

**METEOROLOGICAL SERVICE**



**MAGNETIC OBSERVATIONS  
AT VALENTIA OBSERVATORY**

**U.D.C.  
550.38 (050)**

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NOTE      To simplify reproduction, the letter  $\gamma$  has been used throughout the text to signify  $\gamma$ .

## 1. Introduction

Absolute magnetic observations have been made at Valentia Observatory since 1888. An account of these observations during the period 1888 - 1953 has been published by the Meteorological Service [1]. In December, 1952, a set of La Cour Variometers was installed at the Observatory and was recording on an experimental basis during the year 1953. Other new instruments brought into use at the same time were:

- (a) The Copenhagen Quartz Horizontal Magnetometer (QHM)
- (b) The Copenhagen Magnetometric Zero Balance (BMZ)

During 1953, special comparative readings with the old and new instruments were made and an account of this comparison is given in [1].

The data for the years 1954 - 1978 have been published in annual volumes. The present volume contains the data for 1979.

## 2. Site of the Observations

The geographic and geomagnetic co-ordinates of Valentia Observatory are as follows:

Geographic co-ordinates	$\varphi = 51^{\circ}56' N$	$\lambda = 10^{\circ}15' W$
Geomagnetic co-ordinates	$\delta = 56^{\circ}6' N$	$\lambda = 73^{\circ}4' E$

The height of the station above M.S.L. is 14 metres.

A full description of the site and of the variometer hut is given in [6]. The observing hut for absolute observations has been in use since October, 1956. A plan showing the layout of the instrument pillars in this hut, together with some particulars concerning its construction, is given in [7].

## 3. Variometers and Recorders

Up to December, 1955, the instruments, installed in the variometer hut, consisted of a standard La Cour 15 mm/hr recorder with a set of La Cour H, D and Z variometers. In December, 1955, a second set of La Cour H, D and Z variometers with a La Cour 180 mm/hr (quick-run) recorder was installed, and has been recording continuously since 1st January, 1956.

A description of the instruments and of the recorders will be found in [2], [3] and [4].

The variometers-recorder lines are approximately along the Magnetic Meridian, the recorders being south of the variometers.

At Valentia, the time marking system in the La Cour recorder has been modified to give lines at ten minute intervals. In addition, a number of alarm devices have been installed to reduce to a minimum the possibility of accidental loss of trace.

A full description of the time marking system and alarm devices is given in [5] and [6].

## 4. Base Line Instruments

Since routine recordings began in 1954 a number of changes have been made in the instruments used for base line determination. An account of these changes and comparisons between the instruments is

given in appendix to [9]. The base line instruments used during 1979 were:

Declination..... Ruska Observatory Magnetometer No. 5917 with  
Magnet No. 65S

Horizontal Force.. Proton Vector Magnetometer

Vertical Force.... Proton Vector Magnetometer

#### 4.1 Declination

Ruska Observatory Magnetometer No. 5917 has been in use as the standard base line instrument for Declination since 1st January, 1959. Prior to this date, the instrument in use was the Dover Magnetometer No. 139 with Collimator Magnet No. 139A. Particulars of a comparison between the old and new instruments will be found in [8].

#### 4.2 Horizontal Force and Vertical Force

The proton Vector Magnetometer was introduced as a routine base line instrument for H and Z as from 1st January, 1970. An account of the comparison of results obtained with this absolute instrument and those obtained with the relative instruments used in previous years is given in the appendix to [9].

### 5. Base Line Determination

A summary of the base line values, deduced from the observations made with the instruments specified in paragraph 4, is given in Table 1. The values adopted for the tabulation of the records are given in Table 2.

### 6. Scale Values of the Variometers

The scale values for all three variometers were determined by means of the Helmholtz coil, supplied with the variometers. The scale value for the D variometer was also checked by geometric considerations.

The scale values for 1979 were:

D.....1 mm = 0.90

H.....1 mm = 3.65y

Z.....1 mm = 5.60y

### 7. Diurnal Variation of the Magnetic Elements

Diurnal variation data for all days and international quiet and disturbed days for the seasons and the year are given in Tables 8 to 16. The months taken as comprising the different seasons are as is usual in magnetic work:

Winter.....January, February, November and December

Equinox.....March, April, September and October

Summer.....May, June, July and August.

### 8. K - Indices

The K - Indices, given in Table 17, have been scaled, using the procedure recommended by the committee on Characterisation of Magnetic

Disturbances of the I.A.G.A. The lower limit for  $K = 9$  is 500y.

The actual scaled value for  $K$  is given without reduction for a presumed solar flare effect.

#### 9. Magnetic Disturbance Data

Tables 18 and 19 give the times of onset, as recorded on the Valentia normal speed magnetograms, of the following phenomena:

- (a) Sudden commencements of magnetic storms or periods of storminess (s.s.c.)
- (b) Presumed solar flare effects (s.f.e.)

Giant pulsations (p.g.) as recorded on the quick-run magnetometer are listed in Table 20.

Definitions and descriptions of the phenomena listed in Tables 18 to 20 will be found in [10].

#### 10. Notes on the Tables

##### Tables 4 to 6 (incl.)

The hourly values are the mean values for each hourly interval centred at the half hours.

The mean for each day is the arithmetic mean of the 24 hourly values.

The figures for "Sum" are the last four figures of the monthly totals for each hour (all days).

##### Tables 4 to 7 (incl.)

The international quiet and disturbed days are indicated by letters "Q" and "D" respectively. These days have been selected by the International Association of Geomagnetism and Aeronomy.

##### Tables 7 to 16 (incl.)

The maxima and minima are indicated by the letters "L" and "m" respectively.

##### Table 7

The temperature given for each day is the temperature observed in the variometer hut at 0900 GMT.

##### Table 21

The data given in this table have been adjusted, where necessary, to eliminate discontinuities resulting from occasional changes in base line instruments or other causes. Particulars of this homogeneization will be found in appendix to [9].

#### References

- [1] Magnetic Observations at Valentia Observatory 1941 - 1953.  
(Published by the Irish Meteorological Service)

- [2] Communications Magnetiques No. 8.  
La Balance de Godhavn. Par D. La Cour.  
(Published by Det Danske Meteorologiske Institut, 1930).
  
- [3] Communications Magnetiques No. 11.  
La Variometre de Copenhague, Par D. La Cour et V. Laursen.  
(Published by Det Danske Meteorologiske Institut, 1930).
  
- [4] Observations Faites a Thule.  
Premiere partie: Magnetisme Terrestre, Par V. Laursen.  
(Published by Det Danske Meteorologiske Institut, 1943).
  
- [5] Electrical Controls and Alarm Circuits associated with La  
Cour Magnetic Recorders in operation at Valentia Observatory.  
By S. McWilliams.  
(Published in "Geomagnetica" publicacao comemorativa do 50<sup>o</sup>  
aniversario do Observatorio Magnetico de S. Miguel, Acores,  
Lisboa, 1952).
  
- [6] Magnetic Observations at Valentia Observatory, 1954.  
(Published by the Irish Meteorological Service).
  
- [7] Magnetic Observations at Valentia Observatory, 1956.  
(Published by the Irish Meteorological Service).
  
- [8] Magnetic Observations at Valentia Observatory, 1959.  
(Published by the Irish Meteorological Service).
  
- [9] Magnetic Observations at Valentia Observatory, 1970.  
(Published by the Irish Meteorological Service).
  
- [10] Provisional Atlas of Rapid Variations.  
(Published by the I.A.G.A. Committee on Rapid Magnetic  
Variations and Earth Currents).

TABLE 1 BASE LINE VALUES AS COMPUTED FROM THE ABSOLUTE OBSERVATIONS

DECLINATION  $10^{\circ} + \dots\dots\dots$  (Tenths of Minutes)

DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.
1/1	393	2/3	400	4/5	399	4/7	395	10/9	397	9/11	392
3/1	398	5/3	400	7/5	399	6/7	397	12/9	395	12/11	390
5/1	393	7/3	398	9/5	400	9/7	396	14/9	395	14/11	393
8/1	392	9/3	397	11/5	400	11/7	399	17/9	396	16/11	394
10/1	399	12/3	398	14/5	400	13/7	393	19/9	393	19/11	393
12/1	394	14/3	394	16/5	395	16/7	396	21/9	393	21/11	396
15/1	397	16/3	393	18/5	396	18/7	392	24/9	392	23/11	395
17/1	393	19/3	398	21/5	399	20/7	396	26/9	393	26/11	395
19/1	394	21/3	398	23/5	397	25/7	398	28/9	390	28/11	395
22/1	395	23/3	395	25/5	398	27/7	394	1/10	394	30/11	395
24/1	390	26/3	397	28/5	396	1/8	398	3/10	390	3/12	396
26/1	394	28/3	396	30/5	399	3/8	396	5/10	394	5/12	394
29/1	394	30/3	398	1/6	397	8/8	395	8/10	391	7/12	396
31/1	397	2/4	395	4/6	396	10/8	397	10/10	394	12/12	396
2/2	394	4/4	400	6/6	395	13/8	398	12/10	393	14/12	393
5/2	394	6/4	399	8/6	394	15/8	398	15/10	395	17/12	394
7/2	395	9/4	399	11/6	397	17/8	395	17/10	396	19/12	397
9/2	398	11/4	400	13/6	397	20/8	395	19/10	393	21/12	395
12/2	397	13/4	400	15/6	396	22/8	397	22/10	397	24/12	393
14/2	394	18/4	403	18/6	399	24/8	395	24/10	397	28/12	394
16/2	395	20/4	396	20/6	398	27/8	396	26/10	394	31/12	395
19/2	390	23/4	398	22/6	395	29/8	393	29/10	396		
21/2	397	25/4	399	25/6	398	31/8	395	31/10	395		
23/2	394	27/4	397	27/6	396	3/9	394	2/11	396		
26/2	399	30/4	396	29/6	394	5/9	397	5/11	396		
28/2	396	2/5	395	2/7	398	7/9	396	7/11	396		

HORIZONTAL COMPONENT (Gamma Units)

DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.
1/1	19017	2/3	19015	4/5	19016	4/7	19014	5/9	19013	5/11	19013
3/1	022	5/3	015	7/5	017	6/7	015	7/9	012	7/11	015
5/1	020	7/3	014	9/5	019	9/7	014	10/9	011	9/11	012
8/1	024	9/3	015	11/5	021	11/7	014	12/9	014	12/11	013
10/1	022	12/3	015	14/5	019	13/7	013	14/9	014	14/11	013
12/1	023	14/3	014	16/5	020	16/7	013	17/9	014	16/11	013
15/1	017	16/3	009	18/5	020	18/7	015	19/9	014	19/11	014
17/1	012	19/3	014	21/5	020	20/7	014	21/9	012	21/11	015
19/1	013	21/3	014	23/5	019	23/7	015	24/9	009	23/11	015
22/1	012	23/3	013	25/5	018	25/7	013	26/9	014	26/11	015
24/1	011	26/3	013	28/5	020	27/7	013	28/9	013	28/11	015
26/1	013	28/3	012	30/5	019	30/7	014	1/10	013	30/11	016
29/1	013	30/3	014	1/6	019	1/8	013	3/10	012	3/12	014
31/1	014	2/4	014	4/6	013	3/8	016	5/10	015	5/12	015
2/2	010	4/4	012	6/6	014	8/8	013	8/10	013	7/12	014
5/2	014	6/4	014	8/6	018	10/8	014	10/10	013	10/12	013
7/2	014	9/4	014	11/6	017	13/8	015	12/10	013	12/12	015
9/2	016	11/4	014	13/6	017	15/8	016	15/10	013	14/12	013
12/2	013	13/4	015	15/6	018	17/8	016	17/10	015	17/12	013
14/2	014	18/4	014	18/6	015	20/8	013	19/10	014	19/12	013
16/2	013	20/4	015	20/6	014	22/8	014	22/10	016	21/12	012
19/2	017	23/4	013	22/6	014	24/8	018	24/10	014	24/12	012
21/2	014	25/4	014	25/6	014	27/8	013	26/10	012	28/12	013
23/2	014	27/4	016	27/6	015	29/8	013	29/10	015	31/12	014
26/2	015	30/4	016	29/6	016	31/8	014	31/10	014		
28/2	010	2/5	016	2/7	016	3/9	013	2/11	013		

TABLE 1 (Contd.) BASE LINE VALUES AS COMPUTED FROM THE ABSOLUTE OBSERVATIONS

VERTICAL COMPONENT (Gamma Units)

DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE.	OBS.	DATE	OBS.	DATE	OBS
1/1	44369	2/3	44390	4/5	44381	2/7	44397	3/9	44403	2/11	44397
3/1	376	5/3	389	7/5	386	4/7	399	5/9	406	5/11	399
5/1	374	7/3	387	9/5	386	6/7	399	7/9	404	7/11	401
8/1	380	9/3	391	11/5	389	9/7	399	10/9	399	9/11	395
10/1	380	12/3	390	14/5	390	11/7	399	12/9	404	12/11	394
12/1	381	14/3	387	16/5	390	13/7	400	14/9	400	14/11	394
15/1	390	16/3	383	18/5	387	16/7	401	17/9	404	16/11	393
17/1	386	19/3	384	21/5	386	18/7	402	19/9	402	19/11	397
19/1	382	21/3	385	23/5	388	20/7	399	21/9	399	21/11	400
22/1	385	23/3	384	25/5	388	23/7	400	24/9	397	23/11	401
24/1	382	26/3	386	28/5	390	25/7	402	26/9	403	26/11	402
26/1	384	28/3	386	30/5	390	27/7	403	28/9	398	28/11	403
29/1	386	30/3	385	1/6	390	30/7	406	1/10	401	30/11	405
31/1	386	2/4	389	4/6	396	1/8	402	3/10	401	3/12	400
2/2	382	4/4	386	6/6	393	3/8	404	5/10	398	5/12	402
5/2	387	6/4	388	8/6	394	8/8	403	8/10	404	7/12	404
7/2	389	9/4	387	11/6	395	10/8	403	10/10	404	10/12	399
9/2	386	11/4	388	13/6	395	13/8	405	12/10	402	12/12	398
12/2	385	13/4	390	15/6	392	15/8	403	15/10	401	14/12	397
14/2	385	18/4	392	18/6	393	17/8	404	17/10	400	17/12	397
16/2	376	20/4	389	20/6	399	20/8	403	19/10	402	19/12	396
19/2	365	23/4	388	22/6	396	22/8	403	22/10	401	21/12	398
21/2	391	25/4	387	25/6	395	24/8	401	24/10	399	24/12	397
23/2	385	27/4	385	27/6	396	27/8	400	26/10	392	28/12	397
26/2	389	30/4	388	29/6	397	29/8	403	29/10	398	31/12	396
28/2	386	2/5	383			31/8	406	31/10	400		



TABLE 2

ADOPTED BASE LINE VALUES

DECLINATION  $10^{\circ} + \dots\dots\dots$  (Tenths of Minutes)

DATE	ADOP.	DATE	ADOP.	DATE	ADOP.	DATE	ADOP.
1/1-15/1	396	7/3- 8/3	398	23/8 -18/9	395	14/10-15/10	395
15/1-17/1	395	8/3- 4/4	397	18/9 -19/9	394	15/10- 8/11	396
17/1-20/2	394	4/4-22/4	399	19/9 -22/9	393	8/11-31/12	395
20/2-26/2	396	22/4-31/5	398	22/9 -10/10	392		
26/2-28/2	397	31/5-23/6	397	10/10-13/10	393		
28/2- 7/3	399	23/6-23/8	396	13/10-14/10	394		

HORIZONTAL COMPONENT (Gamma Units)

DATE	ADOP.	DATE	ADOP.	DATE	ADOP.	DATE	ADOP.
1/1-13/1	19022	1/3-13/3	19015	9/5-12/5	19018	26/8 -16/10	19013
13/1-14/1	020	13/3-15/3	014	12/5- 1/6	019	16/10-19/11	014
14/1-15/1	018	15/3-30/3	013	1/6- 2/6	018	19/11- 2/12	015
15/1-16/1	016	30/3-26/4	014	2/6- 3/6	017	2/12-14/12	014
16/1-17/1	014	26/4-27/4	015	3/6-20/6	016	14/12-31/12	013
17/1-19/2	013	27/4- 7/5	016	20/6- 4/7	015		
19/2- 1/3	014	7/5- 9/5	017	4/7-26/8	014		

VERTICAL COMPONENT (Gamma Units)

DATE	ADOP.	DATE	ADOP.	DATE	ADOP.	DATE	ADOP.
1/1- 2/1	44372	24/2-28/2	44388	18/6-26/6	44395	24/10- 6/11	44399
2/1- 3/1	373	28/2-13/3	389	26/6- 4/7	397	6/11- 7/11	398
3/1- 5/1	374	13/3-14/3	388	4/7- 6/7	398	7/11- 8/11	397
5/1- 7/1	376	14/3-11/4	387	6/7-16/7	399	8/11- 9/11	396
7/1- 8/1	377	11/4-24/4	388	16/7-24/7	400	9/11-18/11	395
8/1- 9/1	378	24/4-26/4	387	24/7-25/7	401	18/11-19/11	396
9/1-10/1	379	26/4-10/5	386	25/7-26/7	402	19/11-20/11	398
10/1-12/1	380	10/5-13/5	387	26/7-19/9	403	20/11-21/11	399
12/1-13/1	381	13/5-28/5	388	19/9-20/9	402	21/11-24/11	400
13/1-15/1	382	28/5-30/5	389	20/9-21/9	401	24/11-26/11	401
15/1-16/1	383	30/5- 1/6	390	21/9- 6/10	400	26/11- 8/12	402
16/1-27/1	384	1/6- 4/6	391	6/10-7/10	401	8/12-10/12	401
27/1-28/1	385	4/6- 6/6	392	7/10-17/10	402	10/12-11/12	400
28/1-18/2	386	6/6- 8/6	393	17/10-23/10	401	11/12-13/12	399
18/2-24/2	387	8/6-18/6	394	23/10-24/10	400	13/12-14/12	398
						14/12-31/12	397

NOTE The adopted values as shown above are for periods which are multiples of 24 hours commencing at 0900 G.M.T.

The adopted base line values for the 24 hour period ending at 0900 G.M.T. on 1st January are Declination  $10^{\circ} 39' 6$ , Horizontal Component 19022y and Vertical Component 44372y; for the 24 hour period commencing at 0900 G.M.T. on 31st December they are Declination  $10^{\circ} 39' 5$ , Horizontal Component 19013y and Vertical Component 44397y.

TABLE 3

## MONTHLY AND ANNUAL MEANS OF THE MAGNETIC ELEMENTS

## ALL DAYS

1979	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ}+$	657	649	641	626	620	613	606	597	586	582	572	565	610
Horizontal Force (Gamma Units) 18000 +	936	943	943	930	964	970	972	962	955	955	959	966	956
Vertical Force (Gamma Units) 44000 +	472	468	466	461	457	454	451	455	458	460	460	458	460

## FIVE INTERNATIONAL QUIET DAYS

1979	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ}+$	662	651	646	632	625	612	606	599	589	581	571	565	612
Horizontal Force (Gamma Units) 18000 +	947	950	951	963	966	971	973	965	954	962	960	974	961
Vertical Force (Gamma Units) 44000 +	467	464	463	454	456	448	449	453	458	459	458	455	457

## FIVE INTERNATIONAL DISTURBED DAYS

1979	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ}+$	653	645	636	609	613	620	608	592	578	577	575	558	605
Horizontal Force (Gamma Units) 18000 +	922	931	936	930	955	971	973	955	938	941	947	957	946
Vertical Force (Gamma Units) 44000 +	460	469	470	464	457	456	453	461	463	460	466	460	463

TABLE 4 DECLINATION

MEAN HOURLY VALUES, 10° +..... (Tenths of Minutes)

JANUARY 1979.

HOUR DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1	661	661	665	666	681	670	666	660	654	646	640	663	677	698	699	698	686	676	668	666	662	660	644	603	666	1
2	644	656	661	660	661	661	660	657	651	641	649	668	703	723	736	719	728	678	608	703	656	656	626	591	667	2
3	585	604	618	620	625	644	645	644	643	636	654	666	696	717	717	702	707	706	686	679	686	666	638	624	659	3
4 D	626	592	563	576	679	632	645	647	680	678	685	695	712	733	733	729	706	683	608	662	658	601	571	530	647	4 D
5	565	542	564	655	653	678	676	666	661	656	662	671	684	696	706	706	705	682	711	691	673	667	647	631	660	5
6	636	629	638	646	654	642	652	656	657	646	651	676	686	706	711	725	696	691	690	676	665	656	647	653	666	6
7 D	656	656	656	656	655	655	654	656	656	647	654	666	681	713	746	765	695	735	786	675	676	665	622	601	676	7 D
8	634	646	645	656	655	656	656	656	655	653	656	659	671	689	696	690	682	681	680	680	682	666	660	649	665	8
9	643	641	656	666	659	666	657	663	662	654	656	659	671	689	696	691	682	683	678	671	664	656	653	656	666	9
10 Q	656	651	651	655	650	656	658	654	647	635	640	651	670	696	701	686	676	673	673	670	660	662	660	662	662	10 Q
11 Q	659	650	649	654	656	662	660	659	655	644	645	650	674	686	701	687	678	668	666	661	656	656	655	656	662	11 Q
12	656	656	656	644	650	650	644	649	653	646	647	661	668	701	705	701	691	695	686	671	671	664	654	650	665	12
13 Q	626	661	666	666	664	662	657	656	646	631	635	645	665	691	696	687	676	666	667	660	656	652	649	655	660	13 Q
14 Q	655	656	656	661	656	647	642	642	644	637	640	656	676	706	719	699	693	676	671	667	656	656	656	656	663	14 Q
15	656	659	663	667	656	657	656	655	656	642	636	653	683	713	723	725	702	679	675	655	605	619	644	627	663	15
16	603	645	653	655	681	655	657	652	646	635	636	652	677	693	697	693	683	672	667	665	661	655	651	654	660	16
17 Q	656	658	659	658	661	658	655	651	645	638	647	667	680	703	697	694	692	681	657	667	662	646	637	628	662	17 Q
18	596	608	633	638	661	659	655	651	645	634	637	664	696	692	702	706	697	687	686	673	660	651	647	635	659	18
19	631	580	601	613	637	631	636	637	633	629	649	666	678	686	696	694	691	684	674	664	654	640	634	613	648	19
20	613	643	656	662	669	664	653	648	654	644	654	665	673	684	690	684	687	678	675	670	655	652	646	644	661	20
21	641	651	648	633	647	659	657	655	654	636	638	669	686	719	716	694	692	676	658	663	653	641	644	645	661	21
22	645	648	653	654	654	655	655	652	645	644	664	644	683	699	699	698	687	677	675	664	622	626	565	542	652	22
23 D	601	641	646	658	664	664	664	665	653	643	658	663	676	707	713	733	735	733	675	620	644	587	554	578	657	23 D
24	560	547	513	573	619	654	664	664	655	644	656	656	665	684	698	685	684	691	674	672	663	640	619	643	643	24
25 D	642	626	518	461	504	584	635	639	642	631	645	653	682	711	752	717	710	694	654	668	634	623	623	604	636	25 D
26 D	596	633	630	644	623	627	652	654	648	637	640	664	687	719	721	714	641	674	674	668	635	640	634	542	650	26 D
27	621	627	622	596	631	621	620	643	644	637	644	659	671	680	688	692	686	674	644	634	669	614	640	639	646	27
28	631	638	640	618	629	636	636	642	634	631	650	671	668	684	706	700	675	675	684	661	659	650	642	638	654	28
29	615	612	606	627	629	633	628	631	632	625	640	654	674	702	691	693	688	674	669	666	642	645	644	607	647	29
30	582	606	630	622	634	642	642	644	640	642	647	664	694	701	701	695	675	680	685	681	666	628	581	604	649	30
31	620	625	621	621	641	642	639	638	635	622	638	642	664	681	706	694	685	674	665	665	662	658	642	634	651	31
Mean	626	631	630	635	643	649	651	651	649	641	648	662	680	700	708	703	691	684	673	667	657	645	633	622	657	
Mean Q	650	655	656	659	657	657	654	652	647	637	641	654	673	696	703	691	683	673	667	665	658	654	651	651	662	
Mean D	624	630	603	599	605	632	650	652	656	647	656	668	689	717	733	732	697	704	679	659	649	623	601	571	653	
Sum	9411	9548	9536	9681	9938	0122	0176	0186	0125	9864	0079	0512	1071	1703	1958	1796	1411	1196	0869	0688	0367	9998	9629	9294	653	

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TABLE 4 DECLINATION MEAN HOURLY VALUES, 10° + .....(Tenths of Minutes) FEBRUARY, 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1	629	641	641	625	640	638	638	632	633	638	644	662	677	694	693	690	681	676	674	672	663	657	654	656	656	1
2	652	624	607	624	614	622	614	623	634	635	644	662	686	685	691	684	680	674	684	680	677	665	654	641	652	2
3	648	644	634	623	631	637	641	644	641	634	645	661	675	686	687	681	671	676	694	724	695	675	651	622	659	3
4	627	612	587	590	601	616	617	640	643	641	643	652	674	706	702	724	691	665	664	645	636	614	607	612	642	4
5	604	634	651	644	638	634	646	651	646	645	657	679	695	702	695	683	671	664	659	657	657	654	649	637	656	5
6	637	644	631	598	582	574	604	614	636	642	650	674	693	714	702	689	676	670	672	676	665	638	597	648	647	6
7	653	651	644	643	644	642	641	638	634	634	643	666	674	687	701	703	686	684	678	673	668	656	642	641	659	7
8	644	644	624	643	630	624	624	626	624	615	625	643	674	700	715	716	694	691	672	662	657	651	648	629	653	8
9	615	624	618	610	622	617	632	632	627	626	634	645	661	683	705	707	683	672	664	661	658	644	651	636	647	9
10 Q	634	634	639	639	635	636	633	631	631	625	636	656	684	695	691	679	667	671	664	662	658	656	652	646	652	10 Q
11	634	629	581	581	596	613	627	627	624	622	645	666	693	704	696	682	665	663	655	656	658	643	615	590	640	11
12	591	624	627	634	627	637	630	644	623	630	637	664	704	688	693	684	674	672	669	664	654	648	647	645	650	12
13 Q	646	649	654	654	654	647	639	634	624	604	613	634	660	679	693	689	678	665	658	654	653	647	644	645	651	13 Q
14 Q	647	651	652	652	653	647	644	634	624	613	624	655	679	696	704	696	685	674	668	671	665	650	649	653	658	14 Q
15	654	654	654	645	643	642	645	644	634	634	640	662	691	704	722	705	683	673	662	660	655	650	644	645	660	15
16	645	647	654	656	659	626	625	623	605	604	618	638	664	686	692	692	683	672	665	663	655	647	644	641	650	16
17 Q	641	642	643	643	641	634	632	624	610	596	602	622	651	667	678	684	682	679	670	663	662	652	644	643	646	17 Q
18	639	642	642	638	627	644	638	629	640	627	626	643	674	700	710	693	679	665	665	662	616	613	592	547	644	18
19	585	612	624	639	657	646	635	636	627	615	622	643	677	705	685	681	674	675	659	640	643	652	647	646	647	19
20 Q	635	626	634	641	643	636	639	635	624	608	617	637	661	676	686	680	669	662	674	670	664	649	629	607	646	20 Q
21 D	626	634	641	666	616	682	667	746	706	624	645	672	683	686	697	696	697	665	684	589	599	569	609	629	655	21 D
22 D	622	635	634	642	642	634	643	640	682	662	650	656	691	708	679	695	669	676	676	676	656	636	646	648	658	22 D
23 D	644	636	615	554	596	602	613	616	624	625	636	648	667	676	681	683	670	664	669	664	664	634	597	590	636	23 D
24	613	583	586	604	612	615	624	616	615	609	624	643	673	688	698	708	669	666	657	646	635	598	606	616	634	24
25	626	614	605	597	593	608	614	616	623	619	625	644	670	670	673	675	667	658	652	653	643	636	613	619	634	25
26 D	571	567	579	592	586	584	606	614	615	615	624	648	676	697	715	720	709	658	675	700	652	637	607	586	635	26 D
27 D	615	542	566	546	587	617	610	623	633	644	640	652	671	692	705	707	695	687	667	658	655	651	644	637	639	27 D
28	626	586	597	619	634	632	630	627	627	636	657	671	719	714	737	730	718	691	677	697	679	628	637	631	658	28
29																										29
30																										30
31																										31
Mean	629	626	624	623	625	628	630	634	632	626	635	654	678	692	697	695	681	672	669	664	655	641	633	628	649	
Mean Q	641	640	644	646	645	640	637	632	623	609	618	641	667	683	690	686	676	670	667	664	660	650	644	639	651	
Mean D	616	603	607	600	605	624	628	648	652	634	639	655	678	692	695	700	688	670	674	657	645	625	621	618	645	
Sum	7603	7525	7464	7412	7503	7586	7651	7759	7709	7522	7766	8298	8997	9388	9526	9456	9066	8808	8727	8598	8342	7950	7719	7586		

TABLE 4 DECLINATION MEAN HOURLY VALUES, 10<sup>0</sup>+ ..... (Tenths of Minutes) MARCH, 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	647	619	598	581	590	617	602	612	617	613	619	661	691	706	716	714	699	687	679	669	649	647	640	639	646	1
2	595	550	570	559	567	589	618	613	613	620	632	663	700	719	724	729	700	677	668	663	650	658	631	599	638	2
3	582	615	629	632	633	629	618	629	631	629	630	651	694	719	719	718	719	677	680	682	678	629	628	631	653	3
4	599	594	606	618	626	603	619	619	599	629	690	687	683	720	689	687	680	692	676	668	656	659	620	614	647	4
5	638	626	610	568	589	590	620	628	639	646	649	648	659	669	679	678	672	669	670	647	658	650	649	640	641	5
6 D	633	619	619	629	618	604	618	629	619	634	638	679	707	729	731	729	707	688	656	652	655	599	639	639	653	6D
7 Q	621	603	629	630	623	628	616	629	629	628	638	650	669	678	678	676	670	684	651	667	686	661	650	651	647	7Q
8	636	618	619	610	604	609	614	626	618	616	628	657	667	677	676	677	667	656	645	644	645	647	639	625	638	8
9	604	619	637	614	619	626	621	617	595	602	632	646	665	687	695	709	710	697	678	665	666	645	637	647	647	9
10 D	618	670	617	565	584	585	547	579	597	607	618	658	679	676	685	687	700	705	627	682	567	564	569	524	621	10D
11	552	616	627	625	609	599	618	599	586	586	606	635	667	675	679	677	659	625	626	640	647	648	647	646	629	11
12 Q	646	641	639	634	632	628	625	617	609	607	629	654	672	685	682	677	660	650	649	645	645	655	655	648	645	12Q
13	647	645	642	644	636	627	624	607	607	595	613	637	668	688	698	695	676	666	658	657	656	651	651	648	647	13
14 Q	647	647	643	638	637	628	623	618	597	589	615	642	670	692	696	690	675	658	657	656	654	649	646	647	646	14Q
15	647	647	646	645	639	636	626	612	596	595	617	652	696	721	733	737	699	669	658	657	656	628	640	637	654	15
16	625	641	637	644	645	626	631	634	619	611	635	668	715	742	735	717	677	657	649	645	638	646	638	641	655	16
17	637	634	641	647	644	650	666	684	684	621	607	631	652	678	690	682	668	652	645	644	640	638	637	620	650	17
18	618	636	639	637	634	634	635	614	593	593	611	636	667	688	697	688	671	655	650	648	647	641	638	637	642	18
19	636	634	633	634	634	633	649	629	612	597	617	647	697	718	724	736	693	676	648	648	649	646	639	633	653	19
20 Q	631	628	627	624	627	633	634	627	603	591	597	637	679	698	708	708	689	666	659	659	658	639	642	647	646	20Q
21 Q D	646	644	639	635	634	632	634	616	591	576	591	626	664	697	710	704	686	665	650	649	649	647	645	641	645	21Q
22 D	637	637	636	636	638	633	629	617	581	569	594	631	669	748	804	770	723	699	660	648	646	637	618	636	654	22D
23	632	637	611	620	629	648	664	645	628	611	619	646	668	686	700	692	678	666	657	657	657	657	651	618	649	23
24	612	609	597	589	587	596	599	612	647	617	599	627	657	678	669	674	667	657	650	647	630	608	627	586	627	24
25	577	597	577	564	578	602	607	597	582	584	616	646	687	727	747	739	738	714	680	657	634	627	583	576	635	25
26	537	573	527	576	594	578	597	557	558	577	606	657	714	747	761	737	717	690	614	614	617	567	607	637	623	26
27	647	645	637	620	626	612	586	577	564	576	595	653	705	740	757	745	733	692	647	626	619	604	575	575	640	27
28 D	549	548	578	598	617	613	612	592	567	587	635	669	691	732	707	726	726	665	655	657	656	619	537	562	629	28D
29 D	537	499	551	504	528	567	629	715	652	655	658	661	697	712	718	737	693	686	657	577	569	562	573	572	621	29D
30	615	597	594	596	608	595	618	612	595	586	604	627	659	703	701	682	659	634	620	625	634	631	630	626	627	30
31	621	626	605	603	588	609	600	585	574	565	578	604	645	705	726	729	718	691	663	651	645	635	578	528	628	31
Mean	615	617	615	610	613	615	619	618	607	604	620	648	679	705	711	708	691	672	654	650	644	632	624	618	641	
Mean Q	638	633	635	632	631	630	626	621	606	598	614	642	671	690	695	691	676	661	653	655	658	650	648	647	646	
Mean D	595	595	600	586	597	600	607	626	603	610	629	660	689	719	729	730	710	689	651	643	619	596	587	587	636	
Sum	9069	9114	9060	8919	9017	9059	9199	9147	8802	8712	9216	10086	1053	1840	2034	1946	1429	0845	0282	0146	9956	9594	9359	9170		

TABLE 4 DECLINATION MEAN HOURLY VALUES, 10<sup>0</sup>+ ..... (Tenths of Minutes) APRIL, 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	558	571	594	601	597	602	602	574	566	577	614	659	716	731	718	735	689	663	649	640	638	617	615	565	629	1
2	600	528	449	557	579	589	605	615	595	577	595	623	678	714	741	733	698	688	677	671	672	677	641	612	630	2
3	613	616	614	605	608	608	606	616	605	592	597	609	637	676	695	734	762	727	696	664	653	578	535	569	634	3
4 D	477	515	357	342	367	464	556	555	574	606	626	657	679	674	668	667	646	631	626	627	629	631	621	618	578	4D
5 D	607	613	619	609	589	601	607	609	593	557	620	630	657	687	741	716	703	699	680	668	641	628	598	605	637	5D
6	612	609	632	639	648	642	647	638	622	592	605	627	649	678	690	679	650	639	629	614	629	631	626	627	636	6
7	634	629	628	625	631	650	618	607	601	594	597	613	637	668	681	679	665	651	633	639	647	646	624	608	634	7
8	589	613	620	616	609	608	610	589	568	571	596	634	666	691	699	699	692	681	656	645	650	595	632	629	632	8
9	621	581	559	557	571	599	598	586	575	577	592	606	631	661	679	679	669	663	655	648	642	645	644	640	620	9
10	638	635	630	628	631	630	609	598	595	592	606	639	687	716	730	715	691	656	640	632	628	630	619	630	642	10
11 Q	636	629	623	619	613	609	601	590	581	577	599	628	661	689	696	686	670	655	639	636	643	643	631	622	632	11Q
12	629	631	629	613	610	601	602	595	579	589	610	636	669	699	717	698	669	650	639	629	621	629	627	606	632	12
13	617	629	627	626	630	619	609	603	600	599	598	631	676	698	695	689	669	639	626	630	639	638	630	615	635	13
14	622	629	640	630	621	619	615	600	589	580	599	629	659	688	699	698	679	648	663	660	659	619	541	602	633	14
15	628	610	623	605	619	619	609	600	589	589	609	630	662	714	709	690	679	662	647	640	627	619	602	593	632	15
16	611	633	632	629	589	598	596	584	599	599	612	633	671	696	698	680	664	647	630	621	631	636	636	633	632	16
17 Q	628	622	620	618	620	615	623	618	596	582	593	620	649	672	683	679	669	656	646	636	619	622	607	598	629	17Q
18 Q	608	625	622	622	622	629	618	601	600	607	615	623	644	669	680	669	659	651	641	631	632	629	619	609	630	18Q
19 Q	617	627	629	628	629	627	617	609	595	592	612	641	670	692	702	691	672	650	644	641	640	637	636	632	639	19Q
20 Q	634	636	630	628	621	612	601	596	590	590	609	617	646	670	678	669	660	651	645	642	640	638	633	632	632	20Q
21	630	629	629	628	618	607	593	589	597	589	609	640	677	716	709	701	695	679	673	636	638	607	589	617	637	21
22 D	571	528	457	521	568	591	556	557	568	587	635	669	678	712	737	719	689	678	656	631	597	612	590	586	612	22D
23	570	627	662	623	581	587	588	597	602	612	626	666	678	685	711	678	661	648	631	617	608	621	628	637	631	23
24	633	612	603	605	598	580	568	577	588	588	608	638	673	686	706	689	669	656	638	623	620	607	611	605	624	24
25 D	549	578	444	374	481	529	515	462	560	617	626	672	763	775	747	712	689	676	655	658	588	612	603	638	605	25D
26	639	614	598	586	598	607	604	596	596	591	604	624	651	678	688	687	676	661	645	628	628	600	604	621	626	26
27	627	627	614	577	593	584	585	554	544	555	580	618	651	692	705	717	698	680	648	626	601	570	560	609	617	27
28	557	500	518	571	604	578	589	607	633	612	601	628	672	702	715	713	682	671	651	608	584	576	561	566	612	28
29 D	611	608	611	595	568	595	581	579	540	559	610	630	664	709	717	723	677	674	651	639	580	524	552	547	614	29D
30	598	580	587	574	568	594	600	568	547	577	621	636	675	702	696	678	668	659	641	625	614	603	618	628	619	30
31																										31
Mean	605	603	590	588	593	600	598	589	586	588	607	634	668	695	704	697	679	663	648	637	628	617	608	610	626	
Mean Q	625	628	625	623	621	618	612	603	592	590	606	626	654	678	688	679	666	653	643	637	635	634	625	619	632	
Mean D	563	568	498	488	515	556	563	552	567	585	623	652	688	711	722	707	681	672	654	645	607	601	593	599	609	
Sum	8164	8084	7700	7651	7781	7993	7928	7669	7587	7626	8224	9006	9026	9840	1130	9902	9359	9889	9450	9111	8838	8520	8233	8299		

