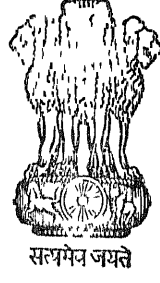


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KODAIKANAL OBSERVATORY

Bulletin No. CLXXI

Published on 28th June, 1969 (7 Asadha 1890)

KODAIKANAL OBSERVATORY

BULLETIN No. CLXXI

PART I

Summary of Prominence and Calcium Flocculus Observations for the first half of 1963.

The results of observations of prominences and calcium flocculi made at Kodaikanal Observatory during the first half of 1963 supplemented by data computed from photographs supplied by Meudon Observatory for those days on which Kodaikanal had imperfect or no Observations are summarized in this bulletin.

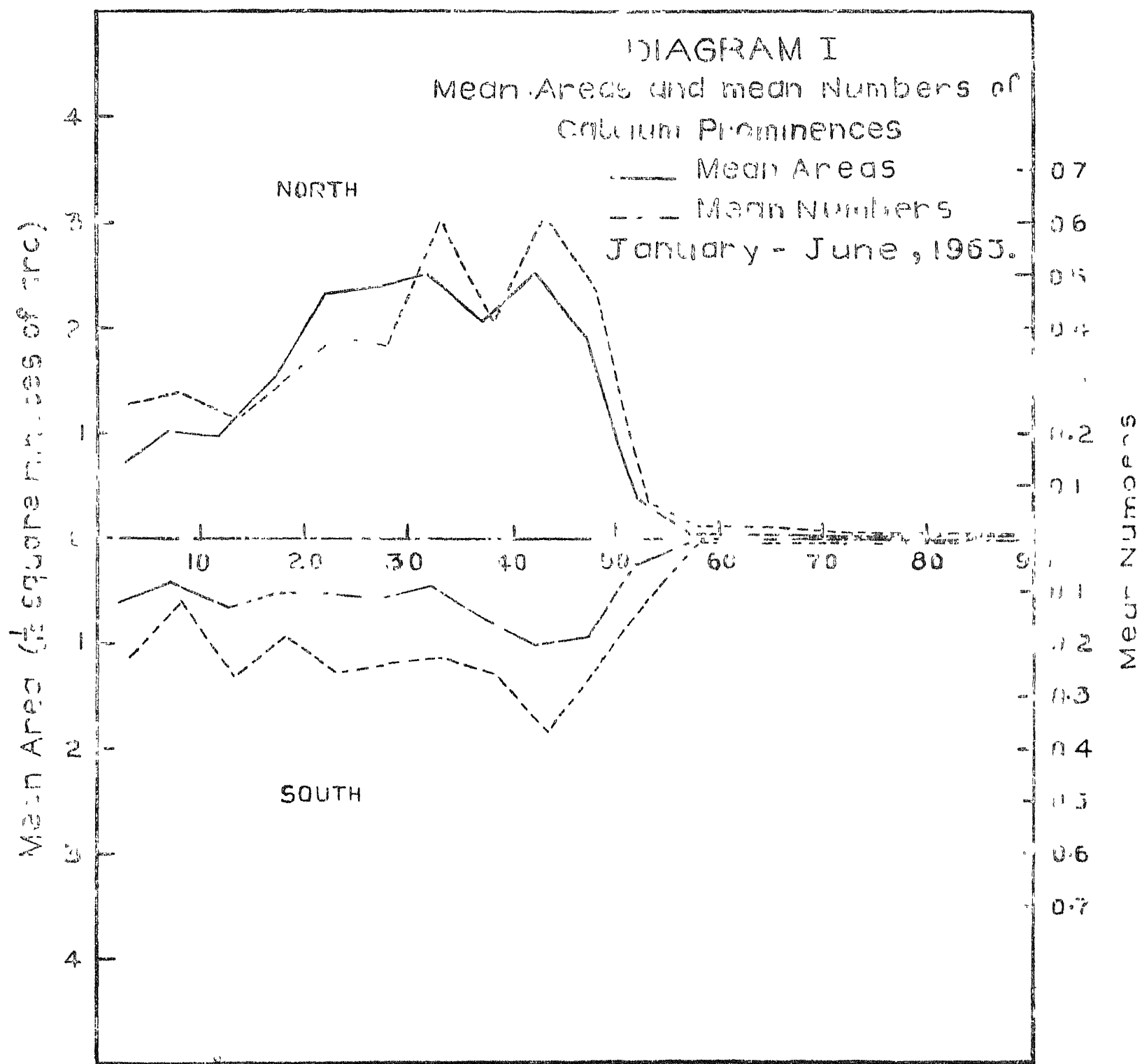
Calcium prominences on the limb —During the half year under review, photographs of calcium prominences at the limb were obtained at Kodaikanal on 140 days which were counted as 121½ effective days after giving due weightage to the photographs according to their quality. Spectroheliograms for 13 days were obtained from Meudon Observatory. In all, complete observations were available for 131 effective days

	Combined data	
	Mean daily area (Sq minutes)	Mean daily number
North	1 84	4 12
South	0 67	2 51
Total	2.51	6 63

These figures when compared with the corresponding values of previous half year show a slight increase of activity in area amounting to 23.7%.

The distribution of areas and numbers in five degree ranges of latitude as obtained from the combined data is presented in diagram I.

In the northern hemisphere, there are two peaks of activity in the latitude belts 30°—35° and 40°—45°. The maximum activity in the southern hemisphere is in the latitude range 40°—45°.



The monthly, quarterly and half yearly areas, numbers, heights and extents of prominences as derived from all available photographs are tabulated below —

1963 Months	No of effective days	Area (Sq minutes)	Numbers	Daily means		Mean height	Mean extent
				Area (Sq minutes)	Number		
January	19½	61 10	132	3 17	6 85	45 23	3 48
February	21½	37 30	139	1 73	6 47	38 38	2 65
March	24½	43 25	139	1 75	5 62	37 66	2 51
April	24½	62 80	146	2 59	6 02	36 95	2 71
May	21½	66 00	163	3 07	7 58	42 94	2 75
June	19¼	58 60	149	2 97	7 54	42 62	3 43
First Quarter	65½	141 65	410	2 16	6 26	40 34	2 87
Second Quarter	65½	187 40	458	2 86	6 99	40 93	2 96
First half year	131	329 05	868	2 51	6 63	40 65	2 92

The distribution of prominences about the sun's axis of rotation is given below

1963, January - June

	East	West	Percentage East
Total Area (Sq minutes)	136 90	192 15	41 60
Total numbers	412	156	47 50

Prominences projected on the disc as absorption markings

During the half-year under review photographs of the sun's disc in H-alpha line were obtained at Kodaikanal on 103 days. H-alpha spectroheliograms were also received for 38 days from Meudon Observatory. On the whole records were available for 103½ effective days.

The mean daily area in millionths of the sun's visible hemisphere (uncorrected for foreshortening) and the mean daily number of H-alpha dark markings as derived from the combined photographs are given below —

	Combined data	
	Mean daily area (millionths of sun's visible hemisphere)	Mean Daily number
North	1567	11 89
South	634	5 32
Total	2201	17 21

On comparing with the previous half year's values, the figures show a decrease being 13.6% in area and 19.8% in number.

The distribution of the areas of the absorption markings in 5 degree ranges of latitude as obtained from the combined data is shown in diagram II.

The total area of dark markings in the northern hemisphere is considerably more than in the southern hemisphere with the peak of activity in the latitude belt 25°-30°.

The distribution of total area and numbers of dark markings east and west of the sun's axis of rotation is given below —

1963, January—June

	Combined data		
	East	West	Percentage East
Total area (millionths of sun's visible hemisphere)	1,10,489	1,17,344	48.50
Total numbers	895	886	50.25

Summary of calcium flocculus Observations

During the half-year under review, calcium flocculi photographs were obtained on 160 days. Spectroheliograms for 6 days were obtained from the Meudon Observatory. On the whole records were available for 143½ effective days. The distribution of areas of calcium flocculi east and west of the sun's axis of rotation is given below

1963, January - June

	Combined data		
	East	West	Percentage East
Total area (in Millionths of sun's visible hemisphere)	2,91,313	3,03,500	49.0

The mean daily area in millionths of sun's visible hemisphere (uncorrected for foreshortening) of the calcium flocculi from the combined photographs are given below —

	North	South	Total
Mean daily area (in Millionths of sun's visible hemisphere)	3068	1077	4145

Compared to previous half-year there is decrease in activity by 33.31%.

Particulars of sudden disappearances, surges and active prominences are given in tables I and II.

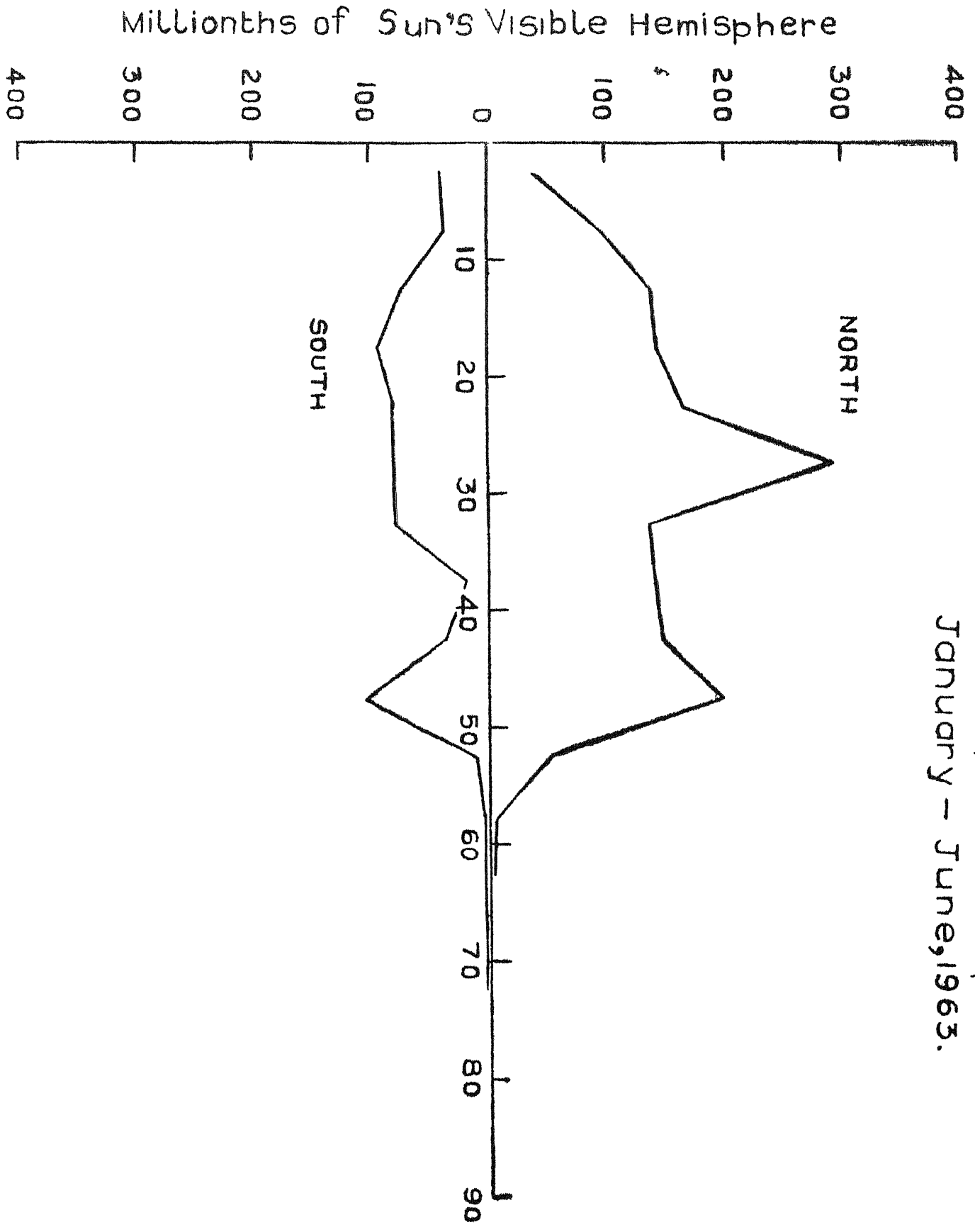


DIAGRAM II
Mean Area of H-alpha Absorption Markings
January - June, 1963.

*Solar Flare Patrol**Observations with the Hale spectrohelioscope*

Details of Doppler displacements in the H-alpha line observed in prominences and dark markings are given below -

	North	South	East	West	Total	Displacements to Red and Violet
Displacements in Prominences	9	1	8	2	10	10
Displacements in dark markings	3	1	3	1	4	4

Particulars of solar flares are given in Table III. The times of solar patrol with the spectrohelioscope and Lyot filter are shown in the accompanying diagrams.

Solar Radio Emission

Table IV contains observations of all outstanding occurrences observed at Kodaikanal.

Our thanks are due to the Meudon Observatory for the photographs supplied by them.

PART II

Magnetic observations for the first half of 1963

Brief descriptions of the absolute instruments, the variometers and the system of observations are available in Bulletins Nos. CXXXII and CXXXVI of this Observatory. The data given in this Bulletin are derived mainly from the records of La Cour Instruments but in the case of failure of La Cour magnetograph Watson magnetograms have been used.

The adopted values of scale coefficients for the Declination, Horizontal Force and Vertical Force for the First half of 1963 were 14 γ /cm, 29 γ /cm and 120 γ /cm respectively.

PART III

Ionospheric observations for the First half of 1963

A description of the system of ionospheric observations at Kodaikanal with a brief description of the Ionosphere Recorder has been given in the Bulletin No. 146 of this Observatory. The present Bulletin contains half-hourly values of eleven ionospheric parameters viz. foF2, foF1, foE, foEs, fbEs, f-min, h'f2, h'F, h'E, h'Es and (M3000)F2 with symbols and terminology as recommended by the Special Committee on world-wide Ionospheric Soundings to the URSI/AGU in its First Report (Brussels, September 2, 1956).

Kodaikanal Observatory,
June 1966

M.K. Vainu Bappu,
Director.

TABLE I
Sudden Disappearances

Date 1963	Time when object last observed before acti- vation (U T)	Time when disintegra- tion first obs- erved (U T)	Time when object has disappeared (U T)	Approximate position of Centre		Greatest ex- tension of filament	Importance	Remarks
				Lat	Long			
February 27	0220		--	43°S	90°E	5°	1	Actual disintegration not observed. Prominence was not seen at 0835.
April 1	1046	-	--	37°S	18°W	25°	2	The dark-marking was not seen on 5th.
April 25	0430		--	02°S	90°E	1°	1	Prominence become very faint by 0430 U T. Real start has not been observed.
May 27	0815	--	--	34°N	52°E	15'	1	Actual disintegration not observed. Dark-marking was not seen at 1000 U T when the observations commenced again.
June 14	0620	-	-	03°N	01°E	5°	1	The dark-marking was not seen on 15th.
June 28	0652	-	-	37°N	04°E	2°	1	Actual disintegration not observed. Dark-marking was not seen on 29th.

TABLE II

Surges, Active Prominences etc

Date 1963	Pheno- menon	Importance	Time in U T		Position (Heliographic)		Direction of out flow	Remarks	
			Beq	End	Lat	Long			
1	2	3	4	5	6	7	8	9	
January	13	DSD	1	0608	0620	08°N	38°E		(To violet 1.00 Å and to Red 1.40 Å at 0610 hrs)
	15	DSD	2	0812	0846	10°N	10°E		B (To violet 7 Å and to Red 2.2 Å at 0822 hrs)
	23	APR	1	0456	0800	23°N	90°W	↑	
February	1	BSI	1	0814	0918	13°S	90°W	↑ ₁₁	(To violet 2.6 Å and to red 2.2 Å at 0845 hrs)
	2	BSI	1	0442	0530	14°N	90°W	↑	(To violet 1.0 Å and to red 0.8 Å at 0443)
	17	DSD	1	0728	0740	15°N	73°E		Was seen only when shifted to red 0.88 Å and 1.20 Å at 0728 and 0740 respectively
	18	APR	1	0310	0755	35°N	90°E		
	26	APR	1	0530	0635	13°S	90°E		Observation through passing clouds
	27	APR	1	0410	0500	29°N	90°W		
March	4	BSI	1	0242	0255	15°N	90°E	↑	Observed through passing clouds
	8	DSD	1	0455	0519	15°N	19°E		A (To violet 1.7 Å and to Red 1.8 Å at 0457)
	12	APR	2	0435	0715	26°N	18°W		A
	31	BSI	1	0443	0455	08°N	90°W	↑	(To violet 0.9 Å and to red 0.9 Å at 0445 hrs)
April	14	BSI	1	0238	0311	19°N	90°W	↑	A Observation through clouds. To Violet 2.0 Å and to Red 1.2 Å at 0240 hrs
	14	BSL	1	0403	0425	23°N	90°W	↑	A To violet 1.12 Å and to red 3.4 Å at 0407 hrs
	14	BSI	1	0545	*0740	20°N	90°W		↑ *End of observation and not end of activity
	22	BSL	1	0642	*0648	10°S	90°W		*End of observation and not end of surge. To violet 0.8 Å and to red 1.4 Å at 0642 hrs
	24	BSL	1	0535	0600	12°N	90°W	↑	To Violet 0.88 Å and to red 1.00 Å at 0548 hrs

TABLE II--Contd

1	2	3	4	5	6	7	8	9
	27	BSI	1	0715	0735	12°N	90°E	To violet 1 28Å and 1 00Å to red at 0720
	20	DSD	1	0247	0305	16°S	68°W	B
May	8	APR	1	0110	0800	19°N	90°E	P
	11	BSI	1	*0215	0240	21°N	90°W	A *beginning of observation and not beginning of the phenomenon
	11	APR	1	0250	0545	31°N	90°W	P
	13	BSI	1	*0250	0320	06°N	90°E	G (To violet 1 40Å and to red 1 32Å at 0255 hrs and to violet 1 68Å and to red 2 00Å at 0312 hrs) *Beginning of observation and not beginning of surge
	13	BSI	1	0446	0513	06°N	90°E	G (To violet 0 90Å and to red 1 40Å at 0446) Observation through passing clouds
	26	BSI	1	0902	*0918	08°N	90°W	G (To violet 0 92Å and to red 0 92Å at 0902) *End of Observation and not end of surge
June	16	DSD	1	*0343	0430	13°N	60°W	A (To violet 1 72Å and to red 1 20Å at 0345 hrs and to violet 1 72Å and to red 0 0Å at 0401 hrs) *Beginning of observation and not beginning of surge
	17	DSD	2	*0400	0430	01°N	37°W	The surrounding region became brighter during the time of dark surge (To violet 1 60Å and to red 1 60Å at 0400 and to violet 1 92Å and to red 1 80Å at 0411 hrs)
	18	APR	2	0310	0420	12°N	90°W	G (0 60Å to violet and 1 60Å to red at 0405 hrs)
	26	DSD	1	0517		11°N	43°E	A (To violet 0 80Å and to red 1 20Å at 0517 hrs)

TABLE III
Solar Flares

Date 1963	Time in U T \			Mean Latitude	Mean Longitude from Central Meridian	Importance	Maximum width of H-alpha line observed Å	
	Beg h m	Max h m	End h m					
January	15	0835	0836	0845	05°N	13°E	1 ⁻	1.7
	16	0248	0252	0254	07°N	70°E	1	1.76
	17	0725	0725	0738	10°N	72°E	1 ⁻	1.44
March	18	0250	0255	0302	10°N	55°W	1 ⁻	1.44
	30	0835	0840	0845	07°S	32°E	1	1.44
April	6	*0151		**0159	16°N	18°E	1 ⁻	
	18	0418	0420	0428	17°S	39°W	1	2.00
	20	0247	0251	0300	10°S	68°W	1	1.56
May	1	*0600		**0611	17°N	45°E	2 (Probably)	1.92
	13	*0240	0246	0300	11°N	17°E	1	1.60
	27	*0615		**0617	11°N	18°E	1 ⁻	
June	8	*0749		0819	14°N	52°E	1	1.60
	14	*0225	0228	0245	09°N	34°W	1	2.00
	14	*0632		0712	03°N	01°E	1 ⁺	1.80
	17	0343	0345	0355	10°N	75°W	1 ⁻	1.52
	26	*0307		0319	06°N	66°W	1 ⁻	1.80

*Beginning of observation and not the beginning of flare
 **End of observation and not the end of flare.

TABLE IV
SOLAR RADIO EMISSION

Outstanding occurrences
JANUARY—JUNE, 1963

Frequency 100 Mc/sec

Normal observing

Period 0300 hrs to 1000 hrs U T

Station Astrophysical Observatory,

Kodakanal

(Latitude 10 2° N Long 77 5° E)

Date	Starting time in U T	Duration in minutes	Type	Maximum flux intensity ($\times 10^{-12}$ w m ⁻² (c/s) ²)		Remarks
				Instantaneous	Smooth	
1	2	3	4	5	6	7
	II M					
29-1-63	0355	235D	CA	> 94		
4-4-63	0612	1 0	SD	113		
8-4-63	0647	5 0	SD	14		
15-4-63	0650	7 0	SD	50		
16-4-63	0524	10 0	SD	67		
17-4-63	0347	343 0	CA	306		
18-4-63	0249	318	CA	169		
19-4-63	0648	4	SD	180		
20-4-63	0429	23	ESD	209		
26-4-63	0351	24	ESD	275		
1-5-63	0536	40	ESD	> 222		Flare of importance 2 Complete short wave radio fade out
12-5-63	0531	1 0	SD	> 7		
13-5-63	0710	1 5	SD	> 6		
17-5-63	0510	142	CA	31		
18-5-63	0649	1 0	SD	183		
19-5-63	0610	1 0	SD	> 8		
21-5-63	0425	322	ECA	> 69		
26-5-63	0332L	313	CA	> 12		
27-5-63	0535	121	ECA	33		
11-6-63	0600	195	ECA	> 137		
12-6-63	0245	300	CA	> 254		
13-6-63	0250	450D	CA	> 267		
14-6-63	0244	466	CA	> 559		
15-6-63	0246	373	CA	> 164		

MAGNETIC DATA

TABLE 5
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2° plus tabular quantities

Date	Hours GMT														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1	39 1	39 2	39 4	39 4	39 2	39 1	40 1	40 8	40 9	39 9	38 9	38 2	38 7	38 8	38 8
2†	39 2	39 2	39 2	38 9	38 8	39 1	40 1	40 3	40 3	39 5	38 9	38 2	38 5	38 8	38 8
3	40 1	40 2	40 5	40 5	40 1	40 5	41 6	41 5	40 6	39 2	38 2	37 7	38 0	38 2	38 1
4	39 4	39 5	39 6	39 6	39 2	39 2	40 4	40 2	40 2	39 2	38 9	38 7	38 4	38 2	38 2
5	39 4	39 5	39 6	39 4	39 2	38 8	38 1	39 9	40 1	39 2	38 9	38 8	38 8	38 7	38 1
6†	39 4	39 1	39 2	39 0	38 8	38 1	37 9	38 7	40 0	40 4	39 4	38 6	38 3	38 1	38 6
7	40 0	40 2	40 4	39 1	38 7	37 9	38 7	38 7	39 1	39 0	39 8	39 1	38 4	38 2	38 1
8	39 1	39 3	39 4	38 8	38 0	37 7	38 4	37 9	39 0	40 1	40 0	39 3	38 0	37 7	38 1
9†	38 7	39 3	39 3	39 0	38 8	38 6	38 7	39 1	40 1	40 0	39 3	39 0	38 8	38 4	38 0
10	39 1	39 0	39 3	38 8	38 3	37 7	38 4	38 6	38 7	38 7	38 1	37 6	38 3	38 7	38 6
11	39 0	39 3	39 3	38 7	38 7	38 8	39 0	39 0	38 8	39 1	38 7	38 7	38 0	38 6	38 7
12	39 0	39 1	38 8	39 0	38 8	38 0	37 4	38 0	38 3	38 8	38 7	37 9	38 1	38 0	37 9
13††	40 1	40 2	40 4	40 7	39 0	38 6	38 0	37 6	37 4	38 0	37 6	37 4	37 3	37 3	37 3
14††	39 1	39 8	40 0	40 2	40 1	38 9	38 7	38 4	37 7	37 5	37 5	36 3	37 4	37 4	37 3
15††	39 2	39 4	39 2	39 1	38 5	37 8	37 8	38 0	39 7	37 8	37 7	37 1	37 5	37 7	37 5
16	39 4	39 4	39 4	39 1	38 1	38 1	39 4	38 5	38 1	38 2	37 7	37 4	37 4	37 5	37 5
17	39 1	39 1	38 9	38 5	37 4	38 2	39 2	39 4	37 8	38 7	38 1	37 8	37 4	37 5	37 5
18	38 7	39 2	39 4	38 9	38 3	39 0	39 3	40 3	39 2	38 5	38 3	37 6	38 2	38 3	38 1
19	39 2	39 6	40 0	39 3	39 3	39 5	40 3	39 6	39 2	38 5	37 8	37 9	38 2	38 2	38 1
20	39 3	39 5	40 0	40 6	39 5	39 3	40 3	40 4	39 3	38 3	38 2	38 1	38 2	38 9	38 9
21	39 2	39 5	39 6	39 2	38 2	38 9	39 3	39 2	38 9	38 5	38 3	38 1	38 5	38 8	38 9
22	39 6	40 4	40 3	40 0	39 1	38 9	40 7	40 5	39 4	39 6	39 0	39 3	39 1	39 1	38 7
23	40 4	40 5	41 1	40 4	39 4	39 6	39 6	40 0	39 6	39 4	39 0	39 1	39 4	39 3	39 1
24	40 4	40 8	41 1	40 1	38 9	39 4	40 0	39 6	38 1	38 7	39 3	38 7	39 3	39 3	39 4
25	40 4	40 7	41 1	40 0	38 6	39 0	41 8	42 1	40 5	39 0	38 2	38 3	38 7	39 0	38 9
26	39 6	40 4	40 3	39 5	39 8	40 9	41 9	41 1	40 2	39 1	38 4	39 7	39 7	39 2	39 1
27†	39 8	40 2	40 4	38 7	38 3	39 0	40 5	39 5	39 4	38 4	38 4	38 3	38 3	39 1	39 1
28†	39 9	40 6	41 2	40 5	40 1	40 5	41 1	40 5	39 2	38 4	38 3	38 5	39 4	39 2	39 4
29	40 4	40 8	40 8	40 1	39 9	40 1	41 3	41 1	39 8	38 5	38 3	38 4	38 7	39 1	39 1
30††	41 1	41 1	41 5	42 1	41 2	40 6	40 5	39 5	38 5	37 8	36 3	36 6	37 6	38 0	38 4
31††	37 6	37 8	38 6	39 8	41 0	41 3	41 2	39 8	38 5	37 7	36 0	35 8	37 1	37 1	37 1
Mean	39 5	39 7	39 9	39 6	39 1	39 1	39 7	39 6	39 3	38 8	38 4	38 2	38 3	38 4	38 4
Mean†	39 4	39 7	39 9	39 2	39 0	39 1	39 7	39 6	39 8	39 3	38 9	38 5	38 7	38 8	38 8
Mean††	39 4	39 7	39 9	40 4	40 0	39 4	39 2	38 7	38 4	37 8	37 0	36 7	37 4	37 5	37 5

† Five International quiet days
 †† Five International disturbed days
 Δ Loss of record, day omitted for means

TABLE 5
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean time)
 2° plus tabular quantities

January										Maximum				Minimum				Phase	Date
Hours G M T										Mag.		Time		Time		Mag.			
15	16	17	18	19	20	21	22	23		Time	Mag.	Time	Mag.	Time	Mag.	Time	Mag.		
										H	M	H	M	H	M	H	M		
38 9	38 7	38 7	38 6	39 1	39 1	39 1	38 9	39 1	39 2	07	30	11	2	11	15	38 1	3 1	1	
38 8	38 9	39 1	39 1	39 2	39 4	39 4	39 6	39 9	39 2	07	15	40	5	11	15	38 1	2 1	2†	
38 5	38 4	38 9	38 8	38 8	38 9	39 1	39 1	39 4	39 4	06	15	11	7	11	00	37 7	4 0	3	
38 4	38 2	38 2	38 8	38 8	38 8	38 9	38 9	39 1	39 0	06	00	40	3	13	15	38 1	2 2	4	
38 4	38 5	38 5	38 7	38 7	38 8	38 9	39 1	39 2	39 0	07	25	40	2	13	30	38 0	2 2	5	
38 6	38 7	38 7	38 7	39 0	39 0	39 3	39 1	39 3	39 0	08	55	40	5	06	00	37 9	2 6	6†	
38 1	38 1	38 1	38 1	38 1	38 2	38 1	38 7	38 8	38 8	02	00	40	4	04	55	37 7	2 7	7	
38 1	38 4	38 7	38 1	38 3	38 6	38 7	38 7	38 7	38 6	09	00	40	1	04	45	37 4	2 7	8	
38 3	38 4	38 6	38 6	38 3	38 4	38 7	38 7	38 8	38 8	08	00	40	1	13	45	37 9	2 2	9†	
38 4	38 1	38 3	38 4	38 4	38 7	38 7	38 7	38 7	38 5	02	00	39	3	11	15	37 4	1 9	10	
37 9	38 0	38 0	38 0	37 7	37 9	38 0	37 9	38 6	38 5	02	30	39	4	19	00	37 7	1 7	11	
38 0	38 6	38 1	38 3	38 1	38 0	38 7	39 1	39 8	38 4	23	55	40	1	05	55	37 3	2 8	12	
37 7	37 7	37 9	38 0	38 1	37 9	38 0	38 7	38 8	38 3	02	30	41	1	11	55	37 2	3 9	13††	
37 4	37 5	38 0	38 0	38 1	38 2	38 1	38 1	38 7	38 3	02	30	40	3	10	55	36 1	1 2	14††	
37 3	37 5	37 7	38 0	38 1	37 8	37 8	38 0	38 7	38 1	01	00	39	4	11	30	37 3	2 1	15††	
37 7	37 7	38 0	38 0	38 1	38 5	38 6	38 8	38 9	38 3	01	15	39	5	11	00	37 4	2 1	16	
37 5	38 0	37 8	37 8	38 0	38 1	38 1	38 2	38 8	38 2	07	00	39	4	12	00	37 4	2 0	17	
38 2	38 3	38 5	38 3	38 6	39 0	39 2	39 3	39 3	38 8	06	55	40	4	14	00	38 1	2 3	18	
37 9	38 1	38 2	38 1	38 1	38 2	38 5	38 9	39 2	38 7	06	30	40	4	10	00	37 8	2 6	19	
38 1	38 2	38 5	39 2	39 3	39 0	39 3	38 9	39 3	39 1	02	30	40	9	13	55	37 8	3 1	20	
38 5	38 8	38 8	39 0	39 2	39 2	39 0	39 5	39 5	38 9	07	00	39	6	11	00	38 1	1 5	21	
39 1	39 0	39 1	39 0	39 1	39 3	39 3	39 1	39 8	39 4	06	00	40	7	14	00	38 7	2 0	22	
39 1	39 3	39 3	39 3	39 3	39 7	39 8	39 8	40 0	39 6	02	00	41	1	10	00	39 0	2 1	23	
39 4	39 3	39 3	39 1	39 4	39 1	39 6	39 6	39 7	39 5	07	00	41	1	08	30	38 3	2 8	24	
39 1	39 0	39 0	39 3	39 3	39 1	39 3	39 3	39 4	39 5	06	30	42	4	10	00	38 2	4 2	25	
39 2	39 1	39 1	39 2	39 4	39 2	39 5	39 8	39 7	39 7	05	45	42	2	10	00	38 1	3 8	26	
39 2	39 4	39 4	39 4	39 4	39 4	39 5	39 4	39 5	39 2	02	30	41	1	11	00	38 3	2 8	27†	
39 5	39 2	39 4	39 4	39 7	39 5	39 5	39 7	39 8	39 7	05	45	41	2	10	00	38 3	2 9	28†	
39 7	39 8	39 5	39 8	39 9	39 8	39 7	39 9	40 5	39 3	06	05	41	5	10	00	38 3	3 2	29	
38 8	38 7	38 4	39 1	39 1	38 4	37 8	37 7	37 0	39 0	02	00	41	5	10	00	36 3	5 2	30†	
36 3	37 8	37 0	37 1	38 5	38 6	39 2	38 5	39 1	38 3	05	05	41	4	10	30	35 6	5 8	31††	
38 4	38 5	38 5	38 6	38 7	38 8	38 9	39 0	39 2	38 9									Mean	
38 9	38 9	39 0	39 0	39 1	39 1	39 3	39 3	39 5										Mean†	
37 6	37 8	37 8	38 0	38 4	38 2	38 2	38 2	38 5										Mean††	

† Five International quiet days
 †† Five International disturbed days
 Δ Loss of record, day omitted for means

TABLE 6

Hourly values of Declination (Westerly), 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

January

2 plus tabular quantities

Date	Hours G.M.T.														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1	39 2	39 3	39 5	39 8	39 9	40 5	41 2	41 4	40 3	38 5	37 7	37 2	37 8	37 7	37
2†	39 8	39 6	39 8	39 8	41 0	42 0	43 5	42 7	42 0	41 3	40 2	39 3	38 6	38 8	38
3	39 8	39 1	38 2	39 1	39 6	41 0	42 0	42 4	42 3	41 0	40 5	39 6	39 2	38 9	39
4	39 9	40 0	39 6	39 5	39 8	40 6	41 0	40 6	38 6	38 8	39 1	39 9	39 8	39 6	39
5	39 8	39 6	39 8	39 6	39 9	40 2	40 7	40 7	39 6	39 5	39 8	39 9	39 8	39 6	39
6	39 8	39 9	40 7	40 1	40 6	40 3	40 7	40 3	40 1	39 7	39 6	39 4	39 7	39 7	39
7	40 6	40 1	40 1	40 1	40 3	40 4	40 0	39 0	38 5	38 6	38 7	39 7	39 9	40 0	39
8†	39 9	40 0	41 1	41 3	41 1	41 0	40 6	39 7	38 3	37 9	38 2	38 7	39 9	40 0	39
9	40 0	40 1	40 3	41 0	40 8	40 8	40 3	40 0	39 0	38 2	38 0	38 0	38 6	39 6	39
10††	38 9	39 7	40 0	39 9	39 9	39 9	39 4	37 9	37 5	36 9	37 2	37 3	37 2	38 5	38
11††	39 7	39 9	39 9	40 0	40 6	40 7	40 6	40 5	39 6	38 2	37 8	38 5	38 5	38 5	38
12††	39 5	39 6	39 8	39 8	39 9	40 9	41 2	41 0	39 8	38 8	38 8	38 6	38 9	38 5	38
13††	39 6	39 8	39 6	40 0	40 2	41 2	41 3	40 5	40 0	39 2	38 6	38 6	38 5	38 4	38
14††	40 5	40 3	40 0	40 3	40 7	40 9	41 2	41 0	39 5	38 5	39 5	40 3	39 8	39 5	39
15	39 9	40 0	39 9	40 2	40 8	40 9	41 5	40 8	39 8	39 1	38 4	38 1	38 3	38 4	38
16	39 4	39 2	39 9	40 9	41 2	41 3	41 9	41 7	39 8	39 5	39 2	38 4	38 5	39 0	39
17	39 5	39 7	39 7	39 8	40 5	40 9	41 6	41 6	40 8	39 7	38 7	38 5	39 4	39 7	39
18	39 8	39 7	39 9	41 1	41 5	41 9	42 5	42 3	41 5	40 5	39 7	38 7	39 4	39 5	39
19†	40 1	39 9	39 9	40 8	41 6	42 0	42 2	41 9	40 8	39 5	38 5	39 0	39 1	39 7	39
20	40 4	40 5	40 8	41 8	42 6	42 7	42 6	42 0	40 8	39 5	38 5	38 3	39 4	39 7	39
21	39 8	39 7	39 9	40 1	40 9	41 3	41 8	41 3	40 5	39 7	39 4	39 2	39 4	39 5	39
22	39 8	39 7	39 8	40 4	40 6	40 6	40 8	40 5	39 5	39 1	38 5	38 4	39 0	39 4	39
23	39 7	39 8	39 8	39 8	41 8	41 5	41 6	40 9	39 8	39 4	38 0	37 8	38 5	39 5	39
24	39 8	39 7	39 8	39 9	39 5	40 1	40 5	39 9	39 2	38 0	37 8	37 7	39 0	39 5	39
25	39 7	39 7	39 8	40 4	41 1	41 3	41 6	40 9	39 8	39 2	38 4	38 5	39 0	39 4	39
26	39 5	39 7	39 5	39 9	40 1	40 5	40 6	40 8	39 8	38 7	38 7	38 5	39 0	39 2	39
27†	39 2	39 5	39 7	39 8	40 4	40 5	41 0	41 1	40 7	39 4	39 1	39 0	39 1	39 3	39
28	39 1	39 6	39 4	39 6	39 6	39 7	40 4	40 5	39 7	38 9	38 3	38 0	38 3	38 4	38
Mean	39 8	39 8	39 9	40 2	40 6	40 9	41 2	40 8	39 9	39 1	38 8	38 7	39 0	39 2	39
Mean†	39 8	39 7	40 1	40 3	40 7	41 1	41 6	41 1	40 2	39 2	38 8	38 7	39 1	39 5	39
Mean††	39 6	39 8	39 9	40 0	40 3	40 7	40 7	40 2	39 3	38 3	38 4	38 7	38 6	38 7	38

† Five international quiet days
 †† Five international disturbed days
 △ Loss of record, day omitted for means

TABLE 6
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 February 2' plus tabular quantities

Hours G M T										Maximum		Minimum		Date		
15	16	17	18	19	20	21	22	23	Mean	Range	Time	Mag	Time		Mag	
										H	M.	H	M.			
37 8	38 4	38 6	39 2	39 8	39 6	39 8	39 8	39 9	39 2	07	00	41 4	11 00	37 2	4 2	1
39 5	39 5	39 5	39 6	39 6	39 6	39 8	39 8	39 9	40 2	06	00	43 5	12 00	38 6	4 9	2
39 2	39 1	39 3	39 2	39 5	39 5	39 6	39 6	39 8	39 9	07	00	42 4	13 00	38 9	3 5	3
39 6	39 5	39 8	39 1	38 8	39 1	39 5	39 6	39 8	39 6	06	00	41 0	08 00	38 6	2 4	4
39 2	39 2	39 1	39 5	39 3	39 5	39 6	39 8	39 9	39 7	06	30	40 9	17 00	39 1	1 8	5
39 9	39 7	39 6	39 7	39 7	39 7	39 9	39 7	40 0	39 9	06	00	40 7	11 00	39 4	1 3	6
39 9	39 9	39 7	39 6	39 7	39 9	39 9	39 9	39 9	39 8	00	00	40 6	08 00	38 5	2 1	7
39 7	39 9	39 6	39 7	39 9	39 7	39 7	39 9	39 9	39 8	03	05	41 4	09 00	37 9	3 5	8
39 9	39 9	40 0	39 9	39 9	40 0	40 1	40 0	39 6	39 7	03	05	41 1	10 30	37 9	3 2	9
38 6	38 6	38 7	38 7	39 0	39 7	39 7	39 9	39 7	38 8	02	00	40 0	09 00	36 9	3 1	10
38 6	38 9	39 5	39 8	39 6	39 8	39 6	39 6	39 8	39 4	05	00	40 7	10 00	37 8	2 9	11
39 2	38 6	39 6	39 5	39 5	39 6	39 5	39 8	39 8	39 6	06	00	41 2	14 00	38 2	3 0	12
39 2	39 8	40 3	39 8	39 9	40 6	39 6	39 8	39 9	39 7	05	45	41 6	13 00	38 4	3 2	13
39 5	39 8	39 6	39 5	39 8	39 9	39 9	40 0	40 2	40 0	06	00	41 2	09 00	38 5	2 7	14
38 8	39 1	39 1	39 2	39 2	39 2	39 2	39 2	39 4	39 5	06	30	41 6	11 00	38 4	3 2	15
39 1	39 2	39 2	39 4	39 2	39 4	39 4	39 4	39 5	39 7	06	00	41 9	11 00	38 4	3 5	16
39 5	39 7	39 7	39 7	39 8	39 8	39 7	39 8	39 7	39 9	06	30	41 8	11 00	38 5	3 3	17
39 4	39 7	39 8	39 7	39 8	39 7	39 7	39 8	39 9	40 2	06	00	42 5	11 00	38 7	3 8	18
39 8	39 9	39 8	39 9	39 9	40 1	39 9	39 8	39 9	40 2	06	00	42 2	10 00	38 5	3 7	19
39 5	39 8	39 8	39 8	39 7	39 7	39 5	39 5	39 5	40 3	05	00	42 7	11 00	38 3	4 4	20
39 4	39 5	39 4	39 5	39 5	39 4	39 5	39 5	39 7	39 9	06	00	41 8	11 00	39 2	2 6	21
39 5	39 5	39 4	39 4	39 4	39 4	39 4	39 5	39 7	39 6	06	00	40 8	11 00	38 4	2 4	22
39 5	39 5	39 4	39 5	39 7	39 8	39 8	39 5	39 7	39 7	04	05	41 8	11 10	37 8	4 0	23
39 8	39 8	39 7	39 5	39 7	39 5	39 4	39 5	39 7	39 4	06	10	40 5	11 05	37 7	2 8	24
39 8	39 7	39 5	39 5	39 4	39 4	39 4	39 5	39 7	39 8	06	05	41 6	10 05	38 4	3 2	25
39 2	39 5	39 4	39 5	39 4	39 4	39 5	39 4	39 4	39 5	07	00	40 8	11 00	38 5	2 3	26
39 6	39 4	39 6	39 3	39 3	39 4	39 4	39 3	39 4	39 7	07	05	41 1	11 05	39 0	2 1	27
39 3	39 3	39 4	39 4	39 4	39 4	39 4	39 4	39 4	39 3	07	00	40 5	11 00	38 0	2 5	28
39 4	39 5	39 5	39 5	39 6	39 6	39 6	39 7	39 7	39 7					3 1		Mean
39 7	39 7	39 6	39 6	39 7	39 7	39 6	39 7	39 8								Mean
39 0	39 5	39 5	39 5	39 6	39 9	39 7	39 8	39 9								Mean

| Five International quiet days
 †† Five International disturbed days
 △ Loss of record; day omitted for means

TABLE 7

Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2' plus tabular quantities

March

Date	Hours GMT														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1††	39 3	39 3	39 3	39 1	39 3	39 6	40 7	39 4	39 1	39 1	39 1	39 1	39 1	39 0	39 1
2	39 4	39 3	39 3	39 1	39 3	39 7	39 8	40 5	40 7	39 6	39 3	39 1	39 0	39 1	39 3
3	39 3	39 3	39 3	39 2	39 2	39 1	39 5	40 1	39 1	39 5	39 5	39 2	38 9	39 2	39 2
4	39 0	39 2	39 3	39 2	39 1	39 1	39 4	39 5	39 4	39 1	38 5	38 2	38 1	38 7	39 1
5	39 1	39 1	39 1	39 5	39 5	40 2	40 1	39 9	39 6	39 1	39 1	38 9	38 8	39 1	38 9
6	39 1	39 4	39 2	39 3	39 4	39 3	39 7	39 5	39 3	38 7	38 1	38 0	38 6	38 7	39 0
7	39 3	39 1	39 3	40 1	41 3	41 1	41 4	40 8	40 3	39 8	39 0	38 5	38 7	39 0	39 2
8††	39 3	39 2	39 3	39 1	39 8	40 6	41 0	40 6	39 2	38 9	38 6	38 5	38 1	37 9	38 4
9††	39 2	39 1	39 2	39 0	39 2	39 3	39 2	39 4	39 2	39 0	38 7	3 5	38 3	38 6	38 9
10††	39 0	38 9	38 7	38 9	38 2	39 3	40 3	40 0	39 4	39 2	38 6	38 3	38 6	37 9	37 8
11††	40 0	39 4	39 3	39 5	39 4	40 0	40 2	40 4	40 7	40 2	39 4	39 3	39 1	39 1	39 0
12	39 0	39 1	39 0	39 0	39 3	40 4	40 8	40 7	40 4	39 8	39 3	39 3	38 1	38 7	38 8
13	39 1	38 8	39 0	39 5	40 2	40 8	42 0	41 9	41 0	40 6	39 4	38 1	38 2	38 4	38 8
14†	38 9	39 2	39 5	39 5	39 6	39 6	40 2	40 5	40 3	39 8	39 2	38 8	38 5	38 9	39 1
15	39 5	39 6	39 5	39 5	40 0	40 3	40 6	41 0	40 7	40 4	39 6	39 2	38 9	39 0	39 0
16†	39 3	39 3	39 2	39 3	39 5	40 6	41 0	40 7	40 2	40 3	39 9	39 7	39 5	39 7	39 6
17	39 9	39 6	39 3	39 1	39 2	39 0	39 7	40 7	41 1	41 4	40 2	39 5	39 5	39 6	39 7
18	39 7	39 3	39 3	39 4	39 6	40 4	41 2	41 5	41 0	40 7	39 6	39 6	39 7	39 4	39 4
19	39 4	39 4	39 3	39 6	39 4	40 5	40 8	41 0	41 1	40 4	39 7	39 4	39 6	39 8	39 8
20	39 7	39 7	39 4	39 2	39 4	39 5	39 1	40 5	40 6	40 2	39 8	39 4	39 5	39 8	39 7
21	39 7	39 8	39 5	39 2	39 4	39 4	39 9	40 4	40 5	39 9	39 2	39 0	39 2	39 5	39 7
22†	39 9	40 3	39 8	39 9	39 9	40 6	40 7	40 6	40 7	40 9	40 5	39 6	39 5	39 8	39 8
23	40 3	40 5	40 6	40 0	39 8	39 9	40 6	41 3	40 7	40 6	40 0	39 6	39 3	39 2	39 1
24	40 0	40 0	39 8	39 6	39 2	38 6	38 9	39 3	40 6	40 3	39 4	38 3	38 5	38 9	39 6
25	40 0	39 4	39 3	39 6	39 3	38 6	39 3	39 9	39 6	39 7	39 3	39 2	39 3	39 3	39 4
26†	39 3	39 4	39 4	39 8	40 0	40 2	40 9	41 2	41 8	41 4	40 0	39 0	38 8	39 3	39 4
27†	39 7	39 7	39 5	39 8	39 5	39 4	39 5	40 7	40 8	40 2	38 8	38 3	39 1	39 7	39 4
28	39 7	39 7	39 7	39 8	40 1	40 8	41 3	41 6	41 2	39 8	39 1	38 7	38 9	39 6	39 9
29	39 8	39 9	39 6	39 5	40 2	40 9	41 6	42 3	42 0	41 3	40 2	38 8	38 9	38 9	39 5
30	39 5	39 4	38 8	38 3	39 1	39 9	40 3	41 1	40 4	39 7	39 0	38 9	39 5	39 3	39 5
31	39 6	39 7	39 6	40 2	39 9	39 9	40 2	40 4	40 9	40 3	39 9	39 6	38 8	39 7	39 9
Mean	39 5	39 5	39 4	39 4	39 6	39 9	40 3	40 6	40 4	40 0	39 4	39 0	38 9	39 1	39 3
Mean†	39 4	39 6	39 5	39 7	39 7	40 1	40 5	40 7	40 8	40 5	39 7	39 1	39 1	39 5	39 5
Mean††	39 3	39 2	39 2	39 1	39 2	39 8	40 3	40 0	39 5	39 3	38 9	38 7	38 6	38 5	38 6

† Five International quiet days
 †† Five international disturbed days
 △ Loss of record, day omitted for means

TABLE 7
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2° plus tabular quantities

March

Hours G M T										Maximum		Minimum		Range	Date	
15	16	17	18	19	20	21	22	23	Mean	Time	Mag.	Time	Mag.			
										H	M	H	M.			
39 3	39 4	39 3	39 3	39 1	39 3	39 3	39 3	39 3	39 3	06	00	40 7	13 00	39 0	1 7	1††
39 3	39 4	39 3	39 3	39 3	39 3	39 1	39 1	39 4	39 4	08	05	40 7	12 05	39 0	1 7	2
39 3	39 3	39 2	39 2	39 3	39 1	39 2	39 1	39 2	39 3	07	00	40 3	12 00	38 9	1 4	3
38 8	38 9	39 1	38 8	38 9	38 9	39 1	38 9	39 1	39 0	07	00	39 5	12 00	38 1	1 4	4
38 9	38 9	38 9	39 1	39 1	39 1	39 1	39 4	39 4	39 2	05	10	40 2	12 00	38 8	1 4	5
38 8	39 1	38 8	38 7	38 7	39 1	38 8	39 1	39 1	39 0	06	00	39 7	11 00	38 0	1 7	6
39 2	39 4	39 3	39 4	39 4	39 2	39 2	38 9	39 3	39 6	06	05	41 4	11 00	38 5	2 9	7
38 1	38 1	38 5	38 8	38 9	38 8	38 8	38 8	38 9	39 0	06	00	41 0	12 30	37 8	3 2	8††
39 0	39 0	38 9	39 2	39 0	39 2	39 2	39 0	39 2	39 0	07	00	39 4	12 00	38 3	1 1	9††
37 9	37 9	38 5	38 9	38 6	38 7	39 0	39 3	39 3	38 8	06	30	40 7	14 30	37 5	3 2	10††
39 1	39 3	39 1	39 0	38 8	39 0	39 1	39 0	39 0	39 4	08	00	40 7	19 00	38 8	1 9	11††
39 0	39 1	39 1	39 3	39 0	39 0	39 0	38 8	39 0	39 3	06	00	40 8	11 55	38 0	2 8	12
39 2	39 1	39 4	39 1	39 1	39 2	39 4	39 2	39 4	39 5	06	00	42 0	11 00	38 1	3 9	13
39 2	39 2	39 4	39 2	39 1	39 2	39 1	39 2	39 4	39 4	07	00	40 5	12 00	38 5	2 0	14†
39 2	39 2	39 3	39 2	39 3	39 2	39 2	39 2	39 5	39 6	07	00	41 0	12 00	38 9	2 1	15
39 5	39 5	39 3	39 5	39 5	39 6	39 5	39 6	39 7	39 7	06	00	41 0	02 00	39 2	1 8	16†
39 7	39 6	39 3	39 5	39 5	39 5	39 5	39 6	40 2	39 8	02	00	41 4	03 05	39 0	2 4	17
39 3	39 3	39 1	39 3	39 4	39 6	39 6	39 4	39 4	39 8	07	00	41 5	17 00	39 1	2 4	18
39 7	39 6	39 8	39 7	39 4	39 7	39 6	40 0	40 1	39 9	08	00	41 1	02 00	39 3	1 8	19
39 8	39 8	39 7	39 8	39 7	39 5	39 5	39 7	39 8	39 7	08	00	40 6	02 55	39 0	1 6	20
39 5	39 7	39 7	39 5	39 5	39 7	39 5	39 7	39 5	39 6	08	00	40 5	11 00	39 0	1 5	21
39 9	39 9	39 8	39 9	40 0	39 8	39 8	40 0	40 2	40 1	09	00	40 9	12 00	39 5	1 4	22†
39 2	39 5	39 3	39 2	39 5	39 3	39 2	39 5	39 5	39 8	07	00	41 3	14 05	39 1	2 2	23
39 3	39 4	39 3	39 4	39 6	39 4	39 6	39 7	39 6	39 1	08	00	40 6	11 00	38 3	2 3	24
39 3	39 3	39 4	39 6	39 4	39 3	39 3	39 4	39 3	39 4	00	10	40 0	05 05	38 6	1 4	25
39 4	39 5	39 7	39 7	39 5	39 5	39 4	39 4	39 5	39 8	08	00	41 8	12 00	38 8	3 0	26†
39 5	39 4	39 5	39 4	39 5	39 4	39 4	39 4	39 4	39 5	08	00	40 8	11 00	38 3	2 5	27†
40 1	39 8	39 8	39 6	39 6	39 6	39 5	39 6	39 5	39 9	07	00	41 6	11 00	38 7	2 9	28
39 6	39 5	39 8	39 5	39 1	39 2	39 1	39 5	39 5	39 9	07	00	42 3	11 00	38 8	3 5	29
39 6	39 2	39 3	39 6	39 5	39 6	39 6	39 6	39 6	39 5	07	00	41 1	02 45	38 2	2 9	30
40 0	39 9	39 6	39 9	39 7	39 7	40 0	40 0	39 7	39 9	08	01	40 9	02 00	38 8	2 1	31
39 3	39 3	39 3	39 3	39 3	39 3	39 3	39 4	39 5	39 5						2 2	Mean
39 5	39 5	39 5	39 5	39 5	39 5	39 4	39 5	39 6								Mean†
38 7	38 7	38 9	39 0	38 9	39 0	39 1	39 1	39 1								Mean††

† Five international quiet days
 †† Five international disturbed days,
 △ Loss of record, day omitted for means

TABLE 8
Hourly values of Declination (Westerly), 1963
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
2° plus tabular quantities

Date	Hours G M T															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
1	38 6	38 8	38 2	38 3	38 8	39 0	38 9	38 3	38 9	39 6	38 9	38 8	39 7	40 0	39 9	
2	39 6	39 6	39 9	39 5	39 6	40 1	41 0	40 9	41 3	40 9	39 6	39 5	39 4	39 5	39 6	
3	38 7	39 5	39 8	39 8	39 5	39 5	40 2	40 9	40 9	40 2	39 5	39 5	39 2	39 5	39 5	
4 †	39 6	39 5	39 4	39 6	39 9	41 0	41 3	41 5	41 0	40 8	39 5	38 7	38 8	38 8	38 7	
5 †	39 5	39 5	38 5	38 7	38 9	39 5	40 2	40 1	39 9	39 4	38 2	38 1	38 2	38 5	38 7	
6	38 7	38 2	38 1	38 0	39 4	40 2	41 1	41 1	39 8	39 0	38 3	38 1	38 6	38 7	38 8	
7	38 6	38 3	38 3	38 0	38 3	39 4	40 0	40 1	39 5	38 7	38 6	38 7	38 6	39 3	38 7	
8	38 6	38 4	38 4	38 8	39 4	40 4	40 0	39 5	39 4	40 1	39 4	38 6	38 3	38 4	38 7	
9	38 6	38 7	38 1	38 4	38 7	38 7	39 4	40 2	40 0	39 7	39 4	39 4	38 7	38 6	38 4	
10	38 8	38 8	38 1	38 4	38 8	39 8	40 8	41 4	40 8	39 8	39 3	38 7	38 0	38 3	38 6	
11†	38 7	38 1	38 3	38 6	39 7	40 8	42 2	42 5	41 9	41 4	40 2	39 3	38 7	38 6	38 4	
12	38 3	38 1	38 0	38 7	39 4	40 0	40 9	40 8	39 4	39 8	38 7	38 1	38 1	38 3	38 6	
13	38 1	38 0	37 9	38 0	38 3	39 3	39 5	39 8	39 4	39 0	38 4	38 1	38 0	38 1	38 7	
14 †	37 2	37 3	37 9	38 3	38 6	39 4	40 7	40 8	40 7	39 7	38 6	37 9	37 8	37 2	37 8	
15	38 2	38 0	37 1	38 0	38 5	39 3	40 0	39 9	39 6	39 7	39 3	38 0	37 9	38 0	38 3	
16	38 3	37 9	37 1	38 0	39 2	39 7	40 0	40 7	40 6	39 4	38 2	38 5	38 2	38 0	38 6	
17	38 0	37 9	37 1	37 9	38 5	39 7	40 0	40 7	39 9	40 0	38 7	37 9	38 0	38 5	38 6	
18	38 2	37 9	38 0	38 7	40 0	40 7	41 1	40 8	40 0	39 3	38 5	38 0	38 3	38 6	39 3	
19	38 0	37 9	37 1	37 9	39 3	40 3	40 7	41 4	40 0	39 7	39 4	38 7	38 6	39 2	39 6	
20	38 6	38 0	37 8	38 5	39 6	40 1	41 4	41 1	40 8	39 7	38 7	38 5	38 3	38 3	38 4	
21†	38 2	38 0	37 9	38 3	39 6	40 7	41 3	42 1	41 1	39 7	39 3	38 6	38 0	38 3	38 2	
22	38 6	37 9	37 2	37 9	39 2	40 0	41 0	41 4	41 5	40 8	39 4	39 3	38 7	38 6	38 3	
23	38 3	37 9	37 2	37 9	38 4	39 2	39 9	39 8	39 5	38 2	37 8	37 4	37 7	38 2	37 9	
24†	38 1	37 9	37 2	38 1	38 8	39 5	40 0	40 6	40 2	39 3	38 5	37 9	37 8	38 2	38 3	
25	38 2	37 8	36 8	37 6	38 1	39 6	40 6	41 0	40 7	39 6	39 2	38 4	37 8	38 1	38 5	
26	37 9	37 8	37 7	38 5	39 6	40 7	41 3	41 2	41 2	40 6	39 6	38 5	38 2	38 4	38 5	
27	38 1	37 9	37 0	37 9	39 2	39 5	40 5	40 7	39 6	39 5	38 5	37 8	36 8	37 2	38 1	
28†	37 8	37 7	37 8	39 2	39 9	40 9	41 3	40 9	39 9	39 2	38 1	38 2	38 4	38 4	38 5	
29	38 1	37 8	37 1	38 0	38 9	39 3	40 7	40 8	40 7	40 0	39 6	38 3	38 2	38 3	38 6	
30 †	38 2	37 9	36 5	37 3	38 0	39 4	41 0	41 5	41 8	41 3	40 7	39 3	38 5	38 3	38 7	
Mean	38 4	38 2	37 8	38 4	39 1	39 9	40 6	40 8	40 3	39 8	39 0	38 5	38 3	38 5	38 7	
Mean†	38 3	38 1	37 9	38 5	39 4	40 3	41 1	41 5	40 8	39 9	39 1	38 5	38 2	38 4	38 4	
Mean †	38 6	38 5	38 1	38 4	39 0	39 9	40 9	41 0	40 6	40 0	39 1	38 4	38 4	38 3	38 5	

| Five international quiet days
 †† Five international disturbed days
 ^ Loss of record, day omitted for means

TABLE 8
Hourly values of Declination (Westerly), 1963
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

April 2nd plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag				
										H M		H M					
39 7	39 6	39 0	38 9	38 8	38 9	38 6	38 3	38 5	39 0	13	00	40 0	02	00	38 2	1 8	1
39 5	39 5	39 5	38 8	38 5	38 7	38 4	38 5	38 4	39 6	08	05	41 3	20	00	38 2	3 1	2
39 4	39 2	39 5	39 6	39 8	39 6	39 5	39 5	39 5	39 7	07	00	40 9	00	01	38 7	2 2	3
38 5	38 4	38 7	38 5	39 2	39 5	38 8	39 4	39 5	39 5	07	00	41 5	16	00	38 4	3 1	4††
38 5	38 4	38 8	38 8	38 5	38 8	38 7	38 5	38 8	38 9	06	10	40 2	11	05	38 1	2 1	5††
38 7	38 4	38 7	38 8	38 7	38 7	38 6	38 8	38 7	38 9	07	00	41 1	11	05	37 3	3 8	6††
38 4	38 1	38 3	38 6	38 7	38 7	38 4	38 6	38 4	38 7	07	00	40 1	16	00	38 1	2 0	7
38 6	38 7	38 8	38 6	38 4	38 6	38 4	38 6	38 7	38 9	05	00	40 4	12	00	38 3	2 1	8
38 3	38 1	38 3	38 6	38 7	38 7	38 4	38 3	38 7	38 8	07	10	40 2	02	00	38 1	2 1	9
38 7	38 7	38 8	38 6	38 7	38 7	38 6	38 7	38 7	39 0	07	00	41 4	12	00	38 0	3 4	10†
38 0	38 7	38 4	38 6	38 6	38 7	38 7	38 7	38 6	39 4	07	00	42 5	01	45	38 0	4 5	11†
38 7	38 6	38 4	38 7	38 3	38 1	38 1	38 4	38 3	38 8	06	00	40 9	02	00	38 0	2 9	12
39 1	38 4	38 6	38 3	38 0	37 3	37 3	37 7	37 3	38 4	07	00	39 8	21	00	37 0	2 8	13
38 0	37 9	38 5	38 3	38 3	38 5	38 6	38 6	38 6	38 6	07	00	40 8	00	01	37 2	3 6	14††
38 5	38 6	38 5	38 3	38 5	38 6	38 3	38 2	38 0	38 6	06	00	40 0	02	00	37 1	2 9	15
39 3	39 2	38 6	38 2	38 0	38 2	38 3	38 5	38 3	38 7	07	00	40 7	02	00	37 1	3 6	16
38 9	38 6	38 5	38 3	38 5	38 2	38 5	38 2	38 0	38 6	07	00	40 7	02	00	37 1	3 6	17
38 6	38 6	38 5	38 3	38 5	38 3	38 5	38 3	38 0	38 9	06	00	41 1	01	00	37 9	3 2	18
39 7	39 6	38 7	38 6	38 7	38 6	38 5	38 2	38 3	39 0	07	00	41 4	02	00	37 1	4 3	19
38 3	38 2	38 3	38 2	38 3	38 5	38 3	38 2	38 3	38 8	06	00	41 4	02	00	37 8	3 6	20
38 3	38 6	38 9	38 3	38 2	38 3	38 2	38 3	38 3	38 9	07	00	42 1	02	00	37 9	4 2	21†
38 6	38 5	38 3	38 2	38 3	38 2	38 3	38 2	38 2	38 9	08	00	41 5	02	00	37 2	4 3	22
37 8	37 9	37 9	38 1	38 1	38 5	38 2	38 1	37 9	38 2	06	00	39 9	02	00	37 2	2 7	23
38 2	38 4	38 5	38 2	38 1	37 9	38 1	37 9	38 1	38 5	07	00	40 6	02	00	37 2	3 4	24†
38 6	38 5	38 4	38 1	38 4	38 1	38 2	37 9	37 8	38 6	07	00	41 0	01	45	36 7	4 3	25
38 5	38 5	38 4	38 1	38 1	37 9	37 9	37 9	38 1	38 9	06	00	41 3	02	00	37 7	3 6	26
37 9	38 2	38 1	37 9	37 8	37 9	37 8	37 9	37 8	38 3	07	00	40 7	12	00	36 8	3 9	27
39 1	38 5	38 4	38 5	38 4	38 5	38 2	38 4	38 4	38 9	06	00	41 3	01	00	37 7	3 6	28†
39 2	39 3	38 9	38 7	38 6	38 3	38 2	38 0	38 3	38 8	07	00	40 8	02	00	37 1	3 7	29
39 2	40 0	39 4	39 7	38 6	38 7	39 0	38 7	38 9	39 2	07	00	41 8	02	00	36 5	5 3	30††
38 7	38 7	38 6	38 5	38 5	38 5	38 4	38 4	38 4	38 9						3 3	Mean	
38 6	38 6	38 6	38 4	38 4	38 4	38 4	38 4	38 4							Mean†		
38 6	38 6	38 8	38 8	38 7	38 8	38 7	38 8	38 9							Mean††		

†Five international quiet days
††Five international disturbed days
Δ Loss of record, day omitted for means.

TABLE 9
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2° plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1††	38 6	37 6	36 5	37 2	37 3	38 8	40 2	40 1	40 0	38 7	38 0	37 7	37 3	37 4	38 0
2††	38 0	37 2	36 5	37 3	38 0	39 4	40 2	40 9	40 9	40 4	39 3	38 0	37 9	38 0	38 0
3	38 0	38 0	37 4	37 2	37 9	39 4	40 1	40 2	40 5	39 8	40 1	39 3	39 3	38 1	38 7
4††	38 0	37 3	36 6	37 6	38 7	39 5	40 4	40 8	40 1	39 4	38 8	38 7	38 7	38 7	38 7
5	38 0	38 0	37 7	37 9	38 7	40 6	40 7	40 7	40 6	39 5	38 6	38 6	37 9	37 9	38 6
6	37 9	37 9	37 9	38 6	40 1	40 8	41 4	40 8	40 3	39 3	38 0	37 9	37 9	38 0	38 0
7	37 9	37 3	37 2	37 2	39 2	40 0	40 7	41 4	40 7	39 9	39 4	38 7	38 2	38 0	38 6
8	37 9	37 9	37 6	37 9	38 6	40 0	40 7	41 3	40 7	40 1	39 6	38 6	38 6	37 9	38 6
9	37 8	37 9	37 8	37 9	40 0	40 6	40 6	40 1	39 4	38 6	37 8	36 6	37 8	37 9	38 0
10	37 9	37 2	36 5	36 6	37 9	40 7	41 4	40 7	40 0	39 2	37 9	37 9	37 9	38 6	38 6
11	37 8	36 5	36 2	37 2	38 6	40 3	41 5	42 1	41 4	41 0	40 0	38 7	38 0	38 0	38 6
12	37 9	37 3	36 9	37 3	38 5	40 0	40 8	41 8	41 0	40 7	40 0	39 3	38 9	39 0	39 3
13††	37 9	37 9	37 6	37 9	39 3	40 0	41 4	42 2	41 3	40 0	39 3	38 6	38 0	38 0	38 6
14	37 9	37 3	37 6	37 9	39 3	40 7	42 1	42 1	42 1	40 0	39 3	38 6	38 0	38 0	39 0
15	37 9	37 2	37 6	37 9	39 2	41 4	42 1	42 7	42 7	41 4	39 3	37 9	37 6	37 9	38 6
16†	38 0	37 9	37 2	37 6	39 3	41 0	41 8	41 7	40 8	39 9	38 7	38 0	37 9	38 6	39 0
17	38 0	37 8	37 9	37 9	39 7	40 7	41 5	42 1	42 0	41 4	40 3	39 4	39 4	39 2	39 3
18†	38 0	37 9	37 9	37 9	39 2	40 5	41 3	41 4	40 6	39 9	39 2	39 1	38 9	39 2	39 3
19	37 9	37 8	37 8	37 8	39 6	40 6	40 7	41 3	40 6	38 6	39 3	39 3	39 3	39 3	39 3
20	37 8	37 8	37 2	37 7	38 2	39 2	40 0	40 3	39 9	39 2	39 2	38 8	38 6	38 9	38 8
21	38 5	37 9	37 8	37 8	38 9	39 8	40 6	40 7	40 5	39 5	39 2	38 9	38 5	39 2	39 2
22†	38 5	37 8	37 1	37 4	39 0	39 9	40 5	40 8	40 5	39 8	39 2	39 1	38 4	39 0	39 1
23†	38 4	37 7	37 7	37 7	39 1	39 4	40 5	41 9	41 2	39 9	39 4	38 1	37 8	38 4	39 1
24†	38 1	37 1	36 3	37 0	37 7	39 4	41 1	41 9	41 2	39 9	39 2	38 1	38 3	38 5	39 0
25	38 3	37 7	37 7	38 7	40 2	41 9	42 9	44 0	43 2	42 0	41 1	40 2	39 2	39 1	39 1
26	38 0	37 0	36 4	36 4	37 4	39 1	39 2	41 2	41 1	40 8	39 8	38 5	38 4	38 3	38 1
27	37 7	37 6	37 3	37 4	39 0	40 2	41 8	41 8	41 1	39 9	39 2	38 4	38 3	38 1	38 4
28	38 0	37 7	36 4	36 7	37 7	40 4	41 8	41 9	41 1	40 6	39 1	38 0	37 8	38 1	39 0
29††	37 8	37 7	37 0	36 9	38 4	39 5	40 6	40 7	39 9	39 1	38 3	37 7	37 7	37 7	37 8
30	37 8	36 3	36 2	37 7	39 2	40 6	40 6	40 5	40 4	39 5	38 4	37 8	38 0	38 1	38 5
31	37 8	37 1	37 0	37 1	37 7	37 8	39 4	40 6	41 2	40 5	39 5	38 0	37 7	37 7	38 0
Mean	38 0	37 5	37 2	37 6	38 8	40 1	40 9	41 3	40 9	40 0	39 2	38 5	38 3	38 4	38 7
Mean†	38 2	37 7	37 2	37 5	38 9	40 0	41 0	41 5	40 9	39 9	39 1	38 6	38 3	38 7	39 1
Mean††	38 1	37 5	36 8	37 4	38 3	39 4	40 6	40 9	40 4	39 5	38 7	38 1	37 9	38 0	38 2

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means

TABLE 9
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes, centred at the full hours of Greenwich Mean Time)
 2' plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag				
										H	M	H	M				
38 1	38 0	38 1	38 0	38 0	38 0	38 0	38 0	38 0	38 2	06	26	40 3	02	15	36 5	4 3	1††
38 6	38 7	38 7	38 8	38 1	38 0	38 0	38 0	38 0	38 5	07	12	41 1	02	20	36 3	4 8	2††
38 8	38 6	38 1	38 1	38 1	38 1	38 0	38 0	38 0	38 7	07	48	40 5	02	52	37 0	3 5	3
38 6	38 3	38 1	38 1	38 1	38 0	38 0	38 0	38 0	38 6	06	46	41 1	01	30	36 6	4 5	4††
38 6	38 6	38 6	37 9	37 9	38 0	38 2	38 0	37 9	38 7	06	00	40 7	01	36	37 2	3 5	5
38 0	38 0	38 0	38 0	38 0	37 9	38 0	38 0	37 9	38 6	06	21	41 4	11	24	37 8	3 6	6
39 0	38 6	39 0	38 5	38 3	38 0	37 9	37 9	38 0	38 7	07	05	41 8	02	00	37 2	4 6	7
38 2	38 5	38 5	38 0	38 6	38 6	37 9	37 8	37 9	38 8	07	00	41 3	01	50	37 2	4 1	8
38 6	38 2	38 9	38 2	38 0	37 9	37 9	37 9	37 9	38 4	06	00	40 7	10	37	36 5	4 2	9
38 6	38 6	38 6	38 6	38 6	37 9	37 9	37 9	37 9	38 5	06	16	41 7	02	00	36 5	5 2	10
38 6	38 6	38 6	38 7	38 6	38 7	38 2	37 9	37 9	38 8	07	00	42 1	02	00	36 2	5 9	11
39 3	39 3	39 3	39 2	38 6	38 3	38 3	38 6	38 0	39 1	07	00	41 8	01	30	36 6	5 2	12
38 6	38 6	38 6	38 6	39 0	38 6	38 5	38 6	38 6	39 0	07	00	42 2	01	15	36 6	5 6	13††
38 9	38 6	38 7	39 0	38 5	38 3	38 2	38 0	38 0	39 0	05	00	42 1	01	15	36 6	5 5	14
38 6	38 9	38 9	39 0	38 9	39 0	38 7	38 6	38 6	39 2	07	24	42 8	01	00	37 2	5 6	15
39 2	39 2	39 2	39 0	38 9	38 7	38 7	38 6	38 9	39 1	06	35	41 8	01	40	36 5	5 3	16†
39 3	39 3	39 3	39 2	39 0	38 5	38 6	38 6	38 6	39 5	07	25	42 1	01	35	37 3	4 8	17
39 2	39 2	39 2	39 2	39 2	38 9	38 8	38 8	38 5	39 2	06	35	41 9	01	35	37 8	4 1	18†
39 3	39 3	39 1	38 6	39 3	38 6	38 2	38 0	38 0	39 1	06	30	41 4	02	00	37 8	3 6	19
39 2	39 2	38 9	39 2	39 2	39 1	38 5	38 5	38 5	38 8	07	15	40 6	01	46	36 4	4 2	20
39 2	39 2	39 2	38 6	38 9	38 2	37 8	37 9	38 5	39 0	06	37	40 7	02	00	37 8	2 9	21
39 1	39 1	39 1	38 8	39 0	38 3	38 5	38 5	38 5	39 0	07	00	40 3	02	20	36 6	4 2	22†
39 1	39 1	39 1	39 1	38 7	38 1	38 3	38 4	38 3	39 0	06	55	42 0	02	05	37 6	4 4	23†
39 0	39 0	39 1	39 1	39 1	39 1	39 0	38 5	38 4	38 9	07	05	42 0	02	09	36 2	5 8	24†
39 1	39 0	38 4	38 4	38 3	38 4	38 4	38 3	38 4	39 7	07	00	44 0	01	30	37 1	6 9	25
39 0	39 1	38 4	38 5	38 4	38 4	38 4	38 3	37 8	38 6	07	04	41 2	07	15	36 3	4 9	26
39 0	39 1	39 0	38 1	38 4	39 0	38 1	38 4	38 4	39 0	06	30	41 8	02	11	37 0	4 8	27
39 1	39 2	39 1	38 4	38 4	38 1	38 4	38 4	38 3	38 8	06	40	42 2	02	10	36 3	5 9	28
38 4	38 3	38 5	38 4	38 4	37 8	38 3	38 4	38 1	38 4	06	00	40 6	02	55	36 3	4 3	29††
38 1	38 5	38 5	38 4	38 4	38 1	38 4	38 3	38 4	38 6	05	50	40 8	01	55	35 9	4 9	30
38 3	38 4	38 5	38 7	38 4	39 0	38 5	39 1	38 4	38 5	08	00	41 2	02	50	36 6	4 6	31
38 8	38 8	38 8	38 6	38 6	38 4	38 3	38 3	38 2	38 8							4 7	Mean
39 1	39 1	39 1	39 0	39 0	38 7	38 7	38 6	38 5							Mean†		
38 5	38 4	38 4	38 4	38 3	38 1	38 2	38 2	38 1							Mean††		

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means.

TABLE 10
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 June
 2° plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1	38 1	37 8	37 8	38 0	39 1	39 2	39 8	40 2	39 8	39 2	39 1	37 8	37 7	39 1	39 1
2	37 7	37 1	37 7	38 2	39 0	40 3	40 5	40 4	39 8	39 1	38 3	38 2	37 7	37 6	38 2
3	37 7	37 6	37 0	37 6	38 4	39 8	41 0	41 0	40 7	40 3	39 3	39 0	38 2	38 4	38 3
4†	37 9	37 7	37 5	37 9	38 9	40 4	40 4	40 5	40 1	39 1	39 0	38 3	37 7	38 2	38 0
5†	38 2	37 7	37 6	38 2	39 6	41 1	41 9	42 1	41 9	40 5	39 3	39 0	39 0	39 0	39 0
6	38 2	37 7	37 0	37 3	37 9	39 3	41 2	42 1	41 8	40 4	39 4	39 0	39 0	39 3	39 6
7††	36 3	36 2	34 4	34 9	36 9	39 4	41 0	41 7	40 7	40 3	39 3	38 9	38 3	38 2	38 0
8	37 7	36 5	36 3	37 2	38 4	39 7	41 5	42 5	42 4	41 0	40 4	39 6	38 3	38 3	39 0
9	38 2	37 7	36 9	37 7	38 7	39 4	40 7	41 4	40 7	40 5	39 6	39 1	38 3	38 3	38 9
10	38 3	37 2	36 3	36 6	37 6	39 0	40 4	42 2	42 1	41 1	40 4	39 7	39 3	38 3	39 0
11	37 9	37 5	36 9	37 6	38 2	38 7	37 9	41 1	41 2	41 0	40 4	39 0	39 0	39 1	39 0
12	38 4	37 7	36 9	37 4	39 6	41 1	42 3	42 4	41 3	40 3	39 0	38 2	38 3	38 9	38 9
13	38 2	37 6	36 9	37 4	38 2	40 3	41 1	41 8	42 3	41 1	40 4	39 2	39 0	38 9	39 0
14	37 6	37 5	37 4	37 5	38 9	39 6	40 6	40 7	40 6	39 0	38 6	38 1	37 6	37 9	38 3
15	38 2	37 8	37 6	37 6	38 2	40 3	41 0	42 3	42 3	41 0	40 3	39 2	39 0	38 9	39 0
16†	38 2	37 9	36 8	37 5	39 5	40 3	40 9	41 0	40 9	39 6	38 2	38 2	38 2	38 9	38 9
17	38 2	37 9	37 6	37 8	39 5	40 0	40 4	40 4	39 5	38 9	39 3	39 0	38 9	38 8	38 9
18††	38 2	37 9	37 6	37 8	37 5	38 8	40 2	41 6	41 7	40 9	39 6	38 3	37 6	38 1	39 2
19	36 9	36 8	35 4	35 3	35 6	36 7	37 5	38 4	38 8	38 5	38 1	38 0	38 1	38 2	38 7
20	37 7	37 5	36 1	37 7	38 8	40 1	40 2	39 9	39 4	38 4	37 7	38 0	38 1	38 5	38 8
21	37 5	36 8	36 7	37 1	36 5	39 9	40 6	40 5	39 5	38 1	37 7	37 5	37 5	38 1	39 8
22†	38 0	36 7	36 6	36 9	38 0	40 0	40 5	40 2	39 5	38 3	37 6	37 4	37 6	38 1	38 7
23†	37 4	36 6	36 3	37 3	38 7	40 1	40 8	41 4	40 0	39 3	38 7	37 7	37 9	38 0	38 8
24	37 9	37 4	36 7	36 9	37 9	39 3	40 3	40 7	40 8	39 6	38 7	38 6	38 7	39 0	38 9
25††	37 3	37 2	37 3	37 3	38 6	38 5	38 7	40 0	39 2	39 4	38 7	38 0	37 9	38 5	38 6
26††	37 3	37 2	36 5	37 1	37 5	38 0	39 3	39 6	40 0	39 3	39 4	39 2	39 0	38 9	39 0
27††	38 0	37 3	37 2	37 0	38 2	39 1	40 0	40 0	40 0	39 9	39 2	39 1	39 3	39 1	39 2
28	38 4	37 7	37 7	37 8	38 8	39 2	40 0	41 3	41 6	40 6	40 0	39 3	39 3	38 9	38 8
29	38 5	38 5	37 7	37 7	37 8	39 2	40 6	41 7	41 6	40 7	40 2	39 2	39 1	38 9	39 1
30	38 4	37 7	37 2	37 6	39 2	40 0	40 1	41 4	41 4	40 6	39 3	38 6	38 5	38 6	39 0
Mean	37 9	37 4	36 9	37 3	38 3	39 6	40 4	41 0	40 7	39 9	39 2	38 6	38 4	38 6	38 9
Mean†	37 9	37 3	37 0	37 6	38 9	40 4	40 9	41 0	40 5	39 4	38 6	38 1	38 1	38 4	38 7
Mean††	37 4	37 2	36 6	36 8	37 7	38 8	39 8	40 6	40 3	40 0	39 2	38 7	38 4	38 6	38 8

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means

TABLE 10
 Hourly values of Declination (Westerly), 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2° plus tabular quantities

June										Maximum		Minimum		Date			
Hours G M T										Time Mag		Time Mag					
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag	Range			
										II	M	II	M				
39 1	39 1	39 1	39 1	38 4	39 1	38 4	37 8	37 8	38 7	06	50	40 6	02	40	37 6	3 0	1
38 3	38 2	38 9	39 0	39 0	39 0	38 4	38 3	38 3	38 6	05	50	40 5	01	35	36 6	3 9	2
39 0	39 0	39 0	39 0	38 7	38 9	38 3	38 2	38 3	38 9	07	35	41 1	01	45	36 9	4 2	3
38 2	38 0	38 7	38 9	38 3	38 3	38 2	38 4	38 0	38 6	06	45	40 7	01	50	36 9	3 8	4†
39 0	39 0	39 0	39 0	39 0	39 0	39 0	39 0	38 3	39 4	06	30	42 5	02	20	37 5	5 0	5†
40 3	40 4	39 7	39 6	39 0	38 0	37 5	36 6	36 5	39 0	07	15	42 2	22	30	36 3	5 9	6
37 7	38 2	38 0	37 7	37 9	38 0	37 7	37 9	37 7	38 1	07	05	41 8	01	45	34 2	7 6	7††
39 0	39 0	39 0	38 4	38 3	38 2	38 0	38 2	38 2	39 0	07	30	42 6	01	40	36 2	6 4	8
39 0	39 0	38 7	38 4	38 3	38 4	38 2	38 3	38 9	38 9	06	55	41 5	01	50	36 8	4 7	9
39 4	39 1	38 4	38 9	38 6	38 2	38 0	38 3	38 2	38 9	07	15	42 4	02	10	36 2	6 2	10
39 0	39 3	39 1	39 0	39 1	39 0	38 9	39 0	38 7	39 0	07	45	41 4	02	15	36 8	4 6	11
38 9	38 9	38 3	38 1	38 9	38 3	38 2	38 1	38 1	39 0	06	30	42 5	02	00	36 9	5 6	12
38 9	38 9	38 9	38 9	38 9	38 9	38 9	38 8	38 9	39 7	07	45	42 4	02	30	36 8	5 6	13
38 5	39 2	39 3	39 0	38 9	38 9	38 3	38 3	38 2	38 7	07	00	40 7	02	10	37 4	3 3	14
38 9	39 2	39 0	38 9	38 9	38 8	38 3	38 2	38 3	39 2	07	45	42 4	02	15	37 5	4 9	15
38 9	38 8	38 9	38 9	38 3	38 2	38 1	38 2	38 2	38 8	07	05	41 0	02	25	36 7	4 3	16†
38 8	38 9	38 9	38 9	38 3	38 8	38 1	37 9	38 9	38 9	06	30	40 6	02	10	37 5	3 1	17
39 1	39 2	39 0	39 0	38 9	38 3	37 8	38 1	38 2	38 9	07	20	42 0	02	20	37 5	4 5	18††
38 8	38 7	38 2	38 4	38 1	38 2	38 1	37 7	37 5	37 7	08	05	38 9	02	30	35 3	3 6	19
39 1	39 2	38 9	38 4	38 1	38 1	38 0	37 8	37 8	38 4	05	45	40 5	02	15	36 0	4 5	20
39 8	39 8	38 1	38 1	38 1	38 1	38 2	38 1	38 7	38 3	06	10	40 8	01	45	36 6	4 2	21
38 7	38 7	38 7	38 7	38 7	38 7	38 1	37 9	37 4	38 3	06	05	40 5	02	15	36 3	4 2	22†
39 0	39 1	39 0	38 8	38 7	38 7	38 1	38 6	38 0	38 6	06	55	41 5	02	05	36 3	5 2	23†
38 6	38 7	38 6	38 6	38 7	38 6	38 0	37 9	37 9	38 6	07	35	41 0	02	15	36 5	4 5	24
38 6	38 9	38 7	39 0	39 2	38 7	37 5	37 9	37 6	38 4	07	00	40 0	02	05	37 2	2 8	25††
39 2	39 3	38 9	38 7	38 6	38 5	38 6	38 6	38 5	38 6	07	50	40 1	01	50	36 4	3 7	26††
39 1	38 9	39 1	38 9	38 8	38 6	38 8	38 9	38 8	38 9	06	30	40 2	02	15	36 5	3 7	27††
38 9	38 8	38 9	38 6	38 8	38 5	38 6	38 5	38 5	39 1	07	45	41 7	01	15	37 7	4 0	28
38 9	38 8	38 6	38 5	38 6	38 9	38 6	38 8	38 6	39 1	07	15	41 9	02	15	37 4	4 5	29
39 2	39 3	38 9	38 6	38 5	38 6	37 9	37 9	37 9	38 9	07	30	41 5	02	15	37 2	4 3	30
39 0	39 0	38 8	38 7	38 6	38 5	38 2	38 2	38 1	38 8								Mean
38 8	38 7	38 9	38 9	38 6	38 6	38 3	38 4	38 0									Mean†
38 8	38 9	38 7	38 7	38 7	38 4	38 1	38 3	38 2									Mean ††

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means

TABLE 11

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

January

39,000 γ plus tabular quantities

Date	Hours G M I														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1	557	554	550	564	585	603	627	642	631	607	582	565	562	563	569
2†	559	561	567	578	596	617	636	646	640	615	588	573	570	572	572
3	576	577	581	593	611	643	675	692	679	635	595	568	566	568	567
4	570	575	576	582	592	609	633	651	646	627	614	605	598	590	570
5	561	568	579	588	596	609	615	630	636	615	590	571	559	556	553
6†	571	573	573	577	574	566	569	601	636	642	619	592	581	579	577
7	577	580	590	591	600	596	599	621	653	663	631	600	581	579	571
8	562	565	563	566	573	585	587	593	603	606	605	589	576	571	568
9†	572	577	587	597	610	623	633	643	641	621	598	586	580	577	574
10	574	577	577	580	591	612	618	613	606	585	572	571	574	570	564
11	574	577	584	600	624	633	634	641	640	625	600	593	598	602	594
12	571	576	583	588	596	609	619	623	612	595	576	563	565	567	568
13††	590	586	592	517	602	592	589	612	606	606	588	567	556	548	550
14††	570	563	562	566	590	579	588	596	602	591	571	542	547	544	540
15††	552	559	564	572	572	569	561	556	569	563	569	566	556	546	536
16	551	550	551	552	561	584	605	607	598	575	552	549	553	552	543
17	555	558	560	566	584	596	598	574	568	565	563	564	561	553	552
18	553	554	558	564	582	589	593	592	577	574	550	555	558	556	558
19	558	558	564	576	597	620	626	610	594	568	549	544	546	548	535
20	557	553	559	570	583	603	615	610	587	558	543	548	553	552	553
21	555	561	568	579	595	601	601	593	577	564	554	555	562	565	561
22	563	565	575	584	601	625	651	647	621	594	571	565	566	569	570
23	566	580	584	586	585	587	601	598	591	573	559	556	564	566	564
24	571	578	591	604	624	640	635	617	589	565	557	564	577	578	575
25	545	553	570	586	603	615	618	609	584	558	543	548	559	557	555
26	560	564	574	592	613	619	609	590	568	548	551	562	568	568	564
27†	567	575	593	609	617	625	617	606	588	566	551	552	563	569	568
28†	568	576	596	616	630	635	628	604	571	541	537	549	566	572	569
29	571	575	587	607	634	655	661	648	622	589	567	566	571	575	573
30††	571	562	577	605	614	641	621	591	555	537	489	501	498	501	499
31††	530	539	547	552	572	578	551	515	479	453	441	447	442	433	429
Mean	564	567	574	584	597	608	613	612	602	585	567	561	561	560	556
Mean†	567	572	583	595	605	613	617	620	615	597	579	570	572	574	572
Mean††	563	562	568	582	590	592	582	574	562	550	532	525	520	514	509

†Five international quiet days.

††Five international disturbed days.

