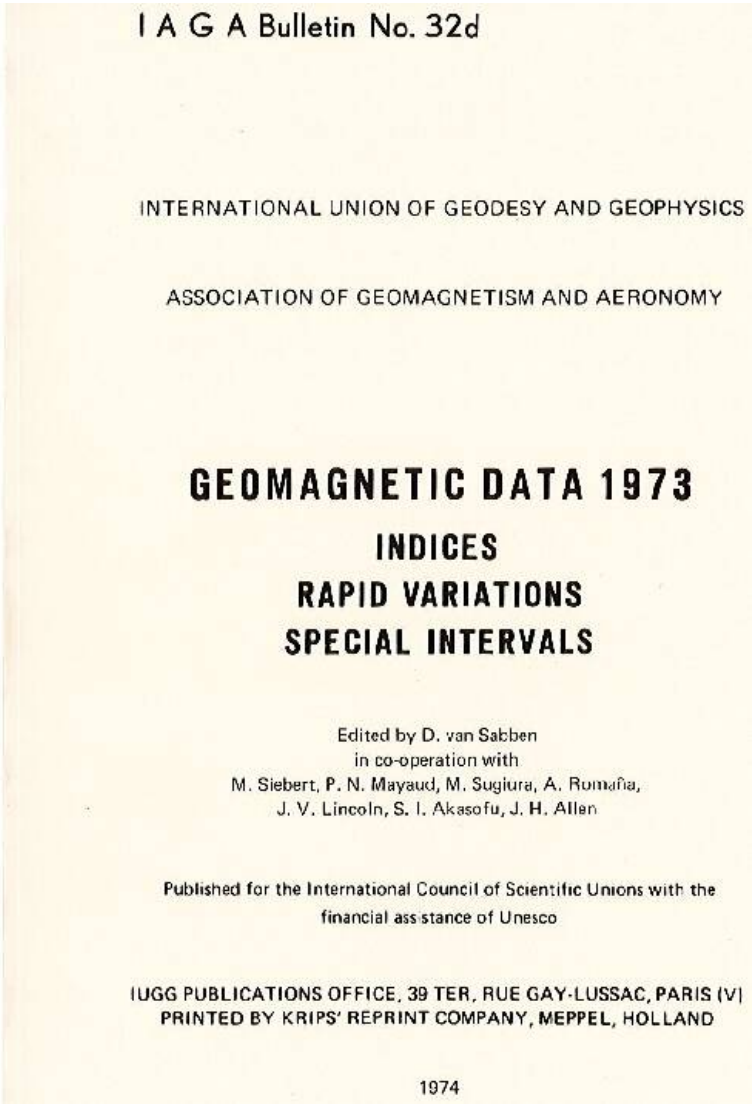

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I A G A Bulletin No. 32d

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1973

INDICES
RAPID VARIATIONS
SPECIAL INTERVALS

Edited by D. van Sabben
in co-operation with
M. Siebert, P. N. Mayaud, M. Sugiura, A. Romaña,
J. V. Lincoln, S. I. Akasofu, J. H. Allen

Published for the International Council of Scientific Unions with the financial assistance of Unesco

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CONTENTS

Introduction iv
Explanation of the tables and diagrams vii
Erratum IAGA - Bulletin 32 c (1972) xii

Part A. LIST OF OBSERVATORIES 1

Part B. INDICES, and INTERNATIONAL QUIET AND DISTURBED DAYS
Table 1, Monthly and annual mean values of Ci, 1905 - 1973 4
Table 2, Daily international character-figures Ci, 1973 5
Table 3, International quiet and disturbed days, 1973 5
Table 4, Planetary three-hour-indices Kp and equivalent ranges ap, daily indices Ap and Cp, 1973 . . . . . 6 - 11
Table 5, Frequencies of Kp - indices 12
Table 6, Monthly averages of Ap and Cp. 12
Table 7, List of magnetic storms 13
Table 8, Very quiet intervals. 13
27 - day recurrence diagrams for Kp . . . . . 14 - 15
Table 9, Indices Kn, Ks, Km, amplitudes an, as, am, daily indices An, As, Am and their monthly mean values, 1973 . . . . . 16 - 33
Table 10, Hourly equatorial Dst - index, 1973 . . . . . 34 - 45
Graph of hourly Dst - indices. . . . . 46 - 47
Table 11, Daily, monthly and annual mean values of Dst, 1973 48
References to tables and diagrams for Kp, Ap and Cp. 49
References to other indices:
Q. Quarter hourly disturbance index for high latitude stations . 50
R. Hourly disturbance index for high latitude stations 51
AE. Auroral electrojet activity index 52

Part C. RAPID VARIATIONS 1973
Table 1, Sudden commencements of magnetic storms (ssc) . . . . . 53 - 54
Table 2, Bays and pulsations (b, bs, bp, bps). . . . . 55 - 62
Table 3, Sudden impulses (si) . . . . . 63 - 64
Table 4, Giant pulsations (pg) . . . . . 65 - 67
Table 5a, Solar-flare effects (sfe) . . . . . 68 - 69
Table 5b, Doubtful solar-flare effects 70

Part D. DATA ON SPECIAL INTERVALS
1973 January 2 - 5 . . . . . 72 - 73
February 20 - 23 . . . . . 74 - 75
March 19 - 22 . . . . . 76 - 77
March 31 - April 3 . . . . . 78 - 79
April 12 - 15 . . . . . 80 - 81
April 16 - 19 . . . . . 82 - 83
May 13 - 16. . . . . 84 - 85
May 20 - 23. . . . . 86 - 87
June 9 - 12 . . . . . 88 - 89
October 28 - 31 . . . . . 90 - 91

INTRODUCTION

The yearly IAGA-Bulletin 32 is the continuation of the series IAGA-Bulletins 12.1 (Indices K and C) and 12.2 (Rapid Variations). In accordance with recommandations of the IAGA-Assemblies in Madrid (1969) and Moscow (1971), the publication of C and K-indices of individual observatories is discontinued, whereas planetary indices like Dst, AE, Kn, Ks, Km and a survey of magnetic storms are included instead. The compilation of C and K-indices at the data center in De Bilt and the publication of the derived indices Ci, Kp etc. continues as before, as well as the determination of the international quiet and disturbed days. The K-indices of individual observatories are put on magnetic tape in De Bilt. These are made available through the World Digital Data Centers for Geomagnetism from 1969 onwards. Besides, tables of local K-indices can be found in the bulletins of many observatories.

The IAGA-Bulletin 32 is prepared for publication by the International Service of Geomagnetic Indices (ISGI) at De Bilt. The data, based on the reports of more than 100 observatories, are provided by the following institutes (under the responsibility of the following collaborators):

Kon. Nederlands Meteorol. Inst., De Bilt (D. van Sabben): Ci, Q- and D-days.
Institut für Geophysik, Göttingen (M. Siebert): Kp, ap, Ap, Cp.
Institut de Physique du Globe, Paris (P.N. Mayaud): Kn, Ks, etc.
NASA-Goddard Space Flight Center, Greenbelt (M. Sugiura): Dst.
Observatorio del Ebro, Roquetas (A. Romaña): Rapid Variations.
Environmental Data Service, Boulder (J.V. Lincoln): Magnetic storm data and magnetograms; (J.H. Allen): AE-data.
Geophysical Institute, College (S.I. Akasofu): Magnetograms of polar cap stations.

The ISGI, formerly called Permanent Service or "C- and K Center", operates under the supervision of IAGA-Commission IV on Magnetic Variations and Disturbances.*) Since 1954 it forms part of the Federation of Astronomical and Geophysical Services. The work began in 1906 with the collection and publication of the daily character figure C (as reported by the observatories in a scale 0 - 2) and its daily mean value Ci, in the series "Caractère Magnétique des Jours" (et des Années) and in the Journal "Terrestrial Magnetism", together with lists of selected quiet and disturbed days. In 1938, this work was extended backwards to 1890. For the years 1884 - 1890 Ci figures were published in Terr. Magn. vol. 52, pp. 33 - 38, 1947 (see also Transacts. Washington Meeting 1939, IATME-Bull. 11, pp. 183 - 195). In 1940, the C-data and the selected days became part of the IATME-Bulletin 12, later IAGA-Bulletin 12.

The three-hourly K-index (scale 0 - 9) was introduced by Bartels in 1938. From the K-figures of 12 selected stations, planetary indices Kp were derived. Both K and Kp were officially adopted by the IAGA in 1951 and the series of Kp was extended backwards to 1932 during the subsequent period. The K-figures of the selected stations for these early years were published as supplementary (table 1b) in Bulletins 12g and 12l. In addition to Kp, the corresponding range figures ap and related daily indices Ap and Cp have been published regularly in the IAGA-Bulletins 12.

The meaning of C, Ci, K and Kp, is explained in textbooks, e.g.: Landolt-Börnstein, Zahlenwerte und Funktionen, Band 3, pp. 731 - 744 (Berlin 1952, Springer-Verlag), and in Terrestrial Magnetism and Atmospheric Electricity 44, pp. 411 - 433 (1939) and 46, pp. 301 - 303 (1941). The results of an exten-

*) After 1973: of IAGA-Division V on Observatories, Instruments, Indices and Data.

sive study on the index K by P.N. Mayaud are given, together with practical rules for its determination, in the "Atlas of Indices K", IAGA-Bulletin No. 21 (1967). The exact definition of Kp is given in IATME-Bulletin No. 12b, reprinted at the end of the IAGA-Bulletin No. 12i, and in the Journal of Geophysical Research, Vol. 54, pp. 295 - 299, Sept. 1949. The indices have also been described, for use in correlation studies in other geophysical fields, in the Annals of the IGY, Vol. 4, pp. 227 - 236 (London, Pergamon Press 1957).

A collection of diagrams for Kp, 1932/33 and 1940 to 1950, together with diagrams for the daily characters 1884 - 1950, is given in: Abhandlungen Akad. Wiss. Göttingen, Math.-Phys. Klasse, Sonderheft 1 (1951). A second collection from 1937 (up to 1958) has appeared in: Abhandlungen Akad. Wiss. Göttingen, Math.-Phys. Klasse, Beiträge zum Geophysikalischen Jahr, Heft 3 (1958). A discussion on time variations of geomagnetic activity, indices Kp and Ap, 1932 - 1961 has appeared in Annales de Géophysique, Tome 19, pp. 1 - 20, 1963. Tables and diagrams of these planetary indices for the whole period 1932 - 1961 are printed in IAGA-Bulletin No. 18.

Other planetary indices derived from the K-indices, are the three-hourly indices Kn and Ks for the Northern- and Southern hemisphere and their mean value Km. These indices are published in the IAGA-Bulletin 32 from 1968*) onwards: They are discribed in a publication of the Centre National de la Recherche Scientifique, Paris 1968: "Indices Kn, Ks et Km, 1964 - 1967", by P.N. Mayaud. The complete series of these indices and the related quantities an, as etc. for the years 1959 through 1971 is available on punched cards at WDC - A for Solar Terr. Physics, Boulder, in the same format as in the above publication.

The equatorial Dst-index for ring current intensity is also published in the IAGA-Bulletin 32 from 1970 onwards. A description of this index is given in the reports for earlier years. Hourly values of Dst for the years 1957 - 1970 based on the data of three stations, have been published by M. Sugiura and D.J. Poros in the report No. X - 645 - 71 - 278 of the Goddard Space Flight Center. This report supersedes earlier Dst-publications by Sugiura and co-workers. Recently, these Dst values have been recomputed, using the data of four stations. Hourly Dst-values for the IGY, based on the data of eight stations, are given in Annals of the IGY, Vol. 35. The same volume contains three-hourly values of Dst for the IGY as determined by W. Kertz in a somewhat different way. The hourly values from 1957 onwards are available on magnetic tape at WDC - A for Solar Terr. Physics in Boulder.

The auroral electrojet index AE cannot yet be included in the IAGA-Bulletin. At present this index is not available in time. However, graphs of preliminary AE-indices for selected intervals are included in part D of this Bulletin. References to AE are given at the end of part B, together with references to the indices Q and R from individual observatories and to indices Kp, Ap and Cp of earlier years.

A description of all indices mentioned in this introduction is given by M. Siebert in "Handbuch der Physik", Vol. 49/3, pp. 206 - 275 (Springer Verlag, 1971).

Data on rapid variations are given as in the former IAGA-Bulletin 12, 2, except that, according to decisions made at the IAGA-Assembly in Madrid, 1969, certain less important cases are no longer published. The list of so called minor distur-

*) For Kn, Ks etc. 1969 and 1968 see Supplementary Tables in Part E of the IAGA-Bulletins 32a and 32b.

bances and rejected solar-flare effects are omitted; ssc's, si's, bays and pulsations, are given only if reported by a sufficient number of stations; pulsations without bays are published in the quarterly bulletins and their yearly supplement. Checklists are sent to the observatories for the reported pg's and sfe's only.

The Bulletin 32a further contains a data survey for special intervals (mostly magnetic storms) consisting of a survey of indices over the selected time intervals, data on sc's, ranges etc. from individual observatories and magnetograms of selected stations, reduced to the same time scale and comparable intensity scales.

Most data appearing in the yearly IAGA-Bulletin 32 have been given earlier in monthly and quarterly bulletins, partly in a preliminary form.

The values of Kp, Ap and Cp for a calendar month are usually available, in a table and in graphical representation, before the end of the next month, and they are distributed, in time for 27-day recurrence forecasts, to about 400 institutions in many countries. This service is carried out by the Institut für Geophysik, Herzberger Landstrasse 180, 34 Göttingen, Germany. Requests may be directed to this address.

Monthly tables of Kn, Ks, Km and related quantities are distributed by the Institut de Physique du Globe, 4, Place Jussieu, Tour 14, 75230, Paris Cedex 05, France.

Monthly bulletins on Ci, selected quiet and disturbed days and preliminary data on rapid geomagnetic variations, as well as threemonthly bulletins on pulsations *), are sent to about 190 observatories and institutions by the International Service of Geomagnetic Indices, c/o Royal Netherlands Meteorological Institute, De Bilt, Netherlands. A yearly supplement to the threemonthly bulletins is distributed in the same way.

The data on rapid variations, including pulsations, are collected and prepared for publication at the Observatorio del Ebro, Roquetas, Spain.

Much of the data published in these bulletins can also be found in the monthly publication "Solar Geophysical Data" issued by the NOAA Environmental Data Service, Boulder, Colorado, USA.

*) Note: The publication of these threemonthly bulletins has been discontinued per 31 December 1973.

IAGA - Commission IV on Magnetic Variations and Disturbences

J. A. Jacobs, Chairman

International Service of Geomagnetic Indices

D. van Sabben, Director
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EXPLANATION OF THE TABLES AND DIAGRAMS

Part A. List of Observatories.

The observatories are arranged according to their geographic latitudes. The two letter symbols have been chosen as far as possible in accordance with the List of Observatories, compiled by G. Fanselau (IAGA-Bulletin No. 20, 1965). For observatories which have removed over a small distance, the old name is sometimes maintained, but the coordinates correspond always with the new site. The symbols are used in the tables of K-figures (now on magnetic tape, formerly in IAGA-Bulletin 12, 1) and in the lists of rapid variations (Part C of this Bulletin). Observatories taking into consideration certain data from ionospheric or solar observatories for their reports of solar-flare effects, are marked by an asterisk.

The last three columns contain the scale value of the H-records in γ/mm, the lower limit for K = 9 used by the observatory in scaling K-indices and the period of time for which the observatory reported K-indices. Of this period, the first and, if the reporting has ended, the last year are given. A letter indicates whether the reporting has been continuous or almost continuous (C) or with interruptions (I). Details of the reporting-periods can be found in IAGA-Bulletin 12, page 12 (up to 1947) and corresponding places in later IAGA-Bulletins.

Part B. Indices.

B. 1, 2 The daily international character figure Ci is defined as the mean value of the C figures of about 30 observatories. These are the observatories from which the C-figures are generally received within four weeks after the end of the month.

B. 3 The selection of the quiet and disturbed days is made on the basis of three criteria: (a) the sum of the eight values of Kp. (b) the sum of the squares of these values. (c) the greatest of the eight values of Kp. According to each of these criteria, a relative "order number" is assigned to each day of a month, the three order numbers are averaged and the days with the lowest and the highest mean order numbers are selected as the five quietest, the ten quietest and the five most disturbed days.

It should be noted that these selection criteria give only a relative indication of the character of the selected days with respect to the other days of the same month. As the general disturbance level may be quite different for different years and even for different months of the same year, the selected quiet days of a month may sometimes be rather disturbed or vice versa. In order to indicate such a situation, selected days which do not satisfy certain absolute criteria are marked as follows:

A selected "quiet day" is considered not "really quiet" and marked by the letter A if for that day: $Ap > 6$, or marked by the letter K if $Ap \leqslant 6$, but one $Kp \geqslant 3o$ or two Kp values are $\geqslant 3-$.

A selected "disturbed day" is considered "not really disturbed" and marked by an asterisk if $Ap < 20$. (Ref.: P. N. Mayaud, Ann. Géophysique t. 26, 1969, pp. 901 - 921).

B. 4 The planetary three-hour-range index Kp is the mean standardized K-index from 13 observatories between 46^{o} and 63^{o} northern or southern geomagnetic latitude. The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is 42/3, 5o is 5, 5+ is 51/3. This planetary index is designed to measure solar particle radiation by its magnetic effects, especially to meet the need of research workers in the ionospheric field. Several other indices are derived from Kp, namely the 3 hour index ap (the equivalent range) and the daily indices Ap and Cp.

The Kp-stations are: Meanook (Canada), Sitka (Alaska), Lerwick (Shetlands), Eskdalemuir (Scotland), Lovö (Sweden), Rude Skov (Denmark), Wingst (Germany), Witteveen (Netherlands), Hartland (England), Ottawa (Canada), Fredericksburg (Virginia), Amberley (New Zealand), Toolangi (Australia).

The three hour equivalent amplitude ap is related to Kp as follows:

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

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

In order to use ap as an equivalent amplitude, it is considered in relation to the conditions at a standard station, which is a station having the lower limit of 500 γ for K = 9. At such a station the average range in γ's of the most disturbed of the three force components in a three hour-interval can be taken as 2·ap (for instance, for Kp = 3+, as 36γ). In other words ap is an equivalent amplitude in the unit 2γ.

The column headed Ap gives the daily average for the eight values ap per day. Therefore, Ap may be called the "equivalent daily amplitude Ap", expressed in the unit 2γ for a standard station.

Observatories wishing to compute, from their own K-indices, a local equivalent amplitude ak, may proceed as follows:

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

This table is valid for all observatories. Using the values of the table, ak has the meaning of an index. If it is desired to convert the index ak into an equivalent amplitude in the unit γ, the conversion factor is obtained from the lower limit for K = 9 valid at the station by dividing the limit by 250. For instance, at Sodankylä, where the lower limit for K = 9 is 1500γ, the factor is 6, so that, for K = 3, the equivalent amplitude is 90γ, or, in other words the index ak for Sodankylä expresses equivalent amplitudes in the unit 6γ. Similary, Ak is the daily average of the ak.

Use of the daily Ap (planetary) or Ak (local value) is recommended in preference to the sum of the indices Kp or K.

The last column gives the daily planetary character figure Cp, as defined in Bulletin 12e, p. 111. It should be noted that Cp, introduced for a standardization of the international character-figures Ci, has not been approved by the Association. Instead, Ap was preferred. For a rough conversion of Ci-figures (prior to 1932) into Ap, the following table (derived from Bulletin 12e, p. 111, Table 2) may

be used:

10·Ci =	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Ap =	2	4	5	6	8	9	11	12	14	16	19	22	26	31	37	44	52	63	80	110	160

B. 5 -8 These tables give the frequencies of occurrence of Kp-values during the year, the monthly average values of Ap and Cp and lists of magnetic storms and of very quiet intervals, based on the successive occurrence of certain Kp-values.

The diagrams of Kp show the values of Kp from the table B 4 in a "musical note script" as defined in the key. The arrangement in solar rotations is made in order to show the 27-day recurrence tendency.

B. 9 The three-hourly indices Kn and Ks for the Northern and Southern hemispheres are derived from the K-indices of observatories in the sub-auroral zones, 11 in the Northern and 8 in the Southern hemisphere, namely: Memambetsu (Japan), Petropavlovsk, Magadan, Podk. Tungusta, Sverdlovsk (USSR), Niemegk (Germany), Witteveen (Netherlands), Hartland (England), Fredericksburg (USA), Victoria (Canada), Tucson (USA), Amberley (New Zealand), Toolangi, Gnangara (Australia), Kerguelen, Crozet (Indian Ocean), Hermanus (South Africa), Argentine Isl. and Trelew (Argentine). These K-indices are standardized according to the distances of the stations to the auroral zones. The stations are arranged in groups, each group representing a longitude sector in one of the hemispheres. The mean standardized K for each sector is converted into an equivalent amplitude and the weighted means an and as of these amplitudes are converted back into Kn and Ks. Km is derived in the same way from am, the mean of an and as. (This method is different from the method followed in the case of Kp, where ap is derived from Kp).

The tables are printed mechanically. As the indices are determined with an accuracy of one third of a unit, the values of 3Kn, 3Ks and 3Km are tabulated. An, As and Am are the daily mean values of the amplitudes an, as and am, Am2 is the mean of am over a 48-hour period centered in the middle of the day. σ n and σ s indicate the standard deviations of the sector values of K in the N. - and S. hemispheres. Monthly mean values of An, As and Am are given at the bottom of the tables.

B. 10, 11 The equatorial Dst-index for the intensity of the ring current is the deviation of the horizontal component H from its quiet time value, averaged over a number of low latitude stations. These stations are: Honolulu (Pacific), San Juan (USA), Hermanus (South Africa) and Kakioka (Japan). The exact definition of Dst is given in earlier data publications (see Introduction, for references). Monthly tables of hourly Dst-values are given, followed by a table of daily mean values and a graph of hourly values for the whole year.

Part C. Rapid Variations.

C. 1 Sudden commencements followed by a magnetic storm or by an increase in activity lasting at least one hour (ssc). This list is based upon the data as reported monthly by the observatories. Only the cases reported by at least ten stations

are given. Stations in isolated regions are thereby counted morefold, depending on the local density of the stations' network. The times in the column at the left are mean values; but the earliest and latest times reported by the observatories for the beginning of the phenomenon are added in brackets. For printing reasons only the minutes are given. These minutes generally belong to the hour of the phenomenon; but if they are underlined, they belong to the preceding hour. The observatories are mentioned in six groups under the letters A, B, C, D, E, X, as follows:

A... when the phenomenon in their magnetograms is very remarkable

B... when it is a fair, ordinary, but unmistakable

C... when it is a poor or doubtful case

D... when it was decidedly not recorded in the magnetograms although the records were satisfactory

E... when the phenomenon cannot be discerned because of heavy disturbance

X... when the record is missing

In some cases one or more observatories preferred another qualification (si, b, bp, etc); these observatories are included in parentheses.

C. 2 Bays or pulsational disturbances associated with bays. The times at the left-hand side of the table have the same meaning as in table C. 1. The observatories are mentioned in groups, according to the qualification (b, bs, bp, etc) which they have attributed to the phenomenon in accordance with the definitions given by the Copenhagen- and Berkeley meetings. The classification symbols A, B, C, D, E, X, are the same as mentioned in C. 1. The meaning of the symbols b, bs, etc. is:

b.... clear and isolated bay appearing during a calm period without pulsations or sharp beginning

bs... bay with sharp beginning without pulsations

bp... bay with pulsations without sharp beginning

bps.. bay with pulsations and sharp beginning

pi2.. train of pulsations of irregular shape and beginning mostly impulsive, with period 40 - 150 sec., consisting of several series of oscillations, each series lasting about 10 minutes (pi2 corresponds with the former pt)

pg... giant pulsations, viz., exceptional pulsations of very great period and regularity, with sufficient relative amplitude

If pulsations precede or follow the beginning of the bay with a time lag of not more than about ten minutes, then symbols bp and bps are used. If the interval is greater, both phenomena are reported separately. As for the ssc's, this list contains only the cases reported by at least ten stations (isolated stations counted morefold). Moreover it may be that a bay has been selected by the observatories out of a group of many similar disturbances all occurring on the same day. Therefore the list is not complete and it seems better not to use this table for statistical purposes without caution. This holds also for the other tables.

C. 3 Sudden impulses (si). These are sudden magnetic changes which could not be classified as ssc, bs, etc. As for the ssc's, this list contains only the cases reported by at least ten stations (isolated stations counted morefold). The mean times and extreme times of the beginning of the phenomena are given as in table C. 1.

C. 4 Giant pulsations (pg) are given, which were reported originally by at least two stations (or by one station, if situated in a very isolated region and if the pg was classified as A). These pg's were checked by the observatories, mentioned in the heading of the table. It is very probable that several cases included in the Table are not real pg's in the sense given to the former classical polar pg's. Nevertheless, in order to clarify the actual signification of this denomination for the different observatories and to know the world distribution of this phenomenon, the table gives the answers to the checking-lists for all the cases in which a positive answer was given by some observatories, situated in regions where typical pg's have been observed in the past. Period and amplitude of the pg's as reported by the individual observatories are also included, as well as the times of beginning and ending of the phenomenon if these deviate from the times given in the left column.

C. 5a Solar-flare effects (sfe) were reported by many observatories. A check of the reported cases has been made by the observatories, mentioned in the heading of the table. In some cases data from the monthly reports of other stations have also been used, in order to get a better idea of the reported effects. The symbols of such stations are included in square brackets. The times tabulated in the column at the left are mean values of the times given for the beginning of a phenomenon. In cases where a clear simultaneous disturbance from an ionospheric or solar observatory or from a radio service, which gives support to the geomagnetic solar-flare effect, has been well established, the indicated time has been underlined. Stations in the daylight hemisphere have been written behind the indicated times and grouped in the same way as in Table C. 1. Observatories near the subsolar point are underlined. Stations lying in the twilight-zone, which reported a clear disturbance are indicated by dotted brackets. Stations under the same circumstances in full dark have been given in parentheses. Stations on the night-side of the earth, which gave a negative or doubtful answer, have been omitted.

C. 5b Doubtful solar-flare effects. In general, the following cases have been considered as doubtful: those where well located stations (with respect to the subsolar point) did not report such an effect, (although several other stations have reported it), and those where some stations in full dark mentioned a disturbance which, considering the hour and their geographic position, was probably no night-side bay coexisting with a sfe at the day-side of the earth. Further some cases were considered doubtful because the interpretation of the totality of data was hindered by simultaneous world wide perturbation and also when the solar, radioelectric and ionospheric records were available, but did not show any clear effect at the time of the presumed sfe. Nevertheless it is very probable that several of these cases are real solar-flare effects.

Part D. Data on special intervals.

The first lines give a survey of indices Kp, Kn and Ks for the selected periods. Dst is given in a graphical form as follows: A single horizontal line indicates that Dst is negative, a double line means Dst $<$ -50, a triple line means Dst $<$ -100, etc. In the list of data from individual observatories, the sign of the amplitude of an ssc

is to be taken algebraïcally for D and Z, D reckoned positive if towards the East and Z reckoned positive if downwards. sc* means that the sc-movement (for which the amplitudes are given) was preceded by a small reverse impuls. The ranges of D, H and Z are the differences between the highest and the lowest values of these components attained during the storm. The end of the storm is indicated by the cessation time of reasonably marked disturbance movements in the traces, more specifically when the K-index diminishes to 2 or less for a reasonable period.

The stations for which K-indices are given, are selected on the basis of a representative distribution over all parts of the world. The stations are indicated by their symbols, according to part A of this Bulletin, but arranged according to geomagnetic latitude.

Magnetograms are given for three groups of stations, namely for stations inside the polar caps (upper diagram), for stations in the auroral zone (middle diagrams) and for stations in lower latitudes (lower diagram). The selected stations may not always be the same, depending on the availability of the magnetograms. *) the magnetograms have been reduced to the same time scale and comparable intencity scales. Only the H-component is shown, except for some stations near by the geomagnetic pole, where both H and D or X and Y are given. The Sq-variation has been substracted from the records.

Graphs of preliminary AU, AL and AE (= AU - AL) values for the selected intervals are given at the bottom of the magnetogram-pages in the same time scale. These graphs are indicative of the definite AE (11) values to be published later.

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*) Stations used in Part D, which are not included in the List of Observatories (Part A) are the following:

CB	Cambridge Bay	69° 1'	N	255°	geomagn.	+77.0	301.0
NQ	Narssarssuaq	61° 11'	N	314° 35'	"	+71.2	37.6

Erratum IAGA-Bulletin 32 c, 1972

In the "CONTENTS" (page iii) the year 1973, printed in Part D at the bottom of the page, should be changed into 1972.

LIST OF OBSERVATORIES

Symbol	Observatory	Collaborator	Geographic		Geomagnetic		S_H γ/mm	K=9 lower limit	K rep.
			Lat.	Long.	Lat.	Long.			
	Alert		+82° 30'	297° 30'	+85.7°	168.7°			
BT	Cheisa (B. Tikhaya)	V. Y. Danilov	+80 37	58 03	+71.3	156.0	5	2000	34I -
CC	Cape Chelyuskin	V. A. Smirnov	+77 43	104 17	+66.2	176.5	10	2500	55C -
TH	Thule	K. Lassen	+77 29	290 50	+89.0	358.0	8	1000	55C70
MX	Mould Bay		+76 12	240 36	+79.1	284.7			
RB	Resolute Bay	R. G. Madill	+74 41	265 10	+83.0	289.6		1500	52C55
B4	Bear Island	S. Berger	+74 31	19 01	+71.1	124.0	17	2000	57C59
DI	Dikson	A. M. Denisova	+73 33	80 34	+63.0	161.6	10	1500	34I -
MS	Matoshkin Shar	N. D. Medvedev	+73 16	56 24	+64.8	146.5		2500	55C56
TI	Tiksy	T. L. Kaplan	+71 35	129 00	+60.4	191.4	5	1000	55I -
PB	Point Barrow	T. L. Hardiman	+71 18	203 15	+68.5	241.1	30	2500	57C -
TR	Tromsø	S. Berger	+69 40	18 57	+67.2	116.8	5	2000	47C -
GO	Godhavn	K. Lassen	+69 14	306 29	+79.9	32.5	10	1800	43I -
AI	Abisko	K. Borg	+68 21	18 49	+66.0	115.0	10	1500	
MM	Murmansk	G. A. Lokinov	+68 15	33 05	+63.5	126.2	7	2500	57C -
LZ	Lovozero		+67 59	35 01	+62.8	127.3			
KI	Kiruna	G. Gustafsson	+67 50	20 25	+65.3	115.8	11	1500	52I -
SO	Sodankylä *	E. Kataja	+67 22	26 38	+63.8	120.0	9	1500	14I -
WE	Welen	N. I. Zueva	+66 10	190 10	+61.8	237.1	8	1250	55C -
CO	College *	J. B. Townsend	+64 52	212 10	+64.6	256.5	8	2500	41C -
BL	Baker Lake	R. G. Madill	+64 20	263 58	+73.8	315.2	6	2500	52C55
RY	Leirvogur (Reykj.)	Th. Saemundsson	+64 11	338 18	+70.2	71.0	15	1500	64C -
SR	Srednikan	N. W. Savangeewa	+62 26	152 19	+53.2	210.6	4	550	40I -
DO	Dombås	E. Gjøen	+62 04	9 07	+62.3	100.1	9	750	25C -
YA	Yakutsk	A. A. Danilov	+62 01	129 40	+51.0	193.8	6	550	41I -
PT	Podk. Tungusta		+61 31	90 00			3.	650	72C -
NU	Nurmijärvi *	M. Kivinen	+60 30	24 39	+57.8	112.6	8	750	58C -
LE	Lerwick *	B. R. Leaton	+60 08	358 49	+62.5	88.6	4	1000	32C -
MG	Magadan *		+60 07	151 01	+50.6	210.1	2	550	67C -
LN	Leningrad	G. D. Swetlajev	+59 57	30 42	+56.2	117.4	3	600	55C -
LO	Lovö	F. Eleman	+59 21	17 50	+58.1	105.8	4	600	30C -
CH	Churchill		+58 48	265 54	+68.8	322.5			
SI	Sitka *	R. J. Main, Jr.	+57 04	224 40	+60.0	275.4	7	1000	32C -
SV	Sverdlovsk	T. N. Panov	+56 44	61 04	+48.5	140.7	5	550	41I -
TM	Tomsk	O. K. Gordjejev	+56 28	84 56	+45.9	159.6	4	350	58C70
RS	Rude Skov	A. Lundbak	+55 51	12 27	+55.8	98.5	10	600	40C -
KN	Kazan	M. P. Tsjerzor	+55 50	48 51	+49.3	130.4	5	550	41I -
MO	Moskva	W. N. Bobrov	+55 28	37 19	+50.8	120.5	2	550	45I -
ES	Eskdalemuir *	B. R. Leaton	+55 19	356 48	+58.5	82.9	4	750	32C -
GW	Great Whale River		+55 16	282 13	+66.8	347.2			
NS	Novosibirsk		+55 02	82 54			2.	500	72C -
ME	Meanook	Anne B. Cook	+54 37	246 34	+61.8	301.0	11	1500	32C -
HL	Helu	W. Czyszek	+54 37	18 49	+53.4	103.7	4	550	56C -
MN	Minsk	M. S. Babuchnikov	+54 04	27 08	+50.6	113.8	4	550	62C -
ST	Stonyhurst	J. E. Worthy S.J.	+53 51	357 32	+56.9	82.7	6	600	60C66
WN	Wingst *	G. Schulz	+53 44	9 04	+54.5	94.0	6	500	40C -
PK	Petropavlovsk		+53 06	158 38	+44.4	218.2			
WI	Witteveen *	D. van Sabben	+52 49	6 40	+54.2	91.0	10	500	40C -
IR	Irkutsk	W. S. Pirozjkov	+52 10	104 27	+41.0	176.9	6	350	41I -
SW	Swider	Z. Kalinowska	+52 07	21 15	+50.6	104.6	4	500	42I -
NI	Niemegk *	K. Lengning	+52 04	12 40	+52.2	96.3	2	500	37C -
VL	Valentia *	S. Mc Williams	+51 56	349 45	+56.6	73.4	3	500	58C -
BE	Belsk	J. Marianiuk	+51 50	20 48	+50.4	104.1	1	500	60C -
GT	Göttingen	M. Siebert	+51 33	9 58	+52.3	93.7	3	500	
CM	Collmberg *	B. Tittel	+51 19	13 00	+51.5	96.5	1	500	54I67
HA	Hartland *	H. F. Finch	+51 00	355 31	+54.6	79.0	4	500	29C -
KV	Kiev	I. A. Mjelnitsjoek	+50 43	30 18	+47.3	112.2	2	350	58C -
MA	Manhay	L. Koenigsfeld	+50 18	5 41	+52.0	88.8	2	500	40C -
DB	Dourbes *	A. de Vuyst	+50 06	4 36	+51.7	88.7	4	500	55C -
RA	Racibórz	W. Kraiński	+50 05	18 11					
PR	Pruhonice *	V. Bucha	+49 59	14 32	+49.9	97.3	4	500	53C -

LIST OF OBSERVATORIES - continued

Symbol	Observatory	Collaborator	Geographic		Geomagnetic		S_H γ/mm	K=9 lower limit	K rep.
			Lat.	Long.	Lat.	Long.			
LV	Lvov	P. W. Soemaroek	+49° 54'	23° 45'	+48.0°	105.8°	3	550	55C -
KD	Karaganda	G. I. Gerasimov	+49 49	73 05	+40.0	148.4	2	350	66C -
BV	Budkov	J. Bouška	+49 04	14 01	+49.1	96.2	1		69I -
VI	Victoria	B. Caner	+48 31	236 35	+54.3	292.7	2	500	57C -
NE	Newport	A. H. Travis	+48 10	242 32	+55.1	300.0	4	600	68C -
FU	Fürstenfeldbruck *	K. Wienert	+48 10	11 17	+48.8	93.3	3	500	48C -
CF	Chambon-la-Forêt*	J. P. le Mouel	+48 01	2 16	+50.4	83.9	6	500	40I -
HB	Hurbanovo *	S. Pintér	+47 54	18 12	+47.1	99.8	4	350	51C -
UB	Ulan Bator	G. Chimiddorj	+47 52	107 03	+36.1	178.0	1	300	56C -
JO	St. Johns	G. A. Brown	+47 36	307 19	+58.7	21.4	6	750	69C -
NA	Nantes	O. Noblanc	+47 15	358 27	+50.5	80.1	6	500	50C59
SA	Yushno-Sakhalinsk	B. E. Mardjerfjeld	+46 57	142 43	+36.9	206.7	3	350	54C -
TY	Tihany		+46 54	17 53	+46.4	99.1	4		58C -
OD	Odessa	W. N. Sjajefski	+46 47	30 53	+43.8	111.1	2	350	55C -
KK	Novo Kazalinsk	A. K. Karpjenko	+45 46	62 07	+39.9	138.6	1	350	66C -
OT	Ottawa	J. Hruska	+45 24	284 27	+57.0	351.5	6	750	32C -
SU	Surlari		+44 41	26 15	+42.5	106.0	2	350	57C -
GC	Grocka *	M. Stojković	+44 38	20 46	+43.6	100.9	3	350	58I -
RT	Roburent *	M. Bossolasco	+44 18	7 53	+45.8	88.5			56C -
MT	Memambetsu *	T. Yoshimatsu	+43 55	144 12	+34.0	208.4	2	350	57C -
AG	Agincourt	A. A. Onhauser	+43 47	280 44	+55.0	347.0	5	600	40C69
VK	Vladivostok	E. I. Bobuljova	+43 41	132 10	+33.0	198.0	4	300	55C -
AT	Alma Ata		+43 16	77 23	+33.4	152.0			64C -
PN	Panagjuriste		+42 31	24 11			2	350	72C -
LG	Logroño *	T. Miguel Lafuente	+42 27	357 30	+46.1	77.0	4	350	57C -
AQ	Aquila *	F. Molina	+42 23	13 19	+42.9	92.9	5	350	58C -
TF	Tbilisi (Tiflis)	N. A. Katziachwili	+42 05	44 42	+36.7	122.1	1	350	40I -
TK	Tashkent	Zarotsjentseva	+41 25	69 12	+32.4	143.7	2	300	41I -
MD	Maddalena	M. Giorgi	+41 13	9 24	+42.7	88.5	3	350	58C63
IK	Istanbul-Kandilli	O. Uyar	+41 04	29 04	+38.5	107.5	3	300	52C -
EB	Ebro *	J. O. Cardus	+40 49	0 30	+43.9	79.7	3	350	42C -
CI	Coimbra	V. Seiça	+40 13	351 35	+44.8	71.3	4	350	51C -
BD	Boulder		+40 02	254 42	+48.9	316.4			
TL	Toledo	R. Gómez-Menor	+39 53	355 57	+43.6	75.7	6	350	48C -
ON	Onagawa		+38 36	141 28	+28.4	206.7			
FR	Fredericksburg	R. Kuberry	+38 12	282 38	+49.6	349.8	2	500	32C -
PE	Pendeli *		+38 03	23 52	+36.2	102.0	4	300	59C -
GI	Gibilmanna *	M. Georgi	+37 59	14 01	+38.5	92.2	2	350	54C57
AK	Ashkhabad	W. G. Dubrovskij	+37 57	58 06	+30.5	133.4	2	300	58C -
SM	San Miguel	A. Silva de Sousa	+37 46	334 21	+45.6	50.9	4	350	51C -
AE	Almeria	L. Valbuena Vera	+36 51	357 32	+40.6	75.3	5	350	64C -
SF	San Fernando	M. Catalán	+36 28	353 48	+41.0	71.3	3	350	40C -
KA	Kakioka *	T. Yoshimatsu	+36 14	140 11	+26.0	206.0	3	300	36C -
TP	Teheran (Persia) *	H. K. Afshar	+35 44	51 23	+29.3	126.4	2	300	57I -
KS	Ksara	J. Plassard	+33 50	35 54	+30.4	112.0	6	300	49C -
SS	Simosato	K. Sugiura	+33 34	135 56	+23.0	202.4	2	300	57C59
AV	Averroes (Maroc)	P. Stahl	+33 18	352 35	+38.1	69.1	3	350	70C -
DS	Dallas	Lavon Posey	+32 59	263 15	+43.0	327.7			69C -
AS	Aso *	Y. Tamura	+32 53	131 01	+22.1	198.1	3	300	57I57
TU	Tuscon	Clyde J. Beers	+32 15	249 10	+40.4	312.2	3	350	38C -
KY	Kanoya *	T. Yoshimatsu	+31 25	130 53	+20.5	198.1	2	300	58C -
QU	Quetta *	K. U. Siddigi	+30 11	66 57	+21.6	139.7	2	300	55I -
ML	Misallat	M. Fahim	+29 45	30 54	+26.7	105.8	2	300	56C -
SZ	Santa Cruz (Ten.)	C. Marzán	+28 29	343 43	+35.0	58.6	2	300	64C -
LP	Lunping *	T. I. Ho	+25 00	121 10	+13.8	189.5	2	300	68C -
TA	Tamanrasset	L. Le Donche	+22 48	5 31	+25.4	80.6	4	300	52I -
HO	Honolulu	R. C. Munson	+21 19	202 00	+21.1	266.5	3	300	38I -
TE	Teoloyucan *	C. Cañón Amaro	+19 45	260 49	+29.6	327.1	3	300	51I -
AL	Alibag		+18 38	72 52	+ 9.5	143.6	4	300	40C -
SJ	San Juan	M. Vazquez	+18 07	293 51	+29.9	3.2	2	300	38C -

LIST OF OBSERVATORIES - continued

Symbol	Observatory	Collaborator	Geographic Lat	Geographic Long.	Geomagnetic Lat.	Geomagnetic Long.	S_H γ/mm	K=9 lower limit	K rep.
HD	Hyderabad	B. J. Srivastava	+17° 25'	78° 33'	+ 7.6°	148.9°	5	300	69I -
MB	M'Bour *	H. G. Barsczus	+14 24	343 03	+21.3	55.0	7	350	52C -
MU	Muntinlupa *	J. V. Presbitero	+14 22	121 01	+ 3.0	189.7	4	300	64C -
GU	Guam	K. Cravens	+13 35	144 52	+ 4.0	212.9	2	300	58C -
AN	Annamalanaigar		+11 24	79 41	+ 1.5	149.4			
AA	Addis Ababa	E. Cambron	+09 02	38 46	+ 5.3	109.2		300	
TV	Trivandrum		+08 29	76 57	- 1.1	146.4			
KR	Koror	K. Gravens	+07 20	134 30	+ 3.2	203.4		300	58
PA	Paramaribo	D. van Sabben	+05 49	304 47	+17.0	14.5	7		57C58
FQ	Fúquene	J. del C. Quintero	+05 28	286 16	+16.9	355.1	4	300	57C60
BA	Bangui	J. Vassal	+04 26	18 34	+ 4.6	88.5	3	350	52I -
MC	Moca	A. G. Cogollor	+03 21	8 40	+ 5.7	78.6	3	300	64C -
BN	Bunia	P. Herrinck	+01 32	30 11	- 0.4	99.3	2		
TT	Tatuoca	J. A. Ferreira	-01 12	311 29	+ 9.6	20.8	3		
LR	Lwiro *	G. Bonnet	-02 15	28 48	- 4.0	98.2	5	350	58C60
HN	Hollandia	D. van Sabben	-02 34	140 31	-12.6	210.3	5	300	57C58
BI	Binza	(P. Herrinck (G. Lesambo	-04 23	15 16	- 3.4	83.2	4		65I -
TG	Tangerang	R. Susanto	-06 10	106 38	-17.6	175.4	4	300	40I -
LU	Luanda	V. S. Moreira	-08 55	13 10	- 7.2	80.5	3	350	61C -
PM	Port Moresbey *	N. G. Chamberlain	-09 24	147 09	-18.7	218.0	3	300	58C -
KC	Karavia (Congo)	(P. Herrinck (G. Lesambo	-11 39	27 28	-12.7	94.1	5		
HU	Huancayo *	A. A. Giesecke M.	-12 02	284 41	- 0.6	353.8	3	600	37C -
DA	Darwin	L. S. Prior	-12 20	131 00	-22.0	201.3			
AP	Apia *	A. L. Burrows	-13 48	188 14	-16.0	260.2	4	300	40C57
PP	Papeete-Pamatai'	G. Rouchouse	-17 34	210 25	-15.3	282.8	1	350	68C -
TN	Tananarive *	(Kakoto (Hee	-18 55	47 33	-23.1	112.1	1	300	50C -
MR	Mauritius	B. M. Badya	-20 06	57 33	-26.6	122.4	3	500	56C60
LQ	La Quiaca	R. P. J. Hernández	-22 06	294 24	-10.6	3.2	3	350	64C -
VA	Vassouras	L. I. Gama	-22 24	316 21	-11.9	23.9	4	600	52C64
LM	Lourenco Marques	F. Augusto Leal	-25 55	32 35	-27.7	95.8	3	300	67C68
BR	Brisbane	R. F. Thyer	-27 32	152 55	-35.8	226.9		500	57C64
WA	Watheroo	P. M. Mc Gregor	-30 19	115 53	-41.8	185.6	3	350	37C59
PI	Pilar	R. P. J. Hernández	-31 40	296 07	-20.2	4.0	3	300	40I -
GN	Gnangara *	P. J. Gregson	-31 47	115 57	-43.2	185.8	3	350	59C -
HR	Hermanus *	L. Loubser	-34 25	19 14	-33.7	81.7	2	300	40C -
AC	Las Acacias	H. A. Hartmann	-35 00	302 19	-24.0	10.3	2	350	64C -
TO	Toolangi *	L. S. Prior	-37 32	145 28	-46.7	220.8	4	500	41C -
AM	Amberley *	A. L. Burrows	-43 09	172 43	-47.7	252.5	5	500	37C -
TW	Trelew *	O. P. Pelliciuoli	-43 15	294 41	-31.7	3.2	3	350	57C -
CZ	Crozet	R. Schlich	-46 26	51 52	-51.4	109.7	2	500	72C -
KG	Kerguelen	R. Schlich	-49 21	70 12	-56.5	127.8	6	750	57I -
MI	Macquarie Island	N. G. Chamberlain	-54 30	158 57	-60.7	243.0	25	1500	52C -
OR	Orcadas del Sur		-60 44	315 13	-50.1	18.2		400	
AR	Argentine Island	J. C. Farman	-65 15	295 44	-53.8	3.3	4	500	57C -
OA	Oasis		-66 06	92 09	-77.2	160.8	8	2000	57C58
WK	Wilkes *		-66 15	110 35	-77.2	179.2	25	2500	58C66
MY	Mirny	U. N. Oviannikov	-66 33	93 01	-77.0	146.8	6	2000	57C -
DU	Dumont d'Urville	R. Schlich	-66 40	140 01	-75.6	230.9	8	1800	57C -
MW	Mawson *	N. G. Chamberlain	-67 36	62 53	-73.2	103.1	10	1500	55C -
CT	Charcot		-69 23	139 01	-78.3	234.5		1500	57C58
PO	Pionerskaya		-69 44	95 30	-80.3	146.5	12	2000	57C58
NL	Novolazarevskaya	V. A. Kazarin	-70 46	11 50	-66.2	53.6	15	1500	60C -
BB	Base Baudouin		-70 26	24 19	-69.	63.			64C66
HT	Hallett		-72 19	170 13	-74.7	278.2	31	2500	57C62
HY	Halley Bay	J. C. Farman	-75 31	333 20	-65.8	24.2	7	1500	57C -
SB	Scott Base *	A. L. Burrows	-77 51	166 47	-79.0	294.4	22	2000	57C -
LA	Little America	J. J. Gniewek	-78 11	197 50	-74.0	312.0		2500	57C58
VO	Vostok	I. N. Babakov	-78 27	106 52	-89-2	91.4	11	2000	58I -
BY	Byrd Island		-80 01	240 29	-70.6	336.3	24	2500	58C60
SP	South Pole		-90		-78.5	0.0	29	2000	60

TABLE 1 INTERNATIONAL CHARACTER-FIGURES, Ci, 1905 - 1973

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean for the year
1905	0.7	0.7	0.6	0.6	0.5	0.6	0.5	0.7	0.7	0.5	0.7	0.4	0.59
06	0.4	0.9	0.7	0.6	0.6	0.6	0.7	0.6	0.8	0.6	0.6	0.7	0.65
07	0.7	0.8	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.66
08	0.6	0.7	0.9	0.7	0.8	0.7	0.5	0.8	0.9	0.5	0.6	0.5	0.68
09	0.8	0.6	0.8	0.5	0.6	0.5	0.5	0.6	0.7	0.7	0.5	0.6	0.62
1910	0.6	0.7	0.8	0.7	0.7	0.5	0.6	0.8	0.8	1.0	0.8	0.8	0.72
11	0.8	0.9	0.8	0.8	0.7	0.5	0.6	0.5	0.5	0.6	0.5	0.4	0.63
12	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.4	0.46
13	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.6	0.4	0.4	0.48
14	0.5	0.5	0.6	0.5	0.4	0.5	0.6	0.6	0.5	0.6	0.6	0.5	0.54
1915	0.5	0.6	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.8	0.8	0.5	0.62
16	0.6	0.6	0.9	0.7	0.8	0.7	0.6	0.8	0.8	0.8	0.8	0.6	0.71
17	0.8	0.7	0.6	0.6	0.7	0.6	0.6	0.8	0.6	0.7	0.5	0.7	0.66
18	0.6	0.8	0.7	0.8	0.7	0.6	0.7	0.8	0.9	0.8	0.8	0.9	0.75
19	0.8	0.8	0.9	0.7	0.8	0.6	0.5	0.7	0.8	0.9	0.5	0.7	0.72
1920	0.6	0.5	0.8	0.6	0.6	0.4	0.5	0.6	0.9	0.6	0.6	0.6	0.62
21	0.5	0.5	0.7	0.7	0.8	0.6	0.5	0.6	0.5	0.6	0.6	0.6	0.61
22	0.6	0.7	0.8	0.8	0.6	0.6	0.7	0.7	0.7	0.7	0.5	0.4	0.64
23	0.5	0.6	0.5	0.4	0.5	0.5	0.4	0.4	0.5	0.6	0.4	0.5	0.48
24	0.6	0.6	0.6	0.4	0.5	0.6	0.6	0.4	0.7	0.5	0.5	0.4	0.54
1925	0.4	0.4	0.4	0.5	0.5	0.7	0.6	0.6	0.7	0.8	0.5	0.6	0.56
26	0.8	0.8	0.8	0.8	0.6	0.5	0.5	0.5	0.8	0.7	0.5	0.5	0.65
27	0.6	0.7	0.8	0.6	0.6	0.5	0.6	0.6	0.8	0.8	0.4	0.6	0.63
28	0.4	0.6	0.5	0.5	0.8	0.7	0.7	0.6	0.8	0.8	0.6	0.5	0.63
29	0.5	0.8	0.8	0.5	0.6	0.6	0.7	0.6	0.8	0.8	0.7	0.7	0.67
1930	0.7	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.8	0.9	0.6	0.5	0.83
31	0.5	0.6	0.6	0.4	0.5	0.6	0.6	0.7	0.8	1.0	0.8	0.7	0.66
32	0.8	0.8	1.0	0.9	0.8	0.4	0.5	0.7	0.7	0.7	0.6	0.7	0.70
33	0.6	0.6	0.7	0.8	0.6	0.6	0.5	0.6	0.8	0.6	0.6	0.5	0.64
34	0.5	0.6	0.8	0.4	0.5	0.4	0.4	0.7	0.7	0.5	0.4	0.7	0.56
1935	0.7	0.7	0.7	0.6	0.5	0.7	0.6	0.5	0.9	0.9	0.6	0.7	0.67
36	0.7	0.8	0.6	0.8	0.7	0.7	0.7	0.4	0.5	0.7	0.7	0.5	0.65
37	0.6	0.9	0.8	0.8	0.7	0.7	0.8	0.5	0.6	1.0	0.7	0.6	0.74
38	1.1	0.8	0.6	0.8	0.7	0.5	0.7	0.7	0.8	0.8	0.6	0.6	0.74
39	0.5	0.9	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.9	0.5	0.6	0.76
1940	0.8	0.7	0.8	0.7	0.7	0.7	0.6	0.6	0.7	0.7	0.8	0.8	0.73
41	0.7	0.8	1.0	0.6	0.6	0.6	0.7	0.7	0.8	0.6	0.7	0.6	0.70
42	0.5	0.6	0.9	0.7	0.4	0.5	0.7	0.7	0.7	0.9	0.7	0.6	0.65
43	0.5	0.5	0.7	0.6	0.6	0.6	0.7	1.0	0.9	0.9	0.8	0.6	0.70
44	0.6	0.5	0.8	0.6	0.5	0.4	0.4	0.5	0.5	0.5	0.3	0.6	0.53
1945	0.5	0.5	0.7	0.6	0.4	0.3	0.4	0.4	0.4	0.5	0.3	0.6	0.47
46	0.6	0.7	0.8	0.6	0.6	0.6	0.7	0.4	0.8	0.5	0.5	0.4	0.61
47	0.6	0.5	1.0	0.6	0.6	0.7	0.6	0.8	1.0	0.8	0.6	0.5	0.69
48	0.6	0.7	0.7	0.6	0.8	0.5	0.6	0.8	0.7	1.0	0.7	0.7	0.71
49	0.7	0.7	0.8	0.6	0.7	0.6	0.5	0.6	0.6	0.9	0.7	0.5	0.65
1950	0.7	0.7	0.7	0.8	0.8	0.6	0.7	0.8	0.8	0.9	0.8	0.7	0.74
51	0.8	0.9	0.9	1.0	0.8	0.8	0.8	0.9	1.1	0.8	0.8	0.8	0.89
52	0.8	0.9	1.0	1.0	0.9	0.7	0.6	0.6	0.9	0.8	0.6	0.7	0.81
53	0.7	0.6	0.8	0.7	0.6	0.5	0.7	0.8	0.8	0.7	0.6	0.4	0.67
54	0.5	0.8	0.8	0.7	0.4	0.4	0.5	0.6	0.9	0.7	0.5	0.4	0.59
1955	0.6	0.7	0.8	0.7	0.6	0.5	0.4	0.6	0.6	0.6	0.6	0.5	0.59
56	0.9	0.7	0.9	0.9	0.8	0.8	0.6	0.7	0.7	0.6	0.9	0.5	0.76
57	0.7	0.7	1.0	0.9	0.6	0.8	0.6	0.6	1.0	0.7	0.8	0.8	0.77
58	0.8	1.0	1.1	0.8	0.8	0.8	0.8	0.7	0.6	0.7	0.4	0.8	0.77
59	0.7	1.0	0.7	0.7	0.8	0.8	1.0	0.9	1.1	0.8	0.8	0.8	0.83
1960	0.7	0.7	0.8	1.1	0.9	0.8	0.8	0.8	0.8	1.0	0.9	0.9	0.84
61	0.6	0.7	0.6	0.6	0.7	0.6	0.9	0.6	0.6	0.5	0.4	0.3	0.61
62	0.3	0.6	0.4	0.7	0.4	0.6	0.7	0.8	0.8	1.0	0.6	0.6	0.63
63	0.5	0.4	0.4	0.5	0.7	0.6	0.6	0.7	1.0	0.6	0.6	0.5	0.61
64	0.6	0.7	0.6	0.7	0.6	0.5	0.5	0.4	0.6	0.5	0.4	0.3	0.53
1965	0.4	0.6	0.5	0.4	0.4	0.5	0.5	0.5	0.6	0.4	0.4	0.4	0.45
66	0.4	0.4	0.6	0.4	0.4	0.4	0.5	0.6	0.9	0.5	0.5	0.6	0.52
67	0.5	0.5	0.4	0.5	0.8	0.7	0.5	0.5	0.7	0.6	0.6	0.7	0.58
68	0.6	0.8	0.7	0.6	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.65
69	0.4	0.6	0.8	0.7	0.6	0.5	0.4	0.5	0.6	0.5	0.5	0.4	0.54
1970	0.4	0.4	0.6	0.7	0.4	0.5	0.8	0.5	0.5	0.6	0.6	0.4	0.52
71	0.6	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.7	0.6	0.5	0.5	0.58
72	0.7	0.5	0.6	0.6	0.5	0.6	0.4	0.7	0.6	0.6	0.6	0.5	0.57
73	0.8	0.9	0.9	1.0	0.7	0.7	0.6	0.6	0.7	0.8	0.6	0.6	0.73

TABLE 2 INTERNATIONAL CHARACTER-FIGURES, Ci, 1973

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.5	1.0	1.1	1.8	0.9	0.1	1.1	0.7	0.1	0.2	0.2	0.1
2	0.0	0.8	1.6	1.7	0.6	1.1	0.7	1.1	0.2	1.3	0.4	0.0
3	0.1	0.8	0.5	1.1	0.4	0.6	0.4	0.4	0.4	1.5	0.1	0.3
4	0.7	0.4	0.1	0.3	0.3	1.0	0.2	0.4	0.8	0.6	1.1	1.4
5	1.2	0.6	0.4	0.3	0.2	0.5	0.0	0.6	0.8	0.6	1.0	1.0
6	1.0	0.8	1.4	0.0	0.8	0.4	0.0	0.6	0.4	0.6	0.4	0.5
7	0.4	0.8	0.3	0.0	0.7	0.0	0.1	0.5	0.5	0.2	1.3	0.4
8	0.8	1.2	0.4	0.4	0.7	0.2	0.9	0.5	0.5	0.3	0.5	0.3
9	0.9	1.2	0.5	0.2	0.6	0.4	0.5	0.2	1.4	0.7	0.7	1.1
10	1.4	0.7	0.5	0.0	0.2	1.3	0.3	0.2	1.2	0.9	0.3	0.2
11	1.3	0.4	0.3	1.2	0.2	1.4	0.3	0.1	0.8	0.5	0.2	0.5
12	1.3	0.3	0.8	0.2	0.4	1.2	0.4	0.3	0.4	0.8	0.1	0.1
13	0.8	0.1	0.2	1.5	1.2	1.0	0.5	0.6	0.5	1.0	0.6	0.1
14	0.2	0.5	0.0	1.6	1.8	0.9	0.4	0.5	0.1	0.4	0.4	0.3
15	0.5	0.4	0.0	0.4	1.4	0.7	1.4	0.1	0.8	0.1	0.5	0.4
16	0.3	0.7	0.8	1.6	1.3	0.6	0.8	0.1	0.7	1.3	0.6	0.1
17	0.1	0.8	0.4	1.6	1.2	1.0	0.3	0.0	0.5	1.1	0.9	0.2
18	0.1	0.7	1.2	1.6	1.1	1.2	0.3	0.2	0.4	1.2	1.0	0.0
19	0.8	0.7	1.6	1.5	1.1	1.3	0.7	0.2	0.1	1.0	0.1	0.9
20	1.3	0.5	1.7	1.5	1.1	0.8	0.4	0.5	0.8	1.2	0.1	1.4
21	1.0	1.6	1.7	1.6	1.6	0.2	0.2	0.3	0.8	1.4	1.2	1.5
22	0.2	1.6	1.5	1.4	1.0	0.0	0.3	0.7	1.0	0.9	0.3	1.2
23	0.8	1.7	1.6	1.1	0.8	0.4	0.9	1.2	1.7	0.2	0.4	0.9
24	1.1	1.6	1.5	0.5	0.2	1.3	0.3	1.4	1.3	0.4	1.3	0.1
25	1.0	1.4	1.6	0.8	0.3	0.1	0.6	1.3	1.3	0.2	1.6	0.1
26	1.0	1.4	1.2	1.2	0.2	0.1	1.6	0.9	1.3	0.1	1.0	0.1
27	1.5	1.5	1.3	1.1	0.4	0.1	1.4	1.2	0.5	0.2	0.8	0.4
28	1.4	0.9	1.1	1.2	0.4	1.1	0.8	1.3	0.2	1.1	0.4	0.7
29	0.9		0.8	1.6	0.1	1.5	1.0	1.1	0.1	1.9	0.4	1.0
30	0.7		0.7	1.0	0.0	1.2	1.1	0.7	0.1	1.2	0.2	0.9
31	0.4		1.3		0.1		1.3	0.5		0.8		0.8
Mean	0.76	0.90	0.91	1.00	0.69	0.72	0.62	0.59	0.66	0.77	0.60	0.55

