

METEOROLOGICAL SERVICE



MAGNETIC OBSERVATIONS
AT VALENTIA OBSERVATORY
1981

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NOTE To simplify reproduction, the letter y has been used throughout the text to signify γ .

Magnetic Observations at Valentia Observatory, 1981.

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 1954-1980 have been published in annual volumes. The present volume contains the data for 1981.

2. Site of the Observations

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

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

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 1981 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 1981 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 "M" 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].

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Table I 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.
2/1	142	4/3	142	6/5	141	6/7	137	2/9	140	2/11	141
5/1	142	6/3	140	8/5	142	8/7	142	4/9	137	4/11	138
7/1	141	9/3	140	11/5	139	10/7	140	7/9	139	6/11	141
9/1	139	11/3	140	13/5	139	13/7	140	9/9	139	9/11	137
12/1	139	13/3	140	15/5	139	15/7	138	11/9	139	11/11	144
14/1	145	16/3	142	18/5	141	17/7	140	14/9	140	13/11	140
16/1	142	18/3	139	20/5	141	20/7	142	16/9	135	16/11	140
19/1	139	20/3	140	22/5	141	22/7	140	18/9	141	18/11	140
21/1	141	23/3	140	25/5	142	24/7	139	21/9	139	20/11	140
23/1	140	25/3	140	27/5	142	27/7	138	23/9	141	23/11	138
26/1	138	27/3	139	29/5	143	29/7	140	25/9	137	25/11	143
28/1	142	30/3	143	1/6	141	31/7	140	28/9	138	27/11	142
30/1	143	1/4	143	3/6	144	3/8	139	30/9	139	30/11	142
2/2	141	3/4	142	5/6	141	5/8	141	2/10	138	2/12	140
4/2	140	6/4	141	8/6	140	7/8	139	5/10	140	4/12	141
6/2	141	10/4	143	10/6	142	10/8	142	7/10	143	7/12	141
9/2	136	13/4	142	12/6	139	12/8	142	9/10	137	9/12	141
11/2	140	15/4	142	15/6	141	14/8	141	12/10	139	11/12	140
13/2	139	17/4	139	17/6	139	17/8	142	14/10	137	14/12	139
16/2	136	20/4	140	22/6	143	19/8	140	16/10	136	16/12	145
18/2	144	22/4	142	24/6	144	21/8	140	21/10	139	18/12	141
20/2	140	24/4	141	26/6	139	24/8	141	23/10	139	21/12	140
23/2	137	27/4	147	29/6	143	26/8	141	26/10	148	23/12	142
25/2	142	29/4	142	1/7	141	28/8	138	28/10	145	28/12	142
27/2	142	4/5	140	3/7	138	31/8	137	30/10	144	30/12	137
2/3	140	-	-	-	-	-	-	-	-	-	-

HORIZONTAL COMPONENT (Gamma Units)

DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.	DATE	OBS.
2/1	19167	4/3	19166	6/5	19167	6/7	19170	2/9	19168	30/10	19162
5/1	167	6/3	167	8/5	170	8/7	170	4/9	169	2/11	164
7/1	169	9/3	171	11/5	168	10/7	170	7/9	170	4/11	162
9/1	166	11/3	171	13/5	167	13/7	166	9/9	168	6/11	163
12/1	165	13/3	171	15/5	168	15/7	171	11/9	167	9/11	160
14/1	166	16/3	166	18/5	168	17/7	171	14/9	166	11/11	161
16/1	166	18/3	167	20/5	172	20/7	168	16/9	168	13/11	162
19/1	167	20/3	169	22/5	170	22/7	167	18/9	167	16/11	159
21/1	167	23/3	167	25/5	167	24/7	171	21/9	166	18/11	157
23/1	165	25/3	166	27/5	174	27/7	167	23/9	165	20/11	161
26/1	165	27/3	168	29/5	172	29/7	170	25/9	168	23/11	161
28/1	167	30/3	168	1/6	172	31/7	165	28/9	163	27/11	162
30/1	165	1/4	170	3/6	168	3/8	167	30/9	161	30/11	161
2/2	166	3/4	171	5/6	171	5/8	164	2/10	163	2/12	160
4/2	164	6/4	170	8/6	172	7/8	169	5/10	160	4/12	161
6/2	167	10/4	167	10/6	174	10/8	166	7/10	161	7/12	162
9/2	165	13/4	169	12/6	172	12/8	165	9/10	161	9/12	160
11/2	166	15/4	172	15/6	171	14/8	166	12/10	159	11/12	162
13/2	172	17/4	168	17/6	176	17/8	167	14/10	160	14/12	161
16/2	173	20/4	167	19/6	172	19/8	167	16/10	162	16/12	159
18/2	166	22/4	168	22/6	171	21/8	168	19/10	160	18/12	159
20/2	162	24/4	168	24/6	170	24/8	167	21/10	160	21/12	160
23/2	164	27/4	163	26/6	169	26/8	169	23/10	163	23/12	161
25/2	165	30/4	167	29/6	166	28/8	171	26/10	161	28/12	162
27/2	165	1/5	170	1/7	167	31/8	169	28/10	162	30/12	160
2/3	163	4/5	168	3/7	168	-	-	-	-	-	-

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.
2/1	44307	4/3	44306	6/5	44308	6/7	44315	2/9	44324	30/10	44319
5/1	305	6/3	306	8/5	310	8/7	317	4/9	326	2/11	323
7/1	305	9/3	307	11/5	310	10/7	315	7/9	323	4/11	321
9/11	307	11/3	308	13/5	312	13/7	320	9/9	324	6/11	323
12/1	304	13/3	307	15/5	310	15/7	317	11/9	322	9/11	321
14/1	307	16/3	306	18/5	309	17/7	317	14/9	322	11/11	323
16/1	308	18/3	305	20/5	311	20/7	317	16/9	321	13/11	321
19/1	311	20/2	306	22/5	311	22/7	316	18/9	322	16/11	321
21/1	310	23/3	306	25/5	309	24/7	314	21/9	321	18/11	322
23/1	306	25/3	309	27/5	313	27/7	319	23/9	323	20/11	324
26/1	308	27/3	306	29/5	311	29/7	317	25/9	322	23/11	326
28/1	309	30/3	307	1/6	312	31/7	316	28/9	321	27/11	324
30/1	309	1/4	310	3/6	311	3/8	319	30/9	324	30/11	325
2/2	311	3/4	309	5/6	311	5/8	320	2/10	319	2/12	324
4/2	308	6/4	307	8/6	312	7/8	316	5/10	322	4/12	324
6/2	309	10/4	307	10/6	311	10/8	319	7/10	320	7/12	322
9/2	306	13/4	309	12/6	312	12/8	320	9/10	324	9/12	319
11/2	300	15/4	310	15/6	312	14/8	321	12/10	320	11/12	317
13/2	304	17/4	308	17/6	310	17/8	319	14/10	320	14/12	320
16/2	300	20/4	309	19/6	313	19/8	321	16/10	314	16/12	321
18/2	307	22/4	309	22/6	312	21/8	321	19/10	323	18/12	315
20/2	304	24/4	309	24/6	313	24/8	322	21/10	320	21/12	323
23/2	304	27/4	306	26/6	312	26/8	322	23/10	321	23/12	322
25/2	314	30/4	308	29/6	312	28/8	323	26/10	319	28/12	326
27/2	306	1/5	311	1/7	316	31/8	323	28/10	321	30/12	323
2/3	306	4/5	308	3/7	313	-	-	-	-	-	-

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- 9/1	140	10/5-15/5	139	11/8-18/8	141	25/10	142
10/1- 7/2	141	16/5-18/5	140	19/8-26/8	140	26/10-30/10	143
8/2-23/2	140	19/5-24/5	141	27/8- 2/9	139	31/10- 1/11	142
24/2-15/3	141	25/5- 3/6	142	3/9- 6/9	138	2/11- 3/11	141
16/3	142	4/6-12/6	141	7/9- 1/10	139	4/11-24/11	140
17/3-27/3	140	13/6-17/6	140	2/10-10/10	140	23/11-21/12	141
28/3-29/3	141	18/6-30/6	141	11/10-12/10	139	22/12-28/12	142
30/3-13/4	142	1/7-23/7	140	13/10-18/10	138	29/12	141
14/4- 8/5	141	24/7- 4/8	139	19/10-23/10	139	30/12-31/12	140
9/5	140	5/8-10/8	140	24/10	141	-	

HORIZONTAL COMPONENT (Gamma Units)

DATE	ADOP.	DATE	ADOP.	DATE	ADOP.	DATE	ADOP.
1/1- 7/1	19168	1/4- 6/4	19170	26/6-27/6	19169	27/9	19164
8/1- 9/1	167	7/4-16/4	169	28/6- 2/7	168	28/9-29/9	163
10/1-22/1	166	17/4- 2/5	168	3/7-27/7	169	30/9- 3/10	162
23/1-10/2	165	3/5- 8/5	169	28/7-30/7	168	4/10-12/10	161
11/2-18/2	166	9/5-18/5	168	31/7-24/8	167	13/10-21/10	160
19/2- 3/3	165	19/5-24/5	169	25/8- 2/9	168	22/10-30/10	161
4/3- 5/3	166	25/5- 4/6	170	3/9- 7/9	169	31/10- 6/11	162
6/3	167	5/6-16/6	171	8/9-16/9	168	7/11-14/12	161
7/3	168	17/6-20/6	172	17/9-23/9	167	15/12-21/12	160
8/3-14/3	169	21/6-22/6	171	24/9-25/9	166	22/12-31/12	161
15/3-31/3	168	23/6-25/6	170	26/9	165	-	

VERTICAL COMPONENT (Gamma Units)

DATE	ADOP.	DATE	ADOP.	DATE	ADOP.	DATE	ADOP.
1/1-13/1	44306	30/6- 4/7	44314	11/9-15/9	44322	6/12	44323
14/1-15/1	307	5/7- 6/7	315	16/9-21/9	321	7/12	322
16/1	308	7/7- 9/7	316	22/9-30/9	322	8/12	321
17/1- 7/2	309	10/7-21/7	317	1/10-12/10	321	9/12	318
8/2	308	22/7	316	13/10	320	10/12-11/12	317
9/2	306	23/7-24/7	315	14/10	318	12/12	316
10/2	304	25/7	316	15/10	316	13/12	318
11/2-16/2	303	26/7-27/7	317	16/10	315	14/12-16/12	320
17/2-28/2	305	28/7- 7/8	318	17/10	317	17/12	318
1/3-22/3	306	8/8-12/8	319	18/10	319	18/12	316
23/3-28/3	307	13/8-18/8	320	19/10-30/10	321	19/12	318
29/3-11/4	308	19/8-22/8	321	31/10-18/11	322	20/12	320
12/4- 6/5	309	23/8-26/8	322	19/11	323	21/12-24/12	321
7/5-22/5	310	27/8-31/8	323	20/11-23/11	324	25/12-26/12	322
23/5-11/6	311	1/9- 5/9	324	24/11- 1/12	325	27/12-28/12	323
12/6-23/6	312	6/9-10/9	323	2/12- 5/12	324	29/12-31/12	325
24/6-29/6	313	-		-		-	

NOTE: The adopted values 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 $10^{\circ}14.0$, Horizontal Component 19168y and Vertical Component 44307y; for the 24 hour period commencing at 0900 G.M.T. on 31st December they are Declination $10^{\circ}14.0$, Horizontal Component 19161y and Vertical Component 44325y.

Table 3

MONTHLY AND ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

ALL DAYS

1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ} +$	452	441	435	423	410	409	398	393	384	374	366	360	404
Horizontal Force (Gamma Units) 18000 +	987	982	980	980	991	1008	999	994	994	980	990	1000	990
Vertical Force (Gamma Units) 44000 +	453	454	457	453	456	449	453	455	451	463	462	454	455

FIVE INTERNATIONAL QUIET DAYS

1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ} +$	453	443	440	425	421	407	397	394	386	375	367	362	406
Horizontal Force (Gamma Units) 18000 +	991	991	992	991	1005	1009	1004	997	996	992	1003	1003	998
Vertical Force (Gamma Units) 44000 +	451	450	450	449	451	448	449	452	451	455	457	453	451

FIVE INTERNATIONAL DISTURBED DAYS

1981	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Declination $10^{\circ} +$	444	441	437	408	401	413	397	392	380	379	363	363	401
Horizontal Force (Gamma Units) 18000 +	982	970	978	954	966	1004	981	987	985	963	985	990	979
Vertical Force (Gamma Units) 44000 +	454	461	434	450	460	451	462	457	455	476	464	460	459

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	451	448	438	398	432	448	438	440	432	429	452	450	472
2	440	442	437	440	436	438	431	440	436	428	437	454	470
3	387	408	418	438	437	437	430	438	431	428	447	453	469
4 D	377	370	364	400	417	428	444	442	436	429	433	454	473
5	450	452	448	448	443	447	443	441	437	430	438	456	450
6													
7	438	431	435	447	458	457	451	447	439	430	434	448	454
8	445	432	431	447	448	447	441	441	433	431	440	454	472
9	435	437	436	444	446	449	449	432	437	423	424	447	482
10	423	429	427	444	446	447	449	444	440	431	441	454	468
11 D	446	451	453	454	459	458	458	457	450	434	436	459	477
12 Q	424	421	428	467	444	447	451	448	447	430	430	451	471
13 Q	440	439	447	446	443	442	446	442	441	438	447	466	479
14	451	453	446	451	460	464	452	443	438	422	424	443	461
15	442	442	440	445	451	451	449	442	437	431	431	455	481
16	434	427	442	451	451	451	452	452	461	441	435	451	461
17													
18 Q	437	441	431	411	438	447	451	448	451	431	443	449	462
19 Q	449	451	454	452	451	450	449	444	442	434	439	450	470
20 Q	453	441	447	443	453	449	443	440	432	427	432	449	461
21 Q	451	452	451	448	443	441	439	439	436	430	433	443	457
22	436	421	432	440	443	444	443	437	431	421	425	432	439
23													
24	443	439	434	431	435	442	441	438	433	431	442	451	461
25	437	448	451	453	451	451	446	441	438	438	439	453	462
26	441	443	447	451	453	451	449	445	436	432	436	454	491
27	431	442	449	450	450	451	447	435	431	427	433	451	463
28	431	438	448	451	453	451	450	443	433	419	422	445	460
29 D	433	441	446	447	449	447	445	443	436	426	433	457	473
30 D	413	388	408	429	431	430	439	433	430	419	430	440	460
31 D	402	412	401	389	389	401	419	425	420	407	406	432	477
	397	405	422	428	427	452	432	432	417	409	421	431	458
	420	413	416	421	430	434	434	431	429	422	422	430	459
	433	431	434	381	324	376	411	431	421	424	451	479	479
MEAN	432	432	434	437	438	443	443	440	436	427	434	450	467
MEAN Q	445	438	442	442	443	444	442	439	435	429	436	448	459
MEAN D	407	408	410	413	400	421	431	436	428	420	428	449	472
SUM	3390	3388	3461	3545	3591	3728	3722	3654	3511	3252	3456	3941	4472

10⁰ +.....(Tenths of Minutes)

JANUARY, 1981

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	HOUR MEAN	DATE
501	520	509	497	499	481	446	462	443	438	438	457	1
483	498	500	491	496	500	472	452	443	428	399	454	2
489	487	480	478	470	471	479	462	453	450	450	450	3
490	490	486	478	472	471	485	404	450	447	442	441	4 D
468	482	480	476	481	470	455	436	434	441	442	452	5
486	481	483	484	456	472	466	443	440	451	444	453	6
490	505	498	447	469	460	454	447	425	439	434	451	7
477	486	499	495	490	484	469	451	440	410	400	452	8
494	493	490	477	470	467	461	458	440	430	442	453	9
495	507	503	493	483	495	479	455	452	400	373	459	10
495	505	490	492	477	461	436	431	431	422	430	451	11 D
488	491	485	476	470	464	462	460	458	454	451	457	12 Q
473	481	476	459	461	460	458	454	449	442	441	453	13
501	491	480	472	463	461	461	455	451	450	450	456	14
480	487	481	473	463	477	466	454	447	434	416	454	15
478	489	490	479	470	459	457	454	447	445	449	452	16
486	486	489	489	483	475	462	427	437	449	447	457	17
478	483	483	472	470	467	460	455	449	449	449	454	18 Q
481	488	489	488	473	470	463	453	449	448	445	455	19 Q
461	483	482	471	465	471	476	471	450	444	441	448	20 Q
473	481	479	473	473	466	461	443	445	439	439	450	21 Q
489	511	505	508	499	491	473	460	447	431	431	461	22
510	535	509	485	464	454	448	432	430	430	420	456	23
484	491	499	484	480	469	461	448	448	449	441	455	24
481	491	490	487	479	478	461	449	448	437	434	453	25
493	501	501	489	481	480	472	474	448	443	435	458	26
479	490	482	482	478	472	467	459	452	442	433	445	27
497	527	515	511	499	486	489	460	415	421	419	442	28 D
476	495	511	496	498	495	460	459	455	435	428	447	29 D
481	501	497	482	472	475	473	462	451	446	441	448	30
493	498	483	471	469	460	461	407	440	402	430	437	31 D
485	495	492	482	477	473	464	450	444	437	433	452	
476	485	484	476	470	468	464	456	450	447	445	453	
490	501	497	490	483	475	466	432	438	425	430	444	
5050	5354	5244	4955	4773	4662	4393	3937	3767	3546	3434		

Table 4 DECLINATION MEAN HOURLY VALUES,

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
1	450	444	432	434	426	401	422	431	430	432	431	452	478
2 D	422	391	391	421	423	435	428	418	418	422	436	453	467
3	418	402	423	440	440	441	432	444	469	489	472	477	459
4	421	432	441	440	431	430	431	431	426	421	431	449	467
5 D	431	435	443	436	424	400	411	448	451	447	453	456	501
6 D	408	393	405	423	433	430	431	428	422	425	437	453	486
7	296	300	367	349	399	434	440	446	443	437	431	436	439
8	431	434	436	437	436	436	431	428	426	430	438	449	460
9	348	359	402	422	359	407	420	428	424	425	444	461	485
10 Q	438	438	438	438	428	427	428	419	419	420	432	450	461
11	442	443	444	446	444	443	439	434	421	419	424	438	465
12	364	410	430	426	440	432	428	423	429	430	433	448	456
13	430	437	438	431	437	431	430	433	437	429	432	454	460
14 Q	439	439	439	439	437	435	429	428	419	411	417	436	450
15	443	446	443	440	438	436	431	424	421	413	417	437	470
16	422	430	441	448	416	394	415	417	408	403	422	451	471
17 Q	442	434	436	438	436	438	431	423	420	411	428	453	470
18 Q	440	446	444	442	441	434	428	421	417	408	422	451	482
19	417	434	433	438	436	434	428	422	418	409	419	437	458
20	440	441	441	439	439	435	431	424	414	429	443	461	493
21 Q	432	437	438	436	433	421	423	420	411	403	418	440	462
22	435	437	439	438	439	431	427	420	414	406	416	435	460
23	393	419	421	426	420	419	419	416	416	405	410	438	466
24	439	439	433	439	439	437	431	429	420	420	425	448	481
25 D	389	380	361	399	420	383	391	391	388	406	425	453	488
26 D	375	360	351	371	399	401	401	397	401	414	438	456	475
27	351	363	388	403	419	416	409	392	393	420	434	461	470
28	406	387	393	416	421	423	429	423	415	411	420	443	459
29													
30													
31													
MEAN	413	415	421	427	427	424	425	424	421	421	430	449	469
MEAN Q	438	439	439	439	435	431	428	422	417	411	423	446	465
MEAN D	405	392	390	410	420	410	412	416	416	423	438	454	483
SUM	1562	1610	1791	1955	1953	1884	1894	1858	1790	1795	2048	2576	3139

10⁰ + (Tenths of Minutes)

FEBRUARY, 1981

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	HOUR MEAN	DATE
487	481	476	481	477	478	471	480	456	443	419	451	1
500	490	492	508	456	479	461	435	415	426	426	442	2 D
470	473	465	471	446	451	453	410	451	442	439	449	3
474	484	486	480	461	411	439	459	446	397	397	441	4
469	493	509	489	500	495	469	448	449	383	398	452	5 D
531	534	496	551	493	496	495	384	423	407	391	449	6 D
454	456	454	451	457	455	450	444	439	434	433	423	7
467	471	459	458	449	465	454	442	423	376	336	436	8
473	472	468	459	450	450	449	442	438	438	438	432	9
471	480	475	467	461	459	452	449	447	442	440	445	10 Q
470	477	477	479	452	450	464	432	422	418	378	443	11
466	477	479	471	464	457	449	439	438	439	421	440	12
467	488	487	482	472	458	449	447	440	435	432	447	13
458	460	460	454	457	455	453	449	446	442	443	441	14 Q
485	480	486	490	487	490	449	440	423	397	411	446	15
480	472	469	454	429	444	446	439	439	439	440	437	16
479	477	465	452	448	446	448	440	436	434	436	443	17 Q
485	487	467	454	449	451	449	445	439	439	420	444	18 Q
477	470	460	451	451	451	451	447	441	438	439	440	19
506	512	510	488	466	449	436	431	430	429	425	451	20
476	481	475	462	455	451	450	449	442	440	435	441	21 Q
475	477	474	470	470	462	459	462	446	428	359	441	22
495	500	506	480	479	470	459	450	440	437	434	442	23
504	519	510	501	503	504	463	418	359	370	373	446	24
510	514	516	507	486	472	421	458	441	418	381	433	25 D
501	531	528	500	495	478	520	381	393	400	371	431	26 D
488	508	494	499	471	451	447	388	425	401	391	428	27
471	480	489	481	476	461	434	443	383	398	403	432	28
												29
												30
												31
482	487	483	478	466	462	455	438	431	421	411	441	
474	477	468	458	454	452	450	446	442	439	435	443	
502	512	508	511	486	484	473	421	424	407	393	441	
3489	3644	3532	3390	3060	2939	2740	2251	2070	1790	1509		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1 D	411	401	396	391	414	409	411	409	386	399	405	431	481
2	395	381	359	370	401	401	409	381	399	411	456	483	491
3	418	423	418	420	423	423	421	421	409	401	411	433	458
4	367	363	357	350	381	418	430	421	411	399	413	427	447
5 D	439	433	431	438	435	413	395	411	400	373	361	439	463
6	426	411	408	405	407	409	405	412	409	408	414	424	451
7	418	419	421	411	413	414	417	427	440	437	442	463	505
8	437	430	415	420	416	412	412	411	419	422	451	457	511
9 Q	434	425	427	430	430	430	423	417	404	400	408	429	468
10	430	422	427	425	428	431	435	433	417	413	420	461	472
11 Q	431	428	423	431	437	424	429	426	411	410	423	461	481
12	431	420	420	424	423	421	421	424	432	421	432	432	460
13 D	379	402	421	422	422	422	422	418	408	391	400	414	460
14 D	410	430	423	415	417	418	421	411	415	401	441	443	512
15	411	429	422	429	459	421	406	415	410	411	429	460	490
16	412	399	431	421	414	411	421	422	407	403	423	460	491
17	343	376	403	426	415	408	405	406	399	406	409	442	478
18	411	396	380	408	430	420	432	428	429	416	430	467	513
19	429	420	418	429	425	418	409	398	380	366	384	410	438
20	435	436	435	435	450	429	420	409	394	380	393	421	480
21	427	428	427	427	425	424	422	411	382	362	370	401	442
22 Q	431	430	431	430	434	428	427	411	382	368	388	420	463
23 Q	433	430	430	428	422	422	420	405	380	372	389	417	460
24 Q	430	429	428	422	420	416	410	400	385	377	392	430	463
25 D	429	469	430	407	388	422	436	398	383	372	388	417	492
26	372	354	351	369	382	377	407	396	383	390	408	442	486
27	402	411	411	404	402	408	400	394	380	390	404	433	471
28	411	433	420	417	402	401	398	388	367	364	392	427	464
29	416	401	387	393	395	401	400	379	390	376	395	440	488
30	423	407	387	393	408	401	401	381	359	358	381	433	485
31	398	366	300	355	362	386	394	381	376	379	402	422	473
MEAN	414	413	408	411	415	414	415	408	398	393	408	437	475
MEAN Q	432	428	428	428	429	424	422	412	392	385	400	431	467
MEAN D	414	427	420	415	415	417	417	409	398	387	399	429	482
SUM	2839	2802	2637	2745	2880	2838	2859	2644	2346	2176	2654	3539	4737

10⁰+.....(Tenths of Minutes)

MARCH 1981

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	HOUR MEAN	DATE
496	470	491	477	464	491	472	453	453	335	391	431	1 D
491	493	488	471	456	443	428	431	432	433	429	431	2
479	489	493	477	460	461	453	430	409	411	389	435	3
469	474	473	461	448	443	442	442	443	436	438	423	4
518	511	585	501	479	443	473	471	389	433	439	445	5 D
465	477	468	458	451	451	442	437	436	437	435	431	6
515	508	510	492	459	412	424	441	437	436	436	446	7
500	501	498	479	455	441	436	435	431	432	434	444	8
500	507	498	480	457	448	446	446	445	438	431	443	9 Q
501	501	493	482	455	439	434	437	438	432	432	444	10
492	492	490	478	451	446	451	450	444	442	441	445	11 Q
488	500	491	479	461	456	454	451	453	402	410	442	12
491	508	502	481	437	470	480	465	372	300	377	428	13 D
511	530	501	465	431	399	411	445	447	443	430	440	14 D
510	500	485	462	451	430	437	448	440	401	413	440	15
501	489	477	451	440	433	413	417	443	442	368	433	16
510	509	490	471	434	435	436	409	386	418	433	427	17
525	519	510	480	463	441	438	429	421	412	412	442	18
464	478	488	473	465	441	420	417	428	425	432	427	19
513	533	508	478	444	429	428	428	426	425	425	440	20
477	493	487	470	452	430	400	419	387	400	431	423	21
492	506	498	479	450	442	439	438	429	422	432	436	22 Q
488	502	499	478	458	448	446	442	442	438	436	437	23 Q
491	500	492	476	459	451	452	456	450	438	422	437	24 Q
524	538	542	526	490	478	464	437	417	369	363	441	25 D
511	521	515	500	461	438	434	432	416	418	426	425	26
519	522	506	476	452	442	424	404	410	409	410	429	27
511	525	511	478	456	447	449	426	398	402	420	429	28
520	542	511	493	464	434	438	437	434	428	431	433	29
514	524	518	499	464	460	437	430	376	372	391	425	30
505	512	522	500	482	437	413	441	441	440	383	420	31
500	506	501	480	456	444	439	437	425	415	417	435	
493	501	495	478	455	447	447	446	442	436	432	440	
508	511	524	490	460	456	460	454	416	376	400	437	
5491	5674	5540	4871	4149	3759	3614	3544	3173	2869	2940		

Table 4 DECLINATION MEAN HOURLY VALUES

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	381	342	368	361	393	382	386	373	359	380	413	441	472
2	430	424	423	421	417	411	407	382	377	381	393	429	480
3	432	423	422	430	403	391	382	363	352	352	361	412	462
4	429	428	412	413	408	399	388	372	351	361	382	431	482
5 Q	433	427	428	422	419	412	403	391	378	375	387	427	474
6	423	413	414	412	415	422	452	402	372	374	387	420	482
7	427	434	425	419	421	422	422	410	385	370	373	404	462
8	432	424	409	414	420	422	419	420	386	370	392	429	467
9 Q	383	390	416	389	402	411	395	380	368	370	390	422	476
10 Q	424	424	425	419	414	412	402	382	371	372	400	422	464
11	424	420	415	412	410	406	398	384	362	369	382	421	484
12 D	280	290	322	250	223	263	340	386	410	420	420	474	496
13 D	361	268	112	300	221	247	383	330	391	366	393	439	470
14	391	436	421	406	412	422	405	352	329	345	371	393	440
15 Q	420	419	415	413	409	400	389	370	353	348	355	391	427
16	449	432	424	411	401	400	396	388	361	333	360	421	457
17	421	425	427	424	431	407	426	439	397	398	408	446	479
18	425	437	429	422	419	404	387	370	359	365	379	405	452
19 D	421	369	330	357	368	387	372	347	337	349	373	430	469
20 D	435	400	358	382	415	391	369	378	363	371	397	447	471
21	415	401	399	401	394	362	394	384	410	431	435	470	481
22	390	361	402	415	399	421	459	402	396	368	371	409	422
23	412	391	380	398	421	447	465	422	392	369	411	440	463
24	417	422	421	411	421	445	421	381	361	361	388	424	459
25	383	391	382	414	420	391	381	378	373	363	387	414	458
26 D	373	381	396	415	391	382	374	366	329	363	376	431	475
27	354	340	358	288	343	395	403	418	381	384	436	460	467
28	421	413	417	410	401	387	372	361	363	381	403	433	469
29	373	380	380	389	389	371	363	353	351	371	397	426	455
30 Q	397	407	416	407	399	386	368	351	341	361	394	423	456
31													
MEAN	405	397	392	394	393	393	397	381	369	371	390	428	466
MEAN Q	411	413	420	410	409	404	391	375	362	365	385	417	459
MEAN D	374	342	304	341	324	334	368	361	366	374	392	444	476
SUM	2156	1912	1746	1825	1799	1798	1921	1435	1058	1121	1714	2834	3971

10⁰ + (Tenths of Minutes)

APRIL 1981

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	HOUR MEAN	DATE
519	512	522	497	453	433	403	411	431	422	410	419	1
513	495	482	462	449	429	432	440	437	426	420	432	2
512	530	491	483	471	444	401	421	438	427	425	426	3
505	500	479	452	441	427	423	435	428	432	435	426	4
505	502	484	457	400	432	431	433	430	424	422	431	5 Q
522	518	507	484	463	452	450	450	446	439	420	439	6
509	517	516	492	467	448	446	444	438	436	433	438	7
501	502	487	463	437	422	411	428	422	424	419	430	8
502	513	501	477	453	441	438	441	442	436	426	428	9 Q
495	509	503	490	474	453	452	450	440	440	430	436	10 Q
552	597	586	539	474	460	472	454	460	454	396	447	11
521	546	540	532	439	457	414	371	417	431	407	402	12 D
522	534	501	482	452	433	377	379	407	373	381	380	13 D
480	498	479	456	443	430	426	429	420	419	419	418	14
469	485	476	464	456	445	446	427	429	429	430	419	15 Q
487	500	491	478	463	434	396	411	419	418	413	423	16
521	523	503	489	468	426	412	413	358	403	421	436	17
495	507	512	487	461	451	443	447	441	433	417	431	18
509	530	529	489	449	423	417	401	413	421	429	413	19 D
511	558	540	523	501	491	458	460	421	390	432	436	20 D
540	530	506	491	462	421	400	397	374	372	408	428	21
480	482	461	462	452	402	371	378	420	407	411	414	22
472	498	481	451	421	402	405	401	370	391	407	421	23
511	550	511	487	451	426	415	409	420	401	400	430	24
491	490	490	475	444	439	433	429	419	392	408	419	25
562	526	506	493	462	398	369	372	321	371	368	408	26 D
481	497	490	453	440	430	420	421	390	412	420	412	27
497	502	497	465	438	427	428	421	398	393	343	418	28
463	479	471	474	460	439	418	405	418	381	400	409	29
466	461	443	431	429	421	421	428	429	422	424	412	30 Q
												31
504	513	500	479	454	435	421	407	417	414	412	423	
487	494	481	464	450	438	438	436	434	430	426	425	
525	539	523	504	461	440	407	397	396	397	403	408	
5113	5391	4985	4378	3613	3036	2628	2606	2496	2419	2374		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE	HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1		422	421	423	417	406	388	373	359	358	357	379	422	451
2		381	413	412	409	399	381	365	361	362	383	411	452	481
3	Q	422	415	410	402	400	391	373	364	375	400	421	451	483
4	Q	425	422	417	409	400	379	358	351	354	372	394	426	460
5	Q	426	421	418	413	403	386	356	332	328	349	380	426	467
6	Q	428	425	424	421	418	389	359	343	341	353	387	429	471
7	Q	425	421	423	420	427	401	361	350	344	357	385	412	441
8		422	421	421	407	390	362	344	325	325	330	357	384	427
9		431	392	383	392	391	381	464	422	377	409	412	452	471
10		387	390	393	419	409	381	358	357	351	360	376	398	430
11	D	328	359	284	160	219	276	328	314	338	403	419	452	479
12		420	410	400	389	388	368	339	330	347	363	390	419	450
13		423	425	410	412	438	426	335	309	323	338	375	419	448
14		419	420	420	409	401	419	406	382	387	399	418	449	468
15	D	410	420	423	449	415	349	342	389	380	349	397	418	437
16	D	347	371	376	357	380	385	376	379	370	338	375	398	453
17		385	389	398	396	384	370	350	336	339	355	370	398	438
18	D	362	409	378	377	348	264	308	286	347	380	404	440	470
19		422	422	419	417	410	393	367	390	375	375	390	418	459
20	D	371	405	420	369	374	391	400	399	381	351	372	412	458
21		412	413	412	404	389	381	381	373	354	361	382	430	477
22		410	410	411	428	423	411	383	362	350	351	361	396	436
23		409	408	403	402	405	410	381	365	356	351	361	399	428
24		351	348	344	342	351	343	328	330	359	362	383	420	443
25		351	338	331	325	339	365	388	388	391	402	410	433	462
26		382	372	372	363	358	352	343	331	331	345	380	409	442
27		407	405	400	386	371	352	335	326	315	327	355	386	422
28		417	412	406	402	428	361	340	337	334	351	391	425	460
29		416	410	420	428	412	370	343	332	335	333	353	381	418
30		423	424	430	421	402	376	353	339	341	356	387	413	437
31		431	431	404	406	387	391	382	366	368	382	393	423	456
MEAN		402	405	400	392	389	374	362	352	353	363	386	419	452
MEAN Q		425	421	418	413	410	389	361	348	348	366	393	429	464
MEAN D		364	393	376	342	347	333	351	353	363	364	393	424	459
SUM		2465	2542	2385	2151	2065	1592	1219	0927	0936	1242	1968	2990	4023

10⁰ +.....(Tenths of Minutes)