ΔLoss of record, day omitted for means

TABLE 11

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centered at the full hours of Greenwich Mean Time)

19,000 *c* plus tabular quantities

Date	Hours (M T)		Minimum		Maximum		Mean	Range
	1	2	1	2	1	2		
15	108	108	108	108	108	108	108	0
16	108	108	108	108	108	108	108	0
17	108	108	108	108	108	108	108	0
18	108	108	108	108	108	108	108	0
19	108	108	108	108	108	108	108	0
20	108	108	108	108	108	108	108	0
21	108	108	108	108	108	108	108	0
22	108	108	108	108	108	108	108	0
23	108	108	108	108	108	108	108	0
24	108	108	108	108	108	108	108	0
25	108	108	108	108	108	108	108	0
26	108	108	108	108	108	108	108	0
27	108	108	108	108	108	108	108	0
28	108	108	108	108	108	108	108	0
29	108	108	108	108	108	108	108	0
30	108	108	108	108	108	108	108	0
31	108	108	108	108	108	108	108	0

Five international quiet days
 ††Five international disturbed days
 †Loss of record, day omitted for means.

Mean	551	552	551	553	555	557	558	558	557	571	572	573	539
421	440	430	436	461	477	493	506	513	487	04	38	585	14
486	489	509	534	513	564	527	507	516	513	05	03	654	15
573	571	567	569	565	555	558	562	587	577	04	58	617	09
567	563	561	563	563	564	566	566	569	577	05	15	628	10
569	569	567	563	563	564	564	564	564	577	05	15	628	10
561	560	561	559	561	562	561	562	561	571	04	25	620	09
548	547	548	552	552	551	551	551	556	566	05	55	623	10
577	578	577	563	564	560	565	571	572	577	05	57	607	10
563	563	564	562	561	565	560	565	571	572	05	57	607	10
566	561	559	558	561	561	562	563	580	580	06	02	656	20
558	557	558	561	562	561	564	564	568	568	05	45	606	10
558	556	556	556	555	551	551	551	551	561	05	50	622	10
536	535	545	555	541	543	553	553	553	563	05	19	633	14
559	553	555	552	552	558	557	553	580	580	05	15	651	20
551	553	550	553	553	553	553	553	553	563	05	46	597	10
553	553	550	553	553	553	553	553	553	563	05	46	597	10
545	545	545	544	546	546	546	546	546	546	06	17	617	16
544	543	543	542	542	542	542	542	542	542	06	17	617	16
527	540	540	543	543	543	543	543	543	543	06	17	617	16
569	570	569	567	567	567	567	567	567	567	06	20	626	11
578	571	571	561	561	561	561	561	561	561	07	28	645	19
562	563	566	567	568	570	571	571	571	571	05	15	620	14
571	570	570	571	571	575	575	575	575	575	07	30	646	16
566	566	566	566	564	568	574	575	573	573	09	40	609	00
561	547	545	550	556	559	561	561	561	561	08	52	668	16
574	574	572	572	574	575	579	579	584	584	08	35	647	05
556	554	553	556	560	561	566	570	577	577	07	35	641	13
558	535	521	530	548	554	557	557	580	580	06	20	654	16
571	568	567	568	569	572	573	573	591	591	07	13	695	11
547	539	538	548	548	549	552	556	570	570	07	07	644	16
536	536	536	536	536	536	536	536	536	536	07	07	644	16

TABLE 12

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

February

39,000 $\gamma\gamma$ plus tabular quantities

Date	Hours GMT														1-4
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	
	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$	$\gamma\gamma$
1	516	525	545	574	600	622	647	615	574	520	488	484	510	511	501 Δ
2†	539	539	547	574	607	633	648	638	606	575	550	544	550	552	540 Δ
3	551	542	533	548	582	608	629	633	622	600	578	564	561	564	552 Δ
4	561	560	563	577	605	626	637	628	616	599	580	575	577	575	563 Δ
5	558	557	553	570	585	592	594	590	583	576	574	572	569	560	546 Δ
6	559	566	579	593	613	625	615	599	590	585	584	580	575	566	552 Δ
7	564	566	573	587	606	627	618	595	578	566	566	570	572	568	554 Δ
8†	557	561	571	598	625	644	637	610	581	563	566	570	573	569	555 Δ
9	566	575	588	609	633	639	626	593	557	540	545	558	581	590	576 Δ
10††	511	491	511	539	557	579	580	556	510	489	467	477	485	488	471 Δ
11††	528	528	544	566	592	606	598	577	545	518	506	522	525	534	521 Δ
12††	542	535	531	560	585	614	623	600	566	544	542	550	550	544	531 Δ
13††	545	547	551	570	588	606	600	573	553	529	528	538	541	537	524 Δ
14††	549	548	548	555	570	579	598	594	556	533	536	540	548	544	531 Δ
15	551	549	552	574	594	616	624	618	598	576	566	558	550	538	525 Δ
16	549	550	560	570	592	609	609	598	584	565	555	560	564	560	547 Δ
17	557	556	562	580	603	625	630	618	595	577	569	572	569	565	552 Δ
18	563	566	579	605	630	641	636	623	599	576	563	565	574	572	559 Δ
19†	571	571	575	595	620	646	661	662	642	618	594	576	575	577	564 Δ
20	576	578	588	613	637	653	673	659	631	607	581	574	578	577	564 Δ
21	566	560	570	590	611	627	623	614	594	578	567	569	567	563	550 Δ
22	557	559	574	598	621	630	627	608	580	553	544	551	560	565	552 Δ
23	563	567	584	612	638	654	656	641	662	581	568	567	563	565	552 Δ
24†	561	564	572	590	611	633	635	626	603	580	572	575	575	569	556 Δ
25	564	565	575	591	619	630	642	625	607	582	568	570	574	568	555 Δ
26	565	567	578	597	620	645	653	643	614	580	559	557	563	565	552 Δ
27†	558	559	568	588	615	635	643	638	624	605	591	583	577	573	560 Δ
28	568	567	577	597	621	638	649	651	644	617	596	589	579	577	564 Δ
Mean	554	554	563	583	606	624	628	615	591	569	557	558	560	558	545 Δ
Mean†	557	559	567	589	616	638	645	635	611	588	575	570	570	568	555 Δ
Mean††	535	530	538	558	578	597	600	580	546	523	516	525	530	529	516 Δ

†Five international quiet days

††Five international disturbed days

 Δ Loss of record, day omitted for means.

TABLE 12
 Hourly values of Horizontal Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 39,000 φ plus tabular quantities

February

Hours GMT										Maximum		Minimum		Date	
15	16	17	18	19	20	21	22	23	Mean	Range	Time	Mag	Time		Mag
φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	H M	φ	H M	φ	φ	
502	504	502	506	512	514	524	530	539	535	05 33	629	10 31	479	150	1
550	550	550	551	550	554	553	551	551	567	06 12	653	01 02	537	116	2†
555	549	550	552	555	556	561	560	561	570	07 00	635	01 36	530	105	3
569	565	557	546	544	551	560	560	557	577	05 48	633	17 56	543	90	4
539	542	550	554	554	555	557	557	557	565	06 15	597	15 23	537	60	5
549	546	547	552	554	558	558	559	561	574	05 20	630	16 35	544	86	6
562	561	559	557	557	558	560	558	557	573	05 15	627	21 22	556	71	7
563	562	562	562	562	562	562	562	563	577	05 13	648	00 25	557	91	8†
580	580	583	578	572	585	584	579	562	583	04 48	642	23 59	509	133	9
492	508	516	513	523	530	530	532	530	517	05 28	601	09 35	457	144	10††
549	537	545	534	535	546	547	537	540	545	04 52	617	09 43	499	118	11††
543	539	544	548	551	548	542	547	547	556	05 36	631	01 40	528	103	12††
537	553	529	543	546	555	539	540	545	551	05 12	618	09 05	521	97	13††
534	548	545	541	549	554	553	550	551	553	06 26	607	08 30	525	89	14††
540	540	542	546	543	542	543	545	548	562	06 22	627	13 00	532	95	15
548	548	548	546	550	551	553	553	554	564	05 12	613	16 00	542	71	16
561	559	558	559	559	560	559	558	560	574	05 46	634	01 05	554	80	17
561	560	566	563	566	565	566	566	570	581	05 05	642	10 25	560	89	18
571	568	566	567	568	572	574	574	574	591	06 17	666	16 45	565	101	19†
564	562	562	563	568	564	559	551	568	590	06 20	683	22 19	547	136	20
557	552	551	543	549	555	558	557	558	572	05 15	630	17 48	541	89	21
561	557	555	556	562	559	559	564	563	572	05 03	634	09 52	543	91	22
560	554	551	552	558	557	558	558	558	580	05 30	660	16 05	549	111	23
568	567	566	563	561	562	564	567	562	580	05 23	638	23 10	560	78	24†
562	557	558	559	563	564	564	565	565	579	06 25	640	16 07	556	84	25
555	554	557	556	559	559	558	560	559	578	05 56	657	16 14	553	104	26
570	568	565	563	561	562	564	564	565	584	05 40	644	00 30	557	87	27†
562	565	568	567	565	566	570	573	561	589	06 25	653	23 22	555	98	28
552	552	552	551	553	556	556	556	557	569					98	Mean
564	563	562	561	560	562	563	564	563							Mean†
531	537	536	536	541	547	542	541	543							Mean††

†Five international quiet days
 ††Five international disturbed days.
 ΔLoss for record, day omitted for means.

TABLE 13

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

March

39,000 γ plus tabular quantities

Date	Hours G M T.															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1†	556	546	547	567	600	616	643	633	592	575	572	561	551	551	549	
2	557	555	557	577	600	630	637	637	621	604	588	580	567	563	566	
3	564	565	572	589	613	623	632	632	628	603	592	580	563	566	566	
4	566	565	572	593	624	645	645	633	612	585	572	568	569	570	565	
5	561	566	582	610	640	652	643	618	583	557	554	565	574	572	566	
6	568	572	585	609	637	646	650	635	608	584	571	574	576	573	569	
7	562	561	572	600	638	659	654	638	603	576	560	563	574	576	576	
8††	567	565	569	591	629	669	684	652	603	566	551	523	506	530	533	
9††	556	554	560	585	610	605	620	618	609	585	578	568	563	554	548	
10††	552	544	554	579	604	634	635	613	598	568	545	538	540	520	503	
11	551	557	556	567	581	601	618	607	589	580	556	559	560	556	550	
12	544	545	549	570	605	640	642	633	613	588	564	553	552	554	550	
13	550	550	560	582	611	638	655	650	626	598	567	554	554	555	545	
14†	550	550	553	576	615	650	667	663	645	614	588	571	565	563	559	
15	559	556	558	581	618	641	648	645	630	614	593	576	566	561	559	
16	560	561	569	593	619	641	647	631	610	593	581	576	576	574	570	
17	566	564	571	590	610	625	633	628	621	610	592	585	578	576	569	
18	561	562	572	592	618	639	643	620	589	564	558	561	565	562	549	
19	556	561	570	592	628	651	639	611	582	566	557	557	562	557	552	
20	561	563	577	602	625	642	649	633	613	598	580	568	570	572	569	
21	566	566	572	595	627	641	647	622	598	585	571	566	568	565	562	
22†	565	569	586	606	625	642	647	635	610	585	569	571	573	573	571	
23	575	575	577	600	608	665	677	659	617	592	594	573	573	565	545	
24	559	538	561	592	619	647	646	623	601	579	561	553	553	560	562	
25	565	564	578	611	640	665	669	655	630	601	581	568	567	570	564	
26	567	567	576	603	629	655	677	677	654	623	592	566	563	569	567	
27†	563	564	572	591	616	633	639	627	607	587	566	558	563	561	562	
28	564	564	575	601	638	678	688	673	647	618	597	586	583	580	577	
29	566	563	565	584	615	663	664	664	639	611	582	562	554	552	556	
30	559	557	560	580	611	631	634	620	600	586	574	568	564	560	560	
31	564	565	576	602	631	651	642	616	592	580	576	571	566	561	557	
Mean	561	560	568	591	619	643	649	636	612	590	574	565	563	562	558	
Mean†	561	562	571	594	621	644	655	647	625	600	579	568	568	569	566	
Mean††	556	553	557	578	605	625	640	626	598	575	560	550	544	542	537	

| Five international quiet days.

†| Five international disturbed days

Δ Loss of record, day omitted for means

TABLE 13
 Hourly values of Horizontal Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 March 39,000 γ plus tabular quantities

Hours G M T										Maximum		Minimum		Date	
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag		Range
'	'	'	'	'	'	'	'	'	'	H M	'	H M	'	'	
548	551	557	551	555	552	556	556	556	569	06 05	653	14 52	545	108	11
560	560	559	563	560	560	564	563	567	579	05 28	641	01 25	554	87	2
563	560	563	569	568	564	559	565	565	582	07 30	656	21 22	555	101	3
562	557	554	553	558	563	565	563	565	580	05 30	625	17 45	552	73	4
565	561	560	560	561	560	567	571	569	580	04 50	625	09 46	551	74	5
565	562	560	565	561	563	566	564	563	584	05 55	655	17 33	557	98	6
575	574	575	582	585	571	569	561	586	587	05 10	664	22 05	556	108	7
514	510	518	538	545	528	531	545	548	564	05 57	692	11 25	502	190	8 †
550	549	552	557	554	556	553	560	557	571	06 38	627	13 48	545	82	9††
524	513	530	559	533	547	561	561	553	559	05 28	653	14 25	493	160	10††
544	548	551	545	548	559	553	549	545	561	06 07	622	18 48	539	83	11
552	546	544	544	548	549	550	548	549	568	05 30	663	02 16	541	122	12
550	543	547	548	547	548	553	550	549	572	06 17	659	15 15	539	120	13
559	558	557	554	556	556	557	557	557	571	06 15	670	01 23	548	122	14
558	557	556	555	556	558	558	560	559	580	06 32	651	01 35	554	97	15
566	561	563	563	564	565	565	565	566	583	05 40	651	00 55	560	91	16
562	555	547	547	551	558	561	558	564	580	05 41	636	18 28	546	90	17
532	532	535	546	553	552	574	574	571	571	05 45	650	15 23	527	123	18
554	554	551	551	543	544	546	548	548	570	05 18	655	19 24	539	116	19
570	570	571	571	571	570	566	563	568	585	05 05	656	22 13	560	96	20
561	561	561	560	563	562	564	564	564	579	05 56	653	17 45	560	93	21
574	572	572	576	576	576	572	572	574	587	05 46	647	00 01	565	82	22†
542	545	554	558	559	554	553	556	556	582	05 42	689	14 23	536	153	23
558	559	555	566	557	558	558	560	562	575	05 15	652	10 52	550	102	24
559	561	567	570	565	564	564	567	568	588	05 49	675	15 07	559	116	25
565	561	558	559	558	556	558	560	562	588	06 36	682	20 20	553	129	26
560	560	559	559	555	558	560	561	563	577	05 55	639	19 13	555	84	27†
574	572	571	570	568	568	571	571	569	596	05 30	690	00 01	564	126	28
559	561	561	560	558	557	559	562	561	582	06 49	676	12 30	548	128	29
560	559	558	559	560	562	562	562	563	575	05 45	637	01 30	555	82	30
554	555	557	557	561	562	563	568	570	579	05 00	654	14 35	553	101	31
556	555	556	559	558	558	561	561	562	578				108	Mean	
565	563	562	562	562	562	562	563	564						Mean†	
536	536	542	550	547	548	555	554	552						Mean††	

†Five international quiet days
 ††Five international disturbed days
 \Loss of record - day omitted for means

TABLE 14

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

April

39,000 γ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	566	555	553	573	605	641	622	599	581	556	557	568	567	561	559
2	559	560	568	585	619	647	654	642	620	599	582	574	570	569	564
3	553	554	564	593	614	634	638	628	606	600	576	576	576	572	569
4††	567	567	579	610	646	666	683	674	643	610	596	594	591	572	555
5††	563	560	531	537	579	577	600	593	585	569	554	547	540	533	530
6††	542	538	544	570	606	625	620	608	568	547	542	533	531	550	546
7	549	547	559	587	604	622	624	602	576	559	559	565	554	547	545
8	549	550	562	586	611	625	624	611	590	573	564	565	562	559	556
9	553	553	558	581	611	620	634	625	605	585	570	564	560	556	553
10†	550	547	555	582	611	636	649	643	625	599	576	562	556	555	553
11†	559	558	561	590	629	657	668	658	633	599	564	552	558	558	558
12	552	566	581	616	660	698	702	690	653	619	573	549	552	561	555
13	545	543	549	576	610	637	642	628	608	586	563	538	520	521	532
14††	529	535	538	560	593	619	624	614	599	577	557	549	545	531	519
15	539	539	531	553	591	612	621	600	567	548	537	531	524	528	531
16	540	543	554	579	612	626	634	615	598	576	558	549	549	552	552
17	542	539	545	572	605	630	635	630	614	588	570	560	554	554	551
18	551	549	556	577	603	616	619	615	597	563	547	550	557	561	558
19	539	546	557	588	628	646	626	622	583	568	562	563	565	564	565
20	550	562	572	600	625	640	639	611	585	566	551	544	547	538	529
21†	543	550	568	593	612	619	617	600	574	553	550	553	555	545	539
22	545	545	559	577	605	617	611	593	572	550	544	549	553	554	552
23	542	545	563	588	599	607	595	568	532	500	503	516	525	526	522
24†	538	537	545	571	603	623	634	625	602	574	559	555	554	556	554
25	554	556	569	599	634	652	627	644	615	581	562	557	560	561	562
26	551	554	568	600	633	650	652	645	625	594	569	559	558	560	560
27	569	568	580	615	646	653	644	629	599	568	542	533	523	522	537
28†	548	554	567	600	617	628	626	619*	605	586	564	555	556	563	565
29	561	564	572	594	623	636	639	628	621	570	578	564	564	563	561
30††	561	561	564	586	613	635	645	641	637	622	603	586	575	568	568
Mean	550	552	559	585	615	633	635	623	601	576	562	555	554	552	550
Mean†	548	549	559	587	614	633	639	629	608	582	563	555	556	555	554
Mean††	552	552	552	573	607	624	634	626	606	585	570	562	560	551	544

†Five international quiet days

††Five international disturbed days

△Loss of record, day omitted for means

TABLE 14
 Hourly values of Horizontal Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 39,000 γ plus tabular quantities

Mean										Maximum		Minimum		Range		Date	
15	16	17	18	19	20	21	22	23	00	Time	Mag	Time	Mag	γ	γ		
556	550	549	548	550	552	556	556	559	568	05	22	651	17	55	547	101	1
561	560	561	558	553	550	550	551	552	580	05	22	658	20	30	549	109	2
565	562	557	558	557	559	559	561	567	579	05	33	642	00	01	553	89	3
536	542	544	542	565	570	564	561	559	589	06	05	695	15	02	533	162	4†
530	533	530	540	553	551	544	544	545	553	05	58	624	17	40	522	102	5†
550	539	535	537	538	547	541	553	551	558	05	28	643	11	02	527	116	6†
539	536	539	539	544	546	547	545	544	562	05	36	631	15	45	533	98	7
556	553	550	551	551	555	553	553	551	569	05	11	631	17	50	544	87	8
553	550	549	553	552	551	551	553	551	571	05	38	640	16	52	546	94	9
553	553	551	553	548	553	554	556	559	574	06	05	651	18	55	547	101	10†
555	555	554	555	555	555	557	558	558	579	06	15	671	10	35	550	121	11†
550	552	549	551	549	550	541	544	546	586	05	30	703	21	22	542	161	12
523	521	517	512	514	517	526	528	527	553	05	35	646	18	23	505	141	13
496	492	512	528	531	536	546	548	529	550	05	15	633	15	40	484	149	14†
537	537	536	536	541	545	540	542	530	550	06	21	629	11	55	520	109	15
554	548	544	543	545	547	556	554	548	566	05	53	640	00	08	539	101	16
551	551	548	548	548	554	556	555	552	569	05	10	638	00	57	537	101	17
557	546	537	536	544	534	548	547	541	563	05	22	628	17	52	528	100	18
563	563	550	550	547	547	547	544	546	570	04	52	657	00	05	538	119	19
524	538	526	533	537	538	540	541	542	562	05	17	653	16	41	522	131	20
541	541	542	541	541	542	542	542	545	560	05	20	621	18	00	539	82	21†
549	544	546	543	538	535	547	547	545	559	04	53	619	20	14	533	86	22
525	525	529	532	533	535	538	539	539	543	05	05	615	08	58	494	121	23
552	550	552	554	554	552	554	556	554	567	05	55	635	01	00	537	98	24†
561	560	562	558	559	557	551	551	550	578	05	30	658	22	52	549	109	25
559	555	555	554	551	551	558	566	566	579	05	25	657	19	15	550	107	26
542	540	542	539	537	539	542	545	547	567	04	28	656	12	39	519	137	27
566	566	561	564	561	557	557	558	561	575	05	14	630	00	01	548	82	28†
561	560	558	559	560	563	555	564	563	579	05	08	644	16	36	557	87	29
578	602	589	586	565	535	521	535	543	584	05	43	647	20	43	516	131	30†
548	547	546	547	547	547	549	550	549	568						111		Mean
553	553	552	553	552	552	553	554	555									Mean†
538	542	542	547	550	548	544	548	545									Mean†

† Five international quiet days.
 †† Five international disturbed days
 ^ Loss of record, day omitted for means.

TABLE 15

Hourly values of Horizontal Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

May

39,000 γ plus tabular quantities

Date	Hours G M T															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
1	544	550	576	549	553	581	620	594	578	554	529	524	514	515	530	
2 †	533	530	537	559	591	609	602	601	596	579	536	522	531	530	531	
3	568	563	566	591	614	631	625	596	587	573	562	559	555	544	541	
4 †	541	538	548	579	612	623	609	588	554	519	507	525	533	536	533	
5	541	541	550	580	607	614	611	604	588	562	542	538	542	547	546	
6	548	553	570	601	622	630	622	606	578	550	536	540	551	553	549	
7	557	555	565	599	628	634	629	618	603	598	561	556	557	556	551	
8	556	553	559	587	621	658	667	646	634	589	563	551	554	551	554	
9	560	563	586	618	646	683	664	629	593	555	513	514	527	534	542	
10	545	546	557	590	621	651	660	616	577	546	519	517	537	550	546	
11	548	549	558	583	612	628	636	626	602	575	546	536	530	541	547	
12	552	552	564	595	623	646	646	634	606	584	563	546	545	552	547	
13 †	547	552	567	585	633	622	638	631	614	582	535	512	512	521	525	
14	549	547	555	577	594	617	634	625	605	578	549	536	532	531	538	
15	548	551	559	588	620	650	654	644	616	580	547	530	531	539	544	
16	544	546	558	581	610	634	646	639	615	582	553	542	546	549	549	
17	548	553	556	579	607	630	652	645	634	613	587	559	549	548	551	
18	552	559	567	583	610	624	626	610	586	567	557	557	563	569	570	
19	561	566	577	599	618	635	639	630	611	588	580	574	570	563	560	
20	537	540	543	554	575	588	600	598	592	580	567	555	551	548	549	
21	561	563	573	590	609	632	644	639	617	592	576	574	569	569	570	
22	566	571	582	604	626	644	651	642	620	600	582	568	558	558	559	
23	568	575	587	613	640	663	671	663	633	599	561	544	554	566	570	
24	568	571	580	599	627	654	665	655	626	591	557	541	553	564	564	
25	580	588	599	624	656	680	687	678	655	627	602	590	576	562	546	
26	558	564	561	565	579	597	613	630	628	612	587	565	555	555	555	
27	561	562	564	580	612	633	645	625	604	581	560	547	551	557	558	
28	574	578	572	580	598	619	618	633	600	572	543	535	538	545	549	
29 †	564	559	555	552	558	568	594	567	575	572	559	544	536	532	533	
30	549	555	563	576	576	578	559	551	562	561	541	525	535	543	546	
31	551	558	563	568	574	597	617	621	612	598	596	556	541	541	546	
Mean	554	556	565	585	609	628	634	622	603	579	555	545	545	547	548	
Mean	560	564	575	596	623	644	652	642	616	588	562	551	555	561	562	
Mean †	546	546	557	565	589	601	613	596	583	561	533	525	525	527	531	

|| Five International quiet days
 ||† Five International disturbed days
 △ Loss of record, day omitted for means

TABLE 15
 Hourly values of Horizontal Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 39,000 φ plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag				
φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	H	M	φ	H	M	φ	φ	
524	521	527	524	526	529	527	535	535	544	05	56	663	12	40	509	154	1†
539	534	547	542	539	539	543	544	565	553	05	50	626	11	28	519	107	2†
542	541	549	544	543	541	546	543	542	565	05	23	639	15	28	537	102	3
533	530	530	544	538	534	534	536	538	548	04	52	629	09	55	501	128	4†
546	543	548	552	549	549	550	549	548	550	04	23	626	10	30	537	89	5
549	544	546	546	549	551	558	553	552	565	04	47	633	10	00	534	99	6
555	556	553	556	558	557	556	556	557	571	05	15	639	13	55	551	88	7
554	553	551	554	563	558	555	563	565	577	06	00	678	10	45	547	131	8
542	543	543	549	546	548	546	545	544	568	05	15	711	10	18	505	206	9
538	532	543	548	543	555	555	555	553	562	05	58	668	10	42	509	159	10
541	546	544	544	545	552	555	546	549	564	06	14	639	11	50	526	113	11
541	546	552	546	544	547	547	547	546	570	05	10	655	15	04	538	117	12
539	535	536	543	548	550	544	545	551	561	06	02	651	11	11	503	148	13†
542	543	544	545	545	543	544	545	548	561	05	58	643	12	40	529	114	14
544	545	544	546	550	547	547	546	545	567	05	58	660	11	30	528	132	15
550	551	552	553	553	551	550	551	549	569	06	20	648	11	02	542	106	16†
548	548	549	555	555	551	551	556	553	574	05	56	655	13	00	543	112	17
569	563	563	560	560	563	563	563	563	574	05	40	629	00	01	552	77	18†
557	556	557	551	552	552	546	541	534	576	06	03	643	23	20	533	110	19
551	554	559	560	561	563	563	563	563	563	05	48	602	01	32	534	68	20
569	568	564	560	559	563	560	563	566	581	06	10	646	19	00	552	94	21
560	561	564	564	565	566	567	567	567	584	06	13	654	13	25	558	96	22†
568	567	568	568	567	572	572	571	570	589	06	26	674	10	56	542	132	23†
567	569	573	575	575	577	578	578	580	587	05	50	669	11	05	544	125	24†
547	553	555	557	559	569	582	568	564	596	04	43	697	14	20	538	159	25
556	558	557	558	564	559	561	561	557	573	07	21	638	13	55	553	85	26
561	558	560	561	569	573	587	575	573	577	05	38	648	11	21	546	102	27
548	550	551	551	556	556	558	560	563	569	07	00	648	11	28	530	118	28
542	548	552	553	550	552	553	551	550	555	06	02	619	03	20	526	93	29†
550	550	550	551	551	553	552	551	550	553	04	40	603	10	53	523	80	30
544	545	547	553	559	560	559	552	554	567	06	45	629	12	07	537	92	31
549	549	551	552	553	554	555	554	555	569						111		Mean
563	562	564	564	564	566	566	566	566									Mean†
535	534	539	541	540	541	540	542	548									Mean††

† Five International quiet days
 †† Five International disturbed days
 Δ Loss of record ; day omitted for means

TABLE 16

Hourly values of Horizontal Force 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

June

39,000 γ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	554	554	558	572	582	609	620	612	599	579	548	522	522	540	544
2	545	550	555	570	598	614	629	619	591	569	547	540	533	537	540
3	560	562	563	572	592	604	610	602	581	558	541	538	552	558	552
4	554	564	577	598	622	633	637	620	604	585	564	552	554	557	557
5	563	566	574	593	619	638	648	641	619	592	560	549	558	566	565
6	568	574	583	597	619	634	642	643	629	603	576	570	581	587	588
7 †	518	521	496	457	477	539	570	582	563	535	509	503	501	500	512
8	535	539	544	560	587	614	632	629	612	576	536	518	518	526	530
9	545	538	547	564	606	620	624	625	608	583	557	530	527	535	535
10	540	543	542	559	587	616	635	640	623	593	558	540	541	544	549
11	556	559	564	583	597	605	611	616	607	591	566	550	557	558	557
12	563	563	566	577	597	615	622	624	609	583	557	546	548	554	553
13	549	548	546	555	560	586	611	616	611	592	563	538	537	540	543
14	557	557	560	573	598	622	633	628	603	575	557	542	539	544	548
15	562	567	572	580	595	615	603	599	586	567	550	548	554	551	547
16	559	559	562	582	605	620	627	620	611	598	580	565	556	554	554
17	554	559	568	586	605	621	628	617	596	557	534	511	512	510	499
18 †	545	555	565	579	585	576	566	556	554	545	542	545	554	538	532
19	538	545	563	579	599	617	628	624	610	586	559	544	541	545	548
20	545	551	557	573	571	595	607	589	579	552	522	516	525	538	543
21	551	557	568	591	612	634	631	612	584	543	531	532	546	559	561
22	562	563	577	597	618	627	620	600	575	548	538	538	548	554	557
23	560	565	578	592	608	621	622	610	596	579	554	548	555	560	560
24	564	564	567	575	594	614	620	634	634	617	601	583	568	569	568
25 †	572	571	568	581	588	571	567	569	587	597	573	553	541	537	542
26 †	550	545	534	546	544	543	558	572	544	528	530	530	536	545	541
27 †	559	565	567	569	581	570	567	567	552	550	553	549	541	542	543
28	555	556	561	570	586	593	592	598	602	583	574	562	561	558	553
29	554	558	562	565	583	602	616	602	594	585	575	566	561	558	557
30	545	555	558	579	606	611	598	588	574	563	547	534	538	543	548
Mean	553	556	560	572	591	606	612	608	595	574	553	542	544	547	548
Mean†	560	563	574	592	614	628	631	618	601	580	559	550	554	558	559
Mean †	549	551	546	546	555	560	566	569	560	551	541	536	535	532	535

†Five international quiet days

††Five international disturbed days

△Loss of record, day omitted for means

TABLE 16
 Hourly values of Horizontal Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 June 39,000 γ plus tabular quantities

Mean										Maximum		Minimum		Range		Date	
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag	Mag	Mag		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H	M	γ	γ	
539	542	539	544	547	548	547	547	545	559	05	44	632	11	40	513	119	1
540	541	548	549	553	560	558	560	560	563	06	15	641	12	07	529	112	2
552	554	554	555	556	557	557	557	555	564	05	43	618	10	24	534	84	3
555	556	557	560	561	562	563	563	563	576	06	17	642	11	30	550	92	4
565	565	567	567	568	568	570	570	570	582	05	57	649	10	39	547	102	5
591	596	590	588	587	575	567	559	535	591	06	58	644	23	59	512	132	6
507	503	514	503	524	521	525	533	535	519	07	07	595	03	45	442	153	7
529	531	534	536	541	544	541	541	543	554	05	55	641	11	54	514	127	8
534	536	540	540	540	547	545	542	542	559	06	02	633	11	30	520	113	9
548	547	542	546	548	552	555	557	557	565	07	07	647	01	31	537	110	10
553	558	560	557	557	555	555	557	562	570	06	35	670	10	45	548	72	11
553	550	552	553	555	555	554	554	553	569	06	35	629	11	22	541	88	12
547	549	551	554	554	556	555	560	560	562	07	07	619	11	32	534	85	13
552	556	560	560	559	557	556	557	559	569	06	38	638	11	32	535	103	14
541	542	547	551	554	556	559	556	559	565	05	25	622	16	15	541	81	15
555	556	554	553	553	557	561	562	559	573	06	05	630	17	48	550	80	16
496	498	499	501	509	518	527	535	543	545	06	10	631	14	30	495	136	17
519	530	521	508	515	533	523	530	533	545	04	23	592	18	18	504	88	18
551	553	550	547	547	544	553	557	553	566	06	17	615	00	02	536	109	19
542	538	549	548	551	557	554	551	549	554	06	02	613	11	16	511	102	20
560	560	557	559	560	558	562	560	560	569	05	23	642	10	45	528	114	21
559	557	560	560	560	560	560	560	560	569	04	49	633	10	12	535	98	22
557	557	560	564	565	564	563	564	564	574	05	41	626	10	48	547	79	23
559	548	547	559	564	565	565	568	571	580	07	30	641	16	50	545	96	24
552	565	565	571	568	559	555	550	551	565	03	50	610	04	50	519	91	25
543	547	550	552	550	550	553	557	559	546	06	39	588	04	10	504	84	26
546	549	549	547	549	561	558	558	555	556	04	20	596	12	40	538	58	27
543	543	544	555	552	553	553	553	553	565	07	36	609	15	43	540	69	28
555	546	541	548	550	549	548	552	553	566	06	05	622	17	07	540	82	29
553	556	551	548	556	555	549	552	552	561	04	23	621	10	47	532	89	30
547	548	548	549	552	553	553	554	554	563						98		Mean
560	558	560	561	561	562	563	564	563									Mean†
537	539	540	536	541	545	543	546	547									Mean††

† Five international quiet days
 †† Five international disturbed days
 △ Loss of record, day omitted for means

TABLE 17

Hourly Values of Vertical Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

January

2,000 γ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
1	188	189	188	185	184	177	174	172	167	172	174	184	184	185	185
2†	186	185	188	186	184	178	172	166	166	167	170	173	179	182	183
3	184	188	185	185	186	167	161	154	143	153	170	178	184	180	180
4	186	188	185	185	186	178	173	165	154	174	183	189	186	185	178
5	189	188	185	186	189	186	178	172	166	166	170	177	184	184	188
6†	188	188	189	190	197	207	208	196	177	162	172	178	185	185	186
7	184	185	186	187	188	177	175	178	165	159	161	170	177	185	182
8	188	184	187	187	185	189	183	182	165	159	160	171	183	183	184
9†	188	183	182	184	183	184	181	178	166	165	166	169	175	183	181
10	187	185	185	184	182	176	176	177	173	177	184	187	182	177	177
11	188	187	184	183	181	177	185	189	179	175	177	184	185	185	184
12	187	187	183	184	182	181	178	165	172	175	177	183	182	184	183
13††	184	179	185	188	189	197	199	196	185	175	165	166	175	176	183
14††	188	187	188	192	198	189	200	197	188	173	172	166	185	186	179
15††	188	189	188	190	183	178	177	189	186	183	176	182	184	180	180
16	188	189	192	200	197	190	188	186	172	166	178	186	184	186	189
17	189	188	188	189	184	167	163	167	172	178	179	186	187	185	189
18	190	189	187	189	187	177	185	186	187	195	187	187	186	187	186
19	185	184	183	182	174	168	164	173	191	180	186	187	188	187	180
20	188	186	184	188	191	180	179	174	178	179	188	190	188	191	192
21	191	190	187	179	176	170	176	177	175	187	186	182	183	185	186
22	183	180	181	185	182	175	153	155	161	163	175	180	181	185	187
23	182	187	186	194	190	184	171	169	168	172	180	177	180	180	180
24	182	180	178	185	177	178	165	167	170	177	179	181	179	185	188
25	181	182	181	188	188	166	158	173	179	189	190	196	186	184	182
26	186	185	182	178	168	147	156	165	180	190	186	179	184	188	185
27†	189	189	190	191	179	166	165	174	181	198	190	190	189	189	185
28	185	184	181	181	179	171	167	177	181	192	199	190	189	186	183
29	191	185	186	187	166	157	168	173	179	186	185	182	181	181	180
30††	186	180	179	185	179	173	172	180	193	190	196	197	181	187	179
31††	191	188	188	175	161	162	167	169	181	188	193	192	180	181	189
Mean	187	186	185	186	183	177	175	176	174	176	179	182	183	184	184
Mean†	187	186	186	186	184	181	179	178	174	175	179	180	183	185	184
Mean††	187	185	186	186	182	180	183	186	187	182	180	181	181	182	182

† Five international quiet days

†† Five international disturbed days

△ Loss of record, day omitted for means

TABLE 17
 Hourly Values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2,000 γ plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date		
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag				
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H	M	γ	γ	
184	184	184	188	186	186	188	186	186	182	01	00	189	08	05	166	23	1
185	183	183	188	186	188	186	188	189	181	23	00	190	07	45	165	25	2
183	181	185	186	185	188	185	185	186	178	00	00	189	08	00	143	46	3
178	172	166	178	182	188	188	186	190	180	23	00	190	07	45	153	37	4
189	188	189	188	189	188	188	189	188	184	18	45	190	08	00	166	24	5
188	189	188	188	189	188	188	189	188	188	05	45	209	09	00	162	47	6†
176	177	175	182	184	183	183	184	185	179	03	00	189	09	00	159	30	7
187	188	188	185	185	187	188	188	188	182	05	00	189	09	00	159	30	8
182	184	185	185	187	185	185	184	185	180	00	00	189	09	00	165	24	9†
184	185	185	185	187	185	185	188	187	182	22	00	188	07	55	172	16	10
177	184	185	184	181	178	187	187	185	183	07	00	189	09	00	175	14	11
187	185	185	188	187	187	189	188	187	183	21	00	189	07	00	165	24	12
182	183	179	193	187	184	187	185	189	184	05	45	201	10	00	165	36	13
183	182	195	188	185	189	185	186	188	186	16	30	202	11	00	166	36	14††
186	183	188	188	186	186	185	185	186	184	03	00	190	10	00	176	14	15††
190	188	183	189	190	189	190	184	183	187	03	05	202	09	00	166	36	16
187	189	187	187	186	185	186	186	187	183	00	00	190	06	00	163	27	17
187	185	186	187	185	187	186	187	184	187	09	00	195	05	00	177	18	18
182	184	192	191	186	187	192	192	187	184	17	40	198	06	00	164	34	19
191	190	190	191	190	190	187	187	191	187	14	00	192	06	45	169	23	20
186	185	185	183	182	185	185	186	192	183	00	00	191	05	00	170	21	21
183	185	181	186	183	182	183	186	186	178	14	00	187	06	00	153	34	22
178	180	187	178	186	178	178	183	182	180	02	45	198	08	00	168	30	23
187	185	178	177	184	176	179	178	179	179	14	00	188	06	00	165	23	24
180	182	183	190	191	185	183	185	184	183	10	50	198	06	00	158	40	25
184	188	189	188	189	184	190	189	189	181	21	55	191	06	00	147	44	26
185	185	186	185	186	187	189	191	187	185	02	00	191	06	00	162	29	27†
183	184	185	185	191	196	191	192	192	185	10	00	199	05	30	166	33	28
182	182	188	182	184	181	185	186	185	181	00	00	191	04	45	156	32	29
176	184	187	194	196	192	192	184	190	186	11	30	202	05	30	170	32	30†
179	188	180	189	194	193	203	204	193	184	22	00	204	04	00	161	43	31†
134	184	185	186	187	186	187	187	187	183							30	Mean
185	185	185	186	188	189	188	189	188									Mean†
181	184	186	190	190	189	190	189	189									Mean

† Five international quiet days
 || Five international disturbed days
 / Loss of record, day omitted for means

TABLE 18

Hourly Values of Vertical Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

February

2,000 φ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ	φ
1	195	194	192	192	183	171	170	170	173	182	192	188	185	182	181
2†	192	193	186	183	183	175	174	172	183	189	195	195	195	190	189
3	192	195	199	177	178	160	155	151	154	160	176	183	185	184	183
4	188	190	194	187	181	172	169	164	161	164	176	178	183	183	185
5	187	188	189	184	183	178	171	170	171	172	172	175	176	179	178
6	185	185	185	187	191	184	176	184	184	183	189	187	185	187	185
7	187	185	184	183	183	181	176	182	182	181	182	180	178	184	186
8†	184	183	183	183	176	175	176	182	187	184	176	170	174	181	183
9	186	183	182	181	169	172	182	186	196	206	207	202	189	184	183
10††	162	163	178	180	174	170	176	177	183	188	190	186	182	183	183
11††	182	184	183	183	183	181	177	172	184	194	190	192	186	187	186
12††	186	183	182	178	169	159	150	158	165	177	187	183	184	183	184
13††	183	183	182	177	169	161	158	158	170	191	189	188	182	183	182
14	182	183	181	177	170	169	173	171	171	185	193	192	183	180	180
15	182	183	179	176	169	169	157	163	161	169	170	173	174	170	177
16	183	182	185	182	182	181	181	180	183	186	189	188	182	180	181
17	183	182	182	180	168	167	151	173	180	177	180	174	173	175	180
18	183	182	183	182	182	175	176	177	182	187	188	187	182	176	177
19†	183	183	182	182	177	173	170	169	173	173	171	170	171	174	175
20	182	182	180	179	173	170	169	159	169	171	173	179	173	174	173
21	181	179	176	176	175	173	169	168	169	170	170	170	171	171	179
22	183	182	182	181	177	173	168	168	168	169	173	180	183	179	177
23	176	175	176	175	171	165	164	165	170	179	181	180	169	177	179
24†	181	183	182	180	180	174	173	180	182	181	181	179	171	174	176
25	183	184	183	187	183	182	181	183	193	192	187	187	183	180	180
26	182	183	181	181	177	169	167	163	169	171	173	171	170	169	171
27†	183	182	182	181	180	179	173	170	169	168	169	171	170	174	176
28	183	183	185	187	185	180	179	180	175	169	170	170	173	174	180
Mean	184	183	184	181	178	173	170	171	175	179	182	181	179	179	180
Mean†	185	185	183	182	179	175	173	175	179	179	178	177	176	179	180
Mean††	179	179	181	179	173	168	167	167	175	187	190	188	183	183	183

† Five international quiet days

†† Five international disturbed days

Δ Loss of record, day omitted for means

TABLE 18
Hourly Values of Vertical Force, 1963

(Averages for sixty minutes centered at the full hours of Greenwich Mean Time)

February 2,000 γ plus tabular quantities

Hours G M I										Maximum		Minimum		Date			
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag		Range		
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	H	M	γ	γ		
182	182	182	182	187	183	191	189	194	184	00	00	195	06	15	169	26	1
187	188	189	188	188	188	189	188	189	187	11	30	198	07	45	170	28	2†
182	183	187	187	187	187	190	187	187	180	02	00	200	07	00	151	49	3
185	184	183	183	183	185	187	187	184	181	02	00	194	08	00	161	33	4
179	183	187	188	187	187	188	187	188	181	02	00	189	07	00	170	19	5
184	185	187	193	189	189	190	189	187	186	18	00	193	06	00	176	17	6
183	188	184	187	188	189	188	188	187	184	20	00	189	06	00	176	13	7
184	182	184	188	187	186	188	186	187	182	08	30	189	11	00	170	19	8
184	183	186	187	184	186	186	184	189	187	10	00	207	04	00	169	38	9
182	190	193	187	186	188	193	188	186	182	15	30	194	00	30	159	35	10††
183	187	195	186	184	186	184	183	184	185	16	45	198	06	45	170	28	11††
184	183	188	186	189	186	183	188	186	179	19	15	194	06	00	150	44	12††
181	186	171	185	179	183	180	181	182	178	09	00	191	06	45	157	34	13††
177	183	185	181	185	183	185	182	181	180	10	00	193	05	00	169	24	14 †
179	180	181	182	181	181	181	182	182	175	01	00	183	06	00	157	26	15
180	181	180	182	182	183	182	183	183	183	10	00	189	12	45	176	13	16
181	181	182	182	181	183	182	185	183	178	21	30	188	06	00	151	37	17
181	180	181	182	181	182	183	182	183	181	08	50	189	05	00	175	14	18
176	176	175	176	181	180	185	183	181	177	21	00	185	07	00	169	16	19†
179	181	183	181	183	181	180	177	185	176	23	00	185	07	00	159	26	20
176	180	177	182	179	183	185	189	183	176	22	00	189	07	00	168	21	21
177	179	181	180	180	183	182	184	183	178	22	30	185	06	45	165	20	22
176	177	180	180	182	181	180	182	183	176	23	00	183	06	00	164	19	23
181	183	182	175	183	183	183	186	183	180	22	00	186	12	00	171	15	24†
181	180	183	185	187	186	182	185	185	184	08	00	193	14	45	179	14	25
174	179	181	182	187	185	183	183	183	176	19	00	187	06	45	161	26	26
182	180	181	181	182	182	185	183	183	178	21	00	185	09	00	168	17	27†
181	180	182	182	183	182	181	182	181	179	03	00	187	09	00	169	18	28
181	182	183	184	184	184	185	185	185	181						25		Mean
183	182	182	182	184	184	186	185	185									Mean
181	186	186	185	185	185	185	184	184									Mean††

†Five international quiet days
 ††Five international disturbed days
 ^Loss of record, day omitted for means

TABLE 19
 Hourly values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2,000 γ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	182	182	185	183	183	176	169	168	158	167	163	169	170	177	176
2	183	185	183	183	182	181	176	174	169	169	168	173	175	181	187
3	182	185	181	182	182	181	181	181	181	180	175	174	173	179	181
4	182	183	183	183	176	170	162	163	160	162	164	170	171	176	176
5	183	184	183	176	171	162	158	160	177	182	180	181	181	181	181
6	182	184	183	186	184	182	181	178	181	182	182	181	180	180	181
7	181	182	180	172	171	161	153	161	161	173	181	178	179	181	182
8††	166	181	179	177	172	163	170	160	159	170	175	170	161	179	182
9††	184	183	177	178	179	170	169	161	165	163	171	171	172	176	175
10††	182	181	177	179	177	159	148	147	157	151	154	157	170	165	170
11††	181	184	177	173	171	169	172	167	164	151	169	178	183	183	179
12	184	181	177	177	171	161	159	158	159	160	163	160	171	172	176
13	185	184	187	185	183	179	173	163	161	163	169	178	179	178	172
14†	183	183	187	189	190	178	170	161	158	158	159	160	170	171	175
15	184	182	183	182	182	173	171	172	161	157	159	169	172	177	176
16†	182	184	183	182	182	177	171	160	158	159	159	170	172	181	182
17	183	182	182	182	179	177	171	170	169	164	166	169	171	173	175
18	182	181	183	183	181	170	160	161	165	171	182	176	183	177	173
19	182	184	185	183	182	169	161	163	170	173	177	178	177	178	176
20	184	183	179	179	173	170	161	159	158	163	164	165	176	177	177
21	178	182	183	180	174	170	162	158	159	164	163	171	176	182	182
22†	183	184	182	181	177	176	176	169	168	171	176	180	172	176	176
23	186	184	190	190	186	171	165	162	160	164	158	163	171	175	175
24	183	187	186	189	184	182	170	159	160	164	172	181	177	176	180
25	184	186	187	186	181	170	163	159	158	163	159	164	175	176	175
26†	187	186	188	186	183	176	162	144	139	145	156	163	175	175	175
27†	186	186	187	185	184	180	168	162	164	168	174	173	174	174	174
28	184	185	186	190	187	184	169	160	158	164	173	174	173	174	174
29	182	184	186	181	181	174	167	160	161	167	171	172	173	180	183
30	185	186	185	182	173	171	167	165	170	171	170	168	171	177	182
31	184	183	183	183	179	177	173	171	173	178	180	182	183	182	180
Mean	183	184	183	182	179	173	167	163	163	166	169	172	174	177	177
Mean†	184	185	185	185	183	177	169	159	157	160	165	169	173	175	176
Mean††	179	182	179	178	176	167	166	161	161	160	167	169	171	176	176

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means

TABLE 19
 Hourly Values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 March 2,000 φ plus tabular quantities

Date	Mean									Maximum		Minimum		Range	
	15	16	17	18	19	20	21	22	23	Time	Mag	Time	Mag		
175	180	181	180	182	181	182	181	182	177	02 00	185	08 00	158	27	1††
181	183	181	183	182	183	182	181	183	179	01 00	185	10 00	168	17	2
180	181	183	182	183	182	181	183	183	181	01 00	185	12 00	173	12	3
182	183	182	183	184	184	186	184	183	176	21 00	186	03 00	160	26	4
181	183	182	183	184	186	184	183	183	179	21 15	189	06 00	158	31	5
181	180	181	182	181	182	181	181	180	182	05 55	190	07 00	178	12	6
182	183	183	184	184	183	183	181	195	177	23 00	195	06 00	153	42	7
172	176	181	189	190	178	193	184	183	175	18 15	196	08 00	159	37	8†
181	182	183	184	185	184	184	187	184	177	22 00	187	07 00	161	26	9††
194	177	183	194	183	187	195	185	184	173	18 00	203	07 00	147	48	10††
178	185	184	182	179	185	181	182	181	177	21 30	189	09 00	151	38	11††
170	169	167	170	182	182	183	184	185	172	23 00	185	07 00	158	27	12
182	175	182	183	182	183	184	183	182	178	02 00	187	08 00	161	26	13
177	183	179	178	181	184	184	183	183	176	02 55	191	08 00	158	34	14†
178	181	182	182	183	183	183	183	183	177	00 00	184	09 00	157	27	15
179	181	182	183	181	182	182	182	183	177	01 00	184	08 00	158	26	16†
173	175	171	176	181	182	183	181	183	176	02 45	184	09 00	164	20	17
177	177	182	183	184	183	182	183	183	177	19 00	184	06 00	160	21	18
178	181	182	183	182	182	182	183	184	178	02 00	185	06 00	161	24	19
177	181	183	178	181	179	179	178	181	171	00 00	184	08 00	158	26	20
183	183	184	184	184	184	184	186	183	177	22 00	186	07 00	158	28	21
181	183	183	183	184	186	183	182	183	179	20 00	186	08 00	168	18	22†
176	177	183	181	183	183	182	186	181	176	03 05	194	10 00	158	36	23
181	184	181	183	183	184	183	184	183	179	02 55	194	07 00	159	35	24
176	183	188	187	187	184	186	187	186	177	17 00	188	08 00	158	30	25
181	179	180	185	183	182	185	185	183	174	02 00	188	08 00	149	19	26†
175	176	182	181	181	182	182	182	185	178	02 05	187	07 00	162	25	27†
171	180	182	185	186	191	186	185	184	179	03 00	192	08 00	158	34	28
183	181	183	180	183	184	184	184	183	178	02 00	186	07 00	160	26	29
182	183	182	183	183	184	190	184	182	178	21 00	190	07 00	165	25	30
180	182	183	185	188	190	194	191	190	182	21 00	194	07 00	171	23	31
179	180	181	183	183	184	184	183	184	177					28	Mean
179	180	181	182	182	183	183	183	183							Mean††
180	179	182	186	184	183	188	184	183							Mean††

†Five international quiet days
 ††Five international disturbed days
 ‡Loss of record, day omitted for means

TABLE 20

Hourly values of Vertical Force, 1963.

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

April

2,000 γ plus tabular quantities

Date	Hours GMT														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1	184	183	184	184	182	177	167	170	171	173	180	182	177	179	179
2	184	184	190	186	184	178	171	168	170	171	177	174	177	179	180
3	186	190	184	176	164	160	162	172	179	180	183	180	179	179	180
4††	184	184	184	181	179	178	171	165	164	176	177	179	178	177	173
5††	183	184	182	187	189	178	178	167	169	169	169	170	177	177	178
6††	183	182	183	183	182	181	182	179	153	171	188	178	183	179	181
7	183	187	189	185	172	170	167	159	165	169	170	176	172	177	182
8	189	190	189	181	177	177	176	171	173	177	183	182	183	184	183
9	189	188	187	185	178	170	167	165	167	166	167	176	177	178	182
10†	183	190	191	190	188	183	176	169	167	173	174	178	182	183	183
11†	189	188	188	181	169	159	155	157	154	155	169	179	188	183	182
12	189	195	189	183	176	169	158	155	154	159	161	177	191	183	183
13	183	189	191	189	188	181	171	177	178	176	177	178	177	178	181
14††	188	190	189	192	194	192	181	180	182	182	183	184	182	177	175
15	187	188	182	178	182	177	171	164	165	168	177	180	178	188	187
16	188	188	190	182	180	171	170	171	181	182	181	180	181	177	176
17	182	188	187	187	184	180	178	177	176	178	187	188	188	187	183
18	188	189	190	194	188	182	178	177	178	182	193	190	188	187	183
19	188	193	190	182	174	166	156	166	172	187	188	187	186	183	188
20	188	200	188	183	171	169	167	165	169	170	176	179	178	179	177
21†	190	194	189	182	173	170	158	159	167	177	189	184	180	188	183
22	192	191	184	179	171	167	165	168	174	184	190	192	191	187	186
23	190	195	192	182	169	167	162	166	167	180	194	193	191	188	187
24†	194	196	192	187	182	176	175	170	174	176	186	191	192	189	187
25	197	198	197	198	189	177	172	164	170	176	188	195	194	193	188
26	193	195	188	185	178	173	175	175	175	176	185	189	194	195	190
27	200	201	195	192	184	173	170	166	167	173	179	191	195	190	196
28†	198	202	200	196	189	183	183	181	183	195	200	202	197	193	194
29	195	200	199	199	194	192	186	175	176	177	183	188	196	195	194
30††	193	199	200	195	188	187	176	172	164	170	178	187	193	194	193
Mean	189	191	189	186	181	175	171	169	170	175	181	184	185	184	184
Mean†	191	194	192	187	180	174	169	167	169	175	184	187	188	187	186
Mean††	186	188	188	188	186	183	178	173	166	174	179	180	183	181	180

† Five international quiet days

†† Five international disturbed days

‡ Loss of record, day omitted for means

TABLE 20
 Hourly Values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

April
 2,000 γ plus tabular quantities

Hours G M T										Maximum		Minimum		Date	
15	16	17	18	19	20	21	22	23	Mean	Range					
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	Time	Mag	Time	Mag		
180	178	182	183	183	184	183	182	184	180	02 45	185	06 00	167	18	1
182	183	184	183	183	184	183	183	184	180	02 00	190	07 00	168	22	2
182	183	184	182	182	183	183	184	184	179	01 00	190	05 00	160	30	3
182	181	183	183	195	190	189	182	183	180	19 00	195	08 00	164	31	4 †
182	184	189	191	194	189	189	183	188	181	18 15	195	08 45	166	29	5††
187	181	182	183	190	191	187	188	185	182	20 00	191	08 00	153	38	6 †
182	182	183	184	188	187	188	187	183	179	02 00	189	07 00	159	30	7
182	183	183	184	189	189	184	188	189	183	01 00	190	07 00	171	19	8
181	182	182	183	184	183	183	183	183	179	00 00	189	07 00	165	24	9
182	183	183	184	183	181	183	184	188	182	02 00	191	08 00	167	24	10
183	181	182	183	182	183	183	187	184	177	00 00	189	08 00	154	35	11
182	183	183	185	183	183	182	184	183	178	01 00	195	08 00	154	41	12
178	182	183	184	188	189	195	189	183	183	21 00	195	06 00	171	24	13
170	176	188	193	189	192	189	190	187	185	04 00	194	15 00	170	24	14 †
187	188	188	188	189	188	188	188	187	182	19 00	189	07 00	164	25	15
175	176	175	176	177	178	180	177	180	179	02 00	190	06 00	170	20	16
181	187	188	189	188	190	192	189	181	185	21 00	192	08 00	176	16	17
186	182	182	188	189	183	192	189	188	186	20 20	200	07 00	177	23	18
187	189	182	186	187	188	188	189	187	183	01 00	193	06 00	156	37	19
179	182	189	189	190	191	189	191	190	181	00 50	201	06 30	164	37	20
184	188	190	189	190	189	190	189	190	183	01 00	194	06 00	158	36	21
185	186	190	191	186	185	191	191	190	184	21 15	197	06 00	165	32	22
191	192	193	194	196	194	197	198	194	186	22 00	198	06 00	162	36	23
191	193	192	193	195	193	197	198	197	188	22 00	198	07 00	170	28	24
193	194	195	194	195	195	194	195	188	189	02 45	200	07 00	164	36	25
191	194	195	195	195	197	199	200	199	189	22 00	200	05 00	173	27	26
197	196	198	200	198	197	198	197	196	190	01 00	201	07 00	166	35	27
197	195	195	196	195	194	195	197	196	194	01 00	202	07 00	181	21	28
195	194	196	198	196	195	196	200	196	192	22 00	200	07 00	175	25	29
194	205	195	199	196	186	176	193	195	189	15 35	207	08 00	164	43	30 †
185	186	187	188	189	188	189	189	188	184				29		Mean
187	188	188	189	189	189	190	191	191							Mean
183	185	187	190	191	190	186	187	188							Mean †

†Five international quiet days.
 ††Five international disturbed days.
 ΔLoss of record, day omitted for means

TABLE 21

Hourly Values of Vertical Force, 1963

(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

May

2,000 γ plus tabular quantities

Date	Hours G M T														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ
1††	198	207	206	194	187	175	174	169	174	174	175	187	192	194	193
2††	198	199	198	191	192	182	168	156	158	167	169	163	175	192	191
3	197	202	204	205	197	183	171	172	173	180	179	178	180	184	185
4††	197	195	196	195	190	178	172	166	160	159	159	167	178	191	192
5	192	194	198	193	176	167	167	171	171	170	176	188	187	187	185
6	193	190	194	192	189	176	164	176	182	188	194	200	202	200	190
7	190	193	199	192	180	168	164	167	167	169	170	171	182	191	189
8	191	199	198	203	199	188	181	179	164	162	167	181	188	187	186
9	190	192	198	199	197	185	163	155	173	179	187	197	187	192	185
10	196	198	199	189	181	169	156	149	166	173	191	196	192	189	185
11	191	193	189	179	174	167	154	152	154	164	166	183	179	184	186
12	197	195	188	185	172	166	159	148	159	171	182	185	187	188	185
13††	188	195	197	203	196	171	173	166	169	164	170	183	184	183	184
14	195	196	197	194	187	188	186	174	171	164	174	186	187	186	188
15	193	194	195	194	183	168	157	148	152	160	172	186	188	184	183
16†	187	189	193	185	170	171	173	173	174	181	183	187	186	182	185
17	187	188	186	182	180	175	164	163	164	164	169	171	181	182	185
18†	192	193	193	193	186	175	169	171	176	185	192	187	188	188	188
19	188	193	197	197	195	193	186	176	174	175	180	182	186	183	186
20	188	193	188	186	186	187	185	180	181	175	180	182	186	187	187
21	187	187	187	186	182	175	169	162	164	165	171	175	180	181	186
22†	187	194	187	174	169	165	161	157	162	164	168	169	180	181	186
23†	189	193	187	186	174	159	157	157	159	162	181	192	193	186	183
24†	191	198	194	187	181	160	158	151	154	169	181	184	183	182	183
25	194	194	189	186	183	176	170	165	164	169	171	182	181	182	181
26	189	199	196	188	178	172	165	158	152	159	165	170	178	184	187
27	189	194	194	194	190	178	177	176	183	188	187	189	188	187	188
28	194	200	200	194	184	154	160	166	167	166	170	183	189	190	190
29††	191	196	200	194	195	200	195	191	188	184	183	188	189	189	188
30	190	189	188	177	176	182	175	188	199	196	195	194	196	194	188
31	193	195	199	199	199	198	192	182	169	164	174	181	186	186	187
Mean	192	195	195	191	185	176	170	167	168	171	177	183	186	187	187
Mean†	189	193	191	185	176	166	164	162	165	172	181	184	186	184	185
Mean††	194	198	199	195	192	181	176	170	170	170	171	178	184	190	190

†Five international quiet days

††Five international disturbed days.

ΔLoss of record, day omitted for means

TABLE 21
 Hourly Values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)

May 2,000 γ plus tabular quantities

Hours G M T										Maximum		Minimum		Range	Date
Mean										Time	Mag	Time	Mag		
15	16	17	18	19	20	21	22	23		H M	γ	H M	γ	γ	
189	194	197	193	197	194	192	199	199	190	01 00	207	07 03	164	43	1††
190	191	192	198	199	197	196	196	194	186	17 10	203	07 15	155	48	2††
191	192	191	195	192	193	193	196	197	189	03 01	205	06 15	168	37	3
194	192	194	192	192	195	192	194	191	185	00 00	196	09 45	156	40	4††
189	189	190	189	191	189	193	193	190	184	02 55	199	09 00	170	29	5
188	188	189	192	192	193	192	194	189	189	11 45	204	06 05	164	40	6
186	187	189	192	192	193	191	192	191	184	02 00	199	06 00	164	35	7
184	186	190	188	191	192	190	191	192	187	02 30	205	09 30	161	44	8
186	190	189	190	191	190	189	190	189	187	02 50	201	06 45	154	47	9
184	185	190	191	193	193	191	189	190	185	02 05	201	07 00	149	52	10
185	190	188	190	189	190	188	188	190	180	20 40	197	07 10	149	48	11
184	188	189	188	189	188	187	188	187	181	00 00	197	07 05	147	50	12
188	189	187	189	191	190	188	187	189	184	02 25	207	09 25	160	47	13††
187	188	187	188	189	188	187	188	189	186	02 00	197	08 55	163	34	14
184	186	187	186	189	188	187	188	187	181	02 15	196	07 15	147	49	15
186	185	186	185	186	186	187	186	185	183	02 10	193	04 00	170	23	16†
187	186	188	192	189	187	188	192	192	181	18 30	193	07 05	163	30	17
188	186	187	188	188	188	188	188	188	186	02 15	194	06 00	169	25	18†
186	187	187	186	187	186	186	187	186	186	02 15	198	08 00	174	24	19
187	191	188	192	188	187	187	186	187	186	01 15	195	09 05	175	20	20
187	186	187	187	187	188	187	187	187	181	19 30	193	07 15	161	32	21
183	186	187	186	187	187	187	187	187	178	01 05	195	06 45	156	39	22†
182	186	187	187	186	187	187	186	187	181	00 55	194	06 30	156	38	23†
184	188	193	194	189	188	189	188	189	182	01 05	201	06 55	150	51	24†
183	188	192	194	192	194	189	192	189	183	01 15	195	08 00	164	31	25
186	187	188	189	192	188	192	188	188	181	01 15	200	09 05	152	48	26
189	189	188	189	188	195	201	190	189	188	20 55	202	07 00	176	26	27
189	190	190	190	195	191	194	191	194	185	00 55	202	05 00	154	48	28
189	189	194	190	189	189	189	189	189	191	04 45	201	10 05	183	18	29††
189	192	189	193	188	193	189	188	188	189	08 15	200	06 15	174	26	30
182	181	186	188	192	193	193	191	188	187	02 15	201	08 55	163	38	31
187	188	189	190	190	190	190	190	190	185					37	Mean
185	186	188	188	187	187	187	187	187							Mean†
190	191	193	192	193	193	191	193	192							Mean††

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means.

TABLE 22

Hourly Values of Vertical Force, 1963
(Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
June 2,000 γ plus tabular quantities

Date	Hours G M T															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	
1	187	188	199	206	193	203	198	187	187	185	184	180	184	185	186	
2	190	194	193	179	169	162	160	173	189	192	186	178	177	184	185	
3	192	191	196	196	195	185	178	182	182	186	192	194	191	189	183	
4 \downarrow	189	185	184	182	178	171	170	159	159	166	170	177	182	181	182	
5 \downarrow	184	183	183	180	176	166	164	158	159	168	174	188	189	182	182	
6	186	183	181	176	175	169	174	169	174	177	186	189	186	177	180	
7 \dagger	175	187	179	178	185	174	166	162	164	174	173	186	187	181	186	
8	186	188	186	180	175	174	164	156	162	161	166	179	186	185	186	
9	185	187	186	178	172	156	154	149	150	153	166	173	178	184	180	
10	184	186	187	183	172	166	160	154	152	153	160	170	176	177	178	
11	183	184	184	170	172	165	172	160	162	166	172	178	184	178	177	
12	184	182	177	176	177	176	177	164	164	172	176	184	183	177	176	
13	182	177	183	183	171	173	172	173	172	170	172	184	177	173	176	
14	182	188	187	182	174	171	172	170	171	172	182	186	175	174	175	
15	182	177	175	181	182	175	170	182	181	182	181	181	176	174	172	
16 \downarrow	183	182	188	186	186	175	170	171	173	174	173	174	173	175	174	
17	181	176	174	179	175	170	169	169	170	170	179	181	181	173	170	
18 $\dagger\dagger$	187	183	175	170	167	166	168	169	179	180	176	180	179	170	169	
19	182	185	182	179	168	151	138	138	151	156	163	175	180	176	173	
20	180	186	185	180	172	168	167	155	157	157	167	173	173	178	177	
21	184	184	185	183	184	184	179	178	174	173	180	186	185	179	174	
22 \dagger	179	184	184	180	170	160	160	161	168	172	174	178	182	178	172	
23 \dagger	179	182	179	169	157	150	150	145	156	162	175	184	180	172	173	
24	179	180	185	183	174	166	150	151	151	157	156	156	165	169	175	
25 $\dagger\downarrow$	178	174	171	174	169	175	174	180	192	174	180	181	180	176	174	
26 $\dagger\dagger$	174	170	182	181	170	175	181	171	151	163	181	180	181	181	176	
27 $\dagger\dagger$	182	183	180	169	158	158	168	163	165	168	169	161	159	168	170	
28	177	180	181	184	176	175	174	172	169	158	170	169	174	175	174	
29	177	182	186	183	179	171	170	170	172	194	183	181	182	179	177	
30	183	183	183	174	166	174	184	186	186	186	186	185	184	184	184	
Mean	183	183	183	180	175	170	168	166	168	170	175	179	180	178	177	
Mean \downarrow	183	183	184	179	173	164	163	159	163	167	173	180	181	178	177	
Mean $\dagger\dagger$	179	179	177	174	170	170	171	169	170	172	177	178	177	175	175	

\downarrow Five international quiet days

$\dagger\dagger$ Five international disturbed days

\downarrow Loss of record, day omitted for means

TABLE 22
 Hourly Values of Vertical Force, 1963
 (Averages for sixty minutes centred at the full hours of Greenwich Mean Time)
 2,000 γ plus tabular quantities

Hours G M T										Maximum		Minimum		Range		Date		
15	16	17	18	19	20	21	22	23	Mean	Time	Mag	Time	Mag					
γ	γ	γ	γ	γ	γ	γ	γ	γ	γ	H	M	γ	H	M	γ	γ		
185	186	187	190	192	187	186	187	186	190	05	00	208	11	00	180	28	1	
184	191	191	196	191	190	191	191	192	184	01	10	194	05	55	159	35	2	
185	184	185	184	184	184	184	184	185	187	03	05	196	06	10	177	19	3	
183	184	183	183	182	182	183	183	183	178	00	00	189	07	30	158	31	4	
182	187	186	182	182	182	182	182	182	178	11	10	190	07	09	157	33	5	
180	186	181	187	183	182	187	180	174	180	11	00	192	07	09	168	24	6	
182	178	179	186	187	186	182	185	187	180	19	15	188	07	30	157	31	7	
185	185	186	186	186	186	186	186	186	184	179	01	03	188	07	05	154	34	8
179	180	185	185	184	180	184	179	179	174	01	10	187	06	45	148	39	9	
183	184	178	184	184	184	181	184	173	175	02	05	186	07	45	150	36	10	
176	183	185	182	184	177	178	184	181	177	01	50	186	06	55	160	26	11	
178	177	183	183	177	182	177	177	177	177	11	05	184	07	05	161	20	12	
178	177	183	178	177	182	177	183	183	177	02	25	189	09	05	170	19	13	
176	177	181	176	177	181	176	182	181	178	01	10	188	06	55	170	18	14	
174	175	180	182	182	181	182	182	181	179	18	15	183	05	50	169	14	15	
180	181	180	181	181	182	181	180	181	178	02	00	188	06	30	169	19	16	
173	174	176	175	181	183	181	185	186	176	23	45	187	06	50	168	19	17	
180	179	175	172	174	185	176	182	181	176	20	10	187	04	45	162	25	18	
180	178	180	181	180	179	181	182	181	172	01	05	185	06	30	137	48	19	
178	177	179	178	183	180	179	179	177	174	01	10	186	07	05	154	32	20	
178	177	178	179	179	175	180	178	184	180	11	10	187	03	05	173	14	21	
174	173	178	177	178	178	178	176	178	175	01	00	185	05	10	159	26	22	
172	178	179	179	178	178	178	179	177	172	11	05	186	07	00	144	42	23	
172	167	171	177	179	180	179	178	179	170	02	00	185	06	15	150	35	24	
180	182	182	184	180	180	175	174	174	178	08	15	193	04	00	169	24	25	
175	181	180	181	177	180	179	181	180	176	05	45	185	08	10	150	35	26	
180	181	176	177	180	181	177	180	181	172	00	50	185	04	50	157	28	27	
172	175	176	183	177	178	181	178	176	175	02	55	184	03	53	157	27	28	
181	172	177	178	177	183	177	183	183	179	03	15	195	06	55	169	26	29	
183	184	183	179	184	183	179	178	184	182	06	55	188	03	55	165	23	30	
179	180	181	181	181	182	181	181	181	178						28		Mean	
178	181	181	180	180	180	181	180	181									Mean†	
179	180	178	180	180	182	178	180	181									Mean††	

†Five international quiet days
 ††Five international disturbed days
 ΔLoss of record, day omitted for means

TABLE 23
Principal Magnetic Storms
January-June 1963

Observatory	Greenwich day 1963	Storm time		Sudden commencements			Figure Degree of activity (iv)	Maximal activity on K-Scale 0 to 9			Ranges					
		GMT of beginning	GMT of ending (i)	Type (ii)	Amplitude (iii)			Greenwich Day	Greenwich 3 hour period	K-index	D	H γ	Z γ			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
		hr	mt	d	h											
Astrophysical observatory, Kodai- kanal	January 12	22	15	16	22	—	—	—	m	14	—	—	3	107	46	
	January 30	04	18	31	19	—	—	—	m	31	—	—	6	234	40	
	February 9	18	10	14	20	—	—	—	m	10	—	—	5	171	46	
	March 7	22	02	10	23	—	—	—	m	10	—	—	4	196	52	
	April 4	05	42	06	22	—	—	—	m	5	—	—	4	172	34	
	April 30	15	21	May 23	2	SC	<1	25	7	m	May 1	—	—	4	149	46
	June 6	17	18	7	23	—	—	—	m	7	—	—	6	156	35	
June 25	00	40	27	12	—	—	—	m	26	—	—	3	107	40		

The following symbols and conventions have been used according to recognised practice

- (i) Approximate time of ending of storm construed as the time of cessation of reasonably marked disturbance movements in the traces
- (ii) SC = sudden commencement, () = Gradual commencement.
- (iii) Signs of amplitudes of 'D' and 'Z' taken algebraically (D = reckoned negative being westerly), (Z = reckoned positive being vertically downwards)
- (iv) Storm described by three degrees of activity (m) = for moderate (when range is less than 250 γ)
(ms) = for moderately severe (when range is between 251 γ and 400 γ)
(s) = for severe (when range is above 400 γ)

IONOSPHERIC DATA

Characteristic foF₂
 Unit Mc
 Month January, 1963

TABLE 24
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	5.1	4.7	3.8	3.3	2.5	2.1	3.1	5.6	6.7	7.6	7.2 _{II}	6.6
2	3.3	2.7	2.7	2.4	2.3	2.0	3.2	5.7	7.3	7.1	C	6.5
3	3.6	2.9	2.5	2.3	2.5	2.3	3.2	5.7	7.3	7.3	6.2	5.8
4	3.4	3.5	3.0	2.8	2.6	2.5	3.3	6.0	7.6	7.9	7.3	6.7
5	C	C	C	C	C	C	C	C	C	6.5	6.7	6.8
6	1.9	1.6	1.6 _{JS}	1.5	E	E	2.8	5.8	7.5	C	C	C
7	4.6	4.2	4.0	3.5	2.3 _{UR}	E	2.6	5.4	7.4 _S	C	C	C
8	4.6 _{UF}	5.0	F	3.7 _{UI}	3.2	2.1	2.9	5.9	7.4	8.0	7.2	7.6
9	4.2	F	4.6	4.1	3.7	2.9	2.7	5.6	6.8	7.0	7.0	7.2
10	5.1 _{JS}	4.9	4.6	4.6	3.5	2.2	3.0	6.4 _{JS}	7.3	8.0	8.1	C
11	4.0	3.3	3.7	3.3	2.0	E	2.7	5.7	7.4	7.3 _{US}	7.0	6.6
12	4.2 _{II}	3.7	3.5	3.0	2.5	C	C	5.6	7.3	7.7	7.5	7.2
13	4.5	3.5	2.6	1.8	E	1.2	2.6	5.9	7.4	8.7 _{II}	8.1	7.9
14	4.1	3.5	2.9	2.7	2.2	C	2.7	5.9	7.0	7.4	8.0	8.8
15	4.5	4.6	3.5	2.8	1.9	1.6	2.6	5.9	8.2	7.9	7.6	7.4 _{II}
16	4.0	F	F	3.0	2.9	2.5	F	5.5	7.0	7.8	8.2	8.4
17	3.1	2.0	2.1	1.7	1.4 _{IK}	1.4	2.6	5.9	7.6	8.5 _{II}	7.4	7.1
18	4.8	4.6	4.6	2.7	2.0	1.3	2.6	5.9	7.3	7.4	6.9	7.0
19	2.8	2.6	1.8	E	E	E	2.5	5.8	7.6	7.2	6.4	6.6
20	5.0	3.6	3.4	2.6	2.1	1.8	2.6	6.2	7.3	7.6	7.0	7.0
21	5.0	3.8	2.5	1.8	1.4	F	2.4	5.2	6.2	6.1	6.5	6.7
22	2.7	2.1	1.9	1.6	F	E	2.4	5.4	6.7	7.4	7.2 _{II}	6.7
23	3.9	3.2	2.3	1.8	E	F	2.3	5.5	7.1	7.8	8.0	7.8
24	4.7 _{UI}	4.6	4.1	3.4	2.1	1.8	2.4	4.6	5.6	6.3 _S	5.7	6.4
25	6.3	5.2	3.4	1.7 _S	R	I	2.4	4.8	5.8	6.4	6.2	6.6
26	F	F	F	F	E	E	2.3	5.3	6.1	6.0	6.0	6.6
27	F	F	F	F	2.1	1.3	2.0	4.4	5.4	6.0	6.3	6.2
28	2.4	1.4	E	C	E	E	2.1	4.4	4.9	5.4	5.6	6.1
29	3.9	3.2	2.4	E	E	F	2.3	5.3	6.0 _{US}	6.2	6.1	6.2
30	3.9	3.5 _{UI}	2.1	E	E	E	2.3	5.3	6.0	5.8	6.5	6.2
31	2.8	2.6	1.9	1.5 _{UR}	E	E	2.6	5.6	7.3	6.8	6.2	6.7
Count	28	26	26	28	28	29	28	30	30	29	28	28
Median	4.0	3.5	2.8	2.5	2.0	1.2	2.6	5.6	7.3	7.3	7.0	6.7
Mean	4.0	3.5	3.0	2.6	2.4	1.9	2.6	5.5	6.9	7.1	6.9	6.9

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF₂
Unit Mc
Month January, 1963

TABLE 24
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
6.8	6.8	7.0	7.4	8.0	7.5	7.4	7.2	7.3	6.2	5.6	4.3	1
6.6	6.6	6.6	7.3	7.5	7.9	7.6	7.3	7.0	6.4	5.0	4.4	2
6.0	5.8	6.4	6.8	7.7	8.3	7.3	7.2	7.0	5.8 ^{US}	4.1	3.7	3
6.8	6.7	6.6	7.1	7.5	7.7	8.0	8.0 ^{UI}	7.3	6.3	5.5	5.0	4
7.1	7.0	6.6	7.1	7.2	7.5	7.4	7.3	7.7	7.1	4.7	2.9	5
C	C	C	C	C	7.5	7.8	7.5	6.8	6.0	6.0	4.4	6
C	C	C	C	C	C	C	6.5	6.1	5.6	4.8	F	7
8.1	8.2	8.1	7.4 ^{II}	6.0	6.0	6.1	6.2	5.9	5.6	4.8	4.4 ^{US}	8
8.0	7.8	7.8	7.2	7.5	7.6	7.5	7.5	7.6	7.0	5.5	4.8	9
7.9	8.3	C	9.0	9.1	8.4	8.0	7.1	7.0	6.2 ^{US}	4.8	4.4	10
7.3	7.7	7.6	7.8	8.3	8.2	8.0	7.3	7.4	6.8	5.5	4.4	11
7.6	7.6	8.0	8.2	8.2	8.2	7.8	7.2	7.7	6.6	5.5	4.8	12
8.5	8.5	8.2	7.5	6.9	6.8	7.1	7.5	7.3	6.6	4.5	4.2	13
8.4	8.5 ^{II}	7.9	7.5	7.0	7.2	7.2	7.3	7.1	5.3	5.2	4.6	14
7.5	9.0	8.2	8.3	8.1	7.2	6.6	5.7	1	1	F	4.6 ^I	15
7.9	7.6	7.1	7.6	8.4	8.6	8.1	7.8	7.4	7.7	6.2	4.8	16
7.3	7.6	8.2	8.4	8.4	7.2 ^{US}	6.4	6.5	1	F	5.5	5.6	17
8.1	8.6	8.6	8.8	8.9	8.6	8.9	9.0	8.0	6.9	5.1	3.7	18
7.2	7.9	7.9	8.6	8.9	9.2	8.7	8.0	7.8	6.9	5.8	5.8	19
7.1	7.2	7.2	8.0	8.2	8.2	8.0	7.6	7.9	7.6	6.2	4.4	20
7.4	7.6	8.2	8.4	8.9	8.8	8.8	8.2	7.1	6.2	3.6	3.0	21
6.8	6.6	6.8	7.6	8.2	8.0	8.0	7.7	7.2	6.0	5.0	4.2	22
8.7	8.6	8.8	9.0	8.2	7.8	7.8	6.6	6.0	5.1	3.9	4.4	23
C	7.1	7.5	C	9.4	8.7	8.0	7.1	F	F	6.6	6.4	24
6.9	7.4	7.7	8.7	8.8	8.5	7.4	1	F	F	1	1	25
6.8	7.3	7.8	8.1	8.3	8.1	8.1	1	1	F	F	F	26
6.8	C	C	8.1	7.9	8.2	7.6	7.5	7.0	6.6	5.0	3.4	27
7.2	7.4	7.8	7.6	7.6	7.9	7.7	7.4	8.2	7.3 ^{US}	5.3	4.3	28
6.8	7.0	7.2	7.9	8.0	7.6	7.4	7.1	6.4 ^{UI}	6.1 ^{UI}	F	4.7	29
7.1	7.6	8.1	8.5	7.8	6.8	7.1 ^{UI}	7.7	7.6	5.3 ^{US}	3.7	3.2	30
7.6	8.8	9.5	9.3	9.3	9.1	9.9	9.6 ^{UI}	8.0	7.7 ^{US}	6.9 ^{US}	6.2 ^S	31
28	28	27	28	29	30	30	29	26	26	27	28	Count
7.2	7.6	7.8	8.0	8.2	8.0	7.8	7.3	7.3	6.4	5.2	4.4	Median
7.4	7.6	7.7	8.0	8.1	7.9	7.7	7.4	7.2	6.4	5.2	4.5	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF₂
Unit Mc
Month January, 1963

TABLE 24 (Cont'd)
Ionospheric Data
75° E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	5.1	4.2	3.7	2.9	2.2	1.7	4.7	6.3	7.5	7.8	6.6	7.0
2	3.1	2.6	2.5	2.6	1.9	2.1	4.6	6.8	7.5	7.0H	6.6	6.8
3	3.2	2.8	2.3	2.4	2.5	2.0	4.7	6.2	7.5	6.9	5.8	5.9
4	3.4	3.1	2.9	2.7	2.6	2.3	4.9	7.1	7.9	7.6	6.9	7.0
5	C	C	C	C	C	C	C	C	6.6	6.7	6.6	6.9
6	1.8	1.6	1.6	1.6IS	1.3	E	4.6	6.6	C	C	C	C
7	4.3	4.2	3.7	3.0	1.9	E	4.1	6.5	7.7	C	C	C
8	5.0UI	F	F	3.3	2.5	1.8	4.6	6.8	8.1	7.4	7.2	7.5
9	4.1	4.8US	4.5	3.9	3.5	2.3	4.4	6.4	6.8	6.8	7.3	7.5
10	5.2	4.9	4.5	4.0US	2.7	1.9	4.6	6.8	7.9	8.4	7.7	7.2
11	3.3	3.3	3.5	2.8	1.6	E	4.4	6.9	7.6	7.3	6.6	6.6
12	3.6	3.6	3.5	2.8	2.4	C	4.5	6.5	7.8	8.1H	7.1	7.1
13	3.9	3.1	2.3	1.4	1.2	E	4.6	6.3	8.1	8.8	7.6	8.0
14	3.9	3.1	2.8	2.5	1.8	E	4.6	6.6	7.5	7.8	8.4	8.6
15	4.6	4.4	3.0	2.2	1.7	1.3	4.6	7.2	8.4	7.8	7.2	7.2
16	3.7	F	3.1	3.0	2.7	2.1	4.6	6.4	7.6	8.1	8.2	8.1
17	2.5	2.1	1.7	1.4	1.4	1.4	4.5	7.0	8.2	7.9	7.2	7.0
18	4.6	4.7	3.7	2.5	1.6	E	4.4	6.6	7.6	7.0	7.0	7.5
19	2.6	2.1	1.5	E	E	E	4.4	6.8	7.6	6.6	6.4	7.0
20	4.2	3.5	2.8	2.3	1.9	1.8	4.8	6.7	8.1	7.0	7.6	7.0
21	4.6	3.0	2.2	1.3	A	L	4.1	5.9	6.2	6.2H	6.5	6.9
22	2.6	1.8	1.8	1.3	E	E	4.2	6.2	7.3	7.4	6.4	6.7
23	3.4	2.7	1.9	1.6IS	E	E	4.1	6.4	7.7	8.0	7.8	8.2
24	F	4.2	3.6	2.7	2.0	1.5	3.6	5.2	6.0	C	6.2	6.4
25	5.8	4.6	2.3	1.4S	1.4JR	E	3.8	5.2	6.2	6.2	6.4	6.9
26	F	F	F	1.8I	E	E	4.0	5.8	6.0	5.8	6.1	6.4
27	F	F	F	2.5	1.7	E	3.3	4.8	6.0	6.2	6.2	6.4
28	1.9	E	E	E	E	E	3.6	4.8	5.1	5.6	6.0	6.6
29	3.7	2.7	1.8UR	E	E	E	4.3	5.6	6.2	6.0	6.0	6.5
30	3.6	2.9F	1.7	E	E	E	4.2	5.6	5.9	6.4	6.1	6.6
31	2.7	2.1R	1.7	1.3R	E	E	4.3	6.8	7.5	6.3	6.3	7.1
Count	27	26	27	30	29	29	30	30	30	28	29	29
Median	3.7	3.0	2.5	2.4	1.7	E	4.4	6.4	7.5	7.0	6.6	7.0
Mean	3.7	3.3	2.7	2.4	2.0	1.8	4.3	6.3	7.2	7.1	6.8	7.1

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_oF_2
Unit Mc
Month January, 1963

TABLE 24 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
6.7	6.8	7.2	7.6	7.7	7.7	7.4	7.6	7.1	5.8	4.9	3.9	1
6.4	6.4	7.0	7.7	8.0	7.9	7.2	7.4 _{Us}	6.8	5.7	4.7	3.8	2
5.8	6.0	6.5	7.4	8.2	7.6	7.0	7.2	6.5	4.9	4.0	3.8	3
6.5	6.7	6.8	7.5	7.6	7.8	8.0	7.8	6.9	5.7	4.9	4.8	4
6.8	6.7	6.8	7.3	7.5	7.2	7.2	7.8	8.2	6.2	4.2	2.2	5
C	C	C	C	C	7.6	7.6	7.0	6.4	6.2	5.4	1.5	6
C	C	C	C	C	C	6.7	6.5	5.8	5.2	4.6	F	7
8.2	8.3	7.6	6.6	6.0 _{Us}	6.0	5.9	6.3	6.0	S	4.8	4.1	8
8.1	7.8	7.7	7.1	7.7	7.4	7.3	8.0	7.4	6.4	5.2	5.0	9
8.1	C	C	9.0	8.4	8.7	7.9	7.1	7.1 _s	5.3	4.8	4.5	10
7.6	7.6	8.0	8.2	8.5	8.2	7.6	7.1	7.3	6.1	4.9	4.1	11
7.4	7.8	8.2	8.1	8.5	8.0	7.5	7.3	7.7	6.2	5.3	4.7	12
8.6	8.6	7.9	7.5	6.9	7.0	7.3	7.1	7.2 _{Us}	5.4	4.1	4.2	13
8.4	8.0	7.8	7.1	6.8	7.2	7.3	7.4	6.1	5.2	5.1	4.7	14
8.6	8.6	8.4	8.1	7.9	6.8	6.0	5.2	F	F	F	4.3	15
7.9	7.3	7.1	8.0	8.8	8.6	7.8	7.6	7.6	6.7	5.3	3.9	16
7.6	7.7	8.4	8.6	8.0	6.7	6.2	Γ	F	5.4	6.1	5.1	17
8.5	8.6	8.8	8.8	8.8	8.6	8.9	8.4	7.6	6.2	4.5	3.2	18
7.4	8.0	8.0	8.8	8.8	8.8	8.3	8.0	7.6	6.2	5.8	5.7	19
7.0	7.2	7.9	8.1	8.2	8.0	8.0	7.7	7.6	6.6	4.4	5.2	20
7.4	8.0	8.1	8.7	9.2	8.8	8.6	7.8	6.6	4.8	3.3	2.9	21
6.6	6.5	7.2	8.0	8.3	8.0	8.0	7.7	6.7	5.4	4.6	4.0	22
8.8	8.8	8.8	8.7	8.2	7.8	7.3	6.4	5.6	4.6	4.0	4.8	23
6.8	7.1	8.0	9.0	9.2	8.2	7.3 _{Js}	7.0	F	Γ	6.8	6.6	24
7.1	7.6	8.1	8.8	8.6	8.2	7.0	F	I	I	F	F	25
7.2	7.5	8.1	8.4	8.4	8.0	8.2	F	F	I	F	F	26
6.8	7.6	7.8	8.2	8.1	7.8	7.3	7.2	6.8	6.2	4.2	2.8	27
7.1	7.7	7.8	7.6	7.6	7.6	7.4	7.9	8.1	F	4.4	4.1	28
6.9	7.0	7.4	8.0	7.5	7.4	7.4	C	F	F	F	4.3	29
7.2	7.8	8.1	8.1	7.1	7.1	7.5	7.5	6.5	4.3	3.2	3.1	30
8.3	9.3	9.4	9.4	9.3	9.8	9.5	9.0	8.2	7.1 _{Us}	6.4	6.2 _{Us}	31
29	28	28	29	29	30	31	27	25	24	27	28	Count
7.4	7.6	7.9	8.1	8.2	7.8	7.4	7.4	7.1	5.8	4.8	4.2	Median
7.4	7.6	7.8	8.1	8.1	7.8	7.5	7.4	7.0	5.7	4.9	4.3	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic foF1
Unit Mc
Month January, 1963

