

IATME Bulletin No. 12 h

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF TERRESTRIAL MAGNETISM AND ELECTRICITY

GEOMAGNETIC INDICES  
K and C, 1953

by

J. BARTELS and J. VELDKAMP

Published with financial assistance from UNESCO

EXCELSIOR, DEN HAAG, HOLLAND  
1954

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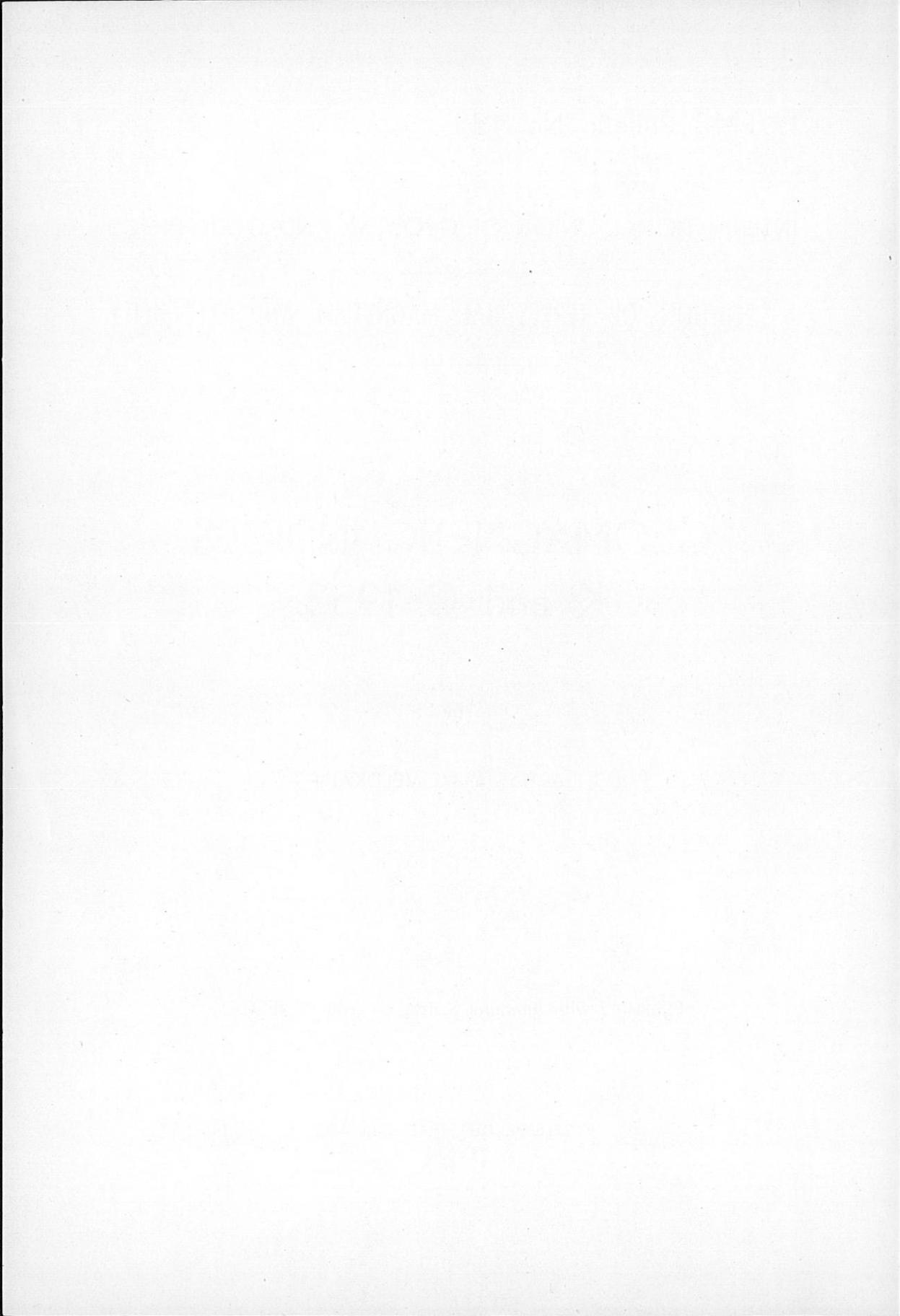
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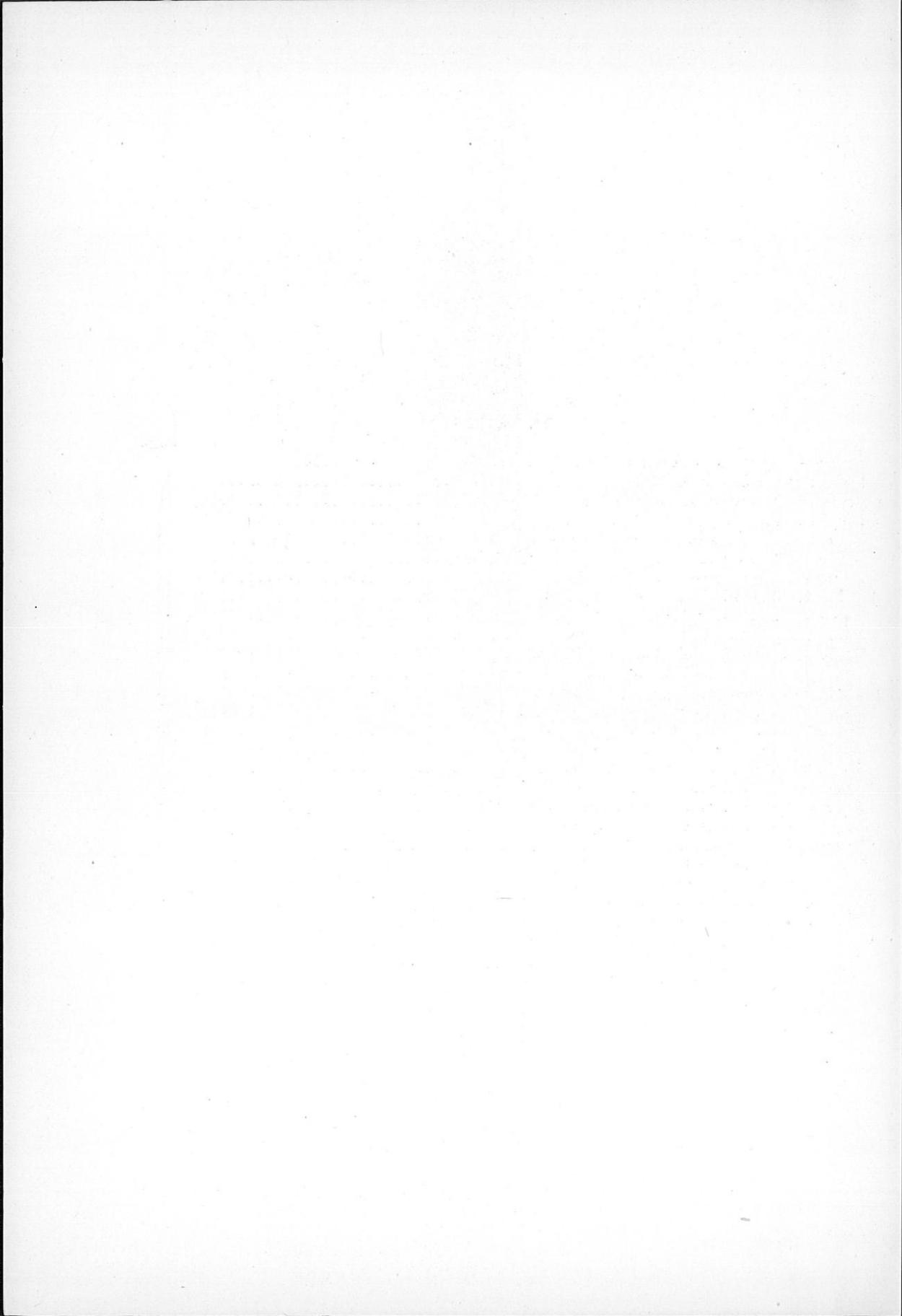
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**P R E F A C E**

La préface que j'avais écrite pour le Bulletin 12g devait être la dernière que je signerais, mais l'activité incessante de notre Comité en a décidé autrement, notre Association devra lui exprimer sa reconnaissance à l'occasion de l'Assemblée de Rome!

Dans le présent Bulletin le Dr. Veldkamp a joint aux Tables habituelles l'étude de deux sfe et de quatre psc, continuant ainsi la constitution progressive d'un précieux album de cas concrets.

Comme d'habitude j'ai l'agréable tâche de remercier les nouvelles stations collaborant à notre travail: Hb (Hurbanovo) et Pr (Průhonice) en Tchécoslovaquie, Qu (Quetta) au Pakistan. Quant à Gt (Göttingen), elle ne fournit que les ssc, psc, sfe, si, - le Président de notre Comité estimant, par une modestie paradoxale, que sa propre station n'a pas besoin d'envoyer les indices K déjà suffisamment nombreux dans la région. Qu'il soit tout de même remercié...

J. Coulomb

Président de l'Association Internationale  
de Magnétisme et Electricité Terrestres

## NOTE TO THE USERS OF THIS BULLETIN

The main content of this Bulletin is the quantitative description of the time changes of the intensity of geomagnetic activity in the year 1953, based on data supplied by about 45 observatories. The tables continue a long series of more than a million figures, supplied by the observatories, and collected by the Committee on Characterization of Magnetic Disturbances (CCMD) of the International Association of Terrestrial Magnetism and Electricity (IATME).

Regional conditions are described by the daily character-figures C and the three-hour-range index K, scale 0 to 9. The eight K-indices per day are printed in succession, beginning with the first Eighth of the day, 00 to 03 Universal Time (GMT). These are combined into world-wide averages, the international character figure, Ci, and the geomagnetic planetary three-hour-range indices, Kp. After a trial period of several years, the IATME has adopted the K-index, and the principle of the Kp-index, as measures of geomagnetic activity. A daily measure based on Kp, the average amplitude Ap, has tentatively been introduced.

For the availability of earlier Bulletins (listed on the back cover), inquiries should be directed to the Secretary of the IATME, Dr. V. Laursen, Dansk Meteorologisk Institut, Charlottenlund, Denmark.

The meaning of C, Ci, K, and Kp, as well as the other phenomena mentioned in this Bulletin, is explained in textbooks, e.g., in: LANDOLT-BÖRNSTEIN, Zahlenwerte und Funktionen, Band 3, Astronomie und Geophysik, pp. 731-744 (Berlin 1952: Springer-Verlag), and in Terr. Mag. 44, 411-433 (1939) and 46, 301-303 (1941). The exact definition of Kp is given in IATME Bulletin No. 12b, and in Journal of Geophysical Research, Vol. 54, pp. 295-299, Sept. 1949.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes  $47^{\circ}$  and  $63^{\circ}$ . The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is  $4\frac{2}{3}$ , 5o is  $5\frac{0}{3}$ , and 5+ is  $5\frac{1}{3}$ . This planetary index is designed to measure solar particle radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field.

Tables for Kp for previous years may be found: for the Polar Year, August 1932 to August 1933, in Bulletin No. 12d, pp. 48-50, for 1937-39 in Bulletin No. 12g, pp. 97-102, for 1940-1944 in Bulletin No. 12c, pp. 104-113, for 1945-1948 in Bulletin No. 12b, pp. 113-120, for 1949 in Bulletin No. 12c, pp. 102-103, for 1950 in Bulletin Nr. 12e, pp. 104-105, for 1951 in Bulletin No. 12f, pp. 86-87, for 1952 in Bulletin No. 12g, pp. 103-108.

A collection of diagrams for K<sub>p</sub>, 1932/33 and 1940 to 1950, together with diagrams for daily characters 1884-1950, is given in: Abhandlungen Akad. Wiss. Göttingen, Math.-Phys. Klasse, Sonderheft 1951. Current tables of the K-index are being published in many journals, e.g., for the British Observatories, in the JOURNAL OF TERRESTRIAL AND ATMOSPHERICAL PHYSICS. Quarterly tables of K<sub>p</sub> appear in the JOURNAL OF GEOPHYSICAL RESEARCH. Final values of K<sub>p</sub> for a calendar month are usually available, as tables and in graphical representation, before the end of the next month, and they are distributed, in time for 27-day recurrence forecasts, to about 150 institutions in many countries. ( Requests may be directed to Geophysikalisches Institut, Herzberger Landstr. 180, (20b) Göttingen, Germany). They are also reproduced in the F-series: Ionospheric Data of the Radio Propagation Physics Division, National Bureau of Standards, Boulder, Colorado.

The authors of this Bulletin, as well as all other members of the Committee, will be glad to supply any information concerning these data.

Beginning with Bulletin No. 12c (1949), tables are given concerning sudden commencements of magnetic storms, and other sudden changes found in the magnetograms, as well as solar-flare effects (see Terr. Mag. 41, 404-406 (1936), 42, 109-122 (1937), or Chapman-Bartels, Geomagnetism, p. 341 ff., Oxford Univ. Press (1940, reprinted 1951).

## GEOMAGNETIC DATA , 1953

Introduction

**List of observatories.** This list contains data of all contributing magnetic observatories. The stations have been arranged according to geographic latitude. The first pages gives the name of the observatory and its two-letter symbol, the name of the collaborator, and the geographic and geomagnetic coordinates. The second page gives the scale values of the instruments, used for scaling K or ( and ) C, the lower limit for K=9, and the range of disturbances on a day with character-figures C=1. The third page gives information on the method used by a number of observatories for checking the solar-flare effects found in the magnetograms. The column "Ionospheric Stations or Radio Service" indicates the ionospheric or solar observatory or the radio services whose reports on Dellingen effects, eruptions on the sun, and black-outs in the radio communication enable the magnetic observatory to distinguish between a solar-flare effect and a common bay-disturbance.

New observatories are Hurbanovo (Hb), Pruhonice (Pr), Quetta (Qu) and Göttingen (Gt). Hurbanovo and Pruhonice are observatories in Czechoslovakia, Quetta is the Pakistan magnetic observatory, and Göttingen from now on cooperates in checking the s.s.c.'s, p.s.c.'s, s.i.'s and s.f.e.'s.

Figure A shows graphically which observatories have furnished K-figures for 1940-1953. For years previous to 1940, see IATME Bulletins No 12 and 12a-g.

TABLE 1 gives the eight K-indices for each magnetic observatory for every day of 1953. The observatories are indicated by the symbols given in the list of observatories, and are arranged in the order of geomagnetic latitude. A hyphen is used whenever a value K is missing. Interpolated values are indicated by dots above the figures. The actual scaled K-indices are given, without any reduction for a presumed solar-flare-effect. The symbol Q (quiet) stands for K = 0, 1 or 2, and is used by equatorial stations with a large daily variation, making the scaling of low K-indices difficult.

TABLE 1a gives K-indices from the observatory Hb (for 1951, 1952 and 1953) and from the polar observatories Cape Evans (1911 and 1912), Cape Denison (1912 and 1913), and Port Martin (1951 and 1952). The K-indices from these polar stations have been derived by P.N. Mayaud.

TABLE 2 gives the C-figures for every day of 1953. A hyphen is used when a value is missing. The table also gives the sum of C-figures for the whole month for each observatory in the column at the right. At the bottom of the table the sums for every day are shown, together with the magnetically selected days of each month. For the method of selection see description of Table 3a (below).

TABLE 3 shows the international magnetic character figure Ci, 1953, obtained by averaging the values of Table 2 for every day.

TABLE 3a gives a summary of the selected quiet and disturbed days for 1953. The selection was made on the basis of three criteria: (a) the sum of the eight values of Kp, (b) the sum of the squares of the eight Kp, (c) the greatest of the eight values of Kp. The days of each month were assigned relative "order numbers" according to the three criteria, the three order numbers were averaged, and the days with highest and lowest mean order numbers were selected for the five disturbed and the ten quiet days. The five quiet days were selected under avoidance of a 14-day period in order to reduce a lunar influence on the mean daily variation on the five quiet days.

TABLE 4 is a list of sudden commencements followed by a magnetic storm or a period of storminess (s.s.c.). The most important cases are marked by an asterisk. The times of the column at the left are mean values with special regard to data of quick-run records. Most of the 48 observatories which checked the sudden commencements agreed with the term s.s.c., but in some cases one or more observatories preferred the qualification p.s.c. or s.i. Observatories, which found a slight disturbance, without being clear about its character, are indicated by the word "doubtful". The checking observatories were: Tr So Co Do Le Lo Si RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch SM SF Ka Ks Tu Qu He Ta Ho Te Al SJ MB Bi El Hu Tn Va Wa Hr To Am MI Gt.

TABLE 5 is a list of polar or pulsational sudden commencements (p.s.c.). This means a type of sudden displacement in the magnetogram, which is followed by pulsations and (or) a bay-disturbance. This list cannot be considered as complete, as it may be that a p.s.c. has been selected by the observatories out of a great many p.s.c.-like disturbances, all occurring on the same day. This remark holds also for Table 6. The p.s.c.'s were checked by 48 observatories.

TABLE 6 gives a summary of sudden geomagnetic changes or impulses (s.i.), which could not be classified as s.s.c. or p.s.c.

TABLE 7 is a list of minor disturbances (s.s.c. 's, p.s.c. 's and s.i. 's) which have been reported by only one station. These disturbances have not been checked by other observatories.

TABLE 8 gives a summary of solar-flare effects, reported by the observatories. The times tabulated in the column at the left indicate the beginning of the solar-flare effect. A check of the solar-flare effects was made by 45 observatories: Co Do Le Lo Si RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch SM Ka Ks Tu Qu He Ta Ho Te Al SJ MB Bi El Hu Va Wa Hr To Am HI MI Gt. Stations on the daylight hemisphere, which reported a clear effect, have been written behind the indicated times. Underlined are observatories near the subsolar point. Stations lying in the twilight zone of the dark hemisphere are indicated by dotted brackets. Stations in full dark, which reported a clear disturbance, have been given in parentheses. As is to be expected, such cases are rather infrequent.

Furthermore, the stations on the daylight hemisphere have been mentioned which were in doubt about the presumed solar-flare effect, as well as the stations in daylight which could not find this type of disturbance at the indicated time.

Stations on the nightside of the earth, which give a negative or doubtful answer, have been omitted.

In cases where one or more stations reported a simultaneous disturbance from an ionospheric or solar observatory or from a radio service, which gave support to the geomagnetic solar-flare effect, the indicated time has been underlined.

TABLE 8a gives doubtful solar-flare effects. As doubtful have been considered those cases where the stations near the subsolar point reported no effect, or where one or two stations on the nightside of the earth mentioned a bay-disturbance. It must therefore be considered improbable that the disturbances summarized in this table are real s.f.e.'s. Meanwhile, it is not impossible that a part of the cases of this table are real solar-flare effects. The underlining of time and stations, and the use of brackets, has the same meaning as in Table 8.

TABLE 8b summarizes times of presumed solar-flare effects, which have proved to be most probably no real solar-flare effects, as several stations in full dark reported a sudden commencement or a bay-disturbance at the indicated time, whereas stations in full daylight found only a doubtful effect, or a disturbance which did not agree with an increase of the normal daily variation.

TABLE 9 is a list of magnetic storms and other outstanding occurrences recommended for reproduction.

FIGURE 1 shows drawings of the solar-flare effect of 1953 Oct. 14d 09h 50m, taken from selected magnetograms. The following observatories have sent magnetograms: Le Lo Es Wn Wi Ni Gt Ma Pr CF IK Eb.Ci Tl Ch SM Ka Ks Tu He Ta Ho MB Bi Hu Va Hr Am.

FIGURES 2 and 3 are maps of the overhead currents necessary to produce the s.f.e.'s of 1953 Oct. 14d 09h 50m and Oct. 14d 14h 24m, and the currents of the normal daily variation.

FIGURES 4 - 7 are copies of magnetograms of the polar disturbances of 1950 Jan. 09d, 1951 May 29d, 1951 Oct. 07d and 1953 May 25d, showing the difference between the local character of bay-disturbances and the world-wide distribution of the accompanying pulsations.

FIGURES 8 - 11 are diagrams of the perturbing vectors belonging to the pulsations of 1950 Jan. 10d 00h 48m, 1951 May 29d 22h 35m, 1951 Oct. 07d 02h 42m and 1953 May 25d 22h 42m. Quick-run records were received from the observatories Le Lo RS Es Wi Ab CF Hr.

TABLE 10. This Table, summarizing the K-indices for 1953, contains the usual Kp-Table, supplemented by "equivalent ranges", to meet requests expressed at the IUGG-Assembly at Brussels, 1951, namely, to express "magnetic activity" in some linear scale, in addition to the quasi-logarithmic scale of the indices K and Kp.

The three-hourly equivalent amplitude ap is coordinated to the Kp-index by 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 9+
ap = 39 48 56	67	80 94	111	132 154	179	207 236	300	400

At a standard station, with  $500\gamma$  as lower limit for  $K = 9$ , the average range of the most disturbed of the three force components, in three-hour-interval with Kp, can be taken as  $2 \cdot ap$  (for instance, for  $Kp = 3+$ , as  $36\gamma$ ). In other words, ap is an equivalent amplitude in the unit  $2\gamma$ . (The Table connecting ap with Kp is identical with Table 1 in IATME Bulletin No. 12e, p. 111, the term "weight g" used there has been replaced by the more significant term "equivalent amplitude ap").

The column headed Ap gives the daily average for the eight values ap per day (sum of the ap divided by 8). Therefore, Ap may be called "equivalent daily amplitude Ap", expressed in the unit  $2\gamma$  for a standard station.

Observatories wishing to compute, from their own K-indices, a local analogon to ap or Ap, may proceed as follows:

Each K-index is replaced by a local equivalent amplitude according to the following table

K = 0	1	2	3	4	5	6	7	8	9
ak = 0	3	7	15	27	48	80	140	240	400.

If it is desired to convert ak into an equivalent range, in the unit  $\gamma$ , that factor is obtained from the lower limit for  $K = 9$  valid at that station, by dividing that limit by 250. For instance, at Sodankylä, where the lower limit for  $K = 9$  is  $1500\gamma$ , the factor

is 6, so that, for  $K = 3$ , the equivalent range is  $90\gamma$ , or, in other words,  $ak$  for Sodankylä expresses equivalent ranges in the unit  $6\gamma$ . - For days,  $Ak$  is the average of the  $ak$ .

Use of the daily  $Ap$  (planetary) or  $Ak$  (local) is recommended in preference to the sum of the indices  $Kp$  or  $K$  (see Note 1, IATME Bulletin No. 12e, p. 130, the weights  $k$  of Table 14, l.c. p.132, appear now as  $ak$ ).

The last column gives the daily planetary character figure  $Cp$ , as defined in Bulletin No. 12e, p.111. It should be noted that  $Cp$ , introduced for a standardization of the international character-figure  $Ci$ , has not been approved by the Association; instead,  $Ap$  was preferred. For a rough conversion of  $Ci$ -figures prior to 1937 (except 1932/33) into  $Ap$ , the following table (derived from Bulletin No. 12e, p.111, Table 2) may be used:

$Ci$	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
$Ap$	2	4	5	6	8	9	11	12	14	16
$Ci$	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
$Ap$	19	22	26	31	37	44	52	63	80	110
										2.0
										160.

Complete Tables for daily  $Ap$  have now been published as follows: 1932/33 and 1940 - 1951 in IATME Bulletin No. 12f (for 1951), pp. 91-97, for 1937 - 1939 (Table 13) and 1952 (Table 12 in Bulletin No. 12g for 1952).

TABLE 11 gives frequencies of  $Kp$ -indices; supplementing tables in Bulletin No. 12c, p.131-133, No. 12f, p.98, and No. 12g, p.112.

TABLE 12 gives the averages of  $Ap$  for months and the year, 1953, supplementing Table 19, p.97, in Bulletin No. 12f (for 1951), and Table 14, p.110 in Bulletin No. 12g (for 1952).

TABLE 13 is a list of magnetic storms, 1953, defined as explained in the heading of the table, preceding tables have also been indicated.

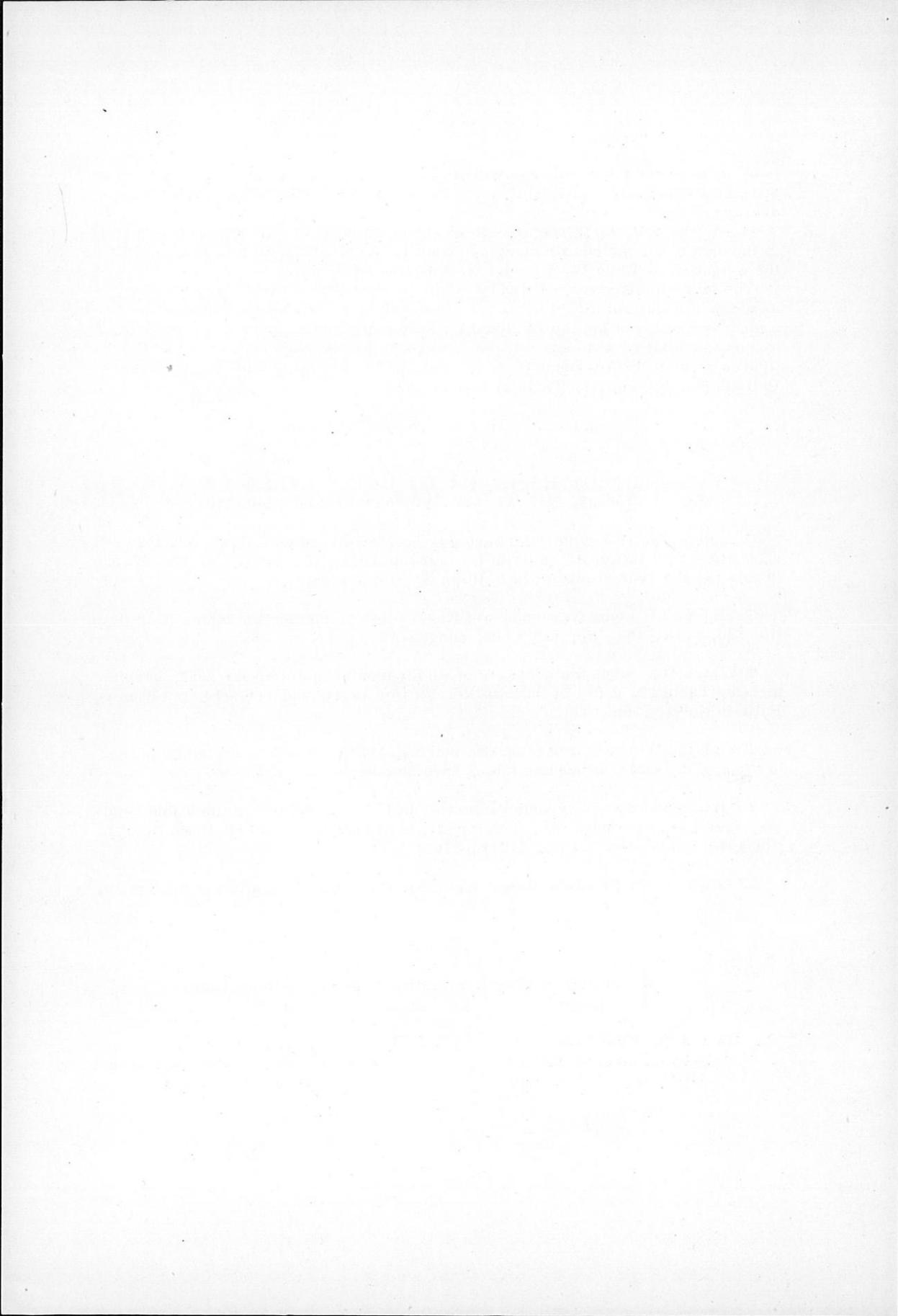
TABLE 14 gives very quiet intervals in 1953, as defined in the Table heading. Such lists have been published for all years beginning 1948 (Bulletin No. 12c (for 1949) p.137, No. 12f (for 1951) p. 105).

27-day-recurrence diagram for  $Kp$ , 1953, is given at the end.

#### Committee on Characterization of Magnetic Disturbances

J. Bartels, Chairman  
Geophysikalisches Institut  
Göttingen, Germany

J. Veldkamp  
Kon. Nederl. Meteorol. Instituut  
De Bilt, Holland



## LIST OF OBSERVATORIES 1953

Arranged according to geographic latitude

	Observatory	Collaborator	Geographic		Geomagnetic	
			Lat.	Long.	Lat.	Long.
Tr	Tromsø	E. Tønsberg	+69° 40'	18° 57'	+67.1°	116.7°
So	Sodankylä	E. Kataja	+67 22	26 39	+63.8	120.0
Co	College	M.L. Cleven	+64 52	212 10	+64.5	255.4
Do	Dombås	K.F. Wasserfall	+62 04	9 07	+62.3	100.0
Le	Lerwick	R.A. Watson	+60 08	358 49	+62.5	88.6
Lo	Lovø	F. Eleman	+59 21	17 50	+58.1	105.8
Si	Sitka	J.B. Campbell	+57 04	224 40	+60.0	275.4
RS	Rude Skov	J. Egedal	+55 51	12 27	+55.8	98.5
Es	Eskdalemuir	R.A. Watson	+55 19	356 48	+58.5	82.9
Me	Meanook	R.G. Madill	+54 37	246 40	+61.8	301.0
Wn	Wingst	O. Meyer	+53 45	9 04	+54.5	94.0
Wi	Witteveen	D. van Sabben	+52 49	6 40	+54.2	91.0
Sw	Swider	Z. Kalinowska	+52 07	21 15	+50.6	104.6
Ni	Niemegk	G. Fanselau	+52 04	12 40	+52.2	96.5
Gt	Göttingen	J. Bartels	+51 33	9 58	+52.3	93.7
Ab	Abinger	H. Spencer Jones	+51 11	359 37	+54.0	83.3
Ma	Manhay	L. Koenigsfeld	+50 18	5 41	+52.0	88.8
Pr	Pruhonice	M. Pavluchová	+49 59	14 33	+50.1	97.5
Fu	Fürstenfeldbruck	Fr. Burmeister	+48 10	11 17	+48.9	92.4
CF	Chambon-la-Forêt	G. Gibault	+48 01	2 16	+50.4	83.9
Hb	Hurbanovo	P. Ochabová	+47 54	18 12	+47.1	99.8
Na	Nantes	O. Noblanc	+47 15	358 27	+50.5	80.1
Ag	Agincourt	R.G. Madill	+43 47	280 44	+55.0	347.0
IK	Istanbul-Kandilli	O.N. Sipahioglu	+41 04	29 04	+38.5	107.5
Eb	Ebro	A. Romaná S.J.	+40 49	0 30	+43.9	79.7
Ci	Coimbra	J.C. Moraes	+40 13	351 35	+44.8	71.3
Tl	Toledo	J. Sancho	+39 53	355 57	+43.6	75.7
Ch	Cheltenham	P.G. Ledig	+38 44	283 10	+50.1	350.5
SM	San Miguel	H. Amorim Ferreira	+37 46	334 21	+45.6	50.9
SF	San Fernando	W. Benitez	+36 28	353 48	+41.0	71.3
Ka	Kakioka	T. Yoshimatsu	+36 14	140 11	+26.0	206.0
Ks	Ksara	J. Delpeut S.J.	+33 50	35 54	+30.4	112.0
Tu	Tucson	J.H. Nelson	+32 15	249 10	+40.4	312.2
Qu	Quetta	S.N. Naqvi	+30 11	66 57	+21.6	139.7
He	Helwan	M.R. Madwar	+29 52	31 20	+27.2	106.4
Ta	Tamanrasset	C. Billaud	+22 48	5 31	+25.4	80.6
Ho	Honolulu	L.R. Burgess	+21 18	201 54	+21.1	266.5
Te	Teoloyucan	S. Ferraeus Gomez	+19 45	260 49	+29.6	327.1
Al	Alibag	S.L. Malurkar	+18 38	72 52	+ 9.5	143.6
SJ	San Juan	R.M. Wilson	+18 23	293 53	+29.9	3.2
MB	M'Bour	Mme. Duclaux	+14 24	343 03	+21.3	55.0
Ba	Bangui	L. Le Donche	+ 4 36	18 35	- 4.6	88.6
Bi	Binza	N. v.d. Elst	- 4 23	15 16	- 3.4	83.2
El	Elisabethville	G. Heinrichs	-11 39	27 28	-12.7	94.1
Hu	Huancayo	A.A. Giesecke Jr	-12 03	284 40	- 0.6	353.8
Ap	Apia	P.J. Gill	-13 48	188 14	-16.0	260.2
Tn	Tananarive	R.P.J. Coze	-18 55	47 33	-23.7	112.5
Va	Vassouras	L.I. Gama	-22 54	316 21	-11.9	23.9
Wa	Watheroo	L.S. Prior	-30 19	115 53	-41.8	185.6
Pi	Pilar	O. Lützow-Holm	-31 40	296 07	-20.2	4.0
Hr	Hermanus	A.M. van Wijk	-34 26	19 14	-33.7	81.7
To	Toolangi	J.M. Rayner	-37 32	145 28	-46.7	220.8
Am	Amberley	H.F. Baird	-43 09	172 43	-47.7	252.5
HI	Heard Island	R.F. Thyer	-53 02	73 22	-61.2	129.9
MI	Macquarie Island	R.F. Thyer	-54 30	158 57	-61.1	243.1

## LIST OF OBSERVATORIES 1953 - continued

	Scale Values			Lower Limit K = 9 $\gamma$	Ranges for C = 1
	D $\gamma/\text{mm}$ , H $\gamma/\text{mm}$	H $\gamma/\text{mm}$	Z $\gamma/\text{mm}$		
Tr	4.7	5.1	6.8	2000	400-1200 $\gamma$
So	3.7	8.2	11.0	1500	45-200 $\gamma$
Co	3.6	6.9	9.2	2500	No fixed range
Do	9.6	9.0	7.6	750	
Le	4.0	3.6	5.9	1000	
Lo	4.2	4.5	5.0	1200	
Si	4.5	7.0	8.0	1000	No fixed range
RS	4.8	10.0	10.0	600	D: 4'-12'; H: 14-42 ; Z: 9-27 $\gamma$
Es	4.3	4.0	5.6	750	
Me	3.6	7.8	10.8	1500	30-375 $\gamma$
Wn	4.3	6.3	5.8	500	Sum K: 20-30 CK:0.7-1.3 Cs:0.8-1.4
Wi	9.7	9.4	5.5	500	D: 4'-12'; H: 15-45 ; Z: 7-21 $\gamma$
Sw	3.6	3.6	4.5	500	
Ni	2.1	2.1	2.6	500	
Gt	8.3	6.6	5.6	500	
Ab	5.0	4.4	4.4	500	
Ma	5.2	2	3.8	500	D: 4'-12'; H: 15-45 ; Z: 7-21 $\gamma$
Pr	2.0	10.6	8.5	500	
Fu	2.6	2.7	2.3	500	No fixed range
GF	5.8	6.2	3.1	500	No fixed range
Hb	7.3	4.3	3.7	350	
Na	9.5	7.2	6.5	500	D: 4'-12' 12-150 $\gamma$
Ag	4.0	5.1	5.9	600	
IK	3.6	3.1	3.5	300	Sum K: 16-31 or <16 and K>4
Eb	6.9	6.6	10.0	350	14-55 $\gamma$
Ci	7.8	4.0	4.5	350	C from Cs
Tl	7.9	5.3	4.3	350	D: 2'-8'; H: 10-60 ; Z: 10-50 $\gamma$
Gh	5.4	2.7	4.1	500	Sum K: 25-44
SM	9.1	6.8	3.4	350	No fixed range
SF	0.7'	3.1	---	350	10-30 $\gamma$
Ka	6.2	2.7	3.0	300	No fixed range
Ks	1.1'	7	4.5	300	15-45 $\gamma$
Tu	3.8	3.0	---	350	No fixed range
Qu	1.0'	1.9	4.6	---	
He	6	6	1	---	10-30 $\gamma$
Ta	1.0'	5.6	3.0	300	H: 42-130 $\gamma$
Ho	8.4	2.8	3.3	300	Sum K: 22-38
Te	1.0'	4.6	3.8	350	D: 2'-4'; H and Z: 10-20 $\gamma$
Al	11.3	4.4	2.8	300	No fixed range
SJ	8.1	2.6	4.7	300	Sum K: 14 or 18 - 30 or 35
MB	1.0'	6.6	6.5	350	
Ba	0.9'	10.0	13.3	300	
Bi	1.0'	3.9	1.2	---	
El	6.2	6.2	7.8	---	H: 20-100 $\gamma$
Hu	1.0'	1.9	3.4	600	Sum K: 25-41
Ap	10.1	2.3	1.7	300	Sum K: 25
Tn	1.5'	6	4	300	No fixed range
Va	1.1'	2.5	3	---	No fixed range
Wa	7.1	2.4	3.9	350	20-35 $\gamma$
Pi	6.8	3.4	1.7	300	No fixed range
Hr	2.1	2.3	3.7	300	Sum K: 18-34
To	7.5	4.9	4.4	500	Sum K: 25
Am	7.3	4.4	4.4	500	
HI	4.9	10.2	3.1	1000	
MI	3.5	12.4	13.6	1500	

## LIST OF OBSERVATORIES 1953 - continued

Instruments	Ionospheric Station or Radio Service
Tr Normal sens.	
So Normal sens.	
Co Normal sens.	
Do Normal sens.	
Le Normal sens.	
Lo Normal, low sens.+quick run	Cable and Wireless Ltd; Sol.Obs.: Greenwich, Edinburgh
Si Normal and low sens.	
RS Normal, low sens.+quick run	
Es Normal sens.	
Me Normal and low sens.	Cable and Wireless Ltd; Sol.Obs.: Greenwich, Edinburgh
Wn Normal,dX/dt,dY/dt,dZ/dt,quick run	Inst.für Ion.-forschung, Lindau; Sol.Obs.: Fraunhofer Inst., Freiburg Nederhorst Den Berg Radio (Nera)
Wi Normal sens.+quick run	
Sw Normal sens.	
Ni Normal sens.	Zentralobs. Potsdam; Sol. Obs.: Astrophysikal. Obs., Potsdam
Gt Normal sens.,str.var.+puls.recorder	
Ab Normal sens. + quick run	Cable and Wireless Ltd; Sol. Obs.: Royal Obs. Greenwich
Pr	Radio-service Panská Ves;Astrophysical Obs. Ondrejov
Fu Normal sens. + high sens.	Inst. für Ion.-forschung, Lindau
CF Normal sens. + quick run	Lab.Nat. de Radioelectr. Bagneux; Sol Obs.: Obs.d' Astrophysique, Meudon
Hb Normal sens.	
Na Normal sens.	
Ag Normal and low sens.	
IK Normal sens.	No
Eb Normal sens.	Confirmation by earth-currents
Ci Normal sens.	
Tl Normal sens.	
Ch Normal and low sens.	
SM Normal sens. + quick run	Tokyo Wireless Adjusting Station
SF Normal sens.	
Ka Normal sens. + high sens. for D	
Ks Normal sens.	
Tu Normal sens.	
Qu Normal sens.	
He Normal sens.	
Ta Normal sens.+dH/dt quick run	All India Radio, New Delhi; Radio Ceylon Colombo; Sol.Obs: Sol.Phys.Obs., Kodalkanal
Ho Normal sens.	No
Te Normal sens.	No
Al Normal sens. + quick run	No
SJ Normal sens.	
MB Normal sens.	
Ba Normal sens.	
Bi Normal sens.	
El Normal sens.	
Hu Normal sens. + quick run	Inst. Geofisico de Huancayo; Sol.Obs: " " " Apia Radio; Christchurch Geoph. Obs. Sol. Obs.: Carter Obs., Wellington
Ap Normal sens.	
Tn Normal sens.	
Va Normal sens.	
Wa Normal sens.	
Pi Normal sens.	
Hr Normal sens. + quick run	Watheroo Magn. Obs.
To Normal sens.	Telecomm.Research Lab.CSIR. Johannesburg
Am Normal sens.	
HI Normal sens.	Lincoln Ion.Stat.; New Zealand Broadc. Service, Wellington; Sol.Obs:Carter Obs. Wellington
MI Normal sens.	No
	No

FIGURE A OBSERVATORIES WHICH HAVE REPORTED K-INDICES

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Jan.	1	2	3	4	5	6	7	8
Tr	5533	3455	3223	5665	4321	4343	3200	0442
Co	3236	5432	2236	6642	2202	4311	2111	1220
So	4423	3344	3123	4554	3211	2332	2102	0331
Le	3322	2233	1123	3443	2111	2232	1121	1221
Do	3422	2343	2122	3553	3111	2332	3000	0221
He	3344	4332	2244	4333	1301	1301	1000	0221
Si	2345	4233	2234	4432	2301	2211	1001	1220
Es	2322	3333	2133	4443	2111	2332	2001	1222
Lo	3323	3343	2133	4553	3221	2332	2012	1222
RS	3322	3343	2133	4553	3221	3332	3111	1321
Ag	3323	2232	1142	3332	2401	1211	3000	1121
Wn	3433	3344	2233	4653	3222	2332	3111	1323
Wi	3433	3344	2233	5553	3221	3332	3111	1332
Ab	3323	3343	2133	4553	3221	3332	2111	0222
Ni	3323	3343	2323	4553	3211	3332	3101	1332
Ma	3323	3343	2233	4543	3222	2332	2001	1332
Na	3323	3343	2233	4543	3211	3332	2100	1222
OF	3323	2343	2233	4553	2211	2232	2110	0221
Ch	3333	2332	2243	4443	2411	2221	3010	1222
Pr	3323	3343	2234	4553	3222	2332	2122	2221
Fu	2323	3343	2123	4552	3212	3331	2112	2221
SM	3333	33—	2242	4342	2223	2332	3223	5553
Gi	3323	3343	3233	3443	3222	2232	2111	1122
Eb	2222	2332	1122	4453	2101	2231	2000	0121
Tl	2323	2342	2123	4442	2212	2222	2000	0221
SF	2333	333—	213—	44—	3223	2332	2121	2332
Tu	3344	2322	2233	3542	2311	1211	2100	0222
IK	2223	3343	2133	4442	2111	2331	1100	0232
Ks	2224	3344	2134	5554	3232	3442	1000	0332
SJ	2212	1122	2122	3333	2201	2211	2101	0322
Te	2322	2223	2233	3333	2212	1322	2000	2321
Ka	2213	3222	2223	4442	1011	3220	1010	1322
Ta	Q330	3330	QQQQ	3340	QQQQ	QQQQ	Q330	Q343
MB	Q3QQ	3Q3Q	QQQ3	3433	QQQQ	3QQQ	Q465	QQQQ
Ho	3333	1222	2232	2222	1111	1111	1010	0222
Al	2123	3322	2233	4442	2212	2321	1111	1232
Hu	2211	3433	1122	3454	2201	2322	1001	1343
Va	3323	2322	3223	4433	2212	2222	3113	1232
Ap	3433	2333	3212	1222	1101	1132	3210	0111
Tn	3343	4344	2444	4443	2334	3333	3233	3333
Hr	3333	4332	2234	4443	3322	4322	3173	3332
Wa	4433	3332	2333	4442	3221	3321	3423	5664
To	4434	—	3333	4443	2222	3322	2221	2323
Am	3333	3232	2333	3333	2301	2222	2210	1223
Mi	2336	5432	2336	6662	2211	4421	1210	2321
HI	3423	3343	3223	4543	3112	3332	2211	2332
Jan.	9	10	11	12	13	14	15	16
Tr	5100	0255	3200	0025	5201	1143	3200	1111
Co	1004	3211	1111	1102	2114	3101	0112	3300
So	4100	1144	1200	1124	4210	1032	2100	1111
Le	3011	1233	1130	1113	4211	1121	2111	2201
Do	4001	1133	1101	1113	4100	1122	1100	2110
Me	2002	2212	2000	0101	1222	2101	0022	1101
Si	2013	2321	2011	2211	1113	2111	1222	3201
Es	4011	2233	1101	2113	4210	1112	2100	3210
Lo	4012	1233	2111	1113	3211	1132	2111	2210
RS	4112	1233	2100	2213	4201	2022	1111	3211
Ag	4012	2122	3000	0102	3212	1111	3111	0112
Wn	4112	2344	2111	2224	4312	2132	0212	3244
Wi	4111	2344	2111	2224	4322	2122	0113	3254
Ab	4012	2333	1111	3213	4221	2122	2211	3221
Ni	4112	2333	2101	2223	4211	1122	2020	3210
Ma	4111	1334	2121	2223	3222	1122	2212	3211
Na	3111	2233	2111	2213	4211	1122	3211	3243
CF	3011	2233	2112	2113	4222	2022	2201	3142
Oh	4122	2232	3111	1112	3222	1111	3221	3133
Pr	4023	2233	2112	1223	4212	2122	2021	3211
Fu	3122	2233	2122	2222	3322	3311	0112	3244
SM	3223	4333	3222	2233	3322	3322	2222	3333
Gi	3111	3233	2322	2123	4322	2222	1112	3243
Eb	3000	0133	2000	0022	3201	0011	1200	4400
Tl	3011	1233	2112	1123	4222	1112	3210	3200
SF	4122	3322	2023	1133	3212	2212	1132	4210
Tu	3012	1222	2111	0102	3311	3111	2122	3210
IK	1401	1233	1110	0123	3211	1112	1100	2112
Ks	4010	0344	1110	0224	421—	—	3200	0112
SJ	1001	2321	2011	2322	3321	1221	2110	2143
Te	2222	0322	2111	1312	3321	3032	2222	1332
Ka	3111	1222	1010	2111	2211	2111	0123	3133
Ta	3QQQ	Q333	QQQQ	Q333	QQQQ	QQQQ	Q333	Q343
MB	3Q3Q	3330	QQQ3	4Q33	3QQ3	Q3QQ	Q3Q3	Q3QQ
Ho	2002	2222	1101	1122	2212	1011	1121	0222
Al	2211	1332	2221	2222	3312	2122	1111	2211
Hu	0001	2442	2100	2223	3211	2333	0111	3441
Va	3112	2322	2211	2233	4322	2222	2213	3211
Ap	3101	2223	3101	0113	3322	2033	3110	1143
Tn	3355	2343	2223	2333	333—	4322	2222	3254
Hr	3344	4433	2232	3323	3334	4422	1234	3354
Wa	4131	2114	4421	1122	4323	3112	2214	3123
To	2232	2324	4321	2122	4332	3232	2222	3322
Am	2121	2223	3210	1033	3422	1122	3311	2211
MI	1223	3222	1211	2112	3324	5312	2212	4311
HI	3222	2144	2212	1113	3222	2122	1214	3433

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Jan.	17	18	19	20	21	22	23	24
Tr	1000 0026	2101 4453	4653 4554	6333 2143	3112 1233	2210 1014	5200 0032	2002 3554
Co	0002 0001	0014 6321	1556 4533	3244 5110	0126 4111	0023 3001	1100 0000	0015 4530
So	2000 0125	2111 4443	2433 5445	6223 2132	2112 2133	2111 1113	4200 1031	0012 3453
Le	1011 1013	2112 2332	2443 3334	4322 1222	2122 2113	2111 1112	4211 1021	1112 2343
Do	1000 1024	2110 3441	2443 3344	6221 1133	2111 2123	2221 1113	4210 1031	1121 2432
Me	0111 0000	0024 6321	1557 4212	3354 2110	0234 3111	0232 2001	2100 0000	0136 3220
Si	0013 0010	0013 6422	1566 5322	2343 3120	1234 3121	1233 3011	2201 0000	0025 4430
Es	1102 1014	1212 3332	2443 3233	5333 1022	2122 3222	2212 1112	4111 1010	1023 2332
Lo	1001 1123	1112 3442	2433 3343	4333 2232	3112 3223	2222 1223	4221 1021	1123 2332
RS	1101 1023	1212 3442	2433 3343	4323 2033	2121 2123	2221 1012	4221 0020	1023 2332
Ag	0011 1012	1211 3211	2555 3124	4433 2112	1223 3112	1331 2011	3200 1000	1133 2220
Wn	1101 1124	1222 3442	2544 3343	5433 2243	3222 3223	3322 2123	4211 2131	2123 3442
Wi	1012 1125	1213 3442	3544 3343	5433 2133	3122 3223	3322 2113	4211 1121	1023 3443
Ab	1011 2124	1223 3332	2544 3333	5333 2232	3122 3213	2222 1212	4222 1121	1123 3332
Ni	1101 1024	1213 3442	2544 3343	4323 2133	3222 2223	3211 1113	4210 1021	1123 3343
Ma	1002 2011	1122 3342	2544 3332	5333 2232	2222 2222	2221 2122	4210 1021	1123 3342
Na	1101 1124	1212 3342	3443 3333	4333 2133	2122 2223	2321 1112	4210 1021	1123 3322
CF	0101 1014	1212 3342	2434 3232	4323 2232	2122 1213	2211 1012	4200 0020	2023 2332
Ch	0011 1012	1222 3332	4545 4133	4433 2122	2323 3222	3231 1022	3210 1000	2023 2320
Pr	1021 1114	1222 3442	2444 3333	4333 2233	3222 2223	2212 2113	4221 1021	1023 3342
Fu	1111 1014	0113 3342	2444 3333	4333 2132	3222 2222	2221 1112	4211 1121	2123 2432
SM	2223 2324	2222 3232	2554 3233	5434 2222	3224 2222	2323 2322	4223 3222	2223 4332
Ci	1001 2123	1213 3332	3444 3333	5422 2122	2112 2222	2322 1122	3311 2121	2123 2342
Eb	0000 1014	1213 4432	2444 3343	5333 2132	1112 2222	2211 0022	3200 0000	1012 2442
Tl	1101 2024	1223 4342	3544 3243	5333 2223	2222 3223	2221 2112	4211 1100	2124 2342
SF	---	3134	1223 3333	354- -443	52- -	-	3223	2123 3123
Tu	1001 1012	2223 4333	4645 3322	3433 3221	1233 3212	1332 2122	3211 1100	1224 2331
IK	1121 1301	0012 4342	2434 3242	4223 2131	1111 2122	1222 1123	4221 0120	2013 3331
Ks	1011 1014	1132 4332	2545 5443	5332 2121	1111 3223	1110 0112	4220 1020	2133 3451
SJ	0000 1122	1122 3322	4444 3133	3333 2111	2222 2323	1221 2211	1110 1000	2222 1232
Te	1010 2223	1122 3231	4545 4242	3332 2321	1222 2213	1222 3232	2211 1221	1212 2330
Ka	1102 1111	1223 3432	2344 3222	2223 3121	1112 3222	1121 2112	2210 2000	2123 2321
Ta	QQQ-Q	QQQ-Q	5333 3444	4444 4443	40QQ 30Q3	QQQ-Q	QQQ-Q	QQQ-Q QQQ-Q QQQ-Q
MB	QQQQ	QQQQ	QQQ-Q	----	----	----	QQQQ	QQQQ QQQ-Q QQQ-Q
Ho	1101 1122	2123 4232	4634 3332	2233 3112	2112 2123	2112 2022	2210 1011	2113 2311
Al	1111 2123	1224 4333	3434 4432	2222 2132	1222 2222	1121 2123	3321 2121	2223 3341
Hu	0001 2121	0122 3332	3433 5454	3322 3332	1113 4322	1111 2232	3210 3210	2212 4431
Va	2112 3122	2234 4333	4445 4344	4324 3223	2233 3233	2321 3222	3321 2110	3224 3231
Ap	3001 1033	3014 3133	4533 3232	3223 3123	3121 3132	2010 1033	3130 1021	3223 2331
Tn	2233 3124	2334 4333	3344 5343	4323 2223	2233 3233	2324 2223	4333 3211	3344 4443
Hr	1344 3313	1244 4332	3445 4333	4234 4223	2134 3323	2332 3212	3344 2021	2233 3442
Wa	3331 1111	1224 4332	4444 4222	2233 2132	2232 2222	3221 1011	3210 1000	3323 3332
To	3321	---	33- -	4554 4322	- -33 2232	2233 2223	2222 2123	3321 1122
Am	2102 1132	4323 4332	3354 3332	3333 3122	3233 2222	2212 2113	2310 1121	2223 2323
MI	1212 2211	2226 7522	2656 5532	5343 6311	2234 3311	2222 3211	2320 2211	1325 5431
HI	2121 1124	2223 4432	3443 4444	5223 2132	1123 2222	1112 2012	3211 1021	1123 3453
Jan.	25	26	27	28	29	30	31	
Tr	0014 4357	7644 5666	6534 4664	3443 4566	5543 4564	5443 3653	4433 4133	
Co	0037 4432	4346 6654	4348 6662	3354 5744	3354 6442	2336 5541	3225 4211	
So	0024 4456	6634 6576	5423 5663	2334 3467	6332 3573	4322 3543	5322 3132	
Le	0114 4334	4523 3575	5323 4452	2222 3445	4323 3352	3232 2432	3222 2121	
Do	0023 4344	6533 5575	6333 5662	2333 3557	5323 3463	3322 2542	4421 3131	
Me	0037 6322	4456 5455	4356 5543	2456 3543	5454 4332	1353 3332	3244 4110	
Si	0027 6322	3446 5443	4346 6652	2445 2633	3354 5431	2354 3321	2414 3100	
Es	0124 4334	5433 4565	4224 4452	2232 3444	4322 3352	3322 3431	3323 2122	
Lo	0125 4344	4433 4565	4234 4552	2333 3545	5323 3453	3333 3532	3312 3121	
RS	1025 4345	5433 4565	4324 4552	2333 3545	4322 3453	4333 3542	3322 3122	
Ag	0025 5223	5554 4345	6335 4342	2443 3435	5434 4222	3343 2231	4423 2110	
Wn	0125 5345	5534 5565	5333 5963	3333 3556	5333 4463	4333 3542	3423 3122	
Wi	0025 5345	5434 5576	5335 5563	3343 3595	5433 4462	4433 3542	4323 3122	
Ab	0125 4334	5534 4565	4235 4553	2333 3445	4333 4453	4333 3441	4323 3222	
Ni	0125 4344	5434 5565	5335 4563	3333 3555	4323 4453	4333 3541	3423 3122	
Ma	0055 3444	5433 5565	4335 4463	3332 3455	4433 4453	3323 3442	3332 2222	
Na	0125 4334	5434 4565	5325 4563	3233 3445	5323 3452	3332 3441	3323 2122	
CF	0025 4334	5434 4565	4224 3592	3333 3445	4322 3442	3332 2441	3322 2122	
Ch	0125 4334	5534 4345	5334 4352	3442 2445	5323 3342	3343 2232	4423 2121	
Pr	0125 3344	4434 4555	4234 3553	2233 2545	4323 4452	3333 3431	3313 3122	
Fu	0225 4334	4434 4554	4224 4452	2232 2445	4322 3342	3322 3431	3333 3021	
SM	1225 5333	5433 3455	5232 3452	2234 3344	5333 3442	3343 3322	4332 3322	
Ci	0125 4334	4434 4555	5323 3563	3233 3445	5323 3452	3333 3432	3322 2222	
Eb	0016 5434	5233 3554	4215 5463	2233 2454	3233 3452	3322 2441	3313 0011	
Tl	0026 4433	5424 4555	5225 4453	2233 2444	4323 3342	3332 3432	3313 2112	
SF	0236 4324	6534 4556	4336 3453	2233 2545	43- -53	44-- 4431	3313 2212	
Tu	0026 5234	4544 3444	5344 4452	3444 3444	5344 4332	2343 2222	3423 3101	
IK	0126 4344	5233 4555	3225 4452	2332 3554	4323 3452	2322 2541	3313 3122	
Ks	0026 4344	5433 5655	3226 5563	3232 3354	4333 5553	3433 2542	2303 2022	
SJ	0124 3334	3333 3344	5222 4352	3221 1434	4222 2232	2332 1321	3312 2311	
Te	0123 3234	3444 3334	4232 4342	3331 2443	3232 3233	2332 3223	2222 2221	
Ka	1124 4333	3324 4433	3335 5341	3233 3443	3223 4421	2233 3322	2313 3111	
Ta	QQQ-Q	3343 4433	4433 4444	3Q05 4343	QQQ-Q 0134	3Q05 4343	3324 3322	
MB	Q3Q3 3333	4333 3345	4Q44 3443	4QQ0 3435	4QQ0 3350	33Q0 332Q	33Q0 33Q0	
Ho	1125 4223	3434 4233	3335 3233	2243 2233	3333 4322	2243 1222	2323 2011	
Al	0126 5333	3333 5543	2224 4452	2233 3343	3213 3442	2322 2532	1222 3121	
Hu	0024 4433	3234 5544	4223 4542	2222 3443	4211 3432	1221 3341	2311 2211	
Va	1234 5344	4435 5455	5323 5452	3233 3534	5322 3343	2333 3332	4422 3212	
Ap	3215 3232	3433 3243	4334 4343	2333 1133	2223 3221	2333 0233	3322 2122	
Tn	2236 4334	4444 5555	3225 5554	3333 3444	3334 5553	3434 4443	3223 3222	
Hr	0125 5333	4334 4455	4334 4543	2333 2535	4333 4442	2332 3432	3324 3312	
Wa	2336 5334	3335 5544	4225 6531	2224 3444	4232 4442	3333 2521	2433 4011	
To	---	---	4335 5543	3334 3434	4333 4432	3234 3422	3333 4221	
Am	1325 4332	3535 4333	3335 4432	4333 3444	3343 3323	3333 3231	3324 3023	
MI	1147 5533	3557 7664	4348 7772	3347 5833	3455 7652	2332 5632	3326 6201	
HI	1125 4465	5535 7776	5334 6773	3223 3557	6332 4572	3322 3642	3322 3021	