MAY, 1981

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	HOUR MEAN	DATE
471	460	444	427	413	403	387	421	431	419	380	410	1
482	471	451	430	412	409	415	422	427	427	420	416	2
503	496	473	448	425	418	415	422	421	426	428	424	3 Q
477	476	462	441	420	412	417	423	432	433	432	416	4 Q
498	508	491	472	451	434	431	430	430	431	430	421	5 Q
497	504	493	473	454	431	428	430	431	428	425	424	6 Q
472	481	471	460	444	424	422	429	430	427	427	419	7 Q
461	473	467	458	444	438	423	425	429	439	427	408	8
480	490	491	488	481	452	434	426	427	412	408	432	9
469	470	466	460	439	426	434	426	412	356	359	405	10
490	489	460	450	426	414	413	410	383	403	423	380	11 D
479	480	458	438	421	409	384	385	399	391	396	402	12
459	450	438	432	429	429	429	428	424	420	419	410	13
469	469	461	438	427	412	419	417	429	423	396	423	14
443	449	461	434	444	441	432	419	411	405	397	413	15 D
474	495	486	458	448	404	410	398	404	393	403	403	16 D
462	470	463	450	438	423	420	423	402	390	392	402	17
468	466	450	438	430	429	387	388	398	400	403	393	18 D
501	511	484	471	449	418	415	411	416	405	385	422	19
477	495	457	453	442	446	397	419	403	415	429	414	20 D
494	501	482	459	440	430	413	404	402	393	393	416	21
471	478	481	469	450	434	420	415	409	411	410	416	22
470	486	491	481	453	423	400	401	397	374	361	409	23
467	479	483	461	463	443	431	421	401	401	378	397	24
481	492	493	483	472	452	452	382	383	393	395	408	25
452	455	457	449	431	412	401	402	404	406	406	394	26
448	462	470	462	452	440	428	423	417	418	422	401	27
475	482	473	462	444	425	412	413	420	423	422	413	28
432	445	447	437	424	414	412	411	413	415	425	401	29
461	466	462	445	433	421	407	413	403	411	421	410	30
482	482	472	463	451	432	412	411	419	424	421	420	31
473	478	469	455	440	426	416	414	413	410	408	410	
489	493	478	459	439	424	423	427	429	429	428	421	
470	479	463	447	438	427	408	407	400	403	411	401	
4665	4831	4538	4090	3650	3198	2900	2848	2807	2712	2633		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	425	424	422	413	401	388	372	353	352	362	383	412	437
2	427	432	422	423	417	395	375	356	355	383	412	432	466
3 D	422	422	411	412	402	391	381	363	380	373	384	412	450
4	413	412	412	407	402	381	360	341	350	354	372	398	430
5	421	412	410	404	391	379	360	342	341	355	383	413	451
6	393	400	402	401	391	381	368	361	353	361	383	421	451
7 D	401	409	410	420	401	414	355	385	329	337	349	389	438
8 D	366	371	403	397	391	373	361	349	350	345	361	383	413
9 Q	403	401	403	401	400	396	382	370	369	371	382	404	423
10 Q	408	406	401	401	391	388	371	359	349	343	353	381	428
11	419	419	403	393	389	379	363	358	361	369	373	401	431
12 Q	422	419	425	403	391	367	351	348	351	371	388	401	431
13	410	412	409	406	393	380	373	351	351	367	393	412	440
14 Q	417	412	408	399	388	370	352	342	343	357	383	414	434
15	409	404	397	380	374	359	357	338	316	326	359	399	445
16 D	368	364	382	406	355	343	351	346	335	346	385	412	448
17	347	355	390	398	379	373	348	330	333	348	378	406	437
18	401	397	383	384	367	353	349	328	321	331	359	391	422
19	394	404	388	391	384	370	350	331	320	341	367	411	442
20	399	391	401	419	398	380	366	337	341	351	373	401	436
21	408	410	402	401	370	348	351	331	332	331	351	371	409
22	401	401	402	402	400	381	361	345	339	340	361	395	429
23 Q	402	406	403	406	407	384	350	342	341	340	359	371	404
24	403	401	401	388	381	365	353	354	360	381	394	411	431
25	420	411	410	401	388	378	357	354	349	370	393	419	446
26	416	399	401	401	408	391	389	385	376	391	403	407	440
27	417	394	386	383	393	381	362	347	344	362	378	389	411
28	426	427	411	410	404	387	381	373	352	351	362	378	407
29 D	420	402	402	400	401	381	410	475	440	405	429	439	470
30	421	425	400	380	361	345	324	318	325	341	371	408	440
31													
MEAN	407	405	403	401	391	377	363	354	349	357	377	403	435
MEAN Q	410	409	408	402	395	381	361	352	351	356	373	394	424
MEAN D	395	394	402	407	390	380	372	384	367	361	382	407	444
SUM	2199	2142	2100	2030	1718	1301	0883	0612	0458	0703	1321	2081	3040

10° +(Tenths of Minutes)											JUNE, 1981	
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	HOUR MEAN	DATE
451	457	453	431	419	412	397	403	412	423	432	410	1
478	480	463	453	434	422	412	411	417	417	429	421	2
481	503	502	481	467	430	412	413	413	421	413	422	3 D
462	475	479	470	443	419	409	411	413	419	422	411	4
480	488	489	469	451	431	421	421	421	420	421	416	5
471	497	506	493	459	438	432	426	430	426	391	418	6
480	501	509	520	519	495	409	439	381	381	371	418	7 D
436	457	465	464	461	439	423	411	401	405	407	401	8 D
435	440	444	448	438	426	418	411	410	409	411	408	9 Q
451	459	461	455	449	431	419	415	411	413	419	407	10 Q
457	473	483	471	451	437	421	413	404	411	419	412	11
459	468	461	450	433	421	419	414	419	418	408	410	12 Q
452	455	451	452	440	425	414	415	418	415	417	410	13
457	470	461	450	436	416	410	409	410	412	411	407	14 Q
471	479	479	473	454	437	417	406	401	415	412	404	15
469	482	495	492	481	443	423	422	413	354	378	404	16 D
460	469	467	453	429	415	410	404	406	402	403	398	17
457	482	481	451	452	444	427	387	402	405	391	399	18
473	481	483	462	451	433	401	401	401	390	401	403	19
472	490	481	461	451	442	427	419	404	411	411	411	20
432	460	461	451	433	426	416	412	408	410	403	397	21
466	482	491	480	467	450	426	401	402	411	409	410	22
436	455	461	461	452	429	412	414	417	412	411	403	23 Q
451	469	471	466	453	432	410	419	421	426	431	411	24
469	471	471	466	443	431	430	424	404	419	420	414	25
458	458	464	455	433	410	411	418	421	421	420	416	26
439	456	458	460	447	442	431	420	411	410	423	406	27
420	420	425	429	426	401	403	411	420	421	420	403	28
463	476	430	399	390	389	392	390	401	409	411	418	29 D
458	454	451	446	443	430	410	413	410	409	401	399	30
												31
458	470	470	460	447	430	415	412	410	411	411	409	
448	458	458	453	442	425	416	413	413	413	412	407	
466	484	480	471	464	439	412	415	402	394	396	413	
3744	4107	4096	3812	3405	2896	2462	2373	2302	2315	2316		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	389	363	414	397	378	361	353	343	358	368	389	402	423
2	406	381	380	386	398	400	387	343	343	359	368	404	457
3	380	385	383	380	380	362	350	341	338	342	360	386	408
4	380	377	368	388	384	372	350	338	346	348	379	406	427
5	390	399	410	408	380	363	347	344	347	359	370	404	439
6	386	401	421	420	380	379	364	354	354	339	359	393	429
7	410	416	410	393	388	391	392	367	350	342	369	399	417
8	376	389	401	409	404	379	370	355	344	352	364	365	393
9 Q	400	403	398	368	364	359	353	346	342	355	371	404	431
10 Q	418	408	399	393	386	380	363	346	346	351	369	387	403
11	410	402	400	393	370	350	319	309	336	348	368	391	432
12	394	397	390	383	410	388	340	348	360	368	380	412	449
13	369	382	380	390	371	351	332	324	339	367	377	404	433
14	410	392	380	380	372	359	341	336	341	345	362	398	430
15 Q	393	390	385	383	379	370	351	339	338	350	359	383	420
16	402	412	409	385	374	350	321	320	318	327	362	402	434
17 D	407	392	368	393	380	362	339	322	276	332	371	430	463
18	323	328	326	333	322	324	324	327	336	341	370	406	438
19	392	378	383	393	400	377	352	338	329	335	367	409	446
20	405	390	378	373	362	340	330	322	333	349	380	431	490
21 Q	400	392	405	392	369	349	332	324	328	344	377	403	430
22	403	407	383	388	351	342	340	333	330	337	374	410	451
23 D	405	392	388	380	380	371	370	382	354	354	360	379	397
24	412	400	393	391	374	353	347	340	340	344	357	381	416
25 D	379	361	374	375	381	428	471	394	341	350	384	381	437
26 D	414	355	186	360	329	339	343	321	307	289	333	378	423
27 D	319	362	356	325	371	413	399	371	367	348	356	390	417
28	389	389	387	369	360	390	328	325	326	329	351	379	402
29 Q	399	394	399	389	364	346	329	329	323	336	369	401	438
30	379	368	384	379	374	348	314	318	328	332	370	407	449
31	384	389	378	349	339	324	315	304	336	366	408	432	462
MEAN	391	388	382	382	373	365	351	339	337	345	369	399	432
MEAN Q	402	397	397	385	372	361	346	337	335	347	369	396	424
MEAN D	385	372	338	367	368	383	384	358	329	335	361	392	427
SUM	2123	2014	1856	1845	1574	1320	0866	0503	0454	0706	1433	2357	3384

10⁰ +.....(Tenths of Minutes)

JULY, 1981

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	HOUR MEAN	DATE
440	447	450	448	445	439	424	422	413	410	414	404	1
482	484	480	471	454	434	419	422	411	381	398	410	2
428	450	458	451	434	428	411	398	386	371	400	392	3
455	468	471	457	444	430	422	406	374	384	376	399	4
470	476	469	456	447	436	420	412	409	404	399	407	5
453	463	461	452	414	410	416	427	427	420	409	405	6
439	454	467	465	452	432	418	413	409	408	397	408	7
420	435	450	449	431	414	401	396	400	400	403	396	8
453	468	470	458	439	422	410	402	408	410	415	402	9 Q
419	434	436	427	409	402	412	417	419	418	412	398	10 Q
458	475	471	460	439	408	411	417	416	409	406	400	11
469	472	462	470	450	422	416	410	402	375	369	406	12
461	478	469	455	436	424	412	398	395	404	407	398	13
449	453	446	430	422	416	419	415	410	407	398	396	14
448	456	453	441	433	425	416	411	410	410	407	398	15 Q
459	470	461	448	429	413	397	401	406	405	404	396	16
496	491	473	453	433	418	404	403	367	303	311	392	17 D
457	460	453	439	418	409	410	404	388	398	405	381	18
490	494	478	458	430	423	410	393	409	405	403	404	19
529	514	500	482	452	429	410	401	407	407	399	409	20
454	462	454	438	422	408	400	408	410	412	402	396	21 Q
486	500	500	478	452	430	404	399	398	355	408	402	22
459	468	469	480	458	419	420	410	441	415	419	407	23 D
437	447	450	446	439	431	425	420	401	377	377	396	24
414	325	519	563	511	424	514	489	449	435	377	420	25 D
449	457	450	463	417	400	407	409	413	412	387	377	26 D
440	446	441	428	405	387	386	388	396	401	391	388	27 D
427	439	429	415	397	387	387	392	395	394	394	383	28
460	458	445	413	390	379	383	397	405	401	384	389	29 Q
472	479	467	430	406	379	366	382	391	396	398	389	30
479	480	466	439	418	389	386	392	371	389	391	391	31
457	461	463	454	433	415	411	408	404	397	396	398	
447	456	452	435	419	407	404	407	410	410	404	397	
452	437	470	477	445	410	426	420	413	393	377	397	
4152	4303	4368	4063	3426	2867	2736	2654	2536	2316	2260		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	387	389	368	380	397	350	336	329	326	349	387	400	433
2	389	379	380	379	373	349	332	329	339	347	374	411	440
3	378	391	388	400	410	399	391	380	397	378	402	422	438
4	378	382	387	411	379	349	332	348	367	371	377	407	441
5	385	382	378	369	371	389	401	382	352	330	350	391	429
6	340	360	367	368	394	368	352	349	345	348	376	409	450
7	398	390	390	385	389	370	356	353	355	360	390	426	454
8 Q	389	388	383	380	371	356	340	334	336	346	370	401	432
9 Q	355	370	350	351	363	354	350	347	350	360	377	400	420
10	380	378	388	380	374	327	314	308	314	356	393	400	431
11	382	370	378	369	360	343	338	340	340	351	381	400	421
12	391	351	345	361	359	331	331	333	334	351	377	410	446
13	379	383	383	364	351	362	337	323	322	339	372	400	427
14 Q	400	382	371	372	370	352	340	340	356	381	417	447	473
15	395	393	393	394	395	372	345	331	341	358	391	431	468
16 Q	354	378	387	383	377	362	358	344	344	366	398	425	455
17 D	398	377	366	374	366	335	307	298	307	339	375	431	446
18 D	347	406	361	357	355	341	331	352	371	370	390	418	445
19	393	381	392	364	360	361	348	339	342	351	381	421	461
20	393	390	406	388	361	348	339	339	351	351	375	403	430
21	391	392	385	374	369	353	349	347	350	350	372	409	450
22	390	390	420	396	369	360	341	320	311	325	361	399	440
23 D	370	361	369	340	360	384	364	350	408	404	419	416	409
24 D	387	370	350	320	295	310	314	305	313	336	359	390	430
25	338	360	364	362	353	348	332	326	339	346	360	387	414
26 Q	388	383	377	370	367	352	343	338	339	348	377	408	429
27 D	399	409	398	385	378	361	350	345	332	345	393	437	479
28	380	401	395	379	369	351	332	314	324	342	379	409	429
29	386	395	376	373	377	373	337	337	346	373	408	428	468
30	411	396	376	402	352	369	346	311	316	345	397	441	464
31	378	379	367	399	369	341	329	319	320	345	379	415	461
MEAN	382	382	379	375	369	355	342	336	342	354	382	413	442
MEAN Q	379	380	374	371	370	355	346	341	345	360	388	416	442
MEAN D	380	385	369	355	351	346	333	330	346	359	387	418	442
SUM	1839	1856	1738	1629	1433	1020	0615	0410	0587	0961	1857	2792	3713

10° +.....(Tenths of Minutes)											AUGUST, 1981	
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	HOUR MEAN	DATE
450	460	451	428	409	398	367	369	381	353	384	387	1
471	480	461	447	425	409	408	414	398	349	379	394	2
449	467	446	419	402	388	374	389	401	400	381	404	3
459	464	456	433	415	395	390	397	397	396	387	397	4
470	482	480	456	428	383	388	392	379	372	360	396	5
481	480	470	445	420	403	406	408	400	402	408	398	6
469	456	449	446	424	403	389	396	396	401	390	401	7
462	464	440	418	408	402	400	407	408	408	380	393	8 Q
435	442	440	428	416	410	410	410	412	409	388	390	9 Q
449	460	443	419	402	392	397	398	401	399	391	387	10
451	485	471	433	414	401	391	346	381	394	393	389	11
463	470	451	429	412	404	405	404	392	398	381	389	12
458	461	452	432	412	400	393	391	366	380	397	387	13
485	469	455	425	399	385	381	383	375	378	383	397	14 Q
487	472	464	440	416	399	395	385	348	349	329	395	15
477	485	464	435	405	388	386	390	391	385	386	397	16 Q
475	465	457	451	439	418	389	394	352	356	341	386	17 D
472	481	486	464	422	415	416	407	371	401	401	399	18 D
510	490	457	433	409	398	391	400	400	399	392	399	19
447	442	425	410	395	382	391	403	404	399	389	390	20
471	468	457	432	410	391	383	377	362	387	391	393	21
461	460	451	440	418	390	375	400	410	410	399	393	22
446	440	434	460	430	416	420	414	416	352	358	398	23 D
455	481	502	452	433	407	400	384	355	388	360	379	24 D
460	475	471	457	426	410	399	390	388	395	390	387	25
447	453	451	439	418	410	413	409	402	398	376	393	26 Q
492	491	467	439	412	397	368	359	377	367	364	398	27 D
442	458	428	388	369	359	381	387	389	359	391	381	28
472	455	438	399	372	359	380	387	391	391	399	393	29
482	478	453	422	394	385	391	391	386	385	372	394	30
485	487	457	421	403	399	399	401	399	397	389	393	31
466	468	456	434	412	397	393	393	388	386	382	393	
461	463	450	429	409	399	398	400	398	396	383	394	
468	472	469	453	427	411	399	392	374	373	365	392	
4433	4521	4127	3440	2757	2296	2176	2182	2028	1957	1829		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1 Q	386	379	374	372	368	358	341	327	326	333	351	397	441
2 D	376	379	359	347	361	350	349	359	353	337	372	411	449
3	389	385	383	375	369	361	338	325	316	334	368	420	448
4	378	360	366	368	362	354	346	339	342	343	366	418	456
5	305	293	288	329	316	334	319	326	326	327	353	401	422
6	378	374	374	374	367	348	344	330	324	340	368	409	439
7 Q	387	376	371	364	359	359	349	338	330	330	358	388	418
8	383	377	368	359	338	316	333	329	317	319	349	398	436
9	346	348	347	339	338	340	339	322	321	338	369	419	458
10	375	373	369	369	368	360	354	348	339	349	374	414	451
11 D	379	369	305	289	270	310	299	300	330	350	399	433	468
12	388	377	378	379	370	369	357	359	369	379	415	449	471
13	383	378	359	349	366	378	351	344	349	369	400	434	463
14	374	377	370	367	359	353	347	339	334	337	356	401	449
15	384	379	382	372	369	369	354	369	389	378	401	413	450
16	387	389	374	349	357	339	347	338	320	333	361	402	435
17 Q	370	372	372	378	375	368	357	345	338	344	369	399	435
18	380	379	374	369	371	362	351	341	331	344	369	400	430
19 D	321	330	280	287	299	308	297	303	368	368	378	413	441
20	369	353	343	353	360	357	357	356	348	347	349	363	396
21	361	368	367	367	367	367	361	359	349	342	349	369	400
22	339	337	330	328	309	350	361	353	351	341	358	382	407
23 Q	341	329	333	354	359	359	357	351	350	357	360	381	413
24	379	374	369	367	369	366	360	349	345	349	369	401	428
25	364	372	369	360	361	376	356	339	339	345	359	400	429
26 D	370	372	374	360	348	348	349	341	340	367	397	411	444
27 D	287	301	297	332	347	379	399	360	367	357	368	393	423
28 Q	359	389	387	379	375	370	362	338	326	329	351	380	419
29	368	377	379	379	379	377	360	340	321	327	350	388	438
30	369	358	350	340	338	326	350	331	329	339	364	391	429
31													
MEAN	366	364	356	354	353	354	348	340	340	345	368	403	436
MEAN Q	369	369	367	369	367	363	353	340	334	339	358	389	425
MEAN D	347	350	323	319	325	339	339	333	352	356	383	412	445
SUM	0975	0924	0691	0634	0594	0611	0444	0198	0187	0352	1050	2078	3086

10° +.....(Tenths of Minutes)

SEPTEMBER, 1981

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	HOUR MEAN	DATE
479	491	473	449	419	399	400	393	393	391	384	393	1 Q
482	492	475	477	467	421	404	405	406	402	399	401	2 D
458	467	447	411	398	399	404	402	392	392	394	391	3
453	448	436	428	419	413	404	387	376	372	351	387	4
449	449	433	411	396	388	394	397	403	378	362	367	5
467	463	446	427	408	401	400	399	399	396	388	390	6
448	458	450	428	400	386	391	388	389	389	389	385	7 Q
455	449	426	405	397	391	399	398	399	400	390	380	8
484	482	458	429	408	390	388	392	398	390	388	385	9
465	460	455	439	414	411	410	406	409	399	380	395	10
479	462	438	411	392	388	380	379	359	360	388	372	11 D
478	454	433	407	399	369	377	380	384	389	386	397	12
468	459	429	415	395	390	392	390	387	379	361	391	13
467	453	422	407	390	388	379	367	367	361	383	381	14
470	465	436	405	364	373	386	386	387	388	382	394	15
454	449	430	404	387	381	388	396	389	382	368	382	16
457	450	432	422	408	398	394	392	392	386	384	389	17 Q
457	457	439	420	411	399	396	370	310	349	350	382	18
441	430	419	409	410	407	402	402	389	379	371	368	19 D
409	428	426	429	420	409	406	388	388	389	375	380	20
418	429	430	428	419	409	409	407	377	349	350	381	21
417	428	416	405	398	399	401	399	401	393	357	373	22
428	436	436	422	411	407	402	399	393	387	384	381	23 Q
439	431	428	409	400	392	390	388	389	371	350	384	24
431	419	429	399	409	403	397	393	386	382	377	383	25
469	449	441	446	437	421	369	338	316	316	331	381	26 D
451	455	450	425	397	359	368	388	384	372	353	376	27 D
450	459	443	420	396	389	387	388	380	362	358	383	28 Q
469	488	488	444	430	435	428	405	376	350	369	394	29
479	458	454	429	410	388	370	375	381	370	339	378	30
												31
456	454	441	422	407	397	394	390	383	377	371	384	
452	458	447	428	407	396	395	392	399	393	380	386	
464	458	445	434	421	399	385	382	371	366	368	380	
3671	3618	3218	2660	2209	1903	1815	1697	1499	1323	1141		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	367	359	348	347	355	358	348	339	321	320	349	385	417
2	339	313	349	366	361	354	359	349	339	338	356	385	420
3 D	371	377	376	377	371	355	335	346	328	322	337	361	422
4	314	344	358	359	362	352	345	335	339	322	340	390	411
5 Q	348	351	368	374	375	367	361	356	339	328	343	391	439
6 Q	370	373	376	375	374	370	364	355	339	320	328	363	412
7	328	358	308	318	349	354	355	348	332	337	356	392	424
8	317	360	357	350	338	323	317	348	377	395	407	430	436
9	314	310	318	369	356	338	354	349	339	330	360	385	409
10	366	359	355	361	350	340	335	342	360	349	349	380	415
11 D	331	310	380	349	326	377	377	379	400	385	396	434	462
12	403	379	369	331	308	320	325	326	336	327	333	360	392
13	378	376	373	371	369	363	359	346	328	318	329	359	397
14 D	391	398	269	172	271	301	309	306	298	302	327	365	408
15	360	358	355	376	365	358	346	337	323	316	319	358	419
16 Q	368	372	373	373	365	351	350	341	324	308	327	348	388
17	368	365	358	347	347	339	349	338	287	295	314	348	398
18 Q	348	349	359	358	358	358	358	349	338	317	326	356	395
19	351	353	358	359	355	378	371	348	348	360	368	369	420
20 D	319	326	302	324	348	347	343	353	340	335	349	388	419
21	269	269	306	289	335	339	345	349	369	349	369	369	387
22 D	319	351	359	360	364	368	353	357	336	347	341	378	428
23	248	316	337	321	366	352	372	376	366	354	331	347	372
24	361	365	365	359	359	356	352	348	335	324	337	365	432
25	356	361	344	341	369	388	390	373	351	347	361	382	429
26	370	369	364	365	362	356	352	350	337	333	338	362	387
27	353	326	347	355	363	356	353	353	336	333	344	380	407
28	366	365	357	366	362	353	342	335	334	334	351	360	403
29	371	362	369	364	353	360	348	341	331	327	337	354	395
30	362	361	354	340	345	353	359	346	337	326	346	373	414
31 Q	360	363	355	363	363	364	361	354	344	327	332	361	388
MEAN	348	352	351	348	353	353	351	347	339	333	345	341	411
MEAN Q	359	362	366	369	367	362	359	351	337	320	331	364	404
MEAN D	346	352	337	316	336	350	343	348	340	338	350	385	417
SUM	0786	0898	0866	0779	0944	0948	0887	0772	0511	0325	0700	1578	2745

10° +(Tenths of Minutes)

OCTOBER, 1981

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	HOUR MEAN	DATE
439	456	449	438	418	408	399	399	389	380	376	382	1
462	455	451	450	431	410	408	414	400	380	381	386	2
473	496	464	445	405	381	379	372	360	339	312	379	3 D
458	458	448	431	401	390	365	340	369	348	346	372	4
452	446	422	400	385	383	382	384	379	371	366	380	5 Q
452	458	450	430	408	400	392	384	380	365	331	382	6 Q
449	460	480	450	452	426	384	300	378	362	326	376	7
450	438	426	405	388	390	391	360	345	351	327	376	8
421	430	420	407	395	389	364	350	370	380	379	368	9
426	465	482	478	400	400	388	334	367	368	336	379	10
459	434	416	405	380	391	390	381	369	367	365	386	11 D
409	415	407	388	380	381	379	377	378	378	379	366	12
420	429	426	406	397	359	358	356	368	343	330	369	13
431	438	434	411	403	404	427	415	390	368	334	357	14 D
454	425	419	428	411	406	395	383	364	366	369	375	15
418	427	417	401	389	381	385	383	377	369	369	371	16 Q
431	438	430	407	396	398	394	392	368	367	365	368	17
418	427	415	399	388	388	381	378	369	359	363	369	18 Q
438	459	429	414	392	390	392	350	335	299	308	373	19
521	521	559	578	469	488	448	367	379	347	315	395	20 D
399	425	403	392	387	379	368	367	327	288	285	349	21
477	489	482	463	369	381	422	419	316	297	296	378	22 D
395	410	410	404	388	385	379	389	367	363	364	363	23
459	442	426	361	379	389	361	351	333	309	346	367	24
430	431	427	410	394	386	381	378	372	370	370	381	25
414	434	422	412	403	394	394	387	378	374	363	376	26
434	447	447	410	401	404	391	385	369	365	345	375	27
424	439	432	424	421	393	388	341	306	361	373	372	28
413	413	407	395	393	390	386	383	374	330	332	368	29
437	453	423	400	392	384	386	380	362	364	361	373	30
413	428	413	407	398	390	386	382	377	369	365	373	31 Q
438	445	437	421	400	395	388	374	365	355	348	374	
431	437	423	407	394	388	385	382	376	367	359	375	
418	419	418	415	402	402	403	391	363	344	324	379	
3576	3786	3536	3049	2413	2238	2043	1581	1315	0997	0777		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	361	361	357	359	358	355	355	352	342	333	346	368	399
2 Q	362	354	354	352	359	359	358	356	348	337	345	368	398
3	331	344	355	347	367	365	355	354	341	331	339	368	390
4	370	371	367	369	371	366	366	361	351	334	334	359	394
5	370	361	361	360	356	364	380	370	362	352	354	380	410
6	361	354	341	361	348	353	351	346	336	328	332	361	391
7	305	321	340	343	350	360	370	360	351	332	351	372	410
8	349	354	334	350	380	351	356	350	372	380	354	383	403
9 Q	364	369	364	362	361	359	351	350	340	326	330	355	379
10	363	370	361	361	358	342	359	348	338	330	347	380	390
11 D	342	350	339	349	338	310	311	321	333	318	320	350	384
12 D	278	205	201	216	304	312	340	370	324	333	345	359	395
13	352	352	357	357	358	357	350	345	337	324	337	364	385
14 D	356	360	357	367	360	355	350	348	340	332	334	384	412
15	317	341	360	346	352	350	360	368	351	339	345	367	388
16	351	345	365	319	344	340	350	342	334	325	333	360	391
17 D	317	360	358	362	370	355	351	348	337	328	351	405	410
18	329	346	350	360	359	362	365	358	352	335	350	389	402
19	315	311	328	331	338	349	351	354	351	343	343	374	396
20	307	341	357	364	367	368	365	358	358	349	360	379	390
21	332	367	370	362	356	350	349	347	351	338	336	364	384
22	340	350	353	340	323	334	346	353	370	350	354	374	394
23	325	330	341	349	348	347	351	353	344	346	348	386	404
24	318	335	330	330	344	350	340	351	356	350	360	386	409
25 D	341	353	351	354	347	369	377	353	346	347	356	373	403
26	319	327	340	347	350	349	345	338	342	342	350	356	386
27 Q	352	361	361	361	365	361	351	351	351	347	351	363	381
28	351	321	341	361	361	361	352	351	351	340	343	360	381
29 Q	345	350	342	342	351	352	351	351	352	342	342	356	372
30 Q	352	355	355	355	354	352	351	349	347	342	350	369	390
31													
MEAN	339	344	346	348	353	352	354	352	347	338	345	370	394
MEAN Q	355	358	355	354	358	357	352	355	348	339	344	362	384
MEAN D	327	326	321	330	344	340	346	348	336	332	341	374	401
SUM	0175	0319	0390	0436	0597	0557	0607	0556	0408	0153	0340	1112	1821

10° +(Tenths of Minutes)

NOVEMBER, 1981

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	HOUR MEAN	DATE
426	440	433	428	420	414	399	390	381	372	370	380	1
414	421	421	415	404	402	397	381	373	369	352	375	2 Q
413	428	423	409	402	406	371	359	369	369	370	371	3
424	431	424	418	412	416	410	378	360	355	376	380	4
426	430	416	410	390	383	377	362	346	352	359	376	5
412	422	414	402	392	390	391	379	352	337	336	366	6
440	421	411	429	401	396	387	370	353	356	345	370	7
429	430	415	429	405	400	389	379	372	365	361	379	8
408	410	400	391	389	381	375	371	370	357	360	368	9 Q
412	432	420	410	400	389	391	384	361	349	326	372	10
448	420	420	447	451	482	442	421	404	362	334	375	11 D
404	403	393	390	388	381	375	365	356	356	353	339	12 D
398	398	390	387	382	376	372	375	377	341	331	363	13
440	438	438	437	398	420	429	378	326	291	302	373	14 D
413	410	412	400	370	372	377	355	345	343	352	364	15
403	405	400	392	388	387	380	379	341	289	320	358	16
426	435	425	395	407	396	329	341	341	300	277	364	17 D
402	408	410	376	380	396	393	359	336	325	323	365	18
402	403	398	359	384	370	358	356	352	347	330	356	19
398	401	398	396	388	389	383	364	350	269	314	363	20
390	407	410	401	377	382	376	335	309	260	319	357	21
406	413	405	386	379	370	366	358	354	348	351	363	22
412	430	434	426	436	362	390	361	340	333	284	366	23
410	412	399	392	397	393	374	355	348	342	339	363	24
408	410	403	380	377	368	362	360	351	317	317	363	25 D
389	401	410	399	392	343	356	360	352	350	351	358	26
391	394	391	381	373	371	365	361	359	356	361	365	27 Q
397	402	397	391	392	390	371	370	352	325	334	362	28
398	402	397	391	385	380	375	369	361	356	351	363	29 Q
392	391	382	381	376	371	362	361	358	357	356	363	30 Q
												31
411	415	410	402	395	389	381	368	355	338	338	366	
401	404	398	392	385	381	375	369	364	359	356	367	
425	421	416	410	404	409	387	393	356	325	317	363	
2331	2448	2289	2048	1835	1676	1422	1036	0649	0148	0154		

Table 4 DECLINATION MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	355	355	359	360	365	360	356	351	349	342	351	369	391
2	339	356	368	369	369	364	359	354	352	350	361	373	378
3	360	362	363	363	364	363	361	354	349	338	343	361	381
4	331	341	340	357	369	366	355	351	350	339	350	369	387
5	322	341	347	351	351	352	352	358	351	335	332	356	373
6 Q	341	352	360	364	369	361	356	353	343	328	333	356	372
7 Q	351	354	356	361	361	356	351	349	338	321	321	343	371
8 D	351	342	338	351	357	352	353	351	345	331	333	351	375
9	343	331	373	379	371	373	355	361	351	339	354	371	391
10	350	361	369	368	380	353	360	349	346	343	343	359	373
11	355	355	361	352	358	355	351	345	339	328	330	345	359
12 D	354	352	355	379	373	355	347	347	354	349	343	361	389
13	331	341	310	300	319	315	335	341	331	323	342	367	384
14	345	347	351	349	345	351	340	342	344	337	342	354	377
15	351	347	351	353	352	353	352	351	349	341	343	352	370
16 Q	356	360	354	354	354	354	351	345	341	341	354	364	373
17	354	358	358	361	362	362	358	353	348	339	348	364	373
18	291	333	352	349	334	343	347	350	349	351	361	373	381
19	320	340	348	350	352	350	342	343	341	336	342	360	361
20	342	345	354	356	342	342	346	347	346	341	340	357	370
21 Q	348	347	356	360	361	357	351	352	351	341	346	360	376
22 Q	357	361	360	359	358	354	351	350	350	345	349	361	373
23	354	352	352	342	325	330	339	349	341	334	339	356	374
24	348	320	332	301	319	332	345	344	340	333	341	357	375
25	330	343	352	345	342	352	350	349	344	337	343	357	372
26	340	334	319	340	350	347	342	344	340	332	342	361	380
27	354	354	354	357	359	353	352	350	344	334	340	354	366
28	314	332	352	372	382	370	362	363	355	332	332	355	382
29 D	346	349	345	355	372	372	374	385	410	371	351	381	379
30 D	339	347	365	327	292	323	347	387	384	338	345	370	388
31 D	335	337	337	323	328	341	344	332	333	370	377	379	375
MEAN	342	347	351	352	353	352	351	352	349	339	344	361	376
MEAN Q	351	355	357	360	361	356	352	350	344	335	341	357	373
MEAN D	345	345	348	347	344	348	353	360	365	352	350	368	381
SUM	0607	0749	0891	0907	0935	0911	0884	0900	0808	0519	0671	1196	1669

10° +(Tenths of Minutes)