TABLE 4 DECLINATION MEAN HOURLY VALUES, 10<sup>0</sup> + ..... (Tenths of Minutes) MAY, 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	633	632	623	582	605	606	564	568	554	568	599	618	653	685	697	688	669	661	647	630	610	613	616	587	621	1
2	578	569	558	565	594	586	568	578	577	578	595	618	652	687	688	678	658	634	620	618	608	628	632	627	612	2
3 Q	628	631	647	621	618	608	591	578	573	576	597	628	668	692	695	673	658	644	630	622	628	623	628	618	628	3 Q
4	589	597	607	608	608	594	578	571	577	576	600	631	666	694	688	674	655	642	631	626	625	621	619	610	620	4
5	605	605	598	590	584	580	567	557	562	578	609	638	669	678	681	670	665	663	649	638	644	638	638	631	622	5
6 Q	627	627	620	619	613	602	591	578	578	580	595	613	640	661	666	660	649	637	628	626	630	635	635	634	623	6 Q
7	633	618	608	607	600	586	566	561	568	596	633	665	692	693	691	662	646	629	609	609	623	635	635	638	625	7
8	637	632	624	614	599	576	568	588	594	592	616	643	668	678	677	659	648	645	633	626	627	639	630	633	627	8
9	626	630	626	616	614	595	577	564	573	578	610	638	663	684	676	665	647	634	620	625	604	611	628	636	623	9
10	633	627	619	610	605	586	566	565	573	594	614	638	669	686	679	660	648	638	630	628	630	629	631	636	625	10
11	624	622	616	610	610	584	567	611	588	583	596	609	647	679	688	688	670	648	640	631	638	625	603	613	625	11
12	625	626	636	616	603	592	578	569	567	579	597	629	650	675	674	666	657	646	636	625	627	627	629	631	623	12
13	630	628	629	616	607	588	578	575	578	589	609	638	675	707	720	712	690	674	657	637	628	628	629	628	635	13
14	624	626	620	616	618	607	595	580	572	578	602	628	673	696	708	684	674	658	641	637	630	624	620	626	631	14
15	627	627	622	615	620	637	627	596	590	588	611	636	668	687	686	680	668	649	636	625	619	618	621	625	632	15
16 Q	625	635	646	638	611	588	576	570	555	561	584	606	628	647	667	668	657	645	628	620	624	628	628	625	620	16 Q
17 Q	616	630	630	627	613	597	586	579	576	582	606	638	670	687	696	692	678	662	648	635	629	629	628	624	632	17 Q
18	622	622	618	612	602	584	562	548	551	564	578	614	643	667	665	669	668	665	658	641	644	636	620	596	619	18
19 D	584	571	538	555	544	570	531	530	547	563	604	646	673	671	678	681	667	646	624	616	604	608	599	600	602	19 D
20	585	571	568	554	551	548	567	548	557	577	610	643	656	678	686	677	665	655	637	631	626	599	609	618	609	20
21	619	616	612	610	606	598	581	565	567	560	587	612	643	678	691	686	678	668	653	609	600	619	609	583	619	21
22 D	568	568	578	534	568	560	549	551	551	605	630	660	684	700	717	720	692	656	647	597	626	578	620	609	615	22 D
23	605	606	604	628	598	588	569	558	558	575	606	638	659	670	669	658	647	628	618	615	602	572	587	583	610	23
24 D	597	597	598	609	599	578	604	550	549	549	583	613	659	699	692	688	678	658	643	628	634	616	601	641	619	24 D
25 D	608	579	585	638	551	525	524	520	527	542	586	638	687	728	728	717	667	650	638	623	601	621	609	593	612	25 D
26 D	563	588	599	619	614	580	570	558	546	563	593	638	672	700	692	692	642	646	643	628	636	627	620	616	619	26 D
27	618	609	648	640	608	596	568	544	558	568	588	628	670	688	686	678	661	650	628	623	629	630	628	626	624	27
28	616	616	617	608	593	581	566	554	547	538	544	582	633	664	672	677	675	661	618	609	617	616	615	622	610	28
29	629	621	618	607	608	593	576	556	542	540	576	616	652	674	678	676	659	642	621	611	624	580	602	605	613	29
30	609	610	610	607	617	614	572	558	559	569	590	620	642	647	650	640	632	624	613	600	604	614	617	618	610	30
31 Q	620	625	622	617	610	599	587	579	578	585	614	641	663	672	674	675	664	639	634	617	617	624	623	617	625	31 Q
Mean	613	612	611	607	600	588	573	565	564	573	599	629	661	682	686	678	662	648	634	623	622	619	620	618	620	
Mean Q	623	630	633	624	613	599	586	577	572	577	599	625	654	672	680	674	661	645	634	624	626	628	628	624	625	
Mean D	584	581	580	591	575	563	556	542	544	564	599	639	675	700	701	700	669	651	639	618	620	610	610	612	613	
Sum	9003	8961	8944	8808	8593	8226	7769	7507	7492	7774	8562	9503	0487	1152	1255	1013	0532	0097	9658	9306	9288	9191	9209	9149		

TABLE 4 DECLINATION

MEAN HOURLY VALUES, 10<sup>0</sup> + .....(Tenths of Minutes)

JUNE, 1979

DATE \ HOUR	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1 Q	609	606	605	605	595	582	564	566	557	565	584	616	654	660	660	658	647	630	623	624	626	620	617	617	612	1 Q
2	608	601	598	594	605	600	579	574	576	587	610	637	649	659	670	660	654	639	628	624	628	629	628	601	619	2
3 Q	607	602	599	599	589	575	558	557	564	567	597	624	650	675	677	665	649	644	637	627	623	605	615	619	614	3 Q
4	617	609	610	608	597	582	558	554	567	599	637	665	688	705	691	673	655	641	631	627	628	632	635	634	627	4
5 Q	627	626	616	606	593	557	537	554	566	583	615	639	657	665	667	661	653	640	633	631	631	627	624	622	618	5 Q
6 D	619	612	607	603	587	573	554	547	555	566	603	650	692	712	726	707	684	663	640	629	665	639	628	688	631	6 D
7 D	647	619	627	620	608	607	545	545	550	583	621	643	664	674	668	656	636	627	607	600	616	619	599	626	617	7 D
8	625	626	632	590	567	557	544	534	537	561	580	609	644	666	678	667	653	631	616	613	618	624	626	624	609	8
9	622	631	612	604	605	579	557	544	559	568	610	632	659	683	684	661	645	629	608	595	588	603	619	628	614	9
10	628	633	638	636	626	595	568	564	573	564	598	607	634	660	667	657	643	637	622	614	622	627	628	628	620	10
11	618	617	635	608	587	566	557	557	548	566	596	625	650	658	674	673	663	647	624	612	611	615	617	627	615	11
12	627	626	616	609	607	596	567	557	546	547	574	613	652	672	674	669	661	647	631	611	603	604	615	615	614	12
13	621	616	619	615	604	587	569	552	547	552	578	609	637	667	677	673	663	642	627	616	614	612	588	608	612	13
14	618	617	635	617	606	582	557	547	550	556	573	592	626	659	675	670	657	637	622	619	617	617	626	627	613	14
15	627	627	627	629	615	587	567	563	558	557	578	605	644	668	669	668	668	655	637	613	597	598	609	617	616	15
16 D	597	608	579	582	596	595	584	597	579	573	579	609	647	675	685	682	670	667	660	647	648	615	616	599	620	16 D
17	589	594	595	607	608	576	570	563	579	570	582	607	642	658	691	693	665	663	639	634	632	626	609	616	617	17
18 Q	615	608	601	590	587	561	546	539	549	563	593	617	637	652	664	667	658	655	648	629	617	626	619	624	611	18 Q
19	619	617	603	594	593	569	547	537	548	548	567	593	637	663	668	668	659	635	616	604	604	604	602	605	604	19
20	599	578	578	583	578	568	555	538	544	557	586	619	648	665	681	688	678	654	637	628	592	584	604	607	606	20
21	612	613	606	599	594	586	557	547	555	570	587	616	656	671	675	687	686	675	665	627	606	587	587	596	615	21
22 D	569	567	596	589	569	549	517	519	549	561	591	638	674	679	699	730	721	737	676	629	637	630	619	624	620	22 D
23 D	615	600	598	554	539	557	574	595	564	604	620	637	657	665	664	669	657	637	622	624	623	582	595	614	611	23 D
24	609	615	597	567	567	569	548	549	553	558	579	606	638	658	664	661	659	644	628	616	608	614	614	586	604	24
25	586	603	604	595	591	576	572	555	546	552	584	621	638	660	676	670	662	652	636	620	596	609	615	613	610	25
26	610	606	598	594	583	572	555	543	535	545	572	619	645	668	707	690	685	658	657	612	647	588	564	566	609	26
27	595	598	585	535	528	526	535	529	533	558	584	605	638	661	666	669	658	649	647	633	626	624	623	618	601	27
28 Q	615	609	605	596	588	574	558	536	539	546	584	609	632	636	642	652	646	627	626	623	613	616	616	616	604	28 Q
29	603	596	597	593	593	579	557	545	536	547	569	601	645	667	676	680	669	648	635	589	609	614	616	603	607	29
30	594	596	597	590	580	575	544	519	516	526	555	578	613	636	659	669	683	669	649	628	619	612	596	600	600	30
31																										31
Mean	612	609	607	597	590	575	557	551	553	563	590	618	648	667	676	673	663	649	634	620	619	613	612	616	613	
Mean Q	615	610	605	599	590	570	553	550	555	565	595	621	646	658	662	661	651	639	633	627	622	619	618	620	612	
Mean D	609	601	601	590	580	576	555	561	559	577	603	635	667	681	688	689	674	666	641	626	638	617	611	630	620	
Sum	8347	8276	8215	7911	7685	7257	6700	6526	6578	6899	7686	8541	9447	9997	10274	10202	9887	9479	9027	8598	8564	8402	8369	8468		



TABLE 4 DECLINATION

MEAN HOURLY VALUES, 10<sup>0</sup> + .....(Tenths of Minutes)

JULY, 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	606	585	559	576	577	576	547	527	530	537	566	596	635	659	669	674	661	646	634	616	601	606	607	607	600	1
2 Q	603	592	596	586	582	569	556	546	546	552	576	601	625	646	667	677	676	661	646	636	626	621	617	613	609	2 Q
3	606	605	600	600	595	575	546	526	508	525	565	609	648	679	706	713	700	673	637	618	617	616	586	606	611	3
4	611	617	626	625	643	645	599	572	576	559	584	615	636	647	647	646	634	617	606	596	596	606	608	615	614	4
5	623	625	625	622	614	605	568	554	536	538	566	592	628	657	666	653	636	627	616	619	614	615	614	614	609	5
6 D	613	604	598	599	591	580	568	571	573	576	586	623	659	678	680	663	649	636	626	606	588	624	624	624	614	6 D
7 D	624	614	607	635	592	560	527	536	548	562	589	616	636	658	657	654	664	658	629	624	635	629	632	626	613	7 D
8	615	607	601	603	605	586	556	552	550	563	593	626	666	689	704	694	675	664	639	625	626	621	614	616	620	8
9	611	600	596	586	588	568	558	556	555	563	589	618	656	676	681	669	644	626	616	609	614	622	625	623	610	9
10	616	607	604	606	586	566	555	551	551	547	569	604	644	662	656	652	642	636	627	614	610	606	616	615	606	10
11 Q	612	606	598	596	597	586	572	555	556	561	586	617	646	661	673	672	663	646	627	610	604	605	598	604	610	11 Q
12	605	606	606	605	595	575	549	530	522	523	539	579	631	667	690	695	686	673	646	626	616	617	609	599	608	12
13	579	555	549	566	573	556	553	554	550	563	588	623	656	694	716	710	713	693	666	636	631	623	616	607	615	13
14	595	595	594	592	583	576	556	549	557	574	589	613	636	656	648	646	646	633	616	609	595	590	606	569	601	14
15	551	564	561	606	591	556	530	551	545	573	610	641	666	680	676	670	646	619	617	606	588	598	606	594	602	15
16	586	611	596	576	568	566	551	539	544	557	584	599	626	648	659	655	642	635	626	619	609	578	602	602	599	16
17	569	574	576	558	587	575	565	561	568	565	588	609	635	656	656	661	658	648	636	632	627	621	598	564	604	17
18	572	579	574	571	575	566	535	537	549	553	574	603	627	640	655	659	647	635	628	623	616	577	591	597	595	18
19	609	578	587	598	599	564	542	549	563	582	597	612	634	644	643	642	626	618	616	620	623	614	598	599	602	19
20 D	600	596	589	580	588	577	558	557	566	573	598	627	649	666	667	670	660	654	626	616	614	616	608	582	610	20 D
21	617	596	606	584	572	555	564	573	572	576	608	634	658	672	674	654	641	632	622	609	599	594	591	586	608	21
22	586	579	576	582	584	571	544	526	531	541	566	595	632	658	660	657	647	635	627	615	608	608	600	598	597	22
23	592	592	592	589	588	591	564	546	545	556	577	598	629	664	670	666	657	644	623	612	597	594	599	600	604	23
24 Q	596	585	584	588	564	557	541	535	537	544	553	584	645	679	700	687	662	643	617	606	605	602	599	594	600	24 Q
25 Q	596	602	607	606	590	575	559	546	556	574	598	637	676	693	683	666	647	627	616	607	605	605	605	606	612	25 Q
26	603	597	597	594	583	567	560	547	538	525	549	591	634	671	688	686	672	652	651	634	625	574	559	517	601	26
27 D	516	465	510	565	564	547	539	544	551	565	598	639	660	671	671	676	674	685	666	646	628	624	605	584	600	27 D
28	568	619	611	592	575	554	545	545	550	561	586	617	647	666	668	656	640	622	621	614	615	624	616	607	605	28
29 D	594	585	588	575	567	548	536	526	538	567	616	628	657	680	677	671	659	641	626	618	616	629	616	571	605	29 D
30	598	587	589	589	574	556	531	531	533	548	595	617	646	657	641	626	621	606	597	586	606	605	608	611	594	30
31 Q	611	606	605	601	597	583	566	558	558	572	596	613	620	626	621	610	602	590	584	589	597	606	611	616	597	31 Q
Mean	596	591	591	592	587	572	553	547	548	557	583	612	643	665	670	665	655	641	627	616	611	609	606	599	606	
Mean Q	604	598	598	595	586	574	559	548	551	561	582	610	642	661	669	662	650	633	618	610	607	608	606	607	606	
Mean D	589	573	578	591	580	562	546	547	555	569	597	627	652	671	670	667	661	655	635	622	616	624	617	597	608	
Sum	8483	8333	8307	8351	8187	7731	7140	6950	7002	7275	8078	8976	9943	10600	10769	10630	10290	9875	9430	9096	8951	8870	8784	8566		

TABLE 4 DECLINATION MEAN HOURLY VALUES, 10<sup>0</sup>+ ..... (Tenths of Minutes) AUGUST, 1979

DATE \ HOUR	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	615	609	601	590	584	572	559	555	555	558	581	606	640	661	664	654	644	638	626	626	629	608	618	576	607	1
2	591	598	595	590	584	571	564	555	562	585	604	607	616	635	648	654	636	626	621	611	616	617	613	606	604	2
3	601	596	602	611	576	568	556	548	566	567	594	623	643	656	656	641	621	606	595	595	596	598	584	589	600	3
4	586	581	567	565	589	618	578	549	545	561	576	598	628	649	669	654	633	616	598	581	555	581	601	606	595	4
5	604	602	603	606	614	600	565	539	545	568	600	630	647	654	648	642	626	614	603	594	583	595	604	608	604	5
6	614	603	591	606	605	562	546	550	593	562	605	628	652	656	657	651	636	604	581	586	594	586	594	605	603	6
7	596	606	605	598	591	567	546	538	545	559	606	642	667	676	670	656	629	608	602	580	579	601	586	598	602	7
8	586	584	578	568	557	557	552	545	548	569	603	639	676	681	682	657	627	598	583	582	601	604	603	601	599	8
9 Q	596	586	590	583	576	558	546	536	538	557	592	629	662	682	687	672	645	609	592	594	600	605	606	602	602	9 Q
10 Q	598	597	593	588	584	586	566	543	541	561	596	636	666	671	660	647	628	606	591	603	605	597	582	587	601	10 Q
11	597	586	581	585	576	554	527	531	542	563	589	633	666	686	689	667	645	622	616	607	606	576	556	552	598	11
12	547	536	561	567	557	548	542	527	546	557	595	617	636	654	654	652	644	627	625	646	635	612	573	543	592	12
13 D	560	569	573	563	563	553	544	528	522	546	576	632	676	723	746	717	707	691	669	640	601	611	542	531	608	13 D
14	554	567	585	581	570	566	557	556	557	566	588	612	640	673	674	654	626	607	602	596	609	599	602	606	598	14
15 Q	597	588	584	582	573	566	566	566	567	570	586	616	636	647	646	633	609	604	599	601	604	603	598	603	598	15 Q
16 Q	597	587	584	570	562	548	546	557	556	576	606	635	655	656	656	629	606	596	597	605	612	607	606	595	598	16 Q
17	593	581	575	575	571	563	556	546	554	553	560	593	626	648	653	636	623	623	606	597	597	607	606	604	594	17
18	586	585	577	573	568	563	549	539	537	555	576	597	616	645	676	645	626	616	607	603	586	586	566	485	586	18
19 D	476	466	476	556	473	472	507	506	506	536	557	603	648	686	699	694	665	617	607	612	616	607	554	573	571	19 D
20 D	575	576	529	548	558	547	526	520	545	568	612	636	656	668	658	648	642	673	560	597	634	628	588	586	595	20 D
21 D	594	536	533	556	544	525	538	556	556	558	599	631	663	681	674	654	636	618	594	576	580	574	586	589	590	21 D
22	605	594	592	578	568	569	547	533	532	544	570	613	657	689	676	656	627	606	578	585	594	584	588	593	595	22
23 Q	594	596	592	586	584	568	548	525	528	534	566	616	666	702	681	650	616	595	596	593	596	603	601	596	597	23 Q
24	594	589	584	579	573	559	540	523	523	544	583	637	691	723	715	693	667	635	612	605	607	604	595	584	607	24
25	588	590	583	572	561	544	517	500	524	561	608	670	718	725	726	712	655	639	608	602	594	579	594	575	606	25
26	602	594	576	603	563	547	555	568	551	562	585	630	679	698	675	652	630	605	582	580	605	605	607	605	602	26
27	601	595	594	618	607	576	556	546	555	562	585	633	657	668	654	637	602	586	574	562	588	604	607	607	599	27
28	603	588	591	573	561	559	538	519	529	545	577	616	655	671	652	626	598	581	578	592	600	602	592	583	589	28
29 D	593	565	546	555	572	613	583	566	554	555	604	627	667	697	697	701	635	610	601	576	553	555	524	551	596	29 D
30	595	535	545	550	545	494	503	518	531	545	565	604	627	637	637	630	619	605	596	593	595	594	588	585	577	30
31	579	578	575	572	570	563	552	555	554	575	582	599	655	684	662	642	622	598	594	594	587	558	575	588	592	31
Mean	588	579	576	579	570	560	548	540	545	559	588	622	654	674	672	657	633	615	600	597	599	596	588	584	597	
Mean Q	596	591	589	582	576	565	554	545	546	560	589	626	657	672	666	646	621	602	595	599	603	603	599	597	599	
Mean D	560	542	531	556	542	542	540	535	537	553	590	626	662	691	695	683	657	642	606	600	597	595	559	566	592	
Sum	8217	7963	7861	7947	7679	7356	6975	6743	6907	7322	8226	9288	10287	10882	10841	10356	9625	9079	8593	8514	8557	8490	8239	8112		

TABLE 4

DECLINATION

MEAN HOURLY VALUES, 10° + .....(Tenths of Minutes)

SEPTEMBER, 1979.

DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1	585	586	602	582	573	565	552	546	547	555	575	604	625	639	644	625	612	597	594	574	544	583	597	596	588	1
2 Q	580	581	585	582	576	566	551	536	537	550	571	602	637	664	655	629	604	585	578	585	590	594	585	578	588	2
3	585	568	547	564	556	555	560	561	555	562	580	625	655	655	643	630	601	580	575	575	588	590	594	595	587	3 Q
4	593	590	583	575	567	575	553	545	554	558	582	608	636	647	637	612	594	575	588	575	563	585	593	593	587	4
5	585	595	592	525	507	522	534	535	545	563	580	629	656	667	657	636	625	605	594	593	531	574	603	602	586	5
6	600	593	551	530	559	550	556	546	549	574	603	623	643	645	627	609	581	585	588	595	596	595	591	574	586	6
7 Q	585	586	583	573	552	559	555	547	546	566	592	628	652	654	638	615	594	579	579	596	595	592	593	582	589	7
8 Q	568	571	565	556	563	558	551	547	565	584	614	654	675	687	677	656	625	603	593	594	585	594	597	592	599	8
9 Q	577	575	565	558	563	559	562	545	535	546	575	615	651	665	667	643	620	595	588	593	583	585	575	556	587	9
10	559	557	546	561	568	563	565	565	558	567	592	633	670	695	700	672	632	607	595	577	568	581	558	556	594	10
11	556	565	564	550	548	555	546	558	574	579	605	655	677	675	669	655	624	602	589	583	597	587	578	573	594	11
12	542	547	548	559	559	558	543	535	532	546	577	612	645	654	645	625	608	606	592	595	595	604	590	533	581	12
13	562	575	595	575	575	572	558	547	537	540	573	611	647	669	648	625	598	582	582	596	597	595	580	588	589	13
14	593	593	591	580	575	569	562	548	532	538	559	602	641	657	655	641	620	605	598	598	585	594	587	584	592	14
15	555	572	585	573	569	568	562	557	548	561	591	618	648	653	642	626	611	606	607	608	603	601	595	587	594	15
16	575	542	517	539	549	552	544	536	536	535	564	605	645	655	656	630	614	596	587	596	597	596	577	582	580	16
17	557	570	568	569	565	560	558	557	545	542	560	594	631	652	654	652	626	623	622	613	614	616	617	569	593	17
18 D	488	441	444	514	539	525	508	574	604	555	634	639	676	684	699	715	653	615	597	571	583	586	590	585	584	18
19 Q	584	578	579	576	573	564	561	553	544	540	563	592	610	612	610	604	603	609	609	603	602	598	579	573	584	19
20 D	573	563	556	562	561	554	554	549	550	549	564	608	682	673	683	663	611	620	603	594	592	585	533	563	589	20
21 D	494	532	504	483	477	543	554	550	563	572	590	609	633	654	642	623	609	603	598	589	592	589	588	554	573	21
22 D	563	579	573	571	567	563	556	546	540	548	574	612	652	664	651	623	612	603	602	596	591	588	582	582	589	22
23	580	581	577	572	572	564	551	533	523	534	564	595	627	652	649	641	623	602	594	589	586	588	590	588	586	23
24	585	586	588	591	589	571	564	560	546	543	580	634	680	683	673	643	622	601	593	588	576	603	516	531	594	24
25 D	517	538	545	483	522	533	564	547	530	524	542	572	608	627	642	645	637	604	594	564	563	562	560	564	566	25
26 D	573	544	534	535	552	552	551	569	549	544	570	610	624	653	649	646	627	612	581	552	551	587	570	555	579	26
27 D	540	542	515	543	547	559	550	538	532	542	569	600	630	641	627	617	601	580	583	578	579	583	572	565	572	27
28	577	582	584	579	571	595	594	574	563	570	569	586	614	635	632	626	604	595	581	572	550	555	548	562	584	28
29	525	518	515	574	574	572	568	559	550	542	555	577	616	627	622	620	601	580	580	570	582	584	587	589	574	29
30	572	564	589	589	560	562	569	556	552	548	560	586	612	629	620	622	591	580	589	590	581	550	572	575	580	30
31																										31
Mean	564	564	560	557	558	559	555	551	548	553	518	611	643	656	650	636	613	598	592	587	582	587	580	574	586	
Mean Q	579	578	575	569	565	561	556	546	545	557	583	618	645	656	649	629	609	594	589	594	591	593	586	576	589	
Mean D	529	524	517	515	530	541	546	558	559	549	580	608	645	658	663	658	627	611	595	574	576	582	568	564	578	
Sum	6928	6914	6790	6723	6728	6763	6656	6519	6441	6577	7327	8338	9298	9667	9513	9069	8383	7935	7753	7602	7459	7621	7397	7226		

TABLE 4 DECLINATION

MEAN HOURLY VALUES, 10<sup>0</sup> + .....(Tenths of Minutes)

OCTOBER, 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	574	544	549	559	570	563	563	554	543	542	566	602	622	630	643	629	608	591	584	583	582	584	584	579	581	1
2	575	573	570	569	564	562	560	552	539	540	553	582	611	622	625	631	629	611	611	575	585	589	582	520	580	2
3	541	540	570	536	540	554	572	561	553	560	576	599	622	640	644	635	615	584	566	593	602	601	595	592	583	3
4	602	567	583	570	566	561	552	542	532	558	577	584	619	637	634	623	607	592	590	589	587	585	585	584	584	4
5	582	580	576	572	571	568	565	562	551	543	557	587	629	650	666	651	633	619	612	592	573	568	565	537	588	5
6 D	534	549	538	529	544	523	516	527	526	528	551	602	646	650	714	737	727	653	609	591	585	582	573	561	587	6 D
7 D	535	539	510	513	541	522	555	552	542	550	568	603	633	681	713	676	632	612	597	600	582	510	544	527	577	7 D
8 D	475	484	505	526	533	551	547	560	611	590	598	624	648	635	643	632	612	553	553	573	560	523	482	533	565	8 D
9 D	505	488	532	549	560	575	566	566	562	562	569	582	601	632	662	645	631	608	592	571	582	552	551	569	576	9 D
10 D	572	561	577	515	546	551	552	544	532	533	560	600	643	668	671	653	630	612	594	533	563	573	553	568	579	10 D
11	573	578	579	574	573	573	568	552	548	563	569	603	622	657	659	654	623	594	583	583	574	563	572	578	588	11
12	579	580	578	581	573	563	559	546	533	537	569	611	644	653	650	640	621	611	596	588	572	566	559	503	584	12
13	550	564	571	571	573	571	562	542	535	528	545	575	606	633	642	641	612	604	612	615	605	586	554	552	581	13
14	564	563	561	556	562	564	562	553	541	530	542	571	609	637	654	648	632	608	602	593	587	582	576	575	582	14
15	575	575	574	573	569	565	561	552	545	551	574	614	648	651	648	646	641	606	605	605	598	578	571	571	592	15
16	571	559	546	565	556	538	551	551	538	535	557	589	623	636	627	614	604	598	598	596	598	594	586	584	580	16
17 Q	579	576	572	567	574	568	564	561	545	536	551	594	617	631	633	613	603	596	595	593	591	586	580	576	583	17 Q
18 Q	573	572	571	575	569	569	569	561	548	535	547	583	612	626	628	619	606	595	592	586	584	579	571	562	581	18 Q
19 Q	559	568	569	568	566	559	557	549	534	526	546	587	627	647	648	636	616	599	594	594	592	588	584	567	583	19 Q
20	536	558	578	579	577	573	566	555	541	543	563	602	637	649	657	643	624	605	602	596	589	584	585	584	589	20
21	584	584	586	573	564	566	561	554	536	526	554	593	635	646	646	636	628	616	606	599	596	544	518	517	582	21
22	526	570	539	549	575	572	574	563	559	542	553	575	603	615	623	607	596	572	597	594	586	576	578	569	576	22
23	573	574	577	586	583	575	572	573	566	561	566	600	635	636	644	634	616	599	592	590	582	566	550	537	587	23
24	545	559	568	568	562	578	566	554	544	546	577	616	653	673	662	646	632	616	593	582	580	579	576	578	590	24
25	579	577	570	556	566	556	553	556	556	539	557	596	641	662	664	652	625	603	595	597	570	551	545	559	584	25
26	558	571	575	578	583	571	561	553	544	546	560	598	619	629	628	615	605	593	589	588	583	578	552	564	581	26
27 Q	573	573	576	571	569	580	570	556	546	546	566	592	605	620	630	622	609	598	591	591	579	568	574	572	582	27 Q
28	570	567	562	559	560	556	551	559	572	572	588	612	613	621	620	614	592	584	585	586	587	557	541	514	577	28
29	524	554	536	526	546	554	562	562	554	546	557	581	596	605	606	601	597	604	616	597	583	567	575	560	571	29
30 Q	564	539	529	551	564	566	566	567	565	563	568	594	606	610	616	606	596	588	586	585	584	584	579	577	577	30 Q
31	568	571	573	571	574	568	566	561	547	536	551	576	612	626	635	617	613	616	597	587	586	576	576	565	582	31
Mean	559	560	561	559	564	562	560	555	548	546	562	594	624	639	646	636	620	601	595	589	584	572	565	559	582	
Mean Q	570	566	563	566	568	568	565	559	548	541	556	590	613	627	631	619	606	595	592	590	586	581	578	571	581	
Mean D	524	524	532	526	545	544	547	550	555	553	569	602	634	653	681	669	646	608	589	574	574	548	541	552	577	
Sum	7318	7357	7400	7335	7473	7415	7369	7200	6988	6913	7435	8427	9337	9808	10035	9716	9215	8640	8434	8245	8107	7719	7516	7334		

TABLE 4 DECLINATION

MEAN HOURLY VALUES, 10<sup>0</sup> + .....(Tenths of Minutes)

NOVEMBER, 1979

DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1 D	523	536	526	509	537	556	562	566	556	545	559	596	620	629	636	626	608	587	587	562	568	536	509	536	566	1 D
2	546	516	507	515	545	561	566	556	536	536	550	594	636	649	647	620	608	590	591	578	571	566	568	568	572	2
3	568	566	566	566	565	564	556	548	537	528	546	585	614	617	619	617	606	602	604	586	559	540	556	564	574	3
4	566	536	507	540	566	560	546	551	534	524	547	591	626	646	648	633	616	608	596	578	576	575	573	574	576	4
5 Q	574	575	576	576	574	571	565	556	545	531	550	591	615	631	633	624	610	601	594	587	581	576	574	573	583	5 Q
6 Q	571	570	568	566	567	563	558	552	536	524	538	576	606	619	624	616	608	601	594	588	585	578	575	575	577	6 Q
7 Q	573	574	574	571	568	561	554	548	546	529	550	582	618	629	634	612	613	626	634	598	575	568	574	566	582	7 Q
8 D	555	571	577	568	568	567	559	566	570	572	596	634	635	633	631	618	593	594	589	585	584	581	575	573	587	8 D
9 D	567	565	563	557	565	561	553	553	542	531	546	582	624	653	668	636	658	643	609	596	552	528	554	569	582	9 D
10	565	559	557	557	563	567	563	558	547	528	540	572	603	626	623	614	604	595	594	595	594	584	551	556	576	10 D
11	555	545	536	529	535	555	556	553	547	540	554	580	605	615	623	607	597	595	591	585	582	574	568	565	571	11
12	563	563	565	566	564	565	557	554	555	539	535	560	603	616	605	593	587	585	577	577	575	573	575	570	572	12
13 D	552	534	532	552	555	583	580	577	574	569	603	625	643	648	629	619	673	635	631	605	511	515	515	443	579	13 D
14 Q	463	479	543	525	505	535	555	553	542	535	547	575	597	613	614	604	592	586	581	576	572	568	566	565	558	14 Q
15 Q	565	566	565	564	563	561	557	554	549	535	539	569	595	605	595	588	586	578	578	578	573	571	571	569	570	15 Q
16	567	571	567	573	565	577	568	574	556	527	537	568	612	627	635	624	632	615	605	587	566	563	562	555	581	16
17	563	561	557	568	567	566	565	548	535	525	533	556	585	603	606	596	593	584	578	576	573	565	566	566	568	17
18	565	572	567	566	566	565	563	555	545	528	535	569	596	615	615	599	586	582	575	576	575	570	565	566	572	18
19	567	572	572	568	565	564	555	548	544	535	546	563	586	612	605	603	599	593	589	581	568	580	535	551	571	19
20	553	564	567	574	570	565	565	555	555	538	556	576	600	608	603	605	605	585	576	575	575	566	559	560	573	20
21	550	555	536	535	545	550	555	556	560	547	554	570	589	597	605	606	602	590	584	575	571	565	564	562	568	21
22 Q	562	564	565	565	565	566	561	552	548	543	544	559	584	596	601	597	593	585	580	575	573	565	565	566	570	22 Q
23 Q	568	569	570	569	568	565	562	555	553	540	544	570	592	605	608	606	603	597	590	583	569	561	546	526	572	23 Q
24 D	518	531	526	521	524	525	534	555	557	545	557	603	610	623	617	595	587	595	602	572	567	494	525	513	558	24 D
25	497	475	513	477	485	538	544	550	547	543	549	570	596	607	613	603	594	585	578	575	567	562	557	561	554	25
26	563	561	563	563	559	557	555	553	547	544	555	576	590	597	593	585	583	576	575	567	558	556	555	564	566	26
27	564	565	566	567	565	565	567	563	555	543	555	584	603	604	603	594	585	578	574	575	568	565	562	556	572	27
28 Q	559	563	564	566	566	565	564	559	557	556	562	574	584	587	587	585	585	581	575	571	567	565	565	567	570	28 Q
29 Q	564	565	566	567	567	565	563	559	555	547	552	568	587	593	590	593	587	583	579	576	572	565	557	557	570	29 Q
30	562	559	565	565	565	562	563	548	595	584	575	577	599	599	612	615	603	595	580	573	574	572	556	566	578	30
31																										31
Mean	554	553	554	554	556	561	559	556	551	540	552	580	605	617	617	608	603	595	590	580	570	562	558	557	572	
Mean Q	546	550	563	560	555	560	561	554	546	538	548	575	597	609	612	605	598	591	585	579	576	570	569	569	571	
Mean D	543	547	545	541	550	558	558	563	560	552	572	608	626	637	636	619	624	611	604	584	556	531	536	527	575	
Sum	6628	6602	6626	6605	6682	6825	6771	6675	6525	6211	6560	7395	8153	8502	8522	8233	8096	7850	7690	7411	7101	6845	6743	6702		

TABLE 4

DECLINATION

MEAN HOURLY VALUES,  $10^0 + \dots$  (Tenths of Minutes)

DECEMBER, 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	558	566	565	565	563	565	567	579	569	561	569	576	594	613	627	618	588	577	568	561	549	534	553	563	573	1
2	565	577	562	575	572	562	564	569	567	555	559	581	609	611	614	601	594	592	575	565	547	561	560	553	575	2
3	538	537	555	572	568	546	558	555	561	547	556	577	597	596	595	589	582	575	570	565	563	564	565	566	567	3
4 D	565	568	557	547	555	563	572	577	577	564	579	600	612	628	633	631	614	568	584	561	557	542	540	545	577	4 D
5	540	543	541	554	555	555	547	551	555	558	568	582	601	609	616	606	611	597	581	573	565	559	556	555	570	5
6	548	538	553	555	554	553	549	551	558	555	561	576	587	593	587	581	583	579	574	569	563	555	556	559	564	6
7 Q	561	557	563	557	557	556	551	546	544	542	554	570	584	595	594	594	595	586	585	576	572	565	565	564	568	7 Q
8	559	556	555	553	538	545	546	555	551	540	565	589	605	629	642	622	616	616	589	593	574	562	541	594	577	8
9	554	552	554	545	549	554	554	555	554	545	555	575	593	600	604	596	593	586	584	577	572	564	556	555	568	9
10	558	562	558	561	556	557	555	550	548	536	545	565	589	614	606	606	597	565	574	585	570	564	556	556	568	10
11	555	545	564	562	560	557	550	554	548	535	546	566	584	596	596	596	594	590	586	585	575	565	564	555	568	11
12 Q	555	555	551	551	554	556	554	548	552	541	548	565	582	585	588	589	587	585	585	581	574	562	565	564	566	12 Q
13 Q	563	562	561	559	560	555	547	552	553	545	552	563	582	595	603	600	594	587	583	580	576	572	566	558	570	13 Q
14	557	558	558	565	558	555	555	553	554	552	552	563	583	595	599	593	587	586	584	584	575	567	565	563	569	14
15	564	557	557	555	561	554	547	547	556	546	556	564	575	592	595	583	583	578	593	584	584	575	567	565	566	15
16	524	545	562	557	555	542	546	555	548	542	544	557	575	600	607	611	597	587	584	574	569	565	565	513	564	16
17	523	555	562	560	564	558	553	555	555	545	554	565	585	594	605	587	593	612	592	575	559	549	530	546	566	17
18	553	553	555	558	562	557	554	552	547	542	542	565	576	589	589	585	582	573	565	564	551	553	552	557	562	18
19	562	567	562	565	555	550	545	547	547	535	527	555	575	592	593	592	581	575	557	562	557	525	555	557	560	19
20	560	563	566	565	565	558	549	546	547	543	549	569	582	592	596	604	585	575	575	583	568	558	554	552	567	20
21	555	555	559	562	561	558	558	555	549	542	547	567	585	603	610	612	613	613	617	593	575	553	536	527	571	21
22 D	526	542	560	565	567	566	565	561	565	555	555	572	578	594	588	586	593	594	596	563	546	539	536	545	565	22 D
23 Q	553	558	564	563	564	566	559	556	552	544	545	555	567	584	590	583	576	571	564	563	559	556	554	547	562	23 Q
24	543	544	555	563	562	564	567	561	556	548	548	559	584	597	605	612	608	585	575	569	562	548	539	546	567	24
25 Q	548	553	557	558	560	560	559	555	552	538	536	552	566	578	578	575	574	572	568	567	565	556	553	548	560	25 Q
26	548	546	536	546	552	555	555	555	553	543	545	562	568	585	592	592	606	606	597	593	547	546	543	544	563	26
27	544	544	544	550	546	550	554	555	572	556	546	564	575	589	592	585	584	574	568	566	560	554	547	548	561	27
28 D	548	551	554	555	563	565	554	554	550	545	544	566	585	585	595	595	574	576	567	565	555	546	509	445	556	28 D
29 D	465	500	483	492	544	525	551	555	553	545	555	556	578	594	577	566	555	576	615	542	518	493	444	445	534	29 D
30 D	464	494	525	494	535	571	555	566	562	565	565	584	611	600	600	604	594	580	535	559	560	555	545	545	557	30 D
31	546	555	555	555	554	555	555	551	552	542	541	554	571	575	584	585	576	576	568	575	561	548	518	495	556	31
Mean	546	550	553	554	557	556	555	556	555	547	552	568	585	597	600	596	591	584	579	573	562	553	547	544	565	
Mean Q	556	557	559	558	559	559	554	551	551	542	547	561	576	587	591	588	585	580	577	573	569	562	561	556	565	
Mean D	514	531	536	531	553	558	559	563	561	555	560	576	593	600	599	596	586	579	579	558	547	535	515	505	558	
Sum	6912	7058	7153	7184	7269	7223	7195	7221	7207	6961	7108	7614	8138	8502	8600	8479	8309	8112	7958	7752	7410	7145	6951	6864		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

JANUARY 1979.