Mean for the Year 0.73

TABLE 3 INTERNATIONAL QUIET AND DISTURBED DAYS 1973

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

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	Jan. 1973				ap				Sum	Ap	Cp
1	4o 3+ 2+ 3+ 2o 1+ 1- 1-	18-	27	18	9	18	7	5	3	3	90	11	0.6
2	1+ 0+ 0+ 0+ 0o 0o 0+ 0+	3o	5	2	2	2	0	0	2	2	15	2	0.0
3	0+ 0o 0o 0+ 0+ 0+ 0+ 2+	4o	2	0	0	2	2	2	2	9	19	2	0.0
4	3o 2+ 1+ 2- 2o 3o 3o 3o	19+	15	9	5	6	7	15	15	15	87	11	0.6
5	4- 3+ 2- 2+ 2- 4o 4+ 5o	26o	22	18	6	9	6	27	32	48	168	21	1.1
6	4+ 5- 2+ 4- 3o 2+ 3- 3+	26+	32	39	9	22	15	9	12	18	156	20	1.0
7	1- 2- 1+ 1+ 2o 3+ 2- 3-	15-	3	6	5	5	7	18	6	12	62	8	0.4
8	2o 3o 1+ 3- 3+ 5o 2+ 2+	22o	7	15	5	12	18	48	9	9	123	15	0.9
9	3+ 3- 2+ 3+ 3- 2+ 4- 4+	25-	18	12	9	18	12	9	22	32	132	16	0.9
10	4o 5- 4- 4o 4- 4o 5o 3o	32o	27	39	22	27	22	27	48	15	227	28	1.2
11	3o 5- 3+ 4- 4+ 4- 3+ 4o	30o	15	39	18	22	32	22	18	27	193	24	1.2
12	4- 4o 4o 4- 5o 4o 3o 3o	30+	22	27	27	22	48	27	15	15	203	25	1.2
13	3+ 3- 2+ 4- 4- 3+ 3+ 2o	24+	18	12	9	22	22	18	18	7	126	16	0.9
14	3o 3+ 2- 2o 2o 2o 1- 1+	16o	15	18	6	7	7	7	3	5	68	8	0.5
15	2+ 2+ 3- 2o 1+ 2- 2o 3o	17+	9	9	12	7	5	6	7	15	70	9	0.5
16	2+ 3o 2- 1+ 1o 1- 3- 3-	15+	9	15	6	5	4	3	12	12	66	8	0.4
17	2+ 1+ 2- 1+ 2o 1+ 1o 0+	11+	9	5	6	5	7	5	4	2	43	5	0.2
18	1o 1o 1- 0+ 0+ 0+ 0+ 0+	4+	4	4	3	2	2	2	2	2	21	3	0.0
19	1- 0+ 1o 1- 1o 4- 3+ 4o	15-	3	2	4	3	4	22	18	27	83	10	0.6
20	6o 5o 3- 3+ 3+ 2+ 3o 4+	30o	80	48	12	18	18	9	15	32	232	29	1.3
21	5- 5- 5o 4- 1+ 2+ 3- 2-	26o	39	39	48	22	5	9	12	6	180	22	1.1
22	1+ 1+ 1- 2- 2+ 2- 1- 2-	11+	5	5	3	6	9	6	3	6	43	5	0.2
23	3- 2+ 2- 4o 4- 2o 2+ 3-	21+	12	9	6	27	22	7	9	12	104	13	0.7
24	4- 3+ 3- 4- 3o 3+ 4o 5-	28+	22	18	12	22	15	18	27	39	173	22	1.1
25	3- 3o 2o 5o 4+ 4- 3- 3o	26+	12	15	7	48	32	22	12	15	163	20	1.0
26	4+ 3+ 2+ 3o 3- 3+ 4+ 4-	27o	32	18	9	15	12	18	32	22	158	20	1.0
27	3+ 5o 4- 4o 4+ 5- 5o 4+	34+	18	48	22	27	32	39	48	32	266	33	1.3
28	5o 6- 4- 4- 4o 4+ 4- 4o	34o	48	67	22	22	27	32	22	27	267	33	1.3
29	4o 3o 4+ 2+ 4- 4- 4- 4o	29-	27	15	32	9	22	22	22	27	176	22	1.1
30	4+ 4+ 2+ 2+ 3- 2o 2o 3-	23-	32	32	9	9	12	7	7	12	120	15	0.8
31	2+ 2o 2- 1o 1- 1o 2+ 2+	13+	9	7	6	4	3	4	9	9	51	6	0.3

	Kp	Sum	Feb. 1973				ap				Sum	Ap	Cp
1	4o 3+ 3o 3o 3- 4- 2+ 3o	25o	27	18	15	15	12	22	9	15	133	17	0.9
2	3o 3+ 2+ 2o 2o 3+ 3- 4o	23-	15	18	9	7	7	18	12	27	113	14	0.8
3	2+ 4+ 3- 3o 3+ 2o 4o 2+	24o	9	32	12	15	18	7	27	9	129	16	0.9
4	2o 2+ 3- 2- 1- 1o 2+ 2-	14+	7	9	12	6	3	4	9	6	56	7	0.4
5	3o 3+ 3- 1+ 1o 0+ 2- 3-	16o	15	18	12	5	4	2	6	12	74	9	0.5
6	2+ 2o 2o 3+ 4+ 4o 3o 2o	23o	9	7	7	18	32	27	15	7	122	15	0.9
7	2+ 2+ 3- 3- 2+ 3+ 4o 3+	23o	9	9	12	12	9	18	27	18	114	14	0.8
8	4- 4+ 4o 4- 3o 4- 4o 4+	31-	22	32	27	22	15	22	27	32	199	25	1.2
9	4+ 3o 5- 4- 3+ 3+ 3+ 2+	28o	32	15	39	22	18	18	18	9	171	21	1.1
10	1+ 3- 3- 2+ 2o 2- 4- 3o	19+	5	12	12	9	7	6	22	15	88	11	0.6
11	3o 3o 2- 2- 2+ 1+ 2- 2-	16+	15	15	6	6	9	5	6	6	68	8	0.5
12	2- 2+ 3o 2- 3- 2+ 2- 2-	17o	6	9	15	6	12	9	6	6	69	9	0.5
13	0+ 0+ 1+ 1- 1o 0+ 0+ 3-	7o	2	2	5	3	4	2	2	12	32	4	0.1
14	2- 2- 2+ 2+ 1o 1- 1+ 3-	14-	6	6	9	9	4	3	5	12	54	7	0.3
15	3o 3o 2- 1+ 2+ 1+ 1o 1o	15-	15	15	6	5	9	5	4	4	63	8	0.4
16	0o 1- 0+ 1o 1+ 3o 4o 4o	14+	0	3	2	4	5	15	27	27	83	10	0.6
17	5- 3+ 4- 1+ 3o 3- 3o 1+	23o	39	18	22	5	15	12	15	5	131	16	0.9
18	2o 2- 2o 2o 3- 3o 3- 4-	20-	7	6	7	7	12	15	12	22	88	11	0.6
19	3o 3- 1o 1o 2o 3- 3- 3+	18+	15	12	4	4	7	12	12	18	84	10	0.6
20	1+ 0o 1o 1o 2o 3- 4o 3-	15-	5	0	4	4	7	12	27	12	71	9	0.5
21	5- 3+ 1+ 2o 2o 5o 7+ 7-	32+	39	18	5	7	7	48	154	111	389	49	1.6
22	6+ 2o 3- 4- 4o 4+ 6+ 6o	35+	94	7	12	22	27	32	94	80	368	46	1.5
23	5- 5+ 5o 4+ 5- 6- 5+ 5o	40o	39	56	48	32	39	67	56	48	385	48	1.6
24	4+ 5o 5+ 5- 5+ 5+ 6o 6-	42-	32	48	56	39	56	56	80	67	434	54	1.6
25	3- 4o 4+ 4o 4- 5o 5o 4+	33o	12	27	32	27	22	48	48	32	248	31	1.3
26	5o 5- 4o 4o 4- 4- 5- 5o	35-	48	39	27	27	22	22	39	48	272	34	1.3
27	4+ 6o 4- 4- 4o 6o 5o 5-	37+	32	80	22	22	27	80	48	39	350	44	1.5
28	5o 3o 4+ 3o 3- 3o 2o 3-	26-	48	15	32	15	12	15	7	12	156	20	1.0

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	March 1973	ap				Sum	Ap	Cp
1	3o 2o 2+ 3- 2+ 5+ 5o 4-	26+	15 7 9 12	9 56 48 22				178	22	1.1
2	4+ 5o 5- 4+ 4+ 5o 5o 5-	37+	32 48 39 32	32 48 48 39				318	40	1.4
3	4+ 4- 3o 2+ 3o 2+ 1+ 2o	22o	32 22 15 9	15 9 5 7				114	14	0.8
4	3- 1o 1o 1- 1- 1- 0+ 1+	8+	12 4 4 3	3 3 2 5				36	4	0.2
5	1o 0o 0+ 0+ 1+ 2+ 3o 2+	11-	4 0 2 2	5 9 15 9				46	6	0.3
6	3o 4o 4+ 3+ 6- 5o 2- 2o	29o	15 27 32 18	67 48 6 7				220	28	1.2
7	2- 3- 2+ 2o 2o 2+ 2- 1o	16-	6 12 9 7	7 9 6 4				60	8	0.4
8	1o 0+ 1o 2- 3o 1+ 3o 2o	13+	4 2 4 6	15 5 15 7				58	7	0.4
9	3- 3+ 3o 3o 3- 1+ 2- 2o	20-	12 18 15 15	12 5 6 7				90	11	0.6
10	2o 2- 2- 2+ 1+ 1o 3o 3-	16-	7 6 6 9	5 4 15 12				64	8	0.4
11	2o 2- 2- 2o 3- 2- 3- 2o	16+	7 6 6 7	12 6 12 7				63	8	0.4
12	3+ 2- 3+ 3- 2- 2o 4+ 2+	21+	18 6 18 12	6 7 32 9				108	14	0.8
13	0o 0+ 2+ 2+ 2- 2- 2+ 0+	11o	0 2 9 9	6 6 9 2				43	5	0.2
14	0o 1- 1o 2- 1+ 1- 1o 1o	7+	0 3 4 6	5 3 4 4				29	4	0.1
15	0+ 0+ 0o 1o 2- 1o 0+ 0+	5o	2 2 0 4	6 4 2 2				22	3	0.0
16	1+ 2o 3- 3+ 3o 3o 3o 2+	21-	5 7 12 18	15 15 15 9				96	12	0.7
17	2- 1o 1+ 2o 2- 1+ 2o 2o	13o	6 4 5 7	6 5 7 7				47	6	0.3
18	2- 3o 2o 3+ 4+ 3o 3+ 5o	26-	6 15 7 18	32 15 18 48				159	20	1.0
19	4o 3+ 5o 7- 6+ 6+ 7o 7o	46-	27 18 48 111	94 94 132 132				656	82	1.8
20	5+ 6- 6- 7- 6- 6- 7- 6+	48-	56 67 67 111	67 67 111 94				640	80	1.8
21	4+ 5+ 6o 5+ 5o 6o 5+ 5+	43-	32 56 80 56	48 80 56 56				464	58	1.7
22	5o 5o 6- 5+ 6o 4o 5o 5o	41o	48 48 67 56	80 27 48 48				422	53	1.6
23	5o 4+ 5o 5o 5- 6- 5o 6-	40+	48 32 48 48	39 67 48 67				397	50	1.6
24	5+ 5- 4o 5o 5+ 5o 5o 6-	40o	56 39 27 48	56 48 48 67				389	49	1.6
25	5o 5+ 5o 5o 5+ 5+ 5- 5o	41-	48 56 48 48	56 56 39 48				399	50	1.6
26	5- 4o 4o 2o 1+ 4o 6+ 4o	30+	39 27 27 7	5 27 94 27				253	32	1.3
27	4- 4o 3o 4+ 5- 4+ 4- 4+	32o	22 27 15 32	39 32 22 32				221	28	1.2
28	4- 3o 3+ 3+ 4+ 4o 3o 4+	29o	22 15 18 18	32 27 15 32				179	22	1.1
29	4- 4o 3- 2o 2o 3- 2+ 4+	24-	22 27 12 7	7 12 9 32				128	16	0.9
30	4o 2+ 3o 3o 3- 3- 2o 4-	23+	27 9 15 15	12 12 7 22				119	15	0.8
31	2+ 4o 3o 1o 3o 5+ 6o 5+	30o	9 27 15 4	15 56 80 56				262	33	1.3

	Kp	Sum	April 1973	ap				Sum	Ap	Cp
1	4o 3- 3o 4o 5+ 8- 8+ 8-	43-	27 12 15 27	56 179 236 179				731	91	1.9
2	7o 6o 4- 6- 5- 5o 4+ 3-	39o	132 80 22 67	39 48 32 12				432	54	1.6
3	5- 5+ 4- 3+ 3+ 4o 3+ 2o	30-	39 56 22 18	18 27 18 7				205	26	1.2
4	2+ 3o 3- 2+ 2o 2+ 1+ 1o	17o	9 15 12 9	7 9 5 4				70	9	0.5
5	1o 2+ 4- 1+ 1o 1o 1- 1-	12-	4 9 22 5	4 4 3 3				54	7	0.3
6	1- 2o 2- 1- 1- 1- 0+ 2-	8+	3 7 6 3	3 3 2 6				33	4	0.1
7	2- 1- 1- 2- 1- 1- 1- 1-	7+	6 3 3 6	3 3 3 3				30	4	0.1
8	0+ 1o 1- 3o 2- 3- 3o 1+	14-	2 4 3 15	6 12 15 5				62	8	0.4
9	3+ 3- 1+ 0+ 1o 1o 1+ 1o	12o	18 12 5 2	4 4 5 4				54	7	0.3
10	1- 1o 1o 0+ 1- 1- 1o 1+	7-	3 4 4 2	3 3 4 5				28	4	0.1
11	4o 5- 5- 4+ 4- 3o 2+ 2o	29-	27 39 39 32	22 15 9 7				190	24	1.1
12	0o 1o 1- 1- 1o 1o 1o 6o	6o	0 4 3 3	3 4 4 4				25	3	0.1
13	1+ 4+ 5- 6- 7+ 5o 2o 3-	33o	5 32 39 67	154 48 7 12				364	46	1.5
14	4o 5+ 8- 5+ 6- 5o 3- 2+	38o	27 56 179 56	67 48 12 9				454	57	1.7
15	3- 3- 2- 3- 1+ 1+ 2- 3-	17-	12 12 6 12	5 5 6 12				70	9	0.5
16	4o 5- 6- 6o 6+ 6- 6- 5-	43-	27 39 67 80	94 67 67 39				480	60	1.7
17	6- 6o 5+ 5- 5o 4+ 5o 5-	41-	67 80 56 39	48 32 48 39				409	51	1.6
18	5o 5o 5+ 5+ 4o 5+ 5- 5-	39+	48 48 56 56	27 56 39 39				369	46	1.5
19	5- 5- 5- 4o 4o 3+ 6- 6o	37o	39 39 39 27	27 18 67 80				336	42	1.5
20	6- 5o 5- 4o 4- 5+ 6- 5-	39-	67 48 39 27	22 56 67 39				365	46	1.5
21	5+ 5o 5o 4+ 4+ 5- 5o 4+	38o	56 48 48 32	32 39 48 32				335	42	1.5
22	5o 5+ 6o 4o 4+ 5+ 3+ 4+	38-	48 56 80 27	32 56 18 32				349	44	1.5
23	5- 5- 4+ 4- 4- 4+ 2+ 2-	29+	39 39 32 22	22 32 9 6				201	25	1.2
24	4- 3o 4o 3o 2o 1+ 3- 3-	22+	22 15 27 15	7 5 12 12				115	14	0.8
25	3- 4o 3- 2- 1+ 3- 3+ 4-	22o	12 27 12 6	5 12 18 22				114	14	0.8
26	4- 4- 3o 2o 4- 4o 6- 5-	30+	22 22 15 7	22 27 67 39				221	28	1.2
27	4+ 5- 5- 5- 4- 3o 2- 3-	29+	32 39 39 39	22 15 6 12				204	26	1.2
28	2+ 3+ 2+ 4o 5+ 3+ 3o 5+	29o	9 18 9 27	56 18 15 56				208	26	1.2
29	6o 6o 6- 5- 6o 4o 6- 4+	42+	80 80 67 39	80 27 67 32				472	59	1.7
30	3- 4- 4o 3o 2o 4o 3- 3+	25+	12 22 27 15	7 27 12 18				140	18	1.0

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	May 1973	ap	Sum	Ap	Cp
1	3- 3+ 2+ 1o 2- 2+ 5- 5-	23-	12 18 9 4	6 9 39 39	136	17	0.9
2	3+ 3o 1+ 2- 2- 2+ 3- 4o	20o	18 15 5 6	6 9 12 27	98	12	0.7
3	3o 3- 3o 2o 2- 1o 2o 2o	17+	15 12 15 7	6 4 7 7	73	9	0.5
4	2o 3- 2- 1+ 2- 2- 1o 3o	15o	7 12 6 5	6 6 4 15	61	8	0.4
5	2+ 2o 0o 0o 1- 2+ 2+ 1o	11-	9 7 0 0	3 9 9 4	41	5	0.2
6	1- 1o 1+ 1- 2+ 3+ 4+ 4+	18o	3 4 5 3	9 18 32 32	106	13	0.8
7	3+ 4- 4- 2+ 3o 3+ 3- 2+	24+	18 22 22 9	15 18 12 9	125	16	0.9
8	2o 3- 3- 3o 4- 4o 4- 3+	25o	7 12 12 15	22 27 22 18	135	17	0.9
9	3- 2o 2+ 2o 4o 3o 1+ 3o	20+	12 7 9 7	27 15 5 15	97	12	0.7
10	2+ 2+ 1+ 2- 3- 2- 2- 0+	14o	9 9 5 6	12 6 6 2	55	7	0.3
11	1+ 1o 3- 1+ 1- 1o 2- 3-	12+	5 4 12 5	3 4 6 12	51	6	0.3
12	3- 1- 2- 3o 2- 1o 1+ 2o	14o	12 3 6 15	6 4 5 7	58	7	0.4
13	4o 2o 4- 3o 1+ 2+ 3o 5+	25-	27 7 22 15	5 9 15 56	156	20	1.0
14	8- 7- 6o 5+ 6- 4+ 6o 5-	46+	179 111 80 56	67 32 80 39	644	80	1.8
15	5- 5- 4o 3+ 4+ 4+ 5+ 5+	36o	39 39 27 18	32 32 56 56	299	37	1.4
16	5o 4o 5- 3+ 4- 3o 2o 6o	32-	48 27 39 18	22 15 7 80	256	32	1.3
17	5o 5- 4- 3+ 4o 4o 3+ 3o	31o	48 39 22 18	27 27 18 15	214	27	1.2
18	4+ 4o 4+ 3o 3o 3+ 3- 4-	28+	32 27 32 15	15 18 12 22	173	22	1.1
19	4- 3+ 4- 3+ 4+ 4- 3o 4-	29-	22 18 22 18	32 22 15 22	171	21	1.1
20	4- 3+ 4- 4- 4+ 4- 4- 4-	30-	22 18 22 22	32 22 22 22	182	23	1.1
21	4- 5- 7o 6+ 5- 3- 2- 4-	34+	22 39 132 94	39 12 6 22	366	46	1.5
22	4- 5o 3+ 4- 3- 3o 3- 3o	27o	22 48 18 22	12 15 12 15	164	20	1.0
23	4- 3o 4- 4- 3- 2+ 1+ 3-	23o	22 15 22 22	12 9 5 12	119	15	0.8
24	1+ 2- 1o 1o 1- 1o 1- 0+	8-	5 6 4 4	3 4 3 2	31	4	0.1
25	0+ 1+ 2o 1+ 1+ 2+ 2o 1+	12o	2 5 7 5	5 9 7 5	45	6	0.3
26	4- 3- 1+ 1+ 1o 1- 1+ 2-	14-	22 12 5 5	4 3 5 6	62	8	0.4
27	2- 3o 2+ 1o 1- 2- 3o 3+	17-	6 15 9 4	3 6 15 18	76	10	0.5
28	2o 2o 3- 3- 2+ 2+ 2- 1o	17-	7 7 12 12	9 9 6 4	66	8	0.4
29	0+ 1o 1- 1o 1o 1- 1o 1-	6+	2 4 3 4	4 3 4 3	27	3	0.1
30	0+ 1- 0+ 0+ 1o 1- 1- 0+	4+	2 3 2 2	4 3 3 2	21	3	0.0
31	0+ 1- 1- 1o 2- 1+ 1+ 2-	9-	2 3 3 4	6 5 5 6	34	4	0.1

	Kp	Sum	June 1973	ap	Sum	Ap	Cp
1	1- 1- 1+ 1o 0+ 0+ 1o 1-	6o	3 3 5 4	2 2 4 3	26	3	0.1
2	1o 3o 5- 4- 4o 3+ 4- 3-	26o	4 15 39 22	27 18 22 12	159	20	1.0
3	3- 3o 3+ 3o 2+ 3- 3- 3o	23-	12 15 18 15	9 12 12 15	108	14	0.8
4	3- 3- 3+ 3o 3+ 4- 4o 4o	27-	12 12 18 15	18 22 27 27	151	19	1.0
5	3- 2+ 3- 3+ 2o 3- 2- 2o	19+	12 9 12 18	7 12 6 7	83	10	0.6
6	2o 3- 3- 2+ 2+ 2o 1+ 1o	16+	7 12 12 9	9 7 5 4	65	8	0.4
7	2- 1o 1- 1- 1- 1- 1o 0+	7-	6 4 3 3	3 3 4 2	28	4	0.1
8	2- 2o 1o 1- 1+ 1o 2+ 2+	12+	6 7 4 3	5 4 9 9	47	6	0.3
9	2o 2o 1o 2- 1+ 3+ 2+ 3o	17-	7 7 4 6	5 18 9 15	71	9	0.5
10	2+ 3- 2o 3+ 2o 4- 6+ 6+	29-	9 12 7 18	7 22 94 94	263	33	1.3
11	4o 5- 4o 4o 5o 5+ 4o 4-	35-	27 39 27 27	48 56 27 22	273	34	1.3
12	4+ 4+ 3+ 4+ 4o 5- 4o 4+	33+	32 32 18 32	27 39 27 32	239	30	1.3
13	5- 4o 2o 4- 4- 3+ 4- 4+	29+	39 27 7 22	22 18 22 32	189	24	1.1
14	4+ 4o 3o 4- 3- 3- 2+ 3-	25+	32 27 15 22	12 12 9 12	141	18	1.0
15	3- 3o 3- 2o 3- 2+ 3+ 3+	22o	12 15 12 7	12 9 18 18	103	13	0.7
16	3- 2o 2+ 3+ 2+ 2+ 3- 3o	21-	12 7 9 18	9 9 12 15	91	11	0.7
17	3+ 3o 4o 3o 3+ 2+ 3+ 4o	26+	18 15 27 15	18 9 18 27	147	18	1.0
18	5+ 4o 4+ 4+ 3o 3o 4+ 4o	32+	56 27 32 32	15 15 32 27	236	30	1.3
19	5+ 5- 5o 4- 4- 3+ 5+ 5-	36-	56 39 48 22	22 18 56 39	300	38	1.4
20	4- 4- 4- 3+ 3+ 2+ 4- 2+	26o	22 22 22 18	18 9 22 9	142	18	1.0
21	2+ 2+ 2+ 1+ 1o 2- 1- 1o	13-	9 9 9 5	4 6 3 4	49	6	0.3
22	1o 1- 0+ 0+ 0+ 0+ 1o 1o	5o	4 3 2 2	2 2 4 4	23	3	0.1
23	1+ 1+ 1+ 3o 3o 2o 2- 3+	17o	5 5 5 15	15 7 6 18	76	10	0.5
24	4+ 4+ 4o 4+ 5o 5o 5o 2o	34o	32 32 27 32	48 48 48 7	274	34	1.4
25	2o 1+ 1- 1+ 2o 2o 2- 2+	13+	7 5 3 5	7 7 6 9	49	6	0.3
26	1o 1+ 1o 2- 1+ 1o 2- 0+	9+	4 5 4 6	5 4 6 2	36	4	0.2
27	1o 2o 1- 1- 1o 1o 1+ 2-	9+	4 7 3 3	4 4 5 6	36	4	0.2
28	3o 4- 4o 3+ 4o 1+ 2- 5o	26o	15 22 27 18	27 5 6 48	168	21	1.1
29	4+ 5- 6+ 4+ 5o 5- 4o 3o	36+	32 39 94 32	48 39 27 15	326	41	1.5
30	3o 4+ 5- 5- 5- 3+ 4o 4-	32+	15 32 39 39	39 18 27 22	231	29	1.3

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	July 1973	ap	Sum	Ap	Cp
1	3o 4- 4- 3+ 3+ 4- 4o 2o	27-	15 22 22 18	18 22 27 7	151	19	1.0
2	3o 3- 2+ 3o 2+ 2o 2+ 2+	20o	15 12 9 15	9 7 9 9	85	11	0.6
3	3- 2o 2- 2+ 2+ 2o 1+ 1o	15+	12 7 6 9	9 7 5 4	59	7	0.4
4	1o 1+ 1+ 2- 1- 1o 1o 1+	9+	4 5 5 6	3 4 4 5	36	4	0.2
5	1+ 1- 1o 1- 1+ 1o 1o 0+	7+	5 3 4 3	5 4 4 2	30	4	0.1
6	1- 1- 1- 1o 1+ 1- 1- 0+	6o	3 3 3 4	5 3 3 2	26	3	0.1
7	0+ 0+ 1+ 1- 1- 1- 1o 0+	5+	2 2 5 3	3 3 4 2	24	3	0.1
8	1o 3- 2- 3+ 4- 3- 3- 3o	21-	4 12 6 18	22 12 12 15	101	13	0.7
9	1o 2o 2+ 2o 3- 3o 2- 1o	16-	4 7 9 7	12 15 6 4	64	8	0.4
10	3o 1o 1+ 1+ 1+ 1o 1- 1o	11-	15 4 5 5	5 4 3 4	45	6	0.3
11	1o 2- 1+ 2- 1- 1o 2+ 3-	12+	4 6 5 6	3 4 9 12	49	6	0.3
12	2- 1+ 1o 2- 1+ 2- 3- 2o	13+	6 5 4 6	5 6 12 7	51	6	0.3
13	2- 2o 2o 2o 2+ 3- 2- 2+	17-	6 7 7 7	9 12 6 9	63	8	0.4
14	2+ 2o 2+ 2- 1+ 2o 2+ 3-	17-	9 7 9 6	5 7 9 12	64	8	0.4
15	4o 5- 4- 3+ 4- 4- 5+ 5o	33+	27 39 22 18	22 22 56 48	254	32	1.3
16	5o 3o 3o 2- 2o 1+ 3- 2+	21o	48 15 15 6	7 5 12 9	117	15	0.8
17	3o 2o 1- 1o 1- 1o 2- 2-	12-	15 7 3 4	3 4 6 6	48	6	0.3
18	2+ 1+ 1o 1o 2- 2- 2- 1+	12o	9 5 4 4	6 6 6 5	45	6	0.3
19	2- 2o 2o 3+ 3- 1+ 2+ 3+	19-	6 7 7 18	12 5 9 18	82	10	0.6
20	2+ 2o 2o 3o 1+ 3- 3- 2-	18-	9 7 7 15	5 12 12 6	73	9	0.5
21	3- 1o 1+ 1+ 1+ 0+ 1- 2o	11-	12 4 5 5	5 2 3 7	43	5	0.2
22	3o 1+ 1- 1- 1- 1o 2+ 1+	11o	15 5 3 3	3 4 9 5	47	6	0.3
23	3o 3o 3o 3+ 3- 2- 3- 3o	22+	15 15 15 18	12 6 12 15	108	14	0.8
24	2- 2- 2- 2- 2- 1o 1+ 2o	13-	6 6 6 6	6 4 5 7	46	6	0.3
25	3- 3- 3o 3- 2o 1o 2o 1+	17+	12 12 15 12	7 4 7 5	74	9	0.5
26	2+ 3+ 4o 4+ 5o 5o 5o 5+	34+	9 18 27 32	48 48 48 56	286	36	1.4
27	5- 3+ 4o 4o 4o 4o 5o 3+	32+	39 18 27 27	27 27 48 18	231	29	1.3
28	3o 3o 3+ 3o 3- 3o 3- 2+	23o	15 15 18 15	12 15 12 9	111	14	0.8
29	3o 4o 3+ 3+ 3o 2+ 3+ 4o	26+	15 27 18 18	15 9 18 27	147	18	1.0
30	4- 3- 3o 3+ 3o 4o 4o 3o	27-	22 12 15 18	15 27 27 15	151	19	1.0
31	4+ 5o 5- 5- 4- 3- 2- 2o	29-	32 48 39 39	22 12 6 7	205	26	1.2

	Kp	Sum	Aug. 1973	ap	Sum	Ap	Cp
1	3+ 3+ 3o 3o 2- 1+ 3- 2+	21-	18 18 15 15	6 5 12 9	98	12	0.7
2	3o 3o 4o 2+ 4+ 4- 2- 1-	23-	15 15 27 9	32 22 6 3	129	16	0.9
3	2- 1+ 1o 1+ 2- 2o 1+ 3o	13+	6 5 4 5	6 7 5 15	53	7	0.3
4	3- 1o 1o 2- 1- 1+ 2+ 3+	14o	12 4 4 6	3 5 9 18	61	8	0.4
5	2+ 1- 1- 2- 3+ 3o 2+ 2o	16o	9 3 3 6	18 15 9 7	70	9	0.5
6	2+ 4- 3o 3- 4- 3o 2- 0+	20+	9 22 15 12	22 15 6 2	103	13	0.7
7	1+ 2o 2- 2o 3o 3- 2+ 2-	17-	5 7 6 7	15 12 9 6	67	8	0.5
8	3o 2o 3+ 2o 2+ 1o 1+ 2o	17o	15 7 18 7	9 4 5 7	72	9	0.5
9	2o 2o 2o 1+ 1+ 0+ 1- 1-	10+	7 7 7 5	5 2 3 3	39	5	0.2
10	2- 1+ 2o 2- 1- 1o 0+ 1-	9+	6 5 7 6	3 4 2 3	36	4	0.2
11	0+ 1- 0+ 1+ 2- 1o 1+ 1-	7+	2 3 2 5	6 4 5 3	30	4	0.1
12	0+ 1- 1+ 1- 1- 1- 1o 3+	9-	2 3 5 3	3 3 4 18	41	5	0.2
13	1o 2- 3o 2+ 3o 2o 3- 3+	19o	4 6 15 9	15 7 12 18	86	11	0.6
14	3o 2- 2- 2- 3- 2o 2+ 2-	17-	15 6 6 6	12 7 9 6	67	8	0.5
15	1- 1+ 1+ 1+ 1+ 1o 0+ 1+	9-	3 5 5 5	5 4 2 5	34	4	0.1
16	1o 1- 0+ 0+ 1+ 0+ 1o 1o	6o	4 3 2 2	5 2 4 4	26	3	0.1
17	0+ 0+ 0+ 1- 0+ 1- 0+ 1-	4-	2 2 2 3	2 3 2 3	19	2	0.0
18	0+ 1o 2- 1+ 2- 2- 1o 0+	9o	2 4 6 5	6 6 4 2	35	4	0.2
19	3- 2- 1o 1- 2+ 2- 1o 2-	13-	12 6 4 3	9 6 4 6	50	6	0.3
20	0o 1+ 2- 4- 3+ 2o 2- 1+	15o	0 5 6 22	18 7 6 5	69	9	0.5
21	1+ 3- 2o 1+ 2o 1o 1o 0+	12-	5 12 7 5	7 4 4 2	46	6	0.3
22	0+ 0o 0+ 3- 3- 4- 4- 4o	17+	2 0 2 12	12 22 22 27	99	12	0.7
23	3+ 3o 3+ 2+ 3+ 4+ 5- 4o	28+	18 15 18 9	18 32 39 27	176	22	1.1
24	6o 5o 5+ 6- 5+ 4- 3o 4-	38-	80 48 56 67	56 22 15 22	366	46	1.5
25	4- 5- 5o 5- 4- 3+ 5- 2o	32-	22 39 48 39	22 18 39 7	234	29	1.3
26	4o 4- 3o 3o 2+ 4o 3+ 3-	26o	27 22 15 15	9 27 18 12	145	18	1.0
27	5- 4o 4- 4- 4- 5o 3+ 3-	31-	39 27 22 22	22 48 18 12	210	26	1.2
28	3o 5- 4o 3+ 4+ 5o 3o 4o	31+	15 39 27 18	32 48 15 27	221	28	1.2
29	4- 4- 4+ 4o 3- 2o 4- 3+	27+	22 22 32 27	12 7 22 18	162	20	1.0
30	3o 3+ 4- 3+ 3- 2- 2+ 2o	22o	15 18 22 18	12 6 9 7	107	13	0.8
31	3- 3- 3o 2o 2+ 2o 2o 2-	18+	12 12 15 7	9 7 7 6	75	9	0.5

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	Sept. 1973				ap				Sum	Ap	Cp
1	1+ 2- 2- 1o 1+ 1- 1- 1+	10-	5	6	6	4	5	3	3	5	37	5	0.2
2	1+ 1o 1+ 1o 1o 3- 2- 2+	12+	5	4	5	4	4	12	6	9	49	6	0.3
3	1o 0+ 1- 1o 2- 2o 2+ 3o	12o	4	2	3	4	6	7	9	15	50	6	0.3
4	3- 2+ 3+ 3o 2+ 2+ 3+ 2+	22-	12	9	18	15	9	9	18	9	99	12	0.7
5	3+ 4o 2+ 2o 2+ 2+ 4+ 3-	23+	18	27	9	7	9	9	32	12	123	15	0.9
6	2+ 3- 2+ 2o 2o 3o 2- 1o	17o	9	12	9	7	7	15	6	4	69	9	0.5
7	1o 3o 4- 2o 2o 2o 1o 1o	16-	4	15	22	7	7	7	4	4	70	9	0.5
8	1- 1o 2o 2o 2+ 3- 2- 3-	15o	3	4	7	7	9	12	6	12	60	8	0.4
9	1+ 1o 2o 4o 4+ 4o 6- 8-	30o	5	4	7	27	32	27	67	179	348	44	1.5
10	3- 2- 3- 4- 4+ 5- 6o 3o	29-	12	6	12	22	32	39	80	15	218	27	1.2
11	4+ 3+ 1+ 1o 2- 3- 3- 2+	19+	32	18	5	4	6	12	12	9	98	12	0.7
12	3- 1o 0+ 1+ 2- 3- 2+ 2-	14-	12	4	2	5	6	12	9	6	56	7	0.4
13	2o 1- 1o 3- 3o 2o 3- 1+	15+	7	3	4	12	15	7	12	5	65	8	0.4
14	2- 2- 1+ 1o 0+ 0+ 0+ 1o	8-	6	6	5	4	2	2	2	4	31	4	0.1
15	2o 1o 1+ 3- 3o 3- 3- 4o	19+	7	4	5	12	15	12	12	27	94	12	0.7
16	4- 4o 4- 3- 3- 2o 1o 2-	21+	22	27	22	12	12	7	4	6	112	14	0.8
17	2o 3- 3+ 3o 1+ 1- 2- 3-	17+	7	12	18	15	5	3	6	12	78	10	0.5
18	3- 2- 1o 2o 2o 1+ 2o 1+	14o	12	6	4	7	7	5	7	5	53	7	0.3
19	0+ 1o 1o 0+ 0+ 1o 2- 1-	6+	2	4	4	2	2	4	6	3	27	3	0.1
20	2o 2- 2o 1+ 3o 3+ 3- 4-	20-	7	6	7	5	15	18	12	22	92	12	0.7
21	4+ 3o 4- 3- 3- 3- 2+ 2o	23+	32	15	22	12	12	12	9	7	121	15	0.9
22	1+ 2o 2o 2+ 2o 3- 4+ 5+	22o	5	7	7	9	7	12	32	56	135	17	0.9
23	5o 5o 4+ 7o 7- 4o 6o 4o	42o	48	48	32	132	111	27	80	27	505	63	1.7
24	4o 5- 4o 3+ 4- 5- 3+ 4+	32o	27	39	27	18	22	39	18	32	222	28	1.2
25	3+ 3o 3+ 2+ 4- 3- 6- 5+	29+	18	15	18	9	22	12	67	56	217	27	1.2
26	4- 4- 4- 5+ 5- 4+ 2o 1-	28o	22	22	22	56	39	32	7	3	203	25	1.2
27	1+ 0+ 2o 3+ 2+ 3o 1+ 2-	15+	5	2	7	18	9	15	5	6	67	8	0.5
28	1o 0o 0+ 2o 2- 1o 2- 1o	9-	4	0	2	7	6	4	6	4	33	4	0.1
29	2o 1+ 1o 1o 1o 1o 0+ 1+	9o	7	5	4	4	4	4	2	5	35	4	0.2
30	1o 0+ 1o 1o 1- 1- 2- 1o	7+	4	2	4	4	3	3	6	4	30	4	0.1

	Kp	Sum	Oct. 1973				ap				Sum	Ap	Cp
1	2+ 2- 1o 0+ 1o 1- 2o 2-	11-	9	6	4	2	4	3	7	6	41	5	0.2
2	2- 5- 5o 5- 5- 4o 4o 4-	32+	6	39	48	39	39	27	27	22	247	31	1.3
3	5o 7+ 6- 4+ 5- 4- 2o 3+	36o	48	154	67	32	39	22	7	18	387	48	1.6
4	2+ 3o 3+ 1o 0+ 3+ 4- 1o	18o	9	15	18	4	2	18	22	4	92	12	0.7
5	1o 0+ 1- 2+ 1o 3- 3+ 4+	16-	4	2	3	9	4	12	18	32	84	10	0.6
6	4o 2o 3- 2o 0+ 2+ 3+ 3o	20-	27	7	12	7	2	9	18	15	97	12	0.7
7	3+ 1+ 1+ 1o 1o 1- 0+ 2o	11o	18	5	5	4	4	3	2	7	48	6	0.3
8	3- 2o 1+ 2- 1o 1- 2+ 1-	12+	12	7	5	6	4	3	9	3	49	6	0.3
9	1+ 0+ 0+ 1o 2- 1+ 4o 4o	14o	5	2	2	4	6	5	27	27	78	10	0.5
10	3o 5o 3+ 2+ 3o 4o 4- 3o	27+	15	48	18	9	15	27	22	15	169	21	1.1
11	3+ 3o 2o 2o 2+ 2+ 3- 2+	20o	18	15	7	7	9	9	12	9	86	11	0.6
12	2+ 3+ 3o 2o 3- 3- 2o 5-	23-	9	18	15	7	12	12	7	39	119	15	0.8
13	4+ 4- 3o 3- 2- 2+ 4o 3-	24+	32	22	15	12	6	9	27	12	135	17	0.9
14	2o 1+ 2o 2o 2- 2o 3- 1+	15o	7	5	7	7	6	7	12	5	56	7	0.4
15	3+ 2- 1+ 2- 0+ 0+ 1- 0+	10-	18	6	5	6	2	2	3	2	44	6	0.2
16	1o 2+ 5o 4o 5- 4o 5+ 4+	31-	4	9	48	27	39	27	56	32	242	30	1.3
17	4+ 4+ 4- 5- 4o 4- 4- 4-	32o	32	32	22	39	27	22	22	22	218	27	1.2
18	3+ 3+ 4- 3+ 5o 4o 3- 3o	28+	18	18	22	18	48	27	12	15	178	22	1.1
19	3o 4+ 4+ 4o 3o 2- 3o 3o	26+	15	32	32	27	15	6	15	15	157	20	1.0
20	3- 4o 4+ 3+ 3+ 4+ 2+ 3-	27o	12	27	32	18	18	32	9	12	160	20	1.0
21	5- 4o 3o 4+ 5o 4+ 5+ 5o	36-	39	27	15	32	48	32	56	48	297	37	1.4
22	5- 4o 4- 3+ 3+ 4- 2+ 2-	27-	39	27	22	18	18	22	9	6	161	20	1.0
23	1+ 2+ 3- 1o 1+ 2- 1- 1+	12+	5	9	12	4	5	6	3	5	49	6	0.3
24	2- 3- 2- 2o 2o 1- 1+ 3-	15-	6	12	6	7	7	3	5	12	58	7	0.4
25	2o 1o 1+ 1o 1+ 1o 2- 2-	11o	7	4	5	4	5	4	6	6	41	5	0.2
26	3- 1+ 1- 0o 0+ 0o 0+ 0+	6-	12	5	3	0	2	0	2	2	26	3	0.1
27	0+ 0+ 1o 0o 1- 2- 2+ 1-	7o	2	2	4	0	3	6	9	3	29	4	0.1
28	1o 2- 3+ 3o 3- 4o 4+ 5o	25o	4	6	18	15	12	27	32	48	162	20	1.0
29	6o 6- 5+ 6+ 7- 6o 7o 6-	49-	80	67	56	94	111	80	132	67	687	86	1.8
30	6- 4o 4o 3- 4- 4- 3+ 4o	31o	67	27	27	12	22	22	18	27	222	28	1.2
31	5- 5o 4o 3- 2- 2o 2- 1+	23o	39	48	27	12	6	7	6	5	150	19	1.0

TABLE 4 PLANETARY THREE-HOUR-INDICES Kp, EQUIVALENT RANGES ap, DAILY AVERAGE RANGES Ap, AND PLANETARY DAILY CHARACTER FIGURES Cp.

	Kp	Sum	Nov. 1973	ap	Sum	Ap	Cp
1	0+ 0o 0o 1o 2+ 2- 2- 1o	8o	2 0 0 4	9 6 6 4	31	4	0.1
2	3o 1+ 2o 1+ 2- 2o 2o 2-	15o	15 5 7 5	6 7 7 6	58	7	0.4
3	2o 1+ 1+ 1o 1o 1- 1o 1+	10-	7 5 5 4	4 3 4 5	37	5	0.2
4	3- 2- 1- 2o 4o 3+ 4- 5o	23o	12 6 3 7	27 18 22 48	143	18	1.0
5	2+ 2+ 3o 3+ 2o 2- 4o 3+	22o	9 9 15 18	7 6 27 18	109	14	0.8
6	3o 2+ 2- 1+ 1o 2- 3o 3o	17o	15 9 6 5	4 6 15 15	75	9	0.5
7	3+ 4- 6- 4- 3- 2+ 5o 4o	30+	18 22 67 22	12 9 48 27	225	28	1.2
8	2+ 3- 3- 3+ 2o 1+ 1+ 3+	19o	9 12 12 18	7 5 5 18	86	11	0.6
9	2+ 2o 3- 3+ 4- 3- 2o 2o	21-	9 7 12 18	22 12 7 7	94	12	0.7
10	2- 3+ 3- 2o 2- 1+ 1+ 1+	15+	6 18 12 7	6 5 5 5	64	8	0.4
11	1+ 2- 1+ 2- 1+ 2+ 1o 1+	12o	5 6 5 6	5 9 4 5	45	6	0.3
12	2- 1o 1o 0+ 1- 1o 1- 1+	8-	6 4 4 2	3 4 3 5	31	4	0.1
13	2+ 1+ 2- 1o 2+ 4o 3o 2+	18o	9 5 6 4	9 27 15 9	84	10	0.6
14	2- 3o 1+ 1+ 1- 2o 3o 2o	15o	6 15 5 5	3 7 15 7	63	8	0.4
15	2o 2o 2o 2+ 3o 2- 2o 2o	17o	7 7 7 9	15 6 7 7	65	8	0.4
16	2- 1+ 2o 2+ 4- 1- 2+ 4-	18-	6 5 7 9	22 3 9 22	83	10	0.6
17	5o 3+ 3- 2o 3+ 2+ 3+ 2+	24+	48 18 12 7	18 9 18 9	139	17	0.9
18	4+ 4- 5- 4- 3- 2- 3- 1o	24+	32 22 39 22	12 6 12 4	149	19	1.0
19	1- 1o 1+ 1o 1+ 1+ 1- 1-	8o	3 4 5 4	5 5 3 3	32	4	0.1
20	1o 1+ 1+ 2o 2o 1o 2- 2-	12o	4 5 5 7	7 4 6 6	44	6	0.2
21	3o 3- 2o 2+ 2+ 4o 6- 5-	27-	15 12 7 9	9 27 67 39	185	23	1.1
22	3+ 3- 1o 1o 1o 1o 1- 1o	12-	18 12 4 4	4 4 3 4	53	7	0.3
23	1o 2o 1o 1+ 3- 3- 3- 1o	14+	4 7 4 5	12 12 12 4	60	8	0.4
24	0+ 1o 2o 2o 5- 5o 5+ 5o	25+	2 4 7 7	39 48 56 48	211	26	1.2
25	6- 6- 5+ 4- 5- 4+ 4+ 4-	37+	67 67 56 22	39 32 32 22	337	42	1.5
26	4+ 4+ 3- 3+ 3o 3+ 2+ 2o	25+	32 32 12 18	15 18 9 7	143	18	1.0
27	4- 2+ 3- 2- 3+ 3o 3- 3o	22+	22 9 12 6	18 15 12 15	109	14	0.8
28	3- 2o 1+ 1+ 2- 1o 1- 2+	13o	12 7 5 5	6 4 3 9	51	6	0.3
29	2o 0o 1+ 2+ 1- 2- 2- 1-	10+	7 0 5 9	3 6 6 3	39	5	0.2
30	0+ 0+ 0o 1o 1- 2- 2o 3-	9-	2 2 0 4	3 6 7 12	36	4	0.2

	Kp	Sum	Dec. 1973	ap	Sum	Ap	Cp
1	2+ 1o 1- 1+ 0+ 0o 1- 1-	7o	9 4 3 5	2 0 3 3	29	4	0.1
2	1+ 0+ 1- 1o 0+ 0o 0o 1-	4+	5 2 3 4	2 0 0 3	19	2	0.0
3	1+ 0+ 1- 1o 0+ 2- 2o 2+	10-	5 2 3 4	2 6 7 9	38	5	0.2
4	4- 3+ 3o 3+ 3- 4o 5- 6o	31-	22 18 15 18	12 27 39 80	231	29	1.3
5	5o 3o 3o 2- 1- 3+ 3- 4-	23o	48 15 15 6	3 18 12 22	139	17	0.9
6	4- 2+ 3o 1- 2o 1+ 1+ 3+	18-	22 9 15 3	7 5 5 18	84	10	0.6
7	3+ 2+ 1o 1o 2o 1+ 2- 2+	15o	18 9 4 4	7 5 6 9	62	8	0.4
8	2+ 2+ 1o 2- 2+ 1+ 1- 2+	14o	9 9 4 6	9 5 3 9	54	7	0.3
9	2+ 3o 3o 4o 4+ 4+ 3+ 4-	28o	9 15 15 27	32 32 18 22	170	21	1.1
10	3- 3+ 2- 2- 0+ 0+ 0+ 3-	13o	12 18 6 6	2 2 2 12	60	8	0.4
11	4- 2+ 1+ 2- 2o 2o 2- 1o	16-	22 9 5 6	7 7 6 4	66	8	0.4
12	1+ 1o 1o 1- 1o 2- 2- 1-	9o	5 4 4 3	4 6 6 3	35	4	0.2
13	1+ 2+ 1+ 1o 0o 1- 2- 1o	9+	5 9 5 4	0 3 6 4	36	4	0.2
14	0+ 0+ 0+ 0+ 2o 2+ 2+ 3o	11o	2 2 2 2	7 9 9 15	48	6	0.3
15	3- 2+ 2+ 2+ 3- 1- 1- 1+	15o	12 9 9 9	12 3 3 5	62	8	0.4
16	2o 1o 1- 1- 1- 1- 1- 1-	7o	7 4 3 3	3 3 3 3	29	4	0.1
17	1o 3- 2- 1o 1- 1o 1+ 2+	12-	4 12 6 4	3 4 5 9	47	6	0.3
18	1+ 0+ 0+ 1- 0o 1o 1o 0+	5o	5 2 2 3	0 4 4 2	22	3	0.0
19	0+ 1- 1+ 2o 3- 4+ 4o 3+	19-	2 3 5 7	12 32 27 18	106	13	0.8
20	3o 4+ 4+ 4- 4- 4o 5+ 4o	32+	15 32 32 22	22 27 56 27	233	29	1.3
21	4- 4o 5o 4- 5o 5o 4+ 4o	35-	22 27 48 22	48 48 32 27	274	34	1.4
22	5o 4- 4- 3+ 4+ 3+ 3+ 4-	30+	48 22 22 18	32 18 18 22	200	25	1.2
23	4o 4o 3- 3+ 2+ 3+ 3+ 3-	26-	27 27 12 18	9 18 18 12	141	18	1.0
24	2+ 2- 1o 2o 0+ 0+ 0+ 0+	8+	9 6 4 7	2 2 2 2	34	4	0.1
25	0+ 1- 0+ 0o 1+ 2- 1- 1+	6+	2 3 2 0	5 6 3 5	26	3	0.1
26	1o 1o 1- 2- 1o 1+ 1+ 1-	9-	4 4 3 6	4 5 5 3	34	4	0.1
27	1+ 0+ 1+ 1+ 1o 1+ 2+ 3o	12o	5 2 5 5	4 5 9 15	50	6	0.3
28	3o 3o 2+ 1o 1+ 2o 3+ 3+	19+	15 15 9 4	5 7 18 18	91	11	0.7
29	4- 4- 3- 3+ 3o 3o 4- 4o	27o	22 22 12 18	15 15 22 27	153	19	1.0
30	3+ 3+ 3o 3+ 3- 3- 3o 2+	24-	18 18 15 18	12 12 15 9	117	15	0.8
31	3o 4o 4- 3- 3- 3+ 3o 3+	26-	15 27 22 12	12 18 15 18	139	17	0.9

TABLE 5 FREQUENCIES OF Kp INDICES, 1973

Kp	Jan	Feb	Mch	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0o	4	2	4	1	2	.	.	2	1	3	4	6
+	17	6	10	4	9	8	6	20	12	15	5	23
-	11	4	5	19	17	13	19	20	10	11	14	27
1o	8	11	14	15	20	20	26	18	34	17	27	24
+	15	12	11	11	20	14	27	24	20	16	29	24
-	15	16	19	10	21	11	27	27	21	20	25	15
2o	16	17	21	8	15	18	23	22	28	18	30	10
+	27	18	17	9	18	20	21	15	18	16	22	23
-	19	25	14	19	21	20	24	16	28	19	20	15
3o	19	23	22	11	21	18	25	21	12	15	13	17
+	22	14	10	10	16	21	15	18	11	19	15	22
-	25	14	7	14	26	17	9	18	11	14	11	16
4o	17	16	13	18	9	20	11	9	9	20	5	11
+	14	12	15	13	9	15	2	4	9	13	5	7
-	7	9	7	24	9	11	4	6	4	10	4	1
5o	10	10	23	12	3	7	7	4	2	9	5	5
+	.	5	14	14	4	4	2	2	3	3	2	1
-	1	2	9	13	1	.		1	2	4	4	.
6o	1	4	4	8	3	.		1	2	2		1
+		2	4	1	1	3			.	1		
-		1	3	.	1				1	1		
7o		.	2	1	1				1	1		
+		1		1	.				.	1		
-				3	1				1			
8o				.								
+				1								
9-												
o												
	248	224	248	240	248	240	248	248	240	248	240	248

TABLE 6 MONTHLY AVERAGES OF Ap AND Cp, 1973

	Jan	Feb	Mch	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Ap	16	20	25	30	17	17	12	12	14	18	12	11	17.0
Cp	0.75	0.87	0.92	1.04	0.72	0.79	0.58	0.58	0.64	0.78	0.58	0.55	0.73

TABLE 7 LIST OF MAGNETIC STORMS, 1973

Gives consecutive sequences of three-hour-intervals (Eighths E of the Greenwich day) in which at least one Kp reached or surpassed 7+, and no Kp was smaller than 5-.

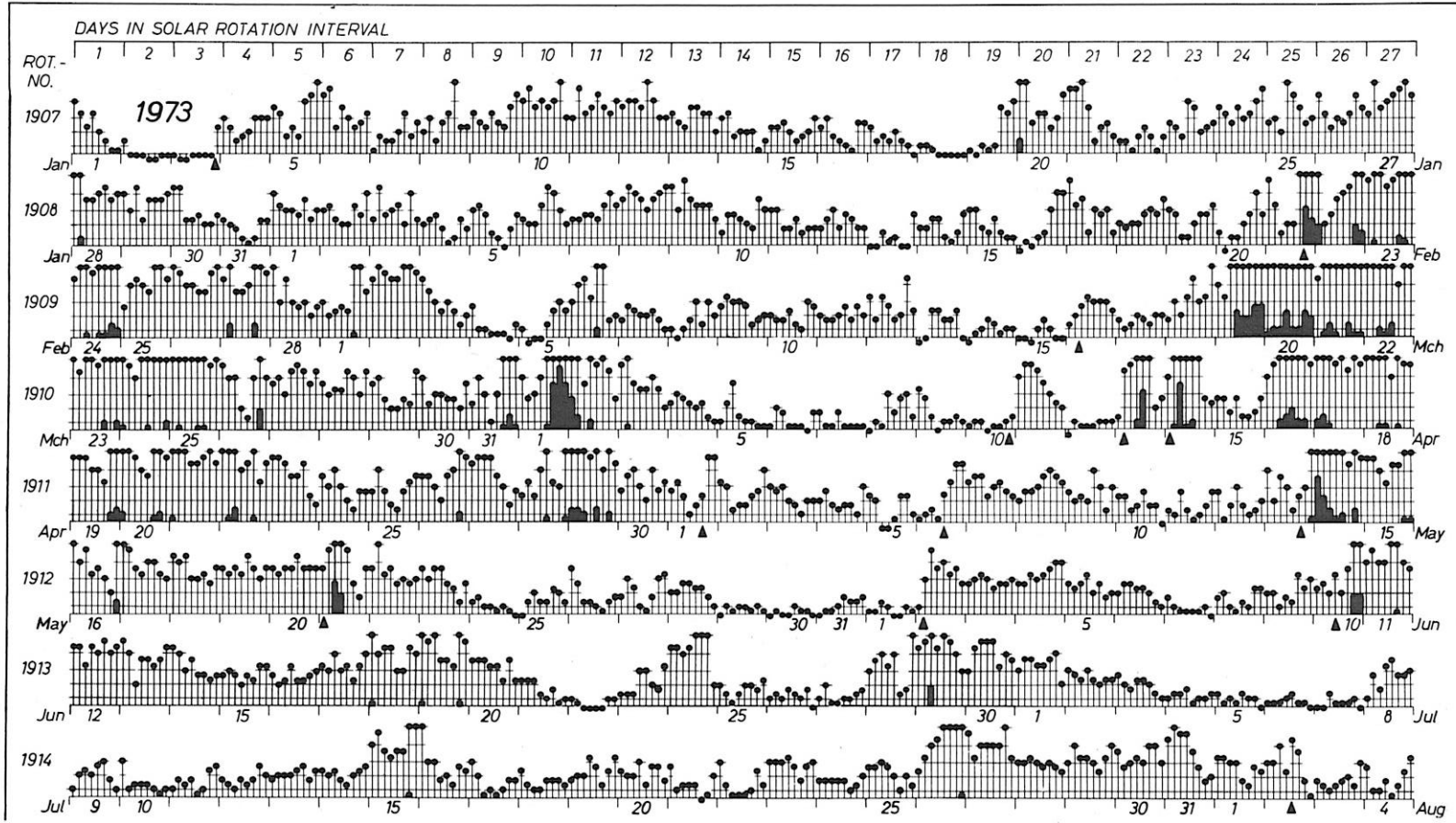
Beginning	s.c. d. GMT	Duration Eighths	Number of Eighths with Kp= 7- 7o 7+	8- 8o 8+	9- 9o
Feb 21 E6	21 18.43	4	1 . 1	. . .	. .
Apr 01 E5	-	6	. 1 .	2 . 1	. .
Apr 13 E3	13 04.38	4	. . 1	. . .	. .
Apr 14 E2	14 02.47	5	. . .	1 . .	. .
May 13 E8	13 17.21	6	1 . .	1 . .	. .
Sep 09 E7	-	2	. . .	1 . .	. .
Oct 03 E1	-	3	. . 1	. . .	. .