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Feb.	1	2	3	4	5	6	7	8
Tr	2110 1045	3310 1343	4301 1223	1102 4430	0000 1030	0000 0332	0000 0002	0100 2114
Co	0010 0011	1223 1311	1115 2120	0003 4410	0002 2100	0000 2010	0001 0000	0022 0000
So	1011 1134	1211 1322	3201 1212	0002 3330	0000 1230	0001 1221	0000 0000	0101 2113
Le	1111 1122	1211 1221	2211 1111	1102 2221	0001 1120	0001 0111	0000 0000	1101 2112
Do	2111 1023	2210 0311	2202 0012	0102 2220	0000 1230	0000 1321	0000 0000	0101 2103
Me	0120 0001	1022 1100	1113 1110	0001 2110	0002 1100	0010 1100	0001 0000	0032 0101
Si	0120 0011	1023 1211	1124 2220	0002 3220	0002 1210	0010 2110	0001 0000	0023 0101
Es	1110 1112	1211 1311	2212 1112	1102 3220	0001 1120	0001 1210	0010 0000	0001 2213
Lo	2111 1012	2212 1321	2212 1121	1112 2230	0001 1230	0011 1331	1011 0011	0111 2213
RS	2121 2122	2321 2321	2212 0111	1112 3220	0001 1130	0001 1321	0001 1011	1101 2113
Ag	0211 0011	1210 1200	3112 1010	0300 3211	0011 1210	0011 1110	0001 0001	1112 1111
Wn	2111 1023	2321 2322	2212 1122	1212 3331	0001 2231	0011 2331	1111 0111	1112 2223
Wi	2121 2123	2222 2321	3212 2123	1202 3231	0012 1221	0012 1221	0001 0111	1111 3223
Ab	1021 2222	1222 2321	3212 1222	1112 3230	0001 1220	0011 1210	0011 1001	1011 2223
Ni	2111 1123	2321 2322	2212 1122	1102 3230	0001 1231	0000 1321	0000 0011	1101 2223
Ma	2110 0022	2220 0322	1211 1122	1112 3331	0000 1221	0001 1100	0000 0001	1101 2212
Na	1111 1123	2211 1322	3112 1222	1212 3330	0001 1221	0001 1221	0101 0001	1101 3212
CF	2110 0022	2201 2311	2111 1122	1113 3220	0001 1120	0001 1221	0000 0000	1101 2212
Ch	1111 1122	3311 1211	3112 1121	2211 2221	0001 1221	0011 1111	1111 0001	2212 2112
Pr	2121 2012	2221 2321	2222 1222	1112 3230	0011 1231	0020 1231	0011 0011	1112 2123
Fu	2121 2112	2222 2321	2222 1122	1222 3220	0112 1221	0112 1221	0112 1011	1112 2111
SM	2222 2232	2223 3222	3222 2222	2323 3322	0222 322-	2222 2222	2222 3222	2222 3322
C1	1121 1222	2211 2311	2112 1222	1212 3331	1001 1221	1001 1211	0111 1011	2111 2222
Eb	1000 0021	1100 0321	2002 1322	1002 3230	0000 0010	0000 0000	0000 0000	0000 1123
Tl	2011 0022	2120 1311	3112 1222	2212 3230	0000 2121	0001 2110	0000 0011	2101 1122
SF	2031 3132	2213 3312	3012 3232	2222 4331	0001 1221	0021 1210	1021 1111	1102 2233
Tu	1211 0012	3222 1211	3213 1111	1201 2110	0002 1110	0011 2111	1211 1002	1122 1222
IK	1000 1012	1101 1311	2102 1222	1102 3220	0000 1221	0000 1210	0000 0011	1101 1111
Ks	1001 0023	2011 ----	--13 1233	2112 4220	0000 1122	0100 0200	0001 0111	0102 1212
SJ	0011 0022	2100 0211	2001 1110	1201 2121	0000 1221	0001 1110	1001 0011	1101 1212
Te	0111 2132	3212 1221	3111 2222	2201 3221	0101 2122	1000 2131	1111 1322	2112 1132
Ka	2011 1022	2221 2311	2112 1221	2212 3120	0111 2210	1011 2211	1211 0111	2111 1212
Ta	QQQQ QQQQ QQQQ	---- Q QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ
MB	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ	QQQQ QQQQ QQQQ QQQQ
Ho	0110 0011	2111 1111	1113 1022	2102 3111	0001 0111	0000 2101	1111 0112	1112 2212
Al	1111 1112	2111 1211	2112 1222	2212 2211	1000 1121	1011 1211	1111 1111	1112 1212
Hu	0010 2222	2100 2421	2012 2221	2102 3321	0000 2221	0012 2211	0100 1211	0102 3322
Va	1112 2122	3112 2421	3002 2122	2212 4210	0002 2221	0001 2111	1111 0101	1102 2312
Ap	2220 0123	3100 01--	---23 3302	3233 3223	3201 1133	2110 1022	2210 0012	2211 0233
Tn	2233 3133	3333 3322	3223 2333	3222 3331	3222 3221	2333 4211	2333 3221	2334 4322
Hr	2111 1133	2212 2312	3123 3222	2313 3231	0012 2121	0112 2211	1223 3112	1213 2222
Wa	2321 1022	3431 0311	3422 1111	2412 4211	0222 1211	2111 1210	1321 0001	3122 0221
To	3222 2122	3332 2313	3323 1222	3232 4323	2222 2223	3221 2113	3221 1123	2222 2222
Am	2010 1022	2222 1221	2213 2222	3202 3223	2102 1123	1210 2121	1210 0012	1211 0121
MI	1010 0111	2212 2411	2215 3210	1104 5520	1020 3110	0111 3120	0111 1010	1111 0011
HI	1111 1123	1221 2322	2222 1112	2212 3231	1011 1220	0111 1321	1111 1010	1000 2212
Feb.	9	10	11	12	13	14	15	16
Tr	4221 2436	3000 3455	5322 2034	2120 2332	0000 0034	5122 1253	4311 2136	6211 4532
Co	1315 5312	1002 4324	2135 5111	0003 3310	0001 1000	1144 2211	0223 2111	3134 5530
So	3311 2436	3001 3456	5222 1123	1111 2221	0001 0013	3122 1251	3211 2036	5212 4341
Le	3321 2314	2001 2245	4222 1013	1111 1221	0010 1003	3122 1141	3221 2114	4121 2531
Do	3311 1415	2101 2255	5222 1023	1120 1231	0000 0033	3122 1251	3321 2134	4112 2531
Me	0313 3112	1001 2223	3132 2111	0001 1100	0000 0001	1054 0221	1243 1101	3035 3321
Si	1304 3322	1002 3323	2232 3121	0002 2110	0001 1000	1153 0221	1132 2112	3034 2431
Es	3312 2324	2001 3234	3222 1022	1112 1220	0000 0002	3132 1241	2222 2124	4221 2532
Lo	3322 2425	2001 3244	3222 2122	1111 1331	0001 0012	3222 1252	3221 2134	4222 2531
RS	3322 2325	2101 3345	3222 1022	1112 2321	0000 1112	3222 2252	3221 2124	4222 2531
Ag	1312 2123	1001 2224	3122 1121	0101 1000	0000 1001	3143 1220	1232 2002	3033 2311
Wn	4322 2335	3102 3345	4322 2123	2211 2331	0010 0013	4233 2352	3322 3234	5222 2642
Wi	4422 2335	3012 3345	4232 2123	2112 2332	0001 1013	3233 2351	3222 3124	5222 3542
Ab	3322 2335	2001 3345	3233 1122	0112 2221	0021 1223	3233 2341	3222 3124	4222 2542
Ni	4321 2335	3002 3345	3222 1123	1111 1331	0000 1013	3222 2251	3212 2134	4222 2541
Ma	3322 2335	1011 3335	3122 2222	1111 1221	0000 0023	2222 1242	3322 3224	4122 2542
Na	3323 2335	2102 3344	3222 1122	1121 1221	0010 0013	3231 2242	3322 3224	4222 2542
CF	3312 3325	2002 3234	3222 1122	1122 1221	0000 0003	3122 1241	2212 3124	4112 1532
Ch	2322 2223	1001 2234	3222 2123	1111 1110	0100 0012	3243 2231	2332 3124	4133 2432
Pr	3322 2335	3012 3344	3222 2122	1122 1221	0010 0112	3232 2252	2222 2234	4222 2542
Fu	3333 2325	1112 3334	3222 1122	1112 2221	1011 1112	3222 2241	2222 2224	4212 2542
SM	3433 3224	2222 2334	3--- 2222	2222 2222	---- ----	3332 3322	52-3 2432	
G1	3322 3324	2111 3344	3322 2222	1111 1210	0000 0112	3222 3241	2222 3224	4222 2532
Eb	3332 3324	1002 2344	3211 1121	1110 0220	0000 0002	3331 2341	3222 3334	4111 1542
Tl	3312 3334	1002 3344	3222 2121	1111 1110	0000 0112	3222 2241	3222 3124	4122 2542
SF	3323 1344	2013 3344	4123 3131	1002 3221	0013 1122	32-- 232-	3324 3225	4323 3442
Tu	2432 2223	2101 3343	3232 1121	0112 2100	0010 0002	3243 1231	2333 1124	4133 2422
IK	3322 3434	1002 3334	3222 1121	1111 1210	0000 0003	3222 1351	2222 2223	4123 2532
Ks	3201 3345	2002 3345	3212 3333	0000 1110	0000 0113	3223 2342	2223 3224	5022 2543
SJ	1311 1323	1000 2243	2211 1121	0000 1100	0000 0122	2222 1231	0222 2125	3123 1432
Te	1102 2222	2242 3252	3322 2132	0111 2122	0002 1232	2223 2232	3223 2225	3223 1312
Ka	2222 2323	2111 3323	2221 1111	1111 2211	1001 1112	2223 1331	1123 3222	3222 2442
Ta	3302 Q333	Q344 3345	3000 3345	3000 3345	3000 3345	3003 Q333	Q300 3Q30	3003 Q3Q4
MB	QQQQ Q333	Q344 3354	3000 3354	3000 3354	3000 3354	3003 Q3Q3	Q303 3Q30	Q303 3Q43
Ho	1322 2222	1001 3232	3232 0022	0101 1100	0001 1112	2132 1232	1122 2113	2122 1312
Al	2222 2224	1111 2332	2131 2122	1111 2210	0111 1112	1232 1341	1322 3233	3222 2532
Hu	2312 3543	1002 3432	2221 2232	0000 2222	0000 1211	1223 2453	2223 4323	3122 3333
Va	2422 1444	2101 3455	2222 1122	1111 1110	0100 0112	2234 2332	1233 3225	4222 3433
Ap	4313 1132	3111 2143	2232 1001	3100 1132	3101 0031	2332 0131	1332 1013	1131 0232
Tn	4333 3334	2332 4343	4243 3222	2222 2121	2223 2222	3344 4342	4334 3234	4444 4443
Hr	3332 3334	1113 3345	4332 2122	1112 2210	0012 1012	3233 3231	3234 3314	3233 3332
Wa	2433 3323	2221 3134	3231 2111	1223 1220	2220 0002	3233 0242	3232 2123	3332 2412
To	3333 3323	2212 3233	3233 3113	2222 2222	2322 1113	4243 1331	2333 2223	3232 2432
Am	2332 3322	2111 3333	3333 2012	3221 2111	2022 0012	2323 1222	2322 2113	3223 2322
MI	1334 5423	1002 5434	2235 5111	1213 3321	1012 1011	2444 3321	2323 3212	3234 3234
HI	3322 2426	3111 3367	5321 1022	1111 2220	1011 0012	4222 2225	3221 2025	4221 2531

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Feb.	17	18	19	20	21	22	23	24
Tr	2222	1134	0011	2324	2311	1345	5000	1342
Co	1144	2110	0002	1011	1134	3311	1003	2110
So	1222	1132	0011	1224	2112	2333	3011	1331
Le	1212	1111	0011	1113	2211	2223	3110	1211
Do	1313	1112	1011	1213	3222	3133	3011	1320
Me	1244	1100	0022	0111	1233	3112	1011	1210
Si	2133	2121	0022	1111	1233	3222	2001	1221
Es	2222	1221	0021	1213	2222	2323	2010	1220
Lo	2323	1222	0021	1223	2222	2333	3111	1331
RS	1222	1221	1011	1223	3222	2333	3011	1321
Ag	2323	1111	0022	1112	2222	2213	3000	1110
Wn	2323	1232	1122	2223	3323	2333	3112	2331
Wi	2323	2222	1022	1223	3323	2333	3111	2331
Ab	2223	2231	1021	2223	2222	2333	3022	2221
Ni	2323	1222	1022	1223	3222	2333	3111	2321
Ma	2333	2222	1122	2223	2222	2323	3111	2331
Na	2323	2222	1022	1223	3322	2333	3111	2221
CF	2212	1121	1011	1213	3322	2332	3101	1220
Ci	2323	1221	1122	2223	2222	2323	3110	2221
Pr	2323	1222	1022	1223	2222	2333	3111	1131
Fu	2322	1221	1122	1223	3222	2333	3112	2221
SM	2334	3322	2222	2222	3332	3223	3232	43-
Ci	2223	2222	1122	1223	2322	2333	3111	2222
Eb	2332	1111	0001	0113	2211	1222	3000	1220
Tl	2323	2221	1011	1113	2222	2222	3001	1121
SF	3333	2232	1023	1222	1213	2323	3112	2331
Tu	2333	2210	1022	1122	2332	2212	2110	1221
IK	3323	2222	1011	2112	1112	2222	2101	1211
Ks	3433	1211	0011	1111	---	-33-	-01	1330
SJ	2323	2121	1011	2122	2312	2121	2001	1122
Te	3323	2132	1022	2333	2322	3222	1101	2223
Ka	2333	2221	1112	2222	2322	3222	1011	2221
Ta	Q333	QQQQ	QQQQ	QQQQ	Q3Q3	QQQQ	QQQQ	Q3Q3
MB	3330	QQQQ	QQQQ	QQQQ	QQQ3	QQQQ	QQQQ	QQQ3
Ho	2332	1111	1012	1122	1222	2122	1101	1121
Al	3433	2221	1112	2222	1222	2221	2111	1331
Hu	2323	4321	1002	3322	1222	3221	1001	3322
Va	3433	3221	1112	2222	2323	3222	3112	2221
Ap	3331	1143	3001	1132	3332	2132	4100	1033
Tn	3453	3322	2333	3233	4433	3223	2333	3322
Hr	2343	3221	1122	2112	1323	2213	3112	1230
Wa	2433	2122	3332	1213	4422	2321	3231	1222
To	3433	2222	1112	2222	3333	2323	2212	3222
Am	4433	2212	1211	1013	2333	3213	2112	2222
MI	3345	3210	1112	1111	2333	3312	1112	3221
HI	2223	1132	1011	2333	3222	2233	3111	1322
Feb.	25	26	27	28				
Tr	6554	5466	6654	5676	443-	-447	4632	3454
Co	5477	6433	3577	6654	3267	5523	3533	4422
So	7344	4456	5545	6776	5324	3446	3632	3444
Le	5434	3435	4433	4465	3123	3325	3531	3342
Do	7444	4545	5443	4576	4234	2435	3632	3442
Me	5566	5323	4666	6444	4262	3423	3642	3322
Si	4566	6323	3476	7433	3262	4423	2531	3222
Es	4344	4444	4343	4455	3234	2335	3521	2342
Lo	5444	4545	4333	5565	3234	3435	3522	2442
RS	5344	4545	4343	5565	3234	2435	3532	1442
Ag	6454	4454	4354	4444	5154	3324	2521	2222
Wn	5444	4555	4344	5565	4234	3436	3632	2452
Wi	5445	4555	4344	5565	4235	3436	3632	2453
Ab	5344	4444	4344	4555	3234	3435	3532	3343
Ni	5444	4545	4344	5564	4234	3435	3522	2442
Ma	4445	4444	4334	5594	4244	3435	3532	2443
Na	444-	-545	4344	4554	3233	3435	3532	3443
CF	4444	4444	4333	4454	3233	3335	3532	3343
Ch	6453	4335	4443	4444	5244	3324	2531	2332
Pr	5444	4544	4334	4564	3234	2435	3522	2442
Fu	4344	4444	4334	4454	3223	2333	3521	1342
SM	5433	4333	3433	-59	4233	3335	3642	3332
Ci	4443	4445	4344	4454	4233	3335	3532	3343
Eb	4344	4444	4224	4554	4134	2225	3440	1332
Tl	4344	4435	4334	4564	4234	2335	3521	2343
SF	5434	4545	5344	4595	4144	3335	3522	-
Tu	5464	3324	4553	4333	4255	3325	3531	2222
IK	4443	4433	3234	5554	3134	2435	3522	1442
Ks	4454	4354	4244	6564	3155	3546	3522	2552
SJ	5343	3324	3332	2333	4133	3324	3421	1332
Te	4232	2325	2331	1-	---	-323	1222	-
Ka	3354	3322	2253	5333	2245	3323	2421	1221
Ta	4344	4335	4Q44	4454	3043	Q335	Q4QQ	Q333
MB	4333	4335	4Q33	4454	4033	Q3Q4	Q3QQ	QQQ3
Ho	3353	3112	3353	2323	2255	2224	2431	1222
Al	3334	4432	2244	5453	3234	2434	2422	2442
Hu	4322	3333	3322	4543	3112	3433	2321	2333
Va	5433	4336	4333	4444	4223	2324	3421	2333
Ap	3343	2232	3442	1343	4244	2235	4431	0132
Tn	4344	3344	3344	5553	3344	3335	3434	3442
Hr	5443	4335	4344	4564	4324	3334	3433	1333
Wa	5345	4344	4344	6453	4355	3414	4431	1433
To	4455	4334	3455	4444	3255	4423	3431	2333
Ab	4454	4334	3454	5443	3355	3324	3431	2323
MT	5477	7443	3477	6664	3367	5634	3543	5532
HI	7344	4447	6444	6676	6234	3436	4532	1433

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

March	1	2	3	4	5	6	7	8
Tr	4233 2265	5543 6775	4545 3355	5311 2332	0211 1366	0011 2225	6332 2353	2321 3477
Co	1135 3122	5466 7764	4447 5113	3213 2211	0200 2321	0113 1211	3344 3231	0104 5645
So	3222 2255	4454 6875	5434 3255	4312 2331	0111 1355	0011 2225	6222 2342	1211 3577
Le	2123 2233	4544 7864	4533 2243	4311 2220	1211 2244	1012 2114	5222 1141	2221 2458
Do	2232 1243	4655 7865	5534 2354	4201 2340	0211 1244	0011 2214	6222 2241	1122 1468
Me	1255 2122	5577 8654	4566 4113	3102 1111	0100 1221	0011 2212	5444 3120	1204 3336
Si	1344 2132	4568 8763	4457 3222	3101 1211	0200 2222	0112 1212	2353 3131	0213 3445
Es	1123 2233	3444 5654	4433 2244	4212 2221	0211 2344	0012 2213	4232 2142	2222 2456
Lo	1133 2244	4444 7764	4434 3244	4212 2331	1212 2243	0112 2224	4222 2142	2222 3457
RS	2222 2243	4444 6664	4434 3244	4211 2331	1311 1243	0102 1224	4232 2141	2222 3456
Ag	1233 1122	4566 5543	3654 3123	3101 2121	0100 1222	0011 2114	6342 1121	1202 2336
Wn	2233 2244	4553 5765	4534 3354	4212 2331	1321 2354	1122 2224	5323 3252	2223 2466
Wi	2233 2244	4454 5665	4534 3354	4212 2331	1211 2355	0022 1224	4333 3142	2313 2456
Ab	2234 3333	4444 5665	4434 3344	4212 3331	1212 2344	0123 2214	4233 3142	2322 3455
Ni	2223 2243	4443 5665	4433 3244	4201 2331	1311 1344	0011 1224	4322 2142	2212 2456
Ma	2233 2233	4444 5665	3433 4344	4211 2332	1211 2344	1111 2224	4223 2241	1113 2446
Na	2232 2233	4444 4665	4544 3344	4211 2332	1222 1334	1122 2224	5333 3242	2322 3456
Cf	2122 2233	4443 4654	4433 2243	4111 2221	1311 2243	0111 2113	4222 2141	1113 2355
Ch	2234 1233	4456 4454	4454 2223	3211 2232	2211 2232	0121 2224	5343 2131	2202 2335
Pr	2223 2233	4443 4664	4434 2243	4212 2221	2201 2344	0122 2224	4323 2142	2213 34—
Fu	2232 2233	3444 4664	4434 3243	3111 1221	1222 1343	1122 1113	4223 2141	2223 2455
SM	2223 3233	3454 4453	2444 3233	3323 2232	2223 2233	222—	5332 2242	3232 3345
Ci	2223 2333	4454 4565	4433 2344	4222 1332	1212 2434	1121 2115	5333 3242	2322 4455
Eb	1123 2333	3355 6664	3423 1144	3200 0210	0201 1344	0021 1114	5222 3140	0111 2456
Tl	2123 1233	3445 5565	3424 3244	4211 1221	1201 1243	0021 2124	5223 2141	0112 2445
SF	--- 2233	4345 5566	543— 4334	5211 1232	1302 1423	0121 1225	3232 2132	0122 3446
Tu	1234 2232	4545 5555	5455 2223	3202 1211	1201 1223	0121 1224	4343 3131	1302 2445
IK	1123 1233	3434 5665	4433 2343	3101 1221	0201 2233	0110 1213	4322 2140	1113 2446
Ks	1024 1134	3355 5666	5544 4354	5112 2222	1301 2354	0220 1224	5333 2150	0223 3556
SJ	1322 1222	4434 4355	4343 2322	3200 0211	1201 1222	0111 2125	4332 2130	1201 2355
Te	--- ---	3443 4455	5443 2333	2211 1222	2211 1232	1121 1225	4332 2231	2202 2244
Ka	1233 2222	3354 6553	4534 3222	3111 1211	1311 2222	2211 2222	3332 3131	1112 3334
Ta	QQQ3 QQQ3	3045 4454	4444 3034	40QQ 33QQ	QQQQ 33QQ	QQQQ 33QQ	QQQQ 33QQ	QQQQ 4445
MB	QQQ3 QQQ3	3345 4565	4433 3333	40QQ 33QQ	QQQQ 33QQ	QQQQ 330Q5	30QQ 30QQ	QQQQ 3445
Ho	1234 1023	3444 5445	5344 2223	3211 1211	1201 1121	0111 1124	4233 3021	1102 2355
Al	1232 1122	2354 5655	4533 3242	3121 1211	1312 1332	1221 1224	3222 1140	1112 3455
Hu	1212 2233	3434 5544	4342 3432	3101 3322	1201 2331	0101 3215	4221 2221	1112 4545
Va	2223 2223	4556 5466	5443 4332	4111 2222	1311 2333	0111 3215	5222 2031	1210 2456
Ap	1233 0121	2343 5435	3333 1213	2201 1121	1300 1222	0010 0114	3222 2121	0201 2335
Tn	2334 2233	346— 56	4444 4343	4334 3222	2333 3443	2334 2233	4333 2243	3232 4456
Hr	2223 1233	4454 5556	4444 2333	4234 2221	0323 2333	1122 2224	3222 2131	1223 3455
Wa	2233 3222	3355 5655	4444 3222	3331 1311	2221 1231	3231 1114	4431 2152	2212 3455
To	2244 3223	3455 5535	4445 3222	3222 2322	3111 3233	3322 2224	3333 3242	2223 3445
Am	1244 2112	3455 5435	5444 2212	3211 2211	1310 2123	2222 1124	4332 2132	2203 3444
Mi	2344 4111	4566 8773	5557 6112	3233 3311	1210 2321	2123 1212	3335 5241	1114 5655
Hl	2122 1244	4436 7875	5433 3254	4311 2331	1211 1244	2111 1117	7221 2242	2211 2578
March	9	10	11	12	13	14	15	16
Tr	5434 3466	6653 4445	5221 1133	4021 1232	1000 1005	4211 1255	3023 3323	4421 1145
Co	5446 5534	4534 5431	3211 1111	1003 2210	0000 0001	3102 3131	2137 6220	2224 4111
So	7334 3477	7542 4445	5221 1122	3011 1121	0000 1003	5111 2245	1023 3212	3311 2344
Le	8433 3356	5532 3333	3111 2112	2111 1111	1011 1113	3211 1333	1122 3221	3311 2224
Do	9433 3357	6432 3334	4111 1022	3011 1111	0000 0004	4211 2144	1033 3211	3312 2224
Me	7556 6324	5554 4212	3220 0011	1101 1100	0000 0002	3210 2121	1035 5111	1431 1002
Si	6446 5433	3444 4311	2121 1121	1002 1120	0000 0101	3101 2121	2036 6121	2332 2212
Es	6233 4355	4332 2323	3112 2122	3111 1111	1001 1103	3212 2233	1133 3211	2322 2224
Lo	7233 3455	5432 3333	3112 1122	2011 2121	1012 2113	3222 3244	2123 3321	3322 3224
RS	6233 3354	4432 2323	3211 1122	2110 1121	0011 0103	3211 2144	1133 3221	3322 2224
Ag	6533 3234	5522 2122	4200 0021	2100 1011	0000 0012	3311 2122	1124 3121	1421 1112
Wn	6334 4465	5432 3334	3212 1122	3111 2122	1101 1114	4222 3244	2234 4321	3232 3235
Wi	5334 3465	5432 3334	4212 1122	3111 1111	0111 2113	4211 3244	2134 4211	3222 3225
Ab	5234 4355	4333 3333	3122 1122	3111 1212	0111 1213	4212 3244	1134 3221	3313 2324
Ni	5234 3455	4432 3333	3211 1122	3111 1121	0011 1003	4211 2244	2133 3211	3312 2224
Ma	5234 4454	4332 3333	3212 1112	3111 1111	1000 1103	3222 2333	2134 4221	3232 3324
Na	5334 4454	4333 3333	3212 2122	3211 2111	1011 1113	4322 3234	2234 4221	3222 2224
Cf	5324 3454	3332 2333	3211 1122	3101 1111	0111 1003	4212 2234	1133 3210	2312 2224
Ch	6533 3234	4233 3233	4211 0021	3211 0021	0000 0113	4321 2233	2234 3131	3332 2223
Pr	--- 454	4432 3333	3212 1222	3101 1221	1011 1203	3211 2244	2233 3221	2322 2224
Fu	4234 3354	3332 2333	2211 1222	3121 2111	1122 1113	3222 2243	1134 3211	2222 2223
SM	5333 3344	4333— 333—	322— 2232	3222 3222	2222 2222	3322 3223	2233 3222	3222 3233
Ci	5334 3345	3333 3333	2222 1122	3111 1211	1022 2122	4322 2333	2324 3322	3323 2224
Eb	5224 4354	3232 2442	2101 0001	3000 0010	0000 0002	3111 1134	1023 3211	2311 2314
Tl	5334 3354	3332 2343	3111 1021	3001 1010	0000 0003	4312 2234	2134 3122	2322 2323
SF	5244 3355	4333 4333	3201 2131	3202 2222	1013 1113	4322 22—3	21— 3321	3322 2233
Tu	5343 3234	4433 3212	3222 1021	2111 1111	1001 1113	3221 3232	2134 4212	3332 2223
IK	4224 3355	4222 2333	3111 1111	3111 1110	0000 0003	3111 2224	1114 2111	2311 2214
Ks	4335 4465	4323 3433	3322 2121	4232 1210	0221 1133	2212 2224	22— —	—21 3124
SJ	5322 2134	3411 3212	3111 1121	1011 1100	1000 0113	4311 2232	2134 3011	2221 0132
Te	4432 3—	—223	3122 1222	1121 1211	0002 2322	4212 2132	2112 3222	3232 1232
Ka	3234 4333	3323 3322	2111 1011	2212 2121	1110 1112	3212 2222	1225 4212	3212 2213
Ta	QQQ3 QQQ3	3033 3033	QQQQ 3QQQ	30QQ 3QQQ	QQQQ 3QQQ	3QQ3 3QQ3	3QQ3 3QQQ	QQQQ QQQ3
MB	4303 3244	3333 3333	30QQ 3QQQ	30QQ 3QQQ	QQQQ 3QQQ	43Q3 3333	3Q94 3QQQ	3Q94 3QQQ
Ho	3335 3233	3222 3211	1011 1100	1011 2110	1000 0113	4311 2122	2134 3011	2212 1111
Al	4324 3355	3222 3332	2112 1121	2112 1111	0001 1113	3112 2223	2224 3211	2212 2113
Hu	5422 4433	3321 3433	3111 2221	1102 2222	0000 2213	3112 3332	1113 3222	2212 3223
Va	5434 3245	3312 2222	4112 2120	2102 2110	0011 2103	5212 3232	2223 3121	2322 2212
Ap	4234 3234	3232 3113	2011 1032	3122 1013	2200 1013	3122 1122	2223 4021	1222 1112
Tn	3334 3455	3423 3443	3323 2222	4333 2322	2213 2123	4322 3344	3245 2222	3233 2224
Hr	4344 3355	4434 2432	3223 3121	3213 2121	0122 1103	4344 3233	2244 3321	3233 3223
Wa	5245 3555	4333 3323	2221 1011	2211 1011	1221 1003	4221 2123	2244 3201	3231 2213
To	4335 4—	—3233	4433 2322	2112 2122	2222 2322	2211 1113	3222 2233	3234 4212
Am	4335 3332	3333 3332	2111 1121	2212 1110	1200 1013	3222 2123	3234 4222	3422 2011
MI	5347 6634	4547 6541	3311 1011	1112 3211	1111 1102	3312 3222	2237 6320	3314 5211
HI	6323 3376	7422 3335	5221 1022	3011 1111	1010 0003	4222 1134	2133 3211	2211 1213





TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

April	17	18	19	20	21	22	23	24
Tr	5322	3333	3323	2243	4534	5537	5544	4544
Co	3246	5211	2355	3221	2336	6722	4564	6533
So	6222	3222	3223	2233	2424	5536	5444	5456
Le	5322	3211	2222	2222	2433	3325	4432	3334
Do	6022	3112	2222	2222	3423	4415	4443	4335
Me	3055	5211	3354	1112	2545	6312	5775	5333
Si	3045	5211	2344	2222	2535	6523	4753	5434
Es	3223	3212	2132	2322	2422	4324	4333	4434
Lo	2123	3312	2333	2332	2433	4424	4443	4345
RS	3223	3212	2232	2222	3422	4324	3433	3435
Ag	5132	3121	4342	1122	2532	4222	5553	3234
Wn	4233	3322	2233	3333	3523	4425	4443	4445
Wi	3233	3312	2233	3333	3423	4435	4444	4435
Ab	3223	3312	2233	3332	3422	4424	4444	4435
Ni	3122	2212	2222	2322	3422	4425	4443	4435
Ma	3223	3322	2232	3333	3433	4425	4344	4445
Na	3223	3312	2222	3322	2423	4424	3343	4435
CF	3122	3202	2122	2222	3422	4324	3333	4335
Ch	5143	3232	4342	1233	3433	4333	4554	3334
Pr	3223	3312	2222	3322	3422	4424	4343	4435
Fu	3223	2211	2122	2222	2423	3324	3334	4335
SM	4232	3322	2332	3322	3334	4333	4344	3244
Ci	3223	3222	2333	3322	3433	4424	3344	4435
Eb	3011	2111	2221	2322	2413	4424	3333	4335
Tl	3233	3222	2322	3322	3433	4424	3333	4335
SF	3234	3312	3334	3322	3423	4424	3344	5435
Tu	4233	3212	3343	2222	2533	4324	4453	3334
IK	2111	1112	2211	1222	2422	4424	3333	3335
Ks	3244	3221	3333	4323	2333	4434	3244	5435
SJ	3131	2111	3332	1221	1422	4324	4343	2324
Te	2231	2113	3332	3332	1322	4224	4343	2224
Ka	2123	3211	3233	2221	1332	4324	3233	3333
Ta	3000	3000	Q003	Q003	Q033	3303	3033	3333
MB	4QQ3	QQQ3	33QQ	Q3Q3	Q433	33Q3	3333	4333
Ho	3223	3122	3234	2221	1332	3223	3394	2323
Al	2224	3212	3222	2222	2322	3423	3443	3334
Hu	3122	3311	3221	2321	2311	4323	3333	4334
Va	4223	2122	4333	2322	2521	3424	4444	3434
Ap	3313	3112	3243	2233	2332	3214	3422	3332
Tn	4433	4323	3333	2333	3333	4534	4444	3435
Hr	3234	3212	2232	2222	2423	3424	3343	3334
Wa	3244	3201	3333	2112	2322	4414	4533	4445
To	3333	4221	3333	3222	3433	5423	3543	4443
Am	3243	4122	3333	3222	2433	4322	4554	3333
MI	2236	6210	3356	3321	2437	7733	4564	6634
HI	5221	3222	3223	2133	2423	4535	4333	4345
April	25	26	27	28	29	30		
Tr	2222	2344	5331	3246	5312	2334	4312	3100
Co	2224	3222	2334	4411	2123	3211	2253	5000
So	1122	2245	3232	3235	4212	2223	2100	1122
Le	1112	2334	3231	3313	3312	3223	2222	1110
Do	2112	3334	2232	3414	4222	3222	2200	1112
Me	2124	2112	3352	2222	3032	2101	2233	4000
Si	2123	2222	3243	3322	2131	3212	2223	3000
Es	2112	3333	2232	4324	3222	3222	2210	1123
Lo	2113	3334	2232	4313	3123	2323	3222	2200
RS	2112	3334	2232	4324	3222	2332	2210	1122
Ag	2112	2133	3342	3112	4121	2102	1221	2100
Wn	3223	3334	3332	4424	3222	3333	2222	2200
Wi	3113	3434	3232	4325	3233	2333	2233	2200
Ab	3223	3334	2233	4314	3123	2223	2233	2110
Ni	3112	2334	2232	4314	3222	2222	2210	1112
Ma	3322	3333	3233	4324	3222	2223	2220	1123
Na	2212	2323	2222	3314	3222	2222	2200	1123
CF	2222	2332	2323	3314	3222	2222	2200	1122
Ch	3222	2334	3342	3223	4232	3223	3333	3212
Pr	2222	3333	3234	3324	3222	2332	2222	1200
Fu	2112	2333	3323	3324	3222	2222	2200	1123
SM	2222	3223	3332	3233	3422	2332	3223	3222
Ci	3222	2334	2322	3324	3222	2223	2210	1123
Eb	2112	2333	3232	3314	2111	1123	3121	1100
Tl	3222	2334	2323	4324	3222	2223	2200	1123
SF	3332	3334	3232	3324	3132	2123	3331	2210
Tu	2223	2233	3342	3223	4222	2123	3333	3111
IK	2212	2323	2322	3314	2122	1222	3110	2210
Ks	3323	3344	3254	4425	3123	2233	2230	3111
SJ	3212	2332	3323	4123	2021	2332	0111	2213
Te	3222	2233	2332	3234	3321	2323	3222	2100
Ka	3322	3322	2232	3322	2122	2221	2122	2100
Ta	3QQ3	Q3Q3						
MB	33Q3	Q344	Q333	3222	3222	3222	3222	3222
Ho	2212	2333	2333	3332	2132	2122	3233	2211
Al	4322	3342	2332	3313	2222	3222	2222	2100
Hu	2112	3422	2321	4433	3112	4222	3211	4320
Va	3213	3323	2322	4312	4111	3122	3211	4113
Ap	3212	2243	3222	2213	2221	2113	3222	2212
Tn	3333	4334	2343	3334	2332	3223	3243	4310
Hr	3222	3334	2332	3234	3223	2223	2232	2100
Wa	3312	2231	2331	3312	1311	3113	3000	2322
To	3222	2222	2322	2323	3334	3113	3000	2330
Am	3223	3233	3232	3222	2222	2222	2222	2000
MI	1223	3112	1334	5422	1112	3221	1255	5020
HI	1122	1234	3332	2224	3-11	1223	3222	1001



TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

May	17	18	19	20	21	22	23	24
Tr	7432	2346	6432	4254	6436	3266	6434	3354
Co	4421	2322	3445	4223	3457	4233	3365	3222
So	8421	2335	5332	4255	6336	3256	6333	3354
Le	7531	2324	3332	3234	4433	3134	4323	2333
Do	9631	2334	3332	4235	5434	3345	5433	3333
Me	5431	1223	3556	3113	3566	3233	4264	2123
Si	7421	2322	3454	3223	4557	3233	3353	3222
Es	5422	3333	3333	3333	3433	4234	3233	3333
Lo	6422	2334	3333	3224	3434	3234	4333	2344
RS	6431	2333	3333	3223	4433	3134	3233	2333
Ag	8531	2233	3343	2123	4544	3134	4243	2133
Wn	6532	2434	3333	3223	4434	4245	4233	3344
Wi	6432	3434	4433	3323	4534	4244	4233	3344
Ab	6432	3434	4433	3333	4434	4244	3233	3333
Ni	6431	2323	4323	3223	4434	3144	3222	3334
Ma	5422	3434	4423	3233	4434	3244	3232	3333
Na	5431	2323	3322	2223	343-	---	---	-332
CF	5431	2323	3332	3123	3423	3134	3122	2233
Ch	6431	2333	3333	2234	4544	3234	4342	2233
Pr	6432	2323	3333	3223	4434	3144	3233	2334
Fu	4322	2323	2332	3223	3433	3234	3222	2232
SM	4332	2323	3332	3333	3433	3343	4234	2233
Ci	5422	2333	3333	3223	4433	4233	3232	3333
Eb	5320	1333	4322	2123	4323	3144	3232	2233
Tl	5422	2443	3322	3233	4433	3233	3221	3222
SF	5421	2334	4323	3224	543-	3144	2222	3233
Tu	6531	2333	4444	2233	3544	3134	4342	3333
IK	4421	2323	3233	3123	4334	3223	2112	3323
Ks	5411	1323	3323	3023	4434	3044	3343	2132
SJ	5421	1222	3432	2122	3433	3124	4222	1124
Te	5521	1333	3322	2142	3443	2133	4221	2332
Ka	3432	2222	2333	3122	2334	3222	2243	3322
Ta	4334	3033	QQQ	QQQ	3324	3033	QQQ	QQQ
MB	4430	Q038	33Q3	Q333	5333	3234	3233	3324
Ho	4531	1121	2333	1121	3344	2122	2232	1222
Al	5432	2322	2332	2222	3234	3133	2242	2221
Hu	5421	3322	2321	3222	3322	3232	2221	3322
Va	532-	2323	3332	2244	5533	3235	4232	2323
Ap	--32	2033	4333	1132	3344	2034	4343	1131
Tn	5432	2334	3433	3335	4334	3144	3233	2343
Hr	5433	3333	4433	2233	5433	3144	3254	3233
We	5431	0222	2334	3222	3335	3233	3231	2235
To	4422	2223	3434	4233	3346	4223	3343	2232
Am	4431	1223	3444	3132	3445	3233	3344	2122
MI	5421	1312	3345	5223	3347	5233	4465	4232
HI	8521	1244	5432	2245	5333	2255	2222	1333
May	25	26	27	28	29	30	31	
Tr	1001	2225	4011	2033	2454	5434	3212	3453
Co	1112	2222	2123	2112	3476	5522	1222	4311
So	0012	2213	31-	---	---	---	---	---
Le	0121	2203	2112	2123	2433	3322	2212	3231
Do	0002	2203	1110	2122	3334	3312	2221	3231
Me	1020	1012	1101	0013	3577	4212	2311	2211
Si	1112	1212	2121	1122	4577	4322	1211	3221
Es	1122	2312	2102	2233	3444	3322	2322	3231
Lo	1122	2213	1021	2123	3434	3422	2322	3231
RS	1112	2302	1121	2123	3433	3412	1323	2221
Ag	0010	1112	0211	1022	3476	3223	2311	1221
Wn	1112	2323	1121	2232	3444	3423	2422	3331
Wi	1112	2313	1122	2243	3444	3422	2333	3331
Ab	0121	2323	1112	3243	3444	3432	3232	3331
Ki	1001	2313	1111	2233	3443	3422	2322	3331
Ma	1102	2323	1112	2233	4444	3433	2222	3331
Na	0012	1212	1110	2232	3443	3232	2322	2211
CF	1012	2212	1121	1122	3433	2422	2322	1231
Ch	2111	2223	2221	1133	4455	3233	3322	2222
Pr	1112	2212	1111	2232	3433	3422	2322	3331
Fu	1122	3212	2212	2232	3333	3422	2222	3221
SM	2223	2323	2222	2222	3444	2322	2222	3222
Ci	1112	2222	2222	2244	4443	3322	2323	2222
Eb	0000	0213	1020	3343	3432	3422	1322	3230
Tl	1002	2222	2122	2243	4443	3322	1112	3212
SF	1023	3223	2032	2144	4443	4432	0113	2200
Tu	2112	1223	3132	2144	4465	3323	3422	2222
IK	1101	1212	1021	2133	3433	2422	0112	3231
Ks	1102	0212	1030	2133	3434	45--	-212	3230
SJ	0112	1111	1222	2133	4444	4222	3312	2221
Te	2012	1132	2122	2323	4344	2322	2221	1232
Ka	1112	1323	1222	2233	4454	2322	2222	1212
Ta	QQQ	QQQ	QQQ3	QQ30	3333	QQQQ	QQ-	---
MB	QQQQ	QQQQ	QQQ3	QQ33	4444	33QQ	QQQQ	QQQQ
Ho	0011	1112	0021	1123	4555	2212	2311	1111
Al	2111	1311	2132	2132	4455	2411	1211	3220
Hu	1001	1222	1121	2232	3333	2321	2211	3121
Va	1002	2111	2231	3233	4434	2212	3312	2220
Ap	3111	1231	3123	1132	3555	2211	1310	3133
Tn	3224	3223	2242	2233	4444	33--	-223	4442
Hr	0123	3201	2223	3222	3344	3311	1212	3231
Wa	1121	0300	0022	0021	3345	2301	2212	2210
To	2112	1312	1223	1132	3455	2312	2222	1212
Am	1221	2101	1122	1032	3465	2312	2111	3211
MI	0102	2200	1113	2100	2566	4413	0201	3310
HI	0010	1202	1001	1011	234-	---	-111	2332





TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

July	1	2	3	4	5	6	7	8
Tr	5535	5336	6743	4566	5333	4465	6344	3444
Co	4357	6322	4544	3433	3265	5332	3356	5332
So	3435	5235	653-	-455	4333	4354	5-3-	-343
Le	3334	4223	5443	4333	3322	3333	3333	3331
Do	3445	5223	6643	4444	3233	4443	3333	3311
Me	3466	6323	4544	3333	3265	3223	2456	5223
Si	4447	6323	4543	3333	3244	3223	2445	4222
Es	3344	4333	4443	4444	3223	4442	3334	4342
Lo	3345	4223	4434	4443	4233	4432	3334	3332
RS	3344	4233	4433	4443	3233	4332	3334	3332
Ag	4446	5223	4562	2344	3243	3222	3443	3223
Wn	3445	4333	4444	5444	3233	5443	3334	4442
Wi	3355	4233	4433	5444	4233	5443	3334	4442
Ab	3344	4333	4443	4444	3233	4433	3334	4442
Ni	3344	3233	4433	4434	3233	4332	3333	4332
Ma	3355	5333	4444	5444	3233	5443	3334	4443
Na	3334	4223	4433	4334	3232	4332	3233	2332
CF	3344	3223	4433	3334	3323	3331	3234	3332
Gh	4455	4344	4553	3344	4333	3233	3343	3323
Pr	3344	4223	4433	4334	3233	4332	3334	3332
Fu	3344	3223	4332	3333	3232	3332	3224	3223
SM	3334	3223	4434	3334	3323	2332	3-3	3332
Ci	3334	3223	4433	3334	3323	3222	3232	2322
Eb	3344	4223	4332	2334	3222	3222	3224	3222
Tl	3334	4223	4433	3334	3232	3231	3224	3431
SF	3454	5233	4543	3435	2233	3232	4335	3341
Tu	4455	4223	5554	2333	4333	3233	4343	2332
IK	3334	3223	3433	3334	3212	3222	3224	2332
Ks	-45	4223	2433	3434	3123	3232	3235	4242
SJ	3333	3222	4432	2333	3122	2322	3211	3131
Te	4344	3223	3442	3243	3222	3232	2321	2133
Ka	3344	3222	4443	3333	3333	3222	3233	2223
Ta	3334	4Q93	3333	3Q34	Q933	3Q32	4Q93	3333
MB	Q344	3303	4434	Q343	3Q33	3333	4330	Q333
Ho	3345	3122	4433	2233	2323	3212	2343	2233
Al	2244	4222	3443	2322	2223	2221	2224	2323
Hu	3233	4233	4332	3433	3111	3322	2321	2221
Va	4324	2213	5432	3234	4222	2221	3323	2321
Ap	3335	3012	4433	3133	3231	3232	3012	0203
Tn	3344	4223	2344	2334	2233	3333	3243	2232
Hr	3344	3113	4433	3234	3232	2231	3231	2333
Wa	3355	3122	4433	3333	3333	3222	3243	2232
To	3456	4222	4444	4323	3234	4322	3345	3222
Am	3456	4122	4443	3223	3234	3222	3231	3334
MI	2457	5222	3444	4333	3245	5312	2345	4231
HI	2334	3214	6532	3454	2222	2243	4333	3242
July	9	10	11	12	13	14	15	16
Tr	4211	2255	4220	2321	2311	1023	2100	2366
Co	2221	3232	3340	2211	1213	0000	2200	2356
So	3121	2255	4221	2210	1221	1021	1000	2155
Le	2121	2233	3221	1201	1311	2011	1111	2254
Do	3222	3244	3221	1200	0300	1000	0000	2255
Me	2221	2122	2240	0111	1402	1001	1100	1124
Si	2222	3232	2230	1210	1302	0000	1200	1233
Es	2122	3343	2222	1210	2322	2111	1212	2344
Lo	3222	3343	3321	2200	1221	3111	1111	3244
RS	3122	2243	2210	1200	1210	1111	1111	2254
Ag	3211	1243	3240	0111	1300	0002	1200	1144
Wn	3222	3344	3221	1211	2301	2112	201	3255
Wi	3132	3344	3222	1211	2323	3221	1201	3355
Ab	3123	3343	3223	2211	3232	1122	3354	3233
Ni	3122	3344	3221	1210	2301	2111	1101	3254
Ma	2222	3344	2222	2211	2211	2222	2211	2222
Na	2221	2233	2210	0101	2301	1001	1210	2254
CF	2211	2343	2321	1200	2311	1111	1211	2254
Ch	3221	1244	3241	0212	2301	1012	1210	1144
Pr	3222	3243	3322	2211	2312	1221	1211	3244
Fu	2222	2232	3223	2211	1222	2311	1222	2244
SM	3332	3333	3232	2222	2322	2222	2222	3332
Ci	2222	2233	3221	2100	1211	2102	1200	3244
Eb	2011	1233	2210	0100	1200	0001	1100	3244
Tl	2022	2243	3230	0201	1201	1112	1211	3244
SF	3033	2344	3222	2221	1322	2223	1331	2334
Tu	2232	2234	3331	0211	2312	1011	1210	3244
IK	1012	2333	1200	0100	0101	0000	1100	3244
Ks	1033	4344	1201	0100	0101	2001	1210	4354
SJ	2122	1233	3210	2101	0201	0012	0110	2233
Te	3122	2334	222-	-332	1312	2012	1211	2343
Ka	1222	3233	2221	1211	1011	2111	3333	2343
Ta	QQQ0	Q033	3Q90	QQQ0	QQQ0	QQQ0	Q3Q3	QQQ0
MB	3Q90	Q043	4Q90	QQQ0	QQQ0	3333	3Q3Q	3Q3Q
Ho	1022	2322	2321	0201	1202	0011	1210	3233
Al	2222	2332	1321	1111	1122	1111	2344	2322
Hu	1012	2343	2110	1210	1201	0101	0100	2332
Va	2112	2233	4210	1100	0100	1101	0100	3232
Ap	3321	2242	2330	0002	1212	0112	2300	3242
Tn	2233	2333	3343	2221	1132	1122	2234	2244
Hr	2022	2243	4222	1110	0111	2101	0110	2233
Wa	1211	2132	1210	1101	1211	0000	1110	2343
To	2222	2133	2221	1210	1011	1211	2344	2322
Am	1212	2133	2220	1111	2202	1001	1200	3343
MI	1111	2121	2241	2210	0113	0000	0100	2345
HI	2111	1053	3221	1111	0101	0021	1110	2434





TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

AUG.	17	18	19	20	21	22	23	24
Tr	3201	3211	4300	3203	2201	2112	2100	1001
Co	2100	3100	2100	1112	1210	2000	1100	0101
So	2201	1200	2200	3102	1111	2111	1000	1100
Le	1111	2200	3211	2211	1101	1211	1010	1001
Do	2101	3301	3300	3212	2202	2221	1000	1101
Me	1000	2100	1100	0011	1200	1000	1010	0001
Si	2100	3100	2110	1121	1200	2000	1000	0100
Es	2121	3311	2212	2322	1112	2211	2112	2112
Lo	2111	3211	3201	3212	2212	2211	1111	2200
RS	2101	3200	3210	2112	2201	1120	1000	0111
Ag	1000	1100	3110	1012	1200	1000	1010	0001
Wn	2211	3311	3211	3322	2212	2221	2111	2111
Wi	2111	3311	2201	3312	2212	3211	2001	2111
Ab	2112	3221	3222	2322	2112	3221	2112	2211
Ni	2201	3201	2200	2222	2201	1121	2000	1111
Ma	2210	3211	2100	2322	2201	2222	2100	1112
Na	1210	2100	2100	1211	1101	1100	1100	1100
CF	1100	2100	2100	2211	1101	1010	1000	0101
Gh	2101	2111	3310	2122	2211	2011	1111	1122
Pr	2211	2201	3201	2211	2212	2120	1110	2111
Fu	1122	2201	2222	1321	1222	2221	2112	1101
SM	2321	2322	2322	3312	2232	2211	2111	1311
Ci	2111	2100	3201	2322	2101	1020	2001	1101
Eb	1000	2100	2200	1212	1101	1010	1000	0001
Tl	2101	2200	3200	2212	1202	1120	1000	1112
SF	2111	2211	3201	3322	2202	3121	2122	1202
Tu	2100	2211	2200	2232	2211	2122	1010	1112
IK	0100	1100	1100	1111	0101	1110	1000	0101
Ks	1000	3100	2200	2222	1111	2010	1000	1111
SJ	1102	2001	1100	1111	2100	1020	0000	1102
Te	2101	2231	1210	2133	1111	1333	1101	1321
Ka	2110	2100	2110	1212	2111	2110	1111	2111
Ta	QQQQ	QQQQ	QQQQ	Q---	QQQQ	QQQQ	QQQQ	QQQQ
MB	QQQQ							
Ho	2100	1110	1200	1111	1111	1110	0000	0111
Al	1111	2111	1121	2211	2211	2211	1111	2211
Hu	1000	3300	1101	3211	1101	3210	0000	1210
Va	1000	2100	2200	2211	1101	2120	0000	0201
Ap	1200	0022	3300	2123	0311	1012	2200	0102
Tn	2233	4211	2334	3322	2332	3222	2233	3222
Hr	2112	2101	2211	3111	1102	3011	1011	2101
Wa	1210	2100	1230	0100	1110	0100	1010	0101
To	2210	2211	3210	1112	2211	2120	0102	2311
Am	2200	2011	3300	1101	2111	1101	1100	0001
MI	1101	3100	1101	0000	1101	2100	0001	1102
HI	1111	2100	2200	2102	1100	1110	0000	0111
Aug.	25	26	27	28	29	30	31	
Tr	6544	5465	6533	4467	6645	5666	6444	4566
Co	3466	6332	3343	5333	5577	5642	3467	5633
So	5334	4354	4323	3466	7534	5656	5343	4366
Le	5434	4333	4422	3334	5523	4544	4433	3445
Do	5434	5443	4433	3435	6634	5655	5354	4444
Me	3576	6222	3592	4233	5776	5433	4566	5353
Si	3565	5322	3541	5333	5567	5532	4556	5332
Es	4344	4333	4322	3435	4434	4554	4344	3443
Lo	4434	5343	4433	3444	5654	4434	4545	4433
RS	2334	5343	4332	3444	4324	4554	4334	3443
Ag	3555	3212	4541	3234	5654	3344	5543	3324
Wn	4344	5443	4333	4445	4334	5654	3555	4444
Wi	4445	5443	4423	4445	4335	5664	3445	4444
Ab	3345	4333	4433	3445	4344	4554	4343	4443
Ni	4344	5343	4332	3445	4334	4554	4343	4443
Ma	3355	5443	4333	4445	4344	4554	4343	4443
Na	3344	4433	4322	3444	4333	4544	4344	4443
CF	3333	4322	4422	3334	3233	3543	4333	4433
Ch	4555	4233	5442	3344	5644	3444	4555	4334
Pr	3344	4343	4322	3444	4333	4544	4334	4443
Fu	3344	4333	4323	3244	4323	4544	4334	3443
SM	4434	3324	3512	2235	4434	4453	4543	3324
Ci	3445	3343	4422	3444	4334	4555	4343	3444
Eb	2345	3333	3311	2334	3344	3454	2323	4244
Tl	3345	3243	4432	3334	4334	4555	4334	3444
SF	3345	3333	4332	3335	4334	3555	4334	3444
Tu	4555	4332	4542	4333	5655	3434	4554	4333
IK	4244	5332	3211	2334	3234	4544	4324	3444
Ks	4345	5342	2322	3435	2334	4655	4344	3444
SJ	3434	3233	3421	3231	3333	3333	3444	3233
Te	4534	3322	3432	2243	3533	2333	4432	3242
Ka	2345	4321	3432	3333	4445	4333	2344	3232
Ta	3334	3Q43	33Q3	3334	Q333	3443	3Q33	3333
MB	Q334	3Q43	4333	3334	3334	3444	Q334	3333
Ho	3445	3211	3441	3234	4543	2223	3344	2223
Al	3344	5332	3332	2443	3333	4532	3333	2332
Hu	3333	3322	3421	3333	4445	4333	3333	2322
Va	3422	3233	4412	1333	3324	3334	4422	2322
Ap	3345	32--	--	--	3	3344	2233	3555
Tn	4445	4443	3333	4344	--3	3344	3343	3444
Hr	3334	3133	3332	3334	4334	2444	3333	3332
Wa	4345	5321	3421	3344	4445	5533	4345	4444
To	4455	5322	3432	4434	4446	--	3445	4322
Am	4455	4222	3431	3334	4455	4323	3444	4322
MI	3457	6331	3342	6433	5567	6653	4457	6723
HI	4444	4343	4422	2445	6534	6676	4434	3555











TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Nov.	17	18	19	20	21	22	23	24
Tr	4324	3567	5543	2344	6433	5476	5533	2367
Co	2235	5543	2336	3333	3356	7433	3365	4524
So	3323	3456	4223	3324	6323	5365	4433	3377
Le	3312	2434	3323	2313	3433	4354	3333	2244
Do	3323	2445	3434	3433	5433	5365	4433	5366
Me	4234	3323	2336	2223	3455	6333	4464	2323
Si	3334	3433	2335	3222	3445	7344	3454	2432
Es	3222	3444	3323	2323	4433	4354	3333	3344
Lo	3212	3454	3333	3323	4433	5354	3333	3455
RS	4223	3444	3333	3333	4433	9355	3333	3455
Ag	4222	1323	4523	2222	4433	4332	3442	2234
Wn	4222	3544	3323	3323	4432	3254	3422	3244
Wi	4223	3545	3434	3333	4433	5465	4443	3455
Ab	3222	3445	3324	3333	4433	5355	3443	3454
Ni	4222	3445	3334	3333	4433	5355	4433	3455
Ma	3323	3445	3324	3333	4433	5354	3443	3455
Na	3223	3444	3334	3323	4433	5355	3333	3344
CF	4222	3444	3334	3323	4433	5355	3333	3354
Ch	4332	2344	4423	3232	5533	5344	3533	3444
Pr	4222	3444	3334	3333	4433	5355	3333	3454
Fu	3222	3444	3324	3323	3333	5354	3232	2344
SM	4222	4324	3323	3323	4432	3254	3422	3244
Ci	3222	3444	3224	3223	3433	5344	3432	3445
Eb	3212	2435	3324	3333	4423	5355	3331	3443
Tl	4223	3445	3224	3323	4423	5354	4432	3444
SF	3233	2455	3314	2223	4423	5433	4433	3445
Tu	5222	2435	4424	2222	5534	5344	4442	2233
IK	3212	3335	1314	2333	3413	5353	3222	3344
Ks	2123	344-	2314	3333	3324	5454	3332	2154
SJ	3211	2433	3323	2222	4413	5334	3211	2232
Te	3222	-334	2222	1221	3423	3344	3321	-332
Ka	3312	3433	2324	4222	3234	5333	2333	3333
Ta	QQQ	3444	QQQ4	QQQ3	3333	43Q	334Q	4344
MB	3222	3443	3223	2223	3223	5333	4332	3443
Ho	3222	2223	2323	1222	3334	3233	3333	1332
Al	2223	3433	2224	3222	3223	4343	2332	2333
Hu	3223	4443	3212	3422	3312	4455	2221	3422
Va	4223	3433	4324	2332	4324	5353	4324	3344
Ap	2322	2324	2323	2133	3333	4343	3332	0332
Tn	2223	3445	3435	4333	3433	5453	3243	3444
Hr	1123	2444	3214	3212	3223	4342	3223	2334
Wa	3233	3433	2213	3211	3233	5333	3233	3233
To	3333	3344	3232	3323	4234	6243	3334	3332
Am	2333	3333	2323	3222	4334	4234	3233	3232
MI	2325	5553	3435	3322	3456	7533	3364	4632
HI	3223	4346	3333	3223	5333	6374	4333	2366
Nov.	25	26	27	28	29	30		
Tr	4322	2245	5211	1223	2231	2334	4000	0004
Co	2224	4222	3211	1111	1143	3221	1100	0011
So	3212	2235	4111	1121	1121	2223	2100	0003
Le	1321	2124	3111	0012	2121	2212	1110	0002
Do	2322	2234	4221	1111	2222	2223	3200	0002
Me	1222	3222	2110	1000	0041	1001	0000	0000
Si	1313	2222	2110	1101	1142	3111	0100	0000
Es	2322	2224	3111	1121	2122	2222	1101	0002
Lo	2322	2234	3111	1122	2121	2322	1101	0002
RS	2322	2234	3111	1121	2121	2222	1100	0002
Ag	1411	2143	3210	1000	3141	1001	0110	0000
Wn	2322	2334	4221	1122	3132	3323	1201	1113
Wi	2322	2234	4221	1111	2132	2223	1101	0002
Ab	2322	2234	3222	1121	2132	2222	2111	0012
Ni	2322	2334	4211	1111	3121	2222	1100	0002
Ma	2322	2224	2221	1111	2121	2223	1100	0002
Na	2323	2224	3212	1111	2121	2222	2101	0102
CF	2322	2224	3211	0011	2122	2212	2000	0001
Gh	2432	3243	3221	1010	3241	2112	0111	0012
Pr	2322	2234	4211	1111	2122	2323	3212	0000
Fu	2322	2224	3211	0111	2121	2122	2110	0002
SM	2322	3222	-222	2222	2222	2223	3222	2222
Ci	2312	2233	3111	1111	2021	2212	1001	0003
Eb	2322	2233	3122	0000	2122	1112	3111	0002
Tl	2323	2224	3222	1011	2122	2212	2102	0002
SF	2312	3133	3111	1121	2131	3313	1111	2013
Tu	2422	2122	3211	1111	2242	2111	1211	0112
IK	1311	2123	3011	1010	2120	1212	0100	0001
Ks	1101	2133	1110	0010	0021	2122	0001	0001
SJ	1210	2122	3210	2010	1131	1111	0101	1122
Te	2221	1232	3221	1121	2130	2111	1111	1--
Ka	2322	3213	2221	1121	2132	2211	1201	0111
Ta	QQQ	QQQ3	3Q3Q	3Q3Q	3Q3Q	3Q3Q	QQQ3	3Q3Q
MB	2322	3223	3122	2211	2222	2222	1112	2121
Ho	2322	2122	1100	1112	1132	2011	0100	0101
Al	1222	3222	2222	1221	1132	2212	1222	2121
Hu	1212	4322	2112	3221	0012	3221	0102	1101
Va	2322	-133	3112	2120	1112	2212	0212	2211
Ap	3332	2213	1211	1102	3122	2211	1212	0222
Tn	3332	3233	3333	3232	3322	3223	2233	2111
Hr	1313	3123	3123	2011	1023	1111	0211	0002
Wa	2322	3221	2311	0102	2231	1313	3121	0113
To	3432	3222	3221	2112	2230	3222	3322	1112
Am	3422	3223	3311	1012	2232	3111	1212	0001
MI	2334	4221	3211	1211	3333	4321	1100	0001
HI	3323	3234	4311	2221	2222	2322	2112	0103
							3321	0000
							1111	2121



TABLE 1 THREE-HOUR-RANGE INDICES, K, 1953

Dec.	17	18	19	20	21	22	23	24
Tr	2100 0335	3000 1434	2000 0344	1100 2343	3110 0000	3121 1352	4321 0023	4321 0023
Co	1001 3112	1012 3211	0012 2221	1010 2221	0101 0011	1110 3321	1000 2122	1135 1000
So	2100 1214	2000 1432	1100 0333	0100 2241	1010 0004	3111 1352	0000 1242	2111 0022
Le	2111 1213	2011 2222	1010 1232	1110 2231	2110 0003	2121 2242	0011 2132	2111 1012
Do	2100 1213	3100 1322	0100 0332	1210 1131	3111 0004	2111 1352	0000 1142	2211 0012
Me	1100 1102	1010 1111	1020 1111	0030 0211	1101 0000	0310 1221	0000 1111	1222 0000
Si	1111 2102	1011 2121	0021 1111	1020 2211	0001 0001	1211 2321	1000 2122	2223 0010
Es	2111 1213	2000 2222	1010 1222	1110 2222	2010 1104	2222 2232	1000 2131	2222 0012
Lo	2111 1313	3010 2322	1111 1332	1110 1232	3111 0014	2122 2342	1010 1142	2221 0021
RS	2111 1313	3101 1322	1100 1332	1101 1231	1111 1004	2122 2341	0101 2142	2221 0022
Ag	0000 1102	3010 1011	0010 0011	0110 1210	1100 0002	0320 1120	0000 0011	1210 0010
Wn	2111 2324	3111 2322	1111 1332	1211 2322	3221 1114	2222 2352	1111 2242	3222 1122
Wi	2211 1324	3101 2322	1111 1332	1111 1332	2121 1113	2222 2352	1011 2242	2232 1112
Ab	2212 2324	3012 2222	1021 2322	1111 2322	2112 2114	2231 2342	1011 2322	2132 1122
Ni	2111 1324	3100 2322	1101 1332	2111 2322	3111 1104	2222 2342	1000 1242	2221 1012
Ma	2212 2323	2001 2223	2111 1332	2211 2332	2011 1104	2222 2332	1000 1232	2232 0121
Na	1111 1224	3000 1222	1101 1332	1110 1232	2111 0103	1222 2341	1000 1232	2221 0012
CF	1111 1213	3000 2122	1001 1322	1110 1231	2111 0003	2221 2341	0110 1132	2221 0012
Ch	1111 2213	3012 1112	0021 1122	1120 1222	2111 1013	1322 1221	1000 1122	2321 1011
Pr	1211 2223	3111 2222	1111 1332	1111 2322	2111 1103	2222 2342	1111 1232	2222 0022
Fu	1101 1213	2001 1211	2011 1221	0001 1121	2001 1003	1111 1231	0000 0131	1111 0010
SM	2222 3323	2222 2222	2122 3322	2222 3332	3222 3323	2322 2322	2222 3222	3223 3222
Ci	2212 2223	3100 2122	0011 2322	1100 1222	3112 2213	1222 3231	----1	2232 1021
Eb	2--0 1223	2101 1212	1010 1132	2110 1222	2101 0003	1222 2331	1000 1132	2222 0011
Tl	2311 1223	2102 2222	1021 2222	2110 1222	2102 2103	0233 3323	1001 2231	2222 0111
SF	1211 2323	3031 3222	0031 3222	1110 3323	3013 2314	0233 3232	1012 2232	2333 2122
Tu	2112 2113	2112 1311	1121 1222	2121 1323	2111 1112	1421 1332	2000 1232	2322 0122
IK	0111 1303	1000 1212	0010 1332	0000 2331	2000 0103	0121 2322	1000 1232	2121 0011
Ks	1121 1204	1101 132-	0010 2323	1000 3432	2010 0104	0034 3241	1000 1132	1121 0010
SJ	1111 1212	2012 1211	0021 1212	1011 1222	1001 1322	1322 2220	1001 1232	2210 1111
Te	2112 2222	2122 2212	0121 1123	1011 2223	2001 3122	2221 2321	1002 1123	2212 1121
Ka	2211 2312	2100 2121	1111 1322	1011 2321	1110 1101	1122 2321	1010 2221	1213 1011
Ta	Q3Q3 3333	Q3Q3 QQQQ	QQQQ 3333	QQQQ Q3Q3	3Q---Q-Q44	QQQ4 33Q	QQ30 333Q	QQ49 33Q
MB	2222 2222	3112 2212	1122 2323	1112 3323	2112 2113	1232 3231	1001 2322	2222 1122
Ho	1121 2101	1001 2111	0011 1113	1110 1222	1001 0002	0111 1210	1100 1111	1223 0011
Al	1121 1313	2111 2112	1121 2322	1111 2322	2121 1113	1223 3341	1111 2232	1221 0121
Hu	1101 2112	1000 2232	0011 2322	1001 2432	0001 2111	1222 3333	0000 2333	2110 1233
Va	1222 2103	2001 2211	0011 2323	2011 2333	2111 2213	1323 3240	1000 1131	2211 1112
Ap	2322 3222	1111 2123	2031 2134	3111 2223	1211 1023	1233 2322	2200 2232	1232 0022
Tn	1232 3323	2223 3322	1233 3333	2223 3333	3223 2113	1233 4322	2313 3332	2333 3122
Hr	1121 1102	2123 2212	0022 1322	1021 2222	2012 2203	0223 3320	1213 1231	3223 2010
Wa	4321 1322	2211 2323	1111 1322	2210 2322	3311 1003	1343 3331	3211 1132	3321 0013
To	3321 3333	323- -	2231 2233	2331 2333	3221 1122	1343 3332	3311 2232	3333 0122
Am	3321 2213	3111 2323	2221 2121	3211 1322	3211 1112	2233 3222	3211 2221	3332 1122
MI	2220 2221	2122 3211	1113 3211	1121 2211	1111 2221	1221 3421	2111 2120	2234 3221
HI	2211 1212	1121 1222	1111 2333	2121 2242	2221 1013	2232 2332	1111 1142	2221 1011
Dec.	25	26	27	28	29	30	31	
Tr	3001 1324	1000 0035	3001 0256	3201 2322	4000 1325	2111 0233	0112 0012	
Co	0013 3112	1000 1112	1111 0112	3113 3221	1100 3212	1123 3111	0131 0000	
So	2000 1214	0000 0024	1101 1156	3101 2231	2000 1324	1011 1121	-012 0011	
Le	2121 1213	1011 2123	1111 2124	3211 2121	3101 2213	1111 1111	1022 0001	
Do	2111 1324	1020 0133	2111 1134	2101 2331	3001 2323	1111 1111	0012 0011	
Me	0021 1101	1100 0111	1011 0112	1101 2101	1010 1211	0101 2011	0131 0000	
Si	0022 1112	1000 0112	1011 1112	2101 2211	1020 2211	1111 2021	0130 0010	
Es	2021 1213	1001 2113	1112 2234	3111 2222	2002 2323	1111 1211	0122 1001	
Lo	2121 1323	1012 1123	2112 2234	2212 2321	3102 2323	2111 2211	1011 2111	
RS	2111 1324	1001 1123	2112 2134	3212 2321	3002 2323	1112 1111	0122 0011	
Ag	0011 1112	0000 0112	0021 1012	2101 1111	2010 1112	0101 1011	1101 0000	
Wn	2221 2324	2101 1124	2112 2325	3212 2323	3112 2324	2222 2222	1122 1111	
Wi	1121 1224	2002 2223	2112 2325	3213 3331	3112 2334	2122 2222	1122 1112	
Ab	2121 1313	1002 2123	1122 2325	3222 3232	3112 3324	1121 1211	0022 2111	
Ni	2221 2324	2001 2123	2111 2324	3212 3232	3102 2324	2222 2221	1122 1012	
Ma	2101 2223	2001 1123	2112 2325	2212 3222	3002 2334	0122 2222	0022 2111	
Na	1221 1223	1001 1123	2212 2324	3211 3222	2101 1324	0111 1111	1112 1001	
CF	2121 1213	1000 1123	2111 3224	3211 2221	2001 2223	0123 1111	1012 0001	
Ch	1111 1123	1001 0123	1121 1313	3211 2222	2011 2323	0211 1112	1222 0101	
Pr	2221 2223	1111 1123	2112 2324	3212 2321	3102 2323	2222 2121	1122 1111	
Fu	1011 1223	1001 1012	1111 1124	2101 1212	2001 1213	0101 1111	0011 1000	
SM	2223 3223	2123 4223	2223 4224	2223 4322	3223 3323	2223 3222	2223 2222	
Ci	1121 1223	2003 1213	2112 1224	2212 2222	3102 3323	2222 1101	0023 2101	
Eb	1121 1223	1001 0113	2101 2224	1111 1222	3001 2324	2111 1111	0012 1100	
Tl	1121 1213	2002 1223	2112 1225	2222 2222	3001 2324	1222 2111	1123 1101	
SF	1022 2322	2003 2313	2113 2335	3114 2223	3103 3333	1113 2311	0123 0112	
Tu	1222 2333	2001 1233	1111 1223	2212 2322	2111 3344	1222 2122	1221 0111	
IK	1121 2323	1001 0122	2112 1234	2111 3232	3002 2324	1112 3121	0011 1000	
Ks	0010 12--	----	--34 2235	1131 3222	2102 2334	0024 2222	0011 1111	
SJ	1110 2213	1001 1122	1011 0122	2112 3212	1011 3323	1211 2121	0220 2321	
Te	1111 2123	1002 1123	1111 1323	2212 2221	111- -224	122- -221	1221 1223	
Ka	1111 2111	2100 1223	2112 1212	2211 3212	2102 2322	1212 2111	1122 0001	
Ta	QQ43 33Q	Q4Q4 3Q23	Q4Q3 3335	Q3Q3 3335	3343 4333	QQ33 33Q	QQQ3 33Q	
MB	2122 2223	2112 2223	2222 2324	2113 3322	2112 3323	1223 2212	1112 1111	
Ho	1111 1113	2000 1123	1011 0122	1212 2122	2101 2223	1113 3021	1121 0011	
Al	1221 2223	2112 1122	2223 2223	2121 2322	2112 2333	1213 2122	1222 1111	
Hu	0001 1333	1000 1323	1012 3333	1111 2343	1101 3433	1111 2322	0211 1232	
Va	1111 2224	3001 2213	2013 2322	2121 3333	1003 3334	1223 2201	1111 1221	
Ap	2211 2133	1202 1224	4222 1123	4221 2114	5002 2324	3213 2134	5220 0013	
Tn	3234 3233	3245 4333	3333 3334	3344 3322	3334 3334	3243 2222	2244 3211	
Hr	1222 3312	2023 2313	1123 2323	2223 2212	2322 3223	0223 2111	0121 0001	
Wa	4122 1213	4321 0111	3232 0223	3321 2221	1222 2433	2233 3021	4332 0112	
To	3323 2223	4222 1233	3222 1223	4231 3222	2232 3333	3333 3123	3233 1123	
Am	1311 2122	3211 1123	2322 1213	3421 2223	3322 3233	3323 3131	2221 0122	
MI	1223 4222	2012 2122	2121 2322	3213 4321	2112 3322	2223 5221	2231 2121	
HI	2222 1323	2112 1124	3212 1145	3212 2332	3021 2334	2213 2221	1232 1011	

TABLE 1a SUPPLEMENTARY K-INDICES, 1951

Hb

	Jan.	Febr.	March	Apr.	May	June
1	4222 2323	5532 2154	3433 3211	2112 1123	3443 4556	2333 4443
2	2422 4354	2211 1112	0012 3223	3332 3545	624- -555	1424 3343
3	3522 2132	2111 0122	2242 2220	4335 3654	4223 3454	4222 2112
4	2210 0213	0023 3323	0221 1123	4433 4634	5433 3443	1112 3323
5	2112 2244	1223 4354	0131 2111	5434 5345	1121 1214	3311 2323
6	1202 1031	6533 2222	1253 3333	4543 4566	4331 2232	2255 4322
7	0111 1111	3231 1242	3234 5455	5433 3455	1221 2132	2332 4222
8	2023 3221	3123 3554	3235 5555	5333 3444	0101 1231	3322 4--3
9	1111 1101	2333 5555	4333 3444	3333 3433	1222 3357	423- 4501
10	1100 1553	3333 3255	5543 4454	4233 3234	3544 5543	0102 3321
11	423- 2334	5332 3555	4333 3553	3222 2214	3233 4334	2223 2442
12	4323 2232	5533 3464	4334 5343	4222 2335	4332 2541	4232 3343
13	3432 1143	4334 3344	2325 4666	6424 5436	1111 1223	3133 4223
14	3233 3334	2112 2143	4543 5554	4233 2333	3333 1234	1202 1554
15	4322 2345	1111 1113	5422 3221	3113 3432	5323 5--	4344 4333
16	4113 4-45	1000 0021	0323 3454	31-- --	3233 3453	3233 3433
17	4322 1122	1000 1143	2244 3423	---2 2121	4432 4433	3211 1546
18	1112 3313	3112 1342	3324 3334	1146 6555	3424 4323	6455 3424
19	3222 3245	1113 2224	3233 1221	5333 3214	3223 4122	3543 3533
20	3111 2211	2212 1110	1014 3311	2322 4665	1221 2111	3212 2103
21	1013 5445	13-- -333	1112 1223	5534 4424	0110 2122	3233 3322
22	5443 5566	4444 5555	3324 4565	4344 4353	3200 3210	2213 2333
23	4233 3453	5445 5566	432- --	4321 2112	3234 4365	3232 2211
24	1223 3222	4333 4543	---3 4454	1353 5564	4222 3422	2112 2123
25	1111 3133	3323 3334	3424 3313	4434 3543	2332 2133	2434 55--
26	1112 2453	2233 4452	3234 3244	5321 2220	3323 3656	--- --1
27	3432 3333	7333 4444	3333 2323	1122 2423	5533 1212	2233 2523
28	3222 3453	5554 4344	3000 1111	3111 2221	2323 2110	3254 ---3
29	1233 2233			134- 4545	1243 3313	2222 3542
30	2233 2444			4213 3112	1133 5223	2233 2231
31	4554 4445			11-- 1341	2224 2133	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3113 3455	3323 2566	2212 2203	3112 1322	1012 1023	3123 2333
2	6655 4544	5543 3323	2111 1112	3332 1114	3323 3433	3331 2333
3	4333 4344	2233 3212	3222 2112	1112 2032	3433 5345	3112 2314
4	3432 2233	3323 3334	2200 2233	1001 1121	5442 4535	3333 5555
5	3233 3221	4322 2333	2213 1154	3010 0122	2333 1244	3213 2433
6	2112 3432	3021 3223	4243 2243	2110 0000	2222 3463	1110 1132
7	1122 1323	1334 1234	2012 2253	1123 3575	5423 3332	1101 3444
8	2111 1233	2222 2222	1122 3332	6554 5545	3112 2033	6335 4565
9	3322 3442	2224 3324	3223 3333	4323 5335	2334 4432	4434 5663
10	2322 2222	1232 3223	4443 5331	5435 3655	2111 0110	2345 3544
11	1122 3321	22-4 4333	4233 3456	3234 4430	0011 2234	4344 4535
12	2122 2322	3233 3244	3333 4436	1214 3332	5333 3522	2132 3123
13	3332 1212	3444 4552	5543 4455	2335 2255	3344 5656	2220 2113
14	2133 2312	1124 2335	4433 4233	5233 1455	5343 4564	2210 0145
15	2225 3335	4231 3354	4353 5434	2222 1244	4334 4533	5233 3362
16	3424 5432	2255 4323	454- 6656	4333 2355	3322 3431	2322 2223
17	3345 4432	3232 4534	5334 5536	5555 4765	2222 2365	2312 4544
18	2333 4543	2131 2211	4423 2553	4453 5644	2122 1133	4332 2445
19	2134 2332	1232 2332	3133 5664	5543 4555	1211 1223	4223 4544
20	2233 3322	5554 3355	345- 6666	5233 3352	3211 2355	3333 2232
21	3232 2311	6444 4645	5655 5555	3334 2232	3222 2133	2111 1214
22	14-3 3543	5532 4452	5545 5566	3333 3554	3212 3344	3313 3664
23	5333 22-3	3233 3445	4533 4455	2112 4423	4213 3454	4213 1321
24	1121 3211	3443 3244	5444 5443	2112 0022	3212 4532	1000 0122
25	1234 3343	4554 3652	3335 5768	1111 1111	2232 3435	1111 1102
26	3444 3524	4344 4445	7643 2322	1014 3236	2112 4352	0011 1110
27	5345 2333	3323 3455	5555 4332	3422 2101	2112 1213	0312 4125
28	4535 3453	3334 3345	5221 1112	0234 7775	3222 5345	4665 5553
29	3423 3333	4235 3423	3232 4653	3222 2111	4333 4544	3101 4322
30	2233 3343	2012 3323	4322 2111	1223 1110	3133 4333	0012 2124
31	4444 4535	2234 4424		0110 1112		3345 4555

TABLE 1a      SUPPLEMENTARY K-INDICES, 1952  
Hb

	Jan.	Febr.	March	Apr.	May	June
1	5233 3332	3135 5554	3322 4420	5443 5541	5444 4555	2222 2222
2	2211 1232	3322 2322	1102 1111	5546 4566	5444 4455	2212 2221
3	2211 1043	2111 1121	0022 5566	5545 4666	5432 3455	1213 2232
4	4112 4335	1001 1010	5545 4555	3454 4465	5323 3444	3111 1121
5	3454 5534	0011 1111	5535 5756	5344 4654	5333 4344	1312 --22
6	5443 3542	1235 4666	6653 4355	5244 4456	4343 3323	2101 2111
7	2211 5544	4345 4445	3425 5656	5344 3454	3344 --45	1102 1131
8	3312 2311	4354 4554	5333 4664	5433 4354	4443 4432	3324 3443
9	0231 1353	3413 5554	5333 4555	4334 3545	1000 0002	3333 5434
10	3533 3635	3223 2566	4333 3555	5333 2133	3102 2110	4222 4334
11	3323 4543	6335 3355	3223 4463	2123 3131	0112 4531	2232 3423
12	4533 4555	4533 4455	4223 3253	3112 0133	4221 1232	2111 2222
13	3335 6655	4323 4446	2212 3134	3322 2131	1113 4234	0111 1133
14	4433 4555	4223 3443	2212 2202	2023 2313	3221 1121	1343 4555
15	4333 6542	1222 1203	3221 2354	3223 4431	1002 2321	2333 3333
16	3223 2333	3464 5466	2333 3344	3333 3333	1101 0201	2443 4331
17	2121 0132	5213 3222	4423 4443	2333 1122	0001 2233	3234 3321
18	2101 1111	3112 3245	2232 2303	0113 3344	4334 4543	3223 3223
19	1101 2222	4333 3565	2011 2333	3222 5455	4534 3332	2212 3221
20	0101 1133	3232 2311	0012 0021	1211 0213	3322 3323	2112 1212
21	2102 1121	1111 1121	3434 5436	3124 7866	3223 3332	1112 2212
22	1111 1223	0011 1131	4423 2355	44-3 33-	1112 1100	1233 5434
23	3122 4444	1111 1114	5233 2464	--3 2231	1123 3332	3344 4334
24	3211 4433	6634 5564	4544 4554	1001 1425	3212 3323	5534 4434
25	3123 3442	4112 5021	2233 4444	1103 2212	4332 2411	1113 4344
26	0012 3210	3333 3555	5301 3354	1001 1242	0135 3556	4334 4421
27	0434 6644	4443 2455	2333 3533	1011 0113	6334 3554	2333 3322
28	3433 4424	4344 4552	1101 2011	3423 4444	4333 4544	3213 3211
29	2013 4576	1323 4423	0005 3123	4454 4665	5445 3533	1122 2245
30	3322 3133		4312 4656	5434 4555	2323 3343	5765 4222
31	1111 4422		6454 3655		4432 2134	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1112 2145	1211 1232	5544 3535	3322 1224	3323 5445	1123 4555
2	3212 2212	3211 3244	4455 5434	1222 4354	4222 4442	4334 6545
3	1222 3432	2333 5532	3434 3324	2331 3566	2223 3513	3433 3234
4	2222 2312	3331 2344	2232 3341	6554 4455	3110 0110	6334 4455
5	3444 5554	4323 1332	3133 3544	3554 -663	1112 3222	4333 4252
6	3454 3221	4432 3332	3322 1333	3334 4542	2444 3331	1211 1332
7	2231 2320	4343 3134	1432 2355	1133 3334	3222 2455	2112 2221
8	1121 3323	2332 3222	6544 3555	4322 4334	3322 3254	2102 2101
9	2334 3433	1102 1233	5435 3555	3213 2134	32-- --32	0000 0010
10	3334 3443	4213 4442	4334 3132	2212 1355	1000 0110	1112 2342
11	4332 2321	4222 3224	4223 3334	3223 2565	1----	1223 2231
12	2223 2122	5233 3443	3333 3343	5332 3253	---- 0011	2122 4411
13	1212 2321	1222 2311	1112 2212	3102 2223	1100 0011	3454 5332
14	3323 3413	1201 2120	3433 4444	2332 1211	1212 1123	110- -203
15	3322 2323	2000 1143	2123 3333	1012 0231	1222 1241	3323 3312
16	3232 3221	2222 1110	3223 2224	1202 3113	0122 5411	2213 3333
17	1212 2233	3335 4354	2223 3102	3311 2532	2021 2253	2122 1113
18	2211 3222	4422 4425	1111 0131	2342 2343	2222 1122	3311 2252
19	1102 3122	4323 3421	0000 0112	2134 1101	1111 1123	3100 1000
20	2225 4545	3433 2333	1010 2134	2112 3222	2202 2213	1101 1110
21	3544 5444	2114 2221	5312 2112	0014 5553	4354 2433	0001 2110
22	4223 2234	1132 2223	1311 1112	1222 0001	4223 3430	1001 4321
23	2222 3214	4222 1322	1100 2210	1001 2201	2222 1111	1101 0011
24	3212 1322	1233 2321	1222 3434	1001 0011	2011 3311	2314 6544
25	1212 3422	0011 2122	2001 1345	0123 ----	3122 3322	3423 4333
26	3323 2221	1122 1222	5532 2131	---- --44	0023 3365	3223 2422
27	2111 2224	3232 2221	1---- ----	3---- --32	4325 5554	3332 2246
28	2222 2220	2100 0111	---- -466	4322 2431	4233 5553	3133 4554
29	0001 1111	2112 3344	5444 5366	212- -444	1023 4343	4324 3554
30	1000 1112	4443 2333	6324 2542	4521 3465	3123 2443	5423 3544
31	2253 3332	1322 2122		5555 5643	4244 4545	

TABLE 1a SUPPLEMENTARY K-INDICES, 1953

Hb

	Jan.	Febr.	March	Apr.	May	June
1	3323 3343	2110 0022	2223 2233	4132 3332	1012 2301	2200 0122
2	2123 4553	2321 2321	4454 5775	4222 2343	1102 1011	2445 5454
3	3232 3332	2223 2122	4534 3244	3211 2254	1012 1322	5553 5333
4	2100 0322	2112 3230	4101 2—	4533 4354	1212 2212	4444 4331
5	1355 4665	0001 1231	1201 2344	2122 2232	2223 2233	2333 2252
6	3123 3623	0001 1221	0221 2224	2211 2112	4346 4345	3323 2331
7	2122 3322	0101 0101	5322 2252	1101 1112	4344 3323	2232 2211
8	3212 2122	1101 2223	2212 3456	2223 2124	4343 4354	1211 1211
9	4001 1234	3323 2435	5244 3455	3211 2232	5343 3333	1112 1211
10	2110 0124	2012 3345	4332 3333	2224 2333	2122 3322	1232 3242
11	4211 1122	3222 2122	3211 1122	2333 2433	2223 2112	3211 2224
12	2111 3211	1112 2331	3111 2211	3234 3223	2121 1222	1223 2344
13	0102 3254	0000 0112	0010 1113	3133 5441	1112 2011	3322 2233
14	2221 1222	4232 2351	3212 2244	2222 2121	1010 1222	2111 3232
15	2100 1102	3222 3234	2234 3231	2332 3122	2223 5466	1211 2021
16	1000 2211	4222 3542	3311 2224	3443 4656	4534 5566	0111 2212
17	0111 2024	2323 2232	1111 0120	3233 3322	6431 2324	2221 3323
18	1223 4442	0022 2223	0001 1122	2222 2322	4333 3223	2221 1112
19	2444 3343	3223 2333	4324 3344	34-- 424	4434 3144	2111 2201
20	5333 2233	3111 1321	3112 0244	3444 4445	4233 2334	1113 4344
21	3222 2223	4221 1233	5434 2463	3343 3554	2222 2332	2332 2234
22	2211 1123	3223 3456	5432 3345	2322 3343	2322 3253	1222 2233
23	4220 1021	5444 4654	4444 4653	2433 3344	3122 2232	1100 1112
24	1123 3343	5554 3665	4445 4566	2111 3332	1112 3221	2211 1233
25	0125 4344	5444 4545	4343 4554	3223 3333	1112 3212	3111 2122
26	5434 5565	4234 5564	2334 3354	3233 3324	2111 2243	1000 1221
27	4335 4563	3234 3435	4434 3343	3132 2332	3433 3422	0122 2222
28	3333 3555	3521 2442	3322 3442	2222 2210	1312 1231	0001 0023
29	4322 4453		2111 2244	1112 3210	1212 3212	2135 6645
30	4333 3542		3412 3243	2222 3532	2211 1213	5444 3443
31	3422 3022		1122 2134		2112 3341	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3344 4233	2312 3444	2333 4341	2422 3252	1012 1141	1000 1111
2	5443 4334	3423 1332	5332 2443	2111 2331	1110 0202	1111 0110
3	3233 4332	3110 2232	2123 2666	1212 2212	1112 2321	2111 2223
4	3334 4332	3210 2332	6534 3464	2101 1231	2211 1002	4111 1133
5	2233 3222	2121 1132	5422 3243	1101 0111	2233 4430	2211 1220
6	5111 1213	112-- 2322	1143 3043	2111 1022	2021 3111	1001 4223
7	3331 4334	3223 1122	2233 2413	2132 3204	0112 2132	3111 0002
8	4323 2343	2201 1212	4114 2330	1222 3225	0001 1213	1121 2223
9	3212 3344	3322 3352	3211 1112	2232 1112	3210 0001	4101 1242
10	3321 1211	2244 3334	1011 2324	3111 1253	0000 0000	1112 1313
11	1101 1111	3422 2343	6233 3122	1102 3441	0002 2143	2224 5535
12	1112 3245	4544 4643	2122 2233	1001 0031	3113 3455	4332 3544
13	2333 3322	3432 4355	3233 1113	1002 1212	4534 6454	3122 2253
14	1111 3442	3312 2332	1011 0010	1011 0110	3523 5554	1111 1232
15	3332 3331	2122 1143	1223 4452	0022 6775	2344 5663	1112 0133
16	1211 0011	3123 3222	2233 2553	5433 3555	5532 3663	1112 1122
17	0111 1111	2100 2201	3332 3241	5333 4654	4223 3554	2212 1323
18	2212 2211	3100 2211	2010 0255	4343 6665	3334 3323	3001 2222
19	2212 1122	1201 1220	5445 5755	5345 5554	4433 6355	1111 1332
20	2212 2201	2100 1111	5323 5455	3443 5555	3433 3455	1111 2232
21	2111 1102	1101 1200	4243 3533	3244 4311	3213 3143	3111 1004
22	1011 1223	1111 2111	5443 2154	1443 3543	1111 2232	2122 2342
23	3334 5545	3425 4466	4444 5654	3333 2331	2134 3455	1000 1242
24	4123 3333	5533 4565	3354 4353	0023 5212	4233 1222	2222 0011
25	0111 2432	4345 5353	2123 4342	2223 1212	2322 2334	2121 2313
26	4323 4443	4322 3444	1122 2234	2121 0022	4122 1111	1101 1123
27	4454 4553	5334 4554	5433 3231	4233 2343	2121 2322	2112 2255
28	3453 3344	5433 3544	3321 1231	3101 0233	1101 0002	3112 2232
29	4334 3444	3435 3554	0001 2210	3211 2234	2212 0001	3001 2324
30	4233 4334	4435 5544	0112 1343	3112 1121	1011 1111	1113 2121
31	4334 3221	4323 4444		3221 1100		1122 2111

TABLE 1a SUPPLEMENTARY K-INDICES  
 CE  $\varphi = -77^{\circ}38'$   $\lambda = +166^{\circ}24'$  1911

	March	Apr.	May	June	July	Aug.
1	6553 4454	--21 3454	4221 2131	3333 3343	3454 4544	2232 2231
2	3332 2444	4322 2344	2344 2322	422- 2122	4343 3343	1321 1231
3	3344 4344	4323 3334	2232 2231	2310 1111	3473 3343	2344 3222
4	4222 2355	3324 4333	1111 1011	1111 2344	2123 2434	3323 2234
5	5545 5554	1212 2211	2243 3233	3353 3344	3222 1232	4322 2235
6	4543 4353	1212 1134	3222 2233	2235 4342	2223 3433	3332 2223
7	4443 2244	3221 1244	2334 4324	4222 3342	2-35 5423	2321 1112
8	3225 6432	3325 5345	4443 2133	3420 1223	4445 4434	0220 1123
9	3332 2333	6545 5235	2221 3343	1110 0134	3223 3332	1211 2211
10	3212 1033	5434 4235	3122 2334	4653 344-	2322 3345	1132 1122
11	3111 1023	5222 2335	5310 4553	---	4263 2333	1201 1112
12	3232 1222	3443 544-	3542 1121	3644 3343	2353 2333	0121 0112
13	1122 2244	----	1132 1112	4453 4422	3121 1222	1244 2211
14	4443 2244	2220 0001	1113 3346	2444 3333	1332 3211	-133 3111
15	3433 3354	3210 0014	6544 3344	3332 1143	3111 1211	1131 2212
16	3334 4344	3443 4555	67-4 4444	2332 2333	0211 2322	2343 1132
17	3223 2343	3554 4445	3344 5342	2222 1110	1332 2-4	3222 3212
18	3211 2233	3445 6344	3433 3344	1122 1111	3353 4443	3111 2111
19	2210 1113	5444 3344	3554 4434	1123 11-2	4544 3343	1111 3334
20	3546 4354	4544 4345	3444 3333	1423 2123	3352 2222	3332 1211
21	5655 5466	5644 5454	3246 3543	2344 3344	3231 2-4	1-20 1011
22	5444 4455	4433 4434	3331 3-2	3444 3232	3324 3323	1-21 1101
23	6444 4455	5453 3333	1231 1234	2343 4--	2331 1211	2334 6655
24	5434 4355	3344 4334	2222 2221	3222 2101	1121 1422	4556 4344
25	6455 4345	3322 4323	0022 4444	1130 0010	1100 0122	4545 4444
26	4543 5435	3451 2223	3211 3-3	0100 1022	1111 1222	3334 3445
27	4644 5364	2242 2223	4443 3222	0011 0011	1200 0232	5334 3444
28	5543 2344	534- --44	3533 1232	1223 4022	2236 4454	3443 2433
29	4533 4433	4343 3333	214- 2222	2223 1111	5343 4444	2232 2322
30	4333 3244	3364 4455	1222 3234	0112 2112	4234 3333	3233 2233
31	3443 2353		3243 3122		3355 2343	2254 4243
	CE 1911				CE 1912	
	Sept.	Oct.	Nov.	Dec.	Jan.	Febr.
1	2322 2123	1211 0122	3222 3331	4232 55-3	5-44 4554	4333 3345
2	-231 2212	1344 4322	2323 3343	2231 1356	4322 2345	3322 3445
3	2211 0001	2121 2223	4524 3455	4333 3355	3423 3344	4332 3434
4	1001 1122	2221 1123	5443 3344	2223 2243	3322 3555	2311 2343
5	2133 3232	2212 2212	4433 4334	3222 2333	5433 4455	2211 2333
6	2122 2211	4132 2213	3332 2334	3225 5576	5432 3233	3321 2132
7	1233 2213	2443 3333	3332 3232	4321 3445	1213 3345	2222 3445
8	3222 1232	3433 3244	2110 4446	3422 2434	4322 3444	3333 3443
9	1121 1133	3533 2334	5533 4556	2211 2332	3223 3433	3222 2244
10	3433 3333	2323 3434	5334 4543	2211 2557	4222 3345	4534 3456
11	2333 4343	4534 2336	2232 3454	7656 5456	2221 2343	5333 3355
12	3323 3334	5221 1334	3212 3556	4322 4344	3433 2456	3234 3435
13	3425 4223	3322 3354	4455 4455	2323 3343	5575 4565	3433 4534
14	2421 2233	3232 1343	5535 6554	4233 4444	5443 4446	3322 3334
15	2432 3234	3442 0125	5554 4444	3222 3344	4212 2344	3442 2334
16	3553 5333	3335 3452	4433 3533	4212 2343	3211 2335	3222 3355
17	3--- ---	1223 4354	3334 3344	2225 5655	3334 4566	4432 4455
18	---- ----	4345 4555	3211 3333	5333 34-5	5434 343-	2311 3343
19	---- ---3	2334 3444	3221 3347	4334 4555	4332 3354	3422 2243
20	5555 4444	3243 3343	5343 34-5	4332 3445	1132 3443	2212 1343
21	4355 5556	3233 3434	5345 3454	4422 3343	2312 3345	2211 1123
22	4645 3455	3332 2244	2323 3443	4222 13-4	4323 55-5	2211 1144
23	4533 3345	3333 1343	2222 3334	5323 2444	4433 3353	3333 3335
24	3212 3133	3234 3334	2322 32-3	3123 3443	3324 4244	4332 244-
25	2111 2232	4221 0354	2321 3445	2323 4464	3322 3332	----
26	1221 1123	3102 3333	4322 2344	3345 5554	4221 24-4	----
27	4323 4223	2223 2254	4212 2343	5322 4445	3222 2233	----
28	2322 1223	2222 2244	3321 2234	4322 3334	4332 2466	----
29	2332 111-	3212 4444	3221 3443	3311 2233	3322 3334	3222 2332
30	---1 2111	3111 2333	3222 4445	2123 3345	3332 3342	3224 2445
31		3322 3225		5433 3565	3224 2445	

TABLE 1a SUPPLÉMENTARY K-INDICES

CE 1912

	March	Apr.	May	June	July	Aug.
1	3232 3234	1103 1132	1330 1121	3444 3122	2322 312-	4631 222-
2	2232 2123	1110 0222	2241 2342	1352 2333	---	1211 3322
3	2211 1235	3231 2323	3242 323-	4543 2123	0011 2344	3332 2112
4	3210 0023	2231 1222	-11 233-	1211 1122	4453 4333	2110 1011
5	1112 3243	3423 4354	4246 533-	1131 2122	6534 4344	1111 223-
6	4212 3243	5422 3334	3223 343-	1220 0011	2214 3333	---
7	4222 3233	4134 3333	3322 2334	0000 0012	2221 1223	3231 0223
8	4435 4545	2221 2212	3324 2233	3453 5354	3211 4332	2020 1112
9	4224 3344	4221 1222	2111 1221	4434 4434	1222 2221	1221 1122
10	3322 3233	3445 3322	1322 2010	4432 3444	1100 1111	3212 0132
11	3322 1133	2131 1112	0000 1222	3422 3223	2110 0011	2221 1111
12	2223 3333	2223 212-	4454 3235	2322 2222	0210 0100	0011 0111
13	3232 2223	3222 1013	5354 3334	1031 1-22	0000 0000	1100 0011
14	2222 3343	2202 1234	44- 3333	1322 33-2	1110 1111	1322 1112
15	2223 2224	4444 4322	2323 3222	2121 101-	1122 1121	3200 0011
16	3212 2233	33- 433-	2232 3-2	----	2233 0112	2211 1134
17	3210 0122	3455 3434	3221 2221	0002 1121	1-22 2322	5534 3213
18	1122 0023	3235 2233	1200 2222	1011 1221	3100 0-11	2121 125-
19	1121 1021	2101 3134	1022 2133	1121 0011	2111 21-1	5334 3333
20	2211 0112	5331 2122	3120 0121	0010 0122	2142 3122	3221 1222
21	3-34 1-4	2110 1012	2200 1222	0121 1111	2233 2122	2233 3124
22	5322 13--	2232 2222	2110 0110	2010 2110	1121 1111	4542 3443
23	----	1220 1224	0000 0001	0112 3233	1131 1111	5433 3333
24	2230 0232	2122 2123	0011 0012	2332 2122	1010 0011	2142 2233
25	11-0 1223	2021 3111	1100 1111	2111 0021	1101 1333	2233 2224
26	3312 1134	2101 1122	0123 1111	1211 2111	1223 3333	3311 1123
27	4210 0123	1123 211-	1211 1011	1144 2013	3322 2222	2234 3333
28	1123 3322	-211 1111	1320 0000	3133 3233	0111 2221	2322 1423
29	2233 3433	1101 2001	0112 2221	3133 3232	1021 1010	3211 2332
30	3242 2212	0003 3210	0000 1233	2123 2222	103- -121	2331 0012
31	2210 0031		1111 1233		-223 2444	3311 1233
CE 1912			CD $\varphi = -67^{\circ}0'$ $\lambda = +142^{\circ}40'$	1912		
	Sept.	Oct.	May	June	July	Aug.
1	3220 2112	3-4- 4--2	0200 0011	3325 2101	3331 4201	4421 1122
2	1121 1011	3211 1213	2121 1122	3231 3323	2200 0001	3201 4312
3	1000 000-	3221 1134	2321 2032	2341 1112	1102 1233	3223 3113
4	4323 2332	----	2-02 2013	3210 1021	4332 5544	2200 0001
5	1224 2124	2231 2122	3325 4121	2300 1111	5324 4445	1100 1234
6	3323 2133	2121 2133	32- 4413	2110 0001	3216 6233	3353 3332
7	3122 2222	2111 4334	4224 4234	0100 0002	2310 1022	3321 0111
8	2342 2123	32- 2144	4322 2212	4433 6443	-100 4223	2100 1102
9	3222 33-2	3313 223-	3110 2102	3324 5533	2223 3111	2212 1021
10	23- 2213	----	2311 1000	3421 3343	2100 0011	2100 1132
11	3322 1222	5223 43-3	1000 1223	33- 3222	1100 0010	2210 1001
12	2334 2243	4322 3234	3444 3124	3313 3222	1001 0000	1100 0001
13	2211 1234	3423 3--3	4454 2243	3210 2--2	0000 0000	1100 0001
14	3223 1123	4254 5444	333- 3123	2201 4312	2100 0000	2212 1002
15	2000 0011	5433 4344	2313 2111	2200 1111	0100 0010	3210 0001
16	1311 11-2	3234 4354	2210 2112	2100 0122	11-- 0001	2110 2014
17	2212 4556	4323 3343	2111 3111	0100 1211	2101 2423	5424 2112
18	4345 4244	2212 0111	2200 2111	1100 1301	2200 0-2	3312 2156
19	2321 1344	2211 2223	2111 2033	2201 0000	3110 2101	4323 3222
20	3232 3332	3211 1344	2211 1112	1200 0110	3211 -012	3321 2212
21	2122 2333	3212 3233	2200 2212	1111 1112	2212 1111	3333 2114
22	2322 3244	2121 2334	2210 0100	2000 2211	3210 1100	4321 2534
23	3233 3342	3323 2432	1000 Q001	1102 3123	2111 1200	5432 6433
24	3445 3345	2221 2334	1200 0002	3220 2102	2100 0001	3231 2233
25	3210 02-2	3322 2233	2100 1001	3200 0011	1100 1221	3323 1122
26	3222 1334	3321 --3	1122 1101	2200 2000	3212 1312	3310 2112
27	2102 1222	3322 2234	2110 0000	2133 1003	3321 1311	2323 3233
28	1100 1112	4422 2243	2110 0001	2222 3323	2100 0001	3331 2333
29	2210 0123	2321 1233	1201 3111	4213 4433	0101 2200	3210 1233
30	2211 1014	3311 3333	1100 1233	3213 3212	2111 3100	3211 0012
31		3212 3343	3202 1122		2233 3224	3210 0223

