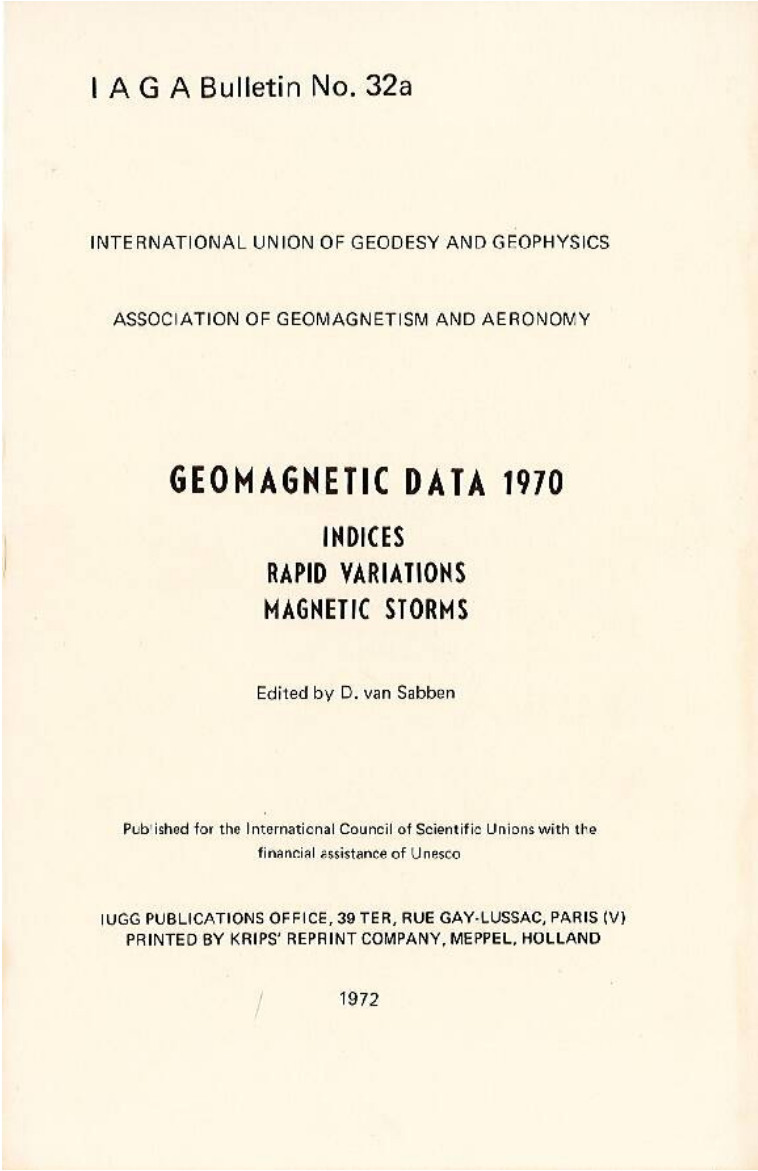


I A G A Bulletin No. 32a

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1970

INDICES
RAPID VARIATIONS
MAGNETIC STORMS

Edited by D. van Sabben

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

IUGG PUBLICATIONS OFFICE, 39 TER, RUE GAY-LUSSAC, PARIS (V)
PRINTED BY KRIPS' REPRINT COMPANY, MEPPEL, HOLLAND

1972

How to cite:

Van Sabben, D., & IAGA (1972). *IAGA Bulletin No. 32a, Geomagnetic Data 1970, Indices, Rapid Variations, Magnetic Storms.* IUGG Publications Office. https://doi.org/10.25577/fwxg-jq62

I A G A Bulletin No. 32a

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1970

INDICES
RAPID VARIATIONS
MAGNETIC STORMS

Edited by D. van Sabben

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

IUGG PUBLICATIONS OFFICE, 39 TER, RUE GAY-LUSSAC, PARIS (V)
PRINTED BY KRIPS' REPRINT COMPANY, MEPPEL, HOLLAND

1972

I A G A Bulletin No. 32a

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1970

INDICES
RAPID VARIATIONS
MAGNETIC STORMS

Edited by D. van Sabben

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

IUGG PUBLICATIONS OFFICE, 39 TER, RUE GAY-LUSSAC, PARIS (V)
PRINTED BY KRIPS' REPRINT COMPANY, MEPPEL, HOLLAND

1972

"UNESCO Subvention - 1972 - DG/2.1/414/34"

CONTENTS

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 recommendations 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 will be 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. will continue 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 and will soon be available through the World Data Center A for Geomagnetism in Boulder 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.
WDC-A, Upper Atm. Geophysics, Boulder (J.V. Lincoln): Magnetic storm data.
Geophysical Institute, College (S.I. Akasofu): Magnetograms.

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, IATMA-Bull. 11, pp. 183 - 195). In 1940, the C-data and the selected days became part of the IATMA-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 other derived 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 extensive 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 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 1970 is available on punched cards at WDC - A for Geomagnetism, 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 Geomagnetism in Boulder.

The auroral electrojet index AE cannot yet be included in the IAGA-Bulletin. At present this index is not available in time. References to AE are given at the end of part B of this Bulletin, together with references to the indices Q and R from individual observatories.

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 before in the 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 disturbances and rejected solar-flare effects are omitted; ssc's, si's, bays, pi2's are given only if reported by a sufficiënt number of stations; pulsations of type pc4 and pc5 will

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

be published in the yearly supplement of the quarterly bulletins. Checklists have been sent to the observatories for the reported pg's and sfe's only.

The Bulletin 32a contains one example of a magnetic storm data survey, consisting of a survey of indices over a time interval which includes the storm of 8 - 9 March 1970, data on sc's, ranges etc. from individual stations and magnetograms of 16 stations, reduced to the same time scale and comparable intensity scales. In future Bulletins 32 this survey will be extended to about 10 interesting time intervals each year, in accordance with IAGA resolution 13 of the IUGG-General Assembly in Moscow (1971).

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 350 institutions in many countries. This service is carried out by the Institut für Geophusik, 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, 9 Quai Saint Bernard - Tour 14, Paris V^e, France.

Monthly bulletins on Ci, selected quiet and disturbed days and preliminary data on rapid geomagnetic variations, as well as threemonthly bulletins on Kp, Ci, selected days and rapid geomagnetic variations, including pulsations, are sent to about 160 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, containing pulsation-data, is distributed in the same way.

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

IAGA - Commission IV on Magnetic Variations and Disturbances

J. A. Jacobs, Chairman
University of Alberta, Edmonton, Alberta, Canada

International Service of Geomagnetic Indices

D. van Sabben, Director
Koninklijk Nederlands Meteorologisch Instituut, De Bilt, Netherlands

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° and 63° northern or southern geomagnetic latitude. The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5, 5+ is 5 1/3. 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 in 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.

B. 9 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. 10 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 7 in the Southern hemisphere, namely: Memambetsu (Japan), Petropavlovsk, Magadan, Tomsk, Sverdlovsk (USSR), Niemegk (Germany), Witteveen (Netherlands), Hartland (England), Fredericksburg (USA), Victoria (Canada), Tucson (USA), Amberley (New Zealand), Toolangi, Gnangara (Australia), Kerguelen (Indian Ocean), Hermanus (South africa), Argentine Isl. and Orcadas del Sur (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 long gitude 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).

For printing reasons the tables give the values of 3Kn, 3Ks and 3Km. 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. σn and σs 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. (See Note).

B. 11, 12 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).

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

Note. In the tables for 1970 the data from one observatory (OR) could not yet been included, so that the final values of Kn, Ks etc. may be a little different from the values published in this Bulletin. Moreover, the station Tomsk stopped reporting in August 1970.

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. 2a 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. 2b Pulsational disturbances of type pi-2 not associated with bays. The periods of these pulsations are in the interval 40 - 150 sec. Only the cases reported by at least three stations and classified as A by at least one of these reporting stations, are included. The mean times and extreme times of the beginning of the phenomenon are given in Table c. 1.

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) reported originally by at least two stations (or by one if situated in a very isolated region and if the pg was classified as A) and checked by 40 observatories, namely: KI SO NU WN WI NI VL GT MA VI FU JO MT LG AQ IK EB CI AE KA KS SS KY QU SZ LP MU PA MC PM HU AP TN GN HR TO AM MI MW SB. 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 reported pg's are also included.

C. 5a Solar flare effects (sfe) were reported by many observatories. A check of the reported cases has been made by 48 observatories, the same as for the pg's plus the following ones: PR HB TL AL AC TW KG DU. 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 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. Stations from which reports have been used, although their check-lists were not received, are given in square brackets.

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. (see Note)

Magnetograms of the H component are given for 16 stations, namely three stations inside the polar caps (upper diagram), eight stations in the auroral zones (middle diagram) and 5 stations in lower latitudes (lower diagram). The selected stations may not always be the same, depending on the availability of the magnetograms. Some pairs are roughly conjugate, namely Godhavn - South Pole, Great Whale River - Byrd, College - Macquarie Island. Abisko is situated near Kiruna. The magnetograms have been reduced to the same time scale and comparable intensity scales.

Part E. Supplementary Tables.

Supplementary tables are given for Kn, Ks, Km etc. in the same form as in Part B., Table 10. The data for the station Orcadas del Sur could not yet be included in the computation of these indices.

Note: In the March 1970-case no selection was made and all K-indices are given which were availaible at a certain moment.

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)	Koptev	+80 37	58 03				2000	34I -
CC	Cape Chelyuskin	Solokov	+77 43	104 17	+65.9	176.5	10	2500	55C -
TH	Thule	K. Lassen	+77 29	290 50	+89.0	358.0	8	1000	55C -
	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	Blagoechin	+73 33	80 34	+63.0	161.6	13	1500	34I -
MS	Matoshkin Shar	N. D. Medvedev	+73 16	56 24	+64.8	146.5		2500	55C56
TI	Tiksy	Dolgich	+71 35	129 00	+60.4	191.4	5	1000	55C67
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 -
MM	Murmansk	M. I. Pudovkin	+68 15	33 05	+63.5	126.2	7	2500	57C -
KI	Kiruna	N. Ambolt	+67 50	20 25	+65.3	115.8	11		52I -
SO	Sodankylä *	E. Kataja	+67 22	26 38	+63.8	120.0	9	1500	14I -
WE	Welen	Razin	+66 10	190 10	+61.8	237.1	7	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	G. Gjellestad	+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 -
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 *	T. A. Vinychova	+60 07	151 01	+50.6	210.1	2	550	67C -
LN	Leningrad		+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 -
	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. Gordeew	+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. F. Monachova	+55 50	48 51	+49.3	130.4	5	550	41I -
MO	Moskva	W. N. Bodrov	+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 -
	Great Whale River		+55 16	282 13	+66.8	347.2			
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 *	O. Meyer	+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 15	+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	A. S. Jaworskij	+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 -
LV	Lvov	W. M. Litinskij	+49 54	23 45	+48.0	105.8	3	550	55C -

LIST OF OBSERVATORIES - continued

Symbol	Observatory	Collaborator	Geographic		Geomagnetic		S_H γ/mm	K=9 lower limit	K rep.
			Lat.	Long.	Lat.	Long.			
KD	Karaganda		+49° 49'	73° 05'	+40.0°	148.4°	2	350	66C -
BV	Budkov	J. Bouška	+49 04	14 01	+49.1	96.2	1		69C -
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			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	. .	+47 51	103 03	+36.4	173.4	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	I. N. Petrov	+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	A. I. Storosjinskij	+46 47	30 53	+43.8	111.1	2	350	55C -
KK	Novo Kazalinsk		+45 46	62 07	+39.9	138.6	1	350	66C -
OT	Ottawa	W. R. Darker	+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	S. A. Negaev	+43 41	132 10	+33.0	198.0	4	300	55C -
AT	Alma Ata		+43 16	77 23	+33.4	152.0			64C -
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	M. G. Antzilevitch	+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-Kandili	O. Uyar	+41 04	29 04	+38.5	107.5	4	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 -
	Boulder		+40 02	254 42	+48.9	316.4			
TL	Toledo	R. Gómez-Menor	+39 53	355 57	+43.6	75.7	5	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 *	A. Stavrou	+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	G. Vazquez	+36 51	357 32	+40.6	75.3	5	350	64C -
SF	San Fernabdo		+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. Kawakami	+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	96 45	+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 *	S. M. Ishaque	+30 11	66 57	+21.6	139.7	3	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		300	64C -
LP	Lunping *	P. H. Kong	+25 00	121 10	+13.8	189.5	2	300	68C -
TA	Tamanrasset	B. Lepretre a. o.	+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		Geomagnetic		S_H	K=9 lower limit	K rep.
			Lat	Long.	Lat.	Long.	γ/mm		
HD	Hyderabad	N. Geoph. Res. I.	+17° 25'	78° 33'	+ 7.6°	148.9°	5	300	69C -
MB	M'Bour *	H. G. Barsczus	+14 24	343 03	+21.3	55.0	7	350	52C -
MU	Muntinlupa *	C. Palma	+14 22	121 01	+ 3.0	189.7	4	300	64C -
GU	Guam	K. Cravens	+13 35	144 52	+ 4.0	212.9	3	300	58C -
AA	Addis Ababa	E. Cambron	+09 02	38 46	+ 5.3	109.2		300	
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	A. Lapouille	+04 26	18 34	+ 4.6	88.5	2	350	52I -
MC	Moca	A. G. Cogollor	+03 21	8 40	+ 5.7	78.6	4	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		65C -
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 *	I. B. Everingham	-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	- 6.6	353.8	3	600	37C -
DA	Darwin	L. S. Prior	-12 20	131 00	-22.0	201.3			
AP	Apia *	A. L. Cullington	-13 48	188 14	-16.0	260.2	4	300	40C57
PP	Papeete-Pamatai	F. Janet	-17 34	210 25	-15.3	282.8	2	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 *	A. M. van Wijk	-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. Cullington	-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 -
KG	Kerguelen	R. Schlich	-49 21	70 12	-56.5	127.8	6	750	57I -
MI	Macquarie Island	L. S. Prior	-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	C. N. Horton	-65 15	295 44	-53.8	3.3			57I -
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	Kuperov	-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 *	L. S. Prior	-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	Berechagin	-70 46	11 49			8	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 24	-65.8	24.3	7	2000	57C58
SB	Scott Base *	A. L. Cullington	-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	Baranov	-78 27	106 52	-89-2	92.6	10	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, 1900 - 1969

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean for the year
1900	0.6	0.5	0.6	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.42
01	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.45
02	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.44
03	0.4	0.4	0.4	0.6	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.6	0.59
04	0.7	0.6	0.4	0.6	0.6	0.5	0.6	0.5	0.5	0.6	0.5	0.5	0.55
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	0.5	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

TABLE 2 INTERNATIONAL CHARACTER-FIGURES, Ci, 1970

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.5	0.5	1.2	0.3	0.6	1.1	0.5	0.1	1.3	0.5	0.0	0.0
2	1.3	1.1	1.1	0.3	0.4	0.5	0.6	0.2	1.0	0.4	0.2	0.2
3	0.4	0.4	1.0	0.5	0.7	0.4	1.2	0.2	0.8	0.9	0.4	0.1
4	0.1	0.9	1.0	0.5	0.3	0.4	1.1	0.2	0.6	1.2	0.4	0.3
5	0.3	0.5	0.9	0.5	0.6	0.3	0.9	0.1	0.4	0.4	0.6	0.6
6	0.2	0.1	1.2	1.2	0.3	0.1	0.9	0.3	0.2	0.4	0.6	0.5
7	0.3	0.1	1.5	0.4	0.2	0.6	0.2	0.8	0.3	0.0	1.7	0.6
8	0.3	0.0	2.0	0.6	0.2	0.7	0.8	1.2	0.5	0.0	0.5	1.1
9	0.4	0.1	1.5	0.9	0.1	0.2	1.8	1.0	0.2	0.0	0.6	0.2
10	0.2	0.4	0.4	0.2	0.0	0.2	1.4	0.4	0.3	0.4	1.1	0.1
11	0.1	0.0	0.0	0.4	0.2	0.2	0.7	0.4	0.1	0.9	1.1	0.0
12	0.3	0.1	0.2	0.3	1.0	0.3	0.9	0.4	0.2	0.9	0.6	0.1
13	0.2	0.3	0.4	0.1	0.3	0.5	0.4	0.4	1.2	0.5	0.4	0.2
14	0.2	0.5	0.1	0.1	0.8	0.4	0.5	0.2	1.1	0.3	0.5	1.7
15	0.2	0.4	0.2	0.4	0.5	0.8	0.3	0.4	0.6	0.1	0.1	0.7
16	1.0	0.2	0.0	0.8	0.3	0.4	0.3	1.0	0.3	1.4	0.5	0.0
17	0.6	0.7	0.2	1.2	0.5	0.8	0.6	1.8	0.4	1.4	0.3	0.0
18	0.2	0.6	0.4	1.1	0.2	1.2	0.2	1.3	0.4	1.5	1.2	0.2
19	0.4	0.1	0.2	1.1	0.4	0.4	0.2	0.7	0.9	0.4	1.0	0.7
20	0.6	0.0	0.2	1.2	0.6	1.0	0.5	0.1	0.7	0.2	0.2	0.4
21	0.3	0.0	0.0	1.7	0.4	0.9	1.3	0.1	1.1	0.0	1.4	0.0
22	0.1	0.0	0.0	1.3	0.2	0.1	0.6	0.4	0.6	1.1	1.1	0.1
23	0.2	0.2	0.1	0.9	0.4	0.2	0.5	0.3	0.3	1.2	1.3	0.3
24	0.3	0.8	0.0	0.7	0.3	0.3	1.2	0.0	0.2	0.7	1.0	0.6
25	0.1	0.1	0.1	0.8	0.3	0.3	1.8	0.3	0.3	0.3	0.9	0.2
26	0.0	0.6	0.2	0.6	0.1	0.8	1.2	0.9	0.2	0.1	0.4	0.1
27	0.2	0.5	0.1	0.5	1.0	1.2	0.9	0.7	1.1	0.3	0.6	0.5
28	0.2	0.9	1.1	0.2	1.3	0.4	0.2	0.7	0.4	0.9	0.3	1.0
29	0.3		1.0	0.4	0.8	0.3	1.3	0.4	0.2	1.0	0.0	1.0
30	0.8		1.0	1.0	0.6	0.2	0.4	0.1	0.4	0.4	0.0	0.8
31	0.4		1.6		0.3		0.8	0.8		0.0		0.1
Mean	0.35	0.36	0.61	0.67	0.45	0.51	0.78	0.51	0.54	0.57	0.63	0.40

Mean for the Year 0.52

TABLE 3 INTERNATIONAL QUIET AND DISTURBED DAYS 1970

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

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

	Kp	Sum	Jan. 1970	ap				Sum	Ap	Cp
1	1- 2o 2- 1- 2o 3o 2+ 2o	14+	3 7 6 3	7	15	9	7	57	7	0.4
2	3- 4+ 5+ 4o 4o 4+ 4o 4-	32+	12 32 56 27	27	32	27	22	235	29	1.3
3	3- 3o 3o 2o 2o 1o 1- 2+	17-	12 15 15 7	7	4	3	9	72	9	0.5
4	0o 0+ 1o 1o 1- 1- 1- 2-	6o	0 2 4 4	3	3	3	6	25	3	0.1
5	1- 1o 2- 1+ 1o 1- 2- 2+	10+	3 4 6 5	4	3	6	9	40	5	0.2
6	3- 1o 1o 1- 1+ 1o 1o 1o	10-	12 4 4 3	5	4	4	4	40	5	0.2
7	1+ 1- 0+ 1- 1o 1o 3- 2-	9+	5 3 2 3	4	4	12	6	39	5	0.2
8	1+ 1+ 1- 1o 1+ 3- 2- 1+	11+	5 5 3 4	5	12	6	5	45	6	0.3
9	4- 3o 2+ 1+ 1o 1- 1+ 2o	15+	22 15 9 5	4	3	5	7	70	9	0.5
10	4- 2- 1o 1- 1o 1- 1+ 0+	10+	22 6 4 3	4	3	5	2	49	6	0.3
11	1+ 1+ 1o 1- 1o 0+ 0+ 2-	8-	5 5 4 3	4	2	2	6	31	4	0.1
12	3+ 2o 1+ 1o 1- 1+ 1o 2+	13o	18 7 5 4	3	5	4	9	55	7	0.3
13	1+ 1o 1- 1o 2- 1+ 1- 1+	9o	5 4 3 4	6	5	3	5	35	4	0.2
14	1o 3- 1o 1- 1- 1- 2- 2+	11-	4 12 4 3	3	3	6	9	44	6	0.2
15	2+ 3- 2o 1o 1+ 2o 1- 1o	13o	9 12 7 4	5	7	3	4	51	6	0.3
16	3- 2+ 3o 4o 3o 4o 3- 3o	25-	12 9 15 27	15	27	12	15	132	16	0.9
17	4- 5- 2o 1+ 1- 1- 2- 1o	16-	22 39 7 5	3	3	6	4	89	11	0.6
18	2+ 2+ 2+ 1+ 1- 2o 1- 1o	13-	9 9 9 5	3	7	3	4	49	6	0.3
19	1- 0+ 0+ 1+ 2o 2- 1o 3o	10+	3 2 2 5	7	6	4	15	44	6	0.2
20	2- 1+ 0+ 2- 3- 1+ 3o 2o	14o	6 5 2 6	12	5	15	7	58	7	0.4
21	0+ 2- 2- 2o 3- 1- 2o 2+	13+	2 6 6 7	12	3	7	9	52	6	0.3
22	3- 1o 1- 1- 1- 1o 1o 1o	9-	12 4 3 3	3	4	4	4	37	5	0.2
23	2o 2o 1+ 1+ 1+ 0+ 1- 2o	11o	7 7 5 5	5	2	3	7	41	5	0.2
24	2o 1+ 2+ 3- 1+ 1+ 1+ 3-	15o	7 5 9 12	5	5	5	12	60	8	0.4
25	1o 1o 0+ 0+ 0+ 0+ 1- 1o	5o	4 4 2 2	2	2	3	4	23	3	0.1
26	1- 1+ 1- 1- 0+ 0+ 0+ 0+	5-	3 5 3 3	2	2	2	2	22	3	0.0
27	2- 2+ 1o 1+ 1+ 1+ 2o 2-	13-	6 9 4 5	5	5	7	6	47	6	0.3
28	2- 0o 0+ 1+ 1- 1+ 3- 2o	10o	6 0 2 5	3	5	12	7	40	5	0.2
29	2+ 2- 2+ 2+ 2o 1- 1+ 1+	14o	9 6 9 9	7	3	5	5	53	7	0.3
30	3o 2o 3+ 2o 1+ 3+ 3+ 3-	21o	15 7 18 7	5	18	18	12	100	12	0.7
31	3o 3o 0+ 2- 2- 1o 1+ 0+	12+	15 15 2 6	6	4	5	2	55	7	0.3

	Kp	Sum	Feb. 1970	ap				Sum	Ap	Cp
1	2+ 3+ 1o 0+ 1- 1- 2- 4-	14-	9 18 4 2	3	3	6	22	67	8	0.5
2	3o 4- 3- 3+ 3+ 2+ 4- 4+	26+	15 22 12 18	18	9	22	32	148	18	1.0
3	3+ 2+ 2- 2o 2o 1- 0+ 1+	14-	18 9 6 7	7	3	2	5	57	7	0.4
4	1o 2- 2- 3- 3+ 4o 3o 2+	20-	4 6 6 12	18	27	15	9	97	12	0.7
5	3- 3+ 1+ 2o 3- 2o 2- 3o	19-	12 18 5 7	12	7	6	15	82	10	0.6
6	2- 1o 1o 1- 0+ 0+ 1- 1o	7-	6 4 4 3	2	2	3	4	28	4	0.1
7	1- 0o 0o 0+ 0+ 0+ 0+ 0+	2+	3 0 0 2	2	2	2	2	13	2	0.0
8	0o 0o 0o 0+ 1- 1o 1- 1-	3+	0 0 0 2	3	4	3	3	15	2	0.0
9	0o 1o 1o 0+ 1o 1- 1- 0+	5o	0 4 4 2	4	3	3	2	22	3	0.0
10	0+ 0+ 1o 0+ 1o 3- 3- 1o	9+	2 2 4 2	4	12	12	4	42	5	0.2
11	1- 0o 1o 1- 1- 1- 1- 1-	5o	3 0 4 3	3	3	3	3	22	3	0.0
12	1o 0o 0o 1- 1- 1+ 1+ 1-	6-	4 0 0 3	3	5	5	3	23	3	0.1
13	0+ 2o 1o 2o 2+ 1o 2- 1-	11o	2 7 4 7	9	4	6	3	42	5	0.2
14	2o 4o 1+ 3+ 3- 2+ 1o 1-	17+	7 27 5 18	12	9	4	3	85	11	0.6
15	2- 3- 2+ 3o 2- 1+ 2o 1+	16o	6 12 9 15	6	5	7	5	65	8	0.4
16	1o 0+ 1+ 2- 2o 1+ 1- 2-	10o	4 2 5 6	7	5	3	6	38	5	0.2
17	2- 0+ 1- 2o 2- 3o 4o 3-	16o	6 2 3 7	6	15	27	12	78	10	0.5
18	2o 3- 2+ 2- 3- 2o 2o 3-	18o	7 12 9 6	12	7	7	12	72	9	0.5
19	2o 1- 1+ 1+ 1+ 1o 1- 1-	9o	7 3 5 5	5	4	3	3	35	4	0.2
20	0+ 0o 0+ 1o 2- 1o 1- 1-	6-	2 0 2 4	6	4	3	3	24	3	0.1
21	0+ 0o 1- 1+ 0+ 0+ 1- 0+	4o	2 0 3 5	2	2	3	2	19	2	0.0
22	0+ 0+ 0+ 0+ 0+ 0+ 1- 1-	3+	2 2 2 2	2	2	3	3	18	2	0.0
23	1o 0+ 0+ 0o 1- 1- 3- 1o	7-	4 2 2 0	3	3	12	4	30	4	0.1
24	1o 3- 2- 1- 3- 4+ 3+ 1o	17+	4 12 6 3	12	32	18	4	91	11	0.7
25	1o 1+ 2o 1- 0+ 1+ 0+ 0+	7+	4 5 7 3	2	5	2	2	30	4	0.1
26	2- 2o 2+ 2o 4o 3+ 0+ 0+	16o	6 7 9 7	27	18	2	2	78	10	0.5
27	0+ 1- 2+ 1+ 1+ 1o 3o 3o	13o	2 3 9 5	5	4	15	15	58	7	0.4
28	4- 3o 3o 3- 2+ 3- 2+ 3-	22+	22 15 15 12	9	12	9	12	106	13	0.8

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

	Kp	Sum	March 1970	ap				Sum	Ap	Cp
1	3+ 3+ 5- 4+ 4o 4+ 1+ 2+	28-	18 18 39 32	27 32 5 9				180	22	1.1
2	4- 4o 4- 4- 2+ 2+ 2- 3-	24o	22 27 22 22	9 9 6 12				129	16	0.9
3	2o 2- 3+ 2+ 3o 4o 3+ 3+	23o	7 6 18 9	15 27 18 18				118	15	0.8
4	3o 2+ 2+ 3+ 4- 4o 2+ 4-	25-	15 9 9 18	22 27 9 22				131	16	0.9
5	2+ 1+ 4- 2- 2o 3- 4o 3o	21-	9 5 22 6	7 12 27 15				103	13	0.7
6	4+ 3o 3+ 4- 2- 3+ 4o 6-	29o	32 15 18 22	6 18 27 67				205	26	1.2
7	5+ 4+ 3o 4- 4+ 5- 6- 6-	37-	56 32 15 22	32 39 67 67				330	41	1.5
8	4+ 5o 6- 5o 8- 8o 9o 8+	53o	32 48 67 48	179 207 400 236				1217	152	2.0
9	6+ 6+ 2+ 3+ 4+ 6o 3+ 4o	36o	94 94 9 18	32 80 18 27				372	46	1.5
10	3o 1+ 2- 2- 1o 1+ 2o 1o	13o	15 5 6 6	4 5 7 4				52	6	0.3
11	1- 0+ 0+ 0o 0+ 0+ 1+ 1+	5-	3 2 2 0	2 2 5 5				21	3	0.0
12	1o 2+ 2o 3- 1+ 1o 0+ 0+	11o	4 9 7 12	5 4 2 2				45	6	0.3
13	0+ 1+ 2o 3+ 3- 2+ 2+ 1+	16-	2 5 7 18	12 9 9 5				67	8	0.5
14	2o 0+ 1+ 1- 0+ 1o 0+ 0+	6+	7 2 5 3	2 4 2 2				27	3	0.1
15	2+ 2o 2o 2o 2- 2o 1+ 1-	14o	9 7 7 7	6 7 5 3				51	6	0.3
16	0o 0+ 0+ 1+ 1+ 1- 1- 1-	5+	0 2 2 5	5 3 3 3				23	3	0.1
17	0o 1- 1o 1- 2+ 2o 2o 2-	10+	0 3 4 3	9 7 7 6				39	5	0.2
18	2o 0+ 1- 2+ 2- 2o 1o 2+	12+	7 2 3 9	6 7 4 9				47	6	0.3
19	1+ 1+ 1+ 1o 1+ 1- 2- 2o	11-	5 5 5 4	5 3 6 7				40	5	0.2
20	1+ 0+ 0o 1- 2- 1o 2o 1+	8+	5 2 0 3	6 4 7 5				32	4	0.1
21	1+ 1- 0+ 0+ 0+ 1- 1- 0+	5-	5 3 2 2	2 3 3 2				22	3	0.0
22	0o 0o 1+ 1- 1- 1- 0+ 0+	4o	0 0 5 3	3 3 2 2				18	2	0.0
23	1o 1+ 2- 2o 1o 1o 1o 1o	10o	4 5 6 7	4 4 4 4				38	5	0.2
24	0+ 0o 1- 0+ 0+ 0+ 1o 1o	4o	2 0 3 2	2 2 4 4				19	2	0.0
25	0+ 0o 1o 1- 1+ 1o 1- 0+	5+	2 0 4 3	5 4 3 2				23	3	0.1
26	2- 2o 2- 1- 1- 1+ 1+ 1-	10o	6 7 6 3	3 5 5 3				38	5	0.2
27	0o 0o 3o 5- 3+ 2+ 2+ 4+	20o	0 0 15 39	18 9 9 32				122	15	0.9
28	3+ 4+ 3o 5- 3- 3+ 2+ 4-	27+	18 32 15 39	12 18 9 22				165	21	1.1
29	3+ 4o 3o 1+ 3+ 3+ 3o 4-	25o	18 27 15 5	18 18 15 22				138	17	0.9
30	4- 2+ 4- 3o 3+ 3o 3o 3-	25-	22 9 22 15	18 15 15 12				128	16	0.9
31	2o 5- 6o 6- 6o 6o 4- 4+	38+	7 39 80 67	80 80 22 32				407	51	1.6

	Kp	Sum	April 1970	ap				Sum	Ap	Cp
1	3- 2o 1o 0+ 1- 0+ 0+ 3-	10o	12 7 4 2	3 2 2 12				44	6	0.2
2	2- 2- 2- 1- 2- 2- 1+ 2-	12o	6 6 6 3	6 6 5 6				44	6	0.2
3	3- 3o 4- 3- 2+ 3- 1+ 1o	19+	12 15 22 12	9 12 5 4				91	11	0.7
4	3- 2+ 3o 3o 3o 2o 1o 1o	18o	12 9 15 15	15 7 4 4				81	10	0.6
5	1- 0+ 2o 3+ 3+ 3- 2o 2-	16o	3 2 7 18	18 12 7 6				73	9	0.5
6	3- 3+ 5o 5o 4o 2+ 2- 3o	27o	12 18 48 48	27 9 6 15				183	23	1.1
7	2+ 2+ 4- 3o 1+ 1- 1- 1o	15o	9 9 22 15	5 3 3 4				70	9	0.5
8	4- 3+ 3- 3o 3- 1o 1+ 2+	20o	22 18 12 15	12 4 5 9				97	12	0.7
9	1+ 3- 4o 4+ 5- 2o 1+ 3o	23+	5 12 27 32	39 7 5 15				142	18	1.0
10	1o 0+ 0o 0o 1- 1- 1+ 2o	6o	4 2 0 0	3 3 5 7				24	3	0.1
11	3o 2o 2+ 3- 2+ 1o 1- 0+	14+	15 7 9 12	9 4 3 2				61	8	0.4
12	1o 2- 2o 1+ 2- 2+ 1+ 1o	12+	4 6 7 5	6 9 5 4				46	6	0.3
13	1- 1o 1- 1o 2o 1o 0+ 0+	7o	3 4 3 4	7 4 2 2				29	4	0.1
14	1o 1- 0+ 1+ 1o 0+ 0+ 1o	6o	4 3 2 5	4 2 2 4				26	3	0.1
15	1- 1o 1o 1o 1- 2- 3- 2o	11-	3 4 4 4	3 6 12 7				43	5	0.2
16	3o 4- 3o 1- 1- 2- 4- 4o	20+	15 22 15 3	3 6 22 27				113	14	0.8
17	5+ 4o 4- 4+ 3o 3o 4+ 4o	32-	56 27 22 32	15 15 32 27				226	28	1.2
18	1+ 1o 1+ 4- 5+ 4- 2+ 4-	22+	5 4 5 22	56 22 9 22				145	18	1.0
19	3+ 4- 5o 5- 3+ 3- 1+ 1+	25+	18 22 48 39	18 12 5 5				167	21	1.1
20	1+ 3+ 2o 3+ 5- 4+ 4- 4-	26+	5 18 7 18	39 32 22 22				163	20	1.0
21	3+ 4o 5o 6- 6o 7- 8+ 7o	46o	18 27 48 67	80 111 236 132				719	90	1.8
22	6+ 7o 5o 4o 3- 1+ 1o 1-	28o	94 132 48 27	12 5 4 3				325	41	1.5
23	2+ 2o 2+ 3- 4- 2+ 3+ 3o	22-	9 7 9 12	22 9 18 15				101	13	0.7
24	3o 3o 3- 2+ 3o 3+ 3- 3+	23+	15 15 12 9	15 18 12 18				114	14	0.8
25	4- 3+ 3+ 3+ 3+ 3- 3o 3-	25+	22 18 18 18	18 12 15 12				133	17	0.9
26	3+ 3- 1o 1+ 2o 1+ 3+ 4+	19+	18 12 4 5	7 5 18 32				101	13	0.7
27	4o 3+ 2o 1o 1+ 1+ 1+ 1o	15+	27 18 7 4	5 5 5 4				75	9	0.5
28	2+ 2- 1+ 0+ 2- 1- 1- 1o	10-	9 6 5 2	6 3 3 4				38	5	0.2
29	1+ 1+ 1+ 1+ 2- 2- 2+ 3-	14-	5 5 5 5	6 6 9 12				53	7	0.3
30	3o 4o 4- 4- 3o 3o 3- 3-	26-	15 27 22 22	15 15 12 12				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 1970				ap				Sum	Ap	Cp
1	2+ 2+ 3- 0+ 3- 2+ 3o 4-	19+	9	9	12	2	12	9	15	22	90	11	0.6
2	3- 3- 3- 1+ 1+ 2+ 3o 2o	18o	12	12	12	5	5	9	15	7	77	10	0.5
3	2- 1o 1o 2- 3o 3- 3o 3+	17+	6	4	4	6	15	12	15	18	80	10	0.6
4	2o 1+ 2o 2o 2o 2o 2- 2-	15-	7	5	7	7	7	7	6	6	52	6	0.3
5	1+ 2- 2- 3+ 4- 3o 2- 3o	19+	5	6	6	18	22	15	6	15	93	12	0.7
6	2+ 0+ 0+ 1- 1+ 3- 2o 2o	12-	9	2	2	3	5	12	7	7	47	6	0.3
7	2o 2o 1- 2- 2- 3- 1+ 1o	13o	7	7	3	6	6	12	5	4	50	6	0.3
8	1- 0+ 1- 0+ 0+ 2- 2- 2-	7+	3	2	3	2	2	6	6	6	30	4	0.1
9	2- 1o 1- 0+ 1- 1o 1- 1-	7-	6	4	3	2	3	4	3	3	28	4	0.1
10	0o 1- 0+ 1- 0+ 0+ 0+ 0+	3o	0	3	2	3	2	2	2	2	16	2	0.0
11	0+ 0+ 0+ 0+ 0+ 0+ 1- 2+	5o	2	2	2	2	2	2	3	9	24	3	0.1
12	4- 2o 2+ 3- 3- 3+ 3+ 4o	24o	22	7	9	12	12	18	18	27	125	16	0.9
13	3o 2+ 1+ 1o 1o 1o 1o 2o	13-	15	9	5	4	4	4	4	7	52	6	0.3
14	3- 2+ 3- 2- 2o 3- 4o 4-	22-	12	9	12	6	7	12	27	22	107	13	0.8
15	4o 2- 2o 3+ 2- 2- 1+ 1o	17-	27	6	7	18	6	6	5	4	79	10	0.6
16	1o 1- 2o 2- 1+ 2o 1+ 2o	12o	4	3	7	6	5	7	5	7	44	6	0.2
17	3- 4o 3- 2+ 2o 2o 1o 2-	18+	12	27	12	9	7	7	4	6	84	10	0.6
18	2o 3- 2- 1+ 1o 1- 1o 0+	11-	7	12	6	5	4	3	4	2	43	5	0.2
19	0+ 2- 2+ 2+ 1o 1+ 2- 2o	13-	2	6	9	9	4	5	6	7	48	6	0.3
20	2+ 3+ 2+ 3o 3o 2+ 3o 3-	22o	9	18	9	15	15	9	15	12	102	13	0.7
21	2+ 2- 1+ 2o 2- 2- 3- 2+	16-	9	6	5	7	6	6	12	9	60	8	0.4
22	2+ 2- 1+ 2- 2- 2- 2o 1o	13+	9	6	5	6	6	6	7	4	49	6	0.3
23	1o 1o 2o 2- 1+ 2- 2o 3+	14o	4	4	7	6	5	6	7	18	57	7	0.4
24	2- 1+ 2- 2o 3- 2o 1o 2-	14o	6	5	6	7	12	7	4	6	53	7	0.3
25	2+ 3- 3- 1+ 2o 1+ 1- 1-	14-	9	12	12	5	7	5	3	3	56	7	0.4
26	0o 0o 0+ 1- 0+ 0+ 0+ 2-	4-	0	0	2	3	2	2	2	6	17	2	0.0
27	1+ 2- 2+ 3- 3+ 2+ 3+ 4+	21+	5	6	9	12	18	9	18	32	109	14	0.8
28	5+ 3o 2+ 6- 7o 5- 3+ 3+	35-	56	15	9	67	132	39	18	18	354	44	1.5
29	4- 3o 4o 2o 2o 2- 3- 2+	21+	22	15	27	7	7	6	12	9	105	13	0.8
30	2o 2o 3- 4- 2- 4- 2+ 1-	19-	7	7	12	22	6	22	9	3	88	11	0.6
31	1- 1+ 2- 2o 2+ 2- 1o 1o	12-	3	5	6	7	9	6	4	4	44	6	0.2

	Kp	Sum	June 1970				ap				Sum	Ap	Cp
1	2+ 5+ 3o 5o 5- 4- 3o 3-	30-	9	56	15	48	39	22	15	12	216	27	1.2
2	3+ 3- 2o 2- 2- 2+ 2+ 2o	18o	18	12	7	6	6	9	9	7	74	9	0.5
3	2o 3- 3o 2+ 3- 3- 2+ 2+	20o	7	12	15	9	12	12	9	9	85	11	0.6
4	3- 2o 2- 2- 2+ 2+ 2- 2o	16+	12	7	6	6	9	9	6	7	62	8	0.4
5	2o 2+ 2+ 2o 1- 1+ 1- 1o	12+	7	9	9	7	3	5	3	4	47	6	0.3
6	1o 1o 1+ 2- 0+ 0+ 0+ 0o	6o	4	4	5	6	2	2	2	0	25	3	0.1
7	0o 1- 1- 1- 1o 3- 3+ 4+	13+	0	3	3	3	4	12	18	32	75	9	0.5
8	3+ 4+ 4- 2- 2o 1+ 2- 2-	20-	18	32	22	6	7	5	6	6	102	13	0.7
9	2- 1o 1o 1- 1+ 1+ 2+ 2-	11o	6	4	4	3	5	5	9	6	42	5	0.2
10	1+ 1+ 2- 1+ 1o 2o 2o 1+	12o	5	5	6	5	4	7	7	5	44	6	0.2
11	2o 1o 1- 0+ 1- 2- 2o 1o	9+	7	4	3	2	3	6	7	4	36	4	0.2
12	2- 1+ 1+ 1o 1- 1o 2- 1+	10o	6	5	5	4	3	4	6	5	38	5	0.2
13	1- 1o 3- 3o 3+ 3- 2- 2o	17o	3	4	12	15	18	12	6	7	77	10	0.5
14	2o 3o 1- 1- 1+ 1+ 3o 2+	14+	7	15	3	3	5	5	15	9	62	8	0.4
15	4- 2+ 3o 2+ 3- 2+ 2o 3o	21+	22	9	15	9	12	9	7	15	98	12	0.7
16	2o 3o 2o 1+ 2+ 2o 1+ 2+	16+	7	15	7	5	9	7	5	9	64	8	0.4
17	1+ 0+ 3- 3- 4- 3+ 3+ 3o	20+	5	2	12	12	22	18	18	15	104	13	0.7
18	3o 2+ 4+ 4+ 5+ 4o 3o 4o	30+	15	9	32	32	56	27	15	27	213	27	1.2
19	2o 2+ 2o 2- 1- 1+ 2+ 3o	15+	7	9	7	6	3	5	9	15	61	8	0.4
20	3- 4o 4- 3o 2o 3+ 4o 3o	26-	12	27	22	15	7	18	27	15	143	18	1.0
21	5- 4+ 3+ 2+ 2+ 3- 2o 2o	24-	39	32	18	9	9	12	7	7	133	17	0.9
22	1+ 0+ 0+ 1o 1o 1- 1+ 2-	8-	5	2	2	4	4	3	5	6	31	4	0.1
23	1+ 1o 1- 1- 0+ 1+ 1+ 1-	7+	5	4	3	3	2	5	5	3	30	4	0.1
24	2- 0+ 0+ 1- 1+ 2+ 3- 2o	11+	6	2	2	3	5	9	12	7	46	6	0.3
25	3- 1+ 1+ 1o 2- 1o 0+ 2+	12-	12	5	5	4	6	4	2	9	47	6	0.3
26	2- 2+ 3o 2+ 3o 3o 4- 2o	21o	6	9	15	9	15	15	22	7	98	12	0.7
27	2o 3o 6o 5+ 6o 3+ 3+ 2-	31-	7	15	80	56	80	18	18	6	280	35	1.4
28	3- 2+ 1+ 3- 2- 1+ 1o 1o	14o	12	9	5	12	6	5	4	4	57	7	0.4
29	0+ 1+ 2- 1o 2- 2o 2+ 2-	12o	2	5	6	4	6	7	9	6	45	6	0.3
30	1o 1+ 3- 1+ 1o 1o 1- 1o	10o	4	5	12	5	4	4	3	4	41	5	0.2

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

	Kp	Sum	July 1970	ap				Sum	Ap	Cp
1	2- 2+ 2+ 2- 3+ 3+ 2+ 2-	19-	6 9 9 6	18 18 9 6				81	10	0.6
2	1+ 2+ 4+ 3+ 2+ 2o 1- 1+	18-	5 9 32 18	9 7 3 5				88	11	0.6
3	2o 3+ 4+ 4- 2- 1o 1+ 6+	24-	7 18 32 22	6 4 5 94				188	24	1.1
4	6+ 4o 5+ 3- 1+ 1o 1o 0+	22o	94 27 56 12	5 4 4 2				204	26	1.2
5	3- 4+ 4- 2- 3+ 3o 2+ 3-	24-	12 32 22 6	18 15 9 12				126	16	0.9
6	4- 3+ 4- 4- 4o 1o 1- 1-	21-	22 18 22 22	27 4 3 3				121	15	0.9
7	0+ 1- 1o 1o 1- 1o 1+ 3-	9-	2 3 4 4	3 4 5 12				37	5	0.2
8	1+ 2- 1+ 1o 2- 1+ 1o 5o	14+	5 6 5 4	6 5 4 48				83	10	0.6
9	4o 7- 5+ 5+ 7+ 6o 6o 7o	48-	27 111 56 56	154 80 80 132				696	87	1.8
10	7- 2o 2- 1+ 4- 5o 5o 4o	29+	111 7 6 5	22 48 48 27				274	34	1.4
11	3+ 1+ 2o 2o 2o 2+ 3o 3o	19o	18 5 7 7	7 9 15 15				83	10	0.6
12	3+ 3+ 2+ 3- 2+ 2+ 4- 3+	23+	18 18 9 12	9 9 22 18				115	14	0.8
13	3o 3o 2o 1+ 1+ 3- 3- 2+	18+	15 15 7 5	5 12 12 9				80	10	0.6
14	3- 2+ 3- 2- 1+ 2o 3- 3-	18o	12 9 12 6	5 7 12 12				75	9	0.5
15	2- 2- 1o 2o 1+ 1o 1o 2-	11+	6 6 4 7	5 4 4 6				42	5	0.2
16	3- 2- 1- 1- 2o 1o 2- 1-	11o	12 6 3 3	7 4 6 3				44	6	0.2
17	1+ 1- 1- 1- 1+ 2+ 2+ 4o	13+	5 3 3 3	5 9 9 27				64	8	0.4
18	1+ 2o 1- 1+ 1o 1o 1+ 2-	10+	5 7 3 5	4 4 5 6				39	5	0.2
19	1o 2- 0+ 1o 1o 2- 2- 2o	10+	4 6 2 4	4 6 6 7				39	5	0.2
20	1o 1o 1o 1o 0+ 1o 1+ 3+	10o	4 4 4 4	2 4 5 18				45	6	0.3
21	3+ 3- 3o 4+ 6- 4o 5o 4-	32-	18 12 15 32	67 27 48 22				241	30	1.3
22	3o 2+ 3o 3- 1+ 3- 2o 3+	20+	15 9 15 12	5 12 7 18				93	12	0.7
23	3+ 2+ 2+ 1+ 2+ 2+ 3- 1-	17+	18 9 9 5	9 9 12 3				74	9	0.5
24	3o 4- 4+ 3- 4o 4- 3o 6-	30o	15 22 32 12	27 22 15 67				212	26	1.2
25	6+ 8- 7+ 7- 6o 4- 3+ 6o	47o	94 179 154 111	80 22 18 80				738	92	1.9
26	5o 4+ 4- 3+ 3o 1+ 2- 4-	26o	48 32 22 18	15 5 6 22				168	21	1.1
27	1+ 4- 2+ 3+ 3- 3+ 4- 2+	23-	5 22 9 18	12 18 22 9				115	14	0.8
28	2- 1- 1- 1- 1o 1o 1- 2-	8o	6 3 3 3	4 4 3 6				32	4	0.1
29	3+ 5+ 6- 5- 6o 5+ 5- 1+	36+	18 56 67 39	80 56 39 5				360	45	1.5
30	1+ 3- 2o 1+ 2+ 2- 1o 2+	15-	5 12 7 5	9 6 4 9				57	7	0.4
31	3o 3+ 3- 2o 2+ 2o 3o 4o	22+	15 18 12 7	9 7 15 27				110	14	0.8

	Kp	Sum	Aug. 1970	ap				Sum	Ap	Cp
1	2- 1+ 1- 1o 0+ 1o 1- 2-	8+	6 5 3 4	2 4 3 6				33	4	0.1
2	3- 2o 1o 2- 1o 1- 1+ 1-	11o	12 7 4 6	4 3 5 3				44	6	0.2
3	1- 1o 1- 2- 2o 1- 0+ 0+	7+	3 4 3 6	7 3 2 2				30	4	0.1
4	1- 1- 1- 1- 1o 2- 2- 1-	8-	3 3 3 3	4 6 6 3				31	4	0.1
5	1- 1o 0+ 1- 0+ 0+ 1- 1-	5-	3 4 2 3	2 2 3 3				22	3	0.0
6	1- 1+ 1o 2o 1- 3- 3- 3o	14o	3 5 4 7	3 12 12 15				61	8	0.4
7	2+ 1+ 2o 1+ 2- 3o 3- 5-	19o	9 5 7 5	6 15 12 39				98	12	0.7
8	3+ 3- 5- 5o 4- 3+ 4- 4o	30+	18 12 39 48	22 18 22 27				206	26	1.2
9	5+ 3o 3- 4o 3- 3- 3- 1+	24+	56 15 12 27	12 12 12 5				151	19	1.0
10	2o 2- 2+ 2+ 3- 1+ 1+ 2-	15+	7 6 9 9	12 5 5 6				59	7	0.4
11	2o 2+ 2o 2o 3- 2- 2- 3+	18-	7 9 7 7	12 6 6 18				72	9	0.5
12	2+ 3+ 2+ 2o 0+ 1o 3- 3-	17-	9 18 9 7	2 4 12 12				73	9	0.5
13	1o 1+ 2- 1+ 2- 1+ 2- 3o	13o	4 5 6 5	6 5 6 15				52	6	0.3
14	1o 2o 1- 0+ 0+ 2o 1o 2-	9o	4 7 3 2	2 7 4 6				35	4	0.2
15	2- 2- 1- 1- 1+ 1o 2o 4-	13-	6 6 3 3	5 4 7 22				56	7	0.4
16	2+ 1+ 1o 1- 1o 1+ 1+ 7o	16o	9 5 4 3	4 5 5 132				167	21	1.1
17	5+ 9- 8o 6o 5+ 7- 5+ 5+	51-	56 300 207 80	56 111 56 56				922	115	1.9
18	5- 5- 4- 4+ 4+ 6- 5- 3+	35+	39 39 22 32	32 67 39 18				288	36	1.4
19	4+ 3o 1+ 3+ 3o 3- 3- 0+	21-	32 15 5 18	15 12 12 2				111	14	0.8
20	0o 0+ 2o 1+ 2- 1- 1- 1+	8o	0 2 7 5	6 3 3 5				31	4	0.1
21	2o 2- 1- 1o 1- 2o 1- 1o	10-	7 6 3 4	3 7 3 4				37	5	0.2
22	1- 1- 1o 1+ 3- 2+ 2o 2-	12+	3 3 4 5	12 9 7 6				49	6	0.3
23	2- 3o 2+ 2- 2- 2- 1+ 2-	15o	6 15 9 6	6 6 5 6				59	7	0.4
24	1o 2o 0+ 0+ 0+ 1- 1- 2-	7o	4 7 2 2	2 3 3 6				29	4	0.1
25	1o 2- 3- 2- 3- 2o 2o 2+	16o	4 6 12 6	12 7 7 9				63	8	0.4
26	2+ 4- 4- 3o 4+ 3- 2+ 3-	25-	9 22 22 15	32 12 9 12				133	17	0.9
27	3o 3o 3- 2- 3o 3o 2+ 2+	21o	15 15 12 6	15 15 9 9				96	12	0.7
28	2o 2+ 3- 1- 3+ 3o 3- 4-	20+	7 9 12 3	18 15 12 22				98	12	0.7
29	3- 3+ 3- 3- 2+ 2o 1- 1+	18-	12 18 12 12	9 7 3 5				78	10	0.5
30	2+ 2o 2- 1o 1- 1o 1- 0+	10-	9 7 6 4	3 4 3 2				38	5	0.2
31	1- 2+ 4- 3- 3o 3o 3o 2-	20o	3 9 22 12	15 15 15 6				97	12	0.7

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

	Kp	Sum	Sept. 1970				ap				Sum	Ap	Cp
1	1- 1o 4o 5o 4+ 4- 4o 3+	26o	3	4	27	48	32	22	27	18	181	23	1.1
2	3- 2o 2o 5o 3+ 3+ 3+ 3-	24+	12	7	7	48	18	18	18	12	140	18	1.0
3	0+ 3o 3- 3+ 3+ 4- 3o 3+	23-	2	15	12	18	18	22	15	18	120	15	0.8
4	2o 2o 3o 3o 3- 3o 2+ 2o	20o	7	7	15	15	12	15	9	7	87	11	0.6
5	2+ 2o 1o 1- 2- 3o 2- 3o	15+	9	7	4	3	6	15	6	15	65	8	0.4
6	1o 1+ 1o 0+ 1o 2- 2+ 2+	11o	4	5	4	2	4	6	9	9	43	5	0.2
7	1+ 0+ 1- 1+ 2- 1o 2+ 3-	11+	5	2	3	5	6	4	9	12	46	6	0.3
8	0+ 2- 2+ 1o 3- 2+ 3o 1+	15-	2	6	9	4	12	9	15	5	62	8	0.4
9	0+ 1o 1- 1+ 1+ 2- 2+ 2o	11-	2	4	3	5	5	6	9	7	41	5	0.2
10	4- 3o 1- 0o 0+ 1+ 0+ 0o	9+	22	15	3	0	2	5	2	0	49	6	0.3
11	0o 0+ 0o 0o 0o 0+ 1- 1-	2o	0	2	0	0	0	2	3	3	10	1	0.0
12	1o 2+ 3- 1o 0+ 1- 1- 1-	9+	4	9	12	4	2	3	3	3	40	5	0.2
13	1o 4- 4o 4- 5- 3+ 4o 4+	29-	4	22	27	22	39	18	27	32	191	24	1.2
14	3+ 3o 3- 4+ 4o 4- 3+ 2+	27-	18	15	12	32	27	22	18	9	153	19	1.0
15	4+ 3o 2+ 2o 2- 1+ 2- 2+	19-	32	15	9	7	6	5	6	9	89	11	0.6
16	3- 3- 3- 2o 2o 1- 1o 1+	15o	12	12	12	7	7	3	4	5	62	8	0.4
17	1+ 3o 3+ 2- 1+ 2o 1o 1+	15o	5	15	18	6	5	7	4	5	65	8	0.4
18	3o 3o 3+ 2- 2o 2+ 2o 2-	19o	15	15	18	6	7	9	7	6	83	10	0.6
19	1o 5- 4o 3+ 2+ 3o 3+ 3o	25-	4	39	27	18	9	15	18	15	145	18	1.0
20	2o 4- 4- 4- 2+ 3- 2+ 3+	24-	7	22	22	22	9	12	9	18	121	15	0.9
21	4- 3+ 5- 4- 4o 4- 4- 2+	29o	22	18	39	22	27	22	22	9	181	23	1.1
22	3o 4- 2- 3o 1+ 3- 2+ 2+	20o	15	22	6	15	5	12	9	9	93	12	0.7
23	2+ 1- 2- 3- 2- 1+ 1- 1o	12o	9	3	6	12	6	5	3	4	48	6	0.3
24	2o 3- 2- 2- 1+ 1o 2o 1+	14-	7	12	6	6	5	4	7	5	52	6	0.3
25	1o 3o 3+ 2+ 1o 1+ 2- 0+	14o	4	15	18	9	4	5	6	2	63	8	0.4
26	1- 3- 2- 2o 1+ 1+ 2- 2o	13+	3	12	6	7	5	5	6	7	51	6	0.3
27	3+ 4- 3+ 3o 3o 4+ 2+ 4-	27-	18	22	18	15	15	32	9	22	151	19	1.0
28	4- 2o 0+ 1+ 1o 1+ 1o 1o	12-	22	7	2	5	4	5	4	4	53	7	0.3
29	1- 1+ 2- 1+ 0+ 1- 0+ 3-	9o	3	5	6	5	2	3	2	12	38	5	0.2
30	2- 3+ 3+ 1+ 2o 2- 1o 2+	17-	6	18	18	5	7	6	4	9	73	9	0.5

	Kp	Sum	Oct. 1970				ap				Sum	Ap	Cp
1	3o 2+ 2o 2- 2o 1+ 3+ 3o	19-	15	9	7	6	7	5	18	15	82	10	0.6
2	3+ 2- 1+ 2o 2o 3- 2+ 2+	18-	18	6	5	7	7	12	9	9	73	9	0.5
3	3o 3+ 1+ 2- 2- 3o 4- 4-	21+	15	18	5	6	6	15	22	22	109	14	0.8
4	4o 6- 4o 4- 3+ 3o 3o 2+	29o	27	67	27	22	18	15	15	9	200	25	1.2
5	3o 3- 3+ 2- 1- 1- 2+ 2-	16o	15	12	18	6	3	3	9	6	72	9	0.5
6	2- 2- 2o 1+ 1o 0+ 2- 2+	12o	6	6	7	5	4	2	6	9	45	6	0.3
7	0+ 1- 1+ 1o 1o 1- 0+ 1+	7-	2	3	5	4	4	3	2	5	28	4	0.1
8	1- 1- 1- 0o 0+ 0+ 1- 0+	4-	3	3	3	0	2	2	3	2	18	2	0.0
9	1- 0+ 1- 0+ 1- 0+ 0+ 0o	3+	3	2	3	2	3	2	2	0	17	2	0.0
10	0o 1o 3o 1o 1+ 2- 2+ 3-	13o	0	4	15	4	5	6	9	12	55	7	0.3
11	3+ 4- 3+ 3o 2o 2o 3+ 3-	23+	18	22	18	15	7	7	18	12	117	15	0.8
12	4+ 5+ 3+ 2+ 2- 1- 1o 1-	19+	32	56	18	9	6	3	4	3	131	16	0.9
13	0o 3- 3- 2- 3o 3o 2o 1o	16o	0	12	12	6	15	15	7	4	71	9	0.5
14	3o 3+ 2o 1+ 1o 1o 1o 1+	14o	15	18	7	5	4	4	4	5	62	8	0.4
15	2o 1+ 1- 0+ 1- 0+ 1o 1o	7+	7	5	3	2	3	2	4	4	30	4	0.1
16	0+ 0+ 1o 5+ 5+ 6o 6o 3+	28-	2	2	4	56	56	80	80	18	298	37	1.4
17	4o 3o 4- 3+ 3o 5o 5o 6o	33o	27	15	22	18	15	48	48	80	273	34	1.3
18	6o 7- 5- 3o 3o 4o 2- 3+	32+	80	111	39	15	15	27	6	18	311	39	1.4
19	3- 3- 4o 2+ 2- 2- 2+ 1+	19-	12	12	27	9	6	6	9	5	86	11	0.6
20	1o 2+ 3o 3- 1+ 1- 1- 1-	12+	4	9	15	12	5	3	3	3	54	7	0.3
21	0o 0o 0o 0o 0o 0+ 0+ 1o	2-	0	0	0	0	0	2	2	4	8	1	0.0
22	2+ 3- 3- 2o 3- 3+ 4+ 5-	25-	9	12	12	7	12	18	32	39	141	18	1.0
23	4o 5- 4- 3- 4o 5o 4o 4o	32o	27	39	22	12	27	48	27	27	229	29	1.3
24	3+ 3+ 4+ 3o 3- 1o 2+ 1o	21o	18	18	32	15	12	4	9	4	112	14	0.8
25	2- 2+ 2o 1- 2o 3- 1+ 1-	13+	6	9	7	3	7	12	5	3	52	6	0.3
26	2o 2o 0+ 1o 1o 0+ 1- 1-	8o	7	7	2	4	4	2	3	3	32	4	0.1
27	1+ 1- 1+ 0+ 1- 1o 1o 3-	9o	5	3	5	2	3	4	4	12	38	5	0.2
28	3o 4- 3- 1o 3- 2- 4- 4o	22+	15	22	12	4	12	6	22	27	120	15	0.8
29	2o 1+ 2- 3- 3o 2+ 4o 4-	21-	7	5	6	12	15	9	27	22	103	13	0.7
30	4o 3+ 2- 2- 1o 2o 1- 1-	15o	27	18	6	6	4	7	3	3	74	9	0.5
31	1- 1+ 1- 2o 1+ 1- 1+ 0+	8+	3	5	3	7	5	3	5	2	33	4	0.1

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

	Kp	Sum	Nov. 1970 ap								Sum	Ap	Cp
1	0+ 0o 0+ 1+ 0+ 0+ 0+ 0+	3+	2	0	2	5	2	2	2	2	17	2	0.0
2	0o 0+ 2- 2o 2o 0+ 1- 1+	8+	0	2	6	7	7	2	3	5	32	4	0.1
3	2o 3- 2- 1o 1+ 2- 2+ 3o	16-	7	12	6	4	5	6	9	15	64	8	0.4
4	3- 1+ 2- 2o 1o 1- 1+ 3-	13+	12	5	6	7	4	3	5	12	54	7	0.3
5	2+ 2o 2o 2o 1+ 2+ 3- 3o	18-	9	7	7	7	5	9	12	15	71	9	0.5
6	3- 3o 3+ 3- 3+ 2- 1o 2+	20o	12	15	18	12	18	6	4	9	94	12	0.7
7	6o 6+ 7- 6- 5o 4- 4- 3+	40+	80	94	111	67	48	22	22	18	462	58	1.7
8	3+ 3- 1o 2o 2- 2- 2- 0+	14+	18	12	4	7	6	6	6	2	61	8	0.4
9	1o 3- 2o 2o 2o 2o 3- 2o	16+	4	12	7	7	7	7	12	7	63	8	0.4
10	4- 3o 2o 4- 3+ 4o 3o 2o	25-	22	15	7	22	18	27	15	7	133	17	0.9
11	4+ 3+ 3- 4o 3- 4o 3o 3o	27o	32	18	12	27	12	27	15	15	158	20	1.0
12	2o 3- 3- 3- 3+ 3- 1- 0+	17o	7	12	12	12	18	12	3	2	78	10	0.5
13	2- 3- 2o 2o 3+ 2- 2- 2o	17o	6	12	7	7	18	6	6	7	69	9	0.5
14	2+ 2+ 2o 2- 1- 2o 2+ 1+	15-	9	9	7	6	3	7	9	5	55	7	0.3
15	0o 0o 1- 1+ 1o 1o 2o 2-	8-	0	0	3	5	4	4	7	6	29	4	0.1
16	1o 0o 0+ 1+ 2o 3- 2o 2-	11o	4	0	2	5	7	12	7	6	43	5	0.2
17	2o 3+ 1+ 1+ 1o 1o 1- 1-	11+	7	18	5	5	4	4	3	3	49	6	0.3
18	1+ 1o 1+ 1o 4+ 4- 3- 5+	21-	5	4	5	4	32	22	12	56	140	18	1.0
19	5o 5- 4+ 2o 1o 0+ 0o 1-	18o	48	39	32	7	4	2	0	3	135	17	0.9
20	0+ 0+ 0+ 0o 1- 0+ 1- 2-	4+	2	2	2	0	3	2	3	6	20	2	0.0
21	2+ 3- 5- 5+ 6- 4+ 2+ 2o	29+	9	12	39	56	67	32	9	7	231	29	1.3
22	4o 4o 3+ 3+ 3- 3+ 3o 2+	26o	27	27	18	18	12	18	15	9	144	18	1.0
23	3+ 3- 3o 4- 4o 4+ 3+ 3-	27o	18	12	15	22	27	32	18	12	156	20	1.0
24	2o 3o 3o 3- 3o 3o 3o 2o	22-	7	15	15	12	15	15	15	7	101	13	0.7
25	3- 2+ 2- 3+ 2o 4- 3+ 2o	21o	12	9	6	18	7	22	18	7	99	12	0.7
26	2o 2o 1+ 2- 1+ 3- 3- 2o	16-	7	7	5	6	5	12	12	7	61	8	0.4
27	2o 2o 2o 2+ 3o 2+ 3- 3-	19o	7	7	7	9	15	9	12	12	78	10	0.5
28	1+ 2o 2- 2- 3o 2+ 1- 2-	14+	5	7	6	6	15	9	3	6	57	7	0.4
29	0+ 1- 0+ 0+ 0+ 1- 1- 1-	4o	2	3	2	2	2	3	3	3	20	2	0.0
30	0+ 0+ 0o 0o 0+ 0o 0o 1-	2-	2	2	0	0	2	0	0	3	9	1	0.0

	Kp	Sum	Dec. 1970 ap								Sum	Ap	Cp
1	0+ 0o 0o 0o 0o 0+ 0+ 0+	1+	2	0	0	0	0	2	2	2	8	1	0.0
2	1- 0o 0o 0o 2o 2o 3- 1o	8+	3	0	0	0	7	7	12	4	33	4	0.1
3	2+ 1- 2- 1o 0+ 1- 0o 1o	8-	9	3	6	4	2	3	0	4	31	4	0.1
4	0+ 0o 1- 1+ 1- 1o 3- 2+	9o	2	0	3	5	3	4	12	9	38	5	0.2
5	2o 3- 2o 3- 1+ 3- 1o 0+	15-	7	12	7	12	5	12	4	2	61	8	0.4
6	1+ 1+ 3+ 2o 2+ 2+ 1o 1o	15-	5	5	18	7	9	9	4	4	61	8	0.4
7	1o 1+ 2o 1+ 2o 2- 2+ 3+	15o	4	5	7	5	7	6	9	18	61	8	0.4
8	4- 5- 3+ 4- 4o 1+ 3- 2-	25o	22	39	18	22	27	5	12	6	151	19	1.0
9	2o 2o 2- 3- 2- 1o 1- 0+	12o	7	7	6	12	6	4	3	2	47	6	0.3
10	1- 0+ 0+ 1o 1o 1- 1o 0+	5+	3	2	2	4	4	3	4	2	24	3	0.1
11	0o 0+ 1- 1- 0+ 0o 0+ 0+	3-	0	2	3	3	2	0	2	2	14	2	0.0
12	1o 0+ 0+ 1+ 1+ 1- 1- 1o	7-	4	2	2	5	5	3	3	4	28	4	0.1
13	2o 1+ 0+ 1- 0+ 1+ 1+ 2o	9+	7	5	2	3	2	5	5	7	36	4	0.2
14	4- 6o 8+ 5o 4+ 3o 4+ 5+	40o	22	80	236	48	32	15	32	56	521	65	1.7
15	4+ 3+ 3+ 3- 3o 2+ 1+ 1+	22-	32	18	18	12	15	9	5	5	114	14	0.8
16	1+ 1- 1- 1- 0+ 1- 1- 1+	6+	5	3	3	3	2	3	3	5	27	3	0.1
17	1+ 1o 0+ 0+ 1o 0o 1- 1-	5+	5	4	2	2	4	0	3	3	23	3	0.1
18	0o 0+ 0+ 0o 0+ 0+ 0+ 3-	4+	0	2	2	0	2	2	2	12	22	3	0.0
19	2- 2o 3o 3- 1- 1+ 2+ 3+	17o	6	7	15	12	3	5	9	18	75	9	0.5
20	2+ 3- 3+ 2+ 2- 0+ 1+ 1o	15o	9	12	18	9	6	2	5	4	65	8	0.4
21	1+ 1o 1+ 1+ 1- 0o 1- 1o	7+	5	4	5	5	3	0	3	4	29	4	0.1
22	2o 2o 2o 1o 1- 1o 1- 2-	11o	7	7	7	4	3	4	3	6	41	5	0.2
23	2+ 2+ 2o 2o 2o 2o 0+ 1+	14+	9	9	7	7	7	7	2	5	53	7	0.3
24	4o 4+ 2o 1+ 2o 2- 2- 1o	18o	27	32	7	5	7	6	6	4	94	12	0.7
25	2- 0o 0o 0+ 1o 2- 2- 2-	8o	6	0	0	2	4	6	6	6	30	4	0.1
26	1o 2- 2- 1o 0o 0+ 1o 1+	8o	4	6	6	4	0	2	4	5	31	4	0.1
27	0o 2o 0+ 2o 2- 3- 2o 4-	14+	0	7	2	7	6	12	7	22	63	8	0.4
28	3- 4- 1+ 2- 3- 4- 4o 4o	24-	12	22	5	6	12	22	27	27	133	17	0.9
29	3+ 2- 2+ 1o 1o 3o 3- 4+	19+	18	6	9	4	4	15	12	32	100	12	0.7
30	4+ 4o 2- 2- 1o 3+ 1+ 1o	18+	32	27	6	6	4	18	5	4	102	13	0.7
31	0o 0+ 0o 1+ 1- 0+ 1- 1-	4o	0	2	0	5	3	2	3	3	18	2	0.0

TABLE 5 FREQUENCIES OF Kp INDICES, 1970

Kp	Jan	Feb	Mch	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0o	2	12	10	2	3	2	.	1	6	9	11	21
+	21	38	27	12	24	12	4	15	14	20	23	34
-	39	38	23	18	18	19	17	36	16	29	16	28
1o	38	27	18	25	21	24	26	22	22	23	13	30
+	40	17	26	26	20	31	27	21	24	19	16	28
-	22	17	14	16	40	26	22	31	22	20	20	21
2o	24	17	19	14	33	27	16	22	20	18	38	24
+	17	12	20	16	25	28	24	18	23	15	14	12
-	16	18	6	24	24	19	20	27	17	19	28	15
3o	12	9	13	21	12	19	13	16	21	20	16	4
+	4	9	18	19	11	10	20	8	21	17	16	9
-	4	4	13	16	7	6	15	8	17	9	7	6
4o	5	4	8	9	5	4	8	2	7	12	6	5
+	2	2	10	5	1	5	6	4	5	3	5	6
-	1		5	3	1	2	2	5	3	3	2	1
5o	.		2	5	.	1	5	1	2	3	2	1
+	1		1	2	1	3	5	5		3	2	1
-			5	1	1	.	3	1		1	2	.
6o			4	1	.	2	5	1		4	1	1
+			2	1	.		3	.		.	1	.
-			.	1	.		3	1		1	1	.
7o			.	2	1		1	1				.
+			.	.			2	.				.
-			1	.			1	.				.
8o			1	.				1				.
+			1	1				.				1
9- o			. 1					1				
	248	224	248	240	248	240	248	248	240	248	240	248

TABLE 6 MONTHLY AVERAGES OF Ap (unit 2 gammas) AND Cp, 1970

	Jan	Feb	Mch	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Ap	7	7	18	15	9	10	19	13	11	12	12	9	12
Cp	0.34	0.32	0.61	0.67	0.45	0.50	0.76	0.53	0.56	0.57	0.54	0.36	0.52

TABLE 7 LIST OF MAGNETIC STORMS, 1970

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
Mch. 08 E2	08 14.18	9	. . .	1 1 1	. 1
Apr. 21 E3	-	9	1 2 .	. . 1	. .
Jul. 09 E2	08 23.17	8	2 1 1	. . .	. .
Jul. 24 E8	24 23.51	6	1 . 1	1 . .	. .
Aug. 16 E8	16 22.04	11	1 1 .	. 1 .	1 .
Dec. 14 E2	14 01.55	3	. . .	. . 1	. .