HOUR DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1	950	947	950	948	952	954	953	952	952	946	942	937	937	941	938	946	947	950	953	956	957	961	950	946	949	1
2	947	947	947	948	951	954	956	959	957	950	944	934	917	922	927	932	938	930	939	932	922	927	937	922	939	2
3	923	919	918	924	928	931	932	929	928	927	921	906	920	924	931	938	948	947	933	940	925	917	916	922	927	3
4 D	926	936	927	914	926	932	944	930	928	919	906	896	896	899	907	907	901	907	908	875	882	879	898	879	909	4 D
5	907	902	901	907	919	920	925	928	931	921	916	910	907	910	917	921	921	912	929	924	934	933	932	931	919	5
6	929	934	953	940	942	942	942	947	947	941	928	913	897	917	927	929	915	929	932	932	942	942	942	941	934	6
7 D	942	942	941	942	942	945	947	955	953	943	932	930	932	930	921	911	897	914	923	877	887	902	896	902	925	7 D
8	907	912	921	922	922	922	922	923	921	915	909	902	902	902	909	920	929	934	936	931	933	930	939	935	921	8
9	934	930	932	944	954	958	970	959	950	949	940	931	928	931	939	944	942	935	935	944	945	941	937	941	942	9
10 Q	940	942	941	942	942	944	946	947	947	940	932	929	929	930	934	942	948	950	952	954	957	958	957	956	943	10 Q
11 Q	950	947	945	947	949	952	953	954	953	946	935	934	935	934	938	944	949	952	954	957	958	957	957	956	948	11 Q
12 Q	954	952	950	957	952	958	965	961	954	950	942	940	937	935	935	947	952	952	946	952	949	917	947	946	949	12 Q
13 Q	952	951	951	951	951	952	954	955	955	945	934	926	925	930	939	942	944	949	952	954	955	955	954	956	947	13 Q
14 Q	956	955	956	956	957	956	955	960	967	958	944	939	929	927	928	930	912	942	941	946	949	950	952	953	948	14 Q
15	955	953	957	958	959	958	961	961	960	953	938	908	906	916	922	924	931	932	936	922	906	916	936	945	938	15
16	948	941	941	945	951	959	952	952	946	932	922	919	919	914	920	930	936	941	946	947	949	954	954	950	940	16
17 Q	954	952	954	954	956	959	960	961	959	952	942	932	926	933	943	944	941	941	939	939	940	940	943	952	947	17 Q
18	952	933	936	938	943	949	953	953	953	947	938	923	927	928	943	942	936	943	943	940	948	954	953	948	943	18
19	950	943	939	938	947	958	951	946	939	930	916	910	919	933	936	932	931	933	912	948	942	938	936	939	937	19
20	943	941	942	943	948	953	954	959	948	938	935	925	918	916	923	932	937	927	933	940	949	952	952	949	940	20
21	944	943	965	952	950	953	960	961	956	949	935	927	923	932	933	939	940	935	944	947	948	949	950	950	945	21
22 D	950	949	950	951	953	957	956	957	957	953	944	938	930	924	930	938	945	950	951	942	915	904	935	935	942	22 D
23 D	931	935	937	941	946	952	958	961	963	952	939	928	919	926	907	899	911	915	893	886	884	868	875	883	921	23 D
24	887	892	898	908	914	918	923	926	923	928	927	908	914	918	921	926	932	933	941	947	938	943	948	948	924	24
25 D	946	944	964	928	909	918	920	926	942	948	941	927	922	912	915	927	930	926	917	934	933	926	927	927	930	25 D
26 D	924	933	930	928	932	933	943	949	947	933	911	910	909	916	918	920	929	931	925	931	920	911	910	929	926	26 D
27	922	923	928	920	920	936	950	941	943	940	937	935	930	926	928	926	927	926	932	948	923	928	936	936	932	27
28	933	935	933	939	942	946	950	944	948	946	936	917	913	913	920	926	937	946	949	929	940	946	948	946	937	28
29	945	943	910	939	938	955	954	955	952	943	933	923	915	923	933	937	935	911	947	949	948	949	948	955	942	29
30	941	935	935	945	948	948	948	946	953	956	949	940	933	926	936	943	945	948	948	945	947	950	937	935	943	30
31	941	946	957	945	943	949	953	950	952	958	952	937	932	935	936	938	940	946	951	957	945	943	942	935	945	31
Mean	938	937	940	939	941	946	949	949	948	942	933	924	921	923	928	931	934	936	938	936	934	934	937	937	936	
Mean Q	950	949	949	950	951	953	954	955	956	948	937	932	929	931	936	940	945	947	948	949	950	951	951	954	947	
Mean D	934	938	940	931	931	936	942	944	947	939	926	918	916	914	913	914	919	913	901	901	897	901	904	922		
Sum	9083	9057	9139	9114	9186	9321	9412	9407	9384	9208	8920	8634	8546	8623	8757	8876	8956	9017	9070	9019	8963	8964	9038	9047		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

FEBRUARY 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	943	939	940	943	943	946	948	948	951	947	941	941	943	942	943	945	945	950	953	955	957	959	959	953	947	1
2	953	955	953	949	946	953	956	949	947	947	938	934	932	934	941	944	948	948	951	946	951	943	943	941	946	2
3	945	948	950	949	948	948	949	949	948	938	931	929	933	938	947	952	954	955	962	958	973	961	955	948	949	3
4	943	942	941	943	948	953	953	948	943	936	925	933	942	946	938	948	912	920	934	929	930	921	918	919	936	4
5	935	936	940	943	943	941	942	950	943	926	908	898	908	909	916	925	933	938	943	946	948	948	949	955	934	5
6	950	949	951	962	951	959	955	953	940	932	920	916	913	913	926	933	940	939	936	943	943	932	929	945	939	6
7	949	948	948	948	948	952	954	954	951	941	932	931	930	932	936	945	945	949	951	955	959	948	940	948	946	7
8	950	944	948	945	951	954	958	957	953	940	926	919	916	924	935	943	940	948	949	947	954	959	959	951	945	8
9	941	947	950	950	947	946	949	952	953	948	938	927	924	925	933	935	945	946	951	957	957	951	949	942	944	9
10 Q	946	946	949	949	952	955	956	956	954	946	935	926	930	935	941	945	949	949	951	959	963	961	959	956	949	10 Q
11	952	956	960	948	950	958	960	960	958	948	933	932	933	935	943	947	943	944	948	953	949	937	924	923	946	11
12	937	940	938	943	954	943	950	954	943	936	926	905	895	908	927	936	947	949	952	954	958	955	955	953	940	12
13 Q	952	950	952	954	954	957	958	958	953	944	935	924	918	918	928	937	944	950	953	956	958	959	959	959	947	13 Q
14 Q	958	959	959	961	962	963	963	963	958	943	936	933	933	937	944	950	952	953	957	963	963	958	962	967	954	14 Q
15	968	967	968	969	968	972	974	978	967	943	936	927	932	926	926	928	930	940	949	956	956	958	958	958	952	15
16	957	957	958	959	962	968	967	962	959	948	936	919	916	920	933	939	944	947	953	958	960	960	960	960	950	16
17 Q	961	961	962	963	963	963	965	965	959	953	944	936	934	935	936	942	945	950	958	958	955	956	963	965	954	17 Q
18	963	961	962	987	982	977	983	984	977	967	952	937	934	933	928	932	933	938	943	953	944	933	938	941	953	18
19	935	941	954	947	947	951	956	953	952	946	938	939	946	936	922	940	946	946	939	948	950	958	958	957	946	19
20 Q	957	957	954	954	954	955	955	956	953	944	936	935	936	941	947	945	942	939	945	947	940	950	949	946	947	20 Q
21 D	947	952	953	969	984	985	944	939	961	919	929	912	916	920	929	940	951	929	926	886	868	864	894	899	930	21 D
22 D	899	926	916	915	921	924	922	924	918	916	891	916	924	918	902	919	909	928	937	946	941	950	949	959	924	22 D
23 D	951	956	946	935	929	937	946	952	934	934	934	920	909	919	921	928	934	940	949	958	956	923	918	926	936	23 D
24	936	947	939	936	934	934	945	944	947	936	934	934	925	921	933	931	928	936	939	945	968	951	929	939	938	24
25	945	947	944	944	943	948	953	956	954	949	947	942	940	936	936	938	940	944	948	954	944	948	928	939	944	25
26 D	942	934	931	934	947	948	947	950	949	944	937	934	938	938	934	932	926	930	937	925	928	916	904	906	934	26 D
27 D	932	932	918	926	918	926	931	926	929	931	928	915	924	927	925	921	928	925	932	943	943	947	941	944	930	27 D
28	939	951	935	935	939	942	940	942	942	944	949	944	954	948	953	938	932	930	934	941	921	928	940	936	940	28
29																										29
30																										30
31																										31
Mean	946	948	947	949	950	952	953	953	950	941	933	927	928	929	933	938	939	941	946	948	948	944	942	944	943	
Mean Q	955	955	955	956	957	959	959	960	955	946	937	931	930	933	939	944	946	948	953	957	956	957	958	959	950	
Mean D	934	940	933	936	940	944	938	938	938	929	924	919	922	924	922	928	930	930	936	932	927	920	921	927	931	
Sum	6486	6548	6519	6560	6588	6658	6679	6682	6596	6346	6115	5958	5978	6014	6123	6258	6285	6360	6480	6539	6537	6434	6389	6435	931	



TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

MARCH 1979.

DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	949	939	947	941	939	937	942	938	934	930	921	917	920	933	937	938	935	934	941	938	948	951	949	953	938	1
2	965	948	933	938	935	937	935	940	937	930	929	920	912	921	928	930	924	935	941	954	940	951	945	953	937	2
3	934	940	952	944	945	949	950	945	952	951	942	937	937	937	938	939	945	936	945	945	931	924	926	939	941	3
4	962	945	940	938	943	946	944	947	939	919	929	927	930	932	912	920	930	946	926	939	952	957	945	931	937	4
5	946	940	945	949	927	934	940	943	951	940	930	936	935	934	939	939	937	944	952	960	954	955	955	959	944	5
6 D	950	950	949	959	944	945	941	945	935	911	909	907	895	890	899	905	901	896	912	928	928	917	930	938	924	6 D
7 Q	940	937	935	937	935	942	940	940	940	938	937	936	938	936	935	937	938	939	945	953	950	946	945	941	940	7 Q
8	949	951	946	945	947	948	948	948	950	951	950	951	935	930	932	937	940	944	945	950	956	960	956	964	947	8
9	960	953	953	951	951	951	955	956	961	950	946	955	950	952	951	949	952	954	961	961	954	953	965	954	954	9
10 D	955	987	968	940	960	972	977	959	950	943	946	947	915	917	921	925	945	964	961	946	926	898	865	861	940	10 D
11	891	890	910	910	910	904	901	913	915	915	903	896	893	902	915	924	929	928	938	941	942	942	942	942	917	11
12 Q	942	941	945	944	943	945	949	946	937	930	925	918	920	922	929	937	941	943	950	949	950	957	958	959	941	12 Q
13	958	960	961	961	965	964	955	957	950	929	920	918	924	929	937	936	936	948	951	953	956	959	960	960	948	13
14 Q	960	960	961	962	962	963	963	961	954	940	938	935	939	948	956	962	961	961	962	966	967	969	965	965	958	14 Q
15	967	967	967	969	969	968	972	973	967	951	943	935	940	940	947	961	959	961	970	968	972	965	977	975	962	15
16	964	963	966	975	969	966	968	977	970	957	939	933	940	940	943	954	958	963	968	968	968	975	973	973	961	16
17	975	973	977	980	982	983	995	985	1005	967	949	934	925	927	929	938	948	951	953	952	952	953	957	950	960	17
18	948	953	956	956	957	955	959	962	957	942	929	923	923	932	932	948	953	957	961	963	963	964	965	965	951	18
19	964	963	963	963	964	965	965	969	958	940	921	925	926	931	935	958	943	953	956	969	968	961	965	964	954	19
20 Q	965	963	962	961	959	960	963	964	962	952	941	937	937	938	940	949	957	964	968	970	967	973	973	973	958	20 Q
21 Q	971	970	970	970	969	972	973	975	965	953	939	930	928	934	945	953	961	964	967	963	968	970	971	973	961	21 Q
22 D	973	973	973	972	971	973	973	978	982	985	976	938	948	968	989	935	871	898	923	933	941	943	945	950	955	22 D
23	948	956	973	956	952	957	970	974	963	943	933	927	920	922	926	933	943	948	953	954	953	951	953	953	948	23
24	948	938	945	948	949	948	955	959	963	947	935	924	925	932	928	938	948	958	953	963	964	963	958	968	948	24
25	952	943	953	953	949	950	961	962	951	932	922	918	912	914	921	933	957	948	953	948	959	954	957	943	944	25
26	935	946	953	939	948	952	943	938	918	913	909	913	903	899	905	923	943	972	969	942	939	943	943	944	935	26
27	945	945	945	945	943	948	944	954	952	922	919	917	909	916	932	936	939	939	935	943	937	938	933	939	936	27
28 D	947	938	933	942	936	936	938	940	932	924	915	879	902	920	924	932	936	935	945	952	963	958	948	945	934	28 D
29 D	958	904	933	937	935	932	944	933	887	887	888	888	877	867	885	913	928	968	961	938	907	893	907	896	915	29 D
30	903	924	914	914	925	928	935	928	918	904	886	877	884	892	905	924	934	939	942	945	949	950	949	949	922	30
31	960	949	956	957	944	938	943	943	934	923	913	899	902	916	927	939	944	948	958	958	957	948	949	967	941	31
Mean	951	949	951	950	949	951	953	953	948	936	928	922	921	925	930	937	940	946	950	952	951	950	949	950	943	
Mean Q	956	954	955	955	954	956	958	957	952	943	936	931	932	936	941	948	952	954	958	960	960	963	962	962	951	
Mean D	957	950	951	950	949	952	955	951	937	930	927	912	907	912	924	922	916	932	940	939	933	922	919	918	936	
Sum	9484	9409	9484	9456	9427	9468	9541	9552	9389	9019	8782	8597	8544	8671	8842	9045	9136	9336	9458	9512	9488	9442	9417	9457		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

APRIL 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	939	933	940	958	938	936	941	949	940	935	919	914	919	922	912	934	941	949	953	952	955	969	1002	920	941	1
2	949	962	889	909	928	924	922	927	932	927	920	912	905	906	924	944	966	964	949	951	966	964	950	942	934	2
3	939	944	954	956	945	944	943	952	957	943	939	934	930	936	938	969	988	989	981	957	937	907	890	804	941	3
4 D	868	838	824	842	865	858	876	886	880	902	906	893	876	899	907	924	926	936	934	934	936	935	942	939	897	4D
5 D	934	931	943	946	952	959	976	979	979	962	955	951	956	961	962	916	955	963	944	954	954	956	959	962	955	5D
6	964	955	949	949	949	959	964	968	961	948	937	929	924	923	926	935	941	958	961	960	965	963	965	968	951	6
7	966	963	958	957	959	968	975	984	970	956	944	934	936	943	945	954	955	965	965	960	962	966	978	994	961	7
8	962	950	956	960	958	958	965	970	969	955	939	929	930	937	940	947	963	975	970	972	972	966	958	961	957	8
9	961	971	941	948	946	949	951	955	954	947	938	933	930	930	936	944	952	960	965	967	971	977	978	979	953	9
10 Q	978	974	975	975	974	976	978	975	972	959	944	935	923	926	937	940	952	955	970	965	964	961	962	965	960	10
11	968	968	968	970	970	972	972	971	963	950	938	924	920	927	937	954	962	976	983	979	979	979	980	976	962	11 Q
12	979	978	986	975	973	984	988	978	971	954	936	916	919	926	936	948	951	970	982	979	969	969	985	977	964	12
13	969	964	968	969	971	976	974	968	961	952	939	927	920	918	939	959	963	973	968	969	974	974	976	972	960	13
14	973	969	970	972	974	974	973	977	974	964	964	937	934	949	964	985	991	998	977	967	975	983	963	960	969	14
15	961	958	959	964	954	958	963	960	955	951	940	939	940	949	950	941	954	964	969	969	972	975	978	969	958	15
16	974	982	985	975	953	948	958	961	956	948	941	937	937	934	937	950	959	966	956	965	969	969	967	967	958	16
17 Q	978	970	959	961	959	963	955	960	970	961	947	929	934	941	949	959	964	962	964	968	979	978	973	973	961	17 Q
18 Q	963	960	963	963	964	968	974	978	975	954	944	947	952	957	959	966	968	970	974	973	973	974	974	972	965	18 Q
19 Q	969	966	966	969	966	966	969	968	964	955	952	944	943	949	958	963	966	960	964	974	974	973	971	977	964	19 Q
20 Q	972	974	969	967	964	964	965	968	967	959	952	943	942	947	959	967	974	974	974	976	976	976	977	978	966	20 Q
21	977	976	976	979	977	975	976	970	969	966	968	966	970	973	965	964	968	955	969	969	967	944	927	939	966	21
22 D	949	960	936	907	934	939	923	924	919	919	907	882	904	921	943	961	947	959	980	969	952	943	945	940	936	22 D
23	936	944	939	960	949	929	921	921	927	924	923	916	919	923	939	944	960	959	964	965	969	962	959	960	942	23
24	969	959	956	948	961	951	939	935	944	946	945	941	945	949	961	959	968	974	970	967	964	960	960	964	956	24
25 D	1016	985	954	900	924	927	928	887	881	901	896	854	876	896	900	922	909	914	913	933	944	975	939	949	922	25 D
26	935	926	937	930	926	924	923	921	919	914	908	908	916	923	929	937	939	952	958	948	955	955	947	945	932	26
27	947	952	966	957	944	947	943	939	925	923	923	926	941	931	958	991	994	953	971	954	935	930	936	946	946	27
28	940	949	931	923	926	933	910	923	899	907	909	906	911	903	917	938	941	951	961	956	971	970	947	937	932	28
29 D	943	956	951	953	973	943	951	944	932	914	908	906	894	920	916	940	993	982	963	976	953	953	931	930	943	29 D
30	939	943	938	933	930	930	946	936	921	886	890	903	912	898	923	946	964	976	973	964	961	970	960	960	938	30
31																										31
Mean	957	955	950	949	950	950	951	951	947	939	932	924	925	931	938	949	959	965	964	964	964	963	959	954	950	
Mean Q	970	968	965	966	965	967	967	969	968	956	947	937	938	944	952	961	967	968	972	974	976	976	975	975	963	
Mean D	942	934	922	910	930	925	931	924	918	920	914	897	901	919	926	933	946	951	947	953	948	952	943	944	930	
Sum	8717	8660	8506	8475	8506	8502	8542	8534	8406	8182	7953	7712	7743	7927	8139	8468	8771	8943	8907	8909	8912	8881	8773	8624		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 1800Y+ .....

MAY 1979.

HOUR DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1	973	979	963	950	953	953	950	948	935	915	908	911	916	922	936	953	960	986	987	971	959	957	952	948	950	1
2	956	956	946	951	942	941	942	946	950	936	922	913	913	925	936	949	957	975	977	975	961	960	961	961	948	2
3 Q	960	964	969	961	957	961	961	961	956	942	938	939	946	951	951	951	963	961	970	966	966	965	967	972	958	3 Q
4	960	953	956	957	961	961	961	963	960	952	943	939	942	944	952	959	966	984	988	987	969	964	967	983	961	4
5	974	963	963	958	957	955	950	956	955	955	954	952	951	951	957	966	976	992	986	978	980	981	982	981	966	5
6 Q	978	972	970	966	966	966	966	962	956	950	951	947	946	951	957	963	967	972	978	978	976	977	977	976	965	6 Q
7	979	978	972	968	970	968	963	958	956	947	950	957	959	954	957	955	981	982	982	966	972	977	976	977	967	7
8	975	973	973	972	973	968	966	956	962	962	961	957	957	962	968	972	976	983	982	982	983	985	984	988	972	8
9	983	982	981	976	977	982	986	985	974	963	960	959	953	961	958	970	981	993	988	989	992	976	975	978	976	9
10	978	968	963	963	969	970	968	964	957	953	950	951	951	958	967	973	989	996	988	987	978	979	978	983	970	10
11	991	978	974	968	970	979	968	957	972	968	958	952	939	953	936	963	980	967	983	977	976	973	974	969	968	11
12	967	963	969	969	964	963	963	964	963	959	955	951	946	948	943	953	965	977	976	981	984	983	981	979	965	12
13	976	976	975	965	970	971	967	964	959	961	957	952	957	955	972	987	981	979	986	984	984	983	984	982	972	13
14	979	975	974	974	974	974	975	977	972	964	955	947	945	944	964	954	977	971	987	987	986	984	984	981	971	14
15	979	979	978	974	978	979	981	974	967	958	959	945	942	932	950	952	967	979	984	989	981	980	983	983	969	15
16 Q	971	974	978	975	970	968	964	955	954	951	946	944	943	951	961	969	982	988	986	981	980	983	983	983	968	16 Q
17 Q	982	982	982	979	979	976	970	964	956	946	943	940	941	941	951	964	973	985	989	983	980	981	982	982	969	17 Q
18	982	983	982	981	984	984	984	984	975	969	964	964	963	961	962	984	996	1020	1024	985	996	994	974	968	982	18
19 D	981	975	964	960	965	956	956	953	946	936	927	941	944	939	952	958	966	972	993	1007	993	988	968	969	963	19 D
20	985	974	965	964	946	948	954	954	952	949	941	931	932	940	949	962	974	985	984	980	984	972	975	966	961	20
21	965	964	965	969	970	968	965	962	953	957	967	963	959	959	955	956	984	999	1004	999	987	964	952	951	968	21
22 D	948	939	959	948	939	937	946	942	930	899	913	934	932	926	946	948	969	1014	992	990	970	964	964	956	950	22 D
23	959	959	949	946	945	942	941	939	930	929	929	930	936	941	943	953	962	965	979	990	983	970	959	952	951	23
24 D	949	956	948	954	955	958	946	943	942	928	906	909	929	916	920	953	974	971	976	979	1003	988	976	979	952	24 D
25 D	961	956	956	963	969	967	959	929	913	914	910	908	922	936	942	952	1004	998	967	978	997	969	969	984	955	25 D
26 D	974	955	939	956	954	946	942	932	920	907	908	909	918	926	941	983	1005	989	993	979	968	970	977	979	953	26 D
27	971	964	969	968	972	977	960	936	931	924	912	920	934	950	964	965	965	984	985	971	975	972	974	975	959	27
28	971	959	969	963	963	959	954	950	942	934	928	925	928	928	941	966	979	994	1005	1006	982	974	967	969	961	28
29	973	968	966	964	963	964	960	955	949	939	931	928	931	934	939	955	957	980	996	1009	1027	1057	1011	1030	970	29
30	1009	1005	1003	990	991	989	987	979	962	941	929	922	920	933	944	951	962	974	978	978	974	971	971	971	968	30
31 Q	971	971	970	971	974	975	971	964	961	955	955	950	956	959	955	982	989	985	1004	998	985	976	973	971	972	31 Q
Mean	973	969	967	965	965	965	963	957	952	944	940	938	940	944	951	962	975	984	987	984	982	978	974	975	964	
Mean Q	972	973	974	970	969	969	966	961	956	949	947	944	946	951	955	966	975	978	985	981	977	976	976	977	966	
Mean D	963	956	953	956	956	953	950	940	930	917	913	920	929	929	940	959	984	989	984	987	986	976	971	973	955	
Sum	0160	0043	9990	9929	9920	9905	9838	9676	9510	9263	9128	9090	9151	9251	9469	9821	0227	0500	0597	0510	0431	0312	0194	0217		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+.....

JUNE 1979

HOUR DATE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	MEAN	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24			
1 Q	971	969	969	969	967	967	964	959	951	939	938	935	938	944	950	967	978	978	990	994	997	985	977	968	965	1 Q	
2	972	971	968	968	970	973	967	963	955	946	942	951	972	977	979	982	979	987	989	991	994	990	985	973	973	2	
3 Q	976	978	978	979	979	977	967	959	954	951	953	953	958	966	971	976	993	1003	1000	1001	991	986	983	975	3 Q		
4	982	976	978	979	981	979	968	959	963	964	966	967	966	966	973	975	981	986	992	996	1001	1001	1002	998	996	992	4
5 Q	992	988	982	984	988	987	976	968	963	962	961	966	973	975	981	986	992	996	1001	1001	1002	998	996	992	984	5 Q	
6 D	988	986	985	981	983	980	971	961	957	960	961	972	969	969	956	956	970	973	980(1053)		1023	1028	1007(1029)		983	6 D	
7 D	1026	1012	1013	1009	1001	990	982	971	953	938	931	932	932	930	938	982	970	995	1002	987	982	975	983	978	976	7 D	
8	961	959	966	958	956	956	950	941	932	938	941	942	938	941	954	950	967	978	990	1000	1001	988	981	981	961	8	
9	978	979	974	972	964	971	968	956	953	940	933	945	942	944	956	958	980	991	985	1004	989	983	981	976	968	9	
10	976	980	975	971	971	967	959	942	945	941	947	950	943	951	953	946	966	990	996	986	991	983	981	980	966	10	
11	979	975	976	966	970	966	958	948	945	943	943	946	955	970	969	986	981	980	983	987	986	984	980	982	969	11	
12	980	980	968	970	976	969	961	954	950	943	939	939	937	942	953	966	976	980	988	996	990	987	985	982	967	12	
13	978	978	978	977	977	978	978	977	972	962	951	944	943	949	957	979	966	980	983	985	986	985	981	980	972	13	
14	976	971	975	975	977	977	971	971	967	960	956	950	947	952	961	959	965	977	984	991	991	987	989	991	972	14	
15	983	986	989	988	988	988	980	966	966	956	951	942	938	933	928	948	962	969	985	987	994	987	978	981	970	15	
16 D	974	972	969	961	961	963	957	949	948	942	929	923	937	949	948	972	993	1006	1016	1012	998	987	971	963	967	16 D	
17	953	954	956	957	966	966	966	959	952	946	937	935	945	963	991	997	978	981	997	989	983	981	980	977	967	17	
18 Q	975	971	971	970	976	977	969	955	951	942	934	934	939	946	946	957	966	986	997	999	990	985	981	980	967	18 Q	
19	979	985	984	978	969	981	978	966	952	946	941	938	941	940	948	960	974	977	981	986	990	986	985	977	968	19	
20	971	965	962	962	966	968	966	959	954	945	938	936	940	951	967	981	981	979	997	1005	999	995	982	980	969	20	
21	980	976	973	975	975	970	974	970	957	951	944	945	931	935	955	978	996	993	1020	995	999	981	975	969	972	21	
22 D	983	971	960	965	964	961	955	950	957	953	957	955	948	960	982	997	1000	998	978	987	995	996	983	977	972	22 D	
23 D	966	967	972	975	955	950	951	963	951	935	936	932	938	936	940	957	967	966	976	983	994	973	971	974	960	23 D	
24	978	976	971	963	956	958	955	941	938	930	924	912	915	924	937	955	971	981	990	985	980	987	986	985	958	24	
25	978	966	967	968	968	963	957	955	945	941	933	929	936	943	955	966	976	976	986	998	990	985	981	977	964	25	
26	972	972	972	972	971	969	965	966	962	956	947	938	938	967	992	957	992	968	1011	1017	1020	996	968	950	972	26	
27	962	964	963	962	954	953	950	937	931	922	925	931	949	947	956	973	988	985	980	971	970	972	974	973	958	27	
28 Q	972	970	970	970	968	965	962	958	955	945	940	940	943	950	950	960	973	983	994	996	987	982	979	980	966	28 Q	
29	980	975	971	972	976	978	975	970	961	951	945	942	934	925	938	960	984	994	1005	1013	1004	994	995	983	972	29	
30	973	980	980	980	981	983	981	973	969	967	965	958	953	951	962	969	993	980	990	1000	995	1004	1003	985	978	30	
31																										31	
Mean	977	975	974	973	972	971	966	959	954	947	944	943	945	950	958	968	978	983	992	996	994	989	983	980	970		
Mean Q	977	975	974	974	976	975	968	960	955	948	945	946	950	956	960	968	977	987	997	998	995	988	984	981	971		
Mean D	987	982	980	978	973	969	963	959	953	946	943	945	949	953	973	980	988	990	1004	998	992	983	984	981	971		
Sum	9314	9252	9213	9176	9154	9130	8981	8766	8609	8415	8308	8282	8338	8490	8729	9039	9334	9504	9768	9894	9825	9655	9500	9402	971		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

JULY 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	982	983	978	975	981	989	985	975	966	963	957	958	956	956	957	970	985	975	985	990	989	988	986	984	976	1
2 Q	978	975	985	978	980	982	979	975	968	962	955	950	945	950	955	970	986	999	1008	1001	1003	998	995	992	978	2 Q
3	990	990	987	987	990	988	995	1000	996	985	966	950	959	960	960	979	983	994	990	986	1000	998	988	984	984	3
4	980	984	988	977	989	985	970	961	960	951	940	934	936	938	953	969	981	983	980	977	975	977	981	982	969	4
5	980	979	979	982	984	987	985	974	964	949	943	946	958	960	973	979	983	993	990	1002	994	990	987	984	977	5
6 D	983	979	980	982	984	983	975	964	955	944	935	923	939	951	950	964	970	980	989	1024	1035	1007	1009	1009	976	6 D
7 D	1018	999	990	1002	1001	995	986	977	965	959	955	958	959	974	956	973	967	987	988	986	987	979	981	983	980	7 D
8	978	977	973	970	975	975	968	955	940	929	925	924	934	949	964	973	968	979	990	987	992	996	994	980	966	8
9	979	978	977	975	974	970	961	958	953	944	937	936	938	942	949	960	995	995	989	985	980	979	978	975	967	9
10	976	975	975	977	979	976	969	963	959	949	939	938	939	949	963	979	984	987	987	1000	994	988	979	981	971	10
11 Q	982	982	978	979	981	982	984	974	966	951	946	946	949	954	964	970	977	985	990	994	993	990	989	989	975	11 Q
12	989	986	983	981	983	987	984	972	955	940	932	933	942	958	978	987	999	1017	1009	989	989	990	988	988	977	12
13	989	989	982	986	978	973	973	960	951	937	934	933	944	964	977	959	996	992	986	980	989	987	986	984	972	13
14	982	974	975	979	976	976	967	956	948	939	930	929	933	948	952	969	982	984	986	1021	984	976	986	986	968	14
15	990	986	979	974	969	970	959	953	942	935	934	935	942	955	949	965	964	963	989	993	989	987	984	979	966	15
16	966	965	979	967	969	965	961	953	952	949	938	934	939	952	958	968	977	998	989	989	994	993	987	982	968	16
17	988	974	974	975	964	974	971	969	965	957	944	941	959	962	963	976	974	974	988	997	996	1006	996	990	974	17
18	966	980	973	968	968	965	956	953	955	954	952	940	941	958	963	971	974	985	984	985	985	997	989	990	969	18
19	978	969	969	972	975	973	969	964	959	953	946	945	951	953	960	969	975	979	981	988	986	1000	984	977	970	19
20 D	976	978	978	978	979	977	971	965	958	954	949	958	969	959	969	984	974	987	975	989	999	992	981	988	974	20 D
21	969	969	970	969	965	963	956	952	954	947	936	949	966	967	980	976	971	976	981	986	992	989	974	970	968	21
22	972	974	969	970	970	970	963	954	950	952	955	958	956	961	972	987	988	999	990	980	977	977	978	971	971	22
23	976	977	978	976	973	969	968	964	963	959	953	946	937	945	954	967	973	979	987	994	994	985	982	979	970	23
24 Q	989	984	977	978	976	974	974	973	972	969	960	952	947	940	954	975	980	989	989	993	993	991	987	984	975	24 Q
25 Q	982	981	988	990	990	985	977	970	965	953	940	939	954	964	966	974	975	976	976	982	986	992	992	989	975	25 Q
26	987	986	984	984	982	977	976	972	966	962	960	960	959	958	962	979	985	991	1022	1030	1021	994	967	942	979	26
27 D	935	921	923	937	949	949	944	935	924	916	919	930	936	938	933	950	980	986	994	1000	1009	999	984	976	953	27 D
28	973	966	983	966	960	961	957	951	936	927	925	926	934	943	954	961	974	983	990	985	984	1003	1004	1004	965	28
29 D	1005	995	993	989	990	988	994	991	981	951	946	951	960	959	977	988	989	979	970	994	1000	994	1000	1020	984	29 D
30	995	984	981	983	982	981	971	961	954	944	931	944	953	958	969	966	980	973	981	975	980	976	970	970	969	30
31 Q	970	969	969	969	969	969	960	950	944	941	940	946	956	962	965	969	971	969	968	968	971	970	971	970	963	31 Q
Mean	981	978	977	977	977	976	971	965	958	949	943	942	948	954	961	971	979	985	988	992	992	990	986	984	972	
Mean Q	980	979	979	979	979	978	975	968	963	955	948	947	950	954	961	972	978	984	986	988	989	988	987	985	973	
Mean D	983	974	973	978	981	978	974	966	957	945	941	944	953	956	957	972	976	984	983	999	1006	994	991	995	973	
Sum	0403	0311	0297	0275	0285	0258	0115	9903	9690	9423	9219	9209	9392	9582	9788	0111	0359	0525	0630	0760	0763	0688	0556	0489		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