TABLE 1a SUPPLEMENTARY K-INDICES

CD 1912

CD 1913

	Sept.	Oct.	Nov.	Jan.	Febr.	March
1	3310 2102	4643 3221	4332 1123		3321 1122	1120 0011
2	2110 1011	2210 0103	2232 1233		4322 1113	2111 0000
3	2100 0003	3310 0124	3220 1122		2320 0001	1101 1122
4	4423 2221	3311 2102	3211 0024		2220 2013	2332 0012
5	2213 2003	2310 0012	4310 0333	---3 2223	3311 2123	3112 2012
6	3312 2002	4200 2012	3111 2222	5--1 2113	3211 0023	3321 2024
7	3201 1112	3201 2213	4311 3--3	4322 1123	4420 2213	3300 0001
8	3110 0013	431- 2023	3222 2234	3321 2213	3321 2223	1320 2123
9	4312 2202	3312 0012	3211 1034	3412 2324	5321 0333	3220 1002
10	33-- 1103	2311 1--4	5444 4334	5322 3433	4210 0121	3211 0003
11	4311 0012	4313 2323	5423 4233	4311 1123	3210 2123	1100 0014
12	2333 2023	3332 1113	4210 0124	3221 1123	4542 3114	3210 0002
13	3310 1133	3433 1023	4310 0013	-221 1123	4442 2233	3200 0113
14	3321 0003	4442 3344	4423 3446	4432 1234	4343 5224	3443 6434
15	3100 0002	5433 1243	4431 1235	3313 3223	5432 3233	4434 3233
16	2310 0012	4323 2234	6532 1133	3310 0013	4312 2223	4312 1544
17	3211 3454	3422 1233	4312 2134	3312 1223	3222 1333	3423 2333
18	5335 4223	3211 0011	5321 2224	4423 3334	4422 2224	4310 3213
19	3320 0233	2110 2002	4422 1224	5443 4233	3322 3133	4312 2033
20	3322 2211	3300 0135	5422 0123	4422 2334	3321 1122	2211 2022
21	2221 1222	5321 1113	2211 0112	443- 3222	3321 1023	3321 3222
22	3322 2135	3322 1003	4432 2223	4433 3232	3220 0133	3311 0122
23	4322 2332	4442 1012	4333 1223	4422 2124	2310 1012	3321 1323
24	4445 2144	3321 0023	5422 1123	3321 2223	2210 0002	3212 1102
25	4420 0003	3311 1013	2211 1123	5431 2234	4433 3213	2111 0211
26	3320 0033	3210 0013	5542 1133	4521 1114	3343 2323	3110 1111
27	2111 1212	4220 0123	5421 1245	4421 0222	3412 0012	3212 1001
28	2210 0012	3423 1133	5421 1113	3211 2223	3340 1000	3212 2012
29	2100 0012	3411 0113	3211 0123	4311 0012		3320 1223
30	4312 1003	2311 3123	3310 2112	3434 2223		4313 1113
31		3210 2113		4323 2223		1210 4323
	CD 1913					
	Apr.	May	June	July		
1	3301 2123	1--- ----	1222 2133	2111 2232		
2	3211 1001	-212 1022	1421 1322	1100 0101		
3	2210 1102	2203 2002	2222 1122	1312 0001		
4	1310 2212	1122 3333	2133 0221	2100 0000		
5	3310 0002	3331 2224	0000 1001	0000 1001		
6	2100 0001	3343 4533	2211 2010	1000 0101		
7	0100 0000	3324 4323	2000 0000	1000 2011		
8	1000 1023	3211 2112	0100 0111	2000 1000		
9	4323 4533	2202 2112	2000 0002	0000 0001		
10	3323 1222	2210 0111	2110 0000	0100 1101		
11	3303 2112	2210 0002	0100 2000	0001 0001		
12	3211 2333	2100 0022	0000 0000	0111 3132		
13	2220 2012	1200 0022	0000 1001	2200 3222		
14	3312 1112	0100 0000	0000 0000	2322 0122		
15	3322 0123	1002 0022	0201 2000	2111 4232		
16	2210 3313	2100 0001	2022 0000	2112 3401		
17	2221 3223	2111 1100	1100 0200	1110 2011		
18	3200 0022	0000 0002	0001 1010	1001 0101		
19	3100 0122	1112 0102	0000 3023	1100 0000		
20	1210 0000	2100 0002	2100 0000	1123 2322		
21	1000 0001	2100 0000	0200 3321	2201 0001		
22	3310 0102	0000 0000	1000 0001	1111 2110		
23	3321 2001	0000 0000	1101 2012	2210 0000		
24	0100 0012	1000 1022	2201 0000	0210 0102		
25	2111 2001	2210 2000	0000 1000	2222 2122		
26	1000 0001	0002 0010	0110 3300	2100 0112		
27	1200 2122	0000 3000	0000 1000	2100 0000		
28	3212 1113	1102 2011	0000 0022	1000 0001		
29	1112 1002	2000 3112	2301 0011	0200 0011		
30	2000 0022	2200 2100	2222 2211	1000 0000		
31		1000 0001		1100 0110		

TABLE 1a SUPPLEMENTARY K-INDICES

PM 1951

	Apr.	May	June	July	Aug.	Sept.
1	3311 0123	3443 2334	3223 2432	3204 3223	---	4321 1123
2	4332 4354	4424 3553	---	4343 3423	3422 2233	4320 0123
3	5534 4443	4433 2334	4322 4212	4423 5544	4412 3223	4331 2124
4	5443 54--	4433 4233	3312 1322	5432 2233	3421 2323	4411 2223
5	-544 5433	---	2311 1222	3322 3222	3421 2322	4412 1224
6	4433 4355	---	3442 3221	3312 2222	3321 1423	5345 3335
7	3433 4344	-322 3122	3421 5313	3320 1232	3413 1133	5422 2233
8	3432 3234	2322 2122	4330 1332	3211 2222	3311 1122	3331 2222
9	3333 4334	2223 1234	3312 1201	3422 2332	3322 2223	3322 4222
10	4322 3233	4433 3433	2101 3122	3322 1232	3431 3123	4433 2323
11	---	-4 4333	4323 2234	2232 2222	4221 3223	4422 3333
12	3331 3324	-331 3443	3322 1222	3201 1122	4322 3323	4432 3333
13	5433 4344	4322 1012	3322 3232	3331 1112	4442 2333	5342 3433
14	5533 3233	4312 2233	3312 1356	3211 1122	3322 1233	4432 4223
15	3331 2223	4432 4333	5443 5544	2210 3123	4432 3234	4433 4444
16	3320 1113	3433 3333	4434 2332	3313 3322	4434 2424	5555 4444
17	3321 1122	4333 3333	2321 1343	3322 2343	5320 1332	4443 4434
18	---	3311 1123	5443 3323	4432 3332	4320 1102	---
19	4323 1223	3321 1112	5433 1322	3323 1332	3322 3333	5232 3545
20	3333 2234	3312 3111	4311 1123	3322 2222	4333 2233	4454 3354
21	4444 3334	2201 1122	4331 2312	3312 3310	4534 3443	5443 4334
22	4433 3443	2210 1322	3312 2112	3232 1223	4443 5324	-444 3355
23	4431 1103	2213 3233	3311 1011	4423 3122	4422 2334	5543 3344
24	4433 3333	4321 2322	3212 2012	3322 2111	5333 5322	4444 4334
25	4332 3432	3321 2233	2333 3332	3322 1132	3433 4543	3444 3454
26	3321 1212	--23 3545	2423 1121	---	4443 5434	5632 2234
27	--21 2223	--22 1122	3331 2222	3333 2223	4333 2434	6644 3245
28	--1 2123	3422 1000	3221 3322	4533 3344	4334 3323	5321 1134
29	3313 1422	-332 2222	3312 3233	4333 3222	3332 3313	5542 4433
30	2211 2103	2323 2112	3332 2233	3222 2233	-310 3333	---
31		4312 1012		3333 3333	4432 4533	---
	PM 1951			PM 1952		
	Oct.	Nov.	Dec.	Jan.		
1	5431 1234	5332 2134	5543 2234	5544 3344		
2	5441 1234	5432 2233	4432 2134	4432 1333		
3	4423 3033	4342 4234	4432 1235	5432 3245		
4	3210 0124	3342 3333	7754 4445	5442 3346		
5	4320 0123	4433 2234	7642 3244	6552 4245		
6	4321 0012	4332 2235	4422 1244	6443 3334		
7	3222 2344	5433 4345	4323 2345	6442 3345		
8	5434 3334	5432 2235	6645 3445	5434 3233		
9	4433 3343	4443 3444	6544 4445	4543 2325		
10	5434 3333	6521 0123	5644 4345	7643 3555		
11	3433 3333	3332 2245	4543 2335	6534 4345		
12	---	6443 2435	5442 2234	7644 3445		
13	4433 3134	6533 3344	5442 2234	6655 4435		
14	3322 1334	5542 4444	4533 2234	5654 4446		
15	5432 1134	4433 3344	6653 3444	6644 6634		
16	4434 2334	3433 2333	5642 2234	5554 3344		
17	5554 3534	6542 2245	6533 3345	5433 1134		
18	5544 3335	5422 2123	5643 3346	5432 1244		
19	5543 4234	---	6553 4345	5431 3334		
20	---	-442 2334	6544 2234			
21	5533 2233	5532 2244	5522 2345			
22	4533 2344	5434 4345	6644 3344			
23	3331 2243	6422 3345	5543 2345			
24	3432 0134	5533 4335	6533 2345			
25	5421 1123	---	5432 2233			
26	5334 2235	5432 4344	4332 2234			
27	5523 2225	54--	5544 3346			
28	5544 5654	5533 3346	7653 4435			
29	5432 2235	6454 4344	5332 3333			
30	5533 1133	5542 3236	4433 3336			
31	4321 1135		7744 3444			

## TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

January

	Day																																	
	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	28	29	30	31	Sum		
Tr	2	1	1	1	1	2	1	1	1	1	1	1	0	1	1	0	0	1	2	2	1	1	0	1	2	2	2	2	2	2	2	39		
Co	1	1	0	0	1	1	1	0	0	0	0	1	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	18		
So	1	2	1	0	2	2	1	0	1	0	1	1	0	0	1	1	2	2	0	0	1	1	2	2	2	2	2	1	1	1	33			
Le	1	1	1	0	1	1	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	1	1	2	1	1	1	1	1	1	19			
Do	1	2	0	0	1	1	0	1	0	0	0	1	1	0	0	0	1	2	1	0	1	1	2	2	2	2	1	1	1	2	28			
Me	1	1	1	0	2	1	1	0	0	0	0	1	0	0	0	1	1	1	1	0	0	1	2	1	1	1	1	1	1	1	22			
Si	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	6			
Es	1	1	1	0	1	1	0	0	1	0	0	0	1	0	0	1	1	1	1	0	0	0	1	1	2	1	1	1	1	1	20			
Lo	2	2	2	1	2	2	2	1	2	1	2	1	1	1	1	2	2	2	2	1	1	2	2	2	2	2	2	2	1	1	51			
RS	2	2	1	1	2	2	2	1	1	1	1	1	2	1	1	1	2	2	2	2	1	1	1	2	2	2	2	2	1	1	47			
Ag	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	17			
Wn	1	1	0	0	2	1	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	2	2	1	1	1	1	19			
Wi	1	2	1	0	2	2	1	1	1	1	1	0	2	0	0	0	2	1	2	2	0	1	1	1	2	2	2	2	2	1	38			
Ab	1	1	1	1	2	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	2	2	1	1	1	31			
Ni	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1	16			
Ma	1	2	1	1	2	2	1	1	1	1	1	0	2	0	0	0	1	2	2	0	0	1	1	2	2	2	2	2	1	1	35			
Na	1	1	1	0	2	1	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	2	2	1	1	1	1	30			
CF	1	2	1	0	2	1	1	0	1	1	1	0	1	1	0	0	1	1	1	1	0	0	1	1	2	2	2	2	1	1	31			
Ch	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	7				
Fu	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	1	2	1	1	1	1	0	15			
SM	1	1	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1	1	2	2	2	1	1	0	17			
Ci	1	1	1	0	1	1	0	1	1	0	1	0	0	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	20				
Eb	1	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	2	2	1	1	40				
Tl	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	2	1	1	1	1	2	2	2	1	1	35			
SF	-	-	1	0	2	1	0	1	1	2	0	0	1	0	0	0	-	1	-	-	0	0	1	1	2	1	1	-	0	16				
Tu	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	1	12			
IK	1	1	0	0	2	1	0	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	1	0	2	2	1	1	1	1	21			
KS	1	1	1	0	2	1	0	1	0	-	0	1	0	0	0	1	2	2	1	0	1	1	2	2	2	2	2	0	30					
SJ	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	1	1	0	10					
Te	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2	2	2	1	1	1	15				
He	1	1	1	1	2	1	1	0	1	0	1	0	0	0	1	1	1	2	0	0	1	1	2	2	2	2	2	0	30					
Ka	1	1	0	0	2	1	1	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	19				
Ta	1	1	0	0	2	1	0	0	1	0	0	0	1	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	19				
Qu	1	-	-	0	2	1	0	0	1	0	0	0	1	0	0	1	1	1	1	0	1	2	1	1	1	1	1	1	1	21				
MB	1	1	0	0	2	1	0	0	1	1	0	0	1	0	0	0	1	-	-	0	0	1	2	2	2	1	1	1	1	21				
Ho	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	5			
Al	1	1	1	1	2	1	1	1	1	0	0	0	1	0	0	0	1	1	1	0	0	1	1	2	2	1	1	1	1	1	26			
Hu	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5			
Va	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3			
Bi	0	0	0	0	2	0	0	0	0	0	0	0	0	0	-	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3			
El	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	1	1	0	12			
Ap	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3			
Tn	1	1	1	1	2	1	1	1	1	0	-	0	1	0	0	0	1	1	0	0	0	1	1	2	2	1	2	1	0	0	23			
Hr	1	1	1	1	2	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	28			
Wa	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	9				
To	-	-	1	0	0	2	1	1	1	0	1	0	-	1	0	0	-	-	1	-	1	0	0	1	-	-	1	1	1	1	1	17		
Am	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	6			
MI	1	2	1	0	2	1	1	1	0	0	1	0	1	1	0	0	0	1	2	1	1	0	0	0	1	1	2	2	2	1	1	29		
HI	1	1	1	0	2	1	1	1	1	0	0	0	1	1	0	0	0	1	1	1	0	0	0	1	1	2	2	1	1	1	0	23		
$\Sigma$	3	8	4	6	2	4	1	1	8	3	4	3	2	5	17	28	14	18	5	3	6	15	3	5	1	3	8	5	8	7	2	6	9	1039

Selected Days: Five quiet     4, 10, 15, 16, 17

Five disturbed     5, 19, 26, 27, 28

Ten quiet     4, 7, 10, 11, 12, 15, 16, 17, 22, 23

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

February

	Day																												
	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	28	Sum
Tr	0	0	1	0	0	0	2	1	1	0	0	1	1	2	0	0	1	1	2	2	2	2	2	2	2	2	2	27	
Co	0	0	1	1	0	0	0	1	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
So	1	0	0	0	0	0	0	2	2	1	0	0	1	2	2	0	1	1	1	2	2	2	2	2	2	2	2	30	
Le	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	0	0	1	2	1	1	1	1	1	1	1	1	16	
Do	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2	0	0	1	0	1	2	2	2	2	2	1	2	21	
Me	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	0	1	0	0	1	1	2	2	2	2	1	1	17	
Si	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	5	
Es	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	15	
Lo	1	1	1	1	1	1	0	1	2	2	2	1	1	2	2	2	2	1	2	1	2	2	2	2	2	2	2	41	
RS	1	1	0	1	1	1	0	1	2	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	39	
Ag	0	0	0	1	0	0	0	1	0	0	0	1	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	13	
Wn	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	1	0	1	2	2	2	2	2	2	2	2	31	
Wi	0	1	1	1	0	0	0	2	1	1	0	0	2	1	2	0	1	1	2	2	2	2	2	2	2	2	2	26	
Ab	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	13	
Ni	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	26	
Ma	0	0	0	1	0	0	0	1	2	0	0	0	1	1	2	1	0	1	2	2	2	2	2	2	2	2	2	23	
Na	1	1	0	1	0	0	1	1	1	1	0	0	1	1	1	1	0	1	2	2	2	2	2	2	2	2	2	26	
CF	0	0	0	1	0	0	0	1	1	1	1	0	1	1	1	0	0	0	0	1	1	1	1	1	0	0	6		
Ch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	16		
Fu	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2	2	2	2	2	2	1	16		
SM	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	1	1	2	2	1	2	1	1	1	15		
Ci	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	30	
Eb	1	1	1	1	0	0	0	1	1	1	1	0	1	1	1	2	1	1	1	2	2	2	1	2	2	1	27		
Tl	0	1	1	1	0	0	0	1	1	1	1	0	0	1	1	2	1	0	1	1	2	2	1	2	2	1	12		
SF	0	0	0	1	0	0	0	0	1	1	0	-	1	1	1	0	0	1	1	-	1	1	1	-	-	8			
Tu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	20	
IK	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	2	1	1	1	2	1	1	1	1	1	15		
Ks	0	-	0	0	0	0	0	2	1	0	0	0	1	1	1	0	-	1	1	2	2	2	2	2	2	2	23		
SJ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	9		
Te	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	0	-	-	6			
He	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	2	2	2	1	2	2	2	2	2	20		
Ka	0	1	0	1	0	0	0	0	1	1	0	0	0	1	1	0	1	0	1	1	1	2	1	1	1	1	17		
Ta	0	-	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	2	1	2	2	2	2	2	14		
Qu	0	0	0	0	0	0	0	-	1	0	0	0	1	1	0	1	1	1	0	1	1	1	1	1	1	1	15		
MB	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	2	2	2	1	0	16			
Ho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	5		
Al	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2	2	1	2	1	1	17			
Hu	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	6		
Va	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	5		
Bi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	7		
El	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	4	
Ap	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	21		
Tn	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	1	2	2	2	1	2	1	1	1	19		
Hr	0	0	0	0	0	0	0	0	1	1	0	0	1	1	1	0	0	0	2	2	2	2	1	1	0	0	4		
Wa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	17		
To	0	1	1	1	0	0	0	0	1	1	0	0	1	1	0	1	0	0	1	1	1	1	1	1	0	0	5		
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2	2	2	2	2	1	0	21		
MI	0	0	0	1	0	0	0	1	1	0	0	1	0	1	0	1	2	2	2	2	2	1	1	1	1	1	20		
HI	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	0	0	1	2	5	7	4	7	47	832			

Selected Days: Five quiet      1, 5, 6, 7, 13

Five disturbed 22, 23, 24, 25, 26

Ten quiet      1, 3, 5, 6, 7, 8, 12, 13, 18, 20

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

March

	D a y																															
	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	28	29	30	31	Sum
Tr	1	2	2	1	1	1	2	2	2	2	1	1	0	1	1	1	0	2	2	2	2	2	2	2	2	2	2	2	2	1	46	
Co	1	2	1	0	0	0	1	1	1	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
So	1	2	2	1	1	1	2	2	2	2	1	0	0	1	1	1	0	0	2	2	2	2	2	2	2	2	2	2	2	2	46	
Le	1	2	1	1	1	1	1	2	2	1	0	0	0	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	30	
Do	1	2	1	1	1	0	2	2	2	2	1	1	0	1	1	1	0	0	2	2	1	2	2	2	2	2	1	1	2	2	42	
Me	1	2	2	0	0	0	1	1	2	1	0	0	0	1	1	1	0	0	1	1	2	1	1	1	1	1	1	0	1	1	28	
Si	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	9	
Es	1	2	1	1	1	1	1	2	1	1	1	0	0	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	30	
Lo	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	1	0	2	2	2	2	2	2	2	2	2	2	2	2	57	
RS	1	2	2	1	2	1	2	2	2	2	1	1	2	1	2	1	0	2	2	2	2	2	2	2	2	2	1	2	2	51		
Ag	0	1	1	0	0	0	1	1	1	1	0	0	0	0	1	0	0	0	1	1	1	1	2	1	1	1	1	1	1	1	20	
Wn	1	2	1	0	1	0	1	2	2	1	0	0	0	1	1	1	0	0	1	1	2	1	2	2	2	1	1	1	1	1	31	
Wi	1	2	2	1	2	1	2	2	2	2	1	1	1	1	2	2	0	0	2	1	2	2	2	2	2	2	2	1	49			
Ab	1	2	1	1	1	1	1	2	1	1	1	0	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	32		
Ni	0	1	1	1	1	1	0	1	1	1	1	0	0	0	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	24		
Ma	1	2	1	1	1	1	1	2	2	1	0	0	1	1	1	0	0	1	1	2	2	2	2	2	2	1	1	1	1	1	35	
Na	1	2	2	1	1	1	1	2	2	1	1	1	1	1	1	0	0	1	1	2	1	2	2	2	1	1	1	1	1	1	37	
CF	1	2	1	0	1	1	1	1	2	1	0	0	1	1	1	0	0	2	1	2	2	2	1	1	1	1	1	1	1	33		
Ch	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	11			
Fu	0	2	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	1	1	0	0	18	
SM	1	2	1	1	1	0	1	1	2	1	0	0	0	0	1	1	0	1	1	2	1	2	2	2	1	1	1	1	1	1	29	
Gi	1	2	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0	0	1	1	1	2	1	1	1	1	1	1	1	27		
Eb	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	0	1	1	2	2	1	1	2	1	1	1	1	39			
Tl	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	0	0	1	1	2	2	2	2	1	1	1	1	1	3	39		
SF	-	2	-	1	0	0	0	1	1	1	0	0	0	-	-	1	0	0	1	1	1	1	2	1	1	1	1	1	1	21		
Tu	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	14	
IK	0	2	1	0	0	0	1	2	1	1	0	0	0	1	0	1	0	0	1	1	1	2	1	1	1	1	1	1	1	22		
Ks	1	2	2	0	0	0	1	2	2	1	0	0	1	1	1	1	0	0	0	2	-	2	2	1	1	-	1	1	26			
SJ	0	1	1	0	0	0	1	1	1	1	0	0	0	1	0	0	0	1	0	1	1	1	1	1	0	1	0	1	17			
Te	-	2	2	0	0	0	1	0	1	-	0	0	0	1	1	0	0	0	2	0	1	1	2	2	2	1	1	1	0	0	21	
He	1	2	1	0	1	0	1	2	2	1	0	0	0	1	1	1	0	0	1	1	2	1	1	2	1	1	1	1	1	1	28	
Ka	1	1	1	0	1	1	1	1	1	1	0	0	0	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	24	
Ta	0	2	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	0	1	0	1	19	
Qu	0	2	1	0	0	0	1	1	1	1	0	0	0	1	1	1	0	0	1	1	1	2	1	1	1	1	1	1	1	1	24	
MB	0	2	2	0	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	1	1	2	1	1	0	1	0	1	0	10	17	
Ho	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	9	
Al	1	2	2	0	1	1	1	2	1	0	0	0	0	1	0	0	0	1	1	1	1	2	2	1	1	1	1	1	1	1	27	
Hu	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	7	
Va	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	0	0	0	10	
Bi	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6	
El	0	2	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	18	
Ap	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
Tn	1	2	2	1	1	1	2	2	1	0	0	0	1	1	1	0	0	1	0	2	1	2	2	2	1	1	2	1	1	1	34	
Hr	0	2	1	1	0	1	0	1	1	0	0	0	1	1	1	0	0	1	1	1	1	2	2	1	1	1	1	1	1	26		
Wa	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	7		
To	1	2	1	0	1	1	1	-	1	0	0	0	1	1	1	0	-	1	1	1	-	1	1	1	1	1	1	1	1	1	23	
Am	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	0	10		
MI	1	2	1	1	0	0	1	1	2	2	0	0	0	1	1	0	0	1	0	2	1	2	2	2	1	1	2	0	1	28		
HI	1	2	1	1	0	1	1	2	2	1	1	0	0	1	0	0	0	1	1	1	1	2	2	1	1	1	1	1	1	1	29	
$\Sigma$	28	85	59	23	26	21	4	16	16	7	44	12	9	9	32	34	33	5	048	346	349	648	169	504	494	936	4330	1254				

Selected Days: Five quiet 11, 12, 13, 17, 18

Five disturbed 2, 9, 23, 24, 25

Ten quiet 4, 5, 6, 11, 12, 13, 17, 18, 20, 31

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

April

	Day																															
	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	28	29	30	Sum	
Tr	1	2	2	2	1	2	1	2	1	1	2	1	2	0	1	2	2	1	2	2	2	2	1	1	1	2	2	2	1	1	2	46
Co	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	1	1	1	25
So	1	1	2	2	1	1	1	2	1	1	1	1	0	1	2	1	1	2	2	2	2	2	0	1	1	1	0	1	1	1	36	
Le	1	1	1	1	0	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	25	
Do	1	2	1	2	1	1	0	0	1	1	2	1	1	1	1	2	1	1	2	1	1	2	1	1	1	1	0	1	0	0	2	33
Me	1	1	1	2	0	1	0	0	1	1	2	1	0	1	2	1	1	2	2	1	1	1	0	1	1	1	1	1	1	1	1	29
Si	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4
Es	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	25
Lo	2	2	2	2	1	1	1	2	1	2	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	53
RS	2	2	2	2	1	1	0	2	1	2	1	2	1	0	1	2	2	1	2	2	2	2	1	1	2	1	1	1	2	1	2	45
Ag	1	1	1	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	0	1	21
Wn	1	1	1	1	0	0	0	0	0	1	1	1	1	0	1	2	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	22
Wi	1	1	2	2	1	1	0	2	1	1	2	1	0	1	2	1	1	2	2	2	1	2	1	1	2	1	1	1	1	1	38	
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31
Ni	0	1	1	1	0	0	0	0	1	0	1	1	1	0	0	1	1	0	1	1	1	1	0	0	1	0	0	0	1	1	17	
Ma	1	1	1	2	0	0	0	1	1	1	2	1	0	1	2	1	1	2	2	2	1	1	1	1	1	1	1	0	1	1	31	
Na	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	27
CF	1	1	1	1	1	0	0	1	0	1	1	1	0	1	2	1	1	1	1	2	1	1	1	1	1	1	1	0	1	1	27	
Ch	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	9	
Fu	0	0	1	1	0	0	0	0	0	0	0	1	0	0	2	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	11	
SM	0	0	1	1	0	0	0	0	0	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	15	
Ci	1	1	1	1	0	0	0	0	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	22	
Eb	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	31	
Tl	1	1	1	2	0	0	0	1	1	1	2	1	2	1	1	2	1	2	2	2	1	2	1	1	1	1	1	1	1	1	35	
SF	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	23	
Tu	1	1	0	1	0	0	0	0	1	0	1	0	0	0	1	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	14	
IK	1	1	1	1	0	0	0	1	0	1	1	1	0	0	2	0	0	1	1	1	1	0	1	1	0	0	1	1	0	0	1	19
Ks	1	1	1	1	1	0	0	0	1	1	1	2	2	1	0	1	2	0	1	1	2	1	1	1	1	1	1	0	0	1	26	
SJ	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	0	0	1	1	1	1	0	0	1	0	0	0	0	0	0	10	
Te	0	0	0	1	0	0	0	0	1	1	1	0	1	1	2	1	1	2	2	2	1	1	1	1	1	1	1	0	0	0	22	
He	0	1	1	1	0	0	0	1	0	1	0	0	1	0	0	2	0	0	2	2	2	1	1	1	1	1	1	0	0	1	21	
Ka	1	1	0	1	0	0	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	20	
Ta	0	1	0	1	0	0	0	1	0	1	1	1	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	12	
Qu	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	22	
MB	1	1	1	2	0	0	0	1	1	1	1	1	1	0	1	2	1	1	1	2	1	1	1	1	1	1	1	0	1	0	25	
Ho	0	0	0	1	0	0	0	0	0	-	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	6	
Al	1	1	1	1	1	0	0	0	1	1	1	1	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
Hu	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5	
Va	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	11	
Bi	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	0	1	1	0	0	1	1	0	0	0	11	
El	0	0	0	1	0	0	0	0	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	16	
Ap	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Tn	1	1	1	1	0	0	0	0	1	1	1	1	0	1	2	1	1	2	2	1	1	1	1	1	1	0	0	0	0	0	22	
Hr	1	1	1	1	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1	1	1	0	1	1	0	1	1	0	1	1	19	
Wa	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	8	
To	1	1	1	1	1	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	23	
Am	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	9	
MI	1	1	1	2	0	1	0	1	1	1	1	0	0	0	2	1	1	2	2	2	1	0	0	1	2	1	1	1	1	1	28	
HI	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	2	1	1	1	1	1	1	1	0	0	0	1	1	1	1	19	
$\Sigma$	34	39	39	58	13	13	4	26	20	44	53	39	45	4	29	7	13	6	32	55	64	59	51	27	36	4	62	21	22	34	1078	

Selected Days: Five quiet 5, 6, 7, 14, 28

Five disturbed 4, 16, 20, 21, 23

Ten quiet 5, 6, 7, 8, 9, 14, 24, 27, 28, 29

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

May

	D a y																															
	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	28	29	30	31	Sum
Tr	0	1	0	0	1	2	2	2	2	1	1	0	0	0	2	2	2	2	2	2	2	1	0	1	0	2	1	1	1	1	36	
Co	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	2	1	1	1	1	0	0	0	0	0	1	0	0	0	0	15	
So	0	0	0	0	1	2	2	2	2	1	0	0	0	0	2	2	2	2	2	2	1	1	1	0	0	-	-	-	-	-	25	
Le	0	0	0	0	1	1	1	1	1	1	0	0	0	0	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0	1	25	
Do	0	0	0	0	1	2	0	1	2	1	0	0	0	0	2	2	2	1	2	1	1	1	1	0	0	1	2	1	0	0	25	
Me	0	0	0	1	1	2	2	2	1	1	1	0	0	0	2	2	1	1	2	1	1	1	0	0	0	2	0	0	0	0	25	
Si	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0	6	
Es	1	0	0	0	0	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	25	
Lo	1	1	1	1	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	1	2	1	1	1	1	2	1	1	46	
RS	1	0	1	0	1	2	2	2	2	1	1	0	0	0	2	2	2	2	2	2	2	2	1	1	1	1	2	1	1	1	40	
Ag	0	0	0	0	1	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	0	1	0	0	0	0	2	0	0	0	17	
Wn	0	0	0	0	1	2	1	1	1	1	0	0	0	0	2	2	1	1	1	1	1	1	0	0	0	1	1	0	0	1	20	
Wi	1	0	0	0	1	2	1	2	1	1	1	0	0	1	2	2	2	1	2	1	1	2	1	1	1	2	1	1	1	2	35	
Ab	1	1	1	0	1	1	1	1	1	1	1	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	30		
Ni	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	15	
Ma	1	0	0	0	1	2	2	2	1	1	0	0	0	0	0	2	2	1	1	1	1	1	1	1	1	1	1	1	0	1	27	
Na	0	0	0	0	1	2	1	1	1	1	1	0	0	0	0	2	2	2	1	1	1	1	1	0	0	1	1	0	0	1	23	
CF	0	0	0	0	1	1	1	1	1	1	0	0	0	0	2	2	2	1	1	1	1	1	0	0	0	1	1	0	0	1	20	
Gh	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	0	0	9		
Fu	0	0	0	0	0	2	1	1	1	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	11	
SM	1	1	0	0	1	2	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	1	1	0	0	0	1	1	0	0	1	22
Ci	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	18	
Eb	0	0	1	0	1	2	1	1	1	1	1	0	0	1	2	2	2	1	1	1	1	1	1	1	1	0	1	1	0	1	29	
Tl	0	0	0	1	1	2	1	2	1	1	1	0	0	0	2	2	2	1	2	1	1	1	1	0	1	2	1	0	0	1	29	
SF	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	2	1	1	1	0	1	0	1	0	0	0	1	0	0	0	14	
Tu	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	1	1	0	0	0	13	
IK	0	0	0	0	0	1	2	1	1	1	0	0	0	0	2	2	1	1	1	1	0	1	0	0	0	0	1	0	0	1	17	
Ks	0	0	0	0	0	1	2	1	2	1	1	0	0	0	2	2	2	1	2	1	1	0	1	0	1	1	0	0	0	-	21	
SJ	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	1	0	0	0	12	
Te	0	0	0	0	0	1	2	2	1	1	0	0	0	0	2	2	1	1	1	1	0	0	0	0	0	0	1	0	0	0	16	
He	0	0	0	0	0	1	2	1	2	1	1	0	0	0	2	2	2	1	2	1	1	1	0	0	0	1	1	0	0	1	23	
Ka	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	21	
Ta	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	2	1	0	1	0	0	0	0	0	0	0	1	-	0	0	8	
Qu	0	0	0	0	0	1	2	2	1	1	1	1	0	0	0	2	2	2	1	1	1	1	1	1	1	1	0	0	0	1	21	
MB	0	0	0	0	0	1	2	1	1	1	1	1	0	0	0	2	2	1	1	1	1	1	1	0	1	0	1	0	0	0	20	
Ho	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	7	
Al	0	0	1	0	1	2	1	1	1	1	1	0	0	0	2	2	1	1	1	1	1	1	1	1	1	0	1	2	1	0	1	26
Hu	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Va	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Bi	0	0	0	0	0	2	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	9	
El	0	0	0	0	0	2	1	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	-	0	0	11	
Ap	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	-	0	0	0	0	0	0	0	0	1	0	0	0	0	3	
Tn	-	0	0	0	0	0	2	1	1	1	0	0	0	0	2	2	1	1	1	1	0	0	0	0	0	0	1	0	0	0	14	
Hr	0	0	0	0	0	1	1	1	1	0	0	0	0	0	2	2	1	1	1	1	1	0	1	0	0	0	1	0	0	0	14	
Wa	0	0	0	0	0	1	2	1	1	1	0	0	0	0	1	2	1	1	1	1	1	0	1	0	0	0	1	0	0	0	15	
To	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	2	1	1	1	1	1	1	0	0	0	0	1	0	0	0	16
Am	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	2	0	1	1	0	0	0	0	0	0	0	1	0	0	0	10	
MI	0	0	0	-1	2	1	1	1	1	1	0	0	0	0	2	2	1	1	1	1	1	1	-	0	0	0	1	0	0	0	19	
HI	0	0	0	0	0	1	2	1	1	1	0	0	0	0	-	1	1	1	1	1	1	0	1	0	0	0	-	0	0	0	11	
<b><math>\Sigma</math></b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>33</b>	<b>67</b>	<b>55</b>	<b>35</b>	<b>54</b>	<b>8</b>	<b>29</b>	<b>13</b>	<b>1</b>	<b>1</b>	<b>47</b>	<b>48</b>	<b>46</b>	<b>0</b>	<b>45</b>	<b>53</b>	<b>42</b>	<b>29</b>	<b>36</b>	<b>16</b>	<b>15</b>	<b>10</b>	<b>21</b>	<b>53</b>	<b>16</b>	<b>8</b>	<b>623</b>	<b>925</b>	

Selected Days: Five quiet 2, 3, 12, 13, 14

Five disturbed 6, 8, 15, 16, 19

Ten quiet 1, 2, 3, 4, 12, 13, 14, 25, 29, 30

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

June

	Day																														
	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	28	29	30	Sum
Tr	1	2	2	2	1	2	1	0	0	1	1	1	2	2	0	0	1	1	0	2	1	1	0	1	0	0	0	0	2	2	29
Co	0	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	2	2	16			
So	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Le	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	0	1	0	0	0	1	1	1	1	19	
Do	0	2	2	1	1	0	0	0	0	1	1	1	1	1	0	0	0	1	0	2	1	0	0	0	0	2	1	1	18		
Me	0	2	2	1	1	1	1	0	0	1	1	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	2	2	19		
Si	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4		
Es	0	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	0	1	0	0	0	1	1	19		
Lo	1	2	2	2	2	2	2	1	1	2	2	2	2	2	1	2	2	1	1	2	2	2	0	1	1	1	1	1	2	2	47
RS	1	2	2	2	2	2	1	1	0	1	1	1	2	2	1	1	0	1	1	1	1	1	0	1	1	1	0	2	2	33	
Ag	0	2	2	1	1	1	1	0	0	1	1	1	1	0	0	0	1	1	1	0	0	0	0	0	0	1	2	19			
Wn	0	2	1	1	1	1	1	0	0	0	1	0	1	1	0	0	1	1	1	0	0	0	0	2	1	1	17				
Wi	1	2	2	2	2	2	1	1	0	1	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	2	37			
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	27			
Ni	0	1	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	1	1	13				
Ma	0	2	2	1	2	1	1	1	0	0	1	1	2	1	1	0	1	0	0	1	1	1	0	1	0	0	0	2	2	24	
Na	0	2	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	1	1	0	1	0	0	0	2	1	20			
CF	0	2	2	1	2	1	0	0	0	1	1	1	1	1	0	0	1	1	1	0	1	0	0	0	2	2	22				
Ch	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5			
Fu	0	2	2	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	2	2	13			
SM	0	1	1	1	1	1	0	0	0	1	0	1	1	1	0	0	1	1	1	0	0	0	0	0	2	1	16				
Ci	0	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	1	0	0	1	0	0	0	0	1	1	15			
Eb	0	2	1	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	2	2	29			
Tl	0	2	2	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	2	29			
SF	0	1	1	1	1	-	0	0	0	0	0	1	1	1	0	0	0	1	1	1	0	1	0	0	0	1	1	13			
Tu	0	1	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	9			
IK	0	2	2	1	1	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	0	0	2	1	1	14				
Ks	0	2	2	1	2	1	0	0	0	1	1	2	1	0	0	0	1	2	-	1	0	1	0	0	1	2	2	24			
SJ	0	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	9				
Te	0	2	2	1	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	2	12				
He	0	2	2	1	2	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	2	2	18			
Ka	0	1	1	1	1	1	1	0	0	1	0	1	1	0	0	0	1	1	0	0	0	0	0	0	1	1	14				
Ta	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5			
Qu	0	2	2	1	1	1	1	0	0	1	1	1	1	1	0	0	1	1	1	1	0	1	0	0	0	2	1	22			
MB	0	2	2	1	1	1	1	0	0	1	0	2	1	0	0	0	1	0	1	0	1	0	0	0	2	2	20				
Ho	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4			
Al	0	2	2	1	1	1	0	0	0	1	1	1	1	0	0	0	1	2	1	1	0	1	0	0	0	2	2	22			
Hu	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3			
Va	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4			
Bi	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5			
El	0	2	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	-	10			
Ap	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	1	1	3				
Tn	0	2	2	1	1	1	1	0	0	1	0	1	1	1	0	0	0	0	1	1	1	0	1	0	0	0	2	2	20		
Hr	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7			
Wa	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	8			
To	0	1	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	13			
Am	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	5			
MI	0	2	1	1	1	1	0	0	0	0	1	0	0	-	0	0	1	1	1	0	0	0	0	0	0	1	2	13			
: I	0	2	1	1	1	0	0	0	-	-	0	-	1	0	0	0	0	1	1	0	0	0	0	0	2	2	12				
$\Sigma$	5	7	3	6	4	5	4	7	2	9	1	3	4	2	9	2	3	4	2	3	7	2	3	7	7	2	6	7	7	79	

Selected Days: Five quiet 16, 19, 23, 26, 27

Five disturbed 2, 3, 4, 29, 30

Ten quiet 1, 8, 9, 16, 19, 23, 25, 26, 27, 28

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

July

	D a y																															
	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	28	29	30	31	Sum
Tr	2	2	2	2	2	2	2	2	2	2	1	1	2	2	0	2	0	0	1	1	1	2	1	1	2	2	2	2	2	2	2	46
Co	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	0	0	0	1	0	2	1	1	1	2	1	1	1	1	1	22	
So	2	2	1	1	1	2	2	2	1	1	0	1	1	0	1	0	0	0	0	0	2	2	1	1	2	2	2	2	1	35		
Le	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	1	1	24		
Do	1	2	1	1	0	1	1	1	0	0	1	1	0	0	1	0	1	0	0	0	2	1	0	1	2	1	2	1	1	24		
Me	2	1	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	1	1	0	2	1	0	2	2	2	2	1	27		
Si	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	1	0	7		
Es	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	27		
Lo	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	0	1	1	1	1	1	1	2	2	2	2	2	2	2	53		
RS	2	2	2	2	1	2	2	2	0	1	2	1	2	1	0	0	1	1	1	1	2	2	1	2	2	2	2	2	2	46		
Ag	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	1	1	1	1	2	1	1	1	1	24		
Wn	1	1	1	1	1	1	1	1	0	0	1	1	0	1	0	0	0	0	0	2	1	0	1	2	1	1	1	1	22			
Wi	2	2	2	2	1	1	2	1	1	1	1	2	1	2	1	0	0	1	1	1	1	1	2	2	2	2	1	42				
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	30		
Ni	1	1	1	1	1	0	1	1	1	0	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	1	1	20			
Ma	2	2	2	1	1	1	2	1	1	0	0	2	1	1	1	0	0	0	0	1	0	1	2	1	1	2	2	2	1	34		
Na	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	1	2	1	1	1	1	1	1	26			
CF	1	2	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	0	1	0	1	2	1	1	1	1	1	1	27			
Ch	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	1	1	0	10			
Fu	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	1	2	2	1	1	1	15			
SM	1	1	1	1	0	0	1	1	0	0	1	1	1	1	0	0	0	0	1	2	1	1	1	2	1	1	1	1	24			
Ci	1	1	1	1	0	1	1	1	0	0	1	1	1	1	0	0	0	0	1	0	1	1	1	1	1	1	1	20				
Eb	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	2	1	1	1	1	1	30			
Tl	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	1	1	1	1	1	2	2	2	1	1	32				
SF	1	1	1	1	0	-1	1	1	0	0	1	1	1	1	0	0	0	-	0	0	1	1	1	1	1	1	1	1	20			
Tu	1	1	1	1	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	1	1	1	1	1	17			
IK	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	0	0	2	1	0	1	2	1	1	1	1	22			
Ks	2	2	1	0	0	1	1	1	0	0	1	1	2	1	1	0	-	0	1	2	-1	1	2	2	2	-	27					
SJ	1	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	13				
Te	2	1	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	1	0	1	2	2	1	1	1	18				
He	2	1	0	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	2	1	1	1	2	1	1	1	1	17			
Ka	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	25			
Ta	1	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	1	1	1	1	0	13				
Qu	1	1	1	1	1	1	1	1	0	0	1	1	0	1	0	0	0	0	2	1	1	1	2	1	1	1	1	23				
MB	1	1	1	1	0	1	1	1	0	0	1	0	1	1	0	0	0	2	1	1	1	1	1	1	1	1	1	22				
Ho	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	1	9				
Al	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	2	1	1	1	2	1	1	1	1	1	28				
Hu	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	4					
Va	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	8				
Bi	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	1	0	1	1	1	1	1	0	12					
El	1	1	1	1	0	0	1	0	0	0	1	0	1	0	0	0	0	0	2	1	1	1	1	1	1	1	1	17				
Ap	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2					
Tn	1	1	1	1	1	0	1	1	0	0	1	1	1	1	1	0	0	0	2	1	1	1	2	1	1	1	1	22				
Hr	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	9					
Wa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	4					
To	1	1	1	1	1	0	1	1	0	0	0	1	0	1	0	0	0	1	1	0	1	1	1	1	1	1	1	17				
Am	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	7					
MI	1	1	1	1	1	0	1	1	0	0	0	1	0	1	0	0	0	0	2	1	0	1	2	2	1	1	21					
HI	1	1	1	1	1	-	1	1	1	0	0	1	0	0	0	-	0	0	0	2	1	1	1	1	1	1	1	19				
$\Sigma$	55	55	40	4	23	0	29	49	38	29	9	8	34	37	31	36	2	3	8	10	16	10	16	7	64	22	75	17	359	594	940	1063

Selected Days: Five quiet 11, 16, 17, 18, 21

Five disturbed 1, 2, 23, 27, 29

Ten quiet 10, 11, 16, 17, 18, 19, 20, 21, 22, 25

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

August

	Day																																				
	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	28	29	30	31	Sum					
Tr	2	1	1	2	1	1	1	2	2	2	2	1	2	2	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	43					
Co	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	1	2	1	1	1	15					
So	1	1	1	1	1	1	1	0	1	1	2	2	1	1	1	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	36						
Le	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	2	1	1	1	1	1	1	1	1	26						
Do	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	0	1	0	0	0	2	2	2	2	2	2	2	2	2	2	39						
Me	1	1	1	0	0	0	1	1	1	1	1	2	1	1	0	1	0	0	0	0	0	1	2	2	1	2	2	2	2	2	29						
Si	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	10						
Es	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	2	1	1	1	1	1	1	1	1	26						
Lo	2	2	1	2	2	2	2	1	2	2	2	2	2	2	2	2	1	2	1	0	0	1	2	2	2	2	2	2	2	2	53						
RS	2	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1	1	1	1	0	0	0	2	2	2	2	2	2	2	2	44						
Ag	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	2	1	1	1	1	1	2	1	21						
Wn	1	1	0	0	0	0	0	1	0	1	1	1	2	1	1	1	1	0	0	0	2	2	1	1	2	2	1	2	1	2	26						
Wi	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1	2	1	1	1	1	0	1	1	2	2	2	2	2	2	44							
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	2	1	1	1	1	2	1	1	1	31							
Ni	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	16						
Ma	1	1	1	1	0	1	1	0	1	1	1	2	2	1	1	1	0	0	0	0	0	2	2	2	2	2	2	2	2	2	34						
Na	1	1	0	1	1	0	1	1	1	2	1	1	1	1	1	1	0	0	0	0	2	2	1	1	2	1	2	2	1	28							
CF	1	1	1	1	0	1	0	1	1	1	2	2	1	1	1	0	0	0	0	0	2	2	1	1	2	1	2	1	1	28							
Ch	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	14							
Fu	1	1	1	0	0	0	0	1	1	2	1	1	1	1	0	0	0	0	0	0	0	2	2	2	1	2	1	2	1	26							
SM	1	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	17						
Ci	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1	2	1	1	1	1	1	1	1	1	22						
Eb	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	2	2	2	1	1	1	2	2	1	34								
Tl	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	2	2	2	2	1	2	2	2	2	37								
SF	1	1	1	1	-	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	2	-	1	1	1	1	1	1	1	1	22						
Tu	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	19						
IK	0	1	0	0	0	0	0	0	1	1	2	1	1	1	1	1	1	0	0	0	2	2	1	1	2	1	1	1	1	1	21						
Ks	1	1	0	1	1	1	1	0	1	1	2	2	1	1	1	0	0	0	0	2	2	2	2	2	2	2	2	2	2	35							
SJ	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	15							
Te	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	2	2	2	1	2	1	2	1	1	19							
He	1	1	0	0	1	1	0	0	1	1	2	1	1	1	0	0	0	0	0	0	2	2	1	1	2	2	1	2	1	26							
Ka	1	1	1	1	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	22							
Ta	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	-	0	0	0	1	1	1	1	1	1	1	1	1	13							
Qu	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	2	1	1	1	1	1	1	1	1	1	18							
MB	1	0	0	0	0	0	1	0	1	1	1	2	1	0	0	0	0	0	0	2	2	1	1	2	2	2	2	2	2	25							
Ho	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	11							
AL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	2	1	1	1	1	1	1	1	1	26							
Hu	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	1	0	8							
Bi	0	0	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	0	2	1	1	1	1	1	1	1	1	1	15							
Va	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	15							
El	0	0	0	0	0	0	0	-	0	1	1	0	0	0	0	0	0	0	0	2	2	2	1	1	1	1	1	1	0	16							
Ap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	-	-	0	1	1	0	1	0	5							
Tn	1	1	1	1	1	1	1	1	1	2	2	1	1	1	0	0	0	0	0	2	2	2	1	-	1	2	2	2	32								
Hr	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	2	2	1	1	1	1	1	1	1	1	14							
Wa	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	8								
To	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	2	1	1	1	16							
Am	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	9								
MI	1	0	0	1	0	0	1	1	2	1	0	-	1	0	0	0	0	0	0	2	2	1	1	2	2	2	2	2	26								
HI	1	0	0	-	0	0	-	1	-	-	-	0	1	0	0	0	0	0	0	2	2	1	1	2	1	1	2	1	1	16							
$\Sigma$	3	5	2	9	20	24	17	19	26	12	4	3	4	7	44	67	56	37	29	26	6	8	4	0	1	4	7	7	8	63	54	66	62	68	71	58	1151

