

IATME Bulletin No. 12e

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF TERRESTRIAL MAGNETISM AND ELECTRICITY

GEOMAGNETIC INDICES

K and C, 1950

By

J. BARTELS and J. VELDKAMP

Part of the cost of printing this publication was
borne by a Grant-in-Aid from U.N.E.S.C.O.

Washington
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WILLIAM H. DODD

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P R E F A C E *

By S. Chapman

It is a matter of great satisfaction that amidst the political and military disturbances of the present time, so many magnetic observatories**, widely spread over the globe, are able and willing to cooperate in this beneficial scientific enterprise--the characterization of several aspects of the magnetic state of the earth, for intervals of time that range from three hours to a (Greenwich) day, a month, a year. The fact and knowledge of this cooperation links the observatories, their Directors and staffs, sometimes isolated and far removed from centers of culture, into a community with common interests, and a wider geophysical outlook than is provided by the data from any one observatory. Each has a share in the production of the Bulletins, and may find satisfaction in the thought that its data contribute to a synthesis that is of interest not only to all workers in geomagnetism but also to those in the fields of solar and ionospheric physics and radio communication.

The preparation of most of the contents of this Bulletin was supervised by Dr. J. Veldkamp, who has also added some special new features, particularly his interesting study of six selected solar flare magnetic effects in 1949, leading to six world maps (pp. 98-103) showing the inferred associated electric current systems in the ionosphere.

The cooperating observatories have shown most laudable zeal in providing data on sudden storm commencements, other sudden impulses, solar flare effects, and in some cases magnetograms of special interest, whose concentration at one place may materially lighten the labors of workers who wish to study the variations concerned. The wealth of data on sudden magnetic impulses and commencements calls for consideration of the best way of presenting and treating such material--a question to receive attention at the forthcoming General Assembly of the Association at Brussels in August 1951.

Dr. J. Bartels, Chairman of the Committee supervising the production of these Bulletins, has made a valuable study of the possibility of standardizing the assignment of the daily international magnetic character figures C; he has shown how the three-hour indices K_p based on the indices K supplied by each cooperating observatory can be used as the basis for daily character figures C_p closely similar in distribution to the character figures C_i as formerly determined. His method will be considered at the General Assembly at Brussels as a possible new method for adoption. Its main value would not be that it would release those observatories that already supply K figures from the task of supplying also daily local character figures C as in the past; its virtue would be that C_p would be determined on a more objective basis than heretofore, thus giving a more uniform series of daily figures.

* New readers of these Bulletins may usefully refer to the Preface to Bulletin 12c. There they will find an outline of the purpose and recent background of the organization and work that lead to the production of these valuable contributions to summarized geophysical data. Users of the Bulletins may find it well to note in their copies of earlier Bulletins the existence of the corrections noted in Table 1a.

** A new contributor to this Bulletin is the North African observatory of Tamanrasset.

with the highest frequency of occurrence. The frequency distributions of the number of days with precipitation for each month are shown in Fig. 1. The highest frequency of occurrence of days with precipitation is in January, followed by December, November, and October. The frequency distributions of the number of days with precipitation for each month are shown in Fig. 1. The highest frequency of occurrence of days with precipitation is in January, followed by December, November, and October. The frequency distributions of the number of days with precipitation for each month are shown in Fig. 1. The highest frequency of occurrence of days with precipitation is in January, followed by December, November, and October.

The mean number of days with precipitation for each month is shown in Fig. 2. The mean number of days with precipitation is highest in January, followed by December, November, and October. The mean number of days with precipitation is highest in January, followed by December, November, and October.

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GEOMAGNETIC DATA, 1950

Introduction

The list of observatories contains data of all contributing magnetic observatories. The stations have been arranged according to geographic latitude. The first page 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 figure 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 Station or Radio-Service" indicates the ionospheric or solar observatory or the radio-service whose reports on Dellinger-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.

Figure A shows graphically which observatories have furnished K-figures for 1936-1950. The symbols for the observatories, which are not found in the list for 1950, are explained in Bulletin 12. During the months of January to August 1950, 38 observatories sent their K-indices. Beginning with September 1950 the observatory Nantes (Na) joined the K-group, but the number of observatories was reduced again to 38 in December, when the observatory Zô-Sè (ZS) was closed by the Chinese military authorities.

Table 1 gives the eight K-indices for each magnetic observatory for every day of 1950¹⁾. The observatories are indicated by the symbols given in the list of observatories, and are arranged in the order of geomagnetic latitude. When a value K is missing, a hyphen is used. Interpolated values are indicated by dots above the figures. The actual scaled K-indices are given, without any reduction for a pre-sunrise solar-flare effect.

Table 1a gives K-figures for 1950 from the observatory Tn, which arrived after completion of table 1, and corrected K-indices for the years 1930, 1931, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948 and 1949 from the observatory Lo.

Table 2 shows the mean Kw, the mean values of the K-indices for each three-hour interval. It also gives the sum of the eight Kw-figures for each day. The mean values are based on the K-indices of table 1.

Table 3 gives the C-figures for 45 stations (44 stations in December) for every day of 1950. 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. The selected days are summarized in table 7.

Table 4 shows the international magnetic character figures C, 1950, obtained by averaging the values of table 3 for every day.

1) As for the scheme of K-indices, the reader is referred to Terr. Mag. and Atm. Elec., vol. 44, pp. 411-433 (1939), and vol. 46, pp. 301-303 (1941).

Table 5 gives the monthly mean values of Kw for each of the eight three-hour intervals, the monthly mean Kw and the monthly mean C. It also gives the annual means for 1950.

Table 6 gives the annual means for the years 1940-1950.

Table 7 gives a summary of the selected quiet and disturbed days for 1950. The selection was made on the basis of four criteria: (a) C; (b) the sum of the eight values of Kw; (c) the sum of the squares of the eight Kw; (d) the greatest of the eight values of Kw. The days of each month were assigned relative "order numbers" according to the four criteria, the four 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 from the ten under avoidance of a 14 days' period in order to reduce a lunar influence on the mean daily variation on the five quiet days.

Table 8 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 37 observatories which checked the times agreed to the mean values, but some of them gave different times, indicated in the table. The checking observatories were: Tr, Co, So, Le, Do, Si, Es, Lo, RS, Wn, Wi, Ab, Ni, Ma, Sw, CF, Ch, Fu, Eb, Tl, SF, Tu, Ks, SJ, Te, He, Ka, Ho, Hu, Va, El, Ap, Pi, Hr, Wa, To, Am.

Observatories, which found a slight disturbance, without being clear about its character, are indicated by the word "doubtful"

Table 8a gives times of sudden displacements in the magnetograms, resembling typical sudden commencements, which were however not followed by a magnetic storm.

Table 9 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 a pulsation and (or) a bay-disturbance.

Table 9a gives a summary of sudden geomagnetic changes or impulses which could not be classified as s.s.c. or p.s.c.

Table 9b summarizes times of small geomagnetic changes which were confirmed by only a few of the 37 checking observatories.

Table 10 gives a summary of solar-flare effects, reported by the observatories²⁾. The times tabulated in the column at the left indicate the beginning of the solar-flare effect. Very important cases are marked by an asterisk. A check of the solar-flare effect was made by 33 observatories: Tr, Co, Le, Do, Si, Es, RS, Wn, Wi, Ab, Ni, Ma, CF, Ch, Fu, Eb, Tl, Tu, Ks, SJ, Te, He, Ka, Ho, Hu, Va, El, Ap, Pi, Hr, Wa, To, Am.

Stations lying on the daylight-hemisphere, which reported a clear effect, have been written behind the indicated times. Underlined are observatories lying near

2) The reader is referred to papers on solar-flare effects in *Terr. Mag. and Atm. Elec.*, vol. 41, pp. 404-406 (1936), and vol. 42, pp. 109-122 (1937).

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 gave 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 solar-flare effect, the indicated time has been underlined.

It must be emphasized that it is not quite certain that all cases of this table represent real solar-flare effects. This holds especially for the small effects which are difficult to distinguish from other disturbances.

Table 10a 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. Meanwhile, it is quite possible that a part of the cases of this table are real solar-flare effects. The underlining of times and stations, and the use of brackets, has the same meaning as in table 10.

Table 10b 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 11 gives a number of ionospheric disturbances, which were not accompanied by a clear geomagnetic effect.

Table 12 is a list of magnetograms, 1950, recommended for reproduction. The great magnetic storms and strong solar-flare effects are summarized. Additional magnetograms recommended by a few observatories.

Table 13 is a report on six selected solar-flare effects, recorded in 1949, viz. February 01d 12h 19m, September 05d 12h 30m, September 13d 13h 03m, September 17d 17h 16m, September 18d 09h 45m and October 02d 14h 01m.

The following observatories sent copies of magnetograms and (or) vector drawings of the solar-flare effects, as well as data on the normal daily variation: Co, Le, Si, Es, Lo, RS, Wn, Wi, Ab, Ni, CF, Ch, SM, Eb, Tl, Tu, Ks, SJ, Te, He, Ho, Hu, Va, El, Pi and Hr. Furthermore, magnetograms from the magnetic observatory on the South Orkney islands (Or) were available.

The observatories Tr, Ka, Ap, To and Am reported that no solar-flare effect had been registered at the indicated times.

Six maps show the overhead currents necessary to produce the s.f.e.'s and the currents of the normal daily variation. In order to avoid overcrowding of the

vectors in the northwestern part of Europe, mean values for the stations Le, Es, Lo, RS, Wn, Wi, Ab and Ni are drawn at a point indicated by the symbol NE. The same was done for the stations CF, Eb and Tl. Here the mean values are drawn at the point indicated by SE.

For the normal daily variation the mean value on the five international quiet days of the month was used, except for the six U.S.C.G.S. observatories (Co, Si, Ch, Tu, SJ, Ho) which forwarded the mean daily variation for all days.

Most observatories sent also vector drawings of the daily variation on the days of the solar-flare effects, or copies of magnetograms from which this daily variation on the day itself could be calculated. It turned out that in general the s.f.e. disturbance-vector did not coincide better with the vector of the daily variation on the day itself than with the mean values of five international quiet days. An exception was found for the station Hu. Here the best agreement was obtained when the diurnal variation on the day of the s.f.e. was calculated, taking the night-value (the mean value of the curve between 22h and 02h local time) as base-line from which the daily variation was measured.

Table 14 lists planetary three-hour-range indices Kp for 1950. For a description of the meaning of Kp, the reader is referred to the Journal of Geophysical Research, vol. 54, pp. 296-297, September 1949.

The final portion of this Bulletin, starting on page 109, is a study prepared by Prof. J. Bartels which demonstrates the correlation between the well known daily international character figure, Ci, and the planetary character figure, Cp, the latter being derived from the planetary three-hour-range indices, Kp. Prof. Bartels concludes from this study that "the planetary character figure Cp, based exclusively on Kp-indices, appears to meet the requirements of the IATME for an adequate and homogeneous continuation of the series of daily international magnetic character-figures, Ci."

Committee on Characterization of Magnetic Disturbances

J. Bartels, Chairman
Geophysikalisches Institut
Göttingen, Germany

J. Veldkamp
Kon. Nederlandsch Met. Instituut
De Bilt, Holland

LIST OF OBSERVATORIES 1950
Arranged according to geographic latitude

	Observatory	Collaborator	Geographic		Geomagnetic	
			Lat.	Long.	Lat.	Long.
Tr	Tromsø	E.Tonsberg	+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 05	9 06	+62.3	100.0
Le	Lerwick	R.A.Watson	+60 08	358 49	+62.5	88.6
Lo	Lovö	N.Ambolt	+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
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
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
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
Eb	Ebro	A.Romaná S.J.	+40 49	0 30	+43.9	79.7
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.Am.Ferreira	+37 46	334 21	-45.6	50.9
SF	San Fernando	W.Benítez	+36 28	353 48	+41.0	71.3
Ka	Kakioka	S.Imamiti	+36 14	140 11	+26.0	206.0
Ks	Ksara	J.Delpéaut S.J.	+33 50	35 54	+30.4	112.0
Tu	Tucson	J.H.Nelson	+32 15	249 10	+40.4	312.2
ZS	Zé-Sè	M.Burgaud S.J.	+31 06	121 11	+19.8	189.2
He	Helwan	M.R.Madwar Bay	+29 52	31 20	+27.2	106.4
Ho	Honolulu	L.R.Burgess	+21 18	201 54	+21.1	266.5
Te	Teoloyucan	R.O.Sandoval	+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
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	A.L.Burrows	-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	J.W.Beagly	-43 10	172 44	-47.7	252.5

LIST OF OBSERVATORIES 1950 - continued

	Scale Values			Lower Limit K = 9 γ	Ranges for C = 1
	D γ/mm	H γ/mm	Z γ/mm		
Tr	4.7	5.1	6.8	2000	400-1200 γ
So	3.7	3.2	11.2	1500	45-200 γ
Co	3.6	6.9	3.2	2500	No fixed range
Do	7.0	5.7	4.7	750	
Le	4.0	3.6	5.9	1000	
Lo	4.2	4.5	5.0	1200	D: 4'-12'; H and Z: 14-42 γ
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 γ ; Z: 9-27 γ
Bs	4.3	4.0	5.6	750	
Me	3.6	7.8	10.8	1500	30-375 γ
In	4.2	5.8	2.7	500	Sum K: 23-34
Wi	9.7	9.4	5.5	500	D: 4'-12'; H: 15-45 γ ; Z: 7-21 γ
Sw	3.6	3.6	4.5	500	
Ni	2.1	2.1	2.6	500	
Ab	5.0	4.4	4.4	500	
Ma	5.2	2	3.8	500	D: 4'-12'; H: 15-45 γ ; Z: 7-21 γ
Fu	2.6	2.8	2.3	500	No fixed range
CF	5.8	6.2	3.1	500	No fixed range
Na	9.5	7.2	6.5	500	D: 4'-12'
Ag	4.0	5.1	5.9	600	12-150 γ
Eb	6.9	6.6	10.0	350	14-55 γ
Tl	7.9	5.3	4.3	350	D: 2'-8'; H: 10-60 γ ; Z: 10-50 γ
Ch	5.4	2.7	4.1	500	Sum K: 25-44
SM	1.4	21.3	14.1	---	No fixed range
SF	0.7	3.1	---	350	10-30 γ
Ka	6.6	3.2	5.4	300	No fixed range
Ks	1.1	7	4.5	300	15-45 γ
Tu	3.8	3.0	---	350	No fixed range
ZS	0.3	2	1.4	300	No fixed range
He	6	6	1	---	10-30 γ
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 γ
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
El	6.2	6.2	7.8	---	H: 20-100 γ
Hu	1.0	1.9	3.4	600	Sum K: 25-41
Ap	10.1	2.3	1.7	300	Sum K: 22-31
Tn	1.5	6.8	2.5	300	No fixed range
Va	1.1	2.5	3	---	No fixed range
Wa	7.1	2.4	3.9	350	20-35 γ
Pi	6.8	3.4	1.7	300	
Hr	2.1	2.3	4.0	300	No fixed range
To	7.5	5.1	4.6	500	Sum K: 18-34
Am	7.3	4.3	4	500	No fixed range

LIST OF OBSERVATORIES 1950 - continued

Instruments	Ionospheric Station or Radio Service
Tr Normal sens.	
So Normal sens.	
Co Normal sens.	
Do Normal sens.	
Le Normal sens.	Cable and Wireless Ltd; Sol.Obs: Greenwich, Edinburgh
Lo Normal,low sens.,quick run	
Si Normal sens.	
RS Normal sens.,quick run	Cable and Wireless Ltd;
Es Normal sens.	Sol.Obs: Greenwich, Edinburgh
Me Normal and low sens.	
Wh Normal sens.	Inst. für Ion.-Forschung, Lindau; Sol.Obs: Fraunhofer Inst., Freiburg
Wi Normal sens.+quick run	Noordwijk Radio (Nora,
Sw Normal sens.	
Ni Normal sens.	ZentralObs. Potsdam; Sol.Obs: Astrophysical Obs., Potsdam
Ab Normal sens.+quick run	Cable and Wireless Ltd; Sol.Obs: Royal Obs. Greenwich
Ha High sens.	
Fu Normal sens.+ high sens.	
CF Normal sens.+ quick run	Lab.Nat. de Radioélectr. Bagneux; Sol.Obs: Obs.d' Astrophysique, Meudon
Na Normal sens.	
Ag Normal and low sens.	
Eb Normal sens.	Confirmation by earth-currents
Tl Normal sens.	
Ch Normal sens.	
SM Normal sens.+quick run	
SF Normal sens.	
Ka Normal & high sens.+quick run	Tokyo Wireless Adjusting Station
Ks Normal sens.	
Tu Normal sens.	
ZS Normal sens.	Chinese Radio; ZS spectrohelioscope; Sol.Obs: ZS Astronom. Obs.
He Normal sens.	
Ho Normal sens.	
Te Normal sens.	
Al Normal sens.+quick run	All India Radio, New Delhi; Radio Ceylon Colombo; Sol.Obs: Sol.Phys.Obs., Kodai-Kanal
SJ Normal sens.	
El Normal sens.	
Hu Normal sens.+quick run	Inst. Geofisico de Huancayo; Sol.Obs: " " "
Ap Normal sens.	Apia Radio; Christchurch Geoph.Obs.
Tn Normal sens.	Sol.Obs: Carter Obs., Wellington
Va Normal sens.	
Wa Normal sens.	Watheroo Magn. Obs.
Pi Normal sens.	
Hr Normal sens.+quick run	Telecomm. Research Lab, CSIR, Johannesburg.
To Normal sens.	
Am Normal sens.	Lincoln Ion.Stat.; New Zealand Broadc. Serv. Wellington; Sol.Obs: Carter Obs. Wellington

FIGURE A OBSERVATORIES WHICH HAVE REPORTED K-INDICES

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Jan.	1	2	3	4	5	6
Tr	4221	1333	4321	0011	1001	1005
Co	2121	1211	1322	0000	0003	4001
So	3121	1332	3211	0000	1111	1004
Le	3121	1221	3311	1001	1111	1013
Do	3111	1221	3311	0000	0012	2003
Me	2120	0111	1322	0001	1002	3110
Si	2110	0111	1212	0000	0002	3101
Es	2121	1211	3321	0000	1112	2003
Lo	3222	1222	3321	1111	1112	2013
RS	3212	1222	3321	0000	1012	2103
Ag	3221	2322	3321	2321	2101	3122
Wn	3221	1332	3321	0111	2112	3014
Wi	3121	1221	2221	0000	2111	2103
Ab	3121	1221	3322	1111	1113	2114
Ni	3221	1322	3321	0111	2112	2114
Ma	3222	2322	2330	0011	2112	2014
Sw	3111	1322	3221	1110	1112	2113
CF	2222	1222	3221	0001	2112	3113
Ch	3221	2212	3321	0010	2101	2012
Fu	3222	2222	3323	1111	1112	2213
Eb	2111	1212	3320	0010	1112	2013
Tl	2121	2322	3320	0010	1112	3013
SF	3233	3322	3333	3011	1122	3214
Tu	3221	0222	3331	0011	2102	2012
Ks	3333	2221	1143	2222	1122	3114
SJ	1121	0322	3311	0111	2111	1121
Ka	3221	1421	3321	0111	2212	3212
Ho	2110	0222	3131	0111	1101	2012
ZS	2211	1321	2331	0111	2112	3011
Al	1121	1321	2221	1111	1122	2112
Hu	1011	4532	3321	1321	2103	3122
Ap	3322	1323	3122	1212	3321	2033
Pi	2231	1431	4422	1233	2102	0123
Hr	1334	3322	3331	1211	2123	4113
Wa	5332	1433	5432	1222	5323	3223
To	3331	1433	3432	0123	4322	3123
Am	3221	1232	3322	1123	3321	2123
Jan.	7	8	9	10	11	12
Tr	4322	2362	1100	0023	4521	1114
Co	1123	6321	0001	0000	1322	2000
So	3311	2351	0000	0012	3421	1123
Le	2212	2231	1000	0001	3331	1012
Do	2211	3240	0000	0003	3331	2012
Me	3333	4221	1010	0000	1332	1010
Si	1133	4210	1001	0010	2322	1020
Es	2212	2131	0000	1001	3321	2011
Lo	2212	3232	1101	0011	4322	2012
RS	3112	2231	0101	0001	3322	2012
Ag	4223	3221	1201	2222	3421	2231
Wn	3212	3241	1100	0112	3332	2012
Wi	2222	2331	1100	1001	3331	2112
Ab	3222	3231	0112	1111	3333	2121
Ni	3222	3241	1111	1--1	3322	2112
Ma	3211	3242	1100	0001	2311	2112
Sw	2111	2231	0100	1111	3322	2011
CF	2212	2231	1212	0001	3322	2011
Ch	3222	2121	1200	0010	3321	2031
Fu	2223	3331	1112	1111	3322	2111
Eb	2222	3232	0100	0001	3322	3011
Tl	2222	3331	0000	0011	3321	2121
SF	3223	3342	0023	2011	3333	3122
Tu	3232	4221	1100	0111	4331	2120
Ks	2221	3341	0000	0012	3332	3122
SJ	3132	2321	1100	1111	2321	2121
Ka	3322	3321	1100	0102	2332	3111
Ho	2311	3112	1100	0012	3321	2120
ZS	2331	3110	1430	0100	1002	3110
Al	2212	3230	1111	1111	2332	3112
Hu	2222	4432	1101	2221	1323	3331
Ap	-----	2300	1113	3---	3332	3112
Pi	3231	3322	0102	3223	3323	5243
Hr	3333	4231	1112	1111	2333	3111
Wa	3432	3243	4534	1212	4542	3112
To	3432	3332	4330	1123	2442	3222
Am	3422	3120	3110	0113	4432	2021

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Jan.	13	14	15	16	17	18
Tr	2211 2453	3523 4355	0011 3352	0332 1236	3000 1142	3321 0014
Co	1113 3311	1235 5432	0005 6311	0143 2311	1003 2111	0101 3000
So	3111 2543	2422 3355	0022 3332	1221 1225	2011 1043	1221 0004
Le	3111 2233	2323 2253	0013 2222	1221 1124	1001 1132	1221 1003
Do	2011 2333	2333 3353	0013 3331	0221 1113	2011 1033	2221 0003
Me	2222 2311	2233 4333	1005 5221	0152 1211	1002 2211	1200 1011
Si	1123 2221	2223 3331	0004 4221	0141 1121	1002 1101	0200 2011
Es	2011 2322	2333 3253	0023 3322	0332 1124	1011 1122	2211 1002
Lo	3222 2332	2333 3453	0123 3332	1222 1224	2111 1133	2322 0013
RS	3111 2332	2433 3354	0023 3332	1332 1224	2102 1033	2322 0003
Ag	3312 3321	2523 3332	0004 4222	1442 2222	1002 3222	1311 2121
Wn	3111 2332	2434 3353	0133 3331	1332 1224	2112 1133	2321 0014
Wi	2112 2332	2323 3353	1014 4332	1222 1224	2011 1133	1312 1013
Ab	3222 2332	2334 4353	0024 3332	1333 1224	2002 2032	2312 1113
Ni	3211 2342	2433 3353	1122 3332	1332 1224	2112 1133	2321 1013
Ma	3111 2322	2333 3353	0123 3322	2222 2234	2111 1131	2321 0003
Sw	2111 2322	2323 3343	0122 2-1	0232 1224	2122 1132	1-21 1113
CF	2111 1222	2423 3352	0013 2222	1332 2123	2112 1132	2221 0003
Ch	2212 3121	2533 3232	0013 3222	1442 2222	1001 1121	1310 1012
Fu	3222 2332	2323 3353	1124 3332	1232 2224	2112 2133	2322 2012
Eb	2001 4322	2334 3353	0012 2221	0322 2234	2001 1020	2310 0002
Tl	3211 2322	2424 3342	0014 3222	1332 2233	2011 2021	2311 0012
SF	3211 4423	3435 4343	1014 4332	2233 1233	1001 1233	3323 1112
Tu	2222 2222	3434 3332	1013 4322	2242 1223	2012 1222	2311 1012
Ks	2112 3233	3545 3463	1022 4333	2132 1234	1011 2231	2222 0013
SJ	2112 2321	3333 3242	1002 2322	1231 1222	1001 1121	1210 0012
Ka	2122 3223	3434 4442	1124 4332	2232 2222	2012 1122	2332 2011
Ho	1111 2212	3434 3333	1112 2123	1221 0022	1000 1001	2300 1002
ZS	1112 3232	4434 3442	1123 4222	2231 1211	1011 2121	2311 1011
Al	0222 3332	2534 4443	1124 4221	1322 1213	1111 1221	2211 1012
Hu	2221 4533	3335 5543	0013 4432	2221 3442	1012 3332	1212 3223
Ap	2221 3332	3534 3333	1122 3133	2322 1222	2222 1122	2322 1143
Pi	3223 5542	3545 0352	0112 1332	2322 1212	2211 4042	2311 4033
Hr	2222 3423	3435 5243	0133 3322	1223 3123	1122 2122	2232 1112
Wa	3432 3333	3535 4443	2344 3322	3332 3323	--3 2232	3332 1023
To	3332 3333	3445 4453	3333 3332	2332 2223	2122 1232	3322 1122
Am	3332 2232	3434 4333	3223 3233	3332 2133	2211 1221	2311 2012
Jan.	19	20	21	22	23	24
Tr	1112 2455	6533 4543	4322 3453	5432 1322	2021 0113	4213 5755
Co	0036 4222	3366 6630	1126 4533	2424 3100	0022 1011	2234 6765
So	1112 1464	5332 4433	3322 3463	4331 1322	1021 1114	4213 5766
Le	1122 2234	4332 3432	3323 2442	3312 1211	1121 1112	3212 3887
Do	0111 1244	5422 4422	3322 3543	3322 0221	2020 1011	3213 4987
Me	1155 4222	3365 6320	2246 4323	2533 2111	0024 0111	1244 4544
Si	0034 3322	2355 6530	1135 4332	1423 2100	0032 0021	1233 5754
Es	1122 2233	4333 3331	3324 3442	3222 1211	2121 1112	2213 4775
Lo	1122 2244	4332 4322	3323 3542	4322 1322	2121 1112	2223 4786
RS	1122 2243	4332 4322	4323 3552	3322 1221	2120 0112	2223 4766
Ag	1234 3223	4454 4431	3334 3332	2422 2221	2134 1222	2233 4554
Wn	1122 2243	5443 4422	4323 3542	4322 1311	2121 1123	2323 4776
Wi	0123 2234	4333 3432	3233 3442	3212 1211	1021 1112	2222 4656
Ab	0123 2234	4333 3412	3324 3442	4322 1312	2121 1112	2213 4666
Ni	1222 2243	4433 4422	4333 3542	3322 1221	2121 1123	2223 4766
Ma	1222 2243	4332 4421	4323 3524	3322 1212	2122 1122	3223 3666
Sw	1122 -233	4333 3411	3222 2442	3312 1311	2121 1112	2223 3755
CF	1122 2133	4322 3402	3222 3442	3322 1211	2121 1012	2213 3665
Ch	1233 2123	2343 3311	2334 2332	2412 1111	2134 1122	3333 3544
Fu	1233 2233	4323 3422	3323 3442	3322 2222	2132 2122	2223 3665
Eb	0233 2234	3232 3530	3234 3443	3222 1201	1130 1022	3223 3666
Tl	1233 2234	4333 3421	3324 3442	3322 1211	2131 2023	3223 3666
SF	1233 3444	4344 3522	3235 3542	4323 2321	2132 3134	3-— 4766
Tu	1234 2223	3354 4432	3234 3343	4412 1211	1133 1124	3333 4654
Ks	1333 2244	3331 4522	2233 3444	341- 1311	0132 2134	3432 5766
SJ	2223 1223	2342 2321	2332 1433	2311 1221	2020 1123	3322 3643
Ka	2334 4343	3243 5522	3234 4332	2212 2311	1132 1223	3323 5655
Ho	1223 3123	1132 2411	2214 3233	2211 0101	1031 1123	3322 4454
ZS	2333 3333	2333 5410	2324 4231	1212 0301	1131 2123	2432 5654
Al	2333 3342	2223 4322	2325 3342	2122 1311	0132 2123	3433 5754
Hu	2233 4443	3343 4652	2224 5532	3313 3322	1033 3344	3323 5764
Ap	2233 2333	3233 2333	2223 2242	3322 1012	2131 1023	3322 4555
Pi	3323 3254	3353 2432	2233 3342	3233 3233	1233 3233	4424 5764
Hr	1232 3223	3232 4432	1234 3321	3333 2211	1133 2123	3344 5766
Wa	3444 3344	4443 5432	4444 4333	3332 1312	3432 2234	4433 5655
To	3333 3344	4333 4432	3324 3233	2433 2213	2332 2333	4442 4655
Am	3334 3233	3333 3423	3334 4222	3422 2112	2231 1122	3432 3555

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Jan.	25	26	27	28	29	30
Tr	4343 3445	3431 3444	4412 3345	4322 3633	4200 0333	4332 1355
Co	3446 5522	1233 4531	2303 4333	3223 5521	1111 0221	3354 1432
So	6433 3455	2311 2554	3312 2355	4312 3632	3210 1223	3233 1465
Le	4343 3234	2321 2222	3312 2333	3222 2331	2210 1222	3332 1253
Do	5443 3344	2221 3322	3312 2433	4312 1431	2200 0221	3222 0363
Me	3456 5422	1224 3322	1313 3223	3222 3311	1121 0111	2464 1222
Si	3446 4412	0222 3321	2203 3222	3232 3320	1110 0111	1454 0331
Es	3343 3324	2212 3322	3313 3333	3212 2421	3110 1221	3232 1343
Lo	4333 3434	2322 2322	3312 2443	4223 2431	2112 1222	3233 1363
RS	3343 3434	2312 2322	3302 2443	3223 2431	2211 1222	3232 2353
Ag	5555 3223	2422 2333	2312 3333	3222 3221	2211 0122	3454 2332
Wn	4343 3434	2322 3333	3312 3444	4223 2432	2210 1232	3232 1363
Wi	4342 3424	2222 3332	3222 2334	4222 2421	2101 1121	2121 1253
Ab	4343 4334	2322 3333	3323 3334	3223 2421	3221 1131	3232 1353
Ni	4343 3434	2322 3333	3312 2343	4123 2432	2211 1232	3232 1353
Ma	4333 3434	2321 3323	2312 3333	3223 2432	3200 0322	3322 1352
Sw	3333 3323	2211 2322	2312 2343	3223 2321	2111 1221	3122 1352
CF	3333 3324	2221 3322	2212 3333	3112 2321	2111 1222	3222 1353
Ch	3545 3222	1311 2223	2311 2133	3222 1100	2210 0012	3353 0232
Fu	3343 3334	2322 3333	3332 3343	4333 3431	2231 1222	3233 2353
Eb	5454 3334	1411 3333	2302 4333	4223 3410	3100 0112	3221 0343
Tl	3443 3324	2321 3333	3323 3334	4233 3311	3220 1122	3231 0342
SF	4343 3322	2421 4444	3333 3334	3332 4422	3132 2322	4232 2443
Tu	3555 3313	1223 2323	2312 2334	3322 1311	1210 0212	3454 0332
Ks	4353 3434	0321 3433	2323 3344	3322 2432	3001 1023	3222 0450
SJ	3543 3222	2211 2323	3312 1333	3211 1120	1110 1111	2322 1332
Ka	3434 4423	1113 3323	3332 3333	3222 3321	2220 1222	2344 2431
Ho	2335 2312	0112 3213	2201 2223	2101 1210	1100 0012	2131 0121
ZS	2333 4523	1011 3312	3311 3331	2122 1220	1100 1211	3220 0542
Al	1342 3323	0121 3323	2212 3332	2222 2321	1110 1211	2233 0341
Hu	3443 5432	2212 5653	2213 4542	3223 3553	1101 2332	3333 1532
Ap	3334 3322	3212 3234	2422 2223	2221 1222	2220 1133	2234 2223
Pi	3545 0222	2224 2434	3322 0343	3313 2320	2202 3243	3333 1431
Hr	3344 3324	0233 4333	3433 4333	1333 2321	2232 1012	2233 1332
Wa	3443 5533	3323 4424	3432 3344	4— 3434	3333 2334	4444 1543
To	4443 4423	2222 4423	3322 3334	3332 2322	2212 1333	3333 2434
Am	3334 3423	2311 3334	3322 3333	3322 1222	1211 1103	2333 0333
Jan.	31					
Tr	2110 1034					
Co	0021 3311					
So	1011 1124					
Le	1211 1113					
Do	1100 0114					
Me	0120 1200					
Si	0021 1110					
Es	1001 1223					
Lo	2111 0124					
RS	1010 0024					
Ag	2221 1122					
Wn	1111 1124					
Wi	0011 1124					
Ab	1021 1223					
Ni	1111 1124					
Ma	1111 1223					
Sw	1111 1113					
CF	1111 1123					
Ch	1121 1122					
Fu	1122 2223					
Eb	1000 0223					
Tl	1100 1223					
SF	1011 2223					
Tu	1120 0112					
Ks	0000 1224					
SJ	1022 1122					
Ka	1011 2222					
Ho	1000 0122					
ZS	1101 2122					
Al	1110 1123					
Hu	1111 2342					
Ap	1220 0134					
Pi	2121 0122					
Hr	1222 1112					
Wa	4443 3223					
To	4322 2233					
Am	3211 1323					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Feb.	1	2	3	4	5	6
Tr	2222 3120	2145 5554	3344 5464	3222 5576	3320 1432	0112 3231
Co	0024 4120	0176 6643	2246 6554	2225 5553	1211 2221	0123 2112
So	1121 2120	1135 5553	2234 5474	3222 5676	2311 1431	0112 2221
Le	1211 1121	1143 5542	1123 3353	2112 3453	2321 1331	0121 2211
Do	1221 1110	1144 5631	0233 3353	2122 2563	2311 1430	0012 2301
Me	1233 3110	1176 6532	2157 5434	2133 4433	1420 1211	0233 2221
Si	1233 2121	0067 7522	1146 5333	2123 4432	1410 1210	0133 2221
Es	0222 1321	1143 3431	1133 3243	2122 2453	2311 1331	0132 3321
Lo	1222 3121	1144 4442	1233 3353	2122 3553	2311 1431	0112 3322
RS	1221 2120	1143 4431	0133 3254	2122 3554	2410 1431	0122 2311
Ag	1223 2110	1165 5432	1155 3334	2132 3343	1420 1221	1333 3322
Wn	1221 2121	1144 4542	1233 3353	3222 3554	3411 1431	1222 3322
Wi	1221 1110	1133 3431	0133 3353	2122 3554	1311 2331	0112 3212
Ab	1212 2131	1154 4432	1134 4354	2123 3554	2311 2331	0131 3321
Ni	1222 1121	1144 3432	1233 3353	2122 3554	2311 1431	1212 3322
Ma	1222 2121	1143 3432	1134 3253	2122 3554	2311 1331	2222 3322
Sw	1221 2221	1133 3432	0123 3243	2122 2553	2321 1331	0122 2322
CF	1221 2121	1133 3321	1223 3243	2112 2453	2311 1331	0122 2222
Ch	2222 1121	2255 4422	1144 2224	2122 2333	1311 1121	0322 3222
Fu	1222 3131	1133 4431	1123 4244	3122 4554	2321 2331	0122 2322
Eb	1211 1021	1243 4432	1133 3343	3111 3455	2300 0331	0121 3322
Tl	1222 2120	2244 4432	1134 4344	2112 3454	2311 1331	0222 3322
SF	2223 2231	2243 4432	1133 4245	2222 4565	2310 2322	0133 4432
Tu	2322 2222	3255 5432	1144 3334	2332 3333	1421 1321	1233 3322
Ks	2331 2120	2344 4543	1134 4354	3223 4564	3333 2432	2224 4433
SJ	2222 1211	2234 2221	0133 2123	2221 2232	0310 0111	1212 3322
Ka	1322 3111	2354 4322	1334 3344	3223 4443	2110 1321	1223 3322
Ho	1221 1013	2234 3312	1223 2223	2212 3233	0221 0112	1112 3213
ZS	1212 2112	3353 4321	1134 3335	2323 4532	1110 1311	1113 4422
Al	2221 2111	3263 3431	1234 3254	2332 4553	1111 1421	1222 3422
Hu	1211 3332	3344 5753	0134 4443	2223 4552	1301 1322	1223 3532
Ap	3222 2124	3243 3332	1333 2224	3223 3232	2222 1231	2123 3322
Pi	2311 3332	3343 2433	0133 0215	2314 2342	0322 0211	1323 3412
Hr	2132 2111	3343 3442	2233 4345	2322 4453	1312 2221	1233 4323
Wa	4432 3324	4344 4333	4334 4335	4333 4443	4333 2334	4223 3323
To	3433 3223	4343 4334	3233 3334	3333 4443	2332 2333	3333 3323
Am	3432 2123	3343 4333	1234 3334	2333 3333	1330 0211	1323 3323
Feb.	7	8	9	10	11	12
Tr	2311 2356	2322 4446	6211 1465	3100 0213	0101 1004	5001 1132
Co	1123 5232	1324 5531	3223 2423	1101 2000	0103 3001	1010 3110
So	2311 2457	2222 3556	5111 1475	3100 1112	0011 1004	3111 1131
Le	1312 2235	3222 2334	3122 1243	2101 1102	1111 1013	2012 1221
Do	1311 2245	1211 2333	4211 1354	2000 1212	0102 1003	2011 1221
Me	1222 4223	1523 3322	3233 2222	1000 0011	1212 2101	1020 1210
Si	0222 3222	1423 3321	2132 1211	0000 1000	0102 2000	1020 1320
Es	1312 3234	2222 2323	3112 1243	1001 1101	0112 2003	2101 1221
Lo	1312 2234	112- ---2	4212 2343	2111 1212	1112 2003	2111 1232
RS	1311 2234	2122 2333	4212 1343	2100 1112	0112 1003	3012 1231
Ag	1532 2234	1532 2333	3131 2333	2001 2211	1212 2012	2121 2221
Wn	1312 2244	2222 3333	4322 2354	2100 1112	0112 2113	3112 2231
Wi	1312 2234	1211 3333	4222 2243	1002 2111	0112 2103	2111 2121
Ab	1312 3235	1222 3333	4221 1343	1111 1101	1112 2103	3011 1221
Ni	1312 2244	2222 2333	4222 1343	2111 1112	0112 2113	3112 2231
Ma	1312 2244	2212 2222	4222 2333	2110 1112	0112 2113	2111 2222
Sw	1322 2234	2222 2323	3211 1243	1110 1112	0122 1012	2112 1231
CF	1312 2234	1222 3233	3211 1243	2011 1112	0112 2002	2112 2121
Ch	2521 2234	1531 2223	2321 1123	2001 1110	1212 1001	2111 1221
Fu	1322 2234	2231 2233	3222 2343	2111 2112	1112 2103	2122 2232
Eb	2401 2135	1221 2334	4220 1343	2000 1001	0113 3113	3111 2211
Tl	2312 2135	2222 3324	4221 1344	2001 1101	0112 2002	3011 1221
SF	2321 3325	2222 1334	4232 2355	2220 1111	1013 3112	2111 1322
Tu	2422 2334	1432 2323	4221 1222	1001 1100	2213 2101	2121 2321
Ks	3322 3335	1311 2323	4332 2354	3010 2102	2133 3112	3222 3221
SJ	1312 2233	1310 1221	3220 0122	1000 0001	1113 2011	2110 2222
Ka	2323 3223	2231 3321	1311 1322	1010 1200	2012 3111	2221 2322
Ho	2303 3123	1222 1222	2211 0111	0100 0001	1012 2011	2100 1211
ZS	2241 2222	4230 1311	1110 1222	2000 1100	1102 2111	2111 1320
Al	2322 3223	1211 2223	3221 2342	1011 1201	1123 2111	2112 2321
Hu	2312 3444	2311 4421	3212 3442	1002 3310	2112 4220	2222 3431
Ap	3313 3124	3122 2233	4210 0221	2211 0113	1323 2123	3211 2232
Pi	3311 1324	1312 0212	4212 1322	1112 1322	2213 1224	3221 0433
Hr	3333 4234	1222 3314	3332 1143	2032 1110	1133 2101	2332 3321
Wa	4322 3343	3312 3433	4321 2343	5332 2213	2222 2112	4311 2322
To	4422 3244	2323 3433	4322 2323	2211 1122	2212 3113	3321 2222
Am	2323 4123	2322 3323	2321 1223	3111 1012	2222 2101	3210 1221

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Feb.	13	14	15	16	17	18	
	Tr	Co	So	Le	Do	Me	
	1011 0121	1200 1223	3112 1243	2000 1003	1001 1001	1001 0231	
	0000 1000	0100 1131	1034 4111	1002 3011	1010 3100	0001 0011	
	0011 1120	0200 1222	2112 1132	1111 1112	1101 1000	0001 1131	
	1111 1110	1201 1121	2112 1121	1111 1112	1112 1100	1011 1221	
	0020 0110	0200 0121	2112 1032	1001 0002	0000 1000	0001 0221	
	0010 1120	2200 1232	1133 2111	1012 1110	0230 1011	0001 1111	
	0000 1110	0100 0131	1133 1111	1011 1000	1230 1000	0001 0011	
	1121 1110	1302 1121	2122 2132	1002 2112	0102 1100	1002 1232	
	1121 1120	1200 1121	2112 2132	2112 1212	1012 1100	0001 1232	
	0122 0120	2200 0111	2122 1132	2112 1002	0002 1000	0002 1122	
	1110 2220	3310 1232	1112 2222	1011 2111	0221 1111	0001 1222	
	1111 1121	1301 1121	3222 2132	2112 1012	1111 2001	1012 1222	
	1121 1110	0211 2021	2122 1231	1112 2112	0010 1000	0002 1122	
	1112 1210	1212 1221	2113 1232	1013 1212	1022 1100	1022 1323	
	1121 1221	1301 1121	2122 1132	2112 1112	1111 2011	1011 1222	
	1110 0111	1200 1122	2212 1132	1111 1112	1111 2000	1011 2232	
	1122 1120	1211 1121	2123 2231	1112 1012	0022 --10	1112 2112	
	1111 1111	1211 2121	2212 2131	1101 1102	0012 2101	1002 2222	
	0110 0121	2300 1122	2122 2121	1001 2111	0220 2111	0000 1122	
	1122 2220	1221 1121	2123 2232	2122 1112	1023 1010	1012 2232	
	0110 0110	2200 1021	1122 1122	1111 1112	1011 1000	1001 1222	
	1111 0110	1300 1121	2112 1221	1002 1112	0020 2001	2001 1132	
	1212 1000	2211 1231	2313 2333	2211 2123	1131 2211	1011 1233	
	0120 1221	2211 1122	2222 2222	1011 1111	0221 1001	1011 1222	
	0222 0330	2311 1122	2243 1211	1012 1011	0001 0001	1011 1223	
	0110 0220	2211 1121	1121 1121	1001 0110	0210 0011	1001 1222	
	1212 0330	2120 2222	2322 2222	1112 3111	4211 1111	2121 1222	
	Ho	0001 0121	1100 1022	2122 0121	2000 1011	3011 1001	1000 1213
	ZS	0111 0120	1100 1121	2221 1122	1100 2110	3110 1000	1011 0323
	Al	0111 0221	2101 2221	2251 1221	1121 1111	1111 1001	1011 2222
	Hu	0112 2340	2100 2442	2222 2322	1012 3221	0112 3122	1112 2443
	Ap	2212 1133	3220 2133	2123 1222	2222 2112	4222 2232	2211 1233
	Pi	0121 3211	3221 2112	2223 3322	2002 4031	0221 3131	2112 4223
	Hr	0122 2100	2221 2212	2243 1121	0011 0001	0132 2211	1143 3212
	Wa	4332 3334	4420 0112	4442 2234	4322 2111	4332 2213	3332 2333
	To	3222 1222	3311 2233	3333 2132	3222 2113	4321 2113	3322 1222
	Am	2211 0213	3220 0122	3223 2122	2211 1011	3211 2122	1111 0212
Feb.	19	20	21	22	23	24	
	Tr	Co	So	Le	Do	Me	
	1010 0001	1111 2577	6753 5476	7442 4675	4335 6557	6744 2166	
	0110 0001	0102 5586	4777 7653	4343 4553	2228 8676	4654 2233	
	1111 1101	1211 2678	7744 5567	7333 3675	4215 7668	7844 2155	
	1111 1102	2112 2598	7953 4445	4333 3343	3123 6477	6743 2145	
	0110 1102	2202 2789	9954 5556	5233 3454	3204 7689	8854 3045	
	Me	1110 0111	1111 3576	6887 7735	4543 3343	3237 6666	6765 2233
	Si	0110 0112	1122 3586	6887 7643	3332 2433	1117 7555	5853 1232
	Es	1112 1103	2212 3599	7743 4444	3233 3453	2214 4455	5643 2144
	Lo	1111 1102	2222 3599	8744 4545	4333 2454	3214 6567	6743 2044
	RS	1111 1113	2222 3499	6643 4444	3343 2453	3124 5456	5643 2144
	Ag	1210 1112	2222 3579	8874 5445	5443 3344	4227 7566	8763 2234
	Wn	1212 1113	3322 3599	6644 5454	4343 3554	3114 5566	5653 2144
	Wi	1121 1113	3212 3589	6643 4454	4332 3563	3114 4456	5542 2254
	Ab	1222 2213	3213 3588	6644 4454	4333 3454	3225 5466	5554 2145
	Ni	1211 1113	3211 3578	5643 4454	4333 3554	3214 4566	5643 2144
	Ma	2211 1113	2212 2479	5533 3454	4233 3453	2215 4465	5543 2145
	Sw	1221 1012	2122 2587	5533 4443	3233 3444	3124 4455	4533 1044
	CF	1211 1113	2222 3476	5443 4434	4233 2453	3114 4455	4333 2144
	Ch	2220 2112	2322 2577	6554 4435	4333 3244	3126 6445	6553 1133
	Fu	1223 1213	2222 3578	5533 4444	4333 3453	3224 4455	5543 2144
	Eb	1221 1212	2212 2488	7744 4454	4332 3454	2125 5556	5643 2144
	Tl	2321 1113	3212 3588	5543 5554	4333 3454	2215 5466	5543 2044
	SF	2323 3313	3312 3677	7644 5545	5343 2455	3326 5466	6654 3245
	Tu	2331 1112	2322 2676	6765 4554	5443 3544	2116 6565	4753 0144
	Ks	2431 2214	3322 3787	6644 5555	5333 3454	2106 5576	6644 3255
	SJ	2220 1112	2211 2586	5552 4444	3321 3344	2104 3364	5642 0032
	Ka	4331 1212	2323 3576	5444 5434	4333 2443	2004 4555	4543 1135
	Ho	2221 1113	2211 3566	5554 4334	4242 1334	1215 5354	3543 0033
	ZS	3431 1113	3322 3576	5444 5333	4232 2453	0005 4554	4524 1012
	Al	2431 2212	2333 3786	5543 5554	4232 3554	1025 5555	5444 1143
	Hu	2322 3331	2312 3877	4420 5443	2121 5555	2114 6565	5554 3342
	Ap	3331 1323	3322 3675	5555 4344	3332 2334	2225 4354	3543 2232
	Pi	3333 4333	3302 5696	5654 2344	3432 5415	3224 4464	5643 5252
	Hr	2243 2113	2243 3688	6534 3534	4233 2444	1234 4466	5444 3234
	Wa	3332 1213	3333 3577	6554 5455	5344 3553	3324 5555	5654 2244
	To	3431 1223	3432 3476	5655 5445	3443 2444	2225 5565	4543 2134
	Am	2330 0123	2322 3587	6764 5434	3443 2334	2215 5454	5543 1143

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Feb.	25	26	27	28
Tr	6533 2111	1010 0000	0000 2003	2123 3333
Co	3236 5112	1100 0000	0000 2012	1045 4421
So	6523 3211	1000 0000	0111 2002	1123 2223
Le	4422 2211	0001 0110	0002 2111	1132 2211
Do	5433 3211	1000 0000	0002 2112	1233 3112
Me	3345 3121	1000 0000	0000 2112	1055 3322
Si	3325 3011	1000 0000	0000 2012	1045 3331
Es	4333 3211	0012 1110	1012 3112	1133 3212
Lo	5333 3211	0010 0010	0012 2112	2233 2212
RS	5333 3111	0000 0000	0012 2112	1233 3112
Ag	4433 3222	1100 2122	0000 3122	1244 3232
Wn	5333 3211	1111 1010	0011 2112	2233 3222
Wi	4333 3211	1000 1010	0011 2112	1133 2212
Ab	5343 3211	0112 1110	0013 3212	1233 2211
Ni	5333 3211	1110 1011	1011 2122	2233 2112
Ma	4333 3321	1110 0010	0001 2112	1232 2222
Sw	3233 2111	1011 1011	0011 1112	1122 2122
CF	4333 3111	1010 0010	0011 2112	1133 3211
Ch	4333 2122	1110 0010	0111 2122	1244 3232
Fu	4333 3211	1112 2110	1012 3112	1132 3212
Eb	4233 3111	1000 0010	0001 2022	1022 2222
Tl	4243 3222	1110 0010	0012 2122	1243 3112
SF	5243 3323	1101 2211	0123 3223	1243 3322
Tu	3433 2112	2210 0111	1111 2123	1133 3132
Ks	5344 4322	2121 1010	0012 3123	2243 4333
SJ	3242 1112	1110 1110	1011 2222	1133 3121
Ka	3243 3222	2210 1011	1111 2113	2244 2222
Ho	3333 3213	2120 0010	1110 2013	2123 1322
ZS	2343 3211	2210 0010	0111 2112	2224 3211
Al	3243 3222	2220 1111	1122 2122	2242 3211
Hu	3333 4333	2110 2221	0012 4332	1133 5332
Ap	3343 3223	3220 1012	3211 2233	3422 1222
Pi	3343 3132	1210 3022	1101 3313	2232 0222
Hr	4233 3211	1121 1000	1232 2102	1344 4221
Wa	4444 4222	3331 1012	3332 3123	3243 2222
To	4444 3222	3231 0111	2221 2123	3244 2222
Am	4243 4112	2220 0012	1211 2022	2243 2223

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

March	1	2	3	4	5	6
Tr	5422	3111	2223	2210	2111	2322
Co	1215	3000	0243	2310	0002	4311
So	4322	3211	2222	2200	1111	2311
Le	3322	2111	2222	1211	2111	2221
Do	3322	3110	2222	2200	2211	2300
Me	3234	2111	0353	1210	1032	2122
Si	2124	2110	0332	1210	0022	2200
Es	3222	2001	2222	1210	2112	2311
Lo	3223	3121	2323	2210	2222	2211
RS	4233	2111	2223	2200	2122	2211
Ag	4224	3111	1342	2211	3222	2321
Wn	4323	2121	3223	2311	3122	3321
Wi	4222	2221	1222	2201	3111	2311
Ab	4233	2111	2323	2201	3122	2311
Ni	4232	2121	2233	2211	3212	2311
Ma	3222	2111	2222	3201	3212	2311
Sw	3223	2111	2222	2201	2112	2311
CF	3122	2211	2222	2211	2122	2211
Ch	4223	2111	1343	2211	3222	2201
Fu	3223	2011	2223	2211	2122	2311
Eb	3223	2111	2222	2201	2112	2320
Tl	3223	2111	2332	2211	2122	2301
SF	4223	2111	2133	3322	3133	3422
Tu	4223	2121	2332	1321	2122	2301
Ks	33--	--32	3211	2112	2311	1123
SJ	3123	2111	1212	0211	1120	1100
Ka	3223	2122	1232	1311	1222	2311
Ho	2122	1111	1122	1201	0111	2211
ZS	2223	2110	0222	2201	1221	2300
Al	2223	2111	1222	2211	1222	2211
Hu	3212	4232	1212	3422	2120	3432
Ap	2322	1133	3232	1223	2221	2123
Pi	3202	3022	1213	4311	1000	5331
Hr	3223	4111	1132	2211	2122	2201
Wa	3333	3222	2233	2312	3432	2312
To	3333	2212	2332	2312	2322	3312
Am	2223	1103	2232	1223	2211	2112
March	7	8	9	10	11	12
Tr	5344	3254	4002	2124	4321	2232
Co	3375	5321	1032	2111	0123	5300
So	6344	4244	4111	2123	3212	2122
Le	4333	3322	3121	2113	2211	2111
Do	5334	3322	3001	2104	3111	1210
Me	3575	5312	2131	1111	2234	3100
Si	3576	4220	1031	1100	1232	4200
Es	3333	3322	2011	1213	3211	2210
Lo	3434	3222	2122	2123	3222	2211
RS	3333	3322	2011	1223	2221	3210
Ag	4465	3222	2121	1212	3222	2322
Wn	4434	4233	3111	2223	3222	1211
Wi	3332	3322	3011	2112	2111	1211
Ab	4343	3222	3112	2113	3222	3310
Ni	3333	3132	3111	2213	3222	1211
Ma	3233	2122	3111	2213	3221	1211
Sw	3223	3122	2111	2113	2121	1311
CF	3222	2112	2011	2112	2121	1211
Ch	4454	3211	2121	1212	3223	2111
Fu	3333	3222	3112	2223	3222	3221
Eb	3333	3212	3000	1212	2212	2210
Tl	4343	3212	3011	2113	3112	2211
SF	5333	2123	3124	2323	4333	4332
Tu	4454	3211	2131	1122	3222	2110
Ks	5233	3222	3012	1213	3222	3321
SJ	2243	2121	0010	0111	1111	1211
Ka	4456	4322	2232	1122	1123	3221
Ho	3453	1111	1011	1112	1221	2110
ZS	2223	5110	1001	0111	1011	2310
Al	3233	3221	1111	1111	1222	3211
Hu	3333	4331	1112	2322	1113	3310
Ap	3443	3122	3222	2112	2221	2133
Pi	3334	4332	2011	4133	0102	3112
Hr	4333	4312	2122	1113	2131	1100
Wa	5445	5322	3222	1212	3332	3312
To	4445	4122	2322	2213	2332	3212
Am	3354	3012	1121	1022	2321	3210

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

March	13	14	15	16	17	18
Tr	1100	2342	0112	2332	6722	2233
Co	0001	3310	0156	5331	3533	4220
So	0111	1240	0112	2331	6622	2231
Le	1011	2230	0112	2331	5531	2110
Do	0001	1240	0122	2331	5532	3120
Me	0010	0110	1053	2231	5534	2221
Si	0000	2110	1144	2241	3423	2211
Es	0011	1231	1112	2341	4532	3221
Lo	1111	1240	1212	2331	5532	3230
RS	0101	1240	0112	2241	5532	2220
Ag	0212	2221	1133	2342	5632	3222
Wn	0111	1341	1233	3342	5532	3221
Wi	0001	2231	1122	2241	4532	2221
Ab	0122	1330	1223	3341	4531	3221
Ni	0111	1241	1123	3342	5542	3221
Ma	0001	1231	1113	3341	5531	2111
Sw	0121	1231	1122	2241	4532	2211
CF	0011	1231	1112	2241	4522	2111
Ch	0211	1221	2233	2242	5522	3121
Fu	0221	1331	1222	3341	4532	3120
Eb	0000	1121	---	3	3442	3532
Tl	0011	1231	1223	3341	4532	2221
SF	0211	1331	2333	3351	5643	3332
Tu	0111	1221	2233	2332	5532	2222
Ks	001-	---	-34	3451	4642	2232
SJ	0101	0122	2222	1341	5411	1122
Ka	2332	2332	3334	4343	5444	3333
Ho	2000	1121	2233	1231	5432	2222
ZS	0010	2112	1333	2341	5331	1310
Al	0011	2331	2324	3341	3442	2220
Hu	0011	3433	2233	3563	4422	4333
Ap	3111	1222	3333	2343	5432	2122
Pi	0000	4341	3333	4452	5513	3343
Hr	0112	0120	2243	3341	4543	2111
Wa	2322	2332	3433	3333	5542	2333
To	3321	2332	3334	3332	4442	3222
Am	2110	2132	2333	3231	4432	2121
March	19	20	21	22	23	24
Tr	4334	4642	3210	1344	3434	5564
Co	1276	6743	2110	0451	2437	6633
So	3235	6753	3211	2454	3334	6575
Ie	2354	6643	2110	2342	2333	5553
Do	2345	7852	2120	2342	2324	7664
Me	2367	7844	2110	1333	2426	5543
Si	1388	9943	2120	0331	1327	5532
Es	2355	6642	2110	1232	2324	4443
Lo	3344	7752	2122	1242	2324	5553
RS	3355	6752	2121	1242	3224	4553
Ag	3479	8753	2111	2333	1335	4444
Wn	3355	6753	2220	2342	3224	4553
Wi	1346	6652	2111	1332	2323	3543
Ab	3466	5642	2111	1342	2324	4443
Ni	3255	5665	2221	2332	3224	3453
Ma	2365	5652	2111	2242	1335	4453
Sw	2355	5642	2121	1-32	2324	4452
CF	1445	5542	2221	2232	2324	3342
Ch	3567	6643	2120	1222	1334	2432
Fu	2356	4642	2122	2342	2324	3453
Eb	1557	8873	3220	1342	0434	3443
Tl	2467	6752	3110	2342	1424	3443
SF	256-	--53	3113	3453	2435	2353
Tu	2566	6543	1120	1331	1334	4543
Ks	1135	5432	2111	1230	0134	4332
SJ	2557	5442	1110	1231	2124	1331
Ka	3578	7643	2221	1332	2344	4432
Ho	1577	5422	2110	0121	1234	3332
ZS	1587	7632	1110	0230	2215	3432
Al	2678	6742	1221	1342	2215	3452
Hu	2567	7753	2212	2433	2224	4542
Ap	1477	5433	4421	1232	3334	3343
Pi	3567	5542	3220	3333	3224	2321
Hr	1467	4642	3211	2442	3334	2342
Wa	4567	8742	3332	1453	3435	5552
To	3467	8643	2231	1442	1335	4442
Am	2467	7532	3220	0331	2235	4332

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

March	25	26	27	28	29	30
Tr	4541 1243	3201 2125	5523 3566	3223 3124	3343 3334	3211 3410
Co	2430 0111	2001 0111	3436 4533	3336 5111	2245 3321	1224 4400
So	3431 2143	2202 1125	5434 4577	2223 2113	2233 3333	1212 3410
Le	3441 1221	2112 2115	5433 3455	2223 2112	2233 3322	2112 2311
Do	2430 1231	2002 3115	5433 3567	2213 3102	1243 3322	2112 3300
Me	2430 1111	2112 1012	3557 4333	3336 4101	1346 3221	2333 2200
Si	1430 0111	2012 1112	3537 3433	2235 4001	1235 2320	2233 2200
Es	2431 1121	1212 2123	5433 3455	1123 2112	1243 3322	2121 2200
Lo	2431 1131	2113 2124	5334 3545	2223 2113	2243 3322	2222 2310
RS	2434 2131	1003 2224	5433 3545	2223 2102	2243 3322	2222 2300
Ag	3541 1122	2112 2224	5535 3445	2434 3222	2344 3321	2332 2311
Wn	2431 2232	2003 2224	5434 3555	2224 3213	2243 3322	2222 2310
Wi	3430 1131	1003 3224	4433 3555	2223 2103	2243 3222	2122 2320
Ab	2431 1121	1113 3124	5433 3455	2123 3213	1243 3332	2222 3211
Ni	2430 1231	2003 2224	5433 3555	2122 2113	2243 3322	2122 2310
Ma	2320 1121	1012 2223	5323 3554	2224 3103	2243 3322	2223 2300
Sw	1331 1131	1122 1123	5323 3544	2123 2112	1243 3222	2122 2310
CF	2321 1121	2012 2123	5333 2444	2123 1102	2243 3212	2122 2210
Ch	3431 1122	2102 2123	5434 3344	2333 2102	2343 3222	2233 2210
Fu	2421 1131	1113 2224	5433 2544	2213 2212	2233 3222	2122 3210
Eb	3321 1121	1002 3124	5433 3555	2123 -----	----- 3	3321 2112 1220
Tl	3430 1021	2002 2124	5443 3555	2123 2102	2243 2221	2121 2210
SF	3431 2221	2124 1124	6433 2544	2224 3223	2343 3321	2233 4221
Tu	3430 1111	2102 1123	4534 3444	2334 2101	3353 2321	1222 2200
Ks	2321 11--	--13 3123	6433 3553	2114 3212	0154 4332	2123 2321
SJ	2420 1121	2002 1124	4423 1445	1321 2101	2342 1220	2201 1110
Ka	2441 1121	200? 2223	4434 4443	2234 3201	2244 3322	2222 2211
Ho	1330 0021	2002 1132	3324 2332	2124 1011	2142 1121	1112 1110
ZS	3201 1110	1003 1222	4434 3423	1113 1100	2145 2220	1131 2310
Al	1221 1130	1003 1223	5434 3443	1223 2111	1154 2321	1212 2310
Hu	2312 2221	2112 2232	4433 5554	2222 3211	2234 3422	1202 3432
Ap	3330 C122	2202 1233	3333 3243	3233 2013	2233 1122	1211 3132
Pi	2420 3032	2203 3335	4433 4455	1222 2332	3242 3332	1002 0221
Hr	2412 1121	1012 1223	5333 3444	0224 3102	0144 3321	2212 3200
Wa	3432 1232	3313 2223	4434 3544	4323 2111	2244 2222	3322 3312
To	1431 0222	2213 2223	3434 3443	2224 3212	3344 2222	3232 2311
Am	2340 0122	2101 2223	4434 3343	2224 3101	1243 1112	2222 1221

March 31

Tr	0023 4545
Co	0056 4723
So	0023 4555
Le	0122 4424
Do	0022 4423
Me	0065 4523
Si	0C45 4633
Es	0023 4324
Lo	0113 2323
RS	0033 4424
Ag	0253 4435
Wn	1133 4435
Wi	0123 4324
Ab	0133 4434
Ni	0133 4434
Ma	0123 3434
Sw	0133 3434
CF	1123 3423
Ch	0142 4335
Fu	0123 4434
Eb	0033 3433
Tl	0133 4433
SF	1143 5434
Tu	1144 4424
Ks	0134 6544
SJ	0132 4334
Ka	1143 4434
Ho	0133 3423
ZS	1133 5324
Al	0233 5434
Hu	0133 5544
Ap	2243 3434
Pi	0032 5444
Hr	0033 4434
Wa	1343 4534
To	2343 4534
Am	1143 3433

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

April	1	2	3	4	5	6
Tr	5633	5463	5554	3455	6434	5477
Co	3674	6444	3466	3534	3336	5544
Jo	6633	5576	5543	3466	6334	5487
Le	5532	3366	5353	3446	4223	3466
Do	6533	3377	6543	2457	5223	3467
Le	4666	6444	3666	3434	4346	4335
Si	3764	6333	3775	3434	3335	4333
Ss	4442	4354	4343	2442	4223	3352
Lo	4413	4375	4334	2345	4213	3365
Rs	5442	4365	4343	2445	4323	3455
Ag	4545	4355	5563	3445	5434	3355
Wn	5543	4365	5344	3445	4334	3465
Hi	4432	3244	3343	3434	3334	3455
Ab	4443	4455	4344	3445	4324	3355
Ti	5432	4355	4342	3445	4333	3455
La	5433	4355	4343	3345	4334	3355
Sw	4432	4355	4233	2445	3333	3454
Cf	4432	3344	4233	2334	3232	3354
Ch	4434	4334	5453	2245	4323	2234
Fu	4433	4354	4343	2445	4323	3354
Eb	4433	3355	4222	3345	3232	3355
Tl	4443	4355	4343	2335	4232	4255
Sf	4444	4466	4333	2436	3334	5355
Tu	4544	4343	4453	3334	4324	3344
Ks	4433	5355	3333	4444	4334	33-3
Sj	4432	3233	4332	2334	4312	2233
Ka	4433	5243	3244	3333	3323	4434
Ho	3432	4232	3343	2234	3223	1233
Zs	2442	5343	4254	3434	2342	4532
Ll	2432	4242	2443	2333	2334	3443
Mu	4433	3543	4332	3444	3222	3443
Ap	3432	4243	2343	2334	2423	2243
Pi	4432	4354	4341	4445	4213	4354
Hr	4333	4244	4433	3435	3234	3354
Wa	4443	5354	4344	4435	3334	4553
To	3443	5343	4344	4434	3234	4443
Am	4542	4243	3443	2333	3233	3344
April	7	8	9	10	11	12
Tr	5533	4354	4221	4331	1113	4514
Co	3335	5321	2233	3411	1125	5521
Jo	5523	4344	3121	3221	1023	4423
Le	6432	3332	3222	3220	1012	3322
Do	7332	4332	3021	3320	0011	3321
Le	4555	5222	2132	2211	1234	5311
Si	3444	5221	2131	2220	1034	4320
Ss	3323	3332	3122	2210	0122	3311
Lo	4423	3332	2122	2321	1122	3322
Rs	4323	3332	2122	2221	0022	3312
Ag	5433	4233	3131	2222	1133	3321
Wn	4332	3332	3121	2321	1122	3322
Vi	3223	3331	3221	2211	0122	2321
Ab	3323	3332	2113	3210	0123	3312
Ni	4322	2332	3221	1221	1121	3312
Ma	4322	2333	3121	2110	1022	2221
Sw	3323	2331	2122	2221	0122	3311
Cf	3222	2232	2122	2120	1122	3212
Ch	4322	2132	3132	2121	1123	2211
Fu	3223	3332	2222	2221	0222	3312
Eb	3322	3132	2010	1000	0000	2211
Tl	3322	2232	3122	2110	1012	3112
Sf	3433	5243	3123	3321	1333	3233
Tu	3432	3222	2233	2111	1123	3211
Ks	3223	2332	2121	1220	0022	3221
Sj	3321	2111	2120	1111	1012	1110
Ka	3222	3222	2221	1211	1122	2222
Ho	2222	2021	2121	1111	0112	2110
Zs	2211	4321	3220	1100	1121	2110
Al	2213	3231	1221	2220	0123	3311
Hu	4311	3220	1111	2311	1112	4330
Ap	2321	2133	2232	1232	1223	2131
Pi	4313	3353	2202	3220	0211	2232
Hr	3222	3122	3022	1100	0122	1101
Wa	4443	4343	4423	2322	3332	3222
To	4433	4333	3332	2312	3323	3322
Am	3433	3222	2232	1201	1312	3210

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

April	13	14	15	16	17	18
Tr	4422	2100	1122	0025	2433	3235
Co	3224	4111	1112	0011	2455	5311
So	4412	2110	0122	1024	2333	4225
Le	4312	2111	0111	2123	1332	3213
Do	4312	2210	0001	2013	0333	4204
Me	3334	4111	1232	0112	2555	5222
Si	3223	2110	1122	0011	2364	4211
Es	4323	2100	0121	2112	2333	4223
Lo	4312	2111	1122	2113	1333	4214
RS	4412	2110	0011	2113	1343	4113
Ag	5322	3322	1222	2223	3463	4323
Wn	4422	2211	1121	3013	1343	5314
Wi	4222	3211	1022	3222	1243	3323
Ab	4312	2111	1121	2113	1333	4223
Ni	4412	2111	1111	2013	1333	4214
Ma	4222	1011	1111	2013	1434	4223
Jw	3323	1111	0121	2103	0333	4113
CF	4322	2011	1121	2012	1332	3213
Ch	5322	1111	1222	1023	3453	3223
Fu	4312	2211	0113	3213	2333	4213
Eb	4212	1011	0111	3012	1233	3213
Tl	4322	1011	0122	2013	2333	3223
SF	3313	1210	1134	4113	2345	4223
Tu	4433	1111	1222	0012	2463	3222
Ks	1213	1011	0123	3012	0335	4334
SJ	4401	1011	0100	0012	2233	2112
Ka	3312	2011	1211	0013	1343	3212
Ho	3222	1012	1110	0011	1332	3221
ZS	4312	0001	1210	0001	1354	4211
Al	3222	1011	1211	0012	1344	3222
Hu	3322	2321	2111	3222	1333	5312
Ap	2332	2032	2222	1022	3433	3133
Pi	4432	3021	0201	2233	3333	3222
Hr	3321	1001	0321	1002	0333	3103
Wa	4423	2212	1332	1112	3454	3222
To	4333	2122	2321	0112	3454	4223
Am	3122	2011	1121	0021	1353	3212
April	19	20	21	22	23	24
Tr	4442	5555	5532	1155	3201	1110
Co	3462	5552	3641	0143	2112	1000
So	3332	6565	6531	1255	3211	1110
Le	3332	4564	3552	1245	2202	1211
Do	2322	4665	4641	0145	2001	1000
Me	4572	4443	4742	1143	2012	1111
Si	2462	5431	3731	0143	1102	1000
Es	3332	3343	3432	2243	2122	1310
Lo	2332	4454	4442	1243	1101	2210
RS	3332	3454	4441	1143	1000	1000
Ag	3452	3444	4642	1334	2211	1312
Wn	3332	4453	4542	1254	2111	1100
Wi	3332	4444	3432	2233	1021	1000
Ab	3433	3343	4531	2144	1113	1220
Ni	3322	3343	4441	1243	1111	1100
Ma	3221	3342	3411	1244	2111	1000
Sw	2232	3343	2442	1143	1121	2210
CF	2221	3342	2431	1133	2111	1000
Ch	4351	2333	3531	0134	2111	1101
Fu	3332	3343	3442	2243	1212	1310
Eb	2231	2243	3432	1143	1000	1000
Tl	3342	3353	3442	1143	1010	1100
SF	3342	3343	4443	1254	211-	-321
Tu	4351	3333	3542	1144	2111	1100
Ks	2232	2342	2401	0144	1110	0000
SJ	3220	1322	2421	1143	1110	1011
Ka	1333	3322	2342	1033	2110	0010
Ho	1141	2222	3331	0133	1100	C000
ZS	2231	4321	2331	1134	1110	0000
Al	1232	4342	2431	2142	4112	1101
Hu	3232	3443	2422	2333	2112	2111
Ap	2342	2343	2242	1033	3311	0032
Pi	3131	2423	3433	3253	2111	3122
Hr	3233	3453	2402	1153	0011	0000
Wa	2443	5444	4442	1143	2232	1111
To	3342	4443	3342	1143	3322	1112
Am	2352	4422	3441	0043	2201	0110