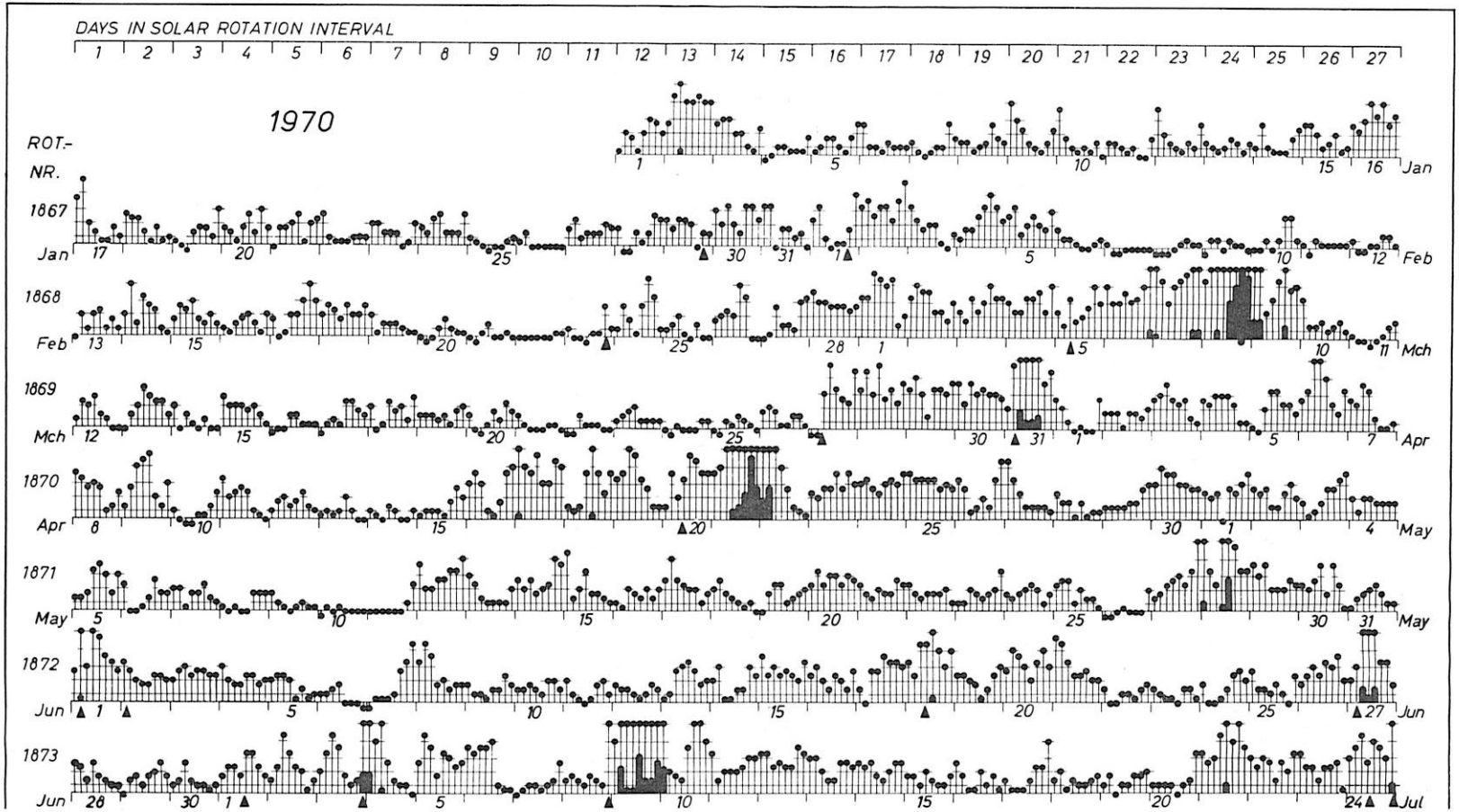
TABLE 8 VERY QUIET INTERVALS, 1970

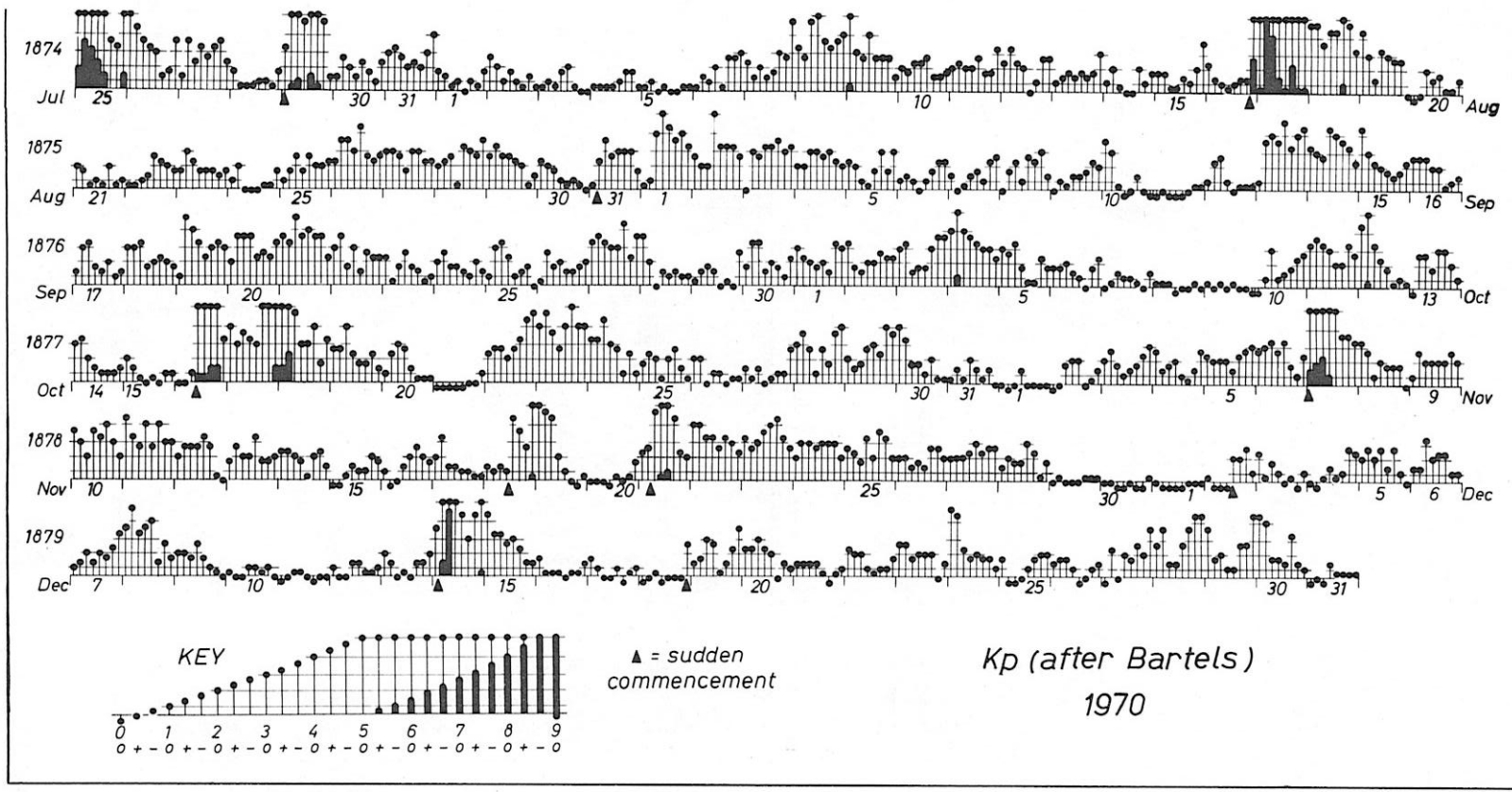
Kp not exceeding 1+ for at least 8 intervals
(= one day) in succession

First. . . . . last Eighth				Duration Eighths
70	Jan.	06 E2	07 E6	13
		10 E3	11 E7	13
		25 E1	26 E8	16
	Feb.	06 E2	10 E5	36
		10 E8	13 E1	18
		19 E2	20 E4	11
		20 E6	23 E6	25
	Mch.	10 E8	12 E1	10
		15 E7	17 E4	14
		20 E8	23 E2	19
		23 E5	25 E8	20
	Apr.	13 E6	15 E5	16
	May	09 E2	11 E7	22
		25 E6	26 E7	10
	June	06 E5	07 E5	9
		23 E1	23 E8	8
	July	06 E6	07 E7	10

First. . . . . last Eighth				Duration Eighths
	Aug.	03 E6	04 E5	8
		04 E8	06 E3	12
	Sep.	10 E3	12 E1	15
		28 E3	29 E2	8
	Oct.	07 E1	10 E2	26
		15 E2	16 E3	10
		20 E5	21 E8	12
		26 E3	27 E7	13
		31 E5	Nov. 02 E2	14
	Nov.	17 E3	18 E4	10
		19 E5	20 E7	11
		29 E1	Dec. 02 E4	28
	Dec.	03 E4	04 E6	11
		09 E6	12 E8	27
		15 E7	18 E7	25
		20 E6	21 E8	11
		30 E7	31 E8	10

For previous publications in IATME or IAGA Bulletins see Table of References.


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
1970
ROT.-
NR.
1867
Jan 17 20 25 30 31 1 5 10 12 Feb
1868
Feb 13 15 20 25 28 1 5 10 11 Mch
1869
Mch 12 15 20 25 30 31 1 5 7 Apr
1870
Apr 8 10 15 20 25 30 1 4 May
1871
May 5 10 15 20 25 30 31 May
1872
Jun 1 5 10 15 20 25 27 Jun
1873
Jun 28 30 1 5 10 15 20 24 Jul
1 5 10 15 16 Jan


1874
Jul 25 30 31 1 5 10 15 20 Aug
1875
Aug 21 25 30 31 1 5 10 15 16 Sep
1876
Sep 17 20 25 30 1 5 10 13 Oct
1877
Oct 14 15 20 25 30 31 1 5 9 Nov
1878
Nov 10 15 20 25 30 1 5 6 Dec
1879
Dec 7 10 15 20 25 30 31
KEY
0 1 2 3 4 5 6 7 8 9
0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0 + - 0
▲ = sudden commencement
Kp (after Bartels)
1970

MOIS 1 1970

	3 Kn								σn		an						An
1	1	5	4	1	6	9	8	6	2443	2321	3	12	8	3	15	30	24	16	14
2	7	9	14	11	11	12	12	11	3523	3544	20	33	71	45	47	53	51	47	46
3	7	7	8	6	6	3	1	7	2322	3226	19	20	23	14	15	7	3	17	15
4	0	1	2	3	3	3	2	5	1232	2312	1	3	5	7	7	7	5	13	6
5	2	1	5	5	4	3	5	8	2223	5334	4	3	11	11	10	6	12	22	10
6	7	2	2	4	5	3	4	2	3324	3122	17	5	5	8	13	7	9	4	9
7	2	2	1	1	2	5	8	4	2222	2333	5	4	3	3	5	11	23	10	8
8	3	3	2	3	4	9	6	4	3322	3112	7	6	5	7	9	28	14	9	11
9	9	7	7	4	3	4	5	5	3232	3624	32	18	18	10	7	10	11	11	15
10	9	3	2	2	4	2	4	1	4133	2332	27	7	5	5	8	5	9	2	9
11	2	2	2	1	4	0	1	5	4232	3112	4	5	5	2	10	1	2	12	5
12	8	2	3	3	2	5	5	8	7241	3666	25	5	7	6	4	13	13	22	12
13	4	2	3	3	5	5	2	4	3221	2324	8	5	6	6	13	11	4	9	8
14	3	6	1	1	2	2	5	6	1622	3324	6	15	2	3	5	5	13	15	8
15	6	5	5	3	4	5	1	2	3221	2224	14	13	11	6	10	13	3	4	9
16	7	4	8	10	9	12	9	9	2422	4553	20	10	21	40	30	55	33	28	30
17	9	10	5	4	1	1	5	3	3423	2321	31	40	12	9	2	3	11	7	14
18	6	4	7	4	1	6	1	3	5453	3232	15	9	17	9	3	15	3	6	10
19	1	1	0	4	7	6	3	8	2212	4436	3	3	1	8	18	14	7	25	10
20	3	3	2	4	9	5	9	5	4222	2353	7	6	4	10	31	13	33	13	15
21	0	3	5	5	8	2	5	6	1132	3213	1	7	11	13	22	4	13	16	11
22	6	3	1	1	2	4	3	3	4132	2641	14	6	3	3	4	10	7	6	7
23	5	5	4	3	5	1	1	6	3233	2124	12	11	9	7	11	3	3	16	9
24	4	2	6	9	4	4	4	7	2234	2445	8	5	15	33	10	10	10	18	14
25	2	3	1	1	1	1	1	2	3132	1234	4	6	2	2	2	2	3	5	3
26	2	2	2	1	1	0	0	2	2222	2111	4	4	4	3	3	1	1	5	3
27	4	4	3	3	4	4	5	4	3321	3443	10	9	6	7	9	8	11	10	9
28	3	0	1	4	3	5	8	7	3112	4223	7	1	2	8	6	11	25	19	10
29	5	3	8	6	5	0	5	5	2231	2123	13	6	22	15	13	1	12	12	12
30	8	5	9	6	5	11	10	7	2353	3322	22	12	29	14	11	45	38	20	24
31	9	7	1	3	5	4	5	1	2224	3232	27	17	3	7	11	9	12	3	11
																			12.2

MOIS 1 1970

	3 Ks								σs		as						As
1	3	5	5	4	7	9	7	8	1113	1143	6	12	13	10	17	32	20	21	16
2	8	10	12	12	11	11	10	10	3115	2434	24	34	53	59	43	45	39	35	42
3	7	7	7	5	4	2	1	5	1131	1233	17	17	20	13	9	5	2	12	12
4	2	3	2	3	4	2	3	6	2115	4116	5	7	5	7	9	5	6	14	7
5	2	3	6	4	4	3	6	8	2013	1003	4	7	16	10	9	6	15	24	11
6	7	3	5	5	5	4	4	4	4112	1434	20	7	12	11	13	9	10	8	11
7	5	3	3	3	3	5	8	4	1101	1223	12	6	7	6	6	12	22	10	10
8	4	5	4	4	6	8	7	6	1131	3145	8	12	9	9	14	26	18	15	14
9	9	7	7	5	3	5	6	7	3111	1354	28	17	17	13	7	12	16	18	16
10	7	4	3	3	3	2	4	2	4121	0133	20	8	7	6	6	5	9	4	8
11	3	2	5	4	5	1	3	7	1223	2153	6	5	11	9	11	2	7	20	9
12	9	4	4	4	3	5	5	6	6121	1625	31	9	10	8	6	13	12	16	13
13	5	5	4	5	5	5	4	7	1132	3244	12	12	10	11	13	11	8	18	12
14	5	5	4	2	3	2	7	8	2144	1255	11	13	8	5	6	5	19	22	11
15	7	8	6	6	4	7	2	3	4223	2111	20	21	15	14	10	17	5	6	14
16	5	6	9	10	6	11	7	10	1213	5616	13	15	32	40	16	43	17	34	26
17	9	8	5	4	2	2	4	4	2424	2244	32	23	11	8	5	4	8	8	12
18	5	5	7	3	2	6	2	2	3441	4121	12	11	19	7	5	16	5	5	10
19	2	3	1	6	4	2	3	6	1122	1415	5	6	2	16	9	5	6	16	8
20	5	4	3	8	9	5	11	6	2113	0335	11	8	7	21	29	12	41	15	18
21	3	6	4	8	8	1	4	6	1134	1235	6	16	10	23	23	3	10	16	13
22	5	3	1	3	4	2	3	4	4021	3114	13	6	3	6	9	5	6	9	7
23	6	5	4	6	5	0	2	5	5232	2021	15	13	10	15	12	0	4	13	10
24	4	3	8	8	5	3	4	7	3114	3135	10	6	23	21	12	6	9	19	13
25	1	2	1	2	2	1	3	2	2123	2312	2	5	3	4	4	3	6	5	4
26	1	2	0	1	3	1	1	4	3212	0334	2	4	1	2	6	3	2	8	4
27	4	5	3	4	5	2	4	7	3111	2334	9	12	6	8	12	4	9	17	10
28	2	0	1	5	2	7	9	7	2122	2454	4	1	2	12	5	18	31	17	11
29	6	6	9	7	6	0	7	5	1021	1041	16	15	29	18	16	0	18	13	16
30	8	6	9	8	5	11	10	10	2502	2233	22	16	29	22	12	42	40	38	28
31	10	6	1	4	4	4	4	0	4323	1430	35	14	3	9	8	8	10	0	11
																			13.1

MOIS 1 1970

	3 Km								Σ Km	am							Am	Am2
1	2	5	4	3	6	9	8	7	14.7	4	12	10	6	16	31	22	18	15	19
2	8	10	13	12	11	11	11	11	29.0	22	34	62	52	45	49	45	41	44	32
3	7	7	8	6	5	3	1	6	14.3	18	18	22	14	12	6	3	14	13	19
4	1	2	2	3	4	3	3	6	8.0	3	5	5	7	8	6	6	14	7	8
5	2	2	5	5	4	3	5	8	11.3	4	5	13	11	9	6	13	23	11	10
6	7	3	4	4	5	4	4	3	11.3	18	6	8	10	13	8	9	6	10	9
7	4	2	2	2	3	5	8	4	10.0	8	5	5	4	6	11	22	10	9	9
8	4	4	3	4	5	9	6	5	13.3	8	9	7	8	11	27	16	12	12	14
9	9	7	7	5	3	5	5	6	15.7	30	17	18	12	7	11	13	14	15	14
10	8	3	3	3	3	2	4	1	9.0	23	7	6	6	7	5	9	3	8	8
11	2	2	4	3	4	1	2	6	8.0	5	5	8	6	10	2	5	16	7	8
12	9	3	4	3	2	5	5	7	12.7	28	7	9	7	5	13	13	19	13	11
13	4	4	4	4	5	5	3	6	11.7	10	9	8	8	13	11	6	14	10	10
14	4	6	2	2	2	2	6	7	10.3	8	14	5	4	5	5	16	18	9	11
15	7	7	5	4	4	6	2	2	12.3	17	17	13	10	10	15	4	5	11	14
16	6	5	8	10	8	11	8	9	21.7	16	13	26	40	23	49	25	31	28	21
17	9	9	5	4	2	2	4	3	12.7	31	31	11	8	4	4	10	7	13	18
18	5	4	7	4	2	6	2	2	10.7	13	10	18	8	4	15	4	5	10	8
19	2	2	1	5	5	4	3	8	10.0	4	4	2	12	13	9	6	21	9	9
20	4	3	3	6	9	5	10	6	15.3	9	7	6	16	30	12	37	14	16	14
21	1	5	4	7	8	2	5	6	12.7	3	12	10	18	23	4	12	16	12	14
22	6	3	1	2	3	3	3	3	8.0	14	6	3	4	7	7	6	7	7	10
23	6	5	4	5	5	0	2	6	11.0	14	12	10	11	12	1	4	14	10	10
24	4	2	7	9	5	4	4	7	14.0	9	5	19	27	11	8	10	19	14	10
25	1	2	1	1	1	1	2	2	3.7	3	5	3	3	3	3	4	5	4	6
26	1	2	1	1	2	1	1	3	4.0	3	4	2	2	5	2	2	6	3	5
27	4	4	3	3	5	3	4	6	10.7	10	10	6	7	11	6	10	14	9	7
28	2	0	1	4	2	6	9	7	10.3	5	1	2	10	5	14	28	18	10	12
29	6	4	8	7	6	0	6	5	14.0	14	10	25	17	14	1	15	12	14	16
30	8	6	9	7	5	11	10	9	21.7	22	14	29	18	12	44	39	29	26	19
31	9	6	1	4	4	4	5	1	11.3	31	15	3	8	9	8	11	2	11	16
																		12.6	

MOIS 2 1970

	3 Km								Σ Km	am							Am	Am2
1	5	7	4	0	3	2	6	10	12.3	13	20	9	1	7	4	16	34	13	15
2	8	9	7	9	10	7	10	12	24.0	23	27	18	32	39	18	36	55	31	24
3	9	6	5	7	5	1	1	6	13.3	29	14	11	18	13	3	2	15	13	20
4	5	4	6	8	10	10	8	6	19.0	11	10	14	25	34	40	23	16	22	16
5	6	8	3	4	8	5	4	8	15.3	15	21	6	8	25	12	10	24	15	16
6	4	2	3	2	1	1	2	3	6.0	9	4	6	5	2	3	4	6	5	7
7	0	0	0	1	1	0	0	0	0.7	1	1	1	2	2	1	1	0	1	2
8	0	1	0	2	1	2	2	2	3.3	1	2	1	4	2	5	5	4	3	3
9	1	1	3	1	1	2	1	1	3.7	3	3	6	3	3	4	3	3	4	4
10	2	2	3	1	4	8	8	4	10.7	4	4	7	2	8	22	23	8	10	7
11	1	2	5	4	2	3	2	3	7.3	2	5	13	8	5	6	5	6	6	8
12	4	0	0	3	2	6	5	2	7.3	8	1	1	6	5	14	12	5	7	8
13	2	7	4	7	6	3	5	3	12.3	5	17	10	17	16	7	11	7	11	13
14	5	9	5	10	8	7	2	2	16.0	12	31	11	35	22	18	5	5	17	15
15	4	5	6	8	5	5	6	4	14.3	9	13	14	23	11	12	16	8	13	12
16	4	2	5	6	6	4	2	5	11.3	8	5	11	15	14	8	5	11	10	10
17	4	1	2	6	5	8	11	8	15.0	10	3	4	14	11	26	46	23	17	15
18	5	7	6	4	8	6	7	8	17.0	13	19	15	10	21	14	18	21	16	17
19	5	2	3	4	4	2	1	2	7.7	11	4	7	9	9	4	2	5	6	9
20	1	1	0	3	5	3	1	1	5.0	3	2	1	7	11	6	2	3	4	4
21	1	0	2	3	0	0	3	2	3.7	3	1	4	6	1	0	6	4	3	3
22	0	0	0	0	0	1	2	1	1.3	0	1	1	0	1	3	4	3	2	2
23	4	1	0	0	1	1	8	4	6.3	8	3	1	1	3	3	23	9	6	7
24	4	7	5	3	7	11	9	3	16.3	9	17	13	6	19	43	31	7	18	14
25	3	5	7	3	0	4	1	1	8.0	7	11	18	7	1	8	2	3	7	13
26	4	5	5	7	11	8	1	1	14.0	10	11	12	17	44	25	2	3	16	11
27	0	1	6	5	4	4	9	9	12.7	1	3	16	12	10	9	28	31	14	17
28	10	6	7	7	7	9	8	8	20.7	34	16	19	19	20	29	25	23	23	27
																		11.2	

MOIS 2 1970

	3 Kn								σn								An
1	5	8	3	0	3	2	6	9	3521	1213	12	22	7	0	6	4	14	33	12
2	9	9	7	9	11	8	10	13	2412	4352	27	28	17	32	44	23	40	64	34
3	9	5	4	5	6	2	0	4	1133	3213	28	13	9	13	14	4	1	10	12
4	3	4	6	8	10	11	9	6	2333	2652	7	8	14	22	39	43	31	15	22
5	6	9	3	3	9	5	5	8	2523	3223	16	27	6	7	27	13	11	26	17
6	3	2	4	1	1	1	2	3	2142	1233	7	4	8	3	2	3	5	6	5
7	1	0	1	1	2	0	0	0	2121	2111	2	1	2	2	4	1	1	1	2
8	0	1	0	1	1	2	2	1	1212	2322	1	2	1	3	2	5	4	3	3
9	1	1	2	2	2	2	1	1	1222	3332	2	3	5	4	5	4	3	2	4
10	1	2	4	1	4	8	8	3	3332	3441	3	4	8	2	8	26	23	7	10
11	1	1	4	3	2	3	2	2	2121	3124	3	2	8	7	4	7	4	5	5
12	3	0	1	1	2	5	4	2	3132	2242	6	1	2	3	5	12	9	4	5
13	1	7	4	6	7	4	5	3	3331	3221	3	17	9	14	18	9	12	6	11
14	5	9	5	9	8	8	3	2	1321	2232	13	27	11	32	21	22	7	5	17
15	4	6	6	9	5	6	7	4	3222	3522	8	15	14	30	11	14	18	8	15
16	3	2	5	6	5	4	2	6	1133	3223	6	5	11	14	13	9	4	14	10
17	4	1	1	5	6	9	11	8	2223	5434	10	2	3	13	14	30	47	23	18
18	5	7	6	5	8	6	7	8	2313	4133	11	19	15	11	26	16	20	25	18
19	5	1	4	4	4	3	1	2	2232	3124	11	3	8	8	10	7	3	5	7
20	1	0	1	2	5	3	1	2	2114	4222	3	1	2	5	11	7	2	4	4
21	1	0	1	3	0	0	2	2	2134	2122	2	1	3	6	1	1	4	4	3
22	0	0	0	0	1	2	2	2	1111	2222	0	1	1	0	2	4	4	4	2
23	2	1	0	0	2	1	8	4	2211	3223	5	3	0	1	4	2	23	9	6
24	3	5	5	2	8	11	10	3	3221	2223	7	13	12	5	22	49	36	7	19
25	3	5	6	3	1	4	1	1	2211	3222	7	11	15	6	3	10	2	2	7
26	5	4	5	7	11	9	1	1	3233	3213	11	10	13	18	49	30	2	3	17
27	0	2	6	5	5	4	9	10	1313	2445	1	4	16	12	11	9	28	38	15
28	9	7	7	7	8	9	8	8	5223	2353	32	19	20	20	26	29	24	23	24
																			11.6

MOIS 2 1970

	3 Ks								σs								As
1	6	7	4	1	3	1	7	10	0421	2244	15	19	10	2	7	3	18	35	14
2	7	8	7	9	10	6	9	11	4111	1352	20	26	18	32	34	14	31	47	28
3	9	6	5	8	5	1	1	8	0133	1233	29	16	12	24	13	3	2	21	15
4	6	5	6	9	9	10	6	7	2304	0104	14	12	15	27	29	37	15	17	21
5	6	6	3	4	8	5	4	8	0031	3134	15	15	6	9	24	12	9	23	14
6	5	1	2	3	1	1	2	3	2315	2331	11	3	5	7	3	3	4	6	5
7	0	0	0	1	0	0	0	0	0103	1000	0	1	0	2	1	0	0	0	1
8	0	1	0	2	1	2	3	2	1302	1112	1	3	0	5	2	5	6	5	3
9	2	1	3	1	0	1	1	1	2322	1322	4	3	7	3	1	3	3	3	3
10	2	2	3	1	4	7	8	4	3113	1144	4	5	7	2	8	17	23	9	9
11	1	3	7	4	2	2	3	3	3165	5255	2	7	19	10	5	4	6	7	8
12	4	1	0	4	2	6	6	3	3114	2565	9	2	1	9	5	16	14	7	8
13	3	7	4	7	6	3	4	4	0133	0134	6	17	10	20	15	6	9	9	12
14	5	10	5	10	8	6	2	3	2423	4031	11	35	11	38	23	15	4	6	18
15	4	5	5	7	5	4	6	4	3211	3334	10	12	13	17	12	10	14	9	12
16	4	3	5	6	6	3	3	4	3122	2053	10	6	11	16	15	6	6	9	10
17	5	2	2	6	4	8	11	8	2121	4244	11	5	4	16	8	21	45	22	17
18	6	7	6	4	6	5	6	7	2423	4324	14	18	15	9	16	12	16	17	15
19	4	3	3	4	4	1	0	2	3113	3202	10	6	7	9	9	2	0	4	6
20	1	1	0	4	5	2	1	1	3313	1233	3	2	1	9	12	4	2	3	5
21	1	1	2	3	0	0	3	2	3232	0052	3	2	5	7	0	0	7	4	4
22	0	0	0	0	0	1	2	1	0110	0323	0	1	1	0	0	3	4	2	1
23	5	2	0	0	1	2	8	4	2211	1223	11	4	1	1	2	4	22	9	7
24	5	8	5	3	6	10	8	3	1311	2110	12	21	13	6	16	37	26	6	17
25	3	5	8	4	0	3	1	2	1324	0133	7	12	21	9	0	6	3	5	8
26	4	5	4	6	10	7	0	1	3136	2313	10	12	10	16	40	20	1	3	14
27	0	1	7	5	4	4	9	8	1312	3334	1	2	17	11	9	9	28	24	13
28	10	5	7	7	6	9	8	8	5111	2242	35	13	18	17	15	29	26	22	22
																			11.1

MOIS 3 1970

	3 Kn								σn								An
1	8	9	11	12	14	12	5	6	2234	5122	23	28	42	59	72	57	13	16	39
2	9	10	10	11	6	8	6	9	3333	1342	33	40	35	43	15	23	14	27	29
3	6	4	9	8	8	12	10	10	1213	3534	15	10	31	22	24	51	37	34	28
4	8	7	6	11	10	12	6	9	1224	3745	25	19	15	47	39	53	15	32	31
5	7	3	9	6	5	10	12	9	3111	3472	17	7	33	14	11	34	53	29	25
6	11	7	9	13	6	9	12	14	5244	3556	45	20	27	61	15	33	53	77	41
7	13	9	8	11	12	14	14	15	5223	1321	66	31	25	49	52	71	83	93	59
8	11	11	14	14	20	20	25	23	4356	5137	43	44	77	78	233	239	473	368	194
9	15	15	6	8	12	16	9	10	5322	3253	90	99	15	22	60	110	27	40	58
10	8	2	4	5	2	4	7	3	3322	3252	22	4	10	12	5	10	18	6	11
11	0	0	0	0	1	0	3	4	1111	2124	0	0	1	1	3	0	7	10	3
12	3	5	6	8	3	3	0	1	2233	2312	6	12	15	22	7	6	1	3	9
13	1	3	7	9	7	6	6	4	1141	3232	2	6	18	31	17	15	16	8	14
14	4	1	4	2	1	2	0	1	3243	2311	9	2	8	4	2	5	1	2	4
15	5	4	5	6	4	5	4	2	5431	3322	13	10	12	14	10	13	8	5	11
16	0	0	1	4	4	1	2	2	1123	3322	1	0	2	8	10	3	4	4	4
17	0	2	3	3	6	6	5	5	2133	3233	1	4	6	6	16	15	11	13	9
18	5	0	2	6	5	6	3	7	3122	4324	11	1	4	16	12	14	7	20	11
19	3	3	3	2	4	2	4	6	2133	2234	6	7	7	4	10	4	9	14	8
20	2	0	0	2	5	3	6	5	4113	3345	4	0	1	4	11	6	15	12	7
21	3	1	1	0	0	2	1	2	3211	1422	6	3	2	1	1	4	2	5	3
22	1	0	4	2	2	2	1	0	1124	3321	2	1	9	5	4	4	2	1	4
23	2	4	5	6	4	4	3	3	2344	3211	5	9	13	15	8	8	7	6	9
24	1	0	1	1	1	2	4	4	3222	2333	3	1	2	2	2	4	9	9	4
25	2	0	2	1	3	3	2	1	3222	3222	5	1	5	3	7	7	5	2	4
26	5	4	5	2	3	4	4	2	3223	2343	11	10	11	5	7	9	9	5	8
27	1	1	10	12	9	8	7	11	3321	1333	2	2	35	52	30	23	19	46	26
28	8	10	6	14	8	10	8	9	5745	2455	25	36	15	75	21	34	22	32	33
29	9	9	8	4	9	9	9	9	1553	1132	29	29	26	10	31	29	31	33	27
30	10	5	10	8	9	8	8	8	3332	1252	34	13	38	21	30	25	21	24	26
31	5	12	15	15	15	15	10	12	2232	1222	11	60	93	90	89	103	39	51	67
																			26.0

MOIS 3 1970

	3 Ks								σs								As
1	9	10	11	12	14	10	5	6	5421	2320	33	39	43	57	72	36	12	15	38
2	10	9	10	9	5	6	4	8	4040	1214	38	29	35	29	13	16	9	22	24
3	7	5	8	7	9	10	9	10	4114	3315	20	12	26	17	28	39	29	37	26
4	6	4	6	9	8	9	6	10	1322	4857	16	10	16	31	26	33	16	39	23
5	5	4	10	4	4	10	11	10	2321	3545	12	9	40	8	10	34	45	40	25
6	13	8	8	12	7	8	10	14	5315	1456	65	25	23	51	17	22	40	79	40
7	14	9	8	10	12	12	14	14	7222	1111	77	32	22	37	53	53	86	86	56
8	9	11	14	12	20	20	24	24	0311	2527	29	45	86	57	213	202	427	387	181
9	15	17	6	7	10	13	6	11	7533	5125	101	123	14	20	37	62	16	46	52
10	10	3	3	5	2	3	6	2	5021	2131	35	7	7	13	4	6	14	5	11
11	0	0	0	0	2	0	2	4	0010	2043	0	0	1	0	4	0	5	9	2
12	3	6	5	8	3	3	0	2	1224	1111	7	15	11	24	7	6	1	5	10
13	3	3	3	7	5	4	5	3	1211	3622	6	7	7	17	13	9	12	7	10
14	2	2	3	2	0	1	0	1	1223	0303	5	4	7	4	0	2	0	3	3
15	5	4	4	5	4	3	4	2	3431	1231	12	10	10	12	8	7	10	5	9
16	0	2	2	4	4	0	1	3	0124	1025	0	5	5	8	8	0	3	7	5
17	0	3	3	3	5	4	4	6	1210	1240	1	6	6	6	13	10	8	15	8
18	5	0	2	6	5	5	4	5	1032	3144	13	0	4	16	12	13	9	13	10
19	3	3	3	2	4	2	5	4	1023	1233	7	6	7	4	8	4	12	10	7
20	2	0	0	2	4	1	4	4	2002	1213	5	0	0	5	9	3	8	9	5
21	2	3	2	0	0	1	0	0	2520	1200	4	6	4	0	1	2	0	0	2
22	1	0	4	3	2	0	0	0	3112	2100	2	1	8	7	4	1	0	0	3
23	3	4	4	6	4	2	3	3	1120	1211	7	9	10	15	9	4	6	6	8
24	0	0	0	1	0	1	3	4	1011	0314	1	0	1	2	0	2	6	9	3
25	1	0	2	0	1	1	1	0	3021	3220	3	0	5	1	3	3	3	0	2
26	3	4	4	2	1	3	3	2	0312	3112	6	10	8	4	2	6	6	4	6
27	0	0	11	11	9	4	5	10	0014	2413	0	0	49	49	29	10	13	40	24
28	9	9	7	13	7	8	8	8	5542	3622	31	31	17	66	20	24	21	25	29
29	8	8	7	4	8	8	7	12	1342	4237	26	24	18	10	26	21	20	52	25
30	11	5	10	8	10	8	7	7	7151	1344	44	13	34	23	34	24	17	18	26
31	5	12	16	15	16	16	8	11	2214	6322	11	56	106	101	112	117	25	43	71
																			24.0

MOIS 3 1970

	3 Km								Σ Km	am							Am	Am2
1	9	10	11	12	14	11	5	6	26.0	28	34	42	58	72	47	13	15	39	34
2	10	10	10	10	6	7	5	8	22.0	35	35	35	36	14	19	12	24	28	27
3	7	5	9	7	8	11	9	10	22.0	17	11	29	19	26	45	33	35	27	23
4	8	6	6	10	9	11	6	10	22.0	21	14	16	39	32	43	16	35	27	27
5	6	4	10	5	4	10	11	10	20.0	14	8	36	11	10	34	49	35	25	30
6	12	8	8	12	6	9	11	14	26.7	55	22	25	56	16	27	46	78	41	39
7	14	9	8	11	12	13	14	15	32.0	72	32	23	43	52	62	84	89	57	53
8	10	11	14	13	20	20	25	23	45.3	36	45	81	68	223	221	450	377	188	127
9	15	16	6	8	11	14	8	11	29.7	96	111	14	21	48	86	22	43	55	110
10	9	2	4	5	2	4	6	2	11.3	29	5	8	12	4	8	16	5	11	18
11	0	0	0	0	1	0	3	4	2.7	0	0	1	0	3	0	6	10	3	7
12	3	6	5	8	3	3	0	2	10.0	6	14	13	23	7	6	1	4	9	9
13	2	3	5	8	6	5	6	4	13.0	4	6	13	24	15	12	14	8	12	9
14	3	1	4	2	0	2	0	1	4.3	7	3	8	4	1	4	0	2	4	8
15	5	4	5	5	4	4	4	2	11.0	12	10	11	13	9	10	9	5	10	6
16	0	1	1	4	4	1	1	2	4.7	0	3	3	8	9	2	3	5	4	5
17	0	2	3	3	6	5	4	6	9.7	1	5	6	6	15	13	10	14	9	8
18	5	0	2	6	5	5	4	6	11.0	12	0	4	16	12	13	8	16	10	10
19	3	3	3	2	4	2	5	5	9.0	7	6	7	4	9	4	11	12	8	7
20	2	0	0	2	4	2	5	4	6.3	5	0	0	4	10	5	12	10	6	6
21	2	2	1	0	0	1	0	1	2.3	5	5	3	0	1	3	1	2	3	5
22	1	0	4	3	2	1	0	0	3.7	2	1	9	6	4	2	1	1	3	5
23	3	4	5	6	4	3	3	3	10.3	6	9	12	15	8	6	7	6	9	5
24	1	0	0	1	0	1	4	4	3.7	2	1	1	2	1	3	8	9	3	4
25	2	0	2	1	2	2	2	0	3.7	4	1	5	2	5	5	4	1	3	5
26	4	4	4	2	2	3	3	2	8.0	9	10	9	5	5	7	7	5	7	10
27	0	0	11	11	9	6	6	11	18.0	1	1	42	50	29	16	16	43	25	23
28	9	9	6	14	8	9	8	9	24.0	28	33	16	71	21	29	21	29	31	27
29	9	9	8	4	9	8	8	11	22.0	27	27	22	10	28	25	26	43	26	26
30	10	5	10	8	9	8	7	8	21.7	39	13	36	22	32	25	19	21	26	37
31	5	12	15	15	15	16	9	11	32.7	11	58	99	95	101	110	32	47	69	43
																		25.0	

MOIS 4 1970

	3 Km								Σ Km	am							Am	Am2
1	8	4	2	0	0	0	0	8	7.3	21	8	4	1	1	0	0	22	7	24
2	5	5	4	1	3	4	4	4	10.0	12	11	10	3	7	8	8	9	9	12
3	6	8	10	8	6	6	3	3	16.7	14	22	37	24	15	16	7	6	18	15
4	7	4	7	8	8	4	2	2	14.0	19	9	20	26	24	8	4	4	14	13
5	1	1	5	9	8	6	6	5	13.7	3	2	12	31	23	14	15	12	14	19
6	7	9	11	12	10	6	4	9	22.7	18	29	48	56	35	14	10	27	30	24
7	7	5	10	8	4	1	3	2	13.3	17	13	34	21	9	3	6	5	14	18
8	9	8	6	8	6	3	3	5	16.0	30	24	15	25	16	7	6	13	17	16
9	3	7	10	10	12	5	3	7	19.0	7	20	40	37	51	12	7	18	24	15
10	2	1	0	1	0	0	3	4	3.7	5	2	0	2	1	1	7	10	4	12
11	6	4	7	9	6	3	2	0	12.3	15	10	19	29	14	7	4	1	12	9
12	2	4	5	4	4	5	3	3	10.0	5	9	11	8	10	12	6	6	8	7
13	2	2	2	3	5	2	1	0	5.7	4	4	5	7	12	5	3	1	5	6
14	2	1	0	2	3	0	0	2	3.3	5	2	1	5	6	0	1	4	3	4
15	2	3	3	3	2	5	8	4	10.0	5	6	7	6	4	12	25	10	9	11
16	9	10	7	2	1	4	10	10	17.7	28	38	18	4	3	9	38	38	22	25
17	14	10	8	10	8	6	10	11	25.7	75	36	21	40	23	15	39	41	36	28
18	4	2	5	11	14	9	6	10	20.3	9	5	13	43	78	31	16	39	29	34
19	10	9	13	14	10	7	3	4	23.3	34	32	61	72	35	20	7	8	34	32
20	2	9	4	9	11	11	9	9	21.3	5	29	10	33	47	42	28	31	28	33
21	8	11	11	16	14	16	20	17	37.7	26	46	48	117	83	118	219	143	100	79
22	14	17	13	9	6	3	2	2	22.0	85	127	68	33	15	6	4	4	43	61
23	7	5	7	9	9	7	10	10	21.3	17	13	19	27	29	17	34	35	24	19
24	9	8	8	5	8	9	8	8	21.0	27	26	25	13	24	28	21	21	23	26
25	9	9	7	10	8	6	8	7	21.3	32	29	20	34	21	15	26	17	24	22
26	9	7	2	2	5	4	9	11	16.3	28	19	5	5	13	9	28	43	19	20
27	10	8	6	4	5	2	4	2	13.7	39	24	16	9	12	5	8	5	15	16
28	8	4	5	1	4	0	0	2	8.0	21	9	12	3	10	1	1	4	8	8
29	3	2	5	4	4	3	4	6	10.3	7	5	13	9	9	6	10	16	9	15
30	8	9	11	12	7	7	5	8	22.3	26	33	41	52	20	19	12	21	28	20
																		21.0	

MOIS 4 1970

	3 Kn								σn								an								Ån
1	7	4	3	1	1	0	0	9	3432	2013	17	10	6	2	2	0	0	27	8
2	5	5	4	2	4	4	4	4	2332	4443	13	12	9	4	9	8	10	10	9
3	6	8	9	8	6	8	4	3	2332	2333	14	22	31	23	15	21	8	7	18
4	7	5	7	8	8	5	3	3	2242	1433	18	11	19	22	26	11	7	6	15
5	2	0	5	9	8	7	7	5	2111	1322	4	1	13	30	25	17	17	13	15
6	7	9	12	12	10	6	5	9	4441	2432	20	30	51	56	36	16	11	29	31
7	6	5	11	8	4	2	3	3	4443	2221	15	13	41	26	10	5	6	6	15
8	9	8	6	9	7	4	4	6	3224	2332	33	23	16	32	19	9	9	15	20
9	3	7	11	11	11	6	4	8	3454	1122	7	20	50	44	49	15	8	23	27
10	3	1	0	1	1	1	4	6	3313	1244	6	2	1	3	2	2	10	15	5
11	7	4	7	10	6	4	2	0	5366	2131	20	10	19	37	16	8	4	1	14
12	2	4	5	4	5	5	4	3	3442	3432	5	8	12	8	11	13	8	7	9
13	1	2	2	4	6	3	1	1	2221	2232	3	4	5	8	14	7	3	2	6
14	3	1	0	4	3	0	1	3	3213	4122	6	2	1	8	7	0	2	6	4
15	2	3	4	3	2	5	9	5	3432	2423	5	7	8	7	5	12	29	13	11
16	9	8	8	2	3	4	10	11	1133	3425	29	25	22	5	6	10	38	41	22
17	12	9	8	11	8	7	10	11	4133	3244	57	31	25	46	25	18	39	42	35
18	4	3	6	11	14	10	8	10	3334	2142	9	6	14	45	76	37	21	36	31
19	9	9	12	14	10	8	4	4	1545	5322	31	31	56	72	39	26	8	10	34
20	3	9	4	10	11	11	10	11	2422	1323	6	28	10	39	49	43	35	41	31
21	9	10	12	15	14	16	19	17	6455	4452	28	34	51	101	86	115	175	124	89
22	15	17	13	10	8	4	2	4	5835	2323	88	138	65	35	21	8	5	8	46
23	7	5	7	8	9	7	10	9	3233	1164	17	11	20	22	29	17	39	28	23
24	8	8	8	6	7	9	9	9	2252	2315	21	24	23	14	20	27	28	27	23
25	9	8	7	10	8	7	8	7	5434	2233	31	24	20	34	24	18	26	19	25
26	8	7	3	3	6	5	8	10	4433	3235	21	18	7	7	14	12	25	35	17
27	9	8	7	4	5	4	4	3	4763	5232	33	21	17	8	12	8	10	6	14
28	6	4	4	2	4	1	1	2	5433	4322	15	8	10	4	9	2	3	5	7
29	3	2	5	4	5	4	5	7	1332	2544	6	5	11	9	11	8	13	19	10
30	8	9	11	11	8	8	7	9	3333	2323	23	33	43	45	23	24	17	27	29
																			21.4

MOIS 4 1970

	3 Ks								σs								as								Às
1	8	3	0	0	0	0	0	7	2110	0001	25	6	1	0	0	0	0	17	6
2	5	4	5	1	3	3	3	4	2322	5114	11	10	11	3	6	7	6	9	8
3	6	8	11	8	6	5	3	2	0241	1411	15	22	43	26	16	12	6	5	18
4	7	3	8	9	8	3	0	1	3222	2112	20	6	21	29	21	6	1	2	13
5	0	1	5	9	8	5	5	5	1331	3122	1	2	12	32	21	12	12	11	13
6	6	9	11	12	10	5	4	8	1011	1312	16	29	45	57	34	13	8	25	28
7	7	5	8	7	4	0	3	2	4111	4102	18	13	26	17	8	1	6	4	12
8	8	8	6	7	5	2	2	5	1321	1124	26	25	15	18	13	5	4	11	15
9	3	7	9	9	12	4	3	5	2300	1512	6	20	29	29	53	10	6	12	21
10	2	1	0	0	0	0	2	3	1301	0021	5	2	0	1	0	0	4	6	2
11	5	4	7	8	5	3	1	0	2344	1121	11	9	18	21	13	6	3	1	10
12	2	4	5	4	4	4	2	2	3324	3211	5	10	11	8	9	10	5	5	8
13	2	2	2	3	4	1	1	0	2211	3330	4	4	5	6	9	3	2	0	4
14	2	1	0	1	3	0	0	1	2213	1102	4	3	1	2	6	1	0	2	2
15	3	3	3	2	1	5	8	3	1211	2722	6	6	6	5	3	12	21	7	8
16	9	12	6	1	0	3	10	10	3622	0245	28	51	14	3	0	7	38	35	22
17	15	11	7	10	8	5	10	10	7511	2153	94	41	17	34	21	13	38	40	37
18	4	2	5	11	14	8	5	11	3125	3325	9	5	11	42	80	25	11	41	28
19	10	9	13	14	9	6	3	3	3545	2212	38	33	67	73	31	15	6	7	34
20	2	9	5	9	11	11	8	8	3524	1422	5	30	11	27	45	41	21	21	25
21	8	12	11	17	14	17	21	18	8511	4656	25	59	45	134	79	121	262	162	111
22	14	16	14	9	4	1	1	0	5431	1221	82	115	71	32	9	3	2	1	39
23	6	6	7	9	9	7	9	11	5554	2558	16	15	17	33	29	17	28	42	25
24	10	9	9	5	9	9	6	6	4673	3425	34	28	27	13	27	29	15	16	24
25	9	10	8	10	7	5	8	6	5433	1312	33	35	21	34	18	12	26	15	24
26	10	7	1	1	5	3	9	12	4334	4029	35	20	3	3	13	6	31	51	20
27	11	9	6	5	5	1	3	2	7763	4202	44	27	14	11	12	2	6	4	15
28	9	4	6	0	4	0	0	2	8361	2002	27	9	14	1	10	0	0	4	8
29	4	2	6	4	3	2	3	5	4154	5321	8	5	15	8	6	4	7	13	8
30	9	9	10	12	7	6	3	6	6544	1420	28	33	39	59	17	14	7	15	27
																			20.5

MOIS 5 1970

	3 Kn								σn		an						An
1	7	7	8	1	8	6	8	11	3331	3322	19	18	24	2	25	15	24	43	21
2	9	7	9	4	4	7	7	6	1222	3233	27	20	28	10	10	18	20	15	19
3	5	2	4	5	8	7	9	10	1222	2242	13	4	8	12	23	20	27	36	18
4	5	3	7	6	5	5	5	5	2441	2224	13	6	17	15	13	12	13	13	13
5	5	4	7	9	9	8	5	9	4222	2333	11	8	17	33	31	24	11	29	21
6	7	0	1	2	3	8	5	5	5122	3324	19	1	2	5	6	21	13	13	10
7	7	6	4	6	6	7	4	4	4133	4434	19	16	8	15	14	17	10	8	13
8	3	0	3	0	0	6	4	4	3121	1433	6	1	7	1	1	14	10	10	6
9	4	4	2	0	1	4	2	2	5421	3323	9	8	4	1	3	8	4	5	5
10	1	2	1	3	0	0	0	1	3324	1112	3	5	3	6	1	1	1	2	3
11	1	1	0	1	0	0	1	7	2212	1124	2	2	1	2	0	0	3	18	4
12	9	8	8	9	8	9	9	10	2334	3242	29	23	23	31	24	30	29	39	29
13	8	6	3	4	3	3	4	6	3222	2432	22	16	7	8	7	6	8	15	11
14	7	8	9	6	7	7	10	9	3531	2444	20	21	27	15	18	20	36	29	23
15	10	6	6	9	4	4	4	5	4221	4533	38	14	15	28	10	10	9	11	17
16	4	4	6	4	5	6	5	6	4542	3433	8	9	16	8	12	15	11	15	12
17	7	11	8	7	6	6	3	5	4142	2411	17	50	23	18	15	15	7	13	20
18	5	8	6	5	4	3	4	1	3322	2322	12	25	14	12	10	7	8	2	11
19	4	6	8	7	4	4	6	6	3433	2243	8	14	24	20	10	10	15	15	15
20	6	9	8	9	9	8	8	8	1253	1233	16	30	21	29	30	21	26	23	25
21	7	5	5	5	5	6	7	5	3322	3444	20	12	12	13	13	14	19	13	15
22	7	5	5	5	5	7	6	4	2423	3653	18	13	12	11	13	18	14	10	14
23	3	4	6	5	4	4	4	8	5332	4432	7	8	16	12	10	10	9	26	12
24	5	4	5	6	8	6	4	5	3221	3433	13	10	12	16	21	14	10	12	14
25	8	8	8	4	5	5	1	2	3332	3122	22	24	24	9	12	13	3	5	14
26	0	1	1	3	1	1	1	5	1234	3223	1	2	3	6	3	2	3	12	4
27	4	6	8	8	9	8	10	12	4325	2332	9	15	26	22	28	21	35	54	26
28	13	8	9	15	15	10	8	8	4532	1311	69	26	30	100	101	38	25	26	52
29	10	10	13	7	7	5	8	6	5451	4432	38	35	70	17	17	13	23	14	28
30	6	7	8	9	5	9	6	3	4331	2333	15	20	22	28	13	32	14	7	19
31	3	4	6	6	7	5	4	4	2211	2642	6	8	15	16	19	12	9	8	12
																			16,3

MOIS 5 1970

	3 Ks								σs		as						As
1	5	6	9	0	8	3	7	8	1041	2012	12	15	32	1	21	6	17	22	16
2	7	8	8	3	3	3	5	5	4321	1244	18	21	22	6	6	7	12	11	13
3	4	2	2	4	6	4	6	9	3111	1105	10	5	5	8	16	9	15	31	12
4	5	2	5	5	3	4	3	3	1113	0111	13	5	13	12	6	9	6	6	9
5	3	3	3	10	7	6	4	8	1121	1013	7	6	7	37	17	15	8	24	15
6	4	0	0	1	1	3	4	3	4011	2210	9	0	1	2	2	7	8	6	4
7	5	4	2	3	3	6	3	2	2312	4622	11	10	5	7	6	14	7	4	8
8	1	0	0	0	0	1	3	4	3010	0214	3	0	1	0	0	3	6	9	3
9	3	2	1	0	1	1	0	0	5630	3210	7	5	2	0	2	2	1	0	2
10	0	1	0	0	0	0	0	0	0300	0000	0	2	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	6	1100	0006	1	1	0	0	0	0	0	15	2
12	8	5	4	8	6	5	7	9	2221	2431	21	11	10	23	15	13	20	29	18
13	9	7	2	3	1	1	1	4	6320	3333	31	20	4	6	2	2	3	10	10
14	8	7	8	5	4	8	9	11	3411	1628	21	18	26	12	8	21	29	49	23
15	12	4	5	10	1	1	2	4	9113	3344	52	8	13	40	2	2	4	9	16
16	2	4	6	3	2	4	1	5	1450	3523	5	8	16	6	4	8	3	12	8
17	7	13	9	5	5	1	0	5	5463	2204	17	62	28	12	11	2	0	11	18
18	5	6	4	4	1	1	0	0	1011	2200	12	15	9	8	2	2	0	0	6
19	1	4	7	7	1	2	4	5	2435	2145	2	9	20	20	2	5	8	12	10
20	5	9	8	8	7	5	8	7	1421	1345	13	32	22	23	17	13	23	18	20
21	7	4	3	7	5	3	5	7	4415	4245	18	8	6	17	13	7	12	18	12
22	7	6	3	5	4	6	6	3	4613	3201	18	14	7	12	9	14	15	6	12
23	3	3	6	4	2	2	4	8	5153	2252	7	6	16	10	4	4	8	25	10
24	5	3	4	5	4	1	0	6	2433	1316	11	6	9	12	8	3	1	16	8
25	7	7	8	4	5	4	0	4	4331	3114	18	20	21	8	12	8	1	9	12
26	0	0	0	0	0	1	0	3	0000	0212	0	0	0	0	0	2	1	7	1
27	2	5	7	6	8	5	10	11	2140	3413	4	12	19	15	24	11	34	44	20
28	13	6	7	15	16	8	6	6	5532	1410	65	16	19	92	112	24	16	15	45
29	10	9	10	5	3	2	4	3	4131	2131	35	29	38	13	7	5	9	6	18
30	4	7	6	11	4	4	3	1	3412	3212	10	18	16	43	9	10	7	2	14
31	0	3	4	5	5	2	0	1	1014	1112	1	6	8	12	13	5	1	2	6
																			12,0

MOIS 5 1970

	3 Km								Σ Km	am							Am	Am2
1	6	7	9	1	8	5	8	9	17.7	15	17	28	2	23	11	21	33	19	19
2	8	7	8	4	4	5	6	5	15.7	23	20	25	8	8	13	16	13	16	15
3	5	2	3	4	7	6	8	10	15.0	11	4	6	10	19	14	21	34	15	14
4	5	3	6	5	4	4	4	4	11.7	13	6	15	13	10	10	9	9	11	15
5	4	3	5	10	8	7	4	8	16.3	9	7	12	35	24	20	9	26	18	12
6	6	0	0	1	2	6	5	4	8.0	14	1	1	3	4	14	11	10	7	11
7	6	5	3	5	4	6	4	3	12.0	15	13	6	11	10	16	8	6	11	8
8	2	0	2	0	0	4	4	4	5.3	4	1	4	1	1	9	8	9	5	6
9	4	3	1	0	1	2	1	1	4.3	8	7	3	0	3	5	2	2	4	4
10	1	2	0	1	0	0	0	0	1.3	2	4	1	3	1	1	0	1	2	2
11	0	0	0	0	0	0	0	7	2.3	1	1	0	1	0	0	1	17	3	7
12	8	7	7	9	7	8	8	10	21.3	25	17	17	27	19	22	24	34	23	16
13	8	7	3	3	2	2	2	5	10.7	26	18	6	7	5	4	5	13	11	16
14	7	7	9	5	5	7	9	10	19.7	20	19	27	13	13	20	33	39	23	20
15	11	5	6	10	3	3	3	4	15.0	45	11	14	34	6	6	7	10	17	17
16	3	4	6	3	4	5	3	5	11.0	6	8	16	7	8	12	7	13	10	14
17	7	12	8	6	5	4	1	5	16.0	17	56	25	15	13	9	3	12	19	15
18	5	7	5	4	3	2	2	0	9.3	12	20	12	10	6	5	4	1	9	10
19	2	5	8	7	3	4	5	6	13.3	5	11	22	20	6	8	11	14	12	13
20	6	9	8	8	8	7	8	7	20.3	15	31	22	26	23	17	24	20	22	17
21	7	4	4	6	5	5	6	6	14.3	19	10	9	15	13	11	15	16	14	15
22	7	6	4	5	5	6	6	4	14.3	18	14	10	11	11	16	14	8	13	12
23	3	3	6	5	3	3	4	8	11.7	7	7	16	11	7	7	9	25	11	11
24	5	4	5	6	6	4	2	6	12.7	12	8	11	14	14	9	5	14	11	13
25	7	8	8	4	5	4	1	3	13.3	20	22	23	9	12	10	2	7	13	10
26	0	0	1	1	1	1	1	4	3.0	0	1	2	3	2	2	2	9	3	7
27	3	5	8	7	8	6	10	11	19.3	7	13	23	18	26	16	35	49	23	26
28	13	8	8	15	16	9	7	8	28.0	67	21	24	96	106	31	20	21	48	41
29	10	9	12	6	5	4	6	4	18.7	37	32	54	15	12	9	16	10	23	28
30	5	7	7	10	5	8	4	2	16.0	12	19	19	36	11	21	10	4	17	13
31	1	3	5	6	6	4	2	2	9.7	3	7	12	14	16	8	5	5	9	17
																		14.3	

MOIS 6 1970

	3 Km								Σ Km	am							Am	Am2
1	5	14	8	12	11	8	8	7	24.3	13	71	26	52	43	25	21	18	34	24
2	10	8	5	3	4	5	6	7	16.0	38	24	11	6	9	11	16	18	17	20
3	5	8	8	8	7	6	7	6	18.3	12	22	21	22	19	15	17	14	18	16
4	8	6	5	6	6	5	2	6	14.7	21	15	13	15	16	13	5	14	14	15
5	5	7	5	7	2	2	1	2	10.3	13	18	11	17	4	5	3	4	9	10
6	2	3	4	5	0	0	0	0	4.7	5	6	9	12	1	1	1	1	5	4
7	0	2	2	2	2	6	9	11	11.3	1	5	4	5	5	16	30	50	15	16
8	9	11	11	6	6	3	5	5	18.7	31	43	42	15	14	7	11	13	22	19
9	5	2	3	2	3	3	6	5	9.7	11	5	6	4	6	6	16	12	8	11
10	5	6	7	5	3	5	5	3	13.0	13	15	18	12	7	12	12	7	12	10
11	6	3	2	0	1	5	5	2	8.0	14	7	4	1	3	11	11	5	7	8
12	4	4	4	3	2	3	4	3	9.0	10	9	8	6	4	6	9	6	7	9
13	1	3	8	9	9	7	5	4	15.3	3	7	21	27	29	19	11	10	16	13
14	7	8	2	1	2	3	8	4	11.7	17	26	4	2	5	6	25	10	12	17
15	9	7	9	9	8	6	6	8	20.7	29	20	32	27	26	14	14	22	23	19
16	7	9	7	3	6	4	3	7	15.3	17	33	18	7	14	8	7	20	16	16
17	4	1	8	8	8	9	9	9	18.7	8	3	26	21	26	29	30	29	22	23
18	9	7	12	12	14	11	7	11	27.7	31	18	52	51	79	42	20	45	42	32
19	7	7	6	5	1	2	6	9	14.3	20	19	15	13	3	4	14	27	14	26
20	8	9	10	8	6	10	10	9	23.3	24	28	39	22	15	38	39	30	29	27
21	12	10	9	8	6	7	4	6	20.7	58	38	27	24	16	17	8	15	25	22
22	4	2	1	3	3	1	4	4	7.3	8	4	2	7	7	3	9	9	6	8
23	4	4	2	1	1	4	3	1	6.7	8	8	5	2	2	8	7	2	5	5
24	3	1	1	0	3	4	7	5	8.0	7	3	2	1	7	10	19	13	8	8
25	7	4	4	4	4	1	1	6	10.3	19	10	8	9	9	2	3	15	9	13
26	4	7	9	8	7	8	9	6	19.3	10	19	27	21	18	25	32	14	21	26
27	5	9	15	14	13	9	7	5	25.7	11	28	97	82	69	28	20	11	43	32
28	7	8	4	8	4	3	2	4	13.3	20	21	8	23	8	6	5	8	12	16
29	1	4	4	3	2	5	4	5	9.3	2	8	10	7	5	11	10	12	8	8
30	2	3	7	5	2	2	2	2	8.3	5	6	20	12	5	4	4	4	8	11
																		16.2	