TABLE 25
Ionospheric Data
75°E Mean Time

Latitude 10 2 N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	L	L	L	4 5
2								L	L	L	4 4	4 4
3								L	L	L	4 4	4 5
4								L	L	L	L	4 5
5								C	C	L	L	L
6								L	4 2	C	C	C
7								L	4 1	C	C	C
8								L	L	L	4 5	4 5
9								L	L	L	4 5	4 5
10								L	L	L	L	C
11								L	L	L	4 5	4 6
12								L	L	L	L	4 6
13								L	L	L	L	4 5
14								L	L	L	4 5	L
15								L	L	L	L	4 4
16								L	L	L	4 6	4 4
17								L	L	4 3	4 7	4 5
18								L	L	L	4 5	4 5
19							L	L	L	4 6	4 5	4 5
20							L	L	L	4 3	4 6	4 4
21								L	L	4 3	4 3	4 4
22								L	4 3	4 3	4 3	4 6
23								L	L	4 4	4 3	4 4
24								L	4 3	4 5	4 3	4 5
25								L	4 11	4 3	4 6	4 4
26								L	4 2	4 3	4 5	4 6
27								L	L	4 3	4 3	4 6
28								L	L	4 3	4 5	4 5
29								L	L	L	4 6	4 4
30								L	L	4 3	4 3	4 4
31								L	L	L	L	L
Count									6	12	21	25
Median									4 2	4 3	4 5	4 5
Mean									4 2	4 4	4 5	4 5

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foF1
Unit Mc
Month January, 1963

TABLE 25
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4 5	I	L	I	L	I							1
4 4	4 3	L	I	L	I							2
4 4	4 3	I	I	L	I							3
4 5	LH	I	A	I	A							4
I	I	I	I	I								5
C	C	C	C	C	I							6
C	C	C	C	C	C							7
4 4	4 4	4 5	LH	I	I							8
4 5	I	I	L	I	I							9
4 6	4 4	C	I	I	I							10
4 5	4 5	L	I	L								11
4 5	4 5	I	L	I	I							12
4 4	I	I	I	L	I							13
4 6	4 4	4 5	L	I	I							14
4 5	4 4	I	I	I								15
I	4 5	I	I	I								16
I	I	4 5	I	I	I							17
4 5	L	I	I	I								18
4 4	4 7	4 4	4 4	4 1	I							19
4 4	4 6	4 3	I	I	I	I						20
4 4	4 6	4 5	4 3	4 1								21
4 4	4 5	4 5	4 5	4 2	I							22
4 4	4 4	4 6	4 3	4 1	I	I						23
C	4 5	4 5	C	4 1	I							24
4 5	4 5	4 4	4 3	4 1	I	I						25
4 7	4 6	4 5	4 3	4 2	I	I						26
4 4	C	C	4 3	4 1	3 7							27
4 4	4 1	A	L	I	I							28
4 4	4 5	4 5	4 3	L	I							29
4 4	4 6	4 6H	4 4	LH	I							30
4 5	I H	LH	I	I	I							31
25	20	13	9	8	1							Count
4 4	4 5	4 5	4 3	4 1								Median
4 5	4 5	4 5	4 3	4 1								Mean

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic foF1
 Unit Mc
 Month January, 1963

TABLE 25 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	L	L	L	4 5
2								L	L	L	4 4	4 4
3								L	L	4 3	4 4	4 4
4							L	L	L	L	4 4	4 4
5									L	L	L	4 5
6							L	L	C	C	C	C
7							L	L	L	C	C	C
8							L	L	L	4.6	4 5	4 4
9							L	L ^H	L	L	4 5	4 5
10							L	L	4 3	L	4 5	4 5
11								L	L	4 6	4 6	4 5
12								L	L	L	4 4	L
13								L	L	L	4 4	4 8
14								L	L	4 5	4 5	4 5
15								L	L	4 5	4 5	4 5
16								L	L	4 5	4 4	4 5
17							L	L	L	4 8 ^{tt}	4 5	4 4
18							L	L	L	L	4 4	4 4
19							L	L	4 3	L	4 5	4 5
20							L	L	4 2	4 4	4 5	1
21							L	L	4 2	4 3	4 4	4 4
22							L	L	4 2	4 3	4 6	4 4
23							L	L	4 2	4 3	4 4	4 4
24							L	4 0	5 0	C	4 5	4 6
25							L	L	4 4	4 2	4 4	4 4
26							L	L	4 2	4 3	4 4	4 4
27							L	L	4 1	4 4	4 4	4 4
28								L	4 2	4 3	4 4	4 5
29								L	L	4 5	4 4	4 5
30							L	L	L	4 3	4 3	4 4
31								L	L	L	L	4 4
Count								1	11	17	26	27
Median									4 2	4 4	4 4	4 4
Mean									4 3	4 4	4 4	4 5

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic foF1
Unit Mc
Month January, 1963

TABLE 25 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4 4	L	L	L	L								1
4 4	L	L	L	L								2
4 4	L	L	L	L								3
4 3	L	L	L	A								4
L	L	L	L	L								5
C	C	C	C	C	L							6
C	C	C	C	C	C							7
4 4	4 3	L	L	L								8
4 5	L	L	L	L								9
4 5	C	C	L	L								10
4 4	4 4	L	L	L								11
4 4	4 5	L	L	L								12
4 4	L	L	L	L								13
4 4	4 6	L	L	L								14
4 4	4 3	L	L	L								15
4 6	L	L	L	L								16
4 6	4 6	L	L	L								17
4 5	L	L	L	L								18
4 6	4 7	4 4	4 1	4 0								19
4 5	4 6	4 6	4 1	L	L							20
4 4	4 5	4 3	4 3	L								21
4 5	4 5	4 3	4 2	L	L							22
4 4	4 7	4 3	4 1	3 9	L							23
4 5	4 5	4 3	4 0	L	L							24
4 4	4 5	4 4	4 1	L	L							25
4 5	4 5	4 3	4 2	L	L							26
A	4 4	4 4	4 1	4 0	L							27
4 6	4 4	4 4	L	L								28
4 4	4 5	A	L	L								29
4 6M	4 5M	4 2M	L	L								30
4 4	LH	LH	L	L								31
27	18	11	9	3								Count
4 4	4 5	4 3	4 1									Median
4 5	4 5	4 4	4 1									Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo L
Unit Mc
Month January, 1963

TABLE 26
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								2 2	2 7	Λ	Λ	Λ
2								A	A	Λ	Λ	Λ
3								2 2	A	Λ	Λ	Λ
4								R	2 8	Λ	Λ	Λ
5								C	C	Λ	Λ	Λ
6								2 6	A	C	C	C
7								A	A	C	C	C
8								A	2 8II	Λ	Λ	Λ
9								A	A	Λ	Λ	Λ
10								2 0UR	2 7	Λ	Λ	C
11								A	A	Λ	Λ	Λ
12								A	A	Λ	Λ	Λ
13								2 1	A	3 0	3 2	3 3
14								R	2 7	Λ	Λ	Λ
15								2 0	A	Λ	Λ	Λ
16								2 2II	2 6UR	3 0	Λ	Λ
17								A	A	Λ	Λ	Λ
18								2 2	2 5	Λ	Λ	Λ
19								A	A	Λ	Λ	Λ
20								A	A	Λ	Λ	Λ
21								A	A	Λ	Λ	Λ
22								1 9	A	Λ	Λ	Λ
23								2 0	2 5	3 0	Λ	Λ
24								A	A	Λ	Λ	Λ
25								A	A	Λ	Λ	Λ
26								A	A	Λ	Λ	Λ
27								A	A	Λ	Λ	Λ
28								A	A	Λ	Λ	Λ
29								A	A	Λ	Λ	Λ
30								A	A	Λ	Λ	Λ
31								A	A	Λ	Λ	Λ
Count								10	8	3	1	1
Median								2 2	2 7			
Mean								2 1	2 7			

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo E
Unit Mc
Month January, 1963

TABLE 26
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	A	A	2.7	1.8							1
A	A	A	A	2.6	2.1							2
A	A	A	A	2.8								3
A	A	A	A	A	A							4
A	A	A	A	A	2.2							5
C	C	C	C	C	2.1							6
C	C	C	C	C	C							7
A	A	A	A	A	A							8
A	A	A	A	A	R							9
\	A	C	3.0H	R	2.2H							10
A	A	A	2.8	2.5	2.0							11
A	A	A	A	2.5	2.1							12
A	A	A	A	A	A							13
A	A	A	A	A	A							14
3.4	A	A	A	A	2.2							15
\	A	A	A	2.6								16
A	A	3.2	A	A	A							17
A	A	3.2	2.8	2.6	2.1							18
A	A	A	A	2.7								19
\	A	A	A	2.5	2.2							20
A	A	A	3.0	2.7	2.3							21
A	A	A	3.0	2.6	1.8							22
A	3.4	3.2	A	2.7	A							23
C	A	3.1	C	2.6								24
A	A	3.3	A	2.6								25
A	A	3.2	3.0	2.4	2.3							26
A	C	C	A	2.7								27
A	3.4	A	3.1	B	2.3							28
A	A	3.3	3.1	2.6	2.2							29
A	3.5H	3.4H	3.0R	2.8H								30
A	3.5UR	3.3H	3.1H	2.8H	R							31
1	4	9	10	19	15							Count
		3.2	3.0	2.6	2.2							Median
		3.2	3.0	2.6	2.1							Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo E
Unit Mc
Month January, 1963

TABLE 26 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							1.8	2.7	2.9	A	A	A
2							2.0	A	A	A	A	A
3							1.7	2.4A	A	A	A	A
4							R	2.6	2.9	A	A	A
5								A	A	A	A	A
6							1.5	3.0	C	C	C	C
7							A	A	A	C	C	C
8							1.7	A	A	A	A	A
9							A	A	A	A	A	A
10							1.7	2.5H	2.8	A	A	A
11							1.7	A	A	A	A	A
12							1.5	A	A	A	A	A
13							1.5	A	A	A	3.3	3.4
14							1.5	2.4	2.8	A	A	A
15							1.6	A	A	A	A	3.3
16								2.3	2.8	A	A	A
17							1.5	A	A	A	A	A
18							1.5 _{UR}	2.2	A	A	A	A
19							1.4	A	A	A	A	A
20								A	A	A	A	A
21							1.5	A	A	A	A	A
22								A	A	A	A	A
23								2.2	2.8	3.1	A	A
24							1.3	A	A	C	A	A
25							1.5	A	A	A	A	A
26								A	A	A	A	A
27							1.5	A	A	A	A	A
28								A	A	A	A	A
29							R	A	A	A	A	A
30							1.9 _{UR}	A	A	A	A	A
31								A	A	A	A	A
Count							19	9	6	1	1	2
Median							1.5	2.4	2.8			
Mean							1.6	2.5	2.8			

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo E
Unit Mc
Month January, 1963

TABLE 26 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	A	2 3								1
A	A	A	A	2 5								2
A	A	A	3 1	A								3
A	A	A	A	2 3								4
A	A	A	A	2 4	1 7							5
C	C	C	C	C	1 6							6
C	C	C	C	C								7
A	A	A	A	A								8
A	A	A	A	2 5								9
A	C	C	2 9 _{tr}	R								10
A	A	A	2 6	2 2	R							11
A	A	A	2 9	2 4	1 8							12
A	A	A	A	A	R							13
A	A	A	A	A	1 6							14
3 3	A	A	A	A	1 7							15
A	A	A	2 8	A								16
A	A	A	A	A	1 7							17
A	A	3 0	2 7	1								18
A	A	A	2 9	2 4								19
A	A	2 9	2 6	R								20
A	A	2 8	2 8	2 4	1 9							21
A	A	3 1	2 7	2 4	R							22
3 4	3 3	3 0	A	A								23
A	A	3 1	2 8	A								24
A	A	3 2	2 6	2 5								25
A	3 4	3 2	2 7	A								26
A	A	A	A	2 4								27
A	3 4	3 2	A	2 3								28
A	A	3 1	2 9	2 5								29
3 5 _{tr}	3 4 _{tr}	3 3 _{tr}	2 8 _{tr}	2 7								30
A	A	3 2 _{tr}	2 7 _{tr}	2 4								31
3	4	12	16	16	7							Count
		3 1	2 8	2 4	1 7							Median
		3 1	2 8	2 4	1 7							Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo Es
Unit Mc
Month January, 1963

TABLE 27
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								G	G	9.4	9.4	10.8
2								5.0	9.0	10.0	9.0	11.0
3								G	9.4	9.8	10.2	9.8
4								G	G	10.0	9.8	10.2
5			3.2	2.4				C	C	11.0	9.6	10.0
6								G	8.4	C	C	C
7								8.0	9.0	C	C	C
8					12.0			4.7	G	6.6	7.6	6.6
9								7.2	9.2	11.1	9.8	10.6
10								G	G	5.7	9.6	C
11								4.8	8.6	8.6	9.0	9.6
12		1.6						6.6	7.8	9.8	9.6	9.7
13						4.8		G	9.4	4.7	G	G
14								G	G	9.0	8.4	9.6
15								G	8.6	10.0	9.0	9.0
16	2.0	4.3						G	G	G	9.8	10.8
17								4.8 _{us}	9.0	8.6	10.0	11.4
18								G	6.6	8.6	8.6	9.6
19			6.4					5.0	8.4	11.0	11.0	11.8
20								8.4	9.0	10.4	10.4	10.2
21						15.6		8.2	10.0	11.4	12.4	10.8
22								6.4	8.4	10.2	9.8	11.4
23								G	G	G	8.6	10.8
24								8.6	10.4	10.0	12.4	11.2
25								8.2	8.6	10.4	9.8	10.6
26								8.2	9.0	10.0	12.0	11.6
27					3.6			6.6	9.0	10.2	11.4	11.2
28								6.8	9.0	8.8	10.4	10.0
29								S	8.4	8.8	10.2	9.8
30	3.4							4.5 _{us}	9.2	10.6	10.6	11.0
31								4.6	9.7	10.0	11.1	11.7
Count	2	2	2	1	2	2		29	30	29	29	28
Median								4.8	8.6	10.0	9.8	10.6
Mean								6.5	8.9	9.4	10.0	10.4

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo Es
 Unit Mc
 Month January, 1963

TABLE 27
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
10.8	10.0	10.0	9.0	G	G		3.0					1
9.0	10.4	11.0	9.2	G	G							2
9.7	9.8	10.0	8.4	G	3.2						5.0	3
10.2	11.8	9.8	18.0	8.2	7.2	3.5	6.4	3.2				4
10.4	10.8	10.6	10.2	7.2	G							5
C	C	C	C	C	5.8us		8.2	2.2				6
C	C	C	C	C	C			2.6	4.6us			7
8.6	10.0	11.4	10.4s	8.8	S				2.2			8
11.0	11.0	11.6	10.6	7.2	G							9
10.1	9.7	C	G	G	G			2.3				10
9.8	9.8	9.4	G	3.0	G			3.1				11
9.2	9.6	8.6	7.4	3.4	G			2.5		7.2		12
11.2	9.2	9.6	9.0	6.8	4.8	9.4						13
8.8	9.0	9.5	9.0	8.8	6.2			1.7	4.3			14
8.3	9.6	9.1	9.4	7.8	6.0							15
11.2	11.2	11.0	9.0	G	5.5				4.6	6.8		16
9.0	9.6	5.6	8.3	8.0	5.7		3.2					17
8.4	9.0	G	G	G	G					2.8		18
11.2	9.8	8.6	6.8	G			2.2	5.4				19
11.2	11.4	8.6	9.4	G	6.2							20
9.6	9.4	5.6	G	G	G		2.4					21
9.8	10.0	9.6	G	G	G							22
11.4	9.8	7.2	11.4	5.6	3.8							23
C	11.4	G	C	7.4	8.2		5.6	8.8	2.6	3.2	2.4	24
11.0	9.8	G	8.0	G	6.4							25
9.8	9.8	5.2	G	G	G							26
11.4	C	C	6.0	G		3.0						27
11.0	G	11.4	7.8	G	G							28
10.4	10.7	3.8	G	G	G				2.5	3.6	5.0	29
11.4	G	G	G	G		2.8						30
11.1	G	G	G	G	G	2.3	2.5	4.0us	S			31
28	28	27	28	29	26	5	8	10	6	5	3	Count
10.3	9.8	9.1	8.2	G	G	3.0	3.1	2.8	3.4	3.6		Median
10.2	10.1	9.0	9.3	6.8	5.8	4.2	4.2	3.6	3.5	4.7		Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic fo Es
Unit Mc
Month January, 1963.

TABLE 27 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude . 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	8 2	9 0	9 6	11 0
2							G	7 0	10 0	10 4	10 0	9 8
3							G	7 0	9 8	9 8	9 8	9 6
4			5 6us				G	G	6 0	10 0	10 0	10 6
5									10 2	10 4	10 0	10 4
6							G	G	C	C	C	C
7							5 0	8 0	9 6	C	C	C
8							G	5 0	5 8	6 6	7 8	8 4
9							3 2s	8 7	10 2	10 9	11 0	11 5
10							G	G	5 0	9 6	9 8	9 8
11							3 2	6 6	9 2	8 4	9 6	10 2
12							5	6 8	8 8	9 2	10 4	9 8
13							G	8 4	9 0	10 4	G	G
14							G	G	G	9 0	8 6	8 6
15							G	6 8	9 0	9 2	9 4	G
16	2 2							G	6 0	8 0	9 6	10 8
17							G	5 8	8 4	9 0	9 7	10 0
18					2 8		G	2 9	6 8	8 8	9 0	10 2
19		2 9					G	8 4	9 0	10 0	11 8	12 4
20					15 8			8 2	9 2	10 0	12 4	11 2
21					5 6		2 3	8 8	12 4	11 4	12 4	9 8
22								8 4	9 8	12 4	11 0	12 4
23								G	G	5 0	11 2	11 2
24							G	9 0	10 2	C	12 4	12 4
25							G	8 2	10 4	9 8	10 4	9 8
26								8 6	11 0	9 8	9 8	10 0
27	3 4						2 1	8 8	9 6	9 8	11 8	11 3
28								6 8	8 6	9 2	10 4	10 6
29							G	6 8	8 8	9 6	9 8	10 6
30							G	8 2	10 2	10 6	12 0	10 8
31								8 6	10 7	9 7	11 6	12 1
Count	1	2	1	-	3	-	22	30	30	28	29	29
Median							G	6 9	9 1	9 8	10 0	10 4
Mean							3 2	7 5	9 0	9 5	10 4	10 6

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo Es
Unit Mc
Month January, 1963

TABLE 27 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
10 4	10 0	10 0	8 0	G								1
11 0	10 4	9 8	6 6	G								2
9 8	10 8	9 2	G	6 4						4 8	2 2	3
12 0	11 0	14 6	13 0	5 2	4 8	6 6	5 2	3 4				4
10 2	10 4	10 4	8 2	G	G							5
C	C	C	C	C	G							6
C	C	C	C	C	C			2 4				7
9 4	11 0	10 6	10 2	8 0	4 0		2 1					8
11 1	11 1	11 0	8 8	G	2 8							9
10 8	C	C	G	G								10
9 8	9 6	7 6	3 7	2 8	G							11
9 4	9 6	8 2	G	2 7	G		4 4			5 0		12
10 0	8 0	9 8	7 4	5 8	3 8							13
9 3	10 2	10 8	8 6	7 0	G			2 8	2 5			14
6 8	9 6	9 8	8 6	6 7	G							15
11 6	11 6	9 8	G	6 8				2 4	6 6			16
9 8	9 0	8 8	8 0	8 4	G	4 6		2 8				17
9 0	9 2	G	G	G						3 0		18
12 4	9 2	9 0	G	G		2 4	2 5	3 1				19
12 4	12 0	G	G	4 8								20
9 8	9 4	G	G	G	2 5	2 9						21
11 8	9 6	8 2	G	G	G							22
9 8	8 2	12 4	8 4	8 2	2 6							23
11 2	9 8	G	G	8 4	1 8		10 0		2 4			24
10 4	9 0	7 8	G	G								25
9 0	10 6	G	G	6 8								26
12 0	8 0	9 8	7 8	G			2 9	4 0				27
9 4	8 0	G	5 0	G								28
11 2	9 2	14 6	G	G	2 3		C			3 8		29
G	G	G	G	G	6 3			3 8				30
10 6	8 2	G	G	G		2 0	3 8 us	5				31
29	28	28	29	29	17	5	7	8	3	4	1	Count
10 2	9 6	9 1	G	G	1 8	2 9	3 8	3 0				Median
10 4	9 7	10 1	8 0	6 3	3 4	3 7	4 4	3 1				Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic fb Es
Unit Mc
Month January, 1963

TABLE 28
Ionospheric Data
70°E Mean Time

Latitude 10 2' N.
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								G	G	3 0	3 2	3 4
2								2 2	2 7	3 0	3 3	3 4
3								G	2 7	3 0	3 2	3 4
4			1.7					G	G	3 0	3 4	3 4
5								C	C	3 0	3 3	3 4
6								G	2 7	C	C	C
7								2 2	2 8	C	C	C
8								2 1	G	3 1	3 3	3 4
9								2 2	2 7	3 1	3 3	3 5
10								G	G	3 0	3 3	C
11								2 0	2 7	3 0	3 3	3 4
12		1.4						2 2	2 8	3 2	3 4	3 4
13								G	2 6		G	G
14								G	G	3 0	3 2	3 5
15								G	2 6	3 0	3 1	3 4
16	1 2	2.0						G	G	G	3 3	3 6
17								2 0	2 7	3 0	3 2	3 4
18								G	2 6	3 0	3 3	3 8
19			1.5					2 1	2 7	3 1	3 4	3 5
20								2 2	2 8	3 0	3 2	3 4
21								2 1	2 7	3 0	3 3	3 3
22								2 1	2 8	3 0	3 3	3 4
23								G	G	G	3 1	3 5
24								2 2	2 7	3 1	3 2	3 5
25								2 1	2 7	3 0	3 4	3 6
26								2 3	2 7	3 0	3 3	3 5
27					2.6			2 1	2 8	3 1	3 4	3 5
28								2 1	2 8	3 2	3 4	3 6
29								2 2	2 8	3 1	3 4	3 6
30	G							2 2	2 8	3 1	3 4	3 5
31								2 3	2 8	3 1	3 3	3 9
Count	2	2	2		1			30	30	28	29	28
Median								2 1	2 7	3 0	3 3	3 4
Mean								2 2	2 7	3 0	3 3	3 5

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic fbEs
Unit Mc
Month January, 1963

TABLE 28
Ionospheric Data
70°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
3 5	3 4	3 2	3 0	G	G		2 0					1
3 5	3 4	3 3	3 0	G	G							2
3 4	3 4	3 2	3 0	G	2 2						2 0	3
3 4	3 5	3 6	5 4	3 0	5 2	2 5	2 0	2 5				4
3 4	3 4	3 2	3 0	2 7	G							5
C	C	C	C	C	2 2		1 8	1 6				6
C	C	C	C	C	2 2			1 5				7
3 4	3 4	3 3	3 1	2 8	2 2				1 7			8
3 5	3 5	3 3	3 1	2 7	G							9
3 5	3 4	C	G	G	G			1 6				10
3 7	3 6	3 3	G	2 9	G			2 0				11
3 4	3 5	3 2	3 0	2 3	G			1 3		2 8		12
3 5	3 4	3 3	3 1	2 7	2 2	3 0						13
3 5	3 4	3 3	3 0	2 7	2 1				1 8			14
3 4	3 3	3 2	3 0	2 7	2 2							15
3 7	3 5	3 4	3 0	G	2 2				1 7	2 0		16
3 4	3 4	3 3	3 0	2 8	2 2							17
3 4	3 3	G	G	G	G							18
3 5	3 4	3 2	3 0	G	G		1 8	1 4				19
3 4	3 4	3 4	3 7	G								20
3 4	3 4	3 7	G	G	G		1 6					21
3 4	3 5	3 3	G	G	G							22
4 0	4 3	4 0	3 1	2 8	2 3							23
C	3 4	G	C	2 8	2 3		2 6	1 9	2 0	2 0	1 7	24
3 7	3 6	G	3 2	G	2 2							25
3 5	3 8	3 4	G	G	G							26
3 7	C	C	3 2	G	G	1 9						27
3 6	G	4 5	G	G	G							28
3 6	3 6	3 5	G	G	G				1 6	1 8	2 1	29
3 6	G	G	G	G		2 1						30
3 8	G	G	G	G	G	1 8		1 8	1 8			31
28	28	27	27	29	26	5	6	9	6	4	3	Count
3 5	3 4	3 3	3 0	G	G	2 1	1 9	1 6	1 8			Median
3 5	3 5	3 4	3 2	2 8	2 5	2 3	2 0	1 7	1 8			Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month January 1963

TABLE 28 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 102° N
Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	2.8	3.0	3.3	3.5
2							G	2.5	2.9	3.2	3.3	3.4
3							G	2.5	2.8	3.1	3.4	3.5
4			1.5				G	G	2.8	3.1	3.4	3.4
5									2.8	3.2	3.4	3.5
6							G	G	C	C	C	C
7							1.8	2.6	3.0	C	C	C
8							G	2.5	3.0	3.2	3.5	3.4
9							2.6	2.5	3.0	3.2	3.4	3.5
10							G	G	3.0	3.2	3.4	3.4
11								2.5	2.8	3.2	3.4	3.6
12							1.8	2.6	2.9	3.3	3.4	3.4
13							G	2.4	2.9	3.2	G	G
14							G	G	G	3.1	3.4	3.4
15							G	2.4	2.8	3.1	3.3	G
16	1.6							G		3.1	3.4	3.5
17							G	2.4	2.8	3.2	3.3	3.5
18							G	2.7	2.8	3.1	3.4	3.6
19		1.6					G	2.5	3.0	3.2	3.4	3.5
20								2.4	2.9	3.2	3.4	3.4
21					A		1.7	2.4	2.9	3.2	3.3	3.4
22								2.5	2.8	3.1	3.4	3.4
23								G	G	3.1	3.5	3.6
24							G	2.5	2.9	C	3.5	3.4
25							G	2.2	2.9	3.1	3.6	3.6
26								2.6	2.9	3.2	3.4	3.8
27		1.7					1.6	2.5	3.0	3.5	3.4	3.6
28								2.5	3.0	3.2	3.6	3.6
29							G	2.6	3.0	3.3	3.6	3.6
30							G	2.5	3.0	3.2	3.5	3.5
31								2.5	3.0	3.2	3.4	3.8
Count	1	2	1		1		22	30	29	28	29	29
Median							G	2.5	2.9	3.2	3.4	3.5
Mean	--	--	--	--			1.9	2.5	2.9	3.2	3.4	3.5

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_oF₂
Unit Mc
Month January 1963

TABLE 28 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77.5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
3.4	3.3	3.1	3.0	G								1
3.4	3.4	3.0	3.0	G								2
3.4	3.3	3.1	G	2.6						1.6	2.0	3
3.5	3.5	3.5	3.5	2.8	3.0	3.5	2.0	2.2				4
3.4	3.3	3.1	2.9	G	G							5
C	C	C	C	C	G							6
C	C	C	C	C	C			1.6				7
3.4	3.4	3.2	3.0	2.6	2.0							8
3.5	3.4	3.2	3.0	G	1.9							9
3.5	C	C	G	G								10
3.6	3.4	3.2	3.2	2.7	G							11
3.4	3.4	3.2	G	2.6	G		1.6			1.3		12
3.6	3.4	3.2	2.9	2.5								13
3.5	3.4	3.1	3.0	2.6	G			1.7	1.7			14
3.4	3.2	3.2	3.0	2.5	G							15
3.5	3.4	3.2	G	2.6				1.5	2.1			16
3.5	3.4	3.2	3.0	2.4	G	1.6		2.2				17
3.4	3.9	G	G	G								18
3.6	3.4	3.3	G	G		1.9	1.6	1.6				19
3.4	3.6	G	G									20
3.3	3.2	G	G	G	1.8	2.4						21
3.6	3.4	3.2	G	G	G							22
4.6	4.2	3.6	3.2	2.5	1.8							23
3.4	3.4	G	G	2.9	1.9		1.8		1.6			24
3.5	3.5	3.4	G	G								25
4.0	3.6	G	G	3.1								26
4.4	4.0	3.4	3.3	G			2.3	1.8				27
3.6	G	G	3.2	G								28
3.6	3.5	4.6	G	G	2.2		C			1.6		29
G	G	G	G	G	2.7							30
3.8	3.5	G	G	G		1.5	1.7					31
29	27	28	29	28	16	5	6	7	3	3	1	Count
3.5	3.4	3.2	G	G	1.8	1.9	1.8	1.7				Median
3.6	3.5	3.3	3.1	2.6	2.2	2.2	1.8	1.8				Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_{min}
Unit Mc
Month January 1963

TABLE 29
Ionospheric Data
75°E Mean Time

Latitude 10.2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	1.5	E	E	E	1.3	1.0	1.4	1.6	1.8	1.8	2.0	2.2
2	1.2	1.4	E	E	1.2	1.0	1.1	1.4	1.6	2.1	2.2	2.4
3	1.5	1.4	E	1.4	1.4	1.0	1.0	1.3	1.5	1.8	2.1	2.2
4	2.2	1.9	1.4	1.1	1.1	1.1	1.3	1.4	1.6	1.7	1.9	2.2
5	C	C	C	C	C	C	C	C	C	1.7	1.9	1.9
6	1.3	1.5	1.8	1.1	E	E	1.1	1.2	1.4	C	C	C
7	1.3	1.2	E	E	1.1	E	E	1.3	1.4	C	C	C
8	1.3	1.4	1.1	1.2	1.2	E	1.2	1.4	1.7	1.9	2.2	2.1
9	1.2	E	E	E	1.1	1.1	E	1.2	1.2	1.6	1.8	2.0
10	1.3	1.4	E	E	1.2	1.2	1.0	1.3	1.5	1.6	2.0	C
11	1.1	1.1	1.3	1.0	1.0	E	1.0	1.1	1.6	2.0	2.4	2.5
12	1.1	1.4	1.2	1.0	1.2	C	C	1.1	1.2	1.6	1.8	2.2
13	1.6	1.5	E	1.0	E	1.0	1.2	1.6	1.4	1.8	2.1	2.4
14	1.4	E	1.1	1.1	1.4	E	1.1	1.5	1.6	2.0	2.3	2.4
15	E	1.5	E	1.1	1.1	1.0	1.1	1.4	1.5	1.6	2.0	2.3
16	E	1.1	1.4	1.2	1.2	1.0	1.0	1.7	1.8	2.0	2.2	2.3
17	1.1	1.1	E	E	S	1.0	1.0	1.1	1.4	1.9	2.2	2.4
18	1.4	1.5	1.0	E	E	1.0	1.0	1.6	1.6	2.0	2.3	2.5
19	1.1	1.3	E	E	E	E	E	1.3	1.5	1.6	1.9	2.2
20	1.8	1.6	1.5	1.6	1.3	1.3	1.1	1.4	1.5	1.7	2.0	2.1
21	1.2	1.1	1.1	1.1	1.0	E	1.2	1.4	1.3	1.8	2.1	2.2
22	E	1.1	1.3	E	F	E	1.0	1.4	1.5	1.5	1.8	2.1
23	1.0	1.1	1.0	1.1	E	E	1.3	1.6	1.7	2.3	2.1	2.2
24	1.5	1.6	1.2	1.5	1.1	E	1.0	1.4	1.6	1.7	2.0	2.3
25	1.5	1.5	1.1	1.4	E	E	1.1	1.3	1.3	1.7	1.9	2.2
26	1.4	1.7	1.5	1.3	E	E	1.1	1.6	1.7	1.9	2.2	2.3
27	1.1	1.5	1.2	1.5	1.5	1.1	1.0	1.3	1.4	1.8	1.8	2.2
28	1.7	1.3	E	E	E	E	1.1	1.3	1.7	1.8	2.3	2.4
29	1.5	1.7	1.2	E	E	E	1.1	1.3	1.3	1.8	2.2	2.4
30	1.4	1.4	1.4	E	E	E	1.1	1.6	1.8	1.9	2.2	2.1
31	1.4	1.3	E	E	E	E	1.3	1.4	1.6	1.9	2.3	2.3
Count	30	30	30	30	28	29	29	30*	30	29	29	28
Median	1.3	1.4	1.1	1.0	1.1	E	1.1	1.4	1.5	1.8	2.1	2.2
Mean	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.4	1.5	1.8	2.1	2.2

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month January 1963

TABLE 29
Ionospheric Data
75°E Mean Time

Latitude 10 2 N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2.2	2.4	2.2	1.9	2.0	1.5	1.5	1.5	1.5	1.3	1.6	1.5	1
2.5	2.2	2.2	1.7	1.7	1.4	1.8	1.7	1.8	1.5	1.5	1.5	2
2.3	2.2	2.1	1.8	1.9	1.9	1.5	1.6	1.5	1.4	1.1	1.5	3
2.2	2.2	2.4	2.0	1.8	2.0	2.2	1.9	1.7	1.8	1.9	1.7	4
2.2	2.0	2.0	1.8	1.7	1.5	1.5	1.7	1.6	1.4	1.5	1.4	5
C	C	C	C	C	1.4	1.7	1.5	1.3	1.3	1.4	1.7	6
C	C	C	C	C	C	C	1.1	1.1	1.4	1.4	1.5	7
2.1	2.1	2.0	1.6	1.6	1.4	1.3	1.4	1.5	1.2	1.4	1.4	8
2.2	2.3	2.2	1.9	1.6	1.5	1.5	1.4	1.6	1.7	1.6	1.6	9
2.3	2.4	C	2.2	1.9	1.6	1.6	1.6	1.6	1.1	1.2	1.3	10
2.6	2.5	2.2	1.9	1.9	1.8	1.9	1.6	1.6	1.5	1.5	1.1	11
2.1	2.1	1.9	1.7	1.8	1.4	1.5	1.4	1.3	1.3	1.0	1.3	12
2.5	2.5	2.2	2.0	1.6	1.3	1.1	2.0	1.4	1.5	1.4	1.3	13
2.6	2.4	2.2	1.9	1.8	1.3	1.4	1.7	1.4	1.1	1.6	1.4	14
2.3	2.5	2.2	1.9	1.7	1.7	1.3	1.3	1.6	1.4	1.4	1.6	15
2.4	2.4	2.3	2.0	2.0	2.0	1.4	1.6	1.7	1.2	1.8	1.7	16
2.4	2.5	2.5	2.2	2.0	1.6	1.4	1.6	2.1	2.3	1.9	1.7	17
2.6	2.5	2.9	2.1	2.0	1.4	1.4	1.4	1.6	1.4	1.1	1.2	18
2.2	2.2	2.0	2.4	2.2	2.4	1.5	1.2	1.2	1.3	1.5	1.3	19
2.3	2.2	2.1	1.6	2.2	1.9	1.5	1.3	1.6	1.6	1.5	1.3	20
2.2	2.2	2.2	2.4	2.1	1.7	1.4	1.3	1.5	1.7	1.1	1.3	21
2.2	2.2	2.2	2.2	2.2	1.6	1.6	1.4	1.5	1.4	1.6	1.1	22
2.2	2.3	2.3	2.4	2.3	2.2	1.2	1.5	1.5	1.5	1.0	1.1	23
C	2.2	2.2	C	1.9	1.8	1.7	1.7	1.3	1.1	1.3	1.3	24
2.2	2.3	1.9	1.5	2.1	1.6	1.5	1.7	1.5	1.5	1.7	1.4	25
2.3	2.3	2.6	2.2	2.2	2.0	1.7	1.5	1.5	1.6	1.3	1.4	26
2.4	C	C	2.0	2.4	2.5	1.7	1.5	1.7	1.5	1.3	1.9	27
2.5	2.4	2.6	2.2	3.0	2.0	1.7	1.4	1.6	1.9	1.7	1.1	28
2.2	2.4	2.8	2.2	2.2	1.9	1.6	2.0	1.7	1.3	1.3	1.9	29
2.4	2.5	2.7	2.4	2.3	2.3	1.1	1.4	1.5	1.5	1.6	1.7	30
2.4	2.6	2.5	2.2	1.9	1.4	1.4	1.4	1.3	1.4	1.4	1.6	31
28	28	27	28	29	30	30	31	31	31	31	31	Count
2.3	2.3	2.2	2.0	2.0	1.6	1.5	1.5	1.5	1.4	1.4	1.4	Median
2.3	2.3	2.3	2.0	2.0	1.7	1.5	1.5	1.5	1.5	1.4	1.4	Mean

Sweep 1 0. Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month January, 1963

TABLE 29 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	1.2	1.1	1.1	1.3	1.1	1.3	1.5	1.8	1.8	2.0	2.1	2.3
2	1.6	1.3	E	1.5	1.4	1.2	1.4	1.6	2.0	2.2	2.2	2.5
3	1.5	1.4	1.1	1.0	1.0	E	1.4	1.4	1.6	1.9	2.2	2.2
4	1.8	1.4	1.3	1.0	1.1	1.0	1.4	1.4	2.0	1.9	2.0	2.3
5	C	C	C	C	C	C	C	C	1.5	1.7	2.0	2.1
6	1.2	1.5	1.1	1.8	1.1	E	1.0	1.6	C	C	C	C
7	1.4	E	E	1.1	1.2	E	1.2	1.4	1.5	C	C	C
8	1.3	1.5	1.3	1.1	1.1	F	1.4	1.6	1.8	2.0	2.1	2.1
9	1.3	1.3	E	E	1.1	E	1.2	1.2	1.4	1.6	1.9	2.1
10	1.6	1.6	E	S	1.2	1.1	1.2	1.4	1.7	1.9	2.1	2.2
11	1.0	1.1	E	1.2	1.1	L	1.3	1.4	1.7	2.0	2.1	2.5
12	1.0	1.1	1.0	1.0	1.1	C	1.1	1.3	1.4	1.9	1.9	2.3
13	1.4	1.1	1.0	1.0	E	E	1.3	1.4	1.7	1.9	2.5	2.6
14	1.2	1.0	1.2	1.3	1.4	F	1.3	1.4	1.8	2.1	2.2	2.5
15	1.5	1.6	1.3	1.1	1.0	1.0	1.4	1.3	1.5	1.9	2.2	2.6
16	1.3	1.8	1.3	1.0	1.1	1.0	1.7	1.6	1.8	2.0	2.3	2.3
17	1.0	1.2	1.0	1.0	1.0	1.1	1.2	1.3	1.7	2.1	2.3	2.5
18	1.4	1.4	1.3	1.0	E	E	1.2	1.5	1.8	2.0	2.3	2.7
19	1.0	1.5	1.3	E	E	E	1.3	1.2	1.6	1.7	2.0	2.2
20	1.4	1.2	1.2	1.1	1.1	1.3	1.7	1.3	1.6	1.6	2.2	2.2
21	1.0	1.2	1.0	1.0	1.1	E	1.3	1.2	1.6	2.0	2.0	2.2
22	E	1.1	1.1	E	E	E	1.7	1.5	1.5	1.8	2.1	2.2
23	1.0	1.3	E	S	E	E	1.7	1.8	1.9	2.1	2.2	2.2
24	1.1	1.1	1.0	1.1	1.6	E	1.2	1.4	1.7	C	2.2	2.4
25	1.3	1.4	1.1	1.0	1.7	E	1.2	1.1	1.5	1.8	2.2	2.2
26	1.4	1.4	1.4	S	E	E	1.7	1.6	1.6	2.0	2.2	2.4
27	1.6	1.7	1.1	1.2	1.2	E	1.5	1.4	1.5	1.8	2.1	2.0
28	1.3	E	E	E	E	E	1.7	1.5	1.7	2.1	2.4	2.5
29	1.5	1.4	1.1	E	E	E	1.1	1.4	1.5	2.0	2.2	2.4
30	1.7	1.4	E	E	E	E	1.5	1.6	1.9	2.1	2.3	2.4
31	1.4	1.4	E	E	E	E	1.7	1.4	1.6	2.0	2.3	2.4
Count	30	30	30	27	30	29	30	30	30	28	29	29
Median	1.3	1.4	1.1	1.0	1.1	E	1.4	1.4	1.6	2.0	2.2	2.3
Mean	1.3	1.3	1.2	1.1	1.2	1.0	1.4	1.4	1.7	1.9	2.2	2.3

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month January 1963

TABLE 29 (Contd.)
Ionospheric Data
75° E Mean Time

Latitude 10 2° N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2.4	2.2	2.0	2.0	1.8	1.6	1.4	1.3	1.6	1.5	1.7	1.4	1
2.4	2.2	1.8	1.8	1.6	2.0	1.7	1.6	1.5	1.5	1.6	1.6	2
2.3	2.0	1.8	2.1	1.7	1.9	1.5	1.5	1.4	1.3	1.2	1.9	3
2.0	2.2	2.1	2.1	1.9	2.2	2.1	1.7	2.2	1.7	1.5	1.5	4
2.0	2.0	2.0	1.9	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.4	5
C	C	C	C	C	1.5	2.1	1.3	1.3	1.4	1.5	1.4	6
C	C	C	C	C	C	E	S	1.1	1.9	1.6	1.4	7
2.1	2.0	1.9	1.6	1.6	1.3	1.2	1.5	1.5	1.2	1.2	1.1	8
2.3	2.0	2.0	1.9	1.5	1.3	1.4	1.5	1.7	1.7	1.5	1.3	8
2.3	C	C	1.9	1.9	1.6	1.5	1.6	1.6	1.2	1.2	1.1	10
2.5	2.3	2.1	2.2	1.9	1.6	1.6	1.5	1.5	1.3	1.4	1.1	11
2.1	2.2	1.8	2.3	1.7	1.4	1.5	1.5	1.4	2.0	1.1	1.5	12
2.3	2.3	2.0	1.7	1.5	1.3	2.1	2.4	1.5	1.4	1.4	1.1	13
2.4	2.4	2.1	2.0	1.5	1.4	1.3	2.3	1.6	1.5	1.3	1.0	14
2.4	2.3	2.3	2.1	1.7	1.6	1.6	1.3	1.5	1.5	1.6	1.0	15
2.4	2.4	2.2	2.4	1.8	1.7	1.3	1.4	1.4	1.7	2.0	1.4	16
2.5	2.5	2.3	2.2	1.9	1.4	1.6	1.7	1.7	2.3	1.6	1.3	17
2.4	2.2	2.5	2.0	1.7	1.6	1.3	1.4	1.5	1.4	1.1	1.4	18
2.2	2.0	1.8	2.4	1.8	1.8	1.2	1.3	1.2	1.4	1.5	1.5	19
2.2	2.0	2.2	2.5	2.2	1.8	1.6	1.3	1.9	1.3	1.6	1.0	20
2.2	2.2	2.3	2.2	2.0	1.6	1.1	1.4	1.2	1.3	1.5	F	21
2.4	2.2	2.1	2.4	2.2	1.7	1.2	1.4	1.6	1.3	1.0	1.1	22
2.3	2.3	2.2	2.4	2.2	1.6	1.6	1.5	1.8	1.4	1.1	1.3	23
2.3	2.2	2.3	2.0	1.6	1.6	1.5	1.1	1.7	1.3	1.4	E	24
2.2	2.2	2.1	2.4	1.8	1.8	1.3	F	1.5	1.7	1.4	1.1	25
2.3	2.4	2.2	2.3	2.0	1.8	1.4	2.0	1.6	1.5	1.2	1.3	26
2.4	2.0	2.3	2.0	2.1	2.0	1.7	1.4	1.7	1.6	1.8	1.1	27
2.4	2.6	2.4	2.7	1.9	1.8	1.9	1.8	1.8	1.4	1.4	1.5	28
2.4	2.2	2.2	2.4	2.0	1.8	2.1	C	1.4	1.4	1.5	1.6	29
2.1	2.7	2.5	2.5	2.3	1.7	1.3	1.4	1.5	1.5	1.4	1.5	30
2.4	2.4	2.3	1.9	1.7	2.0	1.4	1.3	1.5	1.4	1.3	1.6	31
2.9	2.8	2.8	2.9	2.9	3.0	3.1	2.8	3.1	3.1	3.1	3.1	Count
2.3	2.2	2.2	2.1	1.8	1.6	1.5	1.5	1.5	1.4	1.4	1.3	Median
2.3	2.2	2.1	2.1	1.8	1.7	1.5	1.5	1.5	1.5	1.4	1.3	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic $h'F_2$
Unit Km.
Month January, 1963

TABLE 30
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5 E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	L	320	340	400
2								L	L	300	360	350
3								L	320	340	380	455
4								L	L	L	L	375
5								C	C	360	370	365
6								L	280	C	C	C
7								L	300	C	C	C
8								L	L	300	350	345
9								L	L	L	360	360
10								260	280	320	340	C
11								L	L	L	325	360
12								L	L	L	L	360
13								L	300	285	315	300
14								L	260	300	310	325
15								L	L	L	370	350
16								L	285	L	340	320
17								L	295	290	365	355
18								L	L	L	320	310
19								L	L	L	320	385
20							L	L	L	300	360	360
21								L	L	350	315	340
22								L	310	330	330	380
23								L	L	300	300	320
24								L	380	360	340	360
25								L	330	330	360	400
26								L	320	340	360	385
27								L	L	340	280	365
28								L	L	410	440	375
29								L	L	L	420	425
30								L	L	380	400	380
31								L	L	L	L	380
Count								1	12	20	26	28
Median									300	325	355	360
Mean									305	330	350	365

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'/F_2
 Unit Km
 Month January, 1963

TABLE 30
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
360	380	L	320	L	L							1
360	350	L	L	L	L							2
460	440	395	L	L	240							3
375	415	395	A	L	A							4
395	330	360	L	L								5
C	C	C	C	C	L							6
C	C	C	C	C	C							7
330	350	380	L _H	L	L							8
365	L	L	L	L	L							9
360	360	C	320	295	280							10
345	340	L	310	L								11
360	340	325	L	L	L							12
330	320	L	L	L	L							13
330	320	380	L	L	L							14
360	330	L	340 _{HT}	L								15
L	360	L	L	L								16
340	L	335	L	L	L							17
320	330	315	300	L								18
320	350	340	300	275	L							19
340	360	330	L	L	L	L						20
310	350	320	310	280								21
350	360	350	310	280	L							22
320	320	340	300	280	L	L						23
C	360	360	C	300	L							24
380	370	335	310	280	L	L						25
380	360	335	300	300	L	L						26
360	C	C	320	300	280							27
365	335	310	300	285	L							28
370	360	360	315	300	270							29
350	345	320	300	280	280							30
360	340	330	320	320	L							31
27	26	20	16	13	5	—						Count
360	350	340	310	285	280	—						Median
355	355	345	310	290	270	—						Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic $h'F_2$
 Unit · Km
 Month : January, 1963

TABLE 30 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	300	325	370	375
2								L	305	320	360	360
3								L	335	335	405	450
4							240	L	L	340	350	L
5									L	360	L	360
6							L	L	C	C	C	C
7							L	L	305	C	C	C
8							L	L	300	320	360	340
9							L	LH	L	340	360	360
10							L	270	300	330	340	340
11								L	290	345	350	360
12								L	L	L	330	370
13								L	280	300	300	330
14								250	275	310	315	305
15								L	L	355	355	350
16								L	290	310	320	330
17							L	L	300	355	345	345
18							L	L	L	L	310	315
19							L	L	300	L	400	340
20							L	L	300	320	370	L
21							L	L	325	320	350	330
22							L	L	330	320	310	355
23							L	L	300	310	320	320
24							L	320	390	C	400	390
25							L	L	330	280	290	375
26							L	L	340	335	380	340
27							L	L	340	330	340	375
28								L	425	400	375	380
29								L	360L	410	400	390
30							L	L	L	360	380	370
31								L	L	L	L	370
Count							1	3	22	24	27	27
Median									300	330	350	360
Mean									320	335	350	355

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h' F₂
 Unit . Km
 Month January, 1963

TABLE 30 (Contd)
 Ionospheric Data
 75° E Mean Time

Latitude : 10·2° N.
 Longitude: 77·5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
320	L	L	L	L								1
L	L	L	L	L								2
420	L	L	300	L								3
L	L	340	L	A								4
L	380	L	L	L								5
C	C	C	C	C	L							6
C	C	C	C	C	C							7
340	350	L	L	L								8
360	L	L	360	L								9
335	C	C	300	285								10
340	330	345	310	L								11
340	345	315	L	L								12
330	L	L	L	L								13
320	360	L	L	L								14
340	330	360	L	L								15
375	385	L	L	L								16
340	355	L	L	L								17
320	310	300	L	L								18
360	340	320	270	280								19
350	365	340	300	L	L							20
330	330	310	295	L								21
380	380	340	295	L	L							22
330	345	315	300	275	L							23
380	360	330	300	L	L							24
380	350	330	300	L	L							25
355	340	305	305	L	L							26
A	340	335	300	300	L							27
355	320	305	300	280								28
370	370	345	300	L								29
360	330	315	285	280								30
340	330	325	315	L								31
25	22	18	17	6								Count
340	345	330	300	280								Median
350	350	325	300	285								Mean

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds

Characteristic : h'F
 Unit : Km.
 Month : January, 1963

TABLE 31
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	240	235	225	220	225	220	240	225	200	200	180	180
2	215	220	230	220	240	250	255	205	200	190	170	185
3	220	225	220	240	240	230	250	220	205	200	195	180
4	240	255	240	240	255	255	255	230	205	200	200	180 _{II}
5	C	C	C	C	C	C	C	C	C	195 _H	200	200
6	245	300	300	290	E	E	260	220	200	C	C	C
7	220	240	245	230	230	E	265	235	215	C	C	C
8	220	220	230	225	220	235	260	230	215	215	200	200
9	225	230	220	225	220	220	260	230	215	185	190	180 _{II}
10	225	225	235	220	225	225	260	230	215	200	195	C
11	220	220	225	215	240	E	260	180 _H	185 _{II}	190 _{II}	175	175 _{II}
12	220	240	260	260	270	C	C	235	215	205	200	200
13	215	220	235	235	E	305	270	235	200	200	190	180
14	220	220	230	235	260	E	260	225	210	200	180 _H	195
15	215	226	225	225	250	240	270	230	205	190	195	180
16	230	245	235	240	245	250	255	230	220	205	200 _H	205
17	225	245	240	260	S	285	275	230	210	200	190	185
18	220	220	210	225	235	255	265	210	200 _{II}	185 _{II}	200	200
19	220	220	260	E	E	E	280	235	220	215	215	205
20	220	240	240	255	245	265	260	230	220	205	195	180
21	200	210	240	250	260	E	275	215	210	190	190	175
22	230	220	250	240	F	E	260	215	210	200	190	180
23	200	210	220	260	E	E	280	230	210	200	200	190
24	260	240	240	230	230	240	280	235	200	200	190	180
25	245	245	220	275	E	E	280	235	205	195	180	180
26	220	210	200	220	E	E	265	220	200	180	175	175
27	260	280	250	220	230	260	270	220	200	180	180	170
28	240	260	E	E	E	E	275	220	195	190 _{II}	180 _{II}	185
29	265	255	230	E	E	E	270	220	210	200	200	180
30	240	230	240	E	E	E	275	235	220	200	200	190
31	265	240	250	250	E	E	290	240	215	200	200	A
Count	30	30	30	30	28	29	29	30	30	29	29	27
Median	220	230	235	240	250	305	265	230	210	200	195	180
Mean	230	235	235	240	240	250	265	225	210	195	190	185

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic . h'F
Unit Km.
Month January, 1963.

TABLE 31 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	240	230	220	220	230	240	235	220	200	195	180	200
2	215	235	230	230	245	245	235	200	180 _H	170 _H	170 _H	180
3	225	220	235	235	240	230	240	220	200	200	190	180
4	255	240	245	255	260	245	220	215	205	200	180 _H	180 _H
5	C	C	C	C	C	C	C	C	190 _H	200	195 _H	200
6	260	300	280	320	300	E	235	220	C	C	C	C
7	240	240	245	235	240	E	240	220	200	C	C	C
8	220	230	240	225	225	220	240	220	215	200	200	200
9	230	235	220	220	220	215	240	215 _H	200	190	185	180
10	230	235	235	230	220	240	235	220	200	200	200	185
11	225	220	220	220	260	E	235	180 _H	175 _H	180	175 _H	200
12	220	240	275	245	280	C	240	225	200	200	200	185
13	220	230	235	275	280	E	240	220	200	195	185	205 _H
14	215	225	230	240	260	E	230	220	200	200	200	200
15	220	220	235	240	245	270	240	220	205	185	195	180
16	240	245	240	250	245	240	240	225	200 _H	195	200	195
17	225	270	245	260	265	280	240	220	200	185	185	180
18	220	220	215	220	240	E	235	215	195	180 _H	185	180
19	230	240	280	E	E	E	250	225	220	210	210	200
20	220	230	240	250	260	260	250	220	215	190	185	185
21	210	220	240	250	A	E	240	220	200	190	180	180
22	225	250	240	240	E	E	240	200	200	195	180	180
23	200	220	240	265	E	E	240	215	200	200	200	180
24	240 _F	240	240	230	260	260	250	220	200	C	180	175
25	250	230	240	245	300	E	245	175	205	190	180	165
26	210	220	220	S	E	E	235	210	190	175	170	185
27	300	280	220	220	235	E	200	210	195	180	175	175
28	235	E	E	E	E	E	240	185	190 _H	180 _H	180	180
29	265	240	220	E	E	E	240	210	200	200	185	185
30	245	225	250	E	E	E	255	230	210	190 _H	200	190
31	250	250	245	260	E	E	260	230	205	200	200	210
Count	30	30	30	29	29	29	30	30	30	28	29	29
Median	230	235	240	245	260	E	240	220	200	195	185	185
Mean	235	235	240	245	255	245	240	215	200	190	185	185

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F
Unit Km.
Month January, 1963

TABLE 31 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
180	170	180	200	220	240	240	240	205	205	205	210	1
180	180	180H	215	220	245	240	240	225	220	215	220	2
180	170	170H	210	220	225	220	220	200	220	230	230	3
180	175H	A	A	A	240	A	230	240	220	220	220	4
175H	165H	180H	200	215	255	260	235	210	205	215	240	5
C	C	C	C	C	255	235	220	220	220	220	220	6
C	C	C	C	C	C	240	240	245	260	260	230	7
195	185	190	195	230	260	280	245	240	240	230	230	8
185	180	185	215	215	245	235	215	225	235	240	230	9
185	C	C	200	220	250	255	230	245	240	230	220	10
195	185	175H	200	210	240	250	260	220	225	225	215	11
180	180H	180H	200	210	250	260	260	235	240	235	215	12
195	190	180H	185	210	250	235	235	215	220	225	225	13
175H	175H	180H	180H	225	240	225	230	225	230	210	215	14
180H	180H	180	195	220	260	305	360	325	310F	F	225	15
180H	180	180	200	235	250	250	240	230	220	220	215	16
180	180	180	205	220	245	270	240H	1	245	230	225	17
180	200UA	180H	200	210	250	250	235	220	220	215	220	18
190	180	200	200	230	250	260	240	240	230	240	220	19
180	200	170	220	220	260	260	240	220	220	210	215	20
180	170	205	270	215	240	250	210	210	210	220	230	21
180	160	180	190	210	250	240	220	200	210	210	200	22
A	A	220	210	230	240	225	220	220	230	240	260	23
185	190	210	210	230	255	280	A	290	260	240	240	24
155	180	210	205	220	240	280	300	340	300	240	240	25
220	200	200	185	230	240	280	230	210	230	220	240	26
A	230	200	215	220	240	260	270	240	220	220	230	27
180	180H	195	220	215	240	260	215H	220	225	240	255	28
180	180	A	200	215	245	270	C	230H	240	230	240	29
190	180H	200H	205	230	260	280	250	225	230	260	280	30
215	200H	210H	210	210	260	255	240	240	240	270	300H	31
27	27	26	28	28	30	30	30	30	31	30	31	Count
180	180	180	200	220	250	255	240	225	230	230	225	Median
185	185	190	195	220	245	250	240	235	235	230	230	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic . h'E
Unit . Km
Month January, 1963.

TABLE 32
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								110H	100	A	A	A
2								A	A	A	A	A
3								105	A	A	A	A
4								110	105	A	A	A
5								C	C	A	A	A
6								110	A	C	C	C
7								A	A	C	C	C
8								105	105	A	A	A
9								A	A	A	A	A
10								120	110	A	A	C
11								105	A	A	A	A
12								105	A	A	A	A
13								115	A	105	105	105
14								110	100	A	A	A
15								105	A	A	A	A
16								115	110	105	A	A
17								105	A	A	A	A
18								110	100	A	A	A
19								A	A	A	A	A
20								A	A	A	A	A
21								A	A	A	A	A
22								110	A	A	A	A
23								120	110	110	A	A
24								A	A	A	A	A
25								A	A	A	A	A
26								A	A	A	A	A
27								A	A	A	A	A
28								115	110	A	A	A
29								110	A	A	A	A
30								120	A	A	A	A
31								A	A	A	A	A
Count								19	9	3	1	1
Median								110	105			
Mean								110	105			

Sweep 1 0 Mc to 25 0. Mc in 27 seconds

Characteristic h'E
 Unit Km.
 Month January, 1963

TABLE 32
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	A	A	105	100							1
A	A	A	A	100	115H							2
A	A	A	A	110H								3
A	A	A	A	A	A							4
A	A	A	A	105	110							5
C	C	C	C	C	120							6
C	C	C	C	C	C							7
A	A	A	A	A	A							8
A	A	A	A	A	100							9
A	A	A	C	115	120							10
A	A	A	100	105	115							11
A	A	A	A	115	120							12
A	A	A	A	A	110							13
A	A	A	A	A	105							14
105	A	A	A	110	120							15
A	A	A	110	110								16
A	A	105	A	A	110							17
A	A	110	100	100	115							18
A	A	A	A	A	120							19
A	A	A	A	120	120							20
A	A	A	100	115	120							21
A	A	A	100	115	120							22
A	100	110	A	120	A							23
C	A	110	C	110								24
A	A	105	A	120								25
A	A	105	100	110	140							26
A	C	C	A	120								27
A	110	A	100	B	140							28
A	A	120	110	115	135							29
A	105	115	110	115								30
A	110	105	110	110	115							31
1	4	9	11	22	20							Count
		110	100	110	120							Median
		110	105	110	120							Mean

Sweep 1 0 Mc to 25 0_Mc in 27 seconds

Characteristic . h'E
Unit : Km
Month January, 1963.

TABLE 32 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10·2° N
Longitude . 77·5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							120	105H	100	A	A	A
2							105	A	A	A	A	A
3							125	100	A	A	A	A
4							120	105	105	A	A	A
5									A	A	A	A
6							110	100	C	C	C	C
7							A	A	A	C	C	C
8							130	A	A	A	A	A
9							A	A	A	A	A	A
10							130	105	100	A	A	A
11							120	A	A	A	A	A
12							115	A	A	A	A	A
13							120	105	A	A	110	105
14							110	105	100	A	A	A
15							120	A	A	A	A	110
16								110	105	105	A	A
17							115	A	A	A	A	A
18							120	105	100	A	A	A
19							140	A	A	A	A	A
20								A	A	A	A	A
21							120	A	A	A	A	A
22								A	A	A	A	A
23								115	110	110	A	A
24							120	A	A	C	A	A
25							140	A	A	A	A	A
26								A	A	A	A	A
27							120	A	A	A	A	A
28								115	110	A	A	A
29							115	A	A	A	A	A
30							135	120	A	A	A	A
31								A	A	A	A	A
Count							21	12	8	2	1	2
Median							120	105	100			
Mean							120	110	105			

Sweep 1 0 Mc. to 25·0 Mc in 27 seconds.

Characteristic h'E
Unit Km
Month January, 1963

TABLE 32 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77.5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	A	100								1
A	A	A	105	110								2
A	A	A	105	A								3
A	A	A	A	105								4
A	A	A	A	105 _H	120							5
C	C	C	C	C	120							6
C	C	C	C	C	C							7
A	A	A	A	A								8
A	A	A	A	100								9
A	C	C	105	115								10
A	A	A	105	115	140							11
A	A	A	110	115	140							12
A	A	A	A	105	110							13
A	A	A	A	100	130							14
110	A	A	110	110	140							15
A	A	A	110	110								16
A	A	A	A	A	140							17
A	A	105	100	110								18
A	A	A	120	120								19
A	A	105	120	120								20
A	A	100	110	120	120							21
A	A	100	115	120	140							22
100	110	110	A	A								23
A	A	110	110	A								24
A	A	105	115	120								25
A	110	100	110	A								26
A	105	A	A	120								27
110	110	110	A	115								28
A	A	110	115	115								29
105	115	115	110	110								30
A	A	110	110	115								31
4	5	12	18	23	10							Count
	110	110	110	115	135							Median
	110	105	110	110	130							Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'Es
 Unit Km
 Month . January 1963.

TABLE 33
 Ionospheric Data
 75° Mean Time

Latitude . 10.2° N
 Longitude 77.5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								G	G	100	100	100
2								100	100	100	100	100
3								G	100	100	100	100
4			110	110				G	G	100	100	100
5								C	C	100	100	100
6								G	100	C	C	C
7								100	100	C	C	C
8						120		110	G	100	100	100
9								100	100	100	100	100
10								G	G	100	100	C
11								100	100	100	100	100
12		115						100	100	100	100	100
13						110		G	100	115	G	G
14								G	G	100	100	100
15								G	100	100	100	100
16	110	110						G	G	G	100	100
17								100	100	100	100	100
18								G	100	100	100	100
19			100					100	100	100	100	100
20								100	100	100	100	100
21						115		100	100	100	100	100
22								100	100	100	90	100
23								G	G	G	100	100
24								100	100	100	100	100
25								100	100	100	100	100
26								100	100	100	100	100
27						140		100	100	100	100	100
28								110	100	100	100	100
29								100	100	100	100	100
30	120							100	100	100	100	100
31								100	100	100	100	100
Count	2	2	2	1	2	2		19	23	27	28	28
Median								100	100	100	100	100
Mean								100	100	100	100	100

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic h'Es
Unit Km
Month January 1963

TABLE 33
Ionospheric Data
75°E-Mean Time

Latitude 10 2' N.
Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	100	100	G	G		115					1
100	100	100	100	G	G							2
100	100	100	100	G	100						100	3
100	100	100	100	105	120	120	105	105				4
100	100	100	100	100	G							5
C	C	C	C	C	100		100	120				6
C	C	C	C	C	C			130	135			7
100	100	100	100	100	100				100			8
100	100	100	100	100	100							9
100	100	C	G	G	G			120				10
100	100	100	G	120	G			115				11
100	100	100	100	120	G			100		100		12
100	100	100	100	100	100	100						13
100	100	100	100	100	100	100	100	90	115			14
100	100	100	100	100	105							15
100	100	100	100	G	100				100	100		16
100	100	100	100	100	100		110				115	17
100	100	G	G	G	G							18
100	100	100	100	G			125	130				19
100	100	100	100	G	100							20
100	100	100	G	G	G		120					21
95	95	100	G	G	G							22
100	100	120	120	100	120							23
C	100	G	C	120	100		110	100	100	120	120	24
100	100	G	100	G	100							25
100	100	120	G	G	G							26
100	C	C	100	G		120						27
100	G	105	100	G	G							28
100	100	120	G	G	G				130	120	120	29
100	G	G	G	G		130						30
100	G	G	G	G	G	135	130	130	115			31
28	25	22	19	12	13	5	8	10	7	5	3	Count
100	100	100	100	100	100	120	110	120	115	115		Median
100	100	105	100	105	105	120	115	115	115	110		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'Es
 Unit · Km
 Month January, 1963

TABLE 33 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	100	100	100	100
2							G	100	100	100	100	100
3							G	100	100	100	100	100
4			110				G	G	120	100	100	100
5									100	100	100	100
6							G	G	C	C	C	C
7							100	100	100	C	C	C
8							G	100	100	100	100	100
9							100	100	100	100	100	100
10							G	G	100	100	100	100
11							110	100	100	100	100	100
12							105	100	100	100	100	100
13							G	100	100	100	G	G
14							G	G	G	100	100	100
15							G	100	100	100	100	G
16	115							G	115	100	100	100
17							G	100	100	100	100	100
18						110	G	110	100	100	100	100
19			100				G	100	100	100	100	100
20						140		100	100	100	100	100
21						100	120	100	100	100	100	100
22								100	100	100	100	100
23								G	G	110	100	100
24								G	100	100	C	100
25							G	100	100	100	100	100
26								100	100	100	100	100
27			120				160	100	100	100	100	100
28								105	100	100	100	100
29							G	100	100	100	100	100
30							G	100	100	100	100	100
31								100	100	100	100	100
Count	1	1	2		3		6	22	28	29	27	27
Median							110	100	100	100	100	100
Mean							115	100	100	100	100	100

Sweep 1·0 Mc to 25·0 Mc. in 27 seconds

Characteristic h'Es
Unit Km
Month January, 1963.

TABLE 33 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	100	100	100	G								1
100	100	100	100	G								2
100	100	100	G	100						115	120	3
100	100	100	100	130	120	120	105	105				4
100	100	100	100	G	G							5
C	C	C	C	C	G							6
C	C	C	C	C	C			125				7
100	100	100	100	100	120		120					8
100	100	100	100	G	100							9
100	C	C	G	G								10
100	100	100	110	115	G							11
100	100	100	G	120	G		110			115		12
100	100	100	100	100	120							13
100	100	100	100	100	G			115	100			14
100	100	100	100	100	G							15
100	100	100	G	100				100	100			16
100	100	100	100	100	G	110		120				17
100	100	G	G	G						110		18
100	100	100	G	G		120	120	120				19
100	100	G	G	100								20
100	100	G	G	G	100	120						21
95	100	100	G	G	G							22
100	100	120	100	100	140							23
100	100	G	G	100	165		100		100			24
100	100	100	G	G								25
100	100	G	G	100								26
100	100	120	100	G			130	115				27
100	135	G	100	G								28
100	100	105	G	G	135		C					29
G	G	G	G	G	130			115				30
100	100	G	G	G		140	120	125				31
28	27	20	14	14	9	5	7	9	3	4	1	Count
100	100	100	100	100	120	120	120	115				Median
100	100	100	100	105	125	120	115	115				Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M3000) F_2
Unit
Month January 1963.

TABLE 34
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 25	3 30	3 30	3 45	3 40	3 55	3 30	3 50	3 30	2 95	2 50 _{II}	2 40
2	3 40	3 45	3 50	3 40	3 45	3 30	3 20	3 20	2 95	2 55	C	2 55
3	3 45	3 45	3 40	3 25	3 30	3 50	3 30	3 30	2 95	2 55	2 65	2 45
4	3 30	3 35	3 25	3 25	3 25	3 30	3 35	3 40	3 20	2 90	2 55	2 60
5	C	C	C	C	C	C	C	C	C	2 70	2 70	2 60
6	3 40	3 40	3 30 _{JS}	3 10	E	E	3 10	3 30	3 15	C	C	C
7	3 30	3 25	3 15	3 25	3 45 _{UR}	E	3 00	3 05	3 10	C	C	C
8	3 10	3 20	F	3 30 _L	3 40	3 50	3 10	3 30	3 25	3 05	2 75	2 75
9	3 25	F	3 25	3 30	3 45	3 65	3 25	3 10	2 95	2 80	2 70	2 75
10	3 40	3 30	3 30	3 20	3 45	3 45	3 25	3 40	3 40	3 25	2 85	C
11	3 60	3 40	3 15	3 30	3 40	E	3 10	3 30	2 95	2 65 _{US}	2 65	2 70
12	3 60 _I	3 40	3 10	3 15	3 20	C	C	3 20	2 85	2 70	2 60	2 65
13	3 55	3 50	3 40	3 60	E	3 30	3 10	3 45	3 05	2 75 _{II}	2 95	3 00
14	3 50	3 50	3 45	3 40	3 40	E	3 10	3 55	3 50	3 25	3 00	2 70
15	3 45	3 40	3 45	3 45	3 35	3 50	3 05	3 30	3 00	2 60	2 60	2 50
16	3 35	F	F	3 25	3 25	3 30	F	3 40	3 35	3 20	2 80	2 60
17	3 55	3 40	3 40	3 15	3 15 _{JR}	3 40	3 10	3 25	3 00	2 55 _{II}	2 50	2 55
18	3 30	3 35	3 50	3 45	3 45	3 60	2 90	3 35	3 30	2 80	2 80	2 90
19	3 50	3 50	3 40	E	E	E	2 90	3 20	3 00	2 70	2 45 _{II}	2 50
20	3 55	3 40	3 40	3 20	3 40	3 40	3 20	3 25	3 00	2 70	2 60	2 60
21	3 50	3 60	3 60	3 40	3 50	E	2 85	3 15	2 75	2 75	2 70	2 70
22	3 50	3 50	3 40	3 45	F	E	3 10	3 25	2 90	2 65	2 70 _{II}	2 60
23	3 60	3 55	3 55	3 30	E	E	3 00	3 40	3 30	3 20	2 90	2 80
24	3 15 _{UR}	3 20	3 35	3 55	3 40	3 40	2 90	2 90	2 85	2 75 _L	2 80	2 70
25	3 30	3 40	3 50	3 40 _S	R	E	2 85	3 00	2 80	2 80	2 70	2 50
26	F	F	F	F	E	E	3 00	3 10	2 80	2 80	2 65	2 65
27	F	F	F	F	3 60	3 35	3 05	3 10	2 70	2 85	2 85	2 80
28	3 60	3 55	E	E	E	E	3 05	3 00	2 80	2 65	2 50	2 75
29	3 20	3 30	3 45	E	E	E	3 20	3 15	2 75 _{US}	2 70	2 55	2 45
30	3 35	3 40 _{UR}	3 45	E	E	E	3 10	3 00	2 70	2 60	2 45	2 70
31	3 30	3 45	3 40	3 50 _{UR}	E	E	3 00	3 30	2 85	2 50	2 60	2 60
Count	28	26	25	24	19	15	28	30	30	29	28	28
Median	3 40	3 40	3 40	3 30	3 40	3 40	3 10	3 25	3 00	2 75	2 70	2 60
Mean	3 40	3 40	3 40	3 35	3 40	3 45	3 10	3 25	3 00	2 80	2 70	2 65

Sweep 1.0 Mc to 25.0 Mc, in 27 seconds.

Characteristic (M 3000)F₂
 Unit
 Month January 1963

TABLE 34
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 50	2 50	2 60	2 70	2 85	2 90	2 90	3 05	3 20	3 40	3 45	3 60	1
2 50	2 55	2 60	2 70	2 85	3 10	3 10	3 10	3 20	3 30	3 45	3 50	2
2 35	2 45	2 60	2 75	3 10	3 30	3 25	3 35	3 40	3 40 _{URS}	3 40	3 40	3
2 60	2 40	2 60	2 65	3 00	3 10	3 05	3 15 _{UI}	3 15	3 30	3 40	3 45	4
2 60	2 40	2 50	2 60	2 85	2 85	2 95	3 00	3 15	3 30	3 45	3 60	5
C	C	C	C	C	2 85	2 90	3 20	3 30	3 50	3 50	3 50	6
C	C	C	C	C	C	C	3 00	3 00	3 05	3 10	F	7
2 85	2 80	2 55	2 15	2 55	2 80	2 90	2 90	3 00	3 10	3 15	3 15 _S	8
2 60	2 50	2 45	2 45	2 60	2 90	3 05	3 15	3 30	3 35	3 30	3 30	9
2 75	2 80	C	3 00	3 10	3 10	3 00	2 90	2 85	3 15 _{US}	3 35	3 35	10
2 70	2 70	2 60	2 80	2 95	3 00	3 00	2 90	3 00	3 20	3 40	3 55	11
2 60	2 70	2 70	2 75	2 75	2 90	2 85	2 95	3 10	3 10	3 30	3 50	12
2 80	2 70	2 65	2 30	2 50	2 75	3 00	3 10	3 25	3 20	3 40	3 40	13
2 60	2 50 _{II}	2 35	2 35	2 45	2 75	3 00	3 10	3 25	3 30	3 40	3 45	14
2 70	2 75	2 60	2 50	2 30	2 60	2 60	2 35	F	F	F	3 30 _I	15
2 50	2 40	2 40	2 65	2 80	2 95	2 95	3 00	3 10	3 30	3 45	3 60	16
2 65	2 70	2 70	2 70	2 55	2 40 _{US}	2 80	2 65	F	F	3 20	3 25	17
2 80	2 85	2 95	2 90	2 90	2 85	2 80	2 95	3 15	3 40	3 45	3 60	18
2 75	2 65	2 70	2 90	3 05	3 10	3 15	3 20	3 20	3 35	3 45	3 55	19
2 60	2 55	2 80	2 80	3 00	2 95	2 95	3 00	3 15	3 45	3 55	3 50	20
2 80	2 85	2 90	2 90	3 00	3 10	3 00	3 25	3 50	3 55	3 50	3 55	21
2 50	2 70	2 70	2 80	3 05	3 15	3 20	3 40	3 45	3 50	3 50	3 45	22
2 85	3 00	3 15	3 15	3 25	3 40	3 40	3 35	3 40	3 45	3 35	3 25	23
C	2 75	2 80	C	3 05	2 90	2 60	2 60	F	F	3 10	3 20	24
2 55	2 60	2 75	2 90	3 10	3 00	2 80	F	F	F	F	F	25
2 80	2 80	2 85	2 90	2 95	2 95	2 90	I	F	F	F	F	26
2 70	C	C	2 90	3 00	3 20	3 15	3 00	3 10	3 35	3 40	3 40	27
2 65	2 85	3 00	3 10	3 15	3 15	3 15	3 15	3 25	3 50 _{US}	3 45	3 30	28
2 60	2 70	2 70	2 90	3 05	3 10	3 10	3 00	3 00 _{UI}	3 15 _{II}	F	3 40	29
2 85	2 95	3 05	3 10	3 30	3 20	3 05 _{UI}	3 05	3 30	3 40 _{US}	3 30	3 10	30
2 70	2 70	2 85	2 90	2 90	2 95	3 00	3 15 _{UF}	3 15	3 30 _{US}	3 20 _{US}	2 90 _{US}	31
28	28	27	28	29	30	30	29	26	26	27	28	Count
2 65	2 70	2 70	2 80	2 95	2 95	3 00	3 05	3 20	3 30	3 40	3 40	Median
2 65	2 65	2 70	2 75	2 90	3 00	3 00	3 05	3 20	3 30	3 35	3 40	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic (M 3000) F_2
 Unit
 Month January 1963

TABLE 34 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude : 10.2° N.
 Longitude : 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	3 25	3 30	3 40	3 40	3 50	3 60	3 55	3 45	3 15	2 50	2 50	2 35
2	3 45	3 30	3 40	3 45	3 35	3 35	3 25	3 05	2 75	2 35	2 70	2 40
3	3 50	3 45	3 20	3 30	3 25	3 40	3 35	3 15	2 70	2 45	2 50	2 45
4	3 15	3 45	3 35	3 25	3 25	3 35	3 45	3 30	3 15	2 70	2 55	2 50
5	C	C	C	C	C	C	C	C	2 70	2 80	2 60	2 65
6	3 35	3 40	3 20	3 10 _{JS}	3 20	E	3 30	3 20	C	C	C	C
7	3 25	3 20	3 20	3 30	3 50	E	3 10	3 00	C	C	C	C
8	3 20 _F	F	F	3 35	3 50	3 50	3 30	3 25	3 20	2 75	2 65	2 75
9	3 15	3 25 _F	3 30	3 35	3 50	3 60	3 10	3 00	2 80	2 75	2 65	2 65
10	3 35	3 35	3 25	3 35 _{US}	3 50	3 40	3 35	3 40	3 35	3 15	2 70	2 75
11	3 50	3 45	3 30	3 40	3 45	E	3 35	3 10	2 70	2 70	2 75	2 65
12	3 50	3 35	2 90	3 25	3 10	C	3 25	3 00	2 75	2 65 _{IT}	2 80	2 70
13	3 50	3 45	3 45	3 40	3 50	E	3 30	3 30	2 70	2 80	3 05	2 90
14	3 50	3 55	3 25	3 35	3 50	E	3 55	3 50	3 40	3 10	2 90	2 60
15	3 40	3 45	3 40	3 30	3 35	3 40	3 35	3 20	2 85	2 70	2 70	2 65
16	3 40	F	3 25	3 30	3 30	3 45	3 45	3 30	3 30	3 10	2 60	2 65
17	3 45	3 10	3 45	3 25	3 35	3 40	3 20	3 10	3 00	2 55	2 55	2 60
18	3 40	3 25	3 55	3 35	3 55	E	3 35	3 35	3 10	2 85	2 90	2 85
19	3 45	3 45	3 45	E	E	E	3 20	3 00	2 80	2 60 _H	2 50	2 70
20	3 50	3 35	3 40	3 35	3 35	3 35	3 30	3 10	2 85	2 75	2 60	2 50
21	3 60	3 55	3 40	3 45	A	E	3 10	2 90	2 75	2 70 _{IT}	2 75	2 80
22	3 45	3 20	3 40	3 70	E	E	3 35	3 10	2 85	2 75	2 55	2 60
23	3 50	3 50	3 50	3 20 _{JS}	E	F	3 40	3 30	3 30	3 10	2 80	2 85
24	F	3 20	3 50	3 60	3 40	3 50	3 10	2 80	2 70 _S	C	2 55	2 60
25	3 30	3 55	3 50	3 70	3 25 _{JR}	E	3 20	2 80	2 80	2 50 _{IT}	2 70	2 50
26	F	F	F	3 30 _F	E	E	3 30	2 90	2 70	2 75	2 70	2 80
27	F	F	F	3 60	3 60	E	3 30	2 90	2 75	2 90	2 70	2 65
28	3 65	E	E	E	E	E	3 20	2 90	2 60	2 60	2 65	2 65
29	3 10	3 40	3 60 _{UR}	E	E	E	3 30	2 95	2 65	2 60	2 45	2 60
30	3 40	3 60 _F	3 35	E	E	E	3 30	2 80	2 50	2 70	2 65	2 75
31	3 35	3 50 _R	3 40	3 30 _R	E	E	3 40	3 20	2 40	2 50	2 50	2 70
Count	27	25	26	26	21	12	30	30	29	28	29	29
Median	3 40	3 40	3 40	3 35	3 40	3 40	3 30	3 10	2 80	2 70	2 65	2 65
Mean	3 40	3 40	3 35	3 35	3 40	3 45	3 30	3 10	2 85	2 75	2 65	2 65

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M 3000) F_2
Unit .
Month January 1963

TABLE 34 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2 45	2 45	2 60	2 70	2 90	3 00	2 90	3 00	3 20	3 20	3 55	3 55	1
2 50	2 65	2 60	2 80	3 00	3 15	3 10	3 10 _{us}	3 20	3 40	3 45	3 40	2
2 40	2 50	2 70	2 80	3 15	3 40	3 30	3 40	3 35	3 50	3 35	3 45	3
2 40	2 50	2 65	2 70	3 00	3 15	C	3 20	3 25	3 30	3 40	3 30	4
2 40	2 40	2 55	2 75	2 80	3 05	2 95	3 10	3 35	3 45	3 55	3 50	5
C	C	C	C	C	2 95	3 15	3 25	3 40	3 30	3 50	3 30	6
C	C	C	C	C	C	2 90	2 95	3 05	3 10	3 15	F	7
2 80	2 65	2 40	2 30	2 75	2 85	2 85	2 95	3 05	S	3 15	3 20	8
2 55	2 45	2 40	2 60	2 75	2 95	3 10	3 20	3 30	3 30	3 35	3 30	9
2 80	C	C	3 05	3 20	3 15	2 90	2 80	3 00 _s	3 30	3 35	3 45	10
2 65	2 70	2 65	2 80	2 95	3 00	2 90	2 95	3 25	3 30	3 55	3 60	11
2 70	2 60	2 70	2 80	2 85	2 80	2 85	2 95	3 15	3 15	3 45	3 55	12
2 60	2 65	2 40	2 30	2 60	2 85	2 85	3 10	3 30 _{us}	3 30	3 40	3 40	13
2 70	2 45	2 25	2 45	2 65	2 90	3 05	3 20	3 35	3 25	3 50	3 45	14
2 70	2 70	2 60	2 40	2 45	2 60	2 55	2 45	F	F	F	3 30	15
2 45	2 35	2 60	2 75	3 00	3 00	2 95	3 10	3 20	3 45	3 50	3 55	16
2 75	2 70	2 70	2 65	2 40	2 55	2 70	F	F	3 20	3 30	3 35	17
2 80	2 90	2 90	2 90	2 90	2 80	2 90	3 05	3 30	3 50	3 60	3 60	18
2 70	2 65	2 80	3 00	3 15	3 20	3 10	3 20	3 25	3 40	3 40	3 40	19
2 65	2 60	2 85	2 90	2 95	2 95	2 95	3 00	3 25	3 50	3 40	3 50	20
2 80	2 85	2 90	2 90	3 10	3 05	3 10	3 40	3 50	3 60	3 60	3 40	21
2 65	2 65	2 80	2 95	3 10	3 15	3 25	3 45	3 55	3 50	3 55	3 55	22
2 85	2 90	3 10	3 20	3 30	3 40	3 25	3 40	3 10	3 30	3 30	3 10	23
2 60	2 80	2 90	3 00	3 00	2 75	2 60 _{is}	2 60	F	F	F	3 10	24
2 60	2 65	2 85	3 05	3 00	2 90	2 50	F	F	F	F	F	25
2 80	2 85	2 95	3 00	3 00	2 95	2 75	F	F	F	F	F	26
2 75	2 85	2 80	3 00	3 00	3 20	3 15	3 00	3 20	3 40	3 50	3 50	27
2 70	2 95	3 05	3 10	3 10	3 25	3 20	3 10	3 45	F	3 50	3 20	28
2 60	2 65	2 80	2 95	3 10	3 10	3 10	C	F	F	F	3 40	29
2 85	2 95	3 10	3 20	3 30	3 20	2 95	3 05	3 40	3 40	3 10	3 10	30
2 70	2 80	2 95	2 95	2 90	3 00	3 05	3 30	3 10	3 30 _{us}	3 00	3 00 _{us}	31
29	28	28	29	29	30	30	27	25	24	27	28	Count
2 70	2 65	2 75	2 90	3 00	3 00	2 95	3 10	3 25	3 30	3 40	3 40	Median
2 65	2 65	2 75	2 85	2 95	3 00	2 95	3 10	3 25	3 35	3 40	3 40	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foF₂
 Unit . Mc
 Month . February, 1963

TABLE 35
 Ionospheric Data
 75°E Mean Time

Latitude 10 2 N.
 Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	6.2	5.2	3.9	2.6	E	E	2.6	5.2	5.8	6.0	5.7	6.0
2	1.9 ^{UR}	A	A	A	E	E	2.6	5.8	6.8	6.4	6.1	6.1
3	1.6	1.4	E	E	E	E	2.5	5.2	6.7	7.5	7.5	6.9
4	3.4	3.0	2.6	1.9	1.7 ^{UR}	E	2.6	5.7	6.8	7.0	6.6	6.6
5	F	F	3.0	2.2	1.6 ^{JS}	E	2.6	5.7	6.8	8.1	7.8	7.9
6	3.7	3.5	3.2	1.8	F	E	2.5	5.4	6.6	6.8	6.7	7.2
7	2.9	2.5	2.0	1.6	1.5	1.6	2.5 ⁺	5.8	6.6	6.9	7.1	7.1
8	4.3	3.5	2.2	1.4	E	E	2.5	5.4	5.9	6.0	5.9	6.3
9	4.7	4.7	3.6	2.2	1.3 ^{JS}	E	2.4	4.9	5.8	5.8	6.2	7.0
10	3.4	2.4	1.8	1.6	E	E	2.6	6.3	6.9	7.3	8.3	8.3
11	1.9	1.9	1.7	E	F	E	2.7	6.0	7.1	6.8	6.6 ^{II}	6.9
12	2.7	2.2	1.6	1.5	1.3 ^{JS}	E	2.6	5.8	7.2	8.0	6.6	6.4
13	5.5	4.6	3.6	2.8	1.6	E	2.6	5.8	7.6	7.0	6.9	7.2
14	4.5	3.6	2.8	2.6	2.3	1.6	2.6	6.2	7.8	8.6	8.1	7.5
15	4.2	3.8	3.8	3.4	2.8	2.1	2.8	6.0	7.4	7.4	6.8	6.7
16	5.1	4.2	3.3	2.8	2.1	1.7	2.7	5.9	C	7.5	7.0	7.1
17	4.8	4.6	3.6	2.4	1.9	1.6	2.8	6.1 ^{US}	7.2	7.4	6.4	6.5
18	5.7	5.4	5.2	2.7	1.3	1.3	2.6	5.6	6.7	6.3	6.3	6.6
19	5.7	4.9	4.8	3.5	2.7	1.9	2.8	6.0	7.0	7.9	6.9	6.8
20	6.0	6.5	5.8	3.7	2.5	1.9	2.7	5.7	7.0	6.9	6.8	7.0
21	4.6	4.4	4.3	3.8	2.5	1.8	F	5.7	6.6	7.1	7.0	6.9
22	F	Γ	F	4.0 ^I	3.0	2.5	2.9	6.0	6.9	6.4	6.7	6.9
23	5.3	4.6	3.5	2.8	2.0	E	2.7	5.6	6.4	6.6	6.5	6.4
24	6.5	6.6	5.7	3.9	2.1	E	2.8	6.1 ^{US}	7.6	8.2 ^{II}	7.6	7.3
25	F	6.0 ^{IF}	4.4	2.8	1.9	1.5	2.8	5.9	7.5	8.1	7.2	7.5
26	6.5 ^{UI}	5.5 ^{UI}	F	3.4 ^I	2.3	1.6	3.0	5.8	6.6	6.9	6.6	6.5
27	6.0	5.8	5.2	3.3	1.9	F	2.8	5.9	7.1	7.6	7.0	6.9
28	5.5	5.3	4.8	3.8	2.6	1.6	2.8	5.9	6.9	6.8	6.4	6.6
Count	25	25	25	27	28	28	27	28	27	28	28	28
Median	4.7	4.6	3.6	2.7	1.8	E	2.6	5.8	6.9	7.0	6.8	6.9
Mean	4.5	4.2	3.6	2.7	2.0	1.7	2.7	5.8	6.9	7.1	6.8	6.9

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF₂
Unit Mc
Month February 1963

TABLE 35
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
6 4	6 8	7 8	8 6	8 4	7 8	8 2	7 2	4 8	3 5	R	2 0	1
6 1	6 5	7 2	8 0	8 3	8 1	7 8	6 9	6 9	6 3	3 7	2 3	2
6 4	6 5	6 7	7 4	8 4	8 5	7 8	7 2	7 0	6 4	5 0	4 0	3
6 6	6 9	7 2	7 6	7 9	8 2	7 3	6 5	6 6 ^{UF}	7 1 ^{UF}	6 2 ^{UF}	F	4
7 9	8 0	8 7	8 8	8 7	8 1	7 2	6 8	6 7	6 2	5 6	4 6	5
7 6	8 0	8 0	8 1	7 8	7 2	6 9	6 8	6 8	6 8	5 8	3 9	6
7 4	8 0	8 5	9 0	8 6	7 6	6 8	6 2	6 0	5 6	5 6	4 6	7
6 8	7 6	C	C	8 8	8 4	7 8 ^{JS}	6 6	5 9	5 8	5 6	5 0	8
7 6	8 7	8 5	7 8	7 7	7 7	7 9	6 8	6 2 ^F	6 3	5 1	4 2	9
C	C	C	C	C	C	C	8 2	6 6	4 0	2 9	2 2	10
7 6	8 4	9 4	10 0	9 6	8 8	9 6	9 2	8 2	6 0	4 3	3 3	11
6 6	7 2	7 9	9 0	9 4	9 0	8 6	7 4	6 2	6 4	6 7	5 8	12
7 4	8 0	8 9	9 8	10 2	9 6	9 1	7 6	6 8	7 0	7 0	5 5	13
8 0	8 0	8 5	9 4	9 4	9 8	9 0	9 0	7 6	7 5	6 9	5 0	14
7 0	7 1	7 6	8 3	9 4	8 4	7 2	6 5	5.5	F	F	6 2 ^F	15
7 3	7 8	8 0	8 7	9 6	9 2	8 4	7 6	7 2 ^{US}	6 6	5.8	5 3	16
7 0	8 0	8 5	8 6	9 0	9 0	8 3	7 0	6 3 ^{US}	6 4 ^{US}	6 1	5 8 ^{US}	17
7 0	8 0	8 7	9 1	9 6 ^{US}	9 7	9 0	8 0	7 7 ^{US}	F	6 9 ^{US}	6 4	18
7 0	7 1	7 3	8 0	8 4	8 5	8 5	7 7 ^{US}	6 9	6 5	6 5	5 8 ^{US}	19
7 2	7 4	8 5	9 3	10 1	10 0	9 4	C	C	7 6	6 7	5 5	20
7 5	7 8	8 3	8 8	9 2	9 0	8 2	6 8	F	F	F	F	21
7 1	7 8	8 5	9 2	9 4	9 2	9 1	8 5	7 7	7 2	F	6 3 ^{UF}	22
6 6	7 3	8 4	9 5	9 3	9 2	8 6	7 8	7 4	7 6	7 1	6 6	23
7 2	7 4	8 1	9 0	9 5	C	8 0	6 8	F	F	F	F	24
7 6	8 1	8 5	9 0	9 5	9 2	8 8	7 8	7 4	F	F	F	25
6 8	7 2	8 0	9 0	9 5	9 4	9 0	7 7	6 8	F	F	6 5	26
7 0	7 3	7 6	8 1	8 1	8 3	7 8	7 0	6 1	F	F	6 1 ^{JF}	27
6 6	7 0	7 7	7 9	8 5	8 6	8 2	7 0	6 0 ^{JS}	5 7	5 4 ^t	5 8 ^t	28
27	27	26	26	27	26	27	27	25	21	20	24	Count
7 0	7 6	8 2	8 8	9 2	8 7	8 2	7 2	6 8	6 4	5 8	5 4	Median
7 1	7 6	8 1	8 7	9 0	8 7	8 2	7 4	6.7	6 3	5 7	4 9	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foF₂
Unit . Mc
Month February 1963.

