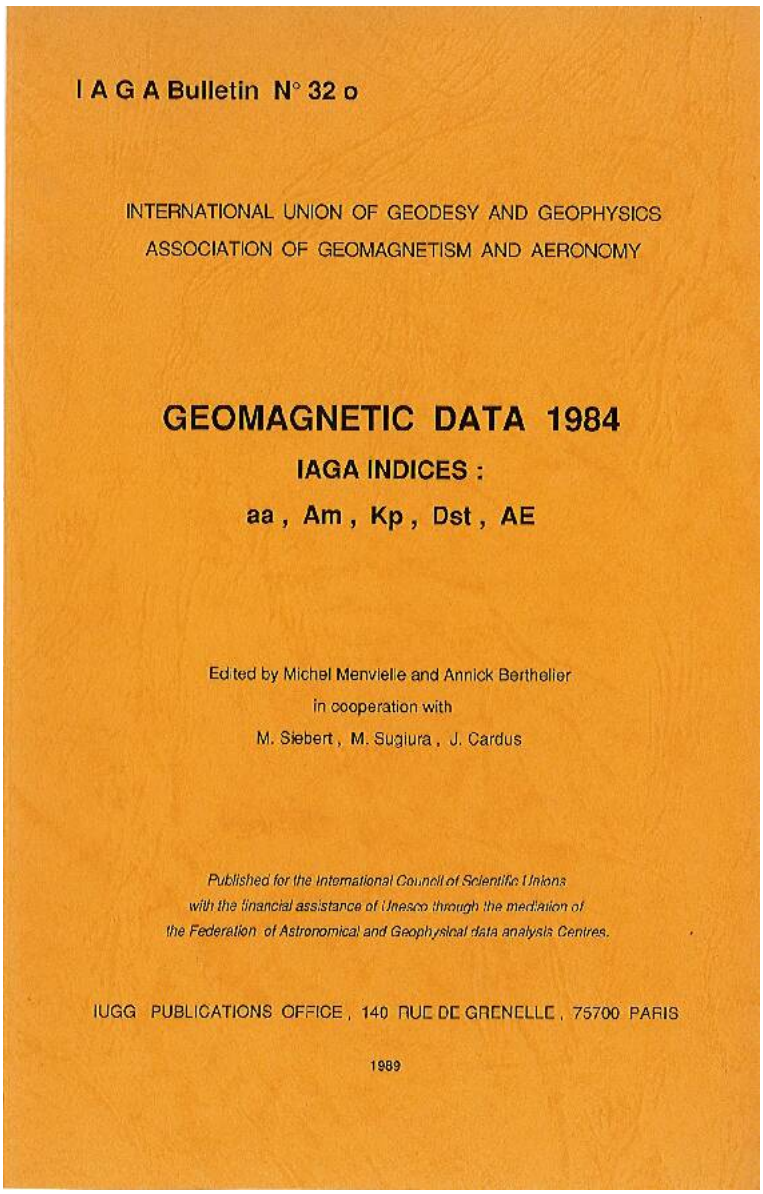


How to cite:

Menvielle, M., Berthelier, A., Siebert, M., Sugiura, M., Cardus, J. O., & IAGA (1989). *IAGA Bulletin No. 32o, Geomagnetic Data 1984, IAGA INDICES: aa, am, Kp, Dst, AE.* IUGG Publications Office. https://doi.org/10.25577/2khx-qv04

I A G A Bulletin N° 32 o

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1984

IAGA INDICES :

aa , Am , Kp , Dst , AE

Edited by Michel Menvielle and Annick Berthelier
in cooperation with
M. Siebert , M. Sugiura , J. Cardus

Published for the International Council of Scientific Unions
with the financial assistance of Unesco through the mediation of
the Federation of Astronomical and Geophysical data analysis Centres.

IUGG PUBLICATIONS OFFICE , 140 RUE DE GRENELLE , 75700 PARIS

1989

I A G A Bulletin N° 32 o

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS
ASSOCIATION OF GEOMAGNETISM AND AERONOMY

GEOMAGNETIC DATA 1984

IAGA INDICES :

aa , Am , Kp , Dst , AE

Edited by Michel Menvielle and Annick Berthelier
in cooperation with
M. Siebert , M. Sugiura , J. Cardus

Published for the International Council of Scientific Unions
with the financial assistance of Unesco through the mediation of
the Federation of Astronomical and Geophysical data analysis Centres.

IUGG PUBLICATIONS OFFICE , 140 RUE DE GRENELLE , 75700 PARIS

1989

ACKNOWLEDGEMENTS

We wish to acknowledge J. O. CARDUS, M. SIEBERT, and M. SUGIURA for their cooperation in preparing the data published in this Bulletin. Thanks are also due to all the organisms, that are listed in Tables 1 and 2, page 8, which support efficiently the preparation and distribution of these geomagnetic data.

Let us add that M. SUGIURA, who moved from the Goddard Space Flight Center (Maryland, U.S.A.) to the WDC-C (Kyoto, Japan ; see Table 1) in 1985 and is now at the Tokai University (Tokyo, Japan), wishes specially to acknowledge the valuable assistance of R. S. KENNON (Goddard Space Flight Center) and T. KAMEI and T. ARAKI (Data Analysis Center for Geomagnetism and Space Magnetism, Kyoto University) in the derivation of the indices and in the preparation of the published tables and figures, respectively for the Dst and for the AE indices.

As for us, we are pleased to express our thanks to Hélène ROBIC and Richard SCHEIB (IPGP) and Christine GUERIN (CRPE) for their contribution to this Bulletin.

A. Berthelier, M. Menvielle

Saint-Maur, Paris, Décembre 1989.

CONTENTS

Section 1 :	Presentation of the Bulletin	3
Section 2 :	List of Observatories	21
Section 3 :	IAGA Indices	33
	3.1. **aa** indices	35
	3.2. **am** indices	43
	3.3. **Kp** indices	65
	3.4. **Dst** indices	77
	3.5. **AE** indices	97
Section 4 :	Classification of Days	125
Section 5 :	Rapid Variations	131

SECTION 1

PRESENTATION OF THE BULLETIN

1.1.	Introduction	5
1.2.	List of Observatories	9
1.3.	IAGA Indices	11
1.4.	Classification of Days	17
1.5.	Rapid Variations	18

1.1. INTRODUCTION

The IAGA-Bulletin N°32 series is a yearly compilation of magnetic indices and other geomagnetic data, based on the report of a great number of magnetic observatories. The series is the continuation of the former IAGA-Bulletin N°12 and is prepared for publication by the International Service of Geomagnetic Indices (ISGI). The ISGI, formerly called Permanent Service or "C- and K-center" operates under the supervision of IAGA-Division V : Observatories, Instruments, Surveys and Analysis. Since 1954, it forms part of the Federation of Astronomical and Geophysical Data Analysis Centers. Its present address is : ISGI, Institut de Physique du Globe de Paris, Tour 14, 4 Place Jussieu, F-75252 PARIS CEDEX 05, FRANCE.

As for 1984, the elaborated data were provided by the following Institutes, under the responsability of the adjoining collaborators :

- Institut für Geophysik, Göttingen (M. SIEBERT) :
  Kp, ap, Ap, Cp, Q- and D-days.

- Institut de Physique du Globe de Paris, Paris (M. MENVIELLE) :
  aa, C- and K-days, an, Kn, An, as, Ks, As, and am, Km, Am.

- NASA-Goddard Space Flight Center, Greenbelt (M. SUGIURA) :
  Dst.

- Data Analysis Center for Geomagnetism and Spacemagnetism, Kyoto (M. SUGIURA) :
  AL, AU, AE.

- Observatorio del Ebro, Roquetas (J.O. CARDUS) :
  Rapid Variations.

The work began in 1906 with the collection and publication of the daily character figure C and the international character figure Ci, together with the lists of selected quiet and disturbed days. In 1938, this work was extended backwards to 1890.

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 in IAGA-Bulletins N°12g and 12l. In addition to Kp, the corresponding range figures ap and related daily indices Ap and Cp have been regularly published in the IAGA-Bulletin N°12.

In accordance with recommendations of the IAGA-Assemblies in Madrid (1969) and Moscow (1971), the publication in the IAGA-Bulletins of C- and K-indices of individual observatories ended with the 1969 data, whereas planetary indices (Dst, an, Kn, An, as, Ks, As, am, Km, Am) and a survey of magnetic storms were included since 1970.

This change marked the end of the IAGA-Bulletin N°12 series and the beginning of the new IAGA-Bulletin N°32 series. The publication of the Ci, Kp, ap, Ap indices, and of the international quiet and disturbed days, Q- and D-days, continued in the new series. According to a recommendation of the IAGA-Assembly in Grenoble (1975) a new index aa is published instead of Ci since 1976 and the C-figures are no longer compiled.

A short recall of the definition of the published indices is given in the section 1.3 below (pages 11-16). For more details, one can refer to the following two general reports :

- M. Siebert, in "Handbuch der Physik", vol.49/3, 206-275, Springer Verlag, 1971, for the description of several indices .

- P. N. Mayaud, Derivation, Meaning and Use of Geomagnetic Indices, Geophysical Monograph 22, Am. Geophys. Union, Washington D.C., 1980, for an up to date complete review of the present IAGA indices.

Indications concerning their availability are given below, together with some more references.

- The *K-indices* of individual observatories are available on magnetic tape for the years 1969-1974, at the World Data Center A (WDC-A, Table 1). Besides, tables of local K-indices can be found in the bulletins or yearbooks of many observatories. The results of an extensive study on the K index by P. N. Mayaud are given together with practical rules for its determination in the "Atlas des indices K", IAGA-Bulletin N°21, 1967.

- The *aa-indices* form a series of indices beginning in the year 1868. A full description can be found in the IAGA-Bulletin N°33, which contains tables and graphs of aa for the years 1868-1967. Values for the years 1968-1975 are published in the IAGA-Bulletin N°39 ; this index is regularly published in the IAGA-Bulletin N°32 since 1976. The whole serie is available on magnetic tape at World Data Center A (Table 1), and in France through CRPE-CNRS (Table 2). They also regularly appear in Geomagnetic and Solar Data monthly tables edited by H. Coffey in Journal of Geophysical Research and in Solar Geophysical Data Publications (Table 2). They can be sent on request by ISGI, by mail before the end of the next month, or by telex within 1 week (Table 1).

- The meaning of *C, Ci, K and Kp* is explained in textbooks (e.g. Landolt-Börnstein, Zahlenwerte und Funktionen, Band 3, 731-744, Springer Verlag, 1952), in Terrestrial Magnetism and Atmospheric Electricity (*44*, 411, 1939; *45*, 309, 1941) and in the IAGA-Bulletin N°12i. Tables and diagrams of these planetary indices for the whole period 1932-1961 are printed in the IAGA-Bulletin N°18. Kp, Ap, Cp are published in the IAGA-Bulletin N°32, and also in the Geomagnetic and Solar Data monthly tables edited by H. Coffey in Journal of Geophysical Research and in Solar Geophysical Data Publications (Table 2). They are sent on request before the end of the next month by the Institut für Geophysik, Göttingen (Table 2). They are available on magnetic tape at the World Data Centers (Table 1).

- The *three-hourly indices an, Kn, and as, Ks,* for the Northern and Southern hemispheres and the *mondial indices am, Km,* are described by P. N. Mayaud in "Indices Kn, Ks and Km, 1964-1967" (Editions du CNRS, Paris 1968). The indices for the years 1959-1963 are published in the IAGA-Bulletin N°39, and for 1964-1967 in the above quoted publication. They are published in the IAGA-Bulletin N°32 from 1968 onwards, and also appear in the Geomagnetic and Solar Data monthly tables edited by H. Coffey in Journal of Geophysical Research and in Solar Geophysical Data Publications (Table 2). They are available on magnetic tape at World Data Centers (Table 1) and in France through CRPE-CNRS (Table 2). They can be sent on request by mail from ISGI within 6 weeks after the end of the month (Table 1).

- The *equatorial Dst-index* for ring current intensity is published in the IAGA-Bulletin N°32 from 1970 onwards. 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 X-645-71-278 of the Goddard Space Flight Center. This report supersedes earlier Dst publications by Sugiura and co-workers. Recently, those 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 the Annals of the IGY, vol. 35. The same volume contains three-hourly values of Dst for the IGY as determined by Kertz in a somewhat different way. The hourly values from 1957 onwards are available on magnetic tape at the World Data Center (Table 1).

- The *auroral electrojet index AE* was originally introduced by Davis and Sugiura in 1966 (J. Geophys. Res., *71*, 785). It was first derived at the Geophysical Instutute of the University of Alaska, and hourly values were published for the years 1957-1964 in the University of Alaska Reports prepared by T. N. Davis, Y. S. Wang and C. Echols and published in 1967 and 1968. The data for 1965 were prepared by NASA ; from 1966 to 1976, they were prepared by WDC-A. Values from 1978 onwards are computed by the Data Analysis Center for Geomagnetism and Spacemagnetism of Kyoto University and published in the data books of this Institute. They are available on magnetic tape at the World Data Centers (Table 1). Hourly mean values are published in IAGA-Bulletin N°32 since 1981.

- Data on *rapid variations* are collected and prepared for publication at the Observatorio del Ebro (Table 2), according to the decisions made at the IAGA-Assemblies in Madrid (1969) and Grenoble (1975). They are given less extensively than in the former IAGA-Bulletins. Provisional lists are available on request at ISGI within 6 weeks after the end of the month (Table 2).

Table 1 and 2 (next page) give present address of the ISGI, of the World Data Centers, and of the National Institutes and Data Centers related to this bulletin.

TABLE 1

ISGI and World Data Centers

ISGI	International Service of Geomagnetic Indices Service International des Indices Géomagnétiques Institut de Physique du Globe de Paris Tour 14, 4 Place Jussieu F-75252 PARIS CEDEX 05, France Telephone 33 1 43 36 25 25 ext. 4935 Telex 202 810 VOLSISM Telefax 33 1 43 26 40 29
WDC-A	World Data Center-A for Solar-Terrestrial Physics NOAA code E/GC2, 325 Broadway BOULDER, Colorado 80303, U.S.A. Telephone 1 303 497 6324 Telex 592 811 NOAA MASC BDR Telefax 1 303 497 6513
WDC-B	World Data Center-B Soviet Geophysical Committee, Academy of Sciences of the U.S.S.R. Molodezhnaya 3 MOSCOW 117296, U.S.S.R. Telephone 7 095 130 05 46 7 095 228 67 88 Telex 411 478 SGC SU
WDC-C	World Data Center-C for Geomagnetism Data Analysis Center for Geomagnetism and Spacemagnetism Faculty of Science, Kyoto University KYOTO 606, Japan Telephone 81 75 751 2111 ext. 3939 Telex 5422 693 LIB KYO J Telefax 81 75 722 7884

TABLE 2

National Institutes and Data Centers

M. MENVIELLE	Institut de Physique du Globe de Paris Tour 14, 4 Place Jussieu F-75252 PARIS CEDEX 05, France
M. SIEBERT	Geophysical Institute, Göttingen University Institut für Geophysik der Universitat Göttingen Postfach 2341, Herzberger Landstrasse 180 D-3400 GOTTINGEN, Federal Republic of Germany
J. O. CARDUS	Observatorio del Ebro Roquetas, TARRAGONA, Espagne
M. SUGIURA	Working Group on World Data Centers National Committee on Solar-Terrestrial Physics Science Council of Japan Geophysical Institute, Faculty of Sciences, Kyoto University KYOTO 606, Japan

• For access to CRPE available data, one has to contact :

Christine GUERIN	CRPE-CNRS 4, Avenue de Neptune F-94107 SAINT MAUR CEDEX, France Telephone 33 1 48 86 12 63 Telex 264 498 OBSMAUR Telefax 33 1 48 89 44 33

• Solar Geophysical Data monthly publications are issued by :

NOAA National Geophysic Data Center
NOAA, NESDIS E/GC4
325, Broadway
BOULDER, Colorado 80303, U.S.A.

1.2. LIST OF OBSERVATORIES

A list of the magnetic observatories at which continuous recordings have been made during at least five consecutive years is given pages 23-30. In this table, the observatories are listed according to the alphabetic order and one has indicated for each station, from left to right :

- its name and three-letter IAGA international code ;
- the geographic and geomagnetic coordinates, and altitude ;
- the K=9 lower limit, given only for the stations which belong to Kp, am or aa networks (see section 1.3 for the description of these networks in 1983) ;
- the opening and closing years.

Note that temporary stations do not appear in this table, as for instance those operating during the International Polar and Geophysical years, but they can be found in the more extensive list published in IAGA-Bulletin n° 20 (1965).

The values of the parameters given in the table has been obtained from the following publications :

- C.R. Bock and R.W. Schumann : Katalog der Jahres mittel der Magnetischen Elemente der Observatorien und der Stationen an deinen eine Zeitlang erdmagnetische Beobachtungen Stattfanden, Geophysikalisches Institut Postdam
  Abhandlungen n° 8, Postdam, 1948;
- Annual mean values of Geomagnetic elements, Geomagnetic Bulletin n°10, Institut of Geological Sciences, Edinburgh, 1981 ;
- Yearbooks of individual observatories.

A list of the stations having provided continuous recordings over at least fifty years is given on pages 31-32. When one observatory has moved, the names of the different consecutive sites are indicated. The stations are listed following the alphabetic order of the oldest observatory. One has indicated in this table the opening and closing years, as the other parameters can be found in the preceeding list.

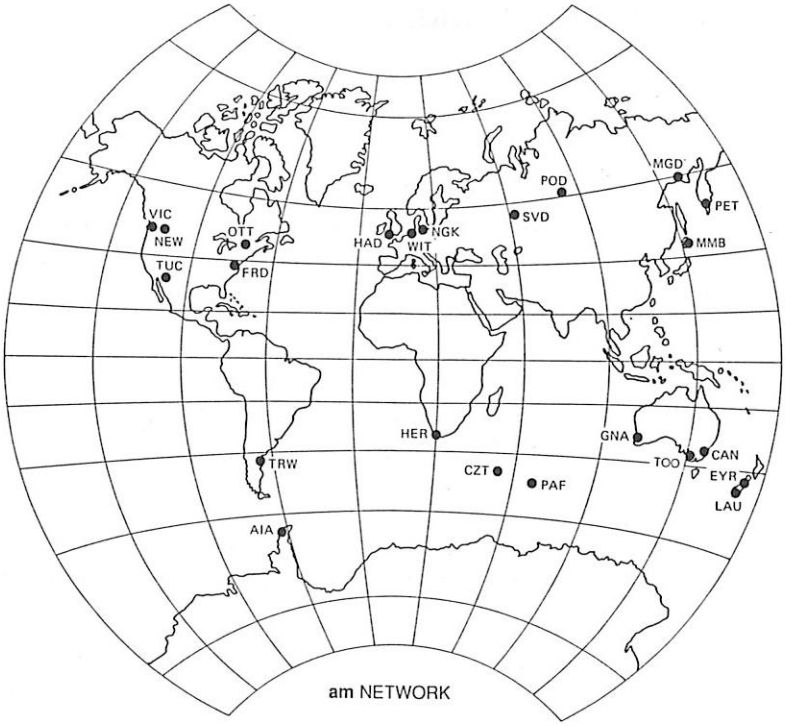


Figure 1



Figure 2

1.3. IAGA INDICES

1.3.1. aa indices

The aa indices are derived using data from two nearly antipodal observatories, where magnetograms were available since 1868. For each three hour interval, K indices are measured at the two stations and converted back into amplitude ; an individual aa index is the average of the northern and southern values, weighted to account for the small difference in latitude of the two stations, or for the slight changes in the very place of the observatory. The observatories and weighting coefficients used to derive aa are the followings :

Northern Hemisphere			*Southern Hemisphere*		
1868-1925	Greenwich	1.007	1868-1919	Melbourne	0.967
1926-1956	Abinger	0.934	1920-1979	Toolangui	1.033
1957-...	Hartland	1.059	1980- ...	Canberra	1.084

Half-daily and daily mean values give an estimate of the activity level very close to the corresponding values derived from am indices. aa is in nanotesla (nT) and it represents the activity level at an invariant magnetic latitude of about 50°. The following values are given pp. 38-39 :

N	=	daily values for the Northern observatory (Greenwich day)
S	=	same for the Southern observatory
am, pm	=	half-daily values of aa indices for the half Greenwich day before, and after noon.

For each month, the average value of daily N, S and aa, are given at the bottom of the tables.

The five international quietest days of the month (see section 4) are indicated by the letter Q. Letters C and K refer to the classification of the quiet 24 and 48 hour intervals as obtained from aa : C = really quiet, K = quiet, but with one or a few slightly disturbed three-hourly intervals (see section 4). The letter on the left column refers to the 24 hour Greenwich day, the right one to a period of 48 hours centered on the Greenwich noon.

A graph of 12-hour running mean values of aa indices is drawn page 37 for the whole year. Monthly and yearly mean values of aa for the years from 1868 onwards are listed pp. 40-41. A graph of 12-month running mean values of aa is drawn page 42, covering the full period when aa has been calculated so far, i.e. 1868-1983. In this graph, the point plotted at the abscissa of a given year corresponds to the average of aa from January to December of that year (unit : nT).

1.3.2. am indices

am, an and as indices are derived from K indices scaled at observatories located in the subauroral zones of the Northern and Southern hemispheres (Figure 1). The stations are arranged in groups (G1 to G9), each group representing a longitude sector in one of the hemisphere. The corrected geomagnetic latitude indicated in the lists below has been calculated by Mayaud for taking into account the actual topography of the main field.

	Northern Hemisphere				*Southern Hemisphere*		
	Observatory	*Corr. Geom. Lat.*			*Observatory*	*Corr. Geom. Lat.*	
G1	Magadan	MGD	53.8°	G6	Eyrewell	EYR	50.2°
	Petropavlosk	PET	46.4°		Lauder	LAU	37.7°
	Memabetsu	MMB	37.4°				
G2	Podkammenkaya	POD	57.2°	G7	Toolangui	TOO	48.0°
	Sverdlovsk	SVD	52.2°		Canberra	CAN	45.2°
					Gnangara	GNA	44.1°
G3	Witteveen	WIT	50.2°	G8	Kerguelen	PAF	58.8°
	Hartland	HAD	50.0°		Crozet	CZT	52.4°
	Niemegk	NGK	48.8°		Hermanus	HER	41.1°
G4	Ottawa	OTT	58.9°	G9	Argentine Islands	AIA	49.7°
	Frederiksburg	FRD	51.8°		Trelew	TRW	27.8°
G5	Victoria	VIC	53.9°				
	Tucson	TUC	39.7°				

For a given time interval, the K values measured at the observatories of one group are averaged and converted back to amplitude. These amplitudes are weighted for balancing the differences in longitude width of the sectors, and the hemispheric averages of these weighted amplitudes give rise to the three-hour an and as indices respectively ; am is equal to (an + as)/2. Am, An and As are the daily mean values of am, an and as. They are all expressed in nanoteslas. For the sake of tradition and convenience, Km, Kn, Ks equivalent values are also made available by means of conversion table; they are as usually expressed by values from 0o to 9o, and 3Km, 3Kn, 3Ks by values from 0 to 27.

Monthly tables of an, and as are given pages 46 to 57, each line corresponding to a Greenwich UT day. Following values are displayed from left to right :

- 3Kn (3Ks) values for the 8 three-hour intervals ;
- σn (σs) values for the 8 three-hour intervals represent, by a code using one digit from 0 to 9, the variance of the sector values of K in Northern (Southern) hemisphere calculated for each given three-hour interval;
- an (as) values for the 8 three-hour intervals ;
- An (As) daily mean value.

At the end of each table, one can find the monthly mean value.

Monthly tables of am (pp. 58 to 63) are displayed in a similar way :

- 3Km values for the 8 three-hour intervals ;
- daily sum ΣKm ;
- am values for the 8 three-hour intervals ;
- Am, daily mean value ;
- Am2, mean value of am over a 48 hours period centered at the middle of the Greenwich day.

Km values are displayed as "musical diagram" according to Bartels solar rotations (page 45). The musical diagrams from 1959 onwards are available on request at CRPE-CNRS (Table 2). Monthly and yearly mean values of Am from 1959 onwards are given page 64.

1.3.3. Kp indices

The planetary three-hour-range index Kp is the mean standardized K-index from 13 observatories between 44° and 60° northern or southern geomagnetic latitude (Figure 2). The scale is 0o to 9o, 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. Several other indices are derived from Kp, namely the three-hour index ap (the equivalent range) and the daily indices Ap as well as C1p and C9 from the daily sum of ap.

The Kp-stations are :

Northern Hemisphere			***Southern Hemisphere***		
Observatory	*Corr. Geom. Lat.*		*Observatory*	*Corr. Geom. Lat.*	
Meanook	MEA	62.5°	Eyrewell	EYR	50.2°
Sitka	SIT	60.0°	Canberra	CAN	45.2°
Lerwick	LER	58.9°			
Ottawa	OTT	58.9°			
Lovö	LOV	56.5°			
Eskdalemuir	ESK	54.3°			
Brorfelde	BJE	52.7°			
Fredericksburg	FRD	51.8°			
Wingst	WNG	50.9°			
Witteveen	WIT	50.2°			
Hartland	HAD	50.0°			

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 nT for K = 9. At such a station the average range in nT 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 36 nT). In other words ap is an equivalent amplitude in the unit 2 nT. 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 2 nT 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 nT, 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 1500 nT, the factor is 6, so that, for K = 3, the equivalent amplitude is 90 nT, or, in other words the index ak for Sodankylä expresses equivalent amplitudes in the unit 6 nT. Similary, Ak is the daily average of the ak. Use of the daily Ap (planetary) or Ak (local value) is recommended in preference to the sum of the indices Kp or K.

The last column gives the daily planetary character figure Cp, as defined in Bulletin 12e, p. 111. It should be noted that Cp, introduced for a standardisation 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

Monthly tables of Kp and derived indices are given pages 68-73. Kp values are displayed as "musical diagrams" according to Bartels solar rotation page 67. These diagrams are also available on request at Geophysical Institute, Göttingen (Table 2). The frequencies of Kp indices is given by month page 74. Monthly and yearly mean values of Ap from 1932 onwards are given page 75.

1.3.4. Dst index

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 four low latitude stations network given in the following table.

Observatory	*Symbol*	*Dipole Lat.*	*Dipole Long.*
Honolulu	HON	21.0°N	266.4°
San Juan	SJG	29.9°N	3.2°
Hermanus	HER	33.3°S	80.3°
Kakioka	KAK	26.0°N	206.0°

The exact definition of Dst is given in earlier data publications (see references page 7). Monthly tables of hourly Dst-values are given pages 82 to 93, followed by a table of daily mean values (page 94). The graph of hourly values for the whole year is given pages 79-81; the table of monthly and yearly mean values from 1959 onwards is given page 95.

1.3.5. AE index

The AE indices are derived from geomagnetic variations in the horizontal component observed at selected observatories along the auroral zone in the northern hemisphere (Figure 3, Table 3). These variations are measured from a base line determined for each of the observatories. For each given time (UT), at one minute intervals the AU and AL indices are respectively defined as the maximum and minimum values among the one minute values of the variations from all the AE observatories at this UT. The AE index is defined by AU-AL, A0 is (AU+AL)/2.

For the sake of simplicity the term "AE (Auroral Electrojet) indices" is generally used to mean all the AE-associated indices, i.e. AU, AL, AE and A0. In a superposed plot of one minute values of H from all the AE observatories with a common time axis the AU and AL indices represent the upper and lower envelopes of the plotted points, respectively, and the AE value gives the separation of these envelopes. The AU and AL indices are intended to represent a measure of the maximum current density of the eastward and westward auroral electrojets, respectively. The AE index represents a measure of global auroral electrojet activity.

One minute values of the AE indices (AU, AL, AE and A0) are calculated at the Data Analysis Center for Geomagnetism and Spacemagnetism, (same address as WDC-C, Table 1) and more detailed plots and tables are given in the Data Book series of the World Data Center C2 for Geomagnetism. One minute values of these indices are available on magnetic tape at the World Data Center-A for Solar Terrestrial Physics in Boulder, Colorado and at the World Data Center-C2 for Geomagnetism in Kyoto (See Table 1).

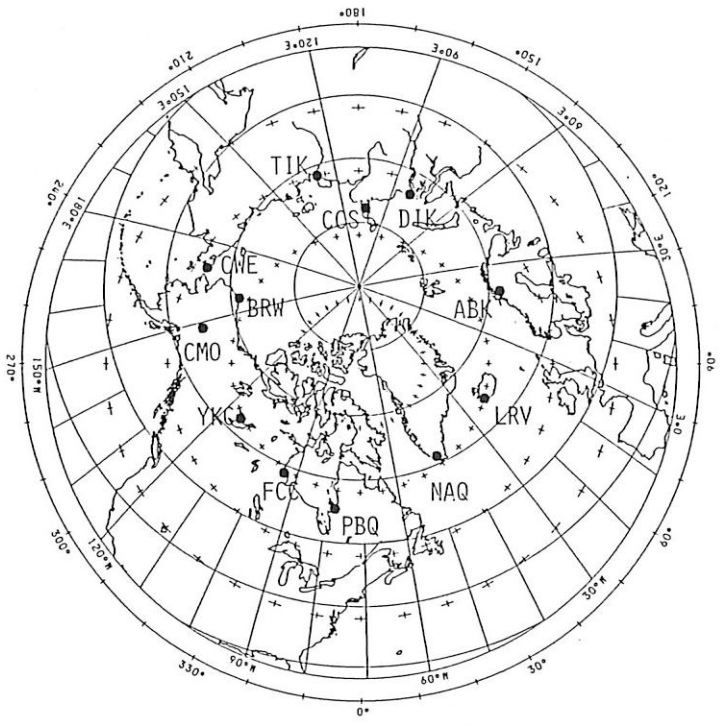
Tables of hourly averages of AU, AL and AE are given pages 100 to 123. The hourly averages of AU, AL and AE are computed from the one minute values of the respective indices, therefore they may not necessarily satisfy the relationship AU - AL = AE exactly. Similarly the daily mean indices are averages of the one minute values for the whole day and are not the daily means of the hourly averages.

Monthly and yearly mean values from 1957 onwards are given page 124.

TABLE 3

List of AE observatories

Observatory	*Symbol*	*Geographic*		*Geomagnetic*	
		Lat. (°N)		Long. (°E)	Lat. (°N)
	Long. (°E)				
Abisko	ABK	68.36	18.82	66.04	115.08
Dixon Island	DIK	73.55	80.57	63.02	161.57
Cape Chelyuskin	CCS	77.72	104.28	66.26	176.46
Tixie Bay	TIK	71.58	129.00	60.44	191.41
Cape Wellen	CWE	66.17	190.17	61.79	237.10
Barrow	BRW	71.30	203.25	68.54	241.15
College	CMO	64.87	212.17	64.63	256.52
Yellowknife	YKC	62.40	245.60	69.00	292.80
Fort Churchill	FCC	58.80	265.90	68.70	322.77
Poste de la Baleine	PBQ	55.27	282.22	66.58	347.36
Narssarssuaq	NAQ	61.20	314.16	71.21	36.79
Leirvogur	LRV	64.18	338.30	70.22	71.04



Distribution of AE(12) stations

Figure 3

1.4. CLASSIFICATION OF DAYS

The international five quietest days and the selection of the 24-hour and 48-hour intervals which are really quiet or very quiet are listed month by month pages 127 to 129. The extensive list of international quietest and more disturbed days and a list of magnetic storms are given page 130. These classifications are made according to the following.

1.4.1. Classification deduced from Kp indices

The selection of the quietest and most 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 (Table page 130, with a list of magnetic storms).

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 also for different months of the same year, the selected quietest 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 is marked by the letter A if for that day : $Ap > 6$, or marked by the letter K if $Ap \leq 6$, with one Kp value greater than 3 or two Kp values greater than 2+;
- a selected "disturbed day" is considered "not really disturbed" and marked by an asterisk if $Ap < 20$. (see P.N. Mayaud, Ann. Géophys., *26*, 901, 1969).

1.4.2. Classification deduced from aa indices

The selection of the quiet 24-hour intervals is made firstly on the basis of the mean value of aa which must be lower than the fixed value : 13 nT. Then, each individual aa value of the day is represented by a weight p, namely :

p	0	1	2	4	6
aa	≤ 17	$17 < aa \leq 21$	$21 < aa \leq 28$	$28 < aa \leq 32$	> 32

A day with a mean value of $aa \leq 13$nT and for which Σp is higher than, or equal to 4 is a quiet K-day ; if Σp is lower than 4, the day is a really quiet C-day.

The same rules are applied to select the 48-hour quiet or really quiet intervals, with the same limit for the aa mean value (13 nT) and a limit for Σp equal to 6. One has to note that in these intervals every local day (0 h to 24 h in local time) is really quiet, at any

1.5. RAPID VARIATIONS

1.5.1. Storm sudden commencements (ssc)

Sudden commencements followed by a magnetic storm or by an increase in activity lasting at least one hour are listed according to the data reported monthly by the observatories mentioned in the heading of the list . The final identification of the storm sudden commencements (ssc) is made from copies of records supplied to the Service of Rapid Variations (J.O. CARDUS, Director ; see Table 2 p. 8) by five low-latitude observatories or their supplementary observatories, also listed in the heading of the list. The copies are requested for all events, also for those reported by other observatories only. Furthermore all events are checked on the microfilm-copies of magnetograms of two low latitude observatories. In doubtful cases, attention is especially given to the monthly reports of all observatories. See IAGA-Bulletin N° 39, pp. 103-111 for a full explanation of this method, and some statistical results concerning the years 1968-1975.

In the list of ssc (example given page 133), the time in the column at the left is the mean value obtained from all observatories ; but the earliest and latest times reported by the observatories for the beginning of the event are added in parenthesis. For printing reasons only the minutes are given. These minutes generally belong to the hour of the event ; but if they are underlined they belong to the preceding hour. The next five figures indicate the qualification given to the event by the Service of Rapid Variations, using the above mentioned copies of low latitude stations (if a figure is underlined, it means that the supplementary station is used). The meaning of these numbers is as follows:

2 or 3 — the event can be unmistakably identified as being an ssc from the single record under consideration ; 3 is imposed instead of 2 when the following three features are present : very sharp change of rythm, large amplitude of the sudden move, remarkably morphology of it ;

1 — means that the event seen in this particular record is possibly an ssc, but is not sufficiently clear by itself for stating that it is a true ssc; one needs records from other longitudes for getting a firm judgement ;

0 — means that, from the record under consideration, the event could escape from the attention of the observer or does not deserve to be called an ssc.

After these numbers are given the average duration of the event in minutes (time-interval between the beginning and the maximum of the sudden move) and its average amplitude in nT at the five selected observatories. The next group indicate the number of observatories which have caracterised the ssc event by either letter A, or B, or C, in their monthly reports. A, B, C have the following meaning :

- A = very remarkable
- B = fair, ordinary but unmistakable
- C = very poor, doubtful

Note that the 0 to 3 qualification is given by the Service of Rapid Variations independently of these A, B, C, quality indications.

The last group indicates the number of observatories which have classified the event other than ssc namely :

si = sudden magnetic change which could not be classified as ssc ;

pg = giant pulsations, i.e. exceptional pulsations of very great period and regularity, with sufficient relative amplitude ;

pi = train of pulsations of irregular shape, consisting of several series of oscillations, each series lasting about 10 minutes ; period of the pulsations pi1 : shorter than 40 s, pi2 : 40-150s, pi3 : longer than 150s ;

pc = pulsation of more continuous character, generally with long duration ; period : pcl : 0,2-5s, pc2 : 5,1-10s, pc3 : 10-45s, pc4 : 45-150s, pc5 : 150-600s, pc6 longer than 600s ;

b = bay-like disturbance in the magnetogram ;

ncl = no classification given in the report ;

cr = crochet-like disturbance ;

1.5.2. SOLAR FLARE EFFECTS (sfe)

Solar flare effects (sfe) were reported by many observatories. A check of the reported case has been made by the Service of Rapid Variations (Table 2, p. 8) using reports of the observatories mentioned in the heading of the list. In the list (example given page 134), the time tabulated in the column at the left is the mean value of the times given for the beginning of the phenomenon. The stations that reported the sfe are listed behind the indicated time, grouped in accordance with the quality-indications A, B, C, D, E or X given in their reports. This letter index refers only to the existence of a movement in the curve, not to its being an sfe :

- A = very clear movement,
- B = fair, ordinary movement,
- C = very poor movement,
- D = movement not observed, although records are satisfactory,
- E = the movement cannot be observed because of heavy disturbance
- X = record missing.

Following the three-letter symbol for each station reporting a movement of classA, B, or C, a number is attached that refers to the opinion of the collaborating observatory about the type of movement :

- 3 = certainly a sfe
- 2 = probably a sfe
- 1 = probably not a sfe
- 0 = decidedly not a sfe

However some observatories did not follow the instructions given in the checking list and only reported "Yes" or "No". As the Service did not know whether these indications refer to the existence (or non existence) of a movement in the curves or to the opinion that the existing movement was (or was not) a sfe, we added these observatories, following the two letters Y and N, respectively. When some observatory identified the movement as a phenomenon different from a sfe they have been reported at the end of the list.

Stations in the twilight-zone reporting a movement (A, B or C and also E and X) are indicated by normal brackets ; those in the night-side of the earth by square brackets. Station in these two zones reporting D have been omitted from the list.

Doubtful solar-flare effects are also listed. They were considered as doubtful when most of the well located stations (with respect to the sub-solar point) did not report any movement, or when almost all stations around the world reported a clear movement. Further, some cases were considered doubtful because the totality of data was hindered by simultaneous world wide perturbation, and also when the solar, radio-electric and ionospheric records were available but did not show clear effect that could be associated with the sfe. Nevertheless it is probable that some of these cases are real solar-flare effects.

Note : *For technical reasons, the 1984 Rapid Variations Data were not available at the date of publication of the present Bulletin. They will be published in further regular issues of the IAGA-Bulletin N°32 :*

- *list of ssc, with 1985 data, in IAGA-Bulletin N°32p ;*
- *list of sfe, with 1987 data, in IAGA-Bulletin N°32r.*

SECTION 2

LIST OF OBSERVATORIES

LIST OF OBSERVATORIES

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
ABN	ABINGER	51.18	359.61	53.58	84.55	244	520	1925-1957
ABK	ABISKO	68.36	18.82	65.88	115.50	380		1945
AAE	ADDIS ABABA	9.03	38.77	5.19	110.97	2442		1958
ADE	ADELAIDE	-34.60	138.40	-43.99	214.06			1973
AGN	AGINCOURT	43.78	280.73	54.65	349.54	175	700	1881-1969
AHM	AHMEDABAD	23.02	72.60	14.03	145.65			1973
ALE	ALERT	82.50	297.50	86.24	163.08	2260		1961
ABG	ALIBAG	18.63	72.87	9.64	145.39	10		1904
AAA	ALMA ATA	43.25	76.92	33.69	152.21	1300		1963
ALM	ALMERIA	36.85	357.53	40.16	76.83	65		1955
ALU	ALOUSHTA	44.68	34.42	40.86	114.94			1957
AML	AMBERLEY	-43.15	172.72	-47.16	254.00	40	530	1929-1977
AWS	ANDREWS AFB	38.20	282.63	49.13	352.23			1972
ANN	ANNAMALAINAGAR	11.40	79.68	1.77	151.20	0		1957
TAN	ANTANANARIVO	-18.92	47.55	-23.85	114.58	1375		1902
ANO	ANTIPOLO	14.60	121.17	3.50	191.60	220		1910-1938
APA	APATITY	67.55	33.33	62.78	125.99			1973
API	APIA	-13.80	188.22	-15.61	261.99	2		1905
ART	ARCTOWSKI	-62.16	301.52	-51.33	9.25	16		1978
ARE	AREQUIPA	-16.47	288.52	-5.45	359.45			1958
AIA	ARGENTINE ISLAND	-65.20	295.70	-54.23	4.73	10	490	1957
SV3	ARTI	56.43	58.43	48.50	139.90			1973
ASH	ASHKHABAD	37.95	58.10	30.58	134.62		300	1958
ASO	ASO	32.88	131.02	22.58	199.85	570		1940
PEG	ATHENS	37.97	23.72	32.60	121.60	110		1900-1908
AUT	AU-TAU	22.45	114.05	11.20	184.60	60		1928-1939
AVE	AVERROES	37.99	14.02	38.13	93.59	230		1970
BKC	BACK	57.69	265.77	67.43	326.54			1978
BAG	BAGUIO	16.42	120.60	5.61	191.08	440		1967
BAL	BALDWIN	38.78	264.83	48.90	330.60	340		1901-1909
BLC	BAKER LAKE	64.33	263.97	73.67	319.15	30		1951
BNG	BANGUI	4.43	18.57	4.45	90.33	390		1952
BAP	BARRACKPORE	22.78	88.36	12.20	160.30	10		1904-1914
BRW	BARROW	71.30	203.25	69.10	243.67	7		1949
BTH	BARTH	54.37	12.75	55.00	99.90	20		1898-1903
BTV	BATAVIA	-6.18	106.83	-17.19	177.64	10		1884-1944
BJI	BEI-JING	40.06	116.18	29.12	186.20	43		1957
KGD	BEREZNIAKI	49.82	73.08	40.30	150.00			1965
BEL	BELSK	51.83	20.80	50.19	105.24	180		1960
BIN	BINZA	-4.38	15.26	-3.57	85.40	300		1953
BJN	BJORNOYA	74.50	19.20	71.06	124.67	80		1951
BOC	BOCHUM	51.49	7.23	52.42	92.24	120		1893-1912
BGA	BORGA	-72.97	356.20	-66.46	42.49			1975
BOX	BOROK	58.03	38.97	52.97	324.23			1977
BOU	BOULDER	40.13	254.77	48.88	319.04	1675		1964
BZR	BOUZAREAH	36.80	3.02	39.20	82.40	340		1912-1920

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
BJE	BRORFELDE	55.63	11.67	55.80	97.60	80		1978
BVZ	BUDAKESZI	47.52	18.90	46.40	101.80	410		1949-1955
BDV	BUDKOV	49.07	14.02	48.82	97.64	496		1967
BY1	BYRD STATION 1	-79.98	240.00	-70.60	336.60	1515		1957-1961
BY2	BYRD STATION 2	-80.01	240.51	-70.60	336.90	1515		1962-1965
CBB	CAMBRIDGE BAY	69.10	255.00	76.77	299.13	17		1972
CAN	CANBERRA	-35.30	149.00	-43.38	226.09	850	420	1980
CCS	CAPE CHELYUSKIN	77.72	104.28	66.72	177.41	10		1935
CGH	CAPE OF GOOD HOPE	-33.93	18.48	-33.10	81.80			1842-1846
CTO	CAPE TOWN	-33.95	18.47	-33.12	82.06	20		1932-1940
CWE	CAPE WELLEN	66.17	190.17	62.36	239.37	10		1933
CY.	CAPO DI MONTE	40.86	14.26	40.90	94.80	160		1883-1911
CPI	CAPRI	40.55	14.22	40.58	94.60			1957
CAO	CASTELLACCIO	44.43	8.93	45.34	90.82	1175	350	1933
CRC	CASTLE ROCK	37.23	237.87	43.56	301.06		460	1970
HVN	CENTRO GEOFISICO	22.97	277.86	34.00	347.40			1965
CPA	CHA-PA	22.35	103.83	11.38	175.03	1550		1957
CLF	CHAMBON LA FORET	48.02	2.27	50.06	85.71			1936
CLH	CHELTENHAM	38.70	283.20	49.65	352.89	72	530	1901-1956
CBI	CHICHIJIMA	27.15	142.30	17.80	210.78	154		197
CHR	CHRISTCHURCH	43.54	172.62	47.60	254.3	10		1902-1928
COI	COIMBRA	40.22	351.58	44.53	71.78	140		1866
BOM	COLABA	18.90	72.82	9.70	145.30	10		1846-1905
CMO	COLLEGE 2	64.87	212.17	65.10	259.23	200		1948
CLL	COLLMBERG	51.32	13.00	51.16	97.70			1935
CSS	COLORADO SPRINGS	38.50	255.51	47.36	320.27			1973
COP	COPENHAGEN	55.69	12.58	55.39	99.64			1892-1900
CZT	CROZET	-46.43	51.87	-51.49	111.46	500		1974
DAL	DALLAS	32.98	263.25	42.73	330.14	210		1964-1974
DRS	DAR ES SALAAM	-6.51	39.18	-10.17	108.56			1896-1900
DAV	DAVAO	7.08	125.58	-3.49	196.39			1968
DVS	DAVIS	-68.60	78.00	-76.81	124.34			1973
DBN	DE BILT	52.10	5.18	53.40	90.56			1899-1938
DDI	DEHRA DUN	30.32	78.06	20.50	151.60	680		1903-1943
DIK	DIXON	73.55	80.57	63.36	162.45	20		1933
DOB	DOMBAS	62.07	9.12	61.97	100.94	660		1916
DOU	DOURBES	50.10	4.60	51.60	88.99	208		1955
DL	DUBLIN	53.35	353.73	56.90	80.00			1841-1850
DRV	DUMONT DURVILLE	-66.66	140.01	-75.06	232.15	40		1957
TFS	DUSHETI	42.08	44.70	36.50	23.50	982		1938
KIV	DYMER	50.72	30.30	47.30	113.60	100		1964
EAA	EAST ANGLIA	52.63	1.30	54.64	87.01			1973
EIC	EASTER ISLAND	-27.17	250.58	-18.37	324.28			1959-1963
EP.	EASTPORT	44.90	293.02	56.20	4.80			1860-1867
EBR	EBRO	40.82	0.50	43.45	81.13	50		1910
ENB	EIELSON AFB	64.67	212.92	65.06	260.11			1966

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
ELI	ELIZABETHVILLE	-11.63	27.42	-13.00	95.93	1230		1932-1957
ESK	ESKDALEMUIR	55.32	356.80	58.04	84.07	245	660	1908
EKP	ESKIMO POINT	61.10	265.93	70.78	324.73			1973
EYR	EYREWELL	-43.41	172.35	-47.48	253.71	390	540	1979
FAL	FALMOUTH	50.15	354.92	53.60	79.40	50		1892-1912
FCC	FORT CHURCHILL 1	58.80	265.90	68.53	325.60	15		1964
FCC	FORT CHURCHILL 2	58.77	265.73	68.70	325.20	15		1964
FMM	FORT MCMURRAY	56.70	248.60	64.18	305.05			1973
FSV	FORT SEVERN	55.98	272.35	66.34	336.32			1977
FSM	FORT SMITH	58.00	246.00	65.01	301.02			1973
FYU	FORT YUKON	66.57	214.70	67.08	259.59			1957
FRD	FREDERICKSBURG	38.20	282.63	49.13	352.23	69	520	1956
FTN	FREETOWN	8.46	346.79	14.21	59.59			1961-1967
FUQ	FUQUENE	5.47	286.27	16.47	357.07	2543		1954
FUR	FURSTENFELDBRUCK	48.17	11.28	48.48	94.62	572		1939
GEN	GENOVA MC	44.55	8.96	45.50	91.00	700		1958-1962
GEN	GENOVA C	44.43	8.93	45.50	91.00	350		1933-1969
GIT	GILGIT	35.93	74.30	26.67	148.86	1494		1967
GIM	GILLAM	56.40	265.30	66.11	326.54			1975
GIR	GIRARDVILLE	49.00	287.40	60.01	357.77			1973
GNA	GNANGARA	-31.78	115.95	-42.71	187.94	60	440	1959
GDH	GODHAVN	69.23	306.48	79.25	34.62	8		1926
GOT	GOTTINGEN	51.55	9.97	51.97	95.00	270		1957
GVD	GONZALES VIDELA	-64.82	297.15	-53.88	5.80	60		1961
VLA	GORNOTAYEZHNAYA	43.68	132.17	30.10	199.60	200		1958
GRM	GRAHAMSTOWN	-33.28	26.48	-34.01	90.04	650		1974
GWC	GREAT WHALE RIVER	55.30	282.25	66.21	350.32	25		1965
GRW	GREENWICH	51.48	0.00	53.79	85.10	50		1846-1925
GCK	GROCKA	44.63	20.77	43.28	102.27	231		1958
GUA	GUAM	13.58	144.87	4.57	214.76	150		1957
HLL	HALLET	-72.32	170.22	-74.42	278.16			1957-1963
HBA	HALLEY BAY	-75.50	333.40	-66.36	25.85	30		1957
HBK	HARTEBEESTHOEK	-25.88	27.71	-27.01	93.14			1980
HAD	HARTLAND	50.98	355.52	54.17	80.29	95	530	1957
HTY	HATIZYO	33.07	139.83	23.45	207.83			1978
HVN	HAVANA	22.97	277.85	33.75	347.53			1964
HII	HEARD ISLAND	-53.03	73.37	-61.50	132.30	10		1950-1954
HIS	HEISS ISLAND	80.62	58.05	71.60	156.33	20		1959
HLP	HEL	54.60	18.82	53.19	104.80	4		1957
HLW	HELWAN	29.87	31.33	26.98	108.01	120		1903-1959
HCR	HERCHMER	57.40	265.90	67.16	326.86			1973
HER	HERMANUS	-34.42	19.23	-33.73	82.67	26	300	1941
HNA	HOLLANDIA	-2.57	140.52	-11.94	212.17	98		1957-1962
HKC	HONG KONG 1	22.30	114.18	11.00	184.70	30		1884-1928
HKC	HONG KONG 2	22.20	114.20	11.22	184.82	555		1972
HON	HONOLULU 1-2-3	21.32	202.00	21.46	268.57	4		1902

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
HUA	HUANCAYO	-12.05	284.67	-1.06	355.67	3313		1922
HRB	HURBANOVO	47.87	18.18	46.89	101.07	120		1938
HYB	HYDERABAD	17.42	78.55	7.86	150.69	500		1965
IBD	IBADAN	7.43	3.90	10.17	76.46	300		1956
IRT	IRKUTSK	52.17	104.45	41.18	176.22	470		1887-1914
ISL	ISLAND LAKE	53.90	265.30	63.65	327.61			1976
ISK	ISTANBUL KANDILLY	41.07	29.07	38.31	108.87	130		1947
JSS	JASSY	47.18	27.53	44.40	109.60			1935-1957
KAK	KAKIOKA	36.23	140.18	26.62	207.77	28		1913
KNG	KALININGRAD	54.60	20.20	52.94	106.06			1964
KNY	KANOYA	31.42	130.88	21.12	199.85	105		1957
KNZ	KANOZAN	35.25	139.97	25.63	207.70	342		1961
KGD	KARAGANDA	49.82	73.08	40.56	150.04			1966
TFS	KARSANI	41.83	42.70	36.20	123.50	1100		1905-1934
KZN	KAZAN	55.83	48.85	49.36	131.52	80		1909
KEL	KELES	41.42	69.20	32.40	145.20	450		1936-1963
KEM	KEM	65.00	34.40	60.26	124.74			1973
KEW	KEW	51.47	359.68	54.10	85.10	10		1857-1924
KHB	KHABAROVSK	48.48	135.07	38.39	201.74			1972
KIV	KIEV	50.72	30.30	47.42	113.40	100		1963
KIR	KIRUNA	67.83	20.42	65.14	116.19	390		1950
KLY	KLYUCHI	55.03	82.90	44.70	159.00			1967
KOD	KODAIKANAL	10.23	77.47	0.81	148.93	2323		1902
KTS	KORETS	50.60	61.07	42.64	140.10			1968
KOR	KOROR	7.33	134.50	-2.64	205.21	10		1957-1966
MOS	KRASNAYA	55.47	37.32	50.70	121.70	190		1930
KSA	KSARA	33.82	35.88	30.03	113.26	920		1937-1968
KUY	KUYPER	-6.03	106.73	-17.04	177.54	1		1950-1962
KWJ	KWAJALEIN	9.05	167.20	3.13	237.11			1973
AQU	L'AQUILA	42.38	13.32	42.52	94.35	682		1960
LQA	LA QUIACA	-22.10	294.40	-11.13	5.01	3464		1920
LAS	LAS ACACIAS	-35.00	302.32	-24.24	11.86	20		1964
LDR	LAUDER	-43.03	169.41	-37.70	232.10	370		1977
LRV	LEIRVOGUR	64.18	338.30	69.71	71.98	30		1957
LNN	LENINGRAD	59.95	30.70	56.14	118.32	70		1869-1877
LER	LERWICK	60.13	358.82	62.15	89.55	105	920	1923
LIS	LISBON	38.72	350.85	43.30	70.60			1890-1900
LGR	LOGRONO	42.45	357.50	45.59	78.66	445		1957
MMK	LOPARSKAYA	68.25	33.08	63.30	126.70	200		1961
LOB	LORING AFB	46.95	292.12	57.95	3.89			1966
LA.	LOS ANGELES	34.05	241.74	41.20	305.70			1882-1889
LMM	LOURENCO MARQUES	-25.92	32.58	-27.98	97.96	40		1957
LOV	LOVO	59.35	17.83	57.84	106.75	25	720	1928
LOZ	LOVOZERO	67.97	35.02	62.90	127.64			1957
LUA	LUANDA	-8.92	13.17	-7.63	82.48	53		1956
LB	LUBECK	53.86	10.69	54.00	97.00			1885-1893

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
LUK	LUKIAPANG	31.32	121.03	20.20	190.80	100		1908-1933
LNP	LUNPING	25.00	121.17	14.21	191.28		100	1965
LVV	LVOV	49.90	23.75	47.80	107.10	400		1952
LWI	LWIRO	-2.25	28.80	-4.06	99.10	1680		1958-1970
MBO	MBOUR	14.40	343.02	20.68	56.80	10		1952
MCQ	MACQUARIE ISLAND	-54.50	158.95	-60.54	244.48	4		1951
MGD	MAGADAN	60.12	151.02	51.28	212.15		610	1966
MSC	MAISACH	48.20	11.26	48.50	94.90	480		1927-1932
MQ	MAKERSTOUN	55.58	357.48	52.20	85.30			1841-1849
MAB	MANHAY	50.30	5.68	51.60	90.15	440		1936-1971
MAN	MANILA	14.58	120.98	3.50	191.40			1891-1904
MRN	MARION ISLAND	-46.85	37.87	-49.30	96.75	45		1972
AMS	MARTIN DE VIVIES	-37.83	77.57	-46.94	142.78			1981
MSR	MATOCHKIN SHAR	73.26	56.40	64.80	147.40	250		1937-1944
MRI	MAURITIUS	-20.09	57.55	-26.80	124.40	50		1892-1965
MAW	MAWSON	-67.60	62.88	-73.32	106.62	6		1955
MEA	MEANOOK	54.62	246.67	61.88	304.02	686	1360	1916
MEL	MELBOURNE	-37.83	144.98	46.60	222.30	30		1865-1921
MEV	MELVILLE AFB	53.28	299.47	64.05	14.25			1966
MMB	MEMAMBETSU	43.90	144.20	34.61	210.23	39	340	1950
MNK	MINSK	54.10	26.52	51.32	111.51			1961
MIR	MIRNY	-66.55	93.02	-76.80	151.15		20	1956
MLT	MISALLAT	29.52	30.90	26.72	107.52	120		1960
MIU	MIYAZU	35.32	135.11	25.30	203.32			1973
MIZ	MIZUSAWA	39.01	141.08	29.47	208.21			1969
MFP	MOCA	3.35	8.67	5.27	80.39	1949		1958-1971
MOL	MOLODEZHNAYA	67.67	45.85	70.10	87.50	854		1965
MOS	MOSCOW	55.48	37.32	50.79	121.62	190		1880-1888
MBC	MOULD BAY	76.30	240.60	79.62	259.89	150		1962
MWC	MT WILSON	34.14	241.97	41.19	306.30			1926-1958
MNH	MUNCHEN	48.15	11.61	48.40	95.20	530		1842-1926
MUT	MUNTINLUPA	14.37	121.02	3.58	191.57	62		1951
MMK	MURMANSK	68.25	33.08	63.45	126.43	210		1958-1960
NCK	NAGYCENK	47.63	16.72	46.93	99.59	160		1961
NAI	NAIROBI	-1.28	36.83	-4.60	107.19	1673		1964
NTS	NANTES	47.25	358.44	50.10	81.70	35		1923-1958
NAQ	NARSSARSSUAQ	61.20	314.6O	70.60	38.66	4		1973
NL	NEW ALESUND	78.92	11.93	75.43	130.70	12		1966
NEW	NEWPORT	48.27	242.88	55.14	302.78	780	700	1966
NYI	NEW YEAR ISLAND	54.65	295.85	43.30	5.20			1902-1916
NCE	NICE	43.72	7.30	45.00	89.00			1889-1901
NGK	NIEMEGK	52.07	12.68	51.94	97.77	78	500	1932
NSM	NITSANIM	31.73	34.60	28.21	111.55	150		1963-1967
NOK	NORILSK	69.20	88.00	58.68	165.77			1969
NKK	NOVOKAZALINSK	45.77	62.12	37.76	139.83			1974
NVL	NOVOLAZAREVSKAYA	-70.77	11.82	-66.76	55.88	460		1961

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
NVS	NOVOSIBIRSK	55.03	82.90	44.92	159.07		480	1967
NUR	NURMIJARVI	60.52	24.65	57.71	113.51	105		1953
ODE	ODESSA	46.78	30.88	43.52	112.42	50		1896-1925
OGY	O'GYALIA	47.88	18.19	46.80	101.30	110		1906-1912
OKN	OKINAWA	24.75	125.33	14.14	195.18			1977
ORC	ORCADAS DEL SUR	-60.74	315.22	-50.30	20.00	4		1931-1962
OSL	OSLO	59.98	10.72	59.60	101.10			1843-1930
OTT	OTTAWA	45.40	284.45	56.37	354.11	75	790	1968
PAG	PANAGYURISHTE	42.52	24.18	40.61	104.75	556		1948
PPT	PAPEETE	-17.55	210.38	-15.09	284.44			1958
PAB	PARAMARIBO	5.82	304.78	16.41	16.28	2		1957
PET	PARATUNKA	53.10	158.63	44.80	220.00	110		1973
IRK	PATRONY	52.17	104.45	40.90	176.10	500		1959
PEB	PELLY BAY	68.50	270.20	78.39	323.86			1977
PEK	PEKING 1	39.95	116.47	28.70	186.30			1870-1883
PEK	PEKING 2	40.04	116.18	28.80	186.10			1957-1964
PEG	PENDELI	38.03	23.52	36.38	102.73	495		1958
PRF	PERPIGNAN	42.70	2.88	44.90	84.30	30		1890-1900
PIL	PILAR	-31.67	296.12	-20.73	6.39	336		1905
PLS	PLAISANCE	-20.43	57.67	-27.02	124.68	123		1966
PZ	PLESHCHENITZI	54.50	27.88	51.40	113.10	200		1961
POD	PODKAMENAYA TUNG	61.40	90.00	50.84	165.64		670	1968
POL	POLA	44.86	13.26	44.80	95.90	30		1883-1922
PAF	PORT AUX FRANCAIS	-49.35	70.22	-57.31	130.79	50		1957
PMG	PORT MORESBY	-9.40	147.15	-17.99	219.75	80		1957
PBQ	POSTE DE LA BALEINE	55.30	287.25	66.31	357.38			1984
POT	POSTDAM	52.38	13.06	52.16	98.28	80		1890-1907
PRU	PRUHONICE	49.98	14.55	49.59	98.55	329		1946
QUE	QUETTA	30.18	66.95	21.77	141.35	1737		1953
RIT	RANKIN INLET	62.80	267.90	72.64	326.36			1975
REG	REGENSBERG	47.48	8.44	48.40	91.70	605		1957-1969
RES	RESOLUTE BAY	74.70	265.10	83.14	295.98	25		1954
RDJ	RIO DE JANEIRO	-22.91	316.83	-12.80	26.00	60		1899-1906
ROB	ROBURENT	44.30	7.88	45.41	89.74	815		1964
RSV	RUDE SKOV	55.85	12.45	55.56	99.61	48	600	1907-1978
SAB	SABHAWALA	30.33	77.80	20.78	151.34	498		1964
SFS	SAN FERNANDO	36.47	353.80	40.47	72.90	28		1891
SJG	SAN JUAN 1-2-3	18.38	293.88	29.36	5.21	100		1903
SNA	SANAE	-70.30	357.65	-64.23	46.20	52		1962
STJ	SAINT JOHNS	47.59	307.32	58.20	23.30			1968
PSM	SAINT MAUR	48.81	2.49	50.80	86.60			1883-1900
SMG	SAN MIGUEL	37.77	334.35	45.04	52.61	175		1911
SBA	SCOTT BASE	-77.85	166.78	-78.84	293.24	15		1957
SED	SEDDEN	52.28	13.01	52.10	98.50	40		1908-1931
STF	SDR STROMFJORD	67.02	309.28	76.83	36.25			1972
SSH	SHE-SHAN	31.10	121.19	20.30	191.03	100		1934

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
SHB	SHEPERD BAY	68.75	266.25	78.14	316.78			1966
SHL	SHILLONG	25.55	91.88	14.99	163.95			1975
SSO	SIMOSATO	33.57	135.93	23.62	204.24	59		1954-1978
SIT	SITKA	57.07	224.67	60.31	278.12	22	1020	1902
SOD	SODANKYLA	67.37	26.63	63.68	120.64	178		1914
SLU	SLUTSK	59.68	30.48	55.80	118.30			1878-1941
SGG	SOUTH GEORGIA	-54.28	323.52	-44.82	27.73		350	1974-1982
SPA	SOUTH POLE	-90.00	0.00	-78.98	0.00	2820		1959
SRE	SREDNIKAN	62.43	152.32	53.67	212.35	61		1936-1966
MGD	STEKOLNI	60.12	151.02	51.00	211.80			1966
ODE	STEPANOVKA	46.78	30.88	43.40	112.50	140		1948
STO	STONYHURST	53.85	357.53	56.52	83.91	116		1865-1967
SUA	SURLARI	44.68	26.25	42.32	107.42	84		1949
SVD	SVERDLOVSK	56.73	61.07	48.64	141.89	290	530	1887-1931
SWI	SWIDER	52.12	21.25	50.38	105.79	100		1921
SYO	SYOWA BASE	-69.03	39.60	-70.10	79.70	15		1958-1970
TAM	TAMANRASSET	22.80	5.53	24.94	81.23	1395		1932
TNG	TANGERANG	-6.17	106.63	-17.18	177.43	14		1964
TKT	TASHKENT	41.33	69.62	32.51	145.52	500		1883
TTB	TATUOCA	-1.20	311.48	8.98	220.50	10		1957-1971
TEH	TEHERAN	35.73	51.38	29.36	128.05	1367		1960-1973
SZT	TENERIFE	28.48	343.72	34.60	60.30	310		1959
TEO	TEOLOYUCAN	19.75	260.82	29.35	329.24	2280		1923
TAA	TERRE ADELIE	-66.67	140.02	-75.07	232.18	40		1957
TMP	THOMPSON	55.72	262.12	65.09	322.65			1969
THU	THULE/CAMP TUTO	76.55	291.17	87.53	11.26	480		1932-1952
THL	THULE/QANAQ	77.48	290.83	88.46	14.10	57		1956
TFS	TIFLIS	42.08	44.70	36.62	123.49	982		1879-1905
THY	TIHANY	46.90	17.90	46.01	100.41	187		1949
TKH	TIKHAYA BAY	80.30	52.80	71.74	153.42	10		1932-1958
TIP	TIRUCHIRAPALLI	10.80	78.70	1.26	150.19			1975
TIK	TIXIE BAY	71.58	129.00	60.99	192.81	40		1944
KAK	TOKYO	35.75	139.72	26.10	207.41	20		1897-1912
TOL	TOLEDO	39.88	355.95	43.39	76.18	501		1947
TMK	TOMSK	56.47	84.93	46.21	160.93	200	510	1958-1969
TOO	TOOLANGI	-37.53	145.47	-46.05	222.66	457	510	1922-1980
AGN	TORONTO	43.67	280.50	54.80	349.10			1872-1898
TLE	TOULOUSE	43.61	1.46	46.00	83.20	190		1894-1905
TGO	TOUNGOO	18.93	96.45	7.90	167.80	300		1905-1923
TOH	TOYOHARANEW	46.95	142.75	37.20	208.30	70		1932-1941
TRW	TRELEW	-43.25	294.68	-32.28	4.81		290	1957-1970
TRD	TRIVANDRUM	8.48	76.95	-0.88	148.24	300		1957
TRO	TROMSO	69.67	18.95	67.00	117.16	105		1930
TSN	TSINGTAO	36.07	120.32	25.00	189.90	80		1924-1936
TSU	TSUMEB	-19.22	17.70	-18.59	84.83	1300		1964
TUC	TUCSON	32.25	249.17	40.37	314.57	770	380	1910

LIST OF OBSERVATORIES (continued)

IAGA Code	Name	Geographic		Geomagnetic		Alt. (m)	K=9 lower limit	Open -Closed
		Lat.	Long.	Lat.	Long.			
TUL	TULSA	35.92	264.22	45.75	330.78	257		1961
UCC	UCCLE	50.80	4.36	52.30	89.40	100		1896-1919
UBA	ULAN BATOR	47.85	106.75	36.84	178.03			1966
WIT	UTRECHT	52.00	5.12	53.40	90.80			1891-1896
VLJ	VAL JOYEUX	48.82	2.02	50.87	85.83			1901-1936
VAL	VALENTIA	51.93	349.75	56.15	74.79	14		1899
VSS	VASSOURAS	-22.40	316.35	-12.53	25.70	457		1915
VIC	VICTORIA	48.52	236.58	54.33	295.66	185	660	1956
VQS	VIEQUES	18.15	294.55	29.11	5.93			1903-1924
VLA	VLADIVOSTOK	43.12	131.90	32.84	199.68			1932
LNN	VOEIKOVO	59.95	30.70	56.00	118.50	70		1947
VOR	VOROSHILOV	43.78	132.03	33.20	199.60	30		1952-1957
VOS	VOSTOK	-78.45	106.87	-89.31	139.62	3500		1958
SVD	VYSOKAYA	56.73	61.07	48.40	141.90	290		1932
WAT	WATHEROO	-30.30	115.90	-41.23	187.82	240		1919-1958
WES	WESTON	42.38	288.68	53.40	359.49			1960
WHS	WHITE SHELL	49.80	264.80	59.56	328.39			1975
WIK	WIEN	48.25	16.36	47.60	69.70			1892-1898
WIA	WIEN-AUHOF	48.20	16.24	47.50	69.60	2050		1929-1950
WIK	WIEN-KOBENZL	48.27	16.32	47.62	69.48	400		1954
WLH	WILHELMSHAVEN	53.53	8.15	54.20	94.50	10		1884-1911
WIL	WILKES	-66.25	110.58	-77.26	182.71			1957-1966
WNG	WINGST	53.75	9.07	54.22	95.21	50	550	1939
WNP	WINNIPEG	49.63	262.87	59.19	326.02			1969-1975
WIT	WITTEVEEN	52.82	6.67	53.79	92.39	17	540	1938-1988
YAK	YAKUTSK	62.02	129.72	51.53	195.40	100		1931
TKT	YANGI BAZAR	41.33	69.62	32.30	145.60	500		1964
YAU	YAUCA	-15.53	285.33	-4.54	356.36			1957-1960
YKC	YELLOWKNIFE	62.47	245.53	69.14	296.56	198		1958
YSS	YUZHNO SAKHALINSK	46.95	142.72	37.49	208.45			1948
KNK2	ZAIMISHCHE	55.83	48.85	49.20	131.60	80		1914-1972
ZAR	ZARIA	11.15	7.65	13.12	80.89			1964
ZKW	ZI KA WEI	31.22	121.43	20.20	191.20	10		1875-1907
ZIN	ZINZEN	37.48	126.63	26.60	195.30	50		1921-1941
ZSC	ZO SE	31.10	121.19	20.00	190.80	100		1933-1974
ZUY	ZUY	52.47	104.03	41.20	17.80	430		1915-1958