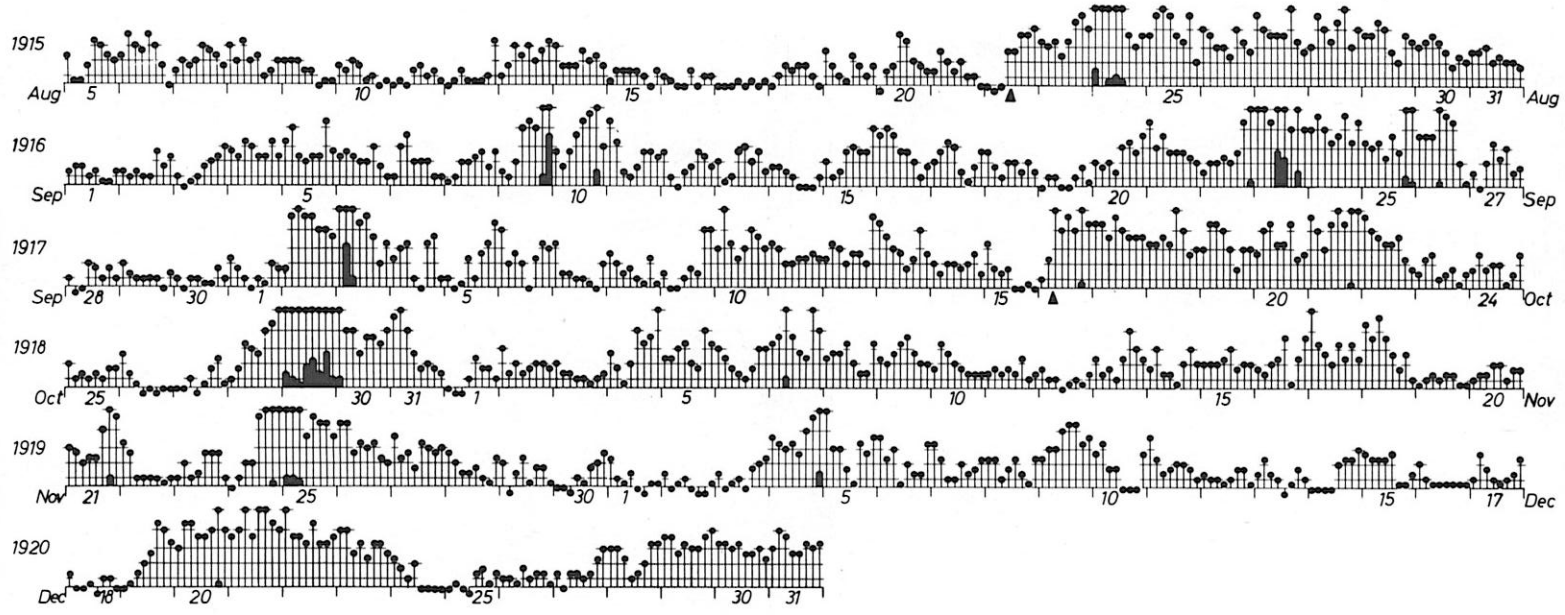
TABLE 8 VERY QUIET INTERVALS, 1973

Kp not exceeding 1+ for at least 8 intervals
(= one day) in succession

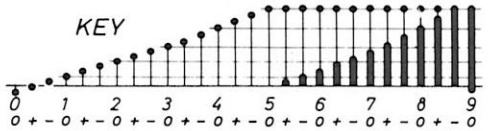
First. . . . . last Eighth		Duration Eighths
Jan 01 E6	03 E7	18
17 E6	19 E5	16
Feb 15 E6	16 E5	8
Mch 04 E2	05 E5	12
14 E5	15 E4	8
Apr 09 E3	10 E8	14
12 E1	13 E1	9
May 24 E3	25 E2	8
28 E8	31 E4	21
Jun 01 E1	02 E1	9
21 E7	23 E3	13
Jul 04 E5	08 E1	29
10 E2	11 E1	8

First. . . . . last Eighth		Duration Eighths
Aug 10 E5	11 E4	8
11 E6	12 E7	10
15 E1	18 E2	26
Sep 01 E4	02 E5	10
29 E2	30 E6	13
Oct 26 E2	27 E5	12
Nov 18 E8	20 E3	12
Dec 01 E2	03 E5	20
16 E2	17 E1	8
18 E1	19 E3	11
24 E5	25 E5	9
26 E5	27 E6	10


DAYS IN SOLAR ROTATION INTERVAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
ROT.-NO.
1973
1907
Jan 1 5 10 15 20 25 27 Jan
1908
Jan 28 30 31 1 5 10 15 20 23 Feb
1909
Feb 24 25 28 1 5 10 15 20 22 Mch
1910
Mch 23 25 30 31 1 5 10 15 18 Apr
1911
Apr 19 20 25 30 1 5 10 15 May
1912
May 16 20 25 30 31 1 5 10 11 Jun
1913
Jun 12 15 20 25 30 1 5 8 Jul
1914
Jul 9 10 15 20 25 30 31 1 4 Aug



Kp (after Bartels)



▲ = sudden commencement

1973

JAN. 1973

	3 Kn								σn								An
1	9	8	6	10	6	4	1	1	4422	3322	31	26	16	34	16	9	3	2	17
2	2	0	1	0	0	1	0	0	2120	1221	5	1	2	0	0	2	1	0	1
3	0	1	0	1	2	2	0	7	1211	2403	1	2	0	2	4	5	0	18	4
4	7	5	3	6	6	9	9	8	2323	4252	17	13	7	15	16	27	32	23	19
5	10	8	5	7	6	11	11	13	4223	3533	34	24	13	19	14	43	48	69	33
6	12	11	6	12	8	6	8	9	2535	3043	51	49	14	54	25	14	25	32	33
7	3	3	3	5	8	9	5	7	2113	5425	6	7	7	12	23	31	11	20	15
8	4	7	4	8	11	13	7	5	3512	4234	10	19	8	21	42	68	17	13	25
9	9	6	5	10	9	8	10	11	1124	4254	28	14	13	39	30	22	39	45	29
10	10	12	10	12	9	12	14	8	3434	3453	37	60	34	56	33	56	76	22	47
11	8	12	8	11	13	12	9	10	3122	5522	23	54	22	43	67	53	32	34	41
12	10	10	10	11	15	12	9	9	2433	3442	37	39	37	41	92	53	31	28	45
13	8	6	6	12	11	10	9	6	3213	4243	23	16	14	51	48	34	32	16	29
14	7	8	5	6	7	5	3	4	3231	2222	18	24	12	14	18	11	6	8	14
15	5	5	7	7	5	6	7	9	3413	3363	12	11	17	18	11	14	18	30	16
16	5	7	5	3	3	2	7	7	2431	2243	11	18	11	7	6	5	20	17	12
17	4	3	5	4	7	5	3	0	3132	4241	10	7	12	9	17	11	7	1	9
18	2	2	3	0	1	3	1	1	2251	2222	4	4	6	1	3	6	2	3	4
19	3	1	4	3	4	12	10	12	1232	3441	7	2	10	6	8	53	35	51	22
20	15	12	6	10	11	7	10	12	3232	3353	91	55	16	34	42	20	38	58	44
21	12	10	13	11	3	8	9	4	2263	1552	51	40	62	48	7	21	28	9	33
22	4	2	1	4	6	5	2	5	3222	2424	9	5	3	10	15	13	4	12	9
23	6	6	5	11	10	5	7	8	2125	3232	15	14	12	50	37	13	19	24	23
24	9	7	8	11	10	10	12	11	3233	2354	33	18	22	42	38	38	52	47	36
25	7	7	4	12	13	11	9	9	3431	6333	17	18	10	57	68	46	27	29	34
26	11	8	7	8	8	10	13	10	2223	2453	43	23	20	24	23	37	69	38	35
27	8	12	9	10	14	15	14	11	4212	5232	25	59	33	39	71	97	84	48	57
28	13	14	9	9	11	12	11	10	3311	3532	65	80	27	30	46	59	42	36	48
29	9	7	12	8	10	11	11	10	2223	5453	31	20	56	22	37	41	42	34	35
30	11	12	6	7	8	7	6	6	3512	5555	41	53	16	19	26	17	14	16	25
31	6	4	3	3	0	4	8	5	5420	1452	15	9	7	6	1	8	25	11	10
																			25.9

JAN. 1973

	3 Ks								σs								As
1	9	8	6	9	6	6	3	2	2332	1443	27	26	16	31	15	14	6	4	17
2	1	1	0	1	1	1	3	2	2311	3363	3	2	1	3	3	3	7	4	3
3	1	2	1	3	3	2	1	11	2323	3324	3	4	3	7	7	4	2	41	9
4	9	7	6	6	7	9	11	8	2211	4352	28	19	16	14	18	32	44	26	25
5	9	6	5	7	6	11	12	13	4323	2115	28	16	11	20	14	44	59	67	32
6	12	10	6	10	8	7	8	9	3223	1552	52	35	14	37	21	19	24	28	29
7	3	4	4	4	6	8	5	7	3142	3254	6	8	8	10	16	24	13	20	13
8	8	6	6	7	9	11	6	6	4131	2142	21	14	15	20	33	50	15	14	23
9	8	6	8	9	9	8	9	11	2321	2322	24	16	23	27	27	23	28	46	27
10	10	11	9	11	9	10	12	8	2122	2443	35	41	31	49	28	35	58	23	38
11	8	11	7	9	10	10	9	10	2113	2342	22	41	20	32	39	39	28	35	32
12	9	8	9	10	13	12	10	9	3110	3354	32	23	27	35	63	60	36	29	38
13	7	7	7	9	11	8	10	6	1321	2244	20	20	17	30	46	26	35	14	26
14	6	7	5	6	6	5	2	4	1222	2542	16	20	13	15	14	12	5	8	13
15	6	6	6	6	5	5	7	8	2311	2333	14	14	16	15	11	11	19	24	16
16	6	6	6	5	4	3	5	7	1331	2434	16	14	14	12	8	7	13	20	13
17	5	5	5	6	6	5	4	4	1212	1323	11	11	13	15	14	11	8	8	11
18	4	3	1	3	3	3	3	3	3321	1444	9	7	3	7	7	7	6	6	7
19	5	3	5	3	4	12	10	11	3111	2242	13	6	13	6	8	51	34	47	22
20	15	12	9	8	9	6	9	11	5321	1345	96	52	29	26	31	16	29	44	40
21	9	11	11	9	4	8	8	5	1323	2223	31	42	43	28	9	23	23	11	26
22	5	3	1	3	5	4	4	6	2211	3153	11	6	2	7	13	10	8	14	9
23	6	7	5	11	11	7	8	8	2530	0211	15	19	11	47	47	18	21	24	25
24	9	8	7	10	9	10	11	11	2222	1133	28	26	19	39	27	40	48	42	34
25	6	7	5	11	13	9	7	9	1232	1342	15	17	11	49	63	30	20	28	29
26	10	7	6	8	7	9	13	9	4211	1324	35	20	16	26	20	33	62	31	30
27	8	12	10	11	11	13	14	11	2211	4035	23	55	37	42	46	62	78	44	48
28	15	13	8	9	11	11	10	11	5212	1232	96	69	26	32	42	49	37	44	49
29	9	8	10	7	8	9	10	9	2221	2353	29	26	39	20	25	29	38	27	29
30	10	9	6	6	8	4	6	7	5313	1133	36	32	15	15	21	10	16	19	21
31	5	4	4	4	2	4	7	5	2211	3141	13	8	8	8	4	10	20	13	11
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JAN. 1973

	3 Km								Σ Km	am							Am	Am2
1	9	8	6	9	6	5	2	1	15.3	29	26	16	33	15	12	5	3	17	14
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3	1	1	1	2	3	2	0	9	6.3	2	3	2	4	6	4	1	30	7	8
4	8	6	5	6	7	9	10	8	19.7	23	16	12	14	17	30	38	24	22	19
5	9	7	5	7	6	11	12	13	23.3	31	20	12	19	14	43	54	68	33	33
6	12	11	6	11	8	7	8	9	24.0	51	42	14	45	23	17	25	30	31	29
7	3	4	3	5	7	9	5	7	14.3	6	8	7	11	19	27	12	20	14	17
8	6	7	5	7	10	12	6	5	19.3	15	17	11	20	38	59	16	13	24	22
9	8	6	7	9	9	8	9	11	22.3	26	15	18	33	29	23	33	46	28	33
10	10	11	9	12	9	11	13	8	27.7	36	50	33	52	30	46	67	23	42	37
11	8	11	8	10	12	11	9	10	26.3	23	47	21	37	53	46	30	34	36	37
12	10	9	9	10	14	12	9	9	27.3	34	31	32	38	78	57	33	29	42	37
13	8	7	6	10	11	9	10	6	22.3	21	18	16	40	47	30	34	15	28	30
14	7	8	5	6	6	5	3	4	14.7	17	22	12	14	16	12	6	8	13	18
15	5	5	6	6	5	5	7	9	16.0	13	13	16	16	11	12	18	27	16	14
16	5	6	5	4	3	3	7	7	13.3	13	16	13	10	7	6	17	18	13	13
17	5	4	5	5	6	5	3	2	11.7	11	9	12	12	16	11	7	4	10	9
18	3	3	2	2	2	3	2	2	6.3	7	6	4	4	5	6	4	4	5	7
19	4	2	5	3	4	12	10	11	17.0	10	4	11	6	8	52	34	49	22	25
20	15	12	8	9	10	7	10	12	27.7	93	53	23	30	36	18	34	51	42	41
21	11	11	12	10	4	8	8	4	22.7	41	41	52	38	8	22	26	10	30	25
22	4	2	1	4	6	5	3	5	10.0	10	5	3	8	14	12	6	13	9	14
23	6	6	5	11	11	6	7	8	20.0	15	16	11	49	42	15	20	24	24	22
24	9	8	8	10	9	10	11	11	25.3	30	22	21	40	32	39	50	45	35	30
25	6	7	5	12	13	10	8	9	23.3	16	18	11	53	65	38	24	28	32	33
26	10	8	7	8	8	10	13	10	24.7	39	21	18	25	21	35	65	34	32	36
27	8	12	10	10	12	14	14	11	30.3	24	57	35	40	58	79	81	46	53	49
28	14	14	8	9	11	12	10	10	29.3	81	75	26	31	44	54	40	40	49	49
29	9	8	11	8	9	10	10	9	24.7	30	23	47	21	31	35	40	30	32	34
30	10	11	6	7	8	6	6	7	20.3	39	43	16	17	24	14	15	17	23	22
31	6	4	4	3	1	4	8	5	11.7	14	9	8	7	3	9	22	12	11	17
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	3 Km								Σ Km	am							Am	Am2
1	9	9	8	9	8	11	8	9	23.7	30	30	24	28	24	49	26	27	30	22
2	6	6	6	5	6	9	8	11	19.0	16	15	16	13	16	29	21	49	22	25
3	6	11	6	8	10	6	12	7	22.0	15	44	15	26	38	16	53	20	28	24
4	5	4	6	5	2	4	7	4	12.3	13	8	14	12	5	8	20	9	11	19
5	8	10	6	5	4	2	6	8	16.3	24	35	16	12	9	4	14	22	17	16
6	5	5	6	10	12	10	8	7	21.0	13	11	16	35	51	36	26	17	26	21
7	6	6	8	8	8	9	11	9	21.7	15	16	22	22	22	33	44	28	25	29
8	8	10	9	10	9	10	11	10	25.7	25	40	33	36	27	38	49	34	35	34
9	10	7	11	9	9	10	9	7	24.0	40	17	42	29	30	36	27	18	30	28
10	4	6	7	5	5	5	10	8	16.7	8	16	20	13	13	12	40	23	18	20
11	8	6	4	5	7	4	5	5	14.7	25	15	8	11	17	10	11	12	14	15
12	3	5	7	4	7	7	5	4	14.0	6	13	17	9	18	18	11	10	13	10
13	1	1	3	1	3	1	2	8	6.7	2	2	6	3	6	2	5	24	6	11
14	5	5	8	7	4	3	4	8	14.7	13	11	22	20	8	6	10	23	14	13
15	7	7	5	4	6	4	5	3	13.7	18	17	12	8	16	10	11	7	12	10
16	0	1	2	3	4	9	10	11	13.3	1	3	5	7	10	32	36	42	17	19
17	11	9	9	5	8	8	9	3	20.7	49	27	30	11	25	24	31	7	26	23
18	6	3	3	6	8	9	7	10	17.3	15	6	7	15	24	28	19	35	19	17
19	7	6	2	1	5	8	7	9	15.0	20	14	5	3	12	23	20	28	16	16
20	4	1	4	2	6	7	10	8	14.0	8	2	9	4	15	19	38	21	15	19
21	12	9	4	5	5	14	18	17	28.0	51	28	9	12	12	85	171	141	64	48
22	15	6	7	9	11	13	18	17	32.0	98	14	17	29	48	64	164	124	70	75
23	12	13	11	13	14	15	14	12	34.7	56	68	46	63	71	96	75	58	67	73
24	12	12	12	14	14	14	14	14	35.3	51	58	55	72	81	78	82	79	70	62
25	8	9	11	11	10	14	13	11	29.0	21	29	45	42	38	71	66	48	45	53
26	12	12	10	9	11	10	12	13	29.7	57	51	37	30	43	37	54	62	46	48
27	11	13	9	10	10	15	13	12	31.0	49	67	30	34	38	93	61	57	54	48
28	12	7	11	9	8	8	5	8	22.7	55	20	41	28	21	22	11	25	28	34
																		29.9	

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	3 Kn								σn		an						An
1	9	9	8	9	8	12	8	8	3333	3832	33	28	21	33	21	59	22	25	30
2	7	6	6	6	6	9	8	12	3322	4421	17	15	14	14	16	29	22	51	22
3	6	12	6	9	11	6	12	7	2411	4533	14	55	15	27	46	16	59	19	31
4	6	4	6	6	2	4	7	4	4323	2253	14	10	16	14	5	9	20	8	12
5	8	10	7	6	4	2	5	7	3333	2323	22	37	19	14	9	4	11	19	17
6	5	4	6	11	12	11	9	6	3324	5252	13	10	16	41	57	42	30	16	28
7	6	7	8	8	7	10	11	9	0434	2352	14	18	21	23	17	34	49	27	25
8	8	12	10	11	9	11	11	10	3522	3344	26	52	39	42	33	44	49	38	40
9	11	7	11	10	9	11	9	8	3243	3534	43	17	50	35	33	45	31	21	34
10	3	7	8	6	6	6	11	8	1441	2362	7	18	25	15	16	14	42	24	20
11	8	6	5	5	7	4	5	5	1134	3355	26	15	11	13	19	10	13	13	15
12	3	6	8	4	8	8	5	5	3432	2533	7	16	23	9	22	22	11	12	15
13	0	0	4	2	3	2	2	7	1142	3312	1	1	8	4	7	4	5	18	6
14	5	4	8	8	4	3	4	7	3353	2143	11	10	24	21	8	7	10	20	14
15	7	7	6	4	7	4	4	3	4332	2331	20	18	14	9	17	10	10	7	13
16	1	1	3	3	5	10	10	11	2211	2423	2	3	6	7	11	35	34	47	18
17	11	8	10	4	9	8	9	4	3252	3353	49	26	37	10	27	24	30	9	27
18	6	3	4	7	9	9	8	11	1222	4744	14	7	9	19	27	33	22	41	22
19	7	7	2	2	5	8	8	9	3212	3333	20	17	5	5	13	25	22	31	17
20	3	0	4	2	6	8	11	7	2221	3532	7	1	9	5	14	23	42	19	15
21	11	9	4	5	6	14	18	17	5121	1366	49	28	9	13	14	80	165	139	62
22	15	6	7	9	12	12	18	16	2520	4163	99	14	19	29	53	55	150	111	66
23	12	13	12	12	13	16	14	13	2325	5324	55	63	57	60	68	115	75	66	70
24	12	13	13	14	15	14	14	14	4523	5553	53	65	64	75	92	82	79	75	73
25	7	9	11	11	11	13	13	12	3322	4553	20	30	49	41	43	66	67	51	46
26	12	12	11	9	11	10	13	13	5432	4312	58	57	44	33	46	38	62	68	51
27	11	14	10	11	11	15	13	12	1433	2333	46	72	35	41	44	97	67	54	57
28	12	7	11	10	8	9	6	8	5333	3112	58	19	46	34	26	28	14	26	31
																			31.3

FEB. 1973

	3 Ks								σs		as						As
1	9	9	9	8	8	10	9	9	4113	3531	28	33	27	23	26	40	30	29	30
2	6	6	7	5	6	9	7	11	1121	2242	15	15	18	11	16	29	20	47	21
3	6	9	6	8	9	6	11	8	1123	2125	15	32	15	25	30	16	47	21	25
4	5	3	5	4	2	4	8	4	5225	5542	11	6	12	9	5	8	21	10	10
5	8	9	6	4	4	2	7	8	3221	2233	26	33	14	9	8	5	17	24	17
6	5	5	7	9	11	9	8	7	2331	1333	13	13	17	29	44	29	23	17	23
7	6	6	8	7	9	9	10	9	3242	4414	15	14	23	20	27	32	40	28	25
8	8	9	8	9	8	9	11	9	1221	1133	24	27	26	30	21	31	49	29	30
9	10	7	10	8	9	9	8	6	2111	3221	37	18	35	24	28	28	23	15	26
10	4	6	6	5	4	5	10	8	2431	1334	9	14	15	11	10	11	39	22	16
11	8	6	3	4	6	4	4	5	2332	1233	24	15	6	8	14	9	9	11	12
12	3	4	5	4	6	6	5	4	2131	1132	6	10	11	10	15	15	11	8	11
13	1	1	2	1	3	0	2	9	3331	2124	2	2	4	2	6	1	5	29	6
14	6	5	7	7	4	3	4	8	1333	2452	16	12	20	18	8	6	10	26	15
15	7	6	5	4	6	5	5	3	5322	4331	17	16	11	8	15	11	11	6	12
16	0	2	2	3	4	9	10	10	0423	1223	0	4	5	7	10	29	39	38	17
17	11	9	8	5	8	8	9	3	3212	3330	49	27	23	12	23	25	32	6	25
18	6	3	3	5	8	8	6	9	1225	4431	16	6	6	11	22	24	16	30	16
19	7	4	2	0	5	8	7	8	4121	5221	20	10	5	1	11	21	18	24	14
20	4	1	4	2	6	6	10	8	4223	1233	9	2	10	4	16	15	34	24	14
21	12	9	4	5	5	15	19	17	1213	3155	52	28	8	11	11	90	176	143	65
22	15	6	6	9	11	14	19	17	4223	2355	97	14	15	29	43	73	178	137	73
23	12	14	10	13	14	14	14	11	1316	5234	57	72	35	67	74	77	75	50	63
24	11	12	11	13	13	14	14	14	3222	3255	49	51	46	68	69	74	84	82	65
25	8	9	11	11	9	14	13	11	3212	3453	22	27	41	43	33	77	65	44	44
26	12	11	9	9	10	10	11	12	1311	5214	55	44	31	27	40	36	46	56	42
27	12	13	8	9	9	15	12	13	4212	3215	51	63	24	27	32	89	55	61	50
28	12	7	10	8	6	7	4	8	4234	1223	51	20	35	22	16	17	8	25	24
																			28.3

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	3 Kn								σn		an						Ån
1	7	4	7	8	8	15	13	9	3252	2452	20	10	17	24	21	95	62	29	35
2	11	12	12	13	13	14	14	11	5235	5333	48	57	51	63	61	73	76	50	60
3	12	9	8	6	9	7	4	6	4421	4522	51	28	23	16	33	19	10	15	24
4	7	1	4	1	1	2	0	3	5223	2324	17	3	8	3	2	4	1	6	6
5	1	0	0	0	5	8	9	7	3010	6653	2	0	0	0	13	24	29	17	11
6	8	10	11	9	15	15	5	6	2432	3222	25	39	46	32	96	87	11	15	44
7	4	7	7	7	6	8	5	4	4353	0233	8	17	17	18	14	22	12	9	15
8	2	2	3	4	9	5	9	6	2303	3232	4	4	6	10	29	11	27	16	13
9	7	8	9	9	8	5	5	6	4344	2421	20	21	29	27	23	13	11	15	20
10	5	4	6	6	5	4	9	7	2211	3142	12	9	15	16	12	8	27	18	15
11	6	3	5	7	8	7	8	8	3222	3632	15	7	12	17	25	19	24	21	18
12	8	3	9	9	5	7	12	6	4234	2245	24	7	33	29	13	19	52	14	24
13	0	2	7	8	4	4	7	1	0234	3252	0	5	20	23	10	10	18	3	11
14	0	2	3	5	4	2	2	3	0213	2220	0	5	7	12	9	4	4	6	6
15	0	0	0	3	5	3	2	1	0003	2132	0	0	0	7	11	7	4	2	4
16	3	5	9	9	11	9	9	8	5112	6303	6	13	30	32	42	27	29	21	25
17	5	3	5	7	5	5	8	7	2221	3353	11	6	11	17	11	12	21	19	14
18	5	6	6	12	12	9	10	14	5625	4212	13	15	14	55	56	30	38	76	37
19	10	8	14	18	17	17	18	17	2235	2574	35	25	73	153	121	125	161	121	102
20	12	13	14	17	14	15	15	16	5234	2552	60	70	73	135	77	87	99	109	89
21	12	14	16	14	14	16	14	14	4453	4443	59	78	117	75	82	106	78	72	83
22	13	13	14	14	15	10	13	13	3344	3443	65	69	77	83	94	40	64	67	70
23	12	10	14	14	13	14	14	14	4344	4433	57	39	77	78	67	85	76	76	69
24	13	12	11	13	15	12	12	13	2344	3234	65	55	43	65	89	55	54	63	61
25	13	15	13	13	15	14	11	12	3441	3244	65	88	67	61	97	76	47	59	70
26	11	10	10	6	5	11	15	10	2331	2562	47	38	39	15	11	46	92	36	41
27	10	10	9	11	13	11	9	12	3333	4363	38	36	28	49	66	44	33	58	44
28	9	7	8	9	11	10	8	12	3230	3344	33	18	24	29	45	34	25	51	32
29	9	11	6	5	6	7	6	12	2312	1535	28	44	16	12	15	18	16	54	25
30	9	4	9	8	8	5	5	10	5223	3343	31	9	27	22	23	13	13	34	22
31	5	10	8	2	9	15	16	14	2242	3252	13	37	26	5	27	93	109	73	48
																			36.7

MAR. 1973

	3 Ks								σs		as						Ås
1	8	3	5	9	7	15	12	8	5243	2342	21	6	11	32	18	98	58	26	34
2	10	11	9	13	12	12	13	13	4124	2147	39	41	33	62	60	55	70	66	53
3	10	7	6	5	7	5	4	6	5221	3234	36	20	16	11	19	12	8	14	17
4	7	0	3	0	0	0	0	2	4141	1112	17	1	6	1	1	1	1	5	4
5	1	0	0	0	4	7	9	9	2000	6116	2	0	0	0	9	20	32	28	11
6	9	13	11	9	14	14	6	4	1522	1342	28	64	46	29	81	84	14	9	44
7	3	7	5	5	5	7	5	4	3532	1022	7	19	11	13	11	17	12	10	13
8	3	3	3	4	8	3	8	5	3212	2351	7	6	6	9	23	7	21	11	11
9	6	6	7	8	8	4	4	4	1322	2121	15	16	20	21	21	8	8	10	15
10	5	4	5	5	3	3	8	7	2135	3423	12	8	11	12	6	7	21	20	12
11	6	4	4	6	7	5	6	7	2411	2144	14	10	10	14	17	13	16	18	14
12	8	4	9	8	4	7	10	7	3323	4322	22	9	27	23	10	19	34	19	20
13	0	3	4	6	4	4	5	1	0314	2231	0	6	8	15	9	9	12	2	8
14	0	3	2	4	3	0	1	2	1321	2012	1	6	5	10	6	0	2	4	4
15	0	1	0	2	3	3	0	1	1213	2312	1	2	1	4	6	7	1	2	3
16	3	4	9	9	9	7	9	6	4211	6143	6	9	31	28	33	20	29	16	22
17	5	3	5	8	5	3	6	8	2234	2644	12	6	13	21	12	7	15	21	13
18	4	5	6	9	10	10	10	15	4524	5245	10	12	14	31	36	35	35	92	33
19	12	8	12	18	16	15	17	16	7214	3354	55	21	57	164	113	98	132	112	94
20	14	14	11	16	13	14	15	14	5432	3463	71	81	45	117	70	71	90	86	79
21	12	14	14	12	12	14	14	13	4114	1115	56	76	77	58	57	81	81	67	69
22	13	11	12	13	13	9	14	12	2333	2243	61	49	52	61	68	29	81	52	57
23	14	11	12	13	11	12	14	15	3443	4427	77	50	57	61	48	58	71	98	65
24	14	12	9	14	15	12	12	14	2224	2435	71	51	33	71	99	58	52	76	64
25	14	14	12	12	14	13	12	12	3323	3136	73	81	51	53	77	65	59	53	64
26	13	8	8	6	5	10	14	10	2221	3344	61	24	26	14	11	37	77	35	36
27	10	10	6	11	13	10	10	11	5114	4335	34	40	15	48	62	40	37	43	40
28	11	7	9	9	10	9	8	13	5351	2314	44	17	28	28	39	31	23	63	34
29	10	11	5	4	4	7	7	12	4324	5303	40	42	12	8	10	19	17	52	25
30	11	3	8	8	9	6	5	9	5112	4122	44	7	26	21	27	16	11	28	23
31	6	8	7	1	8	14	17	15	1153	4124	14	23	18	3	22	73	121	101	47
																			33.2

MAR. 1973

	3 Km								Σ Km	am							Am	Am 2
1	8	4	6	9	7	15	12	9	23.3	21	8	14	28	19	96	60	27	34	34
2	11	11	11	13	13	13	14	12	32.7	43	49	42	62	61	64	73	58	57	47
3	11	8	7	6	8	6	4	6	18.7	43	24	19	14	26	16	9	15	21	28
4	7	1	3	1	0	1	0	2	5.0	17	2	7	2	1	2	1	5	5	7
5	1	0	0	0	5	8	9	8	10.3	2	0	0	0	11	22	31	23	11	16
6	9	12	11	9	15	14	5	5	26.7	27	52	46	31	88	85	13	12	44	31
7	4	7	6	6	5	7	5	4	14.7	8	18	14	16	13	20	12	9	14	21
8	2	2	3	4	8	4	8	5	12.0	5	5	6	9	26	9	24	13	12	15
9	7	7	8	8	8	4	4	5	17.0	18	19	25	24	22	10	10	12	18	16
10	5	4	5	6	4	3	8	7	14.0	12	8	13	14	9	7	24	19	13	13
11	6	4	5	6	8	6	7	7	16.3	14	9	11	16	21	16	20	19	16	17
12	8	4	9	8	5	7	11	6	19.3	23	8	30	26	11	19	43	16	22	18
13	0	2	6	7	4	4	6	1	10.0	0	5	14	19	9	10	15	3	9	12
14	0	3	3	5	3	1	1	2	6.0	1	6	6	11	7	2	3	5	5	5
15	0	0	0	2	4	3	1	1	3.7	0	1	0	5	8	7	3	2	3	8
16	3	5	9	9	10	8	9	7	20.0	6	11	30	30	37	23	29	19	23	16
17	5	3	5	7	5	4	7	7	14.3	12	6	12	19	12	9	18	20	14	19
18	5	5	6	11	11	9	10	14	23.7	11	13	14	43	46	32	36	84	35	39
19	11	8	13	18	16	16	18	16	38.7	45	23	65	159	117	112	147	116	98	82
20	13	14	12	17	14	14	15	15	38.0	66	75	59	126	74	79	94	97	84	91
21	12	14	15	13	13	15	14	13	36.3	57	77	97	67	70	93	79	70	76	76
22	13	12	13	14	14	10	14	12	34.0	63	59	65	72	81	35	72	60	63	67
23	13	11	13	13	12	14	14	15	35.0	67	45	67	69	57	71	74	87	67	63
24	13	12	10	13	15	12	12	13	33.3	68	53	38	68	94	56	53	69	62	66
25	13	14	12	12	15	14	12	12	34.7	69	85	59	57	87	71	53	56	67	59
26	12	9	9	6	5	11	14	10	25.3	54	31	32	14	11	41	85	35	38	45
27	10	10	8	11	13	11	10	12	28.3	36	38	21	49	64	42	35	51	42	39
28	10	7	8	9	11	9	8	12	24.7	39	17	26	28	42	33	24	57	33	35
29	10	11	6	4	5	7	7	12	20.7	34	43	14	10	13	19	17	53	25	28
30	10	4	8	8	8	6	5	9	19.3	37	8	26	21	25	14	12	31	22	22
31	6	9	8	2	8	14	16	15	26.0	14	30	22	4	25	83	115	87	48	37
																		34.9	

APR. 1973

	3 Km								Σ Km	am							Am	Am 2
1	10	7	9	10	14	20	21	20	37.0	38	20	29	36	83	211	262	210	111	98
2	18	14	9	15	12	13	12	7	33.3	161	85	33	92	54	64	57	17	70	95
3	13	13	9	9	9	10	9	5	25.7	63	68	31	27	32	37	27	13	37	35
4	6	6	6	7	7	6	4	4	15.3	15	16	16	17	17	14	9	8	14	18
5	2	5	9	4	3	3	2	2	10.0	4	13	32	10	7	6	5	4	10	10
6	2	4	5	2	1	1	0	4	6.3	4	10	11	4	3	3	1	8	6	6
7	4	2	2	5	3	2	1	2	7.0	9	4	4	11	6	4	3	5	6	6
8	0	2	3	8	4	5	8	4	11.3	1	5	6	23	9	13	23	10	11	10
9	8	7	4	1	4	2	3	3	10.7	24	17	8	3	8	5	6	6	10	9
10	1	3	3	0	2	1	2	4	5.3	2	6	6	1	5	2	5	9	5	15
11	10	11	11	12	11	8	6	7	25.3	39	44	46	52	41	25	15	19	35	20
12	0	3	4	2	3	2	3	3	6.7	0	7	9	5	6	5	7	6	6	24
13	4	12	14	16	18	11	7	7	29.7	8	58	74	106	150	46	17	19	60	50
14	10	12	17	13	14	10	7	7	30.0	39	58	145	62	72	38	17	18	56	47
15	8	6	5	7	4	4	5	7	15.3	21	16	11	18	8	8	12	19	14	34
16	11	13	14	15	16	13	14	12	36.0	48	62	86	87	107	69	71	53	73	56
17	14	14	12	12	13	10	13	12	33.3	80	77	55	55	64	40	66	60	62	66
18	13	12	13	14	11	14	11	13	33.7	64	55	64	82	42	72	50	63	62	60
19	14	12	13	11	10	9	14	15	32.7	72	55	65	50	39	27	85	90	60	60
20	14	13	12	12	10	13	14	12	33.3	80	66	57	52	39	66	77	57	62	63
21	14	12	12	13	12	11	12	13	33.0	85	57	60	68	58	50	55	61	62	63
22	14	13	14	11	12	12	8	11	31.7	75	62	83	50	60	60	23	49	58	55
23	12	11	12	10	11	11	6	6	26.3	56	43	53	38	41	44	14	14	38	38
24	9	8	10	8	6	4	7	6	19.3	32	22	35	24	16	8	17	16	21	23
25	7	10	8	5	4	6	10	10	20.0	20	39	21	12	9	14	38	40	24	22
26	9	10	8	6	11	9	14	13	26.7	32	36	24	16	46	27	80	63	41	41
27	12	12	13	12	10	8	6	8	27.0	57	57	61	55	36	22	15	21	41	40
28	7	9	7	10	14	9	9	13	26.0	19	31	17	37	72	29	28	63	37	41
29	14	13	14	12	15	11	14	11	34.7	74	64	83	51	87	42	76	49	66	54
30	8	11	11	9	5	10	7	9	23.3	21	41	49	28	12	39	18	27	29	35
																		39.6	

APR. 1973

	3 Kn								σn		an						Ân
1	9	7	8	10	14	20	21	20	3342	3657	32	17	25	36	81	215	277	229	114
2	18	14	9	15	12	13	12	7	4414	3672	147	82	32	100	53	67	53	20	69
3	13	14	10	9	10	10	9	6	3332	3452	65	73	35	33	40	40	31	16	42
4	7	7	7	7	7	6	5	4	3432	3133	17	18	20	18	20	16	11	10	16
5	3	6	10	5	4	3	3	3	0441	3022	6	14	39	12	10	6	6	6	12
6	2	5	6	3	2	2	1	5	2541	2223	5	12	15	7	5	4	2	13	8
7	4	2	2	6	3	2	2	3	2233	4222	9	5	4	14	7	5	5	7	7
8	1	2	3	8	5	7	8	5	2232	3223	2	5	6	25	12	17	24	12	13
9	8	7	4	2	4	3	4	4	3423	3033	25	18	8	4	9	6	9	9	11
10	1	2	3	1	2	1	3	5	3211	1212	3	5	7	2	5	3	7	11	5
11	10	11	11	11	10	7	6	7	4424	2413	40	41	43	48	37	19	15	19	33
12	0	2	5	4	4	3	5	4	1243	3143	1	5	13	8	9	7	11	9	8
13	3	11	14	16	18	12	6	7	2233	5532	7	50	77	110	153	51	16	20	61
14	11	12	17	13	14	11	7	8	4343	3633	41	52	146	62	75	47	20	21	58
15	7	7	5	7	4	4	5	8	3532	3223	19	17	12	18	9	10	13	23	15
16	10	12	14	15	16	14	13	12	3533	2334	38	57	83	91	115	72	68	52	72
17	14	14	12	12	12	11	12	12	7741	4433	75	82	58	56	60	42	59	52	61
18	12	12	13	15	11	14	11	13	6713	5343	59	58	63	88	50	78	47	65	64
19	13	12	13	13	10	9	14	14	4445	3253	63	58	70	61	39	32	79	77	60
20	14	12	13	12	11	13	14	12	3445	4632	75	58	63	53	43	70	80	55	62
21	14	13	13	12	12	12	11	12	5434	5543	82	65	66	56	55	51	50	58	60
22	13	14	15	12	13	13	9	12	4542	4224	70	73	99	51	67	69	28	52	64
23	12	12	13	10	11	11	6	6	4443	3232	52	53	62	38	42	46	16	15	41
24	9	8	10	8	7	4	7	7	5231	2233	33	22	40	26	20	9	19	19	24
25	8	10	7	6	5	6	10	10	5323	3443	24	38	19	15	11	16	38	40	25
26	10	10	9	7	12	10	14	12	3431	5423	37	39	29	17	52	37	80	59	44
27	11	12	13	12	9	8	6	8	5542	5313	47	58	69	58	33	26	15	21	41
28	6	9	7	11	14	10	9	13	3444	3203	16	32	19	45	81	34	29	62	40
29	14	13	15	13	15	11	14	11	4352	1332	81	69	100	62	95	44	75	46	72
30	8	11	12	9	5	11	7	9	2354	2234	23	42	56	32	13	42	19	32	32
																			41.1

APR. 1973

	3 Ks								σs		as						Âs
1	11	8	9	10	14	20	21	19	4354	2444	44	22	33	36	85	208	247	192	108
2	19	15	9	14	12	13	13	6	4414	2451	175	87	33	84	55	61	61	14	71
3	12	13	9	8	8	9	8	4	3231	1311	60	64	27	21	23	33	24	10	33
4	6	6	5	6	6	5	3	2	2121	4243	14	14	12	16	14	12	7	5	12
5	1	5	8	4	2	2	2	1	1221	3422	2	12	26	8	4	5	5	3	8
6	1	4	3	0	1	1	0	2	1331	2202	2	8	7	1	2	2	0	4	3
7	4	1	2	4	2	1	1	1	2212	3222	8	3	4	9	5	3	2	3	5
8	0	3	2	8	3	4	8	4	1232	1211	1	6	5	21	6	8	23	8	10
9	8	6	4	1	3	1	1	1	4652	4221	22	16	8	2	7	3	3	3	8
10	1	4	2	0	2	1	1	3	1120	4221	2	8	4	0	5	2	2	7	4
11	10	11	11	12	11	9	6	7	4254	3222	38	47	49	56	45	32	15	19	38
12	0	4	3	1	1	1	2	1	0221	3121	0	8	6	3	3	3	4	3	4
13	4	13	14	15	17	11	7	7	4321	1132	9	66	71	102	146	42	17	18	59
14	10	13	17	13	13	9	6	6	3421	1221	38	64	144	63	68	28	14	15	54
15	8	6	4	7	3	3	5	6	3412	4231	23	15	9	17	6	6	11	15	13
16	12	13	15	14	15	13	14	12	3444	2124	58	66	88	84	98	66	74	53	73
17	14	14	12	12	13	10	14	13	3134	4135	86	72	52	54	68	39	73	67	64
18	13	12	13	14	9	13	12	13	4213	2334	69	51	65	76	33	65	53	61	59
19	14	12	13	10	10	8	15	16	4252	2353	81	51	61	39	39	22	91	104	61
20	14	14	11	11	10	13	14	12	3244	1234	86	74	50	50	35	61	75	58	61
21	15	11	12	14	12	11	13	13	6224	2544	88	49	55	80	60	49	61	63	63
22	14	12	13	11	12	12	7	11	5222	1225	80	51	68	49	54	51	18	47	52
23	13	9	11	10	10	11	5	5	5312	5233	61	33	44	39	40	43	13	12	36
24	9	8	9	8	5	3	6	6	4342	4245	31	22	31	23	12	6	15	14	19
25	6	10	8	4	4	5	10	11	4441	1213	16	40	23	9	8	11	37	41	23
26	9	9	7	6	11	7	14	13	4521	4015	28	33	18	15	41	17	81	67	38
27	13	12	12	12	10	7	6	8	5131	3235	67	57	52	52	39	18	14	22	40
28	8	9	6	9	13	8	9	13	5222	1243	21	29	16	29	63	24	27	65	34
29	13	12	13	10	14	10	14	12	4332	4223	66	59	67	40	78	40	77	52	60
30	7	10	11	8	5	10	6	8	2423	1313	18	40	43	25	11	37	16	22	27
																			38.0

MAY 1973

	3 Kn								σn		an						An
1	7	10	7	4	7	8	12	11	2413	2335	19	36	18	9	17	22	51	47	27
2	8	8	5	6	6	7	8	11	1122	1122	26	26	12	16	16	19	25	44	23
3	8	7	9	7	5	4	7	6	3322	3362	23	20	30	18	11	8	17	14	18
4	5	8	5	5	6	5	4	8	2313	1322	13	23	13	13	15	11	8	23	15
5	5	4	0	1	2	7	7	4	1412	3343	13	10	1	2	4	17	17	8	9
6	3	3	5	3	8	9	11	11	0221	3324	6	7	11	6	22	29	49	47	22
7	9	10	11	7	9	9	9	7	3311	0212	32	36	44	17	29	31	28	17	29
8	7	9	9	9	10	11	10	10	3240	2443	17	27	33	29	36	41	35	37	32
9	9	7	7	7	10	8	5	9	5323	3333	27	20	18	20	39	21	13	27	23
10	7	7	5	6	7	6	6	3	3332	2401	19	19	11	14	18	14	14	6	14
11	5	3	8	4	3	4	6	8	2113	0232	11	7	24	10	6	10	14	24	13
12	7	1	6	9	5	3	5	6	3300	2422	19	2	14	29	13	7	13	14	14
13	9	6	12	9	5	8	11	14	5462	2232	33	15	54	33	11	22	41	86	37
14	18	17	16	14	14	11	15	12	3733	4321	159	130	107	82	84	46	87	51	93
15	12	13	10	10	11	10	13	12	5435	3554	52	65	34	39	48	35	61	57	49
16	13	11	13	9	10	8	6	15	3242	2411	70	45	61	32	34	24	14	87	46
17	13	13	11	10	10	10	9	9	5434	2512	61	62	45	39	40	39	28	29	43
18	11	11	12	9	9	9	8	10	4343	2233	50	48	57	30	32	31	22	35	38
19	10	11	9	11	11	9	8	11	3313	3312	36	42	33	44	46	33	25	47	38
20	10	10	11	10	11	8	10	10	2442	3422	38	35	44	35	45	25	37	39	37
21	11	13	19	18	13	8	6	10	2125	4623	45	66	190	154	61	24	15	35	74
22	10	12	9	9	8	8	7	9	3201	3420	36	51	29	31	23	22	19	29	30
23	11	11	12	11	9	6	5	8	3653	3222	42	41	59	42	27	16	11	23	33
24	4	5	4	4	3	4	2	2	2322	3322	9	13	8	10	6	9	4	5	8
25	1	5	8	6	5	8	6	5	3233	3422	3	11	22	14	13	21	16	11	14
26	9	9	5	6	3	3	3	5	4633	3422	29	28	11	14	6	7	7	13	14
27	5	8	6	3	4	6	8	10	1231	4233	13	24	14	7	8	15	26	35	18
28	7	7	8	8	8	7	5	4	2313	3423	19	19	24	21	21	17	12	10	18
29	4	2	2	5	3	3	3	3	3223	2122	8	5	5	11	7	7	6	6	7
30	1	1	1	0	4	3	1	2	2231	3132	3	2	3	1	9	7	3	4	4
31	1	2	2	4	5	5	4	6	2323	5420	2	5	5	10	13	11	10	14	9
																			27.4

MAY 1973

	3 Ks								σs		as						As
1	8	8	6	4	6	6	12	12	4233	2331	21	21	16	8	15	15	58	57	26
2	8	7	4	4	5	5	6	9	2211	3531	26	20	8	9	11	13	15	31	17
3	8	5	7	6	4	3	6	6	3342	3154	25	13	20	15	9	6	15	15	15
4	6	9	4	4	5	5	1	8	4652	2213	15	32	9	8	11	11	3	22	14
5	6	5	1	1	1	5	4	1	3922	3532	15	12	2	2	3	13	10	2	7
6	2	3	2	1	4	7	11	10	2131	1514	4	7	5	3	10	20	44	35	16
7	8	9	10	5	7	7	5	6	2453	2121	24	28	36	11	19	20	12	14	21
8	5	7	9	8	10	10	9	9	5242	4314	12	18	27	23	40	40	32	27	27
9	10	6	6	7	9	6	2	9	5132	3126	36	14	14	20	29	16	5	27	20
10	6	6	3	5	5	2	3	0	3424	2421	16	14	7	12	12	5	6	1	9
11	3	3	6	4	0	0	5	8	4212	0135	7	6	14	8	0	1	11	23	9
12	7	0	5	7	5	1	4	5	4130	2203	18	1	11	17	11	2	8	13	10
13	10	6	10	9	3	7	8	15	6432	4655	39	15	34	30	6	17	26	103	34
14	19	16	14	15	14	11	16	13	3533	3234	174	106	83	89	78	48	111	67	95
15	12	13	9	9	12	10	13	15	3213	1455	55	66	31	33	52	34	65	92	54
16	12	12	13	8	8	7	6	16	3221	3243	60	51	66	23	23	19	14	117	47
17	13	14	10	10	12	11	9	9	5422	2425	67	74	39	39	55	47	29	31	48
18	13	10	12	9	8	8	6	11	6233	2215	64	39	52	28	25	23	16	44	36
19	10	9	9	10	9	9	8	11	4113	1116	40	29	31	35	30	31	21	50	33
20	11	8	10	9	11	8	11	11	3224	4123	49	24	40	27	46	26	43	49	38
21	11	14	19	17	11	5	2	12	1123	1338	44	73	195	129	42	11	4	53	69
22	12	13	11	9	6	5	4	9	4451	2225	56	63	45	29	15	12	9	31	33
23	11	10	12	12	8	4	2	8	4445	2223	41	40	54	52	21	10	5	22	31
24	4	5	1	4	1	1	1	0	2212	2221	10	12	3	8	3	2	2	1	5
25	1	3	7	3	3	5	4	2	1231	1214	2	6	17	7	6	13	9	5	8
26	9	7	5	4	1	1	1	4	4444	1223	32	20	11	10	2	2	2	9	11
27	7	9	5	1	2	2	7	6	6722	3211	17	29	11	3	5	4	19	16	13
28	6	7	6	6	5	4	3	2	1311	2111	14	17	14	14	11	10	7	4	11
29	0	1	0	2	0	1	0	0	1112	1210	1	2	1	5	1	2	1	0	2
30	0	0	0	0	1	1	1	0	0010	2110	0	0	1	0	2	2	2	0	1
31	0	0	1	1	0	0	1	2	0111	1112	0	1	2	3	1	1	3	5	2
																			24.6

MAY 1973

	3 Km								Σ Km	am							Am	Am2
1	7	9	7	4	6	7	12	12	21.3	20	28	17	8	16	19	55	52	27	24
2	8	8	4	5	5	6	7	10	17.7	26	23	10	12	13	16	20	37	20	24
3	8	6	8	7	4	3	6	6	16.0	24	16	25	17	10	7	16	14	16	17
4	6	9	5	4	5	5	3	8	15.0	14	27	11	10	13	11	6	23	14	12
5	6	5	0	1	1	6	5	2	8.7	14	11	1	2	3	15	13	5	8	9
6	2	3	4	2	6	8	11	11	15.7	5	7	8	4	16	24	46	41	19	19
7	9	9	10	6	8	8	7	6	21.0	28	32	40	14	24	25	20	15	25	26
8	6	8	9	8	10	10	9	9	23.0	15	22	30	26	38	40	33	32	30	25
9	9	7	6	7	10	7	4	9	19.7	31	17	16	20	34	18	9	27	22	23
10	7	7	4	5	6	4	4	1	12.7	17	17	9	13	15	10	10	3	12	14
11	4	3	7	4	1	2	5	8	11.3	9	7	19	9	3	5	12	23	11	11
12	7	1	5	8	5	2	5	5	12.7	19	2	13	23	12	4	11	13	12	17
13	10	6	11	9	4	7	10	15	24.0	36	15	44	31	9	19	34	94	35	49
14	18	16	15	14	14	11	15	12	38.3	167	118	95	85	81	47	99	59	94	68
15	12	13	9	10	11	10	13	14	30.7	54	66	32	36	50	35	63	74	51	56
16	13	11	13	9	9	8	6	15	28.0	65	48	63	27	28	21	14	102	46	50
17	13	13	11	10	11	11	9	9	29.0	64	68	42	39	47	43	28	30	45	44
18	12	11	12	9	9	9	7	10	26.3	57	43	55	29	29	27	19	40	37	37
19	10	10	9	10	10	9	8	11	25.7	38	36	32	39	38	32	23	49	36	34
20	11	9	11	9	11	8	10	11	26.7	43	30	42	31	46	25	40	44	38	56
21	11	13	19	17	12	7	4	11	31.3	44	70	193	141	51	18	9	44	71	56
22	11	12	10	9	7	7	6	9	23.7	46	57	37	30	19	17	14	30	31	35
23	11	11	12	11	6	5	4	8	23.3	42	41	57	47	24	13	8	23	32	23
24	4	5	2	4	2	3	1	1	7.3	9	13	5	9	4	6	3	3	7	10
25	1	4	7	4	4	7	5	4	12.0	3	9	19	10	10	17	13	8	11	11
26	9	8	5	5	2	2	2	5	12.7	31	24	11	12	4	4	5	11	13	13
27	6	9	5	2	3	4	8	8	15.0	15	27	13	5	6	10	22	26	16	14
28	6	7	7	7	6	6	4	3	15.3	16	18	19	18	16	14	10	7	15	13
29	2	1	1	4	2	2	2	1	5.0	4	3	3	8	4	4	4	3	4	5
30	1	0	1	0	3	2	1	1	3.0	2	1	2	0	6	4	3	2	3	3
31	0	1	2	3	3	3	3	4	6.3	1	3	4	7	7	6	6	9	5	5
																		26.0	

JUNE 1973

	3 Km								Σ Km	am							Am	Am2
1	2	1	2	2	1	1	2	2	4.3	5	2	5	5	3	2	4	4	4	11
2	3	8	12	10	11	9	9	7	23.0	7	24	57	36	43	29	31	18	31	22
3	7	9	9	8	7	6	7	8	20.3	19	27	30	23	17	16	17	22	21	25
4	7	8	10	9	9	10	10	10	24.3	19	21	34	28	29	34	34	34	29	25
5	8	8	7	9	6	7	5	4	18.0	22	21	20	32	15	18	12	10	19	22
6	6	8	8	7	6	5	4	3	15.7	14	24	22	18	16	12	9	6	15	12
7	4	2	2	1	2	2	2	1	5.3	10	5	5	3	4	4	5	2	5	7
8	4	6	4	2	4	3	6	7	12.0	8	14	10	5	10	7	16	17	11	9
9	5	5	2	5	5	8	7	8	15.0	11	13	5	11	11	25	17	23	15	15
10	6	6	7	9	5	9	16	14	24.0	14	15	20	30	13	32	114	86	41	38
11	12	13	12	9	11	13	10	11	30.3	54	65	57	33	48	63	37	43	50	54
12	13	13	10	12	10	12	10	12	30.7	68	64	38	51	37	51	37	51	50	47
13	13	11	6	11	10	8	10	11	26.7	61	42	14	42	34	26	35	42	37	40
14	12	11	9	10	7	7	7	7	23.3	56	50	28	37	20	20	19	19	31	30
15	8	8	7	8	7	6	9	10	21.0	23	26	18	21	18	15	32	36	24	21
16	7	5	6	9	7	5	8	9	18.7	19	13	15	29	18	13	23	28	20	23
17	8	9	9	9	10	7	8	11	23.7	24	27	31	28	35	17	23	44	29	34
18	13	13	12	11	9	8	12	11	29.7	68	61	59	44	28	23	55	44	48	46
19	14	12	14	9	10	9	13	13	31.3	76	54	71	29	34	29	61	62	52	45
20	10	11	10	9	10	6	9	7	24.0	36	42	39	33	34	16	30	20	31	31
21	6	7	6	5	2	5	2	3	12.0	16	19	16	11	5	12	5	7	11	13
22	2	2	2	1	0	1	3	3	4.7	5	4	5	2	1	3	7	7	4	7
23	3	3	4	8	8	5	4	9	14.7	6	6	9	23	22	13	10	27	15	21
24	12	12	11	11	12	12	11	7	29.3	58	53	42	47	58	59	50	17	48	31
25	6	3	4	4	5	6	4	6	12.7	14	7	8	9	11	16	10	16	11	20
26	3	6	5	4	3	3	3	2	9.7	7	14	12	10	6	6	7	4	8	9
27	2	4	1	1	2	3	3	5	7.0	5	8	3	2	5	6	6	11	6	12
28	8	9	10	10	9	4	5	14	23.0	23	31	40	36	31	10	11	82	33	35
29	11	12	16	12	13	12	10	7	31.0	48	57	118	52	63	54	37	20	56	49
30	9	11	12	13	12	8	10	9	28.0	33	45	57	63	58	24	40	30	44	42
																		26.6	

JUNE 1973

	3 Kn								σn								An
1	4	2	3	4	2	1	3	3	3243	2222	8	4	7	9	5	2	7	6	6
2	4	9	14	11	12	10	10	8	2136	4222	9	27	75	50	55	37	36	23	39
3	8	9	10	9	8	7	7	8	3232	3233	22	33	34	28	22	18	19	25	25
4	8	8	10	9	9	10	10	10	2332	1333	23	24	39	33	32	40	38	39	34
5	8	8	8	10	7	8	6	5	2323	2412	22	26	23	37	18	21	14	13	22
6	7	8	8	7	8	6	5	4	2222	3223	17	26	25	18	21	15	11	9	18
7	5	3	4	3	3	3	3	1	2134	0232	12	7	9	7	6	6	7	2	7
8	4	6	5	3	5	4	7	7	3433	2232	9	16	11	7	11	9	19	20	13
9	6	6	3	6	6	10	8	9	2320	3222	14	14	7	14	15	34	23	30	19
10	6	7	7	10	6	11	16	15	3552	2312	16	17	17	34	16	44	104	99	43
11	12	12	13	10	12	12	10	10	5342	4433	57	59	61	39	58	60	39	35	51
12	12	13	10	12	11	12	10	11	2333	2523	58	66	40	51	46	59	40	50	51
13	12	11	7	11	10	9	10	11	1313	2223	54	44	17	42	35	28	35	43	37
14	11	11	9	11	8	9	7	8	2232	2433	44	42	30	42	25	27	20	23	32
15	8	9	8	7	7	7	9	10	2232	3224	25	28	22	19	20	17	28	34	24
16	7	6	7	9	7	7	8	8	3131	3541	20	16	19	32	20	17	25	26	22
17	8	9	9	10	11	7	8	11	2342	4222	25	28	33	34	41	18	26	46	31
18	13	13	12	12	9	9	11	11	3531	0123	70	62	60	53	29	29	49	45	50
19	13	12	14	10	10	10	12	12	2323	3243	70	53	75	35	35	34	60	59	53
20	10	11	11	10	10	7	10	8	2332	4333	35	42	41	36	37	18	37	22	34
21	7	8	7	6	4	6	3	4	3333	2343	18	21	18	14	8	15	7	9	14
22	3	3	4	1	0	2	4	5	4232	2232	7	6	8	3	1	4	9	12	6
23	4	4	5	9	9	7	6	10	4122	2243	8	8	12	32	32	18	14	37	20
24	11	11	11	12	13	13	12	7	2232	1332	49	48	47	56	63	64	53	19	50
25	7	4	4	5	7	7	5	7	3342	3323	20	9	10	12	17	20	13	20	15
26	4	6	6	5	4	4	4	2	1442	2533	8	14	14	12	9	10	10	5	10
27	3	4	3	2	4	4	5	6	1412	2321	7	10	6	4	10	10	11	15	9
28	8	9	10	10	10	5	6	14	1123	2303	25	32	36	35	37	12	14	71	33
29	11	12	17	12	14	12	10	8	2232	4222	44	56	127	55	71	55	35	26	59
30	10	12	14	14	12	9	10	10	2533	3333	35	58	74	74	58	27	40	34	50
																			29.2

JUNE 1973

	3 Ks								σs								As
1	1	0	1	1	1	1	1	1	1131	2222	3	1	3	2	2	2	2	2	2
2	2	8	10	8	9	7	9	6	1421	2132	4	21	40	23	32	20	27	14	23
3	6	8	8	7	5	6	6	7	1332	2124	15	22	26	19	12	14	14	18	18
4	6	7	9	8	8	9	9	9	1412	2112	16	18	29	23	25	28	30	29	25
5	8	6	7	9	5	6	5	3	1331	2111	21	16	17	28	11	15	11	7	16
6	5	8	7	7	5	4	3	1	3323	2231	11	22	20	17	11	9	7	2	12
7	4	1	1	0	1	1	2	0	1110	2232	8	2	2	0	2	2	4	1	3
8	3	5	4	1	4	2	5	6	4632	2033	6	11	8	3	9	4	12	14	8
9	4	5	1	3	4	6	5	7	2611	2114	8	11	3	7	8	16	11	17	10
10	5	6	8	8	4	7	17	14	3472	1113	11	14	22	26	10	20	124	73	38
11	12	13	12	9	10	13	10	12	4431	4114	51	70	52	28	38	66	35	51	49
12	14	13	10	12	9	11	10	12	2243	1322	77	62	36	52	28	42	34	51	48
13	13	10	5	11	9	8	10	10	3214	3245	68	39	11	41	33	24	35	40	36
14	13	12	8	9	6	6	7	6	4314	2124	67	58	26	32	15	14	18	16	31
15	8	8	6	8	7	5	10	10	4333	2224	21	23	15	22	17	12	37	39	23
16	7	5	5	9	6	4	8	9	2326	1134	19	11	12	27	15	10	22	29	18
17	8	8	9	8	9	6	7	11	3533	3114	23	26	30	22	28	16	20	41	26
18	13	12	12	10	9	7	13	11	5311	1105	67	60	57	35	28	18	62	44	46
19	14	12	13	8	9	8	13	13	4132	3123	81	55	67	24	33	24	62	65	51
20	10	11	10	9	9	6	8	7	2334	3355	36	42	37	31	32	14	24	17	29
21	5	7	6	4	1	4	1	2	3323	2132	13	17	14	8	2	10	3	4	9
22	2	1	1	0	0	1	2	1	2111	0231	4	2	2	1	0	2	5	2	2
23	2	1	3	6	5	4	3	7	2331	1343	5	3	7	14	11	8	6	17	9
24	13	12	10	10	12	12	11	6	5332	3213	67	58	38	39	54	54	46	15	46
25	4	2	2	2	3	5	4	5	2332	2233	8	5	5	5	6	12	8	12	8
26	3	5	4	3	1	1	2	2	4554	1222	6	13	9	7	3	2	5	4	6
27	1	3	0	0	0	1	1	3	2010	1123	3	6	1	0	1	3	2	7	3
28	8	9	11	10	8	4	4	15	4333	2024	21	30	44	37	26	8	8	92	33
29	12	12	16	11	12	12	10	6	2432	1311	51	58	108	49	54	52	39	15	53
30	9	9	10	12	12	8	10	8	4125	3242	31	31	40	52	57	21	40	26	37
																			23.9

JULY 1973

	3 Kn								σn								An
1	9	11	11	10	9	10	10	6	1332	4342	29	41	45	36	31	37	40	16	34
2	9	9	7	10	8	7	8	8	1323	3233	27	30	20	34	21	17	24	21	24
3	8	6	7	8	7	8	5	5	3351	4622	21	16	17	22	20	21	11	12	18
4	4	4	4	7	2	3	4	4	3224	3333	10	9	10	17	5	7	10	10	10
5	4	2	5	4	4	4	4	1	1334	3232	8	5	12	10	10	9	8	2	8
6	2	3	3	4	5	3	2	1	3234	3122	5	7	7	10	11	7	5	2	7
7	2	1	5	2	2	2	3	3	2232	2221	4	3	11	5	4	5	6	6	6
8	3	8	7	10	11	9	7	10	1333	4133	7	23	19	40	48	32	19	34	28
9	4	7	7	7	8	8	6	5	1321	3313	8	18	19	19	25	26	15	11	18
10	8	3	5	6	5	4	4	5	2311	3222	26	7	12	15	11	9	9	12	13
11	4	5	5	5	4	5	7	8	2324	2342	9	13	12	12	8	12	20	23	14
12	4	4	5	5	5	6	8	5	2222	2222	9	10	12	12	11	14	24	12	13
13	6	7	8	8	7	8	6	7	2242	2412	14	19	23	22	20	22	14	18	19
14	6	6	8	6	4	7	7	8	1122	3432	16	16	23	14	10	17	20	25	18
15	11	13	11	9	11	10	13	13	2323	3332	42	67	45	33	47	35	62	64	49
16	13	9	9	8	6	5	8	6	3333	5232	64	29	30	21	14	11	21	15	26
17	8	6	4	4	2	3	5	5	3233	4322	23	15	9	10	5	7	13	11	12
18	7	7	4	5	5	7	5	5	5425	3222	19	17	10	13	13	17	11	11	14
19	5	7	7	10	9	6	8	8	2313	4023	12	20	19	37	27	14	21	25	22
20	7	7	8	9	5	7	7	6	3220	3541	19	17	21	29	12	18	20	14	19
21	7	4	6	5	5	2	4	5	5223	4232	18	9	16	13	12	4	8	13	12
22	8	5	4	2	3	4	6	4	2233	2332	24	11	8	5	7	9	16	9	11
23	8	9	10	11	8	6	8	8	2224	3223	25	32	34	41	25	14	23	24	27
24	5	6	5	6	7	3	5	7	2224	3123	13	14	13	16	17	7	12	18	14
25	8	8	9	8	7	3	7	5	2525	2444	21	26	29	21	17	7	19	12	19
26	6	10	12	14	14	14	12	14	1356	5322	14	34	54	76	74	77	53	75	57
27	14	11	13	11	10	11	12	10	2353	2334	73	44	66	45	39	42	52	36	50
28	8	9	11	9	9	8	8	7	2134	0244	25	27	42	30	29	24	23	19	27
29	8	13	11	10	9	6	9	10	3432	4325	22	61	46	36	31	16	30	35	35
30	10	8	10	10	9	10	10	9	4351	4330	34	22	39	37	30	38	36	29	33
31	12	14	14	14	11	8	5	6	1233	4331	56	79	76	76	48	26	12	15	49
																			22.8