TABLE 35 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	5.8	4.9	3.2	1.8	E	E	4.2	5.7	6.0	5.9	5.8	6.2
2	A	A	A	E	E	E	4.5	6.6	6.8	6.1	6.1	6.1
3	1.6	1.4	E	E	E	E	4.3	5.8	7.1	7.9	7.3 ^H	6.6
4	3.1	2.9	2.3	1.7 ^{JR}	E	E	4.5	6.3	7.1	7.0	6.8	6.6
5	F	3.6	2.5	2.0	E	E	4.4	6.3	7.4	8.2	7.8	7.9
6	3.5	3.4	2.3	1.6 ^{JS}	E	E	4.1	6.2	6.6	6.8	6.9	7.4
7	2.7	2.4	1.6	1.5	1.5	A	4.4	6.4	6.9	7.1	7.0	7.1
8	4.0	2.9	1.6	1.3 ^{JS}	E	E	4.2	5.8	6.1	5.9	6.0	6.4
9	4.7	4.4	2.7	1.5 ^{UR}	1.4	E	4.0	5.5	5.8	5.8	6.6	7.2
10	2.9	2.2	1.6	E	E	E	5.0	6.6	7.4	7.6	8.8	8.0
11	1.9	1.8	1.5	E	E	E	4.7	6.8	6.8	6.8	6.6	7.2
12	2.4	2.0	1.7	1.4 ^{JS}	E	E	4.5	6.8	7.8	7.2	6.5	6.4
13	5.4	4.4	3.3	2.1	1.5 ^{JS}	E	4.4	6.8	7.4	6.8	7.1	7.1
14	4.3	3.1	2.6	2.5	2.1	1.4	4.7	7.2	8.3	8.6	7.5	8.0
15	4.2	3.8	3.7	3.1	2.4	1.8	4.6	6.8	7.6	7.0	6.6	6.7
16	4.6	3.7	3.0	2.4	2.0	1.9	4.6	C	7.4	7.2	7.0	7.2
17	4.8	4.2	2.7	2.2	1.7	1.5	4.8	6.8	7.5	6.6	6.4	6.7
18	5.4	5.4	4.2 ^{US}	2.0	1.3	E	4.6	6.5	6.5	6.3	6.4	6.8
19	5.4	5.0	4.2	3.1	2.3	1.7	4.6	7.0	7.7	7.3	6.8	6.8
20	6.3	6.6	4.8	2.8	2.2	R	4.4	6.3	7.2	6.8	6.9	7.1
21	4.4	4.3	4.2	2.9	2.1	1.8	4.7	6.5	6.9	7.1	7.0	7.3
22	F	F	4.6 ^{UF}	3.8	2.8	1.8 ^R	4.7	6.6	6.7	6.6	6.6	7.0
23	5.0	3.9	3.2 ^{US}	2.4	E	E	4.5	6.3	6.6	6.6	6.3	6.5
24	6.6	6.5	4.9	2.9	R	E	4.7	7.3	8.0	8.2 ^H	7.2	7.2
25	F	5.4	3.5	2.4	1.5	1.3	4.8	6.9	7.9	8.0 ^H	7.4	7.4
26	6.1 ^{UF}	4.8	3.9 ^{UF}	3.0	1.9 ^S	1.6	4.8	6.5	6.7	6.6	6.6	6.7
27	5.8	5.7	4.2	2.4	1.6 ^S	E	4.6	6.5	7.4	7.5	7.0	6.8
28	5.6	5.0	4.4	3.1	2.0	E	4.8	6.6	7.1	6.6	6.5	6.4
Count	24	26	27	28	27	26	28	27	28	28	28	28
Median	4.6	4.0	3.2	2.2	1.5	E	4.6	6.5	7.1	6.9	6.8	6.9
Mean	4.4	4.0	3.2	2.3	1.9	1.6	4.5	6.5	7.1	7.0	6.8	7.0

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foF₂
Unit Mc
Month February 1963

TABLE 35 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
6.6	7.4	8.2	8.6	7.8	7.7	7.9	5.8	3.8	2.7	R	F	1
6.2	6.8	7.2	8.4	8.2	8.2	7.2	6.9	7.0	5.1	2.8	1.7	2
6.4	6.5	7.1	7.9	8.4	8.2	7.6	7.2	6.7	6.2	4.2	3.6	3
6.8	7.0	7.4	7.7	8.1	7.9	6.7	6.5r	F	6.8uf	F	4.4ur	4
8.0	8.4	8.9	8.8	8.5	7.7	7.1	F	6.5us	5.9	5.1	3.9	5
7.8	8.0	8.1	7.8	7.5	7.0	6.8	6.8	6.8	6.4	4.9	3.4	6
7.8	8.2	8.9	8.9	8.0	7.0	6.4	6.0	5.8	5.6	5.2	4.5	7
7.3	7.8	C	8.6	8.8	8.1	6.9	6.3	5.8	5.8	5.4	4.8	8
8.0	8.9	8.2	7.6	7.8	7.8	7.6	6.4	6.4	5.8	4.6	3.6	9
C	C	C	C	C	C	8.5	7.6	5.2r	3.3	2.5	2.0	10
8.0	8.8	9.9	9.6	8.6	9.2	9.6	8.6	7.4	S	4.0	2.9	11
7.0	7.4	8.4	9.2	9.2	8.8	8.0	7.0	6.1i	6.8	6.2	5.6	12
7.7	8.4	9.4	9.9	10.2	9.2	8.6	6.8	6.9	7.5	6.2	5.2	13
8.0	8.0	8.9	9.6	9.8	9.4	9.2	8.3	7.4	7.3	6.3	4.5	14
7.0	7.3	7.8	9.1	9.1	8.0	7.0	5.9	F	F	F	5.5	15
7.5	7.9	8.4	9.2	9.4	8.8	8.2	7.4us	6.8	6.4	5.6us	5.1	16
7.4	8.0	8.6	8.9	9.2	8.6	7.7	6.6	6.4us	6.3	6.0	5.8	17
7.5	8.3	9.0	9.3	9.8	9.5us	8.4	7.7	7.7us	6.9ur	6.5	5.9	18
7.0	7.3	7.5	8.1	8.5	8.6	8.1us	7.1us	6.8	6.5	6.1us	6.0	19
7.2	8.0	8.8	9.8	10.4	9.6	9.1	C	C	7.1	6.2	4.9	20
7.7	8.0	8.6	9.1	9.3	8.9	7.5	S	F	F	F	F	21
7.4	8.3	9.0	9.6	9.1	9.5	8.8	8.1	7.8	6.7	6.9ur	5.6	22
6.8	7.8	9.1	9.9	9.1	8.8	8.2	7.5	7.2	6.6	6.8	6.5us	23
7.2	7.8	8.6	9.3	C	8.6s	7.5	6.3js	F	F	F	F	24
7.7	8.2	8.6	9.4	9.6	9.0	8.4	7.4	F	F	F	F	25
7.0	7.6	8.5	9.2	9.5	9.1	8.5	7.1us	6.4	F	6.7ur	6.0	26
7.0	7.4	8.1	8.3	8.2	8.2	7.4	6.7	6.3r	F	6.5jr	5.4	27
6.8	7.3	7.8	8.3	8.6	8.4	7.9	6.2	5.8	F	F	5.4	28
27	27	26	27	26	27	28	25	22	20	21	24	Count
7.3	7.9	8.6	9.1	9.0	8.6	7.9	6.9	6.6	6.4	6.0	5.0	Median
7.3	7.8	8.4	8.9	8.9	8.5	7.9	7.0	6.5	6.1	5.5	4.7	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic foF1
Unit: Mc
Month February, 1963.

TABLE 36
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1									L	L	L	4 4
2								L	L	L	L	4 5
3								L	L	L	4 4	L
4								L	L	L	4 4	4 5
5								L	L	L	L	A
6								L	L	4 5	4 7	4 6
7								L	L	L	4 6	4 6
8									L	4 4	L	4 5
9								L	L	4 4	4 4	4 5
10								L	L	L	4 6	4 5
11								L	L	4 4	4 6	4 6
12								L	L	4 4	4 6	4 6
13								L	L	4 4	4 5	4 6
14								L	L	4 3	4 5	4 6
15							L	L	L	4 4	4 8	4 8
16								L	C	4 4	4 5	4 5
17							L	L	L	L	L	L
18								L	L	L	L	L
19								L	L	L	L	L
20								L	L	L	4 4	4 5
21								L	L	L	4 5	4 5
22								L	L	L	4 5	4 4
23								L	L	L	L	4 5
24								L	L	4 3	4 5	4 5
25							L	L	L	L	4 5	4 6
26							L	L	L	L	L	4 5
27							L	L	L	4 3	4 5	4 6
28								L	L	4 4	4 5	4 5

Count			12	19	23
Median			4 4	4 5	4 5
Mean			4 4	4 5	4 5

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo F1
 Unit Mc
 Month February, 1963

TABLE 36
 Ionospheric Data
 75°E Mean Time

Latitude . 10 2° N.
 Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
L	L	L	L	L	L							1
L	L	L	L	L	L							2
4 5	4 5	4 3	L	L	L							3
4 5	4 4	L	L	L	L							4
4 5	L	L	L	L	L							5
4 6	4 5	4 5	4 4	L	L							6
4 6	A	4 5	L	L	L							7
4 6	4 6	C	C	L	L							8
4 6	4 5	L	4 3	L	L							9
C	C	C	C	C	C							10
4 7	4 6	4 6	4 3	L	L	L						11
4 5	4 5	4 4	4 4	4 1	L							12
4 7	4 6	4 4	4 4	4 3	L							13
4 7	4 9	4 5	4 4	L	L							14
4 6	4 6	4 5	A	4 1								15
4 5	L	A	L	L								16
4 5	4 5	I	L	L	L	L						17
4 6	L	4 5 ₁	L	L	L	L						18
4 6	L	4 5 _L	L	L	L	L						19
I	4 6	4 5	L	L	L							20
4 6	4 5	4 4	L	L	L							21
4 5	4 5	A	LH	L	L							22
4 6	LH	4 5	4 3	L	L							23
L	4 5	4 4	4 3	L	C							24
4 7	4 6	4 3	4 3	4 3	I							25
4 5	L	1	L	L								26
4 5	4 5	4 4	4 3	4 4	L							27
4 5	4 5	4 5	L	L	L							28

23	18	17	10	5		Count
4 6	4 5	4 5	4 3	4 3		Median
4 6	4 6	4 5	4 3	4 2		Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foF1
Unit, Mc
Month February, 1963

TABLE 36 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	
1								L	L	L	L	4 4	
2								L	L	L	4 4	4 5	
3								L	L	L	4 4	L	
4								L	L	4 4	4 4	4 5	
5								L	L	L	L	4 5	
6								L	L	4 5	4 6	4 6	
7							L	L	L	4 6	4 6	4 6	
8								L	L	L	4 5	4 5	
9								L	L	4 4	4 5	4 5	
10								L	L	4 4	4 6	4 6	
11							L	L	4 4	4 6	4 6	4 6	
12							L	L	L	4 4	4 6	4 6	
13							L	L	4 4	4 6	4 5	4 6	
14							L	L	4 3	L	4 8	4 6	
15							L	L	4 5	4 6	4 7	4 5	
16							L	C	L	4 4	L	4 5	
17							L	L	L	L	L	4 5	
18							L	L	L	L	L	L	
19							L	L	L	4 5	L	L	
20							L	L	L	L	4 5	4 5	
21							L	L	L	L	L	4 6	
22							L	L	L	4 5	4 4	4 5	
23							L	L	4 3	L	4 4	4 5	
24							L	L ^H	4 1	L	4 4	L	
25							L	L	4 3	4 4	4 5	4 6	
26							L	L	L	L	4 5	4 5	
27							L	L	L	4.6	4 5	4 5	
28								L	L	L	4 5	4 6	
Count										7	14	21	24
Median										4 3	4 5	4 5	4 5
Mean										4 3	4 5	4 5	4 5

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds.

Characteristic foF1
Unit Mc.
Month February, 1963

TABLE 36 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
L	L	L	L	L								1
4 4	L	L	L	L								2
L	4 4	L	L	L								3
4 4	L	L	L	L								4
4 4	L	L	L	L								5
4 7	4 6	4 6	L	L								6
A	4 6	4 6	L	L	L							7
4 5	4 6	C	L	I								8
4 6	4 6	4 5	L	L								9
C	C	C	C	C								10
4 7	4 6	4 4	L	I	L	L						11
4 6	4 6	4 6	4 3	L	L							12
4 7	4 5	4 4	4 2	I	L							13
4 6	4 6	4 5	4 1	I								14
4 5	4 6	4 7	A	I								15
L	L	I	I	L								16
4 6r	L	I	L	L	L							17
4 6r	L	I	I	L	L							18
4 6	I	L	I	L	L							19
L	4 6	4 4	L	L								20
4 6	4 5	4 3	L	L								21
4 7	4 5	4 4	L	L								22
4 6	L	A	L	L								23
4 6r	4 4r	L	L	C								24
4 6	4 6	A	4 5	4 2								25
L	4 5r	L	A	L								26
4 5	4 5	4 4	4 4	L	L							27
4 5	4 5	I	I	L								28

21	18	12	5	1								Count

4 6	4 6	4 4	4 3									Median

4 6	4 5	4 5	4 3									Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foE
 Unit Mc
 Month February, 1963.

TABLE 37
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

Date]	00	01	02	03	04	05	06	07	08	09	10	11
1								A	A	A	A	A
2								2 2	A	A	A	A
3								2 2	2 8	A	A	A
4								2 2	A	A	A	A
5								2 2	2 9	A	A	A
6								A	A	A	A	A
7								A	A	A	A	A
8								A	A	A	A	A
9								A	A	A	A	A
10								2 1	A	A	A	A
11								A	A	A	A	A
12								2 3	A	A	A	A
13								2 0	A	A	A	A
14								1 9	A	A	A	A
15								2 1	A	A	A	A
16								2 2H	C	A	A	A
17								2 3	A	A	A	A
18								A	A	A	A	A
19								2 4	A	A	A	A
20								A	A	A	A	A
21								A	A	A	A	A
22								A	A	A	A	A
23								A	A	A	A	A
24								2 3H	A	A	A	A
25								1 6	A	A	A	A
26								2 3R	A	A	A	A
27								2 2	A	A	A	A
28								2 2	A	A	A	A
Count								17	2			
Median								2 2				
Mean								2 2				

Sweep] 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foE
 Unit . Mc
 Month February, 1963

TABLE 37
 Ionospheric Data
 5°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	3 4	3 1	2 8	2 2							1
A	A	A	3 0	2 8	R							2
A	A	A	A	2 7	2 3							3
A	A	A	A	R	R							4
A	A	A	A	A	R							5
A	A	A	A	A	A							6
A	A	A	A	2 7	A							7
A	A	C	C	A	A							8
A	A	3 2	R	B	2 2							9
C	C	C	C	C	C							10
A	3 4	3 3	3 0	2 8								11
A	A	A	A	3 0	A							12
A	A	3 3	3 1	2 6	2 1							13
A	A	3 2	3 0	2 6								14
A	A	A	A	A								15
A	A	A	A	B								16
A	A	A	3 2	A	A							17
A	A	A	3 1	2 8	2 2							18
A	A	A	A	R								19
A	A	A	A	A								20
A	A	A	A	A	A							21
A	A	A	A	R	2 3							22
A	A	A	A	R	A							23
A	A	A	A	A	C							24
A	A	A	A	2 7	2 3							25
A	A	A	A	R	R							26
A	A	A	A	A	2 2							27
A	A	A	A	A	2 4							28
	1	5	7	10	9							Count
		3 3	3 1	2 8	2 2							Median
..		3 3	3 1	2 8	2 2							Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month February, 1963

TABLE 37 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								A	A	A	A	A
2								A	A	A	A	A
3								2.5	A	A	A	A
4								F	A	A	A	A
5								2.5	A	A	A	A
6								A	A	A	A	A
7							1.4	A	A	A	A	A
8								A	A	A	A	A
9							1.8	A	A	A	A	A
10								A	A	A	A	A
11							1.6	A	A	A	A	A
12							1.8	2.5	A	A	A	A
13							1.8	A	A	A	A	A
14							1.8	2.6	A	A	A	A
15							1.6	A	A	A	A	A
16							1.9	C	A	A	A	A
17							R	A	A	A	A	A
18							R	A	A	A	A	A
19							2.0	A	A	A	A	A
20							R	A	A	A	A	A
21							A	A	A	A	A	A
22							1.7	A	A	A	A	A
23							R	A	A	A	A	A
24							R	A	A	A	A	A
25							1.6	2.4	A	A	A	A
26							1.8	A	A	A	A	A
27							1.7	A	A	A	A	A
28							1.8	A	A	A	A	A
Count							14	5				
Median							1.8	2.5				
Mean							1.7	2.5				

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month February, 1963

TABLE 37 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	3.5	3.3	3.0	2.5	1.9							1
A	A	A	2.9	2.7	1.8L							2
A	A	A	R	2.6								3
A	A	A	R	2.6								4
A	A	A	R	A								5
A	A	A	2.8	A								6
A	3.4	A	2.9	2.5	R							7
A	R	C	2.8	A	2.2							8
A	R	3.2	B	B	1.8							9
C	C	C	C	C								10
A	3.3	3.2	2.9	2.6								11
A	A	A	2.9	A								12
A	3.4	R	R									13
A	A	A	3.0	2.5								14
A	A	A	A	A								15
A	A	A	2.8	2.4								16
A	A	3.3	3.3	A								17
A	A	A	3.0	2.6								18
A	A	A	2.9	R								19
A	A	A	A	A								20
A	A	A	A	A								21
A	A	A	A	2.6H								22
A	A	A	2.7UR	A								23
A	A	A	A	C								24
A	A	A	A	R								25
A	A	A	A	R								26
A	A	A	A	2.6								27
A	A	A	A	2.5	2.0							28
	4	4	13	12	5							Count
			2.9	2.6	1.9							Median
			2.9	2.6	1.9							Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
 Unit Mc
 Month February, 1963

TABLE 38
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								7 0 _{US}	9 4	10 0	10 8	11 2
2		5 2	7 4	6 0				G	9 4	9 8	10 8	10 0
3						3 2		G	6 8	10 8	11 4	11 6
4								G	9 4	11 8	11 8	11 0
5								G	7 0	9 4	10 4	12 0
6												
7							3 8	4 7	9 0	9 0	9 8	9 4
8								4 4	9 2	9 6	9 8	10 2
9								4 8	8 7	9 2	9 2	9 6
10								6 8	9 0	9 6	9 4	10 2
								G	6 2	6 8	9 4	9 0
11								4 8	12 6	10 4	9 8	10 4
12								G	9 0	11 2	10 8	9 8
13								G	9 0	9 8	10 6	9 6
14			1 9					4 6	8 2	10 0	9 8	10 0
15								G	8 8	9 8	10 0	11 4
16								G	C	9 8	12 0	11 0
17								G	9 0	9 6	9 6	10 0
18								4 6 _{US}	10 2	11 0	11 0	11 2
19	5 0		2 3					G	8 0 _{US}	10 8	10 5	11 0
20		4 0						S	9 6	12 0	12 4	11 2
21								S	9 0	10 4	12 0	12 0
22								5 0	10 0	12 2	11 0	11 2
23	3 9							s	10 2	11 1	12 1	11 9
24								G	10 4	10 0	12 0	12 0
25	7 4 _s							4 6 _s	6 8 _s	10 2	11 6	11 6
26								G	8 7	9 9	10 6	10 8
27								G	8 8	10 3	11 4	11 0
28								G	9 0	9 8	10 8	11 0
Count	3	2	3	1		1	1	25	27	28	28	28
Median								G	9 0	10 0	10 8	11 0
Mean								5 1	8 9	10 2	10 7	10 8

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foEs
Unit Mc
Month February, 1963

TABLE 38
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
11.6	9.8	G	G	G	G							1
10.4	11.2	9.2	G	G	G							2
11.6	11.6	11.0	9.2	G	G							3
11.6	10.4	9.0	8.2	6.4	G							4
10.0	9.4	9.0	8.0	6.4	6.0			4.4	4.2	7.0		5
9.0	9.5	8.6	8.0	7.8	4.7			5.2				6
9.6	13.0	5.2	6.8	G	5.7					5.8	4.4	7
9.0	8.0	C	C	5.6	6.7		4.8	4.4				8
5.8	6.0	G	G	G	G							9
C	C	C	C	C	C							10
11.0	9.4	G	4.4	G			2.3					11
10.2	9.8	7.1	10.0	7.2	6.0							12
10.0	9.2	G	G	G				2.1				13
9.8	9.4	8.6	3.6	G	G			3.1				14
10.6	10.6	9.8	11.8	9.4								15
10.0	10.6	12.8	4.4	G								16
11.0	9.6	9.0	7.0	7.0	6.0							17
12.4	11.4	6.6	5.2	G	6.0us			4.6		6.0us		18
11.0	10.8	9.0	7.2	G	3.8			3.4		3.2	3.6us	19
11.2	11.4	9.4	8.4	9.0			G	G	4.6			20
12.6	12.2	11.3	9.0	7.8	6.0							21
11.3	9.7	13.0	6.4	G	G			2.4	2.7	3.7		22
11.0	9.8	9.1	9.0	G	5.6					3.0		23
11.7	11.0	5.6	7.8	8.0	C							24
11.3	9.5	9.6	14.0	6.2	3.8					2.8	4.8	25
11.8	12.0	8.2	11.0	G	G	2.8						26
11.6	10.8	10.0	9.6	7.4	G	4.0			4.2		3.1	27
10.8	11.0	9.8	9.8	7.6	4.6					4.5	3.8	28
27	27	26	26	27	21	2	3	6	6	7	7	Count
11.0	10.4	9.0	7.9	G	3.8			3.8	3.2	3.5	3.7	Median
10.7	10.3	9.1	8.1	7.4	5.4			3.8	3.9	4.6	3.8	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
 Unit Mc
 Month February, 1963

TABLE 38 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								9 0	9 6	10 4	10 8	12 0
2	5 8	7 4	6 4					7 2	10 4	9 8	10 6	9 8
3					2 6	3 5		G	8 6	11 0	11 0	11 0
4								G	9 8	11 8	11 8	11 0
5								G	9 2	10 2	11 4	11 4
6				3 8		4 4	2 4	6 8	9 6	9 0	10 8	9 8
7		3 0				5 2	G	7 0	8 8	9 0	10 2	9 8
8								6 8	8 8	9 0	9 2	9 0
9							G	6 8	9 6	9 0	9 7	9 0
10								5 6	8 8	9 4	9 6	9 5
11							2 8	9 4	10 6	12 4	9 8	11 6
12							G	G	9 8	9 8	10 0	9 8
13							G	8 4	10 0	10 0	9 8	10 4
14	3 1	2 2	6 4	2 6			2 3	2 8	8 6	10 0	9 4	10 6
15							G	5 7	10 2	10 4	10 0	10 6
16							G	C	9 0	10 2	11 6	11 6
17							G	4 8	9 0	12 0	11 0	12 0
18							G	7 0 _{us}	9 0	11 0	11 8	12 0
19							G	4 8	8 8	11 0	11 6	10 2
20							G	9 0	11 2	11 2	11 6	11 6
21							S	8 8	11 0	12 0	12 0	12 1
22							G	9 0	12 0	11 0	11 2	11 4
23	9 3		3 3				G	S	11 2	12 0	11 8	11 2
24							G	S	10 0	11 3	11 8	11 8
25							G	5 6 _s	9 0 _s	9 3 _s	11 3	11 2
26							G	7 0	8 9	10 5	11 2	11 0
27							G	6 6	10 2	10 8	11 4	11 6
28							G	7 0 _{us}	9 6	9 8	11 4	10 8
Count	3	3	3	2	1	3	20	25	28	28	28	28
Median							G	6 8	9 6	10 4	11 1	11 0
Mean								6 9	9 7	10 5	10 8	10 8

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foEs
Unit Mc
Month February 1963

TABLE 38 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date	
10.8	G	G	G	G	G							1	
10.8	11.0	7.0	G	G	G							2	
11.6	10.8	10.6	G	G								3	
12.0	10.8	8.8	G	6.0								4	
10.0	9.0	8.2	7.0	6.6				5.0	6.0	4.8	2.8	5	
8.8	9.0	8.2	6.4	7.4	3.0							6	
9.8	5.8	5.6	G	5.6	G						5.6	7	
8.2	G	C	5.6	7.6	3.6	2.3	4.7					8	
7.8	G	G	G	G	G							9	
C	C	C	C	C	C							10	
9.8	G	G	G	G								11	
9.8	9.2	10.8	G	7.6	2.0							12	
10.4	G	G	G									13	
10.6	8.8	9.4	G	G								14	
9.8	10.4	8.8	10.6	6.4								15	
11.0	8.2	5.8	2.4	G								16	
11.4	9.6	8.2	G	6.6								17	
11.0	9.8	7.0	G	G				3.4us	3.2	5.8us	6.0	18	
11.0	10.8	9.4	5.4	G	3.3				3.1	3.0	3.0	19	
12.2	11.0	8.6	9.0	6.2	S		G	G	4.8			20	
12.6	10.8	11.0	8.6	7.0								21	
11.6	8.8	9.8	4.0	G					3.8us	4.6		22	
10.3	9.8	21.0	G	3.2								23	
10.5	8.8	6.6	4.6	C					2.5		4.6s	24	
11.2	10.0	16.0	6.2	G	5.4							25	
11.8	11.0	6.8	11.6	G					2.5			26	
12.2	11.2	8.8	8.2	7.8	3.4			2.2	3.2		5.8	27	
11.0	10.6	9.6	8.4	6.0						4.2	8.6	28	
27	27	26	27	25	10			2	5	8	5	7	Count
10.8	9.6	8.4	2.4	3.2	2.5			3.4	3.2	4.6	5.6		Median
10.7	9.8	9.4	7.0	6.5	3.4				3.6	4.5	5.2		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fbEs
 Unit Mc
 Month February, 1963

TABLE 39
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								2 2	2 7	3 0	3 4	3 5
2		A	A	A				G	2 7	3 1	3 3	3 5
3								G	2 8	3 2	3 4	3 5
4								G	2 8	3 2	3 4	3 6
5								G	2 8	3 2	3 5	4 5
6									2 2	2 8	3 1	3 4
7							1 2	2 2	2 9	3 3	3 4	3 5
8								2 2	2 8	3 2	3 4	3 6
9								2 3	2 8	3 1	3 4	3 5
10								G	2 8	3 0	3 3	3 5
11								2 2	2 8	3 2	3 4	3 5
12								G	2 8	3 2	3 4	3 5
13								G	2 7	3 2	3 4	3 5
14				1 6					2 8	3 2	3 4	3 7
15								G	2 7	3 2	3 4	3 5
16								G	C	3 1	3 3	3 4
17								G	2 7	3 2	3 4	3 5
18								2 2	2 7	3 2	3 4	3 5
19	2 2		1 6					G	2 8	3 1	3 3	3 4
20	1 9							2 3	2 8	3 1	3 5	3 7
21								2 2	2 7	3 2	3 4	3 5
22								2 1	2 7	3 1	3 4	3 4
23	1 9			2 0				2 2	2 8	3 1	3 3	3 5
24								G	2 8	3 1	3 3	3 5
25	2 2							2 2	2 8	3 1	3 4	3 5
26								G	2 8	3 1	3 4	3 5
27								G	2 7	3 2	3 3	3 5
28								G	2 9	3 2	3 6	3 6
Count	4	1	3	2			1	27	27	28	28	28
Median								G	2 8	3 2	3 4	3 5
Mean								2 2	2 8	3 2	3 4	3 6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic fEs
Unit Mc
Month February, 1963

TABLE 39
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

12	13	14	15	16	17	18	19 ^s	20	21	22	23	Date
3.6	3.5	G	G	G	G							1
3.5	3.5	3.2	G	G	G							2
3.6	3.6	3.4	3.1	G	G							3
3.6	3.4	3.3	3.0	3.0	G							4
3.5	3.4	3.9	3.2	2.9	2.3			2.9	1.9	2.6		5
3.5	3.5	3.4	3.1	2.8	2.3			2.2				6
3.6	5.2	3.4	3.2	G	2.3					2.4	2.2	7
3.6	3.5	C	C	2.8	2.6		2.2	1.9				8
3.6	3.8	G	G	G	G							9
C	C	C	C	C	C	C						10
3.6	3.6	G	3.2	G			2.0					11
3.6	3.6	3.6	3.4	2.9	2.2							12
3.7	3.6	G	G	G		1.8						13
3.6	3.6	3.4	3.2	G	G			1.7				14
3.6	3.6	3.4	4.9	3.8								15
3.6	3.6	4.6	3.1	G								16
3.6	3.6	3.5	3.0	3.0	2.4							17
3.6	3.5	3.4	3.2	G	2.2				2.4	2.2		18
3.5	3.5	3.3	3.1	G	2.8				2.4	1.9	1.0	19
3.7	3.7	3.5	3.2	4.4			G	G	1.8			20
3.6	3.5	3.4	3.1	2.8	2.3							21
3.5	3.5	6.6	3.1	G	G			1.6			1.7	22
3.6	3.4	3.5	3.1	G	2.5						2.0	23
3.6	3.4	3.4	2.6	3.0								24
3.6	3.6	3.5	4.0	2.8	2.3					1.8	1.8	25
3.6	3.6	3.4	3.9	G	G	2.0						26
3.7	3.4	3.4	3.2	3.0	G	2.2			2.2		2.0	27
3.6	3.6	3.4	3.3	2.9	2.4					1.7		28
27	27	26	26	27	21	3	3	5	6	6	6	Count
3.6	3.6	3.4	3.1	G	2.2			1.9	2.0	2.0	1.9	Median
3.6	3.6	3.6	3.3	3.1	2.4				2.0	2.1	1.8	Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds.

Characteristic · fbEs
 Unit · Mc
 Month February, 1963.

TABLE 39 (Contd)
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N
 Longitude · 77 5°E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								2.4	2.9	3.2	3.4	3.5
2	A	A	A					2.5	3.0	3.3	3.5	3.5
3								G	3.0	3.2	3.5	3.6
4								G	3.0	3.3	3.5	3.6
5								G	3.0	3.5	3.9	3.6
6							1.7	2.5	3.0	3.3	3.4	3.4
7						A	G	2.6	3.2	3.3	3.5	3.6
8								2.6	3.0	3.4	3.5	3.6
9							G	2.6	3.0	3.2	3.4	3.5
10								2.4	3.0	3.2	3.4	3.4
11							1.7	2.5	3.0	3.4	3.5	3.6
12							G	3.0	3.3	3.5	3.6	
13							G	2.5	3.2	3.2	3.5	3.8
14	2.0	1.7	1.6	1.7			1.8	2.6	2.9	3.2	3.5	3.7
15							G	2.6	2.9	3.4	3.5	3.6
16							G	C	3.0	3.2	3.4	3.5
17							G	2.5	3.0	3.2	3.4	3.5
18							G	2.5	3.0	3.3	3.4	3.6
19							G	2.6	3.0	3.2	3.4	3.5
20							G	2.6	3.0	3.3	3.6	3.6
21							1.9	2.6	3.0	3.2	3.4	3.6
22							G	2.6	3.0	3.2	3.6	3.5
23	1.8		1.9				G	2.6	3.0	3.2	3.5	3.6
24							G	2.6	2.9	3.2	3.4	3.6
25							G	2.5	3.0	3.2	3.5	3.5
26							G	2.5	3.0	3.2	3.5	3.6
27							G	2.5	3.0	3.3	3.4	3.5
28							G	2.6	3.0	3.3	3.5	3.6
Count	3	2	3	1		1	21	27	28	28	28	28
Median							G	2.5	3.0	3.2	3.5	3.6
Mean	--	--	--	--	--	--	--	2.5	3.0	3.3	3.5	3.6

Sweep 1.0 Mc. to 25.0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month February, 1963

TABLE 39 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
3.6	G	G	G	G	G							1
3.4	3.4	3.6	G	G	G							2
3.7	3.5	3.4	G	G								3
3.6	3.4	3.2	G	2.6								4
3.4	3.4	3.5	3.1	2.6				2.1	-	2.2	2.0	5
3.6	3.4	3.3	3.0	2.6	2.0							6
5.0	3.6	3.4	G	2.6	G							7
3.6	G	C	3.0	2.8	2.4		1.8	2.0				8
3.6	G	G	G	G	G							9
C	C	C	C	C	C							10
3.6	G	G	G	G								11
3.6	3.6	3.6	G	2.6	1.9							12
3.7	G	G	G									13
3.7	3.6	3.7	G	G								14
3.6	3.6	3.2	4.8	2.7								15
3.6	3.4	3.4		G								16
3.8	3.6	3.3	G	2.6								17
3.6	3.6	3.3	G	G				1.5	2.0	2.6	2.3	18
3.5	3.4	3.4	3.0	G	2.0				2.2	1.3		19
3.6	3.6	3.3	3.3	2.8	2.2		G	G	1.8			20
3.6	3.5	3.3	3.0	2.5								21
3.6	3.6	3.3	3.1	G					1.8	1.7		22
3.5	3.7	6.0	G	2.9								23
3.6	3.5	3.1	2.8						1.9		1.8	24
3.5	3.4	7.4	3.2	G	2.2							25
3.6	3.5	3.3	6.0	G					1.8			26
3.5	3.5	3.3	3.2	2.6	2.6			1.9	1.9		2.2	27
3.6	3.6	3.3	3.2	2.7	G					1.5	3.6	28
27	27	26	26	25	12		2	5	7	5	5	Count
3.6	3.5	3.3	2.8G	2.5	2.0			1.9	1.9	1.7	2.2	Median
3.6	3.5	3.7	3.4	2.7	2.2				1.9	1.9	2.4	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
 Unit : Mc
 Month . February, 1963

TABLE 40
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	16	13	11	11	E	E	12	14	15	20	21	23
2	18	15	10	15	E	E	14	14	15	20	21	22
3	12	11	E	E	E	E	15	17	21	22	23	24
4	15	16	11	14	S	E	15	17	18	21	21	24
5	15	13	15	11	E	E	14	17	20	22	23	24
6	16	11	10	10	E	E	11	13	16	19	21	24
7	15	11	12	E	12	10	E	15	17	17	23	23
8	16	12	10	12	E	E	12	17	18	20	24	26
9	16	15	15	13	11	E	11	15	16	19	21	24
10	11	10	10	S	E	E	11	16	17	21	23	24
11	10	15	10	E	E	E	12	16	16	17	20	22
12	E	13	11	E	S	E	12	12	15	18	22	22
13	11	12	11	10	10	E	11	16	15	20	21	29
14	18	14	11	15	11	13	14	22	16	18	22	24
15	14	14	10	10	E	10	11	14	14	17	20	19
16	17	11	E	E	13	E	12	13	C	18	19	21
17	E	E	E	E	E	E	11	14	14	17	21	24
18	17	13	11	13	E	E	10	E	14	17	20	22
19	18	18	E	E	E	11	10	14	13	16	20	22
20	15	10	14	14	14	E	13	14	15	19	21	24
21	12	12	E	E	E	E	E	11	13	19	20	22
22	14	13	13	E	11	11	11	14	14	17	19	22
23	16	17	14	12	12	E	14	13	14	16	20	22
24	13	E	12	12	E	E	12	15	16	19	20	23
25	13	17	14	11	12	10	12	12	15	18	20	23
26	16	12	E	E	E	E	12	13	15	18	20	22
27	13	12	10	12	E	E	13	13	15	16	20	22
28	11	11	10	10	10	11	14	13	15	18	23	24
Count	28	28	28	27	26	28	28	28	27	28	28	28
Median	15	12	10	10	E	E	12	14	15	18	21	23
Mean	15	13	12	12	12	11	12	15	16	19	21	23

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month February, 1963

TABLE 40
Ionospheric Data
75°E Mc in Time

Latitude 10°2' N
Longitude 77°5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2.5	2.5	2.3	2.4	2.4	1.7	1.6	1.3	1.6	1.6	E	1.6	1
2.4	2.3	2.2	2.0	2.0	1.9	1.7	1.8	1.5	1.9	1.6	1.7	2
2.3	2.3	2.1	2.1	2.4	2.0	1.7	1.6	1.9	1.5	1.2	1.7	3
2.4	2.3	2.3	2.1	2.1	1.6	1.6	1.6	1.6	1.5	1.5	1.7	4
2.5	2.2	2.2	2.1	2.1	1.6	1.5	1.4	1.9	1.7	1.9	1.7	5
2.4	2.2	2.2	1.9	1.8	1.7	1.6	1.5	2.0	2.0	1.8	1.4	6
2.3	2.3	2.3	1.9	1.9	1.6	1.4	1.5	1.3	1.9	1.7	1.6	7
2.6	2.4	C	C	1.9	1.5	1.7	1.1	1.4	1.5	1.4	1.3	8
2.3	2.5	2.7	2.5	2.9	1.7	1.6	1.9	1.5	1.6	1.9	1.7	9
C	C	C	C	C	C	C	1.6	1.5	1.3	1.3	1.1	10
2.3	2.4	2.1	2.0	2.2	2.5	1.6	1.5	1.5	1.6	1.1	1.7	11
2.2	2.1	2.4	1.7	1.7	1.4	1.7	1.7	1.8	2.3	1.8	1.8	12
2.5	2.5	2.8	2.5	2.4	2.4	2.2	1.9	1.4	1.7	1.6	1.5	13
2.1	2.6	2.4	1.9	3.0	2.3	1.6	1.5	1.4	1.6	1.5	1.5	14
2.2	2.2	2.2	1.7	1.8	2.4	1.8	1.6	2.0	1.5	1.8	1.4	15
2.2	2.3	2.2	1.4	3.0	2.3	1.7	1.5	1.6	1.5	1.4	1.4	16
2.2	2.3	2.2	2.2	2.0	1.7	1.6	1.8	1.6	1.7	1.5	1.2	17
2.2	2.2	2.0	2.0	2.0	1.5	1.6	1.6	1.4	1.4	1.7	1.7	18
2.3	2.2	2.1	2.0	2.5	1.7	1.6	1.6	1.4	1.3	1.1	1.3	19
2.5	2.6	2.4	2.0	1.8	2.6	1.8	C	C	1.1	1.4	1.4	20
2.4	2.3	2.3	1.9	1.9	1.7	1.7	1.4	1.4	1.6	1.6	1.5	21
2.2	2.3	2.1	1.9	2.3	1.9	1.9	1.3	1.1	1.3	1.6	1.6	22
2.3	2.2	2.2	2.1	2.0	1.9	1.8	1.4	1.5	1.5	1.4	1.2	23
2.3	2.3	2.2	1.2	1.6	C	1.7	1.5	1.2	1.5	1.9	1.5	24
2.2	2.2	2.0	1.9	2.0	1.5	1.6	2.3	1.9	1.7	1.6	1.1	25
2.3	2.2	2.3	1.9	2.0	1.8	1.6	1.3	1.6	1.7	1.7	1.6	26
2.4	2.2	2.2	2.1	2.1	1.9	2.0	1.8	1.6	1.4	1.5	1.5	27
2.4	2.4	2.3	2.1	2.0	1.7	1.7	1.3	1.4	1.6	1.5	1.7	28
2.7	2.7	2.6	2.6	2.7	2.6	2.7	2.7	2.7	2.8	2.8	2.8	Count
2.3	2.3	2.2	2.0	2.0	1.7	1.7	1.5	1.5	1.6	1.6	1.5	Median
2.3	2.3	2.3	2.0	2.1	1.9	1.7	1.6	1.6	1.6	1.6	1.5	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
 Unit Mc
 Month February 1963

TABLE 40 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	11	12	10	13	E	E	16	14	17	21	22	21
2	15	16	14	E	E	E	17	16	17	20	21	23
3	12	11	E	E	E	21	19	19	22	22	23	24
4	14	14	12	E	E	F	17	19	19	23	24	24
5	13	13	11	14	E	E	18	22	22	23	24	24
6	13	12	11	12	E	E	14	13	17	18	23	21
7	14	13	10	12	12	EE	13	16	18	22	22	24
8	10	11	10	14	E	F	16	17	19	22	26	26
9	14	14	13	13	10	E	14	15	17	21	23	24
10	10	11	10	E	E	E	18	15	19	20	22	23
11	14	E	13	E	E	E	14	17	16	28	22	22
12	15	10	10	10	E	EE	14	15	16	19	22	23
13	E	12	11	12	S	E	15	16	16	21	24	24
14	17	12	12	12	14	10	15	16	17	17	22	22
15	12	14	10	E	E	10	12	11	14	18	20	22
16	13	12	E	E	E	E	14	C	15	18	20	22
17	E	10	E	E	E	11	15	14	16	20	22	23
18	13	14	E	11	E	E	13	13	17	20	21	24
19	19	17	11	E	E	E	13	12	15	20	22	23
20	11	10	16	13	E	E	15	14	18	21	24	25
21	16	12	E	11	E	E	12	12	15	20	21	23
22	16	12	14	E	11	E	14	14	15	19	21	21
23	16	16	E	14	E	E	14	14	16	18	22	23
24	14	12	12	12	E	E	14	15	16	19	21	24
25	16	16	10	11	11	11	13	14	18	20	22	22
26	13	12	E	E	E	E	13	14	17	20	21	22
27	13	14	14	11	E	E	14	15	16	20	21	21
28	11	10	11	11	10	E	13	13	17	20	23	25
Count	28	28	28	28	27	28	28	27	28	28	28	28
Median	13	12	10	11	E	E	14	15	17	20	22	23
Mean	14	13	12	12	11	13	15	15	17	20	22	23

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month February, 1963

TABLE 40 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2.4	2.1	2.5	2.4	2.1	1.4	1.5	1.4	1.5	2.0	E	1.6	1
2.2	2.2	2.2	2.4	2.0	1.7	1.6	1.6	1.5	1.6	1.5	1.1	2
2.5	2.3	2.1	2.4	2.1	1.9	1.5	1.6	1.5	1.7	1.5	1.6	3
2.5	2.3	2.2	2.2	1.8	1.9	1.8	1.7	1.6	1.5	1.6	1.3	4
2.4	2.3	2.0	2.0	1.9	1.9	1.4	1.3	1.6	1.8	1.5	1.6	5
2.1	2.0	2.2	2.4	1.6	1.5	1.3	1.5	2.1	1.9	1.5	1.6	6
2.3	2.4	2.1	2.2	1.7	1.5	1.1	1.7	1.8	1.9	1.8	1.6	7
2.6	2.6	C	2.0	1.7	1.4	1.2	1.7	1.5	1.6	1.6	1.4	8
2.1	2.6	2.6	1.2	2.6	1.6	1.6	1.4	1.4	1.7	1.6	1.5	9
C	C	C	C	C	C	1.1	1.4	1.3	1.3	1.3uc	1.2	10
2.1	2.4	2.2	2.2	2.1	2.1	1.7	1.5	1.5	1.4	1.4	1.3	11
2.4	2.4	2.0	2.3	1.6	1.6	1.5	1.8	1.8	1.7	1.7	1.7	12
2.6	2.7	3.0	2.8	2.7	2.1	1.7	1.9	1.4	1.7	1.7	1.3	13
2.4	2.3	2.0	2.7	2.0	1.8	1.4	1.6	1.5	1.4	1.5	1.3	14
2.2	2.0	2.0	2.2	1.8	2.0	1.5	1.7	1.6	1.6	1.6	1.5	15
2.3	2.0	1.7	1.5	2.0	1.9	1.3	1.5	1.6	1.6	1.3	E	16
2.6	2.2	2.3	2.0	1.8	2.0	1.8	1.7	1.6	1.6	1.3	1.7	17
2.4	2.0	1.8	2.2	1.9	2.0	1.8	1.4	1.2	1.6	1.6	1.7	18
2.3	2.3	2.1	2.1	1.8	1.5	1.5	1.5	1.6	1.4	1.2	1.7	19
2.5	2.5	2.3	1.9	1.6	1.7	1.6	C	C	1.6	1.2	1.2	20
2.4	2.3	2.1	2.0	1.8	1.9	1.1	1.3	1.4	1.9	1.6	1.6	21
2.2	2.2	2.3	1.9	2.0	2.0	1.8	1.2	1.6	1.3	1.5	1.6	22
2.2	2.2	2.1	2.2	1.8	2.0	1.6	1.3	1.5	1.4	1.5	1.0	23
2.4	2.3	1.2	1.7	C	2.0	1.3	1.2	1.6	1.8	1.7	1.6	24
2.2	2.3	1.9	2.0	1.5	1.3	1.3	1.9	1.7	1.6	1.4	1.7	25
2.3	2.3	2.0	2.0	1.9	2.0	1.6	2.0	1.7	1.7	1.7	1.2	26
2.2	2.2	2.1	2.0	2.0	2.0	2.2	1.6	1.9	1.2	1.5	1.6	27
2.6	2.5	2.0	2.2	1.8	1.6	1.2	1.5	1.8	1.6	1.5	1.9	28
2.7	2.7	2.6	2.7	2.6	2.7	2.8	2.7	2.7	2.8	2.8	2.8	Count
2.4	2.3	2.1	2.2	1.8	1.9	1.5	1.5	1.6	1.6	1.5	1.6	Median
2.4	2.3	2.1	2.2	1.9	1.8	1.5	1.6	1.6	1.6	1.5	1.5	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic h'F2
Unit Km
Month February, 1963

TABLE 41
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1									L	L		400
2									L	L		400
3								L	280	340	345 ¹¹	405
4								L	L	370	375	395
5								L	300	330	350	360
6								L	L	355	360	360
7								L	L	335	360	355
8									L	360	L	370
9								L	L	415	385	355
10								L	L	L	350	340
11								L	L	330	350	360
12								L	L	320	310	390
13								L	L	320	330	355
14								L	L	300	320	350
15							L	L	L	320	370	410
16								L	C	340	350	360
17							L	L	L	L	L	400
18								L	L	L	L	L
19								L	L	L	L	360
20								L	L	L	360	350
21								L	L	L	365	365
22								L	L	L	370	360
23								L	L	L	L	380
24								265	300	320	330	330
25							L	L	L	L	360	360
26							L	L	L	360	L	400
27							L	L	L	340	360	395
28								L	L	340	370	380
Count								1	3	17	20	27
Median										340	360	360
Mean										340	355	370

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
Unit Km
Month February, 1963

TABLE 41
Ionospheric Data
75°F Mean Time

Latitude 10 2° N.
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
I	L	350	300	280	260							1
L	410	365	340	L	L							2
430	420	380	330	300	I							3
380	370	I	340	320	L							4
350	350	330	320	I	I							5
340	360	355	340	I	L							6
345	340	330	310	L	L							7
360	340	C	C	I	L							8
335	310	290	275	275	L							9
C	C	C	C	C	C							10
355	330	320	300	I	L	L						11
370	345	315	305	280	I	I						12
350	340	310	295	280	I							13
350	370	340	310	I	L							14
370	370	345	A	300								15
I	I	A	I	I								16
360	330	320	L	L	I	I						17
360	325	310	I	L	I	L						18
380	360	340	I	L	L	L						19
380	360	340	310	280	260							20
370	365	325	320	L	L							21
370	365	A	320	295	280							22
395	370	340	300	L	I							23
365	360	310	310	290	C							24
375	370	330	335	300	I							25
400	360	310	I	L								26
400	375	355	320	310	L							27
380	370	345	330	L	L							28
24	25	23	20	12	3							Count
370	360	340	315	290								Median
370	360	335	315	290								Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic h'F2
Unit Km
Month February, 1963

TABLE 41 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	L	L	440	405
2								L	L	L	400	415
3								L	305	345	360	420
4								L	L	375	395	400
5								L	305	320	360	355
6								L	L	330	360	345
7								L	L	355	365	360
8								L	L	L	380	360
9								L	L	380	370	345
10								L	L	345	355	350
11							L	L	320	340	360	340
12							L	L	L	340	370	380
13							L	L	305	340	350	360
14							L	L	300	L	330	370
15							L	L	320	350	370	380
16							L	C	L	340	L	360
17							L	L	L	L	L	360
18							L	L	L	L	L	360
19							L	L	L	330	L	L
20							L	L	L	L	380	360
21							L	L	L	L	L	370
22							L	L	L	370	360	370
23							L	L	340	L	320	380
24							L	300	305	L	320 _H	360
25							L	L	320	340	360	360
26							L	L	L	L	400	380
27							L	L	L	360	370	390
28							L	L	L	360	380	380
Count								1	9	17	23	27
Median									305	345	365	360
Mean									315	350	370	370

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
 Unit Km
 Month February, 1963

TABLE 41 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77.5° E

1230	1330	1430	1530	1630'	1730	1830	1930	2030	2130	2230	2330	Date
430	370	320	300	260								1
420	L	L	315	L								2
440	400	360	L	L								3
380	380	355	320	L								4
345	350	320	320	L								5
355	375	360	340	L								6
345	335	325	305	L	L							7
345	335	C	F	L								8
310	300	280	275	265								9
C	C	C	C	C	C							10
340	330	300	L	L	L	1						11
345	350	320	300	L	L							12
340	320	300	280	L	F							13
345	340	315	290	L								14
375	370	340	A	L								15
355	L	L	L	L								16
340	330	L	L	L	L							17
340	330	300	L	F	L							18
360	340	L	L	L	F							19
L	345	320	300	280								20
360	350	325	L	L								21
390	340	320	310	290								22
385	340	A	300	L								23
365	340	340	310	C								24
360	360	A	330	295								25
380	360	L	A	L								26
390	360	315	320	L	L							27
380	360	325	320	F								28
26	25	19	17	5								Count
360	345	320	310	280								Median
365	350	325	310	280								Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month February, 1963

TABLE 42
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5 E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	260	30	220	220	E	E	300	230	205	200	185	195
2	225	A	A	A	E	E	275	240	200	190	200	195
3	255	260	E	E	E	E	260	220	205	200	190	180H
4	240	235	235	240	310	E	270	220	200	195	200	185
5	240	220	225	235	E	E	270	225	200	195	185	A
6	260	240	210	235	E	E	270	220	200	195	185	180
7	240	235	220	235	290	280	275	230	215	205	190	185
8	225	220	205	265	E	E	270	220	190H	200	180	180
9	235	220	200	225	245	F	280	230	210	185	190	180
10	220	230	235	S	F	E	260	220	215	185H	170H	190
11	270	300	265	E	E	E	280	240	220	200	195	190
12	230	240	230	260	300	E	260	230	200	180	180	180
13	235	230	200	220	250	E	270	220	195	200	185	170
14	220	220	220	240	240	260	260	230	220	210	185	200
15	250	250	250	230	230	235	260	230	200	195	195	200
16	220	220	220	215	240	250	260	230	C	205	200	200
17	220	215	200	220	220	230	240	220	200	180H	180H	180H
18	230	210	200	200	220	E	240	185H	175H	180H	175H	160H
19	240	230	225	200	200	215	240	200	200	180H	180H	175H
20	240	215	200	200	220	230	250	220	220	195	195	195
21	240	240	240	220	230	245	280	240	215	200	195	190
22	265	250	225	230	225	220	250	240	220	200	200	195
23	235	220	230	240	245	E	265	220	215	200	200	190
24	250	240	215	210	210	E	260	230	200	200	200	180
25	260	235	220	225	240	265	260	220	200	200	190	180
26	240	220	220	215	225	235	260	200H	200	185	180H	185
27	235	235	220	220	225	E	270	225	185	200	185	180
28	225	220	210	205	205	240	250	225	210	180	195	180

Count	28	27	27	26	28	28	28	28	27	28	28	27
Median	240	230	220	225	240	E	260	225	200	200	190	185
Mean	245	235	220	225	240	240	265	225	205	195	190	185

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month February, 1963

TABLE 42
Ionospheric Data
75° F Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
180	195	200	210	220	230	235	205	220	225	L	300	1
180	175 _{tr}	175 _{tr}	215 _{tr}	220	210	255	260	235	200	215	235	2
180	180	175	190	215	235	260	260	235	230	220	225	3
180	180	175 _{tr}	175 _{tr}	200	230	265	275	F	220	210	220 _{tr}	4
180	180	A	190	200	240	260	250	A	220	235	240	5
190	185	185	180 _{tr}	200	220	260	280	260	225	225	225	6
190	A	180 _{tr}	200	200	220 _{tr}	250	250	260	260	255	240	7
180	180 _{tr}	C	C	200	240	260	265	280	255	235	210	8
180 _{tr}	200	195	200	210	215	250	270	240	225	220	225	9
C	C	C	C	C	C	C	255	225	220	240	255	10
185	200	200	200	220	240	260	250	220	215	220	240	11
195	190	200	200	215	215	255	300	300	260	220	240	12
200	180	190	195	210	220	250	300	300	255	200	220	13
180	200	200	215	220	230	260	255	255	240	240	240	14
200	190	200	A	A	215	260	315	360	315	260	230	15
190	190	A	200	220	220	260	280	260	210	230	230	16
180 _{tr}	180 _{tr}	190	200	180	220	240	260	280	260	240	245	17
160 _{tr}	185 _{tr}	195	200	200	205	210	245	240	240 _{tr}	220	225	18
165 _{tr}	175 _{tr}	180 _{tr}	185	200	230	240	260	270	270	250	250	19
190	190	200	220	A	225	250	C	C	260	230	240	20
195	19	200	200	200	210	260	310	350 _{tr}	320	I	I	21
200	195	A	200 _{tr}	220	225	260	270	260 _{tr}	260	265	230	22
190	190 _{tr}	210	200	205	235	260	280	260	240	260	270	23
185	180	185	200	200	C	265	325	340	335	F	280 _{tr}	24
180	200	205	A	210	210	270	290	300	270	235	250	25
180 _{tr}	180 _{tr}	200	A	200	220	255	310	320 _{tr}	300 _{tr}	250 _{tr}	225	26
190	180	175	190	200	220	255	300	320	305	210	240	27
180 _{tr}	180	180 _{tr}	180	185 _{tr}	210 _{tr}	250	295	320	275	230	225	28
27	26	23	23	25	26	27	27	25	28	26	27	Count
180	185	195	200	200	220	260	270	260	255	230	240	Median
185	185	190	200	205	225	255	275	275	255	235	240	Mean

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds

Characteristic h'F
 Unit . Km
 Month . February, 1963

TABLE 42 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	240	235	230	260	E	E	260	210	200	200	185H	200
2	A	A	A	E	E	E	250	225	200	200	195	180
3	250	250	E	E	E	E	220	220	205	200	195	180
4	240	235	240	300	E	E	240	215	200	200	195	180H
5	235	220	220	235	E	E	240	205	200	200	A	190
6	250	225	210	265	E	E	240	205	200	200	180	180
7	235	240	240	270	305	A	245	220	215	185H	185H	180
8	220	215	215	280	E	E	240	220	200H	195	190	180
9	225	215	215	240	235	E	245	220	200	200	180H	180H
10	220	240	240	E	E	E	235	205H	200	180	180H	180H
11	300	270	295	E	E	E	255	235	200	200	195	180
12	240	240	240	260	E	E	240	220	200	200	185	190
13	220	230	215	235	260	E	240	205	205	190	180	190
14	240	240	240	230	240	270	235	220	220	195	180	190
15	240	260	240	230	230	240	250	220	200	175	195	200
16	220	225	215	220	240	240	240	C	220	200	190	200
17	220	210	200	215	220	240	240	210	200	180H	180H	180H
18	220	200	200	200	255F	E	230	175H	180H	180H	180H	160H
19	225	225	210	200	215	240	225	200	180H	175H	175H	160H
20	220	200	215	200	220	240	240	220	205	200	200	200
21	245	235	230	220	235	255	250	230	200	200	195	195
22	260	240	230	235	230	240	250	215	200	195H	195	195
23	235	230	240	240	E	E	250	220	200	200	190	190
24	245	220	215	220	240	E	240	210H	200	190	185	180
25	240	230	225	270	265	300	250	205	200	200	180	185
26	220	210	215	220	235	260	240	200	190	180	185	180
27	230	230	220	220	220	E	235	200	200	190	180	180
28	220	220	210	205	220	E	235	200H	200	190	185	180
Count	27	27	27	28	28	27	28	27	28	28	27	28
Median	235	230	220	235	260	E	240	215	200	200	185	180
Mean	235	230	225	235	240	250	240	210	200	195	185	185

Sweep 1 0 Mc. to 25.0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month February, 1963

TABLE 42 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
180H	200	215	215	220	240	220	210	225	240	E	330F	1
175H	180H	220	225	225	250	255	240	215	200	220	240	2
180	175H	200	215	220	250	260	245	240	250	220	235	3
180	180	160H	160H	215	245	275	F	235F	205	215	230	4
175H	175	195	200	215	240	265	240	235	220	240	270	5
185	195	195	205	200	240	275	270	240	230	225	230	6
A	180	200	195	210	235	255	260	260	245	240	240	7
180	195	C	200	220	255	265	275	280	240	240	240	8
190	190	200	200	210	240	260	255	235	210	215	225	9
C	C	C	C	C	C	255	235	220	240	250UC	260	10
180	200	210	200	230	250	255	230	215	220	225	230	11
190	195	200	210	215	230	280	310	280	220	230	240	12
180	200	185	210	215	240	270	310	275	220	210	220	13
215	210	200	210	215	240	260	250	255	240	240	240	14
200	200	180	A	210	235	270	345	340	290	240	225	15
180H	190	200	200	215	240	265	260	245	240	220	220	16
200	180H	180H	200	205	240	250	270	280	245	240	240	17
180H	195	195H	200	200	220	240	250	220H	230	230	230	18
175H	180H	190	195	200	230	240	270	270	260	240	240	19
185	190	200	A	205	235	260	C	C	240	235	240	20
200	200	210	200	200	240	295	320	340	F	F	F	21
190	200	200	210	220	240	260	270	270	260	240	235	22
195	215	A	200	220	245	270	270	245	250	260	260	23
180H	180H	195	190H	C	250	290	340	340	F	F	260	24
175	175	A	220	215	255	270	300	290	260	240	240	25
185	195	200	A	205	220H	275	F	310H	280F	230	240	26
190	180	175	200	210	240	280	320	320	270	230	240	27
180	180	175H	200	210	230	260	300	300	245	225	260U/A	28
26	27	24	24	26	27	28	25	27	26	26	27	Count
180	190	200	200	215	240	260	270	260	240	230	240	Median
185	190	195	200	210	240	265	275	265	240	230	245	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month February, 1963

TABLE 43
Ionospheric Data
75 F Mean Time

Latitude 10 2° N
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								A	A	Λ	Λ	Λ
2								115	A	Λ	Λ	Λ
3								115	110	Λ	Λ	Λ
4								115	A	Λ	Λ	Λ
5								120	110	Λ	Λ	Λ
6								105	A	Λ	Λ	Λ
7								110	A	Λ	Λ	Λ
8								105	A	Λ	Λ	Λ
9								115	105	Λ	Λ	Λ
10								120	105	Λ	Λ	105
11								Λ	A	Λ	Λ	Λ
12								115	Λ	Λ	Λ	Λ
13								120	Λ	Λ	Λ	Λ
14								110	Λ	Λ	Λ	Λ
15								120	Λ	Λ	Λ	Λ
16								115	C	Λ	Λ	Λ
17								115	Λ	Λ	Λ	Λ
18								A	Λ	Λ	Λ	Λ
19								100	Λ	Λ	Λ	Λ
20								Λ	Λ	Λ	Λ	Λ
21								A	A	Λ	Λ	Λ
22								A	Λ	Λ	Λ	Λ
23								A	Λ	Λ	Λ	Λ
24								115	Λ	Λ	Λ	Λ
25								110	Λ	Λ	Λ	Λ
26								115	Λ	Λ	Λ	Λ
27								115	Λ	Λ	Λ	Λ
28								110	Λ	Λ	Λ	Λ
Count								21	4			1
Median								115				
Mean								115				

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month February, 1963.

TABLE 43
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	105	105	110	115H							1
A	A	A	100	100	120							2
A	A	A	A	115	130							3
A	A	A	110	110	120							4
A	A	A	A	A	110							5
A	A	A	A	105	120							6
A	A	105	A	105	115							7
A	A	C	C	A	115							8
A	A	110	110	B	120							9
C	C	C	C	C	C							10
A	110	110	105	115								11
A	A	A	A	100	A							12
A	A	115	110	110								13
A	A	110	100	120	120							14
A	A	A	A	A								15
A	A	A	A	B								16
A	A	A	100	100	100							17
A	A	A	110	100	100							18
A	A	A	A	120								19
A	A	A	A	A								20
A	A	A	A	A	A							21
A	A	A	A	115	140							22
A	A	A	A	A	110							23
A	A	A	A	A	C							24
A	A	A	A	120	120							25
A	A	A	A	110	120							26
A	A	A	A	A	120							27
A	A	A	A	A	115							28
	1	6	9	17	17							Count
		110	105	110	120							Median
		110	105	110	120							Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month February, 1963.

TABLE 43 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								A	A	A	A	A
2								A	A	A	A	A
3								115	110	A	A	A
4								110	A	A	A	A
5								115	A	A	A	A
6								A	A	A	A	A
7							120	105	A	A	A	A
8								A	A	A	A	A
9							130	110	A	A	A	A
10								105	A	A	110	105
11							130	A	A	A	A	A
12							140	110	A	A	A	A
13							140	A	A	A	A	A
14							130	140	A	A	A	A
15							120	A	A	A	A	A
16							125	C'	A	A	A	A
17							125	A	A	A	A	A
18							125	A	A	A	A	A
19							110	100	A	A	A	A
20							120	A	A	A	A	A
21							A	A	A	A	A	A
22							120	A	A	A	A	A
23							120	A	A	A	A	A
24							115	A	A	A	A	A
25							135	115	A	A	A	A
26							120	A	A	A	A	A
27							120	A	A	A	A	A
28							115	A	A	A	A	A
Count							19	10	1		1	1
Median							120	110				
Mean							125	110				

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
 Unit Km
 Month February, 1963

TABLE 43 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	105	105	110 _H	115	120							1
A	A	A	100	115	140							2
A	A	A	115	120								3
A	A	A	115	110								4
A	A	A	105	A								5
A	A	A	115	110								6
A	105	A	105	110	135							7
A	100	C	105	105	120							8
A	110	110	B	B	125							9
C	C	C	C	C								10
A	110	110	110	120								11
A	A	A	110	A								12
A	110	120	120									13
A	A	120	120									14
A	A	A	A	A								15
A	A	A	120	115								16
A	A	100	100	100								17
A	A	A	105	105								18
A	A	A	100	100								19
A	A	A	A	A								20
A	A	A	A	A								21
A	A	A	A	115								22
A	A	A	110	A								23
A	A	A	A	C								24
A	A	A	A	120								25
A	A	A	A	100								26
A	A	A	A	120								27
A	A	A	A	105	120							28
	6	6	17	17	6							Count
	110	110	110	110	120							Median
	105	110	110	110	125							Mean

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds

Characteristic : h'Es
 Unit Km
 Month February, 1963

TABLE 44
 Ionospheric Data
 75°E Mean Time

Latitude 10 2" N
 Longitude 77 5" E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								100	100	100	100	100
2		100	100	100				G 100	100	100	100	100
3						135		G 105	110	100	100	100
4								G 100	100	100	100	100
5								G 100	100	100	100	100
6								100	100	100	100	100
7							105	105	100	100	100	100
8								100	100	100	100	100
9								100	100	100	100	100
10								G 100	100	100	100	100
11								120	100	100	100	100
12								G 100	100	100	100	100
13								G 100	100	100	100	100
14			120					120	100	100	100	100
15								G 100	100	100	100	100
16								G C	100	100	100	100
17								G 100	100	100	100	100
18								100	100	100	100	100
19	100		100					G 100	100	100	100	100
20	100							100	100	100	100	100
21								100	100	100	100	100
22								100	100	100	100	100
23	115			100				100	100	100	100	100
24								G 100	100	100	100	100
25	115							100	100	100	100	100
26								G 100	100	100	100	100
27								G 100	100	100	100	100
28								G 100	100	100	100	100
Count	4	1	3	2		1	1	13	27	28	28	28
Median								100	100	100	100	100
Mean	--							105	100	100	100	100

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic h'Es
 Unit Km
 Month February, 1963

TABLE 44
 Ionospheric Data
 75°E Mean Time

Latitude 10°2' N
 Longitude 77°5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	G	G	G	G							1
100	100	100	G	G	G							2
100	100	100	100	G	G							3
100	100	100	100	100	G							4
100	100	100	100	100	105			100	100	100		5
100	100	100	100	110	100			125				6
100	100	100	100	G	100					100	100	7
100	100	C	C	100	105		110	110				8
100	100	G	G	G	G							9
C	C	C	C	C	C							10
100	110	G	120	G			130					11
100	100	100	100	100	100							12
100	100	G	G	G								13
100	100	100	100	G	G			115				14
100	100	100	100	100								15
100	100	100	100	G								16
100	100	100	100	100	100							17
100	100	100	100	G	100				100	100		18
100	100	100	100	G	100				105	100	100	19
100	100	100	100	100	100		G	G	110			20
100	100	100	100	100	100							21
100	100	100	100	G	G				115	110	115	22
100	100	100	100	G	100						100	23
100	100	100	100	100	C							24
100	100	100	100	120	125					120	120	25
100	100	100	100	G	G	100						26
100	100	100	100	100	G	100			120		110	27
100	100	100	100	100	100					100	105	28
27	27	22	22	13	12	2	2	4	6	7	7	Count
100	100	100	100	100	100				110	100	105	Median
100	100	100	100	100	105				110	105	105	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'Es
Unit Km.
Month February, 1963

TABLE 44 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								100	100	100	100	100
2	100	100	100					100	100	100	100	100
3					115	125		G	105	100	100	100
4								G	100	100	100	100
5								G	100	100	100	100
6				125		140	135	100	100	100	100	100
7		115				100	G	100	100	100	100	100
8							G	100	100	100	100	100
9								100	100	100	100	100
10								100	100	100	100	100
11							130	110	100	100	100	100
12							G	G	100	100	100	100
13							G	100	100	100	100	100
14	120	110	100	100			130	110	100	100	100	100
15							G	100	100	100	100	100
16							G	C	100	100	100	100
17							G	100	100	100	100	100
18	125						G	100	100	100	100	100
19							G	100	100	100	100	100
20							G	100	100	100	100	100
21							100	100	100	100	100	100
22			100				G	100	100	100	100	100
23							G	100	100	100	100	100
24							G	100	100	100	100	100
25							G	100	100	100	100	100
26							G	100	100	100	100	100
27							G	100	100	100	100	100
28							G	100	100	100	100	100
Count	3	3	3	2	1	3	4	23	28	28	28	28
Median								100	100	100	100	100
Mean								100	100	100	100	100

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds.

Characteristic h'Es
Unit Km
Month February, 1963

TABLE 44 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	G	G	G	G	G							1
100	100	100	G	G	G							2
100	100	100	G	G								3
100	100	100	G	100								4
100	100	100	100	100				100	100	100		5
100	100	100	100	100	125							6
100	100	100	G	100	G						100	7
100	G	C	100	100	110		110	110				8
100	G	G	G	G	G							9
C	C	C	C	C	C							10
100	G	G	G	G								11
100	100	100	G	100	145							12
100	G	G	G									13
100	100	100	G	G								14
100	100	100	100	100								15
100	100	100	100	G								16
100	100	100	G	100								17
100	100	100	G	G				100	100	100	100	18
100	100	100	100	100	105				105	100	120	19
100	100	100	100	100	100		G	G	115			20
100	100	100	100	100								21
100	100	100	100	G					115	115		22
100	100	100	G	100								23
100	100	100	100	C					110		120	24
100	100	100	100	G	100							25
100	100	100	100	G					115			26
100	100	100	100	100	120			135	120		100	27
100	100	100	100	100	G					100	100	28
27	22	22	14	13	7		1	4	8	5	6	Count
100	100	100	100	100	110				110	100	100	Median
100	100	100	100	100	115				110	105	105	Mean

Sweep 1 0 Mc to 25 0 Mc, in 27 seconds

Characteristic (M 3000)F2
Unit
Month February, 1963

TABLE 45
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77.5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 10	3 25	3 50	3 55	E	E	2 60	2 80	2 70	2 70	2 60	2 50
2	3 30 ^{UR}	A	A	A	E	E	3 00	3 35	2 75	2 50	2 40	2 50
3	3 40 ^F	3 45	E	E	E	E	3 25	3 65	3 40	2 95	2 35 ^{II}	2 50
4	3 40	3 40	3 50	3 60	3 20 ^{UR}	E	3 05	3 40	3 05	2 55	2 50	2 55
5	F	F	3 55	3 30	3 55 ^{JS}	E	3 20	3 50	3 15	2 95	2 60	2 60
6	3 20	3 40	3 55	3 65	E	E	2 85	3 10	2 80	2 60	2 70	2 65
7	3 50	3 50	3 55	3 60	3 30	2 95	3 15 ^F	3 20	2 70	2 65	2 60	2 60
8	3 45	3 60	3 70	3 60	E	E	3 00	3 10	2 60	2 70	2 65	2 60
9	3 40	3 55	3 65	3 70	3 60 ^{JS}	E	3 05	3 20	2 60	2 60	2 60	2 70
10	3 50	3 50	3 50	3 50	E	E	3 10	3 40	3 10	2 55	2 40	2 35
11	3 20	3 10	3 15	E	E	E	2 95	3 00	2 60	2 65	2 50 ^{II}	2 60
12	3 55	3 50	3 70	3 40	3 30 ^{JS}	E	3 20	3 50	3 20	2 40 ^{II}	2 80	2 55
13	3 40	3 45	3 40	3 60	3 45	E	3 00	3 45	2 95	2 60	2 70	2 55
14	3 45	3 50	3 50	3 30	3 50	3 40	3 20	3 55	3 20	2 70	2 50	2 55
15	3 30	3 30	3 30	3 60	3 55	3 45	3 20	3 30	2 80	2 55	2 55	2 50
16	3 50	3 50	3 55	3 50	3 50	3 20	3 20	3 30	C	2 60	2 70	2 60
17	3 50	3 50	3 60	3 55	3 50	3 50	3 30	2 50 ^{US}	3 10	2 50	2 60	2 55
18	3 35	3 50	3 65	3 70	3 70	3 50	3 20	3 15	2 70	2 70	2 65	2 65
19	3 40	3 50	3 50	3 60	3 60	3 60	3 40	3 50	3 00	2 55	2 60	2 60
20	3 30	3 35	3 50	3 55	3 55	3 45	3 15	3 20	2 85	2 70	2 60	2 55
21	3 30	3 25	3 25	3 40	3 40	3 40	F	3 15	2 80	2 60	2 50	2 55
22	F	F	F	3 35 ^{UF}	3 45	3 50	3 10	3 20	2 70	2 55	2 55	2 60
23	3 35	3 45	3 50	3 50	3 50	E	3 15	3 00	2 70	2 55	2 60	2 55
24	3 20	3 30	3 50	3 50	3 50	E	3 30	3 35 ^{US}	3 00	2 45 ^{II}	2 60	2 70
25	F	3 40 ^{IF}	3 35	3 45	3 45	3 35	3 10	3 25	3 00	2 50	2 65 ^{II}	2 65
26	3 50	3 50	F	3 60	3 60	3 50	3 20	3 25	2 80	2 55	2 50	2 50
27	3 30	3 40	3 60	3 55	3 60	E	3 20	3 40	3 00	2 50	2 60	2 55
28	3 30	3 50	3 50	3 50	3 60	3 55	3 20	3 25	2 80	2 60	2 60	2 50
Count	25	25	24	25	21	13	27	28	27	28	28	28
Median	3 40	3 45	3 50	3 55	3 50	3 45	3 15	3 30	2 80	2 60	2 60	2 55
Mean	3 35	3 45	3 50	3 55	3 50	3 40	3 10	3 30	2 90	2 60	2 60	2 55

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000)F2
Unit
Month February, 1963

TABLE 45
Ionospheric Data
75°E Meridian

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 50	2 40	2 75	3 00	3 25	3 30	3 20	3 40	3 40	3 40	R	3 10	1
2 40	2 35	2 70	2 70	3 00	3 10	3 10	3 05	3 20	3 55	3 60	3 55	2
2 35	2 50	2 50	2 75	2 90	3 10	3 10	3 15	3 10	3 30	3 40	3 45	3
2 60	2 50	2 70	2 75	2 85	2 85	2 65	2 65	2 85 _{UF}	3 30 _{UF}	3 45 _{UF}	F	4
2 70	2 75	2 85	2 90	2 85	2 70	2 60	2 65	2 95	3 25	3 20	3 30	5
2 75	2 70	2 60	2 60	2 60	2 60	2 70	2 65	2 90	3 20	3 45	3 50	6
2 70	2 80	2 90	2 90	2 80	2 60	2 60	2 85	2 90	3 00	3 15	3 45	7
2 70	2 80	C	C	2 80	2 55	2 45 _F	2 70	2 70	2 90	3 00	3 25	8
2 85	3 00	3 20	3 35	3 30	3 20	2 95	2 85	3 00	3 30	3 40	3 50	9
C	C	C	C	C	C	C	3 15	3 35	3 30	3 30	3 25	10
2 75	2 50	2 90	3 05	3 05	3 10	3 10	3 15	3 45	3 50	3 45	3 40	11
2 65	2 70	2 90	2 90	2 90	2 80	2 60	2 60	2 70	2 90	3 20	3 30	12
2 65	2 80	2 95	3 10	3 20	3 10	2 85	2 70	2 65	2 90	3 45	3 45	13
2 60	2 65	2 75	3 00	3 05	3 05	2 90	2 90	3 00	3 20	3 25	3 40	14
2 60	2 65	2 65	2 75	2 85	2 60	2 80	2 55	2 40	F	F	3 30 _r	15
2 60	2 75	2 80	2 95	3 05	3 00	2 65	2 50	2 80 _{us}	3 10	3 35	3 45	16
2 70	2 70	2 80	2 90	2 90	2 80	2 50	2 60	2 80 _{us}	2 30 _{us}	2 95	3 20 _{us}	17
2 70	2 80	2 95	3 10	3 10 _{us}	3 06	2 85	2 75	2 95 _{us}	F	3 25 _{us}	3 30	18
2 60	2 70	2 70	2 70	2 90	2 90	2 80	2 70 _{us}	2 80	2 95	3 20	3 30 _{us}	19
2 60	2 55	2 65	2 85	3 05	3 00	2 70	C	C	3 10	3 25	3 25	20
2 65	2 60	2 55	2 60	2 70	2 75	2 60	2 45	F	F	F	F	21
2 55	2 60	2 75	2 80	3 05	3 15	3 00	2 80	2 90	3 00	F	3 20 _{UF}	22
2 50	2 60	2 80	3 00	3 00	2 90	2 75	2 70	2 85	2 90	3 00	3 10	23
2 65	2 60	2 80	2 85	2 90	C	2 45	2 30	F	F	F	F	24
2 60	2 60	2 70	2 80	2 90	2 90	2 70	2 60	2 70	F	F	F	25
2 60	2 70	2 80	2 90	3 05	3 00	2 90	2 70	2 70	F	F	3 30	26
2 50	2 55	2 65	2 75	2 80	2 70	2 50	2 65	2 70	F	F	3 30 _{UF}	27
2 55	2 50	2 60	2 65	2 70	2 70	2 70	2 60	2 60 _{us}	2 90	3 15 _{UF}	3 25 _{UF}	28
27	27	26	26	27	26	27	27	25	21	20	24	Count
2 60	2 65	2 75	2 90	2 90	2 90	2 80	2 70	2 85	3 10	3 25	3 30	Median
2 60	2 65	2 75	2 90	2 95	2 90	2 80	2 75	2 90	3 15	3 25	3 35	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000)F2
Unit
Month February, 1963

TABLE 45 (Cont'd)
Ionospheric Data
75 L Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	3 15	3 40	3 20	3 40	E	E	2 90	2 70	2 60	2 55	2 50	2 50
2	A	A	A	E	E	E	3 40	3 05	2 50	2 55	2 50	2 50
3	3 45	3 50	E	E	F	F	3 70	3 60	3 20	2 70	2 35H	2 40
4	3 40	3 50	3 50	3 25P	E	F	3 40	3 30	2 35	2 40	2 50	2 50
5	F	3 65	3 50	3 50	E	E	3 50	3 30	3 05	2 75	2 60	2 65
6	3 35	3 55	3 65	3 40IS	L	F	3 25	3 05	2 75	2 75	2 60	2 70
7	3 50	3 45	3 65	3 15	3 15	A	3 30	3 00	2 65	2 65	2 60	2 70
8	3 55	3 70	3 55	3 50IS	E	E	3 20	2 90	2 60	2 55	2 60	2 65
9	3 40	3 55	3 65	3 70UR	3 70	F	3 15	2 85	2 60	2 60	2 65	2 80
10	3 60	3 65	3 50	F	F	F	3 40	3 30	2 95	2 60	2 35	2 60
11	3 10	3 20	3 30	E	L	F	3 15	2 75	2 65	2 60	2 55	2 65
12	3 50	3 50	3 45	3 35P	E	E	3 50	3 40	2 35	2 50	2 50	2 50
13	3 45	3 55	3 65	3 50	3 0IS	E	3 70	3 15	2 50H	2 70	2 60	2 60
14	3 50	3 50	3 50	3 50	3 15	3 40	3 50	3 40	3 00	2 45H	2 60	2 50
15	3 30	3 25	3 40	3 45	3 15	3 20	3 70	3 00	2 55	2 60	2 60	2 50
16	3 50	3 55	3 60	3 50	3 55	3 45	3 25	C	2 75	2 60	2 60	2 60
17	3 50	3 60	3 55	3 55	3 55	3 50	3 45	3 30	2 70	2 60	2 60	2 70
18	3 45	3 60	3 70US	3 70	3 60	F	3 40	2 90	2 70	2 70	2 55	2 70
19	3 50	3 50	3 50	3 60	3 55	3 60	3 50	3 30	2 80	2 65	2 60	2 50
20	3 35	3 40	3 55	3 60	3 50	R	3 30	3 05	2 75	2 60	2 60	2 60
21	3 30	3 30	3 30	3 50	3 35	3 15	3 25	2 95	2 70	2 55	2 55	2 60
22	F	F	3 35UH	3 40	3 50	3 50R	3 30	2 95	2 60	2 60	2 60	2 50
23	3 40	3 50	3 50US	3 50	F	E	3 20	2 85	2 60	2 55	2 60	2 45
24	3 25	3 35	3 55	3 55	R	E	3 40	3 25	2 60	2 40H	2 65	2 65
25	F	3 40	3 40	3 30	3 30	3 15	3 30	3 10	2 75	2 35H	2 65	2 60
26	3 50	3 50	3 60	3 60	3 40	3 15	3 35	3 00	2 55	2 55	2 55	2 55
27	3 30	3 50	3 50	3 60	3 50	E	3 40	3 20	2 75	2 50	2 60	2 50
28	3 40	3 50	3 55	3 60	3 55	F	3 40	3 10	2 50	2 60	2 60	2 60
Count	24	26	26	24	16	0	26	27	28	28	28	28
Median	3 40	3 50	3 50	3 50	3 50	3 45	3 40	3 05	2 70	2 60	2 60	2 60
Mean	3 40	3 50	3 50	3 50	3 45	3 15	3 35	3 10	2 70	2 60	2 55	2 60

Sweep 1*0 Mc. to 25 0 Mc in 27 seconds

Characteristic (M 3000)F2
Unit
Month February, 1963

TABLE 5 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2 50	2 55	2 85	3 15	3 35	3 30	3 25	3 45	3 30	3 40	R	F	1
2 55	2 50	2 65	3 00	3 00	3 10	3 05	3 10	3 45	3 55	3 55	3 70UR	2
2 15	2 50	2 60	2 80	3 00	3 10	3 10	3 00	3 20	3 40	3 40	3 15	3
2 60	2 65	2 70	2 90	2 55	2 80	2 60	2 75I	F	3 40UI	F	3 40UF	4
2 75	2 75	2 90	2 90	2 75	2 50	2 60	F	2 95US	3 25	3 25	3 20	5
2 75	2 65	2 60	2 60	2 60	2 60	2 65	2 80	3 05	3 35	3 50	3 50	6
2 75	2 85	2 95	2 90	2 70	2 65	2 65	2 90	2 90	3 10	3 35	3 45	7
2 80	2 85	C'	2 80	2 70	2 40	2 70	2 70	2 70	3 00	3 20	3 35	8
2 85	3 10	3 30	3 30	3 30	3 10	2 85	2 90	3 10	3 45	3 45	3 45	9
C'	C'	C'	C'	C'	C'	3 05	3 30	3 45I	3 20	3 35	3 35	10
2 80	2 85	3 05	3 05	3 05	3 10	3 10	3 30	3 50	S	3 50	3 40	11
2 75	2 60	2 80	2 95	2 90	2 70	2 55	2 50	2 80I	3 00	3 30	3 30	12
2 75	2 90	3 05	3 15	3 15	2 95	2 75	2 65	2 80	3 20	3 50	3 50	13
2 60	2 65	2 85	3 05	3 10	3 00	2 90	2 95	3 05	3 30	3 30	3 40	14
2 55	2 65	2 70	2 85	2 65	2 60	2 70	2 60	F	I	F	3 45	15
2 70	2 70	2 80	3 00	3 05	2 85	2 60	2 60US	2 90	3 20	3 50US	3 50	16
2 75	2 75	2 85	2 90	2 90	2 65	2 60	2 60	2 80US	2 90	3 10	3 30	17
2 80	2 85	3 00	3 15	3 10	2 90US	2 80	2 80	3 00US	3 20UI	3 25	3 40	18
2 70	2 70	2 70	2 85	2 90	2 90	2 80US	2 85US	2 85	3 10	3 20US	3 15	19
2 50	2 60	2 75	2 95	3 00	2 95	2 90	C'	C'	3 15	3 30	3 30	20
2 65	2 65	2 55	2 65	2 75	2 65	2 50	S	F	F	F	F	21
2 60	2 70	2 80	3 00	3 10	3 10	2 90	2 90	2 95	3 00	3 20UI	3 30	22
2 50	2 70	2 85	3 00	2 95	2 80	2 65	2 80	2 95	3 00	3 05	3 05US	23
2 60	2 70	2 80	2 85	C'	2 55S	2 45	2 35JS	F	F	F	F	24
2 60	2 65	2 75	2 85	2 95	2 80	2 65	2 65	F	F	F	F	25
2 65	2 70	2 85	3 00	3 10	3 00	2 80	2 65	2 70	F	3 25UI	3 30	26
2 50	2 60	2 70	2 80	2 70	2 75	2 60	2 65	2 70	I	3 25UI	3 35	27
2 50	2 55	2 65	2 70	2 75	2 65	2 65	2 55	2 80	I	I	3 30	28
27	27	26	27	26	27	28	25	22	20	21	24	Count
2 65	2 70	2 80	2 90	2 95	2 80	2 70	2 80	2 95	3 20	3 30	3 35	Median
2 65	2 70	2 80	2 95	2 95	2 85	2 75	2 80	3 00	3 20	3 30	3 35	Mean

SwEEP 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic foF2
Unit Mc
Month March, 1963

TABLE 46
Ionospheric Data
75°E Mean Time

Latitude 10 2" N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	5.2	5.0	4.9	3.5	2.4	E	2.9	5.6	7.0	8.2	8.0	7.4
2	6.4	6.2	5.8	4.3	3.1	1.7	3.0	6.3 ^{US}	7.5	8.2	7.6	6.8
3	6.3	6.6	6.5	4.7 ^{US}	3.2	1.9	3.1	6.2	7.4 ^S	7.5 ^{HI}	7.5	7.3
4	6.3	6.4	6.6	4.4	3.1	2.0	3.2	6.3	7.3	7.1	6.6	6.8
5	6.4	6.4	6.0	4.2	2.9	1.9	3.2	6.2	6.6	6.3	6.6	7.0
6	C	C	C	C	C	1.6	3.3	6.3	7.1	6.7	6.7	7.1
7	5.3	5.2	4.6	3.7	3.3	2.5	3.3	6.3	7.5	7.0	6.8	6.8
8	7.4 ^{UP}	5.7	3.8	1.9	E	E	3.4	7.0	7.7	7.6	7.9	7.3
9	7.0	7.1	6.2	C	4.5	3.5	3.8	6.5	7.7	7.4	7.8	8.0
10	7.2	6.7	5.3	4.1	2.6	1.7	3.5	6.7	7.7	8.0	7.3	7.3
11	6.9	6.2	6.7	4.7	2.8	2.1	3.7	C	8.6	9.1 ^{HI}	8.4	7.9
12	8.6	8.1	5.9	4.3	2.9	1.6 ^{GUR}	3.4	6.7	8.6	8.4 ^{HI}	7.6	7.1
13	7.9	7.1	5.4 ^{US}	3.4	1.8	E	3.5	6.6	8.1	8.5	7.6	7.2
14	7.8	6.5	5.1	3.2	2.0	E	3.4	6.2	8.1	8.6	7.2	6.7
15	7.6 ^{US}	F	F	5.1	3.3	1.9	3.6	6.4	7.8	8.4	7.3	7.0
16	6.2	6.6	5.8	4.0	2.6	1.4	3.6	6.5	7.9	8.6	8.0	7.6
17	6.8	7.2	F	4.3 ^F	3.2 ^r	1.9	3.8	6.9	8.2	8.4	8.3	8.0
18	F	7.6	7.0	5.2	3.1	2.1	3.6	6.6	8.3	7.8	7.1	7.2
19	F	6.6	4.6	3.2	2.6	1.7	3.8	6.6	7.5	7.4	6.8	7.0
20	5.0	4.3	3.6	3.4	2.9	2.4	3.8	6.8	7.7	7.1	7.2	7.3
21	6.9	6.4	5.6	4.2	3.3	3.1	4.2	6.8	7.6	8.0	7.4	7.2
22	7.2 ^{US}	6.0	4.6	3.6	2.5	E	3.7	6.0	6.5	6.8	7.0	7.3
23	F	F	4.2	2.3	E	E	3.8	6.4	7.5	8.1	7.0	6.9
24	6.4	5.6	4.4	2.4	E	E	3.9	6.4	7.8	8.9	7.6	7.3
25	5.2	4.8	3.8	2.5	1.8	E	3.9	6.6	7.2 ^{HI}	6.5	6.6	6.4
26	4.8	4.6	3.1	2.0	E	A	4.0	6.5	7.6	7.5 ^{HI}	6.8	6.4
27	F	5.3 ^S	4.2 ^{US}	3.3 ^S	2.6 ^S	F	4.0	6.5	7.8	7.8	7.3	7.0
28	F	F	F	F	2.1 ^{UP}	E	3.8	6.3	7.5	7.6 ^{HI}	6.8	6.4
29	F	F	F	F	F	1.9 ^{UP}	4.0	5.8	7.1	8.3	8.4 ^{HI}	7.5
30	F	4.3	F	4.0	3.1	1.8	3.9	6.2	7.4	7.8	7.7 ^{HI}	7.5
31	F	6.6	S	S	3.8	2.6 ^{UP}	4.0	6.1	7.2	6.6	6.5	6.8
Count	22	26	24	26	29	29	31	30	31	31	31	31
Median	6.6	6.4	5.2	3.8	2.8	1.7	3.7	6.4	7.6	7.8	7.3	7.2
Mean	6.6	6.1	5.2	3.7	2.9	2.1	3.6	6.4	7.6	7.7	7.3	7.1

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF2
Unit Mc
Month March 1963

TABLE 46
Ionospheric Data
75 E Mean Time

Latitude 10 2° N.
Longitude 77 5 L

12	13	14	15	16	17	18	19	20	21	22	23	Date
7 1	7 5	8 0	9 1	9 1	8 6	8 3	7 9	7 6	7 5	7 9	7 2	1
7 0	7 0	7 5	8 4	8 6	7 8	7 4	6 8	6 8	6 8	6 9	6 0	2
7 8	8 2	8 2	8 3	8 7	7 2	7 1	7 0	6 7	6 7	6 5	6 3	3
7 0	7 5	7 9	8 4	9 0	9 5	9 3	8 5	7 1 _{US}	6 9	7 3 _r	7 2 _{US}	4
7 1	A	9 0	9 5	9 8	9 5	10 2	9 3	8 2	7 5 _{US}	7 3 _{US}	C	5
7 6	8 0	9 2	9 2	9 8	10 4	10 2	9 2	8 3	8 4	7 4	6 0	6
7 0	7 5	8 8	9 4	10 2	10 4	9 2	7 7	F	F	F	F	7
7 3	7 4	8 2	9 8	10 4	9 8	9 6	9 7	9 7	9 4	8 8	7 2	8
8 0	8 5	8 8	9 0	9 6	9 6	9 0	8 8	8 7	8 5	8 4	8 0	9
7 4	7 8	8 4	9 4	9 8	9 9	10 0	9 0	9 0	9 0	8 9	7 9	10
8 1	8 6	9 0	9 5	9 8	10 0	9 8 _{US}	8 8	8 0	8 2	8 7	8 6	11
7 4	8 4	9 0	9 2	9 5	9 9	10 0	9 0	8 2 _l	I	9 0	8 1	12
7 6	7 6	8 0	8 4	9 2	9 4	9 1	8 3	8 1	8 2	I	8 6	13
6 6	7 1	7 3	7 6	8 2	8 8	8 7	7 5	F	F	F	F	14
7 1	7 3	7 7	7 6	7 9	8 1	8 2	7 6	7 1	6 8	C	6 5	15
7 6	8 2	8 7	9 3	9 6	9 6	9 4	8 8	7 8	7 9	7 7 _s	7 6	16
8 0	8 6	8 8	9 0	C	C	9 2	8 6	8 0	F	F	F	17
7 6	8 1	8 8	9 6	10 0	10 5	10 4	9 0	F	F	F	F	18
7 8	9 2	9 8	9 8	10 0	10 0	11 0	10 4	9 2	8 3	7 8	6 8	19
7 6	7 6	8 0	8 8	9 6	10 6	9 8	8 8	8 8	8 4	8 0	7 9	20
7 4	7 9	8 8	9 6	10 4	10 4	9 6	9 0	8 6	8 0	7 4 _{US}	7 4 _{US}	21
7 3	7 8	8 5	9 4	10 3	10 4	9 7	8 2 _v	F	I	F	7 4 _{US}	22
7 0	7 8	8 5	8 8	9 3	9 6	9 8	9 2	8 0	7 4	8 0	7 9	23
7 8	8 5	9 0	9 7	10 2	10 1	9 9	9 8	9 4	8 9	8 1	6 2 _{US}	24
6 7	7 1	7 4	7 9	8 9	9 3	9 0	C	C	8 6	7 8	6 6	25
6 6	6 8	C	7 2	7 9	8 8	9 1	8 0	F	F	F	F	26
7 2	7 5	7 9	8 4	9 3	10 0	8 8	8 0	7 0	F	F	F	27
6 4	6 5	6 8	7 6	8 3	8 3	8 1	C	C	F	F	F	28
7 4	7 4	7 9	8 4	9 1	9 8	9 6	9 1	8 3	I	F	6 8 _{UI}	29
7 8	8 2	8 5	9 1	9 5	8 8	8 3	7 5 _s	6 4	F	F	F	30
7 4	8 1	8 8	9 2	9 6	9 6	8 6	7 0	F	F	8 8	8 2	31
31	30	30	31	30	30	31	29	23	19	19	22	Count
7 4	7 8	8 5	9 1	9 6	9 6	9 3	8 8	8 1	8 2	7 9	7 3	Median
7 3	7 8	8 4	8 9	9 4	9 5	9 2	8 5	8 0	8 0	7 9	7 3	Mean

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds.