Sites of observatories having provided records over 50 years or more

First Observatory Name	Open -Closed	Further Observatories, if any Name	Open -Closed
AGINCOURT	1881 - 1969	OTTAWA	1968 - ...
ALIBAG	1904 - ...		
AMBERLEY	1929 - 1977	LAUDER	1977 - ...
ANTANANARIVO	1890 - 1893	same	1902 - 1922
		same	1929 - ...
APIA	1905 - ...		
BATAVIA	1884 - 1944	KUYPER	1950 - 1962
	(1899 - 1902 missing)	TANGERANG	1964 - ...
CAPE TOWN	1932 - 1940	HERMANUS	1941 - ...
CAPE WELLEN	1933 - ...		
	(1944 - 1949 missing)		
CHELTENHAM	1904 - 1956	FREDERICKSBURG	1956 - ...
COIMBRA	1866 - ...		
COLABA	1846 - 1905	ALIBAG	1904 - ...
DIXON	1933 - ...		
	(1945 and 1947 missing)		
DOMBAS	1916 - ...		
EBRO	1910 - ...		
	(1938 - 1942 missing)		
ESKDALEMUIR	1908 - ...		
FÜRSTENFELDBRUCK	1939 - ...		
GODHAVN	1926 - ...		
GREENWICH	1846 - 1925	ABINGER	1925 - 1957
		HARTLAND	1957 - ...
HELWAN	1903 - 1959	MISSALAT	1960 - ...
	(1952 - 1955 missing)		
HONG KONG	1884 - 1928	AU TAU	1928 - 1939
		HONG KONG	1972 - ...
HONOLULU	1902 - ...		
HUANCAYO	1922 - ...		
KAZAN	1909 - ...		
KELES	1936 - 1963	YANGI BAZAR	1964 - ...
KEW	1858 - 1924		
KODAIKANAL	1902 - ...		
KRASNAYA	1930 - ...		
(1934 - 1937 and 1939 - 1945 missing)			
LA QUIACA	1920 - ...		
LENINGRAD	1869 - 1877	SLUTSK	1878 - 1941
	(1871 missing)	VOEIKOVO	1947 - ...
LERWICK	1923 - ...		
LOVÖ	1928 - ...		
MANILA	1891 - 1904	ANTIPOLO	1910 - 1938
		MUNTINLUPA	1951 - ...
MAURITIUS	1892 - 1965		

Sites of observatories having provided records over 50 years or more

First Observatory Name	Open -Closed	Further Observatories, if any Name	Open -Closed
MEANOOK	1916 - ...		
MELBOURNE	1865 - 1921	TOOLANGUI	1922 - 1980
		CANBERRA	1980 - ...
OSLO	1843 - 1930		
PILAR	1905 - ...		
POSTDAM	1890 - 1907	SEDDEN	1908 - 1931
		NIEMEGK	1932 - ...
RUDE SKOV	1907 - 1978	BJORFELDE	1978 - ...
SAINT MAUR	1883 - 1900	VAL JOYEUX	1901 - 1936
		CHAMBON LA FORET	1936 - ...
SAN FERNANDO	1891 - ...		
SAN JUAN (PUERTO RICO)	1903 - 1924	same	1926 - 1964
		same	1965 - ...
SAN MIGUEL	1911 - ...		
SITKA	1902 - ...		
SODANKYLA	1914 - 1931		
	(1945 missing)		
STONYHURST	1865 - 1943	SAME	1961 - 1967
SVERDLOVSK	1887 - 1978	VYSOKAYA - DUBRAVA	1932 - ...
SWIDER	1921 - ...		
TEOLOYUCAN	1923 - ...		
TIFLIS	1879 - 1905	KARSANI	1905 - 1934
		DUSHETI	1938 - ...
TIKHAYA BAY	1932 - 1958	HEISS ISLAND	1959 - ...
	(1947 - 1950 missing)		
TOKYO	1897 - 1912	KAKIOKA	1913 - ...
TROMSÖ	1930 - ...		
TUCSON	1910 - ...		
UCCLE	1896 - 1919	MANHAY	1936 - 1971
			(1943 - 1945 missing)
		DOURBES	1955 - ...
UTRECHT	1891 - 1896	DE BILT	1899 - 1938
		WITTEVEEN	1938 - 1988
VALENTIA	1899 - ...		
VASSOURAS	1915 - ...		
WATHEROO	1919 - 1958	GNANGARA	1959 - ...
WILHELMSHAFEN	1884 - 1911	WINGST	1939 - ...
YAKUTSK	1931 - ...		
ZAIMISHCHE	1914 - 1972		
ZI - KA - WEI	1875 - 1907	LUKIAPANG	1908 - 1933
		ZO - SE	1933 - 1974

SECTION 3

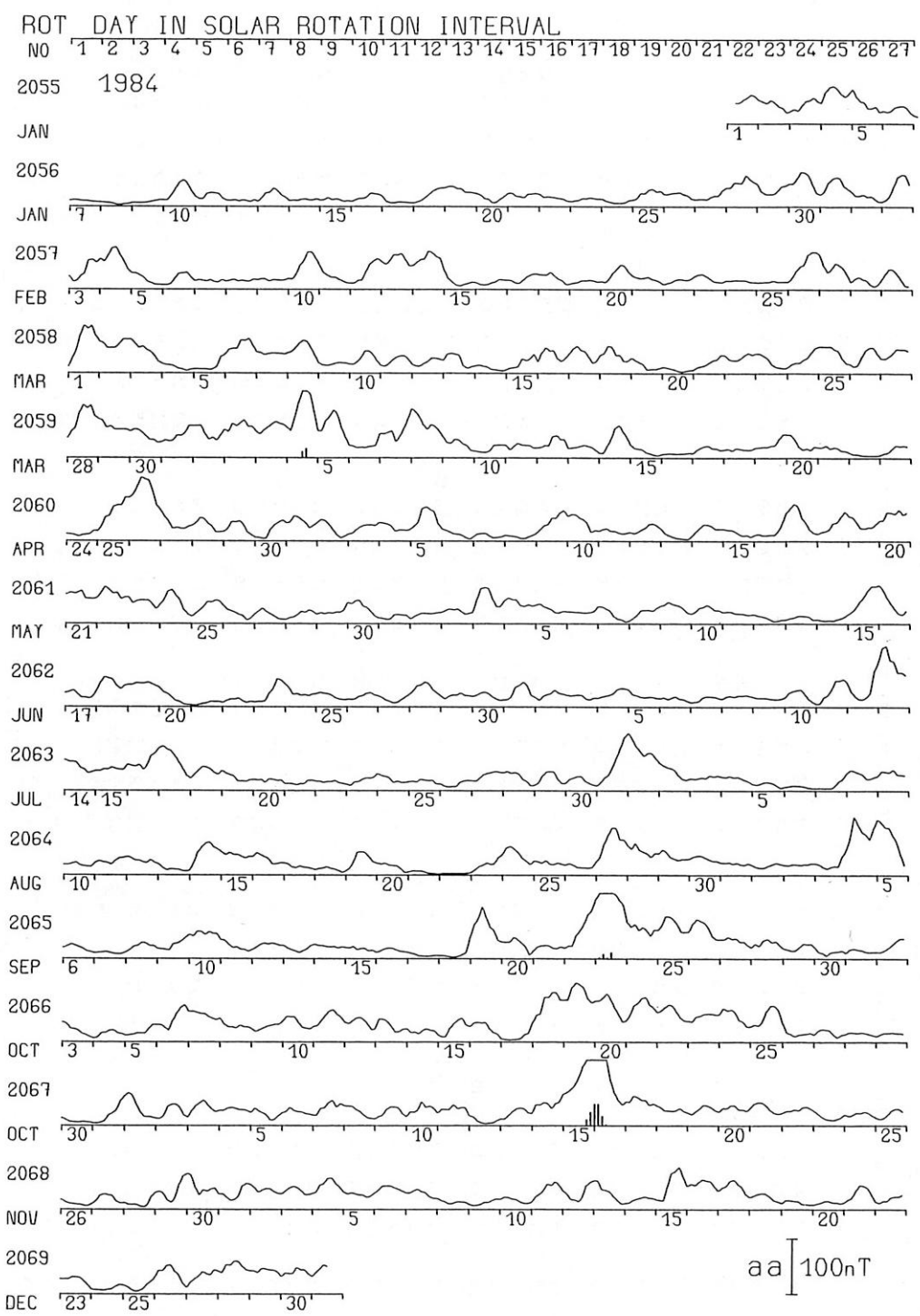
I A G A INDICES

3.1.	**aa** indices	35
3.2.	**an, as, am** indices	43
3.3.	**Kp** indices	65
3.4.	**Dst** indices	77
3.5.	**AU, AL, AE** indices	97

SECTION 3

3.1. aa INDICES

Twelve-hour running averages (graph)	37
Half-daily and daily values	38
Monthly and yearly averages of **aa**	
1868 - 1984	40
Twelve-month running mean values (graph)	42



12-HOUR RUNNING AVERAGES OF THE THREE-HOUR-RANGE INDICES aa 1984

	JAN.					FEB.					MAR.					APR.					MAY					JUNE				
	DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY		
	N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm	
1	50	41	38	52		27	18	27	18		51	47	12	86		43	47	58	33		31	40	33	38		20	8	9	19	
2	34	31	37	29		35	28	9	54		54	49	58	46		66	47	50	63		26	28	34	21		31	17	21	27	
3	43	27	23	47		27	25	23	29		52	52	61	42		61	46	48	60		28	13	13	29		43	43	21	65	
4	48	66	66	49		85	47	55	77		14	12	17	9	QC	102	83	54	131		26	26	34	18		38	38	42	34	
5	41	30	41	31		19	25	30	14		7	6	8	6	QC	79	55	49	86		52	33	22	63		36	24	35	26	
6	33	19	23	29		21	16	8	29		47	46	34	60		21	20	23	18		22	12	22	12		24	18	22	20	
7	11	10	11	10	QC	18	14	15	17		40	35	39	36		40	33	44	29		8	10	8	10	QKC	24	21	32	14	
8	4	7	8	3	QCC	17	14	15	16	Q	56	41	37	60		73	66	88	51		10	6	10	5	QCC	21	10	5	25	
9	7	8	7	8	QCC	16	18	17	17		25	11	19	17		38	32	38	32		37	20	14	42		40	28	33	35	
10	29	27	12	44		38	34	20	52		29	27	16	40		16	9	12	13	C	48	37	46	39		32	20	18	35	
11	24	19	18	25		28	39	45	22		22	22	15	29		26	20	23	23		23	13	18	18		26	13	21	18	
12	11	11	11	12	QC	25	17	11	31		21	16	16	21		35	22	18	38		29	11	16	25		15	10	17	8	QCK
13	27	16	9	34		69	44	51	63		28	27	23	32		26	14	17	23		18	10	22	5		15	6	7	15	QCC
14	12	12	10	14	C	62	51	43	70		12	10	13	8	QC	38	24	9	53		22	17	9	30		8	5	8	5	QCC
15	10	15	11	14	QKC	27	14	35	6		22	11	7	26		19	13	23	10		20	14	22	12		41	25	17	49	
16	12	14	9	17	C	13	11	12	12	QCC	24	38	21	42		9	5	7	8	QCC	14	8	11	12	QC	50	49	72	28	
17	16	12	20	8	K	12	22	17	17		37	37	34	40		18	12	8	22	K	57	35	51	41		25	18	26	17	
18	16	13	7	22		29	23	27	25		37	28	32	33		19	12	15	16	Q	29	16	13	33		45	34	29	50	
19	34	33	35	33		16	10	10	16	QC	17	17	28	7		21	19	18	22		33	36	46	23		48	35	40	43	
20	17	14	24	7		34	18	15	37		8	8	11	4	QCC	31	26	43	15		50	37	37	50		28	19	35	12	
21	23	18	24	16		27	21	25	23		12	13	7	19	QC	24	15	19	19		66	49	54	61		8	2	3	7	QCC
22	23	15	22	16		16	12	10	19	Q	35	25	33	27		9	5	10	4	QCC	47	56	48	56		17	6	8	16	QCC
23	13	11	9	15	C	25	19	24	20		25	27	36	16		18	9	5	22	Q K	57	35	49	43		20	13	9	24	
24	10	11	14	7	CC	19	14	16	17		21	14	11	24		15	9	13	11	QC	45	42	35	52		39	24	41	21	
25	25	18	12	31		13	16	13	16	Q	52	41	49	43		42	39	18	63		30	23	13	40		26	19	24	21	
26	28	21	23	26		33	27	14	45		41	17	17	42		118	76	80	114		34	18	35	17		22	13	14	21	
27	15	15	13	17		57	54	63	48		45	26	27	44		45	36	56	24		20	15	17	18	Q	16	11	20	7	K
28	40	39	35	43		12	19	14	17		64	66	36	95		31	29	29	32		22	8	8	22		40	29	23	45	
29	36	29	42	23		18	27	17	29		62	58	70	51		32	21	17	37		19	17	17	19		28	13	20	22	
30	62	43	42	63							42	45	48	39		21	7	7	21		38	33	39	33		23	21	19	25	
31	43	33	22	54							36	32	28	40							19	7	10	16	QK					
N	25.7					28.9					33.4					37.9					31.6					28.3				
S		21.9					24.1					29.2					28.4					23.4					19.7			
M			23.8					26.5					31.3					33.1					27.5					24.0		

	JULY					AUG.					SEP.					OCT.					NOV.					DEC.				
	DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY			DAY		HALF DAY		
	N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm		N	S	am	pm	
1	33	20	13	40		99	69	105	63		24	10	18	16		13	13	10	15	QKK	34	44	55	25		25	22	28	18	
2	26	15	17	24		47	41	51	37		21	15	18	18		19	18	12	25		27	25	13	39		52	32	45	38	
3	27	15	21	21		28	16	22	22		23	12	21	14		34	23	37	21		33	29	15	47		40	28	28	40	
4	26	14	16	24		31	19	25	25		57	66	45	78		16	12	7	21	Q	29	30	28	31		59	26	29	56	
5	29	19	31	17		19	9	12	15		76	96	100	72		17	11	12	16		19	25	24	20		35	22	31	26	
6	23	11	15	19		10	6	7	9	QCC	20	21	20	21		36	34	32	38		26	23	24	25		46	26	29	43	
7	19	8	8	19	Q	5	4	4	4	QCK	13	8	10	11	QCC	56	53	56	52		36	25	19	41		34	28	30	33	
8	26	9	14	20		33	28	32	30		23	18	12	29		34	35	44	25		33	30	37	26		17	14	20	11	
9	20	13	18	15		34	30	27	38		24	20	18	26		34	19	24	29		27	19	12	35		15	7	10	13	QCK
10	32	16	17	32		22	15	19	18		40	48	44	44		43	31	38	36		35	25	16	44		16	20	18	18	
11	24	13	5	32		20	21	22	19		26	30	35	21		52	32	28	56		34	27	23	38		32	27	13	46	
12	25	32	44	14		29	28	33	24		23	20	16	26		50	32	37	45		12	10	18	4	QK	26	22	34	14	
13	90	75	82	83		17	13	20	10		19	16	24	11		22	31	25	29		25	17	12	31	Q	44	40	52	32	
14	48	49	56	42		30	36	9	58		26	21	26	21		31	13	24	20		29	33	22	40		18	14	11	21	
15	42	36	36	42		45	34	42	37		22	17	20	18	Q	30	17	13	34		79	67	58	89		56	27	18	66	
16	38	47	47	38		32	31	33	30		19	12	12	19	Q	41	24	28	36		113	131	160	84		56	41	42	54	
17	74	66	77	63		21	17	22	16		10	7	11	5	QCC	7	4	6	5	QC	55	35	44	47		54	34	33	54	
18	38	27	22	42		16	6	10	12	QCC	4	5	6	3	QCK	59	58	35	82		33	30	37	26		31	19	22	28	
19	28	25	36	17		29	22	8	43		61	53	39	75		102	80	77	105		40	21	23	38		14	12	11	15	QK
20	25	15	20	20		19	20	22	17		36	29	30	35		83	70	75	78		35	27	25	37		13	10	8	15	QCC
21	18	8	13	13	QC	7	5	6	6	QCK	20	17	14	23		64	55	39	80		33	35	32	37		26	30	12	44	
22	21	12	17	16		3	2	2	3	QCC	33	38	19	51		71	49	54	66		27	23	23	27		19	16	14	21	
23	20	11	11	20	Q	16	11	5	22	K	132	108	109	131		54	35	38	51		18	20	27	11		30	28	28	31	
24	26	20	31	15		43	34	37	40		71	53	67	57		57	47	50	54		20	22	20	22		8	8	9	8	QC
25	22	13	16	19		29	16	25	20		71	53	52	71		45	39	28	56		28	13	14	27		7	15	16	6	QC
26	14	6	12	7	QC	22	10	18	14		62	52	49	65		27	21	35	13		14	13	18	9	Q	40	43	30	53	
27	35	15	18	32		57	52	24	86		36	35	35	37		16	18	13	22		18	19	11	26	Q	30	22	11	40	
28	37	26	33	30		46	49	54	42		30	26	20	36		19	12	14	17		10	8	12	6	QC	62	39	42	59	
29	29	16	10	35		36	32	39	30		26	12	18	20		13	14	10	17		18	25	30	12		50	37	42	45	
30	23	17	14	26	Q	31	30	30	32		21	10	21	11		12	8	14	6	QCC	50	49	65	35		42	37	32	48	
31	33	19	9	42		29	15	22	22							14	10	5	19	QK						43	39	32	50	
N	31.2					29.2					35.6					37.8					33.1					33.5				
S		22.2					23.3					30.9					29.7					30.0					25.4			
M			26.7					26.3					33.2					33.7					31.5					29.4		

ANNUAL MEAN N 32.20 S 25.68 M 28.91

Unit : nT

MONTHLY AND YEARLY **aa** 1868 - 1984

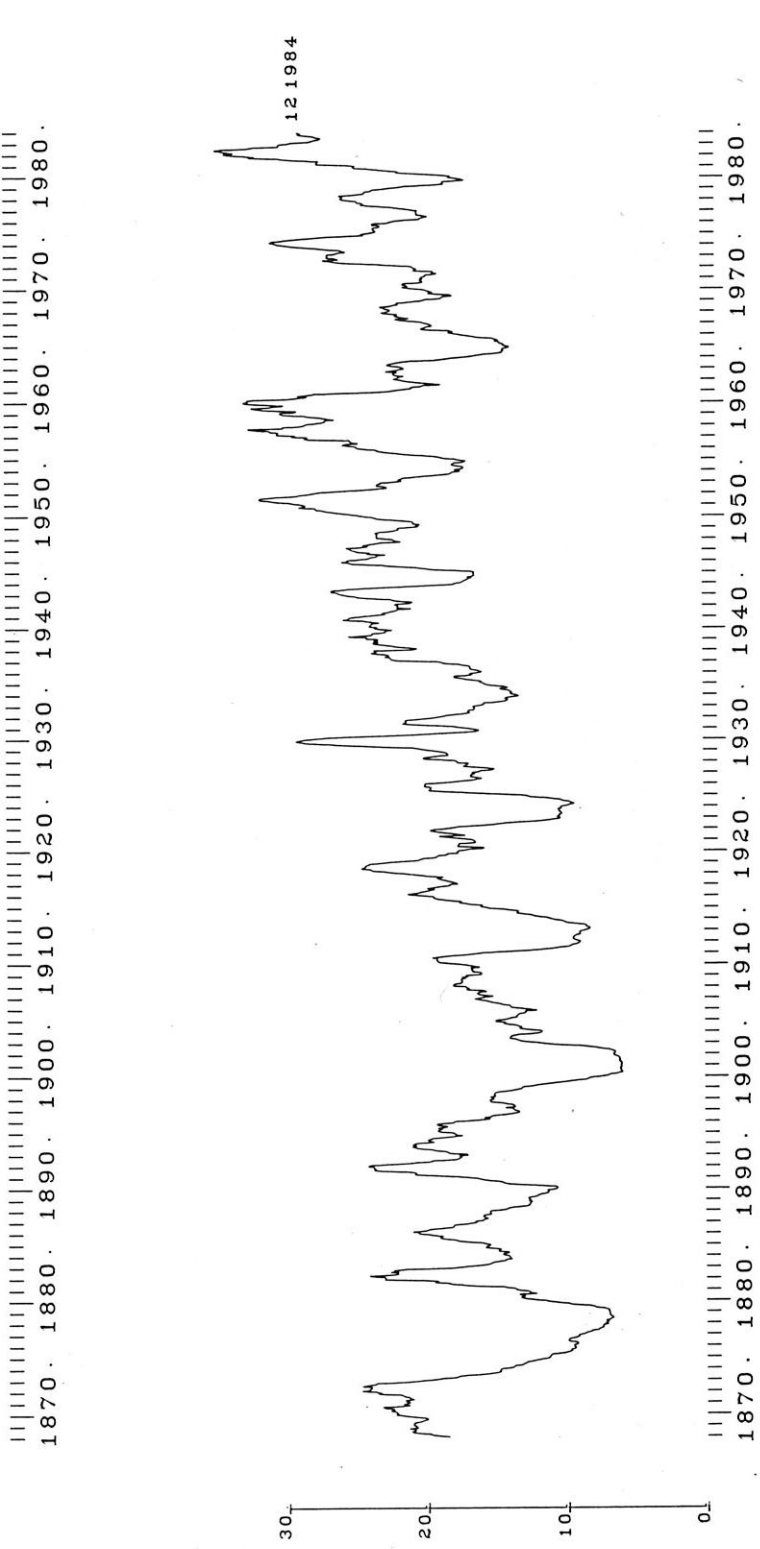
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual mean
1868	10.6	16.0	19.7	21.0	16.4	17.9	21.5	19.4	24.0	25.9	13.3	13.7	18.3
1869	19.2	23.6	22.3	29.5	23.1	19.2	17.4	19.9	29.8	17.9	14.7	14.6	20.9
1870	21.6	23.2	21.2	25.8	20.9	16.4	14.1	21.4	35.2	26.2	21.9	19.9	22.3
1871	19.3	24.8	21.4	31.2	17.2	17.1	21.5	23.5	17.7	20.0	28.1	15.7	21.5
1872	17.0	28.0	23.0	23.4	20.4	17.7	25.3	25.2	20.7	38.6	25.0	20.5	23.7
1873	29.4	20.6	24.1	20.8	20.8	25.8	20.6	18.7	19.3	16.6	14.6	12.1	20.3
1874	17.8	16.1	12.7	19.1	14.0	12.8	13.1	13.0	15.7	17.8	14.3	10.1	14.7
1875	10.0	13.5	12.7	12.7	13.0	10.1	11.8	8.7	13.1	11.9	9.8	8.5	11.3
1876	9.8	12.6	11.0	6.5	7.6	7.7	9.1	10.2	10.1	10.5	10.2	10.1	9.6
1877	9.3	9.6	10.4	8.9	13.0	8.9	7.8	7.6	7.4	6.9	11.6	6.8	9.0
1878	7.4	7.5	6.2	8.5	7.3	8.6	4.8	6.4	7.9	6.8	7.1	9.3	7.3
1879	6.2	5.8	8.6	5.5	6.2	5.9	5.8	8.0	8.9	7.0	7.1	9.3	7.0
1880	7.3	4.7	9.8	8.9	13.1	7.3	9.9	23.1	11.4	14.4	14.5	14.6	11.6
1881	15.1	12.8	13.2	11.4	8.5	10.7	12.2	7.8	17.9	14.0	20.2	20.3	13.7
1882	15.7	19.5	16.5	35.9	20.6	19.0	14.5	19.7	15.0	25.0	55.0	20.1	23.0
1883	15.4	26.7	23.3	17.8	13.9	18.5	21.5	12.4	19.5	13.7	17.6	12.0	17.7
1884	9.1	14.3	17.5	15.6	12.8	13.1	15.5	13.0	13.5	16.0	16.9	13.2	14.2
1885	13.2	15.5	13.3	14.0	21.2	14.2	13.0	17.7	22.1	15.9	13.7	12.1	15.5
1886	17.7	17.1	27.6	21.6	22.6	21.6	19.3	18.1	19.0	21.7	20.7	20.6	20.6
1887	16.9	22.9	15.2	20.6	17.3	12.6	12.5	17.2	18.9	14.1	14.5	15.2	16.5
1888	18.2	15.9	15.2	16.4	19.3	14.5	12.9	13.7	15.1	15.0	15.3	14.0	15.5
1889	9.8	11.0	13.9	11.6	10.2	9.8	13.5	12.6	14.6	13.6	18.5	11.8	12.6
1890	11.7	11.8	10.0	8.4	8.4	7.3	10.0	10.3	13.8	15.6	13.3	8.3	10.7
1891	10.4	14.2	20.6	22.5	23.7	11.7	11.2	15.0	22.3	20.7	16.5	16.2	17.1
1892	19.5	35.1	36.3	20.4	25.1	17.7	33.7	22.1	20.1	23.1	15.7	22.1	24.2
1893	18.2	19.1	18.4	14.0	12.0	17.1	14.5	18.5	19.5	20.9	18.5	13.9	17.0
1894	19.2	33.9	20.0	17.4	19.0	20.0	26.3	21.0	22.5	17.0	21.9	12.0	20.8
1895	15.4	20.8	23.0	20.7	16.6	17.6	17.9	10.5	15.9	22.7	22.5	14.5	18.2
1896	25.4	23.6	21.8	17.2	20.6	11.7	15.6	18.1	17.8	17.5	13.1	13.8	18.0
1897	12.0	14.0	14.2	22.2	14.6	12.0	9.3	10.7	11.0	13.8	12.6	17.2	13.6
1898	13.5	15.1	20.5	13.4	15.1	14.3	13.5	14.6	21.5	14.1	13.6	13.0	15.2
1899	14.3	17.8	15.6	14.2	15.9	13.5	11.6	11.4	13.5	9.4	8.7	12.1	13.2
1900	13.5	8.9	12.5	7.2	9.6	4.7	5.2	6.0	5.2	7.1	5.4	5.4	7.6
1901	7.3	7.0	6.5	5.2	6.2	6.0	5.6	6.1	6.0	5.4	5.6	6.4	6.1
1902	6.1	7.6	5.9	7.9	5.6	5.4	6.3	6.2	7.0	7.2	7.6	6.1	6.6
1903	6.5	5.9	6.7	10.3	7.8	11.3	10.8	14.1	14.0	26.3	16.3	13.5	12.0
1904	15.1	12.6	8.7	13.1	13.0	10.5	10.8	10.2	11.2	13.0	11.6	10.6	11.7
1905	16.0	20.3	16.6	16.6	10.6	13.8	11.8	16.8	16.3	11.2	20.1	10.7	15.1
1906	7.6	17.5	14.0	11.6	11.4	11.3	12.4	12.0	14.2	12.7	9.6	16.4	12.6
1907	16.5	25.3	14.3	12.1	16.8	14.8	16.9	15.5	16.8	18.5	14.6	11.5	16.1
1908	13.6	17.0	23.2	15.6	18.9	12.5	10.4	18.2	31.6	15.8	17.4	11.4	17.1
1909	24.8	17.0	19.8	12.1	18.3	11.5	12.6	17.6	27.6	19.4	11.6	13.8	17.2
1910	12.8	14.6	20.9	19.7	17.2	13.7	10.8	20.2	19.2	24.4	17.9	19.5	17.6
1911	21.3	23.7	21.5	21.1	16.6	13.6	15.3	11.9	12.2	12.5	10.6	11.0	15.9
1912	7.6	8.0	7.7	9.4	9.6	8.4	7.8	10.5	9.8	9.5	9.4	9.4	8.9
1913	10.3	9.5	9.9	9.8	9.0	7.0	7.0	6.7	10.0	10.7	7.6	6.6	8.7
1914	7.1	7.3	10.1	13.5	8.1	10.3	12.9	14.9	11.8	13.3	13.4	9.3	11.0
1915	10.9	13.5	15.0	15.3	13.9	17.9	11.2	14.7	17.0	21.3	24.9	12.4	15.7
1916	16.0	11.6	25.0	19.2	20.2	15.7	19.7	21.4	22.4	24.5	24.0	18.9	19.9
1917	25.1	19.1	16.2	16.7	15.9	12.7	14.6	28.1	16.1	20.2	14.8	19.8	18.3
1918	17.8	21.3	19.7	20.5	18.8	15.6	17.4	22.2	28.4	26.4	23.1	28.1	21.6
1919	27.8	26.5	30.7	21.3	27.5	13.9	14.9	22.7	25.3	26.9	14.3	18.4	22.5
1920	16.7	14.1	28.5	17.8	17.7	12.4	14.0	14.8	25.7	17.3	15.1	17.0	17.6
1921	11.7	10.6	15.6	17.2	40.5	12.4	13.3	14.6	12.4	16.2	16.2	17.8	16.5
1922	18.0	18.6	24.1	23.5	18.3	18.6	20.0	20.7	19.7	20.1	13.1	10.4	18.8
1923	10.2	13.7	12.1	10.0	10.1	11.1	8.4	7.3	10.7	12.6	7.8	9.6	10.3
1924	13.6	10.9	12.9	7.3	10.2	12.3	9.7	6.9	12.6	8.7	9.3	7.9	10.2
1925	9.4	8.6	8.6	10.8	11.0	17.7	11.8	13.6	18.0	21.7	13.2	12.9	13.1
1926	27.1	26.2	27.6	27.1	19.6	16.2	11.4	13.2	22.7	23.3	11.9	13.3	20.0

MONTHLY AND YEARLY **aa** 1868 -1984 (continued)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual mean
1927	15.5	15.2	20.7	15.6	16.8	11.2	16.5	18.5	20.9	24.7	8.0	15.8	16.6
1928	10.1	13.5	11.3	12.8	23.6	20.2	27.8	15.9	19.6	23.4	18.2	15.6	17.7
1929	13.0	24.0	26.2	13.9	16.3	14.7	18.6	15.9	21.5	25.5	22.7	21.0	19.4
1930	20.9	27.9	30.9	38.2	36.4	33.3	28.3	33.3	28.8	29.3	18.8	17.2	28.6
1931	13.0	15.4	12.9	9.9	12.0	14.7	13.1	17.7	21.2	27.3	23.7	21.1	16.8
1932	20.2	21.4	27.9	28.2	22.2	11.8	12.4	19.1	19.1	17.2	13.8	15.3	19.0
1933	15.9	18.4	19.2	21.1	17.5	13.6	12.3	14.2	18.4	16.8	16.0	13.0	16.4
1934	11.5	14.9	20.0	11.3	11.4	10.0	10.3	17.4	17.6	11.6	9.5	15.5	13.4
1935	15.6	16.5	17.8	13.6	11.6	16.4	12.5	9.9	20.7	20.2	15.6	17.7	15.7
1936	17.4	19.8	15.5	22.1	17.5	19.8	18.0	10.2	9.8	15.4	18.0	12.0	16.3
1937	12.2	22.2	18.6	26.3	18.6	18.9	18.8	14.7	14.7	27.8	19.3	16.5	19.0
1938	46.6	26.0	20.4	26.1	23.7	14.8	19.7	19.9	24.7	24.0	17.8	19.5	23.6
1939	13.5	21.7	27.0	36.1	27.8	22.8	26.1	23.0	19.2	28.4	14.5	18.6	23.2
1940	24.8	20.1	43.9	22.4	20.0	23.6	18.4	18.4	20.1	21.9	25.1	23.7	23.5
1941	21.9	27.6	42.9	21.6	19.1	17.4	27.9	22.3	38.2	17.5	23.6	19.3	24.9
1942	14.6	18.8	32.4	24.4	14.2	14.6	23.0	21.9	25.8	30.3	22.8	18.4	21.8
1943	18.1	17.1	21.0	21.9	24.5	21.2	24.4	41.0	35.3	32.8	29.6	23.3	25.8
1944	21.2	17.9	26.6	21.6	16.1	14.9	11.1	16.5	17.5	17.2	11.2	21.8	17.8
1945	16.1	16.4	25.0	19.1	15.4	11.1	15.3	12.1	15.6	17.9	12.0	20.2	16.3
1946	19.2	30.2	43.5	25.0	24.1	22.3	28.6	16.7	41.7	19.6	19.3	14.3	25.4
1947	20.6	17.1	37.9	23.3	19.1	21.1	21.4	32.9	39.1	31.3	20.7	17.9	25.2
1948	20.8	21.0	24.2	17.7	23.7	15.0	16.2	28.3	22.0	36.1	23.1	23.0	22.6
1949	29.8	20.4	24.7	17.6	22.4	17.9	11.8	19.2	17.8	32.7	24.6	15.1	21.2
1950	19.5	23.2	20.6	23.8	21.7	19.0	19.5	30.2	29.3	34.5	28.0	24.0	24.4
1951	23.1	29.2	28.5	32.1	25.5	23.2	25.2	29.7	44.4	30.3	25.7	28.2	28.8
1952	28.5	34.3	40.1	38.0	33.1	23.8	20.7	19.0	28.5	26.4	18.9	23.4	27.9
1953	22.3	21.2	27.4	22.7	21.4	18.4	22.5	26.1	29.0	22.4	20.2	12.6	22.2
1954	13.9	24.5	25.5	20.6	12.0	9.7	13.1	16.5	25.4	21.1	14.5	10.9	17.3
1955	19.3	18.2	23.6	21.1	16.7	15.1	12.3	14.3	19.1	17.8	19.9	14.1	17.6
1956	28.7	23.3	27.6	31.7	29.3	23.5	19.8	20.7	22.4	19.3	32.3	18.2	24.7
1957	28.7	26.8	36.7	28.8	18.1	29.1	21.7	20.7	57.0	24.0	29.5	31.7	29.4
1958	25.5	43.2	36.1	27.6	25.2	29.7	36.0	25.1	26.5	24.7	15.0	27.2	28.5
1959	24.3	35.9	29.9	24.2	25.7	21.6	42.5	31.2	36.1	28.2	32.1	30.8	30.2
1960	25.2	23.5	27.6	51.5	31.6	27.6	28.1	27.2	26.4	45.6	45.9	34.5	32.9
1961	20.6	25.1	22.0	21.8	22.3	20.1	36.0	18.5	20.7	23.3	17.3	21.1	22.4
1962	13.2	19.2	15.5	22.6	13.4	18.1	21.0	26.2	29.8	33.3	22.5	23.5	21.5
1963	19.3	15.3	14.9	18.2	20.4	20.5	20.8	22.5	40.2	23.5	20.7	18.9	21.3
1964	20.1	20.1	21.0	21.7	17.5	15.1	16.9	14.8	18.2	16.9	13.8	10.3	17.2
1965	11.8	16.3	14.3	12.6	10.5	15.7	14.7	16.8	17.5	13.1	11.7	13.8	14.1
1966	14.2	14.8	18.6	12.0	14.8	12.5	17.1	20.0	29.4	17.5	16.8	20.5	17.3
1967	18.9	19.8	13.8	15.5	33.1	18.6	14.4	17.5	24.7	17.8	18.9	24.5	19.8
1968	21.1	26.5	23.3	22.2	21.4	24.9	18.0	20.1	22.0	24.8	26.2	20.3	22.6
1969	17.8	25.8	27.3	23.6	25.2	16.7	15.0	15.3	23.8	17.2	18.7	13.8	20.0
1970	14.4	12.7	26.4	23.1	16.6	18.3	28.4	21.0	19.7	20.6	21.6	16.5	19.9
1971	23.5	21.2	21.1	23.9	21.1	17.0	15.2	17.1	21.4	22.2	18.8	18.6	20.1
1972	21.9	18.3	21.5	18.1	16.6	21.5	14.0	34.2	20.4	20.4	21.8	18.9	20.6
1973	26.1	32.7	36.9	39.6	26.1	27.3	20.9	20.6	22.8	28.2	20.7	19.9	26.8
1974	25.8	26.4	33.7	32.9	29.2	29.2	32.0	30.2	33.7	37.3	26.8	27.5	30.4
1975	27.6	31.1	32.0	24.3	22.7	20.7	21.7	18.1	16.9	20.2	29.3	21.1	23.8
1976	23.3	28.5	33.4	25.4	23.7	17.5	18.4	17.7	23.7	20.4	16.9	18.6	22.3
1977	18.7	21.0	19.9	24.9	20.1	14.2	22.9	23.2	23.0	20.9	17.3	17.0	20.3
1978	25.0	26.2	25.9	31.3	31.2	28.3	19.9	25.6	27.0	20.8	24.6	22.0	25.6
1979	27.3	23.7	26.9	33.5	21.0	18.3	17.9	26.0	22.0	19.3	17.1	16.8	22.5
1980	19.0	17.3	12.7	18.4	15.6	20.0	17.0	15.9	14.2	21.9	23.3	21.7	18.1
1981	16.8	22.9	27.1	33.4	27.3	18.1	27.6	24.3	20.8	34.4	24.5	19.7	24.7
1982	23.5	49.3	27.6	32.2	26.2	31.4	42.4	32.0	45.9	28.9	33.7	34.5	34.0
1983	26.6	40.8	34.2	36.3	32.1	25.1	21.4	25.2	24.0	28.8	34.1	26.4	29.6
1984	23.8	26.5	31.3	33.1	27.5	24.0	26.7	26.2	33.2	33.7	31.5	29.4	28.9

Unit : nT

TWELVE-MONTH RUNNING MEAN VALUES OF **aa** 1868 - 1984



SECTION 3

3.2. an, as, am INDICES

Musical diagram of **Km** 1984 45

Monthly tables of three-hour indices :

an, **as**, **Kn**, **Ks** and daily **An**, **As** values 46

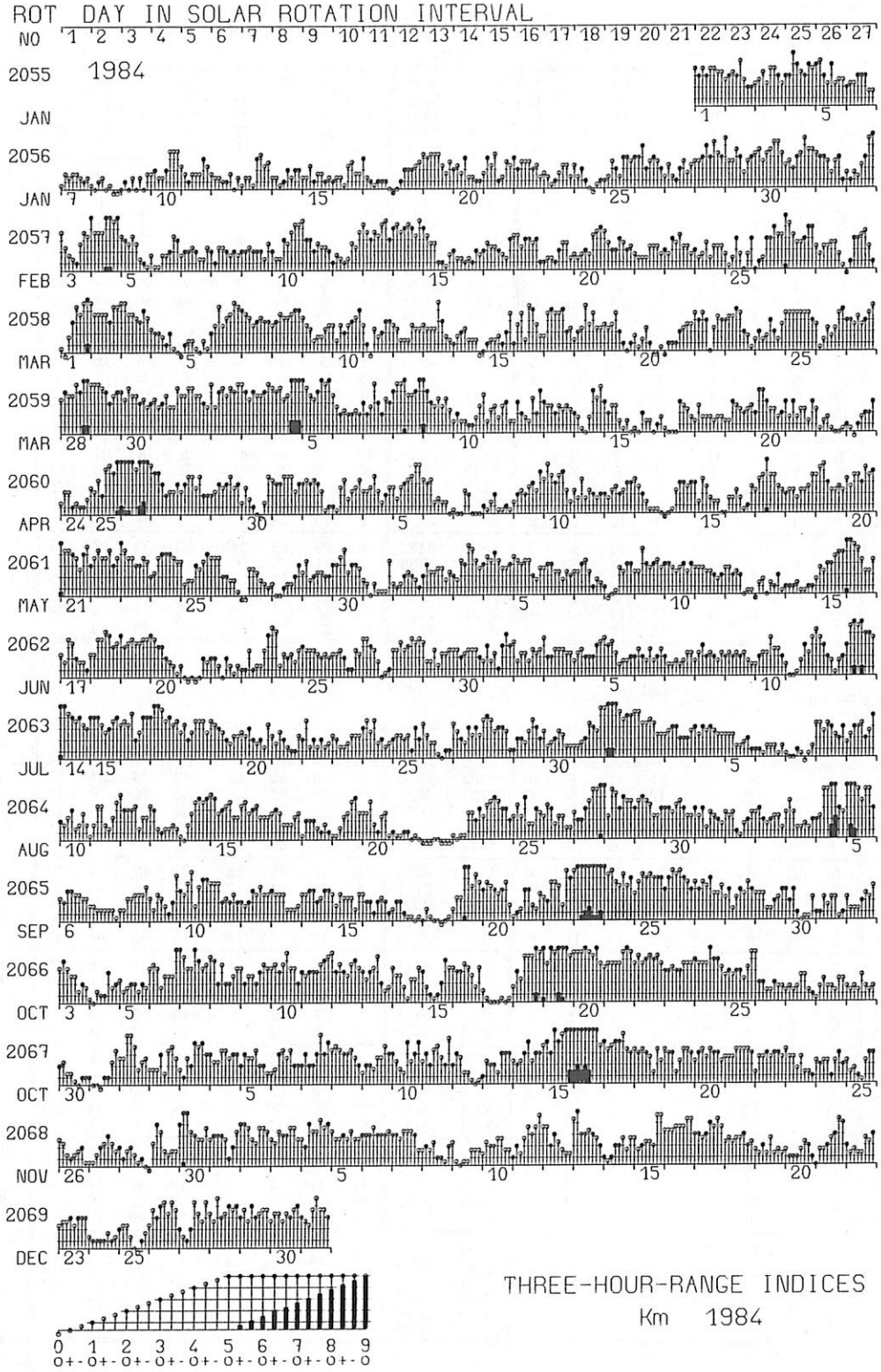
Monthly tables of three-hour indices :

am, **Km** and daily **Am** values 58

Monthly and yearly mean values of **Am**

1959 - 1984 64

MUSICAL DIAGRAM OF **Km** 1984



an , as INDICES 1984

JANUARY 1984

	3Kn								σ n		an								An
1	13	10	11	9	12	12	11	9	3322	4634	62	39	47	27	55	55	41	33	45
2	9	10	11	10	13	8	6	6	4335	5325	28	34	41	34	70	26	14	14	33
3	7	8	11	8	11	11	10	8	5332	7985	20	25	44	22	48	47	39	21	33
4	9	8	14	11	9	9	13	12	4212	5355	31	21	84	43	33	27	63	52	44
5	13	14	10	6	13	7	7	8	5342	5324	67	73	34	15	65	18	17	22	39
6	7	7	8	9	10	10	6	6	3324	6545	17	18	23	31	34	37	14	15	24
7	2	5	4	6	5	4	2	4	1212	2425	4	12	8	15	11	8	5	9	9
8	2	1	3	4	1	2	0	0	3123	2211	4	2	6	10	3	4	1	1	4
9	0	3	1	3	1	4	2	5	2414	2244	1	7	2	7	2	9	5	11	6
10	5	6	4	4	6	11	12	10	3212	5444	13	16	8	8	15	42	51	37	24
11	7	5	3	5	5	5	9	7	2312	3256	19	12	7	12	11	12	33	19	16
12	5	4	4	3	3	6	1	3	4222	2424	11	9	8	7	7	15	3	7	8
13	2	3	3	2	10	10	8	8	2022	5654	4	6	6	4	38	36	21	24	17
14	4	5	1	2	7	4	6	6	2221	1343	8	12	3	5	17	10	16	14	11
15	4	3	6	2	4	5	2	4	1041	2524	8	6	16	5	10	12	5	8	9
16	3	2	3	2	7	8	6	5	2211	4553	6	5	7	4	19	24	16	11	12
17	10	5	4	2	3	2	3	1	3312	1153	35	13	8	4	6	5	7	2	10
18	0	1	2	4	5	5	8	8	0234	3254	0	2	4	10	12	12	22	25	11
19	10	9	10	10	11	7	5	8	3534	4355	35	33	34	37	43	20	13	26	30
20	6	7	4	10	3	4	2	2	3333	1222	16	20	9	36	7	8	4	5	13
21	5	9	7	11	2	4	9	7	3314	2253	12	32	18	47	5	8	27	17	21
22	9	6	8	8	8	6	7	4	3142	3343	30	16	25	25	23	15	20	10	21
23	4	4	3	2	6	8	8	4	4142	3664	10	9	6	5	14	21	21	8	12
24	8	5	7	2	0	0	1	2	4421	1022	22	11	19	5	0	0	3	4	8
25	2	4	8	7	4	10	9	8	2232	2535	5	10	21	17	10	34	28	25	19
26	9	9	12	6	7	10	9	6	4362	3482	28	29	59	14	20	35	27	15	28
27	4	8	3	3	7	8	5	8	2321	6535	9	21	7	6	17	22	13	21	15
28	7	8	9	12	9	13	10	10	2332	2434	19	21	27	54	29	67	34	35	36
29	14	8	8	12	9	5	8	9	2222	2231	79	26	21	51	30	11	22	32	34
30	10	12	8	10	11	14	13	10	2322	2634	39	56	24	39	50	77	69	38	49
31	7	8	7	9	11	15	11	10	2323	4523	18	23	17	33	43	90	48	40	39
																			21.9

JANUARY 1984

	3Ks								σ s		as								As
1	10	8	10	9	11	11	9	10	1222	4313	36	25	35	28	43	44	31	38	35
2	8	8	10	8	12	7	6	6	3223	3224	25	23	37	26	52	20	16	15	27
3	7	8	9	6	10	10	8	7	2331	5677	18	21	31	14	36	36	24	18	25
4	8	10	15	13	11	10	12	10	4344	2123	26	34	91	62	45	36	51	34	47
5	11	11	9	8	10	6	8	7	1414	4233	44	50	32	21	38	16	24	20	31
6	6	7	6	8	8	9	4	4	1123	3333	16	17	15	25	23	27	10	10	18
7	3	5	5	5	4	4	4	4	2213	2111	6	11	11	12	10	8	8	8	9
8	3	1	3	3	1	2	0	0	2322	2201	6	3	6	6	2	4	0	1	4
9	2	2	1	4	1	4	1	4	2222	2113	4	5	3	9	2	8	2	10	5
10	5	5	5	5	6	11	11	11	2222	2233	13	12	12	11	15	43	44	45	24
11	8	6	3	6	5	6	9	6	2322	2413	21	14	7	14	12	14	28	15	16
12	5	4	4	3	4	5	0	4	2222	2214	11	9	10	6	8	11	1	9	8
13	3	4	4	2	9	9	6	7	1222	1123	6	10	10	4	27	31	16	20	16
14	3	3	3	4	6	4	5	6	1412	0322	7	7	6	9	15	9	13	15	10
15	4	4	7	3	5	6	4	4	2241	3532	10	9	18	7	11	14	9	9	11
16	3	4	5	3	7	8	4	5	2232	3223	6	10	11	6	17	21	9	13	12
17	9	4	3	2	2	3	2	1	1311	3232	32	8	7	5	5	6	5	3	9
18	1	1	3	7	6	7	6	8	1213	1325	2	2	7	17	16	18	15	23	13
19	10	9	10	9	10	7	6	7	4211	4113	37	30	36	31	34	18	14	20	28
20	5	7	5	8	4	4	3	4	2232	2341	13	19	12	22	9	8	7	8	12
21	6	9	7	9	4	4	7	7	3132	1442	14	28	19	29	8	8	19	19	18
22	8	6	8	7	7	5	6	4	2213	2122	24	15	21	18	20	13	14	10	17
23	5	5	2	3	5	6	6	4	2330	2223	12	11	4	7	12	16	14	9	11
24	6	4	6	4	1	0	2	4	5211	2112	16	10	14	8	3	1	5	8	8
25	4	4	8	6	4	9	8	7	1212	1333	8	9	24	14	10	28	26	19	17
26	8	9	11	6	8	9	7	6	4241	2152	26	29	44	14	22	27	17	14	24
27	4	7	5	4	5	8	4	7	1312	4324	8	18	11	9	13	22	8	19	14
28	8	9	10	12	9	12	10	8	3222	1311	26	30	35	52	30	54	35	25	36
29	14	9	8	9	8	5	8	9	3123	1220	72	27	21	32	23	11	21	30	30
30	10	9	8	10	11	11	13	9	1233	2434	36	30	23	40	41	48	64	31	39
31	6	8	6	9	10	12	10	11	1211	3423	16	21	16	31	35	55	34	41	31
																			19.5

an , as INDICES 1984 (continued)

FEBRUARY 1984

	3Kn								σ n		an								An
1	11	10	9	9	5	8	9	3	4221	4442	41	34	27	27	12	25	27	6	25
2	5	3	4	4	7	9	14	15	3222	4165	13	6	9	9	20	31	86	94	34
3	13	7	4	4	3	8	11	10	3323	2572	62	18	8	8	7	25	47	38	27
4	15	12	12	11	16	16	14	14	5563	4656	89	56	57	50	108	118	76	75	79
5	9	10	8	10	8	5	4	3	3335	2322	28	34	25	38	22	12	9	6	22
6	4	2	2	5	5	6	10	8	3224	3254	10	4	4	11	12	14	39	24	15
7	7	5	6	7	6	4	4	7	4143	4222	18	12	15	17	15	9	9	20	14
8	5	3	6	6	6	6	6	5	3243	0143	13	6	15	15	14	14	15	13	13
9	6	6	6	6	6	6	4	7	2220	5223	16	14	15	14	16	15	10	20	15
10	7	4	4	10	9	11	13	13	3425	3547	17	10	9	34	27	44	62	67	34
11	15	9	8	6	9	8	7	7	7212	4633	95	29	23	14	27	22	17	17	31
12	3	5	5	4	4	8	7	12	2532	3215	6	12	12	9	8	22	18	60	18
13	14	11	9	12	10	12	14	9	5413	4644	77	49	33	53	36	57	81	32	52
14	13	14	11	13	14	13	10	15	5644	5553	63	75	45	64	71	61	39	87	63
15	13	11	9	9	4	4	2	6	3434	4333	68	43	28	30	9	8	5	14	26
16	7	4	4	3	5	3	7	5	4211	4232	19	10	8	6	12	6	20	13	12
17	6	9	8	8	6	6	5	8	2243	4224	14	28	24	21	16	15	11	24	19
18	10	10	7	10	9	8	10	3	3422	3441	37	35	19	38	32	23	35	7	28
19	3	4	4	3	6	8	8	5	1223	1342	6	10	9	6	16	22	22	11	13
20	6	4	5	5	6	10	11	11	5241	1364	14	8	13	12	14	34	48	41	23
21	11	9	5	6	10	9	7	8	3320	4244	41	27	13	14	34	29	18	22	25
22	5	4	4	4	6	8	8	5	4221	1461	13	8	9	8	16	22	21	12	14
23	6	5	10	8	10	7	7	5	4213	2243	15	12	34	22	40	18	18	13	22
24	7	4	5	8	5	7	6	8	4121	2244	19	9	12	25	11	19	16	24	17
25	6	1	5	9	5	1	4	9	2345	1252	14	3	12	30	13	2	10	29	14
26	1	3	4	8	9	12	11	10	3121	1653	3	7	10	25	27	59	47	40	27
27	16	13	11	9	8	10	12	13	2334	4363	109	68	41	28	23	34	58	65	53
28	6	5	7	7	8	8	5	2	4233	1432	16	11	19	17	25	25	12	5	16
29	0	2	8	8	10	11	8	3	0153	3321	0	5	26	25	36	49	21	6	21
																			26.6

FEBRUARY 1984

	3Ks								σ s		as								As
1	10	9	9	7	5	8	9	4	2101	2242	40	27	31	19	11	22	30	8	24
2	4	4	7	4	6	10	14	15	3311	4164	10	9	18	9	16	35	82	87	33
3	10	6	6	5	3	8	11	11	2141	2234	40	16	15	13	6	22	41	42	24
4	15	10	10	11	17	15	14	15	9243	4677	89	37	36	50	122	95	79	102	76
5	11	9	8	10	8	4	3	3	2324	3321	41	30	22	35	23	8	6	6	21
6	6	2	3	5	4	6	10	9	3403	3034	14	5	7	11	10	15	39	31	17
7	4	6	7	7	6	4	4	7	3133	5323	10	16	20	17	16	10	9	17	14
8	6	3	7	7	6	5	5	4	1222	2232	16	6	20	20	15	11	13	9	14
9	7	6	8	6	6	6	4	8	2121	2214	17	14	22	16	16	15	9	22	16
10	6	4	5	10	7	11	14	12	3225	2335	14	10	11	34	19	41	75	60	33
11	13	10	10	6	8	7	7	6	5341	4312	65	37	34	16	22	19	19	14	28
12	3	5	4	3	4	9	6	10	1431	4213	6	11	10	6	10	27	16	39	16
13	11	10	10	11	10	14	14	9	7413	3633	48	37	34	50	38	77	76	31	49
14	11	12	12	11	12	12	9	14	5456	3442	45	53	54	42	58	52	32	76	52
15	12	10	8	7	3	2	2	4	3123	2234	52	35	21	19	6	4	5	8	19
16	6	4	5	4	4	3	5	5	4332	2242	15	8	12	9	9	7	12	12	11
17	6	8	6	7	5	3	4	9	2503	2322	15	26	15	19	12	7	10	31	17
18	9	10	7	9	8	8	9	3	3311	3244	32	39	17	28	26	22	31	6	25
19	4	3	3	3	6	7	8	4	2202	0333	8	7	7	6	15	20	21	9	12
20	4	5	5	6	4	10	11	13	3210	3356	10	11	11	15	10	39	44	63	25
21	11	8	6	6	8	7	5	7	3114	3133	43	24	15	16	21	17	13	19	21
22	5	4	4	4	8	7	7	5	2112	4133	12	9	9	9	21	17	18	11	13
23	7	6	9	9	9	7	8	5	3201	2153	18	14	31	28	30	18	22	12	22
24	4	5	6	8	4	7	7	7	2322	3112	10	11	16	26	9	17	18	17	16
25	5	2	4	9	5	1	5	9	2112	3122	13	5	8	31	12	2	13	32	15
26	2	4	5	9	9	12	10	10	3122	3432	4	8	11	30	29	52	34	37	26
27	16	12	10	8	8	9	11	11	3423	3355	111	59	37	23	23	27	44	50	47
28	7	5	7	7	8	8	6	2	4222	1332	19	13	20	20	26	24	14	5	18
29	0	4	9	10	11	10	8	3	0305	3131	0	8	31	34	42	35	21	6	22
																			25.0

an , as INDICES 1984 (continued)

MARCH 1984

	3Kn								σn		an								An
1	1	0	5	8	13	11	15	16	2021	4334	2	0	13	26	62	49	93	114	45
2	14	11	11	12	12	10	13	13	5331	4332	74	48	46	55	52	35	66	62	55
3	14	13	10	12	11	10	12	10	2321	4454	73	68	37	51	41	36	56	35	50
4	8	6	6	6	3	7	3	1	5421	2311	22	16	15	14	7	19	6	2	13
5	0	2	4	4	3	2	5	2	2221	2221	1	5	8	8	6	5	11	5	6
6	5	8	12	8	10	11	14	13	2223	3224	13	24	53	21	39	43	79	64	42
7	13	11	10	9	9	10	9	10	3332	1342	61	50	40	27	28	38	33	34	39
8	9	9	11	11	10	11	12	13	3153	4545	29	29	49	43	39	49	54	70	45
9	11	8	7	4	6	6	8	8	4331	3433	45	21	18	9	14	15	21	23	21
10	8	4	9	6	8	10	11	11	3244	3363	22	10	27	15	23	35	42	48	28
11	8	4	1	7	6	6	9	10	3223	1578	21	8	2	19	14	15	31	34	18
12	8	7	4	4	4	8	7	8	7323	3323	22	19	8	9	10	23	20	25	17
13	9	8	7	7	15	10	6	4	5432	2212	27	21	17	17	88	34	14	9	28
14	3	5	6	7	4	4	5	1	1312	3222	6	11	15	17	10	10	12	2	10
15	2	3	4	5	6	4	6	12	3423	1333	4	6	9	12	15	9	15	56	16
16	3	7	11	5	13	12	8	6	2322	4521	6	20	46	11	64	55	25	15	30
17	4	11	11	11	11	12	7	8	2543	3645	9	47	44	50	41	54	19	25	36
18	4	6	7	13	8	11	8	7	1123	2524	8	14	20	65	23	50	21	19	28
19	8	8	9	12	7	4	2	3	4322	5322	21	26	29	53	17	10	4	7	21
20	6	1	4	8	3	0	0	3	1222	0011	14	3	10	21	6	0	1	6	8
21	0	3	3	3	7	8	8	8	1151	6233	1	7	7	7	17	24	25	24	14
22	12	10	11	8	2	7	10	9	2434	1233	52	37	45	26	4	19	38	31	32
23	9	10	10	12	12	7	6	3	3334	4312	32	35	39	60	55	19	14	7	33
24	5	7	4	5	9	8	5	9	2213	3223	11	18	9	13	29	21	12	28	18
25	13	12	12	11	12	11	12	10	2113	3341	62	51	51	46	59	48	55	36	51
26	8	3	4	8	6	7	12	12	4432	1235	26	6	10	22	15	20	58	51	26
27	9	10	9	11	9	8	11	12	3322	3263	32	38	28	46	27	22	44	59	37
28	9	12	11	11	14	12	17	17	3322	3233	33	58	47	49	78	59	146	135	76
29	13	14	15	13	12	10	11	12	4342	4232	66	80	92	61	57	34	49	58	62
30	12	10	13	11	11	9	10	8	5352	4434	60	40	67	44	46	33	38	26	44
31	9	10	8	10	10	8	9	13	3413	3423	29	39	24	36	40	23	28	64	35
																			31.7

MARCH 1984

	3Ks								σ s		as								As
1	3	0	5	10	14	11	14	17	1122	2324	7	1	12	38	80	41	78	134	49
2	14	11	11	11	11	9	13	13	5221	2454	71	48	48	46	45	27	62	68	52
3	14	15	11	11	9	9	12	10	4222	1245	76	90	50	43	33	32	57	34	52
4	7	7	6	5	2	5	2	1	4222	3221	20	18	14	12	5	13	5	2	11
5	0	4	4	4	1	1	3	2	1332	2222	1	9	10	9	3	2	7	4	6
6	7	8	14	9	9	10	13	12	1223	4224	17	21	78	32	32	40	66	59	43
7	12	12	10	8	10	10	9	9	4133	3345	60	51	39	25	38	34	27	30	38
8	8	8	10	10	11	11	12	11	2143	5554	23	25	38	36	43	47	52	46	39
9	9	8	6	4	5	5	7	7	3222	2424	28	26	16	8	13	11	17	20	17
10	9	4	7	5	8	9	9	12	3121	5442	30	9	18	13	24	27	33	55	26
11	8	3	0	7	5	7	9	9	5306	3557	21	6	0	18	11	1	2	2	16
12	8	8	4	4	4	7	7	6	4422	2223	26	22	10	10	10	20	19	16	17
13	8	8	7	7	14	9	5	4	3412	2223	23	21	18	18	72	29	11	10	25
14	4	6	6	7	3	3	3	0	2134	2221	8	14	15	17	6	6	7	0	9
15	0	3	5	4	4	2	6	9	1132	2332	1	6	12	8	9	4	14	30	11
16	3	8	11	4	13	12	7	5	2323	6531	7	25	50	10	61	55	19	11	30
17	6	10	13	11	12	12	5	6	2354	3413	16	38	67	47	52	54	13	14	38
18	4	7	7	13	7	10	7	6	2135	1334	9	17	18	62	19	34	17	15	24
19	9	6	7	10	5	2	0	3	4123	3411	27	16	20	38	11	5	1	6	16
20	5	2	3	6	4	0	0	1	2101	1102	13	5	7	16	9	1	0	3	7
21	0	3	2	3	6	7	8	7	1222	5143	1	6	5	6	14	17	23	17	11
22	10	9	11	9	1	7	10	9	5320	3134	40	28	48	31	3	17	34	30	29
23	9	10	11	12	10	5	5	2	2223	1322	28	35	41	53	34	13	11	4	27
24	4	6	4	5	9	5	4	8	0233	1232	10	14	10	12	28	11	9	21	14
25	10	11	10	11	11	11	10	9	3133	2343	40	48	39	43	44	45	39	31	41
26	8	2	4	6	4	6	9	12	5215	3214	21	4	8	16	9	14	32	52	20
27	9	8	7	10	8	10	11	13	3221	3364	29	25	20	34	23	34	41	66	34
28	11	12	11	11	13	13	17	17	4432	4134	45	54	45	46	67	62	27	124	71
29	14	14	14	13	11	9	11	12	5322	2333	84	85	78	66	49	28	44	60	62
30	12	10	13	11	10	9	11	8	5124	4254	57	34	69	47	40	31	41	22	43
31	10	9	7	9	12	8	8	13	3223	3436	38	31	18	32	52	24	24	65	36
																			29.5

an , as INDICES 1984 (continued)

APRIL 1984

	3Kn								σ n		an								An
1	11	11	14	14	11	12	10	8	1155	3532	49	49	73	73	41	57	36	23	50
2	13	9	12	13	11	13	13	14	3132	3413	63	27	59	61	49	68	61	79	58
3	14	12	10	12	11	11	12	14	1233	3232	84	55	40	52	45	46	54	77	57
4	13	13	12	10	12	18	19	17	3213	2342	67	64	55	38	5l	163	177	143	95
5	15	13	12	10	12	15	15	15	3434	6734	88	62	52	40	60	103	88	87	73
6	10	9	7	7	6	6	7	7	4353	1223	39	27	17	18	15	16	20	17	21
7	10	5	8	15	9	7	11	10	1231	1432	34	12	24	92	31	19	42	36	36
8	12	15	14	16	11	11	11	15	4646	2345	56	89	81	07	44	44	47	101	71
9	18	12	9	8	10	9	11	7	5334	5242	156	56	29	23	39	27	48	17	49
10	4	5	4	4	3	4	7	9	1312	1223	9	12	10	10	7	9	17	27	13
11	12	4	7	8	5	8	9	5	2332	2253	54	9	19	25	12	24	30	11	23
12	4	9	5	5	5	11	6	12	2233	2321	8	28	13	12	13	42	16	53	23
13	9	8	8	6	9	8	8	8	2332	3313	29	21	25	16	27	23	26	23	24
14	5	5	2	2	6	12	11	14	2212	1452	13	12	5	4	16	53	48	75	28
15	10	7	8	8	5	3	4	1	3224	2122	34	17	26	25	13	7	10	3	17
16	3	1	7	5	5	2	4	6	1233	2234	6	3	17	12	11	5	9	14	10
17	2	2	1	1	9	9	8	5	2232	2313	4	4	3	3	33	28	21	12	14
18	4	8	4	6	7	5	6	6	2422	2222	10	21	10	15	18	11	16	15	15
19	5	4	9	9	8	6	8	9	3223	1111	13	10	33	28	24	16	24	30	22
20	7	13	12	9	8	8	5	7	2222	4242	18	66	58	29	24	21	12	19	31
21	9	6	9	5	8	8	5	9	4423	3230	30	14	31	12	22	23	12	29	22
22	6	3	5	4	3	3	1	3	4122	1122	16	7	12	10	7	6	3	6	8
23	3	2	0	4	6	6	7	9	1202	2336	7	5	0	10	14	15	17	31	12
24	4	8	7	3	5	4	4	6	2222	3212	9	21	19	7	11	8	8	15	12
25	9	7	10	6	14	13	12	15	9422	2422	32	19	38	16	82	70	54	101	52
26	16	16	16	15	14	17	18	14	5711	3433	104	120	106	97	72	145	164	83	111
27	14	12	13	9	7	7	8	9	3451	2224	71	57	64	29	19	20	24	32	40
28	8	10	11	11	8	12	7	8	1443	4422	21	36	49	43	25	51	17	21	33
29	6	8	10	8	9	12	8	9	1423	2521	15	24	35	25	33	54	24	31	30
30	4	8	5	4	2	1	5	12	2233	2234	9	23	12	8	4	2	12	59	16
																			35.5

APRIL 1984

	3Ks								σ s		as								As
1	11	11	12	12	11	11	9	8	5155	3452	50	44	59	59	45	43	27	22	44
2	15	8	12	13	11	13	12	15	6124	2233	95	24	55	65	44	66	56	96	63
3	15	11	10	12	12	11	12	15	5235	3344	87	49	35	58	52	50	54	88	59
4	13	12	13	11	11	17	18	18	6514	1334	70	55	69	42	47	144	162	169	95
5	16	13	11	10	12	15	14	16	8444	6535	119	65	50	40	51	96	81	108	76
6	11	9	7	8	7	5	7	5	3444	3233	48	27	17	24	19	13	17	12	22
7	9	7	8	14	10	6	8	8	3112	1134	33	17	26	81	35	14	26	25	32
8	12	13	15	17	11	12	13	14	5344	2256	55	70	89	27	46	55	63	84	74
9	16	12	9	8	10	6	9	7	5334	5244	117	52	27	22	37	16	33	17	40
10	4	7	3	4	2	3	4	7	2502	3123	10	17	7	10	5	6	9	19	10
11	11	4	8	8	5	8	8	4	3233	3341	42	10	21	22	11	24	24	8	20
12	5	9	6	5	4	9	5	11	3222	2123	11	31	14	11	8	28	13	50	21
13	9	9	8	5	6	5	7	6	5122	1212	29	27	22	13	16	13	17	15	19
14	7	5	2	0	5	12	9	13	3211	2553	18	13	4	1	11	56	31	61	24
15	9	6	8	8	3	2	4	1	3232	2221	31	16	23	21	6	4	8	2	14
16	1	1	5	4	4	1	1	4	2121	1223	2	2	11	8	8	2	3	10	6
17	2	1	1	0	9	6	6	5	2211	3233	4	3	2	1	28	15	14	11	10
18	5	9	6	4	4	3	4	4	2651	2123	11	27	14	10	9	6	8	10	12
19	4	3	8	6	6	6	6	8	2021	0102	8	7	25	16	15	14	15	23	15
20	5	11	12	9	5	6	4	5	3223	2103	13	43	51	27	12	15	10	11	23
21	8	4	8	5	7	6	4	9	2223	3115	24	10	25	11	19	16	8	28	18
22	8	2	3	5	1	0	0	2	7212	2102	25	4	7	12	3	1	0	4	7
23	3	2	0	2	4	5	6	8	2403	2246	6	5	0	4	10	13	15	23	10
24	4	6	6	4	3	1	3	4	2221	1125	8	16	16	8	6	3	6	10	9
25	7	6	10	6	11	15	12	17	3222	4337	17	16	38	16	45	87	53	121	49
26	17	16	16	15	12	17	17	15	9422	2435	145	110	115	88	58	145	138	102	113
27	15	12	12	9	5	7	7	9	7363	1135	91	59	58	27	12	17	18	31	39
28	7	9	10	11	8	11	6	5	2333	2302	17	28	39	43	21	43	15	13	27
29	5	7	9	7	9	10	7	8	3322	2322	13	17	32	20	29	36	19	26	24
30	4	9	5	2	0	0	2	10	1564	1123	8	28	12	4	1	1	5	37	12
																			32.9

an , as INDICES 1984 (continued)