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

April	25	26	27	28	29	30
Tr	3332 2211	2221 1100	0001 2154	3103 5543	5315 4444	5634 5663
Co	1363 1100	2112 0000	0000 2121	1144 5532	3204 5442	5455 6742
So	2332 2200	1212 1100	0002 2144	2113 4445	6315 4555	5634 5664
Le	2322 1210	1111 2100	0111 2132	1122 3335	5312 4443	4533 5654
Do	2322 2210	1111 1000	0001 1132	1101 2336	6103 3543	4523 6665
Me	2454 1112	2322 1111	1000 1112	1144 3333	4315 5432	5655 6633
Si	1353 1111	2212 0100	1000 2021	1144 2322	3105 4432	5667 6632
Es	2322 2210	1112 2100	0111 1132	1122 3334	4213 3333	2432 4443
Lo	2323 2200	1212 1200	0112 1133	1112 3334	4213 3443	4433 5554
Rs	2322 2100	1221 2200	0001 2132	1111 3335	4223 2433	4432 4454
Ag	2443 3322	2322 1212	0102 1233	1234 3343	4113 4343	4665 5444
Wn	2322 2110	2222 2101	1011 1142	1222 3325	5203 3433	4433 3444
Wi	1332 2100	1111 1100	0011 3142	1121 3334	4213 3433	4532 4542
Ab	2332 2200	1222 2100	0011 2133	1122 3334	4123 3333	3443 3443
Ni	2322 2110	2221 1110	0001 1143	1211 3335	4213 3433	4433 3343
Ma	2322 2100	2222 2100	0001 1133	1222 3334	4103 2433	3523 3443
Sw	1222 1210	1222 1200	0122 2032	1122 2324	4122 3332	3433 3443
Cf	1221 1100	1221 1000	0011 1132	1111 2324	4212 2333	3432 2333
Ch	2343 1221	2321 1111	0001 0033	2233 2223	3203 4332	5554 3333
Fu	2322 2210	1221 1200	0012 2233	1122 3324	4233 3433	3432 3443
Eb	2222 1100	1111 1000	0000 0032	1111 3334	4202 22--	---- -343
Tl	2222 1110	1211 1000	0001 1133	1121 3335	4103 2333	4433 3443
SF	2333 2311	1223 1100	0021 3133	2222 4236	4234 1333	5534 3443
Tu	2442 1111	2222 1200	0001 1132	2233 2322	3303 3233	4653 4432
Ks	2211 1100	0100 1000	0020 0143	1112 2233	4103 2343	3423 1341
SJ	1320 0110	1211 0000	0001 1021	1112 1122	2103 1331	3432 3233
Ka	1342 1111	1331 0101	0111 1012	1222 2322	2124 3531	3344 3332
Ho	1242 0120	1101 0000	0000 1021	1112 1222	2102 2222	3433 2321
Zs	1431 1210	1120 1100	0000 1111	1212 2310	2203 2531	2413 3341
Al	2321 1111	3211 1001	0111 1122	1222 3312	3114 2332	2322 2550
Hu	2221 2211	1211 2301	0000 2222	1222 3432	2103 3452	3433 3442
Ap	3332 0132	2312 0033	2311 1033	3223 2243	4333 2343	3443 2332
Pi	1320 1122	0300 1102	0011 1232	2323 0343	1321 0332	2433 1434
Hr	1432 1100	1131 1100	0111 2023	0222 2224	2123 3333	3523 4442
Wa	3433 1212	2331 1202	1231 1132	2233 4432	3325 3533	3435 4542
To	2442 1222	2332 1222	2221 1123	3233 2332	3134 4532	4435 3432
Am	2342 0121	2112 0011	1000 0022	1133 1332	2223 3422	2345 3432

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Lay	1	2	3	4	5	6
Tr	3111 1254	3212 3456	6743 3365	5322 2356	6324 3365	4323 4444
Co	2011 0211	2111 3554	3455 3443	3234 3534	4335 4322	2334 3322
So	2111 1265	2102 3557	7733 3376	6323 3456	7324 3365	3223 3335
Le	2112 2232	2112 3456	6543 3376	5222 2446	6223 3333	1211 3334
Do	2001 0233	2102 3457	7633 3487	6212 2446	7324 3333	2201 3335
Me	2111 2211	2111 3345	6605 3244	3555 2435	6355 4223	3344 3323
Si	2011 0211	2111 3445	6565 2333	3344 1334	4344 3122	3333 2122
Es	1122 2232	2122 3345	5433 4455	3222 2444	5224 3433	1121 3333
Lo	2212 1233	2223 3345	6534 3365	3222 3445	5234 3333	2222 3334
Rs	2112 1233	2212 2345	6534 3355	4222 2445	5324 3333	2121 3323
Ag	2002 3322	2211 3346	6563 3355	3433 2445	5333 3334	3334 3333
Wn	2112 1233	3212 3445	6534 3365	3222 2445	5334 3434	2112 3334
Wi	2122 2243	3113 3445	5534 4454	3212 2445	5334 3434	2121 3324
Ab	1233 2233	3123 2445	5534 3454	3333 3444	4334 3434	1112 3433
Ni	1111 1233	2112 3445	5544 3354	3222 2444	4323 3434	2122 3334
Ma	2110 1233	2122 4345	5424 3454	2212 2444	4334 3434	2122 3224
Sw	1122 1232	2232 2334	4433 2254	2232 2434	4333 3334	2132 3323
Cf	1011 1232	2112 2334	4433 2354	3221 2334	3223 3333	1111 2324
Ch	1001 1222	2222 2235	4453 3345	3222 1344	4323 2223	3323 2222
Fu	1223 1233	2222 3434	5433 2354	3222 2344	4213 3334	2221 2323
Eb	10-- --3	2223 3334	5533 2344	3221 2333	3213 3333	1010 1213
Tl	1001 1232	2222 2435	5534 2354	3222 1343	4333 3334	2112 2223
SF	1113 2222	1333 4433	6634 3365	3314 2344	4234 3334	1322 3213
Tu	1111 2223	2222 2334	4543 3344	3332 2334	4333 2323	3323 3222
Ks	0122 3443	2223 3334	6433 3354	2222 2433	3233 3355	2133 2223
SJ	0000 1211	1212 0124	5432 1333	3211 0333	3212 2122	2212 1113
Ka	2122 1221	1212 3455	4543 3333	3222 3333	3423 2212	3322 2222
Ho	1101 1101	0112 1233	4433 2332	2222 0222	3322 1222	1113 0111
ZS	1122 1132	2223 2332	3433 3422	3212 1333	2333 4211	1221 1113
Al	0122 1132	2223 3533	3333 2332	2222 1433	2233 2233	1221 1111
Hu	1012 2323	2212 3444	4442 4444	2222 3544	3223 4332	2212 3423
Ap	3322 1123	1222 3443	3443 2243	2222 2333	4322 2123	2223 1223
Pi	2121 0234	1323 1545	5434 2344	3321 3454	4321 1432	3112 2303
Hr	2322 1232	1123 3535	5434 2354	3122 2433	4224 2233	2332 2322
Wa	2132 1243	3222 3444	4444 2443	3333 3345	4334 4343	3332 2334
To	3222 1122	2322 3544	4334 2443	3333 1345	3334 3333	2333 1333
Am	3011 0031	2212 2433	3344 2343	3222 1234	3233 3233	2223 0222
May						
	7	8	9	10	11	12
Tr	5123 2335	5321 2225	1100 0134	3212 2335	4314 4533	3111 2432
Co	3332 2211	2221 1101	2101 0000	1223 3112	3234 3521	1112 0311
So	6123 2224	4222 2224	1101 0022	2112 2226	5224 4433	3121 1321
Le	5121 2213	3221 2212	1001 2211	1112 2214	3323 3322	2111 0331
Do	6022 2313	2210 2103	0000 1011	1001 2205	4112 4323	2112 0211
Me	4252 3112	2320 1001	2101 1111	1232 2124	3244 3322	2111 2221
Si	3141 2211	2320 1001	1000 0010	1122 2103	3233 3222	2100 0211
Es	4021 3313	2111 2122	0100 1211	1112 2213	3133 4422	1211 0222
Lo	4122 3213	2112 2112	0101 2221	2111 2214	4233 4322	3112 1222
Rs	4122 2313	1111 2112	0000 1111	1112 2203	4222 4422	3111 1222
Ag	4242 3222	2222 2221	1201 1211	2232 2224	3232 3333	3221 1222
Wn	4122 3313	2121 2013	1101 0022	2122 2224	4223 4433	2212 1222
Wi	4122 3313	2122 2113	0000 0012	2122 2114	4233 4432	2112 1332
Ab	4112 3313	2122 2112	1001 2212	1113 2324	3133 4432	2132 1232
Ni	4121 2313	2121 1113	1000 1011	2112 2114	3211 4422	2211 1222
La	4111 2323	2121 1012	0000 0011	2111 1114	3211 3432	1111 0222
Sw	3122 2212	2121 2213	1121 1122	1122 2223	3232 3422	2121 1222
Cf	4121 2212	1121 1002	0100 1011	1111 1114	3221 3322	1111 1122
Ch	4142 1322	2221 1212	1200 0011	1222 1124	3232 3233	2221 0122
Fu	4122 3312	2122 1112	0111 3111	1122 2124	3222 4422	3122 2232
Eb	3021 1202	2110 1001	0000 0010	0000 1013	3112 3432	1010 0122
Tl	4122 2213	2121 1102	1100 1011	1101 1113	3221 3422	2211 1132
SF	4223 2423	3133 2322	2112 2121	2123 2223	3212 3432	3233 3331
Tu	3141 1212	3320 0002	1100 0001	1132 1224	4222 3323	2121 1222
Ks	4232 2323	3222 1113	0100 0011	1122 2113	3121 3433	1121 0132
SJ	3120 0201	1111 0011	0001 0010	1121 1113	3111 1221	1000 0011
Ka	3121 2201	1221 2102	1110 1001	2111 2233	2233 3322	3112 1232
Ho	2030 0001	1211 0011	0000 0000	0000 0012	2121 1323	1010 0111
ZS	2121 2201	1220 1000	1100 0010	1111 1213	3232 3421	1111 1122
Al	3221 2212	1121 1112	1110 0021	1111 1114	3222 2421	2121 1122
Hu	3221 2321	0211 1211	1200 1011	1022 2224	3112 4432	2111 1322
Ap	3231 1221	3232 1122	2101 0010	2211 1013	2132 2233	1212 0022
Pi	3030 0302	2212 3332	0210 3322	1231 3335	3322 2432	3113 1402
Hr	4233 3312	2132 1002	0011 1001	1012 1003	3131 3311	1111 0221
Wa	3231 3322	2231 2223	3121 1221	2321 2213	4333 4323	4321 1222
To	3231 3313	2331 2212	3211 0112	2221 2103	2233 2323	3211 1211
Am	3140 2212	2221 0001	1000 0002	2122 2023	2232 2222	2010 0121

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

May	13	14	15	16	17	18
Tr	4333 4354	4424 5346	5533 3366	3332 3455	5212 4343	4201 2231
Co	2444 4322	3323 5342	3344 3343	3343 3531	2233 4321	2201 1100
So	3333 4354	4324 4356	5433 3466	3322 3455	4112 4243	4201 2221
Le	3332 2233	3322 2334	4322 3453	2222 2344	4111 3232	3201 1220
Do	2333 3243	3323 3334	4212 3344	2222 2233	3011 2221	3102 1110
Le	2544 3223	4225 6233	3454 2233	3343 2223	3133 2312	3201 1101
Si	2432 2222	3313 4323	3453 1243	2342 1311	1232 3211	2201 0111
Es	2332 2333	3223 3233	4332 3453	2332 2333	2012 2222	2111 1120
Lo	3333 3344	3233 3333	3333 2454	2222 3323	1112 3222	3201 2220
RS	3333 2343	3223 3334	3233 3454	3332 2323	1111 2221	2101 1120
Ag	2543 4334	4323 4334	4444 2244	4342 3332	2132 2323	4101 1211
Wn	3433 3343	3323 4334	4342 3454	3333 3333	2112 3222	3202 1221
Wi	3433 3343	3323 4333	4343 3464	2333 3333	2012 3221	2202 1221
Ab	3343 3333	3333 3434	4333 2454	3233 3323	2111 3221	2211 1210
Ni	3433 3343	3323 3333	3333 1354	2332 2223	2112 2222	3111 1120
Ma	2333 2333	3223 3323	3332 3454	2222 2222	3111 2221	2211 1200
Sw	2322 2333	2323 3333	3243 1343	2233 2223	2122 3211	3222 1120
CF	2332 2333	2222 3333	3332 1343	2222 2223	2111 2221	2111 1120
Ch	2433 3234	4322 4234	4433 2243	3342 2222	2131 1112	4001 1111
Fu	3333 3333	3222 3323	3323 2354	2323 3233	2112 2222	2122 2120
Eb	2332 2332	2222 32--	--21 1343	1322 2223	3000 0121	2101 0010
Tl	2333 2333	3323 3333	4433 2254	2332 3233	2112 3122	3101 0120
SF	2333 3333	4322 3444	4433 3365	3333 2324	3113 3332	3233 2212
Tu	2443 2223	3323 4334	2433 2224	2341 2212	2131 1223	3101 1111
Ks	1223 3342	3323 4223	3333 2355	2222 2124	3002 3221	31-- --
SJ	0222 2222	3212 2212	3221 0132	2221 1021	1020 1110	3000 0121
Ka	3343 3222	3333 3233	2343 2322	2232 1231	2222 3221	2201 0011
Ho	0322 2112	1222 3123	2322 0132	1231 0101	3111 1111	1101 0011
ZS	0332 2221	2222 4212	2343 1132	2231 1211	1112 3110	2111 1110
Al	1333 2342	2324 4223	2233 2234	2221 1233	2112 1211	2111 1110
Hu	2322 3422	3222 4423	3331 3444	3332 3432	0121 1221	3002 3220
Ap	2333 2223	2323 3222	2322 1232	2222 1233	2221 2221	2410 2211
Pi	2333 0343	4301 2403	4431 2444	4333 2402	2212 1302	4213 0402
Hr	1333 3332	4333 3443	3333 3355	3232 2323	1111 1001	3201 1110
Wa	3333 3443	3343 4333	4333 3444	2332 2233	3222 3221	3311 1221
To	3323 3323	3224 4333	3343 2343	3231 2223	2222 3212	3212 2120
Am	2423 2322	2222 5223	3342 124-	-----	3021 2111	2000 1012
May	19	20	21	22	23	24
Tr	1001 2321	1021 3335	5312 3321	0023 4434	4335 5655	5432 1244
Co	0110 1210	2121 1222	2321 1410	0025 6333	4346 6643	3333 2112
So	1001 2221	2121 2225	6212 2321	0014 5445	4235 5655	5332 1243
Le	0011 2321	1112 2323	4311 2221	0013 4433	3333 5544	3321 1222
Do	0001 1320	1021 2323	6301 1210	0003 5433	3334 6635	5322 1222
Le	0000 1221	2012 2222	3312 1310	0015 6334	5456 6644	3452 2123
Si	0100 1220	2111 2222	2210 1310	0024 5333	4336 6533	3342 1122
Es	0101 2330	1111 2333	3311 2221	0023 4433	3343 4443	3221 1232
Lo	1112 2321	2222 2323	4321 2312	0124 6433	4334 5544	3322 2223
RS	1011 1330	2121 2323	4301 2310	0113 5433	4344 4444	3221 1223
Ag	0001 1321	1121 2233	4311 2431	0023 4434	4445 4545	4532 2133
Wn	0101 1431	2221 3334	4311 2321	0124 5444	4344 4444	4332 2233
Wi	0001 2431	2222 3334	4301 2321	1134 5444	4334 4544	4333 2233
Ab	0112 1430	2122 3334	3311 2211	0023 5444	4344 3544	4322 2333
Ni	0101 1331	2122 2334	4311 1321	1023 5433	4334 4444	4322 1133
Ma	0000 1330	1110 2324	3300 1211	0023 5433	4334 4444	3322 1132
Sw	0122 1321	2122 2323	3222 2211	1233 5433	4334 4443	3331 1133
CF	0100 1320	1111 2323	3200 1111	0122 4333	4333 3433	3221 1122
Ch	0110 0221	2121 1233	3210 1321	0133 4444	4344 3434	4431 1233
Fu	0021 2320	2222 3323	3322 1211	1133 5333	4235 4533	3233 3223
Eb	0001 1320	1011 2333	3200 0111	0023 4433	3333 3434	4321 2122
Tl	0001 1320	1111 2324	3211 1121	1033 4444	4345 4434	4332 1223
SF	1113 3321	1133 3344	4322 1122	0245 5333	4356 4545	5232 3333
Tu	1100 0332	2022 2324	4311 1432	0033 5443	4455 4435	4431 0223
Ks	----	----	--11 112-	--34 5553	4455 5544	4332 2133
SJ	0000 0210	1111 1132	4100 1020	0023 3332	3343 2324	4420 1122
Ka	1010 0221	3022 2323	2121 1111	1133 5344	4446 4434	2331 2122
Ho	0000 0221	2012 1122	1101 0010	1122 4333	3345 2334	2331 1022
ZS	0010 0220	1022 2221	1111 1111	1133 5343	4344 4532	3331 1222
Al	1111 1220	1122 2224	2111 1211	1133 4333	4345 4443	3232 1122
Hu	0000 2432	1013 3433	3201 2221	0024 6543	3344 4533	4421 2332
Ap	2211 1221	1211 2132	23-- --3	3223 4232	3335 3344	3332 1223
Pi	1103 0302	0120 2204	4111 0002	0223 4413	4344 3414	4433 0112
Hr	0023 2110	1112 2124	3210 1000	0033 4323	3335 4434	4321 0112
Wa	2221 1212	3222 2222	3221 2212	2234 4334	4335 4554	3331 2332
To	2211 1211	3312 3223	3211 2212	1123 4323	3435 5543	3331 1132
Am	1100 0202	----	--2 1100 1113	1123 4223	4334 4433	2332 1021

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

23

May	25	26	27	28	29	30
Tr	4022 3435	4313 4452	5532 5556	8764 5364	4524 5335	5633 4544
Co	3124 3522	3344 3421	3333 6645	6575 4333	4424 6322	4324 4620
So	3112 3534	4223 4341	4322 6566	6354 4365	4424 5335	4623 4533
Le	2112 2323	3223 3431	3322 4557	8765 3443	3323 4333	3532 3322
Do	2011 3423	2223 4431	2321 4569	5965 3453	4324 5433	4522 4332
Me	3113 2323	3455 3332	3343 5537	6777 5334	4435 6233	4544 3411
Si	3113 3322	3334 3222	2322 5445	8776 4323	4524 5322	4432 3411
Es	2112 2433	2233 3431	2232 4546	6555 3443	3323 4433	3322 3422
Lo	3112 3423	3223 4432	2322 4546	7655 3443	4324 5433	4432 4332
RS	2112 2423	2223 3421	2321 4546	7654 3443	4424 4333	4422 3432
Ag	2122 2323	3455 3343	3233 5457	6777 4444	4424 4343	5543 3422
Wn	3112 3433	2223 3432	2331 5546	7544 4443	4424 4433	4422 3433
Wi	3123 3433	3233 3442	2222 5645	6555 4544	4424 5433	4422 3433
Ab	3122 3433	3233 3332	2332 5545	6545 4443	3423 4433	4423 3432
Ni	3112 3423	2223 3432	2322 5545	6544 4445	4324 4333	4421 3422
Ma	3122 2433	2223 3331	2221 5545	6243 4443	3323 4343	3421 3422
Sw	3122 2433	2223 3322	2222 3445	6433 3333	3323 3332	3422 3322
CF	2111 2323	2223 3332	2211 4545	6443 4333	3313 4322	3321 2421
Ch	3122 2323	3444 2343	3232 3447	5765 2334	4424 4333	4532 3322
Fu	2122 3323	3223 3332	2213 5445	6444 4443	3333 4333	4423 2422
Eb	2012 2323	1113 2321	2222 55--	----5 3343	4312 32--	---0 1412
Tl	3012 2333	3344 3331	3332 5445	5554 4443	4423 4233	3421 3422
SF	3143 4433	3344 3433	3343 6456	5544 5444	5423 4333	4433 2523
Tu	3122 1323	3434 2333	2231 4455	6665 2333	4424 3334	4432 3311
Ks	3133 3432	2223 3321	3112 5445	6534 4554	4433 4333	3322 2533
SJ	2022 2322	3322 1122	1130 3235	5554 1323	4413 2122	3221 1220
Ka	2133 2422	2223 3322	2123 4435	7445 4333	4523 3332	3313 2311
Ho	2122 2222	2123 1121	2121 3244	5442 2323	4422 3222	2322 1211
ZS	2233 2422	2233 2321	1121 4333	6324 3332	5534 3221	2221 2310
Al	2222 2322	2332 2221	1121 5443	5654 5443	5423 4222	3212 2321
Hu	2122 3433	2334 4432	3321 6664	6644 3543	4433 5432	3321 3432
Ap	3322 3233	3232 1242	2213 3445	6453 3233	4323 2222	2322 2232
Pi	2133 2324	4223 0343	3233 4555	6644 1344	5513 4203	3312 2312
Hr	2012 3322	3333 2232	2133 5445	5635 3343	4313 3222	3323 2402
Wa	2243 4532	3333 2342	3323 5445	6435 5353	4334 3333	3333 2432
To	2123 3412	3344 1332	3323 5455	6454 5343	3424 4333	3323 2321
Am	2123 2321	3234 1221	2223 4445	5555 4232	3324 3222	2333 1311
May	31					
Tr	4112 2225					
Co	1200 2212					
So	2211 2224					
Le	2211 2113					
Do	1100 2103					
Me	2210 2123					
Si	2200 2012					
Es	2211 2113					
Lo	1211 2213					
RS	1110 2103					
Ag	3100 2213					
Wn	2110 2113					
Wi	2110 2214					
Ab	2211 2114					
Ni	1110 2113					
Ma	1111 1103					
Sw	1221 1113					
CF	1100 1103					
Ch	2211 1113					
Fu	1222 3113					
Eb	2100 1003					
Tl	2110 1003					
SF	2213 1204					
Tu	2210 1222					
Ks	2200 1004					
SJ	1100 0002					
Ka	2211 2112					
Ho	1110 0002					
ZS	1210 1001					
Al	1211 2113					
Hu	2100 2112					
Ap	3210 2222					
Pi	2002 0103					
Hr	0010 0003					
Wa	3211 1223					
To	2211 2112					
Am	2200 1022					

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

June	1	2	3	4	5	6
Tr	4314	3435	6632	2436	3324	4254
Co	2335	5523	5522	0433	3216	6522
So	4213	3425	5512	1435	2214	4443
Le	2323	3414	5432	1335	3323	3432
Do	3333	2414	5422	2325	2324	3543
Me	3343	2424	5521	1333	3315	6312
Si	3324	3423	4511	0323	3215	5323
Es	2323	3423	4422	1335	3223	3442
Lo	3224	3524	4423	2334	2324	3443
RS	2224	2524	4422	1325	3324	3442
Ag	3432	2433	4421	2343	3313	4333
Wn	3324	3524	4422	2325	3333	3443
Wi	2324	3524	4433	2335	3334	4543
Ab	2323	3524	4423	2335	3223	3442
Ni	3323	3423	4422	1235	3323	3443
Ma	2323	2423	4422	2225	2223	3432
Sw	2223	2423	4421	1224	2323	2443
CF	3323	2413	4322	1225	2233	2342
Ch	3433	2323	4422	1233	3312	4223
Fu	2223	3423	4323	2334	2223	3442
Eb	2212	2323	4311	1334	2233	3341
Tl	3313	2324	4422	2234	2333	3342
SF	3334	3425	5413	2334	3324	4333
Tu	2233	2523	4421	1333	3224	4322
Ks	3224	3434	4422	1225	2123	3441
SJ	2323	1314	4312	1223	2203	2121
Ka	3223	2311	3322	1323	3223	3321
Ho	2213	2333	3321	0112	2213	2211
ZS	3314	2323	5421	1311	3323	3331
Al	2223	2323	4221	2223	2224	3441
Hu	2233	3523	4422	2332	2213	4432
Ap	2213	2322	5432	1033	3423	3233
Pi	3333	2333	5423	1313	3220	3322
Hr	2123	1214	4423	1433	2323	3231
Wa	2313	4323	3422	1324	3334	4332
To	2314	3423	3422	1313	3324	4332
Am	1324	3312	3321	0223	3304	4212
June	7	8	9	10	11	12
Tr	4101	2211	1002	2234	5535	6335
Co	2213	1100	0012	1222	4425	5323
So	4101	3100	1111	2135	6425	6325
Le	2111	2210	0012	2223	4433	3333
Do	3002	2200	0002	2235	5414	4324
Me	2112	1101	0002	1223	5546	6324
Si	2112	1101	0012	1213	4535	5232
Es	1012	3210	1011	2323	3423	3333
Lo	3121	3221	2112	2224	4514	4333
RS	2001	3210	0011	2324	4524	4333
Ag	3112	2221	1111	2144	6633	4344
Wn	2112	3311	1002	2224	4524	4333
Wi	2102	3311	1112	2334	4534	4443
Ab	2122	3311	1131	3324	4523	4433
Ni	2112	3211	1002	2324	4524	4333
Ma	2012	2211	1002	2323	4423	4342
Sw	2111	2121	1212	2223	4423	3322
CF	1001	2210	1001	2223	3423	3332
Ch	2111	1222	1012	2335	6533	3234
Fu	2232	3220	1233	4333	4423	4332
Eb	0001	2200	0000	1223	3412	2232
Tl	2012	2211	1001	3324	4423	3333
SF	0133	3311	1134	4235	3533	3333
Tu	2112	1211	2012	1224	4534	3223
Ks	0002	2311	0001	1223	4434	4233
SJ	1001	0211	1000	0224	4423	2232
Ka	2212	2212	3322	2223	3433	3222
Ho	1001	0101	1001	1123	2323	1011
ZS	1102	1210	1011	1223	2323	3121
Al	1112	2211	2012	2222	3424	4222
Hu	1002	3310	0001	2334	4432	5433
Ap	3201	1111	2211	1124	2433	1023
Pi	3110	2101	0101	2035	4430	3123
Hr	1111	1100	0012	2133	3333	3313
Wa	2111	2111	2112	2132	3433	4223
To	3211	2111	2211	2223	3334	4322
Am	3201	1111	2111	1012	3334	4212

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

June	13	14	15	16	17	18	
	Tr	2211 2102	2222 3221	2112 2000	0002 2332	3332 3343	3322 1220
Co	2123	1101	1121 1111	2111 0000	0001 0221	2334 2332	3342 0110
So	1211	1111	1222 2110	1111 2010	0002 2221	2322 3332	2222 1120
Le	1011	1110	1222 2210	1112 1110	1001 2331	2322 2332	1222 1221
Do	1002	2111	1212 2220	1111 2221	2201 2331	2322 2332	1212 2110
Me	1123	1021	1222 1212	2102 0101	0001 1232	2433 2323	3354 1111
Sj	2122	1010	1221 1211	2111 1000	0001 1131	2433 2322	2343 1210
Es	1011	1111	1222 2211	1112 2110	0002 3331	2332 3332	1221 1221
Lo	2122	1111	1222 2211	1222 2110	0012 3332	3332 3332	2223 2221
Rs	2111	1110	1221 2211	1211 1111	0001 3331	3332 3322	2222 1210
Ag	1121	1111	2322 2221	2012 1211	0001 1332	2432 2343	3333 2332
Wn	1112	1111	2222 3221	1211 1111	1002 2342	3433 3323	2233 1221
Wi	1211	2111	1122 3222	2322 2211	1222 3442	3433 3332	2333 2321
Ab	1121	2111	1321 3221	1113 3111	0001 3441	3333 3332	2122 1220
Ni	1111	1111	2212 3211	1211 1111	0001 1341	3432 2332	1223 1221
Ma	1111	1111	2122 2211	1100 0111	1001 1341	2432 3222	2222 1220
Sw	1121	2121	1122 2111	1321 1112	0112 1231	2322 2222	1221 1211
Cf	1001	1110	2222 2211	1211 1011	0101 1331	2422 2222	1221 1210
Ch	1122	1122	2322 1221	2112 1012	1001 1343	2432 2344	3333 2222
Fu	1122	2110	2222 2220	1112 3210	0121 2331	3332 2322	2113 2210
Eb	1000	0110	1111 1100	0110 0000	0000 1231	2321 1211	0111 0210
Tl	1001	1111	2222 2112	2111 0012	1001 2332	3332 2322	1222 1321
Sf	1121	3112	1222 3221	1134 2221	0122 1232	3433 2322	2234 3311
Tu	2122	0001	1222 2211	2111 0001	1001 1333	2442 2333	2232 1221
Ks	0020	2110	0020 0221	1010 0101	0000 2232	2342 3321	1022 1110
Sj	0010	1100	1210 0110	1011 0011	0000 1221	2321 1322	1222 1110
Ka	2222	2111	2332 1221	2121 1112	1002 2222	2443 2322	2322 1221
Ho	0001	0011	0121 1100	1010 0001	0000 1132	2431 0112	1221 1011
Zs	0100	1000	0230 1100	1111 0001	0000 2331	3551 1310	2222 1110
Al	1111	1111	1221 1111	1110 1101	1100 2232	2542 1221	2222 1111
Hu	1010	1220	1221 2200	1010 1201	0001 2443	2432 2432	1322 2321
Ap	2311	1122	2222 1233	2221 2232	3112 1322	2443 1242	2322 0231
Pi	0000	1030	1311 2000	2002 1020	0010 2212	2433 2422	1320 1200
Hr	1110	0001	1221 1100	1001 1000	0011 1211	1221 3421	0111 1000
Wa	1121	1101	2121 1110	2110 0102	1331 2222	2442 2421	2322 0111
To	2221	2101	2222 1120	1221 1102	3312 1221	3332 2332	3233 1111
Am	1111	1001	0111 1002	2000 0001	1001 0121	1431 2232	2232 0002
June	19	20	21	22	23	24	
	Tr	2211 0121	1111 3322	0101 1334	3213 4323	4322 3255	5755 5244
Co	2200	0010	0111 1210	1200 0322	1233 3322	3311 2234	4575 5223
So	1111	1111	1111 2221	0111 1323	2113 4312	2313 2256	6655 5234
Le	1112	1221	1011 2221	0112 2332	1313 4312	3212 2255	5654 4233
Do	1111	1220	0000 2311	0001 1333	2223 4222	3213 2256	6655 4233
Me	2111	1111	1111 1212	1100 0213	2122 3223	3312 1145	5666 6233
Sj	2200	1110	0101 1210	0200 1223	1232 3122	3212 1244	4775 5233
Es	2211	1220	0111 2221	1112 1433	2313 4322	3212 3255	4554 4333
Lo	2212	2221	1212 2322	1112 2433	2324 4322	3323 3255	5545 4243
Rs	2111	1221	1102 2221	1202 1433	2313 4312	3323 3254	4555 4342
Ag	2201	2222	1212 3333	1201 2324	2323 4232	4412 2355	6775 5243
Wn	2211	2331	1211 2321	1201 1433	2323 4323	3223 3255	4554 4343
Wi	2222	1221	1112 3322	1211 2433	2424 4333	4333 3355	5555 4343
Ab	2211	0221	0112 3231	1211 2433	2323 4323	3222 3355	4554 4343
Ni	2211	1221	1110 2221	1111 1433	2423 4323	3323 2255	4554 4243
Ma	1100	0221	1100 1221	1111 1433	2323 4323	3222 2255	4535 3343
Sw	2211	1121	1222 1221	1211 1313	2223 2212	2222 2144	4444 3232
Cf	2200	0220	0100 1221	0200 1322	1322 3222	2122 2245	4544 3232
Ch	2201	1122	0111 1233	1212 1224	2333 3233	4312 2355	4654 3343
Fu	2212	2221	0223 3221	1112 2332	2323 3322	3222 3254	4545 3243
Eb	1100	0210	0000 1111	0000 1332	1323 3322	2111 2254	4444 3343
Tl	2200	1221	0011 2221	1101 1323	2433 3322	3222 2255	4555 4343
Sf	2223	2232	1221 3321	1123 3433	2433 4433	3223 2365	5555 4353
Tu	2210	1111	0111 2221	1212 1313	1333 3333	3322 1045	4644 3243
Ks	1000	0121	0000 1022	1010 0223	2334 3322	2223 2054	4556 5353
Sj	1101	1221	0101 0111	0012 0322	1323 1222	2211 1154	4344 2133
Ka	2201	1221	2212 1122	3222 2333	2333 3223	4422 2344	4566 5443
Ho	1100	0000	1001 0011	0011 0202	1323 2112	2211 0043	2544 3132
Zs	0200	0111	1111 1111	1211 0311	1433 3211	3221 1043	2556 6243
Al	1211	1121	1122 1111	2113 2322	1333 2211	2112 1254	2545 5243
Hu	1100	2211	0001 2221	0001 1332	1222 4321	1211 3453	5534 4343
Ap	3221	1323	2001 1232	3222 2333	3323 2132	2312 0345	4644 3233
Pi	1110	1001	0001 2001	0000 2212	1333 3032	3101 2264	6533 4333
Hr	0101	1100	0021 1000	0112 2212	1323 3211	2223 2354	4555 4232
Wa	2221	0112	2121 1121	2221 1221	1111 0323	3322 2254	4555 5343
To	2211	1222	2211 1112	1212 1312	2323 2212	3322 2244	3555 4333
Am	1200	0111	0011 0101	0102 0202	1223 2111	3212 2243	3555 5233

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

June	25	26	27	28	29	30
Tr	4323 4355	6513 3133	1111 2234	4211 1123	1112 5666	5733 3445
Co	2346 4223	3323 2111	1111 3322	2111 0011	2213 5765	5544 3522
So	4223 4255	6412 3133	0001 2232	3122 1112	1012 4766	7723 3445
Le	3334 2123	5422 2121	1111 2231	2112 2111	1112 4666	7733 4434
Do	4223 2224	5201 2132	0001 3331	1012 1002	0022 5767	8823 4434
Me	3266 5223	5324 3112	1110 1212	2212 0111	2112 4556	6744 3433
Si	2246 4123	4322 2111	1110 2312	2101 0011	2212 3656	5753 3423
Es	3234 2233	3322 2221	1122 3322	2122 2221	0112 4555	5633 4434
Lo	3234 3223	4312 2121	1112 2222	3222 2112	1122 5656	6723 4444
RS	3234 3234	3321 2121	1122 2221	2112 1112	1122 5555	5623 4434
Ag	3355 4233	4333 3122	1111 1222	1212 2221	1222 4566	7753 3434
Wn	4234 3234	3311 2132	1201 2222	2112 1111	1222 5654	6523 4444
Wi	4344 3334	4322 3222	1123 3332	3112 2111	1122 5665	6533 5434
Ab	3234 3134	3321 3122	1122 2321	3122 3111	0112 5554	5523 4444
Ni	4234 3234	3321 3222	1111 2322	3112 1112	1223 5654	5523 4444
Ka	3234 3224	3322 1222	2212 2332	3223 2212	1113 4564	5533 4434
Sw	3233 2123	2322 2121	1122 2221	1222 1111	1122 4534	5423 3333
CF	3223 2125	2311 2121	1201 1212	2212 1111	0213 3554	5422 3334
Gh	3233 2223	4322 2122	1111 1222	2212 0022	1222 4445	5733 3333
Fu	3234 3234	3323 2122	1122 3221	2123 3111	0123 4554	5433 3333
Eb	3111 1123	3100 2111	1001 1212	2010 0011	0010 3555	4421 3323
Tl	3243 2124	3312 2221	1101 2212	3122 1111	0123 4554	5543 4334
SF	4234 1234	3212 3332	2132 3323	3133 3222	0244 ----	---- 4433
Tu	3245 2224	5312 2122	1111 1212	2111 0032	1123 4545	4742 3234
Ks	3333 2013	3222 1201	1022 2200	2012 0000	0024 4544	3411 3324
SJ	3132 1224	3212 2111	1011 1102	1112 0011	0122 3444	3523 2332
Ka	3244 2212	4322 2112	2111 2222	3212 1012	1333 4545	5644 2323
Ho	3244 0012	3201 0111	1001 1112	1111 0011	1022 3444	4531 1222
ZS	3253 2114	4312 1112	2111 2222	2111 1101	0223 5544	4411 2321
Al	2243 2123	3213 2121	2112 1211	2212 1011	1123 4554	4332 2322
Hu	3222 3234	4312 2221	1001 2422	1100 1111	0111 4635	5622 4433
Ap	3244 2122	4432 0222	2322 1123	2222 1212	2132 3553	4542 1232
Pi	3130 2034	4411 1012	1010 2111	1022 2120	0034 4565	3643 2333
Hr	3244 3233	3212 1001	0011 1311	2011 1001	0024 4654	4534 3323
Wa	3343 3224	3323 2121	2221 1321	3211 1101	1232 4545	5523 1443
To	3244 3224	3323 2122	2211 2322	2201 1101	2221 3454	3523 2433
Am	3244 3123	3313 2001	2100 1211	2201 0001	1122 2343	3523 2311

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

July	1	2	3	4	5	6
Tr	4223 3345	3311 1123	1102 3355	5531 3345	5513 4336	4323 3233
Co	3223 6222	2321 2111	1113 4334	4542 2332	4414 5332	3234 3311
So	4123 3245	2211 1222	1102 3366	7531 2345	5413 4335	3323 3322
Le	4322 3223	1211 1211	1111 2347	8541 3334	4423 2333	3322 2321
Do	4322 3314	0201 1112	0002 3458	9522 3343	5423 3232	2121 2211
Me	3132 3213	3541 1122	1112 4235	5542 3334	4414 5233	3244 3212
Si	3222 4222	2421 1121	1102 3244	6641 2333	4413 4232	3243 2212
Es	3222 3323	1210 2211	0011 3444	5432 3333	3312 3333	3222 3421
Lo	4213 3324	2212 2212	1112 3445	6422 3343	4323 3333	3223 3422
RS	4221 3323	1111 2112	0001 2434	6431 3343	4312 2333	2122 3321
Ag	5233 3324	2421 2322	2212 3356	6742 3334	5412 4233	4133 2323
Wn	4222 4324	2211 2222	1101 3434	5422 3444	4323 3333	3223 3422
Wi	4212 4324	1221 1223	0012 3434	5422 3444	4323 3334	3223 3422
Ab	4113 4323	1312 2222	0112 3444	5432 4433	3313 3334	3123 3421
Ni	4322 3324	1211 1222	1101 3434	5332 3344	4313 3333	3223 3322
Ma	3221 3323	2201 1222	1101 4435	5332 3334	3313 3333	32-- ----
Sw	3222 3233	1212 1112	1111 2334	4332 2243	3222 2223	2223 2321
CF	3121 3224	1201 1122	1101 3334	4332 2344	3322 3323	3222 3322
Ch	5122 2224	2321 0222	1211 3245	5532 2234	5312 3333	4232 2323
Fu	3223 3223	1212 3212	0112 2344	4431 3344	4212 3323	2223 3312
Eb	3100 2323	1100 2121	1100 3345	4331 1333	3203 3123	3112 2321
Tl	4121 3223	1211 2222	1202 2345	5442 2333	3212 3223	3233 3422
SF	3235 3323	2222 3232	1123 3345	6543 3334	4223 4333	3233 2322
Tu	3121 2223	1421 1221	2212 2335	4441 2334	4312 2233	3233 2222
Ks	2113 1113	1223 2232	1111 2345	5432 2344	3232 3324	3234 3322
SJ	4111 1213	1210 1121	0211 1125	4422 1232	3111 1223	2122 1221
Ka	3222 3212	'2212 1221	2212 2334	5543 2233	3322 3222	3233 2212
Ho	3101 2102	1220 1112	1001 1213	4420 1122	2111 2213	2122 2111
ZS	3221 3212	1311 2221	0111 1245	4431 1231	3122 1211	2233 2311
Al	2112 3113	1211 1211	1113 2224	2331 2243	3223 3322	2223 1211
Hu	3121 3323	2311 2232	1212 3434	4422 3443	4202 3433	2122 2422
Ap	2212 2223	1221 1133	2223 2335	4352 1132	2321 3323	2323 2233
Pi	4132 3233	2301 2031	1220 3356	5533 3443	4120 1213	2123 2231
Hr	4233 2223	0123 2011	0123 3354	6533 3433	3233 3224	3233 3201
Wa	3233 3213	1221 1211	1213 3335	3432 2343	3323 3433	3233 2311
To	3233 4123	3222 1212	2213 3234	4441 1343	2323 3333	3333 3311
Am	3133 3122	2320 1100	1002 3233	3440 1233	3303 4232	2133 2102
July	7	8	9	10	11	12
Tr	4213 3235	4222 3311	5331 4424	3013 3423	6213 5457	7743 4455
Co	3213 3213	2231 3300	2434 3312	1035 4412	2113 6454	4556 4442
So	3223 2225	3122 3310	3332 3323	20-- ----	--13 4467	8644 4455
Le	3212 2323	2222 3200	3331 3321	1212 2321	4212 4456	8633 3334
Do	2123 2313	2122 3210	2332 3331	0013 2322	4213 5466	8534 4434
Me	3323 2223	2133 2201	2543 3312	1135 4323	3113 5246	6757 5323
Si	3322 2222	3122 2200	2432 3222	2034 3312	3114 5335	6657 5422
Es	2212 2323	2221 3200	2331 3331	1212 2322	3212 5445	6543 3333
Lo	2213 2333	2222 3200	2332 3322	2123 2322	3224 5456	6634 4433
RS	2213 2333	1112 3200	2331 3321	1112 2321	3213 5445	6524 3333
Ag	4222 2234	3232 3221	3442 3222	1132 2324	3113 4256	7756 3333
Wn	3313 3334	2222 3310	2432 4332	2213 3422	4313 5455	6534 3433
Wi	3313 3424	2122 3200	2442 4431	1113 3432	4224 5456	6635 3433
Ab	2213 3324	2121 3200	2332 4431	1212 3422	4213 5455	5534 3333
Ni	2313 2334	2122 3310	1432 4332	1113 2322	4213 5445	5534 3333
Ma	-----	3200 1332	3332 3332	1113 3322	4214 4445	5444 3433
Sw	2212 2223	2222 2211	2232 3232	2213 2222	3223 4245	5423 3332
CF	3323 3333	2232 3200	2332 3333	1222 2322	3323 4445	5534 3333
Ch	3222 2234	3221 2112	2342 2222	1122 2224	3113 4335	7636 3333
Fu	2203 2323	1112 3211	2332 4331	1013 3321	3123 4345	5434 4333
Eb	1101 2223	1011 2200	1221 3321	1011 1222	3313 3234	4524 3333
Tl	3212 2224	2122 3100	2332 4332	1222 2223	3213 4345	5524 4333
SF	3213 2324	2133 3322	2332 4432	1223 2333	4224 4355	4435 3233
Tu	2322 2223	2122 1101	3452 2232	1022 2213	3113 3234	6635 3333
Ks	2103 3214	2132 2100	2333 3341	1012 2222	4323 5346	4535 3443
SJ	2222 1212	3111 1100	2431 2121	0032 0022	3112 3234	6514 2212
Ka	2222 2222	3232 2101	3332 3332	2212 3222	2113 3334	6666 5432
Ho	2111 1111	0122 1000	0232 1121	0022 1101	2011 4124	5425 2123
ZS	2212 2211	1121 2100	1332 3330	1122 1111	1122 4235	5224 2332
Al	1212 1212	1221 2100	1422 2331	1132 2222	3213 4325	5424 2342
Hu	2221 3422	2111 3200	2431 3331	0023 2323	3112 5443	6613 4433
Ap	2222 1233	4222 1222	2222 2243	2323 2222	3222 4334	5425 2222
Pi	2320 2223	3212 2030	2440 3132	0020 2013	4011 4354	7624 3233
Hr	3202 1103	1101 1000	1413 2110	0022 2112	3023 4445	6435 2323
Wa	3322 2213	2321 3300	2432 3321	1232 3322	3222 5345	5445 4432
To	3222 3223	2222 3211	3342 3322	1123 3311	3213 5335	4335 3332
Am	2122 2102	1221 2211	2342 2221	2123 3212	3002 4333	5535 3323

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

July	13	14	15	16	17	18
Tr	4524	5343	4222	2235	5432	3234
Co	3344	6332	2233	2222	3233	3321
So	5424	5332	3222	2225	5222	3233
Le	4424	4332	2122	2223	3321	3332
Do	4424	4332	2222	2223	3322	3331
Le	4446	6322	2254	2333	3343	2122
Si	3335	5231	2243	2233	3242	2222
Es	4424	4232	2132	2233	3321	3332
Lo	4425	5331	2222	2223	4322	3333
RS	4324	4231	1121	2223	3221	3332
Ag	6555	4332	2354	3333	3342	2223
Wn	5435	5332	2132	3334	3322	3333
Wi	5435	5332	3232	3334	3332	3433
Ab	5424	5332	2132	3333	3222	3432
Ni	4434	4232	2122	2234	3222	3333
Ma	3425	5332	2223	2233	3322	3333
Sw	3324	3222	2222	2223	3222	3332
CF	4434	4332	2233	2233	3222	2333
Ch	6544	3332	2245	2233	3333	2123
Fu	4424	5232	2123	3223	3223	3332
Eb	4324	4332	2222	2233	3222	2332
Tl	4434	5332	2233	2223	3232	2232
SF	5335	5333	3233	1232	3223	3342
Tu	3455	3122	2243	2223	3341	3213
Ks	2235	5332	2122	2223	2111	1122
SJ	4343	2121	1232	2221	2232	1121
Ka	2335	3221	2232	2222	2322	1222
Ho	2233	3221	1122	1122	2131	0011
ZS	2335	3220	1131	1222	2231	1022
Al	2334	4222	2232	2222	2221	2232
Hu	4333	5331	2122	3332	2331	4331
Ap	2334	3232	3232	0212	1321	1222
Pi	4333	3130	2232	2123	3332	2022
Hr	4334	4222	2131	1002	3321	1122
Wa	3334	5312	3332	1223	2221	2332
To	2335	4222	2232	1122	3332	2232
Am	3224	4222	2232	1112	3332	1221
July	19	20	21	22	23	24
Tr	4101	2323	2112	2033	4013	3254
Co	2101	1110	1211	1011	1113	3121
So	3001	2222	1212	2122	3112	3244
Le	1112	2211	1212	2222	2112	3223
Do	1001	3301	1212	2232	2013	3243
Me	2100	1111	2112	2122	1003	3222
Si	2100	2211	2201	0121	2113	2132
Es	1111	3311	1202	2221	2112	3333
Lo	2111	3321	2213	2232	2223	3333
Rs	1100	2201	1212	1021	1012	3232
Ag	2101	2312	2312	2232	1112	3333
Wn	2101	3311	2212	2232	2123	4343
Wi	2111	3322	2312	2232	3113	4344
Ab	2111	3311	2222	2222	3213	3343
Ni	1101	3311	2212	2133	2113	4333
Ma	2122	3322	2211	2222	3122	3333
Sw	2222	3221	2322	2122	3232	2323
CF	1111	2311	2212	2122	3333	2121
Ch	2101	2213	2312	2132	2212	2133
Fu	2212	2221	1122	3232	3223	3333
Eb	1000	2221	1211	2221	2011	2232
Tl	2001	2312	2322	2322	3112	2233
SF	2131	4322	2333	2332	3323	3443
Tu	1100	1212	2311	2021	1122	2222
Ks	1001	3322	2411	2232	2111	2243
SJ	1001	1211	2301	0120	1112	1122
Ka	2121	2222	3321	1022	2222	3222
Ho	0000	1211	2211	0020	1001	2122
ZS	2001	2211	2321	1120	1111	2121
Al	1101	2211	3421	1122	1111	2222
Hu	1001	3321	2311	2220	1101	3332
Ap	2221	1122	3322	0232	2112	1222
Pi	1002	3131	2320	1031	0112	2132
Hr	1011	2110	0011	1021	2012	2032
Wa	1121	1212	2312	1122	2222	3232
To	1212	1212	2322	1021	2222	3232
Am	1000	1103	1312	0011	1002	2112

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

July	25	26	27	28	29	30
Tr	6653 5544	3010 2232	1114 3233	5411 1003	3212 2254	4314 3243
Co	4574 5432	1123 2111	0235 6311	3300 0112	3213 2122	3215 4211
So	7643 5554	2012 3122	0113 3232	5412 1103	3203 2243	3214 2243
Le	6743 4342	1111 2222	1112 3221	4421 1223	3212 2332	2212 3232
Do	8833 4342	1100 2222	0102 4221	4201 1113	3213 2343	2203 3331
Me	6665 6323	1121 2122	1235 6212	3410 1102	2123 1123	3305 4221
Si	6785 6321	1112 2221	1124 6211	3400 0102	3213 1123	3204 4212
Es	5543 4332	1110 2222	1012 3222	4320 2223	3222 2332	2213 3321
Lo	6634 4331	1111 2232	0113 4222	4311 2223	2313 3242	2213 3332
RS	5543 3322	1101 2222	0102 3221	4211 2113	2312 3342	2213 3232
Ag	7775 4323	1011 2232	1234 3222	4421 1212	2313 2333	4414 4232
Wn	5643 4332	1111 3232	1123 4222	4312 2213	3212 2343	2213 3332
Wi	5644 4432	1122 2222	1123 4333	4322 2223	3223 3343	3313 3332
Ab	5543 4332	0122 2322	1112 4232	4322 2223	3223 3332	3213 4332
Ni	5542 4322	1101 2233	1113 4222	4211 1213	3222 2342	2213 3332
Ma	5643 3322	2101 1121	1112 3222	4202 2223	2222 3332	2223 3333
Sw	4442 3221	1221 2122	1123 3222	4211 1113	2212 2232	1222 2222
CF	4542 3322	1111 2222	1112 3232	4212 2213	3322 2243	2222 3332
Ch	5553 3222	1011 1233	1323 2323	4311 1213	2212 2223	3304 3232
Fu	5443 3322	1213 1232	1112 3222	3312 2223	2212 3333	2223 3232
Eb	4453 3322	1000 0111	0112 2222	4301 1113	2212 3232	1103 3232
Tl	5453 3322	1011 2122	1233 3232	4311 1213	3222 3232	3314 4232
SF	5554 4342	1233 2323	1243 4333	5333 3224	3333 4343	3334 5232
Tu	5553 3222	1110 1121	1224 3112	4412 0112	2222 2223	3313 2221
Ks	5533 3222	0000 0111	1224 4222	4322 1113	2213 2233	2214 2232
SJ	3352 2112	1010 0112	1312 2112	3311 1112	2212 0112	2203 2111
Ka	5566 5431	2210 1121	2223 4212	3322 1102	2323 2223	3313 3222
Ho	3353 2022	1000 0011	1113 4112	3311 0012	2212 1012	2003 2110
ZS	5333 3221	1110 0110	1213 4111	3322 1102	2221 1111	2323 3110
Al	3332 3231	1111 1221	2224 3222	3323 1111	2222 2232	2114 2231
Hu	6552 4432	1100 2221	0211 3332	3311 2212	2222 3422	2213 4421
Ap	3354 3113	2202 0122	2323 3122	3421 1113	3322 1213	2323 1233
Pi	3553 4302	1101 2022	0302 3002	3420 2022	2330 3332	3112 3222
Hr	4344 4332	0221 0011	0213 3112	4212 1003	1123 1022	2223 2121
Wa	4334 4332	2211 2121	3233 5221	3321 1111	3212 2133	3224 3221
To	3354 4331	2212 2121	1233 5222	3311 1112	2223 2233	3324 4122
Am	2463 3222	2102 1012	1133 5121	3311 0111	2102 2123	3304 4012

July 31

Tr	4521 2345
Co	3310 2322
So	3421 2344
Le	3312 2333
Do	3412 3323
Me	3310 2332
Si	3311 1323
Es	2322 2333
Lo	2312 2333
RS	2312 2333
Ag	4411 3344
Wn	2412 3433
Wi	2423 3434
Ab	2333 3443
Ni	2311 2333
Ma	2322 2433
Sw	1322 1323
CF	2412 2333
Ch	4411 2244
Fu	2313 3333
Eb	1312 1332
Tl	2322 2343
SF	2424 3344
Tu	3311 2233
Ks	2211 1224
SJ	3311 1233
Ka	2312 1222
Ho	2210 1113
ZS	3321 1222
Al	1221 1233
Hu	3311 3433
Ap	2331 1223
Pi	3322 3313
Hr	3311 1433
Wa	3421 1323
To	3321 1333
Am	3200 1212

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Aug.	1	2	3	4	5	6
Tr	4422 3354	4433 4265	5533 4334	4322 3333	1111 2255	5301 2224
Co	3331 3332	3333 5443	4325 4432	3332 3321	1100 1111	3101 1122
So	4322 3344	4323 4265	5423 4333	3212 3222	1111 2244	4212 2223
Le	3332 3333	3332 3343	5423 4323	2212 3322	1111 2223	4312 2323
Do	3313 4332	4433 4354	2224 4423	3213 3322	1110 2233	3302 2333
Me	3242 3333	4333 4233	3345 3222	3233 3232	0200 2112	3321 1122
Si	3332 3343	3232 4343	3335 3332	3332 2222	2100 1122	3201 1132
Es	3323 4432	3332 4353	4323 4433	2222 3322	1110 2233	3112 3333
Lo	3323 4443	3433 4353	4324 4423	3223 3321	1222 2232	4212 3333
RS	3323 4342	4343 4353	4333 4423	2222 2322	1121 2232	3111 2333
Ag	5333 3433	4333 3333	5434 3333	3332 2322	1212 2323	4311 2234
Wn	4323 5443	4433 4364	5324 4423	2312 3123	1111 2233	4202 3333
Wi	4333 4443	3434 4364	5324 4433	2323 3433	1223 3333	4213 3444
Ab	3333 4433	3333 4353	4323 4433	3313 3332	1111 3333	4122 3444
Ni	3323 4443	3433 4353	4324 4433	2323 3322	1111 2233	4212 2333
Ma	3221 3443	2333 4353	4224 4323	2213 3322	1111 2233	4202 2333
Sw	3232 3343	3333 3243	4333 3423	2222 2321	1111 2132	3222 2333
CF	3323 3332	3333 3353	4323 3323	2222 2321	1110 2233	3212 2333
Ch	4322 3343	3222 3234	5334 3333	4332 2222	1110 2123	3312 2244
Fu	3323 3343	3333 4253	3324 3323	2223 3322	1112 3223	3222 3333
Eb	3322 2342	2233 3353	4313 3323	2211 2111	1100 2232	3101 2333
Tl	3323 3343	3332 3353	4324 3333	3322 3222	1200 2233	4102 2333
SF	4334 4443	4433 3354	4324 4334	3333 3222	2322 3223	4322 3444
Tu	3322 3333	3332 3343	4334 3432	4332 2232	2220 1222	3211 2234
Ks	3223 3443	2243 3254	3225 3323	2222 2221	1120 2224	4002 2343
SJ	3312 2233	2222 2232	4313 2221	4211 2111	1111 0122	2202 1333
Ka	2222 2333	3432 3233	3333 3322	3322 2222	1311 1122	2202 2233
Ho	2121 1122	3331 3232	2223 2111	2111 1022	1210 0112	1101 1133
ZS	3222 2331	4342 3241	3323 3421	2332 1121	1210 1122	2212 2233
Al	2122 3343	2232 4233	2324 2432	3322 1221	1211 1132	3112 2232
Hu	3322 3442	2221 4443	4312 5432	3312 3330	1211 3232	3202 2443
Ap	2232 1222	3322 2232	3333 2132	2232 0233	2220 1232	2422 1333
Pi	3333 3342	3222 2153	4423 3332	4220 2212	0211 1232	4313 4343
Hr	3223 3343	4332 3254	4334 2323	3232 1011	0111 1023	3112 1233
Wa	3222 2343	3332 5354	3333 3433	3322 2322	2220 1232	3331 2222
To	3222 2332	4332 4243	4334 3323	3322 2222	2320 2233	2211 1223
Am	4231 2222	3322 3243	4334 3322	3222 2211	2200 0122	2200 1122
Aug.	7	8	9	10	11	12
Tr	4413 3356	6663 2235	5445 5556	6433 5576	5534 4436	5534 4444
Co	3434 3344	5584 3333	3476 5533	4445 5643	3447 6532	4565 5532
So	4313 3367	7664 3336	5435 666-	-- 3577	4535 4536	6634 4443
Le	4413 3439	9683 3334	4434 5546	5423 4465	5533 3334	4643 3333
Do	4413 3439	9684 3334	5434 6546	5433 5676	5533 4435	4633 3433
Me	4343 2337	6775 3323	3476 6434	4546 5443	4567 4433	4465 5322
Si	3423 3356	6696 2333	3577 6433	3435 5643	4447 5532	4566 5432
Es	3314 3447	7564 4334	3433 4545	3323 4564	4334 3444	4443 3333
Lo	3314 3448	8674 4333	4434 5545	4433 5565	4433 4425	4534 3443
RS	3324 3447	7574 4324	4443 4545	3432 5464	4333 3335	4543 3433
Ag	4334 3357	8886 3334	5655 4344	4544 4555	5455 4434	4565 3433
Wn	3314 4446	7564 4334	4434 5545	3433 5565	4434 3435	4444 3433
Wi	3434 4556	6565 4334	4434 4546	4423 5565	4434 4435	4544 3433
Ab	3324 4546	6565 4334	3443 4545	3433 5565	4434 4434	4444 3433
Ni	3314 4446	7564 3334	4334 4545	3433 5564	4434 3435	4434 3443
Ma	3314 3446	6554 4334	3333 4545	3333 4554	4434 3434	4533 3433
Sw	2313 3445	6464 3323	3333 4434	3333 4454	3333 3424	3443 2433
CF	3313 3446	6554 3324	4333 3444	3333 4454	4433 3434	3533 3333
Ch	4434 3357	6675 3223	5554 3344	4443 4445	5444 3344	4554 3433
Fu	3324 4445	6565 4323	3333 4444	3423 4454	4324 3424	4434 3433
Eb	2304 4446	6564 4323	3332 3445	3322 4565	4313 3434	3442 2321
Tl	3424 3446	6665 4333	3443 4344	3433 5454	4334 3434	4443 3433
SF	4425 4556	7675 3434	4343 5353	4433 4565	4434 3534	3444 3443
Tu	4425 4447	5675 3213	3544 3334	4544 4445	5534 3324	5544 3322
Ks	3405 4556	6676 4323	2334 5445	4433 3465	2324 3434	3354 3331
SJ	3424 3447	5653 2213	4431 2333	3432 3333	4423 1123	4433 1333
Ka	2424 5445	5676 3222	3334 3333	2323 4343	3334 4332	3444 3321
Ho	2324 3436	4564 2212	3344 2233	3322 3343	3334 3213	3233 2121
ZS	3425 4535	5664 3223	3444 4323	4433 4343	3334 4422	3455 2321
Al	2424 3445	5565 2213	4333 4344	3423 4452	2224 2423	3443 2322
Hu	3433 4546	6553 4433	3433 4544	3333 5643	4433 4444	3423 4443
Ap	3424 3436	5564 2222	4244 2233	5333 3443	3434 4323	2433 3132
Pi	4524 4547	6653 4233	4431 3333	4422 4344	5433 3234	4421 3142
Hr	4314 3455	6545 3223	3343 3334	3334 4354	4323 3324	3434 3333
Wa	3334 2336	6564 2223	3445 5444	4433 5553	3335 3544	4445 2333
To	3434 2335	6574 3223	3454 4334	4433 4543	3335 3433	3445 3333
Am	3324 2345	5574 2123	3454 3333	4423 4444	3344 4333	3455 3322

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Aug.	13	14	15	16	17	18
Tr	3323	3344	4333	5334	4432	3342
Co	3336	2222	2236	7522	3335	6211
So	2323	3333	3233	5344	4432	3221
Le	2322	3333	2323	3323	3321	2221
Do	2323	3333	2333	4323	4432	3221
Me	2446	2212	2346	7423	3554	3221
Si	2435	2222	3335	7422	3544	4220
Es	2323	3332	2333	4223	3332	2321
Lo	2333	3333	2334	4334	3433	3222
RS	1323	2233	2333	4224	3332	1120
Ag	2444	3223	3434	5334	4542	3321
Wn	2333	3333	3334	5334	4332	2231
Wi	2334	3333	3434	5335	4332	2332
Ab	2323	2333	3334	5334	4342	2332
Ni	2323	3333	3333	4334	4332	2232
Ma	2333	2322	3323	5334	4332	2322
Sw	2233	2222	2333	4224	3332	2221
CF	2323	1233	3323	4324	4332	2221
Ch	2343	2233	3334	4344	4442	2331
Fu	2323	2233	2323	4334	3332	2222
Eb	1213	2212	2323	4224	3331	1221
Tl	2333	2223	3334	4334	4332	2332
SF	3234	2323	3334	4335	5333	4333
Tu	2434	2223	2344	4234	3543	2221
Ks	2234	2222	2144	5435	4312	2242
SJ	1312	1112	3333	4333	4531	0221
Ka	2324	1222	2234	4333	3333	3231
Ho	2223	1111	1233	4434	3322	2221
ZS	4433	1231	2343	5444	4332	3232
Al	1324	2222	1344	4334	4232	2332
Hu	1323	2311	3232	4334	4431	2331
Ap	1343	22--	--3	3323	3123	2221
Pi	1323	1132	3333	4234	4532	2031
Hr	0323	2222	3234	4223	3322	2221
Wa	2334	2332	2334	2232	3432	3220
To	2334	1232	2334	4323	3333	3222
Am	2334	1122	2234	4223	3434	3222
Aug.	19	20	21	22	23	24
Tr	6565	6677	5355	4443	2133	4431
Co	5676	6665	4797	5522	2254	3421
So	7556	6688	8655	4422	2133	4441
Le	6544	8888	9866	3322	2143	3431
Do	7534	9999	9977	3321	2144	3441
Me	6577	7767	8777	6422	3176	3222
Si	6688	8866	8999	7422	3165	2211
Es	4344	7878	9766	3322	2143	3431
Lo	5434	9999	9856	3332	2134	3442
RS	5444	8877	8756	2321	1143	3441
Ag	7578	8778	8897	5332	3165	3222
Wn	5434	7777	8766	3322	2154	3541
Wi	5445	6776	8766	3422	3143	4442
Ab	4355	6766	7656	3422	3144	4441
Ni	5334	6766	7655	2322	2143	3441
Ma	4345	6665	6654	3322	2243	3442
Sw	4334	6676	7654	2311	1133	2341
CF	4334	5665	6554	2422	2132	2432
Ch	5367	7678	9998	4233	3243	2132
Fu	4335	5675	6545	3221	3134	3441
Eb	4336	6676	5565	4432	3142	1341
Tl	4347	7766	6575	4332	3143	3342
SF	5356	7767	6675	4533	324-	-342
Tu	4466	6666	7777	3222	3244	2231
Ks	4238	5777	6545	4333	3243	2240
SJ	4256	5556	6673	2321	3143	1131
Ka	3357	8757	8888	6433	3253	2332
Ho	2266	5557	6575	2222	3133	2211
ZS	4147	5656	6355	6423	4253	2333
Al	4238	6766	5444	4322	4343	2331
Hu	5457	5763	6654	3431	3132	3331
Ap	4457	5557	4475	4233	3243	2222
Pi	5256	5576	7663	4223	3250	3221
Hr	5347	5566	6655	4322	3343	4331
Wa	4---	--67	64-	-432	3354	2232
To	4356	6667	5577	4322	3244	2331
Am	3466	7755	5686	4223	3243	2222

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Aug.	25	26	27	28	29	30
Tr	4211 2222	0001 1111	3101 2322	3223 3336	4533 5345	5432 2353
Co	2203 3100	0011 0010	2101 0111	1215 2333	4544 5432	3341 3311
So	2102 1211	0001 0100	1001 2221	1223 3336	4433 5335	5322 2342
Le	3211 2111	0001 2212	2001 2221	2223 3444	3432 4334	4322 2331
Do	3200 2111	0001 0110	2100 3221	2224 3535	3443 5324	4322 2342
Me	2112 3100	1011 0001	1011 0212	2225 3223	3544 4433	4441 2222
Si	3112 3100	0111 0000	2101 1212	2224 3333	3534 4332	3441 2231
Es	2201 1210	0011 1112	2101 2222	3223 3534	3332 4423	3332 2331
Lo	2222 2212	0112 1211	2211 2222	2234 3534	3433 5434	3332 2342
RS	2101 1211	1001 0110	2110 2122	2113 3434	3432 4334	3321 1341
Ag	3212 1221	1112 1111	2101 3323	2224 3444	3542 4233	5441 3332
Wn	3112 1111	0001 1111	2111 2223	3223 3545	3433 4334	4332 2342
Wi	2302 1111	0011 2112	3111 2223	3223 3545	4433 4434	4332 2342
Ab	3233 2111	0121 2111	3113 2223	3233 3544	3333 4423	4332 2341
Ni	2212 1211	1001 1111	3111 2223	3223 3445	3333 4434	4322 2341
Ma	3111 1011	0000 0000	3002 2223	3123 3444	3332 4433	3322 2342
Sw	2112 1111	0011 0101	2112 1222	2223 3434	2332 3333	2322 1231
CF	2211 2101	0011 0110	2101 2222	3224 3434	3333 4333	4332 1241
Ch	3201 0101	1201 0011	2111 1123	2223 2344	3433 4333	5431 2332
Fu	2223 2211	0012 1211	2112 2212	2213 3434	3322 4334	2222 2331
Eb	2101 0000	0000 0001	2101 1222	2103 3233	3331 4323	4221 1231
Tl	2201 1101	0010 0011	3101 1123	2123 2344	3332 4324	4331 2231
SF	2221 3221	0111 1212	3223 3323	3224 3455	4443 4434	5333 3321
Tu	2111 1100	1111 0111	2111 1323	2224 3334	4443 3233	4441 3331
Ks	1001 0000	0001 0000	3001 1223	10-- --	--33 5334	4232 1131
SJ	2102 0110	0101 1111	1111 0112	1223 2133	3432 2212	3431 1230
Ka	2221 2200	2001 0000	2211 1223	2224 4234	3433 3332	3331 1321
Ho	2101 0000	0000 0011	2100 1123	2213 2233	2531 2212	3330 1120
ZS	1111 2000	0000 0000	2211 1112	2214 3342	3532 3333	3431 1300
Al	1211 1111	1111 1111	2211 2212	1223 3232	2422 4333	2332 2231
Hu	3211 2200	0100 0220	2111 2333	2223 3543	3332 5532	4431 3430
Ap	2322 1232	2320 0122	2221 1213	3223 2233	3442 2213	3331 1222
Pi	3221 3310	1003 3321	2023 2323	2224 2445	4332 4332	4530 3430
Hr	1101 0000	0021 1000	2111 1102	2323 3244	2532 3223	4311 1331
Wa	3322 2111	2322 0111	2331 1112	2334 4244	4433 4433	4331 2331
To	3222 3112	---- ----	---- ----	2224 3233	3443 3333	4431 2322
Am	3111 2001	2000 0002	2000 0012	2213 3223	3433 3232	4330 1321

Aug. 31

Tr	2122 2322
Co	2243 3400
So	1111 1243
Le	1121 2321
Do	1112 3311
Me	2242 2312
Si	2232 2211
Es	1122 3311
Lo	1122 3312
RS	1121 3311
Ag	1332 2312
Wn	1222 3311
Wi	1132 3311
Ab	0133 3321
Ni	1122 3311
Ma	1122 3322
Sw	1121 2311
CF	1222 2401
Ch	1232 2312
Fu	1233 3311
Eb	1121 2301
Tl	1222 3311
SF	1222 3422
Tu	1231 3201
Ks	0032 2411
SJ	1021 1221
Ka	2222 3312
Ho	1131 1101
ZS	1221 2310
Al	1232 2311
Hu	0121 3411
Ap	2232 2222
Pi	1220 3401
Hr	1232 3300
Wa	2232 2412
To	2332 2321
Am	1131 2211

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Sept.	1	2	3	4	5	6
Tr	2111 3203	3101 1154	4334 5557	6344 4457	6565 5576	6645 5466
Co	1123 2211	2200 1110	1456 6655	4476 5543	4488 6644	5567 5533
So	1012 2212	2101 1143	2234 5667	6343 4457	7555 5577	6546 5366
Le	0111 2212	1110 2131	2333 5577	6344 3445	6444 4665	6644 4344
Do	0012 2012	1001 1242	2343 5679	8344 5455	7545 5566	7644 4444
Me	1112 2102	2310 0111	1566 6536	6576 5433	4577 6444	5667 5434
Si	1112 1101	1310 1111	1456 6745	5486 6543	4488 6444	5558 6533
Es	1111 2212	1111 2232	1343 5566	6344 3445	5445 4554	4444 4434
Lo	2122 2212	1212 1132	2344 5557	5334 4445	5535 5555	5544 4443
RS	1221 1102	1111 0032	1343 5566	4333 3445	5544 4455	4444 4343
Ag	1121 3112	2321 3222	2455 4457	7666 3344	6677 4445	6666 4334
Wn	1211 2213	1201 1142	2344 5566	6343 3445	6555 4555	5543 5444
Wi	1111 2212	1211 1142	2445 5556	5444 4456	6545 4555	5544 4444
Ab	1212 2212	1112 1132	2444 5556	5344 3445	5555 3555	4444 4444
Ni	1121 2212	1111 1142	2333 5556	5343 3445	5445 4455	4543 4343
Ma	2211 2112	1200 0131	2334 4555	5343 3445	6355 3455	4534 4344
Sw	1122 1112	1212 1132	1333 4555	3232 3334	5334 3445	4433 4333
Na	1111 1112	1111 1132	2333 3445	4333 3345	5444 3445	4433 3334
CF	1111 1112	1101 0132	2333 4455	4333 3345	5445 3445	4433 3334
Ch	1122 1112	2210 0112	2344 4446	6554 3344	6455 4445	6555 4334
Fu	2112 2102	1222 1132	2444 4555	4333 3335	6435 3445	4443 4333
Eb	0010 1---	---- 0130	1333 3555	3343 3345	4345 2345	3333 3333
Tl	1110 2112	1100 1132	2434 5446	4344 4355	5555 4455	4554 4344
SF	1223 3323	1122 2323	3445 4557	5444 4454	5464 4455	4545 4353
Tu	1122 2211	2220 0121	3345 5546	5554 4435	5556 4435	5565 3324
Ks	0010 0001	0100 0041	13---	43 4455	3335 4456	4433 4443
SJ	1221 0111	2210 0112	2323 4456	5454 3344	5434 3234	5433 3233
Ka	1121 2102	2211 1122	2354 4545	5354 4334	4556 4333	3455 5333
Ho	0112 1111	1100 0111	2243 3435	4344 3133	3355 3224	3345 3313
ZS	1110 1001	1210 0120	1234 4445	4353 5333	4354 4322	3545 5223
Al	1121 2111	1111 1132	1224 4543	4342 3244	3445 4334	4445 5332
Hu	0111 2330	1201 2321	2232 5656	6444 4454	4323 4544	4443 4533
Ap	2322 1122	2211 1123	2354 3345	5333 3234	4445 2234	3445 3333
Pi	1212 0000	2212 0022	2313 4556	6453 2215	5423 3345	5433 3324
Hr	0322 1112	1322 0221	2345 4555	4435 3334	4445 5455	4445 4343
Wa	3222 2322	3332 2233	2344 4555	5355 5445	4556 5455	4455 5434
To	2122 2212	1210 1122	2354 4545	5354 4334	4456 5334	3555 4433
Am	2112 1132	3210 1122	3355 4545	4354 4234	4466 4333	3455 5323
Sept.	7	8	9	10	11	12
Tr	5443 3355	3554 4567	6623 2255	6522 4465	5532 2254	5124 3223
Co	3347 5433	2576 6543	4355 3222	3212 5542	3445 2022	2144 5101
So	5334 3346	2534 4577	6422 2254	6312 4465	5422 2243	4114 3212
Le	4233 4333	2444 3454	5522 2242	5411 3443	4522 1234	4133 3111
Do	4233 4233	2544 4555	5312 2243	6211 3443	5522 1133	4123 3102
Me	3355 4332	2666 4433	4463 2212	3322 4333	3565 1122	2055 4111
Si	2356 4422	2576 5433	4254 2212	3201 5432	3544 1121	1133 4101
Es	3233 4333	1344 3465	4322 2242	5222 3443	4422 1133	3123 3111
Lo	3234 4234	2434 3564	4423 2242	5313 3444	4422 2234	4224 4102
RS	3233 4233	1434 2564	4222 1142	5111 2544	4432 0134	3133 3001
Ag	4453 3333	3665 4444	5343 2223	5311 3333	4544 3324	4143 3322
Wn	3334 4333	2344 3565	5322 2243	5212 3554	5532 1133	3123 3102
Wi	3334 4334	2434 4565	5422 2243	5212 3544	5533 1244	4223 3212
Ab	3234 4333	2345 3565	5323 2343	5213 3443	4433 2334	3233 3111
Ni	3334 4333	2434 3565	4322 3243	5212 3444	5432 1134	4233 3112
Ma	3224 4233	2344 3555	4432 3243	5202 4443	4432 0133	2011 2002
Sw	3333 3223	2333 3554	4312 2132	4121 2442	4422 1132	3122 2101
Na	3333 3233	2333 2455	4322 2242	4211 2343	4431 1133	2123 2111
CF	2334 3233	2334 3455	4323 2243	5223 3443	4433 1133	3233 4001
Ch	4343 3233	3564 3345	5333 1123	5311 3333	4644 0024	3142 2112
Fu	3233 3233	2335 3455	3323 2243	5223 3443	4433 2233	3134 3212
Eb	2123 3311	2333 2445	4411 1132	4201 2343	3432 0123	3013 3001
Tl	3233 3333	2444 3455	5433 2243	5312 3343	4532 1133	3323 3002
SF	3234 4323	3345 4566	5533 3333	5234 4442	4334 2233	4234 3222
Tu	3444 3223	3554 3335	5432 2222	5312 2333	3643 1112	3233 2002
Ks	2234 4332	1335 5556	4333 3243	3122 4453	3333 1133	2333 3001
SJ	3333 3234	2343 2334	5121 1133	4200 2343	3522 2113	3222 1102
Ka	2335 3222	2455 4433	3232 3221	3221 3433	3433 2222	2223 3101
Ho	2233 3211	2354 3333	4232 1111	3111 3233	3433 1111	1123 3101
ZS	1225 3311	1354 3442	4432 2120	4210 4442	3533 0131	1123 3001
Al	1233 3322	2334 3445	3222 2242	3221 3442	2422 1132	2222 3111
Hu	2223 4433	2333 4554	4211 2322	4202 4442	3411 1332	2112 3211
Ap	4233 3133	3343 3234	3332 1132	3421 2243	3423 1122	2334 3122
Pi	3322 3134	2332 3415	5322 3322	5314 0343	3522 3403	3223 2211
Hr	2334 3323	1445 3455	3432 1133	4222 4342	3432 1122	2143 4101
Wa	3335 5332	3554 4445	4332 3243	3332 3443	3443 1232	3343 3213
To	3345 4222	3455 4444	4332 3233	3231 4343	3433 1223	2333 3111
Am	1344 3223	2455 4334	3242 0023	4321 4342	2433 1033	2133 3022