DECEMBER, 1981

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	HOUR MEAN	DATE
410	409	419	421	400	395	373	359	346	346	327	370	1
389	391	389	384	383	374	370	369	353	323	353	365	2
386	391	389	394	389	386	363	358	354	350	335	365	3
389	391	395	391	394	385	382	368	351	341	334	364	4
389	405	401	400	409	401	379	362	339	332	331	361	5
384	401	398	390	385	376	371	367	361	353	350	364	6 Q
384	392	390	381	382	381	370	363	360	362	354	361	7 Q
393	401	415	421	411	410	408	337	335	351	345	365	8 D
401	404	400	401	393	381	387	378	360	359	356	371	9
381	385	381	379	372	371	361	361	353	354	351	363	10
377	388	396	401	394	391	381	367	357	351	355	362	11
433	450	426	438	413	379	358	311	320	299	314	367	12 D
404	418	411	403	385	375	371	361	353	346	342	355	13
386	387	391	387	380	376	369	365	353	351	345	359	14
381	385	383	379	370	365	370	370	341	354	353	359	15
376	378	376	374	368	365	363	358	354	335	348	358	16 Q
382	382	381	381	371	372	379	331	309	287	274	354	17
390	386	395	401	385	381	369	361	352	342	332	359	18
386	382	392	375	361	362	360	350	341	326	340	353	19
382	380	379	377	371	369	363	360	351	333	346	356	20
388	395	397	384	378	371	366	356	350	350	353	362	21 Q
386	389	388	382	370	370	370	368	362	361	356	364	22 Q
385	390	384	378	372	364	367	368	362	359	352	359	23
386	382	382	386	381	374	369	358	352	322	314	350	24
378	400	398	392	382	363	360	344	314	332	336	355	25
384	384	379	373	367	366	358	355	351	351	352	354	26
382	389	389	381	379	366	366	364	351	345	332	359	27
388	401	382	382	382	382	364	344	339	340	343	360	28
408	397	382	384	402	359	360	360	351	327	334	369	29 D
427	407	402	390	378	385	359	353	343	345	338	362	30 D
397	387	365	369	367	367	362	351	333	328	339	353	31 D
391	394	392	390	383	376	369	357	347	340	340	360	
384	391	390	382	377	373	368	362	357	352	352	362	
412	408	398	400	394	380	369	342	336	330	334	363	
2112	2227	2155	2079	1874	1662	1448	1077	0751	0555	0534		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	981	980	980	991	981	979	980	983	978	967	953	953	963
2	981	980	979	983	983	984	989	983	983	978	972	970	970
3	981	976	974	976	978	980	985	989	983	974	972	970	969
4 D	985	980	971	969	973	983	992	988	988	975	969	975	979
5	990	989	987	991	994	991	991	991	992	990	990	991	986
6	990	993	988	991	993	996	998	997	993	991	986	981	977
7	991	995	993	991	991	993	993	991	991	988	983	978	976
8	983	987	987	987	988	988	992	993	990	986	978	979	978
9	977	987	987	992	993	992	991	992	990	989	985	980	982
10	999	1000	999	998	997	998	1001	1003	1004	1001	997	992	990
11 D	984	979	976	984	1000	994	1002	999	996	990	979	975	971
12 Q	986	982	981	979	982	986	986	985	979	976	966	963	963
13	991	997	997	995	996	1004	998	991	991	986	978	976	972
14	988	985	986	987	987	988	989	986	985	980	975	971	967
15	993	991	989	991	996	1000	1000	1000	1002	1005	994	987	981
16	991	991	999	1004	996	1003	1005	1001	991	991	987	970	972
17	992	994	1001	1002	1002	1003	1006	1005	1003	1002	997	996	992
18 Q	998	992	994	991	992	995	1000	1001	1000	993	987	979	976
19 Q	997	997	997	996	996	996	997	1001	1002	995	986	979	979
20 Q	991	989	991	994	996	998	1001	1002	1003	1001	991	988	989
21 Q	996	993	992	996	998	1001	1003	1005	1004	999	991	987	989
22	993	992	996	1001	1005	1006	1007	1007	1007	1003	999	989	986
23	997	1001	998	1001	1001	1002	1002	1004	1002	992	979	964	969
24	991	991	994	997	999	1001	1004	1005	995	990	980	971	970
25	988	988	994	994	994	997	998	999	999	994	984	974	969
26	1001	999	999	999	1000	1002	1001	1000	995	993	987	977	967
27	995	990	988	987	988	989	990	991	991	987	977	964	958
28 D	987	990	996	995	995	996	998	992	990	980	975	973	967
29 D	984	976	975	980	990	995	994	1015	993	981	982	975	972
30	985	986	985	987	986	987	989	990	993	991	988	981	975
31 D	998	994	997	1000	1022	1012	1005	975	972	977	957	946	961
MEAN	990	989	989	991	993	995	996	996	993	989	981	976	975
MEAN Q	994	991	991	991	993	995	997	999	998	993	984	979	979
MEAN D	988	984	983	986	996	996	998	994	988	981	972	969	970
SUM	0684	0664	0670	0729	0792	0839	0887	0864	0785	0645	0424	0254	0215

18000Y+.....(Gamma Units)

JANUARY, 1981

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	HOUR MEAN	DATE
963	969	970	974	973	963	973	964	974	980	982	973	1
978	980	988	964	975	973	973	978	984	989	986	979	2
970	974	978	983	990	993	996	982	994	998	996	982	3
981	983	988	989	994	993	992	980	990	995	993	984	4 D
986	975	977	985	988	989	986	990	983	980	990	988	5
971	971	978	977	984	990	992	991	986	987	992	987	6
977	977	978	987	988	993	995	997	997	992	990	989	7
971	983	991	992	972	982	991	993	989	980	976	985	8
986	980	981	984	990	995	998	997	996	1002	999	989	9
992	1000	1002	1006	1014	1013	993	973	978	985	976	996	10
967	967	953	961	972	972	976	973	966	965	976	978	11 D
967	974	979	981	986	990	995	995	991	990	989	981	12 Q
969	974	981	986	982	983	975	977	981	980	983	985	13
965	966	980	983	986	990	992	994	997	996	996	984	14
980	981	985	989	987	983	990	991	992	987	985	991	15
979	973	973	980	982	988	995	998	998	998	995	990	16
972	970	976	982	981	982	983	986	985	987	996	991	17
977	978	986	990	994	995	996	997	996	997	997	992	18 Q
981	981	982	987	993	998	1002	1003	1002	999	995	993	19 Q
988	986	988	992	998	995	992	986	991	996	996	993	20 Q
994	995	996	998	1001	1003	1002	997	996	996	994	997	21 Q
988	981	980	986	986	979	988	994	992	995	993	994	22
961	967	966	976	980	985	983	981	986	989	989	986	23
967	967	975	980	981	988	989	980	980	991	995	987	24
974	977	979	981	990	989	980	978	986	990	995	987	25
975	978	985	989	996	1006	1004	999	999	999	998	994	26
970	975	980	985	989	994	996	1000	1000	995	990	986	27
964	973	978	988	990	997	992	991	978	979	984	985	28 D
962	966	975	979	983	986	987	992	986	988	989	984	29 D
973	975	980	985	990	997	993	998	1000	998	995	988	30
970	966	970	975	979	984	988	975	972	991	977	982	31 D
975	976	980	984	987	989	990	988	989	990	990	987	
981	983	986	990	994	996	997	996	995	996	994	991	
969	971	973	978	984	985	987	982	978	984	984	982	
0218	0262	0378	0494	0594	0662	0687	0630	0645	0694	0687		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	980	985	983	985	992	990	985	989	991	982	978	978	972
2 D	980	980	980	975	977	985	986	988	974	987	990	988	983
3	980	980	980	981	985	990	995	994	985	987	990	981	965
4	995	995	989	989	991	993	992	994	998	997	991	985	984
5 D	984	985	986	989	992	1015	1012	1002	1004	982	966	955	952
6 D	965	971	971	969	971	974	974	975	975	980	970	970	987
7	890	915	925	920	921	930	942	946	952	955	950	945	946
8	977	976	976	977	979	980	980	981	981	978	975	971	972
9	945	936	939	958	965	962	961	970	966	971	968	961	955
10 Q	984	984	983	983	985	987	987	983	980	972	969	968	967
11	992	993	995	995	997	1000	1004	1004	997	988	979	975	977
12	974	978	983	988	991	991	994	996	990	982	983	973	963
13	989	992	994	993	992	996	1000	1002	1004	1002	992	991	986
14 Q	1001	1000	1001	1001	1001	1002	1003	1001	1000	994	988	981	976
15	1001	1002	1003	1003	1003	1004	1005	1006	1004	995	987	983	968
16	980	985	984	990	1002	996	993	994	993	987	982	976	974
17 Q	998	994	995	1000	1004	1004	1002	998	994	989	983	980	979
18 Q	999	1001	1002	1003	1005	1005	1005	1006	1004	996	990	986	988
19	990	992	996	999	1004	1011	1009	1006	1002	996	989	980	977
20	1005	1005	1006	1007	1009	1010	1010	1008	1003	993	990	978	970
21 Q	991	992	995	995	996	996	990	995	996	993	985	979	972
22	1004	1005	1005	1005	1005	1005	1005	1002	1000	999	992	990	992
23	972	1004	986	986	990	991	994	995	994	989	980	975	975
24	1006	1005	1006	1008	1007	1009	1007	1001	1001	1002	998	996	994
25 D	965	970	958	962	973	975	986	985	960	964	961	943	956
26 D	966	974	975	972	975	970	971	970	970	978	978	977	971
27	964	964	968	969	969	969	979	977	970	962	966	965	964
28	966	967	964	969	978	985	984	983	980	977	969	967	970
29													
30													
31													
MEAN	980	983	983	985	988	990	991	991	988	985	980	975	973
MEAN Q	995	994	995	996	998	999	997	997	995	989	983	979	976
MEAN D	972	976	974	973	978	984	986	984	977	978	973	967	970
SUM	7443	7530	7528	7571	7659	7725	7755	7751	7668	7577	7439	7297	7255

18000Y+.....(Gamma Units)

FEBRUARY, 1981

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	HOUR MEAN	DATE
974	984	985	990	995	998	1000	995	976	964	972	984	1
979	974	985	972	954	971	978	977	985	979	980	979	2 D
969	973	975	981	979	991	985	1000	992	991	992	984	3
983	984	984	980	978	975	985	976	974	984	986	987	4
966	971	958	947	953	962	973	969	968	974	961	976	5 D
972	940	945	957	962	933	951	920	900	908	882	955	6 D
955	957	957	958	962	966	972	974	975	975	977	949	7
977	983	984	985	961	974	978	979	979	951	952	975	8
955	965	970	975	971	975	980	983	985	983	984	966	9
965	970	976	979	980	986	988	991	992	993	993	981	10 Q
966	973	982	980	968	976	964	972	988	992	978	985	11
963	965	970	976	983	988	989	984	985	986	987	982	12
979	973	968	971	978	986	992	993	995	999	1001	990	13
977	978	979	985	993	996	999	1000	999	999	1001	994	14 Q
991	989	995	989	964	979	977	975	979	978	971	990	15
976	976	981	978	978	986	990	990	991	996	996	986	16 Q
975	977	978	980	986	993	996	997	995	994	996	991	17 Q
986	991	991	992	990	998	999	1001	1001	1002	1001	998	18 Q
983	987	989	990	994	996	1000	1000	1003	1003	1004	996	19
971	973	969	969	969	971	983	988	990	990	992	990	20
977	983	989	989	991	995	1000	1004	1004	1002	1002	992	21 Q
994	997	997	997	1003	1007	1010	1020	999	995	970	1000	22
977	985	993	990	990	998	999	1001	1006	1005	1005	991	23
993	988	983	985	980	973	983	961	971	946	947	990	24
965	964	962	960	961	967	972	966	975	964	971	966	25 D
978	980	967	978	976	982	970	971	960	965	972	973	26 D
963	967	955	970	957	980	978	974	984	977	964	969	27
972	975	972	970	980	981	984	976	978	963	971	974	28
												29
												30
												31
974	976	976	978	976	982	985	983	983	981	979	982	
976	980	983	985	988	994	996	999	998	998	999	991	
972	966	963	963	961	963	969	961	958	958	953	970	
7281	7322	7339	7373	7336	7483	7575	7537	7529	7458	7408		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE	HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1	D	990	997	978	981	978	980	985	986	1000	977	985	979	976
2		962	975	975	955	968	971	973	972	960	950	944	946	939
3		987	980	981	980	980	983	983	988	991	986	977	970	965
4		977	977	977	980	981	982	985	996	991	981	981	974	964
5	D	995	991	992	991	991	998	1036	1006	1001	981	944	931	902
6		928	926	924	928	934	935	940	939	930	927	920	913	917
7		967	967	971	971	977	986	989	991	998	990	973	950	942
8		976	973	976	973	976	977	979	977	973	964	960	956	953
9	Q	987	986	984	987	989	990	990	990	989	977	972	961	954
10		1007	1005	1002	999	1004	1004	1009	1007	1005	999	991	974	971
11	Q	994	996	996	994	997	1000	998	1003	1001	996	986	981	978
12		999	1000	996	995	994	995	998	1008	1007	1002	989	979	975
13	D	1003	994	997	998	999	1004	1009	1018	1017	1004	994	978	974
14	D	974	979	983	991	995	981	989	999	999	965	954	954	924
15		978	974	975	978	984	979	984	981	980	978	968	964	963
16		989	978	978	977	973	981	982	983	983	976	963	964	968
17		1028	983	971	983	984	985	990	987	981	971	959	963	962
18		1013	1016	1000	990	992	1010	1006	988	989	980	966	952	949
19		982	989	984	984	990	989	989	988	984	976	969	962	960
20		993	996	994	994	995	998	1003	1004	1000	978	967	954	963
21		1000	998	999	999	999	1003	1006	1006	1001	986	972	964	963
22	Q	993	991	992	994	998	998	1001	1001	994	981	969	964	968
23	Q	1003	1003	1003	1003	1004	1005	1008	1004	997	983	968	956	955
24	Q	1009	1008	1008	1007	1008	1008	1012	1009	1005	993	981	975	974
25	D	1020	1029	1020	1018	1019	1019	1039	1009	994	981	968	963	975
26		956	961	957	957	963	968	969	968	967	960	954	954	954
27		982	976	977	985	983	985	988	979	972	957	939	928	932
28		986	997	992	990	992	990	992	987	980	965	953	950	954
29		998	1003	990	984	984	993	1005	997	986	980	955	945	948
30		988	992	991	981	982	987	988	992	990	972	958	954	953
31		979	986	979	966	977	969	967	967	963	953	945	954	961
MEAN		988	988	985	985	987	989	993	991	988	976	965	958	956
MEAN Q		997	997	997	997	999	1000	1002	1001	997	986	975	967	966
MEAN D		996	998	994	996	996	996	1012	1004	1002	982	969	961	950
SUM		0643	0626	0542	0523	0590	0653	0792	0730	0628	0269	9924	9712	9636

18000γ+.....(Gamma Units)

MARCH 1981

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	HOUR MEAN	DATE
972	961	973	965	977	985	981	988	988	996	960	981	1 D
940	932	933	949	958	969	965	975	979	980	989	961	2
965	969	974	975	976	980	980	989	987	987	977	980	3
961	961	962	965	969	978	984	988	991	988	992	979	4
931	902	1014	972	941	935	918	936	924	927	928	962	5 D
922	932	938	946	954	957	962	967	968	971	972	940	6
942	948	946	950	950	961	957	971	974	973	975	967	7
934	944	957	962	967	978	982	984	984	986	987	970	8
955	962	969	975	980	984	992	997	1000	1001	1003	982	9 Q
975	971	969	973	975	984	991	996	995	994	995	991	10
974	972	982	986	984	983	993	997	1000	1001	1000	991	11 Q
973	969	966	979	989	1004	1010	1009	1012	999	991	993	12
957	959	961	978	969	968	992	991	995	1012	974	989	13 D
919	929	917	929	942	955	970	990	981	975	976	965	14 D
962	961	973	977	975	972	973	982	982	983	988	976	15
968	979	987	983	990	993	988	990	993	995	1001	982	16
976	968	975	980	981	988	993	989	987	990	995	982	17
949	963	968	970	969	965	970	977	978	986	987	981	18
964	966	980	977	985	983	982	985	983	989	993	981	19
958	972	973	990	990	994	995	997	999	1000	1000	988	20
974	987	993	996	996	1005	989	982	992	994	993	992	21
974	988	993	994	994	997	1003	1004	1003	1002	1003	992	22 Q
963	978	993	998	1003	1003	1006	1008	1008	1008	1009	995	23 Q
985	1000	1005	1006	1005	1008	1004	1013	1010	1015	1016	1003	24 Q
976	970	970	970	981	992	998	991	982	963	962	992	25 D
949	959	965	980	966	967	975	983	984	989	1009	967	26
951	950	970	976	982	988	993	989	985	991	993	973	27
971	982	993	1002	993	993	996	995	998	993	993	985	28
959	967	956	959	982	981	982	980	987	992	990	979	29
960	969	988	992	989	1013	991	1010	1004	983	967	983	30
963	967	978	976	990	994	997	998	983	981	959	973	31
959	962	972	975	977	982	984	989	988	989	986	980	
970	980	988	992	993	995	1000	1004	1004	1005	1006	992	
951	944	967	963	962	967	972	979	974	975	960	978	
9722	9837	0121	0230	0302	0457	0512	0651	0636	0644	0577		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	968	988	980	972	984	981	974	975	969	945	939	936	946
2	985	986	987	986	989	989	990	989	980	970	960	955	959
3	996	999	1002	1006	1004	996	1000	999	995	984	969	962	964
4	996	995	999	992	993	990	990	986	979	969	961	960	969
5 Q	1006	1007	1005	1001	1001	1005	1005	1001	992	977	962	955	959
6	1009	1011	1009	1006	1011	1019	1016	1022	1010	990	970	957	953
7	1011	1013	1012	1007	1009	1012	1015	1016	1012	993	975	969	968
8	1027	1029	1019	1013	1011	1015	1019	1018	1008	1001	982	969	970
9 Q	1006	992	1000	994	986	990	988	987	984	977	969	964	964
10 Q	1007	1008	1009	1007	1004	1006	1009	1007	1005	994	979	967	968
11	1013	1011	1009	1009	1012	1014	1016	1023	1015	1000	984	974	962
12 D	952	960	942	943	951	917	935	965	971	961	935	931	924
13 D	920	862	840	780	803	864	800	876	937	852	844	855	838
14	932	942	954	961	965	980	969	959	959	943	923	913	915
15 Q	978	978	978	978	978	979	981	978	970	958	944	937	941
16	1013	1004	997	994	993	994	998	999	992	981	957	945	937
17	1006	999	997	999	1006	1005	992	983	972	969	950	942	938
18	1005	1010	996	994	993	996	998	1001	998	990	976	965	962
19 D	1029	1021	971	982	977	987	990	981	975	971	948	933	936
20 D	986	990	983	986	985	936	961	964	955	951	938	924	922
21	994	983	983	984	976	974	969	958	931	913	917	913	908
22	978	958	968	974	981	970	963	966	963	963	955	945	939
23	1007	989	984	989	989	994	994	991	958	933	913	907	924
24	988	989	988	989	983	986	987	988	980	970	955	943	948
25	1006	993	983	986	988	987	984	978	978	974	963	953	952
26 D	1004	988	989	987	985	993	994	995	960	927	943	939	929
27	957	934	987	971	953	972	982	954	955	926	908	929	920
28	987	988	985	985	984	983	983	975	968	963	959	960	960
29	982	982	978	976	981	977	976	974	969	965	966	943	954
30 Q	989	990	991	990	990	990	993	990	990	992	992	988	986
31													
MEAN	991	987	984	981	982	983	982	983	978	963	951	944	944
MEAN Q	997	995	997	994	992	994	995	993	988	980	969	962	964
MEAN D	978	964	945	936	940	939	936	956	960	932	922	916	910
SUM	9737	9599	9525	9441	9465	9501	9471	9498	9330	8902	8536	8333	8315

18000Y+.....(Gamma Units)

APRIL 1981

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	HOUR MEAN	DATE
959	962	984	984	976	989	994	995	990	995	994	974	1
964	965	979	992	1002	988	992	997	1005	1004	994	984	2
975	985	971	989	1004	1012	1007	1014	1006	1004	996	993	3
969	971	982	995	1004	1007	999	1013	1001	1002	1004	989	4
972	981	992	1000	1003	1010	1012	1012	1010	1010	1008	995	5 Q
962	975	995	1006	1012	1010	1013	1011	1010	1013	1010	1000	6
978	991	1009	1008	1011	1012	1014	1028	1021	1023	1025	1006	7
979	984	994	1011	1030	1005	994	1004	995	996	1006	1003	8
971	979	987	994	997	1002	1011	1014	1014	1014	1009	991	9 Q
968	972	984	991	1000	1007	1011	1014	1011	1013	1011	998	10 Q
972	1016	984	979	981	996	1008	1005	1024	1034	1017	1002	11
929	968	944	994	992	991	974	968	966	998	995	959	12 D
852	867	889	930	934	954	941	969	950	955	939	885	13 D
917	929	948	961	968	971	974	978	974	976	980	954	14
943	952	963	978	983	993	997	998	1000	1001	1002	975	15 Q
947	965	969	973	981	991	996	1003	1004	1005	1008	985	16
949	955	964	976	985	981	984	990	990	1001	1002	981	17
966	972	999	1004	1007	1006	1010	1013	1024	1022	1012	997	18
958	978	992	978	978	987	988	988	986	982	980	979	19 D
943	969	973	999	994	1003	992	972	962	1001	982	970	20 D
928	933	966	972	980	982	983	992	978	979	978	961	21
966	958	970	987	1008	1011	1028	997	983	990	994	976	22
935	948	953	971	982	992	992	998	1000	987	986	972	23
982	1000	1003	1013	1038	1034	1011	993	992	1003	1008	990	24
966	968	991	1013	1029	1016	1008	1010	1009	1002	1004	989	25
992	948	963	937	964	998	1024	1012	999	978	966	976	26 D
908	926	960	994	994	990	991	991	993	991	991	962	27
967	975	996	990	998	1003	1006	1004	1008	1005	990	984	28
964	974	978	989	993	1004	1003	995	997	1000	993	980	29
980	993	998	1001	1003	1008	1008	1006	1009	1010	1011	996	30 Q
												31
955	965	976	987	994	998	998	999	997	1000	997	980	
967	975	985	993	997	1004	1008	1009	1009	1010	1008	991	
935	946	952	968	972	987	984	982	973	983	972	954	
8661	8959	9280	9609	9831	9953	9965	9984	9911	9994	9895		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	1010	1008	1007	1005	1003	1005	1001	993	992	989	990	983	968
2	988	993	998	998	994	993	990	982	980	974	974	978	983
3 Q	1007	1004	1002	999	1000	1002	996	991	981	981	977	973	976
4 Q	1015	1013	1010	1009	1009	1007	1003	994	991	991	989	984	982
5 Q	1020	1018	1012	1007	1006	1006	1003	994	982	974	968	968	975
6 Q	1020	1019	1018	1017	1017	1014	1011	1006	995	987	981	979	977
7 Q	1020	1016	1016	1015	1016	1015	1011	1009	1009	1004	993	987	989
8	1019	1016	1015	1016	1016	1015	1014	1011	1007	1001	993	981	981
9	1051	1056	1053	1002	998	972	988	967	934	951	940	915	927
10	985	974	974	972	987	996	994	992	988	976	959	948	951
11 D	978	963	938	940	918	923	946	959	947	941	917	881	887
12	983	974	973	972	978	978	976	969	968	966	958	959	964
13	1002	1003	991	988	998	1007	992	981	978	974	974	978	979
14	1005	1007	1004	1003	1003	997	999	1008	1007	986	990	989	1008
15 D	1019	1023	1026	1042	982	945	923	959	958	961	952	942	941
16 D	964	961	972	973	969	974	938	953	938	915	863	876	917
17	974	963	965	964	965	965	964	954	944	940	942	943	947
18 D	1014	1001	1008	987	990	968	926	898	933	953	939	920	907
19	983	984	982	982	988	981	965	946	959	959	952	931	939
20 D	1004	993	1006	995	1004	1004	962	942	960	950	939	930	914
21	986	983	985	989	984	979	971	965	955	935	933	935	943
22	990	994	992	998	999	1004	993	990	981	972	963	954	955
23	1002	1003	1003	1003	1005	1005	1008	979	977	976	960	955	957
24	982	982	997	989	991	1001	1007	1004	994	973	974	973	968
25	975	973	971	969	984	1009	997	959	944	941	967	956	950
26	980	980	983	978	975	985	989	980	974	970	965	968	965
27	1002	1001	1000	1000	999	1000	997	997	996	994	983	976	973
28	1030	1022	1012	1011	1015	1016	1005	999	996	984	971	970	973
29	1015	1011	1013	1016	1015	1013	1016	1013	1006	997	993	984	976
30	1017	1013	1012	1012	1014	1011	1011	1010	1004	996	1000	1005	1003
31	1021	1019	1019	1018	1016	1019	1015	1008	995	989	992	997	997
MEAN	1002	999	999	996	995	994	987	981	977	971	964	959	960
MEAN Q	1016	1014	1012	1009	1010	1009	1005	999	992	987	982	978	980
MEAN D	996	988	990	987	973	963	939	942	947	944	922	910	913
SUM	1061	0970	0957	0869	0838	0809	0611	0412	0273	0100	9891	9718	9772

18000Y+.....(Gamma Units)

MAY 1981

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	HOUR MEAN	DATE
979	983	990	1003	1023	1026	1004	1006	1007	1005	998	999	1
991	998	1003	1007	1004	1003	1005	1010	1013	1012	1011	995	2
984	993	1001	1009	1012	1015	1018	1019	1019	1021	1019	1000	3 Q
981	986	994	1007	1011	1011	1017	1016	1016	1017	1018	1003	4 Q
986	997	1011	1021	1026	1024	1016	1016	1020	1022	1021	1004	5 Q
984	991	1005	1014	1029	1021	1017	1019	1023	1020	1019	1008	6 Q
991	1006	1016	1025	1029	1023	1022	1024	1022	1022	1022	1013	7 Q
982	994	1009	1017	1029	1050	1027	1022	1030	1044	1039	1014	8
924	942	959	974	998	993	993	993	988	988	995	979	9
957	964	978	1003	1033	1048	1033	1013	998	977	955	986	10
914	943	969	975	974	983	991	993	996	1012	988	953	11 D
969	978	977	981	1007	1008	999	1004	968	967	1007	978	12
975	978	988	993	998	1005	1003	1003	1003	1004	1005	992	13
990	988	994	985	998	1012	1019	1028	1028	1030	1022	1004	14
957	964	964	1004	1009	1019	1007	997	981	980	971	980	15 D
927	921	912	956	998	1034	997	990	983	975	975	953	16 D
953	960	973	986	1003	1004	1006	1008	1000	1005	1034	973	17
919	916	953	960	987	995	986	988	983	987	987	963	18 D
954	954	962	993	1015	1001	1002	1002	1007	1015	1013	978	19
928	962	1000	1004	1011	1024	1053	1021	987	986	991	982	20 D
955	970	981	992	999	1016	1011	1022	1008	1003	989	979	21
964	970	994	1009	1016	1016	1014	1011	1003	999	1001	991	22
979	970	989	1016	1034	1049	1035	1016	1001	989	984	996	23
967	967	989	988	1018	1011	1012	1017	1004	1001	989	992	24
960	978	1000	1024	1030	1035	1044	1021	1005	984	981	986	25
961	970	986	1003	1011	1019	1018	1010	1003	1009	1007	987	26
977	981	991	1004	1019	1038	1044	1029	1019	1019	1025	1003	27
976	982	985	998	1006	1016	1016	1015	1016	1017	1017	1002	28
976	985	995	1008	1021	1025	1026	1019	1019	1016	1019	1007	29
1004	1000	1028	1011	1012	1019	1026	1030	1021	1016	1015	1012	30
994	996	1004	1005	1013	1030	1022	1022	1029	1026	1024	1011	31
966	974	987	999	1012	1018	1016	1012	1006	1005	1005	991	
985	995	1005	1015	1021	1019	1018	1019	1020	1020	1020	1005	
929	941	960	980	996	1011	1007	998	986	988	982	966	
9958	0187	0600	0975	1373	1573	1483	1384	1200	1168	1141		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	1027	1025	1017	1016	1017	1017	1015	1009	1009	1004	1001	1000	998
2	1019	1024	1016	1017	1020	1020	1016	1010	1001	991	990	999	993
3 D	1030	1030	1024	1024	1029	1029	1026	1020	1014	1006	998	990	982
4	1011	1010	1009	1010	1011	1014	1008	1004	1000	995	991	993	990
5	1019	1025	1012	1011	1013	1012	1010	1005	996	991	985	983	981
6	1022	1014	1016	1017	1016	1021	1018	1010	1001	994	991	979	991
7 D	1010	1023	1027	1017	1014	997	976	997	989	1002	997	982	979
8 D	978	984	991	993	996	1009	992	976	974	970	971	969	969
9 Q	1001	999	999	999	1001	1003	999	993	989	981	982	982	976
10 Q	1011	1011	1011	1011	1009	1009	1008	1004	997	993	985	980	977
11	1021	1016	1008	1003	1012	1021	1024	1017	1006	1000	996	993	991
12 Q	1016	1015	1016	1013	1009	1013	1011	1008	1004	999	997	993	992
13	1018	1017	1017	1018	1020	1016	1011	1006	1000	988	983	981	976
14 Q	1016	1017	1018	1018	1021	1021	1017	1014	1011	1007	1001	994	990
15	1012	1015	1022	1023	1018	1010	1008	1010	1005	998	982	978	977
16 D	1031	1026	1005	1005	1008	1002	1002	993	989	980	978	983	966
17	996	994	990	996	1004	986	986	976	973	976	971	970	984
18	1012	1015	1012	1010	1008	1006	1005	998	991	978	971	972	974
19	1007	1005	1004	1001	1002	1002	1000	993	984	974	976	974	960
20	1012	1013	1009	1012	1017	1021	1018	1002	989	971	970	966	958
21	1013	1017	1016	1022	1022	1014	1013	1011	997	982	973	969	965
22	1013	1015	1015	1017	1019	1020	1015	1009	1006	998	992	987	988
23 Q	1022	1020	1020	1021	1026	1026	1022	1017	1009	998	990	991	993
24	1026	1026	1026	1024	1026	1026	1019	1010	995	985	993	1009	1005
25	1025	1022	1020	1015	1018	1022	1021	1016	1006	985	990	998	1003
26	1026	1024	1014	1017	1022	1017	1007	1000	1002	995	981	988	975
27	1029	1017	1016	1013	1018	1020	1010	998	981	976	979	979	979
28	1025	1023	1017	1017	1024	1024	1010	1017	1009	989	988	982	983
29 D	1013	1010	1010	1012	1019	1022	998	990	987	962	943	959	944
30	1010	1006	1002	1008	1013	1013	1003	993	988	988	988	990	990
31													
MEAN	1016	1015	1013	1013	1015	1014	1009	1004	997	989	984	984	982
MEAN Q	1013	1012	1013	1012	1013	1014	1011	1007	1002	996	991	988	986
MEAN D	1012	1015	1011	1010	1013	1012	999	995	991	984	977	977	974
SUM	0471	0458	0379	0380	0452	0433	0268	0106	9902	9656	9533	9513	9459

18000Y+(Gamma Units)

JUNE, 1981

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	HOUR MEAN	DATE
994	996	1014	1026	1030	1030	1024	1020	1021	1022	1020	1015	1
991	996	1000	1016	1015	1020	1022	1024	1024	1027	1032	1012	2
980	1012	1005	1012	1036	1040	1037	1025	1017	1008	1009	1016	3 D
991	995	1003	1005	1013	1017	1025	1024	1020	1020	1018	1007	4
977	987	1007	1020	1019	1016	1018	1021	1025	1025	1024	1008	5
981	1000	1021	1030	1031	1043	1038	1020	1020	1021	1023	1013	6
1004	1023	1034	1064	1055	1065	1088	1054	1010	993	990	1016	7 D
971	972	982	991	1013	1004	1009	1014	1009	1003	1000	989	8 D
970	971	979	986	1004	1019	1024	1020	1016	1014	1014	997	9 Q
976	983	996	1011	1017	1026	1029	1028	1022	1023	1025	1006	10 Q
991	995	1006	1016	1017	1031	1035	1031	1014	1016	1016	1012	11
990	994	1003	1011	1023	1026	1022	1025	1023	1026	1023	1011	12 Q
980	997	1014	1021	1020	1021	1018	1014	1014	1017	1017	1007	13
994	1000	1012	1020	1032	1044	1036	1028	1021	1017	1014	1015	14 Q
990	1001	1011	1018	1030	1044	1037	1026	1021	1022	1037	1012	15
991	1004	1025	1027	1047	1014	1002	1021	1032	1018	1016	1008	16 D
993	1000	1008	1016	1020	1021	1019	1013	1016	1015	1017	998	17
987	1003	1002	1005	1013	1032	1035	1022	1017	1017	1012	1004	18
968	992	1012	1006	1024	1051	1045	1032	1022	1022	1018	1003	19
968	983	993	1009	1026	1038	1037	1024	1022	1018	1017	1004	20
974	994	1015	1030	1026	1030	1026	1025	1012	1015	1018	1007	21
990	996	1015	1020	1036	1041	1046	1027	1023	1026	1026	1014	22
994	996	1010	1025	1028	1026	1030	1026	1026	1026	1030	1016	23 Q
1010	1025	1009	1023	1040	1057	1072	1027	1026	1024	1026	1021	24
1001	1006	1015	1029	1010	1036	1036	1037	1020	1023	1026	1016	25
971	994	1005	1015	1022	1034	1032	1031	1030	1030	1036	1011	26
981	991	1006	1034	1024	1039	1031	1021	1019	1020	1024	1009	27
978	981	1000	1005	1013	1018	1022	1022	1016	1017	1013	1008	28
950	972	975	993	999	1010	1014	1007	1003	1005	1004	992	29 D
988	996	1006	1015	1030	1048	1019	1032	1024	1014	1007	1007	30
												31
984	995	1006	1017	1024	1032	1031	1025	1020	1018	1018	1008	
985	989	1000	1011	1021	1028	1028	1025	1022	1021	1021	1009	
979	997	1004	1017	1030	1027	1030	1024	1014	1005	1004	1004	
9524	9855	0173	0499	0713	0941	0928	0741	0585	0544	0552		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	998	983	988	999	1000	1003	996	986	973	968	973	978	980
2	1024	1018	1010	1008	998	1001	1023	1003	974	973	976	971	968
3	1008	1008	1009	1009	1010	1008	1001	992	986	976	967	968	977
4	994	994	994	999	1002	1004	994	980	967	955	957	968	980
5	1006	1014	1016	1020	1017	1013	1010	1010	1006	1000	999	977	980
6	1013	1014	1013	1022	1024	1027	1017	1003	999	989	967	960	964
7	1019	1024	1017	1021	1025	1027	1009	1006	1000	988	972	968	979
8	1011	1010	1012	1016	1009	1010	1016	1011	999	983	978	981	977
9 Q	1020	1019	1018	1011	1016	1024	1017	1009	997	979	970	973	989
10 Q	1019	1021	1015	1014	1012	1010	1010	1006	1004	991	982	975	975
11	1024	1019	1021	1028	1034	1039	1033	1024	1013	999	991	993	999
12	1022	1020	1019	1020	1017	1015	1003	991	988	989	989	993	974
13	1004	1007	1000	1001	1005	1006	994	984	976	973	971	979	984
14	1017	1018	1005	1007	1012	1010	1005	999	999	1000	989	989	995
15 Q	1018	1014	1009	1010	1011	1015	1014	1006	995	983	977	980	994
16	1013	1014	1019	1014	1015	1023	1014	999	979	962	961	971	981
17 D	1016	1016	1017	1023	1022	1024	1019	1005	974	985	983	963	1001
18	965	976	978	979	984	982	974	970	962	950	946	949	962
19	1012	1011	1003	1002	1005	1007	1003	988	975	966	963	965	972
20	1016	1016	1006	1012	1015	1012	1006	995	987	978	975	981	975
21 Q	1031	1024	1023	1021	1021	1019	1014	1003	994	989	985	979	979
22	1025	1027	1026	1019	1014	1015	1019	1014	1007	993	970	973	974
23 D	1024	1011	1011	1009	1009	1013	1007	1012	1017	1013	999	994	947
24	990	988	986	986	987	989	989	978	970	962	954	945	950
25 D	995	1003	995	998	1005	1026	1013	995	998	985	980	978	965
26 D	859	845	764	865	905	909	906	922	916	897	882	887	917
27 D	966	968	974	986	981	984	955	950	941	923	919	923	922
28	984	981	988	983	984	982	970	960	952	936	933	940	946
29 Q	993	995	991	993	993	991	984	979	970	954	943	943	956
30	989	990	993	995	998	995	979	968	970	980	978	979	973
31	994	996	1005	1002	994	992	991	995	988	972	961	958	961
MEAN	1002	1001	998	1003	1004	1006	1000	992	983	974	967	967	971
MEAN Q	1016	1015	1011	1010	1011	1012	1008	1001	992	979	971	970	979
MEAN D	972	969	952	980	984	991	980	977	969	961	953	949	950
SUM	1069	1044	0925	1092	1124	1175	0985	0743	0476	0191	9990	9981	0096