Characteristic foF2
Unit Mc
Month March, 1963

TABLE 46 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	5.1	4.8	4.3	2.8	1.8	E	4.7	6.4	7.6	8.2	7.9 ^H	7.1
2	6.3	6.2	5.0	3.6	2.2	E	4.9	7.0	8.0	8.1 ^H	7.0	6.8
3	6.4	6.6	5.9	3.9	2.4	1.5	4.8	6.8	7.5	7.3	7.4	7.6
4	6.4	6.7	5.1 ^s	3.7	2.6	1.6	4.9 ^s	7.1	7.3	6.7	6.9	7.0
5	6.4	6.1	5.0	3.5	2.5	1.6	4.9	6.5	6.2	6.5	6.8	7.0
6	C	C	C	C	1.9	1.5	5.5 ^{US}	6.8	6.8	6.6	7.0	7.3
7	5.1	5.3	4.2	3.3 ^{US}	3.0	1.8	5.2 ^{US}	7.2	7.4	7.0	6.7	6.8
8	7.0	5.0	2.7	E	E	E	5.3	7.4	7.6	7.6	7.6	7.3
9	7.3	7.1	6.0	4.8	4.0	2.9	5.3	7.2	7.6	7.4	8.0	7.9
10	6.9	6.2	5.0	3.2	2.2	E	5.4	7.5	8.1	7.3	7.2	7.2
11	6.4	6.6	6.2	3.6	2.5	1.9	5.6	C	9.0	8.5	8.2	8.0
12	8.4	7.3 ^{US}	5.0	3.8	2.2	E	5.6	7.8	8.8	7.8	7.2	7.3
13	7.7	6.6	4.2	2.6	1.5	1.3	5.4	7.8	8.3	8.2 ^H	7.2	7.4
14	7.2	6.1	4.4	2.5	E	E	5.1	7.1	8.6	8.2 ^H	6.9	6.7
15	7.1	F	5.6	4.2	2.6	E	5.4	7.1	8.2	8.2 ^H	7.0	7.0
16	6.5	6.5	4.8	3.3	1.7	E	5.4	7.2	8.4	8.8 ^H	7.8	7.8
17	7.0	7.0	F	F	2.6 ^H	1.7	5.4	7.6	8.5	8.5	8.1	8.2
18	F	7.6	6.4	3.9	2.5	1.8	5.5	7.6	8.2	7.3	7.2	7.5
19	F	5.8	4.2	2.5	2.1	1.7	5.6	7.2	7.6	7.2	6.7	7.4
20	4.6	3.9	3.4	3.2	2.7	2.0	5.8	7.7	7.5	7.1	7.0	7.4
21	6.8	6.3	5.3	3.6	3.1	3.2	5.8	7.2	8.0	7.6	7.1	7.3
22	6.4	5.5	4.0	3.1	1.9	R	5.3	6.4	6.8	7.0	7.0	7.2
23	F	5.6 ^{US}	3.0	1.8	E	E	5.6	7.3	8.0	7.8	6.9	7.0
24	6.0	5.3	3.2	1.9	E	1.3 ^{US}	5.6	7.2	8.8	8.6 ^H	7.1	7.4
25	5.0	4.4	3.2	2.0	1.5	1.8	5.6	7.2	6.9	6.4	6.6	6.5
26	4.5	3.8	2.6	1.7	E	1.8	5.6	7.2	7.6	6.8	6.7	6.5
27	F	4.6	3.7 ^s	3.0 ^s	2.4 ^s	2.1	5.6 ^f	7.5	7.8	7.6	7.2	7.0
28	F	F	F	F	E	E	5.2	7.0	7.7	7.1	6.5	6.4
29	F	F	F	F	F	2.0	5.5	7.0	7.9	8.4	8.2 ^H	7.4
30	4.4	4.3	4.0	3.7	2.5	R	5.3	6.8	7.7	7.8 ^H	7.3	7.7
31	6.9 ^{US}	6.3	F	4.5	3.2	2.3 ^{UI}	5.5	6.9	7.1 ^{US}	6.3	6.5	7.1
Count	24	27	26	27	30	29	31	30	31	31	31	31
Median	6.4	6.1	4.4	3.3	2.2	1.6	5.4	7.2	7.8	7.6	7.1	7.3
Mean	6.3	5.8	4.5	3.2	2.4	1.9	5.4	7.2	7.8	7.5	7.2	7.2

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF2
Unit Mc
Month March, 1963

TABLE 46 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
7.1	7.7	8.3	9.2	8.9	8.4	8.0	7.9	7.4	8.0	7.6	6.9	1
6.9	7.2	7.9	8.4	8.3	7.6	7.3	6.8	6.9	7.1	6.6	6.3	2
7.8	8.4	8.1	8.5	8.3	7.1	7.1	6.6 ^{UPS}	6.6	6.5	F	6.2	3
7.2	7.8	8.0	8.8	9.4	9.7	9.0	7.6	6.8 ^{US}	7.0 ^{US}	7.2 ^s	6.8	4
7.8	8.6	9.4	9.8	9.7	10.0	9.8	8.8	7.9	7.6 ^{US}	C	C	5
7.6	8.4	9.1	9.5	10.4	10.2	9.9	8.8	8.0	8.0	6.8	5.5	6
7.2	8.3	9.0	9.8	10.6	10.0	8.4	7.3	F	F	F	F	7
7.2	7.7	9.2	10.2	10.0	9.6	9.4	10.0	9.2	9.4	7.8	7.2	8
8.5	8.7	8.8	9.3	9.4	9.2	8.8	8.7	8.5	8.5	8.4	7.6	9
7.6	8.1	8.8	9.6	10.0	10.0	9.7	9.0	9.1	9.1	8.4	7.5	10
8.4	9.0	9.4	9.6	9.8	9.5	9.6	8.2	7.8	8.4	8.7	8.7	11
8.0	8.7	9.1	9.2	9.8	9.9	9.7	8.4 ^F	F	8.7	8.8	8.1	12
7.6	7.8	8.2	8.8	9.5	9.2	8.6	8.1	8.4	8.5	9.0	8.1	13
6.9	7.2	7.4	8.0	8.6	9.0	8.2	6.6 ^{UT}	F	F	F	F	14
7.2	7.6	7.8	7.7	8.1	8.1	8.0	7.2	7.0	6.8	6.6	6.2	15
8.0	8.5	C	9.4	9.6	9.8	9.2	8.2	7.9	F	7.8	7.0	16
8.2	9.1	8.8	C	C	C	9.1	8.2	7.3 ^{UT}	F	F	8.0	17
7.9	8.4	9.4	10.0	9.8	10.4	9.8	8.1	F	F	F	F	18
8.6	9.4	9.8	10.0	10.0	10.1	11.0	9.8	8.8	8.1	7.6	5.8	19
7.8	7.8	8.4	9.2	9.8	10.5	9.4	8.6	8.6	8.4	8.0	7.4 ^{JS}	20
7.6	8.3	9.1	10.0	10.4	10.0	9.4	8.8	8.5	7.2	7.4	7.1	21
7.5	8.0	9.0	9.7	10.5	10.1 ^{US}	9.2	F	F	F	F	F	22
7.4	8.3	8.7	9.0	9.5	9.8	9.8	8.9	7.5	7.7	8.1	7.3	23
8.2	8.7	9.2	10.1	10.4	10.0	9.5	9.8	9.2	8.7	7.1	5.5	24
7.0	7.2	7.6	8.4	9.3	9.2	C	C	8.9 ^I	8.4	7.2	5.6	25
6.7	6.8	C	7.6	8.4	9.4	8.8	I ^s	F	F	F	FS	26
7.5	7.6	8.3	8.9	10.0	9.5 ^{US}	8.5	7.4 ^{US}	F	F	I ^s	F	27
6.4	6.7	7.2	8.1	8.5	8.1	7.7	C	F	F	F	F	28
7.3	7.7	8.1	8.7	9.6	9.8	9.4	8.7	7.8	F	F	F	29
8.0	8.5	8.9	9.5	9.3	8.7	8.2	7.1 ^s	5.8 ^{US}	F	F	F	30
7.8	8.4	9.0	9.6	9.6	9.0	8.0	6.6	F	F	8.9	7.0	31
31	31	29	30	30	30	30	27	22	19	19	21	Count
7.6	8.3	8.8	9.2	9.6	9.6	9.2	8.2	7.9	8.1	7.8	7.0	Median
7.6	8.1	8.6	9.2	9.5	9.4	9.0	8.2	7.9	8.0	7.8	6.9	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
Unit Mc
Month March, 1963

TABLE 47
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	L	L	4.5	4.5
2								L	L	L	4.5	4.6
3								L	L	4.3	4.5	L
4								L	L	L	L	4.5
5							L	L	L	L	4.6	L
6								L	L	L	L	L
7								L	L	L	L	L
8								L	L	L	L	L
9								L	L	L	L	L
10								L	L	L	L	L
11								C	L	L	L	4.7
12								L	L	L	L	4.8
13								L	L	L	4.5	L
14								L	L	4.4	4.6	L
15								L	L	4.5	4.6	4.6
16							L	L	4.4	4.8	4.8	4.7
17							L	L	4.2	4.6	4.8	4.6
18							L	L	4.3	4.5	4.6	4.6
19							L	L	L	4.4	4.7	4.7
20							L	L	4.3	4.5	4.6	4.7
21							L	L	L	4.5	4.6	4.8
22							L	L	L	L	4.5	4.5
23							L	L	L	L	4.5	L
24							L	L	L	L	4.5	L
25							L	L	L	L	L	L
26							L	L	L	L	4.5	L
27								L	L	L	1.4	4.4
28								L ₁₁	L	1 ₁₁	4.5	4.5
29							L	L	4.4	4.5	4.5	4.5
30							L	L	L	4.4	4.5	4.5
31								L	L	4.4	1.5	4.6
Count									5	12	22	18
Median									4.3	4.5	4.5	4.6
Mean									4.3	4.5	4.6	4.6

Sweep 10 Mc to 250 Mc in 27 seconds

Characteristic foF1
 Unit Mc
 Month March, 1963

TABLE 47
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4.5	4.5	L	L	L	L							1
4.6	L	L	L	L	L							2
4.6	4.5	L	L	LH	LH							3
4.6	4.5	4.5	L	L	L							4
4.6	A	L	L	L	L							5
L	L	L	L	L	L							6
L	L	A	L	L	L							7
L	L	L	L	L	L							8
L	L	L	L	L	L							9
L	L	L	L	L	L							10
4.8	4.7	L	L	L								11
L	4.7	4.5	L	L								12
4.7	4.6	L	L	L								13
4.7	4.6	L	L	L	L							14
4.7	4.6	L	L	L	L							15
4.7	4.6	4.6	4.5	L	L	L						16
4.6	4.6	4.4	4.6	C	C	L						17
4.7	4.6	A	4.3	4.4	L	L						18
4.7	4.5	4.6	4.7	L	L	L						19
4.6	4.5	4.7	4.6	A	A							20
4.7	4.6	4.6	4.5	4.2	L	L						21
L	L	L	L	L	L	L						22
L	L	L	L	L	L	L						23
4.5	L	L	L	L	L	L						24
4.5	L	L	L	L	L	L						25
4.5	L	C	L	A	L							26
4.5	4.6	4.5	A	A	L							27
4.5	4.4	4.4	LH	A	A							28
4.4H	4.5H	LH	L	L	L							29
4.5	4.5	4.4	L	L	L							30
4.6	4.5	4.5	4.3	L	L	L						31
23	19	11	7	2								Count
4.6	4.6	4.5	4.5									Median
4.6	4.6	4.5	4.5									Mean

Sweep 1.0 Mc to 25.0 Mc, in 27 second.

Characteristic foF₁
 Unit Mc
 Month March, 1963

TABLE 47 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	L	4.5	4.5	4.5
2								L	L	L	4.6	4.6
3								L	L	4.4	4.5	4.6
4							L	L	LH	4.5	4.6	4.6
5							L	L	L	L	4.6L	4.5L
6								L	L	L	L	L
7								L	L	L	L	L
8								L	L	L	L	L
9								L	L	L	L	L
10								L	L	L	L	L
11								C	L	L	L	L
12							L	L	L	4.7	L	L
13								L	L	L	4.6	4.6
14							L	L	L	4.5	4.6	4.6
15								L	L	4.5	4.6	4.8
16							L	L	4.5	4.6	4.7	4.8
17							L	L	4.6	4.6	4.8	4.6
18							L	L	4.5	4.8	4.6	4.7
19							L	L	4.4	4.6	4.6	4.7
20							L	4.0	L	4.5	4.5	4.6
21							L	L	4.4	4.5	4.6	4.8
22							L	L	L	L	L	4.5
23							L	L	L	L	4.5	L
24							L	L	L	L	L	L
25							L	L	L	L	4.6L	L
26							L	L	L	L	4.6	4.6
27							L	L	L	4.5	4.5	4.5
28							L	LH	LH	4.5	4.4	4.5
29							L	L	4.3	4.5	4.4	4.4
30							L	L	4.4	4.5	4.5	4.5
31							L	L	L	4.4	4.6	4.6
Count								1	7	17	22	21
Median									4.4	4.5	4.6	4.6
Mean									4.4	4.5	4.6	4.6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo F₁
 Unit Mc.
 Month March, 1963

TABLE 47 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4.5	4.5	L	L	L								1
4.6	4.5	4.4	L	L								2
4.5	4.5	4.3	LII	LII								3
4.6	4.6	L	L	LII								4
4.6	L	L	L	L	L							5
L	L	L	L	L								6
L	L	L	L	L								7
L	L	L	L	L								8
L	L	L	L	L								9
L	L	L	L	L								10
4.7	L	L	L	L								11
L	4.7	L	L	L								12
4.6	L	L	L	L								13
L	4.5	L	L	L								14
4.6	4.6	L	L	L								15
4.8	4.7	C	4.4	L	L							16
4.7	4.6	1.6	C	C								17
4.6	4.6	1.6	4.3	L	L							18
4.6	4.5	4.8	1.5	L	L							19
4.6	L	4.6	4.4	A	A							20
4.6	4.6	4.5	4.3	L								21
L	L	A	L	L								22
4.6	L	L	L	L								23
4.6	L	A	L	L								24
4.6	L	L	L	L								25
4.5	L	C	L	L	L							26
4.5	4.6	L	A	L								27
4.4	4.4	L	L	A	A							28
4.5II	4.4	4.4	L	L								29
4.5	4.5	L	L	L								30
4.5	4.6	4.4	L	L	L							31
23	17	9	6									Count
4.6	4.6	1.5	4.1									Median
4.6	4.6	4.4	4.5									Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foE
Unit Mc
Month March, 1963.

TABLE 48
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								2 2H	A	A	A	A
2								2 3	A	A	A	A
3								2 4H	A	A	A	A
4								A	A	A	A	A
5								A	A	A	A	A
6								A	A	A	A	A
7								2 4	A	A	A	A
8								A	A	A	A	A
9								A	A	A	A	A
10								A	A	A	A	A
11								C	A	A	A	A
12								2 3	A	A	A	A
13								2 3	A	A	A	A
14								2 3UR	A	A	A	A
15								2 4	A	A	A	A
16								2 4	A	A	A	A
17								2 4	A	A	A	A
18								2 4	A	A	A	A
19								A	A	A	A	A
20								A	A	A	A	A
21								2 2	A	A	A	A
22								A	A	A	A	A
23								2 4	A	A	A	A
24								2 4	A	A	A	A
25								A	A	A	A	A
26								2 4	A	A	A	A
27								2 3	A	A	A	A
28								2 3	A	A	A	A
29								2 4	3 0	A	A	A
30								2 3H	A	A	A	A
31								A	A	A	A	A
Count								19	1			
Median								2 4				
Mean								2 3				

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic foE
Unit Mc
Month March, 1963

TABLE 48
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	A	A	2 7	2 2							1
A	A	A	A	A	A							2
A	A	A	A	A	A							3
A	A	A	A	A	A							4
A	A	3 3R	3 2R	A	2 2							5
A	A	3 4	3 1	3 3	A							6
A	A	A	3 1	2 6	2 2							7
A	A	3 3	A	A	A							8
A	A	A	A	2 8	A							9
A	A	A	A	A	A							10
A	A	A	A	A								11
A	A	A	A	A	A							12
A	A	A	A	A	A							13
A	A	A	A	A	A							14
A	A	A	A	A	A							15
A	A	A	A	A	A							16
A	A	A	A	C	C							17
A	A	A	A	A	A							18
A	A	A	A	A	A							19
A	A	A	A	A	A							20
A	A	A	A	A	A							21
A	A	A	A	A	2 3R							22
A	A	A	A	A	A							23
A	A	A	A	A	2 3							24
A	A	A	A	A	A							25
A	A	C	A	A	A							26
A	A	A	A	A	A							27
A	A	A	A	A	A	A						28
A	A	A	A	A	A							29
A	A	A	A	A	A							30
A	A	A	A	A								31
												Count
												2 2
												Median
												2 2
												Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month March, 1963

TABLE 48 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							1.8 ^H	2.5	A	A	A	A
2							1.8	A	A	A	A	A
3							R	A	A	A	A	A
4							A	A	A	A	A	A
5							R	A	A	A	A	A
6							A	A	A	A	A	A
7							1.7	A	A	A	A	A
8							1.9	A	A	A	A	A
9							A	A	A	A	A	A
10							1.9	A	A	A	A	A
11							2.0	C	A	A	A	A
12							1.8	A	A	A	A	A
13							1.8	A	A	A	A	A
14							2.0	2.6	A	A	A	A
15							2.0 ^{UR}	2.6	A	A	A	A
16							1.8	A	A	A	A	A
17							1.9	2.8	A	A	A	A
18							1.9	A	A	A	A	A
19							A	A	A	A	A	A
20							2.1	A	A	A	A	A
21							1.4	2.6	A	A	A	A
22							A	A	A	A	A	A
23							2.1	A	A	A	A	A
24								2.7	A	A	A	A
25							2.0 ^R	A	A	A	A	A
26							2.2 ^R	A	A	A	A	A
27							R	A	A	A	A	A
28							R	A	A	A	A	A
29							2.0	2.7	A	A	A	A
30							1.8 ^R	2.7 ^H	A	A	A	A
31							2.7	A	A	A	A	A
Count							21	8				
Median							1.9	2.6				
Mean							1.9	2.6				

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month March, 1963

TABLE 48 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	A	A								1
A	A	A	A	A								2
A	A	A	A	A								3
A	A	A	A	A								4
A	3.4	3.2R	3.0	2.5R	2.1R							5
A	A	3.4	3.0	2.6								6
A	A	3.3	2.9	2.5								7
A	3.6	A	A	A								8
A	A	A	3.0	A	1.9							9
A	A	A	2.9	A								10
A	A	A	A	2.6								11
A	A	A	A	A								12
A	A	A	A	A								13
A	A	A	A	A	A							14
A	A	A	A	A								15
A	A	C'	C'	A								16
A	A	A	A	C'								17
A	A	A	A	A								18
A	A	A	A	2.5								19
A	A	A	A	A								20
A	A	A	A	A								21
A	A	A	A	R								22
A	A	A	A	A	A							23
A	A	A	A	2.5								24
A	A	A	A	A								25
A	A	C'	A	A								26
A	A	A	A	A	A							27
A	A	A	A	A	A							28
A	A	A	A	A	A							29
A	A	A	A	A	A							30
A	A	A	A	A								31
	2	3	5	6	2							Count
			3.0	2.5								Median
			3.0	2.5								Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo Es
Unit Mc
Month March, 1963

TABLE 49
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	4 8			3 2				G	6 8	8 7	9 6	10 8
2								G	6 6	9 6	11 2	11 2
3								G	10 0	10 8	11 8	11 2
4								S	11 0	10 8	10 7	12 1
5								8 4us	9 2us	10 0	9 6	10 0
6								8 4us	10 6	11 2	11 0	12 0
7								G	8 8	10 8	11 0	11 6
8								8 0us	9 0	10 6	11 8	11 0
9								6 4	10 6	12 0	12 0	11 6
10								6 4	10 6	10 0	12 0	12 0
11								C	9 6	11 4	11 2	11 6
12								G	9 6	10 8	11 0	11 2
13								G	8 8	10 6	11 4	11 2
14								G	8 6	10 8	10 6	10 8
15								G	8 3	9 8	11 0	11 8
16								G	10 2	10 6	11 0	11 4
17								G	8 6	10 2	9 8	10 8
18	8 6	8 2						G	12 4	12 4	12 6	11 8
19	2 8	3 6						5 0	8 8	10 2	10 8	10 6
20								8 2	10 0	11 0	11 3	10 8
21								3 8	10 2	11 2	11 3	12 2
22					1 8	1 8		8 2us	9 2	10 0	9 6	10 6
23	3 2							G	10 4	11 0	11 0	10 9
24								G	8 2	10 0	10 0	11 0
25								6 0us	8 8	9 4	9 0	9 8
26								G	9 4	8 8	11 0	10 2
27						6 5		4 3	9 8	11 6	11 3	12 0
28	3 1							8 2s	10 4	11 0	11 6	11 0
29	3 0							G	7 0	10 2	12 0	11 0
30		2 8		2 9				G	8 8	11 6	12 0	12 0
31								6 4us	11 0	11 0	12 4	12 0
Count	6	3		2	1	2		29	31	31	31	31
Median	3 2							G	9 4	10 8	11 0	11 2
Mean	4 2							6 7	9 4	10 6	11 1	11 2

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic f_oF₂
 Unit Mc
 Month March, 1963

TABLE 49
 Ionospheric Data
 75 E Mean Time

Latitude 10 2' N
 Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
10.4	9.5	10.4	8.8	7.8	G	2.8	4.4					1
11.6	11.4	10.8	10.0	8.8	7.8	2.9		2.7				2
11.4	12.0	11.4	11.0	8.6	8.0							3
12.2	11.4	10.7	10.0	8.4	S							4
10.0	18.0us	G	G	G	G						2.4	5
12.0	12.0	G	G	G	4.8			2.7				6
11.4	10.0	16.4	G	G	G							7
12.0	11.2	G	6.4	5.8	5.8							8
12.0	10.6	12.6	10.0	G	7.0							9
9.6	11.6	10.6	8.6	7.6	9.8			2.7	7.0			10
11.4	11.6	10.7	9.0	7.8	6.4							11
11.7	10.2	9.8	8.8	6.6	7.6	5.6			1.8	2.9		12
10.8	11.4	10.0	9.5	8.0	7.0					5.0us		13
10.8	10.0	11.0	9.4	7.4	7.6	5.8				4.9	4.6	14
11.8	10.8	11.6	10.6	8.0	6.8							15
10.2	11.0	9.6	8.8	7.6	6.14						3.0	16
10.0	9.8	9.1	9.8	C	C	6.2						17
11.4	9.2	11.0	10.6	5.4	4.4							18
11.6	9.8	8.0	8.8	4.1	5.0	2.9						19
9.6	9.8	8.8	8.6	8.2	9.0	5.4		3.0	2.3			20
11.0	10.4	9.8	8.2	6.4	3.5							21
9.8	9.2	12.2	6.4	5.8	G							22
11.0	10.0	8.7	9.4	8.2	1.3							23
11.0	10.0	12.2	8.8	G	G						4.1	24
9.0	10.8	9.4	8.1	G	8.0							25
9.8	9.8	C	8.8	9.4	3.4							26
11.8	11.4	8.8	9.0	8.7	8.6							27
11.1	11.0	10.6	9.0	10.6	10.0	5.4p			2.2	3.0	3.0	28
12.0	11.2	10.6	8.0	8.0	6.7	4.6us						29
18.4	11.3	10.8	9.6us	7.6	5.48							30
16.2	12.4	9.4	10.4	8.8	8.2						2.0	31
31	31	30	31	30	29	9	1	4	4	5	5	Count
11.4	10.8	10.5	8.8	7.6	6.4	5.4				3.0	3.0	Median
11.1	10.9	10.7	9.1	7.7	6.8	4.6				3.6	3.4	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foEs
Unit Mc
Month March, 1963.

TABLE 49 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	4 8						G	G	7 2	9 2	10 7	10 4
2							G	5 6us	9 2	11 2	11 2	11 2
3							G	7 0us	11 0	12 0	11 2	11 8
4							S	8 6	10 0	11 0	11 2	12 0
5							1 9	9 0us	10 0	9 6	10 6	10 0
6	C	C	C	C			2 2	10 6	10 8	11 0	11 2	11 6
7							4 2	7 0	9 0	9 8	11 0	11 0
8							G	8 0	9 8	11 0	12 0	11 6
9								8 6	11 8	11 6	9 6	11 8
10							G	8 2	11 0	12 0	11 6	11 2
11							G	C	9 6	11 4	11 4	11 6
12							G	5 6	10 2	11 0	10 4	11 0
13							G	6 7	10 8	10 6	10 6	11 0
14							G	G	9 6	11 0	11 0	10 8
15							G	5 6	10 6	11 6	11 2	11 0
16							2 2	8 0	10 2	9 8	11 8	11 2
17							G	6 2	8 8	9 4	9 6	11 2
18	6 4	8 2					G	8 6	12 6	11 4	11 4	12 4
19		4 2					3 0	8 2	10 0	11 2	9 8	10 6
20							G	8 2	10 6	11 3	11 2	10 8
21						1 9	G	8 2	10 0	10 6	11 4	11 2
22							4 0us	8 2us	9 8	9 6	9 8	10 7
23							G	6 2us	8 8	11 0	10 1	10 8
24								G	9 0	11 0	11 0	11 0
25								G	8 4	8 8	9 0	9 8
26							G	6 6us	10 2	9 4	10 2	11 0
27							G	8 0	11 1	11 8	12 0	12 0
28							G	8 6us	10 4	11 0	11 6	10 4
29							G	5 6	8 8	11 0	11 4	11 2
30							G	6 3	10 4	11 4	11 0	12 0
31							G	9 3us	11 0	11 4	11 3	12 4
Count	2	2		1		1	27	30	31	31	31	31
Median							G	7 5	10 0	11 0	11 2	11 2
Mean							2 9	7 6	10 0	10 8	10 9	11 2

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foEs
Unit Mc
Month March, 1963

TABLE 49 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date ¹
10.6	9.8	9.4	7.0	6.0	4.0		3.2	3.4				1
10.8	11.0	14.4	8.6	7.8	8.0							2
12.2	11.4	10.6	8.8	8.6	2.7							3
11.6	12.0	10.0	8.6	5.0						6.0		4
10.0	G	G	G	G	G						C	5
12.0	10.0	5.6	G	G				2.6				6
12.0	8.2	5.8	G	G								7
12.2	8.6	7.0	6.4	2.8			2.6					8
11.6	12.0	9.6	5.0	7.0	G							9
10.8	11.0	10.8	G	10.6				4.0	1.6			10
11.6	11.4	9.7	7.4	7.0						3.4		11
11.8	10.5	9.4	6.0	7.0	7.6	2.7						12
11.0	10.6	11.6	7.8	7.4	6.0			3.8				13
10.8	11.4	9.8	8.4	8.0	7.6							14
10.8	10.6	10.4	8.6	8.2								15
11.0	9.4	C	8.0	8.0s	4.1							16
9.4	10.8	9.4	C	C	C	3.8					8.4	17
9.0	10.8	13.8	6.4	5.6	4.0						2.6	18
9.6	9.0	8.8	G	G	6.2							19
10.2	10.2	9.2	7.7	10.6	8.6		3.2	3.0			3.2	20
11.0	10.4	9.8	7.0	4.6	4.6					4.0		21
9.6	10.0	18.6us	5.2us	G	G					3.6us		22
10.7	9.0	8.8	8	7.0	5.4							23
10.2	8.6	11.4	5.8	G	G							24
10.4	11.4	10.2	8.8	G	8.0	3.8us						25
9.8	9.3	C	7.6	8.0								26
12.0	10.8	6.6	10.6	7.6	6.6					2.4		27
11.3	11.0	9.7	9.6	11.2	8.8			2.4		3.6	3.8	28
12.0	11.2	9.4	7.6	8.2	6.0	4.3						29
11.7	10.8	9.8	8.6	8.0	4.8us							30
12.4	9.8	10.3	8.8	8.2								31
31	31	29	30	30	19	4	3	6	1	6	4	Count
11.0	10.6	9.7	7.6	7.0	6.0			3.2		3.6		Median
11.0	10.4	10.0	7.8	7.5	6.1			3.2		3.8		Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic fb Es
Unit Mc
Month March, 1963

TABLE 50
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1				1 3				G	2 8	3 2	3 4	3 6
2								G	2 8	3 2	3 4	3 5
3								G	3 0	3 2	3 5	3 5
4								2 3	2 9	3 2	3 4	3 7
5								3 3	2 8	2 2	3 4	3 5
6								2 4	3 0	3 2	3 5	3 6
7								G	2 9	3 2	3 1	3 6
8								2 2	2 9	3 2	3 6	3 6
9								2 3	3 0	3 3	3 5	3 6
10								2 4	2 9	3 3	3 5	3 7
11								C	2 9	3 1	3 5	3 6
12								G	2 8	3 2	3 5	3 7
13								G	2 9	3 2	3 5	3 6
14								G	3 0	3 2	3 5	3 6
15								G	3 0	3 4	3 5	3 6
16								G	3 0	3 4	3 6	3 8
17								G	3 0	3 3	3 6	3 8
18	2 6	2 8						G	3 0	3 2	3 6	3 6
19	2 3	2 4						2 5	2 9	3 2	3 5	3 8
20								2 4	2 9	3 2	3 5	3 6
21					1 2	1 2		2 6	3 0	3 3	3 7	3 8
22								2 4	2 9	3 2	3 4	3 6
23								G	3 0	3 2	3 5	3 6
24								G	2 8	3 2	3 5	3 5
25								2 6	3 0	3 2	3 5	3 6
26								G	2 9	3 2	3 4	3 6
27								2 2	2 9	3 2	3 5	3 5
28	1 9							2 3	2 8	3 2	3 5	3 6
29	2 2			1 3				G	2 9	3 3	3 5	3 6
30		1 9						G	2 9	3 3	3 5	3 6
31								2 5	2 9	3 2	3 6	3 6
Count	4	3		2	1	1		30	31	31	31	31
Median								G	2 9	3 2	3 5	3 6
Mean								2 5	2 9	3 2	3 5	3 6

Sweep 1 0 Mc to 25 0 Mc, in 27 seconds

Characteristic f_oE_s
Unit Mc
Month March, 1963

TABLE 50
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
3.6	3.5	3.4	3.2	2.8	G	1.8						1
3.6	3.6	3.4	3.4	3.6	3.0	1.8						2
3.7	3.5	3.4	3.3	2.9	2.4							3
3.7	3.6	3.5	3.5	3.0	2.7							4
3.5		G	G	G	G						1.8	5
3.7	3.7	G	G	G	2.8			1.8				6
3.6	3.6	5.2	G	G	G							7
3.7	3.6	G	3.4	3.1	2.2							8
3.7	3.6	3.4	3.2	G	2.4							9
3.6	3.6	3.4	3.3	3.1	3.5			2.0	1.9			10
3.7	3.6	3.5	3.2	3.0						2.1		11
3.7	3.6	3.5	3.3	2.1	4.6	2.8						12
3.7	3.7	3.5	3.2	3.2	2.8							13
3.6	3.6	3.5	3.2	3.0	2.6	2.2				2.0	2.3	14
3.8	3.6	3.6	3.2	3.1	2.5							15
3.9	3.6	3.6	3.3	3.0	2.5						2.3	16
3.7	3.7	3.5	3.2	C	C	2.3						17
3.8	3.6	4.0	3.2	3.0	2.4	2.3						18
3.7	3.6	3.6	3.2	3.5	2.4							19
3.7	3.7	3.5	3.4	4.0	2.5	1.9		2.1	2.0			20
3.7	3.6	3.5	3.3	3.3	2.4							21
3.6	3.5	3.6	3.2	3.0	G							22
3.6	3.5	3.4	3.2	3.0	2.6							23
3.7	3.6	3.8	3.3	G	G						1.9	24
3.7	3.6	3.6	3.2	G	3.4							25
3.6	3.5	C	3.2	4.0	2.4							26
3.6	3.6	3.5	3.7	3.6	2.5							27
3.6	3.6	3.4	3.1	2.8	2.4	2.3			1.9	1.6	2.0	28
3.6	3.6	3.3	3.2	3.0	3.2	2.8						29
3.6	3.5	3.4	3.2	3.0	2.4							30
3.8	3.8	3.5	3.2	3.0	2.4						1.8	31
31	30	30	31	30	29	9		3	3	4	5	Count
3.7	3.6	3.5	3.2	3.0	2.4	2.3					2.0	Median
3.7	3.6	3.5	3.3	3.2	2.7	2.2					2.1	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fb Es
Unit Mc
Month March, 1963

TABLE 50 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	2.9	3.2	3.5	3.6
2							G	2.6	3.0	3.3	3.6	3.6
3							G	2.7	3.1	3.3	3.6	3.7
4							2.8	2.7	3.0	3.3	3.5	3.7
5							1.8	2.8	3.0	3.3	3.5	3.5
6	C	C	C	C			2.0	2.6	3.1	3.4	3.7	3.7
7								2.7	3.0	3.4	3.5	3.6
8							G	2.6	3.0	3.5	3.6	3.7
9								2.6	3.2	3.4	3.6	3.7
10							G	2.7	3.0	3.4	3.6	3.7
11							G	C	3.0	3.4	3.6	3.7
12							G	2.6	3.0	3.4	3.5	3.7
13							G	2.6	3.1	3.4	3.5	3.8
14							G	G	3.1	3.4	3.6	3.6
15							G	2.8	3.2	3.5	3.6	3.7
16							2.1	2.7	3.2	3.5	3.6	3.8
17							G	2.8	3.2	3.4	3.7	3.7
18	3.1	2.1					G	2.7	3.1	3.5	3.6	3.7
19		2.4					2.1	2.7	3.1	3.5	3.6	3.7
20							G	2.7	3.1	3.5	3.6	3.6
21						1.5	G	2.7	3.0	3.4	3.7	3.8
22							2.0	2.6	3.0	3.3	3.5	3.6
23							G	2.7	3.1	3.4	3.5	3.7
24							G	G	3.1	3.4	3.6	3.6
25							G	2.6	3.1	3.3	3.5	3.6
26							G	2.7	3.0	3.3	3.5	3.6
27							G	2.7	3.1	3.3	3.5	3.6
28							G	2.6	3.0	3.5	3.6	3.6
29							G	2.7	3.0	3.3	3.6	3.7
30							G	2.7	3.1	3.4	3.6	3.6
31							G	2.7	3.1	3.5	3.6	3.6
Count	1	2					1	28	30	31	31	31
Median							G	2.7	3.1	3.4	3.6	3.7
Mean							2.1	2.7	3.1	3.4	3.6	3.7

Sweep 1.0 Mc. to 25.0 Mc in 27 seconds

Characteristic f_bE_s
Unit Mc
Month March, 1963

TABLE 50 (Contd)
Ionospheric Data
75°E Mean Time

Latitude · 10 2° N.
Longitude · 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
3.6	3.4	3.2	3.0	2.6	2.0		1.9	1.6				1
3.6	3.5	3.6	3.5	2.9	2.6							2
3.6	3.5	3.4	3.2	2.7	2.1							3
3.6	3.5	3.3	3.3	2.7						2.5		4
3.7	G	G	G	G	G						C	5
3.7	3.6	3.7	G	G				1.5				6
3.5	3.6	3.4	G	G								7
3.7	3.5	3.5	3.4	2.7			2.0					8
3.6	3.5	3.3	3.1	2.7	G							9
3.6	3.7	3.4	G	3.3								10
3.7	3.6	3.4	3.2							2.6		11
3.7	3.5	3.4	3.2	3.5	4.0	2.2						12
3.8	3.6	3.4	3.3	3.2	2.8							13
3.6	3.5	3.4	3.1	3.0	2.3							14
3.6	3.6	3.4	3.2	2.8								15
3.8	3.8	C	3.2	2.8	2.0						2.0	16
3.7	3.6	3.4	C	C	C	2.1					2.0	17
3.7	3.8	4.4	3.2	3.2	2.3							18
3.6	3.6	3.3	G	G	2.4							19
3.7	3.6	3.3	3.8	3.2	4.2		2.4	2.2			2.4	20
3.7	3.6	3.5	3.7	3.5	2.2					2.4		21
3.5	3.8	4.3	3.2	G						2.0		22
3.6	3.6	3.3	3.0	2.8	2.5							23
3.6	3.5	5.8	3.2	G								24
3.6	3.5	3.3	G	3.0	3.0							25
3.6	3.6	C	3.2	3.2								26
3.6	3.5	3.4	4.2	2.8	2.8					1.9		27
3.6	3.4	3.3	3.2	2.8	2.4			1.9		2.1	1.9	28
3.7	3.4	3.2	3.2	3.1	3.2	2.1						29
3.5	3.5	3.3	3.0	2.7	2.2							30
3.6	3.5	3.5	3.3	2.7								31
31	31	28	30	29	19	3	3	4		6	4	Count
3.6	3.5	3.4	3.2	2.8	2.4					2.2		Median
3.6	3.6	3.5	3.3	3.0	2.6					2.2		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic fmin
Unit . Mc
Month March, 1963

TABLE 51
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	15	18	16	10	12	E	13	12	17	19	23	23
2	15	14	E	10	10	11	12	14	15	20	22	24
3	12	11	E	E	12	14	12	15	14	18	20	22
4	14	13	12	E	11	E	12	13	15	18	20	23
5	19	11	10	E	E	E	11	12	15	20	21	22
6	C	C	C	C	C	E	12	12	13	20	20	22
7	18	12	12	11	14	E	12	12	15	17	21	23
8	17	18	16	14	E	E	12	13	17	22	22	25
9	15	16	11	C	12	E	11	16	15	20	22	24
10	18	15	12	11	E	E	14	14	15	20	22	25
11	17	16	14	14	11	11	13	C	14	18	21	24
12	19	18	18	14	12	11	14	14	16	19	23	26
13	19	17	15	12	13	E	13	15	15	21	23	25
14	20	15	13	12	13	E	14	14	16	19	23	24
15	16	15	11	10	E	10	14	14	16	19	22	21
16	18	11	13	10	E	12	16	17	19	20	24	26
17	17	16	15	13	E	10	14	17	17	22	24	26
18	18	22	16	10	12	10	12	15	16	19	22	22
19	17	21	18	14	12	11	14	16	15	20	24	25
20	19	17	15	11	E	11	14	16	16	19	24	24
21	13	15	E	11	L	F	16	17	17	22	24	24
22	16	14	13	E	13	E	15	14	15	20	21	22
23	14	13	15	12	E	F	15	13	15	20	21	23
24	15	13	15	11	E	E	17	17	16	21	24	24
25	15	13	12	11	F	E	14	14	21	21	21	25
26	18	16	11	E	E	28	15	14	18	20	22	22
27	15	15	E	E	E	11	16	15	17	20	22	25
28	19	16	E	E	F	E	16	14	17	23	23	25
29	15	15	12	11	14	12	17	17	17	20	23	25
30	17	11	14	E	11	13	16	16	18	22	23	26
31	13	E	11	E	F	E	15	16	17	19	24	24
Count	30	30	30	29	30	31	31	30	31	31	31	31
Median	17	15	12	11	10	E	14	14	16	20	22	24
Mean	16	15	14	12	12	12	14	15	16	20	22	24

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit . Mc
Month March, 1963

TABLE 51
Ionospheric Data
75°E Mean Time

Latitude 10°2' N
Longitude 77°5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2.3	2.4	2.1	1.9	1.9	1.9	1.7	1.9	1.6	1.7	1.6	1.7	1
2.4	2.2	2.3	2.2	2.0	1.9	1.4	1.3	1.6	1.7	1.8	1.4	2
2.3	2.4	2.3	1.9	2.2	1.6	1.6	1.5	1.4	1.6	1.4	1.6	3
2.3	2.4	2.4	2.0	2.0	1.9	1.6	1.5	1.3	1.3	1.6	1.5	4
2.4	2.2	2.4	2.3	3.1	1.8	1.5	1.6	1.7	1.9	1.7	C	5
2.2	2.4	2.2	2.4	2.3	1.9	1.7	1.5	1.2	1.6	1.5	1.5	6
2.5	2.4	2.2	2.6	2.2	1.8	1.5	1.5	1.4	1.7	1.8	1.6	7
2.6	2.6	2.5	2.5	1.9	2.0	1.7	1.6	1.6	1.5	1.8	1.5	8
2.4	2.2	2.0	2.0	2.0	1.7	1.7	1.7	1.6	1.7	2.1	2.0	9
2.4	2.4	2.2	2.2	2.0	2.2	1.9	1.8	1.8	E	2.0	1.5	10
2.5	2.4	2.7	2.4	2.4	2.5	1.8	1.8	1.7	2.0	1.5	1.8	11
2.6	2.6	2.3	2.2	2.1	2.0	1.8	1.8	1.9	1.6	2.2	1.9	12
2.5	2.5	2.4	2.2	2.1	2.1	2.3	2.3	2.1	2.0	2.2	2.1	13
2.6	2.5	2.4	2.2	2.1	1.9	1.9	1.3	1.7	1.8	1.4	1.6	14
2.6	2.5	2.5	2.1	2.3	2.2	2.2	1.8	1.6	1.5	C	1.4	15
2.6	2.6	2.4	2.0	1.7	1.2	2.2	1.8	1.9	2.2	1.7	1.9	16
2.4	2.4	2.4	2.1	C	C	1.2	1.6	2.0	2.2	2.3	2.1	17
2.6	2.6	2.2	2.2	1.8	1.3	1.9	2.3	2.0	1.3	1.9	2.2	18
2.4	2.4	2.3	2.0	2.9	1.5	2.0	2.2	1.7	1.7	1.5	1.5	19
2.6	2.1	2.3	2.0	1.8	1.9	1.5	1.5	1.3	1.3	1.4	1.4	20
2.4	2.4	2.4	2.0	1.8	1.5	1.8	1.8	2.0	2.1	2.1	2.4	21
2.4	2.3	2.3	2.2	2.2	1.9	1.7	1.3	1.6	1.8	1.6	1.6	22
2.3	2.3	2.2	2.0	1.8	1.5	2.0	1.4	1.6	1.4	1.9	1.8	23
2.6	2.4	3.2	2.1	2.8	2.0	1.7	1.8	2.0	1.7	1.7	1.4	24
2.8	2.3	2.3	2.2	3.0	1.5	2.4	C	C	1.8	1.7	1.7	25
2.2	2.5	C	1.9	2.8	2.0	1.9	1.6	1.9	2.0	1.9	1.5	26
2.5	2.6	2.2	2.0	2.0	1.9	1.7	1.5	1.4	1.4	1.3	1.2	27
2.5	2.5	2.2	2.0	1.8	1.4	1.4	C	C	E	1.2	1.5	28
2.5	2.4	2.5	2.0	1.9	1.8	1.5	1.9	2.0	2.0	1.8	1.8	29
3.4	2.4	2.2	2.0	1.9	1.8	1.8	1.5	1.5	1.4	1.3	E	30
2.6	2.6	2.4	2.3	2.2	1.9	1.7	1.6	1.7	1.7	1.7	1.3	31
31	31	30	31	30	30	31	29	29	31	30	30	Count
2.5	2.4	2.3	2.1	2.0	1.9	1.7	1.6	1.7	1.7	1.7	1.6	Median
2.5	2.4	2.3	2.1	2.1	1.8	1.8	1.7	1.7	1.7	1.7	1.7	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic fmin
Unit. Mc
Month March, 1963

TABLE 51 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	1.7	1.8	1.4	1.1	1.2	E	1.3	1.7	1.8	2.1	2.3	2.3
2	1.7	1.5	E	E	1.0	E	1.5	1.4	1.7	2.1	2.3	2.4
3	1.5	1.1	E	E	E	E	1.2	1.4	1.6	1.9	2.0	2.3
4	1.5	1.2	E	E	1.1	E	1.1	1.2	1.6	1.9	2.0	2.3
5	1.7	1.2	E	E	1.1	E	1.3	1.4	1.8	2.0	2.2	2.3
6	C	C	C	C	E	E	1.4	1.2	1.8	1.8	2.1	2.4
7	1.6	1.2	1.1	1.6	E	E	1.4	1.5	1.8	2.0	2.3	2.6
8	1.5	1.7	1.4	E	E	E	1.3	1.4	2.0	2.1	2.4	2.5
9	1.5	1.4	1.2	1.1	E	1.2	2.0	1.6	1.8	2.1	2.2	2.2
10	1.7	1.3	1.1	1.1	1.1	E	1.4	1.5	1.7	2.0	2.2	2.3
11	1.7	1.8	1.6	1.4	1.1	1.3	1.5	C	1.6	1.9	2.2	2.4
12	1.9	1.7	1.5	1.3	1.2	E	1.3	1.4	1.7	2.2	2.5	2.5
13	1.6	1.7	1.3	1.1	1.0	1.2s	1.3	1.3	1.8	2.2	2.4	2.4
14	1.7	1.7	1.2	1.1	E	E	1.4	1.6	1.8	2.1	2.4	2.6
15	1.6	1.3	1.0	1.0	1.2	E	1.6	1.4	1.6	2.2	2.2	2.3
16	1.7	1.1	1.0	1.0	1.1	E	1.6	1.8	1.9	2.2	2.6	2.7
17	1.5	1.8	1.5s	1.6	1.2	1.3	1.4	1.6	2.0	2.2	2.5	2.4
18	1.9	1.6	1.1	1.1	1.0	E	1.3	1.5	1.8	2.2	2.3	2.4
19	1.8	1.8	1.2	1.4	1.5	1.1	1.4	1.4	1.9	2.2	2.4	2.6
20	1.5	1.7	1.3	E	1.1	1.1	1.5	1.5	1.8	2.2	2.4	2.6
21	1.5	1.3	E	E	E	1.3	1.2	1.6	1.8	2.2	2.4	2.6
22	1.6	1.8	1.4	1.2	1.2	E	1.4	1.5	1.8	2.1	2.2	2.4
23	1.4	1.2	1.3	1.2	E	E	1.4	1.5	2.0	2.1	2.3	2.3
24	1.5	1.6	1.2	1.1	E	E	2.0	1.7	2.1	2.2	2.3	2.2
25	1.4	1.3	E	1.1	F	1.1	1.3	1.7	2.2	2.1	2.1	2.3
26	2.0	1.7	1.0	1.0	E	1.1	1.4	1.8	1.9	2.1	2.2	2.3
27	1.4	1.2	E	E	E	1.1	1.3	1.5	1.7	2.3	2.4	2.5
28	1.6	1.4	E	E	E	E	1.7	1.6	2.0	2.2	2.5	2.6
29	1.4	1.4	1.2	1.2	1.4	1.4	1.5	1.9	1.9	2.2	2.4	2.6
30	1.7	1.8	1.2	1.1	1.3	E	1.6	1.4	2.0	2.4	2.5	2.5
31	1.2	1.2	1.1	1.2	E	1.1	1.5	1.7	1.8	2.2	2.4	2.6
Count	30	30	30	30	31	31	31	30	31	31	31	31
Median	1.6	1.4	1.2	1.1	1.0	E	1.4	1.5	1.8	2.1	2.3	2.4
Mean	1.6	1.5	1.2	1.2	1.2	1.2	1.4	1.5	1.8	2.1	2.3	2.4

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic fmin
Unit Mc
Month March, 1963

TABLE 51 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2.3	2.3	2.2	1.9	1.9	1.8	1.5	1.7	1.4	1.5	1.6	1.2	1
2.3	2.3	2.2	2.2	2.0	1.6	1.3	1.2	1.3	1.4	1.4	1.2	2
2.4	2.3	2.0	2.1	1.9	1.4	1.5	1.6	1.5	1.6	1.6	1.5	3
2.5	2.3	2.1	2.0	2.0	1.9	1.4	1.9	1.4	1.3	1.5	1.8	4
2.2	2.1	2.2	2.2	2.0	1.7	1.4	1.9	2.0	1.7	C	C	5
2.3	2.3	2.4	2.4	1.9	1.0	1.5	1.3	1.2	1.7	1.5	1.6	6
2.5	2.4	2.4	2.4	1.7	2.0	1.2	1.5	1.4	1.6	1.8	1.5	7
2.5	2.5	2.2	3.2	1.7	2.2	1.7	1.4	1.7	1.8	1.5	1.7	8
2.4	2.2	2.1	2.2	1.8	1.6	1.4	1.8	2.1	2.5	1.8	1.8	9
2.3	2.2	2.0	2.5	2.0	2.1	1.4	1.7	1.7	E	1.6	1.8	10
2.4	2.4	2.4	2.6	2.2	2.2	1.5	1.5	1.9	1.7	1.8	2.0	11
2.5	2.5	2.3	2.3	1.9	1.8	1.9	1.8	2.2	2.2	2.0	2.1	12
2.6	2.5	2.3	2.6	2.2	1.2	2.2	2.0	1.6	1.9	2.5	1.7	13
2.6	2.5	2.3	2.2	2.0	2.0	1.5	1.6	1.7	1.9	1.8	1.5	14
2.6	2.4	2.2	2.6	2.2	2.2	2.0	1.8	1.4	1.3	1.5	1.6	15
2.4	2.4	C	1.8	1.4	1.2	2.2	1.6	2.4	1.9	1.7	1.9	16
2.4	2.4	2.3	C	C	C	1.4	1.7	2.0	2.4	2.1	1.6	17
2.4	2.5	2.2	2.1	1.6	1.5	2.2	2.1	2.0	2.0	1.5	1.6	18
2.6	2.8	2.3	3.4	2.4	1.5	1.8	1.8	1.8	1.7	1.7	1.6	19
2.6	2.4	2.2	1.9	1.8	1.2	1.5	1.3	1.3	1.7	1.3	1.2	20
2.6	2.1	2.2	2.0	1.9	1.7	1.9	1.8	2.3	1.8	1.7	1.7	21
2.2	2.3	2.2	2.3	1.9	2.0	1.7	1.7	1.8	1.8	1.6	1.8	22
2.3	2.4	2.1	1.8	1.8	1.3	1.6	1.6	1.7	1.9	1.7	1.7	23
2.5	2.5	2.2	2.7	2.2	2.0	1.8	1.9	1.7	1.7	1.9	1.2	24
2.5	2.3	2.2	3.1	2.0	1.1	C	C	1.8	1.8	1.5	1.6	25
2.4	2.5	C	1.8	1.9	2.1	1.4	1.8	1.7	1.9	1.3	1.6	26
2.6	2.3	2.1	2.0	1.9	1.8	1.6	1.5	1.5	1.4	1.2	1.6	27
2.5	2.5	2.2	2.0	1.8	1.3	2.0	C	1.3	1.6	E	1.5	28
2.6	2.5	2.1	2.1	1.9	1.5	1.4	2.0	1.8	1.9	1.9	1.4	29
2.5	2.4	2.2	1.9	1.8	1.5	1.5	1.9	1.5	1.3	1.2	E	30
2.6	2.6	2.4	2.4	1.9	0	2.3	1.8	2.0	1.8	1.5	1.4	31
31	31	29	30	30	30	30	29	31	31	30	30	Count
2.5	2.4	2.2	2.2	1.9	1.8	1.5	1.7	1.7	1.7	1.6	1.6	Median
2.5	2.4	2.2	2.3	1.9	1.7	1.7	1.7	1.7	1.8	1.6	1.6	Mean

*sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic $h'F_2$
Unit, Km.
Month, March, 1963

TABLE 52
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	L	310	340	370
2								L	L	320	350	360
3								240	320	350	335	365
4								L	L	L	L	370
5							L		L	L	370	L
6								L	L	L	365	L
7								L	L	L	360	L
8								L	L	L	L	340
9								L	L	L	335U1	330
10								L	L	L	L	L
11								C	305	310	315	330
12								L	L	300	L	345
13								L	310	325	340	365
14								L	300	315	355	L
15								L	L	340	350	360
16							L	L	300	340	350	350
17							L	L	280	320	340	350
18							L	L	290	320	350	340
19							L	L	L	320	350	380
20							L	L	300	340	350	375
21							L	L	L	320	340	375
22							L	L	L	L	335	340
23							L	L	L	340	360	360
24							L	L	L	L	340	360
25							L	L	L	L	L	L
26							L	L	L	L	350	400
27								L	L	340	360	350
28								280	L	L	410	405
29								290	330	340	360	370
30								270	305	340	370	380
31								L	L	360	420	400
Count								4	10	19	26	25
Median									300	325	350	360
Mean									305	330	355	365

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic $h'F_2$
 Unit Km
 Month March, 1963

TABLE 52
 Ionospheric Data
 75 E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
400	355	330	I	I	I							1
380	375	L	340	I								2
370	360	I	360	I	I							3
370	355	345	I	I	I							4
360	A	I	I	I	I							5
L	355	335	I	I								6
390 _{ut}	350	A	320	I	L							7
L	L	I	I	I								8
L	I	I	I	I								9
L	I	I	I	I	I							10
350	335	310	305	I								11
L	345	305	320	I								12
365	350	310	I	I								13
380	370	350	I	I	I							14
380	370	I	I	I	I							15
350	335	320	305	I	I	I						16
360	330	330	320	C	C							17
365	340	A	305	290	I							18
340	320	320	330	I								19
350	340	350	320	A	A							20
355	330	340	315	I	J							21
340	335	I	I	250	I							22
L	340	I	I	I	I							23
340	340	I	I	I	I							24
400	I	I	I	I								25
380	I	C	I	A	I							26
350	365	350	355	300	280							27
395	395	370	340	300	A							28
360	360	360	320	300								29
370	365	360	345	315	I							30
370	350	350	320	I	I	I						31
25	25	17	16	6	I							Count
365	350	340	320	300								Median
365	350	335	325	300								Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
Unit km
Month March, 1963

TABLE 52 (Contd)
Ionospheric Data
75 L Mean Time

Latitude 10° 2' N
Longitude 77° 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								265	300	360	350	370
2								280	315	L	360	370
3							I	L	L	355	345	380
4							260	L	L	350	370	380
5							L		L	L	360	360
6								L	L	375	355	380
7								L	L	L	L	L
8								L	L	L	360	L
9								L	L	I	350	L
10								I	I	L	360UL	L
11								C'	315	L	325	340
12							L	L	290	330	335	L
13								280	310	345	340	355
14								290	315	325	370	370
15								290	L	345	360	380
16							L	L	310	340	355	360
17							I	L	310	330	350	355
18							L	L	320	360	365	370
19							I	L	320	360	370	360
20							I	300	I	340	340	360
21							L	I	320	330	350	360
22							L	I	L	350	350	335
23							L	L	L	L	360	360
24							L	I	I	350	360	340
25							I	L	L	L	390	400
26							I	L	L	I	380	420
27							L	L	330	350	380	350
28							L	I	240	380	410	410
29							260	290	330	350	370	380
30							260	280	340	350	365	380
31							280	L	L	360	400	380
Count							4	8	15	21	30	26
Median								280	315	350	360	370
Mean								285	310	350	360	370

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristics of F₂
 Unit Km
 Month March, 1953

TABLE 52 (Contd.)
 Ionospheric Data
 75 F Mean Time

Latitude 10 2° N
 Longitude 77 5° E

1500	1530	1545	1550	1630	1700	1830	1930	2030	2130	2230	2330	Date
375	335	340	I	L								1
365	360	350	L	L								2
380	340	340	340	LH								3
370	345	340	330	305								4
340	310	L	I	I	L							5
345	L	340	I	I								6
370	335	320	300	I								7
L	I	I	I									8
I	I	320un	L	L								9
350	I	I	I	L								10
340	340	335	I	L								11
L	340	295	I	L								12
350	340	L	I	L								13
L	340	310	L	L								14
370	370	340	L	I								15
350	340	C'	300	L	L							16
365	340	320	C'	C'								17
340	330	320	295	I	L							18
340	320	340	320	I								19
340	L	340	300	A	A							20
340	340	330	300	L								21
330	L	A	I	L								22
340	340	I	I	L								23
340	I	A	L	L								24
380	370	L	I	I								25
380	360	C'	I	L	L							26
350	360	340	320	280								27
410	400	360	325	A	A							28
380	360	350	315	305								29
370	360	360	320	L								30
350	350	340	340	I	L							31
27	24	21	13	3								Count
350	340	340	320									Median
360	345	335	315									Mean

Sweep 1 0 Mc to 25 0 Mc to 27 seconds.

Characteristic h'F
Unit Km
Month March, 1963

TABLE 53
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	230	230	220	210	210	E	245	220	210	200	195	190
2	260	253	240	220	220	240	260	230	200 _{it}	190	190	180
3	245	240	230	200	230	255	260	240	230	200	215	190
4	250	240	220	220	220	220	270	235	205	220	190	190
5	260	230	215	210	210	210	240	200 _H	190	180	175	180
6	C	C	C	C	C	250	260	220	200	200	200	190
7	260	250	235	225	235	220	240	235	205	200	200	185
8	220	200	205	230	E	E	260	235	220	190	200	195
9	270	240	235	C	240	235	260	200 _{it}	225	220	205	205
10	235	230	220	220	230	250	260	240	215	210	200	195
11	260	240	220	215	225	240	270	C	205	215	205	200
12	250	225	220	220	230	260	265	230	210	200	200	190
13	245	220	210	215	235	E	250	230 _{it}	215	200	190 _{it}	200
14	230	220	215	210	240	L	250	225	215	205	195	190 _{it}
15	240	220	220	220	215	240	250	230	215	200 _{it}	200	190
16	260	235	220	220	220	260	250	220	205	205	200	200
17	265	250	220	220	215	240	250	230	210	200	200	200
18	260	260	230	210	220	250	250	230	220	200	200	180
19	230	220	225	230	245	255	260	230	215	200	195	195
20	240	240	240	250	250	240	260	235	215	200	200	195
21	240	230	225	220	260	275	260	230	210	195	200	190
22	230	220	210	220	220	E	240	210 _{it}	200	185	180	190
23	240	230	200	220	L	E	240	220	205	200	185	180
24	275	245	220	220	E	E	255	230	200	195	200	180
25	250	245	230	225	240	E	240	220	210	200	195	200
26	260	240	220	230	L	A	250	220	200	200	195	190
27	270	240	230	230	240	245	260	230	220	200	200	200
28	240	235	225	230	235	L	250	225 _{it}	200	190 _{it}	200	200
29	250	260	F	250 _{it}	230	240	250	230	200	210	200	190 _{it}
30	300	300	260	240	230	230	240	220	220	200	190	200
31	F	245	240	240	230	230	260	240	220	200	195	200
Count	29	30	29	29	30	30	31	30	31	31	31	31
Median	250	240	220	220	230	250	255	230	210	200	200	190
Mean	250	240	225	225	230	240	255	225	210	200	195	190

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
 Unit : Km.
 Month March, 1963

TABLE 53
 Ionospheric Data
 75°E Mean Time

Latitude 10·2° N
 Longitude 77 5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
190	180 _{it}	190 _{it}	190	205	240	255	300	280	250	280	240	1
190	185 _{it}	190	205	A	255	260	280	270	255	240	260	2
200	195	200	200	200 _{it}	200 _{it}	260	280	300	260	260	260	3
200	200	190	215	215	240	245	280	330	280	260	260	4
185	A	195	200	205	220	245	250	270	260	220	C	5
180	180	195	200	215	240	260	280	280	255	225	240	6
185	180	A	205	205	230	255	310	F	F	260 _{UF}	260 _{UF}	7
180 _{it}	190	200	195	200	240	260	260	250	240	240	270	8
200	195	180 _{it}	195	205	240	265	280	240	230	245	240	9
195	200	200	200	210	A	260	280	280	270	220	250	10
195	190 _{it}	200 _{it}	200 _{it}	220	245	260	295	330	280	260	250	11
200	200	205	200	230	280 _{it} A	260	315	310	260	240	245	12
200	200	195	190	225	245	270	300	290	260	260	240	13
180	180 _{it}	190	210	195	225	260	325	390	320 _{UF}	270	240	14
200	190	180 _{it}	195	200	235	250	280	280	270	C	250	15
200	185	195	195	200	240	260	290	280	280	240	250	16
200	200	185	180	C	C	260	300	300	300	240	230	17
180	200	A	200	215	235	260	320	350	260	260	230	18
180	185	205	195	250	240	260	250	245	260	245	230	19
200	195	200	215	A	A	260	275	280	270	240	225	20
190	200	200	200	220	215	255	265	275	275	270	240	21
180	185	200	180	205	230	260	340	300 _F	F	F	220	22
180	185	185	190	220	240	260	275	310	300	260	245	23
190	180	A	200	220	235	260	280	240 _F	240	220	230	24
210	200	200	200	210	260	260	C	C	240 _F	240	230	25
185	170 _{it}	C	190	A	240	260	320	F	F	F	F	26
195	195	200	A	A	235	265	320	325	F	F	F	27
200	195	195	185 _{it}	A	A	270	C	C	F	F	240	28
195	190	200	190 _{it}	210	A	260	290	300	F	240 _{UF}	260	29
205	210	200	200	205	240	270	310	320	F	F	F	30
190	210	200	210	225	240	270	320	320	270	230	240	31
31	30	27	30	25	26	31	29	27	24	25	27	Count
195	190	200	200	210	240	260	290	290	260	240	240	Median
190	190	195	200	210	240	260	290	295	265	245	245	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month March, 1963

TABLE 53 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	235	225	215	210	225	E	230	215	200	190	195	190
2	255	250	225	215	235	E	240	215	195	195	185	195
3	240	240	220	225	225	260	240	220	220	200	200	205
4	245	240	220	220	220	260	260	230	200 _{II}	195	200	190
5	240	220	205	205	210	220	220 _H	200 _{II}	190	180	180	180
6	C	C	C	C	250	280	240	210	205	200	200	180
7	260	255	225	230	230	235	240	220	200	195	195	190
8	220	200	220	E	E	E	240	220 _{II}	200	205	200	180
9	260	230	230	235	240	235	250	200 _H	225	215	200	200
10	230	220	220	220	240	E	240	230	205 _H	200	200	180
11	245	225	220	230	245	270	250	C	200	210	200	200
12	240	220	225	220	235	E	240	220	205	200	190	200
13	230	210	210	220	250	430 _s	230	220	215	200	200	200
14	220	220	215	230	E	E	235	220	215	200	200	180
15	235	220	215	210	220	E	240	225	210	200	200	185
16	245	220	220	220	240	E	235	210	200	200	190	195
17	260	230	210	220	235	260	235	220	210	190	200	200
18	260	240	220	220	240	255	240	220	200	200	195	180
19	230	230	220	230	255	260	230	220	205	200	190	200
20	235	240	240	240	240	250	240	215	210	200	200	200
21	240	230	220	240	260	290	245	220	200	195	200	180
22	230	220	215	220	230	E	230	200	180 _{II}	180	185	180
23	230	210	200	220	E	E	220	210	200	185	180	175
24	265	225	220	230	E	E	240	220	190 _H	190	200	190
25	250	240	230	240	250	340	230	210	210	200	200	200
26	260	230	220	240	E	340	240	220	200	220	180	190
27	260	230	230	230	250	255	240	225	200	200	195	200
28	240	225	230	230	E	E	240	200 _H	190 _{II}	210	200	200
29	250	260	F	240	245	340	210	220	200	200	200	200
30	305	290	250	230	230	E	230	220	200	190	200	200
31	260	240	235	240	230	240	245	220	205	205	200	200
Count	30	30	29	30	31	31	31	30	31	31	31	31
Median	240	230	220	230	240	340	240	220	200	200	200	195
Mean	245	230	220	225	235	280	235	215	205	200	195	190

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic $h'F$
Unit . Km.
Month March, 1963

TABLE 53 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
190	190	180	200	215	250	275	300	260	235	230	245	1
185	195	205	225	225	255	265	180	255	245	245	260	2
200	200	200	200 _{HF}	200	250	270	300 _{UF}	260 _{UF}	270	260	260	3
190	195	200	215	200 _{HF}	250	260	300	355	270	255	260	4
195	200	190	200	215	240	250	260	270	240	C	C	5
200	200	215	200 _{HF}	230	240	280	300	280	240	230	260	6
190	200	200	210	220	240	280	300 _{HF}	370 _{UF}	270 _{UF}	265 _{UF}	240	7
195	185	200	210	220	250	270	260	250	250	250	280	8
190 _{HF}	180 _{HF}	200	215	205 _{HF}	250	270	265	240	235	240	240	9
200	200	195 _{HF}	200	A	245	270	280	270	240	220	255	10
200	200	195 _{HF}	215	230	255	270	315	310	265	260	260	11
195	195	200	200	255 _{HF} A	270 _{HF} A	280	340	295	250	240	250	12
195	195	190	200	240	260	280	295	270	265	255	235	13
175	180 _{HF}	185	195	220	240	290	380	350 _{UF}	F	260	240	14
200	190	195	205	230	250	270	280	270	260	250	260	15
180	190	C	200	235	250	280	280	310	260	240	260	16
190	195	180	C	C	C	280	320	315	270	240	255	17
200	200	A	200	240	250	290	355	300	290	240	230	18
195	200	200	230	240	260	250	345	250	255	240	230	19
195	200	190	260	A	A	265	380	275	260	230	235	20
190	180	200	A	255	240	255	270	260	280	260	230	21
180	200	A	210	220	240	280	F	F	F	225	220	22
190	180	185	190 _{HF}	235	260	260	280	300	275	240	255	23
180	180	A	210	230	260	275	245 _F	240 _F	230	220	235	24
200	180	195	200	230	260	C	C	F	220	220	240	25
175	170 _{HF}	C	220	230	240	275	F	F	F	F	F	26
200	200	200	A	215	250	285	320	F	F	250 _{UF}	240	27
200	190 _{HF}	190	220	A	A	300	C	F	F	F	250	28
195	200	195	200	240 _{HF} A	260	270	300	305	290 _{UF}	F	290	29
200	200	200	200	230	270	290	320	F	F	F	F	30
190	200	200	220	230	250	300	330	270	270	240	250	31
31	31	26	28	27	28	30	27	25	25	26	28	Count
195	195	200	200	230	250	275	300	270	260	240	250	Median
190	195	195	210	225	250	275	295	285	255	240	250	Mean

Sweep 1 0 Mc to 25 0 Mc to 27 seconds

Characteristic · h'E
Unit · Km.
Month March, 1963.

TABLE 54
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77·5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								100	A	A	A	A
2								115	110	A	A	A
3								115	A	A	A	A
4								A	A	A	A	A
5								A	A	A	A	A
6								A	A	A	A	A
7								110	A	A	A	A
8								A	A	A	A	A
9								A	110	A	A	A
10								A	A	A	A	A
11								C	A	A	A	A
12								115	A	A	A	A
13								120	A	A	A	A
14								110	A	A	A	A
15								110	A	A	A	A
16								120	A	A	A	A
17								120	A	A	A	A
18								120	A	A	A	A
19								A	A	A	A	A
20								A	A	A	A	A
21								120	A	A	A	A
22								A	A	A	A	A
23								105	A	A	A	A
24								115	A	A	A	A
25								A	A	A	A	A
26								110	A	A	A	A
27								115	A	A	A	A
28								100	A	A	A	A
29								120	110	A	A	A
30								115	A	A	A	A
31								125	115	A	A	A
Count								20	4			
Median								115				
Mean								115				

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds

Characteristic h'E
 Unit Km
 Month March, 1963

TABLE 54
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	A	\	110	120							1
A	A	A	\	110	115							2
A	\	A	\	\	A							3
A	\	A	\	\	A							4
A	\	100	100	\	120							5
A	A	115	120	120	A							6
A	A	A	115	110	120							7
A	A	110	A	A	A							8
A	A	A	A	110	A							9
A	A	A	A	A	A							10
A	A	A	110	A								11
A	A	A	A	A								12
A	A	A	A	A	A							13
A	A	A	A	A	A							14
A	A	A	A	115	120							15
A	A	A	A	A	A							16
A	A	A	A	A	C							17
A	A	A	A	A	A							18
A	A	A	\	A								19
A	A	A	\	A	A							20
A	A	A	A	A								21
A	A	A	A	A	115							22
A	A	A	A	A	A							23
A	A	A	A	A	120							24
A	A	A	A	A	A							25
A	A	C	A	A	A							26
A	A	A	A	A	A							27
A	A	A	A	A	A							28
A	A	A	A	A	A							29
A	A	A	A	A	A		A					30
A	A	A	A	A								31
												Count
												Median
												Mean

Sweep 10 Mc to 250 Mc in 27 seconds

Characteristic h'E
Unit Km
Month March, 1963

TABLE 54 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							120	105	A	A	A	A
2							130	115	A	A	A	A
3							120	A	A	A	A	A
4							A	A	A	A	A	A
5							100	A	A	A	A	A
6							A	A	A	A	A	A
7							125H	A	A	A	A	A
8							120	110	A	A	A	A
9							A	A	A	A	A	A
10							120H	A	A	A	A	A
11							135	C	A	A	A	A
12							120	105	A	A	A	A
13							120	A	A	A	A	A
14							120	110	A	A	A	A
15							130	110	A	A	A	A
16							130	A	A	A	A	A
17							130	110	A	A	A	A
18							120	A	A	A	A	A
19							A	A	A	A	A	A
20							135	A	A	A	A	A
21							130	115	A	A	A	A
22							A	A	A	A	A	A
23							115	A	A	A	A	A
24							A	115	A	A	A	A
25							120	A	A	A	A	A
26							115	A	A	A	A	A
27							120	A	A	A	A	A
28							130	A	A	A	A	A
29							130	115	A	A	A	A
30							120	115	A	A	A	A
31							125	A	A	A	A	A
Count							25	11				
Median							120	110				
Mean							125	110				

Sweep 10 Mc to 250 Mc in 27 seconds

Characteristic h'E
Unit Km
Month March, 1963

TABLE 54 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	A	115								1
A	A	A	110	110								2
A	A	A	A	A								3
A	A	A	A	A								4
A	100	100	100	110	125							5
A	A	110	120	120								6
A	A	115	110	110								7
A	110	A	A	A								8
A	A	A	110	A	110							9
A	A	A	115	A								10
A	A	A	A	120								11
A	A	A	A	A								12
A	A	A	A	A								13
A	A	A	A	A	A							14
A	A	A	A	115								15
A	A	C'	A	A								16
A	A	A	C'	C'								17
A	A	A	A	A								18
A	A	A	A	135								19
A	A	A	A	A								20
A	A	A	A	A								21
A	A	A	A	110								22
A	A	A	A	A	A							23
A	A	A	A	120								24
A	A	A	A	A								25
A	A	C'	A	A								26
A	A	A	A	A	A							27
A	A	A	A	A	A							28
A	A	A	A	A	A							29
A	A	A	A	A	A							30
A	A	A	A	A								31
	2	3	6	10	2							Count
			110	115								Median
			110	115								Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'Es
 Unit Km
 Month March, 1963

TABLE 55
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	110			100				G	100	100	100	100
2								G	100	100	100	100
3								G	100	100	100	100
4								100	100	100	100	100
5								100	100	100	100	100
6								105	100	100	100	100
7								G	100	100	100	100
8								100	100	100	100	100
9								110	100	100	100	100
10								105	100	100	100	100
11								C	100	100	100	100
12								G	100	100	100	100
13								G	100	100	100	100
14								G	100	100	100	100
15								G	100	100	100	100
16								G	100	100	100	100
17								G	100	100	100	100
18	110	110						G	100	100	100	100
19	120	110						120	100	100	100	100
20								120	100	100	100	100
21					110	115		115	100	100	100	100
22								100	100	100	100	100
23	100							G	100	100	100	100
24								G	100	100	100	100
25								100	100	100	100	100
26						130		G	100	100	100	100
27								110	100	100	100	100
28	115							100	100	100	100	100
29	115							G	100	100	100	100
30		110		120				G	100	100	100	100
31								100	100	110	100	100
Count	6	3		2	1	2	.	14	31	31	31	31
Median	110							100	100	100	100	100
Mean	110							105	100	100	100	100

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'Es
Unit Km
Month March, 1963

TABLE 55
Ionospheric Data
75°E Mean June

Latitude 10.2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	100	100	100	G	100	140					1
100	100	100	100	100	105	115		110				2
100	100	100	100	100	100							3
100	100	100	100	100	100						100	4
100	100	G	G	G	G							5
100	100	G	G	G	110			115				6
100	100	100	G	G	G							7
100	100	G	100	100	100							8
100	100	100	100	G	100							9
100	100	100	100	100	110			110	100			10
100	100	100	100	100	105					135		11
100	100	100	100	100	100	100			90			12
100	100	100	100	100	100	100				130		13
100	100	100	100	110	100	110				100	100	14
100	100	100	100	100	100							15
100	100	100	100	100	100						130	16
100	100	100	100	C	100	100						17
100	100	100	100	100	100	100						18
100	100	100	100	140	100							19
100	100	100	100	100	100	110		100	100			20
100	100	100	100	100	100							21
100	100	100	100	100	G							22
100	100	100	100	100	100							23
100	100	100	100	G	G					110		24
100	100	100	100	G	100							25
100	100	C	100	100	100							26
100	100	100	100	100	100							27
100	100	100	100	100	100	100			100	120	120	28
100	100	100	100	100	100	100						29
100	100	100	100	100	100							30
100	120	100	100	120	120					130		31
31	31	27	28	24	25	9	1	4	4	5	5	Count
100	100	100	100	100	100	100				130	110	Median
100	100	100	100	100	100	105				125	110	Mean

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds

Characteristic h'Es
Unit Km
Month March, 1963

TABLE 55 (Contd)
Ionospheric Data
75° E Mean Time

Latitude 10 2₀ N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	110						G	G	100	100	100	100
2							G	100	100	100	100	100
3							G	100	100	100	100	100
4							100	100	100	100	100	100
5							G	100	100	100	100	100
6	C	C	C	C			120	100	100	100	100	100
7							100	100	100	100	100	100
8							G	100	100	100	100	100
9								110	100	100	100	100
10							G	100	100	100	100	100
11							G	C	100	100	100	100
12							G	100	100	100	100	100
13							G	100	100	100	100	100
14							G	G	100	100	100	100
15							G	100	100	100	100	100
16							140	100	100	100	100	100
17							G	100	100	100	100	100
18	110	110					G	100	100	100	100	100
19		110					130	100	100	100	100	100
20							G	100	100	100	100	100
21						110	G	100	100	100	100	100
22							100	100	100	100	100	100
23							G	100	100	100	100	100
24				110			G	100	100	100	100	100
25							G	100	100	100	100	100
26							G	100	100	100	100	100
27							G	100	100	100	100	100
28							G	100	100	100	100	100
29							G	100	100	100	100	100
30							G	100	100	100	100	100
31							G	100	100	100	100	100
Count	2	2		1		1	6	27	31	31	31	31
Median							110	100	100	100	100	100
Mean	--						115	100	100	100	100	100

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F₂
 Unit km
 Month March, 1963

TABLE 55 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	100	100	100	100	100		100	125				1
100	100	100	100	105	110							2
100	100	100	100	100	130							3
100	100	100	100	100						100		4
100	G	G	G	G							C	5
100	100	120	G	G				110				6
100	100	100	G	G								7
100	100	100	100	100			100					8
100	100	100	100	105	G							9
100	100	100	G	100				120	100			10
100	100	100	100	100						130		11
100	100	100	100	100	100	100						12
130	100	100	100	100	100			160				13
100	100	100	100	100	100							14
100	100	100	100	100								15
100	100	C	100	100	100							16
100	100	100	C	C	C	100						17
100	100	100	100	100	100						110	18
100	100	100	G	G	100						120	19
100	100	100	100	100	100		100	100			115	20
100	100	100	100	100	100							21
100	100	100	100	G						100		22
100	100	100	100	100	100					100		23
100	100	100	100	C								24
100	100	100	G	100	100							25
100	100	C	100	100								26
100	100	100	100	100	100							27
100	100	100	100	100	100			100		120	120	28
100	100	100	100	100	100	100				115		29
100	100	100	100	100	100							30
100	100	100	115	120								31
31	30	28	24	24	17	3	3	6	1	6	4	Count
100	100	100	100	100	100			115		110		Median
100	100	100	100	100	100			120		110		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000) I:2
 Unit .
 Month March, 1963

TABL 56
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 40	3 50	3 60	3 60	3 70	E	3 35	3 50	3 20	3 00	2 35	2 60
2	3 20	3 25	3 45	3 40	3 55	3 60	3 20	3 35 ^{US}	3 10	2 60	2 55	2 60
3	3 25	3 30	3 45	3 60 ^{US}	3 55	3 40	3 20	3 40	2 90 ^S	2 45 ^{HI}	2 70	2 65
4	3 25	3 40	3 45	3 45	3 50	3 45	3 20	3 20	2 80	2 50	2 55	2 65
5	3 20	3 30	3 45	3 55	3 60	3 65	3 20	3 15	2 60	2 70	2 65	2 60
6	C	C	C	C	C	3 45	3 15	3 15	2 65	2 40	2 60	2 60
7	3 20	3 40	3 50	3 50	3 45	3 60	3 30	3 30	2 70	2 60	2 65	2 60
8	3 45 ^{UP}	3 60	3 70	3 60	L	E	3 30	3 40	2 95	2 50	2 45	2 60
9	3 05	3 20	3 30	C	3 30	3 40	3 25	3 05	2 60	2 55	2 70	2 55
10	3 30	3 35	3 45	3 55	3 50	3 45	3 10	3 30	2 80	2 40	2 60	2 55
11	3 15	3 25	3 45	3 55	3 35	3 50	3 05	C	2 85	2 40 ^{HI}	2 55	2 50
12	3 20	3 40	3 45	3 40	3 45	3 65 ^{UR}	3 20	3 35	3 00	2 45 ^{HI}	2 55	2 70
13	3 15	3 45	3 55 ^{US}	3 55	3 55	L	3 30	3 30	3 00	2 50	2 60	2 50
14	3 30	3 45	3 55	3 55	3 50	E	3 35	3 45	3 10	2 55	2 40	2 60
15	3 15 ^{US}	F	F	3 50	3 50	3 55	3 30	3 45	3 10	2 55	2 50	2 60
16	3 05	3 45	3 60	3 55	3 60	3 65	3 30	3 40	3 10	2 65	2 55	2 60
17	3 10	3 45	F	3 40 ^F	3 60 ^F	3 40	3 30	3 40	3 15	2 75	2 50	2 70
18	F	3 30	3 30	3 65	3 55	3 45	3 20	3 20	2 90	2 45 ^{HI}	2 65	2 60
19	F	3 50 ^F	3 40	3 40	3 50	3 45	3 20	3 25	2 75	2 50	2 60	2 60
20	3 40	3 40	3 30	3 30	3 30	3 45	3 30	3 05	2 60	2 60	2 60	2 60
21	3 30	3 40	3 50	3 50	3 30	3 10	3 00	3 35	2 80	2 60	2 60	2 65
22	3 30	3 50	3 60	3 55	3 60	E	3 30	3 00	2 70	2 55	2 70	2 60
23	F	F	3 60	3 65	E	E	3 40	3 50	3 20	2 50	2 60	2 60
24	3 00	3 30	3 55	3 55	E	E	3 30	3 40	3 20	2 60	2 55	2 65
25	3 25	3 50	3 60	3 65	3 50	E	3 35	3 25	2 50 ^{HI}	2 60	2 50	2 55
26	3 20	3 45	3 60	3 60	E	A	3 30	3 40	2 90	2 45 ^{HI}	2 65	2 55
27	F	3 35 ^S	3 45	3 45	3 50 ^S	F	3 25	3 20	2 95	2 55	2 60	2 60
28	F	F	F	F	3 35 ^{UP}	E	3 30	3 30	2 95	2 35 ^{HI}	2 40	2 55
29	F	F	F	F	F	3 70 ^{UP}	3 35	3 35	3 15	2 95	2 45 ^{HI}	2 55
30	F	2 95	F	3 15	3 45	3 70	3 45	3 50	3 00	2 75	2 35 ^{HI}	2 50
31	F	3 20	S	S	3 40	3 45 ^{UP}	3 35	3 25	2 75	2 50	2 45	2 50
Count	22	26	24	26	25	20	31	30	31	31	31	31
Median	3 20	3 40	3 50	3 55	3 50	3 45	3 30	3 30	2 90	2 55	2 55	2 60
Mean	3 20	3 35	3 50	3 50	3 50	3 50	3 25	3 30	2 90	2 55	2 55	2 60

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000) F₂
 Unit
 Month March, 1963

TABLE 56
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 45	2 65	2 75	2 75	2 70	2 60	2 60	2 60	2 75	2 85	3 05	3 15 _{Us}	1
2 50	2 50	2 50	2 60	2 60	2 60	2 70	2 75	2 85	3 00	3 05	3 05	2
2 60	2 55	2 55	2 50	2 35	2 70	2 85	2 75	2 70	3 00	3 00	3 15	3
2 55	2 65	2 70	2 70	2 80	2 85	2 80	2 60	2 60 _{Us}	2 60	2 95 _F	3 05 _{Us}	4
2 70	A	2 95	3 05	3 10	3 00	2 85	2 80	2 85	3 10 _{Us}	3 30 _{Us}	C	5
2 50	2 65	2 80	2 85	3 00	2 90	2 75	2 70	2 75	3 00	3 20	3 15	6
2 60	2 65	2 80	2 95	3 05	3 00	2 80	2 60	F	F	F	F	7
2 55	2 65	2 80	3 00	3 00	3 00	2 75	2 90	3 05	3 10	3 10	3 00	8
2 50	2 55	2 50	2 70	2 75	2 70	2 55	2 60	2 80	3 05	3 10	3 30	9
2 55	2 60	2 60	2 60	2 70	2 85	2 80	2 75	2 75	2 90	3 15	3 05	10
2 55	2 55	2 60	2 65	2 75	2 70	2 60 _{Us}	2 55	2 50	2 70	2 90	3 05	11
2 65	2 60	2 60	2 70	2 80	2 80	2 75	2 60	2 65	F	3 10	3 15	12
2 50	2 55	2 60	2 65	2 80	2 85	2 75	2 60	2 70	2 90	F	3 20	13
2 50	2 60	2 60	2 55	2 65	2 80	2 80	2 45	F	F	F	F	14
2 50	2 40	2 45	2 50	2 45	2 60	2 80	2 80	2 80	2 90	C	3 00	15
2 60	2 40	2 65	2 75	2 80	2 80	2 65	2 55	2 60	2 75	2 90 _s	3 00	16
2 60	2 65	2 70	2 60	C	C	2 70	2 55	2 60	F	F	F	17
2 60	2 55	2 85	2 90	2 95	3 00	2 90	2 70	F	F	F	F	18
2 50	2 70	2 85	2 90	2 90	2 85	2 85	2 95	3 15	3 15	3 25	3 35	19
2 60	2 65	2 50	2 65	2 80	2 90	2 85	2 80	2 85	2 90	3 00	3 30	20
2 70	2 65	2 70	2 80	2 90	2 90	2 80	2 80	2 85	3 00	3 00 _{Us}	3 15 _{Us}	21
2 65	2 65	2 80	2 90	3 00	2 95	2 85	2 40 _v	F	F	F	3 40 _{Us}	22
2 60	2 75	2 80	2 70	2 70	2 70	2 80	2 70	2 60	2 80	3 00	3 15	23
2 60	2 70	2 80	2 90	3 05	3 10	3 00	2 95	3 15	3 30	3 50	3 30 _{Us}	24
2 50	2 60	2 60	2 65	2 85	3 00	3 00	C	C	3 25	3 50	3 20	25
2 50	2 50	C	2 60	2 80	3 00	3 00	2 70	F	F	F	F	26
2 60	2 60	2 60	2 65	2 90	3 05	2 95	2 70	2 70	F	F	F	27
2 55	2 50	2 55	2 60	2 75	2 85	2 75	C	C	F	F	F	28
2 50	2 55	2 55	2 70	2 80	3 00	2 90	2 95	2 80	F	F	3 20 _{UF}	29
2 50	2 55	2 60	2 65	2 65	2 50	2 45	2 60 _s	2 45	F	F	F	30
2 60	2 70	2 75	2 75	2 70	2 60	2 50	2 60	F	F	3 10	3 15	31
31	30	30	31	30	30	31	29	23	19	19	22	Count
2 55	2 65	2 60	2 70	2 80	2 85	2 80	2 70	2 75	3 00	3 10	3 15	Median
2 55	2 60	2 65	2 70	2 80	2 85	2 80	2 70	2 75	2 95	3 10	3 15	Mean

Sweep 10 Mc. to 25.0 Mc in 27 seconds

Characteristic M (3000) F2
 Unit
 Month March, 1963.