JULY 1973

	3 Ks								σs								As
1	9	9	11	9	7	9	10	4	2153	1252	28	31	43	33	20	29	34	10	29
2	7	9	7	7	7	6	8	6	4223	1212	20	27	19	20	18	14	21	14	19
3	7	6	4	6	5	5	2	3	2344	3322	18	16	10	14	12	13	5	6	12
4	2	2	1	5	0	0	1	2	3333	1033	5	4	3	11	1	0	3	4	4
5	4	1	2	1	1	2	0	0	1331	1110	8	3	4	3	2	4	1	0	3
6	1	1	1	1	3	1	0	0	2112	2310	2	2	2	3	6	3	1	0	2
7	0	0	1	0	0	0	0	0	1131	0010	1	1	3	1	0	0	1	0	1
8	1	8	6	9	11	8	4	7	1443	4212	3	21	16	32	48	25	10	18	22
9	2	5	7	8	9	9	7	2	4523	3113	5	13	19	23	28	27	18	5	17
10	9	2	2	3	2	2	1	3	2222	4314	29	4	4	6	5	4	3	7	8
11	4	5	2	4	1	1	6	7	5611	2242	9	12	5	8	2	2	16	19	9
12	4	4	4	3	2	3	8	6	4223	1134	10	8	8	6	4	7	22	16	10
13	6	7	7	6	5	6	5	7	4541	1224	15	18	18	15	13	16	12	18	16
14	6	6	7	4	1	3	4	5	4453	2442	15	15	19	8	3	6	9	12	11
15	11	11	11	9	11	9	14	14	1222	4153	42	49	45	33	44	27	84	86	51
16	14	8	9	8	4	3	7	5	3344	2452	72	23	28	22	10	6	19	11	24
17	9	6	2	2	2	1	5	4	4103	3224	31	14	4	4	5	2	11	10	10
18	6	4	1	2	4	3	2	4	5411	3335	14	10	2	5	8	7	4	9	7
19	4	5	6	9	9	4	5	8	2211	3424	8	12	14	27	28	10	12	21	17
20	6	6	6	7	3	5	5	5	4113	2222	15	14	15	20	6	12	13	11	13
21	7	3	4	5	5	1	1	3	4413	5322	18	6	10	12	12	3	3	7	9
22	8	3	1	0	0	1	5	3	3220	0141	23	7	2	0	0	3	13	7	7
23	7	9	11	9	7	5	8	9	3134	1153	20	29	44	33	18	11	26	29	26
24	4	6	5	6	5	3	2	4	2433	5435	10	14	13	14	11	6	4	10	10
25	8	8	9	6	5	2	7	4	5432	2212	24	23	30	15	11	5	18	8	17
26	6	7	10	12	14	13	10	14	4224	6025	15	19	39	58	72	62	40	74	47
27	14	10	12	9	9	10	13	8	2443	2322	80	40	54	33	27	37	61	26	45
28	8	9	9	8	8	8	6	4	3234	1132	23	27	31	21	21	23	16	10	22
29	6	12	9	9	8	5	8	10	1312	2232	16	59	29	33	22	11	24	35	29
30	10	8	9	8	8	11	10	8	4511	3234	37	25	29	21	24	43	37	21	30
31	12	12	11	13	12	7	6	5	2143	4142	51	59	48	61	58	20	14	11	40
																			18.3

JULY 1973

	3 Km								Σ Km	am							Am	Am2
1	9	10	11	10	8	9	10	5	24.0	28	36	44	35	26	33	37	13	32	31
2	8	9	7	9	7	6	8	7	20.3	23	28	20	27	20	15	23	17	22	22
3	7	6	6	7	6	7	4	4	15.7	19	16	14	18	16	17	8	9	15	14
4	3	3	3	6	1	2	3	3	8.0	7	6	7	14	3	4	6	7	7	8
5	4	2	4	3	3	3	2	0	7.0	8	4	8	7	6	6	4	1	6	5
6	1	2	2	3	4	2	1	0	5.0	3	5	4	7	8	5	3	1	5	4
7	1	1	3	1	1	1	1	1	3.3	2	2	7	3	2	3	3	3	3	8
8	2	8	7	10	11	9	6	8	20.3	5	22	18	36	48	28	15	26	25	17
9	3	6	7	8	9	9	7	4	17.7	6	16	19	21	27	27	17	8	18	19
10	9	3	4	4	4	3	3	4	11.3	28	6	8	10	8	6	6	9	10	13
11	4	5	4	4	2	3	7	8	12.3	9	12	9	10	5	7	18	21	11	10
12	4	4	4	4	4	5	8	6	13.0	9	9	10	9	8	11	23	14	12	14
13	6	7	7	7	7	7	5	7	17.7	15	19	20	18	17	19	13	18	17	16
14	6	6	8	5	3	5	6	7	15.3	15	16	21	11	7	11	15	19	14	23
15	11	12	11	9	11	9	14	14	30.3	42	58	45	33	46	31	73	75	50	37
16	13	8	9	8	5	4	7	5	19.7	68	26	29	21	12	8	20	13	25	30
17	9	6	3	3	2	2	5	4	11.3	27	14	7	7	5	5	12	10	11	12
18	6	6	3	4	4	5	4	4	12.0	16	14	6	9	10	12	8	10	11	12
19	4	6	7	9	9	5	6	8	18.0	10	16	17	32	27	12	16	23	19	17
20	7	6	7	8	4	6	7	5	16.7	17	16	18	24	9	15	17	12	16	16
21	7	3	5	5	5	2	2	4	11.0	18	7	13	13	12	4	5	10	10	11
22	8	4	2	1	1	3	6	4	9.7	24	9	5	3	3	6	14	8	9	14
23	8	9	10	10	8	5	8	8	22.0	22	30	39	37	21	12	24	26	26	19
24	5	6	5	6	6	3	4	6	13.7	12	14	13	15	14	7	8	14	12	17
25	8	8	9	7	6	3	7	4	17.3	22	24	29	18	14	6	19	10	18	21
26	6	8	11	13	14	13	11	14	30.0	14	26	46	67	73	69	46	74	52	43
27	14	11	12	10	9	10	12	9	29.0	77	42	60	39	33	40	57	31	47	47
28	8	9	10	8	8	8	7	6	21.3	24	27	37	25	25	23	20	14	24	32
29	7	12	10	10	9	6	9	10	24.3	19	60	37	35	27	14	27	35	32	29
30	10	8	10	9	9	10	10	8	24.7	36	24	34	29	27	40	36	25	31	38
31	12	13	13	13	12	8	5	5	27.0	54	69	62	68	53	23	13	13	44	38
																		20.5	

AUG. 1973

	3 Km								Σ Km	am							Am	Am2
1	9	9	8	11	7	5	7	6	20.7	30	27	23	46	17	11	17	14	23	27
2	8	10	12	8	12	10	5	3	22.7	25	37	56	25	53	38	13	6	32	22
3	5	5	4	3	5	6	4	9	13.7	11	11	10	6	11	14	8	29	13	16
4	8	3	3	4	2	4	8	9	13.7	21	7	7	10	5	9	21	28	14	13
5	7	2	2	4	8	8	6	6	14.3	19	4	4	9	25	21	16	16	14	17
6	6	10	9	8	9	9	5	1	19.0	16	34	31	21	29	31	11	3	22	19
7	3	5	6	6	7	8	7	4	15.3	6	11	14	14	20	24	20	9	15	17
8	8	7	9	7	7	2	4	7	17.0	23	17	29	18	17	4	9	17	17	17
9	7	6	7	5	5	1	1	1	11.0	17	16	17	11	11	3	3	3	10	11
10	3	5	7	6	2	2	1	2	9.3	7	11	18	14	4	4	3	4	8	6
11	1	2	1	4	5	2	3	2	6.7	2	5	2	8	12	5	7	5	6	5
12	1	2	4	1	2	2	3	9	8.0	3	5	8	3	4	5	6	29	8	10
13	2	6	9	6	8	8	8	9	18.7	5	15	30	16	22	21	23	29	20	17
14	9	5	5	7	7	6	6	5	16.7	27	12	13	17	18	15	14	12	16	16
15	3	4	5	4	4	4	1	4	9.7	7	8	13	10	8	8	3	9	8	9
16	3	1	0	1	5	1	3	3	5.7	6	2	1	3	11	2	7	6	5	5
17	1	0	1	1	0	3	1	2	3.0	2	0	2	3	1	6	2	4	3	5
18	1	4	5	4	6	3	1	0	8.0	2	8	13	10	14	7	3	1	7	7
19	7	4	4	2	6	4	2	4	11.0	17	10	10	5	16	10	5	9	10	10
20	0	4	5	9	9	5	5	4	13.7	0	9	12	30	30	13	11	9	14	13
21	4	8	6	5	6	3	3	1	12.0	9	22	14	11	14	7	6	3	11	11
22	0	0	2	7	8	9	10	11	15.7	1	1	5	18	25	30	36	49	21	18
23	9	8	9	7	10	12	13	10	26.0	29	23	29	19	35	55	63	37	36	45
24	13	13	14	14	13	11	8	10	32.0	66	67	80	83	69	42	25	37	59	55
25	11	12	13	13	10	9	12	6	28.7	42	56	63	61	38	30	53	14	45	42
26	11	10	8	9	7	11	9	7	24.0	43	40	22	30	20	42	28	19	31	35
27	12	11	11	10	10	12	9	8	27.7	58	45	41	37	36	56	29	22	41	36
28	8	11	11	9	12	12	8	10	27.0	21	48	50	27	51	55	21	36	39	40
29	11	10	12	12	8	6	11	9	26.3	45	34	58	51	21	14	41	29	37	36
30	8	9	10	9	8	5	7	5	20.3	23	30	35	32	23	12	20	12	23	24
31	7	8	9	7	8	5	5	4	17.7	18	21	31	17	23	13	12	10	18	16
																		20.2	

AUG. 1973

	3 Kn								σn								An
1	9	9	8	12	6	5	7	6	2325	3554	31	28	23	52	15	11	18	14	24
2	8	10	12	9	13	10	6	4	4552	2223	26	40	59	29	66	39	14	9	35
3	5	5	4	4	6	6	5	10	1333	0124	12	12	10	9	14	15	12	39	15
4	8	4	4	5	3	5	8	10	3221	2323	22	9	8	13	6	13	23	34	16
5	8	2	3	5	10	8	7	7	2223	2322	22	5	6	12	35	25	18	18	18
6	7	10	10	8	10	9	5	3	3523	2223	19	38	36	26	37	29	13	6	26
7	3	5	7	6	8	8	8	5	3421	3322	7	11	17	15	23	21	22	11	16
8	8	7	9	8	8	3	5	7	3243	3332	23	17	30	21	21	6	11	18	18
9	6	6	7	5	6	2	2	2	1252	2321	16	15	20	12	14	4	5	5	11
10	4	5	7	7	2	3	2	3	3553	3312	8	12	20	18	5	7	5	6	10
11	1	4	2	5	6	3	4	4	2322	3334	2	8	4	11	15	6	10	8	8
12	2	3	4	2	3	4	3	10	2222	3523	4	7	10	4	6	8	7	38	11
13	3	7	9	7	9	7	8	10	3422	1112	6	17	31	19	31	18	26	37	23
14	8	5	6	7	8	7	7	5	3133	3535	23	12	15	20	23	18	19	12	18
15	3	4	6	6	5	4	2	4	1231	3224	7	10	14	14	11	10	5	10	10
16	3	1	1	2	5	1	4	4	1322	3233	7	3	2	4	13	2	10	9	6
17	2	0	1	2	1	3	1	2	3132	2312	5	0	3	5	2	6	2	5	4
18	1	4	5	5	6	4	2	1	2332	1432	3	8	13	11	15	9	4	2	8
19	7	5	5	3	7	5	3	4	4223	2323	18	11	11	6	20	11	7	10	12
20	0	4	5	9	9	6	5	4	1221	1222	1	9	13	32	31	15	13	9	15
21	4	8	6	6	6	3	4	3	3323	1433	10	23	15	14	15	7	8	6	12
22	1	1	3	7	9	10	10	12	1323	0321	2	2	6	20	29	37	40	54	24
23	9	8	9	7	10	13	13	11	3233	2241	28	25	28	20	40	64	61	44	39
24	14	14	15	15	14	11	9	10	6743	3123	75	72	96	95	79	49	27	37	66
25	10	12	14	14	11	9	12	6	3553	1252	36	57	74	73	45	28	51	16	48
26	10	11	8	9	7	11	9	7	3321	1332	39	42	24	30	19	46	32	18	31
27	12	11	11	11	10	13	10	8	1433	2651	51	46	44	45	40	64	35	25	44
28	7	12	12	9	12	13	8	10	4551	2422	20	57	60	30	58	62	23	34	43
29	10	10	12	12	8	6	11	10	2544	3333	40	38	59	57	21	15	44	36	39
30	8	10	9	10	8	5	8	5	3432	2132	23	34	33	34	26	13	23	11	25
31	7	8	10	6	9	6	5	5	4451	3442	18	26	37	16	27	15	13	12	21
																			22.5

AUG. 1973

	3 Ks								σs								As
1	9	8	8	10	7	4	6	5	3235	3133	28	26	24	40	19	10	16	13	22
2	8	9	12	7	11	10	5	2	2531	1223	24	33	52	20	41	36	11	4	28
3	4	4	4	2	4	5	2	7	4443	3215	10	10	9	4	8	12	5	20	10
4	7	3	3	3	2	3	7	8	4211	3431	20	6	6	7	4	6	19	23	11
5	7	1	1	3	6	7	5	6	2122	1322	17	2	2	6	16	17	13	14	11
6	5	9	9	6	8	9	4	0	3422	2121	13	31	27	16	21	33	9	1	19
7	2	4	5	6	7	9	7	3	3331	1331	4	10	11	14	18	27	19	7	14
8	8	7	9	6	5	1	3	7	5243	2335	23	18	28	16	13	3	7	17	16
9	7	6	6	4	4	1	1	0	2343	2321	19	16	14	9	9	3	2	1	9
10	3	4	6	4	1	1	0	0	2441	3212	7	10	16	10	2	2	1	1	6
11	1	1	0	2	4	2	2	0	2210	3331	2	3	1	4	8	4	5	1	4
12	0	1	3	1	1	1	3	8	1342	2344	1	3	6	2	2	3	6	21	6
13	1	6	9	5	6	8	7	8	1443	1131	3	14	29	13	14	24	20	21	17
14	9	5	5	6	5	5	4	5	5211	2126	31	12	11	15	12	12	9	11	14
15	4	3	5	3	3	3	1	4	1132	1325	8	7	11	6	6	7	2	8	7
16	2	1	0	0	4	1	2	1	1101	4232	5	2	0	1	9	2	4	3	3
17	0	0	0	0	0	3	1	1	0001	0322	0	0	0	1	0	6	2	3	2
18	1	3	5	4	5	2	1	0	1331	4210	2	7	12	10	12	5	3	0	6
19	6	4	4	2	5	4	2	4	7432	4022	16	9	9	4	12	8	4	8	9
20	0	4	5	9	9	5	4	4	0533	3113	0	9	11	28	29	11	9	9	13
21	4	7	6	4	5	3	2	0	2413	2221	8	20	14	8	12	6	4	1	9
22	0	0	2	6	8	8	9	11	0031	1222	0	0	4	15	21	23	31	44	17
23	9	7	9	7	9	11	13	9	5432	1212	31	20	29	17	30	46	65	29	33
24	12	13	13	13	12	10	8	10	3535	2023	58	62	65	70	60	35	23	38	51
25	11	12	12	11	9	9	12	5	3314	1354	47	55	52	48	31	32	56	13	42
26	11	10	7	9	8	10	8	8	2211	2124	47	37	20	29	21	37	23	21	29
27	13	11	10	9	9	11	8	7	3121	4425	65	44	39	30	31	47	23	20	37
28	8	10	10	8	11	11	7	10	3122	3433	22	39	39	24	45	49	19	38	34
29	11	9	12	11	8	6	10	8	2414	2133	49	30	57	45	21	14	39	22	35
30	8	8	10	9	8	5	6	5	2334	2331	23	26	37	31	21	11	16	12	22
31	7	7	8	7	7	5	5	3	5332	3431	17	17	26	17	20	11	11	7	16
																			17.8

SEP. 1973

	3 Kn								σn								an								An
1	3	5	5	4	4	2	2	4	2422	2212	6	13	13	9	9	4	5	8	8
2	5	3	5	3	4	8	5	8	2222	1233	11	6	11	7	8	26	13	21	13
3	3	1	3	3	5	5	6	8	1322	2415	6	2	7	7	12	13	15	22	11
4	7	7	9	10	7	8	9	7	3253	2262	19	18	32	37	17	22	31	19	24
5	8	10	7	7	8	6	11	7	6543	3364	26	34	20	19	22	15	47	18	25
6	7	7	7	8	6	8	4	4	5543	3323	17	19	20	21	15	22	8	8	16
7	2	8	8	7	8	6	3	4	3533	3213	5	21	24	20	21	16	7	9	15
8	2	4	5	7	7	8	5	8	1323	2333	4	8	13	19	17	22	12	22	15
9	3	2	7	11	12	10	14	17	2222	1325	7	5	19	41	53	40	84	125	47
10	6	4	8	11	11	12	15	9	3233	2342	14	9	21	46	46	55	89	32	39
11	12	8	4	4	6	9	9	8	3423	3342	58	21	9	8	14	29	33	23	24
12	7	2	2	4	6	10	7	5	4322	0532	17	5	5	10	14	34	17	12	14
13	6	3	3	8	9	6	8	5	3225	5333	14	6	7	26	32	14	23	11	17
14	4	4	4	3	1	0	1	2	4432	3124	8	8	10	7	3	0	2	4	5
15	4	2	4	7	8	9	8	12	3232	4422	10	5	9	18	25	32	21	51	21
16	10	9	11	8	8	6	3	4	3132	3314	36	30	41	22	26	14	7	10	23
17	5	7	9	10	4	2	4	8	2253	3322	11	19	33	35	10	5	9	26	19
18	6	3	4	7	7	4	6	4	4132	3262	16	7	10	17	20	9	16	10	13
19	1	2	3	1	1	3	5	3	2323	4542	2	5	7	2	3	7	13	7	6
20	4	4	5	5	8	8	7	10	4312	3335	9	8	12	11	25	24	20	38	18
21	11	8	10	11	7	8	6	5	4356	4523	45	22	37	50	20	24	15	13	28
22	3	4	7	8	6	8	12	14	1333	3553	7	10	20	23	15	26	55	74	29
23	13	11	11	19	18	11	16	10	3243	4272	67	49	49	175	167	46	111	36	88
24	11	12	10	9	11	13	9	11	3422	3622	41	59	38	28	42	65	27	44	43
25	8	8	9	8	10	8	15	13	2234	3353	24	22	31	25	40	22	94	69	41
26	9	8	10	15	13	11	5	4	4135	6632	31	26	39	97	64	41	12	9	40
27	4	2	6	10	8	10	4	5	3422	6833	10	5	15	36	25	40	10	12	19
28	2	0	2	7	6	3	4	4	2234	6133	5	1	4	18	14	7	10	9	9
29	4	2	3	3	3	3	2	3	3244	2223	9	5	7	7	7	6	4	7	7
30	3	1	3	2	1	2	4	2	2243	2442	6	3	7	5	3	5	8	5	5
																			22.7

SEP. 1973

	3 Ks								σs								as								As
1	4	5	4	3	3	1	1	4	2541	2233	8	12	9	6	7	2	3	8	7
2	5	4	4	2	1	8	4	6	1011	2431	11	8	10	5	2	21	8	16	10
3	4	2	3	1	5	4	6	7	3321	4332	8	4	6	3	12	8	16	20	10
4	7	6	10	10	8	6	9	6	2123	4152	18	15	35	37	26	15	33	15	24
5	8	7	7	7	8	5	11	8	5532	2132	26	20	17	17	21	11	47	26	23
6	5	7	6	5	5	7	3	0	2211	2331	13	18	16	12	12	19	7	1	12
7	1	8	8	6	8	7	4	2	3312	3322	3	22	26	16	22	17	9	4	15
8	2	4	5	8	6	9	4	7	0532	2124	4	8	11	21	16	28	9	20	15
9	4	3	8	10	11	10	16	17	1112	2604	8	6	21	39	49	39	106	131	50
10	7	4	8	11	11	10	14	8	2124	4223	19	10	21	46	50	39	77	25	36
11	12	9	4	1	3	7	7	7	5212	1114	60	27	8	3	6	20	20	17	20
12	6	1	0	3	4	8	6	4	4211	2032	16	3	1	7	8	25	14	8	10
13	4	4	3	7	8	6	7	4	3113	4312	9	8	7	20	26	16	20	9	14
14	4	4	3	2	1	0	0	1	3412	3013	8	10	6	5	2	0	1	2	4
15	4	3	3	7	8	7	7	12	1113	4115	10	7	7	18	26	18	19	55	20
16	11	10	9	7	8	6	3	4	3211	2144	49	39	31	20	21	16	6	8	24
17	6	7	8	9	4	1	4	8	2233	3323	14	20	23	28	9	3	10	24	16
18	7	4	3	6	6	4	5	5	5012	5334	18	8	7	16	16	8	12	11	12
19	1	3	3	0	1	3	4	2	2131	2210	3	7	6	1	2	6	9	4	5
20	7	5	4	4	8	8	8	11	4242	4236	17	12	10	10	21	22	22	42	20
21	10	7	9	10	8	8	5	4	5134	2222	38	18	29	35	25	24	11	10	24
22	4	6	7	7	6	8	11	13	4113	2333	10	14	20	20	16	26	47	66	27
23	13	10	11	18	18	11	15	10	5213	3143	64	35	50	163	156	44	99	38	81
24	11	11	10	8	9	11	8	11	3311	4315	49	44	35	23	31	45	24	47	37
25	8	7	8	7	10	8	14	14	2223	1233	24	19	24	20	35	22	81	73	37
26	10	10	11	14	13	12	5	3	4424	1622	39	39	46	81	65	58	13	6	43
27	4	2	7	9	7	9	4	4	2021	2132	9	4	19	27	17	27	8	9	15
28	2	3	0	6	6	4	5	3	2103	6342	5	6	0	16	15	8	11	6	8
29	6	3	3	3	1	2	2	1	2131	2031	14	7	6	7	3	4	5	3	6
30	2	1	2	1	1	2	5	2	1132	2342	5	2	4	3	3	4	11	5	5
																			21.0

SEP. 1973

	3 Km								Σ Km	am							Am	Am2
1	3	5	5	4	4	1	2	4	9.3	7	13	11	8	8	3	4	8	8	10
2	5	3	4	3	2	8	5	7	12.3	11	7	10	6	5	24	11	19	12	9
3	3	1	3	2	5	5	6	8	11.0	7	3	6	5	12	11	16	21	10	15
4	7	7	9	10	8	7	9	7	21.3	18	17	33	37	22	19	32	17	24	22
5	8	9	7	7	8	5	11	8	21.0	26	27	19	18	21	13	47	22	24	22
6	5	7	7	7	6	8	3	2	15.3	15	19	18	17	14	21	7	5	15	18
7	2	8	8	7	8	6	4	3	15.3	4	22	25	18	22	16	8	6	15	13
8	2	4	5	7	7	8	4	8	15.0	4	8	12	20	17	25	10	21	15	15
9	3	3	7	10	12	10	15	17	25.7	7	6	20	40	51	39	95	128	48	34
10	6	4	8	11	11	11	14	9	24.7	16	9	21	46	48	47	83	29	37	44
11	12	8	4	2	4	8	8	7	17.7	59	24	9	5	10	24	26	20	22	26
12	7	2	1	4	5	9	6	4	12.7	17	4	3	8	11	29	15	10	12	14
13	5	3	3	8	9	6	8	4	15.3	12	7	7	23	29	15	22	10	16	14
14	4	4	4	3	1	0	0	1	5.7	8	9	8	6	2	0	1	3	5	10
15	4	3	4	7	8	8	7	12	17.7	10	6	8	18	26	25	20	53	21	19
16	11	10	10	8	8	6	3	4	20.0	43	35	36	21	23	15	7	9	24	25
17	5	7	9	9	4	2	4	8	16.0	12	20	28	31	10	4	9	25	17	15
18	7	4	4	7	7	4	6	4	14.3	17	8	8	17	18	8	14	10	13	10
19	1	3	3	1	1	3	5	2	6.3	3	6	7	2	2	6	11	5	5	9
20	5	4	5	4	8	8	8	10	17.3	13	10	11	10	23	23	21	40	19	20
21	11	7	9	11	8	8	5	5	21.3	41	20	33	43	22	24	13	11	26	24
22	4	5	7	8	6	8	12	13	21.0	9	12	20	21	15	26	51	70	28	39
23	13	11	11	18	18	11	16	10	36.0	65	42	49	169	162	45	105	37	84	62
24	11	12	10	8	10	12	8	11	27.3	45	52	37	25	37	55	26	45	40	48
25	8	7	9	8	10	8	15	14	26.3	24	20	28	22	38	22	88	71	39	42
26	10	9	11	15	13	11	5	3	25.7	35	32	43	89	64	50	13	7	42	38
27	4	2	7	9	8	9	4	4	15.7	10	4	17	31	21	33	9	10	17	19
28	2	2	1	7	6	3	4	3	9.3	5	4	2	17	15	7	10	7	8	11
29	5	3	3	3	2	2	2	2	7.3	11	6	7	7	5	5	4	5	6	7
30	2	1	2	2	1	2	4	2	5.3	5	3	5	4	3	5	10	5	5	5
																		21.9	

OCT. 1973

	3 Km								Σ Km	am							Am	Am2
1	5	3	1	1	2	1	6	5	8.0	12	7	2	2	5	3	15	12	7	15
2	4	11	12	12	12	11	11	10	27.7	8	43	51	58	51	48	42	37	42	41
3	12	15	14	12	13	10	6	9	30.3	56	101	75	56	66	36	15	31	55	42
4	6	6	8	3	3	9	9	3	15.7	15	16	22	7	7	33	32	7	17	20
5	3	2	3	6	3	7	10	11	15.0	7	4	6	16	7	19	35	47	18	19
6	10	4	8	6	1	7	10	9	18.3	36	8	21	16	2	20	38	28	21	20
7	9	3	3	3	3	3	0	5	9.7	28	6	7	7	6	6	1	11	9	13
8	7	4	3	7	4	4	7	3	13.0	19	9	6	19	9	9	20	6	12	9
9	5	3	2	4	6	4	11	12	15.7	11	6	4	8	14	9	49	53	19	20
10	8	11	10	6	9	12	9	8	24.3	22	48	34	16	27	55	33	22	32	29
11	9	7	7	6	7	7	8	7	19.3	29	20	18	16	19	17	25	18	20	24
12	6	8	8	7	7	9	5	12	20.7	14	26	23	18	19	28	13	58	25	26
13	11	9	9	9	5	7	10	7	22.3	48	30	29	28	13	19	39	19	28	24
14	5	3	4	6	6	7	8	4	14.3	13	6	10	16	15	17	22	8	13	16
15	8	4	4	5	3	0	2	1	9.0	25	8	9	13	6	1	5	2	9	20
16	2	8	14	14	12	11	13	12	28.7	5	21	80	75	59	43	69	54	51	37
17	11	11	9	11	11	10	9	9	27.0	45	41	30	50	49	34	31	32	39	40
18	8	8	9	9	15	10	8	9	25.3	23	25	28	33	91	39	25	30	37	38
19	8	11	12	11	11	5	8	9	25.0	23	44	52	50	41	13	25	29	35	37
20	7	11	10	10	10	12	7	7	24.7	20	43	38	34	37	53	18	20	33	33
21	10	9	7	13	14	11	14	13	30.3	40	33	20	61	81	47	80	64	53	44
22	12	9	9	9	9	10	7	4	23.0	53	31	32	32	30	35	17	10	30	35
23	3	5	7	4	4	5	2	4	11.3	7	11	20	10	8	11	5	10	10	14
24	4	7	4	7	6	3	5	8	14.7	9	19	8	17	15	7	12	21	14	11
25	4	1	3	4	4	4	5	5	10.0	8	3	7	9	9	9	12	13	9	10
26	7	4	2	0	0	1	1	1	5.3	17	8	5	0	1	2	3	3	5	6
27	0	1	4	1	1	6	6	3	7.3	1	3	9	2	3	15	15	7	7	9
28	3	4	9	9	7	12	12	12	22.7	6	8	30	32	20	52	53	53	32	38
29	13	13	12	16	18	16	18	14	40.0	69	70	58	120	155	104	169	80	103	74
30	15	10	9	8	10	9	9	10	26.7	89	34	31	25	38	32	32	40	40	62
31	12	11	10	8	5	6	5	3	20.0	51	45	35	25	12	14	11	6	25	22
																		27.4	

OCT. 1973

	3 Kn								σn		an						An
1	5	3	1	1	3	1	6	5	5323	2213	13	7	3	3	6	3	15	12	8
2	4	11	12	13	13	11	11	11	3233	2342	10	44	51	68	62	48	45	43	46
3	12	16	14	13	14	10	6	10	4545	6424	56	115	77	61	78	40	16	35	60
4	5	7	8	4	5	9	10	3	2421	6452	13	17	25	9	11	33	38	7	19
5	3	1	3	6	3	7	10	11	2233	1546	6	3	6	14	7	20	39	47	18
6	11	4	8	7	1	8	10	9	4233	3341	42	9	22	18	3	22	39	31	23
7	9	3	4	4	4	4	1	5	4123	2325	29	6	8	9	8	8	2	12	10
8	7	4	4	8	4	4	7	2	4535	3331	19	9	9	25	10	9	18	5	13
9	4	3	1	4	6	3	11	11	2212	2242	8	6	3	8	16	7	48	49	18
10	8	11	10	6	9	12	9	8	2221	2533	23	45	34	16	29	59	30	22	32
11	9	8	7	7	8	5	8	7	4223	3343	28	22	20	18	22	13	25	17	21
12	5	8	8	7	7	9	5	12	2332	3422	13	23	25	17	19	31	13	54	24
13	11	10	9	9	6	7	11	7	3453	2365	41	34	32	30	14	18	42	20	29
14	5	2	4	7	6	7	8	4	3231	4532	12	5	10	17	16	18	23	9	14
15	9	4	5	6	4	0	2	0	5234	5122	27	9	11	14	8	1	5	1	10
16	2	8	13	14	13	11	14	12	2727	3342	4	22	70	80	69	44	71	51	51
17	11	11	9	12	11	10	9	10	2442	3534	43	44	32	56	47	37	33	34	41
18	9	9	10	10	15	10	8	9	3543	5243	27	31	34	40	98	36	24	31	40
19	8	11	12	12	11	6	9	9	2456	5444	22	48	59	56	49	14	27	30	38
20	7	10	11	10	11	13	8	7	2234	6633	18	39	46	37	42	61	22	19	36
21	12	10	7	14	14	11	15	13	5323	3254	52	39	18	71	84	48	89	67	59
22	13	9	10	10	10	10	7	4	4134	3542	61	32	39	35	34	37	18	9	33
23	4	6	8	4	4	5	2	4	3452	1414	8	15	25	10	9	12	5	10	12
24	3	6	5	7	6	3	5	8	1132	2235	7	15	12	17	15	6	12	21	13
25	4	2	3	4	4	4	5	5	4213	3224	8	4	6	8	9	8	12	12	8
26	6	4	3	0	0	0	0	1	4311	1122	16	9	6	1	1	1	1	2	5
27	0	1	4	0	0	6	6	2	0221	2252	0	2	8	1	1	14	16	4	6
28	2	3	9	10	8	12	12	13	2223	2252	4	6	28	35	24	51	52	61	33
29	14	14	13	17	18	16	19	14	3333	5354	72	77	67	124	166	109	178	83	110
30	15	10	9	9	11	9	9	11	3214	2223	100	36	32	27	41	32	32	42	43
31	11	11	10	7	6	5	4	3	5442	4243	49	49	35	20	14	12	9	6	24
																			28.9

OCT. 1973

	3 Ks								σs		as						As
1	5	3	1	0	1	2	6	5	3321	3342	12	7	2	1	3	4	14	12	7
2	3	11	12	11	10	11	10	9	3342	3323	7	42	51	48	40	47	39	32	38
3	12	14	14	12	12	9	6	9	5113	3214	56	86	72	51	54	31	14	27	49
4	6	6	7	3	2	9	9	3	3322	1143	16	15	19	6	4	33	27	7	16
5	4	2	3	7	3	7	9	11	1222	2235	8	5	6	18	7	18	32	46	18
6	9	4	7	5	1	7	10	8	4314	2033	31	8	20	13	2	17	37	25	19
7	9	2	2	3	2	2	0	5	6112	1114	28	5	5	6	4	5	1	11	8
8	7	4	1	5	4	4	8	3	2517	2311	19	8	3	13	8	9	21	6	11
9	5	3	2	3	5	4	11	12	2231	2444	13	6	5	7	13	10	50	56	20
10	8	12	10	6	8	11	10	8	1121	4343	21	52	35	16	25	50	35	22	32
11	9	7	6	6	6	8	8	7	2321	1333	29	17	16	15	16	22	25	19	20
12	6	9	8	7	7	8	5	13	1411	2224	15	28	21	18	18	25	13	63	25
13	12	9	8	8	5	7	10	7	2234	3233	54	27	26	25	13	19	37	19	28
14	6	3	4	6	6	6	8	3	3311	4322	14	6	10	14	14	16	21	6	13
15	8	4	4	5	2	1	3	1	3212	2222	24	8	8	11	4	2	6	2	8
16	3	7	15	13	11	11	13	12	4514	1331	6	20	90	69	50	42	66	57	50
17	11	10	9	11	12	9	9	9	3521	3334	47	39	27	44	51	31	28	31	37
18	7	7	8	9	14	11	8	9	5133	4124	20	20	22	27	83	42	26	29	34
19	8	10	11	11	9	5	8	9	3435	3222	24	40	44	45	33	12	23	28	31
20	8	11	9	9	9	11	6	8	3322	2222	22	48	31	32	32	46	14	21	31
21	9	8	8	12	14	11	14	13	2333	4124	28	26	21	51	78	46	71	61	48
22	11	9	8	9	8	9	6	5	3113	3354	44	31	26	28	26	32	15	11	27
23	3	4	6	5	3	5	3	5	2211	1144	6	8	16	11	7	11	6	11	10
24	5	8	2	7	6	3	5	8	2312	2234	12	23	5	17	15	7	11	21	14
25	4	1	4	5	4	5	5	5	3122	3332	9	3	8	11	8	11	12	13	9
26	7	3	2	0	1	1	2	2	2310	2331	19	7	5	0	2	3	4	4	6
27	1	1	4	1	2	6	6	4	1221	3434	2	3	10	3	4	16	14	10	8
28	4	4	9	9	6	12	12	11	2111	1353	8	10	33	30	16	53	54	44	31
29	13	13	11	16	17	15	18	14	2212	2454	66	62	50	117	144	99	161	77	97
30	14	9	9	8	10	9	9	10	2112	2131	77	31	30	23	35	32	32	37	37
31	12	10	10	9	5	7	6	3	4441	1342	53	40	35	31	11	17	14	7	26
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	3 Kn								σn	an							An
1	0	1	1	3	7	6	7	4	1223 4453	1	3	2	7	18	16	17	8	9
2	8	2	7	6	6	7	5	5	4253 3555	22	4	19	14	15	19	12	12	15
3	5	3	4	4	4	3	4	4	3441 3133	12	7	9	9	10	6	9	10	9
4	7	4	2	6	11	10	11	14	4232 2938	19	9	5	14	43	39	42	76	31
5	5	6	9	9	6	5	10	9	2322 2342	13	14	29	32	15	11	39	32	23
6	7	6	4	3	5	5	9	8	3434 4334	19	14	10	7	11	12	27	25	16
7	8	9	14	11	8	8	14	10	2424 2344	26	30	79	46	23	23	81	38	43
8	5	7	8	11	6	6	4	9	1433 0423	12	18	22	41	14	15	9	27	20
9	5	4	8	10	11	8	6	6	3433 5342	11	9	21	38	48	22	16	14	22
10	3	8	8	5	5	5	5	4	3332 4222	7	23	22	12	13	12	11	10	14
11	5	4	4	5	4	7	4	4	3233 3332	11	8	10	12	10	19	8	8	11
12	3	1	2	2	4	4	3	4	3232 3432	7	3	5	5	8	10	6	10	7
13	5	3	4	3	7	11	8	6	3230 2432	11	7	9	6	18	48	24	15	17
14	4	8	3	4	3	8	10	5	2212 2453	9	21	7	9	6	21	35	13	15
15	4	5	6	8	10	4	7	6	2233 5554	8	12	16	23	37	10	17	14	17
16	4	4	7	8	10	3	8	10	3343 2543	8	8	17	24	40	7	23	37	21
17	12	7	6	5	11	8	10	7	6212 4443	55	20	15	11	47	23	39	17	28
18	11	10	12	11	8	5	9	2	2344 3463	48	34	53	48	25	12	31	5	32
19	2	2	4	4	4	3	1	1	2124 3032	4	5	8	8	9	6	3	3	6
20	0	3	4	5	7	3	5	4	2533 4452	1	7	9	11	18	6	12	9	9
21	7	6	5	8	8	13	14	12	4213 2442	18	15	12	24	22	69	85	53	37
22	9	7	4	3	4	4	1	2	2332 4232	29	18	8	7	10	8	3	5	11
23	1	4	3	4	7	8	8	3	3222 5322	3	9	6	9	19	23	24	7	13
24	0	2	7	7	14	15	16	13	2154 4441	1	4	17	19	84	89	107	61	48
25	15	14	16	11	15	13	12	10	5354 6332	93	77	104	42	87	68	56	38	71
26	11	11	8	10	10	9	7	5	5333 6432	50	41	23	38	36	33	17	12	31
27	9	5	5	4	12	10	8	8	4332 5565	28	11	13	10	56	34	24	24	25
28	6	4	4	4	6	3	1	7	4132 4233	14	9	8	9	15	7	3	18	10
29	5	0	3	8	3	6	5	1	2135 3542	12	0	6	22	6	15	12	3	10
30	0	0	0	4	2	4	5	7	0014 3563	0	0	1	9	4	10	12	18	7
																		20.9

NOV. 1973

	3 Ks								σs	as							As
1	0	2	1	4	7	6	5	3	1211 3122	1	4	2	8	20	14	12	6	8
2	6	3	3	4	4	7	5	5	4222 2032	16	7	7	8	8	17	12	11	11
3	4	5	4	3	4	2	4	6	3312 1424	9	11	8	6	8	5	10	14	9
4	6	6	1	6	9	11	11	13	1121 1214	15	16	3	15	33	44	50	61	30
5	6	7	9	10	7	5	11	9	1111 2332	16	18	30	37	17	11	47	29	26
6	8	6	3	4	5	6	9	8	2211 1123	23	14	7	9	11	14	29	22	16
7	9	9	12	11	7	6	13	9	2324 1133	28	31	60	44	20	16	68	32	37
8	6	5	8	8	5	4	5	9	2333 2112	15	11	23	21	12	10	11	28	16
9	6	5	7	9	9	7	6	6	2202 3111	14	11	17	33	33	18	16	15	20
10	4	6	7	5	4	4	5	4	2322 1132	8	16	18	11	10	10	11	9	12
11	5	4	5	4	4	7	5	5	2212 1222	11	10	13	10	10	18	12	12	12
12	4	1	2	2	2	4	3	4	3213 2322	9	3	4	4	5	8	6	10	6
13	5	5	4	4	7	11	9	6	3411 2231	11	11	9	10	20	46	27	16	19
14	5	7	2	3	3	7	8	6	3212 1231	11	17	5	6	7	19	24	14	13
15	4	6	6	7	8	4	6	5	2111 4132	9	15	16	18	26	9	14	12	15
16	3	3	4	7	9	3	7	10	1622 4222	6	7	9	17	31	6	18	35	16
17	10	6	7	5	10	8	9	7	4111 2222	39	16	19	13	39	24	28	18	25
18	12	8	11	9	8	5	8	2	4222 2330	54	26	43	30	21	11	22	4	26
19	1	2	5	4	4	3	3	2	2232 2342	3	5	11	9	8	7	6	5	7
20	1	2	4	4	5	3	6	6	2301 2252	2	5	8	10	11	7	16	14	9
21	7	9	7	9	8	13	16	14	4211 3221	18	32	18	31	25	62	106	73	46
22	10	7	4	3	5	6	5	6	4111 1154	34	19	10	7	13	15	12	14	16
23	3	5	6	6	7	9	9	5	2321 1243	6	11	14	15	18	28	29	11	17
24	1	4	7	7	12	14	15	14	2221 4244	2	8	20	20	57	74	96	81	45
25	14	12	12	9	12	11	12	10	3342 2252	73	59	59	32	60	49	56	40	54
26	11	9	6	9	8	8	5	6	1221 2224	42	33	16	31	25	22	11	16	25
27	7	5	4	6	9	8	8	8	2222 2445	20	12	10	14	30	26	21	21	19
28	6	4	4	4	5	3	2	6	2151 3202	14	10	8	9	13	6	4	15	10
29	3	0	3	4	3	5	5	4	2114 1224	7	1	7	10	7	12	11	9	8
30	0	0	1	3	2	6	6	8	0012 1335	0	0	2	6	5	15	16	24	9
																		19.4

NOV. 1973

	3 Km								Σ Km	am							Am	Am 2
1	0	2	1	3	7	6	6	3	9.3	1	4	2	7	19	15	15	7	9	10
2	7	2	5	5	5	7	5	5	13.7	19	5	13	11	12	18	12	12	13	12
3	5	4	4	3	4	3	4	5	10.7	11	9	8	7	9	6	9	12	9	11
4	7	5	2	6	10	11	11	13	21.7	17	13	4	15	38	41	46	68	30	23
5	6	6	9	10	6	5	11	9	20.7	15	16	29	35	16	11	43	31	25	28
6	8	6	4	4	5	5	9	8	16.3	21	14	8	8	11	13	28	23	16	25
7	9	9	13	11	8	7	14	10	27.0	27	31	69	45	21	20	75	35	40	30
8	6	6	8	9	5	5	4	9	17.3	14	15	22	31	13	12	10	27	18	23
9	5	4	7	10	11	7	6	6	18.7	13	10	19	36	41	20	16	15	21	18
10	4	7	7	5	5	5	5	4	14.0	8	19	20	12	12	11	11	10	13	15
11	5	4	5	5	4	7	4	4	12.7	11	9	11	11	10	19	10	10	11	10
12	4	1	2	2	3	4	3	4	7.7	8	3	5	4	6	9	6	10	6	9
13	5	4	4	4	7	11	8	6	16.3	11	9	9	8	19	47	25	16	18	14
14	4	7	3	3	3	7	9	6	14.0	10	19	6	7	7	20	29	14	14	17
15	4	5	6	7	9	4	6	5	15.3	9	13	16	20	32	9	15	13	16	15
16	3	3	5	7	10	3	7	10	16.0	7	7	13	20	35	6	20	36	18	19
17	11	7	7	5	11	8	9	7	21.7	47	18	17	12	43	23	33	18	26	30
18	12	9	11	10	8	5	8	2	21.7	51	30	48	39	23	11	26	5	29	24
19	1	2	4	4	4	3	2	2	7.3	3	5	10	8	8	7	5	4	6	9
20	0	3	4	5	6	3	6	5	10.7	1	6	9	11	15	6	14	11	9	11
21	7	8	6	9	8	13	15	13	26.3	18	24	15	28	23	66	96	63	42	28
22	9	7	4	3	5	5	3	4	13.3	31	19	9	7	11	12	7	9	13	24
23	2	4	4	5	7	8	9	4	14.3	4	10	10	12	19	25	27	9	15	13
24	0	3	7	7	13	14	15	14	24.3	1	6	19	20	70	81	102	71	46	45
25	14	13	14	10	14	12	12	10	33.0	83	68	81	37	74	59	56	39	62	60
26	11	10	7	10	9	9	6	6	22.7	46	37	20	34	31	28	14	14	28	32
27	8	5	5	5	11	9	8	8	19.7	24	12	12	12	43	30	22	23	22	19
28	6	4	4	4	6	3	2	7	12.0	14	9	8	9	14	6	4	17	10	15
29	4	0	3	6	3	5	5	3	9.7	9	1	7	16	6	13	12	6	9	7
30	0	0	0	3	2	5	6	8	8.0	0	0	1	7	4	13	14	21	8	8
																		20.1	

DEC. 1973

	3 Km								Σ Km	am							Am	Am 2
1	3	2	2	4	1	1	1	1	5.0	7	4	5	10	2	2	3	3	5	7
2	2	0	2	4	2	1	0	2	4.3	5	0	4	8	5	2	1	5	4	4
3	2	1	3	5	1	5	7	7	10.3	5	2	6	11	3	12	18	19	10	12
4	9	7	8	9	9	12	13	17	28.0	30	20	21	31	29	54	68	135	49	35
5	13	6	8	5	4	9	9	10	21.3	63	16	24	11	10	30	27	38	27	36
6	9	7	8	3	7	5	4	9	17.3	28	17	21	6	17	11	10	27	17	18
7	8	4	3	3	6	5	6	7	14.0	24	10	7	7	15	12	15	19	14	14
8	6	4	3	6	7	5	4	7	14.0	15	9	6	14	18	13	10	19	13	16
9	6	7	8	10	12	12	9	10	24.7	14	19	22	37	60	53	27	38	34	25
10	8	8	4	3	1	0	1	8	11.0	21	26	10	7	2	1	2	24	12	21
11	8	5	4	5	7	6	7	6	16.0	25	13	10	12	17	16	17	15	16	12
12	5	4	4	3	4	4	4	4	10.7	13	10	8	6	8	9	8	8	9	11
13	4	5	4	3	1	4	5	2	9.3	9	11	9	6	2	9	13	4	8	6
14	1	1	0	0	7	9	8	8	11.3	2	2	1	1	17	31	21	24	12	12
15	7	5	6	8	9	4	3	4	15.3	17	13	15	25	32	9	6	9	16	15
16	5	1	2	2	4	4	3	2	7.7	11	3	4	5	9	9	6	5	7	9
17	2	7	4	3	2	4	4	7	11.0	4	20	9	7	5	10	10	17	10	8
18	2	1	2	2	1	5	5	1	6.3	4	3	4	5	2	12	11	3	6	8
19	1	4	5	6	9	13	11	9	19.3	2	10	13	15	27	67	42	30	26	23
20	6	10	11	10	11	12	15	11	28.7	16	34	46	38	41	59	94	45	47	44
21	9	10	12	11	14	15	12	10	31.0	28	35	56	42	82	89	51	38	53	51
22	13	9	9	10	12	10	9	9	27.0	61	33	29	34	56	35	29	29	38	42
23	9	9	7	9	8	9	10	8	23.0	29	33	19	27	21	32	36	22	27	25
24	6	3	2	5	1	2	1	0	6.7	15	6	5	12	2	5	2	1	6	11
25	0	1	1	1	4	5	2	4	6.0	1	3	3	2	10	13	5	8	6	5
26	2	2	1	5	3	5	4	3	8.3	5	5	3	11	7	11	10	7	7	8
27	2	0	5	4	5	5	8	10	13.0	5	1	12	9	13	12	23	34	14	13
28	8	6	7	4	5	7	10	9	18.7	23	15	19	10	11	19	40	31	21	22
29	9	9	8	9	9	9	11	11	25.0	27	27	23	32	29	33	41	44	32	29
30	8	9	7	10	7	8	9	7	21.7	26	31	17	35	20	21	30	17	25	28
31	7	9	9	8	8	10	8	9	22.7	18	33	31	22	21	40	25	33	28	25
																		19.3	

DEC. 1973

	3 Kn								σn		an						An
1	4	2	2	5	1	1	2	1	5243	2232	9	5	5	11	2	2	5	3	5
2	2	0	2	3	2	1	0	1	4143	3212	5	1	5	7	4	2	1	2	3
3	2	0	2	5	1	5	6	6	3134	3452	4	1	5	12	3	13	16	15	9
4	9	8	8	9	9	12	12	17	4534	3243	30	21	21	33	30	51	54	121	45
5	12	6	9	5	3	9	9	10	5243	2534	58	15	27	11	7	32	28	34	27
6	9	6	8	3	6	5	4	9	2132	1335	28	15	21	7	15	12	9	28	17
7	8	5	3	2	6	4	5	7	4222	0223	22	11	6	4	14	9	11	19	12
8	6	5	3	6	7	6	3	7	0412	5404	14	11	6	14	20	14	6	19	13
9	5	7	8	10	13	13	8	10	2232	5625	11	18	21	39	64	65	26	38	35
10	7	8	5	4	1	0	0	9	3333	2222	17	21	12	8	2	1	1	27	11
11	9	6	4	6	7	6	6	4	4634	2563	29	15	9	14	19	16	16	10	16
12	4	3	3	1	2	4	4	3	3222	2131	9	7	6	3	5	9	9	6	7
13	3	5	3	4	1	4	5	2	3321	3351	7	11	6	8	2	9	13	5	8
14	0	1	0	0	7	9	7	8	1212	6743	1	2	1	1	20	28	19	25	12
15	5	5	7	8	9	2	2	3	2224	5422	13	11	17	25	33	5	4	7	14
16	5	2	2	1	4	4	2	1	3332	4442	11	5	5	2	9	8	5	3	6
17	2	7	4	4	1	4	4	7	2522	2257	4	20	10	8	2	9	9	17	10
18	2	0	1	1	0	5	3	0	4122	1551	4	1	2	3	1	11	7	1	4
19	0	2	5	6	8	13	10	9	1331	3534	0	5	11	14	24	63	40	29	23
20	7	10	12	11	11	12	16	11	3443	3453	18	38	57	47	42	60	106	46	52
21	9	10	14	11	15	14	12	11	2343	4354	28	38	73	47	98	86	54	43	58
22	13	9	9	10	13	10	9	9	2223	5444	70	33	30	36	68	37	30	28	42
23	9	11	8	10	8	10	10	8	3533	4343	31	46	23	35	23	38	38	23	32
24	5	4	2	7	0	2	0	0	3313	1200	13	8	5	17	1	4	0	0	6
25	0	1	1	0	5	6	1	4	0221	4523	0	2	3	1	12	14	2	8	5
26	1	2	1	6	3	5	4	2	2523	2431	2	5	3	14	7	12	9	5	7
27	2	0	5	4	4	4	6	8	2233	2333	4	1	11	10	10	8	15	25	11
28	8	6	6	4	4	5	10	9	2322	2354	24	15	15	9	10	13	38	27	19
29	9	8	7	9	9	9	10	12	6133	4455	28	26	18	31	30	33	37	55	32
30	8	9	7	10	8	8	9	6	3512	2440	25	32	17	38	21	21	33	14	25
31	7	10	10	8	8	11	8	10	3332	3422	20	37	35	23	23	42	24	34	30
																			19.2

DEC. 1973

	3 Ks								σs		as						As
1	2	2	2	4	1	1	1	1	3321	2221	4	4	5	10	2	2	2	2	4
2	2	0	1	4	3	1	1	4	3024	2113	4	0	3	10	6	2	2	8	4
3	3	2	4	4	2	5	7	8	2224	3444	6	4	8	10	4	12	20	23	11
4	9	7	8	9	9	12	14	18	1311	2432	29	19	21	28	28	58	81	150	52
5	13	7	8	4	5	9	8	11	5022	3236	67	17	21	10	12	28	25	42	28
6	9	7	8	3	7	4	5	8	2124	2232	28	18	21	6	18	9	11	26	17
7	9	4	4	4	6	6	7	7	3122	1422	27	9	8	9	15	15	18	20	15
8	6	4	3	6	6	5	6	7	1211	2142	15	8	7	14	16	11	14	18	13
9	6	8	8	10	12	11	9	10	1133	2344	16	21	24	35	57	42	29	39	33
10	8	9	4	3	1	0	1	8	2311	1033	25	31	9	6	3	0	3	22	12
11	8	5	5	4	6	6	7	7	1332	2404	21	11	11	10	16	16	17	20	15
12	7	6	4	4	4	4	3	4	3222	4111	17	14	10	10	10	10	7	10	11
13	5	5	5	2	1	4	6	2	4232	2413	12	11	11	5	2	8	14	4	8
14	1	1	0	0	6	10	8	8	3311	3233	2	2	1	1	14	35	24	23	13
15	7	6	5	8	9	5	4	5	2212	3554	20	15	13	24	32	12	8	11	17
16	5	1	2	4	4	4	3	3	1332	1121	11	2	4	8	9	10	6	7	7
17	2	7	4	3	4	4	5	6	2412	2423	5	20	8	7	8	10	11	16	11
18	1	2	3	3	1	5	6	2	1411	3133	3	5	7	7	3	13	15	5	7
19	2	6	6	6	9	14	11	9	1111	2421	4	14	15	16	30	71	44	31	28
20	6	9	10	9	10	12	14	11	1122	1121	14	31	35	29	40	57	81	44	41
21	9	9	10	10	13	15	11	9	1321	1323	28	33	39	37	65	92	49	33	47
22	12	9	9	9	11	9	9	9	2112	1121	52	33	27	31	44	33	28	31	35
23	9	8	6	7	7	8	9	8	1413	1213	27	21	15	18	18	26	33	22	23
24	7	2	2	3	1	3	2	1	0132	5642	17	5	5	7	3	6	5	2	6
25	1	2	1	2	4	5	3	4	1221	1253	2	5	3	4	8	12	7	8	6
26	4	2	1	4	3	4	5	4	1221	1132	8	5	3	9	7	10	11	8	8
27	3	0	5	3	6	6	9	11	1113	1646	6	1	13	7	15	16	31	42	16
28	8	6	8	5	5	8	11	10	1121	3532	23	16	23	11	11	26	42	35	23
29	9	9	9	9	9	9	11	9	1121	3354	27	28	29	33	29	32	44	32	32
30	9	9	7	9	7	8	9	7	1101	1222	27	31	17	33	18	21	28	20	24
31	6	9	9	8	7	10	9	9	1312	3133	16	28	27	22	20	37	27	31	26
																			19.1

JANUARY 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-9	-6	-6	-8	-15	-13	-13	-13	-15	-13	-12	-14	-8	-7	-6	-6	-6	-8	-5	-4	-4	-8	-8	-7
2	-7	-6	-8	-8	-8	-7	-7	-7	-5	-4	-0	1	0	-1	-1	-1	-0	-1	-1	-1	-2	-5	-6	-6
3	-4	-3	-4	-6	-4	-2	-1	-1	-1	1	1	0	-1	-3	-1	1	-1	-1	2	3	6	16	25	32
4	30	27	27	29	22	18	15	10	11	10	5	10	14	11	11	13	6	-3	-12	-16	-10	-3	-2	0
5	0	-7	-7	-6	-4	-2	-6	-7	-6	-10	-12	-15	-11	-6	-0	-2	-5	-17	-33	-46	-41	-35	-28	-37
6	-32	-26	-25	-29	-33	-26	-21	-19	-25	-27	-28	-25	-16	-13	-12	-9	-10	-5	-11	-21	-25	-29	-23	-20
7	-17	-19	-20	-18	-15	-13	-10	-9	-7	-10	-18	-19	-14	-11	-12	-12	-8	-12	-14	-12	-11	-14	-20	-16
8	-12	-11	-12	-15	-14	-12	-8	-8	-8	-15	-20	-22	-16	-20	-16	-13	-14	-13	-9	-7	-10	-13	-14	-13
9	-11	-16	-13	-12	-10	-8	-8	-12	-10	-16	-13	-6	-0	1	1	-3	-1	0	2	6	-7	-18	-28	-17
10	-13	-9	-12	-18	-23	-20	-17	-21	-23	-25	-22	-25	-21	-13	-11	-8	-10	-15	-18	-14	-11	-11	-15	-16
11	-20	-20	-19	-20	-21	-17	-16	-15	-16	-23	-21	-24	-18	-13	-15	-11	-6	-7	-10	-9	-5	-4	-12	-13
12	-14	-13	-15	-15	-15	-11	-11	-16	-17	-17	-21	-25	-24	-24	-24	-23	-20	-27	-24	-18	-12	-9	-12	-16
13	-16	-17	-17	-14	-12	-14	-13	-10	-8	-5	-6	-9	-7	-12	-14	-13	-17	-14	-16	-13	-11	-10	-11	-14
14	-16	-21	-23	-24	-19	-16	-17	-15	-15	-15	-15	-11	-7	-6	-7	-7	-7	-7	-5	-4	-4	-6	-8	-5
15	-6	-9	-14	-14	-13	-10	-7	-3	-2	-2	-4	-3	-2	1	5	4	-1	-2	-3	-2	-4	-6	-13	-14
16	-15	-15	-12	-12	-11	-13	-13	-11	-8	-10	-6	-4	-1	-2	-2	-1	-0	-1	-2	-7	-8	-8	-5	-5
17	-7	-4	-2	-2	-4	-4	-2	-0	-1	-6	-9	-6	-4	-4	2	4	3	0	-1	-1	-0	2	3	0
18	-1	-1	-1	-2	0	-2	-5	-5	0	5	10	8	12	12	14	11	6	6	6	6	8	8	8	11
19	22	24	25	26	27	27	25	26	29	27	28	26	26	24	22	12	13	-8	-17	-6	0	-5	-13	-21
20	-33	-44	-46	-53	-44	-39	-38	-40	-42	-34	-30	-33	-30	-34	-35	-31	-30	-28	-32	-35	-37	-40	-34	-47
21	-56	-60	-62	-67	-70	-72	-69	-59	-60	-60	-49	-40	-33	-31	-30	-25	-26	-24	-22	-21	-19	-19	-20	-25
22	-28	-26	-21	-19	-15	-13	-12	-13	-14	-16	-18	-16	-12	-12	-16	-12	-10	-5	-4	-3	-5	-7	-10	-10
23	-8	-9	-9	-8	1	2	3	8	6	2	-6	-31	-41	-36	-30	-21	-20	-19	-19	-24	-24	-19	-16	-16
24	-21	-25	-22	-16	-14	-15	-13	-6	-1	-7	-10	-10	-14	-11	-9	-16	-14	-16	-21	-18	-23	-27	-27	-25
25	-18	-20	-19	-19	-15	-9	-7	-6	-7	-11	-16	-21	-20	-15	-18	-18	-17	-15	-12	-10	-16	-18	-16	-13
26	-16	-27	-33	-28	-21	-19	-14	-9	-11	-4	-10	-9	-11	-16	-15	-13	-11	-13	-18	-10	-15	-9	-11	-9
27	-15	-15	-12	-7	-17	-29	-23	-18	-19	-14	-8	-17	-13	-12	-9	-17	-32	-35	-34	-39	-39	-36	-37	-31
28	-31	-24	-24	-28	-34	-34	-34	-33	-29	-27	-25	-23	-18	-20	-17	-24	-22	-23	-24	-24	-25	-28	-29	-29
29	-31	-29	-27	-26	-22	-22	-29	-25	-18	-16	-17	-17	-19	-20	-17	-16	-19	-17	-15	-25	-32	-34	-31	-30
30	-28	-29	-36	-36	-25	-22	-25	-24	-22	-18	-17	-15	-11	-15	-17	-17	-20	-21	-21	-19	-23	-27	-23	-20
31	-25	-25	-23	-21	-20	-17	-15	-11	-9	-10	-8	-5	-5	-5	-6	-6	-4	-5	-8	-8	-8	-9	-13	-12