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Sept.	13	14	15	16	17	18
Tr	2111 2354	2101 0013	2001 1100	3102 3555	3332 3556	5443 3355
Co	1111 0333	1100 0000	0000 1100	2122 3631	1443 3633	4466 6412
So	1002 2365	2101 0111	1011 1100	2113 3554	3222 3566	6333 4346
Le	2112 2353	1111 1111	1011 2201	2113 3444	2232 3455	6332 3334
Do	2101 2365	1001 0100	0001 2200	2113 4544	2222 3565	7332 4325
Re	1321 1233	1110 0111	0000 1211	2132 2332	1455 2433	4667 4333
Si	1211 1343	1010 0001	0010 1101	2132 2432	1442 2532	4556 4322
Es	2123 2343	1112 2101	0012 2201	2113 4533	1332 3344	4233 4324
Lo	2213 3354	1213 2101	0112 2210	2113 4544	2323 3454	4333 4324
RS	2121 2353	1011 1100	0000 1100	1003 3443	2233 3445	3333 3224
Ag	2422 3244	1212 3322	0001 2221	2133 3533	1443 3434	6454 4334
Wn	2111 2453	1111 1111	0012 1201	2114 4544	2323 3455	4333 4324
Wi	2212 2454	2112 1212	1011 1201	2114 4544	2333 3445	4443 4325
Ab	2123 2443	1212 2212	0013 2211	2114 4544	2333 3444	4343 4334
Ni	2111 2454	1111 0112	1012 1201	2113 3544	2322 2455	3332 4334
Ma	1101 2343	2201 0001	002- -----	-04 4543	2222 2444	3332 3244
Sw	2122 2343	1122 1111	0121 1101	1123 3443	2222 2444	3333 3213
Na	2111 2343	1111 1101	0011 1101	2113 4443	2322 2444	3332 3223
CF	3222 3343	2122 0001	0021 1101	2213 3543	2322 3454	3333 3224
Ch	2311 1233	1110 0012	0011 1101	3123 3543	3342 3434	5454 3224
Fu	2123 3343	1223 2211	1123 2211	2123 4543	2323 2444	3333 3233
Eb	1101 1243	1001 0001	0011 0101	1105 4443	1322 2455	2222 3223
Tl	2112 2343	1101 0101	0011 1201	2114 4543	2332 3444	3344 3323
SF	3134 -----	3222 0133	3312 2125	3543 2333	3534 4344	3334 3334
Tu	1212 0323	1110 0001	0021 1001	2124 5542	2333 2423	5455 2214
Ks	1222 2242	1100 0001	0033 0100	1105 5533	2122 3433	3343 4323
SJ	1212 0254	1110 1010	0011 1211	2114 4332	1221 2333	4332 2313
Ka	1212 1342	1101 1001	1221 1101	2114 5432	2234 2433	3343 4223
Ho	0011 0133	0000 0001	0010 0000	1014 4331	1122 2223	2343 3213
ZS	1211 1352	0101 0000	0010 0100	1114 5432	2121 2534	4434 5311
Al	2211 1442	1211 1111	1122 1101	2214 5422	2322 4543	2233 3332
Hu	1101 2544	0001 2210	0111 1200	1013 5642	1112 4543	4323 4443
Ap	3222 1233	1210 0122	2311 1201	2213 4443	3244 2333	3333 3224
Pi	2213 3554	1102 0220	0211 1220	3125 5632	2113 3534	5332 3303
Hr	2333 2444	2332 0001	0121 1100	1334 4432	1323 3433	3344 4332
Wa	3232 1343	3332 1212	3232 1112	3333 4543	3234 2543	3333 4323
To	2222 1343	1221 1112	2221 1111	2324 3533	1344 2433	3334 5332
Am	3221 0243	3211 0122	3111 0020	3223 3421	2233 2333	3344 3222
Sept.	19	20	21	22	23	24
Tr	6325 5356	6644 5565	4411 1242	0001 2211	0023 3466	6422 4567
Co	3267 6323	3456 5433	2223 0110	0102 3321	0035 5524	3224 4645
So	7225 4257	8434 4564	3312 1231	0111 1211	0012 3567	6323 4577
Le	4223 3237	7533 3443	3321 1131	1101 2111	1123 2455	7412 4456
Do	5224 4237	9533 4543	3312 0131	0000 1111	0022 2367	7323 5557
Le	3277 6533	6567 4433	3332 1111	1111 1121	1146 7333	5234 4434
Si	3158 7223	5556 5533	3422 0010	0221 1120	1137 7433	3223 3545
Es	4223 4135	5434 4443	3312 1131	0001 2210	1123 3454	4212 4456
Lo	4224 3236	6434 4553	3312 2231	0102 2220	1223 3455	5323 5556
RS	4223 3135	6433 3554	3322 0131	0000 1210	0123 2455	4222 4556
Ag	4235 5234	5544 4332	4422 2221	1212 2211	1235 4445	5223 4345
Wn	4323 3146	5434 4553	4312 1231	1101 1221	1122 3455	5313 4566
Wi	5324 4146	6434 4553	4422 1131	0100 1221	1024 3455	5323 4567
Ab	4224 4135	5434 4443	3312 2131	0111 2211	0124 3455	4323 4556
Ni	4223 3136	5434 4553	3312 1231	1100 1221	1123 3455	5313 4566
Ma	4223 3235	5434 4553	3301 0032	1000 1221	1024 4455	4212 4566
Sw	4223 2135	5433 3542	3312 0231	0112 1221	0123 3354	4213 3555
Na	4223 3135	4433 3442	3312 1121	1100 1211	1023 3354	4212 3555
CF	4233 4135	5434 3543	4321 0131	0101 1220	1023 3454	4323 4556
Ch	4234 3225	5544 3333	4431 0121	1210 0122	1235 4345	6223 3345
Fu	4223 3135	4434 4443	3323 2131	0122 2221	0124 2454	4323 4556
Eb	4213 3135	5333 3442	3300 0021	0000 1220	1122 2455	3213 4456
Tl	4224 3134	5434 4443	3311 0121	0100 1221	1134 3455	4323 4556
SF	5334 4134	6435 4553	3322 2222	0222 2332	1135 3555	5234 3556
Tu	4244 4235	5544 4433	4322 0010	0210 0121	1244 4534	5223 3455
Ks	4323 2244	5445 4453	2301 1031	0001 0332	1034 2565	4224 4566
SJ	3124 2125	5433 1344	3311 0220	0200 1231	1213 1445	4212 3454
Ka	4235 4223	4534 3433	3212 1120	0100 2221	2035 5334	4223 3533
Ho	3244 3224	4443 2232	2102 0020	0000 0022	1133 2344	4212 2334
ZS	2235 4225	4534 3431	3211 0110	1100 1221	1125 5334	4323 3535
Al	-----	4334 4542	2311 1121	1111 1321	2125 4454	3223 3554
Hu	3123 4434	4333 4432	2211 1210	0101 2320	0223 4654	3112 5543
Ap	3234 3234	5433 3233	2202 0022	1200 1322	2145 4344	4322 3344
Pi	4224 0205	5432 2443	3301 1210	0200 2200	1213 0345	4224 1554
Hr	3235 4124	5545 4333	2332 1011	0322 1310	1235 3444	5333 3455
Wa	4345 3234	5535 4454	3332 1222	3223 3322	2335 4545	4222 4565
To	3245 4224	4445 4342	3422 1122	3211 2122	3235 4444	4223 4545
Am	3245 4223	3444 3333	3202 0021	1000 0222	1135 4334	5212 3444

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Sert.	25	26	27	28	29	30
Tr	6643 4666	5312 3355	5313 2342	2112 2243	1000 1044	2001 1264
Co	3454 5633	3212 3333	2265 2121	1125 5111	0000 0100	0014 2232
So	5443 4667	5212 2265	3212 2242	1112 2232	2100 1033	1101 1264
Le	4333 3546	5121 2354	3122 1222	0112 2222	0011 1133	1011 1344
Do	4342 3647	4212 2353	3222 2221	1112 2212	0100 0121	1001 1354
Me	3464 4424	3323 2233	3355 2121	1143 3122	1021 0101	1114 1133
Si	3453 4533	2332 1232	2355 1111	1143 3021	0021 0100	0113 0243
Es	4333 3545	3112 2353	3222 1222	0022 2112	1010 1111	1122 1343
Lo	4333 3545	3222 2353	3222 2332	1112 2322	1111 1121	1112 1354
RS	4333 3645	2112 2354	3222 2232	0012 1212	0000 1121	1011 1353
Ag	4554 4435	4431 2344	3233 3221	1132 2233	1011 2221	1202 2333
Wn	4343 3655	3122 2364	3223 2332	1112 2323	1110 1122	2101 1354
Wi	5343 3655	3222 2364	2223 2232	1123 3223	1110 1122	1122 2354
Ab	5343 3545	3233 2353	2223 2232	1123 2122	1112 1111	1122 1354
Ni	4332 3645	3212 1254	3222 1332	1123 2322	1100 1122	1101 1354
Ma	4342 3545	2122 2253	2222 2232	1122 2222	1100 0112	2111 1232
Sw	4332 3545	2122 2253	2222 1221	1122 1212	1111 1111	1122 1343
Na	4332 2544	2111 1253	2122 1222	1112 2122	1110 1111	1111 1344
CF	4333 3545	3123 2353	3223 3232	1123 2322	1110 0122	2112 1354
Ch	4433 3435	3331 2243	3223 1122	1233 1122	0020 0112	1212 0333
Fu	4333 4544	2233 2253	3223 1232	0122 2222	1022 2111	1112 1354
Eb	4332 2535	2112 1253	2123 1221	0022 2112	0110 0010	1001 0344
Tl	5333 4545	2212 2254	3222 2232	1123 3122	0100 1111	2111 0354
SF	6342 4446	2223 2354	3233 2233	1223 4223	1122 3123	2322 1365
Tu	4443 3434	3332 2343	3333 2211	1232 1211	0021 1100	0112 1223
Ks	5343 3645	2211 1253	3233 1122	1111 1123	0000 0111	0022 2454
SJ	3432 2334	2211 2253	2122 0112	1120 1211	0010 0212	1211 0353
Ka	3253 3533	2222 2232	2233 2121	1223 2211	0100 1111	1112 1343
Ho	3332 3323	2112 1132	3232 1111	0122 0111	0000 0100	0111 0232
ZS	4352 3522	1112 1242	2221 1111	1222 1111	0100 0101	0011 1333
Al	3242 4533	2212 1242	1223 1222	1222 1212	1111 1111	2122 1352
Hu	3332 4543	2212 3443	2212 3321	0111 2321	0010 1210	0112 2443
Ap	3332 3344	4222 2242	2332 2122	2122 2123	3122 0222	2121 1333
Pi	4440 2444	1311 2453	3211 1022	0200 0211	0022 0200	1222 0363
Hr	5343 4435	2332 2253	2232 1122	0233 2012	0231 0001	1120 1344
Ja	4343 3543	3332 2343	3433 2322	3333 4322	2322 1112	3422 2344
To	4353 4534	3322 2243	3433 2122	2233 3212	3221 2112	3223 2334
Am	3343 3433	2122 2233	2343 2022	1223 2101	1100 0001	1103 0233

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Oct.	1	2	3	4	5	6
Tr	5654 5656	5644 5666	6553 4475	6554 4764	6454 5465	6233 2645
Co	3586 7543	3567 6764	5556 5564	3476 6653	2476 5444	3356 2543
So	6634 6656	5645 6787	6544 3476	7454 4775	5455 5566	5223 2656
Le	6644 5445	6644 4576	5543 3465	5443 4563	4333 3455	5233 2435
Do	6644 6436	5745 5687	6643 3575	7443 4673	4344 5555	5233 2536
Me	5687 8433	5647 8544	5766 5353	4577 6543	4677 6433	3266 3433
Si	5688 8333	3568 6755	6766 5443	4576 6543	3476 5333	3257 2333
Es	4544 4445	4555 4565	4443 3463	4443 4563	3433 3455	4233 2434
Lo	5545 5545	4555 4585	4443 3564	5444 4563	3444 4445	4334 4434
RS	4444 5545	3545 4675	4433 3574	5443 4563	3334 4545	3234 1434
Ag	5666 6333	4677 5556	6655 4453	6555 4443	5665 4435	4354 2334
Wn	4444 5556	3555 5665	5434 3574	5444 4663	4333 4555	3234 1435
Wi	4454 5546	3565 5665	5534 4574	5444 4673	4443 4555	3234 2545
Ab	4454 5546	3455 5565	4444 4564	5444 4563	3433 3455	3334 3444
Ni	4444 4545	3454 4665	4433 3573	5434 4663	3433 3545	3233 1434
Ma	4444 5545	3455 5665	3434 3363	5333 3554	3433 3544	3234 1435
Sw	3344 4444	3444 4554	4433 3462	4233 4553	3333 3444	3233 2434
Na	4443 5545	3444 4565	4533 3563	5333 3553	4433 3444	3233 1434
CF	4444 4545	3444 4565	4444 3563	5344 3563	3333 3544	3234 2434
Ch	4565 5344	4655 4546	5553 3353	6544 4443	5454 3345	4254 1334
Fu	4444 4545	2455 4565	4433 3463	4433 4553	4433 3444	3234 3434
Eb	3443 5535	2456 4565	3523 3564	5333 3553	4332 3445	3233 3344
Tl	4554 5445	3456 4555	4544 4464	5443 4453	3444 3444	4234 1344
SF	5453 5346	3365 5565	3444 447-	6453 356-	3343 4455	4234 3345
Tu	5565 5333	4655 4544	4654 3344	5553 4443	4565 3433	4345 2324
Ks	4436 4345	4366 5664	3444 3363	4343 4663	4343 4554	3234 2433
SJ	5543 4333	2544 3444	3533 2443	4333 3432	3333 2334	2133 1323
Ka	2365 6433	4555 5554	5544 3333	3344 4442	3355 4433	2234 2333
Ho	4454 3223	4445 3333	4443 2233	4342 3232	3454 2322	2233 0223
ZS	4465 5533	3564 5535	4433 4344	4344 5532	2455 5534	2344 2323
Al	3355 5543	3354 5654	4323 4352	2223 4541	2333 4542	2223 2422
Hu	5553 6433	2435 5555	4433 4444	3223 5432	2333 4444	2133 3443
Ap	4454 3224	4435 3352	3434 2242	4442 3242	3454 3242	4233 2233
Pi	5543 4203	2544 3355	3513 3433	4331 3412	2432 2245	2232 0404
Hr	4444 5234	3344 4453	4434 3453	4334 3453	3333 2344	4333 2334
Wa	3455 5343	4556 5554	4434 4353	4443 4452	2344 4444	2224 1432
To	3465 5333	3556 5544	3444 4343	5354 5443	3454 4433	4244 1333
Am	3354 5333	3456 4434	4454 3343	4454 4342	3354 4333	3333 0223
Oct.	7	8	9	10	11	12
Tr	6534 5566	6322 2322	4313 1234	3201 1124	3010 0221	4521 1256
Co	3355 6642	2225 5301	1146 1211	1101 0111	0010 0211	2434 3121
So	6433 5575	6222 2321	3313 1232	2101 1123	2011 0221	3322 1266
Le	5433 4454	4222 2311	3323 1122	2101 1213	2110 0320	3322 1234
Do	5233 4644	4232 3300	3223 1232	2101 1103	0110 0320	3312 1144
Me	3655 5633	2223 3211	2255 1211	2101 1121	1000 0222	3522 1121
Si	3555 6633	3233 3200	2235 1111	1001 1101	0011 0321	2522 2121
Es	4333 4444	4222 2300	3223 2112	2112 1113	1120 1321	3322 2234
Lo	5333 4555	4222 2311	3224 2222	2112 1113	1212 1221	3322 2243
RS	5233 3444	4221 2310	3213 1122	2101 1003	1110 0221	3322 1244
Ag	5554 4443	3332 2321	3225 2221	2101 1312	1000 2222	4532 1232
Wn	5333 4544	4333 3311	3324 1222	2101 1123	1111 1331	3322 1244
Wi	5333 4444	4322 3311	4234 2222	2211 1113	2121 1332	3423 2344
Ab	4333 4444	4323 3311	3224 3112	2111 1213	1121 1331	3423 3334
Ni	5333 4444	4322 3311	3214 1222	2111 1113	1120 0331	3322 1244
Ma	4432 4444	4332 3301	3224 2222	2101 1223	2200 1332	3422 1244
Sw	4233 3433	4332 2311	3324 1222	2122 1112	1122 1231	3333 1233
Na	4333 3454	4222 3311	3223 1122	2211 1112	1111 1232	3322 1234
CF	4333 4444	4323 3311	4324 1122	2212 1112	2120 1232	3322 1244
Ch	5453 3343	3322 2211	3234 2221	3111 1112	1111 0232	3521 1222
Fu	4333 4444	4322 2300	3214 2122	2111 1112	1123 1331	3322 1233
Eb	4332 4553	4211 2200	3204 2212	1001 0213	1110 1232	2312 0134
Tl	4343 5344	4323 3311	3224 1112	2101 1113	2110 2232	3422 0234
SF	533- -2-	5332 33-2	32--	20--	10--	3433 2334
Tu	4453 4253	4322 2201	3234 1212	2100 1212	1120 1232	4531 2221
Ks	3333 54-	--32 3311	3235 3222	3111 1322	1200 1342	332- -
SJ	3332 3144	3221 2201	2223 2112	2100 0112	1110 1332	2411 1332
Ka	4334 4333	3333 3311	2334 2222	2111 1212	1110 1232	3323 1222
Ho	4332 3233	4322 1201	1113 0111	1000 0002	0010 0132	2312 0121
ZS	4234 5422	2233 3311	1314 1211	2111 1111	0100 1232	3223 1121
Al	4222 5442	4221 2211	1224 1211	1111 2211	1211 1332	3432 2232
Hu	3321 3442	3111 3421	2213 1321	2001 2331	0001 1542	3313 3443
Ap	4333 3332	3322 2212	3113 1222	2120 1112	1222 1133	3432 1233
Pi	4311 2134	3210 3301	3223 2311	2100 2111	0112 3303	4422 3443
Hr	3334 5344	4343 2300	2123 2102	1131 1212	0033 1332	3323 3333
Wa	4333 4443	4323 3411	3323 0202	2220 0100	1430 0122	4432 1132
To	3344 4433	4323 3323	3434 1323	3321 1223	4321 1234	4333 2233
Am	4343 3433	3323 3201	1214 101	2100 1111	2110 0122	2432 2121

TABLE 1 THREE-HOUR-RANGE INDICES, X, 1950

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Oct.	13	14	15	16	17	18
Tr	4422 2365	5524 5555	6531 1355	5444 6764	5332 5655	4323 2354
Co	2243 3321	3336 6533	4234 3312	2346 7543	2354 6532	1146 3310
So	3322 2366	5424 5656	6522 1365	5235 6765	5323 5665	3324 2344
Le	2321 2132	5433 4667	7622 2334	4333 6454	4333 3444	2133 1222
Do	3311 2133	5434 4877	7622 1334	4333 4643	4243 3545	2233 2332
Me	2252 1112	3446 6533	5452 2212	3468 6433	3566 4423	2356 2211
Si	2232 2221	3335 6533	5443 2312	2368 7532	2444 5422	1347 2211
Es	2221 2133	5434 4645	5431 2334	4344 5443	3243 3443	2233 2222
Lo	3312 2243	4334 5655	6522 2424	4334 6555	4233 4544	2233 1332
RS	3311 1133	5333 5635	5421 1434	4234 5554	3232 4544	2233 1322
Ag	3342 2133	5435 4444	6442 2322	4466 5434	4354 4322	3445 2221
Wn	3322 2244	5434 5645	6422 1434	4344 5654	3242 3554	2333 1333
Wi	3322 2244	5444 5645	6433 2434	4344 5554	4344 4554	2343 1333
Ab	3222 2243	5434 5544	5432 2334	4344 4544	4243 4443	2233 2322
Ni	3222 2243	5434 5534	5421 1434	4333 5554	3243 4544	2233 1333
Ma	2321 2144	5334 5534	5422 2334	4334 4553	3343 3543	2233 1333
Sw	2221 2133	4333 5534	5321 1323	3234 5553	3232 3543	2233 1322
Na	2222 1143	5434 4544	5321 1334	4333 4544	3242 3543	2223 1232
CF	3323 2233	5434 4544	5432 1334	4334 4544	3233 3543	2233 2332
Ch	3331 2123	5434 4344	5432 2222	3355 4444	3343 3323	3344 2211
Fu	2332 1233	4334 4534	5432 1334	4334 4554	3223 3443	2233 2233
Eb	2200 0033	4324 4544	5520 1322	3233 4454	4131 3443	1233 1233
Tl	3221 2133	5434 5544	5432 1323	4345 5444	4243 4444	2233 3232
SF	332- 3144	5434 5645	6532 2333	334- 5455	422- -44	2234 3332
Tu	2231 3122	4545 4453	5431 2223	3355 6432	3342 4423	2345 2211
Ks	--21 1033	5545 6644	443- ----	-25 5443	3244 5653	0214 2333
SJ	2221 1122	3434 4544	5332 1222	3244 4332	3143 2233	3333 1201
Ka	2233 3332	4444 5443	4331 1312	124- ----	2243 3432	2244 4321
Ho	1120 1022	3443 4333	4430 0112	2244 5222	2131 3222	1225 0111
Z3	2231 3121	3--- ----	-----	1455 6651	1243 3532	2254 1211
Al	1321 1232	4545 5543	3221 1311	1236 4542	1442 4532	1233 2321
Hu	1112 4233	3334 6644	4322 2422	3245 6533	3023 3533	2224 4421
Ap	3222 2223	3444 4443	4532 1212	1334 5332	3221 3332	4234 2112
Pi	1121 2232	4533 5645	5320 3132	3243 3302	3140 0333	3332 2202
Hr	2232 2333	4434 5644	5443 3312	3235 4344	3234 4343	2123 2222
Wa	2431 2232	3444 5533	4430 0312	2335 6542	3233 4432	3344 2312
To	3432 3322	4544 5533	4541 2323	3346 6543	4333 4433	4345 2321
Am	2332 2222	3444 5433	4432 0220	2445 5432	2333 3332	1234 2221
Oct.	19	20	21	22	23	24
Tr	2201 0023	3100 1355	1000 1233	0001 3444	5322 1345	4222 1234
Co	1144 2000	1012 0112	1003 3110	0124 4422	3215 2323	2243 2111
So	1111 0022	2001 1243	1001 1132	0111 3546	5322 2245	5222 1222
Le	1111 1012	1011 2123	1111 1122	0101 3433	4222 2223	2122 2212
Do	2101 0023	0001 1033	0000 1021	0001 1525	4322 2223	3112 2112
Me	1133 1001	0024 0132	1002 2200	0122 2222	3325 2223	2254 2111
Si	0132 1000	0022 0011	1002 2120	0112 3333	3214 2322	3243 2211
Es	2111 1112	0011 2123	0001 1121	0002 3433	4222 2224	3121 2212
Lo	2112 2022	1113 2133	0111 2122	0112 3534	4323 2224	3223 2223
RS	2101 0022	1001 1133	0000 0021	0001 3534	4323 2223	3122 1112
Ag	2221 2112	2113 2222	1002 3230	0111 2343	3323 3333	3333 2221
Wn	2111 1023	1012 1133	0101 1121	0112 2534	4323 2234	3212 2213
Wi	2222 1022	2112 1134	1011 0121	0012 3544	5323 2235	3222 2223
Ab	2111 1112	1122 1233	0012 1121	0112 3434	4333 3234	3223 2212
Ni	2111 1022	1011 1133	1011 1122	0112 3544	4333 2234	3222 2213
Ma	2111 1022	2012 0033	0001 1121	0002 2434	4322 2224	3232 2222
Sw	1121 0022	1121 1133	1122 1121	0122 2534	4233 2123	3132 1212
Na	2111 1012	1111 1133	1001 1121	0112 2434	4323 2233	3232 2222
CF	2121 0022	1012 2133	0011 1121	0112 3434	4333 3223	3223 2122
Ch	2211 0002	1023 1122	1010 1121	0101 1233	3323 3233	3233 1222
Fu	2112 2112	1122 2123	0011 1121	0112 3433	4233 2124	3232 2222
Eb	1001 0012	2001 0023	0000 0121	0001 2433	4312 2123	2122 2112
Tl	2111 0012	2012 1123	1012 1121	0001 3433	4333 2234	3222 2212
SF	1011 2213	3032 3224	1122 2232	0213 4443	5222 3234	4233 2212
Tu	2221 1001	1023 1123	1010 1120	0122 1333	3323 2233	3333 2222
Ks	1102 0012	1012 1023	1022 0121	0102 -----	--23 2234	3223 1112
SJ	1101 0021	1021 1122	1010 1220	0101 1333	3212 2133	2221 1111
Ka	2122 2001	0122 1122	1211 2--0	0112 4333	2323 2323	2233 2222
Ho	0120 0001	0012 1012	1100 0011	0001 0223	2213 1222	1232 1111
ZS	1112 1000	0011 0022	1111 1211	1102 3432	2322 2331	2232 2211
Al	1111 1111	1122 1132	1221 1221	1112 4433	3222 2232	2232 2112
Hu	0113 2111	0013 3332	0011 1231	0101 4652	3213 4553	2212 3331
Ap	2121 2023	3122 1113	2111 1122	2122 3233	2223 1122	2232 1122
Pi	0120 3232	0121 2203	1101 2100	0200 0323	3322 2232	3211 2302
Hr	0002 1001	0033 1123	0032 1121	0213 3333	3324 1123	3233 1111
Wa	2322 0001	2221 0022	2322 0110	2321 3523	3223 1224	3222 1121
To	4223 1223	3322 1223	3322 1213	3222 3433	3334 2333	4333 2233
Am	2221 0011	1012 0131	2201 0021	1102 2222	3324 2222	3332 1111

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Oct.	25	26	27	28	29	30
Tr	2000 0025	2201 0043	0000 0113	5536 6766	5553 5667	6653 4666
Co	0000 0001	2021 0011	0001 1011	3468 6665	4486 7845	5555 6554
So	1101 0024	2111 C032	0010 1113	443- -----	--43 5773	8633 5676
Le	2111 2113	1122 2122	1011 1112	4445 5797	6543 4557	7643 4565
Do	2100 0023	3100 0031	0010 0012	4445 6898	7744 5767	8643 3576
Le	0109 0102	2132 0011	1010 0111	5577 7566	5676 6744	2765 6554
Si	0000 0012	1132 0012	1021 0001	3568 7655	5466 7744	5555 6554
Is	2102 2123	2112 2122	0011 2211	3455 5676	5444 4556	5433 4455
Lo	1212 3121	2213 2042	1112 2113	2455 6687	5444 5656	6533 4555
RJ	2101 1023	2111 0132	0001 0012	2455 5589	5344 5656	5433 4556
Ag	2100 1113	2222 1232	1112 1122	4567 5576	7665 5535	7645 4445
Wn	2101 0024	2211 0131	1111 1122	3445 5566	5354 5666	5433 4556
Wi	2102 2124	2222 2132	1112 1122	3555 5576	5455 5666	5433 4666
Ab	1102 2223	1223 3232	1012 2221	3455 5565	5354 5556	4434 5555
Ni	2111 0024	2111 1132	1111 1122	3455 5565	5454 5556	4433 4556
La	1100 0023	2221 1021	1001 1112	3445 5565	5354 5555	5433 4556
Sw	1112 1023	2121 1031	1122 1112	2445 5465	4344 5555	4433 4444
Na	2101 0123	2221 1122	1121 1122	3455 5566	5454 4555	4433 4555
CF	2101 0023	2112 1032	1111 1012	3445 5565	5344 5555	4433 4555
Ch	2100 0023	2222 1022	1011 1021	4556 6667	6655 5535	6544 4445
Fu	2112 2223	2213 3032	1012 2212	3455 5565	5344 4555	4433 5555
Eb	1100 0013	2100 0012	1010 0010	2435 5565	4353 5555	3422 5555
Tl	1100 0023	2111 1032	1010 1021	3456 6665	5355 5555	4433 5555
JF	2122 2134	2214 3133	2021 2121	4556 6676	5355 6656	4533 6666
Tu	1110 0113	2222 1011	1021 1122	5556 6655	4555 5544	5544 5544
Ks	0100 0004	2212 0011	1031 1022	4554 6576	4366 6565	4434 5664
SJ	1101 0122	2222 0121	1000 1121	3444 5645	5243 5434	5333 4445
Ka	1011 0013	2122 0121	2111 1122	4457 7655	4354 5545	3443 4443
Ho	1000 0013	1110 0011	1010 0022	4456 5443	3354 3333	3433 4234
Zj	0000 0001	2120 0011	2110 0112	5466 6565	3454 5544	3444 3444
Al	1101 1113	2121 1122	1111 1122	4366 4474	3353 4444	3334 4544
Hu	0102 1232	1212 2243	1001 2323	4335 6655	2234 4554	4323 5544
Ap	1211 0023	2222 0123	2111 C122	4446 5543	4554 4434	3433 4343
Pi	1110 1133	2220 0242	1002 0432	4445 5656	5332 3335	5321 3455
Hr	2011 1002	3142 1122	1021 1011	4355 5565	4354 5454	3444 5444
Wa	1201 0012	2131 0021	1110 0111	5556 6575	3455 5544	4543 5554
To	3311 1123	3332 2133	4321 1233	4556 6665	4454 5544	4533 4444
Am	1000 0113	3221 0022	2121 0112	3466 6554	4344 4433	4433 4434

Oct. 31

Tr	6545 5476
Co	3457 7644
So	6445 2476
Le	5434 5455
Do	7344 5566
Le	5557 7444
Si	4467 6434
Es	4434 4455
Lo	5434 5555
RJ	5434 5565
Ag	6555 5445
Wn	5444 5565
Wi	5544 5565
Ab	5434 5565
Ni	4433 5555
La	5443 5554
Sw	4333 5554
Na	5433 4565
CF	5434 5555
Ch	6444 4445
Fu	4433 5554
Eb	4333 4554
Tl	5444 4454
JF	4334 4465
Tu	6555 5444
Ks	5444 6565
SJ	5432 3343
Ka	4445 5433
Ho	3444 3232
Zj	4545 5433
Al	2444 5443
Hu	4433 5543
Ap	4344 3344
Pi	5432 4343
Hr	4343 4353
Wa	4435 5444
To	4545 5343
Am	3454 5243

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Nov.	1	2	3	4	5	6
Tr	6654 6665	5333 3523	3312 1144	3454 5644	3222 1245	3101 0222
Co	3457 7752	2366 5510	1245 2110	1306 6632	2224 3222	1014 3000
So	5545 6675	4323 4522	2212 1133	2355 5744	3212 2244	3111 1121
Le	5533 5464	3232 2311	2222 1123	2443 5743	3112 2124	2111 1011
Do	5644 6265	3233 3411	2212 1123	2334 7733	3112 2124	3111 0110
Le	4466 6643	3365 4411	3343 1211	1538 7553	2445 2222	1032 1201
Si	3457 6742	3355 4410	3243 1210	1468 6731	2444 3212	1032 2100
Es	3435 5463	3232 2411	1321 2122	2433 4633	3112 2223	1111 1000
Lo	4444 6664	3223 3512	2322 2122	2433 6843	3122 2234	2111 0120
Rs	3444 2963	2222 4411	2322 -----	-----	-----	-----
Ag	5456 6533	4344 3321	4433 1221	3676 4432	4333 3222	2121 1221
Wn	3444 6563	3232 3512	2323 1123	2443 4743	3123 3234	2111 0110
Wi	4445 5563	4243 3511	2323 2223	3443 4743	4223 3334	2122 2121
Ab	4445 5563	3133 3411	2323 2122	2444 3642	3133 3334	3122 1110
Ni	3444 5553	3222 3411	2323 1122	2433 4633	3212 2234	2112 1110
Ma	3332 5033	3222 4411	2322 1112	2443 3632	3112 3224	2111 1111
Sw	2234 5553	3222 3411	2222 1112	2332 3632	3122 2123	2121 1110
Na	4435 5453	3233 3411	2322 2123	2443 3643	3223 3234	2112 2211
Cf	3335 5453	3223 3401	2323 1123	3433 3633	3122 2234	2122 1110
Ch	4456 5444	4344 2301	4333 1011	3565 3312	4333 1122	2122 0101
Fu	3335 5553	3232 3411	2322 2122	2433 3632	3222 2233	2222 1110
Eb	2235 5253	3232 3421	2321 1112	2342 3543	3112 2224	1111 1111
Tl	4335 5453	3233 3411	2322 1012	2454 5632	3113 2123	1112 1211
SF	3346 6564	3143 4411	2323 0112	2354 4632	3232 3334	0231 0101
Tu	5455 5442	4344 3211	3333 1210	4465 5532	3324 2122	1122 1101
Ks	22-- -----	3411 1322	1002 2245	4732 3123	3234 2023	1100 1100
SJ	4434 3332	3312 1310	2222 0001	2344 2222	3112 1112	1110 0101
Ka	3345 5532	2234 3301	1122 2221	1466 6633	.2223 3232	1112 1111
Ho	2344 4332	2132 2200	1111 0011	0354 4400	0213 1021	1001 0000
ZS	3343 6531	2234 3301	1121 2111	1455 4621	1113 3222	0132 0100
Al	2234 5541	2223 2211	1221 1111	1454 4511	1112 2123	1122 1111
Hu	3324 5532	3213 4310	2212 2321	1224 5652	2102 3333	1001 2332
Ap	3345 4433	4332 2203	1211 2223	2355 3332	3422 2222	3211 0102
Pi	4434 3402	3201 1202	2212 3212	3324 2522	3210 4222	2102 4311
Hr	3335 4454	2221 3201	2213 1101	2334 4542	2232 2123	1033 2101
Ja	4445 5542	2334 3301	1111 1111	2455 5522	2322 3232	0211 1101
To	4445 5542	3244 3411	2222 2212	2355 4523	3323 3232	2322 2112
Am	3345 5542	3243 3201	2222 1121	3265 4423	2223 2103	2210 1002
Nov.	7	8	9	10	11	12
Tr	1000 0022	4301 1333	2200 0243	4435 5663	5422 4446	4343 4456
Co	0000 0000	0101 1210	0100 0010	2376 6541	3345 4322	2354 4523
So	0010 0012	2301 1331	1210 0133	3336 6664	5322 3445	5243 5656
Le	1101 0001	3302 1221	1210 0132	3353 5443	4331 2333	3232 3434
Do	0000 0002	2301 2111	1200 0123	3344 6453	5221 3344	3232 3534
Le	0000 0121	2201 1221	0100 0221	3477 6432	4463 4322	3475 4423
Si	0000 0000	2201 1110	0110 0110	2377 7441	3343 4322	3364 4522
Es	1001 0001	2302 2222	1210 0122	3353 4442	3231 2323	2142 2434
Lo	1001 1012	2301 2212	1211 0133	3344 5553	3222 2444	3232 3544
Rs	-----	-----	-----	5552	3331 3443	3232 2544
Ag	1001 2321	3201 2322	1311 1332	3365 4433	5343 3322	4354 3333
Wn	1010 0112	3302 2211	1310 0123	3354 5653	3222 3444	3242 3545
Wi	1010 0012	3312 2322	2321 1232	3464 5553	3342 3444	3343 3545
Ab	0011 1001	3312 2222	1311 0232	3354 5542	3331 3333	3243 3535
Ni	1010 0012	3312 2222	1220 0132	3345 5553	3321 2444	3242 3535
Ma	1011 1122	2101 2222	1320 0122	3354 5543	3331 2433	3242 3535
Sw	1012 0112	2212 1111	1221 1122	2344 5543	3222 2333	2232 2534
Na	1010 1112	3312 3222	2310 1222	3354 5543	3332 3433	3243 3434
Cf	1010 0012	3313 3222	2310 0122	3334 5543	3322 3433	3243 3434
Ch	1010 0010	3211 1121	1320 0122	3345 4333	5342 3333	3353 3323
Fu	1011 0012	3321 2321	1220 1122	3343 5542	3332 2323	2232 4434
Eb	1010 0011	2202 2221	1220 0132	2255 4552	3221 2333	3233 4535
Tl	1010 0011	3202 2222	1220 0122	3354 5443	3333 3323	4243 4525
SF	1012 1322	3334 3333	2223 0233	4365 4443	3232 3334	3343 4536
Tu	1010 0011	3312 1011	1121 1121	3344 5543	3342 2322	3353 3314
Ks	1121 0012	4333 3332	1130 0223	4454 5653	3332 4334	2243 4535
SJ	1010 0111	2201 2111	1121 0212	3343 3432	4232 2223	3242 2323
Ka	1110 0011	2212 2222	1120 1232	3466 5531	2234 3332	2243 3423
Ho	0000 0000	0102 2111	1020 0022	3343 4221	2232 2222	2252 1222
ZS	2110 0001	0212 2211	1120 0133	3564 6531	2242 3423	2343 3514
Al	1121 0112	1212 2322	1131 1222	4555 5432	4222 2333	2332 3334
Hu	0011 1222	2202 3342	0111 1332	3333 5642	3222 3332	2232 4433
Ap	2210 0021	2222 2123	1221 1112	3453 3322	3322 3133	1342 1324
Pi	0110 3300	2322 3402	1220 3222	3432 2402	3232 3113	3433 3244
Hr	0121 1000	2223 3321	1122 1133	4443 4442	3223 2333	3333 4424
Wa	1111 0002	3212 2222	4430 1122	3456 6542	3232 2333	2342 3423
To	2221 1112	2222 2223	3321 1232	3455 6433	4332 3323	3352 3523
Am	1210 0012	2312 1101	1221 0022	3455 5332	2331 2222	2352 3313

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Nov.	13	14	15	16	17	18	
	Tr	Co	So	Le	Do	Ne	
	6343 4355	5312 2221	2354 3411	1001 0034	2001 1134	4112 2365	2002 2263
	2355 5333	3212 2211	2344 0001	0011 1022	1101 1134	1133 3333	0102 5343
	5332 4364	3212 2333	0001 0001	1012 1101	1101 1122	3112 2365	1002 2163
	4332 3344	3212 2343	1000 0022	0022 0000	0013 0112	2122 2243	1002 2243
	3333 3344	3201 2343	1000 0022	0000 0013	0112 1132	2011 2253	0002 2253
	2444 6423	3231 2211	0011 0011	0012 1100	0112 1121	1132 2323	0001 3233
	2443 4422	2131 2211	0001 0011	0012 1100	0121 1122	0142 2321	0101 3242
	3332 3344	2112 2232	0012 0012	1013 1100	1100 1122	2121 2343	0002 2242
	3333 3355	3212 2343	0011 0011	1022 1101	1101 1123	3122 2343	1012 2252
	3333 3344	3211 2343	0001 0011	1012 1100	1100 1133	3122 2343	0002 2252
	2443 4334	3221 2332	1002 0012	1112 2101	2122 2232	2322 3333	0002 3342
	3333 3355	3212 2343	0012 0012	1023 2201	1233 2323	3213 2353	1103 3262
	3333 3355	3212 2343	1012 0012	1023 2211	1233 2323	3223 2354	1103 3362
	3333 3344	3211 2333	0012 0012	1013 2101	1233 2323	3232 3344	0012 3253
	3333 3344	3212 2343	1012 0012	1012 2201	1233 2323	3222 2343	1103 2253
	3323 3444	3222 2342	1012 0012	1012 2101	1222 2213	2113 3244	1103 2252
	2233 3343	3112 2332	0112 0012	1112 1211	1222 2222	2222 2232	1112 2152
	3333 3344	3212 2333	1112 0012	2013 2201	2233 3223	3223 3244	2113 3252
	3333 3344	3212 2343	0012 0012	1012 2202	2223 3223	3223 3343	1113 2252
	3443 3234	3221 1122	1011 0012	1012 2110	1222 2232	2232 2233	0012 3142
	Fu	3323 3344	3222 2333	0112 0012	1111 1111	3222 3243	1121 2252
	Eb	3323 5433	2101 3332	1003 0012	3012 2101	1223 3113	3343 1103
	Tl	4333 4444	3212 2332	0012 0012	1013 2101	1233 3232	3243 1102
	SF	3443 2354	3232 3332	0123 0012	2223 3121	2343 2232	3343 0122
	Tu	3443 4223	3221 1112	2112 1113	3201 1132	1233 2333	0112 3352
	Ks	3333 4342	2102 1243	0134 0023	2023 3300	2343 1233	3444 2123
	SJ	2312 3224	2111 1122	1012 2013	2013 2201	1232 0132	1222 0102
	Ka	2333 4432	2211 3232	1013 2123	3201 3201	2322 1232	2332 1212
	Ho	2342 2221	1020 1022	1012 1013	3200 3200	1232 0220	2222 0002
	ZS	4333 4421	2001 4222	1013 2023	2023 3301	1231 1233	3331 1112
	Al	2223 4432	2221 2232	1123 2123	-----	-----	-----
	Hu	2313 4344	1001 3333	0013 0013	3222 2203	3442 1222	4542 0012
	Ap	2232 2232	2222 1233	3222 2123	3211 2234	4322 2232	2212 2242
	Pi	2222 3334	3312 2123	1123 2033	3310 3310	5343 0323	1112 4352
	Hr	3223 4333	2111 1222	0033 0033	3003 3321	1232 2223	2242 0122
	Wa	3332 4334	2221 3322	1122 1023	2023 2310	1221 2232	2343 2211
	To	3443 4333	3231 3332	2233 2123	2123 3311	2233 2332	2333 2222
	Am	3433 3233	3111 2112	1122 1022	3201 3201	1211 1330	2233 3111
Nov.	19	20	21	22	23	24	
	Tr	Co	So	Le	Do	Ne	
	3220 0011	0111 0232	1000 0045	3100 3657	4010 1044	1100 0366	
	2222 0000	0002 2210	0001 0011	0000 4634	3112 2111	1011 0452	
	3110 1000	0111 1222	1000 0144	2101 3647	4110 1134	2111 1466	
	2211 1001	1111 1121	1011 1034	2101 2535	4011 1123	1101 1357	
	3211 1001	0011 1121	0100 0044	2101 3536	4000 1023	0101 1367	
	2232 0010	1001 1110	0000 0001	1010 3435	3111 0101	1021 2233	
	Si	2233 0000	1002 1110	0000 0011	1010 3544	3112 1121	0011 1343
	Es	2110 0000	0011 1211	0000 1034	2101 3445	3000 1123	0000 1445
	Lo	2212 1001	1112 2321	0012 1133	2111 3435	4112 1123	1102 1445
	RJ	2211 0001	0100 0221	0000 0034	2101 3535	4010 0023	1100 1443
	Ag	3312 2210	1212 2211	0000 2233	2111 3445	4102 2222	0011 2334
	Wn	3221 1102	1111 1321	1000 0144	2101 3545	4110 1133	1111 2443
	Wi	2211 0101	0111 1222	1010 0144	2102 3546	4111 1134	1111 2543
	Ab	2222 1001	0112 2211	0012 2134	2113 3545	4112 2133	1112 1544
	Ni	3211 1101	1111 1321	1010 1144	2112 3545	4111 1123	1111 1443
	Ma	2211 0001	1111 1221	0011 2034	2111 2445	3111 1123	1111 1543
	Sw	2111 0111	0111 1211	0011 1133	1112 2434	3111 1123	1100 1443
	Na	2221 2112	1212 2221	1010 1234	2211 2445	4111 2123	1212 2444
	CF	3221 1101	0111 2221	0010 0034	2101 2445	4111 2023	1101 1444
	Ch	3311 1100	1111 2111	0000 0023	2120 3445	3011 1112	1011 2324
	Fu	2211 1001	0112 2221	0021 2133	2112 3434	4121 2023	0121 1444
	Eb	2211 1101	1110 0111	1000 0133	2101 2345	3100 1023	1101 1454
	Tl	2221 1101	1110 1211	0010 1033	2101 3535	3010 1023	1111 1444
	SF	2312 1122	1222 1222	0023 1233	2233 3545	3132 0134	1213 2555
	Tu	2322 1100	2111 1221	0010 0122	2122 3446	3111 1012	1011 2335
	Ks	2111 1100	1211 1112	0020 1133	0112 3555	2001 1034	1102 2555
	SJ	2310 1100	1110 1111	0010 1122	1110 2335	4110 0012	1100 2334
	Ka	2221 1100	2110 1211	0011 1122	0122 4535	2221 1222	1111 2343
	Ho	1000 0000	1110 0001	0010 0010	0101 3434	1000 0022	0011 1233
	ZS	2211 1100	2210 1100	0020 0022	0111 4533	3011 1010	0111 2454
	Al	-----	3222 1222	0121 1122	1212 3334	2121 2222	1222 2453
	Hu	2301 3421	1111 3321	0010 2232	1111 4565	3000 3331	0001 3454
	Ap	1222 1102	2312 1102	2221 1133	1223 3345	3221 0022	1321 1333
	Pi	2301 0201	3110 2122	1010 2133	2222 3446	5012 2212	0120 3434
	Hr	1212 1100	1110 1111	0021 1022	0131 3534	1131 0023	0002 2434
	Wa	2311 1111	3222 1211	0211 0013	2111 3534	3221 0111	3312 1354
	To	3222 1121	3232 2212	2121 1123	1222 4545	2321 1122	2222 2345
	Am	3211 0022	2221 1011	2110 0022	2222 3545	3210 0012	2111 1333

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Nov.	25	26	27	28	29	30
Tr	7545 5545	6625 5676	7644 5666	6544 5476	5433 3456	4432 1465
Co	4568 8423	3467 6654	5547 6544	3556 6454	3355 6434	2333 1232
So	8543 6445	6524 5676	7554 5666	5534 6587	6433 3366	3322 1465
Le	8433 5434	5534 4664	5533 4454	4333 4474	5322 3244	3322 1343
Do	9423 6524	5424 5675	5534 5554	4334 4575	5323 3355	2321 1443
Me	7567 7322	4558 7653	4566 6433	3656 6454	3454 5333	2444 1232
Si	4567 7322	3569 8544	4666 6543	3646 6444	3444 5322	2333 1221
Es	5334 5334	4445 4554	4434 4454	3433 4464	4232 3344	3322 1343
Lo	7444 5424	5434 5665	5434 5554	4424 4555	4333 4454	3322 0442
RS	5444 5434	5434 5664	4434 5554	4433 4555	4322 3354	3221 0442
Ag	6656 6432	5567 4453	5655 4433	5544 4344	4433 4333	4333 2332
Wn	5434 5534	5534 5665	5335 5554	4434 4565	4333 3454	3321 1453
Wi	5445 6535	5545 5666	5445 5564	4444 5565	4433 3354	3332 1453
Ab	5434 6534	5545 5555	5444 4454	3434 4464	4323 3354	3322 1353
Ni	5445 5534	5445 5665	5444 5554	4434 4555	4333 3344	3321 1443
Na	5435 6434	5455 5655	5425 5454	4443 4455	4332 3344	3321 0443
Sw	5334 5433	5434 5654	4334 5453	3323 4444	4322 3343	2221 1443
Na	4435 5534	4445 5654	5434 4554	3434 4455	4233 3344	3321 1343
CF	4445 5533	5445 5654	5334 5454	4344 4455	4223 3354	3221 1443
Ch	6535 6332	5566 4454	5655 5343	5544 4454	4423 3233	3333 1232
Fu	5435 5434	5435 5654	4334 5454	4433 4445	4322 3334	3222 1443
Eb	4435 6544	5545 5554	3335 4454	4433 5353	3212 3344	3211 1343
Fl	5435 6544	5445 5554	4345 4454	4434 4454	4323 3344	3221 0343
SF	6435 6345	5566 4565	5345 5455	4445 5465	5323 4455	2323 1454
Tu	6555 6333	5555 4544	5655 4443	4535 5344	4434 4333	3444 1232
Ks	6436 7545	5456 556-	--45 5565	4444 5454	4423 4355	3321 1254
SJ	5422 5323	4545 4433	4443 3343	4424 3234	3322 2233	2311 0232
Ka	5555 5433	4456 6543	4445 5433	3445 5443	3224 4232	3323 1342
Ho	5445 4432	4345 4422	3455 2233	3424 3242	3322 2022	1221 0021
ZS	3555 5533	4465 5533	4445 5433	4344 5434	3313 3212	1222 1441
Al	5425 6534	2255 5553	3334 4552	2433 4444	2222 3342	2221 1342
Hu	5424 5444	4434 6653	4433 4442	3324 4444	2213 4432	2312 3342
Ap	4444 4332	4335 3343	3444 3333	3424 4252	3332 3233	3232 2131
Pi	5423 3233	4434 5433	4433 2332	4313 3354	2221 3333	2311 3342
Hr	5424 5324	4346 5453	3344 3444	3433 4343	3333 3244	1232 2243
Wa	5544 4434	4445 5553	3545 5443	3334 5333	3332 3332	3332 1342
To	6545 4433	4446 5544	4555 4433	3444 5344	4333 4333	3333 2332
Am	5554 4323	4456 4544	3554 4334	3534 434/	3333 4233	2322 1222

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Dec.	1	2	3	4	5	6
Tr	1122	1221	1320	2433	1111	1144
Co	1232	2110	0214	3411	1004	3300
So	1111	1210	1211	1532	0112	1134
Le	0211	1111	1211	1321	1111	1134
Do	0221	2210	0211	1521	1111	2224
Me	1241	2110	1423	3222	2023	1111
Si	1231	1110	1323	3221	1024	1111
Es	1211	1110	1222	2322	1112	2133
Lo	1212	1210	1221	1522	1122	2134
RS	1211	1210	1211	1422	1121	2134
Ag	0331	1120	2421	2322	2222	1222
Wn	1322	1220	2321	2432	1212	2134
Wi	1222	2221	1222	2432	2222	2234
At	1222	2211	1211	1432	1112	2134
Ni	1221	1221	2221	2432	2211	2234
Ma	1211	2221	1211	1432	2111	2124
Sw	1211	1211	1211	2422	1212	2123
Na	2232	2211	2222	2332	1212	2234
CF	1222	2211	1322	2432	1212	2134
Ch	1331	1111	2422	2233	3212	1122
Fu	1212	1211	2211	2432	1222	2134
Eb	1331	1111	1221	1322	1211	2123
Tl	1221	1111	1222	2332	2112	2233
SF	1222	---	0332	2223	3232	0221
Tu	1320	2110	1322	2333	2213	1112
Ks	2220	2220	0233	3443	3223	3233
SJ	1221	1111	1211	1332	2111	1112
Ka	2231	3221	2222	2332	2212	2222
Ho	0220	2000	0221	0232	2102	0011
ZS	---	---	---	---	---	---
Al	2221	2211	1122	2332	2322	2122
Hu	1211	2322	1212	3543	2211	3333
Ap	2211	2022	3210	0333	2311	1122
Pi	2321	3111	1313	3313	2213	0233
Hr	0322	2111	0212	1332	1211	2122
Wa	2221	2201	2121	1333	2231	2212
To	2331	2122	1222	2333	3322	2223
Am'	1320	2121	2322	2333	2312	1122
Dec.	7	8	9	10	11	12
Tr	4310	2255	1002	2445	5422	2132
Co	1302	2321	0014	4331	1244	3100
So	3310	2244	1102	2534	4321	2122
Le	3311	1133	1112	2333	3221	2111
Do	3210	2243	1002	2433	3221	2122
Me	3210	1221	1014	4232	1344	1100
Si	2211	1221	0013	3331	1233	2110
Es	3212	2233	0103	2334	3231	2012
Lo	3222	2143	1223	2433	3221	2122
RS	3211	2143	1102	2433	3220	2122
Ag	5221	2232	1113	3322	2433	2211
Wn	3321	3244	1113	3334	3221	2122
Wi	3222	3244	1213	3434	3331	2222
Ab	3232	2234	1223	2434	3231	2112
Ni	3321	2243	1112	2434	3221	2122
Ma	3122	2323	1123	2434	3221	2122
Sw	2211	2133	1112	2433	2221	2121
Na	3222	2233	1212	2433	3321	2222
CF	3322	2133	0112	3433	3321	2021
Ch	4321	1221	2122	2222	2322	1111
Fu	3232	2233	1223	2434	3231	2112
Eb	3212	2233	1003	3334	3321	2111
Tl	4222	2133	1213	2333	2321	2112
SF	333-	-234	233-	--5	2223	2222
Tu	3232	2121	1123	3222	2433	2011
Ks	2333	3233	2214	5334	3211	3222
SJ	3221	2121	1112	2222	2320	1112
Ka	4332	3233	2225	5432	2232	3112
Ho	2222	2122	1022	2122	1230	0000
ZS	---	---	---	---	---	---
Al	3232	3232	1225	3322	1211	2111
Hu	3222	4342	1113	4432	2212	3231
Ap	3332	2223	0314	2233	1232	0012
Pi	3331	3332	1323	2402	3311	4302
Hr	3322	3133	0213	3333	2322	2002
Wa	4332	2221	1234	2332	2222	2212
To	3332	3232	2334	3333	1333	2222
Am	4231	2223	3223	3232	3322	0111

TABLE 1 THREE-HOUR-RANGE INDICES, K, 1950

Dec.	13	14	15	16	17	18
Tr	5534 4775	5521 1366	3222 1344	4433 2234	2001 1132	4011 1364
Co	4465 5454	4411 2354	3222 4232	2326 3221	0025 1011	1111 3342
So	6534 4676	7621 1477	2222 2244	3322 2122	1112 1121	3111 1473
Le	7433 3376	6512 1367	2222 2133	2212 1122	1102 1121	3111 2241
Do	7433 3587	7612 3388	2122 2143	3222 1112	1102 1032	3111 1352
Me	6366 5344	5521 1344	2222 3232	2424 4101	0135 1111	1011 1232
Si	5465 6334	4411 0355	2222 3332	2424 4122	1133 1111	1011 2232
Es	5432 3355	5412 1355	2122 2233	2223 2111	1113 1022	3101 2352
Lo	5423 3466	5522 1366	2222 2243	3313 2112	1113 2022	3112 2352
RS	5433 3566	5412 2375	2122 2243	3223 2121	1112 1121	3102 2352
Ag	5454 3344	6422 2345	2322 2233	2413 3112	0234 1121	2112 2332
Wn	5433 3566	5412 1375	2222 2243	3323 2222	2113 1132	4112 2452
Wi	5433 3476	5422 1366	2222 2343	3323 2222	2213 1233	4112 2462
Ab	4443 3465	5422 2365	1233 3343	2323 2112	1113 1123	3112 3452
Ni	5433 4566	4412 2365	2222 2343	3323 2122	2113 1132	3112 2452
Ma	5432 3265	4412 1365	2222 2143	2223 2222	2123 1223	2111 2352
Sw	4333 3465	4311 0364	2122 2243	2212 2112	1102 1121	3111 1352
Na	5433 3455	4322 1365	2223 2243	3223 2222	1113 1222	3112 2353
CF	5433 3455	4312 1365	2122 2343	2322 2012	1003 0122	3112 2352
Ch	4354 2244	5421 2355	2222 2232	2323 3112	1224 1122	2122 1332
Fu	5323 3465	4332 2365	2232 2243	3333 2112	1123 2122	3132 1352
Eb	5442 2365	5311 1354	2122 2243	2213 2122	1102 1122	2001 2352
Tl	4442 3355	4412 1355	2223 2233	2323 2112	1103 1123	3111 2343
SF	5543 4366	5433 3356	2133 3344	3323 2212	2214 2233	2233 2443
Tu	4454 4334	4422 1354	2222 2232	2413 3122	1124 1022	2012 2231
Ks	6433 4465	5413 1455	2124 3333	2203 2123	1004 3233	3113 2553
SJ	3233 2233	3421 1354	1112 1231	2312 1121	0103 0121	2012 1331
Ka	5555 5555	3322 2354	2223 3232	2324 3322	3223 1112	2222 3232
Ho	3433 3233	3411 0223	2222 2211	2303 1101	.0023 0022	2011 2231
ZS	-----	-----	-----	-----	-----	-----
Al	4223 3453	4322 1454	1223 1232	2323 2222	1113 1222	2112 2342
Hu	3223 4444	4413 4554	1113 3433	2313 4332	0111 2222	2011 3553
Ap	----4	-432 1233	2212 2122	1322 2233	0213 0124	2311 2234
Pi	3332 2054	3533 0355	2223 0222	3302 4231	0121 2003	2104 1423
Hr	4434 3255	4433 2355	2133 3333	1234 2111	0023 1221	2113 3442
Wa	5435 4355	3422 1343	3123 2232	2433 2321	2223 0111	2232 3343
To	4544 4344	4523 2355	3333 3233	2423 2322	3214 1222	3222 3343
Am	3443 4434	4522 2254	2322 2232	2323 2123	3213 1122	2211 2132
Dec.	19	20	21	22	23	24
Tr	5121 1344	2101 1367	3100 0033	1101 5564	5644 4455	5444 4665
Co	2214 3341	0014 2123	3113 2100	0005 5662	3376 6532	3247 6743
So	4121 2443	1101 1156	3111 1022	0101 6575	6444 5445	5334 3666
Le	3121 2242	1111 1134	3101 1022	1112 3675	5433 3325	4333 3554
Do	4121 2452	1102 1245	3101 1022	0101 3686	6544 3424	4333 4665
Me	2232 2231	0124 2223	3112 2100	0005 4643	5466 6322	2266 4643
Si	2223 2221	0113 2223	2022 1000	0004 6753	3385 6432	2256 5742
Es	3221 2342	1012 0235	3211 1011	0112 2574	4443 3423	3233 3644
Lo	3222 2442	1112 1245	3112 1021	0113 4675	5443 3425	4223 4744
RS	3222 2452	1001 0245	4212 1021	0101 3575	4443 3425	4333 3754
Ag	3232 2221	0213 2234	2112 2120	1202 4453	5555 4334	4453 3543
Wn	4221 2452	1112 1345	4212 1122	0212 3575	4443 3435	4334 4754
Wi	4222 2452	1113 2346	3222 2121	0223 4565	4453 4435	4334 4754
Ab	3223 2342	1112 1235	3222 2121	1122 4564	4444 4424	3333 3654
Ni	4221 2442	1112 1245	4212 1121	1123 4565	4443 3435	4333 4754
La	4222 2242	1113 1235	3211 1122	1202 4464	4343 3434	3323 3654
Sw	3221 2342	0112 1234	2211 1021	0112 3564	4333 3434	3223 3644
Na	3232 2342	1112 2245	3222 1122	1212 4464	4443 3334	3333 3654
CF	3221 2442	0002 1235	3212 1021	0212 4464	4443 3334	4333 3644
Ch	3232 1231	1113 1234	2111 2000	1212 4353	5455 3324	4453 2644
Fu	3223 2242	0122 1134	3223 2011	0133 4464	4443 3334	4323 3654
Eb	3221 2342	1103 1225	2101 1111	1101 5665	5333 3433	332- -----
Tl	3222 2342	0113 1235	2211 1010	0113 5555	4444 3434	3333 3654
SF	3131 2442	1133 3335	3333 1221	1234 4435	5444 3455	3333 4754
Tu	3332 2221	1123 1234	2212 1100	0113 5444	5465 4423	3354 4533
Ks	4222 3342	0112 1335	2211 1110	0013 6564	4354 4443	3334 4653
SJ	2221 1321	0102 0234	1101 0000	0000 3354	4433 2323	2333 2533
Ka	2222 3331	1112 2224	1212 2100	0114 6654	5565 5432	2345 5532
Ho	1212 0000	0002 0123	0201 0000	0002 3343	5453 3222	3244 2322
ZS	-----	-----	-----	-----	-----	-----
Al	2212 2341	1222 2234	2211 1110	1123 6545	3333 2332	3324 3642
Hu	2221 3441	1101 3334	1102 2222	1111 5754	4333 4652	3333 3653
Ap	1322 1123	2302 0134	3302 0123	0223 5344	5443 3223	3433 2333
Pi	3222 2300	1202 1234	3201 0001	0212 4455	4433 0403	3433 3503
Hr	2222 2331	0201 1233	0112 1000	0122 5565	4434 4333	3324 3553
Wa	3331 2331	2322 2124	2221 1112	1223 5644	5354 4322	2334 4543
To	3332 3443	3223 2234	3312 1222	2223 4543	5564 3423	4545 4433
Am	2322 2222	2212 1134	2312 0023	3212 4444	4454 3334	4434 2333

TABLE 1 THREE-HOUR-RANGE INDICES, K., 1950

Dec.	25	26	27	28	29	30
Tr	6534 4466	5544 3545	5443 3365	4323 3333	3222 1124	4010 1355
Co	4346 6653	3366 6643	2356 5333	2135 4211	1324 0010	1003 2221
So	6434 4455	5344 3544	3333 2365	3212 3222	1211 1123	3011 1344
Le	4333 4344	4333 3433	3333 2234	2222 2222	1112 1112	3011 2233
Do	5323 4454	4324 3433	3233 2344	3212 3222	1112 0123	2010 1334
Me	4454 5543	4466 4433	2465 4333	2244 3221	1334 0111	1002 1121
Si	3445 6532	3366 4432	2354 4223	2144 3221	1333 0111	1012 1121
Es	4333 4344	4234 3443	3333 2234	2222 2322	1222 1122	3001 2233
Lo	4334 4554	4334 4443	3323 3344	3223 3332	2112 2122	2123 3333
RS	4334 4554	3334 3443	3333 2344	3223 3222	2122 1112	1012 3323
Ag	5554 3443	5456 4332	3444 3333	3323 2221	3322 2122	2012 2222
Wn	4334 4555	4334 4553	3333 2344	3222 3332	2112 1123	3011 1334
Wi	4344 5555	4444 4553	3343 3344	3322 3332	2222 1122	3022 3334
Ab	4334 4445	4334 4443	3333 3344	3233 3321	1123 1222	2013 3333
Ni	4334 4554	4334 4443	3333 2344	3222 3332	2112 1122	3111 1334
Ma	4334 4454	4344 3443	3333 2344	3222 2322	2112 1122	3111 1323
Sw	4233 4454	3224 3332	2223 2333	3211 3321	1111 1121	2111 --2
Na	4333 4444	4334 3433	3333 3344	3222 3322	2221 1122	2012 2343
CF	4333 4444	4334 4432	3333 3334	3222 3322	2221 1022	2011 1333
Ch	5444 3343	5445 3233	3443 3323	3242 2121	3223 1111	2112 2222
Fu	4333 4444	4334 3443	3323 2334	3233 3322	2123 2222	2123 2323
Eb	--2 5544	3234 33--	--244	2111 2311	1110 0122	2001 1223
Tl	4334 4444	4344 3343	3333 2344	3222 2321	2111 0023	2011 1223
SF	4333 3455	4445 4454	2335 3444	3222 3322	2224 2323	2123 2333
Tu	4554 3333	5455 3333	3433 3323	3243 2221	2222 0111	2112 1231
Ks	4334 4355	4335 4543	3224 4343	1-22 3321	1001 1222	-221 1233
SJ	3423 3333	3234 2232	2322 2223	2122 1111	1111 1222	2001 1221
Ka	3334 4432	3345 4332	2234 3222	2223 3322	2122 0222	2221 2221
Ho	2223 3232	4234 2222	2223 0202	2232 1120	2112 0001	0110 0112
ZS	----	----	----	----	----	----
Al	2232 4342	2234 3332	1233 3322	1222 2211	1111 1222	1222 1222
Hu	3234 4454	3123 4344	2313 3443	2112 3344	2111 1333	2121 2344
Ap	4233 33--	--2 3233	2322 3223	2232 1223	2112 0224	4120 2124
Pi	4434 2323	3233 0333	2412 0204	2211 0203	2211 1213	2212 2403
Hr	3333 4344	3435 4443	2434 3233	2324 3321	1232 2221	1333 2122
Wa	4343 5433	3443 3431	1324 3332	3232 3311	2221 0123	3232 1321
To	4334 4433	3453 3433	3334 3233	3233 3322	3233 1223	2232 2332
Am	3344 4433	3353 2333	2243 2124	2232 1122	3222 0223	2211 1122
Dec.	31					
Tr	1000 0103					
CQ	0010 1100					
So	1010 0102					
Le	0011 1101					
Do	0000 0102					
Me	1021 1123					
Si	1021 2101					
Es	0010 0102					
Lo	1012 2112					
RS	0012 1002					
Ag	1212 1221					
Wn	1011 0112					
Wi	1011 1113					
Ab	0011 2113					
Ni	1111 1113					
Ma	1020 0112					
Sw	1011 0111					
Na	1111 1113					
CF	0011 0102					
Ch	1221 1111					
Fu	0022 1102					
Eb	1000 0002					
Tl	0010 0013					
SF	0124 2214					
Tu	1011 0011					
Ks	1030 0012					
SJ	0001 0111					
Ka	0021 0211					
Ho	0000 0001					
ZS	----	----	----	----	----	----
Al	1111 1112					
Hu	1000 1233					
Ap	4102 1123					
Pi	0101 2034					
Hr	0112 1111					
Wa	2221 0211					
To	2332 2333					
Am	3221 1022					

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Tn: 1950

	Jan.	Febr.	March	Apr.	May	June
1	1344 3443	1332 4322	3333 4322	3355 5454	4433 3354	3333 4434
2	4454 4333	3465 5553	1233 3322	4466 3444	2344 4645	5434 2445
3	4343 3334	3444 4355	2333 3322	4366 4464	5555 4354	3345 4443
4	4554 4444	3434 5564	1333 4233	2354 4644	3344 3434	2333 3322
5	3354 4343	1243 3433	2234 3333	4354 5654	4354 3244	4333 2333
6	3344 4542	2344 4444	3345 3354	5443 4554	2343 2333	4664 5554
7	2333 4442	3334 4345	5354 4333	4543 3433	4333 3423	3334 2334
8	1322 2222	2323 4334	2133 2222	3344 4332	3233 3334	3344 4322
9	3553 4233	4333 3454	3344 4322	2244 3422	3232 2322	2---
10	4554 3323	2133 3222	3234 3332	3233 3333	2324 3334	--44 4343
11	3322 4334	3223 4322	1233 3333	2122 3333	3333 4433	4233 2333
12	3333 3442	3343 3432	2244 3322	4445 5333	2233 3333	3343 4332
13	3222 3433	2333 3332	2233 3443	3244 3322	2445 3343	1133 3222
14	3546 5454	4333 2332	3454 3453	2344 3323	3445 5444	1233 3222
15	2234 4443	3444 3333	4453 3332	4445 5434	4343 3455	2232 3211
16	3334 3344	2332 3222	2333 2332	3333 3344	3343 3444	1223 3433
17	2111 2232	1343 5222	2243 3334	4432 2433	3222 3332	3333 3332
18	2332 1112	2222 3333	2243 2333	3343 3344	3223 3321	2233 1211
19	1333 3444	4453 4334	3588 9954	4554 4553	1254 3332	1---
20	3344 5543	3335 55--	4333 3554	2444 3354	2233 3334	-233 2121
21	3334 4443	-----	4446 5566	3455 3322	4443 3332	1332 ---
22	3333 2222	-344 3454	3445 4355	2335 4322	2354 4444	--44 3323
23	3343 3333	3446 5567	3334 4323	4544 5433	4445 6544	3334 3454
24	3344 5766	5544 4255	5553 3432	4454 3534	4332 3333	4556 5353
25	4344 4434	5444 5333	3323 2233	2444 3322	4333 4433	4354 4345
26	2333 4444	3233 2121	3323 3334	2333 2222	3335 4432	--4 3332
27	3433 4334	1234 3333	6445 4554	2433 3344	3333 6545	2223 2332
28	3333 3432	3344 4433	3235 3323	3243 3335	6544 5464	2232 1222
29	3332 3232	-----	2235 5343	4335 5444	5434 4444	1234 5755
30	3344 3443	-----	3223 4422	4353 5553	3334 4543	5433 3434
31	1321 1233	-----	2343 5544	2233 3224	2233 3224	-----
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3323 4334	3344 3434	2233 3322	4465 6545	2346 5554	3333 3232
2	3312 2222	3343 4355	2233 4343	3365 5665	4343 4422	3333 3443
3	1233 3444	3434 3334	3445 4655	3444 5464	2344 3322	3344 4343
4	5433 4444	2354 2332	5454 4455	4444 4554	1245 6632	2344 2334
5	4333 4334	2233 3344	4555 5455	4553 5554	2212 2224	2345 4544
6	4334 3333	4323 3444	4455 5453	4445 4544	2233 2222	5445 4444
7	2333 3323	4546 4556	3344 4433	3344 5454	2343 3223	3443 4344
8	3233 3211	6566 4334	2455 4546	4333 3322	3334 3432	3445 4444
9	3444 4432	3444 4455	4443 2343	3235 4322	2343 1234	3333 3233
10	1233 3334	4444 5565	3344 4454	2311 4322	4435 5642	2444 3343
11	4323 4445	3344 3444	4454 3244	1223 3443	2354 4445	2344 3232
12	4435 3443	4455 4443	3353 4322	4333 3344	2244 5535	3564 3555
13	3445 5333	2344 3333	2343 3554	2344 3343	4344 5453	5554 4465
14	3243 2333	2244 4444	3222 2222	5555 6645	3232 2332	5444 3455
15	3344 4343	4343 3333	1243 2322	5453 3323	2234 3234	3434 4444
16	3344 4322	3332 3212	2345 6543	3346 5544	4333 3343	3344 2333
17	3332 2222	3322 2221	3433 3544	3344 6553	2333 3343	3234 4333
18	2132 4333	2345 4555	3344 4443	2244 3333	1133 3---	3344 4553
19	3124 3333	4558 9977	4345 5344	2343 3233	-233 3322	3344 4343
20	4333 3233	6554 5433	5545 4443	2433 3333	2---	1233 4335
21	3333 4343	4454 4442	3344 3332	2211 2221	2223 3244	2233 3222
22	3334 3332	3323 3232	1111 2433	2333 5445	3344 4655	1234 7665
23	1123 3111	33---	2235 4554	4444 4334	3343 3334	4455 4433
24	4436 4444	-233 3233	4344 4565	3333 2233	3333 4554	3444 4653
25	4543 4343	2344 3322	5454 4545	2231 1224	4445 6544	3444 4454
26	2223 3232	3332 2211	3333 3343	3344 3232	4366 5564	3556 4543
27	2244 4333	3333 3333	3344 3333	3344 3233	4455 4555	3355 3344
28	4323 3223	2334 3344	2333 3233	4476 6666	4545 5555	3344 4433
29	3334 3344	4444 4444	2---	4464 6464	3334 5354	3335 3333
30	2244 4343	3432 4443	-224 3465	4445 6654	3344 3454	2345 2333
31	3433 3444	2344 4432	-----	4465 5444	2244 2333	-----