TABLE 56 (Contd)
 Ionospheric Data
 75 E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	3 45	3 60	3 55	3 65	3 70	E	3 60	3 40	3 10	2 70	2 45H	2 40
2	3 25	3 40	3 45	3 45	3 50	E	3 45	3 20	2 85	2 40H	2 55	2 65
3	3 25	3 40	3 50	3 55	3 50	3 35	3 40	3 15	2 60	2 60	2 75	2 60
4	3 35	3 45	3 50s	3 50	3 60	3 35	3 20s	3 00	2 55	2 70	2 55	2 60
5	3 20	3 40	3 60	3 60	3 65	3 65	3 40	2 75	2 75	2 60	2 65	2 60
6	C	C	C	C	3 45	3 35	3 25U	3 30	2 45	2 50	2 65	2 65
7	3 25	3 50	3 50	3 55Us	3 55	3 60	3 45Us	3 05	2 40	2 50	2 60	2 60
8	3 55	3 75	3 70	E	E	L	3 45	3 10	2 70	2 65	2 50	2 60
9	3 10	3 35	3 35	3 35	3 35	3 10	3 25	2 80	2 40	2 55	2 65	2 50
10	3 25	3 40	3 35	3 60	3 60	E	3 40	3 10	2 50	2 60	2 65	2 50
11	3 25	3 30	3 50	3 40	3 30	3 25	3 20	C	2 55	2 60	2 50	2 45
12	3 30	3 50Us	3 45	3 50	3 50	E	3 40	3 20	2 60	2 60	2 60	2 60
13	3 25	3 50	3 50	3 60	3 50	2 50	3 45	3 20	2 75	2 45H	2 60	2 50
14	3 30	3 45	3 55	3 40	E	E	3 45	3 25	2 90	2 35H	2 60	2 60
15	3 40	F	3 50	3 55	3 50	E	3 45	3 30	2 85	2 30H	2 60	2 60
16	3 35	3 50	3 60	3 50	3 70	E	3 45	3 30	2 90	2 40H	2 60	2 60
17	3 30	3 50	F	F	3 30	3 40	3 40	3 30	3 00	2 50	2 60	2 60
18	F	3 40	3 60	3 60	3 50	3 40	3 30	3 15	2 65	2 50	2 60	2 60
19	F	3 50	3 45	3 60	3 35	3 45	3 35	3 05	2 55	2 50	2 60	2 60
20	3 40	3 40	3 30	3 35	3 40	3 45	3 15	2 85	2 50	2 60	2 60	2 60
21	3 40	3 45	3 60	3 40	3 20	2 90	3 40	3 05	2 55	2 60	2 60	2 60
22	3 40	3 55	3 60	3 55	3 60	R	3 30	2 70	2 75	2 60	2 70	2 70
23	F	3 55Us	3 60	3 65	E	E	3 50	3 40	2 90	2 40	2 60	2 70
24	3 15	3 40	3 60	3 60	E	3 15Js	3 50	3 40	3 00	2 40H	2 60	2 70
25	3 40	3 60	3 60	3 50	3 50	3 20	3 50	3 00	2 60	2 50	2 50	2 55
26	3 30	3 60	3 65	3 55	E	3 30	3 50	3 20	2 50	2 65	2 60	2 50
27	F	3 40	3 45	3 50s	3 40s	3 00	3 30F	3 15	2 70	2 60	2 55	2 55
28	F	F	F	F	E	E	3 40	3 20	2 65	2 50	2 50	2 50
29	F	F	F	F	F	3 00	3 40	3 30	3 15	2 75	2 25H	2 50
30	2 85	3 10	3 10	3 45	3 50	R	3 50	3 35	2 70	2 35H	2 50	2 50
31	3 05Us	3 35	Fs	3 40	3 45	3 50UF	3 30	3 00	2 40Us	2 55	2 55	2 65
Count	24	27	26	26	24	19	31	30	31	31	31	31
Median	3 30	3 45	3 50	3 50	3 50	3 35	3 40	3 15	2 65	2 50	2 60	2 60
Mean	3 30	3 45	3 50	3 50	3 50	3 25	3 40	3 10	2 70	2 55	2 60	2 60

Sweep 10 Mc to 250 Mc in 27 sec.

Characteristic M (3000)F₂
Unit
Month March, 1963

TABLE 56 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Remarks	Date
2 50	2 70	2 75	2 75	2 65	2 60	2 60	2 65	2 85	2 95	3 20	3 10		1
2 55	2 80	2 55	2 60	2 60	2 70	2 80	2 75	2 90	3 05	3 00	3 15		2
2 50	2 55	2 55	2 50	2 50	2 80	2 80	2 70	2 85	3 00	F	3 25		3
2 55	2 60	2 70	2 80	2 80	2 80	2 70	2 65	2 50	2 80 _{Us}	2 95 _s	3 10		4
2 70	2 90	3 00	3 05	3 10	3 00	2 85	2 80	2 90	3 20 _{Us}	C	C		5
2 65	2 70	2 85	2 85	3 00	2 85	2 65	2 55	2 80	3 10	3 20	3 15		6
2 60	2 80	2 90	3 00	3 05	2 95	2 65	2 60	F	F	F	F		7
2 60	2 70	2 90	3 05	3 00	2 85	2 75	3 00	3 05	3 10	3 05	3 00		8
2 50	2 55	2 65	2 70	2 70	2 60	2 60	2 70	2 95	3 10	3 15	3 25		9
2 70	2 60	2 55	2 65	2 75	2 75	2 75	2 80	2 80	3 05	3 10	3 10		10
2 60	2 60	2 60	2 65	2 70	2 70	2 60	2 55	2 60	2 75	3 00	3 10		11
2 55	2 65	2 70	2 75	2 75	2 80	2 75	2 55 _i	F	2 90	3 15	3 15		12
2 50	2 50	2 60	2 70	2 85	2 80	2 65	2 65	2 80	2 90	3 10	3 30		13
2 50	2 60	2 60	2 65	2 70	2 85	2 65	2 30 _{UF}	F	F	F	F		14
2 50	2 50	2 50	2 45	2 50	2 70	2 80	2 75	2 85	3 00	3 00	3 00		15
2 60	2 65	C	2 80	2 85	2 75	2 65	2 50	2 70	F	3 00	3 10		16
2 65	2 70	2 65	C	C	C	2 65	2 55	2 55 _{UL}	F	F	3 15		17
2 70	2 80	2 85	2 95	3 00	3 00	2 60	2 60	F	F	F	F		18
2 60	2 75	2 90	2 90	2 90	2 85	2 85	3 15	3 20	3 20	3 30	3 40		19
2 60	2 50	2 60	2 75	2 85	2 85	2 80	2 80	2 90	2 90	3 25	3 25 _{Js}		20
2 70	2 70	2 75	2 80	2 90	2 85	2 80	2 75	2 80	2 95	3 00	3 20		21
2 60	2 70	2 80	2 90	3 00	2 90 _{Us}	2 60	F	F	F	F	F		22
2 60	2 80	2 70	2 70	2 70	2 80	2 80	2 60	2 70	2 90	3 10	3 00		23
2 70	2 70	2 80	3 00	3 10	3 10	3 00	3 10	3 20	3 40	3 50	3 30		24
2 60	2 65	2 65	2 75	3 00	3 05	C	C	3 10 _i	3 40	3 40	3 20		25
2 55	2 60	C	2 75	2 90	3 10	2 90	F	F	F	F	F _s		26
2 70	2 60	2 60	2 75	3 00	3 05 _{Us}	2 85	2 65 _{Us}	F	F	F	F		27
2 50	2 45	2 60	2 80	2 80	2 80	2 70	C	F	F	F	F		28
2 55	2 50	2 60	2 75	2 90	2 90	2 90	2 85	2 80	F	F	F		29
2 55	2 55	2 60	2 65	2 55	2 50	2 50	2 60 _s	2 45 _s	F	F	F		30
2 70	2 70	2 70	2 75	2 65	2 50	2 50	2 65	F	F	3 20	3 15		31
31	31	29	30	30	30	30	27	22	19	19	21		Count
2 60	2 65	2 65	2 75	2 85	2 80	2 75	2 65	2 80	3 00	3 10	3 15		Median
2 60	2 65	2 70	2 80	2 80	2 80	2 75	2 70	2 85	3 05	3 15	3 15		Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic foF2
Unit Mc
Month April, 1963

TABLE 57
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	6.2	5.6	5.1	3.0	1.9	E	4.1	6.1	7.6	8.4	8.0	7.6
2	5.1	3.0	2.8	2.3	1.8	E	4.2	6.6	7.7	7.8	7.0	7.0
3	F	5.4	4.9	4.2	F	3.2	4.5	6.5	7.6	8.0	8.0	7.4
4	F	F	F	F	F	L	4.2	6.5	7.4	6.8	6.5	7.0
5	F	F	F	F	F	3.4 _r	4.6	6.9	8.0	8.6	8.4	8.2
6	F	6.8 _{uF}	6.6 _{uF}	5.6 _{u1}	F	F	4.8	7.6	8.7	8.9 _{u1}	7.9	7.9
7	6.2 _{uF}	F	5.7 _{u1}	4.2 _{u1}	2.9	L	4.5	6.9	8.1	C	C	C
8	8.0	7.5 _{u5}	6.3	5.3	3.3	1.7	4.6	7.2	8.1	7.5	7.2	7.6
9	F	F	F	F	F	2.4 _{uF}	4.8	7.2	8.6	9.0	8.0 _{u1}	7.8
10	7.0 _F	6.9	5.9 _{u5}	5.1	4.1	2.6	4.9	6.7	7.7	8.4	7.5	7.4
11	6.9	4.9	4.3	4.4	4.0	2.1	4.6	6.8	8.2	8.6	7.4	7.1
12	4.3	3.9	3.5	3.3	2.9	L	4.6	7.1	7.8	6.8	6.4	6.4
13	6.5	5.8	5.4	4.9	4.8	F	5.6 _{uF}	7.3	8.5	8.4	7.4	7.6
14	5.8	5.0	4.6 _{u5}	4.6	4.2	3.4	5.4	6.9	8.4	9.3	9.6	8.5
15	F	F	5.6	F	4.8	3.2 _{uF}	5.0	7.0	8.1	9.3	9.1	8.3
16	6.9	6.0	5.1	4.5	4.4	2.7	4.9	7.5	8.6	7.5 _{u1}	7.4	7.8
17	4.0	3.2	2.5	2.1	L	E	4.8	6.8	8.2	8.7	7.8	7.6
18	4.9	4.8	4.7	4.4	3.0	E	4.9	6.9	8.2	8.6	8.7 _{u1}	8.3
19	6.3	4.8	4.2	4.5	4.5	3.1	4.9	7.1	8.2	7.9 _{u1}	7.0	7.0
20	7.3	6.0	5.3	5.0	5.0	3.2	5.2	7.7	8.5	7.9	7.2	7.3
21	4.2	3.2	2.5	2.2	E	E	4.6	7.2	7.6	C	C	C
22	5.8	5.4	4.6	3.5	2.3	E	4.8	7.0	8.1	7.9	7.2	7.3
23	5.2	3.1	2.5	2.2	2.3	2.3	5.0	6.8	7.1	6.4	6.9	7.1
24	4.4	3.6	3.0	2.8	2.1	F	C	7.2	8.6	8.6	7.6	7.3
25	C	C	C	C	C	C	C	6.6	7.6	7.5	6.0	6.5
26	3.6	F	F	F	2.9	1.9	5.0	7.0	7.2	6.0	6.0	6.3
27	4.2	F	F	2.7	2.2 _{u5}	E	4.9	6.6	7.0	6.5	6.4	6.8
28	F	2.9	2.5	2.4	2.2	1.7	5.0	7.6	7.9	7.6 _{u1}	7.0	7.4
29	3.9	2.6	2.1	2.0	C	1.7	5.1	6.9	8.2	7.6	6.6	6.8
30	E	E	A	A	E	L	4.8	6.5	7.9	8.4	8.0 _{u1}	7.0
Count	22	22	23	23	23	27	28	30	30	28	28	28
Median	5.5	4.8	4.6	4.2	2.9	1.7	4.8	6.9	8.1	8.0	7.4	7.4
Mean	5.6	4.8	4.3	3.7	3.3	2.6	4.8	7.0	8.0	8.0	7.4	7.4

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF2
Unit Mc
Month April 1963

TABLE 57
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
8.2	8.5	9.1	10.1	10.3	10.5	9.8	9.1	8.7	8.6	8.3	6.9	1
7.6	7.5	8.0	8.5	9.0	9.2	9.0	8.0 _{uf}	F	F	F	F	2
7.4	7.6	8.0	8.6	9.4	9.6	9.6	8.7	8.5 _t	F	7.4 _f	F	3
7.4	7.4	7.8	8.6	9.6	10.2	9.2	8.4	F	F	F	F	4
8.5	9.2	9.2	9.4	9.0	8.6	8.0	7.3	F	F	F	F	5
8.7	8.5	8.7	9.6	10.6	10.0	10.0	9.7	8.9	9.1	F	F	6
C	8.0	8.3	9.0	9.5	9.0	8.2	7.4	7.0 _t	6.8	7.0	7.9	7
8.2	8.5	9.1	9.7	9.9	9.7	8.9	7.0 _{us}	F	F	F	F	8
8.0	8.1	8.8	9.6	9.9	9.8	9.8	9.1	8.7	F	F	F	9
7.2	7.2	7.4	8.1	8.8	9.1	9.5	8.8	7.8	F	8.0	8.4	10
7.1	7.1	7.8	C	9.0	9.8	9.6 _{us}	C	C	C	F	5.1	11
6.5	6.9	C	7.6	8.7	9.3	9.1	8.5	F	F	F	F	12
7.9	8.6	9.1	9.5	10.0	10.1	10.1	9.2	8.4	7.6 _{uf}	6.9	6.4	13
8.5	8.5	9.1	10.1	10.4	10.8	11.0	10.1	9.0	F	F	F	14
8.4	8.1	8.6	9.3	10.0	10.7	10.2	9.6	8.4	F	8.3	8.3	15
8.0	8.6	8.9	9.8	10.9	11.0	10.1	8.6	7.2 _{us}	6.2	5.3	4.5	16
7.8	7.8	8.2	9.1	10.1	10.2	9.9	9.2	8.6	7.3	6.1	5.5 _{us}	17
8.8	9.2	9.8	10.7	11.4	11.4	10.5	9.2 _{us}	F	F	6.8	6.7 _{us}	18
7.8	8.5	9.0	9.8	10.1	9.8	9.5	9.1	9.5	9.7	9.0	8.6	19
7.9	8.3	8.4	8.7	10.0	10.7	10.8	C	7.9 _{us}	7.9	F	5.1 _{us}	20
C	C	C	C	C	C	C	C	C	C	7.2	5.8	21
7.8	8.5	9.3	9.6	10.0	10.8	10.6	9.2	7.7	6.7	5.8	5.6	22
7.8	8.6	10.2	11.2	C	11.0	10.4	9.4	7.8	7.1	6.6	5.6	23
7.1	7.1	8.3	9.0	9.4	9.8	10.0	9.2	8.5	C	C	C	24
7.0	7.1	8.2	8.8	9.3	9.2	10.0	8.8	7.6	6.8	5.6	4.6	25
6.6	6.8	7.0	7.7	8.6	9.3	9.7	8.0	6.7	6.0 _t	5.2 _{us}	4.3	26
7.2	7.3	7.5	8.4	9.2	10.1	10.5	7.6	5.2	4.3	3.9	3.8 _f	27
7.7	8.0	8.5	9.0	9.9	10.8	10.5	9.4	8.0	6.9	5.4	C	28
7.2	7.6	7.5	8.0	9.0	9.8	11.0	9.8	7.0	4.8	3.6	2.4	29
7.1	C	C	7.6	8.0	9.3	9.6	8.3	7.7	7.2	5.8	5.0	30
28	28	27	25	28	29	29	27	22	16	19	19	Count
7.8	8.0	8.4	9.0	9.8	9.8	9.9	9.1	8.0	7.0	6.6	5.6	Median
7.7	8.0	8.5	9.1	9.6	10.0	9.8	8.8	7.9	7.1	6.4	5.8	Mean

Sweep 1.0 Mc. 25.0 Mc. to in 27 seconds

Characteristic foF2
Unit Mc
Month April, 1963

TABLE 57 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

Date	0030	0130	0230	0330	0430	0530	0630	0740	0830	0930	1030	1130
1	5.9	5.3	4.4	2.4	E	2.0	5.2	7.0	8.0	8.4	7.6	8.0
2	3.7	2.8	2.6	2.2	E	2.0	5.4	7.3	8.0	7.7	6.9	7.4
3	5.7	5.0	4.5	F	4.1	2.7	6.0	7.0	8.0	8.3	7.4	7.4
4	F	F	F	F	2.1	2.1	5.7	6.9	7.3 ^U	6.4	6.6	7.1
5	F	F	F	F	4.0 ^U	3.2	6.0	7.6	8.3	8.6	8.3 ^H	8.3
6	7.4 ^U	7.0 ^E	6.3 ^I	F	2.7 ^U	F	6.5	8.4	8.9	9.0 ^U	8.0	8.2
7	F	5.6 ^F	F	3.5	2.2	2.5	6.1	7.6	C	C	C	C
8	7.9	7.1 ^S	6.2	4.2	2.1	2.5	6.2	7.8	8.1	7.3	7.2	7.9
9	F	F	F	F	F	2.6	6.2	7.8	9.1	8.5 ^H	7.6	7.9
10	7.2	F	5.3	4.6	3.3	2.9	6.3	7.2	8.3	8.1	7.5	7.3
11	6.1 ^U	4.6	4.3	4.4	3.2	2.7	5.8	7.6	8.5	8.2 ^U	7.3	7.0
12	4.1	3.6	3.5	3.2	2.1	2.7	6.0	7.5	7.4	6.6	6.4	6.6
13	6.1	5.7	5.2	4.8	4.6 ^I	4.7	6.6	8.1	8.6	7.8	7.4	7.7
14	S	4.8	4.5	4.4	3.9	3.4	6.4	7.4	9.0	9.8	9.0 ^U	8.4
15	F	5.6 ^r	F	F	4.1	3.2	6.1	7.6	8.7	9.4	8.5	8.4
16	6.6	5.5 ^U	4.8	4.5	3.6	2.9	6.4	8.3	8.1	7.1	7.5	7.8
17	3.5	2.7 ^U	2.3	1.9 ^R	E	2.6	5.6	7.5	8.5	8.3 ^U	7.7	7.6
18	4.8	4.8	4.6	3.7	2.2	2.8	6.0	7.6	8.5	8.8	8.6 ^U	8.5
19	5.5	4.5	4.4	4.7	3.8	3.1	6.4	7.7	8.3	7.1	6.9	7.3
20	6.8	5.4 ^U	4.9	5.1	4.0	3.3	6.5	8.2	8.3	7.2	7.1	7.7
21	3.6	2.8	2.4	1.9	E	2.7	6.2	7.7	C	C	C	C
22	5.6	5.0	4.2	2.8	1.6	2.8	6.0	7.6	8.1	7.8	C	7.4
23	4.2	2.8	2.4	2.2	2.3	3.1	6.2	7.4	6.6	6.6	7.0	7.2
24	4.1	A	2.9	2.5	1.7	3.0	6.2	8.2	8.5	8.5 ^U	7.4	7.3
25	C	C	C	C	C	C	C	7.2	7.8	6.3	6.3	6.8
26	F	F	F	F	2.8	3.0	6.4	7.1	6.7 ^U	6.0	6.1	6.5
27	3.8	F	2.9	2.4	E	3.0	6.0	6.7	7.2 ^H	6.4	6.6	7.0
28	3.2 ^F	2.7	2.5	2.4	2.0	3.0	6.3	7.8	7.8	7.0	7.0	7.6
29	3.3	2.4	2.0	1.9	1.8	C	6.0	7.4	7.9	7.0	6.6	7.0
30	E	F	A	A	E	3.0	6.0	7.4	8.0	8.2	7.2	7.0
Count	22	22	22	21	28	27	29	30	28	28	27	28
Median	5.2	4.8	4.4	3.2	2.2	2.9	6.1	7.6	8.1	7.8	7.4	7.4
Mean	5.2	4.6	4.0	3.3	2.9	2.9	6.1	7.6	8.1	7.7	7.3	7.5

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_oF2
 Unit Mc
 Month April, 1963

TABLE 57 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
8.4	8.7	9.8	10.3	10.8	10.0	9.4	8.7	8.6	8.5	7.5	6.2 _{us}	1
7.6	7.7	8.2	8.8	9.1	9.3	8.6	F	F	F	F	F	2
7.4	7.9	8.4	9.0	9.4	9.6	9.2	8.4	F	F	F	F	3
7.6	7.6	8.1	9.0	10.0	9.6	8.9	7.8	F	F	F	F	4
8.8	9.1	9.3	9.0	9.0	8.3	7.8	1	F	F	F	F	5
8.5	8.1	9.0	10.2	10.3	10.1	9.9	9.3	8.8	F	8.9 _{uF}	F	6
C	8.1	8.4	9.5	9.4	8.5	7.8	7.0	7.0 _{us}	7.0	7.2	8.0	7
8.4	8.7	9.4	9.8	9.6	9.2	8.4	6.8 _{uF}	F	F	F	F	8
8.2	8.4	9.3	9.5	9.9	9.7	9.3	8.8	8.5 _{uF}	F	F	7.1 _{Fu}	9
7.3	7.3	7.8	8.4	9.0	9.5	9.2	8.1	7.6 _{uF}	7.9 _{uF}	8.4	7.9	10
7.0	7.6	C	8.8	9.4	9.8 _{uF}	C	C	C	F	5.3 _{us}	4.6	11
5.7	7.2	7.5	8.2	9.0	9.4	8.7	8.0	F	F	F	F	12
8.2	8.8	9.2	10.0	10.1	10.1	9.8	9.0	8.1	7.1	6.4 _{us}	6.2 _{us}	13
8.5	9.1	9.6	10.3	10.8	10.8	10.9	9.5	F	F	F	F	14
8.4	8.5	8.9	9.6	10.2	10.4	10.2	9.0	F	F	8.4	7.3	15
8.2	8.8	9.1	10.1	10.9	10.7	9.8	7.9	6.8	5.8	4.9	4.3	16
7.6	8.0	8.6	9.8	10.3	10.0 _{uF}	9.5	9.1	8.0	6.5	5.7	5.2 _{us}	17
9.2	9.6	10.1	11.0	11.3	10.8	10.2	8.8	F	7.3	6.5	6.4 _{us}	18
8.0	8.6	9.4	10.1	10.2	9.5	9.5	9.0	9.7	9.2	8.6	7.8	19
8.1	8.3	8.5	9.2	10.3	10.8	10.2	8.6	7.7	F	F	4.6	20
C	C	C	C	C	C	C	C	C	F	6.3	5.7	21
8.0	9.0	9.6	9.6	C	10.8	9.9	8.2	7.3 _F	6.2	5.6	5.8	22
8.1	9.4	10.6	11.6	11.4	10.6	10.3	8.6	7.2	7.1	6.0	5.2 _F	23
7.1	7.8	8.6	9.3	9.6	10.0	9.6	8.8	C	C	C	C	24
7.1	7.8	8.4	9.0	9.2	9.9	9.8	7.9	7.2	6.3	4.8	4.3	25
6.6	6.8	7.4	8.0	9.0	9.6	9.0	7.4	6.1	5.8 _F	4.5	4.2	26
7.2	7.3	7.7	8.6	9.6	10.8	9.2	6.2	4.6	4.1	3.7	F	27
7.8	8.2	9.0	9.6	10.2	10.8	10.2	8.7	7.7	5.9	4.6	4.0	28
7.4	7.6	7.8	8.4	9.4	10.5	10.2	8.0	6.1	4.1	3.0	E	29
7.4	C	7.5	7.6	8.7	9.4	9.1	8.0	7.4 _{uF}	6.3	5.6	F	30
28	28	28	29	28	29	28	26	18	16	20	19	Count
7.9	8.2	8.8	9.5	9.8	10.0	9.4	8.5	7.5	6.4	5.8	5.7	Median
7.8	8.2	8.8	9.4	9.9	9.9	9.4	8.3	7.5	6.6	6.1	5.8	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
 Unit Mc
 Month April, 1963

TABLE 58
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	L	4.4	L	4.5
2								L	L	L	4.6	4.5
3								L	L	4.5	4.6	4.6
4								L	L	4.4	4.5	4.5
5							L	L	L	L	L	L
6								L	L	L	L	L
7								L	L	C	C	C
8								L	L	L	L	L
9								L	L	L	L	L
10								L	L	L	L	L
11								L	L	L	4.7	4.6
12								L	L	L	4.8	4.8
13								L	L	L	4.6	4.7
14								L	L	L	4.6	4.8
15								L	L	4.6	L	4.7
16								L	LH	L	LH	LH
17								L	L	L	L	4.5
18								L	L	LH	4.6	4.6
19								L	L	L	L	4.7
20								L	L	L	L	4.7
21								L	L	C	C	C
22							L	L	4.3	4.8	4.6	4.6
23							L	L	4.3	4.6	4.6	4.6
24							C	L	4.1	4.8	4.5	4.6
25								L	4.2	4.5	4.5	4.5
26							L	L	L	L	4.4	4.5
27							L	L	L	L	4.4	4.4
28							L	L	L	L	4.4	4.5
29							L	L	L	L	4.5	4.5
30							L	L	L	L	4.6	4.5
Count									4	8	17	22
Median										4.6	4.6	4.6
Mean										4.6	4.6	4.6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic 1011
 Unit Mc
 Month April, 1963

TABLE 58
 Ionospheric Data
 75°E Mean Time

Latitude 10 2 N
 Longitude 77 5 E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4 5	4 5	A	L	L								1
4 5	4 6	4 5	L	L								2
4 6	4 5	L	4 3	A	L							3
4 6	4 6	4 5	L	4 3								4
4 6	L	L	L	L	L							5
L	L	L	A	L	A							6
C	L	L	L	L								7
L	L	L	L	L	L							8
L	L	L	L	L								9
L	L	L	L	L								10
4 6	4 8	L	C	L								11
4 7	4 7	C	L	L								12
4 7	4 6	4 6	L	L								13
4 6	L	4 4	L	L								14
4 7	L	L	L	L								15
4 6	4 6	L	L	L								16
4 6	4 5	L	L	L								17
4 6	4 6	L	L	L								18
4 7	4 6	4 5	L	L								19
4 7	4 5	4 4H	LH	LH	L							20
C	C	C	C	C	C							21
4 6	A	A	4 3	4 0	L	L						22
4 5	4 7	4 6	4 2	C	L							23
4 6	4 5	4 5	4 3	L	L							24
4 5	4 5	4 4	4 4	4 2	L	L						25
4 5	4 4	L	L	L	L							26
4 5	L	L	L	L	L							27
4 5	L	L	A	L	L							28
4 6	4 5	L	L	L	L							29
4 5	C	C	L	L	L							30
24	17	9	5	3								Count
4 6	4 6	4 5	4 3									Median
4 6	4 6	4 5	4 3									Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic foF1
 Unit Mc.
 Month April, 1963

TABLE 58 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude : 10 2° N
 Longitude 77·5° E

Date	0030	0130	0230 _y	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							L	L	L	4.4	4.5	4.5
2							L	L	L	4.6	4.6	4.5
3							L	L	L	4.5	4.5	4.5
4							L	L	L	4.5	4.6	4.5
5							L	L	L	L	L	4.5
6								L	L	L	L	L
7							L	L	C	C	C	C
8							L	L	L	L	L	L
9							L	L	L	L	L	L
10							L	L	L	L	L	L
11								L	L	4.7	4.7	4.7
12							L	L	L	L	4.7	4.6
13								L	L	4.6	4.8	4.8
14								L	L	4.6	L	4.7
15								L	L	L	4.8	4.6
16							L	L	L	L	LH	L
17							L	L	L	L	4.5	4.6
18								L	L	4.7	4.5	4.7
19							L	L	L	4.6	4.6	L
20							L	L	L	L	4.6	4.6
21							L	L	C	C	C	C
22							L	L	4.6	4.6	C	4.5
23							L	4.1	4.3	4.5	4.6	4.6
24							L	4.0	L	4.6	4.5	4.5
25								4.3	4.4	4.4	4.5	4.5
26							L	L	L	L	L	4.5
27							L	L	L	L	4.4	4.5
28							L	L	L	L	L	4.5
29							L	L	L	4.4L	4.5L	4.5
30							L	L	L	L	4.5	4.5
Count								3	3	14	18	22
Median										4.6	4.6	4.5
Mean										4.6	4.6	4.6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
 Unit : Mc.
 Month April, 1963

TABLE 58 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2 N
 Longitude 77 5 E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4.5	L	4.4	L	L								1
4.6	L	4.4	L	L								2
L	4.6	4.5	4.2	L								3
4.4	4.7	4.5	4.2	L	L							4
L	L	L	L	L								5
L	L	L	A	L								6
C	L	L	I	L								7
L	L	L	L	L								8
L	L	L	L	L								9
L	L	L	L	L								10
4.6	4.7	C	I	L								11
4.8	4.7	L	I	L								12
4.7	4.6	L	L	L								13
4.8	4.8	4.4	L	L								14
4.7	L	L	L	L								15
4.6	I	L	L	L								16
4.5	L	LH	L	L								17
4.7	4.6	L	L	L								18
4.6	4.6	L	L	L								19
L	4.4	IH	I	I								20
C	C	C	C	C								21
4.5	A	4.4	4.5	C	I							22
4.6	4.8	4.4	I	I	I							23
4.5	4.6	4.3	4.4	I	I							24
4.4	4.4	4.4	4.2	I	L							25
4.5	I	I	I	I	L							26
4.5	I	I	A	A	L							27
L	I	I	I	I	I							28
4.4	L	I	I	I	I							29
4.5	C	I	A	I	I							30
20	12	9	5									Count
4.6	4.6	4.4	4.2									Median
4.6	4.6	4.4	4.3									Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month April, 1963

TABLE 59
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							1 6	2 5	A	A	A	A
2							R	2 5	A	A	A	A
3								2 3	A	A	A	A
4								2 4	A	A	A	A
5							R	2 5R	A	A	A	A
6							1 8	2 5	A	A	A	A
7								A	A	C	C	C
8								2 4	A	A	A	A
9								2 6	A	A	A	A
10								2 5	A	A	A	A
11							1 7UR	2 6	A	A	A	A
12							1 7	A	A	A	A	A
13								2 5H	A	A	A	A
14								2 3	A	A	A	A
15								2 5	A	A	A	A
16							1 7UR	A	A	A	A	A
17								2 8H	A	A	A	A
18								2 5H	A	A	A	A
19								A	A	A	A	A
20							R	A	A	A	A	A
21							1 8	A	A	C	C	C
22							A	A	A	A	A	A
23							A	A	A	A	A	A
24							C	2 4	A	A	A	A
25								2 6	A	A	A	A
26							1 9	A	A	A	A	A
27							R	A	A	A	A	A
28							R	A	A	A	A	A
29							R	2 6	A	A	A	A
30							R	2 8	A	A	A	A
Count							7	19				
Median							1 7	2 5				
Mean							1 7	2 5				

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic of
Unit Mc
Month April 1963

TABLE 59
Ionospheric Data
175 E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	A	A	B								1
A	A	A	A	3.0								2
A	A	A	A	A								3
A	A	A	3.1	2.7								4
A	A	A	A	A	A							5
A	A	A	A	A	A							6
C	A	A	A	A								7
A	A	A	A	A								8
A	A	A	A	A								9
A	A	A	A	A								10
A	A	A	A	A								11
A	A	C	A	A								12
A	A	A	A	B								13
A	A	A	A	2.7								14
A	A	A	A	A								15
A	A	A	A	A								16
A	A	R	A	R								17
A	A	R	R	A								18
A	A	3.3	A	A	R							19
A	A	A	3.1R	B	B							20
C	C	C	C	C	C							21
A	A	A	3.0	A								22
A	A	A	3.1	C								23
A	A	A	A	A	A							24
A	A	A	A	B	A							25
A	A	A	3.2R	A	A							26
A	A	A	A	A	A							27
A	A	A	A	A	A							28
A	A	A	A	R	A							29
A	C	C	A	A	A							30
I		I	G	3								Count
			3.1									Median
			3.0									Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds.

Characteristic foE
Unit Mc
Month April, 1963

TABLE 59 (Contd.)
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							2 0	2 6	A	A	A	A
2							2 3	A	A	A	A	A
3							1 9	2 8	A	A	A	A
4							2 0	A	A	A	A	A
5							2 2	2 7R	A	A	A	A
6							2 2	2 6	A	A	A	A
7							2 1H	A	C	C	C	C
8							2 1	A	A	A	A	A
9							2 2	2 7	A	A	A	A
10							2 2	A	A	A	A	A
11							2 2	2 8	A	A	A	A
12							2 0	A	A	A	A	A
13							2 0UR	2 6	A	A	A	A
14							2 0	2 8	3 0	A	A	A
15							2 0	A	3 0UA	A	A	A
16							2 1	A	A	A	A	A
17							2 1	2 9H	A	A	A	A
18							R	A	A	A	A	A
19							R	A	A	A	A	A
20							2 1R	B	A	A	A	A
21							A	A	C	C	C	C
22							A	A	A	A	C	A
23							A	A	A	A	A	A
24							2 0	A	A	A	A	A
25							A	A	A	A	A	A
26							2 2	A	A	A	A	A
27							2 1	A	A	A	A	A
28							2 3	A	A	A	A	A
29							R	A	A	A	A	A
30							R	A	A	A	A	A
Count							2 2	9	2			
Median							2 1	2 7				
Mean							2 1	2 7				

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month April, 1963

TABLE 59 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	B	2.6								1
A	A	A	3.1	2.6								2
A	A	A	A	A								3
A	A	A	3.1	R								4
A	A	A	A	A	A							5
A	A	A	A	A								6
C	A	A	A	A								7
A	A	A	A	A								8
A	A	A	2.9	2.6								9
A	A	A	A	A								10
A	A	C	3.0	A								11
A	A	A	3.0									12
A	A	A	2.9 ^{UR}	B								13
A	A	A	2.9	2.5								14
A	A	A	A	B								15
A	A	R	A									16
A	A	A	2.9									17
A	A	A	A	A								18
A	A	3.1	A	A								19
A	A	A	B	A								20
A	A	A	B	B								21
C	C	C	C	C								22
A	A	3.2	2.7	C								23
A	A	3.2	2.8	A								24
A	A	A	A	A								25
A	A	3.2	A	A								26
A	A	A	A	A	A							27
A	A	A	A	A								28
A	A	A	A	R	A							29
A	C	A	A	A	A							30

4	10	4										Count
	2.9											Median
	2.9											Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
Unit Mc
Month April, 1963

TABLE 60
Ionospheric Data
75°E Mean Time

Latitude 10 ° N
Longitude 77 ° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							G	G	7.0	9.2	10.5	10.8
2	2.2		2.6				G	G	9.0	11.6	11.8	10.8
3								2.8	9.0	10.8	11.6	11.0
4	2.8	2.4						6.6	9.2	10.4	10.8	11.2
5		2.3					G	G	5.6	9.2	11.0	11.0
6	8.6	4.6	2.6				G	G	10.8	9.6	11.6	11.6
7		3.4						5.4	9.6	C	C	C
8								5.0	9.6	11.6	10.6	11.6
9								G	8.8	10.8	11.8	11.6
10	4.8	4.0						6.0US	10.6	11.0	12.2	12.0
11	3.2						G	G	9.2	11.0	11.2	11.4
12							G	5.8	10.2	10.7	10.8	11.6
13								G	8.5	10.8	11.6	11.7
14	2.8							2.6	8.0	11.0	11.4	11.8
15								G	7.5	10.0	11.0	10.8
16							G	8.0	9.0	12.2	11.0	12.0
17	4.4			2.6				G	8.5	11.4	12.0	12.1
18								6.0US	8.0	11.0	11.0	11.4
19		4.1	5.0	4.6	2.8			S	12.2	11.4	12.2	12.1
20							G	8.0	9.2	11.8	12.0	11.6
21							G	8.2	9.0	C	C	C
22	3.7	2.8					2.6	4.6	9.4	9.8	11.0	12.4
23							2.9	8.3	10.0	9.8	10.9	11.8
24	8.2	4.0	7.0				C	G	9.0	10.6	11.2	11.0
25								G	11.3	11.2	10.6	12.1
26			3.0				4.4US	6.8US	9.0	9.6	11.4	10.7
27			4.0	4.0US			G	8.2	9.0	9.8	11.0	11.0
28	3.1						3.0	5.7US	9.8US	10.8	10.8	12.0
29	4.2	3.7					G	G	9.2	9.4	11.0	11.2
30			2.6	4.8US			G	G	8.6	9.2	10.4	12.0
Count	11	9	7	4	1		16	29	30	28	26	28
Median	3.7	3.7	3.0				G	2.8	9.0	10.8	11.0	11.6
Mean	4.4	3.5	3.3					6.1	9.1	10.6	11.2	11.5

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
 Unit Mc
 Month April, 1963

TABLE 60
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
9 2	9 6	17 2	7 8	G	3 8					2 3		1
11 0	11 0	9 6	9 6	7 6	5 8							2
11 4	11 4	11 4	10 6	8 2								3
11 8	11 4	11 0	9 0	G								4
11 0	10 0	9 0	9 0	7 0	6 0us						3 4us	5
11 0	10 6	8 4	19 0	6 8	9 4						2 8	6
C	11 2	12 6	11 0	8 6	7 0			8.4	10 0	2 8		7
11 0	9 8	8 8	8 8	8 4	6 0							8
11 4	12 2	11 8	9 2	7 6							3 4	9
11 6	12 0	11 0	10 8	8 7	6 2							10
11 4	11 0	10 0	C	9 8		3 4						11
11 0	11 2	C	9 7	5 6								12
11 8	10 8	9 8	8 6	G						2 7	3 7	13
11 0	11 2	9 8	6 8	G	3 1							14
11 8	11 4	10 0	9 0	8 6	8 2	7 0						15
12 0	11 0	9 0	6 0	5 7								16
11 6	12 1	10 8	10 0	G			2 6				2.8	17
11 0	11 1	G	G	6 0								18
11 7	10 3	G	6 0	9 2	G		S	6 0				19
11 6	10 4	9 7	G	B	B							20
C	C	C	C	C	C	C	C	C	C	2 6	2 8	21
11 4	10 6	22 0	5 8	4 2								22
12 4	9 0	3 9	G	C							8 2	23
12 4	11 2	9 2	8 2	6 6	7 4	3 0						24
12 4	12 2	10 8	8 0	G	3 4							25
10 8	11 0	9 8	7 9	8 2us	G		2 6					26
11 0	10 8	9 5	7 6	7 2	6 0	3 2					3 2	27
11 0	9 8	8 8	12 2	6 0	4 5us	4 1	2 8					28
11 0	10 8	9 8	8 7	G	G	3 0						29
11 4	C	C	9 4	9 8	G	4 6	2 4					30
28	28	27	28	27	17	7	4	2	1	4	8	Count
11 4	11 0	9 8	8 8	6 8	5 8	3 4					3 3	Median
11 4	10 9	10 5	9 1	7 5	5 9	4 0					3 8	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fo Es
Unit Mc
Month April, 1963

TABLE 60 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	9 6	11 2	10 8	11 4
2	2 4						G	6 2	10 2	11 7	10 8	11 0
3							2 4	5 8	10 4	11 0	11 0	11 2
4	3 0						G	8 2	9 4	11 0	11 2	11 8
5							G	G	8 8	9 6	9 8	11 0
6	8 2	4 8					G	7 8 _{us}	10 8	9 4	11 6	11 4
7							G	8 6	C	C	C	C
8	2 4				3.0		G	7 0 _{us}	10 8	10 6	11 6	12 2
9							G	3 5	10 6	10 8	12 0	12 0
10	2 8	3 2					2 8	6 4	10 8	11 0	11 6	12 4
11	2 7						G	G	10 6	11 2	11 8	12 0
12							2 3	8 6	10 7	10 6	10 8	10 4
13							G	5 6	8 8	10 8	11 0	11 4
14		2 6					21 0	G	8 8	10 8	11 6	12 0
15							G	6 8	8 8	11 4	12 0	11 6
16							G	8 8	9 8	11 4	12 0	11 0
17	4 3						G	6 0	10 0	11 8	12 0	11 6
18							G	10 6	11 0	11 4	11 0	11 0
19		5 3	3 7	3.2			G	9 2	10 7	12 2	11 7	11 9
20							G	8 7	10 6	11 6	11 0	11 1
21							2 7	9 0	C	C	C	C
22	3 2						4 8	8 2	9 8	12 0	C	11 2
23							5 0	9 0	10 0	10 6	11 2	11 2
24		9 0	5 6				G	8 2	9 0	10 6	11 4	12 4
25								8 2	12 4	11 4	12 4	11 4
26							G	8 8	9 2	10 2	11 0	10 7
27				5 2 _{us}			G	8 8	9 2	10 6	10 8	11 0
28	3 6 _{us}						4 8 _{us}	7 0	9 2	11 0	10 8	11 0
29	3 0	3.0					G	7 0	9 4	10 6	10 9	10 7
30				6 0 _{us}	4.0 _{us}		G	7 4 _{us}	9 2	9 4	11 0	11 0
Count	10	6	4	2	1		28	30	28	28	27	28
Median	3 0	4 0					G	7 2	9 9	11 0	11 2	11 3
Mean	3 6	4 6					5 7	7 6	10 0	10 9	11 3	11 4

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic foEs
Unit Mc
Month April, 1963

TABLE 60 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
9 8	10 6	9 2	G	G					2 7			1
10 8	10 6	9 4	7 4	5 8								2
11 2	11 4	9 4	8 2	6 2								3
11 4	11 2	9 8	G	G								4
11 0	9 2	9 2	8 0	7 4	G					3 1	6 4	5
12 0	9 0	10 4	11 8	9 0						2 8	3 8	6
C	13 4	11 2	8 6	7 2			6 4	9 8	6 4			7
9 8	9 0	7 8	9 8	7 6								8
11 8	12 0	9 6	7 8	6 4							3 6	9
12 0	11 6	11 0	7 8	6 4								10
11 4	11 4	C	G	9 0	3 7							11
11 4	11 8	11 4	G							2 9		12
11 0	10 8	9 4	G	G							3 2	13
12 0	10 0	9 2	G	G								14
11 8	11 8	8 6	7 4	8 0	5 8	7 8						15
11 1	11 0	G	7 7		2 5		3 0					16
11 2	11 3	9 4	G			3 7						17
11 0	8 8	G	7 8	5 6				2 8				18
11 2	10 7	9 4	6 1	6 0	3 8		7 2us	S				19
11 6	10 4	8 6	B	B								20
C	C	C	C	C	C	C	C	C		3 4	2 9	21
11 2	9 6	G	G	C								22
11 2	3 8	G	G								8 8	23
12 4	12 4	12 4	8 4	7 4	5 4	3 4						24
11 4	11 4	9 4	8 2	7 8			2 7					25
11 0	10 8	8 8	5 6	6 6us	G							26
12 0	10 8	8 8	9 2	9 8							6 6us	27
11 0	9 5	6 0	9 4	6 0	5 6us	2 7	2 2				4 2	28
11 0	9 8	8 8	11 4	G	G	2 5						29
11 0	C	10 2	9 0	8 8	4 2	2 9						30
28	28	28	28	23	9	6	5	2	2	4	8	Count
11 2	10 8	9 3	7 8	6 4	3 7	3 2	3 0				4 0	Median
11 3	10 5	9 5	8 4	7 3	4 2	3 8	4 3				4 9	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fbES
Unit Mc
Month April, 1963

TABLE 61
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1												
2	1 5		1 3				G	G	2 9	3 1	3 4	3 6
3							G	G	2 9	3 2	3 6	3 7
4	1 8	1 7						2 6	3 0	3 3	3 6	3 6
5		1 8					G	G	3 0	3 3	3 7	3 7
6	2 6	2 5	1 8						3 1	3 2	3 4	3 5
7		3 4					G	G	3 2	3 3	3 5	3 7
8								2 5	3 0	C	C	C
9								2 6	3 0	3 4	3 5	3 7
10	2 1	1 7						G	3 0	3 4	3 6	3 8
11	1 9							2 6	3 0	3 4	3 6	3 7
12							G	G	3 0	3 4	3 7	3 8
13							G	2 6	3 1	3 4	3 8	3 9
14	1 8							G	3 1	3 4	3 7	3 8
15								2 6	3 0	3 3	3 6	3 7
16								G	3 0	3 4	3 6	3 7
17	2 2			1 8			G	2 6	3 0	3 2	3 4	3 7
18								G	3 0	3 4	3 6	3 7
19		2 0	1 9	2 2	1 8			2 9	3 0	3 3	3 6	3 7
20							G	2 7	3 0	3 5	3 6	3 7
21								2 7	3 2	3 4	3 6	3 8
22	2 2	2 0					G	2 6	3 0	C	C	C
23							2 0	2 7	3 1	3 4	3 8	3 7
24	2 6	2 5	2 3				2 0	2 6	3 1	3 4	3 6	3 7
25							C	G	3 0	3 3	3 6	3 7
26			1 5					G	2 9	3 4	3 6	3 6
27			1 6	1 8			1 9	2 6	3 0	3 2	3 7	3 8
28	2 3						G	3 0	3 0	3 3	3 4	3 6
29	2 5	2 0					1 9	2 6	3 1	3 3	3 4	3 6
30							G	G	3 1	3 4	3 5	3 6
							G	G	3 1	3 4	3 6	3 6
Count	11	9	6	3	1		16	30	30	28	28	28
Median	2 2	2 0	1 7				G	2 6	3 0	3 4	3 6	3 7
Mean	2 1	2 2	1 7					2 7	3 0	3 3	3 6	3 7

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fbES
Unit Mc
Month April, 1963

TABLE 61
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
3.6	3.7	5.2	3.2	G	2.3					1.6		1
3.7	3.7	3.4	3.1	2.9								2
3.7	3.6	3.5	3.6	4.0								3
3.8	3.8	3.4	3.3	G								4
3.6	3.5	3.3	3.2	2.8	2.4						2.2	5
3.8	3.6	3.2	5.4	3.5	5.0							6
C	3.6	3.4	3.2	3.0	2.4			4.0	5.4			7
3.7	3.8	3.6	3.8	3.2	2.3							8
3.8	3.6	3.6	3.2	3.0							2.1	9
3.8	3.8	3.6	3.0	2.9	2.5							10
3.9	3.9	3.8	C	3.8		2.2						11
3.8	3.8	C	3.2	3.3								12
3.8	3.7	3.5	3.2	G						1.6	1.3	13
3.7	3.6	3.5	3.3	G	2.4							14
3.9	3.7	3.4	3.3	3.0	3.0	3.0						15
3.7	3.6	3.5	3.4	3.2								16
3.7	3.5	3.6	3.3	G			2.1				1.6	17
3.7	3.6	G	G	3.1								18
3.8	3.8	G	3.3	3.3	G		1.8	3.0				19
3.8	3.7	3.5	G	B	B							20
C	C	C	C	C	C	C	C	C	C	2.1	2.0	21
3.8	5.1	8.4	3.4	3.0								22
3.6	3.7	3.5	G	C							2.0	23
3.7	3.7	3.4	3.4	3.0	3.1	1.9						24
3.7	3.6	3.6	3.5	G	2.6							25
3.8	3.6	3.5	3.1	2.9	G		2.0					26
3.8	3.7	3.4	3.0	3.0							2.0	27
3.6	3.6	3.4	4.4	3.0	2.6	2.5	2.0					28
3.6	3.6	3.4	3.2	G	G	2.2						29
3.8	C	C	3.3	3.2	G	2.8	2.4					30
28	28	27	28	27	15	6	5	2	1	3	7	Count
3.8	3.7	3.5	3.2	3.0	2.4	2.4	2.0				2.0	Median
3.7	3.7	3.7	3.4	3.2	2.8	2.4	2.1				1.9	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month April, 1963.

TABLE 61 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	3 0	3 3	3 7	3 6
2	1 5						G	2 6	3 1	3 5	3 6	3 8
3							2 2	2 8	3 1	3 5	3 6	3 7
4	2 1						G	2 8	3 1	3 5	3 8	3 7
5							G	G	3 1	3 4	3 5	3 6
6	2 5	2 0					G	2 7	3 1	3 5	3 6	3 8
7							G	2 7	C	C	C	C
8							G	2 8	3 2	3 4	3 6	3 6
9							G	3 0	3 2	3 4	3 6	3 7
10		1 6					—	2 9	3 2	3 6	3 6	3 9
11	2 4						G	G	3 3	3 7	3 7	3 9
12							2 3	2 9	3 3	3 6	3 7	3 8
13							G	2 8	3 2	3 6	3 7	3 7
14							—	G	3 2	3 4	3 6	3 7
15							G	2 7	3 2	3 5	3 6	3 8
16							—	2 8	3 2	3 4	3 5	3 6
17	2 3						—	2 9	3 2	3 5	3 7	3 8
18								3 1	3 5	3 7	3 6	3 6
19	2 0	2 4	1 9	1 7				G	2 9	3 2	3 5	3 6
20							—	3 3	3 2	2 5	3 7	3 7
21							2 3	3 0	C	C	C	C
22	1 8						2 4	3 0	3 4	3 6	C	3 6
23							2 3	2 9	3 2	3 5	3 6	3 8
24		—	2 0				G	2 8	3 1	3 5	3 6	3 8
25							C	2 8	3 2	3 6	3 6	3 8
26							G	2 8	3 1	3 5	3 7	3 7
27			1 6				G	2 8	3 1	3 4	3 6	3 6
28	2 0						2 3	2 8	3 2	3 4	3 6	3 6
29	2 1						G	2 9	3 2	3 4	3 6	3 6
30							G	2 8	3 2	3 4	3 6	3 8
Count	9	3	3	1	2 2	2 9	28	28	27	28
Median	2 1						G	2 8	3 2	3 5	3 6	3 7
Mean	2 1						2 3	2 8	3 2	3 4	3 6	3 7

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic, fbEs
Unit Mc
Month April, 1963

TABLE 61 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
3.6	3.5	3.4	G	G					1.7			1
3.7	3.5	3.3	3.0	2.6								2
3.7	3.6	3.5	3.9	3.1								3
3.7	3.8	3.4	G	G								4
2.5	3.4	3.2	3.1	2.7	G					2.2	1.8	5
3.7	3.5	3.8	5.2	3.4								6
C	3.6	3.4	3.2	2.8			2.5	4.2	2.6		2.0	7
3.6	3.6	3.6	4.6	2.8								8
3.7	3.6	3.4	3.1	2.7							1.9	9
3.7	3.7	3.4	3.1	2.7								10
3.8	3.8	C	G	3.8								11
3.9	3.6	3.4	G							1.8		12
3.8	3.7	3.4	G	G							1.8	13
3.7	3.6	3.3	G	G								14
3.8	3.7	3.4	3.2		2.6	3.0						15
3.7	3.5		3.5		2.2		2.0					16
3.7	3.6	3.6				2.2						17
3.8	3.9		3.4	3.0				1.8				18
3.8	3.8	3.5	4.0		2.8		2.1	2.6				19
3.8	3.7	3.4	B	B								20
C	C	C	C	C	C					1.6	1.8	21
3.9	4.6	G	G	C								22
3.6	3.6	G	G								2.4	23
3.7	3.6	3.3	3.2	3.0	2.4	2.4						24
3.6	3.6	3.2	3.6	2.8			2.0					25
3.6	3.6	3.4	3.2	3.0	G							26
3.7	3.6	3.2	3.7	3.8							3.0	27
3.6	3.6	3.6	3.3	2.8	2.4	1.9	2.0				2.4	28
3.6	3.6	3.2	3.4	G	G							29
3.7	C	3.3	4.6	2.8	2.1	2.2						30

28	28	26	27	21	9	6	5	3	2	3	8	Count
3.7	3.6	3.4	3.2	2.8	2.2	2.2	2.0				2.0	Median
3.7	3.7	3.4	3.6	3.0	2.4	2.3	2.1				2.1	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month : April, 1963.

TABLE 62
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	05	07	08	09	10	11
1	15	18	14	13	14	E	13	17	17	22	22	22
2	11	14	10	15	11	E	13	13	18	22	24	26
3	19	20	20	11	11	13	17	15	18	20	22	26
4	14	12	15	16	13	E	17	14	18	22	24	26
5	17	11	12	15	12	E	14	20	17	20	22	23
6	17	15	16	15	14	13	12	17	18	22	23	26
7	20	13	13	12	12	E	17	17	20	C	C	C
8	18	17	13	17	14	14	16	17	17	21	25	27
9	18	19	16	12	13	12	20	19	22	23	26	25
10	14	17	14	13	E	10	17	17	19	24	26	27
11	18	19	18	12	S	13	14	18	19	24	27	27
12	16	15	19	11	11	E	13	15	18	23	26	26
13	19	17	13	E	11	13	18	16	17	21	24	24
14	12	14	14	17	13	13	19	18	19	22	25	27
15	21	18	15	14	14	13	18	17	18	23	25	25
16	18	19	16	15	14	13	14	17	21	23	23	28
17	15	15	14	14	E	L	17	14	19	23	26	27
18	15	15	12	12	13	E	19	20	20	23	27	27
19	19	19	14	11	16	18	20	19	20	22	25	28
20	17	19	19	15	14	14	17	16	22	21	24	27
21	16	21	17	14	E	E	16	17	21	C	C	C
22	19	15	16	13	13	E	14	18	21	23	25	25
23	20	20	19	18	15	11	16	15	20	22	25	26
24	21	24	19	16	15	E	C	20	19	22	24	26
25	C	C	C	C	C	C	C	16	18	20	23	24
26	17	17	E	14	13	14	14	18	20	22	30	30
27	21	16	13	13	16	E	17	14	18	21	23	25
28	15	17	11	11	13	13	14	15	18	22	23	26
29	15	16	15	16	C	13	14	18	18	22	23	26
30	E	E	11	12	E	E	17	18	18	23	24	26
Count	29	29	29	29	27	29	28	30	30	28	28	28
Median	17	17	14	14	13	11	16	17	18	22	24	26
Mean	17	17	15	14	13	13	16	17	19	22	24	26

Sweep 10 Mc to 250 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month April, 1963

TABLE 62
Ionospheric Data
75 E Mean Time

Latitude 10 2° N
Longitude 77.5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2.4	2.3	2.0	2.4	2.8	2.1	1.5	1.6	1.3	1.5	1.6	1.1	1
2.6	2.8	2.5	2.3	2.0	2.6	1.7	1.5	S	2.0	1.6	1.6	2
2.6	2.8	2.5	2.5	2.6	2.4	2.2	1.6	1.7	1.9	1.6	1.9	3
2.7	2.8	2.6	2.3	2.3	2.5	1.7	2.2	1.9	2.0	1.4	1.8	4
2.5	2.4	2.3	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.9	1.6	5
2.6	2.5	2.4	2.0	2.4	2.0	2.3	2.2	2.0	1.8	2.3	2.0	6
C	2.4	2.2	1.8	2.5	2.0	1.7	2.4	1.5	1.6	1.6	1.4	7
2.9	2.7	2.2	1.9	1.8	1.9	1.7	1.6	2.0	1.9	2.0	1.9	8
2.8	2.6	2.4	2.3	2.2	2.4	1.7	1.8	1.8	2.1	2.0	1.5	9
2.7	3.0	3.6	2.2	2.2	2.0	2.1	1.8	1.3	1.8	1.6	1.7	10
2.7	2.8	2.8	C	1.9	2.6	2.0	C	C	C	S	1.6	11
2.8	2.6	C	2.3	1.9	2.6	1.9	1.6	1.8	1.9	1.9	1.4	12
2.5	2.4	2.5	2.4	2.8	2.5	1.9	1.5	1.8	1.9	1.5	1.4	13
2.8	2.7	2.4	2.2	2.4	1.8	1.8	1.7	1.8	1.9	2.0	1.6	14
2.7	2.7	2.8	2.3	2.0	2.4	2.0	1.9	2.0	2.0	2.6	2.0	15
2.9	2.7	2.6	2.4	2.8	2.6	2.1	1.5	2.0	2.0	2.0	1.9	16
2.8	2.7	2.6	2.5	2.4	2.4	2.2	1.6	1.6	1.5	1.4	1.2	17
2.7	2.8	2.8	2.6	2.5	2.8	2.1	1.9	1.7	1.6	1.8	1.8	18
2.9	2.8	2.7	2.4	2.1	1.8	1.7	1.2	1.9	2.1	2.5	1.9	19
2.8	2.8	2.6	2.4	3.0	2.5	2.1	C	1.7	1.7	1.8	1.9	20
C	C	C	C	C	C	C	C	C	C	1.8	1.5	21
2.8	2.6	2.8	2.5	2.8	2.4	1.8	1.8	1.7	2.4	2.1	1.8	22
2.8	2.6	2.7	2.2	C	2.5	1.7	1.4	1.6	1.7	1.7	1.9	23
2.7	2.6	2.6	2.1	2.0	1.6	1.2	2.3	2.2	C	C	C	24
2.4	2.6	2.4	2.2	3.2	2.1	2.0	1.7	1.6	2.2	2.0	1.5	25
2.0	2.6	2.6	2.6	1.9	2.5	1.7	1.6	1.9	2.0	1.9	2.0	26
2.6	2.6	2.4	2.4	2.1	2.3	2.2	1.8	1.9	2.2	2.1	1.7	27
2.8	2.8	2.6	1.9	2.0	1.9	1.5	E	2.0	1.7	1.9	C	28
2.4	2.6	2.4	2.4	2.5	2.4	1.6	2.0	1.6	2.0	2.4	2.0	29
2.8	C	C	2.2	2.2	2.4	1.7	1.4	1.9	1.7	1.9	1.8	30
28	28	27	28	28	29	29	27	27	27	28	28	Count
2.7	2.6	2.6	2.3	2.2	2.4	1.8	1.7	1.8	1.9	1.9	1.8	Median
2.7	2.7	2.6	2.3	2.3	2.3	1.8	1.7	1.8	1.9	1.9	1.7	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
Unit Mc
Month April, 1963

TABLE 62 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	1.7	1.2	1.4	1.1	E	1.5	1.6	1.9	1.9	2.2	2.3	2.4
2	1.4	1.4	1.4	1.2	E	1.1	1.4	1.5	2.0	2.2	2.5	2.7
3	2.1	1.8	1.4	1.1	1.1	1.3	1.4	1.8	1.8	2.2	2.4	2.7
4	1.5	1.5	1.3	1.4	1.2	1.3	1.1	1.7	1.9	2.4	2.4	2.6
5	1.7	1.7	1.2	1.5	1.3	1.2	1.7	1.9	1.8	2.2	2.4	2.4
6	1.9	1.7	1.3	1.4	1.0	1.2	1.6	1.8	2.0	2.2	2.4	2.9
7	2.1	1.7	1.1	1.1	1.1	1.2	1.7	1.7	C	C	C	C
8	2.1	1.6	1.3	1.2	1.2	1.5	1.3	1.5	2.0	2.4	2.5	2.7
9	1.8	1.7	1.6	1.5	1.4	1.4	1.7	1.9	2.2	2.4	2.8	2.6
10	1.5	1.4	1.3	1.4	1.1	1.2	1.4	1.7	2.0	2.4	2.7	2.7
11	1.4	1.8	1.4	1.0	1.0	1.3	1.7	1.8	2.2	2.4	2.6	2.8
12	1.6	1.7	1.3	1.5	1.4	1.5	1.6	1.8	2.1	2.3	2.4	2.8
13	1.4	1.6	1.0	1.0	1.3	1.3	1.4	1.6	1.8	2.3	2.3	2.6
14	1.8	1.5	1.4	1.1	1.3	1.5	1.5	1.8	2.2	2.3	2.4	2.7
15	1.9	1.8	1.4	1.3	1.5	1.6	1.5	1.7	1.9	2.3	2.7	2.5
16	2.0	2.1	1.6	1.2	1.4	1.2	1.7	1.9	2.3	2.3	2.4	2.7
17	1.7	1.7	1.4	1.5	E	E	1.7	1.7	2.1	2.4	2.6	2.7
18	1.6	1.4	E	1.2	F	1.5	2.2	2.0	2.1	2.8	2.9	2.9
19	1.8	1.4	1.2	1.2	1.7	1.9	1.9	2.0	2.1	2.5	2.6	2.8
20	1.9	2.0	1.6	1.5	1.4	1.3	1.4	3.1	2.2	2.3	2.5	2.8
21	2.3	1.6	1.2	1.2	E	1.9	1.5	1.7	C	C	C	C
22	1.5	1.5	1.3	1.4	1.3	1.4	1.5	2.0	2.2	2.4	C	2.6
23	2.0	1.8	1.5	1.6	1.0	1.7	1.5	1.7	2.1	2.5	2.4	2.6
24	2.5	1.9	1.9	1.8	1.7	1.3	1.7	1.9	2.2	2.3	2.4	2.4
25	C	C	C	C	C	C	C	1.6	2.1	2.4	2.4	2.6
26	1.7	1.7	1.5	1.3	1.4	1.7	1.4	2.0	2.1	2.6	3.2	3.0
27	2.0	1.7	1.3	1.5	E	1.3	1.4	1.4	2.0	2.2	2.4	2.6
28	1.7	1.5	1.7	1.3	1.4	1.4	1.4	1.7	2.0	2.2	2.5	2.8
29	1.6	1.8	1.5	1.5	1.3	C	1.7	1.7	2.0	2.4	2.6	2.6
30	E	E	2.4	1.8	E	1.7	1.6	1.8	2.0	2.3	2.5	2.7
Count	29	29	29	29	29	28	29	30	28	28	27	28
Median	1.7	1.7	1.4	1.3	1.2	1.4	1.5	1.8	2.0	2.3	2.5	2.7
Mean	1.8	1.6	1.4	1.3	1.3	1.4	1.6	1.8	2.0	2.4	2.5	2.7

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_{min}
Unit Mc
Month April, 1963

TABLE 62 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2.6	2.3	2.1	3.1	2.3	2.0	1.3	1.5	1.4	1.2	1.1	1.1	1
2.6	2.5	2.3	2.3	2.0	2.3	1.9	1.9	2.0	1.4	1.5	1.6	2
2.6	2.4	2.6	2.5	2.5	2.4	1.8	1.8	1.6	1.8	1.7	1.5	3
2.6	2.6	2.4	2.6	2.4	2.2	2.0	1.8	2.0	1.9	1.7	1.7	4
2.4	2.5	2.1	2.0	1.8	2.1	2.5	1.7	2.0	1.8	1.6	1.6	5
2.8	2.2	2.1	2.2	2.2	2.3	2.2	2.1	2.0	2.0	1.8	1.5	6
C	2.3	2.0	2.4	2.2	2.0	1.7	1.5	1.6	1.3	1.5	1.3	7
2.6	2.7	2.0	2.0	2.2	2.0	2.1	1.8	1.6	2.0	2.0	2.0	8
2.6	2.6	2.3	2.3	2.0	2.1	1.5	1.7	2.0	1.9	1.8	1.3	9
2.6	3.6	2.3	2.4	1.9	2.1	2.0	2.0	1.8	1.7	1.6	1.5	10
2.9	2.6	C	2.6	1.9	2.3	C	C	C	2.0	1.7	1.3	11
2.8	2.5	2.2	2.6	2.9	2.0	1.7	1.9	2.0	2.0	1.7	1.6	12
2.5	2.5	2.5	2.4	2.6	2.0	1.4	1.4	1.7	1.7	1.6	1.4	13
2.5	2.5	2.5	2.3	2.1	2.2	1.7	1.7	1.5	2.0	1.9	1.7	14
2.8	2.8	2.6	2.1	3.6	1.7	1.7	2.2	2.2	2.4	1.9	1.8	15
2.7	2.7	2.6	2.1	2.7	1.6	2.3	1.5	1.9	1.7	1.9	1.9	16
2.8	2.6	2.6	2.6	2.6	2.2	1.7	1.9	1.7	1.6	1.2	1.7	17
2.8	2.8	2.6	2.5	2.5	2.8	2.1	1.6	E	1.5	1.8	1.9	18
3.0	2.7	2.2	3.3	1.7	2.1	1.7	1.3	1.6	2.0	1.9	2.1	19
2.8	2.7	2.4	3.2	2.8	2.4	1.9	C	1.8	1.8	1.8	1.8	20
C	C	C	C	C	C	C	C	C	1.7	1.2	1.4	21
2.7	2.6	2.8	2.6	C	2.2	2.5	1.8	2.3	1.8	1.7	2.3	22
2.6	2.9	2.6	2.6	2.7	2.2	1.6	1.6	1.8	1.7	2.1	1.6	23
2.4	2.6	2.4	2.0	1.7	2.0	1.8	1.8	C	C	C	C	24
2.4	2.5	2.8	2.2	2.5	1.6	1.8	1.5	1.5	2.0	1.6	1.4	25
3.0	2.6	2.6	1.9	1.9	2.4	2.2	2.3	1.9	1.7	1.7	1.8	26
2.6	2.5	2.4	2.4	1.7	2.3	2.2	2.0	1.9	2.1	2.0	1.6	27
2.8	2.6	2.6	2.2	2.0	1.4	E	E	1.7	1.8	1.9	1.3	28
2.7	2.6	2.4	2.2	2.8	2.2	E	2.0	1.7	2.0	2.0	E	29
2.5	C	2.2	2.2	2.2	2.1	1.7	2.2	1.7	1.8	1.8	1.5	30
2.8	2.8	2.8	2.9	2.8	2.9	2.8	2.7	2.7	2.9	2.9	2.9	Count
2.6	2.6	2.4	2.4	2.2	2.1	1.8	1.8	1.8	1.8	1.7	1.6	Median
2.7	2.6	2.4	2.4	2.3	2.1	1.9	1.8	1.8	1.8	1.7	1.6	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
Unit Km
Month April, 1963

TABLE 63
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								280	300	325	395	365
2								L	L	L	380	370
3								L	L	345	370	370
4								L	L	360	400	380
5							L	L	L	I	L	370
6								L	L	L	L	L
7								L	L	C	C	C
8								L	L	L	L	370
9								L	I	L	L	L
10								L	L	I	355	L
11								L	L	L	375	370
12								L	L	I	430	415
13								280	L	I	365	380
14									310	L	330	365
15								L	I	335	345	365
16								L	L	I	400	380
17								280	305	L	I	380
18								290	305	L	340	345
19								L	L	L	375	370
20								L	L	L	I	390
21								L	L	C	C	C
22							L	L	310	380	380	380
23							L	L	330	360	385	370
24							C	L	280	360	360	370
25								L	300	360	420	400
26							L	L	L	I	440	420
27							L	L	L	L	400	410
28							L	L	L	L	360	380
29							L	L	L	L	380	400
30							L	L	L	L	380	390
Count								4	8	8	22	25
Median									305	360	380	380
Mean									305	355	380	380

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F2
Unit Km
Month April, 1963

TABLE 63
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
335	350	350	325	315								1
360	355	360	L	L								2
360	360	L	315	A	L							3
380	360	370	L	300								4
350	L	L	L	L	L							5
355	L	L	A	L	A							6
C	L	L	L	L								7
355	345	340	L	L	L							8
360	360	L	L	L								9
400	L	375	L	L								10
380	400	365	C	L								11
400	400	C	L	L								12
370	360	355	325	L								13
325	L	315	L	L								14
355	L	345	L	L								15
345	360	L	320	305								16
380	360	L	L	300								17
365	360	340	320	300								18
380	360	340	330	L								19
380	365	330	330	310	280							20
C	C	C	C	C	C							21
370	A	A	310	300	L	L						22
355	360	340	310	C	L	L	L					23
380	370	350	330	L	L							24
380	350	340	320	300	L	L	L					25
400	385	L	L	L	L							26
380	L	L	L	L	L							27
360	L	340	A	L	L							28
390	360	L	L	L	L							29
380	C	C	L	L	L							30
28	19	16	11	8	1							Count
370	360	340	320	300								Median
370	365	345	320	305								Mean

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds

Characteristic $h'F_2$
Unit Km
Month April, 1963

TABLE 63 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830 *	0930	1030	1130
1							L	290	325	345	390	335
2								L		L	380	360
3							L	295	L	360	360	360
4							L	L	L	390	400	390
5							L	L	L	L	360	340
6								L	L	L	L	355
7							L	L	C	C	C	C
8							L	L	L	L	380	365
9							L	L	L	L	375	360
10								L	L	355UL	370UL	L
11								L	L	350	L	380
12							L	L	L	L	410	365
13								300	L	360	380	375
14								305	L	345	L	350
15								L	L	350	360	360
16							260	290	L	L	380	360
17							280	300	L	L	375	360
18								300	L	370	360	360
19							290	L	L	365	375	L
20							L	L	L	355	370	365
21							L	L	C	C	C	C
22							L	L	340	370	C	375
23							L	310	310	360	380	360
24							L	280	L	360	365	370
25							C	300	340	370	415	390
26							L	L	L	L	L	420
27							L	L	L	400	400	390
28							L	L	L	350	L	380
29							L	L	L	360	385	380
30							L	L	L	L	380	410
Count								295		365	380	370
Median								300		360	380	365
Mean							3	10	4	19	22	26

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic $h'F_2$
 Unit Km
 Month April, 1963

TABLE 63 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude : 10 2° N
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
335	L	330	L	L								1
360	370	340	310	L								2
L	360	350	320	L								3
360	375	350	320	L								4
340	L	L	L	L	L							5
345	L	L	A	L								6
C	L	L	L	L								7
340	345 ^{UL}	335 ^{UL}	L	L								8
370	365	L	L	L								9
380	375	L	L	L								10
L	375	C	305	L								11
425	370	355	L	L								12
370	355	340	L	300								13
350	345	310	L	L								14
355	L	L	L	L								15
360	340	L	315	280								16
360	L	L	320	300								17
360	340	320	315	300								18
380	345	325	320	320								19
370	340	330	315	L								20
C	C	C	C	C								21
355	A	320	310	C	L							22
360	345	325	L	L	L							23
370	360	320	320	L	L							24
360	360	310	310	L	L							25
400	370	L	L	L	L							26
380	380	L	A	A	L							27
L	360	L	L	L	L							28
380	350	L	L	L	L							29
380	C	L	A	L	L							30
365	360	330	315	300	.							Count
360	360	330	315	300	.							Median
25	21	15	12	5	.							Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic h'F
Unit Km
Month April, 1963.