MAY 1984

	3Kn								σ n		an						An
1	10	8	9	11	11	11	8	9	2244	4333	39	26	28	48	45	42	21	29	35
2	9	10	9	10	8	8	3	4	3132	4412	30	34	27	34	21	22	7	10	23
3	4	2	8	11	6	7	8	11	2115	1252	9	4	26	41	15	20	26	43	23
4	7	7	7	11	8	4	7	8	4435	3343	17	20	20	43	22	10	18	25	22
5	8	5	8	10	11	12	14	13	4434	3472	22	13	23	34	42	53	83	63	42
6	9	9	10	4	7	5	5	1	2433	3411	30	31	38	10	19	13	13	2	20
7	2	0	1	8	6	2	2	2	1113	3212	4	1	3	23	16	5	4	5	8
8	4	3	4	6	3	4	5	3	2412	1221	10	7	9	16	7	8	11	7	9
9	4	7	7	7	8	10	8	13	1225	3322	9	18	19	19	24	38	24	67	27
10	9	13	11	9	12	13	8	6	3134	1422	32	70	42	31	58	61	24	14	42
11	8	6	11	5	8	7	6	6	2231	3102	24	14	44	13	22	19	14	15	21
12	6	5	8	8	7	8	10	10	4232	2432	14	12	21	25	19	22	40	38	24
13	11	8	7	5	4	3	3	3	2224	2302	45	22	17	12	8	7	6	6	15
14	0	1	3	8	10	9	8	11	1223	2235	1	3	7	23	35	27	23	41	20
15	9	5	11	8	5	5	4	3	3233	3340	27	11	41	23	13	12	10	6	18
16	2	6	5	8	6	4	4	8	2323	2212	4	14	13	24	15	8	10	24	14
17	8	10	11	16	12	13	10	8	1222	1432	24	37	45	12	56	62	34	24	49
18	7	7	7	5	7	8	8	11	3233	2335	17	20	18	12	17	23	24	45	22
19	11	13	13	9	7	8	8	8	1372	2323	42	62	67	31	17	21	23	22	36
20	9	10	11	10	11	13	12	13	1333	2523	32	35	41	37	42	62	52	70	46
21	15	13	14	13	11	9	13	12	5523	3253	103	69	75	62	46	30	65	58	64
22	10	12	12	11	12	14	9	11	2335	1514	35	51	59	44	56	72	28	45	49
23	15	14	12	11	10	10	12	9	5614	1443	93	71	53	49	34	34	52	30	52
24	7	7	12	12	12	13	12	10	2134	1211	17	19	53	56	59	61	51	39	44
25	9	5	6	6	9	8	10	12	3223	3423	33	11	15	14	31	25	39	56	28
26	11	11	11	6	7	7	7	3	1242	2332	46	46	47	16	17	18	17	7	27
27	1	1	8	8	8	6	5	3	2235	3232	3	2	24	21	24	15	11	7	13
28	5	2	2	5	5	5	7	10	3224	3232	12	5	5	11	11	11	18	34	13
29	8	9	5	6	7	7	6	7	3333	1314	21	33	13	14	17	17	16	18	19
30	9	9	11	12	7	10	9	8	3754	4432	27	30	44	57	18	35	29	22	33
31	5	5	2	5	4	3	3	11	3123	2233	11	13	5	12	8	6	7	43	13
																			28.1

MAY 1984

	3Ks								σ s		as						As
1	10	9	11	12	12	12	7	9	5325	3415	37	33	41	54	55	56	17	29	40
2	10	10	9	10	10	6	1	2	5322	4321	34	40	33	40	37	15	3	5	26
3	2	1	8	9	5	7	7	9	1223	3154	5	3	24	27	11	18	19	33	18
4	8	6	8	11	5	4	5	8	5216	2324	24	16	24	42	12	10	11	22	20
5	7	5	8	9	9	11	14	15	3122	4667	20	13	21	28	30	50	82	91	42
6	11	9	9	4	4	3	3	1	5341	1222	50	27	33	8	8	7	7	3	18
7	2	1	0	7	6	1	1	0	2214	4221	4	2	1	19	15	2	2	1	6
8	3	2	4	5	0	1	1	0	3221	1212	6	4	8	13	1	3	3	1	5
9	3	5	7	4	8	8	6	11	1112	4223	6	13	17	9	21	22	15	46	19
10	10	14	11	9	11	11	6	3	3522	1220	37	83	44	32	42	48	16	7	39
11	7	5	9	4	7	4	5	7	3233	4346	17	11	31	9	19	9	13	17	16
12	7	4	7	8	4	5	8	8	6241	1132	17	10	18	22	9	13	25	24	17
13	9	8	5	4	1	1	1	0	2233	2110	32	21	11	9	3	2	2	0	10
14	0	0	1	6	9	9	9	8	1222	3203	1	1	3	15	32	27	31	21	16
15	9	4	10	8	4	3	2	0	6122	2221	27	8	34	23	10	7	5	1	14
16	1	5	4	6	4	1	2	7	1422	2224	2	11	9	15	8	2	4	19	9
17	6	9	11	16	9	10	6	6	2224	2422	16	32	50	16	31	36	14	14	39
18	5	7	7	6	7	5	7	11	2343	5246	13	19	18	14	17	13	20	43	20
19	11	13	14	8	7	6	8	5	4241	3243	43	68	81	26	18	16	21	12	36
20	10	7	11	11	8	13	10	11	5123	1223	37	18	50	50	25	70	36	41	41
21	16	12	13	11	11	8	11	15	7512	4255	115	58	64	47	42	21	49	92	61
22	9	10	14	11	11	12	9	11	2325	2205	30	38	73	45	41	55	31	49	45
23	15	12	11	12	9	9	11	10	6323	1245	98	57	42	53	28	30	45	40	49
24	6	7	10	13	12	11	11	9	2233	4344	16	18	40	62	51	43	50	32	39
25	11	3	4	5	9	8	9	13	6032	4246	41	7	10	11	28	25	32	65	27
26	12	11	10	5	5	4	3	1	4412	1122	53	47	38	12	12	8	6	3	22
27	0	0	8	8	6	5	2	2	0221	2231	0	1	25	24	15	12	5	5	11
28	2	0	1	2	3	3	4	9	1121	1023	5	1	2	5	6	7	10	28	8
29	6	10	6	6	7	7	6	5	3331	4233	16	39	14	15	20	17	14	11	18
30	9	9	11	14	7	9	10	8	3555	3532	32	30	45	80	18	29	34	26	37
31	4	4	0	4	1	1	0	9	4213	2115	10	8	1	9	3	2	1	29	8
																			25.0

an , as INDICES 1984 (continued)

JUNE 1984

	3Kn								σ n		an								An
1	5	4	4	7	8	7	6	4	2323	3222	11	8	10	20	22	19	15	9	14
2	7	9	8	8	8	9	6	8	2323	2323	20	30	23	24	24	29	15	22	23
3	7	6	10	10	15	13	11	10	1354	3322	18	14	37	39	88	69	45	34	43
4	10	12	11	13	11	9	10	10	2234	1131	34	54	41	66	44	31	37	34	43
5	11	11	9	10	10	7	6	9	3323	1111	47	48	28	36	37	17	14	32	32
6	9	10	9	8	8	6	8	7	2453	2333	28	34	33	25	23	15	23	17	25
7	8	8	9	10	8	4	6	4	1152	2223	24	21	31	39	24	10	14	10	22
8	4	1	2	4	9	8	10	10	2112	3323	9	2	4	9	27	26	37	38	19
9	8	8	14	10	9	10	10	9	2132	2323	24	24	76	34	29	38	34	28	36
10	9	9	8	8	10	10	8	9	1232	2321	27	31	26	23	36	34	24	31	29
11	8	8	8	8	8	8	6	7	2314	2323	24	26	24	23	25	21	14	19	22
12	8	8	7	8	7	3	3	3	2223	4312	24	25	17	22	20	6	6	7	16
13	1	5	5	2	5	4	7	3	2212	4522	3	12	12	5	11	10	19	7	10
14	3	3	3	5	3	4	4	4	3222	2222	7	7	7	13	6	8	9	9	8
15	5	9	8	10	10	12	13	13	2233	1222	12	29	24	36	34	56	63	66	40
16	16	15	14	13	10	8	7	9	2434	3223	111	98	84	67	38	24	19	33	59
17	7	5	10	10	8	6	6	4	2432	3533	18	12	38	35	22	16	15	9	2l
18	7	8	12	11	14	12	10	10	3352	1322	19	22	60	49	72	56	40	35	44
19	11	10	10	11	12	11	12	11	2321	4323	50	40	34	44	52	46	51	43	45
20	12	12	8	10	7	5	5	3	2432	3361	55	52	26	35	18	13	13	7	27
21	3	1	1	2	1	3	7	6	1221	1444	7	3	3	4	2	6	18	14	7
22	6	6	3	1	7	5	3	5	2321	2442	16	14	7	3	18	12	7	12	11
23	3	4	9	3	5	6	9	11	2341	3232	6	8	28	7	13	14	31	44	19
24	14	12	4	7	7	7	6	8	4432	2311	71	56	10	19	19	20	15	26	30
25	8	8	7	8	7	8	8	8	4223	2212	26	26	20	21	19	21	26	21	23
26	8	7	8	7	4	5	8	8	2231	2323	22	20	22	17	10	12	22	22	18
27	10	10	8	8	5	2	4	5	4333	1132	38	40	26	24	11	4	9	11	20
28	8	8	9	8	10	11	10	11	2234	3322	24	23	32	24	38	46	38	46	34
29	10	6	5	8	4	8	8	9	1122	2333	38	16	13	24	9	24	21	28	22
30	8	9	7	7	8	9	8	7	2122	4422	23	29	19	19	25	29	26	18	24
																			26.2

JUNE 1984

	3Ks								σ s		as								As
1	4	3	2	3	6	5	4	1	3331	3412	9	6	5	7	14	11	9	3	8
2	5	9	7	6	7	8	5	6	2410	3213	13	27	18	15	19	21	12	16	18
3	5	4	10	8	14	12	10	6	1313	2432	11	9	34	24	84	57	35	16	34
4	9	11	10	11	9	8	6	9	3233	3225	29	41	38	50	31	21	16	31	32
5	11	9	9	10	9	5	4	7	6213	4215	43	30	27	35	33	13	8	17	26
6	8	8	9	5	7	4	7	6	3241	5332	22	23	27	13	18	8	18	14	18
7	6	6	8	10	6	2	5	4	2344	4231	16	15	25	37	16	4	12	8	17
8	1	0	0	0	6	5	7	7	2001	3221	3	0	0	1	16	13	19	17	9
9	5	6	11	8	8	7	10	8	3422	3233	13	15	50	23	23	20	36	25	26
10	9	9	6	6	7	8	7	9	3322	1313	28	27	16	15	18	26	17	28	22
11	7	7	7	6	7	4	4	4	4330	1212	17	20	20	15	17	10	8	10	15
12	8	9	6	5	5	0	1	1	4431	3012	22	27	14	13	13	0	2	2	12
13	0	4	6	0	2	2	5	1	0440	1432	0	9	15	0	5	4	12	3	6
14	3	3	3	4	1	0	1	1	3215	2022	7	6	6	8	3	0	3	3	5
15	4	8	6	8	9	9	12	12	3222	3105	10	21	15	21	27	33	57	52	30
16	16	15	15	12	10	6	7	10	4443	4224	114	93	92	58	40	16	20	37	59
17	7	4	12	10	4	4	4	2	4253	2232	19	10	54	36	10	9	10	4	19
18	7	7	9	11	12	12	9	10	4123	2216	19	18	33	49	59	59	28	35	38
19	12	9	10	11	9	9	11	12	6322	2324	54	28	40	42	27	31	42	51	39
20	13	11	10	8	5	5	2	1	5232	2232	62	45	37	25	12	11	4	3	25
21	5	0	0	0	0	0	5	5	6001	0143	11	0	0	1	0	1	11	11	4
22	6	6	4	1	5	3	2	2	4342	2422	14	14	9	3	12	6	4	5	8
23	2	3	7	3	2	3	8	14	3333	2235	5	6	20	6	5	6	22	72	18
24	15	14	4	8	5	7	4	8	7524	2325	93	83	9	21	11	18	10	23	34
25	9	8	8	8	7	4	5	4	5422	5233	29	25	23	23	20	10	12	9	19
26	7	6	8	6	1	1	8	7	4331	2141	19	16	21	15	3	2	26	18	15
27	11	11	9	8	6	1	0	1	6543	5212	50	48	30	22	15	2	1	2	21
28	8	8	10	9	9	12	10	11	5373	3333	22	23	38	29	27	52	39	49	35
29	9	5	4	8	4	4	7	8	4122	3154	33	11	9	21	8	10	17	25	17
30	9	6	5	7	9	8	8	4	4034	3230	30	15	13	18	28	25	22	10	20
																			21.6

an , as INDICES 1984 (continued)

JULY 1984

	3Kn								σ n		an								An
1	6	10	6	8	5	10	12	8	2502	2342	15	34	14	23	12	38	52	24	27
2	10	5	7	8	6	10	8	9	1233	2421	37	13	19	23	16	36	21	31	25
3	10	6	7	8	8	8	8	7	3233	3321	40	16	19	26	24	23	21	19	24
4	6	8	8	6	7	7	10	11	3322	2323	15	23	26	16	20	18	35	48	25
5	11	8	11	7	5	6	7	7	3224	2222	41	24	46	20	12	16	18	19	25
6	6	9	7	6	8	6	7	9	2332	3121	15	27	18	14	26	15	18	32	21
7	7	5	6	5	5	5	8	8	3112	2432	17	12	14	12	13	13	23	22	16
8	6	8	10	8	7	8	6	7	1125	2332	14	23	36	23	20	21	15	20	22
9	7	8	6	7	7	8	6	5	3414	2312	19	22	15	20	17	25	15	12	18
10	5	8	8	8	11	9	9	7	1331	3212	12	21	23	24	47	30	31	20	26
11	4	2	2	3	6	9	8	12	3222	2413	9	5	4	6	14	32	22	56	19
12	12	11	9	7	7	4	5	6	2323	3321	58	42	30	17	19	9	13	15	25
13	8	14	18	14	17	12	12	12	3231	3254	25	72	147	84	132	59	58	57	79
14	16	16	13	13	12	12	10	9	5642	3521	105	108	65	66	51	60	40	29	66
15	10	12	12	10	9	10	11	12	2452	2242	39	52	53	38	28	37	47	51	43
16	10	10	10	13	7	8	12	13	3416	2333	35	40	34	66	19	26	51	62	42
17	12	15	14	14	11	13	10	11	3234	3354	54	89	84	80	49	70	36	41	63
18	7	10	6	8	11	11	11	8	1322	1423	20	38	15	23	49	41	45	26	32
19	10	9	9	7	7	7	8	8	3403	2231	38	33	29	20	18	17	21	23	25
20	7	8	9	7	6	7	4	11	5323	4223	20	21	27	17	15	19	9	42	21
21	8	6	9	7	5	5	4	8	2324	3222	21	15	28	20	11	11	10	24	18
22	7	11	5	7	6	7	6	5	2214	2521	17	47	13	18	14	18	15	12	19
23	8	7	5	6	7	7	7	8	2522	4422	21	17	11	14	17	18	20	21	17
24	9	10	9	11	6	7	6	6	2334	3222	30	40	31	45	14	19	14	14	26
25	7	8	7	6	8	4	9	7	2333	3321	18	22	19	16	23	9	27	18	19
26	10	7	5	6	2	1	4	3	3334	2122	37	17	13	14	4	3	9	7	13
27	10	8	6	7	10	8	9	8	2324	1441	36	23	16	17	34	23	32	23	26
28	12	12	12	8	9	10	9	4	4332	3631	52	54	51	25	31	38	29	9	36
29	4	6	7	5	8	13	9	7	2242	3663	8	16	19	12	24	62	33	18	24
30	9	5	6	7	9	8	5	5	3243	5623	27	11	16	19	27	21	11	11	18
31	5	4	7	7	11	10	9	14	1244	3522	13	9	17	18	48	37	30	83	32
																			28.8

JULY 1984

	3Ks								σs		as								As
1	3	9	5	6	1	7	13	10	1532	2343	7	27	13	15	3	17	65	35	23
2	10	5	7	6	4	7	7	8	4240	2123	40	12	18	15	9	17	19	21	19
3	11	6	4	7	8	7	6	7	5122	3324	45	15	9	20	23	20	15	18	21
4	5	5	9	6	4	4	9	9	2332	2134	11	12	28	15	10	10	27	27	18
5	11	9	9	6	3	5	4	4	2542	0212	44	31	31	16	7	11	9	8	20
6	6	8	4	4	8	4	5	7	5321	4246	16	24	10	9	21	9	12	17	15
7	5	4	3	4	3	4	4	6	2422	2224	12	9	7	10	6	10	10	15	10
8	5	6	7	4	7	5	4	6	4003	4124	12	15	20	10	17	11	10	15	14
9	5	6	5	6	6	6	4	2	4223	3312	12	16	13	16	14	15	8	5	12
10	3	4	6	7	10	6	7	4	1403	2111	6	10	15	17	36	16	17	9	16
11	5	1	0	0	4	9	6	10	5122	3231	11	2	1	1	10	28	14	35	13
12	14	12	9	5	3	1	5	6	3431	1133	79	53	27	13	7	2	11	14	26
13	10	14	18	14	18	12	11	10	4524	9674	34	77	151	83	157	56	47	38	80
14	17	15	13	12	11	11	10	9	5343	3364	124	100	66	52	43	48	40	29	63
15	13	12	12	10	8	9	11	13	5431	4025	67	53	55	37	22	31	42	61	46
16	10	12	10	14	6	7	12	11	5334	2343	40	51	40	71	15	18	58	46	42
17	12	16	15	14	12	11	11	11	5123	1355	57	111	97	78	55	48	44	50	68
18	9	10	6	8	10	12	11	9	2322	1224	30	36	16	22	37	55	49	27	34
19	11	11	10	9	6	4	6	6	3313	2132	47	45	37	31	14	9	16	14	27
20	9	8	9	6	5	5	4	10	5243	2214	29	21	32	15	11	13	8	36	21
21	6	4	8	4	2	1	1	6	3221	2214	14	8	21	9	5	3	3	15	10
22	5	10	4	6	3	6	3	6	3316	0134	12	38	8	15	7	14	6	14	14
23	7	6	3	2	3	7	6	6	5522	2414	19	16	6	4	7	17	16	14	12
24	8	11	7	11	3	4	2	4	3332	2332	25	47	20	50	7	9	5	8	21
25	6	7	6	6	7	1	9	5	4324	3142	15	19	16	16	17	2	27	13	16
26	11	7	5	6	2	0	2	3	6544	3022	43	20	11	14	4	0	4	6	13
27	11	8	6	4	8	6	8	7	6551	4132	41	22	15	8	21	15	25	19	21
28	11	13	11	8	9	9	7	2	6542	6324	41	64	50	22	31	27	19	5	32
29	3	5	5	6	8	10	8	5	1435	4442	6	12	12	14	21	35	24	11	17
30	7	4	4	6	8	6	4	4	4125	6234	19	8	10	14	26	15	10	8	14
31	3	3	5	6	9	8	6	14	3141	3226	6	6	11	15	31	25	16	77	23
																			25.2

an , as INDICES 1984 (continued)

AUGUST 1984

	3Kn								σ n		an								An
1	14	18	18	16	14	12	12	12	2453	3233	76	149	154	114	78	53	59	60	93
2	13	13	11	11	12	10	7	7	4314	5344	69	61	45	41	51	36	19	20	43
3	7	9	10	10	7	7	6	8	4142	3322	19	29	34	38	18	20	15	26	25
4	10	8	10	8	9	8	8	7	6233	1323	38	24	37	26	32	22	25	19	28
5	7	8	6	4	5	5	7	4	2531	2531	19	22	16	10	12	13	17	8	15
6	3	3	3	4	5	5	3	5	1223	3323	7	6	6	10	12	11	6	11	9
7	2	1	2	4	4	1	2	5	3225	2223	5	3	4	10	9	2	5	12	6
8	10	10	8	10	9	8	7	10	2323	2314	37	36	25	39	32	21	17	40	31
9	6	7	9	9	11	7	8	12	2322	3215	15	20	29	29	42	17	24	57	29
10	6	5	8	9	5	6	8	6	2241	2543	15	13	23	29	12	14	25	16	18
11	3	5	10	10	6	5	8	11	2243	2321	6	13	39	37	16	11	26	46	24
12	12	9	8	9	10	5	8	8	3232	3344	56	27	25	32	35	13	22	22	29
13	9	9	5	4	6	5	6	4	3332	2312	32	28	11	9	14	13	15	8	16
14	2	2	6	9	13	12	12	12	1322	2112	5	4	14	28	65	59	51	55	35
15	13	12	9	9	10	11	8	8	4414	3332	62	56	27	32	35	46	23	23	38
16	9	11	8	9	11	7	7	7	3413	2212	31	44	22	30	43	20	18	19	28
17	8	9	8	6	6	6	7	8	2522	3232	24	31	23	14	14	15	19	26	21
18	3	7	6	6	6	5	7	5	1411	1222	7	17	14	15	14	11	18	11	13
19	3	2	4	8	9	11	12	8	0323	0432	6	5	10	22	29	49	58	22	25
20	8	8	11	6	4	8	7	3	2352	1333	21	23	44	14	9	22	20	7	20
21	4	2	2	3	4	2	3	2	1212	2211	8	4	5	7	9	5	7	4	6
22	0	0	0	1	3	0	0	1	1112	1102	1	0	0	3	6	1	0	3	2
23	2	1	3	3	9	8	7	10	1311	2232	5	3	6	6	27	25	17	39	16
24	6	11	11	12	11	10	10	7	2234	2263	16	46	46	60	50	35	34	17	38
25	8	11	8	12	6	6	10	8	3321	3132	22	43	22	58	15	15	35	26	30
26	7	11	10	6	8	8	5	4	3541	3532	18	49	35	14	22	24	11	10	23
27	8	7	7	10	12	15	14	17	3413	1432	23	17	17	34	53	94	85	121	56
28	14	7	15	14	10	12	10	12	4233	1542	81	20	98	76	34	53	39	52	57
29	9	11	13	11	11	8	8	9	1223	2325	32	42	61	43	43	21	23	30	37
30	9	9	9	11	11	9	8	8	5554	3542	31	32	30	44	47	32	24	23	33
31	9	7	9	4	8	8	6	6	5331	3324	31	20	30	9	24	22	15	16	21
																			27.9

AUGUST 1984

	3Ks								σ s		as								As
1	14	17	17	15	13	11	11	12	4631	2135	83	126	122	87	62	48	49	57	79
2	12	13	10	9	10	10	7	7	3224	4416	57	65	38	33	40	37	17	17	38
3	7	6	9	8	6	5	5	8	4254	3435	17	16	27	21	14	13	13	24	18
4	9	7	8	7	8	9	6	7	5122	4346	28	17	26	20	24	27	15	17	22
5	6	7	8	2	3	4	6	2	3461	3153	14	18	21	5	6	9	16	4	12
6	3	3	1	4	2	3	1	2	3223	3125	7	7	2	9	5	7	2	5	6
7	1	1	0	2	1	0	3	2	1113	2142	2	2	1	4	2	1	6	4	3
8	9	10	7	10	8	7	5	8	5334	7123	32	38	20	38	25	17	11	26	26
9	5	6	9	9	9	5	7	12	2143	5133	12	16	28	31	29	12	17	56	25
10	6	5	6	8	3	4	7	4	3211	1432	16	13	14	25	6	10	20	10	14
11	1	4	10	11	4	4	6	10	2233	3145	3	10	35	43	9	9	15	36	20
12	13	9	9	8	10	4	7	6	7121	6334	68	28	31	24	35	8	17	14	28
13	11	10	4	2	2	2	5	3	4423	1122	45	34	10	4	5	5	11	7	15
14	2	0	4	7	10	12	11	12	2123	3435	5	1	9	20	35	58	45	57	29
15	13	12	8	9	10	12	6	6	6523	4242	67	58	21	27	35	53	15	15	36
16	11	11	8	8	9	8	7	7	5531	4324	44	43	23	26	28	21	20	18	28
17	7	9	8	5	4	3	7	8	3343	2134	18	27	21	11	9	7	17	22	17
18	1	7	6	5	3	2	4	2	1662	2212	2	17	15	12	7	4	9	4	9
19	2	1	4	7	7	10	12	8	2111	1334	4	3	8	19	17	40	52	22	21
20	8	9	11	4	2	6	8	1	2442	1330	22	27	45	10	4	15	23	3	19
21	2	1	1	2	2	0	2	0	2223	3110	5	3	2	5	4	1	4	0	3
22	0	0	0	0	0	0	0	0	0000	0000	0	0	0	0	0	0	0	0	0
23	1	1	2	2	8	7	6	9	2232	4114	3	3	4	4	21	18	16	27	12
24	8	10	11	11	10	9	9	5	5432	5243	22	34	50	48	37	30	29	13	33
25	7	9	7	12	5	4	8	8	3433	2335	17	27	20	59	12	10	25	21	24
26	7	9	9	4	5	5	3	3	3532	3312	17	31	28	8	12	12	7	7	15
27	9	6	6	9	11	14	14	17	4624	2234	27	15	14	27	48	77	83	124	52
28	15	7	14	11	8	11	11	10	4524	3645	95	18	78	49	24	50	46	39	50
29	9	11	12	11	10	7	6	8	5433	2146	32	48	55	42	39	18	15	26	34
30	9	9	8	10	10	9	6	7	7436	4042	28	27	21	39	40	31	15	19	28
31	9	7	8	3	8	6	6	4	6423	3313	31	19	25	6	23	16	14	10	18
																			23.7

an , as INDICES 1984 (continued)

SEPTEMBER 1984

	3Kn								σ n		an							An
1	8	8	8	3	2	7	7	8	3431	1233	23	21	23	6	5	17	19	25	17
2	9	9	7	6	7	7	8	4	5541	3322	27	32	18	15	19	19	22	10	20
3	9	11	8	4	6	5	4	7	6323	1334	28	46	23	9	15	11	10	19	20
4	6	7	14	14	18	20	9	8	3523	4412	15	18	71	77	159	203	29	25	75
5	14	17	16	14	11	14	14	9	2442	3342	81	130	104	71	47	72	71	32	76
6	6	5	10	10	9	8	6	7	4144	4322	16	13	35	34	27	22	14	19	23
7	5	5	5	5	4	5	4	2	2322	2333	13	13	11	11	10	11	10	5	11
8	4	4	8	8	8	8	8	11	2332	2222	10	8	23	21	24	23	24	42	22
9	7	4	8	7	6	4	8	13	2322	2334	20	10	22	17	14	10	21	68	23
10	9	8	10	14	6	10	11	11	3333	4313	32	22	39	82	14	38	49	44	40
11	10	11	11	6	7	7	8	7	2221	2232	39	45	44	16	19	19	23	17	28
12	5	5	7	10	9	11	8	8	3233	2443	13	12	18	37	27	43	22	22	24
13	9	8	8	8	5	6	4	5	4323	2232	30	23	24	23	12	14	9	13	19
14	8	8	10	9	6	8	10	7	3223	1333	23	22	35	32	16	26	35	20	26
15	7	5	9	7	7	7	4	8	3123	3223	19	13	27	19	19	18	10	25	19
16	7	6	7	4	6	8	6	3	5423	3653	20	14	18	8	14	23	14	7	15
17	5	7	7	3	3	3	3	3	3440	1121	11	18	20	6	6	7	6	7	10
18	1	4	3	1	1	0	2	3	2422	2121	3	9	6	3	3	0	4	6	4
19	3	7	7	16	15	10	14	11	2323	2264	6	18	19	114	88	39	77	45	51
20	9	11	11	10	8	10	11	5	5233	4553	33	45	42	38	25	37	50	13	35
21	3	4	4	9	10	6	4	9	1424	3323	6	8	10	33	35	15	9	27	18
22	6	6	12	12	11	6	13	12	2475	5043	15	15	55	54	48	14	70	57	41
23	15	16	17	18	18	17	16	17	4542	4445	87	111	125	149	157	128	113	134	126
24	15	14	15	12	11	14	11	12	4424	3534	97	72	89	53	46	79	46	55	67
25	8	12	13	11	14	14	13	12	3334	5753	25	58	70	49	73	72	67	58	59
26	9	12	15	14	14	13	12	9	2524	4244	32	58	87	75	86	66	51	28	60
27	11	10	11	11	13	8	9	11	3454	6234	44	35	49	42	69	23	29	44	42
28	8	10	4	7	9	9	11	9	4236	4155	21	37	10	20	33	28	46	31	28
29	8	8	8	4	4	6	7	9	3333	2226	23	23	21	10	9	16	19	30	19
30	9	7	10	3	2	3	2	8	5563	2225	33	18	36	7	4	7	4	25	17
																			34.5

SEPTEMBER 1984

	3Ks								σs		as							As
1	8	6	8	3	2	4	5	7	4544	2244	21	15	24	7	5	8	13	18	14
2	7	9	6	5	5	7	7	3	6532	3133	18	31	14	12	13	17	17	7	16
3	8	11	9	4	3	5	3	5	5452	2223	22	47	31	9	6	11	6	13	18
4	6	7	14	15	18	20	8	8	4532	5642	14	17	83	92	155	209	24	22	77
5	15	19	17	16	11	15	15	9	3554	3243	97	182	143	108	45	87	89	30	98
6	8	6	9	8	8	8	7	6	5232	3425	23	16	33	21	22	21	20	14	21
7	6	4	3	3	4	3	4	1	3311	2112	15	9	6	6	10	6	8	2	8
8	5	5	7	7	7	7	9	10	3231	2415	12	11	18	17	19	20	28	36	20
9	7	4	8	8	4	2	5	13	4234	3315	17	9	23	21	10	4	13	61	20
10	10	7	12	14	5	10	12	13	5243	2425	34	20	57	76	11	37	55	69	45
11	11	11	11	7	7	6	8	6	4221	2223	50	46	41	17	20	15	23	15	28
12	6	6	5	9	8	10	8	9	4210	2344	16	16	13	31	22	34	24	28	23
13	9	8	8	8	3	3	3	5	2513	0214	30	22	23	23	7	6	7	11	16
14	9	9	9	8	5	6	8	10	3233	2437	27	28	29	23	13	15	26	34	24
15	9	5	8	8	6	7	2	8	8223	1324	27	13	24	21	15	19	5	24	19
16	8	7	5	2	6	7	6	3	7522	5455	22	17	11	5	15	18	16	6	14
17	4	5	5	2	1	1	0	1	3232	1202	10	13	13	5	2	3	0	3	6
18	1	4	2	1	1	0	0	1	2312	2012	3	10	4	3	3	0	1	3	3
19	5	7	8	17	15	11	12	10	2233	3365	11	18	21	131	97	41	54	39	52
20	9	10	9	8	8	9	11	4	2322	6433	32	38	32	25	21	27	44	9	29
21	2	3	4	10	8	5	3	8	2336	4303	4	7	10	36	22	12	7	24	15
22	7	7	10	9	9	4	14	11	3352	3444	19	19	35	33	27	9	73	50	33
23	14	14	15	17	18	16	15	17	5252	2454	79	79	101	133	164	116	102	130	13
24	14	12	14	11	9	12	9	12	4234	3543	78	59	76	50	27	51	33	52	53
25	8	10	13	12	12	11	12	12	3346	4455	26	39	67	58	52	50	54	58	51
26	9	13	14	12	14	11	10	9	5354	4235	32	62	78	56	72	43	39	27	51
27	10	9	10	10	11	8	8	10	3142	4245	38	27	37	36	49	22	21	34	33
28	7	8	3	7	8	7	11	8	4126	5263	18	25	6	20	25	19	41	26	23
29	7	7	8	4	4	6	6	9	3334	1238	20	20	21	9	9	16	15	30	18
30	9	6	9	3	0	1	2	7	6262	1226	31	16	31	7	1	3	4	17	14
																			31.8

an , as INDICES 1984 (continued)

OCTOBER 1984

	3Kn								σn		an						An
1	4	3	7	5	8	7	3	4	4341	3523	8	7	18	13	24	20	7	8	13
2	7	3	4	4	7	8	8	10	4222	4332	19	7	10	10	18	26	23	39	19
3	10	13	11	8	8	5	7	6	4762	2235	35	61	49	23	23	11	20	14	30
4	2	2	4	3	4	9	6	6	3221	2233	5	4	9	7	8	30	14	16	12
5	7	4	5	6	7	4	6	5	5443	2212	19	10	13	16	18	10	16	13	14
6	9	10	10	6	8	8	8	14	3221	2322	30	37	35	14	23	26	26	86	35
7	15	12	10	9	16	12	11	10	2421	6252	95	55	37	31	117	51	43	35	58
8	13	12	6	11	7	7	9	10	3423	1443	65	55	16	46	17	17	28	38	35
9	11	7	8	8	7	9	12	10	3221	2353	42	18	24	26	19	33	56	35	32
10	9	11	10	12	14	11	10	6	3424	5251	29	46	36	53	85	42	38	16	43
11	9	8	10	10	10	12	12	14	1443	3433	31	23	36	36	37	53	57	74	43
12	14	10	11	10	9	12	12	10	3242	3343	75	35	48	39	28	51	58	39	47
13	9	8	9	11	14	7	5	5	4333	5434	27	21	32	45	73	18	12	12	30
14	10	8	9	6	2	8	8	10	4210	1334	36	25	27	14	4	23	21	40	24
15	9	5	4	2	3	6	13	11	4232	1233	28	13	9	5	7	14	61	45	23
16	10	10	9	11	10	9	5	11	4353	2533	35	36	33	50	36	28	12	43	34
17	4	3	2	2	2	2	2	3	3311	2223	10	6	4	4	4	5	4	6	5
18	5	10	8	14	12	13	18	14	1323	3452	12	38	21	75	57	63	148	83	62
19	17	12	15	15	18	16	16	13	4533	6653	146	60	99	91	155	115	106	67	105
20	14	14	14	17	14	14	15	11	3544	3564	82	86	83	121	78	80	97	50	85
21	10	11	12	11	12	15	16	14	5312	2452	37	49	55	49	58	93	107	83	66
22	12	14	12	13	13	13	13	12	4734	6353	56	82	58	68	69	66	69	53	65
23	11	10	10	10	10	12	12	11	5222	5252	41	35	40	36	34	53	53	48	43
24	12	12	12	12	15	13	12	10	4333	5543	52	57	57	56	92	65	60	40	60
25	8	9	8	9	9	7	11	14	2424	3452	26	30	25	31	28	20	50	84	37
26	14	5	6	4	4	5	5	6	2212	2213	78	13	14	9	9	13	13	15	21
27	5	6	4	5	8	9	5	3	2122	4421	11	14	10	11	24	27	11	6	14
28	2	6	7	6	6	5	7	7	1321	3355	5	15	19	14	14	11	19	20	15
29	5	4	4	3	8	6	5	6	3322	3222	13	10	10	7	23	14	11	14	13
30	6	8	5	4	3	2	2	3	5222	3222	14	22	11	8	6	5	5	7	10
31	4	0	1	0	3	3	7	11	2121	1222	8	1	2	0	7	7	18	41	11
																			35.6

OCTOBER 1984

	3Ks								σs		as						As
1	2	3	8	5	7	6	2	2	3253	4313	5	6	22	11	17	15	4	5	11
2	6	5	4	4	6	7	6	9	3333	6402	16	11	10	8	15	19	16	33	16
3	10	11	9	9	8	4	5	5	2442	2133	40	44	32	28	21	8	13	11	25
4	1	1	3	2	3	8	4	5	2012	3424	3	3	6	5	6	26	8	13	9
5	8	4	5	6	6	3	6	5	7232	2332	21	10	12	14	15	6	14	11	13
6	11	12	11	4	7	8	8	15	5332	3213	44	54	41	8	19	24	22	97	39
7	15	14	11	11	14	12	9	12	5522	4147	100	81	44	41	85	54	30	56	61
8	14	12	6	11	6	7	8	9	4322	2423	77	51	14	48	14	17	22	31	34
9	10	5	8	8	5	8	9	11	3335	2353	38	13	22	21	13	23	32	45	26
10	11	10	8	11	14	10	10	6	4112	4242	45	39	25	42	71	35	34	15	38
11	10	7	9	9	9	11	11	13	3113	1336	36	19	30	28	27	44	50	68	38
12	14	8	11	9	8	10	13	9	5231	2443	74	26	44	28	21	39	64	31	41
13	9	7	9	10	12	6	4	5	5243	5124	27	18	27	38	53	14	9	11	25
14	10	8	6	5	1	6	6	9	4433	2324	35	23	16	12	3	16	14	32	19
15	9	5	3	1	2	7	12	8	4233	2143	27	11	7	2	5	18	53	25	19
16	9	9	8	11	10	8	4	8	7243	5333	33	31	23	42	40	21	10	25	28
17	4	2	1	1	1	1	0	2	2212	1012	10	4	2	3	2	3	1	4	4
18	6	9	6	13	13	13	18	15	3244	3443	15	31	14	66	70	64	148	90	62
19	15	11	14	14	17	16	15	13	4232	3244	98	41	82	84	138	104	95	70	89
20	14	14	13	14	14	13	15	10	3333	2465	73	73	68	83	77	63	97	37	71
21	10	10	11	11	11	14	15	15	4135	2363	37	34	47	46	41	78	99	88	59
22	10	12	11	11	13	11	14	11	4343	4345	40	53	42	44	62	47	72	43	50
23	8	8	11	9	9	11	10	10	4240	3343	25	24	41	31	28	41	37	38	33
24	12	11	10	11	15	12	11	9	6222	4535	51	41	38	44	91	56	42	31	49
25	7	8	7	8	9	6	9	14	2323	3345	19	26	18	24	28	15	29	71	29
26	15	6	6	5	4	6	4	5	4322	3234	89	15	16	12	8	15	9	12	22
27	4	6	3	5	8	8	4	2	1223	7313	8	14	6	12	25	23	8	5	13
28	1	5	7	5	5	4	7	7	2212	4234	3	11	19	13	12	10	17	19	13
29	5	4	5	5	8	6	4	5	3322	2333	12	10	13	13	25	14	9	13	14
30	7	7	4	4	1	1	3	2	4433	2223	18	17	9	8	3	2	7	5	9
31	3	1	2	0	4	4	7	10	2210	1245	6	3	4	0	8	8	18	35	10
																			31.3

an , as INDICES 1984 (continued)

NOVEMBER 1984

	3Kn								σ n		an								An
1	8	8	14	14	11	5	7	8	3221	4222	23	24	79	78	45	12	19	22	38
2	5	4	4	7	4	10	11	8	1224	2353	11	10	10	20	10	38	50	24	22
3	6	3	8	6	12	10	12	9	4231	4333	14	6	21	15	58	40	51	31	30
4	9	8	7	10	9	9	9	9	2223	4544	29	21	18	35	32	29	28	28	28
5	5	10	8	8	11	7	6	4	1214	4442	13	34	24	24	43	17	16	8	22
6	4	5	8	11	8	10	7	6	4233	3523	9	11	26	43	26	39	18	16	24
7	6	9	6	6	7	14	10	13	1501	3532	14	33	14	14	19	82	34	64	34
8	10	12	11	10	9	10	8	6	3433	2331	38	51	42	37	32	35	23	14	34
9	3	6	7	5	8	8	11	8	1322	3442	7	15	17	11	23	25	50	24	22
10	9	7	5	3	13	8	9	13	4321	3234	30	20	11	7	62	21	28	64	30
11	7	8	6	11	12	9	6	14	3324	3142	20	23	15	48	51	28	15	79	35
12	7	9	7	5	4	2	1	3	3321	2221	17	27	18	13	9	5	3	6	12
13	2	4	5	6	5	9	9	10	2231	4353	5	8	13	16	11	31	30	34	19
14	6	6	7	9	13	8	10	9	3323	3351	15	14	19	30	65	23	40	30	30
15	11	11	8	15	12	14	15	18	4213	2433	42	46	26	92	55	71	95	166	74
16	19	20	18	20	19	15	14	12	5345	5444	190	219	167	202	179	93	86	52	149
17	13	11	11	13	13	15	10	10	5533	3622	66	50	45	66	66	87	36	36	57
18	10	9	11	10	9	5	10	8	3434	5235	39	30	46	34	28	11	37	22	31
19	11	9	10	4	8	12	11	10	4352	3432	45	32	40	10	22	51	44	36	35
20	8	10	11	8	10	9	10	7	2422	3543	24	37	45	26	40	30	36	20	32
21	8	8	7	11	10	10	10	9	3335	3341	24	25	20	41	39	38	37	31	32
22	5	9	6	10	8	9	10	8	2523	3554	12	27	16	39	24	32	36	24	26
23	9	7	7	5	8	4	4	3	3232	2244	30	19	19	12	26	9	9	6	16
24	6	6	7	7	3	7	9	7	4232	1453	15	14	20	20	6	19	28	19	18
25	7	4	5	2	2	7	10	10	4331	3245	20	9	11	5	5	17	35	37	17
26	8	7	4	3	4	5	7	2	3421	2232	22	18	8	7	10	13	17	5	13
27	1	1	4	5	7	10	8	5	2234	3642	3	3	9	13	19	39	22	12	15
28	7	2	5	6	5	3	2	2	5333	2222	17	5	13	14	11	6	5	4	9
29	0	6	13	10	5	4	6	5	0332	2253	0	16	67	39	12	10	14	12	21
30	11	15	15	10	10	8	8	12	3442	2123	43	94	101	34	36	26	25	54	52
																			32.6

NOVEMBER 1984

	3Ks								σs		as								As
1	9	9	14	15	11	6	7	8	2321	4342	31	27	81	97	45	14	18	24	42
2	6	6	5	11	4	10	11	7	2117	1353	14	15	13	41	8	35	49	20	24
3	5	3	9	7	12	11	12	9	2031	2444	11	7	27	18	54	47	53	30	31
4	9	7	8	11	11	8	10	8	4232	6334	32	18	24	41	50	21	35	25	31
5	7	9	8	8	10	5	5	4	2323	4131	18	28	24	24	35	13	12	8	20
6	4	5	10	9	8	10	5	6	1144	4524	9	12	38	30	22	34	13	15	22
7	6	9	6	7	11	13	8	12	0221	7314	16	31	14	17	44	68	25	59	34
8	10	10	10	9	8	10	8	7	3132	2222	36	34	36	28	25	35	24	17	29
9	4	7	5	5	8	8	11	10	1111	4253	9	17	12	12	25	22	44	39	23
10	8	8	5	4	12	7	9	11	3224	3533	25	21	13	10	57	20	27	50	28
11	7	10	5	9	11	8	6	13	3621	3223	18	34	13	27	45	21	16	63	30
12	6	9	9	4	3	2	1	2	0272	1332	16	31	31	8	6	5	3	5	13
13	4	9	7	7	4	9	9	8	1811	2355	8	28	17	17	9	29	31	21	20
14	8	7	6	9	11	7	8	9	2313	4124	25	20	15	31	46	17	24	32	26
15	11	13	10	16	12	14	16	18	2212	4573	43	61	39	110	59	71	108	164	82
16	17	17	18	19	18	15	16	11	5344	5651	137	139	166	190	150	95	106	41	128
17	11	9	11	11	10	12	10	9	3424	2543	43	31	41	42	38	56	36	31	40
18	9	9	10	9	6	3	10	6	0334	5344	31	31	38	27	16	7	34	16	25
19	9	8	8	5	6	9	9	9	4221	3234	27	24	23	11	14	30	29	29	23
20	7	8	9	8	9	8	9	7	2232	4324	17	22	31	21	32	26	29	17	24
21	9	9	9	11	9	10	9	9	3122	5444	28	28	30	41	31	34	32	32	32
22	4	8	9	9	8	8	8	7	1223	4343	8	26	28	27	22	25	26	19	23
23	11	8	9	5	8	3	5	3	3314	3231	45	26	28	12	24	7	12	6	20
24	8	7	8	7	3	7	8	5	2221	2333	26	20	22	20	6	20	26	13	19
25	6	5	5	4	2	7	9	9	4123	1123	16	12	11	9	4	20	33	27	17
26	8	8	4	4	5	4	6	2	3221	2142	24	21	8	8	11	10	16	4	13
27	2	3	5	6	7	9	6	5	3223	2143	5	6	11	15	18	27	14	12	14
28	5	3	4	6	4	2	3	1	1011	2132	13	7	9	15	8	4	7	3	8
29	1	8	11	9	5	3	5	5	2353	3213	3	22	50	31	12	7	13	12	19
30	14	16	15	11	9	8	8	11	4423	2213	79	118	94	43	32	23	26	47	58
																			30.6

an , as INDICES 1984 (continued)

DECEMBER 1984

	3Kn								σn		an								An
1	7	10	10	9	9	3	5	10	3334	3123	19	40	34	30	29	7	13	35	26
2	12	11	11	7	7	11	12	11	3212	3335	58	49	44	19	18	42	54	43	41
3	7	7	10	9	9	11	11	8	3333	4333	19	20	36	33	31	44	47	24	32
4	8	6	13	11	10	14	12	13	3124	5462	21	15	69	48	36	74	58	63	48
5	10	7	9	10	9	10	8	8	3234	5342	40	19	29	35	29	36	25	24	30
6	9	10	10	12	10	10	9	11	3624	5443	32	38	34	59	37	37	31	42	39
7	10	10	7	11	11	10	10	5	2432	4532	35	34	20	44	41	39	35	12	33
8	6	7	5	7	4	3	3	6	4533	2135	15	17	11	19	10	7	7	16	13
9	6	1	1	3	2	6	6	6	4222	3424	15	3	2	6	5	15	14	14	9
10	4	7	6	6	8	9	5	5	2301	3553	10	19	14	14	24	28	13	12	17
11	3	6	4	8	12	9	11	14	1323	5544	6	14	9	22	52	32	48	86	34
12	11	12	6	10	8	7	4	5	4404	5423	49	51	14	37	23	18	9	11	27
13	13	14	9	11	10	11	9	6	5317	4673	65	86	29	43	37	42	32	15	44
14	3	2	2	7	7	8	6	9	3514	3555	6	5	5	20	18	26	14	29	15
15	8	6	7	8	7	7	15	15	4353	3354	26	14	17	23	19	19	90	93	38
16	10	10	11	12	12	12	14	14	2224	4654	37	40	42	53	56	55	76	75	54
17	10	10	9	9	14	12	14	11	3424	4453	34	36	28	32	73	53	76	43	47
18	8	8	7	9	9	10	7	7	3225	4223	23	26	19	29	30	36	19	18	25
19	5	4	7	4	8	4	6	4	2243	3232	13	8	18	10	26	10	16	9	14
20	5	3	4	2	7	8	7	2	5122	5622	13	7	8	5	18	21	17	5	12
21	0	6	5	6	7	9	12	11	0433	3222	0	14	11	16	20	27	51	46	23
22	7	3	4	4	4	8	7	8	5242	2232	17	7	10	9	9	25	18	24	15
23	6	8	8	9	7	10	10	10	2233	2333	15	25	21	28	17	38	34	34	27
24	4	4	2	3	3	5	2	3	3622	1223	10	8	5	6	6	12	5	6	7
25	4	7	6	4	1	0	2	4	2342	3022	10	17	15	8	2	0	5	10	8
26	6	10	8	11	12	11	13	11	1534	5263	15	40	26	50	57	42	64	48	43
27	7	3	2	6	14	10	9	14	3131	4351	17	7	4	15	77	38	28	78	33
28	10	8	14	8	10	13	12	13	3342	4264	37	23	86	25	39	66	52	64	49
29	10	12	9	13	8	10	12	11	2412	3354	34	54	27	65	26	38	56	45	43
30	9	10	10	9	9	9	12	13	5324	4462	32	36	37	33	31	32	53	61	39
31	9	8	8	12	15	11	11	9	2225	5333	32	24	22	52	89	44	49	32	43
																			29.9

DECEMBER 1984

	3Ks								σs		as								As
1	8	8	8	9	7	3	6	10	1232	3123	24	25	24	29	18	6	15	36	22
2	12	12	10	8	8	11	11	9	2122	2234	57	55	38	25	21	41	47	32	40
3	8	8	9	8	10	10	10	8	3433	2353	25	22	33	24	35	40	37	25	30
4	8	7	11	10	10	11	10	11	2231	4343	23	18	42	34	35	50	40	43	36
5	9	8	8	8	8	9	7	9	2232	2131	31	24	24	25	21	33	19	29	26
6	10	8	9	9	9	8	10	9	3213	2322	36	26	27	28	29	21	34	33	29
7	9	9	8	9	9	9	8	5	0132	2222	31	28	24	29	32	31	24	12	26
8	5	6	7	6	2	2	2	5	1131	2221	12	15	17	15	5	5	4	12	11
9	8	2	2	1	2	4	4	5	3420	2233	24	5	5	3	5	8	8	12	9
10	5	8	7	6	8	6	6	5	3221	2512	12	22	18	16	25	15	14	13	17
11	4	7	5	8	10	9	11	13	2322	5235	9	19	12	23	34	29	41	63	29
12	11	10	6	9	5	4	4	4	3233	4333	45	38	14	27	13	9	9	10	21
13	13	15	10	8	10	8	8	6	4424	4232	65	92	35	26	39	25	21	15	40
14	4	2	3	5	6	7	4	7	1223	3413	8	4	7	13	14	19	8	18	11
15	6	4	6	7	6	6	14	13	2223	1133	16	10	14	18	16	15	71	70	29
16	10	11	10	11	11	9	13	13	2332	5553	38	41	39	48	41	32	61	61	45
17	9	8	8	9	11	11	11	11	2223	3254	27	24	25	30	41	44	47	42	35
18	7	7	7	8	8	7	6	6	1123	4222	18	17	20	24	21	19	14	16	19
19	4	4	4	4	7	4	5	4	2122	4423	10	8	10	9	19	9	11	9	11
20	4	4	3	3	4	6	5	3	3310	3323	9	8	6	7	9	16	13	6	9
21	2	5	5	7	8	9	14	13	2214	4353	4	11	12	18	24	32	75	62	30
22	6	6	6	5	4	8	6	10	2222	2333	14	15	16	11	8	21	16	39	18
23	8	8	9	11	7	9	8	8	3212	2312	24	26	27	41	18	28	22	22	26
24	3	2	4	4	3	5	3	5	0221	2242	7	5	10	8	6	11	7	13	8
25	8	7	8	4	1	1	4	7	3122	2224	24	20	22	9	2	2	8	18	13
26	8	11	10	13	13	10	14	11	4423	3142	24	44	35	70	69	34	73	42	49
27	5	4	4	6	12	10	8	12	6215	1332	13	10	8	16	60	35	24	60	28
28	10	8	13	11	10	12	11	11	2421	3232	35	22	63	41	35	53	41	43	42
29	9	11	9	12	9	9	11	10	2211	0233	33	41	27	51	31	30	44	39	37
30	8	9	11	7	10	8	10	11	1221	3343	21	32	41	19	38	24	37	43	32
31	9	9	7	10	12	11	11	9	1114	2321	33	28	19	37	57	41	41	29	36
																			26.3

am INDICES 1984

JANUARY 1984

	3Km								ΣKm	am								Am	Am2
1	11	9	11	9	11	11	10	10	27.3	49	32	41	28	49	49	36	36	40	41
2	8	9	10	9	13	8	6	6	23.0	26	28	39	30	61	23	15	15	30	32
3	7	8	10	7	11	11	9	7	23.3	19	23	37	18	42	42	32	20	29	34
4	9	9	15	12	10	9	12	11	29.0	28	28	88	52	39	32	57	43	46	42
5	12	13	9	7	12	7	8	8	25.3	55	62	33	18	52	17	21	21	35	33
6	6	7	7	9	9	9	5	5	19.0	16	18	19	28	29	32	12	13	21	20
7	2	5	4	5	5	4	3	4	10.7	5	11	9	13	11	8	7	8	9	11
8	2	1	3	4	1	2	0	0	4.3	5	2	6	8	3	4	1	1	4	5
9	1	3	1	4	1	4	1	5	6.7	2	6	3	8	2	8	3	11	5	6
10	5	6	4	4	6	11	11	11	19.3	13	14	10	9	15	43	47	41	24	17
11	7	5	3	5	5	5	9	7	15.3	20	13	7	13	11	13	31	17	16	19
12	5	4	4	3	3	5	1	4	9.7	11	9	9	6	7	13	2	8	8	10
13	2	4	4	2	9	10	7	8	15.3	5	8	8	4	32	34	18	22	16	12
14	4	4	2	3	6	4	6	6	11.7	8	9	4	7	16	9	15	15	10	14
15	4	4	7	3	5	5	3	4	11.7	9	8	17	6	11	13	7	9	10	10
16	3	4	4	2	7	8	5	5	12.7	6	8	9	5	18	22	13	12	12	12
17	9	4	3	2	3	3	3	1	9.3	33	10	7	4	6	6	6	3	9	10
18	0	1	3	6	6	6	7	8	12.3	1	2	6	14	14	15	18	24	12	16
19	10	9	10	10	10	7	5	8	23.0	36	32	35	34	39	19	13	23	29	24
20	6	7	5	9	4	4	3	3	13.7	15	19	11	29	8	8	6	7	13	19
21	5	9	7	10	3	4	8	7	17.7	13	30	18	38	7	8	23	18	19	17
22	9	6	8	8	8	6	7	4	18.7	27	15	23	22	21	14	17	10	19	15
23	5	4	2	3	5	7	7	4	12.3	11	10	5	6	13	18	17	9	11	13
24	7	4	6	3	1	0	2	3	8.7	19	10	16	6	2	0	4	6	8	11
25	3	4	8	6	4	9	9	8	17.0	6	10	22	15	10	31	27	22	18	17
26	9	9	12	6	8	9	8	6	22.3	27	29	51	14	21	31	22	15	26	22
27	4	7	4	3	6	8	5	7	14.7	9	20	9	7	15	22	11	20	14	21
28	8	8	9	12	9	13	10	9	26.0	23	26	31	53	30	61	34	30	36	33
29	14	8	8	11	9	5	8	9	24.0	75	26	21	42	27	11	22	31	32	35
30	10	11	8	10	11	13	13	10	28.7	38	43	24	40	45	62	66	34	44	33
31	7	8	6	9	10	14	11	11	25.3	17	22	16	32	39	72	41	41	35	38
																		20.6	

FEBRUARY 1984

	3Km								Σ Km	am								Am	Am2
1	10	9	9	8	5	8	9	3	20.3	40	30	29	23	11	24	28	7	24	27
2	5	3	5	4	7	9	14	15	20.7	11	7	13	9	18	33	84	91	33	27
3	12	7	5	4	3	8	11	10	20.0	51	17	12	10	6	24	44	40	26	41
4	15	11	11	11	16	16	14	15	36.3	89	46	46	50	115	106	78	89	77	54
5	10	9	8	10	8	4	3	3	18.3	34	32	23	37	22	10	7	6	21	37
6	5	2	3	5	5	6	10	9	15.0	12	5	6	11	11	15	39	28	16	15
7	6	6	7	7	6	4	4	7	15.7	14	14	17	17	16	10	9	19	15	17
8	6	3	7	7	6	5	6	5	15.0	15	6	18	18	15	12	14	11	14	14
9	6	6	7	6	6	6	4	8	16.3	16	14	18	15	16	15	9	21	16	15
10	6	4	4	10	8	11	13	13	23.0	15	10	10	34	23	43	68	64	33	30
11	14	9	9	6	8	7	7	6	22.0	80	33	28	15	25	20	18	16	29	29
12	3	5	5	3	4	8	7	11	15.3	6	11	11	7	9	24	17	50	17	25
13	13	11	9	12	10	13	14	9	30.3	62	43	33	52	37	67	78	31	50	45
14	12	13	11	12	13	12	10	14	32.3	54	64	50	53	64	57	36	81	57	51
15	12	10	8	8	3	3	2	5	17.0	60	39	25	24	7	6	5	11	22	29
16	7	4	4	3	5	3	6	5	12.3	17	9	10	7	11	7	16	12	11	13
17	6	9	7	7	6	5	5	9	18.0	15	27	20	20	14	11	11	28	18	20
18	10	10	7	9	9	8	9	3	21.7	34	37	18	33	29	23	33	7	27	19
19	3	4	4	3	6	8	8	4	13.3	7	9	8	6	15	21	21	10	12	15
20	5	4	5	6	5	10	11	12	19.3	12	9	12	14	12	37	46	52	24	22
21	11	8	6	6	9	8	6	8	20.7	42	25	14	15	28	23	15	21	23	23
22	5	4	4	4	7	7	7	5	14.3	13	8	9	8	18	20	19	11	13	18
23	6	5	9	8	10	7	7	5	19.0	16	13	33	25	35	18	20	12	22	19
24	6	4	6	8	4	7	7	8	16.7	15	10	14	26	10	18	17	21	16	17
25	6	2	4	9	5	1	5	9	13.7	14	4	10	30	12	2	11	30	14	14
26	1	4	5	9	9	12	11	10	20.3	3	8	11	27	28	55	41	38	26	32
27	16	13	10	8	8	9	12	12	29.3	110	64	39	26	23	30	51	57	50	39
28	7	5	7	7	8	8	5	2	16.3	17	12	19	18	26	24	13	5	17	23
29	0	3	9	9	10	11	8	3	17.7	0	7	29	30	39	42	21	6	22	18
																		25.7	

am INDICES 1984 (continued)

MARCH 1984

	3Km								ΣKm	am								Am	Am2
1	2	0	5	9	14	11	14	17	24.0	4	0	12	32	71	45	86	124	47	44
2	14	11	11	11	11	9	13	13	31.0	72	48	47	50	49	31	64	65	53	62
3	14	14	11	11	10	10	12	10	30.7	75	79	43	47	37	34	56	34	51	42
4	8	7	6	5	3	6	3	1	13.0	21	17	14	13	6	16	6	2	12	18
5	0	3	4	4	2	1	4	2	6.7	1	7	9	9	5	3	9	5	6	13
6	6	8	13	8	10	11	14	13	27.7	15	22	65	26	36	41	72	61	42	33
7	12	11	10	8	9	10	9	9	26.0	60	50	39	26	33	36	30	32	38	41
8	8	9	11	10	11	11	12	12	28.0	26	27	43	39	41	48	53	58	42	34
9	10	8	7	4	5	5	7	8	18.0	36	23	17	8	13	13	19	21	19	26
10	8	4	8	6	8	9	10	12	21.7	26	10	22	14	24	31	38	52	27	21
11	8	3	0	7	5	6	9	9	15.7	21	7	1	18	12	16	29	31	17	22
12	8	8	4	4	4	8	7	8	17.0	24	21	9	10	10	22	19	21	17	19
13	8	8	7	7	14	9	5	4	20.7	25	21	18	18	80	32	13	10	27	21
14	3	5	6	7	4	4	4	0	11.0	7	13	15	17	8	8	10	1	10	15
15	1	3	4	4	5	3	6	11	12.3	2	6	10	10	12	6	14	43	13	14
16	3	8	11	4	13	12	8	5	21.3	7	23	48	10	63	55	22	13	30	30
17	5	11	12	11	11	12	6	7	25.0	12	43	55	48	46	54	16	20	37	35
18	4	6	7	13	8	11	7	7	21.0	8	15	19	64	21	42	19	17	26	28
19	8	8	8	11	6	3	1	3	16.0	24	21	24	45	14	7	2	7	18	18
20	5	2	4	7	4	0	0	2	8.0	13	4	8	19	8	1	1	4	7	7
21	0	3	3	3	6	7	8	8	12.7	1	6	6	7	15	20	24	21	13	17
22	11	9	11	9	1	7	10	9	22.3	46	33	46	28	3	18	36	30	30	30
23	9	10	10	12	11	6	5	2	21.7	30	35	40	56	45	16	12	5	30	23
24	4	6	4	5	9	6	5	8	15.7	10	16	9	12	29	16	11	24	16	25
25	12	11	11	11	12	11	11	9	29.3	51	49	45	44	51	47	47	33	46	32
26	8	2	4	7	5	7	11	12	18.7	24	5	9	19	12	17	45	52	23	30
27	9	9	8	10	8	9	11	13	25.7	31	31	24	40	25	28	43	62	36	37
28	10	12	11	11	14	12	17	17	34.7	39	56	46	48	73	60	137	129	74	66
29	14	14	14	13	12	9	11	12	33.0	75	82	85	64	53	31	46	59	62	69
30	12	10	13	11	11	9	10	8	28.0	58	37	68	46	43	32	40	24	44	41
31	10	10	8	10	11	8	8	13	26.0	34	35	21	34	46	23	26	64	35	41
																		30.6	

APRIL 1984

	3Km								ΣKm	am								Am	Am2
1	11	11	13	13	11	11	9	8	29.0	49	47	66	66	43	50	32	22	47	47
2	14	8	12	13	11	13	12	15	32.7	79	26	57	63	46	67	58	88	61	54
3	14	12	10	12	11	11	12	14	32.0	85	52	38	55	49	48	54	83	58	60
4	13	12	13	10	11	18	18	18	37.7	68	59	62	40	49	153	170	156	95	78
5	16	13	12	10	12	15	14	15	35.7	104	63	51	40	56	99	84	97	74	77
6	11	9	7	8	7	6	7	6	20.3	43	27	17	21	17	15	18	14	22	42
7	9	6	8	14	9	6	10	9	23.7	33	15	25	86	33	16	34	30	34	42
8	12	14	14	16	11	11	12	15	35.0	56	79	85	117	45	49	55	93	72	58
9	17	12	9	8	10	8	10	7	27.0	136	54	28	23	38	22	40	17	45	40
10	4	6	4	4	3	3	5	8	12.3	9	14	8	10	6	7	13	23	11	19
11	11	4	7	8	5	8	9	4	18.7	48	9	20	23	12	24	27	10	22	18
12	4	9	6	5	4	10	6	12	18.7	10	29	14	11	10	35	14	52	22	21
13	9	8	8	6	8	7	8	7	20.3	29	24	24	14	22	18	21	19	21	20
14	6	5	2	1	6	12	10	13	18.3	16	12	5	3	14	54	39	68	26	24
15	9	6	8	8	4	3	4	1	14.3	33	16	24	23	9	6	9	2	15	20
16	2	1	6	4	4	2	3	5	9.0	4	2	14	10	9	4	6	12	8	6
17	2	1	1	1	9	8	7	5	11.3	4	3	2	2	31	21	18	11	12	11
18	4	8	5	5	6	4	5	5	14.0	10	24	12	13	14	8	12	13	13	16
19	4	4	9	8	7	6	7	8	17.7	10	8	29	22	20	15	20	26	19	22
20	6	12	12	9	7	7	5	6	21.3	15	54	54	28	18	18	11	15	27	23
21	9	5	9	5	7	7	4	9	18.3	27	12	28	12	20	20	10	28	20	17
22	8	2	4	5	2	1	1	2	8.3	21	5	9	11	5	3	2	5	8	10
23	3	2	0	3	5	6	6	9	11.3	6	5	0	7	12	14	16	27	11	10
24	4	7	7	4	4	3	3	5	12.3	8	18	17	8	9	6	7	12	11	16
25	8	7	10	6	13	14	12	16	28.7	24	17	38	16	63	79	53	111	50	55
26	17	16	16	15	13	17	18	15	42.3	124	115	111	92	65	145	151	92	112	89
27	14	12	13	9	6	7	8	9	26.0	81	58	61	28	15	18	21	31	39	57
28	7	9	11	11	8	11	6	7	23.3	19	32	44	43	23	47	16	17	30	26
29	6	8	10	8	9	11	8	9	23.0	14	21	34	23	31	45	21	28	27	23
30	4	8	5	3	1	0	4	11	12.0	9	25	12	6	2	1	9	48	14	24
																		34.2	

am INDICES 1984 (continued)

MAY 1984

	3Km								ΣKm	am							Am	Am2
1	10	9	10	12	11	11	7	9	26.3	38	30	34	51	50	49	19	29	38	31
2	9	10	9	10	9	7	2	3	19.7	32	37	30	37	29	18	5	7	24	26
3	3	2	8	10	5	7	8	10	17.7	7	4	25	34	13	19	22	38	20	20
4	7	7	8	11	7	4	6	8	19.3	20	18	22	43	17	10	15	24	21	22
5	8	5	8	9	10	12	14	14	26.7	21	13	22	31	36	52	83	77	42	32
6	10	9	10	4	5	4	4	1	15.7	40	29	35	9	13	10	10	2	19	27
7	2	1	1	8	6	1	1	1	7.0	4	2	2	21	15	3	3	3	7	8
8	4	2	4	6	2	3	3	2	8.7	8	5	9	14	4	6	7	4	7	9
9	4	6	7	6	8	9	7	12	19.7	8	15	18	14	23	30	20	57	23	25
10	10	14	11	9	11	12	7	5	26.3	35	76	43	32	50	54	20	11	40	33
11	7	5	10	5	8	6	6	6	17.7	20	13	37	11	21	14	14	16	18	22
12	6	5	7	8	6	7	9	9	19.0	15	11	20	23	14	18	32	31	21	20
13	10	8	6	5	2	2	2	1	12.0	38	22	14	11	5	4	4	3	13	14
14	0	1	2	7	10	9	9	9	15.7	1	2	5	19	34	27	27	31	18	16
15	9	4	10	8	5	4	4	2	15.3	27	10	37	23	11	10	8	4	16	1*
16	1	5	5	7	5	2	3	8	12.0	3	12	11	20	12	5	7	22	12	21
17	7	10	11	16	11	11	8	7	27.0	20	35	48	14	43	49	24	19	44	29
18	6	7	7	5	7	7	8	11	19.3	15	20	18	13	17	18	22	44	21	32
19	11	13	14	9	7	7	8	7	25.3	43	65	74	28	18	18	22	17	36	34
20	10	8	11	11	9	13	11	12	28.3	34	26	46	44	33	66	44	56	44	45
21	16	13	13	12	11	8	12	14	33.0	109	63	69	54	44	26	57	75	62	55
22	9	11	13	11	11	13	9	11	29.3	32	45	66	45	48	64	29	47	47	52
23	15	13	11	12	9	9	11	10	30.0	96	64	48	51	31	32	49	35	51	46
24	7	7	11	12	12	12	11	10	27.3	17	18	46	59	55	52	50	36	42	34
25	10	4	5	5	9	8	10	12	21.0	37	9	12	12	30	25	36	60	28	35
26	11	11	11	6	6	5	5	2	19.0	49	46	43	14	15	13	11	5	25	25
27	0	0	8	8	7	6	4	3	12.0	1	1	25	23	20	14	8	6	12	10
28	4	1	1	4	4	4	6	9	11.0	9	3	3	8	9	9	14	31	11	13
29	7	10	5	6	7	7	6	6	18.0	18	36	13	14	19	17	15	15	18	24
30	9	9	11	13	7	9	9	8	25.0	29	30	44	68	18	32	32	24	35	24
31	5	5	1	5	3	2	2	10	11.0	11	11	3	11	6	4	4	36	11	14
																		26.6	

JUNE 1984

	3Km								ΣKm	Am							Am	Am2
1	4	3	4	6	7	6	5	3	12.7	10	7	8	14	18	15	12	6	11	14
2	7	9	8	7	8	8	5	7	19.7	17	29	21	20	21	25	13	19	21	19
3	6	5	10	9	14	13	10	8	25.0	14	11	35	31	86	63	40	25	38	35
4	9	11	10	12	10	8	8	9	25.7	31	47	39	58	38	26	26	32	37	41
5	11	10	9	10	10	6	5	8	23.0	45	39	28	36	35	15	11	24	29	29
6	8	9	9	7	7	5	7	6	19.3	25	28	30	19	20	12	20	15	21	22
7	7	7	9	10	7	3	5	4	17.3	20	18	28	38	20	7	13	9	19	15
8	3	0	1	2	8	7	9	9	13.0	6	1	2	5	22	20	28	27	14	18
9	7	7	13	9	8	9	10	8	23.7	19	19	63	29	26	29	35	26	31	28
10	9	9	8	7	9	9	7	9	22.3	28	29	21	19	27	30	20	29	25	25
11	8	8	8	7	8	6	5	6	18.7	21	23	22	19	21	15	11	14	18	21
12	8	8	6	7	6	1	2	2	13.3	23	26	16	18	16	3	4	4	14	12
13	0	4	5	1	4	3	6	2	8.3	1	10	13	3	8	7	15	5	8	7
14	3	3	3	4	2	2	3	3	7.7	7	6	6	10	5	4	6	6	6	11
15	5	8	7	9	9	11	12	12	24.3	11	25	19	29	3	4	6	5	3	41
16	16	15	15	13	10	7	7	10	31.0	112	96	88	63	39	20	19	35	59	49
17	7	5	11	10	6	5	5	3	17.3	19	11	46	35	16	12	13	6	20	25
18	7	7	11	11	13	12	10	10	27.0	19	20	46	49	65	58	34	35	41	34
19	12	10	10	11	10	10	11	11	28.3	52	34	37	43	39	39	46	47	42	44
20	12	11	9	9	6	5	4	2	19.3	58	49	31	30	15	12	9	5	26	25
21	4	1	0	1	0	1	6	5	6.0	9	2	1	2	1	3	14	12	6	8
22	6	6	4	1	6	4	3	4	11.3	15	14	8	3	15	9	6	8	10	10
23	3	3	8	3	4	4	8	12	15.0	6	7	24	7	9	10	26	58	18	23
24	14	13	4	7	6	7	5	8	21.3	82	69	10	20	15	19	12	24	31	28
25	9	8	8	8	7	6	7	6	19.7	27	26	21	22	19	15	19	15	21	19
26	8	7	8	6	3	3	8	7	16.7	21	18	21	16	7	7	24	20	17	21
27	11	11	9	8	5	1	2	3	16.7	44	44	28	23	13	3	5	7	21	21
28	8	8	10	8	9	11	10	11	25.0	23	23	35	26	32	49	39	47	34	24
29	10	6	5	8	4	7	7	8	18.3	35	14	11	23	8	17	19	26	19	25
30	8	8	6	7	9	9	8	6	20.3	26	22	16	18	27	27	24	14	22	20
																		23.8	

am INDICES 1984 (continued)