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Loc: 1930

	Jan.	Feb.	March	Apr.	May	June
1	4113 3333	3--- ---3	3344 3444	3224 4323	3312 2210	6343 4355
2	2112 1233	4--- 2243	3334 4625	2234 3333	2202 1201	4333 4455
3	1024 3534	2--- ---3	3--- 42--	2334 3301	1111 2302	5444 4344
4	2233 4465	1--2 2223	---3 333-	1224 3111	3433 3324	2434 34--
5	4432 355-	2--- ---0	---0 2100	2313 3110	5545 5456	---
6	---	1--2 2211	0124 3110	2225 4336	3633 4445	3132 3333
7	---3 3544	0--3 2231	0124 2100	4434 3556	6434 4455	5453 4436
8	3332 3412	0113 1411	1114 3000	7544 4444	4433 4334	5333 3341
9	3222 2122	2023 2112	1124 3111	3334 3544	4343 4445	2323 4333
10	1013 1331	1123 2212	0114 3011	3435 4445	5323 2232	3223 1231
11	1113 0100	3113 1002	1124 3244	5435 4445	3212 2214	1222 2212
12	2003 1200	2244 4417	4555 5645	5434 4444	5423 3324	2234 6545
13	2323 1211	6345 5454	5444 5555	5334 4434	4534 4343	4354 5512
14	1123 1111	6434 5554	4244 6545	5334 3344	3222 3223	3334 3111
15	0012 1334	4343 4544	5344 5533	4434 4443	2223 2334	0112 2322
16	3112 2231	5433 5554	4324 3444	3434 4214	3422 4564	1466 5435
17	1113 2444	3333 5443	3234 3543	4334 3333	6465 5355	5333 4343
18	2122 1234	1233 3554	4224 3555	2234 3444	3424 5533	3333 4534
19	4223 3333	3433 2432	4234 4234	2323 3633	5234 3433	4323 4312
20	3323 2355	2113 2234	3224 4334	3654 5544	2443 4323	3323 3343
21	3223 3314	2212 2123	2334 3424	3345 5436	4433 3343	3223 4511
22	2223 3343	2013 2113	3334 3533	5435 4546	3445 3322	2222 2211
23	3112 1--23	3123 2342	0334 3223	4344 4454	3333 2431	2212 21--
24	2212 1232	2233 2241	3354 4441	2334 4523	2122 2332	--2 2200
25	2122 1100	1434 3554	2234 3234	3234 4333	2322 3533	1122 1221
26	1113 1000	4233 2422	4334 4331	3444 3342	3322 2121	2223 3311
27	0013 1001	3333 ---	2344 3334	2124 3322	1133 3---	4334 4434
28	0012 2223	---	4334 4234	1324 3431	111---1	4434 4445
29	2223 2122		3324 4423	1234 4425	--21 3322	3434 3443
30	1223 3314		3434 3333	4233 3443	3321 3436	3433 3343
31	2133 1232		3234 3232		7644 5553	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2223 4323	3222 3213	3453 5422	1233 3533	2122 4331	3111 2101
2	2112 4443	1223 2322	5324 3321	3223 4534	1011 4413	0001 0122
3	2222 5433	1111 2223	2333 6756	3314 4554	3011 1010	3222 9866
4	3334 4434	2222 1012	5444 2221	4323 4344	0234 3124	5553 4423
5	3223 4342	1112 3334	3323 4454	2323 3543	2111 1333	3101 1111
6	3312 2211	5553 6656	3334 4433	3224 3342	1111 2000	1012 0231
7	2312 2231	5445 4455	2233 3323	2212 3334	0011 2231	3112 2301
8	2112 2213	5434 4544	2332 2332	3233 3432	1112 2343	0001 1000
9	3212 4434	4544 4434	0134 4543	3222 2324	4312 2322	0001 1311
10	5544 3533	2323 4524	3222 2231	1010 1432	0132 1103	1001 1102
11	6633 4334	4334 4342	0133 3323	2222 2120	2000 0002	2101 00--
12	3554 4444	3433 4555	1221 2225	0011 1031	2101 0000	----
13	3433 5633	5333 3422	3320 1012	0010 2221	0000 0012	4223 3524
14	3322 3221	3133 3354	3121 2132	2434 3355	3222 2376	2111 2323
15	2322 3412	4442 3410	1322 1210	3112 1001	4334 2102	2101 2122
16	2244 4444	2232 3343	0011 2311	1112 1122	2112 1023	1100 0110
17	4243 4322	2122 3333	0122 3220	0233 6858	2231 2222	0001 0000
18	1333 3311	2112 2233	1026 6776	3233 2243	1012 0332	1011 0000
19	2223 2232	3224 5321	5334 4434	3233 1143	1101 0100	0111 3323
20	2222 2221	3222 2343	2112 2131	3244 2543	1100 0111	0211 1464
21	2233 2112	3214 4445	0044 3322	4222 2331	0001 0001	3334 4543
22	1111 2122	5443 3244	4122 2111	0112 1420	0000 0000	2311 2443
23	1023 3221	4333 4544	1133 2333	1212 1332	0001 2254	2122 2524
24	2122 1325	4323 3434	3234 3323	1112 1110	3433 3655	3222 3441
25	5445 5534	3212 3221	3012 2343	1121 3444	5544 5664	2213 3233
26	3443 3242	1133 3323	2111 1111	5434 5564	5333 3532	2021 1433
27	3323 3323	2322 3332	2122 2210	4434 6655	3223 2442	2211 2223
28	3221 3333	2201 2333	1333 3354	4233 4543	2222 2133	1201 0100
29	2324 4333	4211 2233	4344 4465	3234 4544	2122 2343	0011 1234
30	1333 2412	2312 1234	6554 3222	4333 4554	2222 2321	2001 2121
31	3322 2232	4312 1232		1124 4434	0001 0011	

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1931

	Jan.	Feb.	March	Apr.	May	June
1	1111 1114	2111 0023	1222 2010	0101 1242	2012 1201	1112 2324
2	3111 0002	4222 1003	0122 2323	2111 1021	2222 3200	2435 4423
3	1001 0000	3322 0210	1422 2323	1112 2333	1021 1112	3322 2112
4	1--- 0010	1122 0123	1112 0102	0101 2333	2112 2111	2112 2111
5	1011 0000	3211 0003	1122 1130	2102 1100	1102 2222	1121 2122
6	1001 0000	1011 0012	0011 2011	0011 1100	2233 3211	2122 2321
7	0001 0000	0012 2003	0012 1121	1000 0002	3534 3331	1122 2222
8	0001 0000	1211 1011	2101 2233	2012 2222	2112 1111	0121 2344
9	3322 2225	1011 2202	3211 2222	2112 2213	0012 2100	5432 2312
10	4332 2231	2011 1000	1001 1422	3333 3333	1021 0000	1232 2411
11	1012 1224	0011 0021	1111 0111	2122 3231	0222 3334	4233 3303
12	3101 0112	0000 0110	2012 2235	0101 0000	3323 2213	2123 3322
13	1011 1102	2233 4335	4223 2354	1100 0100	0110 0345	1212 2222
14	0002 1001	3423 4444	4322 2222	0011 0112	2332 3335	2222 2122
15	1102 2122	2233 4443	3212 2202	1011 2211	5433 4242	2222 1011
16	3233 4545	3211 1000	2112 1000	2110 1001	2232 3222	0121 1102
17	4333 3543	0001 1322	1011 1020	1011 2112	2222 2122	1011 0221
18	3234 3452	2012 1310	1001 0000	2423 2232	3231 1212	2112 1001
19	2112 2134	0010 0222	0111 0020	1112 3334	1122 1100	0123 2111
20	4101 2333	2110 0010	1000 1213	3324 2200	1012 2223	1212 2200
21	2111 1122	0002 1001	2323 3144	0111 1020	2012 2011	0111 3231
22	2112 2011	0001 1031	4311 0024	2212 1212	0001 2101	1213 3231
23	3011 1111	1012 2103	2311 0123	3001 1102	1001 1101	1113 2212
24	0100 0000	3454 4554	3121 2110	3100 1101	1012 2201	1102 2212
25	0011 1245	2002 2435	1122 1124	2022 2222	0122 2212	0111 0000
26	4222 1020	5322 3324	5233 3101	1222 1102	3433 3321	0110 4534
27	0011 1134	3132 3341	2222 1132	20-- ----	1222 2010	3324 4423
28	4311 2223	1122 1111	3222 1231	---- ----	0002 1101	4323 3333
29	2012 3413		2212 1123	--12 1000	1012 3300	2122 2210
30	0001 0000		0011 1000	2021 1101	0010 2100	1222 2101
31	0000 1142		0012 3200		0000 1201	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0011 2102	1122 3222	4222 0122	4343 4444	2133 2403	0121 3343
2	2221 3234	1000 2111	1112 0001	4334 4655	2022 2422	3133 5455
3	2122 3321	2332 2101	1233 3323	3223 2321	2123 3435	4433 4444
4	1011 2232	2122 2121	5534 3333	4221 3354	4333 4230	2233 4534
5	1112 2102	1212 2322	3323 2234	4443 4544	1333 3644	4232 4434
6	1111 2210	2112 3111	3444 4434	4223 1343	3434 4532	2213 3333
7	0101 2223	1223 4312	4432 2341	3212 1300	3222 4334	1211 1322
8	3221 1000	3333 4354	1123 3435	0222 1103	2333 4445	3001 0023
9	0111 1111	5333 4443	4223 3334	1222 3200	3322 3433	1011 2222
10	0111 1112	2222 2313	4132 24--	0102 1312	3332 2432	3343 1003
11	1232 3223	3432 3221	1233 2212	2012 2003	2012 3313	2111 2353
12	1211 2221	2122 2222	4123 4131	3022 3546	0011 1000	3223 3543
13	2212 3320	2102 2322	0122 2221	5444 4412	1003 2033	3211 3334
14	1223 3321	1222 2121	1112 2424	3122 1423	3122 4443	2011 2343
15	2134 3312	1101 2232	4423 3533	1222 3533	1212 2534	2222 2435
16	4222 2102	3213 3323	5333 4425	2111 2100	4321 3544	2212 2343
17	3112 1202	1111 1202	4433 3332	3323 2155	3122 3444	4322 3223
18	2122 2101	2021 1111	0022 3113	3224 4333	3333 4334	0010 1110
19	1002 2201	4213 3234	2011 1122	2323 2344	3222 4353	1001 1021
20	0101 1111	3444 3443	2111 2354	3122 2143	2222 3423	1100 0011
21	1112 2210	2333 4423	5333 2133	3123 3332	1111 2320	0000 0012
22	1111 2200	2011 2212	3222 2245	4223 3333	0111 1101	1210 1102
23	132- -54	2113 2322	2122 4413	1122 2335	0010 0123	2000 2343
24	4223 3311	3112 2323	3322 4422	2323 2112	1110 0023	2100 0011
25	2233 43--	3444 4333	2112 3123	1012 2203	1211 1122	1211 2243
26	-----	2222 3234	3212 2231	2002 2152	3213 4455	1000 0102
27	-----	2223 3324	4222 2131	3102 4452	4433 1344	0110 0000
28	-----	4133 3221	0012 1121	3323 3644	2112 2212	1011 2334
29	-----	2121 2022	2101 1121	1224 7867	0110 1313	2223 3433
30	-----3	1012 1122	1123 4324	3444 5653	2111 1000	5423 4233
31	2111 2100	2111 1122		2333 4323		3223 3443

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1934

	Jan.	Feb.	March	Apr.	May	June
1	0012 2655	2111 0010	0122 2231	3233 3544	2211 2201	0101 2221
2	2323 5441	0001 1144	2123 3344	4212 3142	3111 3345	0001 1211
3	0122 2211	0111 2033	4121 3020	1112 3342	4442 2214	0112 1101
4	2100 1001	2211 2433	0021 2556	3122 2445	3113 3212	0112 3333
5	0110 0010	2111 1333	5354 3435	4232 4542	1012 2311	4323 5433
6	0000 1220	1001 1112	4333 2332	2333 2333	1112 2312	4333 3512
7	1100 0222	2112 2031	3333 4355	3222 1120	1001 1222	1222 3211
8	1101 1202	1000 1223	3132 2122	1101 2312	2122 0200	1021 3343
9	1000 0003	4532 3531	2222 2433	1211 1210	0122 3212	3322 3223
10	2011 0032	1113 4452	3322 2142	0100 0002	3122 2224	2121 2111
11	3101 1111	2322 2332	2423 2043	2022 2100	1322 3236	1111 3343
12	0101 0010	1111 0134	2122 1211	2102 2210	4332 2314	4422 3321
13	1001 1110	3222 1223	0011 0032	1112 2101	3212 3211	1121 2100
14	1011 1235	2111 1101	1011 1011	1013 2222	2111 1111	101- --24
15	3112 1033	1002 1333	4212 3110	2112 1114	0012 1011	4431 0211
16	3322 2132	1112 5663	1123 2233	4333 4322	1111 1110	1122 2321
17	1010 0212	3233 3344	3122 2113	1210 1100	1211 1102	0111 1232
18	1112 1043	2123 3433	3122 2434	0111 0110	1233 5534	1123 3433
19	2110 1021	1212 2321	2111 2101	0112 2331	4223 3312	2122 2210
20	2102 3110	2122 3222	1111 1111	2312 2312	1111 1332	0221 1232
21	1121 2211	1012 2222	2011 2210	1012 2221	2123 3431	1111 0001
22	0000 1124	3332 2211	1422 2336	2112 2311	2133 3312	0111 1101
23	3221 1333	1001 1122	3231 2344	0121 2112	2132 1332	1111 1232
24	2211 1223	0011 2224	1121 1245	1223 2101	0111 1332	0212 2110
25	2021 2321	2113 3222	5223 3434	1221 1133	1022 2333	1111 2100
26	1112 1333	1012 1111	2012 1244	1011 1112	3122 2111	1112 1100
27	2101 1012	0012 2311	2121 1223	1111 2121	0132 1100	0102 2342
28	1002 2223	1012 1321	0012 2255	2111 1100	0110 1100	3112 2212
29	3322 1131		4323 2413	0000 1121	0011 1210	2212 2201
30	3122 1132			2122 2033	0011 2211	1210 3122
31	1111 1332			3243 4344	1011 2201	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3311 2221	4333 3222	3122 3314	1122 2123	0011 1020	0223 3333
2	2222 2210	3333 3322	2432 4544	2212 3220	2001 0111	1321 1011
3	2115 5433	3324 3533	4233 3233	0012 2200	0011 1133	2222 2225
4	3223 3312	3332 3355	2123 3432	0122 2203	0221 1112	6543 5423
5	2333 2312	4322 3223	0112 1101	1012 2320	1111 2321	2322 2541
6	2221 2322	3233 3202	2122 2123	0012 2213	0101 2101	0011 2211
7	3222 2211	2223 3221	3211 2221	1111 2322	1224 4654	1212 2141
8	2223 2122	1112 2213	3012 2321	0012 2000	3123 3111	1110 1222
9	3221 2222	2212 2120	1011 1111	0011 0000	2111 0232	1001 1112
10	2112 2112	2221 1201	0111 1002	0011 1001	2101 2321	0001 0122
11	1212 2331	2222 0101	1122 2221	0012 1001	1112 1222	0001 2221
12	2202 2232	1211 1354	1221 1222	3212 1234	1011 0232	0000 2201
13	1223 2221	4222 3323	1122 2101	3321 1243	0011 2334	0101 1003
14	1122 2332	1212 3234	1011 2212	3222 1211	2211 0202	0000 0133
15	3222 2311	1221 2223	1111 2212	1212 2444	0011 1112	2212 2330
16	3332 3332	3222 2222	1323 3333	1023 1111	1010 1100	1000 0000
17	1112 1233	4212 3333	4233 3321	2111 0133	1211 2103	0000 0011
18	2112 2212	3222 1233	1123 1002	3211 0120	3110 0022	0010 0014
19	1212 1111	3322 3432	1022 2424	0011 0010	2111 2100	3221 1011
20	1122 3321	2012 2222	3133 2312	0011 2234	0010 0011	2100 1000
21	2111 2102	1222 2232	1121 1233	3122 1232	1011 0100	2112 3341
22	1111 0001	2222 4421	4321 2221	2322 1221	0001 0000	2221 1113
23	1112 2101	1022 1222	1102 1200	2111 0002	1000 0010	2100 0001
24	1122 2322	1112 1002	1234 4345	3543 4532	0000 0433	1212 2523
25	1122 2212	2112 1132	4544 6764	3122 3643	3122 3411	4212 3244
26	2211 2111	2213 4334	2122 3244	3223 4431	3110 0001	2312 2101
27	2121 2011	4542 3434	2332 3543	2112 3312	2001 1101	1000 0211
28	1001 1212	4333 4334	2023 3330	2231 2201	2111 1033	2111 1211
29	3313 3333	3343 3343	1001 2432	1021 1101	1010 2321	1112 3565
30	1445 5423	3333 3344	4222 2253	1011 1201	1000 0000	5323 5543
31	3233 3432	3123 2124		0011 1221		3411 1311

TABLE 1a. SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1935

	Jan.	Feb.	March	Apr.	May	June
1	1244 2033	0112 0234	0223 3241	0100 0020	0112 5536	1213 2210
2	3313 2221	4532 2442	2223 4312	0111 1000	5413 2212	0111 1101
3	2223 3233	1123 3242	3321 2343	0112 2210	1211 3201	0112 2101
4	4123 2333	2111 0021	3121 2100	2111 1212	1002 1211	2223 3333
5	1121 2132	1100 1103	0110 1224	0112 1101	2000 1101	0122 3311
6	0000 0001	2220 1001	2120 1232	1011 0000	1101 2002	2133 2112
7	1101 1121	1111 2213	1122 1223	0111 2011	1111 2111	1223 4557
8	0101 2003	3211 2312	2121 1223	1222 3313	1111 1001	5644 4323
9	3000 0002	2222 2121	2122 3202	4443 3300	1011 0111	3235 5443
10	1110 1112	2012 13C1	1122 2222	1113 4454	0121 3443	3324 4433
11	4211 2102	0100 0002	2122 3320	5334 5555	4323 3333	2313 5532
12	2001 1123	2121 1211	1121 1113	3333 4535	3323 2214	--22 -233
13	3221 1122	1233 3556	4324 4551	4433 4533	3222 2222	3223 3222
14	0101 1003	5433 4432	2244 6754	3222 3222	2212 2101	3122 2111
15	3112 2423	3222 1433	4333 5433	2212 2211	0022 2123	0001 0101
16	1101 1124	1022 2442	3222 3544	1123 2313	3344 4312	0121 1112
17	5334 4414	3221 1123	3232 3224	3212 2311	2111 2100	1102 2333
18	3221 3443	3222 1144	4112 2333	1423 2233	0111 2133	2333 5454
19	3121 2221	2101 1130	4212 1143	2012 2222	3113 1222	4214 4322
20	2221 1022	1212 1333	2212 3433	3012 1111	3543 3223	2222 2233
21	1122 2135	4224 3433	2222 2544	2101 1131	2111 3223	3221 3321
22	4322 1223	3212 1021	4220 0112	0112 1222	2222 3221	0212 2211
23	4323 2244	2221 1234	2201 1223	1112 2134	1102 2212	1212 3201
24	2223 2443	1012 3333	4412 3343	3201 2222	1010 2001	1112 1101
25	3212 1133	3222 3211	2122 3202	1211 1210	----	0111 1111
26	4211 1313	2322 3523	1112 1232	0111 1102	1112 3222	1123 2101
27	1001 3264	1001 1000	2211 1221	2111 1001	0112 2111	----
28	5432 3212	0011 2100	1001 2201	1111 1000	0111 2201	2222 3223
29	3010 1000		1111 0101	0121 1000	1122 221-	3112 2223
30	0022 2112		0011 5333	1023 2210	----	3223 3231
31	3133 2011		1223 2210		1321 2111	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1112 3201	3122 3313	5422 2111	3233 11--	2222 2201	2233 3524
2	2212 3311	1013 3101	0122 1100	---- --24	2322 3344	3222 4104
3	1011 2201	1212 2101	1112 2202	2021 0001	4222 2423	4211 3431
4	1112 2111	0022 2121	1122 2243	1111 2231	2011 1001	2111 1111
5	1111 3211	1113 2232	2312 1222	1111 0000	3122 2654	1001 1113
6	0110 2211	2112 3313	2222 2112	0000 0001	4432 2000	0001 1012
7	0011 1214	4123 2111	2321 3312	3113 2123	0111 2022	0102 2233
8	2244 5322	1111 3202	3122 1110	1012 2322	1122 2322	3112 0232
9	2322 3313	2122 1112	1222 1143	3112 1212	0012 2013	2001 1124
10	1021 1111	1222 1112	2213 2243	1110 2433	1011 0100	4111 0412
11	0123 3301	1022 2211	4333 6556	1112 4553	0021 2234	1111 2104
12	1222 2221	1112 2111	5642 1232	3112 1100	3433 3534	2011 2332
13	1222 2212	2221 3112	1122 1201	1112 1010	5222 4424	2232 3410
14	3123 3422	1121 1101	0122 2144	1332 2122	2232 2453	0113 4455
15	1123 3311	1122 3312	2223 3435	4212 3444	1121 1000	4333 4432
16	2122 2311	1133 2142	3232 2334	2322 4442	0011 1122	3233 4424
17	1122 1111	1012 1211	5433 3433	1222 3434	1111 0120	2213 2213
18	2111 2211	1001 2001	4333 4214	4232 1232	0101 1423	2121 1343
19	3332 3312	0123 3323	2322 1245	2212 2033	3232 2213	2111 2113
20	1122 2212	3233 3324	3112 1100	2124 5555	1022 3522	----
21	1112 1221	4323 3213	1021 2102	2333 3645	0122 1200	1012 1122
22	2342 3224	3123 2224	1011 1022	4333 3233	0000 1322	2101 0100
23	4222 3222	4233 2233	1233 5535	2221 1222	2111 1200	0000 0000
24	2332 3244	3102 2213	5323 3323	1145 6631	0011 1121	0111 0014
25	4434 5334	4233 1112	4345 4534	2221 1145	2000 0101	4112 2232
26	3112 2212	1112 2131	3342 4323	4211 1101	1000 1011	4332 3444
27	3221 1212	1222 3343	2223 3223	1333 3445	1011 1450	4432 3334
28	1222 2022	2222 2342	3223 3321	3223 3533	0111 1221	5334 3144
29	2232 2232	1222 2112	4112 2123	2222 2421	0211 1144	4211 3333
30	2122 1211	3232 1212	1223 3545	2332 3421	2333 2434	3112 1232
31	1112 2212	2222 2213		2324 3332		2111 2413

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1936

	Jan.	Feb.	March	Apr.	May	June
1	2111 1121	2111 1021	1121 2100	2122 2343	4222 2201	1222 3453
2	1111 1212	1001 1344	0021 1013	3322 1124	2202 2101	2434 4554
3	1000 1121	2222 1231	1111 1000	2312 2354	1221 1102	3222 2323
4	1000 0011	2232 2221	0021 1000	3332 2111	2223 5444	2113 3312
5	1022 0000	1111 1113	3121 2211	0112 1210	2232 2221	1111 2121
6	0000 0110	1021 0101	1022 2133	1221 2210	1112 3211	1111 1112
7	0101 0010	0012 1121	1021 1100	1212 3310	0112 2201	0121 1222
8	0222 3324	1012 1113	1123 2413	0232 4331	0112 1210	3222 2235
9	3222 1244	1422 3444	1112 2331	1122 2220	0111 1101	3444 4533
10	2223 4353	4323 2544	1112 1211	0012 2110	0023 3443	2333 4444
11	4122 2230	3222 2112	0111 1000	2122 2222	3224 3322	3213 3312
12	3312 3333	1011 2110	0022 1101	3112 2324	2333 4444	2222 2223
13	4222 3443	0010 0001	0121 1110	2333 3542	3222 1312	3322 3333
14	2222 1223	1022 2433	0210 1211	2123 1254	1122 3333	3232 2423
15	2121 1212	3111 3333	3221 1212	1133 3443	2233 2233	4433 4422
16	1101 1002	2114 5444	2210 1112	4311 1211	4334 3433	2323 3232
17	2210 0002	3323 3454	2111 2224	2132 2335	3332 2233	3221 2212
18	2323 3442	2111 2321	3212 2134	4432 4454	4244 3344	2112 3334
19	2122 2241	2222 3466	3211 1043	3333 4526	3433 4333	6656 4432
20	1001 1242	4211 1233	2423 3314	5433 3445	3233 3322	2432 3311
21	2101 1144	3222 4454	4433 3244	4344 3357	2231 2232	0222 3210
22	3112 2255	4333 3334	4421 3242	6435 6444	2222 2211	1222 3221
23	3222 1123	1222 3344	2332 2342	5433 5534	2112 1201	1012 2201
24	2222 1355	3112 2223	2333 4355	2321 3223	0111 0101	1112 3322
25	4333 3412	2121 2342	4413 3225	3212 2213	0012 2221	2211 1101
26	4233 3435	3123 2443	4322 1134	1111 2110	2222 4322	0222 3423
27	2322 2313	4323 3222	2222 2343	0112 1331	0123 2212	3221 2101
28	2332 2131	1111 1010	4222 2021	0312 3223	3221 3321	3221 2211
29	0011 1343	1012 2323	3322 2212	1212 2210	1125 5324	1110 1121
30	1212 2333		2121 1001	1223 2212	3221 2334	1111 2212
31	3111 2333		2123 2322		4322 1111	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1221 1111	3222 2212	2012 1112	3121 2123	0021 1111	1122 2232
2	3434 6642	2121 1213	2213 3110	1011 1201	0021 3122	1122 0123
3	5222 1221	1110 3223	0122 1200	1001 1101	1333 4463	1201 2322
4	0002 1222	3222 1011	2233 1223	1111 1002	3433 3201	2223 2320
5	3333 3423	1233 3321	2221 1111	1111 2234	4223 2123	2122 1123
6	4235 5425	3332 2211	2211 0101	3433 1125	1133 2113	2112 2332
7	3323 3322	0111 1111	0111 1000	2133 2244	2123 2334	2110 1241
8	3213 3232	1121 2344	1122 3211	4432 2340	2111 2313	1111 1030
9	0111 2222	2223 3322	2122 3321	1233 3343	4422 2100	0011 1111
10	3333 4454	2323 4311	1213 2211	4433 3220	1121 1333	0111 0100
11	5335 4533	1011 2111	1123 3423	1111 2100	1222 3544	1011 1111
12	2223 2324	1012 3223	2201 1232	0021 0000	2311 1130	0111 2222
13	3323 3331	----	1121 1000	0011 1200	0010 0001	3212 1123
14	0111 2211	1011 3211	1112 2100	0012 2311	2122 1311	1211 2300
15	1212 3222	2122 1222	2112 1211	3321 1124	2233 3444	0011 1111
16	4332 2322	3112 2211	0111 1000	2122 0466	2233 3432	0000 1232
17	3213 3343	2101 1112	1111 1001	5533 3221	2121 2323	0010 1112
18	3223 3221	1011 1001	0022 2222	1234 2100	3232 4434	2000 2111
19	2222 3112	0211 2210	0101 1101	0012 2132	2223 3332	0011 0000
20	2122 3311	0112 3222	1011 1200	3212 2421	2132 2212	0001 2032
21	1221 1210	3121 1111	0122 2102	2111 2100	2011 2022	2112 3223
22	0121 1101	1022 1220	1123 2103	0001 1000	2001 0000	1000 1001
23	0001 2000	1111 1111	2233 3300	0111 2144	0111 0110	2111 1211
24	1022 3210	0211 2212	1122 2101	3212 3533	0001 1100	1100 0000
25	2213 3213	1112 1323	----	1222 2100	0111 0000	0001 1110
26	2112 1101	2012 2111	3232 3424	1112 1000	1022 1231	0011 0000
27	1121 3222	1123 3212	1023 3210	0011 1000	1011 0000	0212 2334
28	4323 2222	2112 2111	1023 3012	0111 1100	0001 2103	5444 4612
29	0133 6634	1002 1113	3223 4332	0111 2202	5646 4242	1122 2112
30	3332 2001	4422 2452	1011 1012	1102 2100	1112 2311	0011 0122
31	0023 3313	2322 1212		3234 6411		0112 0111

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1937

	Jan.	Feb.	March	Apr.	May	June
1	1011 1000	3212 1221	4233 2346	2011 2123	4532 2233	2332 3230
2	0012 1034	0011 1113	4352 3342	3323 2364	3221 2222	2311 3322
3	2322 2101	6653 3784	2212 0000	4433 4344	1222 1333	3222 2210
4	2211 1321	3222 3242	0012 3101	3211 3222	3312 2345	1111 4322
5	0111 0300	3331 2355	2334 5434	1212 2200	7655 4621	3222 3245
6	1101 1001	2323 2234	4213 2001	1122 2200	1201 2000	6555 5533
7	1111 1375	2321 2233	0112 2100	0011 1221	1202 2211	3113 4322
8	3101 0011	0011 1223	0122 1010	0001 0101	1112 2112	3223 2223
9	2223 3235	3123 3455	3222 2122	1011 0000	2323 5334	3122 2111
10	3113 3345	2233 5223	1112 2212	0021 0102	4222 3232	0332 2212
11	2222 3335	3332 3243	1011 0112	4321 1321	4322 2311	3211 3101
12	2121 3413	2122 1444	0011 0000	0122 3454	2211 2211	1112 0111
13	3322 1132	1132 4344	0121 1215	4223 2232	1222 2212	2334 5421
14	1012 1002	4222 1254	5522 2422	0211 1022	1223 4432	3442 2222
15	0011 2001	4222 2342	3233 5311	0110 2221	3321 3322	2233 3112
16	1112 1000	4212 2312	1112 1233	1122 1311	4222 3313	4432 3323
17	0112 2012	1213 3323	2212 2124	1221 1232	2221 2321	4334 4232
18	1100 1101	2211 2245	1231 1213	4323 2223	1222 2222	3232 3222
19	0011 2123	5333 4532	2111 1022	2221 2244	1233 3211	2211 1221
20	1001 2331	2213 2331	2111 1112	3212 2211	0112 1011	3443 4344
21	2122 3334	1323 3243	0211 2322	3333 2211	0011 1421	3322 3332
22	2112 1011	1122 3312	3333 3344	1122 2202	1114 2211	2224 4323
23	1000 1121	1121 1102	3322 3221	2211 2232	2222 2221	2212 3210
24	0021 1002	2132 2111	1222 2332	2221 4449	1111 2223	2333 4432
25	1111 1000	2233 2110	0123 2101	9331 2668	3433 3224	3323 3222
26	0022 1100	0122 2000	1022 2234	5432 3559	5432 2332	2212 1110
27	1143 3233	2322 2100	4433 4535	7743 2267	3234 4445	1434 5654
28	3212 2334	2121 3222	4442 2224	6777 7745	5444 6655	4233 3321
29	4222 1022		2221 1003	3243 4344	5534 2334	3222 3311
30	1011 3421		3232 2241	4434 4334	3222 3323	2221 2131
31	1001 1200		2454 3655	4412 2123		
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3322 3232	3212 2423	2223 4433	5333 2353	0011 1322	5433 3330
2	2221 2233	4--- 23	2123 2100	3222 1100	3312 1233	3333 2212
3	1221 1102	2233 4325	1222 3101	3323 434-	2121 0122	2211 2032
4	2111 3111	7533 4331	1333 2221	---- 23	0011 1100	2111 1000
5	2333 3322	4221 2322	4222 2211	21--- 02	0022 1111	0012 2231
6	3113 4433	2322 243-	1122 3321	---- 21	0011 0001	2212 3323
7	3343 2233	---- 12	1222 2211	---- 3-	1112 1344	2222 2442
8	0012 2221	2310 1210	1102 2232	---- 21	6233 2234	2222 3443
9	1224 5314	1222 231-	1212 1213	---- 44	3333 5303	3211 1232
10	5431 1101	----	1122 1245	4--- 34	1102 3201	2221 3233
11	1111 4435	12-- 22	6653 3311	---- 5-	1113 2143	3223 3231
12	5322 1210	2221 2112	0101 2112	---- 5-	3223 1233	3121 1221
13	1202 3213	2220 2210	2133 3334	---- 1-	1111 1231	0002 1111
14	2334 5642	1220 1222	1323 2223	---- 2-	1112 2100	0001 1101
15	3324 4332	22-- 12	3222 2101	---- 52	0002 0010	0001 2100
16	1213 3422	1112 0202	0233 2242	2--- 3-	1000 0000	1101 1000
17	3321 3212	1212 2202	2433 2231	----	1111 2322	0001 1221
18	1111 1122	2121 2211	2312 1334	---- 00	3323 4365	1322 4654
19	0--- 4552	2112 2313	4211 2110	0123 2130	2223 5533	3223 3543
20	4444 3322	2012 22--	0011 1102	0121 2000	3233 3424	2322 3533
21	3232 2223	----	4312 2113	0112 2333	1212 3232	1212 1223
22	4454 4355	1567 5362	1123 ----	1223 3344	2234 4543	1133 3223
23	3323 3443	3122 2211	---- ----	4233 4547	3323 3543	3224 6661
24	6543 3344	1112 1110	---- 2 2201	7233 4534	3233 3243	1121 1464
25	5333 4343	01-- 11	2111 0101	3222 3422	2022 2232	1133 2003
26	2222 3311	1222 --22	1133 2302	4443 3454	1110 0202	3433 3211
27	1122 2211	2332 4543	3223 2210	2334 4433	0001 1224	1112 0000
28	2111 2201	----	0121 3222	2233 2335	2332 4424	0012 2201
29	0111 2212	3322 1211	1121 0000	2222 1322	4114 5563	3101 0112
30	2122 3311	2112 1100	0123 4577	3222 1021	2323 3676	1012 2211
31	1011 2322	2122 1201		2112 2132		1101 2444

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1938

	Jan.	Feb.	March	Apr.	May	June
1	2212 2123	2122 3354	4433 3354	1122 2221	1121 1122	1222 1111
2	2212 3232	3322 2233	3213 2223	0012 1112	2222 3212	2212 3335
3	3111 3242	4322 3532	2322 2220	2123 3312	1432 2434	4212 1113
4	2223 5455	3222 3443	0231 1133	2233 3211	4532 5653	1312 0101
5	3223 1001	3222 3231	2233 4654	0011 1000	3423 2544	2323 3221
6	0012 2542	2553 3555	4323 2234	2243 2254	3343 4321	2111 3230
7	4322 3555	4342 4522	2322 3311	4432 3312	1122 2400	1222 2314
8	5432 1014	1233 4776	1221 1113	2232 3223	1221 3122	4444 4543
9	5322 1211	3434 3532	0221 1113	1123 4242	1111 2213	2232 3312
10	2211 1021	4544 4212	2221 0010	2123 2310	4222 3221	1233 3333
11	2122 1312	4543 1320	0112 1123	0123 3443	2322 2699	3324 3334
12	1122 1445	1122 2223	4332 3411	2222 3233	8663 4546	4343 3354
13	5533 2343	3223 3233	1223 3102	2124 5937	7221 3212	3544 4423
14	1122 3112	4444 5642	3333 2233	5554 5432	3335 5446	4223 2101
15	2222 1144	0021 1112	3332 3222	4433 3323	6533 4423	2101 1111
16	2122 3237	1122 2112	1112 1211	3797 7545	2243 4332	0122 3223
17	6666 9956	2012 2211	3322 2211	2334 4544	3433 3332	2221 2132
18	3433 4554	1323 3202	2110 0000	3333 2444	2322 1121	1122 2211
19	3323 4552	2011 0002	0121 0000	3222 3333	1111 2321	1211 2301
20	1343 3563	0122 2101	0020 0002	2122 2222	1221 3211	0112 1112
21	2443 4534	1022 1000	1012 2224	1221 1322	2222 2201	3334 4221
22	5779 6864	0011 1112	3454 6345	4212 3433	1211 2412	2222 2111
23	3233 2244	3332 3434	5444 2367	3335 4645	1000 2111	0121 1110
24	4323 2234	2232 2133	6553 3124	4223 2231	0112 4534	0121 3222
25	4224 6889	1124 3451	2223 2345	2223 3333	4222 1223	3211 2112
26	9644 4453	2212 2242	6412 4433	3113 3201	1222 1111	1122 2111
27	1022 2343	1123 3443	4111 1122	1212 2211	1212 2332	2112 2102
28	2222 3143	4233 2254	2202 2112	1112 1210	1243 4433	1012 1121
29	2423 1155		2123 2341	1211 1011	3334 5524	2111 2241
30	3212 1032		1122 0100	0012 2211	2244 4232	1222 2212
31	3223 3577		0012 1122		2122 2232	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2334 4434	1233 3535	----- --21	6744 2254	2112 3210	0001 0011
2	3443 3311	5632 3345	1121 2221	3333 4434	0022 2301	0012 3355
3	0121 2210	4221 1227	2223 2313	3222 1445	1112 1222	5422 4554
4	1122 5556	6555 4445	1112 2313	3322 3321	1121 2311	4311 0132
5	4323 5321	5532 5443	4222 4421	0122 1000	1121 2311	2122 3201
6	2323 3420	3322 3332	0112 1121	0232 2221	2121 1133	2212 1133
7	1121 2212	2222 4321	2211 2201	0233 8965	1121 1143	1102 1320
8	2222 2211	1112 2132	2222 1321	6664 3542	2222 4546	0001 0000
9	1122 1234	1110 2101	0023 3332	2123 2333	6333 4654	1222 1323
10	5343 3553	1342 3322	1123 3232	3212 3243	5322 1012	2222 3664
11	4322 1111	3334 6444	1323 2224	3221 2220	1011 2122	3232 1212
12	1212 2211	2333 3322	2321 2333	0011 1222	2010 0000	1211 2201
13	0212 3234	3221 2110	2423 2256	0021 1132	1000 0000	2212 2242
14	6423 3222	0112 2112	4622 4566	1021 1000	0010 2333	2112 1333
15	2344 7678	1112 0111	7556 7674	0012 2113	3211 1114	1222 2222
16	6225 5344	1121 1101	4222 2233	2222 4323	2122 1103	1123 2564
17	1231 2120	1111 2212	3322 2310	3122 2200	2212 4654	5433 2444
18	0112 2212	1121 1111	2221 2202	0222 1223	2223 3143	5223 5744
19	4222 3211	1211 2211	1012 2222	3322 2123	3223 1232	2232 3424
20	1222 2312	1111 2011	3122 2211	2343 2342	2122 3311	3212 2324
21	3121 2211	1222 3233	0122 2224	1213 2212	1013 4545	2222 2112
22	1222 2311	1212 5432	2223 3200	0112 2143	2432 2222	3443 3223
23	1121 2323	3324 4321	2432 1112	1233 3424	3222 2314	3212 2113
24	2121 1211	1112 2144	1002 1112	2312 4545	2212 3443	1001 1022
25	2101 1210	4312 1131	0011 1112	5334 4344	3222 2412	1012 3111
26	0112 1201	1123 2222	3244 4555	3343 5656	3233 2523	0011 0010
27	1112 1211	1212 1111	3133 3346	4434 4554	2122 2202	0012 0003
28	0110 2111	1112 2343	8654 4333	4323 4543	1112 1220	2102 2212
29	0122 4323	2232 1233	2333 3232	2231 1433	2110 0113	0101 1102
30	4545 5455	3322 2231	2214 5375	4212 1000	2011 0001	2101 1322
31	3111 2111	3211 2111		1222 2111		2012 0002

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1939

	Jan.	Feb.	March	Apr.	May	June
1	2002 2202	2222 3344	3223 3345	3433 3454	2235 6566	2222 4533
2	0102 2100	4323 2364	5633 3122	3322 2534	5554 4434	4433 5433
3	2112 1001	2222 2244	3333 3435	2333 3334	5333 3333	3343 3313
4	0001 0001	2323 2112	5433 4355	3322 2244	2124 2321	3333 5433
5	1212 3224	1122 2244	3213 2343	3333 4311	2333 3465	2333 4312
6	2112 1333	3334 6675	2223 3433	1332 2110	4334 5546	2232 2211
7	2212 2133	4533 3353	3212 2222	1232 1311	6554 4433	3222 2110
8	3322 2143	2122 2134	3432 2131	1222 2334	5444 5344	2212 3210
9	3323 2134	2222 2253	2343 3241	3222 3343	4544 4522	1121 2102
10	2322 2232	3222 3423	3222 3223	6444 4455	2222 2431	3322 3221
11	2222 1344	5523 2121	1233 2513	5224 3544	2223 3211	1112 3112
12	2212 2102	1012 2000	3223 2343	3333 3223	2112 2221	3322 2202
13	1102 2202	0011 1124	2213 2001	3232 3232	1233 4222	3333 3334
14	3212 2304	1112 2231	0223 2213	2322 2322	1111 3221	5457 5434
15	1212 2201	4322 3321	1233 2422	1222 2122	1332 3323	2333 3323
16	2001 1243	1332 4424	4434 4434	1012 1003	3443 3312	4445 4421
17	4423 2123	2223 3553	4432 2241	5676 8787	2232 2334	2211 2223
18	3332 1003	3233 3242	3122 0101	2254 6555	3323 2314	3323 4334
19	1112 2123	2322 3242	0111 1122	4343 5854	4322 1224	4433 4324
20	3322 1222	1311 1422	4422 2301	5433 4433	4433 3322	4333 4212
21	3212 3351	1111 1010	1234 2342	4333 3433	3223 4434	4434 4533
22	1112 2144	0012 1121	2433 3544	4212 4454	5434 4325	3332 2423
23	3221 2222	4212 3124	4333 3345	4676 7663	3333 3345	3223 4333
24	1331 1112	2313 3878	2222 3333	3222 2699	5433 4454	3332 3213
25	2112 2101	8565 6645	2222 2013	7545 5545	4423 3644	2222 3112
26	0012 1000	1221 1223	3222 1345	4312 1221	4333 4442	2323 3244
27	0000 0000	1011 2111	4322 1365	0011 1327	3222 2324	4335 4322
28	0012 1123	1122 2423	4323 6667	6332 3333	4443 2123	1212 3434
29	4212 1003		5555 5654	2333 2322	4455 4443	3444 4522
30	2112 1000		4333 3565	2112 2341	1213 2101	4324 4323
31	0212 1101		4423 3234		2222 2113	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2223 3212	3210 2111	0222 1300	3212 2323	2122 2132	2232 1132
2	3333 3322	1111 1100	0232 1224	0021 2111	1222 2111	2112 0133
3	3345 6563	0012 1111	5545 3434	2134 5557	2012 2123	1112 1124
4	4222 5558	0201 2211	3312 3210	7733 3241	2122 1002	3211 1012
5	5555 6764	1211 2012	0211 1123	3223 2252	1012 1221	1111 3534
6	5533 2112	1122 1102	3222 2223	4523 3352	1102 1233	4211 2056
7	1110 1100	2102 2100	2222 3111	1002 3464	2212 1332	5543 6655
8	1111 3230	2101 0221	1112 1211	3322 2133	0011 1000	3343 3654
9	3012 2102	0112 2110	3343 4343	3253 4342	0221 0201	4223 3352
10	2211 2101	0214 3432	3333 4342	1122 3112	1201 0221	1112 4333
11	1123 5321	2221 3435	2212 2211	2223 3134	0200 0133	2122 1122
12	0122 4523	6767 6445	3322 2224	3202 0101	4202 3322	2202 1334
13	0222 2222	6634 4543	2113 3103	5554 4679	4434 6454	3222 2200
14	2343 5435	3232 1101	3334 2313	5666 5655	5333 3435	2002 1000
15	4222 2223	1001 2312	2212 2113	6753 3544	2222 2432	2221 2312
16	2333 4554	2333 8846	3122 3231	4333 4665	2221 2322	1101 1225
17	4343 2323	5534 3411	2444 5685	3443 3564	1212 2142	3112 1212
18	3222 2312	0112 2313	3222 2200	4333 3564	1212 2101	1112 0000
19	2132 2225	1223 3510	2323 5656	4334 3444	0002 3432	0111 0000
20	5544 5544	1122 2222	5444 3453	2122 0010	3222 0022	0011 0122
21	2204 7532	1122 2224	2223 3232	0222 3243	1212 2000	1132 5443
22	4334 3424	8756 8889	2123 2324	2222 1143	0011 0001	4222 4544
23	4222 3211	8665 5544	2012 0112	1223 4524	1111 1000	1222 1213
24	2222 4322	5222 3213	2222 2111	4222 2010	0101 2134	2222 3333
25	3443 2211	3323 3232	2113 2323	1122 2100	3442 2356	2222 2113
26	1544 5433	1223 2222	4434 2253	0121 1143	4333 3252	1222 2102
27	3322 3313	2223 3233	2201 1232	0122 1100	1322 1232	2112 2442
28	3233 2322	2122 2211	2112 1120	0012 2133	1211 2121	2122 2233
29	2222 2220	3102 1111	0012 1111	3322 2133	1111 2223	2222 2333
30	2222 1201	1112 2422	0023 2232	4212 3323	1212 1223	3222 1301
31	1212 2112	1100 1221		4112 2112	1112 0000	

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1940

	Jan.	Feb.	March	Apr.	May	June
1	2212 2243	4333 4554	0232 2210	7545 4444	2222 2333	1212 2122
2	4311 3114	4232 3443	1110 1212	2122 2266	1211 1211	2222 3312
3	1322 4955	3222 4535	1212 1223	8764 5563	1221 2101	1111 4212
4	3112 4665	2001 0534	0111 2013	3223 3433	2121 1112	3121 2111
5	2421 1014	2112 3323	2121 1000	3212 1333	2112 2122	2133 2133
6	3323 3553	2122 3143	0100 1102	4221 1122	0000 0001	4444 4433
7	4122 4335	4222 3232	1111 1011	0122 1111	2222 1211	4434 4334
8	3331 2224	3222 1243	2221 0144	0112 1200	1221 2101	3322 4443
9	2011 2453	3322 2103	5522 2222	2112 1010	3322 3332	2323 2343
10	2212 5564	---2 2133	1122 11-1	1211 1001	2232 3334	3222 2112
11	2233 3264	1012 1143	0001 2110	0112 2211	3322 3233	2112 3212
12	3332 4445	3422 3411	0001 1446	0212 2102	2333 2333	1202 2221
13	3322 2110	3121 2143	3222 1203	2223 4412	3212 3332	1111 2213
14	0011 1122	2112 2012	2211 1232	1222 2212	3223 3322	2133 4546
15	4202 2001	2122 3121	1001 1001	2223 4443	1322 3443	5444 4422
16	2221 3533	1122 2232	0111 2133	4332 3244	3222 1221	3133 3223
17	3232 4354	1112 2200	1111 0000	2221 2122	2223 2353	3333 4433
18	3223 4862	0010 0010	0111 0000	2021 1001	4455 5322	2343 2112
19	2122 1122	1001 1012	1222 3453	2212 2321	4222 2323	2333 3312
20	1111 2241	4432 2343	4334 3445	0232 3222	2222 4312	1112 2111
21	1011 1210	3322 4422	4322 2233	3222 2133	2421 2132	1212 1211
22	0112 1431	3332 2323	3212 2144	3332 3411	5444 3322	2113 4222
23	1012 1143	2222 1134	1234 4458	3212 2134	2322 2552	3221 1221
24	3222 2353	4232 2334	5443 7999	4111 3211	2657 3454	3332 4334
25	3221 3313	4344 5422	9989 6469	4732 3478	4322 2432	6758 9965
26	0011 1013	1121 2342	7443 2363	7432 4343	2332 3535	4232 2633
27	1121 2101	2321 2000	5434 3435	4222 3322	6323 2324	2223 2311
28	1010 1012	1212 2114	4333 3333	2112 3313	2433 4322	2102 2431
29	1101 3423	1232 3532	2124 4999	3322 2210	3222 2221	0220 2242
30	3332 3434		8878 7876	1223 4323	1111 1211	4422 3322
31	3332 4554		7348 8757		1111 2101	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3312 3121	4222 2223	4324 4420	5322 4581	2233 3130	2222 2244
2	1111 2122	1111 2351	1222 2233	1222 2433	0232 1102	3324 3554
3	2233 3245	2334 6532	4443 3334	1332 3353	3332 2233	3213 3434
4	5333 3234	3222 1232	4334 3234	4310 0321	3232 3454	1212 2341
5	3223 3344	2223 432-	3332 2331	3322 3210	3423 3231	3221 1232
6	3322 4332	---43	2222 3213	1112 3414	1222 1232	2111 0132
7	2122 3321	2222 44--	4443 3425	4444 5676	1133 2122	1011 0000
8	2211 2213	---03	3224 4312	5643 3455	2111 1011	0000 0010
9	2333 42--	3345 5464	4333 2334	4212 2122	1222 3432	0122 3214
10	---4 5323	2123 3422	2111 1011	0112 2234	1011 1000	2222 1322
11	3332 2222	3333 3343	0121 2210	2221 2114	0111 1003	2022 1224
12	2212 2121	2322 2323	1012 2121	4213 2214	3023 2455	2222 2433
13	1226 7533	3222 2202	0122 2221	2121 1001	5653 4432	4222 2232
14	3434 3323	1222 2223	2221 2344	0011 0011	3323 3325	2123 3454
15	3333 4332	2021 2111	2322 3431	1233 2232	3323 1243	2111 3243
16	2222 2212	1121 1110	1222 4320	3121 2351	4212 1554	3212 1222
17	2212 2301	1121 0111	0121 1111	2112 1013	1111 2455	1101 2133
18	1121 1102	1121 3424	0001 0222	2222 2233	3122 2003	3212 2110
19	2212 3223	2121 3324	1011 1100	3333 3234	1012 2111	2101 2003
20	1122 2122	3333 2231	0123 3332	3222 1124	0010 1234	3334 6755
21	2123 3332	2222 3224	2333 3421	3123 2444	4343 3225	4544 4452
22	2342 4332	3122 2412	1012 3221	3233 2021	3443 3165	3233 4432
23	3212 2222	2122 2122	1000 1001	0011 1000	3434 3142	3112 3365
24	2333 3222	1112 2110	2011 0013	0011 1100	2010 1114	2211 2244
25	3222 2312	0011 1114	3333 3534	0012 2244	2124 6754	2232 2333
26	3222 3201	3312 3235	2101 2674	2234 4554	5433 3420	1222 2043
27	1422 2201	4322 2323	6422 3465	3323 3443	2112 3443	2222 3312
28	2222 2102	3322 3232	5433 3553	3212 2252	1111 2224	2122 2145
29	1222 2143	3212 3111	3112 3132	1313 1120	3434 5545	4322 1354
30	2323 4343	2001 1122	2110 2153	3202 2012	3222 4343	2353 3462
31	4333 3333	3112 2224		2202 2211	4322 4441	

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1941

	Jan.	Feb.	March	Apr.	May	June
1	1122 3554	0011 2332	3676 9999	2112 1223	1102 2344	3321 3123
2	3201 3312	1111 2133	6344 2544	3122 3324	1222 2223	2112 2100
3	1001 1034	2443 3243	3323 3541	3311 2343	2212 1232	1012 2211
4	3212 1200	3222 2232	4444 4357	2121 1003	1334 2223	2112 2101
5	0001 1211	2222 2254	5423 5456	2122 1213	2112 3211	1122 2211
6	3443 12--	4344 3343	3223 3451	3321 1113	1223 2231	1214 3211
7	--43	4532 3444	3213 2354	0113 3354	2222 1122	1111 2201
8	2221 2124	4332 2453	3202 2244	2112 2232	0012 3242	0123 1200
9	2223 4342	3332 1243	3222 1144	2433 4411	2332 2133	1124 3322
10	4212 2343	3222 2232	3222 1132	2242 3555	4223 32--	3233 6533
11	3222 3143	2121 1242	3222 2145	3243 3344	--11	5333 2442
12	2110 1313	1122 1133	2123 3334	3333 3312	1211 1122	2312 3322
13	3112 2124	4234 4446	3222 2344	3112 1112	3222 3311	1345 5344
14	1111 0010	5334 2532	6545 5465	2111 0010	1111 3202	5331 3224
15	1021 1013	4433 4442	2243 3243	0112 2212	3122 1211	2434 3232
16	2122 3411	3411 1134	3212 1110	4204 2110	3333 5422	2112 2211
17	5233 4665	3233 3353	0222 2022	1123 3211	1443 4233	0123 3354
18	4333 2564	2222 1231	3000 0114	4212 4225	2321 1233	4332 3321
19	4333 4534	0012 1421	1114 5343	3553 3444	2311 1111	1102 3233
20	3222 2024	1112 3245	4332 3635	2232 3233	1101 1112	3343 3334
21	2210 0022	3222 5645	4333 4465	3232 2230	3222 2445	3232 4233
22	1111 1143	3434 5665	4434 3564	1121 2122	5424 4353	3132 3232
23	4123 4555	4333 4565	3122 3545	0002 2111	3233 3244	2211 2212
24	3333 5554	2223 4644	3222 2334	1135 64--	3543 2333	0112 2233
25	3333 3544	3222 4364	2122 1242	--44	4233 3233	2102 21--
26	5233 3344	3333 3330	1121 0111	3323 3213	3323 3232	----
27	2223 4543	0011 1331	0111 1011	2111 1211	3211 2232	----
28	3212 2343	3213 2323	5335 5666	2312 2444	3122 3223	---- --21
29	2122 1203		4333 4566	5232 1002	2322 2212	3122 2221
30	3312 3343		4443 4678	2211 0100	2212 2321	1222 2203
31	2011 1100		8535 3443		4212 2341	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3222 2223	1132 2232	2232 3443	1121 2131	7554 6641	3255 9856
2	3223 2221	4435 5443	3232 2333	0222 2143	1020 0143	5532 3430
3	3201 3344	2332 2424	3222 10--	2112 2102	2101 2303	0101 1254
4	1543 3355	4655 9766	---1101	2011 1103	2211 1102	3223 3253
5	7589 9978	7333 4243	1112 0000	2222 1101	1111 2445	1111 1344
6	3245 5554	2343 3445	0001 1111	1012 2212	3334 5566	3212 2312
7	7643 3442	4333 2333	0323 4344	1010 1101	4123 3533	1212 1132
8	1223 4341	2122 2121	2232 2133	3321 1332	3322 4251	2110 2224
9	1213 3344	1022 1112	3231 1125	1211 2121	2112 4533	1012 2224
10	4322 3444	2122 2012	3121 0130	0011 2243	3212 3433	2111 2202
11	3223 2110	2222 2232	2222 2213	3233 3576	5333 2343	0100 1000
12	2122 4022	2222 2213	2211 0000	5532 1423	2221 1133	0101 2222
13	1112 2111	3212 2323	0012 5545	3122 2232	1121 1312	2012 2253
14	0012 2112	2332 2111	3333 2334	2222 3323	2011 1112	4423 5454
15	1012 3211	2101 1112	5333 3365	3332 2343	1010 1122	3222 2114
16	2323 3333	1212 2220	5322 2243	3321 2444	1111 0003	3532 1112
17	3222 2332	2201 0012	2131 3441	1122 12--	3333 5665	3223 1434
18	3111 2221	1022 2233	2678 9999	----	2133 345-	2243 3313
19	3312 2112	4334 3323	9885 4584	----	12-33	2011 1222
20	1233 2332	2112 0101	4445 5331	1122 2223	2112 1132	1002 1210
21	3454 3253	2122 1342	1523 4401	221- -01	3221 2133	0000 0013
22	4323 43--	2002 1032	1321 1000	2212 3575	3112 1444	2101 1222
23	--3 4223	1102 0112	1011 3432	2212 2244	3322 2314	2201 2324
24	2222 3333	2233 2232	3333 3255	3122 3354	3112 0023	2111 2332
25	2332 3220	2122 1143	4222 3352	3211 1110	1111 2032	1011 1011
26	0111 2122	4122 4345	2123 1111	1122 2035	0111 1011	1212 1214
27	0012 2202	6435 5456	2231 2421	2222 1013	0222 2112	3322 1124
28	1111 2001	4343 4123	2121 2123	2113 2232	4544 3365	3211 1122
29	1112 1112	3334 3545	1322 2323	3--- --32	2222 1121	311- -324
30	2222 2221	5422 4343	3222 2142	2212 2233	1001 1232	2101 -233
31	2111 2223	2232 3343		3432 3467		3100 1332

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1942

	Jan.	Feb.	March	Apr.	May	June
1	0011 0011	0001 2112	3288 7567	2232 3122	3332 2211	2221 2121
2	1221 3453	2233 3411	7632 5432	1232 4446	0112 3332	0011 2200
3	3321 2333	2221 0120	4444 4634	4542 3335	2211 2112	1122 4433
4	2432 5445	0011 1121	3323 2443	3355 4783	1101 3354	2001 1222
5	3323 1353	1323 3462	2442 3576	3212 3322	6411 2223	3230 2201
6	2222 1453	4433 3555	4533 2301	2222 1013	2211 2210	3222 1201
7	3213 3331	4212 1102	2233 3443	1012 2102	0112 1111	2221 2010
8	1000 110-	1111 1002	5532 2364	5533 4443	0111 2211	2211 3201
9	----	2001 2101	6632 2445	2123 3322	1122 1111	0112 1001
10	2211 2323	0011 2422	2223 2432	0102 1204	2211 2223	0111 0111
11	3121 2132	2120 2234	4422 1112	5444 5333	3212 1201	1224 5552
12	2112 0243	2110 0010	1111 1002	1112 3222	0112 2211	4223 3422
13	1011 2120	3211 2011	4434 4324	3123 4455	2112 0102	3222 3443
14	1001 0113	0012 1214	2244 3424	7334 4410	2442 2211	3332 3332
15	1012 2312	3222 3043	3113 3131	0112 2112	1321 2132	2321 1111
16	2112 1442	4122 2214	2011 0121	2332 3345	1012 1241	2122 2231
17	4233 2101	2321 1021	3231 1132	6644 3333	2111 1122	2223 3321
18	3322 2135	2110 0000	0023 3445	3233 5444	2102 1223	4222 2210
19	4432 ----	0001 2012	2223 2445	4233 2342	1111 1220	2213 4534
20	---2 1112	1122 2323	6422 2130	3213 3421	0211 3323	3322 3312
21	0001 1123	3321 2122	3333 2554	0102 3220	3212 2322	2231 2001
22	0222 3223	2212 1132	4332 3233	2202 2200	2242 2344	0111 2111
23	2111 1201	4211 4776	3212 2344	0234 5443	3212 2313	1112 3321
24	1011 1003	5344 3323	1323 2201	4323 2320	1212 2122	3223 2202
25	1002 2122	4211 2255	2123 2210	1102 2121	2012 2110	3221 2231
26	1112 1111	3211 1022	0034 5521	1112 2111	0011 2101	1111 1222
27	0011 1222	1111 1343	2312 2133	1112 3334	0214 3453	2211 2200
28	2222 2232	2223 6633	1122 2110	5322 2203	2441 3332	2122 3323
29	1101 1132		1322 3332	1101 1002	2211 2211	4211 3232
30	2212 2222		2122 3532	1112 4332	3111 1131	3432 3332
31	0012 1000		1223 3123		1101 1212	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2333 3221	2211 2122	1112 3431	0011 1112	2232 2412	2000 1243
2	1222 1232	1112 2223	2343 2224	3224 5764	3123 2553	3200 0001
3	2112 3201	3222 2222	3221 1100	5543 4654	3111 3433	3000 0114
4	0112 1101	1222 0231	1122 2332	3343 4634	1133 2133	2211 3321
5	1122 3322	3112 2123	1312 2343	3332 5333	2121 1113	3101 0210
6	2210 2312	1112 4443	3123 3435	2212 1023	3210 0213	0000 1023
7	2112 3223	4233 2243	2222 2422	4222 3433	2222 3322	2002 3345
8	3335 5353	2111 1101	3222 1210	2212 2142	2223 4153	3021 3465
9	3222 2433	1112 3232	0212 2131	3011 2120	3100 1312	2222 4445
10	2222 2313	2223 4554	2321 2201	0122 2123	2121 4223	6333 2233
11	4444 6643	3223 3101	2111 3446	1012 1354	3232 3153	1222 3034
12	2325 3232	2213 2213	4454 3544	3334 4543	1221 3233	3222 3203
13	4222 2312	3101 0002	3232 3344	4323 3634	3221 4343	3001 0212
14	2223 3443	2211 2101	4333 3555	4233 5655	2233 2254	1112 2422
15	3233 3555	1112 2234	3333 4452	3443 3454	4200 1333	1100 1132
16	4223 4333	4432 3364	3332 2335	4222 4453	3211 0032	1202 1423
17	4423 2221	2224 3444	4234 4444	3332 2343	1211 2223	0000 0112
18	2222 1111	2333 4343	3333 3464	2222 3554	3222 1242	1100 1100
19	1112 3301	3333 3454	3334 4533	5343 4632	1012 1231	0001 0001
20	2234 4234	3223 3243	3323 4444	3213 5530	2223 2353	3201 0444
21	5322 2233	2223 4223	4344 5553	0012 3412	2122 2133	4433 4454
22	2222 3212	4332 1214	2333 3424	2111 2021	1010 0222	4423 3130
23	3122 2342	5433 5665	3222 1012	1010 2110	1000 3535	1223 5553
24	3322 2243	3322 2444	3121 1222	1111 1112	6644 5353	3122 4443
25	4333 4344	2332 3233	2122 2212	1333 3121	4333 4544	4211 3334
26	2122 3124	2233 2243	2112 2313	2221 1033	4533 5553	3322 3454
27	4333 3343	4333 3221	1112 2224	3122 1222	2123 3244	1201 1012
28	3333 3332	1111 0111	2112 2112	0012 4787	2223 5545	1100 1210
29	3222 1213	1012 1122	2112 2220	5465 4566	4213 3432	1101 1312
30	4222 3233	1001 2332	0022 1132	4433 4643	1120 3231	1010 0001
31	3222 3222	3212 3212		4334 5444		2000 0000

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1943

	Jan.	Feb.	March	Apr.	May	June
1	0010 0044	2101 2213	0122 3321	3322 2333	4444 4456	2212 2233
2	2011 1212	2111 2112	1233 2120	3222 3213	5322 3533	1213 3212
3	2101 3323	2212 2243	1123 3244	5533 4534	3111 2434	1112 2212
4	2223 5644	2312 2233	3224 3344	4323 4353	3222 2313	2213 1100
5	3321 1334	3212 1343	2333 2534	5312 3624	2223 3313	2212 2222
6	2221 2332	3121 1423	3122 2243	4234 5435	3112 2201	3322 2111
7	1000 1001	2110 0123	2212 2132	4423 4243	2311 2102	1213 4334
8	0100 1144	3111 1141	3311 2333	3223 2100	2101 2210	2434 4534
9	3222 1011	1112 1032	3112 2223	1112 2113	0111 2211	3344 3333
10	1111 1113	0011 1132	2012 2122	1323 3353	1112 2321	1333 3413
11	1100 0103	3232 2121	3112 2254	5533 3344	1112 2423	1114 4422
12	1211 1013	2202 2033	3423 3554	2102 2111	3422 2122	1223 4232
13	2101 1102	2332 2233	2112 2101	1112 1201	2134 4424	5323 3434
14	0111 0001	2112 0003	2323 2202	0103 2201	4423 2213	4333 3311
15	0001 0012	2111 1121	0011 0201	1112 2333	5423 2132	1211 1112
16	1000 2432	1011 0121	2234 3355	3234 3222	1104 4353	2000 1111
17	3113 2553	2445 3355	3114 3203	3123 2211	3333 2455	2102 1101
18	2111 2241	331- -203	1121 1330	2222 1101	4544 3434	0111 1211
19	2110 1323	3112 2321	1013 2335	2301 2111	4432 4343	1213 3424
20	2112 2676	1112 2310	2234 3462	0123 3303	2212 2211	5322 3233
21	3323 5434	0002 1122	1113 1321	5334 3351	2111 2210	3223 5433
22	5223 4544	0012 2122	1213 2456	1132 1212	0111 2111	3333 3343
23	3222 2212	3112 1232	5433 3344	0111 1101	1223 2323	3322 4344
24	2211 2232	3222 1124	1122 3510	0101 2101	4322 3344	4433 4543
25	2111 1010	2112 2444	0222 1000	2323 3325	4232 5343	3222 3333
26	3313 1323	5422 2354	1111 0213	5443 3234	3122 2333	1112 2123
27	2101 2400	4222 2133	2012 1232	4111 3220	4422 2234	3112 2214
28	0122 2441	2012 1220	0012 1123	2111 1123	5433 3433	2333 4243
29	2101 1022		2223 3467	3231 3223	3322 2131	3332 2211
30	4311 1022		5423 3253	3324 3233	3232 3211	1202 2110
31	1111 1222		4222 2544	1112 2212		
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1123 1211	3221 3443	5434 4542	5433 5454	3223 5552	0011 1444
2	0113 1124	3333 4353	5424 5354	5333 4665	2122 1320	2212 2564
3	2433 3221	5333 4343	4434 5436	4333 5645	1011 0113	3232 4554
4	2223 4554	3333 5442	3434 4442	4333 4423	1112 1103	4323 4444
5	4433 5554	5343 4333	3423 3444	3122 2143	2322 4322	3322 3432
6	4445 4434	3231 2442	3223 2331	2212 1211	2322 3755	1001 0001
7	4334 3333	2234 4401	2112 2222	3223 4335	3233 1153	1112 2101
8	4334 4432	2424 7767	3123 3455	4224 4454	2223 2333	1101 2421
9	3354 4453	7532 4433	5343 4345	3444 4564	3221 1232	2221 1322
10	3434 5421	3322 2113	5433 4444	3233 4622	2111 1244	4212 2301
11	2334 4333	2203 1222	4333 3435	2223 3233	1210 0020	1102 1211
12	3222 2343	2222 2223	4213 2353	3322 1101	0002 2132	1000 0122
13	4233 4432	3445 5456	4434 3552	1102 3212	0001 0133	2111 1031
14	3213 2120	4333 4454	4314 3244	1011 1242	1111 0332	1012 3422
15	1223 3332	3332 3443	4221 2334	1011 1101	1100 0111	2101 0155
16	2312 2332	3434 3433	3212 2443	1210 2113	2311 2243	3134 5555
17	4113 3223	4343 3334	3322 2233	1113 3133	1010 0111	5434 3634
18	3224 4444	3345 5441	1112 1025	1111 1334	1112 3432	3323 5352
19	3433 3333	1234 3554	3333 2232	2212 2220	0354 4555	4334 3765
20	3223 3312	5444 4344	2111 3314	0111 1354	4434 4653	4224 5545
21	3233 4423	3442 3213	4324 3353	4221 1001	5433 5654	4222 3265
22	2323 3323	2212 2322	3333 4423	1124 2635	3333 4644	3223 4554
23	2223 3321	2212 4223	3322 1223	4222 3123	3333 4656	2222 4243
24	2323 2101	3443 3423	3112 2121	3224 6555	5333 6565	3222 2142
25	1212 2111	3433 3434	1333 3312	5334 5554	4334 5675	1322 1133
26	2234 2232	3334 3332	1333 4444	5545 6554	3433 5656	4122 2643
27	3223 3311	1311 3132	4334 4454	2334 2465	5544 4354	1222 2231
28	0123 3122	2214 6535	6433 5444	5534 3654	4334 1354	2110 0011
29	2212 1102	4433 4553	4444 6565	4333 5464	4443 3463	1212 0252
30	2334 3442	5653 5567	5435 4466	4434 4555	2211 2411	1101 2211
31	3223 3224	7756 7765		3535 4444	1112 3435	

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1944

	Jan.	Feb.	March	Apr.	May	June
1	3122 5562	2112 1032	1222 1112	3011 2255	3223 7645	2122 2321
2	2110 1242	1212 0133	3322 2342	4467 5464	4444 4322	1223 1122
3	1000 2001	1100 0021	2212 1111	4432 2234	2222 4212	1121 2111
4	2211 1143	1212 2241	2134 4423	3234 4433	1214 2454	1222 2133
5	4212 0333	1012 1233	2122 2333	3334 3454	4223 4332	2212 2322
6	1101 2133	2011 1101	3433 3353	3234 3544	4223 3352	2121 3221
7	3111 0221	2123 5664	4333 5634	4222 2365	2233 3443	0112 2311
8	1101 1231	5342 4545	2323 4453	4213 4243	3222 2122	0112 2111
9	3101 1313	1243 4453	4324 4444	1112 1234	1211 2132	1112 3322
10	2122 2235	2333 3453	4334 5554	4433 4413	2212 1113	2223 2112
11	3323 2653	3323 3443	3333 1252	3112 1434	2212 2122	1211 2332
12	3333 5543	3322 3342	4333 3444	4212 1121	2212 3223	2112 1201
13	5333 4363	1121 1435	4333 4521	1102 0101	1212 2112	0112 2232
14	4333 4643	5643 4343	2333 2141	0113 1110	1113 1113	2212 4123
15	4332 2455	4322 3444	1122 2133	2012 3334	3223 2111	4422 3433
16	4333 5533	2222 1212	2323 2311	5323 4623	1212 2122	3223 3323
17	3333 5444	3101 2123	0013 1111	3313 2123	2122 3102	3222 2313
18	2324 3444	1101 2000	0122 1356	5011 1112	2212 2111	2222 3111
19	3322 1532	0101 1100	6623 3245	1011 0121	1011 3221	1122 1113
20	3212 2334	1003 4344	5012 1131	2121 1221	1011 1111	3322 3233
21	3110 2231	3222 1222	2212 1233	0112 3210	1212 2112	3323 3212
22	4111 1131	3201 0011	2313 3222	0012 1101	1111 2122	3423 3513
23	2211 1024	1111 1112	1222 1244	0012 1001	1212 2221	2243 3423
24	2111 1310	1001 0023	1111 2200	3233 3222	3232 3234	2222 2111
25	0001 2214	21-- ----	2012 2333	3111 1133	1313 2222	1112 1231
26	1001 2334	--01 1021	4234 5325	3112 2343	3222 2311	2212 4444
27	3122 2243	2101 1001	7644 3453	2113 3343	3323 2211	3313 1222
28	3212 1131	2112 2132	2112 3334	3223 2342	1122 3212	1123 2112
29	2111 2232	0212 2233	5543 3332	1322 4221	3223 3535	3432 3312
30	1201 0113		4222 3434	3343 2323	4224 3211	2222 2312
31	1111 0333		3223 3123		2221 3423	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2211 2322	2213 3111	4212 3213	4223 3545	1011 2112	2102 3432
2	2213 2112	1223 3445	4433 3333	1012 2133	1211 0011	4222 2453
3	1222 2212	6633 3243	3123 2221	3332 2444	0111 2310	3222 2332
4	2212 1221	3212 2112	2112 1244	2002 0232	1112 3422	2220 1031
5	2212 2311	2211 2223	3212 2101	2211 1202	3322 2545	1111 2213
6	1221 2213	2312 2221	2012 1213	1111 1354	3321 4112	3211 1232
7	4213 2312	2212 3312	1221 1110	2112 2142	1011 2233	1000 0001
8	1122 2222	1112 2342	0112 2244	1121 1002	2111 1101	0011 1122
9	3333 2222	3223 1211	3112 1132	3121 0011	2122 0132	2201 0122
10	2311 2231	1133 3223	1222 1233	0012 1133	0002 3530	2101 1011
11	2223 2111	3322 1234	1212 2113	5512 4524	0001 1310	1111 0000
12	1112 3233	4433 3223	2123 2223	1222 0333	2011 0000	1110 1021
13	3212 2211	3123 2221	1012 2323	3122 3434	0000 0011	1122 3543
14	2122 2322	2011 2243	3212 3321	3013 3556	0000 1222	3432 2220
15	3232 3221	2222 3111	1212 2000	6532 1346	2000 0012	1111 0134
16	1112 3332	1111 2313	0112 1101	2122 2333	1111 1100	3235 8852
17	1333 2122	3212 1221	1012 2211	3233 2014	0010 0012	2534 7756
18	2213 2132	3343 3442	3221 1121	3213 1321	3110 3311	4343 3432
19	3223 4223	4222 2101	1102 2001	2112 1011	3211 1221	1112 1323
20	2333 3222	3111 2111	0112 2235	0012 1334	1312 3534	1122 1233
21	1313 2222	2212 2032	5323 2322	2112 1222	2111 0012	4312 1212
22	1322 2232	1212 1103	3113 2244	1212 1322	0000 0211	2111 2343
23	2112 2211	4212 2232	3311 2135	2122 2545	2011 1220	2111 0032
24	0012 1111	3323 4312	4233 4133	4223 2343	1100 0001	1101 1221
25	1212 2111	1212 1211	3212 2244	3112 1142	0000 0000	1111 0102
26	1113 2112	1211 2233	5112 2223	3233 1333	3111 1201	1102 2233
27	1112 2212	2111 2232	1233 2343	3111 2421	0110 1010	3323 6755
28	2112 2213	2144 4333	1212 1232	1223 2232	1100 0011	5112 3222
29	2112 2222	1012 3212	1213 2133	1012 1132	0111 0110	1222 2342
30	2213 2122	3222 3132	1122 4664	2122 2101	2101 2312	4322 3434
31	2323 2123	3324 2433		3222 2442		2110 2224