TABLE 64
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	250	260	240	230	245	E	250	230	205H	205	205	200
2	270	300	280	265	250	E	250	230	220	210	205	200
3	390	300	300	275	240	230	245	230	215	200	200	200
4	280	290	260	230	230	E	255	235	215	190	200	200
5	340	F	F	F	270F	235	250	235	230	220	200	215
6	300UF	280UF	250	240	240UF	260UF	260	230	230	210	205	200H
7	300UF	300UF	250UF	230	230	E	250	235	210	C	C	C
8	275	270	240	230	220	280	255	235	210	200	200	210
9	225UF	235UF	235UF	225UF	225F	240	260	245	215	215	195H	200
10	290UF	285	255	245	225	225	250	230	205H	200	185H	200
11	275	300	300	270	235	240	250	235	200	210	185H	200
12	340	340	320	270	235	E	250	220	205	200	200	195
13	300	270	265	290	305	275	260	225	215	200	210	185H
14	280	305	300	265	240	240	255	230	230	205	215	210
15	320F	300	260	245	230	230	245	235	200H	180H	220	210
16	280	300	280	270	240	240	260	240	210H	200	195H	210H
17	310	300	280	290	E	E	265	240	205	220	200	200
18	300	300	300	260	235	E	250	230	200	200H	200	195
19	305	305	320	300	260	250	260	240	220	215	205	200
20	265	275	270	260	240	240	260	235	205	200	195	210
21	300	310	280	260	E	E	260	230	220	C	C	C
22	320	270	240	230	230	E	255	220	200	200	200	200
23	275	305	300	310	280	250	255	220	210	200	200	200
24	315	300	300	260	250	E	C	235	215	200	200	200
25	C	C	C	C	C	C	C	235	210	200	200	180
26	400	400F	F	300F	240	240	240	230	205	200	200	220
27	330	300	270	260	260	E	240	240	205	200	200	200
28	250	260	280	280	265	270	250	225	220	200	200	200
29	300	300	300	320	C	260	240	230	220	205	200	200
30	E	E	A	A	E	E	240	220	220	195	210	200
Count	29	28	26	27	28	29	28	30	30	28	28	28
Median	300	300	280	260	240	270	250	230	210	200	200	200
Mean	295	295	275	265	245	245	250	230	210	205	200	200

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic . h'F
Unit Km
Month April, 1963

TABLE 64
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
205	200H	A	200	230	235	270	280	280	266	250	240	1
180H	205	200	210	215	240	270	325F	300UF	300UF	240	245	2
210	200	200	220	A	240	270	315	310	300	260	255	3
200	195	180	220	220	250	270	325	360	360	230	280	4
210	210	200	200	210	240	260	320	300F	F	F	F	5
200	200	215	A	A	A	270	300	280UF	300UF	250UF	260UF	6
C	200	200	200	220	240	275	300	A	A	270UL	260	7
210	205	200	A	210	240	275	320	F	315UF	260UF	245UF	8
200	200	200	210	210	235	265	300	270UF	F	F	300UF	9
200	200	200	205	210	240	260	280	320	F	260	255	10
200	200H	200	C	A	240	260	C	C	C	F	350	11
190H	195	C	200	230	240	255	320	F	300F	280F	270F	12
200	200	200	200	215	240	255	285	310	F	280	280	13
200	200	205	210	215	240	260	280	300UF	290	310	325	14
200	200	200	210	235	260	260	275	320	F	280	275	15
200	200	200	215	230	245	260	260	260	250	270	280	16
200	200	200H	200	225	250	265	270	265	260	260	280	17
190	195H	215	215	220	250	265	300	F	F	300	305	18
200	210	220	220	230	260	280	305	305	270	270	265	19
200	200	200H	220H	210H	215	260	C	290	315UF	F	320	20
C	C	C	C	C	C	C	C	C	C	340	340	21
200	A	A	230	240	240	260	260	275	280	280	270	22
200	210	230	220	C	250	260	260	260	260	260	280	23
195	200	210	210	220	260	260	260	260	C	C	C	24
195	195	195	220	240	240	250	240	240	260	300	350	25
200	200	200	200	210	240	240	250	260	260	300	335	26
200	200	200	200	240	240	240	235	260	280	300	300	27
200	200	200	A	230	240	250	240	245	235	240	C	28
200	200	200	200H	235	240	245	230	230	230	280	400	29
200	C	C	195	230	240	245	250	250	230	225	260	30
28	27	25	25	25	28	29	27	24	20	25	27	Count
200	200	200	210	225	240	260	280	270	275	270	280	Median
200	200	205	210	225	240	260	280	275	280	270	290	Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic h'E
Unit Km
Month April, 1963

TABLE 65
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							140	120	110	115	A	A
2							140	115	105	110	A	A
3								120	110	A	A	A
4								120	A	A	A	A
5							150	120	A	A	A	A
6							140H	120	A	A	A	A
7								A	A	C	C	C
8								120	A	A	A	A
9								125	A	A	A	A
10								125	A	A	A	A
11							130	120	115	110	A	A
12							130	115	110	105	A	A
13								115	105	110	105	110
14								120	115	110	110	A
15								120	110	110	A	A
16							130	A	A	A	A	A
17								120	A	A	A	A
18								125	A	A	A	A
19								A	A	A	A	A
20							130	A	A	A	A	A
21							160	A	A	C	C	C
22							A	A	A	A	A	A
23							A	A	A	A	A	A
24							C	125	A	A	A	A
25								120	A	A	A	A
26							120	A	A	A	A	A
27							140	A	A	A	A	A
28							110	A	A	A	A	A
29							130	120	A	A	A	A
30							135	120	A	A	A	A
Count							14	20	8	7	2	1
Median							130	120	110	110		
Mean							135	120	110	110		

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
 Unit Km
 Month April, 1963

TABLE 65
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
110	110	A	120	B								1
A	A	A	110	115								2
A	A	A	A	A								3
A	A	A	120	120								4
A	A	A	A	A	A							5
A	A	A	A	A	A							6
C	A	A	A	A	A							7
A	A	A	A	A								8
A	A	A	115	120								9
A	A	A	A	A								10
A	A	110	C	A								11
A	110	C	110	A								12
A	A	110	120	B								13
A	115	115	115	120								14
B	A	A	A	A								15
A	A	A	A	A								16
A	A	A	A	115								17
A	A	115	110	A								18
A	A	115	A	A	115							19
A	A	A	115	B	B							20
C	C	C	C	C	C							21
A	A	A	120	A								22
A	A	A	120	C								23
A	A	A	A	A	A							24
A	A	A	A	B	A							25
A	A	A	120	A	A							26
A	A	A	A	A	A							27
A	A	A	A	A	A							28
A	A	A	A	A	A							29
A	C	C	A	120	A							30

1	3	5	12	6	1	Count
		115	120	120		Median
		115	115	120		Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic h'E
Unit Km
Month April, 1963

TABLE 65 (Contd)
Ionospheric Data
75°E Mean Time

Latitude : 10 2° N
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							125	120	110	110	A	A
2							130	115	A	A	A	A
3							120	120	A	A	A	A
4							120	A	A	A	A	A
5							120	110	A	A	A	A
6							130 _{HT}	120	A	A	A	A
7							130	A	C	C	C	C
8							125	A	A	A	A	A
9							130	120	A	A	A	A
10							130	A	A	A	A	A
11							130	115	110	A	A	A
12							120	110	110	A	A	A
13							120	115	105	110	A	A
14							120	115	115	110	A	A
15							120	115	105	A	A	A
16							125	A	A	A	A	A
17							125	110	A	A	A	A
18								120	A	A	A	A
19							130	A	A	A	A	A
20							120	B	A	A	A	A
21							A	A	C	C	C	C
22							A	A	A	A	C	A
23							A	A	A	A	A	A
24							130	A	A	A	A	A
25								A	A	A	A	A
26							120	A	A	A	A	A
27							120	A	A	A	A	A
28							110	A	A	A	A	A
29							120	A	A	A	A	A
30							120	A	A	A	A	A
Count							25	13	6	3		
Median							120	115	110			
Mean							125	115	110			

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month April, 1963

TABLE 65 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	110	A	B	130								1
A	A	110	115	120								2
A	A	A	A	A								3
A	A	A	120	130								4
A	A	A	A	A	A							5
A	A	A	A	A								6
C	A	A	A	A								7
A	A	A	A	A								8
A	A	A	120	120								9
A	A	A	A	A								10
A	A	C	120	A								11
A	110	110	120	120								12
A	110	115	120	B								13
A	110	115	120	120								14
A	A	120	A	B								15
A	A	115	A									16
A	A	A	115	A								17
A	A	A	A	A								18
A	A	A	A	B								19
A	A	A	B	B								20
C	C	C	C	C								21
A	A	120	120	C								22
A	A	120	120	A								23
A	A	A	A	A								24
A	A	120	A	A								25
A	A	110	A	A	A							26
A	A	A	A	A								27
A	A	A	A	A	A							28
A	A	A	120	A	A							29
A	C	A	A	A	A							30
	4	11	11	5	.							Count
	.	115	120	120	.							Median
	..	115	120	125	.							Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic h'Es
Unit Km
Month April 1963

TABLE 66
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							G	G	105	105	100	100
2	120		115				G	G	105	100	100	100
3								140	105	100	100	100
4	120	120						115	110	100	100	100
5		115					G	G	100	100	100	100
6		115	100	115			G	G	105	105	100	100
7		115						110	115	C	C	C
8								110	105	100	105	100
9								G	110	105	105	100
10	120	120						100	105	100	100	100
11	110						G	G	105	100	100	100
12							G	110	105	100	100	100
13								G	105	100	100	100
14	120							140	105	100	100	100
15								G	100	100	100	100
16							G	100	100	100	100	100
17	115			115				G	100	100	100	100
18								100	100	100	100	100
19		130	120	115	115			100	100	100	100	100
20							G	100	100	100	100	100
21							G	115	115	C	C	C
22	130	120					140	120	110	100	100	100
23							135	110	105	100	100	100
24	120	125	120				C	G	100	100	100	100
25								G	100	100	100	100
26			120				100	100	100	100	100	100
27			120	110			G	100	100	100	100	100
28	115						100	100	100	100	100	100
29	110	115					G	G	100	100	100	100
30			110	110			G	G	100	100	100	100
Count	10	9	7	5	1		4	17	30	28	28	28
Median	120	120	120	115				110	105	100	100	100
Mean	120	120	115	115				110	105	100	100	100

Sweep 1 0 Mc to 25 Mc in 27 seconds

Characteristic h'Es
Unit Km
Month April, 1963

TABLE 66
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	100	100	G	100					120		1
100	100	100	105	110	115							2
100	100	100	100	100								3
100	100	100	100	G								4
100	100	100	100	100	100							5
100	100	100	100	100	100							6
C	100	100	100	100	115			115	110	120		7
100	100	100	100	100	120							8
100	100	100	105	110							120	9
100	100	100	105	110	120							10
100	100	100	C	100		140						11
100	100	100	C	100								12
100	100	100	100	G						125	110	13
100	100	100	105	G	120							14
100	100	100	100	100	100	100						15
100	100	100	100	100								16
100	100	100	100	C			100				135	17
100	100	G	G	100								18
100	100	G	100	100	G		115	100				19
100	100	100	G	B	B							20
C	C	C	C	C	C	C	C	C	C	140	140	21
100	100	120	150	130								22
100	100	120	G	C							115	23
100	100	100	100	100	100	100						24
100	100	100	100	G	120							25
100	100	100	100	100	G		100					26
100	100	100	100	100	130	100				120		27
100	100	100	100	100	100	100	100					28
100	100	100	100	G	G	100						29
100	C	C	100	100	G	100	100					30
28	28	25	25	20	13	7	5	2	1	4	6	Count
100	100	100	100	100	115	100	100				120	Median
100	100	100	105	105	110	105	105				125	Mean

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic h'Es
Unit Km
Month April, 1963

TABLE 66 (Cont'd)
Ionospheric Data
75°E Mean Time

Latitude : 10 2° N
Longitude . 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	G	105	100	100	100
2	120						G	105	100	100	100	100
3							140	105	100	100	100	100
4	120						G	120	100	100	100	100
5							G	G	100	100	100	100
6	115	115					G	110	105	105	100	100
7					105		G	110	C	C	C	C
8	110						G	105	105	100	105	100
9							G	140	110	105	100	100
10	120	120					140	100	105	100	100	100
11	110						G	G	105	100	100	100
12							140	110	105	100	100	100
13							G	105	100	100	100	100
14		130					140	G	100	100	100	100
15							G	105	100	100	100	100
16							G	100	100	100	100	100
17	120						G	100	100	100	100	100
18							G	100	100	100	100	100
19	130	120	120	120			G	100	100	100	100	100
20							G	100	100	100	100	100
21							120	120	C	C	C	C
22	130						120	110	100	100	C	100
23							120	110	100	100	100	100
24		115	120				G	110	100	100	100	100
25								100	100	100	100	100
26							G	100	100	100	100	100
27			110				G	100	100	100	100	100
28	100						100	100	100	100	100	100
29	110	115					G	100	100	100	100	100
30			110	100			G	100	100	100	100	100
Count	11	6	4	2	1		8	25	28	28	27	28
Median	120	120					130	105	100	100	100	100
Mean	115	120					130	105	100	100	100	100

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic h'Es
Unit . Km
Month April, 1963

TABLE 66 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10.2° N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	100	100	G	G					120			1
100	100	105	105	110								2
100	100	100	100	140								3
100	100	100	G	G								4
100	100	100	100	100	G					115	120	5
100	100	100	100	100						120	120	6
C	100	100	100	110			115	110	110			7
100	100	100	100	110								8
100	105	100	110	110							120	9
100	100	100	110	115								10
100	100	C	G	100	100							11
100	100	100	G							130		12
100	100	100	G	G							115	13
100	100	105	G	G								14
100	100	100	100	100	100	140						15
100	100	G	100		100		125					16
100	100	100	G			100						17
100	100	G	100	100				115				18
100	100	100	120	100			120	100				19
100	100	100	B	B								20
C	C	C	C	C						140	140	21
100	100	G	G	C								22
100	120	G	G								110	23
100	100	100	100	100	100	100						24
100	100	100	100	120			140					25
100	100	100	100	100	G							26
100	100	100	100	100							115	27
100	100	100	100	100	100	100	100				110	28
100	100	100	100	G	G	100						29
100	C	100	100	120	100	100						30
28	28	24	19	18	6	6	5	3	2	4	8	Count
100	100	100	100	100	100	100	120				120	Median
100	100	100	100	110	100	105	120				120	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic . (M3000)F2
Unit
Month April, 1963

TABLE 67
Ionospheric Data
75° Mean Time

Latitude : 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 10	3 25	3 20	3 55	3 60	E	3 40	3 40	3 10	2 80	2 40	2 50
2	2 80	2 90	3 25	3 40	3 50	E	3 35	3 35	3 00	2 50	2 50	2 65
3	F	3 05	3 10	2 20 _I	F	3 60	3 50	3 50	3 10	2 70	2 50	2 70
4	F	F	F	F	F	E	3 30	3 20	2 70	2 55	2 45	2 50
5	F	F	F	F	F	3 50 _r	3 30	3 50	3 30	2 80	2 50	2 50
6	F	3 00 _{U1}	3 35 _r	3 20 _{U1}	F	F	3 30	3 30	3 05	2 50 _H	2 55	2 50
7	2 90 _{U1}	F	3 20 _{U1}	3 40 _{U1}	3 45	E	3 20	3 10	2 75	C	C	C
8	2 95	3 10 _{U5}	3 30	3 40	3 60	3 45	3 20	3 10	2 70	2 50	2 60	2 50
9	F	F	F	F	F	3 50 _{U1}	3 50	3 40	3 20	2 70	2 40 _H	2 50
10	3 00 _I	3 10	3 25	3 35	3 60	3 60	3 45	3 40	3 05	2 50	2 55	2 60
11	2 90	2 95	2 95	3 10	3 45	3 65	3 40	3 30	3 05	2 55	2 40	2 55
12	2 60	2 75	2 85	3 10	3 45	E	3 40	3 15	2 50	2 50	2 40	2 55
13	2 80	3 10	3 10	3 00	2 90	F	3 20 _{U1}	3 30	3 05	2 40	2 45	2 50
14	3 05	2 95	3 00 _{U5}	3 10	3 30	3 35	3 30	3 20	3 10	2 80	2 30	2 45
15	F	F	3 00	F	3 40	3 40 _{U1}	3 40	3 20	2 95	2 75	2 25	2 50
16	2 90	3 00	3 10	3 20	3 40	3 50	3 40	3 20	2 75	2 40 _H	2 50	2 55
17	2 90	3 00	3 30	3 40	E	E	3 45	2 25	3 60	2 50	2 50	2 45
18	2 90	2 95	2 95	3 30	3 50	E	3 50	3 30	3 00	2 75	2 35 _H	2 50
19	2 75	2 90	2 80	3 00	3 40	3 45	3 20	2 15	2 70	2 25 _H	2 40	2 60
20	3 05	3 10	3 20	3 15	3 45	3 50	3 35	3 10	2 60	2 30	2 50	2 45
21	2 70	3 10	3 20	3 40	E	E	3 25	2 85	2 50	C	C	C
22	2 80	3 10	3 40	3 55	3 55	E	3 30	3 05	2 80	2 35	2 50	2 50
23	2 95	2 95	3 10	3 30	3 25	3 40	3 20	2 85	2 55	2 60	2 50	2 55
24	2 90	3 00	3 00	3 30	3 50	E	C	3 35	3 00	2 50	2 55	2 60
25	C	C	C	C	C	C	C	3 45	3 05	2 25 _H	2 55	2 50
26	2 60	F	F	F	3 50	3 70	3 40	2 30	2 60	2 60	2 50	2 50
27	2 65	F	F	3 45	3 60	E	3 50	3 30	2 70	2 50	2 50	2 50
28	F	3 40	3 20	3 10	3 35	3 40	3 30	3 20	2 80	2 30 _H	2 60	2 60
29	3 20	3 20	3 20	3 20	C	3 40	3 50	3 30	2 90	2 40	2 65	2 50
30	E	E	A	A	E	E	3 50	3 40	3 15	2 75	2 40 _H	2 50
Count	21	21	23	23	20	15	28	30	30	28	28	28
Median	2 90	3 00	3 20	3 30	3 45	3 50	3 40	3 30	2 95	2 50	2 50	2 50
Mean	2 90	3 05	3 15	3 25	3 45	3 50	3 35	3 25	2 90	2 55	2 45	2 55

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M3000)F2
 Unit
 Month April, 1963

TABLE 67
 Ionospheric Data
 75° Mean Time

Latitude 10 2° N
 Longitude 77.5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 80	2 75	2 70	2 85	2 80	2 75	2 65	2 65	2 70	3 00	3 25	3 20	1
2 60	2 65	2 55	2 60	2 80	2 80	2 80	2 50 _{UF}	F	F	F	F	2
2 55	2 50	2 50	2 65	2 70	2 75	2 80	2 65	2 65 _F	F	3 05 _F	F	3
2 50	2 55	2 55	2 60	2 90	2 95	2 85	2 65	F	F	F	F	4
2 55	2 65	2 60	2 55	2 60	2 50	2 60	2 60	F	F	F	F	5
2 55	2 45	2 60	2 70	2 90	2 85	2 70	2 70	2 75	2 90	F	F	6
C	2 60	2 50	2 55	2 70	2 50	2 45	2 60	2 50 _F	2 60	2 70	2 75	7
2 55	2 70	2 70	2 70	2 65	2 55	2 40	2 50	F	F	F	F	8
2 60	2 60	2 60	2 70	2 75	2 85	2 85	2 75	2 75	F	F	F	9
2 50	2 45	2 60	2 65	2 80	2 85	3 00	3 85	2 80	F	3 10	3 10	10
2 50	2 50	2 50	C	2 80	2 90	3 00 _{US}	C	C	C	F	2 70	11
2 50	2 40	C	2 55	2 80	3 00	3 10	2 75	F	F	F	F	12
2 55	2 55	2 60	2 60	2 70	2 85	2 90	2 85	2 80	2 90 _{OF}	2 80	2 90	13
2 50	2 60	2 65	2 70	2 75	2 80	2 90	2 85	2 70	F	F	F	14
2 45	2 55	2 60	2 60	2 65	2 70	2 75	2 80	2 70	F	2 90	2 85	15
2 55	2 55	2 55	2 65	2 85	3 00	3 00	3 00	3 05 _{US}	3 15	3 00	3 00	16
2 50	2 45	2 45	2 60	2 85	2 90	2 90	2 90	3 00	3 05	3 00	2 95 _{US}	17
2 55	2 55	2 60	2 85	3 05	3 05	3 00	2 90 _{US}	F	F	2 80	2 80	18
2 55	2 55	2 70	2 85	2 90	2 85	2 75	2 65	2 80	3 05	3 10	3 00	19
2 50	2 50	2 55	2 65	2 80	3 00	3 00	C	2 90 _{US}	2 90	F	2 70 _{US}	20
C	C	C	C	C	C	C	C	C	C	2 70	2 70	21
2 60	2 70	2 80	2 95	3 00	3 05	3 05	3 05	3 00	3 00	3 00	3 00	22
2 65	2 65	2 80	2 95	C	3 10	2 95	2 95	3 00	3 10	3 05	2 95	23
2 55	2 55	2 65	2 75	2 85	2 95	3 05	3 05	3 15	C	C	C	24
2 50	2 65	2 75	2 85	3 00	3 05	3 20	3 25	3 30	3 20	2 80	2 55	25
2 50	2 50	2 55	2 75	2 90	3 10	3 25	3 20	3 20	3 20	3 10 _{US}	2 75	26
2 55	2 55	2 55	2 55	2 80	3 10	3 30	3 20	3 00	3 10	3 10	3 15 _F	27
2 50	2 50	2 65	2 75	3 00	3 15	3 20	3 20	3 30	3 30	3 40	3 40	28
2 50	2 55	2 70	2 70	2 90	3 10	3 20	3 50	3 40	3 50	3 20	2 70	29
2 50	C	C	2 60	2 70	3 05	3 20	3 20	3 25	3 40	3 50	3 30	30
28	28	27	28	28	29	29	27	22	16	19	19	Count
2 55	2 55	2 60	2 70	2 80	2 90	2 95	2 85	2 95	3 10	3 05	2 90	Median
2 55	2 55	2 60	2 70	2 80	2 90	2 90	2 90	2 95	3 10	3 05	2 90	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M3000)F2
Unit .
Month May, 1963

TABLE 67 (Contd)
Ionospheric Data
75° Mean Time

Latitude 10.2° N
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	3 00	3 30	3 60	3 45	E	2 90	3 40	3 20	3 00	2 60	2 30	2 80
2	2 90	3 00	3 50	3 50	E	2 90	3 40	3 30	2 80	2 30	2 55	2 70
3	3 10	3 00	3 05	F	3 60	3 40	3 60	3 30	2 90	2 40	2 55	2 60
4	F	F	F	F	3 35	2 95	3 30	2 95	2 30 _{IT}	2 50	2 50	2 55
5	F	F	F	F	3 40 _F	3 25	3 40	3 40	3 05	2 55	2 45 _H	2 50
6	2 90 _{FU}	3 20 _{RU}	3 20 _{UF}	F	3 30 _R	F	3 40	3 25	2 80	2 30 _H	2 60	2 50
7	F	3 10 _U	F	3 50	3 50	3 00	3 30	3 00	C	C	C	C
8	3 00	3 30 _{SU}	3 40	3 50	3 40	2 95	3 40	2 95	2 45	2 55	2 50	2 55
9	F	F	F	F	F	3 25	3 50	3 30	3 00	2 25 _{IT}	2 60	2 60
10	3 00	F	3 30	3 30	3 60	2 90	3 50	3 30	2 80	2 50	2 60	2 55
11	2 90 _{US}	2 90	3 00	3 30	3 60	3 05	3 45	3 25	2 80	2 25 _{IT}	2 40	2 40
12	2 70	2 80	3 00	3 25	3 50	3 00	3 30	2 85	2 45	2 40	2 55	2 40
13	3 00	3 10	3 10	2 90	3 00 _F	3 20	3 30	3 15	2 70	2 50	2 55	2 50
14	S	2 90	3 10	3 20	3 30	3 25	3 40	3 15	2 95	2 60	2 30 _H	2 50
15	F	2 95 _F	F	F	3 40	3 15	3 30	3 15	2 90	2 50	2 35	2 45
16	2 85	3 00 _{US}	3 10	3 30	3 50	3 10	3 40	3 00	2 45	2 50	2 50	2 55
17	3 00	3 05 _{UR}	3 25	3 50 _{UR}	E	3 10	3 40	3 10	2 80	2 35 _{IT}	2 45	2 50
18	2 90	2 95	3 05	3 45	3 45	2 90	3 30	3 20	2 80	2 60	2 50 _H	2 55
19	2 80	2 90	2 90	3 20	3 40	3 20	3 20	2 95	2 40	2 45	2 55	2 60
20	3 00	3 20 _{US}	3 20	3 30	3 60	3 20	3 30	2 90	2 40	2 50	2 50	2 50
21	2 90	3 15	3 20	3 60	E	3 00	3 15	2 70	C	C	C	C
22	3 00	3 30	3 45	3 45	3 60	3 10	3 20	2 95	2 60	2 35 _{IT}	C	2 55
23	2 95	3 10	3 10	3 10	3 40	3 10	3 10	2 55	2 40	2 60	2 50	2 60
24	3 05	A	3 20	3 45	3 60	3 10	3 40	3 20	2 80	2 25 _{IT}	2 60	2 55
25	C	C	C	C	C	C	C	3 30	2 70	2 45	2 55	2 55
26	F	F	F	F	3 70	3 30	3 50	2 90	2 45 _{IT}	2 50	2 50	2 50
27	2 70	F	3 30	3 55	E	3 20	3 50	3 05	2 50 _H	2 50	2 50	2 50
28	3 50 _F	3 20	3 20	3 15	3 40	3 30	3 25	3 00	2 50	2 60	2 60	2 50
29	3 20	3 20	3 20	3 20	3 40	C	3 40	3 15	2 60	2 50	2 50	2 60
30	E	E	A	A	E	3 30	3 55	3 30	3 00	2 50	2 50	2 40
Count	21	21	22	21	22	27	29	30	28	28	27	28
Median	3 00	3 10	3 20	3 30	3 40	3 10	3 40	3 15	2 75	2 50	2 50	2 55
Mean	2 95	3 10	3 20	3 35	3 45	3 10	3 35	3 10	2 70	2 45	2 50	2 55

Sweep 1 0 Mc. to 25.0 Mc in 27 seconds

Characteristic (M3000)F2
Unit
Month April, 1963.

TABLE 67 (Contd)
Ionospheric Data
75.° Mean Time

Latitude 10 2° N
Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2 80	2 70	2 80	2 90	2 70	2 80	2 60	2 70	2 80	3 00	3 30	2 90 _{US}	1
2 70	2 55	2 55	2 70	2 80	2 80	2 60	F	F	F	F	F	2
2 55	2 50	2 60	2 70	2 70	2 85	2 70	2 65	F	F	F	F	3
2 50	2 50	2 60	2 75	2 90	2 90	2 70	2 60	F	F	F	F	4
2 60	2 60	2 60	2 60	2 60	2 50	2 60	F	F	F	F	F	5
2 60	2 50	2 70	2 80	2 90	2 80	2 70	2 70	2 80	F	3 00 _{UF}	F	6
C	2 50	2 50	2 65	2 60	2 40	2 50	2 50	2 55 _{US}	2 60	2 70	2 80	7
2 60	2 65	2 70	2 70	2 65	2 45	2 30	2 10 _{UF}	F	F	F	F	8
2 55	2 60	2 60	2 70	2 80	2 85	2 75	2 75	2 70	F	F	3 00 _{UF}	9
2 45	2 55	2 60	2 70	2 85	2 85	2 90	2 85	2 85	3 00	3 10	2 95	10
2 50	2 50	C	2 80	2 90	3 05 _{US}	C	C	C	F	2 80 _{US}	2 65	11
2 40	2 50	2 50	2 70	2 95	3 05	2 90	2 70	F	F	F	F	12
2 55	2 60	2 60	2 70	2 80	2 90	2 95	2 80	2 85	2 85	2 80 _{US}	3 00 _{US}	13
2 60	2 65	2 65	2 75	2 80	2 80	2 90	2 80	F	F	F	F	14
2 55	2 60	2 60	2 65	2 65	2 70	2 85	2 70	F	F	2 85	2 90	15
2 60	2 55	2 55	2 75	2 95	3 00	3 10	3 05	3 10	3 15	3 00	2 80	16
2 50	2 45	2 50	2 70	2 80	2 85 _{US}	2 85	2 95	3 00	3 00	3 05	2 90 _{US}	17
2 60	2 60	2 75	2 95	3 05	3 00	2 90	2 90	F	2 80	2 85	2 80 _{US}	18
2 50	2 60	2 80	2 90	2 85	2 80	2 70	2 70	2 90	3 00	3 00	3 15	19
2 55	2 55	2 60	2 70	2 90	3 00	3 00	2 90	2 90	F	F	2 70	20
C	C	C	C	C	C	C	C	C	F	2 70	2 70	21
2 65	2 80	2 90	2 95	C	3 05	3 00	3 05	3 00 _{UF}	3 10	3 00	2 95	22
2 60	2 70	2 90	3 00	3 10	3 00	2 95	3 00	3 05	3 00	3 10	2 70	23
2 60	2 60	2 70	2 80	2 90	3 00	3 05	3 05	C	C	C	C	24
2 55	2 70	2 80	2 90	3 00	3 10	3 30	3 20	3 30	3 10	2 70	2 50	25
2 45	2 60	2 60	2 80	3 05	3 30	3 20	3 25	3 30	3 05	2 85	2 80	26
2 50	2 60	2 55	2 70	3 00	3 20	3 30	3 20	2 95	3 15	3 10	F	27
2 45	2 60	2 70	2 90	3 10	3 30	3 20	3 25	3 30	3 40	3 25	3 10	28
2 55	2 65	2 70	2 75	2 95	3 10	3 35	3 40	3 50	3 50	3 10	E	29
2 50	C	2 50	2 65	2 85	3 10	3 20	3 20	3 35 _{US}	3 40	3 35	F	30
28	28	28	29	28	29	28	26	18	16	20	18	Count
2 55	2 60	2 60	2 75	2 90	2 90	2 90	2 90	3 00	3 00	3 00	2 85	Median
2 55	2 60	2 65	2 75	2 85	2 90	2 90	2 90	3 00	3 05	3 00	2 85	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic foF2
Unit Mc
Month May, 1963

TABLE 68
Ionospheric Data
75° Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 3 _F	S	S	S	S	E	5 1	7 3	7 0	8 2	8 9	8 4
2	3 9 _F	A	F	F	F	E	5 3	7 4	8 3	8 7	7 7	7 4
3	S	3 2	2 6	2 6	2 7	2 6	5 2	7 2	8 3	8 1	7 0	6 9
4	5 2	4 2	3 5	3 0 _F	2 1	E	5 2	7 3	7 8	7 0	6 7	6 8
5	F	F	4 6	F	4 0	2 6	5 4	7 4	8 3	8 2 _H	7 0	7 1
6	2 5	2 1	2 1	2 2	S	E	5 3	7 4	7 9	6 9	6 5	7 0
7	3 4	2 7	1 8	1 8	1 7	E	5 3	7 5	8 6	8 0 _H	7 0	7 4
8	3 4	2 9	2 7	2 6	2 3	E	5 2	7 0	8 5	8 4 _H	7 5	7 0
9	4 6	3 7	3 1	2 9	2 0	E	5 3	7 3	8 3	7 3	7 4	6 9
10	5 3	3 1	A	2 9	2 4	E	5 5	7 6	8 0	8 2 _H	7 0	7 0
11	3 1	2 2	1 9	F	F	E	5 3	8 0	8 5 _H	8 3 _H	7 5	7 4
12	6 6	5 0	4 4	3 9 _{US}	2 9	F	5 4	8 0	9 4	R	7 6	7 6
13	6 4	4 3	3 9	3 5	3 6	2 9	5 4	8 1	8 9	9 6	8 8	7 5
14	4 6	3 2	2 4	A	F	E	5 7	7 3	8 4	9 0	9 0	8 2
15	4 7	3 3	F	F	F	1 9	5 5	7 3	8 3	9 0	7 5	6 9
16	3 2	2 5 _F	F	A	A	E	5 5	7 6	8 3	8 2	C	7 1
17	4 9	3 8 _F	F	F	F	F	5 7	7 4	8 6	9 0	8 3	7 7
18	3 9	2 6	2 3	2 5	1 4	1 8	5 8	7 5	8 0	8 6	8 3 _H	7 4
19	5 7	A	A	F	2 3	E	5 4	7 3	7 8	7 6	7 2	7 2
20	3 8	2 6	2 1	1 8	1 9	1 9 _F	5 7	7 1	8 4	8 8	8 3	7 8
21	2 3	2 0	1 7	2 3	2 5	2 5	5 2	6 6	7 0	6 8	6 4	6 4
22	2 8	F	E	F	E	1 6	5 2	6 3	7 0	6 6	6 6	6 4
23	3 2 _F	3 0	F	1 8	1 6	E	5 2	7 1	7 2	6 5	6 1	6 2
24	F	F	F	A	A	E	5 3	6 8	7 9	8 0	6 4	6 5
25	S	A	A	F	S	E	5 2	7 2	7 8	7 4	6 5	6 4
26	2 5	F	F	1 6 _F	S	E	5 0	6 7	7 8	8 1	8 0	7 5
27	E	E	E	E	E	E	5 0	6 4	7 3	8 0	6 7	6 9
28	F	A	A	A	E	E	5 0	6 6	7 4	8 6	8 3	8 0
29	F	F	F	F	F	E	5 1	7 0	8 3	9 0	9 5	9 4
30	2 8	F	F	S	S	E	5 5	6 8	7 6	7 4	8 4	8 7
31	E	A	E	E	E	E	4 9	6 9	7 9	7 9	7 5 _v	7 3
Count	25	19	17	16	18	29	31	31	31	30	30	31
Median	3 4	3 0	2 3	2 4	2 0	E	5 3	7 3	8 0	8 2	7 5	7 2
Mean	4 0	3 1	2 8	2 5	2 4	2 2	5 3	7 2	8 0	8 0	7 5	7 3

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic foF2
Unit Mc
Month May, 1963

TABLE 68
Ionospheric Data
75° Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
8.1	8.2	8.0	8.4	9.0	9.6	10.0	8.4	7.2	6.2	5.3	4.6	1
7.6	8.0	8.6	8.9	9.5	9.4	10.3	9.0	7.0	5.7	4.8	5.1	2
7.2	8.0	8.6	9.6	10.0	9.9	9.5	9.2	9.4	8.7	7.7	6.1	3
7.4	8.3	8.6	9.1	9.5	10.4	10.1	9.1	8.2	6.9	F	F	4
7.7	C	8.7	9.4	10.1	C	11.3	8.7	6.6	5.0	4.4	3.5	5
7.8	8.4	9.2	10.0	10.6	10.8	10.6	9.2	6.7	5.7	5.1	4.2	6
7.6	8.0	8.7	9.5	10.0	10.8	11.1	9.6	7.8	5.6	4.8	4.3	7
7.0	7.4	7.9	8.5	9.2	10.0	9.8	9.0	7.9	6.9	6.4	5.6	8
7.0	7.8	8.6	9.9	10.8	12.0	10.5	8.1	6.6	6.4	5.4	5.4	9
7.0	7.8	8.4	9.7	10.4	10.8	9.4	7.3	5.6	4.6	4.4	4.0	10
7.3	7.4	8.1	8.8	9.5	9.8	10.1	9.5	9.0	8.4	7.5	6.6	11
7.9	8.1	8.3	8.7	9.8	10.7	10.8	9.6	8.6	8.0	7.2	7.7	12
7.6	7.9	7.9	8.7	9.7	9.8	C	C	C	C	5.6	4.9	13
7.8	7.8	8.3	8.7	9.5	9.2	9.3	8.8	C	C	6.5	5.7	14
6.8	7.1	8.0	8.5	9.0	9.8	9.3	C	C	4.6	3.8	3.5	15
7.2	7.2	7.9	8.6	9.1	9.8	10.1	9.7	8.6	7.3	6.1	5.8	16
7.3	7.4	7.7	7.9	8.4	9.4	C	9.1	8.2	6.3	4.8	4.7	17
7.8	8.4	9.4	10.4	9.8	9.4	9.4	9.6	9.0 _R	7.0	C	5.3	18
7.3	7.7	8.2	9.3	8.7	9.0	10.2	9.0	7.8	7.0	6.5	5.3	19
8.1	8.3	8.4	C	C	10.4	10.2	7.5	5.3	3.5	2.8	2.7	20
6.6	6.8	7.4	8.1	8.4	8.7	9.6	8.3	6.8	5.6	4.0	3.4	21
6.3	6.4	7.2	8.0	8.4	8.7	8.3	8.2	6.6	5.5	4.0	3.7	22
6.2	6.5	7.0	7.4	8.8	9.2	8.8	6.9	5.8	3.9	3.3	F	23
6.3	6.4	7.0	7.8	8.8	8.9	9.8	7.0	4.5 _{US}	3.6	2.8	S	24
6.4	6.6	6.7	6.6	7.6	8.1	8.6	8.0	6.5	5.1	4.2	3.4 _{UF}	25
6.8	6.4	6.6	6.9	7.0	7.8	9.4	8.3	5.4	3.7	2.3	F	26
7.1	7.6	7.8	8.5	8.7	8.5	9.0	8.4	6.0	4.7	2.6	F	27
7.8	7.8 _{II}	8.5	8.7	9.4	9.4	9.6	9.4	7.6	4.8	3.7	F	28
9.8	8.4	C	8.5	8.8	9.4	10.3	9.1	7.0	5.4	4.2	3.5 _{UR}	29
9.5	9.7	10.0	9.6	10.1	10.8	8.4	4.6	2.5	E	E	E	30
7.2	7.5	7.6	7.9	8.0	8.7	C	C	C	6.8	4.9 _{US}	4.3 _F	31
31	30	30	30	30	30	28	28	27	29	29	25	Count
7.3	7.8	8.2	8.7	9.3	9.5	9.8	8.9	7.0	5.6	4.8	4.6	Median
7.4	7.6	8.0	8.7	9.2	9.6	9.8	8.5	7.0	5.8	4.8	4.7	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic foF2
Unit Mc
Month May, 1963.

TABLE 68 (Contd)
Ionospheric Data
75° Mean Time

Latitude 10 2° N
Longitude , 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	S	S	S	S	E	3.2	6.5	7.2 ^H	7.8	8.2	9.2 ^H	8.1
2	F	A	F	F	E	3.4	6.8	7.6	8.6	8.4	7.4	7.4
3	3.7	2.7	2.6	2.8 ^F	2.6	3.4	6.1	7.9	8.1	7.6 ^H	7.0	7.0
4	4.6	3.7	A	2.8	E	3.3	6.6	7.6	7.5	6.7	6.7	6.9
5	F	F	F	F	3.5	3.6	6.8	7.8	8.2 ^H	7.4	7.2	7.4
6	2.3	2.0	2.1	1.9	E	3.3	6.5	7.8	7.5 ^H	6.6	6.8	7.6
7	3.0	2.0	1.8	F	F	3.6	6.6	8.1	8.4 ^H	7.3	7.3	7.5
8	3.0	2.8	2.7	2.6	2.0	3.7	6.1	7.8	8.6	8.0 ^H	7.0	7.0
9	4.2	3.3	3.2	2.6	E	3.6	6.3	8.0	7.9	7.3	6.9	6.9
10	4.3	A	A	2.5	2.4	3.6	6.9	7.9	8.3 ^H	7.2	6.9	6.8
11	2.6	R	F	F	E	3.5	7.0	8.5	8.3 ^H	7.8	7.3	7.3
12	5.7	4.6	4.0	3.3	2.3	3.7	6.9	8.6	9.4	7.8	7.7	7.6
13	4.9	4.1	3.8	3.5	3.1	3.9	7.0	8.4	9.1	9.2 ^H	7.7	7.2
14	3.9	2.6	F	A	F	3.9	6.2	7.8	8.8	9.5	8.6	8.2
15	4.0	F	F	F	2.3	3.5	6.5	7.6	8.7	8.6 ^H	7.0	6.7
16	F	F	A	F	E	3.7	6.8	8.0	8.3	C	C	7.1
17	4.1 ^F	3.4 ^F	F	F	F	4.1	6.7	8.3	8.8	8.6 ^H	7.9	7.3
18	2.9	2.4	2.4	2.4	E	3.9	7.0	7.9	C	8.5	7.7 ^H	7.6
19	3.1	2.5	A	F	2.0	3.8	6.6	7.6	7.8	7.4	7.2	7.1
20	3.1	2.4	1.8	1.9	1.7	3.7	6.3	7.9	8.9	8.6	8.0	7.8
21	2.3	1.8	S	2.5	2.6	3.8	6.1	7.1	6.9	6.6	6.4	6.5
22	2.2	E	F	E	E	3.5	5.9	6.6	6.8	6.6	6.5	C
23	3.1	2.6 ^F	2.0	F	E	3.4	6.4	7.3	6.8	6.1	6.3	6.1
24	F	F	A	A	E	3.5	6.5	7.3	8.3	7.8	6.4	6.4
25	S	A	S	A	1.4 ^{US}	3.5	6.3	7.9	7.8	6.9	6.5	6.2
26	F	F	F	1.6 ^{UF}	E	4.0 ^F	6.0	7.5	8.0	8.0	7.8	7.2
27	E	E	E	E	E	3.3	6.2	7.3	8.1	7.6	6.5	7.0
28	F	F	A	A	E	3.4	5.7	7.1	7.9	8.6	8.3	7.8
29	F	F	F	F	E	3.2	6.6	8.0	8.5	9.5	9.2	9.8
30	F	F	S	S	S	3.4	6.1	7.2	7.2	8.0	8.9	9.6
31	A	E	E	E	E	3.2	6.2	7.8	8.1	7.4	7.9 ^H	7.4
Count	20	18	12	15	27	31	31	31	30	30	30	30
Median	3.1	2.6	2.2	2.5	E	3.5	6.5	7.8	8.2	7.8	7.2	7.2
Mean	3.5	2.9	2.6	2.5	2.4	3.6	6.4	7.7	8.1	7.8	7.4	7.4

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic foF2
Unit Mc
Month May, 1963

TABLE 68 (Contd)
Ionospheric Data
75° Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
8.2	8.0	8.2	8.6	9.4	10.2	9.2	7.7	6.9	5.6	4.8	4.3	1
7.8	8.2	8.8	9.2	9.5	9.8	9.8	8.0	6.3	5.2	4.9	4.8	2
7.6	8.3	9.1	10.0	10.0	9.7	9.5	9.5	9.0	8.4	6.9	5.8	3
7.6	8.5	8.8	9.4	10.0	10.4	9.8	C	7.6	F	F	F	4
C	8.4	9.0	9.9	10.8	C	10.4	7.7	5.9	4.8	3.9	2.9	5
8.2	8.7	9.6	10.4	10.5	11.6	10.3	7.8	6.2	5.4	4.6	3.8	6
7.8	8.4	8.9	9.8	10.4	11.4	10.0	9.0	6.5	5.1	4.3	3.8	7
7.2	7.6	8.2	8.8	9.6	9.8	9.7	8.5	7.4	6.6	6.1	5.1	8
7.4	8.3	9.1	10.4	11.0	11.5	9.2	7.2	6.6	6.0	5.0	5.5	9
7.4	8.0	8.8	10.0	10.6	10.6	8.4	6.6	5.0	4.4	4.3	3.5	10
7.3	7.6	8.7	9.2	9.7	C	10.0	9.2	8.7	8.0	6.8	6.5	11
7.9	8.2	8.4	9.0	10.0	10.8	10.5	9.0	8.3	7.6	7.4 ^{US}	7.2 ^{US}	12
7.8	7.9	8.4	9.3	9.8	9.6	C	C	C	6.3	5.4	5.3 ^{US}	13
7.7	8.0	8.5	9.1	9.6	9.1	9.6	C	C	C	6.1	5.3	14
7.0	7.6	8.2	9.0	9.7	9.5	9.1	C	C	4.0	3.6	3.3 ^F	15
7.2	7.6	8.1	8.8	9.6	10.0	10.1	8.7	8.1	6.4	5.8	5.3 ^{US}	16
7.3	7.7	7.7	8.0	8.8	C	9.4	8.8	7.6	5.4	4.9	4.7	17
8.0	8.9	9.7	10.4	9.6	9.1	9.6	9.7	8.2	6.2	5.3	4.5	18
7.6	8.0	8.7	9.2	8.7	9.4	10.0	8.1	7.1	7.0	5.5	4.6	19
8.1	8.3	8.6	C	C	11.0	8.8	6.3	4.2	3.2	2.8	2.4	20
6.8	7.0	7.9	8.3	8.4	8.9	8.9	7.5	6.2	4.7	3.8	3.2	21
6.4	6.9	7.6	8.0	8.7	8.4	8.9	7.5	6.4	5.0	3.9	3.5	22
6.4	6.8	7.2	8.0	9.2	9.1	8.3	5.7	5.1	3.3	F	F	23
6.1	6.6	7.2	8.3	9.0	9.0	8.6	5.4	4.1	3.1	S	2.5 ^{US}	24
6.4	6.6	6.8	7.4	7.9	8.4	8.6	7.4	5.9	4.7	3.9	2.4	25
6.5	6.5	6.7	7.1	7.4	8.6	9.3	6.6	4.3	3.2	F	F	26
7.3	7.8	8.4	8.8	8.7	8.8	9.2	7.5	5.2	3.5	2.1	F	27
7.8	8.3	8.6	9.0	9.5	9.6	9.7	8.7	5.8	4.3	3.6 ^{UF}	F	28
8.8	8.0	8.5	8.8	8.9	9.9	9.8	7.6	6.2	4.7	3.8	3.3 ^F	29
9.5	9.6	10.0	9.8	11.0	11.0	6.5	3.3 ^{US}	2.3	E	E	E	30
7.5	7.6	7.6	8.0	8.2	8.8	C	C	C	5.8	4.6	4.1 ^F	31
30	31	31	30	30	28	29	26	27	29	27	26	Count
7.6	8.0	8.5	9.0	9.6	9.6	9.5	7.7	6.3	5.1	4.6	4.2	Median
7.5	7.9	8.4	9.0	9.5	9.8	9.1	7.6	6.3	5.3	4.7	4.3	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
Unit Mc
Month May, 1963

TABLE 69
Ionospheric Data
75° E Mean Time

Latitude. 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	I	L	4.6	B
2								L	L	4.5	4.6	4.6
3								L	L	4.6	4.6	4.7
4								L	L	4.6	4.6	4.7
5								L	L	I	4.6	4.6
6								L	I	4.6	L	4.8
7								L	4.4	4.7	4.8	4.9
8								L	L	L	L	4.6
9								L	L	L	L	L
10								L	L	I	L	L
11								L	L	L	4.6	4.7
12								L	L	LH	4.7	4.7
13								L	L	L	L	4.7
14								L	L	L	L	L
15							L	L	L	I	4.6	4.6
16								L	L	4.6	C	4.8
17							I	L	L	LH	4.6	4.6
18								L	L	4.6	4.7	4.7
19								L	L	L	4.7	4.6
20								L	I	4.6	4.6	4.6
21								L	L	L	4.5	4.5
22								L	L	4.5	4.5	4.6
23								L	L	4.6	4.5	4.6
24								L	L	4.5	L	4.6
25								L	L	4.5	4.5	4.5
26								I	L	4.0	4.4	4.5
27								L	L	LH	LH	4.4
28								L	L	L	4.3	4.6H
29								L	L	L	4.4	4.5
30								L	L	L	L	L
31								L	L	L	4.5H	4.6
Count									2	15	22	26
Median									.	4.6	4.6	4.6
Mean										4.5	4.6	4.6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds.

Characteristic foF1
Unit Mc
Month May, 1963

TABLE 69
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4 6	4 6	4 4	L	L	A							1
4 6	4 5	4 5	L	L	L							2
4 6	4 6	4 4	L	A	A							3
4 7	4 5	4 6	L	A	A							4
4 5	C	4 6	A	L								5
4 7	4 6	A	L	L								6
4 7	4 8	4 6	L	L	L							7
4 7	4 6	4 7	L	L	L							8
L	L	L	L	L	L							9
L	L	L	L	L	L							10
4 6	L	L	L	L	L							11
L	L	L	L	A	L							12
L	L	L	L	L	L							13
L	L	L	L	A	L							14
4 6	L	LH	L	L	L							15
4 7	4 7	4 8	L	L	L							16
4 6	4 5	LH	LH	A	L							17
4 6	4 6	4 6	4 2	L	L							18
4 7	4 6	A	L	L	L							19
4 6	4 6	L	C	C	L							20
4 6	4 6	4 4	4 1	L	L							21
4 6	4 5	4 4	L	L	L							22
4 5	4 5	4 5	L	L	L							23
4 6	4 5	4 5	4 3	L	L							24
4 5	4 5	4 4	4 2	L	L							25
4 5	4 4	L	LH	L	L							26
4 4	4 5	4 4	L	L	L							27
LH	4 6	4 5	L	L	L							28
4 5	L	C	L	L	L							29
A	LH	4 4	L	L	L							30
4 5	4 5	4 4	L	L	L							31
24	21	18	4									Count
4 6	4 6	4 5										Median
4 6	4 6	4 5										Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foF1
Unit Mc
Month May, 1963

TABLE 69 (Cont'd)
Ionospheric Data
75° E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	L	4 8	4 6	B
2								L	L	4 6	4 5	4 6
3							L	L	L	4 5	4 7	4 6
4							L	L	L	4 7	4 6	4 7
5							L	L	4 4	4 5	4 7	4 8
6							L	L	L	L	4 6	4 7
7							L	L	L	L	4 8	4 8
8							L	L	L	4 6L	4 6	4 7
9							L	L	L	L	L	L
10							L	L	L	L	L	E
11							L	L	L	L	L	4 7
12							L	L	LH	4 7	4 5	L
13							L	L	L	4 5H	4 7	L
14							L	L	L	4 6	L	L
15							L	L	L	L	4 6	4 6
16							L	L	4 6	C	C	4 8
17							L	L	L	4 6	4 7	4 6
18							L	L	C	4 7	4 7	4 8
19							L	L	L	4 7	4 6	4 6
20							L	L	4 3	4 8	4 5	4 6
21								L	L	4 5	4 6	4 6
22							L	L	L	4 6	4 6	C
23							L	L	L	4 5	4 6	4 5
24							L	L	4 5	4 5	4 6	4 5
25							L	L	4 5	L	4 5	4 5
26							L	L	4 3	LH	LH	4 5
27							L	LH	LH	4 5	4 6	4 5
28							L	L	L	4 4	4 5	4 5
29							L	L	L	4 6	L	4 5H
30							L	L	L	4 5	4 7	4 6
31								L	LH	4 5	4 7	4 6
Count									6	22	24	22
Median									4 4	4 6	4 6	4 6
Mean									4 4	4 6	4 6	4 6

Sweep 1 0 to 25 0 Mc in 27 seconds

Characteristic foF1
 Unit Mc
 Month May, 1963

TABLE 69 (Contd)
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
L	L	L	L	L								1
4.6	4.5	L	L	L								2
4.8	4.6	4.5	L	A								3
4.7	4.6	L	A	L								4
C	4.6	A	A	L								5
L	L	A	L	L								6
4.7	4.6	L	L	L								7
4.7	4.6	4.6	L	L								8
L	L	L	L	L								9
L	L	L	L	L								10
4.6	L	L	A	L								11
L	L	L	L	L								12
L	L	L	L	L								13
L	L	L	A	L								14
4.5	L	L	L	L								15
4.8	L	L	4.4	L	L							16
4.6	4.4	LH	L	A	L							17
4.7	4.6	L	L	L	L							18
4.6	4.6	4.6	L	L	L							19
4.6	L	L	C	C	L							20
4.6	4.6	4.3	L	L								21
4.6	4.5	4.4	L	A								22
4.5	4.6	L	4.3	L								23
4.7	4.5	4.4	4.3	L								24
4.7	4.4	4.4	L	L								25
4.4	4.4	L	LH	L	L							26
4.5	4.4	4.4H	4.2	L	L							27
4.6	4.5	4.4	L	L								28
L	L	4.5	L	L								29
4.7	4.5	L	L	L								30
4.5	4.4H	4.4H	L	L								31
22	19	11	4									Count
4.6	4.5	4.4										Median
4.6	4.5	4.4										Mean

Sweep 1.0 to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month May, 1963

TABLE 70
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							R	A	2.9	A	A	B
2								A	A	A	A	A
3							1.8	A	A	A	A	A
4							2.0	A	A	A	A	A
5							1.8	2.5	A	A	A	A
6							1.8	A	A	A	A	A
7							1.9	2.6	A	A	A	A
8							1.7	2.5	A	A	A	A
9							A	A	A	A	A	A
10								2.5	A	A	A	A
11								A	A	A	A	A
12							R	2.6	A	A	A	A
13							R	2.5	2.9 ^{UR}	A	A	A
14							2.1	A	A	A	A	A
15							R	2.9 ^H	A	A	A	A
16							2.1 ^H	A	A	A	C	A
17							2.5	R	A	A	A	A
18							1.9	A	A	A	A	A
19							2.0	A	3.0	A	A	A
20							1.8	2.6	A	3.2	A	A
21								A	A	A	A	A
22							1.9	A	A	A	A	A
23							1.8	A	A	A	A	A
24							2.1	2.6	3.1	A	A	A
25							1.6	2.6	A	A	A	A
26							R	2.8 ^H	A	A	A	A
27								2.7 ^H	A	A	A	A
28							R	2.5	A	A	A	A
29							R	R	2.8	A	A	A
30							R	A	A	A	B	A
31							A	A	A	A	A	A
Count							16	13	5	1		
Median							1.9	2.6	2.9			
Mean							1.9	2.6	2.9			

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic foE
Unit Mc
Month May, 1963

TABLE 70
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
B	B	A	A	2.7	A							1
A	A	A	A	2.8	A							2
A	A	A	A	A	A							3
A	A	A	A	A	A							4
A	C	A	A	A	A							5
A	A	A	A	A								6
A	A	A	3.1	3.0								7
A	A	A	3.2	2.7								8
A	A	A	3.2	2.7								9
A	A	A	A	B								10
A	A	A	A	A	A							11
A	A	A	A	A	A							12
A	A	A	3.0	R	2.4							13
A	A	A	A	A	A							14
A	A	A	3.1	R	2.5							15
A	A	A	3.1	B	2.3							16
A	A	A	3.1	A	A							17
A	3.7	3.3	3.1	R	S							18
A	A	A	3.2	A	A							19
3.5	A	3.2	C	C	A							20
A	A	A	A	A	A							21
A	A	A	A	A	A							22
A	A	A	3.1	S								23
A	A	3.4	3.2	2.7								24
A	A	A	A	2.8	A							25
A	A	A	A	A	R							26
A	A	A	R	B	B							27
A	A	A	A	B	R							28
A	A	C	A	A	A							29
R	B	R	2.9	B	A							30
A	A	A	3.0	R	R							31
1	1	3	13	7	3							Count
			3.1	2.7								Median
			3.1	2.8								Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foE
Unit Mc
Month May 1963

TABLE 70 (Contd)
Ionospheric Data
Mean 75°E Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							2.4	A	R	A	B	B
2							A	A	A	A	A	A
3							A	A	A	A	A	A
4							2.3	A	A	A	A	A
5							2.3 _{II}	A	A	A	A	A
6							2.4	A	A	A	A	A
7							2.4 _{II}	A	A	A	A	A
8							2.2	2.7	A	A	A	A
9							A	A	A	A	A	A
10							2.3	A	A	A	A	A
11							A	A	A	A	A	A
12							2.4 _{II}	A	A	A	A	A
13							2.2	2.8	A	A	A	A
14							R	A	A	A	A	A
15							2.5 _{II}	A	A	A	A	A
16							2.5	A	A	C	C	A
17							2.5 _{II}	A	A	A	A	A
18							2.4	A	C	A	A	A
19							A	A	A	A	A	A
20							2.4	2.7	A	A	A	3.5
21							2.4	A	A	A	A	A
22							2.2	A	A	A	A	C
23							A	A	A	A	A	A
24							2.4	2.7	A	A	A	A
25							2.4 _{II}	2.8	A	A	A	A
26							2.5 _H	3.0 _{II}	A	A	A	A
27							2.6 _H	3.0 _H	A	A	A	A
28							2.4	B	A	A	A	A
29							R	2.7	A	A	A	A
30							R	A	A	A	A	B
31							A	A	A	A	A	A
Count							2.1	8			.	1
Median							2.4	2.8			.	--
Mean							2.4	2.8			...	--

Sweep 1.0 Mc to 25.0 Mc, in 27 seconds

Characteristic foE
Unit Mc
Month May 1963

TABLE 70 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
B	B	A	3.1	A								1
A	A	A	3.1	2.5								2
A	3.4	A	A	A	A							3
A	A	3.2	A	A								4
C	A	A	A	A								5
A	A	A	A	A								6
A	A	3.4	R	A								7
A	A	A	3.0	2.5								8
A	A	A	2.9									9
A	A	A	B									10
A	A	A	A	A								11
A	A	A	A	A								12
A	A	A	R	R								13
A	A	A	A	A								14
A	A	A	2.8UR	B								15
A	A	3.1	3.2	2.7	2.3							16
A	A	A	A	A								17
A	3.5	3.1	2.9	2.7								18
A	A	3.2	3.0	A	A							19
A	3.3	3.2	C	C								20
A	A	A	2.8	2.5								21
A	A	A	A	A								22
A	A	3.3	2.9	2.5								23
A	A	3.3	B	2.5								24
A	A	A	A	A	A							25
A	A	A	A	2.7								26
A	A	R	B	B								27
A	A	A	R	R								28
A	A	A	A	A	A							29
A	R	R	B	2.5								30
A	A	A	R	R								31

	3	8	10	9	1							Count
		3.2	3.0	2.5								Median
		3.3	3.0	2.6								Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foEs
Unit Mc
Month May, 1963

TABLE 71
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							G	8 4	G	8 8	11 7	B
2	5 8	7 0	7 2	7 2	8 4	7 0	6 6	7 6	11 6	10 0	10 7	11 6
3				3 8			5 6	7 2	9 0	10 8	11 6	11 6
4	3 2		4 8				G	10 0	9 4	11 0	11 6	11 6
5							G	4 8	9 0	11 8	11 0	11 0
6							G	6 6	10 2	10 6	11 0	11 6
7							G	7 6	9 4	11 4	11 2	12 0
8							G	G	8 3	9 8	11 6	11 6
9							2 9	6 6	11 0	12 0	12 0	11 0
10	4 4	4 2	7 0	4 8us			2 8	3 4	9 0	11 0	11 6	11 0
11	6 0us		2 0					7 0	9 4	11 0	11 2	12 0
12							G	6 0	10 0	10 4	11 1	11 7
13		S					G	G	6 8	11 0	12 0	11 6
14	4 2	6 5	6 6us	7 0	3 5		G	8 0	10 0	10 0	12 0	11 7
15	3 0						G	G	8 8	11 6	11 6	12 3
16		4 4	3 8	5 6	4 2		G	6 3	9 0	10 8	C	11 7
17							G	G	10 0	10 0	12 0	12 0
18	3 6						G	5 6	8 0	9 7	10 6	11 0
19	3 5	5 0	2 8				2 8	5 8	8 8	9 6	10 3	11 0
20							3 0	5 7	8 8	10 0	10 2	10 6
21				2 0			2 6	7 6	9 6	10 6	11 0	10 8
22							6 6	6 6	9 4	10 0	10 4	11 0
23							2 4	6 0	9 2	10 6	10 6	11 4
24	3 2		3 0	8 0	5 0		G	G	9 0	10 8	10 6	10 6
25		3 6	5 6	8 0	5 4		G	6 6	9 0	10 8	10 8	11 2
26	3 3						G	G	6 4	9 4	11 1	11 4
27		4 1		1 7				G	8 6	10 8	12 0	12 0
28		3 7	4 2	5 8	S		G	G	9 0	9 6	11 0	10 6
29	4 0				2 8		G	G	6 0	8 0	8 2	11 6
30	3 4	2 8	3 2	S	4 8us		G	7 4	9 1	10 8	B	8 4
31	3 9us	2 2					5 0us	8 0	9 0	10 0	10 8	12 0
Count	13	10	11	10	7	1	29	31	31	31	29	30
Median	3 6	4 2	4 2	5 7	4 8		G	6 0	9 0	10 6	11 1	11 6
Mean	4 0	4 4	4 6	5 4	4 9		4 0	6 8	9 0	10 4	11 1	11 3

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foEs
Unit Mc
Month May, 1963

TABLE 71
Ionospheric Data
75°E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
9 8	10 4	9 8	9 8	9 3	14 6	5 8				5 8		1
11 6	10 6	10 6	9 2	6 4	5 5	10 6	6 2		2 6			2
10 0	10 4	9 0	9 4	11 8	11 6	7 4	8 4	6 4	3 8	4 6		3
11 3	10 8	10 2	6 7	11 4	6 7	5 8	6 0	2 7				4
11 4	C	8 6	11 8	4 7								5
11 2	11 8	17 0	8 8	6 2	6 6							6
11 8	12 0	9 6	4 1	G		8 8						7
11 2	11 6	11 4	5 8	G		5 4	3 7					8
12 0	11 8	10 8	G	G			5 6	3 2			9 0	9
11 6	9 8	9 0	8 4	G								10
11 4	11 8	10 1	11 0	9 2	3 2							11
11 8	12 0	12 0	13 4	6 6	4 6							12
11 5	11 0	11 2	5 7	G	G					3 5	4 8	13
11 9	11 4	12 0	10 0	7 4	3 6					8		14
11 6	12 0	10 0	G	G	G			S				15
12 0	11 4	10 0	3 6		G			2 3	3 1			16
12 0	11 8	10 8	10 7	11 8	10 0					C		17
10 0	9 0	3 9	5 0	G	3 3	3 7						18
11 0	10 7	11 8	9 8	13 3	5 8	6 6						19
10 9	9 8	9 0	C	C	S	3 4						20
11 5	11 0	10 0	7 6	7 4	6 0	3 8						21
10 8	11 7	10 2	9 4	5 8	5 5					3 0	3 8	22
10 6	11 0	9 8	G	3 4	2 8				3 6	4 8	3 2	23
10 6	11 0	8 2	7 7	G	2 8							24
11 8	11 8	10 0	12 0	5 6	7 6	9 2	7 0					25
12 0	12 0	10 3	10 0	6 6	G	7 8us	S					26
11 6	12 0	8 6	G	G	G						8	27
11 6	11 1	9 6	8 8	G	G				7 0	7 4	4 0	28
9 2	10 0	C	10 7	8 0	6 2us	8 6						29
G	G	G	G	G								30
10 8	10 2	10 0	G	G	G					2 6		31
31	30	30	30	29	24	13	6	4	5	7	4	Count
11 4	11 0	10 0	8 6	5 8	4 1	6 6	6 1		3 6	4 6		Median
11 2	11 0	10 1	8 7	8 4	6 2	6 7	6 2		4 0	4 5		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
Unit · Mc
Month · May, 1963

TABLE 71 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10·2° N
Longitude · 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	8.4	G	10.6	11.0	9.2
2	7.4	5.6	6.0	5.7	9.2		6.6	12.0	9.6	10.6	11.4	11.8
3			3.4	5.2			7.0	8.8	9.4	11.2	11.4	11.6
4		2.8	7.4				4.8	10.6	10.4	10.8	11.0	11.2
5							6.0	8.4	9.8	11.2	10.6	11.4
6							8.4	8.8	10.4	11.6	11.6	11.2
7							G	8.7	10.4	11.8	11.7	12.6
8							G	5.8	9.0	10.8	11.2	11.6
9		4.0					6.0	8.8	10.0	11.0	12.0	11.4
10		6.2	6.8	3.6			2.6	8.0	10.8	11.0	11.1	11.0
11			1.9				7.0	8.6	9.8	11.2	11.3	11.7
12							G	8.0	10.2	11.2	11.3	11.6
13		2.8					G	G	7.6	11.6	11.2	11.2
14	4.4	5.0	4.0	5.0	3.5		G	8.0	9.2	11.0	12.0	12.2
15			5.2				G	6.4	10.0	11.6	12.0	12.0
16		3.0	5.6	1.8			3.8	8.0	10.0	C	C	12.0
17				2.6			G	7.8	9.7	11.1	12.0	11.7
18							G	7.6	C	10.4	10.6	10.8
19	3.8		3.8				3.5	7.0	9.6	9.7	10.8	11.0
20							G	6.6	9.8	10.6	10.4	10.2
21							5.8	9.2	10.2	10.8	11.0	11.2
22							5.6	8.8	9.6	9.8	9.7	C
23							4.8	8.2	9.6	10.6	10.6	10.0
24		2.0	4.7	7.2			G	8.2	9.7	10.8	11.6	10.6
25		5.4		5.8			G	7.0	9.6	10.4	11.8	11.4
26		3.2		6.6			G	G	8.1	11.0	11.6	12.0
27		2.5					G	G	9.8	10.8	11.4	11.6
28		5.0	6.0	5.0			G	G	8.0	9.0	12.0	12.0
29				6.0			6.0	5.8	8.0	9.0	12.0	11.8
30	2.7	2.5	S	S	S		G	8.0	8.7	9.0	9.2	B
31	3.3us						6.0	8.0	9.6	11.0	11.1	12.0
Count	5	13	11	11	2		31	31	30	30	30	29
Median	3.8	3.2	5.2	5.2			G	8.0	9.6	10.8	11.3	11.6
Mean	4.3	3.8	5.0	5.0		..	5.6	8.2	9.5	10.7	11.2	11.4

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic foEs
Unit Mc
Month May, 1963

TABLE 71 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10·2° N.
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
11·2	11·4	9·4	8·0	8·6	3·1							1
10·8	10·4	9·8	7·8	6·0	9·8	9·4		3·1			2·6	2
11·2	9·3	9·0	9·5	11·6	7·0	9·0	9·4		9·0	3·3		3
11·5	10·6	9·0	16·2	6·5	6·2	4·5	C			C		4
C	10·6	11·6	13·8	6·4								5
10·0	11·2	17·0	7·8									6
11·8	10·6	8·6	G	4·6	6·8	3·8	3·0					7
11·4	11·4	9·4	G	G		8·6		3·8				8
12·0	11·4	10·6	G								8·6	9
11·0	7·8	9·6	7·8	G						2·7	8·0	10
11·8	10·7	9·7	9·4	4·3	C							11
12·0	11·8	9·6	10·6	7·0								12
11·2	11·0	10·4	G	G					3·7	7·0	4·3	13
12·1	11·8	10·8	8·5	9·4								14
11·3	11·6	9·4	G							2·6		15
11·8	11·6	8·0	G	G	G			2·5	2·3			16
11·4	11·6	10·6	9·2	15·0		2·6				4·1		17
10·2	G	G	5·6	3·1		3·4	4·4		2·8			18
11·2	10·0	10·6	10·6	5·5	6·7	6·0	3·0					19
11·0	9·6	8·6	C	C		2·8						20
10·0	11·0	9·0	G	1·8	6·0	3·6						21
11·0	10·2	9·6	6·4	10·4	6·0					2·7		22
10·6	9·8	5·8	G	G	2·4				5·8		3·6	23
11·0	10·0	G	G	G	3·6							24
11·0	11·4	10·6	6·0	11·8	17·4	4·6	4·6					25
11·4	11·0	11·1	8·0	G	5·4	5·6						26
11·0	11·7	G	G	G								27
11·0	11·0	9·6	G	C				4·4	6·3			28
11·0	11·0	12·0	8·8	6·8	8·6	6·2us						29
6·0	G	6·0	G	G								30
10·7	9·7	8·0	G	G								31
30	31	31	30	27	14	13	5	4	6	6	5	Count
11·1	11·0	9·6	6·2	4·3	6·1	4·6	4·4		4·8	3·0	4·3	Median
11·0	10·7	9·8	9·0	7·6	6·8	5·4	4·9		5·0	3·7	5·4	Mean

Sweep 1·0 Mc. to 25·0 Mc in 27 seconds.

Characteristic fbEs
Unit Mc
Month May 1963

TABLE 72
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							G	2 6	G	3 3	3 5	B
2	2 2	A	A	2 2			2 2	2 5	3 6	3 3	3 5	3 6
3				1 9				2 7	3 0	3 4	3 6	3 8
4	1 8		2 2				G	2 7	3 0	3 4	3 7	3 8
5							G	2 8	3 0	3 5	3 6	3 7
6							G	2 8	3 2	3 5	3 8	3 8
7							G	2 7	3 2	3 5	3 6	3 8
8							G	G	3 4	3 6	3 7	3 9
9							2 1	2 9	3 2	3 5	3 7	3 8
10		1 9	A	2 4			2 2	2 8	3 1	3 4	3 7	3 8
11	2 4		1 4					2 6	3 0	3 4	3 6	3 7
12							G	2 8	3 1	3 4	3 6	3 6
13		2 0					G	G	3 4	3 4	3 7	3 8
14		2 6	1 8	A	1 7		G	3 1	3 3	3 4	3 7	3 7
15	2 2								3 3	3 6	3 6	3 8
16		1 8	1 6	A	A		G	2 8	3 2	3 5	C	3 8
17							G	G	3 2	3 4	3 6	3 7
18	2 0						G	2 7	3 2	3 4	3 6	3 9
19	2 0	A	A				2 0	2 8	3 2	3 4	3 8	3 8
20							2 0	2 6	3 1	3 4	3 6	3 6
21				1 2			2 0	2 7	3 0	3 3	3 5	3 8
22								2 7	3 1	3 4	3 6	3 6
23							2 0	2 8	3 1	3 4	3 6	3 6
24	1 8	2 6	1 3	A	A		G	G	3 3	3 3	3 6	3 8
25		A	A				G	3 0	3 2	3 4	3 6	3 8
26	A						G	G	3 0	3 3	3 5	3 7
27								G	3 1	3 3	3 5	3 7
28			1 4	1 3			G	G	3 1	3 5	3 5	3 6
29	2 3						G	G	3 1	3 4	3 6	3 8
30	1 8	S		S	S			2 6	3 2	3 6	B	3 8
31		A					2 5	3 0	3 3	3 4	3 5	3 7
Count	10	9	10	8	3		25	30	31	31	29	30
Median	2 1	2 6	2 0	2 3			G	2 7	3 2	3 4	3 6	3 8
Mean	2 1	2 2	1 6	1 8			2 1	2 8	3 2	3 4	3 6	3 7

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic fBLs
Unit Mc
Month May 1963

TABLE 72
Ionospheric Data
75 E Mean Time

Latitude 10 2' N
Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
	3.8	3.6	3.5		6.8					2.1		1
3.6	3.7	3.5	3.2		2.7	5.0	2.6					2
3.7	3.8	3.5	3.5	4.6	4.5	3.0	3.5	2.3	2.3	2.0		3
3.8	3.6	3.5	3.1	5.1	3.6	3.5	2.4	2.3				4
3.8	C	3.5	4.4	4.0								5
3.8	3.8	6.0	3.5	3.2								6
3.8	3.7	3.6	3.1	G		2.4	2.6					7
3.8	3.7	3.6		G		2.4	3.3					8
3.8	3.8	3.6	G	G							2.0	9
3.7	3.8	3.6	3.3	G								10
3.9	3.8	3.6	3.8	3.1	2.8							11
3.8	3.8	3.7	4.8	3.0	2.8							12
3.9	3.8	3.8	3.4	G	G							13
3.8	3.8	3.5	3.2	3.7	2.5					2.0	2.8	14
3.9	3.7	3.5										15
3.8	3.7	3.6	3.6		G		1.8	2.4				16
3.8	3.7	3.5	3.4	1.8	3.0							17
3.8	3.9	3.6	3.4	G	2.6	2.8				C		18
3.9	3.8	3.3	3.0	3.8	2.6	2.1						19
3.7	3.6	3.5	C	C	2.4	2.8						20
3.8	3.8	3.6	3.3	3.2	2.6	2.7						21
3.6	3.6	3.5	3.8	3.1	2.6					2.0		22
3.6	3.6	3.6	G	3.0	2.6						2.2	23
3.8	3.7	3.6	3.3	G	2.6							24
3.8	3.7	3.6	3.7	3.6	4.1	2.0	2.5					25
3.8	3.6	3.4	3.2	3.0	G	2.8	2.3					26
3.9	3.7	2.7	G	G	G							27
3.8	3.6	3.5	3.2	G	G				2.2	2.5	2.4	28
3.8	3.6	C	3.5	3.1	2.8	2.9						29
	G	G	G	G								30
3.7	3.7	3.6	G	G	G							31
29	30	30	28	26	23	12	7	3	3	5	4	Count
3.8	3.7	3.6	3.4	3.0	2.6	2.8	2.6			2.0		Median
3.8	3.7	3.7	3.5	3.9	3.1	2.9	2.7			2.1		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month May, 1963

TABLE 72 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	3 0	G	3 5		
2	2 1	A	A	2 3			2 4	3 3	3 2	3 4	3 6	3 7
3			1 5	1 9			2 6	3 0	3 2	3 5	3 8	3 8
4		1 6	A				2 3	3 0	3 3	3 5	3 8	3 8
5							2 4	2 9	3 2	3 5	3 6	3 8
6							2 6	3 0	3 4	3 5	3 8	3 8
7							G	2 9	3 3	3 6	3 7	3 7
8							G		3 4	3 6	3 8	3 8
9		2 4					2 5	3 0	3 2	3 5	3 8	3 8
10		A	A				2 5	3 0	3 2	3 5	3 8	3 8
11			1 4				2 4	2 9	3 2	3 5	3 6	3 9
12							G	3 0	3 3	3 4	3 6	3 8
13		1 9					G	G	3 4	3 6	3 7	3 9
14	2 3	2 2	1 4				G	3 2	3 3	3 6	3 6	3 9
15			1 6					3 3	3 5	3 6	3 7	3 7
16		1 8	A				2 5	3 0	3 3	C	C	3 8
17				1 3			G	3 3	3 3	3 6	3 7	3 8
18							G	3 0	C	3 5	3 7	3 7
19			A				2 5	3 0	3 2	3 5	3 8	4 9
20							G	2 9	3 3	3 6	3 5	3 8
21							2 4	2 8	3 2	3 4	3 7	3 8
22							2 3	3 0	3 3	3 5	3 6	C
23							2 4	3 0	3 2	3 4	3 6	3 7
24		1 1	A	A			G	3 0	3 4	3 6	3 9	4 0
25		A		A			G	3 0	3 3	3 6	3 8	3 8
26							G	G	3 2	3 4	3 6	3 6
27							G	G	3 2	3 5	3 6	3 6
28			1 6	1 7			G	G	3 4	3 6	3 7	3 8
29								3 0	3 4	3 5	3 8	3 8
30	1 3	S	S	S	S			2 0	3 5	3 8	3 6	B
31	A						2 8	3 2	3 3	3 4	3 6	3 7
Count	4	9	11	6			28	30	30	30	29	28
Median		2 2	A	2 1			G	3 0	3 3	3 5	3 7	3 8
Mean		1 8	1 5	1 8			2 5	3 0	3 3	3 5	3 7	3 8

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month May, 1963

TABLE 72 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4.1	3.8	3.5		3.0	2.2							1
3.7	3.5	3.3	3.1	3.2	3.4	4.0		2.1				2
3.8	3.6	3.3	3.5	4.3	2.5	3.6	2.7		2.7	2.5		3
3.7	3.6	3.3	4.8	3.3	2.8	1.9	C			C		4
C	3.6	4.6	5.8	2.9								5
3.9	3.8	5.2	3.5		2.8							6
3.8	3.6	3.3	G	3.0								7
3.8	3.8	3.4	G	G		2.8						8
3.8	3.6	3.6	G								2.4	9
3.8	3.9	3.7	B		2.2					1.8		10
3.9	3.6	3.4	5.7	3.1	C							11
3.8	3.6	3.5	3.6	3.0								12
3.8	3.6	3.5	G	G					1.9	3.3	2.9	13
3.9	3.7	3.4	4.5	3.0								14
3.9	3.6	3.4								2.0		15
3.7	3.8	3.4	G	G	G			1.9				16
3.8	3.6	3.5	3.4	5.0		1.7				2.2		17
3.8	G	G	3.8	3.1		2.4	2.2		2.0			18
3.8	3.6	3.8	3.4	2.9	2.3	2.6	2.1					19
3.8	3.6	3.4	C	C		2.4						20
3.7	3.6	3.3	G	2.8	2.5	2.5						21
3.6	3.6	3.4	3.6	3.8	2.5							22
3.7	3.6	3.8	G	G	2.4				2.4			23
3.8	3.4	G	G	G	2.8						1.7	24
3.8	3.6	3.4	3.5	3.6	5.8	2.0	2.2					25
3.8	3.5	3.4	3.0	G	2.5	2.4						26
3.8	3.7	G	G	G								27
3.8	3.6	3.3	G	G				2.0	2.5			28
3.8	3.7	3.9	3.3	3.0	2.5	2.8						29
3.7	G	G	G	G								30
3.8	3.5	3.5	G	G								31
3.0	3.1	3.1	2.7	2.6	1.5	1.2	4	3	5	5	3	Count
3.8	3.6	3.4	3.1	3.0	2.5	2.5			2.4	2.2		Median
3.8	3.6	3.6	3.9	3.3	2.8	2.6			2.3	2.4		Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fmin
 Unit Mc
 Month May, 1963

TABLE 73
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	1.8	S	S	S	S	E	1.4	1.5	1.9	2.3	2.4	6.8
2	1.6	1.6	1.2	1.2	1.2	E	1.6	1.7	1.8	2.1	2.5	2.6
3	1.6	1.7	1.4	1.0	1.6	1.6	1.4	1.5	2.1	2.2	2.5	2.6
4	1.5	2.3	1.6	1.8	1.6	E	1.8	1.7	2.0	2.3	2.4	2.7
5	2.2	2.2	2.0	1.9	1.5	1.5	1.6	1.6	1.9	2.1	2.4	2.6
6	1.4	1.4	1.3	1.1	S	E	1.5	1.4	1.9	2.4	2.5	2.8
7	1.6	1.7	1.8	1.8	1.3	E	1.4	1.4	1.8	2.2	2.0	2.4
8	1.4	1.4	1.1	1.3	1.2	L	1.4	1.9	1.9	2.2	2.5	2.5
9	1.5	1.3	1.3	1.4	1.5	E	1.6	1.6	2.0	2.0	2.4	2.5
10	1.8	1.8	E	1.0	1.8	E	2.0	1.7	1.7	2.2	2.4	2.8
11	1.4	1.7	1.1	1.2	1.3	E	1.9	1.6	1.9	2.3	2.5	2.7
12	1.4	1.9	1.4	1.3	1.2	L	1.7	1.5	2.0	2.2	2.4	2.6
13	2.3	1.5	1.6	1.2	1.3	1.4	1.4	2.1	2.3	2.5	2.8	3.0
14	2.4	1.4	1.1	E	1.1	E	1.8	2.2	2.1	2.2	2.8	2.8
15	1.6	1.1	1.4	1.8	1.4	1.3	1.2	1.4	1.8	2.3	2.6	2.7
16	1.9	1.2	E	1.0	E	E	1.4	1.8	2.0	2.5	C	2.6
17	2.2	1.9	E	1.1	1.3	1.3	1.7	1.8	1.8	2.2	2.6	2.6
18	1.8	1.4	1.3	1.2	1.1	1.2	1.5	1.7	2.1	2.2	2.4	2.8
19	2.0	1.5	1.8	S	1.3	F	1.5	1.5	1.9	2.2	2.6	2.5
20	1.4	1.5	1.2	S	1.1	1.1	1.3	1.5	1.9	2.1	2.5	2.5
21	1.1	1.1	S	1.0	1.1	1.2	1.4	1.5	1.9	2.3	2.5	2.8
22	1.7	1.4	E	1.2	E	1.1	1.4	1.9	2.2	2.3	2.5	2.7
23	1.6	1.6	1.1	1.1	1.1	E	1.4	1.6	1.7	2.0	2.4	2.5
24	1.5	1.6	E	E	1.1	E	1.7	1.9	2.1	2.4	2.6	2.9
25	S	1.2	E	1.5	1.2	E	1.3	1.6	1.9	2.4	2.7	2.8
26	1.7	E	S	E	1.1	L	1.8	1.7	2.0	2.4	2.4	2.6
27	L	E	E	1.2	E	F	2.3	1.7	1.9	2.2	2.3	2.9
28	1.4	1.3	E	1.1	1.1	E	1.4	1.7	2.4	2.9	2.8	3.0
29	2.0	1.5	1.2	1.2	E	E	1.7	2.0	1.9	1.9	2.2	3.0
30	1.2	1.1	E	E	E	E	1.5	1.2	1.7	2.1	3.6	2.8
31	1.5	1.2	E	E	E	E	1.3	1.5	1.9	2.2	2.5	2.7
Count	30	30	28	28*	29	31	31	31	31	31	30	31
Median	1.6	1.4	1.2	1.2	1.2	E	1.5	1.6	1.9	2.2	2.5	2.7
Mean	1.7	1.5	1.4	1.3	1.3	1.3	1.6	1.7	1.9	2.3	2.5	2.8

Sweep 1.0 Mc to 25.0 Mc, in 27 seconds

Characteristic fmin
 Unit, Mc
 Month, May, 1963

TABLE 73
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4.5	3.8	3.1	2.6	2.2	1.9	2.3	1.4	1.8	1.7	1.6	1.6	1
2.8	2.6	2.5	2.2	2.2	1.8	2.0	1.8	1.7	1.7	2.2	1.9	2
2.6	2.6	2.5	2.3	2.2	1.7	1.6	1.6	1.8	1.6	1.2	1.5	3
2.6	2.7	2.3	2.5	2.1	1.7	1.7	1.5	1.1	1.9	1.5	2.0	4
2.9	C	2.3	2.1	2.0	C	2.2	2.2	2.5	2.5	2.3	1.8	5
2.9	3.0	2.5	2.0	2.6	3.0	2.2	2.2	2.0	1.9	2.2	1.8	6
2.7	2.6	2.2	2.4	2.5	2.6	2.4	1.3	1.6	1.6	1.5	1.4	7
2.4	2.5	2.6	2.6	2.3	2.6	1.9	2.1	2.1	1.8	1.8	1.6	8
2.6	2.6	2.5	2.6	2.6	2.6	2.0	1.6	1.6	1.6	1.4	1.5	9
2.8	2.7	2.2	2.0	3.0	2.5	1.9	1.8	2.0	2.2	1.8	1.4	10
2.8	2.7	2.7	2.1	1.9	1.9	1.6	1.5	1.6	1.3	1.3	1.5	11
2.6	2.5	2.5	2.1	2.2	2.1	2.8	2.0	1.9	2.2	1.9	1.9	12
2.8	2.7	2.7	2.5	2.4	2.1	C	C	C	C	1.7	1.6	13
2.8	2.7	2.5	2.3	2.3	1.9	2.0	1.6	C	C	1.5	1.9	14
2.8	2.7	2.5	2.4	2.5	2.1	2.2	C	C	C	1.5	1.3	15
2.7	2.8	2.6	2.6	3.0	1.8	2.2	1.6	1.3	1.7	2.2	2.3	16
2.8	2.5	2.4	2.1	2.2	1.6	C	1.6	1.6	1.7	1.9	2.0	17
2.8	2.9	2.9	2.6	2.6	S	1.7	1.9	1.9	1.4	C	1.8	18
2.7	2.6	2.4	2.2	2.5	2.0	1.4	1.8	1.7	1.6	1.4	1.6	19
2.5	2.4	2.3	C	C	1.1	1.7	1.7	2.2	2.4	1.7	1.4	20
2.7	2.6	2.4	2.1	2.1	1.7	1.8	1.8	1.9	1.5	1.8	1.6	21
2.6	2.6	2.3	1.9	2.3	2.3	2.6	2.6	2.2	1.8	1.4	1.3	22
2.6	2.8	2.7	2.6	S	2.4	1.9	1.3	1.6	1.7	1.8	1.5	23
2.7	2.7	2.6	2.6	2.4	2.5	2.2	1.7	1.6	S	1.6	S	24
2.8	2.6	2.6	2.2	2.2	2.1	1.6	1.6	2.2	2.0	2.4	2.2	25
2.8	2.6	2.3	2.3	2.2	2.0	1.8	1.2	1.8	1.7	1.7	1.9	26
2.8	2.8	2.5	2.5	3.2	3.0	2.5	1.9	1.7	1.5	1.4	1.7	27
3.0	2.8	2.6	2.3	3.1	2.1	2.1	1.5	1.8	1.7	1.5	2.0	28
3.1	2.6	C	2.0	1.9	1.7	1.6	1.7	2.0	2.0	2.0	2.0	29
3.0	2.6	2.8	2.5	2.9	2.5	1.6	1.7	1.6	E	E	E	30
2.6	2.7	2.6	2.4	2.6	2.2	C	C	C	1.9	1.9	1.9	31
3.1	3.0	3.0	3.0	2.9	2.9	2.8	2.8	2.7	2.8	3.0	3.0	Count
2.8	2.7	2.5	2.3	2.3	2.1	2.0	1.7	1.8	1.7	1.7	1.8	Median
2.8	2.7	2.5	2.3	2.4	2.1	2.0	1.7	1.8	1.8	1.7	1.7	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic f_{min}
Unit Mc
Month May, 1963.