Selected Days: Five quiet 17, 19, 20, 21, 22

Five disturbed 12, 23, 24, 27, 30

Ten quiet 3, 5, 6, 8, 17, 18, 19, 20, 21, 22

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

September

	D a y																															
	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	28	29	30	Sum	
Tr	2	2	2	2	2	1	1	2	1	2	1	1	1	0	1	1	2	1	2	2	2	2	2	2	2	2	2	2	1	0	1	45
Co	1	1	1	2	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	2	2	1	1	2	1	1	0	0	0	0	27	
So	1	1	2	2	2	1	1	1	1	0	1	1	1	1	0	2	1	1	2	2	2	2	2	2	1	1	1	0	0	1	37	
Le	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	0	1	31	
Do	1	2	2	2	2	1	1	1	1	0	1	1	1	1	0	2	1	1	2	2	2	2	2	2	1	1	2	1	0	1	40	
Me	1	1	1	2	1	1	1	0	0	0	1	1	1	1	0	0	1	1	2	2	2	2	2	2	1	0	1	1	0	0	30	
Si	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	9	
Es	1	1	2	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	2	1	1	1	1	1	1	1	1	0	1	31	
Lo	2	2	2	2	2	2	2	2	1	2	2	2	2	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	55	
RS	2	2	2	2	2	2	2	2	1	1	2	1	2	1	0	2	2	2	2	2	2	2	2	2	2	2	2	1	0	1	50	
Ag	1	1	1	2	1	1	1	0	0	0	1	0	1	0	0	1	2	2	2	1	2	1	1	1	1	0	1	0	0	0	24	
Wn	1	1	2	2	1	1	1	1	0	0	1	1	0	0	1	1	1	2	2	1	1	2	1	1	1	0	0	0	0	27		
Wi	1	2	2	2	2	2	2	1	0	2	2	1	1	0	2	2	2	2	2	2	2	2	2	2	1	0	1	0	1	46		
Ab	1	1	2	2	2	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	32		
Ni	1	1	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	21	
Ma	1	1	2	2	2	2	2	1	1	1	1	1	1	1	0	2	1	1	2	2	2	2	2	2	2	1	1	1	0	1	40	
Na	1	1	2	2	2	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	2	1	1	1	1	0	1	32		
CF	1	1	1	2	1	1	1	1	0	1	1	1	1	0	2	1	1	1	2	2	2	1	1	2	1	0	1	0	1	32		
Ch	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1	1	1	1	1	0	0	0	9	
Fu	0	1	2	2	1	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	2	1	2	1	0	0	1	0	0	19		
SM	1	1	1	2	1	1	1	1	0	0	1	0	0	0	1	0	1	1	2	1	1	1	1	1	1	1	0	1	0	0	22	
Ci	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	1	2	1	1	1	1	1	1	1	1	1	0	0	0	25	
Eb	1	1	2	2	2	2	1	1	1	1	1	1	1	0	2	1	1	2	2	2	1	1	2	2	2	1	1	1	1	39		
Tl	1	1	2	2	2	1	1	1	1	1	1	1	1	1	0	2	1	1	2	2	2	1	1	2	1	1	1	1	1	37		
SF	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1	1	—	—	—	—	—	—	8			
Tu	1	1	1	1	1	1	1	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	20	
IK	1	1	2	2	2	1	1	1	0	0	0	2	1	0	0	1	0	1	2	1	1	1	2	1	1	1	0	0	0	26		
Ks	1	1	2	2	2	2	1	1	0	0	0	1	1	0	0	2	2	0	2	2	1	1	2	2	2	1	0	1	—	1	31	
SJ	0	0	1	1	1	0	1	0	0	0	0	0	0	0	1	1	1	2	1	1	1	1	1	1	1	1	0	0	0	0	16	
Te	0	—	—	2	1	0	0	0	0	0	0	0	0	0	1	0	0	2	1	1	1	1	1	1	1	0	0	0	0	0	12	
He	1	1	2	2	2	2	1	1	0	0	1	2	0	1	0	2	1	1	2	2	2	1	2	2	2	1	1	1	0	1	35	
Ka	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	26	
Ta	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1	2	1	1	1	1	1	1	0	1	0	1	21	
Qu	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12		
MB	1	1	2	2	2	1	0	1	0	0	1	1	0	0	2	2	1	1	1	2	1	1	2	1	1	1	0	1	1	1	29	
Ho	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	10	
Al	1	1	2	2	1	1	1	0	1	1	0	0	2	1	1	1	2	1	1	1	2	2	1	1	1	0	1	1	1	32		
Hu	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	5		
Bi	0	0	1	1	0	0	0	0	0	0	0	0	0	2	1	0	1	1	1	1	1	1	1	1	1	0	0	0	0	12		
Va	0	0	1	1	1	0	0	0	0	0	1	0	0	1	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	9		
El	0	0	2	1	0	0	0	0	0	0	0	0	0	2	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	13		
Ap	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	—	0	1	1	0	1	1	1	0	0	—	0	8		
Tn	1	1	1	2	1	1	1	0	0	1	1	1	1	0	2	2	1	2	2	2	2	2	2	2	2	1	1	0	0	1	35	
Hr	0	1	2	1	1	0	0	0	0	0	1	0	0	0	1	1	0	1	2	1	1	1	1	1	1	0	1	0	1	19		
Wa	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4		
To	1	1	1	2	1	0	1	0	0	0	1	1	0	0	1	1	1	2	1	1	1	1	1	1	1	1	0	1	0	0	22	
Am	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	9		
MI	1	1	1	2	1	1	1	0	1	1	—	—	1	1	0	2	2	2	1	2	2	1	0	1	0	0	0	0	28			
HI	1	1	2	2	2	1	1	0	0	1	1	0	0	1	1	1	2	2	1	1	2	1	1	1	1	0	1	0	0	27		
$\Sigma$	384	267	777	533	363	723	112	254	129	220	060	463	349	8567	5655	6958	3726	4214	823	1229												

Selected Days: Five quiet 9, 14, 28, 29, 30

Five disturbed 3, 4, 19, 20, 23

Ten quiet 8, 9, 10, 12, 13, 14, 26, 28, 29, 30

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

October

	Day																													Sum			
Tr	2	1	0	1	0	0	1	2	0	1	1	0	0	0	2	2	2	2	2	2	2	1	1	1	1	1	2	2	1	1	1	36	
Co	1	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	2	2	2	2	1	1	1	1	0	0	1	0	0	0	0	20	
So	1	1	0	1	0	0	1	2	0	1	0	1	0	0	2	2	2	2	2	2	1	1	1	1	0	0	2	1	2	1	1	31	
Le	1	0	0	0	0	0	1	1	1	1	1	0	0	0	2	2	1	2	2	1	1	1	1	1	0	1	1	1	0	0	24		
Do	1	1	0	0	0	0	1	1	1	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	1	0	2	1	0	1	29		
Me	1	0	1	0	0	0	1	0	1	0	0	0	0	1	1	2	2	2	2	2	2	1	1	1	1	0	1	0	0	0	0	21	
Si	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	7	
Es	1	1	0	0	0	1	1	1	1	1	1	0	0	0	2	2	1	1	2	1	1	1	1	1	0	1	1	1	0	0	25		
Lo	2	2	1	1	0	1	2	2	1	2	2	1	0	0	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	1	1	48	
RS	2	1	1	1	0	0	2	2	2	1	1	1	0	0	2	2	2	2	2	2	2	1	2	1	2	1	1	2	1	1	1	41	
Ag	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	2	1	1	2	1	1	1	1	0	1	0	0	0	1	1	17		
Wn	1	0	0	0	0	0	1	1	0	1	0	0	0	0	2	2	2	2	2	2	1	1	1	0	0	0	1	0	1	0	0	21	
Wi	2	1	0	1	0	1	1	2	1	2	1	1	1	0	2	2	2	2	2	2	2	2	1	2	1	0	1	1	1	1	1	39	
Ab	1	1	1	1	0	1	1	1	1	1	1	1	1	0	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	32		
Ni	1	0	0	0	0	0	1	1	0	1	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	0	16		
Ma	1	-	1	0	0	0	1	1	1	1	1	1	0	0	2	2	2	2	2	2	2	1	1	1	1	0	2	1	1	0	0	30	
Na	1	1	0	1	0	0	1	1	1	1	1	1	0	0	2	2	2	2	2	2	2	1	1	1	1	0	0	1	1	1	0	29	
CF	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	0	0	1	1	1	1	27	
Ch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	8	
Fu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	1	1	1	0	0	0	1	0	0	0	0	0	0	14	
SM	1	1	1	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	19	
Ci	1	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0	1	0	0	16	
Eb	1	1	1	1	0	1	1	2	1	1	1	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	39	
Tl	1	1	1	1	0	0	1	1	1	1	1	1	1	0	2	2	2	2	2	2	2	1	1	1	1	1	0	1	1	1	1	33	
SF	1	-	-	0	0	0	1	1	0	1	0	0	0	0	-	-	1	1	2	2	1	1	1	1	0	0	1	1	0	0	17		
Tu	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	12	
IK	1	0	0	0	0	0	0	1	0	1	0	0	0	0	2	2	2	2	2	2	1	-	0	1	0	0	0	1	0	0	0	18	
Ks	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	2	2	2	2	2	2	1	1	0	1	0	0	1	0	1	1	24	
SJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	8	
Te	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0	14	
He	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	0	0	1	0	1	0	24	
Ka	1	0	1	0	0	0	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	13	
Ta	1	0	0	0	0	0	0	1	0	0	-	0	0	0	2	1	1	1	2	1	1	1	1	0	0	0	1	0	0	0	0	16	
Qu	0	-	0	0	0	0	0	1	1	1	1	1	0	0	0	2	1	1	1	1	1	-	1	1	-	0	0	1	0	1	-	0	16
MB	1	1	1	0	0	1	1	1	1	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	1	0	1	1	1	1	10		
Ho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6	
Al	1	1	1	1	1	1	1	1	1	1	1	0	0	0	2	2	2	2	2	2	2	1	1	1	1	0	1	1	1	1	0	32	
Hu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6	
Bi	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	10	
Va	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6	
El	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	11	
Ap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6	
Tn	1	1	1	1	0	1	1	1	-	1	0	0	0	2	2	2	2	2	2	2	1	1	0	1	0	0	1	0	1	1	0	27	
Hr	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	11	
Wa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6	
To	1	0	1	1	0	0	1	1	0	1	1	0	0	0	1	-	1	1	2	1	1	1	1	0	0	1	0	1	0	0	0	19	
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	7	
MI	1	0	1	0	0	0	1	1	0	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	0	0	1	0	0	0	0	23	
HI	1	-	-	0	0	0	-	1	0	1	1	0	0	0	2	2	2	2	2	2	1	1	1	1	0	0	1	0	1	0	0	22	
$\Sigma$	38	17	15	12	1	8	35	36	24	3	125	9	6	178	747	374	807	251	453	132	14	64	320	321	1211	1006							

Selected Days: Five quiet      5, 6, 12, 13, 14  
                                       five disturbed 15, 16, 18, 19, 20  
                                       Ten quiet      2, 3, 4, 5, 6, 12, 13, 14, 26, 30

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

November

	Day																															
	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	28	29	30	Sum	
Tr	1	0	1	0	2	1	0	1	0	0	0	2	2	2	2	2	2	2	2	2	1	0	1	1	1	1	1	1	0	0	0	30
Co	0	0	0	0	1	1	0	1	0	0	0	1	2	2	1	2	1	1	1	1	1	0	1	1	1	0	1	0	0	0	0	20
So	1	0	0	0	1	0	1	1	0	0	1	2	2	2	2	2	1	2	2	1	0	2	1	1	1	0	0	0	0	0	0	28
Le	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	15
Do	1	0	0	0	1	0	0	0	0	0	1	1	2	2	2	2	2	1	2	2	1	0	2	1	1	0	1	0	0	0	0	26
Me	0	0	0	0	1	1	0	0	0	0	0	1	2	1	2	1	2	1	1	0	1	1	1	0	0	0	0	0	0	0	0	19
Si	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4
Es	0	0	0	0	1	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	16
Lo	2	1	1	1	2	1	2	1	1	0	1	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1	1	0	1	0	42	
RS	2	0	1	1	2	1	1	1	1	0	1	2	2	2	2	2	2	1	2	2	1	1	2	2	1	1	1	0	0	0	0	37
Ag	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	0	0	0	15
Wn	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	2	1	1	1	2	1	1	0	1	1	1	0	1	0	0	0	20
Wi	1	0	0	0	2	1	1	1	0	0	1	2	2	2	2	2	2	1	2	2	2	1	1	2	1	1	0	1	0	0	0	31
Ab	1	0	1	1	1	1	1	1	1	0	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	29
Ni	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	12
Ma	1	0	0	0	1	0	0	1	0	0	1	2	2	2	2	2	2	2	2	2	1	0	2	1	1	0	0	0	0	0	0	27
Na	1	0	1	1	-	-	0	0	0	0	1	1	2	2	2	2	1	1	1	2	1	1	0	1	1	1	1	0	0	0	0	22
CF	1	0	1	0	1	0	1	0	0	0	0	1	2	2	2	2	2	1	1	1	2	2	1	0	1	1	1	0	1	0	0	24
Gh	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	9
Fu	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	2	2	1	1	1	2	1	0	0	1	1	0	0	0	0	0	17
SM	1	0	0	0	1	1	0	0	0	0	0	1	1	2	2	2	2	1	1	1	1	1	0	0	1	0	1	0	0	0	0	17
Ci	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	0	0	12
Eb	1	-	-	0	1	1	0	1	0	0	1	1	2	2	2	2	1	1	1	1	2	1	1	1	2	1	1	1	0	1	0	27
Tl	1	0	0	0	2	0	0	0	0	0	1	2	2	2	2	2	2	2	1	2	1	2	1	1	0	2	1	1	1	0	0	26
SF	0	0	0	0	1	0	0	0	0	0	0	1	2	2	2	2	2	-	1	1	1	1	1	0	1	1	0	0	0	0	0	15
Tu	0	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	11
IK	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	1	2	1	1	1	1	1	0	0	1	0	0	0	0	0	0	12
Ks	1	0	0	0	1	0	0	0	0	0	1	2	2	2	2	2	2	1	1	1	2	2	1	1	0	2	1	1	1	0	0	23
SJ	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	10
Te	0	0	0	0	1	0	0	0	0	0	0	2	2	2	2	2	2	1	1	1	2	2	1	0	2	1	1	0	0	0	0	22
He	1	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	1	1	1	2	2	1	0	2	1	0	0	0	0	0	20
Ka	0	0	1	0	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	0	18
Ta	0	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	13
Qu	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	14
MB	0	0	1	0	1	1	0	0	0	0	0	1	2	2	2	2	2	2	1	2	1	2	1	1	1	0	1	0	1	1	0	31
Ho	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	-	0	6	
Al	1	1	1	0	2	1	1	0	0	0	1	2	2	2	2	2	1	1	1	1	1	1	2	1	1	0	1	0	1	1	0	29
Hu	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	6
Bi	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	9
Va	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	10
El	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	1	1	1	1	1	0	2	0	0	0	0	0	0	0	12
Ap	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4
Tn	0	0	1	0	1	1	0	0	0	0	0	1	2	2	2	2	2	1	1	2	1	0	0	2	1	1	0	0	0	0	0	23
Hr	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	10
Wa	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	7
To	1	0	1	0	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	18
Am	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
MI	0	0	0	0	1	1	0	1	0	0	0	1	-	2	2	2	1	1	2	1	1	0	1	1	1	1	0	1	0	0	0	20
HI	0	0	0	0	1	0	0	0	0	0	0	0	1	--	2	1	1	2	1	1	0	2	1	1	0	0	0	0	0	0	0	15
$\Sigma$	20	2	12	4	39	15	10	12	2	0	18	54	72	72	74	64	53	45	70	55	32	7	62	33	30	9	15	1	4	3	889	

Selected Days: Five quiet 2, 9, 10, 28, 30

Five disturbed 13, 14, 15, 16, 19

Ten quiet 1, 2, 4, 7, 8, 9, 10, 11, 28, 30

TABLE 2 MAGNETIC CHARACTER-FIGURES, C, 1953

December

	Day																																	
	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	28	29	30	31	Sum		
Tr	0	0	1	1	2	1	1	1	1	0	2	1	1	0	1	1	0	1	1	0	0	0	1	0	1	0	0	0	1	0	1	0	0	20
Co	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
So	0	0	1	2	0	1	0	1	1	0	2	2	1	0	1	1	1	1	1	1	0	1	1	2	0	1	0	0	0	0	0	0	24	
Le	0	0	0	1	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	1	9	
Do	0	0	0	1	0	0	0	0	1	0	2	1	1	0	1	0	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	1	13	
Me	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Si	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Es	0	0	0	1	0	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	8	
Lo	0	0	1	2	1	1	1	1	2	1	2	2	2	2	2	1	1	1	1	1	2	2	2	1	1	1	2	1	2	1	0	0	40	
RS	0	0	0	2	1	1	1	2	1	2	2	2	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	0	0	0	0	0	33	
Ag	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Wn	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	5	
Wi	0	0	0	2	1	1	1	2	1	2	2	2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	0	0	30	
Ab	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	27	
Ni	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
Ma	0	0	0	1	0	1	1	1	1	1	2	1	2	0	1	0	1	1	1	1	1	0	1	0	1	0	2	1	1	0	0	0	23	
Na	0	0	0	1	1	1	1	1	0	2	1	1	—	—	0	1	0	1	0	1	1	1	0	1	0	1	1	1	0	0	0	0	20	
CF	0	0	0	1	1	1	0	1	1	0	1	1	0	1	0	1	0	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	2	
Ch	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Fu	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
SM	0	0	0	1	1	0	0	0	1	0	1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9	
Ci	—	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	—	0	0	0	0	1	0	0	0	0	0	0	4	
Eb	0	0	1	1	1	1	1	1	1	1	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	28	
Tl	0	0	1	1	1	1	1	1	1	2	2	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30	
SF	0	0	0	0	—	0	—	0	—	—	1	1	—	0	0	0	0	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	7	
Tu	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	
IK	0	0	0	0	0	0	0	—	—	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	5	
Ks	0	0	1	0	1	0	1	0	1	0	2	2	2	1	1	1	1	1	0	1	1	0	1	0	1	1	0	1	1	0	0	0	23	
SJ	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Te	0	0	0	0	0	0	0	0	1	0	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8	
He	0	0	0	1	0	0	0	1	1	0	2	1	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	11	
Ka	0	0	0	1	0	0	0	1	1	1	1	1	1	1	0	0	1	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	12	
Ta	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	9	
Qu	0	0	0	1	1	0	0	1	0	1	1	1	0	0	0	0	1	0	1	0	1	0	0	0	1	1	0	0	1	0	0	0	14	
MB	0	0	1	1	0	1	1	1	1	1	2	2	1	1	1	1	0	1	1	0	1	1	1	1	1	1	2	1	1	1	0	0	30	
Ho	0	0	0	0	0	—	0	0	0	—	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Al	0	0	1	1	1	1	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	26	
Hu	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Bi	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	10	
Va	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0	1	0	0	0	1	1	1	1	1	0	0	0	0	0	
El	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Ap	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Tn	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	23	
Hr	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Wa	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	
To	—	0	0	1	0	0	0	1	1	0	0	1	0	1	—	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Am	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
MI	0	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	8	
HI	0	0	0	1	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	8	
$\Sigma$	0	0	1	1	27	14	17	11	19	27	14	56	51	36	11	17	9	19	9	16	16	17	33	16	9	17	16	30	20	30	9	3	590	

Selected Days: Five quiet      1, 2, 23, 30, 31

Five disturbed 11, 12, 13, 22, 29

Ten quiet      1, 2, 3, 10, 16, 21, 23, 26, 30, 31

TABLE 3 INTERNATIONAL MAGNETIC CHARACTER-FIGURES, Ci, 1953  
(Based on data of Table 2)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.8	0.1	0.6	0.7	0.2	0.1	1.1	0.7	0.8	0.8	0.4	0.0
2	1.0	0.2	1.7	0.8	0.1	1.5	1.1	0.6	0.9	0.4	0.0	0.0
3	0.5	0.2	1.2	0.8	0.1	1.3	0.8	0.4	1.5	0.3	0.2	0.2
4	0.2	0.3	0.5	1.2	0.1	0.9	0.9	0.5	1.6	0.2	0.1	0.6
5	1.7	0.0	0.5	0.3	0.7	1.0	0.7	0.4	1.1	0.0	0.8	0.3
6	0.9	0.0	0.4	0.3	1.5	0.6	0.6	0.4	0.8	0.2	0.3	0.4
7	0.5	0.0	0.8	0.1	1.1	0.4	1.0	0.5	0.8	0.7	0.2	0.2
8	0.4	0.1	1.2	0.5	1.1	0.1	0.8	0.2	0.5	0.7	0.2	0.4
9	0.6	0.9	1.4	0.4	1.0	0.1	0.6	0.9	0.2	0.5	0.0	0.6
10	0.3	0.8	0.9	0.9	0.6	0.6	0.2	1.0	0.5	0.6	0.0	0.3
11	0.4	0.4	0.2	1.1	0.3	0.5	0.2	0.9	0.8	0.5	0.4	1.3
12	0.1	0.1	0.2	0.8	0.0	0.9	0.7	1.4	0.6	0.2	1.1	1.0
13	0.8	0.1	0.2	0.9	0.0	0.8	0.8	1.2	0.5	0.1	1.5	0.8
14	0.3	0.8	0.7	0.1	0.1	0.5	0.6	0.8	0.0	0.0	1.5	0.2
15	0.1	0.7	0.7	0.6	1.5	0.2	0.7	0.6	1.2	1.6	1.5	0.4
16	0.1	1.0	0.7	1.4	1.8	0.1	0.0	0.5	1.0	1.6	1.3	0.2
17	0.3	0.4	0.1	0.7	1.2	0.5	0.1	0.1	0.7	1.5	1.1	0.4
18	0.8	0.2	0.0	0.6	0.9	0.2	0.2	0.2	1.0	1.5	0.9	0.2
19	1.2	0.6	1.0	1.1	1.1	0.2	0.2	0.1	1.7	1.6	1.4	0.3
20	0.9	0.3	0.7	1.3	0.9	0.9	0.3	0.0	1.4	1.5	1.1	0.3
21	0.4	0.7	1.3	1.2	0.6	0.7	0.2	0.0	1.1	1.1	0.6	0.4
22	0.2	1.3	1.0	1.1	0.8	0.5	0.3	0.1	1.1	0.9	0.1	0.7
23	0.4	1.5	1.3	1.1	0.3	0.0	1.6	1.6	1.4	0.6	1.3	0.3
24	0.8	1.5	1.7	0.6	0.3	0.4	0.9	1.6	1.2	0.7	0.7	0.2
25	1.2	1.3	1.4	0.8	0.2	0.1	0.5	1.3	0.8	0.3	0.6	0.4
26	1.5	1.5	1.0	0.9	0.4	0.0	1.0	1.1	0.5	0.1	0.2	0.3
27	1.4	1.2	1.0	0.5	1.1	0.1	1.5	1.4	0.9	0.9	0.3	0.6
28	1.2	1.0	1.0	0.2	0.4	0.2	1.2	1.3	0.3	0.4	0.0	0.4
29	1.2		0.8	0.4	0.2	1.5	1.2	1.4	0.2	0.6	0.1	0.6
30	0.9		0.9	0.7	0.2	1.4	1.0	1.4	0.5	0.3	0.1	0.2
31	0.6		0.6		0.5		0.8	1.2		0.2		0.1

TABLE 3a MAGNETICALLY SELECTED DAYS 1953

Month	5 Quiet Days					5 Disturbed Days				10 Quiet Days											
	Jan	4	10	15	16	17	5	19	26	27	28	4	7	10	11	12	15	16	17	22	23
Feb	1	5	6	7	13		22	23	24	25	26	1	3	5	6	7	8	12	13	18	20
Mar	11	12	13	17	18		2	9	23	24	25	4	5	6	11	12	13	17	18	20	31
Apr	5	6	7	14	28		4	16	20	21	23	5	6	7	8	9	14	24	27	28	29
May	2	3	12	13	14		6	8	15	16	19	1	2	3	4	12	13	14	25	29	30
Jun	16	19	23	26	27		2	3	4	29	30	1	8	9	16	19	23	25	26	27	28
Jul	11	16	17	18	21		1	2	23	27	29	10	11	16	17	18	19	20	21	22	25
Aug	17	19	20	21	22		12	23	24	27	30	3	5	6	8	17	18	19	20	21	22
Sep	9	14	28	29	30		3	4	19	20	23	8	9	10	12	13	14	26	28	29	30
Oct	5	6	12	13	14		15	16	18	19	20	2	3	4	5	6	12	13	14	26	30
Nov	2	9	10	28	30		13	14	15	16	19	1	2	4	7	8	9	10	11	28	30
Dec	1	2	23	30	31		11	12	13	22	29	1	2	3	10	16	21	23	26	30	31

TABLE 4 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) 1953

Sudden commencements followed by a magnetic storm or a period of storminess. Very important cases are marked by an asterisk.

January

05d 05h 46m	Tr Do Le Lo Si RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci Tl SM SF Ka Ks Tu Qu He Ta Ho Te SJ MB Bi El Hu Tn Va Wa Hr To Am MI Gt.
25d 08h 17m	Do Me Wi Ci SM He Te MB El Wa Gt. Doubtful: So Lo RS Wn Pr IK Eb.

February

n o n e

March

02d 04h 29m	Do Ci SM MB El Va Gt. Doubtful: So IK He Te Bi Tn Hr To. p.s.c.: Ag. s.i.: Am.
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April

24d 17h 50m	So Do Wi Ma Ci Tl SM Ks Qu He MB Bi Tn Hr Am Gt. Doubtful: Lo RS Ni Ab Pr Fu CF Eb Va Wa To. p.s.c.: IK Ta.
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May

05d 21h 16m	So Co Do Le Lo Es Wi Ni Ma Pr IK Ci Tl SM SF Ka Tu Qu He Ta Ho Te SJ MB Bi El Hu Tn Va To Gt. Doubtful: Ab CF Eb Hr Am. p.s.c.: Ag.
14d 16h 40m	Eb SM Te El. Doubtful: So Tl Ka Ks He Tn Gt. s.i.: Qu.
15d 04h 11m	Wi Ci SM Ka Ks Qu Te. Doubtful: So Lo CF Ag IK He Tn To Gt.

June

29d 07h 36m	Do Le Es Wi Ma Pr Qu Te MB El Tn Gt. Doubtful: Lo Me Wn Ab CF IK Tl SM Ks Hr Am.
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July

23d 08h 08m	Tr So Do Le Lo Es Me Wn Wi Ma Pr Fu Ag IK Eb Ci Tl SM Ka Ks Qu He Ta Te SJ MB Bi El Tn Va Wa Hr To Am Gt. Doubtful: RS Ab CF Hu.
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August

12d 00h 45m	Co Do Wi Ma IK Ci Tl SM Ks Qu He Ta MB Bi Hu Tn Am Gt. Doubtful: So Lo Pr Eb SF Ka Hr.
*23d 00h 24m	So Co Do Le Lo Si RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch SM SF Ka Ks Tu Qu He Ta Ho Te SJ MB Bi El Hu Tn Va Wa Hr To Am MI Gt.

September

15d 02h 59m	Tr So Co Do Le Lo RS Es Me Wn Wi Ni Ab Ma Pr Fu CF IK Eb Tl Ch SM SF Ka Ks Tu Qu He Ta Ho Te MB Bi El Hu Tn Va Wa Hr To Am MI Gt. s.i.: Si Ag SJ.
18d 16h 09m	So Co Do Le Lo Es Wn Wi Ni Ma Pr Fu IK Eb Tl Ch SM Ka Ks Tu Qu He Ta Te SJ MB El Tn Va Wa Hr To Am Gt. Doubtful: RS Ab CF Bi MI. s.i.: Tr Ag.

October

15d 08h 45m	Tr So Co Do Le Lo Si Es Me Wn Wi Ab Ma Pr Fu CF IK Eb Ci Tl Ch SM Ka Ks Tu Qu Ta Ho Te SJ MB Bi El Hu Tn Va Wa Hr To Am MI Gt. Doubtful: RS SF
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TABLE 4 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) - continued

November

11d 13h 11m So Do Le Lo RS Es Wn Wi Ni Ab Ma Fu CF IK Eb Ci Tl Qu He Te SJ MB Tn Wa Gt. Doubtful: Pr SM Ks. s.i.:Ka Ta Bi Hu Hr Am.

December

n o n e

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)

Sudden commencements of a pulsation or a bay-disturbance.  
Note. It is not quite certain that the list of p.s.c.'s is complete, as it may be that a p.s.c. has been selected by the observatories out of a great many p.s.c.-like disturbances, which all occurred on the same day. It therefore seems better not to use this list for statistical purposes.

January

02d 18h 17m	Do Wi Pr Fu CF Eb Ci SM Ta MB Bi Hr Gt. Doubtful: SF He To.
05d 17h 42m	So Do RS Wi Ab Pr IK Ci SM Ta MB Gt. Doubtful: Lo CF To.
06d 14h 58m	So Co Lo Wi Ni Ab Fu IK Ci SM SF Ka Ks He Ta MB Bi El Hu Tn Wa Hr To Am Gt. Doubtful: Tr Do Ma Ho. s.i. : CF.
07d 21h 52m	Tr So Do Le Es Wn Pr CF IK Qu Ta Bi Tn Hr. Doubtful: Lo RS MB Gt.
09d 00h 31m	Tr So Do Le Lo Es Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch SM SF Ks Tu He Ta Te MB Bi El Tn Hr Gt. Doubtful: RS Me Ka Qu.
09d 19h 31m	Tr So Wn Wi Ni Pr Fu CF Eb Ci Tl Qu Ta MB Bi El Tn Hr Gt. Doubtful : Lo RS IK SM Ka He.
10d 21h 15m	Tr So Do Le Lo Es Wn Wi Ni Ma Pr Fu IK Eb Tl SM Qu Ta Te Bi Tn Hr Gt. Doubtful: RS MB El.
11d 00h 13m	So Do RS Wn Pr Fu Eb Ci SF Qu Ta Te MB Bi Tn Gt. Doubtful : Lo CF Tl Hr.
11d 00h 36m	So Do Lo RS Wn Wi Pr IK Eb SM Qu He Ta MB El Tn Gt. Doubtful : Ab CF Tl Ch Hr.
11d 19h 37m	So Do Lo RS Wn Qu He MB Bi Hr Gt. Doubtful: Tr Pr CF IK SM.
15d 21h 47m	So Do RS Wi Pr Fu Eb Qu Tn Gt. Doubtful: Tr Lo Wn CF Ka He MB.
16d 22h 59m	So Le Es Wi Fu Eb Qu Ta MB Bi El Tn Hr Gt. Doubtful: Lo Wn Pr SM SF Ka CF.
17d 22h 05m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF IK Eb Ci Tl SM SF Ks Qu He Ta MB Bi El Tn Hr Gt. Doubtful: Ka.
20d 00h 06m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF Ag IK Eb Ci Tl SM SF Ks Qu He Ta MB Bi El Tn Va Hr Gt. Doubtful: Ma.
20d 19h 35m	So Do RS Wn Pr Fu CF IK Qu MB Bi Gt. Doubtful: Lo Eb SM Ka He. s.i. : Tr.
22d 21h 00m	Tr So Do Le Lo RS Es Wn Wi Ma Fu Eb SM Qu Ta MB Bi El Tn Hr Gt. Doubtful: Ab CF.
23d 00h 27m	Tr Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF Ag IK Eb Ci Tl SM SF Qu He Ta SJ MB Bi El Tn Hr Gt. Doubtful: So Ch Ka.
24d 00h 36m	Lo Wi Ab Pr Fu Ag Ci SM SF Ka He Ta MB Bi El Hu Tn Hr. Doubtful : So Si RS Wn Ma CF IK Ks. s.s.c.: Tl Va To. s.i.: Me Am MI.
24d 22h 17m	Tr So Do Lo Eb Qu Tn. Doubtful: RS Wn Pr CF IK SM Ks MB.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued  
(January)

25d 23h 50m	Lo Wi Ab Ma Pr Fu Ag IK Eb Ci Tl SF Qu Ta Te MB Bi El Hr Gt. Doubtful: Do Ch Ka Tu.
26d 02h 47m	Ag IK Eb Ci SM SF Ta Te MB. Doubtful: RS Ab Pr Ka Tn Hr Gt.
27d 11h 45m	So RS Ag Ci SM Ta Ho Te MB Bi El Tn Am Gt. Doubtful: Lo Ab CF IK Ka Ks Qu MI.
28d 22h 02m	So Do Le Lo RS Es Wi Ni Ab Ma Pr Fu IK Eb Ci Tl Ch SM SF Ka Tu Qu Ta Te SJ MB Bi El Tn Hr. Doubtful: CF. s.s.c.: Ag. s.i.: Gt.
29d 18h 14m	So Do Le Lo RS Es Wi Ni Ab Ma Pr Fu IK Eb Ci Tl SM SF Qu He Ta Bi El Tn Hr Gt. Doubtful: Ka MB. s.i.: CF Ag Ks.

February

01d 21h 02m	So Do Lo Fu CF Eb Ci SM Qu He Ta Bi El Tn Gt. Doubtful: RS Ks MB.
03d 01h 40m	So Do Fu CF Ci SM MB Bi Gt. Doubtful: Lo RS Ab IK Eb He Tn.
03d 22h 28m	So Do Pr Fu Eb Ci SM Ks Qu Ta Bi El Tn Hr Gt. Doubtful: Lo RS Wn Ab CF IK MB.
04d 13h 39m	Ci SM Ka Qu MB Bi Tn Wa Hr To Am MI. Doubtful: Co Si RS.
04d 18h 18m	So Do Lo RS Wn Wi Pr Fu CF IK Ci Qu MB El Tn Hr Gt. Doubtful : Ab Ka.
05d 18h 30m	So Do Lo Rs Wn Fu Qu Bi Tn Hr Gt. Doubtful: Pr CF MB.
06d 17h 01m	Do Do Me Pr CF SM Ka Ks Qu Ta MB Bi El Tn Hr. Doubtful: Lo He Gt.
08d 01h 26m	CF Eb Ci Ta MB Bi Tn Va Hr. Doubtful: IK Ka Qu.
09d 00h 23m	Do Lo RS Wn Wi Ni Ab Pr Fu CF IK Eb Ci Tl SM SF Qu Ta MB Bi El Tn Va Hr Gt. Doubtful: So Ka Ks.
09d 04h 42m	Do RS Pr CF Ag Eb Ci Tl Ch SM Tu Ta SJ MB Bi El Va Hr Gt. Doubtful : So Lo Tn.
09d 21h 10m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu Ag IK Eb Ci Tl SM Ka Ks He MB Bi Tn Wa Hr To MI Gt. Doubtful: CF Am.
09d 21h 39m	So Do Le Lo Es Wi Ab Pr Ag IK Eb Ci Tl SM SF Ta MB Bi El Tn Va Hr Gt. Doubtful: RS Wn Ma CF Ka.
10d 20h 57m	So Fu Ag SM Qu He Ta Bi El Tn Gt. Doubtful: Lo Ab Pr CF IK Tl MB. s.i. : To.
10d 21h 20m	So Do RS Ab Pr CF Ci Ta MB Gt. Doubtful: Lo Wi Tl SM.
11d 20h 13m	Tr So Do RS CF Tl Qu Ta Bi El Tn. Doubtful: Lo Pr IK Eb MB Gt.
12d 17h 20m	So Do Wi Pr CF Qu Bi El Tn. Doubtful: RS Wn IK Eb Ka MB Gt.
13d 21h 00m	So RS Fu CF Eb Ci Qu Bi Tn Gt. Doubtful: Lo Pr Tl Ka He MB.
14d 00h 40m	Do Le Lo RS Es Wi Ab Pr Fu CF IK Eb Ci Tl SF Qu Ta MB Bi El Tn Hr Gt. Doubtful: Tr So Ma.
14d 19h 00m	So Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF IK Eb Ci Tl Ka Tu Qu He Ta Te SJ MB Bi El Tn Wa Hr Gt. Doubtful: Ag SM.
15d 23h 07m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF IK Eb Ci Tl SM Qu He Ta SJ MB Bi El Tn Hr Gt. Doubtful: Ma Ag SF Ka.
15d 23h 56m	So Do Lo Wi Ni Ab Pr CF Eb Ci Tl SF He Ta Te MB El Tn Hr Gt. Doubtful: RS Wn Ma Fu IK Ka. s.i. : Ag.
16d 16h 12m	So Do Lo Si RS Wn Ni Ab Pr Fu IK Ci Tl SM SF Ka Ks Tu Qu He Te SJ MB Bi El Tn Wa Hr To Am Gt.Doubtful:Ma CF Eb Ho.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (February)

17d 03h 16m	Do CF Eb Ci Tl Qu MB Bi El Tn Va Hr. Doubtful: Lo IK Ch SM SF Ka
18d 07h 51m	Pr CF Eb Ci Tl SM Ka Ta MB El. Doubtful: SF Qu Tn.
18d 17h 46m	So Do Le Lo RS Es Wn Wi Pr CF IK SM Ka Qu Ta MB Bi El Tn Hr Gt. Doubtful: Tr Ab Eb SF Wa.
18d 22h 40m	Do RS Pr Fu CF Eb Tl SM Qu Ta Bi Tn Gt. Doubtful: So Lo Ab IK MB.
19d 23h 19m	Do RS CF Eb Ci Tl SM Ta MB Gt. Doubtful: Lo Ab Pr IK Qu Hr.
19d 23h 51m	Fu CF Eb Tl Qu Ta MB Gt. Doubtful: Lo RS Ab Pr IK Ka Hr.
20d 17h 25m	So Do Lo RS Wn Wi Ni Pr Fu CF IK Ka Qu He Ta MB El Tn Hr Gt. Doubtful: SM Wa.
21d 00h 37m	So Do Le Lo RS Es Wn Wi Ni Ab Pr Fu CF IK Eb Ci Tl SM SF Ka Ks Qu Ta MB Bi El Tn Va Hr Gt. Doubtful: Ma.
21d 00h 57m	Tr So Do Lo Ab Pr CF Ag IK Eb Ci Tl SM SF Ka Qu He Ta MB Bi El Tn Gt. Doubtful: RS Ma.
21d 19h 05m	So Do Le Lo RS Es Wn Wi Ni Pr CF IK Eb Tl Ka Ks Qu Ta Te MB Bi El Tn Va Hr Gt. Doubtful: Tr Ab Fu SM.
22d 00h 36m	CF Ag Ch Qu Ta Te MB Bi Va Hr. Doubtful: Lo RS Pr Fu Ka.
22d 00h 45m	Do RS Wi Pr CF Ag IK Eb Tl Ch SM Ta MB Bi El Tn Hr Gt. Doubtful : Lo Wn Ab Fu SF Ka.s.i.: So.
22d 23h 28m	Do Lo RS Wi Ab Pr CF Ag IK Ci Tl SM SF Qu Ta MB Bi El Va Hr Gt. Doubtful: Ma Eb Ch He Tn To. s.i. : Wn.
23d 19h 24m	Pr CF Wi SM Ks Ta MB El Tn Va Hr Gt. Doubtful: RS IK He Am. s.i. : Wn Ab.
23d 23h 40m	Do RS Ab Pr CF IK Ci SM Qu Ta MB Bi El Tn Hr. Doubtful: Tr Lo Fu Ag Ch He To Gt.
24d 19h 36m	Tr Do Lo RS Wi Ab Pr IK Eb Qu He Ta Te MB Bi El Tn Hr Gt. Doubtful : Ma CF Tl SM SF Tu SJ Am. s.i. : Wn.
25d 00h 38m	Do RS Ab Pr Ag Ci SM SF Ka Ta Te MB Bi Gt. Doubtful: IK He Hr.
26d 17h 58m	So Do Lo RS Wi Ab CF Ci Ks Qu He MB Hr. Doubtful: Ag IK SM Gt.
27d 20h 58m	Tr So Do Qu. Doubtful: RS IK MB.
27d 21h 46m	So Do Le Lo RS Es Wi Ni Ab Ma Pr IK Eb Ci Tl SM SF Ka Tu Qu He Ta MB Bi El Tn Va Hr Gt. Doubtful: Tr Wn CF SJ Am.
28d 04h 12m	So Do Lo Pr CF IK Ci SM SF He Ta MB Bi El. Doubtful: RS Fu Tl Qu To.

March

01d 20h 24m	So Do RS Pr IK SM Qu He Ta MB Tn Hr. Doubtful: Lo Wn Fu CF Eb Ka.
01d 20h 55m	So Do Le Es Wi Ab Ma Pr IK SM Tu Qu Ta Bi El Tn Hr Gt. Doubtful : Tr Lo RS Wn Fu CF Eb Tl Ka MB.
03d 19h 27m	Tr So Do Lo RS Wi Pr Fu IK SM Qu He Ta MB Bi El Tn Gt. Doubtful : Ab CF Ka.
03d 21h 45m	So Do Lo RS Wi Ab Ma Pr Fu IK Eb SM Qu Ta Bi El Hr Gt. Doubtful : CF MB.
03d 20h 12m	Tr So Do RS Ab Pr Fu CF SM Ks Qu He Ta MB El Tn Hr Gt. Doubtful : Lo IK Ka.
05d 03h 54m	Ci Ka He Ta MB Bi El Am. Doubtful: CF IK SM Te Va To. s.i.: Hr.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (March)

05d 20h 20m	So Do RS Fu Qu Te. Doubtful: Lo Tl Ka MB.
05d 20h 42m	So Do Le Lo RS Es Wn Wi Ab Ma Pr CF IK Eb Tl SM Ks Qu He Ta Te MB Bi El Hr Gt. Doubtful: Fu Ka Tu SJ.
06d 23h 50m	Me CF IK Eb Ci Ch Ta Te SJ MB Bi El Hr. Doubtful: Do Lo RS Wn Pr Fu Tl Ka Va Am Gt. s.i.: So Ag.
07d 18h 04m	So Do Le Lo Es Wn Ni Ma Pr Fu CF IK SM Ks Qu He Ta Te MB Bi El Tn Wa Hr To Am Gt Al. Doubtful: RS Wi Eb Tl SJ.
08d 19h 37m	So Do Wi Pr IK Qu Ta Te MB Tn Hr Gt. Doubtful: Lo RS Fu CF SM
08d 22h 15m	Do RS Ag SM Ks Qu He Ta MB Bi El Tn Hr. Doubtful: Lo Fu CF IK. s.i.: Am.
08d 23h 52m	Do Wi Ci Ta MB Bi Hr. Doubtful: Lo Fu CF IK Eb He Gt.
09d 11h 07m	Ka Ta MB To Am. Doubtful: Do SM Tn Wa.
09d 20h 00m	So Do RS Wi Ma Fu SF Ks Qu He Ta Te Al MB Bi El Tn Gt. Doubtful: Lo IK Ka
12d 00h 46m	RS Ab Pr CF Ci Tl SF Qu He Ta MB Bi El Tn Hr Gt. Doubtful: Do Lo Fu IK.
13d 21h 27m	Tr So Do Le Lo RS Es Wn Wi Ni Pr Fu CF IK Eb Tl Qu Ta Al Bi El Tn Va Hr Gt. Doubtful: Ab SM Ka.
14d 00h 06m	So Wn SM MB Tn Va Gt. Doubtful: Do Lo RS Fu IK SF Ka He.
14d 00h 19m	Do RS Wi Pr Fu IK Eb Ci SM Qu He Ta MB El Tn Hr Gt. Doubtful: Lo Ab Ka. s.i.: So SF Te Bi Am.
16d 12h 35m	SM Ka MB To Am MI. Doubtful: So Wa.
16d 21h 00m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ks Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Ka Te Wa. s.i.: Ag.
19d 00h 33m	So RS Wn Fu CF Eb Tl SM Ta MB Va Gt. Doubtful: Lo Ab SF Ka Te Hr.
19d 20h 10m	Do Wi Eb SM Ta MB El Gt. Doubtful: Tr Lo RS Ab IK SF He Hr.
20d 00h 25m	So Do RS Ci SM Ta MB Bi. Doubtful: Fu CF IK Ch He Ta El Hr Gt SF.
21d 02h 11m	Do Si RS Fu Ag IK Ch SM Qu He Ta Te MB Bi El Tn Hr MI Gt. Doubtful: Lo Pr CF Tl Ka Am.
21d 19h 15m	Do Lo RS Pr Ag IK Ci Tl SM SF Qu He Al SJ MB Bi El Tn Hr Gt. Doubtful: So Ab Fu Ka.
22d 01h 19m	Do Lo Me Wn Wi Ab Ag Ci Tl Ch Sm Sf Ka Tu Ta SJ MB El Va Hr Gt. Doubtful: So Si RS Pr CF IK Eb He Ho Te Am.
22d 20h 48m	So Do Le Lo RS Es Wi Ab Pr Fu IK Ci SM Qu He Te Al MB Bi El Tn Gt. Doubtful: Wn CF SF Hr.
22d 21h 42m	Tr Do Ta MB Bi Tl Tn. Doubtful: So CF IK SM Hr Gt. s.i.: Al.
24d 03h 50m	Me Ag SM Qu Te SJ MB Va. Doubtful: RS CF He Am Gt.
24d 21h 10m	Do RS Wi Pr Ag IK Ci SM SF Ks Qu He Ta Te MB Bi El Tn Am Gt. Doubtful: Tr So Lo Ab CF Tl.
25d 18h 02m	So Do Lo RS Wi Ni Ab Ma Pr IK Eb Ci Tl SF Ks Qu He Ta Al MB Bi El Tn Hr Am Gt. Doubtful: Ag SM Wa To MI.
26d 11h 17m	So Ci SM Ks Ta MB To Am. Doubtful: Do RS Wi IK Qu Tn MI Gt.
28d 19h 32m	Tr So Do Le Lo RS Es Ma Pr Fu Eb Ci Tl SM Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Wn Ab IK SF.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (March)

29d 19h 32m	So Do Le Lo Es Wi Ma Pr CF IK Eb SF Qu He Ta Al MB Bi El Hr Gt. Doubtful: Wn Fu Tl SM.
29d 21h 50m	Do Lo Wi Ni Ab Pr CF Eb SM Qu Ta Te MB El Hr Gt. Doubtful: RS Wn Ma He Fu. s.i. : So.
30d 04h 23m	Si Me Ag Ch SM Tu He SJ MB Am MI Gt. Doubtful: Lo RS Pr Fu CF IK Te Va.
31d 23h 42m	Do RS CF Ag Ci SM Ta MB Hr Gt. Doubtful: Lo Pr Fu IK SF.

## April

01d 00h 25m	So CF Ag Eb Ci Tl Qu Te Gt. Doubtful: Tr Lo Ka MB.
02d 00h 24m	So Do Le Lo RS Es Wn Wi Ab Ma Pr Fu CF IK Eb Ci Tl Ch SM SF Ka Qu He Ta SJ MB El Tn Va Hr Gt. Doubtful: MI.
02d 19h 05m	So Ka Qu Al. Doubtful: Lo Fu CF Eb MB MI.
02d 20h 28m	So Do RS Ma Pr Eb Tl SM Ks Qu He Ta Al MB El Tn Hr Gt. Doubtful : Tr Lo Fu CF IK.
03d 01h 10m	RS CF AG Ci SM Ta MB Tn Hr Gt. Doubtful: So Lo Pr Tl.
03d 18h 44m	So Do Le Lo RS Es Wn Wi Ma Pr Fu CF IK Eb Tl SM Ks Qu Te Ta MB Bi El Tn Hr Gt. Doubtful: Ab Va.
04d 18h 48m	So Co Do Le Lo RS Wi Pr Fu IK Ci Tl SM Ka Ks Qu He Te MB Tn Wa Hr To Am Gt Es. Doubtful: Si Ma CF SF.
04d 22h 21m	Do Lo Ab Ma Pr Tl SM Ks He Ta MB Bi El Tn Hr MI Gt. Doubtful : So RS Wn CF IK Eb Ka.
05d 19h 27m	So Do Lo RS Wn Pr Fu CF Ks Qu Al Gt. Doubtful: Ab IK SM He MB Hr.
06d 22h 18m	Do Le RS Es Wi Ma Pr Fu Eb Tl SM Ks Ta MB El Gt. Doubtful : CF Ka Qu Hr. s.i. : So.
08d 20h 48m	Tr So Le Es Ma Pr CF Eb Tl Ka Qu Ta MB Bi Tn Hr Gt. Doubtful : Lo RS .
08d 21h 20m	So Do Wi Ab Pr CF Eb Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Tr Lo RS .
09d 00h 03m	So RS Wi Ab Pr Fu Eb Ci SM SF Ta MB Bi El Tn Hr Gt. Doubtful : Lo CF IK Tl.
09d 03h 10m	Ag Eb Ch SM Ks Tu Te SJ MB. Doubtful: RS Me CF Ka Va.
10d 21h 17m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr CF IK Eb Ci Tl SM Ka Ks Qu Ta Al MB Bi El Tn Hr Gt. Doubtful: Fu He To.
13d 00h 44m	Lo RS SM SF Qu Ta MB Bi El Hr. Doubtful: Pr Fu CF He.
15d 02h 08m	So Do Le Lo RS Es Wn Ab Fu CF Ag Eb Ci Tl Ch SM Ks Qu Ta Te MB El Hr Gt. Doubtful: Pr IK Ka SJ Va.
16d 01h 04m	So Do Lo CF Eb SM Qu Ta Te MB Bi Va Hr Gt. Doubtful: RS Wn Pr Fu Ag Ka Am.
16d 16h 18m	So RS Wi Pr Ci Qu He Ta Al Bi El Tn. Doubtful: Lo CF IK Ab SM Ka MB Hr.
16d 20h 12m	Tr So Do RS Pr Eb Ci SM Qu Ta Bi Tn Gt. Doubtful: Lo Ma Fu CF Ag Ka MB Hr
16d 20h 50m	So Do Lo RS Wi Ni Ab Ma Pr Fu IK Eb Ci Tl SF Ka Ks Qu He Ta Al MB Bi El Tn Hr. Doubtful: CF Ag SM Tu SJ Gt.
18d 01h 58m	CF Ag Ci Ch SM He Ta Te MB El. Doubtful: Lo RS SF.
19d 03h 30m	So Do Lo RS CF Ag IK Ci Ka Ks Ta Te MB Bi El Gt. Doubtful : Wn Pr Fu Tl Ch SF Qu Hr To.
19d 11h 50m	So SM Ka Ta El To Am MI. Doubtful: Lo MB Tn Gt.
20d 21h 10m	Tr So Do Lo RS Wi Ab Ma Pr Fu IK Eb SM Ks Qu Ta Te MB Bi El Tn Hr Gt. Doubtful: Wn CF Tl SF He Va Am.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(April)

21d 00h 04m	So Do RS Wi Ab Ma Ag IK Eb Ci Tl SM SF He Ta Te Bi El Tn Hr Gt. Doubtful: Lo Wn CF Ka Tu MB.
21d 17h 37m	So Do Lo RS Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci SM Ks Qu He Ta Te Al SJ MB Bi El Tn Wa Hr Gt. Doubtful: Tl SF Tu Va. s.i.: Wn.
21d 22h 34m	So Do Pr Fu SM Ta MB El Hr Gt Ag. Doubtful: Lo RS Ab CF Ka He.
23d 18h 40m	Tr So Do RS Wi Ma Pr Fu CF IK Ci Qu He Ta Al Bi El Tn Gt. Doubtful : Lo Wn Ab SF MB Hr.
23d 22h 57m	Tr So Do Lo Pr Fu CF Ag Ci He Ta MB Bi El Gt Ch. Doubtful : IK Tl SF Hr.
25d 22h 22m	So Wn Ni Pr CF Eb SM Qu Ta MB Bi El Tn Hr. Doubtful: Lo Ma Tl Gt.
25d 23h 05m	So Do Lo RS Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ks Qu He Ta Al MB Bi El Tn Va Am Gt Hr. Doubtful: Tr Wa To.
26d 22h 09m	Tr So Do Le Lo RS Es Wn Wi Ni Ma Pr CF IK Eb Ci Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Hr Gt.Doubtful:Ab Fu Ag SM Tu.
27d 01h 06m	So Do RS Ab CF Ci SM Ka Qu Ta MB El. Doubtful: Lo Pr IK Eb Tl SF Hr Gt.
27d 23h 15m	So Do Le Lo RS Es Wn Ma Pr Fu CF Ag Eb Ci Tl SM SF Ka Qu Ta Al MB Bi El Tn Hr. Doubtful: Ab IK Te Gt.
29d 11h 12m	Si Me Ka Qu Ta MB Bi To Am MI. Doubtful: Th Wa Hr Gt.
30d 01h 15m	RS Wn Pr CF Ag Eb Ci Tl SM SF Ka Qu Ta SJ MB Bi El Va Hr Gt. Doubtful: So Ab Fu IK Ch.
30d 16h 24m	So Do Lo Pr Fu IK Eb Ci SM Ka Qu He Ta Al MB Bi El Tn MI Gt. Doubtful : RS Wn Ma CF SF Wa Hr.