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1945

	Jan.	Feb.	March	Apr.	May	June
1	2112 2142	2100 1111	1102 1212	2345 6554	4323 2132	0111 2121
2	3221 1322	1001 2333	0123 2411	5322 2431	3422 4311	1111 2122
3	1112 2341	2201 1212	3222 2231	1211 1200	3212 3433	1223 2111
4	0001 1354	1110 1112	1022 2222	0112 3312	1122 2123	0013 3211
5	2111 1120	2542 2241	2123 2565	0013 2365	1121 2112	1211 2212
6	3102 2012	4123 1133	3123 3543	2333 4543	0222 3322	2334 4334
7	1112 1023	1112 1241	2222 2321	3333 2215	0122 2123	3332 3242
8	2001 2111	2232 3414	3424 4411	4333 3302	1222 3111	3333 4333
9	1011 0215	3222 3333	1123 1233	1201 0110	0121 4444	2232 2333
10	5333 3330	2213 1122	2122 1103	1211 2002	2211 3234	3333 3323
11	1010 0022	2221 1321	5424 5542	0135 5435	2333 4443	3221 2241
12	1000 2233	2222 1302	2225 5666	4323 2445	3312 1244	1222 1111
13	3321 1000	0112 1101	3213 3221	3322 2124	2222 2333	1222 3321
14	0110 1111	0012 2124	1123 2344	4423 3444	2212 3413	2323 1121
15	1322 4653	4323 3254	6543 4656	3223 2222	2212 1112	1122 3101
16	4222 1134	4222 3363	4233 4534	1222 2232	2212 2213	1123 2223
17	3213 2352	2222 2452	2121 1323	2122 1100	3222 3333	2323 3421
18	1101 1124	3111 1203	2222 3433	0212 2102	3223 3323	1211 2222
19	3212 1352	2112 1102	3223 2111	3213 3224	3212 3334	1222 2223
20	2322 2211	1011 2212	3212 1264	4323 3220	3233 2311	3223 2222
21	2111 1114	1011 1012	2222 1251	1012 2102	2112 4421	1211 2302
22	2101 0122	1012 2123	1222 1000	2102 1243	1102 2212	1122 2212
23	1101 0022	1002 2211	1211 1011	2213 3424	2232 2221	1123 2111
24	0000 0001	2112 1232	1112 2323	3233 2343	2321 3221	1122 2112
25	1100 1001	4211 2152	3212 2425	3222 2202	3433 2233	3312 1121
26	1002 2342	1211 2654	6434 4565	0111 2212	2112 2232	1122 2112
27	2112 2111	4232 3363	3324 3444	2322 0211	2111 3332	3223 3221
28	2100 0345	2211 2342	3346 6321	0112 1111	1113 2322	1312 2312
29	5633 3665		1333 3223	2112 3232	4322 1332	1213 1101
30	3422 2401		1221 2211	2124 2342	2222 3434	2223 4423
31	1100 1003		1111 1213		3223 3311	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5433 5443	1112 2232	2111 2133	3211 1243	1010 1001	0100 0011
2	4212 3312	4422 3333	2223 1102	0212 3201	1011 0021	0100 1003
3	4322 2222	2221 2221	2011 1112	2112 2101	0002 1103	1100 1011
4	1224 3423	2222 1113	3133 3242	0112 1101	2001 2113	1000 0000
5	3323 3233	2113 3322	3222 2322	2212 2333	4212 1101	0001 0143
6	3443 3322	3322 3212	2122 2132	1012 2133	0011 0100	3101 3234
7	1223 3224	1223 2223	1112 2212	2111 1135	0000 1221	3221 0013
8	2422 3333	2113 2321	1011 1233	3113 3311	0012 2454	3322 4222
9	2122 3211	2212 2111	2011 2102	1221 1200	3454 3544	4222 3422
10	11-- 221	1012 2111	1022 1221	0012 2100	3321 2112	1211 2211
11	1222 2312	3212 2223	1112 2345	0011 1001	3322 4351	2011 1111
12	1222 2211	2222 1212	4333 3221	1123 5564	4333 1252	0001 1121
13	1112 2102	2123 3203	1113 3342	3132 1123	2232 2233	1001 3355
14	1114 3311	3322 3342	2112 1121	2112 2443	2111 1232	6654 7611
15	1113 2212	2122 2324	0112 1101	1122 2322	2112 1232	1212 2224
16	2212 3334	4112 2112	1112 2223	1122 4431	2222 3444	1110 0022
17	2123 2443	1112 3321	4334 4545	0112 1342	3122 3000	4312 2313
18	3323 2222	1112 2111	4434 5656	2112 2121	0101 0100	1001 2121
19	3323 1123	1001 1001	5122 1133	2112 2235	0000 1111	1001 1245
20	1113 2201	2112 1001	3213 1320	4211 2143	0110 0001	4242 2364
21	1112 1211	1113 3221	0012 2223	1112 1224	0000 0013	3422 2002
22	1111 2121	1121 1343	2112 2121	1012 3423	2200 0101	1010 0011
23	0111 3325	4311 2212	1112 1000	2011 1102	0000 0320	1100 1354
24	4123 2120	1212 1011	0102 1221	3334 5565	0001 0001	2223 3411
25	2212 1212	1213 2101	1213 3123	6523 5531	1000 1232	0023 4654
26	1122 2221	1112 2211	2111 2431	1112 1102	0000 0001	4323 3343
27	2113 2101	2112 1342	1214 3222	1012 2336	1100 0011	3322 5463
28	1233 4223	562- ----	2322 1121	7423 3554	0010 0012	4332 5434
29	3111 3324	---3 2202	1111 1232	2112 2323	1212 2152	2322 2334
30	4422 3213	1212 2212	3233 2233	2122 4311	2100 0011	2212 2121
31	3122 2102	2212 2133		1111 2123		2211 2011

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1946

	Jan.	Feb.	March	Apr.	May	June
1	1122 2342	0111 1211	4433 2213	5333 2243	1221 3233	1121 2221
2	3111 2431	3232 2122	4333 3211	4323 4336	4212 2312	3322 2221
3	0136 6778	1101 3333	1122 2123	1112 2322	3211 1132	0211 2201
4	5534 3665	2112 4303	2323 3356	3312 2213	3223 3322	1223 4312
5	3211 1133	3311 3333	5324 4433	2213 3322	1211 2224	1111 2143
6	3122 1441	4022 3123	2323 3433	2122 2133	4544 3435	3323 5322
7	0111 2342	3138 8799	2223 2233	3323 3321	4654 4212	3135 7543
8	1112 1130	9767 6653	1121 1233	1123 3123	3463 4334	4435 5535
9	0011 1121	2134 3333	0022 3453	3234 6635	5443 5554	4332 3422
10	0112 2221	2343 4322	5544 4466	4213 2103	2443 3323	2221 4431
11	2443 3244	2212 3131	7333 3444	2122 1121	4455 5522	2223 3332
12	2122 2232	0201 2334	1122 2110	2213 3334	2323 3221	1223 5545
13	1111 0031	2234 3211	1122 2232	3433 3344	3311 3123	3423 5321
14	0111 1111	1244 2443	1111 2131	3134 6334	3221 3212	2223 3232
15	0011 1122	3532 2221	2132 2332	4455 6661	1112 3212	1233 4231
16	3221 2112	1111 2123	0121 2113	2211 2234	1222 4222	2223 4345
17	2112 2444	4222 1011	3423 3553	3222 2111	3422 4422	6443 2223
18	1111 3444	2112 1222	2222 3231	1212 2220	3434 4312	3332 2444
19	4311 1133	2332 2456	1121 2123	1011 1323	1121 2211	5434 4443
20	2100 1000	2122 2256	3113 3232	2112 2210	1212 2324	3223 3321
21	0001 1013	5554 7641	2423 3211	0211 2210	4343 4443	3333 3233
22	4322 2013	5432 2343	0344 4223	1124 3342	3554 5453	3123 4341
23	3322 3225	4333 3451	3222 2347	3334 7889	4334 4454	1133 1111
24	3333 5553	2112 1144	9854 7935	9756 4754	4323 4433	1222 2122
25	2121 4441	3323 2333	8747 9998	4421 1011	4332 3432	2322 3332
26	2333 2531	2111 1232	7554 2453	2232 2223	3323 3311	2222 5433
27	2321 1123	1112 1110	4322 3435	4222 1001	1221 2112	2223 3334
28	1101 2113	1112 1111	4589 9999	2122 2342	2222 3321	2432 4233
29	1212 2132		6456 5433	1233 2223	3222 3332	2333 4565
30	2211 2123		2223 1223	2222 2221	2111 3222	1112 3220
31	2011 2313		1223 2125		3322 3222	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1112 3321	3322 3322	1212 3211	2223 2352	4333 3545	2111 0323
2	2322 2222	1213 2112	2332 2232	1331 3333	2132 2033	3112 2233
3	2334 3222	1212 1212	2312 2323	3332 2311	2121 1102	5322 2111
4	2122 3311	1111 3211	2233 3424	2322 2322	2023 1122	1110 1111
5	2212 2312	1202 4222	3223 3323	1322 3551	1124 3232	1122 2323
6	1222 3222	2113 4322	3311 0001	2322 2343	2123 3423	2311 1023
7	1444 4443	2423 5453	0134 4343	3323 3321	3312 1110	2322 1322
8	4323 4422	2111 1323	3122 2243	1111 0011	0012 1023	2411 1011
9	4324 2432	2112 3231	2222 3442	2443 3234	3213 3214	1112 1131
10	2323 2323	1112 2233	2134 3215	3132 3144	3222 2255	3113 2424
11	3313 4333	3444 5434	2113 3332	3232 2232	4423 2134	2112 3354
12	2222 3211	4322 1225	2133 3233	3341 1123	4432 2241	3114 4434
13	1112 2312	3232 2222	2211 3222	3012 1002	1123 1233	2122 3221
14	1212 4533	2334 5365	3112 1123	1122 2121	1112 1002	0111 0000
15	2423 2311	4423 3444	1112 2311	0123 1112	1143 3344	0001 2111
16	2124 4433	3322 3355	1112 4586	1033 2133	4331 2144	1101 1123
17	3333 3313	2334 4334	6421 2456	1122 1010	1311 0114	2212 3124
18	3224 5655	2322 1222	8757 6795	1021 1002	3112 1103	3212 1121
19	4333 5433	3112 3221	6633 8643	1022 1134	4232 2344	2243 4651
20	3211 1212	2222 1231	3233 2232	4332 2243	3312 3343	2311 0111
21	2333 3423	2222 2102	3123 3545	2122 1122	3133 5344	1134 3313
22	2323 3324	1201 2102	4879 9986	1021 2011	4223 1522	3332 3333
23	3235 3422	1112 2122	7766 7857	3222 3202	3121 1101	1133 4324
24	2112 3221	1221 2112	5333 3310	1112 3112	1333 5410	3322 3322
25	2324 2434	3223 2211	1122 2221	3111 1224	1323 3553	3222 3255
26	4334 4479	1111 2221	1112 2212	4433 2347	4321 2310	3335 6454
27	9996 6433	1212 3113	2333 3655	6543 5545	1001 1000	4533 2265
28	1322 3434	2210 2221	4455 6898	3222 2412	0110 1011	4422 4222
29	4555 4644	1201 1112	8332 4554	3212 3143	0001 1001	3333 3333
30	5544 5522	1101 2133	4433 3564	1121 2101	1011 2103	1222 2212
31	3222 2322	5654 4422		0023 3534		3232 2224

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Loc: 1947

	Jan.	Feb.	March	Apr.	May	June
1	1213 3312	3321 2022	3111 1112	1233 3332	3332 4332	6543 3222
2	0032 -642	0012 2121	2365 5578	1323 3411	1212 2002	1333 3222
3	1232 2445	1022 3322	6556 5798	3423 2433	1222 2121	2323 3321
4	2224 4554	3233 3123	7655 4364	3233 4344	1223 2121	2223 3231
5	3344 -464	1012 2112	3222 2210	4233 2321	2322 2321	2254 4445
6	4332 4244	1133 2232	2222 2222	4433 3331	0123 3322	5222 1022
7	3322 1435	0022 3232	1334 4332	1224 3312	3211 2100	2324 4435
8	4351 2210	2133 4565	2335 9778	0123 3216	0212 2110	4423 3333
9	1011 0101	4322 1355	7544 3343	6345 4323	2212 2211	3432 3433
10	1001 0000	4124 4312	2223 2121	2232 3203	1222 2212	3323 3222
11	0100 0101	1122 2112	1123 3110	3223 4323	0122 3332	2223 3332
12	0001 1000	1022 1213	3334 4421	1223 3334	4223 2222	2322 3233
13	0001 1002	2122 1010	1243 4332	3223 3233	3332 3345	2223 3545
14	1012 1110	0022 2111	2333 3542	2222 3242	5444 4332	5755 5553
15	0012 1122	0023 2210	2356 6833	4313 4323	4534 4444	3324 3322
16	2633 3563	0334 6755	2232 3455	3223 3434	5434 5334	2223 3222
17	3223 2134	6533 3522	5422 2332	4312 6699	3323 4233	2443 5553
18	2122 3432	4222 2233	2212 3443	5424 5736	3221 4543	2323 2333
19	2223 2223	2123 4445	3221 2342	4333 4425	2233 3322	3423 3432
20	3101 2231	4413 1120	3322 2232	4444 3451	1322 2322	2122 3332
21	3211 1120	0122 2101	2123 2314	0321 1111	2233 2223	1323 3323
22	2111 1333	0022 2013	1443 2341	0012 1100	2112 3223	3433 3433
23	1111 1132	1112 1000	3324 5633	2221 2101	4543 4321	3333 5422
24	0143 3234	2123 3221	4553 3232	0112 2101	3457 5432	2322 3423
25	3555 4665	1123 2214	3322 2333	0223 3532	3324 4232	3433 4223
26	3533 3552	4323 2103	4323 4444	3332 3433	3334 4434	2334 4333
27	2222 4353	3213 2102	3333 2344	2234 4331	3433 4422	3223 3221
28	4111 1132	2013 2214	6644 6656	2322 4332	2223 5433	2323 3322
29	0322 2220		4322 3364	2133 5222	2224 6441	2222 2222
30	1122 1104		5434 4432	3323 3332	2222 1201	3232 3332
31	2211 1013		3334 4311		1223 3444	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3222 3433	3334 3432	3323 3232	4454 4355	2123 2134	2134 1010
2	3322 3433	1333 3333	1223 3113	3434 7656	3322 1101	1102 2422
3	2222 2312	2322 3332	4355 5556	8533 5124	1112 2122	1111 1001
4	1221 2210	2323 2222	5434 5544	3333 3222	2113 2422	1022 2423
5	2222 2212	2311 3221	4222 3344	2123 2212	1111 1001	4422 2335
6	1132 3321	2234 4333	3233 3453	1223 3223	0100 0101	5323 4444
7	3212 3323	2222 2322	4333 5575	1123 2355	0011 1223	3121 2541
8	2223 4332	3313 4321	5343 3222	1322 3333	2223 3434	1232 2112
9	2223 2233	2332 2213	3102 2222	4333 4665	4224 6678	1323 4353
10	4332 2423	2223 2213	1111 1211	5434 4565	7324 5556	3213 2324
11	3322 2333	2333 4323	0213 3543	5433 4554	6344 7644	3322 3343
12	2313 --32	4445 4334	2332 3343	6444 5464	4422 3433	3322 3433
13	3222 3432	3233 4535	5434 5345	4433 2555	3223 1331	4322 3343
14	1211 2332	5322 3333	4444 5655	4444 3455	2122 3443	2222 4222
15	2222 2330	1125 5657	5445 4655	2433 5446	4433 2223	4212 3233
16	4122 1212	7435 5644	3332 2346	4333 3522	3323 2114	1212 1001
17	1123 2687	4444 5565	5434 4556	3323 3442	2222 2111	1112 2112
18	7556 7665	6545 5555	5434 4656	2133 2544	2221 2233	2012 2033
19	5532 2123	4335 5645	3433 4544	3233 4564	2333 3343	3212 2122
20	3444 4532	5444 5635	3332 3524	3322 2445	2122 1323	0101 1212
21	2323 3232	5444 5444	3333 4444	4222 2443	1212 1432	0001 0000
22	2233 4433	3337 5544	2334 4544	3322 2213	0102 2221	0000 2234
23	3344 5323	7534 6543	5544 5212	2322 3442	1232 1122	3112 3323
24	3323 3422	4333 4344	3343 7888	4222 2312	2111 1364	1111 1114
25	3324 5432	4333 4433	8755 5654	3012 2221	3132 1121	2101 1122
26	3433 4433	2322 3223	4323 3233	1111 1111	1112 2123	3212 2232
27	2334 5322	3332 2211	3322 3223	0012 1000	3122 1121	3333 2234
28	2223 4232	2222 3334	2223 3323	1001 1110	2212 2211	3121 2113
29	2213 4222	3334 3422	2223 2323	0012 2230	2222 2243	2212 3433
30	2110 2212	2332 2122	3312 2252	0111 2311	1112 1143	1101 2111
31	2223 3223	2123 3433		0232 3222		1101 1021

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS
Lo: 1948

	Jan.	Feb.	March	Apr.	May	June
1	1111 2344	4100 0001	4443 3346	5433 2323	2322 3333	5444 5432
2	3322 2353	0222 2344	4344 3254	2433 2123	2223 5352	1322 1213
3	3443 4773	3233 6333	3532 3413	3323 2310	3323 4443	2112 3211
4	1012 0121	2232 2332	3222 3212	1222 2311	3312 3334	2112 2222
5	0112 2233	3313 2443	2212 2332	0121 1200	4112 2233	2323 3222
6	0133 2332	0022 2314	1113 3543	0222 2453	3213 4343	1223 2222
7	3232 3355	3212 2433	2222 3310	3223 2334	3354 4543	2213 3323
8	3333 3443	3222 2104	0111 3324	2112 1100	2233 3322	1214 2233
9	4423 3123	3111 0120	1122 1322	0012 1223	3355 5532	3322 2322
10	1212 3333	2132 2300	1122 2343	3212 2312	2323 2542	2322 3211
11	3221 2231	2112 1233	1211 2115	2212 0231	2332 2443	1111 1131
12	2113 1143	1022 3213	5442 4323	3212 4322	2223 3323	2322 2223
13	0001 2323	4112 3214	4334 4645	2323 2333	4433 3211	3223 3242
14	0001 1300	2113 3332	5543 3454	4322 2302	1112 1334	1221 2320
15	0002 1113	3332 3355	5756 7785	2221 4432	5555 5226	1112 2211
16	0211 2111	5333 3544	4221 1133	1212 2321	7554 6535	0012 2212
17	1122 5454	4333 3323	2234 2312	2211 2211	3322 3323	3222 2433
18	3223 2131	3233 3443	2322 2222	1123 2311	4223 2233	2324 5343
19	4232 2242	2323 2235	3223 1221	1222 3212	2112 3101	5433 3232
20	2222 3344	2212 2210	0122 3333	4223 4214	1101 2023	3223 3423
21	3222 3534	0012 1111	2243 3232	6332 1312	3334 5655	2433 4544
22	4312 3133	2112 2200	2123 3333	4545 5341	5433 3443	5332 3212
23	2212 1132	2224 4532	2111 1012	3123 3311	4421 3323	1123 3322
24	0001 1021	2222 2355	1121 3100	2222 2223	4334 3223	1333 2232
25	0111 1201	0112 1212	0111 1122	3222 3343	4423 3122	2213 3234
26	1100 0011	0002 2122	1112 3324	2123 4423	2122 3222	3324 4534
27	1022 3231	3322 2224	4212 2312	2223 3231	3112 2322	3233 4322
28	0002 2311	4322 2312	3112 2200	2313 3313	2010 2222	0223 2211
29	4212 2444	3312 3422	1111 1223	2243 4313	4324 6524	1121 3211
30	3222 3533		2211 2344	3223 2232	4332 2431	1212 3312
31	4211 2200		3322 2223		0122 3334	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2122 2232	2323 3224	6333 4245	4544 5333	0101 2446	0001 1001
2	2212 3233	3243 4222	3333 3244	3454 4434	5434 5546	2112 2124
3	2323 4312	1223 3323	3113 4323	3223 3634	5322 2343	2222 1101
4	2234 4335	2325 5431	2245 4533	2232 2255	2121 1100	0002 0243
5	4212 3314	2222 2211	1223 3112	4322 2321	0022 1231	3101 1123
6	3224 3331	0221 4511	0222 3213	2111 1111	0211 1023	2312 3554
7	2222 3331	0433 4224	2542 2121	1112 1044	3213 2223	3332 4452
8	2322 3321	5676 8777	3322 2212	2212 2001	3313 2343	3112 1124
9	1212 2323	6533 5546	3222 2321	2112 0222	4223 2433	2112 1221
10	1324 4431	5465 5564	0112 3322	2453 3222	2222 1202	1112 1353
11	1211 2233	4444 3343	1113 2333	2333 3443	3111 1211	4123 3423
12	2222 3221	3343 3344	3323 4432	2223 3413	1011 2100	1011 1000
13	2222 3222	4322 2221	3213 3111	2213 2432	0011 2433	1001 2345
14	4323 5323	2123 3332	0323 1200	3233 5447	3221 1222	3533 2353
15	2212 3333	3222 2222	1113 2335	6444 6653	2111 1254	2211 3313
16	3323 4322	2221 1101	5422 3334	2211 1330	4332 2322	3322 3443
17	3333 3342	2011 2223	2122 3211	0022 0039	3233 3452	3310 0022
18	1113 2320	2123 1122	2223 2234	9564 3368	3323 5443	2222 3200
19	1222 1111	1011 1244	4323 2231	7775 5553	2433 2453	2222 1211
20	3022 2222	5334 5232	1123 3223	1111 4554	4334 7764	0003 2223
21	3212 2342	3323 4435	0122 1232	3545 4575	6533 2233	3233 3533
22	2212 2211	1223 2233	2221 2245	1234 5355	3223 4553	2133 2312
23	1222 3221	4323 3212	4324 2424	3343 4554	3322 2334	2011 1143
24	1212 2212	3323 3321	3323 3454	4233 5554	3222 3565	3432 1132
25	2213 2321	2222 2133	4333 5523	2222 3423	3234 4554	2223 4765
26	2122 3333	2110 2221	5433 3324	4323 3435	2013 4311	5221 0062
27	1212 1322	1010 2223	3112 2101	5233 6254	1123 2311	1313 1243
28	2121 1433	1112 2334	0012 1100	2332 2333	1223 1233	1011 2123
29	3343 5322	4225 4453	3323 3535	2212 3223	2111 0112	3112 1334
30	3322 4454	4423 3342	4223 3521	1212 2102	1011 0121	1101 3555
31	3444 4432	2122 3322		2322 2232		4134 4611

TABLE 1a SUPPLEMENTARY K-INDICES, 1950, AND PREVIOUS YEARS

Lo: 1949

	Jan.	Feb.	March	Apr.	May	June
1	2222 2334	Q001 3000	1114 3333	Q012 1222	Q102 1332	4423 2213
2	5634 4343	0012 2111	3323 2445	3112 1111	3201 2432	3134 3322
3	1210 0032	1001 2255	3222 2523	1123 3300	4312 0046	2212 2114
4	3010 1110	6433 2100	3122 2212	1112 2211	6423 4411	6442 4565
5	1100 1012	1121 3212	3432 1023	1112 2213	1112 3445	3455 5657
6	1112 1214	2113 4654	1011 1010	2212 0101	4322 2332	5412 2335
7	4422 1124	5433 2122	2012 2212	2113 3347	2311 2433	4333 3222
8	2112 1432	1012 1210	2211 2223	7546 5542	2212 3234	2223 2222
9	3122 3353	0012 2000	4322 4543	2222 2313	3233 3522	3223 2242
10	2222 4445	2011 2123	1111 1220	4323 3444	2212 4423	1102 2110
11	1222 3234	2343 3234	Q012 1100	5244 5532	4333 3221	0112 2333
12	4122 1554	2333 2333	1022 2323	1233 4533	2266 9977	4324 5456
13	5232 2031	4323 2214	5324 3444	4333 4342	9723 6322	5234 3222
14	1012 1033	3222 2125	4434 3554	3423 3334	3334 4433	0112 3222
15	0012 2003	2213 2433	5123 3343	4222 2213	3313 3101	2323 3331
16	3112 2332	3222 2113	2111 2753	2213 4423	1333 4323	1123 2323
17	4112 2112	3223 5524	3332 4567	3213 3223	4222 2211	1211 3233
18	1313 2455	4323 3144	6344 4453	2112 1232	0112 1111	4223 3423
19	4322 2443	3222 1211	2212 2323	1022 2223	1201 2411	2223 4310
20	3112 2112	0012 2443	1322 2323	1111 1231	1221 2211	1122 3322
21	2322 1225	3223 3535	3222 3336	2202 1122	0123 4212	1112 3222
22	3332 2111	5543 2343	6756 4653	1222 2211	2213 3322	1213 4431
23	0002 1333	3113 4322	3554 4422	1212 3331	2222 3223	2312 2200
24	3212 2376	5323 4413	Q122 2131	2122 2322	3332 1211	0123 3332
25	9954 5799	1122 2110	Q323 3214	2112 2211	0114 3321	3234 4211
26	9855 5554	1222 2412	3333 3221	3212 2211	1232 3311	2112 4333
27	3422 3342	2343 3211	0011 2110	3423 2111	1223 4321	3223 2222
28	2221 1221	Q121 1311	2223 3335	2112 2322	2312 1210	2212 2323
29	2112 1222		5233 3322	2222 2642	1112 1111	3323 2343
30	1100 1011		2322 3211	3223 2210	0112 5567	2223 3322
31	0111 1232		3111 1000		5533 4344	
	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2313 2122	1113 3121	2124 4444	4223 2113	3123 5674	3323 1121
2	2111 2101	1244 5422	2432 4444	3421 2122	3223 4445	0122 0001
3	0112 2221	4566 4433	5554 4452	1111 1102	5421 2224	1012 3324
4	1201 1201	6654 5463	3323 3243	3222 4332	1222 2421	3223 2244
5	0202 2011	4334 4533	3123 2333	5322 2323	3332 3335	3222 2343
6	1211 3121	3214 3131	3223 3111	1134 4455	3212 2222	3223 3231
7	3012 4411	1121 4423	0122 2223	3423 4686	1112 1022	2201 1101
8	2222 2342	6644 4211	2124 3333	7323 5543	0001 0001	0012 2212
9	1124 3201	2222 4442	3213 2211	6522 3321	1122 1121	1434 2424
10	1212 2110	1223 2423	0111 2213	2113 2221	2122 3324	2122 1132
11	0112 1123	0112 2202	2213 2222	4223 4524	4432 2532	2012 1220
12	0113 3242	1111 2221	2334 5443	3222 2112	2212 2353	0011 1111
13	4423 3321	2023 3423	3312 2213	2221 2343	4212 2410	1111 2101
14	1222 3111	5334 5445	1212 5321	3445 5888	1322 2524	2322 3423
15	1112 2100	5543 3334	2123 3431	6567 8887	2111 1444	2211 1113
16	1123 5443	2223 2202	4222 2312	8645 5543	4321 1101	4211 1131
17	2234 4411	2313 5433	0123 2133	3222 1443	0001 1012	1111 0013
18	2223 3433	1223 4434	2114 2111	2212 3210	2112 3222	2100 1021
19	4333 4312	3113 3322	0002 0000	0233 3423	3132 3587	0111 2213
20	3122 2212	2322 3222	0011 1001	3112 3133	7442 3343	3212 1323
21	1112 2212	2212 2233	0003 2102	1323 3320	4212 2461	1212 2221
22	1132 3343	2213 2211	2113 1200	2112 2245	1112 1332	3212 1132
23	3423 4232	1112 1111	1112 2101	3123 2354	3202 1142	1111 2352
24	2221 3322	1212 2111	1122 3325	5433 3322	3311 1100	4223 1330
25	2333 2232	0110 2211	5423 3553	3212 1010	0012 2121	2112 3312
26	2232 1111	1012 1221	3322 3324	3212 2142	1011 1112	3112 0102
27	1002 2220	1223 3322	4334 4323	1322 5465	2222 2533	2002 2221
28	0102 2121	3312 2212	4322 1111	6532 3433	1111 1002	1112 2244
29	0112 3211	0122 2223	1222 2322	2322 3234	5423 3445	3222 2112
30	1222 2222	3322 2222	1323 3253	1122 2222	3335 5654	2112 1344
31	2212 2221	3110 1222		4222 1233	2223 4352	

TABLE 2 MEAN K-INDICES 1950
 (Based on data of Table 1)

TABLE 2 MEAN K-INDICES 1950
(Based on data of Table 1)

	Values Kw																	
	May					Sum	June											
1	1.6	0.9	1.3	1.6	1.2	1.9	2.7	2.4	13.6	2.5	2.6	2.1	3.3	2.5	3.8	1.9	3.4	22.1
2	1.9	1.7	1.5	2.2	2.6	3.5	3.7	4.5	21.7	4.2	3.9	2.0	1.9	1.2	2.7	2.5	3.8	22.2
3	4.9	4.6	3.6	3.5	2.6	3.2	4.6	4.0	31.0	2.6	2.5	1.8	3.4	3.4	3.4	3.1	2.2	22.4
4	3.1	2.4	2.2	2.3	1.9	3.5	3.6	4.1	23.1	1.9	2.6	1.7	0.9	2.1	2.3	1.2	1.1	13.8
5	4.1	2.7	2.5	3.4	2.8	2.8	2.9	3.2	24.4	2.6	2.1	2.2	2.0	1.8	1.8	1.8	1.8	16.1
6	2.1	1.9	1.9	2.1	2.2	2.6	2.1	3.1	18.0	3.7	4.6	3.8	3.6	4.4	4.8	3.2	2.5	30.6
7	3.7	1.2	2.5	1.5	2.0	2.4	1.1	2.3	16.7	1.9	0.9	0.3	1.6	1.9	1.8	0.9	0.7	10.5
8	2.0	1.7	1.9	1.2	1.4	1.0	0.9	2.0	12.1	0.9	0.5	0.8	1.6	1.8	2.0	2.3	3.5	13.4
9	0.8	0.8	0.3	0.5	0.7	0.6	1.1	1.1	5.9	3.8	4.2	2.4	3.4	3.6	2.5	2.6	2.8	25.3
10	1.4	1.1	1.5	1.6	1.7	1.4	1.4	3.6	13.7	3.6	3.6	2.8	3.4	3.1	2.6	2.8	2.6	24.5
11	3.1	1.8	2.3	2.3	3.1	3.5	2.4	2.2	20.7	3.0	1.5	1.4	1.7	1.9	1.3	1.5	2.1	14.9
12	2.0	1.2	1.3	1.2	0.8	1.9	2.0	1.7	12.1	2.1	1.2	2.2	1.9	2.1	1.5	2.1	1.7	14.3
13	2.1	3.3	3.0	2.8	2.6	2.7	3.0	2.8	22.3	1.1	0.9	1.2	1.1	1.2	0.8	0.9	0.8	8.0
14	3.0	2.6	2.1	2.8	3.5	2.8	2.7	3.3	22.8	1.2	1.9	1.9	1.5	1.7	1.6	1.2	0.8	11.8
15	3.3	3.2	3.1	2.6	2.1	2.9	4.3	3.6	25.1	1.4	1.1	1.1	1.2	1.0	0.8	0.7	0.9	8.2
16	2.4	2.6	2.8	2.1	2.1	2.5	2.4	2.7	19.6	0.5	0.4	0.4	1.1	1.6	2.5	2.9	1.5	11.0
17	2.2	1.0	1.5	1.6	2.3	1.9	1.8	1.5	13.8	2.3	3.6	3.0	2.1	2.1	2.9	2.5	2.0	20.5
18	2.7	1.5	0.5	1.2	1.1	1.3	1.4	0.8	10.5	1.7	2.2	2.3	2.1	1.1	1.7	1.4	0.6	13.1
19	0.4	0.6	0.5	0.9	1.1	2.7	2.0	0.7	9.0	1.6	1.6	0.7	0.8	0.9	1.5	1.6	1.0	9.7
20	1.6	1.0	1.6	1.5	2.1	2.5	2.3	3.1	15.7	0.6	0.9	0.8	1.1	1.6	1.8	1.7	1.2	9.7
21	3.2	2.3	0.9	0.9	1.3	1.9	1.4	1.1	13.0	0.8	1.2	0.7	1.3	1.2	3.0	2.2	2.6	13.0
22	0.4	0.6	2.2	3.3	4.6	3.6	3.2	3.3	21.2	1.6	2.8	2.1	2.9	3.1	2.4	1.9	2.2	19.0
23	3.8	3.1	3.6	4.5	4.1	4.5	3.6	3.8	31.0	2.8	2.4	1.5	2.1	2.0	2.0	4.7	4.5	22.0
24	3.5	3.1	2.7	1.6	1.4	1.6	2.4	2.5	18.8	4.2	5.3	4.8	4.7	4.1	2.4	3.6	2.9	32.0
25	2.5	1.0	1.8	2.3	2.5	3.5	2.4	2.8	18.8	3.1	2.1	3.4	3.6	2.6	1.6	2.4	3.5	22.3
26	2.6	2.5	2.7	3.3	2.6	3.1	2.9	1.8	21.5	3.6	2.9	1.5	2.0	2.0	1.2	1.7	1.6	16.5
27	2.4	2.3	2.3	2.0	4.5	4.4	4.2	5.4	27.5	1.2	0.9	1.1	1.2	1.8	2.3	1.3	1.8	12.1
28	6.2	5.4	4.8	4.4	3.5	3.5	3.8	3.3	34.9	2.1	1.2	1.2	1.7	1.1	0.8	1.0	1.3	10.4
29	3.9	3.8	2.0	3.5	3.9	2.9	2.7	2.8	25.5	0.8	1.2	1.8	2.4	4.0	5.2	4.9	4.7	25.0
30	3.4	3.7	2.7	2.3	2.6	3.7	2.1	1.8	21.8	4.9	5.5	2.8	2.8	3.0	3.5	2.9	3.3	28.7
31	1.7	1.5	0.8	0.6	1.5	1.0	0.8	2.9	10.8									
	July						August											
1	3.4	1.7	1.9	2.1	2.9	2.2	1.9	3.2	19.3	3.1	2.6	2.3	2.4	3.0	3.2	3.5	2.7	22.8
2	1.5	2.4	1.3	1.2	1.5	1.6	1.7	1.7	12.9	3.1	3.0	2.9	2.5	3.5	2.6	4.4	3.2	25.2
3	0.9	1.1	0.8	1.7	2.6	3.0	3.6	4.7	18.4	3.8	3.1	2.3	3.6	3.3	3.2	2.5	2.6	24.4
4	4.9	4.2	3.2	2.1	2.3	2.9	3.4	3.3	25.9	2.7	2.5	2.0	2.1	2.3	2.3	2.1	1.8	17.8
5	3.6	2.8	1.4	2.5	3.0	2.6	2.5	3.0	21.4	1.1	1.5	1.1	0.7	1.7	1.7	2.6	2.6	13.0
6	2.8	1.9	2.4	2.8	2.4	2.8	1.7	1.7	18.5	3.2	2.0	0.8	1.7	2.0	2.5	3.0	3.0	18.2
7	2.4	2.1	1.3	2.3	2.1	2.3	1.9	3.1	17.5	3.2	3.5	1.8	3.9	3.3	3.9	4.1	6.2	29.9
8	2.1	1.5	2.0	1.7	2.4	1.8	0.5	0.4	12.4	6.2	5.5	6.4	4.4	3.1	2.6	2.4	3.4	34.0
9	2.0	3.3	3.1	1.9	3.0	2.7	2.5	1.6	20.1	3.6	3.8	3.8	3.8	4.1	3.9	3.6	4.2	30.8
10	1.0	0.9	1.8	2.5	2.3	2.5	1.8	2.1	15.0	3.6	3.8	2.8	3.1	4.2	4.4	5.1	4.1	31.1
11	3.2	1.6	1.3	2.8	4.4	3.2	4.0	5.0	25.5	3.8	3.7	3.1	4.1	3.4	3.7	2.8	3.9	28.5
12	5.6	5.1	3.1	4.5	3.2	3.2	3.0	2.9	30.6	3.7	4.4	3.9	3.8	3.0	3.4	3.0	2.5	27.7
13	3.7	3.5	2.9	4.3	4.2	2.5	2.7	1.8	25.6	1.9	3.0	2.6	3.4	2.1	2.3	2.4	2.4	20.1
14	2.1	1.7	2.8	2.3	1.9	2.0	2.3	2.8	17.9	2.4	2.8	3.0	3.6	4.4	2.9	2.7	3.6	25.4
15	2.9	2.5	2.5	1.8	2.3	2.2	2.6	2.2	19.0	3.5	3.5	3.0	2.3	2.4	2.1	2.4	1.4	20.6
16	2.2	2.4	2.1	3.2	1.6	1.4	1.3	1.6	15.8	2.4	2.0	2.0	0.8	1.1	1.0	0.7	1.6	11.6
17	2.3	1.1	2.1	1.5	1.3	1.4	1.7	1.0	12.4	1.9	1.0	0.7	0.5	1.1	0.6	1.0	1.2	8.0
18	1.8	1.2	1.4	1.3	1.9	1.8	0.8	1.1	11.3	1.7	2.1	1.6	1.7	2.0	3.3	3.6	4.2	20.2
19	1.6	0.8	0.6	1.0	2.1	2.2	1.3	1.4	11.0	4.6	3.5	4.6	5.8	6.4	6.6	6.4	6.5	44.4
20	1.8	2.4	1.2	1.6	1.5	1.2	2.3	1.6	13.6	6.7	6.2	6.2	5.6	3.7	3.2	2.3	2.1	36.0
21	1.9	1.1	1.2	2.2	2.6	2.1	2.9	2.5	16.5	2.6	1.5	4.1	3.3	2.6	3.1	3.1	1.4	21.7
22	2.6	2.7	2.4	3.1	2.2	1.4	2.0	1.1	17.5	1.7	1.5	1.4	2.3	1.8	2.0	2.1	1.0	13.8
23	1.0	1.0	1.0	0.9	0.7	0.9	0.6	0.8	6.9	2.0	0.6	1.3	3.1	2.0	1.8	1.5	2.6	14.9
24	3.0	4.0	3.3	4.5	2.5	3.1	4.0	4.5	28.9	0.9	0.3	0.6	2.0	1.0	1.0	0.7	2.5	9.0
25	4.8	4.9	4.6	3.3	3.7	2.8	2.6	2.0	28.7	2.3	1.6	0.9	1.5	1.5	1.2	0.7	0.7	10.4
26	1.2	1.0	0.9	1.1	1.5	1.4	2.0	1.7	10.8	0.4	0.5	0.6	0.9	0.6	0.8	0.8	0.8	5.4
27	0.9	1.6	1.6	2.9	3.6	1.9	1.9	1.9	16.3	2.1	1.0	0.7	1.1	1.5	1.9	1.7	2.3	12.3
28	3.7	3.1	1.2	1.3	1.2	1.3	1.1	2.5	15.4	2.1	1.9	1.9	3.4	2.9	3.3	3.4	3.9	22.8
29	2.4	2.1	1.5	2.3	2.1	2.1	2.8	2.5	17.8	3.1	3.9	3.2	2.6	3.8	3.1	2.7	3.2	25.6
30	2.5	2.2	1.1	3.3	3.0	2.1	2.5	1.7	18.4	3.7	3.2	2.8	1.4	1.8	2.7	3.0	1.2	19.8
31	2.5	3.2	1.4	1.5	1.9	2.9	2.8	3.1	19.3	1.1	1.5	2.5	1.7	2.4	3.0	1.1	1.2	14.5

TABLE 2 MEAN K-INDICES 1950
(Based on data of Table 1)

	Values Kw																	
	September						Sum	October										
1	1.1	1.2	1.4	1.4	1.6	1.4	0.9	1.8	10.8	4.2	4.5	4.9	4.4	5.0	4.0	3.5	4.3	34.8
2	1.4	1.7	0.9	0.8	0.8	1.2	2.5	1.7	11.0	3.4	4.7	4.8	5.1	4.6	5.2	5.4	4.7	37.9
3	1.9	3.1	3.7	3.9	4.4	4.9	4.3	5.7	32.4	4.2	4.6	3.7	3.7	3.1	3.9	5.4	3.5	32.4
4	5.0	3.4	4.3	3.8	3.6	3.4	3.8	4.6	31.9	4.6	3.7	4.1	3.6	4.0	4.6	4.9	2.8	32.5
5	4.8	4.2	4.5	5.1	4.0	4.0	4.3	4.7	35.7	3.3	3.7	4.1	3.8	3.6	4.0	4.9	4.1	30.6
6	4.4	4.6	4.2	4.4	4.1	3.4	3.4	3.6	32.1	3.3	3.2	3.3	3.7	1.8	3.7	3.0	3.8	24.3
7	2.9	2.6	3.2	3.8	3.5	2.6	2.7	2.9	24.2	1.2	3.2	3.3	3.1	4.0	3.9	4.0	3.5	29.2
8	2.1	3.8	4.2	4.2	3.4	4.2	4.6	4.6	31.1	3.7	2.5	2.3	2.2	2.6	2.8	0.8	0.9	17.8
9	4.3	3.2	2.6	2.3	2.0	1.8	3.2	2.5	21.9	2.7	2.2	2.0	3.8	1.4	1.7	1.6	1.8	17.2
10	4.3	2.3	1.3	1.7	3.1	3.7	4.0	3.0	23.4	1.9	1.1	0.6	0.9	0.9	1.4	1.1	2.2	10.1
11	3.6	4.4	2.9	2.7	1.2	1.4	2.6	2.8	21.6	1.1	1.0	1.2	0.6	0.3	2.4	2.6	1.7	11.4
12	2.8	1.9	2.6	3.1	3.0	1.0	0.7	1.2	15.2	3.0	3.6	2.1	2.2	1.4	2.0	3.2	3.0	20.5
13	1.8	1.6	1.3	1.8	1.6	3.0	4.2	3.2	18.5	2.4	2.5	3.3	1.6	1.9	1.6	3.1	2.8	18.2
14	1.2	1.2	0.9	1.1	0.7	0.9	0.7	1.1	7.8	4.2	3.9	3.2	4.1	4.8	5.2	3.9	4.1	33.4
15	0.9	0.5	1.2	1.2	1.1	1.4	0.4	0.7	7.0	5.0	4.1	2.8	1.6	1.5	2.9	2.3	2.9	23.1
16	1.9	1.2	1.4	3.4	3.7	4.6	3.6	2.8	22.6	3.2	2.8	3.8	4.4	5.0	4.6	4.1	3.3	31.2
17	1.0	2.6	2.7	2.6	2.6	4.2	3.8	3.9	24.2	3.1	2.3	3.5	2.8	3.5	4.3	3.6	3.1	26.2
18	3.8	3.2	3.6	3.3	3.6	2.7	2.3	3.4	25.9	2.1	2.3	3.1	3.7	1.8	2.5	2.1	1.9	19.5
19	3.9	2.1	2.3	4.2	3.6	1.8	2.8	4.8	26.0	1.5	1.2	1.3	1.4	0.9	0.3	1.2	1.7	9.5
20	5.1	4.3	3.4	4.0	3.6	4.1	4.0	2.9	31.4	1.1	0.4	1.3	1.8	1.1	1.1	2.4	2.7	11.9
21	3.0	2.9	1.3	1.7	0.7	1.1	2.2	0.9	13.8	0.8	0.6	0.8	1.1	1.1	1.1	1.9	1.0	8.4
22	0.5	1.1	0.9	0.8	1.3	2.0	1.8	1.0	9.0	0.3	0.9	0.8	1.7	2.5	3.8	3.0	3.3	16.3
23	0.9	1.0	2.4	3.9	3.3	3.3	4.5	4.6	24.5	3.2	2.6	2.0	2.9	2.1	2.1	2.6	3.2	21.0
24	4.4	2.4	1.8	2.8	3.6	4.6	4.8	5.3	29.7	2.8	1.9	2.5	2.3	1.7	1.7	1.5	1.9	16.3
25	4.0	3.3	3.8	2.7	3.3	4.9	3.7	4.5	30.2	1.3	0.9	0.3	0.8	0.6	0.5	1.6	2.9	8.9
26	2.7	2.0	1.3	1.9	1.9	2.2	4.5	3.2	20.5	2.0	1.5	1.7	1.5	0.3	0.6	2.4	1.8	12.3
27	2.6	2.2	2.5	2.6	1.6	1.7	2.3	1.7	17.2	1.1	0.4	1.1	0.9	0.8	0.9	1.5	1.8	8.5
28	0.9	1.2	1.9	2.3	2.0	1.7	1.7	1.9	13.6	3.6	4.2	4.8	5.6	5.6	5.5	6.1	5.4	40.8
29	0.7	0.7	1.0	0.6	0.7	1.0	1.2	1.3	7.2	4.6	3.8	4.8	4.2	4.9	5.2	4.6	5.1	37.2
30	1.1	1.1	1.1	1.7	1.0	2.8	4.2	3.4	16.4	4.6	4.4	3.4	3.3	4.4	4.7	4.8	4.8	34.4
31										4.6	4.0	3.8	4.1	4.8	4.2	4.8	4.2	34.5
	November												December					
1	3.5	3.6	3.8	4.8	5.1	4.9	4.5	2.8	33.0	1.1	2.2	2.0	1.2	1.6	1.5	1.2	0.7	11.5
2	3.0	2.2	3.0	2.9	3.0	3.6	0.8	1.1	19.6	1.2	2.3	1.6	1.6	1.7	3.4	2.7	2.2	16.7
3	2.0	2.4	2.0	2.2	1.3	1.2	1.5	1.8	14.4	1.6	1.6	1.3	1.9	1.7	1.4	2.3	2.0	14.5
4	2.0	3.6	4.6	4.2	4.3	5.5	3.0	2.4	29.7	0.3	1.1	0.9	0.9	1.3	2.0	2.2	2.0	19.7
5	2.7	1.9	1.8	2.5	2.4	1.8	2.4	3.1	18.6	1.3	0.8	1.6	1.6	1.9	3.0	3.1	2.0	15.8
6	1.6	1.0	1.5	1.6	1.0	1.1	0.8	0.3	9.4	2.3	1.9	3.4	4.1	3.0	2.6	1.9	2.2	21.4
7	0.8	0.4	0.8	0.5	0.4	0.5	0.9	1.4	5.7	3.1	2.4	2.0	1.5	2.2	1.9	2.9	2.7	1.7
8	2.3	2.4	0.8	1.8	1.9	2.1	1.8	1.6	14.7	1.0	1.4	1.3	2.9	2.6	3.2	2.8	2.9	18.1
9	1.2	1.9	1.6	0.5	0.4	1.4	2.3	2.1	11.4	2.5	2.5	2.5	1.6	1.9	1.1	1.1	1.5	14.8
10	3.1	3.4	4.8	4.4	4.9	4.6	3.9	2.4	31.5	1.5	2.1	1.9	1.7	2.0	1.9	2.7	1.9	15.7
11	3.3	2.7	2.9	2.0	2.7	3.1	2.8	3.1	22.6	1.3	1.2	0.9	1.1	0.8	0.9	1.1	0.6	7.3
12	2.8	2.5	4.0	2.7	3.1	4.2	2.8	4.0	26.1	0.6	3.5	3.2	2.9	1.9	3.1	4.9	4.3	23.0
13	2.9	3.1	3.1	2.9	3.5	3.1	3.6	3.5	25.7	4.7	3.8	3.5	3.4	3.4	3.5	5.2	4.8	32.4
14	2.6	1.7	1.3	1.4	2.1	2.4	2.4	2.4	16.8	4.5	4.1	1.7	1.9	1.4	3.1	3.3	4.9	25.9
15	0.6	0.4	1.1	2.0	1.3	0.3	1.5	2.5	9.7	2.0	1.8	2.1	2.4	2.2	2.2	3.3	2.7	18.7
16	2.0	1.6	3.0	0.8	1.3	1.8	2.6	2.5	12.9	2.3	2.9	1.7	3.0	2.2	1.5	1.7	1.9	17.2
17	2.1	1.7	2.4	2.1	2.3	2.7	3.6	2.9	19.8	1.1	1.1	1.2	2.9	1.1	1.1	2.0	1.9	12.4
18	0.8	0.8	0.6	2.1	2.6	2.1	4.6	2.3	15.9	2.5	1.0	1.1	1.7	1.9	3.1	4.3	2.2	17.8
19	2.2	2.1	1.3	1.2	0.8	0.7	0.4	0.8	9.5	2.9	2.0	2.1	1.8	2.0	2.9	3.4	1.7	18.8
20	1.1	1.2	1.1	1.1	1.2	1.7	1.4	1.1	9.9	0.8	1.0	0.9	2.2	1.2	1.9	3.1	4.4	15.6
21	0.4	0.2	0.9	0.5	0.7	0.7	2.6	2.9	8.9	2.5	1.7	1.0	1.6	1.1	0.6	1.3	1.1	10.9
22	1.5	1.1	0.9	1.3	2.9	4.6	3.7	4.9	20.9	0.2	1.2	1.0	2.4	4.3	4.9	5.5	4.2	24.0
23	3.2	0.8	1.1	0.9	1.0	0.8	2.0	2.5	12.3	4.4	3.9	4.4	3.7	3.5	3.6	2.8	3.5	29.9
24	0.9	0.9	0.8	1.1	1.4	3.7	4.1	4.0	16.9	3.3	3.0	3.2	3.7	3.4	5.7	4.2	3.5	30.0
25	5.4	4.3	3.6	4.7	5.4	4.0	3.0	3.6	34.0	3.9	3.2	3.2	3.6	4.0	3.9	4.1	3.7	29.6
26	4.5	4.3	4.1	5.2	4.9	5.2	5.0	4.0	37.2	3.7	3.1	3.6	4.2	3.3	3.7	3.5	2.8	27.9
27	4.4	4.2	3.9	4.5	4.4	4.2	4.4	3.7	33.7	2.6	3.0	3.0	3.3	2.6	2.7	3.2	3.5	23.9
28	3.7	4.1	3.2	4.0	4.4	3.8	4.9	4.2	32.3	2.5	2.0	2.3	2.4	2.5	2.5	2.0	1.7	17.9
29	3.7	3.0	2.6	2.8	3.4	2.9	3.8	3.6	25.8	1.8	1.6	1.6	1.9	0.8	1.3	1.8	2.1	12.9
30	2.6	2.8	2.3	1.9	1.1	3.0	3.9	2.6	20.2	2.1	0.3	1.3	1.9	1.6	2.4	2.5	2.6	14.8
31										0.8	0.5	1.1	1.0	0.7	1.0	0.9	2.0	8.0

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

January

	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	0	0	2	0	1	1	1	1	1	1	1	1	2	1	1	1	0	1	2	2	1	0	2	2	1	2	1	1	1	0	32
So	1	1	1	1	0	1	1	1	1	1	2	1	1	1	1	2	2	2	1	1	2	2	2	2	1	2	1	1	0	39		
Co	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	1	1	1	1	0	2	1	1	1	1	0	1	0	22		
Do	0	1	0	1	0	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	0	1	1	1	24		
Le	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	1	1	1	0	1	1	28	
Lo	1	1	1	2	1	1	1	0	1	1	2	1	1	2	2	2	1	0	2	2	2	2	2	1	2	1	1	2	1	42		
Si	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	0	5		
RS	1	1	1	2	1	1	1	0	1	2	2	1	1	2	2	2	1	0	2	2	1	1	2	1	2	1	1	2	1	42		
Es	1	1	1	1	0	1	0	1	1	1	1	1	1	0	0	1	1	1	1	0	2	1	1	1	1	0	1	1	1	26		
Me	0	0	0	1	0	1	1	0	1	0	0	0	0	1	1	0	0	1	2	2	1	1	1	2	1	1	1	0	20			
Wn	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	2	1	0	1	0	1	1	11			
Wi	1	1	1	1	1	1	1	0	1	2	1	1	1	2	1	2	2	2	1	0	2	2	1	1	1	0	2	1	37			
Sw	1	0	0	1	1	1	1	0	1	1	1	1	2	1	1	0	0	1	1	1	1	0	2	1	1	1	0	1	0	25		
Ni	0	0	0	1	0	1	1	0	0	1	0	0	1	0	0	1	1	1	0	0	2	1	1	1	1	0	1	0	17			
Ab	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	31		
Ma	1	1	1	1	1	1	1	0	1	2	1	1	1	2	1	1	1	1	2	2	1	0	2	1	1	1	1	2	1	35		
Fu	0	0	1	1	0	0	1	0	1	1	1	1	1	1	0	1	0	1	2	1	0	0	2	2	1	1	1	0	1	0	23	
CF	1	0	1	1	0	1	0	1	1	1	1	1	2	1	1	1	0	1	1	1	1	0	2	1	1	1	1	2	1	29		
Na	0	1	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	2	1	1	1	1	1	1	1	28			
Ag	1	1	0	1	0	1	0	1	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0	1	0	21		
Eb	1	1	1	1	1	1	0	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	1	34		
Tl	1	1	1	1	0	1	1	0	1	1	1	1	1	0	1	1	2	1	1	1	2	1	1	1	1	0	1	1	1	28		
Ch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2		
SM	0	0	0	1	0	1	1	0	1	1	1	1	1	0	0	0	1	1	0	2	1	1	1	1	0	1	0	21				
SF	0	0	0	0	-	1	1	0	1	1	0	0	1	1	1	1	0	0	1	1	1	1	2	1	1	1	1	0	1	20		
Ka	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	2	1	1	1	0	1	30	
Ks	1	0	1	1	1	1	0	1	1	1	0	1	2	1	1	0	0	1	2	1	0	1	2	2	2	1	1	0	1	0	28	
Tu	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	6		
ZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	1	0	0	0	0	1	0	8		
He	1	0	1	1	0	1	1	1	1	1	2	1	1	0	0	1	2	1	1	1	2	1	1	1	1	1	0	1	0	27		
Ta	1	1	1	1	1	1	0	0	1	1	0	1	2	1	1	0	1	1	2	1	1	2	2	2	1	1	0	0	1	28		
Ho	0	0	0	0	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	3		
Te	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	2	2	1	0	0	0	1	0	13			
Al	1	0	0	1	0	1	0	0	1	1	1	1	2	1	1	0	0	2	2	2	1	1	2	2	1	1	1	0	1	28		
SJ	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	1	0	1	0	7			
El	0	0	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	0	0	2		
Hu	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	1	1	1	1	0	1	0	11		
Ap	0	0	0	0	-	-	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3		
Tn	1	0	0	1	0	1	1	0	0	1	1	1	1	0	0	1	1	0	0	2	1	1	1	1	0	0	0	0	17			
Va	0	0	0	1	0	0	0	1	1	0	0	0	0	1	1	1	0	1	2	1	1	1	1	0	0	0	0	0	14			
Wa	0	0	0	1	1	1	1	0	1	0	0	0	1	1	0	0	1	1	1	0	0	2	1	0	1	1	0	1	0	16		
Pi	0	1	0	1	0	0	1	1	0	1	0	1	1	0	0	0	1	1	0	1	2	2	1	0	0	0	0	0	0	16		
Hr	1	0	1	1	0	1	0	1	1	0	0	0	1	1	1	0	0	2	1	1	1	0	0	1	0	0	1	0	18			
To	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	2	1	1	1	1	1	0	1	1	27			
Am	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0	7			

Σ 24172035133029 23381262130563129131241554825177858373833 94416 951

Selected Days: Five quiet 5, 8, 17, 18, 29

Five disturbed 14, 20, 21, 24, 25

Ten quiet 3, 4, 5, 8, 10, 11, 12, 13, 16, 18

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

February

	D a. v																												Sum	
Tr	0	2	2	2	1	0	1	2	2	0	0	1	0	1	0	0	0	0	0	2	2	2	2	2	2	2	0	0	1	27
So	0	2	2	2	1	0	2	2	2	0	1	1	0	0	1	0	0	0	0	2	2	2	2	2	2	0	0	1	29	
Co	1	1	1	1	0	0	1	1	1	0	0	0	0	1	0	0	0	0	2	2	1	2	1	1	0	0	1	18		
Do	1	1	1	1	1	0	1	1	1	0	0	1	0	0	0	1	0	2	2	2	2	2	1	0	0	0	22			
Le	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	2	2	2	1	2	2	2	1	0	0	1	19
Lo	1	2	2	2	2	1	1	2	2	0	1	1	1	1	1	0	1	1	0	2	2	2	2	2	2	0	1	1	38	
Si	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	0	0	1	1	11	
RS	0	2	2	2	2	1	2	1	2	0	1	1	0	0	1	0	0	1	1	2	2	2	2	2	2	0	0	1	32	
Es	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	1	2	2	1	2	2	2	1	0	0	1	21
Me	1	2	2	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	2	2	1	2	2	2	1	0	0	1	23
Wn	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	1	2	2	1	0	0	0	15	
Wi	0	2	2	2	1	1	2	1	2	0	1	0	0	1	1	0	0	1	1	2	2	2	2	2	2	0	0	1	31	
Sw	0	1	1	1	1	1	1	1	1	0	1	0	0	0	1	0	0	1	1	2	2	2	2	2	2	1	0	1	1	25
Ni	0	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	0	0	0	0	14	
Ab	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	0	1	1	2	2	1	2	2	2	1	0	1	1	28	
Ma	0	1	2	2	2	1	1	2	1	1	0	1	0	0	1	0	0	1	1	2	2	2	2	2	2	2	0	0	1	28
Fu	0	1	1	2	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	2	2	2	2	2	2	1	0	0	1	19
CF	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	0	0	0	2	2	1	2	1	1	0	0	1	19	
Na	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	2	2	2	2	2	2	1	0	0	1	26	
Ag	0	2	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	2	2	1	2	2	2	1	0	0	1	29
Eb	1	1	1	2	1	1	2	1	1	0	1	1	0	0	1	1	0	1	1	2	2	2	2	2	2	1	0	0	1	24
Tl	0	1	1	2	1	1	1	1	1	0	0	0	0	1	0	0	0	1	1	2	2	2	2	2	2	1	0	0	1	24
Ch	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	6	
SM	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	2	1	0	0	1	16	
SF	0	1	1	1	0	1	1	1	1	0	0	0	0	1	0	0	0	1	2	2	1	2	2	1	0	0	1	20		
Ka	1	2	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	2	2	1	1	2	1	1	1	1	31	
Ks	0	2	2	2	1	1	2	1	1	0	1	1	0	1	0	0	1	1	2	2	2	2	2	2	2	0	1	1	31	
Tu	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	0	0	0	12
ZS	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	1	1	0	0	0	12	
He	0	1	1	2	1	1	1	1	2	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	2	0	0	1	25	
Ta	1	2	1	1	0	1	1	0	1	1	0	0	1	0	0	0	1	2	2	2	2	2	2	2	1	0	0	1	24	
Ho	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	0	0	0	6
Te	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	0	0	0	16	
Al	1	2	2	2	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	2	2	2	2	2	2	0	0	1	26	
SJ	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	1	1	0	0	0	7		
El	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	3	
Mu	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	10
Ap	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	0	0	0	10	
Tn	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	1	1	1	2	1	2	1	2	1	1	0	0	0	16	
Va	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	2	1	1	0	0	0	17	
Wa	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	0	0	0	11	
Pi	1	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	2	2	1	2	2	1	0	1	1	1	21	
Hr	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	2	1	2	1	1	1	0	0	1	16	
To	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	1	2	1	1	1	1	1	0	0	1	19	
Am	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	1	1	1	0	0	0	10	
Σ	1	3	5	5	4	5	1	2	6	2	7	4	1	2	8	3	5	0	1	2	1	1	3	0	1	2	1	4	730	884

Selected Days: Five quiet 10, 13, 16, 17, 26

Five disturbed 20, 21, 22, 23, 24

Ten quiet 1, 10, 11, 13, 14, 16, 17, 18, 26, 27

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

March

	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	1	0	0	0	0	2	2	1	1	0	0	1	1	1	2	-	0	2	1	2	2	1	2	2	1	2	1	1	1	2	32	
So	1	0	0	0	0	2	2	1	1	0	0	0	1	1	2	0	1	0	2	2	2	2	2	2	1	1	2	1	1	1	2	33
Co	1	1	0	0	0	1	1	1	1	0	0	0	1	1	0	1	0	2	1	2	1	1	1	1	0	1	1	1	1	1	23	
Do	1	1	0	0	0	2	1	0	1	0	0	0	0	2	0	0	1	2	1	2	1	2	0	2	1	1	2	1	0	0	2	25
Le	1	1	1	0	0	1	1	0	0	0	0	1	1	1	0	1	0	2	1	1	1	1	1	1	1	1	1	1	0	1	22	
Lo	1	1	1	1	1	2	2	1	1	0	0	1	1	2	1	1	2	2	2	2	1	2	2	1	2	1	1	1	1	2	40	
Si	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	1	1	0	1	0	0	1	1	1	1	0	1	12
RS	1	1	1	1	1	2	2	1	1	0	0	1	1	2	1	1	2	2	2	2	1	2	1	1	2	1	2	1	2	40		
Es	1	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	0	2	1	1	1	1	1	1	1	1	1	1	1	1	24	
Me	1	1	0	0	1	1	2	0	1	1	0	0	0	1	1	1	1	2	0	2	1	0	2	1	1	1	1	1	1	29		
Wn	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	2	0	1	2	2	0	1	0	1	0	1	2	12		
Wi	1	1	1	0	0	1	1	1	0	0	1	1	1	2	1	1	0	2	1	2	2	0	2	1	1	2	1	1	1	2	32	
Sw	1	1	1	1	1	1	1	0	0	0	0	1	1	2	0	1	0	2	1	2	1	0	1	1	1	1	1	0	1	25		
Ni	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	2	1	1	1	0	1	1	1	1	0	1	0	1	16	
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	1	1	1	1	1	1	1	1	1	1	1	31	
Ma	0	0	0	0	0	1	1	1	-	0	0	0	1	2	1	0	0	2	1	2	1	0	2	1	1	1	1	1	1	1	24	
Fu	1	1	0	1	0	1	1	0	0	0	0	0	1	1	0	1	0	2	1	2	1	1	1	1	0	2	0	0	0	2	21	
CF	1	1	1	1	0	1	1	0	0	0	0	0	1	1	0	1	0	2	1	1	1	1	1	1	2	1	1	0	1	23		
Na	1	1	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	0	2	1	1	1	1	1	1	2	1	1	1	28		
Ag	1	1	1	0	1	1	2	0	1	0	0	0	0	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	26		
Eb	1	1	1	1	1	1	1	0	1	1	1	1	2	1	1	0	2	1	1	1	1	1	1	2	1	-	0	1	30			
Tl	1	1	0	0	0	1	1	1	1	0	1	0	1	2	1	0	0	2	1	1	1	0	1	1	1	2	0	1	0	2	25	
Ch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3		
SM	1	1	0	1	0	1	1	0	0	0	0	0	1	1	1	0	0	2	1	1	1	0	1	1	0	2	0	1	1	1	20	
SF	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	0	0	2	1	1	1	0	1	1	1	1	1	1	21		
Ka	1	1	1	1	1	2	0	1	0	1	1	1	1	1	2	1	1	1	1	0	1	1	1	1	0	1	1	1	0	1	28	
Ks	-	1	1	0	1	2	2	1	0	0	-	2	2	-	1	0	2	2	2	2	1	2	0	1	2	1	2	1	2	34		
Tu	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	2	0	1	1	0	1	0	0	1	0	1	0	1	12	
ZS	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2	0	1	1	0	0	0	0	1	0	1	10		
He	1	1	0	0	1	1	1	0	0	0	0	2	2	0	1	1	2	1	2	1	2	1	0	1	0	1	2	1	2	1	26	
Ta	1	1	0	0	0	1	1	1	0	0	0	0	1	1	0	0	0	2	2	2	1	0	1	0	1	2	1	2	0	1	24	
Ho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	1	0	0	1	5		
Te	0	0	0	0	0	2	2	1	0	0	0	1	2	1	0	0	2	2	2	2	2	1	0	0	0	0	0	1	0	22		
Al	0	0	0	0	0	1	1	0	0	0	0	0	2	1	0	0	0	2	1	2	1	0	1	0	1	2	0	1	0	2	18	
SJ	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	2	0	1	1	0	1	0	0	1	0	1	0	1	11	
El	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	0	1	0	0	0	0	0	0	0	3	
Hu	0	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	1	0	0	0	2	
Ap	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	0	0	0	0	0	1	0	0	1	6	
Tn	0	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0	0	2	1	1	1	1	0	0	0	1	0	1	0	1	14	
Va	-	0	0	0	0	0	0	0	-	0	0	1	1	0	0	0	1	1	0	1	1	0	1	0	0	1	0	1	0	1	10	
Wa	0	0	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	2	0	1	1	0	0	0	0	1	0	1	0	12	
Pi	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	2	1	1	1	1	0	1	0	1	0	1	0	1	15	
Hr	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	2	0	1	1	0	1	0	0	1	0	1	0	1	11	
To	1	1	0	1	1	1	0	1	0	0	0	1	1	0	0	0	2	1	1	1	0	1	0	0	1	0	1	0	1	0	19	
Am	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	0	1	1	0	0	0	0	1	0	0	0	1	8	

Selected Days: Five quiet 4, 10, 11, 12, 18

Five disturbed 15, 19, 21, 22, 27

Ten quiet 3, 4, 5, 8, 10, 11, 12, 13, 16, 18

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

April

	D a y																													Sum		
Tr	2	2	2	2	2	2	2	2	1	1	2	1	1	1	1	1	2	2	2	2	0	0	2	2	0	0	1	2	2	2	43	
So	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	1	0	1	2	2	2	2	42				
Co	1	1	1	2	2	2	1	1	1	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	26	
Do	2	2	2	2	2	2	2	2	1	0	1	0	1	1	1	1	2	2	1	0	0	1	1	0	0	1	1	2	2	34		
Le	2	1	2	1	2	1	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0	1	1	0	0	0	1	1	2	25	
Lo	2	2	2	2	2	2	2	1	1	1	0	2	2	1	2	1	1	2	2	2	0	2	2	2	1	1	2	2	2	2	48	
Si	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	1	1	1	0	0	1	1	15
RS	2	2	2	2	2	2	2	2	1	2	1	2	2	2	2	0	1	2	1	0	1	2	2	2	1	0	1	2	2	2	47	
Es	2	1	2	1	2	1	1	0	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	0	0	1	1	2	2	28		
Me	2	2	1	2	2	1	1	1	1	1	0	1	1	0	1	0	1	1	2	2	0	0	1	2	1	0	0	1	1	2	31	
Wn	2	1	1	1	1	1	1	0	0	0	0	0	1	0	0	1	1	1	0	0	1	1	0	0	0	0	1	1	1	16		
Wi	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	1	2	2	2	2	0	1	2	2	2	1	0	1	2	2	44	
Sw	2	1	1	1	2	1	2	1	1	0	1	0	1	1	1	1	1	1	1	1	0	0	1	2	1	1	0	1	1	1	27	
Ni	1	1	1	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	1	19	
Ab	1	1	1	1	2	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	29	
Ma	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	0	1	1	2	1	0	1	1	1	36	
Fu	2	2	2	1	2	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	0	0	0	0	1	1	1	17	
CF	1	1	2	1	2	1	1	0	1	0	1	1	0	1	1	1	1	1	1	0	0	1	2	0	0	1	1	1	1	1	26	
Na	1	1	2	1	2	1	1	0	0	0	0	1	0	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	25		
Ag	1	2	1	1	2	1	1	1	1	0	1	1	0	1	0	1	1	1	2	0	0	1	2	1	0	0	1	1	2	28		
Eb	2	2	2	2	2	2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	32	
Tl	2	2	2	1	2	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	28	
Ch	1	1	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	9		
SM	2	2	2	2	2	2	1	1	0	0	0	0	0	1	0	0	1	1	2	0	0	1	1	1	0	0	1	1	2	25		
SF	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	11		
Ka	1	1	1	1	1	1	1	1	1	0	0	1	0	1	0	1	1	1	1	0	1	1	1	1	0	0	1	1	1	23		
Ks	2	1	1	1	2	1	1	0	1	0	1	2	1	0	1	1	2	0	1	2	2	1	0	0	1	1	1	1	1	29		
Tu	1	1	1	1	1	1	1	0	0	0	0	1	0	0	1	0	1	1	1	0	0	1	0	0	0	1	1	1	1	17		
ZS	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	8		
He	2	1	2	2	2	2	1	1	0	0	1	0	1	1	1	1	0	1	1	0	1	2	1	0	0	0	0	1	1	1	25	
Ta	2	2	1	2	2	2	1	0	0	0	0	1	0	1	1	0	0	1	2	0	2	2	1	0	0	0	0	1	2	27		
Ho	1	1	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	0	0	4	
Te	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	12	
Al	2	2	2	2	2	2	1	0	1	0	1	2	0	0	2	1	1	1	1	0	1	2	2	1	0	0	1	1	1	32		
SJ	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	1	1	12		
El	0	0	0	0	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	2		
Hu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ap	1	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	0	0	0	0	2	
Tn	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	1	1	1	1	14			
Va	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	9	
Wa	1	1	1	1	1	1	1	0	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	1	15	
Pi	1	1	1	1	1	2	2	1	0	0	1	0	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	1	1	18	
Hr	1	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	1	1	14	
To	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	0	1	1	1	1	0	0	1	1	1	1	24		
Am	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	8		
	Σ	6	3	5	7	5	6	6	9	4	9	3	6	1	4	1	8	1	9	1	3	6	2	2	7	3	5	4	3	4	6	1006