AUGUST 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	071	071	069	068	069	071	070	066	059	049	050	064	081	083	077	063	073	087	088	1006	999	078	088	085	074	1
2	079	075	074	073	074	069	063	066	051	034	049	053	050	054	057	071	075	075	084	087	086	087	085	083	069	2
3	079	076	083	090	083	080	074	064	052	049	039	031	044	051	049	061	063	064	077	081	081	083	078	074	067	3
4	071	074	067	075	064	071	077	075	063	054	049	053	046	044	044	048	072	077	091	085	070	076	072	073	066	4
5	071	070	070	069	073	079	068	055	048	041	040	043	049	060	064	068	061	064	073	071	082	080	079	083	065	5
6	084	078	078	081	079	077	075	062	059	063	039	027	045	045	057	060	069	053	075	085	084	079	074	074	067	6
7	078	075	078	074	078	074	064	049	044	049	053	049	051	050	062	059	065	079	093	093	091	084	076	069	069	7
8	065	059	061	061	064	059	060	050	048	044	041	043	039	040	061	066	068	082	089	074	079	085	084	077	062	8
9 Q	083	073	070	069	067	072	069	059	047	035	029	037	044	057	066	077	086	077	077	079	077	079	077	074	066	9Q
10 Q	076	079	078	076	074	074	070	061	054	048	043	044	056	069	074	084	090	088	081	089	088	094	085	079	073	10Q
11	079	076	074	083	079	079	072	063	054	047	043	048	052	068	078	079	090	089	098	1000	1004	086	078	069	075	11
12	070	059	060	061	064	064	063	053	044	039	042	062	064	072	072	076	089	095	1006	1025	1015	1001	097	076	074	12
13 D	074	078	079	079	080	078	059	053	050	064	074	048	032	053	057	061	075	084	093	1005	090	054	045	031	067	13D
14	026	035	034	038	040	038	033	028	021	014	014	013	015	028	040	049	059	056	058	057	062	066	066	061	040	14
15 Q	060	059	060	058	060	056	054	053	051	050	049	045	048	057	063	064	066	076	076	073	071	076	067	068	061	15Q
16 Q	068	069	066	064	065	061	054	055	054	045	046	049	050	050	060	059	060	066	073	068	072	075	074	073	062	16Q
17	074	074	069	068	068	067	068	063	055	051	048	047	053	058	062	062	071	093	079	090	076	078	078	078	068	17
18	076	071	070	068	065	065	064	054	044	039	037	038	053	060	066	077	094	093	090	088	087	085	091	084	069	18
19 D	044	048	002	037	068	056	068	045	029	016	014	018	020	047	035	048	056	069	083	086	081	079	079	062	050	19D
20 D	062	080	079	059	060	059	059	073	075	080	076	067	062	058	054	061	088	1059	1039	1014	079	064	059	056	076	20D
21 D	049	049	032	036	046	024	019	026	010	009	010	014	024	040	043	051	061	074	067	080	085	086	079	074	045	21D
22	072	076	074	071	062	061	060	056	049	037	034	034	039	040	034	047	060	079	083	085	079	074	071	070	061	22
23 Q	070	070	070	070	070	069	060	049	036	024	022	024	033	049	062	071	079	084	083	087	080	079	078	076	062	23Q
24	076	075	076	076	074	071	066	055	039	027	022	032	044	056	058	060	076	1020	076	090	1002	089	087	084	068	24
25	079	080	081	086	084	083	069	050	035	018	026	026	026	037	040	054	051	078	070	074	079	076	072	088	061	25
26	099	084	078	081	079	079	071	062	054	024	015	023	038	041	043	064	068	080	072	082	081	077	078	076	065	26
27	073	073	075	073	075	071	068	048	040	037	031	026	036	048	049	055	058	072	070	076	083	081	079	078	061	27
28	079	083	073	074	072	066	058	050	037	020	014	022	023	030	049	063	062	071	074	079	085	080	080	075	059	28
29 D	086	075	074	072	068	078	050	056	029	083	082	094	089	008	041	049	069	1013	076	035	008	091	012	003	040	29D
30	022	037	023	018	028	026	022	015	006	093	087	089	089	007	014	025	034	036	043	048	053	053	054	052	024	30
31	050	052	053	053	053	052	056	055	047	033	028	032	038	032	036	038	051	063	057	063	069	071	063	064	050	31
Mean	069	069	065	066	067	065	061	054	045	036	034	035	040	049	054	060	069	081	080	082	080	076	074	070	062	
Mean Q	071	070	069	067	067	066	061	055	048	040	038	040	046	056	065	071	076	078	078	079	078	081	076	074	065	
Mean D	063	066	053	057	064	059	051	051	039	028	031	028	027	041	046	054	070	1000	092	084	069	055	055	045	055	
Sum	0045	0033	0930	0961	0985	0929	0783	0569	0284	0006	0946	0895	0149	0407	0567	0770	0039	0396	0394	0455	0378	0252	0185	0069		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 1800Y+ .....

SEPTEMBER 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	968	965	968	962	960	958	959	957	950	937	924	919	927	936	942	945	958	968	975	979	972	963	968	970	955	1
2 Q	963	964	956	958	962	962	960	952	940	925	914	912	922	933	938	948	953	961	963	968	968	971	965	968	951	2 Q
3	969	985	966	958	963	958	962	963	962	952	944	946	938	937	945	946	953	962	964	968	966	969	971	972	959	3
4	973	972	971	973	972	968	965	953	943	937	945	955	963	970	973	963	961	959	976	974	978	975	975	978	966	4
5	975	983	991	986	976	969	961	955	940	929	928	937	937	941	937	937	958	957	956	966	964	974	972	973	958	5
6	975	981	975	948	962	987	986	962	958	943	937	929	935	942	952	952	957	955	967	968	970	969	971	967	960	6
7 Q	967	972	972	973	952	952	949	943	937	937	939	949	959	961	965	966	969	968	963	966	972	973	974	975	961	7 Q
8 Q	971	971	973	969	968	972	965	954	940	941	946	948	944	953	960	960	964	967	967	974	980	977	974	974	963	8 Q
9 Q	973	974	972	970	967	967	962	957	945	931	930	935	941	948	955	956	962	968	970	972	967	967	972	972	960	9 Q
10	971	971	971	964	968	974	972	967	957	944	936	932	935	936	941	941	942	957	957	955	961	959	958	956	955	10
11	957	966	966	967	970	972	975	956	948	930	909	914	917	925	933	943	941	958	952	958	972	972	973	972	952	11
12	969	958	958	964	968	966	958	950	943	936	936	938	939	941	945	952	961	978	973	978	978	983	980	978	960	12
13	971	973	981	979	971	972	968	963	956	943	933	933	945	955	950	955	967	974	975	980	982	977	979	973	965	13
14	977	977	976	973	973	968	968	967	953	938	930	928	938	956	962	965	974	987	980	992	970	953	951	962	963	14
15	972	965	963	965	964	963	963	960	955	942	938	937	949	963	967	973	974	975	979	983	985	983	982	982	966	15
16	987	984	969	967	969	969	965	957	951	941	937	932	938	940	947	951	964	963	968	975	976	979	987	989	963	16
17	969	967	969	973	973	973	968	969	968	956	955	952	954	959	970	982	979	988	991	992	998	999	998	1003	975	17
18 D	974	928	913	934	949	957	955	892	884	868	847	838	844	859	862	895	850	890	911	926	936	939	946	945	906	18 D
19 Q	943	941	942	942	940	941	938	940	936	922	912	909	913	919	919	923	928	934	946	955	963	958	954	952	936	19 Q
20 D	958	943	955	952	952	952	952	952	953	940	928	922	928	908	912	918	924	924	942	952	953	953	953	956	941	20 D
21 D	957	976	968	970	960	931	942	948	938	931	925	917	920	925	928	933	942	951	963	954	958	963	965	963	947	21 D
22	970	962	960	962	960	960	961	958	949	934	924	925	934	941	945	958	968	971	968	968	971	973	973	973	957	22
23	973	972	973	972	973	973	967	960	952	938	928	922	923	928	922	933	937	951	962	968	971	973	973	973	957	23
24	976	975	975	978	985	976	978	972	958	943	934	920	920	931	944	944	952	954	959	965	966	966	936	939	956	24
25 D	943	943	956	959	952	959	953	953	946	928	918	909	911	915	926	942	948	938	938	949	955	963	966	962	943	25 D
26 D	968	978	966	954	957	958	964	957	953	948	934	928	927	928	927	939	939	959	955	953	966	963	964	963	952	26 D
27	965	965	964	968	954	955	953	948	938	928	927	927	934	934	941	943	949	956	953	958	962	960	970	958	950	27
28	960	967	968	968	969	975	980	963	953	943	937	928	925	927	933	942	942	945	953	958	959	958	939	953	952	28
29	964	953	945	953	961	965	955	958	949	945	935	928	930	915	936	955	952	947	957	964	968	968	975	968	953	29
30	978	973	979	978	979	959	968	955	948	941	935	926	925	931	934	943	949	959	957	964	963	968	966	964	956	30
31																									956	31
Mean	968	967	965	965	964	964	962	955	947	936	929	927	931	935	940	947	951	957	961	966	968	968	968	969	955	
Mean Q	963	964	963	962	958	959	955	949	940	931	928	931	935	943	947	951	953	960	962	967	970	969	968	968	954	
Mean D	960	954	952	954	954	951	953	940	935	923	910	903	906	907	911	925	921	932	942	947	953	956	959	958	938	
Sum	9036	9004	8961	8939	8929	8911	8872	8641	8403	8071	7865	7795	7915	8057	8211	8403	8517	8724	8840	8982	9049	9050	9033	9055		

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

OCTOBER, 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	968	973	955	958	959	963	965	963	957	950	937	929	931	933	940	935	943	955	963	965	968	969	970	960	955	1
2	969	971	969	968	968	968	969	968	965	955	944	939	938	935	947	950	954	966	956	947	963	969	971	973	959	2
3	968	963	968	975	966	968	964	964	959	953	945	941	946	957	963	968	963	952	958	971	977	973	976	971	963	3
4	985	974	972	972	971	975	976	973	957	949	947	941	940	943	948	955	960	963	970	973	974	973	974	975	964	4
5	976	975	975	976	976	977	978	977	970	956	943	933	933	947	958	961	958	958	962	968	979	969	964	969	964	5
6	958	961	964	963	973	978	955	950	953	947	936	938	925	914	935	938	936	935	948	959	956	961	957	962	950	6
7	949	943	948	948	945	961	967	963	962	951	929	921	922	937	923	919	933	948	951	971	949	935	938	938	944	7
8	924	923	939	940	947	952	962	961	930	895	882	886	900	901	910	918	928	917	936	939	947	925	918	931	925	8
9	950	937	942	947	953	960	953	948	938	938	909	904	909	922	928	928	927	933	946	950	953	948	950	957	939	9
10	959	960	962	963	954	962	964	953	948	930	919	917	923	933	940	952	952	949	953	943	955	962	963	964	949	10
11	964	965	968	969	972	973	972	965	951	933	925	923	921	938	938	938	934	943	956	963	960	962	963	968	953	11
12	965	965	963	966	967	968	973	968	958	945	940	928	929	938	948	947	940	947	949	957	957	963	960	977	955	12
13	963	964	962	961	965	970	971	968	957	943	935	922	918	926	933	945	949	964	978	968	965	975	975	963	956	13
14	969	963	968	967	965	965	966	968	963	953	939	932	936	943	956	966	968	972	977	975	976	976	976	973	963	14
15	973	973	972	972	972	973	973	970	962	949	939	928	928	925	938	950	943	946	965	965	959	955	965	970	957	15
16	972	973	968	966	968	966	957	957	952	940	934	928	932	933	938	946	954	959	969	967	970	975	974	976	957	16
17	969	969	970	969	969	973	973	970	964	951	939	935	934	940	950	953	959	961	967	973	977	982	974	970	962	17
18	971	970	969	969	974	974	971	967	960	946	936	935	939	943	949	954	959	964	969	975	979	983	978	972	963	18
19	969	970	970	970	972	971	970	969	961	951	937	926	929	937	949	959	968	974	979	984	988	989	985	979	965	19
20	973	970	973	976	979	982	985	980	969	956	939	929	929	932	939	949	964	972	975	975	976	975	979	979	965	20
21	981	984	984	994	983	980	980	981	972	956	945	937	940	939	946	948	949	954	959	957	954	962	935	944	961	21
22	947	969	963	959	961	962	976	958	956	946	934	919	919	919	925	937	950	950	959	956	951	957	964	963	950	22
23	965	964	969	974	967	969	974	975	968	952	941	931	931	925	930	934	939	951	959	963	958	950	952	954	954	23
24	956	959	962	961	967	968	974	963	954	938	921	908	914	921	922	930	933	938	952	956	963	969	969	970	949	24
25	969	971	972	971	972	971	965	952	957	937	918	908	905	904	913	927	933	945	957	950	934	944	953	959	945	25
26	961	962	962	962	967	964	964	964	959	948	932	925	916	922	931	941	949	952	964	967	968	972	974	974	954	26
27	972	971	970	972	971	972	976	972	959	948	939	930	929	935	941	944	951	960	969	970	964	970	977	979	960	27
28	976	975	979	979	979	981	984	979	977	966	953	938	930	924	921	930	940	949	954	957	959	950	944	942	957	28
29	946	950	959	968	959	959	959	959	960	959	954	955	954	946	942	944	947	954	944	943	949	951	958	964	953	29
30	959	959	953	956	959	964	967	968	964	954	949	943	934	934	939	945	953	960	968	970	971	973	973	973	958	30
31	973	970	971	973	974	975	976	975	968	953	941	927	929	938	944	948	950	952	954	959	969	973	970	964	959	31
Mean	964	964	965	967	967	969	970	966	959	947	935	928	928	932	938	944	948	953	960	962	963	964	964	965	955	
Mean Q	968	968	966	967	969	971	971	969	962	950	940	934	933	938	946	951	958	964	970	974	976	979	977	975	962	
Mean D	948	945	951	952	954	963	960	955	949	932	915	913	916	921	927	931	935	936	947	952	952	946	945	950	941	
Sum	9899	9896	9921	9964	9974	0044	0059	9948	9730	9348	8981	8756	8763	8884	9084	9259	9386	9543	9766	9836	9868	9890	9879	9922		



TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 180000Y+ .....

NOVEMBER 1979.

HOUR DATE	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	DATE	
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24			
1 D	960	961	968	975	970	972	978	976	970	959	951	944	934	943	946	953	946	944	950	964	971	964	971	959	960	1 D	
2	969	965	954	964	966	964	969	963	959	949	934	931	930	926	937	940	941	945	948	956	964	964	967	966	953	2 D	
3	964	964	963	965	966	966	966	966	957	943	931	924	922	933	949	954	943	941	949	954	950	949	960	962	952	3 Q	
4	964	969	964	965	964	965	976	971	963	949	939	925	922	929	936	944	949	953	959	960	969	972	975	974	957	4 Q	
5 Q	976	975	974	973	974	974	974	974	970	956	942	935	930	934	946	954	960	966	972	972	974	975	976	975	964	5 Q	
6 Q	974	974	973	972	974	977	974	970	964	957	947	935	939	951	956	960	964	970	974	977	979	980	980	979	967	6 Q	
7 Q	978	977	977	977	977	981	980	980	974	954	936	929	934	944	949	954	964	956	942	934	946	947	954	956	958	7 Q	
8 D	954	959	964	961	963	962	964	964	934	918	909	910	907	917	919	924	942	958	968	970	969	969	970	971	948	8 D	
9 D	969	971	966	967	966	966	964	960	950	936	920	919	930	938	926	936	948	925	949	958	943	952	956	959	949	9 D	
10	959	955	952	955	959	959	958	954	949	930	919	914	914	923	935	946	951	959	968	968	969	957	949	959	949	10 D	
11	966	967	965	967	973	974	974	971	968	960	951	949	950	960	973	970	972	976	978	980	979	983	979	976	969	11 D	
12	974	971	973	971	975	979	984	981	976	965	954	948	945	950	952	953	951	956	966	974	977	979	979	979	967	12 D	
13 D	972	975	974	971	960	969	953	950	944	926	914	912	900	896	900	904	900	908	900	915	911	920	919	923	930	13 D	
14 Q	922	907	926	929	930	934	928	930	924	912	901	894	900	909	919	928	937	946	954	957	960	960	959	957	930	14 Q	
15	957	958	959	961	964	964	964	962	958	946	934	928	929	933	941	949	955	961	966	969	969	972	969	969	956	15 Q	
16	971	974	977	972	978	984	986	973	970	950	940	936	934	937	944	944	953	950	949	949	956	964	964	956	959	16 Q	
17	953	964	959	964	967	972	971	966	962	949	939	934	928	934	944	951	959	965	968	967	963	971	973	974	958	17 Q	
18	974	974	979	978	979	979	979	978	970	955	946	938	937	945	954	958	963	969	971	974	975	974	975	976	967	18 Q	
19	975	974	975	978	981	980	976	974	969	963	956	949	951	954	954	959	960	973	974	975	969	963	964	961	967	19 Q	
20	969	970	971	973	976	985	984	989	985	970	962	954	959	960	952	944	942	954	969	975	974	970	968	969	968	20 Q	
21	966	970	980	973	973	974	974	968	970	964	957	955	951	950	953	960	961	964	970	970	972	972	972	973	966	21 Q	
22 Q	974	974	975	976	978	979	979	977	972	965	954	948	947	950	954	959	965	970	971	972	973	974	975	975	968	22 Q	
23	975	977	980	980	980	980	981	980	976	966	955	950	946	948	951	956	962	965	971	972	965	966	965	962	967	23 Q	
24 D	964	968	975	970	971	971	975	975	961	960	949	925	911	915	925	929	941	933	916	947	946	937	930	945	947	24 D	
25	939	937	935	942	935	931	936	937	935	926	925	931	934	933	941	950	955	962	967	970	971	970	967	964	946	25 D	
26	963	961	962	963	964	965	966	965	963	957	954	955	954	958	969	966	965	970	973	961	952	962	967	968	963	26 D	
27	973	972	973	974	977	982	979	978	973	961	952	947	949	950	951	953	959	965	969	968	970	971	971	974	966	27 D	
28	974	975	975	976	977	979	979	975	973	967	960	955	956	957	960	961	965	972	977	980	981	979	980	979	971	28 D	
29 Q	977	977	980	980	981	982	983	982	977	970	965	963	964	963	963	967	976	985	985	975	975	978	974	975	975	975	29 Q
30	976	976	978	981	985	988	993	990	995	995	982	968	970	965	976	978	978	980	985	985	985	980	974	972	977	980	30 Q
31																										31 Q	
Mean	966	966	968	968	969	971	972	969	964	953	943	937	936	940	946	950	954	958	962	965	965	966	966	966	959		
Mean Q	964	961	965	965	967	969	967	965	961	951	941	933	934	940	947	952	958	965	970	972	973	974	974	973	960		
Mean D	964	967	969	969	966	968	967	965	952	940	929	922	916	922	923	929	935	934	937	951	948	948	949	951	947		
Sum	8981	8991	9026	9053	9083	9137	9147	9079	8911	8590	8285	8107	8081	8206	8372	8497	8626	8738	8852	8948	8950	8968	8980	8992			

TABLE 5 HORIZONTAL COMPONENT

MEAN HOURLY VALUES, 18000Y+ .....

DECEMBER 1979.

HOUR DATE	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	DATE	
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23				
1	976	976	975	979	981	982	980	980	970	959	953	948	944	943	944	944	946	944	956	967	963	963	969	971	963	1	
2	971	976	973	972	978	984	984	980	979	960	946	944	944	940	949	956	961	963	965	968	968	971	969	969	965	2	
3	970	962	963	964	972	979	984	981	971	957	952	944	943	941	944	952	960	964	968	969	974	974	974	974	964	3	
4 D	977	977	980	983	986	979	967	960	955	942	939	934	924	924	933	932	933	943	932	937	936	934	938	944	950	4 D	
5	947	947	946	949	950	954	959	962	957	950	944	935	939	942	937	948	952	955	961	961	960	962	965	963	952	5	
6	961	955	961	969	971	973	975	971	969	960	955	950	950	953	956	961	964	965	970	976	981	982	980	979	979	977	6
7 Q	973	969	968	970	971	973	974	972	969	959	952	953	956	961	964	965	970	976	981	982	980	979	979	977	970	7 Q	
8	976	975	971	972	980	986	985	983	981	975	971	968	964	964	963	959	969	968	975	974	959	968	964	960	971	8	
9	964	964	968	968	969	971	974	969	963	954	949	945	948	950	959	964	969	974	976	979	979	977	978	974	966	9	
10	974	975	974	974	976	974	977	974	973	968	964	959	958	962	959	954	961	963	968	974	978	979	979	979	970	10	
11	975	978	974	978	978	974	975	976	973	961	950	943	943	949	959	964	970	974	975	976	981	983	983	974	969	11	
12 Q	975	976	975	975	975	974	978	979	976	964	960	958	960	963	962	964	968	971	974	975	973	979	978	978	971	12 Q	
13 Q	979	979	979	979	979	981	982	978	976	971	963	954	954	957	963	970	974	970	980	981	977	975	973	973	973	13 Q	
14	972	972	973	977	984	986	985	985	980	971	960	948	949	960	969	971	975	980	975	973	975	978	979	980	973	14	
15	981	984	984	980	980	985	983	979	973	961	956	955	948	945	951	956	963	953	950	944	953	964	965	963	965	15	
16	962	958	963	968	971	981	981	971	966	959	952	945	939	945	948	953	962	967	968	969	970	974	968	962	963	16	
17	956	964	968	968	973	976	975	971	972	968	956	945	942	946	948	949	959	957	955	963	967	960	953	959	960	17	
18	967	978	969	968	969	973	975	975	974	968	950	947	942	942	953	960	963	966	973	974	968	963	968	970	965	18	
19	973	977	971	973	975	975	978	980	975	969	955	949	954	958	967	966	968	968	969	975	975	975	968	973	969	19	
20	975	975	975	975	978	978	979	983	979	973	963	958	953	955	957	958	960	965	965	957	955	958	963	965	967	20	
21	969	969	971	971	973	974	975	973	969	964	958	949	946	950	956	962	964	963	963	963	963	961	953	953	958	21	
22 D	971	967	976	979	982	993	998	990	986	982	962	963	974	962	959	959	965	949	942	957	970	969	970	968	971	22 D	
23 Q	970	972	973	975	977	977	977	976	974	969	964	961	959	963	970	973	976	979	983	984	983	980	978	979	974	23 Q	
24	968	967	968	975	979	985	987	986	982	978	970	957	959	960	966	968	958	973	979	978	975	965	966	970	972	24	
25 Q	974	975	976	978	980	981	983	984	983	977	972	967	964	972	981	988	990	993	988	987	989	990	987	983	981	25 Q	
26	982	978	978	982	983	988	992	994	991	980	973	967	963	971	978	982	989	974	963	955	948	951	956	962	974	26	
27	972	971	969	974	975	982	984	978	974	978	974	963	954	954	953	955	943	963	968	964	973	975	973	972	968	27	
28 D	973	973	974	972	978	980	977	976	974	972	968	945	933	951	963	959	950	966	972	972	969	962	963	959	966	28 D	
29 D	954	953	958	956	954	977	988	973	961	953	950	950	939	928	933	923	933	937	927	928	920	914	907	944	944	29 D	
30 D	923	935	953	953	953	960	963	958	953	955	948	938	941	939	948	945	944	957	963	969	967	973	970	968	953	30 D	
31	967	967	968	973	978	981	979	978	977	973	968	960	956	954	960	965	969	968	963	961	960	950	943	949	965	31	
Mean	969	969	970	972	974	978	979	977	973	965	958	952	950	952	956	959	962	965	966	967	967	967	966	966	966		
Mean Q	974	974	974	975	976	977	979	978	976	968	962	959	959	963	968	972	976	980	981	982	980	981	979	978	974		
Mean D	960	961	968	969	971	978	979	971	966	961	953	946	944	943	946	946	943	950	949	952	954	952	951	949	957		
Sum	0027	0044	0074	0129	0208	0316	0353	0275	0155	9930	9697	9502	9453	9515	9647	9733	9814	9913	9957	0989	0988	9973	9956	9954			

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y +.....

JANUARY 1979.

DATE \ HOUR	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE	
1	468	471	473	478	472	476	476	475	472	473	468	461	459	458	469	470	482	483	482	450	476	472	450	483	473	1	
2	465	467	469	473	473	473	472	472	470	472	464	456	453	455	463	473	481	501	505	479	502	495	495	501	476	2	
3	490	485	483	484	482	475	476	475	473	471	467	466	452	452	458	471	470	474	486	484	493	504	506	497	478	3	
4 D	487	478	470	465	462	448	448	455	452	457	457	460	461	477	490	497	512	517	533	505	512	516	497	487	481	4 D	
5	451	454	454	438	450	454	468	479	483	486	477	476	471	470	472	476	486	502	487	499	497	495	496	494	476	5	
6	485	485	467	466	470	475	474	472	473	476	472	467	470	466	466	475	491	486	485	491	486	482	477	472	476	6	
7 D	467	466	466	466	466	466	465	462	463	467	469	467	458	457	461	477	531	499	406	561	524	514	521	510	483	7 D	
8	494	488	487	478	478	477	476	477	477	478	483	483	478	471	476	481	481	478	478	482	483	488	487	488	481	8	
9	488	482	478	468	468	466	465	465	468	469	473	475	469	461	468	474	478	478	478	477	478	479	479	478	473	9	
10 Q	477	478	474	471	470	468	467	468	469	472	471	468	459	456	465	474	476	475	473	473	476	475	474	473	471	10 Q	
11 Q	475	479	477	472	470	468	469	409	469	465	469	469	461	462	470	475	473	470	470	468	469	468	468	467	470	11 Q	
12	468	469	470	469	466	464	462	460	460	462	463	461	456	454	470	471	471	471	475	474	473	473	477	475	467	12	
13 Q	471	465	467	469	470	469	469	466	466	468	464	462	454	452	461	467	472	472	469	466	464	463	462	462	465	13 Q	
14 Q	461	462	462	461	462	462	462	455	452	450	453	452	452	452	461	469	468	471	468	465	463	462	458	458	460	14 Q	
15	457	458	459	456	459	459	458	457	455	462	460	454	446	447	453	466	480	480	476	490	500	476	465	465	464	15	
16	463	453	460	455	451	459	456	457	462	464	460	456	452	456	464	466	472	472	468	467	467	466	464	464	461	16	
17 Q	462	464	464	466	466	466	467	464	464	464	465	461	454	454	456	464	471	475	478	482	475	476	477	474	471	17 Q	
18	470	466	464	465	465	468	471	470	469	465	460	454	451	461	462	467	479	475	476	482	481	474	471	472	468	18	
19	468	474	457	449	434	443	456	462	467	471	463	461	461	460	466	474	476	481	481	481	482	484	481	476	467	19	
20	471	463	464	466	467	468	472	469	467	466	465	458	461	464	467	471	471	480	481	481	478	474	472	471	469	20	
21	471	465	461	463	461	461	464	465	466	467	462	455	454	453	464	471	474	480	478	474	474	474	471	466	466	21	
22	465	464	463	463	463	463	464	464	464	464	461	458	454	453	452	453	462	466	468	467	480	493	504	501	474	467	22
23 D	450	456	463	462	462	464	464	464	466	464	459	463	465	464	480	495	502	514	527	527	511	531	531	514	484	23 D	
24	503	487	494	463	459	464	469	474	479	479	474	474	465	458	464	475	480	477	479	478	483	486	484	474	476	24	
25 D	474	476	490	463	443	438	449	460	460	463	460	464	463	460	464	499	495	497	509	486	498	488	492	494	474	25 D	
26 D	492	472	475	471	475	466	463	455	463	465	466	464	462	457	467	479	514	489	494	496	488	493	488	493	477	26 D	
27	470	477	478	476	470	465	459	458	461	465	465	465	469	474	475	483	492	495	499	485	479	499	477	480	476	27	
28	487	485	485	487	476	470	467	465	465	470	469	469	475	472	476	486	488	479	475	487	482	480	477	476	477	28	
29	483	481	479	475	475	472	467	466	464	456	453	455	459	463	473	476	481	484	478	476	480	474	474	478	472	29	
30	478	474	472	476	471	470	469	466	464	453	452	450	449	460	465	472	476	474	473	477	479	492	492	477	470	30	
31	470	469	468	467	467	469	470	467	465	457	446	445	440	441	451	461	470	475	475	474	476	476	479	478	465	31	
Mean	474	471	471	467	465	465	466	466	466	466	464	462	459	459	466	475	483	483	484	485	485	485	483	480	472		
Mean Q	469	470	469	468	468	467	467	464	464	464	464	461	456	456	464	471	473	473	472	469	470	469	467	466	467		
Mean D	475	470	473	465	462	456	458	459	461	463	462	464	462	463	472	489	511	503	512	515	507	508	506	500	480		
Sum	4687	4613	4593	4481	4423	4406	4434	4433	4448	4459	4383	4318	4232	4241	4458	4730	4963	4975	5003	5020	5023	5034	4970	4868			

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+.....

FEBRUARY 1979

HOUR DATE	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	DATE	
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24			
1	475	470	474	476	470	471	471	468	461	459	454	446	442	440	449	461	468	472	472	472	472	471	468	466	465	1	
2	469	476	474	468	473	470	468	466	465	466	466	463	462	465	465	469	477	481	478	479	482	486	484	483	472	2	
3	477	476	478	478	476	476	476	476	478	482	475	466	466	466	473	476	476	476	474	476	483	495	495	496	478	3	
4	484	485	482	474	471	466	466	465	466	467	466	464	457	453	469	474	507	508	496	498	495	498	494	485	479	4	
5	469	458	452	460	466	466	462	463	466	466	469	468	466	466	469	469	474	473	473	473	474	474	473	473	468	5	
6	469	468	470	469	460	455	449	453	456	461	463	457	456	460	464	465	468	469	473	473	478	497	492	468	466	6	
7	467	467	468	466	465	464	464	465	467	470	466	462	464	460	462	466	469	466	468	469	470	477	482	476	468	7	
8	474	476	476	468	469	467	464	464	466	469	463	456	452	449	454	467	475	471	475	476	476	474	475	482	468	8	
9	484	476	475	470	468	468	464	464	465	467	465	461	459	453	457	468	475	467	467	466	467	473	472	476	468	9	
10 Q	476	475	472	470	469	466	464	462	461	461	455	448	450	456	466	473	470	467	467	466	466	466	466	469	465	10 Q	
11	474	473	482	471	466	459	458	458	464	466	460	454	452	456	466	475	474	470	467	465	466	476	483	484	467	11	
12	466	454	450	447	447	447	454	450	464	466	460	456	455	466	471	476	476	472	467	467	466	466	466	466	461	12	
13 Q	466	466	467	467	467	469	469	467	470	470	462	452	450	450	455	463	467	472	469	466	466	466	464	463	464	13 Q	
14 Q	464	464	466	466	466	466	466	464	465	463	454	446	445	450	456	464	468	472	469	466	466	470	466	465	463	14 Q	
15	464	466	466	466	470	469	466	466	471	467	467	461	450	457	463	482	497	495	489	482	478	477	475	474	472	15	
16	473	473	473	474	474	477	475	476	477	476	466	461	455	456	462	472	476	482	479	476	476	475	474	472	472	16	
17 Q	471	469	470	471	471	474	474	473	473	467	459	448	445	448	453	458	466	467	468	468	470	471	467	464	465	17 Q	
18	461	460	460	455	456	455	455	456	455	453	450	448	443	448	457	466	473	476	474	469	488	475	474	470	462	18	
19	458	456	448	447	450	459	462	460	463	463	455	446	435	445	457	457	464	468	477	477	471	466	465	465	459	19	
20 Q	464	463	458	457	458	460	460	464	468	467	457	448	445	446	446	451	461	467	467	471	476	474	476	472	462	20 Q	
21 D	461	457	457	447	454	417	432	408	423	459	447	447	445	449	451	453	466	482	485	553	549	547	499	489	466	21 D	
22 D	480	459	460	467	470	472	473	473	465	471	470	467	449	459	475	477	482	480	477	475	486	483	477	471	472	22 D	
23 D	473	471	470	469	466	466	463	460	467	471	464	460	460	461	464	466	470	469	467	469	475	495	504	489	470	23 D	
24	479	484	475	469	469	467	459	462	461	462	457	446	446	448	455	469	491	480	482	479	469	476	474	477	468	24	
25	470	478	476	471	468	458	452	451	456	462	460	456	452	457	458	465	470	475	470	467	475	468	478	477	465	25	
26 D	485	474	471	470	462	458	448	444	448	453	451	446	441	448	458	471	490	511	490	495	510	489	490	497	471	26 D	
27 D	467	464	456	462	448	449	460	454	455	457	457	455	448	453	466	472	490	492	480	475	471	470	473	473	464	27 D	
28	476	468	468	468	470	473	471	468	460	451	441	442	437	457	454	475	496	512	516	507	519	515	492	486	476	28	
29																										29	
30																										30	
31																										31	
Mean	471	469	468	466	465	463	462	461	463	465	460	455	451	454	461	468	476	478	476	478	480	481	479	476	468		
Mean Q	468	467	467	466	466	467	467	466	467	466	457	448	447	450	455	462	466	469	468	467	469	469	468	467	464	464	
Mean D	473	465	463	463	460	452	455	448	452	462	458	455	449	454	463	468	480	487	480	493	498	497	489	484	469		
Sum	3199	3126	3094	3043	3019	2964	2945	2900	2956	3012	2879	2730	2627	2722	2895	3100	3336	3392	3336	3375	3440	3470	3398	3326	469		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+.....