May

03d 20h 00m	Tr So Do RS Wn Ma Pr Fu IK Eb Ci Ka Ks Qu Ta Al MB Bi El Tn Hr Gt. Doubtful: Lo CF Tl .
04d 20h 50m	Tr So Do Lo RS Wn Wi Ma Pr Fu CF IK Eb Ci Tl Ka Qu Ta Al SJ MB Bi El Tn Hr Gt. Doubtful: Co SF He.
05d 03h 30m	So CF Ag Ci Ch SM Ka Ta MB Bi El Va Hr Am Gt. Doubtful: RS Wn Fu Eb Tl.
05d 18h 47m	So Do Le Lo RS Es Wn Wi Ni Ma Pr Fu Ag IK Eb Ci Tl SM Ka Ks Qu Ta Al SJ MB Bi El Tn Hr Gt. Doubtful: Co CF He.
06d 01h 34m	Do Lo RS Me Pr Ik Ci SM SF Ks He Ta Al MB Bi El Tn Hr MI Gt. Doubtful: CF Eb Ch Am. s.i. : So Ag.
06d 20h 50m	So Do Le Lo Es Wi Ab Ma Pr IK SM Ks He Ta Al MB El Tn Hr Gt. Doubtful: RS CF Ci Qu MI. s.i. : Tr Bi.
08d 01h 08m	So Do Lo RS CF Ag IK Ci Tl SM Ta Te Al MB Bi El Tn Hr Gt. Doubtful : Eb Ka He.
08d 18h 09m	So Do Lo RS Pr Ci SM He Ta Te Bi El Tn Gt Al. Doubtful: Fu CF Ag IK Tl MB Hr.
11d 01h 27m	Do Wn CF Eb Ci Tl Ch Ka Ta SJ MB El Tn Hr Gt. Doubtful: So RS Ma Pr IK Va.
15d 20h 10m	RS Wi Ag IK Ci SM Ta Bi El Tn Gt. Doubtful: Ab Ma CF Tl Ks He MB MI.
15d 29h 51m	Wi Pr IK Ci SM Ka Ks Qu Ta Al Bi El Tn Hr. Doubtful: Lo RS Ab Ma CF Tl Te MB Am MI Gt.
16d 21h 18m	Tr Ag IK Ci SM Ka Qu Ta Te MB Bi El Tn. Doubtful: Lo RS Ab Pr CF Eb Tl SF Ks MI.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (May)

18d 22h 06m	Do RS Wn CF IK Ci SM Ks Qu Ta MB Bi El Hr Gt. Doubtful: So Lo Ab Ma Pr Tl He.
19d 00h 10m	Tr So Do Le Lo RS Es Wn Wi Ab Ma Pr CF IK Eb Ci Tl SM SF Ka Ks Tu Qu He Ta Al SJ MB Bi El Va Hr Gt. Doubtful: Te.
19d 20h 27m	So Do Wi Pr CF IK Qu He Ta MB Tn Hr Gt. Doubtful: Tr RS Ma SM Ka. s.i. : Wn.
21d 20h 15m	So Do Le RS Es Pr CF IK Ci Tl SM He Ta MB Bi El Tn Hr Gt. Doubtful: Lo Wn.
22d 19h 29m	Do Le RS Es Wn Ni Ma Pr IK Ci SM He Ta Al SJ Bi El Tn Hr Gt. Doubtful: So Lo Ab Eb Tl Ka Te MB To CF.
23d 20h 10m	Pr Ci SM He Ta Te Al Bi El Gt. Doubtful: So RS CF IK Tl Ka Ks MB Tn Hr.
24d 18h 58m	Tr So Do Lo RS Wn Wi Ni Ab Pr IK Eb Tl SM Ka Ta Al MB Bi El Tn Wa Hr To Gt. Doubtful: Ma Ci.
25d 22h 42m	So Do Le Lo RS Es Wn Wi Ni Ma Pr CF IK Eb Ci Tl Ch SM SF Ka Ta Ho SJ MB Bi El Tn Va Hr Gt. Doubtful: Ab Tu.
27d 07h 01m	Ag Tu Ho Te Am. Doubtful: Do Me CF SM MB Tn Ch.
29d 23h 45m	Lo Wn Fu CF IK Eb Ci Tl Ch SF Ka Qu Ta SJ MB Bi El Va Hr Gt. Doubtful: RS Ma Tu.
30d 21h 46m	Do Lo Wn Pr Fu Eb Ci Tl Qu Ta Al MB Bi El Tn Hr Gt. Doubtful: RS Ma CF SM.
31d 19h 52m	Do Lo Wn Wi Pr Fu CF IK Ci Tl SM Qu Ta Al MB Bi El Tn Va Hr Gt. Doubtful: RS Ma Eb Ch To.

## June

02d 03h 00m	Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci SM SF Ks He Ta MB Bi El Tn Va Hr Gt. Doubtful: Tr Tl Ka SJ.
02d 06h 32m	Do Lo Ma Ci Ka Ks Ta Al MB El Tn. Doubtful: SM Hr Am Gt.
05d 19h 14m	Tr Co Do Le Lo RS Es Wn Ni Ab Ma Pr Fu Ag IK Eb Ci Tl SM Ka Ks Qu He Ta Al SJ MB Bi El Tn Hr To Gt. Doubtful: CF Tu Te.
11d 21h 44m	Tr Do Le Lo RS Es Wn Ab Ma Fu CF IK Ci Tl SM Ks Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Ka To.
12d 18h 07m	Pr Ci SM Qu Ta Al MB Tn Wa To Gt. Doubtful: RS CF Ka.
12d 20h 35m	Fu Ag He Ta Al MB Bi El Tn Hr Gt. Doubtful: Do Lo RS Ma Pr CF SM
13d 18h 09m	Do Lo RS Pr Fu CF Ci SM Qu He Al Gt. Doubtful: Wn IK Ka Te MB Hr.
13d 18h 55m	Do Lo Wi Pr Ci SM Qu Ta Al MB Bi El Va Gt. Doubtful: RS Wn Fu CF IK Ka He Hr.
14d 17h 59m	Do Lo RS Fu Qu He Ta Al Bi El Gt. Doubtful: Pr CF IK SM MB Hr. To.
15d 13h 09m	Co Si Ci Tl Ka Qu Ta Al MB Va Wa To Am MI. Doubtful: Pr CF.
20d 13h 44m	Co Si Ci SM Ka Ta Al Mb El Tn To Am MI. Doubtful: Do CF IK Tl He Ho Gt.
20d 20h 18m	Tr Do RS Wi Ab CF Ag IK Ci SM Ks He Al El Tn Hr Gt. Doubtful : Lo Wn Pr Tl Qu MB Am.
21d 18h 05m	Do Lo RS Wi Ni Ab Ma Pr IK Eb Ci SM Qu Ta Al Bi El Tn Hr To Am Gt. Doubtful: Wn Fu CF Ka He MB.
21d 21h 55m	Le Lo Es Wn Ni Ma Pr Fu CF IK Tl Qu He Ta Al MB Bi Hr Gt. Doubtful : RS.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (June)

25d 20h 11m Do Lo RS Wn Ma Pr CF IK Eb Ks Qu Ta Al MB Bi El Tn Hr Gt.  
Doubtful : Fu He SJ.

26d 17h 55m Lo Wn Pr Eb Ci Ks Qu Ta Al MB Bi El Tn Hr. Doubtful: RS  
Fu CF IK Tl SM.

27d 22h 04m Lo Wn Ma Pr Fu CF IK Eb Gi Tl Ch SM Ks Qu Ta Al SJ MB Bi  
El Tn Va Hr Gt. Doubtful: RS Ka.

29d 07h 40m Lo Gi SM Ks Tn. Doubtful: Do RS IK Te MB Bi. s.s.c.: Wi  
Pr. s.i. : CF Gt

29d 09h 18m Me IK Ci SM Ks Qu MB Bi El Tn To Am MI. Doubtful: RS SF  
Hr. s.s.c.: Ag.

July

02d 02h 01m So Do Le Lo RS Es Ab CF Ag Eb SM Ta Te SJ El Tn Va Hr.  
Doubtful : IK Tl Ch Ka He MB Am . s.i. : Ci Gt.

02d 21h 52m Tr So Do Lo CF SM Ks He Ta Bi El Tn Hr Gt. Doubtful: RS  
IK Ka MB.

05d 00h 37m Ag. Doubtful: MB.

05d 05h 53m Ag Ci Ka Ks Ta Te Tn To Am MI. Doubtful: So Lo Me CF IK  
SM Qu MB Hr Gt

06d 00h 37m So Do Le Lo RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Ci  
Tl Ch SM SF Ka Tu Qu Ta Te Al Sj MB Bi El Hu Tn Va Hr To  
Gt.

07d 23h 18m So Do Lo RS Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ka  
Ks Tu Qu He Ta Al MB Bi El Tn Va Hr Gt.

08d 20h 31m So Do Lo RS Wn Pr Fu CF Ci SM Qu Ta Al Tn Hr Gt. Doubt-  
ful : Tr Ab Ma IK He MB.

10d 14h 40m Co Ka Qu To Am MI. Doubtful: So RS.

11d 22h 51m So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr CF IK Eb Ci Tl Ch SM  
Ka Qu Ta SJ MB Bi El Tn Va Hr. Doubtful: SF.s.i.: Tr Ag.

12d 20h 26m So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci SM Ks  
Qu He Ta Al Bi El Tn Hr To Gt. Doubtful: Tl SJ MB Am.

13d 20h 50m Tr So Do Le Lo RS Es Wn Wi Ma Pr Fu CF IK Ci Ks Qu Ta Al  
SJ Bi El Tn Hr To Gt. Doubtful: Ab Eb SM He MB.

15d 00h 23m Ab Pr CF Ci Tl SM SF Ka Ta MB Bi El Va Hr. Doubtful: So  
Lo RS Wn IK Gt.

18d 23h 34m So Lo Ma Pr CF IK Eb Ci Tl SM Ks Qu Ta Al SJ MB Bi El Tn  
Hr Gt. Doubtful: RS Wn Ab Fu Ka Va.

19d 20h 00m So Lo RS Ma Pr CF IK Qu Ta Al MB Bi El Tn Hr. Doubtful:  
Do Wn Ab SM Ka Gt. s.i. : Tr.

21d 00h 18m So RS Pr Fu CF IK Ci Tl Ch SM Ta Al SJ MB Bi El Tn Hr.  
Doubtful : Do Lo Wn Ag SF Ka Va.

21d 21h 52m Tr So Do Le Lo RS Es Wn Wi Ni Ma Pr Fu CF IK Eb Ci Tl SM  
Ks Qu He Ta Al Bi El Tn Hr Gt. Doubtful: Ch Ka MB.s.i.:  
Ab.

22d 21h 21m So Do Lo RS Wn Ma Pr CF Ci Ka Ks Qu Al MB Bi El Tn Hr Gt.  
Doubtful : Fu SM He

23d 21h 46m Do Le Lo Es Pr IK SM Ka He Ta Bi El Tn Hr Gt. Doubtful:  
So RS Ab Fu CF Ci MB.

24d 11h 48m Do IK El. Doubtful: So Lo RS Ma Pr SM Ka He MB Tn.s.i.:  
Tr Wi Hr.

25d 23h 54m So Ma Pr CF Ag Ka Ta MB Tn Hr. Doubtful: Lo RS Wn Ab.

26d 00h 35m Do Le Lo RS Es Ab Ma Pr Fu CF IK Tl SM Ks Qu He Ta Al MB  
Bi El Tn Gt. Doubtful: Tr Wn SF Ka To.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (July)

27d 18h 14m	So Do Le Lo RS Es Ni Ab Pr CF IK Ci SM Ka Ks Qu He Ta Al MB Bi El Hr Gt. Doubtful: Ma Tn. s.i. : Ag.
28d 21h 48	Tr So Do Lo RS Qu He Bi El Tn Gt CF SM. Doubtful: Pr IK Ka Hr.
29d 20h 12m	So Do Le Lo RS Es Wi Ab Ma Pr Fu CF IK Tl SM SF Ks He Ta Bi El Tn Hr Gt. Doubtful: Eb Ka MB. s.i. : Ci.
29d 23h 21m	So Do Le Lo RS Es Wn Wi Ab Ma IK Ci Tl Ch SM SF Ka Qu Tu Ta MB Bi El Tn Va Hr To Gt Pr Fu CF. Doubtful: Te SJ.
30d 21h 00m	So Do Le Lo RS Es Pr Fu CF Ag IK Ci Tl SM Qu He Ta Te Bi El Tn. Doubtful: Tr Ab Eb Ka MB Hr.
31d 19h 07m	So Do Le Lo RS Es Wn Wi Ni Ma Pr Fu CF IK Qu Ta Hr Gt. Doubtful: Ab Eb SM.

## August

01d 20h 50m	So Do Le Lo RS Es Ma Pr CF IK Ci SM SF He Ta Bi El Tn Hr Gt. Doubtful: Fu Tl Ka Ks MB.
02d 19h 20m	So Do Le Lo Es Wn Wi Ni Ab Ma Pr Fu CF IK Ci SM Ka Ks Qu He Ta Al MB Bi El Tn Hr To Gt. Doubtful: RS Eb SF.
05d 18h 58m	So Lo Rs Wn Wi Ni Ma Pr Fu CF IK Ci Tl Ks Qu He Ta Al SJ MB Bi El Tn Wa Hr To Gt. Doubtful: SM SF Ho Ab. s.i.:Tr.
05d 20h 04m	So Do Lo RS Wn Wi Ab Ma Pr Fu CF IK SM Ka Ks Qu He Ta Al SJ MB Bi El Tn Hr To Gt. Doubtful: Tl Wa.
07d 01h 39m	So RS Ab Pr Fu CF Ag Ci Tl Ch SM SF Ta Te SJ MB Bi El Hr Gt. Doubtful: Do Lo Wn Ks Qu He Tn Va.
07d. 23h 27m	So RS Wn Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch SM SF Ka Ks Qu Ta Te SJ MB Bi Hr Gt. Doubtful: Do Lo.
09d 19h 50m	So Do Lo RS Ni Ab Fu CF Tl SM Ks Qu He Te Al Bi El Gt. Doubtful : Wn Pr IK MB Hr.
10d 21h 33m	So Do Pr CF IK Ci Qu Ta MB Bi El Tn Hr Gt. Doubtful: RS Wn Ma Fu SM.
10d 21h 59m	Do Wi Ma Pr Ag IK Ci Ks Qu Ta MB Bi El Tn Hr Gt. Doubt- ful: RS Wn Ab Fu Eb SM Ka SJ.
11d 00h 05m	So Do Ab Fu CF Ag Ci Ch SM SF Ks Qu Ta Te El Tn Va Hr Gt. Doubtful : RS Wn Pr IK Tl MB.
15d 19h 55m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ks Qu He Ta Al Bi El Tn Hr To Gt. Doubtful: MB.
18d 01h 19m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr CF IK Eb Ci Tl Ch SM SF Ka Qu Ta Al SJ MB Bi El Hr Gt. Doubtful: Tr Fu Am.
18d 02h 02m	So Ma Pr Fu CF Ag IK Ci Tl Ch SM Qu Al SJ MB Bi. Doubt- ful : Lo RS Me Wn Ab SF Hr Am.
20d 19h 30m	So Ma Pr CF Ks Qu Ta Al Bi El Hr. Doubtful: Lo Wn Ka Ho.
20d 20h 40m	So Ma Pr CF Ks Qu Ta Al Bi El Hr. Doubtful: Lo Wn Ci Tl SM Ka MB.
20d 23h 16m	So Ma Pr CF Eb Ci Tl SM Ka Ks Qu Ta Al MB Bi El Tn Hr. Doubtful : Lo RS Wn Ab IK SF.
22d 20h 40m	So Do Lo RS Wn Ma Pr CF IK Eb SM Ka Ks Qu Ta Al MB Bi El Tn Hr Gt. Doubtful: Fu He Wa To MI.
24d 19h 10m	So Do Lo Ni Pr Fu IK Ci SM Ks He Ta Te Al Bi El Tn Hr Gt. Doubtful : Ab Ag SF Qu MB To.
24d 22h 40m	So Do Lo RS Me Ni Ab Pr Fu Ag Eb Ci SM Ka Ta Te MB Bi El Hr Am. Doubtful: CF IK Tl Ch SF SJ.
26d 21h 35m	Do Lo RS Ab Ma Fu CF Ci SM Ks He Bi El Tn Hr Am Gt. Doubtful : So IK Ka MB MI.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (August)

26d 21h 48m	Do Lo CF Ci Tl SM SF Hr. Doubtful: So RS Ab IK Ka He MB.
27d 19h 30m	So Do Le Lo RS Es Wi Ab IK Ci Tl SM Ka Qu He Bi El Hr Gt. Doubtful : CF SF Ks MB.
28d 20h 37m	Tr So Do Lo Ni Pr Fu CF IK SM Ka Ks Qu He Ta Bi El Tn Hr Gt. Doubtful: MB.
29d 20h 17m	Tr So Do Le Lo Es Ab Ma Pr Fu IK Tl SM SF Ks Qu He Ta Te Al MB Bi El Tn Hr Gt. Doubtful: Wn To Am.
30d 14h 46m	So Co Do Le Lo Es Me Ni Pr Fu IK Ci Ka Ks Qu He Ta Al Bi El Tn Wa Hr To Am. Doubtful: Si Ab CF SF SJ MB Gt.
31d 20h 03m	Tr So Do Wi Ab Pr SM Qu Ta El Tn Hr Gt. Doubtful: Lo Ma CF Ka He MB.
31d 22h 46m	So Do Le Es Ab Ag SM Ka Te Bi El Gt. Doubtful: Lo Ma Pr CF IK SF He Hr.

September

02d 01h 00m	So Do Le Lo Es Ma CF Ag SM SF Ta MB El Hr. Doubtful: RS Ab IK Ci Ka SJ Va Gt.
02d 01h 17m	So Do Lo RS Wn Wi Ni Ab Ma Pr Fu CF Ag Eb IK Ci Tl Ch SM SF Ka Tu Ta Te MB Bi El SJ Tn Va Hr To Am Gt. Doubtful: Si Me.
02d 22h 23m	So Do Le RS Es Wn Wi Ab Ma Pr Fu CF Ci SM Ka Ta Al Bi El Tn Hr Gt. Doubtful: Lo IK Tl MB.
03d 17h 33m	Tr So Do Lo RS Wi Ab Pr Fu IK Ci SM Ks He Ta Te Al Bi El Hr Am Gt. Doubtful: CF Ka MB.
03d 22h 15m	So Do Me Wi Ab Pr Ag IK Ci SM Ks He Ta Te El Hr Am. Doubtful : Tr Lo RS CF Tl SJ MB Bi MI Gt.
04d 18h 33m	Do Le Es Wn Wi Ab Ma Pr Fu Ag IK Tl SM Ka Ta Al Bi El Tn Hr. Doubtful: Tr So Co Lo CF SF MB MI Gt.
04d 23h 44m	So Do Lo Wn Wi Ab Ma Pr Cf Ag Ci SF Ka Ta El Tn Hr. Doubtful : RS IK Tl He MB Gt.
05d 00h 27m	Do Lo Ab Ma CF Ci SM Ka Ks He Ta Te El Tn Gt. Doubtful: So RS Ag IK Tl MB To MI.
05d 18h 48m	So Do RS Wi Fu CF Ci SM Ka Al Wa Gt. Doubtful: Lo Pr IK He MB Hr. s.i. : Tr.
05d 19h 34m	Tr So Do RS Fu Ks He Ta MB El Gt. Doubtful: Pr SM Hr.
06d 20h 25m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu IK Eb Ci Tl SM Ka Ks He Ta Al SJ MB Bi El Tn Hr To Gt Me.
06d 22h 58m	So Do Lo RS Wn Ni Ab Ma Pr Fu CF IK Ci Tl Ch SM SF Ta MB El Tn Hr Gt. Doubtful: Tr He To.
07d 16h 59m	So Do Lo RS Pr Fu CF IK Ci Ks He Al Tn Gt. Doubtful: Wn Ab SM MB Hr.
10d 22h 13m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Ci Tl SM SF He Ta Al MB Bi El Tn Hr Gt. Doubtful: Ka Te.
11d 00h 32m	So Do Lo RS Wn Wi Ni Ma Pr Fu CF Ag Ch SM SF Ka Tu Ta Te MB Tn Gt. Doubtful: Me Ab IK He.
11d 00h 53m	Tr So Do Lo Si Ab Ma Pr CF IK Ci SF Ks Ta Al MB Bi El Tn Hr Gt. Doubtful: Me Ag Tl Ka SJ Va Am.
11d 19h 56m	Tr So Do Lo RS Wn Wi Ni Ab Ma Pr Fu Cf Ks He Ta Al MB Bi El Tn Hr Gt. Doubtful: Eb Ci.
12d 20h 32m	Tr So Do Lo RS Wn Wi Ma Pr Fu CF SM Ka Ks Ta Al MB Bi El Tn Hr Gt. Doubtful: Ab IK He.
13d 21h 10m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ka Ks Qu He Ta Al MB Bi El Tn Va Hr To Gt

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(September)

20d 02h 00m	Lo RS Wn Ab Ma CF Ag Ci SM SF Ka Te SJ MB El Tn Va Gt. Doubtful : Do IK Ch He Hr.
21d 17h 04m	So Do Lo RS Wi Ni Pr Fu IK Ci Tl SM Ks Qu He Ta Al Bi El Tn Wa Hr Gt. Doubtful: Ab Ma CF SF MB To Eb.
22d 01h 30m	So Do Lo RS Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Ci Tl Ch SM Ka Tu Ta Te SJ MB Bi El Tn Va Hr Gt. Doubtful: SF He.
22d 18h 24m	So Do Lo RS Wn Wi Ma Pr Fu CF IK Ci Tl SM Ka Ks Qu He Ta Al Bi El Tn Gt. Doubtful: Tr Ab MB Hr To.
22d 20h 24m	So Do Lo RS Wn Ma Pr Fu CF IK SM Qu He Ta Al Bi El Gt. Doubtful : Tl Ka MB Hr.
22d 23h 32m	So Do Lo RS Wn Pr Fu CF IK Ci SM Ka Ta Bi El Gt. Doubt- ful : Ab Tl SF Te MB Hr.
23d 16h 10m	So Do RS Wi Pr Fu IK Ci Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Hr To Am. Doubtful: Lo Ab CF .
23d 21h 21m	So Do Lo Rs Wi Ab Ma Pr Fu IK Eb Ci Tl SM SF Qu He Ta Bi El Tn Hr Gt. Doubtful: Tr CF Ks MB.
24d 19h 55m	Tr So Do Lo RS Wi Ni Ma Pr Fu CF IK Tl SM Ks Qu He Al Bi El Tn Hr To. Doubtful: Wn Ab MB.
24d 20h 16m	So Do Lo Ab Ag Ci SF Ka Hr. Doubtful: RS CF Tl He MB.
25d 19h 03m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Tl Ka Ks Qu Ta Al Bi El Tn Va Hr Gt. Doubtful: SM SF He MB.
26d 21h 15m	So Do Lo RS Wn Wi Ab Ma Pr Fu CF IK Tl SM SF Ka Qu Ta MB Bi El Tn To. Doubtful: He Hr Gt.
27d 02h 20m	RS Ab Pr Fu Ag Ci SM He Ta Al MB Bi El Hr. Doubtful: So Do Lo Me Wn CF IK Tl SF Ka Ks Te Tn Gt.
27d 23h 49m	So Do CF Tl Ka Ta MB Hr Gt. Doubtful: Lo RS Wn Ab Pr Fu Ci SF.

October

01d 03h 18m	So Do Lo RS Me Ni Pr Fu CF Ag Ci Tl Ch SM Ka Tu Ta SJ MB Bi El Tn Hr Gt. Doubtful: Wn Ab IK SF He Te Va Am.
01d 12h 11m	Do IK Eb Ka Qu Al MB Bi El Tn To Am MI. Doubtful: So Lo RS Me CF Ci SM Te Gt.
01d 18h 49m	So Do Lo RS Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ka Ks Qu He Ta Al MB Bi El Tn Hr To Gt. Doubtful: Tr.
03d 23h 45m	So Do Lo RS Wn Ab Ma Pr CF Eb Ci Tl Ta MB Bi El Tn Hr Gt. Doubtful : IK SF.
04d 10h 56m	Co Ka Qu Ta MB Bi To Am MI. Doubtful: SM.
04d 16h 21m	Do Tl SM Ka Ks Bi El. Doubtful: So Lo RS CF IK He MB Tn Hr. s.i. : Ci.
04d 20h 27m	So Do Lo Wn Wi Ni Ma Pr Fu CF IK Eb Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Wa Hr To Gt. Doubtful: RS Ab SF.
05d 23h 33m	So Do RS Fu Eb Tl Ka Ks Ta Al MB Bi El Hr Gt. Doubtful: Tr Lo Wn Ma Pr CF IK SM.
06d 18h 40m	So Co Do Lo RS Me Wn Ma Pr Fu IK Eb Tl Ka Qu Ta Ho Al MB Bi El Tn Va Wa Hr To Am Gt. Doubtful: Si CF Ag SM He SJ.
07d 20h 28m	Fu Eb. Doubtful: MB.
08d 20h 59m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ka Ks Qu He Ta Al SJ MB Bi El Tn Hr Gt. Doubtful: SF.
09d 22h 36m	Tr So Do Le Lo RS Es Wn Wi Ab Ma Pr Fu IK Eb Ci Tl SM Ka Qu He Ta Al MB Bi El Hr Gt. Doubtful: CF.
10d 23h 06m	So Do RS Ma Fu CF IK Eb Ci Tl SM SF Ka Ks Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Lo Ab Pr Ag.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(October)

11d 17h 24m	So Do RS Fu Ci SM Ka Qu Al MB Bi El Tn Gt. Doubtful: Lo CF IK Tl He Hr. s.i. : Ag.
12d 18h 55m	Tr So Do Le Lo RS Es Wn Wi Ma Fu CF Eb Tl Ka Qu Ta Al MB Bi El Tn Hr Gt. Doubtful: Pr IK SM .
16d 17h 34m	So Do Ma Pr Tl SM SF Qu He Ta Al Bi El Tn Gt. Doubtful: Tr Lo RS CF Ag IK Eb Ka MB.
16d 19h 40m	Tr So Do Le Lo Es Wi Ab Ma Pr CF Ag IK Eb Ci Tl SM Ka Ks Qu He Ta Te SJ MB Bi El Tn Hr Am Gt.Doubtful:RS Ch Wa MI.
16d 23h 00m	So Do Lo Me Ab Ma Pr IK Ci Tl SM Ks He Ta Te MB Bi El Tn Hr Gt. Doubtful: RS CF.
18d 02h 52m	So Do Ci SM Te Am. Doubtful: Lo RS CF IK Ch MB.s.s.c.:Ag.
20d 19h 20m	So Do RS Wi Ab Pr Ag IK Ci SM Ks Qu He Ta Al Bi El Tn Hr Gt. Doubtful: Lo CF SF MB Am.
22d 17h 16m	So Do Pr Fu CF Ci Tl SM Ka Qu Al Hr Gt. Doubtful: Lo RS SF MB Tn.
22d 21h 10m	Do Wn Pr CF IK Ci SM Ta MB El Tn Hr. Doubtful: Lo RS Ab Eb Tl Gt.
24d 13h 01m	So Do Si Me Fu Ag IK Eb Ci Tl SM SF Ka Ks Tu He Ta Ho Al SJ MB Bi Tn Hr To Am MI Gt. Doubtful: Co Lo RS Ab CF Wa.
26d 18h 18m	So Co Do RS Wn Ma Pr CF IK Tl Ka Qu Ta Al MB Bi El Tn Va Wa Hr To Gt. Doubtful: Lo Fu Eb.
27d 00h 37m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu Cf Ag IK Eb Ci Tl Ch SM SF Ka Qu Ta Al SJ MB Bi El Tn Va Hr Gt.
27d 18h 56m	So Do Lo Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ks Qu He Ta MB Bi El Tn Hr Gt. Doubtful: Tr RS SF.
27d 22h 21m	Do Lo RS Wi Ab Ma Pr Fu IK Ci SM Ks He Ta MB Bi El Tn Hr Gt. Doubtful: So Wn CF Eb Tl SF.
28d 20h 48m	So Do Le Lo RS Es Wn Wi Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ka Ks He Ta SJ MB Bi El Tn Va Hr Gt. Doubtful: Tr Qu.
29d 19h 23m	So Do Lo RS Pr CF IK Eb Ta Te MB Tn Va Hr. Doubtful: Wn Ag Tl SM He Gt.
30d 19h 49m	Tr So Do Lo RS Wn Fu CF IK Eb Tl He Ta Te Al MB Bi El Tn Hr Gt. Doubtful: Ma To.

November

01d 18h 05m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ka Ks Qu He Ta Al SJ MB Bi El Tn Va Wa Hr To Am Gt.
04d 22h 00m	So Do Lo RS Wn Ab Ma Pr CF IK Eb Ci Tl SM Ka Al Bi Tn Va Hr Qu Ta. Doubtful: Fu Ch SF MB Gt.
06d 13h 29m	So Co Do Si RS Eb Ci Tl Ka Ks Qu Ta Al MB El Tn Wa Hr To Am MI. Doubtful: Lo Pr Fu CF IK SM He Gt.
07d 20h 20m	So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Hr To Gt. Doubtful: Tr Wa.
08d 11h 11m	Co Si Fu Ka Qu Al MB Bi Hr To Am MI.
08d 23h 05m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr CF IK Eb Ci Tl SM SF Ks Qu Ta Al MB Bi El Tn Hr Am Gt. Doubtful: Ka He.
09d 22h 32m	So Do Le RS Es Wn Ma Eb Ci Tl Ch Qu Ta Al MB El Hr. Doubtful : Tr Lo CF SM SF Gt.
10d 19h 04m	So Ka Ks Qu Al Bi El Hr. Doubtful: CF Eb SM MB.
10d 19h 57m	So Do Eb Ka Ks Qu Ta Al MB Bi El Tn Hr. Doubtful: RS CF Tl SM.
11d 14h 04m	So Si Eb Ci Tl Ka Ks Qu Ta Al Mb Bi El Tn To Am MI. Doubtful : Lo CF IK He Hr.

TABLE 5 POL OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (November)

11d 17h 51m	So Ka Qu Ta Al Bi Hr. Doubtful: Lo CF Eb MB Tn.
15d 04h 20m	So Do RS CF Ag Ci Ch SM Ka Te MB Gt. Doubtful: Lo Me Tn Hr
15d 18h 08m	So Do Lo RS Wi Ni Pr Ci Qu He Al Tn Gt. Doubtful: CF MB.
15d 18h 26m	So Do Lo Fu Ag IK SM Ks Ta MB Bi El Tn. Doubtful: Tr RS CF Tl Ka Am.
16d 01h 03m	So Do RS Wn Wi Ni Ab Ma Pr Fu CF Eb Ci SM Te MB El Hr Gt. Doubtful : Lo IK Tl SF.
16d 02h 20m	So Do Lo Si RS Me Wn Wi Ni Ab Pr Fu CF IK Ci Tl Ch SM SF Tu Ta Te Al SJ MB Bi El Va Hr Am Gt. Doubtful: Ka Qu He.
16d 17h 32m	So Do Lo RS Ni Ab Pr Fu Ag IK Ci Ka Qu Al Bi Tn Gt. Doubtful : CF Tl SF He MB.
16d 22h 03m	So RS Ab Pr Fu CF Ci SM Ta MB Bi El Tn Hr Gt. Doubtful: Do Lo Eb SF Ka.
16d 22h 30m	So Do Ab Pr Fu CF IK Ci SM Ka Ks Qu Ta MB Bi El Tn Hr Gt. Doubtful : Lo RS SF He.
17d 01h 23m	So RS Ab Fu CF Ag Ci SM Ka Ta Te El Gt. Doubtful: Tr Lo Pr MB Hr.
19d 19h 55m	Tr So Do Le Lo RS Es Ni Ab Ma Pr Fu IK Eb Ci Tl SM Ks Qu He Te Bi El Tn Hr Gt. Doubtful: Si CF Ka SJ MB MI.
20d 18h 12m	So Do Lo RS Ab Pr Fu CF IK Ci Tl SM Ks Qu He MB Bi El Tn Gt. Doubtful: Wn Ma Eb.
20d 20h 40m	So Do Lo RS Ni Ab Pr Fu CF Ag Ci SM Ta MB Bi El Gt. Doubtful : Wn Ma IK Eb Tl Tn.
21d 18h 23m	Tr So Do Le Lo RS Es Wn Pr Fu CF IK Ci Ks Qu He Al Bi Va Hr To Gt. Doubtful: Ab Ma Eb SM Ka MB.
21d 18h 57m	So Do Lo Wi Ma Pr Fu CF Eb Tl Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Tr RS Ab.
23d 20h 15m	So Do Le Lo RS Es Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM SF Ks Qu He Ta Al MB Bi El Tn Va Hr Gt. Doubtful: Wn SJ.
23d 23h 48m	So Do RS Ab Pr CF Ag Ci Tl SF Ks Qu Ta MB Bi Tn Hr Gt. Doubtful : Lo Ma IK Eb He Am.
25d 23h 16m	Do CF Ag Eb Ci Tl SM SF Ta MB Bi El Hr. Doubtful: So Lo RS Gt.
30d 18h 50m	RS Ni Pr Eb SM Ks Qu Ta MB Bi El Tn Hr. Doubtful: Tr Do Lo CF Tl Gt.

December

02d 18h 52m	Tr So Ks Qu Ta Al Bi El Tn Hr. Doubtful: Lo CF Tl MB.
03d 02h 14m	So Le Lo RS Es Wn Fu CF IK Eb Ci Tl Ch SM SF Ka Qu Ta Al SJ MB Bi El Va Hr Am Gt. Doubtful: Ab Pr Ho.
03d 23h 52m	So Do Le Lo Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl Ka Ks Qu He Ta Al MB Bi El Hu Tn Hr Am Gt. Doubtful: Go RS SF Te Va Wa To.
04d 17h 32m	So Fu CF Qu Bi Tn . Doubtful: Lo Wn Pr IK SM MB.
05d 17h 18m	So Do RS Pr Fu SM Ka Qu Ta Al MB Bi El Wa To Gt. Doubtful : Lo Wn CF IK He.
07d 01h 50m	So Do Lo Ma Pr Fu CF IK Ci Tl SM SF Qu MB Bi Hr Gt. Doubtful : RS Wn Ab Eb.
07d 22h 06m	So Do Lo Wn Ma Pr Fu CF IK Eb Tl SM Ks Qu Ta Al MB Bi El Hr Gt. Doubtful: Tr RS SF Ka.
08d 19h 42m	So Do Lo RS Fu Eb Tl SM Ka Ks Qu Ta Al MB Bi El Tn Hr. Doubtful : Pr CF.

TABLE 5 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

## (December)

08d 23h 09m	So Do Lo RS Pr Fu CF Eb Ci Tl SM Ks Qu Ta Al MB Bi El Hr Gt. Doubtful: He.
09d 19h 21m	So Do Lo Wn Ma Pr Tl SM Ka Ks Qu Ta Al MB Bi Tn Hr Gt. Doubtful : RS.
09d 19h 47m	So Do Le Lo RS Es Wi Ni Ab Ma Pr Fu CF IK Ci Tl SM Ka Qu He Ta Al MB Bi El Tn Hr To Am Gt. Doubtful: Tr Eb SF Wa.
11d 20h 11m	Do Lo Wi Ab Pr CF Ci Tl SM Ks Qu Al MB Bi El Tn Hr Gt. Doubtful : So RS Wn He. s.i. : Ag Ta.
12d 15h 08m	So Do RS Pr Ci Ch SM Ka Ta Bi Wa Am. Doubtful: Lo IK SF He MB Hr Gt
12d 23h 00m	So Do Le Lo RS Es Pr Fu CF Ag IK Ci Ch SM SF Ta Al SJ MB Bi El Hr Gt. Doubtful: Wn Ab Eb.
13d 18h 37m	Tr So Do Lo RS Pr Fu CF Ks Qu Al El Hr Gt. Doubtful: Wn SM He MB Tn
13d 19h 45m	Tr So Co Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci SM Ks Qu He Ta Al MB Bi El Tn Hr Gt. Doubtful: Tl SF.
14d 16h 50m	So Do Ci Ka Qu Al Bi. Doubtful: Lo RS CF MB Tn Wa To Gt.
15d 19h 43m	So Do Ab Ma Pr CF Ci Tl SM Ta Te Al MB Bi El Hr Gt. Doubtful : Lo RS Wn Fu IK Ka He. s.i. : Ag.
17d 16h 07m	So Co Do RS Ma Pr Fu Ci Tl Ka Ks Qu Al MB Bi El Tn Wa Hr To Gt. Doubtful: Lo Wn IK SM CF.
17d 17h 15m	So Do Lo RS Wn Wi Ni Ab Ma Pr Fu Eb Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Va Hr To Am Gt. Doubtful: CF IK.
17d 20h 47m	Tr So Do Lo Wn Ma Pr Fu CF Ka Ks Qu Al Bi El Hr. Doubt- ful : RS Eb Tl MB.
17d 21h 54m	So Do Le Lo RS Es Wn Wi Ab Ma Pr Fu CF IK Tl SM Ka Ks Qu He Al Bi El Hr Gt. Doubtful: Eb SF MB.
18d 17h 09m	So Do Wn Pr IK Eb Ci SM Ks Qu Al MB Bi El Tn Hr Gt. Doubtful : Lo RS Fu CF He.
21d 22h 54m	So Do Le Lo RS Es Wn Ab Ma Pr Fu CF IK Ci Tl SM SF Ta Al MB Bi El Tn Hr Gt Ks. Doubtful: Eb.
22d 19h 03m	Tr So Do Le Lo RS Es Wn Wi Ni Ab Ma Pr Fu CF IK Eb Ci Tl SM Ka Ks Qu He Ta Al MB Bi El Tn Wa Hr Gt. Doubtful: To.
23d 18h 04m	So Do RS Wn Pr Fu Ci SM Ka Ks Qu He Al El Hr To Gt. Doubtful : Lo CF IK Eb MB Wa.
25d 22h 06m	So Do Lo RS Pr Fu Ci SM Qu Al. Doubtful: CF Tl He MB Hr Gt.
26d 19h 40m	So Do RS Pr CF Eb Ka Qu He Al MB Bi El Tn Hr Gt. Doubt- ful : Lo Fu SM To.
27d 20h 38m	Tr So Do Lo Ma Pr CF SM Ka Ks Qu Ta Al MB Bi El Tn Hr Gt. Doubtful : RS Wn Tl.
27d 21h 22m	So Do Lo Ab Ma Pr Fu CF IK Ci SM Ka Ks Qu He Ta Al Mb Bi El Tn Hr MI Gt. Doubtful: Tr RS Wn Tl SF.
29d 00h 05m	So Do Lo RS Ma Pr Fu IK Ci Tl SM Ks Ta MB Bi El Tn Hr Gt. Doubtful : Wn Ab CF SF Qu.

TABLE 6 SUDDEN GEOMAGNETIC CHANGES OR IMPULSES (S.I.'S)

This list cannot be considered as complete and can therefore better not be used for statistical purposes (see Cautionary Note at the head of Table 5).

January

05d 16h 55m	Tr So Do RS Wn Wi Ab Pr Fu Ag IK Eb Ci SM SF Ks Qu He Ta Te MB Bi Tn Hr Am Gt. Doubtful: Lo Me Ma CF Ka.
18d 11h 54m	So MB Bi El Tn Hr. Doubtful: Lo CF Ka Am.
19d 07h 37m	So Co Do Le Lo RS Es Wn Wi Ab Pr Fu CF Ag IK Eb Ci Tl SM Ks Tu Qu He Ta Te SJ MB Bi El Tn Va Hr To Am. Doubtful: Tr Ma Ka Gt.
19d 12h 40m	Do Le Es Wi Ab Ci Ks Qu Ta MB Tn Hr Gt. Doubtful : So Lo Pr CF SM He Va Am.
25d 09h 18m	So Do Le Lo RS Es Wi Ni Ab Pr Fu CF Ag Eb Tl SM Te SJ MB Bi El Tn Gt. Doubtful: Wn IK Ci Ka Qu Hr. p.s.c.: Ta.
25d 10h 43m	So Do Le RS Es Me Wi Ni Ab Pr Fu CF Ag IK Eb Ci Tl SM Ka Qu Ta Te MB Bi El Hr Am Gt Ch. Doubtful: Lo Wn SJ Tn Va.
26d 19h 30m	So Do Lo RS Wn Wi Ab Pr Fu CF IK Ci Tl Ks Qu He Al MB Bi El Tn. Doubtful: Tr Ma Eb Ka Gt. p.s.c.: Ta Hr.

February

06d 22h 36m	Tr Bi El. Doubtful: Pr MB Hr. p.s.c.: So.
08d 14h 41m	Do Le RS Es Ag Ci Ks Ta MB Bi El Tn Gt. Doubtful: So Lo He CF IK SM Ka Qu.
22d 15h 30m	Do Lo RS Wi Ab Ma Pr CF Ag IK Ci SM SF Ks Qu He Ta MB Bi El Tn Hr Gt. Doubtful: So Fu Ka
22d 15h 40m	So Co Do Lo RS Wi Ni Ab Ma Pr CF Ag IK Eb Ci Tl Ch SM SF Ks He Ta SJ MB Bi El Tn Hr Am MI Gt Qu.Doubtful:Wn Fu Ka.
22d 16h 20m	Do Wi Ma CF Ag SF Qu He Ta Al MB Bi El Tn Hr Gt . Doubtful : Lo RS Ab Pr Fu IK Eb Tl SM Ka. p.s.c.: Ci.
22d 19h 58m	So Do RS Wn Wi Ab CF SF MB Bi El Tn Gt. Doubtful: Ma Pr Ag IK Ka He Hr. p.s.c.: Ta.
24d 15h 58m	So Do RS Wi Ab Pr Fu Ag IK Eb Tl SM SF Ks Qu He Ta MB Bi El Tn Hr Gt. Doubtful: Co Wn Ma Ci Ka.
24d 18h 00m	Do RS Ab IK Ci Ks Qu He Te MB Bi Am Gt. Doubtful: Wn Ma Fu Ka.

March

01d 20h 02m	Qu Am. Doubtful: CF MB.
02d 13h 04m	Wi Ci Qu Te Bi El Hr Am. Doubtful: Do Lo RS Wn CF SM Ka MB. p.s.c.: Ta Gt.
02d 16h 10m	Do Lo RS Wi Ab Pr IK Ci SM SF Qu He Al MB Bi El Gt. Doubtful : Tr CF Eb Tl. p.s.c.: Ag Ta.
14d 00h 35m	So Do Lo Si RS Me Wi Ab Ma Pr Ag IK Ci Tl Ch SM SF Ka Tu Qu He Ta Ho Te Al SJ MB Bi El Hu Tn Va Hr To Am Gt. Doubtful : Tr CF MI.
15d 08h 45m	Tr So Do Le RS Es Wi Ab Pr Fu Ci Qu MB Va Gt. Doubtful: Lo Wn Ma CF Eb Tl SM Ka Hr.
23d 02h 42m	So Me Ci SM MB Am. Doubtful: Do RS CF El. p.s.c.: Ag Ta Hr Gt.
24d 18h 05m	Do Lo RS Wn Ab Pr Fu CF IK Tl SM Qu He Te Al MB Bi El Tn Gt. Doubtful: Tr Ma Eb Ka Ks. p.s.c.: Wi Ci Ta Hr.
26d 12h 35m	Do Le RS Es Ab CF Ag He Ta Al MB Hu Tn Gt. Doubtful: Lo Ma Pr IK SM SF Ka Ks Te Hr Tl. p.s.c.: So.

TABLE 6 SUDDEN GEOMAGNETIC CHANGES OR IMPULSES (S.I.'S) - continued

April

10d 18h 00m	Do Le Es Ab Ag Ci SM Ka Ks Qu Al MB Bi El Tn Hr To MI Gt. Doubtful : Lo Ma Pr Fu CF IK Eb Tl Te. p.s.c.: Ta.
12d 12h 40m	So Do Le Es Ab CF Ag Ci Sm Ks Te MB Gt. Doubtful: Lo He El Tn Hr. p.s.c.: Ta.
14d 06h 30m	So Do Ci Qu Te Al El Hr To Am MI Gt. Doubtful: Lo RS CF SM Ka He MB. p.s.c.: Ta.
15d 05h 00m	So Do Le Lo Si RS Es Ab Ma Ag Ci SF Ka Ks Tu Qu Te MB El Tn Am Gt. Doubtful: Tr Me CF IK SM Hr To. p.s.c.: Ta. s.s.c. : Wi Al.
21d 11h 59m	So Do Le Es Wi Ni Ab Ma Ag SM SF MB Bi El Gt. Doubtful: Lo RS Me Fu CF IK Ci Tl Ch Ka Qu.
24d 19h 45m	Do CF IK Tl Ka MB Bi El Tn Wa Hr To MI Gt. Doubtful: Ma Fu Eb SM.
27d 18h 23m	SM Ks Qu Al Tn MI Gt. Doubtful: Tr RS Wn Ab MB. p.s.c.: So Lo Wi Pr IK Ka Ta Hr.

May

06d 07h 40m	Tr So Co Do Le Lo Si RS Es Me Wn Wi Ni Ab Ma Pr Fu CF Ag IK Eb Tl Ch SM Ka Ks Tu He Ta Ho Al SJ MB Bi El Hu Tn Va Hr Am MI Gt. Doubtful: Qu. p.s.c.: Ci.
15d 20h 00m	Do Le Es Wn Wi Ci SM SF Ka Ks Bi El Tn Gt. Doubtful: RS Fu CF Ag Tl He MB.
15d 20h 41m	Do Le RS Es Wn Wi Ab Ma IK Ci SM SF Ks He MB Bi El Tn Gt. Doubtful : Tr Lo Fu CF Ag Eb Ka Hr Tl. p.s.c.: Ta.
26d 07h 24m	Co Do Le Si Es Ma Ag Eb Ci Ch SM Ka Ks Tu He Ta Ho Al SJ Bi El Hu Tn Wa Hr To Am MI Gt. Doubtful: Tr Lo Wn Pr Fu CF IK Tl MB Va.
27d 09h 00m	Do RS IK Ci SM Ka Ks Al MB Bi El Tn Hr. Doubtful: Lo CF Ag Eb He Gt. p.s.c.: Ta.

June

18d 19h 06m	Tr Le Lo RS Es Wn Wi Ab Ma Pr Fu Qu Al El Gt. Doubtful: Do Tl Ka Ks Tn. p.s.c.: CF Hr.
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July

01d 12h 12m	Do Le Lo RS Es Wi Ab CF Tl SM Bi El Tn Gt. Doubtful: So Ma Ag IK Eb He MB Hr. p.s.c.: Ci.
07d 14h 25m	So Do Lo RS Wi Ma Ag IK Ci Tl SM SF Ks Ka Tu Qu He Ta MB Bi El Hu Tn Hr To MI Gt. Doubtful: Wn Ab Pr Fu CF Te.
07d 21h 34m	Ci SM SF Ks He Te MB Bi Tn To MI Gt. Doubtful: So Do RS CF Ag Ka Hr. p.s.c.: IK.
14d 17h 41m	So Co Do Le Lo Si RS Es Wi Ni Ab Ma Pr Fu CF Ag IK Ci Tl Ch SM Ka Tu He Ta Ho Te Al SJ MB Bi El Hu Tn Hr To Am MI Gt. Doubtful: Wn Eb SF Ks Va.
14d 19h 52m	So RS Wi Ab Ci Ka He Ta Te Al Sj Bi El Hu Tn Hr To Am MI. Doubtful : Co Lo Pr Fu CF Eb SM MB Gt. p.s.c.: IK.
23d 19h 30m	So Me Pr Ag Eb SM Qu He Ta Al SJ MB Bi El Tn Am Ci Te. Doubtful : Do Lo Ab Ma CF IK Ka Hr Gt.

August

06d 16h 38m	So Wi Ab Ks El Gt. Doubtful: Do Lo Ma CF SM MB Tn. p.s.c. : Pr Ka Qu Hr To.
11d 17h 00m	So Do Wi Fu CF Ag Tl SM SF Ka Qu He Ta Al MB Bi Hu Gt. Doubtful : Co Lo Me Ab Pr IK Ci Hr Am.
12d 14h 24m	Do Ab Fu Ag Ci He Ta Al MB Bi El Gt. Doubtful: So Lo RS Pr CF SM Ka Qu Tn.

TABLE 6 SUDDEN GEOMAGNETIC CHANGES OR IMPULSES (S.I.'S) - continued

(August)

12d 15h 24m So Do Lo RS Wi Fu CF IK Ci Ka Qu He Al MB Bi El Tn Gt.  
Doubtful : Pr Tl SM SF Hr.

13d 14h 43m So Do RS Pr Fu CF Tl SM Ka Qu He Ta Te Al MB Bi El Hu Tn Hr MI Gt. Doubtful: Ag IK.

13d 15h 05m So Do Si RS Wi Ab Pr Fu CF IK Ci Tl SM Ka Qu He Ta Al MB Bi El Hu Tn Hr Am MI Gt. Doubtful: Lo Eb.

27d 13h 05m So Go Do Wi Ab Pr Fu Ag Ci Tl SM SF Qu He Te MB El Gt.  
Doubtful : Lo RS CF IK Ch Ka.

September

03d 20h 48m Do Pr Ag IK Ci SM Ka Ks He Ta Al MB Bi El Hr Am MI Gt.  
Doubtful : Lo RS Ab CF Wa.

15d 14h 44m Do Le Es Me Pr Fu CF Ag IK Eb Ci Tl SM SF Ka Ks Ta Al MB Bi El Tn Hr. Doubtful: Lo He.

16d 09h 00m Tr So Do He Ta Al MB Bi El Tn Am. Doubtful: RS Fu CF Ag Eb SM Ka Ks Hr Gt.

18d 18h 32m So Do He Ta Te Al El Hu Tn. Doubtful: Tr Lo CF Ag SM Qu MB Hr Gt.

October

06d 23h 59m So Co Do Le Lo Si Es Me Ni Ab Ma Fu IK Eb Ci Tl Ch SM SF Ka Ks Tu Qu He Ta Te Al SJ MB Bi El Hu Tn Wa Hr To MI Gt.  
Doubtful : RS Pr CF. s.s.c.: Wn Va Am.

07d 07h 20m RS CF Ag Ci Ta Al Bi El Am. Doubtful: Lo Tl Ka Ks Qu MB Gt.

11d 10h 50m CF Ci Ks Qu He Ta Te Al MB Bi El Tn Hr. Doubtful: Lo Wi Ag SM Ka Va To Gt.

15d 13h 04m Ag Ci Qu Ta Te SM Al Bi El Tn. Doubtful: So Do Lo CF Tl Ka MB Am Gt.

15d 13h 29m Do CF Ag Ci SM Qu Ta Bi Tn. Doubtful: Lo Ab Tl MB Wa.

15d 13h 37m Tr So Qu Ta SM Bi Tn. Doubtful: Lo CF Ag IK Tl MB.

15d 14h 14m So Do RS Ab CF Ag Ci Tl Ta Te MB Bi El Tn Gt. Doubtful: Lo Pr IK Eb SM. p.s.c.: Am.

16d 01h 54m So Do RS Pr IK Eb SM Ks Qu He Ta Tn Gt. Doubtful: CF Tl MB Wa.

18d 18h 44m So Do Ta Gt. Doubtful: Lo RS Ab CF MB Tn. p.s.c.: Wi IK Hr.

November

12d 22h 32n Wn Ks Qu He Al MB Bi El Tn To Am MI. Doubtful: Ag Hr.

17d 11h 40m Tr So Do Pr CF IK SM Ks Qu He Al MB Tn To Gt. Doubtful: Lo RS Ab Ma Fu Eb Tl SF Ka Hr MI.

23d 08h 50m Ag Ks He Al Bi El Tn. Doubtful: So SF Ka Qu MB Gt.

23d 15h 54m So Co Do Wi Ab Pr Ag Tl SM SF Ka Qu He Te Al MB Bi El Tn Am MI Gt. Doubtful: Lo RS Me Fu CF IK Eb Wa. p.s.c.: Ci.

23d 17h 40m So Do Ab Ag Eb Ci Tl Ka Qu He Ta Al MB Bi El Tn Am MI Gt.  
Doubtful : RS Fu CF IK SF Wa.

23d 17h 48m So Do Wi Ab Pr CF Ci Tl Ka Ks Qu He Ta Al MB Bi Tn To Am MI Gt. Doubtful: RS Fu IK SF.

December

11d 17h 46m Do Ag Ci MB Bi El. Doubtful: So Tl Ks He Hr Gt.

29d 15h 15m So Le Lo RS Es Wn Ab Ma Pr CF Qu El Hu Gt. Doubtful: Tr Do IK Ci Tl MB Tn Wa. p.s.c.: Hr.

29d 17h 00m Do Ci Qu Ta Te Al MB Bi El Hu Tn Wa To Gt. Doubtful: Lo CF Ag SM Ka Ks Hr Am MI.

TABLE 7 MINOR DISTURBANCES, 1953

Minor disturbances (s.s.c., p.s.c. and s.i.) reported by only one station. These disturbances have already been published in the three-monthly reports from the C + K Center, De Bilt.

January

02d 13h 02m - 02d 15h 45m - 03d 10h 15m - 03d 14h 48m - 04d 02h 35m -  
 04d 16h 09m - 04d 18h 35m - 05d 05h 00m - 05d 05h 12m - 05d 21h 13m -  
 05d 21h 53m - 07d 12h 18m - 08d 00h 30m - 08d 02h 05m - 09d 20h 30m -  
 10d 02h 20m - 10d 08h 11m - 10d 20h 13m - 10d 22h 12m - 11d 01h 06m -  
 15d 20h 48m - 17d 22h 30m - 18d 12h 51m - 18d 20h 21m - 19d 02h 45m -  
 19d 03h 13m - 19d 04h 51m - 19d 09h 46m - 20d 02h 25m - 20d 11h 20m -  
 22d 00h 54m - 22d 02h 55m - 22d 11h 20m - 23d 13h 40m - 23d 19h 36m -  
 24d 08h 18m - 24d 10h 02m - 25d 07h 50m - 25d 10h 19m - 25d 12h 11m -  
 25d 23h 10m - 26d 20h 29m - 26d 21h 08m - 27d 00h 39m - 27d 18h 17m -  
 28d 11h 25m - 29d 00h 40m - 29d 09h 45m - 29d 18h 17m - 30d 16h 22m -  
 30d 16h 52m - 30d 17h 41m - 31d 00h 03m - 31d 19h 07m.