Selected Days: Five quiet 11, 14, 21, 26, 27

Five disturbed 1, 2, 3, 5, 30

Ten quiet 8, 9, 10, 11, 14, 21, 22, 25, 26, 27

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

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	1	2	2	2	2	2	2	1	1	2	2	2	2	2	1	0	1	2	1	2	2	2	2	1	2	2	2	2	1	51		
So	1	2	2	2	2	2	1	0	1	2	1	2	2	2	1	0	1	1	1	2	1	1	1	2	2	2	1	44				
Co	1	1	1	1	1	1	1	0	0	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	23			
Do	1	2	2	1	1	1	1	1	0	1	2	1	1	1	2	2	1	0	0	1	1	1	1	1	1	2	0	33				
Le	1	1	2	1	1	1	1	1	0	0	1	1	0	1	1	1	1	0	0	1	1	1	1	1	2	2	1	1	0	27		
Lo	1	2	2	2	2	2	2	1	0	2	2	1	2	2	2	2	1	1	1	2	2	2	2	1	2	2	2	1	52			
Si	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	0	9		
RS	1	2	2	2	2	2	2	1	0	2	2	1	2	2	1	1	1	1	1	2	2	1	2	2	2	1	2	1	47			
Es	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	1	1	1	1	1	2	2	1	1	0	27			
Me	0	1	2	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	0	1	1	2	1	1	1	1	1	0	27			
Wn	0	1	2	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0	2	2	1	1	0	18			
Wi	1	2	2	2	2	1	1	1	0	1	1	1	1	2	1	1	0	1	1	1	2	2	1	1	2	2	2	1	39			
Sw	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	2	2	1	1	1	1	1	28			
Ni	0	1	1	1	1	0	1	0	0	0	0	1	0	1	1	0	0	0	0	1	1	0	1	1	1	1	1	0	18			
Ab	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31			
Ma	0	2	2	1	1	1	1	0	0	1	2	0	1	1	2	1	1	0	1	1	1	2	2	1	1	1	2	2	36			
Fu	0	1	1	1	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	2	2	0	1	1	2	2	1	0	19			
CF	0	1	2	1	1	1	1	0	0	0	1	0	1	1	1	0	0	0	1	1	1	2	1	1	1	2	2	1	0	26		
Na	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	0	30			
Ag	1	1	2	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	2	2	1	1	1	1	31			
Eb	-	1	2	1	1	1	1	0	0	1	1	1	1	-	-	1	1	0	1	1	1	1	1	1	1	2	2	1	1	28		
Tl	0	1	2	1	1	1	1	0	0	1	1	0	1	1	2	1	1	0	1	1	1	1	2	2	1	1	1	1	31			
Ch	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	7			
SM	0	1	1	1	1	0	1	0	0	1	1	1	1	1	1	1	0	0	1	0	1	2	1	1	0	0	25					
SF	0	1	2	1	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	1	1	1	2	2	1	1	20			
Ka	1	1	2	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	0	0	1	2	1	1	1	1	2	1	28			
Ks	2	2	2	2	1	0	1	0	0	1	1	0	1	2	1	0	-	-	0	2	2	1	1	1	2	2	2	1	0	31		
Tu	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	1	0	10			
ZS	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	1	0	8			
He	1	1	2	1	1	1	0	1	0	0	1	1	0	1	2	1	0	0	0	1	2	1	1	1	2	2	1	1	30			
Ta	1	2	2	1	1	1	0	0	0	0	1	0	1	1	1	1	0	0	0	0	1	1	2	2	1	1	0	0	25			
Ho	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3			
Te	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	2	2	2	1	0	15			
Al	0	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	0	0	1	0	1	2	1	1	2	2	1	1	22			
SJ	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	6			
El	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	5			
Hu	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	8			
Ap	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	1	0	0	0	1	1	0	5			
Tn	0	1	1	1	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	2	1	1	0	1	1	0	19			
Va	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	1	0	0	1	1	-	0	10			
Wa	0	1	1	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	1	0	1	1	1	1	0	0	14			
Pi	1	2	1	2	1	0	0	0	1	1	0	1	0	0	0	0	1	1	1	2	1	0	1	2	2	1	0	0	23			
Hr	0	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	1	2	1	0	0	11			
To	0	1	1	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0	1	0	1	1	0	0	1	2	1	0	19			
Am	0	0	1	1	0	0	0	0	0	0	0	0	0	0	-	-	0	0	-	0	1	1	0	0	0	1	1	0	0	6		
Σ 19476243402726 9 12341143535442817 7 9212449673432336775473514 1025																																

Selected Days: Five quiet 8, 9, 12, 18, 19

Five disturbed 3, 15, 23, 27, 28

Ten quiet 1, 8, 9, 12, 17, 18, 19, 20, 21, 31

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

June

	Day																												Sum		
Tr	2	2	2	1	1	2	0	1	2	2	1	1	0	1	0	1	2	1	0	0	1	1	2	2	2	2	1	1	2	2	38
So	1	2	2	1	1	2	0	1	2	2	1	0	1	0	1	1	0	0	0	1	2	2	1	2	0	0	2	2		32	
Co	1	1	1	0	1	1	0	0	1	1	0	1	0	0	0	1	1	0	0	0	1	1	1	1	0	0	1	1		16	
Do	1	2	1	1	0	2	1	1	2	1	0	0	1	0	0	0	1	1	1	0	0	0	1	1	1	2	0	1	2		26
Le	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	0	0	0	1	1	1	2	1	1	0	0	2	2		23
Lo	2	2	2	2	1	2	1	2	2	2	1	1	1	1	0	2	1	1	1	1	2	2	2	2	2	2	1	0	2		44
Si	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1		11
RS	2	2	2	1	1	2	1	1	2	2	1	1	0	1	0	1	1	1	1	2	2	2	2	2	1	0	2	2		40	
Es	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	1	2	1	1	1	0	2	2			27			
Me	1	1	1	1	1	2	0	0	2	1	1	1	0	0	0	1	1	0	0	0	1	1	2	2	1	0	0	1	2		24
Wn	1	1	1	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	2	2		14
Wi	2	2	2	1	1	2	1	1	2	2	1	1	0	1	0	1	1	1	1	1	1	2	2	2	2	1	0	2	2		39
Sw	2	2	1	1	1	2	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	2	1	1	0	1	2	2		31	
Ni	1	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1			14	
Ab	1	1	1	1	1	2	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	2	1		30
Ma	1	2	1	1	1	2	0	1	1	1	1	1	0	0	0	1	1	0	0	0	1	2	2	1	1	1	1	2	2		29
Fu	1	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0	2	2			16		
CF	1	1	1	0	0	2	0	1	1	1	1	1	0	1	0	1	1	0	0	0	1	2	2	1	1	0	0	2	2		25
Na	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	0	0	0	1	2	2	1	1	1	0	2	2		28
Ag	1	1	1	1	1	2	0	1	2	1	1	1	0	1	0	1	1	1	2	1	1	0	0	2	2			29			
Eb	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	2	1	1	1	1	1	2	1			25			
Tl	1	1	1	1	1	2	0	1	1	1	1	1	0	0	0	1	1	1	2	2	1	1	0	1	2	2			28		
Ch	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1		4	
SM	0	1	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	1	1	1	0	0	2	1			13				
SF	1	1	1	0	0	1	0	1	1	1	1	0	0	0	1	0	0	0	1	1	2	0	0	0	-	-		14			
Ka	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	2	2			34		
Ks	1	2	1	0	0	2	0	1	1	1	-	0	0	0	0	1	1	0	0	1	2	2	1	1	0	0	2	2		23	
Tu	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1			7	
Z3	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0				
He	1	1	1	0	0	1	0	1	1	1	0	0	0	0	1	1	0	0	0	1	2	2	1	1	0	0	2	1		19	
Ta	1	1	0	0	0	1	0	0	1	2	1	0	0	0	0	1	1	0	0	0	0	1	2	1	1	0	0	2	2		18
Ho	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	0	0	0		2	
Te	0	0	0	0	0	2	1	1	2	1	0	0	0	0	1	0	0	0	0	0	1	2	2	2	1	1	2	2		24	
Al	1	0	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	1	1	2	1	2	1	0	0	0	2	1		15
SJ	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	1	1			9	
El	0	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	0			3	
Hu	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1			6	
Ap	0	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			4	
Tn	1	1	1	0	0	-	1	0	0	0	0	1	0	0	0	-	1	2	2	1	0	1	0	2	1				16		
Va	1	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	1	0			8			
Wa	0	1	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1			9			
Pi	0	1	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	2	2	0	1	0	0	2	2			14		
Hr	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1	2	1	0	0	0	1	1			11			
To	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	1	1			14		
Am	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1			4		

Selected Days: Five quiet 7, 13, 15, 19, 20

Five disturbed 6, 9, 24, 29, 30

Ten quiet 7, 13, 14, 15, 16, 18, 19, 20, 27, 28

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

July

	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	
Fr	2	1	2	2	2	1	2	1	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	0	2	2	1	2	2	2	1	1	49
So	1	0	2	2	2	1	1	1	-	2	2	2	2	2	1	0	1	0	1	1	1	0	2	2	1	1	1	1	1	1	1	1	36
Co	1	0	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	1	1	0	1	0	1	0	1	0	1	19
Do	1	1	2	1	1	0	0	0	1	0	2	2	1	1	1	1	0	0	0	1	1	1	0	2	2	0	0	1	1	1	1	1	26
Le	1	0	1	2	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	0	1	1	0	2	2	0	1	1	1	1	1	1	29
Lo	1	0	2	2	2	1	1	1	2	1	2	2	2	1	2	1	0	1	1	1	1	2	0	2	2	1	1	2	2	1	1	41	
Si	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	10
RS	1	0	2	2	2	2	1	2	1	2	2	2	2	1	1	1	0	1	1	1	1	1	0	2	2	1	1	2	1	1	1	1	39
Es	1	0	1	1	1	1	1	1	1	1	2	1	1	1	1	0	0	1	0	1	1	0	1	2	0	1	1	1	1	1	1	1	27
Me	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	1	1	0	2	2	0	1	1	1	1	1	1	1	30
Wn	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	1	9	
Wi	1	0	2	2	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0	2	2	1	1	1	1	1	1	36
Sw	1	0	1	1	1	1	1	1	1	0	2	2	1	1	1	1	0	0	1	1	1	1	0	2	2	0	1	1	1	1	1	1	29
Ni	1	0	1	1	0	1	1	0	1	0	1	1	1	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	14
Ab	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	2	1	1	1	1	1	1	31
Ma	1	0	2	2	1	-	-	1	1	2	2	2	1	1	1	0	0	0	1	1	0	2	2	0	1	1	1	1	1	1	1	28	
Fu	0	0	1	1	1	0	1	0	1	1	2	1	1	1	1	1	0	1	1	1	1	1	2	1	0	1	1	1	1	1	1	1	27
CF	1	0	1	2	1	1	0	1	1	2	2	2	1	1	1	1	0	0	1	1	1	1	0	2	2	0	1	1	1	1	1	1	30
Na	1	1	1	2	1	1	1	1	1	1	2	2	1	1	1	1	1	0	0	1	0	1	2	0	0	1	1	1	1	1	1	1	29
Ag	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	0	1	1	1	0	1	2	0	1	1	1	1	1	1	1	31
Lb	1	0	2	2	1	1	1	1	1	1	2	2	1	1	1	1	0	0	0	1	1	1	0	1	2	0	1	1	1	1	1	1	29
Tl	1	0	2	2	1	1	1	0	1	1	2	2	1	1	1	1	1	0	1	1	1	1	1	0	2	2	0	1	1	1	1	1	32
Ch	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	5
SM	0	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	1	1	1	13	
SF	1	0	1	2	1	0	1	0	2	1	1	0	1	0	0	0	0	1	0	0	2	2	0	1	1	1	1	1	1	1	1	22	
Ka	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	0	1	1	1	1	0	2	2	1	1	1	1	1	1	1	1	33
Ks	1	0	1	1	0	1	0	1	1	2	2	2	1	1	1	1	0	1	0	1	1	0	2	1	0	1	1	1	1	1	1	1	26
Tu	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	7
ZS	0	0	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	3
He	1	0	1	2	1	1	1	0	1	0	2	2	1	1	1	1	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	27
Ta	1	0	1	2	1	1	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0	0	0	0	15
Ho	0	0	0	0	0	0	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	2
Te	2	1	0	2	1	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	20
Al	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	1	0	1	13	
SJ	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	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	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
Hu	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	6
Ap	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	3
Tn	0	0	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	10
Va	0	0	1	1	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	-	0	0	0	0	0	0	0	9
Wa	0	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	12
Pi	1	0	2	2	1	0	0	0	1	0	2	2	0	1	0	0	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	0	17
Hr	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	7
To	1	0	1	1	1	1	1	0	1	0	1	1	1	0	1	0	0	0	0	0	0	1	1	0	1	0	1	1	1	1	1	17	
Am	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5
Σ	29	8	44	59	33	23	23	14	33	23	57	66	49	27	29	22	9	7	13	15	26	26	16	56	7	8	29	26	26	25	911		

Selected Days: Five quiet 17, 18, 19, 23, 26

Five disturbed 4, 11, 12, 24, 25

Ten quiet 2, 8, 10, 16, 17, 18, 19, 20, 23, 26

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

August

	Day																													Sum			
Tr	2	2	2	1	1	2	2	2	2	2	2	2	2	2	1	0	0	2	2	2	1	1	1	1	1	1	0	1	2	2	2	1	46
So	1	2	1	1	1	1	2	2	2	2	2	2	1	1	1	0	0	2	2	2	1	0	1	0	0	0	1	2	1	1		35	
Co	1	1	1	1	0	0	1	2	2	2	1	2	1	1	1	0	0	1	2	2	1	0	1	1	0	0	1	1	1			28	
Do	1	2	1	1	0	2	2	2	2	2	1	1	1	2	1	0	1	2	2	2	1	0	0	0	0	0	1	2	0	0		32	
Le	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	0	0	1	2	2	1	1	1	1	0	0	1	1	1			29	
Lo	2	2	2	1	1	1	2	2	2	2	2	2	1	2	1	0	1	2	2	2	2	1	1	1	1	1	0	1	2	2	1		46
Si	1	1	1	0	0	0	1	2	1	1	1	1	1	1	0	0	0	2	2	1	0	0	0	0	0	0	0	1	1	0			20
RS	2	2	2	1	1	1	2	2	2	2	2	2	1	2	1	0	1	2	2	2	2	1	1	1	1	0	1	2	2	1			46
Es	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	0	0	1	2	2	1	1	1	0	0	0	1	1	1				29
Me	1	1	1	1	0	1	1	2	2	2	1	2	1	1	2	1	0	1	2	2	2	1	1	1	1	0	0	1	1	1			33
Wn	1	1	1	0	0	0	2	2	1	2	1	1	0	1	0	0	0	1	2	2	1	0	0	0	0	0	1	1	1	0			22
Wi	1	2	2	1	1	1	2	2	2	2	2	2	1	2	1	0	1	2	2	2	2	1	1	1	0	0	1	2	2	1			43
Sw	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	0	0	1	2	2	1	0	1	0	0	0	1	1	1			30
Ni	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	2	2	1	0	1	0	0	0	1	1	1			23
Ab	1	1	1	1	1	1	2	2	2	1	2	1	1	1	1	1	1	0	1	2	2	1	1	1	1	1	0	1	1	1			34
Ma	2	2	1	1	1	1	2	2	2	2	2	1	1	1	1	1	0	0	2	2	2	1	0	1	0	0	0	2	1	1			34
Fu	1	1	1	0	0	1	2	2	2	2	1	1	1	1	1	0	0	0	1	2	2	1	0	0	0	0	0	1	1	0			24
CF	1	2	1	1	1	1	2	2	2	1	2	1	1	1	1	0	0	1	2	2	1	1	1	0	0	0	1	1	1	1			32
Na	1	1	1	1	1	1	2	2	2	1	2	1	1	1	1	1	0	1	2	2	1	0	0	0	0	0	0	1	1	1			29
Ag	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	0	1	2	2	1	1	1	1	0	0	1	1	1	1			30
Eb	1	2	1	1	1	1	2	2	2	2	1	1	1	1	1	1	0	1	2	2	1	1	1	1	1	0	1	1	1	1			36
Tl	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	0	0	1	2	2	1	1	1	1	0	0	1	1	1			32
Ch	0	0	1	0	0	0	1	1	1	1	1	0	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0			13
SM	0	1	1	0	0	0	1	2	1	1	1	1	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	1	1	0			17
SF	1	1	1	0	0	0	2	2	1	1	1	1	0	1	0	0	0	1	2	2	-	0	0	0	0	0	0	1	0	0			18
Ka	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	0	1	2	2	1	1	1	1	1	1	0	1	1	1	1			33
Ks	1	2	1	1	0	1	2	2	2	2	2	1	2	1	0	0	2	2	2	1	1	1	1	0	0	0	1	-	1	1			35
Tu	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0			10
ZS	0	1	1	0	0	1	2	2	1	1	1	1	1	1	0	0	0	2	2	1	0	0	0	0	0	0	0	1	0	0			20
He	1	2	1	0	1	1	2	2	2	2	1	1	1	1	1	0	0	2	2	1	1	1	1	1	0	0	0	0	1	1			31
Ta	1	1	1	0	0	1	2	2	1	2	1	1	0	1	0	0	0	2	2	1	0	0	0	0	0	0	0	1	1	0			21
Ho	0	0	0	0	0	0	1	2	1	1	1	0	0	1	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0			11
Te	1	1	1	0	0	1	2	2	2	1	-	-	1	-	-	1	2	2	1	0	0	0	0	0	0	0	1	1	1	0			21
Al	1	1	1	0	0	0	2	2	1	1	1	1	1	0	1	0	0	1	2	2	1	0	0	0	0	0	1	1	1	0			22
SJ	1	0	1	0	0	0	2	1	1	1	1	1	0	1	0	0	0	2	2	1	0	0	0	0	0	0	0	1	1	0			18
El	0	0	0	0	0	0	1	1	0	1	0	0	0	1	0	-	0	1	2	1	0	0	0	0	0	0	0	0	0	0			8
Hu	0	0	1	0	0	0	1	1	1	1	1	0	1	1	0	0	1	2	1	0	0	0	0	0	0	0	0	1	1	0			16
Ap	0	0	0	0	0	0	1	1	1	1	1	0	-	0	0	0	0	2	2	0	0	-	0	0	0	0	0	0	0	0			9
Tn	1	1	1	0	0	1	2	1	1	1	0	0	1	0	0	0	1	2	1	1	0	-	0	0	0	0	1	1	0			19	
Va	0	0	0	0	0	0	2	2	1	1	1	0	0	1	0	0	0	1	2	2	1	0	0	0	0	0	0	1	0	0			15
Wa	0	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0			13
Pi	1	1	0	1	0	1	2	2	1	1	1	1	0	1	0	1	0	2	2	2	0	1	0	0	0	0	0	1	0	1			24
Hr	0	1	1	0	0	0	1	2	1	1	1	1	0	1	0	0	0	1	2	2	1	0	0	0	0	0	1	1	0	0			18
To	1	1	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	2	2	1	0	0	0	0	-	-	1	1	1	0			21
Am	0	0	1	0	0	0	1	2	1	1	1	1	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0			14

Selected Days: Five quiet 16, 17, 24, 25, 26

Five disturbed 7, 8, 10, 19, 20

Ten quiet 5, 16, 17, 22, 23, 24, 25, 26, 27, 31

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

September

	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	1	2	2	2	2	2	2	2	2	2	2	2	1	1	0	0	2	2	2	2	2	1	0	2	2	2	2	1	1	0	1	44
So	0	1	2	2	2	2	2	2	2	1	1	1	1	0	0	0	1	1	1	1	0	0	1	2	2	2	2	1	1	0	2	43	
Co	0	0	2	2	2	2	1	1	1	1	1	1	0	0	0	2	2	2	2	1	0	2	2	2	2	1	1	0	0	0	23		
Do	0	0	2	2	2	2	1	2	1	2	2	1	1	0	0	2	2	2	1	0	2	2	2	2	2	0	0	0	0	1	37		
Le	0	0	2	1	2	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	25		
Lo	0	1	2	2	2	2	2	2	2	2	2	2	2	0	1	2	2	2	2	1	0	2	2	2	2	1	1	1	1	2	48		
Si	0	0	1	1	2	1	1	1	0	1	1	0	0	0	0	1	1	1	1	0	0	1	1	1	0	0	0	0	0	0	16		
RS	1	1	2	2	2	2	2	2	2	2	1	2	1	0	2	2	2	2	1	1	2	2	2	2	1	1	0	2	48				
Es	0	0	2	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	25		
Me	0	0	2	2	2	2	2	1	2	1	1	1	1	1	0	0	1	1	2	2	2	1	0	2	1	1	1	1	1	0	1	33	
Wn	0	0	2	1	2	1	1	2	1	1	1	0	0	0	0	1	1	1	1	2	0	0	1	2	2	1	0	0	0	1	25		
Wi	0	1	2	2	2	2	1	2	2	2	2	1	2	0	0	2	2	2	2	1	0	2	2	2	2	1	1	0	2	44			
Sw	0	1	2	2	2	2	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	2	2	1	1	0	0	1	28		
Nr	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	21		
Ab	0	1	2	2	2	2	1	2	1	1	1	1	1	0	0	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	32		
Ma	0	1	2	2	2	2	1	2	2	2	1	0	1	0	-	2	2	2	2	1	0	2	2	2	2	0	0	0	0	0	37		
Fu	0	0	2	1	2	1	1	2	0	1	0	0	0	0	0	1	1	1	1	2	0	0	1	2	1	1	0	0	0	1	22		
CF	0	1	2	2	2	1	1	2	1	2	1	1	1	0	0	1	2	1	1	2	1	0	1	2	2	1	1	0	1	1	34		
Na	0	1	2	2	2	2	1	2	1	1	1	1	0	0	0	1	1	1	1	1	0	1	2	1	1	1	1	0	1	1	29		
Ag	0	1	2	2	2	2	1	2	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	31		
Eb	0	1	2	2	2	1	1	2	1	1	1	1	1	0	0	2	1	1	1	2	1	0	1	2	2	1	0	0	2	34			
Tl	0	0	2	2	2	2	1	2	1	1	1	1	1	0	0	1	1	1	1	2	1	0	2	2	2	1	1	1	0	2	34		
Ch	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	0	0	0	0	0	13		
SM	0	0	2	1	2	2	1	2	1	1	1	0	0	0	0	1	1	1	1	2	0	0	1	2	2	1	0	0	0	0	25		
SF	0	0	2	1	2	1	0	2	1	1	1	0	-	-	0	1	1	1	1	0	0	1	2	2	1	0	0	0	1	23			
Ka	0	0	2	2	2	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	1	26	
Ks	0	1	-	2	2	2	1	2	1	1	0	1	2	0	0	2	1	1	2	2	1	0	2	2	2	1	0	0	0	2	33		
Tu	0	0	1	1	1	1	1	1	0	0	1	0	0	0	0	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	15		
ZS	0	0	0	1	1	1	1	0	1	0	1	1	0	0	0	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	15		
He	0	1	2	2	2	1	1	2	1	1	1	1	1	0	0	1	1	1	2	1	0	0	2	2	2	1	0	0	0	1	30		
Ta	0	0	2	2	2	1	1	1	0	1	0	0	1	0	0	2	1	1	1	1	0	0	1	2	2	0	0	0	0	1	23		
Ho	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	9		
Te	0	0	2	2	2	2	2	2	1	0	0	0	0	0	1	1	2	2	2	1	0	1	2	2	1	0	0	0	1	32			
Al	0	0	2	2	2	2	1	1	2	1	1	1	0	0	2	2	1	-	1	0	0	2	2	2	1	0	0	0	1	30			
SJ	0	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	1	0	0	1	1	1	1	1	0	0	0	1	19		
El	0	0	1	1	1	0	0	1	-	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6		
Hu	0	0	1	1	1	1	1	0	1	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	12		
Ap	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	0	0	0	0	0	14		
Tn	0	0	1	1	1	1	1	1	0	1	0	0	1	1	1	1	0	0	1	1	1	1	1	0	0	0	-	1	19				
Va	0	0	1	1	1	1	0	1	1	1	1	0	0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	1	14			
Wa	0	0	1	1	1	1	0	1	0	1	0	0	0	0	0	1	1	1	1	1	0	0	1	1	1	0	0	0	0	14			
Pi	0	0	2	2	1	1	0	1	1	0	0	2	0	0	1	0	0	1	1	0	0	1	1	1	0	0	0	0	1	18			
Hr	0	0	2	1	2	1	1	0	1	0	0	1	1	1	1	1	0	0	1	2	1	1	0	0	0	0	0	0	0	20			
To	0	0	1	1	2	1	1	1	1	0	1	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	22			
Am	0	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5			

Selected Days: Five quiet 1, 14, 15, 22, 29

Five disturbed 3, 4, 5, 6, 24

Ten quiet 1, 2, 12, 14, 15, 21, 22, 27, 28, 29

TABLE 3 MAGNETIC CHARACTER-FIGURES, C, 1950

October

	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	2	2	2	2	2	2	2	2	1	1	0	2	2	2	2	2	1	0	1	0	1	2	1	0	0	0	2	2	2	2	44
So	2	2	2	2	2	2	2	2	1	1	0	0	2	2	2	2	2	1	0	1	1	1	1	0	0	-	2	2	2	40		
Co	2	2	2	2	2	2	1	1	1	0	0	1	1	1	1	1	1	0	0	0	1	1	0	0	0	2	2	1	2	32		
Do	2	2	2	2	2	2	2	2	1	0	0	0	1	1	2	2	2	2	1	0	0	0	1	0	2	2	2	2	37			
Le	2	2	1	1	1	1	1	1	1	0	0	1	0	2	1	1	1	0	0	0	1	1	0	0	0	2	2	2	1	27		
Lo	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	2	1	0	1	0	2	2	1	1	2	2	2	2	49		
Si	2	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	2	1	1	1	18		
RS	2	2	2	2	2	2	2	2	1	1	1	2	1	2	2	2	2	1	1	1	0	2	1	1	1	0	2	2	2	46		
Es	1	2	1	1	1	1	1	1	1	0	0	1	0	2	1	1	1	1	0	0	0	1	1	1	0	0	2	2	1	26		
Me	2	2	2	2	2	2	2	1	1	0	0	1	1	2	1	2	2	1	1	1	0	0	1	1	0	0	2	2	2	38		
Wn	2	2	2	2	2	1	1	1	0	0	0	0	0	0	2	1	2	1	0	0	0	1	0	0	0	0	2	2	2	26		
Wi	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	1	0	1	0	2	2	2	2	2	45					
Sw	2	2	2	2	2	1	1	1	1	1	0	0	1	2	1	2	2	1	0	0	0	1	1	0	0	0	2	2	2	35		
Ni	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	0	0	0	1	1	1	0	0	0	2	1	1	21
Ab	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	2	2	1	1	34	
Ma	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	1	0	1	1	1	1	1	0	0	2	2	2	42	
Fu	1	2	1	2	1	1	1	1	0	0	0	0	1	2	0	1	1	0	0	0	0	1	1	0	0	0	0	2	2	2	25	
CF	2	2	2	2	2	1	2	1	1	0	0	1	1	2	1	2	1	1	0	1	0	1	1	1	0	0	0	2	2	2	36	
Na	2	2	2	2	2	2	1	2	1	1	1	1	1	2	1	2	1	1	0	1	0	1	1	0	0	0	2	2	2	38		
Ag	2	2	2	1	2	1	1	1	1	0	0	1	1	1	1	2	1	1	0	0	0	1	1	1	0	0	0	2	2	2	32	
Eb	2	2	2	2	2	1	2	1	1	1	1	1	1	2	2	2	1	1	1	1	0	1	1	1	1	0	0	2	2	2	41	
Tl	2	2	2	2	2	1	2	2	1	0	1	1	1	2	2	2	1	1	0	1	0	1	1	1	0	1	0	2	2	2	39	
Ch	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	14	
SM	2	2	1	1	1	1	1	1	1	0	0	0	0	2	1	1	1	1	0	0	0	1	1	1	0	0	0	2	2	2	28	
SF	2	2	2	2	1	1	-	-	-	0	-	2	1	-	-	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	21	
Ka	2	2	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	1	0	0	0	1	1	1	0	0	0	2	1	1	28
Ks	2	2	2	2	2	1	1	-	1	0	1	-	1	2	1	2	2	1	0	1	0	-	1	1	1	0	0	0	2	2	2	35
Tu	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	17		
ZS	2	2	1	1	1	1	1	0	0	0	0	0	0	-	2	1	0	0	0	0	0	0	0	0	0	0	0	2	1	1	17	
He	2	2	2	2	1	1	2	1	1	0	1	1	0	2	1	1	2	0	0	0	0	1	1	0	1	0	0	2	2	2	33	
Ta	0	2	1	2	1	1	2	0	0	0	0	0	0	2	2	1	2	1	0	0	0	0	0	0	0	0	0	2	2	2	25	
Ho	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	11		
Te	2	2	2	2	2	1	0	0	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	2	2	2	19		
Al	2	2	2	1	1	1	1	1	1	0	0	1	1	2	0	2	2	1	0	0	0	1	1	0	0	0	2	2	2	31		
SJ	1	1	1	1	1	1	1	1	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	2	1	1	1	17		
El	1	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	10		
Hu	1	1	1	1	1	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	1	1	1	1	15		
Ap	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	1	1	1	12		
Tn	2	2	2	2	2	1	1	1	1	0	1	1	0	2	1	2	2	1	0	0	0	1	1	0	0	0	2	2	2	35		
Va	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	2	1	1	1	14	
Wa	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	11		
Pi	1	2	1	0	0	0	1	0	0	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	1	2	1	1	16		
Hr	2	1	1	1	1	1	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	2	1	1	19		
To	1	2	1	1	1	1	1	1	1	0	1	1	1	2	1	1	1	1	0	0	1	1	1	0	1	1	2	2	1	31		
Am	1	1	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	11		

Σ 737767676147502924 81331277043634826 513 029332197 382757070 1241

Selected Days: Five quiet 10, 19, 21, 25, 27

Five disturbed 1, 2, 14, 28, 29

Ten quiet 9, 10, 11, 19, 20, 21, 24, 25, 26, 27

TABLE 3 MAGNETIC CHARACTER-FIGURES, G, 1950

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	2	2	2	2	2	0	0	1	0	2	2	2	2	2	0	0	2	1	0	0	1	2	1	1	2	2	2	2	2	1	40
So	2	1	1	2	1	0	0	0	1	2	1	2	2	1	0	1	2	0	0	1	2	1	2	2	2	2	2	2	2	39	
Co	2	1	1	2	1	0	0	0	0	1	1	1	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	21	
Do	2	1	0	2	1	0	0	1	0	2	2	2	2	2	0	C	1	1	0	0	0	2	0	1	2	2	2	2	1	1	32
Le	2	1	1	2	1	0	0	0	0	1	1	1	1	1	0	C	1	1	0	0	1	1	0	1	2	2	2	2	1	1	24
Lo	2	2	1	2	2	1	0	1	1	2	2	2	2	1	0	1	2	1	0	1	2	1	2	2	2	2	2	2	2	45	
Si	1	1	0	2	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	1	2	1	1	1	0	0	0	16	
RS	2	2	-	-	-	-	-	-	-	2	2	2	2	2	1	1	2	2	0	0	1	2	1	2	2	2	2	2	2	2	38
Es	2	1	1	2	1	0	0	1	0	1	1	1	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	25	
Me	2	1	1	2	1	0	0	0	0	2	1	2	1	1	0	0	1	1	0	0	0	1	0	1	2	2	2	1	1	28	
Wn	2	0	0	2	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	18	
Wi	2	2	1	2	2	0	0	0	1	1	2	2	2	2	1	1	1	2	0	0	1	2	1	2	2	2	2	2	2	43	
Sw	2	1	0	1	1	0	0	0	0	2	1	1	1	1	0	0	1	1	0	0	1	2	2	2	2	2	1	1	1	26	
Ni	1	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1	16	
Ab	2	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	2	2	2	1	1	1	30	
Ma	2	2	1	2	1	0	0	0	0	2	1	2	2	1	0	1	1	2	0	0	1	2	1	2	2	2	2	2	1	38	
Fu	2	1	0	2	0	0	0	0	0	2	1	1	1	1	0	0	0	0	0	0	1	0	1	2	2	2	2	1	25		
CF	2	1	1	2	1	0	0	1	0	2	1	1	1	0	0	1	1	0	0	1	2	1	1	2	2	2	1	1	1	31	
Na	2	1	1	2	1	0	0	1	1	2	1	1	1	1	0	1	1	1	1	0	1	1	1	2	2	2	1	1	1	33	
Ag	2	1	1	2	1	0	0	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	2	2	2	1	1	1	29	
Eb	2	1	1	2	1	0	0	1	1	2	1	2	2	1	1	1	1	2	0	0	1	2	2	2	2	2	1	1	1	38	
Tl	2	1	1	2	1	0	0	0	1	0	2	1	2	1	1	1	1	1	0	0	1	2	1	2	2	2	2	1	1	35	
Ch	1	0	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	10		
SM	1	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0	0	0	2	2	2	1	1	0	0	17		
SF	2	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	1	1	2	1	0	0	15		
Ka	1	1	1	2	1	0	0	1	1	2	1	1	1	1	1	1	0	0	0	0	1	0	1	2	2	1	1	1	1	28	
Ks	-	1	0	2	1	0	0	0	1	2	1	2	2	1	1	1	1	1	2	0	0	2	2	2	2	1	2	1	35		
Tu	1	1	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	14		
ZS	1	0	0	1	0	0	0	0	0	2	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	11	
He	2	1	0	2	0	0	0	0	0	2	1	2	1	1	1	1	1	1	0	0	2	0	2	2	2	2	2	0	0	30	
Ta	2	1	0	2	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	1	0	1	2	2	1	1	0	0	18	
Ho	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	6		
Te	1	0	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	1	0	1	2	2	2	1	0	0	17	
Al	1	1	0	2	0	0	0	0	0	2	1	1	1	0	-	-	-	-	0	0	1	0	1	2	2	1	1	1	1	19	
SJ	1	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	0	0	12	
El	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	7	
Hu	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	10	
Ap	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	0	0	9	
Tn	2	1	0	2	1	0	0	1	1	2	1	1	1	0	1	1	1	1	-	-	0	1	0	1	2	2	2	1	1	28	
Va	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	10	
Wa	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	7	
Pi	1	0	0	2	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	15
Hr	1	0	0	1	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	1	1	2	1	1	1	1	0	15	
To	1	1	0	1	1	0	0	0	0	1	1	1	1	1	0	0	1	1	0	0	0	1	0	1	2	2	1	1	1	21	
Am	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	6		

Selected Days: Five quiet 6, 7, 15, 19, 20

Five disturbed 1, 4, 25, 26, 27

Ten quiet 6, 7, 8, 9, 15, 16, 19, 20, 21, 23

TABLE 3 MAGNETIC CHARACTER-FIGURES, C., 1950

December

Selected Days: Five quiet 1, 4, 11, 21, 31

Five disturbed 13, 14, 22, 23, 24

Ten quiet 1, 3, 4, 9, 11, 17, 21, 29, 30, 31

TABLE 4 INTERNATIONAL MAGNETIC CHARACTER-FIGURES, C, 1950
 (Based on data of Table 3)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.5	0.3	0.5	1.4	0.4	0.9	0.6	0.8	0.0	1.6	1.5	0.1
2	0.4	1.2	0.5	1.3	1.0	1.0	0.2	1.0	0.3	1.7	0.7	0.7
3	0.4	1.1	0.3	1.3	1.4	0.8	1.0	1.0	1.7	1.5	0.4	0.5
4	0.8	1.1	0.3	1.2	1.0	0.4	1.3	0.5	1.5	1.5	1.5	0.2
5	0.3	0.6	0.3	1.5	0.9	0.4	0.7	0.4	1.7	1.4	0.6	0.7
6	0.7	0.6	0.9	1.1	0.6	1.4	0.5	0.6	1.3	1.0	0.0	0.9
7	0.7	0.9	1.0	0.8	0.6	0.2	0.5	1.6	0.9	1.1	0.0	0.6
8	0.0	0.6	0.3	0.3	0.2	0.5	0.3	1.8	1.5	0.7	0.3	0.8
9	0.7	0.8	0.4	0.4	0.0	1.1	0.7	1.3	0.8	0.6	0.2	0.3
10	0.7	0.0	0.1	0.4	0.5	0.9	0.5	1.4	1.1	0.2	1.5	0.5
11	0.6	0.3	0.1	0.3	0.9	0.5	1.3	1.2	0.8	0.3	0.9	0.1
12	0.5	0.2	0.2	0.8	0.3	0.4	1.5	1.0	0.5	0.7	1.1	1.4
13	0.7	0.1	0.4	0.5	0.8	0.1	1.1	0.6	0.8	0.6	1.0	1.6
14	1.2	0.2	1.0	0.3	0.8	0.2	0.6	1.1	0.0	1.6	0.6	1.4
15	0.7	0.4	1.1	0.9	1.0	0.0	0.6	0.7	0.0	1.0	0.2	0.7
16	0.6	0.1	0.3	0.5	0.6	0.4	0.5	0.2	1.1	1.5	0.3	0.4
17	0.3	0.0	0.4	0.6	0.4	0.6	0.2	0.1	1.1	1.1	0.7	0.3
18	0.3	0.3	0.2	0.8	0.2	0.4	0.2	1.0	1.1	0.6	0.8	0.8
19	0.9	0.5	1.9	1.0	0.2	0.2	0.3	2.0	1.2	0.1	0.1	0.7
20	1.2	1.8	0.9	1.0	0.5	0.2	0.3	1.9	1.3	0.3	0.0	0.8
21	1.1	1.9	1.3	0.0	0.6	0.4	0.6	0.9	0.4	0.0	0.3	0.2
22	0.6	1.4	1.1	0.4	1.1	0.6	0.6	0.4	0.0	0.7	1.2	1.5
23	0.4	1.7	0.4	1.1	1.5	1.2	0.0	0.4	1.2	0.7	0.3	1.3
24	1.7	1.6	1.0	1.2	0.8	1.6	1.4	0.2	1.5	0.5	0.9	1.5
25	1.3	1.1	0.6	0.4	0.7	0.9	1.5	0.1	1.4	0.2	1.6	1.3
26	0.8	0.0	0.5	0.0	0.7	0.7	0.2	0.0	0.9	0.2	1.6	1.2
27	0.8	0.2	1.4	0.3	1.5	0.3	0.7	0.2	0.4	0.1	1.4	0.9
28	0.7	0.7	0.5	0.7	1.7	0.2	0.7	0.8	0.3	1.9	1.4	0.5
29	0.2	0.9	0.9	1.1	1.5	0.6	1.0	0.0	1.7	1.0	0.2	
30	1.0	0.4	1.1	0.8	1.4	0.6	0.8	0.8	1.6	0.7	0.4	
31	0.4		1.2		0.3		0.6	0.5		1.6		0.1

TABLE 5 MEAN K AND C FIGURES BY MONTHS 1950
(Dependent only on data of tables 2 and 4 resp.)

Month	Mean K _w								Monthly Mean Kw	Mean C
Jan.	2.15	2.08	1.93	2.00	2.04	2.30	2.40	2.32	2.15	0.68
Feb	2.01	1.97	1.98	2.06	2.20	2.26	2.58	2.48	2.19	0.70
Mar	2.01	2.04	2.20	2.36	2.25	2.23	2.07	1.90	2.13	0.66
Apr	2.45	2.66	2.43	2.40	2.45	2.39	2.61	2.57	2.49	0.75
May	2.65	2.16	2.07	2.18	2.34	2.63	2.51	2.72	2.41	0.75
Jun	2.28	2.28	1.88	2.15	2.20	2.30	2.20	2.18	2.18	0.65
Jul	2.53	2.29	1.92	2.29	2.38	2.18	2.22	2.27	2.26	0.66
Aug	2.85	2.61	2.48	2.68	2.65	2.69	2.63	2.71	2.66	0.82
Sep	2.65	2.35	2.38	2.66	2.49	2.73	3.01	3.00	2.66	0.85
Oct	2.95	2.64	2.70	2.80	2.69	2.99	3.13	3.04	2.87	0.91
Nov	2.43	2.21	2.21	2.35	2.51	2.73	2.85	2.69	2.50	0.76
Dec	2.17	2.09	2.03	2.31	2.12	2.51	2.88	2.62	2.34	0.73
Year	2.43	2.28	2.18	2.35	2.36	2.50	2.59	2.54	2.40	0.74

TABLE 6 MEAN K AND C FIGURES BY YEARS FROM 1940 TO 1950

Year	Mean K _w								Annual Mean Kw	Mean C
1940	2.12	2.05	1.95	2.09	2.24	2.29	2.34	2.22	2.16	0.73
1941	2.21	2.14	2.20	2.28	2.31	2.34	2.39	2.35	2.28	0.70
1942	2.14	2.08	2.13	2.29	2.38	2.37	2.28	2.22	2.24	0.65
1943	2.40	2.35	2.49	2.60	2.53	2.48	2.42	2.36	2.45	0.71
1944	1.96	1.87	1.93	2.04	2.06	2.03	1.96	1.95	1.98	0.53
1945	1.84	1.78	1.82	1.97	2.02	2.00	1.95	1.89	1.91	0.47
1946	2.18	2.18	2.32	2.41	2.50	2.43	2.35	2.25	2.33	0.61
1947	2.29	2.29	2.38	2.52	2.57	2.59	2.46	2.39	2.44	0.69
1948	2.21	2.10	2.09	2.28	2.41	2.44	2.37	2.37	2.29	0.71
1949	2.17	1.99	1.99	2.15	2.22	2.26	2.22	2.24	2.16	0.65
1950	2.43	2.28	2.18	2.35	2.36	2.50	2.59	2.54	2.40	0.74

TABLE 7 MAGNETICALLY SELECTED DAYS 1950

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

TABLE 8 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) 1950

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

January

n o n e

February

- *19d 23h 40m So Le Do Lo RS Wn Wi Ab Ma Sw Na CF Ch Fu Eb SF Tu Ks SJ He Ho ZS Hu Va El Ap Pi Hr Wa Am. 39m: Ka; 39.5m: Al; 41m: Es Ni Tl; 42m: Te. Doubtful: Tr To.
*23d 10h 43m Tr Co So Le Si Ab Ni Sw Na CF Tl Ks SJ He Ka Va El Hr Wa; 40m: SF; 41m: Ma ZS; 42m: Do Lo Wn Ch Eb Tu Hu To; 43m: Al; 44m: RS Wi Ho Pi Am; 45m: Es Fu; 46m: Te Ap.

March

- *19d 05h 45m Tr Le Do Es Lo RS Wi Ab Ni Ma Sw CF Fu Tl He Ho Hu Ap Pi Hr Wa; 43m: ZS Va; 44m: Wn Ch Eb Tu Ks SJ Ka Al To; 47m: So SF; 48m: Te Am.

April

- 22d 09h 11m Tr Co So Do Si Do RS Wn Ma Ch Fu Tl Tu Ks SJ He Ho Hu El Pi Hr; 08m: Ni; 09m: Ap; 10m: Wi Va; 12m: Sw SF Te Ka ZS Al To Am. Doubtful: Le Es Ab CF Eb Ja.
23d 05h 48m Tr So Le Do Es Lo Wn Wi Ni Ma Sw Tl Ks He Al Va El Pi Hr Wa Am; 45m: Ap; 49m: Ab; 50m: Te; 51m: Fu. Doubtful: CF Eb SF Ka To.

May

- 02d 09h 46m Tr So Le Lo RS Ni Ma Sw Eb Tl Ks He Va Ap Pi Hr; 47m: Do Es Wn Wi Fu Ka Hu Am; 48m: Te; 50m: El. Doubtful: Ab CF SF Wa To.
*27d 12h 05m Le Es Lo RS Wn Wi Ch Fu Eb Tl SF Ks He Ho ZS Hu Va Ap Ni Pi Hr Wa Am; 03m: So To; 04m: Tr Ab Ma Sw CF Tu Al El; 06m: Do Si Te Ka; 15m: SJ.

June

- *23d 18h 02m Tr So Le Do Lo RS Wn Wi Ab Ni Sw Ks He ZS Al Ap Wa; 00m: Tl SF Ho; 01m: CF Eb; 03m: Co Si Es Ma Ch Fu Tu SJ Te Ka Hu Va Pi Hr To Am; 07m: El.
29d 08h 22m Tr Le Lo Wn Wi Ma Ch Fu Tu SJ He ZS Hu Ap Pi; 21m: Do; 23m: So Es Tl Te Ka To Am; 24m: Ho; 25m: El. Doubtful: Ni CF Eb SF Ks Va Hr Wa.

July

- *24d 01h 51m Tr So Si Lo RS Wn Wi Ab CF Ch Fu Tl Tu Ks SJ He Ho Al Va Ap Hr Wa; 48m: Es; 50m: Co Le Ni Ma Sw Eb Ka ZS El To Am; 52m: Te Hu Pi; 53m: SF; 55m: Do.

August

Tu

- *07d 10h 55m Tr So Le Lo RS Wn Ab Ni Ch SF Ks SJ He Al Va Hr Wa To Am 53m: CF ZS; 54m: Vi Ma Sw Fu Eb Ka Ap Pi; 56m: Si Tl Ho Hu El; 57m: Es Te.
14d 08h 21m So Lo Wi Sw Fu Tl Ks Te He Ka Hu Va El Pi Hr; 20m: ZS; 22m: Al. Doubtful: Tr Le Do Es CF Eb SF To Am.
*18d 15h 38m Tr So Le Lo RS Wi Ab Ni Sw Tl Ks He ZS Hu Ap; 29m: Ka; 35m: El; 37m: Eb Pi; 39m: Wn Ma Fu Al Va Hr Am; 40m: Es; 42m: Do. Doubtful: CF SF Te.

TABLE 8 STORM SUDDEN COMMENCEMENTS (S.S.C.'S) - continued

(August)

- *19d 10h 06m So Es Lo Wn Wi Ab Ni Sw Tl Ks Te Ka Al Va Ap Pi Hr; 05m: Le ZS; 07m: Do Ma; 08m: El. Doubtful: CF Fu Eb SF Tu SJ Ho Am.
28d 10h 20m So Lo RS Ni Ma Sw Fu Te Va Ap Hr; 17m: El; 18m: Le Eb Ka ZS Al Pi; 19m: Es Wn Tl; 21m: Do Wi; 24m: SF. Doubtful: Ab CF Hu Wa To.

September

- *16d 10h 18m Tr So Lo RS Wn Wi Sw CF Ch Fu Ks SJ Ka ZS Al Hu Ap Hr Wa To; 15m: Pi; 16m: El; 17m: Ma SF Va; 19m: Le Es Ab Eb Tl Tu Te Ho; 20m: Ni Am; 21m: Do.
*30d 17h 47m Tr So Si Es Lo RS Ma Ch Fu Tl Ks He Ka ZS Al Va Hr To. 44m: Ap; 45m: Ni SF Pi; 46m: Le Wn Wi Ab Sw CF Eb Tu SJ Hu El; 48m: Te Am; 49m: Do. Doubtful: Wa.

October

n o n e

November

n o n e

December

- 12d 05h 26m Co So Le Es Lo RS Wi Ab CF Ch Eb Tu Ks SJ He Ka Va El Ap Hr Wa To; 17m: Hu; 25m: Ni Fu Am; 27m: Tr Wn Sw Tl Ho Pi; 28m: Ma SF; 29m: Do Si; 30m: Te.
14d 05h 41m Ks El Pi To Am; 45m: Te. Doubtful: So Do Lo Fu Ka Hu Ap Hr Wa.

TABLE 8a S.C.'S NOT FOLLOWED BY A MAGNETIC STORM

January

- 01d 16h 45m Co So Si Es Lo RS Wn Wi Ab Ni Sw CF Ch Fu Eb Tl SF Tu Ks SJ He Ho ZS Al Va El Ap Pi Hr Wa; 43m: Le To; 44m: Ka; 47m: Do Ma Am; 48m: Te. Doubtful: Tr Hu.

February

- 02d 06h 35m Sw Fu Hu Pi; 19m: Do; Doubtful: So Lo Te El
03d 23h 22m Tr So Do Es Lo RS Wn Wi Ab Na SF Ks He Al Hu Va El Pi Hr Wa; 21m: Le Ma Eb Ap To; 23m: Tl Am; 24m: Te; 25m: Ni Fu. Doubtful: Co Si CF Ch Tu SJ Ka Ho.

March

- 29d 07h 21m Tr Le Es Lo RS Wn Wi Ab Sw Ch Fu Tl Tu Ks He Al Hu El Ap Pi Hr Wa To; 16m: So; 20m: Ni Eb SJ Va; 22m: Ma Te Ka Ho ZS; 23m: Do; 24m: Am; 25m: SF. Doubtful: CF.

April

- 15d 11h 59m Tr So Lo Fu SF He Hu El Pi; 56m: Te. Hr; 57m: Sw; 12h 00m: Va. Doubtful: RS Eb Tl Ks Ka Wa.

TABLE 8a S.C.'S NOT FOLLOWED BY A MAGNETIC STORM - continued

May

11d 17h 12m Es Lo RS Wn Ni Fu Eb Tl SF He Va El Pi Hr; 14m: Do Sw Te. Doubtful: So Le Wi Ab Ma CF Ks Ka Hu Am.
 20d 08h 21m Tr Le Es Lo Wi Sw Tl Te He Hu Va El; 20m: So Wn; 24m: Do. Doubtful: Co Si Ma Ch SF Tu SJ Ka Ho Ap Hr Wa.
 22d 20h 52m So Wi Sw Fu Tl Ks He Al Hu Va Pi Hr; 50m: Ni Eb; 51m: CF ZS Ap; 53m: Ma El; 54m: Te. Doubtful: Tr Lo SF Wa Am.

June

16d 14h 32m Do Lo Fu Tl Ks Te He Va Pi; 31m: ZS El; 33m: Wi; Doubtful: So RS Ma Ka Ap Hr.
 22d 04h 53m Tr So Le Do Es Lo Wi Ab Ma Sw Fu SF ZS Hu Va Ap Pi Hr To; 54m: Am; 55m: Tl El; 56m: Te. Doubtful: Wn CF Ks Ka Wa.

July

n o n e

August

n o n e

September

12d 12h 14m So Lo Fu Eb El Pi; 16m: Tl; 17m: Do. Doubtful: Wn Wi Ks Te He Ka Hr Wa.

October

n o n e

November

n o n e

December

n o n e

TABLE 9 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)

Sudden commencements of a pulsation or a bay-disturbance.

January

03d 21h 55m Tr So Lo RS Wn Wi Ma Fu El Ap Pi Hr; Doubtful: CF.
 09d 04h 12m Wi Ab Sw Fu Tl SF Ks Te Va El Ap Pi Hr Am; 08m: Do. Doubtful: So Lo Wn CF Ka Hu Wa.
 09d 13h 14m Do Wi Tl Te He Hu Va El Pi Hr. Doubtful: Es Lo Ab Fu Ks Ka Wa.
 09d 21h 41m So Do RS Wn Wi Ma Fu El Ap Pi Hr. Doubtful: Tr Lo.
 10d 00h 52m So Do Lo RS Wn Wi CF Fu Tl SF El Hr; 48m: Te. Doubtful: Ab Ka.
 10d 23h 18m So Do Lo RS Wn Wi Ab Fu Eb Tl Te He El Hr. Doubtful: Tr Ks.
 14d 18h 15m So Do Tl SF Te El; 12m: Hu Hr; 13m: Pi. Doubtful: Ab Fu Ka Ap Wa.
 16d 21h 32m Tr So Do Lo Wn Wi Ab Fu Eb He Hu El Ap Hr. Doubtful: RS CF Ks.
 17d 19h 35m Tr So Do Wn CF Fu Eb Tl Hu El Hr; 37m: Wi. Doubtful: Le Es Lo RS Ma Ks He.

TABLE 9 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(January)

18d 21h 58m Tr So Do Lo RS Wn Wi Ab Ma Sw CF Fu SF Ks He Hu El Ap
Hr. Doubtful: Le Es Eb Tl Te Wa.
22d 16h 32m So Do Lo RS Wn Wi Ab Fu Te ZS Wa; 31m: Ka Hr.
Doubtful: CF Ks El.
24d 03h 00m Do Ab Fu Tl Te El Pi Hr Am; Doubtful: Tr So Lo Wn Ks
Ka Hu Wa.
24d 05h 34m So Do Ab Ma Sw Fu Tl Te He Pi Am; 33m: Hr.
Doubtful: Tr Lo Wi SF Ks Ka Hu El Ap Wa.

February

05d 17h 28m So Le Do Es Lo Wn Wi Ab Fu Ks He El; 26m: Te.
Doubtful: Tr RS CF Ap.
06d 14h 00m So Do Ab Sw SF Ks He Hu Va El Ap Pi Hr Wa.
Doubtful: Tr Lo Fu Tl Ka To.
11d 22h 25m Tr So Lo Wn Wi Ma Na Fu Hu El Ap Pi Hr. Doubtful: Do RS.
18d 23h 06m So Do Lo RS Wi Ab Sw Fu Tl SF Te He Al Hu Va El Ap Hr
Am. Doubtful: Wn Ma Na CF Eb Ks Ka.

March

07d 00h 25m Wi Ab CF Eb Tl SF Ks He Hu El Hr. Doubtful: Lo RS Wn Fu.
08d 23h 25m So Do Wn Wi Ab Ma CF Tl SF Ks El Ap. Doubtful: Lo.
17d 21h 06m So Le Es Lo RS Wn Wi Ab Ni Ma Sw Fu Eb Tl He Hu El Ap
Hr Wa; 05m: Ka. Doubtful: CF Ks.
22d 03h 38m Wi Ab Ma Sw Tl Ks Te Hu Va El Pi Hr. Doubtful: So Do
Lo RS Wn CF Fu Ka Ap Wa To.
26d 23h 30m Wi Ma Fu Tl Hu El Pi Hr; 37m: Te. Doubtful: Do Lo CF
SF He.
27d 20h 41m So Wn Wi Ni Sw Fu Eb Tl Ks He El Pi Hr. Doubtful: Lo CF.

April

01d 19h 55m Lo Wi Ma Sw CF Fu Tl El Hr. Doubtful: So Ab Ks Va.
03d 20h 34m So Lo Wi Ab Sw Fu Eb Tl He El Hr. Doubtful: Ap.
10d 22h 35m Tr So Do Lo Wn Wi Ma Fu Eb Tl Hu El Ap Hr. 36m: Te.
Doubtful: RS Ab.
12d 04h 19m So Do Wi Sw Tl Ks Te He El Pi Hr Am. Doubtful: Lo Wn
Ab Ma CF Fu Eb Ka Hu Va Ap Wa To.
15d 22h 40m So Do Lo RS Wn Wi Ab Ma Eb Ks He Hu El Hr. Doubtful: Tr Ap.
19d 18h 55m Wi Ma CF Tl Ks Te He Hu El Pi Hr. Doubtful: Lo Ab Fu Ka.
27d 20h 05m Tr So Do Lo RS Wn Wi Fu Ks He El Hr. Doubtful: CF Ap.
29d 11h 08m Hu El Ap Wa To. Doubtful: So Do Tl Ks Te Ka.

May

01d 20h 43m Do Lo RS Wi Ab Fu Tl He El Hr. Doubtful: So CF.
03d 20h 25m Wi Ab Ma CF Fu Eb Tl El. 26m: Hr. Doubtful: So Lo Ks Ka Va.
10d 21h 19m Do Lo RS Wi Ab Fu Tl Ks He Hu El Ap Pi. 18m: Te ZS.
Doubtful: So Wn CF SF Ka Va Hr Am.
15d 18h 42m Tr So Le Es Lo RS Wn Wi Ni Ma Sw Fu Eb Tl SF Hu El Pi
Hr; 39m: He. Doubtful: Ab CF Te Ka Wa.
29d 00h 47m Fu Ka Hu El Ap Hr Wa; 49m: Te. Doubtful: Do SF Ks Am.
29d 03h 46m So Do Fu Te El Ap Hr Wa. Doubtful: Lo Ab Tl Ka.

TABLE 9 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.S)-continued

(May)

31d 21h 23m Tr So Do Wn Wi Ma Fu Eb Ks He Hu Hr. Doubtful: Lo RS
CF Te El.

June

02d 21h 50m Le Es Wn Wi CF Fu Eb Tl Ks El Ap; 45m: Hr; 58m: He.
03d 11h 33m So Do Tl Hr Va El Ap Pi Wa To Am; 29m: Te; 35m: Hr.
Doubtful:Lo Ka.
05d 00h 45m Tr So Le Do Es Wn Wi Fu Tl Ks Hu El Ap Hr.
Doubtful:Lo Ab CF.
06d 00h 17m So Do Lo RS Wn Wi Ni Ma Sw CF Fu Eb Tl SF Ks Tl He ZS
Hu Va El Pi. Doubtful: Ka Ap Hr Wa.
08d 20h 32m Do Wn Wi Ma Fu Tl He El Ap Pi Hr; 35m: Te.
Doubtful:Le Es CF Ks Ka Hu.
12d 20h 25m So Do Wn Wi Ma Fu Tl Hu El Ap; 24m: Hr.
Doubtful:Lo CF Ks.
25d 20h 57m Tr So Do RS Wn Wi Ab Ma Sw Fu Eb Ks He El; 50m: Hr.
Doubtful:Lo CF Te Ka Wa.

July

09d 18h 14m Lo Wn Ab Fu Eb He El. Doubtful: Do Tl Ks Te Ka Va Ap
Pi Hr Am.
11d 18h 08m So Le Es Wn Wi Fu El. Doubtful: Lo Ma Te Hr.
11d 18h 35m So Es Wn Wi Ma Fu El; 39m: Tl. Doubtful: Le Lo CF Te
Ka Hr.
16d 21h 43m Tr So Do Wi Ma Hu El Hr; Doubtful:Le Es Lo Wn Fu.
21d 20h 02m Do Wn Fu Eb Ka El Ap Pi Hr Wa; Doubtful:So Lo CF Te.
21d 20h 39m Tr So Wn Wi Ab CF Fu Te He Hu El Ap Hr; 45m: Do.
Doubtful:Lo RS Ka.
30d 20h 21m So Do Wn Wi Ma Fu El; 18m: Te;
Doubtful:Tr Lo CF Ks Ka Hr Wa.
31d 22h 00m Tr So Do RS Wn Wi Ma Fu Eb Ks Te He Hu El Hr CF.
Doubtful:Lo Ka Wa.

August

02d 19h 10m Tr So Lo Wn Wi Ma CF Fu Eb Ks He El.
Doubtful:Tl SF Te Hr.
05d 23h 26m So Wn Wi CF Fu Tl Hu El Pi; 25m: Hr.
Doubtful:Do Lo Ab Ka.
06d 21h 46m So Do Wi Fu He Hu; 45m: Hr. Doubtful:Lo Wn Tl Ka.
07d 03h 41m So Do Sw Eb He Al Va El Ap To Am; 43m:Tl; 44m: Te.
Doubtful:Lo Wn Ma Fu Ka Hu Hr Wa.
08d 22h 24m So Wn Wi Ma Fu Eb Ks He El Hr. Doubtful:Do Lo SF.
09d 23h 13m Wn Wi Fu Eb Tl Ks He Hu El. Doubtful:Do Lo Ab CF Ka Hr.
18d 20h 41m So Wn Wi Ab Ma Fu Tl Ks He Hu El Hr; 53m: Eb.
Doubtful:Lo.
23d 23h 05m So Le Do Es Wn Wi Fu Eb Ks He El Hr.
Doubtful:Tr Lo Ab CF Te Ka.
28d 00h 37m CF Eb.

September

02d 18h 50m Wn Wi Fu Hu El Ap Hr. Doubtful: So Do Lo.

TABLE 9 POLAR OR PULSATATIONAL SUDDEN COMMENCEMENTS (P.S.C.'S)-continued

(September)

03d 02h 06m	Do Wi Fu Hu El Hr. Doubtful: Lo RS CF Ka Ap.
04d 22h 23m	So Wi Na Fu Eb Ks He Hr. Doubtful: Lo Wn Ap.
08d 19h 53m	Wi Ab Ni Fu Eb Tl SF Ka El Pi; 54m:Hr. Doubtful: So Lo Wn Ma CF Ks Te Va Ap.
10d 00h 30m	Le Es Wn Wi Ab CF Fu Eb Tl Ks Ka Hu Ap Pi Hr. Doubtful: Lo RS Te Va.
11d 00h 06m	So Le Es Wn Wi Ab CF Fu Eb Tl Ap Pi Hr; 02m: Te. Doubtful: Lo Ks.
24d 01h 25m	Le Es Wn Wi Ab Fu Eb Tl Ka Va El Ap. Doubtful: Lo CF Te.
29d 20h 46m	Tr So Do Lo Wn Wi Fu Hu El Ap Hr. Doubtful: CF Ks He.

October

03d 19h 15m	So Wi Ab Sw CF Fu Eb Tl Ks Te He El Ap Pi Hr. Doubtful: Lo Wn SF.
10d 22h 58m	So Le Es Wn Wi Ma Fu Hu El Hr. Doubtful: Do Lo CF Ap.
12d 18h 00m	Tr So Do Wn Wi El Pi. Doubtful: Lo CF Fu He.
14d 02h 38m	So Do Wi Ab Sw Fu Ks He Va El Ap Pi Hr Am. Doubtful: Lo Ma Tl Ka Hu Wa To.
20d 18h 07m	So Wn Wi Fu El Ap Pi Hr; 13m: Do. Doubtful: Lo Ks Wa.
20d 19h 19m	So Wn Wi Fu Hu El Hr. Doubtful: Do Lo Ks Te.
20d 22h 17m	Do Wn Wi Ma Fu Eb Ks He Hu Ap Hr. Doubtful: So Lo Ka.
22d 21h 19m	So Lo RS Wn Wi Ab Sw Fu Eb He El Ap Hr. Doubtful: CF Tl SF Te Ka.
25d 22h 35m	Tr Le Do Es Lo Wn Wi Ma Fu Eb Ks He Ap Hr. Doubtful: So CF.

November

01d 18h 34m	Do Lo Wi Ab Ma CF Fu Eb Tl He El Ap Hr. Doubtful: So Te Ka.
21d 20h 35m	Tr So Do Lo RS Wn Wi Ab Sw CF Fu Ks He Ap Hr. Doubtful: Ka El.
23d 21h 48m	So Le Do Es Wn Wi Ma Fu Eb Hu Hr. Doubtful: Lo CF.
28d 19h 31m	Do Wn Wi Ab Ni Ma CF Fu Eb Tl SF He El Hr; 36m: Te. Doubtful: So Le Es Lo Ks Ka.
29d 20h 43m	So Wn Wi Ma Fu Eb Tl SF He El Ap Pi Hr. Doubtful: Do Lo Ks Ka.

December

02d 16h 05m	So Do Wn Wi Fu Ks He El Ap Pi Hr. Doubtful: Lo CF Te Ka Wa.
03d 20h 48m	Tr So Do Wn Wi Ab Fu Eb He Ap Hr. Doubtful: Lo CF Ks El.
07d 22h 20m	Wn Wi CF Fu Te Hu El Hr. Doubtful: So Do Lo Tl Ka Ap.
10d 20h 23m	Tr So Do Lo Wn Wi Ma Fu Ks Te He Hu El Ap Pi Hr. Doubtful: CF Tl.
14d 18h 55m	So Lo Wi Sw Fu Eb Tl Ks Te He Pi Hr; 57m: Ka; 19h 00m: El. Doubtful: 'CF.
18d 18h 45m	So Wn Wi Ab Sw Fu Eb Tl Ks He Ka El Pi Hr. Doubtful: Lo RS CF Te Wa.
20d 22h 26m	So Wn Wi Ma CF Fu Tl Ks He Hu El Pi Hr; 30m: Te. Doubtful: Lo Eb Ka Ap.
29d 23h 54m	Wn Wi Fu Tl Hu El Ap Pi Hr; 24m: Te. Doubtful: So Lo Ma CF Eb Ks.
30d 20h 47m	So Le Do Es Wn Wi Ab Fu Eb El Pi Hr; 56m: He. Doubtful: Lo Ma CF.

TABLE 9a SUDDEN GEOMAGNETIC CHANGES OR IMPULSES
not belonging to the class of s.s.c. or p.s.c.

January

09d 12h 21m Do Wi Sw Te He Va El Pi Hr.
Doubtful: So Lo Ab Fu Eb Tl Ks Ka Hu Wa.
14d 09h 44m Tr So Le Do Es Ab Ni Sw Fu Tl Ks Te He Hu El Pi Hr.
Doubtful: Lo Wi SF Ka Va Wa.
23d 07h 01m Tr So Le Do Es Lo RS Wn Wi Ab Ni Ma Sw CF Fu Eb Tl Ks
Te He Ka Hu Va El Ap Pi Hr Wa To Am; 02m: ZS Al.
Doubtful: SF.

February

22d 14h 14m So Do Es Wn Wi Ab Sw Fu Tl He Va El Hr; 15m: Te.
Doubtful: Tr Lo SF Ks Ka Wa.

March

05d 22h 01m Do Fu Te Va; 00m: Hr. Doubtful: So Lo Eb SF Ka Hu Am.
14d 17h 27m Do Ab Ma Sw Fu Tl SF Ks Te Va El Hr.
Doubtful: So Lo Wn Wi Ka Ap.
31d 13h 24m Tr So Do Ni Sw Fu SF Ks Te He Va El Pi Hr.
Doubtful: Lo Wn Wi Tl Ka Hu Ap Wa To Am.
31d 13h 58m So Do Ab Ni He Va El Pi Hr.
Doubtful: Tr Lo Wn Wi Fu Eb Tl Ks Ka Hu Ap Am.

April

n o n e

May

13d 16h 52m Do Wi Ab Ma Fu Tl SF Hu Va El Pi.
Doubtful: Tr Co So Si Lo Ch Tu SJ Ka Ho Hr Am.
22d 12h 18m So Do Es Sw Fu El Tl Te Va El Ap Pi Hr Am.
Doubtful: Le Lo Wi Ab Ma CF SF Ks Ka.

June

25d 23h 28m Co So Do Si Ma Ch Fu Eb Tl SF Ks SJ He Ho Hu Va El Ap
Pi Am; 30m: Te. Doubtful: Lc RS Wn Wi Ab CF Ka Hr To.

July

20d 05h 38m So Do Lo Fu Tl Va El Pi To.
Doubtful: Ks Te He Ka Ap Hr Wa Am.

August

14d 21h 45m So Do Es Ab Ni Fu Ks Te He El Hr; 46m: Tl.
Doubtful: Le Lo Ma CF Ka Va Wa.

September

17d 11h 53m So Wi Ks He El Pi; 54m: Te; 57m: Do.
Doubtful: Lo Wn Ma Fu Tl Ka Hr.

October

n o n e

November

n o n e

December

n o n e

TABLE 9b SMALL OR DOUBTFUL GEOMAGNETIC CHANGES
confirmed by only a few observatories.

January

10d 07h 42m- 12d 13h 32m- 13d 14h 21m- 13d 23h 02m- 19d 18h 05m-
20d 07h 42m- 21d 17h 25m- 24d 05h 54m- 24d 13h 02m- 24d 14h 53m-
24d 19h 28m- 27d 01h 02m- 29d 00h 57m.

February

02d 02h 21m- 02d 07h 52m- 02d 21h 03m- 03d 06h 40m- 06d 04h 19m-
14d 18h 00m- 14d 18h 23m- 18d 16h 02m- 20d 14h 50m- 20d 15h 20m-
20d 20h 09m- 21d 06h 53m- 21d 23h 39m- 22d 00h 15m- 24d 20h 07m.

March

03d 04h 43m- 04d 10h 33m- 06d 02h 52m- 14d 00h 00m- 14d 18h 31m-
15d 05h 37m- 20d 18h 40m- 21d 02h 00m- 21d 09h 02m- 21d 14h 57m-
21d 19h 27m- 21d 19h 57m- 24d 02h 10m- 26d 11h 50m- 26d 20h 27m-
27d 08h 02m- 30d 10h 07m- 30d 15h 18m- 31d 07h 05m.

April

01d 04h 30m- 04d 16h 45m- 05d 10h 23m- 05d 18h 02m- 12d 21h 46m-
13d 02h 21m- 15d 05h 42m- 19d 00h 50m- 19d 14h 04m- 20d 03h 37m-
22d 10h 51m- 23d 11h 20m- 23d 15h 46m- 26d 03h 24m- 28d 08h 25m-
28d 14h 23m- 30d 17h 42m.

May

01d 20h 28m- 02d 21h 51m- 03d 19h 17m- 03d 23h 26m- 05d 00h 11m-
05d 00h 45m- 07d 00h 02m- 11d 19h 51m- 14d 19h 09m- 15d 17h 23m-
15d 18h 23m- 20d 16h 42m- 21d 01h 24m- 22d 07h 08m- 22d 10h 28m-
22d 12h 08m- 22d 12h 52m- 23d 08h 45m- 25d 09h 42m- 27d 21h 09m-
28d 08h 53m- 28d 16h 08m- 28d 17h 14m- 29d 08h 46m- 31d 21h 50.

June

01d 16h 35m- 01d 23h 38m- 02d 01h 39m- 02d 01h 59m- 02d 21h 01m-
03d 12h 30m- 03d 12h 42m- 06d 13h 46m- 10d 20h 18m- 17d 05h 02m-
23d 23h 00m- 24d 03h 57m- 24d 10h 20m- 24d 10h 31m- 24d 11h 05m-
24d 20h 25m- 29d 12h 38m- 29d 15h 36m.

July

01d 21h 54m- 03d 08h 42m- 04d 00h 33m- 05d 22h 17m- 07d 01h 53m-
11d 00h 17m- 11d 13h 35m- 11d 13h 58m- 11d 17h 58m- 11d 21h 28m-
13d 09h 05m- 13d 16h 26m- 13d 19h 41m- 15d 01h 18m- 15d 04h 51m-
19d 16h 46m- 21d 19h 53m- 24d 09h 40m- 24d 11h 05m- 24d 16h 57m-
28d 02h 41m.

August

05d 18h 50m- 06d 10h 51m- 06d 20h 12m- 08d 23h 15m- 09d 00h 06m-
09d 20h 19m- 10d 19h 00m- 11d 21h 08m- 14d 12h 27m- 14d 12h 40m-
16d 01h 53m- 17d 01h 42m- 17d 02h 19m- 18d 17h 57m- 19d 19h 30m-
21d 01h 55m- 21d 08h 20m- 24d 22h 02m- 27d 23h 00m- 28d 01h 37m-
29d 23h 36m- 30d 01h 10m- 31d 08h 09m.

September

02d 19h 34m- 03d 08h 15m- 03d 10h 50m- 03d 19h 03m- 03d 23h 34m-
04d 18h 04m- 05d 06h 15m- 05d 16h 25m- 05d 18h 42m- 05d 19h 42m-
05d 21h 57m- 08d 06h 31m- 08d 22h 35m- 11d 03h 08m- 12d 11h 15m-
12d 12h 32m- 13d 04h 44m- 16d 12h 41m- 19d 07h 28m- 19d 11h 09m-
20d 19h 26m- 21d 18h 33m- 23d 09h 22m- 23d 09h 41m- 23d 19h 47m-
24d 12h 12m- 24d 19h 50m- 25d 15h 44m- 25d 16h 54m- 25d 21h 40m-
26d 18h 47m- 30d 19h 43m.

October

01d 09h 29m- 01d 12h 39m- 04d 18h 06m- 05d 18h 26m- 05d 20h 52m-
06d 17h 12m- 06d 22h 27m- 09d 11h 50m- 11d 19h 15m- 13d 02h 24m-
14d 20h 12m- 16d 06h 00m- 17d 06h 27m- 17d 21h 11m- 17d 21h 26m-
21d 20h 02m- 23d 00h 16m- 23d 04h 23m- 23d 21h 48m- 24d 21h 02m-
26d 01h 18m- 26d 02h 25m- 26d 18h 06m- 28d 01h 09m- 28d 12h 08m-
28d 12h 56m- 28d 19h 07m.

November

01d 05h 30m- 04d 16h 35m- 05d 20h 37m- 09d 08h 51m- 10d 07h 00m-
11d 19h 18m- 11d 21h 01m- 12d 19h 43m- 12d 22h 13m- 13d 15h 04m-
14d 19h 47m- 15d 06h 45m- 16d 18h 50m- 21d 22h 09m- 22d 12h 07m-
22d 15h 02m- 22d 18h 44m- 22d 21h 58m- 24d 17h 04m- 25d 00h 37m-
26d 08h 32m- 26d 18h 57m- 27d 21h 25m- 28d 13h 52m.

December

02d 15h 20m- 07d 01h 52m- 07d 18h 06m- 13d 17h 48m- 13d 18h 07m-
13d 22h 47m- 14d 16h 29m- 14d 18h 17m- 15d 10h 31m- 18d 18h 17m-
19d 00h 01m- 19d 17h 25m- 21d 20h 33m- 22d 11h 15m- 23d 00h 20m-
24d 15h 15m- 27d 19h 59m.

TABLE 10 SOLAR-FLARE EFFECTS (S.F.E.'S) 1950

Starting-times of solar-flare effects checked by 33 observatories. 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. Strong effects are marked by an asterisk.