18000 Y +.....(Gamma Units)

JULY, 1981

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	HOUR MEAN	DATE
983	981	1003	1017	1028	1023	1021	1018	1025	1020	1019	998	1
979	995	1019	1033	1038	1030	1026	1038	1024	1036	1023	1008	2
985	997	1009	1019	1023	1035	1039	1033	1017	1016	1011	1004	3
992	1000	1020	1025	1027	1031	1039	1033	1034	1015	1015	1001	4
980	980	984	1009	1016	1037	1034	1034	1029	1026	1025	1009	5
979	998	1010	1021	1027	1026	1014	1017	1015	1017	1015	1006	6
968	969	993	1000	1026	1028	1023	1027	1023	1022	1022	1006	7
981	986	999	1010	1015	1022	1024	1025	1024	1024	1021	1006	8
995	998	1008	1010	1019	1029	1033	1027	1023	1020	1021	1009	9 Q
985	998	1013	1022	1025	1028	1033	1029	1029	1025	1024	1010	10 Q
1008	1010	1009	1019	1030	1025	1029	1032	1033	1028	1025	1019	11
984	989	1000	1043	1033	1029	1038	1034	1026	1032	1029	1012	12
1001	1009	1016	1029	1019	1021	1034	1031	1024	1013	1013	1004	13
994	1002	1002	999	1027	1033	1036	1028	1021	1020	1019	1009	14
1002	1004	1006	1011	1017	1029	1034	1029	1022	1023	1018	1009	15 Q
988	993	994	1011	1027	1037	1033	1028	1027	1026	1024	1006	16
996	999	997	1003	1024	1042	1062	1040	1015	1014	977	1009	17 D
973	984	996	1004	1004	1014	1019	1024	1014	1009	1010	985	18
989	1001	991	1009	1025	1034	1039	1028	1019	1012	1013	1001	19
964	969	1006	1025	1028	1033	1034	1034	1034	1032	1029	1007	20
989	997	1005	1012	1017	1019	1024	1028	1032	1028	1024	1011	21 Q
985	1007	1001	1002	1010	1023	1034	1034	1035	1034	1024	1011	22
953	968	1027	1069	1071	1025	994	989	992	1007	986	1006	23 D
953	959	969	990	1006	1005	1014	1021	1025	1010	997	984	24
973	1179	1033	1071	1005	1064	1008	963	932	939	987	1004	25 D
915	947	972	1030	993	975	982	977	978	987	984	926	26 D
928	928	940	962	978	989	994	991	993	999	994	962	27 D
950	966	967	979	988	991	1000	1003	998	994	991	974	28
966	974	988	992	998	993	993	997	1003	1003	997	983	29 Q
969	980	996	998	1018	1026	1016	1016	1009	1002	1001	992	30
959	968	967	992	1002	1011	1016	1021	993	992	996	989	31
976	991	998	1013	1018	1023	1023	1020	1015	1014	1011	999	
987	994	1004	1009	1015	1020	1023	1022	1022	1020	1017	1004	
953	1004	994	1027	1014	1019	1008	992	982	989	986	981	
0266	0735	0940	1416	1564	1707	1719	1629	1468	1425	1334		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

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
1	991	996	991	995	1002	1002	985	980	966	951	949	959	953
2	997	997	991	993	993	993	988	978	966	961	957	959	967
3	997	1002	1008	1011	1017	1016	987	973	963	969	967	954	953
4	997	998	999	1009	1006	993	989	972	949	954	959	958	963
5	1002	1002	1003	1001	1006	997	1000	1017	1006	981	967	952	956
6	986	977	1013	1002	1010	1005	1000	987	974	967	962	951	953
7	999	996	995	999	1002	1007	1004	993	982	973	967	963	966
8 Q	991	997	996	995	994	990	984	971	963	961	967	972	979
9 Q	1005	1009	1010	994	997	999	995	988	979	972	968	974	985
10	1022	1015	1017	1017	1031	1042	1035	1016	1009	1012	1011	1002	1006
11	1011	1015	1019	1009	1005	1003	996	987	988	992	997	999	1003
12	1003	1003	995	996	995	992	999	995	986	975	975	982	991
13	1010	1005	1010	1007	1001	1001	997	990	975	977	985	989	985
14 Q	1015	1012	1002	997	998	996	990	985	982	980	980	985	992
15	1004	1004	1006	1005	1003	1002	1000	993	992	989	987	989	996
16 Q	996	996	1005	1003	997	991	991	989	966	982	988	989	988
17 D	1019	1033	1023	1018	1022	1021	1015	988	959	945	940	960	973
18 D	993	1016	1008	992	993	990	984	970	968	973	966	966	969
19	1007	1006	1009	1009	1002	998	998	989	974	962	962	957	969
20	1007	1007	1014	1009	1005	998	994	987	977	973	977	984	986
21	1007	1007	1013	1010	1009	1008	996	981	987	974	965	962	952
22	1006	1007	1015	1010	1004	1004	998	985	976	967	964	967	972
23 D	1026	1007	1014	1001	992	997	1007	990	964	938	954	959	957
24 D	969	986	976	977	970	962	967	966	955	940	933	935	956
25	988	983	985	987	984	983	975	966	949	954	957	953	957
26 Q	998	997	997	998	998	993	987	982	977	968	973	985	999
27 D	1013	1014	1011	1006	1008	1001	998	987	970	961	962	978	992
28	1001	1002	1006	1001	996	1003	1003	992	983	966	948	956	968
29	1004	1003	990	992	1002	1004	996	983	966	951	961	969	974
30	1010	1011	1016	1016	1004	998	990	978	968	958	956	952	958
31	1016	1021	1029	1025	1003	992	993	983	973	960	949	949	962
MEAN	1003	1004	1005	1003	1002	999	995	985	975	967	966	968	974
MEAN Q	1001	1002	1002	997	997	994	989	983	977	973	975	981	989
MEAN D	1004	1011	1006	999	997	994	994	980	963	951	951	960	969
SUM	1090	1124	1166	1084	1049	0981	0841	0541	0212	9966	9953	0009	0160

18000Y+.....(Gamma Units)

AUGUST, 1981

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	HOUR MEAN	DATE
953	959	971	996	1012	1044	1028	999	1008	1006	1001	987	1
984	989	1006	987	1000	1006	1012	1015	1018	1012	1003	991	2
964	973	977	1003	1007	1010	1023	1009	1002	1002	1003	991	3
971	980	988	994	1004	1010	1011	1015	1006	1004	1003	989	4
970	982	994	1015	1023	1027	1017	1012	1003	997	991	997	5
964	979	990	993	990	997	1000	1002	1000	1004	1002	988	6
968	975	993	1013	1026	1019	1017	1008	1006	1002	997	995	7
989	987	990	995	1002	1005	1009	1010	1012	1012	1013	991	8 Q
997	1002	1007	1014	1017	1023	1027	1031	1030	1029	1027	1003	9 Q
1003	1013	1008	1014	1019	1022	1021	1022	1021	1016	1012	1017	10
1007	1020	998	996	1013	1018	1030	1021	1007	997	997	1005	11
995	998	999	1002	1013	1027	1022	1020	1022	1018	1015	1001	12
987	986	992	1001	1007	1008	1012	1013	1022	1008	1006	999	13
1002	1006	1008	1006	999	997	1009	1017	1022	1029	1013	1001	14 Q
1000	996	1007	1007	1000	1000	1019	1043	1037	1009	1005	1004	15
989	988	989	995	1005	1011	1014	1017	1015	1016	1009	998	16 Q
973	965	976	1002	1013	1014	1009	1011	1005	1007	997	995	17 D
973	982	985	985	986	1012	1004	1007	1000	1004	1007	989	18 D
989	988	991	1004	1003	1011	1012	1012	1017	1010	1008	995	19
989	992	997	1004	1015	1017	1011	1011	1012	1012	1007	999	20
954	951	987	986	1012	1021	1010	1002	1007	1004	1004	992	21
975	975	990	995	1012	1017	1004	1012	1013	1016	1020	996	22
991	970	939	943	989	1010	1003	1006	997	954	949	982	23 D
964	973	994	1007	979	993	1004	992	991	987	992	974	24 D
960	954	959	982	998	998	1007	1003	1008	995	998	978	25
996	996	993	991	988	996	998	1010	1017	1014	1005	994	26 Q
998	983	991	982	1016	998	1002	1011	1010	1013	1004	996	27 D
977	990	990	1001	993	998	1001	1005	1008	1028	1007	993	28
963	960	959	958	973	978	985	994	1000	998	1003	982	29
958	967	968	988	990	996	1003	1009	1006	1017	1016	989	30
974	990	999	1004	1008	1009	1009	1013	1013	1013	1012	996	31
980	983	988	996	1004	1009	1011	1011	1011	1008	1004	994	
995	996	997	1000	1002	1006	1011	1017	1019	1020	1013	997	
980	975	977	984	997	1005	1004	1005	1001	993	990	987	
0377	0469	0635	0863	1112	1292	1333	1352	1335	1233	1126		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE	HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1	Q	1010	1008	1008	1006	1004	1003	998	988	974	958	947	941	948
2	D	1023	1016	1016	1018	1014	1018	1015	990	988	960	942	941	948
3		1008	1006	1003	998	993	991	987	978	967	965	967	964	961
4		1001	1006	1000	1001	999	997	989	980	977	969	970	974	970
5		1009	985	992	989	989	993	986	978	972	964	961	957	947
6		994	994	998	995	995	993	988	984	976	963	955	949	950
7	Q	1014	1009	1007	1006	1005	1006	1003	997	989	976	968	959	967
8		1009	1009	1013	1006	1007	1018	995	986	973	959	950	951	965
9		1031	1021	1018	1019	1013	1009	1002	991	981	973	971	967	978
10		1008	1010	1012	1011	1010	1009	1005	997	988	974	968	968	974
11	D	997	1011	1019	1006	1000	997	1005	990	981	959	960	962	958
12		1005	1007	1008	1003	1008	1003	994	984	981	977	973	976	984
13		1005	1007	1014	1001	1002	1010	1015	1000	988	974	968	966	967
14		1005	1005	1005	1004	1004	998	997	996	991	989	985	981	978
15		1008	1003	1002	1007	1007	1007	998	983	978	974	961	958	962
16		1006	1008	1012	1008	1003	1008	1007	997	983	971	962	957	957
17	Q	1005	1008	1006	1004	1008	1003	1002	998	990	977	975	975	979
18		1013	1012	1010	1011	1011	1010	1003	996	989	981	971	970	977
19	D	987	1003	1012	1004	1005	1006	990	960	989	983	970	957	967
20		991	995	995	992	991	990	992	996	997	989	979	969	963
21		1020	1007	1003	1005	1006	1005	1005	1005	1005	999	989	977	977
22		997	998	1002	1013	1017	1002	1009	1001	1003	991	977	969	966
23	Q	999	998	998	1002	1000	1002	1002	1003	1004	999	990	983	983
24		1022	1020	1021	1025	1025	1022	1018	1017	1012	1003	998	989	980
25		1009	1014	1025	1012	1013	1011	1012	1011	1005	991	988	988	982
26	D	1014	1011	1023	1031	1035	1009	1011	1009	983	961	960	951	941
27	D	985	987	985	984	995	987	1000	975	984	977	954	948	952
28	Q	986	989	995	998	995	1000	1004	1001	997	983	972	964	966
29		1008	1013	1008	1011	1011	1013	1016	1017	1008	999	985	975	978
30		1013	1008	1016	1011	1007	1003	1003	1003	995	982	968	947	955
31														
MEAN		1006	1006	1008	1006	1006	1004	1002	994	988	977	969	964	966
MEAN Q		1003	1002	1003	1003	1002	1003	1002	997	991	979	970	964	969
MEAN D		1001	1006	1011	1009	1010	1003	1004	985	985	968	957	952	953
SUM		0182	0168	0226	0181	0172	0123	0051	9811	9648	9320	9084	8933	8980

18000Y +.....(Gamma Units)

SEPTEMBER, 1981

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	HOUR MEAN	DATE
960	978	993	1005	1008	1010	1016	1019	1018	1017	1024	993	1 Q
955	975	987	987	968	978	993	998	999	1007	1005	989	2 D
970	984	990	987	998	1004	1007	1008	1008	1004	1003	990	3
968	983	987	996	1001	1010	1013	1018	1019	1006	1019	994	4
961	960	971	988	998	1003	1006	1003	1008	1003	997	984	5
960	964	974	990	996	1005	1009	1012	1014	1016	1007	987	6
977	984	990	997	1005	1009	1012	1009	1005	1007	1009	996	7 Q
979	988	994	998	1005	1006	1008	1014	1022	1041	1046	998	8
987	998	999	1007	1012	1016	1012	1020	1019	1012	1013	1003	9
989	993	1007	1004	997	1003	1013	1019	1012	1005	1004	999	10
948	959	967	968	977	995	999	1005	998	998	1003	986	11 D
988	986	986	983	983	988	996	1000	1004	1007	1007	993	12
967	973	969	975	978	996	1003	1004	1008	1005	1000	991	13
975	963	968	984	997	1004	1010	1009	1000	1003	1007	994	14
968	974	980	980	993	999	1002	1005	1005	1010	1008	991	15
969	984	988	992	1002	1007	1007	1001	1001	1006	1003	993	16
979	979	982	991	999	1008	1014	1014	1013	1013	1013	997	17 Q
988	992	995	1002	1007	1014	1044	1015	977	969	987	998	18
967	970	972	977	989	988	997	1003	997	1001	994	987	19 D
962	966	970	982	994	997	1008	1005	1003	1002	999	989	20
980	987	993	1002	1009	1016	1017	1017	995	982	983	999	21
966	977	989	996	1001	1007	1013	1013	1006	999	1006	997	22
983	992	1002	1002	1008	1012	1011	1011	1014	1014	1021	1001	23 Q
976	980	989	990	997	998	1009	1013	1012	1013	1012	1006	24
970	984	1000	986	992	1005	1008	1011	1012	1013	1015	1002	25
955	958	961	972	980	964	950	964	973	967	957	981	26 D
964	974	986	986	985	974	988	998	996	992	984	981	27 D
976	986	991	995	994	1004	1009	1013	1010	1004	1004	993	28 Q
985	998	1005	1000	1011	1011	1014	1011	1008	1012	1009	1004	29
969	971	988	993	1003	999	1005	1005	1007	1024	1017	996	30
												31
971	979	986	991	996	1001	1006	1008	1005	1005	1005	994	
975	984	992	998	1003	1009	1012	1013	1012	1011	1014	996	
958	967	975	978	980	980	985	994	993	993	989	985	
9141	9360	9573	9715	9887	0030	0193	0237	0163	0152	0156		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	1002	1002	1006	1002	999	998	997	997	989	977	959	955	957
2	1022	1018	998	1001	1002	1001	1000	998	993	983	973	965	971
3 D	1012	1008	1007	1004	1007	1004	1002	1005	1007	989	972	958	957
4	995	988	994	1000	1006	1002	1002	988	982	982	969	964	947
5 Q	996	996	996	995	998	1000	998	997	993	974	958	953	961
6 Q	1004	1004	1005	1006	1006	1007	1010	1010	1005	991	973	964	957
7	1002	1007	1001	998	1002	1009	1007	1011	1011	985	989	974	958
8	964	970	982	986	983	983	984	991	970	946	938	934	939
9	986	983	981	996	1011	1017	991	990	986	977	967	954	959
10	1006	1001	998	997	1006	1001	1000	998	992	985	975	961	971
11 D	983	970	977	989	997	993	986	1000	975	971	967	942	940
12	965	961	970	981	987	991	985	966	968	961	948	941	944
13	994	993	996	995	996	997	997	998	998	984	971	959	957
14 D	997	997	925	830	904	922	930	939	942	952	950	940	935
15	977	975	975	971	973	972	975	970	961	956	944	940	940
16 Q	994	995	997	998	997	994	994	989	983	970	956	950	951
17	1000	1000	996	996	995	990	1000	997	989	990	975	971	976
18 Q	1014	1005	998	997	997	999	1001	1004	999	985	970	954	950
19	1010	1006	1018	1007	1008	997	1008	1009	997	991	975	955	960
20 D	985	975	990	983	986	999	999	990	995	980	958	954	949
21	911	900	904	929	932	935	939	948	942	910	910	920	910
22 D	956	963	966	968	975	986	996	1005	994	962	938	922	906
23	920	927	935	936	936	940	945	946	934	938	931	921	917
24	976	975	976	978	981	982	984	986	983	973	966	942	936
25	980	980	984	992	1002	984	983	986	986	984	967	950	938
26	994	996	997	996	997	997	998	998	1008	988	974	963	956
27	996	993	994	995	996	999	1002	999	991	976	961	956	958
28	1003	1002	1002	1010	1011	1010	1009	1001	991	986	970	964	969
29	1001	998	997	998	996	1002	1005	1008	1001	987	975	967	971
30	999	1000	1001	1006	1001	1002	1001	1001	996	982	969	961	966
31 Q	1001	1004	1001	999	1001	1004	1006	1005	1001	992	982	974	972
MEAN	989	986	986	985	990	991	991	991	986	974	962	953	951
MEAN Q	1002	1001	999	999	1000	1001	1002	1001	996	982	968	959	958
MEAN D	987	983	973	955	974	981	983	988	983	971	957	943	937
SUM	0645	0592	0567	0539	0688	0717	0734	0730	0562	0207	9830	9528	9478

18000Y+(Gamma Units)

OCTOBER, 1981

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	HOUR MEAN	DATE
966	982	983	994	1002	1009	1011	1012	1012	1012	1009	993	1
978	977	992	1002	1003	995	1004	1037	1025	1025	1017	999	2
948	932	937	965	971	978	999	1004	989	1012	1003	986	3 D
954	961	971	983	980	982	999	998	996	994	990	984	4
966	977	986	992	995	998	1001	1003	1007	1011	1007	990	5 Q
961	968	985	991	997	1002	1003	1007	1012	1014	1010	996	6 Q
963	969	981	989	1004	997	951	970	966	974	982	988	7
941	941	948	959	975	986	981	979	971	982	985	967	8
966	978	974	988	986	996	995	1004	1002	1003	1001	987	9
976	985	986	994	997	981	966	966	981	981	997	988	10
929	947	951	946	960	961	953	953	969	968	972	967	11 D
952	960	967	971	977	983	986	988	993	993	995	972	12
961	973	989	987	994	997	1010	1015	1011	1020	1014	992	13
936	942	949	953	965	977	1000	990	989	985	978	951	14 D
942	950	962	983	971	981	987	991	996	1000	997	970	15
958	965	973	979	984	991	998	1001	1001	1004	1001	984	16 Q
975	986	995	990	1000	1009	1010	1010	1003	1003	1003	994	17
959	972	980	985	993	1005	1009	1009	1010	1010	1010	992	18 Q
970	974	974	985	994	1000	989	978	984	988	994	990	19
967	974	973	974	965	958	924	914	946	945	936	967	20 D
903	912	924	943	958	968	972	971	969	960	964	935	21
908	908	927	970	932	945	918	910	913	900	905	945	22 D
921	933	953	960	960	967	971	967	961	974	978	945	23
949	953	958	966	961	960	949	952	961	982	977	967	24
941	949	954	963	974	983	990	995	996	994	994	977	25
964	975	981	991	996	1000	1003	1005	1005	1005	1001	991	26
970	980	981	981	989	996	1004	1006	1006	1001	1005	989	27
977	984	986	989	990	996	1006	986	981	991	997	992	28
976	987	991	996	1001	1004	1004	1006	1007	1020	1002	996	29
970	966	969	985	994	996	996	996	988	996	1003	989	30
980	991	994	1002	1003	1006	1009	1013	1012	1014	1012	999	31 Q
956	963	970	979	983	987	987	988	989	992	992	980	
965	975	984	990	994	1000	1004	1007	1008	1011	1008	992	
938	941	947	962	959	964	959	954	961	962	959	963	
9627	9851	0074	0356	0471	0607	0598	0636	0662	0761	0739		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12	
	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	
1		1013	1012	1012	1013	1012	1011	1010	1007	1003	994	984	970	973
2	Q	1006	1006	1008	1004	1003	1004	1005	1006	1003	993	983	975	972
3		1005	1007	1007	1006	1005	1007	1009	1006	1001	992	977	965	961
4		1010	1010	1010	1009	1012	1012	1011	1008	1003	990	977	967	967
5		1014	1012	1012	1015	1013	1012	1017	1013	1003	991	988	984	973
6		1003	1007	1016	1010	1017	1011	1008	1006	999	987	975	967	967
7		998	997	995	998	1011	1001	1006	1001	988	970	960	957	948
8		984	988	993	995	1006	1010	1018	1007	986	973	969	960	955
9	Q	996	996	995	996	997	998	1000	1001	994	978	963	956	957
10		1006	1005	1004	1005	1008	1008	1012	1011	1004	991	977	954	970
11	D	996	996	998	996	1006	1016	1021	1017	1007	988	974	971	973
12	D	963	984	966	948	934	960	955	954	948	942	954	949	946
13		985	984	984	984	985	984	986	984	982	973	964	958	958
14	D	989	993	989	992	992	1001	1003	999	999	998	990	988	971
15		971	969	972	977	991	976	986	997	981	972	960	957	961
16		996	997	1004	998	988	993	994	994	990	986	981	973	966
17	D	983	992	1001	999	1003	999	1001	1001	1001	990	965	927	946
18		976	979	980	982	982	986	987	981	978	970	946	932	929
19		994	990	983	985	989	993	991	992	987	979	973	971	963
20		996	994	997	997	1001	1001	999	994	985	973	973	964	965
21		986	991	995	996	998	999	1002	1001	991	979	973	971	968
22		973	977	991	1001	997	1001	996	990	989	978	972	967	962
23		1003	994	993	999	1001	1003	1003	997	993	978	967	971	969
24		977	981	985	988	993	996	995	989	984	975	967	961	961
25	D	994	993	1010	1026	1027	1052	1033	1028	1016	1017	1014	1019	1032
26		995	985	993	994	995	998	1005	1006	1006	1006	997	996	996
27	Q	1005	1006	1008	1008	1007	1011	1018	1017	1011	1006	1001	998	997
28		1015	1003	996	1002	1005	1007	1009	1010	1009	1004	1001	993	991
29	Q	1005	1005	1017	1008	1007	1009	1010	1010	1011	1011	1005	998	992
30	Q	1011	1009	1011	1011	1012	1013	1012	1008	1006	1005	1001	997	997
31														
MEAN		995	995	998	998	1000	1002	1003	1001	995	986	978	971	970
MEAN Q		1005	1004	1008	1005	1005	1007	1009	1008	1005	999	991	985	983
MEAN D		985	992	993	992	992	1006	1003	1000	994	987	979	971	974
SUM		9848	9862	9925	9942	9997	0072	0102	0035	9858	9589	9331	9116	9086

18000Y+(Gamma Units)

NOVEMBER, 1981

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	HOUR MEAN	DATE
983	986	987	991	995	1001	1004	1006	1003	1004	1004	999	1
974	983	992	1000	1004	1007	998	1000	1008	1012	1011	998	2 Q
967	976	984	989	1004	1006	1005	1006	1005	1009	1010	996	3
974	985	994	999	1008	1010	999	1003	998	1006	1014	999	4
971	973	982	982	989	992	987	985	994	1003	1004	996	5
977	986	996	1000	1003	999	999	998	992	992	986	996	6
943	944	957	961	968	969	973	979	977	980	987	978	7
966	970	981	1005	1006	1007	1003	1003	999	996	997	991	8
962	974	981	991	1000	1002	1005	1007	1006	1006	1006	990	9 Q
984	991	999	998	1005	1012	1014	999	1001	995	998	998	10
963	994	1005	1007	998	1006	980	987	973	979	978	993	11 D
945	951	953	962	978	987	989	991	990	988	985	963	12 D
962	967	973	977	983	989	994	1000	993	998	993	981	13
970	956	960	974	981	966	965	970	953	955	973	980	14 D
965	965	966	963	983	989	988	991	997	994	995	978	15
966	972	976	982	989	995	1001	1008	996	996	996	989	16
957	949	957	951	954	950	950	956	961	969	991	973	17 D
943	956	960	969	981	969	981	972	975	978	975	969	18
963	969	961	969	976	975	972	984	993	996	1001	981	19
966	972	973	981	988	994	995	987	985	983	975	985	20
974	973	976	977	971	974	965	951	947	956	963	978	21
966	976	976	979	989	995	995	996	997	997	1004	986	22
965	965	966	963	958	964	957	954	957	962	970	977	23
969	974	977	983	983	982	980	981	984	990	993	981	24
1027	1018	1009	999	997	1000	1001	1003	1002	1009	1012	1014	25 D
996	991	984	985	985	995	1007	1006	1005	1002	1006	997	26
996	996	997	1000	1005	1006	1010	1011	1011	1012	1012	1006	27 Q
996	1001	1000	1007	1011	1013	1015	1016	1012	1010	1004	1005	28
995	1000	1005	1009	1012	1011	1013	1015	1014	1013	1012	1008	29 Q
999	1006	1008	1011	1015	1017	1019	1020	1019	1017	1017	1010	30 Q
												31
973	977	981	985	991	993	992	993	992	994	996	990	
985	992	997	1002	1007	1009	1009	1011	1012	1012	1012	1003	
972	974	977	979	982	982	977	981	976	980	988	985	
9184	9319	9435	9564	9719	9782	9764	9785	9747	9807	9872		

Table 5 HORIZONTAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	1015	1012	1011	1013	1017	1017	1019	1016	1015	1009	1002	998	1004
2	1010	1011	1013	1015	1019	1021	1023	1022	1020	1014	1004	979	981
3	1011	1012	1013	1017	1018	1018	1018	1016	1013	1006	999	993	994
4	993	998	998	999	1006	1010	1009	1009	1003	992	986	987	986
5	996	998	998	1001	1003	1006	1009	1012	1005	989	982	977	977
6 Q	996	997	998	1001	1009	1012	1010	1006	1004	992	984	981	976
7 Q	1003	1003	1004	1006	1009	1014	1015	1015	1008	995	986	975	975
8 D	1001	1001	999	998	1001	1006	1028	1022	1017	1006	995	984	981
9	992	991	997	1001	1006	1004	1016	1018	1014	1006	996	993	987
10	1001	1002	1005	1011	1023	1011	1007	998	995	994	993	993	993
11	1007	1003	1004	1008	1011	1014	1016	1013	1009	1003	996	991	989
12 D	1004	1003	1012	1016	1016	1016	1024	1018	1016	1016	1006	993	975
13	981	976	987	985	983	994	987	983	976	978	982	970	961
14	998	999	997	995	992	996	997	997	997	989	984	983	983
15	1003	1004	1006	1006	1007	1008	1011	1007	1003	996	989	983	981
16 Q	1009	1009	1007	1008	1010	1012	1013	1010	1004	991	990	992	992
17	1011	1011	1012	1013	1017	1021	1023	1022	1015	1006	997	995	994
18	972	982	992	995	998	1002	1006	1012	1008	999	990	986	986
19	1008	1005	1000	1002	1006	1010	1016	1012	1009	1005	995	976	972
20	1002	1002	1005	1014	1010	1011	1014	1015	1014	1001	998	995	994
21 Q	1001	1005	1005	1008	1014	1015	1014	1008	1008	1007	1006	1001	998
22 Q	1008	1008	1009	1011	1014	1016	1016	1016	1015	1012	1006	1000	996
23	1013	1015	1012	1013	1013	1013	1014	1012	1009	1006	998	995	994
24	997	988	985	989	991	998	1003	1003	1007	1005	1000	998	997
25	1002	1002	1001	1011	1017	1016	1017	1016	1013	1005	999	991	989
26	1003	1004	1009	1007	1011	1014	1020	1020	1018	1009	996	990	991
27	1009	1012	1013	1008	1009	1015	1019	1019	1018	1011	1007	1006	1000
28	983	995	1006	1011	1018	1026	1023	1026	1027	1018	1006	997	997
29 D	1006	1007	1011	1006	1013	1047	1038	1001	1011	987	968	962	961
30 D	990	990	998	993	992	985	983	1005	990	971	966	966	964
31 D	991	991	986	989	986	989	994	992	981	966	980	974	969
MEAN	1001	1001	1003	1005	1008	1011	1013	1011	1008	999	993	987	985
MEAN Q	1003	1004	1005	1007	1011	1014	1014	1011	1008	999	994	990	987
MEAN D	998	998	1001	1000	1002	1009	1013	1008	1003	989	983	976	970
SUM	1016	1036	1093	1150	1239	1337	1402	1341	1242	0984	0786	0604	0537

18000Y+.....(Gamma Units)

DECEMBER, 1981

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	HOUR MEAN	DATE
1015	1018	1012	1013	1003	1000	1000	1002	1000	1001	1003	1009	1
987	989	992	998	1006	1007	1011	1017	1010	1012	1009	1007	2
990	994	1000	1006	1003	1006	1001	994	1004	1006	1002	1006	3
986	988	990	994	996	988	991	996	996	994	1004	996	4
980	985	989	993	991	986	991	992	987	985	997	993	5
976	982	986	991	998	1004	1008	1007	1004	1002	1003	997	6 Q
979	984	993	999	1001	1004	1009	1012	1016	1010	1005	1001	7 Q
986	1002	1017	999	998	992	974	973	986	996	997	998	8 D
984	981	982	983	987	996	994	986	1001	998	998	996	9
993	995	992	996	1001	1007	1011	1011	1013	1011	1007	1003	10
991	999	1001	1003	1006	1011	1009	1014	1012	1017	1011	1006	11
958	972	983	973	971	981	989	961	961	961	975	992	12 D
975	969	973	985	991	997	1001	1003	1003	1001	1001	985	13
988	998	1003	1004	1002	1006	1008	1005	1007	1006	1004	997	14
987	998	1002	1004	1006	1008	1016	1004	988	1005	1005	1001	15
994	996	1000	1003	1007	1013	1015	1010	1005	1006	1008	1004	16 Q
998	1009	1015	1012	1012	1022	1024	1025	1005	984	985	1010	17
983	989	989	980	985	990	998	1002	1005	1004	1003	994	18
983	994	996	998	995	999	1005	1007	1005	1004	1005	1000	19
997	1000	1001	1004	1007	1005	1000	996	995	1003	1004	1004	20
1000	996	997	997	1001	1001	1004	1002	993	1005	1008	1004	21 Q
998	1000	1001	998	1007	1010	1013	1018	1017	1016	1013	1009	22 Q
1001	1007	1013	1021	1026	1026	1027	1024	1017	1011	997	1012	23
1003	1006	1006	1006	1000	1006	1008	1011	1010	1022	1006	1002	24
997	1000	1000	996	997	1005	1008	1003	1001	1006	1004	1004	25
994	998	1005	1006	1008	1006	1006	1011	1011	1012	1011	1007	26
999	1001	1003	1008	1011	1009	1018	1011	999	996	993	1008	27
998	987	988	995	992	996	996	1002	1002	1006	1008	1004	28
941	956	976	986	984	990	997	997	994	992	994	993	29 D
944	956	966	977	986	984	990	996	994	997	996	982	30 D
971	969	969	985	990	994	998	994	991	1000	1004	986	31 D
986	991	995	997	999	1002	1004	1003	1001	1002	1002	1000	
989	992	995	998	1003	1006	1010	1010	1007	1008	1007	1003	
960	971	982	984	986	988	990	984	985	989	993	990	
0576	0718	0840	0913	0968	1049	1120	1086	1032	1069	1060		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