MARCH 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1	471	479	478	477	476	472	476	471	469	462	456	445	445	451	461	473	488	497	494	495	489	478	476	471	473	1
2	478	469	461	467	461	459	457	468	467	459	449	438	430	439	450	463	475	478	479	475	484	476	483	479	464	2
3	475	464	458	463	468	470	470	465	462	459	454	443	430	439	449	460	477	504	498	489	498	509	494	483	470	3
4	479	465	463	468	469	474	469	468	469	452	444	451	453	457	469	468	474	478	500	497	489	479	499	487	472	4
5	473	474	473	470	465	469	464	468	466	469	466	465	459	459	460	465	469	473	474	479	474	475	475	474	469	5
6 D	470	475	469	458	459	469	465	464	467	464	460	453	458	468	478	502	510	528	512	507	498	508	479	479	479	6 D
7 Q	483	480	473	475	474	469	472	469	471	469	465	459	458	460	465	469	473	477	480	476	478	489	489	484	473	7 Q
8	484	480	477	476	474	469	469	468	473	469	466	457	457	458	459	461	470	477	477	476	472	470	474	470	470	8
9	469	459	454	463	463	464	464	465	468	457	445	437	439	441	448	451	459	467	469	470	473	483	479	470	461	9
10 D	478	439	453	466	454	449	451	445	447	449	441	429	442	452	458	461	468	474	504	499	535	482	477	492	464	10 D
11	469	468	455	471	479	477	471	477	475	466	459	451	455	468	469	473	481	489	481	471	469	469	469	470	470	11
12 Q	471	474	474	473	472	470	469	469	469	458	448	439	441	447	455	462	472	472	470	471	470	466	467	468	464	12 Q
13	468	470	470	467	461	462	463	468	468	464	449	438	432	442	448	461	468	469	468	467	466	465	466	467	461	13
14 Q	468	468	469	471	471	470	468	468	468	459	449	439	436	439	447	458	465	467	465	465	465	465	464	464	461	14 Q
15	465	466	467	466	466	467	466	467	460	445	433	420	414	418	428	445	467	470	468	467	467	470	460	463	455	15
16	464	458	465	464	464	468	464	464	466	454	445	435	425	434	449	464	477	478	476	474	473	469	468	473	463	16
17	465	464	460	460	464	460	457	455	447	465	463	450	446	446	459	468	476	479	476	474	473	469	468	473	463	17
18	470	465	467	470	472	472	473	477	480	472	462	450	443	447	461	470	477	480	475	472	471	469	467	465	468	18
19	465	466	466	467	468	469	465	469	469	460	448	435	425	433	437	455	479	484	484	475	471	469	467	465	468	19
20 Q	464	465	464	464	465	464	464	467	469	462	453	434	426	429	435	449	464	471	470	468	468	470	461	460	459	20 Q
21 Q	460	460	460	462	463	464	463	468	471	464	456	439	430	429	439	449	459	468	474	472	467	465	465	463	459	21 Q
22 D	462	459	458	458	458	458	459	463	467	450	432	428	425	417	450	507	516	504	505	497	487	483	480	470	466	22 D
23	469	461	453	448	453	454	450	457	466	474	472	462	453	456	458	467	473	476	474	473	477	477	477	482	465	23
24	476	476	476	468	467	461	457	453	447	463	456	443	437	438	447	452	461	467	468	467	472	467	467	472	461	24
25	465	462	462	457	456	446	444	452	451	452	437	427	420	427	440	461	477	496	506	502	494	487	476	475	461	25
26	477	463	465	453	454	451	458	472	467	457	450	438	434	447	457	481	483	513	538	515	498	497	468	467	471	26
27	467	470	473	475	468	466	467	464	457	447	444	429	427	431	446	466	487	511	512	505	496	486	484	472	469	27
28	467	459	455	454	461	467	469	472	467	450	433	440	444	439	456	462	481	512	501	485	478	490	504	475	468	28
29 D	431	449	424	446	448	452	437	417	446	443	441	439	437	463	477	501	545	561	557	541	525	513	474	482	473	29 D
30	471	459	476	475	461	462	463	475	482	475	465	456	448	453	468	478	490	497	496	484	476	473	471	471	472	30
31	465	466	468	465	466	468	476	479	478	469	457	446	429	425	438	465	478	497	507	498	497	493	495	466	470	31
Mean	469	466	464	465	465	464	463	465	465	460	452	442	439	444	454	467	479	488	489	484	482	479	475	472	466	
Mean Q	469	469	468	469	469	467	467	468	470	462	454	442	438	441	448	457	467	471	472	470	470	471	469	468	463	
Mean D	463	456	452	456	456	459	456	452	459	451	441	438	441	448	464	487	504	516	516	506	505	495	483	480	470	
Sum	4548	4432	4386	4415	4400	4392	4360	4404	4429	4258	3998	3715	3598	3752	4061	4467	4839	5114	5158	5003	4946	4857	4740	4643		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+.....

APRIL 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1	448	454	451	435	450	462	466	471	464	447	434	423	429	454	462	471	499	507	499	487	481	479	442	466	462	1
2	449	435	450	445	455	458	459	465	475	468	459	447	435	440	457	485	521	526	517	505	490	480	493	489	471	2
3	482	474	469	465	467	469	469	465	465	457	449	440	430	429	435	445	484	537	567	558	553	553	494	389	477	3
4 D	435	434	460	427	425	413	435	468	474	480	484	484	488	490	488	496	504	498	497	494	488	487	488	487	472	4
5 D	487	481	477	478	477	470	467	467	467	466	443	453	431	425	417	449	484	511	509	498	500	495	487	474	471	5 D
6	467	467	461	460	457	457	457	461	468	474	462	449	440	440	458	474	489	487	483	480	472	473	474	468	466	6
7	466	467	467	468	465	459	466	468	470	467	457	451	445	439	447	458	467	473	480	475	468	468	472	459	463	7
8	463	460	464	466	466	464	459	467	465	457	447	437	433	437	448	454	465	473	484	485	479	489	473	475	463	8
9	477	475	477	473	467	459	465	467	463	450	440	431	427	429	437	450	457	460	463	460	461	461	463	464	457	9
10	464	466	466	465	462	458	462	460	457	447	446	434	429	436	447	466	468	475	473	471	474	474	476	468	460	10
11 Q	468	468	468	468	467	464	463	464	461	454	438	431	430	432	447	462	468	468	468	463	458	458	461	463	458	11 Q
12	458	462	459	461	461	459	454	456	454	449	437	432	430	433	444	461	471	469	469	473	469	465	464	452	456	12
13	451	458	461	463	459	461	463	463	460	458	450	435	432	442	453	465	478	482	478	468	461	459	459	463	459	13
14	459	460	458	461	462	462	462	459	458	449	439	431	428	430	441	456	474	486	483	474	467	470	483	449	458	14
15	448	443	441	449	458	463	466	467	465	451	438	431	428	432	452	464	468	474	477	472	472	469	464	459	456	15
16	450	438	429	418	428	442	455	459	458	456	450	438	430	437	449	460	466	477	480	476	465	459	459	458	452	16
17 Q	457	452	457	460	463	467	462	461	461	455	449	440	434	431	439	450	460	467	468	471	469	458	462	457	456	17 Q
18 Q	452	453	457	458	458	458	458	459	457	448	443	434	426	425	435	448	456	460	462	468	467	466	465	460	453	18 Q
19 Q	456	452	453	455	456	458	458	457	458	451	440	429	424	423	432	448	465	475	469	467	464	462	459	458	453	19 Q
20 Q	455	455	456	458	459	461	460	459	457	452	447	436	426	420	428	440	449	458	459	460	461	461	460	458	451	20 Q
21 Q	458	457	457	456	457	458	457	449	445	442	430	415	406	412	433	458	469	480	487	508	498	503	488	469	458	21 Q
22 D	454	445	437	426	438	436	457	456	447	448	430	435	431	427	448	476	513	515	533	528	516	490	490	486	465	22 D
23 D	479	453	439	428	438	455	452	450	450	441	432	426	430	435	447	480	488	488	488	485	478	468	468	468	457	23 D
24	461	461	461	458	451	456	461	455	452	454	439	429	429	437	448	466	475	477	481	481	476	475	469	471	459	24
25 D	461	417	360	417	382	319	357	414	387	405	414	415	427	460	497	518	529	529	527	506	511	466	466	431	442	25 D
26 D	438	467	472	475	474	475	471	470	468	466	456	449	443	444	454	465	473	480	489	492	478	484	472	468	468	26 D
27	469	470	464	458	460	467	466	467	464	458	444	432	429	431	449	471	506	526	526	516	513	504	489	449	472	27
28	459	453	439	444	457	471	458	439	436	445	448	446	438	446	462	480	499	494	496	505	496	475	475	466	464	28
29 D	453	446	446	463	459	436	444	456	463	460	452	450	448	446	466	480	527	523	523	519	519	492	466	440	470	29 D
30 D	410	438	436	453	460	455	453	465	466	450	440	444	429	439	457	466	474	479	486	489	484	474	467	465	457	30 D
31																										31
Mean	458	455	453	454	455	453	456	459	458	454	445	438	433	437	449	465	482	488	491	488	483	477	472	461	461	
Mean Q	458	456	458	460	461	462	460	460	459	452	443	434	428	426	436	450	460	466	465	466	464	461	461	459	454	
Mean D	458	445	436	442	436	415	432	452	448	452	445	447	445	450	463	484	511	515	518	509	507	486	479	465	464	
Sum	3734	3661	3592	3611	3638	3592	3682	3784	3735	3605	3339	3127	2985	3101	3477	3962	4446	4654	4721	4634	4488	4317	4148	3835		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 41000Y+ .....

MAY 1979.

DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	460	445	446	459	450	456	466	466	471	456	446	436	426	426	439	457	464	477	495	500	500	486	471	470	461	1
2	453	445	436	435	450	471	476	468	467	464	453	437	435	437	455	470	486	496	497	496	494	476	473	472	464	2
3 Q	471	466	463	466	471	476	480	477	476	463	450	435	428	433	445	461	469	476	482	483	476	476	472	473	465	3Q
4	473	467	466	467	471	476	477	472	466	457	448	437	432	436	449	460	473	478	483	486	486	484	478	467	466	4
5	465	466	466	466	468	468	475	473	464	450	440	431	423	430	441	453	459	466	476	476	476	471	467	466	466	5
6 Q	466	466	466	466	467	470	472	470	462	454	441	434	427	434	444	456	464	466	468	467	465	464	464	465	459	6Q
7	464	464	465	465	466	469	470	464	456	445	436	431	431	443	455	464	469	480	494	484	473	466	466	465	462	7
8	465	466	466	466	467	471	466	456	451	449	437	428	427	436	445	457	464	466	467	468	466	462	463	462	457	8
9	464	462	463	465	466	471	466	458	450	443	424	422	424	431	446	457	466	476	481	476	476	464	459	457	457	9
10	459	464	466	466	467	472	469	462	456	447	441	434	429	438	449	457	459	465	465	464	461	459	459	457	457	10
11	457	457	462	463	464	467	465	447	447	437	429	424	420	428	443	458	478	485	478	475	465	467	466	459	456	11
12	459	459	459	467	468	467	466	462	456	444	436	425	434	440	454	460	467	471	470	467	464	457	457	457	457	12
13	457	457	459	467	467	474	470	458	449	442	436	428	421	426	435	452	465	466	467	470	467	460	456	457	454	13
14	458	457	460	463	461	465	462	458	454	438	419	410	415	428	443	459	468	471	471	466	462	458	455	450	452	14
15	450	452	454	458	458	455	458	461	456	447	436	431	428	432	446	457	465	470	470	470	469	464	457	456	454	15
16 Q	455	452	448	451	460	470	470	466	461	445	432	421	419	422	431	446	458	465	468	467	460	455	454	453	451	16Q
17 Q	454	449	449	453	458	466	468	466	457	438	428	418	418	424	428	436	451	460	465	467	465	460	458	456	450	17Q
18	455	455	456	458	460	466	466	466	457	448	436	429	417	417	427	438	448	456	468	480	481	472	471	474	474	18
19 D	467	446	447	447	450	437	447	451	446	436	428	426	425	434	440	458	474	483	492	493	498	471	466	461	455	19D
20	449	443	441	439	439	451	448	458	454	438	427	413	421	430	447	462	470	477	482	478	478	482	468	460	452	20
21	459	459	458	457	458	462	460	457	448	442	435	421	415	416	435	453	466	478	498	513	503	488	488	488	461	21
22 D	478	464	440	448	455	460	448	428	428	417	426	429	437	444	449	468	488	508	518	514	485	489	452	457	460	22D
23	458	448	445	449	459	467	469	468	458	441	435	430	429	436	448	458	467	474	474	475	479	484	469	467	458	23
24 D	458	457	447	446	456	460	448	457	458	455	447	438	428	435	455	463	474	488	488	486	478	470	475	443	459	24D
25 D	440	461	463	437	438	447	447	448	438	428	415	406	415	429	457	479	518	523	517	501	473	458	459	455	456	25D
26 D	445	427	439	440	446	464	465	467	461	444	429	420	420	430	449	469	508	497	496	486	470	467	459	453	456	26D
27	453	452	439	440	440	438	448	455	450	442	428	414	414	432	460	478	484	492	495	478	466	459	457	457	453	27
28	454	449	449	458	467	469	470	466	458	449	442	431	429	439	455	466	475	484	505	494	479	474	468	459	462	28
29	453	456	459	464	465	470	470	465	459	449	429	415	410	418	433	450	463	473	482	474	459	451	453	449	453	29
30	450	455	456	459	458	459	467	463	460	455	440	430	434	441	451	462	466	470	472	471	464	459	456	453	456	30
31 Q	452	452	455	459	461	469	468	460	455	443	432	421	422	430	440	451	463	471	472	477	470	462	458	456	454	31Q
Mean	458	455	454	456	459	464	464	461	455	445	435	426	424	432	445	459	471	478	483	481	474	468	464	461	457	
Mean Q	460	457	456	459	463	470	472	468	462	449	437	426	423	429	438	450	461	468	471	472	467	463	461	461	456	
Mean D	458	451	447	444	449	454	451	450	446	436	429	424	425	434	450	467	492	500	502	496	481	471	462	454	457	
Sum	4201	4118	4088	4144	4231	4383	4397	4284	4120	3794	3474	3193	3153	3365	3805	4225	4597	4820	4968	4903	4694	4510	4376	4276	457	

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

JUNE 1979

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1 Q	458	458	457	457	460	462	463	453	446	434	421	408	411	417	428	441	456	464	470	470	464	464	461	460	449	1 Q
2	459	458	458	459	456	460	466	461	455	441	427	414	401	401	413	436	454	464	466	461	459	455	453	459	447	2
3 Q	453	451	451	452	453	460	461	453	446	433	421	408	401	408	423	439	444	451	460	461	460	461	453	451	444	3 Q
4	451	451	451	452	456	462	462	456	443	437	424	414	410	421	436	451	460	462	464	464	462	459	455	454	448	4
5 Q	453	453	454	456	461	470	464	446	440	432	421	414	413	420	430	442	452	458	459	457	455	456	455	455	447	5 Q
6 D	455	455	454	454	454	459	462	461	454	442	423	407	413	425	428	443	455	462	466	469	456	470	469	446	449	6 D
7 D	459	460	448	453	451	441	456	463	467	457	453	442	442	453	463	478	493	504	509	488	473	467	467	448	464	7 D
8	455	455	447	460	466	467	466	462	452	438	434	426	423	430	443	455	464	469	477	473	460	462	461	462	455	8
9	460	455	459	461	459	466	464	459	444	434	424	422	424	435	456	475	480	484	483	478	475	466	454	451	457	9
10	454	452	452	450	452	460	463	456	444	439	434	434	435	447	463	473	478	478	484	475	464	461	455	455	457	10
11	459	458	454	459	461	465	464	457	445	433	420	417	426	440	452	465	473	474	474	469	465	459	454	451	454	11
12	454	453	454	458	459	465	474	471	465	451	441	430	428	436	445	457	464	470	473	476	472	465	460	458	457	12
13	455	457	457	461	464	466	470	464	461	452	441	429	420	426	444	464	474	483	483	479	473	467	467	454	459	13
14	453	455	451	454	462	469	471	467	465	459	450	436	424	421	435	445	460	473	476	471	467	462	454	454	456	14
15	453	454	454	454	459	468	469	462	459	449	439	432	428	433	438	444	454	466	474	482	482	473	463	457	456	15
16 D	459	445	452	448	448	447	450	444	449	451	444	432	424	426	442	456	465	472	478	485	478	478	470	465	455	16 D
17	463	458	458	452	453	465	466	465	461	459	454	440	435	437	442	470	487	484	492	479	473	468	466	457	462	17
18 Q	456	456	455	456	456	460	456	451	443	440	433	419	410	417	426	435	445	454	463	470	471	462	459	456	448	18 Q
19	456	452	451	451	454	454	456	455	448	440	434	425	427	435	443	447	456	465	469	466	461	459	457	457	451	19
20	458	460	455	454	455	461	462	458	451	448	438	429	423	424	433	442	447	456	458	464	475	466	457	454	451	20
21	453	454	456	455	455	454	455	453	445	442	434	426	425	437	439	442	453	467	477	488	488	483	467	462	455	21
22 D	463	444	449	456	463	466	467	449	433	433	427	419	421	433	445	455	483	517	537	515	487	480	473	465	462	22 D
23 D	466	465	459	457	457	451	435	424	427	427	429	427	424	433	445	456	467	476	479	468	463	476	464	456	451	23 D
24	453	447	449	453	447	451	455	454	449	443	436	431	432	442	447	457	462	467	475	473	465	456	455	462	453	24
25	453	453	457	463	463	466	464	466	457	443	436	432	425	424	432	446	456	465	466	473	475	464	455	455	454	25
26	457	460	463	465	467	467	465	463	459	449	430	417	419	425	438	455	460	476	479	494	497	475	468	458	459	26
27	450	456	458	465	462	464	458	457	448	439	434	426	422	438	456	469	476	480	478	476	466	460	458	458	456	27
28 Q	458	459	462	464	468	468	466	462	454	444	433	420	421	433	439	449	457	465	466	466	465	459	455	453	454	28 Q
29	454	452	455	456	459	464	467	463	457	449	438	427	424	429	439	449	463	476	483	491	474	466	462	465	457	29
30	463	456	456	458	465	467	472	466	456	445	436	427	415	418	434	446	454	458	466	469	468	466	456	452	453	30
31																										31
Mean	456	455	455	456	458	462	462	457	451	443	434	424	422	429	440	453	463	471	476	475	470	466	460	456	454	
Mean Q	456	455	456	457	460	464	462	453	446	437	426	414	411	419	429	441	451	458	464	465	463	460	457	455	448	
Mean D	460	454	452	454	455	453	454	448	446	442	435	425	425	434	445	458	473	486	494	485	471	474	469	456	456	
Sum	3693	3642	3636	3693	3745	3845	3869	3721	3523	3283	3009	2730	2646	2864	3197	3582	3892	4140	4284	4250	4099	3965	3803	3690		



TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+.....

JULY 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1	453	456	456	453	456	456	461	457	446	442	436	423	417	420	428	437	448	403	471	476	471	465	458	457	450	1
2 Q	457	457	448	452	456	461	464	459	456	448	440	432	426	420	426	435	447	462	467	467	463	458	456	455	451	2 Q
3	454	453	453	452	455	458	458	456	447	437	428	417	407	416	427	443	457	475	486	482	470	467	467	456	451	3
4	448	447	441	442	438	442	450	460	460	467	448	428	425	435	448	456	463	469	477	478	472	466	462	458	453	4
5	458	455	456	457	461	466	469	469	468	454	445	438	431	435	446	458	466	470	471	468	468	466	463	458	458	5
6 D	456	458	457	456	458	459	459	456	450	443	432	426	433	440	454	461	460	468	470	477	477	460	459	457	455	6 D
7 D	449	441	449	444	454	465	469	461	459	455	449	442	436	442	469	492	499	490	492	482	464	462	459	460	462	7 D
8	463	465	464	462	462	466	470	461	454	441	434	427	421	430	445	468	478	478	471	467	460	459	453	456	456	8
9	459	460	460	462	458	460	458	454	452	447	436	423	416	425	443	459	474	480	479	472	463	457	456	458	455	9
10 Q	459	461	461	460	465	469	463	459	451	445	436	428	426	431	451	461	469	470	469	470	466	461	457	455	456	10
11 Q	456	458	459	460	460	462	459	460	457	445	438	427	420	422	437	450	461	468	470	466	461	453	451	447	452	11 Q
12	448	450	453	458	461	467	469	469	463	449	436	421	415	414	419	429	449	465	480	486	469	458	457	452	452	12
13	456	448	441	432	439	449	448	450	450	449	431	423	419	423	443	460	469	486	497	491	477	467	461	459	453	13
14	456	452	456	454	461	461	461	455	449	441	431	421	422	431	439	444	449	458	463	471	479	469	457	461	452	14
15	442	439	431	425	439	457	459	448	448	439	431	424	423	426	439	458	474	477	474	473	478	467	457	451	449	15
16	450	439	439	444	449	454	459	458	451	448	435	421	417	420	424	439	448	453	460	461	467	470	453	451	446	16
17	443	445	441	441	431	441	447	448	442	442	436	433	426	423	431	435	443	450	454	454	453	455	462	454	443	17
18	447	438	442	448	448	452	453	448	443	435	427	422	422	425	432	440	447	453	462	463	462	468	450	445	445	18
19	432	449	450	444	441	453	457	451	447	444	442	440	440	444	452	457	455	458	460	460	458	459	459	457	450	19
20 D	457	458	457	457	450	450	451	450	443	439	430	424	421	420	431	442	452	462	479	475	470	466	466	455	450	20 D
21	447	455	450	453	451	452	448	443	442	436	430	431	431	434	446	458	463	463	460	463	466	464	463	461	450	21
22	460	460	458	457	458	461	463	458	453	449	440	430	422	428	438	448	459	465	462	461	459	456	457	457	452	22
23	458	459	458	458	458	455	457	451	444	434	427	419	418	421	428	440	448	459	462	461	461	460	452	452	448	23
24 Q	451	449	448	447	452	453	453	448	440	429	425	417	401	405	422	441	459	464	468	463	455	452	452	452	444	24 Q
25 Q	450	449	445	445	450	455	453	450	443	433	421	398	404	422	437	447	457	463	462	457	452	447	446	446	443	25 Q
26	448	450	451	452	454	461	459	457	452	449	435	420	412	413	423	442	461	472	472	478	477	490	471	453	452	26
27 D	437	425	431	433	453	469	470	464	455	444	428	417	415	423	436	450	459	461	470	472	470	464	468	467	449	27 D
28	463	440	433	443	461	468	470	468	461	441	426	413	410	418	431	445	453	463	463	459	453	447	448	449	447	28
29 D	451	452	449	452	453	460	458	453	445	433	418	409	405	424	441	458	474	478	483	473	468	458	458	445	450	29 D
30	433	445	448	452	460	467	468	458	450	442	429	416	413	424	444	455	468	473	474	472	461	462	456	453	451	30
31 Q	451	453	453	455	457	464	467	464	458	446	436	436	436	440	446	462	466	466	466	464	460	456	453	452	454	31 Q
Mean	451	451	450	450	453	458	460	456	451	443	433	424	420	426	438	451	460	467	471	470	465	462	458	454	451	
Mean Q	453	453	451	452	455	459	459	456	451	440	432	422	417	422	434	447	458	465	467	463	458	453	452	450	449	
Mean D	450	447	449	448	454	461	461	457	450	443	431	424	422	430	446	461	469	472	479	476	470	462	462	457	453	
Sum	3992	3966	3938	3950	4049	4213	4250	4143	3979	3746	3436	3146	3030	3194	3576	3970	4275	4462	4594	4562	4430	4309	4187	4089		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

AUGUST 1979.

HOUR DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23			
1	452	454	456	459	461	463	464	461	457	450	435	421	412	424	440	447	455	462	464	464	471	476	461	465	453	1
2	444	448	452	453	454	458	461	463	455	448	442	435	433	430	437	448	464	469	470	464	458	456	456	456	452	2
3	456	455	452	442	443	447	450	452	450	445	435	433	432	431	441	453	463	465	463	460	460	458	463	457	450	3
4	453	449	446	440	435	436	450	454	455	451	441	428	425	433	443	456	465	473	482	484	486	465	456	455	453	4
5	456	455	455	453	446	445	454	460	454	443	433	430	433	437	445	453	455	460	462	465	469	463	456	454	452	5
6	453	455	457	451	447	455	455	449	441	449	433	429	430	441	448	458	471	482	475	465	460	460	454	453	453	6
7	455	451	452	453	453	455	455	450	440	423	410	415	422	433	452	465	478	482	479	482	474	459	462	455	452	7
8	458	459	460	462	463	461	459	458	449	437	433	425	423	433	447	467	475	476	476	472	456	453	455	455	455	8
9 Q	453	455	459	462	463	465	463	461	452	440	428	417	416	423	443	463	477	487	483	469	460	453	451	452	454	9 Q
10 Q	453	454	455	458	463	463	466	466	455	443	432	415	413	429	446	462	473	482	478	462	454	453	456	450	455	10 Q
11	448	453	453	451	456	467	467	463	453	438	423	413	413	420	437	454	463	466	464	459	457	467	463	452	450	11
12	450	448	445	451	459	462	462	450	448	436	425	413	413	422	430	443	453	460	463	455	468	462	464	459	448	12
13 D	451	449	452	453	453	457	461	459	450	434	422	405	423	446	466	488	506	513	529	523	498	488	487	463	466	13 D
14	453	454	460	463	465	470	473	473	467	456	446	435	423	422	441	461	473	480	478	476	469	469	463	462	460	14
15 Q	462	463	462	462	463	465	464	463	460	453	444	432	425	428	437	453	464	466	465	465	465	461	461	459	456	15 Q
16 Q	459	455	456	459	460	463	460	454	450	443	433	430	432	437	448	462	464	463	460	453	453	456	459	462	453	16 Q
17	458	458	455	453	457	461	459	457	453	453	444	429	423	429	439	449	452	456	463	467	466	460	458	457	452	17
18	462	458	458	458	458	458	461	459	452	443	433	428	428	428	428	449	456	463	463	462	465	462	464	463	452	18
19 D	443	429	413	421	443	429	422	434	433	421	426	415	413	411	429	450	473	488	482	473	466	470	478	462	443	19 D
20 D	463	453	454	453	455	457	462	450	438	419	406	413	416	431	443	452	462	483	553	520	492	480	481	472	459	20 D
21 D	461	457	446	431	433	450	443	435	438	437	429	413	412	423	439	453	466	475	480	473	463	457	452	457	447	21 D
22	448	448	450	453	455	460	463	461	453	443	434	421	413	416	441	462	474	481	481	469	462	460	455	455	452	22
23 Q	456	458	460	462	463	466	468	464	453	440	422	403	397	411	435	454	469	472	466	457	456	453	454	456	450	23 Q
24	456	460	461	462	464	466	466	463	453	441	425	410	401	409	426	448	463	484	491	473	464	464	466	464	453	24
25	460	460	463	463	464	470	472	471	453	438	421	406	413	423	433	450	471	471	480	475	475	473	462	459	455	25
26	431	436	449	444	455	461	456	453	453	440	424	407	403	425	444	456	469	480	487	474	460	456	453	453	449	26
27	453	454	455	450	453	463	464	463	457	450	442	433	435	440	455	472	484	486	485	481	462	455	455	453	458	27
28	453	451	451	455	459	464	471	471	461	451	436	423	422	433	452	466	478	475	465	456	453	453	457	455	455	28
29 D	446	453	453	445	445	432	438	445	445	449	448	453	445	463	503	533	603	663	637	571	522	503	490	466	490	29 D
30	453	468	473	466	459	467	470	475	475	466	460	443	441	444	456	467	474	482	479	475	473	473	470	470	466	30
31	469	467	465	467	467	471	470	467	466	453	450	434	415	427	442	456	469	478	474	470	472	478	464	460	460	31
Mean	454	454	454	453	455	458	460	458	452	443	433	423	421	429	444	460	473	481	483	475	468	464	462	458	455	
Mean Q	457	451	458	461	462	464	464	462	454	444	432	419	417	426	442	459	469	474	470	461	458	455	454	456	453	
Mean D	453	448	444	441	446	445	445	445	441	432	426	420	422	435	456	475	502	524	536	512	488	480	478	464	461	
Sum	4068	4067	4078	4053	4114	4207	4249	4213	4019	3733	3415	3107	3045	3302	3766	4250	4662	4923	4977	4714	4509	4396	4326	4211		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

SEPTEMBER 1979.

HOURLY DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE
1	460	455	453	458	462	465	470	469	468	463	453	443	438	440	450	457	460	474	473	482	481	464	462	461	461	1
2 Q	463	456	458	462	462	465	472	473	472	463	449	433	426	431	450	467	471	470	464	463	462	463	466	465	459	2 Q
3	463	458	453	449	454	457	458	454	453	451	444	431	431	445	460	470	474	473	468	468	463	463	462	462	457	3
4	462	462	462	462	462	454	455	453	449	446	432	423	423	432	443	458	467	467	459	462	462	452	453	454	452	4
5	456	452	444	445	444	443	447	451	452	443	436	427	433	443	459	467	474	482	478	478	488	451	453	455	454	5
6	455	454	454	458	445	433	433	445	444	441	440	439	440	446	462	475	481	471	460	453	453	453	454	461	452	6
7 Q	458	457	457	454	461	461	462	462	453	441	426	417	422	436	454	466	473	473	469	460	459	454	455	457	454	7 Q
8 Q	460	458	458	462	461	460	461	457	447	431	421	406	415	425	442	455	471	473	466	463	462	455	455	456	451	8 Q
9 Q	459	456	457	460	461	463	463	467	465	451	436	425	423	433	448	463	475	481	477	473	475	469	464	461	459	9 Q
10	454	453	454	456	461	464	466	470	468	457	444	432	426	434	451	468	485	493	500	496	487	475	474	469	464	10
11	464	457	460	464	463	462	462	460	453	450	442	430	431	443	458	479	495	502	501	492	476	473	471	464	465	11
12	463	461	461	460	462	463	470	471	463	448	433	425	423	425	435	450	455	462	470	466	465	460	462	468	453	12
13	452	450	444	451	454	460	465	470	469	459	443	428	420	426	445	457	463	465	463	461	462	463	463	458	454	13
14	455	455	455	457	460	463	464	466	467	453	442	416	412	421	430	444	454	460	458	463	474	476	476	473	454	14
15	473	464	463	463	462	461	463	464	463	457	447	436	430	432	441	448	453	454	455	455	460	461	463	463	453	15
16	462	463	463	455	453	454	456	461	460	450	433	421	416	424	432	444	450	463	463	456	457	456	461	442	450	16
17	452	451	455	453	453	453	453	454	454	445	433	421	414	424	433	443	452	449	450	451	450	451	453	469	447	17
18 D	472	469	454	447	452	459	451	434	422	433	438	453	471	483	503	531	567	523	493	489	478	473	473	473	473	18 D
19 Q	473	474	474	473	473	473	473	474	474	468	453	448	449	452	457	462	462	462	462	465	464	471	474	473	466	19 Q
20 D	468	472	472	471	470	471	463	462	452	451	445	435	431	454	468	485	517	488	482	477	472	475	485	465	468	20 D
21 D	481	440	447	437	427	431	448	451	451	454	451	449	444	448	462	477	480	480	479	480	476	470	469	476	459	21 D
22	464	464	470	470	470	470	469	469	467	456	440	429	427	440	458	460	466	467	464	464	461	460	460	460	459	22
23	461	463	462	462	460	459	460	460	459	450	443	434	430	433	450	462	472	476	472	469	464	460	458	460	457	23
24	460	460	461	460	454	457	458	460	462	456	441	432	431	444	467	479	481	479	472	471	471	458	481	467	461	24
25 D	461	458	449	449	441	449	449	461	466	460	445	436	432	438	443	468	490	500	495	488	478	471	459	453	460	25 D
26 D	449	448	436	442	448	455	459	458	465	452	444	435	433	438	450	459	474	485	497	498	472	460	465	458	458	26 D
27	454	452	452	431	440	452	464	470	467	455	441	432	432	444	451	459	470	479	477	477	469	467	466	461	457	27
28	457	456	453	459	458	444	441	452	456	451	451	443	438	440	448	468	483	484	486	482	483	470	478	468	460	28
29	458	453	449	446	452	455	462	469	462	458	449	440	436	450	450	463	478	482	478	473	467	467	461	450	459	29
30	450	450	439	429	432	436	444	458	460	463	460	444	440	444	452	457	473	473	468	464	467	470	460	459	454	30
31																										31
Mean	461	457	456	455	455	456	459	461	459	452	442	432	431	439	452	465	476	477	473	471	469	464	465	463	458	
Mean Q	463	460	461	462	464	464	466	467	462	451	437	426	427	435	450	463	470	472	468	465	464	462	463	463	458	
Mean D	466	457	452	449	448	453	454	453	451	450	445	442	442	452	465	484	506	496	489	486	475	470	470	465	463	
Sum	3819	3721	3669	3645	3657	3692	3761	3825	3763	3554	3255	2963	2917	3168	3552	3941	4272	4296	4199	4139	4058	3911	3936	3861		

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

OCTOBER 1979.

DATE	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	DATE
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24		
1	457	450	451	450	451	459	461	467	469	462	453	446	444	450	458	471	470	468	462	461	460	460	460	461	458	1
2	460	460	460	458	458	458	458	460	460	454	450	442	441	444	447	456	468	481	481	490	470	464	465	470	461	2
3	458	457	434	439	441	444	444	453	457	450	444	437	430	430	440	451	466	484	477	460	458	460	461	463	452	3
4	454	460	455	460	460	460	458	460	460	450	443	439	430	440	447	455	463	460	457	455	453	453	456	458	454	4
5	460	461	462	462	460	459	457	458	457	453	450	438	428	433	443	461	472	471	470	470	467	461	465	468	458	5
6 D	467	463	461	453	446	447	450	453	455	451	441	425	433	443	443	460	483	503	491	479	471	468	471	471	460	6 D
7 D	476	475	478	465	460	463	446	458	459	453	448	444	442	443	467	482	481	478	476	470	484	496	473	458	466	7 D
8 D	465	446	422	418	432	449	454	452	442	452	446	444	455	453	451	464	482	513	494	482	482	482	464	445	458	8 D
9 D	439	446	439	445	444	441	449	454	461	457	453	446	440	442	452	473	488	492	488	485	477	482	470	458	459	9 D
10 D	458	460	442	451	448	458	458	465	468	462	446	432	429	432	452	464	475	480	480	495	472	469	469	462	459	10 D
11	456	458	461	462	462	462	466	472	464	452	445	432	436	432	447	463	482	482	478	472	472	472	465	462	461	11
12	462	460	461	461	462	462	466	468	468	458	442	430	429	439	449	462	474	480	482	481	482	478	475	481	463	12
13	453	454	455	460	460	461	464	469	469	462	452	440	432	432	444	455	465	465	463	469	473	473	474	470	459	13
14	463	464	463	462	462	462	462	466	470	469	453	434	424	427	435	450	460	461	462	463	464	464	465	464	457	14
15	462	462	461	461	460	461	461	462	462	455	447	433	434	450	461	467	472	474	470	470	474	481	476	472	462	15
16	470	472	464	455	455	459	457	462	464	462	452	449	444	453	461	465	466	467	462	466	464	466	467	467	461	16
17 Q	468	469	467	467	463	463	463	465	470	466	452	443	449	450	451	461	464	461	459	459	459	461	463	466	461	17 Q
18 Q	466	467	467	464	463	462	461	463	465	461	451	440	438	442	451	461	464	461	459	459	459	460	460	464	468	18 Q
19 Q	468	464	464	462	461	461	458	459	458	452	441	431	428	434	443	452	461	460	458	453	451	452	457	463	454	19 Q
20	469	460	457	457	461	458	458	462	461	453	441	433	436	443	451	464	470	469	463	463	463	463	461	461	457	20
21	461	463	459	460	457	459	459	460	462	457	444	435	431	445	458	471	474	473	471	472	474	481	481	471	462	21
22	469	447	460	455	453	457	449	452	454	459	448	442	441	451	462	472	478	481	469	471	473	470	464	466	460	22
23	464	466	463	461	463	465	463	460	463	463	460	450	450	461	470	479	484	479	473	470	473	480	477	475	467	23
24	469	462	462	466	468	460	462	462	465	458	446	443	443	451	466	478	482	487	483	480	472	468	465	462	465	24
25	461	462	462	463	459	459	459	462	469	471	462	449	446	456	469	479	487	485	481	482	499	493	482	470	469	25
26	467	464	467	464	465	469	471	472	472	466	459	446	450	459	468	472	479	483	478	476	475	473	474	463	468	26
27 Q	460	462	464	466	467	465	466	468	469	464	458	450	450	451	457	469	472	472	471	469	473	471	466	463	464	27 Q
28	461	462	461	456	455	458	458	456	455	451	441	441	452	458	459	467	475	472	468	467	468	479	477	477	461	28
29	461	459	459	449	449	456	457	459	461	459	446	429	429	439	452	460	468	470	474	484	483	479	469	469	459	29
30 Q	464	466	463	456	458	458	459	459	464	464	457	448	447	448	450	458	459	459	458	456	456	459	460	459	458	30 Q
31	459	459	458	456	456	456	456	458	463	468	456	449	446	451	459	468	469	470	475	472	469	468	467	469	462	31
Mean	462	461	458	457	457	458	458	461	462	459	449	440	439	445	454	465	473	476	472	471	470	471	468	466	460	
Mean Q	465	466	465	463	462	462	461	463	465	461	452	442	442	445	450	460	465	463	461	460	460	461	462	464	459	
Mean D	461	458	448	446	446	452	451	456	457	455	447	438	440	443	453	469	482	493	486	482	477	479	469	459	460	
Sum	4327	4280	4202	4164	4159	4211	4210	4296	4336	4214	3927	3640	3607	3782	4063	4410	4659	4745	4635	4603	4571	4586	4503	4432	460	

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

NOVEMBER 1979.