January

<u>20d 11h 00m</u>	Wi Ab Ni CF El. Doubtful: Wn. No effect: Le Do Es RS Ma Fu Eb Tl Ks SJ He Hu Va Pi Hr Wa.
<u>21d 14h 16m</u>	CF Pi. Doubtful: Ma. No effect: Le Do Es RS Wn Wi Ab Ni Ch Fu Eb Tl Tu Ks SJ Te He Hu Va El Hr.
<u>22d 09h 49m</u>	CF El Pi Hr. Doubtful: Ma. No effect: Le Do Es RS Wn Wi Ab Ni Fu Eb Tl He Va Wa.

February

<u>01d 21h 52m</u>	Hu Ap Am. No effect: Co Si Ch Tu SJ Te Ka Ho Pi Wa To.
<u>10d 14h 31m</u>	Tl Hu Va Pi. Doubtful: Do CF El. No effect: Le Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tu Ks SJ Te He Hr.
<u>*13d 19h 13m</u>	Si Ch Tu SJ Te Ho Hu Pi. Doubtful: Va. No effect: Co Ap Am
<u>15d 06h 23m</u>	Ks ZS Al Hr. Doubtful: Fu El Wa. No effect: Ni He To Am.
<u>*17d 01h 20m</u>	Ka ZS Ap Wa To Am. No effect: Co Si Ho.
<u>17d 23h 08m</u>	Tu Ho (El) Ap Am. Doubtful: Wa. No effect: Co Si Te Ka To.
<u>21d 23h 40m</u>	Te Wa. Doubtful: Ka Ho To Ap Am. No effect: Co Si Tu.
<u>23d 07h 20m</u>	Tl He Al El Hr. Doubtful: CF Ka. No effect: Do RS Wn Wi Ab Ni Ma Fu Eb Ks Wa To Am.

March

<u>04d 16h 55m</u>	Do Hu Va Pi. Doubtful: Wi CF. No effect: Le Si Wn Ab Ma Ch Fu Eb Tl Tu SJ Te.
<u>08d 04h 37m</u>	Ka Am. Doubtful: Ks El Wa. No effect: He Ap To.
<u>13d 09h 42m</u>	CF Fu Tl El. Doubtful: Do Wi Hr. No effect: Le Es RS Wn Ab Ni Ma Eb He Va Wa.

April

<u>07d 14h 45m</u>	CF Hu. Doubtful: Do. No effect: Le Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tl Tu Ks SJ Te He Va El Pi Hr.
<u>09d 06h 53m</u>	Al El Hr. Doubtful: Do RS CF Fu Ks Ka Wa. No effect: Le Es Wn Wi Ab Ni Ma Eb Tl He To.
<u>*12d 14h 53m</u>	Do Wn Wi Ni Ma CF Ch Fu Eb Tl Tu SJ Hu Va El Hr. Doubtful: Le Es RS Te. No effect: Co Si Ab Ks He Ap Pi.
<u>*14d 12h 45m</u>	Le Do Es Wn Wi Ni Ma CF Fu Eb Tl Ks He El Hr. Doubtful: RS. No effect: Ab Ch SJ Te Hu Va Pi.
<u>*14d 13h 35m</u>	Tr Le Do Es RS Wn Wi Ab Ni Ma CF Ch Fu Eb Tl Tu Ks SJ Te He Hu Va El Pi Hr.
<u>14d 16h 52m</u>	Hu Va Pi. No effect: Co Le Do Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tl Tu Ks SJ Te Ho.
<u>*15d 12h 57m</u>	Wi CF Te He Hu. Doubtful: Do Ab Fu Ks El Hr. No effect: Le Es RS Wn Ni Ma Ch Eb Tl Tu SJ Va Pi.
<u>26d 10h 50m</u>	Do Wi. Doubtful: CF Tl. No effect: Le Es RS Ab Ni Ma Ch Fu Eb Ks SJ He Va El Hr.
<u>26d 17h 48m</u>	Co Si Ch Tu SJ Te Ho Hu Va Pi. Doubtful: CF Ks. No effect: Tr Le Do Es RS Wn Wi Ab Ni Ma Fu Eb Tl.
<u>27d 12h 43m</u>	Do Fu Tl. Doubtful: Tr Ma CF Ks Te Hu Hr. No effect: Le Es RS Wn Wi Ab Ni Ch Eb Tu SJ He Va Pi.

TABLE 10 SOLAR-FLARE EFFECTS (S.F.E.'S) - continued

May

03d 09h 30m Do CF. No effect:Le Es RS Wn Wi Ab Ni Ma Fu Eb Tl Ks He El Hr.

05d 05h 50m Do Wn Wi CF Fu Tl He (Hu). Doubtful:Ma' Eb Ka Hr.
No effect:Le Es RS Ab Ni Ks Wa To.

05d 09h 52m Do CF. No effect:Le Es RS Wn Wi Ab Ni Ma Fu Eb Tl Ks He Va El Hr.

05d 19h 46m Co Do Si Ch Tu Ks Te Ho Hu. No effect:Le SJ Ap Pi.

*06d 13h 30m Wn Wi Ni CF Fu Eb Tl Ks He Hu. Doubtful: Co Si RS Ch Tu SJ Va Hr. No effect: Le Do Es Ab Ma Te El Pi.

08d 00h 48m Ka. No effect:Co Si Tu Te Ho Ap Wa To.

08d 03h 32m Ka Al. Doubtful: Ks Wa To. No effect:Si He Ho Ap Am.

08d 13h 42m CF. Doubtful:Do. No effect:Co Le Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tl Tu Ks SJ Te He Hu Va El Pi Hr.

09d 05h 22m Ka ZS Al Wa. Doubtful:CF El To. No effect:Le Do Es RS Wn WI Ab Ni Ma Fu Eb Tl Ks He.

18d 07h 04m Al. Doubtful:CF Ka El. No effect:Le Do Es RS Wn Wi Ab NI Ma Fu Eb Tl He Hr Wa To.

19d 21h 03m Si Ch Tu Ka Ho Hu. No effect:Co SJ Te Ap Pi Am.

20d 00h 10m Ka ZS. Doubtful:Te Ap. No effect: Co Si Ch Tu Ho Wa To.

20d 06h 48m Al. Doubtful:Ka El. No effect:Le Do Es RS Wn Wi Ab Ni Ma CF Fu Eb Tl He Hr Wa To.

22d 13h 59m Wi Ni Eb El. Doubtful:Do CF Ch Fu Tl Hu. No effect:Co Le Si Es RS Wn Ab Ma Tu Ks SJ He Va Pi Hr.

26d 15h 00m Do Wi CF. Doubtful:Fu Hu El Hr. No effect:Co Le Si Es RS Wn Ab Ni Ma Ch Eb Tl Tu Ks SJ Te He Va Pi.

*27d 08h 14m Do Wi Ab Fu Eb Tl Ks Te ZS El {Pi}. Doubtful:Le Es Ma CF Ka Hr Wa. No effect: Co RS Wn Ni He.

June

12d 12h 07m Ma CF. Doubtful:Do Wi Tl. No effect:Le Es RS Wn Ab Ni Ch Fu Eb Ks SJ He Hu Va El Pi Hr.

15d 17h 35m Hu. Doubtful:Ma. No effect:Co Le Si Es RS Wn Wi Ab Ni CF Ch Fu Eb Tl Tu SJ Te Ho Va Pi.

July

02d 19h 08m Co Do Si Ch Tu SJ Te Ho Hu. Doubtful:CF. No effect:Le Es RS Wn WI Ab Ni Ma Fu Eb Tl Va Ap Pi.

12d 16h 07m Do Si Wi Ch Tu SJ Te Ho. Doubtful:Co CF Fu Hu.
No effect: Le Es RS Ab Ni Ma Eb Tl Ks He Va Pi.

12d 17h 06m Do Si Ch Eb Tl Tu {Ks} {He} Ho. Doubtful: Co Wi OF Fu Te Hu. No effect: Le Es RS Wn Ab Ni Ma Va Pi.

15d 04h 29m Ka. Doubtful:Do CF. No effect: Co Le Si Es RS Wn Wi Ab NI Ma Fu Ks He Ho Ap Wa To Am.

17d 13h 38m CF. Doubtful:Tl El. No effect: Co Le Do Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tu Ks SJ Te He Hu Va Pi Hr.

18d 13h 12m CF. Doubtful:Do El. No effect:Co Le Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tl Tu Ks SJ Te He Hu Va Pi Hr.

19d 00h 33m Co (Do) Si Tu Te Ka Ho ZS. Doubtful:Wa To.
No effect: Ap Am.

19d 09h 36m Do Wi CF Ks El. Doubtful:Ma Hr. No effect:Le Es RS Wn Ab Ni Fu Eb Tl He Ka.

21d 00h 46m Co Si (Fu) Tu Ho. Doubtful:Ka Ap Wa. No effect:Te To Am.

21d 13h 12m Do Wn Wi CF Ch Tl Tu Ks SJ El.Doubtful:Ma Eb Te Hr.
No effect:Co Le Si Es RS Ab Ni Fu He Hu Va Pi..

TABLE 10 SOLAR-FLARE EFFECTS (S.F.E.'S) - continued

(July)

<u>22d 15h 45m</u>	CF Hu. Doubtful: Do No effect: Co Le Si Es RS Wn Wi Ab Ni Ma Ch Fu Eb Tl Tu Ks SJ Te He Va El Pi Hr.
<u>29d 17h 15m</u>	Tl Hu. No effect: Cc Le Do Si Es RS Wn Wi Ab Ni Ma CF Ch Fu Eb Tu SJ Te Ho Va Pi.

August

<u>02d 22h 04m</u>	Co Si Ch Tu SJ Te Ho (El). No effect: Hu Ap To Am.
<u>03d 13h 30m</u>	CF Fu Va Doubtful: Do. No effect: Co Le Si Es RS Wn Wi Ab Ni Ma Ch Eb Tl Tu Ks SJ Te He Hu El Pi Hr.
<u>04d 05h 50m</u>	Do Ka ZS. Doubtful: CF Fu Hr. No effect: Co Le Es RS Wn Wi Ab Ni Ma Eb Tl Tu Ks He Wa To.
<u>04d 23h 30m</u>	Si Ch Tu Ka Ho ZS. Doubtful: Te Ap. No effect: Co Wa To Am.
<u>09d 00h 04m</u>	(Do) ZS Wa. Doubtful: Te Ka To Am. No effect: Co Si Ho Ap Tu.
<u>11d 17h 30m</u>	Do Te Hu Va. Doubtful: CF Fu. No effect: Co Le Si Es RS Wn Wi Ab Ni Ma Ch Eb Tl Tu SJ Ho Pi.
<u>25d 10h 06m</u>	Ni Ma CF Fu Eb Tl Ks He (Pi). Doubtful: Le Do Es Wi El Hr. No effect: RS Wn Ab SJ Va.
<u>27d 12h 37m</u>	Do Wn CF Fu. Doubtful: Wi Tl Ks Te He El Pi. No effect: Le Es RS Ab Ni Ma Ch Eb SJ Hu Va Hr.

September

<u>01d 16h 06m</u>	Co Do Si Ch Tu SJ Ho Va. Doubtful: Wi Ks Hu. No effect: Le Es RS Wn Ab Ni Ma CF Fu Eb Tl Te He Pi.
<u>11d 11h 45m</u>	Do CF Fu Tl (Te) He El Pi Hr. Doubtful: Wi Ks. No effect: Le Es RS Wn Ab Ni Ma Ch Eb SJ Hu.
<u>*19d 17h 08m</u>	Co Si CF Ch Tu SJ Te Ho Hu Va Pi. No effect: Le Do Es RS Wn Wi Ab Ni Ma Fu Eb Tl.
<u>20d 03h 06m</u>	Ka Ho. Doubtful: Co Si Wa. No effect: Ap To Am.
<u>26d 15h 20m</u>	Do Tl Hu Va El Pi. Doubtful: Wi Ab CF Ks. No effect: Le Si Es RS Wn Ni Ma Ch Fu Eb Tu SJ Te He Hr.

October

<u>19d 21h 39m</u>	Co Si Ch Tu SJ Te Ho. Doubtful: Ka Hu. No effect: Pi To Am.
<u>23d 13h 13m</u>	Do Wi Te Hu Va El. Doubtful: CF Fu Tl Ks Hr. No effect: Le Es RS Wn Ab Ni Ma Ch Eb SJ He Pi.
<u>23d 13h 33m</u>	Do Wi Hu Va. Doubtful: CF Fu Tl Ks Te El Hr. No effect: Le Es RS Wn Ab Ni Ma Ch Eb SJ He Pi.

November

none

December

none

TABLE 10a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S) 1950

Small bay-like disturbances, resembling solar-flare effects, with indications against diagnosis s.f.e. (no increase of the effect from the twilight-zone to the subsolar-point, or affirmation by stations in full dark).

January

01d 11h 08m	Do Ab Eb El Pi. Doubtful:Le Es CF Fu Ks. No effect:RS Wn Wi Ni Ma Tl SJ He Hu Hr Wa.
01d 14h 01m	Hu. Doubtful:Do Tl Ks El Hr. No effect:Le Es RS Wn Wi Ab Ni Ma CF Ch Fu Eb SJ He Va Pi.
05d 12h 06m	Do Ab Fu (Te) Hu El Hr (Am). Doubtful: Wi CF Tl Va. No effect:Le Es RS Wn Ni Ma Eb SJ He.
23d 19h 12m	(Ks) Te Hu (El) Pi. No effect: Si Ch Tu SJ Ho Va Ap Am.

February

02d 08h 28m	Eb He El. Doubtful:Do Wi Ab Ma CF Fu Tl Ks. No effect: Le Es RS Wn Ni Wa To.
06d 11h 45m	Do RS Ks (Te) He Hu El Pi (Wa) (Am). Doubtful:Wi CF Tl Va Hr. No effect:Le Es Wn Ab Ni Ma Fu Eb SJ.
18d 09h 56m	Do Fu (Te) El Hr Wa. Doubtful:Tr Wi CF Ks. No effect: Le Es RS Wn Ab Ni Ma Eb Tl He Va.
26d 19h 38m	Co Si Ch Tu SJ Te Ho (Hr) Am. Doubtful:Hu. No effect: Va Pi.

March

03d 12h 31m	Do Fu Hu. Doubtful:RS Wi CF Tl El. No effect:Le Es Wn Ab Ni Ma Ch Eb Ks SJ He Va Pi Hr.
04d 20h 53m	(CF) Hu Pi. Doubtful: Te Ap. No effect:Co Ch Tu SJ Ho To Am.
11d 13h 31m	Do Te Hu Va (Am). Doubtful:Wi CF Fu Tl El Hr. No effect:Le Es RS Wn Ab Ni Ma Ch Eb Tu Ks SJ He.
12d 14h 03m	Do Ma CF Fu Tl Ks Hu Va Pi (Wa). Doubtful: Le Es RS Wi El Hr. No effect: Wn Ab Ni Ch Eb Tu SJ He.
12d 15h 43m	Do Wi Fu Tl Ks Va. Doubtful:CF He El. No effect: Le Si Es RS Wn Ab Ni Ma Ch Eb Tu SJ Te Hu Pi Hr.
22d 13h 12m	Hu El. Doubtful:Do RS Wi CF Fu Tl Te Va. No effect:Le Es RS Wn Ab Ni Ma Ch Eb SJ He Pi Hr.
23d 15h 36m	Do Wi Ks Te He Hu Va El Pi. Doubtful:CF Tl Hr. No effect: Co Le Si RS Wn Ab Ni Ma Ch Fu Eb Tu SJ.
25d 13h 00m	Do Wi Ks Hu Va Pi (Am). Doubtful:CF Tl El Hr. No effect: Le Es RS Wn Ab Ni Ma Ch Fu Eb SJ Te He.
30d 15h 05m	Wi Fu Te He Hu Pi. Doubtful: Do CF Va. No effect: Co Le Si Es RS Wn Ab Ni Ma Ch Eb Tl Tu Ks SJ El Hr.

April

17d 16h 00m	Co Do Si Ch Tu (Ho) Pi (Am). Doubtful: CF El. No effect:Le Es RS Wn Wi Ab Ni Ma Fu Eb Tl Ks SJ Te He Hu Va Hr.
21d 15h 00m	Co Do Si Ch Fu Tu. Doubtful:Le Es Wi Ma CF Eb El Pi. No effect:RS Wn Ab Ni Tl Ks SJ Te He Hr.
25d 04h 53m	(Te) Ka. Doubtful: CF El Wa. No effect: Le Do RS Wn Wi Ab Ni Ma Fu Ks He To Am.

May

03d 13h 44m	Do Hu Va Pi (Am). Doubtful:CF Tl El. No effect:Le Si Es RS Wn Wi Ab Ni Ma Ch Fu Tu Ks SJ He Hr.
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TABLE 10a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S) - continued

(May)

- 20d 20h 15m Co Do Si Ch Tu SJ (He) Ho. Doubtful: Te Ka Hu.
No effect: Le Va Ap Pi.
- 20d 20h 36m Co {Do} Si Ch Tu SJ Te (He) Ho (Wa). Doubtful: Ka Hu Va El Ap. No effect: Pi.

June

- 01d 11h 30m Do Fu Ks {Te} He Va El. Doubtful: Wi CF Hu Hr.
No effect: Es RS Wn Ab Ni Ma Ch Eb Tl SJ.

July

- 09d 12h 34m Do CF Fu Eb Tl Ks He Hu Va El Pi. Doubtful: RS Wn Wi Ab Te Hr. No effect: Co Le Si Es Ni Ma Ch Tu SJ.
- 27d 07h 31m Do El. Doubtful: Wi CF Eb Ka Wa.
No effect: Le Es RS Wn Ab Ni Ma Fu Tl Ks He Hr.
- 27d 09h 38m Do Tl (Te) He El. Doubtful: Wn Wi CF Fu Ks Hr.
No effect: Le Es RS Ab Ni Ma Eb Ka.
- 27d 12h 35m Do Wi Eb Te. Doubtful: CF Fu Tl Ks He El Hr.
No effect: Le Es RS Wn Ab Ni Ma Ch Tu SJ Hu Pi.

August

- 01d 12h 15m Do Hu Va El. Doubtful: RS CF Fu Tl Ks Te Hr.
No effect: Le Es Wn Wi Ab Ni Ma Ch Eb SJ He Pi.
- 03d 01h 20m (Do) ZS. Doubtful: Te Ka. No effect: Co Si Tu Ho Va Ap To Am.
- 09d 16h 11m Te Hu Va Am. Doubtful: Do Wi CF Fu Tl Ks He.
No effect: Co Le Si Es RS Wn Ab Ni Ma Ch Eb Tu SJ Ho Pi.
- 14d 09h 14m Do Fu Ks (Te) (Hu) Va El. Doubtful: Wi Ab CF Hr.
No effect: Le Es RS Wn Ni Ma Eb Tl Ka Wa.
- 15d 17h 33m Do Do Si Ma Ch Fu Tu {Ks} SJ Te {He} Ho Hu Va (El) (Am).
Doubtful: CF Tl Pi. No effect: Le Es RS Wn Wi Ab Ni Eb.
- 17d 13h 55m Do Fu He Hu Va Pi. Doubtful: Wn Wi Ma CF Tl El Hr.
No effect: Tr Co Le Si Es RS Ab Ni Ch Eb Tu Ks SJ Te Ka.
- 18d 11h 40m Do Wi Ab Ni Fu Eb Tl He Hu (Wa). Doubtful: Wn Ma CF Ks El Hr. No effect: Le Es RS Ch SJ Va Pi.

September

- 07d 11h 20m Do {Te} He. Doubtful: Wi Ab Fu Eb Tl Ks Hu El Hr.
No effect: Le Si Es RS Wn Ni Ma CF Ch SJ Pi.
- 07d 13h 43m Do Wi Eb Te. Doubtful: Fu Ks He Hu El Hr.
No effect: Le Es RS Wn Ab Ni Ma CF Ch Tl Tu SJ Pi.
- 10d 12h 02m Do Wi Fu {Te} Hu. Doubtful: RS Ab Ma Eb Tl Hr.
No effect: Le Es Wn Ni CF Ch Ks SJ He Va Pi.
- 15d 07h 30m Al. Doubtful: RS CF Ks El Hr Wa.
No effect: Tr Le Es Wn Wi Ab Ni Fu Eb Tl He Ka To.
- 19d 14h 32m Do Hu Pi. Doubtful: Wi CF El. No effect: Le Si Es RS Wn Ab Ni Ma Ch Fu Eb Tl Tu SJ Te He Va Hr.

October

n o n e

November

- 10d 12h 25m Ch {Tu} Ks SJ. Doubtful: Do Wi CF Fu Eb Tl El.
No effect: Le Es RS Wn Ab Ni Ma Hu Va Pi Hr.
- 15d 06h 45m {Fu} {Te} El Hr Wa. Doubtful: Ks Ka. No effect: He To Am.

TABLE 10a DOUBTFUL SOLAR-FLARE EFFECTS (S.F.E.'S) - continued

(November)

15d 08h 44m Fu El. Doubtful: Wi CF Tl Hr. No effect: Do Es RS Wn Ab Ni Ma Eb Ks He Wa To.
 17d 15h 24m (Do) Tl Hu Pi. Doubtful: Wi CF Te Va El.
 No effect: Le Es Wn Ab Ma Ch Fu Eb Tu SJ Hr.
 25d 12h 35m (Te) Hu Va. Doubtful: Do Wi CF Fu Ks El.
 No effect: Le Es RS Wn Ab Ni Ma Ch Eb Tl SJ He Pi Hr.
 27d 10h 25m Do Eb He. Doubtful: Wi CF Fu El.
 No effect: Le Es RS Wn Ab Ni Ma Tl Ks Va Pi Hr Wa.

December

05d 12h 41m Do Hu Va. Doubtful: Wi CF Fu Ks He El Hr.
 No effect: Le Es RS Wn Ab Ni Ma Ch Eb Tl SJ Pi.
 06d 11h 55m El Hr (Wa). Doubtful: Do Wi CF Hu. No effect: Le Es RS Wn Ab Ni Ma Fu Eb Tl Ks SJ He Va Pi.
 18d 16h 09m (Do) Te (He) Hu El Pi. Doubtful: CF Va Hr.
 No effect: Ch Eb Tl Tu SJ.
 20d 17h 41m (Co) (Do) Si Ch (Fu) Tu SJ Te Ho.
 No effect: Hu Va Ap Pi Hr Am.

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TABLE 10b REJECTED SOLAR-FLARE EFFECTS 1950

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

January

04d 15h 20m- 04d 17h 05m- 04d 18h 39m- 09d 12h 21m- 11d 15h 52m-
 11d 22h 33m- 13d 14h 18m- 14d 18h 12m- 15d 08h 35m- 24d 05h 33m-
 26d 16h 35m- 28d 16h 54m- 31d 19h 54m.

February

03d 06h 30m- 03d 23h 21m- 06d 14h 00m- 06d 16h 18m- 07d 12h 53m-
 13d 17h 53m- 15d 23h 33m- 18d 17h 28m- 18d 23h 05m- 19d 23h 36m-
 21d 10h 10m- 22d 00h 20m- 22d 18h 08m- 23d 10h 42m- 27d 14h 20m.

March

05d 21h 59m- 12d 04h 34m- 13d 05h 09m- 14d 19h 06m- 17d 21h 04m-
 21d 01h 56m- 21d 09h 01m- 26d 12h 00m- 29d 07h 21m- 31d 13h 59m.

April

02d 15h 10m- 13d 10h 07m- 15d 11h 57m- 15d 14h 55m- 22d 09h 10m-
 22d 10h 55m- 23d 05h 49m- 30d 17h 46m.

May

06d 12h 30m- 10d 21h 18m- 10d 23h 45m- 11d 17h 11m- 15d 18h 43m-
 20d 08h 20m- 22d 08h 37m- 22d 12h 18m- 22d 15h 51m- 28d 16h 06m-
 30d 15h 50m.

June

01d 16h 36m- 01d 23h 35m- 02d 00h 38m- 02d 01h 37m- 06d 00h 12m-
 06d 15h 33m- 06d 16h 13m- 16d 14h 33m- 22d 06h 32m- 23d 09h 09m-
 25d 23h 26m.

July

02d 17h 31m- 09d 18h 12m- 11d 05h 38m- 19d 16h 08m- 24d 16h 39m.

TABLE 10b REJECTED SOLAR-FLARE EFFECTS - continued

August

01d 11h 20m- 02d 10h 48m- 06d 20h 02m- 07d 01h 45m- 07d 03h 40m-
 08d 01h 27m- 14d 12h 36m- 16d 01h 45m- 16d 12h 18m- 16d 23h 05m-
 17d 02h 18m- 19d 10h 06m- 21d 01h 47m- 27d 23h 00m- 28d 13h 56m-
 31d 15h 24m.

September

06d 04h 41m- 07d 06h 41m- 09d 16h 16m- 12d 11h 32m- 12d 12h 14m-
 13d 04h 42m- 20d 09h 35m- 21d 20h 32m- 30d 17h 47m.

October

09d 15h 22m- 10d 11h 33m- 11d 17h 17m- 11d 17h 30m- 12d 18h 27m-
 17d 21h 14m- 18d 05h 48m- 23d 04h 23m- 27d 01h 07m- 27d 06h 02m-
 28d 06h 26m.

November

01d 18h 29m- 05d 15h 19m- 06d 16h 03m- 19d 16h 43m- 21d 15h 20m-
 22d 18h 40m- 24d 17h 04m- 28d 19h 40m- 30d 05h 41m.

December

02d 15h 22m- 06d 07h 40m- 07d 18h 30m- 09d 13h 24m- 14d 16h 27m-
 17d 10h 08m.

TABLE 11 IONOSPHERIC DISTURBANCES WITHOUT CLEAR GEOMAGNETIC EFFECTJanuary

22d 15h 00m: Hu

February

13d 15h 45m: Hu
 14d 16h 45m: Hu
 16d 17h 45m: Hu
 17d 20h 00m: Hu
 18d 13h 45m: Wi Hu
 18d 15h 15m: Hu
 19d 14h 00m: Hu
 19d 18h 45m: Hu
 20d 15h 15m: Hu
 21d 10h 10m: Wi
 27d 17h 00m: Hu

March

05d 16h 15m: Hu
 19d 08h 45m: Hu

April

12d 18h 45m: Wi Hu
 13d 17h 25m: Hu
 15d 16h 45m: Hu
 27d 09h 30m: Wi Wn

May

05d 17h 30m: Hu
 18d 07h 04m: Wn Wi
 22d 09h 35m: Wn Wi CF

June

08d 15h 45m: Hu

July

03d 17h 00m: Hu
 08d 16h 45m: Hu

August

02d 10h 48m: Wi Hu
 12d 16h 25m: Hu
 29d 18h 20m: Hu
 30d 18h 29m: Hu

September

15d 14h 05m: Wn

October

11d 19h 15m: Hu
 11d 19h 30m: Hu

November

28d 11h 30m: CF

December

n o n e

TABLE 12 MAGNETOGRAMS RECOMMENDED FOR REPRODUCTION, 1950

The following solar-flare effects in 1950 are recommended for reproduction: February 13d 19h 13m, February 17d 01h 20m,
April 14d 12h 45m and April 14d 13h 35m.

Important magnetic storms in 1950 have been recorded in the following times:

January	23d 00h	-	January	25d 12h
February	20d 12h	-	February	21d 24h
February	23d 08h	-	February	24d 24h
March	19d 05h	-	March	20d 03h
June	23d 12h	-	June	24d 24h
August	07d 00h	-	August	08d 24h
August	18d 15h	-	August	20d 24h
September	30d 12h	-	October	05d 24h
October	28d 00h	-	November	01d 24h
December	12d 00h	-	December	14d 24h

(recommended by Ab Wi CF and Am)

The observatory Va draws the attention to a few cases of "coupled" sudden commencements: 1950 February 06d 14h 00m and 06d 16h 10m; March 05d 20h 21m and 05d 22h 01m; March 31d 13h 24m and 31d 13h 58m; May 11d 16h 19m and 11d 17h 12m; May 22d 12d 18m and 22d 12h 51m; August 06d 20h 12m and 06d 21h 06m; December 12d 05h 26m and 12d 08h 20m.

The observatory Ab finds a number of bay-like s.c.'s and "moving vortex" type of disturbances which would make interesting comparison with observatories fairly near to Ab. Examples of bay-like s.c.'s are: 1950 September 10d 0-2h; September 11d 0-2h; October 7d 1-3h. Examples of vortex-type movements are: 1950 August 10d 18-21h; October 3d 19-20h; October 4d 19-20h; October 5d 20-22h; November 1d 18-20h; November 28d 19-21h.

- The observatory Wn recommends for reproduction:
- a. typical s.s.c.'s: 1950 March 19d 05h 45m, May 27d 12h 05m, June 23d 18h 02m, July 24d 01h 51m, August 07d 10h 55m.
 - b. typical p.s.c.'s: 1950 January 18d 21h 58m, January 22d 16h 32m, March 17d 21h 06m, April 27d 20h 05m, May 01d 20h 28m, September 10d 00h 30m, November 21d 20h 33m.
 - c. typical s.f.e.'s: 1950 May 06d 13h 30m.
 - d. typical s-s-c's, by a few stations considered as s.f.e.'s: 1950 February 03d 23h 22m, February 19d 23h 40m, February 23d 10h 43m, March 29d 07h 21m, September 30d 17h 47m.

TABLE 13 SIX SELECTED S.F.E.'S 1949.

Vector drawings of the overhead sheet-currents necessary to produce strong solar-flare effects (1949) at the time of maximum intensity (full arrows), and current-vectors of the normal daily variation at the same time (dashed arrows).

Data on the six selected s.f.e.'s were received from the following observatories: Co Le Si Es Lo RS Wn Wi Ab Ni CF Ch SM Eb Tl Tu Ks SJ Te He Ho Hu Va El Pi and Hr. Magnetograms from the magnetic observatory of the South Orkney islands (Or) were also available by courtesy of Servicio Meteorologico Nacional, Argentina. No vector drawn at a station means that the s.f.e. was not observed.

Mean values are taken for the observatories Le Es Lo RS Wn Wi Ab and Ni, in order to avoid overcrowding of the vector drawings, and the mean vectors are drawn at the point indicated by the symbol NE (north-west Europe). This seemed allowed, as the amplitudes and directions of the vectors differed little. The same is done for the observatories CF Eb and Tl. Here the mean values are drawn at the point indicated by SE (south-west Europe).

The amplitude of the s.f.e. was measured from the estimated traces of D and H on the magnetogram, assuming that no solar-flare had occurred. Only D- and H-deviations were taken in considerations, deviations from the horizontal plane being very small in general.

For the normal diurnal variation the mean value of the variations on the 5 quiet days of the month was used, except for the six United States Coast and Geodetic Survey stations (Co Si Ch Tu SJ Ho), which forwarded the mean daily variations for all days.

In general there is no better agreement between the s.f.e. disturbance-vector and the vector of the daily variation on the day itself, than between the s.f.e. vector and the vector of the mean daily variation on 5 I.Q. days, except in some cases for the station Hu. Here the best agreement was obtained with the diurnal variation on the day of the s.f.e. (dash-dotted line), taking the night-value as base-line.

The heavy line indicates the limitation of the hemisphere hit by direct sun-rays.

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

SFE 1949 February 01d 12 h 19 m

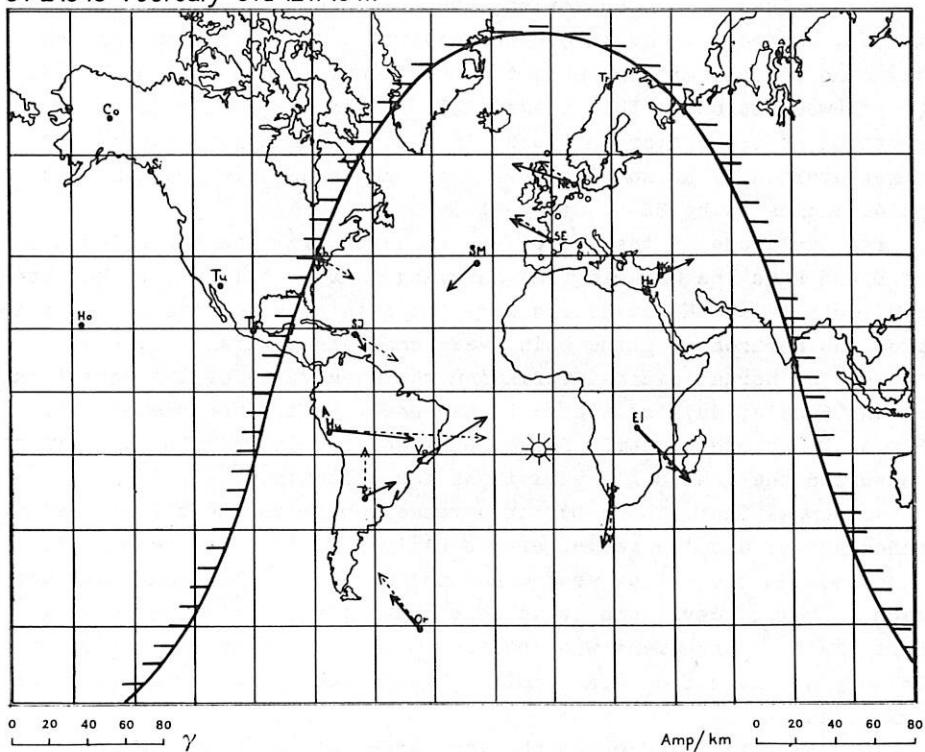


FIG. I—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

SFE 1949 September 5d 12h 30m

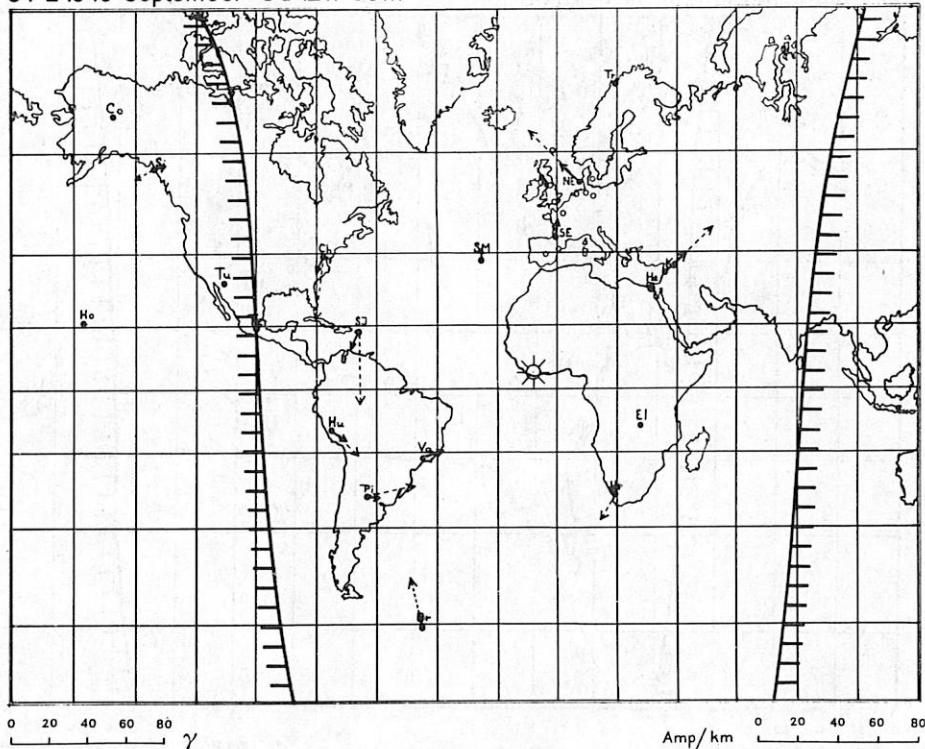


FIG. 2—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

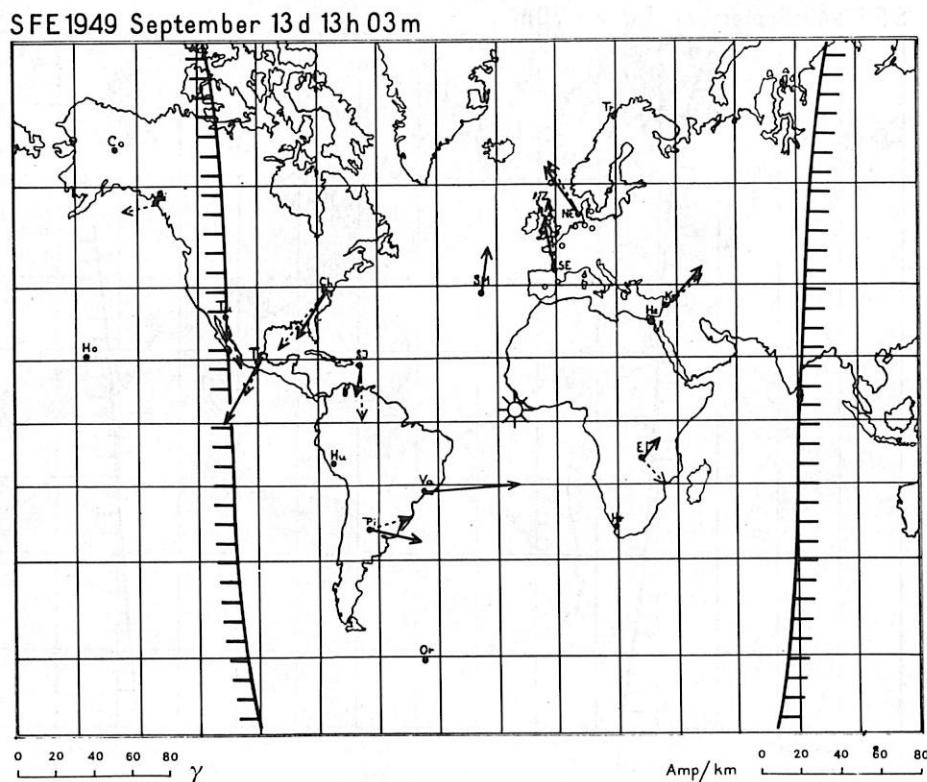


FIG. 3—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

S F E 1949 September 17d 17h 16m

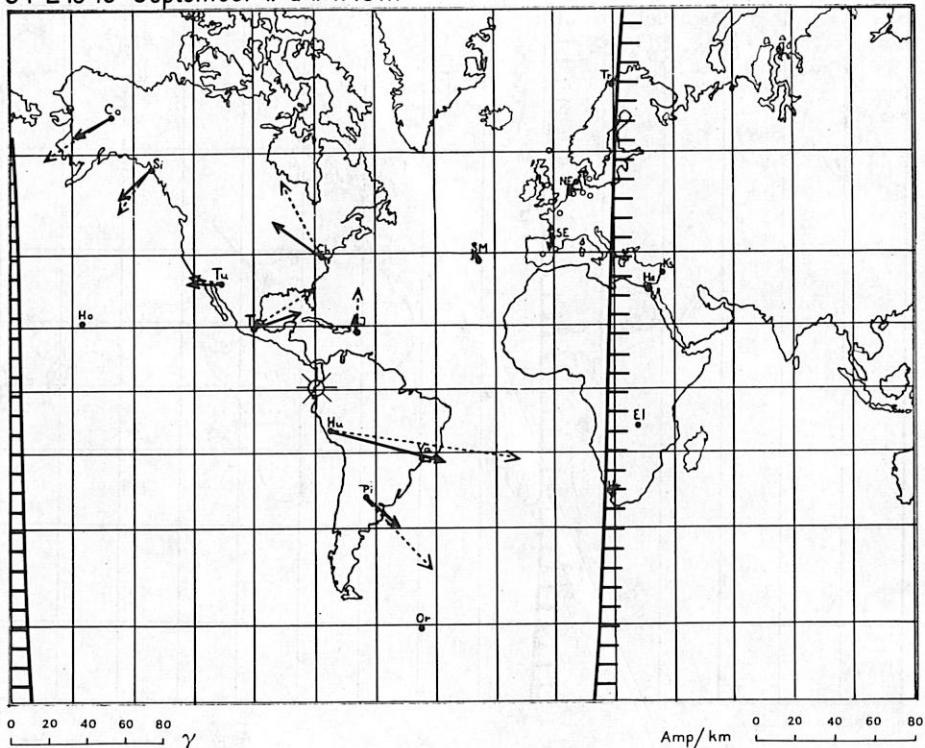


FIG. 4—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

SFE 1949 September 18d 09h 45m

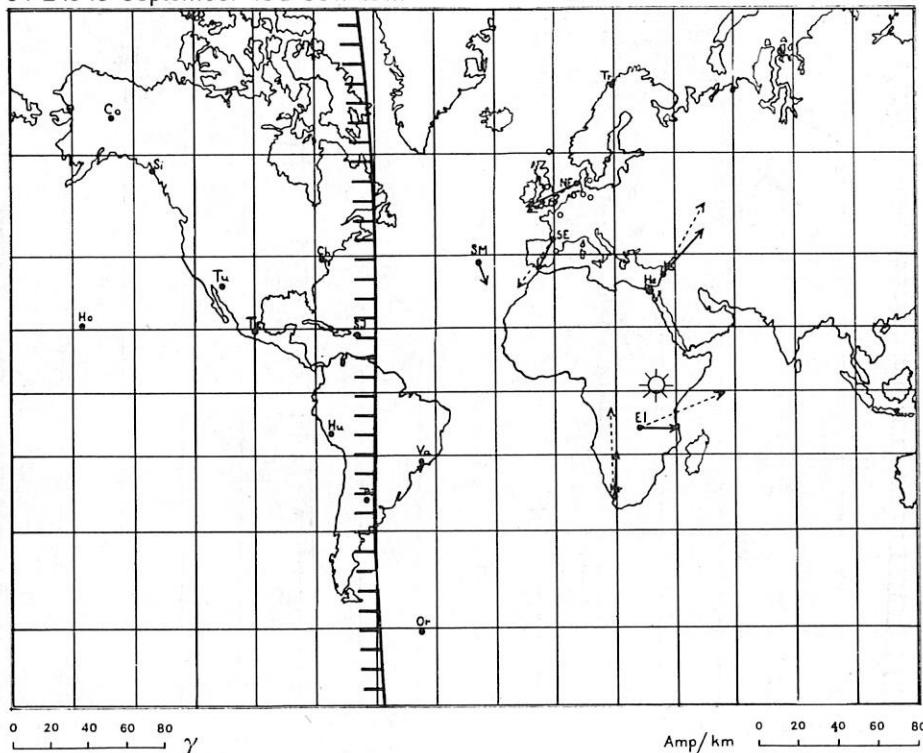


FIG. 5—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

SFE 1949 October 02d 14 h 01m

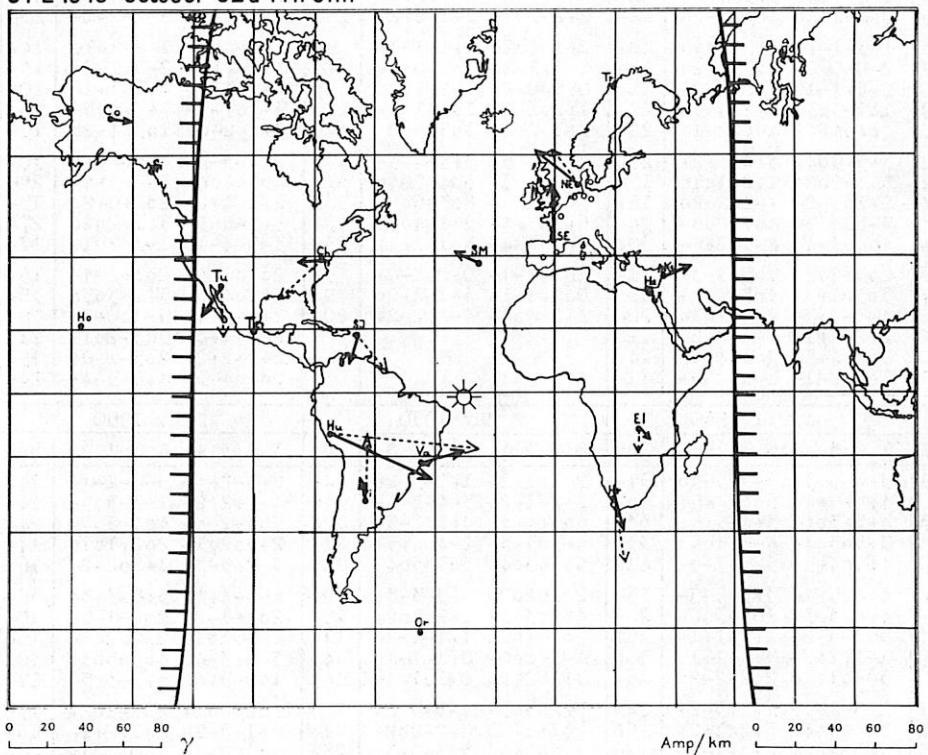


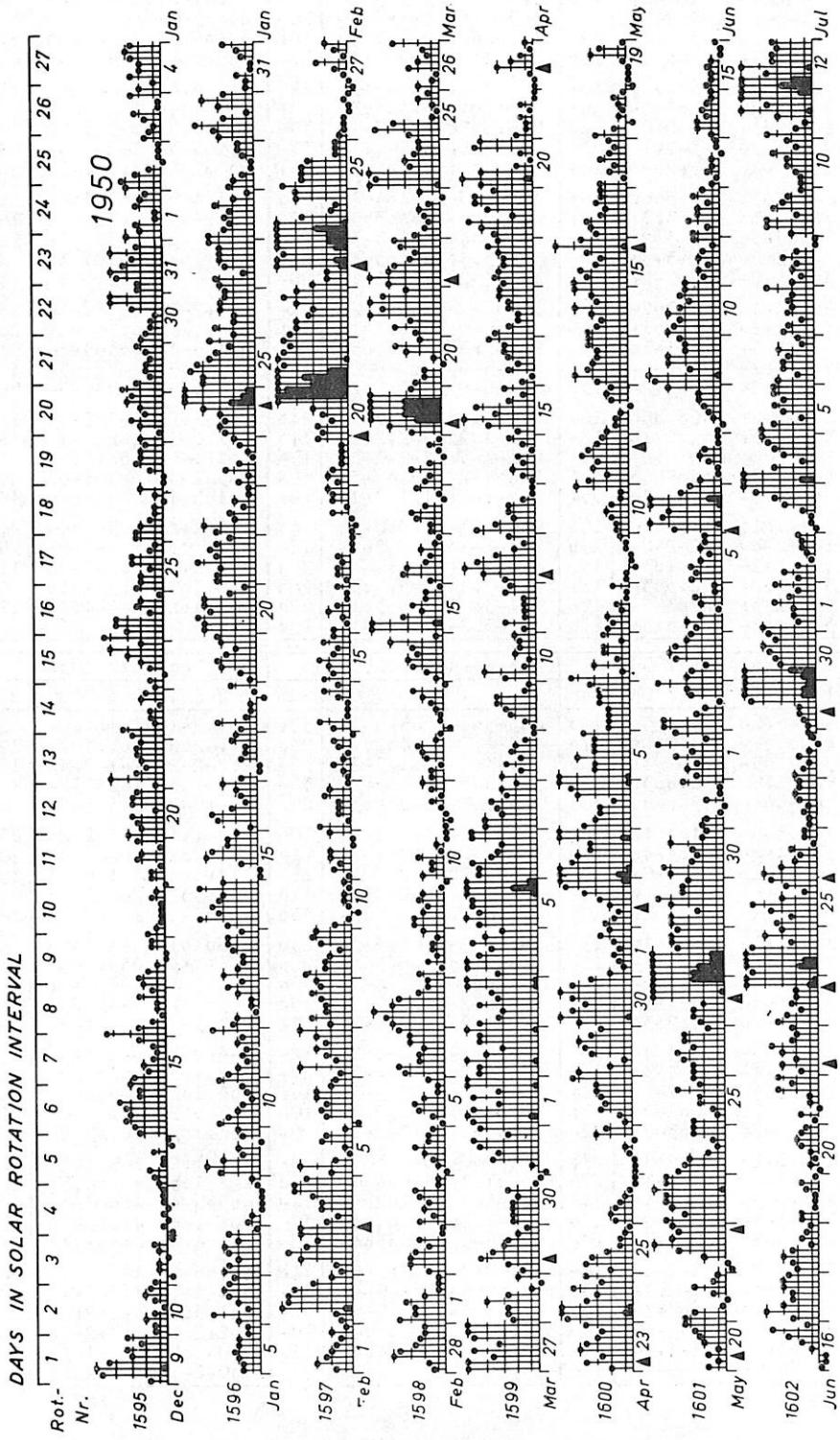
FIG. 6—OVERHEAD CURRENTS NECESSARY TO PRODUCE INDICATED SOLAR FLARE EFFECT, AND CURRENTS FOR THE NORMAL DIURNAL VARIATION

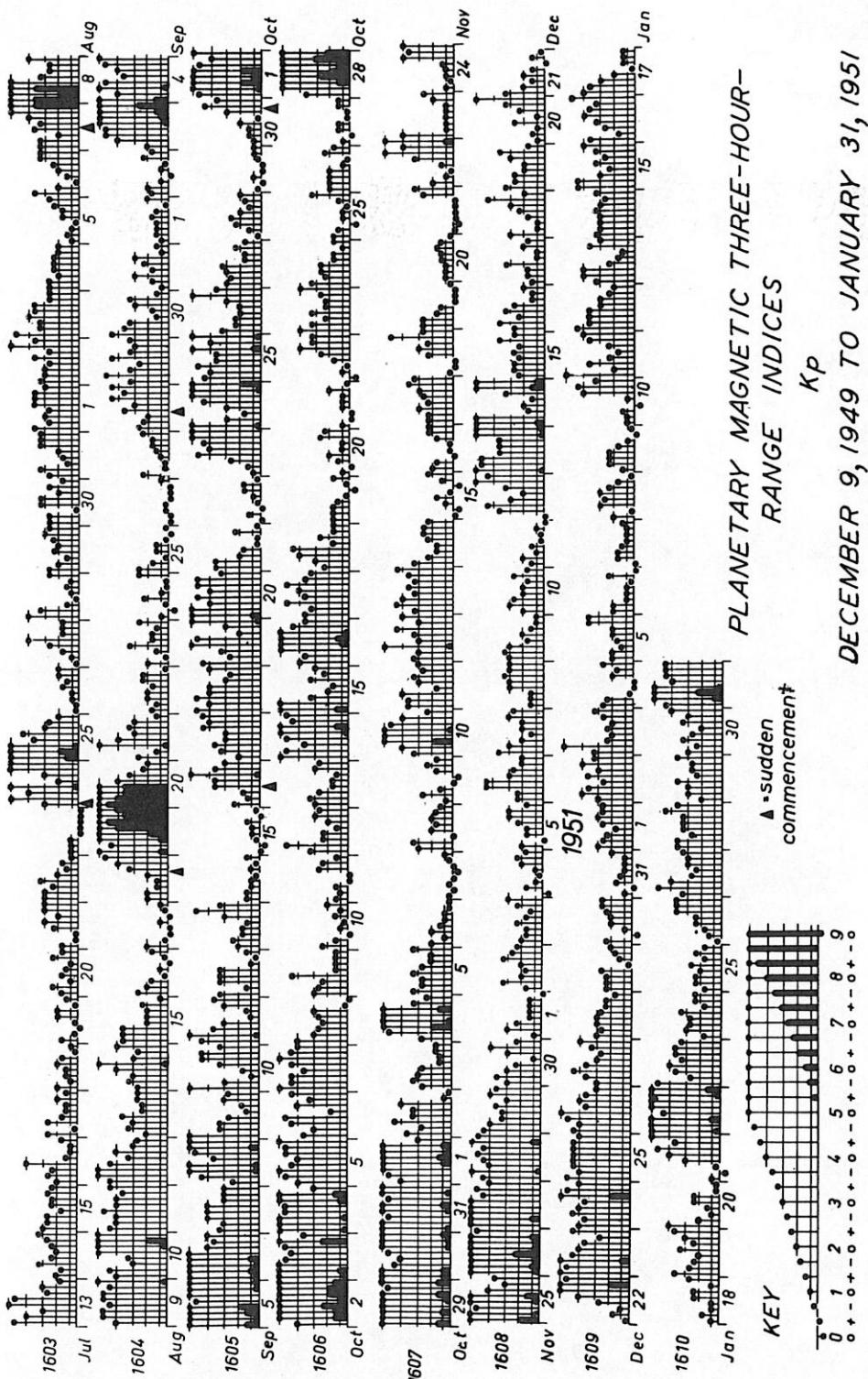
Table 14. Geomagnetic planetary three-hour-range indices K_p.

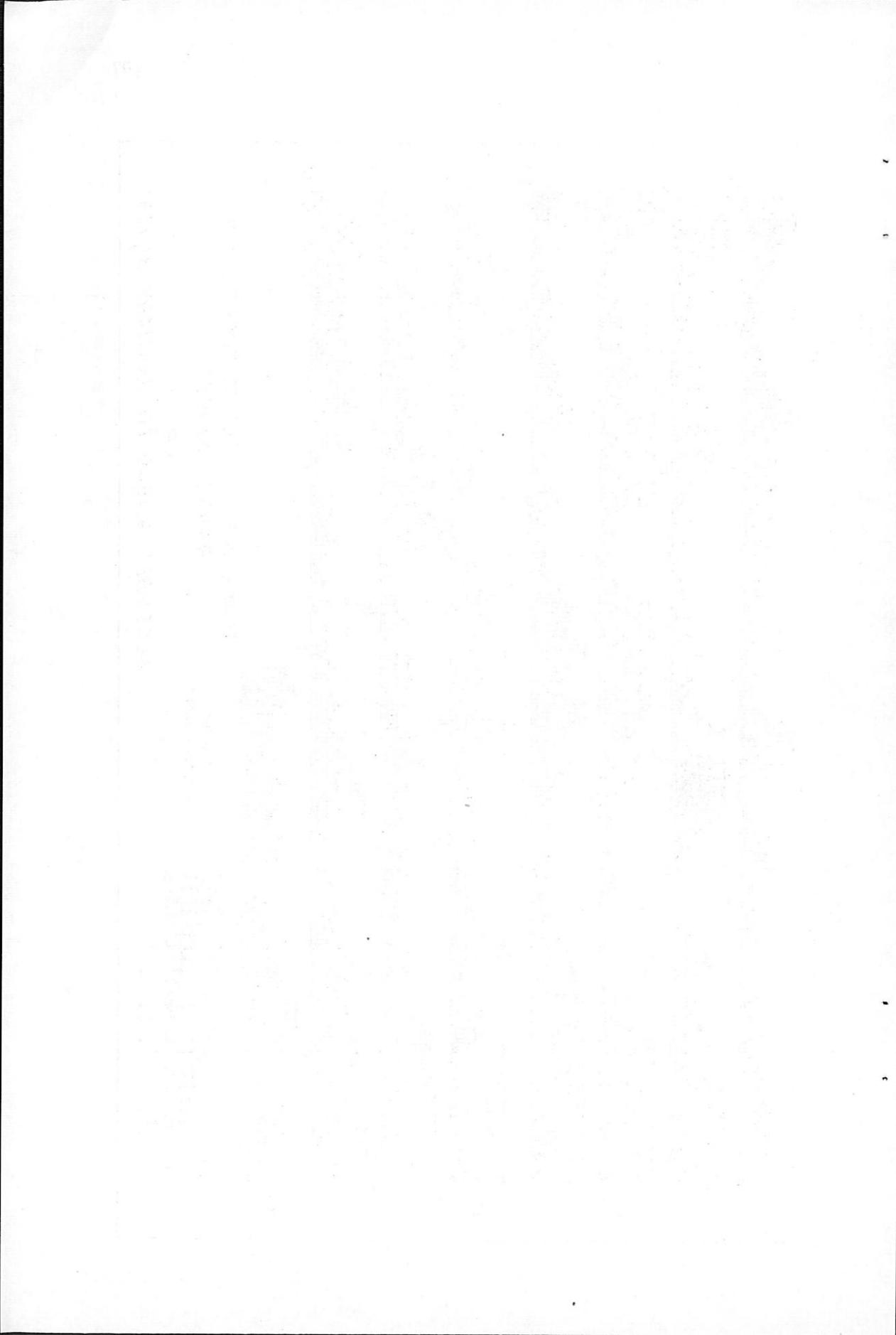
	January 1950								February 1950								March 1950																							
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum													
1	3	0	2	0	2	1	0	1	15+	2	-	3	0	2	2	0	1	0	150	4	-	3	-	3	+	2	0	1	0	1	0	1	0	17+						
2	3	0	3	2	1	+	0	1	1	1	1	2	-	6	-	5	-	4	28-	2	-	3	0	3	-	2	-	2	1	1	-	16-								
3	2	-	1	1	0	2	-	2	120	1	+2	-	4	0	5	-	4	0	40	2	+1	2	0	2	-	2	1	0	1	0	14+									
4	2	0	1	3	-	2	0	3	180	2	+2	-	3	3	-	3	4	4	4	250	0	+1	0	1	2	0	2	0	1	2	1	120-								
5	2	-	2	0	2	+	2	0	14+	2	0	4	0	2	-	1	1	0	3	-	2	1	0	1	1	-	2	0	1	0	13-									
6	2	0	4	-	1	+	2	0	20-	0	0	2	3	-	2	+	3	0	3	0	2	0	-	3	4	+2	2	+	2	0	3	0	4-	23+						
7	3	0	3	-	2	0	3	-	19-	1	+4	0	2	-	2	+	3	0	4	0	22-	4	0	4	5	0	4	-	4	2	-	2	7-							
8	1	+1	0	0	+	0	0	+	1	10-	5	+	2	0	3	2	+	2	0	3	22-	2	+1	2	-	1	0	1	0	2	0	1	11+							
9	3	+4	0	3	0	2	-	2	180	4	-	2	2	+	2	0	1	3	-	3	0	21-	3	-	3	2	0	2	-	2	0	1	0	14+						
10	3	3	-	2	0	2	-	2	170	2	-	1	0	0	1	-	1	0	0	1	7-	2	0	1	1	+2	+	1	-	1	0	0	0+	9+						
11	3	-	2	0	1	+	2	-	16+	1	-	2	-	1	2	0	0	0	2	0	10+	0	+0	0	0	1	+	1	-	1	2	0	1	0	7-					
12	2	+2	0	1	-	1	0	2	0	3	-	2-	13+	3	-	1	-	1	1	+	2	0	12+	1	+1	1	-	2	0	2	+	1	0	1	110-					
13	3	0	2	0	2	-	2	+	3	3	-	2-	18-	1	-	1	0	2	1	0	0	8+	0	0	1	-	1	0	1	0	3	0	0	9-						
14	3	-	4	3	+	4	-	3	28-	2	-	3	-	1	1	-	1	2	1	+	1	11+	1	0	2	-	3	0	2	3	-	4	0	10	18+					
15	0	0	+2	+	2	0	4	-	3	20-	17+	2	+2	0	3	-	2	1	+	2	2-	16-	5	0	6	-	3	2	0	3	2	-	2	1	23-					
16	1	0	3	+4	-	2	1	+2	0	3	0	18-	2	-	1	0	2	0	0	0	2	0	9+	1	+3	3	0	2	-	1	2	0	1	0	1	14+				
17	2	-	0	0	+2	-	1	+1	2	0	2	0	110	1	-	1	+1	1	0	0	0	0	7-	1	+1	2	+2	3	-	2	0	1	-	1	2	0	13-			
18	2	-	3	-	1	1	0	1	0	0	0	1	2-	11+	0	0	0	0	1	2	-	2	0	8+	2	-	1	3	-	1	0	1	1	0	100-					
19	1	0	2	-	3	0	3	-	3	20-	0	3	0	2	0	2	-	1	0	0	1	12-	3	-	4	0	7	-	7	7	+7	5	0	3	430-					
20	4	0	4	0	4	-	4	0	4	0	2	1	28-	2	+3	-	2	2	+	3	0	9	-	8+	3	4	0	2	2	-	0	1	0	3	0	4	20-			
21	3	3	-	3	0	4	+	3	27-	7	+8	-	6	-	5	-	5	+5	-	4	5-	450	2	+4	-	3	5	0	4	5	0	4	3	0	30+					
22	3	+4	0	2	0	2	+	1	2	0	1	0	170	4	+4	0	4	0	3	+	3	0	451+	4	0	5	0	4	0	4	-	3	-	2	3	4-	29-			
23	2	-	1	0	5	-	2	-	1	0	2	-	20-	3	0	2	0	2	0	6	0	5	-	606+	36-	2	+2	-	1	2	+	1	0	2	0	20	13-			
24	3	-	3	0	3	0	4	0	7	-	6	0	6-	34-	6	+7	0	5	4	-	2	-	1	0	4	0	33+	5	+5	0	3	0	2	0	2	0	20	270-		
25	4	0	4	0	5	-	4	4	-	2	4	0	3	0	0	0	4	4	-	3	1	1	1	+	2	3	0	5	-	4	10	1	1	0	2	0	1	0	1	70-
26	2	0	3	+4	0	2	0	2	0	3	0	3	0	21-	1	0	1	1	1	-	0	0	1	0	5-	2	0	1	0	1	3	-	2	0	1	0	1	150-		
27	3	0	3	-	1	3	-	3	230	0	0	0	1	1	-	1	3	-	1	2	0	2	0	90	5	0	5	0	4	-	5	-	5	0	5	0	36+			
28	4	-	3	-	2	3	-	2	200	1	+2	-	4	0	4	-	3	2	+	2	0	20	20-	2	+3	-	3	4	-	3	-	1	0	0	2	0	18-			
29	2	+2	0	1	1	-	1	1	2-	12-	12-	12-	12-	12-	12-	12-	12-	12-	12-	12-	12-	2	-	3	-	4	+	3	-	1	0	2	0	21+						
30	3	0	4	-	4	3	-	3	120	1	0	1	0	2	-	1	1	2	-	3	0	403-	240	2	+2	-	2	2	+	2	0	3	-	1	0	150-				
31	1	0	1	0	2	-	1	1	11-	11-	11-	11-	11-	11-	11-	11-	11-	11-	11-	11-	11-	0	0	1	0	4	-	3	-	4	+	5	-	3	4-	240-				

Table 14. Geomagnetic planetary three-hour-range indices K_p.

	July 1950								August 1950								September 1950																						
E	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum	1	2	3	4	5	6	7	8	Sum												
1	4	0	2	-2	0	2	0	-	20+	4	-3	-3	0	-3	4	-4	-4	30	260	1	0	1	1	+	2	-1	-1	20											
2	2	-3	-2	-1	-	1	0	1	1	2	-	3	+3	0	3	-	4	-3	50	270	2	-2	0	1	0	+	1	0	2										
3	0	+1	-1	-1	-	3	-3	+4	50	18+	5	-3	+3	40	4	-4	-3	-3	280	204	0	5	-	5	+6	-6	0	70											
4	6	0	5	0	3	1	+1	-	3	-3	+4	-4	0	29+	3	-3	-2	0	2	2	+2	0	20	18+	6	0	4	0	5	-	5	40							
5	4	0	3	+1	-3	-	3	+3	-3	+3	240	1	0	1	1	0	1	-	2	-2	-2	3	12+	6	0	5	+6	0	6	5	-5	0	5	+5	40				
6	3	0	2	-3	-3	-	2	+3	0	1	-2	18+	4	-2	0	1	-	1	2	0	2	+3	+3	19-	5	+6	-5	6	-	50	40	4	-4	0	40				
7	3	-2	1	+2	-	2	0	2	+2	0	-4	19-	3	+3	+2	0	4	-	3	+4	0	5	0	32+	3	+3	0	4	0	4	0	40							
8	2	0	1	+2	-	2	0	2	-	0	+0	120	8	-6	+8	-5	0	3	+3	-3	-4	0	39+	2	+4	+5	+5	+	4	-5	-6	-5	0	50					
9	2	0	4	-4	-2	-	3	+5	-2	+1	21-	4	0	5	-5	-4	4	-5	-4	+5	+5	37-	5	0	4	3	-3	-	1	+2	-3	0	3	-	230				
10	1	+1	+2	-2	-	2	+3	+2	-2	+4	16-	4	0	4	+3	0	3	-	5	0	5	+6	50	36+	5	0	3	0	1	0	2	-	3	+4	+4	+3	+3	260	
11	4	-2	-1	0	3	0	5	+4	-5	0	6	29+	4	+4	0	4	-5	4	0	4	-4	-	4	330	4	+5	+4	-3	0	1	0	3	4	-	0	4	4	+2	50
12	7	0	6	4	-5	-	3	+3	-3	0	3	35+	4	+5	0	5	0	4	-3	0	3	-	3	32-	3	+1	3	+3	-	3	+1	0	1	-	1	-	18		
13	5	-4	0	3	0	5	0	5	-3	0	2	29-	2	0	3	+3	0	4	-	2	+2	-3	-3	220	2	0	2	2	-2	-	1	+3	0	5	-3	-	200		
14	2	0	2	-3	+2	-	2	0	2	-3	-3	20-	3	-3	+3	0	4	0	5	+3	0	3	-4	280	1	+1	1	0	1	0	1	-	1	-	1	-	8+		
15	3	0	3	-3	-2	-	2	+2	-3	+2	-	20-	4	-4	-4	2	0	2	0	2	+1	0	1	20+	0	0	1	0	1	0	1	-	0	1	-	0	1	5+	
16	2	0	3	-2	+4	0	1	+1	0	1	0	2	160	3	-2	0	2	-1	1	0	0	1	-2	11-	2	+1	+2	-4	-	4	-5	+4	-3	0	-	25-			
17	3	-1	-3	-2	-	1	+1	+2	0	1	-1	14-	2	0	1	0	+0	0	1	0	0	1	-1	6+	2	0	3	+4	-3	0	3	0	4	0	4	0	4	28-	
18	2	0	1	0	1	+1	-	2	0	2	-1	110	2	0	2	0	1	+1	2	0	3	+4	0	5-	21-	5	-4	0	5	-4	0	4	0	3	0	-4	310		
19	2	-1	-0	1	-	2	0	2	-1	1	-1	9+	6	-4	+6	-6	-	8	0	8	+8	-8	80	540	4	+3	-3	+5	0	5	-2	0	3	0	5	+5	30+		
20	2	-2	+1	0	2	-	1	+1	0	2	-2	130	8	+8	0	8	-8	-	4	0	3	+2	+2	0	43+	6	-5	0	4	0	5	-	4	0	5	-3	+5	360	
21	2	-1	-1	-2	-	3	0	2	0	3	0	30	16+	3	-1	+5	4	0	3	0	3	0	1	240	4	-4	-2	0	2	-1	-1	-2	1	-1	-2	-1	-1	15+	
22	3	0	3	0	2	+3	-	2	0	1	-2	10-	18-	2	-1	+2	0	2	-2	+2	-1	3	-	140	0	1	+0	1	-	1	0	2	-1	-1	-1	-1	8-		
23	1	0	1	0	1	0	0	+	0	0	0	0	5-	20	1	-1	+3	-	2	-2	-1	-3	-	15-	1	0	1	3	-5	-	4	0	4	+5	0	50	280		
24	3	0	5	0	4	0	5	-	2	0	5	0	50	324+	1	0	0	1	-2	1	0	1	-1	-3	90	5	+3	0	2	-3	0	4	+5	0	+6	+	340		
25	6	0	6	+5	+4	-	4	-	3	0	3	-20	33+	3	-2	-1	1	-	1	1	-	0	1	9+	4	+4	0	5	-4	-	4	-6	-4	0	5	+5	35+		
26	1	-1	-1	0	1	0	1	-	2	-1	0	2	0	10+	0	0	+1	-1	-	0	0	+0	0	1	10	40	3	+2	+2	0	2	0	3	0	5	0	4	-	24-
27	1	-1	0	2	-3	-	4	0	2	-2	-2	150	2	+1	-1	1	0	1	2	-2	-2	-1	12-	3	0	3	-3	0	3	-	2	-2	-2	-1	-1	19+			
28	4	0	3	+1	-1	-	1	0	1	0	-3	15+	3	-2	+2	0	4	-	3	0	4	-4	4	260	1	-1	+2	+3	-	2	0	1	+2	-2	0	-	140		
29	3	-2	0	1	+2	-	2	0	2	-3	0	3	-18	184+	3	+5	-3	+3	-	4	+3	+3	0	3	280	1	-0	+1	0	0	0	1	0	1	0	0	0	5+	
30	3	-3	-1	-3	-	3	+2	0	3	-2	-2	190	4	+4	-3	+1	-	2	-3	0	3	+1	-	220	1	0	1	1	+2	0	1	-	3	-3	4	-	17+		
31	3	-3	+1	-2	-	2	0	3	-3	+3	-	210	1	0	2	-3	0	2	-	2	3	0	1	0	150	1	5	0	3	0	1	4	-	4	-	17+			







An attempt to standardize the
daily international magnetic character figure.

By Julius Bartels, Göttingen.

Contents: 1. Introduction. - 2. Remark on Notation and Symbols.* - 3. Purpose. - 4. Derivation of C_p from the indices K_p . - 5. General relation between C_i and C_p . - 6. Discussion of days with large differences ($C_i - C_p$). - 7. Systematic changes of ($C_i - C_p$). - 8. Causes for shifts in the standard of C_i . - 9. Statistical aspects of C_i .

Notes: 1. The daily sum of K-indices, and the indices B and B_p . - 2. Specimen for C_p . - 3. Local daily character-figures C_k and C_s . - 4. Local bias in C and C_i . - 5. Characterization of months and years.

References. - Main conclusion.

1. Introduction. As a measure for the intensity of geomagnetic disturbance, the daily international magnetic character figure - here designated C_i - has become comparable in popularity to the Zürich relative sunspot number as a measure of solar activity. An unbroken series of C_i from 1884 to the present is available, as the result of a remarkable collaboration of nearly all magnetic observatories. C_i is now being derived under the auspices of the International Association of Terrestrial Magnetism and Electricity (IATME), through its Committee on Characterization of Magnetic Disturbances (CCMD), by Dr.J.Veldkamp (De Bilt).

Since 1940, the K-index has been introduced to measure magnetic disturbance for three-hour intervals. At the Oslo Meeting 1948 of the IATME [1] it was

"recommended that the Committee (CCMD) develop proposals for a method of determination of C_i from K-indices which would give a homogeneous series of the former. When this fact could be demonstrated, the matter of discontinuing the present method of determining C_i could be taken up with URSI (Union Radio-Scientifique Internationale) and other interested groups"

The following proposal for a daily planetary character figure C_p to be derived from planetary three-hour-range indices K_p is submitted to the members of the CCMD and to others interested. The underlying studies and calculations are reproduced so far only as they seem relevant to describe C_p and its relations to C_i ; a few Notes will give additional details.

*) Symbols and abbreviations are underlined where they occur first.

2. Remark on Notation and Scales. The reader is asked to excuse some changes in symbols etc. introduced to simplify the typing. K_p is [2, 3] the planetary three-hour-range index, (scale of 28 steps, from 0o, 0+, 1-, 1o, 1+, 2-, ... to 8+, 9-, 9o). K_p is currently computed from the K-indices of 11 observatories [3], and now available for the 13 months of the Second International Polar Year (August 1932 to August 1933) and for every day since 1940 January 1. It is hoped eventually to obtain K_p -indices for the 3 years 1937 to 1939.

The daily character assigned at a single observatory (scale 0, 1, or 2) is C . If necessary, such symbols like $C(Si)$ shall denote C for Sitka, with the two-letter abbreviations for the names of observatories used in the tables listing C or K . C_i (scale 0.0 to 2.0) is the daily international magnetic character figure, derived as the arithmetic mean of the individual characters C for all collaborating observatories. C_p , (same scale as C_i , with the option to split 2.0 into 2.0 to 2.5) is the new planetary character figure. To avoid decimals, the ten-fold values of C_i , C_p , as well as of the "excess" ($C_i - C_p$) are used occasionally, and called T_i , T_p , and $E_i = T_i - T_p$.