February

01d 20h 14m - 02d 15h 47m - 02d 16h 35m - 02d 19h 54m - 02d 20h 12m -  
 03d 09h 43m - 03d 11h 00m - 03d 15h 05m - 03d 21h 07m - 03d 21h 56m -  
 04d 11h 41m - 05d 16h 06m - 08d 22h 29m - 08d 23h 02m - 09d 04h 18m -  
 09d 11h 41m - 09d 15h 55m - 10d 12h 30m - 11d 00h 12m - 11d 00h 40m -  
 13d 21h 52m - 14d 00h 00m - 15d 00h 27m - 15d 13h 20m - 15d 22h 22m -  
 16d 00h 15m - 16d 00h 40m - 16d 23h 39m - 18d 17h 14m - 18d 22h 05m -  
 19d 11h 15m - 19d 18h 50m - 21d 00h 00m - 22d 11h 41m - 22d 13h 20m -  
 22d 16h 35m - 22d 21h 04m - 23d 15h 06m - 23d 17h 25m - 23d 18h 21m -  
 23d 20h 14m - 24d 04h 52m - 24d 11h 04m - 24d 15h 04m - 24d 20h 04m -  
 24d 20h 30m - 24d 23h 00m - 25d 02h 08m - 25d 05h 51m - 25d 07h 48m -  
 25d 22h 23m - 25d 23h 08m - 25d 23h 35m - 26d 08h 11m - 26d 12h 10m -  
 26d 20h 00m - 26d 21h 14m - 27d 00h 09m - 27d 08h 00m - 27d 08h 38m -  
 27d 10h 58m - 28d 03h 15m - 28d 19h 32m.

March

01d 16h 02m - 01d 23h 45m - 02d 01h 40m - 02d 06h 23m - 02d 07h 25m -  
 02d 18h 48m - 02d 22h 24m - 02d 22h 36m - 02d 23h 02m - 02d 23h 07m -  
 02d 23h 10m - 02d 23h 25m - 03d 04h 37m - 03d 06h 30m - 04d 01h 20m -  
 04d 15h 11m - 05d 14h 12m - 06d 22h 54m - 07d 01h 53m - 08d 08h 12m -  
 08d 14h 02m - 08d 14h 40m - 08d 19h 56m - 09d 10h 52m - 09d 15h 32m -  
 09d 22h 43m - 12d 20h 48m - 13d 21h 16m - 14d 00h 14m - 14d 14h 45m -  
 14d 20h 12m - 14d 21h 34m - 14d 23h 31m - 17d 18h 34m - 17d 18h 50m -  
 18d 10h 30m - 18d 17h 19m - 19d 01h 18m - 19d 01h 35m - 19d 14h 54m -  
 19d 23h 09m - 20d 16h 15m - 20d 18h 05m - 20d 21h 59m - 21d 08h 00m -  
 21d 23h 30m - 22d 14h 30m - 22d 20h 35m - 23d 15h 48m - 23d 17h 48m -  
 23d 18h 08m - 24d 00h 03m - 25d 07h 24m - 25d 20h 08m - 25d 21h 38m -  
 26d 20h 30m - 26d 23h 26m - 27d 03h 35m - 27d 21h 17m - 28d 02h 38m -  
 28d 09h 19m - 29d 18h 35m - 30d 18h 01m - 31d 12h 07m - 31d 18h 46m.

April

01d 00h 05m - 01d 17h 15m - 02d 07h 06m - 02d 19h 48m - 03d 15h 00m -  
 04d 00h 06m - 06d 03h 15m - 07d 14h 30m - 07d 22h 38m - 09d 10h 13m -  
 09d 23h 04m - 10d 17h 18m - 11d 07h 28m - 11d 16h 24m - 11d 18h 00m -  
 12d 09h 10m - 12d 13h 14m - 12d 21h 38m - 13d 00h 23m - 13d 01h 14m -  
 13d 08h 05m - 13d 11h 12m - 13d 13h 39m - 14d 18h 39m - 15d 09h 40m -  
 15d 10h 38m - 15d 12h 54m - 16d 08h 47m - 16d 16h 03m - 16d 19h 30m -  
 16d 21h 25m - 17d 00h 40m - 17d 01h 00m - 18d 17h 40m - 19d 02h 50m -  
 19d 11h 15m - 20d 02h 00m - 20d 08h 00m - 21d 08h 03m - 22d 01h 15m -  
 22d 17h 50m - 22d 19h 00m - 22d 22h 02m - 23d 02h 41m - 23d 17h 50m -  
 23d 23h 50m - 24d 17h 50m - 25d 08h 06m - 25d 14h 52m - 25d 21h 07m -  
 26d 07h 20m - 26d 08h 28m - 26d 14h 10m - 26d 21h 04m - 27d 01h 50m -  
 27d 17h 24m - 27d 22h 51m - 28d 11h 32m - 29d 14h 00m - 29d 22h 52m -  
 30d 00h 00m.

TABLE 7 MINOR DISTURBANCES, 1953 - continued

May

01d 00h 50m - 01d 02h 20m - 03d 14h 16m - 04d 16h 21m - 04d 19h 41m -  
 04d 23h 05m - 05d 21h 08m - 06d 02h 15m - 06d 02h 20m - 06d 07h 36m -  
 06d 23h 00m - 07d 08h 40m - 07d 17h 12m - 08d 17h 12m - 09d 05h 18m -  
 09d 22h 17m - 10d 20h 19m - 12d 05h 22m - 12d 07h 15m - 12d 07h 27m -  
 12d 17h 05m - 12d 20h 37m - 14d 13h 55m - 14d 22h 30m - 15d 12h 00m -  
 15d 12h 08m - 15d 14h 33m - 15d 18h 03m - 15d 19h 39m - 15d 21h 55m -  
 16d 12h 25m - 16d 18h 30m - 16d 18h 42m - 16d 18h 55m - 16d 21h 12m -  
 17d 03h 33m - 17d 03h 56m - 17d 04h 27m - 17d 21h 39m - 18d 23h 10m -  
 19d 01h 15m - 19d 07h 27m - 19d 10h 03m - 19d 14h 12m - 19d 21h 20m -  
 20d 08h 39m - 20d 23h 00m - 21d 19h 54m - 22d 03h 25m - 22d 18h 48m -  
 23d 00h 30m - 25d 16h 06m - 25d 17h 50m - 25d 23h 04m - 26d 02h 09m -  
 26d 13h 12m - 26d 18h 17m - 26d 18h 44m - 27d 02h 24m - 27d 04h 00m -  
 28d 02h 45m - 31d 20h 08m.

June

01d 18h 25m - 02d 02h 15m - 02d 05h 46m - 02d 06h 20m - 02d 07h 07m -  
 02d 07h 34m - 02d 07h 50m - 02d 08h 31m - 02d 09h 00m - 02d 11h 35m -  
 02d 19h 00m - 03d 00h 19m - 03d 07h 49m - 03d 09h 24m - 03d 10h 36m -  
 03d 11h 18m - 03d 13h 42m - 04d 00h 58m - 04d 03h 22m - 04d 12h 28m -  
 05d 18h 57m - 05d 19h 09m - 06d 03h 48m - 06d 07h 10m - 06d 16h 16m -  
 07d 09h 38m - 10d 07h 12m - 10d 19h 05m - 10d 20h 45m - 13d 19h 50m -  
 13d 23h 10m - 14d 15h 30m - 16d 17h 29m - 17d 14h 00m - 17d 21h 29m -  
 18d 02h 35m - 18d 19h 36m - 19d 17h 45m - 20d 11h 15m - 20d 20h 42m -  
 21d 08h 55m - 21d 19h 09m - 21d 22h 02m - 23d 19h 55m - 24d 18h 00m -  
 24d 18h 31m - 24d 19h 12m - 25d 00h 20m - 28d 23h 24m - 29d 06h 45m -  
 29d 07h 18m - 29d 09h 25m - 29d 10h 24m - 29d 12h 25m - 29d 13h 42m -  
 29d 20h 49m - 29d 21h 54m - 30d 00h 32m - 30d 07h 05m - 30d 13h 31m.

July

01d 08h 05m - 01d 10h 05m - 01d 20h 52m - 01d 21h 13m - 02d 01h 47m -  
 02d 19h 30m - 02d 21h 31m - 03d 10h 30m - 03d 23h 12m - 04d 00h 13m -  
 04d 07h 43m - 05d 06h 25m - 06d 22h 25m - 07d 21h 17m - 08d 00h 02m -  
 09d 15h 38m - 09d 18h 58m - 09d 22h 12m - 10d 04h 09m - 11d 17h 05m -  
 11d 21h 42m - 12d 18h 45m - 12d 23h 05m - 14d 17h 06m - 16d 15h 11m -  
 17d 04h 08m - 19d 01h 59m - 20d 11h 47m - 20d 12h 10m - 20d 22h 35m -  
 21d 00h 45m - 22d 21h 52m - 22d 23h 39m - 24d 00h 15m - 24d 00h 52m -  
 24d 11h 16m - 24d 18h 12m - 25d 00h 30m - 26d 00h 15m - 26d 12h 40m -  
 27d 03h 30m - 28d 00h 27m - 28d 01h 50m - 28d 07h 33m - 29d 00h 18m -  
 29d 00h 36m - 29d 15h 13m - 29d 19h 18m - 29d 23h 57m.

August

01d 02h 10m - 01d 21h 25m - 02d 04h 51m - 04d 18h 58m - 04d 20h 00m -  
 04d 20h 07m - 04d 20h 55m - 05d 10h 42m - 05d 18h 43m - 05d 19h 06m -  
 07d 02h 00m - 07d 10h 20m - 09d 01h 12m - 09d 12h 40m - 09d 19h 30m -  
 10d 21h 00m - 10d 21h 07m - 10d 22h 13m - 11d 02h 26m - 11d 03h 10m -  
 11d 23h 26m - 12d 05h 11m - 12d 05h 30m - 13d 03h 35m - 13d 08h 52m -  
 13d 21h 19m - 13d 21h 35m - 14d 01h 35m - 14d 06h 24m - 14d 11h 00m -  
 20d 18h 57m - 22d 08h 20m - 23d 07h 35m - 23d 09h 52m - 23d 11h 19m -  
 23d 20h 08m - 23d 22h 37m - 24d 13h 19m - 24d 15h 49m - 25d 08h 28m -  
 25d 08h 44m - 25d 09h 35m - 25d 13h 00m - 25d 21h 39m - 26d 00h 46m -  
 26d 20h 22m - 26d 21h 24m - 27d 05h 21m - 27d 08h 38m - 27d 16h 58m -  
 27d 22h 10m - 28d 01h 17m - 28d 08h 50m - 28d 09h 45m - 28d 12h 08m -  
 28d 20h 20m - 29d 03h 12m - 29d 17h 34m - 30d 01h 14m - 30d 09h 48m -  
 30d 19h 12m - 30d 19h 23m - 30d 23h 21m - 31d 02h 15m.

September

01d 05h 23m - 01d 10h 08m - 01d 12h 12m - 01d 12h 58m - 01d 13h 55m -  
 01d 18h 18m - 01d 18h 26m - 02d 05h 27m - 02d 20h 00m - 03d 12h 05m -  
 03d 17h 20m - 03d 19h 14m - 03d 23h 16m - 03d 23h 28m - 05d 08h 08m -  
 05d 19h 46m - 06d 06h 07m - 07d 09h 07m - 07d 23h 00m - 08d 09h 37m -  
 09d 02h 20m - 11d 01h 17m - 11d 02h 08m - 11d 14h 00m - 12d 19h 55m -  
 13d 20h 36m - 13d 20h 49m - 14d 21h 00m - 15d 09h 34m - 15d 11h 38m -  
 15d 14h 50m - 15d 18h 17m - 16d 06h 03m - 16d 09h 15m - 16d 09h 57m -  
 16d 11h 21m - 16d 18h 38m - 17d 02h 15m - 17d 18h 34m - 18d 15h 42m -

TABLE 7 MINOR DISTURBANCES, 1953 - continued

September

18d 15h 58m - 18d 20h 44m - 18d 21h 25m - 18d 23h 15m - 18d 23h 30m -  
 19d 00h 54m - 19d 01h 39m - 19d 04h 34m - 19d 16h 00m - 19d 16h 35m -  
 19d 23h 50m - 20d 00h 22m - 20d 00h 36m - 20d 22h 57m - 21d 15h 30m -  
 21d 16h 01m - 22d 17h 34m - 22d 20h 50m - 22d 23h 48m - 23d 00h 00m -  
 23d 04h 42m - 24d 05h 16m - 26d 08h 48m - 27d 06h 06m - 27d 18h 29m -  
 28d 14h 03m - 29d 15h 12m - 30d 09h 12m - 30d 10h 10m - 30d 14h 15m -  
 30d 15h 41m.

October

01d 11h 51m - 02d 13h 58m - 02d 14h 24m - 02d 15h 03m - 04d 05h 45m -  
 04d 08h 15m - 05d 10h 01m - 05d 15h 44m - 05d 23h 47m - 06d 00h 00m -  
 06d 09h 00m - 06d 18h 52m - 06d 19h 39m - 07d 12h 08m - 07d 21h 04m -  
 07d 22h 45m - 08d 21h 36m - 09d 05h 25m - 10d 01h 08m - 10d 01h 30m -  
 10d 18h 31m - 11d 10h 33m - 11d 11h 32m - 11d 11h 57m - 13d 15h 00m -  
 13d 21h 53m - 15d 10h 25m - 15d 11h 23m - 15d 13h 18m - 15d 17h 36m -  
 15d 17h 59m - 15d 23h 33m - 16d 00h 18m - 16d 15h 52m - 17d 05h 00m -  
 17d 14h 40m - 17d 15h 05m - 17d 20h 29m - 18d 19h 05m - 18d 22h 41m -  
 18d 23h 26m - 19d 01h 12m - 19d 02h 36m - 19d 09h 15m - 19d 15h 24m -  
 19d 17h 35m - 20d 12h 12m - 20d 21h 00m - 21d 07h 58m - 21d 08h 42m -  
 22d 02h 57m - 22d 03h 30m - 22d 13h 05m - 23d 17h 45m - 25d 20h 56m -  
 25d 21h 32m - 27d 14h 00m - 27d 18h 06m - 29d 19h 32m - 29d 21h 05m -  
 30d 11h 30m - 30d 14h 06m.

November

01d 10h 18m - 03d 00h 50m - 03d 12h 15m - 03d 12h 46m - 04d 21h 44m -  
 08d 03h 00m - 08d 17h 11m - 09d 03h 10m - 09d 23h 33m - 10d 12h 30m -  
 10d 18h 15m - 11d 13h 31m - 11d 17h 43m - 11d 23h 52m - 12d 00h 20m -  
 12d 07h 32m - 12d 10h 30m - 12d 10h 35m - 12d 20h 39m - 13d 03h 27m -  
 13d 09h 30m - 13d 13h 07m - 13d 16h 36m - 13d 19h 37m - 14d 19h 07m -  
 14d 19h 50m - 15d 08h 12m - 15d 10h 45m - 15d 17h 38m - 16d 08h 53m -  
 16d 17h 15m - 16d 18h 00m - 16d 20h 03m - 17d 21h 16m - 17d 21h 50m -  
 18d 02h 00m - 18d 15h 05m - 18d 22h 15m - 19d 10h 23m - 19d 12h 36m -  
 19d 14h 00m - 21d 10h 33m - 21d 12h 36m - 23d 05h 52m - 23d 08h 07m -  
 23d 09h 05m - 23d 09h 59m - 23d 16h 00m - 25d 20h 03m - 27d 16h 28m -  
 28d 21h 20m.

December

01d 22h 59m - 02d 01h 32m - 02d 19h 20m - 03d 11h 04m - 03d 22h 21m -  
 04d 10h 08m - 04d 14h 32m - 04d 18h 12m - 04d 23h 26m - 06d 00h 10m -  
 06d 01h 06m - 06d 12h 15m - 07d 01h 40m - 07d 02h 42m - 07d 22h 20m -  
 08d 04h 30m - 08d 06h 10m - 08d 23h 30m - 09d 19h 34m - 10d 20h 48m -  
 11d 04h 20m - 11d 04h 37m - 11d 20h 42m - 14d 10h 40m - 14d 19h 00m -  
 14d 19h 35m - 14d 23h 18m - 15d 13h 07m - 15d 18h 32m - 16d 20h 48m -  
 17d 13h 35m - 17d 13h 52m - 18d 14h 11m - 19d 16h 47m - 19d 22h 33m -  
 20d 14h 13m - 20d 18h 11m - 22d 05h 00m - 23d 13h 25m - 23d 22h 25m -  
 24d 23h 43m - 26d 21h 30m - 28d 16h 05m - 28d 22h 21m - 29d 21h 30m -  
 29d 21h 46m - 29d 22h 30m - 30d 12h 31m - 31d 09h 53m - 31d 19h 15m.

TABLE 8 SOLAR-FLARE EFFECTS (S.F.E.'S) 1953

Starting-times of solar-flare effects checked by 44 observatories. Observatories near the subsolar point are underlined. A simultaneous ionospheric disturbance has been indicated by underlining the time. Stations on the nightside of the earth, which gave a negative or doubtful answer, have been omitted. Strong effects are marked by an asterisk.

January - September

n o n e

October

- \*14d 09h 50m Do Le Lo RS Es Wn Wi Ni Gt Ma Pr Fu CF Eb Tl Ks He Ta MB  
Bi El Hr. Doubtful: Ci. No effect: Ab IK SM Wa.  
 14d 14h 23m Le Es Wn Wi Ni Ma CF Eb Tl Ch SM Tu Ta Al MB Bi Hu Tn Hr.  
 Doubtful: Lo RS Pr Fu Ci Gt. No effect: Do Ab IK Ks He SJ El.  
 14d 23h 45m Ka Ho Am. No effect: Co Si Me Tu Wa To MI.

November, December

n o n e

TABLE 8a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S) 1953

Small bay-like disturbances resembling solar-flare effects. Stations in the twilight-zone on the dark hemisphere are indicated by dotted brackets (.). Stations in full dark, reporting a clear disturbance, are given in parentheses (.). Observatories near the subsolar point are underlined.

January

- 07d 02h 16m (CF) (Gt) (IK) Ka Am. No effect: Ho Wa To MI.

February

- 20d 16h 04m (Do) Le (Gt) SM Ta (El) Hu. Doubtful: Es Wi Ab Ma CF Ci.  
 No effect: Si Me Wn Fu Eb Tl Ch Tu SJ MB Bi Va Hr.

March

- 13d 14h 50m Do Le Ci SM Ta Te Bi El Hu. Doubtful: Lo RS Es Wi Ni Ab Gt Ma Pr Fu CF Eb Ch MB. No effect: Me Wn Ag IK Tl Ks Tu He SJ Va Hr.  
 14d 13h 30m SM Te MB Bi. Doubtful: Do Wi Pr CF Ks He El. No effect: Le Lo RS Es Wn Ni Gt Ab Ma Fu Ag IK Eb Ci Tl Ch Ta SJ Hu Va Hr.

April

- 05d 08h 12m Do Ma Ks Qu Al Bi El. Doubtful: Lo Ni Pr Fu CF Ci MB Hr.  
 No effect: Le RS Es Wn Wi Gt Ab IK Eb Tl SM Ka He Ta Wa.  
 26d 14h 14m Do Pr Ci Tl SM Ks He Ta Bi El Hu (MI). Doubtful: Lo RS Wi Ab Ma CF IK Ch Te MB Va Hr. No effect: Co Le Si Es Ma Wn Ni Fu Ag Eb Tu SJ.

May

- 18d 06h 44m Do Pr (SM)Ks Ta (MB) Bi El. Doubtful: Lo RS Ab Ma Fu IK Eb Ci Qu Wa Hr. No effect: Le Es Wi Wn CF Ag Tl Ka He To Gt.

June

n o n e

TABLE 8a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S)-continued

July

07d 12h 27m	Ta MB Bi Va. Doubtful: Lo RS Pr CF IK SM Qu Gt. No effect: Co Do Le Es Me Wn Wi Ni Ab Ma Fu Ag Eb Ci Tl Ch Ks He SJ El Hu Hr.
14d 14h 10m	Te Bi El. Doubtful: Do CF IK Ks He MB Hr. No effect: Co Le Lo Si RS Es Me Wn Wi Ni Gt Ab Ma Pr Fu Ag Eb Ci Tl Ch Tu Ta SJ Hu Va
31d 15h 36m	Do Ci Tu Ta Te Bi El Hu. Doubtful: Lo RS Ma CF IK Tl SM MB Va. No effect: Co Le Si Es Me Wn Wi Ni Ab Gt Pr Fu Ch Ks He SJ.

August

n o n e

September

11d 14h 30m	Wi Te Bi El Hu (To). Doubtful: Le Lo RS Es Gt CF Ci SM He MB Hr. No effect: Wn Ni Ma Fu Ag IK Eb Tl Ch Ks Tu Ta SJ Va.
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October

<u>14d 07h 44m</u>	CF Al. Doubtful: Wi Ka Hr. No effect: Do Le Lo RS Es Wn Ni Gt Ab Ma Pr Fu IK Eb Ci Tl Ks He Ta MB Bi El Wa To MI.
<u>14d 08h 11m</u>	IK. Doubtful: CF Ka. No effect: Do Le Lo RS Es Wn Wi Ni Gt Ab Ma Pr Fu Eb Ci Tl Ks He Ta MB Bi El Wa Hr To.
16d 10h 03m	Do SM Ks Qu Ta. Doubtful: Lo RS Ab Pr CF IK Ci He MB. No effect: Le RS Wn Wi Ni Gt Ma Fu Eb Tl Bi El Tn Wa Hr.
26d 12h 15m	Do Ta Hu Hr (To). Doubtful: Lo RS Wi SM Qu MB. No effect: Le Es Wn NI Gt Ab Ma Pr Fu CF Ag IK Eb Ci Tl Ch Ks He SJ Bi El Tn.

November, December

n o n e

TABLE 8b REJECTED SOLAR-FLARE EFFECTS 1953

Starting-times of presumed cases, presented by one or more observatories, which most probably do not represent real solar-flare effects.

January

09d 00h 29m ( p.s.c. ) - 09d 13h 55m - 09d 15h 45m - 10d 16h 12m -  
13d 14h 46m - 14d 15h 30m - 16d 02h 36m - 24d 00h 35m ( p.s.c. ) -  
29d 18h 48m ( p.s.c. ).

February

04d 11h 42m - 10d 21h 06m - 21d 22h 08m.

March

05d 03h 53m - 06d 13h 17m - 06d 15h 36m - 13d 15h 50m - 13d 21h 09m -  
14d 00h 34m - 15d 13h 25m - 30d 00h 15m - 31d 22h 20m.

April

23d 23h 10m ( p.s.c. ) - 24d 19h 36m ( s.i. ) - 25d 10h 24m -  
25d 10h 36m - 25d 14h 53m - 27d 13h 22m - 28d 10h 17m - 29d 14h 00m -  
30d 10h 31m.

TABLE 8b REJECTED SOLAR-FLARE EFFECTS - continued

May

02d 11h 08m - 06d 13h 30m - 08d 20h 09m - 10d 20h 16m - 13d 18h 51m -  
 13d 22h 10m - 14d 16h 37m - 15d 06h 30m - 23d 20h 08m - 24d 21h 27m -  
 25d 17h 42m - 25d 21h 03m.

June

06d 16h 15m - 06d 20h 39m - 07d 21h 21m - 08d 15h 02m - 09d 21h 05m -  
 10d 19h 21m - 10d 22h 52m - 13d 01h 21m - 19d 15h 33m - 20d 20h 07m -  
 24d 19h 00m - 24d 22h 33m - 25d 00h 00m.

July

12d 18h 48m - 12d 22h 45m - 24d 00h 21m - 27d 13h 27m.

August

01d 21h 27m - 06d 19h 32m - 10d 00h 18m - 11d 17h 00m - 11d 22h 21m -  
 13d 19h 41m - 13d 21h 41m - 14d 22h 01m - 23d 00h 24m ( s.s.c. ) -  
 23d 17h 18m - 24d 13h 19m ( s.i. ) - 24d 20h 20m - 24d 22h 39m -  
 27d 21h 12m - 29d 14h 12m - 31d 21h 23m.

September

03d 18h 19m - 11d 19h 18m - 11d 20h 18m - 15d 14h 42m - 18d 15h 35m -  
 23d 14h 31m.

October

06d 20h 33m - 06d 21h 15m - 07d 14h 16m - 24d 13h 05m - 25d 19h 18m -  
 25d 20h 11m - 25d 20h 38m - 25d 21h 27m - 25d 22h 17m - 25d 23h 08m -  
 25d 23h 34m - 26d 00h 24m - 29d 17h 09m - 30d 19h 01m - 31d 12h 50m.

November

09d 07h 36m - 16d 11h 50m - 16d 18h 29m - 16d 19h 17m - 24d 13h 12m -  
 24d 20h 35m - 26d 14h 50m.

December

26d 02h 55m - 27d 09h 10m - 27d 10h 05m - 30d 11h 37m - 31d 09h 55m.

TABLE 9 MAGNETOGRAMS RECOMMENDED FOR REPRODUCTION, 1953

The following periods are recommended by the observatory Ni.

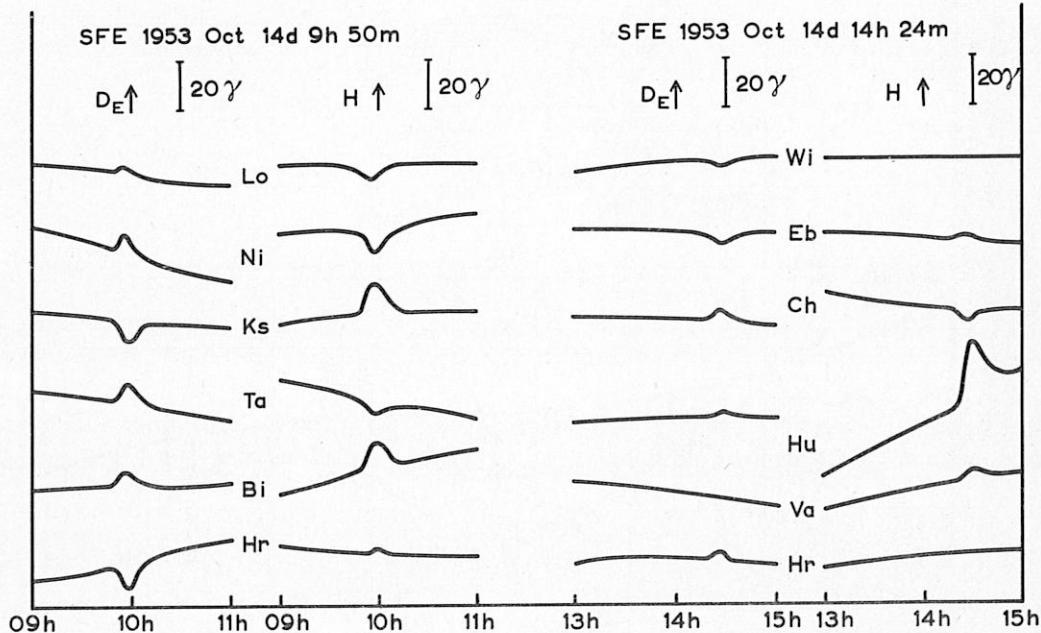
1953 Aug 30d 13h - 18h	: p.s.c.
Oct 17d 13h - 18h	: p.s.c.
Nov 19d 18h - 23h	: p.s.c.
May 15d 10h - May 17d 08h	: storm.
Sep 03d 14h - Sep 04d 08h	: storm.
Oct 15d 10h - Oct 17d 06h	: storm.

FIGURES 1-3 SELECTED SOLAR-FLARE EFFECTS, 1953.

Two important solar-flare effects occurred in 1953, viz. on Oct 14d 09h 50m and Oct 14d 14h 24m. Magnetograms were received from the following observatories: Le Lo Es Wn Wi Ni Gt Ma Pr CF IK Eb Ci Tl Ch SM Ka Ks Tu He Ta Ho MB Bi Hu Va Hr Am.

Figure 1 shows copies of a few selected magnetograms. Directions of increasing easterly declination and horizontal intensity are indicated, together with scales of gammas.

Fig.1



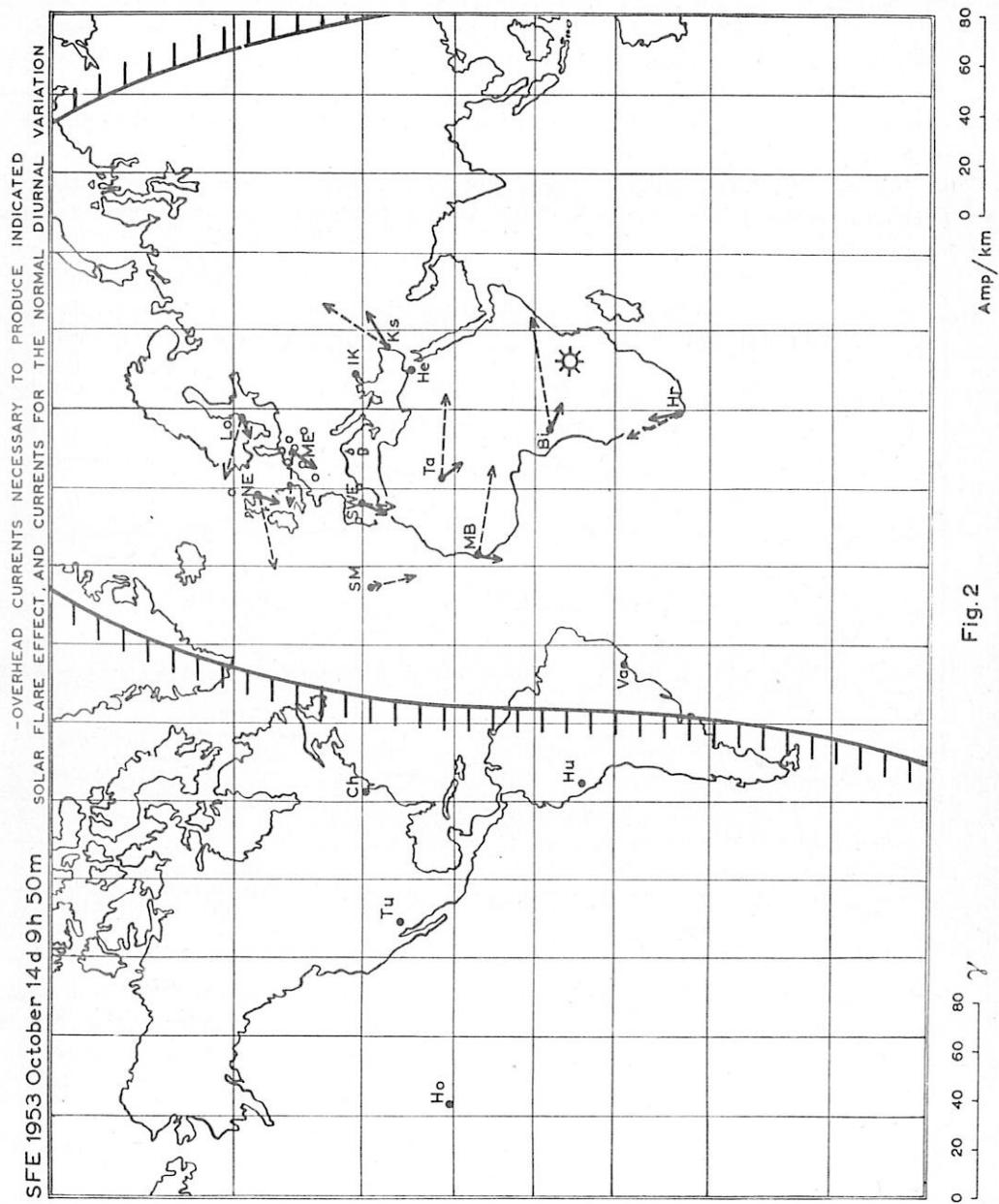
Figures 2 and 3 are maps of overhead currents necessary to produce the s.f.e. at the time of maximum intensity (full arrows), and currents for the normal diurnal variations at the same time (dashed arrows). In order to avoid overcrowding of the vector drawings, mean values are taken for the observatories Wn Wi Ni Gt Ma Pr and CF, and the mean vectors are drawn at a point indicated by the symbol ME. The same is done for the observatories Le and Es (NE), and the mean values for Eb Ci and Tl are indicated at a point SE. No vector drawn at the station means that the s.f.e. was not observed.

The amplitude of the s.f.e. was measured from the estimated curves of D and H, assuming that no solar-flare effect had occurred. Only D- and H- deviations were taken in consideration, the vertical components of the s.f.e.'s being very small in general.

For the normal daily variation (dashed arrows) the daily variation on the day of the s.f.e. was used, taking the night-value (the mean value of the curve between 22h and 02h local time) as base-line.

The heavy line indicates the limitation of the hemisphere hit by direct sun-rays. The subsolar point is marked by a star.

Scales of gammas and of current-intensity per km are drawn below the maps (see Chapman and Bartels, Geomagnetism, Vol.1, p.232).



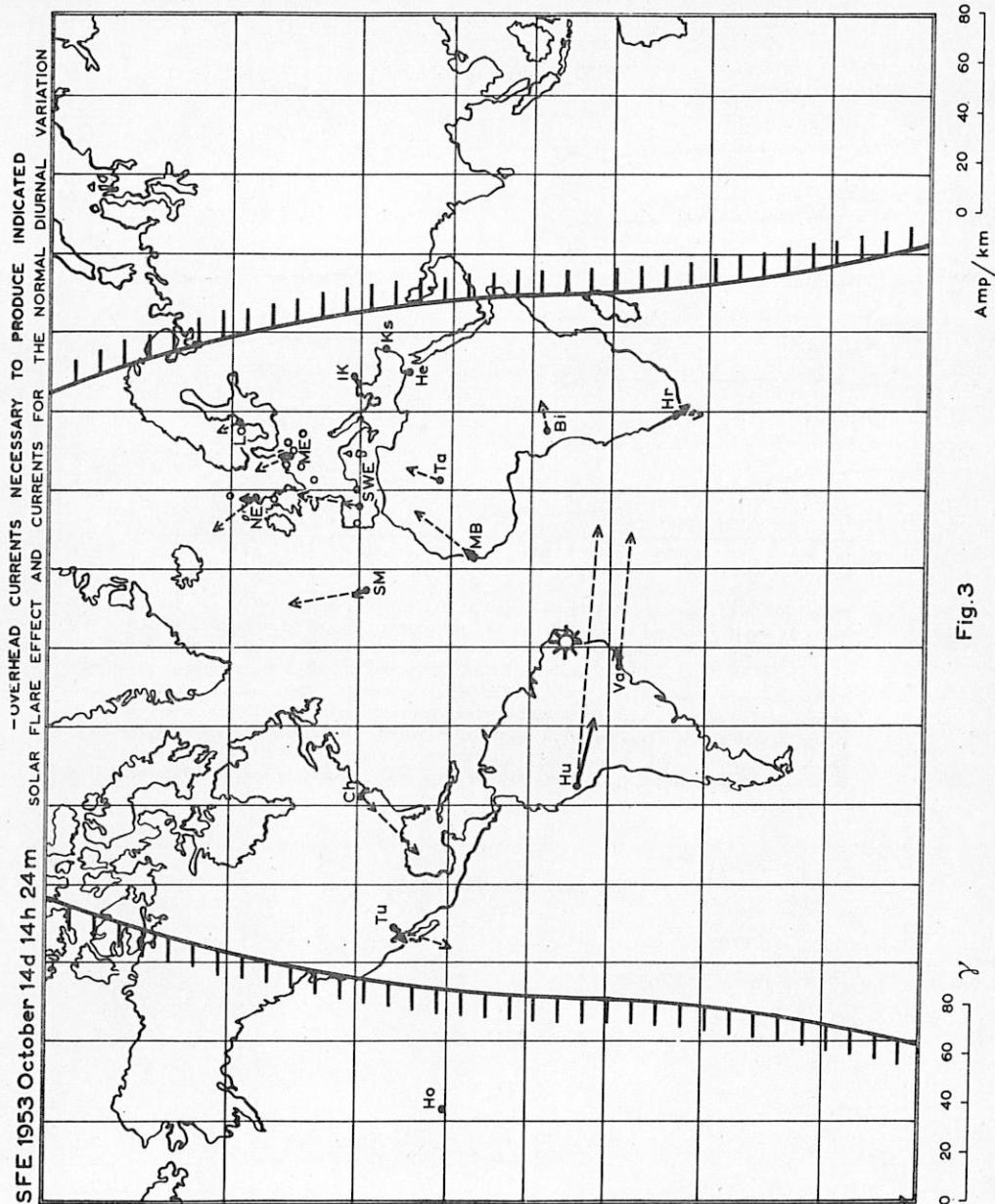
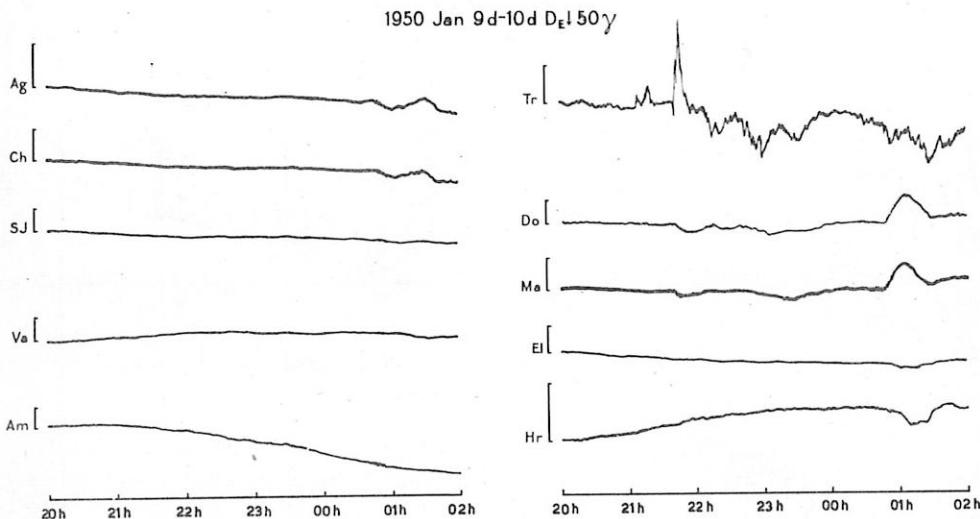
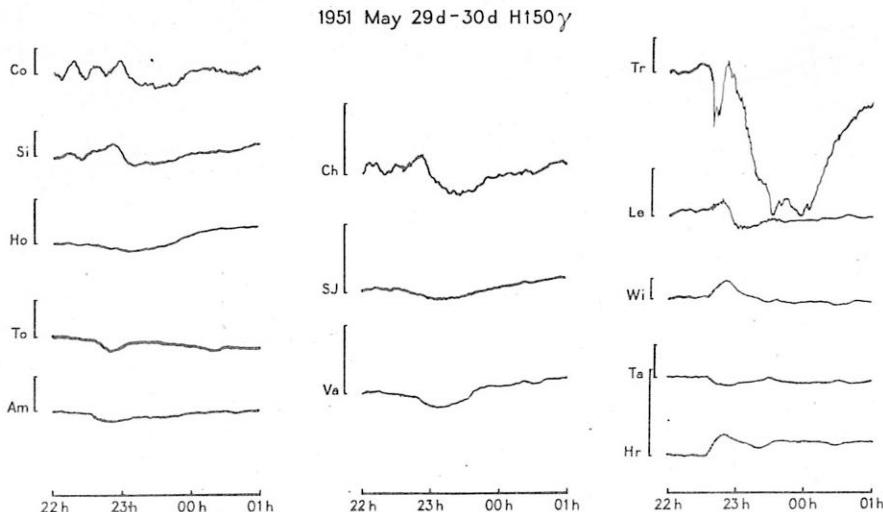


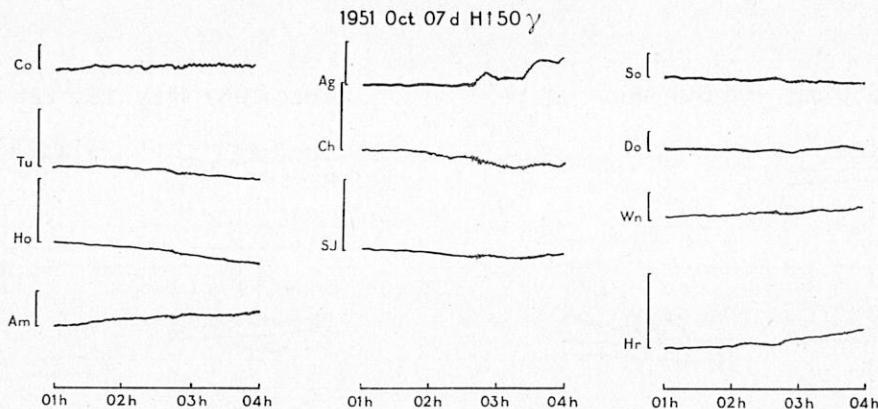
Fig. 3

FIGURES 4 and 5 SELECTED POLAR DISTURBANCES.

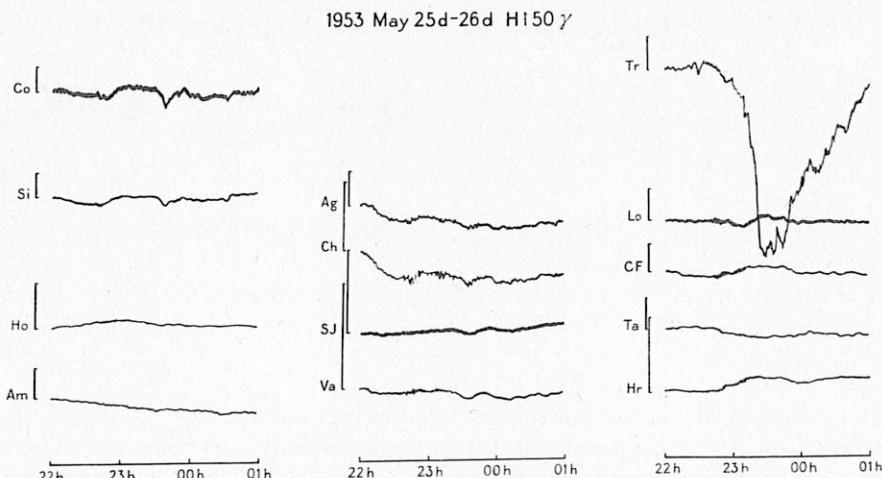
Magnetograms of a polar disturbance on Jan 9-10d 1950. The beginning of the disturbance at 21h 40m and the beginning of the bay at 00h 50m are characterized by pulsations, which were recorded at the observatories: Tr, So, Do, Le, Lo, RS, Es, Me, Wn, Wi, Ab, Ma, Fu, CF, Tl, Ch, SF, Tu, Ta, Ho, Te, SJ, Va, Hr, Am. The vertical scales drawn near to the curves indicate values of  $50\gamma$  for  $D_E$  (increasing downwards). Magnetograms were received from nearly all magnetic observatories. The reproduced magnetograms have been chosen rather arbitrarily, but this collection can be considered as representative for a great part of the earth. The pulsation was recorded over more than half of the earth's surface, whereas the polar storm was recorded strongly by the observatories Tr and So only.



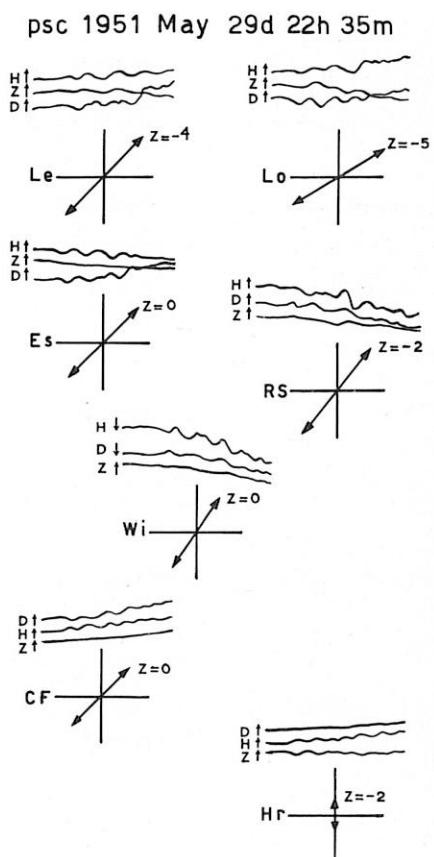
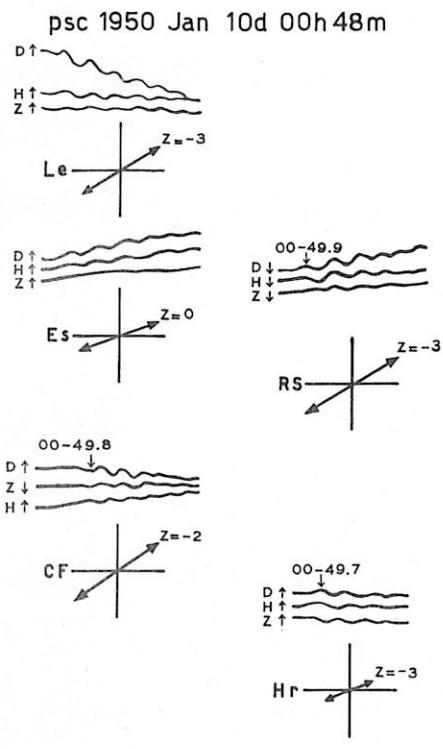
Magnetograms of a polar disturbance on May 29d 1951. The pulsation at the beginning of the disturbance was recorded at the observatories: Tr, So, Do, Le, Lo, RS, Es, Wn, Wi, Ab, Ma, Fu, CF, Tl, Ch, Tu, Ta, Va, Hr. The vertical scales drawn near to the curves indicate values of  $50\gamma$  for  $H$  (increasing upwards). The reproduced magnetograms have been chosen out of the great number sent by the observatories, but they can be considered as representative for a great area. The bay-disturbance was heavy at Tr and So only; the pulsation, however, was recorded over a great part of the earth.

FIGURES 6 and 7 SELECTED POLAR DISTURBANCES - continued.

Magnetograms of a storm recorded at the observatories Me and Ag on Oct 07d 1951. The pulsations at the beginning of the disturbance were recorded at the observatories: Tr, So, Co, Do, Lo, Si, RS, Me, Wn, Wi, Ab, Ma, Fu, CF, Ag, Eb, Ci, Tl, Ch, Tu, Ta, Ho, Te, SJ, Hr, Am. The vertical scales drawn near to the curves indicate values of 50' for H (increasing upwards). Nearly all observatories sent copies of magnetograms of this day. The reproduced magnetograms have been chosen arbitrarily, but they can be considered as representative for a great area. The polar storm was a very local one, whereas the accompanying pulsations were recorded at observatories as far apart as Hr and Am.



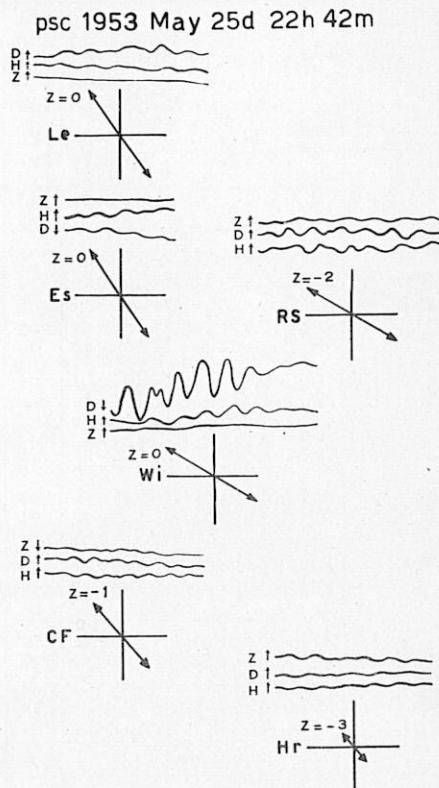
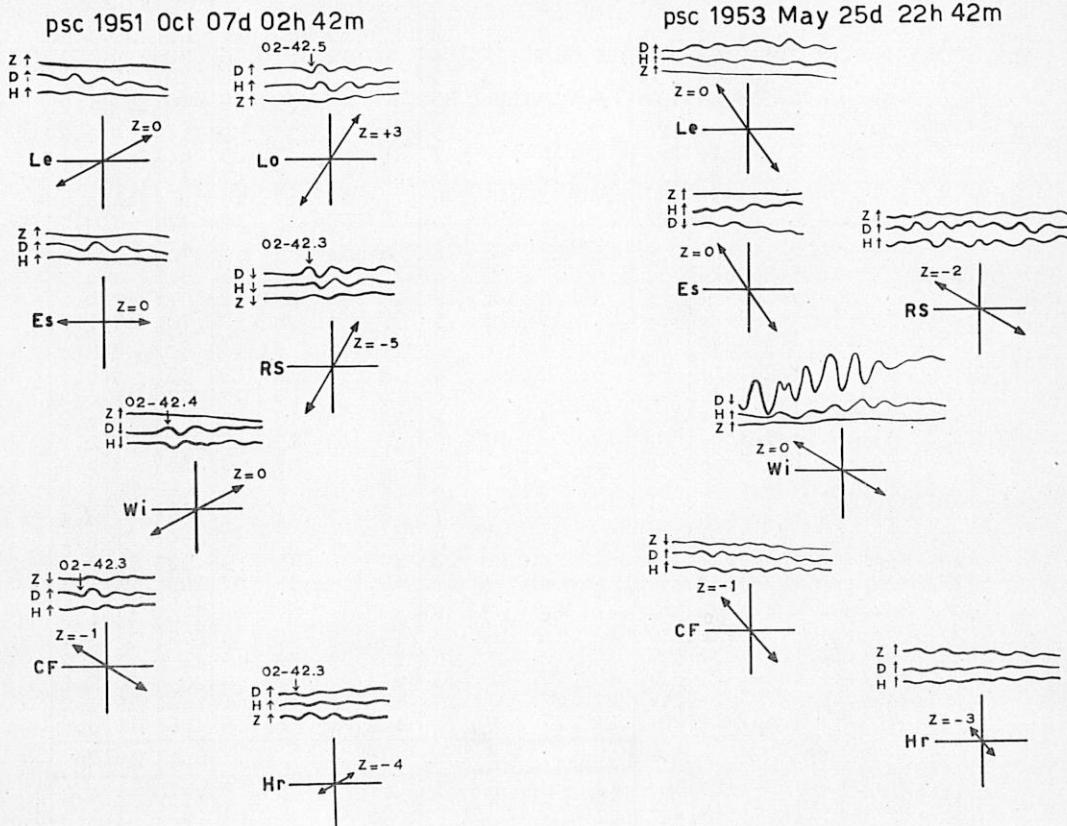
Magnetograms of a polar disturbance on May 25-26d 1953, strongly recorded at Tr and So. The pulsations at the beginning of the bay were recorded at the observatories: Tr, So, Do, Le, Lo, RS, Es, Wn, Wi, Ab, Ma, Gt, Fu, CF, Ag, Eb, Ci, Tl, Ch, SF, Ka, Tu, Ta, Ho, Te, SJ, MB, Bi, El, Va, Hr. The vertical scales drawn near to the curves indicate values of 50' for H (increasing upwards). The reproduced magnetograms have been taken arbitrarily out of the great number sent by the observatories; however, they can be considered as representative for a great area. Whereas the bay disturbance was quite local (strongly recorded at Tr and So), the pulsations were visible in the magnetograms of observatories over more than half of the earth's surface.

FIGURES 8 and 9 ANALYSIS OF QUICK-RUN RECORDS.

Quick-run records of the pulsations of 1950 Jan 10d 00h 48m and 1951 May 29d 22h 35m which occurred at the beginning of the bay-disturbances reproduced in figures 4 and 5 respectively. The arrows drawn near to the symbols D, H and Z indicate the directions of increasing easterly declination, increasing horizontal force, and increasing numerical value of vertical force. For each station the deviations from the undisturbed curves have been compounded into a resultant vector. During the pulsation the perturbing vector describes a straight line or a very flat ellipse moving from SW to NE (except for the case in figure 9 at Hr, where the movement occurs along the NS-axis). The total length of each NS and EW axis is  $10\gamma$ . The indication  $Z = -3$  at the northern end of the perturbing vector means that this end dips  $3\gamma$  below the horizontal plane.

The pulsation starts practically at the same time in stations as far apart as Le and Hr. There is no great difference between the amplitudes at these stations; the pulsations are therefore probably caused by a source with very large horizontal dimensions.