DATE \ HOUR	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	DATE	
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24			
1 D	472	462	460	453	443	446	447	449	460	463	449	444	446	445	449	460	474	479	478	474	466	472	469	459	459	1D	
2	456	459	459	454	444	445	448	453	459	458	450	439	438	451	467	477	480	481	476	475	469	468	467	466	460	2	
3	466	468	467	464	462	460	459	459	460	457	447	441	440	449	458	466	474	475	469	469	478	472	464	461	462	3	
4	461	469	462	449	446	454	454	451	457	457	439	437	438	447	457	467	471	472	469	469	463	460	459	459	457	4	
5 Q	459	459	460	461	461	461	460	459	461	458	445	437	441	449	457	463	465	467	464	462	460	459	458	458	458	5Q	
6 Q	459	459	460	461	461	460	459	459	460	457	443	433	432	441	448	453	454	458	457	456	456	454	453	452	454	6Q	
7	451	454	456	457	458	459	458	456	456	448	441	430	429	440	446	458	467	471	485	489	480	470	464	459	458	7	
8 D	459	453	454	457	457	460	463	458	459	454	450	442	452	460	469	474	476	470	468	466	465	464	463	460	461	8D	
9 D	460	458	458	464	462	466	467	468	474	468	456	446	440	449	467	488	487	500	495	484	502	485	473	466	470	9D	
10	467	471	472	468	468	467	472	472	473	471	457	444	437	443	454	463	466	469	468	468	472	478	485	475	466	10	
11	472	467	465	464	459	455	458	458	462	460	452	437	435	438	443	454	463	466	469	468	468	472	478	485	475	466	11
12	457	456	454	455	455	456	455	456	457	465	455	435	435	445	455	464	465	467	465	463	463	462	460	461	458	456	12
13 D	464	463	440	428	431	437	445	452	459	460	453	454	459	478	501	508	506	526	526	525	528	495	492	496	476	13D	
14	472	462	436	446	459	455	459	467	476	479	471	464	462	464	468	473	475	472	471	472	474	474	474	474	467	14	
15 Q	473	473	472	469	468	467	467	467	471	477	470	455	453	462	467	468	467	467	465	465	466	467	467	467	467	467	15Q
16	466	465	464	463	463	455	453	457	465	472	462	453	453	463	470	477	475	480	482	486	483	475	474	475	468	16	
17	467	464	465	465	465	463	463	465	467	469	461	455	451	454	456	464	463	464	460	459	463	462	461	462	462	17	
18	462	463	462	456	456	456	456	456	462	466	460	455	454	456	460	467	469	466	461	459	459	461	461	461	460	18	
19	461	460	462	462	461	461	460	457	456	453	450	446	444	449	460	465	467	467	459	460	466	463	473	462	459	19	
20	463	462	459	460	459	458	457	452	449	448	447	440	439	452	464	467	478	477	469	463	460	461	463	462	459	20	
21	462	460	459	457	452	451	449	449	448	447	440	434	438	443	451	460	466	468	465	464	461	460	460	460	454	21	
22 Q	459	459	460	460	460	460	460	459	457	456	445	437	437	445	452	458	461	463	461	460	460	460	460	460	460	454	22Q
23	454	455	456	457	458	460	460	459	459	461	453	447	442	445	450	459	462	463	462	466	470	469	469	470	459	23Q	
24 D	462	459	458	451	447	445	442	440	446	457	453	449	461	466	470	480	481	483	498	492	486	501	481	473	466	24D	
25	464	460	444	449	450	459	463	469	470	470	461	451	448	449	459	465	469	472	471	471	470	471	469	467	462	25D	
26	465	466	462	462	462	463	463	463	463	461	453	445	446	452	452	455	462	462	462	469	472	471	464	460	461	26	
27	457	453	453	454	455	458	458	462	465	466	458	450	450	452	453	461	462	463	463	464	464	464	463	462	459	27	
28 Q	460	455	455	455	454	456	459	461	462	462	462	457	453	456	459	457	456	456	456	459	459	460	460	459	458	28Q	
29	456	454	452	452	452	452	453	453	457	462	458	450	446	452	454	452	452	452	452	458	462	460	462	462	455	29Q	
30	455	454	452	451	450	449	446	446	431	442	442	441	435	444	444	444	451	452	453	453	453	459	462	460	449	30	
31																										31	
Mean	462	461	458	457	456	456	457	458	460	461	453	445	444	451	459	466	469	471	470	469	470	468	466	464	460		
Mean Q	462	461	461	461	461	461	461	461	462	462	453	444	443	451	457	460	461	462	461	460	460	459	459	459	458		
Mean D	463	459	454	451	448	446	447	453	460	460	452	447	446	445	471	482	485	492	493	488	489	483	476	471	466		
Sum	3861	3822	3738	3704	3678	3694	3713	3732	3801	3829	3580	3348	3334	3530	3700	3067	4058	4119	4088	4078	4092	4039	3987	3924			

TABLE 6 VERTICAL COMPONENT

MEAN HOURLY VALUES, 44000Y+ .....

DECEMBER 1979.

HOUR DATE	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	MEAN	DATE	
1	459	455	455	455	454	452	452	450	455	461	459	462	464	464	469	475	482	479	475	469	469	470	460	460	463	1	
2	460	452	460	452	452	452	448	447	450	456	457	455	453	462	465	468	466	467	468	466	468	460	462	462	459	2	
3	462	461	459	452	454	454	445	445	451	458	453	451	452	463	466	470	469	468	464	462	461	458	458	458	458	3	
4 D	458	459	462	460	451	447	446	445	448	452	454	457	466	475	482	488	494	502	488	489	485	487	483	479	469	4 D	
5	477	476	474	471	471	470	467	462	457	455	446	448	451	459	465	471	471	474	476	474	472	471	466	465	466	5	
6	469	471	463	463	463	465	463	460	455	453	450	446	448	455	461	464	465	465	464	462	462	462	460	458	460	6	
7 Q	458	460	460	461	461	462	462	460	455	450	443	441	438	443	449	452	456	461	459	459	460	459	458	455	455	7 Q	
8	454	455	458	459	461	455	452	452	452	451	441	437	440	441	447	460	461	467	471	465	478	472	472	466	457	8	
9	466	462	462	462	462	461	461	460	460	457	451	444	444	448	452	457	461	461	461	461	464	463	462	461	458	9	
10	458	456	457	458	459	459	460	461	460	459	453	448	446	447	451	458	462	475	464	461	461	461	460	459	458	10	
11	459	458	450	452	456	457	460	459	460	460	457	450	449	449	452	451	458	458	459	461	462	462	460	464	457	11	
12 Q	460	459	459	459	458	458	458	459	459	460	457	448	445	444	446	449	456	457	458	459	465	461	459	459	456	12 Q	
13 Q	459	458	457	456	455	457	457	455	453	453	446	443	443	444	449	450	453	456	457	458	460	464	465	465	455	13 Q	
14	462	460	457	453	453	453	453	454	456	457	453	448	446	446	448	449	449	453	456	457	458	461	459	459	454	14	
15	457	457	453	452	448	447	449	448	449	458	458	455	453	452	459	461	459	464	459	473	475	469	466	467	458	15	
16	469	461	457	457	456	452	447	449	455	457	457	452	451	453	457	456	458	459	458	458	458	458	461	474	457	16	
17	460	455	455	456	453	452	452	451	449	452	448	447	447	451	459	466	464	464	469	468	467	470	474	465	458	17	
18	460	454	457	458	457	457	457	456	454	452	449	444	443	449	457	457	457	460	457	457	460	459	460	458	455	18	
19	455	456	457	458	457	456	454	449	450	455	453	449	448	451	457	460	465	465	467	457	459	463	455	456	456	19	
20	457	457	457	459	459	458	457	456	453	450	445	442	447	449	455	459	469	469	465	465	469	467	466	464	458	20	
21	459	460	459	460	460	459	457	457	455	454	449	447	447	450	455	459	464	467	466	472	473	475	475	468	460	21	
22 D	462	459	455	454	455	451	448	449	447	446	436	440	439	450	459	461	465	475	481	483	474	466	461	458	457	22 D	
23 Q	457	455	456	458	458	458	458	458	458	456	451	444	443	446	449	456	459	461	459	458	457	457	456	456	455	23 Q	
24	456	455	451	452	455	455	455	455	457	458	454	447	444	447	449	451	463	467	464	464	465	467	466	459	457	24	
25 Q	455	454	454	454	454	457	457	457	457	457	454	443	439	438	441	445	448	450	454	454	454	454	454	454	452	25 Q	
26	449	450	454	446	445	447	447	447	448	449	445	443	440	438	439	441	446	454	463	475	492	475	469	464	453	26	
27	457	456	456	450	449	448	447	449	448	454	449	443	445	447	457	464	468	464	460	462	462	463	461	460	455	27	
28 D	457	457	455	452	447	447	451	452	454	456	454	453	457	457	448	454	466	458	457	457	462	462	463	461	460	457	28 D
29 D	457	450	451	438	426	431	425	437	446	451	452	456	452	457	477	482	487	479	477	516	487	488	489	473	462	29 D	
30 D	454	444	433	440	429	428	438	441	451	457	461	457	447	460	461	464	468	468	480	457	463	463	464	465	454	30 D	
31	461	458	460	457	457	453	453	453	452	456	454	451	450	454	456	457	461	460	464	462	467	474	478	473	459	31	
Mean	459	457	457	455	454	453	453	453	453	455	451	448	448	451	456	460	464	465	465	466	467	466	465	463	458		
Mean Q	458	457	457	458	457	458	458	458	456	455	450	444	442	443	447	450	454	457	457	458	459	459	458	458	455		
Mean D	458	454	451	449	442	440	442	445	449	452	451	453	452	460	465	470	476	476	477	480	474	474	474	469	460		
Sum	4243	4180	4153	4114	4075	4058	4036	4033	4054	4100	3989	3886	3877	3989	4137	4255	4370	4427	4420	4441	4469	4445	4412	4356	460		

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

JANUARY, 1979.

Date	DECLINATION						HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C					
	Maximum			Minimum			Maximum			Minimum		Maximum			Minimum			Range				
	G.M.T.			G.M.T.			G.M.T.			G.M.T.		G.M.T.			G.M.T.							
	h	m	'	'	h	m	h	m	y	y	h	m	h	m	y	y			h	m		
1	13	56	71.2	58.3	23	06	14.9	21	32	966	933	14	10	33	23	06	503	453	13	26	50	6.0
2	14	30	74.6	54.8	18	23	19.8	07	50	960	908	18	04	52	18	11	542	451	12	24	91	7.7
3	13	27	72.6	55.2	00	04	17.4	18	11	952	897	11	34	55	22	24	512	444	12	47	68	11.0
4 D	13	12	75.9	48.9	18	32	27.0	06	52	959	867	19	23	92	18	31	584	443	05	05	141	11.0
5	18	57	72.5	50.5	01	33	22.0	20	41	942	882	02	06	60	17	25	511	424 <sub>m</sub>	01	06	87	9.1
6	15	37	74.3	60.5	01	52	13.8	02	10	966	888	12	18	78	16	36	500	459	02	23	41	11.3
7 D	19	08	83.6 <sub>M</sub>	56.7	23	01	26.9	07	26	957	843 <sub>m</sub>	19	56	114 <sub>M</sub>	19	15	603 <sub>M</sub>	448	12	54	153 <sub>M</sub>	14.9
8	14	26	69.9	61.9	00	00	8.0	22	29	943	899	13	33	44	01	56	501	468	13	27	33	13.3
9	03	44	70.8	62.2	01	05	8.6	06	30	978	922	00	26	54	00	00	496	456	03	43	40	11.6
10 Q	14	11	70.6	63.2	09	40	7.4 <sub>m</sub>	21	00	954	927	12	00	27 <sub>m</sub>	01	27	482	451	13	15	31	12.1
11 Q	14	33	71.1	63.4	01	55	7.7	22	55	960	928	12	57	32	01	52	484	458	11	57	26	11.0
12	14	03	71.9	59.5	23	54	12.4	06	35	968	931	14	37	37	23	54	501	449	12	53	52	14.4
13 Q	14	00	70.3	59.6	00	00	10.7	23	56	959	923	12	00	36	00	00	494	450	13	09	44	14.9
14 Q	14	56	73.7	63.5	09	31	10.2	08	51	970	920	13	16	50	15	30	473	449	09	40	24 <sub>m</sub>	19.5
15	15	03	75.3	59.4	20	20	15.9	06	46	964	897	20	33	67	19	50	511	443	12	40	68	19.2
16	04	50	70.5	57.7	00	27	12.8	05	10	961	909	14	04	52	17	14	474	443	04	50	31	19.2
17 Q	13	24	71.5	61.7	23	48	9.8	07	30	963	923	12	04	40	18	27	493	452	13	23	41	15.5
18	16	03	71.4	57.6	00	47	13.8	00	06	961	919	11	35	42	19	33	465	443	12	25	42	15.2
19	15	28	70.6	54.8	01	26	15.8	05	04	967	904	10	51	63	20	53	490	426	04	14	64	14.9
20	14	32	69.6	59.9	00	43	9.7	07	28	963	912	13	32	51	17	46	489	454	11	20	35	14.9
21	13	53	73.5	62.2	03	20	11.3	02	16	973	917	11	57	56	17	54	485	448	13	16	37	16.5
22	14	40	70.4	50.7	23	07	19.7	20	10	967	878	20	50	89	22	19	524	450	13	55	74	17.4
23 D	17	14	75.4	52.4	22	32	23.0	08	30	967	858	21	52	109	19	11	564	453	01	05	111	15.5
24	14	30	70.4	47.4	02	35	23.0	23	39	953	878	00	09	75	00	00	514	454	03	39	60	14.1
25 D	14	48	77.1	43.4 <sub>m</sub>	02	56	33.7 <sub>M</sub>	02	45	997 <sub>M</sub>	900	04	27	97	20	23	521	432	05	36	89	16.0
26 D	14	33	73.2	45.1	23	04	28.1	19	49	980	891	22	52	89	23	03	557	452	06	48	105	15.2
27	14	51	70.7	54.3	21	20	16.4	05	53	966	906	21	16	60	21	19	535	454	07	13	81	14.3
28	14	11	71.5	60.7	03	39	10.8	06	35	955	908	12	03	47	19	22	499	462	11	35	37	16.0
29	13	24	73.6	58.3	23	50	15.3	23	54	963	907	12	34	56	00	40	497	447	11	55	50	17.0
30	13	14	72.5	56.2	22	11	16.3	08	58	964	918	13	20	46	21	56	510	437	12	06	73	17.1
31	14	03	72.5	60.5	02	41	12.0	02	27	963	925	12	01	38	22	05	490	433	11	47	57	17.8
Mean			72.7	56.7			15.9			963	904			59			510	448			63	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

FEBRUARY, 1979.

Date	DECLINATION				HORIZONTAL COMPONENT				VERTICAL COMPONENT				TEMP °C	
	Maximum		Minimum		Maximum		Minimum		Maximum		Minimum			Range
	G.M.T.	10 <sup>0</sup> +	G.M.T.		G.M.T.	18000Y+	G.M.T.		G.M.T.	44000y+	G.M.T.			
h m	'	'	h m	'	h m y	y	h m	y	h m y	y	h m	y		
1	14 01	70.9	61.7	08 04	9.2	22 44 963	937	10 28	26 <sub>m</sub>	00 00 483	438	13 20	45	20.3
2	13 59	69.7	59.7	01 53	10.0	02 00 961	927	11 44	34	21 54 489	456	12 03	33	14.3
3	19 33	74.2	61.6	03 50	12.6	20 44 983	928	10 37	55	21 53 499	465	13 23	34	11.9
4	15 02	74.4	56.4	02 09	18.0	15 03 958	900	16 11	58	17 34 526	446	13 03	80	16.9
5	13 10	70.6	58.7	00 22	11.9	23 16 959	893	11 31	66	00 00 481	447	02 26	34	18.2
6	13 10	72.7	54.3	22 13	18.4	03 42 970	908	13 25	62	22 10 518	445	06 11	73	19.4
7	14 45	71.0	61.9	09 18	9.1	20 21 962	928	11 34	34	22 53 486	458	11 54	28 <sub>m</sub>	18.2
8	15 03	72.7	61.0	02 11	11.7	06 14 961	915	12 19	46	23 56 486	446	13 40	40	16.0
9	15 44	71.6	60.4	02 58	11.2	20 00 963	923	12 04	40	00 23 488	446	13 44	42	17.4
10 Q	13 52	70.6	62.1	09 10	8.5 <sub>m</sub>	21 02 966	924	11 14	42	00 09 478	446	11 29	32	16.9
11	13 35	71.4	54.4	02 55	17.0	01 50 968	918	23 37	50	02 53 493	449	12 07	44	16.8
12	12 28	74.3	56.3	00 28	18.0	04 32 967	888	11 57	79	16 02 482	435	03 00	47	17.0
13 Q	14 55	69.5	60.2	09 42	9.3	22 40 960	915	12 29	45	08 53 474	446	12 49	28 <sub>m</sub>	16.3
14 Q	14 10	70.5	60.9	09 46	9.6	23 56 968	932	11 08	36	21 28 474	444	12 00	30	17.0
15	14 18	74.4	62.3	08 41	12.1	07 20 979	920	14 39	59	16 48 506	446	12 49	60	11.8
16	15 09	69.7	59.9	09 28	9.8	05 53 971	909	11 43	62	17 04 484	452	12 56	32	11.0
17 Q	15 25	69.5	59.1	09 46	10.4	23 01 969	931	12 14	38	08 01 476	441	12 06	35	15.0
18	14 41	72.2	52.6	23 53	19.6	03 08 1005	923	20 49	82	20 53 520	437	09 51	83	19.2
19	13 03	71.5	53.5	00 00	18.0	02 33 963	911	14 03	52	18 40 479	428	12 59	51	18.0
20 Q	14 34	68.7	59.7	23 29	9.0	01 30 960	934	10 59	26 <sub>m</sub>	20 50 478	444	12 40	34	19.8
21 D	07 41	78.4 <sub>M</sub>	51.3 <sub>m</sub>	19 23	27.1 <sub>M</sub>	05 03 1011 <sub>M</sub>	837 <sub>m</sub>	20 10	174 <sub>M</sub>	19 23 596 <sub>M</sub>	402 <sub>m</sub>	07 38	194 <sub>M</sub>	19.7
22 D	13 52	72.5	60.8	00 06	11.7	23 34 974	874	14 11	100	15 53 495	445	12 27	50	17.1
23 D	15 21	69.4	53.4	03 23	16.0	01 39 970	899	21 33	71	22 33 519	450	05 27	69	16.1
24	15 24	72.4	57.5	02 50	14.9	20 32 976	911	13 17	65	16 10 498	438	11 54	60	17.1
25	13 01	68.7	57.6	05 25	11.1	21 13 964	919	22 00	45	22 03 487	445	06 05	42	18.1
26 D	15 24	72.8	53.6	00 50	19.2	06 43 954	899	22 23	55	20 42 543	438	12 11	105	18.8
27 D	13 55	71.7	51.4	01 15	20.3	00 42 973	906	04 18	67	17 15 500	429	00 46	71	20.0
28	14 49	74.9	56.7	00 55	18.2	01 02 963	899	20 35	64	20 42 545	434	12 23	111	16.7
29														
30														
31														
Mean		71.8	57.8		14.0		969	911	58		499	443		57



Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

MARCH, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 <sup>0</sup> +	G.M.T.			G.M.T.	18000Y+	G.M.T.			G.M.T.	44000y+	G.M.T.			
h m	'	'	h m	'	h m	y	y	h m	y	h m	y	y	h m	y		
1	14 10	72.2	56.4	03 07	15.8	00 36	963	915	11 50	48	17 53	499	441	11 40	58	16.3
2	14 51	73.9	53.5	01 14	20.4	00 42	983	905	12 02	78	20 18	490	428	12 58	62	19.9
3	16 46	72.9	56.8	00 07	16.1	02 16	961	916	20 51	45	20 56	517	429	12 06	88	20.0
4	13 07	72.9	51.5	22 53	21.4	00 45	977	905	14 40	72	22 52	539	439	10 06	100	18.0
5	14 56	68.1	54.9	03 46	13.2	19 46	967	923	04 24	44	19 30	491	457	13 26	34m	18.1
6 D	15 21	75.9	58.1	21 06	17.8	03 36	964	877	13 35	87	17 45	536	448	11 05	88	19.0
7 Q	20 34	69.2	59.7	01 47	9.5	19 17	955	930	01 36	25m	21 54	494	455	12 05	39	17.4
8	13 20	68.7	59.7	05 04	9.0	23 39	975	926	12 27	49	01 00	491	449	11 37	42	19.0
9	16 07	71.8	57.4	08 17	14.4	23 27	975	938	21 54	37	21 56	488	434	12 05	54	19.6
10 D	01 41	73.6	42.9	23 33	30.7	01 38	1006	815m	23 12	191M	20 22	568	417	01 42	151	18.2
11	14 56	68.7	49.6	00 00	19.1	21 13	944	877	00 55	67	00 00	505	444	01 54	61	20.0
12 Q	13 50	68.7	60.0	09 20	8.7m	23 20	960	915	12 04	45	16 52	477	438	11 43	39	18.7
13	14 45	70.7	58.7	09 17	12.0	04 01	970	914	10 54	56	07 40	474	429	12 39	45	18.4
14 Q	14 23	70.1	58.5	09 27	11.6	21 35	971	933	11 24	38	03 50	472	435	12 20	37	16.8
15	15 27	74.6	58.6	09 23	16.0	23 48	983	934	11 38	49	21 40	477	410	12 43	67	16.4
16	13 50	75.7	60.3	09 44	15.4	03 50	983	928	11 10	55	16 47	484	419	12 50	65	15.2
17	08 09	74.3	58.0	10 15	16.3	08 10	1029 M	918	12 17	111	17 20	481	431	08 09	50	14.5
18	13 55	71.4	57.9	08 56	13.5	21 25	967	918	11 34	49	07 50	485	439	12 00	46	13.2
19	15 18	74.7	59.3	09 39	15.4	20 25	973	919	10 26	54	18 05	488	421	13 01	67	14.9
20 Q	15 23	71.4	58.5	09 16	12.9	21 50	980	935	12 31	45	21 43	477	424	12 57	53	16.0
21 Q	14 13	71.6	56.7	09 06	14.9	23 21	978	924	12 01	54	18 40	475	425	13 13	50	14.8
22 D	14 43	84.0	54.7	08 31	29.9	14 43	1022	860	16 44	162	16 10	525	410	13 43	115	16.0
23	14 47	70.4	59.8	02 12	10.6	06 56	978	914	12 44	64	23 25	491	439	03 05	52	14.3
24	13 38	69.4	54.3	24 00	15.1	23 36	976	920	11 37	56	23 31	482	435	13 38	47	18.2
25	14 51	75.7	53.6	23 55	22.1	22 30	973	905	12 15	68	18 55	509	416	13 00	93	19.9
26	14 55	77.7	50.7	02 00	27.0	17 57	987	890	14 20	97	18 19	551	430	12 15	121	17.1
27	14 09	76.7	54.6	23 58	22.1	07 53	961	903	12 40	58	17 44	525	417	11 55	108	18.3
28 D	13 35	75.1	49.9	23 44	25.2	24 00	1004	862	12 05	142	17 31	518	425	10 54	93	16.2
29 D	18 42	75.5	41.7m	03 02	33.8M	18 00	1006	855	13 45	151	18 52	637M	396m	02 24	241M	16.0
30	13 58	71.3	56.7	01 38	14.6	21 42	954	874	11 09	80	17 56	498	444	12 53	54	16.2
31	15 02	74.0	48.6	23 33	25.4	23 14	988	894	12 20	94	18 53	516	417	13 08	99	19.1
Mean		73.0	55.2		17.7		978	905		73		505	430		75	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

APRIL, 1979.

Date	DECLINATION				HORIZONTAL COMPONENT					VERTICAL COMPONENT				TEMP °C		
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 <sup>0</sup> +	G.M.T.			G.M.T.	18000 Y+	G.M.T.			G.M.T.	44000y+	G.M.T.			
h m	'	'	h m	'	h m y	y	h m	y	h m y	y	h m	y	h m	y		
1	15 12	74.9	51.6	00 00	23.3	21 59	1045M	909	14 36	136	17 32	510	416	21 13	94	19.6
2	14 42	74.7	41.7	02 16	33.0	01 27	1000	878	02 38	122	16 40	537	415	01 56	122	17.8
3	16 48	78.7	51.5	22 56	27.2	19 42	1010	627 <sub>m</sub>	23 50	383M	19 37	605M	178 <sub>m</sub>	23 45	427K	16.9
4D	12 43	69.2	30.2	02 50	39.0	22 48	948	771	00 00	177	16 18	506	391	00 32	115	15.6
5D	14 28	80.3M	50.1	09 30	30.2	14 28	1042	878	15 17	164	17 48	517	389	12 38	128	16.6
6	14 30	69.5	58.6	09 22	10.9	23 20	974	917	13 48	57	16 46	497	436	13 17	61	17.8
7	15 30	68.7	57.9	09 38	10.8	23 20	1000	930	11 30	70	18 14	485	437	13 23	48	17.9
8	14 53	70.7	56.1	08 56	14.6	17 53	981	924	11 31	57	21 18	507	431	12 03	76	17.0
9	15 36	68.5	53.6	02 15	14.9	01 14	985	925	13 16	60	02 10	487	425	12 35	62	17.1
10	15 03	73.6	57.2	08 43	16.4	13 10	982	916	06 52	66	22 17	478	427	12 40	51	17.2
11Q	14 20	70.3	56.9	09 19	13.4	18 24	986	919	12 40	67	17 03	472	428	12 10	44 <sub>m</sub>	18.0
12	14 10	72.9	55.9	08 28	17.0	22 54	1020	913	12 14	107	19 51	476	428	12 08	48	20.0
13	13 13	70.8	58.5	08 09	12.3	05 47	980	910	13 16	70	17 50	485	428	11 47	57	18.5
14	14 44	70.5	50.8	22 24	19.7	17 30	1009	929	12 20	80	22 24	499	427	11 37	72	19.6
15	13 26	73.3	57.1	09 06	16.2	22 51	986	932	13 55	54	21 59	478	423	13 20	55	18.2
16	13 41	70.9	55.9	04 30	15.0	01 40	1000	929	14 10	71	18 53	484	407	04 03	77	18.2
17Q	14 09	68.9	57.9	09 50	11.0	20 45	994	921	11 40	73	20 33	478	429	13 23	49	19.2
18Q	14 21	68.8	59.0	00 02	9.8	07 57	983	938	10 18	45	19 48	472	420	13 03	52	19.7
19Q	14 47	70.7	58.6	09 23	12.1	23 42	984	941	12 17	43 <sub>m</sub>	17 20	477	419	13 21	58	20.3
20Q	14 32	67.9	58.4	09 04	9.5 <sub>m</sub>	23 19	980	937	12 02	45 <sub>m</sub>	20 51	464	417	13 26	47	17.0
21	14 03	72.3	55.7	24 00	16.6	03 30	981	919	22 50	62	19 53	510	401	12 53	109	17.9
22D	14 18	75.8	41.9	02 50	33.9	18 33	986	869	11 23	117	19 00	551	414	01 42	137	17.2
23	14 37	72.5	54.2	00 17	18.3	20 32	972	907	12 01	65	15 44	496	420	03 13	76	16.8
24	14 30	70.9	55.9	07 03	15.0	24 00	1014	930	07 13	84	19 40	486	427	11 51	59	15.1
25D	12 28	80.1	28.5 <sub>m</sub>	03 17	51.6 <sub>M</sub>	00 03	1034	774	08 20	260	20 25	555	307	06 03	248	15.1
26	14 33	69.1	57.4	21 50	11.7	18 15	964	901	10 47	63	19 11	497	417	00 08	80	14.8
27	15 34	72.5	53.5	07 49	19.0	16 50	1022	918	09 37	104	17 47	536	424	23 18	112	14.2
28	14 40	72.4	47.5	01 00	24.9	21 08	982	889	08 42	93	19 48	518	424	08 04	94	16.1
29D	15 55	73.8	45.8	05 04	28.0	16 53	1007	884	12 45	123	16 31	549	400	24 00	149	16.1
30	13 29	70.8	51.7	00 39	19.1	17 57	988	873	09 38	115	19 25	492	366	00 10	126	15.9
31																
Mean		72.1	52.3		19.8		995	894		101		503	406		97	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

MAY, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C						
	Maximum			Minimum		Range	Maximum			Minimum		Range	Maximum				Minimum		Range			
	G.M.T.			10 <sup>0</sup> G.M.T.			G.M.T.			18000y+			G.M.T.				44000y+			G.M.T.		
	h	m	'	'	h		m	y	y	h	m		y	h	m		y	y		h	m	y
1	14	24	69.9	53.9	06	40	16.0	17	53	1001	901	09	56	100	20	20	506	424	12	58	82	15.7
2	13	35	69.6	53.8	02	00	15.8	18	50	981	909	12	20	72	20	30	499	430	03	36	69	12.2
3 Q	13	40	69.8	56.8	08	50	13.0	22	52	975	935	11	50	40m	19	00	486	427	12	50	59	11.1
4	14	03	70.0	57.0	07	47	13.0	19	13	992	937	11	40	55	20	22	493	427	12	52	66	12.0
5	14	07	68.5	55.2	08	58	13.3	17	48	1003	945	12	50	58	18	50	477	421	12	47	56	12.8
6 Q	15	13	67.1	56.8	07	25	10.3m	22	52	984	942	11	45	42	07	20	474	426	12	35	48m	12.2
7	13	40	69.8	55.6	07	37	14.2	18	05	993	941	09	35	52	18	52	499	426	11	53	73	16.0
8	14	14	68.3	56.1	06	26	12.2	23	38	992	952	07	14	40m	05	23	475	424	12	18	51	16.0
9	13	55	69.5	54.8	08	05	14.7	17	15	1009	945	12	22	64	20	09	504	416	11	36	88	16.0
10	13	57	69.0	55.7	06	55	13.3	17	11	1009	947	10	38	62	05	52	475	427	12	25	48m	17.1
11	15	05	70.8	55.3	06	21	15.5	00	22	1000	930	14	12	70	17	12	487	415	12	02	72	18.1
12	13	31	68.2	56.1	08	34	12.1	20	00	991	935	14	22	56	17	26	475	422	11	12	53	18.0
13	14	37	72.8	56.7	08	24	16.1	15	55	1003	944	11	50	59	05	23	477	418	12	49	59	17.6
14	14	39	71.8	56.3	08	27	15.5	16	27	994	939	13	03	55	18	30	474	406	12	00	66	17.8
15	13	19	69.6	57.7	08	57	11.9	19	13	994	923	13	36	71	19	04	476	426	12	48	50	18.1
16 Q	14	55	67.1	54.9	08	55	12.2	18	08	990	940	12	21	50	05	50	473	417	11	52	56	17.1
17 Q	14	57	70.0	57.0	08	48	13.0	18	40	991	938	12	01	53	06	30	470	417	11	56	53	16.1
18	15	31	67.2	54.6	07	34	12.6	18	23	1046	955	13	38	91	19	11	488	415	11	35	73	15.4
19 D	15	26	70.2	51.2	06	11	19.0	19	47	1017	914	10	10	103	20	35	500	422	12	23	78	13.4
20	14	42	69.0	53.6	03	47	15.4	00	10	998	925	11	42	73	21	52	490	409	11	31	81	15.8
21	14	00	69.8	54.9	09	14	14.9	18	37	1009	944	23	59	65	19	42	521	413	12	43	108	15.0
22 D	15	08	73.8M	51.3	03	08	22.5	17	30	1037	884m	09	50	153	19	02	552M	409	09	11	143M	15.2
23	13	33	67.6	55.6	08	05	12.0	20	20	999	925	09	00	74	20	57	498	428	12	23	70	15.3
24 D	13	19	70.8	53.0	08	57	17.8	20	30	1017	889	10	52	128	17	46	493	425	12	52	68	15.9
25 D	14	44	73.8M	49.8m	07	08	24.0M	20	14	1027	899	11	04	128	17	24	528	403m	11	29	125	16.0
26 D	13	56	70.9	53.7	08	31	17.2	16	32	1026	894	10	08	132	16	30	518	417	12	49	101	16.6
27	13	33	69.6	53.0	07	05	16.6	18	11	996	907	10	24	89	18	05	500	408	12	05	92	16.3
28	15	42	68.1	53.0	08	07	15.1	18	50	1023	921	13	49	102	18	40	517	428	12	09	89	17.0
29	14	34	68.2	53.6	09	20	14.6	21	01	1123M	925	11	09	198M	18	54	485	409	12	00	76	17.7
30	14	28	65.7	54.8	07	23	10.9	00	00	1016	916	12	16	100	18	13	476	427	11	45	49	17.7
31 Q	15	50	67.8	57.2	08	27	10.6	18	50	1009	946	11	23	63	19	32	480	418	11	50	62	17.3
Mean			69.5	54.8			14.7			1008	927			81			492	419			73	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