FEBRUARY 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-18	-25	-25	-19	-20	-24	-34	-33	-29	-26	-22	-18	-10	-12	-15	-19	-19	-16	-18	-19	-20	-23	-25	-26
2	-20	-18	-22	-24	-22	-21	-20	-17	-13	-9	-5	-5	-8	-12	-14	-13	-12	-9	-3	1	-5	-22	-26	-21
3	-15	-10	-15	-16	-21	-18	-8	-5	-8	-19	-23	-21	-21	-18	-19	-17	-17	-18	-15	-9	-9	-7	-8	-12
4	-11	-8	-7	-9	-9	-10	-9	-10	-9	-6	-7	-7	-7	-8	-7	-6	-5	-3	-3	-6	-4	-6	-8	-8
5	-5	7	10	14	11	-2	-14	-12	-10	-13	-14	-15	-16	-16	-16	-12	-12	-12	-7	-7	-4	-2	2	-1
6	2	4	5	4	6	9	3	4	5	-1	-1	4	-1	1	-4	-7	-6	-6	-12	-13	-13	-12	-11	-11
7	-9	-9	-5	-2	-2	2	1	-4	-6	-11	-14	-12	-11	-8	-5	-4	-6	-8	-10	-8	-8	-7	-12	-12
8	-10	-5	-4	-6	-4	-7	-10	-14	-9	-8	-16	-18	-17	-17	-12	-12	-22	-22	-21	-21	-17	-16	-19	-24
9	-28	-31	-25	-20	-18	-18	-20	-20	-20	-23	-27	-23	-23	-23	-31	-27	-26	-23	-19	-19	-17	-17	-22	-25
10	-22	-17	-13	-14	-15	-18	-17	-11	-7	-9	-11	-16	-19	-19	-15	-10	-10	-10	-12	-20	-22	-23	-23	-21
11	-19	-17	-22	-21	-18	-13	-9	-7	-3	0	-2	-2	-3	-4	-4	-4	-5	-6	-5	-6	-7	-7	-8	-11
12	-11	-10	-9	-8	-9	-13	-13	-6	-1	-0	-4	-7	-9	-12	-10	-12	-15	-16	-15	-13	-10	-11	-8	-9
13	-9	-10	-9	-8	-7	-5	-3	-2	-1	-3	-3	-2	-3	-4	-3	-3	-4	-2	-1	2	3	15	17	14
14	11	8	8	6	7	9	10	4	-1	-3	-6	-3	-2	-1	2	4	4	2	1	5	2	-1	-3	4
15	3	0	-2	-5	-7	-8	-7	-7	-6	-4	-5	-5	-7	-9	-13	-10	-9	-11	-12	-13	-12	-13	-12	-11
16	-7	-5	-5	-3	2	4	5	4	6	6	3	6	12	12	16	18	17	6	-5	-23	-31	-24	-23	-19
17	-17	-20	-24	-20	-15	-20	-28	-26	-24	-21	-21	-24	-24	-28	-25	-29	-31	-27	-30	-33	-28	-22	-19	-16
18	-17	-19	-17	-14	-14	-11	-8	-7	-7	-15	-23	-22	-13	-13	-17	-22	-25	-26	-24	-18	-15	-20	-23	-27
19	-26	-25	-22	-18	-15	-15	-10	-5	-3	-3	-7	-10	-13	-11	-8	-12	-14	-17	-13	-5	-4	-7	-9	-12
20	-3	2	3	3	1	2	4	6	3	3	-0	-6	-10	-12	-7	-8	-8	-10	-15	-25	-27	-19	-16	-19
21	-14	-10	-6	-3	-0	3	-0	-1	0	-3	-5	-7	-9	-6	-7	-12	-13	-39	-65	-85	-102	-107	-121	-111
22	-107	-101	-89	-79	-75	-69	-67	-67	-60	-58	-58	-65	-58	-55	-54	-42	-46	-53	-71	-80	-87	-97	-84	-75
23	-72	-73	-75	-66	-59	-58	-62	-59	-55	-52	-49	-56	-54	-60	-53	-59	-65	-64	-58	-54	-59	-54	-53	-58
24	-55	-52	-53	-48	-48	-40	-43	-49	-47	-41	-43	-45	-42	-46	-52	-51	-59	-61	-57	-55	-62	-68	-58	-47
25	-42	-39	-42	-45	-42	-45	-42	-39	-38	-36	-48	-48	-45	-42	-39	-40	-43	-47	-35	-37	-38	-37	-37	-39
26	-46	-45	-43	-39	-38	-42	-45	-44	-35	-33	-39	-40	-37	-34	-34	-35	-39	-38	-38	-32	-43	-43	-38	-33
27	-31	-33	-41	-52	-47	-46	-37	-31	-34	-39	-41	-45	-42	-36	-35	-35	-40	-46	-40	-47	-39	-34	-31	-32
28	-33	-33	-31	-29	-29	-27	-28	-36	-28	-27	-28	-25	-29	-29	-33	-31	-33	-32	-31	-30	-30	-30	-28	-29

MARCH 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-29	-27	-24	-19	-19	-25	-27	-24	-26	-24	-23	-14	-18	-23	-22	-19	-31	-45	-50	-40	-32	-33	-36	-26
2	-25	-24	-20	-26	-36	-36	-41	-35	-29	-42	-48	-35	-34	-29	-27	-30	-35	-41	-48	-48	-54	-58	-48	-44
3	-36	-36	-38	-34	-31	-30	-32	-31	-29	-29	-32	-34	-35	-32	-31	-29	-30	-29	-28	-29	-28	-30	-29	-30
4	-32	-31	-31	-31	-29	-28	-28	-26	-24	-25	-25	-24	-21	-18	-19	-20	-23	-24	-22	-19	-18	-19	-21	-22
5	-20	-18	-14	-12	-10	-10	-12	-11	-9	-7	-8	-9	-8	-6	-3	-6	-17	-24	-19	-14	-12	-13	-3	5
6	19	22	26	16	-1	-19	-34	-32	-15	-2	-13	-9	-10	-16	-34	-49	-41	-35	-34	-36	-37	-34	-28	-27
7	-22	-16	-13	-13	-22	-26	-23	-22	-22	-23	-25	-23	-18	-13	-13	-11	-12	-18	-14	-12	-12	-13	-13	-11
8	-10	-7	-7	-5	-2	-2	-5	-8	-9	-10	-11	-9	-8	-9	-4	-4	-4	-6	-4	-2	-8	-5	-5	-6
9	-6	-8	-14	-13	-14	-14	-16	-19	-14	-8	-6	-3	1	-3	-2	-0	-2	-1	-1	-4	-7	-8	-12	-10
10	-4	-1	-1	3	4	3	2	3	-3	-4	-4	-10	-8	-6	-2	-3	-3	-3	-6	-3	-2	-3	-1	1
11	4	3	6	4	2	2	1	1	-1	-2	-1	-2	-2	-3	-2	-2	-5	-11	-10	-5	-2	-3	-1	-2
12	-8	-10	-7	-3	-0	-2	-6	-14	-24	-27	-29	-19	-11	-7	-11	-11	-10	-13	-18	-24	-24	-18	-13	-12
13	-12	-13	-8	-4	-1	-3	-4	-4	-4	-10	-10	-9	-7	-6	-8	-8	-4	-4	-3	-2	-6	-3	-2	-3
14	-2	-3	-3	-1	-1	-3	-2	-1	-3	-3	-3	-4	-4	-3	-3	-2	-0	1	3	3	3	4	2	3
15	3	4	6	5	5	4	3	3	4	5	5	5	5	6	8	6	6	5	4	5	7	8	8	9
16	8	9	7	6	12	13	19	30	33	31	-11	9	-2	-7	-0	1	-1	-11	-5	-9	-5	11	9	4
17	1	-1	1	3	3	5	0	-2	-2	1	5	5	2	1	2	2	3	-2	-5	-8	-11	-10	-9	-2
18	-1	-1	-1	-1	1	2	0	1	-2	-1	1	-1	-1	-9	-0	-3	0	-0	-9	-23	-16	-6	-32	-49
19	-43	-32	-19	-15	-18	-25	-22	-23	-28	-44	-58	-43	-42	-62	-83	-82	-73	-81	-84	-70	-82	-81	-81	-83
20	-71	-57	-61	-64	-57	-53	-57	-54	-53	-53	-53	-60	-56	-52	-51	-52	-58	-63	-52	-57	-61	-68	-61	-60
21	-58	-52	-50	-55	-48	-47	-54	-56	-54	-45	-51	-42	-45	-44	-38	-44	-51	-50	-45	-47	-57	-56	-59	-54
22	-55	-56	-48	-50	-48	-50	-55	-57	-53	-48	-47	-37	-30	-37	-38	-31	-32	-43	-46	-36	-41	-41	-44	-51
23	-41	-47	-54	-52	-46	-50	-60	-54	-49	-46	-52	-52	-42	-42	-46	-44	-40	-44	-42	-46	-39	-45	-56	-58
24	-54	-43	-38	-42	-46	-53	-50	-48	-41	-37	-33	-30	-29	-38	-43	-44	-54	-46	-46	-47	-52	-53	-57	-52
25	-46	-51	-51	-55	-56	-53	-49	-52	-57	-43	-43	-37	-36	-34	-41	-46	-45	-45	-45	-42	-47	-45	-54	-53
26	-49	-50	-45	-46	-48	-50	-48	-44	-39	-32	-30	-30	-27	-25	-24	-23	-24	-30	-41	-46	-42	-40	-38	-43
27	-44	-45	-51	-44	-40	-41	-41	-38	-35	-35	-37	-43	-38	-34	-36	-36	-36	-34	-34	-35	-32	-39	-39	-40
28	-39	-41	-41	-38	-38	-38	-38	-36	-30	-27	-23	-27	-22	-23	-20	-20	-23	-26	-29	-28	-29	-33	-38	-48
29	-54	-46	-39	-36	-37	-38	-41	-39	-36	-29	-21	-17	-24	-24	-27	-30	-26	-24	-26	-23	-19	-19	-27	-28
30	-23	-26	-30	-29	-30	-27	-23	-23	-29	-21	-16	-18	-28	-31	-32	-31	-28	-25	-23	-24	-30	-37	-42	-37
31	-35	-32	-33	-39	-43	-39	-36	-36	-33	-28	-24	-23	-23	-25	-17	-10	-8	-20	-22	-36	-60	-51	-42	-43

APRIL 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
1	-51	-46	-46	-42	-43	-44	-41	-43	-48	-44	-47	-51	-50	-44	-62	-96	-132	-170	-167	-173	-182	-182	-211	-188
2	-173	-164	-167	-156	-138	-128	-123	-117	-119	-122	-108	-97	-89	-84	-80	-82	-86	-82	-91	-84	-78	-79	-85	-85
3	-81	-78	-82	-79	-84	-79	-72	-69	-71	-70	-66	-63	-58	-57	-55	-52	-52	-55	-58	-58	-60	-57	-54	-55
4	-55	-55	-54	-58	-58	-56	-53	-56	-56	-54	-52	-49	-51	-48	-45	-44	-40	-42	-41	-38	-37	-39	-37	-36
5	-37	-35	-31	-27	-28	-33	-45	-52	-47	-41	-37	-35	-35	-33	-33	-33	-36	-38	-38	-38	-39	-37	-36	-37
6	-36	-35	-35	-38	-39	-36	-33	-33	-33	-31	-30	-29	-30	-31	-31	-29	-28	-27	-27	-28	-28	-28	-30	-31
7	-30	-29	-30	-28	-28	-27	-25	-25	-26	-24	-25	-22	-22	-25	-25	-20	-20	-19	-17	-17	-17	-18	-22	-22
8	-23	-21	-19	-18	-17	-13	-11	-11	-14	-18	-26	-26	-21	-18	-17	-18	-20	-18	-17	-23	-21	-20	-21	-22
9	-23	-24	-27	-29	-27	-21	-17	-18	-20	-19	-18	-19	-19	-17	-14	-15	-14	-15	-15	-19	-16	-18	-21	-21
10	-18	-16	-16	-15	-16	-17	-14	-15	-15	-14	-14	-16	-17	-17	-15	-13	-13	-13	-10	-10	-10	-3	-1	-1
11	-1	-9	-11	-17	-30	-46	-51	-53	-59	-67	-65	-50	-45	-53	-58	-62	-61	-56	-53	-56	-56	-51	-42	-41
12	-37	-32	-32	-33	-30	-28	-27	-21	-16	-11	-11	-9	-8	-9	-11	-14	-17	-19	-19	-18	-19	-22	-24	-25
13	-22	-18	-11	-10	2	20	28	18	26	-12	-51	-60	-60	-73	-84	-83	-81	-83	-77	-77	-71	-64	-59	-53
14	-54	-58	-50	-41	-34	-29	-68	-114	-134	-133	-113	-105	-104	-97	-63	-77	-80	-76	-77	-77	-76	-79	-76	-69
15	-64	-68	-71	-70	-65	-61	-56	-56	-54	-50	-47	-43	-43	-42	-41	-42	-39	-34	-29	-28	-28	-31	-33	-35
16	-37	-35	-42	-44	-46	-39	-51	-78	-79	-61	-57	-64	-70	-68	-67	-68	-69	-68	-76	-72	-70	-62	-57	-67
17	-67	-64	-57	-65	-75	-77	-71	-68	-58	-58	-52	-50	-56	-52	-49	-49	-49	-46	-48	-52	-51	-49	-55	-61
18	-62	-61	-56	-59	-58	-51	-51	-63	-54	-54	-41	-40	-38	-41	-44	-44	-48	-47	-48	-47	-51	-51	-51	-54
19	-56	-53	-52	-54	-49	-47	-52	-53	-45	-42	-40	-39	-42	-39	-38	-37	-37	-42	-52	-51	-57	-54	-65	-75
20	-76	-63	-58	-62	-60	-57	-55	-58	-50	-46	-42	-45	-44	-35	-34	-42	-39	-44	-44	-47	-39	-41	-56	-67
21	-66	-62	-59	-58	-58	-53	-47	-47	-49	-55	-49	-49	-49	-48	-53	-56	-55	-53	-58	-55	-51	-47	-47	-48
22	-48	-60	-64	-56	-57	-67	-71	-65	-61	-61	-54	-52	-52	-53	-56	-54	-49	-44	-41	-42	-46	-47	-47	-50
23	-43	-47	-52	-60	-65	-61	-54	-49	-53	-50	-44	-43	-45	-54	-56	-55	-50	-46	-45	-44	-44	-42	-38	-34
24	-35	-36	-36	-37	-38	-45	-48	-50	-46	-46	-42	-44	-41	-40	-37	-36	-35	-38	-36	-36	-35	-38	-42	-39
25	-37	-36	-39	-51	-57	-54	-49	-45	-40	-39	-38	-35	-35	-33	-29	-29	-28	-24	-29	-36	-38	-42	-42	-39
26	-45	-56	-62	-59	-59	-47	-36	-28	-27	-21	-23	-19	-23	-19	-27	-30	-28	-23	-25	-26	-40	-45	-40	-37
27	-45	-47	-54	-64	-61	-57	-59	-52	-45	-42	-45	-42	-44	-45	-43	-41	-39	-34	-35	-37	-38	-37	-36	-38
28	-34	-31	-32	-32	-32	-30	-25	-23	-24	-18	-11	1	-28	-41	-31	-24	-19	-22	-24	-23	-26	-34	-32	-50
29	-61	-63	-61	-54	-67	-66	-74	-57	-58	-61	-57	-50	-50	-53	-51	-52	-46	-42	-38	-37	-43	-38	-37	-38
30	-38	-36	-38	-42	-46	-42	-40	-39	-41	-38	-37	-36	-35	-35	-36	-37	-41	-41	-35	-37	-37	-40	-45	-45

MAY 1973

UNIT=GAMMAS G.M.T.

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
1	-35	-29	-26	-22	-23	-21	-21	-21	-18	-14	-15	-17	-20	-22	-21	-19	-17	-13	-7	-16	-23	-32	-41	-41
2	-35	-32	-28	-29	-31	-27	-24	-23	-20	-19	-19	-20	-22	-19	-16	-16	-15	-10	-13	-9	-6	-0	-2	-7
3	-9	-13	-9	-14	-14	-9	-8	-11	-13	-16	-16	-12	-13	-15	-14	-16	-18	-19	-18	-18	-17	-18	-20	-24
4	-23	-17	-20	-15	-11	-11	-13	-17	-17	-20	-20	-21	-18	-15	-17	-19	-18	-18	-18	-20	-22	-20	-24	-24
5	-25	-25	-26	-26	-22	-19	-19	-21	-20	-18	-18	-19	-19	-16	-15	-14	-14	-11	-10	-12	-13	-9	-9	-10
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7	6	5	3	1	-3	-10	-12	-8	-7	-4	-4	-3	-2	-1	-3	-6	-4	-2	-7	-7	-9	-10	-10	-10
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9	-7	-8	-5	-4	-3	-4	-2	-2	-8	-15	-17	-16	-13	-11	-15	-17	-17	-15	-13	-8	-7	-6	-9	-8
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14	-48	-82	-95	-97	-83	-78	-86	-76	-82	-83	-73	-77	-77	-70	-71	-67	-62	-60	-57	-62	-57	-60	-56	-46
15	-43	-44	-50	-44	-45	-46	-36	-34	-44	-50	-46	-43	-43	-37	-35	-38	-41	-43	-42	-43	-41	-45	-42	-39
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21	-28	-29	-23	-5	-22	-22	-29	-66	-98	-100	-96	-77	-58	-60	-74	-78	-78	-71	-65	-60	-58	-58	-56	-58
22	-54	-56	-61	-60	-50	-52	-51	-51	-53	-50	-41	-35	-30	-27	-28	-29	-30	-24	-23	-21	-19	-23	-21	-23
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26	-5	-7	-14	-12	-11	-9	-14	-19	-18	-14	-11	-13	-14	-12	-12	-13	-11	-9	-7	-7	-6	-4	-2	-3
27	-5	-9	-10	-11	-10	-7	-4	-4	-4	-6	-8	-7	-3	-1	5	5	2	1	1	-6	-2	2	-4	0
28	0	-5	-1	-2	-8	-7	-7	-6	-6	-4	-6	-11	-12	-12	-10	-8	-8	-8	-10	-10	-6	-6	-4	-1
29	1	-1	-2	-1	-0	-1	0	1	1	0	-2	-3	-3	-3	-3	-3	-1	3	1	1	2	3	3	4
30	6	9	8	8	6	5	2	1	3	5	9	10	10	9	10	10	8	8	8	8	9	11	11	12
31	11	10	10	11	11	12	12	13	12	8	7	7	8	10	7	8	7	4	2	0	-1	-2	-3	-3

JUNE 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	G.M.T. 24
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2	18	23	25	33	33	38	39	27	13	9	12	17	15	7	1	-0	7	2	1	-5	-3	-5	2	2
3	-5	-3	0	-3	-5	-3	-4	-4	-5	-2	1	-1	-3	1	3	1	-2	2	2	-1	-2	0	3	5
4	4	-2	-5	-2	6	5	4	-1	-1	0	3	7	7	3	0	1	6	6	-1	-9	-16	-18	-14	-11
5	-10	-10	-6	-4	-2	-5	-7	-7	-8	-12	-13	-11	-11	-10	-10	-11	-10	-10	-10	-12	-10	-10	-10	-12
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7	-12	-13	-10	-9	-6	-7	-8	-7	-6	-4	-6	-8	-10	-9	-11	-12	-12	-10	-7	-5	-6	-5	-5	-5
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9	3	4	3	0	-1	1	6	9	9	7	8	5	8	13	16	21	27	21	13	8	5	5	-3	-3
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11	-58	-55	-56	-44	-47	-48	-38	-28	-27	-30	-29	-30	-32	-25	-24	-20	-23	-22	-30	-39	-34	-34	-32	-28
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24	1	-17	-26	-29	-31	-24	-19	-18	-26	-30	-29	-25	-28	-31	-29	-29	-30	-43	-50	-50	-47	-40	-38	-34
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27	-1	1	1	-1	-0	-2	-0	2	1	1	4	7	7	4	3	5	5	7	6	4	4	2	4	10
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29	-38	-30	-21	-23	-20	-27	-21	-33	-34	-36	-32	-28	-24	-26	-26	-18	-19	-17	-17	-18	-16	-19	-17	-12
30	-7	-5	-13	-22	-23	-20	-13	-15	-12	-10	-4	-0	2	-5	-6	-10	-9	-11	-11	-10	-11	-18	-24	-19

JULY 1973

UNIT=GAMMAS G.M.T.

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

AUGUST 1973

UNIT=GAMMAS G.M.T.

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
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2	-2	-2	-5	-15	-5	-4	-2	-1	-0	4	-0	4	11	31	20	12	9	3	-7	-9	-8	-10	-10	-9
3	-9	-10	-9	-9	-10	-9	-4	-2	1	1	-1	-1	2	1	-0	-5	-3	2	7	8	7	5	3	-11
4	-11	-7	-7	-8	-9	-8	-3	1	2	-1	-5	-2	-2	-4	-6	-5	2	8	5	-1	-5	-6	4	8
5	7	0	-1	-1	-1	0	3	7	9	6	2	1	4	9	16	20	21	22	14	9	12	12	9	3
6	3	-3	-6	-5	-1	-2	-6	-6	-4	-2	-1	-0	-3	-7	-9	-10	-6	-2	-5	-6	-11	-10	-8	-4
7	-3	-3	-3	-5	-6	-5	-3	3	13	11	1	0	-1	3	2	-2	3	7	10	7	3	4	4	6
8	5	-1	-7	-13	-12	-10	-11	-13	-16	-15	-10	-10	-6	-2	-1	2	2	2	-3	-7	-1	1	4	6
9	5	4	0	-5	-8	-8	-6	-1	-2	-5	-2	-2	-10	-10	-9	-7	-4	-3	-2	0	4	6	9	11
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14	-3	4	5	1	-1	1	3	5	2	0	2	5	9	8	7	5	6	11	10	6	1	3	5	3
15	2	-1	-0	4	4	3	3	0	1	0	3	3	5	5	3	3	2	5	6	5	4	2	1	-0
16	-1	1	3	4	-0	2	3	4	5	5	4	3	4	0	2	6	8	7	9	6	6	4	3	6
17	6	7	7	7	8	9	11	11	9	9	9	9	11	10	9	9	9	8	8	9	9	11	12	14
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19	9	4	2	2	5	6	6	3	4	9	10	9	8	5	2	3	4	7	9	10	11	13	12	9
20	8	4	3	4	3	3	3	4	6	19	21	9	4	1	-2	-2	-1	-3	-3	-1	3	5	5	4
21	4	5	4	2	-8	-5	1	4	5	7	10	10	11	9	8	8	8	7	6	3	4	4	3	-1
22	0	1	5	7	9	12	16	18	18	20	21	25	25	24	17	6	3	6	-7	-8	1	4	-1	1
23	-4	-3	-5	-4	-11	-16	-19	-19	-18	-8	-0	-1	4	8	7	-3	-7	-5	-9	-7	-13	-5	-0	-5
24	-23	-26	-27	-26	-31	-25	-21	-22	-22	-26	-41	-42	-42	-47	-47	-43	-44	-40	-40	-41	-34	-29	-25	-20
25	-14	-12	-18	-25	-29	-31	-32	-25	-22	-25	-25	-22	-27	-23	-20	-23	-24	-23	-26	-28	-22	-21	-17	-14
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29	-21	-19	-16	-13	-15	-16	-20	-19	-26	-20	-8	-11	-12	-16	-14	-11	-9	-8	-13	-17	-14	-14	-11	-11
30	-9	-9	-5	-8	-14	-13	-18	-25	-26	-20	-19	-17	-17	-15	-16	-17	-17	-17	-18	-14	-15	-13	-10	-10
31	-8	-8	-12	-17	-17	-18	-12	-6	-6	-5	-7	-11	-13	-10	-10	-11	-10	-10	-9	-9	-9	-9	-7	-7

SEPTEMBER 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-8	-5	-4	-4	-6	-8	-8	-8	-8	-4	-3	-2	-2	-4	-5	-2	-0	-1	-0	-2	-2	-2	-4	-5
2	0	7	7	7	6	8	9	11	14	17	14	13	12	10	11	14	11	4	2	3	2	-1	-5	-7
3	-5	-3	-2	1	1	3	4	5	5	6	6	3	4	3	5	3	3	2	-1	-1	-2	-5	-7	-8
4	-11	-13	-15	-11	-7	-10	-19	-19	-18	-14	-7	-10	-13	-14	-13	-16	-15	-15	-17	-22	-19	-17	-15	-17
5	-18	-19	-19	-21	-23	-24	-25	-25	-22	-20	-21	-21	-20	-24	-22	-21	-23	-23	-27	-30	-29	-21	-16	-9
6	-7	-12	-18	-19	-18	-16	-18	-17	-13	-9	-13	-19	-22	-24	-20	-25	-27	-25	-19	-15	-14	-14	-13	-11
7	-8	-7	-6	-6	-12	-18	-15	-12	-12	-7	-1	-1	-4	-9	-10	-6	-7	-10	-10	-11	-11	-13	-12	-10
8	-7	-6	-4	-6	-6	-5	-9	-9	-7	-5	-6	-5	-5	-2	4	-2	-9	-9	-5	-2	-1	-4	-6	-2
9	3	5	4	6	7	8	9	11	-1	-16	-9	-3	-2	-18	-16	-8	-8	-22	-18	-30	-62	-79	-75	-55
10	-46	-45	-49	-48	-44	-38	-32	-23	-28	-24	-18	-31	-37	-30	-30	-28	-25	-25	-38	-37	-27	-21	-21	-29
11	-37	-33	-36	-38	-38	-34	-33	-32	-30	-27	-22	-18	-14	-15	-17	-19	-18	-17	-25	-24	-27	-24	-21	-18
12	-20	-19	-18	-18	-16	-15	-12	-10	-9	-6	-1	3	8	14	18	8	1	-2	-1	-0	-2	-6	-8	-10
13	-13	-11	-9	-9	-7	-8	-8	-10	-8	-10	-17	-23	-19	-11	-8	-11	-18	-18	-19	-20	-24	-26	-21	-17
14	-13	-12	-13	-13	-11	-9	-7	-6	-6	-4	-6	-8	-6	-6	-3	1	2	1	-1	-1	1	3	2	3
15	3	3	7	9	10	7	6	11	15	12	11	9	-1	-2	-1	3	-0	-4	-5	1	2	-9	-19	-29
16	-15	-15	-13	-14	-18	-30	-23	-12	-13	-8	-4	-7	-2	2	-0	-3	-2	0	4	1	-4	-6	-4	2
17	8	11	9	-2	-11	-11	-11	-7	-6	-5	-5	-3	3	7	6	6	4	4	5	5	1	-6	-13	-12
18	-7	-3	1	-0	-1	-5	-5	-4	-2	2	5	5	5	4	3	2	1	-0	-2	-1	-1	-4	0	2
19	3	5	6	7	8	5	5	5	6	7	8	10	12	12	9	7	6	9	8	9	6	5	6	9
20	11	15	15	13	9	10	7	7	6	7	9	12	9	6	4	4	2	2	-0	-5	-9	-5	-2	-4
21	-6	0	4	5	2	-4	-4	-3	-5	-5	-11	-10	-1	5	3	-4	-6	-15	-13	-8	-9	-6	-3	-1
22	2	2	-2	-5	-2	0	4	6	8	10	12	13	10	7	10	12	7	7	7	0	-1	-2	-2	-6
23	-13	-12	-25	-36	-46	-44	-40	-45	-33	-29	-37	-49	-44	-59	-53	-49	-46	-53	-61	-53	-46	-41	-35	-34
24	-31	-27	-27	-24	-27	-26	-23	-25	-22	-21	-21	-21	-15	-18	-26	-30	-27	-30	-22	-24	-26	-26	-28	-29
25	-24	-22	-25	-28	-31	-33	-32	-30	-26	-26	-18	-19	-19	-24	-18	-11	-12	-17	-20	-24	-29	-33	-35	-26
26	-14	-12	-12	-17	-20	-24	-36	-46	-52	-61	-59	-75	-84	-88	-82	-68	-59	-50	-45	-41	-36	-35	-32	-26
27	-27	-23	-24	-29	-31	-31	-24	-21	-25	-27	-32	-31	-32	-33	-34	-32	-31	-28	-24	-23	-23	-24	-20	-18
28	-17	-14	-13	-12	-11	-10	-9	-9	-8	-12	-13	-17	-13	-9	-9	-11	-11	-10	-10	-10	-7	-7	-4	-1
29	-3	-3	-2	-4	-4	-1	-1	-2	-0	1	-1	-1	-1	-2	-2	-1	-2	-3	-2	1	4	6	7	7
30	7	8	5	3	3	4	6	6	5	4	4	2	0	-1	-3	-2	-0	4	6	6	8	9	6	2

OCTOBER 1973

UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-0	-1	-1	2	4	6	6	8	11	16	17	16	17	18	18	19	19	18	13	8	5	5	2	0
2	-0	-1	1	3	1	-13	-40	-45	-29	-24	-24	-26	-24	-22	-21	-25	-26	-35	-29	-27	-27	-23	-23	-34
3	-27	-18	-26	-43	-63	-68	-72	-66	-70	-54	-46	-44	-42	-44	-29	-44	-42	-42	-37	-38	-36	-35	-32	-28
4	-28	-27	-27	-30	-30	-29	-32	-30	-25	-23	-23	-22	-26	-28	-28	-26	-23	-25	-30	-34	-34	-31	-28	-26
5	-24	-23	-20	-19	-19	-17	-15	-13	-10	-5	-6	-6	-5	-6	-6	-9	-9	-8	-13	-14	-28	-37	-30	-29
6	-29	-25	-25	-22	-23	-23	-27	-26	-21	-20	-14	-11	-13	-17	-17	-17	-19	-20	-22	-16	-15	-9	-9	-11
7	-17	-18	-17	-18	-17	-16	-13	-10	-8	-5	-5	-5	-6	-8	-7	-10	-9	-7	-5	-3	-2	-2	-3	-1
8	0	-3	-6	-10	-8	-9	-11	-12	-11	-10	-8	-4	-5	-7	-5	-3	0	-6	-11	-9	-6	-6	-6	-4
9	0	1	1	-1	2	6	10	11	10	5	3	2	8	11	6	10	13	16	14	8	-9	-24	-23	-14
10	-6	-2	-2	-11	-12	-3	-4	-5	-3	-2	-4	-5	-10	-13	-9	-13	-10	-11	-10	-18	-16	-7	-4	0
11	3	6	5	1	-2	-3	-3	-4	-3	-0	-2	-2	-5	-6	-7	-6	-2	1	-1	-7	-5	-2	4	10
12	9	10	7	3	2	-1	-5	-6	-7	-7	-6	-2	1	4	1	-11	-10	-11	-12	-7	-5	-5	-6	-9
13	-4	-2	-8	-7	-7	-9	-6	-7	-10	-8	-12	-8	-6	-6	-5	-6	-2	-1	-7	-5	-7	-3	-3	-3
14	-2	-3	-5	-6	-5	-4	-3	-2	-2	-5	-6	-5	-5	-9	-6	-4	-6	-8	-10	-6	-6	-4	-5	-6
15	-6	-4	-6	-5	-4	-2	-0	2	-0	-2	-4	-4	-2	-4	-4	-4	-3	-1	3	3	2	3	0	2
16	5	7	6	10	7	11	25	26	-11	-13	-4	-12	-8	-10	-6	-5	-6	-15	-33	-38	-29	-35	-25	-18
17	-17	-21	-26	-32	-31	-24	-25	-24	-22	-14	-14	-17	-24	-24	-19	-18	-24	-29	-28	-25	-21	-16	-17	-15
18	-11	-10	-10	-11	-13	-16	-19	-16	-18	-16	-15	-25	-24	-22	-19	-23	-16	-16	-20	-18	-16	-14	-16	-22
19	-23	-21	-21	-25	-23	-25	-20	-22	-28	-30	-29	-32	-30	-27	-23	-25	-27	-25	-25	-22	-24	-26	-21	-13
20	-8	-10	-6	-9	-21	-25	-18	-20	-21	-20	-27	-21	-19	-20	-20	-26	-20	-21	-24	-24	-18	-14	-6	-4
21	-12	-18	-23	-30	-20	-17	-16	-17	-13	-15	-22	-22	-38	-33	-25	-24	-34	-26	-24	-29	-26	-26	-27	-21
22	-22	-25	-25	-27	-30	-28	-29	-23	-31	-34	-30	-27	-25	-27	-26	-23	-21	-22	-22	-21	-18	-13	-14	-12
23	-9	-9	-14	-18	-18	-16	-13	-9	-12	-11	-8	-5	-4	-5	-4	-6	-7	-10	-12	-11	-13	-14	-16	-11
24	-4	0	1	-3	-15	-16	-13	-12	-13	-12	-11	-11	-9	-5	1	1	-3	-7	-8	-12	-13	-12	-10	-7
25	-5	-1	-3	-5	-6	-5	-4	-1	0	-2	-2	1	6	7	9	10	12	13	12	11	11	11	12	7
26	9	4	2	3	3	4	5	5	6	6	6	5	4	3	4	4	4	3	2	-0	0	1	1	2
27	2	5	6	6	5	6	7	6	4	4	5	6	6	7	6	5	-2	-5	-5	-6	-6	-4	-0	2
28	3	6	8	8	7	10	15	18	8	-4	-6	-4	-1	1	-3	-23	-30	-24	-14	-9	-5	-5	-12	-18
29	-14	-16	-22	-35	-25	-19	-24	-27	-39	-39	-51	-42	-38	-43	-60	-55	-59	-57	-64	-59	-63	-62	-61	-64
30	-63	-60	-60	-61	-56	-54	-48	-44	-42	-40	-38	-35	-34	-34	-29	-29	-28	-25	-25	-24	-30	-37	-42	-46
31	-42	-44	-47	-53	-52	-52	-56	-59	-59	-50	-49	-46	-41	-35	-32	-29	-29	-26	-23	-21	-21	-22	-21	-19

NOVEMBER 1973

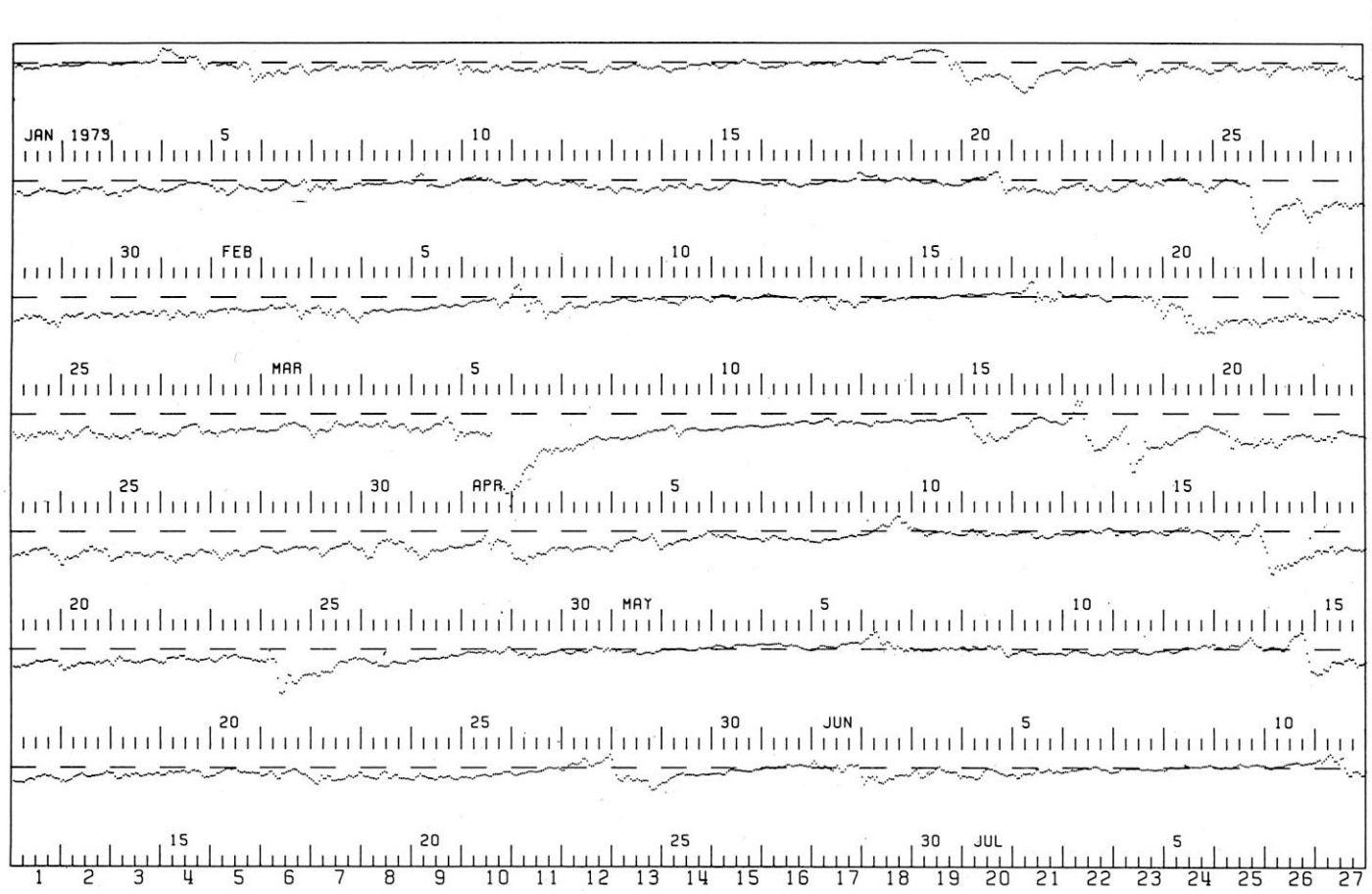
UNIT=GAMMAS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	G.M.T. 23	24
1	-18	-19	-20	-22	-23	-20	-16	-15	-15	-17	-21	-23	-25	-24	-24	-24	-25	-21	-19	-22	-21	-21	-20	-22
2	-22	-19	-19	-18	-19	-16	-18	-21	-23	-23	-20	-20	-21	-22	-22	-20	-17	-17	-16	-18	-21	-25	-25	-24
3	-21	-18	-18	-17	-17	-15	-14	-13	-10	-9	-8	-7	-7	-6	-7	-5	-3	-4	-4	-1	0	5	6	0
4	-4	-7	-3	-2	-0	-3	-6	-8	-10	-11	-9	-6	-2	-5	-4	4	7	-2	-12	-17	-28	-33	-18	-8
5	-3	-8	-6	-5	-8	-9	-3	-5	-15	-9	3	-9	-7	-6	-3	-1	-3	-1	1	-13	-12	-5	-4	-10
6	-11	-10	-15	-15	-15	-12	-10	-10	-9	-8	-8	-14	-12	-8	-2	-0	-4	-1	-1	-8	-5	-2	-5	-4
7	-4	-3	-5	-6	-7	-9	-8	-15	-23	-24	-17	-9	-10	-9	-8	-9	-5	-1	-5	-12	-15	-14	-10	-7
8	-8	-10	-10	-10	-10	-11	-8	-14	-18	-18	-8	-6	-5	-3	-1	-0	-2	-2	-1	-0	-1	-5	-12	-13
9	-7	-3	-3	-7	-8	-7	-16	-17	-16	-11	-5	-4	-6	-7	-2	-3	-3	-4	-4	-4	-4	-7	-6	-2
10	3	6	3	-1	-2	1	-7	-6	-8	-8	-1	5	6	5	3	2	2	2	6	5	0	-1	1	2
11	7	7	4	3	1	0	2	2	-2	-4	-1	2	6	10	9	8	5	4	6	4	2	-0	-1	2
12	4	4	4	4	2	2	-2	-3	-1	-0	-0	-0	1	3	2	1	0	2	3	5	2	1	3	3
13	5	6	7	9	11	9	4	4	5	5	4	7	7	14	13	1	-7	-6	-7	-3	-5	-6	-5	-5
14	-1	2	2	-2	-3	-7	-9	-9	-9	-8	-7	-3	1	6	9	5	4	-2	-2	1	2	0	-2	1
15	3	6	5	2	6	6	1	-2	-3	-4	-3	-0	-2	3	1	-0	-2	-2	-2	1	-0	-2	-2	1
16	1	2	4	3	1	-3	-4	-3	-2	-2	0	2	2	3	4	0	-2	-6	-5	0	2	7	-4	-14
17	-9	-9	-4	-2	-4	-7	-8	-6	-7	-2	1	6	9	8	7	5	0	-4	-9	-9	-12	-11	-8	0
18	6	-14	-30	-23	-17	-11	-14	-23	-24	-19	-13	-10	-10	-7	-7	-6	-8	-8	-8	-8	-7	-9	-7	-4
19	-3	-2	-1	-1	-1	1	-0	1	1	3	6	5	7	5	3	1	1	2	2	2	0	-1	-1	3
20	5	3	1	0	-1	-1	0	4	3	7	8	8	4	5	7	7	6	3	2	1	1	3	6	9
21	12	15	18	19	16	14	12	8	9	14	8	5	15	23	23	23	11	-24	-48	-54	-53	-63	-56	-46
22	-41	-42	-36	-34	-34	-34	-33	-36	-37	-35	-31	-26	-24	-25	-26	-19	-20	-18	-16	-15	-14	-16	-13	-9
23	-6	-6	-6	-5	-5	-6	-6	-6	-7	1	6	8	10	8	2	-6	-11	-12	-7	-11	-9	-6	-3	-1
24	-1	-1	-1	-1	-0	6	4	2	7	7	13	17	20	7	3	-16	-21	-24	-35	-47	-59	-51	-44	-43
25	-42	-50	-51	-47	-44	-41	-47	-41	-44	-42	-38	-28	-25	-23	-28	-27	-31	-37	-34	-30	-27	-29	-23	-16
26	-12	-13	-20	-25	-26	-27	-25	-29	-30	-29	-30	-25	-25	-23	-20	-16	-15	-15	-13	-8	-7	-9	-8	-3
27	-4	-6	-6	-8	-9	-11	-13	-11	-10	-12	-12	-6	-2	-4	-7	-11	-12	-15	-12	-13	-18	-17	-14	-9
28	-8	-7	-7	-6	-5	-9	-12	-13	-13	-15	-12	-9	-5	-5	-4	-3	-6	-9	-6	-3	-6	-11	-9	-5
29	-2	-1	-1	-2	-1	-4	-3	-4	-8	-9	-9	-12	-8	-7	-5	-5	-6	-6	-3	0	1	2	-1	1
30	2	3	3	3	2	4	3	3	1	-1	-1	1	1	0	0	1	-2	-6	-6	-4	-2	-2	-6	-9

DECEMBER 1973

UNIT=GAMMAS G.M.T.

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
1	-7	-6	-4	-2	-3	-5	-9	-12	-13	-11	-8	-4	-2	-0	1	2	0	-2	-2	0	1	1	2	4
2	4	6	5	5	3	3	2	6	5	4	1	-3	-2	-0	3	4	3	0	1	1	2	4	3	4
3	6	8	12	13	14	15	14	14	12	7	4	5	7	8	10	14	16	12	6	3	1	-0	-3	-3
4	-0	-2	-1	-2	2	2	-4	-15	-19	-17	-18	-12	-12	-19	-19	-6	-13	-33	-42	-38	-28	-47	-67	-56
5	-45	-44	-38	-39	-41	-42	-38	-42	-36	-33	-29	-25	-21	-22	-21	-17	-19	-17	-19	-27	-31	-33	-30	-24
6	-20	-19	-19	-19	-20	-17	-15	-20	-16	-15	-14	-13	-13	-17	-11	-8	-8	-8	-6	-4	-8	-13	-15	-12
7	-11	-8	-6	-7	-6	-8	-8	-7	-5	-5	-5	-3	-2	-4	2	1	-1	-0	0	1	-3	-13	-11	-9
8	-6	-7	-10	-9	-6	-5	-4	-4	-1	-2	-3	-0	-2	2	5	6	7	9	12	13	9	4	0	0
9	4	5	3	-1	5	7	0	-7	-6	-2	2	-7	-12	-8	-8	-11	-10	-4	-5	-7	-10	-7	-0	4
10	4	-3	-11	-13	-2	-0	-0	-1	-2	-4	-9	-10	-10	-8	-3	-1	-2	-3	-4	-4	-5	-2	-1	-5
11	-11	-10	-7	-1	1	1	3	3	1	-1	-5	-5	-1	0	8	15	17	17	19	23	21	13	20	24
12	23	18	15	15	10	13	14	11	12	9	8	9	9	8	10	12	13	7	3	3	3	1	3	6
13	7	8	7	6	7	5	5	6	3	2	3	6	6	6	7	10	10	9	9	10	8	8	9	13
14	14	15	13	11	12	14	15	15	14	16	18	19	18	20	25	26	19	8	6	6	7	5	-2	-4
15	0	4	5	4	5	5	3	5	4	4	5	5	1	-5	-2	2	7	8	8	7	4	3	1	-0
16	2	2	5	4	6	8	9	11	11	13	15	17	18	17	15	14	15	17	17	15	15	16	15	16
17	15	14	11	7	6	10	14	20	17	15	16	17	14	9	10	9	8	8	9	6	3	3	4	5
18	4	4	5	6	9	13	15	15	17	20	18	18	15	14	14	17	14	16	16	15	16	19	20	20
19	20	19	19	24	25	23	26	28	30	36	42	41	39	36	38	48	29	3	-5	-8	-10	-5	-5	-4
20	-2	-0	-2	-8	-7	-7	-3	-8	-8	-4	0	1	-8	-7	-5	-2	-5	-5	-7	-8	-12	-10	-10	-2
21	-1	-5	-9	-8	-7	-7	-13	-10	-15	-21	-21	-16	-15	-16	-19	-22	-22	-20	-28	-27	-24	-25	-20	-15
22	-14	-14	-13	-12	-14	-21	-20	-21	-22	-18	-15	-10	-9	-14	-17	-17	-20	-22	-17	-14	-14	-17	-14	-12
23	-13	-14	-14	-19	-19	-18	-16	-15	-17	-18	-16	-15	-13	-11	-12	-13	-10	-11	-10	-10	-11	-9	-2	-5
24	-8	-12	-11	-12	-11	-8	-7	-5	-3	-5	-4	-2	-1	-3	-2	-0	3	5	5	5	4	4	4	7
25	7	4	1	-1	-1	-1	1	3	3	2	1	1	0	0	-1	-2	1	4	7	8	8	8	6	6
26	7	6	4	7	9	12	12	13	11	7	9	9	9	9	7	6	8	6	6	5	5	8	9	12
27	11	9	8	6	8	11	11	9	5	4	7	9	10	8	7	9	10	14	17	17	23	25	26	20
28	18	16	13	9	9	8	7	6	3	6	9	12	12	9	8	12	16	16	7	3	-3	-11	-12	-3
29	-0	0	1	3	2	3	6	1	-4	-9	-7	-12	-5	-1	-3	-4	-6	1	-0	-4	-1	-1	-6	-6
30	-3	-6	-7	-4	-9	-3	-0	3	-1	-1	-10	-10	-7	-7	-7	-7	-6	-5	-5	0	-0	-2	-1	-2
31	-2	-6	-2	-1	-5	-0	-9	-11	-4	-3	-1	2	-2	-4	-4	-8	-14	-10	-7	-4	-7	-11	-8	-4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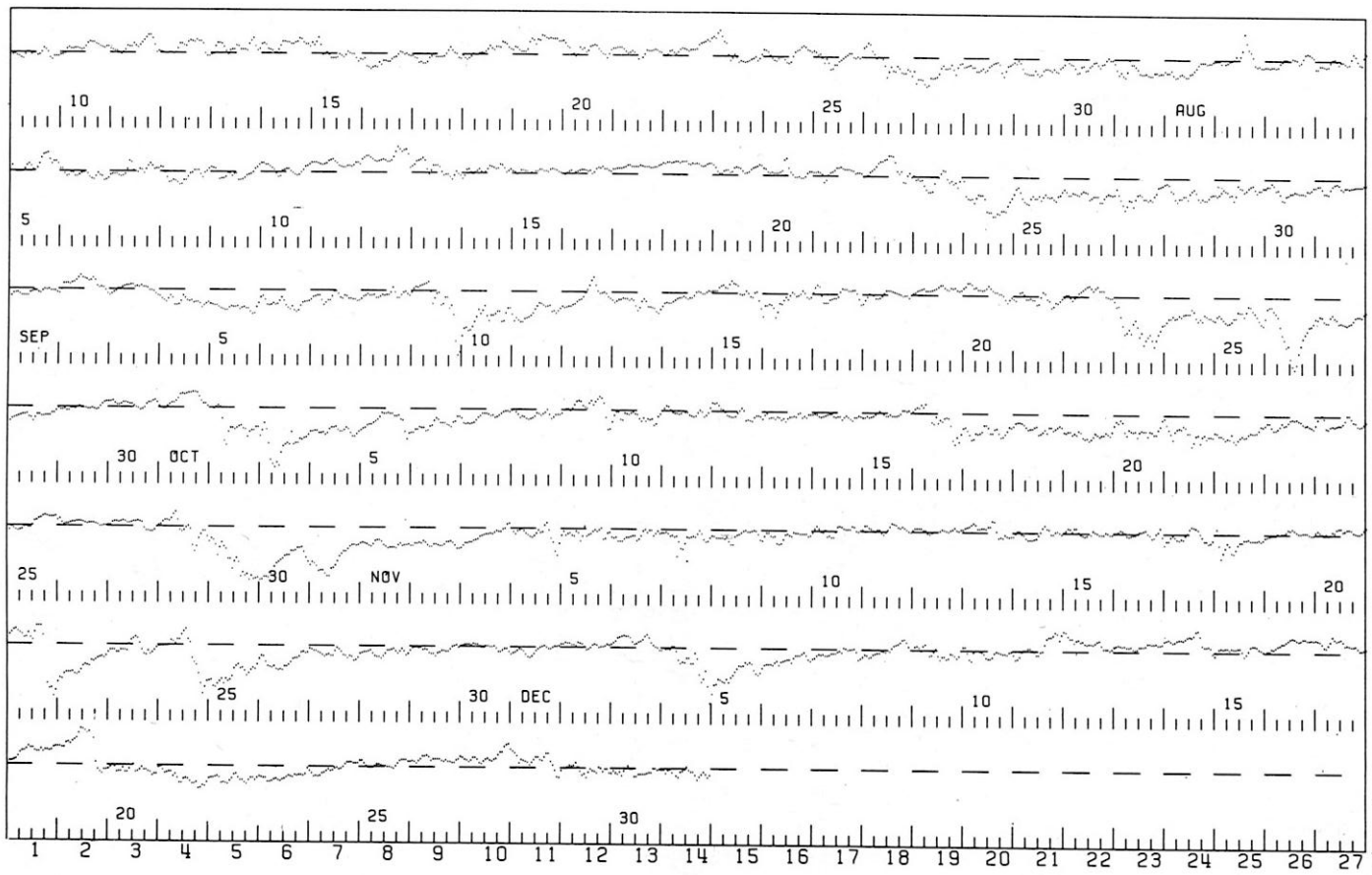


Part B Graph of hourly equatorial Dst for 1973

DAILY MEANS OF EQUATORIAL DST FOR 1973

DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	-9	-21	-27	-92	-22	9	-15	-13	-4	9	-21	-3
2	-4	-14	-37	-109	-18	13	-12	0	7	-21	-20	3
3	2	-15	-31	-65	-15	-1	-5	-2	1	-44	-8	8
4	9	-7	-24	-48	-18	-1	-5	-3	-14	-28	-8	-19
5	-14	-6	-11	-37	-17	-9	1	8	-22	-15	-6	-31
6	-21	-2	-18	-32	11	-9	3	-5	-17	-19	-8	-14
7	-14	-7	-17	-23	-4	-8	7	2	-9	-9	-10	-5
8	-13	-14	-6	-19	-7	1	6	-5	-5	-7	-7	0
9	-8	-23	-8	-19	-10	8	-3	-2	-15	3	-7	-3
10	-16	-16	-2	-13	-2	3	6	3	-32	-8	1	-4
11	-15	-8	-1	-46	-5	-35	7	11	-26	-1	3	6
12	-18	-10	-13	-21	-2	-26	6	18	-5	-3	2	10
13	-12	-1	-6	-40	-10	-20	7	4	-14	-6	3	7
14	-12	3	-1	-79	-71	-18	10	4	-5	-5	-1	13
15	-5	-8	5	-47	-42	-13	-1	3	2	-2	0	3
16	-7	-1	6	-60	-32	-10	-8	4	-8	-7	-1	12
17	-2	-24	-1	-57	-34	-15	-4	9	-1	-22	-3	10
18	5	-17	-6	-51	-27	-24	4	14	-0	-17	-12	14
19	14	-12	-53	-49	-22	-21	14	7	7	-24	1	20
20	-37	-7	-58	-50	-21	-23	5	4	5	-18	4	-5
21	-42	-30	-50	-53	-57	-17	4	5	-4	-23	-4	-16
22	-13	-71	-45	-54	-38	-8	9	9	4	-24	-26	-16
23	-14	-59	-48	-49	-31	12	3	-6	-41	-11	-4	-13
24	-16	-51	-45	-40	-20	-30	2	-33	-25	-8	-11	-2
25	-15	-41	-47	-39	-6	-19	-2	-23	-24	4	-35	3
26	-15	-39	-38	-35	-10	-9	-9	-21	-45	4	-19	8
27	-22	-39	-39	-45	-4	3	-20	-22	-27	3	-10	12
28	-26	-30	-31	-27	-7	0	-12	-20	-10	-3	-8	7
29	-23	0	-30	-53	-0	-24	-15	-15	-0	-43	-4	-2
30	-22	0	-28	-39	8	-12	-8	-15	4	-41	-1	-4
31	-12	0	-32	0	7	0	-16	-10	0	-39	0	-5
MEAN	-13	-20	-24	-46	-17	-10	-1	-3	-11	-14	-7	-0

ANNUAL MEAN -14

REFERENCES TO TABLES AND DIAGRAMS FOR Kp, Ap AND Cp

Year	Kp-Indices Tables	Kp-Diagrams	Frequencies of Kp	Stormy Intervals	Quiet Intervals
	Bull. No. pp.	Bull. No. pp.	Bull. No. p.	Bull. No. p.	Bull. No. p.
1932	12 1 222-227	12 1 258-259	12 1 252	12 1 255	12 1 255
1933	12 1 228-233	12 1 260-261	12 1 252	12 1 255	12 1 256
1934	12 1 234-239	12 1 262-263	12 1 253	12 1 255	12 1 256
1935	12 1 240-245	12 1 264-265	12 1 253	12 1 255	12 1 257
1936	12 1 246-251	12 1 266-267	12 1 254	12 1 255	12 1 257
1937	12 g 97-98	12 g 113-114	12 g 112	12 g 111	12 k 154
1938	12 g 99-100	12 g 114-116	12 g 112	12 g 111	12 k 154
1939	12 g 101-102	12 g 116-117	12 g 112	12 g 111	12 k 154
1940	12 c 104-105	12 c 114-115	12 c 131	12 c 135	12 k 154
1941	12 c 106-107	12 c 116-117	12 c 131	12 c 135	12 k 155
1942	12 c 108-109	12 c 118-119	12 c 131	12 c 135	12 k 155
1943	12 c 110-111	12 c 120-121	12 c 132	12 c 135	12 k 155
1944	12 c 112-113	12 c 122-123	12 c 132	12 c 135	12 k 155
1945	12 i 106-107	12 c 124-125	12 c 132	12 c 135	12 k 156
1946	12 i 108-109	12 c 126-127	12 c 132	12 c 135	12 k 156
1947	12 i 110-111	12 i 102-103	12 c 133	12 c 136	12 k 156
1948	12 i 112-113	12 i 104-105	12 c 133	12 c 136	12 c 137
1949	12 c 102-103	12 c 128-129	12 c 133	12 c 136	12 c 137
1950	12 e 104-105	12 e 106-107	12 c 133	12 c 136	12 f 105
1951	12 f 86-87	12 f 88-89	12 f 98	12 f 105	12 f 105
1952	12 g 103-108	12 g 118-119	12 g 112	12 g 111	12 g 110
1953	12 h 80-85	12 h 88-89	12 h 86	12 h 87	12 h 87
1954	12 i 78-83	12 i 114-115	12 i 84	12 i 87	12 i 87
1955	12 j 114-119	12 j 122-123	12 j 120	12 j 121	12 j 121

Year	Ap Daily values	Ap Monthly and annual means	Cp Daily values	Cp Monthly and annual means
	Bull. No. pp.	Bull. No. p.	Bull. No. pp.	Bull. No. p.
1932	12 1 222-227	12 1 254	12 1 222-227	12 1 254
1933	12 1 228-233	12 1 254	12 1 228-233	12 1 254
1934	12 1 234-239	12 1 254	12 1 234-239	12 1 254
1935	12 1 240-245	12 1 254	12 1 240-245	12 1 254
1936	12 1 246-251	12 1 254	12 1 246-251	12 1 254
1937	12 g 109	12 g 110	12 i 85	12 i 86
1938	12 g 109	12 g 110	12 i 85	12 i 86
1939	12 g 109	12 g 110	12 i 85	12 i 86
1940	12 f 91	12 f 97	12 e 113	12 e 120
1941	12 f 92	12 f 97	12 e 113-114	12 e 120
1942	12 f 92	12 f 97	12 e 114	12 e 120
1943	12 f 93	12 f 97	12 e 115	12 e 120
1944	12 f 93	12 f 97	12 e 115-116	12 e 120
1945	12 f 94	12 f 97	12 e 116	12 e 120
1946	12 f 94	12 f 97	12 e 117	12 e 120
1947	12 f 95	12 f 97	12 e 117-118	12 e 120
1948	12 f 95	12 f 97	12 e 118	12 e 120
1949	12 f 96	12 f 97	12 e 119	12 e 120
1950	12 f 96	12 f 97	12 e 119	12 e 120
1951	12 f 97	12 f 97	12 i 86	12 i 86
1952	12 g 103-108	12 g 110	12 g 103-108	12 i 86
1953	12 h 80-85	12 h 86	12 h 80-85	12 i 86
1954	12 i 78-83	12 i 84	12 i 78-83	12 i 86
1955	12 j 114-119	12 j 120	12 j 114-119	12 j 120

The tables and diagrams of the following years up to 1970 may be found in the corresponding yearbooks of the series IAGA - Bulletin No. 12 (from 1958 onwards in the Bulletins with index 1), always in the last pages of each book, and from 1970 onwards in part B of the new series IAGA-Bulletins No. 32.

All tables and diagrams of the 30 years 1932 - 1961 are reprinted in IAGA-Bulletin No. 18.

REFERENCES TO OTHER INDICES

Q QUARTER HOURLY DISTURBANCE INDEX FOR HIGH LATITUDE STATIONS

The Q-index was introduced in order to enable a precise correlation of geomagnetic activity with ionospheric, auroral and other observations for stations at latitudes higher than 58°. (Ref.: IAGA-resolutions Toronto 1957 and Helsinki 1960). It is a quarter hourly measure, on a quasi logarithmic scale, of the maximum deviation in γ's of the most disturbed horizontal component from its normal quiet-day value (the highest value of either ΔH and ΔD, or ΔX and ΔY). When the trace shows both positive and negative deviations during a 15 minute-interval, however, the total range is used instead.

The relation between Q and this deviation (or range) Δ is as follows:

Q =	0	1	2	3	4	5	6	7	8	9	10(T)	11(E)
$\Delta \leq$	10	20	40	80	140	240	400	660	1000	1500	2200	>2200

The details of the scaling technique of the Q-indices are explained in:

J. Bartels and N. Fukushima, Abh. Akad. Wiss. Göttingen, Math.-Phys. Klasse, Sonderheft 3 (1956).

or: J. Bartels, Annals of the IGY, 4, 220 - 236 (1957).

Since the IGY Q-indices have been determined and published for certain periods of time by 26 stations. In recent years only Sodankylä seems to have continued this practice. Mimeographed publications are available directly from this observatory.

The following data are available through the World Data Centers for Geomagnetism: (IGY = 7.57 - 12.58).

Arctica III	5.59 - 3.60	Welen	7.57 - 11.59, 64, 65
Heiss Isl.	64, 65	College	7.57, 6 - 9.58
Tikhaya Bay	7.57 - 2.59	Baker Lake 1)	IGY
Murchison Bay	7.57 - 7.59	Yellowknife 1)	7.57 - 7.58
C. Chelyuskin	IGY, 59, 64, 65	Nurmijärvi	5 - 6.61
Thule	IGY	Lerwick	IGY
Resolute Bay 1)	IGY	Eskdalemuir	IGY
Dikson	7.57 - 9.59, 64, 65	Macquarie Isl.	IGY
Tiksy	IGY, 64, 65	Mirny	IGY, 3 - 10,59, 64, 65
P. Barrow	7.57 - 8.58	Mawson	IGY
Godhavn	IGY	Novolazarevskaja	64, 65
Kiruna 2)	7.57 - 12.61	Halley Bay	IGY, 7.60 - 10.62
Sodankylä	1.57 - today	Vostok	64, 65
		Base Roi Baudouin	5.58 - 2.59

1) Publications of the Dominion Observatory, Ottawa, Vol. 27, No. 4 (1963)
2) Kiruna Geophysical Data, Data Report No. 631 (febr. 1963)

R HOURLY DISTURBANCE INDEX FOR HIGH LATITUDE STATIONS

For some observatories in geomagnetic latitudes higher than about 65°, hourly R-indices are available. The R-index is defined as the absolute hourly range in each horizontal component, expressed in tens of gamma (Ref.: IAGA resolution, Berkeley 1963).

The hourly range in the horizontal component was introduced as a measure of magnetic activity by Russian workers (especially Nikolski).

R-indices for Canadian stations are given in the magnetic yearbooks (Publications of the Dominian Observatory, Ottawa, Canada up to and including Volume 39; thereafter Publications of the Earth Physics Branch), for the stations:

Resolute Bay and Baker Lake (IGY and from 1960 onwards).
Alert (starting 1 October 1961).
Mould Bay (starting 1 August 1962).
Fort Churchill (IGY and from 1966 onwards).
Great Whale River (starting 1 January 1967).

Prior to 1964 the hourly range was measured at the Canadian arctic observatories in the principal horizontal component only, from 1964 onwards it was measured in both components X and Y.