A more detailed classification of storm days by splitting, for C_p , the conventional maximum 2.0 into steps 2.0 to 2.5 will be indicated in § 4. Anybody who wishes to preserve, in C_p , the conservative scale of C_i , ending with 2.0, may simply regard all $C_p = 2.0$ to 2.5 as 2.0. For the purpose of comparisons and correlations with C_i , this contraction of the last steps into $C_p = 2.0$ will be used anyway.

3. Purpose. The time-variations of the geomagnetic field are superpositions of four main parts

- (a) secular variation,
- (b) daily variations, solar (S_q) and lunar (L), of the type most distinctly shown on quiet days,
- (c) disturbances, of the type most intense in polar regions,
- (d) post-perturbation, most clearly shown at equatorial stations in a depression of H , slowly recovering.

Just as K and K_p , C_p will refer to part (c) only. With the usual assumption that this "magnetic activity" is due to solar corpuscular radiation P (= particle radiation), C_p can be regarded as daily index for the intensity of P for the entire earth. The scale for C_p will be the same as that for C_i , ranging from 0.0 to 2.0, with the option to split the range for the highest figures to extend to 2.5. The formula for C_p has been adjusted so that, in the 10 years 1940 to 1949 - the standardization basis -, there will be, in C_i as well as in C_p , about equal numbers of days with each of the 21 steps 0.0, 0.1, ..., 2.0.

4. Derivation of Cp from the indices Kp. Cp is based exclusively on the planetary three-hour-range index Kp, described previously [2].

After several trials, the following procedure was adopted: Each value of Kp is replaced by a weight g according to Table 1, and the sum G of the 8 values of g for each day is computed. G determines, according to Table 2, the daily planetary character-figure Cp. The two tables necessary to compute Cp from the Kp are

Table 1. Weights g assigned to Kp.

Kp	g	Kp	g	Kp	g	Kp	g	Kp	g
0o	0	2-	6	4-	22	6-	67	8-	179
0+	2	2o	7	4o	27	6o	80	8o	207
1-	3	2+	9	4+	32	6+	94	8+	236
1o	4	3o	12	5-	39	7-	111	9-	300
1+	5	3+	15	5o	48	7o	132	9o	400
			18	5+	56	7+	154		

Table 2.

Key for Cp as a function of the daily sum G of the weights g.

Limits of G	Cp	Limits of G	Cp	Limits of G	Cp
0...	22	0.0	121...	139	0.9
23...	34	0.1	140...	164	1.0
35...	44	0.2	165...	190	1.1
45...	55	0.3	191...	228	1.2
56...	66	0.4	229...	273	1.3
67...	78	0.5	274...	320	1.4
79...	90	0.6	321...	379	1.5
91...	104	0.7	380...	453	1.6
105...	120	0.8	454...	561	1.7

Examples

1940 March 1,
 Kp = 1o 3o 3- 2o 2o 1+ 1o 0+ 1940 March 24,
 g = 4 15 12 7 7 5 4 2 6+ 6o 5o 4+ 8o 9o 9o 8+
 G = 56, Cp = 0.4; Ci was 0.3 94 80 48 32 207 400 400 236
 G = 1497, Cp = 2.1; Ci was 2.0

Reasons for choosing this procedure: The weights g in Table 1 have been chosen so that the average three-hour-range of the most disturbed field-component at a standard station like Wingst or Cheltenham, in an interval with Kp, would be about 2 g gammas. The limits of G for Cp in Table 2 were chosen so that, in the 10 years 1940 to 1949, the number of days with Cp = 0.0, 0.1, ..., 2.0 should about equal the number of days with the same values of Ci. In other words, the frequency-distribution, for the 3653 days in the 10 years, is practically the same for Cp and the original Ci.

Table 3 gives daily values of Tp = 10 Cp and Ei = 10 (Ci - Cp); 10 Ci can easily be derived as Tp + Ei. Thus, e.g., for 1940 January 3, Ci = 1.8, Cp = 1.5.

Table 3.

Daily values,
planetary character-figures Cp, 5
and differences ($Ci - Cp$).
To avoid decimals, the
table lists the tenfold
value
 $Tp = 10 Cp$
and the excess
 $Ei = 10 (Ci - Cp)$

International Polar Year
1932/33 and all months 1940
January to 1949 December.
For the months 1950 January
to 1951 February, for which
final Ci are not yet avail-
able, only $Tp = 10 Cp$ is
given. Days with $Cp = 2.1$
or 2.2 are marked; for these,
 $Ci = 2.0$, and Ei has been
given as 0.

	1932 Aug 32	Sep 32	Oct 32	Nov 32	Dec
1	6 +3	6 +2	3 +1	11 +1	2 +4
2	12 0	4 +4	5 +3	6 +2	3 +2
3	11 +3	2 -1	5 +1	4 +1	1 +3
4	8 +3	2 +1	3 +4	4 +4	3 +1
5	8 +3	3 +5	3 +3	5 +1	1 -1
6	2 +3	13 +2	1 +1	2 -1	2 +2
7	1 0	3 +6	1 +2	1 +4	0 0
8	1 0	10 +2	2 +2	1 +2	8 +5
9	4 -1	8 +2	5 +4	1 -1	8 +2
10	0 0	1 0	7 +3	1 0	5 +3
11	1 +3	1 0	3 +3	1 +2	1 +2
12	7 +4	1 +1	2 +2	4 +4	1 0
13	7 +4	2 0	1 +1	5 +2	6 +5
14	2 +3	3 +1	0 +3	9 +3	13 +5
15	1 +1	2 0	13 +5	6 +5	11 +5
16	1 -1	1 -1	10 +3	14 +2	10 +5
17	1 0	1 0	9 +3	8 +4	10 +3
18	1 0	7 +2	3 +3	6 +3	6 +2
19	0 +1	9 +3	3 +2	4 +2	6 +2
20	0 +1	7 +3	12 +3	4 +2	1 +1
21	6 +4	5 +1	12 +3	1 +1	0 0
22	6 +4	6 +5	6 +4	1 -1	1 +1
23	5 +3	12 +4	11 +1	1 +1	0 +1
24	0 +1	14 +2	7 +3	0 0	1 +1
25	2 +2	15 +3	4 +3	4 +6	4 +5
26	1 0	10 +1	1 0	1 +1	5 +3
27	13 +4	8 +2	7 +4	1 0	6 +3
28	17 +2	3 0	1 0	4 +3	6 +3
29	13 +4	5 +3	1 +2	8 +2	2 0
30	12 +1	6 0	8 +1	2 +2	4 +4
31	6 +1	3 0	3 0	7 +2	

	1933 Jan 33	Feb 33	Mar 33	Apr 33	May 33	Jun 33	Jul 33	Aug
1	8 +4	0 +1	3 +1	5 0	18 +1	11 0	3 +2	0 0
2	6 +2	6 +2	3 +1	4 0	10 +1	3 +2	3 +1	1 0
3	2 0	1 +2	4 +1	7 +2	8 0	3 +1	3 +2	1 0
4	0 0	1 +2	2 0	7 +1	9 +1	1 0	2 +2	0 +1
5	0 0	1 +2	0 0	3 +2	8 0	1 -1	2 +1	14 +4
6	9 +3	0 +1	1 0	5 +1	10 0	0 0	2 +2	11 +2
7	5 +3	4 +1	0 +1	9 +1	5 +2	1 0	1 +1	3 +1
8	2 +1	1 +3	1 +1	6 +2	2 -1	7 +3	4 +5	2 +1
9	1 0	3 0	1 -1	7 0	0 0	5 +3	10 +3	0 +1
10	0 0	1 +1	3 +1	5 +2	1 0	2 +1	5 +4	1 0
11	0 +1	0 0	6 +2	1 0	1 0	1 0	6 +3	0 0
12	0 +1	1 +2	3 +1	0 0	0 +1	2 +2	4 0	0 +2
13	1 0	0 0	5 +3	0 +1	4 0	14 +2	1 0	11 +4
14	2 +5	4 +4	4 +2	2 +3	8 +2	9 +3	1 0	6 +4
15	10 +2	6 +3	1 +1	10 +2	8 +1	5 +3	0 0	4 +4
16	4 +1	0 +1	1 0	10 +3	4 +2	1 0	1 +2	2 +2
17	3 -1	0 0	1 +3	13 +1	6 +2	2 0	5 +5	7 +3
18	1 0	1 +2	13 +2	11 0	10 +1	1 0	6 +4	10 +3
19	7 +5	12 +5	13 +2	12 0	5 +2	4 +4	2 +1	8 +2
20	7 +2	12 +2	14 +2	10 +2	1 +1	9 +3	3 +2	8 +3
21	0 +1	14 +3	12 +3	11 +1	2 0	3 +3	1 0	10 +3
22	9 +5	13 +3	12 +3	10 +2	2 +1	1 +2	2 +1	2 0
23	9 +2	13 +2	13 +2	10 +1	2 0	0 +1	10 +5	8 +2
24	9 +2	13 +2	13 +2	5 +1	1 0	1 0	13 +3	8 +3
25	8 +1	10 +1	8 +2	4 +1	2 +1	5 +5	3 +2	5 +4
26	10 0	11 +1	4 +2	6 +2	0 0	3 +3	3 +4	5 +4
27	12 +2	7 -1	9 +2	3 +1	3 +4	6 +3	7 +4	2 +1
28	11 +1	2 +1	9 0	4 -1	3 +3	9 +1	2 0	1 0
29	7 +2		7 +1	1 0	6 +5	6 +2	1 +1	1 0
30	7 0		5 +1	10 +3	9 +3	3 +1	1 0	1 +1
31	4 +1		5 +1	11 +1		2 +1	0 +1	

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

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

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

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

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

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

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

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

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

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

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

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

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

1949	Oct 49	Nov 49	Dec	1950				Jl	Au	Se	Oo	No	De	1951						
				Ja	Fe	Mr	Ap													
1	5	+1	13	+2	6	-1	4	4	6	15	3	9	7	10	2	17	16	3	7	12
2	5	-1	13	+1	2	-1	4	12	5	14	11	10	3	10	2	18	9	6	10	3
3	1	0	11	-2	6	+1	3	11	4	13	15	9	9	11	16	16	6	4	9	2
4	10	+2	5	0	8	+1	5	10	3	13	11	4	13	5	15	16	15	2	3	6
5	9	0	10	0	6	0	3	5	3	16	11	4	9	3	17	14	7	4	6	10
6	11	0	5	+1	6	0	6	5	8	13	6	14	6	6	15	12	2	9	2	14
7	17	0	2	-1	1	-1	6	8	11	10	6	2	6	15	10	13	0	6	2	6
8	14	+1	0	0	2	0	1	7	2	4	2	4	3	18	15	7	4	7	5	11
9	10	-1	4	+1	12	-1	6	7	4	5	0	12	7	14	9	6	2	5	3	12
10	5	0	8	+1	2	+1	5	1	2	5	4	10	5	15	11	2	14	5	7	12
11	10	0	12	0	1	-1	5	2	1	4	8	4	13	13	11	2	9	1	10	12
12	4	+1	9	+1	0	0	3	3	2	10	2	4	15	13	6	8	12	11	10	14
13	8	+1	6	0	1	-1	5	1	2	6	9	1	12	7	8	6	11	14	9	11
14	18	+1	7	+1	8	+2	10	3	6	2	9	2	6	11	1	15	6	14	9	7
15	20	0	5	+2	4	+1	6	4	11	10	11	1	6	7	1	12	1	7	10	2
16	17	0	7	-1	5	0	6	2	4	5	7	3	5	2	10	15	3	6	10	1
17	9	-1	1	0	2	0	2	1	3	6	3	8	3	1	11	12	8	4	6	2
18	4	0	5	+2	1	0	3	1	3	9	2	4	2	8	12	8	7	7	3	7
19	9	-1	14	+2	2	+2	7	3	18	12	2	2	2	19	12	2	2	7	7	8
20	6	0	15	-2	6	0	11	18	5	12	4	2	3	19	14	3	2	7	5	3
21	6	-1	9	+1	5	+3	10	18	12	1	4	4	5	10	5	1	2	3	10	6
22	9	+1	2	+2	4	+1	6	12	11	2	10	6	6	3	1	6	11	13	16	15
23	9	+1	4	+2	5	+3	3	16	3	9	13	11	0	4	12	9	4	14	11	17
24	10	-2	3	0	8	0	15	15	12	13	7	15	13	2	15	5	7	14	6	14
25	3	-1	1	0	4	+1	12	9	7	5	6	10	14	2	14	3	16	13	4	10
26	3	+1	1	+1	2	0	7	0	4	2	8	5	2	0	9	3	17	13	7	9
27	14	+1	7	+1	3	0	8	2	14	2	16	2	5	3	6	1	15	10	10	16
28	13	-1	2	-1	5	+1	7	7	6	7	17	2	5	10	3	18	15	7	10	16
29	8	-1	13	0	4	+1	2	8	9	11	14	14	5	11	1	17	11	4	8	
30	4	-1	14	+1	7	+2	9	4	10	13	9	14	6	9	7	16	8	4	9	
31	6	-2			9	+2	2			3			7	4		16		2		16

Table 3a. Monthly and annual averages of Cp, multiplied by 100.

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
1932	50	49	57	64	51	40	35	50	57	49	40	43	48
1933	50	49	57	64	51	40	35	43	..	..	..	..	65
1940	71	62	80	65	60	63	56	54	63	64	73	72	66
1941	68	84	103	68	54	52	62	62	78	51	66	49	66
1942	45	56	90	71	38	38	61	61	76	87	70	52	62
1943	49	45	63	65	65	62	69	110	104	93	80	65	73
1944	61	52	77	67	43	38	26	43	51	53	25	54	49
1945	46	51	70	59	48	32	44	32	43	49	33	61	47
1946	54	79	91	71	76	74	80	48	95	62	62	47	70
1947	56	54	106	77	66	74	69	96	111	89	61	54	76
1948	59	66	67	64	84	48	52	75	74	100	75	65	69
1949	72	70	81	61	69	64	38	61	63	89	69	44	65
1950	59	67	63	82	74	64	66	85	91	96	81	73	76
1951	78	92	..	..	..	..	..	..	..	..	..	..	..
Average for 1932/33 and 1940 to 1950													58
	58	61	79	68	61	54	55	62	76	74	61	57	64

Table 3b. Monthly and annual averages of the differences (Ci - Cp), multiplied by 100.

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year
1932	..	..	..	..	..	..	..	+17	+16	+24	+18	+24	+17
1933	+15	+16	+14	+12	+11	+15	+19	+17	..	..	..	..	+4
1940	+11	+6	+1	+5	+9	+9	+7	+10	+7	+8	+11	+7	+8
1941	+4	-3	-2	-3	+4	+11	+4	+4	+2	+7	+7	+9	+4
1942	+7	+6	-2	+1	+2	+10	+5	+5	-3	0	+1	+4	+3
1943	+3	+5	+3	-3	0	+2	0	-9	-14	-6	-1	-1	-2
1944	+1	+2	+6	-3	+4	+6	+9	+7	+1	+1	+6	+6	+4
1945	+2	0	-1	-4	-7	-1	0	+7	-1	+4	+1	-1	0
1946	+2	-8	-6	-12	-13	-11	-11	-7	-11	-12	-8	-5	-9
1947	+1	-2	-8	-14	-5	-8	-9	-11	-11	-11	-4	0	-7
1948	+4	+4	+4	0	-6	+6	+4	+4	-1	-3	-1	+4	+2
1949	-4	+1	-6	-2	-1	-3	+9	+1	-2	0	+5	+5	0
Average for the ten years 1940 to 1949													0
	+3	+1	-1	-4	-1	+2	+2	+1	-3	-1	+2	+3	0

Table 3 lists 3 days with Cp = 2.2, 7 with 2.1, and 7 with 2.0 If, in addition to the days beginning at midnight Universal Time, intervals of 24 hours with other limits are admitted, higher values than 2.2 have occurred, e.g. the 24 hours beginning 1940 March 24, 12.00 U.T., would get Cp = 2.3, and the 24 hours beginning 1941 Sept. 18, 9.00 U.T., would get Cp = 2.4.

It should not be forgotten that the characterization of an interval of 24 hours by a single figure for the whole earth has its limitations and requires a compromise, especially if the day is partly quiet, partly disturbed. It is therefore recommended to use as much as possible the indices for three-hour-intervals, for a local measure of activity, the K-index provided by the nearest observatory, or for the Earth as a whole, the planetary Kp-index. But there is a demand for an objective measure of activity for a whole day and for the whole earth, and this shall be met by Cp. - If a local daily measure of activity is desired, a figure Ok will be suggested in Note 3.

The method used to introduce C_p , namely, assimilating of frequency distributions by ranking, has been applied before in the standardization of K [2]. See also Note 1 for a transitory stage (daily indices B and B_p) now given up. In Note 2, typical K_p -values leading to various figures C_p are tabulated.

The monthly and annual averages given in Tables 3a and 3b will be referred to in Note 5.

5. General relation between C_i and C_p . Tables 4 and 5 contain practically the same information in different arrangement. The correlation-coefficient between C_i and C_p is +0.962.

Table 4. Correlation-Table $C_i..C_p$ for the 3653 days, 1940-49.

Tp	Ti =																				Sum	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
0	90	46	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	141
1	72	203	96	9	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	383
2	3	80	152	82	25	4	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	348
3	1	12	87	123	77	26	4	1	.	.	.	.	.	.	.	.	.	.	.	.	.	331
4	.	28	76	87	74	.	26	10	4	.	1	.	.	.	.	.	.	.	.	.	.	306
5	.	7	29	79	84	.	62	39	15	3	1	.	.	.	.	.	.	.	.	.	.	319
6	.	.	.	4	27	64	67	45	32	8	.	.	.	.	.	.	.	.	.	.	.	247
7	.	.	.	1	6	29	54	49	60	23	8	3	1	.	.	.	.	.	.	.	.	234
8	.	.	.	.	3	12	28	50	49	44	24	6	.	.	.	.	.	.	.	.	.	216
9	.	.	.	.	.	1	9	28	32	50	54	21	8	.	.	.	.	.	.	.	.	203
10	.	.	.	.	.	.	.	11	20	41	45	26	20	3	.	.	.	.	.	.	.	166
11	.	.	.	.	.	.	.	1	5	17	46	54	30	10	6	.	1	.	.	.	.	170
12	.	.	.	.	.	.	.	.	2	17	46	59	32	7	4	.	.	.	.	.	.	167
13	.	.	.	.	.	.	.	.	.	1	6	35	29	16	18	.	1	.	.	.	.	106
14	.	.	.	.	.	.	.	.	.	.	1	9	28	22	21	.	9	6	.	.	.	96
15	.	.	.	.	.	.	.	.	.	.	.	1	11	22	20	.	15	3	1	.	.	73
16	.	.	.	.	.	.	.	.	.	.	1	1	1	6	12	13	10	1	.	.	.	45
17	.	.	.	.	.	.	.	.	.	.	.	.	3	5	11	11	9	2	.	.	.	41
18	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	5	13	4	1	.	.	26
19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	8	6	.	.	.	18
20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	15	.	.	.	17
Sums	166	341	375	324	306	295	252	234	217	188	197	164	164	114	82	81	52	36	27	16	22	3653

For the 3653 daily values of C_i , C_p , and $(C_i - C_p)$, the arithmetic means are 0.646 0.643 $+ 0.003$; the standard deviations are 0.462 0.458 0.126 . The last two columns of Table 5 show that the scattering of $(C_i - C_p)$ is lowest at the two ends of the scale; but at no level the standard deviation of $(C_i - C_p)$ exceeds 0.15.

The linear equations of regression according to least squares adjustments, are,

$$C_i = 0.970 C_p + 0.021 + R_i \quad C_p = 0.954 C_i + 0.028 + R_p$$

the standard deviations of the residuals are, for R_i , 0.126 and, for R_p , 0.125; the residuals of the equations $C_i = C_p + R$, with $R = C_i - C_p$, have the standard deviation 0.126, practically not higher than those for the least-square residuals, R_i and R_p .

Table 5. Frequencies of the excess $E_i = 10 (C_i - C_p)$, for fixed values of C_p , for the 3653 days, 1940-49.

$C_p =$	$E_i =$										Sum	Average	Stand. dev.		
	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	+6			
0.0	90	46	5	.	.	.	.	141	+0.04	0.07
0.1	72	203	96	9	2	1	.	.	383	+0.01	0.08
0.2	.	.	.	3	80	152	82	25	4	2	.	.	348	+0.02	0.10
0.3	.	.	1	12	87	123	77	26	4	1	.	.	331	+0.01	0.11
0.4	.	.	7	28	76	87	74	26	10	4	.	1	306	+0.02	0.13
0.5	.	.	29	79	84	62	39	15	3	1	.	.	319	+0.01	0.15
0.6	.	.	4	27	64	67	45	32	8	.	.	.	247	0.00	0.14
0.7	.	1	6	29	54	49	60	23	8	3	1	.	234	+0.01	0.15
0.8	.	3	12	28	50	49	44	24	6	.	.	.	216	-0.02	0.15
0.9	.	1	9	28	32	50	54	21	8	.	.	.	203	0.00	0.15
1.0	.	11	20	41	45	26	20	3	.	.	.	.	166	-0.02	0.15
1.1	.	1	5	17	46	54	30	10	6	.	1	.	170	-0.02	0.14
1.2	.	.	2	17	46	59	32	7	4	.	.	.	167	-0.02	0.12
1.3	.	.	1	6	35	29	16	18	1	.	.	.	106	0.00	0.12
1.4	.	.	1	9	28	22	21	9	6	.	.	.	96	+0.01	0.14
1.5	.	.	1	11	22	20	15	3	1	.	.	.	73	-0.03	0.12
1.6	1	1	1	6	12	13	10	1	.	.	.	.	45	-0.05	0.14
1.7	.	3	5	11	11	9	2	.	.	.	.	.	41	-0.04	0.13
1.8	.	.	1	2	5	13	4	1	.	.	.	.	26	-0.02	0.11
1.9	.	.	.	1	3	8	6	.	.	.	.	.	18	+0.01	0.08
2.0	.	.	.	2	15	.	.	.	.	.	.	.	17	-0.01	0.03
	1	7	65	278	845	1243	809	301	86	14	3	1	3653		

The last line of Table 5 shows that the differences $(C_i - C_p)$ are, on 4 out of 5 days, not higher than 0.1, more exactly

$$(C_i - C_p) = \begin{cases} 0.0 & \text{for 1243 days, or 34 per cent of all days,} \\ = -0.1 \text{ or } +0.1 & 1654 \quad 45 \\ = -0.2 \text{ or } +0.2 & 579 \quad 16 \\ = -0.3 \text{ or } +0.3 & 151 \quad 4 \end{cases},$$

The remaining 26 days (about 7 out of 1000 days) are listed in Table 6.

Table 6. Days with $(C_i - C_p)$ numerically greater than 0.3, from the years 1940-49.

Date	Ti Tp	Kp-indices	Date	Ti Tp	Kp-indices
$C_i - C_p = + 0.6$					
41 Je 9	10 4	0+1-1+4- 3-1+2-2+	48 Mr 11	8 4	1o1o0+0+ 1+0+0+5-
$C_i - C_p = + 0.5$					
40 No 12	16 11	2+0+2+5- 3+3+405+	46 Ja 7	7 3	0+1+l-1o 2o2o3o2o
49 Fe 3	12 7	2o0+1+l+ 2+2-405-	40 Je 29	6 2	0+1+l-1o+ 1+l3o2-
45 Au 22	10 5	0o1-l+1o 1+4-4o3-	42 Je 23	6 2	1-l-1+l+ 2o2o2o2o
$C_i - C_p = + 0.4$					
42 Ja 2	11 7	1o2o3-2o 3+3+4-3-	43 Ja 1	5 1	0o0o0o0+ 0o1+3-3o
43 Fe 25	11 7	1-2o0+1+ 1+3o4o4o	46 My 9	12 16	4+5-5-4+ 6o6-6-5-
45 Ja 28	11 7	2+l+1-0+ 1+2+4+5-	45 De 21	7 11	5o6-3+3o 2ololol+
41 De 13	9 5	l+1o2o2- 3-3o3o2o	47 Ap 15	5 9	4o4o3-3o 3+3o2+3-
44 No 10	9 5	0+o+2o2+ 3o4o3o0o	46 Jl 11	4 8	3+3+2+2+ 3-3o4-2o
48 Au 19	9 5	1o0+o+o+ 0+2-4o4+	46 Oc 3	4 8	3o4o4-1+ 3-3+l-1-
40 Je 22	8 4	0+1o0+3+ 3+2o1+2+	49 Ja 22	4 8	3o3+4+3o 3-2-1+l0
40 No 20	8 4	0+o+1+l+ 1+2+2o4+	46 Oc 12	3 7	3+4-4o1- 1-lolo3-
44 De 15	8 4	1-1-2-1+ 1-1-3o4o	43 Au 9	11 16	8-6+4+3- 3o3o2+4o
$C_i - C_p = - 0.4$					
$C_i - C_p = - 0.5$					

Table 7. Selected days differently characterized by Ci and Cp.
 (Ti = 10 Ci, Tp = 10 Cp).

Pairs of days with equal Ci, different Cp						Pairs of days with different Ci, equal Cp					
Date	Ti	Tp	Kp-indices	Date	Ti	Tp	Kp-indices				
44 No 28	2	0	0+0o0o0+ Ool-2ol+	40 Je 29	6	2	0+l+l-0+ 1+lo3o2-				
43 Ja 9	2	5	3o3-3+3+ l-l+l-lo	46 No 3	0	2	2+l+3-0+ lol-0+l+				
43 Ja 1	5	1	0o0o0o0+ Ool+3-3o	41 Je 9	10	4	0+l-l+4- 3-l+2-2+				
47 Ap 15	5	9	4o4o3-3o 3+3o2+3-	44 Oc 28	2	4	2-3-3-2- 2ol+2+2-				
46 Ja 7	7	3	0+l+l-lo 2o2o3o2o	49 Fe 3	12	7	2o0+l+l+ 2+2-4o5-				
45 De 21	7	11	5o6-3+3o 2ololol+	46 Oc 12	3	7	3+4-4ol- 1-lolo3-				
41 Je 9	10	4	0+l-l+4- 3-l+2-2+	42 No 23	12	9	2o2-2-2- 3o4o3o5+				
47 Mr 24	10	13	5-6o5+3- 2+3-3-2+	42 Oc 7	6	9	4+3+3+2- 3+3ol+2+				
49 Fe 3	12	7	2o0+l+l+ 2+2-4o5-	40 No 12	16	11	2+o+2+5- 3+3+4o5+				
46 My 9	12	16	4+5-5-4+ 6o6-6-5-	45 De 21	7	11	5o6-3+3o 2ololol+				
40 No 12	16	11	2+o+2+5- 3+3+4o5+	45 Oc 24	18	16	4-4-4+6- 6o5+6o5+				
47 Mr 4	16	18	7+7o7+7- 4o3+5o3o	43 Au 9	11	16	8-6+4+3- 3o3o2+4o				
44 Ap 2	20	18	4+5o8o8+ 6o4o5o4o					← This day underrated by Ci			
46 Jl 27	19	20	9-9-9o7- 5+4-4-2+								
All days with Ci = 0.0, Cp = 0.2 or 0.3						All days with Ci = 0.2, Cp = 0.0					
44 Se 16	0	2	0+2o2-1- 1+2ol-1-	40 Ja 26	2	0	0+0o0o0+ O+l-l+2-				
46 No 3	0	2	2+l+3-0+ lol-0+l+	41 No 15	2	0	1-0o0+l- 1-l-lolo				
47 Fe 13	0	2	lol+2-2- 2+lolol0+	44 No 22	2	0	0+0o0o0+ O+2ololol				
45 De 10	0	3	2-3ol+2- 1+l0o0+	44 No 28	2	0	0+0o0o0+ Ool-2ol+				
				46 Ja 21	2	0	0o0o0o0 1-lol+2+				
All days with Ci = 0.3, Cp = 0.6 or 0.7						All days with Ci = 0.6 or 0.7, Cp = 0.3					
43 Ja 24	3	6	3+3-2-3o 2+2-2+2o	41 Oc 10	6	3	0+l-lol- 1+2o3+2+				
45 Mr 13	3	6	4-2o2o3+ 3ol+lol-	42 Au 30	6	3	1-lolol+ 2-2+3+1o				
46 De 3	3	6	4+3o2+3- 1+l+l0o+	46 Ja 7	7	3	Ool+l-lo 2o2o3o2o				
47 Oc 22	3	6	3o4-3o2+ 3-1+l02-	47 No 30	6	3	lol+2-2o 1-2-3-3-				
46 Oc 12	3	7	3+4-4ol- 1-lolo3-	48 De 23	6	3	2o0+2ol+ 2-1o3-3-				

6. Discussion of days with large differences (Ci - Cp). Table 7 is arranged to exhibit the essential reasons for the differences between Ci and Cp.

The comparison with the 8 values of Kp for each day in Table 7 shows that, in general, Ci is higher than Cp for such Greenwich days which are disturbed in the noon or evening hours, while Ci is lower for Cp if the main disturbance is restricted to the first three-hour-intervals (Eighths) of the Greenwich day, up to about 09 Universal Time. The reason seems clear: For the great number of European observatories the level of activity is generally low in the early morning hours, and high in the evening. This well-known daily variation of activity, numerically expressed in the Conversion-Tables K into Ks (IATME Bull. 12b), leads to an "European bias" in C, which is reflected in Ci (see also Note 4).

7. Systematic changes of $(C_i - C_p)$. An inspection of the excess-values

$Ei = 10(Ci - Cp)$ in Table 3 shows that there are significant changes in Ei from year to year. Thus, plus-signs prevail in 1932/33 and in 1940, and minus-signs prevail in 1946. For a closer study, it must be taken into account that Ei may depend systematically on Cp ; in order to make the groups of days large enough in each sub-division, five levels of activity were kept separate, namely $10 Cp = Tp = (0, 1, \text{or } 2); (3, 4, 5); (6, 7, 8); (9, 10, 11, 12); (13 \text{ to } 20)$. The frequencies of $Ei = 10(Ci - Cp)$ in each group were counted for each quarter year. As a sample the complete table for one level of activity ($Cp = 0.9 \text{ to } 1.2$) is reproduced here in Table 8. The shift in the frequencies from the Polar Year 1932/33 over 1940 to 1946/47 is quite obvious.

Table 8. Frequencies of the excess $E_i = 10 (C_i - C_p)$ for all days with $C_p = 0.9$ to 1.2, for quarters (JFM = Jan. Febr. March, etc.) and years, Polar Year 1932/33, and years 1940-49.

All years 1940 - 1949.

E1=	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	Sum
	2	27	82	165	208	142	58	21		1	706

The average differences ($C_i - C_p$) for the 5 levels of activity are given in Table 9. Main result: Compared with C_p , the average C_i was, in 1932/33, too high by 0.07 to 0.26 units; in 1940, too high by 0.06 to 0.09 units, and, in 1946 and 1947, too low, as much as 0.11 units of C_i or C_p . One may say that $C_p = 1.0$ was expressed, in 1932/33, by $C_i = 1.2$; in 1940, by $C_i = 1.1$; in 1947, by $C_i = 0.9$.

Table 9.

Average differences ($C_i - C_p$), expressed in one hundredth unit of C_i or C_p , for years and quarter years (JFM = January, February, March, etc.) for the five levels of activity:

Level: $C_p =$	Years												Seasons				All
	32/33	40	41	42	43	44	45	46	47	48	49	JFM	AMJ	JAS	OND		
0.0 to 0.2	+ 7	+ 6	+ 5	+ 3	+ 4	+ 4	0	- 4	- 1	+ 2	0	+ 2	+ 1	+ 2	+ 2	+ 2	
0.3 to 0.5	+ 22	+ 8	+ 5	+ 2	- 2	+ 5	0	- 10	- 3	+ 4	+ 2	+ 1	0	+ 2	+ 2	+ 1	
0.6 to 0.8	+ 25	+ 8	+ 4	+ 5	- 6	+ 2	- 1	- 9	- 8	+ 2	+ 1	+ 1	- 1	0	- 1	0	
0.9 to 1.2	+ 21	+ 9	+ 2	+ 3	- 4	+ 2	- 2	- 10	- 11	+ 1	- 1	+ 1	- 4	- 2	0	- 1	
1.3 to 2.0	+ 26	+ 6	+ 2	+ 1	- 4	+ 12	+ 8	- 7	- 11	- 2	0	+ 2	- 4	- 6	+ 1	- 1	

The seasons (Table 9) have little systematic influence (less than 0.1 unit) on the average ($C_i - C_p$), apart from somewhat smaller values for the higher levels of C_i in northern summer. The monthly averages for ($C_i - C_p$), in the bottom line of Table 3b, are insignificant, not above a few hundredths of a unit of C. They show a trace of the wellknown semi-annual wave in magnetic activity - so clearly expressed in the bottom-lines of Tables 3a and 18 -, with a reversed sign in ($C_i - C_p$), in keeping with the tendency of C_i to shift its standard opposite to the general level of activity.

Shifts in the standard of C_i are important enough to be demonstrated by two more examples. Table 10 shows the number of days with $C_p = 0.9$, as distributed according to C_i , for four years. C_i , in 1932/33 compared with 1947, was rated too high by more than 0.3 units. In 1949, no appreciable systematic difference appears between the levels $C_p = 0.9$ and $C_i = 0.9$.

Table 10.

Frequencies of C_i on days with $C_p = 0.9$ in selected years.

Year	n =	$C_i = 0.5$	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	Average C_i
1932/33	15	.	.	.	.	1	3	3	7	.	1	1.13
1940	26	.	.	.	1	5	11	8	1	.	.	1.02
1947	19	1	2	6	2	6	2	.	.	.	.	0.78
1949	29	.	1	6	5	6	8	2	1	.	.	0.88

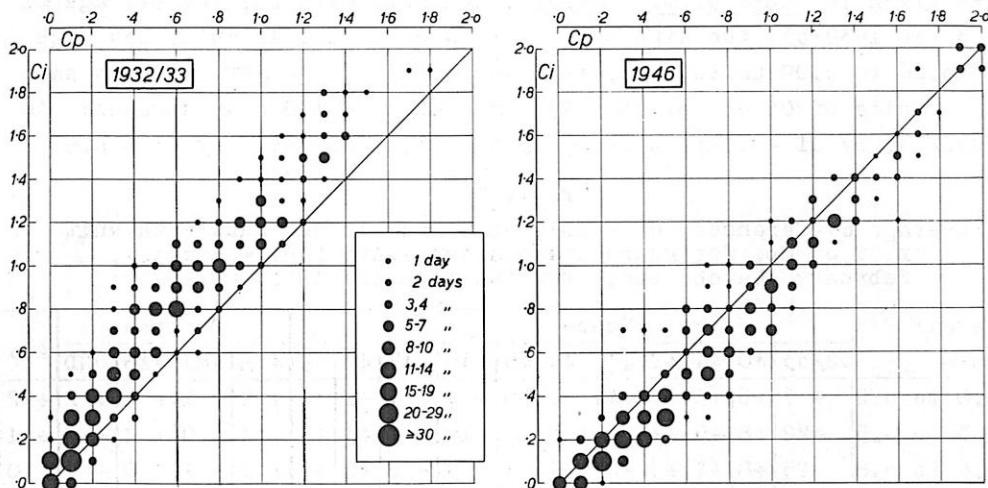


Fig. 1 shows the two correlations between C_i , C_p for the 396 days of the Second International Polar Year 1932/33, and for the 365 days of the year 1946. The number of days for each combination (C_i, C_p) (e.g., in 1932/33, 18 days with $C_i = C_p = 0.0$, 38 days with $C_i = C_p = 0.1$, 17 days with $C_i = 0.1$, $C_p = 0.0$ etc.) is indicated by symbols, and the reference-line $C_i = C_p$ is drawn. In 1932/33, most symbols lie above the line $C_i = C_p$ (i.e., C_i was too high), in 1946, most symbols lie below the line (i.e., C_i was too low).

It should be added that such large shifts of $(C_i - C_p)$ are certainly not due to C_p . Whoever has worked with K-indices for non-tropical observatories will agree that any uncertainty remaining in K_p , as the basis of C_p , is restricted to the lowest levels, O_0 , O_+ or $l-$, say; such an extreme shift at the level $C_p = 0.9$ from $C_i = 1.4$ (for 1933 Jan. 22) to $C_i = 0.5$ (for 1947 April 15) could never have occurred in C_p , since $C_p = 1.4$ (see Table 13) corresponds to $K_p = 5-$, while $C_p = 0.5$ corresponds to $K_p = 2+$, two levels of K which are much too far apart to merge in the average for 88 indices (11 observatories, 8 intervals).

Systematic shifts in $(C_i - C_p)$ tend to blur the correlation (C_i , C_p). This is easily seen from Fig. 1: Superposition of the two diagrams for 1932/33 and for 1946 would give a much wider scattering. Numerical data follow:

	1932/33	1946	1932/33 +1946
Number of days	396	365	761
Average C_i	0.65	0.61	0.63
Average C_p	0.48	0.70	0.59
Average $(C_i - C_p)$	+0.17	-0.09	+0.04
Standard deviation of C_i	0.49	0.49	0.49
Standard deviation of C_p	0.41	0.48	0.45
Standard deviation of $(C_i - C_p)$	0.15	0.12	0.19
Correlation-Coefficient $r(C_i, C_p)$	+0.96	+0.97	+0.92

8. Causes for shifts in the standard of Ci: Two main causes are obviously possible: Every change in the membership of the C-observatories-addition of new stations as well as termination of old stations-may alter the average Ci in as much as the standards of the individual C at these observatories differ.

If the C's for three observatories furnishing many twos like Tr, Lo, RS were replaced by the C's of three stations furnishing many zeros like He, Ch, Am, the average Ci for 1949 would already be depressed by 0.1 unit. This would occur even if all other stations kept their individual standards faithfully during their collaboration.

The other cause for shifts in Ci might be a change in the standard of C at individual stations, either gradual in the course of the years, or abrupt with a change in the observer or in the scaling practice.

Table 11. Average characters C, for days with $C_p = 0.5$ and for days with $C_p = 0.9$, given by 11 observatories designated A to L, in 5 selected years.

n = number of days with $C_p = 0.5$ or 0.9.

Year	n	A	B	C	D	E	F	G	H	J	K	L
$C_p = 0.5$												
1932/33	27	0.8	0.5	0.4	0.6	0.3	0.1	1.0	0.6	1.0	1.3	1.0
1940	28	0.0	0.0	0.2	0.0	0.3	0.1	0.6	0.1	0.4	1.5	1.0
1943	24	0.0	0.1	0.0	0.0	0.1	0.0	0.4	0.2	0.5	1.3	1.0
1946	34	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.6	1.1	1.0
1949	32	0.0	0.2	0.0	0.0	0.0	0.0	0.5	0.1	0.8	1.4	1.0
$C_p = 0.9$												
1932/33	15	1.0	0.9	0.9	1.0	0.7	0.5	1.7	1.0	1.2	1.9	1.0
1940	26	0.5	0.8	0.8	0.7	1.0	0.5	1.3	0.5	0.9	1.9	1.0
1943	12	0.2	0.7	0.3	0.5	0.8	0.2	1.2	0.7	1.1	1.8	1.0
1946	20	0.0	0.0	0.0	0.2	0.6	0.1	1.2	0.6	1.0	1.7	1.0
1949	18	0.1	0.6	0.0	0.6	0.4	0.0	1.1	0.4	1.0	1.9	1.0

Such shifts of stations-standards of C have occurred in a surprising number of cases. A typical sample, from more extended studies, is shown in Table 11: For eleven stations - whose names are replaced by letters A to L since no inducement for further enquiries is intended -, and for 5 years, the characters C for all days with $C_p = 0.5$ were averaged for each station, and the same was done for all days with $C_p = 0.9$. An inspection of Table 11 - with the shocking changes in station-standards by as much as one whole unit of C - will demonstrate how precarious the basis of Ci actually is.

G. van Dijk finished a detailed discussion [9] on the activity in the year 1930 - resumed recently by H.H. Howe [5] - by the conclusion "...that the standard of characterisation was stable in the investigated period 1921 to 1934, so that Ci can be used as a measure of magnetic activity, not only for intervals of weeks and months, but also for intervals of years."

The evidence given in our §§ 6 to 8 is, however, rather convincing in tracing quite definite changes in the standard of Ci during the years 1932 to 1949, which discredit monthly and annual means of Ci (See also Note 5).

9. Statistical aspects of Ci. It is of interest to recall the conception of the international character figure Ci as envisaged in 1905 by Adolf Schmidt [4]. He vigorously rejected all proposals to make any numerical prescriptions for the method of assigning the characters C = 0, 1, 2; on the contrary, that method was left entirely left at the discretion of the directors of each observatory. It is true that G. van Dijk [9], who was in charge of the derivation of Ci up to 1939, occasionally wrote letters to such observatories whose standards of C differed too much from that of most observatories; but otherwise, Schmidt's principle of estimating C ad libitum has been adhered to until to-day.

Schmidt's attitude was due to his belief (now refuted by the K-index) that objective numerical measures of activity, applicable to all observatories, could not be provided without an unjustified amount of labor. He realized, of course, the psychological reasons for dangerous shifts of standards, but, fortunately, the consequences of that arbitrariness have been less disastrous than they might have been. In fact: those evil spirits which have so often played havoc among geo-physical statistics, have, in the past, had mercy on geomagicians, in providing them with a good series of Ci whose defects (§§ 6 - 8) are small compared with its merits.

How miraculous this result is, has been shown by Table 11. Another aspect is given by some simple considerations: Assigning characters C = 0, 1, or 2 for a year (say, 1949) at a single station is equivalent to "ranking" the daily magnetograms in the order of their activity, and to choose two limits, an upper one for C = 0, and a lower one for C = 2, much as described by H.H. Howe [5]. Imagine now, that all observatories would agree to choose those limits so that everywhere, the days in 1949 with C = 0, 1 and 2 in 1949 should number (say) 100 : 200 : 65. Because of the high correlation of magnetic activity at different stations, the ranks given to each day would not differ much from station to station. The majority of days would then be classified alike at all stations, so that, in the average for all stations, 80 days (say) would have Ci = 0.0, 150 days Ci = 1.0, and 50 days Ci = 2.0, and only the remaining 85 days (say) would have intermediate values of Ci. This, of course, would be highly undesirable, because Ci would then fail to distinguish neither the really quiet days nor the days with great storms.

Fortunately (!), the observatories disagree heartily in the percentages of C = 0 or 2: for instance, in 1949, the number of days

	C =	0	1	2	
was for Lovö		30	139	196	days, average C = 1.45
for Abinger		36	299	30	days, average C = 0.98
for Honolulu		337	24	4	days, average C = 0.09

These great differences in "sensitivity" of the observatories cause that customary fine gradation in Ci, as shown, e.g., in the frequencies of Table 4 (See also Table 17).

A few possible modes how the Ci-scheme might have worked will be demonstrated for the year 1949: Three groups, of 10 observatories each, were selected, with many twos (sanguine), with many ones (equable) and with many zeros (impassive). The observatories, and the average percentages of the number of characters C = 0, 1, 2 assigned in 1949 by each group, are:

Sanguine group: Tr So Lo RS Me Wi Ma Ag Eb Ks, O:1:2 = 20:49:31.

Equable group: Co Le Es Sw Ab CF Na Tl Ka Pi, O:1:2 = 31:60: 9.

Impassive group: Ni Ch ZS SJ Ho Hu El Ap Wa Am, O:1:2 = 76:22: 2.

The average characters of the year 1949 for the three groups are 1.11, 0.78, and 0.26 (see also Note 5, Table 17).

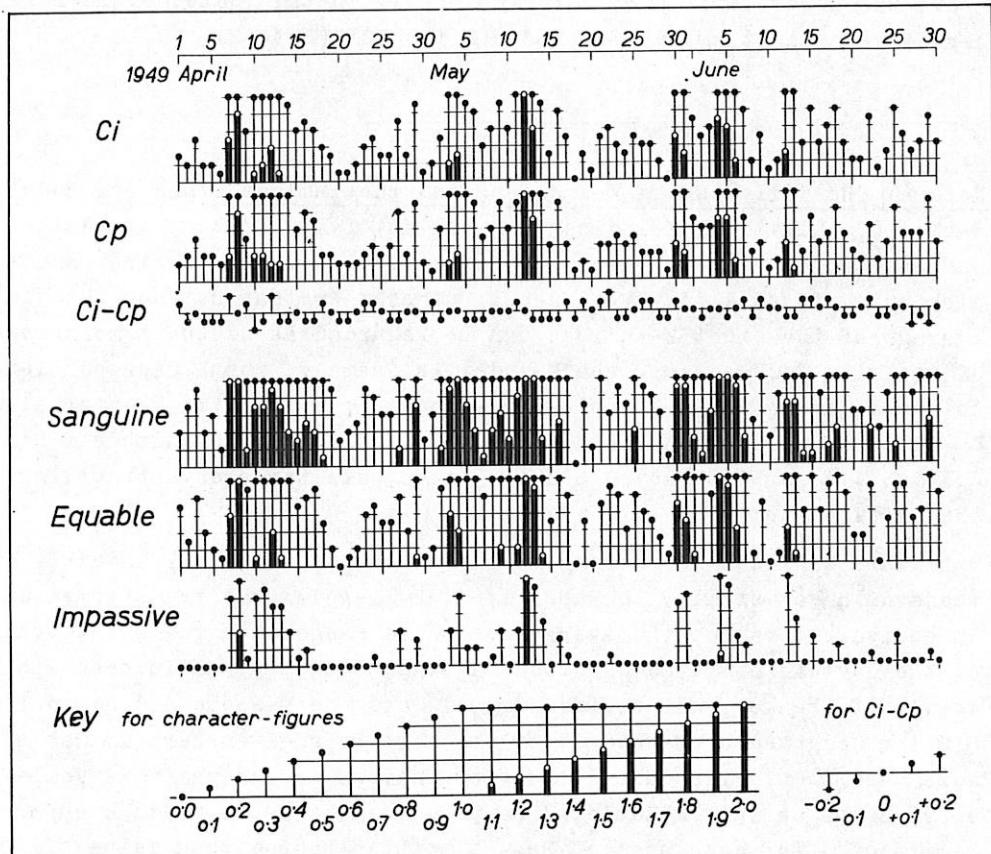


Fig. 2. Various kinds of daily magnetic character-figures, 1949 April 1 to June 30. Ci = International, Cp = planetary; and average daily characters for three groups of ten observatories each, preferring C = 2 (sanguine), C = 1 (equable), or C = 0 (impassive).

Fig. 2 shows the agreement between Ci and Cp just as clearly as their good gradation. The average characters for the three sensitivity-

groups show the features to be expected; of the 91 days, the following numbers had

Character figure = 0.0 to 0.2 0.8 to 1.2 1.8 to 2.0 0.3 to 0.7, or
1.3 to 1.7

for Ci	18	18	2	53
for Cp	15	18	2	56
for "Sanguine" group	4	30	13	44
for "Equable" group	15	37	5	36
for "Impassive" group	65	9	1	16

There is an analogy to photographic emulsions : The picture of the changes of magnetic activity from day to day as given by Ci or Cp, has excellent half-tones as well as good contrasts ; the sanguine group is somewhat "over-exposed", the impassive group "under-exposed", while the equable group gives a "grey" picture.

All three sensitivity-groups agree, with Ci and Cp, on 2.0 for 1949 May 12, and, with Ci, on 0.0 for 1949 May 18. For the latter day, Cp = 0.1, because the 8 Kp-indices 0+1-1-1-1-1+1+ lead to G = 28, above the lower limit G = 23 for Cp = 0.1. In this case, Cp is more sensitive against small disturbances than Ci (Note 2).

Additional Notes.

Note 1: The daily sum of K-indices, and the indices B and Bp. Some tables of individual K-indices as well as of Kp-indices give daily sums of the 8 indices. Those sums serve to check the entries, and to pick out quiet and disturbed days. But neither that sum nor the simple average of the eight K-indices can be regarded as adequate measures of activity for the day. The K-index is, namely, roughly proportional to the logarithm of the three-hour-ranges ; a day with 8 intervals K = 1 would certainly be considered quieter than a day with six 0's and two 4's, or with seven 0's and one 8, all three days providing the simple K-sum 8.

This has been the reason to introduce [6] the daily index B. By means of a key similar to Table 1, every K-index was transformed into an equivalent range, the average of those ranges for the 8 intervals of the day was computed, and that average range, by an inverse application of the key, was re-transformed into the K-scale and named B. Similar weighted averages - with the weights g given here in Table 1 - were used to provide daily planetary indices Bp, on the same scale of 28 steps as Kp. In Table 12 (a precursor to Table 2), the upper limits of G for each step of Bp are written behind each value of Bp.

Table 12. Upper limits of daily sums G of g for daily indices Bp.

Bp	G	Bp	G	Bp	G	Bp	G	Bp	G
0o	8	2-	52	4-	196	6-	588	8-	1544
0+	19	2o	64	4o	240	6o	692	8o	1772
1-	28	2+	84	4+	288	6+	820	8+	2144
1o	36	3-	108	5-	344	7-	972	9-	2800
1+	44	3o	132	5o	412	7o	1144	9o	..
		3+	160	5+	492	7+	1332		

These Bp-indices were given for 1932/33 (IATME Bull. 12o). They were also computed for all days of 1940 - 1949 and used in the assimilation of the Cp-scale to the frequency-distribution of Ci.

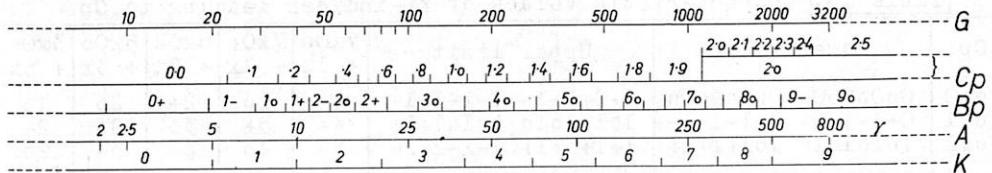


Figure 3. Comparison of scales.

The 28 steps of Bp gave, at the lower and upper ends of the scale, a somewhat more detailed classification than the 21 steps of Ci (see Fig. 3). In 1932/33 and 1940-49, the lowest level Bp = 0o was reached on 8 days only:

1933 Febr. 17; 1940 March 15, March 18, Dec. 8; 1944 Nov. 13;
1945 Jan. 24, Oct. 11, Dec. 4.

All these days have Cp = o.0 (of course) as well as Ci = o.0, except 1940 March 15 with Ci = o.1.

On the other end of the scale, Bp = 7+, which has nearly the same lower limit in G as Cp = 2.0, occurred, in the 10 years 1940-1949, on 12 days, Bp = 8- on 4 days, Bp = 8o on 4 days, and Bp = 8+ was reached on two days, 1941 July 5 and Sept. 18. All these are the usual Greenwich days. For the 24 hours beginning 1940 March 24 at noon, Universal Time, Bp = 9-; and for the 24 hours beginning 1941 Sept. 18, 9.00 U.T., Bp = 9o. This shows that the whole range of Bp may occur, (in the case of 1940 March 18 and March 24 the extremes 0o and 9o occurred a few days apart!) and, therefore, the extension of the Cp-scale beyond 2.0 has been recommended.

B and Bp have now been given up in favor of Ck (Note 3) and Cp.||

Note 2. Specimen for Cp. The definition of Cp as given by Tables 1 and 2 is illustrated by Table 13. The first two columns give 8 Kp-indices which are nearly equal, and for which the sum of the weights g leads to the lower and upper limits of G for Cp according to Table 2 (The order of the eight Kp-indices - here arranged increasing - is, of course, irrelevant for Cp). The last 5 columns give various combinations of low and high Kp-indices.

It is perhaps surprising that a day with Cp = o.0 may have seven intervals with Kp = 0o and one interval with Kp = 4- (a disturbance beginning in the late evening). Since Kp = 0o is quite rare, such extreme combinations will hardly ever occur. It would have been easy to introduce additional restrictions in the definition of Cp, for instance, to say that Cp = o.0 should have no Kp beyond 2-, say. But such complications-beyond the limits of G set in Table 2-appear rather unnecessary, because the characterization of a day with intervals unequally disturbed requires a compromise in any case. Moreover, Cp shall continue the standard of Ci, and the reader is asked to refer to the diagram in IATME Bull. No. 12b, pp. 109-110, which demonstrates the great variety of combinations of eight Kp-indices which, in the past, have occurred on days characterized by identical values for Ci.

Continued absolutely quiet conditions on the whole Earth for more than a few hours are so rare, that even Cp = o.0 does not exclude the occurrence of small disturbances at some polar stations beyond the limits set for K = 0; even the quietest day of 1932/33, namely,

1933 Febr. 17, with $K_p = 000000+ 00000+00$ (see IATME Bull. No. 12d, p. 23) brought, at Fort Rae [7], passing disturbances with hourly ranges in H and Z up to 60γ , and 5 local K-indices 2.

Table 13. Characteristic values of K_p -indices leading to C_p .

C_p	Lower limit	Upper limit	$7x0o + 1x$	$7x0+ + 1x$	$6x0o + 2x$	$5x0o + 3x$	$3x0o + 5x$
0.0	00000000 00000000	0+0+1-1- 1-1-1-1-	4-	20	2+	20	10
0.1	0+1-1-1- 1-1-1-1-	10101010 10101+1+	4+	3+	30	2+	2-
0.2	10101010 101+1+1+	1+1+1+1+ 2-2-2-2-	5-	40	4-	3-	20
0.3	1+1+1+2- 2-2-2-2-	2-202020 20202020	50	5-	40	3+	2+
0.4	20202020 20202020	2020202+ 2+2+2+2+	5+	50	4+	4-	3-
0.5	20202+2+ 2+2+2+2+	2+2+2+2+ 2+2+3-3-	6-	5+	5-	4-	30
0.6	2+2+2+2+ 2+3-3-3-	2+2+3-3- 3-3-3-3-	60	6-	5-	40	3+
0.7	2+3-3-3- 3-3-3-3-	3-3-3-3- 3-3-3030	6+	60	50	4+	3+
0.8	3-3-3-3- 3-303030	30303030 30303030	7-	6+	5+	5-	4-
0.9	30303030 3030303+	30303+3+ 3+3+3+3+	70	7-	6-	5-	40
1.0	303+3+3+ 3+3+3+3+	3+3+3+4- 4-4-4-4-	7+	70	60	50	4+
1.1	3+3+4-4- 4-4-4-4-	4-4-4-4- 4-4-4040	8-	7+	6+	5+	4+
1.2	4-4-4-4- 4-404040	40404040 40404+4+	80	80	7-	6-	5-
1.3	40404040 404+4+4+	4+4+4+4+ 4+4+5-5-	8+	8+	70	60	50
1.4	4+4+4+4+ 4+5-5-5-	5-5-5-5- 5-5-5-5-	9-	9-	7+	6+	5+
1.5	5-5-5-5- 5-5-5-50	5-505050 50505050	9-	9-	8-	7-	6-
1.6	50505050 50505050	5+5+5+5+ 5+5+5+5+	90	90	80	70	60
1.7	5+5+5+5+ 5+5+5+6-	6-6-6-6- 6-6-6-60	..	..	8+	8-	7-
1.8	6-6-6-6- 6-6-6060	60606+6+ 6+6+6+6+	..	..	9-	8+	70
1.9	606+6+6+ 6+6+6+6+	70707070 70707+7+	..	..	90	9-	80
2.0	70707070 707+7+7+	7+7+8-8- 8-8-8-8-	..	..	..	90	8+
2.1	7+8+8+8- 8-8-8-8-	80808080 808+8+8+	..	..	..	..	9-
2.2	80808080 80808+8+	80808080 8+8+8+8+	..	..	..	..	..
2.3	8080808+ 8+8+8+8+	8+9-9-9- 9-9-9-9-	..	..	..	..	90
2.4	9-9-9-9- 9-9-9-9-	9-9-9-9- 9-909090	..	..	..	..	..
2.5	9-9-9-9- 90909090	90909090 90909090	..	..	..	..	..

Note 3. Local daily character-figures C_k and C_s . Every observatory that scales K-indices may, if it wants to do so, derive a local daily character-figure C_k by a process similar to that by which C_p is derived from K_p . The following weights are proposed:

Table 14. Weights k to be assigned to K-indices to derive C_k .

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

The sum of the 8 values of k for the day is used as G in the key given in Table 2, and the result is called C_k .

Example (Cheltenham): 1949 June 5. K-indices 3545 4455. Sum of weights k , according to Table 14, $15 + 3 \times 27 + 4 \times 48 = 288$, from Table 2, therefore, $C_k = 1.4$.

Observatories for which conversion-tables (to convert K-indices into standardized K_s -indices) are available (IATME Bull. No. 12b, pp. 99-101), may also derive from K_s , via Tables 1 and 2, a standardized character-figure C_s to approximate C_p .

Table 15. Daily character-figures, April to June 1949, world-wide Ci and Cp, and local Cs and Ck for Wingst and Cheltenham, indicated by their tenfold values Ti, Tp, Ts, Tk.
 (As a local daily measure of activity, Ck, derived from local K-indices, is recommended).

	April 1949				May 1949				June 1949			
	Ti	Tp	Ts Wn	Ts Ch	Tk Wn	Tk Ch	Ti	Tp	Ts Wn	Ts Ch	Tk Wn	Tk Ch
1	3	2	3	4	3	3	2	1	1	0	2	0
2	2	3	5	1	4	1	5	6	6	6	6	5
3	5	5	6	6	5	4	12	12	12	9	10	8
4	2	3	2	3	2	2	13	13	14	12	12	12
5	2	3	5	4	4	3	9	10	11	7	10	6
6	1	2	3	2	2	1	8	9	10	8	10	8
7	15	13	12	14	11	11	4	5	5	4	5	4
8	18	18	18	18	16	16	6	6	10	4	10	4
9	6	5	5	5	4	4	9	9	9	9	8	8
10	11	13	12	14	12	12	6	6	8	6	8	6
11	12	13	14	13	12	11	10	9	7	8	7	8
12	14	12	11	13	10	11	20	20	20	20	19	20
13	11	12	13	11	11	10	16	17	17	17	14	15
14	9	10	7	11	6	10	9	10	11	9	10	8
15	6	6	9	6	8	5	3	4	5	5	5	5
16	7	8	10	9	10	8	8	9	8	9	7	9
17	6	7	8	7	7	6	5	4	5	4	6	5
18	4	3	5	4	5	4	0	1	1	1	8	8
19	3	3	2	3	2	2	3	2	4	3	4	5
20	1	2	2	2	2	1	1	1	2	1	2	1
21	1	2	2	4	1	3	5	4	5	5	4	3
22	2	2	2	2	2	1	6	4	6	5	7	6
23	4	3	4	2	3	1	4	5	7	5	1	2
24	5	4	5	5	5	4	3	4	4	2	3	4
25	3	3	5	3	4	2	5	5	6	3	8	8
26	3	4	5	5	4	4	4	3	5	2	5	5
27	7	8	9	7	7	6	4	3	5	2	3	5
28	3	3	4	4	4	3	2	3	2	2	4	7
29	9	9	9	5	9	3	0	1	0	0	7	9
30	1	2	2	1	1	1	15	14	16	14	13	11
31							13	13	13	13	12	12

In Table 15, the ten-fold values Ts and Tk of Cs and Ck, for Wingst and Cheltenham, are compared with $Ti = 10$ Ci and $Tp = 10$ Cp. It appears that the approximation to Cp is not much improved by the use of the standardized Ks-indices instead of the original K-indices [2]. Therefore, the use of the simple Ck may be recommended.

For any individual observatory, the weights k given in Table 14 could be further adjusted to improve the similarity of Ck and Cp; it would also be possible to shorten the process (K to Ks to g to G to Cs) by introducing, for every season, separate conversion-keys (K to g) for each of the eight three-hour-intervals. But it is doubtful whether the result of such refinement would pay the effort.

The way from the K-indices to Cp proposed in this paper (§ 4) goes via Kp . Another possibility - namely (K to Ck to Cp) - is ruled out as it would be open to some of the objections (§ 9) to the Ci-scheme.

Note 4. Local bias in C and Ci. The daily variation in the target-sectors of solar particle radiation P (see the discussion in [8]) makes the North-European observatories (e.g. Tromsö, Sodankylä, Dombås, Rude Skov, Wingst, in longitudes 9° to 29° E) alternate in sensitivity to P, so-to-say, with the North-West American observatories (e.g. College, Meanook, Sitka, in longitudes 113° to 148° W):

The intervals	06 to 09 GMT	and	18 to 21 GMT
are in N-Europe	quietest		most disturbed
in NW-America	most disturbed		quietest.

Consider two Greenwich days, D1, most disturbed between 06 to 09 GMT, and D2 most disturbed between 18 to 21 GMT: Comparing D1 with D2, Europe will have a bias to regard D2 relatively more active, and West-America will have a similar bias towards D1. This would show in Ok and presumably in C too. Since so many observatories furnishing C-characters are in Europe, this bias may also be expected in Ci: and in fact, apart from the shift in ($Ci - Cp$) from year to year, the days with positive ($Ci - Cp$) are, in general, more disturbed in the evening, while those with negative ($Ci - Cp$) are more disturbed in the morning of the Greenwich day. This has been pointed out in § 6; two more groups of days (Table 16) with large differences ($Ci - Cp$) will now be discussed by means of local K-indices and character-figures Ck (Note 3).

Table 16. K-indices and local Ck-figures for selected days at European and at NW-American observatories.

	1933 Jan.22	1947 April 15		1949 Febr.3	1949 Febr.4		1949 Jan.22
	$Ci=1.4$	$Ci=0.5$		$Ci=1.2$	$Ci=1.2$		$Ci=0.4$
	$Cp=0.9$	$Cp=0.9$		$Cp=0.7$	$Cp=1.3$		$Cp=0.8$
Kp	1331 3444 --0+ -000	4433 3323 00-0 +0+-	Kp	2011 2245 0+++ +-0-	6654 3211 ---- +--0		3343 3211 0++0 --+0
European group							
Do	0131 2575	4313 3313	Tr	1000 1155	4633 3200		4332 3223
RS	0121 2445	4322 3223	So	1001 2166	6533 3100		3222 3122
Wn	1231 2545	4322 3323	RS	1011 2154	6432 2100		3333 2111
Ck=	1.1	0.8		0.9	1.0		0.6
NW-American group							
Co	1232 4433	3444 3322	Co	1000 2133	4555 4311		2264 4200
Me	0341 2333	3444 3222	Me	1011 1223	6765 5211		2254 4111
Si	0332 3433	2434 2211	Si	1011 1133	6656 5201		2253 3200
Ck=	0.6	0.9		0.2	1.5		0.9

The first pair of days in Table 16 are the extreme cases of Table 10: Both have $Cp = 0.9$, but 1933 January 22 has $Ci = 1.4$, and 1947 April 15 has $Ci = 0.5$. The second group are the days with the greatest differences ($Ci - Cp$) in 1949, namely 1949 Febr.3 ($Ci = 1.2$, $Cp = 0.7$) and Jan.22 ($Ci = 0.4$, $Cp = 0.8$). The K-indices for Febr. 4 ($Ci = 1.2$, $Cp = 1.3$) are given too, because it is quite characteristic to see, in the disturbance extending through the three-hour-intervals 1949 Febr.3, 18.00 GMT to Febr.4, 15.00 GMT, how the local European bias raises the two K-indices 18.00 to 24.00, while the American bias raises the three K-indices, 6.00 to 15.00. Ci is 1.2 for both days, 1949 Febr.3 and 4, obviously as a result of the "European bias" emphasizing the evening disturbance of Febr.3 against the forenoon disturbance of Febr.4. Both Febr.4 and Jan.22 (with $Cp = 0.4$) appear in Ci grossly underrated against Febr.3, from the standpoint of the American observatories.

Note 5. Characterization of months and years. The difficulty to characterize, by a single figure, a whole day, with different levels of magnetic activity, is even more pronounced in the case of whole months, years etc. In recent discussions ([5] and [8]), it has been proposed to consider frequencies of Kp-indices.

Table 17. Average characters for months and year, 1949, for twelve typical observatories, and frequencies of characters for 1949.

	Tr	Lo	RS	Ni	Ch	Ho	Am	Co	Le	Es	Ab	Tl	Mean Ci	Mean Cp
Ja	1.1	1.5	1.5	0.6	0.1	0.1	0.3	0.7	0.7	0.8	1.0	1.0	0.68	0.72
Fe	1.1	1.5	1.3	0.6	0.2	0.0	0.3	0.5	0.7	0.7	0.9	1.0	0.71	0.70
Mr	1.2	1.5	1.4	0.5	0.3	0.1	0.3	0.5	0.7	0.8	1.0	1.1	0.75	0.81
Ap	1.1	1.4	1.3	0.3	0.1	0.0	0.2	0.4	0.6	0.6	1.1	0.9	0.59	0.61
My	1.3	1.5	1.5	0.4	0.2	0.1	0.2	0.6	0.7	0.7	1.0	1.1	0.68	0.69
Je	1.5	1.5	1.4	0.3	0.1	0.0	0.2	0.7	0.7	0.8	1.0	1.0	0.61	0.64
Jl	1.0	1.3	1.2	0.4	0.0	0.0	0.0	0.5	0.5	0.6	0.8	0.7	0.47	0.38
Au	1.3	1.5	1.4	0.3	0.2	0.1	0.2	0.8	0.8	0.8	0.9	1.0	0.62	0.61
Se	1.3	1.3	1.2	0.5	0.1	0.1	0.2	0.6	0.7	0.6	0.9	0.8	0.61	0.63
Oc	1.6	1.7	1.6	0.7	0.3	0.3	0.4	1.0	1.0	1.1	1.2	1.2	0.89	0.89
No	1.3	1.5	1.5	0.6	0.2	0.2	0.3	0.8	0.8	0.9	1.0	1.0	0.74	0.69
De	0.8	1.2	1.0	0.3	0.0	0.0	0.1	0.5	0.7	0.6	1.0	0.8	0.49	0.44
Year	1.2	1.5	1.4	0.5	0.1	0.1	0.2	0.6	0.7	0.7	1.0	1.0	0.65	0.67
Number of days in 1949 with C = 0, 1, or 2														
C=														
0	67	30	37	202	317	337	292	148	124	118	90	77		
1	147	139	163	159	45	24	67	203	222	224	229	228		
2	151	196	165	4	3	4	6	14	19	23	46	60		

In order to demonstrate the inadequacy of monthly averages of Ci, Table 17 gives averages characters for twelve typical stations, for the months and the year 1949.

The monthly averages of Ci vary so little, that the shifts in the standard of Ci (§ 7) distort the impression of the activity level given by the average Ci. For instance, the average character-figures are

$$\begin{array}{ll|ll} \text{Ci=} & \text{Cp=} & \text{Ci=} & \text{Cp=} \\ \text{for December 1932} & 0.67 & 0.44 & \text{for the 13 months 1932/33} & 0.65 & 0.48 \\ \text{for June 1946} & 0.63 & 0.74 & \text{for the year 1946} & 0.61 & 0.70 \end{array}$$

Of course, the average Cp is a more reliable indication of the relative level of activity. But despite of their uncorrupted standard, the monthly averages of Cp are disappointing because they give a too colourless picture: Low averages of Cp can, it is true, be relied upon as indicating a quiet month, but medium or high monthly averages may be misleading. The most blatant case is that of March 1940, with the average Cp = 0.80, Ci = 0.81. That month brought, up to the 23rd, 8 days with Cp = 0.0 or 0.1, but in the last 9 days, there were three days of intense storm with Cp = 2.1. The average Cp for the first 23 days is 0.40, for the last 9 days, 1.74. If we look for a month with a similar average Cp, we find April 1950, in which the most

disturbed day had $C_p = 1.6$ only, and no K_p higher than 7-. In the month with the highest monthly average of C_p , September 1947 with $C_p = 1.11$, no day reached the level $C_p = 2.0$.

Similar remarks have sometimes been made to discredit the K -indices: Hourly ranges, plotted in gammas, give, to the unexperienced eye, a much more pronounced picture of the changes in activity than K -indices. Indeed, a change of K from 6 to 9 means, of course, a much bigger numerical increase in the ranges than that from $K = 1$ to $K = 4$ (see Table 14). It should, however, be remembered that the K -index is approximately a logarithm of a range. Likewise, C_i or C_p are somewhat conservative in their scale; the picture of a great magnetic storm connected, to the geomagnetician, with $C_i = 2.0$, is a result of training and experience rather than the impression made by that modest figure. It would have been easy, of course, - though uneconomical - to devise more impressive scales, with graphs consuming more paper than the current note-script for K , K_p or C_p .

Now, in spite of all arguments that speak in favor of characterizing months etc. by frequencies of K_p , there will probably always be a demand for monthly measures of activity expressed by not more than one figure, and magneticians should try their best in that direction. As demonstrated above, the average C_p is not good; it fails to express the great difference of the two model months, A and B, discussed in [9], which have different numbers of very quiet days ($C_p = 0.0$), moderately disturbed days ($C_p = 1.0$), and storm days ($C_p = 2.0$), namely,

A with 5 days 0.0, 25 days 1.0, no day 2.0,
 B with 15 days 0.0, 5 days 1.0, 10 days 2.0,
 but the same average $C_p = 0.83$.

A compromise seems possible by using the conception of the average amplitude, introduced in one of the first K -papers [6], in the following form: Every K_p -index is replaced by its weight g , according to Table 1. The average of the g is computed and doubled. That gives the average amplitude Ap , in gammas, for a standard observatory. This computation may be abridged by using the monthly frequency-tables of K_p - such as those given in IATME Bull. No. 120, pp. 131-133. Local measures may be computed from the K -indices, using the weights k from Table 14.

Table 18 of average amplitudes Ap has been computed for the 147 months for which K_p -indices are available. It will not be discussed here, except to say that Ap proves to be superior to C_p in ranging the two months March 1940 and April 1950 mentioned above, with nearly equal average C_p , more reasonably: March 1940 gets the highest value of Ap for the whole series, 73γ , while April 1950 gets 37γ only. Ap agrees with C_p at the lowest levels of activity: The months of July and November, 1944, with the lowest average $C_p = 0.26$ and 0.25 , get also the lowest average $Ap = 11$ and 12γ . - With the u -measure, Ap shares the emphasis on the most intense disturbances.

Table 18. Average amplitudes Ap for months and years. Unity γ .

	Ja	Fe	Mr	Ap	My	Je	Jl	Au	Se	Oc	No	De	Year				
1932	..	..	..	..	..	..	..	23	24	20	17	18	21
1933	19	23	25	25	23	17	15	18	..	..	..	..	21
1940	30	25	73	35	27	33	24	21	28	28	32	29	32				
1941	28	36	66	30	21	22	39	33	53	23	32	23	34				
1942	18	23	45	34	16	16	25	26	34	45	29	21	28				
1943	21	19	26	28	29	25	29	62	51	47	40	28	34				
1944	25	24	35	30	19	16	11	18	20	22	12	27	22				
1945	20	22	34	26	18	14	19	14	19	22	15	26	21				
1946	25	44	67	40	35	32	44	23	69	26	25	18	37				
1947	25	23	64	35	28	32	32	51	64	46	28	21	37				
1948	24	25	35	26	38	20	20	40	30	54	32	26	31				
1949	41	29	38	28	37	28	15	28	26	51	31	17	31				
1950	24	35	29	37	33	28	28	49	45	56	41	32	36				
1951	32	43	..	..	..	..	..	..	..	..	..	..	..
Average for the years 1932/33 and 1940 to 1950																	
	25	27	45		31	27	24		25	31	39		37	28	24		30

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Main conclusion: The daily planetary character-figure Cp, based exclusively on Kp-indices, appears to meet the requirements of the IATME for an adequate and homogeneous continuation of the series of daily international magnetic character-figures Ci.

Errata

In the list of observatories the observatory Ta arrived too late for inclusion.

The name of the observatory Ta is Tamanrasset. The collaborator is Castet-Billaud. Geographic coordinates of the observatory are:
 $\phi = 22.8^\circ \text{ N}$, $\lambda = 5.5^\circ \text{ E}$. Instruments have normal sensitivity with velocity 10mm, per 9 minutes. An instrument recording dH/dt is in function. Ranges for C=1 are 4 and 127 for H.

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