JUNE, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C							
	Maximum			Minimum		Range	Maximum			Minimum		Range	Maximum				Minimum		Range				
	G.M.T.			10 <sup>o</sup> G.M.T.			G.M.T.			18000Y+ G.M.T.			G.M.T.				44000y+ G.M.T.						
h	m	'	'	h	m	'	h	m	y	y	h	m	y	h	m	y	h	m	y				
1Q	14	09	66.5	54.9	09	03	11.6	20	45	999	933	11	48	66	19	16	471	401	11	47	70	17.9	
2	14	54	67.6	56.8	07	48	10.8 <sub>m</sub>	20	23	997	940	11	02	57	06	23	469	399 <sub>m</sub>	12	57	70	18.0	
3Q	14	40	68.3	55.5	06	52	12.8	18	44	1005	949	09	17	56	21	12	469	399 <sub>m</sub>	12	47	70	20.7	
4	13	47	70.8	55.0	06	47	15.8	20	07	1008	951	14	03	57	19	07	469	406	12	33	63	20.4	
5Q	14	23	67.0	52.5	06	21	14.5	20	21	1006	959	10	37	47 <sub>m</sub>	05	58	478	411	12	30	67	19.7	
6D	23	19	74.7	54.3	07	34	20.4	19	42	1131 <sup>m</sup>	938	14	52	193 <sup>m</sup>	22	28	497	404	11	50	93	18.8	
7D	13	32	67.7	50.8	06	47	16.9	00	02	1038	923	13	44	115	18	12	520	433	05	12	87	18.3	
8	14	07	68.8	52.5	07	48	16.3	20	17	1009	928	08	52	81	18	56	485	421	12	35	64	19.1	
9	13	58	69.3	53.3	07	42	16.0	19	25	1017	929	10	23	88	20	10	486	420	10	48	66	19.3	
10	13	55	67.7	54.6	09	09	13.1	18	16	1006	936	08	57	70	18	34	485	432	10	15	53	19.0	
11	14	59	67.8	54.7	07	30	13.1	15	12	995	940	08	38	55	17	00	475	414	11	22	61	20.2	
12	13	54	67.6	53.8	09	12	13.8	20	03	1001	934	12	17	67	06	34	478	425	12	00	53	20.0	
13	14	38	68.3	54.5	08	05	13.8	20	00	995	936	12	18	59	17	40	484	418	12	50	66	19.4	
14	14	32	67.7	54.0	06	33	13.7	20	05	996	945	12	25	51	18	32	479	418	13	13	61	19.1	
15	13	54	67.8	54.6	09	23	13.2	20	18	1002	922	14	15	80	20	57	485	425	12	42	60	18.1	
16D	14	50	69.7	56.4	02	35	13.3	18	53	1021	918	11	20	103	21	02	492	420	12	38	72	19.7	
17	15	31	70.8	55.0	07	03	15.8	15	33	1012	931	11	44	81	18	35	501	433	12	21	68	19.2	
18Q	15	32	66.9	52.6	07	40	14.3	19	34	1006	928	10	45	78	20	02	475	407	12	30	68	20.4	
19	14	45	67.3	52.7	07	33	14.6	20	54	995	936	11	30	59	19	01	473	424	11	19	49 <sub>m</sub>	19.8	
20	15	38	69.6	52.8	07	27	16.8	18	55	1011	931	12	07	80	20	50	485	417	12	55	68	22.6	
21	16	29	69.1	53.3	07	30	15.8	18	54	1030	927	12	59	103	20	40	498	422	11	52	76	21.1	
22D	17	23	76.7 <sub>m</sub>	50.3 <sup>m</sup>	07	13	26.5 <sub>m</sub>	17	10	1019	942	12	07	77	18	38	545 <sup>m</sup>	416	11	45	129 <sub>m</sub>	19.8	
23D	15	23	67.5	51.9	03	58	15.6	20	46	1002	928	12	01	74	21	36	485	419	12	42	66	19.1	
24	14	16	66.6	53.6	07	01	13.0	18	06	995	910 <sub>m</sub>	12	00	85	18	38	477	427	12	11	50	19.3	
25	14	28	68.1	53.8	09	13	14.3	19	47	1003	924	11	13	79	20	40	478	421	13	53	57	19.2	
26	14	50	72.7	50.4	20	11	22.3	20	28	1033	932	11	08	101	20	09	525	414	11	51	111	18.6	
27	15	11	67.6	51.6	05	44	16.0	16	59	991	919	09	23	72	17	20	484	419	12	28	65	20.0	
28Q	15	30	65.4	51.9	07	28	13.5	19	06	1001	936	11	22	65	04	38	470	416	11	57	54	20.0	
29	15	30	68.4	53.1	18	49	15.3	19	50	1025	920	13	26	105	19	32	504	419	12	22	85	19.0	
30	16	35	69.3	51.1	08	27	18.2	22	00	1009	947	13	15	62	06	21	474	412	12	40	62	19.2	
31																							
Mean			68.8	53.4			15.4			1012	933			79			487	417			69		

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

JULY, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C						
	Maximum			Minimum		Range	Maximum		Minimum			Maximum		Minimum			Range					
	G.M.T.			10° + G.M.T.			G.M.T.		18000y+ G.M.T.			G.M.T.		44000y+ G.M.T.								
	h	m	'	'	h		m	h	m	y	y	h	m	y	y			h	m	y		
1	15	11	68.0	51.2	07	50	16	55	995	952	14	11	43	19	11	477	416	12	33	61	18.7	
2Q	16	00	68.3	54.2	08	02	14.1	18	20	1011	941	12	19	70	18	25	469	419	13	12	50	20.2
3	15	10	71.9	49.1	09	04	22.8	20	35	1005	939	11	39	66	18	50	487	402	12	38	85	20.7
4	04	55	65.8	55.4	07	18	10.4	05	00	999	930	11	35	69	19	42	481	424	12	30	57	20.5
5	14	15	66.9	52.2	09	05	14.7	17	14	1016	938	10	38	78	18	10	477	428	12	55	49	19.7
6D	13	47	69.0	55.7	09	03	13.3	19	55	1061M	914M	11	03	147M	19	55	489	421	10	42	68	21.0
7D	16	20	67.7	51.4	06	33	16.3	00	22	1030	947	14	41	83	16	33	507M	433	12	30	74	22.0
8	14	36	70.8	54.6	06	21	16.2	21	43	1004	919	11	24	85	16	41	479	420	12	27	59	22.0
9	14	16	68.7	55.2	08	34	13.5	16	46	1008	933	11	10	75	17	40	482	414	12	31	68	21.1
10	13	20	66.6	54.4	09	20	12.2	19	25	1006	936	11	08	70	19	20	472	424	12	29	48	20.6
11Q	15	00	67.6	54.7	09	09	12.9	19	43	1000	944	11	03	56	18	15	471	418	12	44	53	21.3
12	14	45	69.9	51.7	09	07	18.2	17	00	1028	928	11	11	100	19	32	488	412	12	50	76	21.5
13	15	05	73.4M	53.6	05	34	19.8	16	23	1004	926	10	51	78	18	40	500	417	12	58	83	21.5
14	13	37	66.4	49.6	23	55	16.8	19	17	1025	921	12	23	104	20	52	489	418	12	00	71	21.0
15	13	46	69.0	50.4	00	05	18.6	20	00	1002	924	10	51	78	20	52	484	419	03	45	65	20.0
16	13	59	66.4	52.8	07	08	13.6	17	46	1007	928	11	20	79	21	12	485	413	12	12	72	21.2
17	15	29	66.7	53.4	23	13	13.3	22	51	1030	936	10	42	94	23	13	472	420	13	08	52	23.2
18	15	40	66.5	51.3	06	39	15.2	21	57	1007	932	12	10	75	21	27	470	420	11	50	50	21.9
19	15	20	65.2	53.2	06	45	12.0	21	46	1012	943	11	52	69	21	40	463	420	00	11	43	20.2
20D	12	57	68.0	54.2	23	10	13.8	23	14	1007	941	10	56	66	18	50	482	412	12	49	70	20.8
21	13	58	68.6	54.8	05	42	13.8	21	29	1003	934	10	02	69	21	04	476	429	10	34	47	20.6
22	14	58	66.4	52.0	07	38	14.4	18	52	1005	949	09	10	56	06	30	469	421	12	33	48	19.3
23	14	52	67.5	54.1	08	22	13.4	19	38	999	935	12	50	64	20	25	463	416	12	03	47	21.9
24Q	14	18	70.3	52.8	07	45	17.5	00	39	995	937	13	34	58	18	20	470	399	12	48	71	21.6
25Q	13	42	69.6	53.8	07	20	15.8	22	16	994	935	11	23	59	17	00	465	394m	11	51	71	22.9
26	14	55	69.6	48.0	23	44	21.6	18	40	1055	923	24	00	132	21	45	505	410	12	35	95M	22.7
27D	16	52	69.7	43.0m	01	12	26.7M	16	52	1038	914m	09	39	124	18	42	474	411	01	05	63	22.3
28	01	44	68.1	54.2	07	05	13.9	21	20	1016	923	11	09	93	07	05	472	407	12	13	65	23.9
29D	14	02	68.8	51.3	07	52	17.5	23	45	1039	940	10	41	99	18	43	490	403	12	19	87	23.5
30	13	32	66.0	52.3	07	07	13.7	00	08	1019	926	10	25	93	18	30	477	410	12	09	67	23.0
31Q	13	54	62.8	55.6	08	19	7.2m	20	06	972	939	09	27	33m	05	51	470	433	10	47	37m	21.3
Mean			68.1	52.6			15.5			1013	933			80			479	416			63	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

AUGUST, 1979.

Date	DECLINATION				HORIZONTAL COMPONENT				VERTICAL COMPONENT				TEMP °C									
	Maximum		Minimum		Maximum		Minimum		Maximum		Minimum			Range								
	G.M.T.		10°+ G.M.T.		G.M.T.		1800CY+ G.M.T.		G.M.T.		44000y+ G.M.T.											
	h	m	'	'	h	m	y	y	h	m	y	y										
1	14	10	67.4	54.7	09	12	12.7	19	52	1019	944	10	15	75	21	22	481	403	12	02	78	21.0
2	15	24	65.9	54.8	07	16	11.1	18	54	992	929	09	09	63	18	30	473	427	13	27	46	21.4
3	13	58	66.7	54.4	07	29	12.3	04	02	994	922	11	09	72	17	23	466	429	13	10	37m	21.1
4	14	43	67.7	52.6	20	54	15.1	18	39	998	936	15	04	62	20	52	494	423	12	32	71	21.0
5	13	29	65.6	53.6	07	32	12.0	20	18	990	937	10	45	53	20	00	473	428	11	46	45	21.7
6	12	56	67.2	52.2	07	01	15.0	00	27	993	920	11	09	73	17	27	483	425	10	57	58	22.7
7	13	20	67.9	52.9	07	00	15.0	19	34	1000	939	07	44	61	19	13	489	407	10	33	82	21.3
8	14	12	68.6	54.2	04	46	14.4	18	07	993	935	12	57	60	18	45	479	421	11	55	58	20.8
9Q	13	48	69.2	52.5	07	48	16.7	15	51	990	927	10	36	63	18	00	490	414	12	00	76	20.7
10Q	13	09	67.6	53.6	07	53	14.0	20	07	1003	938	11	00	65	18	06	486	407	12	10	79	21.2
11	13	53	70.0	52.1	06	45	17.9	18	18	1017	940	10	39	77	21	11	473	411	12	05	62	22.1
12	20	25	65.9	50.6	07	45	15.3	19	15	1037	925	10	10	112	20	42	483	412	11	50	71	22.8
13D	14	25	77.7M	48.7	22	56	29.0	19	55	1036	877	12	25	159	19	35	568	387	11	34	181	21.7
14	14	04	68.4	54.2	00	13	14.2	22	23	969	909	10	10	60	17	40	482	417	12	56	65	21.1
15Q	14	05	65.1	56.2	05	40	8.6m	21	17	988	941	11	54	47	05	40	468	423	12	36	45	20.3
16Q	14	29	66.5	54.1	06	20	12.4	21	40	979	943	09	41	36m	16	20	466	428	11	10	38	20.7
17	14	16	65.7	53.9	07	16	11.8	17	26	1004	944	11	36	60	19	49	471	422	12	40	49	20.5
18	14	21	70.6	45.6	23	10	25.0	23	22	1009	935	11	23	74	23	10	489	413	14	20	76	20.4
19D	13	52	71.3	41.6	04	54	29.7	19	13	996	885	02	32	111	21	18	493	383m	02	50	110	21.0
20D	17	42	71.3	49.3	07	08	22.0	17	12	1128M	934	24	00	194	18	34	589	404	10	25	185	20.7
21D	13	47	69.3	49.9	01	51	19.4	19	48	996	896	09	20	100	19	02	487	404	12	13	83	19.8
22	13	51	69.8	51.7	08	50	18.1	17	44	991	923	14	37	68	18	40	484	412	13	10	72	19.8
23Q	13	36	70.6	50.8	07	47	19.8	19	29	989	919	10	52	70	17	20	474	393	12	28	81	19.0
24	13	57	72.8	51.6	07	58	21.2	17	31	1037	919	10	48	118	18	01	494	396	12	26	98	18.8
25	14	02	73.6	49.0	07	41	24.6	20	56	1001	911	09	46	90	18	32	485	403	11	38	82	20.1
26	13	08	71.1	52.9	08	02	18.2	00	11	1021	913	10	45	108	19	09	493	398	12	10	95	21.3
27	13	34	67.4	53.1	07	11	14.3	20	06	991	922	10	59	69	18	17	491	430	11	35	61	18.8
28	13	16	67.8	51.5	07	41	16.3	01	18	999	910	10	03	89	16	52	480	421	11	50	59	19.9
29D	14	56	72.9	41.5m	22	46	31.4M	17	05	1102	859m	09	42	243M	17	34	741M	418	06	06	323M	19.0
30	13	55	64.5	47.5	05	46	17.0	21	55	958	879	10	14	79	17	20	483	440	12	47	43	19.1
31	13	16	70.1	54.6	08	40	15.5	21	05	977	913	13	36	64	21	23	483	413	12	30	70	22.5
Mean			68.9	51.5			17.4			1006	920			86			496	413			83	

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

SEPTEMBER, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C							
	Maximum			Minimum		Range	Maximum			Minimum		Range	Maximum				Minimum		Range				
	G.M.T.			10° + G.M.T.			G.M.T.			18000Y+ G.M.T.			G.M.T.				44000y+ G.M.T.						
	h	m	'	'	h		m	h	m	y	y		h	m	y		h	m		y	y	h	m
1	14	03	65.1	53.5	20	12	11.6	19	57	994	917	11	13	77	19	48	494	437	12	50	57	22.4	
2 Q	14	00	66.7	53.1	07	43	13.6	00	00	974	908	11	20	66	07	19	474	423	12	40	51	20.8	
3	12	53	66.6	52.3	02	05	14.3	01	34	995	929	13	02	66	16	42	479	425	12	03	54	21.0	
4	12	54	65.3	53.3	07	06	12.0	23	53	985	935	08	56	50	17	10	475	415	11	52	60	22.0	
5	13	45	67.5	48.4	20	38	19.1	02	51	998	922	14	45	76	20	37	507	425	11	14	82	22.2	
6	13	12	65.5	51.5	03	17	14.0	01	49	998	924	11	38	74	16	03	490	425	06	21	65	21.0	
7 Q	13	17	65.8	54.3	04	17	11.5	03	37	980	935	08	27	45 <sup>m</sup>	17	00	474	415	11	30	59	21.0	
8 Q	13	43	69.3	54.4	07	07	14.9	20	27	984	934	08	40	50	17	27	475	402 <sup>m</sup>	11	43	74	21.0	
9 Q	14	22	67.5	53.3	08	50	14.2	01	47	979	927	10	11	52	17	12	482	420	12	13	62	19.1	
10	14	21	70.7	53.6	02	24	17.1	02	06	981	927	12	07	54	18	44	503	424	12	38	79	18.3	
11	12	58	68.2	54.3	06	50	13.9	06	01	979	900	10	42	79	17	08	506	426	12	09	80	20.4	
12	13	11	65.7	51.2	23	27	14.5	23	10	1001	934	10	13	67	23	07	477	421	12	47	56	21.1	
13	13	30	67.9	53.2	08	29	14.7	03	00	990	928	11	20	62	21	57	473	417	12	22	56	19.0	
14	13	56	66.1	52.7	08	56	13.4	19	06	995	926	11	15	69	21	27	483	409	12	02	74	19.0	
15	13	53	66.3	54.3	08	04	12.0	21	50	988	932	11	14	56	00	33	479	423	12	14	56	17.8	
16	14	08	66.7	51.1	02	49	15.6	22	59	1008	924	11	27	84	22	45	470	409	12	27	61	20.0	
17	15	03	66.1	51.3	24	00	14.8	22	36	1013 <sup>M</sup>	947	11	36	66	23	47	485	412	12	50	73	20.7	
18 D	15	37	75.4 <sup>M</sup>	40.5	02	01	34.9 <sup>M</sup>	00	05	1012	825 <sup>m</sup>	12	24	187 <sup>M</sup>	16	36	580 <sup>M</sup>	402	07	57	176 <sup>M</sup>	21.7	
19 Q	14	00	61.6	53.4	08	50	8.2 <sup>m</sup>	20	29	966	907	11	41	59	23	35	479	446	11	25	33 <sup>m</sup>	18.8	
20 D	12	42	70.8	48.2	22	34	22.6	20	58	962	895	13	02	67	16	17	527	421	12	05	106	18.0	
21 D	13	25	65.8	39.4 <sup>m</sup>	00	52	26.4	01	03	1008	909	12	04	99	00	46	514	421	04	14	93	18.2	
22	13	50	67.1	53.3	08	25	13.8	00	23	979	921	11	18	58	00	00	474	424	11	50	50	17.8	
23	13	53	66.1	52.2	08	30	13.9	22	21	978	916	14	25	62	17	10	478	427	12	25	51	19.8	
24	13	16	69.0	50.5	22	10	18.5	21	40	992	913	11	20	79	22	06	498	427	12	00	71	16.5	
25 D	14	54	65.8	46.0	03	17	19.8	22	02	977	906	11	30	71	17	01	511	429	12	22	82	20.3	
26 D	13	12	65.5	48.5	19	50	17.0	01	35	990	915	12	05	75	19	49	525	428	02	17	97	20.8	
27	13	19	64.8	50.5	02	50	14.3	03	28	979	922	11	30	57	19	47	482	418	03	18	64	18.4	
28	15	11	64.2	53.0	20	20	11.2	06	08	990	921	12	04	69	20	17	495	433	12	28	62	16.5	
29	13	22	63.5	49.4	00	58	14.1	23	48	1001	910	13	26	91	17	30	483	429	12	18	54	18.6	
30	13	37	64.2	53.2	04	34	11.0	04	23	993	921	13	07	72	21	20	488	423	04	07	65	20.4	
31																							
Mean			66.7	51.1			15.6			989	918			71			492	422			70		

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

OCTOBER, 1979.

Date	DECLINATION			HORIZONTAL COMPONENT					VERTICAL COMPONENT			TEMP °C				
	Maximum		Minimum	Range	Maximum		Minimum		Range	Maximum			Minimum	Range		
	G.M.T.	10 <sup>0</sup> +	G.M.T.		G.M.T.	18000y+	G.M.T.	G.M.T.		G.M.T.	44000y+		G.M.T.			
h m	'	'	h m	'	h m y	y	h m	y	h m y	y	h m	y				
1	14 44	65.2	53.1	08 57	12.1	01 12	983	925	11 54	58	15 50	476	441	12 06	35	19.2
2	16 10	63.8	49.2	23 20	14.6	23 40	978	933	19 21	45	19 26	500	439	12 20	61	20.8
3	14 01	65.2	52.4	03 42	12.8	20 34	982	939	12 00	43	17 23	492	423	02 25	69	18.3
4	14 04	64.1	50.6	08 58	13.5	00 20	993	935	09 00	58	08 57	468	428	12 24	40	17.8
5	14 24	67.4	51.6	23 47	15.8	20 32	987	923	12 10	64	16 51	477	425	12 24	52	17.9
6D	15 23	77.4M	50.7	05 57	26.7M	05 05	985	903	13 39	82	17 29	511	413	11 43	98	19.2
7D	14 29	72.9	46.9	23 02	26.0	19 26	978	903	14 56	75	21 04	522 M	432	13 15	90	20.2
8D	12 42	66.1	46.2	00 19	19.9	02 23	969	876m	10 59	93 M	17 27	521	398m	03 10	123 M	21.3
9D	14 28	66.9	46.9	01 33	20.0	00 12	972	890	10 54	82	19 10	503	422	00 27	81	21.4
10D	13 50	69.1	50.7	19 38	18.4	03 02	973	913	11 01	60	19 30	511	428	12 01	83	20.4
11	15 13	66.4	53.8	08 27	12.6	06 07	975	914	12 04	61	16 40	488	429	11 35	59	20.1
12	13 59	65.7	45.2m	23 22	20.5	23 28	993	923	11 48	70	23 21	506	424	12 10	82	19.7
13	15 29	64.5	51.0	09 05	13.5	18 47	983	917	12 45	66	22 18	482	429	13 18	53	19.9
14	15 03	65.6	50.6	09 11	15.0	18 50	980	930	11 30	50	09 12	479	421	12 54	58	18.1
15	12 54	66.3	54.1	09 04	12.2	23 26	974	919	13 20	55	21 28	483	429	11 52	54	19.0
16	13 05	65.3	52.6	09 04	12.7	23 11	980	924	11 05	56	01 12	473	441	12 13	32	19.0
17Q	14 36	63.8	53.1	09 26	10.7	21 41	986	929	12 24	57	08 24	472	442	11 40	30	17.9
18Q	14 33	63.1	53.3	09 17	9.8m	21 36	984	934	10 57	50	16 35	471	434	12 13	37	16.2
19Q	13 50	66.3	52.1	09 10	14.2	21 23	990	918	11 57	72	00 04	471	424	11 57	47	19.2
20	14 47	66.6	52.6	00 26	14.0	07 00	986	925	11 57	61	00 25	473	431	11 03	42	15.9
21	14 53	65.6	49.9	22 45	15.7	03 18	999 M	928	22 22	71	21 23	494	428	12 23	66	15.5
22	14 20	63.6	51.6	00 37	12.0	06 15	983	111	13 21	72	17 21	493	438	01 23	55	18.3
23	14 18	64.7	52.8	23 43	11.9	07 07	977	921	13 22	56	16 40	488	446	11 27	42	15.1
24	13 30	68.0	53.2	08 56	14.8	06 47	975	903	11 19	72	17 40	489	439	12 16	50	17.7
25	13 48	67.6	53.2	22 06	14.4	04 34	977	894	13 07	83	20 46	506	441	12 18	65	14.5
26	13 15	64.0	53.4	22 32	10.6	22 04	986	914	12 38	72	17 30	485	442	11 32	43	13.6
27Q	14 56	63.6	53.6	09 10	10.0	23 16	980	927	11 43	53	21 16	478	449	12 01	29	13.0
28	13 10	62.9	49.0	23 38	13.9	03 06	986	917	14 36	69	21 48	490	438	10 25	52	16.6
29	18 35	62.8	50.4	00 00	12.4	03 12	975	934	18 41	41m	20 54	489	424	11 50	65	16.5
30Q	14 38	61.8	51.6	02 12	10.2	24 00	975	930	12 40	45	02 11	469	446	12 17	23m	18.6
31	14 37	63.8	52.1	24 00	11.7	06 59	978	924	12 00	54	24 00	482	443	11 07	39	17.1
Mean		65.8	51.2		14.6		981	919		63		488	432		57	



Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

NOVEMBER, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C							
	Maximum			Minimum		Range	Maximum		Minimum			Range	Maximum		Minimum			Range					
	G.M.T.			10 <sup>0</sup> + G.M.T.			G.M.T.		18000Y+ G.M.T.				G.M.T.		44000Y+ G.M.T.								
	h	m	'	'	h		m	h	m	y	y		h	m	y		h		m	y	y	h	m
1	14	19	66.2	49.6	22	31	16.6	06	15	979	928	12	06	51	00	08	484	434	11	46	50	16.0	
2	13	57	66.0	49.3	02	24	16.7	00	47	982	920	13	35	62	17	44	488	432	12	40	56	16.0	
3	12	57	62.6	52.4	20	40	10.2	04	35	969	915	11	39	54	20	37	493	435	11	15	58	19.7	
4	14	11	65.7	49.4	02	23	16.3	06	40	981	918	12	43	63	01	42	478	430	11	45	48	18.0	
5 <sup>Q</sup>	14	15	63.7	52.5	09	12	11.2	00	56	978	928	12	20	50	16	37	469	433	11	21	36	17.1	
6 <sup>Q</sup>	14	53	62.8	51.8	09	07	11.0	22	16	982	929	11	42	53	08	20	465	428	11	57	37	18.2	
7	18	18	65.9	52.7	09	13	13.2	04	56	982	926	11	08	56	18	56	505	425	12	40	80	18.8	
8 <sup>D</sup>	12	03	65.6	54.6	00	20	11.0	23	18	976	902	12	32	74	15	24	479	438	11	33	41	16.4	
9 <sup>D</sup>	14	56	68.5	48.5	21	01	20.0	01	29	976	914	17	29	62	20	57	518	435	12	36	83	14.5	
10	13	37	63.4	52.3	09	35	11.1	18	52	972	910	12	19	62	22	13	492	436	12	24	56	13.8	
11	15	08	64.8	51.7	04	16	13.1	15	08	988	946	11	49	42	00	03	475	432	12	36	43	15.2	
12	13	15	63.1	52.5	10	23	10.6	06	27	988	941	12	20	47	17	00	470	427	12	28	43	14.0	
13 <sup>D</sup>	18	11	70.7 <sup>M</sup>	43.3 <sup>m</sup>	23	04	27.4 <sup>M</sup>	02	11	985	879 <sup>m</sup>	18	24	106 <sup>M</sup>	20	08	553 <sup>M</sup>	421 <sup>m</sup>	03	10	132 <sup>M</sup>	13.2	
14	14	04	61.8	44.8	00	36	17.0	21	00	961	891	11	33	70	09	30	482	425	02	48	57	13.4	
15 <sup>Q</sup>	12	58	60.7	53.0	09	49	7.7	23	59	974	924	12	30	50	09	46	478	448	12	11	30	12.6	
16	14	10	64.3	52.3	09	52	12.0	06	10	994	933	11	30	61	18	07	490	448	12	01	42	13.2	
17	14	26	60.7	52.0	10	05	8.7	06	00	975	925	12	40	50	00	27	475	449	12	10	26	15.1	
18	13	41	61.6	52.5	09	51	9.1	02	16	984	933	12	13	51	16	12	472	450	11	31	22	15.0	
19	13	18	61.5	51.7	22	34	9.8	05	10	984	944	11	40	40	22	30	477	441	12	14	36	15.5	
20	12	56	62.5	53.0	10	00	9.5	07	56	992	936	16	55	56	16	59	491	437	12	08	54	16.9	
21	15	44	60.8	52.5	02	52	8.3	02	40	985	949	14	06	36	00	10	469	432	11	38	37	17.8	
22 <sup>Q</sup>	15	36	60.2	53.5	10	11	6.7	07	20	980	944	12	18	36	17	00	466	432	12	05	34	18.0	
23	14	25	61.2	51.7	23	58	9.5	02	27	982	943	12	30	39	20	53	472	441	11	50	31	17.1	
24 <sup>D</sup>	13	44	63.4	45.0	21	32	18.4	02	36	985	904	18	21	81	21	24	526	431	06	56	95	14.9	
25	13	46	62.0	45.1	04	15	16.9	20	45	975	920	02	24	55	00	05	475	427	02	22	48	16.8	
26	13	07	60.4	54.1	09	08	6.3	18	25	975	950	19	52	25 <sup>m</sup>	20	02	476	444	11	55	32	18.7	
27	13	48	60.6	53.8	09	27	6.8	07	17	984	945	11	32	39	09	24	470	447	12	00	23	18.9	
28 <sup>Q</sup>	13	38	59.2	55.3	10	26	3.9 <sup>m</sup>	20	03	983	954	11	22	29	10	30	464	452	12	35	12 <sup>m</sup>	18.7	
29	13	26	59.7	54.6	09	40	5.1	18	23	988	960	11	29	28	22	23	464	444	12	36	20	19.2	
30	14	46	63.4	52.5	07	40	10.9	09	07	1005 <sup>m</sup>	960	13	08	45	22	20	469	425	08	37	44	18.8	
31																							
Mean			63.1	51.3			11.8			981	929			52			483	436			47		

Table 7

## EXTREME VALUES OF THE MAGNETIC ELEMENTS

DECEMBER, 1979.

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C						
	Maximum			Minimum		Range	Maximum		Minimum			Range	Maximum		Minimum		Range					
	G.M.T.		10 <sup>0</sup> +	G.M.T.			G.M.T.		18000Y+	G.M.T.			G.M.T.		44000y+			G.M.T.				
h	m	'	'	h	m	'	h	m	y	y	h	m	y	h	m	y	h	m	y			
1	14	57	63.6	52.6	21	30	11.0	05	10	985	939	13	22	46	16	40	484	447	07	22	37	17.4
2	12	45	63.0	53.8	20	33	9.2	01	50	987	936	13	22	51	20	30	472	444	07	32	28	18.9
3	12	33	60.8	52.6	00	55	8.2	06	54	993	937	13	04	56	15	32	472	442	06	30	30	16.9
4	15	05	64.9	49.8	17	27	15.1	04	57	994	914	13	05	80	17	26	540	439	06	25	101	17.8
5	14	20	62.5	52.5	01	53	10.0	22	55	969	932	11	45	37	01	53	479	442	10	33	37	17.3
6	13	12	59.7	53.4	01	20	6.3	07	14	977	948	11	23	29 <sub>m</sub>	01	20	472	444	11	50	28	17.8
7	13	19	59.9	53.6	09	07	6.3	20	14	984	949	10	45	35	04	30	463	437	11	50	26	18.5
8	14	39	66.6	53.4	04	22	13.2	05	55	989	956	20	00	33	20	34	481	425	13	14	56	17.5
9	13	18	60.7	53.4	09	46	7.3	19	49	982	944	11	17	38	00	28	470	441	11	43	29	17.2
10	13	18	61.5	53.3	09	52	8.2	20	59	981	951	15	30	30	17	37	480	441	13	10	39	15.8
11	14	10	60.2	53.4	01	07	6.8	22	00	984	940	12	30	44	18	59	466	448	02	00	18 <sub>m</sub>	15.0
12 Q	15	00	60.3	53.5	09	23	6.8	21	07	985	955	11	16	30	20	53	476	441	13	47	35	15.0
13 Q	13	59	60.5	54.2	09	43	6.3	06	30	984	952	11	42	32	23	10	467	439	12	32	28	14.5
14	14	08	60.5	54.6	08	57	5.9	06	10	987	944	11	32	43	00	00	466	445	13	04	21	14.0
15	18	40	61.3	53.5	09	24	7.8	04	55	989	938	18	54	51	20	10	482	445	05	35	37	14.5
16	15	08	62.0	46.6	23	59	15.4	05	49	990	935	12	35	55	23	44	487	444	06	43	43	14.1
17	17	22	62.2	46.7	00	00	15.5	05	42	980	938	12	52	42	22	06	484	444	12	09	40	14.1
18	13	50	60.3	53.5	10	03	6.8	01	36	981	938	12	50	43	20	54	466	438	12	56	28	14.1
19	14	41	59.6	51.2	21	22	8.4	07	30	983	948	11	08	35	21	03	471	447	12	48	24	14.1
20	15	40	60.6	53.8	09	43	6.8	07	20	985	950	19	46	35	20	16	473	440	11	10	33	14.3
21	18	24	62.9	52.3	23	38	10.6	06	20	976	943	12	22	33	22	03	479	446	11	02	33	14.2
22 D	18	11	62.4	51.6	00	08	10.8	05	58	1001 <sub>M</sub>	932	18	16	69	19	10	487	428	11	00	59	14.2
23 Q	14	39	59.3	52.7	24	00	6.6	23	46	987	957	12	28	30	17	28	465	440	11	40	25	14.0
24	16	00	61.6	52.7	00	01	8.9	07	00	989	951	16	25	38	22	00	470	443	12	30	27	14.0
25 Q	13	59	58.7	53.4	10	16	5.3 <sub>m</sub>	17	42	994	963	12	03	31	09	45	459	437	13	59	22	14.1
26	17	36	61.6	52.4	20	40	9.2	16	41	998	939	20	29	59	20	39	503	436	11	16	67	15.3
27	16	15	60.5	53.2	04	10	7.3	06	32	987	936	16	37	51	16	46	479	438	11	16	41	14.7
28 D	12	54	60.5	41.4 <sub>m</sub>	23	00	19.1	05	20	982	920	12	01	62	22	52	499	440	05	00	59	14.4
29 D	19	00	62.5	41.8	23	20	20.7 <sub>m</sub>	06	19	992	893 <sub>m</sub>	23	47	99 <sub>M</sub>	19	32	542 <sub>H</sub>	417 <sub>m</sub>	04	25	125 <sub>M</sub>	14.2
30 D	12	54	61.7	42.5	00	01	19.2	18	59	987	913	00	29	74	18	38	497	419	02	24	78	14.1
31	14	55	58.7	45.6	23	23	13.1	05	48	984	933	22	34	51	22	38	489	447	12	21	42	14.1
Mean			61.3	51.3			10.1			986	939			47			481	439			42	

Table 8

## DIURNAL VARIATION. - ALL DAYS - DECLINATION (Tenths of Minutes)

1979.

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24
Jan.	-31	-26	-27	-22	-14	-8	-6	-6	-8	-16	-9	5	23	43	51M	46	34	27	16	10	9	-12	-24	-35m
Feb.	-20	-23	-25	-26m	-24	-21	-19	-15	-17	-23	-14	5	29	43	48M	46	32	23	20	15	6	-8	-16	-21
Mar.	-26	-24	-26	-31	-28	-26	-22	-23	-34	-37m	-21	7	38	64	70M	57	50	31	13	9	3	-9	-17	-23
Apr.	-21	-23	-36	-38	-33	-26	-28	-37	-40m	-38	-19	8	42	69	78M	71	53	37	22	11	2	-9	-18	-16
May	-7	-8	-9	-13	-20	-32	-47	-55	-56m	-47	-21	9	41	62	66M	58	42	28	14	3	2	-1	0	-2
June	-1	-4	-6	-16	-23	-38	-56	-62m	-60	-50	-23	5	35	54	63M	50	50	36	21	7	6	0	-1	3
July	-10	-15	-15	-14	-19	-34	-53	-59m	-58	-49	-23	6	37	59	64M	59	49	35	21	10	5	3	0	-7
Aug.	-9	-18	-21	-18	-27	-37	-49	-57m	-52	-38	-9	25	57	77M	75	60	36	18	3	0	2	-1	-9	-13
Sept.	-22	-22	-26	-29	-28	-27	-31	-35	-38	-33	-68m	25	57	70M	64	50	27	12	6	1	-4	1	-6	-12
Oct.	-23	-22	-21	-23	-18	-20	-22	-27	-34	-36m	-20	12	42	57	64M	54	38	19	13	7	2	-10	-17	-23
Nov.	-18	-19	-18	-18	-16	-11	-13	-16	-21	-32m	-20	48	33	45M	45M	36	31	23	18	8	-2	-10	-14	-15
Dec.	-19	-15	-12	-11	-8	-9	-10	-9	-10	-18	-13	3	20	32	35M	31	26	19	14	8	-3	-12	-18	-21m
Year	-17	-18	-20	-21	-21	-24	-29	-33	-35m	-35m	-16	10	38	59	61M	53	39	26	15	8	2	-5	-11	-15
Winter	-22	-21	-20	-19	-15	-12	-12	-11	-14	-22	-14	5	26	41	45M	40	31	23	17	10	0	-11	-18	-23
Equinox	-23	-23	-27	-30	-27	-25	-26	-31	-37m	-37m	-17	13	44	64	69M	60	42	25	13	7	1	-7	-15	-19
Summer	-7	-11	-13	-15	-22	-35	-51	-58m	-56	-46	-19	11	43	63	67M	59	44	29	15	5	4	0	-2	-5

Table 9

## DIURNAL VARIATION. - ALL DAYS - HORIZONTAL COMPONENT (Gamma Units)

1979.

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24
Jan.	2	1	4	3	5	10	13M	13M	12	6	-3	-12	-15m	-13	-8	-5	-2	0	2	0	-2	-2	1	1
Feb.	3	5	4	6	7	9	10M	10M	7	-2	-10	-16m	-15	-14	-10	-5	-4	-2	3	5	5	1	-1	1
Mar.	8	6	8	7	6	8	10M	10M	5	-7	-15	-21	-22m	-18	-13	-6	-3	3	7	9	8	7	6	7
Apr.	7	5	0	-1	0	0	1	1	-3	-11	-18	-26m	-25	-19	-12	-1	9	15M	14	14	14	13	9	4
May	9	5	3	1	1	1	-1	-7	-12	-20	-24	-26m	-24	-20	-13	-2	11	20	23M	20	18	14	10	11
June	7	5	4	3	2	1	-4	-11	-16	-23	-26	-27m	-25	-20	-12	-2	8	13	22	26M	24	19	13	10
July	9	6	5	5	5	4	-1	-7	-14	-23	-29	-30m	-24	-18	-11	-1	7	13	16	20M	20M	18	14	12
Aug.	7	7	3	4	5	3	-1	-8	-17	-26	-28m	-27	-22	-13	-8	-2	7	19	18	20M	18	14	12	8
Sept.	13	12	10	10	9	9	7	0	-8	-19	-26	-28m	-24	-20	-15	-8	-4	2	6	11	13	13	13	14M
Oct.	9	9	10	12	12	14	15M	11	4	-8	-20	-27m	-27m	-23	-17	-11	-7	-2	5	7	8	9	9	10
Nov.	7	7	9	9	10	12	13M	10	5	-6	-16	-22	-23m	-19	-13	-9	-5	-1	3	6	6	7	7	7
Dec.	3	3	4	6	8	12	13M	11	7	-1	-8	-14	-16m	-14	-10	-7	-4	-1	0	1	1	1	0	0
Year	7	6	6	6	6	7	7	3	-2	-11	-18	-23m	-22	-17	-12	-5	1	7	10	12M	12M	10	8	7
Winter	4	4	5	6	8	11	12M	11	8	0	-9	-16	-17m	-15	-10	-6	-4	-1	2	3	3	2	2	3
Equinox	9	8	7	7	7	7	8	5	-1	-11	-20	-26m	-25	-20	-14	-7	-2	4	8	10	11M	10	9	8
Summer	8	5	4	3	3	2	-2	-8	-15	-23	-27m	-27m	-24	-18	-11	-2	8	16	20	22M	20	16	12	10

Table 10

## DIURNAL VARIATION - ALL DAYS - VERTICAL COMPONENT (Gamma Units)

1979.