R-indices of the stations Thule and Godhavn (Greenland) are determined since 1964, for the components H, D and Z. They are published in the magnetic yearbooks for these stations, which are issued by the Meteorologisk Institut, Charlottenlund, Denmark.

Daily, monthly and yearly mean values of R-indices (based on the H-component) from arctic and antarctic USSR-stations for the period 1934 through 1967 are given in a publication of the Arctic and Antarctic Institute, Fontanka 34, Leningrad (1970). This concerns the following stations:

Welen (1935 - '47, 1951 - '67),
Tiksi (1944 - '67),
Dikson (1934 - '67),
C. Chelyuskin (1935 - 167),
B. Tikhaya (1934 - '58),
O. Cheisa (1958 - '67).
Arctic drifting stations:
NP 3 - 13 (1954 - '67).
Mirny (1956 - '67),
Molodezhnaya (1964 - '67),
Lazarev (1960 - '61),
Novolazarevskaya (1961 - '67),
Vostok (1958 - '67).

R-indices of the station Loparskaya (near Murmansk) from 1954 onwards are available at WDC - B2, Molodezhnaya 3, Moscow, 117-296, USSR. These indices are also given in the publication "Auroral Phenomena" of the Polar Geophysical Institute, Ac. of Sciences of the USSR, Apatity, starting with the year 1970.

AE AURORAL ELECTROJET ACTIVITY INDEX

AE, at any instant of time, is the range of deviation from quiet time reference levels of the horizontal magnetic field (H) around the auroral oval. In practice, it is defined as the largest positive deviation (AU) minus the largest negative deviation (AL) from the H-variation records of a network of northern hemisphere auroral zone magnetic observatories. The average $\frac{AU+AL}{2}$ is called AO, an auxiliary auroral electrojet index. These indices may be derived from instantaneous values of H-deviations, or from averages over any suitable time interval.

(Ref: IAGA-resolution 2, Madrid 1969 and IAGA-resolution 13, Moscow 1971. For complete definition see: Davis, T.N. and Sugiura, M., J. G. Res. Vol. 71, 3, p. 736 - 792, 1966).

For the period January 1966 through December 1972, 2.5-min and hourly average AE, AU, and AO indices have been derived by the National Geophysical and Solar-Terrestrial Data Center of NOAA in the U.S.A. A network of stations as uniformly spaced in longitude as possible, was used. The number of stations contributing data to the derivation for each month is indicated parenthetically in identifying the index, such as, AE(10) or AE(11). These indices are available on magnetic tape from World Data Center A for Solar-Terrestrial Physics, National Oceanic and Atmospheric Administration, Boulder, Colorado 80302, U.S.A. Daily graphs of the 2.5-min indices are available on 35mm microfilm. Annual summaries of the hourly average indices, explanatory text, and 2.5-min daily graphs have been published for most years in the WDC-A UAG Report series. Graphical representations of AU, AL, and AE appear for some intervals of special interest in Solar-Geophysical Data, Part II (Comprehensive Reports), published monthly by NGSDC.

For the period September 1964 through 1965, the indices AE, AU, and AL for each 2.5-min and as hourly averages were derived at the NASA Goddard Space Flight Center. For July 1957 through September 1964, hourly values of AE were derived and publiced by the Geophysical Institute, University of Alaska. These indices are available from WDC-A for STP on either magnetic tape or 35mm microfilm and have been exchanged with other WDC's as outlined in the Guide to International Data Exchange, ICSU, December 1973.

TABLE 1 STORM SUDDEN COMMENCEMENTS (ssc) 1973

Sudden commencements followed by a magnetic storm or period of storminess.

JANUARY

03 2118 (13-20) A: CO LG TI TA SJ BA LU HU LM AC TW; B: VL MA VI AQ IK PE AE KS HO GU PM PP TN TO DU; C: LE ES WN NI HA DB BU NE HB? SU EB TU SZ MB - (si: A: FR DS TE; B: DO SI HL FU GN HR; C: WI MT TL KA SS KY - bs: C: CF - bp: B: BE).

19 1544 (42-48) B: HL SW MA TA LU PP LM; C: WN NE SZ HO MB - (si: B: FU BA AM).

FEBRUARY

13 2119 (16-24) A: VI LG AE SJ BA LU AC; B: SO HA MA EB KS TU HO GU PM PP GN TO AM TW; C: LE NI BU NE IK AP - (si: A: OT SU FR PE DS TA TE HU LM; CO DO SI WN VL BE HA DB FU HB AQ TL HR; C: WI MT KA SS KY SZ).

21 1843 (39-44) A: WN VL MA SU AQ LG TL PE AE BA LU LM HR; B: LE ES WI NI HA BU IK CI SZ TA MB; C: KS KG - (si: A: FU CF; B: BE OT - bps: C: EB).

MARCH

06 0011 (08-15) B: SU CI TI KS BA LM - (si: A: AC TW; B: PP - bs: HL).

16 0625 (19-27) A: VI CF SU TI KS TA HO SJ BA LU PM HU TN LM AC TO AM; B: SO CO MA NE AQ CI QU MB GU TG PP GN TW DU; C: MT EB TL KA SS TU KY - (si: A: FU IK FR DS; B: WN BE BU OT AE; C: VL - sfe: HL).

APRIL

01 1246 (41-50) B: VL MA BU CF CI AP; C: WN HB? TL - (si: A: LG QU; C: AE DU - bps: A: PP).

10 2110 (08-12) A: SU LG SJ; B: BE MA AQ KS QU TA MB LU PM PP; C: WN VL CF BU IK EB PE AE TU DU - (si: B: HL FU FR LM AC; C: TL - sfe: HO).

13 0438 (34-41) A: SO CO DO NU SI VL MA DB VI FU OT SU LG IK CI FR PE DS QU SZ TA HO SJ MB LU PM HU AP TN LM HR AC TO TW KG DU; B: LE ES HL WN WI SW NI BE HA BU NE CF HB MT AQ EB TL AE KA KS TU KY TG PP GN; C: SS.

13 0753 (50-55) A: SO HU TN; B: BE KS LU; C: TL - (si: A: PP AC; B: SS TA PM; C: KY).

14 0247 (42-50) A: SO CO OT LG CI TL FR PE AE DS QU SZ TA HO SJ MB LU PM AP LM AC TO TW; B: DO NU LE SI ES WN WI VL BE HA MA DB VI CF AQ IK EB KY TG PP GN HR DU; C: NE MT KA SS KG - (si: A: FU; B: HL NI BU HB TU HU).

MAY

01 1733 (30-35) A: CO MA LG TI SJ LM AC; B: SO HL WN WI VL HA BU VI HB AQ IK EB TL PE AE KS QU SZ HO MB TG LU PM HU TN GN TO; C: NI CI TU AP PP KG DU - (si: A: CO NU FU SU FR TA TW; B: LE SI ES BE DB MT KA KY; C: CF SS).

06 1339 (30-41) A: SI LG TA SJ AC; B: SO WN WI VL BE MA BU VI FU AQ IK EB FR PE AE TI KS QU SZ HO GU LU PM GN TO TW; C: NI DB NE CF HB TL TU MB KG DU - (si: A: ME SU; B: DO HL; C: MT KA SS KY).

13 1722 (17-29) A: SU; B: HL WI SW BE MA LG PE TI TA QU SZ SJ HU AC; C: ES WN VL HA BU CF TL LM.

21 0252 (46-57) A: DO SI MA VI FU SU LG CI TL TI KS DS QU HO SJ GU LU HU AP TN LM AC TW KG DU; B: LE ES WN WI SW NI VL HA DB BU NE CF HB MT AQ IK EB PE KA KY SZ TA MB TG PM PP GN; C: SS - (si: A: SO; B: BE HR TO; C: TU).

TABLE 1 STORM SUDDEN COMMENCEMENTS (ssc) 1973 - continued

JUNE

02 0301 (56-05) B: HL SW MA SU; C: LE ES WN VL BU HB - (si: B: FU).

02 0334 (31-39) B: TI KS QU PM; C: VI SZ MB PP? - (si: B: TA).

10 1042 (38-49) A: LG TK KS QU TA SJ MB AC; B: HL SW BE MA MT CI PE KA TI KY SZ HO LU PM HU AP PP LM TW; C: WN VL BU CF HB? IK EB SS - (si: B: FU DS - b: A: VI - sfe: TL?).

23 2209 (02-11) B: MA QU HU; C: WN NI VL BU NE CF HB SZ - (si: B: HL AC; C: TL HO).

28 0106 (04-09) B: SW; C: WN NI VL BU NE HB? - (si: B: QU TA; C: TK - bs: HL).

JULY

08 1043 (33-50) A: TI KS; B: KV IK; C: PE AE LU - (si: A: OD LG; B: FU TK - bp: B: BE; C: MT KA - bps: C: KY).

09 0630 (28-31) B: LE MA HB; C: ES WN NI BU - (si: B: NU HL BE; C: TL).

09 0859 (56-61) A: LG TI KS TA; B: KV OD IK PE TW; C: SZ LU - (si: A: SU; B: MO HA FU QU LM; C: PP).

31 0546 (44-52) A: MO TI TA HO SJ HU AC; B: BE MA PE KS TU LU PM PP TW KG DU; C: NE MT IK KA KY - (si: A: SO UB HB FR DS GU TO; B: SI WN VL SS SZ LM GN; C: HA EB - b: B: MB).

AUGUST

12 1249 (48-52) A: NU MO IR MA HB SU TF TK TL PE AE SF TI KS SZ TA SJ MB LU LM AC; B: DO LE ES WN WI VL HA KV DB BU VI CF AQ IK EB TU HO GU HU PP GN KG; C: NI NE PM - (si: A: FU OD; B: MT KA SS KY - bp: B: DU).

22 1212 (10-14) A: SU TA; B: CF UB IK TK TI? HU; C: VL VI NE BU CI MB? LU PP? TN - (si: A: FU SF; B: WN BE; C: LE MT KA KY).

SEPTEMBER

09 1213 (10-16) B: NU WN SW VL MA DB BU CI; C: NI KV CF HB? IK TL AE - (si: B: HL; C: ES - bps: A: SZ).

10 0954 (52-60) B: SO TI SJ AC; C: VL HU - (si: A: TW; B: HL SZ LM).

OCTOBER

16 0520 (19-22) A: QU SJ; B: CO UB LG SZ MB LU PM LM GN TO; C: VI NE CF MT KA TU KY HO PP - (bps: B: TI).

16 0646 (44-51) A: MA SU PE SF QU TA; B: DO HL VL KV DB OD TK IK CI TI? TN TW; C: WN WI HB TL (si: A: AC; B: PM; C: LE ES SS HO PP).

24 0238 (35-40) A: TW; B: KS; C: QU - (si: B: HL; C: HO - bps: XC: TI).

28 0733 (25-35) B: SW MA CI SZ MB TG; C: WN DB CF HB? SU LG TF TK TA - (si: A: TW; B: HL).

NOVEMBER

04 1130 (27-33) B: VL MA BU CI; C: CF UB AE TI - (si: B: FU LM).

DECEMBER

none

TABLE 2 BAYS AND PULSATIONS 1973

Times of commencement of bays or pulsational disturbances associated with bays. Stations which reported other kinds of disturbances are included in parentheses.

JANUARY

05 2316 (11-30) b: A: CF SF SJ MB: B: FR - bs: A: LG AE - bp: A: IK TL PE; B: MA EB LM - bps: B: TA BA.

06 0327 (15-40) b: A: CI AE SF SJ; B: CF FR MB HU; C: NE - bp: A: TA AC TW; B: EB TL.

06 1109 (o5-16) bp: B: MT KA SS KY PP - (si: HL).

06 2224 (20-30) b: A: PE AE; B: IK SF BA - bp: B: EB CI; C: TL - bps: B: SZ.

07 1540 (35-45) b: B: SW - bpa: NU; B: SO DO WN VL MA DB BU MT IK KA KY GN; C: EB SS - bps: B: BE - (ssc: A: TI?).

08 1545 (28-66) b: A: SU AQ; B: DO SW - bs: A: NU - bp: A: WN IK CI SF LU; B: WI NI VL HA MA DB BU HB EB TL KG DU - bps: A: SO AE LM; B: HL BE SS AM.

08 2055 (54-57) b: A: NU - bs: C: BE - bp: A: PE; B: SO WN VL MA BU IK: C: CF EB TL - bps: B: DO HL WI.

10 0927 (26-28) bs: A: SS PM - bp: B: MT KA KY PP DU - bps: A: AP AM; B: HO.

10 1711 (00-15) b: A: AQ CI SF SJ; B: SW MB - bp: A: PE; B: SO DB MT IK TL KA KY KG; C: EB - bps: B: BE.

12 1209 (46-28) b: A: PM; B: HO - bp: A: SS AP; B: MA MT EB KA KY GU PP DU - bps: B: LU - (si: A: AE).

15 1845 (42-50) bs: B: HL - bp: A: NU; B: LE WN VL BE MA FU IK TI? LM; C: BU - bps: A: SO; B: DO DB.

15 2210 (08-15) b: A: NU - bs: B: HL - bp: A: FU; B: LE WN WI VL BE HA MA BU IK EB PE TI; C: CF TL - bps: B: SO DO; C: NI HB.

15 2248 (45-57) bp: A: NU IK CI PE SF TI TA; B: ES WN WI HA DB AQ MA EB HR; C: BU TL - bps: A: SO CF LG AE BA LU; B: VL.

20 0101 (54-11) bp: A: PE TI; B: WN MA BU CF HB EB LU - bps: A: SZ; B: VL TL TA - (si: A: LG; B: BA).

20 2045 (42-52) b: A: CF SF - bs: A: KS SZ - bp: A: PE; B: MA MT IK EB TL KA KY - (si: A: LG TI).

24 1056 (54-60) bp: B: MT KA KY HO PP; C: SS - bps: A: AP AM - (ssc: C: SZ - si: BE).

24 1511 (56-23) bp: A: TI; B: MT KA KY LM GN; C: WN SS - bps: A: SO; B: HL.

25 1420 (00-29) b: A: SU; B: WN BU - bp: A: SO PE SS AP; B: HL VL HB MT EB KA KY GN DU; C: TL - bps: A: IK; B: BE GU - (si: A: AE).

25 2023 (21-24) b: A: SF - bs: B: HL - bp: A: CF; B: VL MA TL; C: WN BE EB - bps: A: SO.

26 0021 (10-25) b: A: AE AC - bp: A: SO CI; B: MA CF IK EB TL PE TA HR - bps: A: LG SZ BA LU.

26 1731 (07-49) b: A: AE SF LU - bs: B: HL - bp: B: SO VL MA IK GN; C: SS.

26 2009 (03-14) b: A: SU - bs: A: KS - bp: A: WN VL LM; B: NI BU HB IK TL KG-bps: A: SO; B: BE DB - (si: A: TI?).

28 0023 (19-33) bs: B: HU - bp: A: SJ; B: MA EB - bps: A: SZ; B: CF TA; C: TL - (si: B: BA).

31 1952 (46-63) b: A: LG AE - bs: A: SO KS; B: HL - bp: A: PE TI LU; B: VL MA FU AQ IK EB TL LM - bps: A: BA; B: BE.

FEBRUARY

02 1630 (25-40) b: B: SW - bp: B: WN VL MA FU AQ EB CI; C: BU HB MT KA KY-bps: B: VL BE; C: NI.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

(FEBRUARY)

02 2111 (50-27) b: B: SW - bp: A: LG LM; B: MA FU EB TL PE KG; C: NI BU CF - bps: A: SZ; B: BA.

03 1809 (00-33) b: B: SW MB - bs: B: HL BA - bp: A: SO DO WN FU CF SU LG CI TL PE AE SZ; B: LE ES WI NI VL HA MA BU HB EB TA DU; C: MT KA KY - bps: A: DB IK LM; B: BE GN.

04 1953 (50-57) b: B: SW - bs: A: KS; B: SO SU - bp: A: LG IK PE; B: WN VL BE MA BU FU CF AQ EB CI TL LU; C: NI HB LM - bps: A: BA.

07 1745 (40-56) b: B: SW - bs: A: SU; B: SO HL - bp: A: VL IK PE; B: WN HA MA DB BU EB TL LM KG; C: MT KA KY - bps: B: NI BE HB.

08 2044 (42-47) bs: B: WN BU CF - bp: A: AE LU; B: MA IK EB SZ - bps: B: BA.

10 2014 (57-26) b: A: AE; B: HL SW MB - bs: A: SO SU KS - bp: A: WN FU CF CI TL PE TA LU; B: WI VL BE HA MA? HB AQ EB LM; C: HR - bps: A: BU LG IK SZ BA; B: DO NI.

16 2233 (28-37) b: B: HL; C: MB - bs: B: BE - bp: A: CF; B: VL MA CI TL; C: TA - bps: A: IK PE; B: WN BU EB; C: HB - (ssc: A: SO - si: B: BA).

17 0131 (20-40) b: B: MB - bp: A: LG AE; B: EB TA KG - bps: B: SZ - (si: B: BA).

17 1343 (38-46) bp: A: AP; B: PP DU; C: MT KA KY.

18 1732 (20-36) bp: A: CF PE; B: SO WN WI VL BE MA DB BU HB SU IK EB TL BA KG - bps: A: FU; B: HL.

18 2127 (18-38) b: B: SW - bs: A: KS - bp: A: FU LG TL PE AE; B: WN VL BE MA DB BU HB SU AQ EB CI TA LM; C: HR - bps: A: SO IK SZ; B: HL BA; C: NI.

21 0206 (00-12) b: A: PE AE; B: BE - bs: A: LG - bp: A: CF EB TA; B: MA BU TL; C: NI HB - bps: B: SZ.

25 1738 (30-45) bs: A: WN KS; B: BE BU - bp: A: EB; B: MA KG - bps: A: TL QU BA; B: VL.

25 1908 (00-10) b: A: TE - bp: B: WN VL MA EB - bps: B: CF BA; C: BU - (si: A: LG).

27 1725 (15-40) b: A: SJ; B: MB - bp: A: WN SZ TE; B: VL BE HA HB SU EB CI LM kg; C: MT KA KY - bps: A: TL QU GN; B: IK SS TA GU - (si: B: BA).

28 0741 (39-42) b: A: TE; B: NE - bps: A: HO AP; B: VI - (si: A: SI; B: PP).

28 2255 (51-58) bp: A: PE; B: SO MA IK EB TA; C: CF TL - bps: C: BA.

MARCH

02 1559 (50-68) b: B: WN - bs: A: SO - bp: A: SU PE; B: VL MT IK EB TL KA SS KY - bps: A: SU - (si: B: HB).

02 1854 (48-63) bp: A: SU EB PE LM; B: VL KG - bps: A: SO CF IK TL LU; B: WN BU - (si: A: DO SF BA; ?: SZ).

03 0226 (23-33) b: B: HU - bs: B: SZ - bp: A: AC; B: SO DO WN MA BU EB HR - bps: A: TW; B: VL.

04 2322 (16-25) bp: A: LG; B: ES VL MA EB CI AE LU; C: CF SZ BA.

08 2011 (07-20) b: A: NU; B: SW PE - bp: A: DO TI; B: HL WN WI VL BE MA DB BU FU AQ IK EB TL QU LM; C: HB - bps: A: SO SU.

10 1823 (15-30) b: B: SW - bs: A: KS - bp: A: NU WN FU PE TI QU LM; B: LE ES WI VL BE MA DB AQ IK CI GN; C: TL - bps: A: SO SU; B: DO HL BU HB EB BA; C: NI.

11 1752 (33-65) b: B: WN SW - bp: B: SO LE ES HL WI MA DB BU IK EB; C: NI TL.

12 1809 (00-16) b: B: SW - bp: B: NI BU QU KG; C: MT TL KA KY.

12 1942 (38-46) bp: A: IK SZ; B: WN VL MA BU; C: CF EB - bps: A: SO QU - (si: C: BA).

12 2000 (50-08) b: A: FU SU; B: HL SW PE MB - bp: A: LG TL AE TA; B: DB HB AQ EB - bps: A: DO; B: BE.

13 2005 (00-09) b: B: SW - bs: A: SO - bp: A: NU CI; B: LE ES WN WI BE DB BU FU AQ EB; C: LM - bps: A: DO; C: NI.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

(MARCH)

18 1124 (19-30) b: B: NE - bp: B: MT KA KY HO PP DU; C: SS.

19 1007 (00-16) bs: A: TO - bp: B: HO DU - bps: A: AM; B: PP.

23 2314 (11-18) b: A: SJ - bs: B: MB - bp: A: CF; B: MA - bps: A: AC; B: VL EB HR - (si: A: SF; B: CI; C: TL).

24 1031 (30-32) bp: B: PP DU; C: SS KY - bps: B: HO.

26 1938 (35-47) b: A: MB - bp: B: MA EB LM - bps: A: HB; B: VL TL; C: WN CF-(si: A: LG; B: BA).

26 2002 (54-06) b: A: TI - bs: A: KS - bp: A: TL; B: EB - bps: A: CF IK PE QU -(si: B: BA).

28 2159 (58-60) b: B: SW - bp: A: CI; B: VL IK KG; C: EB - bps: A: SO; B: MA CF SZ; C: HR - (si: A: AE; B: BA LM).

29 2208 (01-24) b: A: SU SF TI; B: SW; C: MB - bs: A: NU KS; B: HL - bp: A: MA AQ EB CI AC; B: WI HA SZ LM KG - bps: A: SO DO WN DB BU FU CF LG IK TL PE QU BA LU; C: NI VL BE HB HR - (si: A: AE; B: LE ES TA).

30 2128 (14-31) b: B: SW - bp: B: MA IK CI LU; C: NI BU CF - bps: A: SO; B: VL SZ; C: EB - (si: A: AE; B: BA).

31 1705 (54-16) b: A: SJ - bs: A: SF; B: HL - bp: A: HB TL; B: WN VL MA IK EB LM KG; C: KY - bps: A: SO BU; B: DO NI BE.

31 2021 (08-33) b: A: TI - bs: A: CF HB; B: BE - bp: A: LU; B: MA IK EB - bps: A: SO TL; B: WN VL - (si: B: BA).

APRIL

01 0054 (50-59) b: B: SW CF HR - bs: A: LU - bp: B: EB; C: WN - bps: B: BE LM - (ssc: B: SZ - si: A: SF; B: FU PP).

09 0008 (00-20) b: A: SF - bp: A: LG CI TA; B: LZ SO WI BE FU CF IK EB SZ; C: TL LM.

19 1805 (03-11) bp: B: MA TL; B: WN BE BU HB IK KG - (ssc: A: SO LM; B: KS; C: PE).

22 2329 (24-45) b: A: PE; B: SW - bs: B: KS AC - bp: A: CF HR; B: VL MA HB IK EB TA KG; C: TL - bps: A: SO LG; B: AE.

23 1525 (20-32) b: A: PE - bs: B: SO - bp: A: HB AE; B: VL BE MA BU EB TA - bps: B: WN - (si: C: LM).

25 2215 (10-24) b: A: PE SF; B: SW TA - bs: B: HB QU - bp: A: SU; B: BE EB TL - bps: A: SO.

29 1945 (39-47) b: A: SF AC; B: BE - bp: A: HB; B: LZ WN VL MA BU EB CI TL LM KG - bps: B: DO - (ssc: A: SO).

MAY

04 2225 (19-35) b: A: LG; B: MB - bs: A: KS - bp: A: CI PE; B: CF AQ IK EB QU TA LM; C: TL - bps: B: SZ.

08 1753 (42-65) b: A: PE SF - bp: B: WN VL BE MA BU IK EB KG; C: TL - bps: A: SO.

11 2254 (40-69) b: A: SF; B: LG - bp: A: AE; B: LZ SO MA EB CI; C: TL TA.

13 0143 (38-48) b: A: NU LG SJ; B: SW BE - bp: A: VL FU CF AE TA AC; B: HL WI MA DB BU AQ IK EB TL PE LM TW; C: WN HA - bps: A: CI LU HR; C: SZ.

13 0755 (53-55) b: A: VI - bp: B: PP; C: MT KA KY - bps: B: NE HO - (ssc: A: SI - si: A: CO).

15 1949 (40-62) b: A: SF; B: LU - bs: A: CF KS - bp: A: MA FU IK EB; B: KG - bps: A: SO TL; B: WN VL BU HB - (si: A: LG).

16 2255 (49-63) b: A: SF MB - bs: A: LG TA; B: HL - bp: A: FU SU AQ EB AC; B: MA ? bps: A: CF IK TL PE TI LU LM HR; B: WN WI VL BU HB - (si: A: AE).

18 0046 (43-48) b: A: SJ - bp: C: TL - bps: A: SZ LU; B: HU LM TW.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

(MAY)

19 2302 (01-05) b: B: BE SF - bp: B: VL MA CF KG; C: TL HR - bps: A: SO.

20 1934 (30-40) b: A: SF; B: WN - bp: B: IK EB TL KG; C: HB - bps: B: QU.

22 0333 (28-38) b: A: LU - bs: A: CF LG KS - bp: A: FU EB; B: MA IK SZ TA - bps: B: BE TL - (ssc: A: PE).

23 2126 (15-33) b: A: SF - bp: A: CI; B: LZ MA CF TL PE TA LM; C: EB HR - bps: A: SO; B: HL.

26 0027 (24-45) bp: A: FU CF LG CI; B: LE MA EB TA LM; C: LZ DB TL - bps: B: VL.

JUNE

09 1622 (19-24) b: B: TA; C: MB - bs: B: AC - bp: B: BE SU TL - bps: B: HL - (sfe: SZ SJ?).

09 2105 (48-16) bp: A: LG PE TA; B: VI MA DB FU CF EB TL LU LM HR - (bps: B: SO HL.

14 0237 (33-42) b: A: SZ SJ HU; B: MB HR - bp: A: CI; B: SO TL LU - bps: A: AC.

15 2227 (24-30) b: A: SF - bp: A: CF CI PE; B: MA IK EB TL TA LU HR - bps: B: SO HL.

16 0152 (52-53) bp: A: TW; B: PP AC; C: NE - bps: B: HU.

16 1055 (52-60) bp: A: AP; B: HO PP; C: MT KA KY.

18 2345 (38-50) b: A: PE - bs: A: SO LG KS - bp: A: SU EB LU; B: BE MA TL HR - bps: A: CF; B: TA.

19 0729 (24-35) b: A: SJ - bp: A: AP; B: FR - bps: B: HO PP AC - (si: A: CO; C: TK).

19 1906 (01-13) b: A: AE TA; B: HL - bs: A: KS; B: BE - bp: A: EB PE; B: WN VL MA BU HB LU HR KG - bps: A: CF LG LM; B: DO IK - (ssc: B: SO - si: B: SF; C: TK).

20 1820 (09-25) b: A: SF - bs: A: SO - bp: A: PE; B: LZ WN WI VL MA BU IK EB TL TI; C: NI HB - bps: A: LG AC; B: HL BE.

25 2207 (02-15) bp: A: CI PE; B: LZ SO WN WI VL MA DB BU TL LM; C:CF EB LU HR - (ssc: B: LG).

JULY

10 0056 (51-68) b: B: SW BE; bs: A: KS - bp: A: FU CF CI PE AE SZ LU HR TW; B: SO DO WN VL KV MA BU OD AQ IK EB HU LM; C: NI HB TU - bps: A: LG TA AC; B: MB.

12 2002 (54-12) b: A: IR - bp: B: BE KV OD IK TK TI LM - (si: A: LG; C: PP).

13 2122 (18-26) b: B: SW - bs: A: SO NU - bp: A: PE; B: WN WI BE MA BU FU OD TF TK IK EB CI QU LU LM; C: CF HB TL - bps: A: DO TI; B: VL KV.

15 1909 (49-22) b: A: SF - bp: A: MA CF OD EB LM HR; B: MO VL SU; C: WN - bps: A: SO TA LU.

15 2229 (22-39) bp: A: MA CF LG EB LU HR; B: TL KG - bps: A: SO OD.

16 0121 (20-22) bp: B: WN VL MA BU OD SU LU HR - bps: A: AC.

16 1923 (15-32) b: B: SF - bp: A: PE AE; B: WN VL MA FU CF IK EB TL TI TA LU; C: HB - bps: A: LG; B: SO HL KV LM.

17 0047 (43-52) b: A: SJ; B: TA HU - bp: A: NU TW; B: SO WI VL MA FU CF AQ IK; C: HB - bps: A: DO CI AE LU AC; B: LE ES WN DB EB SZ MB LM HR; C: BU TL - (si: A: LG SF; B: KV).

21 0100 (58-01) bs: B: MB - bp: B: SO AQ LU AC TW; C: CF IK EB - bps: A: AE; B: VL SZ LM HR.

21 2352 (43-60) b: B: SW TA - bs: C: NI - bp: A: NU FU LG TF PE TI; B: SO LE WN WI VL BE KV DB BU CF HB OD AQ TK IK EB CI TL SZ LM - bps: A: SU.

29 2022 (20-28) bs: B: HL - bp: B: WN BE MA BU UB OD IK TL PE - bps: A: SO; B: DO.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

AUGUST

01 0015 (08-25) b: A: PE AC; B: CI SZ LU HR - bp: B: EB LM - bps: B: SO.

01 1058 (48-66) b: B: IR - bp: B: KV OD PP TO; C: MT SS KY HO - bps: A: UB.

01 2026 (18-38) b: B: WN SW KV - bp: B: BE MA OD; C: NI BU HB - bps: B: HL.

03 2202 (00-03) bp: A: PE; B: BE KV MA CF OD LM; C: TF - bps: A: SO.

06 0311 (07-16) b: A: SJ HU; B: LE WN SW - bp: B: HL VL BE BU EB CI MB LU;C: HB - bps: A: SZ AC; B: TW.

08 2246 (35-49) bp: A: SU PE; B: KV CF OD IK EB CI LU; C: TL - bps: A: SO MA;B: DO ES TK LM - (si: B: MO BE).

19 0026 (15-30) bp: A: LG CI PE SF; B: SO VL KV MA FU CF AQ EB TL LU LM; C: HR - bps: A: SU.

22 1154 (53-56) b: A: LM - bs: A: MO; B: HL BE - bps: A: OD; B: KV - (ssc: A: MA ?; B: WN HB - si: B: FU; C: KS - sfe: TL? SZ).

22 2150 (47-60) bp: A: MA CF TI; B: BE EB SZ LU HR; C: TL - bps: A: SO LG.

25 1927 (24-35) b: A: WN SU AQ SF; B: HL TK SZ - bs: A: CF TI TA - bp: A: HB OD EB LU HR; B: WI NI VL BU LM KG - bps: A: MO HA MA DB IK TL; B: ES BE - (si: A: LG).

27 0158 (46-65) b: B: EN SZ MB - bs: A: LG - bp: A: OD SU AE LU LM HR; B: WN BU HB IK HU KG - bps: A: TA.

27 1730 (18-40) b: A: WN SU AQ; B: HL TK; C: TA - bs: A: NU CF TI - bp; A: WI HB TL; B: NI VL BU EB LM KG - bps: A: MO OD IK; B: ES BE HA DB - (si:A: LG - sfe: SZ).

28 1407 (00-15) bp: A: KA; B: KV OD MT EB KY DU - bps: A: UB; B: HL SS.

28 1645 (36-56) b: A: SU SF; B: HL WN TK - bs: A: CF - bp: A: MA OD; B: NI KV BU HB EB KV - bps: A: SO MO; B: BE DB IK TL - (si: A: LG).

29 1843 (25-52) b: A: LM; B: WN SW SU TK - bs: B: HL TI - bp: B: BE BU HB OD TF IK EB TL HR; C: NI - bps: A: MO.

31 1752 (30-56) b: A: SU; B: HL SW - bp: A: SO OD PE; B: WN KV MA DB BU TF TI; C: WI NI UB TL - bps: A: MO.

SEPTEMBER

04 1955 (48-64) b: B: SW UB; C: TN - bs: A: NU KS; B: HL - bp: A: MA FU OD SU CI PE AE SF SZ LU HR; B: MO WI VL HA CF HB AQ EB TL TI MB KG; C: NI TF - bps: A: DO KV LG IK TA; B: LE ES WN BE DB BU LM - (ssc: A: SO).

05 2006 (00-12) b: A: AE; B: SW - bs: A: SO NU LG KS; B: HL - bp: A: HA DB UB CF CI TL PE HR; B: MO TF EB - bps: A: WN KV MA FU OD AQ TK IK SF TI TA LU LM.

09 0903 (00-06) b: B: PE - bp: B: KV OD PP - bps: A: VI; B: HR - (ssc: B: SI).

09 2112 (10-15) b: A: EB - bs: B: BE - bp: A: FU CF AQ SF HR; B: MA - bps: A: OD IK TL LU; B: WN VL BU.

09 2235 (31-45) b: A: SF - bp: A: FU CF HR - bps: A: OD AQ TL SZ LU.

10 1839 (35-42) bp: A: WN CF OD EB HR; B: MO SU - bps: A: HB IK; B: DO BE BU TL - (si: A: NU; B: SI).

10 2354 (52-56) b: B: SW - bp: A: LU HR; B: MA OD LM KG; C: EB - bps: A: DO CF; B: WN VL BE BU.

11 2114 (13-15) b: A: SF - bp: A: LG; B: MA CF IK SZ LU HR; C: EB LM - bps: A: SO.

12 1604 (03-04) bp: B: GN TO; C: MT KA KY - bps: A: UB.

15 2209 (05-11) bp: A: FU OD; B: WN VL BE MA BU EB; C: HB - bps: A: CF.

17 0008 (05-12) bp: B: DU; C: IK PE SZ LU - bps: A: MA AE; B: VL; C: KV CF EB - (ssc: C: TN - si: B: BE LG? TA LM).

21 0034 (31-36) bp: A: BU FU EB TA LU; B: ES WN VL BE KV MA OD AQ IK TL SZ LM HR - bps: A: MB.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

(SEPTEMBER)

21 1115 (08-20) bp: B: PP DU; C: NE HO - bps: B: UB.

22 1849 (40-63) b: C: SU - bs: A: KS - bp: A: VL BU OD IK EB PE TI; B: WN BE HB TL LU LM HR; C: TA - (ssc: B: SO).

22 2152 (40-57) b: A: KS TA; B: BE - bp: A: SU EB TI MB LU HR; B: MA HB KG; C: TF - bps: A: UB CF OD AQ IK PE SF SZ; B: WN VL BU TL LM - (si: A: LG).

23 1806 (03-18) b: B: SU - bs: B: BE - bp: A: VL MA HB OD EB LU HR; B: WN TL SS KG; C: MT KA KY - bps: A: MO IK GN; B: BU LM - (ssc: A: SO - si: A: TK SZ).

24 1655 (45-67) b: A: BU SU AC; B: WN - bs: A: KS; B: BE - bp: A: OD IK LU; B: TK EB TL; C: SZ - bps: B: HB.

25 1823 (19-35) b: A: SU PE SF - bs: A: KS; B: HL BE - bp: A: MA CF OD TL; B: HA TF EB TI SZ TA KG - bps: A: AQ IK LU; B: WN VL BU HB TK LM - (ssc: A: SO; C: CI).

25 2019 (17-21) b: A: SU SF; B: TA - bs: A: LG PE TI KS AC; B: WN BU HB TF - bp: A: MA EB - bps: A: CF AQ IK TL LU; B: VL BE SZ.

27 1448 (33-66) b: A: TK PE; B: SW - bs: A: IR TF - bp: A: OD IK; B: BE KV HB SU MT KA KY GN; C: NI DB EB SS - bps: A: UB; B: HL.

OCTOBER

03 1408 (54-15) b: A: TI - bp: B: WN MA IK EB SS KG; C: KY - bps: A: MO TK QU.

04 1719 (19-20) B: KV MT KA KY KG; C: NI.

04 1734 (31-41) b: B: SW PE - bs: A: TI - bp: A: AQ; B: WN WI VL MA DB BU FU OD IK EB TL - bps: A: UB; B: QU LM GN - (ssc: B: SO - si: A: KS).

05 1731 (26-34) b: B: BE TI - bp: B: IK EB KG; C: WN TF TK - bps: B: UB QU - (ssc: SW).

05 2153 (48-57) b: B: HL - bs: A: LG - bp: A: CF IK EB; B: MA HB LU LM HR - bps: A: TL SZ TA.

06 0027 (25-32) b: B: HL WN BU SF - bp: B: VL IK EB TL; C: HB - bps: B: QU.

06 1952 (36-68) b: A: NU SU PE; B: HL SW CF TI - bp: A: MO UB OD LG; B: DO WN VL KV DB BU HB TF IK EB TL TA LM; C: NI - bps: B: BE.

06 2313 (08-29) b: A: SU - bp: A: NU CF OD LG; B: VL MA DB TF IK EB CI SZ TA LU HR; C: TL.

07 2340 (35-42) bs: A: NU - bp: B: HA DB IK PE LU HR; C: WI - bps: A: FU LG CI LM; B: DO LE ES VL KV MA OD SU AQ EB TL SZ; C: WN CF - (ssc: B: SO - si: A: KS TA).

08 0058 (54-63) bp: A: NU; B: KV MA FU IK EB CI SZ MB; C: CF.

08 1028 (22-33) b: B: IR - bp: A: AP; B: MT KA KY HO DU; C: PP ? - bps: B: UB; C: VI.

10 1524 (15-35) b: B: WN - bs: B: HL - bp: A: HB OD IK; B: VL BU MT TK EB KA KY GN KG; C: NI TL - bps: B: MO BE.

12 2243 (35-46) bp: A: FU CF SU LG AQ TL; B: DO KV MA BU KG - bps: C: NI.

12 2325 (14-32) b: A: PE SJ; B: SF TI MB - bs: A: KS - bp: A: OD IK SZ HR; B: EB LM - bps: A: TA LU AC; B: MO DB.

13 1819 (00-35) b: A: SF; B: SW BU - bs: A: KS; B: HL - bp: A: FU CF OD IK TL PE; WN WI VL KV MA HB TF TK EB LM KG - bps: A: LG TI; B: NI BE DB QU.

13 2040 (30-49) b: A: SF; B: MB - bp: A: CF PE; B: KV MA UB IK EB TL; C: WN LM - bps: A: LG; B: TI.

14 1831 (28-33) b: A: PE - bs: A: KS - bp: A: LG; B: MA CF IK EB TL TI; C: KV LM.

17 1723 (20-32) bp: A: LG; B: WN VL MA BU CF OD EB TL; C: HB - bps: B: HL - (ssc: B: SO).

17 2323 (22-25) bp: A: TL HR; B: WN VL MA BU CF AQ EB LU LM - bps: B: SZ.

18 1331 (25-48) b: B: EB TI - bp: A: OD SU TK IK SS HO AP TO; B: KV MT KA KY GU; C: TF - bps: A: MO; B: BE - (ssc: SW).

TABLE 2 BAYS AND PULSATIONS 1973 - continued

(OCTOBER)

20 1508 (01-25) b: A: AQ SF - bs: A: NU KS; B: HL - bp: A: FU OD BU SU IK TI; B: WI NI VL HA TF TK EB TL LM; C: MT KA KY - bps; A: DO MO WN HB PE; B: BE DB QU.

21 1922 (18-30) b: A: SF - bs: A: KS; B: BE - bp: A: CF EB TI; B: WN VL HA MA HB MT TK KY LM KG - bps: A: TL PE QU; B: NI BU TK.

24 2119 (00-26) b: A: SF; B: SW BE - bs: A: LG KS; B: TA - bp: A: OD PE; B: HL VL KV MA FU CF IK EB TI LU LM; C: NI BU TF TL SZ - bps: B: QU.

29 1344 (35-60) b: A: EB - bp: A: SS; B: TL KG; C: MT KA KY - bps: A: IK QU - (si: A: OD).

29 1834 (30-47) bs: B: BE? - bp: A: MA EB SF QU; B: LM KG - bps: A: WN IK TL QU; B: VL - (si: A: OD).

NOVEMBER

02 0003 (00-07) b: A: SF; B: MB - bs: A: SU KS - bp: A: OD PE SZ; B: WI VL BE KV MA BU FU CF AQ IK EB CI TL TI; C: WN TF - bps: A: LG; B: HB; C: NI.

04 2116 (00-30) b: A: SF - bp: A: WI MA CF HB SU AQ EB TI LM; B: VL HA - (bps: A: MO WN DB BU FU LG IK TL PE QU TA LU HR; C: DO NI BE - (ssc: A: KS; C: TI - si: B: PP).

07 0717 (12-30) bp: A: TI AC; B: TU HU PP; C: VI.

07 1808 (00-24) b: B: SW TN - bs: A: KS; B: HL - bp: A: FU OD PE TI; B: NI BE DB BU TF IK LM KG; C: TK - bps: A: QU.

07 1912 (09-19) b: B: TN - bp: A: CF OD PE; B: WN VL MA HB IK TL; C: EB.

07 1943 (32-50) b: A: SF; C: TK - bs: A: KS; B: WN BU - bp: A: MO OD PE TI; B: EB.

08 2110 (00-15) b: A: AE - bs: B: HL; C: KV TF - bp: B: VL MA DB CF EB CI TL PE TA - bps: A: LG; B: DO LE ES - (ssc: B: SO).

09 1856 (50-61) b: C: TK - bp: B: VL MA EB; C: WN BU TK QU LM - bps; B: DO KV.

13 1508 (59-12) b: B: SW - bp: B: HL KV OD MT IK KA KY; C: TK SS - bps: A: UB GN.

14 1759 (56-61) b: B: IR SW SU; C: WN - bp: A: OD; B: MO WI UB TK IK QU; C: TL - bps: B: HL KV.

14 1951 (35-60) b: A: PE SF; B: IR TK? - bs: A: KS; B: HL - bp: A: LG AE; B: MA CF IK TL TI QU TA; C: TF.

15 1250 (48-55) bs: B: HL - bp: A: HO PM AP; B: OD MT IK EB KA TI SS KY TO DU; C: NE TF - bps: A: UB; B: GU GN.

16 1823 (17-26) b: B: SW; bs: B: HL - bp: A: OD TI; B: WN VL MA TK IK EB LM; C: NI BU TL - bps: A: UB; B: KV QU - (ssc: B: SO).

17 0138 (25-52) bp: A: CF LG CI TA LM; B: WN VL KV MA BU IK EB TL SZ LU HR; C: NI HB - bps: B: FR.

17 1403 (50-11) bp: A: OD SU; B: HL KV MT KA TI KY GN TO DU; C: TF SS - bps: A: UB; B: GU.

18 1921 (02-33) b: A: IR PE - bs: A: KS; B: HL - bp: A: FU OD SU LG TF TK TL AE; B: MO VL BE KV MA DB CF UB AQ IK CI TI SZ LU LM HR; C: NI BU - bps: A: AE SF QU TA; B: SZ.

25 1344 (40-50) b: B: WN - bp: A: OD TI; B: KG; C: TK EB - bps: A: QU.

27 0055 (50-65) b: A: CI AE - bp: B: VL MA CF EB SZ TA; C: KV TL.

27 1313 (05-18) bp: A: OD AP; B: KV VI NE MT IK KA KY DU - bps: A: UB GU.

28 2112 (50-30) b: A: CI; B: HL CF PE TI - bp: A: LG; B: VL DB UB TF TL; C: WI KV.

29 1910 (00-21) b: A: AE; B: SW - bp: A: NU LG AP; B: MA BU FU OD SU TF IK PE TI QU HO PP LM; C: CF EB TL TU HR - bps: A: CO; B: DO LE WN WI VL BE KV.

TABLE 2 BAYS AND PULSATIONS 1973 - continued

DECEMBER

04 0216 (10-21) b: A: AE; B: SW BE - bs: A: KS - bp: A: CF TI SZ; B: MA BU FU IK EB TL; C: HB TF - bps: A: LG TA.

04 2120 (09-40) bp: A: SU EB TI: B: WN VL TL LM - bps: A: MO; B: HL BE IK.

05 2305 (54-10) b: A: AE; B: TN - bs: A: LG; B: HL TA - bp: A: MA CF TI; B: BE FU OD IK EB TL LM - bps: B: DO.

06 2101 (50-06) b: B: AE SZ - bp: B: WN KV MA FU OD IK; C: DB - bps: B: HL - (ssc: B: SO).

09 1609 (56-24) b: A: EB - bp: A: OD SU IK TI TN; B: WN TL LM; C: SS - bps: B: MO BE DB.

09 2103 (00-06) bs: A: SF - bp: A: FU CF TI; B: OD EB TL; C: WN - bps: A: MA LG CI SZ; B: VL BE.

13 1811 (08-17) b: B: SW - bp: B: VL MA OD IK QU; C: WN TF - bps: A: IR UB; B: KV; C: TK.

15 2326 (22-28) bp: A: LG; B: LE ES VL HA MA TA; C: KV CF EB.

16 0020 (15-24) b: B: HL - bp: A: LG AE; B: LE ES BE HA KV MA DB OD IK EB CI PE TA; C: WN WI BU CF TL - bps: B: VL; C: SZ.

17 2149 (42-50) bp: A: LG PE; B: KV MA FU OD IK TL; C: WN WI NI BU CF TF HR.

22 0040 (29-60) b: A: SF; B: HU - bs: B: CF FR - bp: A: MA OD IK TI; B: TF EB TL - bps: A: AC.

23 1746 (40-55) bs: A: LG KS; B: BE; C: NI - bp: A: MA FU CF TI; B: WN BU TF EB TL - bps: A: OD AQ IK SF; B: HL VL KV HB TK - (ssc: B: SO).

25 2159 (54-61) b: B: HL PE - bp: A: NU LG; B: LE ES MA; C: KV CF IK EB.

29 1941 (30-60) b: A: CF EB PE SF - bs: A: LG - bp: A: OD TL TI; B: NI MA BU IK TA LU LM HR KG - bps: B: HB.

29 2249 (45-51) b: A: PE SF - bp: A: CF OD TI; B: MA BU IK EB TL TA LU HR; C: NI.

30 1844 (42-48) bs: A: NU; C: NI - bp: B: VL MA FU OD EB; C: WN TL - bps: A: TI; B: MO HL BE KV LM.

31 1656 (47-66) bs: B: HL - bp: A: OD; B: MA IK TI LM; C: WN - bps: A: MO; B: KV.

TABLE 3 SUDDEN IMPULSES (si) 1973

Times of commencement of sudden magnetic changes or impulses (si) which could not be classified as ssc, bp, etc.

JANUARY

none

FEBRUARY

05 0529 (24-35) A: LG AE TA TE BA LU LM AC AM TW; B: MA SU IK EB PE SZ PM PP TO; C: TL KY MB - (bp: C: VI).

09 0154 (52-57) A: LG LU; B: VL HA HU; C: EB TL - (ssc: A: SJ; B: SZ - bp: B: MA - bps: A: AC; B: WN; C: BU).

24 2021 (17-25) A: SI CF TL AE BA; B: LE ES SZ - (bp: B: MA - bps: A: WN VL; B: EB; C: BU).

24 2207 (05-12) A: AC AF BA; B: TL SZ - (ssc: A: LG - bp: A: MA - bps: A: VL; B: WN BU EB).

MARCH

02 1202 (00-05) A: AE; B: DO LE ES WN FU HB EB TL?; C: WI CF - (ssc: A: SZ; B:MA LG CI SF TA; C: NI VL BU).

05 2023 (20-28) A: LG; B: HL SU SF QU; C: TL? TI - (ssc: B: TA; C: LM).

06 0957 (56-58) B: QU BA PP; C: MT KA KY - (bps: B: LU).

09 0917 (12-20) B: DO LE ES WN VL FU; C: BU - (sfe: HL NI SZ).

20 1754 (45-60) A: CF LG TL SF - (ssc: A: LU; B: SZ - b: A: WN - bps: B: VL BE).

22 1122 (20-30) B: BE QU BA LU - (bp: B: KY DU).

APRIL

01 0629 (23-33) B: DO VL FU - (ssc: A: SO; B: AE LM - b:B: HU AC - bp: B: PP).

12 0705 (02-07) A: SO; B: LM AC; C: WN EB PM TN - (ssc: B: QU; C: NE MB).

14 1401 (56-03) A: WN CF SU AQ EB TL QU TA HU AC; B: VL BE DB SS LM; C: KY - (ssc: A: SZ; B: LU).

28 1201 (53-15) A: FU; B: BE SU PP LM; C: MT KA KY - (ssc: A: LU; C: NE).

28 1550 (49-54) A: AC; B: WN BU TK LM; C: HB TL - (ssc: B: MA).

MAY

02 0137 (34-40) A: LG PE TA LU TW; B: CI QU LM HL FU AQ EB; C: CF TL PP - (ssc: A: MA; B: WI SU TI; B: HU TN AC; C: HA IK).

02 1142 (40-47) B: QU TA LM AC; C: EB SS - (ssc: C: MB TN - bs: B: LU).

02 2123 (21-26) A: FU CF LG AQ PE TI QU TA SJ LM AC; B: ES WI MT EB TL KA KY GU TG HU PP; C: LE SS HO - (ssc: A: LU AP; B: MA KS SZ MB; C: HA TN - b: SW - bps: A: VL SU; B: SO WN; C: VI BU HB).

06 2211 (00-15) A: FU CF; B: QU PP; C: MB - (b: SW - bs: A: SO - bp: C: WN TL).

21 1244 (44-45) B: PP; C: MT KA SS KY - (ssc: B: LM - sfe: TL?).

TABLE 3 SUDDEN IMPULSES (si) 1973 - continued

(MAY)

22 1431 (28-32) A: FU; B: WN NI VL BE BU HB - (ss: B: MA - sfe: HL SZ).

JUNE

02 0713 (03-21) A: SF LM; B: BE PP; C: MT TK KA SS KY.

02 1722 (20-30) B: MT TL KA QU; C: SS KY - (b: A: LM - bp: A: LU).

23 1312 (12-15) A: AC TW; B: FU TI; C: SS TA - (ssc: B: MA).

23 1708 (06-09) A: AC TW; B: LE ES HL VL FU PE; C: CF TL TI.

24 0704 (01-09) A: SU; B: LE ES BE HB QU LM TW; C: NI BU TL HO - (ssc: B: SO WN VL MA; C: IK - sfe: HL).

24 1753 (50-55) A: TI; B: TL QU HU - (bs: B: PE; C: CF - bp: B: MA - sfe: LG).

JULY

08 0400 ( ) A: LG; B: HL; C: TN - (ssc: B: SU QU; C: TL - bp: A: SJ AC; B: HU; C: SZ).

AUGUST

05 0045 (30-48) A: MO FU AE SF AC; B: HL BE MA? IK SZ TA LU; C: TL?

12 2107 (04-10) A: SU SF; B: HL FU TF IK TA; C: CF TK KS TN - (bs: A: OD).

12 2147 (46-51) A: SI BU FU CF OD LG IK FR AE SF TI TA; B: HL WN WI NI BE HB TK EB PE DS TU LU PP LM; C: TL? SS SZ HU TN - (ssc: A: MA; B: HB SU).

SEPTEMBER

09 1419 (15-22) A: OD LG; B: FU SZ HU; C: TK TL - (ssc: B: TI TA AC; C: SU LU).

10 1752 (51-54) A: SI OD SF AC; B: WN VL MA? BU HB TK IK LU PP; C: CF EB SS.

OCTOBER

04 0741 (38-42) A: LG; B: DO LE ES WN VL BE KV BU SU QU; C: LM - (ssc: B: MA).

16 0733 (28-42) A: FU MT KA TI KS KY QU SJ PM PP AC TW; B: BE? TU SS; C: TL - (ssc: B: BO SW TF; C: NI BU HO).

NOVEMBER

05 0954 (50-59) A: LM TW; B: HL WN IR BU FU OD SU TI? TA LU PM GN; C: LE ES TK EB KA SS KY SZ KG - (ssc: A: SO LG SJ AC; B: IK AE QU MB PP; C: HO HU - bp: B: MA DU - bps: B: KV).

DECEMBER

07 1403 (00-06) A: LG; B: HL; C: PP TN - (ssc: B: QU - bp: C: TK TI - sfe: OD SZ).

19 1645 (40-54) A: MO FU LG SF LU HU AC; B: LE ES BE HA BU TL AE TU HO PP; C: CF EB SJ - (ssc: A: SI MA SU; B: WN VL KV HB LM; C: WI - bp: C: KG - bps: A: TI).

TABLE 4 GIANT PULSATIONS 1973

Times of commencement and ending of presumed giant pulsations (pg) checked by 56 observatories, namely: LZ CO DO NU LE SI SV ES ME WN WI NI VL GT KV NE FU CF OD MT LG TF TK IK EB CI BD TL FR PE SM KA KS DS TU KY QU HO TE SJ MU GU PA BA PM HU AP PP GN HR TO AM KG MI MW SB. Period in minutes and amplitude in γ's, as reported by some stations, are added in parentheses, e.g. (7.2 - 5) means, period 7.2 min., amplitude 5γ. Beginning or ending times of the reported phenomenon are given in square-brackets if clearly deviating from the times at the left.

JANUARY

11 1350 -1750 A: CO(6.2-20) SI(3-20) GT[-1805](3-7) FU[-1620] CF(3-10) LG CI(2.5-8);B: DO(3-25) LE[-1545] SV ES[1156-1714] ME[0625-1912] NI? VL[-1410](3.5-15) KV OD(4-4) TL KS(13-4) MU BA MW(4.2-130); C: WI(4-18) EB[-1412]TU TE GU KG[-1600](3.2-12); D: 9; E: IK MI; x: QU - (pi2: A: (8.4-24) FR(0.9-10); B: AP - pi2+pc4: B: SB - pc: A: BD(0.7-7) SJ(0.8-2);B: TF[-1720] TL DS (0.5-3) HO(0.5-2) HR[0751]; C: SM - pc3: C: PP - pc4: B: LZ[1339](1-) - pc4+pi2: B: AM - pc4+pc5: A: WN[-1545](1/3.2-16).

12 0637 -.... A: SV FU[-1235] LG MU; B: ME[-1920] NI[-1135] KV[-1200] OD(3-3) KS (13-6) TO[-0722](5-20) AM MW[-11..] (5-170); C: LE[-0930] SI NE CF CI BD TL FR HO SJ GU KG[-0715](3.3-7) MI [-07..] (4.2-50); D: 13; E:IK; X: GT QU - pi2: B: DO[-1000](4-25) AP; C: TU(3.2-3) - (si: C: BA - pc: A: CO (5.3-37); B: TF[-1125] SM HR; C: TL DS - pc3: B: LZ[0248-1126](03-) WN [-1132](0.5-2) - pc4: B: ES[-1045] PP - pc5: LZ[-1140](3.3-)).

27 1835 -1950 A: SI(3-30) MU; B: NU(40-140) ME[1700-] WN? [-1850](15-50) NI MI (2.5-140); C: LE ES GT OD LG SJ GU TO; D: 14; E: LZ DO SV KV CF TK SM TE PP HR MW; X: QU - (pi2: A: TU(4-6) AM SB; B: FR AP; C: BA-pc:A:CO (2.6-135) NE(4.5-17) BD(4.6-11); B: DS(5-5) HO(0.3-1); C: TF - pc5: B: NI PM).

28 09.. -1500 A: FU[1115-1145] MU; B: SV ME[0918-2400] KV[0900-] OD[0540-](2-3) LG BA KG[1115-1125](4-46) MW[06..-](5-200); C: CO LE SI NI GT(5 - CF TK IK CI TL TU HO GU; D: 13; E: PP; X: SM GU - (pi2: B: DO[0500-](5 - 30) FR; C: NE BD AP - pc; B: TF DS(0.5-1) SJ(1.2-2) HR; C: TL - pc3: B: LZ [06..-0948](04-) ES WN(0.3-2) EB - pc4: B: SB - pc5: B: LZ[0340-13..](3.5 -) TO[1115-1130](4.2-8)).

FEBRUARY

09 1353 -1415 A: LZ GT(2.8-9) KV FU LG CI(5-8); B: DO(3-15) SV ME[1200-2330] WN(5-10) VL(5-17) CF(5-10) OD(4-3) TL SM MU; C: LE SI(4-5) WI(6-16) NI IK EB SJ GU PA(6-6) HR KG(4-7); D: 11; E: CO TK PP MI MW; X: QU - (pi2: C: NE BD - pc: B: TL FR(0.8-3) DS(5-5); C: TE TU - pc3: B: ES[07..-] - pc4: B: AP SB - pc5: NI - pc3+pc4: A: FU).

MARCH

01 1418 -1600 A: LZ CO(1.3-115); B: ME[1600-2400] KV; C: SV GT LG TU HO TE SJ GU BA; D: 27; E: MW - (pi2: B: AP - pc: A: TF; B: NE(8.5-12) OD OD TL DS(0.3-1) HR; C: BD FR(0.6-2) SM - pc3: B: WN(0.4-2) - pc4: A: SI(1.5-4) MI(1.5-13) - pc5: C: NI).

24 0403 -0415 A: LZ CO(4.7-251) SI(5.35) KV MU AP PP(6-) AM; B: SV TU(5-4) HO(5-4) TO(5.23) MI(5-140); C: OD LG TK FR TE SJ; D: 21; E: MW; X: CI - (pi2: A: SB; C: TF SM QU BA - pc: A: GU(5.9-10); B: NE(4.8-11) BD(4.6-7) DS(5-5); - pc5: C: NI).

26 2350 -2405 A: CO(5.3-172) MU; B: SI(5-45) SV ME[2232-2430] KV LG TU(4-5);C:GT OD TK IK BD TL QU TE SJ TO; D: 22; E: LZ NE CF MW - (pi2: A: AM; B: GU AP; C: TF TL BA - pc: B: DS(5-5); C: FR(0.5-2) HO - pc5: B: PP; C: NI).

APRIL

05 0130 -06.. A: CO(2.7-22) KS(4-8) MU; B: SV ME[-0832] MW[02..-14..](3.3-50); C: LE SI NI? KV NE TK BD TL 0050-0346 DS TU GU KG 0341-0626 (1.3-3); D: 27; X: LG PE - (pi2: C: FR(1.7-3) - pc: B: OD TF SJ(1.5-1); C: SM HO(8-2) BA - pc4: B: AP).

TABLE 4 GIANT PULSATIONS 1973 - continued

MAY

14 0605 -0812 A: DO(5-20) GT(3.5-20) OD[0150-0720](5-10) LG; B: LE SI(15-240) SV WI(7-22) VL(4.8-15) KV CF(5-16) CI(4.2-7) KS(4-4) BA; C: ES NI EB BD TL SJ GU TO; D: 7; E: CO NU NE FU TK IK FR PE DS TU QU HO TE MU HU AM MI MW SB - (pc: B: TF[-1020]; C: SM? HR - pc4: B: AP - pc5: A: LZ[03.. -10..](5-); B: WN(5-20) NI).

JUNE

13 0040 -18.. A: SV SB; B: ME[-2400] GT KV CF(-8) OD(5-6) LG DS MU BA MW(4.2-140); C: LE SI NI[-1850] NE TK CI TL HO SJ GU TO MI[12 1900-13 0500](2-80); D: 14; E: DO IK FR PE SM QU; X: AP - (pi2: B: CO(3.2-194) C: BD - pi2+pc4: A: AM - pc: B: TF TU(2-2) HR[0432-](2-3); C: TL - pc3: C: LZ[0730-1605](0.5-) - pc4: A: WN[0850-](0.8-7) - pc5: B: LZ[0240-0600](3.3-); C: NI[-1850] - pc3+pc4: B: PP).

14 0400 -1800 A: SV KS(6-5) MU; B: KV OD(6-4) LG BA MW 0335- (5-220); C: DO LE SI WI(8-15) NI GT NE TK CI BD SJ GU HR KG 0326-0430 (5-5); D: 13; E: CF SM QU - (pi2: B: AM SB; C: CO FR HO - pc: B: TF TL DS(0.7-2); C: TU-pc3: B: LZ[0440-1425](0.5-) NU[-0500](0.5-) ES WN(0.4-3) VL[0440-1625] - pc4: B: AP - pc5: C: LZ[0030-0420](4.7-) NI).

19 0340 -0945 A: SV FU OD(8-7) LG; B: LE[0920-][ES 0920-] WI(6-26) NI KV CF[0918-0936](5.3-10) TK IK EB CI(5-8) TL KS(4-4) DS(5-8) MU BA TO(4.2-25) MW (4.5-300); C: DO GT BD SJ KG[0325-](3.4-25) MI; D: 7; E: SI NE FR PE QU HU - (pi2: A: AP AM; B: TU(3-4) SB; C: CO - pc: B: TF TL SM GU (4.1-10) HR -1538 (2-2); C: HO(4-6) - pc3: B: LZ 0358-1018 (0.5-) VL - pc5: B: LZ (4-) WN(5.3-8) NI PM(-8)).