MOIS 6 1970

	3 Kn								σn		an						An
1	7	14	9	13	12	9	9	8	5222	4333	17	85	30	62	51	33	29	22	41
2	11	8	6	4	5	6	7	6	2142	1453	42	25	14	10	13	15	17	16	19
3	5	8	8	8	8	7	6	7	4533	2435	13	23	21	22	24	19	16	19	20
4	8	6	6	6	7	6	4	6	3222	4434	23	14	14	14	19	16	10	15	16
5	6	7	5	8	2	4	2	4	5442	3424	16	20	13	21	5	9	5	8	12
6	4	3	4	6	1	1	0	1	3331	3222	8	6	10	14	2	2	1	2	6
7	1	3	3	4	4	9	9	12	3431	3331	2	6	7	8	9	27	33	51	18
8	10	11	11	7	6	4	5	6	3252	3331	37	49	44	17	16	10	13	15	25
9	6	4	4	1	5	5	6	6	2223	3435	14	8	8	3	11	11	16	15	11
10	5	5	7	7	4	6	6	4	2533	3544	13	13	19	17	10	15	14	9	14
11	5	3	2	0	2	6	5	4	6321	2444	13	7	5	1	5	14	13	9	8
12	5	4	4	4	3	4	5	4	5443	3334	12	9	10	8	6	10	12	8	9
13	2	5	8	9	9	8	5	5	2542	3332	5	11	21	32	32	24	12	13	19
14	7	8	2	2	4	5	8	7	3342	4443	19	24	5	4	10	12	26	18	15
15	9	8	9	9	9	7	7	8	3244	2223	32	23	33	29	32	19	20	25	27
16	7	10	7	5	7	5	5	7	1333	3435	18	35	19	11	19	13	11	19	18
17	4	2	9	9	10	9	9	10	4434	2413	10	5	32	31	38	32	29	34	26
18	9	8	13	12	14	11	8	11	2232	4333	29	22	64	53	75	43	24	46	45
19	8	7	7	6	2	4	6	8	3323	2454	23	18	19	15	5	8	16	24	16
20	8	10	10	8	5	10	10	9	3431	3542	21	37	38	24	13	39	37	27	30
21	13	10	7	7	7	8	5	7	5422	3345	62	39	20	20	18	21	12	18	26
22	4	2	1	4	5	3	5	5	3232	3224	9	4	3	10	11	6	13	11	8
23	5	4	3	2	2	5	4	2	2422	3332	11	9	6	4	4	11	10	4	7
24	4	2	2	1	5	7	8	6	4221	1254	9	4	4	3	13	17	21	14	11
25	8	5	4	5	5	2	2	7	4343	2424	22	12	9	11	13	5	5	19	12
26	5	8	8	8	9	9	9	7	3432	4343	12	22	25	22	30	29	33	20	24
27	6	9	16	14	14	10	8	6	5612	3234	15	28	110	85	82	35	25	16	50
28	8	8	3	8	4	4	4	4	6642	4445	22	23	7	23	10	9	9	10	14
29	1	5	5	4	4	5	5	6	2234	3441	3	12	11	8	9	13	13	14	10
30	4	4	7	4	2	4	3	4	3334	4222	9	8	20	8	5	8	7	8	9
																			18.9

MOIS 6 1970

	3 Ks								σs		as						As
1	4	12	8	11	10	7	5	6	3132	1142	9	57	21	43	34	17	13	15	26
2	10	8	3	1	2	3	6	7	1122	3425	34	23	7	2	4	7	15	19	14
3	5	8	8	8	6	5	7	4	1333	2333	12	21	21	21	14	11	19	9	16
4	7	6	5	6	6	4	0	5	4515	4213	18	16	12	16	14	10	1	12	12
5	4	7	4	5	1	0	0	0	3431	3100	9	17	9	13	3	1	0	0	7
6	1	3	3	4	0	0	0	0	2543	0000	2	7	7	10	0	0	0	0	3
7	0	2	1	1	1	2	9	11	0611	1444	0	5	2	2	2	5	27	48	11
8	8	10	10	5	5	2	4	5	2341	4254	25	38	39	13	12	4	8	11	19
9	3	1	2	2	1	0	6	4	1222	1123	7	3	4	4	2	1	16	10	6
10	6	7	7	4	2	4	4	3	6541	4121	14	17	18	8	4	9	10	6	11
11	6	4	2	0	0	4	4	0	5420	0511	15	8	4	0	0	8	8	1	6
12	4	4	3	2	1	0	3	2	4453	1112	9	9	7	5	2	1	6	5	6
13	0	2	8	8	8	6	4	3	1242	3031	1	4	21	22	26	15	9	7	13
14	6	9	1	0	0	0	8	1	5720	1142	16	27	3	0	1	1	24	2	9
15	8	6	9	8	7	4	4	7	1555	3313	26	16	31	26	20	9	8	20	20
16	6	9	7	1	4	1	1	7	5443	3327	16	32	17	3	9	3	3	20	13
17	3	0	8	5	6	8	9	8	1124	0114	6	1	21	11	15	26	32	23	17
18	10	6	11	11	14	10	6	11	6221	4213	34	14	41	49	84	40	16	44	40
19	7	7	5	5	0	0	5	9	4322	1132	18	20	11	11	1	1	12	31	13
20	9	7	11	8	7	10	11	10	7433	4534	27	18	41	21	18	36	41	34	30
21	12	10	10	9	5	5	2	5	7440	1122	54	38	34	29	13	13	5	11	25
22	4	2	0	2	1	0	2	4	4602	2041	8	5	0	5	2	0	5	8	4
23	3	3	2	0	0	2	1	0	1560	1120	6	6	5	0	1	5	3	0	3
24	2	1	0	0	1	1	7	5	3200	1244	5	2	0	0	2	3	18	11	5
25	7	4	3	4	3	0	1	5	5151	2023	17	8	7	8	6	0	2	12	8
26	4	7	9	7	3	8	9	4	4453	2221	9	17	30	20	7	21	31	8	18
27	3	9	14	14	12	8	6	3	5711	1222	7	27	84	79	57	21	15	7	37
28	7	7	4	8	3	1	0	2	4342	2211	18	20	9	22	7	2	1	5	11
29	0	2	4	3	0	4	3	4	1231	1223	1	4	9	6	1	10	7	10	6
30	1	2	7	6	2	0	0	0	2335	2011	2	4	20	15	5	0	1	1	6
																			13.8

MOIS 7 1970

	3 Kn								σn		an						An
1	4	7	8	6	9	9	7	5	3422	3331	10	19	25	16	32	29	18	12	20
2	5	8	12	10	6	6	2	5	2233	3316	12	22	60	39	16	16	5	11	23
3	5	9	12	11	5	3	5	15	5242	2441	12	33	58	42	11	6	12	101	34
4	16	11	14	9	4	4	3	1	3325	2452	120	46	84	28	8	8	7	3	38
5	10	14	9	6	9	8	6	8	6421	3333	34	72	33	14	28	26	16	25	31
6	9	9	11	11	10	2	3	3	3412	2333	32	31	47	43	38	5	7	6	26
7	2	3	2	3	1	4	5	8	2323	4223	4	6	5	7	3	8	11	22	8
8	3	5	3	4	6	4	4	14	2443	4523	7	11	7	8	16	8	9	71	17
9	13	18	14	14	16	13	15	15	5532	3322	64	169	71	81	113	68	90	89	93
10	15	6	7	4	11	12	13	12	1333	4343	101	16	18	10	43	59	65	52	46
11	9	5	7	6	6	7	9	9	3241	2222	29	11	18	15	14	17	29	29	20
12	8	9	8	8	7	7	9	9	3532	2232	25	29	24	21	19	19	29	30	25
13	8	9	7	4	4	8	8	7	2342	3343	23	27	17	10	10	22	21	17	18
14	7	7	7	6	4	6	8	8	5431	4534	18	18	20	15	10	14	25	21	18
15	4	5	4	6	4	2	4	5	3534	2443	10	11	10	15	9	5	8	12	10
16	8	5	4	3	5	4	6	3	4312	2424	22	12	8	6	13	8	14	7	11
17	4	3	3	4	5	7	7	9	3332	3344	9	6	7	9	12	18	17	33	14
18	4	6	3	4	4	4	4	5	4541	2544	9	16	6	9	9	10	8	11	10
19	4	5	1	3	4	5	4	5	4333	4354	9	11	3	7	8	13	10	13	9
20	2	4	4	5	2	3	4	9	2534	1434	5	8	9	12	5	7	10	32	11
21	10	8	9	12	13	11	12	9	2323	5453	38	25	33	59	61	41	53	33	43
22	8	7	9	9	4	7	7	8	4557	5342	21	17	30	27	9	19	17	24	21
23	9	8	7	5	7	6	8	3	4532	3633	30	23	20	11	17	16	23	6	18
24	8	9	11	9	11	9	8	14	2332	3533	26	30	46	27	41	31	24	76	38
25	15	18	18	16	15	9	9	14	2243	2332	98	157	162	110	89	33	28	82	95
26	11	10	10	10	9	5	4	9	3434	2232	50	37	36	40	28	13	10	32	31
27	4	9	7	9	7	10	9	6	3532	2453	10	30	17	31	18	35	33	16	24
28	3	1	3	3	3	5	4	5	3233	2243	7	3	6	6	7	11	8	11	7
29	10	14	14	13	14	14	12	5	2355	2323	37	75	76	67	75	78	52	13	59
30	4	9	6	6	7	6	4	6	4633	2433	9	30	14	14	19	15	8	16	16
31	8	9	8	8	6	7	8	11	3373	2234	25	27	23	22	16	20	23	42	25
																			27.7

MOIS 7 1970

	3 Ks								σs		as						As
1	4	6	8	9	7	6	3	1	3546	1122	9	15	24	28	17	16	6	2	15
2	3	7	10	9	5	2	0	0	1312	3101	6	20	37	31	12	5	0	1	14
3	5	9	11	11	3	0	0	14	4034	2111	11	29	45	43	7	1	1	86	28
4	15	11	14	8	2	0	0	0	3211	4100	89	47	84	26	5	1	0	0	32
5	8	12	12	4	6	8	5	7	2463	0114	22	59	51	10	15	23	12	18	26
6	11	8	10	11	8	0	0	0	8233	1100	49	22	40	41	26	1	0	0	22
7	0	1	1	2	0	1	1	8	1331	1224	1	2	2	5	1	3	3	23	5
8	4	5	6	3	4	2	4	11	3761	4335	9	13	14	6	10	5	9	41	13
9	12	17	14	11	18	11	14	15	5432	2414	56	128	71	43	155	49	86	101	86
10	17	6	4	1	7	11	12	11	1112	1333	143	16	9	2	17	42	51	44	41
11	11	4	5	5	2	6	9	8	4322	3443	42	10	11	11	5	14	27	24	18
12	9	9	8	8	6	6	8	8	5533	0143	33	33	21	25	15	16	23	24	24
13	8	8	4	3	3	6	5	8	3332	1215	21	21	10	7	6	16	12	22	14
14	9	5	7	6	3	2	7	6	8242	1235	27	12	18	14	7	4	19	15	15
15	6	4	1	5	3	0	0	5	5332	1004	15	10	2	11	6	0	0	11	7
16	8	4	3	0	5	1	5	0	4311	5340	23	9	6	1	12	2	13	0	8
17	4	3	1	1	4	5	3	9	3521	1322	10	7	2	2	8	12	7	31	10
18	4	7	2	1	0	0	0	3	4422	1011	9	17	4	3	1	0	1	6	5
19	3	4	1	3	1	2	1	5	1330	2324	6	9	2	6	3	5	2	11	6
20	3	4	3	1	1	0	3	10	5314	3025	6	9	6	3	2	0	7	37	9
21	9	8	8	10	13	8	12	8	2312	1221	29	21	26	40	62	25	57	26	36
22	9	5	8	6	0	5	5	10	5224	1144	33	11	22	15	1	13	11	34	18
23	8	7	7	4	3	2	4	0	5344	1231	22	20	18	9	7	5	10	1	12
24	8	9	11	8	8	7	5	13	7723	1134	25	31	42	21	23	17	12	67	30
25	14	16	17	17	14	7	5	14	2123	1321	82	112	139	121	84	20	12	79	81
26	13	10	10	11	8	4	2	11	5443	4323	65	38	38	46	24	9	4	41	33
27	3	10	7	8	6	8	9	7	0441	2345	6	35	20	23	16	26	32	18	22
28	6	0	0	1	2	1	1	1	7113	3132	14	1	1	2	4	2	2	3	4
29	9	14	15	16	12	12	11	3	0436	4141	29	74	87	105	52	57	49	7	58
30	4	9	6	4	3	3	3	7	1651	0004	8	28	15	8	6	6	6	17	12
31	8	10	7	7	4	4	6	10	3443	1104	21	34	19	20	9	9	15	38	21
																			23.4

MOIS 7 1970

	3 Km								Σ Km	am							Am	Am2
1	4	7	8	8	8	8	5	3	17.0	10	17	24	22	24	22	12	7	17	17
2	4	8	11	10	6	4	1	3	15.7	9	21	48	35	14	10	2	6	18	22
3	5	9	12	11	4	1	3	15	20.0	11	31	51	42	9	3	6	93	31	34
4	16	11	14	9	3	2	1	1	19.0	105	47	84	27	7	4	3	2	35	34
5	9	13	11	5	8	8	6	8	22.7	28	65	42	12	22	25	14	21	29	25
6	10	9	11	11	9	1	2	1	18.0	40	27	44	42	32	3	4	3	24	18
7	1	2	1	3	1	3	3	8	7.3	2	4	3	6	2	6	7	22	7	8
8	4	5	5	3	5	3	4	12	13.7	8	12	11	7	13	7	9	56	15	31
9	12	18	14	13	17	12	15	15	38.7	60	149	71	62	134	58	88	95	90	60
10	17	6	6	3	9	11	12	11	25.0	122	16	14	6	30	50	58	48	43	50
11	10	5	6	5	4	6	9	8	17.7	36	11	15	13	9	15	28	26	19	28
12	9	9	8	8	7	7	8	9	21.7	29	31	22	23	17	17	26	27	24	21
13	8	8	5	4	4	7	7	7	16.7	22	24	13	9	8	19	17	19	16	18
14	8	6	7	6	4	4	8	7	16.7	22	15	19	15	9	9	22	18	16	15
15	5	5	3	5	3	1	2	5	9.7	13	11	6	13	7	2	4	12	9	11
16	8	5	3	1	5	2	6	2	10.7	22	11	7	3	13	5	14	4	10	8
17	4	3	2	2	4	6	5	9	11.7	10	6	5	5	10	15	12	32	12	10
18	4	6	2	3	2	2	2	4	8.3	9	16	5	6	5	5	4	9	7	10
19	3	4	1	3	2	4	3	5	8.3	7	10	3	7	5	9	6	12	7	7
20	3	4	3	3	1	1	4	10	9.7	6	9	7	7	3	3	9	34	10	15
21	10	8	9	11	13	9	12	9	27.0	34	23	30	50	61	33	55	30	40	28
22	9	6	8	8	2	6	6	9	18.0	27	14	26	21	5	16	14	29	19	26
23	8	8	7	4	5	5	6	2	15.0	26	22	19	10	12	11	16	4	15	19
24	8	9	11	8	9	8	7	14	24.7	26	30	44	24	32	24	18	72	34	50
25	15	17	18	16	15	8	7	14	36.7	90	134	151	115	87	26	20	80	88	64
26	12	10	10	11	8	5	3	10	23.0	58	37	37	43	26	11	7	36	32	35
27	4	9	7	9	7	9	9	7	20.3	8	33	18	27	17	31	33	17	23	18
28	5	1	1	2	3	3	2	3	6.7	11	2	3	4	6	6	5	7	6	26
29	9	14	14	14	13	13	11	4	30.7	33	75	82	86	63	67	50	10	58	35
30	4	9	6	5	5	5	3	6	14.3	9	29	15	11	13	11	7	16	14	25
31	8	9	8	8	5	6	7	10	20.3	23	30	21	21	12	14	19	40	23	16
																		25.5	

MOIS 8 1970

	3 Km								Σ Km	am							Am	Am2
1	4	4	3	4	0	2	2	5	8.0	10	10	7	9	1	4	4	11	7	13
2	7	6	4	7	3	1	3	1	10.7	19	15	10	17	6	3	6	3	10	8
3	3	5	2	4	4	1	0	0	6.3	6	11	4	9	10	2	1	1	6	5
4	2	2	2	3	3	5	4	2	7.7	4	4	5	7	6	12	8	5	6	5
5	2	3	1	1	0	1	1	1	3.3	4	7	2	2	1	2	2	3	3	5
6	1	3	4	5	2	6	6	8	11.7	2	7	8	13	5	14	15	25	11	9
7	7	3	6	4	4	8	7	13	17.3	19	7	16	8	9	22	18	68	21	25
8	9	9	12	12	9	8	9	11	26.3	33	28	51	57	28	22	30	44	37	35
9	13	9	7	11	7	7	8	4	22.0	68	27	18	42	20	20	25	9	29	26
10	6	6	5	7	7	4	3	4	14.0	14	14	13	19	19	8	7	10	13	15
11	5	7	5	6	7	5	4	9	16.0	12	19	13	16	17	12	8	28	16	15
12	6	8	7	6	1	1	7	7	14.3	15	24	19	14	2	3	19	19	14	14
13	4	4	5	5	4	3	5	9	13.0	8	10	12	13	10	7	11	28	12	11
14	3	6	2	1	1	4	2	4	7.7	7	14	4	2	2	10	4	8	6	10
15	6	6	4	3	4	3	4	10	13.3	15	16	10	6	9	6	10	34	13	11
16	8	5	2	1	2	2	3	16	13.0	21	11	5	3	5	5	6	115	21	56
17	14	21	20	15	13	15	12	12	40.7	73	254	240	97	66	103	59	53	118	80
18	13	11	10	13	11	13	10	9	30.0	61	44	34	63	49	69	40	27	48	49
19	12	8	4	9	8	7	6	1	18.3	54	25	9	29	22	19	14	3	22	24
20	0	0	6	4	3	0	2	2	5.7	0	1	14	10	7	1	5	5	5	8
21	4	3	2	3	2	2	1	2	6.3	10	6	5	6	4	5	2	4	5	5
22	1	2	2	4	7	5	6	2	9.7	3	5	5	10	19	12	14	5	9	9
23	3	8	8	5	4	4	3	3	12.7	7	22	21	11	9	8	7	7	12	10
24	2	5	0	0	1	1	2	3	4.7	4	12	1	1	2	2	4	7	4	7
25	2	4	6	5	7	6	4	7	13.7	4	9	16	11	17	15	10	17	12	15
26	7	10	10	10	12	7	6	7	23.0	18	37	34	36	55	18	16	17	29	23
27	8	8	8	4	8	8	6	8	19.3	22	24	22	9	26	22	15	21	20	20
28	5	7	7	3	7	9	7	9	18.0	12	18	20	6	19	27	19	32	19	21
29	7	9	8	7	6	6	1	1	15.0	18	33	21	19	14	14	3	3	16	17
30	6	5	5	4	1	2	1	1	8.3	16	11	13	8	3	4	3	2	8	11
31	2	7	10	8	8	8	8	5	18.7	5	20	35	21	23	23	26	12	21	20
																		18.5	

MOIS 8 1970

	3 Kn								σn		an						An
1	5	5	4	4	1	4	3	5	3213	3432	12	11	8	10	2	8	6	13	9
2	7	5	4	7	4	3	4	3	4242	2423	18	13	8	20	9	7	10	6	11
3	3	5	2	6	6	1	1	1	3221	4422	7	12	5	16	15	3	3	2	8
4	2	3	4	3	4	7	4	3	2321	3433	5	6	8	7	10	17	10	6	9
5	2	3	1	1	1	1	2	2	3423	2322	5	7	2	3	2	3	4	5	4
6	1	4	4	6	4	7	8	9	2432	2223	3	8	9	16	9	20	24	27	15
7	8	4	7	5	6	10	8	13	2432	1222	21	8	19	11	14	34	26	69	25
8	9	8	11	13	8	8	9	11	3335	2414	32	22	43	68	25	22	31	43	36
9	13	9	8	11	8	8	9	5	4233	2342	68	28	22	50	25	24	29	13	32
10	5	5	6	7	8	4	4	5	3234	3222	12	11	15	18	23	10	9	12	14
11	5	8	5	7	8	6	5	8	3623	2324	12	22	13	19	22	14	11	24	17
12	5	8	7	6	1	2	9	8	2523	2332	13	26	18	16	3	5	29	22	17
13	4	4	6	6	6	4	5	8	3431	1333	9	10	14	16	16	10	12	26	14
14	3	5	2	1	1	6	2	4	4532	3432	7	12	5	3	2	16	5	10	8
15	5	6	4	2	5	3	6	10	2122	3453	12	16	8	5	11	7	14	40	14
16	8	5	2	1	2	4	4	17	4522	2423	23	12	4	3	5	8	9	132	25
17	14	21	21	16	14	15	13	12	2122	3535	78	267	248	109	75	100	64	57	125
18	12	11	8	12	11	14	11	9	4624	2321	52	48	26	57	46	73	43	31	47
19	11	8	5	10	9	8	7	2	6531	3562	49	21	11	34	28	21	17	4	23
20	0	1	6	4	4	1	2	3	1134	4234	0	2	16	9	8	3	5	7	6
21	5	4	2	4	2	4	2	3	4325	2323	11	8	5	8	5	10	4	6	7
22	2	4	3	5	8	7	7	3	2432	3354	4	8	6	12	26	17	18	7	12
23	4	9	8	5	5	4	4	5	3632	3542	9	28	23	13	12	10	9	12	15
24	2	4	0	1	1	1	2	4	2512	2333	5	10	1	3	2	3	5	9	5
25	3	5	7	6	8	6	5	8	3563	3432	6	12	19	15	22	15	12	24	16
26	7	10	10	9	12	8	7	7	4473	1223	19	37	37	28	56	22	18	20	30
27	8	8	8	4	8	8	7	7	3244	3533	23	24	21	9	26	23	18	19	20
28	6	7	8	3	8	9	8	10	2421	3334	14	19	23	7	24	28	21	36	22
29	7	10	8	7	6	7	2	2	2421	1524	19	34	21	17	15	17	5	5	17
30	6	5	6	4	2	3	1	2	4314	4432	16	12	15	9	4	6	3	4	9
31	2	7	9	8	9	9	9	6	2444	3351	5	19	33	26	28	28	32	15	23

MOIS 8 1970

	3 Ks								σs		as						As
1	4	4	3	3	0	0	1	4	4312	0023	8	10	6	7	0	0	2	9	5
2	7	7	5	5	1	0	0	0	3421	2010	20	18	11	13	2	0	1	0	8
3	3	4	1	1	2	0	0	0	1332	4101	6	9	2	3	4	1	0	1	3
4	1	1	1	3	1	3	3	2	3215	2023	2	3	2	7	2	6	7	4	4
5	2	3	1	0	0	0	0	0	2531	0001	4	6	2	1	0	0	0	1	2
6	0	3	3	4	1	4	3	8	1011	1124	1	6	6	9	2	8	7	23	8
7	7	2	5	2	2	4	4	13	4134	2133	18	5	12	5	5	9	9	66	16
8	10	10	12	11	9	8	9	11	4443	2213	35	35	59	46	31	21	29	45	38
9	13	8	6	10	6	6	8	2	4201	1522	67	25	15	34	16	16	21	5	25
10	6	7	5	7	6	3	2	3	5513	4112	16	17	12	20	14	6	5	7	12
11	5	7	5	5	5	4	3	9	2413	1315	12	17	13	12	12	10	6	33	14
12	7	8	7	5	0	0	4	7	4231	1015	18	22	20	13	1	0	9	17	13
13	3	4	5	4	2	2	5	9	0423	4342	6	9	11	10	5	5	11	29	11
14	3	6	2	0	0	2	1	3	5621	1222	6	16	4	1	1	4	3	7	5
15	7	7	5	3	3	2	3	9	4475	2112	18	17	13	6	6	5	6	29	13
16	7	5	3	1	2	1	1	15	5253	3221	19	11	7	3	5	3	2	99	19
17	13	20	20	14	12	16	12	11	3121	2124	69	241	232	84	56	106	54	49	111
18	13	11	11	13	12	13	10	8	6327	1142	70	41	43	70	53	65	38	22	50
19	12	9	3	8	7	7	4	1	5623	1442	59	28	6	25	17	17	10	2	21
20	0	0	5	5	3	0	2	1	1012	2012	1	0	12	11	6	0	5	3	5
21	4	2	2	2	1	0	0	1	5111	3113	8	5	5	5	2	1	1	2	4
22	1	1	2	4	5	4	4	1	3321	4163	3	2	4	8	13	8	9	2	6
23	2	6	7	4	3	2	2	1	2553	2213	5	15	19	10	7	5	5	3	9
24	2	6	0	0	1	0	2	2	2010	2144	4	15	1	0	2	1	4	5	4
25	1	3	5	4	5	6	4	5	3511	4444	2	6	13	8	13	14	8	11	9
26	7	10	9	11	12	5	6	5	5448	2434	17	38	32	44	53	13	14	13	28
27	8	8	8	4	8	8	5	8	3323	3224	21	24	22	9	26	21	12	23	20
28	5	7	7	2	6	8	7	9	2442	0714	11	17	18	4	15	26	17	27	17
29	6	9	8	7	5	4	0	0	1533	3211	16	33	21	20	12	10	1	1	14
30	7	4	5	3	0	1	1	0	5321	1221	17	9	11	7	1	2	3	1	6
31	2	8	10	7	7	7	8	4	1251	1453	5	22	38	17	18	17	21	10	19

16.7

MOIS 9 1970

	3 Kn								σn		an						An
1	3	3	11	14	12	10	11	10	4375	1224	6	6	50	73	56	39	49	37	40
2	8	6	6	12	9	9	9	7	3111	1323	23	16	16	58	31	32	31	19	28
3	3	8	8	9	9	8	8	10	4251	1321	6	26	25	32	32	25	22	36	26
4	6	6	9	7	9	8	7	7	2312	3231	14	15	31	18	29	25	19	17	21
5	6	5	4	3	6	9	5	9	2213	2125	16	13	9	6	14	28	13	27	16
6	3	4	3	1	4	5	6	7	3432	2233	6	8	6	3	9	12	16	19	10
7	4	2	4	3	4	2	8	8	4423	2232	9	4	8	7	10	5	21	25	11
8	1	5	8	4	8	8	9	5	2531	3453	2	11	22	8	25	24	32	12	17
9	2	3	4	4	4	6	7	6	3432	2123	4	7	9	8	8	16	18	14	11
10	10	8	2	0	2	3	0	0	6531	2311	35	21	5	0	5	6	0	0	9
11	1	2	0	0	0	1	2	3	3311	1331	2	5	0	0	0	3	5	7	3
12	4	8	9	4	1	1	4	3	4562	2323	9	22	27	9	3	3	8	6	11
13	3	10	10	11	11	11	11	12	3454	2433	6	39	40	50	44	48	47	51	41
14	9	8	8	12	12	9	9	8	4223	4132	30	24	22	54	52	31	31	24	34
15	11	8	7	6	6	3	5	8	6214	3323	49	26	17	14	15	7	11	21	20
16	7	6	8	6	7	2	4	4	6353	4342	17	15	21	16	18	4	10	10	14
17	4	9	9	4	5	6	3	5	4684	4333	8	31	30	9	11	14	6	12	15
18	6	7	9	6	6	8	7	5	4263	4332	16	20	32	15	14	22	19	12	19
19	3	11	10	9	8	9	9	10	3343	2443	6	47	35	32	21	28	31	34	29
20	5	10	10	9	8	9	6	10	2442	3542	12	35	35	33	22	30	16	34	27
21	9	9	11	8	11	9	11	7	2343	1454	30	29	42	22	49	30	46	18	33
22	8	9	5	8	5	7	7	7	3434	2563	25	33	11	21	11	20	18	17	20
23	6	2	7	10	5	5	2	4	3256	2222	14	5	18	36	13	13	5	9	14
24	6	6	6	6	4	3	6	4	2653	4344	16	16	16	14	8	6	15	9	13
25	2	7	10	7	3	3	6	1	2444	2422	5	19	34	19	7	7	15	3	14
26	2	7	4	5	5	5	4	6	2453	3334	5	17	10	13	11	12	10	15	12
27	9	9	9	8	9	12	8	11	4352	2535	29	28	32	21	28	53	22	41	32
28	9	4	1	5	4	4	4	4	4423	1224	29	9	2	11	8	10	9	8	11
29	3	5	5	4	1	3	2	9	3322	2123	6	12	12	8	2	7	4	29	10
30	5	9	10	5	5	6	3	7	2113	2114	12	29	35	11	13	14	7	20	18
																			19.3

MOIS 9 1970

	3 Ks								σs		as						As
1	1	4	12	13	10	9	11	8	3354	3441	3	10	56	70	39	32	49	26	36
2	9	5	5	13	8	9	7	7	5241	3414	33	13	11	61	25	27	18	17	26
3	0	9	8	10	11	8	5	9	1733	4112	1	30	21	38	43	23	13	32	25
4	7	5	8	7	7	7	5	5	4134	1162	20	13	21	17	17	18	13	12	16
5	7	5	4	1	5	7	4	8	4343	2332	18	12	9	3	11	20	10	25	14
6	0	4	3	0	3	4	5	6	1411	0242	1	8	6	1	6	10	11	16	7
7	4	0	3	2	3	1	6	8	4012	0325	8	0	6	5	6	2	15	22	8
8	0	5	8	4	8	8	8	3	0213	3340	0	11	23	10	24	24	23	6	15
9	0	4	4	5	2	3	7	5	1344	1251	1	9	9	11	5	6	17	13	9
10	10	7	3	0	1	2	0	0	4350	3200	34	20	7	0	3	4	0	0	9
11	0	2	0	0	0	0	1	3	0200	0031	0	4	0	0	0	0	3	6	2
12	3	6	8	3	0	1	0	1	1542	0213	7	16	21	6	0	2	1	3	7
13	3	12	10	10	9	9	12	10	2633	1223	6	51	40	40	32	32	54	39	37
14	10	8	7	11	10	9	9	7	5311	2423	37	24	17	49	40	29	29	20	31
15	11	8	5	5	5	3	3	6	7333	1121	50	24	12	13	13	6	7	14	17
16	4	5	8	5	5	2	4	3	3143	3311	10	13	21	12	11	4	8	6	11
17	4	5	8	4	3	4	1	3	4141	1120	9	12	21	9	7	9	2	6	9
18	5	7	8	7	3	6	6	5	1434	0421	12	18	21	17	6	15	16	12	15
19	3	12	8	9	7	8	9	9	2521	3314	6	56	22	32	20	24	29	27	27
20	5	9	8	8	6	6	5	8	2021	1211	11	29	22	26	16	16	13	26	20
21	9	8	8	8	10	7	9	5	3312	1351	28	21	26	22	37	20	31	13	25
22	8	8	2	6	5	8	5	7	3111	2444	24	23	5	16	12	24	13	17	17
23	4	0	7	9	4	5	3	3	3053	3211	9	0	17	27	10	11	6	6	11
24	5	6	5	5	3	2	5	3	3512	1140	12	15	12	11	6	5	12	6	10
25	2	7	9	7	2	3	5	1	3455	2522	5	20	31	19	4	7	12	2	13
26	2	5	5	5	3	4	3	8	3222	2325	5	11	11	11	7	10	7	22	11
27	9	9	10	7	7	9	8	9	4633	3434	27	28	40	20	20	32	21	27	27
28	10	4	1	4	4	1	3	3	4113	1210	34	8	2	9	9	3	6	6	10
29	3	5	6	4	0	2	0	8	0321	0202	6	12	14	9	0	5	0	22	9
30	3	10	10	3	4	3	3	5	2332	3201	7	40	40	7	10	7	6	13	16
																			16.3

MOIS 9 1970

	3 Km								Σ Km	am							Am	Am2
1	2	4	12	14	11	10	11	9	24.3	4	8	53	72	47	36	49	31	38	31
2	9	6	5	12	9	9	8	7	21.7	28	14	13	60	28	29	24	18	27	29
3	1	9	8	10	10	8	7	10	21.0	3	28	23	35	37	24	17	34	25	23
4	7	6	8	7	8	8	6	6	18.7	17	14	26	18	23	22	16	15	19	19
5	7	5	4	2	5	8	5	8	14.7	17	13	9	5	12	24	11	26	15	13
6	1	4	3	1	4	5	6	7	10.3	3	8	6	2	8	11	14	18	9	10
7	4	1	3	3	4	2	7	8	10.7	8	2	7	6	8	4	18	23	10	11
8	0	5	8	4	8	8	9	4	15.3	1	11	23	9	24	24	27	9	16	13
9	1	4	4	4	3	5	7	6	11.3	2	8	9	10	6	11	18	14	10	14
10	10	7	3	0	2	2	0	0	8.0	34	20	6	0	4	5	0	0	9	8
11	0	2	0	0	0	1	2	3	2.7	1	4	0	0	0	2	4	6	2	5
12	4	7	8	4	0	1	2	2	9.3	8	19	24	8	1	3	5	5	9	14
13	3	11	10	11	10	10	11	11	25.7	6	45	40	45	38	40	50	45	39	28
14	9	8	7	12	11	9	9	8	24.3	33	24	20	51	46	30	30	22	32	33
15	11	8	6	6	6	3	4	7	17.0	49	25	15	14	14	6	9	17	19	21
16	6	6	8	6	6	2	4	4	14.0	14	14	21	14	14	4	9	8	12	13
17	4	8	8	4	4	5	2	4	13.0	8	21	25	9	9	11	4	9	12	13
18	6	7	9	6	4	7	7	5	17.0	14	19	27	16	10	18	18	12	17	18
19	3	12	9	9	7	8	9	9	22.0	6	52	29	32	20	26	30	30	28	24
20	5	9	9	9	7	3	6	9	20.7	12	32	28	30	19	23	14	30	24	25
21	9	8	10	8	11	8	10	6	23.3	29	25	34	22	43	25	39	15	29	25
22	8	9	4	7	5	8	6	7	18.0	24	28	8	18	12	22	16	17	18	21
23	5	1	7	9	5	5	2	3	12.3	11	2	18	31	11	12	5	7	12	14
24	6	6	6	5	3	2	6	4	12.7	14	15	14	12	7	5	14	8	11	12
25	2	7	9	7	2	3	6	1	12.3	5	19	32	19	5	7	14	3	13	11
26	2	6	4	5	4	5	4	7	12.3	5	14	10	12	9	11	9	19	11	14
27	9	9	10	7	8	11	8	10	24.0	28	28	36	20	24	42	22	34	29	21
28	9	4	1	4	4	3	3	3	10.3	32	9	2	10	9	7	7	7	10	15
29	3	5	5	4	0	3	1	8	9.7	6	12	13	9	1	6	2	26	9	12
30	4	10	10	4	5	4	3	7	15.7	10	35	37	9	12	10	7	17	17	15
																		17.7	

MOIS 10 1970

	3 Km								Σ Km	am							Am	Am2
1	9	6	5	5	6	4	9	8	17.3	30	14	12	11	15	9	28	25	18	16
2	9	3	4	7	5	5	8	6	15.7	31	7	9	20	12	11	24	15	16	17
3	8	8	4	6	6	9	10	11	20.7	23	21	10	14	15	27	36	42	24	28
4	10	14	11	10	9	8	9	7	26.0	34	79	42	35	30	21	27	20	36	30
5	8	8	8	4	2	3	6	5	14.7	21	21	22	10	4	7	15	13	14	16
6	4	4	6	4	2	0	4	8	10.7	10	8	14	10	4	1	10	22	10	9
7	1	2	5	2	3	1	0	4	6.0	2	5	11	5	7	3	0	8	5	6
8	4	2	2	0	0	0	1	1	3.3	8	4	4	1	1	0	2	2	3	3
9	2	1	2	2	3	1	1	1	4.3	4	2	4	5	6	3	3	2	4	5
10	1	4	9	3	5	6	8	8	14.7	2	8	30	6	11	15	22	26	15	16
11	8	8	9	11	7	5	9	8	21.7	22	25	30	41	20	11	32	23	26	28
12	11	13	10	8	5	3	3	3	18.7	48	67	34	25	13	6	6	7	26	22
13	0	8	8	6	8	9	6	4	16.3	1	21	21	15	23	29	15	10	17	15
14	7	8	6	5	4	4	3	4	13.7	20	22	14	11	10	8	7	9	13	13
15	5	2	3	0	2	1	2	4	6.3	13	5	7	1	4	2	5	9	6	10
16	1	1	3	14	14	16	16	9	24.7	2	3	7	74	82	112	106	27	52	34
17	9	7	9	9	9	13	12	16	28.0	33	19	29	30	33	63	52	114	47	61
18	15	15	11	8	8	11	6	9	27.7	96	99	47	26	23	48	15	28	48	45
19	7	6	9	6	4	5	6	3	15.3	17	15	30	15	10	13	15	7	15	18
20	2	4	7	8	4	3	2	3	11.0	5	9	20	23	9	6	5	6	10	8
21	2	0	0	0	0	0	2	4	2.7	4	1	0	0	0	1	4	10	3	7
22	5	6	8	8	8	9	12	15	23.7	13	14	22	23	25	30	56	87	34	26
23	10	10	9	8	10	12	10	12	27.0	40	40	30	26	40	56	39	51	40	39
24	8	8	10	8	7	3	7	2	17.7	26	24	38	22	19	6	18	5	20	24
25	2	5	6	1	7	8	3	2	11.3	5	13	14	3	18	21	7	4	11	10
26	4	4	1	5	3	1	2	3	7.7	8	8	2	11	6	3	4	6	6	8
27	3	2	3	2	1	3	4	8	8.7	7	4	7	4	3	6	10	23	8	11
28	8	9	9	3	8	6	10	11	21.3	26	27	28	7	22	15	34	45	26	19
29	6	4	5	7	8	9	12	10	20.3	15	8	12	18	23	27	53	39	24	25
30	10	8	5	6	2	6	1	3	13.7	37	24	12	15	5	16	3	6	15	18
31	2	2	2	5	4	3	4	2	8.0	5	5	5	11	10	7	10	4	7	6
																		19.3	

MOIS 10 1970

	3 Kn								σn								An
1	8	6	5	5	6	5	9	8	2124	2233	25	16	12	11	16	11	29	24	18
2	8	4	4	7	5	6	8	7	2123	3323	26	8	9	17	13	15	26	17	16
3	7	7	5	6	7	9	10	11	4243	2444	20	20	12	14	17	29	40	43	24
4	9	14	10	9	9	8	9	7	3422	1222	27	73	40	33	31	26	28	18	35
5	7	8	9	5	2	4	6	5	4223	2432	20	21	28	11	5	8	16	13	15
6	4	4	6	5	2	1	5	7	4533	4233	9	9	16	12	5	2	12	20	11
7	1	2	5	3	4	2	0	4	4432	2212	3	5	11	7	8	4	1	8	6
8	2	2	2	1	0	0	2	1	2332	1132	5	4	4	2	1	0	4	2	3
9	1	1	2	2	3	1	2	0	4234	2331	3	2	4	4	6	3	4	1	3
10	0	3	9	3	5	7	8	9	1573	3442	1	7	30	6	12	18	23	28	16
11	8	8	9	11	7	5	10	8	3256	5454	23	24	33	44	20	12	36	21	27
12	12	13	9	8	6	3	4	2	4363	3132	53	68	33	26	14	7	8	5	27
13	1	7	8	5	9	10	6	4	2343	3343	2	19	24	11	28	34	16	10	18
14	8	8	6	5	4	4	3	4	4432	4312	22	22	16	11	10	10	7	10	14
15	6	2	3	0	3	0	2	4	3222	4133	14	5	7	1	6	1	5	10	6
16	0	1	4	14	14	16	16	9	1214	6341	1	2	8	86	79	111	104	28	52
17	10	6	9	9	10	12	11	16	5162	3744	39	15	32	30	37	52	45	110	45
18	15	15	12	9	8	12	7	9	6324	4733	90	98	53	27	23	56	17	32	50
19	6	7	10	6	5	7	7	3	7323	3544	16	18	39	15	12	17	20	6	18
20	2	4	7	9	4	3	2	3	2473	4223	5	10	20	28	9	6	5	6	11
21	1	0	0	0	0	0	2	4	1101	1122	2	0	0	0	0	0	4	8	2
22	6	5	8	7	9	8	12	13	4256	4453	14	12	23	20	29	25	53	61	30
23	10	11	9	8	11	13	11	11	4613	3535	36	49	29	26	45	63	41	42	41
24	8	8	11	8	8	3	8	3	3422	3365	24	22	43	23	25	6	21	7	21
25	3	6	7	1	8	8	4	2	4373	3622	6	14	17	3	23	25	8	4	13
26	4	3	0	5	3	2	2	2	5514	4332	8	7	1	11	7	4	4	5	6
27	4	2	4	1	2	3	4	8	2212	3024	8	4	8	3	4	7	10	24	9
28	8	8	8	3	8	6	11	11	2331	2463	25	22	22	7	26	16	43	45	26
29	6	3	5	8	8	8	11	10	2433	3345	14	6	12	21	21	22	50	38	23
30	10	8	5	5	2	7	1	2	4233	2412	38	25	12	12	5	18	2	4	15
31	1	3	2	5	4	4	4	2	3434	3332	3	6	4	11	10	8	10	4	7
																			19.6

MOIS 10 1970

	3 Ks								σs								As
1	10	5	5	5	6	3	8	8	4334	5112	35	12	12	11	15	7	26	25	18
2	10	3	4	8	5	3	8	5	5112	1232	35	7	9	22	12	7	21	12	16
3	8	8	3	6	5	8	9	11	2213	2344	25	22	7	14	12	24	32	42	22
4	10	14	11	10	9	6	8	8	3112	2214	40	86	45	37	29	16	26	23	38
5	8	8	6	4	2	3	6	5	3311	2132	21	21	16	8	4	6	14	12	13
6	5	3	5	4	2	0	3	8	1121	2123	12	7	12	8	4	1	7	24	9
7	1	3	4	2	3	1	0	3	2132	1304	2	6	10	4	6	2	0	7	5
8	4	2	2	0	0	0	0	1	3310	0012	10	4	5	0	0	0	1	2	3
9	2	1	2	3	3	1	1	1	3331	1323	4	2	4	6	6	3	2	3	4
10	1	4	9	3	4	5	8	8	3301	3443	3	9	29	6	10	13	22	24	15
11	8	8	8	10	7	4	9	8	3113	2325	21	26	26	38	19	10	29	25	24
12	11	13	10	8	5	3	2	4	2341	2111	43	66	35	23	12	6	5	8	25
13	0	8	7	7	7	8	6	4	1144	1133	1	23	18	18	18	23	14	10	16
14	7	8	5	5	4	3	3	4	4332	3211	18	21	12	11	10	7	7	8	12
15	5	3	3	0	1	2	2	4	2111	2224	12	6	7	1	2	4	5	9	6
16	2	1	3	13	14	16	16	8	2301	1961	4	3	6	62	84	112	108	26	51
17	8	8	8	9	9	14	12	16	1110	2946	26	23	26	29	29	75	59	118	48
18	15	15	11	8	8	11	5	8	4423	3212	101	101	41	26	22	41	13	25	46
19	7	5	8	6	3	4	4	3	4132	1122	18	12	21	15	7	9	10	7	12
20	2	4	8	7	4	3	3	3	3435	1032	5	9	21	17	8	6	6	7	10
21	3	0	0	0	0	0	2	5	2110	0122	6	1	1	0	0	1	5	11	3
22	5	7	7	8	8	10	12	16	1436	2668	12	17	20	25	21	36	59	113	38
23	11	9	9	8	10	11	10	12	3411	5366	44	32	32	26	35	49	37	60	39
24	9	8	9	8	5	3	6	1	3123	4123	28	26	32	21	13	6	15	3	18
25	2	5	5	1	5	7	3	2	2223	4103	4	11	11	3	13	17	6	5	9
26	4	4	2	5	2	1	2	3	4424	1211	9	9	4	11	5	2	5	7	7
27	3	2	3	3	1	3	4	8	1321	2133	6	4	6	6	2	6	9	21	8
28	8	9	10	3	7	6	8	11	1112	1011	26	32	34	7	17	15	26	45	25
29	6	4	5	6	8	9	12	10	1322	3223	16	9	12	15	24	31	57	39	25
30	10	8	5	7	3	6	2	3	4123	1211	35	23	12	19	6	15	5	7	15
31	3	2	3	5	4	3	4	2	0312	3133	6	4	6	12	10	6	10	5	7
																			18.9

MOIS 11 1970

	3 Kn								σn		an						An
1	1	0	1	3	1	1	0	1	3123	3211	3	0	2	7	3	2	1	2	3
2	0	1	6	5	7	2	3	5	2232	3312	1	2	16	13	17	5	6	12	9
3	6	5	5	2	4	5	5	9	1223	4554	14	12	11	4	10	11	12	31	13
4	7	2	5	6	5	2	4	8	4333	3323	19	4	12	14	11	4	9	24	12
5	6	4	7	5	4	8	8	8	2542	3443	15	9	19	13	9	23	23	26	17
6	8	8	9	9	11	6	2	7	3323	6323	21	23	28	29	44	15	4	19	23
7	16	15	16	17	14	9	11	9	2157	3442	110	90	113	124	83	30	43	33	78
8	9	7	3	8	6	5	6	2	3123	2342	31	17	6	21	14	12	14	4	15
9	4	5	5	7	6	8	9	7	3123	3244	8	13	13	20	15	21	33	18	18
10	9	7	5	12	11	11	8	7	5334	3233	29	20	11	57	46	47	21	20	31
11	12	8	7	11	8	11	10	10	1223	2222	51	25	19	45	23	49	36	34	35
12	5	7	9	8	10	8	2	0	3442	3422	12	19	29	23	38	25	4	1	19
13	4	6	5	4	10	5	5	6	2254	3343	10	14	11	9	35	12	12	14	15
14	5	4	6	6	3	6	9	2	2411	4464	12	8	15	14	6	14	28	4	13
15	1	0	3	4	4	2	7	5	3125	4232	2	0	6	9	8	4	17	13	7
16	6	0	0	4	6	9	7	5	7112	2554	16	0	1	9	15	30	19	13	13
17	5	8	4	4	3	3	2	2	2242	3122	11	22	9	9	6	7	4	4	9
18	4	2	4	2	13	11	7	14	2232	2122	8	4	9	4	65	49	20	81	30
19	14	12	11	5	3	1	1	2	6522	3322	71	52	48	13	6	3	2	4	25
20	1	2	2	1	3	2	2	4	2222	1225	2	4	4	2	7	5	4	9	5
21	5	6	13	15	16	13	8	6	4145	3374	12	16	69	92	110	63	25	15	50
22	10	11	8	10	8	10	9	7	2524	4765	39	43	24	35	26	36	30	18	31
23	8	6	8	12	12	11	12	8	5456	3674	26	16	22	52	57	48	51	23	37
24	3	8	9	8	8	9	9	6	4312	3321	7	25	31	23	23	29	31	15	23
25	7	6	6	9	6	11	11	4	3352	3563	17	15	14	28	16	48	44	10	24
26	4	4	2	6	5	9	9	6	3333	2551	10	9	4	14	12	30	28	15	15
27	5	3	6	7	9	7	8	8	2332	1442	12	6	14	17	32	17	25	23	18
28	4	5	2	5	9	9	2	4	2433	5624	8	13	5	11	28	28	5	8	13
29	0	1	1	0	0	3	2	1	1221	1122	0	3	2	1	1	7	5	3	3
30	0	1	0	0	0	0	0	1	0210	0102	0	2	0	0	0	1	0	2	1
																			20.2

MOIS 11 1970

	3 Ks								σs		as						As
1	0	1	3	3	1	1	2	2	0300	2312	0	3	7	6	3	2	5	4	4
2	0	3	7	6	6	3	4	5	0312	1142	0	6	17	15	16	6	9	12	10
3	5	8	4	3	4	3	5	8	1332	3221	13	21	10	7	9	7	11	26	13
4	6	3	5	7	5	3	5	8	2116	3123	15	6	12	17	12	6	11	23	13
5	5	5	7	5	3	7	7	8	3341	2142	12	13	18	13	7	17	17	25	15
6	7	7	10	6	8	5	2	5	3142	4121	20	18	35	16	26	12	5	12	18
7	16	15	14	17	16	9	11	9	3133	3362	110	91	78	132	110	28	45	29	78
8	9	6	3	6	4	4	3	1	5252	3113	33	16	6	15	10	8	6	3	12
9	3	6	4	6	5	6	8	4	1230	1053	7	14	10	15	13	15	22	9	13
10	8	8	4	11	10	9	8	8	3112	3012	24	23	8	42	38	29	26	22	27
11	9	6	7	10	7	8	6	7	0211	1124	29	15	17	34	17	23	16	20	21
12	5	6	6	8	7	6	2	2	1122	1123	13	16	16	22	18	16	4	5	14
13	1	7	6	4	8	4	3	5	3324	2121	3	18	15	9	21	9	7	13	12
14	5	2	8	5	1	5	8	4	2321	2364	11	4	22	13	2	13	21	8	12
15	2	0	4	4	3	1	4	7	1021	0234	5	0	10	8	6	3	10	18	8
16	8	0	1	6	6	9	6	7	4120	2424	23	1	3	15	16	33	15	18	16
17	5	8	5	5	3	4	4	4	1133	1344	13	23	13	12	7	9	9	9	12
18	5	3	4	3	13	12	8	15	3212	1533	12	7	8	7	62	60	21	89	33
19	13	11	13	7	4	1	1	5	4333	3233	67	41	62	20	9	2	2	12	27
20	1	3	4	3	3	3	3	5	3411	2153	3	6	8	6	7	6	7	12	7
21	5	8	11	15	17	12	8	7	1435	3434	12	21	49	96	132	53	21	18	50
22	11	10	10	9	8	9	9	5	2412	3432	47	35	37	32	24	29	28	12	31
23	8	7	9	12	13	12	10	8	3401	1433	24	18	29	57	62	56	40	24	39
24	5	11	12	11	9	9	10	8	1443	2233	13	45	56	44	32	29	38	21	35
25	7	6	6	8	5	11	9	5	1221	1322	17	16	15	23	13	41	29	12	21
26	4	3	3	4	5	9	8	6	3113	2235	10	7	7	10	11	29	24	16	14
27	4	3	6	6	8	6	7	8	1012	3231	8	6	16	16	24	16	20	23	16
28	5	5	3	4	7	7	4	4	1111	1143	13	13	6	8	17	17	8	9	11
29	2	3	2	2	2	4	4	3	1122	2441	5	7	4	4	4	9	8	6	6
30	0	2	1	0	1	0	1	4	1131	2134	1	5	3	1	2	1	2	9	3
																			19.7

MOIS 11 1970

	3 Km								Σ Km	am							Am	Am2
1	0	1	2	3	1	1	1	1	3.3	1	2	4	7	3	2	3	3	3	6
2	0	2	6	6	7	2	3	5	10.3	1	4	16	14	17	5	7	12	10	8
3	6	7	4	3	4	4	5	9	14.0	14	17	10	6	10	9	12	29	13	12
4	7	2	5	6	5	2	4	8	13.0	17	5	12	16	11	5	10	24	13	14
5	5	5	7	5	4	7	7	8	16.0	13	11	19	13	8	20	20	26	16	17
6	7	8	9	8	10	5	2	6	18.3	20	21	31	22	35	13	4	15	20	41
7	16	15	15	17	15	9	11	9	35.7	110	91	95	128	96	29	44	31	78	48
8	9	7	3	7	5	4	4	1	13.3	32	17	6	18	12	10	10	3	14	22
9	3	6	5	7	6	7	9	6	16.3	7	14	11	17	14	18	27	14	15	16
10	8	8	4	11	11	10	8	8	22.7	26	22	9	49	42	38	24	21	29	26
11	10	7	7	10	7	10	8	9	22.7	40	20	18	39	20	36	26	27	28	27
12	5	7	8	8	9	7	2	1	15.7	12	17	22	22	28	20	4	3	16	18
13	3	6	5	4	9	4	4	6	13.7	6	16	13	9	28	10	9	14	13	13
14	5	3	7	6	2	6	8	3	13.3	12	6	18	14	4	14	25	6	12	11
15	1	0	4	4	3	2	6	6	8.7	3	0	8	9	7	4	14	16	8	9
16	7	0	1	5	6	9	7	6	13.7	19	1	2	12	15	32	17	15	14	13
17	5	8	5	5	3	4	3	3	12.0	12	22	11	11	6	8	6	6	10	12
18	4	3	4	3	13	12	8	14	20.3	10	6	9	6	63	55	21	85	32	29
19	13	11	12	6	4	1	1	4	17.3	69	46	55	16	8	3	2	8	26	28
20	1	2	3	2	3	2	2	4	6.3	2	5	6	4	7	5	5	10	6	16
21	5	7	12	15	17	12	8	6	27.3	12	18	59	94	121	58	23	16	50	36
22	11	10	9	10	8	9	9	6	24.0	43	39	30	34	25	33	29	15	31	37
23	8	7	8	12	12	12	11	8	26.0	25	17	26	55	59	52	46	23	38	33
24	4	10	11	10	9	9	10	7	23.3	10	35	44	34	27	29	34	18	29	30
25	7	6	6	8	6	11	10	5	19.7	17	15	14	26	14	44	37	11	22	20
26	4	4	2	5	5	9	8	6	14.3	10	8	5	12	11	29	26	15	15	17
27	4	3	6	6	9	6	8	8	16.7	10	6	15	16	28	16	23	23	17	16
28	5	5	2	4	8	8	3	4	13.0	11	13	5	9	23	22	6	9	12	13
29	1	2	1	1	1	4	3	2	5.0	3	5	3	3	3	8	7	4	5	6
30	0	1	1	0	0	0	0	2	1.3	1	3	2	0	1	1	1	5	2	3
																		19.9	

MOIS 12 1970

	3 Km								Σ Km	am							Am	Am2
1	0	0	0	1	0	0	1	1	1.0	0	1	1	3	1	0	2	3	1	2
2	3	1	1	1	5	7	8	5	10.3	7	3	2	2	13	18	24	11	10	8
3	5	2	5	4	2	3	1	4	8.7	13	4	11	9	4	6	3	8	7	9
4	1	0	2	5	5	4	8	8	11.0	3	1	5	11	11	8	25	21	11	11
5	5	7	7	8	7	8	4	2	16.0	12	19	19	22	17	25	9	4	16	16
6	4	3	9	7	8	6	5	2	14.7	10	7	27	18	24	15	11	5	15	13
7	3	4	5	5	6	5	8	10	15.3	7	9	12	11	16	12	23	37	16	21
8	10	11	10	10	10	6	9	6	24.0	35	43	34	38	38	14	29	14	31	24
9	4	4	4	7	5	3	2	2	10.3	8	8	10	19	12	7	4	5	9	12
10	1	1	3	4	6	3	3	1	7.3	3	3	6	9	14	7	6	3	6	6
11	0	1	2	4	1	1	2	1	4.0	1	3	4	10	3	2	5	3	4	5
12	1	2	2	5	5	2	3	4	8.0	3	4	4	12	13	5	7	10	7	6
13	5	3	2	2	0	4	5	8	9.7	13	7	4	4	0	8	11	21	9	36
14	12	15	20	15	12	9	14	14	37.0	52	97	234	91	52	32	71	75	88	54
15	11	7	8	9	9	6	4	4	19.3	47	18	24	28	31	15	10	9	23	27
16	3	1	2	2	2	2	2	3	5.7	7	3	5	5	5	5	5	7	5	8
17	3	3	1	3	4	1	3	2	6.7	6	6	3	7	8	2	6	5	5	5
18	0	0	3	1	1	1	1	9	5.3	1	1	6	2	3	2	3	27	6	9
19	6	5	8	8	3	5	8	10	17.7	14	13	23	23	6	12	25	39	19	18
20	8	8	9	8	5	2	4	3	15.7	22	22	30	23	12	5	9	7	16	15
21	3	2	4	4	3	0	2	4	7.3	6	5	8	10	7	1	5	8	6	7
22	4	4	5	2	4	3	4	6	10.7	10	8	13	5	8	6	8	15	9	10
23	7	5	7	7	7	6	2	7	16.0	17	12	17	19	20	14	5	18	15	16
24	12	9	6	4	7	5	6	4	17.7	51	27	14	10	18	13	15	8	20	15
25	4	1	2	2	5	5	6	6	10.3	9	3	4	4	11	13	14	14	9	10
26	4	4	5	5	1	2	3	4	9.3	8	9	11	11	3	5	7	9	8	10
27	3	5	4	5	7	8	6	10	16.0	7	13	9	13	19	23	16	37	17	15
28	7	9	5	6	7	11	12	10	22.3	19	28	12	14	20	42	54	36	28	23
29	7	4	6	3	5	9	9	12	18.3	20	8	15	7	11	31	28	53	22	25
30	9	9	5	4	4	10	5	5	17.0	29	29	13	10	8	36	11	11	18	18
31	0	2	2	4	4	2	2	4	6.7	1	5	5	9	9	4	4	10	6	10
																		14.9	

Part B

MOIS 12 1970

	3 Kn								σn	an							Ån
1	0	0	0	0	0	0	0	1	1111 0012	0	0	0	1	0	0	1	2	1
2	1	0	1	0	6	6	8	3	2121 2131	2	1	2	1	14	16	22	6	8
3	5	1	5	3	1	2	0	2	3263 2213	13	3	12	6	2	5	1	5	6
4	1	0	2	4	4	3	8	7	2134 2143	2	0	4	8	9	6	24	20	9
5	4	6	7	7	6	9	4	0	4442 5421	10	15	17	19	15	27	8	1	14
6	3	1	9	7	8	6	4	2	4254 3333	7	3	27	17	24	15	8	4	13
7	2	4	5	4	7	5	8	10	3422 2234	5	8	11	10	17	12	21	34	15
8	10	11	10	10	11	5	10	5	2253 3452	39	41	39	35	42	12	34	11	32
9	4	4	4	7	5	4	2	0	3521 2521	8	10	8	18	11	8	4	1	9
10	0	0	2	4	5	3	3	1	2125 4451	1	1	4	9	13	7	7	2	6
11	0	1	1	2	1	0	1	0	0223 2121	0	3	3	4	2	1	3	1	2
12	1	1	1	5	5	2	3	4	3233 2313	3	2	3	11	12	4	6	10	6
13	4	3	1	1	0	4	4	5	2232 1533	10	7	2	3	0	10	10	13	7
14	10	15	21	14	11	9	13	14	2364 3243	37	93	246	84	50	27	65	72	84
15	10	8	8	9	9	7	4	4	3322 1323	38	22	24	30	31	17	10	8	23
16	2	1	2	2	1	2	1	3	4224 3444	5	3	5	4	2	5	3	6	4
17	3	2	0	3	3	1	2	2	5216 1244	6	5	1	6	7	2	5	5	5
18	0	1	2	0	2	1	0	8	1230 3212	0	2	4	0	4	2	1	22	4
19	3	4	8	8	2	4	7	10	2334 4215	7	8	26	25	4	10	18	35	17
20	5	5	9	8	6	1	4	2	2244 3244	12	13	29	26	15	3	8	5	14
21	1	2	4	3	2	0	2	3	3344 3135	3	4	8	7	5	1	4	7	5
22	4	3	6	2	3	3	3	4	2472 3113	10	7	14	5	7	6	6	10	8
23	6	5	4	5	7	6	0	4	7323 3512	15	11	10	13	17	16	1	9	12
24	11	9	4	5	7	6	4	2	4345 4423	46	31	10	12	19	14	9	5	18
25	3	0	1	0	3	6	5	5	4121 1225	6	1	2	1	7	14	11	13	7
26	2	4	4	3	1	2	2	3	2543 2223	5	9	8	6	2	5	5	7	6
27	2	5	3	5	8	8	5	10	2232 5443	4	12	6	12	21	24	12	36	16
28	6	8	4	6	8	11	12	10	3335 3785	16	23	9	15	25	46	53	40	28
29	9	2	6	1	4	8	8	12	6243 4233	27	5	14	3	9	25	26	59	21
30	10	9	4	3	4	11	4	3	4423 3311	37	29	9	6	8	41	9	6	18
31	0	1	0	3	3	1	1	2	1313 1223	1	3	1	6	7	3	3	4	4
																		13.6

MOIS 12 1970

	3 Ks								σs	as							Às
1	0	0	0	2	1	0	1	2	0114 3022	0	1	1	5	3	0	3	4	2
2	5	2	1	1	5	8	8	6	2112 3315	11	5	2	3	13	21	26	16	12
3	5	3	4	5	3	3	2	5	1112 1012	13	6	9	12	6	6	5	11	9
4	2	1	3	6	5	4	8	8	4320 2323	4	2	6	15	12	9	25	21	12
5	5	8	8	8	7	8	4	3	1222 3331	13	22	22	25	20	22	10	7	18
6	5	4	8	7	8	6	6	3	3413 4061	12	10	26	20	24	15	14	6	16
7	4	4	5	5	6	5	8	10	3324 0323	10	10	12	12	15	12	25	40	17
8	9	11	9	11	10	6	8	7	1123 1535	32	45	29	41	34	15	24	17	30
9	4	3	5	8	5	3	2	4	1014 2224	8	6	12	21	12	7	4	9	10
10	2	3	3	4	6	3	2	2	1113 2112	5	6	7	9	15	7	5	4	7
11	1	1	2	6	2	1	4	2	3336 2242	2	3	5	16	5	3	8	4	6
12	1	3	2	6	6	3	4	4	3023 2343	3	6	5	14	15	6	9	10	9
13	6	3	2	3	0	3	5	9	2431 0235	15	6	5	6	0	7	12	30	10
14	13	15	20	15	12	10	14	14	4411 2331	67	101	222	99	54	38	78	79	92
15	12	6	8	8	9	5	4	4	5211 2233	56	15	23	26	32	12	9	9	23
16	4	1	2	3	4	2	3	4	3245 4334	9	3	4	7	9	5	6	8	6
17	3	3	2	3	4	1	3	2	0131 1322	6	7	4	7	8	3	7	5	6
18	0	0	3	2	1	1	2	9	1022 1235	1	0	7	5	2	2	4	31	7
19	8	7	7	8	4	5	9	11	3132 4142	21	17	20	21	8	13	32	43	22
20	9	9	9	7	4	4	4	4	4123 3434	32	32	31	20	10	8	9	9	19
21	4	3	4	5	4	0	3	4	3251 4113	9	6	8	13	8	1	6	10	8
22	4	4	5	2	4	3	4	7	3421 1134	10	9	12	5	9	6	9	20	10
23	7	5	8	8	8	5	4	9	4112 4346	18	13	23	25	23	12	9	27	19
24	12	8	7	4	7	5	7	4	6143 1333	56	23	18	9	18	12	20	10	21
25	5	2	3	3	6	5	6	6	2422 2310	12	5	7	7	15	12	16	15	11
26	5	4	6	6	2	3	4	5	2335 2132	11	9	14	16	5	6	10	11	10
27	4	5	5	5	7	8	8	10	3114 1233	10	13	12	13	17	22	21	39	18
28	8	10	6	5	6	10	12	9	2123 1655	22	34	16	13	16	38	56	31	28
29	5	4	6	5	5	10	9	11	1244 2322	13	10	16	11	12	38	29	47	22
30	8	9	7	6	4	9	5	7	2052 3124	21	29	17	15	9	32	12	17	19
31	1	3	4	5	4	2	3	7	2232 2214	2	6	8	12	10	5	6	17	8
																		16.4