JULY 1984

	3Km								ΣKm	am							Am	Am2
1	5	9	6	7	3	9	12	9	20.0	11	30	14	19	7	28	58	30	25	24
2	10	5	7	7	5	8	7	8	19.0	38	12	18	19	12	26	20	26	21	24
3	11	6	6	8	8	8	7	7	20.3	43	15	14	23	24	22	18	18	22	21
4	5	7	9	6	6	6	9	10	19.3	13	17	27	15	15	14	31	38	21	24
5	11	9	10	7	4	5	5	6	19.0	43	27	38	18	9	13	13	14	22	21
6	6	8	6	5	8	5	6	8	17.3	16	25	14	12	24	12	15	25	18	15
7	6	4	5	5	4	5	7	7	14.3	15	10	11	11	10	11	17	18	13	16
8	5	7	9	6	7	6	5	7	17.3	13	19	28	16	18	16	12	17	17	16
9	6	7	6	7	6	7	5	4	16.0	16	19	14	18	15	20	12	8	15	16
10	4	6	7	8	11	8	8	6	19.3	9	15	19	21	41	23	24	14	21	15
11	4	1	1	2	5	9	7	11	13.3	10	3	3	4	12	30	18	46	16	24
12	13	11	9	6	5	2	5	6	19.0	68	47	29	15	13	5	12	15	26	40
13	9	14	18	14	17	12	12	11	35.7	30	74	149	83	144	58	52	47	80	64
14	16	16	13	12	11	12	10	9	33.0	114	104	65	59	47	54	40	29	64	63
15	12	12	12	10	8	10	11	12	29.0	53	52	54	37	25	34	44	56	44	45
16	10	11	10	13	7	8	12	12	27.7	38	46	37	69	17	22	55	54	42	51
17	12	15	15	14	12	12	10	11	33.7	55	100	91	79	52	59	40	45	65	48
18	8	10	6	8	11	11	11	8	24.3	25	37	15	23	43	48	47	26	33	38
19	11	10	9	8	6	5	7	7	21.0	42	39	33	26	16	13	19	19	26	29
20	8	8	9	6	5	6	4	10	18.7	25	21	30	16	13	16	9	39	21	19
21	7	5	8	6	4	3	3	7	14.3	17	12	25	14	8	7	6	19	14	17
22	6	11	4	6	4	6	5	5	15.7	15	43	10	16	10	16	11	13	17	14
23	7	6	4	4	5	7	7	7	15.7	20	16	9	9	12	17	18	17	15	19
24	9	11	8	11	5	6	4	5	19.7	28	43	25	47	11	14	9	11	24	20
25	6	7	7	6	7	3	9	6	17.0	16	20	17	16	20	6	27	15	17	17
26	10	7	5	6	2	1	3	3	12.3	40	18	12	14	4	2	7	7	13	16
27	10	8	6	5	9	7	9	8	20.7	38	22	15	13	27	19	28	21	23	24
28	11	12	11	8	9	9	8	3	23.7	47	59	50	23	31	32	24	7	34	26
29	3	6	6	5	8	11	9	6	18.0	7	14	15	13	23	48	29	14	20	20
30	8	4	5	7	9	7	5	4	16.3	23	10	13	17	27	18	11	9	16	18
31	4	4	6	6	10	9	8	14	20.3	10	8	14	16	40	31	23	80	28	46
																		26.9	

AUGUST 1984

	3Km								ΣKm	am							Am	Am2
1	14	17	17	15	13	12	12	12	37.3	79	138	138	100	70	51	54	58	86	67
2	13	13	11	10	11	10	7	7	27.3	63	63	42	37	45	37	18	18	40	41
3	7	8	9	9	6	7	6	8	20.0	18	23	31	30	16	17	14	25	22	25
4	9	7	9	8	9	8	7	7	21.3	33	20	31	23	28	25	20	18	25	21
5	7	7	7	4	4	5	7	3	14.7	17	20	18	8	9	11	17	6	13	14
6	3	3	2	4	4	4	2	4	8.7	7	6	4	10	8	9	4	8	7	7
7	2	1	1	3	2	0	3	4	5.3	4	2	2	7	5	1	6	8	4	12
8	10	10	8	10	9	7	6	9	23.0	35	37	22	38	28	19	14	33	28	21
9	6	7	9	9	10	6	8	12	22.3	14	18	28	30	36	15	21	57	27	24
10	6	5	7	9	4	5	8	5	16.3	15	13	19	27	9	12	23	13	16	22
11	2	5	10	10	5	4	7	11	18.0	5	11	37	40	12	10	20	41	22	24
12	13	9	9	9	10	4	7	7	22.7	62	27	28	28	35	10	20	18	29	25
13	10	9	5	3	4	4	5	4	14.7	39	31	11	7	9	9	13	8	16	16
14	2	1	5	8	11	12	11	12	20.7	5	2	11	24	50	58	48	56	32	29
15	13	12	8	9	10	11	7	7	25.7	64	57	24	30	35	50	19	19	37	40
16	10	11	8	9	10	7	7	7	23.0	37	43	23	28	36	20	19	18	28	27
17	8	9	8	5	5	5	7	8	18.3	21	29	22	13	11	11	18	24	19	18
18	2	7	6	6	4	3	5	3	12.0	4	17	14	14	10	7	13	7	11	12
19	2	2	4	7	8	11	12	8	18.0	5	4	9	20	23	44	55	22	23	20
20	8	8	11	5	3	7	8	2	17.3	22	25	45	12	7	19	21	5	20	20
21	3	2	2	3	3	1	2	1	5.7	7	4	4	6	6	3	5	2	5	6
22	0	0	0	1	1	0	0	0	0.7	1	0	0	2	3	0	0	1	1	3
23	2	1	2	2	8	8	6	9	12.7	4	3	5	5	24	21	16	33	14	17
24	7	10	11	12	11	9	9	6	25.0	19	40	48	54	43	32	31	15	35	32
25	7	10	8	12	5	5	9	8	21.3	19	35	21	58	13	12	30	24	27	27
26	7	10	9	5	7	7	4	4	17.7	17	40	32	11	17	18	9	9	19	20
27	8	6	6	9	11	14	14	17	28.3	25	16	16	31	50	86	84	122	54	46
28	15	7	15	13	9	12	11	11	31.0	88	19	88	62	29	52	42	45	53	59
29	9	11	12	11	11	7	7	9	25.7	32	45	58	42	41	19	19	28	36	36
30	9	9	8	11	11	9	7	8	24.0	29	29	25	42	44	32	19	21	30	27
31	9	7	9	4	8	7	6	5	18.3	31	20	27	8	24	19	14	13	20	21
																		25.8	

SEPTEMBER 1984

	3Km								ΣKm	am								Am	Am2
1	8	7	8	3	2	5	6	8	15.7	22	18	23	7	5	13	16	22	16	17
2	8	9	6	5	6	7	7	4	17.3	22	32	16	13	16	18	20	9	18	19
3	8	11	9	4	4	5	4	6	17.0	25	47	27	9	10	11	8	16	19	26
4	6	7	14	14	18	20	9	8	32.0	14	17	77	84	157	206	27	23	76	69
5	15	18	17	15	11	14	14	9	37.7	89	156	124	89	46	80	80	31	87	75
6	7	6	10	9	8	8	7	7	20.7	19	14	34	27	24	22	17	17	22	28
7	6	5	4	4	4	4	4	2	11.0	14	11	9	9	10	9	9	4	9	14
8	5	4	8	7	8	8	8	10	19.3	11	10	21	19	21	21	26	39	21	17
9	7	4	8	7	5	3	7	13	18.0	18	10	23	19	12	7	17	64	21	29
10	9	8	11	14	5	10	12	12	27.0	33	21	48	79	12	38	52	57	43	37
11	11	11	11	6	7	7	8	6	22.3	44	46	42	16	20	17	23	16	28	29
12	6	6	6	10	8	10	8	8	20.7	14	14	16	34	25	38	23	25	24	23
13	9	8	8	8	4	4	4	5	16.7	30	22	23	23	9	10	8	12	17	22
14	8	8	9	9	6	7	9	9	21.7	25	25	32	28	14	20	31	27	25	20
15	8	5	8	7	7	7	4	8	18.0	23	13	26	20	17	19	8	25	19	19
16	8	6	6	3	6	7	6	3	15.0	21	16	14	6	14	20	15	6	14	14
17	4	6	6	3	2	2	1	2	8.7	10	16	16	6	4	5	3	5	8	9
18	1	4	2	1	1	0	1	2	4.0	3	9	5	3	3	0	2	4	4	13
19	4	7	7	17	15	10	13	11	28.0	8	18	20	123	92	40	66	42	51	35
20	9	11	10	9	8	9	11	5	24.0	33	42	37	31	23	32	47	11	32	35
21	2	4	4	10	9	5	4	8	15.3	5	8	10	34	29	13	8	25	17	23
22	7	7	11	11	10	5	14	12	25.7	17	17	45	43	37	11	72	54	37	50
23	14	15	16	17	18	17	16	17	43.3	83	95	113	141	160	122	107	132	119	88
24	15	13	14	12	10	13	10	12	33.0	88	65	83	52	36	65	39	53	60	75
25	8	11	13	12	13	13	12	12	31.3	26	48	68	54	63	61	60	58	55	55
26	9	12	14	13	14	12	11	9	31.3	32	60	83	66	79	55	45	27	56	53
27	11	9	11	10	12	8	8	10	26.3	41	31	43	39	59	22	25	39	37	36
28	7	9	4	7	9	8	11	9	21.3	19	31	8	20	29	23	44	28	25	26
29	8	8	8	4	4	6	7	9	18.0	22	22	21	10	9	16	17	30	18	23
30	9	7	9	3	1	2	2	8	13.7	32	17	33	7	2	5	4	21	15	15
																		33.1	

OCTOBER 1984

	3Km								ΣKm	am								Am	Am2
1	3	3	7	5	8	7	2	3	12.7	7	6	20	12	21	17	5	7	12	11
2	7	4	4	4	7	8	7	10	17.0	18	9	10	9	17	23	20	36	18	22
3	10	12	11	8	8	4	7	5	21.7	37	52	41	26	22	10	17	13	27	21
4	2	1	4	3	3	9	5	6	11.0	4	3	8	6	7	28	11	15	10	13
5	7	4	5	6	7	4	6	5	14.7	20	10	12	15	17	8	15	12	14	19
6	10	11	10	5	8	8	8	15	25.0	37	45	38	11	21	25	24	92	37	37
7	15	13	10	10	15	12	10	11	32.0	97	68	40	36	101	53	36	46	60	52
8	14	12	6	11	6	7	8	10	24.7	71	53	15	47	15	17	25	34	35	39
9	10	6	8	8	6	9	11	10	22.7	40	16	23	24	16	28	44	40	29	30
10	10	11	9	11	14	10	10	6	27.0	37	42	30	47	78	39	36	16	41	36
11	9	8	9	9	9	11	12	14	27.0	33	21	33	32	32	49	53	71	41	42
12	14	9	11	10	8	11	13	10	28.7	74	31	46	34	25	45	61	35	44	42
13	9	7	9	11	13	6	4	5	21.3	27	19	29	41	63	16	10	11	27	30
14	10	8	8	5	2	7	7	10	19.0	35	24	21	13	4	20	17	36	21	20
15	9	5	4	2	3	6	12	10	17.0	27	12	8	4	6	16	57	35	21	24
16	10	10	9	11	10	8	5	10	24.3	34	34	28	46	38	25	11	34	31	24
17	4	2	1	1	1	2	1	2	4.7	10	5	3	3	3	4	2	5	4	17
18	6	10	7	13	13	13	18	14	31.3	14	34	17	70	64	63	148	86	62	54
19	17	11	15	15	17	16	15	13	39.7	122	50	91	87	146	109	100	68	97	92
20	14	14	14	15	14	14	15	11	37.0	77	79	76	102	77	71	97	43	78	76
21	10	11	12	11	11	14	15	14	32.7	37	42	51	47	50	86	103	86	63	63
22	11	13	11	12	13	12	14	11	32.3	48	68	50	56	65	57	71	48	58	58
23	9	9	10	10	9	11	11	11	26.7	33	29	40	34	31	47	45	43	38	46
24	12	11	11	11	15	13	12	10	31.7	52	49	47	50	91	61	51	35	55	44
25	8	9	8	9	9	7	10	14	24.7	23	28	22	28	28	17	40	78	33	39
26	14	6	6	4	4	6	5	5	16.7	83	14	15	10	8	14	11	13	21	23
27	4	6	4	5	8	8	4	3	14.0	9	14	8	12	25	25	10	6	14	13
28	2	5	7	5	5	5	7	7	14.3	4	13	19	13	13	11	18	19	14	14
29	5	4	5	4	8	6	4	5	13.7	12	10	11	10	24	14	10	13	13	14
30	6	7	4	4	2	2	3	3	10.3	16	20	10	8	4	4	6	6	9	9
31	3	1	1	0	3	4	7	10	9.7	7	2	3	0	7	8	18	38	10	20
																		33.5	

am INDICES 1984 (continued)

NOVEMBER 1984

	3Km								ΣKm	am							Am	Am2
1	9	8	14	15	11	5	7	8	25.7	27	26	80	87	45	13	18	23	40	29
2	5	5	5	9	4	10	11	8	19.0	12	12	11	31	9	37	49	22	23	21
3	5	3	8	7	12	11	12	9	22.3	12	7	24	17	56	43	52	30	30	29
4	9	7	8	10	11	8	9	9	23.7	31	20	21	38	41	25	31	27	29	32
5	6	9	8	8	10	6	6	4	19.0	15	31	24	24	39	15	14	8	21	24
6	4	5	9	10	8	10	6	6	19.3	9	12	32	36	24	37	16	15	23	21
7	6	9	6	6	9	14	9	13	24.0	15	32	14	15	31	75	29	61	34	32
8	10	11	10	9	9	10	8	6	24.3	37	42	39	33	29	35	23	15	32	31
9	4	6	6	5	8	8	11	9	19.0	8	16	14	11	24	24	47	31	22	22
10	9	7	5	4	12	8	9	12	22.0	28	2	12	9	60	21	28	57	29	29
11	7	9	6	10	11	8	6	14	23.7	19	28	14	37	48	24	16	71	32	31
12	6	9	8	4	4	2	1	2	12.0	16	29	24	10	8	5	3	5	13	20
13	3	7	6	7	4	9	9	9	18.0	6	18	15	17	10	30	30	28	19	16
14	7	7	7	9	12	7	9	9	22.3	20	17	17	30	55	20	32	31	28	34
15	11	12	9	15	12	14	15	18	35.3	43	54	33	101	57	71	101	165	78	92
16	18	19	18	19	18	15	15	11	44.3	163	179	166	196	164	94	96	47	138	106
17	12	10	11	12	12	14	10	9	30.0	54	40	43	54	52	72	36	33	48	58
18	10	9	11	9	8	4	10	7	22.7	35	31	42	30	22	9	35	19	28	33
19	10	9	9	5	7	10	10	9	23.0	36	28	31	11	18	40	37	32	29	27
20	7	9	10	8	10	9	9	7	23.0	20	29	38	24	36	28	32	18	28	29
21	8	8	8	11	10	10	10	9	24.7	26	26	25	41	35	36	34	31	32	29
22	4	9	8	9	8	9	9	8	21.3	10	27	22	33	23	29	31	21	25	27
23	10	8	8	5	8	4	4	3	16.7	38	22	24	12	25	8	10	6	18	21
24	8	7	8	7	3	7	9	6	18.3	21	17	21	20	6	19	27	16	18	15
25	7	4	5	3	2	7	10	9	15.7	18	10	11	7	4	19	34	32	17	16
26	8	7	4	3	5	5	6	2	13.3	23	20	8	7	11	12	16	4	13	14
27	2	2	4	6	7	9	7	5	14.0	4	5	10	14	19	33	18	12	14	13
28	6	3	5	6	4	2	3	1	10.0	15	6	11	14	10	5	6	3	9	17
29	1	7	12	10	5	4	5	5	16.3	2	19	59	35	12	8	13	12	20	30
30	13	16	15	10	10	8	8	12	30.7	61	106	98	38	34	25	26	51	55	37
																		31.5	

DECEMBER 1984

	3Km								ΣKm	am							Am	Am2
1	8	9	9	9	8	3	6	10	20.7	21	32	29	30	23	7	14	35	24	31
2	12	12	11	8	7	11	12	10	27.7	57	52	41	22	19	41	51	38	40	32
3	8	8	10	9	9	11	11	8	24.7	22	21	35	28	33	42	42	25	31	33
4	8	6	12	11	10	13	11	12	27.7	22	16	55	41	35	62	49	53	42	37
5	10	8	8	9	8	10	8	9	23.3	36	21	26	30	25	35	22	27	28	35
6	10	9	9	11	9	9	9	10	25.3	34	32	30	44	33	29	32	37	34	31
7	9	9	8	10	10	10	9	5	23.3	33	31	22	37	37	35	29	12	30	27
8	6	6	6	7	4	3	2	6	13.3	14	16	14	17	8	6	5	14	12	15
9	7	2	2	2	2	5	5	5	10.0	20	4	4	4	5	12	11	13	9	11
10	5	8	6	6	8	8	5	5	17.0	11	21	16	15	24	22	13	13	17	15
11	3	7	5	8	11	9	11	14	22.7	7	17	11	22	43	30	44	74	31	29
12	11	11	6	9	7	5	4	5	19.3	47	45	14	32	18	13	9	11	24	38
13	13	15	9	10	10	10	9	6	27.3	65	89	32	34	38	34	27	15	42	26
14	3	2	3	6	6	8	5	8	13.7	7	5	6	16	16	23	11	23	13	18
15	8	5	6	8	7	7	14	14	23.0	21	12	15	21	18	17	80	81	33	32
16	10	10	10	12	11	11	13	13	30.0	38	40	40	51	49	43	68	68	50	44
17	9	9	9	9	12	11	13	11	27.7	30	30	27	31	57	49	61	43	41	40
18	7	8	7	9	8	9	6	7	20.3	20	22	19	27	25	27	16	17	22	27
19	5	4	6	4	8	4	5	4	13.3	11	8	14	10	23	9	13	9	12	13
20	5	3	3	3	5	7	6	3	11.7	11	7	7	6	13	18	15	6	10	11
21	1	5	5	7	8	9	13	12	20.0	2	12	11	17	22	29	63	54	26	20
22	6	5	5	4	4	8	7	9	16.0	16	11	13	10	8	23	17	31	16	25
23	7	8	8	10	7	9	9	9	22.3	20	26	24	34	18	33	28	28	26	20
24	4	3	3	3	3	5	3	4	9.3	8	7	7	7	6	11	6	9	8	14
25	7	7	7	4	1	0	3	6	11.7	17	18	19	9	2	1	7	14	11	17
26	7	11	9	12	13	10	13	11	28.7	20	42	30	60	63	38	68	45	46	27
27	6	4	3	6	13	10	8	13	21.0	15	9	6	16	68	36	26	69	31	39
28	10	8	14	9	10	12	11	12	28.7	36	22	74	33	37	60	46	54	45	45
29	9	11	9	12	9	10	11	11	27.3	33	47	27	58	29	34	50	42	40	40
30	8	10	10	8	10	9	11	12	26.0	26	34	39	26	35	28	45	52	36	35
31	9	8	8	11	14	11	11	9	27.0	32	26	21	45	73	43	45	31	40	38
																		28.1	

MONTHLY AND YEARLY **Am** 1959 - 1984

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual mean
1959	25.5	35.7	30.1	24.1	25.5	22.7	42.1	31.5	36.9	28.2	33.0	31.6	30.6
1960	25.7	23.5	27.3	53.4	31.5	27.3	27.3	27.8	27.0	45.0	44.4	32.1	32.7
1961	19.4	24.0	21.3	20.6	21.1	20.3	34.4	17.8	19.4	21.9	15.7	19.6	21.3
1962	12.9	18.3	14.0	21.6	12.7	17.0	19.8	24.9	27.8	29.8	20.4	21.1	20.0
1963	17.2	13.9	13.2	15.4	17.8	17.9	19.4	21.2	38.0	22.2	19.0	16.8	19.3
1964	17.8	17.5	19.0	19.7	15.9	13.7	15.3	13.3	16.1	15.0	12.4	9.2	15.4
1965	10.8	14.6	13.2	11.5	9.7	14.8	13.6	14.8	16.1	11.8	10.8	12.2	12.8
1966	12.8	13.2	17.8	11.0	14.0	11.6	15.4	18.2	28.2	16.1	15.3	18.5	16.0
1967	17.6	18.4	11.9	14.0	32.7	17.7	12.8	15.3	23.9	16.7	17.4	23.2	18.5
1968	19.3	25.0	21.8	20.2	21.5	24.2	16.3	18.5	21.0	24.0	25.1	17.7	21.2
1969	15.2	23.5	26.0	22.4	23.5	15.6	12.3	13.4	21.6	14.4	16.8	11.9	18.0
1970	12.5	11.1	24.9	20.9	14.0	16.2	25.4	18.4	17.6	19.1	19.8	14.9	17.9
1971	20.9	19.0	18.3	23.2	20.3	15.7	13.7	15.9	20.0	19.4	16.9	18.1	18.4
1972	20.5	16.8	18.9	17.3	16.2	20.9	12.8	32.2	19.3	19.4	21.1	16.9	19.4
1973	24.9	29.8	34.8	39.4	25.9	26.5	20.4	20.0	21.8	27.3	20.0	19.1	25.8
1974	24.1	25.2	33.6	31.5	28.0	27.2	33.1	30.3	33.4	37.1	27.1	26.0	29.7
1975	25.8	29.5	30.7	24.7	23.2	19.8	21.3	17.8	15.9	18.4	28.8	20.2	23.0
1976	21.9	26.7	33.4	26.3	22.9	16.8	16.2	15.9	21.8	19.2	15.2	18.0	21.2
1977	18.4	19.9	18.7	25.0	18.8	13.8	22.9	22.5	23.8	20.7	16.8	16.8	19.8
1978	24.6	25.3	25.9	32.2	32.5	28.2	18.8	24.3	26.8	19.7	24.2	22.0	25.4
1979	26.5	24.2	27.6	35.3	21.7	17.5	18.0	25.8	21.2	18.7	17.0	16.3	22.5
1980	18.1	18.0	11.9	17.4	15.1	19.4	16.2	16.0	13.8	22.6	22.5	22.6	17.8
1981	16.4	23.3	28.5	35.9	28.5	17.8	28.7	24.2	19.9	34.6	25.0	18.6	25.1
1982	20.7	48.3	26.9	31.8	26.0	32.1	43.7	32.3	50.5	29.2	34.6	35.5	34.3
1983	25.7	39.4	34.5	35.3	32.1	24.2	21.8	25.9	23.1	27.4	32.0	24.2	28.8
1984	20.6	25.7	30.6	34.2	26.6	23.8	26.9	25.8	33.1	33.5	31.5	28.1	28.4

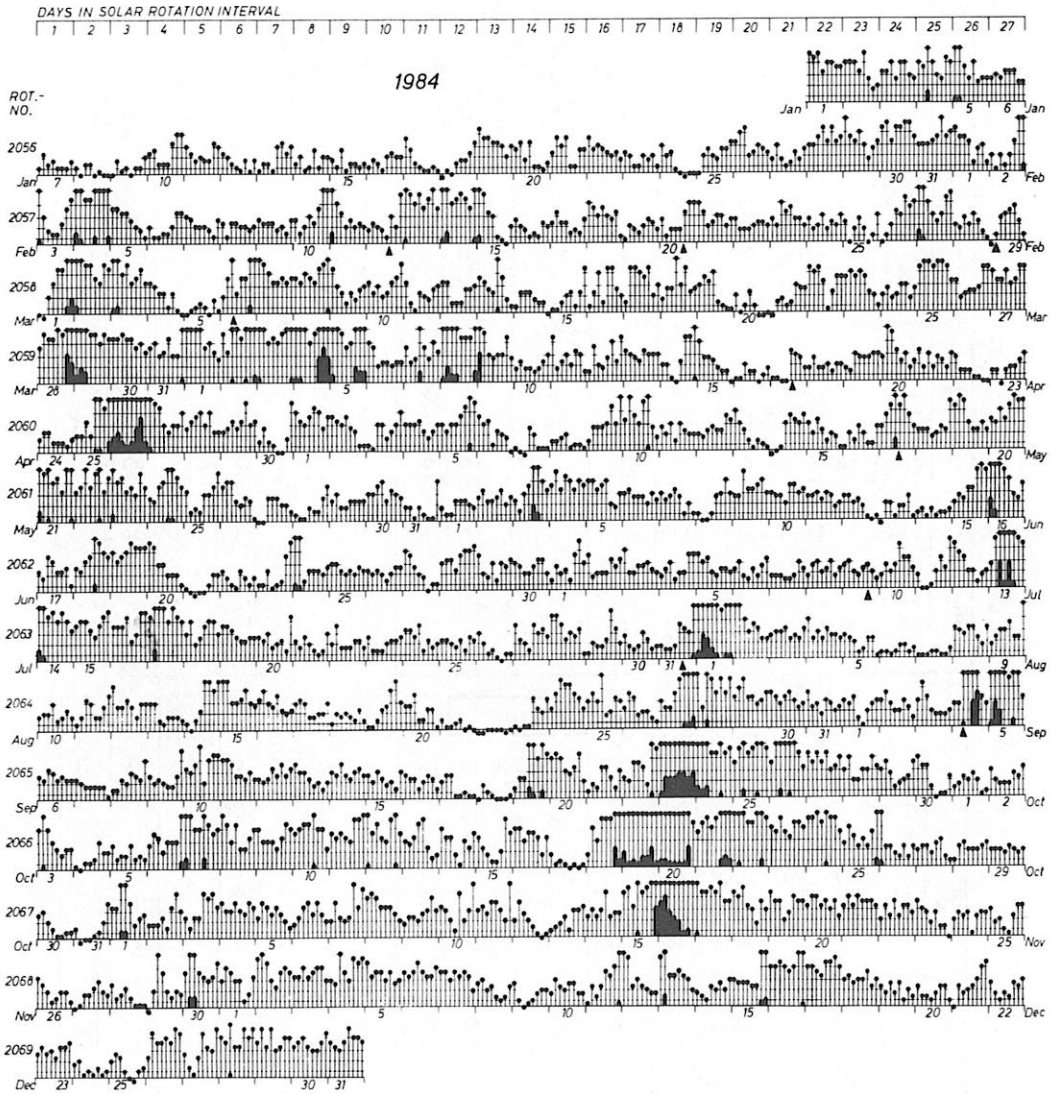
Unit : nT

SECTION 3

3.3. Kp INDICES

Musical diagram of **Kp** 1984	67
Monthly tables of three-hour indices :	
Kp, **ap** and daily **Ap** and **Cp** values	68
Frequencies of **Kp** indices	74
Monthly and yearly mean values of **Ap**	
1932-1984	75

MUSICAL DIAGRAM OF **Kp** 1984



Kp (after Bartels)

1984

Kp INDICES 1984

	Kp	Sum	Jan 1984	ap	Sum	Ap	Cp
1	5- 4+ 5- 3+ 4o 4o 4- 4-	32+	39 32 39 18	27 27 22 22	226	28	1.2
2	4o 4o 4o 3+ 5- 3- 2- 2o	26+	27 27 27 18	39 12 6 7	163	20	1.0
3	3+ 3+ 4o 3- 4o 4o 3o 3-	27o	18 18 27 12	27 27 15 12	156	20	1.0
4	4o 4- 6o 4o 3o 3- 4+ 4o	32-	27 22 80 27	15 12 32 27	242	30	1.3
5	5+ 5+ 4- 3- 4o 2+ 3- 3-	29-	56 56 22 12	27 9 12 12	206	26	1.2
6	3- 3o 3- 3+ 3+ 3+ 2+ 2+	23o	12 15 12 18	18 18 9 9	111	14	0.8
7	1o 2+ 1+ 2- 1o 1o 1o 2-	11o	4 9 5 6	4 4 4 6	42	5	0.2
8	1o 0+ 1+ 1+ 0+ 1- 0+ 0+	6-	4 2 5 5	2 3 2 2	25	3	0.1
9	0+ 2- 1- 1o 0+ 1o 1o 2o	8o	2 6 3 4	2 4 4 7	32	4	0.1
10	2+ 3- 1+ 1+ 1+ 3+ 4o 4o	20+	9 12 5 5	5 18 27 27	108	14	0.8
11	3o 2+ 2- 2o 2- 2- 3+ 3o	19-	15 9 6 7	6 6 18 15	82	10	0.6
12	2+ 2o 1+ 1o 1- 2- 1- 2-	11+	9 7 5 4	3 6 3 6	43	5	0.2
13	1- 1+ 1+ 1- 3o 3+ 2+ 3o	16-	3 5 5 3	15 18 9 15	73	9	0.5
14	1+ 2o 1- 1o 3- 1o 2o 2o	13-	5 7 3 4	12 4 7 7	49	6	0.3
15	2- 1o 3- 1- 1+ 1+ 1o 1+	11o	6 4 12 3	5 5 4 5	44	6	0.2
16	1o 2- 1+ 1- 2o 2+ 2o 2o	13o	4 6 5 3	7 9 7 7	48	6	0.3
17	4- 3- 1+ 1o 1- 1- 1o 1-	12-	22 12 5 4	3 3 4 3	56	7	0.4
18	0o 1- 0+ 1+ 2- 2- 2+ 3+	11+	0 3 2 5	6 6 9 18	49	6	0.3
19	4+ 4- 4- 3+ 3+ 3o 2o 3o	26+	32 22 22 18	18 15 7 15	149	19	1.0
20	3- 3+ 2- 3+ 1o 1o 1- 1+	15o	12 18 6 18	4 4 3 5	70	9	0.5
21	2+ 4- 3o 4- 1o 1o 3- 3-	20o	9 22 15 22	4 4 12 12	100	12	0.7
22	4- 3- 3o 3- 2+ 2o 2+ 2-	20+	22 12 15 12	9 7 9 6	92	12	0.7
23	2+ 2o 1o 1o 2o 2- 2o 1o	13o	9 7 4 4	7 6 7 4	48	6	0.3
24	3o 2o 2+ 1- 0+ 0o 0+ 0+	9o	15 7 9 3	2 0 2 2	40	5	0.2
25	0+ 2o 3- 2o 2- 3- 3- 3+	17+	2 7 12 7	6 12 12 18	76	10	0.5
26	3+ 4o 4+ 2o 2+ 3o 3- 2+	24o	18 27 32 7	9 15 12 9	129	16	0.9
27	2- 3o 2- 1o 1+ 2+ 2- 3-	15+	6 15 6 4	5 9 6 12	63	8	0.4
28	3o 3o 4- 4+ 3+ 4+ 3+ 4-	29-	15 15 22 32	18 32 18 22	174	22	1.1
29	5o 4- 3+ 4o 3o 2- 3- 3+	27-	48 22 18 27	15 6 12 18	166	21	1.1
30	4+ 5- 3+ 4+ 4+ 5- 5- 4-	34o	32 39 18 32	32 39 39 22	253	32	1.3
31	3o 3o 3o 3+ 4- 5o 4- 4o	29-	15 15 15 18	22 48 22 27	182	23	1.1

	Kp	Sum	Feb 1984	ap	Sum	Ap	Cp
1	4+ 4- 4- 3+ 1+ 3- 3o 1+	23+	32 22 22 18	5 12 15 5	131	16	0.9
2	2o 1- 2o 1o 2o 3+ 5o 6-	22-	7 3 7 4	7 18 48 67	161	20	1.0
3	5+ 3o 2- 1+ 1+ 2+ 4- 4+	23o	56 15 6 5	5 9 22 32	150	19	1.0
4	6o 5+ 4+ 4+ 6- 5o 5o 6-	41+	80 56 32 32	67 48 48 67	430	54	1.6
5	4- 4- 3+ 3+ 3- 2o 2- 1o	21+	22 22 18 18	12 7 6 4	109	14	0.8
6	2o 1o 1o 1+ 1+ 2o 3+ 3+	15+	7 4 4 5	5 7 18 18	68	8	0.5
7	3o 3- 2o 2o 2o 2- 1o 3-	17o	15 12 7 7	7 6 4 12	70	9	0.5
8	2+ 1o 2+ 2+ 2o 2o 2- 2o	16-	9 4 9 9	7 7 6 7	58	7	0.4
9	3- 2+ 2+ 2+ 2- 2o 1+ 3-	17+	12 9 9 9	6 7 5 12	69	9	0.5
10	3- 1+ 2o 3o 2+ 4- 5o 5o	25o	12 5 7 15	9 22 48 48	166	21	1.1
11	6o 4o 3+ 2o 3- 2o 2+ 2o	24+	80 27 18 7	12 7 9 7	167	21	1.1
12	2- 2+ 2o 2- 1o 3o 2o 5-	18+	6 9 7 6	4 15 7 39	93	12	0.7
13	5+ 5- 4o 5- 4- 4+ 5o 4-	35+	56 39 27 39	22 32 48 22	285	36	1.4
14	5+ 6o 4o 4+ 5- 4+ 4- 5+	38-	56 80 27 32	39 32 22 56	344	43	1.5
15	6- 5- 3+ 3o 1o 1- 0+ 2o	21-	67 39 18 15	4 3 2 7	155	19	1.0
16	3- 2o 2- 1o 1+ 1o 2+ 2o	14o	12 7 6 4	5 4 9 7	54	7	0.3
17	2+ 3+ 2+ 2+ 1+ 2- 1+ 3-	17+	9 18 9 9	5 6 5 12	73	9	0.5
18	4o 4- 3o 4- 3o 3- 3+ 1o	24+	27 22 15 22	15 12 18 4	135	17	0.9
19	1- 2o 2- 1+ 2o 3- 2+ 2-	14+	3 7 6 5	7 12 9 6	55	7	0.3
20	3- 1o 2- 2- 2- 3+ 4o 4o	20o	12 4 6 6	6 18 27 27	106	13	0.8
21	4o 3+ 2o 2+ 3o 3o 2o 3-	22+	27 18 7 9	15 15 7 12	110	14	0.8
22	3- 2- 2- 2- 2o 2+ 2+ 2o	16+	12 6 6 6	7 9 9 7	62	8	0.4
23	3- 2o 4o 3+ 4- 3- 3- 2o	23o	12 7 27 18	22 12 12 7	117	15	0.8
24	3- 2- 2o 3o 2- 2+ 2o 3o	18+	12 6 7 15	6 9 7 15	77	10	0.5
25	2+ 0+ 2- 3- 2- 0+ 1o 3o	13o	9 2 6 12	6 2 4 15	56	7	0.4
26	0+ 1o 2o 3+ 3o 4+ 4- 4o	22-	2 4 7 18	15 32 22 27	127	16	0.9
27	6o 5+ 4o 3o 2+ 3o 4+ 5-	33-	80 56 27 15	9 15 32 39	273	34	1.3
28	2o 2- 3- 2o 3o 2+ 1+ 1-	16-	7 6 12 7	15 9 5 3	64	8	0.4
29	0o 1o 3- 3o 3+ 4- 2+ 1o	17o	0 4 12 15	18 22 9 4	84	10	0.6

Kp INDICES 1984 (continued)

	Kp	Sum	Mar 1984 ap								Sum	Ap	Cp
1	0+ 0o 2o 3+ 4+ 4+ 6- 6+	26+	2	0	7	18	32	32	67	94	252	32	1.3
2	6- 5o 5- 5- 4- 3+ 5- 4+	36o	67	48	39	39	22	18	39	32	304	38	1.4
3	5+ 6- 4o 5- 3+ 4- 4+ 3+	34+	56	67	27	39	18	22	32	18	279	35	1.4
4	3+ 3o 2+ 2+ 1o 2+ 1- 0+	15+	18	15	9	9	4	9	3	2	69	9	0.5
5	0+ 1- 1o 1+ 1o 0+ 2- 1-	7o	2	3	4	5	4	2	6	3	29	4	0.1
6	2o 4- 5o 2+ 4- 4- 6- 5o	31o	7	22	48	9	22	22	67	48	245	31	1.3
7	5o 5- 4o 3+ 3+ 4- 3+ 4-	31o	48	39	27	18	18	22	18	22	212	26	1.2
8	4- 3+ 4o 4- 3+ 4+ 5- 5+	32+	22	18	27	22	18	32	39	56	234	29	1.3
9	4+ 3o 2+ 1+ 2+ 2- 3- 3o	21-	32	15	9	5	9	6	12	15	103	13	0.7
10	3+ 2+ 3o 2o 2+ 3+ 4- 5-	25-	18	9	15	7	9	18	22	39	137	17	0.9
11	3+ 1+ 1- 2+ 2o 2- 3- 3o	17o	18	5	3	9	7	6	12	15	75	9	0.5
12	3+ 3+ 1+ 1+ 1+ 3- 3- 3o	19o	18	18	5	5	5	12	12	15	90	11	0.6
13	4- 3+ 3- 2+ 5+ 4- 2- 1o	24-	22	18	12	9	56	22	6	4	149	19	1.0
14	1o 2+ 2+ 2+ 2- 1+ 1+ 0+	13-	4	9	9	9	6	5	5	2	49	6	0.3
15	1- 1- 1+ 2o 2+ 1o 2+ 4+	15-	3	3	5	7	9	4	9	32	72	9	0.5
16	1o 2+ 4o 1+ 4+ 4+ 3- 2o	22o	4	9	27	5	32	32	12	7	128	16	0.9
17	1+ 4+ 4+ 4o 4- 4+ 2o 3o	27o	5	32	32	27	22	32	7	15	172	22	1.1
18	2- 3- 3- 5o 3o 4+ 2+ 3-	24+	6	12	12	48	15	32	9	12	146	18	1.0
19	3o 4- 3+ 4o 1+ 1o 1- 1-	18-	15	22	18	27	5	4	3	3	97	12	0.7
20	2o 0+ 1o 2+ 1o 0o 0o 0+	7o	7	2	4	9	4	0	0	2	28	4	0.1
21	0o 1+ 2- 1o 1+ 3o 3- 3-	14-	0	5	6	4	5	15	12	12	59	7	0.4
22	4+ 4o 4+ 3+ 1- 2+ 4- 4-	26+	32	27	32	18	3	9	22	22	165	21	1.1
23	4- 4o 4- 4o 4- 2+ 2o 1o	24+	22	27	22	27	22	9	7	4	140	18	1.0
24	2o 3- 2- 2o 3o 3o 2- 3-	19-	7	12	6	7	15	15	6	12	80	10	0.6
25	4+ 5- 5- 4+ 5- 5- 4+ 3+	35o	32	39	39	32	39	39	32	18	270	34	1.3
26	3+ 2- 2o 2+ 2+ 3- 4+ 4+	23o	18	6	7	9	9	12	32	32	125	16	0.9
27	4o 3+ 3+ 4o 3o 3+ 4+ 4+	30-	27	18	18	27	15	18	32	32	187	23	1.1
28	4- 5- 4+ 4+ 5o 5- 7+ 7-	41-	22	39	32	32	48	39	154	111	477	60	1.7
29	6- 6+ 6o 5- 5- 4o 5- 4+	40+	67	94	80	39	39	27	39	32	417	52	1.6
30	4+ 4+ 5- 4+ 4+ 4- 4o 3+	33o	32	32	39	32	32	22	27	18	234	29	1.3
31	4- 4o 3o 3+ 4+ 3o 3o 5+	30-	22	27	15	18	32	15	15	56	200	25	1.2

	Kp	Sum	Apr 1984 ap								Sum	Ap	Cp
1	5o 5o 5o 5o 4- 4o 3+ 3-	34-	48	48	48	48	22	27	18	12	271	34	1.3
2	5- 3+ 5+ 5o 4+ 5+ 5o 6-	39-	39	18	56	48	32	56	48	67	364	46	1.5
3	5+ 5o 4o 4+ 4o 5- 5o 5+	38-	56	48	27	32	27	39	48	56	333	42	1.5
4	5+ 5+ 5o 4o 5- 7o 8- 7o	46o	56	56	48	27	39	132	179	132	669	84	1.8
5	6- 5o 5- 4- 4o 6+ 6o 6o	41+	67	48	39	22	27	94	80	80	457	57	1.7
6	4o 4- 2o 2+ 2+ 2o 2+ 2+	21o	27	22	7	9	9	7	9	9	99	12	0.7
7	4- 2+ 3- 6o 4- 3- 4o 3+	28+	22	9	12	80	22	12	27	18	202	25	1.2
8	5+ 6+ 6- 6- 4+ 4+ 4+ 6o	42o	56	94	67	67	32	32	32	80	460	58	1.7
9	7+ 5- 3o 3- 3o 3o 4+ 3-	31-	154	39	15	12	15	15	32	12	294	37	1.4
10	2- 2+ 2- 2- 1+ 2- 2+ 3o	16-	6	9	6	6	5	6	9	15	62	8	0.4
11	4+ 2- 2+ 3o 2o 3+ 3o 1+	21o	32	6	9	15	7	18	15	5	107	13	0.8
12	1+ 4- 2o 2- 3- 4o 2+ 4+	22o	5	22	7	6	12	27	9	32	120	15	0.8
13	3+ 3o 3- 2+ 3+ 3o 3o 3o	24-	18	15	12	9	18	15	15	15	117	15	0.8
14	2o 2o 1- 0+ 2+ 4+ 4+ 5+	21+	7	7	3	2	9	32	32	56	148	18	1.0
15	4o 3- 3- 2+ 2- 1+ 1+ 0+	16+	27	12	12	9	6	5	5	2	78	10	0.5
16	1- 1- 2o 1+ 1+ 0+ 1o 2-	9o	3	3	7	5	5	2	4	6	35	4	0.2
17	1- 1- 0+ 0+ 3+ 3o 3- 2-	13-	3	3	2	2	18	15	12	6	61	8	0.4
18	2- 3- 2- 2- 2o 1+ 2o 2o	15o	6	12	6	6	7	5	7	7	56	7	0.4
19	2- 1+ 3o 3- 3- 3- 3o 3o	20o	6	5	15	12	12	12	15	15	92	12	0.7
20	3- 5o 5- 3+ 2+ 3o 2- 2+	25o	12	48	39	18	9	15	6	9	156	20	1.0
21	3+ 2- 3o 2- 3- 2+ 2- 3o	19+	18	6	15	6	12	9	6	15	87	11	0.6
22	3- 1+ 1+ 1+ 1- 1- 0+ 0+	9-	12	5	5	5	3	3	2	2	37	5	0.2
23	1+ 1+ 0o 1+ 2- 2- 2+ 3o	13-	5	5	0	5	6	6	9	15	51	6	0.3
24	2- 2+ 2+ 1+ 1+ 1+ 1o 2-	13o	6	9	9	5	5	5	4	6	49	6	0.3
25	2o 2o 3+ 2o 5+ 5+ 4+ 6o	30+	7	7	18	7	56	56	32	80	263	33	1.3
26	6+ 7- 6o 6- 6o 7o 8- 6o	51+	94	111	80	67	80	132	179	80	823	103	1.9
27	5+ 5- 4+ 3o 2+ 3o 3o 4o	30-	56	39	32	15	9	15	15	27	208	26	1.2
28	3- 3+ 4- 4o 3o 4o 2+ 2+	25+	12	18	22	27	15	27	9	9	139	17	0.9
29	2+ 3- 3+ 3- 3+ 5- 3o 3+	25+	9	12	18	12	18	39	15	16	141	18	1.0
30	1+ 3- 1+ 1o 0+ 0+ 2- 5-	13+	5	12	5	4	2	2	6	39	75	9	0.5

Kp INDICES 1984 (continued)

	Kp	Sum	May 1984	ap	Sum	Ap	Cp
1	4o 3+ 3o 4- 4+ 4o 3- 4-	29-	27 18 15 22	32 27 12 22	175	22	1.1
2	4- 3+ 3o 4- 3- 2+ 1o 1o	21-	22 18 15 22	12 9 4 4	106	13	0.8
3	1o 1- 3o 3o 2- 2+ 3o 4o	19-	4 3 15 15	6 9 15 27	94	12	0.7
4	3o 3o 3o 3+ 2+ 2- 2+ 3o	22-	15 15 15 18	9 6 9 15	102	13	0.7
5	3o 2+ 3o 3o 4- 4+ 6- 5-	30-	15 9 15 15	22 32 67 39	214	27	1.2
6	4- 3o 3+ 1o 2+ 2o 2- 0+	17+	22 15 18 4	9 7 6 2	83	10	0.6
7	1- 0+ 0o 3- 2o 1- 1- 1-	8-	3 2 0 12	7 3 3 3	33	4	0.1
8	1+ 1+ 2- 2o 1- 1o 1o 1-	10-	5 5 6 7	3 4 4 3	37	5	0.2
9	1+ 3- 3- 3- 3o 4+ 3o 5o	25-	5 12 12 12	15 32 15 48	151	19	1.0
10	3+ 5o 4- 3o 5- 5+ 3- 2-	29+	18 48 22 15	39 56 12 6	216	27	1.2
11	3- 2o 3o 1+ 3o 2+ 2o 2o	18+	12 7 15 5	15 9 7 7	77	10	0.5
12	2o 2- 2+ 3- 2+ 2+ 4- 3+	20+	7 6 9 12	9 9 22 18	92	12	0.7
13	4o 3o 2+ 1+ 1- 1+ 1o 1-	14+	27 15 9 5	3 5 4 3	71	9	0.5
14	0o 0+ 1- 3o 4- 3+ 3o 4-	18-	0 2 3 15	22 18 15 22	97	12	0.7
15	3o 2o 3+ 2+ 1+ 2o 2- 1-	16+	15 7 18 9	5 7 6 3	70	9	0.5
16	1- 2o 1+ 3- 2o 1o 1o 3-	13+	3 7 5 12	7 4 4 12	54	7	0.3
17	3- 4- 4+ 6o 4+ 5o 4- 3-	32+	12 22 32 80	32 48 22 12	260	32	1.3
18	2+ 2+ 2+ 2- 2o 3- 2+ 5-	20+	9 9 9 6	7 12 9 39	100	12	0.7
19	4+ 5o 5- 3o 2+ 2+ 3o 2+	27o	32 48 39 15	9 9 15 9	176	22	1.1
20	3+ 3o 4o 3+ 4+ 5o 5- 5-	32+	18 15 27 18	32 48 39 39	236	30	1.3
21	6o 5- 5+ 4o 4+ 3+ 5o 5+	38o	80 39 56 27	32 18 48 56	356	44	1.5
22	3+ 4- 5o 4- 5- 5+ 3+ 4+	33+	18 22 48 22	39 56 18 32	255	32	1.3
23	6- 4o 4+ 3+ 4- 3o 5- 4-	32+	67 27 32 18	22 15 39 22	242	30	1.3
24	3- 2+ 4- 4o 5+ 5+ 4+ 4-	31+	12 9 22 27	56 56 32 22	236	30	1.3
25	3+ 1+ 2- 1+ 3o 3o 4- 5-	22o	18 5 6 5	15 15 22 39	125	16	0.9
26	4- 4o 4o 2+ 2o 3- 2+ 1-	22-	22 27 27 9	7 12 9 3	116	14	0.8
27	0+ 0+ 3- 3- 3- 2o 2o 1+	14o	2 2 12 12	12 7 7 5	59	7	0.4
28	1o 1- 1- 2- 1+ 1+ 3- 4-	13o	4 3 3 6	5 5 12 22	60	8	0.4
29	2+ 3o 2- 2- 2+ 2+ 2+ 2+	18o	9 15 6 6	9 9 9 9	72	9	0.5
30	3o 3o 4- 4o 2+ 3+ 3o 3-	25o	15 15 22 27	9 18 15 12	133	17	0.9
31	2- 2- 1- 2- 1o 1- 1- 4o	12o	6 6 3 6	4 3 3 27	58	7	0.4

	Kp	Sum	Jun 1984	ap	Sum	Ap	Cp
1	2- 1o 1o 2+ 2+ 2+ 2o 2-	14+	6 4 4 9	9 9 7 6	54	7	0.3
2	3- 3+ 2+ 2+ 3- 3+ 2o 3-	21+	12 18 9 9	12 18 7 12	97	12	0.7
3	2+ 1+ 3o 4- 6+ 6- 4o 3+	30-	9 5 15 22	94 67 27 18	257	32	1.3
4	4- 5- 3+ 4+ 4o 3+ 4o 4-	31o	22 39 18 32	27 18 27 22	205	26	1.2
5	4o 4o 3+ 4- 4o 2o 2- 3o	26-	27 27 18 22	27 7 6 15	149	19	1.0
6	3o 3+ 3- 3- 3- 2o 3o 2+	22-	15 18 12 12	12 7 15 9	100	12	0.7
7	3o 2+ 3- 3+ 3- 1o 2o 1o	18o	15 9 12 18	12 4 7 4	81	10	0.6
8	1o 0+ 0+ 1o 3- 3o 4o 3o	15+	4 2 2 4	12 15 27 15	81	10	0.6
9	3- 3- 5- 3+ 3+ 4- 4o 3o	27+	12 12 39 18	18 22 27 15	163	20	1.0
10	3o 3- 3- 2o 4- 4- 3o 3+	24o	15 12 12 7	22 22 15 18	123	15	0.9
11	3- 3- 3o 2+ 3o 3- 2- 2o	20o	12 12 15 9	15 12 6 7	88	11	0.6
12	3- 3- 2o 2+ 2- 1- 0+ 1-	13o	12 12 7 9	6 3 2 3	54	7	0.3
13	0o 2o 2o 1- 2- 2- 3- 1-	11+	0 7 7 3	6 6 12 3	44	6	0.2
14	1o 1+ 1- 1+ 1- 1o 1o 1+	8+	4 5 3 5	3 4 4 5	33	4	0.1
15	2o 3- 2+ 3+ 3+ 5- 5o 5-	28o	7 12 9 18	18 39 48 39	190	24	1.1
16	7- 6- 5o 5- 4o 3- 2+ 4-	35-	111 67 48 39	27 12 9 22	335	42	1.5
17	2+ 2- 4- 3+ 2+ 2+ 3- 1o	19+	9 6 22 18	9 9 12 4	89	11	0.6
18	3- 2+ 3+ 4- 6- 5- 4o 4-	30o	12 9 18 22	67 39 27 22	216	27	1.2
19	4o 3+ 4- 4o 5- 4+ 4+ 4+	33-	27 18 22 27	39 32 32 32	229	29	1.3
20	5- 4+ 3o 3o 2o 2o 2o 1o	22o	39 32 15 15	7 7 7 4	126	16	0.9
21	1- 0+ 0o 0+ 0+ 1o 2o 2o	7-	3 2 0 2	2 4 7 7	27	3	0.1
22	2+ 2- 1o 1- 2+ 2- 1o 2-	12+	9 6 4 3	9 6 4 6	47	6	0.3
23	1o 1o 2+ 1- 1o 1+ 4- 5-	16-	4 4 9 3	4 5 22 39	90	11	0.6
24	6- 5+ 1+ 2+ 2+ 2+ 2o 3-	24o	67 56 5 9	9 9 7 12	174	22	1.1
25	3o 3o 2+ 2o 2+ 2o 3- 2+	20-	15 15 9 7	9 7 12 9	83	10	0.6
26	2+ 2o 2+ 2o 1+ 2o 3- 3-	17+	9 7 9 7	5 7 12 12	68	8	0.5
27	4o 4- 3- 2o 2- 0+ 1o 1o	16+	27 22 12 7	6 2 4 4	84	10	0.6
28	3o 3+ 3+ 2+ 4- 4o 4o 4+	28o	15 18 18 9	22 27 27 32	168	21	1.1
29	4- 2o 2- 3o 1+ 3o 3- 3+	21-	22 7 6 15	5 15 12 18	100	12	0.7
30	3o 3- 2o 2o 3- 3+ 3+ 2o	21o	15 12 7 7	12 18 18 7	96	12	0.7

Kp INDICES 1984 (continued)

	Kp	Sum	Jul 1984	ap	Sum	Ap	Cp
1	1+ 3- 2o 2+ 1+ 4- 5- 3o	21o	5 12 7 9	5 22 39 15	114	14	0.8
2	4- 2- 2o 2o 2o 3+ 3- 3+	21-	22 6 7 7	7 18 12 18	97	12	0.7
3	4o 2o 2o 3- 3- 3o 2+ 2o	21-	27 7 7 12	12 15 9 7	96	12	0.7
4	2- 2+ 3o 1+ 2o 2o 4- 4-	20-	6 9 15 5	7 7 22 22	93	12	0.7
5	4- 3o 3+ 2o 2- 2+ 2+ 2o	20+	22 15 18 7	6 9 9 7	93	12	0.7
6	2+ 3o 2- 1+ 2+ 2- 3- 3+	18+	9 15 6 5	9 6 12 18	80	10	0.6
7	2- 2- 2- 1+ 1+ 2- 3o 2+	15-	6 6 6 5	5 6 15 9	58	7	0.4
8	2- 3- 3o 2o 2+ 3o 2- 2+	19-	6 12 15 7	9 15 6 9	79	10	0.6
9	3- 3o 2o 2- 2+ 3- 2o 1+	18-	12 15 7 6	9 12 7 5	73	9	0.5
10	2- 3- 2o 3- 4+ 3+ 3+ 2+	22+	6 12 7 12	32 18 18 9	114	14	0.8
11	2- 0+ 0+ 1- 2o 3+ 2+ 5-	15+	6 2 2 3	7 18 9 39	86	11	0.6
12	4+ 4- 3+ 2o 2o 1o 2- 2o	20o	32 22 18 7	7 4 6 7	103	13	0.7
13	3- 5- 7o 5+ 7o 5+ 5- 4+	41o	12 39 132 56	132 56 39 32	498	62	1.7
14	6o 5+ 4+ 5- 4o 5- 4o 3+	36+	80 56 32 39	27 39 27 18	318	40	1.4
15	4- 4o 4o 3+ 3- 4- 4+ 5-	30+	22 27 27 18	12 22 32 39	199	25	1.2
16	4- 4- 4- 4+ 2+ 3o 5- 5-	30o	22 22 22 32	9 15 39 39	200	25	1.2
17	4+ 6o 5o 5o 4o 5o 4+ 4o	38-	32 80 48 48	27 48 32 27	342	43	1.5
18	3o 4o 2o 3- 4- 4o 4o 3o	26+	15 27 7 12	22 27 27 15	152	19	1.0
19	4- 4- 3+ 3- 2+ 2+ 3- 3-	23+	22 22 18 12	9 9 12 12	116	14	0.8
20	3- 2+ 3o 2- 2o 2+ 1+ 4+	20-	12 9 15 6	7 9 5 32	95	12	0.7
21	2+ 2- 3- 2o 1+ 1o 1+ 3o	15+	9 6 12 7	5 4 5 15	63	8	0.4
22	2o 4- 2- 2- 2- 2+ 2+ 2-	17o	7 22 6 6	6 9 9 6	71	9	0.5
23	3- 1+ 1+ 1+ 2o 2+ 2+ 3-	16o	12 5 5 5	7 9 9 12	64	8	0.4
24	3+ 3+ 3- 4- 1+ 2+ 2- 2o	20+	18 18 12 22	5 9 6 7	97	12	0.7
25	2+ 2+ 2o 2- 2+ 1+ 3- 2+	17o	9 9 7 6	9 5 12 9	66	8	0.4
26	3o 2o 1o 1+ 1- 0+ 1o 1o	10+	15 7 4 5	3 2 4 4	44	6	0.2
27	4- 2+ 2o 1+ 4- 3o 3+ 3-	22o	22 9 7 5	22 15 18 12	110	14	0.8
28	4+ 4+ 4- 2+ 3o 3- 3+ 1o	25-	32 32 22 9	15 12 18 4	144	18	1.0
29	1o 2o 2- 2- 2+ 5- 3+ 2o	19-	4 7 6 6	9 39 18 7	96	12	0.7
30	3- 2- 1+ 2- 3o 2+ 1+ 2-	18-	12 6 5 6	15 9 5 6	64	8	0.4
31	2- 1+ 1+ 2- 4- 3+ 3o 5+	21+	6 5 5 6	22 18 15 56	133	17	0.9

	Kp	Sum	Aug 1984	ap	Sum	Ap	Cp
1	6- 7o 7- 6o 5+ 5- 5+ 5+	46o	67 132 111 80	56 39 56 56	597	75	1.8
2	5o 5o 4o 3o 4- 3+ 2+ 2+	29-	48 48 27 15	22 18 9 9	196	24	1.2
3	3- 3o 3o 3+ 2+ 3- 2+ 3+	23-	12 15 15 18	9 12 9 18	108	14	0.8
4	4o 2+ 3o 2+ 3+ 3- 3- 2+	23-	27 9 15 9	18 12 12 9	111	14	0.8
5	3- 2+ 2o 1o 1+ 2+ 2+ 1-	15-	12 9 7 4	5 9 9 3	58	7	0.4
6	1o 1o 1- 1o 2- 2- 1o 1+	9+	4 4 3 4	6 6 4 5	36	4	0.2
7	1- 1- 1- 1o 1o 1- 1- 1+	7-	3 3 3 4	4 3 3 5	28	4	0.1
8	3+ 3o 3- 3+ 3+ 2+ 2- 3+	23o	18 15 12 18	18 9 6 18	114	14	0.8
9	2- 2+ 3o 3o 4- 2+ 2+ 5o	23+	6 9 15 15	22 9 9 48	133	17	0.9
10	2- 2o 2o 3o 1+ 2- 2+ 2-	16-	6 7 7 15	5 6 9 6	61	8	0.4
11	1o 2- 3+ 3o 2- 2- 3- 4-	19-	4 6 18 15	6 6 12 22	89	11	0.6
12	4+ 3- 3- 3+ 3- 2- 3o 3o	23+	32 12 12 18	12 6 15 15	122	15	0.9
13	3o 3o 1+ 1o 2- 2- 2- 1+	15-	15 15 5 4	6 6 6 5	62	8	0.4
14	1o 0+ 1+ 2+ 5- 5- 4o 5-	23o	4 2 5 9	39 39 27 39	164	20	1.0
15	5- 5- 3o 3o 3+ 4o 3o 3-	28+	39 39 15 15	18 27 15 12	180	22	1.1
16	3+ 4o 3o 3- 4- 2+ 2o 2+	23+	18 27 15 12	22 9 7 9	119	15	0.8
17	3o 3+ 3o 2- 2- 2o 2o 3o	20-	15 18 15 6	6 7 7 15	89	11	0.6
18	1o 2o 2- 2o 2- 1+ 2+ 1+	13+	4 7 6 7	6 5 9 5	49	6	0.3
19	1- 1- 1+ 2+ 3- 4o 5- 3o	19+	3 3 5 9	12 27 39 15	113	14	0.8
20	3- 3- 4- 1+ 1+ 2+ 2+ 1-	17o	12 12 22 5	5 9 9 3	77	10	0.5
21	1+ 1- 1- 1o 1+ 0+ 1- 0+	6+	5 3 3 4	5 2 3 2	27	3	0.1
22	0o 0o 0+ 0+ 0+ 0+ 0o 0+	2-	0 0 2 2	2 2 0 2	10	1	0.0
23	1- 0+ 1- 1- 3+ 2+ 2o 3+	13+	3 2 3 3	18 9 7 18	63	8	0.4
24	2+ 4- 5- 4+ 4+ 4- 3+ 2+	29-	9 22 39 32	32 22 18 9	183	23	1.1
25	3o 4- 3o 5o 2- 2o 3+ 3o	25-	15 22 15 48	6 7 18 15	146	18	1.0
26	2+ 4- 3+ 2- 2o 2o 1+ 1o	17+	9 22 18 6	7 7 5 4	78	10	0.5
27	3o 2+ 2+ 4- 5- 5+ 5+ 6o	33-	15 9 9 22	39 56 56 80	286	36	1.4
28	5o 2+ 6- 5- 4- 5- 4- 5-	34+	48 9 67 39	22 39 22 39	285	36	1.4
29	3+ 4o 5- 3+ 3+ 3- 3o 4-	28o	18 27 39 18	18 12 15 22	169	21	1.1
30	4- 3+ 3- 3+ 4- 3o 2+ 3-	25-	22 18 12 18	22 15 9 12	128	16	0.9
31	4- 2+ 3- 2- 3o 3- 2o 2+	20+	22 9 12 6	15 12 7 9	92	12	0.7

Kp INDICES 1984 (continued)

	Kp	Sum	Sep 1984	ap				Sum	Ap	Cp
1	3o 3- 3+ 1+ 1- 2o 3- 3o	19-	15	12	18	5	3	7	12	15	87	11	0.6
2	3o 4- 3- 2o 2o 3o 2+ 1+	20o	15	22	12	7	7	15	9	5	92	12	0.7
3	3o 4+ 3+ 2o 2- 2- 2- 2o	20-	15	32	18	7	6	6	6	7	97	12	0.7
4	3- 3- 5+ 5o 7o 8- 3+ 3-	36+	12	12	56	48	132	179	18	12	469	59	1.7
5	5+ 7o 6+ 5o 5- 6- 5o 3+	42+	56	132	94	48	39	67	48	18	502	63	1.7
6	3- 2+ 3+ 3o 2+ 3- 2+ 2+	21o	12	9	18	15	9	12	9	9	93	12	0.7
7	2+ 2o 2- 2- 2- 2- 2- 1-	13+	9	7	6	6	6	6	6	3	49	6	0.3
8	1+ 1+ 2+ 2o 3o 3- 2+ 4o	19o	5	5	9	7	15	12	9	27	89	11	0.6
9	3- 2o 2+ 2o 2- 2- 3- 5-	20-	12	7	9	7	6	6	12	39	98	12	0.7
10	3+ 3o 4- 5o 2o 4o 4+ 4+	30-	18	15	22	48	7	27	32	32	201	25	1.2
11	4o 4o 4- 3- 3- 2+ 3o 2+	25-	27	27	22	12	12	9	15	9	133	17	0.9
12	2+ 2o 2+ 3+ 3- 4- 3- 3+	22+	9	7	9	18	12	22	12	18	107	13	0.8
13	4- 3o 3o 2+ 2- 2o 1+ 2o	19o	22	15	15	9	6	7	5	7	86	11	0.6
14	3o 3- 4- 3- 2+ 3o 3+ 3-	23+	15	12	22	12	9	15	18	12	115	14	0.8
15	3- 2o 3o 2+ 2- 2o 1+ 3o	18o	12	7	15	9	6	7	5	15	76	10	0.5
16	3- 2+ 2+ 1+ 2o 3- 2+ 1+	17o	12	9	9	5	7	12	9	5	68	8	0.5
17	2o 3- 3- 1- 1- 1o 1- 1-	11o	7	12	12	3	3	4	3	3	47	6	0.3
18	0+ 2- 1o 1- 0+ 0+ 0+ 1-	5+	2	6	4	3	2	2	2	3	24	3	0.1
19	1+ 2+ 2+ 6o 5+ 4o 6- 4+	31+	5	9	9	80	56	27	67	32	285	36	1.4
20	4o 4+ 4o 3o 3- 3+ 4+ 2o	28-	27	32	27	15	12	18	32	7	170	21	1.1
21	1o 2- 1+ 3+ 3+ 2+ 1+ 3o	17+	4	6	5	18	18	9	5	15	80	10	0.6
22	2+ 2o 4- 4- 3+ 2- 5+ 5-	27-	9	7	22	22	18	6	56	39	179	22	1.1
23	5+ 7- 7- 7- 7o 7o 7- 7o	53o	56	111	111	111	132	132	111	132	896	112	1.9
24	6o 6- 6o 4+ 4+ 5+ 4+ 5-	41-	80	67	80	32	32	56	32	39	418	52	1.6
25	4- 5- 6- 4+ 5- 5+ 5o 5-	38o	22	39	67	32	39	56	48	39	342	43	1.5
26	4- 5o 6- 5o 5+ 5o 4+ 3+	37+	22	48	67	48	56	48	32	18	339	42	1.5
27	4+ 4- 4+ 4- 4+ 3o 3+ 4o	31-	32	22	32	22	32	15	18	27	200	25	1.2
28	3o 4o 2o 2o 3o 3o 4o 3+	24+	15	27	7	7	15	15	27	18	131	16	0.9
29	3o 4- 3- 1+ 2- 2o 2+ 4-	20+	15	22	12	5	6	7	9	22	98	12	0.7
30	4o 3+ 3+ 1+ 0+ 1- 1- 2+	16o	27	18	18	5	2	3	3	9	85	11	0.6

	Kp	Sum	Oct 1984	ap				Sum	Ap	Cp
1	1+ 2- 2+ 2o 3- 2o 1- 1o	14-	5	6	9	7	12	7	3	4	53	7	0.3
2	3o 2o 2- 2- 2- 3- 2+ 3+	18+	15	7	6	6	6	12	9	18	79	10	0.6
3	4o 5+ 4o 3o 2+ 2- 2+ 2+	25o	27	56	27	15	9	6	9	9	158	20	1.0
4	1- 0+ 1o 1o 1+ 3o 2o 2o	11+	3	2	4	4	5	15	7	7	47	6	0.3
5	3- 1+ 2- 2- 3- 1+ 2- 1+	14+	12	5	6	6	12	5	6	5	57	7	0.4
6	3- 4- 3+ 2o 3o 3o 3o 6-	26+	12	22	18	7	15	15	15	67	171	21	1.1
7	6o 5o 4o 4o 6o 4+ 4- 4o	37o	80	48	27	27	80	32	22	27	343	43	1.5
8	5o 4+ 3o 4+ 2+ 2+ 3+ 4o	29-	48	32	15	32	9	9	18	27	190	24	1.1
9	4o 3o 3o 3o 2+ 3+ 4+ 4o	27o	27	15	15	15	9	18	32	27	158	20	1.0
10	4- 4o 4+ 4+ 5+ 4o 4o 2+	32o	22	27	32	32	56	27	27	9	232	29	1.3
11	4- 3+ 4- 3+ 3o 5- 5- 5o	31+	22	18	22	18	15	39	39	48	221	28	1.2
12	5+ 4- 4+ 3+ 3o 5- 5+ 4-	33+	56	22	32	18	15	39	56	22	260	32	1.3
13	3o 3- 3+ 4+ 5- 2+ 1+ 2-	23+	15	12	18	32	39	9	5	6	136	17	0.9
14	4o 3+ 3+ 2- 1- 3o 2+ 4-	22o	27	18	18	6	3	15	9	22	118	15	0.8
15	3+ 2+ 2- 1o 1o 2o 5- 4-	20-	18	9	6	4	4	7	39	22	109	14	0.8
16	4o 4o 3o 4- 4- 3+ 2- 3+	27-	27	27	15	22	22	18	6	18	155	19	1.0
17	2- 1- 1o 1- 0+ 1- 0+ 1-	6o	6	3	4	3	2	3	2	3	26	3	0.1
18	2- 4o 3o 5- 5- 5- 7- 6-	35o	6	27	15	39	39	39	111	67	343	43	1.5
19	6+ 5+ 6- 5+ 6o 6o 7- 5+	47-	94	56	67	56	80	80	111	56	600	75	1.8
20	6- 6- 5+ 5+ 5+ 5+ 7- 4+	44-	67	67	56	56	56	56	111	32	501	63	1.7
21	4- 4+ 5- 4o 5- 6- 6o 6-	39-	22	32	39	27	39	67	80	67	373	47	1.5
22	5o 5+ 5o 4+ 4+ 5o 6- 5-	39+	48	56	48	32	32	48	67	39	370	46	1.5
23	4o 4- 5- 4- 3+ 4+ 4+ 4o	32o	27	22	39	22	18	32	32	27	219	27	1.2
24	5- 5- 5o 4+ 5+ 5- 5- 4-	37o	39	39	48	32	56	39	39	22	314	39	1.4
25	3- 4o 3+ 2+ 3o 2+ 4- 6-	27o	12	27	18	9	15	9	22	67	179	22	1.1
26	5+ 2+ 2+ 2- 1+ 2+ 1+ 2+	19o	56	9	9	6	5	9	5	9	108	14	0.8
27	2o 2+ 2+ 2- 3- 3o 1+ 1o	16+	7	9	9	6	12	15	5	4	67	8	0.5
28	1o 2+ 3- 2o 2o 2o 2+ 3-	17o	4	9	12	7	7	7	9	12	67	8	0.5
29	2o 2o 2o 2- 2+ 2o 2- 2o	16-	7	7	7	6	9	7	6	7	56	7	0.4
30	3- 3o 2o 1+ 1- 1- 1o 1o	12+	12	15	7	5	3	3	4	4	53	7	0.3
31	1+ 0o 0+ 0+ 1- 1o 2o 4-	9+	5	0	2	2	3	4	7	22	45	6	0.3