29 1605 -1640 A: MU; B: CO(5.3-275) SI(5-20) SV OD 0400- (5-8) LG DS(5-8) AM; C: LE WN NI? GT KV CI BD TL DS SJ GU MI; D: 17; E: LZ FU CF TK IK SM QU HU; X: ES TE - (pi2: B: AP; C: TF FR BA - pc: A: NE(4-16); B: TU(3-4) HR(-2) SB; C: TL HO - pc5: C: NI).

JULY

01 0500 -1700 A: SV OD(4-4) LG PE[0817-0825](8-2) KS(4-3) MU; B: KV TK TL BA MW (4.2-450); C: DO ES NI GT BD TU SJ GU; D: 13; E: CO SI NE FU CF IK QU - (pi2: B: SB - pc: B: TF TL SM DS(5-3) HR(3-2); C: FR(0.7-5) HO - pc3: A: WN[0545-1515](0.6-10); B: LZ[0615-1225](0.4-) LE[0250-1200]VL EB-pc4: B: CI(2-3) AP AM - pc5: B: LZ[0230-1500](03.5-); C: NI).

04 0300 -1706 A: SV KG(1.8-5); B: KV MU BA MW(5-100); C: CO NI? LG TK HR; D: 22; E: NU; X: LE CI - (pi2: A: SI(1.2-10); B: HO(1-2) - pc: A: SI(2-2) BD(1.6-2) DS (1.5-2); B: NE(1.3-5) OD TF TU(2-2); C: FR(0.9-2) SM GU - pc3: LZ[0637-1317](0.6-) WN[0436-16..](0.7-3) VL - pc4: B: ES TL - pc3+pc4: B: FU).

15 0137 -0320 A: SV LG KS(5-5) DS(8-15) mu AM[-0251]; B: SI(8-45) WN[0237-](13 - 23) WI(8-21) KV FU[0235-] OD[0239-0500](3-4) TU(7-15) BA TO[0237-0450](5.8-30) MI[0235-0400](4-100); C: DO LE NI GT CI(1.7-) BD TL[-0440] SM PA (10-10) KG[0245-](1.9-15); D: 12; E: LZ CO NE CF TK IK QU - (pi2: A: AP; B: TF FR; C: GU(9-15) - pc: A: SJ(1-2); B: HR; C: HO - pc4: B: SB - pc5: PM (-13) - pc4+pi2: B: AM[0251-] - pc4+pc5: B: NI).

15 0900 -1100 A: SV KV KS(8-7) MU; B: ME[1100-1710] WN?[0930-1025](13-18) FU[0930-1030] OD[0940-1200](5-5) LG TF TK BA MW[05..-12..](4.2-150); C: CO DO SI ES NI NE CF BD PE DS TU HO SJ TO KG(4-17); D: 10; E: IK QU - (pi2: A: SB; B: NU AP; C: GU - pc: B: TL FR HR(-2); C: SM - pc3: B: LE - pc4: A: VL CI(-3); B: EB; C: LZ[0930-1215](1.7-) AM - pc5: FU[0900-1030] PM (-7) - pc4+pc5: B: NI).

16 0600 -0730 A: SV OD(5-3); B: DO(6-15) WN?(10-13) GT(3.5-7) KV FU 0630- MU MW(5-230); C: CO LE NI CF LG IK BD TL -0755 SM HO SJ GU BA; D: 19; E: KG - (pi2: B: SI(1.5-10) TF DS(1-2) TU(1-3); C: FR - bp: B: AP -0623 - bps: A: AM -0621 - pc: B: NE(1-3) - pc4: B: EB CI(2.5-2) SB - pc5: C: LZ 0620-0733 (6-) NI).

AUGUST

05 1349 -1749 A: SV FU[1440-1500] LG KS(10-20); B: NI? GT(4/8-8) KV OD(6-8) CI(2.5-8) TL SM MU BA KG[-1640](2.7-10) MW[1440-18..](5-130); C: CO DO LE ES

TABLE 4 GIANT PULSATIONS 1973 - continued

(AUGUST)

WN? PE TE SJ; D: 11; E: CF TK IK DS HO HU PP; X: QU - (pi2: A: BD(1.6 -8) GU SB; B: NE FR(-8) AP; C: LZ[-1521] SI AM - pc: B: TF TU(3-5) HR (2-2) - pc5: B: NI).

27 0300 -1300 A: SV; B: KV FU LG TK TL[0400-] MU BA MW(5-320); C: DO LE WN WI(6 -15) NI GT CF OD CI BD DS TU SJ GU TO; D: 13; E: LZ SI NE IK FR PE SM KG MI; X: QU - (pi2: B: AM SB; C: CO - pc: B: TF; C: HO(1-1) HR [0513-] - pc4: B: AP - pc5: B: GN[0943-1008] - pc3+pc4: FU).

29 0335 -1700 A: SV; B: DO(5-18) ME[28 1818-] KV FU OD[-1400](5-5) LG TL[0353-1400] MU BA MW[0504-16..](4.2-130); C: CO ES NI? GT TK PE SJ GU TO; D: 14; E: NE CF IK CI; X: QU - (pi2: B: DS(1-1) TU(1-2) HO SB - pc: B: TF BD(1.0 -1); C: FR(0.8-2) SM[1305-1740] HR - pc3: A: VL[0515-1635]; B: LZ[-0713] (0.4-) LE[0359-15..] WN[05..-1635](0.7-3) - pc4: B: AP - pc5: B: LZ[0933 -1530](5-) SI(0.5-5) - pc3+pc4: FU - pc4+pi2: B: AM).

SEPTEMBER

09 1527 -1600 A: KV FU OD(3-7) LG; B: DO(6-30) LE SV ES NI GT(2.5-6) IK SM TU(5-5) MU BA MW(5.8-90); C: CO SI WN? NE CF EB BD TL[1420-] DS HO TE GU PA(6-10) KG(4.2-18); D: 13; E: TK HU; X: CI QU - (pi2: A: LZ(4.2-) SB; B: FR; C: TF AM - pc: A: SJ(4-5); B: HR(3-2) - pc4: C: NI).

OCTOBER

NOVEMBER

25 1207 -1336 A: SV NI KV FU[1230-] CF(3.7-18) OD(4-10) LG KS(6-8); B: DO(4-50) LE [1240-] ES[1232-] ME[1336-2340] WN[1230-](4-21) WI(5-39) NI VL [1229-1245](4-20) GT(3.5-9) IK CI(4.2-10) SM MU BA MW(5-170); C: NE BD PE TU HO SJ GU; D: 6; E: CO SI TK DS QU PA HU PP TO; X: EB TL - (pi2: A: AP; B: TF AM; C: FR KG(~4.2-40) - pc: A: HR(5-8) - pc4: A: SB - pc5: B: LZ (5-) NI PM).

DECEMBER

09 1145 -1345 A: DO(6-60) SV GT(5-12) KV FU CF(5-26) OD(6-8) LG CI(5-12) KS(8 - 15) MU BA KG(~5-70); B: LE[1320-] SI(6-35) ES ME[1030-1845] WN[-1316](5-38) WI(6-74) VL[-1312](4.8-12) TK IK SM DS(5-5) QU[-1316] TE MW (5 - 160); C: EB[-1325] BD PE TU GU PA(6-8) TO; D: 1; E: NE TL HU - (pi2: A: SJ(6-6); B: MT[1238-1400](0.8-) AP; C: CO FR KA[1238-1400] KY[1238-1400] GU AM - pc: A: HR[-1300](6-12); B: TF HO(0.7-1) - pc3: C: LZ[-1420] (0.6 -) - pc4: A: SB - pc5: B: LZ[-1400](5-) PM).

TABLE 5a SOLAR-FLARE EFFECTS (sfe) 1973

Times of commencement of solar-flare effects (sfe) checked by 67 observatories, namely, CO DO NU LE SI SV ES WN WI NI VL GT CM KV VI NE FU CF HB OD OT MT LG TF TK IK EB CI BD TL FR PE SM AE KA KS DS TU KY QU SZ LP HO TE AL SJ HD MU GU PA BA PM HU AP PP TN GN HR AC TO AM CZ TW KG MI MW SB. Stations from which the monthly reports have been used, although their check-lists were not received, are the following ones: HL BU AQ SS TA MB LU. Strong effects are marked by an asterisk.

JANUARY

none

FEBRUARY

none

MARCH

none

APRIL

04 1136 B: DO NU WN GT CM KV (VI) {NE} FU OT {BD} AE SJ TN; C: SV ES NI CF OD TF FR PE KS SZ QU BA HU HR; D: WI HB TK IK EB TL AL HD AC TW CZ KG MW; E: (SI) CI SM {TU} (MI); x; LG PA - (si: B: VL; C: LE).

10 1224* A: OD IK PE AE KS SZ; B: DO NU WN CM KV OT LG TF EB CI [MB] BA HR; C: LE SV ES WI NI GT CF HB TL FR SM DS QU SJ AC TW; D: VL FU TK AL HD PA HU CZ KG; x: TN.

11 1410 A: NU CI AE SZ (MU); B: SV WN CM KV HB TL; C: SI GT VI NE LG TF EB FR DS TE PA BA HR AC TW; D: ES WI VL FU OD IK PE KS HU; E: DO NI CF OT BD TU (LP) {HD} (PP) TN (MI); x; SJ - (si; C: LE SM - bp: B: (AM)).

11 1842 A: OT {LG} BD FR DS TU TE SJ HU; B: {NU} (SV) (KV) (TF) HO PP; C: CO LE ES VL NE CI SM SZ AP AC TW; D: VI PA; E: {DO} {CF} (MI) (MW).

MAY

03 0832* A: NU SV WN NI GT KV FU HB LG TK IK EB AE QU SZ [TA] AL HD MU GU BA HR; B: DO WI CM [BU] CF TL; C: VL TF CI SM KS KG; D: MT KA KY TN GN CZ; E: ES MW - (si: A: PE; C: LE - bps: A: OD).

05 1715* A: BD FR TU SZ TE SJ AC TW; B: CO CM KV OD LG EB SM AE DS HO PA HU; C: NU SI WN GT VI NE CI TL PP; D: DO LE ES WI NI VL FU CF OT PE.

19 2243 A: VI BD GU; B: NE (TF) DS TU HO MU PM; C: CO MT FR KA KY TE AL SJ AP; D: HU PP; E: {DO} SI {SV} (CF) OT {TK} (IK) (AE) LP (HD) TO AM - (pi2: C: {ES}).

JUNE

none

JULY

10 1350 A: (MU) HU; B: DO NU SV WN KV OT LG CI FR DS TU SZ {HD} BA [LU]; C: CO NI GT NE CF HB OD TF TK IK EB BD AE QU TE SJ TN HR; D: LE SI WI VL VI FU TL PE SM PA AC; E: KS; X: ES.

AUGUST

none

SEPTEMBER

04 1503* A: DO NU OT TF CI FR HU AC; B: SI {SV} [HL] WN WI VL GT CM KV VI

TABLE 5a SOLAR-FLARE EFFECTS (sfe) 1973 - continued

(SEPTEMBER)

NE FU HB OD {TK} AE KS DS TU (HD) (AP) (AM); C: CO NI LG IK EB BD TL SJ PA BA HR TW; D: ES CF PE TE; X: {QU} - (si: C: LE SM).

07 1155 B; WN WI GT CM KV [BU] FU OD [AQ] TF; C: SV ES NI CF HB LG IK FR KS SJ HD PA HR AC TW; D: DO LE VL OT TK EB CI TL PE SM AE SZ AL HU TN CZ KG MW; E: NU; x: QU BA.

OCTOBER

none

NOVEMBER

none

DECEMBER

none

TABLE 5b DOUBTFUL SOLAR-FLARE EFFECTS (sfe) 1973

Times of commencement of presumed solar-flare effects checked by 67 observatories, the same as for Table 5a. Effects which very probably are real sfe's are indicated by an asterisk.

JANUARY

none

FEBRUARY

none

MARCH

11 1126* B: WN CM (VI) SZ BA {GN} HR; C: SV KV NE OD LG TF TK CI FR SM QU AL SJ HD; D: DO NU ES WI NI VL GT FU HB IK EB TL PE AE HU AC TW CZ KG MW; E: LE CF KS TN MI; X: PA.

25 0918 A: MU; B: NI CM (VI) TF (BD); C: SV WN GT KV HB LG EB PE SZ AL BA; D: ES WI VL OD IK TL KS GN HR CZ KG MW; E: DO NU LE (SI) FU CF (OT) TK CI AE (DS) (TU) QU LP HD TN {MI}; X: SM.

APRIL

09 1745 A: HU; B: {NU} (TF) SJ {AM}; C: CO SI WN GT VI NE OT BD FR TU HO AC TW; D: DO LE ES WI NI VL FU CF LG CI EB TL SM AE DS SZ TF PA; X: {PE} (GU) (TN).

30 0554* B: CM KV [SS] LP AL MU; C: ES WN LG TF GU BA GN CZ KG; D: WI VL HB OD MT IK EB TL PE KA KS KY PM HR TO MI; E: DO NU LE {SI} SV NI FU CF TK CI (BD) AE (DS) (TU) QU HD (PP) MW; X: GT TN - (si: C: TE)).

MAY

17 1913 A: CO BD {GU {AM}; B: {NU} (SV) {KV} {HB} OT TU; C: SI NE FR SZ TE SJ HU PP; D: WI VL TL HO PA; E: DO CF (TK) (IK) CI SM DS (LP) (HD) AC TW; X: ES VI LG - (si: C: LE - pc2: A: SB; B: AP).

18 1547 B: CM KV HU; C: CO NU SI SV WN GT VI NE TF FR AE TU SJ BA; D: DO LE ES WI VL FU HB OD LG EB CI TL PE KY SZ TE PA AC TW; E: NI CF OT IK BD SM KS DS (HD) (MI) (SB).

20 0559 B: CM [SS] LP HD; C: SV KV TF QU AL MU GU; D: DO NU LE ES WN WI NI VL GT FU CF HB OD MT LG TK IK EB CI TL PE AE KA KS KY TN GN HR TO CZ; E: {SI} (OT) (BD) MW; X: PM KG.

JUNE

15 1405 B: WN CM TF SZ; C: CO NU LE SV GT KV BD FR SM AE DS TU QU SJ BA; D: DO SI WI NI VL VI FU NE HB OD OT LG EB TL TE PA HU TN HR AC TW; E: ES CF IK CI PE KS {HD}; X: TK AP.

JULY

none

AUGUST

none

SEPTEMBER

none

OCTOBER

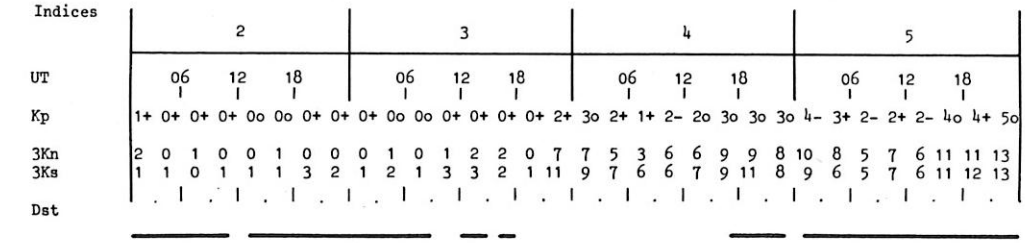
none

NOVEMBER

none

DECEMBER

16 1107 B: CM TF HD TN HR; C: ES WN KV OD LG AL BA; D:DO LE SV WI NI VL GT FU CF HB TK IK EB CI TL PE SM AE KS QU SZ SJ HU GN AC TW CZ KG MW; E: NU; X: PA SB.



Data from Individual Observatories: JANUARY 1973

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
RB	83.0N	3	2118	SC	+17	+17	+ 6	05(6)	-	251	308	112	06	24
MX	79.1N	3	2118	SC	-25	-25	- 4	05(6)	-	372	375	246	06	24
BL	73.8N	3	2118	SC*	+27 *	-91 *	+27	04(6)	-	175	155	407	06	23
CH	68.8N	3	2118	SC*	+ 8	-31	-22 *	05(7)	-	251	573	739	06	23
GH	66.8N	3	2118	SC	- 6.9	-20	-26	06(2)	-	143	642	624	06	24
CO	64.6N	3	21--	..	..	..	..	06(4)	5	100	680	405	06	24
ME	61.8N	3	2118	SC	13	46	19	06(4)	5	52	201	332	06	24
SI	60.0N	3	2118	SC	5	-14	0	06(4)	4	28	140	160	06	24
OT	57.0N	3	2118	SC*	- 1.3	-24.8	- 5.2	05(8) 06(2)	5	29	53	78	06	23
NE	55.1N	3	2118	SC*	+ 2	+ 9	--	06(4)	5	20	82	66	06	24
VI	54.3N	3	2118	SC*	+ 1.0	+13	- 3	06(4)	5	18	79	86	06	24
WI	54.2N	3	2119	SC	- 1	+19	0	05(7,8) 06(1)	5	25	160	60	06	24
FR	49.6N	3	2118	SC	--	+17	--	06(2)	5	23	99	36	06	24
BD	48.9N	3	2118	SC*	- 1	+19	--	05(7)	5	19	112	36	06	24
DS	43.0N	3	2118	SC*	0.5	22	- 1	05(8)	5	13	165	32	06	24
TU	40.4N	3	2118	SC	+ 2	+10	+ 1	05(8)	5	10	90	10	06	23
MT	34.0N	3	2118	SC	+ 0.3	+12	- 1	05(8) 06(4)	4	8	72	14	06	24
SJ	29.9N	3	2118	SC	0	9	3	05(4)	5	10	90	30	06	24
KA	26.0N	3	2118	SC	+ 0.2	+11	+ 8	06(4)	4	6	73	28	06	24
HO	21.1N	3	2118	SC	- 0.5	13	03	05(8)	4	4	75	20	06	24
KY	20.5N	3	2118	SC	+ 0.2	+13	+ 6	06(4)	4	6	85	39	06	24
AL	9.5N	3	2118	SC	- 0.4	15	- 5	05(6)	5	4	125	30	06	24
HD	7.6N	3	2118	SC	- 0.4	+15	- 1	04(7) 05(6,7)	4	4	132	27	06	23
GU	4.0N	3	2118	SC	--	+15	--	03(8)	4	4	118	33	06	24
AN	1.5N	3	2118	SC				--	-				06	24
TV	1.1S	3	2118	SC	0.0	13	17	--	-	5	200	81	06	24
HR	33.7S	3	2118	SC	1	16	13	05(8)	5	13	84	78	06	24
GN	43.2S	3	2118	SC	- 1	+ 7	- 3	05(7)	5	9	30	40	06	12
TO	46.7S	3	2117	SC	--	+ 8	--	03(8) 05(6,7,8) 06(2,4)	4	14	117	34	07	06
MI	61.7S	3	2118	SC	- 1	+14	- 8	05(6,7) 06(4)	7	90	870	630	06	13
MW	73.2S	3	2100	..	..	..	..	05(8)	7	80	760	800	06	24
KG	56.5S	5	1057	SC	+ 1.5	+ 9	+ 2.5	05(8)	5	24	168	156	06	13

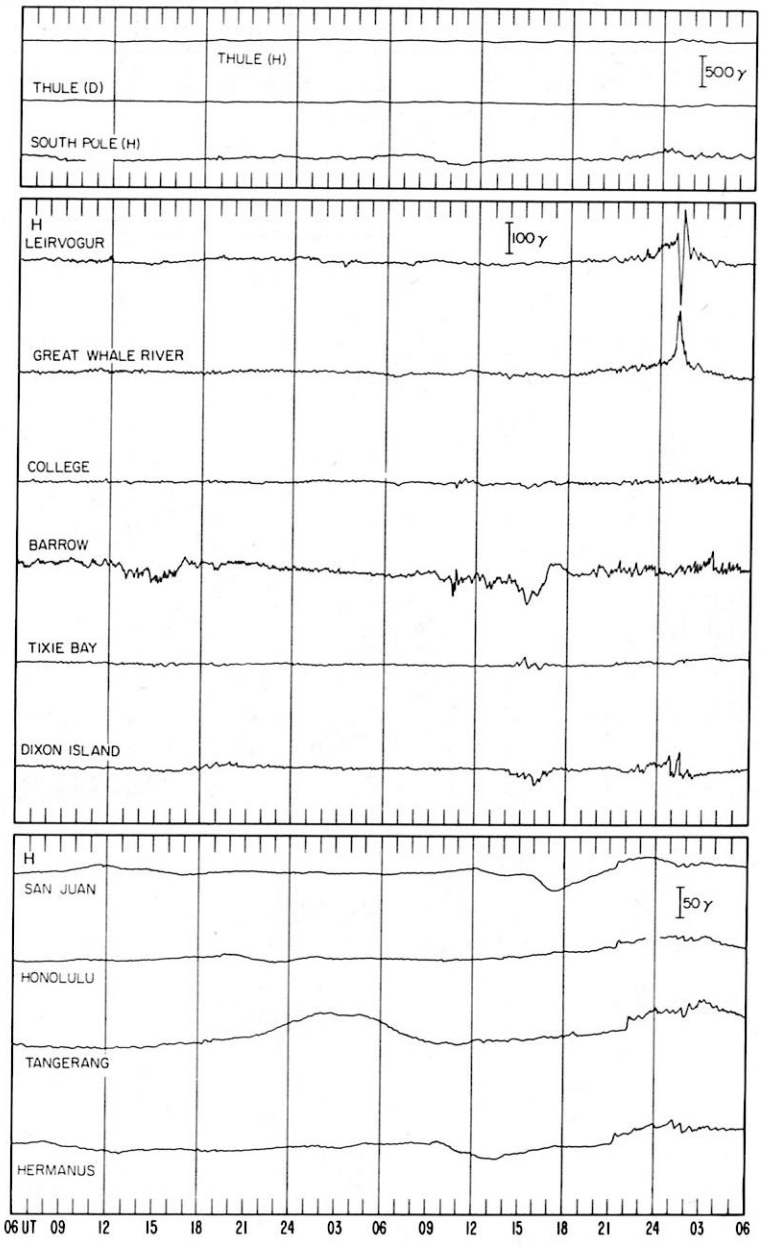
THREE-HOUR-RANGE INDICES, K

JAN	2				3				4				5			
GO	4212	2111	1112	2112	3113	3332	5323	2346								
BT	2121	1111	3202	2222	4453	3444	5543	3764								
RY	3111	0111	2101	1113	5211	2444	6522	2567								
PB	1001	2210	0103	2311	2264	4554	3326	3674								
TR	1000	0001	0000	0002	4101	1433	4411	2467								
CC	2121	1321	1012	2523	3123	4634	4333	1655								
CO	0000	0000	0001	0101	1133	3322	2113	1663								
MM	1011	0011	0010	0000	3111	1544	4321	1557								
DI	2222	1221	2212	2332	3223	3665	5433	3777								
DO	1000	0000	0000	0001	3101	1243	4211	0465								
WE	1000	0111	1001	1111	1123	3332	1213	1663								
ME	1111	0111	1011	0112	2222	2722	3313	2443								
TI	1011	0111	1111	2311	2213	4664	3225	3836								
SI	0000	0000	0001	0002	2122	2222	2202	2443								
JO	1001	0010	0001	1021	2111	2211	4211	1315								
NU	1000	0000	0000	0000	2100	1232	3212	1444								
OT	1100	0000	0000	1003	2112	2223	4212	2345								
VL	1111	1100	1011	1102	3111	3343	4322	2445								
VI	1000	0000	0001	0002	2122	3222	3312	2433								
DB	1100	0000	1000	1002	3212	2542	3312	2445								
YA	2111	1211	1111	1212	3123	5444	3433	2666								
MG	----	----	----	----	----	----	----	----								
FR	1010	0000	0000	1003	2212	1323	4322	2235								
SV	1000	0000	0000	0101	2111	1332	3222	1444								
KV	1112	1011	0012	1102	2212	3443	3223	2545								
TL	1000	0000	0001	2002	2111	1332	3211	1444								
DS	1111	0010	0001	1013	4223	2223	4322	2355								
IR	1100	0110	0001	1213	3323	3332	3323	2545								
TU	0000	0010	0000	0002	2212	2323	3322	1355								
KD	0101	0000	0112	0211	2202	1232	3122	1444								

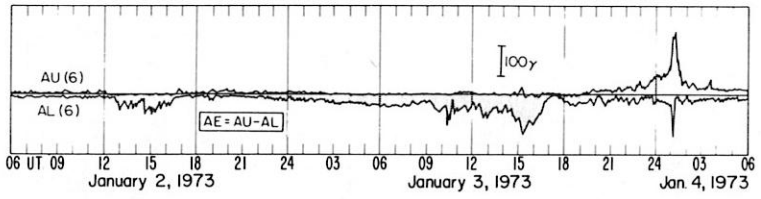
THREE-HOUR-RANGE INDICES, K

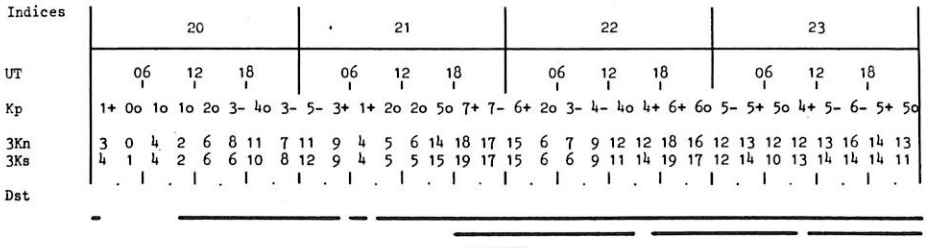
JAN	2				3				4				5			
IK	1001	1011	1001	1113	3211	1442	3212	1555								
MT	0000	0000	0001	1102	2212	2332	2223	3334								
VK	0010	0110	0020	1213	2123	3333	1023	3444								
TK	1102	2021	0112	2213	3312	3443	3223	3544								
KS	3211	0011	1001	1104	4221	1443	4222	2435								
SJ	0000	0000	0000	0323	3211	1322	3321	1445								
TA	1112	1211	1211	1113	3211	1333	3212	3444								
QU	----	----	----	----	----	----	----	----								
HO	0000	0012	2100	0003	2212	2233	2212	2334								
KY	0010	0000	0001	1113	3222	2332	2223	3333								
AL	1112	1111	1213	1213	3322	2443	3223	3544								
BA	----	----	----	----	----	----	----	----								
GU	1000	0001	1000	1103	3212	2722	3113	3343								
HU	0011	2233	1112	3323	2222	3554	3212	3454								
LU	0002	1000	0001	2113	3211	0232	2122	2454								
PP	0000	0000	1010	----	3211	2212	1211	2134								
PM	11--	----	2101	0113	4222	3333	3323	3344								
TN	1221	0000	1121	1113	2221	0332	2232	3434								
AC	1000	0010	0000	1103	3211	3333	3311	1234								
TW	0000	1121	0000	1114	3322	3343	3211	3545								
HR	0000	0000	0002	2004	3222	1443	3112	2445								
GN	1101	0011	1111	1102	2222	3343	2323	1452								
TO	1100	0000	1111	0014	3232	3333	2223	2444								
AM	1101	0001	1211	1002	3222	2212	2323	2344								
MI	0000	0000	0001	0001	2112	4431	2113	1772								
NL	1010	1121	2111	1102	3122	1332	6322	1565								
MW	3222	1122	3321	2113	5333	4443	5433	3667								
MY	3332	1112	3334	2123	3455	3443	5544	3444								
SB	2222	1233	1321	2224	4332	3354	4333	2455								
VO	2223	2222	2332	3223	4434	3344	5443	4444								

MAGNETOGRAMS JANUARY 2-4, 1973



PRELIMINARY AURORAL ELECTROJET INDICES





Data from Individual Observatories:

FEBRUARY 1973

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	COMMENCEMENT hr min (UT)	COMMENCEMENT TYPE	SC - AMPLITUDES D(')	SC - AMPLITUDES H(γ)	SC - AMPLITUDES Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	RANGES H(γ)	RANGES Z(γ)	UT END DAY	UT END HOUR
ME	61.8N	20	1934	..	..	..	..	24(3)	9	82	1170	404	28	18
HO	7.6N	20	1330	..	..	..	..	21(6,7,8) 22(6,7,8) 23(6,7)	5	5	155	24	24	23
RB	83.0N	21	1843	..	..	..	..	22(7)	-	450	394	213	24	03
MX	79.1N	21	1843	SC*	-14 *	-19 *	--	22(8)	-	527	486	233	24	02
BL	73.8N	21	1843	SC	--	--	--	22(6)	-	350	619	596	23	24
CH	68.8N	21	----	..	..	..	..	23(6)	-	424	769	788	23	24
GW	66.8N	21	----	..	..	..	..	23(2)	-	391	1420	1535	23	24
CO	64.6N	21	16--	..	..	..	..	21(7)	7	310	1870	1040	28	16
SI	60.0N	21	16--	..	..	..	..	23(5)	7	90	700	540	23	24
OT	57.0N	21	1843	SC	- 4.8	+46.4	+27.3	21(7)	8	48	278	307	24	23
NE	55.1N	21	16--	..	..	..	..	24(2)	6	52	244	262	25	01
VI	54.3N	21	1843	SC	+ 2.8	+12	--	22(5,7,8) 23(3,4,5,6,7)	5	32	164	200	03	15
WI	54.2N	21	1843	SC*	+ 6	+33 *	0	21(7)	7	50	240	140	24	24
FR	49.6N	21	18--	..	..	..	..	21(7)	5	34	148	133	23	24
BD	48.9N	21	16--	..	..	..	..	24(2)	6	28	180	100	28	10
DS	43.0N	21	16--	..	..	..	..	22(7)	6	22	165	55	28	12
TU	40.4N	21	1843	SC	--	+10	--	22(1)	6	22	180	35	28	10
MT	34.0N	21	14--	..	..	..	..	21(7)	6	17	146	43	28	17
SJ	29.9N	21	16--	..	..	..	..	21(7)	6	06	170	55	22	06
KA	26.0N	21	14--	..	..	..	..	21(7) 22(7,8) 23(5,6) 27(6)	5	11	109	64	28	17
HO	21.1N	21	16--	..	..	..	..	21(7)	6	8	130	30	23	24
KY	20.5N	21	14--	..	..	..	..	21(7) 22(7,8) 23(5,6) 27(6,7)	5	10	112	60	28	17
AL	9.5N	21	03--	..	..	..	..	21(6) 22(7)	6	5	151	28	23	24
HD	7.6N	21	1842	SI	- 0.1	+ 7	0	24(5,6)						
GU	4.0N	21	16--	..	..	..	..	22(8)	5	5	104	39	23	24
AN	1.5N	21	03--	..	..	..	..	--	-	4	170	59	23	24
TV	1.1S	21	03--	..	..	..	..	--	-	3	194	126	23	24
HR	33.7S	21	1843	SC	5	22	23	21(6,7)	6	27	87	124	22	03
GN	43.2S	21	16--	..	..	..	..	22(7)	7	28	150	180	23	18
TO	46.7S	21	1630	..	..	..	..	21(7,8) 23(4)	6	30	218	78	28	13
KG	56.5S	21	1843	SC	- 8	-160	-17	21(7)	9	125	1010	390	25	01
MI	61.7S	21	1600	..	..	..	..	22(7)	7	150	1460	880	28	15
MM	73.2S	21	1400	..	..	..	..	21(8) 22(1,8) 23(7) 24(1) 26(2,3,7) 27(6,7)	7	200	1240	1600	28	12

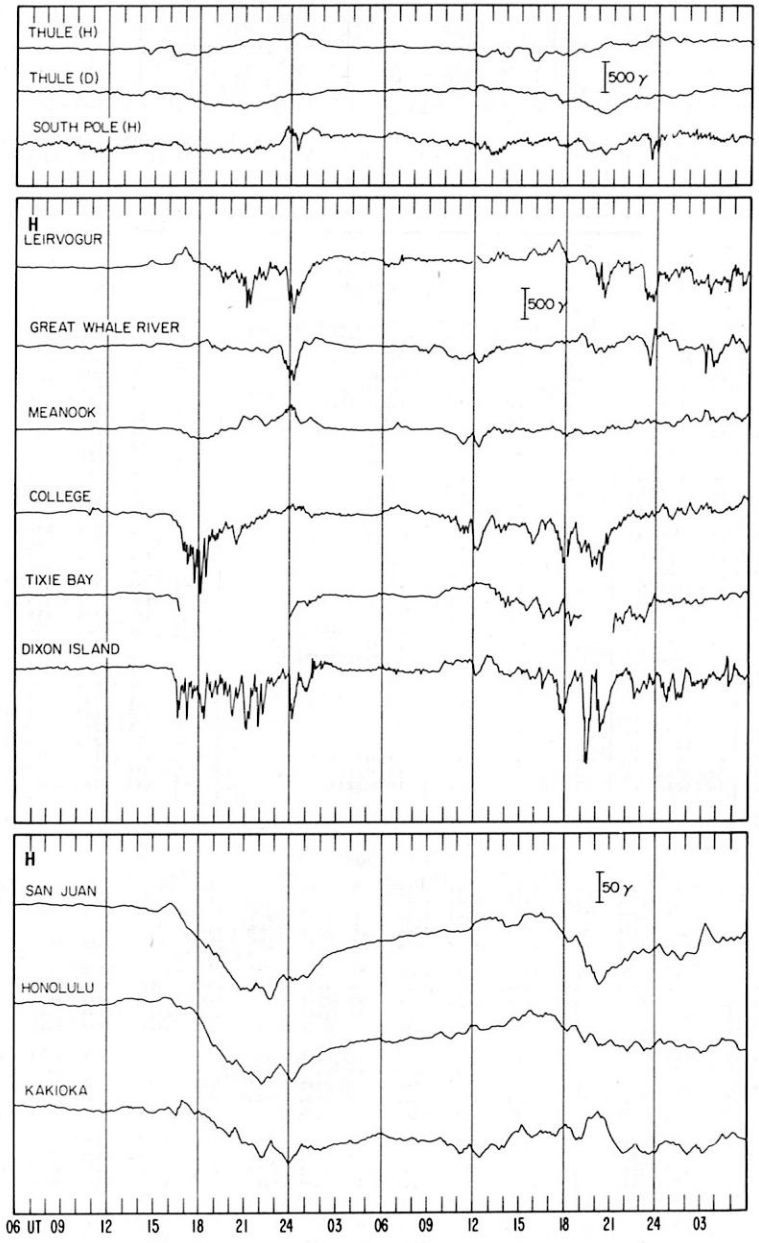
THREE-HOUR-RANGE INDICES, K

FEB	20		21		22		23	
GO	1113	3332	4223	4344	5224	5554	5633	5443
BT	3133	2563	4533	3566	7454	4476	6665	5777
RY	3211	2264	6522	3567	8453	5577	6666	5566
PB	2121	3365	3222	2775	4336	5577	5477	6755
TR	2001	2453	5412	3567	7333	4566	6654	5576
CC	2132	3444	5433	2656	6443	5596	6547	6755
CO	1010	3333	2113	3775	4235	6665	4466	5754
MM	1011	1454	5422	2678	8333	5577	6645	5636
DI	3233	4674	6533	3778	8455	6796	7636	8937
DO	0011	2342	4111	2699	8234	4788	6643	4766
WE	1110	3343	2211	2786	4225	7776	4558	7864
ME	1011	2233	3212	2466	6145	5444	5576	6644
TI	2121	4674	3322	3897	7335	7699	5556	8937
SI	1001	2243	3202	2655	5134	5555	4467	7744
JO	0000	2133	4311	1367	4443	3365	5543	3444
NU	1001	1342	4222	1487	7223	3577	5433	4655
OT	1010	1133	5311	2487	5133	4365	4644	4445
VL	1011	2342	4312	2476	5123	3356	4444	4555
VI	1010	2232	3312	2444	4133	5455	4455	5553
DB	1011	2342	4312	2566	5223	3466	4434	4555
YA	1121	4454	4422	2687	7334	6587	5557	8766
MG	----	----	----	----	----	----	----	----
FR	1011	1132	5312	2455	5133	3455	4543	3544
SV	1021	1342	4322	2566	5333	4476	5333	5655
KV	1111	1353	4322	2567	5223	4576	5444	5655
TL	0010	1242	4301	2555	5212	2446	3322	3554
DS	2021	2233	4312	3555	5133	4565	5554	4564
IR	2121	2342	2222	3566	5334	5576	4544	6755
TU	1021	2233	4312	2555	6123	4455	4555	3554
KD	2010	1220	3122	2455	4233	3456	4333	4434

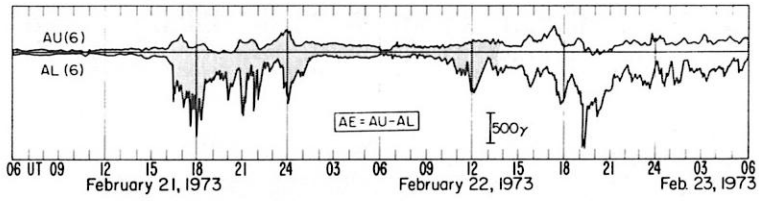
THREE-HOUR-RANGE INDICES, K

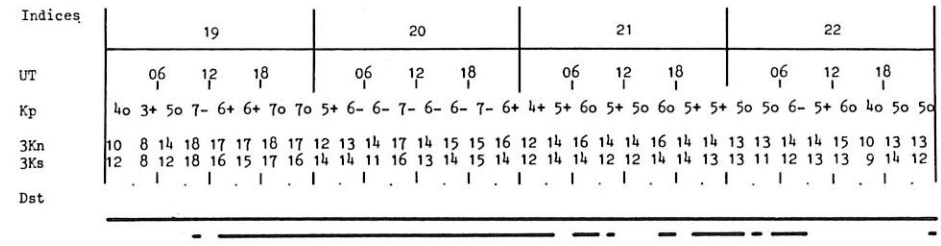
FEB	20		21		22		23	
IK	1011	2343	4312	3556	5123	4566	5433	4635
MT	1020	2332	2211	2465	4223	4455	4434	5544
VK	1011	2332	1011	2565	3123	4465	4555	5544
TK	2222	3333	3333	3556	5324	4565	4525	5564
KS	1011	2133	4312	2667	6122	3566	4333	5655
SJ	1010	1032	3111	1565	4122	3565	4533	3554
TA	2221	2152	4311	3555	5323	3546	4423	3544
QU	----	----	----	----	----	----	----	----
HO	1120	2222	3311	2364	5323	3344	3444	3343
KY	1021	2333	3211	2454	4223	4455	3434	5534
AL	2121	3333	3212	3655	4223	4565	3433	4554
BA	----	----	----	----	----	----	----	----
GU	2111	3321	4212	2355	4123	4345	4334	4523
HU	1011	3344	2201	3566	5433	5653	4423	4543
LU	1000	1242	2211	2555	4333	4455	3223	3543
PP	0020	2121	3212	2443	4224	2343	4343	1233
PM	1121	3332	4222	2454	5333	5356	4434	5533
TN	1112	1232	1233	4554	4123	3544	2322	2443
AC	21--	2122	3211	354-	5111	4555	4532	3544
TW	2111	2223	3312	3655	5211	3565	4533	3544
HR	1020	1042	4311	1665	4123	3566	4534	4554
GN	1011	2332	4212	2565	5222	4475	5436	6553
TO	1120	3332	4322	2566	4224	4455	3446	5543
AM	1020	2232	4321	1564	4124	4454	4445	5343
MI	0010	4342	3213	2775	4246	5775	4567	7754
NL	1022	1152	6322	2577	7433	3567	6654	4535
MW	2232	2465	6633	3567	7443	3667	6655	5576
MY	3243	2232	4444	3344	4455	3445	4555	4464
SB	2221	2253	4333	3445	4333	3445	5343	4444
VO	2132	3133	4343	3444	4344	4445	5443	4444

MAGNETOGRAMS FEBRUARY 21-23, 1973



PRELIMINARY AURORAL ELECTROJET INDICES





Data from Individual Observatories: MARCH 1973

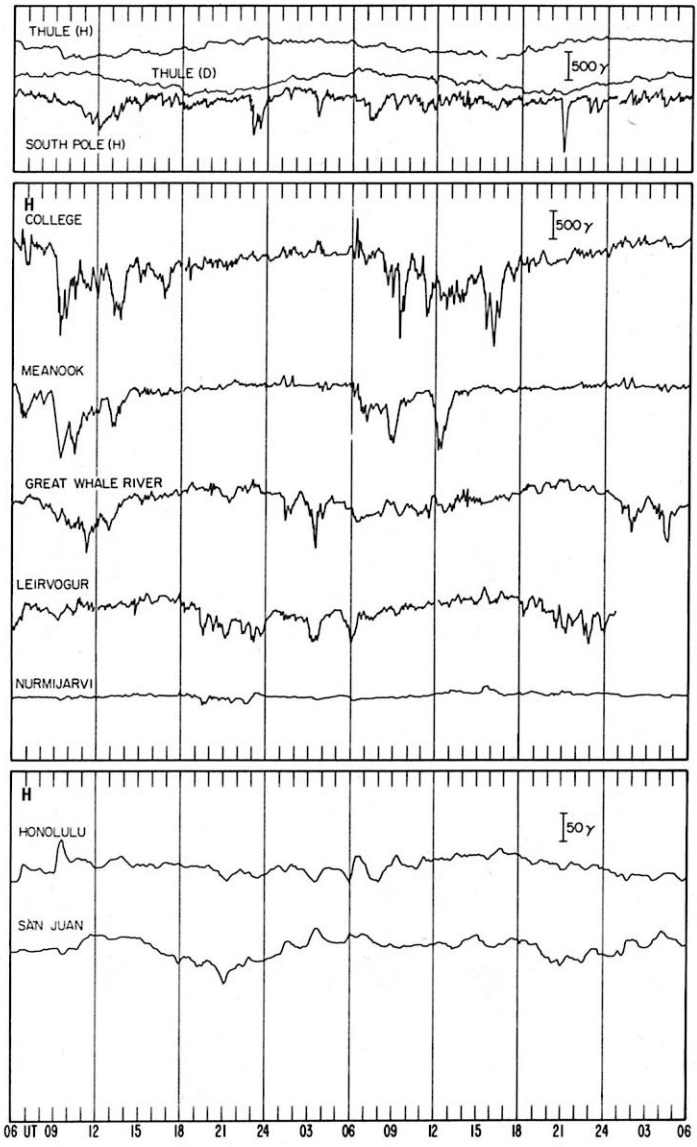
OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
CO	64.6N	18	08--	..	..	..	..	19(4)	8	490	2700	2250	28	04
NE	55.1N	18	11--	..	..	..	..	19(4)	8	57	516	471	26	12
GD	48.9N	18	11--	..	..	..	..	20(4)	6	41	196	117	29	06
OS	43.0N	18	18--	..	..	..	..	25(2)	6	23	170	65	26	12
HT	34.0N	18	07--	..	..	..	..	19(4) 20(4)	6	20	171	37	26	12
SJ	29.9N	18	1630	..	..	..	..	18(8)	6	10	145	50	26	04
KA	26.0N	18	07--	..	..	..	..	19(4) 20(4)	6	14	135	73	26	12
HO	21.1N	18	11--	..	..	..	..	20(4)	5	10	125	40	26	12
KY	20.5N	18	07--	..	..	..	..	19(4) 20(4)	6	13	146	87	26	12
HD	7.6N	18	0735	..	..	..	..	19(5)	7	5	214	23	19	24
TO	46.7S	18	0200	..	..	..	..	19(4)	7	46	248	86	26	12
KG	56.5S	18	1100	..	..	..	..	19(7)	8	125	905	500	26	09
RB	83.0N	19	1200	..	..	..	..	20(4)	-	532	504	484	23	03
MX	79.1N	19	1200	..	..	..	..	20(4)	-	1240	1122	644	23	02
BL	73.8N	19	1200	..	..	..	..	21(2)	-	834	1329	1109	23	03
CH	68.8N	19	----	..	..	..	..	22(2)	-	1344	1184	1296	22	19
GW	66.8N	19	1200	..	..	..	..	21(2)	-	338	1365	1417	22	20
ME	61.8N	19	0748	SC	90	463	18.8	20(3) 22(3)	8	164	1083	379	25	18
SI	60.0N	19	06--	..	..	..	..	20(4)	9	180	1350	640	22	24
OT	57.0N	19	----	..	..	..	..	19(7) 20(4)	7	59	420	210	22	13
VI	54.3N	19	1200	..	..	..	..	21(3)	7	57	243	301	29	06
WI	54.2N	19	0940	..	..	..	..	19(7,8) 20(7)	7	50	310	150	26	03
FR	49.6N	19	12--	..	..	..	..	21(2)	6	32	189	116	22	24
TU	40.4N	19	12--	..	..	..	..	20(4)	6	20	170	30	29	06
AL	9.5N	19	03--	..	..	..	..	19(4,5,7)	6	5	206	37	24	01
GU	4.0N	19	09--	..	..	..	..	20(4)	6	5	153	41	22	24
AN	1.5N	19	03--	..	..	..	..	--	-	5	239	89	24	01
TV	1.1S	19	03--	..	..	..	..	--	-	3	270	156	24	01
HR	33.7S	19	06--	..	..	..	..	19(4,5,7)	6	31	154	111	26	03
MI	61.7S	19	0700	..	..	..	..	19(4) 22(3,4,5)	8	180	1900	1100	26	12
MH	73.2S	19	0700	..	..	..	..	19(7) 21(7)	8	210	1380	1460	28	15
HO	7.6N	20	0300	..	..	..	..	20(4,5)	6	5	139	28	24	02

THREE-HOUR-RANGE INDICES, K

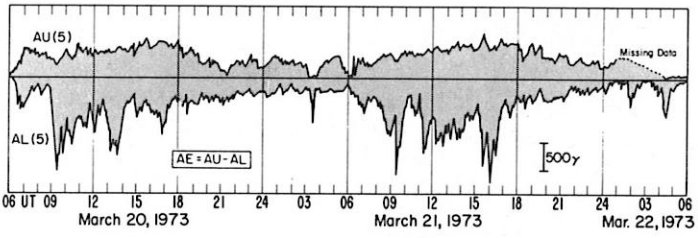
MAR	19		20		21		22	
GD	4245	5544	5544	5556	3454	5546	4444	5556
BT	3556	5558	5666	4776	5664	8765	5657	5756
RY	4456	5677	6777	5688	6775	5577	6665	5466
PB	4456	7566	5467	7566	4477	6766	5576	7566
TR	5335	5577	5645	5766	5664	4666	6654	5476
CC	5446	6557	7647	6756	6657	7766	7657	7656
CO	3348	6775	4567	7654	4477	6854	4477	8544
MM	6336	6688	6655	5788	5655	6776	6555	6486
DI	6468	6778	8657	7879	7766	9997	8766	8788
DO	5244	7788	6535	5578	4644	4656	5534	5456
WE	3268	8785	4568	8655	4678	7865	4468	8655
ME	4367	8655	5687	7465	5677	6544	5587	7444
TI	6368	8889	5558	8888	5667	9988	6567	7888
SI	3269	7755	4569	7445	4577	7644	4577	8444
JO	3334	5466	5545	4455	4563	3444	4544	4344
NU	4334	6677	5435	4566	3433	5655	4434	5455
OT	4345	6576	5657	4455	5665	4554	6555	5445
VL	4345	5466	4445	4565	3444	3555	4344	5354
VI	3267	8554	4556	5445	5675	4544	5565	6344
DB	3335	5466	5445	4666	3444	4555	4334	5354
YA	5459	7787	5458	7667	5567	6676	5466	7556
MG	----	----	----	----	----	----	----	----
FR	3345	5555	5555	4455	5564	4544	5544	4345
SV	4246	6676	3445	4555	3344	5654	3434	5454
KV	5345	8677	4445	5666	3454	5655	5445	5455
TL	3224	5466	3444	4355	3343	3444	3323	4254
DS	5355	8655	5556	5445	5564	4645	5554	5345
IR	2257	8666	3457	6555	3566	5655	4556	6555
TU	4355	8545	4556	5445	5565	4545	5554	5344
KD	3345	5555	3334	4544	2344	4543	2333	5444

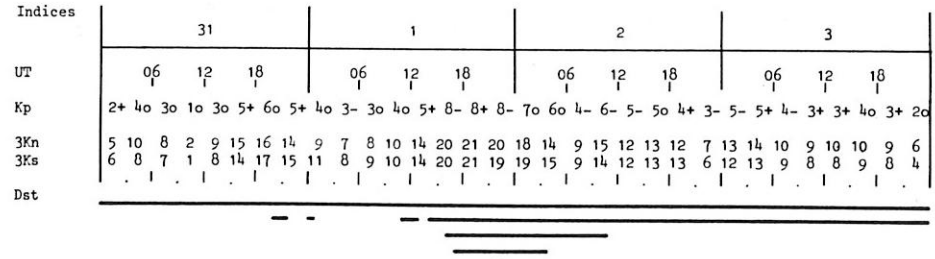
THREE-HOUR-RANGE INDICES, K

MAR	19		20		21		22	
IK	3236	6576	4446	5555	3454	5655	4435	5455
MT	2256	5555	3446	4445	3555	5444	3445	5334
VK	1157	5665	4557	5445	4665	5555	4465	6444
TK	3346	6565	3545	5535	3554	5655	4545	5555
KS	2246	7677	3446	5666	3365	5666	3445	5465
SJ	5355	5554	5545	3545	5553	4454	4432	5344
TA	4245	5566	4345	4454	3443	3654	3334	4454
QU	2146	6565	3445	5444	3444	4544	3444	4455
HO	3345	5444	3445	4344	3454	3443	3344	4333
KY	2256	5554	2446	4345	3545	5443	3445	5333
AL	3346	6565	2345	5444	3444	4544	3434	4455
BA	----	----	----	----	----	----	----	----
GU	2345	4533	3346	4333	3445	4343	3334	5223
HU	4334	5654	4423	4554	3433	4553	3333	4342
LU	3224	5665	4345	5554	4344	5554	3334	5443
PP	2334	4334	3445	3233	43--	----	3343	3233
PM	2346	4533	3446	4334	3555	5443	3443	6323
TN	2125	5445	2234	4443	--33	4443	2334	4344
AC	---5	554-	5524	3445	4543	4434	4433	4444
TW	5245	5554	5525	3455	4543	4445	4433	4353
HR	4246	6565	5535	4554	4543	4554	4433	3354
GN	3348	6666	3446	6544	3445	5653	4345	5343
TO	3347	5455	4446	5445	3553	4454	4355	4355
AM	1346	4544	3456	4334	4565	3443	4455	5243
MI	3368	7775	3567	7655	4577	7755	4488	8655
NL	5445	4587	6845	4567	6764	4556	6654	4357
MW	54--	6697	4776	6877	6665	5787	6665	6677
MY	2365	4354	3554	4455	4555	3565	4455	5466
SB	4334	4444	4545	4434	5663	4445	5644	5444
VO	4334	4344	3544	4334	4444	3344	4444	5344



PRELIMINARY AURORAL ELECTROJET INDICES





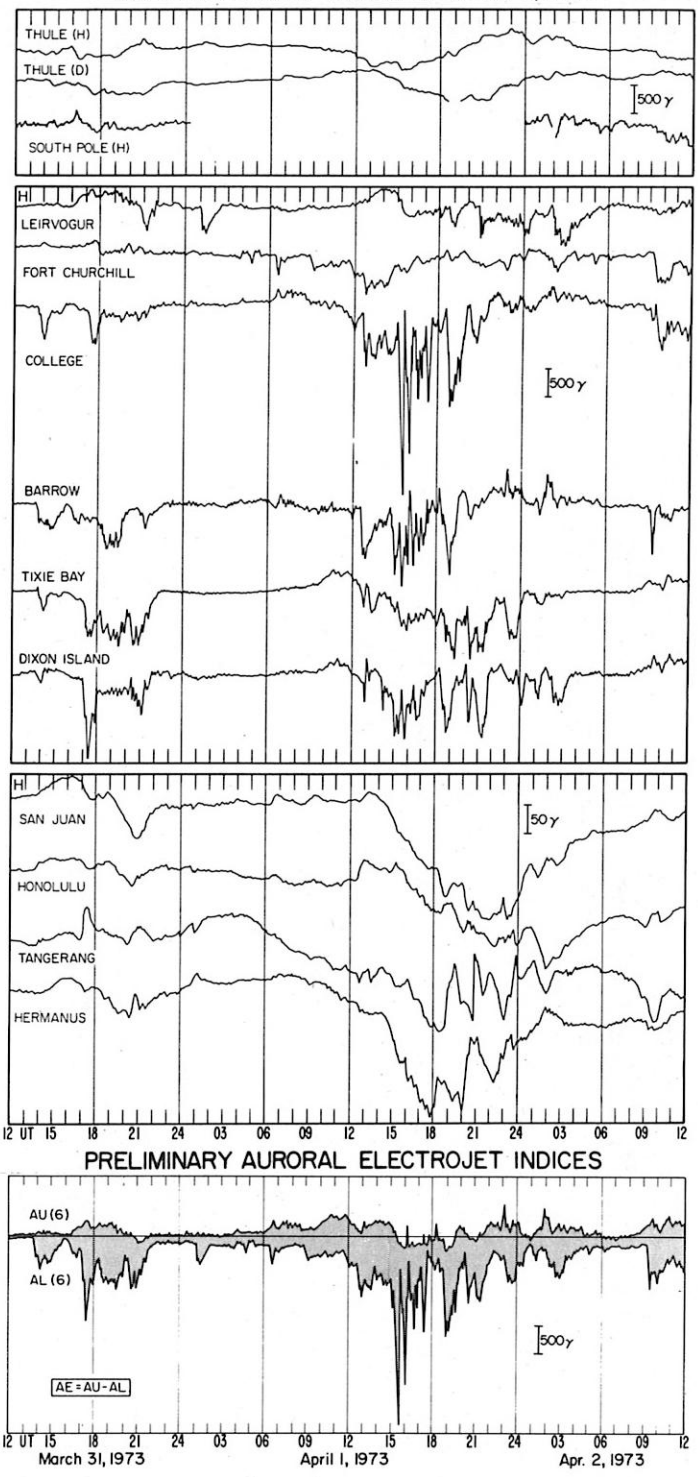
Data from Individual Observatories:

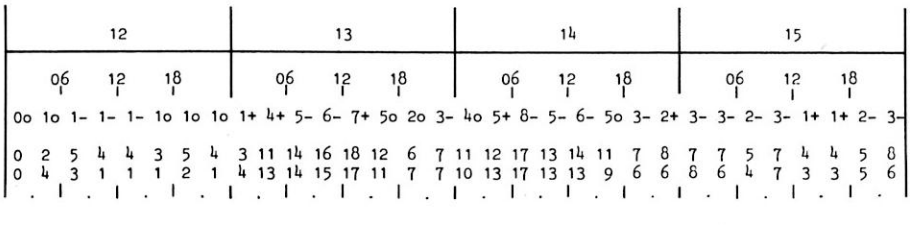
MARCH-APRIL 1973

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
NE	55.1N	31	16--	..	..	..	..	01(6)	7	72	500	510	03	24
BD	48.9N	31	13--	..	..	..	..	02(1,2)	6	35	287	191	03	24
TU	40.4N	31	17--	..	..	..	..	02(1)	6	22	210	50	03	11
HT	34.0N	31	13--	..	..	..	..	01(7)	7	26	215	40	03	24
KA	26.0N	31	13--	..	..	..	..	01(7)	6	15	202	77	03	24
KY	20.5N	31	13--	..	..	..	..	01(6,7)	6	12	196	73	03	24
HO	7.6N	31	1300	..	..	..	..	01(6)	8	7	276	30	03	21
TO	46.7S	31	1400	..	..	..	..	--	-	--	--	--	04	18
HH	73.2S	31	1700	..	..	..	..	02(1)	8	190	1560	1220	04	12
RB	83.0N	1	0629	SC	--	--	--	01(8)	-	767	670	394	04	03
HX	79.1N	1	0631	..	..	..	..	01(7)	-	868	645	608	04	03
BL	73.8N	1	0631	SC	--	--	--	03(2)	-	1157	1000	868	03	23
CH	68.8N	1	0630	SC	-63	+44	-274	03(1)	-	856	942	1035	03	23
GW	66.8N	1	0631	..	..	..	..	02(1)	-	303	1106	1217	03	21
CO	64.6N	1	0630	SC	-34	118	-119	01(6)	9	745	3980	1950	03	24
ME	61.8N	1	0530	..	..	..	..	01(5,6,7) 02(4)	7	188	660	827	03	17
SI	60.0N	1	06--	..	..	..	..	01(6)	9	230	1740	1340	03	24
OT	57.0N	1	0629	SC*	- 1.6	+ 9.1	-19.6	01(7,8) 02(2)	8	70	607	294	03	06
VI	54.3N	1	0631	SC	--	+16	--	01(6,7)	7	68	435	483	04	18
WI	54.2N	1	12--	..	..	..	..	01(6,7)	7	60	375	375	03	07
FR	49.6N	1	06--	..	..	..	..	01(8)	8	62	272	326	03	24
DS	43.0N	1	06--	..	..	..	..	02(1)	6	25	250	120	03	24
SJ	29.9N	1	06--	..	..	..	..	01(6)	6	12	230	60	03	24
HO	21.1N	1	06--	..	..	..	..	01(6)	6	11	150	45	03	12
AL	9.5N	1	0631	SC	0.0	9	- 3	01(6)	7	6	264	53	02	20
HD	7.6N	1	0632	SI	- 0.2	+10	- 2							
GU	4.0N	1	00--	..	..	..	..	01(8)	6	5	181	50	03	06
AN	1.5N	1	0631	SC	- 0.5	15	4	--	-	6		68	02	20
TV	1.1S	1	0631	SC	0.0	16	17	--	-	5	317	144	02	20
HR	33.7S	1	06--	..	..	..	..	01(6,7)	7	48	258	288	02	22
GN	43.2S	1	11--	..	..	..	..	01(6,7,8)	7	36	120	230	02	20
KG	56.5S	1	1300	..	..	..	..	02(1)	9	258	1900	1040	03	03
MI	61.7S	1	0628	SC	-12	+85	-53	01(6)	9	235	2100	1300	03	15

	THREE-HOUR-RANGE INDICES, K MAR 31		APR 1		2		3		MAR 31		THREE-HOUR-RANGE INDICES, K APR 1		2		3	
GO	3433	3554	3336	4565	4434	6633	6544	4432	IK	1311	2555	3223	5676	5435	3553	4422	3331
BT	4542	4765	5354	9855	6655	5653	56o4	6674	MT	1321	3454	2123	5575	5335	4442	3433	3322
RY	4643	3677	7444	9676	7745	5565	7653	3434	VK	1220	3554	2123	5676	6546	4553	4533	4333
PB	3452	5565	3345	7836	6437	5664	4585	5553	TK	3131	3655	3234	5776	4445	4553	4543	4432
TR	4530	4566	5234	6676	6634	5663	6642	4343	KS	2422	3566	4334	6777	6545	3562	2423	4432
CC	4431	3666	4234	9776	5445	5634	4543	5653	SJ	2220	3565	3233	4665	6634	3222	4431	2212
CO	3341	6644	3245	7986	5436	5652	3544	6331	TA	1321	2354	4233	3776	6333	3352	4322	2222
MM	4431	4677	5235	8787	7735	5665	6532	4443	QU	2221	2554	3333	5776	5435	4552	2344	3332
DI	5542	5978	4345	8898	7646	6964	5554	5764	HO	1330	3454	3233	5654	6535	3342	4433	2321
DU	2421	3688	4233	6799	9635	5673	6632	3432	KY	2321	3454	3123	4665	5445	4442	4433	3322
WE	2340	6766	2245	8--8	5448	7753	3644	6332	AL	2233	3554	2223	5766	4335	3452	3423	3331
ME	2451	3433	3356	7776	6667	6433	4646	4333	BA	----	----	----	----	----	----	----	----
TI	3442	7888	4347	8799	6556	7874	4544	7763	GU	2220	3354	4223	4565	5345	5432	4432	3321
SI	2133	9334	3234	7986	6537	6542	3544	4332	HU	1211	2354	2233	4666	5523	4553	3321	3532
JO	2321	2355	4333	3699	7634	3432	4563	2321	LU	0100	5354	3123	5777	5554	4554	3211	4332
NU	2311	3566	3233	4899	7434	4552	4433	3442	PP	0320	3343	3232	4654	5634	2321	4331	0110
OT	2433	1366	3334	4588	7846	4433	5633	3332	PM	2321	3354	4323	4555	5245	5432	4431	3332
VL	2421	3554	4225	4776	5634	3443	4432	3432	TN	1111	2344	2224	----	--23	2342	1121	2222
VI	2340	3544	3343	5776	6646	5432	5554	4323	AC	2120	2555	333-	5665	5524	2432	4431	3331
DB	2321	3564	4223	3676	6434	4553	4433	3432	TW	2221	2566	3243	5665	5634	3332	4432	3421
YA	3441	5776	5224	7898	7638	6773	5533	6442	HR	1210	1465	4333	4776	6435	4452	4422	2322
MG	----	----	----	----	----	----	----	----	GN	2220	4565	4224	5777	6536	5652	4422	4332
FR	2331	2544	3333	5578	7535	3322	5533	3332	TO	2330	3554	2234	5665	5446	5543	4423	3332
SV	2321	3555	3223	5787	5334	4552	4433	4441	AM	2330	3354	3233	4765	5435	4331	3433	2221
KV	2434	3665	4343	4777	4455	5553	4433	3442	MI	3340	6755	2347	7987	5437	6652	4543	6341
TL	1311	1354	4212	2666	5434	3352	3322	2221	NL	4321	1455	5342	4577	7644	3452	6542	2320
DS	2340	3555	4244	5666	6635	3333	5544	3322	MW	4641	3777	6554	6556	8546	5563	6653	4342
IR	3432	4555	3234	6776	6545	5553	5443	5442	MY	3532	3674	3455	3454	5464	3333	4454	3352
TU	3440	2555	3243	5665	6635	3323	5544	3211	SB	3431	3445	3343	4444	5434	3444	4543	3343
KD	1221	3444	2124	4555	4124	3452	2322	3331	VO	2332	3444	3333	3354	5443	3332	4443	3322