Table 11 Hourly equatorial Dst-index

JANUARY 1970

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	10	13	14	12	9	10	16	19	17	15	14	9	7	10	10	5	1	5	14	15	14	10	14
2	12	6	6	1	3	-7	-8	-13	-10	-4	-3	-11	-21	-24	-23	-30	-36	-27	-22	-21	-23	-23	-19	-20
3	-15	-12	-11	-12	-11	-13	-14	-17	-14	-15	-16	-17	-18	-16	-13	-13	-15	-16	-14	-14	-15	-14	-11	-10
4	-10	-7	-3	-2	-2	-5	-5	-4	-4	-5	-5	-6	-9	-9	-7	-4	-5	-6	-4	-4	-5	-6	-6	-5
5	-6	-4	-2	-1	0	0	8	11	9	-1	-3	-2	1	2	4	4	9	11	13	12	14	11	9	12
6	-2	-2	-1	-1	-0	-0	1	3	7	6	6	4	1	-1	-0	-1	-3	-5	-8	-7	-6	-3	1	3
7	5	8	8	10	12	13	12	10	11	11	11	11	11	11	11	13	8	3	-8	-14	-13	-8	-7	-3
8	-1	2	2	1	2	2	1	-0	5	6	6	10	14	17	14	14	8	-3	6	5	14	18	19	17
9	12	9	9	10	6	1	-1	-7	-10	-5	-1	0	2	6	9	5	2	-1	-3	-2	-1	2	6	10
10	12	8	11	11	10	7	6	5	7	8	8	7	7	7	10	10	6	3	3	2	0	4	8	11
11	10	5	3	6	9	11	9	7	8	10	10	11	13	13	12	16	17	14	12	8	7	5	8	6
12	3	3	-0	-0	6	11	8	4	3	1	0	1	7	12	15	16	12	5	4	7	6	5	3	3
13	4	6	10	9	8	9	9	11	12	10	10	7	8	5	2	4	1	8	11	10	13	14	9	7
14	7	8	7	5	5	6	7	5	5	6	3	2	-0	-4	-4	-2	-3	-2	2	3	9	12	11	13
15	12	11	6	9	14	23	23	23	23	25	24	25	22	17	16	16	8	9	7	4	5	4	2	-1
16	-3	-12	-7	-8	-6	-6	-14	-16	-13	-13	-15	-10	-22	-27	-31	-36	-36	-39	-40	-41	-45	-44	-40	-39
17	-42	-43	-44	-45	-38	-36	-34	-32	-29	-29	-29	-27	-23	-22	-20	-17	-17	-19	-18	-18	-19	-14	-13	-12
18	-14	-16	-17	-16	-13	-14	-20	-24	-19	-12	-9	-8	-9	-9	-7	-1	0	-2	-2	-2	-5	-6	-3	3
19	10	9	7	7	5	5	3	-0	-2	-2	2	5	8	5	3	6	4	2	1	2	0	1	2	4
20	3	0	-3	-8	-4	-3	-3	1	2	3	4	3	1	-1	1	4	10	9	8	-0	-8	-3	4	7
21	8	6	5	6	5	4	4	5	4	1	4	7	9	6	8	11	10	6	1	-0	-2	2	5	8
22	8	7	3	1	-0	3	3	3	6	5	4	4	5	5	4	4	4	5	4	5	6	8	8	9
23	6	3	-0	-3	-1	1	-0	-3	2	8	9	10	8	5	9	13	12	11	10	8	6	9	8	10
24	10	8	6	4	4	4	4	-2	-1	-4	-2	1	1	-1	0	2	0	-0	-1	-1	-1	-1	1	0
25	2	2	1	0	1	1	2	3	5	4	3	4	6	5	5	7	7	4	5	3	5	8	10	10
26	11	10	8	5	3	2	-1	-2	-0	2	4	4	6	8	9	9	6	7	8	8	6	6	2	3
27	3	3	2	1	7	7	6	7	8	8	8	9	9	9	8	11	12	12	12	11	8	0	-4	-4
28	-2	1	5	8	8	7	9	11	13	14	13	13	14	16	23	26	36	34	31	22	22	22	18	14
29	12	13	12	13	12	10	1	-3	2	7	5	4	2	3	10	12	13	11	15	22	22	24	26	30
30	23	22	25	21	16	6	3	8	13	17	12	10	11	10	9	14	4	-2	9	5	2	9	14	12
31	12	6	-5	-4	-2	-4	-7	-7	-4	0	2	4	6	8	9	15	15	12	7	3	5	5	6	5

Table 11 Hourly equatorial Dst-index

FEBRUARY 1970

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	4	5	5	1	-2	-0	5	4	8	10	10	6	7	11	14	16	18	19	20	18	22	22	18	8
2	9	8	7	1	-2	-1	1	-1	6	9	2	-11	-11	-2	3	2	-1	-1	-5	-12	-14	-8	-5	-5
3	7	7	2	-2	-3	-10	-5	-1	3	7	6	0	0	3	1	2	1	1	2	3	5	6	8	10
4	10	11	7	4	5	2	2	3	-2	-5	-4	2	4	4	0	-2	-5	-13	-10	-12	-11	-6	-4	-1
5	1	3	-2	-7	-10	-8	-9	-9	-6	-4	-6	-5	-1	-0	-0	-0	-0	-2	1	1	2	5	5	4
6	5	5	2	-1	-5	-5	-6	-8	-7	-7	-4	-4	-0	4	6	8	9	8	8	5	2	2	3	7
7	10	9	6	2	2	2	0	-1	-2	-3	-4	-3	-2	-0	-0	-1	-1	2	5	5	5	7	7	7
8	9	7	5	2	4	6	6	6	8	11	12	13	11	11	11	11	12	11	11	11	11	10	10	10
9	11	9	7	4	5	6	5	6	6	7	8	11	11	11	10	10	12	14	16	19	23	22	20	24
10	26	22	18	15	9	7	8	6	9	13	13	15	15	14	18	21	14	5	-1	3	6	5	3	4
11	6	8	7	5	5	6	7	11	10	6	5	9	11	9	9	9	7	7	5	4	5	7	5	-1
12	-3	-2	3	6	8	9	8	10	14	18	19	20	18	16	17	20	25	26	19	18	20	20	16	13
13	8	8	8	11	12	11	17	20	24	23	21	22	26	28	27	31	33	33	26	23	21	21	21	18
14	15	15	11	1	-11	-12	-7	-5	-3	0	-3	-7	-3	1	0	-1	-2	-2	1	2	3	4	5	5
15	5	-0	-6	-11	-12	-12	-14	-15	-12	-6	-4	3	7	6	4	7	8	6	8	13	16	19	19	14
16	15	18	15	11	10	11	12	10	11	14	16	16	16	13	9	8	10	12	13	13	13	14	11	10
17	12	13	10	7	9	12	14	16	16	15	11	11	14	17	20	18	17	17	3	-4	-8	-7	-4	-4
18	-2	-2	-3	-3	-5	-7	-8	-6	-1	-1	1	3	4	5	6	5	7	7	7	7	4	3	2	1
19	3	6	6	2	3	5	5	4	3	4	2	0	1	5	8	9	10	11	11	13	11	9	10	12
20	14	17	17	13	12	12	11	9	7	7	6	8	7	4	6	10	13	13	12	8	5	4	6	8
21	11	12	14	15	14	12	10	11	12	13	14	13	12	11	9	9	8	8	10	9	10	13	13	13
22	13	14	14	15	15	15	14	13	11	12	13	12	12	12	14	15	15	15	16	18	15	13	14	16
23	16	21	22	23	21	19	20	20	20	21	22	22	24	24	25	26	27	27	25	25	34	35	32	28
24	30	28	25	24	20	21	23	22	19	22	23	23	24	28	34	17	19	22	9	13	10	4	3	5
25	7	11	12	12	11	18	18	20	20	16	10	8	8	9	11	18	13	17	19	17	14	13	14	11
26	8	7	5	1	-4	-5	-8	-11	-11	-14	-19	-27	-30	-31	-31	-24	-18	-15	-14	-17	-18	-16	-14	-13
27	-13	-14	-14	-17	-17	-16	-9	-11	-11	-12	-18	-23	-20	-17	-15	-10	-8	-9	-7	3	2	-7	-14	-18
28	-24	-23	-22	-21	-15	-16	-16	-16	-20	-13	-11	-14	-19	-23	-16	-13	-8	-12	-10	-5	-4	-2	-3	-5

Table 11 Hourly equatorial Dst-index MARCH 1970

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	-15	-17	-10	-16	-17	-12	-19	-21	-40	-49	-40	-25	-26	-37	-49	-53	-41	-33	-33	-31	-28	-27	-21	-19
2	-25	-28	-29	-28	-29	-32	-29	-22	-23	-27	-29	-21	-14	-11	-9	-6	-5	-6	-3	-3	-3	-2	-0	-3
3	-5	-4	-5	-5	-4	-6	-7	-5	-3	-3	2	2	-1	-4	-4	-3	-6	-9	-5	-10	-17	-15	-13	-11
4	-6	-8	-13	-11	-7	-3	-5	-8	-4	-3	-7	-8	-13	-16	-16	-19	-23	-18	-22	-28	-29	-25	-18	-12
5	-10	-10	-7	-6	-7	-7	-5	-1	12	4	8	9	7	5	8	11	14	4	-6	-18	-28	-31	-22	-24
6	-29	-26	-14	-13	-13	-12	-15	-22	-26	-31	-25	-18	-15	-16	-19	-18	-18	-22	-23	-30	-39	-44	-50	-41
7	-41	-46	-40	-41	-47	-43	-40	-41	-40	-37	-46	-41	-34	-30	-31	-30	-28	-22	-34	-42	-17	-23	-14	-37
8	-38	-37	-39	-32	-44	-59	-72	-77	-73	-80	-73	-60	-59	-50	-37	-63	-84	-56	-90	-121	-211	-249	-278	-271
9	-251	-229	-219	-204	-187	-177	-168	-161	-155	-150	-145	-139	-135	-126	-122	-110	-104	-100	-100	-95	-97	-96	-90	-86
10	-80	-77	-75	-77	-79	-77	-72	-69	-66	-68	-68	-68	-68	-67	-66	-65	-61	-56	-58	-61	-60	-59	-56	-54
11	-57	-58	-56	-53	-52	-51	-50	-50	-49	-51	-51	-52	-50	-50	-51	-49	-47	-45	-43	-42	-41	-39	-37	-38
12	-39	-40	-40	-41	-41	-40	-38	-42	-44	-42	-39	-37	-31	-27	-26	-28	-28	-27	-25	-24	-23	-23	-23	-21
13	-20	-18	-17	-17	-19	-22	-27	-24	-22	-21	-26	-26	-22	-27	-30	-34	-28	-25	-25	-26	-35	-29	-21	-21
14	-21	-23	-19	-18	-19	-20	-18	-14	-15	-16	-15	-12	-12	-14	-16	-16	-14	-14	-14	-16	-17	-15	-13	-11
15	-13	-14	-15	-17	-23	-29	-28	-22	-23	-22	-20	-16	-14	-14	-15	-14	-11	-8	-10	-14	-16	-15	-10	-9
16	-9	-11	-12	-13	-14	-12	-10	-8	-7	-7	-7	-7	-7	-8	-9	-7	-5	-3	-1	0	-2	-0	2	2
17	1	2	3	4	2	-0	-1	4	6	7	6	5	3	-2	-5	-2	-2	1	2	-2	-5	-4	-9	-13
18	-13	-9	-9	-10	-11	-8	-8	-5	-2	2	-6	-13	-14	-14	-10	-7	-9	-7	-5	-7	-7	-8	-9	-13
19	-14	-11	-9	-7	-6	-6	-7	-8	-6	-3	-2	-3	-1	-0	-2	-1	-2	-1	-2	-1	-5	-10	-12	-9
20	-6	-6	-6	-6	-5	-5	-4	-2	-3	-5	-4	-3	-4	-7	-8	-8	-5	-3	-6	-9	-9	-9	-9	-9
21	-10	-10	-11	-11	-8	-6	-5	-3	-2	-3	-2	-1	-2	-3	-6	-6	-6	-6	-8	-6	-6	-5	-3	-2
22	-1	2	3	4	4	3	2	1	1	4	2	3	2	2	1	-0	-0	1	2	2	2	3	5	4
23	5	4	3	3	1	2	5	4	-4	-5	-1	7	7	2	-1	-1	-2	-0	-0	-5	-4	-2	1	3
24	1	0	3	3	4	4	3	3	4	6	6	7	8	12	11	10	7	7	6	8	9	7	3	4
25	6	7	9	10	10	8	7	6	6	6	7	10	12	11	8	8	9	11	10	9	6	4	5	8
26	11	12	11	12	6	4	4	7	6	6	8	9	10	9	8	4	5	8	7	7	5	5	4	3
27	3	5	8	9	10	10	11	37	51	32	21	33	38	31	22	12	8	9	10	3	-9	-15	-22	-25
28	-26	-24	-21	-17	-16	-19	-19	-20	-20	-26	-37	-28	-33	-34	-43	-45	-38	-38	-36	-35	-33	-29	-32	-40
29	-38	-31	-34	-35	-36	-35	-36	-34	-31	-28	-29	-28	-26	-24	-23	-25	-29	-32	-32	-34	-28	-26	-21	-21
30	-23	-14	-9	-9	-15	-20	-24	-24	-21	-16	-20	-28	-34	-34	-29	-28	-32	-32	-27	-25	-27	-24	-18	-14
31	-12	-12	-12	-10	-18	-1	4	-30	-49	-32	-43	-43	-30	-30	-59	-35	-24	-24	-36	-49	-49	-38	-42	-45

Table 11 Hourly equatorial Dst-index

APRIL 1970

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	-35	-40	-44	-44	-44	-42	-41	-39	-38	-39	-36	-34	-35	-33	-32	-32	-32	-33	-33	-34	-32	-18	-12
2	-15	-15	-15	-18	-25	-27	-23	-23	-22	-24	-24	-22	-18	-20	-24	-27	-24	-19	-21	-20	-19	-18	-17	-14
3	-9	-12	-15	-14	-22	-29	-28	-23	-16	-19	-20	-16	-15	-22	-23	-14	-12	-14	-12	-9	-10	-11	-9	-7
4	-6	-5	-8	-9	-9	-10	-12	-19	-18	-12	-4	-2	1	-1	-2	-2	-2	-1	-1	-1	-2	-2	0	3
5	7	8	5	4	3	4	2	1	-1	-5	-10	-2	-0	4	-1	0	1	1	2	5	4	5	6	8
6	8	0	-4	-4	-7	-7	-23	-32	-26	-22	-28	-34	-35	-28	-23	-29	-26	-29	-25	-27	-29	-28	-22	-14
7	-10	-5	-3	-3	-6	-9	-13	-14	-15	-19	-16	-12	-12	-13	-14	-13	-13	-10	-6	-3	-3	-4	-3	-0
8	-2	-10	-8	-9	-14	-16	-13	-11	-13	-17	-19	-13	-7	-8	-12	-14	-13	-10	-6	0	-0	-3	-7	-10
9	-5	-4	-3	-1	5	4	3	-6	-6	-4	-3	0	-11	-24	-21	-21	-27	-27	-24	-21	-17	-15	-20	-19
10	-13	-12	-11	-8	-6	-5	-2	-2	-3	-3	-4	-2	2	5	3	2	2	4	6	6	6	0	-1	-2
11	-3	-11	-10	-8	-8	-8	-6	-8	-11	-13	-11	-6	-3	-3	-10	-12	-10	-8	-6	-4	-3	-4	-5	-2
12	4	5	4	-2	-0	-2	-4	-8	-9	-3	-1	4	7	7	3	-5	-7	-4	-2	-0	2	1	3	4
13	6	6	5	3	-0	2	2	2	3	3	3	2	1	5	7	9	12	14	15	15	14	11	10	11
14	13	13	14	12	10	8	8	9	11	12	11	9	7	8	9	8	5	6	5	6	8	9	8	8
15	11	14	16	16	20	19	18	18	14	14	15	18	17	14	12	14	11	9	-6	-14	-9	-7	-7	-3
16	-10	-9	-11	-6	-13	-10	-9	-16	-16	-16	-14	-11	-8	-10	-10	-8	-3	2	2	-2	-14	-31	-37	-43
17	-51	-43	-38	-37	-44	-42	-36	-31	-30	-33	-26	-24	-18	-19	-26	-29	-29	-27	-31	-32	-33	-45	-40	-29
18	-19	-11	-9	-11	-12	-9	-7	-8	-7	-14	-24	-28	-22	-29	-28	-28	-25	-25	-22	-22	-22	-32	-29	-25
19	-13	-10	-27	-38	-38	-42	-38	-45	-48	-61	-55	-39	-25	-25	-28	-28	-34	-31	-31	-30	-30	-29	-28	-25
20	-22	-20	-22	-27	-24	-26	-24	-23	-23	-25	-24	-12	-11	-20	-14	-15	-21	-23	-20	-9	-4	-12	-23	-28
21	-23	-19	-21	-22	-30	-39	-41	-46	-49	-64	-73	-77	-81	-99	-118	-120	-125	-124	-134	-130	-108	-104	-125	-118
22	-107	-117	-129	-126	-101	-84	-73	-81	-76	-56	-58	-51	-47	-41	-46	-54	-54	-51	-47	-43	-41	-39	-40	-39
23	-37	-38	-39	-39	-38	-40	-45	-47	-46	-41	-38	-40	-42	-52	-50	-48	-47	-51	-48	-48	-48	-49	-48	-44
24	-40	-35	-41	-42	-40	-39	-39	-38	-38	-35	-34	-34	-35	-34	-35	-32	-29	-30	-31	-27	-27	-28	-24	-20
25	-18	-17	-18	-21	-21	-23	-30	-29	-32	-40	-33	-17	-14	-15	-20	-22	-20	-17	-20	-25	-31	-27	-26	-29
26	-23	-22	-24	-28	-26	-21	-16	-15	-14	-13	-10	-9	-15	-22	-26	-26	-24	-23	-23	-26	-27	-28	-27	-25
27	-22	-27	-25	-23	-24	-23	-22	-23	-19	-17	-17	-15	-15	-16	-17	-19	-19	-15	-14	-14	-12	-8	-8	-7
28	-5	-8	-10	-12	-13	-14	-16	-13	-13	-12	-12	-12	-16	-17	-15	-16	-17	-13	-11	-10	-9	-8	-9	-7
29	-4	-7	-10	-8	-8	-10	-11	-8	-5	-8	-7	-4	-6	-13	-17	-17	-18	-20	-20	-19	-12	-11	-11	-7
30	-2	-2	-7	-14	-20	-17	-6	-6	-8	-23	-20	-18	-14	-16	-25	-33	-31	-27	-20	-18	-18	-20	-14	-16

Table 11 Hourly equatorial Dst-index MAY 1970

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	-13	-5	-3	-6	-5	-10	-15	-12	-5	-0	0	1	-0	-10	-10	-8	-5	-1	1	-3	-6	-11	-17	-10
2	-8	-5	-6	-5	-5	-3	-4	-8	-8	-3	-2	-0	2	-2	-3	-6	-3	-6	-3	-3	-4	-5	-4	-3
3	2	1	3	1	-0	1	1	2	2	4	6	5	3	7	5	4	9	11	9	9	4	-3	2	7
4	10	12	11	8	7	4	2	2	4	8	4	1	3	3	-1	-2	-3	-3	-3	-2	-5	-7	-5	-2
5	-0	-0	1	2	6	6	6	7	9	8	-2	-13	-11	-6	-11	-12	-10	-9	-6	-3	-2	-3	-5	-10
6	-5	-2	-3	-5	-4	-5	-5	-5	-5	-4	-4	-6	-10	-13	-15	-13	-11	-6	-1	1	5	7	11	14
7	14	17	15	11	8	8	10	9	8	11	12	7	7	8	6	9	13	12	11	10	10	8	7	8
8	12	15	17	19	19	18	17	16	15	18	19	17	15	14	13	13	16	14	11	7	2	-2	-6	-9
9	-5	-1	3	5	5	6	5	4	3	3	2	3	5	6	5	3	2	2	5	8	9	9	8	8
10	7	5	4	3	3	4	4	5	5	4	6	6	8	6	4	5	5	5	4	4	4	6	10	13
11	13	11	10	10	10	10	10	12	12	10	10	12	13	15	15	16	18	20	20	20	22	22	20	22
12	19	13	11	15	9	12	17	21	16	15	11	-0	3	-1	-4	-5	-7	-9	-17	-16	-16	-17	-20	-18
13	-12	-11	-12	-15	-18	-21	-16	-12	-10	-8	-6	-6	-7	-7	-7	-8	-5	-1	-1	-5	-7	-3	-3	-3
14	2	5	8	8	7	2	-2	-4	-2	2	6	2	-2	-3	-4	-2	-10	-17	-19	-22	-20	-15	-6	-8
15	-9	-16	-14	-10	-11	-18	-14	-7	-7	-11	-11	-8	-4	-6	-10	-11	-9	-8	-11	-11	-9	-7	-4	0
16	2	1	-1	-3	-4	-7	-7	-4	-1	1	1	-2	-0	-1	-1	-0	0	-2	-4	-4	-4	-5	-0	4
17	12	13	16	19	10	-8	-9	1	7	7	8	1	-5	-8	-10	-3	2	3	1	-1	-1	1	2	4
18	4	1	-1	-5	4	6	11	14	20	20	20	17	6	4	3	5	6	8	10	8	7	6	9	12
19	14	11	12	6	1	-0	6	9	10	9	6	8	10	13	15	17	18	19	17	14	12	14	15	13
20	13	13	13	7	-2	-8	-9	1	3	2	1	-4	-10	-10	-8	-7	-10	-8	-9	-11	-16	-16	-10	-9
21	-10	-6	-5	-6	-9	-10	-9	-4	-1	2	0	-1	-6	-11	-15	-15	-10	-9	-12	-15	-14	-10	-9	-6
22	-1	-2	-3	-6	-2	-2	-2	1	5	7	5	0	-2	-4	-3	-3	-3	-4	-3	-4	-6	-8	-8	-2
23	3	5	6	4	3	4	6	7	9	12	14	10	7	10	13	11	10	8	1	-2	-5	-7	-3	-2
24	-4	-1	5	4	-0	-3	0	4	5	5	4	2	3	9	6	4	6	7	3	2	1	3	4	5
25	8	3	-0	-0	-0	-2	-1	4	9	9	7	-0	-8	-12	-12	-12	-10	-9	-7	-4	-4	-4	-3	3
26	3	3	4	5	5	5	3	5	9	11	9	8	6	6	8	8	7	8	10	10	9	11	12	12
27	14	14	14	14	12	15	17	16	13	15	17	17	10	13	13	16	10	3	-3	-9	-16	-26	-29	-38
28	-35	-40	-38	-24	-20	-15	-9	3	8	8	-18	-56	-73	-64	-74	-79	-77	-71	-69	-67	-63	-55	-48	-43
29	-51	-45	-42	-46	-51	-49	-50	-38	-45	-38	-34	-34	-36	-36	-34	-33	-31	-32	-31	-31	-36	-30	-25	-21
30	-24	-23	-25	-25	-28	-25	-20	-16	-14	-21	-25	-19	-15	-14	-16	-16	-16	-21	-21	-21	-23	-24	-22	-18
31	-15	-13	-12	-13	-15	-15	-13	-13	-7	-5	-5	-4	-4	-6	-5	-3	-1	-1	-7	-9	-8	-6	-3	2

Table 11 Hourly equatorial Dst-index JUNE 1970

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	4	4	-0	1	-9	-12	-4	-1	-3	-10	-9	-7	-6	-15	-19	-16	-14	-12	-15	-19	-23	-20	-23	-19
2	-14	-8	7	-1	-5	-5	-2	0	1	6	9	7	4	0	-1	-3	-7	-5	-5	-7	-5	-2	-3	-2
3	1	4	-0	-7	-14	-16	-15	-12	-10	-10	-15	-14	-8	-7	-5	-8	-8	-8	-12	-15	-13	-14	-15	-14
4	-10	-10	-8	-7	-11	-17	-12	-11	-10	-8	-7	-7	-8	-10	-9	-8	-7	-2	-2	-4	-8	-11	-8	-5
5	-0	4	5	-1	-4	-8	-12	-12	-8	-2	4	1	-1	-2	-4	-4	-4	-3	-2	-3	-1	2	5	8
6	9	13	15	14	13	11	10	8	8	9	7	7	6	5	4	5	6	10	12	13	14	13	11	13
7	14	16	16	12	10	11	12	14	15	16	22	27	28	29	29	27	29	31	31	16	8	1	-1	-4
8	-2	-5	-15	-15	-12	-18	-18	-9	-3	-5	-9	-10	-2	3	5	6	2	1	-2	-7	-8	-6	-4	-1
9	2	6	6	2	1	4	6	8	6	5	5	5	5	5	6	8	12	12	8	2	2	-1	-5	-4
10	-2	-1	-3	-2	0	4	5	7	3	2	6	10	12	10	7	4	-1	-4	-6	-10	-10	-9	-7	-1
11	-1	-1	2	1	2	5	7	5	6	8	9	11	12	15	17	17	15	12	4	1	0	1	4	3
12	6	7	7	8	9	8	9	9	8	8	6	6	10	12	14	18	16	12	8	7	7	8	7	10
13	14	20	19	14	11	14	15	10	10	7	-2	-6	-11	-14	-8	-2	-5	-5	-5	-5	-7	-8	-8	-3
14	0	-0	-0	1	-6	-7	-7	-3	-2	1	2	3	4	6	6	8	11	15	13	8	9	16	20	21
15	14	3	-1	-1	1	-3	-4	-2	-3	-8	-7	-5	-4	-3	-3	-5	-7	-7	-5	-5	-6	-8	-1	4
16	4	2	-1	-10	-9	-11	-8	-2	3	6	7	4	1	-1	0	2	5	8	6	4	4	3	-0	5
17	8	11	12	12	11	12	13	18	36	35	35	29	24	23	23	20	13	6	1	-10	-18	-20	-21	-23
18	-20	-15	-10	-10	-7	-4	-3	-1	-3	-20	-15	-20	-22	-23	-20	-23	-24	-29	-31	-37	-40	-39	-32	-21
19	-19	-15	-18	-29	-27	-25	-21	-15	-14	-16	-18	-14	-10	-9	-10	-12	-15	-16	-20	-18	-14	-9	-12	-18
20	-29	-35	-33	-31	-34	-40	-42	-40	-41	-35	-29	-27	-31	-31	-33	-36	-38	-37	-36	-39	-41	-43	-49	-54
21	-57	-53	-52	-48	-46	-51	-53	-56	-53	-45	-40	-37	-28	-28	-30	-34	-35	-30	-24	-19	-14	-16	-14	-11
22	-10	-13	-11	-9	-9	-7	-5	-4	-2	-1	2	2	-1	-1	-4	-3	-2	2	9	13	12	12	16	12
23	7	4	3	2	2	1	1	4	4	4	4	6	5	5	4	0	1	6	7	12	13	12	10	11
24	12	7	6	10	14	17	19	18	17	16	19	20	20	25	25	28	27	29	30	22	17	19	17	9
25	4	-1	-4	-1	-3	-6	-1	3	2	1	-2	-3	-4	-4	-2	-1	1	2	1	2	6	10	5	8
26	12	12	8	9	8	6	2	1	-0	-1	0	6	7	10	12	7	2	-0	-6	-9	-10	-7	-5	-1
27	-1	-0	1	-1	-6	-5	15	17	-15	-21	-19	-13	-30	-44	-35	-28	-32	-31	-32	-29	-30	-36	-30	-23
28	-18	-19	-27	-28	-28	-24	-21	-20	-20	-22	-22	-21	-22	-24	-23	-24	-22	-18	-15	-15	-10	-9	-6	-4
29	-2	-2	-4	-6	-6	-5	-1	-4	-4	-2	-3	-2	-3	-3	-5	-6	-12	-15	-16	-16	-15	-16	-14	-8
30	-4	-3	-3	-2	-3	-0	1	2	1	-2	-1	-0	-3	-6	-6	-3	-1	1	3	3	5	5	5	7

Table 11 Hourly equatorial Dst-index JULY 1970

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	9	6	4	-2	-6	-10	-1	-2	-8	-7	2	3	1	4	2	7	9	14	13	9	7	8	10	13
2	12	9	8	7	7	14	8	-3	-1	0	4	3	4	5	2	-4	-4	-4	-3	-2	3	4	4	6
3	3	-1	-3	-3	4	1	-3	-9	-20	-24	-20	-16	-14	-17	-17	-20	-22	-20	-21	-18	-11	-15	-9	-18
4	-47	-34	-34	-38	-30	-39	-33	-37	-23	-27	-28	-27	-25	-25	-26	-26	-26	-27	-26	-24	-24	-24	-22	-20
5	-17	-16	-9	-5	-13	-17	-18	-12	-13	-14	-13	-11	-12	-9	-12	-11	-9	-10	-11	-8	-3	1	3	-0
6	-3	-8	-11	-14	-15	-7	-4	-12	-20	-18	-10	-13	-15	-14	-13	-13	-10	-7	-6	-3	0	-1	-2	-3
7	-1	-1	-3	-3	-2	-2	0	-0	-2	-3	-4	-5	-4	-1	1	3	3	6	6	-1	-5	-6	-7	-3
8	-3	-8	-12	-14	-15	-13	-9	-6	-5	-1	1	2	1	0	-1	-4	-4	-2	-2	-6	-8	-11	-9	8
9	8	7	22	25	4	-16	-14	-15	-12	-32	-43	-41	-31	-27	-38	-41	-36	-28	-28	-53	-73	-82	-81	-80
10	-53	-35	-39	-43	-42	-38	-35	-31	-29	-28	-24	-22	-28	-28	-24	-12	-1	12	-12	-22	-25	-8	-13	-20
11	-25	-25	-30	-26	-17	-14	-16	-16	-14	-15	-17	-17	-20	-21	-22	-18	-17	-11	-9	-13	-14	-7	-8	-10
12	-9	-11	-13	-7	-6	-6	-5	-4	-5	-6	-7	-8	-10	-13	-14	-14	-11	-5	-3	-10	-5	-5	-4	-5
13	-4	-7	-7	-0	1	-1	-0	2	3	3	1	-3	-3	-3	-3	-1	-3	-4	-6	-4	-3	-6	-5	-1
14	-1	-2	-2	0	1	2	3	2	1	-2	-1	0	2	1	-1	-1	1	3	-3	-7	-4	-7	-3	-2
15	-4	-5	-3	1	3	3	5	6	6	5	0	-1	-0	2	-1	-1	2	4	3	2	4	8	9	8
16	13	8	1	5	7	8	7	9	8	8	5	6	6	2	0	2	4	2	-0	0	4	8	10	11
17	10	9	9	10	13	14	16	16	15	14	14	13	12	10	8	11	11	9	5	3	4	-1	-6	-6
18	-3	0	3	1	-0	4	7	5	5	6	8	8	9	9	6	6	4	5	7	8	7	5	3	5
19	6	7	8	13	16	16	13	11	12	13	12	9	7	6	7	7	5	4	-1	1	5	8	10	9
20	7	4	2	3	6	10	13	11	12	12	12	14	15	14	14	17	19	19	18	15	14	14	12	6
21	-1	-3	0	-2	-3	2	9	15	16	25	17	11	16	-3	-18	-18	-14	-15	-18	-20	-15	-11	-13	-17
22	-11	-12	-11	-9	-5	-1	-1	1	-2	-3	-4	-2	1	3	-1	-4	-4	-7	-8	-7	-5	-6	-9	-15
23	-16	-17	-16	-10	-4	-1	-1	3	-0	-2	1	2	1	-2	-1	-1	-1	1	-4	2	5	3	3	6
24	10	1	-9	-20	-25	-25	-26	-22	-13	-9	-10	-6	-3	1	-3	-6	-7	-9	-12	-9	-9	-12	-12	-2
25	16	0	-12	-30	-25	-14	-79	-88	-98	-93	-88	-85	-88	-81	-80	-78	-70	-65	-58	-60	-57	-56	-66	-68
26	-66	-62	-62	-59	-49	-45	-45	-44	-37	-41	-44	-51	-48	-46	-44	-38	-31	-29	-25	-29	-30	-29	-36	-31
27	-25	-25	-26	-26	-23	-26	-23	-20	-17	-21	-26	-24	-22	-22	-28	-28	-28	-25	-24	-23	-20	-20	-18	-19
28	-21	-23	-22	-19	-18	-16	-14	-15	-12	-11	-5	-5	-5	-7	-4	-8	-9	-7	-9	-5	-3	-5	-9	-12
29	-12	1	3	3	-6	-22	-24	-41	-47	-68	-64	-68	-71	-71	-61	-59	-60	-53	-54	-45	-40	-37	-37	-39
30	-37	-36	-29	-29	-28	-25	-26	-22	-19	-18	-22	-25	-25	-25	-23	-23	-27	-24	-23	-20	-18	-20	-16	-17
31	-23	-25	-29	-25	-25	-22	-23	-22	-23	-24	-20	-17	-17	-21	-23	-23	-22	-22	-22	-19	-18	-23	-22	-20

Table 11 Hourly equatorial Dst-index AUGUST 1970

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	-14	-15	-13	-12	-7	-6	-7	-8	-9	-7	-3	-2	-2	-4	-3	1	5	6	6	4	0	-2	-1	2
2	-5	-7	-5	-2	-2	1	4	5	3	-0	5	7	9	11	13	15	13	15	15	13	15	12	12	14
3	20	24	22	22	19	18	20	20	19	17	15	14	14	13	8	5	7	7	7	5	6	6	7	5
4	1	1	3	7	12	12	13	12	12	11	11	10	11	10	9	12	11	12	14	17	17	17	18	21
5	19	18	15	11	9	8	7	7	9	10	8	9	10	11	11	9	9	13	19	21	22	23	21	18
6	17	14	14	14	20	22	21	17	17	16	16	22	22	23	25	23	32	27	21	17	25	27	22	19
7	19	18	15	20	26	26	26	20	20	16	14	15	16	16	16	17	12	11	12	15	18	11	-2	-13
8	-12	-9	-6	-15	-13	-9	-7	-3	-19	-41	-51	-46	-34	-28	-31	-36	-31	-27	-30	-34	-33	-33	-35	-30
9	-38	-51	-41	-30	-31	-32	-30	-27	-22	-19	-17	-19	-16	-15	-13	-12	-11	-15	-18	-14	-10	-11	-12	-14
10	-13	-13	-12	-10	-7	-6	-5	-5	-7	-11	-12	-8	-6	-4	-1	-1	-4	-9	-9	-8	-5	-7	-7	-6
11	-7	-8	-7	-8	-3	-0	1	2	2	1	-1	-1	0	-0	-3	-5	-5	-6	-7	-6	-3	-0	-3	-9
12	-15	-17	-17	-17	-18	-13	-8	-6	-6	-6	-3	-1	-1	-2	-2	-1	1	-1	-4	-4	-1	-1	-1	3
13	6	1	-1	-3	-1	-4	-12	-8	-4	-0	-5	-7	-4	-1	-4	-6	-7	-6	-3	-8	-8	-12	-16	-13
14	-9	-6	-4	-7	-9	-8	-3	-0	2	2	3	4	5	4	2	-1	-1	-2	-2	1	7	8	6	5
15	7	8	6	4	7	6	5	8	9	7	6	3	-2	-4	-5	-5	-6	-4	-2	1	3	11	16	14
16	15	20	16	11	8	4	7	9	11	12	11	7	5	6	10	11	10	6	1	1	2	2	41	17
17	11	10	-12	-41	-95	-139	-150	-163	-172	-157	-146	-150	-128	-105	-97	-101	-116	-108	-106	-106	-105	-89	-88	-91
18	-88	-76	-75	-74	-73	-72	-75	-75	-74	-76	-71	-78	-76	-76	-74	-73	-77	-80	-78	-68	-60	-61	-63	-63
19	-55	-56	-52	-47	-49	-47	-44	-41	-39	-38	-32	-32	-36	-36	-36	-35	-38	-38	-33	-31	-27	-28	-30	-33
20	-35	-35	-32	-30	-28	-24	-21	-20	-20	-22	-20	-21	-25	-22	-18	-18	-16	-16	-17	-16	-16	-12	-14	-20
21	-25	-29	-28	-23	-20	-17	-15	-15	-12	-8	-9	-9	-10	-8	-7	-7	-8	-11	-12	-13	-13	-11	-10	-10
22	-13	-13	-12	-9	-6	-5	-1	3	-1	-4	-4	-7	-12	-14	-16	-16	-15	-15	-18	-18	-16	-13	-14	-19
23	-21	-23	-22	-22	-20	-16	-12	-16	-20	-20	-18	-14	-10	-6	-7	-8	-6	-8	-8	-8	-7	-6	-7	-9
24	-10	-8	-12	-13	-7	-6	-5	-5	-4	-2	-1	-3	-5	-5	-5	-5	-5	-6	-9	-9	-8	-8	-9	-13
25	-14	-14	-15	-16	-16	-16	-11	-12	-12	-11	-13	-17	-20	-20	-20	-21	-18	-19	-19	-19	-17	-16	-18	-17
26	-14	-7	-2	-3	-11	-21	-24	-20	-21	-30	-37	-41	-31	-30	-33	-38	-37	-37	-35	-28	-24	-25	-24	-22
27	-26	-28	-23	-20	-21	-22	-19	-12	-9	-6	-6	-8	-6	-4	-8	-11	-13	-17	-17	-17	-15	-18	-22	-23
28	-18	-13	-12	-11	-6	-9	-10	-4	-4	-4	-7	-8	-2	2	1	-4	-12	-15	-9	-12	-19	-23	-25	-13
29	-13	-17	-16	-19	-24	-27	-17	-17	-23	-24	-22	-19	-21	-19	-16	-14	-13	-15	-15	-14	-12	-9	-9	-10
30	-12	-14	-12	-11	-10	-10	-5	-6	-8	-6	-4	-6	-5	-3	-1	-0	1	2	-1	-3	-2	0	3	6
31	5	4	7	15	19	14	4	-6	-17	-18	-15	-8	-3	-3	-2	1	-5	-24	-39	-43	-36	-24	-20	-17

Table 11 Hourly equatorial Dst-index SEPTEMBER 1970

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	-14	-10	-7	-2	1	2	-3	-9	-15	-25	-25	-14	1	18	-2	-13	-17	-14	-18	-29	-28	-21	-23	-23
2	-19	-14	-10	-9	-8	-12	-9	-3	-0	-0	-16	-21	-19	-12	-13	-16	-17	-20	-19	-19	-20	-24	-21	-21
3	-16	-11	-8	-6	-11	-7	-2	2	-6	-17	-20	-13	-16	-9	-4	-9	-12	-9	-7	-10	-11	-16	-20	-26
4	-16	-12	-4	0	-2	-1	1	-5	1	1	-0	-5	-8	1	5	3	-3	-4	-8	-15	-14	-12	-9	-9
5	-8	-5	-5	-3	-0	-3	-3	0	1	0	-2	-3	-1	-1	-0	-0	-3	-2	-3	-3	-7	-8	-14	-14
6	-11	-5	-1	-1	-1	0	5	7	9	7	5	2	2	2	3	3	2	2	2	2	4	3	2	-3
7	-3	-2	2	3	5	8	9	11	10	8	5	8	10	11	10	9	11	12	12	10	4	1	1	2
8	3	5	7	12	12	10	6	9	12	10	10	7	7	9	6	2	4	3	-0	-7	-5	1	4	2
9	-1	2	5	5	4	2	1	8	10	9	8	8	8	8	8	6	5	7	6	1	-1	-4	-8	-11
10	-8	-9	-12	-17	-23	-17	-10	-6	-4	-3	-3	0	4	4	4	3	2	-0	-1	-2	-2	0	3	3
11	2	2	2	2	3	2	4	5	7	7	5	5	6	6	5	5	7	7	6	10	11	11	14	18
12	17	15	15	14	11	11	11	9	8	11	13	13	12	12	10	10	12	10	10	10	9	9	12	16
13	16	15	17	17	15	3	-9	-16	-22	-23	-27	-27	-35	-31	-31	-28	-30	-28	-20	-19	-28	-33	-34	-34
14	-25	-15	-17	-18	-15	-12	-9	-8	-11	-10	-11	-16	-21	-25	-25	-35	-33	-28	-27	-28	-30	-34	-30	-24
15	-26	-26	-22	-21	-23	-19	-17	-13	-8	-6	-9	-13	-15	-15	-14	-14	-13	-12	-15	-17	-17	-19	-19	-17
16	-13	-9	-5	-3	-3	-8	-8	-6	-2	-4	-5	-6	-6	-6	-6	-4	-2	0	-3	-6	-8	-9	-5	-3
17	-4	-4	-2	-0	-1	-3	-4	-7	-5	-1	-1	-3	-5	-5	-3	0	2	4	2	-2	-2	-6	-11	-11
18	-6	-5	-7	-7	-5	-2	-1	-2	-3	-4	-3	-3	-5	-4	-6	-4	-2	1	-2	-0	-1	-2	-8	-5
19	-5	-5	-7	-7	-6	-10	-9	-5	-6	-14	-21	-17	-9	-8	-14	-17	-15	-9	-13	-19	-20	-18	-16	-12
20	-9	-6	-3	2	0	-4	-4	-1	-0	-3	-4	-9	-8	-11	-13	-14	-11	-6	-3	-7	-12	-10	-9	-15
21	-18	-19	-17	-8	-7	-14	-13	-14	-14	-14	-8	-8	-14	-18	-22	-20	-18	-15	-16	-16	-15	-16	-16	-14
22	-13	-14	-12	-13	-10	-8	-2	-1	-2	-4	-11	-10	-8	-7	-3	-1	-1	-5	-6	-6	-6	-6	-5	-7
23	-7	-7	-5	-3	1	5	5	2	-0	-3	-6	-5	-2	-4	-2	-2	-1	-2	-2	-5	-6	-6	-6	-8
24	-11	-12	-9	-5	-4	-4	-3	-8	-8	-9	-3	1	3	5	8	7	9	8	3	-1	3	4	2	-1
25	0	2	4	4	3	-1	-6	-1	2	-0	-1	3	7	10	9	7	10	11	6	4	5	7	8	8
26	7	5	2	2	3	6	7	6	5	2	4	8	14	15	18	19	21	23	24	23	22	28	27	22
27	16	8	-7	-8	-14	-16	-17	-16	-11	-9	-14	-20	-15	-10	-10	-14	-12	-1	-4	-6	-4	-1	-10	-21
28	-25	-17	-11	-14	-15	-6	1	3	3	0	4	5	4	1	2	0	3	7	8	7	9	8	9	8
29	6	7	8	15	21	18	14	15	9	9	13	13	12	12	14	13	15	17	17	20	19	21	22	21
30	22	22	17	23	28	26	32	23	19	15	12	19	22	22	22	26	26	22	24	23	22	20	19	18

Table 11 Hourly equatorial Dst-index OCTOBER 1970

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	15	17	15	14	14	16	17	18	17	14	12	11	13	11	9	7	11	10	9	-1	-4	-1	2	-2
2	0	-0	7	12	12	13	12	13	14	13	7	10	10	9	7	6	9	12	3	6	9	9	9	8
3	6	3	1	4	9	12	15	13	10	9	13	14	10	7	4	3	6	5	6	4	8	6	0	14
4	8	2	5	3	-7	-6	-6	-20	-20	-22	-14	-11	-11	-13	-10	-9	-7	-9	-11	-7	-8	-8	-4	-3
5	-5	-5	-1	1	2	5	3	4	1	4	4	2	0	1	1	2	3	0	-1	1	0	-2	-1	0
6	-0	1	4	7	7	4	6	7	7	7	6	6	7	8	8	9	8	7	6	2	2	3	4	5
7	7	8	10	10	10	11	11	11	11	8	7	10	13	14	16	15	14	12	9	9	9	8	11	12
8	13	15	13	12	13	14	16	17	15	14	14	14	13	13	13	12	12	12	13	11	11	13	12	7
9	5	6	9	13	14	16	17	19	17	16	16	14	14	15	14	11	10	8	7	9	12	13	11	9
10	9	9	10	10	10	7	6	4	0	8	13	14	14	17	16	12	8	10	6	-4	-13	-13	-9	-5
11	-7	-12	-19	-15	-15	-24	-35	-40	-45	-49	-46	-38	-36	-35	-38	-39	-35	-30	-26	-18	-13	-5	-1	-6
12	-13	-28	-31	-34	-41	-42	-38	-36	-42	-40	-32	-25	-18	-17	-15	-12	-10	-8	-6	-5	-4	-1	-0	0
13	-1	-0	0	1	-1	-0	-5	-4	1	2	4	1	-1	-3	1	-1	-7	-9	-11	-4	-5	-4	-4	-4
14	-6	-11	-12	-10	-6	-4	-6	-8	-8	-6	-6	-9	-9	-8	-5	-4	-2	-2	-4	-5	-7	-5	-1	3
15	6	3	2	-1	-2	-2	-2	-5	-5	-2	-2	-3	-4	-2	0	4	7	9	12	13	11	9	11	10
16	8	9	9	8	7	9	12	11	11	27	17	3	-23	-21	-9	-27	-63	-72	-87	-100	-78	-73	-75	-74
17	-66	-58	-48	-45	-45	-51	-52	-54	-59	-60	-55	-55	-58	-65	-73	-75	-81	-87	-88	-88	-85	-91	-83	-89
18	-106	-108	-98	-97	-76	-65	-63	-70	-74	-65	-52	-45	-40	-41	-43	-44	-41	-38	-34	-35	-35	-35	-38	-38
19	-38	-37	-36	-34	-34	-32	-33	-35	-30	-26	-23	-22	-24	-28	-30	-28	-28	-25	-23	-18	-18	-20	-21	-25
20	-26	-27	-27	-27	-28	-29	-28	-26	-22	-22	-20	-16	-11	-11	-12	-13	-12	-9	-9	-9	-12	-12	-12	-13
21	-12	-10	-9	-7	-7	-5	-5	-5	-4	-5	-3	0	2	3	2	2	0	1	3	4	5	8	5	1
22	1	3	-1	-5	-10	-12	-14	-15	-11	-9	-10	-12	-13	-21	-25	-28	-31	-33	-41	-51	-63	-59	-54	-52
23	-48	-56	-59	-57	-47	-44	-42	-40	-36	-39	-32	-30	-28	-31	-39	-47	-48	-40	-37	-44	-46	-49	-42	-35
24	-31	-30	-29	-35	-36	-39	-33	-32	-36	-31	-26	-28	-26	-23	-23	-24	-21	-18	-16	-13	-14	-14	-11	-11
25	-8	-9	-9	-8	-9	-8	-10	-8	-9	-8	-6	-7	-7	-5	-6	-8	-7	-2	-0	3	4	3	1	2
26	2	-1	-3	-1	-0	-2	-2	0	1	-1	-1	-2	-3	-4	-4	-5	-5	-3	1	5	8	10	9	8
27	7	8	9	7	5	7	8	7	9	11	15	19	20	18	17	18	18	19	18	21	20	14	15	17
28	16	13	6	15	6	4	-4	-8	-2	3	5	10	11	7	4	3	1	-1	-2	-3	-10	-20	-25	-11
29	-7	-7	-3	-2	-3	-6	-7	-6	-5	-2	-7	1	6	-1	-4	1	3	-6	-4	-9	-20	-17	-16	-13
30	-15	-12	-9	-10	-16	-13	-13	-15	-16	-15	-13	-7	-7	-9	-11	-9	-9	-5	-2	1	3	3	3	3
31	4	4	5	6	5	3	1	0	-3	-4	-1	2	-0	-4	-8	-7	-7	-6	-3	-3	-2	0	1	2

Table 11 Hourly equatorial Dst-index NOVEMBER 1970

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	2	1	4	5	7	9	8	8	9	8	10	13	10	9	8	7	4	4	6	9	12	12	11	9
2	10	9	10	13	16	17	12	15	16	15	17	17	11	0	-2	-0	3	5	7	9	10	12	9	8
3	6	5	7	6	1	-0	1	4	7	8	10	13	10	5	6	6	2	-5	-8	-9	-9	-9	-9	-7
4	-5	-6	-7	-4	-4	-5	-6	-6	-3	-3	-2	1	-3	-1	1	1	3	4	6	6	4	1	5	7
5	6	5	5	6	8	2	-4	-3	-1	1	4	8	8	10	8	9	10	16	14	9	10	10	9	8
6	4	6	3	-3	-3	-2	-10	-17	-20	-26	-28	-29	-27	-22	-23	-23	-20	-16	-13	-12	-14	-12	-5	-4
7	7	33	-2	-20	-36	-45	-56	-70	-85	-97	-89	-62	-72	-83	-87	-86	-77	-66	-61	-55	-50	-46	-42	-43
8	-46	-46	-45	-45	-45	-46	-46	-45	-40	-34	-32	-30	-27	-29	-36	-36	-33	-28	-25	-24	-21	-18	-15	-15
9	-14	-16	-14	-17	-21	-26	-27	-25	-21	-20	-19	-16	-16	-16	-18	-19	-20	-21	-23	-19	-20	-17	-13	-8
10	-5	-12	-11	-13	-16	-22	-19	-18	-16	-17	-24	-30	-33	-30	-25	-30	-30	-30	-28	-25	-25	-25	-19	-15
11	-19	-22	-24	-27	-27	-28	-33	-34	-32	-30	-21	-25	-26	-27	-30	-23	-23	-21	-17	-16	-19	-26	-24	-19
12	-17	-18	-15	-16	-14	-15	-20	-20	-16	-20	-20	-20	-20	-19	-21	-20	-17	-14	-12	-13	-13	-13	-10	-8
13	-7	-7	-10	-16	-15	-15	-25	-22	-14	-11	-12	-13	-19	-17	-20	-19	-18	-18	-22	-23	-22	-19	-14	-14
14	-18	-22	-17	-13	-12	-12	-12	-13	-11	-6	-9	-10	-12	-11	-10	-10	-5	-7	-5	-7	-5	-3	-2	-1
15	1	2	3	2	-1	-1	0	4	2	1	1	4	6	7	6	6	7	7	4	0	1	3	5	6
16	4	6	12	16	16	14	11	9	8	8	11	12	12	16	24	31	27	23	28	25	21	22	19	16
17	6	1	5	12	14	19	22	23	24	18	15	11	12	10	13	12	10	11	9	10	13	13	12	11
18	8	7	11	15	17	12	10	14	17	17	20	15	28	36	24	-14	-11	-1	6	3	3	11	-19	-40
19	-62	-65	-70	-73	-75	-77	-70	-51	-40	-37	-41	-42	-40	-39	-36	-30	-24	-21	-20	-19	-15	-13	-11	-10
20	-12	-15	-15	-14	-10	-8	-9	-9	-7	-7	-8	-5	-2	1	2	4	5	8	10	7	4	4	2	-0
21	-2	-4	-6	-13	-11	-11	-10	-18	-20	-31	-39	-55	-75	-73	-84	-98	-83	-65	-58	-53	-47	-40	-39	-37
22	-38	-38	-22	-24	-30	-34	-33	-33	-31	-33	-37	-35	-38	-40	-43	-48	-48	-44	-43	-44	-45	-44	-43	-45
23	-48	-47	-42	-41	-43	-45	-49	-45	-42	-34	-41	-41	-34	-25	-39	-47	-52	-49	-39	-36	-34	-27	-33	-34
24	-33	-33	-32	-30	-32	-15	-6	-3	-5	-9	-9	-9	-6	-5	-5	-9	-17	-19	-19	-18	-12	-8	-11	-7
25	-3	-1	-1	1	3	3	1	-2	-3	-1	1	-1	-6	-6	-2	-4	-5	-9	-5	-4	-2	1	3	3
26	-2	-5	-3	-2	-0	-1	-3	-2	-0	-0	-3	-1	0	2	4	2	1	1	5	4	-1	4	6	7
27	4	3	2	4	4	1	-0	0	0	-1	-3	-2	-3	-7	-6	0	2	4	4	8	8	3	3	4
28	2	-1	-0	-1	-3	-3	-4	-1	3	4	1	-1	-1	-0	1	0	-1	0	3	2	3	5	7	8
29	9	9	9	8	9	11	11	10	9	9	6	5	7	9	12	12	11	11	13	14	14	16	17	17
30	19	18	18	17	15	15	15	15	16	15	14	12	8	8	8	10	10	11	12	13	13	14	14	14

Table 11 Hourly equatorial Dst-index

DECEMBER 1970

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	15	17	18	16	18	19	20	19	19	19	19	21	21	19	18	18	19	19	18	18	19	18	18	17
2	16	16	21	24	25	25	23	21	22	23	20	20	19	19	26	26	26	31	24	13	17	19	15	14
3	12	10	16	18	19	20	17	14	14	15	14	14	16	15	17	18	16	14	16	16	15	13	11	6
4	8	12	12	13	13	15	14	13	12	12	13	18	15	15	20	19	19	24	28	24	17	6	2	0
5	-0	-2	-3	-2	-2	4	1	4	3	2	6	9	15	15	5	0	-4	3	5	5	7	9	9	10
6	8	6	7	7	7	7	4	-5	-3	-4	-9	-9	-2	-1	-1	-7	-9	-10	-8	-5	-8	-5	-3	-3
7	2	7	10	8	5	5	5	1	-1	2	3	-1	-3	-2	3	5	4	8	9	12	6	5	11	1
8	-3	-14	-18	-26	-37	-32	-30	-22	-21	-20	-14	-18	-17	-17	-15	-17	-16	-13	-13	-15	-12	-8	-9	-11
9	-12	-14	-14	-13	-13	-8	-4	-5	-2	-5	-2	-3	0	2	1	3	4	5	6	7	6	8	7	6
10	2	2	2	2	3	5	5	5	7	6	3	5	6	4	4	4	4	1	2	3	2	5	5	6
11	5	4	3	1	2	3	5	9	11	11	9	11	11	12	15	16	15	13	16	19	19	21	24	24
12	22	20	20	18	16	17	14	11	11	12	13	11	8	7	4	8	9	9	12	15	16	14	10	7
13	8	7	7	7	11	13	13	13	15	13	12	12	12	12	14	15	13	12	16	22	21	19	17	10
14	16	22	45	46	27	-3	-94	-141	-115	-114	-113	-113	-116	-108	-94	-88	-88	-87	-83	-71	-71	-54	-57	-59
15	-64	-58	-56	-61	-62	-64	-67	-71	-71	-69	-68	-62	-56	-51	-47	-49	-53	-50	-46	-42	-39	-38	-40	-41
16	-40	-40	-40	-38	-35	-34	-34	-31	-29	-28	-30	-30	-28	-30	-31	-33	-32	-29	-26	-25	-26	-26	-28	-31
17	-29	-23	-21	-22	-24	-23	-22	-20	-19	-20	-19	-20	-20	-19	-18	-18	-17	-15	-11	-10	-13	-15	-17	-18
18	-18	-16	-15	-15	-14	-12	-9	-9	-10	-10	-12	-14	-13	-10	-6	-1	-3	-2	1	3	2	4	14	12
19	9	6	8	9	9	10	13	15	13	4	4	7	6	7	6	10	14	19	14	19	12	2	2	0
20	1	-2	-5	-7	-7	-9	-12	-17	-18	-20	-24	-20	-15	-12	-12	-11	-12	-10	-8	-9	-13	-15	-15	-13
21	-12	-11	-10	-10	-8	-7	-7	-9	-9	-7	-9	-5	-1	-1	-3	-6	-8	-8	-5	-4	-6	-10	-15	-17
22	-15	-13	-11	-13	-13	-14	-14	-11	-6	-2	-2	0	4	5	5	-1	-4	-4	-1	1	6	-3	-5	-3
23	-1	1	5	5	1	-1	1	1	5	6	7	0	0	3	-5	-9	-7	-5	-3	0	3	6	5	2
24	-13	-23	-30	-33	-31	-25	-23	-21	-17	-16	-15	-13	-13	-12	-13	-9	-10	-11	-9	-7	-7	-9	-9	-10
25	-11	-10	-7	-6	-7	-6	-6	-5	-4	-6	-7	-6	-4	-0	-2	-5	-8	-10	-8	-7	-6	-5	-7	-5
26	-1	0	-0	-3	-5	-5	-3	-5	-5	-1	0	0	-2	-1	3	-0	-6	-5	1	3	3	1	1	0
27	1	4	4	2	5	7	10	9	7	6	3	3	1	-0	-5	-10	-7	-5	-5	-3	-5	-10	-9	-6
28	-12	-17	-21	-15	-4	-1	-6	-8	-10	-9	-11	-9	-6	-8	-9	-12	-21	-31	-32	-37	-38	-45	-42	-38
29	-34	-26	-24	-23	-23	-22	-23	-23	-19	-14	-11	-12	-14	-15	-15	-12	-11	-5	-6	0	9	13	-3	-20
30	-26	-20	-16	-17	-15	-16	-14	-13	-12	-10	-7	-7	-7	-7	-9	-11	-12	-14	-13	-10	-3	-9	-10	-6
31	-5	-3	-0	0	1	1	-1	-4	-2	2	3	5	4	3	-0	-0	-1	-1	1	4	6	9	8	6

Table 12 DAILY MEANS OF EQUATORIAL DST FOR 1970

DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	11	10	-28	-35	-6	-10	4	-4	-12	10	8	18
2	-13	-1	-16	-21	-4	-2	3	7	-14	9	10	21
3	-14	2	-6	-16	4	-10	-12	13	-11	8	2	15
4	-5	-1	-13	-5	2	-8	-29	11	-5	-8	-1	14
5	5	-2	-4	2	-2	-2	-10	13	-4	1	7	4
6	-0	1	-24	-21	-4	10	-9	21	2	5	-13	-2
7	5	2	-35	-9	10	17	-1	15	7	11	-54	4
8	7	9	-94	-10	12	-6	-5	-26	5	13	-34	-17
9	2	12	-144	-11	4	4	-29	-22	4	12	-19	-2
10	7	11	-67	-2	5	1	-25	-7	-4	6	-22	4
11	10	7	-48	-7	15	6	-17	-3	6	-26	-25	12
12	6	14	-33	-0	1	9	-8	-6	12	-21	-16	13
13	8	21	-24	7	-9	2	-2	-5	-16	-2	-16	13
14	4	0	-16	9	-4	5	-1	-0	-21	-6	-10	-53
15	14	2	-16	9	-9	-3	2	4	-16	3	3	-55
16	-23	13	-6	-13	-2	1	6	10	-5	-24	16	-31
17	-27	9	0	-33	3	10	9	-102	-3	-67	13	-19
18	-9	1	-8	-20	8	-20	5	-73	-4	-58	8	-6
19	4	6	-5	-33	11	-16	9	-39	-12	-28	-41	9
20	1	10	-6	-20	-4	-37	12	-22	-7	-18	-3	-12
21	5	12	-5	-79	-8	-36	-3	-14	-15	-2	-41	-8
22	5	14	2	-67	-2	-0	-5	-11	-7	-24	-38	-5
23	6	24	1	-44	5	5	-2	-13	-3	-42	-40	1
24	1	20	6	-34	3	18	-10	-7	-1	-25	-15	-16
25	4	14	8	-24	-2	1	-59	-16	4	-5	-2	-6
26	5	-13	7	-21	7	3	-43	-25	13	0	1	-1
27	6	-12	12	-18	5	-18	-23	-15	-9	14	1	-0
28	16	-14	-30	-12	-42	-19	-11	-10	-0	1	1	-18
29	12	0	-30	-11	-37	-7	-41	-17	15	-6	11	-14
30	11	0	-23	-16	-21	-0	-24	-4	22	-8	14	-12
31	4	0	-30	0	-8	0	-22	-9	0	-1	0	2
MEAN	2	6	-22	-19	-2	-3	-11	-11	-3	-9	-10	-5

ANNUAL MEAN -7

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

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^{o}, 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.

AE AURORAL ELECTROJET ACTIVITY INDEX

AE is determined from deviations from the quiet reference level of the horizontal component H (either instantaneous or mean) of a number of stations near the northern or the southern auroral zones. It is the largest positive deviation (AU) minus the largest negative deviation (AL) from the adopted quiet time value of H at each station. To be most useful, the index should have a time resolution of less than one hour.

(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. 786 - 792, 1966)

For the period Sept. 1964 through Dec. 1968, AE-indices were determined at 2.5 minute-intervals at NASA-Goddard Space Flight Center. They are available on magnetic tape at World Data Center A for Geomagnetism, National Oceanic and Atmospheric Administration, NOAA, Boulder, Colorado 80302, U.S.A. Hourly means, computed from the 2.5 minute data, are also available at WDC-A as card images on magnetic tape and as a microfilm listing of tabular values and plots of AE, AU, and AL. Only the AE indices for 1964 and 1965 are based on a complete set of stations; values for 1966, 1967 and 1968 are preliminary and based on four (or more) northern hemisphere stations. These values are to be updated as additional data are available.

AE-indices for 1970 and other recent years are determined by the NOAA-Environmental Data Service and will be made available similarly through WDC-A.

Hourly values of AE were derived and published by the Geophisical Institute of the University of Alaska, College, Alaska, for the years 1957-1964. They are based on different sets of stations and include some southern hemisphere data. These values are also available from WDC-A and contain tables and plots of AE, AU, AL, and $\frac{AU + AL}{2}$. Some of these data are also available at other WDC's under the WDC exchange arrangements.

TABLE 1 STORM SUDDEN COMMENCEMENTS (ssc) 1970

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

JANUARY

16 0818 (17-19) B: SO SW VL JO; C: WN MA EB AC - (si: B: ES BE; C: LE LG - bp: C: LM).

29 1839 (35-44) A: BA LU AC; B: HL MA HB SU IK AE GU MC PM TN DU; C: LE ES WN VL DB PR AQ TF LM HR - (si: A: UB PE AK SF TE TW; B: IR FU OD; C: MT TL? KA KS KY).

FEBRUARY

01 1957 (50-60) A: TR CO SU; B: MG WN VL MA HB OD IK PE KS PP DU; C: NI PR VI NE EB TL SZ LM TO KG - (si: B: MO IR BE JO LG TK AK MB BA MC LU; C: LE ES TF HR - sfe: FR QU HU AC TW).

23 2013 (09-15) A: TR MA FU JO OT SU PE AK QU SJ GU BA MC LU HU LM AC; B: SO LE MG KN ES HL WN WI NI VL BE KV DB PR VI NE CF HB LG AQ IK EB TL EA KS TG PM TN GN HR TO; C: TU AP - (si: A: CO NU MO UB FR DS HO TE TW; B: DO ME IR SW TK CI SM MB PP? AM; C: MT TF KA KY SZ - sfe: OD).

24 1338 (23-40) A: TR KS SJ LU AC; B: SU PE AK QU SZ MC LM; C: LG EB AE PP? TN HR - (si: A: TE BA; B: IR OD; C: TL MB - bp: B: MA).

MARCH

05 0805 (01-06) A: TR SO NU MG MO MA VI FU UB OD SU FR PE SF DS QU SJ GU BA MC LU TN LM TO AM; B: CO LE KN ES HL WN WI IR NI VL BE KV PR NE CF HB LG AQ IK EB TL SM AK AE TU TG PM AP PP GN KV; C: MT KA KY SZ HR - (si: A: JO OT KS HO; C: TK - bs: A: HU AC TW - bp: B: TF - bps: C: MB).

08 1417 (03-19) A: SO NU WN WI MA DB PR NE FU UB HB JO OT SU MT LF TF IK EB CI TL FR PE SM AE SF KA KS TU KY QU SZ HO TE SJ MB GU BA MC LU HU AP TN LM GN HR AC TO AM TW DU; B: ES SW VL BE CF AK TG; C: VI KG - (si: A: CO KN MO OD TK PM PP).

27 0657 (50-60) A: BP TR SO CO NU MG MO IR DB VI FU UB HB JO OD OT SU TK IK CI FR PE AK SM AE SF KS QU SZ HO TE SJ GU BA MC LU HU AP PP TN LM HR AC AM KG; B: LE SI KN ES ME HL WN WI SW NI VL BE KV MA PR NE CF LG AQ TF EB TL DS TU MB TG PM GN TO; C: MT KA KY - (si: B: DO NU).

31 0529 (26.40) A: TR SO CO MG SI MO WN IR VL MA DB PR HB VI FU JO OD OT TF IK EB CI FR PE AK SM AE TU SZ HO TE SJ MB GU LU PM HU AP PP LM HR AC TO AM TW KG DU; B: LE KN ES HL WI SW NI KV NE CF SU MT LG AQ TL KA DS KY QU BA TG - (si: A: NU; C: ME).

APRIL

01 2153 (49-55) A: PB PE SF AC; B: VL MA FU HB AK KS QU SJ BA PP; C: LE ES WN NI PR VI NE LM HR AM - (si: A: CO SI IR UB SU; B: HL LG TK AE TN; C: MB - b: MC; B: KV? - bs: A: OD; B: TL).

18 0823 (20-25) A: TR MG IR UB SU PE SF BA; B: HL SW MA OD IK FR KS QU MC PM TN LM GN AM; C: LE ES WN VL KV PR MT LG TL AK KA SS KY MB PP HR AC TO - (si: B: KN HB; C: OT - sfe: EB).

20 1122 (20-30) A: TR SO NU MG KN MO IR NI MA DB VI NE FU UB HB OD OT SU LG IK TL FR PE AK AE SF KS DS QU HO SJ MB GU BA MC LU HU AP TN LM HR AC AM TW KG; B: DO LE ES ME HL WN WI SW VL KV PR CF MT AQ TF EB CI SM KA SS TU KY SZ TG PM PP GN DU - (si: A: TE).

MAY

27 0514 (12-17) A: SU; B: MG WI IR KV UB SM QU BA LM; C: VL PR MT EB KA SS KY MC TG PP GN TO - (si: A: SO IK TE; B: FU?; C: AK - sfe: OD HO).

TABLE 1 STORM SUDDEN COMMENCEMENTS (ssc) 1970 - continued

JUNE

01 0305 (00-12) A: CO NU SI KN MO WN IR VL MA DB VI FU UB HB OD SU LG TF EB CI TL FR PE AK AE SF TU SZ TE GU BA MC LU HU LM AC TO TW AM KG DU; B: MG LE ES HL WI SW NI KV PR NE CF MT AQ IK SM KA KY SJ TG PM AP PP TN GN HR - (si: A: JO OT DS HO; B; SS; C: ME TK - bp: C: LZ - bps: A: SO; B: DO).

02 0209 (03-13) A: SO MG SI MA VI FU PE AK SF SJ GU MC HU LM AC AM TW; B: LE ES WN WI NI VL KV PR NE CF AQ TF IK EB TL AE KS TU QU SZ BA PM AP PP TN GN HR TO - (si: A: CO NU KN MO IR UB HB OD OT SU MT TK FR KS DS KY HO TE MB; B: BE DB? CI SS LU KG DU).