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24
Jan.	2	-1	-1	-5	-7	-7	-6	-6	-6	-6	-8	-10	-13m	-13m	-6	3	11	11	12	13M	13M	13M	11	8
Feb.	3	1	0	-2	-3	-5	-6	-7	-5	-3	-8	-13	-17m	-14	-7	0	8	10	8	10	12	13M	11	8
Mar.	3	0	-2	-1	-1	-2	-3	-1	-1	-6	-14	-24	-27m	-22	-12	1	13	22	23M	18	16	13	9	6
Apr.	-3	-6	-8	-7	-6	-8	-5	-2	-3	-7	-16	-23	-28m	-24	-12	4	21	27	30M	27	22	16	11	0
May	1	-2	-3	-1	2	7	7	4	-2	-12	-22	-31	-33m	-25	-12	2	14	21	26M	24	17	11	7	4
June	2	1	1	2	4	8	8	3	-3	-11	-20	-30	-32m	-25	-14	-1	9	17	22M	21	16	12	6	2
July	0	0	-1	-1	2	7	9	5	0	-8	-18	-27	-31m	-25	-13	0	9	16	20M	19	14	11	7	3
Aug.	-1	-1	-1	-2	0	3	5	3	-3	-12	-22	-32	-34m	-26	-11	5	18	26	28M	20	13	9	7	3
Sept.	3	-1	-2	-3	-3	-2	1	3	1	-6	-16	-26	-27m	-19	-6	7	18	19M	15	13	11	6	7	4
Oct.	2	1	-2	-3	-3	-2	-2	1	2	-1	-11	-20	-21m	-15	-6	5	13	16M	12	11	10	11	8	6
Nov.	2	1	-2	-3	-4	-4	-3	-2	0	1	-7	-15	-16m	-9	-1	6	9	11M	10	9	10	8	6	4
Dec.	1	-1	-1	-3	-4	-5	-5	-5	-5	-3	-7	-10m	-10m	-7	-2	2	6	7	7	8	9M	8	7	5
Year	1	-1	-2	-2	-2	-1	0	0	-2	-6	-14	-22	-24m	-19	-9	3	12	17	18M	16	13	11	8	4
Winter	3	1	-1	-3	-4	-5	-5	-5	-4	-2	-7	-12	-13m	-10	-4	3	9	10	10	10	11M	11M	9	7
Equinox	2	-1	-3	-3	-3	-3	-2	1	0	-5	-14	-23	-26m	-20	-9	4	16	21M	20	18	15	12	9	4
Summer	1	0	-1	0	2	7	8	4	-2	-10	-20	-30	-32m	-25	-12	2	13	21	24M	21	15	11	7	3

Table 11

## DIURNAL VARIATION - QUIET DAYS - DECLINATION (Tenths of Minutes)

1979.

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24	to 01
Jan.	-12	-7	-6	-3	-5	-5	-8	-10	-15	-25m	-21	-8	11	34	41M	29	21	11	5	3	-4	-8	-11	-11	-18
Feb.	-10	-11	-7	-5	-6	-11	-14	-19	-28	-42m	-33	-10	16	32	39M	35	25	19	16	13	9	-1	-7	-12	-11
Mar.	-8	-13	-11	-14	-15	-16	-20	-25	-40	-48m	-32	-4	25	44	49M	45	30	15	7	9	12	4	2	1	-3
Apr.	-7	-4	-7	-9	-11	-14	-20	-29	-40	-42m	-26	-6	22	46	56M	47	34	21	11	5	3	2	-7	-13	-8
May	-2	5	8	-1	-12	-26	-39	-48	-53m	-48	-26	0	29	47	55M	49	36	20	9	-1	1	3	3	-1	-11
June	3	-2	-7	-13	-22	-42	-59	-62m	-57	-47	-17	9	34	46	50M	49	39	27	21	15	10	7	6	8	1
July	-2	-8	-8	-11	-20	-32	-47	-58m	-55	-45	-24	4	36	55	63M	56	44	27	12	4	1	2	0	1	-1
Aug.	-3	-8	-10	-17	-23	-34	-45	-54m	-53	-39	-10	27	58	73M	67	47	22	3	-4	0	4	4	0	-2	-3
Sept.	-10	-11	-14	-20	-24	-28	-33	-43	-44m	-32	-6	29	56	67M	60	40	20	5	0	5	2	4	-3	-13	-17
Oct.	-11	-15	-18	-15	-13	-13	-16	-22	-33	-40m	-25	9	32	46	50M	38	25	14	11	9	5	0	-3	-10	-20
Nov.	-25	-21	-8	-11	-16	-11	-10	-17	-25	-33m	-23	4	26	38	41M	34	27	20	14	8	5	-1	-2	-2	-3
Dec.	-9	-8	-6	-7	-6	-6	-11	-14	-14	-23m	-18	-4	11	22	26M	23	20	15	12	8	4	-3	-4	-9	-11
Year	-9	-9	-8	-11	-15	-20	-27	-34	-39m	-39m	-22	4	29	45	49M	41	28	16	9	6	4	1	-3	-6	-9
Winter	-14	-11	-6	-7	-8	-8	-10	-15	-16	-30m	-23	-4	16	32	37M	30	24	17	12	8	4	-3	-6	-8	-10
Equinox	-9	-11	-12	-14	-16	-18	-22	-30	-39	-40m	-22	7	34	51	54M	43	27	14	7	7	6	2	-3	-9	-12
Summer	-1	-3	-4	-10	-19	-33	-47	-55m	-54	-45	-19	11	40	56	59M	51	36	20	10	5	5	4	3	2	-3

Table 12

## DIURNAL VARIATION - QUIET DAYS - HORIZONTAL COMPONENT (Gamma Units)

1979

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24	to 01
Jan.	3	2	2	3	4	6	7	8	9M	1	-10	-15	-18m	-16	-11	-7	-2	0	1	2	3	4	4	7	6
Feb.	5	5	5	6	7	9	9	10M	5	-4	-13	-19	-20m	-17	-11	-6	-4	-2	3	7	6	7	8	9	8
Mar.	5	3	4	4	3	5	7	6	1	-8	-15	-20m	-19	-15	-10	-3	1	3	7	9	9	12M	11	11	13
Apr.	7	5	2	3	2	4	4	6	5	-7	-16	-26m	-25	-19	-11	-2	4	5	9	11	13M	13M	12	12	9
May	6	7	8	4	3	3	0	-5	-10	-17	-19	-22m	-20	-15	-11	0	9	12	19M	15	11	10	10	11	9
June	6	4	3	3	5	4	-3	-11	-16	-23	-26m	-25	-21	-15	-11	-3	6	16	26	27M	24	17	13	10	9
July	7	6	6	6	6	5	2	-5	-10	-18	-25	-26m	-23	-19	-12	-1	5	11	13	15	16M	15	14	12	11
Aug.	6	5	4	2	2	1	-4	-10	-17	-25	-27m	-25	-19	-9	0	6	11	13	13	14	13	16M	11	9	10
Sept.	9	10	9	8	4	5	1	-5	-14	-23	-26m	-23	-19	-11	-7	-3	-1	6	8	13	16M	15	14	14	14
Oct.	6	6	4	5	7	9	9	7	0	-12	-22	-28	-29m	-24	-16	-11	-4	2	8	12	14	17M	15	13	10
Nov.	4	1	5	5	7	9	7	5	1	-9	-19	-27m	-26	-20	-13	-8	-2	5	10	12	13	14M	14M	13	12
Dec.	0	0	0	1	2	3	5	4	2	-6	-12	-15m	-15m	-11	-6	-2	2	6	7	8M	6	7	5	4	1
Year	6	5	5	5	5	6	4	1	-3	-12	-19	-22m	-21	-16	-10	-3	3	7	11	12	13M	13M	11	11	10
Winter	3	2	3	4	5	6	7	7	4	-5	-14	-19	-20m	-16	-10	-6	-2	2	5	7	7	7	8M	8M	7
Equinox	6	6	4	5	3	5	5	3	-3	-13	-20	-25m	-23	-18	-11	-5	0	4	8	11	13	14M	13	12	11
Summer	6	5	5	4	4	3	-1	-8	-13	-21	-25m	-25m	-21	-15	-9	0	7	13	18M	18M	14	14	12	10	9

Table 13

## DIURNAL VARIATION - QUIET DAYS - VERTICAL COMPONENT (Gamma Units)

1979

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24	to 01
Jan.	2	3	2	1	1	0	0	-3	-3	-3	-3	-6	-11m	-11m	-3	4	6M	6M	5	2	3	2	0	-1	-1
Feb.	4	3	3	2	2	3	3	2	3	2	-7	-16	-17m	-14	-9	-2	2	5M	4	3	5M	5M	4	3	1
Mar.	6	6	5	6	6	4	4	5	7	-1	-9	-21	-25m	-22	-15	-6	4	8	9M	7	7	8	6	5	5
Apr.	4	2	4	6	7	8	6	6	5	-2	-11	-20	-26	-28m	-18	-4	6	12M	11	12M	10	7	7	5	2
May	4	1	0	3	7	14	16M	12	6	-7	-19	-30	-33m	-27	-18	-6	5	12	15	16M	11	7	5	5	5
June	8	7	8	9	12	16	14	5	-2	-11	-22	-34	-37m	-29	-19	-7	3	10	16	17M	15	12	9	7	7
July	4	4	2	3	6	10	10	7	2	-9	-17	-27	-32m	-27	-15	-2	9	16	18M	14	9	4	3	1	1
Aug.	4	-2	5	8	9	11	11	9	1	-9	-21	-34	-36m	-27	-11	6	16	21M	17	8	5	2	1	3	2
Sept.	5	2	3	4	6	6	8	9	4	-7	-21	-32m	-31	-23	-8	5	12	14M	10	7	6	4	5	4	3
Oct.	6	7M	6	4	3	3	2	4	6	2	-7	-17m	-17m	-14	-9	1	6	4	2	1	1	2	3	5	6
Nov.	4M	3	3	3	3	3	3	3	4M	4M	-5	-14	-15m	-7	-1	2	3	4M	3	2	2	1	1	1	-1
Dec.	3	2	2	3	2	3	3	3	1	0	-5	-11	-13m	-12	-8	-5	-1	2	2	3	4M	4M	3	3	1
Year	4	4	4	4	5	7	7	5	3	-3	-12	-22	-24m	-20	-11	-1	6	9M	9M	8	6	5	4	3	3
Winter	3	3	3	2	2	2	2	1	2	1	-5	-12	-14m	-11	-5	0	3	4M	4M	3	3	3	2	1	0
Equinox	5	4	4	5	5	5	5	5	5	-2	-12	-23	-25m	-22	-13	-2	6	9M	8	6	5	5	5	4	3
Summer	4	4	3	5	8	12	12	9	1	-10	-20	-32	-35m	-28	-16	-3	8	14	16M	13	10	6	4	4	3



Table 14

## DIURNAL VARIATION - DISTURBED DAYS - DECLINATION (Tenths of Minutes)

1979

Hr. MONTH	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	24 to 01
Jan.	-29	-23	-50	-54	-48	-21	-3	-1	3	-6	3	15	36	64	80M	79	44	51	26	6	-4	-30	-52	-82m	-58
Feb.	-29	-42	-38	-45m	-40	-21	-17	3	7	-11	-6	10	33	47	50	55M	43	25	29	12	0	-20	-24	-27	-21
Mar.	-41	-41	-38	-50m	-39	-36	-29	-10	-33	-26	-7	24	53	83	93	94M	74	53	15	7	-17	-40	-49	-49	-45
Apr.	-46	-41	-111	-121m	-94	-53	-46	-57	-42	-24	14	43	79	102	113M	98	72	63	45	36	-2	-8	-16	-10	-4
May	-29	-32	-33	-22	-38	-50	-57	-71m	-69	-49	-14	26	62	87	88M	87	56	38	26	5	7	-3	-3	-1	-17
June	-11	-19	-19	-30	-40	-44	-65m	-59	-61	-43	-17	15	47	61	68	69M	54	46	21	6	18	-3	-9	10	-3
July	-19	-35	-30	-17	-28	-46	-62m	-61	-53	-39	-11	19	44	63M	62	59	53	47	27	14	8	16	9	-11	-4
Aug.	-32	-50	-61m	-36	-50	-50	-52	-57	-55	-39	-2	34	70	99	103M	91	65	50	14	8	5	3	-33	-26	-7
Sept.	-49	-54	-61	-63m	-48	-37	-32	-20	-19	-29	2	30	67	80	85M	80	49	33	17	-4	-2	4	-10	-14	-27
Oct.	-53m	-53m	-45	-51	-32	-33	-30	-27	-22	-24	-8	25	57	76	104M	92	69	31	12	-3	-3	-29	-36	-25	-45
Nov.	-32	-28	-30	-34	-25	-17	-17	-12	-15	-23	-3	33	51	62M	61	44	49	36	29	9	-19	-44	-39	-48m	-47
Dec.	-44	-27	-22	-27	-5	0	1	5	3	-3	2	18	35	42M	41	38	28	21	21	0	-11	-23	-43	-53m	-44
Year	-34	-37	-44	-45m	-40	-33	-34	-30	-29	-26	-4	25	53	73	79M	74	55	41	24	8	-1	-14	-25	-28	-27
Winter	-34	-30	-35	-40	-30	-15	-9	-1	-1	-11	-1	19	38	53	58M	54	41	33	26	7	-8	-29	-40	-53m	-43
Equinox	-47	-47	-63	-71m	-53	-39	-34	-28	-29	-26	0	30	64	86	99M	91	66	45	22	9	-6	-18	-28	-25	-30
Summer	-22	-34	-35	-26	-39	-47	-59	-62m	-59	-42	-11	24	56	78	81M	77	57	46	22	9	10	4	-9	-7	-8

Table 15

## DIURNAL VARIATION - DISTURBED DAYS - HORIZONTAL COMPONENT (Gamma Units)

1979

Hr. MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	to 1	to 2	to 3	to 4	to 5	to 6	to 7	to 8	to 9	to 10	to 11	to 12	to 13	to 14	to 15	to 16	to 17	to 18	to 19	to 20	to 21	to 22	to 23	to 24	to 01
Jan.	12	16	18	9	9	14	20	22	25M	17	4	-4	-6	-5	-8	-9	-8	-3	-9	-21	-21	-25m	-21	-18	-13
Feb.	3	9	2	5	9	13M	7	7	7	-2	-7	-12m	-9	-7	-9	-3	-1	-1	5	1	-4	-11	-10	-4	0
Mar.	21M	14	15	14	13	16	19	15	1	-6	-9	-24	-29m	-24	-12	-14	-20	-4	4	3	-3	-14	-17	-18	-8
Apr.	12	4	-8	-20	0	-5	1	-6	-12	-10	-16	-33m	-29	-11	-4	3	16	21	17	23M	18	22	13	14	12
May	8	1	-2	1	1	-2	-5	-15	-25	-38	-42m	-35	-26	-26	-15	4	29	34M	29	32	31	21	16	18	15
June	16	11	9	7	2	-2	-8	-12	-18	-25	-28m	-28m	-26	-22	-18	2	9	17	19	33M	27	21	12	13	6
July	10	1	0	5	8	5	1	-7	-16	-28	-32m	-29	-20	-17	-16	-1	3	11	10	26	33M	21	18	22	14
Aug.	8	11	-2	2	9	4	-4	-4	-16	-27	-24	-27	-28m	-14	-9	-1	15	45M	37	29	14	0	0	-10	-9
Sept.	22M	16	14	16	16	13	15	2	-3	-15	-28	-35m	-32	-31	-27	-13	-17	-6	4	9	15	18	21	20	23
Oct.	7	4	10	11	13	22M	19	14	5	-9	-26	-28m	-25	-20	-14	-10	-6	-5	6	11	11	5	4	9	8
Nov.	17	20	22M	22M	19	21	20	18	5	-7	-18	-25	-31m	-25	-24	-18	-12	-13	-10	4	1	1	2	4	5
Dec.	3	4	11	12	14	21	22M	14	9	4	-4	-11	-13	-14m	-11	-11	-14m	-7	-8	-5	-3	-5	-6	-8	-5
Year	12M	10	8	7	10	10	8	4	-3	-12	-19	-24m	-22	-18	-14	-6	0	8	9	12M	10	5	3	4	4
Winter	10	12	14	12	13	17M	17M	16	12	3	-6	-13	-14m	-13	-13	-10	-9	-6	-5	-5	-6	-10	-8	-6	-3
Equinox	16M	10	8	5	11	12	14	7	-2	-10	-19	-30m	-28	-21	-14	-8	-6	2	8	12	11	8	6	7	9
Summer	10	6	1	3	5	1	-4	-10	-19	-30	-32m	-30	-26	-20	-15	0	13	26	23	29m	26	15	11	11	6

Table 16

## DIURNAL VARIATION - DISTURBED DAYS - VERTICAL COMPONENT (Gamma Units)

1979

Hr. MONTH	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21	21 to 22	22 to 23	23 to 24	24 to 01
Jan.	-5	-10	-7	-15	-18	-24m	-22	-21	-19	-17	-18	-16	-18	-17	-8	9	31	23	32	35M	27	28	26	20	2
Feb.	4	-4	-6	-6	-9	-17	-14	-21m	-17	-7	-11	-14	-20	-15	-6	-1	11	18	11	24	29M	28	20	15	6
Mar.	-7	-14	-18	-14	-14	-11	-14	-18	-11	-19	-29	-32m	-29	-22	-6	17	34	46M	46M	36	35	25	13	10	-5
Apr.	-6	-19	-28	-22	-28	-49m	-32	-12	-16	-12	-19	-17	-19	-14	-1	20	47	51	54M	45	43	22	15	1	-8
May	1	-6	-10	-13	-8	-3	-6	-7	-11	-21	-28	-33m	-32	-23	-7	10	35	43	45M	39	24	14	5	-3	-8
June	4	-2	-4	-2	-1	-3	-2	-8	-10	-14	-21	-31m	-31m	-22	-11	2	17	30	38M	29	15	18	13	0	3
July	-3	-6	-4	-5	1	8	8	4	-3	-10	-22	-29	-31m	-23	-7	8	16	19	26M	23	17	9	9	4	-2
Aug.	-8	-13	-17	-20	-15	-16	-16	-16	-20	-29	-35	-41m	-39	-26	-5	14	41	63	75M	51	27	19	17	3	-5
Sept.	3	-6	-11	-14	-15	-10	-9	-10	-12	-13	-18	-21m	-21m	-11	2	21	43M	33	26	23	12	7	7	2	1
Oct.	1	-2	-12	-14	-14	-8	-9	-4	-3	-5	-13	-22m	-20	-17	-7	9	22	33M	26	22	17	19	9	-1	-1
Nov.	-3	-7	-12	-15	-18	-20	-19	-13	-6	-6	-14	-19	-20	-21m	5	16	19	26	27M	22	23	17	10	5	-2
Dec.	-2	-6	-9	-11	-18	-20m	-18	-15	-11	-8	-9	-7	-8	0	5	10	16	16	17	20M	14	14	14	9	1
Year	-1	-8	-11	-12	-13	-14	-12	-11	-11	-13	-19	-23m	-23m	-16	-4	11	28	34	35M	31	24	19	13	6	-1
Winter	-2	-7	-9	-12	-16	-19m	-17	-18	-14	-9	-13	-14	-15	-10	-1	8	19	21	21	25M	23	22	17	12	2
Equinox	-2	-10	-17	-16	-18	-19	-16	-10	-10	-12	-20	-23m	-22	-16	-3	17	37	41M	38	32	27	19	11	3	-3
Summer	-2	-7	-9	-10	-6	-4	-4	-7	-11	-19	-27	-34m	-34m	-24	-8	8	27	39	46M	35	21	15	11	1	-3

Table 17 Three-Hour Range Indices, K.

Date	January			February			March			April		
	K		K Sum	K		K Sum	K		K Sum	K		K Sum
1	1211	2114	13	1221	2112	12	4322	2221	18	3333	3315	24
2	2013	3454	22	3222	2122	16	4333	3334	26	5433	4434	30
3	4213	3243	22	2111	1133	13	3122	3333	20	3232	3457	29
4	4443	3554	32	3322	3422	21	4323	4335	27	6534	3212	26
5	4322	2333	22	3223	2202	16	3333	2131	19	3335	6633	32
6	3223	3322	20	2332	3224	21	3323	3444	26	3232	3322	20
7	1122	4554	24	0102	2122	10	3221	2022	14	2323	2223	19
8	3111	2213	14	3213	3222	18	2122	2122	14	3223	1333	20
9	3332	3221	19	2213	3222	17	3132	3113	17	4322	2221	18
10	1111	2110	8	1112	2121	11	5443	4466	36	1133	3322	18
11	1102	2100	7	4311	2123	17	5333	3320	22	1013	2311	12
12	1221	3223	16	4334	3210	20	1112	1120	9	2334	3334	25
13	3112	2101	11	0012	3200	8	0122	2200	9	2213	3322	18
14	0123	3220	13	0012	1012	7	0021	1111	7	2123	3335	22
15	1114	3344	21	0132	3320	14	0112	2323	14	3222	3323	20
16	4322	2211	17	1323	3120	15	2223	3312	18	3432	2321	20
17	0002	2223	11	0012	3212	11	2244	3322	22	3133	2232	19
18	3213	2222	17	1324	3244	23	2133	3200	14	2122	2112	13
19	4423	3123	22	4222	4231	20	0033	3331	16	1122	1222	13
20	3223	2231	18	1111	1223	12	1122	2213	14	1012	2100	7
21	3313	3211	17	2453	3554	31	0033	3121	13	1112	3334	18
22	0112	3255	19	4234	4433	27	1134	5532	24	5534	4443	32
23	3123	3354	24	3433	2324	24	3333	3224	23	4433	3322	24
24	4523	2222	22	3223	3333	22	2233	3234	22	3331	2224	20
25	5533	4343	30	2321	2134	18	3432	3334	25	6665	5355	41
26	4323	3456	30	3322	3454	26	4333	4444	29	3212	1333	18
27	3432	2145	24	5423	3232	24	1233	3334	22	3332	3544	27
28	2213	3331	18	3213	3343	22	3344	4435	30	5343	3344	29
29	3312	3233	20				5552	4564	36	3433	3545	30
30	3232	3224	21				4333	3311	21	5333	4332	26
31	3223	3223	20				3323	4235	25			

Table 17 (Contd.)

Three-Hour Range Indices, K.

Date	May			June			July			August		
	K		K Sum	K		K Sum	K		K Sum	K		K Sum
1	3333	3433	25	0011	1323	11	3222	2321	17	1013	4333	18
2	4333	2331	22	1212	2113	13	2112	1311	12	3233	2220	17
3	2121	1222	13	1011	2322	12	0134	3332	19	2323	2122	17
4	2121	1333	16	1122	3221	14	3333	2212	19	2431	3333	22
5	2121	1331	14	1320	2111	11	0232	1332	16	1221	1232	14
6	1122	2211	12	1113	4365	24	1123	2353	20	2344	2432	24
7	2112	3331	16	3442	3443	27	3421	4332	22	2232	1233	18
8	0232	2212	14	2222	3432	20	1231	3323	18	1212	3332	17
9	1222	2333	18	2322	3432	21	1102	1421	12	2122	3310	14
10	2211	2322	15	2332	3432	22	1202	3222	14	1111	2232	13
11	3243	3432	24	1321	3322	17	1121	1221	11	2221	3233	18
12	2222	3321	17	2221	1232	15	1132	3442	20	3123	1334	20
13	1223	2321	16	1123	2322	16	3321	3431	20	3135	5555	32
14	1223	3411	17	2222	2331	17	2112	3244	19	3111	2221	13
15	1333	3321	19	1222	3333	19	4332	2232	21	1111	1222	11
16	2321	2221	15	3223	3333	22	3223	2323	20	2021	1111	9
17	1111	1320	10	1322	4431	20	3313	3324	22	1111	1331	12
18	1112	2443	18	1222	2321	15	3333	3323	23	1011	4325	17
19	4323	3333	24	2221	1321	14	3221	2223	17	5433	4324	28
20	3323	2323	21	2112	3343	19	1213	4334	21	3333	3654	30
21	0022	3443	18	1122	3443	20	2122	2233	17	4332	3332	23
22	3334	3545	30	4232	3343	24	1121	1331	13	2232	3322	19
23	3311	1133	16	3432	2333	23	1222	2121	13	1022	3221	13
24	3334	3343	26	2323	2323	20	2222	3221	16	0023	2542	18
25	3543	3544	31	2222	2231	16	2212	1120	11	1234	3444	25
26	4332	4432	25	1123	4454	24	1121	2245	18	3333	2331	21
27	3332	3332	22	2312	2220	14	4323	3533	26	1322	2332	18
28	3121	2432	18	0021	1321	10	4220	2223	17	3232	3223	20
29	2132	2356	24	2122	3432	19	2223	3444	24	3444	4655	35
30	2333	2311	18	2132	1433	19	3213	2221	16	4332	2221	19
31	0112	2331	13				0111	1111	7	1123	3323	18

Table 17 (Contd.)

Three-Hour Range Indices, K.

Date	September			October			November			December		
	K		K Sum	K		K Sum	K		K Sum	K		K Sum
1	2112	2333	17	3223	2211	16	2323	3333	22	1022	3332	16
2	2122	2211	13	1013	2234	16	3333	2221	19	3213	2121	15
3	3222	2221	16	4312	2331	19	0023	3343	18	2232	1210	13
4	0123	2222	14	3133	1100	12	4223	2121	17	2332	2532	22
5	3322	3343	23	0013	3233	15	0023	2110	9	1112	2211	11
6	4432	3211	20	2323	5432	24	0023	2100	8	2111	1001	7
7	2312	1121	13	3333	4344	27	0123	2342	17	1001	1100	4
8	1132	2322	16	4343	2434	27	2133	2311	16	1212	3232	16
9	1122	2212	13	3324	3233	23	2223	4444	25	1122	2101	10
10	2222	2322	17	3323	3243	23	1113	3213	15	0011	2321	10
11	2133	1432	19	1122	3321	15	2312	3322	18	2102	2122	12
12	2111	1324	15	0123	2224	16	0112	3121	11	0111	1121	8
13	3222	2212	16	3223	2333	21	3423	3464	29	0012	2111	8
14	1122	3333	18	1123	2210	12	4313	2210	16	0113	2110	9
15	2112	3211	13	0013	2323	14	0112	1201	8	1212	2231	14
16	3223	3213	19	3212	2211	14	1233	3232	19	3222	3214	19
17	1112	2224	15	0112	2122	11	3132	2211	15	4123	3323	21
18	5354	4532	31	1112	1112	10	1122	2101	10	2013	2121	12
19	1112	1132	12	0023	2212	12	0012	3224	14	1112	2113	12
20	3123	4334	23	3123	3311	17	1113	2312	14	0002	1121	7
21	5422	2233	23	2323	2224	20	2111	2110	9	0002	2133	11
22	2102	2211	11	4333	2322	22	0002	2100	5	3223	3331	20
23	1112	2311	12	1113	2223	15	1102	2223	13	1001	1102	6
24	0223	3215	18	2233	2220	16	3234	2344	25	2113	2321	15
25	3433	2333	24	2223	3333	21	4412	2211	17	0002	2011	6
26	4333	2343	25	1313	2213	16	1001	2132	10	1112	2342	16
27	3421	2222	18	0123	1222	13	1012	1100	6	0222	2320	13
28	2332	2233	20	2223	2314	19	0011	0100	3	0214	3315	19
29	3323	3323	22	3320	3232	18	0011	1221	8	3432	4354	28
30	2332	2323	20	3212	1200	11	0143	2222	16	4422	2242	22
31				0013	1223	12				1112	2124	14

TABLE 18

SUDDEN COMMENCEMENTS OF MAGNETIC STORMS  
OR PERIODS OF STORMINESS (S.S.C's)

Date	Time (GMT)	Date	Time (GMT)	Date	Time (GMT)	Date	Time (GMT)	Date	Time (GMT)
Jan 4	1726	Feb 21	0303	Mar 22	0826	July 6	1930	Oct 6	1121
7	1215	21	1551	28	0827	12	1941	7	1356
9	0339	Mar 4	0446	Apr 3	1001	26	1833	19	1156
25	0139	6	0818	5	0156	Aug 11	1813	Nov 7	1348
Feb 3	1823	9	0808	24	2358	13	0611	9	1202
11	0148	15	0556	May 29	1850	20	0625	18	0210
18	0304	17	0232	June 6	1927	29	0459	30	0739

TABLE 19

PRESUMED SOLAR FLARE EFFECTS (SFE's)

Date	Time (GMT)			Date	Time (GMT)		
	Begin	Max	End		Begin	Max	End
NIL							

TABLE 20

GIANT PULSATIONS (p.g's)

Date	Time (GMT)		Date	Time (GMT)		Date	Time (GMT)	
	Begin	End		Begin	End		Begin	End
Sept 30	0645	0802						

TABLE 21

ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

Year	D	H	I	X	Y	Z	T
	<sup>o</sup> ' "	<sup>y</sup>	<sup>o</sup> ' "	<sup>y</sup>	<sup>y</sup>	<sup>y</sup>	<sup>y</sup>
1899	-21 35.0	17739	68 33.0	16495	-6525	45149	48508
1900	-21 30.0	17765	68 29.6	16529	-6511	45084	48458
1901	-21 27.7	17801	68 26.3	16567	-6513	45048	48438
1902	-21 24.2	17833	68 23.9	16603	-6508	45037	48439
1903	-21 18.7	17833	68 22.6	16614	-6481	44987	48393
1904	-21 15.2	17840	68 20.9	16627	-6467	44941	48352
1905	-21 10.4	17848	68 19.2	16643	-6447	44895	48313
1906	-21 06.3	17867	68 16.9	16669	-6433	44856	48283
1907	-21 01.4	17870	68 17.0	16680	-6411	44867	48295
1908	-20 55.7	17870	68 16.3	16691	-6383	44840	48270
1909	-20 50.3	17877	68 15.1	16708	-6359	44813	48247
1910	-20 44.6	17892	68 13.0	16732	-6337	44771	48214
1911	-20 38.1	17889	68 12.1	16741	-6304	44729	48174
1912	-20 29.3	17898	68 10.3	16766	-6265	44684	48135
1913	-20 19.6	17892	68 09.2	16778	-6215	44628	48081
1914	-20 12.3	17895	68 07.8	16794	-6181	44583	48040
1915	-20 03.8	17869	68 07.9	16785	-6130	44522	47974
1916	-19 53.1	17869	68 06.6	16804	-6078	44473	47929
1917	-19 43.0	17855	68 06.9	16808	-6024	44449	47901
1918	-19 36.2	17843	68 06.5	16809	-5956	44405	47855
1919	-19 27.2	17840	68 06.1	16822	-5941	44382	47833
1920	-19 17.9	17837	68 05.3	16835	-5895	44345	47798
1921	-19 06.5	17844	68 03.4	16861	-5841	44292	47751
1922	-18 57.0	17844	68 02.9	16877	-5795	44273	47734
1923	-18 46.5	17846	68 01.3	16896	-5744	44219	47684
1924	-18 34.9	17847	68 00.3	16917	-5687	44184	47652
1925	-18 22.4	17841	67 59.6	16932	-5624	44143	47612
1926	-18 10.8	17825	67 59.6	16935	-5561	44104	47570
1927	-17 59.5	17826	67 58.5	16954	-5506	44066	47535
1928	-17 48.0	17813	67 58.5	16960	-5445	44033	47500
1929	-17 37.3	17807	67 58.6	16971	-5391	44022	47487
1930	-17 27.6	17798	67 58.7	16978	-5340	44004	47467
1931	-17 16.8	17798	67 57.4	16995	-5287	43956	47422
1932	-17 05.4	17791	67 57.1	17005	-5228	43928	47394
1933	-16 54.5	17792	57 56.4	17023	-5175	43904	47372
1934	-16 43.7	17791	67 55.8	17038	-5121	43880	47349
1935	-16 32.7	17782	67 55.6	17046	-5064	43850	47319
1936	-16 21.6	17777	67 55.7	17057	-5007	43842	47309
1937	-16 11.7	17777	67 55.9	17072	-4958	43849	47315
1938	-16 02.7	17782	67 56.3	17089	-4915	43876	47342
1939	-15 54.1	17793	67 56.1	17112	-4875	43896	47365
1940	-15 45.6	17798	67 55.1	17129	-4834	43908	47378



TABLE 21 (Contd.)

ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

Year	D		H y	I		X y	Y y	Z y	T y
	°	'		°	'				
1941	-15	36.8	17808	67	55.2	17151	-4793	43900	47374
1942	-15	28.0	17831	67	53.6	17185	-4755	43898	47381
1943	-15	19.8	17837	67	53.6	17202	-4716	43913	47397
1944	-15	11.6	17861	67	52.1	17237	-4681	43917	47410
1945	-15	03.6	17867	67	51.1	17253	-4642	43895	47392
1946	-14	54.2	17857	67	52.3	17256	-4593	43914	47406
1947	-14	45.1	17876	67	52.3	17287	-4552	43961	47456
1948	-14	37.2	17883	67	52.1	17304	-4514	43971	47468
1949	-14	30.1	17911	67	50.9	17340	-4485	43996	47502
1950	-14	23.9	17952	67	49.8	17388	-4464	44056	47573
1951	-14	16.5	17983	67	48.3	17428	-4434	44077	47604
1952	-14	10.3	18020	67	45.7	17472	-4412	44072	47614
1953	-14	03.6	18061	67	44.3	17520	-4388	44121	47675
1954	-13	55.9	18109	67	41.8	17576	-4360	44147	47717
1955	-13	48.5	18137	67	39.9	17613	-4329	44146	47727
1956	-13	41.6	18158	67	39.0	17642	-4298	44165	47752
1957	-13	35.1	18192	67	37.1	17683	-4273	44178	47777
1958	-13	29.0	18226	67	35.4	17724	-4250	44197	47808
1959	-13	22.9	18252	67	34.1	17756	-4224	44215	47831
1960	-13	16.4	18279	67	32.7	17791	-4197	44229	47857
1961	-13	10.3	18318	67	30.5	17836	-4174	44242	47884
1962	-13	04.1	18359	67	27.9	17884	-4151	44245	47903
1963	-12	57.6	18391	67	26.0	17923	-4125	44253	47922
1964	-12	51.6	18428	67	23.7	17966	-4102	44260	47943
1965	-12	46.1	18466	67	21.4	18009	-4081	44268	47965
1966	-12	40.8	18495	67	19.8	18044	-4060	44277	47985
1967	-12	35.7	18526	67	18.3	18080	-4040	44298	48016
1968	-12	30.7	18564	67	16.3	18123	-4022	44316	48047
1969	-12	25.8	18605	67	14.1	18169	-4005	44337	48082
1970	-12	20.6	18651	67	11.8	18220	-3987	44361	48122
1971	-12	14.8	18697	67	09.3	18271	-3966	44379	48157
1972	-12	08.2	18735	67	07.4	18316	-3939	44400	48191
1973	-12	00.7	18773	67	05.3	18362	-3907	44416	48220
1974	-11	52.0	18809	67	03.5	18407	-3868	44436	48253
1975	-11	43.0	18849	67	01.2	18456	-3828	44447	48278
1976	-11	33.0	18882	66	59.1	18500	-3781	44454	48298
1977	-11	22.7	18914	66	57.1	18543	-3731	44456	48312
1978	-11	11.9	18932	66	56.2	18572	-3677	44465	48328
1979	-11	01.0	18956	66	54.5	18607	-3622	44460	48333