MAGNETOGRAMS MARCH 31 - APRIL 2, 1973





Data from Individual Observatories:

APRIL 1973

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
RB	83.0N	13	0438	SC*	+37	+62 *	+17	13(5)	-	515	461	360	13	18
MX	79.1N	13	0438	SC	+50	-37	+ 8	13(4)	-	539	403	246	13	18
BL	73.8N	13	0438	SC*	+24	+45 *	+11 *	13(4)	-	464	445	460	13	18
CH	68.8N	13	0438	SC	+22	+25	-11	13(4)	-	487	707	761	13	18
GW	66.8N	13	0438	SC	+10.4	+30	-25	13(5)	-	258	860	755	13	18
CO	64.6N	13	0438	SC*	-18	240	-50	13(5)	8	365	2020	910	13	18
ME	61.8N	13	0439	SC	9	87	34	13(5) 14(3)	8	176	1061	1000	14	24
SI	60.0N	13	0438	SC*	- 7 *	75	15	13(5)	9	270	1450	1130	13	18
OT	57.0N	13	0438	SC*	+ 2.3	+51.6	+19.6	13(4,5)	6	41	182	118	13	16
NE	55.1N	13	0428	SC*	- 4	+68	--	13(5)	7	60	360	312	13	18
VI	54.3N	13	0438	SC*	- 3.3	+51	+15	13(5)	7	46	308	302	15	10
WI	54.2N	13	0438	SC*	- 5 *	+36	0	13(5)	6	20	215	90	13	18
FR	49.6N	13	0439	SC*	- 2	+55	- 7	13(5)	6	33	244	75	13	18
GD	48.9N	13	0439	SC*	- 3	+55	- 5	13(4)	6	31	200	146	13	20
DS	43.0N	13	0439	SC*	- 1	60	1	13(5)	6	18	195	55	13	18
TU	40.4N	13	0438	SC*	- 1	+50	+ 3	13(2)	6	16	125	40	13	18
MT	34.0N	13	0438	SC*	- 2.0	+57	+ 5	13(4)	6	14	185	31	14	01
SJ	29.9N	13	0438	SC	0.5	28	8	13(4)	5	10	120	30	14	01
KA	26.0N	13	0438	SC*	- 0.6	+44	+26	13(4)	6	10	185	63	13	24
HO	21.1N	13	0439	SC	- 1	29	12	13(4)	6	8	130	25	14	01
KY	20.5N	13	0438	SC*	- 0.6	+51	+20	13(4)	7	9	217	58	13	24
AL	9.5N	13	0438	SC	- 0.6	48	-10	13(4,5)	6	4	320	32	13	18
HD	7.6N	13	0437	SC	- 0.7	+55	- 7	13(5)	7	5	322	25	14	01
GU	4.0N	13	0437	SC*	--	+51	-14	13(3)	5	4	211	29	13	18
AN	1.5N	13	0438	SC	- 2.2	94	29	--	-	5	368	74	13	18
TV	1.1S	13	0438	SC	0.9	90	10.9	--	-	3	391	273	13	18
HR	33.7S	13	0439	SC*	4 *	15	8	13(5)	6	18	186	95	13	21
GN	43.2S	13	0439	SC	+ 1	-25	+ 3	13(5)	6	27	190	200	13	19
TO	46.7S	13	0438	SC*	+ 2 *	+63 *	+10 *	13(4,5)	6	27	220	60	13	23
KG	56.5S	13	0439	SC*	+13	-32	+15	13(5)	7	60	390	330	13	18
MI	61.7S	13	0438	SC	- 5	-80	+42	13(5)	7	150	1100	700	13	18
MM	73.2S	13	0439	SC*	+26	216	-160	13(4,5,6)	5	53	490	460	14	01
RB	83.0N	14	0247	SC	-22	+31	+15	14(6)	-	469	732	388	15	06
MX	79.1N	14	0245	SC	+35	+37	+ 7	14(2)	-	620	558	316	15	10
BL	73.8N	14	0245	SC*	-27	+52	-13 *	14(2)	-	457	710	684	15	06
CH	68.8N	14	0246	SC	+11	+37	--	14(2)	-	471	550	805	15	12
GW	66.8N	14	0246	SC	+ 3.6	+20	-20	14(3)	-	167	655	770	15	12
CO	64.6N	14	02--	SC*	-23	280	-80	14(3)	5	100	615	720	15	12
SI	60.0N	14	0249	SC	- 7	20	70	14(3)	9	110	1040	470	14	22
OT	57.0N	14	0247	SC	+ 2.2	+42.5	+13.1	14(3)	8	49	455	452	15	12
NE	55.1N	14	0245	SC	- 4	+63	--	14(3)	9	78	870	452	15	12
VI	54.3N	14	0247	SC	- 4.0	+52	+17	14(3)	7	44	362	386	15	10
WI	54.2N	14	0247	SC	- 2	+16	0	14(3,5)	6	20	190	40	14	18
FR	49.6N	14	0247	SC	+ 1	+50	- 6	14(3)	6	31	188	130	15	12
GD	48.9N	14	0247	SC*	- 6	+50	--	14(3)	6	30	215	144	15	12
DS	43.0N	14	0247	SC	1	55	- 3	14(3)	7	20	170	50	15	12
TU	40.4N	14	0245	SC	- 1	+45	+ 1	14(3)	7	17	160	25	15	12
MT	34.0N	14	0247	SC*	- 0.5	+35	+ 1	14(3)	7	15	190	41	15	03
SJ	29.9N	14	0245	SC	0.1	28	10	14(3)	6	10	85	22	15	04
KA	26.0N	14	0247	SC*	+ 0.3	+31	+19	14(3)	7	9	183	109	15	03
HO	21.1N	14	0247	SC	- 1	22	07	14(3)	6	7	160	40	15	06
KY	20.5N	14	0247	SC*	+ 0.8	+34	+15	14(3)	7	7	198	101	15	03
AL	9.5N	14	0244	SC	0.0	32	- 5	14(3)	6	4	207	48	14	22
HD	7.6N	14	0246	SC	+ 0.5	+37	- 5	14(3)	7	5	225	35	15	03
GU	4.0N	14	0246	SC*	--	+42	-12	14(3)	7	5	239	36	15	04
AN	1.5N	14	0244	SC	- 1.0	64	16	--	-	7	338	106	14	22
TV	1.1S	14	0244	SC	0.6	59	67	--	-	4	411	388	14	22
HR	33.7S	14	0247	SC	4	3	..	14(3)	6	21	117	69	15	03
GN	43.2S	14	0247	SC*	- 1 *	+12 *	- 3 *	14(3)	6	26	120	120	14	18
TO	46.7S	14	0247	SC*	- 2 *	+45 *	+ 8	14(3)	6	27	190	105	14	22
KG	56.5S	14	0248	SC*	+ 2	+13 *	- 1	14(3)	5	21	226	60	14	21
MI	61.7S	14	0247	SC	--	-80	--	14(2,3,5)	6	80	1000	440	14	17
MM	73.2S	14	0249	SC	--	+96	--	14(3)	8	190	1250	1110	14	18

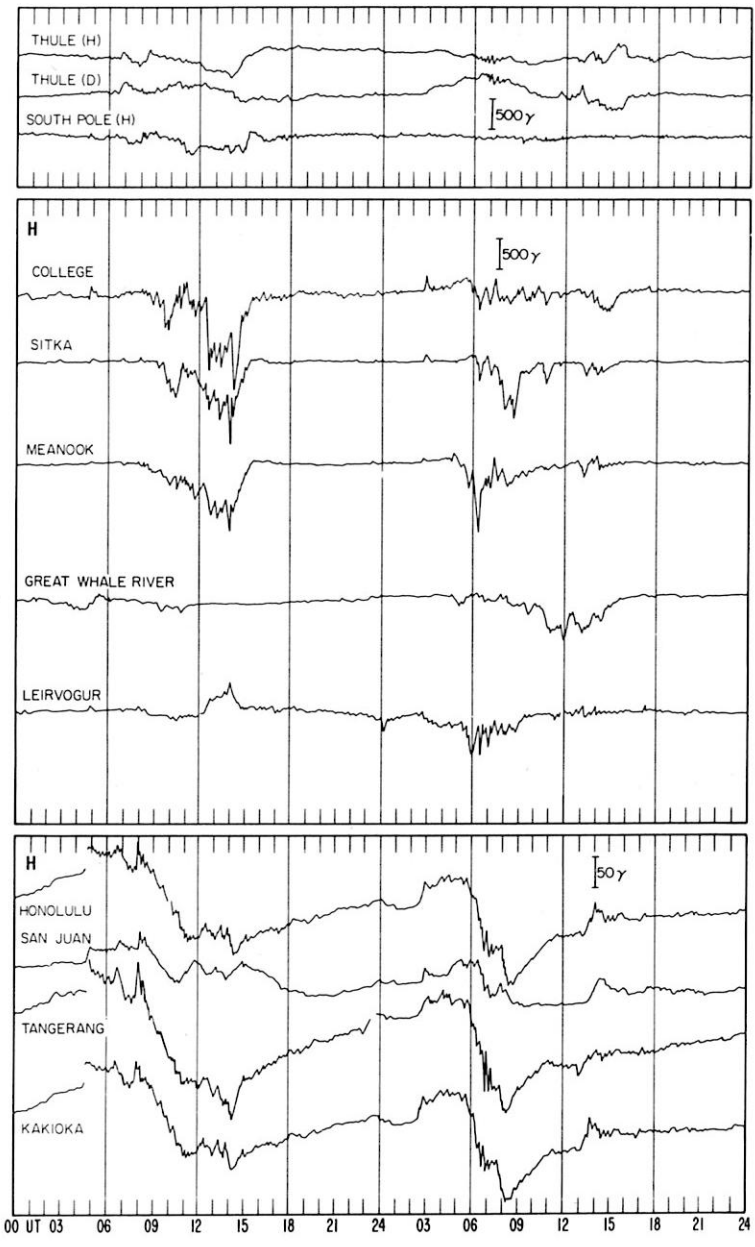
THREE-HOUR-RANGE INDICES, K

THREE-HOUR-RANGE INDICES, K

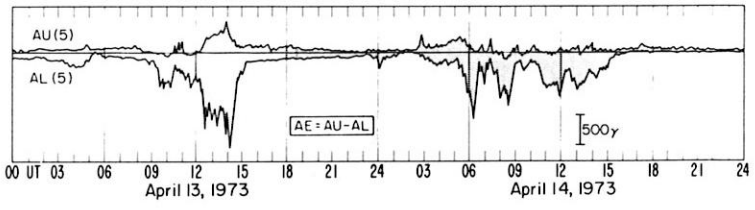
THREE-HOUR-RANGE INDICES, K

APR 13	14	15	13	14	15	13	14	15
GO 1355 5533 3445 6542	2234 2323 YA	3447 7533	4466 6423 4212 2222	AL 3556 6433	5565 5333	3223 2223		
BT 3576 6534 5665 5332	4444 2213 MG	---- ----	---- ---- ---- ----	BA ---- ----	---- ----	---- ----		
RY 3455 6434 6676 5533	5433 2222 FR	1455 6423	4464 5433 3322 1123	GU 2556 5323	5475 5323	3122 1223		
PB 1446 7433 4554 4432	3313 2223 SV	1446 6422	3454 5322 2122 1122	HU 1344 7743	3354 6532	3211 2223		
TR 3235 5543 4353 4332	3412 1212 KV	2446 6632	4555 5532 3234 2223	LU 1455 5554	3455 4444	3321 1121		
CC 1455 6533 4664 4333	4324 1223 TL	1434 4323	3452 4422 1112 1112	PP 1345 4322	3465 5232	2222 1122		
CO 1436 6522 4455 5521	3213 1122 DS	2566 6523	5575 5334 3333 2223	PM 2556 5423	5476 5222	3112 1222		
MM 1345 6554 4454 5433	3323 2222 IR	2567 6433	4455 6432 3223 2223	TN 1145 5422	3332 4222	2112 1112		
DI 2466 7544 4576 5434	4334 2224 TU	2566 6322	5575 5423 3333 1223	AC 2455 5332	4463 6322	3311 2223		
DO 1345 7322 3465 5532	2223 2223 KD	0334 5321	1353 4321 2212 1211	TW 2445 5433	4463 5422	3311 2232		
WE 1347 6522 4687 7512	2112 0112 IK	1446 6533	4463 6432 2222 1123	HR 2455 6322	3363 5322	2113 1112		
ME 1356 8523 4786 6323	3323 1223 MT	1556 5322	4474 5323 2122 1123	GN 1555 6322	3564 5322	3122 1112		
TI 2557 7543 4575 6443	3223 2224 VK	1557 6423	4466 6323 2122 2123	TO 0556 6322	4565 4322	2122 1112		
SI 1347 9512 4496 5422	3312 0112 TK	2557 6533	3465 6433 3242 2223	AM 1555 6412	4455 4212	3213 0012		
JO 0345 5322 3575 4433	2212 3444 KS	2667 7434	5474 6543 3123 2234	MI 0436 7521	4665 6421	2202 0022		
NU 1336 7332 3454 5421	2223 2222 SJ	1455 5533	4463 5333 3322 2232	NL 2335 5322	4575 4431	3313 1122		
OT 1346 6423 3697 4434	3322 1123 TA	2556 6333	4563 5333 3222 2223	MW 3545 5535	4686 6422	3323 1222		
VL 1344 5523 3464 5532	2223 3322 QU	3557 6533	4574 6433 3322 2222	MY 2465 4422	3555 4321	3323 1112		
VI 1456 7313 4576 4423	3322 1113 HO	1456 5423	4465 5322 3222 1123	SB 2345 5333	3443 4322	2212 1223		
DB 2445 5533 3464 5533	2223 2223 KY	1557 5323	5474 5323 2112 1123	VO 2354 5323	2443 4311	2223 2211		

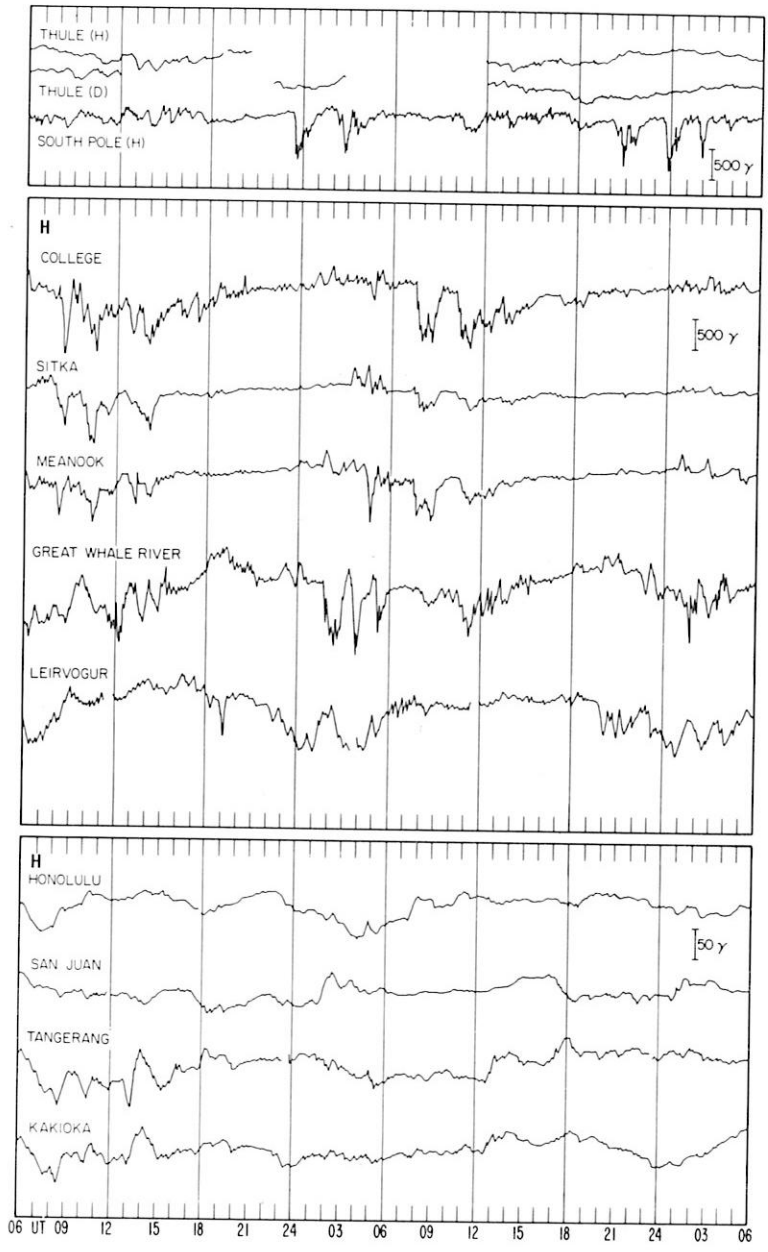
MAGNETOGRAMS APRIL 13 - 14, 1973



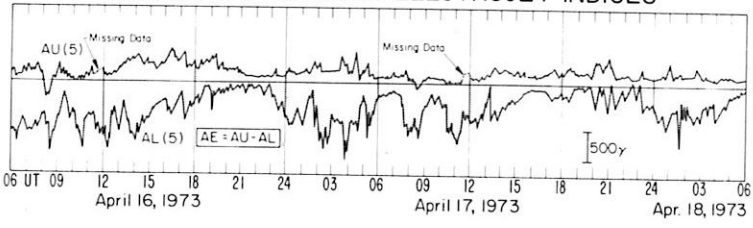
PRELIMINARY AURORAL ELECTROJET INDICES



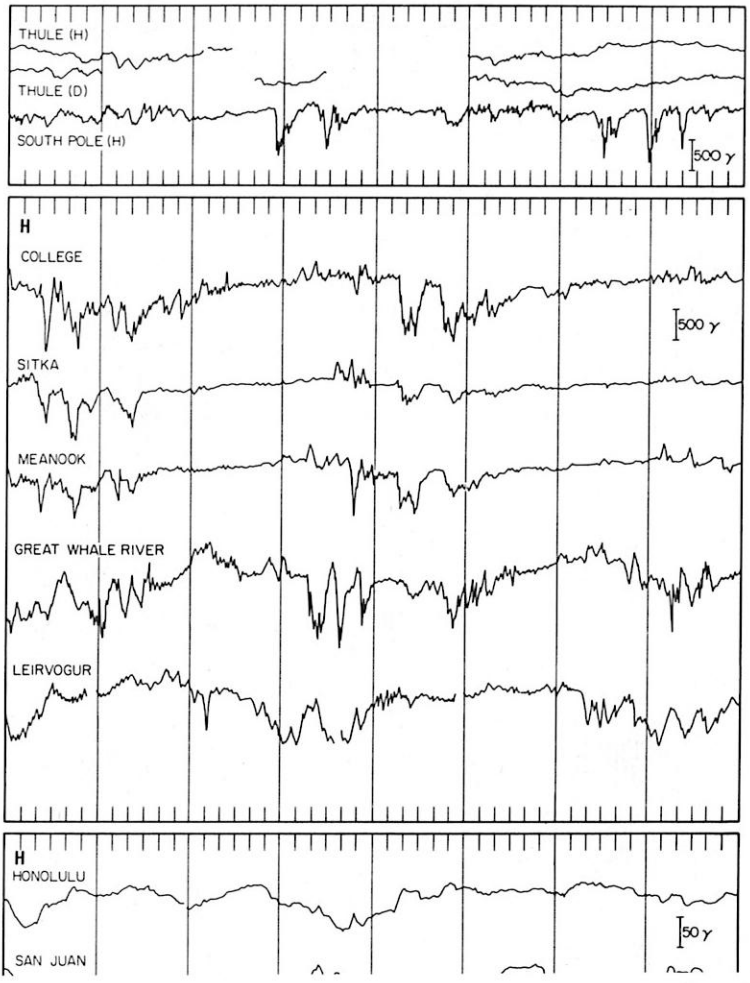
MAGNETOGRAMS APRIL 16-18, 1973

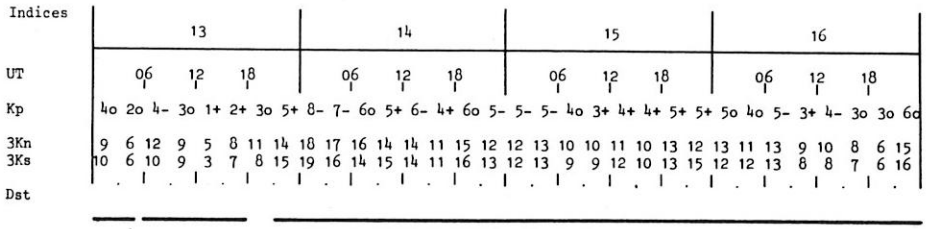


PRELIMINARY AURORAL ELECTROJET INDICES



MAGNETOGRAMS APRIL 16-18, 1973





Data from Individual Observatories: MAY 1973

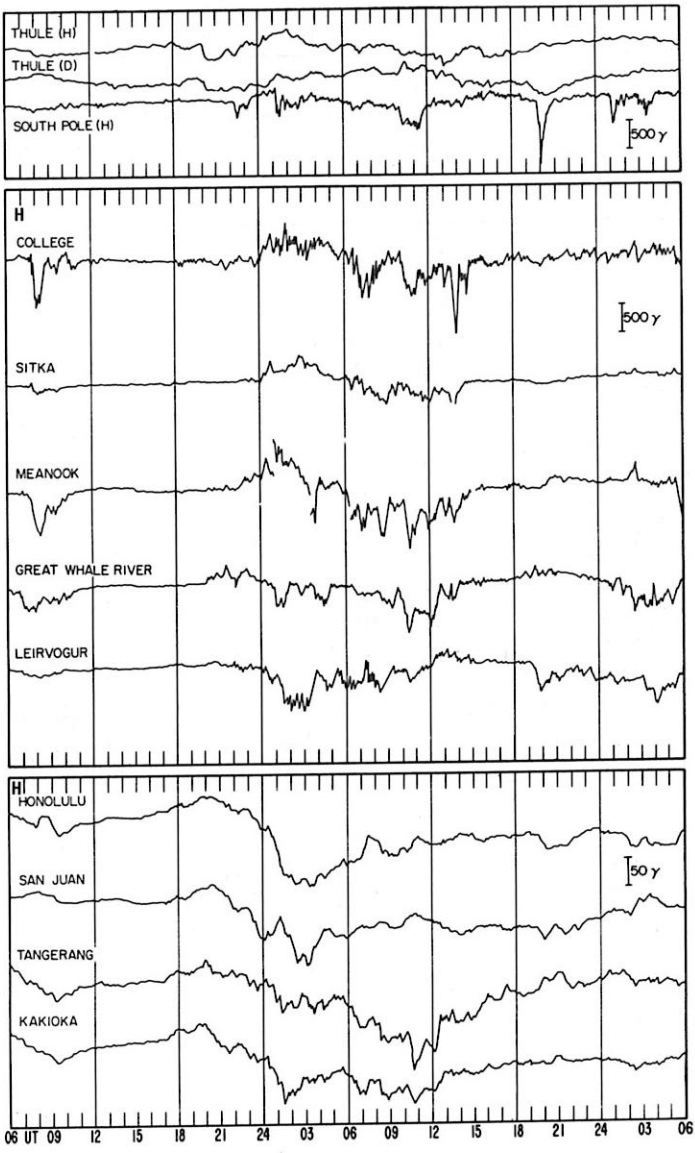
OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY (3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
RB	83.0N	13	1720	..	..	..	..	13(7)	-	828	658	738	16	14
MK	79.1N	13	1720	..	..	..	..	13(8)	-	794	840	497	16	12
BL	73.8N	13	1720	..	..	..	..	16(3)	-	834	1032	1127	17	06
CH	68.8N	13	1721	SC	- 8	--	- 8	15(1)	-	1344	1168	1232	16	12
GW	66.8N	13	1722	SC	+ 9.1	-20	+15	14(1)	-	322	1447	1274	16	16
CO	64.6N	13	17--	..	..	..	..	21(3)	7	265	1940	1110	21	15
ME	61.8N	13	0550	..	..	..	..	14(1,3)	8	190	1111	1447	20	13
SI	60.0N	13	17--	..	..	..	..	14(1)	9	110	1650	730	16	18
OT	57.0N	13	1720	SC	+ 2.1	+17.8	+ 6.6	14(1)	8	100	504	256	16	12
NE	55.1N	13	1718	..	..	..	..	14(1)	9	90	980	750	16	12
VI	54.3N	13	1720	..	..	..	..	14(1,2,3)	7	67	285	559	23	24
WI	54.2N	13	1722	SC	- 1	+25	0	14(1,7) 15(7)	6	30	245	150	18	08
FR	49.6N	13	17--	..	..	..	..	14(2)	7	52	189	205	16	12
BD	48.9N	13	1721	..	..	..	..	14(2)	7	62	185	256	16	12
DS	43.0N	13	17--	..	..	..	..	14(2)	7	30	195	60	16	18
TU	40.4N	13	1720	..	..	..	..	14(1)	7	25	200	50	16	12
MT	34.0N	13	17--	..	..	..	..	14(1)	6	16	154	56	16	17
SJ	29.9N	13	17--	..	..	..	..	14(1)	6	11	140	28	15	06
KA	26.0N	13	17--	..	..	..	..	14(1)	6	12	141	98	16	17
HO	21.1N	13	17--	..	..	..	..	14(1)	6	14	165	35	16	12
KY	20.5N	13	17--	..	..	..	..	14(1)	6	12	157	90	16	17
AL	9.5N	13	1720	SC	0.0	8	- 3	13(8) 14(1,4,5,7)	5	7	142	51	16	12
HD	7.6N	13	1720	SC	- 0.1	+ 9	0	14(1,2,4)	6	6	155	29	16	17
GU	4.0N	13	17--	..	..	..	..	14(1)	6	7	160	42	16	12
AN	1.5N	13	1720	SC	- 0.2	9	4	--	-	6	176	76	16	12
TV	1.1S	13	1720	SC	0.0	7	8	--	-	5	164	119	16	12
HR	33.7S	13	17--	..	..	..	..	13(8) 14(1,4,7) 15(7,8) 16(8) 17(1) 18(1)	5	33	130	101	18	09
GN	43.2S	13	17--	..	..	..	..	14(4,5)	6	23	150	130	16	15
TO	46.7S	13	17--	..	..	..	..	14(1) 16(8) 20(5)	6	30	200	60	16	18
KG	56.5S	13	2141	..	..	..	..	14(1)	8	71	825	470	16	16
MI	61.7S	13	1725	SC	+ 2	-12	+ 6	14(5)	8	180	1800	900	16	16

THREE-HOUR-RANGE INDICES, K

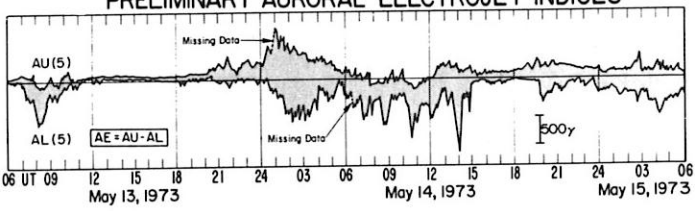
MAY	13		14		15		16	
GO	3333	3345	5445	6454	4434	6554	4354	6436
BT	3655	3456	6765	5576	6565	7565	6665	4337
RY	6543	2345	8775	5476	5754	5576	7673	4338
PB	3375	3245	5565	6555	4655	6665	4554	4345
TR	3433	1234	7755	5466	5534	4675	7543	4337
CC	4243	2235	6655	5568	6545	6566	6554	4237
CO	3274	3024	6566	7443	5546	6544	5455	5324
MM	4334	2236	8856	5576	5534	4675	7444	4338
DI	5355	3447	7766	7786	6656	6677	7564	5448
DO	4233	2337	8655	6454	5533	4566	6444	4327
WE	1363	2134	7677	7455	4546	6554	4545	5224
ME	3276	2235	8787	7454	6776	5345	6666	4336
TI	3266	3357	7667	8688	1546	6876	5554	6438
SI	2165	1124	9776	7344	5645	5335	5453	4224
JO	4133	1234	8654	4254	5532	3345	5442	2225
NU	3212	2235	7545	6454	3333	4454	4434	3325
OT	4243	2346	8775	4455	5554	4356	5554	4336
VL	3232	2334	6544	4454	3333	4454	4343	3325
VI	3164	1235	7775	5343	6635	4234	5553	3325
DB	4132	2334	5544	4454	3433	4454	4333	3325
YA	3455	3336	7666	7565	4545	6554	5454	5327
MG	----	----	----	----	----	----	----	----
FR	4343	1245	6754	4354	4542	3345	5453	3225
SV	3222	2335	5545	5454	3333	4343	4343	3324
KV	3232	2435	5545	5554	3343	4453	4444	3335
TL	3221	1224	4433	3352	3331	2253	4232	2105
DS	4353	1146	7764	4455	5553	3335	5553	3225
IR	3244	2445	6556	5454	3444	5354	4444	3325
TU	3353	2345	7665	4455	5553	3234	5453	3325
KD	3033	2324	5334	4343	3332	3342	3333	3213

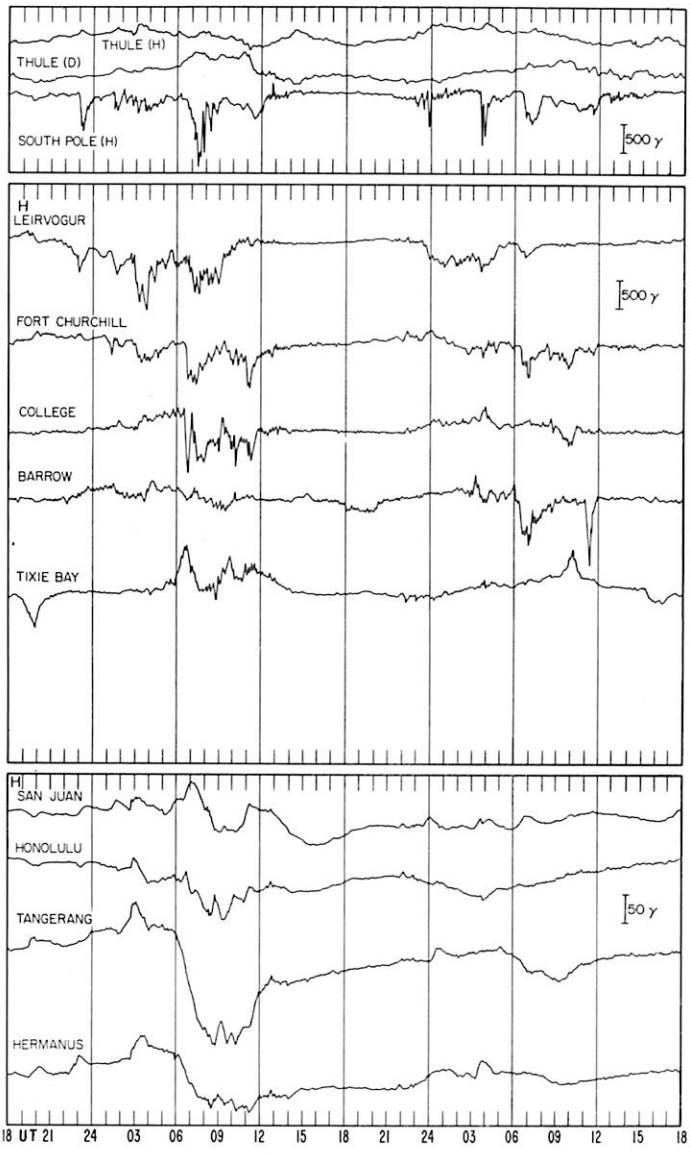
THREE-HOUR-RANGE INDICES, K

MAY	13		14		15		16	
IK	3112	2335	5545	5464	3342	4354	4232	3215
MT	1143	1245	6455	4343	3334	4333	3343	3214
VK	0144	2345	6455	5444	5444	5344	4343	3215
TK	2244	3445	5445	5554	4344	4333	3444	3324
KS	2123	2245	5546	4363	4353	5463	3253	3226
SJ	3233	0346	6544	4344	4432	3235	4443	2215
TA	3222	1335	5444	4353	3331	3254	3333	3225
QU	----	----	----	----	----	----	----	----
HO	2333	1335	6554	3344	4433	3333	3342	3315
KY	1133	1345	6455	4333	3344	4333	3343	3214
AL	2233	2445	5445	5454	3343	3343	3343	3324
BA	----	----	----	----	----	----	----	----
GU	2234	1345	6554	4332	3434	4323	3234	3224
HU	3222	2345	5533	5444	4322	3334	3342	4434
LU	3222	2224	3434	5543	1222	3343	3221	3214
PP	2233	0134	6554	2342	4433	3223	3342	2104
PM	3324	1335	6554	4433	4434	4334	3444	3215
TN	2133	1234	3444	4352	2223	2242	3223	2114
AC	4232	1346	6643	5455	4422	3235	4442	2215
TW	3232	2446	6654	4355	5432	3235	4442	2335
HR	4123	1235	5445	4354	4332	3355	4443	2215
GN	2233	1235	6456	6554	3424	5444	4332	3225
TU	3234	0124	6455	5555	4434	4434	3454	4315
AM	1044	0113	5556	5343	4544	4334	4553	3215
MI	2255	2013	6577	8554	4547	7564	4455	6435
NL	5333	1117	7766	5466	7633	3357	6564	2317
MW	----	----	7665	5585	3656	5777	6575	4327
MY	2333	2124	4444	3776	3453	4455	4433	2217
SB	3233	2234	5435	4353	4434	4344	4473	3325
VO	2233	2124	4443	3344	3333	4345	3343	3217

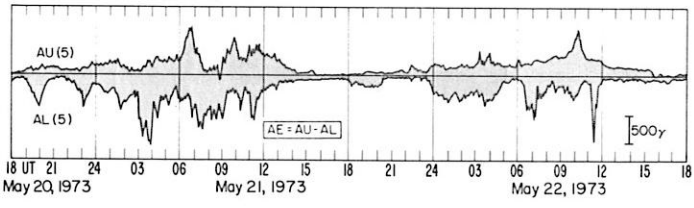


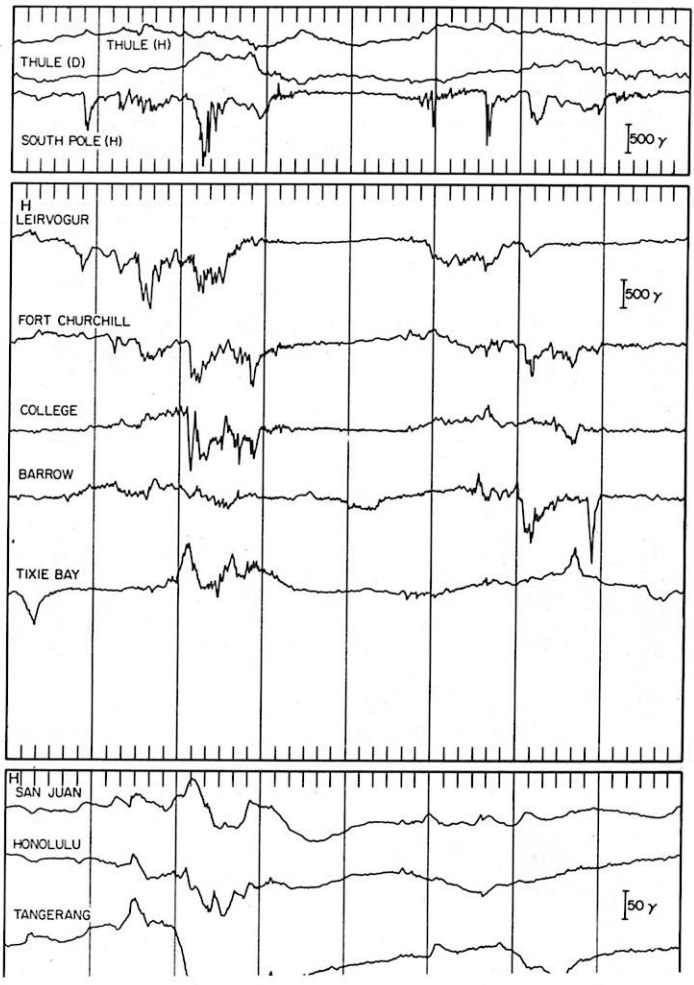
PRELIMINARY AURORAL ELECTROJET INDICES

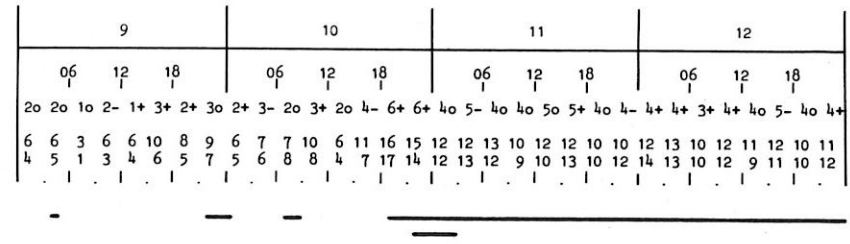




PRELIMINARY AURORAL ELECTROJET INDICES




THULE (H)
THULE (D)
SOUTH POLE (H)
500γ
H
LEIRVOGUR
500γ
FORT CHURCHILL
COLLEGE
BARROW
TIXIE BAY
H
SAN JUAN
HONOLULU
TANGERANG
50γ



Data from Individual Observatories:

JUNE 1973

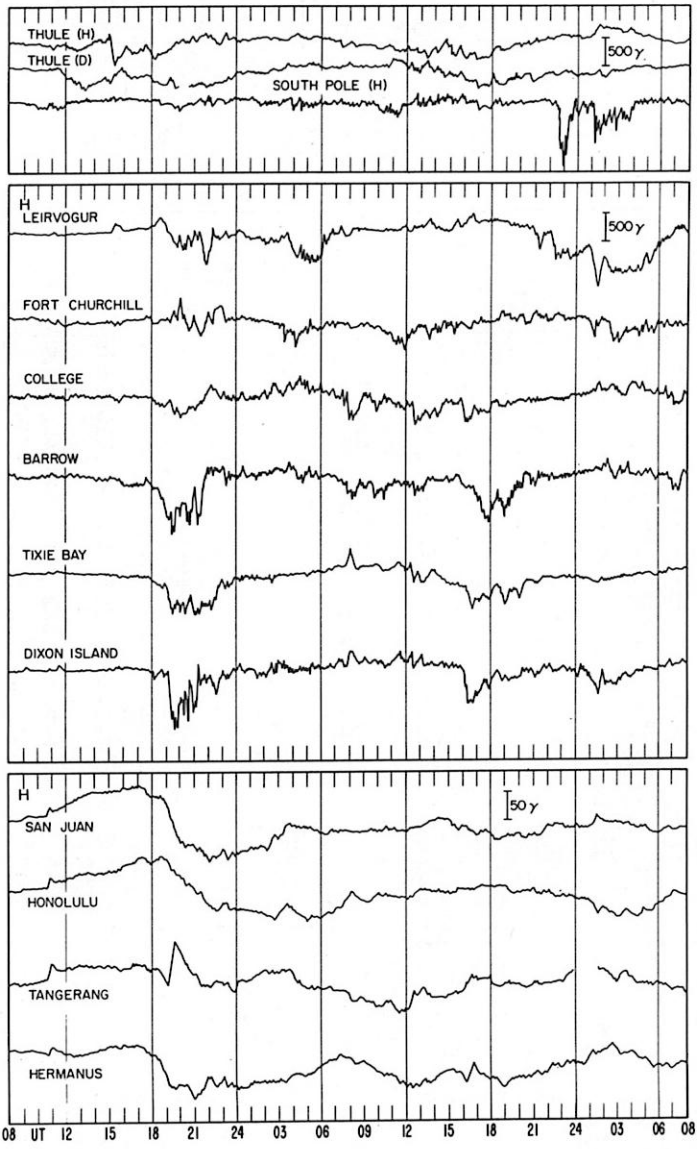
OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
RB	83.0N	10	1040	SC	--	--	--	10(6)	-	763	796	510	12	12
MK	79.1N	10	1040	SC	--	-12	--	10(7)	-	930	877	573	12	12
BL	73.8N	10	1040	SC	--	-32	--	12(1)	-	942	813	1148	12	12
CH	68.8N	10	1040	..	..	..	..	10(8)	-	878	1195	1429	12	18
GW	66.8N	10	1040	..	..	..	..	12(4)	-	199	1329	2156	12	12
CO	64.6N	10	10--	..	..	..	..	11(3)	6	115	970	670	13	16
ME	61.8N	10	1458	..	..	..	..	11(2,3)	6	74	710	480	12	13
SI	60.0N	10	1040	SC	..	..	..	11(3)	6	50	310	410	13	06
OT	57.0N	10	1040	SC	- 2.2	+18.0	+ 3.2	10(8)	7	41	132	213	12	12
NE	55.1N	10	10--	..	..	..	..	11(3)	6	40	205	205	13	08
VI	54.3N	10	1042	SC	--	+29	--	11(3)	6	36	161	89	16	12
WI	54.2N	10	1040	..	..	..	..	10(7,8) 11(6)	6	30	185	100	14	04
FR	49.6N	10	1042	..	..	..	..	10(8)	5	26	175	95	12	12
BD	48.9N	10	1040	..	..	..	..	11(3)	5	27	147	89	14	08
DS	43.0N	10	1040	SC	..	31	..	10(7)	6	19	135	80	13	06
TU	40.4N	10	1040	SC	--	+30	--	10(7)	6	20	100	40	12	12
MT	34.0N	10	1041	SC	+ 0.7	+27	- 1	10(7,8)	5	15	127	39	12	24
SJ	29.9N	10	1042	SC	0.5	17	4	10(7)	6	12	145	28	12	12
KA	26.0N	10	1041	SC	+ 0.6	+22	+14	10(7,8)	5	12	98	52	12	24
HO	21.1N	10	1041	SC	0	17	5	10(7)	5	12	115	35	12	12
KY	20.5N	10	1041	SC	+ 0.3	+24	+13	10(7,8)	5	10	94	49	12	24
AL	9.5N	10	1040	SC	- 0.7	26	- 7	10(7) 11(6)	5	8	94	55	11	21
HO	7.6N	10	1040	SC	- 0.5	+22	- 1	10(7)	5	7	95	27	13	06
GU	4.0N	10	1041	..	..	..	..	10(8)	6	7	81	30	12	12
AN	1.5N	10	1040	SC	- 1.0	29	15	--	-	5	101	59	11	21
TV	1.1S	10	1040	SC	0.0	23	30	--	-	5	136	95	11	21
HR	33.7S	10	10--	..	..	..	..	10(7) 12(1) 13(1)	5	29	99	139	13	06
GN	43.2S	10	10--	..	..	..	..	10(7)	6	15	140	110	13	21
TO	46.7S	10	18--	..	..	..	..	10(7) 11(3) 13(4)	5	18	150	20	16	18
KG	56.5S	10	1045	..	..	..	..	10(8)	6	45	510	180	14	09
MI	61.7S	10	1800	..	..	..	..	11(5)	7	100	800	450	13	15
MM	73.2S	10	1000	..	..	..	..	12(1,8)	8	240	1280	1060	15	10

THREE-HOUR-RANGE INDICES, K

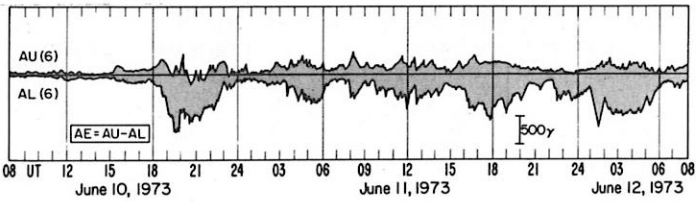
JUN	9		10		11		12	
GO	3234	4444	3326	4655	3346	6654	5535	6544
BT	4354	3455	5545	3477	5665	5655	6656	5656
RY	4422	2445	4543	2477	5764	5557	7765	5556
PB	2323	3543	2343	3467	4555	5665	5455	5554
TR	3211	2345	3323	2365	3544	5545	6734	4666
CC	3223	3333	3233	3476	5544	7555	6545	4646
CO	2212	1321	2233	2345	4464	5533	4456	5533
MM	2112	2345	2223	2367	5545	5655	6635	4667
DI	4323	3355	3234	2388	7665	6755	7556	6757
DO	2222	3433	1223	3488	5534	6543	5334	4545
WE	2211	1333	2122	2355	4556	6753	4445	6533
ME	2233	2323	5665	4345	5565	4443	5536	5334
TI	2323	3343	3223	3488	6565	7775	5556	6756
SI	2201	2322	2212	2355	4565	5433	4454	4433
JO	2212	1322	1233	2255	4443	3443	4334	3334
NU	1112	2323	1123	2467	3334	5534	4434	4434
QT	2212	2323	3334	2356	6653	4444	4434	4334
VL	2223	2323	2233	2455	3433	4533	4423	3534
VI	3212	3333	2333	2355	5464	5443	4545	3334
DB	2212	2423	1223	2455	3333	4533	3323	4534
YA	3313	3334	3323	3466	5564	6643	5554	5555
MG	----	----	----	----	----	----	----	----
FR	1110	2210	1133	2212	1333	3333	2355	5543
SV	2222	2323	1113	2355	3444	4433	4434	4433
KV	1234	3424	2233	2364	3444	5533	3424	4544
TL	0101	1313	1113	1254	2322	2423	3321	2433
DS	2312	3333	3344	3466	5553	3444	4444	4434
IR	2223	3434	2124	3455	4444	5434	4345	4444
TU	2212	2323	2234	2465	5554	3443	4434	4434
KD	2222	1222	2122	2244	3332	3322	3323	2322

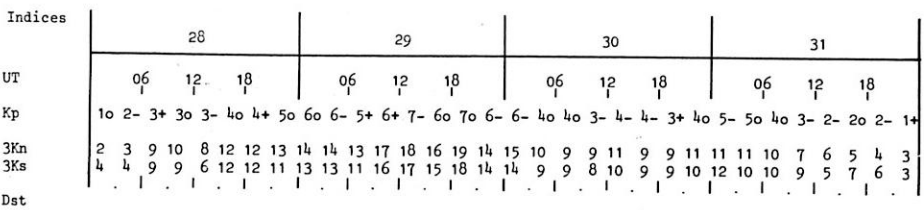
THREE-HOUR-RANGE INDICES, K

JUN	9		10		11		12	
IK	1112	2323	1113	2455	3323	4533	3223	3443
MT	1112	2332	2114	3455	3333	4333	4434	4433
VK	2033	4343	2044	3455	5353	4434	5555	4434
TK	3332	2333	3214	3465	4354	4432	3345	3432
KS	2122	2424	2114	2465	2244	4544	4233	3444
SJ	1212	1312	2234	4364	4433	3434	4333	3334
TA	2232	2423	2144	3434	3333	3454	4422	2333
QU	1313	1423	2123	2455	3434	4432	3224	3432
HO	1201	2332	1023	2354	3453	3332	3333	3323
KY	1212	2332	2114	2355	3333	4333	4434	3323
AL	2322	2423	2324	2454	3433	4532	3333	3432
BA	----	----	----	----	----	----	----	----
GU	2101	2312	2113	2346	5423	4332	4324	3322
HU	1212	3431	1223	3554	4322	4443	3233	4443
LU	1011	1301	1113	3344	4312	2332	3222	2222
PP	0200	1312	1223	1244	3443	3233	4343	2333
PM	1111	2322	2123	2353	344-	----	4434	4332
TN	0122	3322	1123	2245	2222	3322	2323	3332
AC	----	2322	2233	246-	4422	3444	4323	2324
TW	1201	2322	2233	1364	5432	2434	4334	2233
HR	1001	1313	1123	2354	4432	2434	5423	2334
GN	1111	1222	2113	1265	3433	5542	4434	4544
TO	1111	1221	1123	2354	3453	4444	4444	3434
AM	1101	1211	1222	2253	3454	4433	5445	3323
MI	011-	-110	1123	2255	5455	7653	4446	6634
NL	2111	1113	2232	1267	6553	3435	6544	3336
MW	3421	2336	3345	2476	3565	5676	8756	4678
MY	2332	2222	2233	2273	3433	3764	6544	3767
SB	2212	1222	3221	2344	3653	3433	6444	3335
VO	1211	1112	1223	1244	3332	3433	5433	2366



PRELIMINARY AURORAL ELECTROJET INDICES





Data from Individual Observatories:

OCTOBER 1973

OBS. 2 letter IAGA code	GEOMAG-NETIC LATI-TUDE	COMMENCEMENT DAY	hr min (UT)	TYPE	SC - AMPLITUDES D(')	H(γ)	Z(γ)	MAXIMUM 3 HOUR - INDEX K DAY(3 HOUR PERIOD)	K	RANGES D(')	H(γ)	Z(γ)	UT END DAY	HOUR
RB	83.0N	28	0730	..	..	..	..	29(4)	-	639	551	989	31	22
HX	79.1N	28	0730	SC	..	..	..	29(4)	-	1776	2032	814	31	24
BL	73.8N	28	0730	..	..	..	..	29(4)	-	962	1248	1662	31	21
CH	68.8N	28	----	..	..	..	..	29(4)	-	1158	1802	1914	31	18
GW	66.8N	28	0731	SC*	..	..	-23 *	29(4)	-	276	1487	1708	31	12
CO	64.6N	28	07--	..	..	..	..	29(4)	8	495	2410	1500	31	24
ME	61.8N	28	0730	SI	64	77	38	29(5)	8	98	1101	433	31	24
SI	60.0N	28	07--	..	..	..	..	29(5)	8	180	1150	700	31	24
OT	57.0N	28	1734	SC	- 1.1	+ 8.9	+ 3.6	29(1,4) 30(1)	6	49	151	164	31	10
NE	55.1N	28	07--	..	..	..	..	29(5)	6	50	245	310	30	12
VI	54.3N	28	0730	..	..	..	..	29(4,5)	6	51	259	265	31	10
WI	54.2N	28	0730	..	..	..	..	29(7)	8	65	360	120	31	08
FR	49.6N	28	07--	..	..	..	..	30(1)	6	44	205	109	31	24
BD	48.9N	28	07--	..	..	..	..	30(1)	6	40	208	109	31	24
DS	43.0N	28	07--	..	..	..	..	29(5)	6	26	215	60	31	12
TU	40.4N	28	0732	SC	..	..	..	29(2)	6	19	200	40	31	12
MT	34.0N	28	07--	..	..	..	..	29(4,5)	6	16	187	35	31	21
KA	26.0N	28	07--	..	..	..	..	29(4,5)	6	10	141	92	31	21
HO	21.1N	28	07--	..	..	..	..	29(4)	5	10	130	30	31	12
KY	20.5N	28	07--	..	..	..	..	29(4,5)	6	8	149	69	31	21
AL	9.5N	28	07--	..	..	..	..	29(6,7)	6	7	183	29	31	24
HD	7.6N	28	0300	..	..	..	..	29(4,5,7)	6	7	199	19	30	03
GU	4.0N	28	0730	..	..	..	..	29(5)	6	6	159	27	31	10
AN	1.5N	28	07--	..	..	..	..	--	-	5	157	-	31	24
TV	1.1S	28	07--	..	..	..	..	--	-	3	195	127	31	24
HR	33.7S	28	07--	..	..	..	..	29(5,7)	6	43	156	131	30	03
GN	43.2S	28	0730	..	..	..	..	29(4,5,7)	6	20	130	160	31	17
TO	46.7S	28	04--	..	..	..	..	29(4,5)	6	24	190	70	31	21
KG	56.5S	28	0735	..	..	..	..	29(7)	8	90	740	430	31	17
HI	61.7S	28	0730	..	..	..	..	28(6) 29(4,5,6,7)	7	210	1230	1020	31	13
MM	73.2S	28	0736	SC	+ 7	-20	+34	29(7) 30(1)	8	180	1540	1150	31	15

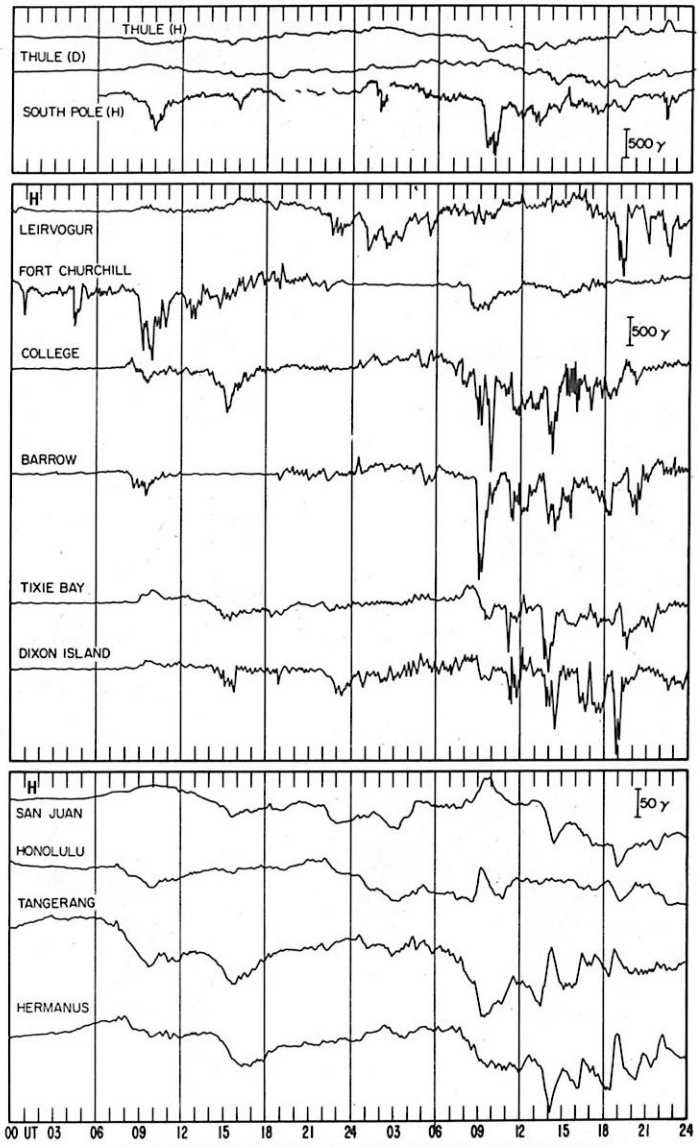
THREE-HOUR-RANGE INDICES, K

OCT	28		29		30		31	
GO	2134	4443	6445	5557	7534	4444	5433	4321
BT	2345	4435	5555	7775	7653	5767	5333	3433
RY	3124	3546	7666	5687	7644	5556	6663	3322
PB	1255	--44	5549	7665	4455	7345	4345	3421
TR	2023	4466	5655	6787	7542	3365	5543	2243
CC	2233	2545	5557	8675	6543	5645	5433	3522
CO	0044	5633	4568	7664	3445	5434	4565	3311
MM	1123	4676	6555	6787	7442	3466	6434	2232
DI	2234	5666	7668	9897	7553	6777	6645	4643
DO	0123	3455	5446	7787	7332	4445	5532	2233
WE	0144	4743	3468	8774	4344	4533	4555	2311
ME	1355	4336	6777	8555	5553	5333	5655	2322
TI	1135	6665	4569	9887	6554	6777	5555	5531
SI	0034	3443	4568	8654	4453	4333	4565	2210
JO	0033	2333	6556	5466	5332	3333	5532	1101
NU	1123	3444	5445	6675	5332	3434	4422	2221
OT	1133	2433	6456	5455	6332	3332	5432	1321
VL	1222	3355	5545	6575	4333	3344	4433	2212
VI	0134	3444	4546	6554	5444	3323	4543	1210
DB	1132	2355	5545	6675	5332	3434	3421	2221
YA	2244	4655	5558	9787	6545	6555	4555	3323
MG	----	----	----	----	----	----	----	----
FR	1133	3434	5555	5555	6332	3333	5442	1100
SV	0023	2444	5445	7566	5332	3334	3322	2221
KV	2233	3455	5555	6676	5333	3444	4433	2223
TL	0021	1344	3434	6565	5221	2234	3312	1210
DS	1233	3544	5656	6655	6343	3333	4533	2211
IR	1244	3545	4456	7675	5343	4444	3233	3221
TU	2233	2434	5656	5564	5433	4343	4532	2211
KD	1222	233-	--34	5454	4322	3223	2322	2221

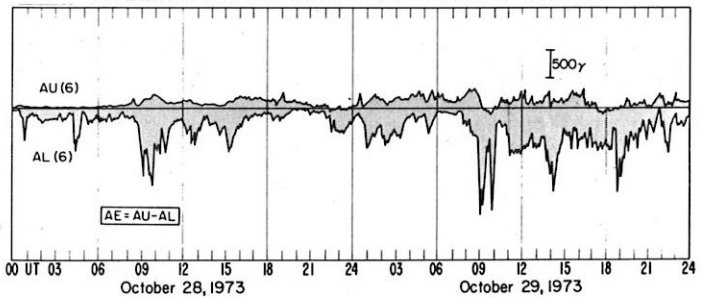
THREE-HOUR-RANGE INDICES, K

OCT	28		29		30		31	
IK	1122	2444	5435	6675	5222	3334	3422	2211
MT	0134	3334	3456	6454	4333	3223	2232	2110
VK	0154	3434	5456	7564	4443	4344	4433	3311
TK	3243	4533	4356	6664	3252	4333	3233	2310
KS	1233	3445	4436	5677	5332	3333	3322	2322
SJ	----	4335	5545	6555	4321	3332	4422	0110
TA	1233	5443	4445	6566	5312	4334	33--	3-11
QU	----	----	-355	6664	4324	3332	3214	2221
HO	0133	3334	4435	5444	4233	3233	3333	1111
KY	0144	3324	3356	6453	4323	3223	3222	2110
AL	1143	4543	3455	5664	3333	3333	4323	2222
BA	----	----	----	----	----	----	----	----
GU	2244	3333	5455	6444	4233	2223	3322	2101
MU	0134	4554	4435	6644	3313	4433	3313	3432
LU	0122	2432	2224	5454	3222	3312	1232	1100
PP	0133	2333	4444	3433	3333	2121	3323	1110
PM	1134	3323	4455	6443	4333	3222	3332	3210
TN	2133	3442	2244	5454	4122	2232	2223	1201
AC	1133	3--4	4535	6554	4211	3321	4322	1220
TW	1132	2444	4535	6554	4322	4343	4423	2331
HR	0133	3543	4344	6565	5233	3333	3332	2211
GN	1133	2433	5346	6564	4333	3334	4244	2312
TO	1244	2433	4546	6554	5433	3333	3343	2220
AM	1233	2333	4446	5454	4343	3323	3443	1100
MI	2244	5743	5457	7774	5445	4543	5565	3320
NL	1233	2355	7646	5567	6532	3345	6662	2211
MW	3344	4466	7767	6787	8643	4476	6554	3233
MY	2355	3333	3665	4764	5444	3466	4344	2212
SB	3333	3444	-547	4445	5432	3454	4443	2333
VO	2344	3333	4545	4444	4333	3444	3344	2222

MAGNETOGRAMS OCTOBER 28 - 29, 1973



PRELIMINARY AURORAL ELECTROJET INDICES



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