17 0750 (47-54) A: SO MG KN IR VI UB OD OT SU TF TK PE AK SF KS QU TE SJ MB GU BA MC LU AP TN AC LM TO AM TW; B: SI LE MO WN WI VL MA HB JO MT LG AQ IK EB TL SM AE KA KY TG HU PP GN HR; C: ES NI KV NE SS TU SZ - (si: A: NU FR DS HO; B: HL BE PM).

27 0605 (57-09) A: SO MG KN MO WN IR VL VI FU UB JO OT SU MT LG TK IK CI FR PE AK SM AE SF KA KS SS DS TU KY QU HO TE SJ MB GU BA MC LU HU AP PP TN LM AC TO AM TW DU; B: DO LE SI ES HL WI NI BE KV MA DB NE CF AQ EB TL SZ TG PM GN HR KG; C: PR.

JULY

01 1302 (50-04) A: NU KN MO MA FU UB HB SU TF SF SJ MC AC TW; B: SO LE ES HL ME WN WI NI VL KV DB PR VI CF AQ IK EB PE AE QU PM TN HR AM; C: BE LG TL KS TU - (si: A: IR OD TE LU; B: OT TK HO MB LM KG; C: MT KA SS KY HU PP TO - bs: A: MG - sfe: KS? BA?).

03 0334 (29-38) A: SF TN; B: MA AQ TL PE BA TW; C: WN KV DB MT TF TK IK EB AE KA KY MC PP? HR - (si: A: SO TE; B: HL BE FU HB MB; C: LM - b: A: SJ - bs: A: LU AC; B: KS - bps: B: SZ - sfe: OD).

03 2251 (49-53) A: SO CO NU MG SI KN MO WN WI NI VL MA DB PR NE FU HB JO OD OT SU LG AQ TF IK EB CI TL FR PE SM AE SF KS DS TU QU HO TE MB GU BA MC LU HU AP TN LM HR AC TO AM TW KG DU; B: LE ES HL IR SW BE KV VI CF UB MT PE KA KY SZ SJ TG PM PP GN; C: SS.

05 0212 (10-13) A: SF; B: BA AM; C: MA MT KA KY QU PP? - (si: B: HL FU - bps: B: SS).

08 2317 (13-22) A: CO NU MG SI KN MO WN WI IR NI VL MA DB PR VI NE FU UB HB JO OD SU OT LG AQ TF TK IK EB CI TL FR PE SM AE SF KS DS TU QU SZ HO TE MB GU BA MC LU AP HU TN LM HR AC TW DU; B: DO LE ES HL SW BE KV CF MT KA KY SJ TG PM PP GN TO AM KG; C: SS - (bps: A: SO).

21 0734 (30-39) A: SF SZ AC; B: NU MG KN HL WN BE MA FU SU TF PE AE QU SJ MB BA; C: NI VL PR LG MT TL KA KY HU LM HR TW - (si: A: SO OD; B: TN TO).

24 1125 (19-30) A: PR FU HB AC KG; B: KN HL WN VL KV MA DB IK EB PE QU AM; C: SI WI NI MB PP TN - (si: A: SO UB OD SU KS TE; B: BE AQ AE BA PM LM; C: MT TF TL? KA KY TO - b: B: GU - bs: A: MG - sfe: TK SZ).

24 2350 (38-69) A: SO ME WN IR MA DB PR UB OT SU LG AQ TF TK IK EB CI TL FR PE SF DS QU SZ TE MB GU BA MC LU HU AP TN LM HR AC TO TW DU; B: NU LE SW VL BE VI NE CF MT SM AE KA KY HO SJ TG PM PP GN; C: SS - (si: A: CO KN MO FU OD KS AM; B: ES - bs: HL).

25 2107 (03-15) A: SO SU PE; B: IK; C: MA - (si: A: ME OD TE; B: QU - bp: B: KG).

29 0043 (35-45) A: MG MA FU OT SU LG TK IK PE SF KS QU HO BA MC LU HU AP LM AM DU; B: SO CO LE KN MO ES HL WI VL BE KV DB PR VI NE CF UB HB AQ EB CI TL FR SM AE DS SJ MB GU TG PM PP TN GN HR KG; C: SI NI MT KA SS KY SZ TO TW - (si: A: TE; B: ME - bps: A: AC).

TABLE 1 STORM SUDDEN COMMENCEMENTS (ssc) 1970 - continued

AUGUST

16 2204 (58-09) A: SO CO DO NU KN SI ME WN WI IR NI VL MA DB NE FU UB JO HB OD OT SU MT LG AQ TF TK IK EB CI TL FR PE SM AE SF KA KS DS KY QU SZ HO TE SJ MB GU BA MC LU PM HU AP PP TN LM GN HR AC TO AM TW KG DU; B: LE ES HL SW BE KV VI SS TU TG; C: BD.

31 0334 (28-44) A: SU SF SJ BA AC TW; B: SO CO LE KN NN ES ME HL WN VL KV MA DB VI FU HB OD LG AQ IK EB TL PE SM AE QU PM HU PP TN HR TO AM; C: SI WI NI PR NE MT KA KY AP - (si: A: IR UB FR TE LU; B: BE OT BD DS HO MB GU LM KG DU; C: SS).

SEPTEMBER

01 1049 (36-56) A: SF PE; B: VL MA HB AE BA HU; C: WN DB PR SM SZ - (si: A: FU OD TE AC; B: SU MT KA KY MB PP HR - bp: B: SO - sfe: TL?).

13 0543 (39-55) A: SO SF; B: DB FU HB BA LM; C: MA LG SZ - (si: B: KN HL VL BE FU; C: LE ES WN PR).

OCTOBER

16 0917 (13-20) A: PB SO NU KN IR MA VI NE FU UB HB JO OD OT SU LG TK IK CI FR PE SM AE SF KS DS QU HO TE SJ GU BA MC LU HU AP TN AC TO AM TW DU; B: CO DO LE SI ES WN WI SW NI VL BE KV DB PR MT AQ EB TL KA TU KY SZ MB PM PP GN HR KG; C: SS - (si: ME).

NOVEMBER

07 0046 (43-58) A: SO CO DO NU MG SI KN MO WN WI IR NI VL MA DB PR VI NE FU UB HB JO OD OT MT LG AQ TF IK EB TL FR PE SM AE SF KA KS DS KY QU SZ HO TE SJ MB GU BA MC LU HU AP PP TN LM GN HR AC TO AM TW KG DU; B: LE ES ME HL SW BE KV SS TU TG PM; C: TK.

18 1225 (18-30) A: SO NU MG KN MO WN IR MA DB VI FU UB HB JO OD OT MT LG TF TK IK EB CI FR PE AE SF KA KS DS KY QU SZ TE SJ MB BA MC LU HU AP PP TN LM GN HR AC TO AM TW KG DU; B: DO LE ES WI ME HL SW NI VL BE KV PR NE AQ TL SM SS TG PM; C: TU - (si: A: SU).

21 0622 (16-32) A: SO CO IR UB JO SU OT TK SF KS TE SJ LU AC TO TW; B: SI LE ES ME WN HL SW VL MA DB PR VI FU OD IK FR PE SM QU GU BA MC TG PM HU AP PP LM GN HR KG; C: WI NI BE KV NE MT AQ TF EB TL CI AE KA SS KY MB - (si: A: NU HB; B: BA DU; C: HO TN).

23 0923 (14-25) B: QU GU AC KG; C: KV EB HU - (si: A: UB; B: FU TK; C: BA).

24 0457 (52-59) A: PE BA LU; B: SO KV MA QU GU MC? AP PP? LM; C: NI VL TL AE MB HU - (si: A: OD TE TW; B: KN PR FU UB SU LG TK IK HR; C: WN MT EB KA KY).

DECEMBER

02 1438 (32-42) A: SU SF SJ LU AC; B: SO VL KV MA VI OD IK KS QU BA MC PM HU LM GN; C: WN WI NI NE LG AQ EB TL PE SM TU SZ TA - (si: A: NU KN FR; B: LE ES HL IR FU HB OT AE HO MB PP TO AM KG; C: SS - bs: A: MG; B: HR).

14 0154 (45-59) A: SO CO NU SI KN MO ME UB IR DB VI NE FU OD OT SU TF TK IK EB CI TL FR PE SM AE SF KS SS DS QU SZ TA HO TE SJ MB GU BA MC PM HU AP TN LM GN HR AC AM; B: LE ES HL WN WI SW NI VL BE KV MA JO LG AQ TU LU PP TO KG.

18 2144 (35-48) A: KN FU HB OD SU SF QU SJ GU LU; B: MG SI ME HL WN WI VL VI LG AQ IK TL PE SM AE KS BA MC PM HU PP TN LM HR AM DU; C: LE ES NI NE TU SS AP TO - (si: A: SO CO IR UB JO OT TK FR TA HO TE MB TO; B: MO SW BE KV DB TF EB CI DS - bs: A: NU).

29 1530 (18-33) A: SO SJ GU LU HU; B: WN KV MA VI OD AQ TK IK SM KS QU MB BA MC PM PP LM GN AM; C: WI VL DB NE LG EB PE AE SS SZ HR KG - (si: A: JO OT FR; B: SI KN HL IR BE FU HB HO TO - b: C: MG).

TABLE 2a BAYS AND PULSATIONS 1970

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

JANUARY

01 1618 (09-26) bs: A: KN IR; B: HL - bp: A: MG TO; B: MT KA KY PM - bps; A: UB; B: GN - (ssc: B: OD).

03 2125 (20-36) b: A: KN SF; B: HL SW - bs: A: KS; B: IR AE - bp: A: NU UB OD TL PE; B: LE ES WI VL BE MA DB PR CF LG AQ EB CI AK QU BA KG; C: NI LM HR - bps: A: SO FU TF IK; B: DO WN HB SU TK.

05 2249 (47-55) b: B: SW - bp: A: SO; B: VL MA CF HB SM BA MC - bps: B: DO LE HL.

09 0011 (00-31) bp: A: OD PE SZ; B: SO LE ES WI VL KV? MA DB CF TF IK EB CI SM AE BA MC; C: WN TF AK HR - bps: A: LU; B: HL FU - (ssc: B: TR).

09 1604 (00-07) bs: B: IR - bp: B: MG QU; C: AK - bps: B: GN; C: TK.

10 0206 (50-14) b: B: HL SW AE BA - bs: B: SO - bp: A: IK CI SZ AC; B: ES WN VL KV? MA DB PR CF HB EB PE SM MB MC LU HU HR; C: BE TL - bps: B: LE.

10 1752 (48-54) b: A: NU; B: SW - bs: B: IR - bp: B: SO CF PE KG; C: BE IK EB AK.

11 2225 (17-27) b: A: SU SJ?; B: HL OD PE MC; C: HO MB HU AC - bs: B: TW - bp: B: MA SM; C: KV? TL HR - (ssc: C: BA?).

12 0009 (00-18) b: A: JO SJ - bs: B: VL - bp: A: SF; B: LE MA DB CF OD EB PE SM MB BA MC HR; C: WN WI KV? LM - bps: A: CI SZ TW; B: ES FU LU.

12 2048 (40-60) b: A: CI; B: SW - bp: A: UB OD SU TF; B: SO LE KN ES WN VL KV? MA PR CF HB AQ IK EB PE AK; C: WI NI BE - bps: B: MO FU

14 2311 (52-24) b: B: KN AE - bp: A: SO OD SU PE; B: LZ LE ES KV? MA CF IK EB CI MC; C: TL AK HR - bps: B: HL FU LG - (ssc: B: TR).

16 1546 (34-64) b: A: KN SU MC LU; B: PE - bs: A: KS MO; B: HL - bp: A: AK SF; B: WN MA PR EB TL LM; C: KV? - bps: A: HB IK QU; B: TF GN.

18 1523 (18-26) b: A: UB SJ?; B: OD - bs: B: MB HR - bp: A: MG PE; B: TO; C: MT TF KA KY AP - bps: B: PM - (ssc: B: BA - si: A: LU AC; C: LG - sfe: MC).

19 1443 (40-46) bs: B: CO IR - bp: A: UB; B: TO DU - bps: A: MG; B: PM AP.

19 2114 (02-18) b: A: NU; B: MO SW AE TN - bs: A: KS; B: SO HL - bp: A: CI SF; B: WI MA DB PR CF AQ TF EB TL AK SM MB MC LU LM HR KG - bps: A: DO KN FU OD SU LG IK PE; B: ES WN NI VL BE HB BA; C: LE - (si: B: TR).

20 1943 (36-57) b: A: PE; B: HL IR BA - bp: A: SU; B: LZ NU MG DB AK QU; C: MT TL KA KY - bps: A: KN; B: TK - (si: A: TR SO).

20 2019 (12-20) bp: A: NU IK; B: WN VL MA PR CF EB - bps: A: SO; B: LE WI.

21 1320 (15-30) b: B: KN - bs: A: TR - bp: A: UB; B: OD DU; C: MT KA KY.

21 2117 (13-27) b: B: SW - bp: A: OD PE SF; B: SO VL MA FU CF HB TF IK EB AK QU BA; C: WN NI BE TL MC - bps: B: HL - (si: A: TR).

21 2348 (45-49) bs: B: AE - bp: A: PE; B: SO MA HB OD AQ IK EB; C: TL BA MC.

24 1005 (03-17) b: B: MG NE UB - bp: A: AP AM; B: OD MT KA KY; C: HO.

24 2051 (42-69) b: A: LG TN; B: HL SW AE - bp: A: OD SU IK PE; B: SO KN WN WI VL MA DB PR CF HB AQ TF EB CI TL AK QU SZ BA MC; C: BE KV? LM HR - bps: A: FU; B: NI TK - (ssc: A: TR).

27 0237 (30-45) b: B: SW - bp: A: NU PE SF; B: LE KN VL MA CF OD AQ IK EB CI TL AE; C: WN HB SZ BA? HR - bps: A: TR SU; B: LG.

FEBRUARY

01 0134 (28-36) bp: A: PE SF; B: SO MA CF EB CI SZ LU LM HR; C: HU - bps: A: FU; B: AQ SM - (ssc: B: BA; C: AE).

02 2008 (50-13) b: A: SF; B: IR AE - bs: A: SO - bp: A: SZ MC; B: KV? MA CF EB; C: LM HR - bps: A: IK TL PE; B: WI VL PR; C: WN - (ssc: A: TR; B: HL BA - si: A: OD; B: LG; C: LE MO).

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(FEBRUARY)

02 2244 (42-48) b: A: KN - bs: B: MO - bp: A: WN FU SU IK PE; B: MA PR TF TL KG - bps: A: HB; B: NI - (si: B: LE).

02 2308 (00-15) b: A: SF SZ; B: HL FR - bs: B: AE LU - bp: A: JO EB MC; B: KV? CF HR - (si: B: BA).

04 1720 (11-32) b: A: MO PR; B: WN SW AE BA - bs: A: KN AQ - bp: A: SU PE SF QU; B: WI VL MA HB TF EB AK KG; C: MT TL KA KY - bps: A: UB IK; B: BE TK.

05 1323 (18-20) b: A: MG; B: IR - bp: B: NE TO; C: MT KA KY PP - bps: A: AP AM; C: HO.

05 2155 (52-57) bp: B: ES SU TF IK EB BA; C: WN KV? - bps: B: SO VL - (ssc: B: TR).

05 2236 (33-40) bp: A: PE; B: OD AQ TF EB SM SZ BA MC; C: LM HR.

15 1028 (22-36) bs: A: MG - bp: A: AP AM; B: PP DU.

15 1500 (59-02) b: A: IR; B: HL - bp: A: SU - bps: A: UB; B: GN; C: TO.

15 1857 (54-60) b: B: SW - bp: A: SO UB; B: WN MA PR HB OD AQ IK PE; C: BE KV? EB.

17 1835 (12-48) b: A: IR; C: MG - bp: B: LE ES WN PR CF TF EB LM - bps: A: PE SF; B: VL; C: TL - (ssc: A: SO; B: HB?; C: BA - si: A: TR; B: LG AE; C: MB MC).

18 1829 (25-34) b: HL IR - bp: B: SO KN OD SU IK PE AK; C: KV?

18 2150 (47-52) bp: A: SO PE; B: MA CF OD AQ IK EB; C: KV? TL MC.

24 1545 (42-48) b: B: SW - bp: B: MG IR DU - bps: A: TO.

26 0133 (29-40) bp: A: PE; B: LE ES OD LG AQ; C: IK EB TL PP - bps: A: SO.

27 2040 (35-44) b: B: IR SW - bp: B: WN VL MA PR HB EB LM KG; C: TL AK - bps: B: DO - (ssc: A: SO - si: A: TR).

27 2349 (45-60) b: B: AE - bp: A: SF LU; B: WN VL MA PR EB SM MC LM HR; C: KV? - bps: B: LG.

28 1729 (28-32) b: B: SW - bs: B: MO HL - bp: A: IR; B: MG IK AK; C: EB - bps: A: SO KN GN; B: OD QU PM TO KG; C: MT KA KY.

MARCH

02 1730 (15-35) b: A: NU; B: SW - bp: A: OD; B: WN IK MA AQ TF IK PE AK QU KG - bps: A: SO; B: KN MO.

02 2316 (00-18) b: B: SW AE - bs: A: KS - bp: A: NU OD CI PE SF; B: LZ LE WN WI VL KV? MA PR CF AQ TF IK EB TL AK SZ MC LM HR; C: NI - bps: A: SO FU; B: KN ES BE HB LG BA - (si: A: TR).

03 1718 (10-26) b: B: SW - bs: A: SO NU MO KS - bp: A: PR IK QU LM; B: MG HL MA CF TF EB AK AE HR KG; C: TL - bps: A: WN OD AQ PE; B: BE HB TK - (ssc: B: TR).

03 2110 (00-15) b: A: SF SZ MB; B: AE - bs: A: SO - bp: A: PE MC; B: MA CF OD TF IK EB TL SM LM HR; C: AK - bps: A: LU; B: LG - (ssc: B: SW - si: A: TR; B: BA).

04 1109 (05-19) b: A: IR - bs: A: MG - bp: B: MT KA KY AP; C: VI - (si: B: OD).

04 1606 (48-30) b: A: KN SU; B: WN AE BA - bs: B: HL - bp: A: HB PE SF QU MC; B: NI KV? MA TL LM HR; C: TF - bps: A: MO PR IK; B: BE - (si: A: TR).

05 1750 (29-65) b: A: NU KN WN SU EB; B: HL - bs: A: MO KS LU; B: SO - bp: A: PR LM HR; B: NI VL KV? MA CF HB MT TF IK TL KA KY TO - bps: B: BE - (ssc: B: TR PE - si: A: OD; B: MA).

06 0147 (44-54) b: A: SJ - bs: A: FR - bp: A: SZ; B: SM; C: EB TL - bps: B: MB - (si: A: TE).

06 1001 (00-03) bs: A: MG - bp: A: TO AM; B: MT KA KY - bps: A: AP; B: PP.

06 2211 (07-15) bs: A: KN - bp: A: MO LM; B: MA CF IK QU; C: KV? - (si: A: OD).

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(MARCH)

09 1243 (38-54) bs: B: MG - bp: B: MT KA KY DU - bps: B: TO.

09 1633 (30-50) bs: A: SO - bp: B: CF - bps: A: WN MA FU; B: VL BE PR TL - (ssc: B: HL KS - si: A: TR NU KN OD LG PE; C: ME MC).

09 2322 (15-26) b: A: KN SU SF SZ; B: MB - bs: A: MO - bp: A: SO FU EB MC LU HR; B: MA CF LG TF; C: WN AK - bps: A: IK PE; B: LE ES VL BE DB PR TL AE LM - (si: B: BA).

10 1950 (40-60) b: B: KN HL WN SW KV? FU SU AK; C: BA - bp: B: SO BE MA PR QU TL KG; C: MC.

13 1007 (00-18) b: A: MG - bp: B: VI NE HO AP PP; C: TF - bps: A: AM.

15 0128 (21-36) b: B: SW - bp: A: PE; B: SO ES VL BE MA DB PR FU CF OD LG AQ IK EB CI SM AE HR; C: WN TL BA - bps: A: SF; B: LE - (ssc: C: LM).

19 2132 (20-37) bp: A: SO FU OD IK PE MC; B: VL MA CF AQ EB CI TL BA; C: BE AK AE LM HR - bps: B: HL SZ.

20 2219 (10-25) b: B: HL - bp: A: PE; B: LE WN VL KV? FU PR OD AQ IK EB QU; C: TL AK - bps: B: SO.

27 2149 (41-54) b: B: SW - bp: A: SO FU PR PE AK QU; B: WN KV? MA CF TF IK EB TL MC - bps: A: BA; B: LE.

28 1036 (35-37) bs: A: MG - bp: A: TO; B: PP DU - bps: A: AP AM; B: MT KA KY.

28 1913 (10-15) b: B: KN - bp: B: AK QU LM KG; C: KV? TF TL - bps: A: SO - (ssc: A: TR).

28 2307 (50-17) b: B: SW - bp: A: SO FU PE; B: WN PR CF IK EB TL LM; C: NI KV? TF HR - bps: A: CI; B: VL.

29 2331 (15-45) b: A: SF; B: SW DB - bs: B: BA - bp: A: SO SU TL PE MC HR; B: MA CF HB TF EB AE SZ LM; C: WN NI - bps: B: LE.

30 2020 (1024) b: B: KN SW - bs: A: SO - bp: A: FU PE; B: LE WN VL MA PR HB OD TF EB TL; C: KV? - (ssc: B: TR).

APRIL

04 0141 (27-45) b: B: SW SZ - bp: A: PE; B: HB CI TL MC HR; C: EB.

06 2131 (20-36) b: B: SW AE - bp: A: OD CI LU; B: LZ WI VL KV? MA FU CF AQ IK MC; C: WN EB LM HR - bps: A: SO; B: HB LG TL - (ssc: B: TR).

08 0014 (00-25) b: B: SW AE - bp: A: SO OD SF; B: LZ VL KV? MA FU CF AQ EB TL SZ MC LM; C: TF BA HR - bps: A: LU; B: HL - (ssc: B: TR).

11 0936 (34-40) b: B: HU - bp: A: PE AP; B: VI FR AC - bps: A: TE; B: PP; C: HO.

15 2001 (00-15) bs: B: KN - bp: A: UB SU PE; B: MA IK AK QU LM KG; C: WN TF - bps: A: SO.

17 0118 (05-34) bs: A: BA - bp: A: SU IK EB TL PE MC LM AC; B: CF HB SM AE; C: TF - bps: A: SZ HR; B: LG; C: PP.

17 1836 (31-40) bs: A: NU; B: MO HL - bp: A: SU SF LM; B: KV? MA DB CF AQ EB HR KG - bps: A: SO KN FU OD IK TL PE MC; B: DO WN VL PR HB LG AE - (ssc: A: TR; C: SZ - si: A: AK LU; B: BA).

17 2104 (00-10) b: A: OD; B: QU - bp: A: PE; B: KV? TF CI AK; C: TL - bps: A: SO.

18 2203 (00-11) bp: A: MC LU HR; B: CF IK EB SM BA; C: KV? - bps: B: AE.

20 0336 (24-49) bp: A: SJ MC; B: HU AC; C: EB SZ - bps: B: FR SM TW.

21 2321 (18-23) bs: A: HR - bp: B: MA - bps: B: CF EB - (ssc: A: BA LU - si: A: OD PE SZ MB).

23 1806 (00-16) b: B: IR SW - bs: A: SO KN KS; B: MO - bp: A: UB SU AQ AK; B: WI NI VL KV? MA TF IK EB TL LM KG; C: HR - bps: A: FU OD QU; B: HL WN PR HB TK - (ssc: A: TR).

23 2222 (10-32) b: A: KN; B: HL SW AE - bs: A: KS; B: BA - bp: A: OD SU LG SF MC; B: WI VL MA CF HB AQ IK EB CI TL SM LM HR; C: KV? TF SZ - bps: A: LU - (si: A: TR).

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(APRIL)

24 1454 (50-60) b; B: NE - bp: A: PB AP; B: OD PM DU; C: KV? MT KA KY - bps:A: AM; B: TO.

24 2050 (49-50) b: B: SW - bp: B: WN MA PR HB OD TF; C: KV? - bps: A: SO - (si: A: TR).

26 2329 (24-48) b: A: SF; B: SW AE - bs: B: SZ MB - bp: A: PR OD CI MC LU HR;B: LE ES WN VL DB CF LG EB TL SM LM - bps: B: BA.

27 1116 (15-18) b: A: MG - bp: B: AP - bps: B: HO AM - (ssc: A: PB).

29 2203 (56-10) bs: A: SO - bp: B: WN WI VL MA PR FU CF OD IK AK LM; C: LZ NI KV? EB TL - bps: B: HB - (ssc: A: TR - si: B: LG).

MAY

03 2151 (40-54) b: B: SW - bs: A: KS - bp: A: VL FU; B: WN WI KV? MA PR CF AQ CI TL; C: TF EB - bps: A: SO; B: DO HL - (ssc: A: TR; C: AE).

05 2304 (50-10) b: B: HL - bs: B: AE - bp: A: SF; B: SO LE ES KV? CI TL LM; C: LZ TF HR - bps: B: SZ.

05 2337 (32-38) bp: B: WN VL MA PR CF FU OD AQ EB - bps: B: SO WI - (si: B: BA).

11 2258 (43-73) b: B: SW; C: BA - bp: A: NU PE SF MC; B: LE KN ES WI VL KV? MA FU CF AQ TF EB TL SM LM; C: LZ - bps: A: SO; B: HL - (si: A: TR).

12 2052 (44-60) bs: A: SO - bp: A: PE; B: MA CF IK EB TL LU MC LM; C:HR - (ssc: A: TR).

14 1744 (38-64) b: B: HL IR SW BA; C: HR - bs: A: SO - bp: A: KN OD SU TL PE LM; B: NU WN NI KV? PR UB TF IK EB AK QU MC KG - bps: A: LU;B:MO VL TK.

14 2330 (29-31) bp: A: SO LM HR; B: WN MA PR FU CF SM SJ MC; C: TL - bps: A: CI SF LU AC; B: VL AQ EB SZ - (si: C: BA).

19 0908 (04-12) bs: B: OT - bp: A: TE AP - bps: A: HO AM; B: PP TW; C: VI.

21 2326 (20-36) bs: B: BA - bp: A: SO PE MC; B: LE ES MA FU CF AQ CI SM LM; C: WN EB TL AE - bps: B: LU; C: NI.

22 1144 (42-45) bp: C: EB PP TO - bps: B: HO AP.

22 1727 (22-35) b: A: IR; B: SW - bp: B: KN WN MA PR UB OD EB GN TO;C:MT AQ AK KA SS KY QU LM - bps: B: TK.

23 0815 (15-16) bp: A: TE TW; B: NE HU; C: VI.

23 2156 (52-58) b: B: KN SW HR - bs: A: KS BA - bp: A: OD PE AK SF MC LM; B: WN VL KV? MA PR FU CF AQ IK EB TL AE QU KG - bps: A: SO; B; HL HB LG LU.

27 2158 (50-64) bp: A: PR; B: WN MA CF TL MC; C: SS - (ssc: A: SO; B: BA - SI; A: OD).

JUNE

04 1406 (57-18) b: A: MG; B: IR - bp: A: UB; B: OD TO DU; C: TF.

04 2247 (44-50) b: A: LU - bp: A: PE; B: MA OD AQ IK; C: KV? EB MC HR - bps:B: SO.

07 2310 (09-12) bs: A: LU - bp: A: FU CI PE MC LM; B: WN MA PR CF IK EB TL HR KG - bps: A: VL SF; B: ES HL LG - (si: A: SO; B: BA).

08 1152 (50-54) bp: A: UB; B: MG PP TO DU - bps: A: AM.

09 1921 (15-33) b: C: BA - bp: A: PE; B: MA OD TF EB LU; C: WN KV? QU MC LM HR.

13 0755 (45-62) bp: B: NE; C: VI AP PP - bps: A: AM; B: HO - (si: ME).

14 0243 (42-45) b: A: CI LU - bp: EB SM SZ MC HU HR - bps: A: AC TW; B: MB.

14 1920 (15-22) b: B: DU - bp: B: MA OD LM HR TO KG - bps: A: KN; B: SO TK GN.

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(JUNE)

15 0008 (03-11) b: C: BA? - bp: A: VL PE SF; B: LE ES WN MA PR FU CF EB TL SM SZ LM HR KG - bps: A: SO; B: CI.

16 2240 (38-45) bp: A: CI PE; B: CF SM HR; C: KV? TL SZ LU LM.

18 0039 (36-42) bp: A: PE; B: FU IK SM AE LM - bps: A: MA MC; B: LE PR CF HB LG AQ EB TL LU HR; C: SZ - (ssc: A: SF; B: BA; C: DB - si: B: ES WN VL).

18 2222 (09-37) b: B: AE - bs: B: NI PR; C: BA - bp: B: LE ES WN VL MA CF TL SZ MC LM HR DU - bps: A: SF; B: LU.

20 1633 (26-45) b: A: KN IR SU; B: IK - bp: A: QU; B: TF AK; C: MT KA SS KY - bps: A: UB; B: MO.

21 0041 (35-50) b: A: MB; B: AE SZ; C: HU - bp: B: EB SM MC TW; C: TL.

21 0315 (11-19) bs: A: SO CI LU MB HR; B: VL AE BA - bp: A: PR SM MC LM; B: ES WN TL - bps: A: SF SZ HU AC TW; B: LE EB.

23 2032 (30-33) b: A: SJ MC; C: BA - bs: B: LU; C: SS MB - bp: B: KV? TF - bps: A: SF - (ssc: C: VI - cr: B: TL PP).

JULY

06 0000 (57-04) b: B: AE - bs: B: BA - bp: A: CI HR AC; B: VL SM LM; C: TL - bps: A: LU; B: LE ES.

07 2300 (50-08) b: A: SO - bp: A: CI SF; B: LZ VL BE MA FU CF SU LG PE MC HR; C: KV? EB TL LM - bps: B: LU.

11 2035 (30-38) bs: A: SO NU; B: BA - bp: A: FU PE SF MC; B: WN VL MA PR CF SU AQ EB TL LU HR - bps: B: HB LG LM - (si: BE).

14 0140 (37-42) b: C: BA - bp: A: CI; B: CF EB MC HR; C: TL MB LM - bps: B: LU.

14 0820 (20-21) bp: B: VI - bps: A: TE AC TW; B: HU PP - (sfe: OD).

16 0001 (56-03) bp: A: CI PE SF AC; B: SO VL CF LG EB SM AE BA MC; C: HR - bps: B: LU; C: SS SZ.

17 2143 (25-52) b: A: NU SF; B: HL SU - bp: A: SO KN OD LG IK CI TL PE LU; B: LE ES WN WI NI VL KV? MA PR CF AQ EB AE QU SZ MC LM HR KG - bps: A: BA; B: MO BE DB HB TF TK.

20 2333 (20-42) b: A: KN SF; B: SW KG; C: BA HR - bp: A: FU OD PE; B: LE ES WN WI NI VL KV? MA PR CF HB EB TL; C: TF - bps: A: SO; B: MO HL BE.

21 1827 (22-30) b: B: SW; C: BA - bs: B: SO - bp: A: KN; B: KG; C: KV? - bps: A: LU; B: MO LM GN.

26 2201 (49-06) b: B: SW TN - bp: A: SO PE LU; B: LE ES MA DB OD HR; C: KV? TL LM.

27 1511 (00-24) b: B: HL SW - bs: A: SO - bp: A: KN IR OD PE LU; B: MG MO WN NL VL KV? MA PR HB IK GU HU LM TO KG; C: MT KA KY HR - bps: A: UB TK; B: BE TF QU GN; C: SS - (si: B: FU).

27 1921 (16-26) b: A: KN; B: BA - bs: B: HL - bp: A: PE MC; B: NI MA PR HB EB QU LM HR KG; C: TF - bps: A: SO.

27 2322 (18-26) b: A: SF; B: SU - bs: B: AE BA - bp: A: PE; B: MA CF EB MC HR; C: KV? SZ LM - bps: B: HB; C: LU.

30 2150 (45-56) b: B: IK BA - bp: B: MA OD TF MC; C: KV? EB TL HR.

31 0317 (14-20) bs: B: BA LU - bp: A: AC TW; B: OD MC HR; C: EB LM.

31 0516 (14-21) b: B: HU - bs: B: TW - bps: B: HO; C: SS - (ssc: A: SF - si: C: BA).

AUGUST

01 2101 (56-15) b: C: BA - bp: A: NU LU; B: VL MA AQ PE HR; C: EB - bps; B: SO KV HL.

06 2229 (23-30) bp: A: SO CI; B: LE ES VL MA EB SM AE HR; C: WN LM.

07 2146 (30-58) b: B: SW - bs: A: KS; B: HL - bp: A: SO SU IK SF MC LM; B: WN WI

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(AUGUST)

VL KV MA PR HB LG AQ TF EB CI TL AE LU - bps: A: FU BA; B:NI TK SZ.

08 2238 (23-50) bs: A: SO - bp: A: IK PE MC; B: KV MA AQ EB SM LM; C: WN TL- bps: A: LU; B: LG AE SZ - (ssc: A: BA).

09 1751 (47-55) b: B: SW - bs: B: KS - bp: A: KN IR IK PE SF; B: WI NI VL DB PR AQ TF EB CI HR KG; C: TL AE SS - bps: A: SO WN KV FU UB OD TK; B: LE HL BE MA HB QU; C: LM.

11 0413 (10-16) b: B: NE - bp: A: TE SJ; B: PP - bps: A: AC TW; B: BD HU.

11 2306 (53-15) bp: A: SO FU PE SF; B: VL KV MA DB OD AQ IK EB CI AE BA MC HR; C: HB TL MB LM - bps: B: DO BE LU; C: SZ - (si: B: LG).

12 2015 (13-20) b: B: DB TU PP?; C: BA - bp: B: PE - (sfe: FR HO TE).

12 2122 (18-25) b: B: SW - bp: A: FU; B: SO WN VL MA PR OD AQ IK EB SM PE MC HR; C: TL MB - bps: A: LU; B: DO KV DB HB CI AE; C: BA.

13 2124 (14-29) b: B: KN HL PE AE - bs: A: BA; B: KS - bp: A: FU OD IK TF TL; B: WN WI VL BE MA PR HB EB CI QU SZ MC LU LM HR KG; C: NI-bps: A: SO; B: KV - (si: A: SF).

15 2310 (00-17) b: B: SW - bp: A: IK PE; B: BE KV MA OD EB TL HR KG - bps: A: SO.

17 1649 (46-57) bp: B: MA - bps: A: HU HB IK TL; B: WN VL PR - (si:A: SO OD BA).

19 0007 (06-14) bp: A: SJ; C: EB - bps: A: FR TE; B: HR - (si: B: OT).

19 1735 (28-48) b: B: HL SW FU LG BA - bp: A: SO PE; B: LE ES WN WI MA PR HB TF IK EB TL HR KG; C: NI LM - bps: A: LU; B: BE.

20 0745 (44-48) bp: A: TE AC TW; B: VI HO HU - bps: B: PP - (sfe: HB).

22 1153 (50-60) b: B: NE - bs: B: IR - bp: A: AP; B: PP TO DU; C: MT KA KY.

22 1853 (30-63) b: B: SW SU; C: KN BA - bp: B: LZ WN VL BE KV MA FU HB OD IK EB PE; C: NI PR TF TL LM - bps: B: SO HL.

22 2349 (43-51) bp: A: PE; B: SO LE MA OD CI MC; C: LG EB LM - bps: B: VL AE; C: BA.

26 1204 (47-16) b: B: PE - bs: A: KN - bp: A: AP; B: KV AE SS LM HR DU - bps: B: HL PP; C: MB - (si: A: BA).

28 2245 (33-55) b: B: KN SZ - bp: A: PE MC; B: BE KV MA EB; C: AE - (si: B: BA).

29 1503 (58-11) bp: A: SO PE; B: BE KV OD IK KG; C: TF - bps: C: TK.

SEPTEMBER

02 1010 (00-18) bs: A: MG - bp: A: HO TE AP TO AM; B: VI - bps: A: PP.

02 2130 (28-33) b: B: HL BE; C: BA - bp: A: PE; B: LE ES WN VL KV MA DB EB TL SZ; C: PR.

03 0300 (56-02) bp: B: VL CI SM SZ SJ - bps: A: AC TW; B: HU.

03 2057 (52-64)b: B: KN SW; C: BA - bs: A: SO - bp: A: FU; B: WN VL BE KV MA DB PR SU EB PE HR KG; C: TF TL - bps: A: LM; B: HB.

06 2157 (54-60) b: A: SF; B: KN HL TN; C: BA - bs: A: KS - bp: A: MA PE; B: NU WI VL KV HB OD AQ EB CI TL AE MC HR KG; C: WN SZ LM - bps: A: SO FU; B: LE LG.

07 2051 (33-61) b: B: KN SW; C: BA - bs: A: SO KS - bp: A: FU OD PE; B: LZ NU LE ES WN WI VL KV MA DB PR AQ TF EB MC LM HR KG; C: TL - bps: C: AE SZ.

08 1824 (20-25) bp: A: FU PE; B: NU WN MA EB; C: PR - bps: B: HR - (si: A: SO; B: AQ; C: LM).

10 0007 (03-10) b: B: SW HR - bs: B: BA - bp: A: SF AC TW; B: VL MA EB SM AE HU LM; C: WN TL - bps: A: CI; B: MB SZ.

12 0429 (26-30) bp: A: TE TW; B: HU - bps: A: AC; B: PP.

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(SEPTEMBER)

13 1953 (50-58) bp: B: VL MA PR AQ EB PE HR KG; C: TL - bps: A: IR HB FU B: KN WN - (ssc: A: SO - si: A: OD).

14 1052 (46-60) b: B: MG NE - bp: A: HO AP; C: MT KA KY - bps: A: PP.

14 1343 (38-53) bs: A: MG - bp: B: PM DU; C: MT KA KY - bps: B: SO SS QU - (si: B: OD).

15 0158 (52-67) bs: A: SF; B: BA - bp: A: MC; B: WN MA AQ EB TL PE SM AE- bps: A: FU HB CI HR; B: LE ES VL SZ MB LM; C: NI PR.

18 1455 (50-57) bp: A: MG KN IR UB OD; B: KV SS GU PM GN DU; C: MT KA KY - bps: B: TO.

19 0515 (11-21) b: B: AE SJ - bp: A: SZ MC HR TW; B: DB LG EB CI SM HU AC - bps: A: MB - (ssc: B: BA).

21 1749 (35-69) b: A: CI; B: LG BA; C: AE - bs: B: HL SW - bp: A: WN FU HB PE SF MC; B: LE ES WI VL NI KV MA PR EB TL SZ HR; C: TF QU LM - bps: A: SO; B: BE DB.

22 0119 (12-23) b: B: SJ HU - bs: A: TE AC TW; B: EB; C: TL.

22 0420 (13-30) b: B: SJ; C: NE - bp: A: TE TW; B: VI PP - bps: B: HU.

22 1734 (28-45) b: A: KN; B: IR SW - bp: A: SO OD; B: WN VL KV MA PR HB TF EB QU LM KG; C: NI PE - bps: B: HL BE.

22 2201 (55-05) bp: B: SO VL MA FU HB OD AQ PE AE HR; C: KV LG EB TL.

22 2224 (19-27) bs: A: BA - bp: A: SO MC; B: MA LG AQ EB PE SM AE; C: LM - bps: A: CI; B: VL..

23 0910 10-11) bp: A: AP; B: PP; C: MT KA KY - bps: B: HO.

24 0022 (20-26) bp: A: PE; B: SO VL KV EB CI SM AE BA MC; C: TL LM.

25 0348 (47-50) bp: A: TW; B: VL SM AE MC LM HR; C: EB - bps: A: AC; B: CI SZ MB HU.

27 1608 (57-20) b: A: KN; B: SW BA HR - bs: A: KS; B: HL - bp: A: FU SU PE SF; B: LE WN WI IR NI KV MA PR EB QU LM - bps: A: SO HB; B: BE TF KG - (si: A: OD).

27 2209 (00-15) b: B: SW - bs: A: SO - bp: A: NU WN CI PE; B: LE ES WI VL KV MA PR AQ EB LM KG; C: TL - bps: A: FU; B: DO HL NI BE TF HR.

OCTOBER

01 2338 (30-40) b: B: BE - bs: B: SW - bp: A: MC; B: KV MA IK EB CI HR; C: TL.

03 1522 (10-38) bp: A; MG; B: KN MT KA KY DU; C: KV - bps: B: SS.

03 1935 (24-45) b: B: BA - bs: B: HL - bp: A: NU MA SU IK CI SF; B: KN NI VL DB AQ EB TL PE AE MC KG - bps: A: SO FU LU; B: DO LE ES WN BE KV PR HB LG HR.

06 2117 (13-20) b: A: TN; B: SW - bs: A: SO KS; B: KN - bp: A: KV SU MC; B: HL WI MA TF TL SM HR; C: WN - bps: A: FU OD LG IK CI PE AE SF BA LU; B: DO LE ES VL BE HB AQ EB; C: PR SZ MB.

10 0630 (25-37) bp: A: HO AP AM; B: NE? PP TO - bps: B: VI.

11 1815 (00-30) b: A: KN IR; B: WN - bs: B: SW - bp: A: UB OD SU; B: BE KV MA PR HB TF IK EB QU; C: NI TL.

11 2341 (33-50) b: A: KN - bs: B: HL - bp: A; PR OD IK CI TL MC; B: WN VL KV MA DB FU LG AQ TF EB QU SZ BA - bps: A: SO PE SF; B: NI BE HB LU.

12 0346 (34-54) b: B: BA - BS: A: KN SF KS - bp: A: SU AQ EB CI AE SZ MC; B: WN KV MA DB SM HR - bps: A: PR FU OD LG IK PE MB LU HU AC TW; B: HB TL - (si: B: OT TN).

13 1205 (04-09) bp: A: AP; B: TO; C: MT KA KY PP - bps: A: CO AM; B: HO - (ssc: A: PB).

13 1531 (30-32) bp: A: MG IR; B: KV OD TO; C: MT SS KA KY GU - bps: A: KN.

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(OCTOBER)

17 2135 (22-50) b: B: BA - bp: A: MC; B: MA EB SM - bps: A: IK TL?; B: LG LU - (ssc: A: SF - si: A: OD; B: PE).

18 1149 (47-52) b: B: NE - bs: A: MG - bp: C: MT KA KY - bps: A: AM; B: HO.

18 1605 (57-20) b: A: IR FU SU BA LU; B: HL SW - bs: A: MG KN - bp: A: OD IK PE SF AC; B: LE ES WI NI VL BE MA MT TF EB TL KA KY; C: MC - bps: A: HB QU; B: WN DB PR AE GN - (si: C: TN).

18 2132 (21-45) b: A: SU SF LU; B: KN IK AE PE BA; C: SZ MB - bp: A: SO OD CI; B: LE ES KV MA DB HB EB TL; C: NI.

19 0224 (18-25) b: B: AE - bs: C: SZ - bp: A: AC TW; B: SM; C: EB TL MC.

19 0755 (50-60) b: A: MG; B: ME HO - bp: A: TE; B: VI - bps: A: PP.

19 1808 (00-13) bp: B: KV MA OD PE QU; C: TF EB TL BA MC - (si: B: HL).

22 1135 (30-37) bp: A: HO; B: TO; C: MT KA KY - bps: A: AP; B: PM PP.

22 2200 (54-04) b: C: BA - bp: A: MC; B: MA TF EB TL AE SZ HR; C: WN QU - bps: A: SO FU IK; B: HL - (si: A: OD).

24 1832 (28-35) b: A: IR CI; B: SU AE - bp: A: PE; B: KN WN VL BE MA DB FU EB QU; C: NI TF - bps: B: SO HB TK.

25 1633 (10-41) b: A: SU; B: SW PE - bp: A: NU UB OD; B: SO KN ES WN WI VL KV MA DB PR IK EB AE KG; C: NI TF TL - bps: B: LE HL HB TK.

26 0219 (10-25) bp: A: PE; B: SO LE ES VL MA HB OD AQ IK EB CI SM LU; C: WN KV TL AE SZ BA MC - bps: B: LG.

27 2113 (08-25) b: B: IR SW - bs: B: HL - bp: A: NU FU OD IK PE SF; B: LZ ES WI VL KV MA DB PR TF EB TL AE BA; C: QU HR - bps: A: SO KN WN; B: DO LE NI BE HB LG AQ LU.

28 1830 (17-33) b: B: WN SW - bp: A: KN IK PE; B: KV MA PR EB TL; C: NI MT KA KY - bps: A: SO; B: BE.

29 1803 (57-10) b: B: SW - bp: B: WN KV MA HR KG; C: EB TL - (ssc: A: SO).

29 2226 (22-29) bs: B: BA - bp: A: MC; B: KV MA EB; C: PR - bps: A: LG LU SF; B: WN VL TL - (si: A: OD).

NOVEMBER

03 2114 (08-21) b: A: SU; B: SW BA TN - bp: A: FU OD IK PE; B: KN WN NI VL KV MA PR AQ TF EB TL SM MC LM GN HR KG; C: MT KA KY - bps: A: IR UB QU; B: BE HB TK - (ssc: B: SO).

04 0000 (51-03) b: A: SF BA; B: SW SU - bs: A: SO KS; B: HL - bp: A: OD IK PE LU; B: WN WI VL KV MA FU AQ TF EB TL AE QU MC; C: PR HR - bps: B: LE ES; C: HB.

04 2129 (20-32) b: A: TN; B: KN HL SW BA - bs: A: SO NU IR KS; B: BE; C: AE - bp: A: UB FU; B: KV MA DB AQ TF SM MC LM - bps: A: OD IK PE QU LU; B: DO WN WI NI VL PR HB TK TL HR; C: EB - (si: B: LG; C: LE ES).

05 0047 (42-51) b: C: BA - bp: B: KV MA OD AQ TL PE MC; C: HB EB.

05 1511 (00-14) bp: A: UB; B: TO; C: KV MT KA KY - bps: A: MG; B: IR.

06 1224 (21-25) b: A: KN IR; B: AM - bs: A: MG - bp: B: OD - bps: A: AP TO; B: MT KA SS KY PM.

06 2105 (00-09) b: B: SW - bp: B: BE KV OD EB; C: KN IK - bps: B: SO; C: TK.

07 1330 (29-31) bps: A: AM; B: MT KA KY - (si: A: GU; B: HO PP).

09 1827 (20-33) b: B: AE BA - bs: A: SO; C: BE - bp: A: TL SF; B: WN DB IK EB CI PE; C: PR TF.

10 0143 (40-46) b: A: SJ; B: AE - bp: A: FR SZ TW; B: WN VL MA EB SM MC HU HR; C: PR TL - bps: A: CI AC; B: MB LU; C: NI.

10 1012 (00-18) b: A: MG - bp: B: VI MT KA SS KY TO AM DU.

10 1452 (48-59) b: B: KN WN SW - bs: A: MO; B: HB; C: VI - bp: B: MA KG; C: KV - bps: A: OD; B: BE.

TABLE 2a BAYS AND PULSATIONS 1970 - continued

(NOVEMBER)

11 0042 (36-54) b: A: KN OD SU; B: SW IK MB BA - bs: B: BE - bp: A: FR PE MC;B: DB HB EB SM AE LU; C: KV TF TL - bps: B: HL LG.

11 0951 (43-59) bp: A: SO AP; B: HO DU; C: MT KA SS KY - bps: B: PP - (ssc: B: SW; C: MA - si: B: OD).

11 2017 (15-22) bp: B: WN VL MA PR IK CI; C: TF EB TL - bps: A: SO; B: BE.

12 1604 (00-06) b: B: MO SW SU - bp: A: SO KN; B: OD IK; C: KV TF - bps: C: BE.

13 1310 (05-18) b: A: SO - bs: B: SS - bp: A: MG; B: KN OD MT KA KY TO; C: KV GU.

14 1812 (00-24) b: B: MO HL SW - bp: A: SO KN; B: ES WN WI VL KV MA PR FU OD EB TL PE LM; C: LE TF AE - bps: B: NI BE.

16 1620 (12-23) b: B: MO SW - bp: A: SO; B: WN VL KV MA PR AQ IK EB - bps: BE HB QU.

20 2236 (34-37) bp: B: VL KV MA IK EB PE; C: TL - bps: A: SO OD - (ssc: B: HB;C: LG - si: B: KN).

23 0129 (21-34) b: A: SU CI SF; B: SZ BA LU - bp: B: HB SM AE MC TW - bps: C:TL.

25 1727 (18-36) b: A: PR FU SU AQ IK EB SF; B: MO HL WN SW MB BA; C: KV - bp: A: CI PE LU; B: MG KN WI VL MA DB HB OD TF TL AE LM HR - bps: B: NI BE.

27 1739 (30-45) b: A: SU IK CI; B: NU WN SW EB - bp: A: SO KN OD; B: LE ES HL WI NI BE MA PR HB PE.

27 2117 (00-24) b: B: HL - bs: B: SW - bp: A: NU; B: LE ES WN WI VL BE MA PR OD TF IK EB TL PE KG; C: KV - bps: A: SO; C: NI TK

28 1437 (30-48) b: A: MG; B: WN SW PR - bp: A: IR UB OD; B: KN HL MA IK - bps: C: TK.

28 2106 (00-10) b: A: SU; B: KV - bp: B: SO LE HL OD IK EB TL; C: BE.

DECEMBER

04 2031 (28-38) b: B: SW - bs: A: SO - bp: A: NU KN FU OD CI; B: WN WI VL KV MA HB AQ TF IK EB AE KG - bps: B: NI BE; C: TK.

05 1503 (55-15) bs: B: SO OD - bp: A: IR TO; B: BE DU; C: KV SS - bps: A: MG UB; B: KN - (si: B: FU).

08 1004 (50-18) b: B: MG MB? HU - bs: B: AE - bp: B: KG - (sfe: SZ MC).

08 1327 (12-42) b: A: UB; B: SW - bs: B: HL WN? - bp: A: KN MO; B: KV KG DU - bps: A: OD; B: BE TK SS.

17 2044 (35-45) b: C: TN - bs: A: NU; B: SO - bp: A: MA; B: VL BE FU AQ IK PE QU; C: WN EB - bps: B: KV OD; C: LG - (si: B: HL; C: TK).

19 2229 (20-35) b: B: SW - bs: A: KS QU; B: HL HU - bp: A: KN FU CI; B: LE MO WN WI ES NI KV MA TF TL - bps: A: OD SU IK PE; B: BE HB MC HR; C: EB - (ssc: B: GU LM - si: A: TA LU TN; B: MB PP; C: SS).

23 1556 (50-60) bp: A: KN OD SU; B: SO MO MA IK QU; C: KV HB SS - bps: B: HL TK.

24 0004 (45-20) b: B: HL SW - bp: A: SO NU FU SU SF SZ LU; B: WN VL MA DB IK EB CI SM MC LM HR; C: KV TL BA - bps: B: NI BE MB - (ssc: B: JO).

24 1427 (20-30) b: C: KV - bs: A: IR - bp: A: TO; B: OD HR - bps: MG; B: KN PM; C: SS - (si: A: UB; B: HL GN).

25 1547 (44-48) bp: B: MG KN IR; C: SS - bps: B: TK.

25 2314 (08-17) b: B: HL SW - bs: A: KS; B: KN - bp: B: VL BE MA SU EB QU; C: WN TL - bps: B: KV OD.

28 1738 (30-44) b: A: IR IK - bp: A: KN MO UB; B: TF EB KG - bps; A: QU; B: HL TK.

28 2004 (00-20) b: B: HL - bp: B: MA EB; C: HR - bps: B: WN IK MC - (si: A: SO OD; B: HU).

28 2222 (10-30) b: B: SF BA - bs: B: HL - bp: A: SO MC; B: VL MA IK EB TL HR - bps: C: MB.

29 0825 (20-38) b: A: LU; B: MG - bp: A: NE AP - bps: A: VI HO AM; B: PP - (ssc: B: SI - si: A: CO; C: BA?).

30 1615 (12-17) b: B: WN SW - bs: B: HL - bp: A: KN MO FU; B: LE ES IR VL MA IK; C: NI BE TL - bps: A: SO UB OD; B: QU; C: KV - (si: B: TK).

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970

Times of commencement of pulsational disturbances (pi2) not associated with bays.

JANUARY

01 0412 (11-13) LMn ACAn TWn.
01 1612 (59-25) MT KY GUn PM ACAn TWn.
01 2220 (13-21) WN KV MAn FUn IKn BA MC.
02 0249 (46-52) SJAn HRn ACAn TWn.
02 2209 (08-10) WN VL FUAn BA MC HRn.
03 2041 (40-42) NI ODn AK BA ACAn.
03 2125 (24-25) LE ES WN WI KV FUA EB HRn.
04 1406 (04-07) COn MGAn UBAn QUn TWAn.
05 2233 (28-34) ES WN KV MA(48-63A) FU(48-55A) AQAn IKn EB TLA AK SZ MBn BA MC(49-55A) LUAn LMn.
05 2248 (47-48) LE WI HRAn TWAn.
07 0220 (19-21) EB TL MBn LMn ACn.
07 1646 (42-53) MGAn KV TKn GUn LMn ACAn.
07 2149 (46-52) TL(2256-2446A) PEn BA MCA.
07 2255 (54-56) LE KV ODn AQn.
08 0018 (18-20) WN NI VL IKn EBn TL FRn AK SZn MBn BA MC HRn ACAn TWAn.
09 0003 (00-15) WN NI FUn AQAn EBn TLA FRn AK MBn BA HRn ACAn TWAn.
09 1606 (04-07) TL AK TWAn.
09 2125 (24-27) LE KV EB BA.
09 2212 (11-13) ES BA(14-16A) MC HRn.
09 2307 (05-09) WN VL KV AQn IKn PEn.
10 0206 (02-09) WN BA MC HRn TWn.
10 1056 (54-60) MGAn ACAn TWn.
10 1714 (09-15) KV ODn TFn BA(53-57A) MC LMn ACAn TWAn.
11 1118 (13-24) COn SIn ACAn TWn.
11 2333 (28-40) WN VL MA FUn AQn EBn TLA PEn BA(41-44A) MC.
12 1711 (00-15) MGAn KV TKAn KY MC PM LMn TWAn.
12 2027 (23-30) KV TKn TL MC LMn ACn.
13 2158 (40-73) TR WN KV ODn AQn IKn EBn TL PEn BA MC LMn ACn.
14 2305 (02-09) WN VL KV FUn AQAn MC LMn.
16 0134 (26-40) AQn EB ACn TWAn.
16 1540 (40-42) MT KY MC(42-44A) HRn TWAn.
19 0930 (28-31) PM ACAn TWAn.
19 1442 (42-43) MC PM TWAn.
19 2104 (02-12) WN NI KV FU(16-20A)n AQn EB BA MC LUn LMn.
20 1941 (33-48) LE WNA KV EB KY BA MC LMn.
20 2019 (18-22) ES FUAn LGAn AQAn PEn HRAn.
21 1951 (50-52) KNn BA ACAn.
21 2049 (47-51) KV FUn AQn EBn.
21 2113 (13-14) WN KV AQn HRn.
22 1559 (58-60) ODn TKn BA TWn.
23 0214 (12-15) LE ES AQn EB MBn ACAn.
23 2030 (22-37) KV TL AK BA.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(JANUARY)

23 2202 (00-05) WN KV AQn IKn AK MC LUn HRn.
24 2051 (45-55) WN FUn AK BA MC ACAn TWn.
25 2020 (16-25) KV EB TL AK.
25 2103 (03-04) FUn IKn MC HRn.
26 0207 (03-16) AQn EB PEn MC.
27 0234 (32-42) WN DB FUn EB SZn MBn MC(50-53A) LUAn HRn ACAn TWn.
27 2325 (17-28) KV ODn TL MBn BA.
28 1327 (25-36) COAn SIn PM ACAn TWn.
28 2323 (21-24) FUn EB SZn MBn MC LUAn.
29 0734 (33-35) HOn MC LUAn AMAn.
30 0614 (14) HRn ACAn TWAn.
31 1809 (06-12) TKn AK QU(26-48A)n BA.
31 1836 (30-41) SIn KV AQn IKn PEn HRn.
31 1940 (40-41) WN KV AQn HRn ACn.

FEBRUARY

01 0023 (20-29) WN PEAn BA.
01 0134 (23-36) WI VL FUAn IKAn EB HUn PP LMn HRAn TWn.
01 0408 (07-10) EB LMn ACAn TWAn.
01 2204 (03-09) KN WN FUn AQn MC(32-39A) LUn LMn.
02 0347 (44-53) FRn LMn TWAn.
02 1220 (20-21) GUAn MC PP HRn.
02 2244 (43-44) LE ES WNA FUAn EBn MC(44-46A) HRAn.
03 2331 (30-32) VL AQn EBn LUn.
04 0414 (14-15) DSn HUn ACAn TWn.
04 0913 (09-20) HOAn MC PP.
04 2041 (39-42) ES WN VL FU EBn PEAn MCA HRn.
05 0122 (20-30) ESA WN EB BAA MC(29-34A) ACn.
05 0147 (45-49) HRn TWAn.
05 1327 (25-28) PP ACAn TWn.
05 2052 (47-55) WN NI KV TL BA.
05 2134 (34-35) KV IKn DSn MC HUn PP.
09 0206 (01-10) ODn EBn MBn TWn.
09 1404 (04-05) MGn MTn KAn KYn GUn TOn.
10 1451 (50-52) AQAn MTAn PEn KAn KYAn HOAn GUAn MC LUAn PMn PP GNAn HRn ACAn.
12 1514 (11-15) WN ODn MTn AQn EBn TL PEn KAn KYn QUn GUn BA MC PMn HRn ACAn TWn.
13 0533 (33) DSn TUn HUn HRn.
14 0233 (24-40) WN EB SZn MBn MC HUn TWn.
15 0201 (00-03) WN VL FUn AQn TL SZn BA MC LUAn HUn LMn HRn.
15 0624 (17-32) HUn PP LMn ACAn.
15 1412 (06-15) MTn KAn KYn PMn TWAn.
15 1500 (59-00) BA HRn ACAn.
17 1607 (00-09) EB KY MC HRn ACAn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(FEBRUARY)

17 1823 (20-28) WNA NI KV.
17 2014 (08-16) LE WNA FUAn EB BA MC LMn HRn ACAn.
18 1832 (31-35) AQAn BA HRn.
18 2151 (50-55) ES WN FUAn EB MC LUAn HRn ACAn.
20 1326 (25-28) MG MTn KAn KYn QUn MC PP ACAn TWAn.
20 1352 (52-53) COAn EB HRn.
21 1941 (40-42) KNn ODn TKn QUn.
21 2145 (45-46) AQn PEAn LUn ACAn.
24 1447 (45-51) NI MTn KAn KYn.
26 0129 (27-30) WN TL LUAn.
27 2040 (35-43) WNA NI KV FUAn IKn EB PEAn BA MC LUAn LMn HRn ACAn.
27 2334 (33-35) LE WNA MAn DB TL BA MC(46-59A).
27 2346 (46-48) WI FUAn PEAn LMn HRn ACAn.
28 1728 (18-30) WN NI VL KV FUn MTA AQn IKn EB PEn KAn KYn BA MC PPA LMn HRn ACAn TWAn.

MARCH

02 0113 (11-14) WN FU EB MC PP HRn TWn.
02 1706 (02-18) MGAn UBAn AQn IKn KY QUn PP LMn.
02 2313 (02-16) WN NI FUn EB BA MC PP LMn HRn ACAn TWAn.
03 1356 (52-61) UBAn MTAn IKn EB KAn KYAn PP LMn ACn.
03 1720 (19-21) WN MTAn EB KAAn KYAn PP LMAn HRAn.
03 2309 (07-16) LE ES KV EB MC.
06 0058 (58-61) WN NI VL FU(58-66A) EB BA MC LMn HRn.
06 2208 (07-08) ES WN(51-53A) VL KV FU(51-54A) MC HRn.
06 2249 (42-51) MAn EB LMn HRn TWAn.
08 1412 (10-17) NIA FUAn SJn.
09 1629 (26-30) WN FUAn MC.
11 1933 (24-42) KV ODn TKn TLA QUn.
11 2010 (09-10) WN KV AQn IKn MC.
13 0610 (10) FRn DSn TUn ACAn TWn.
14 0154 (46-60) WN FUn AQn IKn EB MC LUAn LMn HRn ACAn.
14 0329 (28-30) GUn PM PP TWAn.
15 0128 (27-30) WN FUn EB DSn GUn MC(28-31A) HUn PP LMn HRn ACAn TWAn.
16 1347 (43-49) UBn ODn MTn TFn KAn KYn QUn MCA PM LMn GNn HRn ACAn TWn.
16 2133 (29-38) ODn TL PEAn BA.
17 0616 (09-21) DSn TUn PP LMn HRn ACAn.
19 0716 (15-17) COA MC ACAn TWn.
19 1237 (33-41) COA MC ACAn TWn.
19 1639 (30-43) UBAn ODn ACAn TWn.
19 2048 (47-49) KV TKn TLA PEAn MC.
20 0016 (13-18) IKn EBn PEAn MC ACn.
20 2217 (09-21) WN KV FUn TKn TL MC LMn HRn ACAn TWn.
22 1025 (22-27) MC PMn HUn PP LMn TOn AMAn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(MARCH)

23 2225 (24-30) AQn TKn EBn LUAn LMn.
25 0648 (45-49) TUn HOn MC LMn ACn TWn.
27 1728 (25-30) KV UBAn LMn.
28 1915 (12-17) KV BA MC(12-23A) PP HRn.
28 2156 (55-56) KV ES WN EB BA MC.
28 2208 (07-08) VL FUAn IKn PEAn LMn HRn.
29 2222 (13-31) ES WN NI VL KV MA(38-43A) FUn EB TL BA(28-42A) HRn ACAn TWn.
30 2009 (03-11) WN NI FUn TL MC HRn.
31 0530 (29-36) NIA FUAn SJAn PP TWn.

APRIL

02 1307 (07-08) MTn IKn KAn BA MC(23-25A) PMn HRn ACAn
02 2026 (22-28) LE ES NI KV MAn ODn AQn EBn BA.
02 2223 (21-23) WN VL AQn IKn PEAn BA HRn.
03 0453 (35-36) FRn DSAn TUn BA MC HUn PP LMn HRn ACAn TWAn.
03 1408 (08-09) UBAn MT KY.
03 2353 (45-55) KV MAn FUn ODn AQn IKn EBn PEAn BA LMn HRn.
04 0807 (02-15) SIn MTn KAn DSn TUn KYn GUn PMn HUn PP LMn HRn ACAn.
04 2027 (27-28) AQn IKn PEAn BA MC PP HRn ACAn.
04 2300 (47-06) MAn ODn AQn IKn EBn TL PEAn MBn MC LMn ACn.
05 1450 (50-51) MGAn MTn KYn TWn.
06 2132 (31-34) WN NI KV FUAn MC(34-37A) LMn HRn.
08 0009 (00-15) WN FUn MBn LMn.
08 2113 (12-14) KNn KV ODn AQn QUn ACAn.
09 0406 (05-06) AQn EB FRn MBn LUAn HUn PP ACAn.
10 2211 (08-14) KNn WN KV MAn FUn AQn TKn IKn EBn PE(32-41A)n LMn.
13 1949 (48-50) KV ODn AQAn QUn.
13 2005 (03-07) PEAn LUn HRn.
15 0825 (24-27) AQn IKn MC LUn HRn TWn
15 2000 (00) NI KV FUn MC.
16 1946 (41-46) LE WNA NIA VL KV MA(67-83A)n FUAn AQAn EBn PE(46-53A)n BA MC(1947-1952A; 2011-2013A) LMAn HRn TWn.
16 2007 (06-08) FUAn AQAn IKn LUn HRn.
17 0122 (18-28) MA EB FRn TUn GUn PP LMn HRn TWAn.
17 1836 (35-36) WNA NIA KV FUAn MCA LMn HRAn.
17 2144 (44) VL EB MC HRn.
18 2051 (47-55) KV AQn EB TL LMn.
18 2203 (03-04) FUA MC HRn.
19 1014 (14-15) MTAn KAn KYn GUn.
21 1031 (28-38) MT KY MCA.
21 1954 (51-57) KV FUA MC.
23 0129 (27-30) FRn DSn SM ACAn TWAn.
23 1807 (06-08) WN FU MT EB MC LMn.
24 0407 (03-12) LE ES MC ACn TWn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(APRIL)

24 2230 (30) LE ES VL MC.
24 2349 (49-50) LE WN EB MC.
25 0337 (31-44) EB MBn MC TWAn.
25 1921 (21-22) KV TKn MC LMn.
25 2328 (15-35) EB FRn MC HUn ACAn TWn.
26 1045 (45) WN WI VL FUAn.
26 2251 (47-53) ES NI BA MC.
28 1944 (42-45) KNn ODn TKn TL.QUn.
29 0834 (33-34) HOn MC PP AMAn.
29 2108 (07-10) LE KNn NI KV AQn TFn EBn QUn MC.
29 2155 (55-56) WN DB FUAn AQn HRn.
30 0105 (04-07) LE AQn EBn MBn ACAn TWAn.
30 0119 (18-19) WN NI VL MC LUn HRn.
30 1052 (52) MT PP AMAn.
30 2030 (27-32) KV AQn LUn PP HRn.