Kp INDICES 1984 (continued)

	Kp	Sum	Nov 1984 ap								Sum	Ap	Cp
1	3+ 3+ 6- 6- 4- 2- 2+ 3-	28+	18	18	67	67	22	6	9	12	219	27	1.2
2	2- 2- 2- 2+ 1+ 3+ 4+ 3o	19+	6	6	6	9	5	18	32	15	97	12	0.7
3	2+ 1+ 2+ 2+ 4+ 4o 4+ 3+	24+	9	5	9	9	32	27	32	18	141	18	1.0
4	4- 3o 3o 4- 3o 3- 4- 3+	26o	22	15	15	22	15	12	22	18	141	18	1.0
5	2+ 4- 3+ 3- 3+ 3- 2o 1+	21+	9	22	18	12	18	12	7	5	103	13	0.7
6	2- 2+ 3+ 4- 3- 4- 3- 2o	22o	6	9	18	22	12	22	12	7	108	14	0.8
7	2o 4- 2+ 2o 2+ 5o 3+ 5-	25+	7	22	9	7	9	48	18	39	159	20	1.0
8	4o 4+ 4o 3+ 3+ 3+ 3- 2o	27o	27	32	27	18	18	18	12	7	159	20	1.0
9	2- 2+ 2+ 2o 3- 3o 4o 3o	21o	6	9	9	7	12	15	27	15	100	12	0.7
10	3+ 3o 2o 1o 4+ 2o 3o 5o	24-	18	15	7	4	32	7	15	48	146	18	1.0
11	3o 3+ 3- 4- 4- 3o 2o 5o	26+	15	18	12	22	22	15	7	48	159	20	1.0
12	2o 4- 3- 2o 1+ 1- 0+ 1-	13+	7	22	12	7	5	3	2	3	61	8	0.4
13	1o 1+ 2- 2+ 1o 3o 3o 3+	17-	4	5	6	9	4	15	15	18	76	10	0.5
14	2+ 3o 2+ 3o 4+ 2+ 3- 3-	23-	9	15	9	15	32	9	12	12	113	14	0.8
15	4+ 5- 3+ 5+ 4+ 5- 5o 7+	39o	32	39	18	56	32	39	48	154	418	52	1.6
16	8- 8o 7o 7- 6+ 5+ 6- 5o	52-	179	207	132	111	94	56	67	48	894	112	1.9
17	5+ 4+ 4+ 5- 4+ 5o 4- 4-	35+	56	32	32	39	32	48	22	22	283	35	1.4
18	4+ 4o 5- 3+ 3o 2- 4- 3o	28-	32	27	39	18	15	6	22	15	174	22	1.1
19	4+ 4- 4- 2o 3- 4o 4- 4-	28-	32	22	22	7	12	27	22	22	166	21	1.1
20	3+ 4o 4o 3+ 4- 3o 4- 2+	27+	18	27	27	18	22	15	22	9	158	20	1.0
21	3+ 4o 3+ 4o 4- 4- 4- 3+	29o	18	27	18	27	22	22	22	18	174	22	1.1
22	2o 3+ 2+ 4- 2+ 3+ 3+ 3-	23o	7	18	9	22	9	18	18	12	113	14	0.8
23	4- 3o 3- 2- 3- 1+ 1+ 0+	17-	22	15	12	6	12	5	5	2	79	10	0.6
24	2o 3- 2+ 3- 1- 2+ 3- 3-	18o	7	12	9	12	3	9	12	12	76	10	0.5
25	3o 2- 2o 1o 1- 2+ 3+ 3+	17+	15	6	7	4	3	9	18	18	80	10	0.6
26	3+ 3- 2o 1o 1+ 2o 2o 1o	15+	18	12	7	4	5	7	7	4	64	8	0.4
27	0+ 1- 2- 2- 2+ 3o 2o 2-	13+	2	3	6	6	9	15	7	6	54	7	0.3
28	3- 1+ 2- 2+ 1+ 1- 1- 1-	11+	12	5	6	9	5	3	3	3	46	6	0.3
29	0o 2o 5o 4- 2o 1+ 2o 2-	18-	0	7	48	22	7	5	7	6	102	13	0.7
30	4- 6o 6o 4- 3+ 3o 3+ 4+	33+	22	80	80	22	18	15	18	32	287	36	1.4

	Kp	Sum	Dec 1984 ap								Sum	Ap	Cp
1	3o 4o 4- 3o 3o 1o 2- 3+	23-	15	27	22	15	15	4	6	18	122	15	0.9
2	5- 5o 4+ 3o 2+ 4- 4o 4-	31-	39	48	32	15	9	22	27	22	214	27	1.2
3	3+ 3+ 4o 3+ 4- 4o 4o 3o	29-	18	18	27	18	22	27	27	15	172	22	1.1
4	3o 3- 5o 4- 3o 5- 4+ 5-	31o	15	12	48	22	15	39	32	39	222	28	1.2
5	4+ 3+ 4- 4- 3o 4- 3- 3o	27+	32	18	22	22	15	22	12	15	158	20	1.0
6	4- 3+ 4- 4+ 4- 3+ 3+ 4o	29+	22	18	22	32	22	18	18	27	179	22	1.1
7	4- 4- 3o 4- 3+ 4- 3+ 2o	26+	22	22	15	22	18	22	18	7	146	18	1.0
8	3- 3o 2o 2+ 1+ 1o 1+ 2+	16o	12	15	7	9	5	4	5	9	66	8	0.4
9	3- 1o 0+ 1- 1o 2- 2o 2o	11+	12	4	2	3	4	6	7	7	45	6	0.3
10	2- 3o 2+ 2o 3- 3- 2- 2-	18-	6	15	9	7	12	12	6	6	73	9	0.5
11	1- 2+ 1+ 2+ 4- 3+ 4o 5+	23o	3	9	5	9	22	18	27	56	149	19	1.0
12	5o 5- 2+ 3o 2+ 2o 2- 2-	23-	48	39	9	15	9	7	6	6	139	17	0.9
13	5- 6o 3+ 3+ 4- 3+ 3o 2o	29+	39	80	18	18	22	18	15	7	217	27	1.2
14	2- 1+ 1o 2+ 2o 3- 2o 3o	16o	6	5	4	9	7	12	7	15	65	8	0.4
15	3o 3- 3- 3- 2+ 2+ 5+ 6-	27-	15	12	12	12	9	9	56	67	192	24	1.2
16	4o 4o 4+ 4o 4- 4o 5o 5+	34+	27	27	32	27	22	27	48	56	266	33	1.3
17	4o 4o 4- 3+ 4+ 4+ 5- 4o	32+	27	27	22	18	32	32	39	27	224	28	1.2
18	3o 3+ 3- 3o 3o 4- 2+ 3o	24o	15	18	12	15	15	22	9	15	121	15	0.9
19	2+ 2- 3- 2- 3- 1o 2o 1+	15+	9	6	12	6	12	4	7	5	61	8	0.4
20	2+ 1+ 1+ 1o 2- 2+ 2+ 1o	13+	9	5	5	4	6	9	9	4	51	6	0.3
21	0+ 2+ 2- 2o 2+ 3o 4o 4+	20o	2	9	6	7	9	15	27	32	107	13	0.8
22	3- 2- 1o 2- 1+ 3- 2+ 3o	16+	12	6	4	6	5	12	9	15	69	9	0.5
23	3- 3+ 3- 3o 2+ 3+ 3+ 4-	24+	12	18	12	15	9	18	18	22	124	16	0.9
24	2- 2o 1- 1o 1- 1+ 1- 1o	9o	6	7	3	4	3	5	3	4	35	4	0.2
25	2o 3- 2+ 1o 0+ 0o 1o 1+	11-	7	12	9	4	2	0	4	5	43	5	0.2
26	2+ 4+ 4- 4- 4o 4- 5- 4+	31-	9	32	22	22	27	22	39	32	205	26	1.2
27	3- 1+ 1- 2+ 4+ 3+ 3o 5-	22+	12	5	3	9	32	18	15	39	133	17	0.9
28	4o 4- 5+ 3+ 3+ 5- 4o 5-	33o	27	22	56	18	18	39	27	39	246	31	1.3
29	4- 5- 3+ 5- 3o 3+ 4o 4o	31-	22	39	18	39	15	18	27	27	205	26	1.2
30	3+ 4- 4o 3+ 3o 3o 4- 4+	28+	18	22	27	18	15	15	22	32	169	21	1.1
31	4- 3+ 3o 4- 5- 4o 4o 4-	30o	22	18	15	22	39	27	27	22	192	24	1.2

FREQUENCIES OF **Kp** INDICES 1984

Kp	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0o	2	1	4	1	2	2	.	3	.	1	1	1
0+	11	4	7	9	5	7	3	9	5	5	3	3
1-	15	4	9	7	18	9	2	16	10	10	8	6
1o	24	16	12	3	11	19	7	13	3	11	6	13
1+	18	13	14	20	13	8	21	15	13	11	11	11
2-	21	22	10	22	15	13	30	21	16	18	15	15
2o	19	35	12	13	15	27	30	13	22	18	22	13
2+	18	23	22	22	28	28	32	32	25	23	23	23
3-	24	22	14	21	21	31	25	20	25	11	22	19
3o	20	18	16	23	32	20	19	28	22	19	21	28
3+	23	15	25	14	16	21	17	23	18	15	30	27
4-	16	14	22	7	22	16	20	16	14	17	28	31
4o	17	10	14	12	12	15	10	7	11	19	10	23
4+	9	9	30	12	11	6	11	3	14	15	14	12
5-	6	6	17	9	10	9	10	13	7	16	5	13
5o	2	6	6	11	7	2	3	5	8	7	7	4
5+	2	6	4	11	6	1	4	5	8	14	3	4
6-	.	4	5	5	2	4	.	2	5	9	3	1
6o	1	4	1	8	2	.	2	2	3	5	2	1
6+			2	3		1	.	.	1	1	1	
7-			1	1		1	.	1	4	3	1	
7o			.	3			2	1	5		1	
7+			1	1					.		1	
8-				2					1		1	
8o											1	
8+												
9-												
9o												
	248	232	248	240	248	240	248	248	240	248	240	248

Reduction of Kp to Kp' due to solar flare effects as far as data were available.

Month	Day	Eighth	Kp	Kp'
May	31	4	2-	1+
	31	5	1o	1-

MONTHLY AVERAGES OF Ap AND Cp, 1984

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Ap	13	17	21	25	17	15	16	16	24	23	21	18	18.8
Cp	0.65	0.79	0.94	0.93	0.80	0.75	0.76	0.74	0.92	0.94	0.89	0.87	0.83

MONTHLY AND YEARLY **Ap** 1932 - 1984

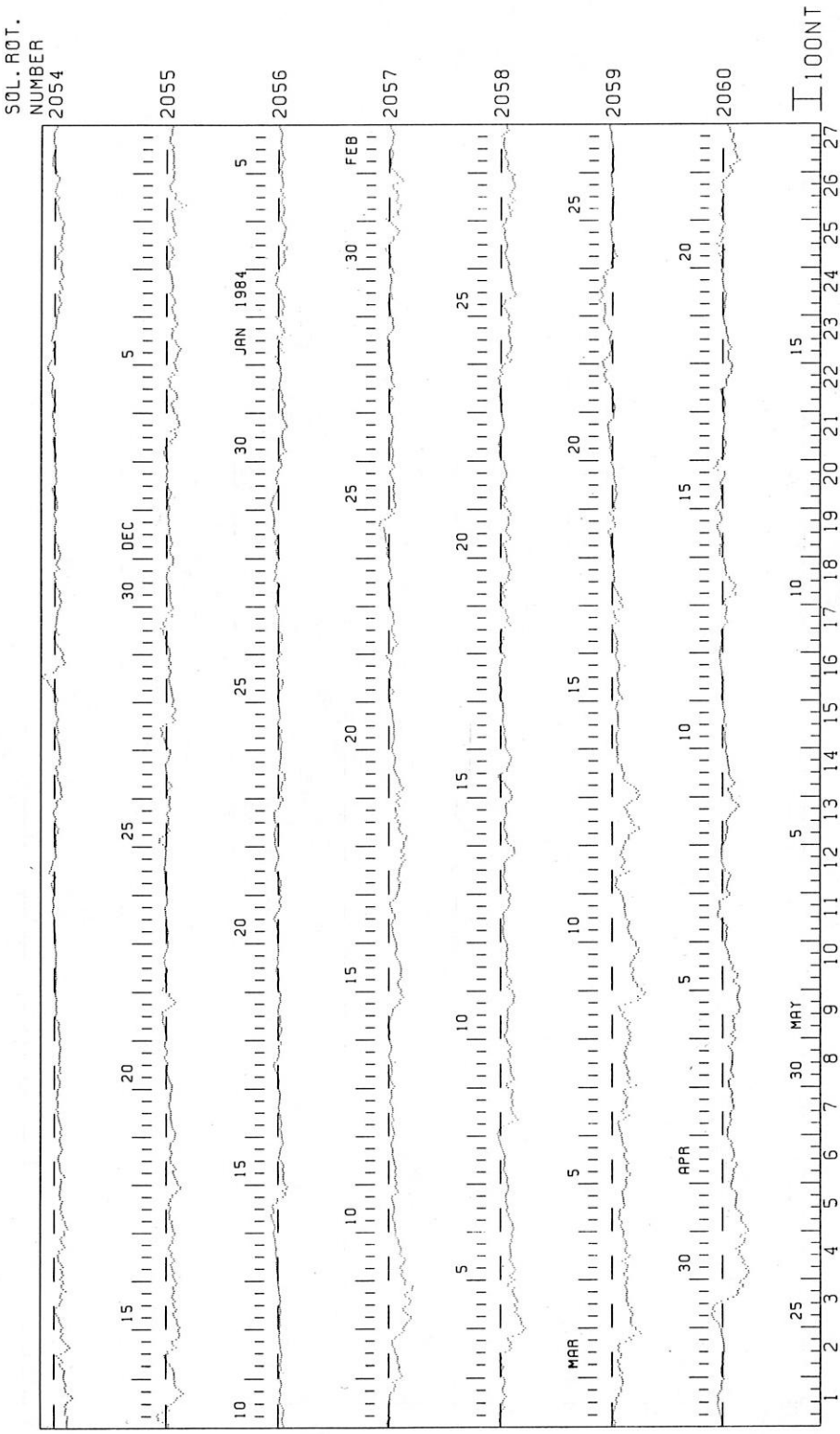
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1932	11	12	18	17	15	7	7	12	12	10	8	9	11.5
1933	10	11	12	12	12	8	7	9	12	10	9	7	10.1
1934	6	8	11	6	7	5	6	9	10	6	5	8	7.2
1935	9	10	10	8	6	9	7	5	13	12	8	9	8.9
1936	9	11	9	15	10	12	11	5	5	9	10	5	9.1
1937	7	13	12	20	13	12	12	10	9	20	12	10	12.5
1938	28	16	13	18	18	9	13	12	17	16	10	11	15.3
1939	7	15	19	28	21	15	19	19	13	22	9	11	16.5
1940	15	12	36	18	13	16	12	11	14	14	16	15	16.1
1941	14	18	33	15	11	11	19	16	27	11	16	11	16.8
1942	9	12	22	17	8	8	13	13	17	22	15	11	13.8
1943	11	9	13	14	14	12	15	31	25	24	20	14	17.0
1944	13	12	17	15	9	8	6	9	10	11	6	14	10.8
1945	10	10	17	13	9	7	9	7	10	11	8	13	10.4
1946	12	22	33	20	18	16	22	11	34	13	12	9	18.6
1947	12	12	32	18	14	16	16	25	32	23	14	11	18.8
1948	12	13	17	13	19	10	10	20	15	27	16	13	15.4
1949	20	14	19	14	18	14	8	14	13	25	15	9	15.4
1950	12	18	14	18	16	14	14	25	22	28	20	16	18.1
1951	16	22	21	27	20	17	20	22	40	24	18	20	22.3
1952	19	26	33	34	27	18	15	13	23	20	12	15	21.2
1953	15	15	21	16	16	13	16	19	21	16	14	7	15.7
1954	9	16	16	14	7	6	8	10	17	15	9	6	11.0
1955	12	12	14	14	11	9	8	9	13	11	13	8	11.3
1956	18	15	20	27	26	17	13	15	18	14	24	10	18.0
1957	17	17	26	21	11	22	16	14	49	14	18	18	20.1
1958	15	27	26	20	17	24	25	18	20	16	8	15	19.2
1959	14	24	24	17	19	15	32	23	28	19	22	19	21.3
1960	15	14	18	42	24	20	20	20	20	36	32	21	23.6
1961	12	16	14	14	13	14	28	11	13	16	10	12	14.4
1962	7	11	8	14	7	9	12	15	19	20	13	13	12.3
1963	11	9	8	10	11	11	12	13	28	15	12	11	12.6
1964	12	12	13	13	10	9	9	8	11	10	7	5	9.9
1965	6	9	8	8	6	10	8	9	10	7	6	7	7.7
1966	7	8	13	7	9	6	9	11	21	11	9	11	10.2
1967	11	11	7	9	25	12	8	9	16	10	10	14	12.0
1968	11	16	13	13	13	17	10	12	14	16	17	10	13.5
1969	8	15	17	14	17	9	8	8	15	9	10	7	11.3
1970	7	7	18	15	9	10	19	13	11	12	12	9	11.9
1971	12	12	11	15	13	9	8	9	13	12	11	10	11.3
1972	13	10	12	11	10	14	8	24	13	12	14	10	12.6
1973	16	20	25	30	17	17	12	12	14	18	12	11	17.0
1974	15	16	23	21	18	17	24	19	23	26	18	15	19.6
1975	16	18	20	16	13	11	12	10	10	12	18	12	13.9
1976	13	17	23	17	14	10	9	9	13	12	9	10	12.9
1977	10	11	11	16	11	8	14	13	16	13	10	10	11.9
1978	15	16	17	24	25	20	13	17	18	12	15	13	17.0
1979	16	15	19	25	14	12	12	18	14	12	10	9	14.5
1980	10	11	8	11	10	13	11	10	8	14	13	13	11.1
1981	9	14	18	28	20	12	19	15	12	23	15	10	16.3
1982	12	33	18	22	17	22	30	21	36	18	21	21	22.4
1983	16	27	23	24	22	15	12	16	14	17	21	15	18.5
1984	13	17	21	25	17	15	16	16	24	23	21	18	18.8

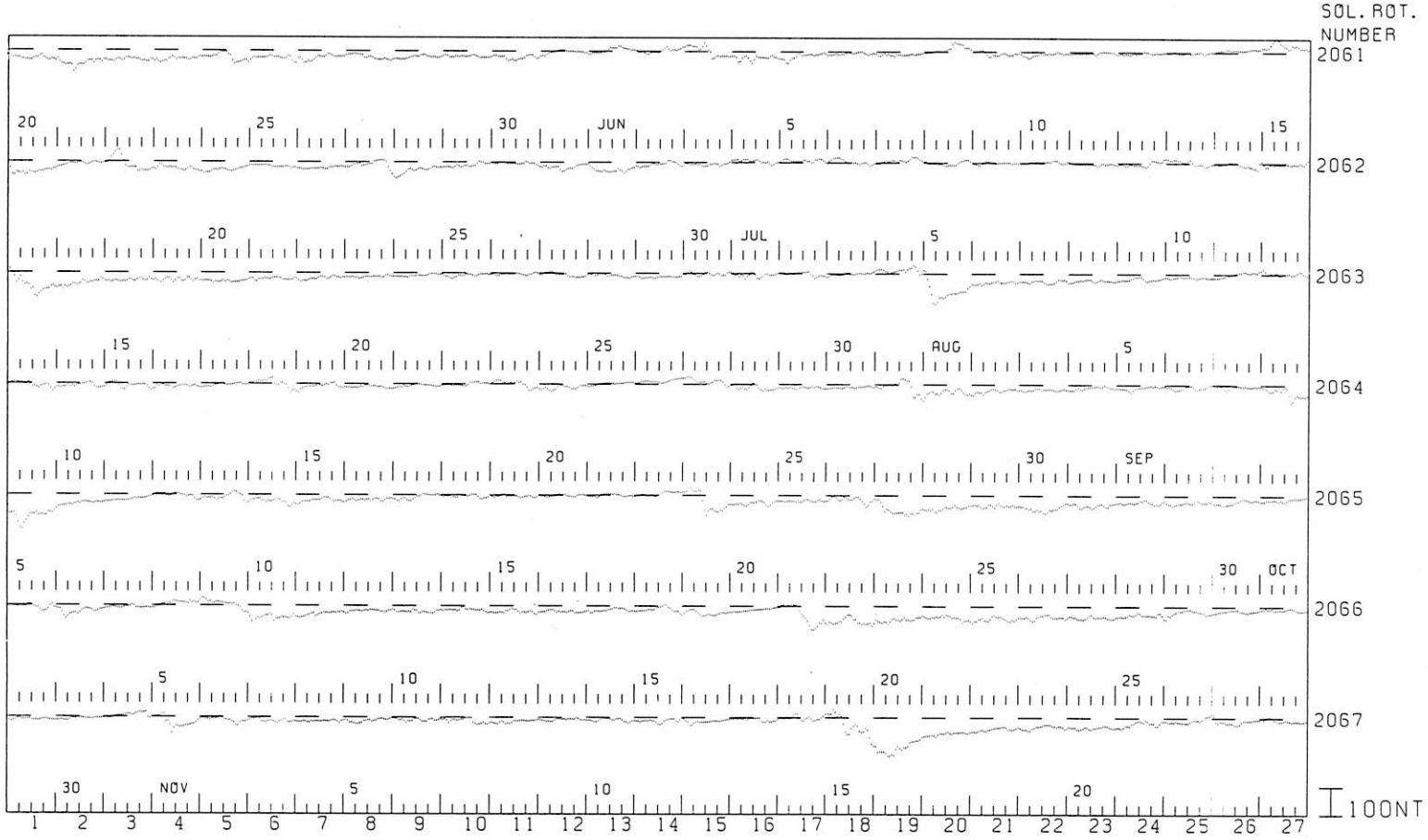
SECTION 3

3.4. Dst INDICES

Hourly values of **Dst** 1984 (graph)	79
Monthly tables of **Dst** hourly values	82
Tables of daily means of **Dst**	94
Monthly and yearly mean values 1957-1984	95

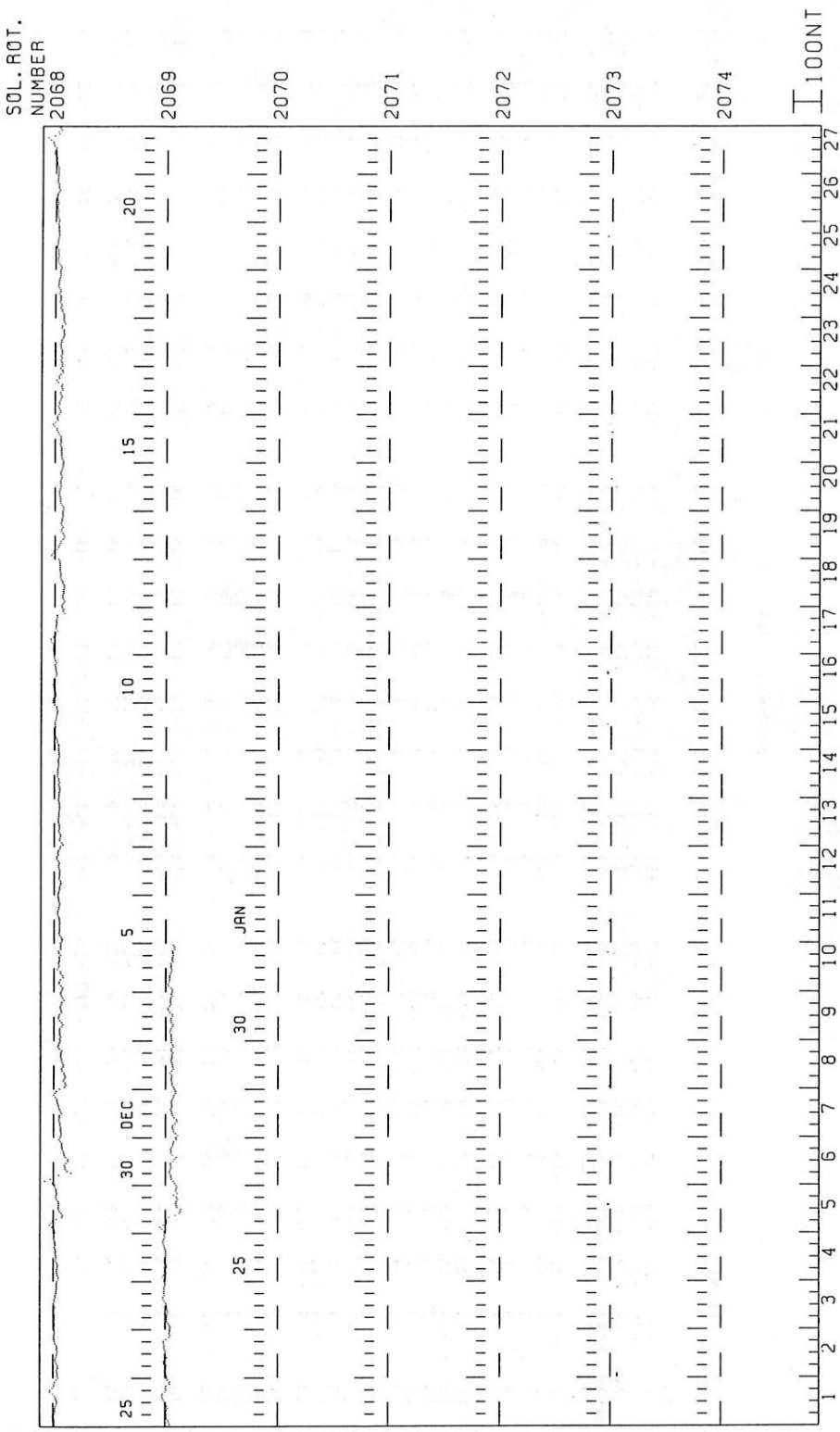
HOURLY VALUES OF **Dst** 1984





HOURLY VALUES OF **Dst** 1984 (continued)

HOURLY VALUES OF **Dst** 1984 (continued)



JANUARY 1984

DAY	UNIT=NT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-30	-26	-33	-35	-39	-40	-42	-47	-51	-43	-37	-34	-31	-20	-20	-19	-21	-25	-21	-33	-39	-38	-30	-28
2	-30	-29	-23	-22	-20	-20	-25	-31	-29	-28	-23	-19	-13	-20	-22	-23	-24	-21	-20	-19	-18	-17	-14	-12
3	-6	-9	-10	-9	-10	-17	-21	-27	-21	-19	-23	-21	-14	-10	-5	-12	-27	-34	-32	-27	-25	-23	-28	-27
4	-23	-23	-21	-19	-16	-20	-29	-54	-68	-51	-43	-31	-30	-34	-31	-18	-14	-12	-11	-17	-22	-27	-24	-25
5	-27	-27	-21	-26	-26	-23	-25	-25	-25	-24	-25	-23	-20	-25	-21	-14	-11	-12	-12	-18	-19	-18	-20	-23
6	-23	-20	-17	-15	-14	-15	-19	-19	-19	-21	-17	-13	-8	-5	-6	-7	-10	-9	-7	-8	-12	-13	-12	-10
7	-7	-5	-4	-6	-11	-11	-8	-8	-11	-10	-13	-14	-13	-10	-8	-9	-8	-6	-5	-6	-4	-4	-6	-5
8	-5	-7	-8	-7	-7	-7	-6	-7	-9	-9	-9	-7	-6	-8	-9	-7	-8	-6	-4	-3	-3	-2	0	-1
9	0	1	0	0	3	4	5	5	6	6	3	6	6	8	8	7	6	8	10	10	10	11	14	15
10	17	14	11	10	13	17	18	22	24	25	16	15	18	21	18	5	1	2	-18	-27	-26	-17	-30	-35
11	-26	-22	-19	-20	-19	-20	-21	-18	-17	-21	-20	-15	-11	-4	-4	-7	-7	-8	-10	-13	-18	-19	-17	-14
12	-14	-14	-12	-11	-8	-11	-13	-13	-11	-8	-9	-8	-4	-5	-3	-2	-4	-6	-6	-7	-7	-8	-7	-5
13	-2	1	-2	-3	-5	-1	0	0	5	9	11	15	15	12	3	1	-3	-2	-5	-4	-2	-3	-11	-10
14	-3	-1	-6	-8	-11	-13	-12	-7	-7	-9	-8	-8	-7	-1	0	0	-3	-3	-6	-9	-8	-7	-10	-9
15	-6	-1	0	1	1	0	-3	-3	1	4	7	7	5	3	0	0	2	2	-1	-1	-1	-1	0	0
16	0	1	2	3	2	-2	-1	3	5	5	6	11	16	12	8	4	-2	-5	-9	-9	-5	-4	-8	-11
17	-7	-5	-8	-6	-8	-10	-9	-9	-5	-2	0	5	10	10	8	6	4	0	-1	-2	0	2	5	7
18	9	11	12	10	10	13	14	13	10	10	7	5	10	13	13	14	14	14	9	-1	-6	-7	-9	-17
19	-16	-11	-5	-4	-12	-10	-12	-15	-15	-24	-25	-23	-23	-14	-4	-6	-5	-7	-7	-8	-10	-10	-10	-9
20	-9	-10	-11	-12	-14	-10	-8	-8	-7	-12	-12	-5	0	2	0	-4	-7	-6	-5	-5	-4	-4	-2	-1
21	-2	0	1	1	0	-3	-7	-13	-13	-17	-18	-15	-2	2	0	-4	-2	3	3	0	1	5	2	-5
22	-12	-7	-3	-3	-4	-4	-10	-15	-13	-13	-13	-7	-1	-1	-1	-1	-1	-1	-2	-3	-1	3	4	7
23	9	7	5	5	3	3	4	6	4	0	-5	-3	5	15	13	10	7	12	12	7	6	8	5	-1
24	-3	0	6	7	8	4	3	9	12	8	5	6	12	16	18	19	16	15	15	15	15	17	18	19
25	23	24	28	26	24	20	20	16	9	6	4	0	0	6	5	9	8	3	0	3	-2	-8	-12	-11
26	-8	-9	-5	-8	-17	-28	-22	-18	-18	-17	-15	-14	-12	-13	-15	-16	-22	-30	-29	-25	-22	-17	-17	-14
27	-15	-13	-14	-21	-24	-21	-16	-12	-13	-15	-11	-9	-5	-5	-3	-4	-7	-7	-9	-10	-9	-6	-8	-6
28	-3	6	-1	2	10	-1	-20	-11	0	2	-13	-8	-2	5	3	-13	-22	-19	-18	-10	-7	-9	-6	4
29	8	-15	-15	-11	-17	-21	-19	-17	-14	-10	-22	-11	-8	-8	-2	5	9	8	5	4	2	11	7	-2
30	-2	-4	-12	-19	-23	-24	-20	-22	-19	-20	-29	-30	-20	-13	-14	-17	-21	-21	-22	-24	-27	-25	-21	-17
31	-12	-10	-10	-17	-19	-20	-22	-20	-17	-11	-10	-13	-21	-14	-16	-8	-8	-15	-16	-17	-14	-13	-12	-9

FEBRUARY 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-12	-11	-7	-10	-11	-14	-17	-23	-19	-14	-14	-12	-9	-10	-12	-9	-8	-10	-11	-13	-12	-9	-5	-2
2	0	4	6	3	-4	-6	0	-2	-2	-2	-2	-3	-3	-2	-4	-4	-5	-9	-20	-20	-25	-23	-16	-30
3	-43	-49	-45	-40	-37	-39	-38	-33	-32	-33	-33	-28	-24	-22	-22	-17	-13	-14	-13	-23	-27	-39	-49	-56
4	-52	-57	-62	-67	-75	-81	-80	-69	-62	-54	-52	-61	-74	-78	-80	-74	-62	-59	-68	-84	-85	-87	-59	-59
5	-61	-54	-48	-46	-51	-49	-42	-45	-53	-56	-61	-58	-47	-41	-44	-45	-45	-41	-36	-36	-36	-32	-26	-25
6	-26	-25	-23	-23	-23	-21	-17	-15	-14	-17	-20	-20	-21	-20	-18	-16	-13	-12	-14	-25	-34	-33	-27	-24
7	-29	-29	-25	-22	-24	-27	-23	-24	-27	-25	-21	-21	-19	-17	-16	-13	-15	-15	-14	-10	-9	-11	-15	-17
8	-17	-21	-20	-18	-16	-14	-11	-12	-19	-17	-13	-12	-16	-15	-15	-12	-8	-5	-6	-10	-12	-11	-10	-11
9	-17	-21	-15	-11	-7	-7	-8	-12	-12	-12	-10	-12	-10	-8	-6	-2	-1	-3	-7	-9	-10	-10	-6	-4
10	-4	-1	0	-4	-3	-1	2	2	0	-2	-7	-7	-11	-13	-15	-16	-22	-31	-40	-37	-43	-53	-48	-43
11	-46	-44	-37	-34	-33	-35	-41	-46	-43	-44	-45	-45	-44	-42	-40	-38	-32	-28	-24	-24	-27	-30	-28	-28
12	-27	-23	-22	-19	-17	-15	-13	-15	-12	-9	-13	-16	-22	-22	-21	-13	-12	-11	-6	-4	-6	-17	-24	-29
13	-31	-32	-36	-38	-38	-38	-42	-35	-32	-37	-37	-38	-38	-40	-45	-47	-52	-59	-45	-52	-56	-46	-46	-53
14	-55	-54	-54	-62	-63	-65	-49	-42	-38	-36	-40	-40	-32	-34	-23	-28	-31	-25	-25	-24	-38	-35	-27	-33
15	-41	-34	-29	-38	-49	-53	-45	-40	-39	-38	-35	-30	-26	-23	-20	-18	-19	-22	-23	-23	-24	-20	-17	-13
16	-14	-11	-13	-16	-18	-20	-20	-19	-18	-19	-19	-18	-19	-18	-16	-14	-14	-14	-13	-12	-10	-6	-5	-5
17	-4	-5	-1	-3	-13	-18	-14	-7	-4	-3	-3	-6	-9	-6	-4	-2	-5	-6	-8	-8	-7	-3	5	9
18	-10	-13	-15	-17	-27	-33	-26	-21	-17	-21	-17	-11	-11	-11	-12	-18	-19	-18	-15	-16	-16	-13	-7	-5
19	-5	-3	-2	-4	-5	-3	0	-2	-1	1	3	2	0	-4	-10	-11	-8	-5	-5	-3	0	0	-1	-3
20	-2	4	7	7	5	8	3	4	11	12	12	14	13	17	17	19	34	33	30	14	1	-6	-18	-11
21	-10	-22	-24	-23	-19	-17	-18	-17	-20	-17	-15	-17	-17	-20	-15	-13	-10	-6	-3	-5	-12	-20	-17	-12
22	-11	-12	-14	-15	-14	-15	-13	-10	-7	-9	-11	-12	-14	-10	-9	-11	-12	-15	-13	-10	-10	-12	-11	-6
23	-2	-2	-1	-1	-1	-5	-10	-14	-9	-1	-1	-6	-11	-19	-16	-11	-8	-8	-8	-12	-12	-8	-7	-5
24	-4	1	3	0	0	0	3	3	1	6	4	1	4	6	5	0	-7	-12	-16	-16	-13	-12	-14	-13
25	-8	-5	-4	-3	-1	1	2	4	-1	-11	-9	-9	-6	-4	-4	-4	-5	-8	-8	-8	-6	-5	-17	-13
26	-11	-7	-4	-2	-2	-3	-6	-4	1	10	13	1	0	-5	-14	-16	-16	-29	-33	-36	-29	-23	-13	-8
27	3	11	-14	-32	-30	-31	-37	-41	-41	-29	-25	-30	-32	-32	-27	-27	-16	-14	-14	-29	-49	-46	-38	-29
28	-25	-18	-10	-3	-6	-7	-6	-7	-11	-13	-14	-10	-6	-6	-10	-13	-11	-14	-14	-18	-14	-11	-6	-4
29	-2	1	1	3	3	0	1	2	-4	-10	-15	-8	-7	-10	-15	-21	-15	-9	-8	-9	-13	-16	-16	-15

MARCH 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-12	-5	-2	-4	-9	-11	-5	0	1	-4	-1	1	-18	-33	-39	-33	-39	-36	-29	-27	-45	-67	-79	-83
2	-90	-83	-76	-76	-73	-73	-66	-61	-53	-59	-60	-53	-51	-63	-60	-56	-50	-48	-44	-44	-50	-27	-29	-40
3	-51	-40	-34	-45	-50	-54	-50	-45	-44	-37	-32	-37	-38	-37	-36	-36	-34	-34	-35	-41	-38	-43	-43	-40
4	-43	-47	-48	-44	-44	-41	-36	-33	-29	-30	-24	-22	-26	-25	-22	-19	-21	-19	-19	-21	-25	-28	-29	-28
5	-25	-23	-24	-25	-22	-19	-15	-11	-12	-15	-15	-16	-14	-16	-16	-13	-10	-8	-5	-2	0	2	4	6
6	7	10	6	3	-1	-11	-30	-43	-63	-56	-53	-45	-43	-39	-38	-46	-43	-42	-44	-38	-41	-42	-46	-43
7	-28	-22	-24	-37	-49	-47	-42	-38	-37	-36	-38	-36	-33	-30	-27	-35	-35	-33	-29	-35	-40	-32	-26	-23
8	-21	-15	-15	-20	-23	-25	-25	-24	-23	-25	-28	-25	-26	-27	-25	-27	-33	-41	-47	-47	-47	-50	-49	-44
9	-43	-32	-24	-31	-38	-38	-33	-25	-21	-22	-25	-23	-23	-19	-19	-22	-25	-22	-22	-22	-25	-26	-23	-24
10	-20	-17	-13	-11	-10	-9	-9	-9	-8	-12	-14	-11	-10	-11	-9	-14	-21	-27	-30	-34	-31	-29	-32	-36
11	-34	-26	-20	-21	-24	-22	-17	-14	-11	-9	-13	-15	-15	-15	-14	-13	-17	-23	-30	-42	-50	-50	-49	-48
12	-37	-27	-23	-18	-23	-23	-22	-18	-14	-11	-13	-15	-15	-13	-16	-20	-22	-20	-20	-19	-18	-21	-30	-38
13	-41	-41	-35	-37	-31	-24	-18	-15	-7	2	7	6	-7	-23	-23	-26	-31	-31	-36	-38	-39	-34	-30	-25
14	-21	-18	-17	-19	-19	-18	-16	-13	-13	-16	-15	-11	-10	-7	-8	-8	-9	-9	-12	-9	-9	-9	-8	-8
15	-5	1	3	3	-2	-4	-5	-3	4	3	3	3	3	5	3	0	2	2	-1	-4	-4	-6	-16	-13
16	-7	-1	3	4	-1	-6	-3	-11	-10	-2	-1	-4	-4	-16	-35	-30	-23	-23	-28	-24	-20	-18	-18	-8
17	-3	0	3	-4	-16	-14	-9	-9	-19	-8	-7	-14	-21	-31	-26	-28	-30	-30	-37	-33	-32	-29	-22	-22
18	-21	-22	-20	-19	-18	-15	-9	-10	-20	-33	-35	-29	-23	-18	-20	-22	-27	-29	-28	-28	-27	-35	-35	-30
19	-24	-14	-10	-15	-22	-19	-16	-7	-4	-7	-11	-15	-11	-9	-11	-14	-20	-21	-21	-18	-15	-13	-13	-12
20	-9	-1	3	4	5	4	1	5	7	6	3	1	0	1	-3	-6	-10	-11	-11	-11	-8	-6	-4	-3
21	-3	-2	-2	-2	-5	-1	0	2	5	4	1	1	0	-1	4	5	4	9	2	-6	-1	3	-3	-6
22	-14	-32	-37	-24	-20	-25	-32	-35	-36	-39	-34	-32	-33	-33	-29	-27	-29	-28	-32	-29	-38	-37	-29	-26
23	-29	-27	-21	-18	-13	-6	-11	-15	-16	-33	-48	-53	-50	-43	-42	-39	-38	-38	-36	-34	-36	-33	-32	-30
24	-27	-26	-29	-27	-23	-19	-18	-15	-14	-18	-21	-22	-22	-20	-16	-14	-14	-11	-14	-15	-11	-5	-9	-16
25	-18	-19	-34	-34	-32	-40	-30	-29	-25	-40	-50	-43	-33	-31	-37	-40	-46	-50	-49	-47	-42	-42	-41	-48
26	-37	-29	-23	-23	-26	-25	-22	-16	-13	-18	-19	-15	-11	-10	-9	-9	-11	-12	-2	-9	-19	-27	-21	-20
27	-10	-10	-13	-9	-4	-2	-3	-4	-8	-11	-11	-16	-18	-14	-17	-25	-25	-34	-34	-33	-39	-40	-40	-39
28	-36	-29	-39	-31	-28	-24	-28	-22	-22	-32	-34	-34	-26	-23	-26	-23	-29	-51	-70	-63	-79	-105	-101	-87
29	-86	-74	-69	-69	-69	-69	-75	-75	-70	-65	-72	-59	-59	-54	-53	-55	-53	-54	-56	-54	-51	-47	-53	-52
30	-57	-57	-45	-44	-53	-53	-57	-57	-49	-38	-49	-60	-65	-54	-48	-48	-52	-55	-51	-51	-46	-40	-42	-42
31	-43	-39	-34	-32	-37	-35	-27	-25	-28	-29	-27	-30	-42	-46	-44	-42	-42	-41	-39	-39	-38	-44	-50	-51

APRIL 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-54	-51	-51	-54	-65	-66	-56	-53	-53	-53	-60	-55	-50	-45	-44	-45	-53	-51	-46	-39	-40	-38	-37	-36
2	-33	-36	-30	-27	-27	-25	-22	-25	-43	-50	-62	-42	-36	-41	-53	-55	-50	-51	-54	-57	-50	-44	-42	-48
3	-68	-88	-62	-56	-65	-63	-58	-56	-60	-55	-53	-51	-44	-46	-52	-51	-47	-45	-49	-54	-51	-59	-58	-66
4	-63	-67	-62	-67	-61	-56	-56	-62	-65	-57	-48	-39	-38	-44	-32	-28	-25	-48	-69	-94	-102	-94	-116	-120
5	-108	-107	-92	-91	-86	-77	-78	-76	-71	-75	-79	-77	-67	-67	-71	-77	-83	-80	-89	-97	-95	-98	-88	-87
6	-86	-76	-70	-70	-63	-60	-59	-57	-60	-62	-63	-55	-49	-50	-49	-47	-46	-45	-47	-46	-42	-41	-41	-38
7	-32	-33	-25	-17	-12	-15	-18	-18	-14	-31	-51	-62	-42	-35	-39	-45	-47	-44	-39	-30	-35	-35	-42	-41
8	-44	-49	-49	-61	-61	-61	-73	-84	-99	-97	-80	-70	-74	-69	-61	-63	-55	-56	-50	-45	-55	-63	-72	-91
9	-95	-100	-89	-95	-88	-81	-68	-57	-46	-41	-41	-44	-45	-39	-37	-36	-34	-22	-20	-23	-18	-21	-20	-19
10	-18	-19	-23	-18	-16	-17	-15	-17	-18	-23	-27	-23	-22	-22	-22	-22	-22	-21	-21	-18	-13	-16	-18	-19
11	-24	-38	-35	-28	-25	-23	-22	-25	-27	-25	-21	-22	-20	-20	-20	-26	-27	-26	-27	-24	-22	-17	-14	-13
12	-16	-20	-19	-17	-21	-18	-20	-17	-14	-12	-9	-6	-2	-1	-1	-13	-24	-15	-10	-11	-6	-7	-25	-39
13	-39	-32	-27	-35	-32	-24	-21	-19	-13	-9	-7	-4	-8	-8	-9	-5	-6	-7	-6	-3	-2	-6	-4	-4
14	-5	-7	-4	-6	-2	2	5	5	4	4	6	7	13	13	5	-10	-11	-9	-2	-6	-4	5	9	-5
15	-11	-8	-7	-8	-10	-13	-14	-17	-18	-12	-11	-13	-14	-11	-9	-6	-8	-5	-6	-6	-5	-2	2	5
16	1	-1	1	2	3	4	8	6	5	8	8	10	11	9	13	14	14	16	15	11	4	-4	-5	-5
17	-6	-8	-10	-9	-7	-3	0	1	-2	-3	-1	2	5	5	10	25	20	25	29	29	24	20	28	32
18	33	35	27	19	9	10	6	3	4	4	7	7	10	9	6	3	3	12	15	18	26	29	30	31
19	28	25	26	26	27	26	28	42	47	39	34	35	39	43	37	29	26	27	27	32	32	20	25	17
20	5	0	4	4	1	-7	-17	-11	-8	-8	-4	-6	-5	0	3	3	2	3	4	5	3	7	9	5
21	1	-3	0	0	2	0	2	-2	-3	-5	-3	-5	-4	0	-2	-2	-3	2	4	2	2	2	4	4
22	3	-4	-4	0	2	0	-2	-1	-4	-2	0	-1	-2	-1	0	2	4	4	4	4	4	8	10	10
23	6	1	1	2	5	6	9	10	12	15	17	19	17	14	15	18	13	8	3	3	4	2	1	-6
24	-3	2	4	3	4	0	-4	0	-3	-2	-4	-5	-7	-6	-6	-6	-5	-3	-3	0	2	2	4	4
25	10	10	14	21	31	34	39	39	29	36	34	29	20	4	-19	-38	-50	-55	-53	-58	-71	-71	-61	-64
26	-75	-83	-86	-93	-92	-83	-89	-79	-71	-76	-70	-66	-56	-60	-59	-48	-59	-68	-75	-77	-79	-62	-66	-81
27	-91	-89	-82	-80	-71	-66	-65	-66	-70	-64	-57	-49	-45	-45	-48	-48	-48	-50	-51	-49	-44	-34	-30	-30
28	-31	-34	-37	-38	-36	-41	-38	-40	-47	-51	-48	-33	-36	-40	-41	-40	-38	-37	-32	-30	-34	-29	-21	-18
29	-17	-19	-18	-18	-21	-27	-25	-29	-31	-27	-27	-27	-31	-38	-39	-39	-35	-35	-35	-30	-33	-35	-32	-28
30	-23	-23	-22	-21	-27	-38	-36	-31	-28	-30	-32	-34	-34	-34	-35	-35	-36	-35	-31	-26	-21	-32	-35	-43

MAY 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-45	-37	-36	-37	-44	-40	-40	-42	-37	-37	-41	-37	-50	-57	-58	-62	-59	-57	-55	-52	-52	-52	-54	-57
2	-59	-61	-57	-48	-39	-40	-51	-53	-53	-43	-35	-36	-38	-30	-29	-23	-24	-24	-20	-20	-17	-13	-10	-9
3	-10	-14	-14	-16	-15	-12	-16	-18	-13	-6	0	6	16	18	17	15	9	9	10	11	10	-3	-16	-25
4	-25	-19	-15	-16	-18	-19	-20	-23	-27	-29	-23	-10	-9	-5	-2	1	4	2	3	3	4	2	3	2
5	2	-5	-9	-12	-13	-11	-17	-17	-18	-19	-14	-13	-15	-20	-25	-28	-35	-44	-49	-58	-55	-47	-37	-32
6	-33	-31	-26	-20	-20	-32	-40	-43	-36	-30	-26	-23	-23	-25	-23	-21	-20	-19	-19	-17	-18	-14	-12	-12
7	-14	-14	-12	-10	-9	-9	-9	-10	-10	-6	-6	-13	-13	-6	-6	-7	-8	-10	-7	-6	-3	-2	-1	-2
8	0	3	4	1	-1	-2	0	-2	-1	1	-4	0	1	2	1	3	5	5	8	6	6	10	10	9
9	10	8	6	7	2	3	1	-2	1	4	4	4	-1	-5	-9	-18	-16	-11	-9	-13	-12	-15	-14	-16
10	-10	-4	-7	-11	-26	-46	-46	-35	-39	-44	-47	-40	-30	-25	-24	-12	-14	-12	-10	-11	-9	-6	-5	-6
11	1	10	10	11	10	6	8	-4	-1	2	8	9	10	14	19	20	19	10	4	3	5	8	9	17
12	25	22	17	13	7	5	5	-1	2	4	7	5	8	7	2	-2	-6	-8	-7	18	33	25	19	20
13	15	5	-4	-9	-4	-3	-7	-11	-12	-11	-7	-3	0	-2	-4	-4	-5	-6	-9	-6	-4	-5	-7	-6
14	-4	-4	-6	-9	-9	-8	-7	-4	1	4	6	7	-7	-14	-13	-13	-13	-19	-22	-30	-31	-29	-33	-34
15	-31	-25	-20	-19	-20	-21	-19	-27	-31	-25	-21	-18	-19	-18	-16	-13	-13	-12	-12	-8	-6	-5	-3	-2
16	-1	-2	-5	-5	-9	-9	-7	-8	-10	-10	-11	-13	-8	-5	-3	-2	0	0	2	0	-2	-2	4	5
17	1	4	5	4	6	0	9	15	4	-7	2	14	22	7	3	0	12	7	2	4	1	-2	-8	-3
18	0	3	8	12	5	5	4	1	-1	2	2	0	-3	-2	4	6	-1	-2	-1	3	-2	-12	-20	-24
19	-34	-33	-27	-24	-38	-49	-59	-50	-50	-47	-44	-38	-42	-44	-41	-34	-31	-36	-37	-38	-26	-24	-23	-17
20	-16	-23	-26	-24	-27	-27	-32	-31	-35	-33	-36	-35	-30	-27	-27	-20	-17	-27	-31	-36	-37	-32	-34	-37
21	-30	-41	-48	-50	-54	-52	-50	-54	-77	-69	-55	-52	-52	-53	-47	-40	-38	-38	-47	-38	-35	-37	-43	-35
22	-34	-39	-39	-39	-42	-35	-31	-34	-38	-35	-27	-28	-30	-32	-29	-33	-32	-37	-40	-38	-41	-41	-34	-33
23	-40	-34	-42	-45	-42	-39	-39	-32	-29	-23	-28	-34	-29	-31	-29	-30	-31	-35	-34	-29	-30	-30	-24	-22
24	-24	-22	-23	-24	-25	-22	-19	-20	-12	-4	-7	-5	-6	-14	-18	-37	-48	-44	-44	-41	-38	-34	-35	-41
25	-34	-27	-24	-27	-26	-26	-26	-26	-25	-21	-18	-20	-25	-24	-23	-27	-29	-30	-27	-18	-22	-37	-44	-44
26	-28	-26	-33	-44	-43	-37	-41	-38	-33	-26	-20	-21	-23	-23	-19	-13	-13	-18	-22	-23	-21	-21	-21	-20
27	-15	-13	-13	-12	-10	-11	-12	-14	-15	-25	-26	-22	-21	-24	-29	-31	-32	-32	-31	-28	-31	-34	-36	-31
28	-29	-29	-30	-31	-30	-30	-28	-25	-22	-21	-18	-20	-21	-15	-14	-14	-19	-21	-23	-22	-23	-25	-24	-21
29	-18	-14	-17	-23	-23	-23	-19	-20	-21	-19	-20	-21	-20	-19	-16	-14	-18	-20	-25	-24	-24	-24	-24	-23
30	-20	-16	-17	-20	-21	-20	-20	-29	-35	-33	-30	-35	-35	-30	-28	-29	-25	-17	-15	-14	-15	-22	-28	-26
31	-19	-17	-18	-13	-9	-6	-4	-2	0	2	4	4	2	0	-2	-1	-1	-2	-3	-2	-3	-3	-7	-6

JUNE 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-12	-10	-7	-6	-6	-8	-6	-2	-3	0	7	12	11	11	11	18	17	12	10	8	7	3	4	4
2	2	-2	-3	-1	-7	-11	-11	-6	-3	-3	-2	-5	0	4	10	16	8	2	5	5	3	7	9	14
3	16	20	21	21	18	17	16	7	7	17	30	19	4	-2	-27	-25	-18	-16	-19	-17	-18	-17	-20	-19
4	-17	-18	-22	-39	-37	-25	-19	-16	-24	-35	-43	-30	-17	-22	-22	-23	-23	-24	-24	-18	-15	-21	-22	-27
5	-28	-28	-30	-42	-43	-32	-25	-25	-19	-10	-8	-15	-13	-14	-12	-11	-11	-15	-12	-12	-9	-8	-4	-9
6	-14	-12	-13	-11	-9	-11	-12	-10	-10	-5	-1	-4	-7	-8	-4	-2	-1	-1	-6	-9	-13	-9	-7	-7
7	-9	-16	-17	-11	-8	-12	-10	-14	-14	-18	-11	-11	-12	-14	-14	-13	-12	-10	-9	-12	-11	-9	-9	-6
8	-5	-5	-3	-2	-1	0	2	2	1	0	2	6	9	11	27	34	30	28	27	24	13	13	13	7
9	0	-1	2	1	3	3	-1	-12	-19	-19	-12	-13	-15	-14	-9	-6	-6	-10	-14	-14	-13	-7	-9	-5
10	-10	-17	-17	-21	-25	-21	-16	-13	-13	-10	-8	-10	-9	-10	-6	-9	-8	-5	-1	-4	-6	-10	-7	-7
11	-9	-8	-7	-7	-5	-7	-7	-5	-7	-6	-3	-4	-8	-11	-6	-1	-1	0	-1	-1	-1	-3	-4	-9
12	-10	-7	-8	-10	-8	-9	-11	-8	-5	-8	-5	-5	-3	1	-1	-1	-5	-7	-6	-4	-5	-5	-4	-2
13	-3	-5	-3	-1	0	-3	-7	-7	-6	-4	-2	-3	-6	-7	-3	-1	-2	1	-4	-8	-4	-2	0	-1
14	0	1	3	6	6	7	9	10	7	6	8	8	6	6	5	6	6	8	10	10	12	10	9	11
15	15	16	13	17	26	36	45	50	43	33	28	21	18	11	14	24	21	24	19	13	14	13	15	9
16	1	-23	-46	-48	-39	-41	-44	-39	-48	-46	-37	-39	-41	-43	-40	-36	-37	-35	-32	-31	-30	-33	-27	-26
17	-22	-19	-18	-15	-13	-11	-8	-7	-8	-9	-8	-4	-3	-7	-10	-13	-10	-7	-3	-1	-4	-7	-8	-6
18	-5	-4	1	16	24	33	41	41	21	1	-15	-21	-22	-21	-21	-22	-36	-36	-30	-33	-34	-34	-31	-26
19	-25	-28	-21	-10	-11	-19	-22	-23	-20	-23	-21	-23	-27	-29	-31	-34	-31	-26	-21	-21	-29	-31	-32	-36
20	-36	-43	-39	-39	-39	-33	-29	-29	-31	-27	-25	-27	-28	-32	-34	-35	-31	-30	-27	-24	-23	-21	-18	-17
21	-14	-11	-13	-12	-13	-13	-12	-11	-11	-13	-14	-17	-19	-19	-20	-19	-19	-19	-17	-16	-19	-24	-22	-20
22	-24	-24	-26	-28	-27	-27	-27	-25	-25	-25	-25	-24	-22	-24	-27	-26	-21	-20	-18	-17	-18	-17	-16	-18
23	-20	-19	-19	-15	-10	-9	-7	-6	-15	-13	-11	-9	-8	-7	1	4	5	6	6	6	0	-19	-33	-44
24	-53	-58	-55	-51	-46	-42	-35	-27	-25	-29	-33	-30	-25	-23	-26	-28	-29	-28	-24	-19	-17	-20	-21	-19
25	-20	-19	-18	-18	-20	-22	-17	-11	-15	-20	-17	-13	-13	-17	-17	-14	-13	-6	2	-1	-1	-6	-6	-6
26	-3	-4	-7	-6	-2	-1	-1	-3	-6	-7	-6	-5	-7	-8	-7	-6	-5	1	-1	-6	-4	-5	-10	-13
27	-17	-19	-14	-14	-21	-23	-18	-18	-17	-17	-27	-34	-32	-27	-24	-23	-24	-19	-14	-11	-10	-8	-8	-8
28	-8	-15	-21	-26	-31	-32	-34	-35	-30	-33	-35	-37	-34	-33	-33	-24	-29	-32	-40	-34	-27	-25	-22	-20
29	-14	-16	-20	-17	-15	-16	-15	-11	-7	-7	-9	-9	-7	-6	-6	-4	5	6	1	1	-1	-8	-13	-15
30	-11	-5	-5	-9	-9	-8	-7	-10	-8	-12	-15	-13	-13	-7	-8	-5	-5	-7	-15	-11	-6	-6	-4	1

JULY 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	7	8	8	10	4	6	10	9	10	5	3	6	8	10	4	-2	1	-2	2	-5	-12	-8	-3	0
2	1	-1	10	13	12	8	5	5	4	4	4	4	8	8	4	4	-2	1	10	9	13	11	6	1
3	-2	5	9	15	16	17	17	12	10	5	1	-2	1	-2	0	-3	-7	-3	-1	0	-4	-12	-9	-4
4	-3	-4	-2	0	4	8	4	5	8	7	0	2	8	7	4	2	6	12	19	18	20	16	10	6
5	3	4	-2	-4	-2	-3	-5	-8	-5	-7	-10	-12	-10	-9	-9	-10	-8	-1	4	6	9	10	9	4
6	-1	-5	-6	-10	-10	-3	1	5	4	1	0	-1	-3	-1	-1	-1	0	0	0	-1	-5	-2	-2	-5
7	-2	-3	-4	-2	-1	2	2	2	3	2	1	1	2	2	3	2	7	7	7	1	-2	-5	-2	3
8	3	-1	-4	-7	-5	-4	-5	-4	-7	-4	-4	-5	-6	-8	-12	-9	-4	-2	-7	-5	-3	-3	-5	-7
9	-10	-6	-5	-9	-11	-10	-6	-7	-9	-8	-9	-8	-10	-13	-15	-11	-2	8	8	6	4	2	5	13
10	15	13	9	9	12	11	8	9	4	2	1	8	11	2	-6	-8	-5	-6	-6	-14	-13	-10	-6	-4
11	-4	-3	-5	-5	-4	-3	-3	0	3	1	0	1	-3	-7	-9	-12	-13	-10	-14	-15	-19	-19	-24	0
12	5	-4	-14	-13	-6	-3	-8	-5	-4	-6	-6	-5	-2	-4	-7	-7	-4	-6	-6	-2	-5	-8	1	9
13	16	13	-1	-14	-36	-28	-16	-35	-43	-41	-45	-61	-57	-85	-88	-78	-71	-63	-61	-59	-58	-50	-48	-53
14	-55	-51	-50	-60	-49	-54	-51	-48	-41	-42	-47	-42	-40	-29	-33	-39	-39	-35	-35	-31	-31	-31	-19	-24
15	-30	-32	-30	-34	-33	-29	-30	-33	-34	-32	-33	-30	-25	-26	-30	-31	-26	-22	-19	-27	-30	-28	-20	-25
16	-28	-24	-30	-34	-36	-29	-24	-20	-20	-28	-36	-30	-22	-21	-30	-32	-28	-19	-18	-26	-33	-25	-23	-30
17	-28	-30	-28	-28	-29	-32	-38	-32	-34	-34	-32	-27	-33	-28	-31	-36	-35	-34	-34	-33	-30	-29	-28	-26
18	-22	-20	-21	-30	-31	-24	-24	-22	-20	-21	-24	-22	-18	-17	-18	-19	-20	-26	-25	-26	-26	-26	-24	-19
19	-21	-27	-32	-29	-29	-29	-26	-23	-22	-23	-23	-18	-13	-14	-17	-22	-21	-17	-11	-12	-16	-17	-19	-15
20	-17	-14	-17	-15	-14	-18	-18	-21	-20	-17	-14	-13	-15	-15	-13	-13	-14	-13	-17	-15	-10	-7	-11	-13
21	-13	-13	-12	-14	-13	-15	-15	-17	-12	-10	-11	-11	-9	-10	-11	-11	-10	-7	-4	-3	-4	-4	-7	-6
22	-5	-10	-12	-14	-19	-21	-17	-13	-9	-10	-10	-8	-5	-5	-6	-8	-12	-10	-6	-4	-5	-4	-3	-6
23	-6	-4	-9	-10	-9	-5	-5	-4	-3	-5	-4	-4	-3	-1	-3	-5	-7	-9	-9	-5	-4	0	2	0
24	-6	-8	-2	2	1	3	6	1	-7	-4	-6	-6	-4	-3	-10	-14	-13	-14	-16	-16	-16	-14	-14	-11
25	-7	-3	-4	-10	-9	-8	-3	-2	-3	-6	-11	-10	-8	-8	-7	-9	-11	-12	-16	-17	-17	-19	-15	-12
26	-12	-11	-14	-20	-19	-17	-17	-15	-15	-19	-18	-15	-12	-13	-13	-13	-12	-12	-13	-14	-15	-14	-12	-12
27	-3	-4	0	9	5	-4	-7	-11	-11	-9	-3	2	4	-1	-6	-8	-5	0	-2	-9	-7	-7	1	5
28	1	-3	-7	-5	-12	-7	-9	-21	-11	-6	2	2	-5	-18	-20	-15	-9	-3	-2	-7	-7	-7	-4	-1
29	2	2	1	-3	-4	-1	0	-1	0	1	3	6	5	4	5	6	-3	-9	-17	-14	-9	-7	-9	-10
30	-14	-11	-7	-5	-4	-5	-6	-6	-5	-2	2	1	-2	-4	-4	-1	1	0	-2	-1	2	0	1	6
31	10	13	15	15	12	8	6	2	5	6	7	9	13	12	14	6	14	19	20	29	25	10	-5	0

AUGUST 1984

DAY	UNIT=NT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	12	9	-20	-45	-74	-107	-112	-101	-87	-84	-89	-83	-76	-73	-73	-70	-71	-70	-66	-65	-64	-65	-52	-46
2	-38	-39	-40	-38	-34	-42	-37	-32	-34	-35	-32	-29	-30	-25	-32	-33	-33	-32	-30	-28	-26	-30	-34	-32
3	-28	-29	-29	-29	-32	-35	-28	-26	-24	-26	-24	-26	-31	-36	-38	-36	-36	-34	-28	-22	-21	-23	-22	-26
4	-33	-32	-31	-28	-25	-26	-23	-25	-22	-21	-20	-21	-26	-30	-28	-24	-21	-23	-26	-25	-26	-26	-29	-29
5	-25	-25	-23	-22	-23	-23	-22	-18	-15	-11	-11	-9	-11	-17	-24	-26	-23	-22	-21	-22	-20	-20	-17	-15
6	-12	-13	-16	-17	-14	-13	-11	-8	-10	-11	-11	-10	-9	-12	-14	-16	-16	-14	-12	-11	-13	-15	-15	-14
7	-14	-14	-14	-13	-11	-10	-9	-6	-4	-2	0	1	4	5	5	8	8	5	3	4	7	6	4	10
8	12	18	9	-2	-1	2	-2	3	3	-4	-3	0	0	0	2	-4	-3	-1	4	8	8	1	-3	-6
9	-4	1	4	7	8	4	2	2	-1	-1	5	-3	-11	-9	-13	-16	-10	-8	-6	-3	-7	-18	-28	-19
10	-13	-13	-16	-12	-12	-10	-7	-12	-8	-13	-8	-5	-6	-2	-2	1	5	3	-1	-11	-16	-17	-16	-14
11	-13	-7	0	4	6	7	7	-8	-19	-22	-23	-14	-6	-7	-7	-6	-5	-4	-5	-4	-4	-10	-18	-24
12	-20	-18	-8	-10	-7	-5	-9	-9	-10	-12	-17	-15	-12	-9	-7	-6	-6	-8	-13	-11	-8	-6	-11	-13
13	-15	-14	-11	-10	-11	-13	-9	-6	-4	-1	0	0	-5	-5	-4	-4	-3	-1	0	1	2	-3	-3	-4
14	1	4	5	8	8	9	8	9	12	9	17	20	21	-2	-5	-4	2	3	-2	-4	-17	-31	-25	-23
15	-28	-32	-22	-17	-13	-11	-9	-10	-9	-10	-7	-3	-5	-8	-5	-2	-5	1	3	3	-6	-12	-13	-16
16	-11	-13	-12	-14	-15	-13	-14	-12	-9	-11	-6	-5	-7	-10	-8	-8	-11	-10	-10	-13	-17	-18	-17	-18
17	-17	-15	-12	-9	-12	-7	-9	-10	-9	-6	-3	0	-1	-1	-3	-5	-4	-5	-5	-7	-8	-10	-9	-8
18	-6	-5	-3	-2	-3	-6	-8	-5	-4	-6	-7	-9	-8	-3	5	4	6	7	7	1	2	2	3	1
19	-1	4	9	12	14	12	6	5	0	2	5	2	3	10	5	7	-1	-3	-12	-23	-24	-19	-15	-12
20	-18	-23	-18	-13	-18	-24	-27	-22	-19	-10	-3	-5	-7	-10	-10	-13	-18	-18	-18	-13	-8	-5	-6	-5
21	-8	-10	-8	-8	-5	-2	0	0	1	3	4	3	2	1	0	1	2	2	2	4	6	6	6	6
22	2	3	6	9	9	10	10	9	8	8	8	8	6	3	4	6	8	11	14	16	17	18	20	21
23	21	22	26	27	24	19	13	8	7	7	9	9	2	0	5	7	13	12	15	13	8	-2	-9	-8
24	-3	-2	0	-14	-20	-14	-9	-17	-20	-13	-4	4	1	-3	-14	-20	-25	-18	-22	-23	-21	-21	-19	-15
25	-12	-12	-16	-14	-12	-14	-10	-15	-17	-19	-15	-12	-9	-11	-13	-14	-12	-8	-12	-8	-9	-13	-17	-17
26	-17	-16	-15	-14	-11	-12	-13	-14	-15	-12	-9	-10	-11	-11	-14	-13	-9	-10	-10	-8	-6	-5	-8	-12
27	-9	-9	-14	-15	-8	-4	-2	-1	-3	-3	1	-4	6	19	21	17	13	12	-8	-47	-48	-37	-36	-52
28	-60	-47	-35	-31	-26	-27	-34	-34	-40	-32	-22	-19	-20	-23	-33	-33	-22	-16	-14	-21	-31	-36	-38	-34
29	-39	-40	-32	-27	-30	-30	-37	-29	-25	-22	-18	-17	-19	-22	-28	-28	-23	-22	-19	-16	-18	-18	-17	-22
30	-21	-21	-25	-27	-23	-21	-23	-21	-16	-16	-15	-23	-19	-19	-18	-17	-19	-21	-23	-23	-21	-19	-17	-20
31	-21	-22	-22	-22	-16	-12	-17	-19	-15	-11	-10	-9	-9	-8	-6	-6	-9	-7	-3	-7	-9	-13	-13	-16