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
1	458	461	464	463	447	449	454	455	458	456	448	455	453
2	464	464	464	457	456	455	455	454	456	456	454	454	452
3	466	456	454	449	454	454	449	447	450	450	442	443	444
4 D	478	466	458	452	449	446	442	446	452	453	446	445	441
5	459	459	462	458	456	454	455	455	454	450	446	443	449
6	459	459	456	454	452	452	452	452	452	449	446	440	439
7	456	458	458	454	454	454	454	450	449	447	445	445	443
8	456	456	456	456	455	454	454	452	448	447	442	432	428
9	455	454	455	449	449	451	450	450	451	447	440	435	435
10	448	448	449	453	454	455	455	454	454	452	445	436	437
11 D	449	452	446	436	439	446	448	451	455	463	459	451	442
12 Q	450	452	452	452	455	456	456	457	457	456	452	449	442
13	455	454	455	454	452	452	456	462	465	467	465	459	452
14	452	451	452	451	450	452	454	456	457	461	456	446	447
15	454	452	446	447	447	451	448	448	447	451	450	444	443
16	453	452	452	444	441	439	442	446	447	456	449	449	447
17	456	452	450	447	448	449	448	448	448	453	449	440	437
18 Q	455	459	454	454	453	454	454	452	453	455	452	448	448
19 Q	453	454	454	455	453	452	451	449	449	451	449	448	448
20 Q	457	459	456	453	450	450	448	447	446	442	441	439	437
21 Q	452	455	456	455	451	449	447	446	443	440	439	439	439
22	451	449	451	449	449	449	448	447	443	441	438	439	439
23	443	444	447	449	449	450	450	449	449	448	446	442	438
24	447	443	446	449	449	450	449	448	447	447	441	437	435
25	455	451	449	450	450	452	451	451	449	449	445	440	440
26	448	446	446	448	449	450	450	450	451	449	446	440	439
27	458	458	448	447	449	450	449	450	450	448	442	442	442
28 D	467	456	454	452	449	442	440	444	448	455	452	443	436
29 D	467	459	452	452	451	445	453	445	452	449	443	441	438
30	463	460	454	451	449	449	450	450	448	447	448	448	440
31 D	456	456	452	460	448	419	412	429	443	448	444	450	450
MEAN	456	455	453	452	450	449	449	450	451	451	447	444	442
MEAN Q	453	456	454	454	452	452	451	450	450	449	447	445	443
MEAN D	463	458	452	450	447	440	439	443	450	454	449	446	441
SUM	4140	4095	4048	4000	3957	3930	3924	3940	3971	3983	3860	3762	3700

44000Y +(Gamma Units)

JANUARY, 1981

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	HOUR MEAN	DATE
447	450	464	466	467	478	484	474	474	472	468	461	1
453	454	454	468	460	465	474	475	473	474	474	461	2
446	456	456	456	456	455	454	464	458	457	460	453	3
443	454	458	458	456	456	456	483	457	459	462	455	4 D
445	450	459	457	456	456	463	462	464	463	459	456	5
437	449	456	463	467	456	456	460	459	456	457	453	6
444	448	458	462	459	457	455	454	457	450	454	453	7
443	448	453	456	465	463	460	458	458	466	465	453	8
435	446	456	460	460	457	456	455	458	455	449	450	9
433	436	447	453	452	452	463	480	472	473	462	453	10
446	456	478	476	478	481	483	475	474	472	464	459	11 D
441	445	453	460	463	461	459	461	461	460	457	454	12 Q
451	454	459	465	464	465	467	466	466	465	459	460	13
447	452	454	456	457	455	456	456	457	456	454	454	14
444	448	453	454	459	457	458	463	462	465	466	452	15
444	446	452	456	458	457	455	454	457	456	454	450	16
441	449	455	459	461	464	466	472	462	459	459	453	17
449	450	454	457	457	454	454	454	456	455	453	454	18 Q
445	450	454	457	457	453	452	452	453	453	454	452	19 Q
432	437	447	451	451	449	449	456	459	453	452	448	20 Q
439	441	449	449	449	449	449	453	449	449	449	447	21 Q
438	446	451	456	459	464	467	461	459	456	449	450	22
442	446	460	462	463	461	460	460	456	451	450	451	23
437	441	449	447	459	461	459	467	462	457	457	449	24
439	446	451	455	455	456	463	465	459	458	452	451	25
432	435	446	451	452	452	454	459	457	453	454	448	26
439	440	447	449	453	453	456	457	457	459	460	450	27
439	444	453	456	457	459	459	471	477	471	467	454	28 D
437	439	446	449	449	458	469	461	466	469	466	452	29 D
438	445	449	452	457	454	455	456	458	458	458	452	30
445	452	458	459	458	459	458	478	459	463	450	450	31 D
442	447	454	457	459	459	460	463	461	460	458	453	
441	445	451	455	455	453	453	455	456	454	453	451	
442	449	459	460	460	463	465	474	467	467	462	454	
3691	3853	4079	4175	4214	4217	4269	4362	4296	4263	4194		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE	HOURLY	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1		452	453	458	455	450	452	445	445	446	451	453	450	445
2	D	469	476	458	449	450	449	449	449	449	444	445	445	446
3		452	467	456	454	453	450	449	445	439	439	449	449	459
4		459	450	453	455	456	455	450	449	446	446	442	442	439
5	D	453	458	458	459	459	452	438	432	432	439	446	453	449
6	D	469	476	465	463	462	461	459	456	449	439	439	438	429
7		480	473	436	449	451	457	457	460	467	467	467	467	463
8		459	459	459	461	463	463	462	461	457	452	448	445	443
9		448	448	433	437	451	438	446	452	457	456	448	446	449
10	Q	456	456	457	459	463	464	465	465	464	461	453	452	453
11		455	454	454	454	456	456	458	462	465	463	457	452	446
12		465	446	446	449	446	451	453	453	452	450	445	442	439
13		455	447	446	448	445	448	447	447	449	451	449	440	442
14	Q	450	450	449	449	449	449	450	450	451	454	446	442	439
15		449	449	446	446	444	444	444	444	446	448	442	431	429
16		456	453	451	449	450	446	442	443	445	443	435	433	433
17	Q	452	453	452	449	447	446	446	447	449	447	441	435	435
18	Q	452	452	452	452	451	451	448	445	444	437	426	418	417
19		451	448	450	449	449	447	445	445	445	443	437	435	432
20		447	450	451	452	451	451	451	450	449	439	435	431	430
21	Q	450	453	454	455	455	456	455	454	454	449	442	435	435
22		448	446	448	449	450	452	452	451	450	445	435	430	424
23		455	430	440	450	454	454	453	450	449	450	442	432	425
24		446	445	446	446	449	452	452	453	451	445	435	426	421
25	D	455	454	458	450	443	453	446	445	447	443	436	428	429
26	D	465	457	450	445	443	448	451	451	446	437	431	429	429
27		465	459	453	453	453	454	453	453	450	445	437	437	444
28		460	466	461	456	455	455	453	455	456	456	454	450	448
29														
30														
31														
MEAN		457	455	451	452	452	452	451	450	450	448	443	440	438
MEAN Q		452	453	453	453	453	453	453	452	452	450	442	436	436
MEAN D		462	464	458	453	451	453	449	447	445	440	439	439	436
SUM		2783	2731	2640	2642	2648	2654	2619	2612	2604	2539	2415	2313	2272

44000Y+.....(Gamma Units)

FEBRUARY, 1981

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	HOUR MEAN	DATE
444	448	453	454	456	451	452	456	476	483	481	455	1
439	453	450	457	485	466	466	470	469	464	463	457	2 D
457	457	459	459	468	455	459	465	449	454	456	455	3
442	447	458	462	466	478	458	459	467	474	458	455	4
459	457	473	492	495	495	485	482	476	482	470	462	5 D
441	477	483	469	524	529	504	511	503	510	519	474	6 D
459	467	472	471	469	469	467	464	463	462	460	463	7
444	448	456	458	476	468	468	467	467	477	476	460	8
456	456	461	469	473	470	469	467	464	463	460	455	9
456	460	464	463	464	464	464	462	461	458	456	460	10 Q
455	453	455	462	475	473	477	483	473	464	473	461	11
436	437	443	449	455	454	456	463	461	459	460	450	12
442	442	447	451	453	456	456	457	457	457	452	449	13
437	440	446	447	445	447	449	450	452	452	451	448	14 Q
433	440	444	451	469	461	476	473	472	473	463	451	15
439	450	456	463	464	453	450	453	452	452	451	448	16
445	448	454	457	455	453	452	452	454	453	453	449	17 Q
432	438	449	454	452	449	448	446	447	446	454	444	18 Q
435	440	445	452	451	450	448	447	448	447	446	445	19
441	453	467	475	481	476	471	462	456	455	454	453	20
438	444	449	455	455	454	451	448	448	448	448	449	21 Q
425	432	440	445	445	446	446	444	455	458	474	445	22
426	435	445	461	456	456	456	455	453	451	448	447	23
431	442	456	472	477	485	491	505	475	460	465	455	24
434	445	455	469	475	481	486	472	474	480	482	456	25 D
428	434	453	463	483	494	494	517	460	468	470	456	26 D
449	455	468	475	488	478	477	485	465	468	467	460	27
447	450	458	466	467	473	475	474	484	470	465	461	28
												29
												30
												31
442	448	456	461	469	467	466	467	464	464	463	454	
442	446	452	455	454	453	453	452	452	451	452	450	
440	453	463	470	492	493	487	490	476	481	481	461	
2370	2548	2759	2921	3122	3084	3051	3089	2981	2988	2975		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE	HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1	D	459	453	455	455	452	456	455	457	455	446	438	428	424
		469	468	465	458	454	456	456	460	455	446	436	434	438
2		464	459	459	457	456	456	455	456	459	456	446	437	438
3		469	460	455	449	439	434	436	438	445	447	437	436	433
4		458	458	459	456	448	446	424	429	443	448	444	438	460
5	D													
6		496	496	494	488	486	482	478	474	474	468	465	460	453
7		473	472	472	473	470	466	461	456	450	451	446	443	443
8		467	468	468	469	472	470	468	466	459	450	442	443	436
9	Q	459	463	462	463	464	465	465	465	466	465	452	436	424
10		453	454	454	455	456	456	455	454	456	454	438	428	431
11	Q	454	455	454	452	454	456	453	454	452	445	437	425	425
12		454	455	454	453	455	456	456	456	454	447	443	435	425
13	D	455	444	445	446	447	450	449	449	454	453	438	432	416
14	D	446	450	456	456	452	450	449	454	448	446	438	432	432
15		467	462	460	457	437	444	446	451	456	453	445	438	439
16		460	453	446	456	458	460	456	460	466	458	448	443	439
17		447	440	438	441	449	456	456	456	457	454	452	436	430
18		455	448	447	437	432	436	434	441	444	444	435	434	428
19		457	461	461	460	460	462	464	467	468	461	449	438	430
20		458	458	458	458	455	458	457	458	458	455	441	429	416
21		454	456	456	456	456	456	454	456	459	452	438	424	416
22	Q	453	455	456	457	456	456	455	458	463	454	438	424	416
23	Q	454	454	456	458	458	458	456	462	464	453	437	422	409
24	Q	449	451	453	455	455	455	455	457	454	446	431	418	409
25	D	447	432	444	450	456	439	425	437	445	441	431	419	403
26		447	449	447	458	459	462	458	469	466	459	448	432	422
27		453	455	458	455	454	454	454	458	456	443	437	426	418
28		456	447	450	456	458	456	457	459	462	447	435	422	420
29		454	455	456	456	456	451	448	453	451	455	442	430	421
30		465	466	460	456	455	460	460	465	459	446	436	417	413
31		459	455	449	445	438	441	456	464	462	455	443	428	411
MEAN		458	457	456	456	455	455	453	456	457	452	441	432	427
MEAN Q		454	456	456	457	457	458	457	459	460	453	439	425	417
MEAN D		453	447	452	453	451	448	440	445	449	447	438	430	431
SUM		4211	4152	4147	4141	4097	4103	4051	4139	4160	3998	3686	3387	3238

44000Y+(Gamma Units)

MARCH, 1981

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	HOUR MEAN	DATE
438	447	456	468	475	468	474	470	476	491	463	457	1 D
454	454	457	468	470	473	478	471	466	466	465	459	2
443	446	454	468	474	466	469	474	472	466	472	458	3
440	448	456	466	469	464	459	456	456	459	457	450	4
512	544	612	654	626	599	544	524	532	498	498	499	5 D
456	458	469	473	472	468	469	469	468	467	469	473	6
455	469	489	516	529	529	498	480	473	468	469	473	7
456	458	465	479	479	475	469	465	463	461	459	463	8
426	437	449	462	469	467	463	458	456	456	455	456	9 Q
436	448	457	468	478	474	468	460	457	456	455	454	10
431	436	444	455	467	465	457	456	456	455	453	450	11 Q
418	426	440	447	457	456	455	455	454	472	459	449	12
426	444	465	491	504	480	467	472	490	477	446	456	13 D
442	446	470	482	488	493	477	461	466	467	469	457	14 D
449	465	472	478	495	486	478	471	471	478	464	461	15
444	449	458	466	464	462	471	466	459	461	478	458	16
431	446	458	465	477	466	461	471	469	456	456	453	17
435	446	465	484	490	491	481	478	476	471	464	454	18
428	436	452	471	480	488	486	473	466	464	459	460	19
428	439	463	473	473	466	459	456	455	453	453	453	20
415	425	444	454	457	466	476	466	474	451	448	450	21
419	429	446	458	465	464	461	457	456	456	451	450	22 Q
409	418	437	451	457	457	455	450	449	449	449	447	23 Q
411	420	436	453	457	458	457	452	454	451	450	445	24 Q
419	445	452	465	477	475	479	489	487	489	468	451	25 D
441	463	467	490	497	495	482	475	475	469	443	461	26
421	443	463	471	473	468	470	476	467	460	457	454	27
421	440	462	475	475	470	467	475	477	459	455	454	28
427	443	471	478	499	504	494	485	475	470	465	460	29
421	431	447	466	479	478	484	474	479	458	464	456	30
414	432	446	460	478	496	499	483	488	486	498	458	31
434	446	462	476	482	480	474	470	470	466	462	457	
419	428	442	456	463	462	459	455	454	453	452	450	
447	465	491	512	514	503	488	483	490	484	469	464	
3466	3831	4322	4755	4950	4867	4707	4568	4562	4440	4311		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	484	465	455	459	442	446	449	457	453	435	422	419	416
2	458	461	461	460	459	458	461	466	458	448	440	424	412
3	458	459	458	448	452	455	457	458	453	445	434	414	404
4	462	463	462	458	458	461	463	467	458	444	429	413	409
5 Q	456	458	458	459	459	458	458	458	452	446	433	413	408
6	451	454	453	453	453	448	440	449	447	442	434	417	400
7	452	452	453	456	456	456	456	457	457	451	440	418	406
8	447	448	449	450	453	455	459	459	460	448	433	419	409
9 Q	451	447	437	445	446	452	458	459	455	439	428	408	390
10 Q	452	450	449	451	453	453	456	460	456	438	424	408	398
11	448	448	449	448	449	448	450	452	456	445	433	418	408
12 D	412	406	361	357	344	389	426	430	438	449	455	446	459
13 D	429	350	302	219	239	271	301	378	387	432	437	445	459
14	469	449	439	459	462	450	457	485	487	474	473	465	449
15 Q	471	471	471	469	469	469	471	471	470	460	443	426	419
16	453	456	458	462	462	460	459	459	460	449	435	422	420
17	455	458	459	459	452	449	444	439	451	453	447	437	436
18	459	454	460	463	465	469	471	469	465	456	444	429	419
19 D	458	457	448	412	413	439	451	457	455	441	427	414	417
20 D	463	469	469	439	397	389	407	431	447	442	433	419	427
21	440	459	459	447	443	453	446	449	440	429	433	428	429
22	429	449	439	442	449	432	428	447	458	462	454	442	445
23	444	445	457	449	449	438	432	433	449	449	435	429	429
24	457	458	459	463	459	449	457	468	468	452	437	425	420
25	449	429	442	445	449	463	467	467	465	453	439	424	419
26 D	459	451	452	444	447	446	451	454	453	433	421	411	397
27	448	438	420	439	431	418	423	426	429	421	405	415	423
28	465	465	462	464	467	469	471	469	464	456	442	427	417
29	442	429	439	447	453	459	462	462	461	449	434	428	426
30 Q	466	460	457	460	462	465	467	469	459	446	429	421	419
31													
MEAN	453	449	445	441	440	442	447	454	454	446	436	424	420
MEAN Q	459	457	454	457	458	459	462	463	458	446	431	415	407
MEAN D	444	427	406	374	368	387	407	430	436	439	435	427	432
SUM	3587	3458	3337	3226	3192	3267	3398	3605	3611	3387	3073	2724	2589

44000Y+.....(Gamma Units)

APRIL, 1981

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	HOUR MEAN	DATE
417	429	448	484	493	488	493	476	465	467	462	455	1
419	438	448	454	467	471	463	458	457	459	462	453	2
410	434	458	458	463	478	484	463	457	467	459	451	3
423	439	453	462	462	463	457	453	458	456	456	451	4
416	431	447	456	459	458	456	452	453	452	451	448	5 Q
413	430	443	453	458	458	455	452	452	452	456	444	6
411	427	443	455	461	462	456	452	452	449	448	447	7
412	427	442	458	479	486	481	466	465	458	455	451	8
398	413	431	447	457	462	458	455	453	453	452	441	9 Q
398	417	435	448	456	458	456	455	457	450	450	442	10 Q
408	418	445	467	478	470	460	468	462	459	439	447	11
467	466	488	520	562	517	533	540	501	482	469	455	12 D
477	500	529	516	503	500	519	501	492	497	475	423	13 D
452	466	489	493	487	482	477	472	477	477	472	469	14
422	436	448	455	457	461	458	466	464	465	464	457	15 Q
421	433	449	459	468	476	483	469	464	462	460	454	16
442	461	479	484	493	505	492	479	488	458	459	462	17
422	437	449	465	477	472	465	458	457	459	465	456	18
427	445	482	517	529	522	507	499	479	469	467	460	19 D
423	436	479	516	528	527	525	513	502	482	442	459	20 D
429	458	491	499	514	519	510	490	479	467	439	460	21
439	465	474	474	485	516	516	489	468	463	456	459	22
436	440	459	475	489	490	479	478	469	461	458	453	23
416	430	474	488	500	510	499	482	469	468	456	461	24
429	442	452	468	484	484	479	475	474	460	455	455	25
392	442	463	480	494	524	525	499	471	456	460	455	26 D
432	448	471	504	497	489	485	478	484	469	462	448	27
423	440	459	483	487	480	474	475	479	476	479	462	28
431	435	450	461	481	493	497	489	475	476	464	456	29
433	448	456	457	457	461	461	459	459	461	460	454	30 Q
												31
425	441	461	475	484	486	483	475	469	464	458	453	
413	429	443	453	457	460	458	457	457	456	455	449	
437	458	488	510	523	518	522	510	489	477	463	450	
2738	3231	3834	4256	4525	4582	4503	4261	4082	3930	3752		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	459	459	459	458	461	467	465	465	449	447	433	419	428
2	465	451	449	455	459	463	461	457	449	442	433	422	419
3 Q	459	461	464	463	462	467	466	460	454	451	446	437	428
4 Q	457	459	461	461	465	469	463	455	446	432	424	418	419
5 Q	456	458	459	461	466	469	469	462	453	440	426	414	410
6 Q	452	453	455	456	457	466	468	460	453	438	425	413	409
7 Q	450	453	453	455	456	467	469	458	450	440	425	417	410
8	450	452	453	456	460	467	462	456	449	434	423	410	403
9	441	447	440	420	406	398	350	386	420	416	424	430	432
10	465	460	459	451	451	461	470	469	469	465	457	444	430
11 D	480	471	438	410	400	421	401	434	444	442	445	444	450
12	469	470	470	471	470	471	479	477	463	454	444	440	437
13	444	439	444	453	450	449	466	464	455	440	430	421	425
14	460	459	457	458	459	456	456	457	450	441	431	423	423
15 D	460	459	455	421	390	404	400	398	418	440	433	432	443
16 D	477	450	450	455	440	441	440	442	454	455	444	445	457
17	474	470	468	470	473	473	475	472	462	453	443	432	430
18 D	452	432	451	456	406	402	385	409	407	419	414	415	430
19	462	468	471	474	474	475	479	463	464	457	440	431	433
20 D	452	434	425	441	445	435	433	435	444	450	439	423	427
21	452	457	460	462	467	470	471	472	466	445	435	412	416
22	459	460	460	455	451	458	469	472	471	459	447	435	423
23	459	459	460	460	460	460	468	468	465	453	441	433	433
24	465	459	452	451	451	452	449	444	441	439	433	422	421
25	469	461	460	462	453	433	431	441	447	441	427	411	421
26	456	458	457	459	461	465	466	469	461	452	438	427	421
27	459	458	458	459	461	463	461	457	451	443	435	419	408
28	448	442	448	451	439	449	457	458	455	439	432	420	415
29	458	455	450	450	455	468	469	465	458	449	438	430	429
30	454	456	453	452	458	464	462	458	451	441	433	427	427
31	454	452	456	453	460	459	460	460	456	446	435	426	429
MEAN	459	456	455	454	451	454	452	453	451	444	435	426	425
MEAN Q	455	457	458	459	461	468	467	459	451	440	429	420	415
MEAN D	464	449	444	437	416	421	412	424	433	441	435	432	441
SUM	4217	4122	4095	4059	3966	4062	4020	4043	3975	3763	3473	3192	3186

44000Y+.....(Gamma Units)

MAY, 1981

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	HOUR MEAN	DATE
436	450	461	466	470	482	489	465	459	467	477	458	1
428	441	454	466	469	466	459	456	456	457	459	452	2
436	449	461	469	470	468	460	454	452	452	453	456	3 Q
429	443	460	469	472	469	459	455	451	451	451	452	4 Q
419	435	451	460	467	467	459	455	450	448	449	450	5 Q
419	433	449	459	466	467	459	454	452	451	450	449	6 Q
417	429	445	457	467	467	461	453	452	450	450	448	7 Q
408	424	440	451	458	457	457	452	448	442	447	444	8
439	443	453	465	479	489	489	482	478	474	470	440	9
430	440	449	457	480	505	510	517	506	470	425	464	10
465	480	500	493	497	492	485	480	489	466	465	458	11 D
441	460	481	484	493	497	500	490	477	470	451	469	12
438	450	459	460	461	461	463	461	460	460	460	451	13
440	450	464	476	476	478	470	470	462	463	470	456	14
461	472	480	506	509	515	520	509	487	472	473	457	15 D
494	504	508	520	533	538	519	510	490	486	474	476	16 D
437	449	460	470	477	480	477	472	478	470	452	463	17
452	468	491	510	532	539	539	507	488	475	462	456	18 D
441	461	480	490	503	498	482	470	460	458	459	466	19
441	460	489	480	490	489	499	469	470	464	455	454	20 D
429	441	458	470	474	478	481	481	470	458	459	458	21
428	440	453	467	476	481	481	473	467	460	460	459	22
433	446	459	477	492	503	505	492	483	481	473	465	23
431	451	475	484	478	481	478	481	484	470	471	457	24
431	445	462	485	498	510	509	511	481	472	461	459	25
427	436	450	461	472	479	478	473	466	461	460	456	26
411	422	433	444	454	461	470	472	470	463	459	450	27
429	439	449	454	462	471	471	468	460	459	459	449	28
434	442	450	458	466	472	471	467	462	460	455	455	29
429	440	454	461	465	468	466	458	462	459	457	452	30
432	447	455	458	466	469	468	461	455	452	456	453	31
435	448	462	472	480	484	482	475	469	463	459	456	
424	438	453	463	468	468	460	454	451	450	451	451	
463	477	494	502	512	515	512	495	485	473	466	460	
3485	3890	4333	4627	4872	4997	4934	4718	4525	4341	4222		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE	HOURLY	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1		454	455	457	459	461	462	464	461	452	444	428	420	421
2		452	451	454	457	460	462	462	460	451	438	425	419	418
3	D	451	452	457	458	461	461	460	456	447	437	421	412	414
4		456	456	460	461	463	471	471	462	451	441	431	420	411
5		450	451	450	459	461	465	471	469	460	449	431	416	409
6		451	448	448	450	454	457	460	458	456	450	431	421	416
7	D	451	447	447	441	436	434	447	431	441	423	404	395	397
8	D	459	442	435	453	462	463	464	470	464	454	447	436	428
9	Q	451	451	451	452	453	459	462	461	454	443	435	423	420
10	Q	452	452	452	451	455	456	455	453	452	443	440	430	422
11		451	450	450	452	451	451	454	453	450	445	443	437	430
12	Q	453	453	450	455	457	458	454	453	451	442	437	431	424
13		454	452	452	454	456	460	456	455	450	440	432	426	426
14	Q	452	453	453	453	457	460	459	452	449	442	434	428	427
15		454	454	453	451	452	457	452	449	447	434	423	406	401
16	D	448	433	426	415	432	435	440	449	450	442	434	428	423
17		453	444	439	442	443	450	455	459	451	440	427	419	413
18		452	453	453	451	454	455	459	461	459	450	444	434	434
19		449	443	450	450	454	461	462	459	451	437	428	411	410
20		448	450	446	442	451	454	456	461	452	438	430	419	412
21		448	443	445	447	453	459	450	447	442	436	422	412	404
22		445	443	444	447	451	455	459	459	453	446	432	418	402
23	Q	445	442	445	446	448	456	458	454	450	441	430	419	412
24		443	442	443	447	451	453	452	448	442	434	422	406	402
25		449	449	448	453	454	453	454	453	452	435	428	423	426
26		452	448	449	449	449	453	450	444	443	434	435	427	413
27		445	451	446	446	445	449	450	451	450	448	435	425	419
28		451	445	449	449	449	452	451	448	446	443	443	438	428
29	D	453	454	449	450	449	449	429	406	425	436	429	433	438
30		455	451	456	461	462	461	459	457	453	450	444	437	434
31														
MEAN		451	449	449	450	453	456	456	453	450	441	432	422	418
MEAN	Q	451	450	450	451	454	458	458	455	451	442	435	426	421
MEAN	D	452	446	443	443	448	448	448	442	445	438	427	421	420
SUM		3527	3458	3457	3501	3584	3671	3675	3599	3494	3235	2945	2669	2534

44000Y+.....(Gamma Units)

JUNE, 1981

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	HOUR MEAN	DATE
431	442	458	470	472	472	471	460	451	448	450	453	1
432	442	458	467	476	473	470	458	451	450	448	451	2
426	441	461	472	481	501	491	479	466	456	456	455	3 D
419	432	446	455	461	469	469	461	455	451	450	451	4
421	435	447	459	466	468	461	453	451	451	449	450	5
425	433	443	456	471	480	479	471	460	456	457	451	6
397	411	431	433	442	470	506	499	521	488	471	444	7 D
431	440	447	450	461	474	476	472	466	459	456	455	8 D
428	437	446	451	458	461	463	462	459	453	451	449	9 Q
433	443	443	450	454	459	463	460	458	454	451	449	10 Q
433	441	451	457	463	470	472	472	471	461	455	453	11
430	442	450	454	460	463	462	461	456	455	460	450	12 Q
435	442	449	452	460	460	460	455	452	452	452	449	13
432	438	447	455	461	466	466	462	456	454	454	450	14 Q
410	425	436	444	453	460	465	463	458	451	445	443	15
432	440	451	460	477	489	479	461	460	470	454	447	16 D
420	434	444	453	460	459	456	454	451	451	450	444	17
438	448	463	472	469	466	465	472	456	453	453	455	18
422	435	443	457	466	474	482	470	461	453	446	449	19
422	435	448	455	462	461	461	457	452	447	447	446	20
408	414	431	441	451	455	453	451	449	446	443	440	21
401	410	418	432	449	456	462	462	455	447	447	441	22
416	427	435	442	452	461	459	451	447	446	443	443	23 Q
406	413	431	441	453	463	478	471	460	453	449	442	24
433	437	451	462	472	473	470	470	474	460	453	451	25
431	439	452	458	462	466	466	459	455	453	451	447	26
421	426	433	444	458	463	468	466	465	458	452	446	27
438	443	452	457	462	472	462	455	453	453	453	450	28
467	476	487	487	482	480	473	471	463	456	456	454	29 D
442	452	458	464	466	475	477	464	464	462	461	457	30
												31
426	436	447	455	463	469	470	464	466	455	452	449	
428	437	444	450	457	462	463	459	455	452	452	448	
431	442	455	460	469	483	485	476	475	466	459	451	
2780	3073	3410	3650	3880	4059	4085	3922	3796	3647	3563		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	454	445	432	446	461	466	472	471	458	454	447	441	431
2	455	458	458	457	452	442	437	446	446	441	439	426	414
3	453	453	455	457	457	461	462	461	452	443	432	423	423
4	450	452	454	456	455	457	463	463	456	442	428	414	410
5	447	446	444	447	456	460	460	454	447	440	429	425	424
6	453	448	445	440	441	441	447	458	461	457	447	440	435
7	451	445	449	453	455	455	455	456	455	449	437	427	422
8	455	446	445	445	447	452	453	455	457	447	440	429	412
9 Q	446	444	444	447	447	448	458	459	457	448	435	416	408
10 Q	449	447	447	450	452	455	456	457	456	453	444	429	421
11	451	449	447	447	453	454	456	448	438	441	430	427	417
12	453	447	446	444	436	437	443	443	438	444	440	430	423
13	447	439	443	446	453	460	461	457	446	430	425	417	413
14	447	446	447	449	450	455	457	456	448	441	437	435	428
15 Q	451	451	452	451	452	454	454	453	447	438	427	414	407
16	451	448	447	452	455	458	459	450	445	435	420	409	407
17 D	447	447	448	447	452	456	456	452	448	424	404	397	400
18	435	442	451	456	460	460	457	454	445	434	424	410	410
19	453	451	449	451	453	462	468	474	467	452	440	430	417
20	447	450	452	455	457	459	458	455	444	433	419	405	397
21 Q	447	447	443	449	457	459	458	457	450	439	429	415	409
22	445	444	447	445	450	453	455	457	455	442	426	412	406
23 D	443	443	444	453	458	459	456	445	454	437	432	412	426
24	460	463	464	464	470	475	475	472	464	461	450	437	431
25 D	448	433	443	452	451	417	371	407	444	446	444	440	428
26 D	429	432	257	261	326	364	397	442	464	481	470	457	441
27 D	475	450	444	439	424	410	437	451	456	457	452	450	452
28	467	467	467	467	467	468	473	474	468	460	454	450	448
29 Q	464	462	460	461	469	476	473	466	463	460	452	443	431
30	468	467	467	467	468	476	478	471	465	448	438	428	425
31	468	466	463	463	466	468	458	448	434	428	427	426	428
MEAN	452	449	444	446	450	452	454	455	453	445	436	426	421
MEAN Q	451	450	449	452	455	458	460	458	455	448	437	423	415
MEAN D	448	441	407	410	422	421	423	439	453	449	440	431	429
SUM	4009	3928	3754	3817	3950	4017	4063	4112	4028	3805	3518	3214	3044

44000Y+(Gamma Units)

JULY, 1981

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	HOUR MEAN	DATE
434	447	458	466	478	481	476	466	464	460	455	457	1
426	444	464	474	475	474	472	458	461	454	444	451	2
424	430	442	454	462	463	466	472	468	460	430	450	3
417	434	452	464	463	463	464	465	466	452	451	450	4
426	438	449	457	466	474	478	475	465	457	453	451	5
437	442	456	474	501	506	493	472	462	457	455	457	6
425	436	447	455	462	473	473	465	459	455	455	451	7
426	434	439	446	456	464	465	460	456	454	448	447	8
413	426	443	455	463	466	468	466	459	453	449	447	9 Q
421	434	447	454	459	461	457	453	450	451	451	448	10 Q
417	427	443	452	461	468	458	452	448	450	452	445	11
428	440	447	457	473	485	477	474	467	469	447	450	12
415	434	447	458	465	464	466	465	457	455	454	447	13
429	439	453	457	457	455	451	450	448	448	450	447	14
414	430	445	452	457	456	456	455	450	448	449	444	15 Q
415	429	441	449	457	459	458	454	446	445	446	443	16
414	438	452	462	467	474	484	487	485	458	431	447	17 D
423	434	446	456	461	460	460	457	459	454	450	446	18
417	437	451	461	472	473	469	466	455	451	449	453	19
408	423	437	454	464	465	465	459	449	447	447	444	20
415	429	443	455	460	461	458	452	447	445	447	445	21 Q
409	428	446	459	473	478	482	474	464	456	443	448	22
435	476	529	545	583	575	537	508	468	455	456	472	23 D
437	446	454	460	467	470	470	467	469	471	457	461	24
473	641	584	613	574	649	636	632	556	507	390	495	25 D
449	457	477	496	525	501	487	477	470	473	474	438	26 D
459	467	473	476	476	477	475	470	467	465	466	457	27 D
448	456	467	474	476	473	466	461	463	465	466	464	28
439	456	467	471	468	468	463	458	458	460	468	461	29 Q
433	448	468	482	488	491	487	471	464	465	464	464	30
435	449	468	477	486	494	487	479	484	468	464	460	31
428	447	459	470	477	481	478	472	464	458	450	453	
420	435	449	457	461	462	460	457	453	451	453	449	
446	496	503	518	525	535	524	515	489	472	443	462	
3261	3849	4235	4565	4795	4921	4804	4620	4384	4208	3961		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	460	457	455	446	445	462	464	461	459	450	443	438	433
2	456	457	458	463	468	478	474	468	459	452	443	437	436
3	453	454	458	458	458	464	467	468	458	450	441	436	435
4	458	458	457	448	457	468	472	467	462	458	445	434	433
5	456	457	458	459	458	454	448	448	453	437	435	426	423
6	460	436	426	434	424	431	433	438	447	446	443	433	424
7	460	461	458	458	458	461	464	464	464	458	448	439	437
8	Q	461	459	459	459	465	471	476	475	465	442	431	426
9	Q	459	456	449	451	458	462	466	467	460	453	446	437
10		459	454	452	451	451	458	449	448	439	420	408	407
11		458	457	459	452	456	459	457	452	448	433	420	419
12		459	461	456	449	452	459	456	455	448	442	436	421
13		452	452	451	451	456	452	455	456	447	430	410	399
14	Q	449	448	450	450	453	459	459	452	440	426	418	419
15		447	451	452	452	452	455	456	453	444	432	420	410
16	Q	444	447	450	453	458	461	458	457	450	438	421	408
17	D	447	447	449	447	450	458	460	458	451	435	420	411
18	D	450	421	432	447	457	463	463	454	447	431	420	416
19		455	453	446	450	452	461	465	465	459	451	437	429
20		453	452	446	448	455	462	462	457	451	442	431	414
21		452	451	451	454	456	460	461	457	451	437	418	406
22		452	451	440	441	451	455	462	466	462	451	432	417
23	D	457	432	422	428	427	431	441	448	438	443	432	433
24	D	457	450	449	438	444	456	467	472	471	464	452	441
25		457	458	462	462	463	464	464	464	457	457	447	440
26	Q	467	466	465	462	461	463	463	461	454	445	437	430
27	D	453	448	452	457	457	461	462	463	462	442	423	415
28		459	452	453	454	456	463	466	470	463	452	443	435
29		453	452	461	463	461	459	466	463	456	444	431	433
30		450	451	450	435	448	450	461	463	453	435	421	419
31		453	451	453	436	438	456	465	465	461	447	433	420
MEAN		455	452	451	450	453	459	461	460	454	444	432	424
MEAN Q		456	455	455	455	459	463	464	462	454	444	433	425
MEAN D		453	440	441	443	447	454	459	459	454	443	429	423
SUM		4106	4000	3979	3956	4045	4216	4282	4255	4079	3758	3396	3152