MAY

01 1311 (04-18) MGAn SSn MC.
01 1914 (09-16) KNAn WN NI VL KV DB FUAn ODn AQn TKn IKAn EBn PEAn BA MC (16-21A) LMn TWAn.
01 2230 (28-32) WN VL FU TL PEn MC.
02 1725 (23-28) WN NI VL MAn TKn EBn MC LMn ACn TWAn.
02 2153 (50-55) LE ES WN NI VL MAn DB FUAn AQn EB TL MC(54-60A) HRn TWn.
03 2151 (50-52) LE WN NI FUAn BA MC.
05 2337 (36-38) WN WI KV FUAn IKn PEAn BAA MC(39-41A) HRn AMn.
06 2343 (32-50) KV SSn GUAn PP AMAn.
07 1052 (50-56) OTn LMAn TWAn.
07 1838 (25-44) KV UBAn FUA ODn TKAn PEAn QU(43-48A)n BA MC LMn.
08 1629 (19-31) KNAn WNA NI VL MAn UBAn FUAn ODn AQn TFn TKAn IKn EBn PEAn.QUn BA MC LMn ACAn TWAn.
08 2217 (17-18) KV ODn AQn EB TL.
09 1841 (37-45) KV ODn TKn IKn PEAn QUn LUn.
10 0318 (15-21) IKn DSn MC LUn ACAn TWn.
11 0714 (14-15) COAn IKn PP LMn.
11 1812 (10-15) KNAn ODn TKn.
11 2216 (16-17) NI DB EBn TLA FRn KY HOn SJAn BA MCA PP ACAn TWn.
11 2239 (28-47) LE KNn ES WNA FU(11-20A)n AQAn TUn GUAn HUn LMn.
13 0932 (30-33) COAn SJAn PP.
13 2231 (23-38) LE ES WN NI KV FUn ODn AQn IKn EBn TLA PEAn BA MC TWn.
14 0012 (10-13) WN NI FUAn DB AQn IK(43-62A)n FRn BA MCA TWAn.
14 0357 (57-58) DSAn ACAn TWAn.
14 0422 (21-24) SM SSn MC PP.
14 0446 (45-47) SIAn TUn MC.
14 2331 (30-33) WNA NI FUn IKn EB PEn HOn BA MCA PP LMn TWAn.
15 1935 (29-36) ES WNA WI NIA VL KV AQn TKAn IKAn EB PEAn QUAn BA MCA LUn LMn ACAn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(MAY)

15 2229 (24-33) LE(32-38A) ES WN VL KV DB ODn AQn IKn EBn TLA PEAn BA MC LUn.
15 2335 (30-39) KV NI IKn LUn HRn.
16 2243 (42-44) ES KV FUn ODn AQn IKn EBn PEAn BA MC.
17 0438 (32-48) FRn MC ACAn TWAn.
18 1329 (29-30) SSn GUn MC PMn.
19 0344 (42-45) FRn ACAn TWn.
19 2038 (37-40) WN PEAn MC.
20 2037 (37-38) WN NI KV MC.
21 2326 (23-30) LE ES WN NI VL KV FUAn IKAn EB BA MC ACn.
23 1624 (23-26) MTn TKn KAn SSn KYn.
23 2156 (55-56) WN KV FUAn MC.
24 2314 (10-21) WN KV AQn IKn EBn TL BA MC.
25 2150 (47-51) KV AQn PEAn MC.
26 2040 (35-46) LE ES ODn AQn IKn EBn TL BA(30-41A) MC.
26 2106 (04-12) WN NI VL MAn LUn.
26 2130 (29-31) WI PEAn HRn.
27 1846 (43-47) WN NI KV FUAn AQn TF MC LUn LMn.
27 2156 (55-60) WN KV FUAn BA MC.
28 0946 (40-53) HOn SJAn TWn.
29 2039 (33-42) LE ES WN KV AQn IKn PEAn MC.

JUNE

01 0153 (48-57) AQn TL LUAn HUn ACn TWn.
01 0303 (55-10) MTA KY PP LM.
02 2018 (17-20) ES WN VL FUn PEAn.
04 2052 (50-55) ES KV ODn TLA.
05 0231 (31-32) AC(03-10A; 36-43A)n TWn.
06 0349 (49-50) FRn AC(20-30A)n TWAn.
07 0334 (25-39) LE ODn FRn DSAn QUn PP ACn TWAn.
07 0411 (09-13) WN WI EBn TUn GUn MC HUn.
07 2122 (21-23) ES LE MCA LMn.
07 2310 (09-10) LE ES KV FUAn HOAn MCA LMAn HRAn.
08 2041 (39-42) ES KV ODn AQn IKn TLA MC.
09 1906 (01-16) KNn ES WN KV FUn LGn AQn EBn TLA QUn BA MC LUn LMn.
10 0104 (04-05) EB ACAn TWAn.
11 0150 (50) FRn HUn TWAn.
11 1707 (05-08) KNn WN TKn IKn EB QUn MC ACAn .
12 0050 (47-53) WN ODn IKn EBn TL FRn MC LUn ACAn TWAn.
12 1850 (48-55) KNn WN KV ODn TKn IKn TLA.
12 1929 (25-32) LE VL KV FUn AQn EB PEAn MC.
12 2144 (42-45) WN KV FUAn ODn AQn IKn EBn PEn MC LMn.
13 0636 (32-40) FRn AC(47-54A)n TWAn.
13 0758 (54-61) DSn TUn ACAn.
13 1337 (36-37) SS MCA PM.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(JUNE)

14 0158 (40-67) SIAn NEn EB SM DSAn TUn HOAn BA HUn PP HRn ACAn TWAn.

14 1850 (48-51) WN KV TKn SS.

15 0005 (01-09) WNA FUAn AQn IKAn EB TL BA MCA LMn HRn ACAn.

15 2037 (35-43) WN KV TL MC.

16 2206 (58-17) LE WNA AQn IKn EB TL.

16 2317 (16-19) KV FUAn PE(19-23A)n BAA MCA LUn LMn HRn.

18 0039 (30-40) LE FUAn MCA LMn HRn.

20 0540 (39-40) FRn AC(56-59A)n TWAn.

20 0647 (42-52) WN EB SS PM PPA HRn.

22 1917 (15-19) KNn ES VL KV MAn FUn ODn AQn TKn IKn TL BA MCA LMn HRn.

22 2054 (52-68) LE ES WNA WI VLA KV FUAn LGn AQn IKn EBn PE(10-14A)n BA MCA PP LMn HRn ACAn.

23 0104 (00-10) EBn FRn AC(11-18A)n TWn.

23 0519 (18-20) OTAn EB ACAn TWn.

24 0051 (50-51) WN AQn TL ACn.

24 1949 (45-50) WNA VL KV MAn FUAn AQn TKn IKn EBn TLA PEAn QUAn HOn BA MC LUn PP LMn HRn ACn TWn.

25 0032 (27-35) WN AQn EB MC ACn.

25 0555 (55-56) MC HUn ACAn.

25 2217 (05-25) WN KV EBn TL MC.

26 1839 (39) WN KV AQn EB.

28 0055 (54-56) AQn EBn TL MC ACAn TWn.

28 2120 (18-21) ODn EB TL MC.

29 0500 (00-02) FRn PP ACAn TWAn.

29 1626 (22-30) WN VL FUAn EB QUn LMn.

30 0652 (50-55) FRn TUn PP AC(28-32A)n TWAn.

JULY

01 0113 (08-14) DB AQn EBn TL FRn SM BA MC HUn HRn ACAn TWn.

02 0444 (43-45) HUn ACAn TWn.

03 0006 (05-07) KNn WN DB LGn AQn IKn EBn TLA PEAn BA LUn LMn HRn.

03 0741 (40-42) SS HOAn MC PP.

03 2146 (44-50) WN NI VLA MAn DB FUAn AQAn IKAn QUn HOn GUn BA MC(45-60A) LUn HUn LMn HRn ACAn TWn.

05 0342 (42-43) FRn ACAn TWAn.

05 0622 (20-23) TUn ACAn TWAn.

07 2258 (50-68) WN FUn AQn IKn EB BA MC HRn ACn.

10 2029 (25-34) WN WI NI SS HRn.

11 2035 (35-36) LE WN WI FUAn HRn.

11 2329 (26-30) LE ES WN VL EB SM HRn.

12 2310 (09-15) LE ESA WN VL DB FUn AQn EBn TLA BA(10-12A) MCA HRn.

13 2051 (48-54) MA FUAn EB BA MCA HRn.

13 2239 (38-40) VL BAA MC HRn.

14 0138 (35-40) WN NI VL DB EB BA MCA HR ACAn TWAn.

14 2240 (40-42) ES MA AQn TL.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(JULY)

15 0213 (10-19) FRn ACAn TWn.
15 0858 (56-59) SI PP TWAn.
15 2119 (17-20) LE KNn ES WN MAn FUAn ODn LGn AQAn TKn IKn EBn PEn QUn BA LUn LMn HRn.
16 0002 (00-03) KNn WN DB FUAn AQn IKn EB BA MCA LUn LMn HRn.
16 1736 (34-38) KNn UBAn ODn MTn TFn TKn KAn KYn QUn.
16 1801 (00-05) MGAn IKn SS GUn MC.
17 0219 (14-25) FUAn LGn AQn IKn EB TLA FRn BA MC LUn LMn HRn ACAn TWn.
19 0218 (15-19) EBn TL LUn ACAn.
19 0258 (54-63) FRn LUn LMn HRn TWAn.
19 1641 (39-42) UBAn MTn TKn KAn SS KYn QUAn GUn PMn.
20 0500 (58-01) FRn ACAn TWAn.
20 1812 (10-15) KNn UBn ODn TKn.
22 1941 (38-44) ES TL BA(33-48A).
23 1745 (39-53) UBn IKn QUn BA(06-08A).
24 2352 (50-56) NI TUAn HOAn HUn TWn.
27 0438 (35-40) FUA FRn TUn MC HUn PP LMn ACAn TWAn.
27 1019 (17-23) MTn KAn KYn PM PP.
27 1510 (09-10) ES WN WI MT KY MC HRn.
27 1922 (22-23) VL EB MC HRn.
27 2322 (19-24) ES EB BA MC HRn.
31 0521 (20-22) FRn TUn PPA ACAn TWAn.
31 2105 (01-06) WB VL EBn MC HRn.

AUGUST

01 0830 (29-30) COAn SIAn FRn HOAn PMn PP(30-37A).
01 0931 (31) MT KY MC HRn.
01 2103 (58-15) WN WI NI FUAn IKn TL SSn MCA LUn PP LMn HRn TWAn.
02 0114 (00-25) ES WN FU FRn TL SM MCA HUn PP LMn HRn ACAn TWAn.
04 0023 (21-25) KNn WN VLn ODn LGAn AQAn EBn PEAn MC ACAn.
04 0239 (29-50) TL LMn ACAn TWn.
04 1928 (27-28) KNn WN TKn IKn TL(24-72A) QUAn.
04 2332 (22-48) KNn ES WN VL FUn AQn TKAn IKAn EBn PEAn QUn MC PP.
04 2351 (50-52) NI DB GUAn LMAn HRn ACAn.
05 2308 (06-09) AQn PEn EBn MC ACAn.
06 2113 (10-14) KNAn WN VL DB FUAn AQn TFn TKn IKn EBn MCA LUn LMn.
06 2230 (28-31) WNA NI DB FUAn AQn IKn EB PEAn MCA LUn HUn PP LMn HRn.
07 2139 (32-47) WNA NI MAn FUAn EBn MCA LMAn HRn.
08 2235 (28-41) WN NI VL EB.
09 1752 (51-58) WNA FUAn MT KY MCA LMn.
10 0652 (50-53) SIA HOn PP ACAn TWAn.
10 2122 (11-25) ES ODAn AQn EBn TL.
10 2152 (51-55) WN NI VL MAAn FUAn IKn MC LMn HRn.
10 2233 (32-34) FUn PEAn MC HRn.
11 0806 (05-07) SIA HOn PP.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(AUGUST)

11 2255 (54-57) WN FUn AQn EBn MC LUn HRn.

12 1920 (18-21) WN WI NI VL MAn FUAn UBAn AQn TKn EB TLA QUn BA(21-28A) MC LMAn HRn ACAn TWn.

12 2118 (05-23) LE ES(22-25A) WNA WI NI FUAn MT EB KY BAA MC HUAn PP LMn HRn ACAn TWAn.

13 0639 (35-40) SIAn TUn HO(55-70A)n TWAn.

14 2005 (05-07) TL BA MC PP.

14 2329 (27-30) WN VL LUn HRn.

15 0239 (29-46) MAn AQn EB MC TWn.

15 2309 (04-14) WN VL FUAn AQn EB MC LMn HRn.

16 1627 (26-30) KNAn UBAn MT KY QUAn PMn.

16 1732 (30-37) ODn MTn IKn KAn KYn GUn PP GNn ACAn TWn.

17 0746 (45-47) MTn KAn KYn HOAn PP.

17 1647 (47) WN FUAn MCA.

17 2205 (05) ESA WNA VLA FUAn IKn MC(05-22A) HRn.

17 2355 (54-55) WNA VLA FUAn MCA HRn ACAn.

18 0035 (33-40) MAn FUAn EB TUn MCA TWAn.

19 0007 (06-12) WI FUAn IKn EB SM SS TUn MC.

19 0507 (07-08) HUn PP ACAn.

20 0746 (45-47) FRn MC HUn PP.

20 2151 (50-51) AQn IKn EB PEAn QUn MC.

21 1056 (55-57) MT IKn KY PP ACn AMAn.

21 2020 (19-22) KNn ODAn AQn PEn QUn BA.

21 2113 (11-14) WN FUn AQn TKn IKn EBn PEAn MC.

22 0431 (26-33) FRn DSn TUn HUn PP ACAn TWn.

22 2349 (47-50) LE WN FUAn AQn IKAn EB TL MC PP LMn ACAn.

23 0334 (33-35) EB ACAn TWAn.

23 0445 (40-49) LE ES PP ACAn TWAn.

24 0303 (02-04) WN EBn FRn SM PP HRn ACAn TWn.

26 1147 (47-48) MT KY BA PP.

26 2126 (22-30) WN VL EB PP.

27 0110 (07-12) LE VL FRn ACAn TWAn.

28 0537 (37-38) FRn ACAn TWn.

28 2248 (39-55) WN FU TLA MC HRn.

31 1851 (40-61) WN FUAn MT EB TL SS KY MC HRn TWAn.

SEPTEMBER

01 0657 (55-62) HOAn HUn PP ACAnTWAn.

03 0259 (51-60) ES WN MAn FUn EB(59-75A) TL FRAn SM MBn GUn MC HUn LMAn HRn ACAn TWAn.

03 0807 (05-09) PP ACn TWAn.

03 1034 (33-35) MTA SSn KYA GUAn PP.

03 1223 (22-24) MGAn MT SSn KY.

03 2055 (54-55) WN WI FUAn AQn EB BA MCA PP HRn.

05 1011 (10-12) COAn HOn AMAn.

06 1437 (36-42) MGAn MT KAn SSn KYn GUn ACAn TWAn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(SEPTEMBER)

06 2114 (08-17) LE(31-61A) ES AQn EBn TL BA.
06 2131 (31-32) MAn FUAn PEAn MC PP LMn HRn.
06 2158 (57-58) WNA WI MA(58-70A) FUAn MCA LMn HRn.
07 0053 (52-53) ES EB ACAn TWAn.
07 0947 (45-51) SIn HOn AMAn TWn.
07 2012 (09-22) WN UBn AQn TFn TKn EB QUn MC ACn.
07 2054 (50-60) FUAn TKn EB MC LMn HRn ACAn.
08 0523 (22-24) FUAn AQn EBn PEn ACAn TWn.
08 1401 (58-02) MT KAn SSn KYn MC GUAn PP.
09 1542 (42-43) MGAn UBn KY TWAn.
12 0400 (54-04) FRAn HUn PP LMn ACAn TWAn.
12 0711 (10-13) SIn HOAn PP TWn.
12 1716 (12-20) KNn ODn TFAn TKAn.
13 0206 (06-07) EB ACAn TWn.
13 0433 (30-37) TUn MC HUn PP ACAn TWAn.
13 1626 (23-31) MT KAn SSn KYn.
13 1953 (52-53) WN NI FUAn EB MC PP LMAn HRn ACAn.
13 2217 (16-17) WN VL EB MC.
15 0137 (30-38) LE NI EB SM MC(57-77A) HRn ACAn TWAn.
15 0158 (57-60) WN WI FUAn SM KY MBn BA LMn.
15 0706 (05-07) COAn SIn PP.
15 1121 (13-23) BA MC PM PP AMAn.
16 0717 (16-20) PP(36-62A) ACAn TWn.
18 0035 (33-36) ES WN VL DB FU ODn EBn TLA MBn MC HRn ACAn.
18 1454 (50-55) MT KY QUAn MC PM.
19 2133 (32-33) WN VL MAn EB TL MC.
19 2225 (24-25) MAn FUn AQn PEn MC.
20 0448 (48-49) FRn ACAn TWAn.
20 1935 (34-36) WN VL MAn DB FUn AQn EB MC ACAn.
20 2306 (00-14) VL MAn FUn AQn MC.
21 1151 (49-56) MT KAn SSn KYn GU MC PM PP.
22 0350 (50-51) FRn ACAn TWn.
22 2202 (01-03) ES WNA WI MAAn FUAn EB BA MCA LMn HRn.
24 0020 (20-21) WN MA FUAn EB FRn MBn BA MCA PP LMn.
24 0105 (05-06) MBn MC PP ACAn.
24 0304 (57-12) MBn LMn ACAn TWAn.
24 0749 (48-50) KNn UBAn TKn QUn.
24 1814 (13-15) AQn EBn BA PP ACAn TWn.
25 0349 (47-50) WNA NI FUAn AQn EB TL FRn PEn SSn HOAn MBn GU MC HUn PP. LMn ACAn TWAn.
25 2038 (29-44) ODn AQn EBn TL PEn QUn BA MC PP.
26 0236 (35-37) TL FRn MBn MC PP ACAn TWn.
26 1551 (50-58) UBAn ODn TKn KAn SSn KYAn QUn MC ACAn.
26 1619 (15-21) FUAn TFn GUA.
26 1738 (35-40) AQn PEAn MC.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(SEPTEMBER)

26 1815 (15-16) AQn PEAn MC.

26 2138 (35-40) WN VL DB AQn PEAn MC.

26 2340 (40-41) WN VL AQn MC HRn.

27 2211 (08-12) LR WNA NIA FUAn AQn EB TLA MBn BA MCA LM(12-20A)n HRn.

28 0048 (47-49) LE WN EB MC ACAn TWn.

29 2232 (29-35) WN FUAn AQn EB BA MC HRn.

OCTOBER

01 0014 (11-22) MAn AQn IKn EB LMn HR ACn TWn.

01 1757 (52-60) BA(61-66A) MC TWn.

01 1901 (00-01) WN FUAn AQn MC.

02 2132 (31-33) WN VL AQn EB MC.

03 1515 (05-20) MT TKn KY QUn MC ACAn.

03 1934 (32-35) WNA NI FUAn TKn SS QUn MC PP LMAn ACAn.

03 2208 (07-09) LE ES WN NI VL TLA MC ACAn.

04 2154 (53-54) LE ODn AQn EB.

05 0534 (28-37) FRn PP ACAn TWAn.

05 1856 (55-58) LE ES(56-61A) WN NI MAn FUAn AQn IKn EB MCA PP LMAn HRn ACAn.

06 1854 (51-56) ES WN MAn FUn UBAn AQn TKn IKn EB QUn MCA PP LMn ACAn TWAn.

06 2020 (19-20) LE AQn IKn MCAn.

06 2118 (17-19) WN NI MAn FUAn BA MCA PP LMn HRn ACAn TWn.

07 0701 (00-06) SIAn DSAn HOn PP ACAn TWn.

07 1548 (47-49) PP ACAn TWn.

07 2143 (40-49) WN WI FUAn AQAn IKAn QUn HOAn MBn GUAn BA MCA PMn HUn PPA HRAn ACAn TWAn.

07 2254 (52-55) FUn AQn IKn MC PP ACAn.

08 0817 (15-18) COn SIAn PP ACn.

08 2326 (23-35) MAn EB TL GUn ACAn.

09 1757 (49-60) KNn ODn TKn QUn GNn ACAn TWn.

10 0416 (15-17) FRn DSAn HUn ACAn TWAn.

10 0532 (30-33) SSn PP ACAn.

10 0605 (05) SIA HOAn GUn.

11 2337 (31-40) LE ES WN NI FUAn MCA LMn HRn.

13 0506 (05-07) FRn HUn PP TWn.

13 1206 (05-07) MT IKn SSn KY BA PMn PP ACn TWn.

13 1531 (30-32) MT TKn KY QUAn MC.

14 2002 (01-03) LE ES ODn IKn EB BA TWn.

14 2107 (00-09) WN FU(25-29A)n MT AQAn IK(24-29A)n TL PEn KY MBn MC(24 - 27A) HUn AC(08-15A; 25-27A)n TWAn.

15 2047 (44-50) LE ES WN WI NI FUAn ODn AQAn TFn TKn IKAn TL PEAn QUn BA MC HUn ACAn TWn.

17 2132 (32) VL FUAn MC.

18 0814 (14-15) MGn MT KY AMAn.

19 1525 (23-30) MGAn MT KY.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(OCTOBER)

20 0248 (46-52) ES WN MAn FUAn ODn AQn IKn.EB TL PE(46-52A)n QUn BA MC PP LMn ACAn TWAn.

21 1554 (48-58) KNn ODn AQn TKn ACAn TWn.

21 2257 (54-64) ODn BA AC(75-82A)n.

21 2356 (54-57) WN NI VL MAn FUn AQn IKn EB MC PP ACAn.

22 0720 (18-21) PP ACAn TWn.

22 2159 (57-62) FUAn SS MC LMn.

23 0001 (00-05) SM MC ACAn TWAn.

24 1806 (00-07) LE ES NI EB QUn LMn.

24 2336 (35-36) ESA AQn EB PP.

25 1205 (05-06) MGn MT SSn KY.

25 1234 (34-35) BA AC(51-55A)n TWAn.

25 1621 (17-28) MGAn MT SSn KY LMn ACAn.

26 0218 (16-21) LE ES WN FUn FRn.BA LMn HRn ACAn TWAn.

26 0318 (17-19) WN WI VL FUAn AQn IKn PEn MBn MC LUAn HUn LMAn HRn AC (18-20A)n TWAn.

27 2114 (13-14) LE ES WN NI FUAn MC LUn PP HRn ACAn TWn.

27 2225 (21-32) WN VL MAn FUn LGAn AQn IKn EB PEAn MBn LUn HUn PP LMn HRn ACAn TWn.

28 0130 (27-34) LE ES AQn ACAn TWn.

28 1439 (36-40) MT AQn TKn SSn KY GUAn MC AC(47-49A)n.

29 0531 (30-32) FRn DSAn TUn PP ACAn TWn.

29 1642 (35-45) KNn QUn GNn TWn.

29 1801 (59-10) WNA NI FUn AQn BA LMn HRn ACAn.

30 0116 (11-20) FRn AC(57-59A)n TWAn.

31 1933 (32-34) QUn PP ACAn.

NOVEMBER

01 1651 (49-54) ODn PP ACAn TWn.

02 2316 (05-25) KNn WN VL MAn ODn LGAn AQn IKn EB TLA PE(24-33A)n LMn HRn ACAn.

03 2112 (08-15) WN FUAn MCA PP LMn ACAn TWn.

05 1516 (14-22) KNn MTn KAn SSn KYn QUn GUn ACAn.

05 1611 (10-12) FUn AQn PEn SSn BA PP LMn HRn ACAn.

05 1904 (04-06) KNn FUn UBAn IKn TL PEAn SSn KY QU(04-08A)n BA(09-11A) MC PP HRn ACn TWAn.

05 1932 (32-33) WN FUAn AQn.

05 2008 (08-09) WN NI MC PP LMn ACAn.

06 0301 (00-02) DSn PP ACAn TWn.

07 0046 (45-46) NI MT KY MC PP.

09 1008 (08-10) MTn KAn KYn GUAn.

10 0144 (40-45) LEA WN FUAn FRn MCA PP LMAn HRAn TWAn.

10 2122 (22-23) LE ES WNA WI NI VL FUAn AQn IKn MCA HRAn ACAn.

11 0000 (58-02) WN WI NI AQn IKn EB TL BA.

11 0014 (14) PEn PP HRAn.

13 2205 (04-05) LE ES WN MAn FUn IKn EB PP HRn.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(NOVEMBER)

14 0026 (21-31) LE ES WN VL IKn MC ACAn TWn.
14 1805 (05) LE WN FUn LMn.
14 1952 (51-53) ES WN NI DB FUAn ODn IKn TL MC PP ACAn.
14 2027 (23-29) LE WI VLA MC HRn ACAn.
15 1055 (52-57) HOn PP ACAn AMAn.
16 0902 (00-04) SIn HOn PP ACn TWAn.
16 1638 (36-38) KTn TKn KAn SSn KYn.
16 1720 (18-21) WN NI TKn LMAn.
16 2019 (18-20) LE WN FUAn TKn.
16 2101 (54-04) KNAn TKn MC(04-05A) PP LMAn HRn ACAn.
17 2335 (34-37) WN VL MAn FUn ODn AQn IKn EB TL PEn MC(35-60A) PP HRn.
18 1151 (49-54) MTn KAn KYn HOn GUAn BA PMn PP HRn ACAn AMAn TWn.
18 2212 (11-13) WNA NI MAAn FUAn AQAn IKAn PE(12-26A)n MC HRn.
19 0741 (37-50) WN NI BA LUn.
20 2237 (35-38) WN FUAn AQAn GUn MC LUAn PP LMAn HRn ACn.
24 2311 (11-12) FUAn MC HRn.
26 0952 (50-56) SI(53-85A)n PP TWn.
26 1454 (54) MTn KAn KYn ACAn.
28 0432 (30-33) FUn AQn PEAn HRn.
28 1031 (26-35) PP ACAn TWn.
30 1438 (30-41) COAn UBAn PM ACAn.
30 2140 (38-41) ODn AQn EB PEAn.

DECEMBER

01 2122 (21-25) ODn AQn ACn TWn.
01 2208 (05-10) EBn PEn MCA.
03 0048 (46-49) WN FUAn ODn AQAn IKn EBn TLA PEAn TAAn MCA LUn LMn HRn ACAn TWn.
03 0706 (05-16) SIn NEn HOAn PP ACAn AMAn TWAn.
03 1620 (16-24) KNn UBAn TKn QUn ACAn TWn.
03 2101 (57-05) KNn ODn AQn IKn ACn TWAn.
04 2004 (02-09) KNn ES FUn UBAn AQAn PEAn TAAn HOn HUn PP ACAn TWAn.
04 2029 (27-37) LE WN NI FUAn IKAn EB BA MCA LUn PMn LM(36-48A)n HRn.
05 1456 (55-57) SSn KY GUn ACAn TWn.
06 0155 (54-56) FRn ACAn TWAn.
06 0746 (44-47) FRn PP ACAn AMAn TWAn.
07 2105 (57-17) LE ES WN VL FUAn AQn IKn EB TL MC LUn HRn ACAn TWAn.
08 0124 (21-27) LE ES WNA WI NI VL MAn FUAn AQn IKn EB(23-31n) PEAn BA MCA HR ACAn TWn.
10 1450 (49-51) SSn KY MC ACAn TWAn.
11 1802 (00-04) KNAn UBAn ODn QUn PP LMn ACAn TWAn.
13 1659 (58-60) NI UBAn MT KY QU(52-57A)n GUn ACAn.
13 1729 (23-34) ES WN MAn FUAn AQn TKn IKn EB PEAn SSn MC LUn PP LMn.
13 2232 (31-34) WN FUn AQn PEn.
14 0657 (55-60) HOAn SJ PP.

TABLE 2b PULSATIONS pi2 WITHOUT BAYS, 1970 - continued

(DECEMBER)

14 2254 (53-54) WNA NIA FUAn EB.

17 2044 (41-45) KNAn ES WN FUAn BA MC ACn TWn.

19 1905 (00-11) KNAn FU AQn TFn PEAn BA MC LMn ACAn TWn.

19 2153 (51-54) WN WI FUAn AQn EB PEAn MC LUn.

20 1846 (44-47) KNAn MC ACAn.

21 0028 (24-30) AQn EB MC LUn PP ACAn TWn.

21 2047 (40-50) WN FUn UBAn ODn AQn TKn EBn TL PEn QUn BA MCA HUn PP HRn ACAn TWn.

22 0055 (54-55) MC ACAn TWn.

23 0122 (21-23) AQn FRn ACAn TWAn.

23 0215 (13-18) WN FUn AQn EB PEn SM GUn LUn LMAn HRn.

23 2353 (51-57) KNn WN FUn AQn IKn EBn PEAn MC(2400-2452A) LUn LMn HRn.

24 0007 (00-15) PP LMn HRn ACAn TWn.

24 1429 (28-30) MT SSn GUn ACAn TWn.

25 1546 (45-47) AQn MC ACAn TWn.

28 1521 (21-22) SI(22-40A; 40-60n) MT SSAn MC.

28 1958 (53-63) LE ES WNA NI VL FUAn EB MC HRn.

28 2229 (28-30) ES WI FUAn MC(29-37A) PP HRn.

29 1245 (44-45) MGn UBAn MT KY PMn PP TWn.

29 2230 (30-31) WN DB FUn MC.

30 0026 (25-28) WN VL SM PP.

30 1531 (30-31) MTA SSn KYA GUAn.

TABLE 3 SUDDEN IMPULSES (si) 1970

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

JANUARY

05 0607 (05-12) A: SF LU; B: BE IR SU AM DU; C: MT EB KA KY MB LM - (ssc: A: SJ? AC; B: PE QU BA PM GN TO; C: AQ IK AK AP - b: B: HO - bs: B: HU; C: SZ - bp: B: SM).

08 1637 (30-50) A: QU TN AC; B: IR OD; C: MT AK KA KY HR - (ssc: C: HB? TF SZ BA LM - b: B: AE - bs: B: MO LU - bps: C: TL).

14 2028 (15-30) A: PE LU; B: CO KN LE ES IR VL BE MA FU JO LG AQ AK MC TW; C: ME WI MT KA KY LM - (ssc: A: UB SU SJ AC: B: PR TF IK QU BA HU TN GN; C: WN VI HB HR TO - b: A: OD HO; B: HL; C: KV AE - bs; C: EB - bp: B: SM PM - bps: C: TL).

15 0431 (31-33) A: TW; C: MT KA KY HR - (ssc: B: QU GU AC; C: AK TN - bp: B: HU).

15 1542 (33-43) A: AC TW; B: VL PR SM QU SZ; C: WN PE AK MB HR - (ssc: B: AE; C: LM - sfe: TL?).

29 0932 (30-37) B: KN LE ES WN IR VL PR FU JO LG TF IK GN; C: EB LM HR - (sfe: HL OD TN).

29 1308 (06-12) A: JO SU PE LU HR AC TW; B: MG VL BE FU OT IK AK AE; C: IR TF TL TN LM - (ssc: C: NI - sfe: HL OD LG?).

30 1620 (16-31) A: TR CO KN PR FU HB OD JO SU LG TK IK AK PE QU SJ LU GN HR AC AM TW; B: MO ME WN CF AQ DS BA MC; C: LE ES NE MT EB KA TU KY HO MB - (ssc: A: TE LM; B: HL VL OT TL? SM SZ DU; C: NI TF).

30 1815 (06-27) A: OD TE LU; C: MB HR - (bp: C: MT KA KY).

FEBRUARY

01 1223 (19-25) B: IR SU LU; C: AK BA HR - (ssc: C: LG EB TN - b: C: MG - bp: B: PE).

12 1751 (49-52) A: AC; B: SO HL VL BE SU AQ PE AK SM LU; C: MO ES WN LG TF EB SZ MB MC TN HR - (ssc: C: LM).

MARCH

07 2004 (59-08) A: KN MO ME MA PR FU HB OD AQ IK PE AK TE SJ MC LM HR AC; B: WN WI VL CF MT TK EB TL KA KY PM; C: VI - (ssc: A: TF CI SF KS QU GU BA LU; B: AE AP MB; C: SZ).

07 2159 (57-64) A: MO OD PE TU LU MC HR; B: AQ SZ.

08 1715 (12-18) A: OD QU TE MB; C: MT KA KY.

08 1957 (54-63) A: OD LG QU TE MB; C: CF QU.

09 1546 (36-49) A: MO WN FU FR MB; B: VL PR NE CF HB LG PE QU BA; C: MT KA KY PP HR - (ssc: B: HL MA SU; C: VI SZ LM).

27 0906 (03-07) A: SZ TE MC; B: CF; C: MT KA KY - (ssc: A: MO?).

27 1257 (50-60) A: NU KN MO PR FU HB OD TK PE SF MC HR AC; B: WN MA CF EB TL QU MB; C: MT KA KY.

APRIL

01 2208 (06-12) A: MG KN FU UB; B: MO CF; C: MT KA KY.

03 0923 (14-26) A: UB SU; B: KN IR AK SM HR; C: MO HB LG LM - (ssc: B: BA; C: SS SZ - sfe: OD).

15 1802 (55-08) A: KS; B: HL OT MC; C: LG - (ssc: B: SW; C: HB - b: A: LU; B: AK; C: AE - bp: A: UB - bps: C: PP - sfe: SZ).

18 1455 (54-56) A: FU OD IK PE LU; B: WN PR CF HB LG AQ AK SZ MB - (ssc: A: SU).

20 1322 (20-24) A: KN MO FU HB OD PE SZ LU AC; B: LE WN MA PR CF LG AQ

TABLE 3 SUDDEN IMPULSES (si) 1970 - continued

(APRIL)

TK EB AK QU MB MC; C: MT KA KY - (ssc: A: SU).

20 2125 (21-28) A: KN OD PE LU; B: LG AQ HR AM; C: TL.

21 2004 (57-18) A: FU HB OD LG TL PE SF SZ MB; WN - (ssc: A: SO; B: BA - bs: A: MO - bp: A: HR; B: MA EB - bps: A: DB IK AE MC; B: CF).

22 1430 (28-32) A: FU OD; B: ES HL WN VL PR CF AK SZ; C: EB TL MB AC - (sfe: AE).

30 0800 (57-03) A: SO TE; B: MO FU? - (ssc: B: OD; C: HB? SS BA).

30 1423 (20-27) A: FU HB OD IK SF; B: HL WN VL PR PE MB; C: EB SZ - (ssc: A: SU; C: AE SS).

MAY

03 2212 (10-14) A: TE; B: AK QU MC; C: SS HO MB PP - (ssc: C: PE).

07 1731 (28-36) A: SO KN MO; B: DO NU HL WN VL PR HB; C: AE SZ - (ssc: B: TR KV - sfe: TE).

12 0044 (38-50) A: SO TE LU PM; B: HL VL OD LG AQ TL PE AE QU MB MC PP LM; C: EB AK SS - (ssc: A: VI; B: BA - cr: HO).

17 0436 (34-38) A: TE; B: AK QU; C: SS - (bs: B: OT).

20 0315 (09-25) A: SU; B: HL VL LG AK LU DU; C: EB TL LM - (ssc: C: MA AE - bp: A: TE).

JUNE

18 0827 (24-30) A: KN UB OD LG KS SS DS TE MB MC LU AC TO TW; B: MT TK KA KY QU BA HU PP HR - (ssc: A: SO FU PE LM; B: HL WN WI VL BE MA PR AQ TF IK EB TL SZ PM GU KG).

28 0231 (30-34) A: TE; B: HL WN VL BE MA FU LG IK TL SM SS SZ; C: ES HB EB PP LM.

JULY

02 0505 (03-09) A: SO UB TE; B: HL HB MB AC TO AM; C: WN MT KA SS KY MC PP LM - (ssc: A: MG; B: CO MA EB PE BA TG PM; C: DB AQ TF IK - bs: B: KS - bp: A: SF; B: HU).

06 0716 (09-21) A: TE LU; B: QU; C: SS LM HR - (ssc: A: TF).

09 0254 (54-55) A: HO TE; B: MA; C: MT KA KY - (ssc: B: GU).

09 0312 (05-17) A: TE AM; B: VI TK; C: MT KA KY.

09 0405 (04-07) A: KN MO FU OD MT TL KA SS KY QU TE GU MC; B: CF MB.

09 0539 (35-40) A: KN OD MT TL KA SS KY QU TE MB GU MC GN AC; B: CF TK.

10 1431 (30-33) A: LU AC; B: BA MC; C: MT KA KY HU - (ssc: A: OD; B: TF SJ).

10 1619 (16-23) A: KN; B: HB MT TK KA KY QU HU.

10 1803 (00-05) A: KN HB OD LG MB MC AC; B: MO WN VL PR CF CI TL PE SS QU SZ; C: MT KA KY - (ssc: C: TF).

21 1002 (57-09) A: SO PR OD LG IK PE QU TE MB BA AC AM; B: IR MA MT TK KA SS KY HU; C: HR - (ssc: A: LU LM; B: HB? TF - bs: A: MO; B: MG - bp: A: MC).

25 0511 (06-15) A: KN VL FU OD LG AQ TL PE TE LU AM; B: MA CF CI SS QU HU - (ssc: A: NI).

25 0604 (00-05) A: KN OD LG AQ TE; B: MT CF PE QU.

31 2211 (08-14) A: FU HB OD SU LG LU; B: KN MO WN BE PR MT AQ TL PE AE KA KY LM - (ssc: A: MG; B: MA KS; C: WI IK TF SZ - bp: A: SO; B: KV?).

TABLE 3 SUDDEN IMPULSES (si) 1970 - continued

AUGUST

14 1558 (50-62) A: SF; B: HL BE LG AE; C: WN WI PR PE - (bp: B: KV - sfe: MA HB OD SZ).

15 2140 (37-43) A: SI ME VL FU HB JO OD OT SU FR DS QU MC LU LM; B: NU KN ES WN IR PR UB AQ TF TK EB SM BD HO MB PP?; C: LE DB SS SZ TO - (ssc: A: CO MA SF SJ AC DU; B: HL WI VI LG IK AE PM HU HR; C: NI NE TN - b: A: SO - bs: A: OD PE KS - bp: B: KV - bps: B: BE TL).

17 0534 (30-38) A: KN OD MT KA KY HO TE GU.

SEPTEMBER

01 1154 (52-57) A: SU TE; B: MA FU MB BA PP HR; C: MT KA KY.

01 1222 (21-24) A: KN MA FU OD PE TE MC; B: WN VL KV PR HB LG AQ EB QU SZ MB LM HR; C: TL - (ssc: A: SU SF; B: WI - bps: B: SO).

01 1250 (46-52) A: FU OD MA PE SF TE MC PP TN AC; B: LG AQ EB SS SZ MB BA GN HR AM; C: VI TL - (ssc: B: KN WI - bps: A: SO).

28 1109 (07-16) A: SO SU KS; B: KN WN? VL BE FU HB SM AE; C: PR TF HR? - (sfe: HL OD PE BA).

30 0447 (45-49) A: MG UB TE AC TO AM TW; B: KN VL FU OD MT KA SS KY BA MC PM PP GN HR; C: LG EB TL - (ssc: A: SO TF SF LM; B: WI MA).

30 0601 (59-04) A: UB TE MC AM TW; B: WN VL MA FU AE SS QU MB PM HU PP HB?; C: MT LG EB KA KY - (ssc: A: SO; B: WI BA - sfe: TN).

30 0629 (19-34) A: TE AC; B: BE HB SS QU PM PP LM; C: MT KA KY - (ssc: B: TF).

30 1410 (09-12) A: OD SU; B: WN MA EB SM AE HR; C: PR MB - (sfe: HL).

OCTOBER

28 0247 (43-49) A: SO HB TE AM TW; B: HR KG; C: MA - (ssc: A: SU; B: VI PE PP; C: AE - sfe: GN).

NOVEMBER

04 1436 (32-40) B: HL UB HB MB; C: WN LG EB SZ - (ssc: A: SU - sfe: OD HU).

07 0217 (16-18) A: KN MC AC; B: LG QU GU PP HR; C: TK - (ssc: B: LM).

17 0441 (39-43) A: TE; B: VL BE HB SM AE - (ssc: B: VI - bp: B: HU - cr: B: PP).

19 0735 (27-40) A: KN MO FU HB OD LG PE TE BA GN; B: NU WN NI MA? PR AQ IK EB TL MB HR; C: MT KA KY SZ - (ssc: C: BE QU - b: B: HU - bs: A: SO - BP: B: LM).

24 0840 (36-46) A: OD QU TE MC AC; B: BE LG AQ TK PE PP; C: SS - (ssc: B: LM; C: SZ).

24 1303 (00-12) A: SO TE MC LU AC; B: MA OD LG PP; C: TL - (ssc: B: SU).

DECEMBER

04 1054 (52-58) B: VL FU SM; C: AE SS - (ssc: C: PP LM - bps: C: HR - sfe: SZ).

27 1019 (11-22) B: KN VL FU MC; C: WN EB - (ssc: B: HL; C: HB? SM LM).

29 2019 (15-21) A: SO CO FU OD MC LU; B: MA EB SJ MB HU PP HR - (ssc: B: SW LM - b: HL).

TABLE 4 GIANT PULSATIONS (pg) 1970

Times of commencement of giant pulsations (pg), checked by 40 observatories. 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.

JANUARY

none

FEBRUARY

13 0412 A: AE(7-2.5) - B: NU(4.7-5) WN(7-5) NI(6-8) GT FU LG AQ(8-4) CI(6-5) LP (4.5-4) MU - C: KI WI(6-3) VL(8.3-6) SS(2-2) QU SZ HR(7-2) TO MI MW - D: MA VI JO IK KA KS PA AP TN - E: SO - X: PM - (pi2: A: AM - pc3: C: MT KY - pc4: B: SB; C: MC - pc5: EB(6.6-1.5); C: GN).

17 1827 A: FU SZ - B: KI NI(3-9) LG(2.4-1) IK - C: NU VL(2.2-3) AQ SS - D: WI VI JO CI AE KS PA AP TN GN TO MI SB - E: SO MW - X: MU - (pi2: A: WN B: GT MA; C: MT EB KA KY - pc: A: PM(1-1); C: QU - pc3/4: B: MC - pc4: B: AM; C: LP HR(·-1).

MARCH

26 0244 A: NU(3.7-7) - B: WN(3.3-2) NI(4-4) LG(4-1) AE(4-2) MU - B: MI - C: SO GT FY MT AQ(3-1) CI KA SS(3-3) KY QU TN TO MW - D: KI WI VL MA VI JO IK EB KS SZ PA HR - E: LP - (pi2: B: AM - pc: C: PM(3.5-1) - pc4: B: AP SB - pc5: C: MC(5-2) GN).

31 1300 A: LG(7.6-7) TN(12-9) SB - B: KI MA [FR(0.4-50)] SZ AM TO - C: SO MT KA KY MW - D: VI PA - E: NU WN NI GT FU JO AQ IK EB CI AE KS SS QU LP MU MC GN HR MI - (pi2: A: AP - pc3: B: WI - pc4: B: VL(1.1-·) - pc5: PM(4-10).

APRIL

09 0916 A: SO FU LG(4-2) SZ MU - B: KI NI(3-18) MA TN(14-5) - C: MT CI KA KY HR(·-2) TO MW - D: NU VL GT VI JO AQ IK EB SS PA GN - E: AE KS QU LP PM MI SB - X: AM - (pc3: B: WI - pc4: B: AP - pc5: A: PM(15-6); B: WN (3.3-10).

MAY

06 2003 A: LG(4.4-5) - B: NI(6-9) FU AE(6-6) [TE] MU TO - C: SO WN(6-9) MA JO CI SZ TN(10-2) HR MI - D: KI NU WI VL GT VI IK EB LP PA MW - E: AQ KS QU - (pi2: B: AP AM; C: MT KA SS(1.2-·) KY - pc: C: PM(1-8) - pc4: B: SB - pc5: B: MC(4.5-1.5); C: GN).

06 2345 B: WN(3-8) NI(3-8) GT FU LG(4-2) SZ TE LP(6-13) HR(6-1) TO - C: KI SO MA JO AQ CI MU TN(6-2) - D: WI VL VI IK EB PA MC MW - E: NU AE KS QU - (pi1, 2: B: SS(0.2-3; 60s) - pi2: A: AM; B: MT SB; C: KA KY - pc4: B: AP - pc5: B: PM(·-7) GN).

07 1731 A: SO AQ(7-4) SZ MW - B: WN(6-15) NI(4-10) VL(6-9) FU IK(7-11) AE(6-6) QU(8-10) LP(7-5) MU HR(7-2) TO - C: MA JO CI SS(1-2) TN(4-2) MI - D: KI NU WI VL GT VI PA AP - E: KS - X: LG - (pi2: A: MC SB; C: MT KA KY - pc3: B: PM(1-2) - pc4: A: AM - pc5: B: GN(4-6).

JUNE

18 0823 A: FU LG(8-12) SZ LP(9-42.5) TN(18-20) - B: KI JO MI MW - C: TO - D: VL GT MA VI PA AP AM - E: SO NU AQ IK CI AE KS MU - (pi1: B: MT KY; C: KA - pi2: A: MC; B: NI SB - pc3: B: WI - pc5: B: GN(10-32) - si: B: SS? HR PM? - ssc: WN EB).

JULY

10 1528 A: FU SZ - B: KI SO [SI] LG(2.4-1) - C: MA MT KA KY TO - D: WI VL GT VI IK - E: NU WN JO AQ EB CI AE KS QU LP MU TN GN HR MI MW - X: PA - (pi2: A: MC SB; B: NI AP - pc4 + pi2: A: AM - si: SS? PM).

TABLE 4 GIANT PULSATIONS (pg) 1970 - continued

AUGUST

10 1710 A: LG(8.4-4.5) CI(10-15) AE(8.5-5) - B: WN(9-7) GT FU AQ(9-3) QU(9-5) SZ LP(9-4) - C: KI VL(8-5) JO IK MU TN(10-2) HR(8-1) - D: SO WI MA VI KA SS PA GN AM TO MI - E: NU NI KS - (pi2: B: SB - pc1: PM - pc3: C: MT KY - pc3/4: MC - pc4: B: AP).

SEPTEMBER

08 0510 B: WN(8.7-5) KS SZ LP(.-7.5) MI - C: KI SO JO LG(0.3-1) CI AE TO AM - D: NU WI VL GT MA VI FU AQ IK EB KA SS PA TN HR MW SB - X: MU PM - (pi2: C: NI - pc3: B: MC AP; C: MT KY - pc5: C: GN).

OCTOBER

01 0117 A: SZ AM(2-18) MI - B: FU LG(4-1) LP(4-3) MU - C: KI SO GT JO KA SS (4-5) QU TN - D: NU WI VL MA VI AQ IK EB AE KS PA HR TO MW - (bp: CI? - pc3: B: PM; C: MT KY - pc3/4: B: MC - pc4: A: AP; B: SB - pc5: B: WN GN(4-8).

04 0915 A: FU JO LG(6-2) AE(8-9) SZ MU TN(10-8) MW - B: KI SO CI(8-10) LP(5-6) - C: HR - D: GT VI SS PA TO - E: NU AQ IK KS QU GN MI - (pi2: A: AM; B: AP SB; C: MT KA KY - pi2+pc3+pi1: NI - pi2+pc3/4: A: MC - pc3: A: MA; C: PM - pc4: B: WI VL EB - pc5: B: WN).

04 1100 A: SZ MW - B: SO [OT(5-30)] FU JO LG(4.4-3) CI(8-10) AE(5.5-5) MU - C: KI AQ(5.5-2) IK SS(2-1) LP TN(5-2) HR - D: WI GT VI PA TO - E: NU KS QU GN MI - (pi2: A: SB; B: AM; C: MT KA KY - pi2+pc3/4: A: MC - pc3: A: MA; C: PM - pc4: B: VL EB AP - pc5: B: WN).

05 0727 A: SO LG(6.4-3) AE(7-2) SZ MU MW - B: WN(6.7-15) VL(7-9) FU AQ(7-4) LP(8-5) - C: KI JO IK SS(1-1) QU - D: GT VI KS PA AP TN TO MI SB - E: NU - (pi1+2: B: NI - pc3: A: MA; C: MT KY PM HR - pc3/4: B: MC - pc4: A: AM; B: WI EB; C: KA - pc5: C: GN).

NOVEMBER

22 0145 A: FU LG(9.6-7) AQ(8-4) AE(7-7) AM(1.5-4) MI - B: KI SO GT SS(3-5) SZ LP(3-5) - C: WN MA JO MT CI KA KY QU MU - D: WI VL VI EB PA TO MW - E: NU IK KS TN HR - X: PM - (pi2: A: AP SB - pc5: B: MC(9-3) GN(7-13)).

DECEMBER

none

TABLE 5a SOLAR-FLARE EFFECTS (sfe) 1970

Times of commencement of solar-flare effects (sfe) checked by 48 observatories. Strong effects are marked by an asterisk.

JANUARY

28 0610 B: QU LP MU HR - C: MT KA KY PM TN - D: IK KS SS AL MC AM KG MI MW - E: DU - X: (PR) SB - (si: [AK] - b: C: GN).

28 1916 A: AC TW - B: [FR] [DS] - C: JO HU - D: PA AP AM MI - E: (KI) (LP) DU - X: SB - (si: [OT] b: VI).

FEBRUARY

09 0624 A: TO - B: (VI) QU LP AL TN HR - C: MT KA KY MU PM - D: PR HB AQ IK SS MC AM KG MI MW SB - E: DU - X: KS - (b: C: GN).

11 0706* A: {SZ} LP AL MU GN HR TO KG SB - B: NU GT HB [OD] MT [TK] IK [PE] KA KY QU BA PM - C: SO WN FU LG AQ SS - D: WI MA PR EB AE KS AM MI MW - E: DU - X: MC {AP} TN - (si: [HL] [IR] [UB] [SU] [AK] [LM]).

20 0943 A: HR - B: QU SZ AL MC - C: WN LG EB MU TN GN AC - D: KI SO NU WI VL GT MA PR FU HB AQ IK CI TL AE TW KG MW SB - E: KS {LP} DU - (si: [AK]).

MARCH

01 2004 B: VI [FR] [TE] HU AC TW SB - C: JO - D: PA PM AP AM MI - E: (KI) (WN) (LP) (TN) (DU).

29 0038 B: MT KA KY LP MU AP - C: VI SS PM TO - D: GN AM MI SB - E: (KI) (SO) (WN) DU.

APRIL

15 0414 A: MU - B: MT KA KY QU LP PM TO - C: IK SS AL AM - D: KI SO NU PR HB KS AP TN GN KG MI MW - E: DU - (si: [SU]).

MAY

09 1600 A: JO SZ - B: EB FR PA [MB] HU TW - C: WN MA LG IK AE - D: KI SO NU WI VL GT PR FU HB AQ CI TL KS MC AC - X: VI - E: (DU).

26 1123* A: NU HB JO IK EB CI KS QU SZ MC AC - B: KI SO [LE] [ES] WN WI NI GT MA [OD [SU] LG [TF] [FR] [PE] [SM] AE AL [MB] [BA] TN HR - C: VL PR AQ - D: FU PA KG - E: DU - (ssc: [KN] [MO] [AK] - si: [CF] [OT] IK TL SF).

JUNE

13 0658 A: LP - B: SO MA HB MT [OD] [PE] KA KY QU AL MU - C: KI WN PR AQ IK EB TL SS PM TN - D: NU WI VL GT FU AE KS SZ MC GN TO HR KG - E: CI {DU} - X: LG - (si: {[ME]} [IR]).

14 0506* A: NU MA FU MT LG KA SS KY LP AL MU - B: WN WI NI VL GT PR AQ [TK] IK EB [PE] QU [GU] [BA] PM TO - C: TL AE GN - D: SO HB KS AP AM KG - E: KI {DU} - X: TN - (si: [IR] [SU]).

14 1322* A: NU WN FU HB JO AQ IK AE KS SZ HR - B: SO [KN] WI NI VL GT MA PR [OD] LG EB [FR] [PE] [DS] MC HU AC - C: [OT] CI TL QU PA TN TW - D: VI AL - E: KI (DU) - (ssc: [KV] [SU] - si: [HL] [SW] [BE] [MB] [BA] [LM]).

14 1424 B: WN PR FU HB EB AE SZ HR - C: SO MA LG AQ IK CI TL - D: KI NU WI VL GT VI JO KS PA MC HU AC TW - E: (DU).

14 1700* A: JO LG SZ AC - B: VL MA IK EB CI [FR] [PE] [HO] PA HU - C: NU WN VI FU TL AE - D: SO WI GT PR HB AQ TW - E: KI (LP) MC (TN) (DU) - (si: [PP]).

15 1317 A: HB - B: PR LG EB SZ HR TW - C: SO MA JO AQ CI KS HU AC - D: NU WI VL GT VI TL AE QU AL PA - E: KI WN FU IK MC (DU) - X: TN.

TABLE 5a SOLAR-FLARE EFFECTS (sfe) 1970 - continued

JULY

none

AUGUST

19 1113* A: NU AQ IK KS SZ MC TN HR AC - B: WN WI VL GT MA PR {VI} FU HB JO LG EB [PE] QU AL [HY] [MB] TW - C: CI TL - D: SO KG - E: KI AE (DU) - X: PA - (si: [KN] [SU] [TF] [TK] [SF] [BA] [LM]).

SEPTEMBER

none

OCTOBER

26 1238 A: SZ - B: WN NI VL MA PR FU HB AE HR - C: WI GT LG AQ EB CI TL TN - D: KI SO NU IK KS QU AL PA MC HU AC TW KG MW - E: JO {DU}.

28 1249* A: HB SZ HR - B: WN WI NI MA PR (VI) FU JO LG EB PA - C: KI NU AQ CI TL - D: SO VL GT IK AE QU AL MC HU AC TW KG MW - E: KS (LP) TN {DU} - (bps: [SF]).

NOVEMBER

16 0049* A: MT KA SS KY LP MU AP TO AM SB - B: (WN) (MA) [HO] [PP] (TN) PM - D: WI KG MI MW - E: (HR) DU - (si: [GU] GN).

16 0951 A: HB SZ {MU} MC TN AC - B: {JO} LG EB QU (PM) HR TW - C: KI WN GT MA KS AL GN - D: SO NU WI VL PR FU AQ CI TL AE KG MW SB - E: IK DU - (si: {TO} - b: ([MG]) - bp: [LU]).

16 1219* A: FU HB SZ TN AC TW - B: WN WI NI VL GT MA PR (VI) JO LG EB [PE] [MB] [BA] MC HU HR - C: AQ IK EB CI AE - D: SO NU TL KS QU AL PA KG MW SB - E: {KI} (LP) DU - (b; [KV] [SU] [LM]).

17 0734 A: QU - B: HB LG [TK] EB {SZ} AL HR - C: AQ KA KY MU TO - D: NU WN WI GT PR FU IK TL AE KS SS MC PM TN AM KG MI MW SB - E: {KI} MA LP DU - (si: [LM] - b: GN).

DECEMBER

08 0427 B: PM AP HR - C: MT KA SS KY AL MU - D: LP AM TO KG MI MW SB - E: (KI) (WN) TN GN DU - X: QU.

11 1027* A: NU FU HB LG AQ IK CI AE SZ TN HR AC TW - B: {SO} [HL] WN WI NI GT MA PR [TK] EB TL [PE] KS QU AL [BA] GN - C: PA KG DU - D: VL MW SB - (si: [KN] [MO] [BE] [KV] [OD] [TF] [SM] [SF] [TA] MC).

12 0903* A: NU HB IK SZ TN HR AC TW - B: SO [HL] WN WI NI MA PR FU [TK] LG [PE] KS [BA] MC GN SB - C: AQ EB CI AL KG - D: VL GT TL AE QU MU TO MI MW - E: DU.

TABLE 5b DOUBTFUL SOLAR-FLARE EFFECTS (sfe) 1970

Times of commencement of presumed solar-flare effects checked by 48 observatories. Effects which very probably are real sfe's are indicated by an asterisk.

JANUARY

none

FEBRUARY

11 2111* A: AC TW - B: HU - C: TO AM - D: PA PM MI SB - E: DU - X: (KI) AP - (si: [PP] - b: VI [SJ]).

MARCH

01 0937* A: NU HB AC - B: GT LG EB QU SZ - C: CI AL - D: WI VL PR IK TL AE MU KG MW SB - E: KI SO WN MA FU {MT} AQ {KA} KS {SS} (KY) LP MC TN GN HR DU - (si: [MB] - bps: ([PP])).

01 1530* A: MA LG EB SZ - B: HB HR AC TW - C: VI AQ TL HU - D: WI VL GT PR JO IK AE PA MC - E: {KI} {SO} {NU} WN FU CI (SS) (LP) (PM) {TN} (DU).

24 0921 A: HR - B: LG AL - C: KI NU WN GT EB QU MU TN - D: SO WI VL MA PR FU HB AQ IK CI TL AE KS SZ MC KG MW SB - E: {DU}).

25 1209 B: SO NI GT MA PR (VI) HB (PM) - C: KI NU WN JO SZ HU - D: WI VL FU LG AQ IK CI TL AE KS QU AL PA TN HR AC TW KG MW - E: MC (DU).

26 1727 A: AC - B: IK SZ HU TW - C: MA JO - D: WN WI VL GT VI FU LG EB CI TL AE PA MC - E: (DU).

APRIL

10 1635 A: AC TW - B: NU (QU) SZ (MU) HU - C: KI SO WN GT MA HB JO LG AQ IK CI - D: WI VL PR VI FU TL AE PA - E: MC (DU).

14 1111* A: SZ - B: NU [LE] [ES] VL MA (VI) FU HB LG CI - C: SO WN AQ EB QU - D: WI GT PR JO IK TL AE KS AL TN HR AC TW KG - E: KI {LP} MC (DU) - X: PA.

24 0907* B: LG EB QU SZ AL HR - C: NU MA JO MT KA KS KY MC TN - D: SO WN WI VL GT PR FU HB AQ IK CI TL AE SS LP MU GN KG MW - E: KI {DU}.

MAY

08 0705* B: WN LP AL - C: MT KA SS KY QU MU - D: SO NU WI VL GT MA PR FU HB LG AQ IK EB CI TL AE KS SZ MC PM TN GN TO HR KG MW - E: {DU}.

15 2205 B: VI [HO] - C: JO MT KA SS KY PM HU - D: MU PA TO AM NI - E: LP {DU} - X: (SZ) AP - (si: [PP] -bp: C: {SO} - pi2: A: (MC)).

JUNE

07 0706 B: HB [PE] LP AL - C: NU WN MA MT AQ IK EB KA SS KY SZ QU MU - D: KI WI VL GT PR FU LG CI TL AE KS MC PM TN GN HR KG - E: {DU}.

14 0015* B: (MA) (SZ) [HO] LP PM AP - C: MT KA SS KY MU - D: SO VI GN AM MI - E: KI {DU}.

25 1835 B: JO [FR] HU - C: VI AC - D: KI SO NU WN WI VL GT MA FU LG EB CI TL AE SZ AP TW - E: (DU) - X: PA.

30 0433 NU LP MU - C: KI SO WN MT AQ KA SS KY QU AL PM - D: NU WI GT MA PR FU HB IK KS AP TN GN TO AM KG MI - E: {DU}.

JULY

20 1116* A: QU TN HR - B: SO - C: WN JO KS AC - D: NU WI VL GT MA PR FU HB LG AQ IK EB CI TL AE SZ AL PA KG - E: KI {LP} MC (DU) - X: PA - (si: [BA] - b: [MB] bp: [LU]).

22 0026 B: MT KA KY LP - C: SS MU MP - D: VI AP GN TO MI - E: KI SO (WN) (TN) (HR) AM {DU} - (b: (EB)).

TABLE 5b DOUBTFUL SOLAR-FLARE EFFECTS (sfe) 1970 - continued

AUGUST

none

SEPTEMBER

05 1535 A: SZ - B: JO AC - C: LG EB HU HR - D: NU WI VL GT MA PR VI FU HB AQ IK TL AE KS PA MC TW - E: KI SO WN CI (LP) (DU).

OCTOBER

none

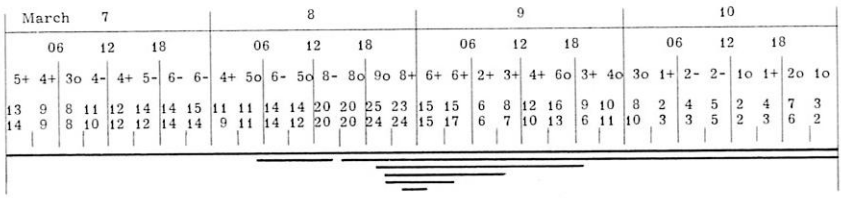
NOVEMBER

none

DECEMBER

26 0840 B: NI FU HB [OD] IK KS QU TN GN HR SB - C: WN LG AQ MU - D: NU WI GT MA PR EB CI TL AE SZ AL TO KG MI MW - E: {KI} MC DU - (si:[SU] [TK] [LM]).