SEPTEMBER 1984

UNIT=NT

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-13	-14	-15	-15	-16	-18	-23	-28	-21	-14	-11	-11	-10	-9	-8	-7	-5	-4	-7	-4	-6	-10	-7	-6
2	-6	-9	-8	-10	-16	-21	-20	-19	-16	-13	-7	-5	-3	-4	-8	-15	-18	-15	-13	-13	-11	-7	-3	-1
3	-1	-8	-8	0	-5	-13	-18	-22	-16	-10	-7	-6	-4	-4	-6	-6	-5	-8	-8	-9	-8	-6	-7	-6
4	-7	-9	-11	-17	-23	-25	-23	-16	-17	-8	-23	-10	-6	-12	-37	-64	-59	-44	-38	-42	-44	-42	-44	-40
5	-41	-69	-67	-66	-78	-103	-121	-125	-106	-95	-83	-73	-71	-72	-66	-76	-75	-73	-76	-75	-64	-65	-66	-59
6	-51	-44	-42	-41	-41	-39	-37	-37	-39	-34	-33	-31	-33	-28	-27	-27	-29	-29	-32	-32	-29	-28	-30	-30
7	-28	-25	-26	-25	-24	-22	-22	-21	-22	-22	-23	-22	-21	-19	-17	-13	-15	-13	-14	-14	-13	-11	-9	-7
8	-4	1	4	3	2	2	2	-4	-7	-4	6	3	3	3	-1	-2	-3	-8	-5	-3	-5	-15	-20	-22
9	-18	-12	-9	-12	-11	-11	-10	-14	-21	-16	-13	-14	-10	-5	-3	2	8	11	9	3	0	-4	-22	-29
10	-28	-20	-17	-18	-15	-15	-14	-22	-22	-28	-22	-24	-24	-20	-17	-16	-18	-26	-27	-29	-43	-45	-38	-31
11	-35	-36	-33	-26	-24	-24	-25	-24	-19	-19	-19	-19	-18	-15	-10	-10	-11	-15	-22	-25	-22	-22	-22	-26
12	-28	-24	-19	-18	-15	-20	-23	-20	-17	-17	-20	-17	-16	-22	-18	-14	-14	-16	-24	-25	-19	-14	-14	-12
13	-15	-16	-21	-22	-16	-11	-13	-19	-22	-22	-16	-11	-6	-5	-2	2	2	0	-1	-2	-1	-1	2	-1
14	-4	-8	-4	-4	-3	-10	-8	-10	-9	0	-2	-3	-3	-5	-2	1	1	0	-7	-14	-16	-12	-11	-8
15	-2	-6	-9	-5	-6	-3	1	1	-8	-4	-4	-3	-3	-4	-8	-11	-9	-6	-5	-2	-4	-9	-11	-8
16	-2	-3	-4	-6	-9	-7	-5	-4	-3	-1	2	-1	-1	1	-4	-5	-6	-7	-7	-2	0	0	1	-1
17	-4	-5	-7	-6	-8	-10	-7	0	1	4	5	5	3	2	3	1	0	-2	-5	-6	-5	-3	-2	-4
18	-4	-2	-2	0	2	0	-3	-3	-1	-1	-4	-4	0	5	8	13	13	13	11	9	10	11	12	9
19	9	11	14	24	27	18	14	13	18	15	-20	-53	-73	-57	-50	-49	-55	-59	-61	-54	-57	-48	-42	-34
20	-33	-35	-34	-32	-33	-29	-33	-37	-40	-34	-27	-27	-28	-25	-19	-21	-23	-27	-36	-41	-36	-29	-24	-21
21	-21	-21	-22	-24	-23	-21	-20	-22	-22	-24	-19	-25	-24	-18	-15	-16	-19	-22	-24	-23	-18	-16	-21	-23
22	-21	-20	-13	-6	-3	-9	-17	-19	-17	-6	-9	-14	-17	-16	-11	-6	-7	-14	-22	-32	-42	-37	-24	-20
23	-12	-17	-15	-25	-40	-58	-49	-53	-59	-64	-65	-63	-63	-62	-62	-71	-67	-75	-66	-66	-72	-64	-63	-52
24	-49	-52	-55	-50	-54	-49	-59	-62	-53	-54	-49	-43	-43	-46	-45	-42	-36	-42	-45	-48	-46	-43	-42	-38
25	-37	-36	-34	-37	-35	-42	-47	-44	-43	-34	-33	-39	-44	-34	-28	-36	-40	-41	-36	-40	-39	-35	-41	-41
26	-39	-41	-41	-46	-45	-50	-47	-56	-56	-51	-57	-55	-63	-65	-60	-51	-53	-51	-49	-48	-41	-37	-34	-28
27	-28	-32	-33	-29	-30	-36	-45	-47	-41	-38	-37	-41	-47	-44	-39	-33	-31	-31	-37	-42	-41	-32	-31	-30
28	-28	-27	-25	-29	-31	-29	-26	-25	-27	-28	-26	-24	-18	-20	-14	-16	-23	-27	-28	-34	-30	-34	-30	-24
29	-20	-27	-31	-32	-37	-34	-31	-29	-30	-28	-25	-23	-26	-28	-28	-24	-18	-19	-24	-26	-25	-26	-20	-23
30	-28	-30	-29	-29	-31	-34	-36	-32	-32	-30	-29	-24	-22	-20	-15	-12	-12	-14	-16	-19	-19	-16	-16	-18

OCTOBER 1984

DAY	UNIT=NT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	-22	-22	-21	-17	-17	-17	-16	-15	-17	-20	-16	-21	-24	-18	-13	-12	-10	-9	-10	-11	-9	-8	-6	-4
2	-3	-2	-1	-3	-4	-5	-3	-3	-4	-3	2	2	-1	-5	-8	-9	-16	-23	-22	-19	-13	-3	3	-9
3	-10	-12	-13	-25	-39	-48	-40	-33	-30	-28	-27	-32	-26	-20	-15	-12	-13	-14	-17	-23	-23	-20	-15	-14
4	-12	-10	-10	-9	-7	-7	-9	-10	-10	-10	-8	-5	-5	-3	1	-2	-9	-9	-10	-10	-9	-8	-9	-10
5	-9	-9	-4	-2	2	4	4	8	7	7	15	16	14	11	11	10	10	7	6	15	10	13	8	10
6	19	27	27	20	13	15	8	8	12	12	10	9	8	6	4	6	3	6	0	-2	-6	-19	-25	-23
7	-27	-41	-58	-65	-50	-43	-48	-43	-37	-35	-35	-29	-35	-56	-46	-47	-46	-42	-43	-43	-45	-47	-41	-31
8	-40	-41	-44	-42	-40	-38	-34	-32	-28	-27	-38	-34	-31	-28	-25	-26	-26	-27	-25	-24	-26	-23	-24	-21
9	-24	-29	-26	-20	-20	-19	-17	-18	-19	-21	-17	-16	-18	-14	-15	-16	-17	-18	-21	-21	-25	-21	-17	-16
10	-13	-17	-23	-24	-22	-20	-21	-24	-21	-23	-13	-17	-17	-26	-27	-22	-22	-25	-26	-27	-27	-24	-17	-17
11	-15	-18	-14	-16	-14	-15	-16	-15	-19	-16	-8	-6	-12	-14	-12	-13	-14	-17	-15	-17	-13	-18	-23	-26
12	-24	-23	-26	-26	-25	-23	-24	-26	-18	-18	-13	-10	-13	-14	-20	-27	-23	-23	-25	-22	-17	-22	-29	-31
13	-24	-23	-22	-21	-18	-16	-14	-14	-18	-24	-20	-24	-22	-22	-24	-20	-18	-19	-26	-25	-25	-25	-24	-21
14	-19	-17	-25	-25	-19	-19	-19	-20	-19	-17	-18	-14	-12	-11	-7	-7	-10	-9	-9	-12	-16	-21	-19	-18
15	-19	-20	-19	-18	-17	-18	-16	-13	-14	-15	-13	-9	-6	-4	-1	3	3	-6	-9	-16	-21	-20	-20	-29
16	-34	-27	-19	-17	-14	-13	-13	-19	-26	-31	-37	-35	-34	-29	-32	-34	-35	-33	-29	-27	-24	-25	-27	-24
17	-23	-23	-20	-22	-22	-21	-20	-18	-18	-17	-15	-14	-14	-14	-13	-13	-13	-11	-11	-10	-11	-9	-7	-6
18	-5	-5	2	4	-1	1	1	6	4	1	-13	-19	-28	-36	-44	-54	-70	-86	-86	-80	-74	-60	-63	-50
19	-61	-67	-58	-61	-65	-63	-61	-55	-57	-46	-40	-32	-31	-35	-48	-47	-60	-60	-67	-62	-66	-64	-61	-72
20	-63	-49	-55	-58	-61	-56	-58	-65	-56	-47	-44	-49	-51	-54	-48	-41	-49	-49	-53	-51	-49	-42	-41	-40
21	-35	-38	-41	-44	-44	-39	-42	-37	-40	-38	-32	-39	-31	-34	-36	-41	-40	-42	-42	-46	-59	-53	-51	-50
22	-55	-62	-54	-54	-46	-46	-42	-50	-53	-53	-46	-36	-32	-38	-39	-37	-42	-45	-49	-55	-56	-49	-53	-46
23	-42	-40	-43	-42	-38	-43	-50	-55	-51	-40	-37	-34	-34	-30	-30	-29	-38	-42	-42	-42	-40	-40	-41	-47
24	-43	-37	-37	-40	-40	-45	-46	-47	-48	-44	-40	-32	-30	-39	-42	-39	-40	-40	-37	-39	-43	-45	-46	-46
25	-40	-39	-37	-38	-39	-37	-34	-29	-32	-33	-29	-22	-26	-32	-32	-33	-32	-32	-34	-34	-36	-25	-24	-33
26	-46	-47	-32	-35	-29	-25	-21	-15	-18	-16	-13	-11	-10	-11	-15	-16	-16	-19	-21	-22	-24	-30	-29	-28
27	-26	-24	-23	-20	-20	-17	-17	-17	-14	-13	-12	-12	-11	-12	-18	-18	-20	-22	-23	-19	-19	-17	-17	-15
28	-12	-11	-10	-7	-11	-10	-8	-15	-14	-12	-11	-13	-12	-10	-7	-6	-7	-9	-13	-16	-17	-17	-15	-14
29	-10	-14	-16	-13	-10	-7	-5	-9	-9	-9	-9	-8	-12	-13	-12	-13	-12	-9	-8	-7	-10	-12	-12	-12
30	-13	-12	-11	-10	-13	-13	-14	-10	-5	-5	-6	-3	-3	-4	-5	-7	-7	-7	-8	-7	-4	-5	-5	-5
31	-4	-3	-4	-5	-3	-1	2	4	5	5	7	8	9	9	5	7	12	15	17	14	16	18	-2	-4

NOVEMBER 1984

DAY	UNIT=NT 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	U.T. 24
1	0	1	1	2	1	10	9	-18	-16	-30	-58	-41	-32	-34	-37	-36	-34	-31	-31	-29	-26	-25	-20	-12
2	-7	-5	-4	-8	-7	-10	-6	-5	-6	-3	2	-2	-9	-10	-12	-11	-17	-20	-31	-30	-22	-16	-17	-16
3	-12	-9	-6	-6	-4	-2	-5	-17	-17	-20	-15	-14	-13	-16	-19	-23	-17	-14	-10	-8	-19	-19	-18	-14
4	-16	-17	-18	-17	-15	-15	-19	-19	-15	-16	-15	-15	-15	-16	-14	-14	-15	-16	-12	-10	-12	-16	-21	-14
5	-11	-9	-12	-20	-19	-22	-24	-25	-22	-20	-13	-12	-10	-10	-16	-13	-11	-7	-6	-5	-7	-9	-8	-5
6	-2	-2	-5	-10	-10	-9	-13	-20	-14	-15	-13	-5	-5	-5	-11	-16	-15	-16	-8	-7	-6	-12	-12	-9
7	-6	-9	-7	-11	-21	-14	-9	-9	-11	-10	-8	-8	-3	-2	-1	-2	-18	-23	-27	-25	-23	-19	-24	-26
8	-21	-18	-21	-23	-25	-19	-14	-18	-25	-21	-24	-19	-13	-13	-14	-12	-11	-12	-13	-14	-13	-11	-12	-9
9	-8	-9	-11	-13	-15	-14	-16	-15	-10	-7	-7	-7	-7	-6	-9	-6	-6	-6	-7	-2	-5	-9	-11	-9
10	-11	-10	-11	-13	-17	-17	-13	-8	-3	-3	-4	-4	-7	-10	-10	-6	-5	-5	-10	-16	-17	-22	-18	-13
11	-12	-13	-14	-17	-13	-12	-12	-13	-10	-12	-14	-18	-25	-27	-23	-13	-10	-8	-6	-6	-6	-13	-16	-9
12	-2	-6	-12	-18	-29	-29	-22	-18	-15	-18	-18	-18	-17	-17	-16	-14	-13	-13	-14	-15	-12	-11	-9	-8
13	-7	-6	-7	-4	-6	-4	-7	-6	-2	-8	-4	-2	-3	-3	-2	-2	-14	-18	-17	-11	-17	-17	-13	-13
14	-9	-4	-1	-5	-2	-1	-4	-1	8	13	12	-3	-10	-13	-6	-2	3	-5	-12	-11	-8	-7	-1	5
15	11	14	11	12	28	19	3	10	5	-23	-52	-62	-61	-40	-31	-25	-31	-50	-55	-52	-39	-46	-74	-97
16	-104	-106	-128	-125	-126	-126	-131	-141	-140	-135	-139	-116	-105	-113	-119	-109	-110	-106	-92	-88	-88	-85	-85	-81
17	-72	-69	-68	-67	-66	-64	-66	-71	-63	-58	-58	-60	-56	-52	-57	-60	-55	-55	-55	-54	-53	-54	-58	-58
18	-54	-52	-52	-54	-50	-47	-45	-48	-51	-45	-44	-41	-39	-37	-37	-36	-34	-34	-37	-45	-42	-45	-43	-40
19	-36	-39	-43	-45	-44	-49	-48	-41	-38	-34	-34	-32	-30	-26	-26	-26	-27	-32	-32	-36	-31	-33	-36	-42
20	-40	-34	-37	-37	-36	-43	-45	-42	-39	-35	-35	-41	-44	-39	-38	-36	-34	-34	-30	-30	-32	-36	-38	-40
21	-39	-36	-38	-41	-37	-31	-30	-32	-24	-21	-16	-13	-11	-14	-18	-9	-13	-21	-20	-21	-31	-30	-22	-14
22	-12	-13	-17	-18	-17	-17	-12	-16	-18	-19	-19	-20	-19	-15	-11	-8	-9	-9	-12	-7	-2	4	5	7
23	13	7	-15	-19	-14	-14	-16	-20	-21	-19	-20	-24	-27	-26	-23	-16	-11	-11	-11	-11	-10	-7	-8	-7
24	-7	-3	-8	-2	1	3	0	-8	-9	-14	-15	-14	-11	-9	-11	-13	-16	-14	-13	-14	-15	-16	-15	-11
25	-7	-5	-5	-5	-2	1	-4	-8	-7	-8	-9	-13	-14	-12	-10	-6	0	11	11	2	-3	-4	-6	-12
26	-18	-15	-16	-14	-13	-17	-16	-12	-9	-8	-10	-13	-14	-16	-13	-14	-12	-7	-5	-4	-3	-3	-5	-5
27	-4	-3	-5	-5	-3	-4	-5	-5	-3	-2	-4	-7	-3	-1	-5	-4	-8	-7	-11	-11	-12	-13	-12	-13
28	-14	-19	-19	-15	-13	-12	-13	-15	-16	-13	-9	-9	-11	-9	-7	-9	-6	-4	-7	-6	-5	-2	-3	-3
29	-5	-4	-2	5	13	8	1	-11	-31	-33	-28	-22	-18	-18	-19	-19	-17	-12	-9	-11	-12	-10	-10	-6
30	-5	3	31	10	-1	-19	-63	-49	-43	-41	-39	-45	-52	-51	-43	-38	-37	-35	-31	-30	-29	-30	-24	-20

DECEMBER 1984

UNIT=NT

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

DAILY MEANS OF EQUATORIAL DST FOR 1984

DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	-33	-11	-24	-50	-47	3	3	-66	-12	-15	-20	-19
2	-22	-7	-58	-42	-35	1	6	-33	-11	-6	-11	-30
3	-19	-32	-41	-57	-2	1	2	-29	-8	-23	-13	-25
4	-28	-68	-30	-63	-10	-24	7	-26	-28	-8	-16	-23
5	-21	-45	-12	-84	-25	-18	-2	-19	-78	7	-13	-19
6	-13	-21	-33	-55	-24	-8	-2	-13	-34	6	-10	-18
7	-8	-20	-34	-33	-8	-12	1	-1	-19	-43	-13	-19
8	-6	-13	-31	-66	3	10	-5	2	-3	-31	-16	-16
9	6	-9	-26	-49	-4	-8	-4	-5	-8	-19	-9	-8
10	5	-17	-18	-20	-22	-11	2	-9	-24	-21	-11	-1
11	-15	-37	-25	-24	9	-5	-7	-8	-22	-15	-13	-5
12	-8	-16	-21	-14	9	-6	-5	-10	-19	-22	-15	-26
13	1	-42	-24	-14	-5	-3	-44	-5	-9	-21	-8	-20
14	-7	-40	-13	0	-12	7	-41	1	-6	-16	-3	-23
15	1	-30	-1	-9	-17	22	-29	-10	-5	-13	-26	-17
16	1	-15	-12	6	-4	-36	-27	-12	-3	-27	-112	-20
17	-1	-5	-18	9	4	-9	-31	-7	-2	-15	-60	-27
18	7	-16	-24	15	-1	-9	-23	-2	4	-31	-44	-20
19	-12	-3	-14	31	-37	-25	-21	-1	-23	-56	-36	-12
20	-6	10	-2	0	-29	-30	-15	-14	-30	-51	-37	-9
21	-3	-15	0	0	-47	-16	-10	0	-21	-41	-24	-2
22	-4	-12	-30	1	-35	-23	-9	10	-17	-47	-11	-5
23	6	-7	-31	8	-33	-10	-5	10	-54	-40	-14	-3
24	11	-3	-18	-1	-25	-32	-7	-13	-48	-41	-10	-4
25	8	-6	-38	-8	-27	-13	-9	-13	-38	-33	-5	1
26	-17	-10	-18	-73	-26	-5	-14	-11	-49	-23	-11	-25
27	-11	-27	-19	-57	-23	-19	-3	-9	-36	-18	-6	-24
28	-5	-11	-43	-36	-23	-29	-7	-30	-26	-12	-10	-29
29	-6	-8	-62	-29	-20	-8	-2	-25	-26	-10	-11	-23
30	-19		-51	-31	-24	-8	-3	-20	-23	-8	-28	-18
31	-14		-38		-4		11	-13		5		-20
MEAN	-7	-18	-26	-25	-18	-11	-9	-12	-23	-22	-21	-16

ANNUAL MEAN -17

MONTHLY AND YEARLY **Dst** 1957 - 1984

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual mean
1957	-19.8	-24.1	-41.3	-27.8	- 5.2	-10.0	-11.7	- 3.5	-64.0	-14.4	-20.7	-18.5	-21.7
1958	-18.3	-28.1	-32.3	-19.6	-10.8	-22.8	-27.5	-13.8	-24.9	-17.7	- 1.1	-18.9	-19.6
1959	-10.5	-31.5	-25.1	-22.6	-14.3	- 6.5	-35.6	-32.0	-39.2	-25.3	-35.1	-30.1	-25.7
1960	-17.7	-11.8	-11.5	-58.3	-28.6	-18.2	-20.7	-21.9	-30.8	-53.9	-54.5	-42.3	-30.9
1961	-17.2	-21.5	-13.6	-11.8	- 7.0	- 6.5	-28.3	- 7.2	- 8.8	-28.3	-17.5	-10.9	-14.9
1962	- 3.1	- 5.4	0.5	- 7.6	2.1	0.2	1.1	- 7.4	-19.6	-17.9	-11.6	-12.3	- 6.8
1963	- 6.1	- 2.2	1.8	2.0	1.1	0.0	1.9	- 4.2	-29.5	-23.3	-15.4	- 7.9	- 6.8
1964	- 8.8	- 9.2	- 9.8	-10.1	- 4.0	- 0.2	1.8	2.3	- 0.3	- 6.2	- 0.2	6.1	- 3.2
1965	5.7	- 1.0	0.8	- 3.4	5.7	0.3	1.4	2.5	- 2.2	5.3	4.6	2.4	1.8
1966	4.2	0.1	- 8.2	- 1.6	- 3.4	0.2	- 3.2	- 2.1	-25.2	-10.7	- 8.1	-13.9	- 6.0
1967	-18.6	-19.3	- 2.7	- 6.1	-32.6	-25.7	- 9.7	- 5.0	-20.6	-14.1	-11.8	-18.1	-15.4
1968	-20.4	-26.8	-20.8	-13.9	-12.6	-13.0	- 5.4	- 6.2	-11.8	-16.6	-32.5	-13.7	-16.1
1969	- 7.2	-21.6	-29.1	-19.8	-16.3	- 2.5	3.6	- 0.3	- 8.3	-10.8	- 4.1	2.3	- 9.5
1970	- 3.0	0.0	-28.5	-25.8	-10.2	-12.1	-20.4	-21.4	-13.2	-20.1	-21.5	-17.3	-16.1
1971	-15.0	-17.9	-15.0	-26.6	-17.2	- 8.7	- 3.5	- 9.4	-16.8	-15.6	-14.9	-24.2	-15.4
1972	-19.8	-17.9	-16.9	-15.1	- 8.2	-16.4	-10.1	-36.4	-22.7	-22.2	-24.2	- 9.9	-18.3
1973	-12.8	-20.4	-23.9	-46.3	-17.0	-10.1	- 1.3	- 2.9	-10.8	-13.7	- 7.3	- 0.2	-13.9
1974	- 4.2	- 5.6	-16.3	-13.7	- 8.4	- 5.7	-26.6	-13.3	-20.8	-23.0	-17.1	-12.0	-13.9
1975	-10.4	-13.4	-18.2	-10.4	- 6.3	0.5	- 7.0	- 9.0	- 4.2	- 9.9	-21.4	- 9.5	- 9.9
1976	-12.3	-11.3	-24.1	-24.6	-13.2	- 4.4	- 5.7	- 7.5	-12.2	-16.2	-14.9	-16.1	-13.5
1977	-13.6	-14.6	-10.9	-23.3	-13.7	- 3.6	-13.7	-19.3	-23.5	-25.4	-19.4	-22.4	-17.0
1978	-19.4	-26.1	-28.1	-30.8	-34.5	-14.9	- 9.2	-12.1	-27.1	-22.7	-27.4	-13.9	-22.2
1979	-28.8	-26.2	-30.4	-33.4	-12.7	- 4.3	1.8	-10.8	-19.3	-18.9	-11.6	- 2.5	-16.4
1980	-13.1	-18.5	- 3.1	- 9.4	- 6.6	-11.7	- 6.6	- 4.3	- 4.8	-22.2	-18.1	-19.9	-11.5
1981	- 8.5	-21.6	-35.0	-43.6	-29.9	- 2.9	-21.6	-26.6	-19.9	-42.5	-27.5	-12.5	-24.3
1982	- 3.9	-50.0	-18.8	-25.0	- 2.7	-12.5	-31.0	-23.4	-47.8	-23.9	-26.1	-20.1	-23.8
1983	-21.2	-37.9	-35.5	-23.2	-18.4	-10.1	- 1.8	- 9.9	- 5.0	-15.5	-17.6	-10.5	-17.2
1984	- 7.0	-18.0	-26.0	-25.0	-18.0	-11.0	- 9.0	-12.0	-23.0	-22.0	-21.0	-16.0	-17.3

Unit : nT

SECTION 3

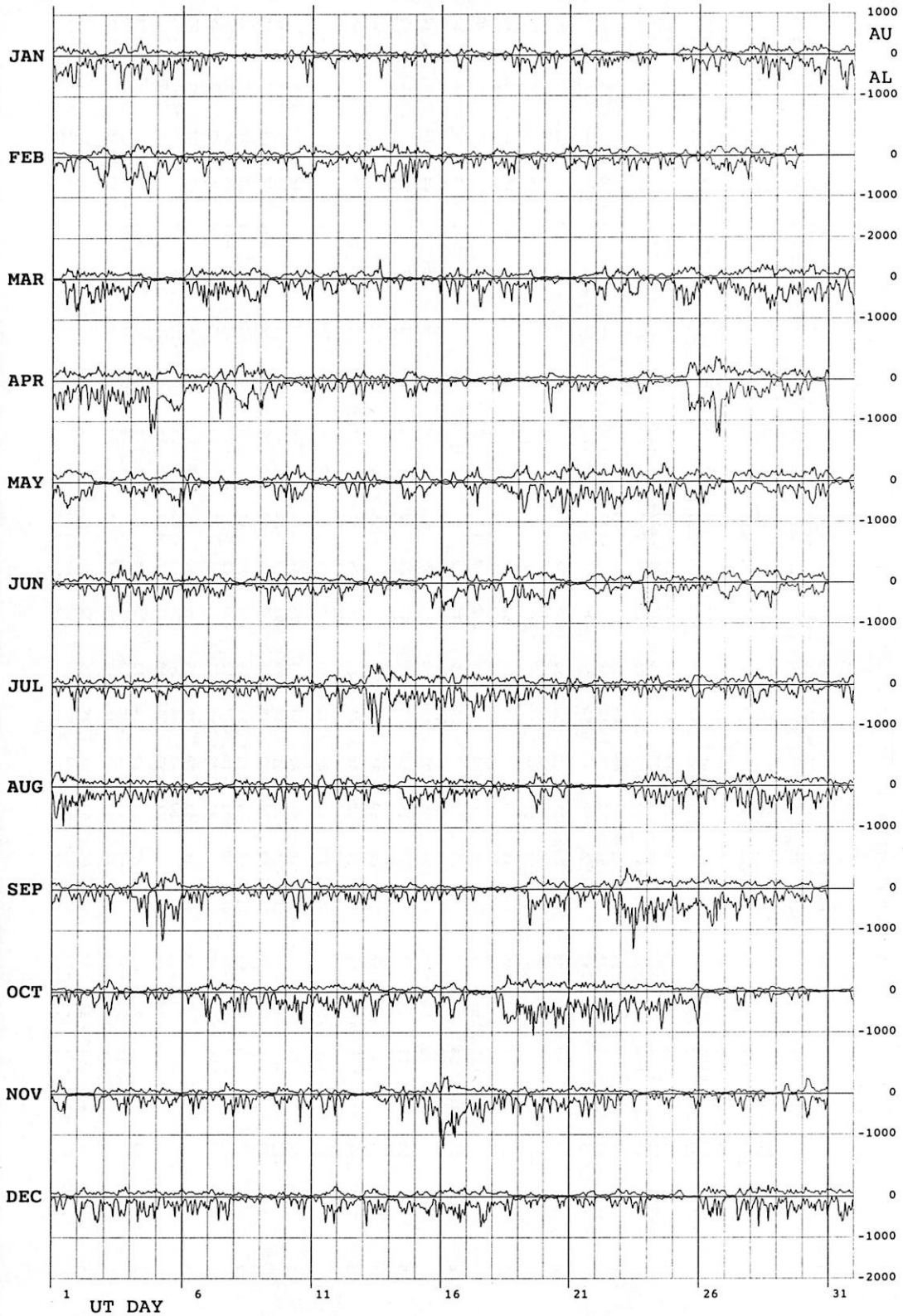
3.5. AU, AL, AE INDICES

Hourly values of **AU** and **AL** 1984 (graph) 99

Monthly tables of hourly values of
AU, **AL** and **AE** indices 100

Monthly and yearly mean values of **AE**
1957-1984 124

HOURLY VALUES OF **AU** AND **AL** 1984



HOURLY VALUES (nT) OF AU, AL AND AE INDICES JANUARY 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	110	121	140	202	199	244	175	188	253	135	167	98	125	217	108	47	46	112	184	114	130	158	109	119	146
	AL	-253	-229	-641	-532	-415	-432	-370	-437	-486	-335	-325	-250	-445	-513	-264	-178	-188	-639	-672	-638	-663	-141	-177	-213	-393
	AE	363	351	781	734	615	676	545	625	739	471	494	349	572	732	373	226	235	753	857	753	793	301	287	333	540
2		78	65	35	164	111	71	120	166	121	57	41	57	45	97	121	51	34	19	20	24	22	27	38	32	67
		-240	-237	-142	-221	-114	-31	-250	-288	-108	-71	-90	-326	-228	-460	-519	-142	-91	-123	-65	-200	-81	-42	-51	-87	-175
		319	303	178	385	226	103	370	454	230	129	132	384	274	559	642	194	125	143	85	225	104	69	89	120	243
3		33	28	44	72	75	74	72	75	132	146	143	190	105	48	99	171	305	290	229	153	80	85	80	77	117
		-148	-73	-107	-161	-163	-139	-94	-273	-328	-188	-240	-201	-131	-137	-659	-819	-592	-333	-285	-244	-192	-287	-161	-188	-256
		182	102	152	233	238	214	167	349	461	335	384	392	237	186	759	991	898	624	516	398	273	373	243	267	374
4		84	101	123	133	106	129	249	306	376	223	133	240	244	121	58	73	67	78	99	150	136	80	75	137	147
		-201	-189	-481	-274	-256	-201	-364	-584	-467	-63	-91	-180	-70	-91	-227	-114	-190	-231	-271	-460	-435	-204	-233	-361	-260
		286	291	605	408	362	330	613	892	843	287	225	421	315	214	287	188	259	310	372	612	572	286	308	500	408
5		74	94	123	143	110	117	99	111	107	68	46	58	102	80	49	49	35	37	38	90	70	66	91	145	83
		-361	-349	-459	-494	-107	-126	-326	-266	-272	-75	-48	-134	-597	-565	-249	-105	-148	-213	-91	-170	-65	-118	-229	-250	-242
		436	444	583	637	218	243	426	378	380	145	95	193	700	646	299	156	184	251	130	261	136	186	321	397	327
6		117	72	81	67	77	55	105	98	55	89	113	84	54	24	24	48	64	47	30	25	22	16	32	25	59
		-127	-60	-78	-119	-142	-26	-55	-108	-73	-368	-280	-119	-85	-127	-394	-377	-185	-32	-30	-54	-235	-152	-15	-10	-135
		245	133	161	186	219	81	161	207	130	458	393	204	141	152	420	426	250	81	61	80	258	169	48	36	196
7		31	22	24	34	39	40	44	45	43	63	70	69	53	24	29	45	32	18	30	20	20	16	21	22	36
		-8	-7	-19	-81	-146	-31	-25	-22	-43	-218	-183	-121	-69	-83	-107	-128	-37	-2	-6	-8	-14	-40	-50	-71	-63
		40	31	43	115	186	72	69	68	88	281	253	191	123	108	137	174	70	21	38	29	36	57	73	94	100
8		23	20	18	16	12	13	20	27	22	64	15	25	33	22	18	17	39	18	19	20	21	15	11	16	22
		-14	-17	-15	-12	-8	-8	-22	-74	-63	-137	-25	-22	-25	-46	-49	-38	-67	-20	-13	-13	-12	-9	-8	-8	-30
		38	38	33	28	20	22	43	101	86	201	40	48	60	69	67	56	107	38	33	35	34	25	20	25	53
9		17	13	14	21	35	31	24	28	31	16	17	31	47	27	33	25	22	16	12	17	16	40	43	25	25
		-6	-10	-15	-37	-83	-16	-25	-31	-27	-79	-47	-91	-59	-16	-23	-14	-72	-42	-15	-16	-18	-95	-85	-20	-39
		23	24	29	59	119	48	50	60	58	95	66	123	108	45	56	40	94	60	28	34	35	136	130	45	65
10		28	34	78	135	131	58	34	24	22	30	25	21	36	99	113	88	26	104	113	249	143	130	70	120	80
		-11	-53	-103	-176	-97	-5	0	2	2	1	-5	-9	-73	-136	-203	-125	-13	-245	-678	-414	-87	-141	-301	-87	-123
		40	88	182	312	228	63	35	21	19	28	31	30	110	236	317	213	40	351	792	664	231	273	373	207	203
11		93	94	91	59	40	54	53	25	61	62	54	73	73	34	19	39	43	49	57	118	110	148	130	137	71
		-70	-32	-49	-46	-38	-39	-19	-16	-28	-60	-40	-99	-91	-17	-21	-42	-79	-167	-210	-182	-340	-137	-70	-87	-82
		164	127	140	106	79	93	72	42	89	123	95	174	165	52	40	81	122	218	268	302	452	287	201	225	155
12		91	87	75	98	85	93	71	59	89	124	123	69	57	20	42	55	26	44	24	20	16	21	43	27	61
		-100	-61	-32	-22	-15	-36	-26	-10	-101	-48	-27	-12	-13	-42	-35	-39	-160	-134	-27	-32	-17	-26	-81	-35	-47
		192	149	108	121	101	129	97	71	191	172	151	83	71	63	77	94	187	179	52	53	34	48	125	63	109
13		27	22	36	50	68	43	42	36	63	48	29	38	65	62	86	227	111	48	92	50	36	61	74	80	62
		-28	-13	-26	-80	-69	-20	-14	-13	-10	-8	-4	-26	-76	-83	-367	-565	-238	-99	-107	-200	-103	-55	-135	-137	-103
		55	36	62	130	138	64	57	50	74	57	35	65	142	145	454	794	350	149	201	251	141	117	211	219	166
14		59	49	53	51	71	80	31	27	12	22	14	32	71	75	31	26	37	6	10	19	30	71	86	88	44
		-43	-28	-33	-34	-58	-63	-7	-7	-14	-14	-20	-32	-199	-45	-27	-54	-93	-109	-43	-273	-136	-137	-43	-80	-66
		104	78	87	86	130	143	39	34	27	37	34	65	270	121	59	81	131	116	53	293	168	210	130	168	111
15		60	51	66	64	35	38	93	86	157	51	28	26	32	38	41	22	37	42	26	16	21	37	46	64	49
		-9	-17	-42	-24	-9	-12	-40	-183	-81	-1	-5	-6	-13	-19	-176	-95	-195	-40	-45	-55	-34	-15	-80	-37	-51
		70	70	110	89	45	51	133	270	239	53	34	33	45	58	217	117	234	83	73	72	56	53	127	103	102

16	54	42	50	95	145	118	61	35	29	9	11	10	14	26	34	35	58	159	140	54	34	48	93	108	61
	-10	-9	-17	-27	-34	-34	-13	-4	-3	-10	-18	-16	-14	-30	-120	-296	-214	-329	-140	-47	-23	-44	-81	-86	-68
	66	52	67	122	179	153	75	40	32	21	30	26	30	56	156	333	273	490	281	103	58	93	176	195	129
17	117	97	114	161	90	57	53	108	82	70	32	32	36	47	24	25	18	25	43	63	62	39	37	36	61
	-83	-141	-220	-30	-10	-8	-21	-34	-36	-25	-2	-1	-37	-37	-46	-34	-37	-71	-107	-97	-105	-35	-2	-19	-52
	201	240	334	193	101	67	75	143	119	97	34	33	74	85	71	60	56	97	152	162	169	75	39	56	114
18	22	23	30	28	24	24	24	28	29	38	71	98	62	40	27	28	13	28	97	217	255	180	146	103	68
	-13	-18	-17	-20	-10	-4	-5	-5	-7	-36	-135	-103	-7	-9	-10	-10	-13	-53	-297	-297	-180	-53	-58	-168	-64
	36	42	48	49	35	29	29	34	36	75	206	201	70	50	38	40	26	83	395	516	437	235	205	272	133
19	99	292	258	155	179	193	144	71	110	174	134	93	104	89	113	64	33	23	9	13	38	55	51	68	107
	-409	-118	-71	-98	-84	-213	-155	-89	-113	-158	-297	-451	-313	-263	-347	-234	-143	-35	-21	-23	-49	-220	-280	-217	-183
	510	410	330	254	264	407	299	161	225	334	432	545	418	354	462	300	177	60	31	37	88	276	333	286	291
20	70	43	44	39	53	30	18	28	28	36	47	103	44	18	10	8	10	9	4	8	10	8	15	19	29
	-75	-38	-115	-137	-210	-22	-10	-11	-34	-205	-348	-177	-28	-27	-37	-97	-83	-37	-21	-27	-41	-20	-14	-51	-78
	146	81	160	177	264	53	28	40	63	241	395	280	74	46	48	106	95	47	27	37	52	29	29	71	108
21	30	49	58	59	83	84	89	119	86	108	167	60	30	34	35	20	10	13	26	64	99	68	106	96	66
	-101	-132	-53	-99	-269	-272	-151	-250	-138	-295	-470	-127	-34	-20	-27	-26	-65	-61	-130	-122	-181	-92	-51	-79	-135
	131	182	112	159	352	356	241	370	225	405	639	188	65	56	62	48	77	76	157	187	281	161	158	177	203
22	83	85	69	104	62	33	58	26	23	33	41	23	24	32	25	63	36	43	68	46	76	59	42	55	50
	-132	-98	-310	-143	-62	-30	-157	-276	-104	-134	-322	-69	-76	-148	-261	-191	-88	-167	-123	-61	-185	-67	-51	-89	-139
	216	183	380	248	125	65	215	303	128	169	363	93	100	181	287	254	124	212	193	108	262	128	94	145	191
23	49	42	44	43	43	41	25	16	19	14	7	12	16	25	35	18	46	37	22	26	45	50	61	57	33
	-136	-45	-39	-54	-52	-100	-63	-21	-23	-23	-17	-15	-14	-25	-58	-213	-284	-195	-53	-51	-232	-84	-69	-102	-82
	186	87	84	98	96	141	88	37	42	38	25	28	30	51	94	232	331	233	76	79	279	135	131	160	116
24	59	124	110	59	38	38	46	27	24	18	11	12	15	21	18	20	16	8	16	8	11	15	17	20	31
	-102	-249	-119	-29	-20	-85	-137	-21	-3	-7	-9	-10	-11	-9	-13	-12	-13	-11	-6	-9	-4	-8	-5	-18	-38
	162	374	230	88	59	123	184	49	28	26	20	23	27	31	31	33	30	21	23	18	16	24	23	38	70
25	20	20	25	35	50	88	109	94	162	108	108	116	132	114	89	41	91	172	177	125	166	117	120	123	100
	-5	-15	-21	-23	-37	-37	-19	-29	-195	-78	-75	-136	-99	-104	-67	-33	-82	-467	-288	-114	-113	-139	-116	-249	-106
	25	35	46	59	88	126	129	124	358	188	184	253	232	218	157	76	174	640	466	240	280	257	236	373	207
26	113	76	130	127	138	160	296	180	135	99	73	39	50	67	68	112	202	198	135	66	67	56	99	70	115
	-206	-164	-129	-213	-244	-292	-403	-207	-142	-72	-44	-22	-33	-172	-315	-281	-289	-448	-155	-71	-83	-111	-106	-53	-177
	320	241	260	340	382	452	700	388	277	173	119	62	83	239	385	393	493	648	292	138	151	169	206	124	293
27	51	29	46	40	36	37	30	21	26	3	10	19	36	69	58	28	50	68	93	107	75	147	194	155	59
	-22	-30	-94	-170	-87	-27	-14	-19	-23	-18	-64	-79	-69	-108	-230	-221	-257	-258	-199	-135	-90	-156	-188	-87	-110
	74	59	141	211	123	66	45	41	50	22	76	99	106	179	289	250	308	328	294	244	167	304	383	244	171
28	124	185	201	127	145	125	111	62	41	79	289	272	87	18	45	231	174	133	100	99	116	103	64	84	126
	-63	-138	-76	-27	-133	-241	-192	-109	-46	-138	-494	-303	-59	-54	-183	-606	-456	-240	-162	-112	-273	-338	-165	-125	-197
	188	324	278	155	279	367	304	171	88	218	784	576	147	73	229	838	632	375	263	211	391	441	230	209	324
29	114	100	110	51	113	91	68	133	102	99	184	173	105	81	50	26	20	27	28	28	52	62	86	79	82
	-494	-672	-101	-72	-159	-174	-104	-228	-257	-209	-387	-359	-346	-141	-44	-109	-103	-53	-35	-37	-189	-109	-159	-223	-199
	610	773	211	123	272	266	173	362	360	310	572	533	452	222	95	136	123	80	64	66	243	172	247	303	282
30	112	217	148	72	146	131	114	96	72	172	195	173	94	76	119	119	243	150	132	144	160	138	129	62	134
	-201	-320	-199	-178	-324	-209	-109	-115	-97	-280	-446	-361	-381	-301	-355	-301	-751	-492	-413	-381	-535	-208	-91	-81	-297
	314	539	348	252	470	341	224	212	170	452	641	535	475	377	475	422	996	643	547	527	696	347	221	144	432
31	95	66	62	46	69	40	55	54	42	42	56	77	101	125	96	144	196	199	155	81	71	78	74	120	89
	-116	-139	-104	-73	-171	-148	-84	-72	-186	-153	-156	-447	-593	-638	-581	-410	-830	-885	-469	-225	-266	-142	-293	-538	-322
	212	205	167	120	241	188	140	127	228	196	213	525	695	764	678	556	1027	1085	626	307	338	222	369	659	412

HOURLY VALUES (nT) OF AU, AL AND AE INDICES FEBRUARY 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	124	120	127	101	104	104	100	90	96	122	96	89	63	50	51	37	31	52	54	41	54	52	34	33	76
	AL	-393	-214	-129	-224	-112	-130	-164	-138	-174	-290	-373	-258	-92	-48	-87	-26	-32	-226	-389	-192	-95	-5	-26	-44	-161
	AE	518	335	257	326	217	235	265	229	272	413	470	348	156	99	139	65	64	278	444	234	150	58	61	77	238
2		42	49	46	34	27	26	43	49	50	39	47	56	153	163	123	91	60	144	139	104	178	220	253	201	97
		-71	-13	-11	-14	-9	-13	-23	-53	-52	-102	-108	-107	-300	-299	-282	-288	-228	-407	-507	-589	-523	-759	-596	-336	-237
		114	63	58	49	37	40	67	102	102	141	156	164	455	464	406	381	289	552	648	694	701	981	850	538	336
3		165	195	114	82	47	29	43	50	47	24	26	34	36	38	34	36	48	18	58	146	131	171	68	29	70
		-331	-482	-359	-48	-25	-29	-27	-50	-32	-13	-16	-19	-18	-22	-22	-74	-273	-168	-255	-559	-563	-541	-547	-469	-206
		496	678	474	131	73	59	72	101	81	38	44	54	56	61	58	111	322	187	314	705	694	712	616	498	276
4		147	175	144	248	298	328	313	263	191	294	281	113	197	179	283	228	264	236	107	89	82	9	76	136	195
		-698	-557	-379	-379	-514	-488	-314	-125	-106	-321	-336	-513	-555	-641	-834	-920	-593	-353	-491	-479	-454	-562	-433	-391	-476
		847	732	524	629	813	817	627	389	297	616	619	626	752	820	1118	1149	859	590	598	569	536	571	510	527	672
5		167	112	81	102	137	83	88	71	111	161	172	123	52	69	63	53	46	17	32	23	24	31	35	43	79
		-211	-114	-64	-82	-278	-178	-81	-91	-233	-425	-442	-335	-292	-252	-195	-121	-59	-52	-17	-120	-171	-117	-17	-6	-165
		379	227	146	184	416	262	171	164	345	588	616	459	345	322	259	175	107	69	50	144	196	148	53	51	245
6		37	57	101	104	64	72	73	72	55	75	114	94	95	108	149	125	69	42	138	128	118	122	144	153	96
		-25	-113	-128	-44	-18	-32	-5	-13	-10	-33	-126	-84	-41	-81	-159	-150	-29	-63	-398	-489	-425	-209	-227	-101	-125
		63	171	230	149	82	104	79	86	66	110	242	179	138	190	309	277	99	106	536	618	543	332	372	254	222
7		126	79	74	108	85	91	102	63	92	112	129	76	131	103	70	37	15	25	32	20	29	36	71	89	75
		-111	-115	-51	-16	-20	-95	-40	-28	-102	-215	-57	-45	-99	-48	-9	-18	-38	-45	-80	-40	-34	-48	-237	-191	-74
		237	195	126	124	105	186	143	93	196	329	188	122	231	153	80	57	55	70	112	61	64	84	309	281	150
8		79	74	116	45	35	36	54	86	184	88	86	74	77	65	110	78	40	48	24	36	64	99	164	168	80
		-79	-58	-52	-6	-12	-15	-32	-108	-118	-13	-27	-185	-60	-53	-163	-50	-18	-16	-12	-111	-146	-92	-120	-101	-68
		159	132	169	51	48	51	87	195	303	101	115	261	138	119	275	129	60	65	37	148	210	192	284	270	150
9		218	172	115	76	85	108	149	150	78	45	80	97	109	86	90	76	68	33	46	47	26	40	66	90	90
		-102	-69	-35	-13	-29	-72	-94	-30	-5	-12	-60	-85	-86	-26	-51	-171	-33	-25	-40	-11	-27	-42	-140	-229	-62
		321	241	150	90	115	180	244	181	84	58	141	183	197	114	143	249	102	60	87	59	53	83	208	320	153
10		86	112	75	44	58	56	72	89	107	103	144	112	219	193	218	286	272	193	143	122	181	132	97	44	132
		-57	-13	-4	-30	-60	-31	-24	-9	-12	-51	-326	-306	-255	-277	-393	-448	-364	-525	-435	-515	-425	-390	-393	-499	-243
		144	126	80	75	119	88	96	98	119	155	471	420	475	472	612	735	636	718	578	638	606	522	491	543	376
11		94	78	246	176	120	132	153	145	112	105	136	148	112	82	95	106	53	57	53	75	102	139	132	119	115
		-415	-266	-342	-129	-102	-85	-122	-146	-66	-163	-154	-151	-124	-265	-214	-141	-69	-119	-205	-191	-149	-137	-132	-77	-165
		510	345	589	307	223	218	276	293	180	269	292	300	238	348	310	248	124	176	258	267	252	277	264	196	282
12		55	53	43	45	53	65	92	69	139	81	46	31	25	17	68	110	101	67	54	49	115	161	162	113	76
		-8	-14	-13	-94	-5	-14	-36	-171	-39	0	-9	-20	-41	-40	-123	-123	-123	-37	-12	-46	-123	-266	-321	-143	-76
		64	68	57	140	58	80	129	241	179	82	56	52	67	58	192	234	226	105	67	96	240	427	483	257	152
13		16	137	119	73	100	130	221	174	143	180	154	273	158	188	289	336	257	148	211	172	142	140	151	97	167
		-487	-198	-187	-376	-259	-310	-222	-31	-92	-346	-617	-459	-458	-512	-456	-471	-451	-507	-632	-395	-219	-175	-235	-391	-354
		503	336	307	450	360	441	444	206	237	527	772	734	617	700	746	807	709	656	844	568	361	316	386	489	522
14		132	112	165	315	214	239	306	79	73	97	132	80	117	106	76	257	180	114	72	110	106	96	156	64	142
		-408	-538	-399	-533	-335	-367	-348	-116	-80	-108	-184	-591	-772	-313	-178	-653	-407	-24	-62	-112	-429	-199	-75	-634	-328
		540	651	565	850	550	606	654	196	154	206	317	672	890	420	255	910	587	139	135	223	536	295	232	699	470
15		178	238	100	134	102	94	131	159	104	79	114	80	37	26	29	22	13	10	10	14	27	39	34	42	76
		-502	-221	-53	-87	-283	-257	-110	-128	-91	-94	-300	-276	-46	-24	-25	-26	-49	-69	-92	-40	-47	-46	-89	-123	-128
		681	459	154	222	386	352	242	289	197	175	416	357	84	51	55	50	63	80	103	55	75	86	124	167	205

16	53	84	111	109	49	54	33	49	36	56	60	54	43	39	19	16	14	20	49	49	44	42	59	38	49
	-208	-148	-110	-86	-26	-28	-5	-29	-38	-87	-194	-162	-142	-162	-101	-155	-111	-74	-314	-77	-44	-14	-55	-26	-100
	262	233	222	196	76	83	38	80	76	144	256	216	186	203	121	172	126	95	364	127	88	57	114	64	150
17	49	57	48	73	111	129	86	51	23	33	69	82	46	31	20	31	16	27	26	31	41	34	41	105	52
	-92	-74	-83	-56	-129	-299	-199	-52	-53	-50	-256	-220	-55	-29	-29	-67	-93	-27	-9	-6	-45	-23	-4	-123	-86
	141	131	133	130	240	429	287	103	76	84	327	303	101	62	50	99	109	55	35	38	86	58	46	230	140
18	40	140	129	197	142	116	139	70	83	141	88	63	55	62	67	109	93	90	88	121	81	57	48	36	94
	-319	-188	-126	-243	-227	-187	-177	-66	-40	-209	-291	-69	-72	-262	-481	-347	-157	-256	-209	-439	-121	0	-17	-15	-188
	359	329	256	441	370	304	316	137	125	352	380	133	128	325	549	457	252	346	297	560	202	56	65	52	283
19	36	34	36	38	39	44	38	50	44	44	41	43	68	66	72	50	38	116	89	66	60	36	54	31	51
	-20	-28	-78	-50	-61	-39	-23	-30	-14	-108	-54	-19	-68	-142	-218	-210	-89	-332	-263	-67	0	-4	-64	-71	-86
	57	63	115	89	102	83	62	81	59	153	97	64	137	209	291	261	129	449	353	133	59	40	119	104	138
20	52	63	50	40	30	40	67	95	67	45	43	36	35	41	46	53	58	74	51	117	199	162	140	317	80
	-119	-138	-33	-5	-8	-6	-33	-135	-98	-26	-11	-17	-20	-18	-19	-23	-35	-24	-36	-125	-327	-347	-231	-315	-90
	172	202	85	46	38	47	101	231	165	72	56	55	56	60	66	77	95	99	88	243	527	509	371	632	171
21	219	97	125	109	211	190	265	239	127	113	136	135	140	143	116	151	73	68	53	48	103	132	185	150	139
	-185	-236	-202	-56	-205	-110	-121	-79	-42	-97	-137	-130	-153	-149	-344	-256	-55	-25	-13	-24	-119	-260	-228	-75	-138
	405	334	328	165	417	301	387	319	170	211	275	267	295	293	460	408	129	94	67	73	223	393	414	226	277
22	153	141	115	161	209	192	132	127	146	143	173	135	175	78	47	52	61	61	85	68	112	147	167	138	126
	-109	-113	-99	-40	-63	-91	-43	-33	-76	-71	-61	-75	-123	-97	-55	-27	-234	-214	-167	-138	-206	-119	-57	-47	-98
	263	254	215	203	274	284	176	160	223	215	236	212	300	176	104	80	296	276	253	207	318	267	224	185	225
23	111	116	131	80	90	148	147	227	219	203	201	139	144	88	112	56	38	45	53	78	68	57	61	48	111
	-41	-66	-111	-10	-13	-75	-398	-310	-160	-86	-98	-33	-219	-371	-143	-106	-110	-52	-81	-180	-189	-49	-134	-196	-135
	153	183	242	91	104	224	547	538	380	290	300	173	364	459	256	162	149	98	134	259	258	107	196	245	246
24	58	29	38	44	32	47	37	64	41	43	72	87	46	31	38	51	26	44	58	52	40	71	54	60	48
	-243	-103	-33	-53	-49	-67	-33	-47	-28	-26	-96	-353	-78	-19	-21	-41	-191	-207	-267	-92	-61	-231	-157	-211	-113
	302	133	72	98	83	115	71	112	70	71	169	442	125	51	60	93	218	251	326	144	101	302	212	272	162
25	56	61	37	32	27	28	35	46	61	109	155	124	62	40	36	23	19	18	25	25	30	120	62	42	53
	-53	-32	-49	-16	-8	-13	-21	-76	-203	-279	-313	-128	-87	-50	-42	-26	-32	-12	-13	-4	-4	-134	-145	-63	-75
	111	93	87	50	36	42	57	123	264	389	469	253	149	91	79	51	52	31	38	29	35	254	208	106	129
26	30	25	24	36	43	48	90	99	59	46	116	146	133	95	149	182	227	239	219	242	183	145	101	68	114
	-11	-16	-9	-8	-40	-69	-129	-89	-38	-23	-103	-239	-186	-204	-348	-299	-233	-362	-346	-167	-231	-180	-301	-98	-155
	42	42	34	44	84	118	220	189	99	70	221	386	319	300	498	482	461	602	567	410	415	326	403	167	271
27	70	100	78	74	129	145	184	182	187	128	144	80	93	61	103	34	49	59	77	172	178	211	133	78	115
	-66	-88	-403	-158	-171	-336	-467	-409	-289	-308	-167	-96	-141	-178	-173	-56	-177	-266	-111	-324	-444	-610	-116	-21	-232
	138	189	482	233	301	482	652	592	477	438	313	178	236	240	276	91	227	326	189	496	622	822	250	100	348
28	60	68	60	59	63	64	59	79	148	162	129	60	68	75	93	65	78	16	29	46	47	38	29	25	68
	-39	-36	-20	-103	-163	-100	-40	-50	-202	-175	-107	-51	-70	-217	-240	-228	-284	-82	-33	-64	-52	-22	-15	-15	-100
	101	105	82	163	227	164	100	131	351	339	238	113	139	293	334	293	363	99	63	110	99	61	45	40	169
29	26	22	20	27	31	42	44	90	170	149	137	211	206	147	99	160	262	92	31	25	27	32	38	40	89
	-11	-11	-9	-11	-9	-15	-14	-86	-241	-182	-129	-148	-149	-160	-262	-233	-349	-168	-95	-27	-16	-8	-11	-3	-98
	38	34	31	40	40	58	58	176	412	332	267	360	357	308	363	394	612	261	127	52	43	41	49	44	187

HOURLY VALUES (nT) OF AU, AL AND AE INDICES MARCH 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	23	23	18	18	18	18	20	34	61	135	103	118	155	275	203	220	175	207	63	84	74	17	233	155	102
	AL	-8	-4	-13	-9	-12	-13	-11	-16	-51	-96	-18	-88	-620	-623	-291	-219	-273	-300	-96	-122	-670	-800	-580	-775	-238
	AE	32	28	32	27	31	32	32	51	113	232	122	208	775	898	495	439	449	508	159	206	745	817	813	932	341
2		56	117	158	117	198	124	80	97	167	140	95	159	122	164	167	98	70	60	115	139	153	166	125	132	126
		-516	-375	-184	-191	-225	-203	-134	-126	-446	-294	-331	-603	-497	-596	-471	-195	-237	-159	-481	-577	-430	-45	-192	-479	-333
		573	493	344	309	424	327	215	224	615	434	428	763	620	761	639	294	308	219	596	716	583	212	318	612	459
3		60	89	225	162	128	198	112	85	163	115	117	88	96	105	110	105	109	140	146	145	136	177	102	114	126
		-242	-89	-375	-380	-246	-393	-82	-126	-309	-291	-180	-224	-156	-321	-255	-252	-206	-375	-529	-375	-501	-168	-215	-247	-272
		302	179	601	543	375	593	195	212	474	407	299	313	253	427	366	357	316	516	676	521	639	346	318	362	400
4		123	93	90	111	93	102	136	71	147	108	43	41	26	20	31	62	48	50	25	13	16	17	17	16	62
		-278	-334	-275	-146	-153	-68	-66	-64	-211	-75	-1	-15	-59	-37	-53	-200	-243	-58	-14	-22	-30	-36	-19	-27	-103
		402	429	367	258	247	171	203	137	360	185	45	58	86	58	85	263	291	108	41	36	47	53	36	43	167
5		15	22	29	17	25	30	30	37	61	51	39	36	38	39	22	23	29	23	25	25	41	35	25	28	31
		-19	-16	-19	-13	-8	-7	-6	-4	-16	-108	-11	-7	-21	-26	-72	-13	-3	0	-8	-6	-18	-11	-20	-20	-19
		35	38	48	30	34	39	37	43	79	161	51	44	60	67	94	38	33	24	33	31	59	47	45	48	51
6		26	38	83	101	132	134	194	294	220	140	85	107	53	108	139	204	153	263	180	111	171	174	133	138	141
		-16	-15	-55	-139	-46	-155	-373	-351	-224	-112	-69	-74	-37	-237	-412	-354	-147	-326	-592	-145	-422	-690	-437	-239	-236
		43	53	139	240	179	291	568	647	446	254	155	182	91	346	552	559	301	590	773	257	594	865	570	378	378
7		116	130	187	102	143	170	89	80	134	144	129	191	238	166	108	199	119	124	174	199	149	122	110	76	142
		-299	-410	-251	-427	-403	-104	-89	-204	-534	-198	-81	-173	-382	-45	-158	-396	-290	-174	-323	-290	-267	-335	-452	-197	-270
		416	541	439	531	548	274	179	285	669	344	212	365	620	211	268	596	409	299	498	489	417	458	563	274	413
8		58	124	115	133	187	147	96	120	121	103	162	125	156	81	216	215	281	270	281	178	169	164	231	175	163
		-112	-258	-386	-305	-145	-185	-40	-284	-449	-141	-224	-269	-336	-514	-562	-488	-497	-546	-501	-546	-293	-330	-600	-431	-352
		171	383	502	439	333	334	138	405	571	245	388	394	494	596	779	703	778	817	782	725	462	494	831	606	516
9		111	107	150	106	100	115	93	58	30	25	38	29	37	38	63	27	31	35	35	56	95	109	127	113	72
		-288	-221	-130	-271	-361	-215	-72	-25	-8	-7	-11	-25	-31	-24	-71	-51	-130	-98	-88	-64	-133	-337	-288	-52	-125
		400	329	282	379	462	330	166	83	39	32	49	55	69	63	135	79	162	134	124	120	228	447	417	166	198
10		128	106	118	148	96	86	106	142	154	204	122	100	52	53	80	131	182	230	186	172	141	139	152	218	135
		-93	-300	-119	-9	-17	-39	-144	-215	-136	-130	-34	-60	-22	-119	-228	-412	-346	-300	-516	-331	-320	-133	-164	-529	-196
		221	407	238	158	113	126	252	358	291	336	157	161	75	173	309	544	529	530	702	503	462	273	317	747	333
11		201	112	111	80	72	64	40	42	45	55	109	99	93	102	151	91	59	117	173	193	164	190	204	162	114
		-196	-72	-49	-48	-66	-2	-3	-2	-6	-10	-234	-289	-159	-71	-97	-75	-125	-241	-387	-364	-356	-294	-363	-107	-151
		398	186	161	129	139	66	43	45	53	66	344	388	253	175	250	166	184	359	560	558	521	484	568	270	265
12		66	67	81	114	79	102	138	39	23	35	66	74	86	87	68	50	74	138	173	146	196	197	165	146	100
		-16	-40	-142	-163	-28	-141	-109	-20	-8	0	-21	-106	-140	-73	-144	-140	-134	-332	-390	-155	-95	-101	-156	-147	-117
		83	107	223	278	108	245	248	61	32	35	87	180	227	161	213	191	209	471	563	301	291	299	322	293	218
13		79	94	101	133	72	64	79	81	102	198	180	214	142	260	479	176	40	27	32	28	24	31	35	31	113
		-137	-180	-222	-71	-60	-48	-21	-72	-131	-87	-54	-105	-217	-334	-526	-144	-37	-21	-45	-91	-79	-22	-12	-17	-114
		216	275	324	205	133	114	101	154	234	286	236	321	361	594	1005	321	78	49	78	120	104	55	48	49	228
14		24	22	20	32	26	34	35	57	102	103	82	49	33	32	22	27	34	39	38	35	33	25	22	21	39
		-16	-28	-34	-118	-56	-30	-28	-55	-144	-273	-155	-35	-30	-3	-20	-28	-47	-22	-63	-15	-7	-4	-10	-11	-51
		41	50	54	151	83	64	65	113	248	378	237	84	64	35	42	55	81	61	102	50	40	30	33	32	91
15		22	22	21	23	27	28	91	56	39	36	78	63	47	42	50	24	25	22	22	27	49	74	95	59	43
		-17	-23	-10	-10	-6	-59	-164	-33	-11	-14	-26	-34	-23	-38	-63	-60	-16	-26	-18	-12	-30	-46	-381	-82	-50
		40	46	31	33	34	88	257	90	51	52	105	99	71	81	115	85	42	49	41	40	80	121	477	143	94

16	51	37	24	29	100	45	87	151	116	41	41	70	77	144	252	275	52	99	98	66	57	46	38	34	85
	-6	-14	-22	-22	-83	-172	-249	-457	-160	-18	-18	-61	-63	-284	-635	-304	-42	-189	-212	-138	-18	-7	-5	-9	-133
	58	52	47	52	184	219	338	609	276	60	60	131	141	429	887	580	94	288	311	205	75	54	45	45	218
17	40	40	36	96	102	99	72	129	227	108	72	159	156	139	109	226	193	145	132	101	88	76	50	51	110
	-28	-19	-18	-65	-318	-305	-136	-150	-271	-71	-42	-700	-682	-417	-193	-377	-339	-201	-158	-107	-43	-178	-41	-10	-203
	69	59	54	162	421	405	210	280	500	180	115	859	839	557	304	604	533	347	290	209	132	255	93	62	314
18	38	46	59	56	28	40	42	66	90	201	254	167	61	48	58	44	131	123	60	76	95	114	80	81	86
	-6	-54	-86	-127	-53	-49	-35	-129	-262	-361	-487	-191	-83	-76	-153	-146	-382	-573	-183	-113	-120	-180	-142	-72	-169
	44	101	146	184	81	91	78	196	354	564	742	358	145	125	212	191	513	697	244	190	217	295	223	154	256
19	108	102	109	98	86	106	123	117	104	128	211	177	93	36	30	28	22	24	23	25	24	37	31	37	78
	-203	-217	-173	-177	-107	-114	-254	-183	-62	-155	-592	-422	-23	-22	-28	-84	-72	-21	-11	-6	-24	-26	-19	-16	-126
	312	320	283	277	195	222	378	301	167	284	804	600	117	60	59	112	95	46	35	33	49	63	51	54	205
20	35	39	37	31	32	31	22	30	33	38	36	42	63	33	26	28	18	18	24	21	22	24	18	21	30
	-75	-41	-28	-22	-39	-38	-30	-33	-77	-137	-96	-83	-57	-32	-17	-23	-26	-15	-10	-12	-9	-16	-19	-22	-40
	112	81	66	54	71	70	54	65	112	177	132	125	120	66	43	52	44	34	35	34	31	40	37	44	71
21	20	24	28	39	26	25	24	26	48	42	38	68	70	88	86	52	70	77	67	94	96	82	125	109	59
	-23	-15	-16	-25	-14	-44	-99	-98	-49	-17	-22	-68	-65	-76	-213	-96	-78	-126	-60	-54	-81	-93	-110	-277	-76
	44	40	45	64	41	71	125	125	99	60	62	136	136	165	299	149	149	204	128	148	178	177	236	388	136
22	156	92	153	118	145	115	172	232	306	160	54	38	32	22	30	83	33	105	182	145	237	109	144	155	126
	-369	-439	-220	-201	-301	-213	-269	-500	-549	-181	-70	-43	-26	-14	-19	-75	-134	-224	-263	-273	-355	-216	-277	-358	-233
	526	532	374	321	448	329	441	734	856	343	125	82	59	37	50	159	168	330	446	419	593	326	423	515	360
23	153	95	129	78	60	62	151	128	182	195	236	184	55	122	172	61	35	33	31	67	61	38	25	26	99
	-291	-150	-138	-200	-11	-21	-176	-371	-327	-434	-362	-381	-419	-364	-405	-92	-83	-47	-28	-42	-76	-41	-18	-33	-188
	444	247	268	279	72	83	328	500	510	630	599	566	475	487	578	154	119	81	60	110	138	80	44	61	288
24	39	65	89	73	66	62	33	38	40	45	89	97	112	108	68	66	29	43	42	45	45	43	130	45	63
	-24	-103	-146	-191	-42	-36	-28	-38	-45	-59	-99	-103	-203	-335	-215	-126	-58	-46	-62	-50	-30	-5	-103	-127	-95
	64	169	235	265	109	99	63	77	87	106	189	201	315	443	284	192	88	90	104	96	75	49	235	173	159
25	51	107	96	86	190	157	107	119	180	188	266	208	137	161	197	269	268	196	266	185	121	98	148	116	163
	-54	-233	-563	-282	-227	-314	-188	-175	-471	-694	-384	-253	-318	-683	-604	-656	-439	-339	-555	-360	-194	-89	-257	-341	-361
	106	340	660	368	418	473	295	295	653	883	651	462	456	844	801	926	707	535	822	546	317	189	406	457	526
26	93	89	49	42	24	32	31	34	43	64	54	42	32	38	38	38	59	80	135	142	197	98	94	73	67
	-141	-278	-48	-71	-141	-31	-14	-72	-12	-108	-156	-33	-17	-25	-26	-36	-108	-197	-319	-116	-405	-389	-112	-106	-123
	235	368	98	114	166	64	46	107	56	173	211	76	50	64	64	74	167	278	455	258	602	488	208	181	192
27	130	110	86	66	72	121	88	83	135	153	105	71	126	214	147	99	131	200	201	242	218	274	206	146	143
	-296	-161	-72	-29	-34	-230	-256	-137	-168	-333	-394	-140	-214	-450	-370	-258	-215	-271	-562	-394	-463	-577	-411	-205	-277
	426	272	159	96	107	352	346	222	305	487	500	213	340	665	518	358	347	472	765	636	682	851	618	352	420
28	159	167	126	188	140	236	237	125	208	289	340	280	207	185	331	213	251	186	194	306	134	14	113	66	196
	-202	-119	-163	-392	-265	-285	-256	-131	-369	-259	-280	-365	-187	-405	-658	-495	-508	-799	-501	-410	-624	-721	-472	-535	-392
	363	287	291	581	406	523	494	257	578	549	622	647	395	590	989	708	760	985	696	717	758	736	586	602	588
29	109	168	213	172	156	212	181	234	215	176	169	162	66	177	135	90	194	190	153	176	104	127	223	131	164
	-294	-214	-319	-312	-253	-541	-572	-532	-622	-529	-417	-280	-144	-313	-422	-190	-312	-290	-330	-430	-104	-188	-635	-512	-365
	404	384	532	485	411	754	754	767	839	706	586	443	210	490	557	281	506	481	484	607	209	317	860	644	530
30	54	102	146	165	147	200	326	259	274	326	296	75	122	111	112	60	132	171	203	162	169	134	99	109	165
	-526	-302	-375	-268	-249	-297	-402	-343	-252	-271	-391	-588	-352	-140	-125	-118	-222	-610	-500	-386	-352	-409	-245	-200	-330
	581	405	522	434	397	498	729	603	527	598	689	664	475	252	237	179	354	782	703	548	522	545	345	310	496
31	88	103	103	94	99	130	86	104	61	97	220	219	219	150	200	148	45	21	85	143	172	188	180	175	130
	-159	-126	-294	-246	-328	-234	-48	-97	-197	-146	-293	-529	-584	-319	-282	-169	-28	-17	-51	-242	-379	-357	-458	-695	-262
	248	230	398	341	429	365	135	202	260	245	514	749	804	470	482	318	74	39	137	386	552	545	638	871	393