FIGURES 10 and 11 ANALYSIS OF QUICK-RUN RECORDS - continued.



Quick-run records of the pulsations of 1951 Oct 07d 02h 42m and 1953 May 25d 22h 42m, which occurred at the beginning of the bay-disturbances reproduced in figures 6 and 7 respectively. The arrows drawn near to the symbols D, H and Z indicate the directions of increasing easterly declination, increasing horizontal force, and increasing numerical value of vertical force. For each station the deviations from the undisturbed curves have been compounded into a resultant vector. In the first case (fig. 10) the perturbing vector describes a straight line moving from SW to NE (except for CF, where the movement seems to be anomalous). In the second case (fig. 11) the movement of the perturbing vector occurs from SE to NW. The total length of each NS and EW axis is 10°. The indication  $Z = +3$  means that the northern end of the perturbing vector rises 3° above the horizontal plane;  $Z = -5$  means that the northern end dips 5° below the horizontal plane;  $Z = 0$  means no vertical component of the pulsation.

The starting time of the pulsation is practically the same in stations as far apart as Lo and Hr. There is no great difference between the amplitudes at these stations; the cause, if near the earth, must have very large horizontal dimensions.

TABLE 10 PLANETARY THREE-HOUR-INDICES K<sub>p</sub>, EQUIVALENT RANGES ap,  
DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER-FIGURES C<sub>p</sub>,  
1953

	K <sub>p</sub>	Sum	Jan. 1953	ap		Sum	Ap	C <sub>p</sub>
1	3+40303+ 30304-30	26+	18 27 15 18 15 15 22 15 145			18	1.0	
2	202+4-3+ 404+4+30	270	7 9 22 18 27 32 32 15 162			20	1.0	
3	3-301+10 2+3-202-	17-	12 15 5 4 9 12 7 6 70			9 0.5		
4	3-1-1-1- 1-2+2+2-	12-	12 3 3 3 3 9 9 6 48			6 0.3		
5	2-3+7-60 6-505-5-	38-	6 18 111 80 67 48 39 39 408			51 1.6		
6	3-2-2+30 3-5-3-2+	220	12 6 9 15 12 39 12 9 114			14 0.8		
7	201+2+20 302+201+	16+	7 5 9 7 15 9 7 5 64			8 0.4		
8	3+3+2+2- 1+1-2020	17-	18 18 9 6 5 3 7 7 73			9 0.5		
9	400+1+2- 203-3-30	18-	27 2 5 6 7 12 12 15 86			11 0.6		
10	2+101-1- 2-1+1+3-	12-	9 4 3 3 6 5 5 12 47			6 0.3		
11	4-302-2- 2-101+2-	16-	22 15 6 6 6 4 5 6 70			9 0.5		
12	2+201+10 3-20101-	130	9 7 5 4 12 7 4 3 51			6 0.3		
13	0+1+105- 3+2-4-3+	17+	2 5 4 12 18 6 22 18 87			11 0.6		
14	3-303-1- 1+2-2-2+	17-	12 15 12 5 5 6 6 9 70			9 0.5		
15	2-0+0+1- 1+100+20	8+	6 2 2 5 5 4 2 7 33			4 0.1		
16	1+0+0+10 1+201-1+	8+	5 2 2 4 5 7 3 5 33			4 0.1		
17	1-0+1-2- 100+1+3-	9-	3 2 3 6 4 2 5 12 37			5 0.2		
18	1o2o2-3- 4-3+3020	19+	4 7 6 12 22 18 15 7 91			11 0.7		
19	3-5+505- 4-3-3030	300	12 56 48 39 22 12 15 15 219			27 1.2		
20	5-4o4-3+ 201+2+2-	230	39 27 22 18 7 5 9 6 133			17 0.9		
21	2+2+2+3- 3o2-2-2+	18+	9 9 9 12 15 6 6 9 75			9 0.5		
22	2o3o2+20 2-1-1o20	15-	7 15 9 7 6 3 4 7 58			7 0.4		
23	403-1+1- 1-0+1+0+	11+	27 12 5 3 3 2 5 2 59			7 0.4		
24	1olo3-4- 3-3+301+	19-	4 4 12 22 12 18 15 5 92			12 0.7		
25	Oolo2+6- 5o3+3040	24+	0 4 9 67 48 18 15 27 188			24 1.1		
26	505+405- 5-4+6-50	39-	48 56 27 39 39 32 67 48 356			44 1.5		
27	503+5+5- 5-5-5020	34-	48 18 18 56 39 39 48 9 275			34 1.4		
28	3o4-4o3+ 3+5-4+50	31+	15 22 27 18 18 39 32 48 219			27 1.2		
29	5o4o4-3+ 4o4+4+2+	30+	48 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+ 3o1o2-1+	20+	22 27 9 18 15 4 6 5 106			13 0.8		
	K <sub>p</sub>	Sum	Feb. 1953	ap		Sum	Ap	C <sub>p</sub>
1	lol+2-1- lol-1+20	10-	4 5 6 3 4 3 5 7 37			5 0.2		
2	2o2+2o2- 1+3-1+10	14+	7 9 7 6 5 12 5 4 55			7 0.3		
3	3-2o1+2+ lol1+1+	13+	12 7 5 9 4 5 5 5 52			6 0.3		
4	1+2o1-20 3o2+2o0+	14-	5 7 5 7 15 9 7 2 55			7 0.3		
5	0o0+1+0o 1o2-2o0+	7-	0 0 2 5 4 6 7 2 26			3 0.1		
6	0o0o1-1o 1o2-1+0+	60	0 0 3 4 4 6 5 2 24			3 0.1		
7	0+o+0+1- 0o0o0+1-	3-	2 2 2 3 0 0 2 3 14			2 0.0		
8	1-1o1o2- 2-1+1o20	10+	3 4 4 6 6 5 4 7 39			5 0.2		
9	3-4-2o2+ 2+3-2+40	220	12 22 7 9 9 12 9 27 107			13 0.8		
10	2o0+0+1+ 3o3o3+5-	180	7 2 2 5 15 15 18 39 103			13 0.7		
11	4-3-3o3- 2-1-2o20	18+	22 12 15 12 6 3 7 7 84			11 0.6		
12	1o1+1+2- 2-2o2+0-	11o	4 5 6 6 6 7 6 2 41			5 0.2		
13	Oo0o1-0+ 0+o+1-20	4+	0 0 3 2 2 2 3 7 19			2 0.0		
14	3o2o4-3o 1+2+3+1+	20o	15 7 22 15 5 9 18 5 96			12 0.7		
15	3-3-3-2o 3-1o1+4-	19-	12 12 12 7 12 4 5 22 86			11 0.6		
16	4+2-3-3- 2+5-3o2-	230	32 6 12 12 9 39 15 6 131			16 0.9		
17	2+3+3-3o 1+2-2-10	17o	9 18 12 15 5 6 6 4 75			9 0.5		
18	0+o+2o2- 1+2-1+3-	11+	2 2 7 6 5 6 5 12 45			6 0.3		
19	2+3o3-3- 2+3-2o30	21-	9 15 12 12 9 12 7 15 91			11 0.7		
20	3o1-1o1o 1+2+2o1-	12o	15 3 4 4 5 9 7 3 50			6 0.3		
21	4o3+3+2- 1o2o2o2+	20-	27 18 18 6 4 7 7 9 96			12 0.7		
22	3o2o2+2+ 3-4+5-60	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		

TABLE 10 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	0.8
2	4+5+6-6- 6+6+0o5+	45o	52 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 5 6	7 9 7 4	72	9	0.5
	1-3-1o1- 2o2+3+3+	16o	3 12 4 3	7 9 18 18	74	9	0.5
6	0+1-2-2o 2-2-1+4o	13+	2 3 6 7	6 6 5 27	62	8	0.4
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	0.3
12	3-1+1-1o 1-1-1o1-	9-	12 5 3 4	3 3 4 3	37	5	0.2
13	0+0+0-1+ 0+1-1-3o	6+	2 2 2 3	2 3 3 15	32	4	0.1
14	4-3-1+1+ 2+2-3o3o	19o	22 12 5 5	9 6 15 15	89	11	0.6
15	2o1+3+4+ 4o2o2-1o	20-	7 5 18 32	27 7 6 4	106	13	0.8
16	3o4o2+2o 2o2-1+3+	20-	15 27 9 7	7 6 5 18	94	12	0.7
17	2o2-2+1o 0+1-2-0+	11-	7 6 9 4	2 5 6 2	41	5	0.2
18	1-1-1-2- 1o1o2-1o	8+	3 3 3 6	4 4 6 4	33	4	0.1
19	4o4o2+3+ 3+3o4-4-	27+	27 9 18	18 15 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	0.6
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 29 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	0.7
30	4-5-2o1o 2+2o4o3o	25-	22 39 7 4	9 7 27 15	130	16	0.9
31	1+2-1o1+ 3-1o3-3+	15o	5 6 4 5	12 4 12 18	66	8	0.4
	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	0.8
2	4o3+3+3o 1+2o3+2+	23-	27 18 18 15	5 7 18 9	117	15	0.8
3	4-3+2-1o 1o2o3+3+	19+	22 18 6 4	4 7 18 18	97	12	0.7
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	0.3
6	2o3o2+2+ 1+1-1+2-	15-	7 15 9 9	5 3 5 6	59	7	0.4
7	0+0+1-0+ 1o1o1o2-	6+	2 2 3 2	4 4 4 6	27	3	0.1
8	2+2+2o2o 2-1o1+3o	16-	9 9 7 7	6 4 5 15	62	8	0.4
9	3o3+0+2- 1+2-2-1o	14o	15 18 2 6	5 6 6 4	62	8	0.4
10	2-3+3-4- 4-3o2+3+	24-	6 18 12 22	22 15 9 18	122	15	0.9
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	0.8
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	0.3
15	3+3o2+3+ 2+1+2o2-	19+	18 15 9 18	9 5 7 6	87	11	0.6
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	0.8
18	3-3-4-3o 2o2+2+2+	21o	12 12 22 15	7 9 9 9	95	12	0.7
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	0.5
25	3-2-2-3- 3-3-3o4-	21-	12 6 6 12	12 12 15 22	97	12	0.7
26	3o3-4-2o 4-3-2-3+	23-	15 12 22 7	22 12 6 18	114	14	0.8
27	3+2o2+2o 2+2o2-2+	18o	18 7 9 7	9 7 6 9	72	9	0.5
28	2+2+3-3- 2o1+0o0o	14-	9 9 12 12	7 5 2 0	56	7	0.4
29	1+1+2+3- 4-2+1+1-	16-	5 5 9 12	22 9 5 3	70	9	0.5
30	3-2+3o3- 2+4-3+2-	22-	12 9 15 12	9 22 18 6	103	13	0.7

TABLE 10 continued

	Kp	Sum	May 1953				ap				Sum	Ap	Cp
1	lol-1-2- 2-2+0+1o	100	4	3	5	6	6	9	2	4	39	5	0.2
2	2ol+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+	80	2	2	4	3	4	6	6	5	32	4	0.1
4	1+2+1+2+ 0+1ol-2-	110	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	350	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-	320	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	2ol+2+3- 3+2+3o2o	190	7	5	9	12	18	9	15	7	82	10	0.6
11	3-2o2+3o 2ol+1o1o	15+	12	7	9	15	7	5	4	4	63	8	0.4
12	1+2o2-0+ 1ol-1+l+	10-	5	7	6	2	4	3	5	5	37	5	0.2
13	1olo0+1+ 1o0+1o0+	6+	4	4	2	5	4	2	4	2	27	3	0.1
14	1ol-1-O+ 1ololo2o	8-	4	3	3	2	4	4	4	7	31	4	0.1
15	1o3o3-2+ 5+5+8-7-	340	4	15	12	9	56	56	179	111	442	55	1.6
16	6-6o5-5+ 6+6o7-7+	480	67	80	39	56	94	80	111	154	681	85	1.8
17	7-5-3o1+ 2o5o3-4-	270	111	39	15	5	7	15	12	22	226	28	1.2
18	3+4-4-3+ 3-2-2+3+	240	18	22	22	18	12	6	9	18	125	16	0.9
19	4o5o4-4+ 4-1+4-4+	300	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-	150	9	5	7	9	6	5	9	6	56	7	0.4
24	1ol-2o1o 2+2o2+2-	130	4	3	7	4	9	7	9	6	49	6	0.3
25	1-1+l+1+ 1+2ol-2+	10+	3	3	5	5	5	7	3	9	40	5	0.2
26	1+lol+1+ 1+l-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+l+l-1+	110	3	4	6	7	9	5	3	5	42	5	0.2
30	2+l+l-1- 1ololo2-	10-	9	5	3	3	4	4	4	6	38	5	0.2
31	2-0+l-2o 2+2+4+l-	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-	390	12	32	80	67	48	48	67	39	393	49	1.6
3	5-4+6o3o 4+4-4o3o	330	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	5	4	4	41	5	0.2
9	1-1o2o2- 1+lol+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 2ol+1+3+	16+	7	7	9	7	7	5	5	18	65	8	0.4
12	1-l+l+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-l+l+0+ 2-1+2+2o	10+	3	5	5	2	6	3	9	7	40	5	0.2
16	0+0+l2- 2-1-1o1+	8o	2	2	4	6	6	3	4	5	32	4	0.1
17	2ol+2+l+ 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	1ol02-0+ 1+l+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	2o5o4-3o 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	l+l-1-0+ 1-0+o2o	6+	5	3	3	2	3	2	2	2	27	3	0.1
24	2o2o1+l- 1-l+3o2+	13+	7	7	5	3	3	5	15	9	54	7	0.3
25	2+l+lolo 1olol+1+	10+	9	5	4	4	4	4	5	5	40	5	0.2
26	0o0o0+0+ O+ol+l1o	4+	0	0	2	2	2	4	5	4	19	2	0.0
27	O+1-1-1+ 1-1+l+2-	8o	2	3	3	5	3	5	5	6	32	4	0.1
28	1-2-0+l- 1-0+1+l+	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

TABLE 10 continued

	Kp	Sum	Jul. 1953				ap				Sum	Ap	Cp
1	3+4-5-0- 5-2+3-3+	30+	18	22	39	67	39	9	12	18	224	28	1.2
2	4+5-5-3+ 404-4040	33-	32	39	39	18	27	22	27	27	231	29	1.3
3	3+2+3+3+ 4030303-	250	18	9	18	18	27	15	15	12	152	17	0.9
4	3+3+4-4+ 4-303020	260	15	18	22	32	22	15	15	7	146	18	1.0
5	2030403- 2+2-2020	20-	7	15	27	12	9	6	7	7	90	11	0.6
6	5-1+2+2+ 101+1030	170	39	5	9	9	4	5	4	15	90	11	0.6
7	3+404-2- 3+3+3040	26+	18	27	22	6	18	18	15	27	151	19	1.0
8	4-3-3-30 2-2+4-30	23-	22	12	12	15	6	9	22	15	113	14	0.8
9	2+1+202- 2020403+	19-	9	5	7	6	7	7	27	18	86	11	0.6
10	3-203-1- 1-1+1-1-	11+	12	7	12	3	3	5	3	3	48	6	0.3
11	1+301-1- 1+0+1-10	10-	5	15	3	5	5	2	3	4	42	5	0.2
12	1-2-0+0- 2-2-5-4+	15+	3	6	2	2	6	6	39	32	96	12	0.7
13	202+4-3+ 2+2+203-	21-	7	9	22	18	9	9	7	12	93	12	0.7
14	101-1-10 2040402+	16-	4	3	3	4	7	27	27	9	84	11	0.6
15	304-4-3- 3+3-3-10	23-	15	22	22	12	18	12	12	4	117	15	0.8
16	1+2-101- 0+0+011-	60	5	6	4	3	2	2	0	3	25	3	0.1
17	0+102+20 1+1-0+1-	9-	2	4	9	7	5	3	2	3	35	4	0.2
18	2+2-1-1+ 201-0+1+	10+	9	6	3	5	7	3	2	5	40	5	0.2
19	3-201+1- 1-0+2-20	11+	12	7	5	3	3	2	6	7	45	6	0.3
20	3-3-1+20 2+200+10	14+	12	12	5	7	9	7	2	4	58	7	0.4
21	2-1+2+20 1-1-1-20	11+	6	5	9	7	3	3	3	7	43	5	0.2
22	0+0+2-2- 1-201+30	110	2	2	6	6	3	7	5	15	46	6	0.3
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+ 3-303-2+	21+	32	6	5	18	12	15	12	9	109	14	0.8
25	0+101+10 20304-3-	150	2	4	5	4	7	15	22	12	71	9	0.5
26	4+303030 4-2+4040	27+	32	15	15	15	22	9	27	27	162	20	1.0
27	4+606-4- 5-505-30	38-	32	80	67	32	39	48	39	15	352	44	1.5
28	4-5-504- 3+3+4-3+	31-	22	39	48	22	18	18	22	18	207	26	1.2
29	405-4+4+ 3+404+5-	34-	27	39	32	32	18	27	32	39	246	31	1.3
30	4+304+4- 403+3+40	300	32	15	32	22	27	18	18	27	191	24	1.2
31	403+4-40 4-2+202-	25-	27	18	22	27	22	9	7	6	138	17	0.9
	Kp	Sum	Aug. 1953				ap				Sum	Ap	Cp
1	30302020 30303+4-	230	15	15	7	7	15	15	18	22	114	14	0.8
2	2+3+3-30 1+203-20	19+	9	18	12	15	5	7	12	7	85	11	0.6
3	2+2-2+1- 202-202-	14+	9	6	9	3	7	6	7	6	53	7	0.3
4	302+2010 2-3-2+2-	17-	15	9	7	4	6	12	9	6	68	8	0.5
5	1+102020 1-1-3-20	12+	5	4	7	7	3	3	12	7	48	6	0.3
6	1-1-1+20 2-3-2020	130	3	3	5	7	6	12	7	7	50	6	0.3
7	4-2+2-30 1+1+202+	18-	22	9	6	15	5	5	5	9	78	10	0.5
8	2+2+2+2- 1+1+1-2-	14-	9	9	9	9	6	5	5	3	52	6	0.3
9	3+4-3-20 3+2+4+3-	24+	18	22	12	7	18	9	32	12	130	16	0.9
10	2+2+503+ 2+3-2+4+	25-	9	9	48	18	9	12	9	32	146	18	1.0
11	4+4+3+3- 2+3+303-	260	32	32	18	12	9	18	15	12	148	18	1.0
12	4+5+505+ 4+6-3+3+	37-	32	56	48	56	32	67	18	18	327	41	1.5
13	403+3010 4-4-505-	28+	27	18	15	4	22	22	48	39	195	24	1.2
14	3+4-2-2+ 2-2+2+2-	190	18	22	6	9	6	9	9	6	85	11	0.6
15	201+201+ 2-104-3-	16-	7	5	7	5	6	4	22	12	68	8	0.5
16	302-204- 20202+2+	190	15	6	7	22	7	7	9	9	82	10	0.6
17	2-101-0+ 2+1+1-1-	9-	6	4	3	2	9	5	3	3	35	4	0.2
18	3-201-0+ 2-2-102-	12-	12	7	3	2	6	6	4	6	46	6	0.3
19	2-2-1-10 2-101-1-	90	6	6	3	4	6	4	3	3	35	4	0.2
20	1+0+1-1- 1-0+0+10	5+	5	2	3	3	3	2	2	4	24	3	0.1
21	1-101010 1-1-0+0+	6-	3	4	4	4	3	3	2	2	25	3	0.1
22	0+2-1+1+ 1+1-1010	9-	2	6	5	5	5	3	4	4	34	4	0.1
23	4-3+3+5+ 4+50506+	36+	22	18	18	56	32	48	48	94	336	42	1.5
24	5+604+4- 5-6-5+7-	42-	56	80	32	22	39	67	56	111	463	58	1.7
25	404+505+ 5-3-303-	32-	27	32	48	56	39	12	15	12	241	30	1.3
26	405-3+20 3+3+405-	29+	27	39	18	7	18	18	27	39	193	24	1.2
27	50504+50 5-5+5-40	380	48	48	32	48	39	56	39	27	337	42	1.5
28	5-5-405- 4-50405-	35+	39	39	27	39	22	48	27	39	280	35	1.4
29	3+50505+ 4-4+5+40	360	18	48	48	56	22	32	56	27	307	38	1.4
30	5+505+5- 506-4040	390	56	48	56	39	48	67	27	27	368	46	1.5
31	5-4+3-4- 50403+4-	31+	39	32	12	22	48	27	18	22	220	28	1.2

TABLE 10 continued

	Kp	Sum	Sep. 1953				ap				Sum	Ap	Cp
	Kp	Sum	Oct. 1953				ap				Sum	Ap	Cp
1	2+3-4-3-0 4-3-3-2-0	25+	9	12	22	15	27	15	12	7	119	15	0.8
2	5-4-0-0-3- 3-3-3+3-0	28-	39	27	27	12	12	18	18	15	168	21	1.1
3	2+2-3-3- 3-0-5+5+7+	30+	9	6	12	12	15	56	56	154	320	40	1.4
4	7+7-5-5-0 4-3-5+5-5-	41-	154	111	39	48	22	18	56	39	487	61	1.7
5	6-0-4+3-0-2+ 2+1+3+3-0	26-	80	32	15	9	9	5	18	15	183	23	1.1
6	1-0-1+5-0-3- 3-0-1-3-3-0	19+	4	5	48	12	15	3	12	15	114	14	0.8
7	1-3-0-3+3+ 3-3-2-3+	220-	5	15	18	18	12	18	6	18	110	14	0.8
8	3-0-2+3-0-4- 2-2-0-2-1-	180-	15	9	15	22	6	7	6	3	83	10	0.6
9	3-0-3+2-1-0 1-1-1-1+	12+	15	18	6	4	3	3	3	5	57	7	0.4
10	1-1-1-2-0-2- 2-2-0-2-4-	15+	5	3	7	6	9	7	6	22	65	8	0.4
11	6-3-3-0-2+ 3-0-1-0-2-1+	21-	67	12	15	9	15	4	6	5	133	17	0.9
12	20-1+20-3-0 2+20-3-0-3+	190-	7	5	7	15	9	7	15	18	83	10	0.6
13	3-0-3-0-3-0 1-1-0-1-0-2+	180-	15	15	18	15	5	4	4	9	85	11	0.6
14	0-1-1-1-1- 0-1-1-1-0-0	5-	2	3	5	3	2	3	3	0	21	3	0.0
15	0-0-3-3-3- 4-0-4-5-0-3-0	24+	0	12	12	18	27	22	48	15	154	19	1.0
16	3-3-2-2-3-0 3-4-4-4-3-	23+	12	12	9	15	12	22	22	12	116	14	0.8
17	4-0-3+3-2-0 3-0-2-0-2-0	22+	27	18	18	7	15	7	15	6	113	14	0.8
18	2-3-3-1-0 1-2-4+6-	22-	9	12	12	4	3	9	32	67	148	18	1.0
19	6-6+6-6-6- 5-0-7-5-5-0	47+	94	94	80	94	80	111	39	48	640	80	1.8
20	5-5+4-4-3+ 4-4-4-4-5-	360-	56	56	32	18	32	32	32	39	297	37	1.4
21	4-4-5-0-4-0 4-0-4-3-0-3+	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	4-0-5+5-5-0 5-5-0-5-0-4-0	390-	27	56	56	48	56	48	48	27	366	46	1.5
24	4-0-4-0-5-5- 5-0-3-4-3-0	32+	27	27	56	39	48	12	22	15	246	31	1.3
25	3-0-2-0-3-3- 4-3-0-3-2-	220-	15	7	18	12	22	15	12	6	107	13	0.8
26	1-1-1-2-2-0-0 2-0-2-2-3+	16+	5	5	9	7	7	6	9	18	66	8	0.4
27	5-5-4-3-3+ 3-0-2-0-2-0-10	250-	39	39	32	18	15	7	7	4	161	20	1.0
28	3-3-2-0-1-0 1-1-2-0-1-0-10	15-	12	18	7	4	5	5	7	4	62	8	0.4
29	1-1-1-1-1-0 2-2-1-1-0+	80-	3	5	3	4	6	5	6	3	32	4	0.1
30	0-0-1-2-2-0 2-1-3-0-3-	14-	0	5	6	7	6	5	15	12	56	7	0.4
	Kp	Sum	Oct. 1953				ap				Sum	Ap	Cp
1	3-0-5-2-2-2- 3-2-2-3-0-1+	210-	15	39	9	6	18	6	15	5	113	14	0.8
2	2-1-1-2- 2-2-2-1-0-2-	120-	6	5	3	6	6	9	6	4	45	6	0.3
3	1-3-2-2-2- 2-0-2-1-0-2-	14-	3	12	6	9	7	6	4	6	53	7	0.3
4	2-0-1-0-0-1+ 1-0-1-0-2-1-	10-	7	4	2	5	4	4	6	5	37	5	0.2
5	1-1-1-1-2- 0-0-1-0-1-	7+	3	5	5	6	2	2	4	3	30	4	0.1
6	2-1-0-2-1-0 1-1-1-1-1-0	10-	6	4	6	4	5	3	5	4	37	5	0.2
7	2-0-1-5-3-0 3-1-0-1-0-3-	180-	7	3	39	15	18	5	5	2	101	13	0.7
8	2-2-3-2-2- 2-0-2-2-4-0	18+	6	9	12	9	7	5	5	27	82	10	0.6
9	2-0-3+3-2+ 1-1-1-1-2-0	170-	7	18	18	9	5	5	5	7	74	9	0.5
10	3-0-2-0-1-0- 2-3-4-3-	17+	15	7	4	3	6	12	22	12	81	10	0.6
11	1-1-0-1-2- 3-0-3-2-1-0	14-	3	4	3	6	15	18	9	4	62	8	0.4
12	1-1-0-1-0 1-0-2-0-1-0-1	8-	3	4	3	4	3	2	7	5	31	4	0.1
13	1-1-0-0-1+ 1-2-1-2-1-	9-	3	4	2	5	3	6	5	6	34	4	0.1
14	1-2-0-1-0-0 0-1-0-0-0-0	5+	3	7	4	2	2	3	2	0	23	3	0.1
15	0-0-0-2-0-2- 6-0-7-6-5-	280-	0	0	7	6	80	154	67	56	370	46	1.5
16	6-0-5-4-0-2- 3-5-5-6-6-0	360-	80	39	27	9	12	39	67	80	353	44	1.5
17	5-4-4-4-4+ 4-5-4-4-4-0	34+	39	22	32	32	22	56	32	27	262	33	1.3
18	4-4-5-5-0-4+ 5+6-0-5+5+	40+	32	39	48	32	56	80	56	56	399	50	1.6
19	6-5-5-6-6-0 5-5-4-4-4-	41+	94	56	67	80	56	39	32	22	446	56	1.6
20	4-4-5-5-4-0 5-5-5-5-5-	370-	32	56	39	27	39	39	39	39	310	39	1.4
21	3-3-0-5-6- 4-3-1-2-0-2	28-	18	15	56	67	32	12	5	7	212	26	1.2
22	2-4-4-5-3- 3-0-4-0-3-2-	26+	6	32	39	18	15	27	15	9	161	20	1.0
23	3-0-4-0-3-3- 2-3-2-0-1-0	210-	15	27	18	12	9	12	7	4	104	13	0.7
24	0-0-0-2-3- 5-2-1-0-1-0-1	150-	2	2	9	12	39	9	4	5	82	10	0.6
25	3-4-2-0-2+ 2-1-0-2-2-0	170-	12	22	7	9	6	4	6	7	73	9	0.5
26	1-2-2-2-0-0 0-0-2-1-1-1	110-	5	6	9	7	2	2	6	5	42	5	0.2
27	4-3-0-4-3-0 2-3-4-4-3-	25+	22	15	32	15	9	12	22	12	139	17	0.9
28	3-2-2-1-0-0 0-2-2-0-2-0	140-	18	9	4	5	2	6	7	7	58	7	0.4
29	2-3-0-2-1- 2-0-3-3-0-4-0	200-	9	15	6	5	7	12	15	27	96	12	0.7
30	3-0-2-2-2-0 1-1-0-2-0-1-0	14-	15	6	6	7	5	4	7	4	54	7	0.3
31	3-3-0-3-0-1- 1-0-0-0-0-0-0	12+	18	15	15	3	4	4	4	0	61	8	0.4

TABLE 10 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	0.2
2	1-0+2o1+ 1-1+l-1o	8o	3 2 7 5	3 5 3 4	32	4	0.1
3	lol-lolo 2-2o2o2-	11o	4 3 4 4	6 7 7 6	41	5	0.2
4	2+l+l+l+ 1-0+o+2-	9+	9 5 5 5	3 2 2 6	37	5	0.2
5	2+4-3+3o 4o3-2o0o	21o	9 22 18 15	27 12 7 0	110	14	0.8
6	1+l-3-2o 3o2-1-1-	13-	5 3 12 7	15 6 3 3	54	7	0.3
7	0+2o2-2- lol2-l0	10+	2 7 6 6	4 4 6 4	39	5	0.2
8	0+o2+2- 1+l+l-2o	9o	2 2 6 5	5 5 3 7	35	4	0.2
9	2+2o1+l- OooOoOl-	7o	9 7 5 3	0 0 0 3	27	3	0.1
10	OooOoO+o 0+0+l+-	2o	0 0 2 2	0 0 3 2	11	1	0.0
11	OooOoO+- 2o1+2+2o	9-	0 0 2 3	7 5 9 7	33	4	0.1
12	3+l+2-2+ 4-3-4o4+	25+	18 5 6 9	22 12 27 32	131	14	0.9
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	0.9
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	0.7
22	2-1-2o1o 2o1-2-2-	11+	6 3 7 4	7 3 6 6	42	5	0.2
23	1+2-4-4o 3+4-5o4o	27-	5 6 22 27	18 22 48 27	175	22	1.1
24	4o4-4-3- 1o2+2+2-	21+	27 22 22 12	4 9 6 9	111	14	0.8
25	2o4o3-2o 3-2o3o4-	22o	7 27 12 7	12 7 15 22	109	14	0.8
26	4-2+2-1o 1-1-lolo	12o	22 9 6 4	3 3 4 4	55	7	0.3
27	2+l+4-2- 2+2-1+2o	16+	9 5 22 6	9 6 5 7	69	9	0.5
28	1-1+o+l- OooOoOl+	5-	3 5 2 3	0 0 2 5	20	2	0.0
29	3-2+1+2- O+OooOo+	9-	12 9 5 6	2 0 0 2	36	5	0.2
30	1oOo1-1- 1-lolol-	6-	4 0 3 3	3 4 4 3	24	3	0.1
	Kp	Sum	Dec. 1953	ap	Sum	Ap	Cp
1	0+1-1-o+ O+o+l-1-	4o	2 3 3 2	2 2 3 3	20	2	0.0
2	1+l-2o1- O+l-1o0+	7o	5 3 7 3	2 3 4 2	29	4	0.1
3	2-2-1-1+ l+lolo2o	11-	6 6 3 5	5 4 4 7	40	5	0.2
4	4o2-2-1+ l-1o2o2o	14+	27 6 6 5	3 4 7 7	65	8	0.4
5	3-2ololo O+l+l0oO	9+	12 7 4 4	2 5 4 0	38	5	0.2
6	1+o+l-1o 3-2+2-2o	12o	5 2 3 4	12 9 6 7	48	6	0.3
7	3o2o1+2- O+o+o+2o	11o	15 7 5 6	2 2 2 7	46	6	0.3
8	l-2-2-1o 1+2o2o3-	13o	3 6 6 4	5 7 7 12	50	6	0.3
9	3+l-1-1- 1o2o3+2-	13+	18 3 3 3	4 7 18 6	62	8	0.4
10	1+oOl+2o 1o2o0+2-	10-	5 0 5 7	4 7 2 6	36	4	0.2
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- 201+4-2+	18-	9 12 6 6	7 5 22 9	76	10	0.5
14	1o1+2-1+ 1+l+2o1+	11+	4 5 6 5	5 5 7 5	42	5	0.2
15	O+lol+2o 1o1-3o2+	12-	2 4 5 7	4 3 15 9	49	6	0.3
16	2-1-2o2o 1-lol-2-	10+	6 3 7 7	3 4 3 6	39	5	0.2
17	2-2-lolo 1+2o1o3o	13-	6 6 4 4	5 7 4 15	51	6	0.3
18	3o0+lolo 2-2-2-2-	12o	15 2 4 4	6 6 6 6	49	6	0.3
19	1o0+2-1- 1o2o2o2-	10+	4 2 6 3	4 7 7 6	39	5	0.2
20	1o1+l+o+ 1+3-2o1+	11+	4 5 5 2	5 12 7 5	45	6	0.3
21	2o1+lol- 1-o+o+3-	9o	7 5 4 3	3 2 2 12	38	5	0.2
22	2-3-2+l+ 2-2+3o1+	16+	6 12 9 5	6 9 15 5	67	8	0.5
23	1-0+l-0+ 2-1+2+2-	9o	3 2 3 2	2 6 5 9	36	4	0.2
24	2+2+2+2- O+ooololo	11o	9 9 9 6	2 0 4 4	43	5	0.2
25	1+l+2o1o1o 1o2o1+3o	13-	5 4 7 4	4 7 5 15	51	6	0.3
26	1+o+ooolo 1o1+2-3-	9+	5 2 0 4	4 4 5 6	38	5	0.2
27	1+l+2-2- 2-2+2o4-	15-	5 4 6 6	6 6 6 7	62	8	0.4
28	3o2o1o2- 2+2o2-1+	15o	15 7 4 6	9 7 12 6	59	7	0.4
29	3-1-lol+ 2o3-2-3o	15o	12 3 4 5	5 7 15 5	64	8	0.4
30	1o2-1+l+ 1+l+1+l+	10+	4 6 5 5	5 4 5 5	39	5	0.2
31	1-lol2o2- O+o+o+l-	7o	3 4 7 6	2 2 2 3	29	4	0.1

TABLE 11 FREQUENCIES OF Kp INDICES, 1953  
 (continues Table 17 in IATME Bulletin 12g)

Kp	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De
0°	1	8	.	1	.	2	1	.	3	4	14	4
0+	11	16	7	6	12	14	13	8	3	15	17	25
-	14	12	17	3	18	21	21	20	14	17	24	26
10	15	16	15	9	25	19	11	14	10	24	18	37
+	23	22	18	19	28	34	17	14	17	22	18	38
-	23	18	14	21	21	26	15	22	15	30	19	38
20	18	23	17	22	21	29	22	22	17	20	19	32
+	22	18	13	28	29	22	18	22	14	17	16	11
-	21	19	15	19	13	5	17	15	24	14	11	12
30	21	13	19	22	15	17	20	11	29	16	13	8
+	20	9	18	26	13	11	23	18	20	10	9	4
-	15	6	21	26	13	10	18	14	12	7	16	6
40	12	8	19	13	5	4	18	11	11	7	14	3
+	5	7	14	8	8	6	13	12	9	10	13	3
-	10	7	12	6	10	7	12	13	10	14	6	.
50	9	9	8	5	3	3	2	15	9	1	6	i
+	3	7	8	4	4	1	3	11	10	9	4	
-	3	2	4	1	2	6	3	3	3	4	3	
60	1	4	3	1	2	2	1	1	3	5		
+	.	3		1	1		1	1	3	1		
-	1	3		3			1	2		.		
70				.					2	.		
+												
-												
80												
+												
9-												
9+												
	248	224	248	240	248	240	248	248	240	248	240	248

TABLE 12 AVERAGE AMPLITUDES Ap FOR MONTHS, 1953  
 (unit 2 gammas)  
 (continues Table 14 in IATME Bulletin 12g)

Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
15	15	22	16	16	13	16	19	21	16	13	7	16

TABLE 13 LIST OF MAGNETIC STORMS, 1953

Continues Table 16 in IATME Bulletin 12g. Gives consecutive sequences of three-hour-intervals (Eighths E of the Greenwich day) in which at least one K<sub>p</sub> reached or surpassed 7+, and no K<sub>p</sub> was smaller than 5-.

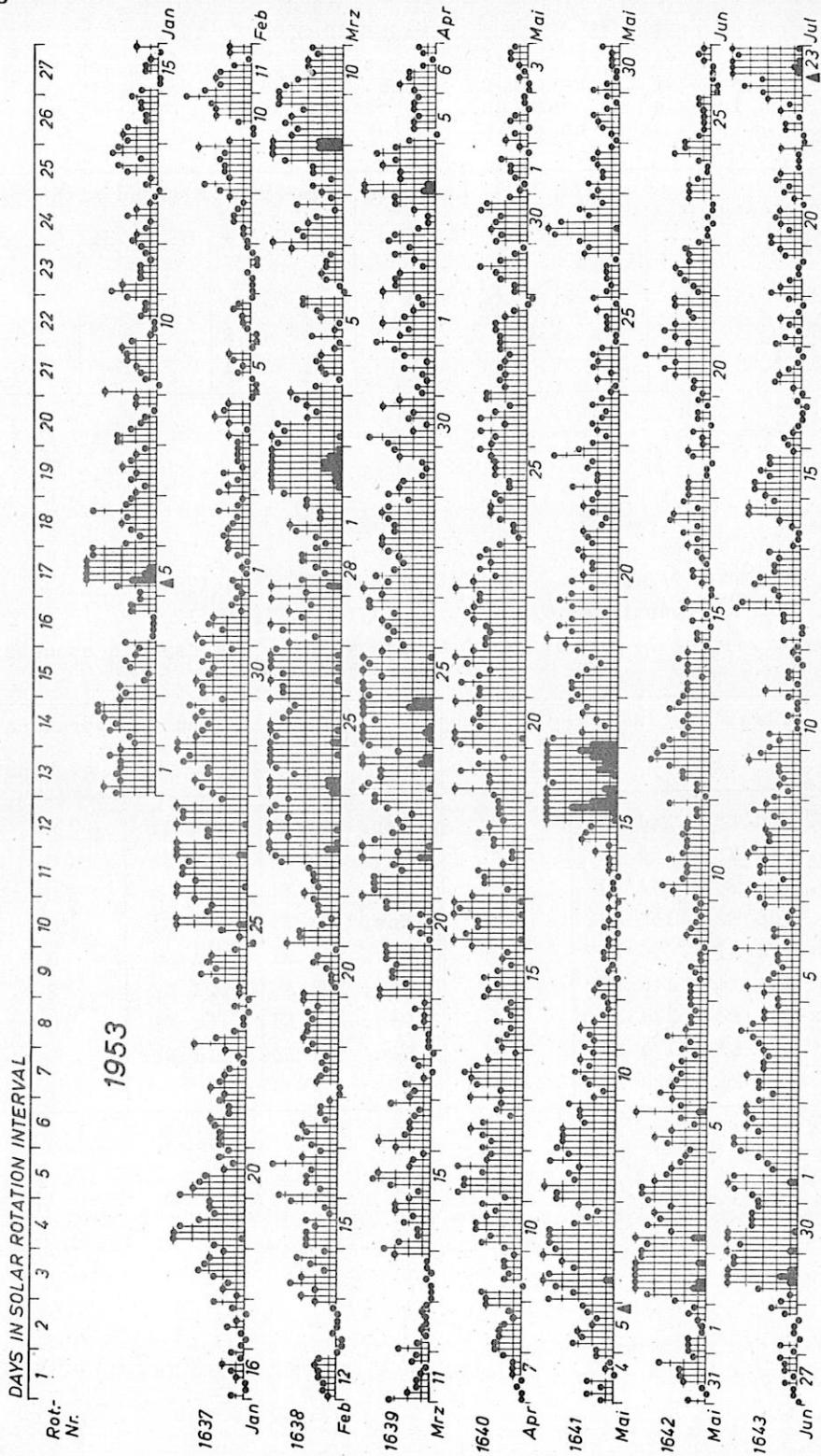
Beginning	s.c. d	Duration Eights	Number of Eighths with K <sub>p</sub> =					
			7-	70	7+	8-	80	8+
May 15 E5	.. ....	14	3	.	1	1		
Sep. 3 E6	.. ....	7	1	.	2			
Oct. 15 E5	15 08.8	6	.	.	1			

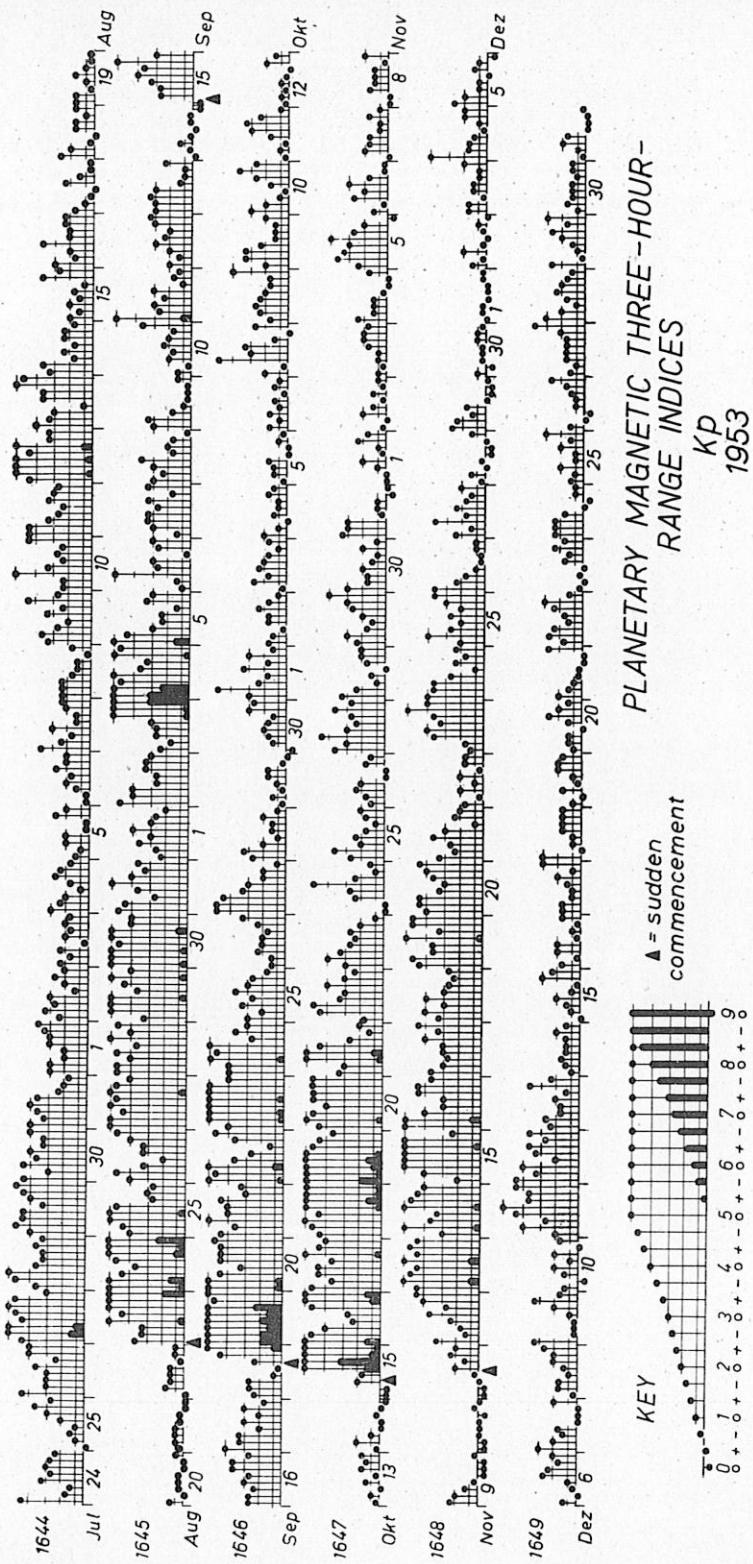
TABLE 14 VERY QUIET INTERVALS IN 1953

(continues Table 15 in IATME Bulletin 12g)

K<sub>p</sub> not exceeding 1+ for at least 8 intervals (= one day) in succession

First ... last Eighth	Duration Eighths	First ... last Eighth	Duration Eighths		
Jan. 23d E3	24d E2	8	Sep. 14d E1	15d E1	9
Feb. 6d E7	8d E3	13	Oct. 14d E3	15d E2	8
Feb. 12d E8	13d E7	8	Oct. 31d E4	Nov. 1d E3	8
Mar. 12d E2	13d E7	14	Nov. 9d E3	11d E4	18
May 2d E5	3d E5	9	Nov. 28d E1	28d E8	8
May 12d E4	14d E7	20	Nov. 29d E5	Dec. 2d E2	22
June 25d E2	27d E7	22	Dec. 5d E3	6d E4	10
July 16d E3	17d E2	8	Dec. 30d E3	31d E2	8
Aug. 19d E6	22d E1	20			

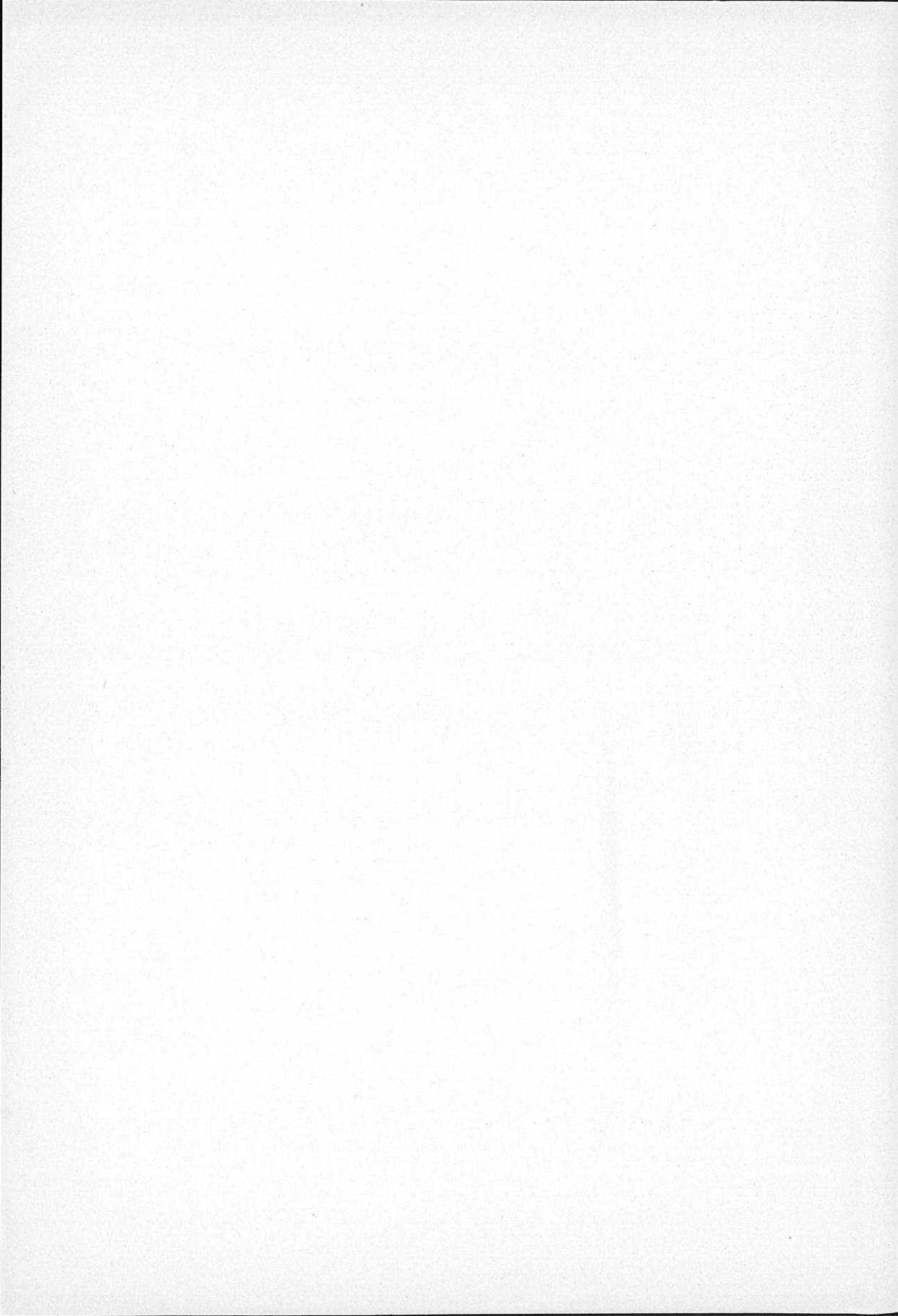


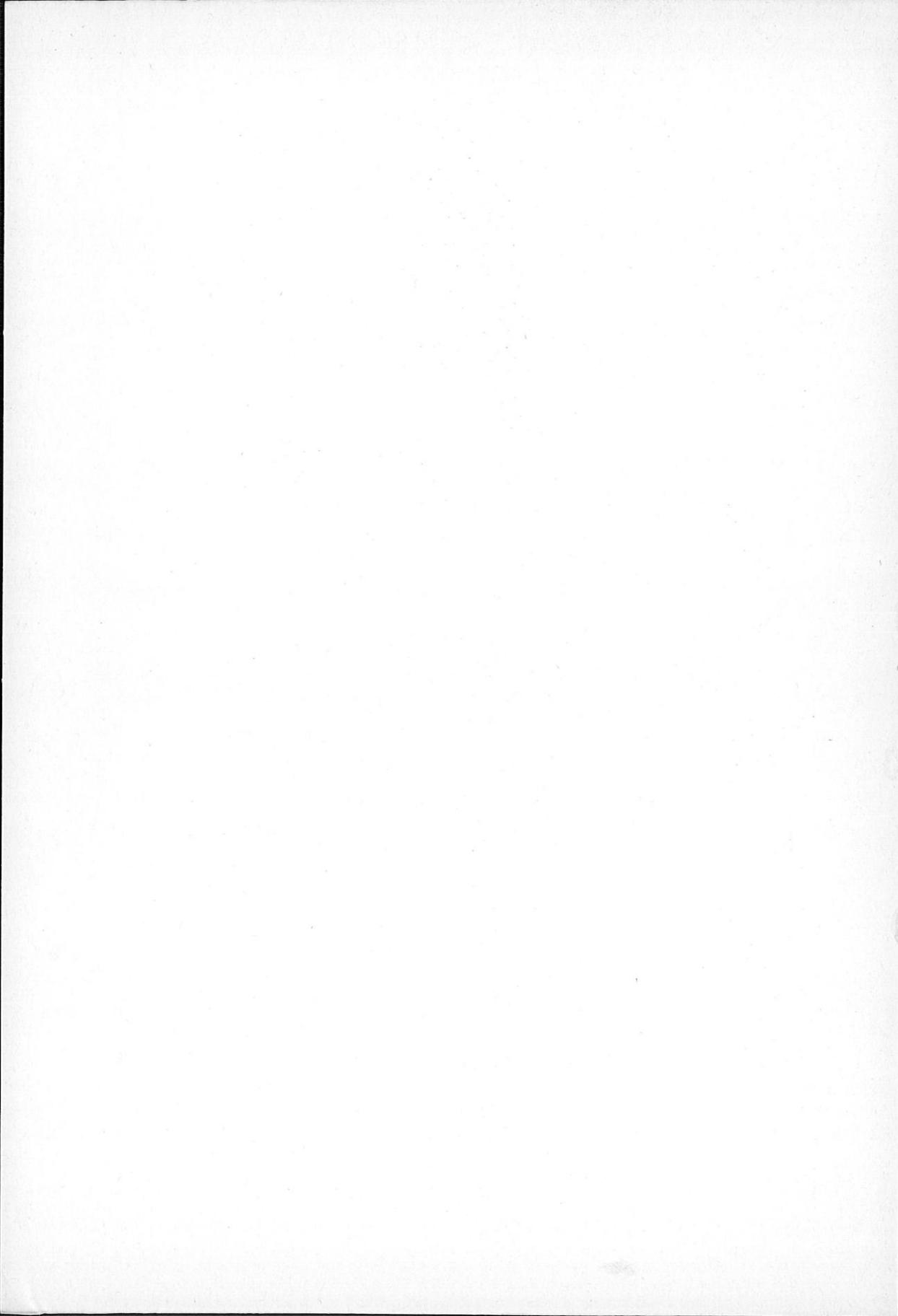


E R R A T A

Figure A, Bulletin 12 f, shows Abinger as having reported K-indices since 1940 only. However, figures for the years 1929-1939 appeared in Bulletin 12c.

Data sent by the observatories Ap and HI have been used for the tables 8, 8a and 8b. They have, however, not been used for the tables 4, 5 and 6, as the check-lists arrived after completion of these tables.





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