Indices



Data from Individual Observatories:

March 1970

Obs.	Geo-mag. Lat.	UT Start Day	UT Start Hr.Min.	Sudden Commencement Amplitudes Type	D(')	H(γ)	Z(γ)	Ranges D (')	Ranges H (γ)	Ranges Z (γ)	UT End Day	UT End Hour
COLL	64.6N	05	0805	SC*	-4	+62	-18	741	4990	1960	10	03
SITK	60.0N	06	08--	"	"	"	"	270	1720	1480	09	22
NEWP	55.1N	08	1417	SC*	00	+38	+22	127	683	885	10	00
WITT	54.1N	08	1417	SC*	-19*	+24	+5	130	850	400	09	19
FRED	49.6N	08	1418	SC*	-10	-18	+16	62	870	582	09	05
BOUL	49.0N	08	1418	SC*	-47	+40	+25	95	330	280	10	03
TUCS	40.4N	08	1418	SC*	-8	+50	+4	45	330	40	09	20
SJUA	29.9N	08	1418	SC	-0.3	+14	+5	35	370	101	15	06
MBOR	21.3N	08	1417	SC*	-8	+70	-50	10	310	55	10	02
HONO	21.1N	08	1418	SC	-1	+62	+29	13	302	62	09	07
ALIB	9.5N	08	1417	SC	-1.0	+68	-12	7	--	82	09	06
HYDE	7.6N	08	1418	SC	-0.6	+68	-4	7	382	22	09	20
GUAM	4.0N	08	1418	SC	--	+82	+24	10	200	30	09	24
ANNA	1.5N	08	1417	SC	-2.8	+87	+43	8	405	162	09	06
TVAN	1.1S	08	1417	SC	+0.3	+69	+89	5	367	299	09	06
APIA	16.1S	08	1418	SC	+13	+58	-23	14	320	75	10	02
HRMN	33.3S	08	1417	SC*	+7	+41	+30	63	229	322	09	24
TOOL	46.7S	05	0805	SC*	-2	+40	+5	61	430	--	09	09
AMBE	47.7S	08	1416	SC*	+7.7	+87	+37	38	506	221	09	06
KGLN	57.3S	05	0803	SC*	--	--	--	--	--	--	10	02

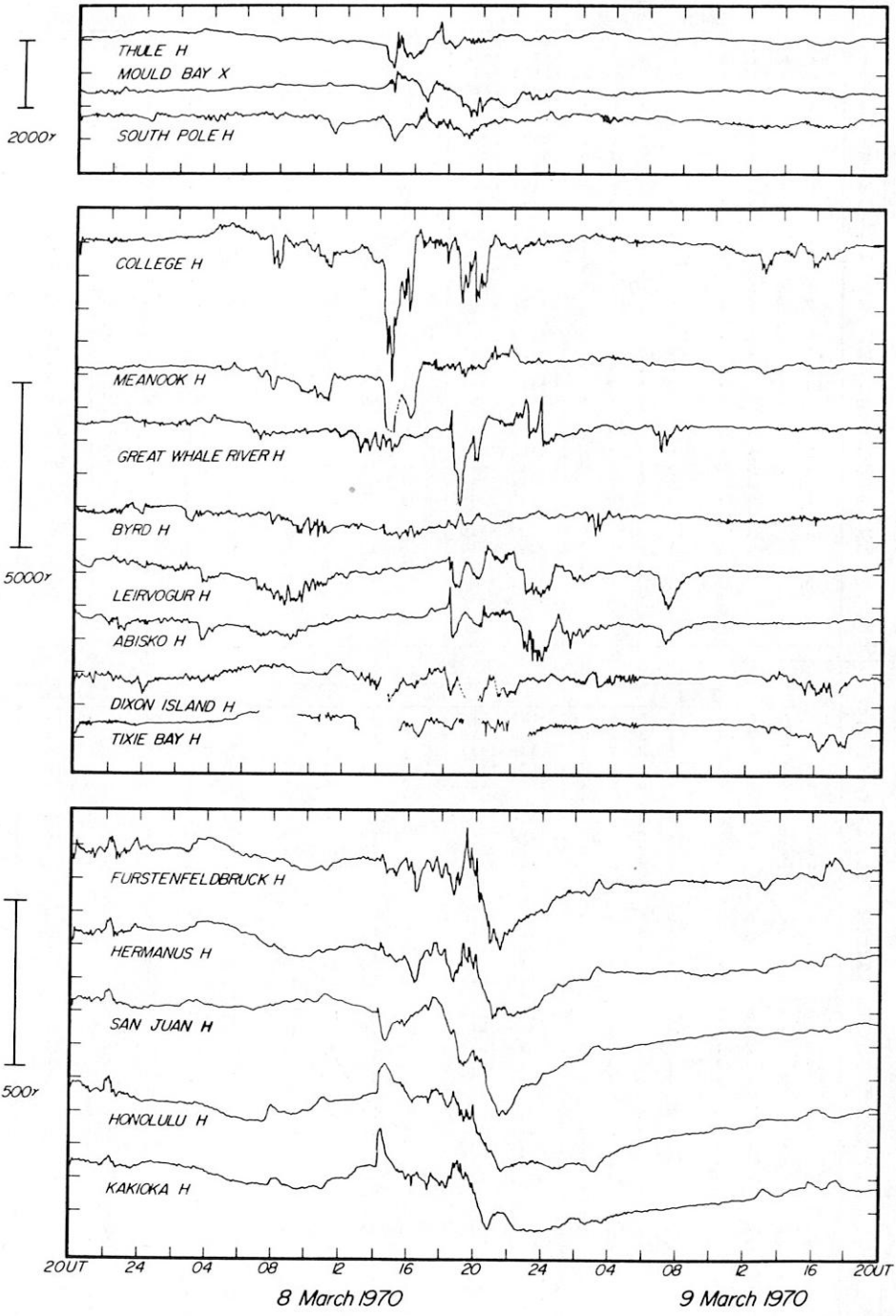
THREE-HOUR-RANGE INDICES, K

MAR	5	6	7	8	9
BT	4343 2454	5644 5455	5643 6776	6544 9897	6533 6645
CC	4142 1665	5335 5466	5444 7666	6556 9799	5534 7635
TH	3143 4544	4444 4545	5544 5665	5554 9977	5543 4644
DI	3343 3777	6445 4677	6546 6776	7656 9798	6643 6845
TI	3242 4797	6446 6789	5447 9886	5687 9999	5633 8864
PB	2233 2565	3436 4456	3366 5775	4586 8776	4426 6854
TR	4121 2344	4423 3656	5534 4656	5653 8686	4633 3745
GO	2143 3443	4233 4544	4433 4545	5544 8875	4534 4535
MM	4132 2365	6223 2666	7524 5767	5554 8767	5733 4755
KI	4132 2465	6313 3766	7624 5667	5654 8797	5713 4756
SO	4131 1465	6223 2667	7524 5667	5554 8797	5723 4745
WE	1231 1563	3336 3555	4447 7775	4787 8887	5535 7653
CO	2133 1343	3336 3445	4345 6664	3576 9985	5535 6632
RY	5343 3556	5444 4567	6744 5567	6765 9896	7933 4557
OO	3142 2255	5223 2457	6433 5566	5444 7899	7823 4635
YA	4242 1575	4337 4456	4545 5666	5466 7999	5623 8734
NU	3133 2344	3222 2345	5323 4455	4433 6999	7723 5623
LE	3121 1244	4222 1346	6523 4455	4443 6897	7722 3535
MG	2242 1454	3335 3355	3435 4655	4523 6623	4523 6623
LN	3143 3444	3333 3456	5434 5454	4434 7999	6733 4834
LO	3132 2344	3323 2446	5423 4455	5444 7899	7633 4644
SI	1022 1222	2235 2335	4346 6554	2586 9986	5635 6542
SV	3032 1443	3213 1355	4323 4555	3433 6699	4522 4524
TM	3242 1564	3335 2455	5434 5556	4444 7899	5524 5623
RS	3131 3353	4333 2446	5333 4455	5433 6899	5633 4634
KN	3133 1454	4223 2455	4334 4455	3433 7788	5622 4524
HO	3243 2454	3333 3456	4444 5455	4534 6799	5633 4634
ES	2131 2243	4223 2345	5322 3455	4433 6799	6523 4534
ME	2132 2243	3254 2335	5456 5545	3578 8887	5545 6533
HL	4242 3444	4334 3445	5444 4554	4544 5676	5544 4544
MN	3143 1254	3233 3445	4334 4454	4434 5687	5523 3544
WN	3143 2353	4333 2456	5433 4455	5444 6898	6523 4444
WI	3131 2453	4333 2556	5433 4455	5444 6798	5513 5634
IR	3343 2464	3335 3445	4334 5455	4345 7798	4634 5533
SW	3243 2344	3333 2445	4434 4454	4433 6686	5523 4534
NI	3132 2353	4333 2446	5433 4455	5443 6777	5513 4634
VL	3032 3343	4233 2445	4423 3455	4543 5698	5423 4524
BE	3242 2444	4333 2445	4433 4455	4443 6776	5523 4534
HA	3132 3343	4323 2445	4323 3455	4443 5697	6423 4634
KV	3244 3454	4234 3456	4445 5555	4444 5677	5634 5634
MA	3132 2343	4223 2445	4323 3455	4433 6777	5422 4634
DB	3133 3443	4233 3445	4333 3455	4443 6787	5523 4634
PR	3233 2344	4333 3455	4333 3455	5444 6787	6533 4634
LV	3132 1342	2233 2344	3333 3455	3333 9587	4323 4523
KD	2253 1353	3234 2455	5343 5555	3434 7687	42-- ----
VI	1132 1322	3245 2333	5345 5655	3466 8886	4533 5533
NE	2031 1333	3245 2333	6345 3554	3366 8887	5633 4533
FU	2132 2243	3223 2335	4322 3455	3333 5786	4512 3533
CF	3131 2342	4222 2345	4312 3355	4433 5787	5512 3534
MG	3131 2453	4334 2446	5433 4455	5443 6786	5523 4634
UB	3453 2464	3436 3455	5334 5555	5545 8798	5644 6533
JO	2131 2233	5232 2235	5434 3444	3454 7789	6613 3534
SA	2332 1353	3335 3345	4334 5445	3454 7686	4633 5534
TY	2242 2453	4324 3456	5433 4555	5443 6787	5623 5634
OD	2243 3453	3334 2445	4444 4565	3454 6686	5533 5534
KK	2232 1343	2244 2333	3332 4444	3344 655-	-232 4522
OT	1131 2233	6233 2236	5433 3455	4576 9789	7623 3534

THREE-HOUR-RANGE INDICES, K

MAR	5	6	7	8	9
MT	1132 1343	2335 2243	3224 4345	3355 7686	3522 4523
SU	2241 2443	3223 3444	4433 4566	345- --76	5--- --34
GC	2141 1443	4233 3456	4433 4555	5454 6788	5522 4634
RT	3002 1133	2103 1334	4323 3444	243- ----	4312 3424
VK	2343 2354	3345 3344	5434 5445	4455 7687	4633 5534
AT	3353 3564	4345 2455	5344 5565	4545 8787	6644 5534
LG	3131 2543	3323 2445	5443 6797	6523 3566	4513 4625
AQ	3031 2443	4223 3445	4322 4555	4433 5787	5502 4534
TF	2334 2353	3334 4443	3433 3565	3544 6786	5424 4533
TK	0142 2334	3334 3434	4323 3465	4445 7796	5622 5632
IK	2141 2353	4223 2445	4313 4565	3333 6797	5512 4524
CI	3131 23--	---- ----	---2 4465	4--3 6787	5--- ----
TL	3131 2333	3223 2334	4321 3455	3433 5686	5312 5324
FR	2132 2233	5234 2235	5334 4455	4455 8799	6622 3544
PE	3031 1243	3221 0345	4112 3456	3132 5686	5301 3434
AK	3332 2233	3334 3443	3455 5454	3456 5788	7777 6665
SM	3223 3333	4333 3334	4424 3444	3443 5676	4323 2424
AE	3132 2433	3222 3345	5432 4565	2442 6677	5422 4424
SF	4223 3444	4333 4356	5433 4566	4543 679-	6522 5545
KA	2132 1343	2335 2243	3223 4345	4344 7686	4422 4523
KS	3142 2353	3324 3535	5423 4676	3544 5899	5522 4625
DB	2142 2334	4344 3344	5334 4566	4455 8786	7623 4534
TU	2142 2323	4245 2333	5334 3955	3455 7786	6623 4533
KY	1132 2353	2335 2243	3223 4345	3344 7686	4522 4523
QU	1242 1453	3344 3333	3343 4455	3554 7696	5522 5533
ML	3332 2453	3233 2345	4334 3565	3434 6786	6323 5534
SZ	3132 2333	4213 3225	5323 4465	4333 6687	6413 3434
LP	3442 2354	3444 2344	3434 5455	4644 7796	5543 4433
HO	1032 1222	2234 1333	2323 3345	3354 6676	5512 3433
TE	3242 3444	4333 3354	5433 3466	3555 6786	5533 4444
AL	1142 2453	3334 3333	3323 4455	3544 7687	4322 4533
SJ	2132 2443	4233 2254	4333 3455	3344 6686	5311 3333
MB	2141 2333	4122 2245	4213 4455	3332 6687	6312 3324
MU	5252 3453	4434 2---	4424 4355	4544 7686	6412 4423
GU	2231 2332	3434 2233	3313 4245	3544 7676	5332 4423
BA	2142 2543	4223 1345	4324 3455	3342 6676	6363 4114
MC	4041 1433	4323 3345	5424 3455	4444 6686	6602 3424
TG	4241 1353	4453 1344	4353 5355	3554 7786	5531 4532
LU	2131 2133	3322 2124	443- 2345	4421 4666	6432 3434
PM	2141 1333	3324 2234	2314 3345	3444 7686	5422 4322
HU	2132 3443	3222 3443	4333 5665	3343 6888	5432 4653
PP	1131 1333	3233 1223	2323 3245	2445 56--	--33 3422
TN	1031 1332	2233 2233	2332 2354	3331 4---	--22 2423
GN	2141 1454	4325 2344	3324 4565	3244 7686	4412 5533
HR	2042 1444	4233 3345	5333 4455	3454 5787	5533 3424
AC	2242 2324	5333 2435	5333 3556	4433 678-	-313 3434
TO	2142 2443	3335 3234	3334 4445	3355 6687	3522 5422
AM	0141 1222	3335 2122	3324 4344	3454 6686	3413 3413
TW	2142 3343	4233 2344	4332 3456	3443 668-	-532 3433
KG	2231 1455	5223 2456	6423 4455	3454 8898	6723 3535
MI	1232 1453	3347 3445	5556 6674	4687 9877	6635 7732
MY	4565 3343	4555 4443	5655 4574	5554 7696	5554 3534
DU	4333 2324	3434 2335	4534 4444	3554 7665	6533 3334
MW	5242 2465	5444 4644	6636 4576	6754 8786	3533 4736
NL	3222 1145	7332 2458	7623 3465	5774 6787	6722 2536
SB	3332 2333	4344 2344	5544 4555	4544 7776	4532 3434
VO	3334 2333	4444 3344	4443 4544	4544 6665	4533 3434

MAGNETOGRAMS 8 - 9 MARCH 1970



MOIS 1 1969

	3 Kn								σn								An
1	5	3	4	9	7	6	6	6	3222	4354	12	7	9	29	20	15	14	15	15
2	2	6	2	3	5	5	2	1	3244	3432	5	16	5	7	13	13	4	2	8
3	0	1	1	1	3	1	1	1	2323	3232	1	2	2	3	6	2	3	3	3
4	2	1	1	3	5	2	5	4	4423	4322	4	3	3	6	12	4	11	9	7
5	3	5	3	2	2	2	1	2	2233	3223	6	12	6	4	4	4	3	5	6
6	1	2	2	2	1	1	1	1	2433	2222	2	4	4	5	3	2	3	2	3
7	1	6	5	9	9	4	9	6	3231	1361	3	14	13	31	32	10	28	16	18
8	6	7	7	5	4	4	6	6	3232	5344	16	17	18	11	10	9	16	16	14
9	4	5	4	3	4	2	4	6	3134	4434	10	13	9	6	8	4	9	15	9
10	2	3	3	3	5	2	2	1	3343	3442	5	6	7	7	13	5	5	2	6
11	1	2	4	4	7	5	6	5	3424	2253	2	5	9	8	17	11	15	11	10
12	4	4	6	7	9	7	4	1	2222	7462	9	9	14	20	32	17	9	3	14
13	2	1	2	5	4	1	1	3	3335	5221	5	3	5	11	8	2	2	7	5
14	7	6	6	8	4	4	7	10	3323	3235	17	16	15	24	10	9	18	34	18
15	8	8	5	6	6	6	12	8	3322	2178	21	22	13	15	15	14	55	22	22
16	5	6	6	9	11	8	4	8	3111	3223	11	16	14	27	50	23	8	24	22
17	10	10	8	9	9	10	11	9	3323	1572	38	36	23	31	27	40	49	30	34
18	8	8	9	14	11	9	9	9	2353	3744	26	25	28	77	44	32	31	31	37
19	10	5	6	8	8	5	9	7	3114	4455	37	13	16	24	26	13	31	19	22
20	7	9	7	4	8	7	7	8	3432	4534	17	28	17	10	23	18	20	25	20
21	6	5	5	7	2	3	7	3	2222	3151	15	12	11	20	5	6	19	6	12
22	2	2	4	4	0	3	3	4	2122	2425	5	5	10	9	1	7	7	8	7
23	1	1	3	3	4	5	5	7	1313	2623	2	3	6	7	10	11	13	20	9
24	3	1	2	3	9	9	11	11	1344	1244	7	3	5	7	32	30	47	43	22
25	11	8	12	12	14	12	12	9	1222	3354	46	22	55	57	73	56	56	31	50
26	16	9	5	11	13	9	6	9	3123	5515	105	30	11	42	63	29	14	28	40
27	4	6	8	9	11	9	8	7	2225	3652	9	15	25	29	50	32	21	18	25
28	7	4	3	3	2	3	4	4	4232	3324	19	10	6	7	5	7	9	10	9
29	3	1	2	3	1	2	2	4	3333	3232	7	3	4	7	3	5	4	8	5
30	6	5	4	8	4	5	2	1	3223	2412	15	12	8	24	9	12	5	2	11
31	0	1	4	7	7	8	5	6	2323	1333	1	3	9	20	17	25	13	14	13
																			16.0

MOIS 1 1969

	3 Ks								σs								As
1	4	3	6	8	7	6	5	7	3103	5214	9	6	15	21	17	15	12	18	14
2	2	4	2	4	5	3	2	0	2434	2121	5	8	4	8	11	7	4	1	6
3	0	1	2	3	4	2	2	1	1335	3323	1	2	5	7	9	4	4	2	4
4	3	4	3	3	4	1	4	7	0111	3344	6	8	6	6	10	3	9	19	8
5	4	4	2	2	1	0	0	2	3332	2102	10	10	4	5	2	1	0	4	5
6	1	2	1	4	5	3	0	2	2334	7502	2	4	3	8	13	7	0	4	5
7	1	7	4	11	11	4	8	8	3342	3322	3	20	9	47	41	9	21	22	22
8	8	8	5	5	3	3	8	6	3114	1221	21	26	13	11	7	7	21	14	15
9	7	4	5	4	4	2	4	7	4234	4234	17	10	12	8	8	4	9	17	11
10	2	3	3	4	6	2	2	2	2214	0111	4	7	6	8	15	5	5	5	7
11	1	2	4	5	6	4	5	3	3311	3320	3	4	9	12	14	9	12	6	9
12	6	5	7	7	8	4	1	2	0111	2212	15	13	17	18	21	10	2	4	13
13	3	2	3	4	2	1	0	3	1112	3211	7	5	7	10	4	3	1	7	6
14	5	8	7	8	5	5	7	8	4113	1432	13	23	17	24	13	11	20	21	18
15	7	8	6	5	7	7	9	7	4104	4445	20	23	15	13	18	18	32	17	20
16	5	5	5	9	10	6	3	9	3134	1214	12	13	12	27	34	16	6	27	18
17	11	10	8	8	8	9	11	9	2322	1441	41	39	25	22	23	29	41	29	31
18	7	8	10	13	8	7	9	8	1114	1351	17	26	34	67	26	20	31	26	31
19	10	7	7	7	7	5	8	6	4111	1333	38	17	17	17	17	12	21	14	19
20	5	5	3	4	7	6	7	7	1124	1234	12	13	7	8	18	16	20	18	14
21	5	5	4	5	2	1	6	4	1213	4324	13	11	8	12	5	2	16	8	9
22	2	1	4	4	0	3	2	3	1233	1121	5	2	9	10	1	6	5	6	6
23	1	1	2	3	3	4	7	8	3210	0343	2	2	5	6	6	9	18	21	9
24	3	2	3	4	10	8	11	10	3123	3244	6	5	7	10	36	21	43	38	21
25	10	10	11	12	13	11	12	9	3312	1132	40	38	49	54	65	49	51	29	47
26	15	8	6	11	11	7	7	7	3121	3153	89	26	16	49	45	18	17	20	35
27	3	6	6	9	10	6	5	7	1510	1215	6	15	16	29	34	15	13	19	18
28	4	4	3	1	2	1	2	4	3112	2325	9	8	6	3	5	2	4	10	6
29	3	2	1	5	2	2	2	6	0123	3225	6	5	2	12	4	5	4	15	7
30	5	4	5	8	4	4	2	1	4431	4363	11	10	13	26	8	10	5	2	11
31	2	1	4	6	6	8	4	5	1112	3133	5	2	8	16	14	23	9	12	11
																			14.7

MOIS 1 1969

	3 Km								Σ Km	am							Am	Am2
1	5	3	5	8	7	6	5	6	15.0	11	7	12	25	18	15	13	16	15	15
2	2	5	2	3	5	4	2	0	7.7	5	12	5	7	12	10	4	1	7	8
3	0	1	1	2	4	1	2	1	4.0	1	2	3	5	8	3	4	3	4	5
4	2	3	2	3	5	2	4	6	9.0	5	6	4	6	11	4	10	14	8	7
5	4	5	2	2	1	1	0	2	5.7	8	11	5	5	3	3	1	5	5	6
6	1	2	1	3	4	2	0	1	4.7	2	4	3	6	8	5	1	3	4	7
7	1	7	5	10	10	4	8	7	17.3	3	17	11	39	37	9	25	19	20	15
8	7	8	6	5	4	4	7	6	15.7	18	22	15	11	9	8	19	15	15	16
9	6	5	5	3	4	2	4	6	11.7	14	11	11	7	8	4	9	16	10	10
10	2	3	3	3	6	2	2	2	7.7	4	7	6	7	14	5	5	4	7	7
11	1	2	4	4	6	4	6	4	10.3	3	5	9	10	16	10	14	8	9	10
12	5	5	6	7	8	6	2	1	13.3	12	11	15	19	26	14	5	3	13	11
13	3	2	3	4	3	1	0	3	6.3	6	4	6	10	6	3	1	7	5	10
14	6	7	6	8	5	4	7	9	17.3	15	20	16	24	11	10	19	27	18	14
15	7	8	6	6	7	6	11	7	19.3	20	23	14	14	17	16	44	19	21	19
16	5	6	5	9	11	7	3	8	18.0	11	15	13	27	42	19	7	26	20	24
17	10	10	8	8	8	10	11	9	24.7	40	38	24	26	25	35	45	29	33	32
18	8	8	9	14	10	8	9	9	25.0	22	26	31	72	35	26	31	28	34	31
19	10	6	7	7	8	5	8	6	19.0	37	15	17	20	21	12	26	16	21	21
20	6	8	5	4	8	7	7	8	17.7	14	21	12	9	21	17	20	21	17	16
21	6	5	4	6	2	2	7	3	11.7	14	11	10	16	5	4	17	7	11	12
22	2	2	4	4	0	3	3	3	7.0	5	4	10	10	1	6	6	7	6	6
23	1	1	2	3	4	4	6	8	9.7	2	3	5	7	8	10	16	21	9	7
24	3	2	3	4	10	8	11	10	17.0	6	4	6	9	34	26	45	40	21	25
25	11	9	12	12	13	12	12	9	30.0	43	30	52	55	69	53	54	30	48	45
26	15	9	5	11	12	8	6	8	24.7	97	28	13	46	54	24	15	24	38	36
27	4	6	7	9	11	8	7	7	19.7	8	15	20	29	42	24	17	18	22	20
28	6	4	3	2	2	2	3	4	8.7	14	9	6	5	5	4	6	10	7	11
29	3	2	1	4	2	2	2	5	7.0	7	4	3	9	4	5	4	12	6	8
30	5	5	5	8	4	5	2	1	11.7	13	11	11	25	9	11	5	2	11	9
31	1	1	4	7	6	8	5	5	12.3	3	2	8	18	15	24	11	13	12	9
																		15.4	

MOIS 2 1969

	3 Km								Σ Km	am							Am	Am2
1	1	2	3	3	1	5	6	3	8.0	3	4	7	6	3	11	16	6	7	10
2	2	1	5	7	6	15	23	17	25.3	4	3	11	18	16	100	337	145	79	57
3	15	11	12	12	14	12	15	15	35.3	89	41	57	53	86	53	101	95	72	78
4	8	5	8	7	8	8	8	9	20.3	23	12	25	19	26	26	21	30	23	38
5	10	6	5	7	4	3	4	7	15.3	40	14	12	17	9	6	10	18	16	22
6	10	9	9	8	2	2	5	8	17.7	35	32	32	25	4	5	11	23	21	17
7	4	2	6	9	6	5	7	8	15.7	8	4	15	29	15	11	20	23	16	14
8	8	6	6	4	4	8	7	4	15.7	26	15	14	8	10	26	17	10	16	14
9	4	3	2	1	2	4	4	3	7.7	8	7	5	2	5	10	9	7	7	11
10	4	6	5	7	6	7	8	13	18.7	10	14	12	18	15	18	21	70	22	32
11	16	9	12	16	17	16	16	14	38.7	104	29	59	110	127	107	107	81	91	57
12	10	4	3	2	2	5	7	11	14.7	35	10	6	5	5	12	17	46	17	39
13	8	5	4	6	6	5	7	7	16.0	23	12	10	15	15	13	18	20	16	16
14	5	8	4	4	5	5	4	9	14.7	11	26	8	10	13	12	10	32	15	18
15	7	10	6	9	8	8	10	9	22.3	20	36	15	29	25	23	35	28	26	23
16	8	7	9	5	8	6	6	3	17.3	25	18	28	13	21	14	15	6	18	18
17	3	5	3	2	1	4	4	3	8.3	7	11	7	4	2	8	9	6	7	7
18	0	1	0	0	0	1	4	2	2.7	1	2	1	1	1	2	8	4	3	6
19	4	5	5	5	8	6	4	5	14.0	8	13	13	12	26	14	10	12	14	12
20	4	9	5	7	7	7	7	6	17.3	9	29	12	18	17	19	17	14	17	17
21	8	5	9	4	4	4	3	1	12.7	21	13	30	8	8	9	7	3	12	12
22	1	3	3	3	5	6	4	5	10.0	2	6	6	6	11	16	10	13	9	11
23	5	7	7	8	9	5	6	5	17.3	12	19	20	23	27	12	16	13	18	15
24	4	5	7	4	5	6	3	4	12.7	9	12	17	9	11	15	6	8	11	13
25	8	3	5	7	4	1	4	2	11.3	24	7	11	18	8	3	10	5	11	16
26	9	9	11	8	8	6	8	6	21.7	28	31	44	25	22	14	21	14	25	21
27	8	9	11	6	14	17	11	7	27.7	24	33	41	14	74	122	49	17	47	34
28	6	11	8	5	8	10	6	10	21.3	16	49	25	13	23	39	15	39	27	33
																		23.7	

MOIS 2 1969

	3 Kn								σn		an						An
1	1	2	3	3	1	5	6	3	2343	2224	2	5	6	6	3	11	15-	6	7
2	1	2	5	6	7	15	23	17	3423	3225	2	4	12	14	18	96	353	129	79
3	14	10	13	11	15	12	16	15	5242	3562	76	40	61	41	102	60	107	92	72
4	8	5	8	6	9	8	8	9	2232	2333	21	13	21	16	27	26	22	32	22
5	10	5	6	7	5	3	5	7	3232	3434	38	12	14	19	11	7	11	20	17
6	11	10	9	8	2	3	5	8	7321	3133	41	36	29	26	5	6	11	26	23
7	4	3	7	9	7	5	7	9	2243	2233	10	6	17	29	20	11	20	27	18
8	9	6	6	4	5	9	7	4	3122	3553	32	15	15	9	11	31	17	10	18
9	4	3	2	1	2	5	4	3	3432	3323	9	7	5	2	4	11	8	6	7
10	5	5	6	7	7	8	7	14	3222	4634	11	13	14	18	18	22	20	72	24
11	16	9	12	15	16	16	15	14	3444	6174	104	29	52	102	109	111	98	75	85
12	9	4	3	2	3	5	7	11	4423	3233	32	10	7	4	7	12	17	45	17
13	8	4	5	6	6	7	7	8	4213	2133	23	10	12	15	15	17	17	24	17
14	4	8	4	5	6	5	4	11	2142	3524	10	26	9	11	14	11	10	42	17
15	8	10	6	9	8	8	10	8	3414	2324	22	39	15	29	24	25	39	23	27
16	8	7	9	6	8	6	6	4	1243	3142	25	20	33	14	21	16	16	9	19
17	3	4	4	2	1	4	5	4	1322	2343	7	9	8	4	2	9	11	9	7
18	1	2	1	1	1	1	4	2	2422	2232	2	4	2	2	2	3	9	4	4
19	3	6	6	5	9	7	5	6	3122	4433	7	14	14	11	30	17	11	15	15
20	4	8	5	5	7	8	7	6	3223	3231	8	23	12	13	20	24	20	16	17
21	8	5	10	4	4	5	4	1	3212	2222	26	13	34	8	9	11	8	3	14
22	0	2	3	3	5	8	5	4	2423	1542	1	5	6	6	13	22	13	10	10
23	5	7	8	8	9	6	5	5	3332	3223	11	20	22	24	27	14	13	13	18
24	4	5	6	3	5	6	3	4	3221	3325	10	11	16	7	11	16	6	10	11
25	9	4	5	7	4	2	5	3	3326	3324	27	9	11	19	8	4	11	7	12
26	8	8	10	8	7	6	7	6	2233	3436	25	25	36	25	20	16	20	14	23
27	8	9	9	6	15	17	12	8	4111	3543	26	32	32	14	90	123	51	22	49
28	6	11	8	5	8	10	6	11	2332	3212	16	42	24	13	24	38	16	41	27
																			24.1

MOIS 2 1969

	3 Ks								σs		as						As
1	2	1	3	3	2	4	7	3	1211	2352	5	3	7	6	4	10	17	6	7
2	2	1	5	8	6	16	22	18	2225	2465	5	2	11	22	15	104	321	162	80
3	15	11	12	13	14	11	15	15	8443	2352	102	43	54	64	71	46	96	98	72
4	8	5	9	8	8	8	7	9	3122	1133	24	12	29	21	26	26	20	28	23
5	11	6	4	6	3	3	4	6	5015	0132	41	15	9	16	6	6	9	16	15
6	9	9	10	8	1	2	4	7	5233	2233	30	29	34	25	2	4	10	20	19
7	3	1	5	9	5	5	7	7	1230	4235	6	3	13	29	11	11	20	19	14
8	7	6	5	3	4	8	7	5	3112	3442	19	16	13	7	9	22	17	11	14
9	3	3	2	0	3	4	4	4	2111	1334	7	7	5	1	6	9	9	9	7
10	4	6	4	7	5	6	8	13	3133	3033	10	16	9	19	12	15	21	69	21
11	16	9	13	16	17	16	16	15	4233	3555	104	29	66	117	144	104	116	87	96
12	10	4	3	3	1	5	7	11	7355	2155	38	9	6	6	3	12	18	46	17
13	8	5	4	6	6	4	7	6	5111	0142	22	13	8	16	15	9	18	16	15
14	5	8	4	4	5	5	4	8	1111	1434	12	26	8	8	12	13	10	23	14
15	7	10	6	9	8	8	9	9	4400	1244	18	34	15	29	26	21	32	32	26
16	8	6	8	5	8	5	6	2	2112	2112	25	16	23	12	21	12	14	4	16
17	3	5	3	2	0	3	3	2	0312	1022	6	12	6	4	1	6	7	4	6
18	0	0	0	0	0	0	3	1	1101	0123	1	1	0	1	0	1	7	3	2
19	4	5	5	5	8	5	4	4	3311	2233	10	12	13	13	21	11	10	9	12
20	4	10	5	8	6	6	5	5	3443	2011	10	35	12	24	15	15	13	12	17
21	6	5	8	4	3	3	3	1	1114	2003	16	13	26	8	7	6	6	3	11
22	1	3	3	3	4	4	3	6	3201	3225	3	6	6	6	10	10	7	16	8
23	5	7	7	8	8	4	7	5	1443	1341	13	18	18	21	26	10	20	13	17
24	4	5	7	5	5	6	3	3	1111	4010	9	13	17	12	11	15	6	6	11
25	8	3	5	7	3	1	4	1	3124	1333	21	6	11	17	7	2	9	3	10
26	9	10	12	8	8	5	8	5	2243	3136	31	37	52	24	24	13	21	13	27
27	8	10	11	6	12	17	11	5	3330	1662	21	34	49	15	57	121	47	12	45
28	6	12	8	5	8	11	6	10	1211	2233	16	56	26	13	22	41	14	37	28
																			23.2

MOIS 3 1969

	3 Kn								σn		an						An
1	8	4	5	3	6	11	9	10	2331	1642	24	9	11	7	15	45	32	35	22
2	10	8	3	7	7	4	3	5	3234	5223	39	23	7	19	19	10	6	11	17
3	3	3	1	0	2	4	3	2	2421	3332	7	6	2	1	5	9	6	5	5
4	0	1	1	1	3	2	9	11	2342	4464	1	2	3	2	6	5	33	46	12
5	7	5	5	8	8	5	5	6	3423	3313	20	12	12	22	23	13	13	16	16
6	7	5	6	9	5	12	11	7	2211	4653	18	12	14	29	13	60	43	18	26
7	9	9	7	6	11	11	12	8	2111	3653	32	30	17	14	43	48	51	26	33
8	8	8	5	9	7	4	7	9	3124	5241	23	24	12	27	20	9	20	31	21
9	6	6	5	7	7	8	10	5	3123	3282	16	15	12	18	20	25	37	13	20
10	6	5	5	7	3	2	4	4	3233	2213	15	12	12	17	6	4	8	10	11
11	6	5	8	10	10	8	13	12	2134	3242	14	13	22	35	37	24	62	56	33
12	14	14	13	11	8	11	10	5	4543	3543	72	76	69	49	26	48	34	12	48
13	8	4	4	4	4	5	5	10	1332	3333	25	10	10	10	8	12	13	36	16
14	6	4	4	2	4	6	8	9	3223	4431	14	10	8	5	9	15	24	33	15
15	10	8	10	10	7	10	8	10	4265	3213	34	25	37	37	19	36	26	37	31
16	4	10	11	12	9	6	5	5	3443	3314	10	40	47	54	27	14	12	12	27
17	14	14	9	9	12	11	12	10	2212	4233	83	79	31	32	58	47	60	37	53
18	4	10	10	8	4	8	5	7	3343	1232	9	35	36	24	9	22	12	20	21
19	4	4	9	6	5	5	12	14	3211	3233	10	9	27	15	13	12	59	84	29
20	14	10	9	8	5	10	9	11	2234	2423	81	36	31	24	12	34	27	41	36
21	9	7	11	8	7	3	6	10	3241	2314	30	20	46	24	17	7	16	40	25
22	8	9	8	8	9	8	9	5	2333	2222	22	30	22	21	27	22	27	12	23
23	5	4	4	6	7	10	16	19	3323	2544	11	9	9	14	17	38	119	187	51
24	22	14	17	20	13	9	5	6	7135	3132	325	85	146	206	67	30	13	15	111
25	7	8	13	11	12	8	7	11	2333	3633	20	22	64	42	51	25	17	41	35
26	9	4	6	8	8	8	6	7	2223	2213	28	9	14	25	26	23	14	19	20
27	7	6	5	4	6	4	4	3	3123	3222	20	15	11	10	16	8	8	7	12
28	4	5	6	5	5	9	5	4	3224	2522	8	13	14	12	13	30	11	9	14
29	3	4	7	7	10	10	7	11	2413	3232	7	10	18	18	36	34	20	43	23
30	9	8	6	5	4	8	10	14	2313	2443	33	24	14	13	9	25	37	76	29
31	11	8	5	8	8	10	10	7	2223	3443	43	24	11	21	21	36	35	17	26
																			27.8

MOIS 3 1969

	3 Ks								σs		as						As
1	7	4	5	4	4	9	8	7	4122	3224	18	8	11	10	10	29	22	19	16
2	8	7	4	4	5	1	2	4	2441	4213	25	20	8	9	12	2	5	9	11
3	3	3	0	0	2	1	2	1	1011	1223	6	6	1	1	5	3	4	3	4
4	0	0	0	0	1	1	9	9	1000	2244	1	0	0	0	2	2	27	33	8
5	8	4	6	11	8	4	4	8	2324	1133	22	9	14	42	26	8	9	21	19
6	8	5	5	9	4	10	8	6	3212	1242	21	11	13	31	8	40	24	15	20
7	9	9	5	7	10	10	12	9	5014	1122	33	29	13	18	34	34	54	29	31
8	8	7	5	10	7	4	6	8	2111	3432	22	17	13	34	18	9	14	25	19
9	5	7	6	8	8	8	9	4	1421	1351	13	19	15	23	23	23	28	8	19
10	6	5	5	8	0	0	3	4	0124	1014	15	12	11	24	1	0	6	8	10
11	5	5	5	9	10	8	12	12	3114	1354	13	13	12	30	34	23	60	59	31
12	13	10	13	13	8	9	9	4	6311	1123	62	38	61	65	26	29	29	9	40
13	8	4	3	4	3	3	5	8	5421	1222	22	9	7	8	6	7	11	25	12
14	5	2	3	3	3	4	7	8	2210	2231	11	4	6	6	6	10	20	23	11
15	9	7	9	10	7	8	8	9	5451	4225	30	18	29	34	17	21	21	31	25
16	3	9	12	13	8	4	4	3	2554	4142	7	29	56	70	24	8	8	7	26
17	14	13	9	10	13	12	11	8	1304	3431	86	66	29	35	62	53	44	26	50
18	3	8	9	6	3	5	4	5	2350	1131	6	21	31	15	6	13	9	12	14
19	4	4	8	5	3	3	11	14	3341	0014	9	9	21	13	6	6	45	74	23
20	15	9	8	8	5	10	8	9	6011	3324	93	29	26	26	12	39	21	33	35
21	10	7	9	8	4	2	5	11	5112	1224	37	18	32	22	8	4	12	42	22
22	8	9	8	8	6	6	9	6	3512	2210	21	31	23	21	15	15	29	15	21
23	4	3	3	6	4	10	18	20	3000	3675	10	6	6	15	10	40	166	202	57
24	22	16	18	18	12	9	3	4	6422	1303	289	115	165	164	57	28	6	10	104
25	9	8	13	11	11	8	5	11	0323	1223	29	22	66	45	45	21	12	44	36
26	7	3	5	7	6	6	4	6	1213	2232	17	6	12	19	15	15	10	16	14
27	5	4	4	4	4	1	2	1	1334	5312	13	10	9	8	10	3	5	2	8
28	3	4	4	5	2	7	5	3	1433	1121	7	8	10	12	5	18	11	6	10
29	3	3	7	6	8	8	6	10	1011	1104	7	6	17	16	26	23	15	38	19
30	8	8	4	5	3	8	9	13	1213	1424	26	22	8	12	6	23	31	63	24
31	10	7	3	6	5	8	9	6	4410	4426	35	20	7	15	13	26	29	15	20
																			24.5

MOIS 3 1969

	3 Km								Σ Km	am							Am	Am2
1	8	4	5	4	5	10	9	9	18.0	21	9	11	9	13	37	27	27	19	22
2	9	8	3	6	6	3	2	4	13.7	32	21	7	14	16	6	5	10	14	14
3	3	3	0	0	2	3	2	2	5.0	6	6	1	1	5	6	5	4	4	5
4	0	0	1	0	2	1	9	10	7.7	1	1	2	1	4	3	30	40	10	11
5	8	5	5	9	8	5	5	7	17.3	21	11	13	32	25	11	11	19	18	18
6	7	5	6	9	5	11	10	6	19.7	20	11	14	30	11	50	34	16	23	22
7	9	9	6	6	10	11	12	9	24.0	32	30	15	16	38	41	52	28	32	28
8	8	8	5	9	7	4	7	9	19.0	23	21	13	31	19	9	17	28	20	24
9	6	7	6	8	8	8	9	4	18.7	15	17	14	21	22	24	33	10	20	18
10	6	5	5	7	1	1	3	4	10.7	15	12	11	20	3	2	7	9	10	15
11	6	5	7	9	10	8	13	12	23.3	14	13	17	32	35	24	61	57	32	33
12	13	12	13	12	8	10	9	5	27.3	67	57	65	57	26	38	32	11	44	36
13	8	4	4	4	3	4	5	9	13.7	24	9	9	9	7	9	12	30	14	16
14	5	3	3	3	4	5	8	9	13.3	13	7	7	6	8	13	22	28	13	18
15	9	8	9	10	7	9	8	10	23.3	32	22	33	35	18	29	23	34	28	28
16	4	10	12	13	8	5	4	4	20.0	9	35	52	62	25	11	10	9	27	34
17	14	14	9	9	12	11	12	9	30.0	84	73	30	33	60	50	52	32	52	35
18	3	9	9	7	3	7	4	6	16.0	7	28	33	19	7	18	10	16	17	24
19	4	4	8	6	4	4	12	14	18.7	10	9	24	14	10	9	52	79	26	27
20	15	9	9	8	5	10	8	10	24.7	87	32	29	25	12	36	24	37	35	34
21	9	7	10	8	5	3	6	11	19.7	33	19	39	23	13	6	14	41	24	25
22	8	9	8	8	8	7	9	5	20.7	22	31	23	21	21	18	28	13	22	18
23	4	4	4	6	6	10	17	19	23.3	10	8	8	14	14	39	142	195	54	79
24	22	15	18	19	13	9	4	5	35.0	307	100	156	185	62	29	10	13	108	88
25	8	8	13	11	11	8	6	11	25.3	24	22	65	43	48	23	15	42	35	29
26	8	4	5	8	7	7	5	7	17.0	23	8	13	22	20	19	12	18	17	19
27	7	5	4	4	5	2	3	2	10.7	17	12	10	9	13	5	6	4	10	12
28	4	5	5	5	4	8	5	3	13.0	8	11	12	12	9	24	11	7	12	11
29	3	4	7	7	9	9	7	10	18.7	7	8	17	17	31	29	17	40	21	18
30	9	8	5	5	3	8	10	13	20.3	29	23	11	13	7	24	34	69	26	26
31	10	8	4	7	7	9	9	6	20.0	39	22	9	18	17	31	32	16	23	25
																		26.1	

MOIS 4 1969

	3 Km								Σ Km	am							Am	Am2
1	6	8	5	8	7	11	13	14	24.0	16	23	13	26	19	43	62	71	34	27
2	8	4	4	7	7	10	11	11	20.7	25	10	9	20	19	37	50	46	27	34
3	14	9	6	4	5	6	10	8	20.7	77	27	15	10	13	16	35	26	27	29
4	7	8	7	7	7	4	9	7	18.7	20	26	20	19	20	9	27	20	20	21
5	8	6	10	6	4	6	6	8	18.0	25	16	34	16	9	14	14	21	19	17
6	7	5	7	2	5	7	10	9	17.3	18	12	17	5	12	17	34	30	18	21
7	9	11	11	6	6	8	10	6	22.3	31	45	45	15	15	22	38	14	28	23
8	9	5	4	4	5	3	5	8	14.3	27	12	9	8	13	6	11	21	13	17
9	4	7	8	7	7	7	11	8	19.7	9	20	23	20	18	19	42	21	22	16
10	2	4	7	4	4	8	6	4	13.0	5	8	17	10	10	21	14	8	12	17
11	5	6	8	7	8	2	3	2	13.7	12	15	25	19	23	5	7	4	14	12
12	2	3	3	5	4	4	11	11	14.3	4	7	6	11	10	8	41	43	16	18
13	12	7	9	7	7	10	12	11	25.0	58	20	30	17	17	34	54	47	35	30
14	12	7	5	5	5	6	8	10	19.3	60	18	13	11	13	16	25	39	24	29
15	9	8	10	9	8	6	7	6	21.0	31	24	35	32	23	15	17	14	24	24
16	6	8	9	8	10	8	9	10	22.7	15	26	30	25	34	22	29	35	27	27
17	11	9	11	8	10	9	10	9	25.7	50	29	42	25	36	29	35	28	34	34
18	12	11	10	6	5	2	4	8	19.3	51	41	34	16	13	5	8	23	24	22
19	7	1	2	2	4	1	4	6	9.0	19	2	5	4	8	2	10	15	8	10
20	7	4	4	2	4	3	7	8	13.0	19	8	10	5	9	6	20	26	13	13
21	10	3	5	4	2	1	4	7	12.0	36	6	12	8	4	3	8	17	12	18
22	7	8	12	8	7	5	3	3	17.7	20	26	57	25	19	12	6	7	22	15
23	3	5	4	4	6	4	4	5	11.7	7	12	8	9	14	8	9	11	10	12
24	8	8	7	4	2	5	4	8	15.3	26	24	17	8	5	12	9	22	15	15
25	10	6	7	5	6	5	4	5	16.0	34	16	19	13	14	11	9	11	16	13
26	5	4	3	3	4	4	7	8	12.7	13	8	6	7	9	10	19	21	12	15
27	10	6	7	8	6	5	9	4	18.3	36	16	18	26	14	12	30	8	20	34
28	10	14	17	14	17	11	7	7	32.3	38	71	126	83	127	41	20	19	66	41
29	7	8	8	3	5	7	9	11	19.3	20	22	25	7	11	20	32	47	23	35
30	11	11	11	10	11	9	9	9	27.0	41	46	46	37	41	33	33	32	39	31
																		22.5	

MOIS 4 1969

	3 Kn								σn		an						An
1	6	8	6	8	8	11	13	12	4233	3444	15	23	16	25	21	46	63	58	33
2	8	4	5	7	8	11	12	11	2333	2344	25	10	12	20	22	41	51	45	28
3	13	8	6	5	6	7	10	8	3323	1264	67	21	15	11	15	19	39	24	26
4	7	9	8	8	8	5	9	7	2343	2253	18	29	25	22	23	12	33	19	23
5	8	6	10	7	4	7	6	7	1254	3332	24	16	37	19	10	18	14	19	20
6	7	5	8	3	6	8	10	10	2231	1333	17	13	21	6	14	23	35	34	20
7	9	11	11	6	7	8	10	6	2422	1361	29	44	41	16	17	24	40	15	28
8	8	5	5	4	5	4	5	8	3132	2225	22	13	11	9	13	10	12	24	14
9	4	7	8	8	6	7	10	8	3333	1563	10	18	24	22	16	18	39	21	21
10	3	5	7	4	5	8	6	5	5332	3414	7	11	20	10	13	21	16	11	14
11	5	7	9	7	8	3	4	3	2232	3421	13	17	28	17	25	7	9	7	15
12	3	3	3	4	5	5	11	11	3353	2232	6	7	7	10	12	11	46	47	18
13	12	7	11	8	8	10	12	11	2233	5263	56	19	41	21	23	38	57	41	37
14	12	7	7	5	6	7	8	10	1252	1125	52	18	18	12	15	19	24	37	24
15	9	9	9	9	7	7	8	6	1232	2223	27	27	32	32	20	20	22	15	24
16	6	9	9	8	10	8	8	10	3246	2343	16	27	33	26	37	25	26	35	28
17	10	8	11	8	10	9	10	9	4243	2323	40	25	44	25	39	33	36	28	34
18	12	11	10	7	6	4	5	9	3542	4331	58	45	38	17	16	8	11	27	28
19	7	1	3	3	4	2	5	7	3333	2222	20	3	7	7	10	4	12	18	10
20	7	5	5	4	5	4	8	9	2322	2433	20	11	11	8	12	8	22	32	16
21	9	4	5	5	3	2	6	7	5323	3332	29	8	12	12	7	5	14	20	13
22	8	9	12	9	8	6	4	5	2441	3313	23	30	60	30	24	14	9	11	25
23	4	6	4	5	7	5	5	6	3232	1233	9	15	10	11	17	11	12	15	13
24	9	8	7	4	4	7	6	9	2322	1113	30	25	19	9	9	17	14	27	19
25	10	7	7	5	7	6	5	6	2323	2321	37	18	19	13	17	15	12	15	18
26	6	5	2	4	5	6	8	9	1222	3124	14	11	5	9	12	15	21	28	14
27	10	7	6	8	6	6	10	5	2312	1314	35	17	15	25	16	16	37	12	22
28	11	14	17	15	17	12	9	8	2343	2322	41	79	146	90	145	54	27	23	76
29	8	9	9	4	6	8	9	11	1314	1222	24	27	28	10	15	22	33	45	26
30	11	11	11	10	11	10	10	10	2323	2432	43	50	41	36	47	34	37	34	40
																			24.2

MOIS 4 1969

	3 Ks								σs		as						As
1	7	8	4	8	7	10	12	14	5241	1654	17	22	9	26	17	40	60	85	35
2	8	4	3	7	7	10	11	11	3304	1542	24	10	6	20	17	34	49	47	26
3	15	10	6	4	5	6	9	9	7401	1423	87	34	15	8	12	14	31	28	29
4	8	8	6	7	7	3	7	8	3121	1133	21	23	14	17	17	6	20	21	17
5	8	6	9	5	4	4	6	8	1153	1233	26	16	31	13	8	10	14	24	18
6	7	5	5	2	4	5	10	8	4211	3311	18	11	13	5	9	12	34	26	16
7	10	11	11	6	6	8	10	5	4772	4562	34	47	49	15	14	21	35	12	28
8	9	5	3	3	5	1	4	7	5221	3233	33	11	7	7	12	2	9	19	13
9	3	8	8	7	7	8	11	8	1921	3663	7	23	22	17	20	21	45	21	22
10	1	3	6	4	3	8	5	3	2204	2621	2	6	15	10	7	21	12	6	10
11	4	5	8	7	8	1	2	0	3123	2220	10	13	22	20	21	2	5	0	12
12	1	3	2	5	4	3	10	10	2224	4112	2	6	5	11	8	6	37	40	14
13	12	8	7	5	5	9	11	12	4311	4252	59	21	18	13	12	29	50	54	32
14	13	7	4	5	5	5	9	11	4113	2145	67	17	9	11	11	13	27	41	25
15	10	8	10	9	8	5	5	5	4331	1233	35	21	38	32	26	11	12	12	23
16	6	8	8	8	9	7	9	10	2313	1555	14	25	26	24	32	18	31	35	26
17	12	9	10	8	9	8	10	9	6533	4313	60	33	40	25	32	24	34	28	35
18	11	10	9	6	5	1	2	7	2350	3213	43	38	30	15	11	2	5	20	21
19	7	1	1	0	3	0	3	5	4221	1123	18	2	2	1	6	1	7	12	6
20	7	2	4	1	3	2	7	8	4213	2215	18	4	8	2	6	5	17	21	10
21	11	2	5	2	0	0	1	6	9314	1132	44	5	12	4	1	1	2	15	11
22	7	8	12	7	6	4	1	1	4313	0333	18	21	53	20	15	10	3	2	18
23	2	4	3	3	5	2	3	3	3110	2111	5	9	7	6	11	5	6	6	7
24	8	8	6	3	0	3	2	6	2202	1015	22	22	15	7	1	6	5	16	12
25	9	6	7	5	4	4	3	3	1243	2100	32	14	18	12	10	8	6	6	13
26	5	2	3	3	3	2	7	6	1321	0410	12	5	7	6	6	5	17	15	9
27	10	6	8	8	5	3	8	2	3531	3134	37	15	21	26	13	7	23	5	18
28	10	13	16	14	16	9	6	6	1534	5030	34	64	106	76	109	29	14	15	56
29	6	7	8	1	3	7	9	11	1122	0524	16	17	21	3	6	19	31	48	20
30	10	11	12	10	10	9	9	9	6264	1115	40	43	51	37	34	32	29	31	37
																			20.6

MOIS 5 1969

	3 Kn								σn		an						An
1	8	9	7	5	4	6	6	6	3333	5343	21	27	20	13	10	16	16	16	17
2	5	8	6	8	11	11	16	9	3542	2434	11	21	16	22	49	46	116	33	39
3	5	10	11	7	8	7	7	8	1311	3231	13	36	50	18	26	18	18	25	26
4	5	8	5	5	7	6	7	5	2232	3131	12	22	12	11	17	15	20	13	15
5	8	5	5	6	9	6	8	8	2333	2124	26	13	12	16	27	14	22	22	19
6	6	9	8	4	6	4	5	8	2522	2333	16	28	21	9	14	9	12	21	16
7	7	4	8	6	3	2	1	3	3236	5324	19	10	24	14	6	5	3	7	11
8	3	4	4	3	5	7	5	7	3231	3332	7	10	8	7	11	17	12	19	11
9	4	7	9	8	7	5	8	12	2323	4421	10	18	33	22	18	12	22	53	24
10	7	9	9	7	8	6	4	6	2113	3422	19	28	33	18	23	14	10	15	20
11	6	4	3	7	5	5	4	4	3323	1313	15	10	7	19	13	11	9	9	12
12	3	3	3	4	3	4	9	11	3525	2212	6	6	7	8	7	9	30	45	15
13	13	11	14	10	11	12	10	12	2343	3424	63	47	79	38	42	57	37	53	52
14	14	11	9	10	7	11	17	17	5413	2342	85	46	27	39	20	41	122	123	63
15	18	17	14	19	18	15	15	14	1222	1342	149	126	72	178	151	99	99	75	119
16	16	13	15	12	10	6	7	9	7553	3341	108	61	91	59	34	14	20	30	52
17	8	8	11	9	5	5	6	11	3235	3413	25	21	41	27	13	13	14	41	24
18	10	7	9	10	8	12	12	8	4242	4442	38	18	30	35	22	53	60	25	35
19	7	5	6	8	9	7	7	6	2212	2222	18	11	15	26	27	19	18	14	19
20	7	7	8	6	6	5	8	7	2322	4323	19	19	23	15	16	12	23	18	18
21	7	8	8	9	9	7	7	8	1321	3442	19	26	25	31	27	20	17	23	24
22	5	7	6	9	9	8	7	6	3312	3431	12	17	15	32	32	26	18	15	21
23	7	6	8	9	9	8	8	5	3322	1233	18	16	22	28	31	21	22	11	21
24	5	9	8	6	7	7	8	8	2123	3222	13	31	22	15	20	18	21	24	21
25	8	8	4	5	4	4	6	7	2333	2453	26	25	9	11	9	9	16	17	15
26	3	6	4	5	3	4	4	4	1123	4223	7	15	10	11	6	10	8	10	10
27	3	3	2	4	5	3	4	6	3343	3321	6	6	5	10	13	7	10	14	9
28	4	8	6	8	8	9	3	7	2212	2312	10	23	16	23	23	32	7	17	19
29	4	4	4	6	5	6	6	7	3534	2313	8	8	8	14	11	16	15	20	13
30	5	7	8	9	8	10	5	8	2231	2331	13	18	24	30	21	37	12	25	23
31	6	10	8	8	8	8	9	8	1333	2331	16	35	25	24	24	22	28	26	25
																			26.1

MOIS 5 1969

	3 Ks								σs		as						As
1	7	8	6	4	2	3	6	6	4201	4423	20	22	15	8	5	7	16	14	13
2	5	7	6	8	11	8	12	11	2321	3354	11	20	14	26	42	24	52	42	29
3	5	10	11	7	8	5	6	7	1131	3303	12	34	46	17	24	13	15	19	23
4	4	8	4	5	4	5	7	5	3133	1112	10	23	9	12	9	12	18	12	13
5	11	5	4	5	7	4	8	11	6133	1437	48	13	10	12	18	8	23	50	23
6	5	9	7	3	4	2	3	5	2642	3422	11	29	18	7	9	4	7	12	12
7	9	5	7	4	0	0	0	0	5141	0001	33	12	19	8	0	0	0	1	9
8	4	4	5	1	2	3	2	5	4372	4232	9	9	13	3	4	7	4	12	8
9	3	6	8	6	4	1	5	11	1612	3242	6	14	23	15	9	3	12	47	16
10	5	9	8	6	4	3	3	3	1514	2220	13	31	23	14	10	7	7	6	14
11	4	3	3	5	2	0	2	0	4552	1131	9	7	7	11	5	1	4	1	6
12	2	1	1	1	0	0	6	11	2323	1123	5	3	3	3	1	1	16	41	9
13	11	10	14	9	10	12	12	13	1442	2437	45	35	76	31	37	53	51	67	49
14	14	10	9	9	6	10	15	17	5350	1124	72	38	31	29	16	34	98	143	58
15	18	18	15	18	17	15	16	13	4252	4414	169	156	97	165	134	98	106	63	124
16	15	15	16	11	10	3	5	5	7833	3141	87	92	113	46	40	6	13	13	51
17	8	7	10	7	6	4	3	9	3341	2522	24	20	37	17	14	8	6	29	19
18	11	6	10	9	4	8	9	5	2044	1211	47	15	35	30	8	25	29	13	25
19	5	5	4	8	6	5	3	0	1322	1121	13	12	10	25	16	12	7	1	12
20	7	5	5	3	3	1	3	5	5211	0213	19	11	13	6	6	2	7	12	10
21	7	7	7	9	7	6	4	8	5432	3235	17	20	20	29	20	15	10	22	19
22	4	5	4	7	8	7	3	3	3331	3511	10	12	10	18	26	18	7	6	13
23	4	7	7	7	8	5	4	2	3443	3113	9	18	18	20	24	13	9	4	14
24	3	10	8	5	6	4	3	7	1432	4125	7	35	21	12	14	8	7	19	15
25	8	7	2	2	2	0	3	5	3422	2143	21	17	4	5	4	1	6	12	9
26	2	5	3	3	0	0	3	3	1211	0022	5	11	6	6	0	0	7	7	5
27	1	1	0	1	4	1	3	3	2311	1211	2	2	1	2	8	2	6	6	4
28	3	6	7	6	4	6	0	2	0541	1214	6	16	19	16	8	15	1	5	11
29	2	1	2	4	3	2	3	7	3321	1325	5	2	4	8	7	4	7	19	7
30	4	6	8	7	7	9	2	8	3513	3126	9	16	23	20	18	32	5	21	18
31	7	9	8	5	7	4	8	6	4421	3132	18	32	22	13	20	9	24	16	19
																			21.2

MOIS 5 1969

	3 Km								Σ Km	am							Am	Am2
1	8	8	7	4	3	5	6	6	15.7	21	25	18	10	7	12	16	15	16	21
2	5	7	6	8	11	10	14	10	23.7	11	20	15	24	45	35	84	38	34	27
3	5	10	11	7	8	6	6	8	20.3	12	35	48	17	25	15	16	22	24	28
4	5	8	4	5	5	5	7	5	14.7	11	23	10	11	13	13	19	13	14	17
5	10	5	5	6	8	5	8	10	19.0	37	13	11	14	22	11	23	36	21	18
6	5	9	7	4	5	3	4	7	14.7	13	29	20	8	12	7	10	17	15	17
7	8	5	8	5	1	1	0	2	10.0	26	11	22	11	3	2	1	4	10	10
8	4	4	4	2	4	5	4	6	11.0	8	10	10	5	8	12	8	16	10	10
9	4	6	9	7	6	3	7	11	17.7	8	16	28	19	14	7	17	50	20	18
10	6	9	9	6	7	5	4	5	17.0	16	29	28	16	17	11	8	11	17	17
11	5	4	3	6	4	3	3	2	10.0	12	8	7	15	9	6	7	5	9	9
12	3	2	2	2	2	2	8	11	10.7	6	4	5	5	4	5	23	43	12	21
13	12	11	14	10	10	12	11	12	30.7	54	41	77	35	40	55	44	60	51	42
14	14	11	9	10	7	10	16	17	31.3	78	42	29	34	18	37	110	133	60	77
15	18	17	14	18	17	15	15	13	42.3	159	141	85	172	143	99	102	69	121	100
16	15	14	15	12	10	4	6	8	28.0	98	77	102	52	37	10	16	21	52	58
17	8	7	10	8	6	5	4	10	19.3	25	20	39	22	14	11	10	35	22	24
18	11	6	9	9	6	10	11	7	23.0	43	16	33	32	15	39	44	19	30	24
19	6	5	5	8	8	6	5	4	15.7	16	12	13	25	21	15	12	8	15	19
20	7	6	7	4	5	3	6	6	14.7	19	15	18	10	11	7	15	15	14	16
21	7	8	8	9	8	7	5	8	20.0	18	23	22	30	23	18	13	22	21	18
22	5	6	5	8	9	8	5	4	16.7	11	15	12	25	29	22	13	10	17	18
23	6	7	7	8	9	7	6	4	18.0	14	17	20	24	27	17	15	8	18	18
24	4	9	8	6	7	5	6	8	17.7	10	33	21	14	17	13	14	21	18	17
25	8	8	3	4	3	2	5	6	13.0	23	21	6	8	6	5	11	14	12	12
26	3	5	4	4	1	2	4	4	9.0	6	13	8	8	3	5	8	8	7	7
27	2	2	1	3	4	2	4	4	7.3	4	4	3	6	10	5	8	10	6	9
28	4	7	7	7	6	8	2	5	15.3	8	20	18	19	16	24	4	11	15	11
29	3	2	3	5	4	4	5	7	11.0	6	5	6	11	9	10	11	19	10	13
30	5	7	8	8	7	10	4	8	19.0	11	17	24	25	20	34	8	23	20	19
31	7	9	8	7	8	6	8	8	20.3	17	33	24	18	22	15	26	21	22	19
																		23.6	

MOIS 6 1969

	3 Km								Σ Km	am							Am	Am2
1	7	6	4	2	5	3	5	2	11.3	17	14	8	4	13	7	12	5	10	14
2	3	7	9	4	4	4	5	4	13.3	6	19	28	9	9	9	12	10	13	11
3	5	4	3	3	2	5	4	7	11.0	12	9	7	6	5	12	10	18	10	11
4	5	5	7	4	5	4	3	3	12.0	12	11	19	9	11	10	7	7	11	12
5	7	5	5	7	3	3	3	3	12.0	17	12	11	19	6	7	7	6	11	9
6	3	2	2	2	2	3	2	7	7.7	6	5	5	5	5	6	5	17	7	9
7	7	6	5	7	8	5	4	3	15.0	20	14	13	19	24	11	8	7	15	17
8	6	11	9	8	5	8	8	8	21.0	15	48	30	22	12	22	23	21	24	19
9	6	7	4	6	8	8	10	10	19.7	16	18	10	16	22	23	34	34	22	22
10	10	8	9	7	7	6	4	3	18.0	34	23	28	19	17	14	9	6	19	21
11	6	7	9	7	5	4	5	7	16.7	15	18	27	20	12	8	12	19	16	21
12	9	12	11	9	5	7	8	7	22.7	28	56	44	31	12	19	23	19	29	24
13	8	11	7	5	8	7	8	10	21.3	25	42	18	13	21	17	21	39	25	28
14	9	11	13	10	13	10	6	9	27.0	28	46	63	40	69	38	15	32	41	31
15	6	6	7	8	7	4	7	5	16.7	15	16	17	21	19	9	18	12	16	26
16	7	8	12	11	9	8	6	8	23.0	18	25	51	42	30	26	15	22	29	29
17	13	11	11	8	4	8	9	4	22.7	62	41	44	26	9	22	28	10	30	23
18	4	4	2	2	2	4	4	3	8.3	10	8	4	5	4	10	8	6	7	11
19	2	4	6	6	4	4	3	5	11.3	5	10	16	16	10	8	7	12	11	14
20	8	8	11	8	5	3	3	4	16.7	21	24	43	25	13	7	7	9	19	15
21	6	4	6	6	6	3	3	1	11.7	14	10	16	16	14	6	7	3	11	9
22	1	3	0	3	2	2	2	1	4.7	3	6	1	7	4	5	4	3	4	7
23	2	7	8	5	3	5	4	6	13.3	4	18	21	11	7	13	8	16	12	13
24	8	9	8	6	8	7	4	8	19.3	21	28	21	16	22	17	10	22	20	16
25	5	5	8	5	6	8	8	8	17.7	12	13	21	13	14	23	22	23	18	17
26	7	7	5	6	8	6	2	5	15.3	17	17	12	16	21	14	5	11	14	15
27	6	7	3	4	4	4	1	7	12.0	16	17	7	8	9	9	3	17	11	10
28	3	3	2	2	1	2	3	3	6.3	7	6	4	5	3	4	6	7	5	7
29	2	4	3	2	2	2	4	4	7.7	4	10	6	5	5	4	9	9	7	6
30	3	4	4	3	3	4	4	5	10.0	6	8	10	6	6	8	9	11	8	14
																		15.8	

MOIS 6 1969

	3 Kn								σn		an						An
1	7	7	4	3	7	5	6	4	4223	2222	17	17	10	6	18	12	15	8	13
2	4	8	9	5	5	5	6	6	4353	3332	10	21	28	12	13	13	14	14	16
3	6	4	4	4	3	6	5	6	2263	3222	15	9	10	8	7	15	13	15	12
4	6	5	8	5	6	5	4	5	1233	2232	14	12	21	11	15	12	9	11	13
5	7	5	6	8	4	5	5	4	3434	3323	17	13	14	25	9	12	12	8	14
6	3	3	3	4	3	4	4	8	2225	4253	6	7	7	9	7	10	9	21	10
7	7	6	5	8	9	7	5	4	2313	3533	20	15	13	24	31	17	13	10	18
8	6	12	9	9	7	10	9	9	3114	2533	14	54	29	28	17	34	32	30	30
9	8	8	5	7	9	8	11	10	2343	2533	21	24	13	20	33	21	45	38	27
10	10	8	8	8	7	8	5	5	3322	2412	34	22	26	24	20	21	12	12	21
11	7	8	9	7	7	5	7	8	2244	2324	17	21	27	18	18	12	19	26	20
12	8	12	10	9	7	9	8	7	2314	2543	24	56	35	30	18	27	26	20	30
13	9	11	7	7	8	8	8	9	2322	2421	27	43	19	18	22	22	26	31	26
14	9	12	13	12	14	12	8	10	3341	5432	32	53	64	52	86	57	21	40	51
15	7	7	7	8	8	5	7	6	3234	2223	19	19	19	23	21	11	19	15	18
16	7	9	13	12	10	8	7	9	2132	4423	20	30	61	51	37	26	18	30	34
17	13	11	11	9	6	9	10	5	3331	1233	66	42	48	30	15	30	35	13	35
18	5	5	3	4	3	6	5	4	2345	3333	13	11	7	9	7	14	13	10	11
19	4	6	7	8	6	4	4	7	3332	2313	9	14	20	23	15	10	9	17	15
20	8	9	11	8	6	4	5	5	2322	2422	26	29	43	23	15	10	11	13	21
21	5	4	6	7	7	4	4	2	1252	4332	13	9	16	19	17	8	10	5	12
22	2	3	1	3	3	4	3	2	2231	2311	4	7	3	7	7	9	6	5	6
23	4	8	9	6	5	6	4	6	3331	3442	8	23	28	16	13	15	9	15	16
24	8	8	8	6	8	8	5	8	3221	3422	23	26	23	16	23	23	13	23	21
25	4	6	8	6	6	8	9	8	3123	3523	10	16	22	15	16	23	29	26	20
26	6	7	6	7	8	6	4	5	1222	2134	15	18	14	19	22	15	9	13	16
27	6	6	5	4	6	4	3	6	4132	4342	14	16	11	9	14	10	6	14	12
28	4	3	3	3	2	3	4	5	2111	2422	8	7	7	7	5	7	9	11	8
29	3	5	3	4	4	4	5	5	1215	2312	7	12	7	8	9	8	12	11	9
30	3	5	5	4	4	5	6	6	1232	2321	7	11	11	9	10	12	15	14	11
																			18.9