HOURLY VALUES (nT) OF AU, AL AND AE INDICES — APRIL — 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	101	102	128	200	158	219	274	266	235	226	347	171	144	85	121	243	229	178	154	225	196	169	153	120	185
	AL	-435	-309	-360	-559	-718	-292	-274	-318	-550	-731	-276	-221	-367	-103	-190	-533	-533	-455	-178	-267	-269	-178	-153	-82	-348
	AE	536	412	489	760	878	513	549	585	786	959	625	393	512	188	312	778	762	633	333	494	466	348	306	203	534
2		179	93	90	124	58	109	118	151	185	205	127	191	180	190	198	189	248	365	262	246	180	105	178	211	174
		-207	-585	-142	-178	-107	-97	-87	-309	-723	-613	-403	-158	-272	-401	-439	-502	-192	-526	-575	-520	-140	-95	-368	-740	-349
		387	680	233	304	166	207	206	461	909	820	532	350	452	592	637	692	441	891	837	766	320	201	546	951	524
3		114	115	190	139	113	133	90	156	191	264	194	171	127	152	184	197	185	248	209	174	189	157	231	163	170
		-876	-552	-222	-345	-523	-302	-144	-349	-274	-483	-507	-214	-356	-570	-571	-380	-251	-558	-675	-818	-489	-576	-655	-422	-463
		991	667	413	485	637	436	235	506	467	747	702	387	484	724	756	578	437	807	884	993	678	733	886	586	634
4		197	143	250	268	266	167	127	200	202	114	66	64	144	242	129	103	189	162	-7	63	41	-17	20	124	136
		-405	-565	-518	-441	-169	-232	-219	-530	-535	-195	-139	-242	-415	-538	-134	-130	-220	-1199	-1303	-816	-994	-1206	-763	-491	-517
		603	708	769	710	436	400	347	731	737	311	206	307	560	781	264	234	409	1362	1295	879	1036	1189	783	615	653
5		190	165	231	161	189	170	182	196	194	244	236	194	288	357	352	299	272	185	162	73	72	61	181	173	201
		-430	-441	-409	-380	-389	-358	-406	-411	-458	-499	-496	-562	-445	-621	-652	-758	-692	-688	-608	-755	-675	-632	-593	-539	-537
		621	608	642	542	579	530	589	608	654	745	734	758	734	980	1005	1057	964	873	770	829	748	694	774	712	740
6		115	155	132	133	160	69	71	142	130	142	71	74	141	87	89	81	81	130	173	168	159	110	89	61	115
		-355	-302	-168	-172	-202	-98	-90	-177	-237	-262	-78	-86	-225	-130	-118	-95	-128	-289	-265	-194	-134	-165	-99	-29	-171
		471	458	302	307	363	169	162	320	367	406	151	161	367	219	207	177	210	420	439	363	294	276	189	92	287
7		110	110	88	36	23	76	108	114	167	222	187	304	171	57	38	27	99	157	135	275	221	238	134	86	133
		-96	-143	-41	-19	-14	-49	-84	-62	-94	-429	-954	-438	-186	-65	-85	-56	-149	-161	-175	-335	-238	-175	-246	-285	-191
		207	254	130	56	38	126	194	178	262	652	1143	744	359	123	124	85	249	318	311	611	460	414	380	371	325
8		136	215	314	351	377	346	421	417	167	88	249	230	151	185	213	103	96	259	160	205	242	327	166	156	232
		-299	-475	-461	-483	-512	-495	-676	-637	-535	-645	-591	-720	-316	-337	-267	-291	-82	-303	-354	-318	-330	-479	-513	-676	-450
		435	691	777	835	891	842	1099	1055	704	735	842	952	469	523	480	395	179	562	514	524	573	806	680	833	683
9		286	184	288	278	139	118	55	34	49	60	157	168	86	80	91	67	86	106	146	131	99	77	62	51	121
		-465	-716	-296	-358	-227	-184	-84	-55	-41	-37	-252	-205	-362	-449	-290	-140	-93	-70	-185	-211	-45	-20	-113	-50	-206
		753	901	585	637	368	304	140	89	91	98	411	374	449	530	382	209	180	177	332	343	145	98	175	102	328
10		52	63	63	63	69	52	53	37	59	77	55	77	85	80	63	23	37	51	96	34	64	87	65	54	61
		-68	-77	-49	-131	-121	-73	-36	-43	-36	-36	-60	-49	-64	-124	-99	-66	-39	-103	-181	-25	-35	-92	-248	-108	-82
		121	141	113	196	191	127	90	82	97	114	116	128	150	204	164	90	77	155	278	61	99	180	314	163	144
11		175	89	65	32	27	17	78	88	57	47	152	113	72	44	34	87	67	149	133	138	119	50	41	28	79
		-295	-414	-76	-20	-33	-38	-128	-216	-128	-61	-319	-205	-115	-82	-58	-123	-208	-240	-282	-168	-222	-51	-22	-36	-147
		472	504	141	53	62	56	208	306	186	109	472	319	189	127	92	211	277	390	415	308	341	102	64	65	228
12		20	20	27	44	129	131	192	74	25	31	44	28	28	22	44	124	191	83	121	72	52	145	177	252	87
		-42	-41	-73	-62	-302	-226	-153	-55	-35	-31	-33	-24	-22	-22	-45	-133	-359	-149	-142	-56	-29	-168	-523	-419	-131
		63	63	101	107	433	359	347	130	61	63	78	53	51	45	89	258	551	232	263	130	82	314	701	672	218
13		152	80	81	69	42	21	114	99	66	43	35	55	106	76	18	34	59	144	144	54	82	72	76	28	73
		-158	-39	-53	-108	-141	-29	-91	-231	-61	-18	-13	-40	-119	-93	-56	-40	-42	-193	-212	-54	-40	-42	-158	-38	-86
		310	120	136	179	185	52	207	331	127	62	48	96	226	171	76	75	102	338	357	110	123	115	235	67	160
14		35	40	55	45	23	23	19	20	25	24	19	24	26	49	100	166	214	207	175	201	222	130	110	198	90
		-30	-48	-37	-81	-42	-30	-32	-30	-34	-25	-23	-30	-26	-52	-100	-286	-427	-227	-211	-217	-408	-336	-111	-398	-135
		66	89	93	127	66	55	52	52	60	50	43	55	53	102	202	454	642	434	387	419	631	467	222	597	226
15		87	82	41	31	53	90	87	96	64	66	46	47	18	44	47	33	28	26	43	57	26	24	25	22	49
		-248	-117	-58	-28	-55	-140	-249	-233	-181	-289	-112	-47	-29	-43	-57	-70	-55	-28	-24	-80	-36	-16	-9	-9	-92
		335	200	100	60	110	231	338	331	246	356	158	95	48	88	106	105	84	55	68	137	62	41	34	32	142

16	23	22	18	16	15	16	28	48	65	80	57	51	56	53	50	32	31	31	40	56	91	97	77	37	45
	-14	-23	-27	-26	-27	-31	-23	-15	-168	-42	-34	-40	-44	-30	-29	-26	-20	-17	-24	-56	-139	-135	-159	-99	-52
	37	45	45	43	44	48	52	64	234	123	92	92	101	84	80	59	52	50	65	113	231	232	236	137	98
17	45	37	21	17	15	14	13	14	12	21	39	36	37	53	51	60	44	40	54	56	72	69	70	65	40
	-53	-36	-29	-25	-28	-32	-30	-27	-23	-19	-35	-31	-33	-36	-44	-73	-113	-42	-14	-18	-11	-15	-20	-15	-33
	99	74	52	42	44	47	45	42	37	41	75	69	71	90	97	134	158	83	69	75	84	85	90	81	74
18	47	42	32	50	55	117	67	23	12	20	30	34	29	30	44	36	23	27	29	25	31	34	38	37	38
	-7	-11	-20	-22	-23	-295	-134	-46	-21	-24	-33	-41	-33	-34	-31	-36	-22	-15	-9	-6	-2	-5	-12	-12	-37
	55	53	53	73	79	413	202	70	34	45	64	76	63	64	77	73	47	44	39	33	34	40	51	50	76
19	46	34	35	30	28	27	43	61	75	69	49	42	43	57	65	58	64	65	65	64	113	98	69	88	58
	-21	-11	-22	-19	-24	-32	-21	-22	-32	-33	-22	-17	-10	-15	-42	-46	-85	-24	-2	4	-41	-90	-89	-97	-34
	68	47	58	50	53	61	65	84	109	103	71	60	54	73	107	104	150	90	68	60	154	189	159	186	93
20	74	52	35	73	175	161	158	168	155	116	107	97	79	67	73	68	52	106	75	68	60	49	58	74	92
	-125	-172	-48	-57	-431	-601	-829	-179	-176	-202	-222	-141	-88	-89	-189	-47	-130	-101	-8	-21	-30	-9	-45	-93	-168
	199	226	85	132	607	763	988	349	332	320	330	239	168	158	263	116	183	208	84	89	91	58	103	167	261
21	49	74	65	52	33	35	75	113	105	87	74	71	87	62	42	69	110	111	76	54	56	70	92	119	74
	-167	-191	-171	-100	-41	-33	-88	-291	-294	-141	-62	-95	-184	-127	-89	-171	-279	-225	-57	-41	-117	-62	-89	-268	-141
	218	266	237	153	76	69	165	405	401	229	137	168	272	189	132	241	389	337	133	96	174	133	182	388	216
22	61	54	40	39	33	39	36	71	60	70	46	47	23	16	14	16	24	26	26	20	18	17	16	19	35
	-173	-70	-52	-57	-31	-30	-21	-122	-57	-83	-94	-46	-24	-27	-22	-22	-18	-11	-5	-8	-16	-22	-29	-31	-45
	235	124	92	97	66	70	59	195	118	153	142	94	48	44	38	39	43	38	33	29	35	39	46	51	80
23	21	29	29	32	22	15	20	30	35	32	43	68	57	29	44	54	92	106	144	221	148	149	196	119	72
	-22	-44	-33	-67	-53	-47	-37	-32	-35	-30	-32	-48	-60	-38	-35	-133	-198	-371	-294	-220	-140	-135	-330	-147	-108
	44	74	63	100	76	64	59	64	71	63	76	118	119	68	80	188	290	478	439	442	290	285	526	266	181
24	81	44	29	61	161	163	62	102	69	78	84	78	95	63	38	22	27	48	43	44	45	85	112	61	71
	-41	-35	-32	-19	-125	-115	-45	-72	-56	-48	-59	-82	-63	-86	-69	-46	-28	-39	-69	-41	-37	-53	-102	-78	-60
	123	80	63	81	287	280	108	175	127	127	145	161	160	150	107	69	56	88	113	86	83	139	214	139	132
25	59	44	53	64	66	64	45	116	49	69	56	65	109	187	383	416	348	259	425	396	289	155	85	252	169
	-37	-29	-41	-34	-36	-40	-25	-27	-24	-12	-17	-25	-82	-243	-785	-712	-545	-699	-693	-754	-600	-520	-622	-374	-291
	96	74	96	98	103	105	71	144	74	81	73	91	193	431	1170	1129	894	958	1119	1150	890	676	708	627	460
26	142	207	253	252	310	199	159	289	358	272	289	208	172	247	428	579	499	443	518	415	244	336	347	265	310
	-766	-426	-475	-473	-691	-632	-565	-521	-526	-739	-407	-444	-279	-481	-656	-1325	-1257	-992	-1412	-794	-506	-480	-508	-498	-660
	909	634	729	726	1003	833	726	811	885	1013	697	654	451	729	1085	1905	1757	1436	1930	1209	750	816	856	763	971
27	163	215	324	324	217	156	234	218	298	203	227	130	78	162	122	105	104	204	208	202	173	188	261	160	195
	-489	-296	-479	-616	-197	-73	-181	-479	-469	-275	-230	-133	-58	-148	-141	-142	-168	-392	-440	-443	-274	-148	-436	-248	-290
	653	512	804	942	415	230	417	697	768	480	458	264	137	311	264	248	272	596	650	646	449	337	697	409	486
28	165	176	110	145	131	189	186	163	200	268	219	182	195	134	75	137	203	92	38	97	123	103	73	66	145
	-177	-177	-191	-267	-229	-307	-437	-413	-459	-448	-220	-306	-343	-260	-185	-275	-376	-163	-23	-61	-156	-151	-85	-40	-240
	343	354	302	413	361	498	623	577	660	717	440	489	539	395	262	413	580	256	62	159	280	254	158	107	385
29	38	56	29	27	76	138	112	180	128	117	129	138	212	187	239	175	268	178	88	95	197	238	118	150	138
	-29	-74	-46	-54	-38	-280	-234	-462	-288	-80	-203	-234	-419	-370	-439	-272	-347	-296	-95	-115	-280	-413	-180	-139	-224
	68	130	76	82	115	420	347	643	417	198	333	374	633	559	679	447	615	474	184	210	478	652	298	289	363
30	71	47	33	106	162	211	114	41	23	13	11	11	21	46	29	20	28	18	30	30	39	225	236	136	71
	-57	-21	-30	-58	-289	-263	-124	-40	-55	-36	-29	-30	-30	-34	-44	-48	-44	-41	-39	-45	-38	-246	-638	-692	-124
	129	69	63	166	453	476	240	82	78	50	41	42	53	82	73	69	72	60	69	75	78	472	874	829	196

HOURLY VALUES (nT) OF AU, AL AND AE INDICES MAY 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	235	179	184	157	77	107	141	178	139	166	233	291	246	301	309	307	307	258	270	271	284	288	241	241	225
	AL	-382	-165	-160	-260	-60	-104	-360	-321	-215	-236	-458	-504	-490	-643	-549	-548	-374	-361	-423	-419	-331	-392	-338	-346	-352
	AE	618	345	346	419	139	213	501	499	354	403	691	796	737	945	858	856	682	620	694	691	616	681	579	588	578
2		201	227	183	117	160	254	205	232	176	165	176	170	105	44	21	48	20	4	16	30	23	19	20	17	110
		-459	-323	-178	-192	-167	-282	-343	-278	-171	-100	-115	-326	-153	-23	-29	-40	-37	-36	-33	-41	-25	-15	-18	-19	-142
		661	551	363	311	329	537	549	511	348	266	291	496	259	67	52	89	58	41	50	72	49	35	39	36	253
3		12	18	7	2	2	8	10	31	84	63	136	76	55	63	65	48	78	72	68	127	152	149	206	274	75
		-29	-23	-38	-33	-31	-33	-37	-44	-91	-52	-68	-37	-36	-48	-56	-172	-233	-225	-63	-129	-260	-235	-208	-355	-106
		42	42	45	36	34	42	48	76	176	117	205	114	92	112	122	221	311	298	131	257	413	385	415	630	182
4		205	104	96	107	156	194	182	165	169	198	233	188	128	90	110	58	58	64	79	126	111	110	113	89	131
		-224	-101	-88	-99	-301	-270	-209	-160	-189	-282	-216	-391	-102	-194	-204	-106	-59	-34	-104	-236	-60	-97	-395	-139	-177
		431	206	186	207	458	465	392	326	359	482	450	580	231	285	315	165	118	99	185	364	172	207	509	229	309
5		119	137	140	92	112	167	156	179	161	218	237	237	277	281	251	355	364	307	280	335	260	146	173	141	213
		-134	-281	-197	-132	-191	-144	-170	-183	-196	-259	-309	-278	-277	-453	-420	-326	-460	-430	-422	-410	-619	-135	-161	-500	-295
		254	420	339	225	305	312	328	362	358	478	547	516	554	735	672	682	824	738	703	746	879	282	335	643	510
6		187	138	72	49	35	206	197	223	177	147	79	45	36	57	107	63	31	35	30	25	16	12	23	35	84
		-436	-182	-44	-19	-24	-165	-420	-225	-127	-81	-42	-60	-30	-59	-131	-102	-22	-14	-18	-27	-19	-27	-35	-40	-98
		624	321	117	69	60	372	619	450	305	228	122	105	67	117	239	166	54	50	48	53	36	39	58	76	183
7		49	30	16	8	9	13	8	17	25	29	106	164	97	62	40	23	18	24	30	21	18	15	16	21	36
		-89	-54	-20	-21	-24	-31	-23	-18	-22	-20	-56	-214	-136	-64	-46	-23	-26	-16	-16	-26	-21	-31	-32	-26	-44
		139	85	36	30	35	45	33	37	48	51	162	378	233	126	86	46	45	40	46	48	39	46	49	47	80
8		16	17	15	32	37	24	59	51	36	83	76	46	51	28	28	22	25	32	36	31	26	23	21	18	35
		-20	-18	-24	-45	-42	-54	-59	-45	-18	-23	-71	-65	-23	-19	-20	-23	-12	-5	-7	0	-5	-16	-19	-25	-28
		37	36	41	79	81	79	120	98	56	107	148	112	74	49	49	47	38	38	44	32	32	40	41	44	63
9		17	29	34	105	65	49	132	90	73	54	43	93	90	87	145	212	155	84	80	123	120	200	160	256	104
		-15	-25	-21	-88	-141	-84	-105	-75	-80	-12	-16	-38	-71	-267	-420	-442	-150	-112	-61	-76	-145	-241	-134	-380	-133
		33	55	57	194	208	134	239	166	154	67	60	132	162	354	566	654	305	196	142	199	266	442	295	638	238
10		176	73	41	138	254	258	213	188	221	411	427	265	103	171	162	177	241	156	116	106	96	68	72	79	175
		-202	-23	-25	-64	-492	-492	-183	-121	-200	-425	-397	-321	-242	-336	-313	-214	-191	-143	-151	-37	-14	-8	-21	-69	-195
		379	96	68	204	747	750	398	309	422	837	825	586	345	508	476	391	433	300	269	144	110	78	95	149	372
11		78	52	39	45	41	37	102	102	61	69	70	107	159	58	32	35	46	60	96	130	193	137	97	126	82
		-189	-65	-20	-40	-25	-25	-24	-62	-37	-26	-57	-57	-86	-46	-45	-49	-62	-66	-83	-66	-105	-144	-63	-47	-62
		268	118	60	86	67	63	128	165	98	95	128	165	247	106	78	85	108	127	179	197	299	282	161	174	145
12		130	55	37	67	35	53	85	152	226	211	211	159	88	68	97	68	138	251	254	150	103	71	48	58	117
		-65	-21	-19	-20	-32	-14	-32	-116	-173	-275	-252	-92	-32	-28	-44	-84	-186	-374	-245	-65	3	-18	-22	-16	-93
		195	77	57	89	69	68	118	269	400	487	464	253	121	97	142	153	324	625	501	216	98	90	71	75	211
13		65	207	270	135	58	33	52	58	114	183	100	42	43	50	58	43	27	32	36	20	18	20	14	9	70
		-22	-307	-385	-247	-80	-50	-54	-45	-123	-97	-58	-24	-23	-40	-57	-20	-11	-7	-15	-10	-15	-27	-29	-29	-74
		87	515	657	383	140	84	108	105	239	281	158	67	67	91	115	64	39	41	52	31	34	47	44	39	145
14		7	4	2	2	10	49	24	9	22	36	32	145	195	167	131	118	151	240	269	259	236	300	365	314	129
		-26	-21	-22	-23	-24	-29	-41	-26	-26	-35	-30	-121	-376	-414	-262	-209	-151	-435	-360	-254	-345	-266	-234	-257	-166
		34	26	25	26	35	80	67	37	49	72	63	267	572	582	393	328	303	676	630	514	582	567	601	572	296
15		157	129	93	43	47	78	133	303	213	253	195	142	85	66	42	58	45	37	56	82	45	40	21	28	100
		-119	-119	-91	-64	-98	-114	-193	-395	-228	-246	-178	-157	-111	-156	-70	-27	-28	-36	-104	-45	-44	-14	-16	-23	-112
		277	250	184	109	146	194	328	699	442	499	373	300	197	223	113	86	74	75	162	128	90	55	37	51	212

16	39	36	51	69	47	44	27	20	25	70	247	207	117	68	41	39	33	36	37	31	34	48	105	120	66
	-33	-46	-44	-57	-61	-59	-44	-33	-33	-28	-87	-148	-105	-40	-27	-13	-8	-17	-4	-7	-32	-47	-131	-89	-50
	73	83	97	128	109	105	73	54	59	99	335	355	223	109	69	53	42	55	42	38	67	96	236	211	117
17	178	151	141	132	244	149	98	150	315	370	199	100	100	79	33	40	63	59	42	47	41	38	25	38	118
	-192	-166	-95	-206	-333	-327	-54	-54	-192	-616	-221	-93	-80	-39	-25	-35	-32	-72	-23	-10	-9	-18	-22	-29	-123
	372	319	238	340	579	478	153	204	508	987	421	194	182	119	59	76	97	131	66	58	52	57	48	67	242
18	34	27	39	76	92	126	101	126	120	112	113	100	93	118	117	102	107	97	142	131	206	240	287	308	126
	-31	-28	-27	-36	-69	-115	-111	-48	-49	-71	-164	-75	-75	-126	-229	-248	-255	-114	-312	-240	-269	-297	-278	-409	-153
	65	56	67	114	162	242	214	175	171	184	277	176	169	245	347	350	363	212	456	372	476	537	567	718	280
19	173	164	193	252	207	293	319	404	186	205	86	78	71	44	35	46	124	216	262	174	69	70	94	124	162
	-446	-226	-166	-384	-760	-777	-641	-523	-272	-287	-77	-78	-99	-89	-87	-65	-148	-235	-521	-239	-72	-74	-67	-157	-270
	621	391	361	637	968	1071	961	928	459	494	164	156	170	133	122	112	272	452	783	414	142	144	161	282	433
20	238	204	169	171	161	206	249	197	186	272	250	211	97	117	120	50	273	330	367	325	243	232	325	248	218
	-297	-368	-243	-197	-279	-313	-506	-491	-371	-423	-385	-173	-101	-194	-359	-156	-252	-789	-717	-604	-417	-179	-226	-359	-350
	536	573	413	370	442	520	756	689	558	696	636	384	198	312	480	207	526	1120	1084	930	660	412	552	608	569
21	273	341	489	360	324	273	281	294	189	178	92	189	251	54	37	127	87	196	196	243	226	329	241	206	228
	-245	-403	-573	-520	-474	-305	-311	-637	-428	-256	-81	-306	-437	-286	-127	-164	-126	-325	-407	-406	-232	-247	-379	-535	-342
	520	746	1063	881	799	579	593	932	618	434	173	495	688	340	164	291	214	522	604	650	459	577	622	742	571
22	241	166	161	236	163	181	300	314	245	161	152	176	163	199	146	213	410	350	257	240	226	233	293	202	226
	-386	-409	-268	-268	-122	-211	-417	-653	-580	-262	-141	-240	-466	-415	-306	-389	-569	-697	-558	-363	-389	-443	-356	-490	-392
	629	576	430	506	285	393	718	968	826	424	293	416	630	615	452	603	980	1048	816	604	616	677	650	694	619
23	158	363	217	140	312	193	114	240	266	341	308	156	97	78	98	221	170	259	236	201	149	191	138	136	199
	-563	-453	-410	-353	-396	-178	-121	-163	-444	-355	-383	-352	-251	-166	-115	-375	-275	-258	-435	-310	-202	-219	-420	-249	-310
	722	817	628	495	709	372	237	404	710	697	692	508	349	245	213	597	446	519	672	512	352	411	558	386	510
24	113	82	52	65	67	155	158	164	185	239	251	184	232	211	445	462	365	234	322	180	133	103	179	210	200
	-248	-147	-34	-103	-90	-138	-352	-239	-202	-342	-396	-60	-234	-172	-538	-720	-572	-266	-452	-250	-65	-56	-194	-380	-260
	362	230	87	170	159	294	512	404	389	582	648	245	468	385	984	1183	938	500	774	432	199	160	375	591	461
25	133	74	65	41	35	71	122	48	58	71	152	143	165	238	191	153	205	193	170	142	251	311	264	239	147
	-442	-123	-20	-42	-100	-99	-137	-68	-48	-43	-67	-191	-333	-332	-373	-398	-282	-199	-302	-215	-282	-437	-394	-554	-228
	576	198	86	85	136	171	260	117	107	114	219	335	499	571	565	552	487	393	472	358	535	750	659	794	377
26	77	114	179	141	156	208	189	145	85	70	127	160	127	116	84	51	29	43	89	43	23	27	18	14	96
	-131	-98	-386	-554	-379	-226	-349	-313	-131	-57	-139	-186	-141	-208	-125	-25	-22	-67	-158	-72	-20	-22	-26	-31	-161
	209	213	567	696	536	436	539	459	217	127	267	347	269	325	209	78	53	111	248	116	43	49	44	46	258
27	8	5	4	5	8	9	7	85	200	213	207	144	129	159	172	188	187	217	166	118	173	276	235	281	133
	-32	-33	-26	-23	-22	-23	-30	-48	-199	-311	-221	-144	-187	-249	-320	-318	-252	-276	-164	-97	-129	-169	-211	-205	-154
	41	38	31	29	31	34	38	134	400	526	430	289	318	409	494	507	440	493	331	216	303	446	448	488	288
28	219	137	108	104	92	68	73	127	171	197	159	169	155	116	104	120	108	152	198	255	229	220	221	260	157
	-155	-57	-48	-34	-45	-55	-61	-62	-75	-69	-83	-134	-153	-150	-158	-254	-269	-236	-284	-266	-221	-230	-285	-271	-152
	376	195	157	140	139	124	135	189	246	266	243	304	309	267	262	374	378	388	482	521	451	451	507	532	310
29	133	138	157	201	294	142	148	124	133	166	145	157	159	123	94	103	92	194	167	119	107	108	107	100	142
	-85	-75	-213	-321	-406	-147	-127	-104	-123	-180	-202	-143	-97	-160	-144	-226	-249	-338	-445	-138	-71	-154	-182	-140	-186
	219	215	371	523	701	291	277	229	257	347	347	301	257	283	238	330	341	532	613	258	180	264	290	242	329
30	164	233	239	199	223	193	162	242	324	228	346	307	148	53	40	107	191	148	83	158	217	267	262	201	197
	-150	-249	-314	-240	-252	-228	-427	-475	-517	-571	-482	-437	-157	-82	-66	-164	-385	-216	-56	-105	-337	-396	-261	-234	-283
	315	484	554	441	477	423	590	718	842	799	829	746	306	136	107	271	577	364	139	264	555	664	524	435	482
31	173	176	118	84	52	18	21	35	60	60	85	76	49	32	12	12	5	8	12	29	65	137	110	159	66
	-125	-113	-68	-28	-56	-46	-15	-17	-32	-52	-103	-92	-36	-33	-28	-27	-26	-26	-23	-25	-47	-210	-164	-132	-63
	299	290	188	114	109	66	38	53	93	112	188	168	85	65	42	39	32	35	35	54	113	349	275	292	131

HOURLY VALUES (nT) OF AU, AL AND AE INDICES JUNE 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	140	67	43	27	69	45	12	50	50	42	69	119	117	118	131	53	47	66	74	102	92	70	57	81	73
	AL	-112	-34	-35	-16	-17	-74	-60	-19	-27	-26	-29	-40	-91	-101	-122	-64	-28	-48	-76	-53	-13	-17	-24	-36	-48
	AE	253	103	78	43	87	121	73	69	78	69	98	160	208	219	253	118	76	114	151	156	107	89	82	118	122
2		135	175	128	178	219	246	231	124	143	184	209	167	160	125	124	140	152	80	79	98	141	160	145	122	153
		-86	-140	-63	-42	-203	-292	-223	-41	-31	-45	-43	-103	-135	-158	-190	-156	-173	-71	-21	-15	-14	-56	-305	-169	-116
		222	316	192	221	424	540	456	167	175	230	253	272	295	284	314	296	325	152	102	113	156	218	450	292	269
3		81	73	54	48	37	26	173	184	158	141	170	246	129	348	468	293	183	337	336	150	103	90	137	68	168
		-21	-13	-11	-7	-13	-10	-56	-163	-184	-40	-43	-74	-45	-401	-734	-438	-202	-359	-301	-51	-21	-21	-115	-47	-141
		104	87	66	56	52	38	230	348	343	181	214	320	174	750	1203	733	386	697	639	202	125	112	253	116	309
4		67	79	137	294	251	158	78	129	265	359	255	170	214	191	72	106	146	148	171	110	111	201	299	300	180
		-40	-58	-199	-271	-298	-124	-85	-74	-254	-548	-459	-188	-269	-283	-99	-96	-157	-230	-151	-31	-40	-196	-400	-438	-208
		107	138	337	566	549	284	164	204	520	909	714	359	484	475	172	203	304	379	323	142	152	397	700	739	388
5		191	189	244	260	221	132	146	150	127	97	173	275	225	131	72	54	75	72	80	79	95	52	56	207	142
		-405	-306	-331	-405	-278	-177	-60	-152	-270	-82	-97	-292	-376	-254	-90	-58	-59	-85	-45	-44	-26	-11	-26	-152	-170
		597	496	576	666	500	310	207	303	397	179	271	568	602	386	163	112	135	158	126	123	122	64	83	361	313
6		101	57	101	100	71	183	114	95	135	90	114	128	185	148	97	48	56	64	75	118	178	108	107	83	106
		-228	-137	-137	-350	-111	-145	-315	-165	-157	-95	-89	-166	-312	-255	-218	-82	-20	-13	-24	-51	-237	-176	-82	-75	-152
		331	195	239	452	183	330	431	261	292	185	204	294	499	403	316	130	76	78	100	169	416	286	190	159	259
7		117	118	88	63	117	230	214	177	241	243	232	153	121	138	72	39	43	53	87	140	125	76	59	56	125
		-154	-250	-155	-101	-161	-308	-236	-207	-216	-349	-257	-155	-157	-310	-231	-40	0	-22	-68	-138	-120	-17	-22	-19	-154
		272	369	244	165	280	539	451	385	458	593	489	309	279	449	304	80	45	76	155	279	246	95	82	76	280
8		42	28	31	19	14	20	17	27	33	37	65	86	105	104	129	93	93	99	81	168	285	140	154	181	85
		-21	-28	-37	-24	-18	-10	-10	-14	-25	-16	-85	-32	-38	-56	-31	-52	-20	0	-4	-68	-191	-73	-74	-89	-42
		64	57	70	44	33	32	28	42	59	54	150	119	144	161	160	146	114	99	86	237	478	214	229	271	129
9		97	93	92	102	55	87	207	344	343	168	96	118	132	92	64	67	143	132	242	224	203	143	124	78	144
		-110	-90	-40	-100	-135	-104	-137	-521	-415	-125	-63	-86	-190	-167	-78	-45	-138	-137	-207	-301	-308	-156	-127	-77	-161
		208	183	133	204	192	192	345	866	759	294	160	205	323	260	142	112	282	269	449	526	512	301	252	156	305
10		82	137	151	200	169	152	116	103	112	165	125	98	125	118	129	150	86	99	102	61	91	168	139	148	126
		-83	-118	-270	-374	-431	-272	-298	-226	-127	-116	-179	-134	-102	-219	-294	-232	-130	-150	-82	-19	-56	-216	-260	-176	-190
		166	257	422	575	601	425	415	330	240	282	306	233	228	338	423	383	217	251	185	80	149	385	400	325	317
11		109	113	160	145	125	148	113	122	120	95	84	121	140	110	93	89	51	91	63	70	88	85	116	98	106
		-90	-169	-296	-218	-305	-259	-224	-233	-137	-77	-50	-37	-199	-230	-132	-92	-166	-140	-43	-19	-62	-125	-114	-73	-145
		199	283	457	364	431	408	338	355	258	173	135	159	340	340	225	181	218	232	107	90	150	211	231	172	252
12		85	118	204	213	172	170	137	94	89	135	71	119	121	93	64	42	39	37	34	40	47	49	42	35	94
		-41	-91	-318	-438	-213	-230	-161	-84	-91	-199	-90	-92	-186	-144	-69	-15	-16	-21	-28	-38	-44	-27	-12	-13	-111
		127	210	523	652	387	401	300	179	180	335	161	211	308	237	133	58	57	59	63	79	93	76	55	49	206
13		25	19	19	25	106	141	180	115	44	26	26	64	107	64	50	25	28	80	161	161	84	35	42	34	69
		-20	-17	-21	-16	-81	-171	-247	-79	-32	-31	-24	-30	-66	-37	-36	-31	-26	-92	-281	-176	-75	-48	-32	-28	-71
		45	37	42	42	189	313	428	195	78	59	51	94	174	102	87	57	54	173	443	338	160	84	75	63	141
14		35	36	52	33	42	22	39	57	108	101	75	82	79	55	85	61	59	43	58	62	65	51	46	44	58
		-26	-25	-76	-20	-8	-28	-39	-20	-12	-136	-28	-17	-18	-12	-19	-47	-15	-1	-25	-44	-52	-31	-25	-30	-31
		63	63	130	54	51	52	79	78	121	238	104	99	98	67	104	109	75	45	84	106	118	83	73	75	90
15		46	63	129	80	129	110	75	108	120	120	197	172	172	169	136	293	207	187	267	231	288	236	171	269	165
		-20	-43	-58	-108	-141	-104	-16	-15	-34	-57	-54	-197	-216	-217	-283	-626	-493	-299	-237	-376	-151	-85	-159	-278	-178
		67	107	188	189	271	216	92	124	154	177	252	370	388	386	419	920	700	487	505	608	440	321	332	548	344

16	285	413	397	245	413	302	315	354	291	289	286	166	196	165	127	66	135	129	162	145	119	202	310	185	237
	-453	-597	-693	-455	-548	-436	-465	-395	-450	-373	-601	-385	-356	-286	-238	-103	-205	-169	-225	-191	-143	-164	-324	-254	-354
	739	1010	1091	701	961	739	780	749	742	663	888	552	553	452	367	170	342	300	388	337	264	368	635	441	593
17	129	62	50	42	31	43	53	115	210	130	62	33	63	62	71	54	41	43	46	80	111	53	43	44	70
	-132	-42	-37	-25	-47	-45	-33	-194	-416	-444	-112	-15	-24	-44	-151	-138	-152	-76	-67	-84	-135	-29	-29	-21	-104
	262	105	88	67	79	90	87	310	627	575	174	49	87	107	223	192	194	119	114	166	248	83	73	66	174
18	80	84	80	74	81	64	63	71	141	179	232	174	224	440	312	350	394	391	244	223	132	105	92	130	182
	-59	-71	-190	-189	-97	-34	-11	-9	-87	-183	-505	-379	-359	-613	-524	-521	-441	-457	-361	-314	-92	-53	-115	-324	-249
	140	155	270	264	179	99	75	81	230	362	739	553	584	1054	837	872	836	849	606	539	226	159	207	455	432
19	173	154	86	65	146	157	164	183	214	255	289	103	90	105	207	233	230	191	252	214	255	273	242	179	186
	-350	-361	-199	-29	-79	-329	-376	-345	-244	-258	-434	-161	-152	-192	-358	-326	-267	-253	-320	-338	-436	-380	-365	-492	-293
	524	516	286	95	226	487	541	529	459	514	724	264	242	298	567	560	498	446	574	554	693	654	607	672	480
20	246	230	257	197	169	166	93	193	118	224	122	76	87	73	93	55	61	91	60	38	20	27	67	33	117
	-544	-496	-479	-566	-423	-213	-134	-201	-174	-403	-145	-109	-88	-132	-139	-28	-32	-133	-36	-18	-17	-26	-45	-36	-192
	791	727	737	763	593	379	227	395	292	628	268	186	176	206	233	85	95	226	97	58	38	54	113	70	310
21	62	35	11	10	6	8	3	5	10	9	16	14	15	15	17	41	54	50	73	88	158	148	170	185	50
	-83	-44	-33	-33	-22	-19	-23	-30	-28	-27	-27	-20	-16	-13	-20	-36	-92	-102	-149	-131	-145	-156	-165	-219	-68
	146	80	46	44	29	28	27	37	40	37	44	35	32	28	38	78	147	153	222	220	304	305	337	405	119
22	196	216	219	195	222	210	154	134	96	38	31	38	88	160	107	78	93	53	59	84	102	122	129	159	124
	-285	-230	-278	-223	-170	-163	-214	-161	-78	-41	-25	-27	-71	-219	-294	-164	-164	-127	-109	-97	-141	-101	-130	-165	-153
	482	447	498	419	394	375	369	296	175	80	58	65	160	380	402	242	258	181	168	182	244	224	261	326	278
23	178	128	104	105	157	105	109	174	92	45	18	28	24	16	31	23	38	54	40	54	206	294	344	317	112
	-170	-101	-49	-37	-82	-78	-72	-150	-74	-21	-12	-14	-13	-14	-15	-17	-22	-16	-9	-35	-172	-590	-504	-569	-118
	350	231	154	144	240	184	182	324	167	68	32	43	37	31	47	40	61	70	49	90	379	885	849	887	231
24	187	260	221	281	304	164	82	51	66	154	115	89	69	91	88	64	98	114	65	46	27	45	77	183	123
	-684	-718	-564	-426	-507	-255	-56	-45	-53	-82	-208	-173	-58	-142	-116	-149	-171	-229	-69	-55	-48	-45	-52	-234	-214
	872	978	786	707	811	420	139	98	119	237	324	262	127	234	205	213	269	344	136	102	76	91	130	418	337
25	152	135	133	122	174	119	53	100	163	103	36	33	75	97	86	55	80	53	110	113	121	101	96	68	99
	-116	-86	-182	-208	-266	-183	-36	-23	-109	-218	-54	-40	-87	-152	-213	-111	-155	-41	-100	-52	-165	-52	-72	-55	-116
	269	222	316	331	442	303	91	123	272	321	91	73	163	249	300	167	235	94	211	167	287	154	170	125	216
26	58	125	185	84	82	43	94	170	111	128	55	67	37	23	23	19	26	41	132	187	237	220	247	240	110
	-31	-128	-242	-52	-29	-17	-38	-164	-70	-66	-85	-53	-10	-20	-14	-20	-25	-42	-172	-237	-292	-221	-302	-264	-108
	90	253	427	137	112	61	133	335	181	195	141	121	49	43	38	40	51	83	305	424	531	442	550	505	219
27	191	213	244	267	288	194	141	156	145	171	210	234	201	103	70	39	25	23	28	36	54	31	62	87	134
	-385	-336	-392	-413	-224	-221	-244	-86	-109	-138	-210	-204	-172	-105	-51	-22	-13	-29	-19	-37	-44	-34	-49	-57	-150
	577	550	637	682	513	417	386	242	254	309	421	440	374	210	122	62	39	53	47	74	99	67	112	146	285
28	139	149	207	266	253	348	338	282	278	269	288	295	244	262	161	146	270	291	233	178	202	297	230	312	247
	-111	-225	-193	-234	-359	-435	-287	-286	-250	-192	-252	-214	-254	-382	-231	-228	-422	-555	-635	-215	-213	-329	-246	-324	-295
	251	376	402	501	612	783	626	569	528	463	542	510	499	644	393	376	693	847	869	395	416	626	477	637	543
29	294	255	212	139	75	72	69	49	57	163	152	120	124	112	82	59	75	97	97	89	198	201	214	211	134
	-266	-251	-164	-51	-31	-41	-103	-62	-13	-21	-89	-95	-98	-72	-52	-84	-110	-107	-66	-27	-203	-351	-252	-204	-117
	561	508	377	190	107	115	173	112	70	184	243	215	223	185	135	144	186	205	164	117	403	554	468	416	252
30	135	126	139	134	174	225	196	105	96	146	152	148	181	148	159	208	135	186	251	168	78	50	53	48	143
	-250	-262	-226	-161	-171	-143	-174	-152	-51	-68	-261	-306	-183	-230	-308	-282	-252	-228	-263	-211	-22	-22	-29	-35	-179
	385	389	366	296	347	370	372	258	148	214	414	455	365	379	469	491	387	414	514	381	102	74	83	84	323

HOURLY VALUES (nT) OF AU, AL AND AE INDICES JULY 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	74	85	107	100	196	167	110	96	72	125	87	49	60	50	63	86	174	153	120	255	256	203	141	80	121
	AL	-16	-25	-28	-21	-103	-274	-109	-33	-16	-136	-79	-18	-7	-1	-34	-34	-143	-264	-137	-300	-617	-213	-97	-35	-114
	AE	90	111	136	122	300	443	220	130	89	263	166	68	68	52	98	121	318	418	257	556	874	416	239	116	236
2		142	200	136	90	59	59	94	146	99	82	147	70	74	46	66	91	111	140	150	150	169	132	78	199	114
		-90	-269	-258	-107	-24	-12	-68	-203	-166	-59	-50	-34	-32	-7	-32	-66	-56	-129	-99	-27	-124	-188	-28	-174	-96
		233	469	395	198	84	72	164	351	266	142	198	104	107	54	99	158	167	270	249	179	294	321	107	374	211
3		164	148	140	105	81	67	67	111	113	148	202	119	133	159	155	183	190	254	134	87	117	99	74	51	129
		-340	-216	-122	-45	-41	-23	-39	-77	-59	-94	-272	-164	-80	-249	-298	-301	-296	-304	-49	-19	-71	-96	-84	-27	-140
		505	365	264	151	123	91	108	190	174	243	475	284	214	408	454	485	487	558	184	107	190	196	159	79	270
4		39	38	102	156	107	126	192	111	141	125	120	174	96	116	95	94	96	116	138	221	192	158	182	220	131
		-23	-29	-59	-195	-64	-93	-202	-286	-156	-101	-32	-20	-56	-124	-85	-37	-73	-38	-57	-149	-130	-112	-159	-285	-107
		64	68	163	353	171	220	396	398	298	227	153	196	153	241	181	132	170	155	196	371	323	271	341	506	239
5		303	111	153	131	100	130	137	156	183	137	54	107	76	39	40	41	70	50	58	93	69	49	46	60	100
		-420	-137	-101	-175	-132	-238	-183	-212	-348	-202	-50	-61	-133	-118	-12	-29	-54	-20	-44	-37	-106	-16	-33	-52	-121
		723	249	255	308	233	369	321	369	532	340	106	168	209	158	54	71	124	70	104	130	176	66	80	112	222
6		135	138	158	201	223	248	152	143	99	75	116	96	143	126	64	79	71	60	65	100	156	112	127	123	125
		-80	-104	-139	-179	-220	-274	-106	-78	-88	-48	-99	-95	-134	-301	-76	-45	-38	-64	-46	-86	-162	-145	-165	-159	-122
		216	242	297	381	445	524	260	223	188	125	216	192	278	427	140	126	110	126	113	188	320	258	292	283	249
7		70	58	84	40	60	58	100	110	104	84	77	95	127	96	106	53	62	60	101	124	140	120	108	93	89
		-64	-43	-77	-58	-53	-135	-129	-104	-63	-70	-152	-85	-65	-62	-225	-156	-61	-43	-49	-62	-81	-119	-179	-86	-93
		135	101	161	98	114	195	230	215	168	155	230	182	193	159	332	209	124	104	151	187	223	240	288	180	182
8		70	81	92	148	76	223	159	158	163	102	60	97	112	126	115	48	71	92	79	81	45	99	120	222	110
		-32	-51	-191	-251	-62	-129	-233	-219	-262	-106	-38	-63	-197	-239	-262	-85	-81	-83	-148	-85	-17	-86	-180	-366	-144
		102	132	283	400	139	354	394	379	427	209	99	162	310	366	378	134	153	175	229	167	63	186	302	589	256
9		177	117	111	122	250	156	124	199	212	155	150	135	170	130	83	82	61	68	59	50	58	75	87	66	121
		-265	-131	-131	-229	-374	-177	-43	-82	-197	-108	-69	-183	-235	-159	-121	-32	-54	-48	-31	-16	-23	-31	-29	-15	-116
		443	248	242	352	625	334	169	282	410	265	221	318	405	290	205	115	115	117	91	68	83	107	117	81	238
10		50	52	56	71	62	95	50	91	163	253	122	63	143	176	205	136	130	170	163	225	122	54	50	136	118
		-23	-32	-53	-105	-56	-27	-13	-16	-56	-303	-252	-54	-118	-293	-526	-191	-226	-179	-181	-225	-133	-26	-44	-133	-136
		73	84	109	177	118	124	64	109	220	557	375	119	261	470	732	329	356	350	344	451	256	80	94	269	255
11		130	67	29	35	31	32	51	61	18	14	23	65	135	159	127	199	244	246	231	226	262	256	235	116	125
		-143	-105	-37	-28	-33	-30	-48	-55	-27	-16	-17	-50	-142	-264	-220	-293	-397	-268	-203	-195	-183	-271	-250	-12	-137
		273	172	66	63	65	64	100	118	47	31	42	116	278	423	347	492	642	515	434	421	446	528	486	128	262
12		175	166	179	84	90	84	183	97	107	112	124	33	40	20	17	14	33	45	47	69	147	141	113	65	91
		-66	-239	-649	-474	-112	-83	-166	-218	-192	-96	-42	-85	-60	-40	-52	-62	-78	-10	-29	-67	-178	-193	-91	-36	-138
		241	405	829	558	203	167	351	316	300	210	168	119	100	61	69	76	112	56	77	138	326	335	205	101	230
13		41	66	161	194	254	219	488	493	381	368	289	289	537	282	492	399	269	310	250	187	128	95	164	151	271
		-32	-51	-174	-463	-605	-172	-345	-946	-295	-192	-471	-533	-851	-1208	-862	-498	-164	-178	-200	-242	-105	-41	-107	-342	-378
		73	118	336	658	860	392	834	1440	677	561	760	823	1389	1491	1356	897	434	489	451	430	233	137	271	494	650
14		90	365	283	314	261	249	194	203	103	213	180	138	80	115	116	332	264	229	173	224	150	134	127	128	194
		-387	-445	-530	-492	-297	-376	-233	-277	-92	-234	-296	-220	-355	-319	-154	-414	-547	-263	-273	-342	-118	-187	-350	-246	-310
		479	811	815	808	559	627	428	482	196	449	477	359	435	434	271	746	813	493	447	567	270	321	478	375	506
15		157	148	212	147	167	230	162	209	203	144	203	175	81	69	121	145	69	119	174	241	175	243	202	165	165
		-213	-130	-491	-445	-291	-218	-161	-349	-416	-281	-337	-281	-61	-174	-366	-370	-125	-177	-140	-595	-304	-297	-413	-432	-295
		370	279	704	593	459	449	325	559	620	426	542	457	143	243	488	516	195	297	315	837	480	541	616	598	461

16	146	202	173	200	140	118	64	75	194	230	300	171	56	37	62	50	61	69	106	223	256	155	234	158	145
	-265	-238	-325	-547	-359	-178	-59	-43	-236	-530	-517	-402	-38	-39	-129	-124	-62	-53	-103	-342	-389	-164	-300	-368	-242
	411	441	499	749	500	297	124	119	431	761	818	574	95	77	193	174	124	123	209	566	646	319	535	527	388
17	144	197	210	147	227	337	195	176	141	114	263	213	162	130	141	202	152	155	238	92	122	218	152	93	176
	-299	-376	-394	-392	-403	-718	-784	-483	-435	-178	-558	-539	-478	-227	-287	-643	-276	-274	-214	-60	-142	-422	-242	-78	-371
	443	574	605	540	632	1056	980	661	578	294	822	752	640	358	429	846	429	430	452	153	265	640	395	171	548
18	129	126	160	178	189	159	98	100	100	95	128	80	149	163	113	107	150	191	161	182	209	143	79	53	135
	-76	-163	-397	-385	-274	-286	-161	-107	-139	-173	-104	-154	-338	-541	-291	-153	-180	-456	-289	-397	-461	-251	-160	-57	-250
	206	289	558	564	464	446	261	209	240	269	233	235	488	704	405	261	331	647	451	580	670	395	240	110	386
19	168	150	194	164	172	233	126	91	104	108	74	45	78	77	69	39	32	56	46	112	133	144	171	135	113
	-399	-326	-353	-366	-318	-358	-160	-59	-82	-359	-155	-66	-110	-291	-109	-93	-36	-96	-105	-97	-183	-218	-124	-164	-193
	567	477	548	531	492	593	287	151	187	468	231	112	188	368	179	133	69	154	153	211	317	363	295	300	307
20	115	138	117	123	134	102	163	179	56	70	108	158	74	46	23	47	44	49	53	36	31	57	181	153	94
	-145	-183	-182	-245	-200	-181	-277	-343	-81	-50	-175	-344	-160	-106	-68	-62	-139	-137	-97	-30	-21	-38	-278	-229	-157
	261	322	300	369	335	285	442	524	139	121	284	502	235	153	92	110	183	187	151	66	52	95	461	382	252
21	161	45	19	18	88	45	153	142	103	40	73	40	14	20	26	15	14	24	42	37	42	71	112	110	61
	-141	-44	-34	-24	-78	-64	-187	-101	-26	-54	-41	-38	-36	-20	-21	-35	-48	-19	-18	-19	-36	-65	-213	-190	-65
	302	90	53	44	167	111	342	245	130	95	115	79	52	42	49	51	64	45	61	57	79	136	327	300	126
22	80	120	81	202	177	111	114	81	30	49	50	65	44	53	31	46	93	59	28	78	67	56	37	125	78
	-85	-86	-61	-305	-473	-190	-116	-41	-19	-36	-71	-167	-65	-28	-42	-73	-160	-83	-15	-61	-45	-32	-37	-129	-101
	165	206	143	509	651	302	232	123	50	86	122	234	110	82	73	119	254	143	44	140	113	89	75	255	180
23	146	105	69	88	95	40	39	80	56	52	36	69	89	45	18	22	72	92	113	106	82	37	33	117	71
	-255	-109	-96	-68	-152	-100	-25	-19	-16	-27	-50	-50	-146	-65	-47	-31	-112	-305	-290	-80	-29	-27	-30	-112	-93
	402	214	166	157	249	142	66	100	73	81	88	120	235	111	65	53	184	398	403	187	113	66	63	230	165
24	165	117	121	202	97	50	65	188	101	235	169	61	32	35	13	42	37	80	67	82	105	85	85	73	96
	-259	-83	-80	-203	-117	-8	-19	-109	-121	-155	-205	-129	-22	-14	-36	-121	-61	-166	-53	-39	-40	-47	-98	-60	-94
	424	200	201	407	215	59	85	298	224	391	374	192	55	50	50	163	98	246	121	122	146	133	183	134	191
25	58	62	96	91	93	62	147	86	118	112	169	95	53	104	51	23	27	79	159	218	229	229	212	230	117
	-35	-101	-153	-75	-43	-38	-146	-61	-48	-85	-159	-158	-47	-82	-74	-29	-20	-75	-215	-280	-294	-236	-196	-167	-117
	94	163	250	167	138	101	295	148	167	199	329	254	101	186	125	53	48	155	375	499	524	466	409	398	235
26	194	165	234	207	185	180	113	95	86	75	90	116	71	30	16	19	33	43	47	69	116	146	129	132	108
	-128	-200	-338	-235	-107	-106	-83	-73	-91	-63	-110	-131	-62	-26	-40	-55	-60	-40	-21	-49	-149	-112	-79	-89	-102
	323	365	572	443	293	287	198	170	178	140	202	249	135	57	57	74	93	83	68	119	266	259	208	221	211
27	173	170	65	58	121	122	142	146	130	82	56	79	120	139	95	74	94	84	140	242	256	166	62	50	119
	-363	-183	-25	-21	-54	-163	-234	-154	-87	-18	-5	-25	-58	-201	-271	-140	-81	-76	-113	-342	-285	-104	-27	-34	-128
	537	354	90	80	177	286	377	302	219	101	61	105	179	341	367	216	176	161	253	584	542	270	90	84	248
28	73	100	179	212	191	314	213	253	147	155	134	194	164	133	183	171	96	75	113	115	97	60	54	46	145
	-50	-68	-280	-452	-336	-473	-412	-383	-200	-137	-163	-102	-155	-124	-295	-277	-131	-12	-56	-69	-51	-28	-35	-28	-180
	124	169	460	665	528	789	627	638	349	293	297	297	320	258	478	449	228	87	170	185	150	89	90	75	326
29	46	82	67	96	62	43	73	80	68	70	133	139	143	132	75	143	205	271	253	180	82	47	59	84	110
	-16	-70	-34	-81	-150	-132	-162	-132	-63	-23	-157	-219	-247	-189	-131	-267	-196	-235	-340	-214	-53	-18	-24	-45	-133
	63	152	102	177	213	176	237	214	132	95	292	359	391	322	206	411	402	507	594	396	137	66	83	130	244
30	90	101	65	55	46	59	95	75	98	88	133	134	112	136	92	72	83	75	80	71	64	52	57	81	84
	-70	-204	-176	-64	-38	-38	-64	-131	-38	-24	-146	-145	-164	-116	-254	-108	-97	-153	-104	-115	-52	-41	-44	-62	-102
	160	306	242	120	84	98	160	207	137	113	280	280	277	252	347	181	181	229	185	187	117	94	101	144	187
31	77	68	38	52	65	54	91	56	80	99	82	56	82	150	138	52	51	45	41	76	178	196	226	181	93
	-72	-37	-27	-21	-27	-49	-45	-70	-37	-14	-108	-40	-21	-162	-336	-125	-13	-11	-2	-38	-94	-369	-477	-160	-98
	150	105	65	74	93	105	138	127	118	114	192	97	105	313	474	177	65	57	45	114	273	565	704	341	192

HOURLY VALUES (nT) OF AU, AL AND AE INDICES — AUGUST 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	102	210	286	350	371	341	378	274	150	240	104	191	144	238	301	275	213	264	172	251	158	199	137	164	230
	AL	-99	-241	-668	-725	-759	-537	-298	-415	-170	-355	-949	-403	-207	-536	-579	-370	-312	-480	-205	-389	-355	-468	-345	-469	-431
	AE	202	452	954	1076	1131	879	678	690	321	596	1054	595	352	775	880	646	526	745	378	641	514	668	483	634	661
2		115	105	214	168	74	209	112	94	126	119	68	101	116	70	129	149	115	91	99	138	150	138	79	112	120
		-297	-158	-273	-469	-191	-366	-275	-100	-52	-316	-109	-162	-307	-145	-298	-316	-196	-158	-169	-226	-322	-173	-174	-225	-228
		412	264	488	638	265	576	387	194	179	436	178	264	424	216	428	466	313	249	268	364	473	312	254	338	349
3		56	71	86	109	205	100	127	113	112	149	217	160	216	140	84	85	126	128	82	74	104	145	109	196	125
		-128	-65	-189	-178	-329	-143	-171	-198	-143	-92	-482	-352	-344	-360	-187	-162	-252	-218	-89	-19	-78	-134	-192	-288	-200
		186	137	276	288	535	244	299	312	256	243	701	513	561	501	272	248	378	347	172	94	183	280	302	486	326
4		173	121	85	82	106	167	146	143	103	69	124	175	149	126	92	47	71	135	137	119	130	131	155	151	122
		-383	-320	-130	-88	-57	-163	-233	-318	-283	-124	-178	-391	-396	-368	-208	-35	-57	-264	-321	-141	-96	-128	-184	-393	-219
		557	442	216	171	164	330	380	462	387	194	303	567	547	495	301	83	129	400	460	261	226	260	341	545	343
5		74	63	39	64	129	147	80	73	77	47	44	33	43	61	88	32	35	72	107	126	89	51	31	26	68
		-246	-124	-47	-37	-130	-285	-121	-61	-148	-82	-39	-26	-25	-91	-242	-107	-43	-57	-136	-261	-104	-72	-63	-30	-107
		322	188	87	102	260	432	201	134	227	129	83	60	69	153	330	141	79	130	243	387	193	124	94	57	176
6		41	61	95	75	60	35	32	39	46	43	71	68	95	122	63	73	56	46	61	83	99	105	81	90	68
		-31	-53	-146	-128	-38	-25	-21	-45	-27	-37	-71	-171	-91	-102	-92	-111	-208	-191	-134	-85	-83	-63	-168	-126	-94
		73	116	242	205	100	61	54	84	74	80	144	240	188	226	155	185	265	237	196	170	182	169	250	217	163
7		56	48	45	52	62	47	69	78	60	62	97	81	64	28	26	23	28	39	43	46	41	47	61	67	53
		-36	-48	-80	-76	-43	-52	-46	-28	-15	-45	-134	-47	-39	-19	-11	-12	-1	-1	-18	-11	-27	-21	-23	-42	-36
		92	97	127	129	106	100	115	107	76	109	232	129	104	49	39	36	29	40	63	58	69	69	84	110	91
8		138	188	158	137	105	145	99	48	107	137	74	178	105	60	42	84	106	65	62	53	82	118	123	131	106
		-81	-284	-153	-213	-86	-117	-60	-21	-57	-184	-137	-221	-330	-18	-43	-99	-175	-111	-37	-22	-99	-149	-254	-144	-129
		220	473	312	351	192	262	159	69	165	322	211	400	436	78	87	183	283	177	99	75	182	268	378	276	236
9		64	69	70	25	96	91	86	91	122	105	140	215	192	183	187	88	45	43	48	53	174	197	200	113	112
		-55	-41	-54	-37	-31	-44	-63	-59	-193	-231	-134	-239	-312	-375	-372	-108	-41	-73	-15	-14	-172	-540	-356	-90	-152
		119	112	125	62	128	135	150	150	316	338	274	455	506	559	560	197	88	117	63	68	347	738	558	204	265
10		65	79	42	61	50	43	114	70	79	100	82	41	23	36	39	37	34	88	173	204	163	114	69	50	77
		-31	-80	-147	-64	-26	-32	-59	-85	-33	-252	-132	-41	-22	-22	-39	-99	-29	-145	-323	-286	-248	-114	-103	-71	-103
		98	160	190	127	77	76	173	155	113	352	215	83	46	59	79	138	63	234	497	491	412	230	173	122	182
11		44	39	28	25	22	34	160	187	211	287	232	126	62	41	32	23	29	40	35	46	112	168	174	165	97
		-36	-36	-27	-35	-19	-13	-78	-364	-438	-351	-129	-226	-63	-14	-15	-17	-25	-56	-15	-21	-89	-215	-327	-268	-120
		81	76	56	61	41	48	238	552	650	639	362	354	125	56	48	41	55	97	50	68	203	384	502	434	217
12		191	176	197	88	44	116	68	40	197	216	160	160	172	77	79	36	31	105	73	87	104	94	99	129	114
		-228	-322	-226	-118	-18	-59	-57	-22	-129	-355	-236	-114	-213	-216	-106	-31	-21	-80	-109	-87	-130	-169	-70	-103	-134
		420	499	424	207	63	175	126	63	328	572	398	275	386	293	186	68	53	186	182	175	235	264	170	234	249
13		138	45	87	144	195	150	65	53	33	26	25	27	25	44	28	35	43	25	47	66	55	27	25	39	60
		-350	-142	-55	-229	-402	-292	-49	-9	-51	-16	-19	-19	-28	-53	-50	-75	-101	-59	-56	-103	-76	-38	-32	-24	-97
		490	189	143	373	597	443	114	63	85	43	45	47	54	98	79	112	145	85	104	170	132	67	58	64	158
14		37	19	18	17	18	37	34	61	80	105	106	124	105	97	103	228	273	269	246	198	218	189	215	214	125
		-10	-10	-21	-23	-16	-10	-9	-13	-21	-40	-51	-33	-94	-297	-252	-259	-352	-451	-539	-199	-393	-376	-250	-355	-170
		48	30	40	40	34	48	43	75	102	146	157	158	200	394	356	488	626	721	786	397	612	566	466	570	296
15		129	163	232	173	115	145	195	124	114	83	94	90	125	124	111	160	160	88	59	55	156	93	83	98	124
		-224	-285	-282	-494	-173	-239	-192	-217	-57	-33	-126	-330	-193	-260	-169	-190	-389	-108	-38	-27	-106	-164	-88	-151	-189
		355	449	516	668	288	385	388	341	172	117	222	421	319	385	281	351	550	196	97	83	263	257	173	251	314

16	135	103	132	145	217	161	162	49	152	97	51	123	126	52	60	94	116	179	139	173	144	94	87	137	122
	-427	-276	-532	-313	-292	-296	-176	-92	-29	-212	-60	-187	-382	-84	-172	-97	-178	-211	-144	-176	-136	-45	-89	-255	-203
	564	380	665	459	509	457	339	142	183	311	113	312	510	137	233	192	295	392	285	349	281	140	177	393	326
17	107	113	72	125	153	55	103	114	113	53	50	54	46	34	15	19	42	48	96	142	126	123	126	64	83
	-192	-138	-71	-145	-299	-95	-66	-83	-229	-124	-104	-107	-75	-41	-43	-41	-55	-137	-208	-241	-106	-90	-187	-99	-124
	300	253	144	272	453	152	170	199	343	177	155	162	122	76	59	61	98	186	305	383	233	214	314	164	208
18	35	35	26	39	75	124	76	26	13	25	76	58	30	24	33	40	22	16	46	82	37	25	31	35	43
	-9	-12	-16	-29	-90	-259	-133	-25	-12	-15	-59	-102	-79	-69	-36	-90	-43	-27	-53	-120	-48	-31	-33	-17	-59
	45	48	42	69	166	384	210	52	26	41	137	162	111	94	70	131	66	44	100	203	86	58	65	54	103
19	24	22	19	17	18	17	15	50	40	39	111	111	73	75	64	140	340	304	170	214	234	108	71	125	100
	-15	-14	-10	-19	-20	-19	-12	-16	-35	-33	-38	-161	-141	-223	-236	-304	-445	-649	-311	-371	-458	-82	-39	-139	-158
	39	36	30	36	38	37	28	67	76	73	151	274	215	299	301	445	785	955	482	585	693	191	110	265	259
20	164	91	76	157	205	179	230	128	71	44	60	43	22	29	46	38	50	114	161	92	48	25	16	16	88
	-155	-52	-83	-148	-231	-235	-254	-197	-22	-15	-10	-29	-23	-40	-81	-94	-140	-278	-274	-84	-35	-28	-30	-21	-107
	320	143	159	306	436	416	485	327	94	60	71	73	46	70	129	134	192	393	436	176	84	54	47	39	195
21	14	61	40	24	15	14	20	16	18	18	27	52	35	23	14	13	14	20	21	20	19	20	22	25	24
	-24	-34	-22	-28	-24	-14	-13	-14	-16	-21	-22	-59	-74	-57	-35	-46	-50	-16	-13	-69	-17	-14	-22	-17	-30
	39	97	64	53	40	28	34	31	36	40	50	113	110	81	50	60	65	37	35	89	37	35	45	42	55
22	23	18	18	20	16	14	13	15	23	15	17	21	27	21	19	20	21	16	19	21	21	28	29	32	20
	-15	-16	-16	-21	-21	-20	-20	-16	-19	-22	-24	-26	-21	-15	-6	0	-4	-9	-13	-14	-14	-13	-6	-3	-15
	38	35	35	41	38	35	33	32	42	38	43	48	50	37	26	21	27	26	33	36	37	42	36	36	36
23	32	38	44	31	27	30	59	75	62	50	47	66	99	108	66	87	99	105	69	70	128	152	256	184	83
	-8	-13	-18	-15	-19	-33	-86	-77	-44	-15	-11	-19	-85	-305	-195	-123	-95	-107	-35	-32	-45	-288	-376	-137	-91
	41	51	63	47	46	63	146	152	106	66	59	86	186	414	262	210	195	212	105	103	174	441	633	323	174
24	122	72	131	231	345	253	133	166	354	293	254	134	117	175	228	292	262	140	115	183	162	131	62	46	183
	-86	-60	-150	-291	-278	-137	-96	-160	-443	-324	-194	-50	-166	-436	-368	-443	-356	-108	-152	-283	-276	-187	-94	-76	-217
	210	133	282	524	623	390	230	328	799	618	449	186	284	611	597	736	619	249	268	467	439	319	157	123	402
25	78	97	64	119	119	108	106	103	134	373	158	62	61	35	24	27	42	50	123	87	96	106	138	169	103
	-149	-249	-231	-197	-118	-456	-199	-180	-135	-569	-231	-41	-113	-46	-27	-25	-75	-62	-240	-171	-87	-112	-190	-366	-178
	228	347	296	316	237	565	306	284	270	944	390	104	175	82	53	53	119	113	363	259	184	219	330	535	282
26	191	161	132	131	142	129	119	122	95	111	119	97	101	128	92	107	49	43	56	71	48	55	58	39	100
	-247	-184	-286	-201	-113	-378	-462	-87	-33	-62	-56	-77	-94	-126	-234	-198	-54	-92	-41	-51	-47	-31	-41	-26	-134
	439	346	420	333	255	508	583	210	130	175	177	175	196	255	326	306	104	136	99	122	95	88	100	66	235
27	53	121	120	102	41	71	79	99	118	78	116	223	330	129	77	113	254	205	281	217	180	121	235	136	146
	-57	-154	-384	-197	-45	-53	-172	-46	-34	-29	-47	-388	-526	-144	-32	-96	-473	-411	-483	-556	-178	-118	-277	-790	-237
	111	276	505	300	87	125	252	146	153	108	165	612	857	274	111	210	728	617	765	774	359	241	513	928	384
28	270	184	84	53	63	89	102	226	287	155	87	107	113	129	265	291	215	174	253	278	223	196	181	223	177
	-397	-168	-63	-30	-21	-55	-149	-438	-597	-526	-93	-143	-127	-202	-449	-415	-468	-240	-379	-541	-331	-229	-248	-352	-278
	668	353	147	84	85	144	252	666	885	682	181	251	241	332	714	707	683	415	633	820	555	427	431	576	455
29	189	157	115	216	146	139	185	116	66	119	110	75	124	145	95	61	85	148	100	102	91	83	56	122	119
	-384	-301	-138	-301	-369	-245	-285	-168	-13	-230	-557	-123	-194	-687	-342	-123	-89	-263	-225	-111	-63	-161	-81	-182	-235
	574	460	254	518	516	385	470	285	80	351	668	199	318	834	437	185	175	411	326	214	154	244	138	305	354
30	127	142	145	121	179	179	103	72	87	171	170	196	175	199	78	145	172	211	162	208	122	111	77	62	142
	-372	-267	-261	-275	-227	-263	-89	-147	-124	-267	-450	-335	-580	-296	-150	-187	-427	-386	-207	-226	-237	-288	-115	-68	-260
	500	411	407	396	407	443	193	220	213	439	621	533	756	496	229	333	600	598	370	434	359	400	193	131	403
31	97	148	136	100	33	38	119	63	61	62	39	44	39	45	61	75	54	47	30	27	118	117	71	81	71
	-84	-220	-356	-135	-26	-17	-128	-253	-109	-27	-21	-26	-36	-35	-165	-200	-102	-102	-21	-26	-91	-167	-83	-114	-106
	182	369	493	236	61	56	247	317	171	90	62	72	77	81	227	276	157	150	52	54	210	285	154	196	178