44000Y+(Gamma Units)

AUGUST, 1981

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	HOUR MEAN	DATE
440	450	465	480	486	497	509	488	468	471	455	462	1
438	458	479	483	489	496	483	469	469	470	452	464	2
441	450	475	490	494	497	493	478	464	462	461	463	3
438	447	458	469	478	480	476	467	462	458	458	459	4
426	436	454	470	486	501	490	485	478	469	463	457	5
432	448	474	492	498	498	487	475	471	463	459	453	6
441	454	467	481	500	514	509	488	476	468	467	466	7
426	439	457	465	462	461	461	459	459	459	463	457	8 Q
439	441	448	458	463	467	463	459	456	457	460	455	9 Q
421	426	445	453	458	457	456	452	453	457	457	443	10
421	436	459	474	472	473	475	486	463	460	459	453	11
416	431	449	459	462	461	456	455	458	456	456	449	12
410	428	443	454	463	460	454	451	456	450	448	443	13
436	450	457	467	467	460	454	452	451	445	445	447	14 Q
416	430	442	459	462	460	456	456	455	450	450	445	15
416	435	451	463	470	467	459	452	450	450	449	446	16 Q
413	429	441	457	471	480	482	472	473	460	455	449	17 D
437	453	469	488	500	495	475	471	473	456	453	454	18 D
429	452	471	478	479	472	469	463	460	457	456	455	19
411	428	446	461	471	480	467	459	456	456	456	449	20
417	438	456	472	483	496	502	494	480	460	455	455	21
418	431	445	455	467	481	481	463	460	458	457	450	22
442	481	500	483	492	483	474	474	484	512	480	457	23 D
424	436	464	511	507	508	502	501	489	472	474	466	24 D
432	445	460	480	492	491	487	480	469	468	467	462	25
432	442	452	463	467	459	454	457	457	460	464	455	26 Q
443	450	465	480	500	502	496	485	470	469	461	460	27 D
441	453	481	505	499	485	462	460	461	453	446	460	28
454	481	495	509	511	500	473	465	460	459	457	464	29
441	453	466	476	478	467	460	460	461	455	453	451	30
423	440	457	466	469	463	455	455	453	453	453	449	31
429	444	461	474	481	481	475	469	464	461	458	455	
430	441	453	463	466	463	458	456	455	454	456	452	
432	450	468	484	494	494	486	481	478	474	465	457	
3314	3771	4291	4701	4896	4911	4720	4531	4385	4293	4189		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE	HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
		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
1	Q	456	456	459	461	462	463	465	462	456	451	441	424	412
2	D	451	446	446	442	434	436	444	452	456	452	440	426	416
3		454	455	458	461	464	469	472	469	463	448	428	410	415
4		461	460	456	457	460	462	463	461	455	447	428	411	414
5		449	446	440	440	450	444	455	460	456	455	444	431	426
6		451	454	453	454	459	464	464	466	464	452	440	425	424
7	Q	453	453	454	455	456	454	455	462	463	454	442	428	414
8		454	453	452	452	453	448	445	452	453	443	424	404	398
9		461	453	453	449	448	448	452	453	446	436	420	403	398
10		456	452	452	451	451	450	452	452	450	442	428	411	407
11	D	463	462	463	456	453	437	436	438	432	427	413	416	422
12		457	461	455	452	452	452	458	456	452	442	424	422	430
13		460	462	461	461	455	448	450	452	448	439	433	432	438
14		459	461	462	462	461	462	462	461	456	440	427	412	419
15		452	454	457	457	457	454	457	451	444	440	432	427	416
16		453	452	457	457	454	457	453	460	461	448	436	421	424
17	Q	454	449	451	451	452	454	459	461	460	449	432	417	414
18		450	450	451	453	453	458	460	459	451	439	430	413	412
19	D	451	451	454	451	444	450	453	452	431	433	429	421	411
20		459	457	451	451	452	455	455	453	451	447	439	429	417
21		453	449	451	451	451	453	454	454	453	451	446	435	428
22		465	460	458	451	443	429	431	441	443	444	442	437	430
23	Q	462	462	457	451	452	452	454	457	455	449	444	432	427
24		452	452	452	450	448	448	449	450	449	444	432	422	430
25		452	449	445	445	444	440	447	450	446	443	438	426	434
26	D	457	457	453	449	442	444	445	448	448	439	440	438	442
27	D	456	444	446	443	445	435	434	450	450	449	451	451	449
28	Q	460	452	453	461	462	462	462	466	464	459	452	442	432
29		453	452	453	455	453	452	452	457	455	446	432	427	426
30		454	459	458	455	457	455	449	452	447	440	425	423	419
31														
MEAN		456	454	454	453	452	451	453	455	452	445	434	424	421
MEAN Q		457	454	455	456	457	457	459	462	460	452	442	429	420
MEAN D		456	452	452	448	444	440	442	448	443	440	435	430	428
SUM		3668	3623	3611	3584	3567	3535	3587	3657	3558	3348	3032	2716	2644

44000Y+(Gamma Units)

SEPTEMBER, 1981

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	HOUR MEAN	DATE
412	425	446	461	466	465	456	457	455	454	454	451	1 Q
424	446	474	488	498	503	492	476	468	462	457	455	2 D
424	438	458	469	465	457	457	460	461	458	457	453	3
430	440	448	459	465	468	470	471	470	470	451	453	4
423	438	454	469	471	466	461	461	458	465	463	451	5
425	438	450	457	461	458	457	458	456	456	458	452	6
412	423	442	456	467	471	467	467	463	461	455	451	7 Q
403	419	440	447	452	448	448	452	450	447	453	441	8
403	417	434	443	450	456	456	453	453	454	454	441	9
413	423	440	455	463	457	453	454	458	463	463	446	10
436	456	466	472	468	461	462	461	467	461	452	449	11 D
446	462	475	487	481	485	472	468	464	460	460	457	12
450	462	476	482	478	466	460	458	460	462	465	457	13
432	449	459	462	461	458	458	460	464	460	451	452	14
421	437	454	470	485	478	467	462	459	454	454	452	15
437	451	465	472	471	467	462	458	458	456	457	454	16
425	442	451	455	460	459	457	455	451	451	451	448	17 Q
417	433	444	444	449	453	454	471	481	453	449	447	18
419	434	446	451	455	461	460	460	461	461	460	446	19 D
419	425	436	443	450	457	461	467	463	463	462	448	20
421	422	431	441	448	451	454	458	474	480	470	449	21
431	432	442	451	451	451	450	455	460	466	467	447	22
429	432	439	445	450	449	451	452	452	452	452	448	23 Q
438	444	449	459	461	459	455	452	453	458	459	449	24
443	446	455	475	460	453	453	452	454	454	456	448	25
454	474	482	481	502	516	508	507	500	482	462	465	26 D
448	456	463	482	492	498	476	463	462	463	471	457	27 D
431	442	452	462	469	462	458	454	457	462	461	456	28 Q
432	442	458	462	464	459	462	466	471	462	454	452	29
429	442	446	459	463	470	467	460	452	452	451	449	30
												31
428	440	453	462	466	465	462	462	462	460	458	451	
422	433	446	456	462	461	458	457	456	456	455	451	
436	453	466	475	483	488	480	473	472	466	460	455	
2827	3190	3575	3859	3976	3962	3864	3848	3855	3802	3729		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

HOUR DATE	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	447	452	453	452	452	454	457	458	460	451	440	424	421
2	458	451	445	448	452	457	457	457	453	446	439	428	421
3 D	456	454	454	456	455	456	457	449	449	444	431	416	406
4	450	448	450	451	443	444	446	450	451	449	437	413	413
5 Q	456	450	449	451	454	459	456	458	459	457	445	430	427
6 Q	454	452	452	452	454	456	456	459	461	456	447	436	429
7	459	439	448	444	441	444	446	453	458	457	443	431	423
8	481	468	467	464	459	451	449	445	445	449	454	453	458
9	449	447	448	423	423	421	434	451	461	465	451	449	444
10	461	461	461	455	450	449	448	448	447	451	448	441	435
11 D	447	452	421	429	438	414	421	426	429	440	441	443	461
12	448	452	453	459	458	451	451	456	460	467	461	449	445
13	465	468	468	468	465	464	463	464	464	458	453	444	439
14 D	453	464	428	407	429	465	476	476	474	461	447	440	438
15	472	474	475	464	466	470	471	471	472	461	456	439	436
16 Q	462	463	463	465	466	468	466	467	468	457	444	435	428
17	458	460	463	465	465	465	460	460	465	458	446	433	427
18 Q	458	452	456	458	462	461	462	463	467	469	454	434	426
19	456	451	447	449	451	444	447	452	455	451	446	442	426
20 D	453	449	441	445	442	443	445	446	454	454	448	441	446
21	491	471	444	461	471	475	477	481	479	489	480	488	478
22 D	471	467	468	471	471	469	468	467	471	472	478	477	478
23	478	477	471	462	452	470	469	473	483	491	493	486	480
24	481	479	478	476	471	471	470	469	471	471	465	463	451
25	467	469	469	456	433	438	444	449	461	459	454	453	453
26	471	472	472	472	471	469	467	466	466	466	460	452	451
27	472	477	468	466	464	464	461	461	462	463	460	450	448
28	463	467	468	460	460	461	461	461	461	451	444	441	439
29	463	468	464	464	467	461	461	460	461	456	451	446	441
30	453	461	463	464	461	460	460	461	463	461	451	440	431
31 Q	461	459	461	461	461	461	460	459	459	457	447	432	425
MEAN	462	460	457	455	455	456	457	459	461	459	452	444	439
MEAN Q	458	455	456	457	459	461	460	461	463	459	447	433	427
MEAN D	456	457	442	442	447	449	453	453	455	454	449	443	446
SUM	1314	4274	4168	4118	4107	4135	4166	4216	4289	4237	4014	3749	3624

44000Y+(Gamma Units)

OCTOBER 1981

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	HOUR MEAN	DATE
421	431	446	454	459	458	456	455	454	454	454	448	1
419	431	438	453	465	470	465	453	459	459	456	449	2
419	441	451	463	481	481	471	464	470	457	449	451	3 D
420	433	447	461	478	475	476	466	459	465	460	449	4
436	446	458	465	465	461	459	458	457	457	455	453	5 Q
430	438	448	461	469	466	463	462	461	461	461	454	6 Q
423	431	449	483	491	508	539	512	477	487	494	462	7
455	458	467	474	477	473	474	483	482	468	463	463	8
441	445	459	463	462	461	465	465	455	458	461	450	9
436	441	451	471	509	500	506	516	473	470	461	462	10
489	515	540	553	533	511	505	499	482	474	467	468	11 D
444	453	464	471	469	464	463	462	461	462	463	458	12
440	447	458	465	466	475	465	461	457	461	449	459	13
444	456	468	480	478	474	468	489	491	508	487	463	14 D
455	463	465	471	482	476	474	473	469	464	461	466	15
434	443	455	465	466	465	464	463	461	461	459	458	16 Q
431	441	452	464	466	461	463	464	468	465	462	457	17
428	436	449	459	460	459	459	459	459	459	455	454	18 Q
421	435	453	461	462	462	471	490	481	468	456	453	19
438	493	521	555	595	621	665	585	508	511	492	491	20 D
478	479	504	501	492	485	483	484	497	498	483	482	21
507	538	568	621	600	550	529	543	513	524	501	505	22 D
476	476	486	492	491	482	481	483	495	488	483	480	23
464	484	499	523	501	493	502	498	500	475	466	480	24
461	470	477	481	478	475	472	471	471	471	471	463	25
450	454	465	467	468	465	462	464	466	466	471	465	26
449	453	463	482	478	469	469	465	469	469	471	465	27
441	451	463	473	472	478	469	486	480	460	460	461	28
450	455	465	469	465	463	461	461	463	470	459	460	29
444	462	488	480	471	468	465	467	461	467	463	461	30
430	441	452	458	462	462	460	459	458	457	457	454	31 Q
444	456	470	482	484	481	482	479	473	471	466	463	
432	441	452	462	464	463	461	460	459	459	457	455	
459	489	510	534	537	527	528	516	493	495	479	476	
3774	4140	4569	4939	5011	4911	4934	4860	4657	4614	4450		

Table 6 VEPTICAL COMPONENT MEAN HOURLY VALUES,

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
1	456	457	459	457	455	457	456	455	458	455	445	442	433
2 Q	462	462	460	459	459	459	459	459	462	462	455	446	442
3	464	456	454	458	455	458	458	458	462	462	454	444	437
4	454	454	454	454	454	456	457	457	461	460	452	440	434
5	452	455	452	450	450	450	446	451	459	463	455	444	439
6	460	456	451	445	449	449	452	456	459	462	453	442	441
7	459	448	441	437	427	432	437	450	459	471	466	462	460
8	467	463	462	450	428	442	443	452	452	457	461	456	452
9 Q	463	463	462	461	461	461	461	461	466	471	466	457	449
10	461	461	461	457	456	457	451	450	452	457	448	444	445
11 D	464	464	463	459	459	452	445	441	444	452	449	438	435
12 D	490	488	442	408	410	430	431	438	454	444	440	439	438
13	467	467	467	469	469	467	467	465	464	462	454	446	449
14 D	460	463	466	466	467	466	463	461	459	457	452	437	444
15	455	464	469	474	462	465	464	460	464	466	460	454	452
16	461	456	447	453	449	456	456	461	465	470	460	447	449
17 D	462	452	454	459	460	463	462	462	462	459	446	443	453
18	449	452	450	454	460	461	461	463	464	469	462	459	469
19	464	455	459	458	456	454	459	461	463	465	463	455	453
20	463	454	455	455	457	457	461	461	463	471	466	467	467
21	463	455	456	461	462	462	461	463	463	469	464	456	456
22	468	465	457	454	454	451	451	454	454	461	456	450	449
23	464	460	457	454	454	454	451	454	460	464	464	460	468
24	470	470	468	464	457	454	457	456	460	466	465	464	465
25 D	476	474	469	459	460	447	447	455	457	452	451	442	436
26	463	466	463	464	464	463	460	456	454	449	445	444	445
27 Q	461	458	460	461	461	459	456	454	452	454	451	448	446
28	461	465	461	458	459	462	460	457	455	455	451	444	444
29 Q	462	464	461	458	458	458	458	456	454	454	451	445	443
30 Q	456	455	455	456	457	457	457	457	455	451	446	437	435
31													
MEAN	463	461	458	456	454	455	455	456	459	460	455	448	448
MEAN Q	461	460	460	459	459	459	458	457	458	458	454	447	443
MEAN D	470	468	459	450	451	452	450	451	455	453	448	440	441
SUM	3877	3822	3735	3672	3629	3659	3647	3684	3756	3800	3651	3452	3428

44000Y+(Gamma Units)

NOVEMBER, 1981

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	HOUR MEAN	DATE
435	444	457	464	466	465	466	466	466	464	462	456	1
442	446	452	459	463	461	464	468	466	462	465	458	2 Q
437	442	451	461	462	461	469	464	461	458	456	456	3
435	446	452	459	460	457	465	474	474	468	454	455	4
442	446	456	463	469	468	470	474	473	466	460	456	5
439	446	451	452	459	459	461	464	472	469	461	455	6
461	472	480	471	473	478	481	481	483	477	471	462	7
451	453	459	453	452	452	460	462	463	467	466	455	8
442	452	459	461	461	458	457	457	461	462	462	460	9 Q
442	446	460	462	456	454	452	463	469	471	472	456	10
437	452	450	454	476	482	512	505	517	502	489	464	11 D
451	461	470	472	470	466	464	464	464	464	464	453	12 D
452	460	466	468	471	469	464	460	464	470	466	463	13
453	471	473	480	500	494	500	510	517	507	482	473	14 D
452	463	474	487	487	477	472	476	467	466	460	466	15
453	462	468	473	473	472	472	470	480	481	461	462	16
459	476	481	501	495	510	520	502	496	495	465	472	17 D
481	476	481	491	483	491	481	489	493	482	477	471	18
463	464	476	490	480	485	487	478	475	471	468	467	19
474	471	475	476	473	468	472	480	484	492	472	468	20
460	460	465	471	480	477	488	498	501	498	474	469	21
450	457	466	470	468	466	465	467	467	467	464	460	22
474	482	496	507	518	516	500	507	506	499	501	478	23
475	479	485	482	477	479	487	488	485	484	481	472	24
445	454	464	467	468	466	466	466	468	470	466	459	25D
451	455	463	470	471	480	464	461	461	463	461	460	26
450	457	463	465	465	462	461	458	456	457	456	457	27Q
448	454	458	464	465	462	464	462	465	468	464	459	28
443	450	456	462	464	462	461	461	461	460	458	457	29 Q
441	447	454	455	455	456	455	455	454	454	453	452	30
												31
451	458	465	470	472	472	473	474	476	474	467	462	
444	450	457	460	462	460	460	460	460	459	459	457	
449	463	468	475	482	484	492	489	492	488	473	464	
3538	3744	3961	4110	4160	4153	4200	4230	4269	4214	4011		

Table 6 VERTICAL COMPONENT MEAN HOURLY VALUES,

DATE \ HOUR	0	1	2	3	4	5	6	7	8	9	10	11	12
	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
1	452	452	454	454	454	455	454	454	451	447	443	435	430
2	454	450	450	450	452	453	454	454	452	443	442	441	444
3	450	450	452	452	452	452	454	455	455	454	446	440	437
4	456	453	453	448	446	448	453	454	455	452	444	440	444
5	460	452	452	451	453	454	454	454	459	464	459	451	449
6 Q	459	455	454	453	450	452	453	457	463	463	453	444	446
7 Q	458	455	454	453	453	453	452	453	460	461	456	447	446
8 D	456	455	452	449	450	449	443	444	451	460	453	451	448
9	463	463	450	449	450	450	451	449	453	455	448	450	450
10	461	461	458	456	447	448	447	454	456	453	449	447	448
11	457	459	457	457	456	456	451	451	454	454	450	447	448
12 D	458	461	457	452	456	457	455	451	447	446	444	441	444
13	466	466	466	458	458	450	446	453	456	454	444	441	444
14	456	456	458	459	460	457	458	455	452	454	450	444	444
15	456	457	456	456	457	457	457	456	454	450	447	442	440
16 Q	452	451	453	454	456	456	457	458	458	458	452	447	447
17	450	449	450	450	451	452	454	454	455	450	445	446	440
18	456	449	450	456	459	457	455	455	456	455	452	446	448
19	456	446	446	447	449	449	450	450	452	454	447	448	454
20	448	447	443	440	443	443	443	443	444	450	448	445	445
21 Q	451	449	446	447	446	446	447	448	450	453	449	448	446
22 Q	454	451	451	451	450	449	449	449	449	448	446	441	442
23	453	453	452	451	453	450	447	447	450	449	449	444	443
24	465	469	458	458	453	449	448	450	451	451	449	448	448
25	458	458	456	456	451	448	448	449	450	451	448	447	448
26	453	457	454	448	447	447	445	442	443	444	440	440	442
27	449	448	448	449	450	448	447	446	446	445	441	441	443
28	473	460	450	445	445	445	446	445	443	443	433	431	431
29 D	450	449	450	447	445	436	431	432	431	447	452	447	456
30 D	459	457	449	443	446	443	436	417	426	448	446	445	452
31 D	465	466	467	468	466	464	463	464	461	454	455	452	453
MEAN	457	455	453	452	452	451	450	450	451	452	448	444	445
MEAN Q	455	452	452	452	451	451	452	453	456	457	451	445	445
MEAN D	458	458	455	452	453	450	446	442	443	451	450	447	451
SUM	4154	4104	4046	4007	4004	3973	3948	3943	3983	4010	3880	3777	3800

44000Y+.....(Gamma Units)

DECEMBER, 1981

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	HOUR MEAN	DATE
436	446	447	454	464	465	469	468	467	462	463	453	1
445	449	454	458	459	459	459	456	460	460	451	452	2
444	445	448	453	456	457	466	466	464	461	461	453	3
449	448	450	454	456	464	466	469	472	470	463	454	4
449	450	455	460	462	468	473	474	479	477	466	459	5
450	449	454	460	460	459	460	460	463	463	462	456	6 Q
447	448	451	453	452	452	455	455	454	454	456	453	7 Q
448	444	445	455	459	464	483	501	481	468	468	457	8 D
452	458	466	466	465	464	460	468	468	465	466	457	9
450	455	459	459	457	455	455	455	455	455	456	454	10
447	449	454	456	458	457	458	459	459	458	456	455	11
446	466	478	476	486	488	489	494	486	489	476	464	12 D
444	451	465	468	471	467	464	461	459	458	457	457	13
447	451	454	460	462	461	460	460	460	458	458	455	14
443	446	450	454	458	459	455	462	471	461	456	454	15
447	448	452	456	458	456	457	458	460	461	452	454	16 Q
441	446	448	452	456	450	450	468	465	472	468	453	17
447	449	456	464	467	470	467	466	466	464	462	457	18
448	448	448	457	459	457	456	455	458	457	448	452	19
445	448	449	449	450	450	453	458	460	460	452	448	20
446	450	451	456	455	455	455	459	463	459	455	451	21 Q
444	448	451	456	454	451	451	451	451	452	452	450	22 Q
443	445	450	451	448	448	447	449	452	456	462	450	23
450	456	458	459	461	460	459	459	460	461	461	456	24
449	451	460	462	464	462	458	461	465	454	453	454	25
444	446	448	448	452	452	450	451	448	449	448	447	26
443	446	450	455	453	453	451	452	457	460	466	449	27
436	449	453	453	458	461	463	463	458	453	450	449	28
461	474	479	474	469	476	469	465	466	472	462	456	29 D
456	480	487	490	485	475	476	472	471	466	465	458	30 D
452	464	477	472	469	468	466	468	474	464	456	464	31 D
447	452	456	459	461	461	461	463	464	462	459	454	
447	449	452	456	456	455	456	457	458	458	455	453	
453	466	473	473	474	474	477	480	476	472	465	460	
3849	4003	4147	4240	4283	4283	4300	4363	4372	4319	4227		

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

JANUARY, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 ³ +	G.M.T.			G.M.T.	1800y+	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 52	53.0	36.0	03 31	17.0	19 22	998	947	11 07	51	19 18	517M	445	04 19	72	19.8
2	16 23	51.2	38.4	23 47	12.8	22 31	992	950	16 40	42	16 50	486	448	12 53	38	20.8
3	14 00	49.9	37.9	00 34	12.0	19 32	1000	966	13 12	34	00 02	471	436	10 47	35	21.7
4 D	15 13	50.0	35.2	00 40	14.8	19 10	999	964	03 03	35	20 32	498	436	06 27	62	19.0
5	14 45	49.5	41.7	20 03	7.8	08 10	996	971	14 56	25	20 03	474	439	11 35	35	18.9
6	13 26	49.3	42.0	21 20	7.3	07 09	1002	966	13 57	36	17 33	473	433	13 02	40	20.0
7	14 44	50.9	41.8	21 30	9.1	21 38	1000	973	13 02	27	16 05	465	440	12 52	25	20.1
8	15 42	50.4	38.1	22 55	12.3	16 24	996	964	17 53	32	22 50	475	422	11 51	53	21.5
9	13 36	50.6	40.8	00 00	9.8	22 20	1009	974	00 03	35	21 55	465	431	12 54	34	21.0
10	14 54	51.3	33.6	23 12	17.7	18 24	1022	967	20 23	55	20 42	487	430	13 22	57	17.1
11 D	14 45	51.4	41.1	01 23	10.3	04 06	1015	948	15 15	67	19 42	488	426	03 51	62	17.0
12 Q	13 55	49.3	42.1	00 01	7.2	19 31	996	962	12 32	34	17 00	464	439	13 06	25	19.1
13	15 09	48.4	41.7	10 16	6.7	05 40	1009	967	13 40	42	20 03	471	449	05 18	22	17.1
14	13 50	51.5	42.1	10 12	9.4	23 01	999	961	13 24	38	09 57	464	444	12 06	20	20.1
15	14 10	49.7	39.1	23 20	10.6	09 16	1008	975	13 02	33	23 21	475	441	12 00	34	18.8
16	15 11	50.0	39.0	03 28	11.0	03 03	1018	963	11 58	55	18 09	461	436	03 56	25	20.0
17	14 28	49.3	40.7	20 45	8.6	06 31	1011	964	14 01	47	20 43	479	432	12 09	47	18.1
18 Q	15 04	49.0	42.1	09 24	6.9	00 29	1004	974	13 46	30	01 03	461	446	07 41	15m	19.0
19 Q	16 20	49.2	42.5	09 20	6.7	20 49	1005	976	11 43	29	17 00	459	440	13 03	19	20.2
20 Q	15 13	49.1	41.3	01 10	7.8	08 57	1005	979	20 32	26	01 04	467	430	13 50	37	21.7
21 Q	15 01	48.4	42.4	03 41	6.0m	08 22	1006	986	11 40	20m	20 43	459	436	13 34	23	21.9
22	14 55	52.4	42.0	22 59	10.4	09 03	1010	976	14 58	34	19 41	469	433	11 07	36	21.6
23	14 14	54.8M	40.9	23 37	13.9	01 18	1005	958	11 40	47	20 02	468	432	12 30	36	21.7
24	15 33	50.3	41.9	09 14	8.4	07 03	1011	962	13 43	49	20 52	473	431	12 59	42	21.0
25	15 39	50.0	41.4	09 36	8.6	24 00	1003	967	12 46	36	20 07	470	437	13 04	33	20.6
26	13 50	51.5	42.0	09 52	9.5	18 50	1011	957	12 41	54	20 36	461	426	13 48	35	21.0
27	14 37	50.0	38.0	01 32	12.0	21 14	1005	950	12 25	55	24 00	462	437	13 53	25	20.7
28 D	14 11	53.6	37.4	00 31	16.2	06 03	1005	956	13 10	49	20 58	486	432	12 49	54	20.6
29 D	15 23	52.5	38.9	00 22	13.6	07 40	1023	958	13 14	65	19 37	479	429	12 56	50	20.9
30	14 06	51.2	40.4	01 48	10.8	21 31	1003	966	13 00	37	00 20	467	436	12 33	31	20.9
31 D	14 14	51.1	30.6m	04 07	20.5M	04 17	1038M	940m	11 36	98M	20 37	490	405m	06 03	85M	20.6
Mean		50.6	39.8		10.8		1007	964		42		474	435		39	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

FEBRUARY, 1981

Date	DECLINATION					HORIZONTAL COMPONENT						VERTICAL COMPONENT				TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 ⁰⁺	G.M.T.			G.M.T.	1800y+	G.M.T.			G.M.T.	4400y+	G.M.T.			
	h m	'	'	h m	'	h m	y	y	h m	y	h m y	y	h m	y		
1	14 49	49.1	38.8	05 29	10.3	20 18	1004	957	23 04	47	22 35	496	439	13 04	57	20.2
2 D	13 30	53.0	36.4	01 33	16.6	10 19	999	940	17 31	59	17 38	495	429	13 30	66	21.3
3	09 32	49.4	36.9	20 10	12.5	20 27	1012	961	12 50	51	20 10	489	435	08 54	54	21.0
4	15 21	49.2	35.9	22 52	13.3	00 42	1005	962	18 29	43	18 40	490	436	12 33	54	18.7
5 D	12 17	52.3	36.1	22 48	16.2	05 37	1025	940	17 36	85	17 41	511	428	07 22	83	20.1
6 D	19 50	64.1M	26.9	23 13	37.2	12 54	1010	860m	23 03	150M	20 06	577	389m	19 50	188M	21.7
7	13 45	47.7	20.1	01 37	27.6	23 40	979	876	00 03	103	01 38	522	427	02 36	95	21.9
8	13 49	49.6	31.2	23 46	18.4	13 47	1000	923	22 44	77	22 56	492	435	13 51	57	21.8
9	11 57	49.4	33.4	04 15	16.0	20 07	987	922	01 11	65	17 40	475	425	01 59	50	18.6
10 Q	14 22	48.7	41.7	07 58	7.0	22 43	995	963	13 15	32	15 32	466	448	11 10	18m	18.0
11	16 03	49.2	33.2	23 57	16.0	06 40	1005	953	19 54	52	20 08	490	443	12 24	47	15.7
12	14 33	48.6	33.4	00 05	15.2	07 31	998	957	12 46	41	00 00	481	433	13 22	48	19.8
13	14 57	49.7	42.0	22 54	7.7	08 42	1006	965	15 16	41	22 50	461	434	13 47	27	18.8
14 Q	15 04	46.4	41.0	09 00	5.4m	06 24	1004	974	12 30	30	09 03	457	435	13 14	22	17.6
15	17 10	51.0	39.0	22 43	12.0	07 16	1007	956	17 24	51	19 37	491	425	12 10	66	19.1
16	13 36	49.0	38.6	05 24	10.4	04 24	1005	970	12 18	35	17 40	468	427	11 52	41	18.0
17 Q	14 12	49.0	40.4	09 11	8.6	06 05	1006	966	13 35	40	16 05	461	431	11 40	30	19.0
18 Q	14 43	49.9	38.7	23 58	11.2	07 32	1008	983	13 19	25m	23 56	464	415	12 20	49	18.9
19	13 25	48.9	39.0	00 00	9.9	05 36	1013	976	12 30	37	00 00	463	430	12 25	33	18.5
20	15 14	52.2	40.4	08 46	11.8	06 01	1011	964	12 14	47	17 36	484	425	12 28	59	16.8
21 Q	14 30	48.3	39.5	09 16	8.8	20 54	1007	969	12 05	38	05 10	461	430	11 48	31	18.0
22	14 40	47.9	34.4	23 28	13.5	20 32	1024	960	23 54	64	23 27	480	421	12 52	59	18.0
23	15 54	52.3	36.1	00 00	16.2	21 43	1018	949	00 12	69	00 00	468	424	01 52	44	16.6
24	14 35	53.9	31.8	21 02	22.1	03 44	1015	941	23 20	74	20 45	535	415	12 36	120	14.9
25 D	15 55	52.7	34.3	01 41	18.4	06 47	996	934	11 20	62	19 35	499	420	12 06	79	18.7
26 D	19 47	58.1	19.9m	20 34	38.2M	20 41	1036M	910	20 20	126	20 33	590M	415	12 04	175	19.5
27	15 02	52.5	33.9	00 00	18.6	18 52	991	944	17 39	47	20 11	508	427	11 13	81	18.4
28	15 20	49.6	35.4	21 20	14.2	21 27	989	958	22 18	31	21 20	503	444	13 03	59	17.6
29																
30																
31																
Mean		50.8	35.3		15.5		1006	948		58		492	428		64	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

MARCHI, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 ⁰ +	G.M.T.			G.M.T.	1800y+	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		
1D	13 30	50.9	29.1	22 13	21.8	22 26	1020	952	23 09	68	22 13	533	418	12 43	115	18.1
2	14 10	50.7	35.1	02 23	15.6	23 51	999	925	14 50	74	19 30	480	426	10 29	54	18.4
3	15 30	50.1	38.1	22 26	12.0	20 32	999	962	12 30	37	20 27	486	435	11 33	51	17.4
4	14 20	48.3	34.1	03 50	14.2	08 10	1000	958	14 57	42	00 10	474	429	12 20	45 ^m	18.0
5D	15 42	67.1 ^M	34.1	09 31	33.0 ^M	15 50	1112 ^M	876 ^m	14 43	236 ^M	15 48	743 ^M	408	07 00	335 ^M	19.0
6	14 35	48.7	38.7	09 06	10.0 ^m	23 57	974	910	12 57	64	01 53	498	446	12 31	52	19.1
7	13 08	52.4	37.0	18 29	15.4	08 29	1002	935	12 56	67	18 29	552	434	12 06	118	19.7
8	12 32	51.6	40.7	07 34	10.9	24 00	989	929	13 14	60	16 48	484	429	12 04	55	19.3
9Q	14 27	51.2	39.4	09 04	11.8	24 00	1006	951	12 18	55	17 45	471	421	13 00	50	19.4
10	14 25	50.8	40.4	09 13	10.4	06 40	1013	963	12 15	50	17 22	481	425	11 10	56	19.6
11Q	13 56	50.6	40.2	09 08	10.4	07 26	1005	969	13 35	36	17 28	471	417	12 06	54	19.6
12	14 42	51.3	36.1	22 37	15.2	18 27	1019	962	15 04	57	22 35	488	414	13 08	74	19.3
13D	13 53	52.1	23.0 ^m	22 14	29.1	22 33	1036	943	13 15	93	22 08	517	403	12 54	114	19.0
14D	12 54	55.1	35.1	07 57	20.0	07 41	1026	894	15 15	132	18 23	496	418	11 38	78	18.6
15	13 50	51.6	38.0	06 03	12.7	17 16	991	956	14 35	35 ^m	18 02	508	424	04 37	84	18.4
16	12 37	50.6	29.0	23 55	21.6	24 00	1043	957	11 15	86	23 53	496	435	12 30	61	18.3
17	13 31	52.4	29.9	00 00	22.5	00 02	1046	957	10 10	89	21 12	484	425	12 04	59	18.2
18	14 57	53.1	35.8	02 33	17.3	01 24	1023	940	13 15	83	18 28	497	424	12 36	73	18.3
19	15 33	49.5	35.5	09 17	14.0	23 06	997	955	12 44	42	19 35	496	425	13 17	71	18.3
20	14 40	53.8	36.4	09 14	17.4	06 56	1008	946	13 12	62	16 30	476	414	12 12	62	18.3
21	14 42	49.8	34.9	21 50	14.9	18 37	1013	959	12 10	54	21 50	484	407	13 02	77	18.7
22Q	15 03	51.0	36.4	09 30	14.6	19 36	1005	963	12 10	42	17 44	466	415	12 51	51	17.3
23Q	14 47	50.8	36.4	09 06	14.4	23 31	1011	948	12 05	63	08 41	466	406	13 02	60	18.5
24Q	14 42	50.3	37.2	09 22	13.1	23 30	1020	970	12 18	50	18 18	459	407	13 04	52	18.8
25D	16 04	56.4	34.2	23 06	22.2	06 30	1048	948	15 01	100	21 10	499	395 ^m	12 14	104	18.5
26	13 49	53.6	32.0	00 29	21.6	23 05	1044	934	13 41	110	17 34	503	418	11 50	85	18.2
27	14 23	52.9	36.8	08 06	16.1	19 44	999	925	11 40	74	20 30	478	411	13 11	67	18.4
28	14 09	53.1	34.8	09 23	18.3	21 44	1007	948	12 00	59	21 35	489	418	13 30	71	18.4
29	15 01	54.7	36.4	08 06	18.3	06 44	1012	930	11 07	82	17 56	520	419	12 04	101	18.0
30	14 45	53.2	31.2	21 48	22.0	18 34	1030	844	12 16	86	21 47	497	408	11 53	89	17.7
31	15 21	54.1	24.0	02 08	30.1	20 49	1008	938	10 25	70	23 15	508	408	12 30	100	18.2
Mean		52.3	34.9		17.4		1016	943		73		500	419		81	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