MOIS 6 1969

	3 Ks								σs		as						As
1	7	5	3	1	4	1	4	1	5203	1242	17	11	6	2	9	2	10	3	8
2	1	7	9	3	3	3	4	3	3461	1423	2	17	29	6	6	6	10	6	10
3	4	4	2	2	1	4	3	8	3322	2202	10	9	5	5	2	9	6	22	9
4	4	4	7	3	4	3	2	2	3342	5153	9	10	17	7	8	7	5	4	8
5	6	5	4	5	1	1	1	1	7234	2224	16	11	9	13	2	2	2	3	7
6	3	1	1	0	1	1	0	6	5331	2213	6	3	3	1	2	3	1	14	4
7	8	5	5	6	7	2	2	2	6734	5431	21	13	12	15	18	5	4	5	12
8	6	11	9	6	3	4	6	5	5211	1333	16	42	32	16	7	10	14	12	19
9	5	5	3	5	4	8	8	9	2103	2632	11	12	6	12	10	24	23	29	16
10	10	8	9	6	5	3	3	0	4350	1201	34	24	31	15	13	7	6	1	16
11	5	6	8	8	3	2	2	5	1512	1213	12	16	26	22	6	4	5	12	13
12	9	12	12	9	3	5	7	7	6654	1334	31	56	54	32	7	12	20	18	29
13	8	11	7	4	7	5	6	11	2343	3312	22	41	18	9	20	12	16	47	23
14	8	10	13	9	12	7	4	8	1210	1132	23	40	61	29	53	18	9	25	32
15	4	5	6	7	7	3	7	4	2103	1213	10	13	15	20	17	7	17	10	14
16	6	8	10	10	8	8	5	5	5331	2311	16	21	40	34	22	26	13	13	23
17	12	11	10	8	1	5	8	3	5522	2120	59	41	40	22	2	13	21	6	26
18	3	2	0	0	0	3	1	1	1311	1022	7	5	1	1	1	6	2	2	3
19	1	3	5	4	3	3	2	3	2111	1511	2	6	12	9	6	6	5	6	7
20	7	7	11	8	5	2	2	2	4421	3322	17	19	42	26	12	5	4	5	16
21	6	4	6	5	5	2	1	0	5353	4331	15	10	16	12	12	5	3	1	9
22	1	2	0	3	0	0	1	0	2100	1131	2	5	0	6	1	1	2	1	2
23	0	5	6	3	0	5	3	7	1322	1325	1	13	14	7	1	12	7	17	9
24	7	9	7	6	8	5	3	8	5532	2306	19	31	20	15	21	12	6	21	18
25	6	4	7	4	5	8	6	7	6353	3425	15	9	19	10	12	24	16	19	16
26	7	7	4	5	7	5	1	4	4431	3323	18	17	9	13	20	13	2	9	13
27	7	7	2	3	2	4	0	8	5422	3313	18	18	4	6	5	9	1	21	10
28	3	3	1	2	0	1	1	1	1132	1242	6	6	2	4	1	2	3	3	3
29	0	4	2	1	0	0	2	3	1422	1042	1	9	5	3	1	0	5	7	4
30	3	2	4	2	1	1	1	3	1232	2222	6	5	9	4	2	3	2	7	5
																			12.8

MOIS 7 1969

	3 Kn								σn		an						An
1	8	8	14	6	10	8	11	8	3233	2262	21	22	80	15	35	24	41	23	33
2	8	9	6	4	4	1	3	4	2353	2342	24	29	16	9	8	3	7	9	13
3	3	2	2	2	2	4	4	3	2234	4533	6	4	5	4	5	9	8	7	6
4	2	0	1	2	3	1	2	4	2114	3121	5	1	2	4	6	2	4	8	4
5	1	3	1	2	2	1	0	3	2322	3211	3	6	3	5	4	2	1	7	4
6	2	2	3	3	7	6	4	7	2231	2423	5	5	6	7	17	14	8	19	10
7	4	5	3	4	6	8	5	7	3332	4423	10	12	7	10	16	21	12	17	13
8	4	5	3	2	4	5	7	7	2232	3343	9	13	6	4	9	12	19	18	11
9	6	6	7	5	6	6	5	5	4132	1423	16	14	20	12	16	15	13	11	15
10	5	7	4	5	8	6	5	8	2132	3322	13	18	8	13	25	15	12	22	16
11	6	3	4	2	4	4	8	5	5133	2443	14	7	8	4	8	10	23	11	11
12	8	7	9	5	7	5	8	10	2383	2335	23	19	27	13	17	11	23	40	22
13	8	9	10	9	7	6	9	8	1231	2334	23	33	36	31	17	14	33	21	26
14	6	13	7	6	9	7	7	5	3313	3222	15	61	18	16	27	18	20	11	23
15	5	5	5	6	5	3	4	6	2323	3422	12	11	12	15	12	7	9	14	12
16	4	8	5	8	5	9	8	7	2511	3545	10	21	13	25	13	28	25	19	19
17	5	6	4	3	4	4	4	3	3211	2511	11	15	8	7	8	8	9	7	9
18	1	1	3	4	6	3	3	3	2213	3311	3	2	7	10	14	6	7	7	7
19	2	4	4	3	1	2	1	2	3431	3223	4	9	10	6	3	4	3	5	6
20	2	4	3	7	5	4	3	1	2422	2332	5	9	7	20	11	10	6	3	9
21	5	2	5	2	4	6	6	7	2343	2434	11	5	11	5	9	16	14	17	11
22	5	6	8	5	6	6	7	8	1432	4253	13	15	25	11	15	16	17	22	17
23	4	4	1	4	2	6	7	6	3421	2423	9	8	3	8	4	16	17	14	10
24	4	4	5	2	4	4	4	4	3423	3223	9	8	11	5	10	10	10	10	9
25	4	5	4	2	4	2	3	4	3323	1332	9	12	8	5	8	4	6	9	8
26	5	8	4	11	14	9	7	12	3242	4322	12	21	10	47	80	28	19	59	35
27	15	14	14	7	8	5	10	4	5252	2343	102	81	76	20	22	11	36	10	45
28	4	3	7	2	2	3	2	4	1142	3333	8	7	19	5	4	7	4	8	8
29	2	1	2	1	1	1	4	1	2232	2332	4	3	5	3	2	3	8	3	4
30	4	4	4	5	5	11	11	9	4431	3523	9	10	9	13	13	42	47	27	21
31	8	5	4	4	5	5	5	4	2222	3323	23	11	10	9	12	11	11	10	12
																			14.5

MOIS 7 1969

	3 Ks								σs		as						As
1	8	6	13	6	6	7	9	5	5512	1151	22	15	61	16	16	17	31	13	24
2	9	7	5	1	0	0	0	0	6443	0111	31	18	11	3	0	1	1	1	8
3	1	2	0	0	0	0	3	3	3210	1002	3	4	1	0	1	0	6	7	3
4	4	1	0	0	0	0	0	3	4200	0003	9	2	0	0	0	0	0	6	2
5	0	0	1	1	0	0	0	1	1132	1003	1	1	2	2	1	0	0	2	1
6	2	0	1	0	1	1	0	3	1031	2211	5	0	2	1	2	3	1	7	3
7	3	4	3	3	3	4	2	5	1350	2533	6	9	7	6	7	8	4	12	7
8	3	4	1	0	1	1	2	5	1330	2243	6	10	3	0	3	2	5	12	5
9	7	5	6	4	4	2	5	2	5153	5342	18	13	16	9	8	4	11	5	11
10	6	7	2	4	7	5	0	4	5443	5413	16	18	5	10	19	13	1	10	12
11	6	2	3	0	1	1	8	5	6210	2242	14	4	6	0	2	2	22	11	8
12	7	5	9	5	3	1	3	10	4171	2224	20	12	27	12	7	3	7	35	15
13	7	8	10	8	3	1	9	6	4153	2332	18	26	34	21	7	3	28	16	19
14	7	13	6	7	8	2	5	5	3411	1242	20	63	16	18	26	5	12	12	22
15	6	4	5	4	3	1	3	4	5323	0204	15	10	11	9	6	3	6	8	9
16	2	7	5	8	3	6	6	3	2321	4122	5	20	11	26	6	16	15	7	13
17	5	4	2	3	0	2	2	2	2311	1312	11	10	5	6	1	5	5	5	6
18	0	0	2	3	6	0	1	0	1024	5121	1	0	4	6	15	1	2	1	4
19	0	1	4	0	0	0	0	0	0340	0000	0	3	9	0	0	0	0	0	2
20	0	3	1	3	2	3	0	0	1522	3411	1	7	2	7	4	6	1	1	4
21	3	0	2	0	2	5	6	8	0110	3445	6	1	5	0	4	11	14	22	8
22	4	7	8	4	3	3	7	7	3523	2145	10	17	22	9	7	7	17	19	14
23	3	6	0	3	0	5	5	8	1602	0443	6	14	0	7	0	12	11	24	9
24	4	3	4	1	0	1	3	2	4533	0222	8	7	10	2	0	3	7	5	5
25	4	6	4	1	0	0	0	2	4653	0002	8	15	8	2	0	0	0	4	5
26	4	7	2	9	11	8	3	12	3421	1325	9	18	4	32	49	25	7	56	25
27	15	16	17	8	6	4	10	3	4632	1412	101	107	121	22	16	8	37	6	52
28	5	3	5	4	0	2	0	1	4214	1203	11	6	13	8	1	4	0	2	6
29	1	0	2	0	0	0	0	0	2131	0011	2	1	4	1	0	0	1	1	1
30	6	2	3	2	3	9	10	5	7113	6252	15	5	6	4	7	29	34	12	14
31	6	3	3	3	1	3	4	3	3211	2134	14	7	6	6	3	7	9	7	7
																			10.5

MOIS 7 1969

	3 Km								Σ Km	am							Am	Am 2
1	8	7	13	6	8	7	10	7	22.0	21	19	70	15	25	20	36	18	28	21
2	9	8	6	3	2	1	2	2	11.0	28	24	14	6	4	2	4	5	11	13
3	2	2	1	1	1	2	3	3	5.0	5	4	3	2	3	4	7	7	4	4
4	3	0	0	1	1	0	1	3	3.0	7	1	1	2	3	1	2	7	3	4
5	1	2	1	2	1	0	0	2	3.0	2	4	3	4	3	1	1	5	3	3
6	2	1	2	2	4	4	2	5	7.3	5	3	4	4	10	9	4	13	7	6
7	4	5	3	4	5	6	4	6	12.3	8	11	7	8	11	14	8	14	10	9
8	3	5	2	1	3	3	5	6	9.3	7	11	4	2	6	7	12	15	8	11
9	7	6	7	5	5	4	5	4	14.3	17	14	18	11	12	9	12	8	13	12
10	6	7	3	5	8	6	3	6	14.7	14	18	7	12	22	14	6	16	14	11
11	6	2	3	1	2	3	8	5	10.0	14	5	7	2	5	6	22	11	9	13
12	8	6	9	5	5	3	6	10	17.3	22	15	27	12	12	7	15	37	18	19
13	7	9	10	8	5	4	9	7	19.7	20	30	35	26	12	8	31	18	23	23
14	7	13	7	7	9	5	6	5	19.7	17	62	17	17	27	11	16	12	22	19
15	6	5	5	5	4	2	4	5	12.0	14	11	11	12	9	5	8	11	10	13
16	3	7	5	8	4	8	7	5	15.7	7	20	12	26	9	22	20	13	16	12
17	5	5	3	3	2	3	3	3	9.0	11	12	6	6	5	6	7	6	7	9
18	1	0	2	4	6	1	2	2	6.0	2	1	5	8	14	3	5	4	5	5
19	1	3	4	1	0	1	1	1	4.0	2	6	9	3	1	2	2	2	3	5
20	1	4	2	5	4	4	2	1	7.7	3	8	5	13	8	8	4	2	6	5
21	4	1	4	1	3	6	6	7	10.7	8	3	8	2	7	14	14	19	9	10
22	5	6	8	4	5	5	7	7	15.7	11	16	24	10	11	12	17	20	15	13
23	4	5	0	4	1	6	6	7	11.0	8	11	1	8	2	14	14	19	10	10
24	4	3	4	2	2	3	4	3	8.3	8	7	10	4	5	7	9	7	7	9
25	4	5	4	1	2	1	1	3	7.0	8	13	8	3	4	2	3	6	6	10
26	5	7	3	10	13	9	5	12	21.3	11	20	7	39	64	27	13	58	30	36
27	15	15	15	8	7	4	10	4	26.0	101	94	99	21	19	10	36	8	49	37
28	4	3	6	3	1	2	1	2	7.3	10	6	16	7	2	5	2	5	7	9
29	1	1	2	1	0	0	2	1	2.7	3	2	4	2	1	1	5	2	3	4
30	5	3	3	4	4	10	10	7	15.3	12	7	7	8	10	36	40	20	18	12
31	7	4	4	3	4	4	4	4	11.3	19	9	8	7	8	9	10	9	10	13
																		12.4	

MOIS 8 1969

	3 Km								Σ Km	am							Am	Am 2
1	2	3	2	2	3	1	1	1	5.0	4	7	5	5	7	3	2	3	5	5
2	1	0	0	1	4	4	5	6	7.0	2	1	1	2	8	10	13	14	6	8
3	6	6	6	7	7	7	10	9	19.3	14	14	16	20	18	20	35	32	21	21
4	11	9	7	9	5	7	5	6	19.7	42	28	17	28	11	20	11	15	22	22
5	7	9	4	6	7	3	3	1	13.3	17	29	9	15	17	7	6	3	13	13
6	9	6	4	2	1	1	2	1	8.7	27	14	10	4	3	3	4	3	9	10
7	5	6	5	6	6	4	8	7	15.7	13	16	13	14	14	9	21	19	15	12
8	4	3	7	9	7	6	4	7	15.7	10	6	17	28	18	14	10	20	15	17
9	8	10	7	4	7	5	4	6	17.0	21	34	17	10	18	13	9	16	17	17
10	4	5	7	8	4	4	1	0	11.0	10	12	20	24	9	9	2	1	11	10
11	0	3	1	4	4	4	4	4	8.0	0	7	2	9	8	10	8	10	7	14
12	9	10	9	12	9	11	8	6	24.7	33	37	27	51	31	41	26	16	33	23
13	6	7	8	8	1	3	4	6	14.3	16	18	21	21	3	6	9	15	14	18
14	3	5	7	8	5	4	4	1	12.3	7	11	20	21	11	9	10	2	11	9
15	0	0	6	1	4	4	4	6	8.3	1	1	14	3	9	10	9	16	8	7
16	1	1	2	4	2	3	2	7	7.3	2	2	5	10	5	6	4	17	6	10
17	9	4	5	4	0	1	4	2	9.7	32	10	12	10	1	2	9	5	10	10
18	6	4	2	4	8	6	2	3	11.7	16	10	5	9	23	16	4	7	11	12
19	7	8	7	9	6	9	9	10	21.7	18	24	17	29	16	30	28	35	25	20
20	7	7	8	5	4	2	3	7	14.3	19	20	23	11	10	4	7	20	14	16
21	4	7	2	1	5	5	4	4	10.7	9	20	4	3	12	12	10	9	10	9
22	4	2	0	3	4	5	6	4	9.3	8	4	1	7	8	12	15	10	8	14
23	8	11	7	8	7	7	6	6	20.0	26	49	18	21	19	18	14	15	23	17
24	6	4	4	7	5	3	5	6	13.3	16	10	8	19	13	6	12	14	12	12
25	7	4	1	1	0	0	0	1	4.7	19	10	2	3	1	1	1	3	5	11
26	2	6	5	13	9	4	4	10	17.7	5	15	11	63	31	10	9	39	23	25
27	12	15	9	10	5	7	6	6	23.3	54	89	33	39	13	17	15	14	34	26
28	7	7	4	3	5	3	6	3	12.7	17	18	9	6	12	6	15	6	11	11
29	3	2	3	2	2	3	1	1	5.7	7	4	7	5	5	7	3	2	5	6
30	0	3	5	2	4	2	4	3	7.7	1	6	13	4	10	5	8	7	7	7
31	3	1	6	4	2	3	3	2	8.0	7	3	15	9	4	7	6	5	7	7
																		13.5	

MOIS 8 1969

	3 Kn								σn								An
1	3	4	2	3	4	3	1	2	1223 3342	7	8	5	6	8	6	3	4	6
2	2	0	0	2	6	6	7	7	1112 3334	4	1	1	4	16	14	17	17	9
3	6	6	7	8	7	8	10	9	1133 2422	15	16	20	25	19	24	36	33	24
4	10	9	6	9	6	8	5	6	4412 2233	37	30	15	27	15	21	12	16	22
5	6	9	4	7	7	5	4	3	2522 2221	14	28	10	17	19	13	8	6	14
6	8	5	5	3	3	3	4	2	3321 3442	21	13	11	7	6	6	8	5	10
7	6	7	6	7	7	5	8	7	2123 2332	14	17	14	19	17	12	25	20	17
8	4	3	6	9	7	7	5	8	3211 3221	10	7	16	30	20	17	13	25	17
9	8	10	8	5	9	7	5	7	2321 2321	23	36	21	13	27	18	13	17	21
10	5	6	7	8	4	4	1	0	2452 3522	11	15	19	25	10	10	2	1	12
11	0	3	1	5	4	5	5	5	1322 3222	1	7	3	11	10	12	12	13	9
12	9	10	9	11	10	11	8	7	2312 3333	32	34	31	49	36	43	23	19	33
13	6	7	9	8	2	3	5	7	1313 3433	16	18	27	24	4	7	11	17	16
14	3	5	8	8	5	5	5	1	4232 3321	7	11	22	21	12	12	12	2	12
15	0	0	7	3	5	6	5	8	1111 3323	1	1	17	6	13	15	12	23	11
16	2	1	2	4	3	4	3	7	2122 3223	4	2	5	9	6	9	7	20	8
17	9	5	5	5	1	1	5	3	4333 2442	30	11	13	12	2	3	11	7	11
18	6	5	3	5	8	7	3	5	4232 3323	15	11	7	11	26	20	7	11	14
19	7	7	8	9	6	9	8	9	4421 3434	19	20	21	28	16	28	22	30	23
20	7	7	8	4	4	3	4	7	4454 4432	18	20	25	10	10	7	8	18	15
21	4	8	2	2	6	6	5	5	4433 2422	8	21	4	5	14	14	12	11	11
22	4	2	1	4	5	6	8	5	4222 3335	10	5	3	8	12	15	22	13	11
23	8	11	8	8	8	8	6	7	2323 2341	26	44	22	24	23	23	16	17	24
24	6	5	4	7	6	4	6	6	6422 1212	15	11	9	19	15	9	15	15	14
25	7	4	1	2	1	0	1	2	5523 3123	19	9	3	4	2	1	3	5	6
26	3	6	5	14	9	5	5	11	1322 1323	7	14	12	73	33	12	12	44	26
27	11	15	10	11	6	7	7	7	3333 3533	44	88	37	41	15	20	18	19	35
28	6	7	4	3	7	4	6	4	2633 4454	15	19	9	7	19	8	15	9	13
29	4	2	3	3	3	4	2	1	3332 3432	8	4	7	7	7	10	5	3	6
30	0	3	5	3	5	3	5	4	1333 2222	1	6	13	6	12	7	11	8	8
31	3	1	6	4	3	4	3	3	3254 3434	6	2	14	10	6	8	7	6	7
																		15.0

MOIS 8 1969

	3 Ks								σs								As
1	1	3	2	1	3	0	0	0	3222 2001	2	6	4	3	6	0	0	1	3
2	0	0	0	0	0	3	4	5	1110 1053	1	1	1	0	1	6	10	12	4
3	5	5	5	6	7	6	10	9	1232 5412	13	12	12	15	17	16	34	31	19
4	11	9	7	9	3	7	4	6	8640 1532	46	27	18	29	7	19	10	15	21
5	7	9	4	5	6	0	2	0	3544 2121	20	31	9	13	15	1	5	1	12
6	10	6	4	1	0	0	0	0	4141 1001	34	16	9	2	1	0	0	1	8
7	5	6	5	4	5	2	7	7	1013 4345	13	15	12	10	12	5	17	19	13
8	4	2	7	8	7	5	3	6	3141 1100	9	5	18	26	17	12	6	15	14
9	7	9	5	3	4	4	3	6	3712 3115	20	31	13	7	9	8	6	16	14
10	4	4	8	8	3	4	0	0	4344 2110	9	10	21	24	7	9	1	0	10
11	0	3	0	3	3	3	2	3	0012 2241	0	6	1	7	7	7	4	7	5
12	10	10	8	12	8	10	9	5	4311 1312	35	40	23	53	26	39	29	12	32
13	6	7	6	7	1	2	3	5	5423 2101	15	18	16	18	2	5	6	13	12
14	4	4	7	8	4	3	4	0	4343 3031	8	10	18	21	9	6	9	1	10
15	0	0	5	0	2	2	3	4	0010 1423	0	0	12	0	5	4	7	10	5
16	0	1	2	4	2	2	0	6	1322 2313	1	2	5	10	4	4	1	14	5
17	10	4	4	4	0	0	4	1	4331 0012	35	10	10	8	0	0	8	2	9
18	7	4	1	3	8	5	0	1	4420 2313	18	8	3	6	21	13	1	2	9
19	7	9	5	9	6	9	9	11	4610 1245	18	27	13	29	16	32	33	41	26
20	8	7	8	5	5	1	3	8	3343 3324	21	20	21	12	11	2	7	23	15
21	4	7	2	1	4	4	4	3	3423 1211	9	18	4	2	9	10	9	7	9
22	3	1	0	3	2	4	4	3	0201 4110	6	2	0	7	5	8	9	6	5
23	8	12	6	7	6	5	5	5	1521 2311	26	54	15	18	15	13	13	13	21
24	7	4	3	7	5	2	4	5	4411 4232	18	9	7	18	12	4	10	12	11
25	7	5	0	1	0	0	0	0	4113 0001	18	12	1	2	0	0	0	1	4
26	1	6	4	12	9	4	3	10	2112 0114	3	16	9	53	29	8	6	34	20
27	13	15	9	10	5	6	5	4	5302 3441	63	89	29	37	12	14	11	9	33
28	7	7	4	3	3	1	6	1	4431 1232	18	17	9	6	6	3	14	3	10
29	3	2	3	1	1	2	0	0	0122 3301	6	5	7	3	2	4	0	1	4
30	0	2	5	1	4	1	3	3	1133 1210	1	5	12	2	8	2	6	6	5
31	3	2	7	4	1	3	2	2	1241 3122	7	4	17	8	2	6	4	5	7
																		12.1

MOIS 9 1969

	3 Kn								σn								an								An
1	4	4	2	1	0	1	0	1	3434	1213	9	8	4	3	0	2	1	3	4
2	1	2	3	2	1	1	0	1	2242	2212	2	5	6	4	2	2	1	3	3
3	2	0	2	4	4	3	7	4	2234	3434	5	1	5	10	10	6	20	9	8
4	4	4	3	4	4	3	6	4	3322	2422	8	9	7	8	10	6	14	10	9
5	2	2	5	6	13	13	10	11	2333	4632	4	5	11	14	61	63	39	48	31
6	11	13	12	10	5	7	5	10	2553	2443	50	65	58	40	12	17	12	35	36
7	5	4	7	9	7	7	8	10	4333	3436	12	9	20	32	17	20	26	36	22
8	9	11	13	10	8	5	3	1	4442	5412	28	43	62	35	21	12	6	3	26
9	5	6	8	7	8	9	4	6	4342	2634	11	14	26	18	21	27	8	16	18
10	9	6	1	2	5	4	7	9	5322	2245	28	14	3	4	11	10	17	27	14
11	9	5	7	7	7	3	8	3	3253	4232	29	13	20	18	17	7	21	7	17
12	5	8	5	7	3	3	1	0	3631	3321	11	26	11	17	6	6	3	1	10
13	1	2	3	4	2	1	2	2	2214	2221	2	4	6	10	4	3	4	4	5
14	3	3	2	5	4	8	11	11	4425	2223	7	7	5	13	8	24	45	43	19
15	12	10	11	6	7	10	8	5	5333	1232	58	36	41	16	19	37	23	11	30
16	7	8	5	4	3	2	2	5	3442	4333	18	23	11	8	7	4	4	13	11
17	2	0	2	9	9	9	10	9	2123	2131	4	1	4	30	32	29	37	28	21
18	7	7	8	8	9	13	12	9	2132	2352	19	18	23	21	30	62	51	29	32
19	8	8	6	5	5	4	3	7	3243	3242	24	26	14	12	13	9	7	19	16
20	5	4	8	8	8	9	5	2	2334	5442	13	9	25	24	22	29	12	4	17
21	4	2	4	3	1	4	1	4	4233	2423	8	5	9	6	2	8	2	8	6
22	3	3	4	2	2	2	2	2	0243	3422	6	6	9	4	5	4	4	4	5
23	1	1	2	2	9	8	9	9	2233	5424	3	2	5	5	27	22	28	30	15
24	4	7	5	6	2	1	2	5	3322	3322	8	19	11	16	5	3	4	13	10
25	5	8	9	2	5	8	4	7	3324	3534	12	23	27	5	12	24	10	19	17
26	4	2	4	5	1	1	1	4	4235	1224	9	5	10	13	2	2	3	8	7
27	1	2	1	0	3	4	5	11	2421	2232	2	4	2	1	7	8	12	47	10
28	8	10	9	18	15	12	12	13	2212	1253	22	36	30	149	97	60	51	63	64
29	7	11	13	15	16	15	14	18	4312	2121	19	46	64	87	115	97	86	162	85
30	20	17	17	17	15	11	13	6	5654	4363	206	125	122	135	99	45	62	15	101
																			22.3

MOIS 9 1969

	3 Ks								σs								as								As
1	4	6	1	0	0	0	0	0	4631	0000	8	14	3	1	0	0	0	0	3
2	0	3	3	1	0	0	0	0	1153	0000	1	6	7	2	0	0	0	0	2
3	1	3	1	4	2	0	4	2	2423	1031	2	6	2	10	5	0	10	5	5
4	3	6	3	3	3	0	4	3	1604	1132	6	14	6	6	6	1	9	7	7
5	2	1	5	4	13	11	9	12	2223	2335	4	2	11	9	66	49	28	58	28
6	11	12	10	10	4	5	3	8	3532	3222	44	56	40	40	9	12	7	25	29
7	7	3	8	10	6	7	7	10	4134	0137	18	7	21	39	15	17	20	39	22
8	10	10	13	11	8	4	2	2	4643	2122	34	40	62	46	21	9	5	4	28
9	7	4	6	6	7	8	3	5	4312	3314	17	10	16	16	20	26	7	13	16
10	7	6	0	0	4	3	6	6	4500	5225	18	16	0	0	8	7	16	16	10
11	9	5	5	8	6	4	6	3	5111	1422	33	13	13	23	16	8	16	7	16
12	5	7	4	5	2	2	1	0	2443	1121	11	17	9	12	5	5	3	1	8
13	1	2	2	3	2	0	0	0	2120	2011	2	5	4	6	4	0	1	1	3
14	5	4	1	3	3	6	12	11	8422	0023	12	9	2	7	6	15	54	44	19
15	14	8	10	8	8	11	7	6	9131	3455	78	26	38	23	24	49	17	15	34
16	7	8	6	3	3	1	1	5	3351	0332	20	21	15	6	6	2	2	11	10
17	1	0	1	10	9	6	10	8	2041	2132	3	0	3	34	29	16	36	25	18
18	10	8	7	7	8	12	11	10	4141	2224	34	26	18	18	21	54	47	34	32
19	8	8	4	4	3	2	1	8	3141	1234	21	26	9	8	7	4	2	23	13
20	5	4	7	6	7	7	3	1	1334	5103	13	9	20	15	18	18	6	2	13
21	4	3	3	3	0	2	2	3	3012	0122	9	6	6	7	0	5	4	6	5
22	3	2	4	3	0	0	0	0	1240	0000	6	5	8	6	0	0	0	0	3
23	0	0	3	2	8	7	8	9	1114	4313	1	1	6	4	26	19	26	28	14
24	5	8	4	7	2	1	1	4	3234	3331	12	22	10	20	5	2	2	9	10
25	7	9	8	4	5	8	5	6	4524	1322	17	31	22	9	12	26	12	16	18
26	4	3	5	5	0	0	0	2	4113	0004	8	6	12	13	0	0	0	4	5
27	0	3	0	0	2	3	5	10	0010	2241	0	6	1	0	5	7	11	37	8
28	9	11	10	18	15	11	11	12	0111	1412	29	49	34	154	91	45	49	57	64
29	8	11	13	16	16	14	14	20	5111	3223	22	45	61	104	110	71	82	220	89
30	21	17	16	17	15	10	12	5	6514	2572	262	123	104	142	98	36	60	12	105
																			21.2

MOIS 9 1969

	3 Km								Σ Km	am							Am	Am2
1	4	5	2	1	0	0	0	0	4.0	9	11	4	2	0	1	1	1	4	4
2	0	2	3	1	0	0	0	0	2.0	1	5	6	3	1	1	1	1	2	3
3	2	2	2	4	3	1	6	3	7.7	4	4	4	10	7	3	15	7	7	6
4	3	5	3	3	4	2	5	4	9.7	7	12	7	7	8	4	11	8	8	8
5	2	2	5	5	13	12	10	12	20.3	4	4	11	11	63	56	34	53	30	29
6	11	12	11	10	5	6	4	9	22.7	47	60	49	40	11	15	10	30	33	34
7	6	4	8	10	6	7	8	10	19.7	15	8	21	36	16	18	23	37	22	26
8	9	11	13	10	8	4	2	1	19.3	31	41	62	40	21	10	5	3	27	23
9	6	5	8	7	7	9	3	6	17.0	14	12	21	17	20	27	7	14	17	13
10	8	6	0	1	4	4	7	8	12.7	23	15	1	2	9	8	17	21	12	15
11	9	5	7	8	6	3	7	3	16.0	31	13	17	21	16	7	19	7	16	15
12	5	8	4	6	2	2	1	0	9.3	11	21	10	14	5	5	3	1	9	9
13	1	2	2	4	2	0	1	1	4.3	2	5	5	8	4	1	3	2	4	5
14	4	4	2	4	3	7	11	11	15.3	10	8	4	10	7	19	49	44	19	20
15	13	9	10	7	8	11	7	5	23.3	68	31	39	20	21	43	20	13	32	27
16	7	8	5	3	3	1	1	5	11.0	19	22	13	7	7	3	3	12	11	14
17	2	0	2	9	9	8	10	9	16.3	4	1	4	32	30	22	36	27	20	17
18	8	8	7	7	8	12	11	9	23.3	26	22	20	20	25	58	49	31	31	27
19	8	8	5	4	4	3	2	8	14.0	23	26	11	10	10	6	4	21	14	21
20	5	4	8	7	7	8	4	1	14.7	13	9	22	19	20	23	9	3	15	12
21	4	3	3	3	0	3	1	3	6.7	9	6	7	6	1	6	3	7	6	8
22	3	2	4	2	1	1	1	1	5.0	6	5	8	5	3	2	2	2	4	4
23	1	1	2	2	8	8	9	9	13.3	2	2	5	4	26	21	27	29	15	12
24	4	8	5	7	2	1	1	5	11.0	10	21	11	18	5	3	3	11	10	16
25	6	9	8	3	5	8	5	7	17.0	14	27	25	7	12	25	11	17	17	12
26	4	2	5	5	0	0	1	3	6.7	8	5	11	13	1	1	2	6	6	7
27	0	2	0	0	3	4	5	11	8.3	1	5	1	0	6	8	12	42	9	21
28	8	11	9	18	15	12	11	12	32.0	26	42	32	151	94	53	50	60	64	50
29	7	11	13	15	16	14	14	19	36.3	20	45	62	96	113	84	84	191	87	98
30	20	17	16	17	15	10	13	6	38.0	234	124	113	138	99	40	61	14	103	90
																		21.8	

MOIS 10 1969

	3 Km								Σ Km	am							Am	Am2
1	11	6	9	11	10	9	7	8	23.7	45	14	32	49	36	33	18	26	32	41
2	11	10	9	14	12	13	7	6	27.3	43	38	32	78	57	63	17	14	43	34
3	9	8	6	8	11	11	9	2	21.3	31	22	14	23	42	42	30	5	26	26
4	7	5	5	7	5	10	6	2	15.7	17	12	12	19	11	34	15	5	16	18
5	6	4	4	5	5	3	7	4	12.7	16	10	10	11	11	6	19	9	12	15
6	6	7	6	8	8	11	8	5	19.7	15	18	16	26	26	44	25	11	23	18
7	6	9	6	3	2	3	1	2	10.7	14	29	16	7	5	7	3	5	11	13
8	1	1	3	2	3	3	5	4	7.3	2	3	7	4	7	6	13	8	6	6
9	2	2	3	1	1	6	10	10	11.7	5	5	7	2	2	14	40	39	14	19
10	11	11	9	10	10	7	11	10	26.3	41	42	29	39	40	19	44	34	36	28
11	5	7	6	8	8	7	5	6	17.3	13	17	16	23	25	18	11	15	17	22
12	8	5	9	4	8	6	4	1	15.0	24	12	30	9	21	16	8	2	15	15
13	1	3	5	8	3	3	5	1	9.7	3	6	12	26	6	6	11	3	9	8
14	1	3	2	1	2	3	6	3	7.0	2	6	4	2	4	6	14	7	6	6
15	0	1	4	4	1	0	3	1	4.7	0	3	10	9	3	1	6	3	4	5
16	0	2	4	2	4	8	6	7	11.0	1	5	8	5	8	23	16	17	10	7
17	4	2	1	3	1	1	4	8	8.0	9	4	3	6	3	3	10	25	8	12
18	7	3	7	8	2	1	7	4	13.0	20	6	18	23	4	2	18	9	13	14
19	7	6	9	7	8	5	5	6	17.7	18	16	30	18	24	11	12	14	18	12
20	4	2	1	2	1	0	4	7	7.0	9	5	2	5	2	1	9	20	7	11
21	4	3	7	8	4	10	5	6	15.7	9	6	18	22	9	35	12	14	16	14
22	6	6	5	7	6	6	4	2	14.0	14	16	13	17	16	15	10	5	13	12
23	3	4	2	1	0	2	4	7	7.7	7	8	4	2	0	4	9	17	6	13
24	8	9	9	9	8	6	5	9	21.0	24	30	28	28	24	14	12	32	24	17
25	8	5	3	2	0	0	5	8	10.3	24	12	6	4	1	1	12	24	11	13
26	3	4	8	3	4	2	5	4	11.0	6	9	23	7	9	5	11	8	10	10
27	3	2	6	5	6	6	9	7	14.7	6	5	15	11	15	14	31	18	14	12
28	6	5	4	2	3	6	6	6	12.7	14	11	8	5	6	15	16	14	11	12
29	3	4	3	1	0	1	6	1	6.3	7	10	6	2	1	2	14	3	6	7
30	1	0	2	2	0	1	0	1	2.3	2	1	5	4	1	2	0	2	2	6
31	4	4	6	7	7	4	1	5	12.7	10	10	16	18	18	8	2	12	12	7
																		14.5	

MOIS 10 1969

	3 Kn								σn								an								An
1	10	6	10	12	10	10	7	9	4124	2533	40	14	38	57	35	40	20	27	34
2	11	10	9	14	12	13	8	6	4344	3435	49	39	33	78	51	62	21	14	43
3	10	8	6	9	11	11	9	3	3222	3353	39	23	15	27	47	45	31	7	29
4	7	5	5	8	6	10	7	4	3123	3543	17	13	12	21	14	38	17	8	18
5	6	5	4	5	5	4	8	4	4224	3434	16	12	9	12	12	8	21	9	12
6	6	8	7	9	10	11	8	6	5523	3534	15	21	20	29	34	47	26	15	26
7	5	9	7	4	3	3	1	3	3543	4423	13	31	20	8	6	7	3	7	12
8	1	1	3	2	3	3	6	4	2233	3352	3	3	7	4	7	7	15	10	7
9	2	2	4	1	1	7	11	11	1232	2246	5	5	8	2	3	17	47	46	17
10	10	11	9	11	11	8	11	10	4213	3453	34	42	28	43	46	22	49	35	37
11	6	6	5	9	9	7	5	6	3542	1443	14	16	12	28	29	19	12	16	18
12	8	4	10	4	8	6	4	1	2243	3342	24	10	37	10	24	16	10	3	17
13	1	2	6	9	3	2	6	1	3242	2351	3	4	16	28	7	5	14	3	10
14	0	2	2	0	3	3	6	4	1221	3253	1	4	4	1	6	7	14	8	6
15	0	1	5	4	1	1	4	3	1245	3364	1	3	12	10	3	3	8	6	6
16	0	2	4	3	4	8	7	6	1343	2554	1	4	8	6	10	24	17	16	11
17	4	1	1	3	2	1	5	9	3222	2245	10	3	3	7	4	3	12	27	9
18	7	3	8	8	2	0	6	5	4284	2124	19	7	23	26	4	1	14	11	13
19	7	6	8	7	8	5	6	5	3223	2234	19	14	25	17	22	11	15	13	17
20	4	3	1	2	1	1	4	7	2323	3236	8	6	3	4	3	2	10	20	7
21	4	2	7	7	4	10	5	6	3322	3523	9	5	17	18	8	34	13	15	15
22	5	6	5	6	7	7	5	2	1523	2332	12	15	13	15	17	19	11	5	13
23	3	3	2	1	0	2	4	8	3122	1344	7	6	5	3	1	5	9	22	7
24	8	9	8	8	8	6	5	9	4433	2121	22	29	25	25	22	16	12	32	23
25	8	5	2	2	1	1	5	9	2333	2153	22	12	5	4	3	2	11	27	11
26	2	3	8	3	4	2	5	3	2342	3433	5	7	21	7	8	5	11	7	9
27	2	2	5	5	7	7	10	8	2233	3352	5	4	12	11	17	18	35	24	16
28	6	5	3	2	4	6	7	6	3322	5162	14	11	6	4	8	16	19	16	12
29	3	5	2	1	1	1	6	2	4531	2233	6	13	5	3	3	2	15	5	7
30	0	0	2	1	1	0	0	1	1122	1112	1	1	5	3	2	1	1	2	2
31	3	4	7	7	7	4	1	5	2345	3313	7	9	17	18	20	9	2	11	12
																			15.4

MOIS 10 1969

	3 Ks								σs								as								As
1	11	5	8	11	10	8	6	8	7113	2423	50	13	26	42	37	26	16	24	29
2	10	10	9	14	13	13	6	6	4321	3632	38	38	31	79	64	63	14	15	43
3	8	8	5	7	10	10	9	2	3323	2512	24	21	12	19	37	39	29	4	23
4	7	5	5	7	4	9	5	1	5131	1212	17	12	12	18	9	29	13	2	14
5	7	4	5	4	5	2	7	4	5422	2144	17	9	11	10	11	5	17	9	11
6	6	6	5	8	7	10	8	3	6511	1522	16	15	12	23	18	40	25	7	20
7	6	9	5	3	2	3	2	1	0611	3233	15	27	12	6	5	7	4	3	10
8	0	1	3	2	3	3	5	3	1202	1142	1	3	6	5	7	6	11	7	6
9	3	2	3	1	1	5	10	9	1112	2145	6	5	6	2	2	12	34	33	13
10	11	11	9	10	10	7	10	9	7201	5454	47	43	29	34	35	17	38	33	35
11	5	7	7	7	7	7	4	5	2441	3134	12	17	20	18	20	17	10	13	16
12	8	6	8	4	7	6	3	1	3324	5223	24	14	22	8	17	16	7	2	14
13	1	4	4	8	2	3	4	1	2431	1143	3	8	9	23	5	6	8	3	8
14	1	4	2	1	1	3	6	3	3413	3135	3	8	5	2	3	6	14	7	6
15	0	2	4	4	1	0	2	0	0231	2051	0	4	9	9	2	0	5	1	4
16	0	3	3	2	3	8	6	7	0552	0605	0	7	7	5	6	21	15	17	10
17	4	2	1	2	1	1	4	8	4132	2244	8	5	3	5	3	3	8	23	7
18	8	3	6	7	2	1	8	3	3165	1332	21	6	14	20	5	2	21	7	12
19	6	7	10	7	8	4	4	6	2115	1351	16	17	34	19	26	10	10	16	19
20	4	2	0	3	0	0	3	7	3212	1026	10	5	1	7	1	0	7	20	6
21	4	3	7	8	4	10	4	5	1012	3132	9	6	18	25	9	37	10	12	16
22	6	7	5	7	6	5	4	2	1424	2342	16	17	12	18	15	12	9	4	13
23	3	5	1	1	0	1	4	5	2223	0243	7	11	3	2	0	3	8	12	6
24	8	9	9	9	8	5	5	9	1122	1134	26	32	32	32	26	13	12	32	26
25	8	5	4	2	0	0	6	8	1242	0033	26	11	8	4	0	0	14	21	11
26	3	4	8	3	4	2	5	4	0310	3144	7	10	26	6	10	5	11	9	11
27	3	2	7	5	5	4	9	5	2112	1341	6	5	17	11	13	10	27	13	13
28	6	5	4	3	2	6	6	5	0132	2231	15	12	9	7	5	15	14	13	11
29	3	3	3	0	0	1	6	0	1221	0331	7	6	7	1	0	2	14	1	5
30	1	1	3	2	0	1	0	1	3113	0303	3	2	6	4	0	3	0	3	3
31	5	4	6	7	6	3	1	5	1355	5231	13	10	16	17	16	6	2	12	12
																			14.0

MOIS 11 1969

	3 Kn								σn		an						An
1	2	1	0	0	1	1	0	3	2210	2213	5	2	1	0	2	2	1	7	3
2	6	4	5	6	9	8	9	8	3224	3343	14	8	12	15	30	24	33	26	20
3	8	9	9	7	8	9	9	9	2344	4352	23	28	32	19	23	29	33	28	27
4	4	5	5	7	3	1	4	3	3333	4222	10	12	12	18	7	3	8	7	10
5	4	4	3	5	7	8	2	4	3322	2224	8	9	6	13	20	21	4	9	11
6	2	2	3	0	0	1	3	6	2221	1134	4	4	6	1	0	3	7	14	5
7	9	7	7	6	9	6	10	7	2333	1323	30	20	17	16	31	15	34	18	23
8	5	6	6	3	9	10	12	10	2342	1222	11	16	14	7	28	38	54	36	26
9	7	11	12	15	15	15	11	6	2313	3322	20	42	52	94	98	97	47	15	58
10	5	10	14	13	15	12	12	9	3343	1644	12	40	80	65	97	53	56	33	55
11	7	3	6	8	7	11	8	6	3213	3432	17	7	15	25	20	48	22	14	21
12	9	3	3	5	3	7	4	4	1322	5544	27	6	6	13	6	18	8	9	12
13	3	1	2	4	5	6	4	5	3223	4334	6	3	5	10	12	14	10	11	9
14	2	3	0	0	0	0	0	0	2111	1111	5	6	1	0	0	0	1	1	2
15	0	0	0	0	0	0	1	1	1111	1122	1	0	1	0	1	0	3	3	1
16	1	0	2	1	0	4	5	2	2022	1223	2	0	4	2	1	10	11	5	4
17	3	2	0	0	0	4	5	4	3211	1333	6	5	0	1	1	8	11	8	5
18	3	3	3	3	3	7	7	3	2123	3242	6	6	7	6	6	20	18	7	10
19	2	2	4	3	6	5	9	8	3333	3445	4	4	8	6	15	13	30	25	13
20	4	3	2	2	0	1	2	2	4232	1334	10	6	5	4	1	3	4	4	5
21	1	0	1	2	4	3	0	2	2122	4414	2	1	3	4	9	7	1	5	4
22	8	8	5	5	4	4	8	5	3543	2242	21	23	13	13	10	8	23	12	15
23	2	2	2	1	1	7	6	6	3223	3331	4	5	5	3	3	18	16	14	9
24	1	1	3	8	8	7	7	7	2223	3334	3	3	7	22	21	19	18	20	14
25	1	1	6	6	6	8	4	6	2132	2333	3	2	16	14	14	21	9	16	12
26	8	7	5	2	3	11	10	6	2452	2241	21	17	13	4	7	41	35	14	19
27	5	11	10	12	11	11	10	8	2335	4443	11	49	35	55	43	43	37	21	37
28	7	4	9	5	5	2	5	9	3243	3233	19	10	27	13	13	4	13	30	16
29	5	3	8	7	10	8	10	9	2232	2454	13	6	25	17	39	26	38	28	24
30	10	9	9	8	4	11	10	4	4212	1363	40	27	31	24	8	42	35	9	27
																			16.6

MOIS 11 1969

	3 Ks								σs		as						As
1	2	0	0	0	1	0	0	4	1100	3104	5	1	0	0	2	1	0	8	2
2	7	5	4	5	5	8	8	7	4114	4234	18	12	8	11	13	21	21	20	16
3	8	8	8	5	7	8	9	8	2331	1224	25	24	21	13	18	21	29	23	22
4	4	4	4	5	3	2	3	4	3313	0353	10	10	9	13	6	4	7	9	9
5	3	6	3	5	6	7	2	4	1012	3313	7	15	7	12	14	20	5	9	11
6	4	3	3	0	0	1	4	6	3001	0336	9	6	6	1	0	2	9	16	6
7	11	8	6	6	11	7	10	7	3302	2444	41	21	15	16	47	18	35	18	26
8	5	7	4	3	6	9	12	10	1120	2221	13	18	10	6	16	32	57	34	23
9	8	13	14	14	14	14	11	8	3111	4433	21	61	86	84	85	85	46	21	61
10	8	11	14	14	16	9	11	10	2332	1266	22	50	80	72	106	31	45	34	55
11	8	4	8	8	8	9	8	7	2422	2244	22	9	22	22	21	31	23	20	21
12	9	2	4	4	2	7	2	4	0143	3543	29	5	8	9	4	17	4	9	11
13	4	3	4	5	6	7	5	4	3112	0443	9	6	8	11	15	20	11	9	11
14	3	4	1	1	0	0	0	1	1313	0002	7	10	2	2	0	0	0	3	3
15	0	1	0	2	0	1	2	2	0302	0323	0	2	0	5	0	2	5	4	2
16	3	1	4	1	1	4	4	4	0112	3334	6	2	8	3	2	10	10	9	6
17	5	3	1	2	1	4	7	4	2122	3353	11	7	3	4	2	10	17	10	8
18	7	4	5	4	3	7	7	5	4315	3342	18	10	13	10	6	20	19	11	13
19	3	3	7	5	6	4	7	6	0143	1343	6	7	18	12	16	10	18	14	13
20	4	2	4	3	0	3	3	2	3132	1113	10	5	9	7	1	6	6	4	6
21	3	3	3	3	3	3	2	4	2111	1223	6	7	6	6	7	7	4	9	7
22	8	8	8	8	5	5	10	7	1133	2454	26	23	21	21	12	11	35	18	21
23	4	4	5	4	3	5	5	7	4213	1124	9	10	12	10	6	13	11	18	11
24	3	4	5	10	7	8	8	7	0414	3355	6	9	13	35	19	24	22	19	18
25	3	3	8	6	5	6	7	7	1122	1144	6	6	21	16	13	16	18	17	14
26	9	7	2	3	5	10	11	8	2523	3422	31	18	5	6	12	38	43	22	22
27	8	11	10	11	11	9	8	8	2213	2235	22	43	34	41	43	31	24	22	33
28	6	6	7	4	4	2	9	10	2033	1254	15	15	20	10	8	4	30	34	17
29	6	5	9	8	8	8	10	9	1103	1333	16	12	29	21	26	23	36	28	24
30	11	9	10	8	4	10	8	4	3212	3132	41	29	34	25	9	34	24	10	26
																			17.3

MOIS 11 1969

	3 Km								Σ Km	am							Am	Am2
1	2	1	0	0	1	1	0	4	3.0	5	2	1	0	2	2	0	8	3	7
2	6	4	4	5	8	8	9	8	17.3	16	10	10	13	22	22	27	23	18	16
3	8	8	9	6	8	8	9	8	21.3	24	26	27	16	21	25	31	25	24	21
4	4	5	4	6	3	2	3	4	10.3	10	11	10	16	7	4	7	8	9	13
5	3	5	3	5	7	8	2	4	12.3	7	12	7	13	17	21	4	9	11	8
6	3	2	3	0	0	1	4	6	6.3	7	5	6	1	0	2	8	15	6	11
7	10	7	6	6	10	7	10	7	21.0	36	20	16	16	39	17	34	18	25	17
8	5	7	5	3	8	10	12	10	20.0	12	17	12	7	22	35	56	35	25	33
9	7	12	13	15	15	15	11	7	31.7	20	51	69	89	91	91	46	18	59	52
10	7	11	14	13	15	11	11	10	30.7	17	45	80	69	102	42	50	34	55	47
11	7	4	7	8	7	10	8	7	19.3	20	8	19	24	20	40	22	17	21	28
12	9	3	3	5	2	7	3	4	12.0	28	6	7	11	5	18	6	9	11	14
13	4	2	3	5	5	7	4	4	11.3	8	4	7	11	13	17	10	10	10	8
14	3	4	0	0	0	0	0	1	2.7	6	8	1	1	0	0	0	2	2	5
15	0	0	0	1	0	0	2	1	1.3	0	1	1	3	1	1	4	3	2	2
16	2	0	3	1	1	4	4	3	6.0	4	1	6	3	2	10	10	7	5	5
17	4	3	1	1	1	4	6	4	8.0	9	6	2	3	2	9	14	9	7	8
18	5	4	4	4	3	7	7	4	12.7	12	8	10	8	6	20	19	9	12	10
19	2	2	5	4	6	5	8	7	13.0	5	5	13	9	15	12	24	19	13	12
20	4	2	3	3	0	2	2	2	6.0	10	5	7	6	1	5	5	4	5	8
21	2	2	2	2	4	3	1	3	6.3	4	4	4	5	8	7	3	7	5	9
22	8	8	7	7	5	4	9	6	18.0	24	23	17	17	11	9	29	15	18	12
23	3	3	4	3	2	6	5	6	10.7	6	7	8	7	4	16	13	16	10	12
24	2	3	4	9	7	8	7	7	15.7	5	6	10	28	20	22	20	20	16	14
25	2	2	7	6	6	7	5	7	14.0	4	4	19	15	14	18	13	17	13	15
26	8	7	4	2	4	10	10	7	17.3	26	18	9	5	9	40	39	18	21	23
27	7	11	10	11	11	10	9	8	25.7	17	46	34	48	43	37	31	21	35	28
28	7	5	8	5	5	2	8	9	16.3	17	12	23	12	11	4	21	32	17	21
29	6	4	9	7	9	8	10	9	20.7	15	9	27	19	33	25	37	28	24	24
30	11	9	9	8	4	10	9	4	21.3	41	28	32	24	9	38	30	10	27	23
																		17.0	

MOIS 12 1969

	3 Km								Σ Km	am							Am	Am2
1	3	1	4	6	6	5	4	2	10.3	6	2	8	15	14	13	9	5	9	11
2	0	2	4	2	5	3	2	1	6.3	1	4	8	4	11	7	5	3	5	6
3	1	0	0	0	2	1	7	9	6.7	2	1	1	0	4	2	18	27	7	9
4	4	6	7	6	9	7	6	4	16.3	9	14	18	14	28	20	14	9	16	16
5	4	6	7	10	9	11	11	11	23.0	9	15	20	35	33	42	45	47	31	28
6	10	11	8	8	9	7	9	8	23.3	38	42	24	26	31	19	30	24	29	27
7	4	2	4	6	3	3	4	5	10.3	8	4	8	14	7	7	9	13	9	13
8	3	3	4	2	2	5	6	7	10.7	7	7	10	4	5	12	14	17	10	12
9	9	8	6	5	8	7	4	7	18.0	28	26	16	12	21	20	9	17	19	13
10	1	1	3	2	1	5	7	10	10.0	3	2	7	5	2	11	19	39	11	15
11	9	7	8	4	7	7	7	4	17.7	28	20	21	8	20	18	17	10	18	16
12	5	6	3	4	4	1	2	4	9.7	12	15	6	8	10	2	5	8	8	9
13	4	3	2	0	3	2	3	2	6.3	8	6	4	1	7	4	6	4	5	6
14	2	2	3	5	4	6	4	3	9.7	4	5	6	11	8	15	9	6	8	8
15	3	3	5	6	3	7	6	6	13.0	7	7	13	14	6	17	16	14	12	13
16	8	5	8	7	6	9	7	5	18.3	26	13	22	17	14	27	18	12	19	15
17	7	1	2	3	2	3	5	3	8.7	17	3	4	7	4	7	13	6	8	10
18	5	2	2	2	1	0	2	3	5.7	11	4	5	5	2	1	5	7	5	6
19	3	3	3	4	4	3	6	4	10.0	7	6	7	8	8	6	15	8	8	6
20	3	1	2	3	1	1	3	3	5.7	7	3	4	7	2	3	6	7	5	6
21	5	4	1	0	1	1	2	4	6.0	12	8	2	0	3	2	5	9	5	7
22	5	3	8	5	9	7	5	6	16.0	12	7	23	12	31	20	12	14	16	13
23	4	7	5	8	11	9	9	8	20.3	9	18	13	24	43	31	28	23	24	20
24	8	4	4	8	8	4	7	7	16.7	23	9	8	21	21	9	17	17	16	20
25	3	8	7	7	8	7	5	5	16.7	7	21	18	19	23	19	11	13	16	15
26	4	4	7	5	3	9	8	8	16.0	9	10	20	13	6	30	26	26	18	18
27	9	6	5	9	4	4	2	1	13.3	27	14	13	32	10	10	5	2	14	13
28	1	0	0	3	1	6	3	4	6.0	2	1	1	7	3	16	6	8	6	6
29	3	2	2	4	3	4	2	1	7.0	7	4	5	8	6	8	4	3	6	6
30	1	2	1	3	2	1	3	3	5.3	2	4	2	6	5	3	7	7	5	5
31	1	4	2	3	1	1	4	3	6.3	2	8	4	7	3	3	9	6	5	6
																		12.0	

MOIS 12 1969

	3 Kn								σn								an				An
1	2	1	4	8	6	5	4	2	3223	4353	4	2	8	21	14	13	9	5	10
2	0	1	4	2	5	3	3	1	1243	4342	1	3	10	4	13	7	6	2	6
3	0	0	1	0	1	0	6	8	1111	2154	0	0	2	1	2	1	16	22	6
4	4	4	5	5	9	8	4	4	1433	1333	8	10	13	13	28	23	10	8	14
5	2	4	8	10	10	11	12	11	2332	2344	5	10	23	38	37	50	52	49	33
6	10	10	9	8	10	8	8	9	4313	3244	38	37	28	25	38	21	25	28	30
7	2	1	3	6	2	3	4	6	1223	1265	5	3	6	14	5	7	9	14	8
8	3	4	4	1	2	5	6	6	5312	3556	7	8	8	3	5	11	16	15	9
9	10	9	5	4	6	7	2	6	4333	2423	34	29	12	9	16	20	4	15	17
10	0	0	2	2	1	5	7	10	1122	2456	1	1	5	4	2	13	18	39	10
11	9	6	8	4	7	6	5	3	4153	3132	33	16	26	9	18	14	13	7	17
12	4	6	2	3	3	0	2	2	3423	5123	8	14	4	7	7	1	4	5	6
13	3	2	2	0	2	1	3	1	3230	3232	7	5	5	0	5	3	7	3	4
14	1	1	2	4	3	6	4	2	2222	2342	2	2	4	8	6	14	8	4	6
15	2	2	4	5	3	6	7	4	2232	1453	4	4	9	12	6	16	17	10	10
16	9	4	8	6	6	8	7	5	3241	1553	31	10	25	15	16	25	19	12	19
17	6	2	0	3	1	2	5	2	4314	1374	15	4	1	7	3	5	11	5	6
18	4	1	1	1	0	0	2	2	5213	1133	10	3	2	3	1	1	4	5	4
19	2	2	1	3	3	3	5	3	2322	3223	5	5	3	6	7	6	12	6	6
20	3	0	1	2	0	0	1	2	3122	1122	6	1	3	4	1	1	3	4	3
21	3	3	0	0	0	1	1	4	2410	1212	6	7	1	0	0	2	2	8	3
22	3	1	7	4	9	7	5	5	1343	1222	7	3	18	10	31	20	12	11	14
23	4	6	5	8	12	10	9	8	4334	4433	8	16	12	24	52	34	33	21	25
24	9	4	3	8	8	4	7	6	2222	2223	27	10	6	22	22	9	18	15	16
25	3	7	7	6	9	8	5	4	3421	4332	7	20	20	16	27	23	13	9	17
26	4	3	7	4	3	9	8	8	2333	3533	9	6	20	10	6	31	25	22	16
27	8	6	6	11	4	5	3	1	3223	2342	25	14	14	42	10	11	6	2	16
28	0	1	0	3	1	8	2	3	1211	2423	1	2	1	7	3	22	5	6	6
29	4	1	3	4	3	4	2	1	2213	3433	8	3	7	10	7	10	5	2	7
30	0	2	0	2	2	1	3	2	1312	2322	0	5	0	5	5	3	6	5	4
31	1	2	0	3	1	2	4	2	2213	2433	2	5	1	7	2	4	9	5	4
																			11.4

MOIS 12 1969

	3 Ks								σs								as				As
1	4	1	4	4	5	5	4	3	4213	1131	8	2	8	9	13	13	9	6	9
2	0	2	3	2	4	3	2	1	1302	1213	1	5	6	5	9	7	5	3	5
3	1	0	0	0	3	1	7	9	3110	5352	3	1	1	0	7	2	19	32	8
4	4	7	8	6	9	7	7	5	3510	1142	10	19	23	15	29	17	18	11	18
5	6	7	7	9	9	9	10	11	2311	0433	14	20	17	32	29	33	38	44	28
6	10	11	7	8	8	7	10	8	3231	3153	38	47	20	26	24	17	35	21	29
7	5	3	4	6	4	3	4	5	2130	4234	11	6	9	15	9	7	9	11	10
8	3	3	5	3	2	5	5	7	1233	2145	6	6	12	6	5	13	13	18	10
9	8	8	8	6	9	8	6	7	2135	4264	22	23	21	16	27	21	14	20	21
10	2	1	4	3	1	4	8	10	3211	1366	4	3	9	6	2	9	21	40	12
11	8	8	6	3	8	8	8	5	1312	2331	23	24	16	7	21	21	21	13	18
12	6	6	4	4	5	1	3	5	1113	3213	16	16	8	9	12	3	6	12	10
13	4	3	2	1	4	3	3	2	3123	3111	9	7	4	3	9	6	6	5	6
14	2	4	4	6	4	6	4	4	1113	5134	5	8	8	14	10	16	10	9	10
15	4	4	7	6	3	7	6	7	3312	2504	10	10	17	16	7	19	15	18	14
16	8	7	7	7	5	9	6	5	2131	2421	21	17	20	18	12	29	16	12	18
17	7	1	3	3	2	4	6	4	4202	2454	18	2	6	7	5	9	16	8	9
18	5	2	4	3	1	0	3	4	2110	2014	11	5	8	6	3	0	6	9	6
19	4	3	5	5	4	3	7	4	4224	3243	9	7	11	11	10	7	18	9	10
20	4	2	3	5	1	2	4	4	4314	1243	9	4	6	11	2	5	8	9	7
21	7	4	1	0	3	1	4	4	4331	1143	18	9	2	1	6	2	8	10	7
22	7	5	9	6	9	8	5	7	4222	2334	18	11	29	15	32	21	12	17	19
23	4	7	6	8	10	9	8	8	3301	4322	9	20	15	23	35	28	22	25	22
24	7	4	5	7	7	4	7	7	3143	3354	19	9	11	20	20	9	17	18	15
25	4	8	6	8	7	6	4	6	1315	1535	8	21	16	22	18	16	10	16	16
26	4	5	7	7	3	9	9	9	3134	1165	10	13	20	17	6	29	28	30	19
27	9	6	5	8	4	4	2	1	3222	3423	28	15	12	22	9	8	4	3	13
28	1	0	0	3	2	4	3	4	3110	2304	2	1	1	6	4	10	6	9	5
29	3	3	1	3	3	3	2	1	2112	1123	7	6	2	7	6	6	4	3	5
30	1	1	2	3	3	1	4	4	2222	3143	3	3	4	7	6	2	8	9	5
31	1	5	3	3	1	1	4	3	3210	2242	2	11	7	6	3	2	8	7	6
																			12.6

No. 14	Transactions of the Brussels Meeting, 1951	
No. 15	Transactions of the Rome Meeting, 1954	
No. 15a	Le Noyau Terrestre, Rome 1954	Out of print
No. 15b	Problèmes de la Physique de la haute atmosphère, 1954	Out of print
No. 16	Transactions of the Toronto Meeting, 1957	
No. 16a	Paléomagnétisme et Variation Séculaire, Toronto 1957	Out of print
No. 16b	Aéronomie, Toronto 1957	Out of print
No. 16c	Rapid Magnetic Variations, Utrecht 1959	Out of print
No. 17	List of Resolutions	
No. 18	Geomagnetic Planetary Indices Kp, Ap and Cp, 1932 to 1961	
No. 19	Transactions of the Helsinki Meeting, 1960 and the Berkeley Meeting, 1963	
No. 20	List of Geomagnetic Observatories	
No. 21	Atlas of Indices K, 1. Text, 2. Figures	
No. 22	Description of Instruments	
No. 24	Program and Abstracts, St. Gall Meeting, 1967	
No. 25	Transactions of the St. Gall Meeting, 1967	
No. 26	Program and Abstracts, Madrid Meeting, 1969	
No. 27	Transaction of Madrid Meeting, 1969	

Caractère Magnétique Numérique des Jours (from 1 January 1930 to 31 December 1939) and Caractère Magnétique Numérique des Jours pendant l'Année Polaire 1932 – 1933 (in complete sets only)

Internation Auroral Atlas, published for the IUGG, to be obtained from University Press, Edinburgh, 1963

IAGA Symposium No. 1, Copenhagen, 1960
IAGA Symposium No. 2, Berkeley, 1963
IAGA Symposium No. 3, Pittsburgh, 1964
IAGA Symposium No. 4, Cambridge (Mass.), 1965
IAGA Symposium No. 5, Sao Paulo, Brazil
IAGA Symposium No. 6, Birkeland, Aurora and Magnetic Storms, 1967
IAGA Symposium No. 7, Upper Atmospheric Winds, Waves and Ionospheric Drifts, 1967
IAGA Symposium No. 8, Laboratory Measurements of Aeronomic Interest

PUBLICATIONS

by the

INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY

To be obtained from the IUGG Publications Office,
39 ter, rue Gay-Lussac, Paris (V)

No. 1	Organization, Minutes, and Proceedings of the Brussels Meeting, 1919	Out of print
No. 2	General Report of the Rome Meeting, 1922	Out of print
No. 3	Transactions of the Rome Meeting, 1922	
No. 4	General Report of the Madrid Meeting, 1924	Out of print
No. 5	Transactions of the Madrid Meeting, 1924	
No. 6	Preliminary Reports on Subjects of Investigation, 1926	Out of print
No. 7	Comptes Rendus de l'Assemblée de Prague, 1927	Out of print
No. 8	Comptes Rendus de l'Assemblée de Stockholm, 1930	
No. 9	Comptes Rendus de l'Assemblée de Lisbonne, 1933	
No. 10	Transactions of the Edinburgh Meeting, 1936	
No. 11	Transactions of the Washington Meeting, 1939	
No. 12	Geomagnetic Indices, C and K, 1940-1946	Out of print
No. 12a	Geomagnetic Indices, C and K, 1947	Out of print
No. 12b	Geomagnetic Indices, K and C, 1948	Out of print
No. 12c	Geomagnetic Indices, K and C, 1949	Out of print
No. 12d	Geomagnetic K-Indices, International Polar Year, August 1932 to 1933	
No. 12e	Geomagnetic Indices, K and C, 1950	Out of print
No. 12f	Geomagnetic Indices, K and C, 1951	Out of print
No. 12g	Geomagnetic Indices, K and C, 1952	Out of print
No. 12h	Geomagnetic Indices, K and C, 1953	
No. 12i	Geomagnetic Indices, K and C, 1954	
No. 12j	Geomagnetic Indices, K and C, 1955	
No. 12k	Geomagnetic Indices, K and C, 1956	
No. 12l	Geomagnetic Data, 1957, Indices K and C, Rapid Variations	
No. 12m1	Geomagnetic Data, 1958, Indices K and C	
No. 12m2	Geomagnetic Data, 1958, Rapid Variations	
No. 12n1	Geomagnetic Data, 1959, Indices K and C	
No. 12n2	Geomagnetic Data, 1959, Rapid Variations	
No. 12o1	Geomagnetic Data, 1960, Indices K and C	
No. 12o2	Geomagnetic Data, 1960, Rapid Variations	
No. 12p1	Geomagnetic Data, 1961, Indices K and C	
No. 12p2	Geomagnetic Data, 1961, Rapid Variations	
No. 12q1	Geomagnetic Data, 1962, Indices K and C	
No. 12q2	Geomagnetic Data, 1962, Rapid Variations	
No. 12r1	Geomagnetic Data, 1963, Indices K and C	
No. 12r2	Geomagnetic Data, 1963, Rapid Variations	
No. 12s1	Geomagnetic Data, 1964, Indices K and C	
No. 12s2	Geomagnetic Data, 1964, Rapid Variations	
No. 12t1	Geomagnetic Data, 1965, Indices K and C	
No. 12t2	Geomagnetic Data, 1965, Rapid Variations	
No. 12u1	Geomagnetic Data, 1966, Indices K and C	
No. 12u2	Geomagnetic Data, 1966, Rapid Variations	
No. 12v1	Geomagnetic Data, 1967, Indices K and Ci	
No. 12v2	Geomagnetic Data, 1967, Rapid Variations	
No. 12w1	Geomagnetic Data, 1968, Indices K and Ci	
No. 12w2	Geomagnetic Data, 1968, Rapid Variations	
No. 12x1	Geomagnetic Data, 1969, Indices K and Ci	
No. 12x2	Geomagnetic Data, 1969, Rapid Variations	
No. 13	Transactions of the Oslo Meeting, 1948	

(Continued inside back cover)