HOURLY VALUES (nT) OF AU, AL AND AE INDICES SEPTEMBER 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	178	130	174	162	103	154	178	107	74	32	34	43	50	39	37	34	62	75	119	115	135	111	102	105	98
	AL	-359	-287	-291	-147	-104	-207	-304	-186	-34	-14	-5	-16	-13	-2	-8	-27	-101	-143	-260	-208	-90	-201	-233	-123	-140
	AE	538	418	466	311	208	363	483	294	109	47	41	60	63	41	46	62	164	219	380	323	225	313	336	230	239
2		113	95	99	137	194	140	132	98	70	103	70	41	79	141	122	151	47	26	44	113	87	68	41	32	94
		-93	-91	-178	-372	-290	-164	-132	-48	-10	-177	-41	-12	-30	-151	-243	-295	-126	-25	-27	-110	-183	-46	-10	-3	-119
		208	188	278	510	485	306	265	147	81	280	112	54	109	293	366	447	173	52	72	224	271	115	53	37	213
3		60	113	49	67	134	141	149	106	56	46	30	33	23	42	64	18	32	55	50	53	38	112	88	44	67
		-32	-144	-151	-118	-213	-556	-277	-111	-121	-26	-19	-26	-18	-42	-111	-77	-24	-146	-63	-47	-38	-218	-182	-27	-116
		93	258	201	186	348	698	427	218	178	72	50	59	41	84	176	95	57	201	114	100	77	331	271	72	184
4		57	72	104	123	191	138	152	259	335	288	440	327	179	212	407	414	198	108	57	27	29	43	37	67	178
		-32	-176	-185	-160	-193	-161	-229	-430	-550	-197	-449	-294	-127	-120	-521	-903	-153	-50	-61	-28	-16	-21	-33	-54	-214
		91	249	290	284	384	299	382	690	886	486	890	622	306	333	929	1318	351	159	119	56	46	66	71	122	393
5		152	66	130	227	292	104	12	290	305	257	228	274	194	203	211	346	390	318	215	107	152	172	113	60	201
		-266	-565	-299	-237	-803	-1249	-1193	-579	-246	-228	-455	-463	-352	-344	-397	-716	-711	-403	-419	-773	-454	-291	-202	-94	-489
		419	632	430	466	1097	1353	1205	870	552	487	684	738	547	548	608	1063	1103	723	635	881	607	464	316	155	691
6		89	102	79	70	63	69	59	47	100	79	87	91	94	117	44	68	65	145	99	99	45	90	51	53	79
		-109	-215	-136	-33	-25	-106	-265	-76	-331	-170	-51	-72	-178	-333	-37	-58	-156	-520	-239	-88	-18	-47	-82	-192	-147
		198	318	216	105	90	176	325	123	432	250	138	164	273	451	82	127	222	666	339	187	64	138	134	247	228
7		64	48	58	58	64	50	64	57	86	66	48	37	56	76	43	48	47	39	56	67	38	31	25	23	52
		-160	-143	-86	-90	-107	-43	-23	-23	-81	-78	-39	-34	-49	-148	-105	-70	-94	-60	-44	-31	-20	-17	-19	-22	-66
		225	191	146	149	173	94	88	81	168	144	87	72	106	225	148	119	142	99	100	98	59	49	45	46	119
8		22	28	31	28	34	45	80	101	155	48	54	35	39	55	58	67	61	93	115	64	96	124	134	172	72
		-11	-16	-21	-31	-26	-6	-30	-115	-90	-15	-6	-12	-16	-39	-122	-178	-104	-130	-175	-4	-61	-66	-191	-199	-69
		33	44	53	61	61	52	111	217	246	64	61	48	56	94	180	246	165	224	292	69	158	191	326	372	143
9		120	54	39	48	40	41	52	120	131	87	67	73	37	31	22	27	39	50	85	106	110	159	260	266	86
		-97	-20	-26	-17	-13	-13	-28	-198	-238	-120	-62	-127	-74	-5	-37	-7	-19	-19	-73	-107	-27	-72	-211	-270	-78
		218	75	67	67	55	56	81	318	370	208	130	201	112	36	60	35	59	70	159	214	139	233	472	537	165
10		175	127	120	95	81	80	130	176	195	207	244	141	80	58	46	55	150	175	238	252	203	174	178	165	148
		-178	-58	-72	-57	-46	-41	-127	-302	-453	-381	-704	-185	-17	-24	-24	-45	-379	-519	-314	-483	-420	-395	-348	-264	-243
		355	186	193	153	128	123	259	479	649	589	949	326	98	83	72	102	530	695	553	736	625	569	528	431	392
11		133	121	130	116	121	182	138	107	57	83	98	71	105	84	83	50	29	101	169	91	57	69	90	96	99
		-344	-279	-130	-247	-38	-218	-247	-60	-21	-56	-161	-96	-98	-105	-43	-39	-61	-199	-281	-151	-34	-57	-170	-163	-137
		479	400	261	364	161	401	385	168	79	139	259	168	204	190	127	90	91	302	451	242	93	127	261	261	238
12		88	80	79	56	75	101	87	48	73	106	61	72	116	92	69	90	154	158	126	81	51	107	111	142	93
		-145	-87	-53	-14	-64	-58	-48	-248	-86	-159	-308	-68	-257	-322	-289	-135	-371	-352	-234	-53	-90	-139	-191	-383	-173
		234	168	133	71	140	161	137	297	160	265	369	140	375	414	358	226	526	511	361	135	143	246	303	525	267
13		104	121	114	86	55	37	62	77	126	108	83	65	30	38	28	28	55	28	40	54	56	90	66	54	67
		-186	-338	-372	-172	-70	-23	-42	-218	-218	-174	-270	-41	-9	-21	-21	-21	-69	-59	-44	-48	-65	-52	-75	-61	-111
		291	459	487	259	126	61	105	296	344	283	354	106	39	60	49	50	125	88	85	103	122	143	142	117	179
14		48	110	38	39	49	122	52	97	62	69	91	71	43	56	51	54	57	115	158	175	120	120	101	120	84
		-35	-197	-82	-37	-27	-243	-173	-107	-310	-204	-211	-186	-14	-46	-86	-47	-101	-325	-392	-337	-232	-163	-248	-288	-170
		84	308	121	78	78	365	227	205	374	273	303	258	57	102	137	102	160	441	551	513	352	283	350	409	255
15		113	70	51	54	36	36	30	51	87	105	80	35	29	20	55	63	46	39	31	28	71	99	102	105	60
		-294	-52	-16	-67	-30	-7	-1	-14	-272	-233	-155	-46	-17	-21	-86	-280	-125	-50	-14	-13	-31	-151	-273	-154	-100
		409	124	69	122	67	43	32	65	360	339	236	82	46	42	142	343	171	90	45	42	102	251	377	260	161

16	85	92	85	48	53	85	58	63	58	31	28	39	22	30	51	54	42	42	98	52	35	27	34	46	52
	-205	-80	-12	-12	-55	-130	-85	-60	-13	-17	-14	-21	-22	-32	-126	-254	-234	-99	-83	-67	-13	-15	-24	-27	-71
	290	172	99	61	109	216	145	124	72	49	43	61	44	63	178	309	276	142	182	120	49	43	59	74	124
17	57	52	55	45	52	93	48	46	43	39	21	23	22	18	15	29	23	19	23	23	26	31	30	33	36
	-63	-41	-14	-9	-59	-288	-239	-19	-19	-17	-16	-11	-12	-18	-20	-74	-92	-86	-23	-7	-13	-17	-17	-20	-50
	121	94	69	55	112	382	287	67	64	58	39	35	35	37	35	104	116	105	47	31	40	49	48	55	87
18	23	17	26	46	64	59	39	29	33	33	38	49	26	15	17	17	17	25	29	25	30	37	47	49	33
	-1	-3	-12	-23	-84	-28	-20	-16	-6	-7	-10	-79	-27	-5	0	-4	-3	-5	-6	-15	-34	-55	-34	-13	-20
	25	21	40	71	150	89	61	46	40	40	48	129	54	21	18	21	21	30	36	41	66	94	82	64	54
19	49	33	42	53	57	75	84	59	98	175	113	258	282	294	243	254	312	224	211	174	143	143	111	77	148
	0	0	-7	-61	-23	-78	-111	-24	-19	-112	-837	-886	-491	-249	-339	-482	-501	-285	-342	-430	-250	-319	-273	-166	-262
	48	33	51	116	82	155	196	85	117	288	952	1145	773	544	582	737	814	510	553	605	394	464	385	244	411
20	88	97	130	133	243	100	111	122	141	143	119	60	77	31	43	116	129	141	191	171	123	69	75	42	112
	-120	-122	-289	-337	-456	-324	-205	-295	-438	-181	-335	-131	-120	-209	-152	-436	-385	-286	-263	-549	-219	-198	-151	-19	-259
	209	220	421	471	700	425	316	418	581	326	456	193	199	242	196	553	515	428	454	721	342	268	227	62	373
21	36	25	28	29	41	61	81	80	102	136	148	120	133	59	43	49	52	51	49	43	49	76	75	60	68
	-17	-17	-23	-34	-126	-110	-81	-64	-101	-172	-447	-214	-172	-60	-298	-166	-206	-181	-93	-10	-9	-128	-253	-102	-128
	54	43	52	64	168	172	163	146	204	310	596	335	306	121	342	216	258	233	143	53	59	205	329	163	197
22	54	72	60	52	52	127	111	144	206	154	83	103	142	82	34	29	21	73	120	229	223	214	91	78	106
	-86	-143	-145	-44	-31	-127	-162	-442	-448	-230	-73	-194	-645	-103	-28	-31	-100	-281	-241	-392	-866	-343	-66	-79	-221
	141	216	207	97	85	255	275	587	654	385	156	298	788	186	64	61	122	355	362	622	1090	558	158	158	328
23	107	116	233	225	281	532	368	347	375	228	185	211	301	366	192	272	254	157	90	101	214	191	192	200	239
	-139	-514	-451	-352	-720	-514	-431	-543	-859	-579	-454	-1466	-1211	-453	-891	-800	-512	-429	-278	-170	-607	-800	-473	-450	-587
	248	631	684	577	1002	1047	800	892	1235	808	640	1678	1513	819	1084	1073	767	587	369	272	822	993	666	651	827
24	228	125	310	172	169	192	241	170	249	195	143	117	114	153	108	177	191	158	175	142	132	193	172	67	171
	-851	-402	-504	-289	-337	-573	-792	-434	-829	228	-201	-502	-476	-546	-328	-789	-599	-422	-464	-257	-244	-386	-418	-165	-460
	1081	528	815	462	507	765	1033	605	1079	424	344	621	591	700	437	967	792	581	640	400	378	580	592	233	631
25	51	68	78	60	142	155	208	196	125	149	171	142	96	181	146	173	174	261	179	193	137	121	134	150	145
	-64	-221	-268	-116	-609	-585	-511	-522	-378	-341	-701	-484	-468	-546	-396	-496	-403	-445	-400	-329	-367	-208	-417	-334	-400
	116	290	347	178	752	740	720	720	504	492	873	627	565	728	543	670	578	708	579	522	505	331	552	485	547
26	169	142	162	195	150	226	229	242	284	222	103	168	211	206	102	134	229	118	102	117	73	69	52	101	159
	-282	-291	-354	-425	-362	-428	-503	-428	-730	-551	-525	-763	-922	-854	-307	-204	-782	-253	-254	-507	-181	-103	-73	-347	-434
	452	434	517	620	513	654	733	671	1015	774	629	931	1134	1061	410	339	1013	372	357	625	254	173	127	449	594
27	96	140	149	133	148	109	187	190	128	125	191	113	145	112	118	72	48	76	120	142	145	171	122	122	129
	-320	-350	-347	-212	-343	-352	-315	-388	-467	-357	-336	-798	-641	-486	-535	-226	-30	-92	-229	-323	-235	-478	-335	-328	-355
	417	491	497	346	492	461	502	578	596	483	528	912	786	598	654	299	78	169	350	465	381	650	458	451	485
28	98	75	110	126	187	88	76	76	89	56	65	85	71	99	78	112	148	126	176	203	174	158	77	68	109
	-179	-148	-229	-229	-445	-159	-119	-127	-116	-64	-105	-161	-369	-160	-225	-336	-343	-264	-239	-404	-426	-211	-60	-75	-216
	278	224	340	355	634	248	196	204	206	121	171	247	442	259	304	449	492	392	416	607	601	369	138	144	327
29	102	162	118	215	143	115	99	76	59	54	43	50	48	77	36	22	52	61	72	69	95	103	97	147	88
	-139	-281	-328	-259	-263	-148	-314	-152	-69	-19	-52	-120	-104	-73	-86	-134	-210	-244	-133	-110	-211	-151	-333	-231	-174
	243	444	447	474	407	264	414	229	129	74	95	171	153	151	123	157	264	305	206	179	307	255	431	379	262
30	129	115	105	92	120	76	113	179	146	66	26	26	19	11	7	16	19	23	43	44	38	61	59	97	68
	-199	-346	-321	-146	-205	-279	-275	-346	-305	-72	-31	-15	-9	-25	-14	-23	-69	-85	-89	-57	-53	-46	-166	-261	-143
	329	462	426	239	325	356	388	525	452	139	58	43	29	37	22	40	88	109	132	102	92	108	227	359	212

HOURLY VALUES (nT) OF AU, AL AND AE INDICES OCTOBER 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	84	63	69	67	52	66	89	73	93	79	86	97	80	28	41	60	55	29	27	24	32	58	65	56	61
	AL	-192	-93	-80	-94	-95	-62	-290	-127	-56	-44	-57	-122	-215	-23	-31	-248	-257	-51	-17	-4	-49	-127	-72	-47	-102
	AE	278	158	149	161	147	129	380	201	150	124	144	221	297	52	73	308	313	81	44	28	82	185	137	104	164
2		59	78	52	56	42	28	21	39	59	48	53	38	31	42	44	116	95	141	185	223	108	54	104	131	77
		-91	-326	-255	-59	-52	-17	-10	-45	-64	-69	-68	-21	-31	-65	-286	-383	-241	-261	-213	-151	-22	-10	-43	-56	-118
		151	405	308	116	94	45	32	85	123	118	123	61	63	108	331	499	337	403	399	375	130	65	147	188	196
3		153	140	104	204	310	285	266	185	158	70	78	129	84	29	27	29	33	18	30	87	101	76	71	50	113
		-412	-323	-241	-461	-572	-426	-430	-178	-75	-16	-39	-194	-113	-32	-19	-19	-36	-18	-24	-130	-180	-107	-119	-54	-176
		567	464	346	667	883	713	697	364	233	88	118	324	198	62	47	49	69	37	55	218	281	184	191	105	290
4		75	31	17	15	15	19	23	14	16	19	18	18	33	42	32	45	122	71	48	40	36	56	45	68	38
		-17	-15	-14	-12	-8	-2	-17	-7	-10	-12	-18	-13	-24	-49	-35	-84	-272	-84	-35	-10	-10	-62	-106	-170	-45
		94	47	32	29	25	21	41	21	28	31	37	32	58	93	68	130	394	156	84	50	47	119	153	240	85
5		51	69	75	98	94	54	39	83	103	97	52	41	43	73	70	22	28	23	28	33	39	54	23	28	55
		-53	-133	-193	-137	-52	-13	-37	-176	-114	-167	-89	-23	-21	-25	-28	-7	0	1	4	6	-1	2	-4	-12	-53
		106	203	268	235	146	67	77	260	218	265	143	66	66	100	99	30	30	21	24	26	40	50	28	40	109
6		33	39	53	38	31	60	42	43	104	70	51	46	85	75	39	64	135	98	131	132	152	136	114	204	82
		-8	0	-15	-47	-83	-293	-155	-59	-110	-56	-19	-16	-32	-47	-24	-39	-101	-181	-198	-53	-41	-544	-616	-170	-121
		41	37	69	86	115	353	198	103	215	127	71	63	118	123	64	105	236	280	329	186	194	681	732	375	204
7		94	175	303	164	67	81	122	47	58	58	112	111	153	224	143	181	182	86	107	118	95	68	149	182	128
		-500	-721	-344	-272	-179	-103	-237	-59	-60	-77	-156	-156	-468	-684	-277	-281	-436	-248	-235	-205	-262	-128	-181	-267	-272
		595	897	648	437	247	185	360	108	120	136	270	269	622	909	421	463	618	335	343	323	357	197	331	450	402
8		115	138	137	99	127	110	87	44	44	133	140	88	78	69	28	42	54	49	93	95	81	85	105	117	90
		-484	-427	-195	-130	-325	-499	-69	-47	-24	-174	-484	-153	-63	-32	-44	-82	-145	-92	-100	-116	-92	-266	-327	-422	-200
		600	565	333	229	453	609	157	92	69	308	626	243	142	101	73	125	200	142	195	212	174	353	433	540	291
9		82	119	98	123	100	56	45	47	106	126	93	53	42	33	46	56	64	115	138	131	147	163	114	99	91
		-309	-253	-277	-153	-38	-17	-15	-52	-226	-413	-134	-57	-30	-19	-76	-313	-213	-195	-432	-399	-178	-321	-275	-180	-191
		391	373	375	277	138	74	60	100	334	540	228	112	74	53	123	370	278	311	570	531	326	485	390	281	283
10		158	183	118	84	137	170	102	96	100	101	66	82	155	137	241	90	84	139	139	100	77	45	58	86	114
		-206	-361	-457	-306	-421	-450	-410	-199	-71	-491	-198	-194	-699	-446	-794	-235	-241	-272	-245	-293	-93	-48	-78	-121	-305
		365	545	576	391	558	622	513	296	171	593	265	278	855	584	1036	325	326	411	384	394	172	93	137	208	421
11		134	113	128	84	72	95	156	142	116	111	70	78	89	121	136	142	116	115	169	140	111	177	168	148	122
		-377	-305	-108	-146	-49	-39	-219	-269	-117	-279	-255	-360	-263	-287	-101	-434	-442	-300	-355	-464	-171	-420	-556	-388	-279
		512	419	237	230	122	135	375	412	234	391	326	439	352	410	238	577	559	415	525	604	283	598	726	537	402
12		144	200	143	110	88	111	71	115	123	75	58	76	77	86	123	209	160	90	211	96	55	82	113	225	118
		-480	-636	-257	-102	-86	-123	-254	-249	-389	-169	-54	-249	-84	-203	-327	-485	-449	-202	-558	-334	-163	-221	-182	-341	-275
		625	837	400	213	175	235	326	365	513	246	114	326	163	291	451	694	609	293	770	431	218	304	297	567	394
13		144	93	101	119	68	41	69	169	137	214	101	101	184	145	50	52	49	37	34	34	24	30	33	44	86
		-199	-31	-76	-122	-66	-10	-61	-277	-353	-613	-291	-194	-606	-429	-179	-189	-138	-76	-121	-80	-61	-58	-83	-27	-181
		344	125	178	242	134	52	131	447	492	828	393	296	792	575	231	242	188	114	156	115	86	88	117	73	268
14		64	62	64	113	82	90	48	44	72	51	47	64	61	42	24	30	27	76	53	62	85	123	101	95	66
		-139	-269	-204	-367	-179	-26	-136	-204	-110	-65	-20	-9	-54	-13	-26	-58	-142	-274	-241	-196	-73	-140	-298	-111	-140
		204	332	269	480	261	117	185	249	183	117	68	75	117	56	51	90	171	351	294	258	159	263	400	207	207
15		94	123	95	94	71	64	43	36	35	25	27	22	30	27	44	39	29	76	85	177	154	126	137	129	74
		-134	-237	-162	-61	-41	-170	-90	-2	-16	-8	-6	-11	-18	-23	-27	-40	-122	-115	-131	-288	-606	-253	-239	-375	-132
		230	360	258	156	112	235	133	38	51	34	34	34	50	52	73	80	153	192	217	465	761	379	377	504	208

16	116	76	72	127	83	100	128	131	135	201	166	232	215	151	94	72	75	66	41	35	30	56	135	117	111
	-246	-146	-100	-253	-118	-153	-113	-170	-333	-655	-550	-630	-452	-282	-248	-195	-229	-219	-162	-69	-32	-102	-347	-206	-250
	363	222	173	380	202	253	242	302	469	857	718	863	668	435	344	267	305	286	203	104	63	160	483	324	362
17	70	40	28	19	28	21	29	26	28	35	30	19	17	21	21	20	28	18	16	15	16	14	22	21	25
	-94	-63	-28	-26	-11	-13	-67	-43	-77	-73	-28	-25	-23	-32	-73	-59	-65	-19	-11	-13	-27	-38	-8	-4	-38
	165	104	57	46	40	34	97	70	106	110	59	45	41	54	95	81	94	37	29	30	44	53	32	26	65
18	21	22	34	50	91	126	93	57	64	102	139	108	180	207	404	321	301	182	201	179	172	235	201	167	152
	-6	-10	-6	-26	-218	-372	-167	-54	-42	-119	-380	-679	-566	-549	-781	-753	-722	-603	-591	-571	-671	-658	-575	-176	-387
	29	33	41	76	310	499	260	111	107	221	520	788	747	757	1185	1074	1024	786	793	752	844	894	777	345	540
19	176	238	164	187	122	224	254	208	305	294	175	101	86	176	196	201	282	178	189	206	145	185	216	156	194
	-233	-566	-293	-399	-344	-309	-551	-340	-694	-489	-329	-798	-316	-502	-1067	-473	-777	-780	-580	-350	-302	-277	-639	-536	-498
	409	805	458	586	467	534	806	549	1000	784	505	900	403	679	1263	675	1060	959	770	557	449	462	857	693	693
20	99	115	151	144	208	182	157	242	164	136	127	198	189	139	169	105	227	173	214	244	206	130	101	92	163
	-237	-289	-678	-558	-337	-500	-512	-519	-441	-261	-523	-905	-551	-378	-673	-383	-594	-603	-809	-533	-406	-454	-253	-144	-481
	337	404	830	704	545	684	670	763	606	398	651	1104	741	518	843	489	822	777	1024	778	614	586	355	237	645
21	106	72	47	137	154	133	201	186	134	145	155	103	214	116	127	238	153	90	182	189	200	167	133	193	149
	-326	-243	-336	-388	-504	-189	-402	-247	-196	-278	-385	-369	-642	-481	-290	-611	-337	-125	-466	-859	-615	-352	-302	-379	-388
	432	316	384	527	659	323	604	433	330	424	542	473	858	598	418	850	490	215	649	1049	816	520	435	572	538
22	106	109	101	169	115	96	155	168	265	197	83	110	171	123	129	92	183	164	169	166	181	214	131	86	145
	-348	-452	-413	-661	-153	-210	-346	-504	-751	-434	-143	-364	-708	-277	-379	-259	-799	-670	-737	-709	-589	-611	-483	-293	-471
	454	562	515	831	269	307	503	673	1017	632	228	475	880	401	509	352	982	835	907	877	771	827	616	380	617
23	103	82	70	56	70	123	123	164	116	67	130	95	81	78	88	110	192	160	168	171	118	114	147	163	116
	-266	-232	-242	-147	-158	-392	-516	-486	-212	-94	-163	-287	-118	-285	-401	-515	-742	-409	-420	-348	-228	-213	-448	-477	-325
	370	315	313	204	230	516	641	651	329	162	295	383	200	363	490	626	935	569	588	520	347	328	596	642	442
24	133	133	112	125	110	126	152	143	199	206	117	93	104	187	205	195	143	102	125	94	144	122	121	134	139
	-371	-410	-580	-453	-233	-399	-497	-345	-343	-494	-208	-156	-525	-931	-766	-492	-284	-181	-492	-190	-168	-357	-295	-358	-397
	505	544	693	579	344	526	650	488	543	702	327	250	630	1119	971	688	427	283	618	285	312	481	417	493	536
25	72	53	59	78	84	72	33	63	80	49	69	91	77	47	71	55	56	41	72	83	104	175	190	109	78
	-211	-83	-216	-249	-302	-246	-59	-57	-179	-329	-228	-204	-338	-276	-285	-191	-241	-168	-241	-267	-476	-487	-698	-815	-285
	284	138	276	328	387	319	93	121	260	379	299	296	416	323	357	247	297	210	313	350	581	663	890	925	365
26	97	101	71	59	34	38	31	42	39	23	40	21	25	25	26	48	34	36	56	48	57	47	46	103	48
	-557	-212	-106	-49	-41	-17	-12	-22	-25	-12	-26	-12	-17	-17	-24	-51	-33	-41	-41	-108	-71	-61	-78	-63	-71
	656	314	178	109	75	56	44	65	65	36	68	35	43	43	52	100	68	77	97	157	129	109	125	167	120
27	78	51	74	50	34	28	19	18	25	22	21	40	89	75	56	49	85	65	45	27	18	19	19	16	43
	-25	-9	-31	-25	-39	-26	-37	-22	-52	-12	-5	-27	-278	-363	-251	-163	-202	-373	-94	-31	-20	-12	-7	-13	-88
	104	61	106	76	73	55	56	41	79	36	28	69	368	439	307	213	287	438	140	59	38	32	27	30	132
28	9	9	15	29	17	19	46	78	67	61	50	24	31	49	51	52	33	45	110	108	120	105	108	57	54
	-16	-19	-25	-28	-189	-91	-86	-151	-113	-27	-26	-21	-21	-59	-31	-28	-17	-36	-208	-267	-99	-43	-68	-98	-74
	26	29	41	58	206	111	133	230	182	88	77	47	54	110	83	82	52	81	319	376	219	148	177	156	128
29	74	92	78	68	47	37	49	41	28	26	51	43	76	53	50	94	43	20	12	30	52	101	69	114	56
	-72	-85	-68	-88	-37	-72	-27	-46	-12	-21	-44	-54	-103	-134	-226	-93	-14	-15	-18	-24	-45	-191	-95	-108	-71
	147	178	146	157	84	110	76	88	41	48	97	99	180	188	277	188	59	37	31	55	98	293	165	223	128
30	106	104	58	38	28	31	28	35	33	38	22	19	32	26	23	18	15	14	12	12	18	18	22	24	32
	-58	-18	-96	-29	-40	-243	-82	-22	-3	-10	-7	-9	-14	-13	-15	-20	-43	-14	-8	-7	-11	-12	-5	-13	-33
	166	123	156	69	69	275	111	58	37	49	30	30	47	41	39	39	59	29	21	21	30	30	29	38	66
31	18	20	21	13	15	18	20	17	12	15	14	19	26	34	25	48	33	29	39	26	27	45	75	109	30
	-9	-14	-2	-10	-5	-3	-3	-1	-2	-1	-4	-8	-15	-9	-12	-17	-15	-12	-2	-1	2	-47	-195	-204	-24
	28	36	24	23	20	22	23	18	15	17	19	28	43	44	39	66	49	42	42	28	24	93	271	314	55

HOURLY VALUES (nT) OF AU, AL AND AE INDICES NOVEMBER 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	86	78	114	83	55	77	142	353	335	170	124	167	144	66	42	15	20	15	22	20	20	21	35	36	93
	AL	-116	-39	-174	-188	-200	-185	-372	-375	-412	-414	-386	-158	-466	-145	-45	-35	-25	-36	-24	-20	-17	-18	-32	-16	-162
	AE	203	118	288	272	256	262	514	729	748	585	511	326	612	212	88	52	46	52	46	41	38	41	69	54	257
2		36	31	33	31	33	25	30	36	31	35	44	36	28	21	27	29	108	145	176	172	127	120	93	74	63
		0	-2	-6	-5	-10	-2	-1	-2	-2	-8	-11	-12	-11	-13	-19	-25	-246	-431	-364	-280	-112	-86	-36	-61	-73
		35	33	41	37	44	28	31	39	34	44	56	49	40	35	47	55	355	577	541	453	240	207	130	136	137
3		75	104	73	48	48	45	74	98	94	84	82	100	67	159	118	129	78	100	56	60	129	103	98	120	89
		-66	-43	-46	-11	-9	-1	-39	-69	-134	-117	-96	-97	-132	-334	-403	-232	-210	-214	-238	-57	-516	-132	-50	-258	-146
		141	149	120	60	58	47	114	169	229	202	179	197	200	494	522	362	289	315	295	119	646	236	148	379	236
4		168	161	114	134	97	79	85	75	79	82	147	98	63	51	45	42	64	96	164	108	80	105	99	98	97
		-226	-202	-90	-43	-38	-2	-71	-58	-37	-156	-346	-114	-45	-117	-230	-313	-168	-150	-177	-144	-30	-105	-232	-221	-138
		396	365	206	177	135	81	157	134	117	238	494	213	108	169	276	355	233	247	342	253	111	211	332	320	236
5		64	78	70	38	106	109	176	110	132	102	69	78	123	66	53	50	33	45	51	43	39	35	31	36	72
		-56	-47	-103	-103	-127	-214	-209	-217	-159	-45	-165	-185	-320	-218	-276	-129	-141	-61	-203	-102	-82	-24	-25	-35	-135
		122	126	174	142	233	324	386	328	292	148	234	264	443	285	330	180	175	107	255	146	122	60	57	73	209
6		49	42	44	49	40	55	69	106	66	102	118	70	61	36	45	114	83	111	68	43	51	59	80	47	67
		-43	-42	-37	-6	-18	-29	-81	-234	-77	-105	-479	-122	-25	-28	-172	-355	-195	-119	-53	-128	-56	-78	-115	-77	-111
		94	86	82	56	59	85	150	341	144	207	598	193	87	65	218	470	279	231	123	172	107	137	196	125	179
7		44	34	48	57	31	59	63	71	44	43	67	85	70	109	73	88	251	291	176	190	106	107	159	166	101
		-19	-14	-13	-33	-148	-148	-24	-32	-20	-14	-63	-29	-119	-150	-35	-108	-491	-371	-221	-227	-268	-123	-318	-535	-147
		64	49	61	91	180	208	88	104	65	58	131	114	190	260	109	197	742	663	398	418	375	232	478	702	249
8		138	110	114	114	116	107	69	96	118	99	86	75	75	60	56	70	93	92	113	106	59	77	48	34	89
		-430	-135	-69	-325	-283	-80	4	-121	-328	-349	-150	-14	-81	-74	-199	-374	-227	-117	-89	-115	-134	-60	-25	-57	-160
		570	247	184	441	400	187	65	218	446	449	237	90	157	136	256	445	321	211	202	222	193	139	75	92	249
9		30	39	72	55	55	48	50	76	55	31	36	35	33	38	40	40	55	180	167	92	95	153	166	96	72
		-67	-41	-8	-42	-117	-59	-65	-17	-21	-26	-25	-30	-29	-40	-162	-224	-158	-250	-371	-166	-59	-138	-146	-45	-96
		99	82	81	98	173	108	116	95	77	58	62	65	63	79	202	264	215	432	539	259	154	292	313	142	169
10		110	150	113	77	80	77	83	49	59	50	47	47	56	131	135	97	33	42	83	111	108	169	144	108	90
		-169	-209	-71	-32	-141	-94	0	-5	-8	-17	-1	-11	-76	-680	-267	-44	-12	-137	-197	-301	-226	-366	-268	-129	-144
		280	360	185	110	221	172	83	55	68	68	49	59	132	812	403	142	46	179	281	413	335	537	414	238	235
11		100	81	84	97	109	99	53	36	41	68	80	97	110	143	81	73	47	52	24	26	39	114	117	81	77
		-124	-88	-26	-66	-131	-73	-20	-25	-31	-63	-214	-471	-420	-340	-369	-162	-28	-146	-82	-27	-52	-342	-532	-74	-163
		225	170	110	165	240	173	74	62	73	132	294	569	530	484	451	236	77	199	106	54	92	458	650	156	241
12		51	54	44	44	82	96	118	51	93	67	45	50	29	37	28	21	27	26	18	11	18	15	21	29	45
		-4	-22	-41	-143	-318	-214	-60	-26	-95	-113	-110	-33	-12	-21	-15	-15	-45	-37	-15	-15	-15	-17	-17	-6	-59
		56	77	86	189	401	312	178	78	188	181	156	84	41	60	44	38	73	64	35	27	34	33	39	37	105
13		28	26	25	46	47	34	34	31	48	46	33	64	50	57	77	56	233	156	157	195	141	136	110	127	81
		-4	-3	-3	-39	-12	-1	-3	-1	-13	-31	-81	-77	-7	-31	-148	-119	-174	-162	-194	-148	-96	-253	-191	-102	-79
		33	30	29	85	59	37	37	32	61	77	114	141	58	89	227	177	408	319	351	343	238	391	302	229	161
14		94	126	135	113	101	47	52	49	46	41	45	96	93	197	62	46	28	45	82	70	69	64	43	64	75
		-74	-41	-15	-8	11	-70	-87	-189	-75	-4	-19	-152	-660	-240	-12	-18	-17	-95	-352	-120	-88	-139	-67	-26	-106
		169	168	151	122	89	117	139	239	122	45	65	249	754	438	76	64	45	141	435	190	158	204	111	92	183
15		52	63	79	84	59	45	68	71	70	56	13	186	124	98	73	45	116	169	271	286	159	153	46	75	103
		-20	-123	-322	-209	-11	-24	-50	-123	-71	-265	-637	-743	-337	-78	-51	-235	-519	-514	-287	-311	-411	-321	-589	-1024	-303
		73	187	403	295	71	69	118	196	143	322	650	930	462	177	125	281	636	684	559	598	570	475	637	1100	407

16	63	186	285	408	357	378	444	52	213	226	168	201	226	192	153	180	143	209	141	151	138	155	145	109	205
	-609	-1050	-1331	-929	-794	-693	-709	-641	-723	-802	-395	-977	-765	-1060	-441	-485	-782	-607	-537	-513	-468	-420	-475	-376	-691
	674	1238	1617	1338	1152	1071	1154	693	936	1028	563	1178	993	1252	595	666	927	817	680	664	607	576	621	487	897
17	144	92	127	98	117	130	140	139	102	84	65	73	85	85	149	186	143	92	69	77	110	167	97	130	113
	-363	-278	-203	-130	-329	-474	-516	-385	-195	-449	-564	-335	-94	-591	-547	-698	-513	-204	-196	-163	-325	-390	-368	-337	-360
	508	371	331	229	447	604	658	525	298	533	630	410	180	677	696	885	657	297	266	240	436	559	465	468	474
18	125	160	95	142	110	80	55	109	114	57	39	89	74	51	30	23	14	30	48	107	84	75	61	69	77
	-376	-291	-68	-209	-247	-104	-13	-152	-390	-100	-46	-346	-100	-19	-15	-19	-33	-36	-93	-478	-330	-86	-98	-161	-159
	502	452	164	352	358	184	68	261	504	157	87	435	175	70	45	43	49	66	142	585	416	161	160	231	236
19	78	87	134	133	111	131	179	130	71	42	34	41	58	51	40	64	49	118	99	59	54	70	90	104	84
	-180	-230	-503	-251	-273	-227	-274	-105	-1	-12	-22	-73	-53	-31	-236	-316	-110	-573	-651	-366	-225	-264	-469	-253	-237
	259	318	638	385	385	359	454	236	71	54	57	115	112	82	277	381	159	691	751	426	280	334	560	357	323
20	91	94	80	89	151	134	146	140	100	64	71	82	112	114	82	45	52	121	65	50	81	84	107	127	95
	-142	-85	-127	-200	-88	-281	-469	-198	-44	-120	-144	-158	-224	-437	-328	-299	-212	-338	-213	-93	-401	-329	-334	-262	-230
	234	181	208	290	239	416	616	338	145	186	215	241	336	552	411	346	264	460	278	144	482	413	442	390	326
21	123	133	116	207	183	131	98	69	80	100	133	157	160	92	152	83	77	110	165	136	86	116	121	86	121
	-234	-158	-219	-210	-79	-117	-153	-179	-192	-151	-253	-358	-557	-409	-95	-49	-135	-220	-569	-309	-212	-340	-205	-31	-226
	358	292	337	418	262	249	251	249	272	251	386	516	717	502	248	133	214	331	735	447	299	457	327	118	349
22	68	49	78	91	84	70	87	75	64	81	98	149	81	66	60	59	60	66	132	63	59	63	76	69	77
	-8	-17	-89	-157	-258	-195	-27	-28	-67	-425	-390	-286	-53	-82	-164	-121	-151	-322	-333	-352	-18	-8	-97	-176	-159
	77	68	168	248	342	266	114	103	131	508	489	435	135	149	225	181	212	389	467	416	77	71	174	246	237
23	81	78	68	43	72	60	60	51	38	32	44	53	96	97	70	66	39	31	34	28	26	28	29	32	52
	-148	-69	-26	-12	-36	-28	-5	-8	-10	-25	-35	-54	-332	-217	-50	-44	-5	-32	-19	-19	-6	-12	-8	-4	-50
	230	149	96	56	109	89	66	60	49	59	81	108	429	315	121	111	45	63	54	48	32	41	38	36	104
24	29	39	43	55	47	62	59	70	46	53	70	57	46	40	44	37	62	72	58	76	97	118	97	82	61
	0	-1	-13	-102	-60	-21	-135	-141	-30	-20	-101	-112	-4	-6	-15	-178	-267	-167	-84	-181	-360	-173	-103	-84	-98
	29	40	58	158	108	83	195	211	78	74	172	170	51	46	61	216	330	240	143	257	458	293	201	168	160
25	87	85	93	71	53	62	72	43	53	41	42	31	29	27	39	48	29	35	38	56	120	77	60	89	57
	-106	-106	-33	-15	-7	1	-5	-7	-6	-5	-52	-18	-15	-9	-10	-24	-77	-90	-69	-53	-264	-370	-254	-159	-73
	193	192	127	86	60	60	78	50	60	47	96	50	44	37	50	72	108	125	108	110	386	448	315	249	131
26	90	99	86	97	113	80	52	53	52	33	31	37	66	75	55	46	27	25	46	37	24	27	31	30	55
	-218	-330	-49	-19	-25	-119	-26	-3	-2	-2	-8	-18	-66	-44	-33	-40	-28	-75	-235	-63	-46	-15	-16	-8	-62
	310	431	137	117	139	200	78	57	54	36	40	56	133	120	90	88	55	101	282	101	71	43	48	39	118
27	32	35	33	33	42	44	61	54	44	32	47	65	99	123	100	41	50	90	97	90	45	40	53	54	59
	0	0	0	-1	-7	-28	-47	-90	-37	-13	-173	-211	-322	-244	-109	-76	-350	-438	-210	-134	-44	-41	-83	-70	-114
	31	34	34	35	49	73	110	145	82	46	221	277	422	368	210	118	401	529	308	225	90	82	137	125	173
28	46	56	72	63	47	40	45	54	51	80	86	63	40	32	27	25	20	24	26	26	23	25	25	25	43
	-68	-61	-212	-94	-24	-18	-29	-41	-177	-184	-85	-47	-111	-26	-8	-8	-6	-4	0	-1	-18	-1	0	0	-51
	115	118	285	158	72	59	75	96	228	264	172	112	152	59	36	33	26	28	26	27	42	27	26	25	94
29	28	29	31	36	41	38	51	75	204	239	238	142	58	35	30	25	20	28	28	44	92	63	58	51	70
	0	2	1	3	8	0	-99	-431	-443	-245	-189	-32	-10	-19	-31	-20	-12	-9	-9	-70	-187	-130	-73	-104	-87
	27	26	29	32	32	38	150	507	648	484	427	174	69	56	63	46	33	39	38	115	280	193	132	156	158
30	50	75	130	169	379	347	359	287	165	135	150	113	78	49	61	39	39	89	80	95	118	91	167	114	141
	-70	-102	-179	-393	-608	-424	-548	-236	-105	-61	-84	-104	-171	-85	-250	-100	-107	-173	-184	-199	-144	-407	-327	-102	-215
	122	178	310	563	988	773	908	524	270	196	235	218	250	135	312	140	148	263	265	296	262	499	495	217	357

HOURLY VALUES (nT) OF AU, AL AND AE INDICES DECEMBER 1984

DAY\UT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	MEAN
1	AU	74	85	85	63	87	69	120	106	36	26	44	59	62	57	25	25	22	13	14	14	19	48	63	100	55
	AL	-94	-37	-23	0	-105	-361	-167	-102	-16	-63	-282	-312	-205	-148	-23	-24	-41	-20	-56	-17	-20	-65	-161	-434	-116
	AE	169	123	109	62	192	431	288	208	53	90	326	372	267	207	49	50	63	33	71	32	41	114	224	535	171
2		69	62	76	170	137	204	236	125	120	64	73	102	101	78	56	110	69	64	119	116	102	49	76	86	103
		-436	-555	-610	-402	-107	-298	-280	-134	-138	-59	-75	-110	-84	-146	-119	-401	-578	-451	-631	-562	-292	-62	-158	-352	-293
		506	617	687	573	245	503	517	259	259	124	149	212	185	225	176	513	648	516	751	679	395	112	235	439	397
3		88	122	106	99	113	93	90	74	102	106	75	44	39	46	164	140	128	183	146	153	248	159	101	74	112
		-120	-182	-145	-122	-182	-223	-168	-273	-487	-178	-60	-40	-65	-124	-359	-479	-310	-406	-427	-473	-305	-52	-162	-83	-226
		209	305	253	221	295	317	258	348	589	285	136	85	105	171	525	621	439	590	574	628	555	212	264	158	339
4		97	110	97	70	53	83	82	139	145	115	96	71	120	78	90	114	111	147	107	122	86	136	144	111	105
		-92	-160	-138	-72	-41	-81	-92	-616	-311	-113	-339	-373	-285	-98	-398	-500	-464	-459	-196	-263	-249	-144	-537	-395	-267
		190	270	236	143	95	166	175	756	458	229	435	445	406	177	488	615	577	608	304	386	337	281	683	507	374
5		193	127	111	119	89	70	46	47	95	115	71	55	57	86	88	78	49	93	73	82	86	74	169	134	92
		-226	-311	-233	-34	-4	-1	-3	-30	-283	-247	-203	-89	-128	-204	-240	-124	-222	-486	-178	-101	-215	-345	-194	-179	-178
		420	439	344	153	94	71	49	79	379	362	275	145	186	291	330	203	272	581	252	185	302	421	365	314	271
6		184	133	115	68	74	105	123	106	130	121	115	89	63	78	71	77	86	75	54	83	137	97	122	115	101
		-231	-122	-57	-53	-102	-373	-229	-118	-87	-422	-439	-116	-62	-216	-436	-300	-231	-89	-90	-154	-241	-109	-274	-198	-198
		416	256	174	122	177	480	353	225	217	543	554	205	126	294	508	379	319	165	146	238	379	207	397	314	300
7		106	69	156	178	174	141	79	42	64	72	109	48	73	62	102	79	40	62	68	52	44	66	36	33	81
		-261	-322	-80	-61	-122	-70	-23	-13	-42	-174	-578	-204	-100	-129	-328	-263	-141	-368	-580	-443	-94	-16	-43	-75	-189
		368	392	237	240	297	212	103	55	108	248	687	253	174	191	431	344	182	431	649	496	140	83	80	108	271
8		39	53	55	56	103	91	73	63	28	58	46	55	49	31	18	19	17	5	5	11	17	21	31	55	42
		-80	-59	-44	-88	-69	-89	-27	-40	-42	-67	-97	-142	-25	-20	-16	-38	-56	-50	-111	-147	-114	-39	-44	-88	-66
		120	113	101	145	172	181	101	103	71	125	144	198	76	53	35	57	74	56	116	159	132	61	76	143	109
9		83	80	39	25	26	43	41	29	32	36	56	48	40	39	18	10	36	71	108	85	62	85	129	39	52
		-181	-74	-20	-5	-6	-5	-5	-6	-6	-11	-48	-60	-25	-31	-14	-48	-181	-264	-125	-53	-55	-33	-81	-38	-57
		265	155	60	30	33	50	48	36	39	48	105	110	66	72	33	60	218	336	234	139	118	120	211	78	111
10		34	37	29	40	57	105	79	68	67	43	48	39	103	72	53	14	20	59	31	24	26	21	33	34	47
		-12	-17	-4	-11	-57	-230	-68	-36	-70	-47	-155	-93	-304	-193	-67	-40	-111	-457	-219	-65	-40	-29	-25	-25	-99
		47	54	34	53	116	336	148	105	137	91	204	133	408	265	121	55	133	517	251	91	68	51	58	60	147
11		32	30	29	58	55	42	39	36	34	41	74	64	90	40	127	73	94	85	123	158	160	220	258	233	91
		-16	-4	-8	-53	-132	-63	-18	-7	-12	-34	-228	-218	-204	-634	-515	-202	-214	-352	-338	-182	-338	-659	-340	-331	-213
		49	35	39	112	189	106	58	44	47	75	303	283	295	675	643	276	309	438	463	340	499	880	599	564	305
12		236	139	144	119	75	87	37	41	46	76	91	62	48	29	54	49	26	13	13	5	4	21	17	26	61
		-364	-263	-225	-372	-82	-57	-29	-90	-98	-299	-292	-187	-135	-130	-213	-180	-101	-99	-60	-42	-34	-78	-72	-30	-147
		601	403	370	492	159	145	67	132	145	376	383	250	183	160	267	229	128	113	74	48	39	100	90	57	209
13		34	65	150	149	169	113	91	91	106	197	185	185	102	167	89	67	77	60	45	73	60	55	26	22	99
		-32	-105	-430	-718	-121	-116	-85	-165	-214	-421	-230	-172	-413	-300	-59	-310	-306	-173	-166	-368	-343	-206	-81	-45	-233
		67	171	581	868	292	231	177	258	320	619	415	358	515	468	149	378	384	234	213	442	405	262	108	67	333
14		28	29	22	17	25	30	12	29	39	56	123	116	86	75	36	45	43	26	29	18	29	29	53	60	44
		-48	-60	-79	-50	-55	-97	-63	-57	-82	-180	-277	-259	-371	-312	-271	-409	-361	-167	-97	-105	-207	-375	-224	-141	-181
		77	90	102	68	80	127	76	87	122	238	401	376	457	387	307	454	405	194	127	124	236	405	278	201	226
15		77	106	146	66	52	56	60	51	82	121	130	123	88	74	34	34	30	38	32	22	94	101	122	149	79
		-231	-223	-182	-162	-195	-266	-253	-249	-299	-273	-336	-418	-297	-466	-261	-232	-185	-50	-70	-93	-490	-487	-125	-269	-255
		309	330	329	229	248	323	313	300	382	395	467	542	386	541	296	268	216	88	103	117	585	589	248	420	334

16	168	103	74	134	169	116	146	147	163	221	130	164	118	106	95	74	140	55	144	175	137	174	223	116	137
	-421	-149	-144	-165	-250	-373	-404	-255	-252	-320	-230	-334	-459	-250	-395	-385	-551	-176	-639	-408	-295	-380	-455	-128	-326
	589	253	219	300	420	491	552	403	415	542	360	498	578	356	491	460	692	232	785	584	433	555	679	245	464
17	85	76	57	54	72	127	101	129	126	104	81	78	49	103	136	145	268	171	127	84	98	83	94	73	105
	-127	-225	-104	-104	-244	-263	-202	-225	-238	-267	-131	-158	-294	-732	-628	-404	-644	-568	-555	-219	-117	-388	-296	-123	-302
	213	302	162	160	318	391	305	355	365	373	214	237	344	836	765	551	913	740	683	305	217	471	391	196	409
18	81	65	71	85	59	118	90	123	112	110	95	108	89	149	118	35	49	37	39	29	28	39	30	27	74
	-148	-226	-121	-163	-195	-159	-134	-131	-114	-166	-187	-166	-360	-184	-55	-163	-464	-439	-221	-45	-14	-85	-75	-78	-170
	230	292	194	250	255	277	225	256	227	277	282	274	449	333	173	199	514	477	261	75	43	125	106	106	246
19	34	30	43	38	32	25	22	20	44	42	47	65	102	68	45	43	29	16	27	38	55	37	32	25	40
	-42	-50	-70	-18	-17	-1	-4	-121	-189	-127	-107	-94	-282	-111	-68	-93	-78	-69	-205	-95	-50	-5	-25	-30	-81
	77	82	115	56	50	28	27	141	234	170	155	159	385	180	113	137	108	87	232	135	106	42	58	56	122
20	22	38	42	36	30	24	33	35	33	35	29	23	21	22	33	7	24	30	23	26	14	23	16	17	26
	-96	-120	-25	-39	-18	-10	-9	-4	-13	-28	-38	-32	-31	-19	-145	-285	-176	-106	-101	-236	-57	-28	-18	-3	-68
	119	160	68	77	49	35	42	40	47	64	68	57	53	42	178	293	201	137	125	264	72	51	35	20	96
21	26	24	23	22	29	35	36	47	49	33	57	63	90	103	91	40	32	84	109	108	137	125	143	125	68
	-2	-2	-9	-38	-101	-10	-5	-79	-204	-51	-85	-193	-228	-267	-82	-28	-75	-73	-120	-219	-194	-104	-186	-230	-108
	29	27	34	62	131	46	43	127	253	84	142	257	319	371	174	69	109	158	230	329	332	230	330	356	177
22	67	50	41	36	32	32	25	46	32	45	48	40	30	31	47	52	78	55	73	88	128	182	184	130	66
	-43	-17	-9	0	-3	-8	-8	-6	-8	-19	-40	-105	-38	-38	-17	-152	-264	-183	-110	-79	-215	-236	-144	-92	-76
	110	68	51	37	35	41	35	54	41	64	90	146	69	70	64	206	344	239	184	169	344	419	328	223	143
23	122	73	90	82	115	153	130	55	66	57	101	101	121	111	77	50	55	50	39	47	111	100	88	75	86
	-82	0	-7	-39	-146	-194	-75	-15	-25	-32	-173	-294	-152	-166	-116	-158	-421	-211	-13	-94	-337	-457	-173	-97	-145
	205	72	97	122	262	348	206	71	92	90	274	396	273	278	194	210	477	262	53	143	449	558	262	172	232
24	46	36	34	27	25	35	35	21	19	28	33	22	21	19	23	36	29	20	15	13	15	26	65	52	29
	-36	-20	-68	-86	-23	-5	-7	-5	-5	-30	-48	-31	-44	-62	-68	-28	-19	-18	-15	-20	-12	-25	-38	-4	-30
	84	57	103	114	49	41	43	27	24	59	82	54	67	82	92	64	49	39	31	35	29	52	103	56	60
25	49	41	61	86	103	152	137	152	96	80	22	15	9	7	6	10	10	11	15	18	16	14	10	12	47
	4	-6	-16	-44	-33	2	-35	-45	-82	-33	0	-5	-11	-8	-10	-13	-11	-11	-7	-4	-6	-8	-3	-10	-16
	44	48	78	131	137	149	173	198	179	113	23	22	21	16	17	24	22	23	23	22	23	23	14	23	64
26	14	24	70	122	124	196	155	134	131	249	190	84	115	186	106	59	119	180	103	80	123	151	155	128	125
	-16	-19	-160	-188	-315	-161	-9	-22	-157	-456	-352	-506	-247	-419	-122	-51	-269	-475	-101	-192	-478	-327	-109	-85	-218
	32	44	231	311	440	358	165	157	289	707	543	592	363	606	230	110	390	657	205	272	603	479	265	214	344
27	151	73	37	30	21	25	21	26	18	15	27	66	89	122	200	139	81	31	41	42	101	153	143	197	77
	-71	-5	-12	-15	-22	-21	-10	-8	-9	-6	-16	-60	-582	-572	-414	-324	-186	-93	-65	-120	-349	-88	-129	-494	-153
	222	79	50	45	44	48	32	35	28	22	44	127	672	694	615	464	269	125	106	163	451	243	273	692	231
28	244	118	87	103	103	80	90	233	189	142	121	170	115	153	101	163	273	105	68	190	223	202	125	130	147
	-338	-304	-178	-169	-76	-25	-115	-739	-276	-156	-51	-85	-228	-208	-209	-294	-604	-193	-174	-171	-280	-359	-225	-222	-237
	582	423	266	273	180	107	206	973	466	299	174	255	344	362	310	458	878	299	243	361	503	563	351	354	385
29	193	131	114	122	115	120	117	54	55	73	155	124	89	177	86	79	57	101	160	75	95	91	118	115	109
	-317	-135	-27	-158	-181	-69	-146	-88	-51	-34	-563	-374	-264	-127	-104	-197	-360	-255	-409	-345	-212	-223	-320	-275	-218
	511	267	141	281	297	190	265	142	107	109	718	499	354	305	191	277	418	357	570	420	308	315	439	390	328
30	80	72	149	226	146	115	144	102	96	106	83	83	137	117	135	117	37	71	133	105	131	90	143	175	117
	-102	-53	-205	-127	-59	-118	-272	-287	-150	-246	-296	-176	-360	-161	-137	-79	-89	-302	-360	-329	-134	-103	-162	-453	-198
	183	127	355	354	206	234	417	391	247	353	381	260	498	279	273	197	127	375	495	436	266	195	306	630	316
31	152	142	185	135	138	131	118	90	63	112	129	170	122	126	76	104	73	109	129	107	152	82	85	80	117
	-274	-209	-102	-11	-91	-150	-117	-24	-39	-161	-420	-498	-382	-612	-586	-370	-152	-406	-496	-287	-231	-350	-318	-90	-266
	427	352	288	146	230	281	236	114	103	274	550	668	504	740	663	476	226	516	627	395	384	434	403	170	384

MONTHLY AND YEARLY **AE** 1957 - 1984

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual mean
1957							159.	145.	311.	156.	168.	217.	96.3
1958	193.	255.	302.	263.	231.	273.	270.	201.	186.	175.	132.	183.	221.9
1959	184.	256.	205.	193.	208.	206.	274.	225.	270.	217.	246.	236.	226.8
1960	171.	162.	183.	317.	207.	235.	225.	211.	212.	324.	277.	255.	231.6
1961	156.	168.	141.	166.	154.	163.	252.	145.	149.	143.	129.	149.	159.7
1962	90.	95.	100.	160.	110.	131.	140.	172.	198.	221.	152.	155.	143.6
1963	132.	95.	94.	109.	124.	142.	137.	156.	229.	153.	130.	115.	134.6
1964	116.	122.	133.	149.	124.	95.	99.	88.	137.	142.	97.	71.	114.4
1965	83.	121.	113.	93.	94.	178.	132.	130.	143.	89.	87.	101.	113.6
1966	108.	130.	152.	145.	162.	146.	180.	176.	223.	152.	148.	157.	156.4
1967	135.	139.	121.	168.	278.	205.	177.	172.	204.	123.	161.	196.	173.3
1968	187.	227.	256.	231.	268.	302.	213.	203.	206.	184.	198.	163.	219.9
1969	132.	169.	227.	255.	268.	225.	172.	175.	198.	161.	152.	110.	187.1
1970	118.	104.	210.	233.	199.	243.	276.	222.	203.	194.	192.	135.	194.1
1971	188.	177.	194.	245.	241.	230.	189.	195.	213.	189.	155.	153.	197.4
1972	192.	156.	203.	203.	193.	238.	177.	259.	196.	202.	180.	133.	194.3
1973	221.	262.	315.	337.	241.	273.	232.	223.	225.	261.	192.	183.	247.1
1974	201.	226.	324.	309.	297.	278.	322.	307.	306.	326.	248.	245.	282.3
1975													
1976													
1977	198.	246.	283.	227.	238.	542.	240.	220.	188.	197.	244.	180.	250.3
1978	191.	237.	243.	284.	310.	307.	213.	239.	245.	192.	214.	176.	237.6
1979	212.	195.	247.	297.	252.	254.	223.	254.	216.	188.	152.	157.	220.6
1980	149.	164.	122.	181.	183.	261.	203.	180.	165.	195.	198.	150.	179.3
1981	147.	195.	238.	324.	319.	218.	279.	279.	206.	252.	217.	158.	236.0
1982	178.	386.	220.	304.	290.	367.	372.	318.	346.	275.	254.	277.	298.9
1983	218.	320.	317.	381.	291.	283.	261.	264.	229.	263.	282.	237.	278.8
1984	213.	253.	300.	329.	314.	283.	279.	260.	310.	301.	246.	254.	278.5

Unit : nT

SECTION 4

CLASSIFICATION OF DAYS

CLASSIFICATION OF DAYS 1984

JANUARY			
Five international quietest days (from Kp)		:	7 8 9 12 15
24-hours quiet intervals (from aa)	C - very quiet	:	7 8 9 12 14 16 23 24
	K - quiet	:	15
48-hours quiet intervals (from aa)	C - very quiet	:	8 9 15 24
	K - quiet	:	17
FEBRUARY			
Five international quietest days (from Kp)		:	8 16 19 22 25
24-hours quiet intervals (from aa)	C - very quiet	:	16 19
	K - quiet	:	NONE
48-hours quiet intervals (from aa)	C - very quiet	:	16
	K - quiet	:	NONE
MARCH			
Five international quietest days (from Kp)		:	4 5 14 20 21
24-hours quiet intervals (from aa)	C - very quiet	:	4 5 14 20 21
	K - quiet	:	NONE
48-hours quiet intervals (from aa)	C - very quiet	:	20
	K - quiet	:	NONE
APRIL			
Five international quietest days (from Kp)		:	16 18 22 23 24
24-hours quiet intervals (from aa)	C - very quiet	:	10 16 22 24
	K - quiet	:	NONE
48-hours quiet intervals (from aa)	C - very quiet	:	16 22
	K - quiet	:	17 23

MAY			
Five international quietest days (from Kp)		:	7 8 16 27 31
24-hours quiet intervals (from aa)	C - very quiet	:	8 16
	K - quiet	:	7 31
48-hours quiet intervals (from aa)	C - very quiet	:	7 8
	K - quiet	:	NONE
JUNE			
Five international quietest days (from Kp)		:	12 13 14 21 22
24-hours quiet intervals (from aa)	C - very quiet	:	12 13 14 21 22
	K - quiet	:	27
48-hours quiet intervals (from aa)	C - very quiet	:	13 14 21 22
	K - quiet	:	12
JULY			
Five international quietest days (from Kp)		:	7 21 23 26 30
24-hours quiet intervals (from aa)	C - very quiet	:	21 26
	K - quiet	:	NONE
48-hours quiet intervals (from aa)	C - very quiet	:	NONE
	K - quiet	:	NONE
AUGUST			
Five international quietest days (from Kp)		:	6 7 18 21 22
24-hours quiet intervals (from aa)	C - very quiet	:	6 7 18 21 22
	K - quiet	:	23
48-hours quiet intervals (from aa)	C - very quiet	:	6 18 22
	K - quiet	:	7 21

SEPTEMBER

Five international quietest days (from Kp)		: 7 15 16 17 18
24-hours quiet intervals (from aa)	C - very quiet	: 7 17 18
	K - quiet	: NONE
48-hours quiet intervals (from aa)	C - very quiet	: 7 17
	K - quiet	: 18

OCTOBER

Five international quietest days (from Kp)		: 1 4 17 30 31
24-hours quiet intervals (from aa)	C - very quiet	: 17 30
	K - quiet	: 1 31
48-hours quiet intervals (from aa)	C - very quiet	: 30
	K - quiet	: 1

NOVEMBER

Five international quietest days (from Kp)		: 12 13 26 27 28
24-hours quiet intervals (from aa)	C - very quiet	: 28
	K - quiet	: 12
48-hours quiet intervals (from aa)	C - very quiet	: NONE
	K - quiet	: NONE

DECEMBER

Five international quietest days (from Kp)		: 9 19 20 24 25
24-hours quiet intervals (from aa)	C - very quiet	: 9 20 24 25
	K - quiet	: 19
48-hours quiet intervals (from aa)	C - very quiet	: 20
	K - quiet	: 9

CLASSIFICATION OF DAYS 1984 (continued)

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

These days are arranged according to their degree of quietness or disturbance, respectively.

VERY QUIET INTERVALS, 1984

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

First. . . . . last Eighth					Duration Eighths
Jan	08	E1	09	E1	9
	17	E3	18	E4	10
Mar	04	E7	05	E6	8
Apr	22	E2	23	E4	11
May	13	E4	14	E3	8

First. . . . . last Eighth					Duration Eighths
Jun	13	E8	14	E8	9
Aug	06	E7	07	E8	10
	20	E8	23	E4	21
Oct	30	E4	31	E6	11

LIST OF MAGNETIC STORMS, 1984

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
Mar	28	E5	—	9	1 . 1	. . .	. .
Apr	04	E5	—	7	. 2 .	1 . .	. .
	08	E8	—	3	. . 1	. . .	. .
	25	E8	—	11	1 1 .	1 . .	. .
Sep	04	E3	04 07.46	4	. 1 .	1 . .	. .
Nov	15	E6	—	12	1 1 1	1 1 .	. .

SECTION 5

RAPID VARIATIONS

For technical reasons, the 1984 rapid variations data were not available at the date of publication of the present Bulletin (see page 20). As example of the presentation of these data, we give hereafter the beginning of the 1981 list.

LIST OF SSC 1981 :

Sudden commencements followed by a storm or period of storminess as selected from reports of the following 47 Observatories identified by their IAGA three letter code (see list pp. 23-32 above).

SOD, DOB, NUR, MOS, ESK, HLP, WNG, WIT, IRK, NGK, VAL, BEL, HAD, KIV, DOU, BDV, VIC, FUR, CLF, HRB, OTT, SUR, MMB, AQU, TFS, EBR, COI, TOL, FRD, PEN, ALM, KAK, HAY, KNY, TEN, LNP, BNG, LUA, PMG, HUA, MPO, GNA, ACS, TWA, CZT, KGL, DUM, and the records from HON.

Copies of the magnetograms sent by five low-latitude observatories (MBO, FUQ, HON, PMG, ABG) or their supplementary observatories (TEN, SJG, KNY, HYB) have been used for qualifying the ssc's and for measuring their duration and amplitude.

JANUARY

17/01 - 06:02 (01-04)	11122	5.9	12	2A	2B		2si
29/01 - 06:56 (51-60)	23232	4.7	21	17A	7B	7C	3si

etc...

SOLAR FLARE EFFECTS (sfe)

For technical reasons, the 1984 rapid variations data were not available at the date of publication of the present Bulletin (see page 20). As example of the presentation of these data, we give hereafter the beginning of the 1981 list.

LIST OF SFE 1981 :

Times of commencements of solar-fare effects (sfe) are checked by the following 58 observatories, identified by their IAGA three letter code (list pp. 23-32 above) :

ABK SOD COL DOB YAK NUR LOV SIT SVD KNS MNK WNG NGK VAL GTT KIV DOU KGD BDV VIC NEW HRB UBA ODE NKK MMB VLA AAA AQU TKT ISK EBR COI SPT FRD PEN ASH KAK HTY TUC LNP HON SJG HYB MBO MUT GUA HUA PPT MPO GNA HER ACS TOO TWA EYR MCQ MAW

JANUARY

26/01 - 12:34
A: WNG3 ODE3 NKK2 AQU2 EBR2 MBO2
B: NUR2 (SVD1) NGK3 VAL2 GTT2 BDV3 ISK0 SPT1 ASH2 [MUT 1]
C: SOD- [SIT1] KNS1 KIV- (KGD1) [NEW1] [MMB0] [VLA-] (AAA1) COI1 [KAK0] [HTY0] SJG2 MPO2 ACS0 MAW1
D: LOV FRD HER TWA
E: [COL] (DOB) DOU PEN [LNP] (MCQ)
Y: MNK
N: HUA

etc...

Reproduction photomécanique
IMPRIMERIE LOUIS-JEAN
BP 87 — 05003 GAP Cedex
Tél. : 92.51.35.23
Dépôt légal : 213 — Mars 1990
Imprimé en France

TRANSACTIONS OF IAGA MEETINGS

Bulletin

No. 3	Transactions of the Rome Meeting, 1922
No. 5	Transactions of the Madrid Meeting, 1924
No. 8	Comptes rendus de l'Assemblée de Stockholm, 1930
No. 13	Transactions of the Oslo Meeting, 1948
No. 14	Transactions of the Brussels Meeting, 1951
No. 15a	Le Noyau Terrestre, Rome, 1954
No. 15b	Problèmes de la Physique de la haute atmosphère, 1954
No. 16	Transactions of the Toronto Meeting, 1957
No. 16a	Paléomagnétisme et Variation Séculaire, Toronto, 1957
No. 16b	Aéronomie, Toronto, 1957
No. 16c	Rapid Magnetic Variations, Utrecht, 1959
No. 19	Transactions of the Helsinki and Berkeley Meetings 1960/1963
No. 21	Atlas of Indices K (Vol. 1 : Text ; Vol. 2 : Figures)
No. 24	Programme and Abstracts of the St Gall Meeting, 1957
No. 25	Transactions of the St Gall Meeting, 1967
No. 26	Programme and abstracts of the General Scientific Assembly, Madrid, 1969
No. 27	Transactions of the General Scientific Assembly, Madrid, 1969
No. 28	The World Magnetic Survey, 1957-1969
No. 29	Grid values for the IGRF 1965
No. 31	Transactions of the XV General Assembly, Moscow, 1971
No. 34	Programme and abstracts for the Second General Scientific Assembly, Kyoto, 1973
No. 35	Transactions of the Second General Scientific Assembly, Kyoto, 1973
No. 36	Programme and Abstracts of the XVI General Assembly, Grenoble, 1975
No. 37	Transactions of the XVI General Assembly, Grenoble, 1975
No. 38	Grid values and charts of the IGRF 1975
No. 41	Transactions of the III General Scientific Assembly, Seattle, 1977
No. 44	Transactions of the XVII General Assembly, Canberra, 1979
No. 45	Program and abstracts of the IV General Scientific Assembly, Edimbourg, 1981
No. 46	Transactions of the IV General Scientific Assembly, Edimbourg, 1981
No. 48a	Program and abstracts of the XVIII General Assembly, Hambourg, 1983
No. 48b	Program and abstracts of the IAGA/IAMAT Joint symposium on middle atmospheric sciences Hambourg, 1983
No. 49	Transactions of the XVIII General Assembly, Hambourg, (1983-1985)
No. 50	Program and abstracts of the V Scientific Assembly, Prague, 1985
No. 51	Transactions of the V Scientific Assembly, Prague, 1985

PROCEEDINGS OF IAGA SYMPOSIA

IAGA Symposium No. 2, Communications présentées à la Réunion de Berkeley, 1963
IAGA Symposium No. 3, Symposium on Magnetism of the Earth's Interior, Pittsburgh, 1964
IAGA Symposium No. 4, Communications présentées à la Réunion de Cambridge (Mass.),1965
IAGA Symposium No. 5, Communications présentées à la Réunion de Sao José dos Campos (Brésil),
IAGA Symposium No. 6, Symposium on Aurora and Magnetic Storms, Birkeland, 1967
IAGA Symposium No. 7, Symposium on Upper Atmospheric Winds, Waves and Ionospheric Drifts, St Gall, 1967
IAGA Symposium No. 8, Symposium on Laboratory Measurements of Aeronomic Interest, Toronto, 1963
IAGA Symposium No. 9, Symposium on Multidisciplinary Studies of Unusual Regions of the Upper Mantle, Madrid, 1969

INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY

The following IAGA Publications are on sale at the IUGG Publications Office,
140, rue de Grenelle, 75005 Paris France

GEOMAGNETIC INDICES AND GEOMAGNETIC DATA

No. 12	Geomagnetic Indices, K and C, 1940-1946
No. 12a	Geomagnetic Indices, K and C, 1947
No. 12b	Geomagnetic Indices, K and C, 1948
No. 12c	Geomagnetic Indices, K and C, 1949
No. 12d	Geomagnetic K-Indices, International Polar Year, August 1932 to 1933
No. 12e	Geomagnetic Indices, K and C, 1950
No. 12f	Geomagnetic Indices, K and C, 1951
No. 12g	Geomagnetic Indices, K and C, 1952
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 C
No. 12v2	Geomagnetic Data, 1967, Rapid Variations
No. 12w1	Geomagnetic Data, 1968, Indices K and C
No. 12w2	Geomagnetic Data, 1968, Rapid Variations
No. 12x1	Geomagnetic Data, 1969, Indices K and C
No. 12x2	Geomagnetic Data, 1969, Rapid Variations
No. 18	Geomagnetic Planetary Indices Kp, Ap and Cp, 1932 to 1961
No. 20	List of Geomagnetic Observatories
No. 21	Atlas of K Indices (Vol. 1 : Text ; Vol. 2 : Figures)
No. 32a	Geomagnetic Data, 1970, Indices, Rapid Variations, Magnetic Storms
No. 32b	Geomagnetic Data, 1971, Indices, Rapid Variations, Special Intervals
No. 32c	Geomagnetic Data, 1972, Indices, Rapid Variations, Special Intervals
No. 32d	Geomagnetic Data, 1973, Indices, Rapid Variations, Special Intervals
No. 32e	Geomagnetic Data, 1974, Indices, Rapid Variations, Special Intervals
No. 32f	Geomagnetic Data, 1975, Indices, Rapid Variations, Special Intervals
No. 32g	Geomagnetic Data, 1976, Indices, Rapid Variations, Special Intervals
No. 32h	Geomagnetic Data, 1977, Indices, Rapid Variations, Special Intervals
No. 32i	Geomagnetic Data, 1978, Indices, Rapid Variations, Special Intervals
No. 32j	Geomagnetic Data, 1979, Indices, Rapid Variations, Special Intervals
No. 32k	Geomagnetic Data, 1980, Indices, Rapid Variations, Special Intervals
No. 32l	Geomagnetic Data, 1981, IAGA indices : aa, Am, Kp, Dst, AE, Rapid Variations
No. 32m	Geomagnetic Data, 1982, IAGA indices : aa, Am, Kp, Dst, AE
No. 32n	Geomagnetic Data, 1983, IAGA indices : aa, Am, Kp, Dst, AE
No. 32o	Geomagnetic Data, 1984, IAGA indices : aa, Am, Kp, Dst, AE
No. 33	A hundred year series of Geomagnetic Data 1868-1967
No. 39	Supplementary Geomagnetic Data, 1957-1975