APRIL, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	° +	G.M.T.	'		G.M.T.	1800y+	G.M.T.	'		G.M.T.	4400y+	G.M.T.	'		
h m	'	'	h m	'	h m	y	y	h m	y	h m	y	y	h m	y		
1	15 31	53.2	30.8	01 02	22.4	19 01	1005	930	11 01	75	19 48	498	403	13 00	95	18.6
2	13 30	52.0	36.8	08 51	15.2	21 35	1009	950	11 06	59	18 22	473	405	12 37	68	19.3
3	14 14	53.9	34.3	10 00	19.6	18 01	1016	955	12 15	61	19 16	497	403	12 53	94	18.7
4	13 35	51.1	34.6	08 21	16.5	20 56	1022	959	12 01	63	01 40	468	405	12 30	63	18.6
5 Q	14 02	51.1	37.1	09 05	14.0m	20 24	1016	952	11 15	64	17 20	461	406	11 44	55m	18.2
6	13 26	52.8	35.5	08 34	17.3	07 35	1030	947	12 28	83	18 15	461	398	12 03	63	18.5
7	13 54	52.6	36.2	09 05	16.4	19 57	1035	964	11 35	71	07 55	464	403	12 50	61	18.5
8	14 06	50.9	35.7	09 04	15.2	17 18	1039	966	11 48	73	19 18	488	406	13 00	82	18.4
9 Q	14 15	51.8	36.2	08 33	15.6	21 43	1017	959	12 05	58	18 31	465	383	12 38	82	18.7
10 Q	14 46	51.2	35.9	09 08	15.3	20 13	1021	964	11 33	57	07 57	462	396	13 04	66	18.9
11	14 34	63.8M	33.8	09 00	30.0	23 01	1059	952	14 06	107	17 38	485	393	13 45	92	19.0
12 D	14 32	59.9	17.3	04 28	42.6	14 40	1044	883m	05 17	161	17 17	585M	288	04 38	297	18.8
13 D	13 43	54.8	02.0m	03 00	52.8M	20 45	989	717	03 49	272M	15 36	535	185m	03 32	350M	18.6
14	14 55	50.8	31.2	08 20	19.6	05 50	995	905	11 54	90	15 58	500	419	02 13	81	18.7
15 Q	14 14	49.3	33.7	10 18	15.6	23 55	1007	932	11 35	75	07 39	475	417	12 31	58	18.7
16	14 50	50.7	32.2	09 25	18.5	00 28	1020	929	12 47	91	19 32	486	414	11 57	72	18.8
17	14 02	53.0	34.1	21 40	18.9	05 54	1011	933	12 11	78	18 42	513	433	13 05	80	19.0
18	15 20	52.5	35.1	09 08	17.4	17 02	1040	958	12 40	82	17 19	484	418	12 35	66	18.3
19 D	15 00	55.0	27.9	02 16	27.1	00 14	1036	908	11 51	128	17 48	536	382	03 39	154	18.3
20 D	14 55	56.4	32.7	06 05	23.7	22 50	1027	905	12 17	122	19 12	536	369	04 57	167	18.6
21	13 27	54.9	33.2	21 25	21.7	20 46	1019	897	12 14	122	18 29	529	416	11 12	113	18.3
22	13 56	51.1	34.5	01 45	16.6	19 08	1054	929	11 56	125	18 45	529	417	00 15	112	18.5
23	14 54	50.6	35.1	09 11	15.5	00 45	1015	900	11 52	115	18 00	495	419	07 34	76	18.4
24	14 03	58.1	35.0	09 22	23.1	17 37	1048	930	11 37	118	19 00	515	402	14 04	113	18.2
25	14 13	50.0	34.9	09 15	15.1	17 25	1034	943	12 00	91	17 37	487	414	01 16	73	16.8
26 D	13 50	62.5	26.8	21 35	35.7	13 54	1081M	901	12 43	180	19 37	549	388	13 21	161	17.8
27	14 24	50.7	27.1	03 15	23.6	02 22	1006	893	13 27	113	16 50	508	393	02 25	115	17.8
28	14 33	51.1	30.9	23 47	20.2	22 09	1014	953	11 07	61	17 30	490	412	12 42	78	18.6
29	14 33	48.9	33.0	00 00	15.9	19 15	1013	930	11 44	83	19 12	507	412	01 38	95	18.8
30 Q	13 58	47.3	33.0	08 20	14.3	18 42	1018	971	13 00	47m	08 06	472	416	12 27	56	18.9
31																
Mean		53.1	31.9		21.2		1025	927		98		498	394		105	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

MAY, 1981

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.	1800y+	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	13 43	47.3	31.1	07 51	16.2	17 50	1036	961	12 30	75	19 00	501	413	11 50	88	18.8	
2	13 19	48.8	35.2	08 22	13.6	22 20	1015	970	10 13	45	17 12	471	416	12 26	55	18.4	
3Q	13 44	50.9	35.7	07 52	15.2	22 52	1024	971	12 02	53	17 20	471	427	12 26	44m	18.6	
4Q	13 43	48.1	34.4	08 40	13.7	19 35	1021	979	13 03	42	17 27	477	414	12 07	63	18.3	
5Q	14 10	52.3M	32.2	08 23	20.1	18 02	1030	966	10 55	64	08 13	471	409	12 20	62	18.6	
6Q	14 03	50.8	33.7	08 12	17.1	17 46	1035	975	12 26	60	06 20	470	406	12 06	64	18.7	
7Q	14 41	48.4	33.7	08 15	14.7	17 13	1032	985	12 17	47	06 08	472	407	12 53	65	18.7	
8	14 28	47.8	31.6	09 13	16.2	18 13	1059	978	13 00	81	05 43	470	401	13 12	69	19.0	
9	06 50	50.7	31.3	08 27	19.4	01 23	1065	897	08 27	168	19 12	492	332m	06 32	160	18.9	
10	14 00	47.6	29.9	22 44	17.7	18 17	1057	934	23 38	123	20 20	520	386	23 19	134	18.9	
11D	14 24	50.0	14.8m	03 55	35.2M	22 25	1028	862	11 43	166	15 20	503	384	06 27	119	18.9	
12	14 13	49.1	32.4	07 10	16.7	20 15	1015	953	10 30	62	20 08	520	436	12 22	84	19.0	
13	05 04	47.9	30.0	07 13	17.9	05 31	1011	971	13 52	40	06 40	470	420	11 30	50	19.1	
14	13 27	47.9	37.0	08 42	10.9m	19 01	1044	980	13 55	64	16 14	480	420	11 54	60	18.9	
15D	03 10	52.1	26.8	06 26	25.3	03 13	1065	907	06 49	158	19 45	528	360	04 23	168	18.8	
16D	14 45	52.2	31.9	00 26	20.3	18 18	1048	854m	10 42	194M	18 02	562M	414	05 56	148	18.9	
17	14 37	47.3	32.9	08 05	14.4	23 05	1068	938	09 15	130	21 55	488	427	12 08	61	18.9	
18D	12 24	48.5	20.0	05 35	28.5	00 31	1037	883	07 33	154	19 46	552	362	04 52	190M	18.8	
19	14 05	51.9	35.0	06 23	16.9	17 18	1024	919	11 44	105	17 50	513	429	11 20	84	18.8	
20D	14 50	50.3	33.9	19 32	16.4	19 34	1094M	905	12 37	189	19 32	530	414	02 35	116	19.5	
21	14 16	50.7	35.1	09 00	15.6	18 48	1030	928	09 49	102	19 21	483	407	12 04	76	19.1	
22	15 52	48.3	34.4	08 32	13.9	18 52	1019	950	11 48	69	19 10	483	420	12 51	63	19.1	
23	13 54	50.1	34.1	07 38	16.0	18 32	1061	947	11 02	114	18 58	510	429	13 33	81	19.0	
24	15 28	49.1	31.4	07 10	17.7	17 48	1039	959	14 12	80	21 10	492	419	12 01	73	18.7	
25	15 24	50.0	31.2	20 21	18.8	19 12	1061	935	09 10	126	20 21	551	409	11 20	142	18.9	
26	15 12	46.0	32.4	07 24	13.6	18 58	1024	959	13 15	65	18 45	481	419	12 28	62	19.0	
27	15 01	47.3	30.8	09 03	16.5	18 46	1046	971	12 29	75	20 47	474	406	12 40	68	19.0	
28	14 40	48.9	32.6	07 49	16.3	00 00	1034	966	12 58	68	18 41	473	411	12 10	62	18.8	
29	14 40	45.2	32.5	07 47	12.7	18 05	1030	972	13 30	58	19 05	474	426	11 59	48	19.9	
30	15 20	47.2	33.2	07 23	14.0	20 22	1033	995	14 12	38m	19 00	471	423	11 40	48	19.5	
31	13 39	48.6	35.3	08 01	13.3	18 55	1035	985	09 45	50	18 50	471	421	11 13	50	19.2	
Mean		49.1	31.8		17.3		1039	947		92		494	409		86		

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

JUNE, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 ⁰ +	G.M.T.	'		G.M.T.	1800y+	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 38	46.0	34.8	08 38	11.2	17 11	1041	992	13 11	49	17 10	475	415	12 09	60	19.9
2	14 26	48.2	34.2	07 55	14.0	23 51	1035	985	13 40	50	17 50	478	411	12 05	67	20.0
3D	15 02	51.2	35.2	07 13	16.0	17 50	1054	971	13 05	83	18 50	517	411	11 28	106	19.1
4	15 10	48.0	32.8	07 49	15.2	20 03	1030	988	10 10	42m	06 00	476	410	12 30	66	19.0
5	15 07	49.1	33.0	08 24	16.1	01 30	1035	973	13 33	62	06 58	474	404	12 36	70	19.1
6	15 36	51.1	35.0	08 06	16.1	18 47	1055	966	13 29	89	19 55	482	409	12 40	73	19.0
7D	17 37	53.1M	28.0m	08 44	25.1M	19 34	1137M	965	12 02	172M	21 15	565M	389m	11 53	176M	19.0
8D	16 10	47.1	33.8	07 22	13.3	17 26	1029	962	00 42	67	20 05	481	407	01 47	74	19.1
9Q	16 36	44.9	36.1	08 00	8.8m	19 02	1026	969	14 00	57	19 37	466	418	12 09	48	18.9
10Q	15 30	46.2	33.9	09 10	12.3	20 02	1036	975	12 04	61	20 02	464	421	12 23	43	19.0
11	15 40	48.8	35.4	07 38	13.4	20 02	1037	985	12 51	52	21 30	474	428	12 30	46	19.9
12Q	14 18	47.1	34.2	08 05	12.9	20 47	1031	988	13 23	43	19 01	465	422	12 30	43	19.9
13	14 37	45.8	34.4	08 30	11.4	17 55	1025	969	12 50	56	18 57	463	422	12 05	41m	20.6
14Q	14 54	47.2	33.7	07 56	13.5	18 50	1046	988	12 11	58	18 32	468	426	12 26	42	20.5
15	15 10	48.6	30.6	08 41	18.0	18 48	1051	972	12 37	79	19 22	470	399	12 26	71	19.1
16D	15 45	50.7	33.0	08 20	17.7	17 17	1057	973	10 45	84	18 14	493	407	02 56	86	19.0
17	14 57	47.3	32.3	07 36	15.0	18 28	1024	965	10 55	59	07 38	462	412	12 51	50	19.0
18	15 06	48.8	31.1	09 04	17.7	18 40	1038	967	11 49	71	20 27	482	432	11 39	50	19.1
19	15 16	49.0	31.6	08 33	17.4	18 40	1054	952	12 32	102	19 39	485	405	12 04	80	20.1
20	14 50	49.3	32.6	07 23	16.7	18 54	1044	950	12 25	94	07 23	964	408	12 05	56	20.3
21	14 50	47.0	32.2	07 41	14.8	16 35	1033	963	12 15	70	05 41	462	402	12 40	60	20.3
22	15 28	49.2	33.2	09 09	16.0	19 42	1051	985	12 17	66	20 38	468	400	12 56	68	19.9
23Q	16 07	46.4	33.8	08 55	12.6	23 28	1033	986	10 55	47	19 10	463	409	12 40	54	20.4
24	14 49	47.9	35.1	06 15	12.8	19 27	1082	982	09 16	100	19 17	484	401	12 00	83	20.8
25	15 04	47.4	33.4	08 43	14.0	16 30	1055	979	09 49	76	21 39	479	421	11 33	58	19.9
26	15 13	47.0	36.4	08 55	10.6	23 58	1043	956	13 10	87	18 47	471	409	12 18	62	19.2
27	16 14	46.3	33.7	06 58	12.6	18 55	1055	973	09 50	82	21 39	471	415	12 35	56	19.2
28	01 07	44.7	34.1	09 09	10.6	01 05	1034	975	13 51	59	18 36	477	424	12 39	53	19.0
29D	07 34	49.9	35.5	06 10	14.4	06 11	1033	916m	13 08	117	15 33	492	401	07 35	91	19.7
30	13 23	46.4	31.0	07 10	15.4	18 38	1060	981	13 50	79	19 00	482	432	12 30	50	20.8
31																
Mean		48.0	33.5		14.5		1045	972		74		478	412		66	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

JULY, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range	
	G.M.T.	10 ⁰ +	G.M.T.			G.M.T.	1800y+	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	18 20	45.2	33.3	07 49	11.9	17 54	1038	963	09 00	75	18 40	484	415	02 22	69	21.0
2	13 25	49.7	33.5	08 00	16.2	20 21	1053	960	12 06	93	17 00	477	410	12 48	67	20.3
3	15 28	46.0	33.0	09 10	13.0	18 50	1049	964	11 10	85	21 07	477	421	12 57	56	20.0
4	15 57	47.8	33.2	07 01	14.6	21 28	1051	952	08 42	99	21 20	482	408	12 01	74	20.7
5	14 28	47.9	33.5	08 27	14.4	18 39	1059	974	14 59	85	19 47	481	421	10 40	60	21.0
6	15 47	46.8	32.8	09 06	14.0	18 16	1044	955	11 02	89	18 16	512	433	03 01	79	21.2
7	16 07	47.3	33.5	09 02	13.8	18 06	1046	957	14 03	89	18 56	476	420	12 52	56	21.8
8	16 07	45.5	33.4	09 14	12.1	19 10	1029	973	12 32	56m	19 09	466	418	11 58	48	21.4
9 Q	15 50	47.3	33.7	08 05	13.6	19 11	1038	969	10 55	69	19 51	471	406	12 10	65	21.0
10 Q	15 20	43.9	33.9	07 38	10.0m	19 20	1038	973	11 41	65	18 35	463	417	13 30	46	21.0
11	15 00	48.3	30.5	07 30	17.8	17 38	1048	982	10 46	66	18 18	477	411	12 26	66	21.1
12	14 03	47.8	32.0	22 49	15.8	16 56	1053	963	12 11	90	18 02	487	418	12 50	69	21.1
13	14 10	48.0	31.3	07 24	16.7	19 53	1037	967	10 28	70	20 52	469	409	13 09	60	21.8
14	14 25	45.7	33.2	07 21	12.5	19 16	1040	984	10 44	56m	06 26	459	425	12 41	34	21.4
15 Q	15 09	45.7	32.8	08 20	12.9	19 09	1036	976	10 36	60	17 20	458	405	12 27	53	21.6
16	14 43	47.5	31.0	06 59	16.5	18 11	1041	953	10 22	88	18 02	462	406	12 38	56	21.9
17 D	13 56	50.8	24.7	08 28	26.1	19 21	1070	952	11 40	118	21 54	517	395	10 54	122	20.6
18	14 38	46.3	30.3	00 44	16.0	20 35	1030	941	10 52	89	05 13	464	405	11 50	59	20.5
19	14 11	49.7	32.0	08 40	17.7	19 13	1042	961	10 12	81	07 20	476	408	13 08	68	21.6
20	14 00	55.2	31.9	07 38	23.3	20 40	1041	952	14 06	89	19 12	467	391	12 12	76	22.0
21 Q	14 00	46.7	32.0	07 04	14.7	21 48	1035	977	11 40	58	18 20	464	407	12 10	57	21.8
22	15 12	51.5	30.4	22 09	21.1	20 26	1047	964	11 06	83	22 03	486	404	13 10	82	20.8
23 D	17 05	52.7	32.0	09 16	20.7	16 58	1093	924	12 55	169	17 24	621	405	11 37	216	20.0
24	14 34	45.3	32.9	07 09	12.4	21 40	1032	942	11 58	90	05 56	481	427	12 13	54	20.0
25 D	20 52	71.1M	00.1	23 02	71.2M	14 35	1305M	825	20 56	480M	14 45	805M	306	23 31	499M	20.4
26 D	00 00	54.7	02.9m	02 43	57.6	16 50	1059	647m	02 35	412	17 16	537	201m	02 27	336	21.3
27 D	15 20	45.0	29.4	03 32	15.6	22 28	1009	909	09 53	100	00 16	488	407	05 55	81	22.1
28	14 11	30.8	17.8	07 45	13.0	20 08	1006	931	10 43	75	06 05	477	445	13 04	32m	22.0
29 Q	14 10	46.4	31.9	08 31	14.5	22 00	1008	939	10 54	69	05 57	478	429	12 30	49	20.6
30	14 21	48.8	30.7	06 31	18.1	18 11	1033	965	12 50	68	18 11	496	424	12 06	72	20.1
31	14 50	48.3	29.7	07 17	18.6	20 39	1025	957	11 40	68	18 39	496	423	10 50	73	21.0
Mean		48.2	29.3		18.9		1050	944		106		495	404		91	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

AUGUST, 1981

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.	1800y+	G.M.T.			G.M.T.	4400y+	G.M.T.			
h m	'	'	h m	'	h m	y	y	h m	y	h m y	y	h m	y			
1	14 40	46.8	31.5	22 28	15.3	18 12	1051	942	09 53	109	19 53	518	429	03 54	89	20.6
2	14 02	48.9	31.7	22 11	17.2	20 56	1024	952	12 05	72	18 18	498	430	13 04	68	20.0
3	14 37	46.9	35.6	19 08	11.3	19 13	1035	945	12 42	90	19 07	508	428	10 59	80	22.0
4	14 15	46.8	31.9	06 15	14.9	20 17	1024	944	08 42	80	18 40	484	431	12 55	53	21.2
5	15 20	49.1	31.9	09 00	17.2	18 35	1037	949	11 56	88	18 23	508	418	13 02	90	22.4
6	13 38	49.0	31.7	00 41	17.3	02 15	1019	943	12 04	76	17 54	503	416	04 15	87	20.3
7	13 24	47.8	34.4	07 27	13.4	18 10	1043	961	11 40	82	19 17	526	435	12 08	91	20.6
8 Q	13 49	47.2	33.0	08 40	14.2	23 10	1022	960	09 00	62	07 10	478	419	13 20	59	20.2
9 Q	15 12	44.4	33.2	02 48	11.2 _m	20 03	1039	967	10 30	72	18 52	469	432	12 00	37 _m	20.4
10	15 03	47.2	29.7	07 55	17.5	04 36	1056	992	11 36	64	04 35	468	400	12 05	68	22.2
11	14 52	50.1	32.2	20 11	17.9	19 36	1040	982	07 52	58	20 12	505	417	12 43	88	22.2
12	14 27	48.0	32.1	05 47	15.9	18 43	1034	971	10 03	63	18 14	464	412	12 58	52	22.7
13	14 12	47.1	30.6	08 21	16.5	21 15	1025	969	08 55	56	17 43	465	397 _m	11 32	68	22.8
14 Q	13 58	49.2	33.3	06 56	15.9	22 21	1032	977	10 44	55	16 38	470	416	10 38	54	23.0
15	13 31	49.0	31.1	23 13	17.9	21 01	1064 _m	985	10 22	79	21 57	469	407	12 03	62	23.1
16 Q	14 28	49.0	33.1	00 02	15.9	22 29	1020	979	09 37	41 _m	17 35	471	400	12 16	71	22.2
17 D	13 31	48.1	28.5	07 07	19.6	00 50	1053	932	10 11	121 _M	19 23	487	402	10 56	85	23.0
18 D	15 33	49.3	32.1	06 23	17.2	18 02	1028	961	11 17	67	17 54	508	410	01 47	98	23.4
19	13 46	51.9 _M	33.0	08 11	18.9	21 40	1021	954	11 08	67	17 07	481	421	13 10	60	22.4
20	13 54	45.2	33.0	07 14	12.2	18 15	1028	972	09 10	56	18 41	482	409	12 10	73	22.3
21	13 57	48.0	33.2	07 18	14.8	18 45	1026	941	14 08	85	19 22	507	399	11 46	108	22.4
22	13 44	46.9	30.5	08 10	16.4	23 17	1029	960	10 45	69	19 02	492	409	12 15	83	22.9
23 D	16 03	47.1	29.8	00 45	17.3	21 00	1037	919 _m	16 17	118	22 37	539 _M	412	02 35	127 _M	23.4
24 D	16 05	51.8	28.0 _m	04 49	23.8 _M	16 26	1024	923	11 05	101	16 22	535	420	13 25	115	23.0
25	15 00	48.2	28.6	00 13	19.6	21 05	1025	941	08 43	84	18 06	496	424	13 15	72	22.5
26 Q	15 31	46.3	32.9	07 36	13.4	21 53	1022	966	09 37	56	17 11	471	422	12 40	49	23.1
27 D	13 19	50.9	32.7	08 47	18.2	17 26	1053	947	16 44	106	17 58	513	413	10 56	100	22.5
28	14 38	46.1	30.0	07 57	16.1	22 20	1040	942	10 59	98	16 47	515	433	12 20	82	23.7
29	13 04	47.9	32.7	06 46	15.2	01 10	1008	942	09 18	66	17 00	513	423	11 03	90	23.7
30	13 41	48.7	29.6	07 53	19.1	23 30	1038	948	11 10	90	17 13	483	415	11 03	68	23.3
31	14 12	49.9	30.2	06 43	19.7	02 15	1041	942	11 08	99	06 44	475	413	12 13	62	23.8
Mean		48.2	31.7		16.5		1033	955		78		494	417		77	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

SEPTEMBER, 1981

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.		1800y+ G.M.T.			G.M.T.		G.M.T.				44000y+ G.M.T.						
	h	m	'	'	h	m	y	y	h	m	y	h	m	y	h		m	y					
1 Q	14	17	49.7	31.9	08	20	17.8	23	52	1028	938	11	45	90	17	53	468	406	12	43	62	23.6	
2 D	14	39	49.7	32.8	09	03	16.9	00	01	1028	936m	11	38	92	18	25	507	414	12	51	93	24.0	
3	14	33	47.1	29.5	08	31	17.6	01	10	1011	953	11	53	58	06	30	476	406	11	25	70	23.9	
4	12	23	46.2	31.8	23	56	14.4	23	30	1039	956	13	06	83	23	15	477	407	11	42	70	24.0	
5	13	41	45.9	26.2	02	22	19.7	00	28	1015	940	12	01	75	17	20	472	418	13	18	54	23.9	
6	13	50	47.6	31.1	08	30	16.5	22	24	1020	944	11	31	76	08	30	471	421	13	12	50	22.2	
7 Q	14	23	46.1	32.5	09	04	13.6	00	25	1016	956	11	37	60	18	01	473	409	13	10	64	23.0	
8	13	39	45.9	30.9	05	16	15.0	21	50	1060M	948	10	49	112M	23	57	458	396m	12	50	62	23.1	
9	14	11	49.6	29.8	08	05	19.8	00	25	1038	965	11	16	73	00	16	464	396m	12	35	68	23.8	
10	13	35	47.4	33.6	08	42	13.8	20	40	1023	964	10	38	59	23	12	466	402	12	13	64	23.3	
11 D	13	57	48.8	26.6	04	48	22.2	02	12	1028	940	13	35	88	17	00	474	412	10	52	62	22.1	
12	13	16	49.3	35.2	06	13	14.1	04	46	1010	971	10	04	39m	18	44	491	416	10	46	75	22.1	
13	14	02	46.9	33.2	07	40	13.7	02	24	1023	959	13	03	64	16	41	488	429	10	50	59	22.1	
14	13	32	47.4	32.8	08	49	14.6	19	26	1015	956	14	03	59	21	50	471	407	11	37	64	22.4	
15	14	26	48.0	34.4	06	42	13.6	00	14	1014	955	11	33	59	17	28	490	415	12	17	75	22.1	
16	13	36	45.9	31.8	08	42	14.1	03	00	1019	953	11	52	66	16	18	475	417	11	42	58	20.0	
17 Q	14	26	46.1	33.3	09	02	12.8	20	42	1018	973	09	50	45	17	24	462	412	12	20	50	22.2	
18	13	23	46.1	29.7	21	47	16.4	19	33	1058	950	22	10	108	20	50	494	409	11	46	85	22.1	
19 D	13	16	47.2	24.9m	03	24	22.3M	01	41	1032	944	13	51	88	19	33	467	409	13	17	58	22.0	
20	14	53	43.6	33.3	02	08	10.3m	19	28	1012	959	12	50	53	20	24	471	413	12	27	58	22.0	
21	16	03	43.4	33.0	09	21	10.4	00	23	1027	972	11	41	55	22	20	483	420	13	40	63	22.0	
22	14	45	43.1	29.9	04	20	13.2	04	24	1033	957	13	02	76	23	49	472	421	06	00	51	21.9	
23 Q	15	25	44.1	32.2	01	43	11.9	23	52	1027	980	13	36	47	00	00	469	422	12	20	47	22.0	
24	13	57	44.9	33.2	08	54	11.7	03	38	1029	971	13	33	58	23	27	465	419	11	44	46m	22.0	
25	13	13	45.1	32.5	07	34	12.6	02	27	1029	965	13	37	64	16	32	483	422	11	44	61	21.8	
26 D	13	38	49.1	29.3	21	22	19.8	04	24	1045	937	13	03	108	18	40	542M	432	09	42	110M	21.6	
27 D	13	50	46.4	26.0	00	45	20.4	06	36	1006	939	11	05	67	18	51	522	431	06	28	91	21.9	
28 Q	14	02	46.3	31.7	09	10	14.6	21	01	1014	962	12	00	52	17	10	472	425	13	10	47	22.0	
29	15	11	51.7M	31.2	09	09	20.5	21	01	1027	969	13	54	58	21	59	478	421	12	25	57	22.2	
30	13	19	49.2	31.0	23	16	18.2	22	43	1036	938	11	44	98	19	01	479	411	12	59	68	22.1	
31																							
Mean			46.9	31.2			15.8			1026	955			71			479	415			65		

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

OCTOBER, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C						
	Maximum			Minimum		Range	Maximum		Minimum			Range	Maximum		Minimum							
	G.M.T.		10°+	G.M.T.			G.M.T.		1800y+	G.M.T.			G.M.T.		44000y+							
	h	m	'	'	h		m	y	y	h	m		y	h	m		y	y	h	m	y	
1	14	50	47.1	30.9	09	02	16.2	22	58	1021	951	12	07	70	08	17	463	411	13	15	52	22.0
2	13	52	47.8	30.4	01	24	17.4	20	24	1093M	958	11	43	135	18	21	474	409	12	50	65	20.9
3 D	14	47	51.4	27.6	10	32	23.8	22	49	1021	913	14	20	108	17	35	488	400	12	46	88	19.9
4	14	44	46.9	30.1	09	07	16.8	04	57	1012	941	12	05	71	19	42	489	402	11	54	87	21.6
5 Q	13	20	45.7	31.8	09	46	13.9	22	45	1019	949	11	38	70	16	54	469	419	12	33	50	21.4
6 Q	13	56	48.0	31.5	09	43	16.5	23	13	1020	952	13	10	68	17	14	471	421	13	47	50	21.1
7	15	30	49.3	23.3	20	02	26.0	08	17	1017	941	19	10	76	20	02	591	418	14	02	173	21.0
8	13	10	45.7	28.0	06	22	17.7	07	26	997	921	11	42	76	20	20	491	435	06	57	56	22.4
9	14	00	43.2	27.9	01	01	15.3	05	07	1029	949	11	06	80	19	40	473	411	03	45	62	22.4
10	16	13	50.0	27.9	10	43	22.1	00	10	1013	954	20	33	59	20	43	537	430	13	40	107	21.4
11 D	13	00	47.9	29.7	01	38	18.2	05	03	1015	916	13	12	99	17	11	568	403	02	47	165	20.6
12	14	48	41.9	30.2	04	30	11.7	23	21	997	940	11	03	57	16	43	473	441	00	53	32	20.1
13	14	58	43.9	29.7	22	43	14.2	23	12	1061	955	12	41	106	22	43	485	432	23	27	53	19.8
14 D	14	26	44.8	08.0m	03	00	36.8	22	27	1024	798m	03	11	226M	22	45	547	392m	03	10	155	19.5
15	13	34	48.5	30.8	09	36	17.7	22	39	1006	932	13	06	74	17	18	485	426	12	03	59	17.9
16 Q	14	40	43.0	30.2	09	14	12.8	04	10	1006	947	11	20	59	05	40	476	425	12	49	51	16.0
17	15	13	45.3	22.8	09	09	22.5	20	07	1023	958	13	34	65	08	37	485	413	12	58	72	17.3
18 Q	14	07	42.8	31.3	09	47	11.5	00	51	1023	946	11	49	77	09	08	474	425	12	40	49	17.1
19	12	29	48.7	27.8	23	04	20.9	02	19	1022	945	12	52	77	20	10	497	401	12	29	96	22.1
20 D	15	11	61.2M	24.3	22	50	36.9	16	58	1023	885	20	00	138	19	23	776M	426	13	21	350M	21.0
21	14	50	43.7	22.9	03	04	20.8	20	06	975	886	01	08	89	15	43	518	424	02	04	94	19.6
22 D	16	04	56.7	11.9	23	58	44.8M	16	12	1028	820	23	51	208	16	31	654	433	23	44	221	21.0
23	15	17	42.2	13.5	00	00	28.7	23	40	980	902	00	12	78	00	00	557	444	04	12	113	21.0
24	13	36	47.4	26.6	22	27	20.8	22	01	1006	929	12	31	77	16	14	559	446	12	22	113	22.2
25	15	05	44.2	32.5	03	20	11.7	04	30	1012	934	12	35	78	16	04	486	419	14	11	67	20.4
26	14	22	45.6	31.6	07	55	14.0	08	06	1015	953	12	32	62	07	55	477	447	12	23	30m	20.1
27	13	58	46.3	31.7	01	22	14.6	20	06	1013	953	11	36	60	16	39	487	444	11	55	43	21.0
28	14	46	45.7	24.6	21	09	21.1	03	11	1017	961	11	01	56	20	58	518	431	12	22	87	20.7
29	13	05	42.3	29.3	23	00	13.0	22	34	1036	965	11	14	71	23	34	481	440	12	14	41	20.2
30	14	52	47.3	31.9	09	11	15.4	03	32	1011	960	11	52	51	15	20	493	422	12	20	71	20.7
31 Q	14	42	43.3	32.1	09	40	11.2m	22	50	1016	970	12	03	46m	00	11	465	422	13	09	43	21.7
Mean			46.7	27.2			19.5			1018	932			86			513	423			90	

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

NOVEMBER, 1981

Date	DECLINATION					HORIZONTAL COMPONENT					VERTICAL COMPONENT					TEMP °C							
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum		Minimum		Range								
	G.M.T.		10 ⁰⁺ G.M.T.			G.M.T.		1800y+ G.M.T.			G.M.T.		44000y+ G.M.T.				G.M.T.						
	h	m	'	'	h	m	y	y	h	m	y	h	m	y	h		m	y					
1	14	15	45.6	32.8	09	15	12.8	03	38	1018	968	11	13	50	22	07	469	430	13	00	39	22.1	
2 Q	15	30	42.6	33.1	23	58	9.5	23	24	1019	969	12	31	50	20	06	472	440	13	03	32	22.3	
3	15	06	43.4	31.7	09	22	11.7	19	49	1013	958	12	30	55	19	42	480	435	12	49	45	22.4	
4	14	40	44.3	32.7	10	06	11.6	23	43	1022	965	11	20	57	20	43	479	432	13	21	47	21.0	
5	14	28	44.7	34.4	21	17	10.3	06	36	1025	966	12	32	59	21	17	480	432	12	21	48	20.0	
6	14	26	43.4	31.7	24	00	11.7	02	30	1031	962	12	24	69	21	20	473	432	13	24	41	22.0	
7	13	24	44.6	28.6	00	13	16.0	04	20	1027	939	13	52	88	21	37	488	422	04	47	66	21.7	
8	16	23	45.9	31.7	10	33	14.2	16	23	1028	950	12	53	78	10	33	472	418	04	09	54	22.0	
9 Q	14	16	41.5	31.9	09	49	9.6	20	24	1009	950	11	53	59	09	41	472	441	13	27	31	21.0	
10	14	33	44.5	30.8	09	02	13.7	19	06	1018	944	11	50	74	23	10	478	439	11	23	39	21.8	
11 D	18	51	52.2M	30.0	05	52	22.2	18	19	1026	939	13	57	87	21	34	532	402	13	07	130	22.5	
12 D	13	03	41.5	12.5m	01	36	29.0M	01	15	1007	911m	04	08	96M	01	35	520	384m	03	26	136M	22.0	
13	14	09	40.3	31.8	23	31	8.5	20	54	1008	954	11	45	54	23	34	478	442	11	43	36	21.2	
14 D	13	07	47.0	27.3	23	46	19.7	06	10	1009	936	21	53	73	21	25	527	420	11	46	107	21.0	
15	15	04	43.4	30.0	00	15	13.4	07	19	1007	952	11	06	55	17	00	498	443	00	00	55	21.0	
16	14	03	42.1	25.1	23	30	17.0	20	35	1025	961	12	40	64	22	35	496	440	02	25	56	19.3	
17 D	13	54	46.2	23.9	23	31	22.3	04	26	1007	923	11	23	84	18	53	549	437	11	31	112	21.1	
18	19	42	42.8	30.8	21	47	12.0	06	34	993	923	12	07	70	18	57	522	439	00	13	83	21.1	
19	13	07	42.4	28.6	01	04	13.8	23	49	1010	947	16	01	63	16	17	503	446	01	40	57	20.0	
20	13	28	40.9	24.9	22	36	16.0	00	00	1005	961	13	12	44	22	04	506	453	01	20	53	22.1	
21	15	55	41.3	20.5	22	20	20.8	07	08	1007	943	21	00	64	22	20	520	452	01	41	68	22.0	
22	14	59	41.9	31.3	04	35	10.6	23	48	1009	960	12	24	49	16	33	473	445	12	15	28	22.3	
23	17	39	47.0	23.3	23	48	23.7	06	06	1007	936	17	46	71	17	50	554M	450	06	41	104	22.3	
24	14	09	43.1	26.9	00	00	16.2	05	55	998	958	11	39	40	20	11	493	453	05	30	40	19.8	
25 D	13	29	41.8	29.6	22	35	12.2	05	20	1061M	988	02	04	73	02	43	483	429	12	30	54	19.0	
26	15	39	41.1	30.9	00	07	10.2	19	53	1010	978	15	59	32	18	22	494	441	10	34	53	22.0	
27 Q	14	10	39.8	34.1	09	34	5.7	07	01	1021	994	13	03	27	16	50	467	444	12	30	23m	21.6	
28	14	20	40.9	31.2	01	29	9.7	00	57	1017	988	12	30	29	22	10	475	443	11	32	32	20.4	
29 Q	14	12	41.9	33.1	02	33	8.0	02	13	1022	991	12	38	31	02	34	465	438	13	10	27	20.8	
30 Q	13	17	39.6	34.0	09	02	5.6m	20	40	1021	995	11	40	26m	06	00	459	433	12	30	26	22.3	
31																							
Mean			43.2	29.3			13.9			1016	957			59			493	435			57		

Table 7

EXTREME VALUES OF THE MAGNETIC ELEMENTS

DECEMBER, 1981

Date	DECLINATION				HORIZONTAL COMPONENT				VERTICAL COMPONENT				TEMP °C									
	Maximum		Minimum		Range	Maximum		Minimum		Range	Maximum			Minimum								
	G.M.T.	10 ⁰	G.M.T.			G.M.T.	1800y+	G.M.T.			G.M.T.	44000y+		G.M.T.								
h	m	'	'	h	m	y	y	h	m	y	h	m	y	h	m	y						
1	16	10	44.3	31.7	23	35	12.6	16	10	1029	995	11	12	34	19	50	472	425	12	05	47	21.6
2	11	31	39.5	30.7	22	25	8.8	06	38	1026	968	11	37	58	21	55	469	432	11	26	37	21.0
3	14	22	40.5	32.7	23	50	7.8	06	23	1021	983	13	28	38	19	47	474	430	12	47	44	20.4
4	15	06	40.1	32.1	24	00	8.0	23	25	1017	982	11	02	35	22	27	474	434	11	48	40	22.0
5	17	58	41.5	30.1	23	00	11.4	07	36	1016	973	12	15	43	23	00	484	446	12	03	38	20.1
6 Q	15	00	40.4	32.2	09	42	8.2	05	40	1016	974	13	20	42	09	02	469	443	11	27	26	20.0
7 Q	14	17	39.6	31.5	10	07	8.1	21	30	1021	972	12	20	49	09	06	462	443	11	58	19	20.5
8 D	16	13	43.1	31.2	20	52	11.9	06	32	1033	957	19	50	76	20	22	510	438	15	05	72	20.0
9	14	10	41.1	31.5	01	30	9.6	07	48	1021	975	15	20	46	20	48	473	444	03	37	29	17.0
10	04	23	40.4	33.6	09	54	6.8	04	40	1033	989	15	24	44	00	00	466	438	04	34	28	17.0
11	16	53	40.5	32.3	10	14	8.2	22	48	1023	987	12	17	36	19	23	463	446	11	17	17m	16.2
12 D	14	20	47.5M	27.8	22	20	19.7	06	45	1026	951	20	23	75	20	27	514M	437	11	40	77	13.7
13	14	40	42.2	28.5	03	20	13.7	20	18	1006	955	12	40	51	02	06	477	439	11	02	38	17.0
14	15	00	39.5	33.4	09	37	6.1	19	23	1011	981	12	47	30	17	50	465	443	12	23	22	18.0
15	14	24	38.8	33.0	21	03	5.8	19	38	1020	976	21	17	44	21	23	482	439	12	10	43	18.8
16 Q	13	56	38.2	31.9	22	43	6.3	19	33	1017	989	09	48	28	22	38	468	445	13	57	23	17.2
17	15	12	38.8	26.1m	23	54	12.7	20	59	1035	980	22	30	55	20	40	486	440	11	24	46	15.0
18	16	09	40.5	26.1m	00	00	14.4	23	57	1022	964	00	26	58	19	03	475	445	01	56	30	13.1
19	15	26	40.1	31.0	00	41	9.1	00	00	1020	963	12	03	57	17	29	463	444	15	28	19	15.8
20	14	09	39.0	33.0	22	31	6.0	07	40	1017	991	21	22	26m	22	12	466	437	03	45	29	18.9
21 Q	15	35	40.5	33.1	10	01	7.4	06	10	1016	990	21	15	26m	21	30	466	442	13	30	24	17.1
22 Q	13	57	39.4	34.2	09	10	5.2m	19	58	1020	992	16	05	28	16	34	460	439	11	22	21	16.1
23	15	14	39.5	32.2	04	54	7.3	17	20	1031	991	12	22	40	23	54	469	438	12	04	31	15.7
24	13	39	39.4	29.2	22	24	10.2	22	34	1036	976	02	18	60	22	18	476	444	05	49	32	13.9
25	14	46	40.4	30.4	21	20	10.0	04	53	1021	984	11	55	37	21	20	472	443	10	37	29	15.4
26	13	20	39.0	30.8	02	26	8.2	08	28	1022	986	10	50	36	01	51	462	435	10	31	27	20.2
27	15	25	39.4	32.7	23	40	6.7	19	33	1021	985	23	04	36	23	21	471	436	10	37	35	18.2
28	14	34	40.8	28.8	00	38	12.0	08	13	1033	976	00	28	57	00	32	484	425	12	50	59	18.6
29 D	07	51	44.3	31.4	18	14	12.9	06	00	1057M	935	13	30	122M	18	14	507	415	07	52	92M	18.8
30 D	13	42	47.0	27.1	04	26	19.9M	07	05	1014	926m	13	51	88	15	32	493	412m	07	58	81	16.2
31 D	13	50	42.0	31.0	03	10	11.0	23	25	1007	948	09	11	59	15	32	482	445	13	50	37	15.9
Mean			40.9	31.1			9.9			1023	974			49			476	437				38

Table 8

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

1981

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.	-20	-20	-18	-15	-14	-9	-9	-12	-16	-25m	-18	-2	15	33	43M	40	30	25	21	12	-2	-8	-15	-19
Feb.	-28	-26	-20	-14	-14	-17	-16	-17	-20	-20	-11	8	28	41	46M	42	37	25	21	14	-3	-10	-20	-30m
Mar.	-21	-22	-27	-24	-20	-21	-20	-27	-37	-42m	-27	2	40	65	71M	66	45	21	9	4	2	-10	-20	-18
Apr.	-18	-26	-31	-29	-30	-30	-26	-42	-54m	-52	-33	5	43	81	90M	77	56	31	12	-2	-16	-6	-9	-11
May	-8	-5	-10	-18	-21	-36	-48	-58m	-57	-47	-24	9	42	63	68M	59	45	30	16	6	4	3	0	-2
June	-2	-4	-6	-8	-18	-32	-46	-55	-60m	-52	-32	-6	26	49	61M	61M	51	38	21	6	3	1	2	2
July	-7	-10	-16	-16	-25	-33	-47	-59	-61m	-53	-29	1	34	59	63	65M	56	35	17	13	10	6	-1	-2
Aug.	-11	-11	-14	-18	-24	-38	-51	-57m	-51	-39	-11	20	49	73	75M	63	41	19	4	0	0	-5	-7	-11
Sept.	-18	-20	-28	-30	-31	-30	-36	-44m	-44m	-39	-16	19	52	72M	70	57	38	23	13	10	6	-1	-7	-13
Oct.	-26	-22	-23	-26	-21	-21	-23	-27	-35	-41m	-29	-33	37	64	71M	63	47	26	21	14	0	-9	-19	-26
Nov.	-27	-22	-20	-18	-13	-14	-12	-14	-19	-28m	-21	4	28	45	49M	44	36	29	23	15	2	-11	-28m	-28m
Dec.	-18	-13	-9	-8	-7	-8	-9	-8	-11	-21m	-16	1	16	31	34M	32	30	23	16	9	-3	-13	-20	-20
Year	-16	-16	-18	-18	-19	-24	-28	-35	-38m	-38m	-22	5	35	57	62M	56	43	28	17	9	2	-5	-11	-14
Winter	-23	-20	-16	-14	-12	-12	-11	-13	-16	-23	-16	3	22	38	43M	40	33	26	20	13	-1	-10	-20	-24m
Equinox	-21	-23	-27	-27	-25	-25	-26	-35	-43	-44m	-26	6	43	70	75M	66	46	25	14	7	1	-7	-14	-17
Summer	-7	-7	-11	-15	-22	-34	-48	-57m	-57m	-47	-23	6	38	61	68M	62	48	31	15	7	5	2	-1	-3

Table 9 DIURNAL VARIATION - ALL DAYS - HORIZONTAL COMPONENT (Gamma Units) 1981

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

Table 10

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

1981

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

Table 11

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

1981

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.	-8	-15	-11	-11	-10	-9	-11	-14	-18	-24m	-17	-5	6	23	32M	31	23	17	15	11	3	-3	-6	-8	-9
Feb.	-5	-4	-4	-4	-8	-12	-15	-21	-26	-32m	-20	3	22	31	34M	25	15	11	9	7	3	-1	-4	-8	-8
Mar.	-8	-12	-12	-12	-11	-16	-18	-28	-48	-55m	-40	-9	27	53	61M	55	38	15	7	7	6	2	-4	-8	-9
Apr.	-14	-12	-5	-15	-16	-21	-34	-50	-63m	-60	-40	-8	34	62	69M	56	39	25	13	13	11	9	5	1	3
May	4	0	-3	-8	-11	-32	-60	-73m	-73m	-55	-28	8	43	68	72M	57	38	18	3	2	6	8	8	7	4
June	3	2	1	-5	-12	-26	-46	-55	-56m	-51	-34	-13	17	41	51M	51M	46	35	18	9	6	6	6	5	3
July	5	0	0	-12	-25	-36	-51	-60	-62m	-50	-28	-1	27	50	59M	55	38	22	10	7	10	13	13	7	5
Aug.	-15	-14	-20	-23	-24	-39	-48	-53m	-49	-34	-6	22	48	67	69M	56	35	15	5	4	6	4	2	-11	-7
Sept.	-17	-17	-19	-17	-19	-23	-33	-46	-52m	-47	-28	3	39	66	72M	61	42	21	10	9	6	3	7	-6	-9
Oct.	-16	-13	-9	-6	-8	-13	-16	-24	-38	-55m	-44	-11	29	56	62M	48	32	19	13	10	7	1	-8	-16	-19
Nov.	-12	-9	-12	-13	-9	-10	-15	-12	-19	-28m	-23	-5	17	34	37M	31	25	18	14	8	2	-3	-8	-11	-17
Dec.	-11	-7	-5	-2	-1	-6	-10	-12	-18	-27m	-21	-5	11	22	29M	28	20	15	11	6	0	-5	-10	-10	-9
Year	-8	-9	-8	-11	-13	-20	-30	-38	-44m	-43	-28	-2	27	48	54M	46	32	19	10	8	5	3	-1	-5	-6
Winter	-9	-9	-8	-7	-7	-9	-12	-15	-20	-27m	-20	-3	14	28	33M	29	21	16	12	8	2	-3	-7	-9	-10
Equinox	-13	-13	-11	-12	-13	-18	-25	-37	-50	-54m	-37	-6	33	60	67M	56	38	20	11	10	8	4	-2	-7	-8
Summer	-1	-3	-6	-12	-18	-33	-51	-61m	-60	-47	-24	4	34	56	62M	54	39	22	9	5	7	8	7	2	1

Table 12

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

1981

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

Table 13

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

1981

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	5M	3	3	1	1	0	-1	-1	-2	-4	-6	-8	-10m	-6	0	4	4	2	2	4	5M	3	2	3
Feb.	2	3	3	3	3	3	3	2	2	0	-8	-14m	-14m	-8	-4	2	5M	4	3	3	2	2	1	2	1
Mar.	4	6	6	7	7	8	7	9	10	3	-11	-25	-33m-31	-22	-8	6	13M	12	9	5	4	3	2	1	
Apr.	10	8	5	8	9	10	13	14M	9	-3	-18	-34	-42m-36	-20	-6	4	8	11	9	8	8	7	6	4	
May	4	6	7	8	10	17M	16	8	0	-11	-22	-31	-36m-27	-13	2	12	17M	17M	9	3	0	-1	0	2	
June	3	2	2	3	6	10	10	7	3	-6	-13	-22	-27m-20	-11	-4	2	9	14	15M	11	7	4	4	3	
July	2	1	0	3	6	9	11	9	6	-1	-12	-26	-34m-29	-14	0	8	12	13M	11	8	4	2	4	4	
Aug.	4	3	3	3	7	11	12	10	2	-8	-19	-27	-29m-22	-11	1	11	14M	11	6	4	3	2	4	1	
Sept.	6	3	4	5	6	6	8	11M	9	1	-9	-22	-31m-29	-18	-5	5	11M	10	7	6	5	5	4	1	
Oct.	3	0	1	2	4	6	5	6	8	4	-8	-22	-28m-23	-14	-3	7	9M	8	6	5	4	4	2	2	
Nov.	4	3	3	2	2	2	1	0	1	1	-3	-10	-14m-13	-7	0	3	5M	3	3	3	3	2	2	2	
Dec.	2	-1	-1	-1	-2	-2	-1	0	3	4	-2	-8m	-8m	-6	-4	-1	3	3	2	3	4	5M	5M	2	1
Year	4	4	3	4	5	7	7	7	5	-1	-10	-20	-25m-24	-12	-1	6	10M	9	7	6	5	4	3	2	
Winter	2	2	2	1	1	1	0	0	1	0	-5	-10	-11m-10	-6	0	4M	4M	2	2	3	3	3	2	1	
Equinox	6	5	4	6	7	8	8	10	9	2	-11	-25	-33m-29	-18	-5	5	11M	11M	8	6	6	5	4	2	
Summer	3	3	3	4	7	12	12	9	3	-7	-16	-26	-31m-24	-12	0	8	13	14M	10	7	4	2	3	2	

Table 14

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

1981

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.	-37	-36	-34	-31	-14m	-23	-13	-8	-16	-24	-16	5	28	46	57M	53	46	39	31	22	-12	-6	-19	-14	-13
Feb.	-36	-49	-51m	-31	-21	-31	-29	-25	-25	-18	-3	13	42	61	71M	67	70	45	43	32	-20	-17	-34	-48	-71
Mar.	-23	-10	-17	-22	-22	-20	-20	-28	-39	-50	-38	-8	45	71	74	87M	53	23	19	23	17	-21	-61m	-37	-34
Apr.	-34	-66	-104m	-67	-84	-74	-40	-47	-42	-34	-16	36	68	117	131M	115	96	53	32	-1	-11	-12	-11	-5	-17
May	-37	-8	-25	-59	-54	-68m	-50	-48	-38	-37	-8	23	58	69	78M	62	46	37	26	7	6	-1	2	10	-4
June	-18	-19	-11	-6	-23	-33	-41	-29	-46	-52m	-31	-6	31	53	71M	67	58	51	26	-1	2	-11	-19	-17	-23
July	-12	-25	-59	-30	-29	-14	-13	-39	-68m	-62	-36	-5	30	55	40	73	80M	48	13	29	23	16	-4	-20	-26
Aug.	-12	-7	-23	-37	-41	-46	-59	-62m	-46	-33	-5	26	50	76	80M	77	61	35	19	7	0	-18	-19	-27	-23
Sept.	-33	-30	-57	-61m	-55	-41	-41	-47	-28	-24	3	32	65	84M	78	65	54	41	19	5	2	-9	-14	-12	-22
Oct.	-33	-27	-42	-63m	-43	-29	-36	-31	-39	-41	-29	6	38	39	40M	39	36	23	23	24	12	-16	-35	-55	-60
Nov.	-36	-37	-42	-33	-19	-23	-17	-15	-27	-31	-22	11	38	62M	58	53	47	41	46	24	30	-7	-38	-46m	-44
Dec.	-18	-18	-15	-16	-19	-15	-10	-3	2	-11	-13	5	18	49M	45	35	37	31	17	6	-21	-27	-33m	-29	-25
Year	-27	-27	-39m	-38	-37	-34	-30	-31	-34	-34	-17	12	44	70	74M	71	61	40	27	16	1	-10	-23	-24	-30
Winter	-32	-35	-36m	-28	-26	-23	-17	-13	-17	-21	-14	9	31	54	58M	52	50	39	34	21	-11	-14	-31	-35	-39
Equinox	-31	-33	-55m	-53	-61	-41	-34	-38	-37	-37	-20	17	57	91	95M	90	71	36	25	15	5	-15	-30	-27	-33
Summer	-19	-14	-29	-32	-36	-39	-40	-44	-49m	-45	-19	10	43	64	68	71M	62	43	22	11	8	-3	-9	-13	-18

Table 15

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

1981

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.	6	2	1	4	14	14	16M	12	6	-1	-10	-13m	-12	-13m	-11	-9	-4	2	3	5	0	-4	2	2	3
Feb.	2	6	4	3	8	14	16M	14	7	8	3	-3	0	2	-4	-7	-7	-9	-7	-1	-9	-12	-12	-17m	-17
Mar.	18	20	16	18	18	18	34M	26	24	4	-9	-17	-28	-27	-34m	-11	-15	-16	-11	-6	1	-4	-3	-18	-18
Apr.	24	10	-9	-18	-14	-15	-18	2	6	-22	-32	-38	-44m	-19	-8	-2	14	18	33M	30	28	19	29	18	4
May	30	22	24	21	7	-3	-27	-24	-19	-22	-44	-56m	-53	-37	-25	-6	14	30	45M	41	32	20	22	16	12
June	8	11	7	6	9	8	-5	-9	-13	-20	-27	-27	-30m	-25	-7	0	13	26M	23	26M	20	10	1	0	-5
July	-9	-12	-29	-1	3	10	-1	-4	-12	-20	-28	-32m	-31	-28	23	13	46M	33	38	27	11	1	8	5	-28
Aug.	17	24M	19	12	10	7	7	-7	-24	-36m	-36m	-27	-18	-7	-12	-10	-3	10	18	17	18	14	6	3	5
Sept.	16	21	26M	24	25	18	19	0	0	-17	-28	-33m	-32	-27	-18	-10	-7	-5	-5	0	9	8	8	4	10
Oct.	24	20	10	-8	11	18	20	25M	20	8	-6	-20	-26m	-25	-22	-16	-1	-4	1	-4	-9	-2	-1	-4	-9
Nov.	0	7	8	7	7	21M	18	15	9	2	-6	-14m	-11	-13	-11	-8	-6	-3	-3	-8	-4	-9	-5	3	-7
Dec.	8	8	11	10	12	19	23M	18	13	-1	-7	-14	-20	-30m	-19	-8	-6	-4	-2	0	-6	-5	-1	3	1
Year	12M	11	7	6	9	11	8	5	1	-10	-19	-25	-26m	-21	-13	-6	3	6	11	10	7	3	4	1	-4
Winter	4	5	6	6	10	17	18M	14	8	2	-5	-11	-11	-14m	-12	-8	-6	-4	-2	-2	-5	-8	-4	-2	-5
Equinox	21M	18	11	4	10	10	14	13	12	-7	-19	-27	-32m	-25	-20	-10	-2	-2	4	5	7	5	8	0	-3
Summer	11	11	5	9	7	5	-7	-11	-17	-25	-34	-36m	-33	-25	-6	-1	17	24	31M	27	20	11	9	5	-5

Table 16

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

1981

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 0
Jan.	9	4	-2	-4	-7	-14	-15m	-11	-4	0	-5	-8	-13	-12	-5	5	6	6	9	11	20M	13	13	8	4
Feb.	1	3	-3	-8	-10	-8	-12	-14	-16	-21	-22	-22	-25m	-21	-8	2	9	31	32M	26	29	15	20	20	7
Mar.	-11	-17	-12	-11	-13	-16	-24	-19	-15	-17	-26	-34m	-33	-17	1	27	48	50M	39	24	19	26	20	5	1
Apr.	-6	-23	-44	-76	-82m	-63	-43	-20	-14	-11	-15	-23	-18	-13	8	38	60	73M	68	72	60	39	27	13	0
May	4	-11	-16	-23	-44	-39	-48m	-36	-27	-19	-25	-28	-19	3	17	34	42	52	55M	52	35	25	13	6	7
June	1	-5	-8	-8	-3	-3	-3	-9	-6	-13	-24	-30	-31m	-20	-9	4	9	18	32	34M	25	24	15	8	4
July	-14	-21	-55m	-52	-40	-41	-39	-23	-9	-13	-22	-31	-33	-16	34	41	56	63	73M	62	53	27	10	-19	-9
Aug.	-4	-17	-16	-14	-10	-3	2	2	-3	-14	-28	-34m	-33	-25	-7	11	27	37M	37M	29	24	21	17	8	-1
Sept.	1	-3	-3	-7	-11	-15	-13	-7	-12	-15	-20	-25	-27m	-19	-2	11	20	28	33M	25	18	17	11	5	2
Oct.	-20	-19	-34m	-34m	-29	-27	-23	-23	-21	-22	-27	-33	-30	-17	13	34	58	61M	51	52	40	17	19	3	-8
Nov.	6	4	-5	-14	-13	-12	-14	-13	-9	-11	-16	-24m	-23	-15	-1	4	11	18	20	28M	25	28M	24	9	1
Dec.	-2	-2	-5	-8	-7	-10	-14	-18m	-17	-9	-10	-13	-9	-7	6	13	13	14	14	17	20M	16	12	5	2
Year	-2	-8	-16	-21	-32	-20	-20	-15	-12	-13	-20	-25m	-24	-14	4	19	30	38	39M	36	31	23	17	6	1
Winter	3	2	-4	-9	-9	-12	-14	-14	-12	-11	-14	-17	-18m	-14	-3	6	9	17	18	20	23M	18	17	10	3
Equinox	-9	-15	-23	-32	-34m	-30	-25	-17	-15	-16	-22	-28	-27	-16	5	28	47	53M	48	43	35	25	20	7	-1
Summer	-3	-13	-23	-24	-24	-21	-22	-16	-11	-14	-24	-30m	-28	-14	3	23	34	43	50M	45	35	25	14	1	1

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	1413	3242	20	1322	2223	17	3342	3325	25	4323	4333	25
2	1111	3433	17	3333	4432	25	3333	3322	22	0122	3332	16
3	3121	2232	16	3132	2341	19	2132	1133	16	2323	4432	23
4	4322	2242	21	3012	1244	17	2422	2121	16	2123	3333	20
5	1111	3232	14	2332	2110	14	1445	5754	35	1023	3211	13
6	2212	3222	16	0003	3344	17	3223	3221	18	2243	3312	20
7	2112	3212	14	3112	5565	28	2234	2342	22	2133	3331	19
8	2112	2333	17	5420	3424	24	2122	4210	14	2133	2433	21
9	2201	3113	13	4423	2220	19	1013	2221	12	3312	3221	17
10	1112	2244	17	1011	2110	7	1123	3220	14	0023	3221	13
11	3423	3333	24	0012	3334	16	1222	3220	14	0133	5534	24
12	2112	1011	9	4212	2222	17	1033	3334	20	5544	6545	38
13	2212	2121	13	1122	3221	14	3234	4435	28	7764	4544	41
14	1112	3100	9	0101	1200	5	3444	3442	28	4344	4411	25
15	2112	2123	14	0002	3433	15	2433	2333	23	0133	3321	16
16	3323	3221	19	2313	2321	17	3223	2235	22	3134	3232	21
17	2111	3232	15	1112	2111	10	5222	3334	24	2343	3334	25
18	2112	2100	9	1012	2113	11	3333	3322	22	3123	2423	20
19	0112	2111	9	3112	2111	12	2123	2232	17	5424	4432	28
20	2012	2122	12	1023	3321	15	1123	3300	13	4533	4445	32
21	1102	2021	9	0122	2021	10	0033	2134	16	3343	4444	29
22	2012	3222	14	0111	2124	12	0133	2211	13	4343	4443	29
23	1003	4322	15	4212	3322	19	0023	3210	11	3444	4333	28
24	2122	3222	16	1222	3354	22	0013	2122	11	1343	4442	25
25	1113	3222	15	4343	3244	27	3443	4434	29	3323	3433	24
26	1012	3221	12	4323	4364	29	3223	3334	23	3354	6455	35
27	3113	3112	15	3333	3343	25	2223	2322	18	5543	4423	30
28	3222	3233	20	3221	3234	20	2123	3323	19	1112	3314	16
29	3333	3233	23				2234	3421	21	3224	3333	23
30	2112	3211	13				3223	3344	24	2122	3121	14
31	2443	2244	25				5323	4344	28			

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	1233	2333	20	2122	2322	16	4232	3322	21	2332	2444	24
2	3112	1211	12	1122	3312	15	2343	3333	24	1222	3434	21
3	1122	2211	12	2223	3433	22	1112	2234	16	2233	3332	21
4	1111	2211	10	1121	1221	11	2122	2323	17	2432	2321	19
5	2132	3220	15	3022	2221	14	3223	3432	22	0343	3333	22
6	1222	2321	15	1213	4233	19	3333	3332	23	4333	3312	22
7	1222	2111	12	3454	4564	35	2233	3432	22	1222	2332	17
8	1323	3443	23	4322	2332	21	3233	1321	18	2122	1102	11
9	4554	3423	30	1121	3321	14	2222	2222	16	3211	2223	16
10	3323	2445	26	1122	1321	13	1022	2211	11	2433	3312	21
11	5555	4223	31	2312	3221	16	1232	3332	19	2222	3343	21
12	2222	2433	20	1211	2211	11	2323	3434	24	3212	2222	16
13	2432	2101	15	1112	2211	11	2222	3332	19	2232	2223	18
14	1332	3333	21	0012	1321	10	3112	2321	15	3121	3223	17
15	3653	3433	30	2233	3233	21	1111	1221	10	1211	2244	17
16	4445	4544	34	4321	3444	25	2232	1321	16	3311	2312	16
17	2111	2325	17	3322	2122	17	1244	4335	26	4243	3433	26
18	4554	3442	31	2132	3332	19	3222	3222	18	4232	2433	23
19	1334	3413	22	2132	3432	20	2222	3331	18	2232	3221	17
20	4443	4353	30	2332	3331	20	2213	4321	18	2212	1331	15
21	1122	3233	17	2223	3322	19	3212	1211	13	2133	3433	22
22	2233	2321	18	1122	2332	16	2323	4434	25	3232	2332	20
23	0333	3442	22	1212	2311	13	3134	4544	28	4443	4535	32
24	3332	3433	24	1123	3341	18	2222	2433	20	4322	3444	26
25	2444	3454	30	1222	3423	19	3453	8777	44	4132	3433	23
26	3211	2322	16	2223	3322	19	7544	4533	35	1113	2332	16
27	1223	2332	18	3231	2333	20	4543	3423	28	2133	4543	25
28	3413	3312	20	2232	2321	17	2221	2221	14	3233	3334	24
29	2313	2322	18	2254	4322	24	2212	2212	14	3233	4332	23
30	1221	2322	15	3221	3343	21	1222	3332	18	4433	2323	24
31	2222	2221	15				3233	1323	20	3432	3210	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	0022	3222	13	2223	3312	18	0113	3211	12	0011	2322	11
2	2233	3432	22	3123	3353	23	1112	2222	13	2004	1223	14
3	2133	3211	16	1235	4433	25	2213	3331	18	1112	2122	12
4	2013	3223	16	3323	4332	23	0013	3233	15	2212	2123	15
5	3333	2313	21	2113	2202	13	2232	3212	17	2021	2133	14
6	2223	2312	17	0023	3213	14	3223	3222	19	1211	2201	10
7	1113	2211	12	4323	3364	28	4333	3323	24	0013	1112	9
8	2323	3124	20	3343	2333	24	2444	3421	24	2223	3342	21
9	2223	2222	17	3423	2332	22	1013	3211	12	3212	2222	16
10	2122	3332	18	2223	4454	26	1124	3233	19	1321	1111	11
11	4433	3223	24	4344	3433	28	2333	5444	28	2112	1122	12
12	2122	2231	15	3332	1100	13	5534	2311	24	3223	4443	25
13	3332	2222	19	1123	3235	20	0012	1223	11	3322	2211	16
14	1112	3322	15	6633	2345	32	2214	4444	25	1100	2111	7
15	2133	3321	18	2223	3322	19	3332	3321	20	1012	2033	12
16	2222	3222	17	1223	1221	14	3312	3234	21	1020	0113	8
17	1110	2220	9	1244	4332	23	4214	3454	27	0002	2144	13
18	1012	1254	16	3113	2311	15	3224	3343	24	3222	2323	19
19	4343	4342	27	2334	4333	25	3212	2333	19	3113	3212	16
20	2123	2322	17	3324	5565	33	3122	2224	18	1211	2122	12
21	3123	1223	17	4433	3424	27	3122	2334	20	2012	2122	12
22	2423	2113	18	3334	5656	35	3222	2203	16	0001	1210	5
23	1122	2112	12	5433	3223	25	2013	3434	20	0221	1213	12
24	1123	2233	17	0013	3434	18	3222	2132	17	3321	1223	17
25	3322	3311	18	2434	2321	21	4334	3313	24	2212	2222	15
26	2343	3354	27	1133	3211	15	2111	2131	12	2212	1000	8
27	3433	3342	25	3123	3322	19	1011	1111	7	1111	2122	11
28	3133	2212	17	2123	3254	22	3111	1213	13	4223	3221	19
29	2123	4323	20	1123	2214	16	2112	3101	11	1443	3333	24
30	2234	4324	24	2223	3313	19	0001	1000	2	2442	4332	24
31				1112	2211	11				2234	3322	21

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 29	0656	Apr 11	0724	May 17	2302	July 25	1323	Oct 13	2241
Feb 6	0847	11	1339	June 6	0947	Aug 10	0434	22	0526
8	1345	18	1502	7	0824	17	0046	Nov 8	1619
20	0917	26	0813	7	1746	23	1257	11	1239
Mar 1	0737	May 1	0744	29	0610	Sept 8	2146	16	2029
2	0655	10	1753	July 16	0442	18	1911	25	0228
5	0535	10	2209	17	0802	Oct 2	2022	Dec 12	0145
12	1824	14	1857	23	0617	10	1434	29	0456
Apr 7	1953	15	0252	25	0515				

Table 19 PRESUMED SOLAR FLARE EFFECTS (S.F.E's)

Date	Time (G.M.T.)			Date	Time (G.M.T.)		
	Begin	Max	End		Begin	Max	End
May 4	0838	0840	0842	May 5	1407	1410	1414

Table 20 GIANT PULSATIONS (p.g's)

Date	Time (G.M.T.)			Date	Time (G.M.T.)		
	Begin	Max	End		Begin	Max	End
NIL							

TABLE 21

ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

Year	D		H	I		X	Y	Z	T
	o	'	y	o	'	y	y	y	y
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	-5986	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

TABLE 21 (Contd.) ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

Year	D o ' .	H y	I o ' .	X y	Y y	Z y	T y
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 56.1	17129	-4834	43908	47378
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

TABLE 21 (Contd.) ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS

<u>Year</u>	<u>D</u> <u>o '</u>	<u>H</u> <u>y</u>	<u>I</u> <u>o '</u>	<u>X</u> <u>y</u>	<u>Y</u> <u>y</u>	<u>Z</u> <u>y</u>	<u>T</u> <u>y</u>
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 10.2	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
1980	-10 50.4	18980	66 52.7	18641	-3570	44450	48332
1981	-10 40.4	18990	66 52.1	18662	-3517	44455	48341

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METEOROLOGICAL SERVICE

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ERRATUM

In headings of Table 7 (pp 80-91), Horizontal Component should read 18000y+ in each case. (1800y+ is shown in text).