TABLE 73 (Contd.)
Ionospheric Data
75° E Mean Time

Latitude 10.2° N
Longitude . 77.5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	S	S	S	S	E	1.4	1.4	1.6	2.4	2.3	4.1	5.2
2	1.7	1.4	1.1	1.6	E	2.1	1.6	1.8	1.9	2.2	2.5	2.5
3	1.8	1.5	1.3	1.5	2.0	1.5	1.8	2.1	2.2	2.3	2.6	2.6
4	1.8	1.9	1.4	1.7	E	1.6	1.3	1.9	2.2	2.4	2.6	2.7
5	2.1	2.2	2.0	1.8	1.5	1.6	1.6	1.6	1.9	2.3	2.8	2.8
6	1.8	1.2	1.5	S	E	1.5	1.3	1.6	2.2	2.5	2.6	2.7
7	1.9	1.4	1.2	S	1.4	1.6	1.4	1.6	2.1	2.2	2.3	2.6
8	1.5	1.4	E	1.2	1.2	1.6	1.7	1.9	2.0	2.4	2.5	2.5
9	1.3	1.5	1.1	1.1	E	1.6	1.2	1.6	2.0	2.3	2.6	2.5
10	2.0	1.4	1.4	1.4	1.8	1.5	1.6	1.7	2.2	2.4	2.5	3.0
11	1.5	E	E	1.2	E	1.4	1.2	1.7	2.2	2.4	2.6	2.8
12	1.6	1.5	1.2	1.4	1.3	1.5	1.8	1.6	2.0	2.5	2.5	2.6
13	2.2	1.5	1.2	1.2	1.4	1.7	1.9	2.3	2.4	2.5	2.8	3.0
14	2.2	1.4	E	1.2	1.9	1.8	2.2	2.0	2.3	2.6	2.8	3.0
15	1.5	1.3	E	1.4	1.4	1.5	1.7	1.9	2.0	2.6	2.4	2.8
16	1.6	1.2	E	1.1	E	1.5	1.4	1.6	2.3	C	C	2.6
17	2.4	1.8	1.1	1.2	1.4	1.6	1.8	2.0	2.0	2.5	2.7	2.6
18	1.7	1.8	1.6	1.0	E	1.4	1.7	1.9	C	2.4	2.7	2.7
19	1.6	S	S	S	1.2	1.6	1.4	1.9	1.9	2.2	2.6	2.6
20	1.3	1.2	1.1	1.2	1.0	1.6	1.5	1.6	2.1	2.3	2.6	2.6
21	1.2	S	1.2	1.2	1.1	1.4	1.4	1.8	2.1	2.4	2.6	2.7
22	1.8	E	E	E	E	1.2	1.4	2.1	2.2	2.4	2.6	C
23	2.0	1.9	1.4	1.1	E	1.4	1.2	1.5	2.0	2.2	2.6	2.5
24	1.4	C	E	E	E	1.5	1.4	1.9	2.2	2.6	2.8	2.8
25	S	1.1	S	1.9	1.1	1.4	1.3	1.8	2.2	2.8	2.7	2.8
26	1.3	1.1	1.1	E	E	1.7	1.9	2.2	2.2	2.3	2.6	2.6
27	E	1.3	E	E	E	1.7	1.7	1.9	2.1	2.4	2.6	2.9
28	1.4	1.4	E	E	E	1.5	1.4	3.1	2.8	2.8	3.0	3.0
29	2.0	1.5	1.1	E	E	1.5	1.6	1.7	2.0	2.0	2.3	2.9
30	1.1	E	E	E	S	1.8	1.7	1.5	2.0	2.0	2.5	3.1
31	E	E	E	E	F	1.6	1.4	1.9	2.0	2.3	2.6	2.7
Count	29	28	28	27	30	31	31	31	30	30	30	30
Median	1.6	1.4	1.1	1.2	E	1.5	1.5	1.8	2.1	2.4	2.6	2.7
Mean	1.7	1.5	1.3	1.3	1.4	1.6	1.5	1.8	2.1	2.4	2.6	2.8

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic fmin
Unit Mc
Month May, 1963

TABLE 73 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10.2° N
Longitude 77.5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4.1	3.7	2.6	2.6	2.7	2.1	1.9	1.7	1.4	1.7	1.5	1.9	1
2.5	2.5	2.4	2.3	1.9	1.5	2.3	1.9	1.6	1.7	1.7	1.5	2
2.8	2.6	2.4	2.2	2.2	1.5	1.4	1.1	1.8	1.9	2.2	1.7	3
2.6	2.5	2.5	2.5	1.7	1.3	E	C	2.0	2.0	C	2.2	4
C	2.7	2.2	1.9	1.9	C	2.2	2.6	2.3	2.4	1.7	1.6	5
3.0	2.4	2.1	2.4	2.6	2.5	2.2	2.6	2.0	1.8	2.1	1.9	6
2.7	2.5	2.5	2.4	1.7	2.4	1.9	1.7	1.6	1.6	1.4	1.4	7
2.5	2.5	2.6	2.6	2.2	2.4	2.1	2.4	2.0	1.9	1.7	1.7	8
2.8	2.6	2.4	2.4	2.9	2.3	2.0	1.8	2.2	1.3	1.9	1.5	9
2.8	2.7	2.2	3.2	3.0	1.7	1.8	2.1	2.0	1.7	1.4	1.2	10
2.6	2.6	2.2	2.4	1.9	C	1.6	1.2	1.4	1.2	1.7	1.5	11
2.6	2.4	2.4	1.9	2.0	2.4	2.2	2.0	1.9	1.9	1.9	2.4	12
2.8	2.7	2.8	2.4	2.4	2.3	C	C	1.5	1.7	1.7	1.9	13
2.8	2.7	2.5	2.4	2.1	2.0	1.6	C	C	C	1.7	1.9	14
3.0	2.7	2.3	2.2	2.6	2.6	1.9	C	C	1.4	1.4	1.6	15
2.6	2.8	2.5	2.4	2.5	1.9	1.6	1.4	1.4	1.9	2.3	2.1	16
2.8	2.7	2.6	2.4	1.7	C	1.7	1.7	1.7	1.6	1.9	1.8	17
2.8	2.7	2.4	2.6	2.1	2.0	1.8	2.0	1.8	1.3	1.4	1.8	18
2.6	2.5	2.4	2.6	2.3	1.7	1.6	1.9	1.6	1.8	1.2	1.3	19
2.5	2.4	2.6	C	C	2.2	1.7	1.8	1.6	1.6	1.6	1.1	20
2.7	2.6	2.2	2.5	1.7	1.3	1.4	1.8	1.7	1.7	1.7	1.8	21
2.6	2.6	2.2	2.2	2.1	2.3	2.6	2.2	1.8	1.7	1.4	1.7	22
2.8	2.8	2.4	2.6	2.2	1.9	1.5	1.6	1.5	1.6	2.0	1.2	23
2.7	2.8	2.5	3.2	2.2	2.4	1.6	1.8	1.6	1.6	S	S	24
2.8	2.6	2.3	2.4	2.0	1.6	1.5	1.9	1.9	2.1	2.2	1.8	25
2.7	2.5	2.3	2.4	2.1	1.8	1.7	2.1	1.8	1.7	1.9	1.8	26
2.8	2.6	2.6	3.3	3.0	2.6	2.2	1.8	1.6	1.4	1.8	1.5	27
3.0	2.6	2.6	2.5	2.3	2.0	2.0	1.4	1.5	1.9	2.1	2.2	28
3.0	2.2	2.0	2.3	1.6	1.9	1.9	2.0	1.7	2.4	2.0	1.4	29
3.0	2.7	3.0	3.3	2.1	2.3	1.7	1.5	1.6	E	E	E	30
2.8	2.6	2.5	2.6	2.3	2.3	C	C	C	1.6	2.1	2.0	31
30	31	31	30	30	28	29	26	27	30	29	30	Count
2.8	2.6	2.4	2.4	2.2	2.0	1.8	1.8	1.7	1.7	1.7	1.7	Median
2.8	2.6	2.4	2.5	2.2	2.0	1.8	1.8	1.7	1.7	1.8	1.7	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
 Unit Km
 Month May, 1963

TABLE 74
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								L	290	315	360	B
2								280	315	335	365	380
3								275	300	365	370	370
4								L	320	350	385	395
5								280	L	380	350	340
6								L	L	380	415	380
7								290	300	380	375	410
8								L	340	340	L	400
9								L	L	L	L	L
10								L	I	I	390UT	400
11								280	LII	L	360	400
12								320	325	345	350	360
13								280	290	L	I	370
14								280	330	L	340	380
15							270	290	320	L	405	410
16								L	L	350	C	395
17							L	300	330	360	370	390
18								L	I	350	380	400
19								L	L	400	380	400
20								280	310	355	375	375
21								L	I	L	405	425
22								L	L	400	400	420
23								L	L	420	410	435
24								260	340	360	435	445
25								290	I	360	405	425
26							280	290	300	360	380	410
27								L	340	L	385	420
28							270	280	320	340	380	350
29							L	300	320	320	330	400
30							L	L	330	350	340	390
31								300	315	I	400	420
Count							3	17	19	22	27	29
Median								280	320	360	380	400
Mean								285	320	360	380	395

Sweep 1 0 Mc to 25 0]Mc. in 27 seconds

Characteristic h'F2
 Unit Km
 Month May, 1963

TABLE 74
 Ionospheric Data
 75° E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
360	360	340	320	305	310							1
370	360	350	L	L	L							2
360	360	350	L	315	305							3
400	360	340	L	335	280							4
375	C	345	310	300								5
370	350	340	310	310								6
395	390	355	335	320								7
420	385	360	L	L	L							8
410	380	L	L	L	L							9
L	L	L	L	L	L							10
390	375	360	320	320	L							11
395	390	345	A	320	L							12
390	L	L	L	300	290							13
380	L	L	L	A	L							14
400	L	360	L	L	280							15
390	380	380	L	L	280							16
370	425	375	L	A	L							17
380	360	345	320	320	L							18
410	380	370	330	L	L							19
390	380	370	C	C	275							20
425	400	380	320 _{tr}	L	L							21
460	415	360	345	340	280							22
440	430	375	350	305	260							23
430	445	385	340	300	270							24
420	450	395	L	L	L							25
400	440	L	L	L	L							26
395	400	380	340	315	320							27
415	400	380	L	310								28
360	L	C	L	320	300							29
350	370	360	320	315	280							30
415	380	350	380	L	310							31
30	25	25	14	17	14							Count
395	380	360	325	315	280							Median
395	390	360	330	315	290							Mean

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds

Characteristic h'F2
Unit . Km
Month May, 1963

TABLE 74 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10.2° N.
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	290	360	360	365
2							L	L	340	355	370	360
3							L	300	L	360	385	385
4							L	L	L	380	380	400
5							275	300	340	375	360	410
6							L	330	L	L	385	385
7							L	300	330	375	380	390
8							L	L	325	360	410	410
9							L	L	L	L	L	405 ^{UL}
10							L	L	L	L	385	L
11							L	L	340 ^H	L	L	400
12							L	L	320	360	L	L
13							270	280	L	L	360	L
14							280	290	310	340	L	L
15							270	305	340	L	420	400
16							L	L	345	C	C	400
17							L	295	340	380	400	390
18							L	L	C	370	370	400
19							L	290	L	400	385	400
20							L	300	315	360	365	370
21								L	360	400	420	440
22							L	L	L	415	400	C
23							L	L	L	415	440	425
24							L	300	340	400	450	410
25							L	300	340	400	420	410
26							260	295	340	360	390	430
27							280	300	L	400	460	400
28							280	300	340	330	390	375
29							280	300	320	340	370	380
30							L	L	320	350	360	370
31							300	295	320	380	420	430
Count							9	17	20	24	26	26
Median							280	300	340	370	385	400
Mean							275	300	330	375	395	395

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic $h'F_2$
 Unit Km
 Month May, 1963

TABLE 74 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N,
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
L	L	350	L	305								1
370	350	340	L	L								2
365	350	340	315	300								3
380	345	L	320	L								4
C	355	330	320	280								5
370	340	335	320	300								6
390	370	350	L	300								7
440	375	345	L	L								8
375	L	315	L	L								9
390	L	L	L	L								10
370	L	345	A	305								11
L	370	L	L	305								12
L	L	L	320	295								13
L	390	L	A	300								14
380	390	L	L	300								15
400	L	L	320	300	L							16
405	L	L	L	A								17
365	345	335	305	305								18
400	370	360	310	320	L							19
380	365	370	C	C								20
405	390	360	345	L								21
430	410	360	340	300								22
415	420	360	335	280								23
L	410	370	315	280								24
470	425	370	L	L								25
410	420	L	370	L	L							26
400	385	360	330	305								27
400	415	370	330	300								28
L	L	390	360	300								29
370	360	340	330	295								30
420	370	360	360	L								31
24	23	22	18	20								Count
395	370	355	325	300								Median
395	380	350	330	300								Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic · h'F
Unit · Km
Month May, 1963

TABLE 75
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	400	S	S	S	S	E	250	235	220 _H	190 _H	190 _H	B
2	355	A	A	F	F	E	250	235	A	210	215	200
3	320	350	370	340	250	260	250	235	215	205	205	200
4	275	300	325	300	235	E	250	230	215	205	195	200
5	305	280	F	275	235	240	250	240	210	200	190	180 _H
6	315	340	330	240	S	E	250	225	220	200	200	195
7	310	300	300	300	300	E	250	230	205	210	210	195
8	280	280	260	260	240	E	245	235	220	210	210	200
9	290	270	270	240	240	E	255	235	220	200	200	180
10	240	260	A	A	280	F	245	230	215	200	195	180
11	A	320	340	F	270	E	250	230	210	200	200	200
12	240	260	260	240	235	E	260	225	215 _{IT}	195 _H	200	195
13	250	270	260	265	245	245	245	240	230	200	190 _{IT}	210
14	280	340	350	A	F	E	250	240	230	215	210	200
15	360	380	F	F	260	240	240	240	240	220	205	200
16	300	335	325	A	A	E	250	230	215	210	C	190
17	300	305	F	F	280	245	250	240	225	195 _{IT}	200	200
18	300	310	300	255	260	300	240	225	205	210	200 _H	200
19	335	A	A	F	240	E	240	230	215	200	200 _H	200
20	300	340	350	S	240	265	250	230	200	190 _H	200	195 _H
21	330	340	380	380	285	250	255	230	210	215	200	195
22	305	340	E	400	E	310	245	220	200	200	185	180 _H
23	280	305	310	260	225	E	250	225	210	200	185	180
24	F	375	S	A	A	E	245	225	215	205	200	195
25	S	A	A	F	265	E	245	225	215	200	200	200
26	A	F	F	320	S	E	245	235	210	190	195	200
27	E	E	F	E	E	E	250	225	200 _H	185 _H	200	185 _{IT}
28	F	A	E	A	E	F	240	235	220	210	195 _H	200
29	F	F	F	F	F	E	250	230	220	210	210 _{UA}	190
30	310	F	F	S	S	E	245	200 _H	230	230	220	210
31	E	A	E	E	E	E	255	240 _{UA}	220	210	180 _{IT}	200
Count	25	22	18	16	22	31	31	31	30	31	30	30
Median	300	315	330	290	260	E	250	230	215	200	200	200
Mean	300	315	315	290	255	260	250	230	215	205	200	195

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month May, 1963

TABLE 75
Ionospheric Data
75°E Mean Time

Latitude: 10.2° N
Longitude: 77 5° E

	12	13	14	15	16	17	18	19	20	21	22	23	Date
B	220	200	215	220	A	240	245	255	245	270	300		1
200	200	210	200	220	245	260	240	255	270	300	300		2
200	200H	215	195II	A	A	270	300	245	260	260	280		3
180H	200	195	225	A	A	260	265	300	310	325	325		4
195	C	195	A	A	C	260	245	260	265	300	335		5
200	220	A	220	230	265	245	235	240	245	260	280		6
180	200	195	190II	220	245	250	255	240	240	250	265		7
185	185	200	L	230	235	260	265	275	250	260	290		8
210	190	195	215	230	220	265	260	250	260	250	260		9
180H	195H	205	220	220	235	250	255	260	265	260	250		10
200	L	200	A	220	255	260	275	280	250	260	260		11
195	200	200	A	235	245	255	250	270	270	250	270		12
210	200	200	200H	235	240	C	C	C	C	245	A		13
200	200	210	200	A	250	260	245	C	C	295	300		14
200	200	185H	215	240	240	255	C	C	240	260	300		15
200	190	195H	220H	225	235	260	245	250	260	265	290		16
200	200	195H	200H	A	A	C	240	230	235	260	300		17
200	200	200	200	215	235	265	270	F	250	C	315		18
210	200	A	A	A	240	260	250	250	235	245	270		19
185	185	190	C	C	230	240	235	240	270	285	315		20
200	200	205	200	200	240	250	225	235	240	260	280		21
185	190	190	A	220	230	255	230	235	235	265	260		22
180H	180	175H	220	235	235	240	225	240	245	275	F		23
200	190	200	210H	220	230	250	220	230	245	255	245		24
200	200	200	210	A	A	255	240	225	235	280	380		25
200	190	190II	180H	220	235	260	225	235	250	280	F		26
200	200	210	220	230	255	260	225	220	225	260	300		27
200H	200	200	200	230	240	260	235	230	260	280	F		28
200	200	C	220	230	240	250	235	250	270	280	300		29
A	200H	210	220	225	230	240	220	270	E	E	E		30
200	200	200	220	225	240	C	C	C	250	265	270		31
29	29	28	24	23	25	28	28	26	29	30	27		Count
200	200	200	210	225	240	260	240	250	250	260	290		Median
195	200	200	210	225	240	255	245	250	255	270	290		Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month May, 1963

TABLE 75 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	S	S	S	S	E	280	240	220	180 _H	210 _H	B	B
2	420	A	A	F	E	285	245	A	220	210	210	210
3	315	380	360	300	265	265	240	225	215	200	200	205
4	280	320	A	245	E	265	240	225	200	200	200	200
5	300	280	285	260	245	255	230	220	180 _H	200	180 _H	195
6	320	305	300	235	E	260	240	220	210	195	195	200
7	300	315	305	F	300	260	240	215	200	200	200	200
8	280	275	250	250	240	260	240	220	205	215	200	185
9	280	300	250	240	E	250	240	235	205	200	190	195
10	240	A	A	280	280	260	240	230	220	200	190	185
11	300	E	340	300	E	270	240	230	200	205	L	200
12	245	260	260	230	225	270	240	220	200 _H	200	195 _H	195
13	250	280	270	265	240	260	240	230	215	200	190	200
14	300	355	340	A	E	270	250	230	210	215	200	200
15	360	400	F	F	240	255	240	240	230	205	200	195
16	300	340	A	F	E	270	240	225	205	C	C	180
17	310	320	F	295	F	260	240	240	205	210	200	200
18	305	330	300	220	E	260	235	220	C	200	200	190
19	350	S	A	F	240	255	235	220	195 _H	200	205	200
20	325	345	360	290	260	260	240	210 _H	205 _H	210	190 _H	200
21	340	S	400	340	260	270	240	215	210	210	205	200
22	340	E	380	E	E	260	230	210	200	190	185	C
23	310	340	300	250	E	270	230	220	205	190	200	190
24	365	385	A	A	E	260	230	215	200	200	200	205
25	S	A	S	A	230	260	235	215	210	200	200	200
26	F	F	F	280	E	260	230	225	200	180 _H	190 _H	200
27	C	E	E	E	E	265	240	220 _H	195 _H	200	200	190
28	F	F	A	A	E	260	240	230	215	205	200	190
29	F	F	F	F	E	270	240	230	215	210	200	200 _H
30	F	F	S	S	S	270	250	220	230	220	A	200
31	A	C	E	E	F	270	240	230	200 _H	190	180	200
Count	24	21	17	19	28	31	31	30	30	30	27	29
Median	310	340	305	280	E	260	240	220	205	200	200	200
Mean	310	325	315	270	250	265	240	225	205	200	195	195

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'F
Unit Km
Month May, 1963

TABLE 75 (Contd)
Ionospheric Data
75°E Mean Time

Latitude. 10.2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
225 _{UB}	200 _H	215	220	240	255	240	255	245	245	280	335	1
200	200	200	200	A	260	240	245	265	270	275	305	2
200	200	205	230	A	260	290	260	245	270	285	280	3
190	190	200	A	A	270	250	C	305	325	C	320	4
C	190	A	A	230	C	240	260	260	280	315	320	5
200	210	A	220	240	250	240	240	245	240	260	305	6
195	200	200	220	240	260	245	245	240	240	250	275	7
100	200	200	215	230	250	260	285	260	260	275	300	8
200	200	210	220	240	240	260	260	265	250	260	260	9
185	215	235	210 _B	230	250	250	255	260	260	260	230	10
200	195	195 _{II}	A	240	C	265	280	280	260	255	255	11
200	200	200	A	240	260	250	260	270	255	260	270	12
200	200	200	240	240	260	C	C	C	250	A	280	13
200	200	200	A	240	260	245	C	C	C	300	320	14
200	190	190	220	240	250	240	C	C	250	300	290	15
190	195	185	215 _H	235	260	250	245	255	260	270	300	16
200	200	200 _H	230	A	C	240	240	240	250	280	285	17
200	200	195	A	230	250	265	275	250 _F	270	310	320	18
200	190	200	205	230	250	260	255	230	250	240	285	19
200	180 _H	190	C	C	240	230	235	235	260	310	320	20
200	200	190	180 _H	240 _U	255	240	230	240	240	260	310	21
180 _H	200	180 _{II}	230	A	250	245	230	240	250	255	270	22
180	180	A	210 _H	230	240	230	220	230	S	F	F	23
195	180 _H	200 _H	205	230	255	235	225	240	245	260	250	24
200	205	200	200	A	A	240	235	240	250	310	320	25
190	185 _H	180 _H	200 _H	235	260	240	235	240	270	F	F	26
190	200 _H	210 _H	215	240	265	245	220	230	240	300	F	27
195	200	200	225	230	250	245	230	240	260	280	F	28
200	200	A	230	220	260	240	240	260	280	300	280	29
200	200	200	230	210	255	220	225	290	E	E	E	30
200	190 _H	190 _H	250	230	250	C	C	C	245	260	280	31
30	31	27	24	24	27	29	26	27	29	27	27	Count
200	200	200	220	235	255	245	240	245	255	275	290	Median
195	195	200	215	235	255	245	245	250	260	275	290	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month May, 1963

TABLE 76
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							130	110	115	115	A	B
2								150	110	110	A	A
3							140	A	110	A	115	A
4							150	110	110	A	110	A
5							140	120	A	A	A	A
6							125	110	A	A	A	A
7							120	115	A	A	A	110
8							120	115	110	A	A	A
9							A	A	A	A	A	A
10								120	A	A	A	A
11								A	A	A	A	A
12							140	115	A	A	A	A
13							130	120	115	A	A	A
14							130	A	A	A	A	A
15							120	115	A	A	A	A
16							130	115	110	A	C	A
17							120	115	A	A	A	A
18							135	110	115	A	A	A
19							120	115	110	A	A	A
20							120	115	105	110	110	105
21								115	110	110	A	A
22							120	115	110	110	A	A
23							130	115	A	A	A	A
24							135	120	110	A	A	A
25							120	110	110	A	A	A
26							125	115	115	A	A	A
27								A	A	A	A	A
28							120	115	A	A	A	A
29							135	120	110	A	A	A
30							130	A	A	A	B	A
31							A	A	A	A	A	A
Count							24	25	16	5	3	2
Median							130	115	110	110		
Mean							130	115	110	110		

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic h'E
Unit Km
Month May, 1963

TABLE 76
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77.5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
B	B	A	120	120	A							1
A	A	115	115	120	A							2
A	A	115	115	115	110							3
A	115	110	A	A	A							4
A	C	A	A	A								5
A	A	A	A	A								6
A	A	110	120	120								7
A	A	A	120	120								8
A	A	A	120	120								9
A	A	A	A	B								10
A	A	A	A	A	A							11
A	A	A	A	A	A							12
A	A	A	120	115	130							13
A	A	A	A	A	A							14
A	A	A	115	R	120							15
A	A	A	120	B	120							16
A	A	A	A	A	A							17
A	115	120	120	120	S							18
A	A	A	120	125	A							19
110	110	110	C	C	A							20
A	A	110	110	A	A							21
A	A	110	A	A	A							22
A	A	A	120	S								23
A	A	115	120	120								24
A	A	A	115	115	A							25
A	A	A	A	A	120							26
A	A	A	115	B	B							27
A	A	A	A	A	B	120						28
A	A	C	A	A	A							29
100	B	120	115	B								30
A	A	A	115	115	125							31
2	3	10	18	12	7							Count
		110	120	120	120							Median
		115	120	120	120							Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
Unit Km
Month - May, 1963

TABLE 76 (Cont'd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							120	115	115	A	B	B
2							A	115	A	A	A	A
3							A	115	110	A	A	A
4							115	115	110	A	110	A
5							120	110	A	A	A	A
6							115	110	A	A	A	A
7							120	110	A	A	A	A
8							120	115	110	A	A	A
9							A	A	A	A	A	A
10							120	A	A	A	A	A
11							A	A	A	A	A	A
12							120	A	A	A	A	A
13							125	120	115	A	A	A
14							140	A	A	A	A	A
15							120	A	A	A	A	A
16							120	A	A	C	C	A
17							115	A	A	A	A	A
18							125	A	C	A	A	A
19							A	115	A	A	A	A
20							120	115	110	A	110	110
21							120	115	110	A	115	A
22							115	115	A	A	A	C
23							110	105	A	A	A	A
24							120	115	A	A	A	A
25							115	110	110	A	A	A
26							120	115	A	A	A	A
27							115	115	A	A	A	A
28							115	B	A	A	A	A
29							120	115	A	A	A	A
30							125	A	A	A	A	B
31							A	A	A	A	A	A
Count							25	19	8		3	1
Median							120	115	110			
Mean							120	115	110			

Sweep 1 0 Mc. to 25 0 Mc in 27 seconds

Characteristic h'E
 Unit Km
 Month May, 1963.

TABLE 76 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2°N
 Longitude 77 5°E.

1 230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
B	B	115	120	A								1
A	A	115	115	120								2
A	115	115	110	110	110							3
A	115	115	A	A								4
C	115	A	A	A								5
A	A	A	A	A								6
A	115	115	120	A								7
A	A	A	120	125								8
A	A	A	120									9
A	A	A	B									10
A	A	A	A	A								11
A	A	A	A	A								12
A	A	A	115	120								13
A	A	A	A	A								14
A	A	A	120	B								15
115	A	115	120	120	135							16
A	A	A	A	A								17
A	120	115	120	120								18
A	A	115	120	A	A							19
105	110	115	C	C								20
110	A	110	120	135								21
A	A	105	105	A								22
A	A	115	120	120								23
A	A	115	B	120								24
A	A	115	120	115	A							25
A	A	A	A	120								26
A	A	115	B	B								27
A	A	A	120	120								28
A	A	A	A	A								29
A	115	120	B	115	A							30
A	A	A	115	120								31
3	7	16	17	14	2							Count
	115	115	120	120								Median
	115	115	120	120								Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic , h'Es
 Unit Km
 Month May, 1963

TABLE 77
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							G	105	G	100	100	B
2	120	115	115	110	110	100	105	105	105	100	100	100
3				105			120	100	100	100	100	100
4	120		110				G	105	100	100	100	100
5							G	100	100	100	100	100
6							G	105	100	100	100	100
7							G	105	100	100	100	100
8							G	G	100	100	100	100
9							140	115	105	100	100	100
10	110	120	110	115			160	155	105	100	100	100
11	115		120					100	100	100	100	100
12							G	100	100	100	100	100
13		115					G	G	100	100	100	100
14	130	115	125	115	115		G	100	100	100	100	100
15	135						G	G	100	100	100	100
16		120	120	110	110		G	110	100	100	C	100
17							G	G	100	100	100	100
18	125						G	105	100	100	100	100
19	125	120	120				120	105	100	100	100	100
20							135	105	100	100	100	100
21				120			130	110	105	100	100	100
22							120	105	105	100	100	100
23							135	105	100	100	100	100
24	135		115	105	110		G	G	100	100	100	100
25		120	115	125	120		G	105	100	100	100	100
26	125						G	G	100	100	100	100
27		115		125			G	G	100	100	100	100
28		120	115	110	100		G	G	100	100	100	100
29	120				115		G	G	100	100	100	100
30	100	100	100	100	100		G	100	100	100	B	100
31	130	125					100	100	100	100	100	100
Count	13	11	11	11	8	1	10	22	30	31	29	30
Median	125	120	115	110	110		125	105	100	100	100	100
Mean	120	115	115	110	110		125	105	100	100	100	100

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'Es
 Unit Km
 Month May, 1963

TABLE 77
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5 E

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	100	100	130	100	100						1
100	100	100	100	105	100	100	100		135			2
100	100	100	100	110	105	105	100	120	105	140		3
100	100	100	100	100	100	100	100	100				4
100	C	100	100	100								5
100	100	100	100	100	100							6
100	100	100	140	G		140	125					7
100	100	100	100	G		100	100	130				8
100	100	100	G	G								9
100	100	100	100	G							105	10
100	100	100	100	100	100							11
100	100	100	100	100	100							12
100	100	100	100	G	G					115	100	13
100	100	100	100	100	100					115		14
100	100	100	G	G	G							15
100	100	100	135		G			100	115			16
100	100	100	100	100	100							17
100	100	120	125	G	140	135				C		18
100	100	115	120	110	120	115						19
100	100	100	C	C	100	100						20
100	100	100	100	100	100	100						21
100	100	100	100	115	100					115		22
100	100	100	G	160	140				120	130	125	23
100	100	100	100	G	145							24
100	100	100	105	120	115	110	100					25
100	100	100	100	100	G	100	100					26
100	100	100	G	G	G							27
100	100	100	100	G	G				120	120	120	28
100	100	C	100	100	100	100						29
G	G	G	G	G								30
100	100	100	G	G	G					115		31
30	29	29	25	17	18	13	7	4	5	7	4	Count
100	100	100	100	100	100	100	100		120	115		Median
100	100	100	100	110	110	110	105		120	120		Mean

Sweep 1 0 Mc. to 25.0 Mc. in 27 seconds

Characteristic h'Es
 Unit Km
 Month May, 1963

TABLE 77 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10.2° N.
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1							G	105	G	100	100	100
2	115	120	115	115	105		110	105	100	100	100	100
3			110	105			100	105	100	100	100	100
4		120	110				100	105	100	100	100	100
5							105	105	100	100	100	100
6							110	105	100	100	100	100
7							G	105	100	100	100	100
8							G	105	100	100	100	100
9		120					110	110	100	100	100	100
10		115	110	110			155	105	100	100	100	100
11			120				100	100	100	100	100	100
12							G	100	100	100	100	100
13		115					G	G	100	100	100	100
14	120	120	100	115	115		G	100	100	100	100	100
15			110				G	100	100	100	100	100
16		120	110	115			105	100	100	C	C	100
17				115			C	100	100	100	100	100
18							G	105	C	100	100	100
19	135		120				120	105	100	100	100	100
20							G	105	100	100	100	100
21							110	105	100	100	100	100
22							110	105	100	100	100	C
23							105	100	100	100	100	100
24		115	110	110			G	100	100	100	100	100
25		120		125			G	105	100	100	100	100
26		120		120			G	G	100	100	100	100
27		135					G	G	100	100	100	100
28		135	115	110			G	G	100	100	100	100
29				110			150	100	100	100	100	100
30	100	100	100	100	S		G	100	100	100	100	B
31	130						100	100	100	100	100	100
Count	5	13	12	12	2		15	27	29	30	30	29
Median	120	120	110	110			110	105	100	100	100	100
Mean	120	120	110	110	--	--	115	105	100	100	100	100

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'Es
 Unit Km
 Month May, 1963

TABLE 77 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N
 Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	100	100	105	110	110							1
100	100	100	105	135	100	100		135			135	2
100	100	100	105	105	105	105	120		120	130		3
100	100	100	100	100	100	100	C			C		4
C	100	100	100	100								5
100	100	100	100									6
100	100	100	G	100	140	140	140					7
100	100	100	G	G		100		125				8
100	100	100	G								105	9
100	110	100	100	G						120	115	10
100	100	100	100	100	C							11
100	100	100	100	100								12
100	100	100	G	G					115	120	120	13
100	100	100	100	100								14
100	100	100	G							120		15
100	100	100	G	G	G			100	115			16
100	100	100	100	100	C	100				120		17
100	G	G	120	150		130	125		100			18
100	110	120	115	120	115	110	110					19
100	100	100	C	C		100						20
100	100	100	G	105	100	100						21
100	100	100	100	100	100							22
100	100	100	G	G		135			120	120	125	23
100	100	G	G	G		135						24
100	100	100	120	110	110	105	100					25
100	100	100	100	G	100	100						26
100	100	G	G	G								27
100	100	100	G	G				120	120			28
100	100	100	100	100	100	100						29
100	G	100	G	G								30
100	100	100	G	G								31
30	27	28	17	16	13	13	5	4	6	6	5	Count
100	100	100	100	100	105	100	120		120	120	120	Median
100	100	100	105	110	110	105	120		115	120	120	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000) F2
Unit
Month May, 1963

TABLE 78
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	2 40 _F	S	S	S	S	E	3 30	2 80	3 05	3 00	2 55	2 50
2	2 70 _F	A	F	F	F	E	3 25	3 25	2 90	2 40	2 45	2 40
3	S	2 60	2 70	2 90	3 30	3 50	3 40	3 30	2 90	2 30	2 45	2 50
4	3 00	2 90	2 85	3 00 _r	3 60	E	3 25	3 10	2 60	2 35	2 55	2 50
5	F	F	2 90 ^a	F	3 30	3 45	3 30	3 15	2 75	2 25 _H	2 60	2 65
6	2 90	2 95	2 95	3 30	S	E	3 20	2 95	2 45	2 45	2 50	2 45
7	2 90	3 20	3 15	3 10	3 30	E	3 25	3 15	2 70	2 15 _H	2 50	2 45
8	2 90	3 10	3 20	3 25	3 40	E	3 30	3 25	3 00	2 40 _H	2 10	2 30
9	3 00	3 05	3 10	3 50	3 60	E	3 35	3 00	2 50	2 35	2 35	2 35
10	3 45	3 45	A	3 05	3 25	E	3 40	3 25	2 85	2 10 _H	2 45	2 45
11	3 00	2 90	2 90	F	F	E	3 25	3 15	2 70 _H	2 20 _H	2 50	2 40
12	3 30	3 30	3 15	3 40 _{US}	3 50	F	3 30	3 10	2 85	R	2 40	2 40
13	3 20	3 10	3 10	3 05	3 20	3 35	3 25	3 25	3 10	2 75	2 05 _H	2 45
14	3 10	2 95	F	A	F	E	3 35	3 25	3 05	2 65	2 40 _H	2 40
15	2 70	2 60	F	F	F	3 55	3 35	3 25	3 00	2 45 _H	2 20	2 40
16	3 00	3 10 _{Ur}	F	A	A	E	3 30	3 10	2 70	2 35	C	2 50
17	3 00	2 90 _F	F	F	F	F	3 20	3 10	2 90	2 55	2 20	2 35
18	3 00	2 90	3 05	3 40	3 55	3 10	3 25	3 20	2 90	2 60	2 20 _H	2 50
19	2 80	A	A	F	3 30	E	3 30	3 20	2 75	2 40	2 50	2 40
20	2 85	2 85	2 75	2 95	3 40	3 30	3 45	3 30	3 00	2 65	2 25	2 50
21	2 80	2 80	2 60	2 45	2 90	3 05	3 10	2 80	2 60	2 45	2 50	2 50
22	2 95	F	E	F	E	3 05	3 20	2 20	2 60	2 50	2 50	2 45
23	3 20 _F	F	F	3 30	F	E	3 20	2 95	2 55	2 45	2 55	2 50
24	F	F	F	A	A	E	3 40	3 25	3 05	2 60	2 50	2 45
25	S	A	A	F	S	E	3 30	3 15	2 85	2 30	2 50	2 50
26	2 65	F	F	3 10 _F	S	E	3 25	3 30	3 10	2 90	2 55	2 25
27	F	E	E	E	E	E	3 30	3 15	2 95	2 50	2 40	2 40
28	F	A	A	A	E	E	3 40	3 30	3 10	2 80	2 50	2 40
29	F	F	F	F	F	E	3 25	3 20	3 00	3 00	2 90	2 70
30	2 90 _F	F	F	S	S	E	3 15	2 95	2 70	2 55	2 65	2 60
31	E	A	E	E	E	E	3 25	3 05	2 95	2 65	2 35 _F	2 35
Count	23	17	13	14	13	8	31	31	31	30	30	31
Median	2 95	2 95	2 95	3 10	3 30	3 30	3 30	3 15	2 90	2 45	2 50	2 45
Mean	2 95	3 00	2 95	3 10	3 35	3 30	3 30	3 15	2 85	2 50	2 45	2 45

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000) F2
Unit
Month May, 1963

TABLE 78
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 45	2 30	2 35	2 60	2 80	2 95	3 05	3 00	3 05	3 10	2 95	2 75	1
2 45	2 45	2 50	3 50	2 60	2 80	3 00	3 15	3 05	2 90	2 95	2 85	2
2 60	2 60	2 55	3 70	2 80	2 70	2 65	2 80	3 00	3 00	3 00	2 90	3
2 50	2 55	2 65	2 65	2 75	2 80	2 95	3 05	2 85	2 80	F	F	4
2 50	C	2 70	2 75	2 95	C	3 15	3 10	3 15	3 10	2 90	2 50	5
2 50	2 60	2 75	2 90	3 00	3 10	3 15	3 25	3 10	3 20	3 10	3 00	6
2 45	2 45	2 60	2 75	2 80	2 95	3 10	3 15	3 20	3 20	3 10	3 05	7
2 30	2 30	2 60	2 70	2 80	3 05	3 05	3 10	3 10	3 05	3 00	2 80	8
2 40	2 55	2 60	2 75	3 00	3 15	3 10	3 05	2 90	3 00	3 20	3 20	9
2 35	2 60	2 70	2 80	3 05	3 20	3 30	3 15	3 10	3 15	3 15	3 30	10
2 30	2 50	2 60	2 75	2 85	2 90	2 90	2 90	2 90	3 00	3 00	3 15	11
2 40	2 40	2 50	2 55	2 65	2 85	3 10	3 15	3 05	3 05	3 10	3 05	12
2 45	2 40	2 50	2 55	2 85	3 00	C	C	C	C	3 30	3 20	13
2 40	2 35	2 45	2 35	2 65	2 80	2 95	3 05	C	C	2 90 ^{us}	2 85	14
2 40	2 45	2 55	2 60	2 75	3 05	3 20	C	C	3 05	3 00	2 95	15
2 45	2 45	2 60	2 65	2 70	2 95	3 00	3 10	3 10	3 20	3 00	2 90	16
2 45	2 35	2 50	2 55	2 60	2 80	C	3 10	3 25	3 20	3 20	3 00	17
2 45	2 55	2 75	2 90	3 00	2 95	2 95	2 95	3 10 ^F	3 10	C	2 80	18
2 45	2 50	2 65	2 80	2 90	2 90	3 05	3 15	3 15	3 25	3 20	3 05	19
2 50	2 45	2 40	C	C	2 90	3 20	3 20	3 20	3 20	3 00	2 85	20
2 40	2 40	2 50	2 70	2 70	2 85	3 15	3 15	3 30	3 35	3 20	3 00	21
2 40	2 55	2 55	2 70	2 80	2 95	3 05	3 30	3 25	3 40	3 30	3 15	22
2 40	2 45	2 60	2 70	3 00	3 25	2 20	3 40	3 30	3 30	3 10	F	23
2 55	2 40	2 60	2 75	3 00	3 15	3 30	3 40	3 50 ^{us}	3 20	3 40	S	24
2 40	2 30	2 50	2 65	2 75	2 90	3 00	3 25	3 30	3 20	3 10	2 70 ^{UF}	25
2 35	2 40	2 40	2 40	2 55	2 70	2 95	3 20	3 30	3 25	3 10	F	26
2 50	2 55	2 60	2 75	2 90	3 00	3 10	3 35	3 30	3 40	3 30	F	27
2 40	2 30	2 35	2 35	2 70	2 90	3 00	3 10	3 25	3 20	3 20	F	28
2 50	2 30	C	2 35	2 55	2 80	3 05	3 15	3 10	3 15	3 00	2 95	29
2 60	2 60	2 75	2 75	2 95	3 25	3 50	3 45	3 30	E	E	E	30
2 35	2 35	2 55	2 55	2 60	2 70	C	C	C	3 15	3 20 ^{us}	3 20 ^F	31
31	30	30	30	30	30	28	28	27	28	28	24	Count
2 45	2 45	2 60	2 70	2 80	2 90	3 05	3 15	3 15	3 20	3 10	3 00	Median
2 45	2 45	2 55	2 65	2 80	2 95	3 10	3 15	3 15	3 15	3 10	2 95	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M 3000) F2
Unit
Month May, 1963

TABLE 78 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	S	S	S	S	E	3 00	3 20	2 35H	3 05	2 75	2 30H	2 45
2	F	A	F	F	E	3 20	3 25	3 00	2 70	2 20	2 45	2 45
3	2 80	2 55	2 70	3 00	3 40	3 05	3 30	3 10	2 60	2 30H	2 40	2 50
4	3 00	2 70	A	3 45	E	3 20	3 25	2 85	2 45	2 40	2 50	2 50
5	F	F	F	F	3 40	3 30	3 25	3 00	2 45H	2 30	2 70	2 50
6	3 00	2 90	3 05	3 45	E	3 15	3 10	2 75	2 35H	2 45	2 50	2 55
7	3 00	3 15	3 20	F	F	3 20	3 25	2 95	2 35H	2 40	2 50	2 40
8	3 15	3 20	3 20	3 30	3 45	3 10	3 25	3 15	2 80	2 10H	2 35	2 30
9	3 00	3 05	3 25	3 40	E	3 15	3 15	2 85	2 30	2 45	2 25	2 35
10	3 50	A	A	3 10	3 45	3 20	3 35	3 05	2 50H	2 45	2 45	2 35
11	2 90	R	F	F	E	3 10	3 25	2 95	2 45H	2 40	2 40	2 40
12	3 35	3 20	3 15	3 45	3 60	3 15	3 10	3 00	2 60	2 50	2 30	2 40
13	3 25	3 10	3 05	3 05	3 40	3 30	3 30	3 15	3 00	2 40H	2 45	2 40
14	3 00	2 90	F	A	F	3 20	3 40	3 20	2 85	2 50	2 40	2 40
15	2 60	F	F	F	3 40	3 30	3 35	3 20	2 75	2 00H	2 35	2 45
16	F	F	A	F	E	3 05	3 20	2 95	2 45	C	C	2 45
17	2 90F	2 90F	F	F	F	3 20	3 15	3 00	2 80	2 35H	2 40	2 35
18	2 95	3 10	3 05	3 55	L	3 10	3 25	3 10	C	2 40	2 35H	2 50
19	2 80	2 75	F	F	3 45	3 10	3 20	3 00	2 55	2 50	2 40	2 50
20	2 75	2 80	2 75	3 10	3 40	3 25	3 30	3 20	2 90	2 45	2 50	2 50
21	2 80	2 70	S	2 70	3 10	3 15	3 00	2 70	2 50	2 45	2 50	2 45
22	3 00	E	F	E	E	3 05	3 00	2 60	2 60	2 40	2 50	C
23	F	3 05F	3 00	F	E	3 15	3 00	2 75	2 45	2 50	2 35	2 50
24	F	F	A	A	E	3 25	3 40	3 10	2 90	2 20H	2 30	2 60
25	S	A	S	A	3 60US	3 30	3 20	3 10	2 60	2 25	2 35	2 45
26	F	F	F	3 30F	E	3 05	3 25	3 20	3 00	2 75	2 35	2 30
27	E	E	E	E	E	3 20	3 40	3 10	2 80	2 40	2 35	2 45
28	F	A	A	A	E	3 20	3 40	3 25	2 95	2 65	2 45	2 55
29	F	F	F	F	E	3 20	3 30	3 20	2 95	2 85	2 80	2 55
30	F	F	S	S	S	3 20	3 25	2 80	2 60	2 60	2 70	2 60
31	A	F	E	E	E	3 15	3 15	3 05	2 80	2 40	2 30	2 40
Count	18	15	10	12	11	31	31	31	30	30	30	30
Median	3 00	2 90	3 05	3 30	3 40	3 20	3 25	3 00	2 60	2 40	2 40	2 45
Mean	3 00	2 95	3 05	3 25	3 40	3 15	3 25	3 00	2 65	2 40	2 45	2 45

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M 3000) F2
Unit:
Month May, 1963

TABLE 78 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2 30	2 35	2 50	2 60	2 80	3 00	3 00	3 05	3 00	3 05	2 90	2 75	1
2 40	2 50	2 55	3 55	3 75	2 85	3 10	3 15	3 00	2 90	3 00	2 90	2
2 60	2 60	3 60	3 80	3 75	2 75	2 65	2 90	2 95	3 00	2 95	2 90	3
2 45	2 60	2 60	3 70	3 80	2 90	3 00	C	2 80	F	F	F	4
C	2 60	2 70	2 85	3 00	C	3 20	3 15	3 15	3 00	2 80	2 85	5
2 50	2 65	2 80	2 95	3 05	3 20	3 20	3 20	3 10	3 20	3 15	2 85	6
2 40	2 50	2 70	2 80	2 90	3 00	3 10	3 20	3 20	3 20	3 10	3 05	7
2 30	2 40	2 70	2 80	2 90	3 00	3 10	3 05	3 05	3 10	2 95	2 85	8
2 50	2 50	2 70	2 85	3 10	3 10	3 10	3 00	3 00	3 10	3 10	3 30	9
2 50	2 65	2 75	2 90	3 10	3 30	3 15	3 05	3 10	3 10	3 25	3 15	10
2 40	2 50	2 70	2 80	2 90	C	2 90	2 95	3 00	3 05	3 05	3 20	11
2 40	2 45	2 50	2 55	2 75	3 00	3 10	3 05	3 10	3 05	3 05 ^{US}	3 15 ^{US}	12
2 35	2 45	2 50	2 70	3 05	3 10	C	C	C	3 35	3 40	3 15 ^{US}	13
2 40	2 40	2 40	2 50	2 80	2 90	3 00	C	C	C	2 90	2 75	14
2 50	2 50	2 55	2 70	2 85	3 15	3 25	C	C	3 20	2 90	3 10 ^F	15
2 40	2 50	2 55	2 65	2 90	3 00	3 10	3 10	3 15	3 05	2 95	2 90 ^{U1}	16
5 45	2 45	2 50	2 50	2 70	C	3 10	3 20	3 20	3 20	3 00	3 00	17
2 50	2 70	2 75	2 95	3 00	3 00	2 95	3 10	3 10	3 00	2 80	2 80	18
2 50	2 50	2 65	2 85	2 90	2 95	3 05	3 10	3 30	3 15	3 05	3 00	19
2 45	2 40	2 45	C	C	3 00	3 20	3 30	3 30	3 15	2 90	2 90	20
2 50	2 50	2 55	2 70	2 80	2 90	3 30	3 25	3 35	3 40	3 20	2 80	21
2 50	2 50	2 60	2 70	2 85	3 00	3 15	3 35	3 30	3 30	3 10	3 15	22
2 60	2 45	2 65	2 80	3 15	3 35	3 30	3 30	3 20	3 10	F	F	23
2 40	2 55	2 65	2 90	3 15	3 20	3 35	3 30	3 30	3 40	S	S	24
2 40	2 40	2 60	2 65	2 80	2 90	3 10	3 20	3 30	3 15	2 90	2 60	25
2 35	2 45	2 30	2 50	2 60	2 85	3 10	3 20	3 30	3 20	F	F	26
2 55	2 55	2 70	2 85	2 95	3 00	3 20	3 35	2 40	3 30	3 25	F	27
2 30	2 30	2 35	2 50	2 80	2 95	3 00	3 20	3 25	3 20	3 25 ^{UF}	F	28
2 35	2 40	2 40	2 40	2 70	2 95	3 15	3 15	3 20	3 10	2 90	2 95 ^F	29
2 55	2 70	2 70	2 85	3 05	3 45	3 50	3 30	3 10	E	E	E	30
2 30	2 45	2 50	2 65	2 75	2 70	C	C	C	3 20	3 25	3 15 ^F	31
30	31	31	30	30	28	29	26	27	28	26	24	Count
2 40	2 50	2 60	2 70	2 90	3 00	3 10	3 20	3 15	3 15	3 00	2 90	Median
2 45	2 50	2 60	2 70	2 90	3 00	3 10	3 15	3 15	3 15	3 05	2 95	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foF2
Unit Mc
Month June, 1963

TABLE 79
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3.7	3.2	2.3	2.5	2.4	2.2 ^{UF}	5.0	6.9	7.7	8.4	8.4	8.0
2	2.6	2.6	5	S	F	F	5.0	7.3	8.3	8.4 ^H	8.4 ^H	7.3
3	2.4	2.1	1.7	S	S	1.7 ^{UF}	4.9	6.5	7.3	7.4	7.5	C
4	2.5	E	S	S	S	E	4.8	6.6	7.6	6.9	6.6	6.5
5	F	C	C	C	C	C	C	C	C	7.5	6.7	6.6
6	1.8	S	S	1.6	E	E	5.1	7.2	7.8	8.1	7.8	6.9
7	S	F	E	E	E	E	4.7	7.3	8.8	7.4	7.9	8.5
8	F	E	E	E	E	F	5.5	6.9	7.5	7.8	7.6	6.9
9	3.0 ^{UF}	F	E	E	E	E	4.8	7.6	7.8	7.8 ^H	6.4	6.6
10	2.1	E	E	A	E	E	5.6	7.2	8.3	8.7	8.6	7.2
11	4.7 ^F	F	F	F	F	F	5.5	7.6	8.8	8.7	7.9 ^H	7.5
12	3.9	3.0	F	F	F	E	5.8	7.2	8.2	8.5	8.3 ^{UR}	7.2
13	F	E	E	E	E	E	5.2	7.0	8.0	8.2	8.2	8.4
14	3.3	2.6	F	E	E	E	5.1	7.0	7.8	8.1	7.1	6.6
15	F	F	F	F	E	E	4.7	7.0	8.2	7.6	7.1	7.0
16	3.6 ^{UR}	2.9 ^F	2.3 ^F	F	F	F	5.1	6.8	C	C	C	C
17	3.9	3.1	2.8	2.6	2.1	2.0	5.1	6.4	7.5	7.7	7.4	6.8
18	4.8	3.9 ^{UF}	F	F	F	E	4.6	6.2	7.0	6.9	7.0	8.0
19	2.6	2.0 ^{J_s}	1.9	S	E	1.8 ^F	5.1	6.1	6.4	6.0	6.1	6.4
20	F	S	E	E	E	E	5.1	6.4	7.3	8.5	9.0	8.3 ^H
21	E	S	E	E	E	E	4.8	6.5	7.7	6.7	6.0	5.7
22	F	F	F	E	E	E	4.8	6.6	6.7	6.6 ^{UC}	5.9 ^H	6.4
23	E	E	E	E	E	E	4.4	5.7	5.8	5.8	5.6	5.6
24	1.9	E	E	C	C	C	C	C	C	6.9	6.8 ^H	5.6
25	C	C	C	C	C	C	C	C	C	C	6.7 ^H	7.2
26	C	2.0	1.8 ^{UR}	2.0	E	1.6 ^{UF}	4.7	6.2	6.9	7.0	7.7	8.3
27	F	F	F	E	E	E	4.8	6.6	6.8	7.1	7.0	6.9
28	3.5	F	2.4 ^F	1.8	F	R	4.4	6.5	7.2	8.0	7.4	7.1
29	4.9	4.7	3.8	3.1	3.1	3.6	5.3	6.0	7.1	C	8.2	7.5
30	F	F	F	E	E	E	4.5	6.7	7.1	7.3	6.2	6.6
Count	20	17	17	17	20	22	27	27	26	27	29	28
Median	2.8	2.1	E	E	E	E	5.0	6.7	7.6	7.6	7.4	7.0
Mean	3.2	2.9	2.4	2.3		2.2	5.0	6.7	7.5	7.6	7.3	7.0

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF2
Unit Mc
Month June, 1963

TABLE 79
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° F

12	13	14	15	16	17	18	19	20	21	22	23	Date
7.2	7.6	8.4	8.6	8.3	9.1	11.3	8.9	6.5	3.9	2.9	2.7	1
7.1	7.7	8.2	9.0	9.5	9.5	9.2	7.8	6.1	4.3	3.7	3.0	2
C	C	C	C	C	C	C	7.4	5.0	3.1	2.6	2.6	3
6.3	6.5	7.1	7.8	8.4	8.8	9.6	8.3	5.5	3.6	2.6	A	4
C	C	C	C	C	C	9.1	7.2	4.2	3.1	2.3	E	5
6.7	6.4	6.7	7.2	8.0	C	C	8.2	5.3	3.3	C	2.6 _r	6
8.7	7.2	7.9	8.4	8.6	8.8	9.8	8.3	4.4	3.3	3.9	2.9 _r	7
6.9	7.3	7.2	7.4	7.7	8.0	9.2	8.7	5.6	3.5	2.8	3.1	8
6.6	7.2	7.6	8.0	8.4	9.9	10.1	7.6	4.0	2.9	2.8	2.6	9
7.0	7.1	7.5	8.2	8.7	8.8	8.7	9.1	8.2	5.9	5.8	5.4	10
7.5	7.5	7.9	A	7.9	8.5	9.0	9.2	6.8	5.9	5.2	4.2 _r	11
7.0	7.2	7.8	7.8	8.2	8.6	9.3	8.7	5.3	4.1	2.2 _{UR}	E	12
8.0 _H	7.0	7.2	7.2	7.7	8.0	8.4	9.0	6.8	4.8	3.7	3.6	13
6.8	7.3	7.8	8.3	9.0	8.5	9.2	8.2	6.6	5.1	3.6	3.4 _{UF}	14
6.8	7.0	7.8	8.9	9.2	10.0	9.3	8.6	7.3	6.2	5.1 _{US}	4.8	15
C	C	7.7	7.5	7.7	8.2	8.3	8.7	8.7	5.7	4.8	4.1	16
7.0	7.6	7.8	9.7	9.4	8.9	8.3	8.2	7.8	5.4	5.5	5.5 _r	17
8.3	8.0	8.6	9.1	10.2	9.2	8.7	9.0	8.1	6.0	4.5	3.6	18
6.5	6.6	6.8	7.7	8.8	9.5	7.6	6.8	7.2	5.6	4.6	5.0 _{UF}	19
7.0	7.8	8.5	9.6	10.2	10.4	9.0	7.8	4.8	3.4	C	F	20
6.4	7.1	7.5	8.2	9.1	10.5	9.0	6.1	5.7	4.8	F	F	21
7.0	7.3	7.0	8.8	8.8	9.2	8.2	8.1	6.2	3.5	3.3	E	22
6.3	6.6	7.2	7.2	7.8	7.8	8.2	7.0	6.5	4.4	2.7 _{UR}	2.5	23
6.0	6.3	6.2	6.3	5.6	6.7	7.6	6.6	4.3	2.5	2.1	C	24
7.2	7.1	7.6	7.0	7.5	7.7	8.0	6.4	5.6	4.1	3.5	3.2	25
8.5	8.8	9.2	9.5	9.8	9.8	9.2	8.2	6.3	5.1	4.1	3.6 _{UI}	26
7.4	7.7	8.4	8.4	8.7	8.2	8.6	8.1	7.2	5.8	5.8	4.7	27
7.0	C	6.7	6.7	7.2	7.0	6.9	7.1	6.8	6.5	5.7	5.4	28
7.0	C	6.8	6.8	7.3	7.8	7.9	8.4	7.0	5.1	4.4	F	29
6.6	7.1	8.0	7.9	8.4	8.4	8.9	8.3	6.3	4.4	3.6	3.2	30
27	25	28	27	28	27	28	30	30	30	27	25	Count
7.0	7.2	7.6	8.0	8.4	8.8	9.0	8.2	6.3	4.4	3.7	3.2	Median
7.1	7.2	7.6	8.0	8.4	8.7	8.8	8.0	6.2	4.6	3.8	3.7	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic foF2
 Unit Mc
 Month June, 1963

TABLE 79 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	3.2	F	2.5	2.5	2.1	3.7	5.9	7.0	8.2	8.1	8.4	7.4
2	2.5	2.0	S	S	E	3.5	6.5	8.1	7.9	8.6	7.8	7.0
3	2.3	1.8	1.7	S	S	3.6	6.0	6.8	7.5	7.3	C	C
4	S	S	S	S	S	3.4	6.4	6.9	7.4	6.6	6.4	6.4
5	F	C	C	C	C	C	C	C	C	7.4	6.4	6.5
6	S	S	S	E	E	3.4	6.2	7.3	7.2	8.2	7.1	6.6
7	F	E	E	E	E	3.4	5.6	8.6	8.0	7.8	8.4	8.5
8	E	E	E	E	E	3.7	6.5	7.2	7.8	7.8	7.2	6.9
9	2.1 ^{UR}	F	E	E	E	3.6	6.5	7.6	7.7	7.3 ^{II}	6.4	6.6
10	E	E	S	E	E	3.6	6.9	7.8	8.7	8.7	7.9	7.2
11	F	F	F	F	F	F	6.1	8.1	8.6	8.4	7.2 ^{II}	7.5
12	3.6	F	F	E	F	3.6 ^I	6.4	7.6	8.4	F	7.6 ^{II}	7.1
13	E	E	E	E	A	3.4	6.1	7.2	8.4	7.8	8.5	C
14	2.9	2.4	F	E	E	3.3	6.5	7.2	7.8	7.7	6.7	6.8
15	S	F	F	F	E	3.2	5.9	7.8	8.2	7.4	7.0	6.6
16	3.3 ^I	2.6 ^I	F	F	F	F	5.9	7.1	C	C	C	C
17	3.7	2.8	2.7	2.4 ^r	1.6 ^{UR}	3.6	6.0	6.9	7.9	7.4	7.0	6.8
18	4.2	2.8 ^{UF}	F	F	A	3.5	5.6	6.6	7.3	6.8	7.5	8.4
19	2.1	2.0 ^{US}	S	F	E	3.7	5.5	6.3	6.1	6.0	6.4	6.4
20	F	E	E	E	E	3.3	6.0	6.7	8.4	8.7	8.6	7.5 ^H
21	S	S	E	E	E	3.3	5.6	7.8	7.3	6.1	5.8	6.3
22	F	A	F	S	E	3.0	5.9	6.7	6.7	5.8	6.1	6.8
23	E	E	E	E	E	3.0	5.3	5.6	5.8	5.7	5.6	5.8
24	E	E	C	C	C	C	C	C	C	7.0	6.1	C
25	C	C	C	C	C	C	C	C	C	6.4 ^H	6.5 ^{II}	7.2
26	C	2.1	1.7	2.0	E	3.4	5.7	6.4	6.9	7.2 ^{II}	7.9	8.6
27	F	F	C	E	E	F	6.4	6.8	6.8	6.9	C	7.3
28	3.2	F	2.2 ^r	F	A	3.2	5.4	7.3	8.0	7.6	7.0	7.1
29	4.8	4.5	3.5	3.1	3.3	4.4	5.7	6.8	C	8.0	7.7	7.2
30	F	F	E	E	E	3.4 ^{UI}	5.7	7.1	7.6	6.4	6.6	6.6
Count	17	16	14	17	19	24	27	27	25	2.8	27	26
Median	2.5	1.9	E	E	E	3.4	6.0	7.1	7.8	7.4	7.1	7.0
Mean	3.2	2.6	2.4		2.3	3.5	6.0	7.2	7.6	7.3	7.1	7.0

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fo F2
Unit Mc
Month June, 1963

TABLE 79 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
7.6	7.8	8.7	8.5	8.4	10.4	10.4	8.1	5.1	3.1	2.7	2.8	1
7.1	8.0	8.6	9.3	9.5	9.3	8.8	7.3	4.9	3.9	3.5	2.4	2
C	C	C	C	C	C	C	6.1	3.8	2.6	2.7	2.5	3
6.4	6.6	7.6	8.1	8.7	9.0	9.2	6.5	4.4	2.8	2.3	F	4
C	C	C	8.1	8.3	C	8.7	C	3.7	2.7	2.4	C	5
6.5	6.4	7.0	7.6	C	C	9.0	6.5	4.4	F	2.8	2.3	6
7.6	7.3	8.2	8.8	9.0	9.0	9.6	6.8	3.6	3.7	3.3	2.6	7
7.2	7.2	7.1	7.6	7.9	8.4	9.5	6.6	4.5	3.0	3.1	3.0	8
6.9	7.5	7.7	8.4	9.2	10.0	9.4	5.6	3.3	2.8	2.8	2.5	9
7.1	7.3	7.8	8.5	8.6	8.6	8.6	8.8	7.3 _{Us}	6.2	5.3	5.4	10
7.6	7.8	7.7	7.6	8.1	9.3	9.5	7.8	6.3	5.1	4.7	4.4	11
7.1	7.6	7.9	7.8	8.1	8.7	9.6	8.5	4.7	2.6	1.9	E	12
7.6	7.0	7.0	7.4	7.9	8.3	9.0	8.6	5.7	4.2	3.5	3.5	13
7.0	7.6	8.0	8.5	9.1	9.5	8.5	7.1	5.6 _s	4.1	3.5 ₁	3.1 _s	14
6.8	7.3	8.5	8.7	9.9	9.6	9.4	8.5	6.5	5.3 _s	5.4	4.4	15
C	7.7	7.4	7.7	8.0	8.3	8.5	8.8	7.2 _{Us}	5.1	4.6	4.0	16
7.4	7.4	8.8	9.5	8.9	9.1	8.8	8.6	6.2	5.4	5.2	5.1	17
8.0	8.4	8.7	9.6	10.3	8.7	9.0	8.5	7.0	5.3	3.8	3.2	18
6.6	6.8	7.2	8.0	9.6	8.6	6.7	7.0	7.3	5.3	4.8	4.6	19
7.0	8.2	9.0	9.8	9.8	9.2	8.9	6.1	3.9	R	2.2 ₁	E	20
8.6	7.4	7.8	8.7	9.6	10.5	9.0	6.1	5.7	5.3 _{Us}	4.5	F	21
7.4	7.2	7.7	9.2	9.0	8.8	7.7	7.7	4.4	3.6	F	E	22
6.4	6.7	7.4	7.4	8.1	7.9	8.1	6.8	6.1	3.3	2.6	R	23
6.1	6.3	6.5	5.9 _{II}	6.3	6.8	7.3	5.6	3.3	2.4	C	C	24
7.0	7.3	7.3	7.2	7.5	C	7.5	6.4	4.6	3.7	3.7	C	25
8.6	8.8	9.3	9.7	9.7	9.3	8.8	7.3	5.9	4.5	3.7	2.8 ₁	26
7.3	8.1	8.7	9.0	8.4	8.4	8.8	8.6	7.4	6.5	5.3	4.1	27
7.2 _s	C	6.7	7.0	7.1	6.9	7.5	7.1	6.8	6.5	5.6	5.2	28
6.7	6.5	6.8	7.0	7.7	7.6	8.3	8.0	5.9	4.7	4.2	F	29
6.9	7.7	7.7	8.2	8.4	8.7	10.5	7.1	5.0	3.9	3.3	A	30
27	27	28	29	28	26	29	29	30	28	2.8	2.2	Count
7.1	7.4	7.7	8.2	8.5	8.8	8.8	7.1	5.2	4.2	3.5	3.1	Median
7.1	7.4	7.8	8.2	8.6	8.8	8.8	7.3	5.4	4.2	3.7	3.6	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
 Unit Mc
 Month June, 1963

TABLE 80
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1									4 4	4 4	4 6	4 6
2								L	4 2	L	L	L
3								L	L	1	4 5	C
4								L	4 4	4 5	4 5	4 7
5								C	C	4 4	4 5	4 6
6							L	L	4 2	4 4	4 5	4 6
7								L	L	L	L	4 6
8										L	4 6	4 8
9								L	L	L	4 6	4 7
10								L	L	4 5	4 7	4 8
11							L	L	L	L	4 6	4 7
12							L	L	L	4 6	4 6	L
13							L	L	L	L	4 6	4 6
14								L	L	4 5	4 6	4 6
15								L	L	4 8H	4 5	4 5
16								L	C	C	C	C
17							L	L	4 4	4 4	L	4 6
18								L	4 2	L	4 6	4 5
19								L	L	L	4 6	4 6
20								L	L	4 5	4 4	4 6
21								L	L	4 4	4 6	4 4
22								L	L	5 0Uc	4 4	4 4
23								L	LH	4 3	4 4	4 4
24										4 2	4 3	4 3
25											4 3	4 4
26							L	L	L	4 2	4 4	A
27							L	L	L	4 2	4 4	4 4H
28							L	L	L	L	4 4	4 4
29							L	L	L	C	4 4	4 5
30								L	LH	L	4 5	4 5
Count									6	16	26	25
Median									4 3	4 4	4 5	4 6
Mean									4 3	4 4	4 5	4 6

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic foF1
Unit Mc.
Month June, 1963

TABLE 80
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77.5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
4 8	4 4	4 5	L	L	L							1
L	L	A	L	L								2
C	C	C	C	C	C							3
4 6	4 5	4 4	A	L	L							4
C	C	C	C	C								5
4 5	4 5	4 4	4 4	4 2	C							6
4 8	4 6	4 6	L	L	L							7
4 4	4 6	4 6	4 4	L	L							8
4 7	4 7	4 6	L	L	L							9
4 7	4 7	4 6	4 6	L	L							10
4 7	A	A	A	4 1	L							11
4 6	4 6	4 5	L	L	L							12
4 6	4 6	L	L	L	L							13
4 6	4 6	4 6	L	L	L							14
4 6	4 6	4 4	L	I								15
C	C	4 4	LH	L	L							16
4 7	4 5	4 4	A	L	L	3 0						17
A	4 6	4 5	4 5	L	L							18
4 6	4 5	4 5	4 4	L								19
4 5	A	A	4 2	L	I							20
4 5	4 5	4 3	L	L	I							21
4 4	4 4	4 4	4 2	L	L							22
4 4	4 3	4 4	A	4 0								23
4 3	4 3	4 2	4 1	L	L							24
4 4	4 3	4 2	4 2	LH	A							25
4 4	4 3	4 3	4 0	L	L							26
4 4 _H	A	4 3	4 2	L	A							27
4 4	C	4 3	L	L								28
4 4	C	L	4 4	4 1	L							29
4 7	4 4	A	4 3	4 2	A							30
25	21	22	13	5		1						Count
4 6	4 5	4 4	4 3	4 1								Median
4 5	4 5	4 4	4 3	4 1								Mean

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic foF1
Unit Mc
Month June, 1963

TABLE 80 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								L	4.4	4.6	4.6	4.6
2							L	L	L	L	L	4.5
3								L	L	L	C	C
4								L	L	4.6	4.6	L
5								C	C	4.5	4.6	4.5
6							L	L	4.5	4.4	4.6	4.7
7							L	L	L	L	4.6	4.6
8							L	L	L	L	4.5	4.9
9							L	L	L	4.6	4.6	4.7
10							L	L	L	4.9	4.8	4.8
11							L	L	L	4.8	4.8	4.6
12							L	L	L _H	L	4.6	4.6
13							L	L	4.4	4.6	4.7	C
14							L	L	L	4.5	4.7	4.6
15							L	L	4.3	4.5	4.5	4.6
16							L	L	C	C	C	C
17							L	L	4.4	4.6	4.6	4.6
18								L	4.2	4.5	4.5	A
19								L	4.3	4.4	4.5	4.5
20							L	L	L	4.3	L	4.6
21							L	L	4.2	4.6	4.4	4.4
22							L	L	4.2	4.4	4.4	4.4
23							L	L	4.2	4.2	4.4	4.4
24							C	C	C	4.4	4.4	C
25							C	C	C	4.3	4.3	4.4
26							L	L _H	L	4.4	L	4.4
27							L	L	L	4.3	C	4.5 _H
28							L	L	4.2	4.3	4.4	4.5
29							L	L	C	4.3	4.5	4.5
30							L	L	4.3	4.4	4.4	4.4
Count									12	24	24	24
Median									4.3	4.4	4.6	4.6
Mean									4.3	4.5	4.5	4.6

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foF1
Unit · Mc
Month June, 1963.

TABLE 80 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N,
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
4 6	4 5	4 4	L	L	L							1
L	L	L	L	L								2
C	C	C	C	C	C	C						3
4 6	4 5	4 5	L	L	L							4
C	C	C	4 2	L								5
4 5	4 6	4 4	4 2	C	C							6
4 6	4 8	4 4	L	L	L							7
4 6	4 8	L	L	L	L							8
4 8	4 6	4 5	L	L	L							9
4 8	4 8	4 6	4 6	L								10
A	A	A	L	L	L							11
4 6	4 6	4 5	L	L	L							12
4.8	4 7	4 5	L	L	L							13
4 7	L	A	A	L	L							14
4 6	4 6	4 6	L	L								15
C	4 4	4 4	L ^H	L	L							16
4 6	4 6	A	L	L	L							17
A	4 6	L	L	L								18
4 6	4 4	L	L	L								19
4 6	A	4 3	L	L								20
4 4	4 4	4 4	L	L								21
4 4	4 4	4 4	L	L								22
4 4	4 4	4 2	I	L								23
4 5	4 2	4 2	4 0	L								24
4 3	4 3	4 3	4 1	L	C							25
4 4	4 3	A	L	L								26
4 4 ^H	4 3	A	A	A								27
4 4	C	L	L	L								28
4 4	4 4	4 5	4 0	L								29
4 5	A	A	4 2	L								30
24	22	17	7									Count
4 6	4 5	4 4	4 2									Median
4 5	4 5	4 4	4 2									Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic. foE
Unit Mc
Month June, 1963

TABLE 81
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77° 5° E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							1.94	2.7H	A	3.1	A	A
2							1.7	2.4	A	A	A	A
3							1.3	A	2.5	A	A	C
4							A	A	A	A	A	A
5							C	C	C	A	A	A
6							1.9	A	A	A	A	A
7							1.9	2.5	2.4	3.2	A	A
8							1.9	A	A	A	A	A
9							1.9	2.5	A	A	A	A
10							1.8	2.7	3.0	A	A	A
11							2.0	2.7	A	A	A	A
12							1.9	2.6	A	A	A	A
13							2.1H	2.8	A	A	A	A
14							1.9	2.5UR	A	A	A	A
15							R	A	A	A	A	A
16							R	R	C	C	C	C
17							1.9H	A	A	A	A	A
18							A	A	A	A	3.5	3.4
19							A	A	A	A	A	A
20							A	A	A	A	A	A
21							R	A	A	A	A	A
22							1.7	A	A	A	A	A
23							R	A	A	A	A	A
24							C	C	C	A	A	A
25							C	C	C	C	3.3	A
26							R	2.6H	3.1H	A	A	A
27							R	A	A	A	A	A
28							R	2.6	A	A	A	A
29							R	2.9	A	C	A	A
30							R	2.8H	A	A	A	A
Count							14	13	4	2	2	1
Median							1.9	2.6				
Mean							1.9	2.6				

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic foE
Unit: Mc.
Month June, 1963

TABLE 81
Ionospheric Data
75°E Mean Time

Latitude · 10·2° N.
Longitude : 77·5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	A	3 6	A	2 9	2 3							1
A	A	A	A	B								2
C	C	C	C	C	C							3
A	A	A	3 2	R	2 2							4
C	C	C	C	C	C							5
A	A	3 6	3 2	B	C							6
A	A	3 3	3 1	2 8	2 3							7
A	A	A	3 1	3 0	2 4							8
A	A	A	A	2 9								9
A	A	A	3 2	2 9	2 4							10
A	A	A	A	A	A							11
A	A	A	R	B	B							12
A	A	A	A	R	2 4							13
A	A	A	A	A	A							14
A	A	A	3 3	R								15
C	C	A	A	A	R							16
A	A	A	A	A	R							17
A	3 3	3 3	A	A	A							18
A	A	A	A	A	A							19
A	A	A	A	A	A							20
A	A	3 3	3 2	2 8								21
A	A	A	A	B								22
A	A	A	A	2 7	2 4							23
A	A	A	A	R	R							24
A	A	A	A	B	A							25
A	A	A	B	B	B							26
A	R	R	A	B	A							27
A	C	A	A	A	A							28
A	C	A	A	A	A							29
A	A	A	A	3 0	A							30
	1	5	7	8	7							Count
		3 3	3 2	2 9	2 4							Median
		3 4	3 2	2 9	2 3							Mean

Sweep 1·0 Mc to 25·0 Mc. in 27 seconds

Characteristic foE
Unit Mc
Month June, 1963.

TABLE 81 (Contd)
Ionospheric Data
75°E Mean Time

Latitude . 10·2° N.
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1						R	2 3 _{II}	2 9 _{II}	A	3 2	A	A
2							2 1	A	A	A	A	A
3							A	A	A	A	C	C
4							2 1	A	A	A	A	A
5							C	C	C	A	A	A
6							A	A	A	A	A	A
7							2 3 _H	2 3	2 7	3 2	A	A
8							2 2	A	A	A	A	A
9							2 2	A	A	A	A	A
10							2 5	2 6	A	A	A	A
11							2 4 _H	A	A	A	A	A
12							2 4 _H	A	A	A	A	A
13							2 4 _H	2 8	A	A	A	C
14							2 4	R	A	A	A	B
15							A	A	A	A	A	A
16							2 4 _H	R	C	C	C	C
17							2 4	A	A	A	A	A
18							A	A	A	A	3 4	A
19							A	A	A	A	A	A
20							2.3	A	A	A	A	A
21							A	A	A	A	A	A
22							2 2	A	A	A	A	A
23							A	A	A	A	A	A
24							C	C	C	A	A	C
25							C	C	C	A	A	B
26						R	R	B	A	A	A	A
27							R	A	A	A	C	A
28							R	A	A	A	A	A
29							A	R	C	A	B	A
30							R	A	A	A	A	A
Count							15	4	1	2	1	
Median							2 3					
Mean							2 3					

Sweep 1 0 Mc. to 25 0 Mc. in 27 seconds

Characteristic foE
 Unit. Mc.
 Month. June, 1963.

TABLE 81 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77.5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
A	A	A	3.0	2.6								1
A	3.6	A	B									2
C	C	C	C	C	C	C						3
A	A	A	3.0	R								4
C	C	C	A	2.4	C							5
A	A	3.4	2.9	C	C							6
A	A	3.2	2.8	R	R							7
A	A	A	3.0	2.8								8
A	A	A	3.0	2.6								9
A	A	3.2	3.1	2.7	2.1							10
A	A	A	A	A	R							11
A	A	A	R	B								12
A	A	A	R	B	R							13
A	A	A	A	A								14
A	A	A	3.0	R								15
C	A	A	A	R	R							16
A	A	A	A	A	A							17
A	3.4	A	A	A								18
A	A	A	A	R								19
A	A	A	A	A								20
A	3.4	3.2	B									21
A	A	A	B									22
A	A	A	A	2.6								23
A	A	A	R	R								24
A	A	A	B	A	C							25
A	A	B	R	B								26
A	R	R	B	A								27
A	C	A	R	A	R							28
A	A	A	A	A								29
A	A	A	2.8	2.5	A							30
	3	4	9	7	1							Count
			3.0	2.6								Median
			3.0	2.6								Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic foEs
 Unit. Mc.
 Month June, 1963

TABLE 82
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1		5.6	4.2	3.4	2.0		G	6.0	7.8	8.0	9.6	9.7
2							2.1	G	7.0	9.6	9.6	11.4
3							2.7	7.0	5.2	9.8	10.2	C
4							4.2	7.2	9.0	10.0	11.4	11.0
5		C	C	C	C	C	C	C	C	11.2	11.4	11.2
6							G	7.6	8.8	10.4	10.6	11.7
7							G	G	G	G	9.6	11.0
8	2.3						G	7.8	9.0	9.4	10.6	10.6
9							G	G	8.0	9.2	10.6	10.8
10				4.6			3.4	G	5.8	9.0	9.8	11.6
11							G	G	9.2	10.0	10.8	11.1
12							G	G	8.0	10.0	11.0	12.0
13							G	G	8.2	6.2	10.0	11.0
14						2.0	G	G	8.0	10.0	9.7	11.0
15	S						G	7.0	7.2	11.0	11.6	12.0
16					2.6		G	G	C	C	C	C
17							3.7	5.0	9.6	10.4	11.0	10.8
18					5.6		5.8	7.0	9.2	9.6	8.0	7.6
19							S	7.6	9.2	10.4	9.6	11.0
20								5.8	9.8	10.6	10.6	10.0
21				3.1			G	6.0	9.6	9.6	10.8	11.0
22	1.2						2.0	6.8	8.4	9.8 ^{UC}	8.6	8.4
23							G	5.6	7.2 ^{US}	8.4	8.2	8.4
24				C	C	C	C	C	C	8.6	9.0	8.0
25	C	C	C	C	C	C	C	C	C	C	G	7.7
26							G	G	G	8.2	7.6	10.6
27							G	6.3	7.0	8.0	8.2	7.6
28	4.2						G	S	8.0	8.0	8.0	8.3
29			4.2s	2.4			G	G	5.8	C	8.0	10.0
30							G	G	8.2	9.0	9.2	9.0
Count	3	1	2	4	3	1	25	26	26	27	29	28
Median							G	5.3	8.1	9.6	9.7	10.8
Mean							3.4	6.6	8.1	9.4	9.8	10.2

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic foEs
Unit: Mc
Month June, 1963

TABLE 82
Ionospheric Data
75°E Mean Time

Latitude : 10°2' N
Longitude 77°5' E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
10 0	9 8	9 2	8 2	4 6	G							1
11 4	9 8	11 6	8 4	G		11 4	4 0					2
C	C	C	C	C	C	C	6 6					3
11 0	11 0	9 8	10 4	G	5 2						5 2	4
C	C	C	C	C	C	3 4	3 0					5
10 6	10 8	8 8	G	G	C	C	9 2	6 8	6 0			6
11 2	10 6	8 4	G	G	G							7
11 2	10 8	10 3	9 6	G	G							8
9 8	10 8	10 6	7 8	G	3 2							9
11 0	11 4	9 6	8 2	G	G						2 7	10
12 2	20 0	20 0	20 0	6 5	5 0						3 0	11
11 2	12 0	10 1	G	G	G							12
12 0	11 2	9 6	8 6	G	G							13
11 0	9 8	11 0	10 2	7 8	4 0	3 6	3 7	S				14
11 0	10 6	9 0	G	G	3 1	3 5			2 8			15
C	C	12 0	10 6	6 6	G	2 4						16
11 6	11 0	8 8	15 0	13 0	G	2 6	4 4	4 8			5 1	17
17 8	5 4	7 8	10 4	7 3	5 3	2 6	2 8					18
10 8	10 2	10 4	8 6	8 5	9 6	3 3						19
11 0	9 2	12 4	9 0	6 4	4 8							20
11 4	9 8	3 7	5 8	G		2 8			2 7		2 8	21
7 8	8 0	6 6	4 0	G							2 7	22
8 4	8 4	7 8	9 7	5 0	G					2 6		23
10 0	9 9	8 7	8 6	G	G						C	24
8 0	6 0	9 4	7 8	G	10 0	4 6us						25
8 2	9 0	6 0	G	G	G		3 7					26
8 0	6 6	G	5 3	G	12 6	19 0	12 2	9 6	2 8	2 7	7 0	27
9 2	C	10 0	8 6	6 0	S				S			28
9 6	C	10 0	8 2	8 3	7 6us	S						29
9 0	7 8	10 8	8 4	G	5 6						9 4	30
27	25	28	28	28	23	11	8	4	4	2	8	Count
11 0	9 9	9 6	8 4	G	3 1	3 4	4 2				4 0	Median
10 5	10 0	9 7	9 2	7 3	6 3	5 4	5 7		.	.	4 7	Mean

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds.

Characteristic foEs
 Unit: Mc
 Month: June, 1963.

TABLE 82 (Contd)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77·5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	7.6	4.6	4.6	2.4		G	G	5.6	8.6	10.0	9.6	9.8
2							G	6.0	8.8	10.0	11.0	11.2
3							6.4	7.8	8.6	10.6	C	C
4							6.4	8.4	9.7	10.2	10.6	11.2
5	C	C	C	C	C	C	C	C	C	11.4	11.6	11.8
6							6.6	7.8	9.8	11.0	10.0	11.0
7							G	G	G	G	9.2	11.2
8							7.0	8.4	9.4	10.4	10.8	10.8
9							G	7.2	9.2	10.6	10.6	11.0
10			2.4	3.6			G	3.8	7.8	10.0	11.0	11.0
11							G	6.6	9.6	10.6	10.4	10.8
12							G	8.0	9.4	11.0	12.0	11.0
13						8.6	G	G	8.4	11.7	8.7	C
14							G	G	8.8	10.0	10.6	11.0
15	S						G	8.0	9.7	10.6	11.6	11.8
16							G	G	C	C	C	C
17							5.6	6.6	9.4	11.2	11.6	11.4
18				5.7	5.8		6.8	7.6	8.8	10.0	9.4	12.8
19						3.2	6.8	7.8	9.2	9.6	10.2	9.7
20							G	10.6	9.4	11.0	9.0	9.8
21			1.7				6.0	7.0	9.6	10.0	10.0	9.8
22	6.8	2.0	6.8	8.4	9.8uc	8.6	8.4	7.8	9.4	8.8	8.6	8.6
23							3.6	6.2us	7.6	8.8	8.6	8.6
24							C	C	C	9.6	9.2	C
25	C	C	C	C	C	C	C	C	C	8.6	8.0	8.0
26			C			G	G	B	8.3	G	8.7	8.6
27							G	5.6	8.3	8.6	C	8.6
28	5.0				2.9		G	6.0	7.0	9.0	8.4	8.6
29		4.2us	2.5				S	G	C	8.0	9.0	10.0
30							G	6.2	8.8	9.4	9.2	8.4

Count	3	3	5	4	4	4	2b	26	25	29	27	26
Median			2.5				G	6.6	8.8	10.0	10.0	10.8
Mean			3.6				6.4	7.1	8.9	10.2	9.9	10.2

Sweep 1.0 Mc, to 25.0 Mc in 27 seconds.

Characteristic foEs
Unit: Mc
Month June, 1963

TABLE 82 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
10 0	9 8	6 8	3 6	G	2 3	5 8		2 6		2.8		1
9 7	8 2	12 6	G		5 6	12 2						2
C	C	C	C	C	C	C	5 8					3
11 6	13 6	9 4	10 4	G								4
C	C	C	9 4	G	C			5 2				5
11 0	11 8	7 4	G	C	C	7 8	9 2	5 8				6
11 4	10 4	5 8	G	G	G	2 8						7
11 0	10 4	10 0	5 6	G								8
11 2	11 2	11 0	5 7	G								9
10 8	10 6	9 2	G	G	G							10
19 0	18 0	21 0	20 0	6 0	G						3 8	11
12 0	11 0	8 0	G	G	2 3							12
11 7	11 0	10 0	6 3	G	G							13
10 8	9 0	13 6	10 4	6 0		4 6	3 6				S	14
11 0	9 6	8 0	G	G	2 5		2 5	2 2				15
C	12 4	12 0	8 2	G	G							16
11 4	10 6	14 5	13 4	6 0	6 2	4 6	4 8					17
12 8	G	7 8	9 4	5 8	5 2	2 5	2 3		3 0			18
10 4	11 4	8 8	11 7	G	10 2							19
10 8	11 8	11 2	7 2	6 8	6 2	3 4						20
10 8	5 8	4 1	G								2 8	21
8 1	9 8	6 0	G		3 3							22
8.6	8 2	7 2	4 2	G						2 0		23
10 4	9 0	8 6	G	G	7 7					C	C	24
6 0	9 6	8 7	G	7 6	C							25
9 2	8 0	7 4	G	G				2 7				26
9 4	G	6 4	6 2	12 0	8 6	22 0	10 0	8 0 _{us}	2 7	2 6	6 0	27
9 3	C	9 4	G	6 0	G			6 8				28
8 8	9 0	9 0	9 8	4 0	6 0							29
8.6	12 4	13 8	G	G	6 0	2 6				3 8	6 4	30
27	27	28	29	25	19	10	7	7	2	4	4	Count
10 8	10 4	8 9	4 2	G	3 3	4 6	4 8	5 2				Median
10 6	10 4	9 6	8 8	6 7	5 5	6 8	5 4	4 8				Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month June, 1963.

TABLE 83
Ionospheric Data
75°E Mean Time

Latitude 10°2' N.
Longitude 77°5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1		2.0	1.4	1.4	1.0		G	2.7	3.2	3.4	3.6	3.7
2							G	2.7	3.1	3.4	3.6	3.7
3							G	2.7	3.2	3.3	3.8	C
4							G	2.8	3.3	3.5	3.6	3.8
5		C	C	C	C	C	C	C	C	3.2	3.5	3.6
6							G	2.8	3.0	3.5	3.6	3.8
7							G	G	G	G	3.8	3.7
8	1.4						G	2.6	3.0	3.4	3.6	3.8
9							G	G	3.1	3.2	3.4	3.8
10				A			G	G	3.3	3.5	3.6	3.8
11							G	G	3.1	3.4	3.6	3.8
12							G	G	3.1	3.4	3.7	3.8
13							G	G	3.2	3.4	3.7	3.7
14							G	G	3.2	3.4	3.5	3.7
15	S						G	2.5	3.2	3.3	3.6	3.7
16					1.3		G	G	C	C	C	C
17								2.8	3.1	3.5	3.7	3.7
18					1.7			2.0	2.6	2.9	3.3	3.6
19								1.8	2.6	3.0	3.4	3.8
20									2.7	3.2	3.5	3.7
21							G	2.5	3.0	3.3	3.5	3.8
22							G	2.6	2.9	3.8 ^{uc}	3.6	3.7
23							G	2.6	3.0	3.4	3.5	3.7
24				C	C	C	C	C	C	3.3	3.4	3.6
25	C	C	C	C	C	C	C	C	C	C	G	3.5
26							G	G	G	3.4	3.4	4.0
27							G	2.6	3.1	3.3	3.4	3.6
28	2.5						G	2.6	3.1	3.3	3.5	3.6
29			2.1	1.5			G	G	3.1	C	3.5	3.6
30							G	G	3.0	3.3	3.5	3.6
Count	2	1	2	3	3		23	27	26	27	29	28
Median							G	2.5	3.1	3.4	3.6	3.7
Mean							2.0	2.6	3.1	3.4	3.6	3.7

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fbEs
Unit Mc
Month June, 1963

TABLE 83
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
3	3.6	3.7	3.5	3.0	G							1
3.8	3.7	4.4	3.8	G		3.5	1.8					2
C	C	C	C	C	C	C	1.9					3
3.8	3.6	3.7	4.6	G							A	4
C	C	C	C	C	C							5
3.8	3.7	3.5	G	G	C	2.0	2.1					6
3.7	3.6	3.6	G	G	G	C	2.7	2.8				7
3.8	3.8	3.6	3.3	C	C							8
3.8	3.7	3.8	3.6	G	2.6							9
4.0	3.8	3.9	3.4	G	C						2.4	10
3.8	4.8	5.5	A	3.4	3.0						1.6	11
3.8	3.8	3.7	C	C	C							12
3.8	3.7	3.5	3.3	G	C							13
3.8	3.7	3.8	3.8	3.4	2.6	2.6	2.3	2.4				14
3.8	3.8	3.6	C	C	3.1	2.1						15
C	C	3.5	3.2	3.1	C	2.0						16
3.8	3.8	3.6	5.0	3.1	C	2.3	3.2	2.6			2.4	17
3.8	5.1	3.8	3.6	3.5	3.2	2.6	2.1	2.1				18
3.7	3.7	3.5	3.2	3.0	4.0	2.4						19
3.8	4.1	5.3	3.8	3.0	2.5							20
3.6	3.6	3.7		G		2.2			2.1		1.9	21
3.6	4.0	3.6	3.3	C								22
3.6	3.6	3.9	4.6	3.0	C							23
3.7	3.6	3.4	3.3	G	4.3						C	24
3.6	3.5	3.5	3.2	C	4.3	2.7						25
3.8	3.6	3.5	C	C	C			2.8				26
3.7	4.5	C	3.1	C	5.3	5.3	4.0	3.4	3.2		3.0	27
3.7	C	3.5	3.3	2.9	2.5				S			28
3.6	C	3.8	3.4	3.7	2.7	2.5						29
3.9	3.8	5.0	3.2	C	1.4						2.2	30
27	25	28	27	28	23	12	8	6	2		7	Count
3.8	3.7	3.6	3.3	G	2.5	2.4	2.2	2.7			2.4	Median
3.8	3.9	3.8	3.6	3.3	3.4	2.7	2.5	2.7			2.2	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic fbEs
Unit: Mc
Month June, 1963

TABLE 83 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	2.4	1.7	1.6	1.5		G	G	3.2	3.4	3.5	3.6	3.7
2							G	3.0	3.2	3.5	3.7	3.8
3							2.3	2.9	3.2	3.4	C	C
4							2.4	3.0	3.5	3.5	3.7	3.8
5		C	C	C	C	C	C	C	C	3.3	3.6	3.6
6							2.6	2.9	3.2	3.4	3.6	3.8
7							G	G	G	G	3.8	3.7
8								2.9	3.2	3.5	3.8	3.8
9							G	2.8	3.2	3.4	3.7	3.7
10			S				G	3.1	3.4	3.5	3.7	3.9
11							G	3.0	3.2	3.8	3.7	3.8
12							G	3.0	3.3	3.6	3.8	3.8
13					A		G	G	3.3	3.6	3.7	C
14							G	G	3.3	3.4	3.7	
15	S						2.3	3.0	3.2	3.4	3.7	3.8
16							G	G	C	C	C	C
17							2.4	3.0	3.3	3.5	3.7	3.8
18				1.6	A		2.2	2.8	3.1	3.4	3.5	5.2
19							2.3	2.8	3.2	3.5	3.6	3.8
20							G	3.4	3.4	3.5	3.7	3.8
21							2.2	2.9	3.2	3.4	3.6	3.8
22	A							2.8	3.0	3.4	3.6	3.7
23							2.3	2.7	3.1	3.4	3.6	3.7
24			C	C	C	C	C	C	C	3.3	3.5	C
25	C	C	C	C	C	C	C	C	C	3.4	3.4	
26								G	3.2	G	3.6	3.7
27			C				G	2.9	3.3	3.3	C	3.5
28	2.3							2.8	3.2	3.4	3.5	3.7
29		2.0	1.6				2.5	G	C	3.2	3.6	3.7
30							G	3.0	3.1	3.4	3.6	3.9
Count	3	2	2	2	2	1	23	27	25	29	27	24
Median							G	2.9	3.2	3.4	3.6	3.8
Mean							2.4	2.9	3.2	3.4	3.6	3.8

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic f_oF₂
Unit Mc
Month June, 1963.

TABLE 83 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10°2' N
Longitude 77°5' E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
3.9	3.6	3.6	3.2	G	2.3	2.0				2.0		1
3.7	3.8	4.1	G	G	2.2	3.4						2
C	C	C	C	C	C	C	2.2					3
3.8	3.8	4.1	3.8	G	G							4
C	C	C	3.2	G	C		C	2.3				5
3.8	3.7	3.6	G	C	C	3.0	2.8					6
3.7	3.6	3.3	G	G	G							7
3.9	3.7	3.5	G	G	G							8
3.8	3.6	3.6	3.8	G	G							9
3.8	3.7	3.5	G	G	G							10
5.2	4.8	6.0	3.6	3.2	G						2.7	11
3.9	3.7	3.5	G	G								12
3.8	3.7	3.5	G	G	G							13
3.7	3.6	5.0	4.2	3.1		2.3	2.5				S	14
3.7	3.8	3.7	G	G	2.4							15
C	3.5	3.4	3.1	G	G							16
3.8	3.7	5.0	3.3	2.8	2.8	2.6	2.8					17
5.0	G	3.5	4.0	2.7	2.2	2.0	1.7		1.9			18
3.8	3.6	3.4	3.8	G	3.5							19
4.0	4.4	3.6	3.4	2.9	2.5	2.7						20
3.6	3.4	3.5	G								1.6	21
3.6	4.4	3.8	G		2.6							22
3.6	3.5	3.9	3.6	G								23
3.8	3.5	3.4	G	G	2.4					C	C	24
3.6	3.5	3.4	G	3.6	C							25
3.7	3.6	6.6	G	G				2.3				26
3.7	G	5.3	4.3	6.0	2.2	3.2	3.3	3.5			2.9	27
3.6	C	3.5	G	2.8	G			S				28
3.5	3.7	3.4	3.8	2.9	2.8							29
3.8	4.6	5.8	G	G	2.6	2.0				1.7	A	30
27	27	28	28	25	19	9	6	3	1	2	4	Count
3.8	3.7	3.6	3.1FG	G	2.2	2.6	2.6					Median
3.8	3.8	4.0	3.6	3.3	2.5	2.6	2.6					Mean

Sweep 1.0 Mc to 25.0 Mc. in 27 seconds

Characteristic fmin
Unit Mc
Month June, 1963

TABLE 84
Ionospheric Data
75 E Mean Time

Latitude 10° 2' N
Longitude 77 5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	1.4	1.4	1.4	1.2	1.0	1.3	1.1	1.5	1.8	1.9	2.3	2.4
2	S	1.6	1.2	1.1	E	E	1.2	1.8	1.8	2.1	2.2	2.4
3	1.8	1.3	E	S	S	E	1.0	1.3	1.7	2.1	2.4	C
4	1.6	E	S	S	S	E	1.2	1.3	1.9	2.3	2.4	2.6
5	S	C	C	C	C	C	C	C	C	1.9	2.3	2.3
6	1.3	S	S	1.3	E	E	1.3	1.8	2.2	2.1	2.3	2.6
7	S	1.4	E	E	E	E	1.4	2.0	2.2	2.4	2.7	2.8
8	E	E	E	E	E	1.1	1.4	1.6	1.9	2.4	2.6	2.8
9	1.4	S	E	E	E	E	1.6	1.9	1.8	2.2	2.4	2.6
10	1.2	E	E	1.1	E	E	1.4	1.5	2.0	2.4	2.5	2.7
11	2.7	2.1	1.5	1.5	1.7	1.3	1.5	1.5	2.0	2.4	2.6	2.8
12	2.2	1.8	1.5	1.2	1.5	F	1.2	1.8	2.3	2.6	2.8	2.8
13	E	E	E	E	E	F	1.4	1.9	1.7	2.1	2.5	2.8
14	E	1.4	1.4	E	E	E	1.4	2.0	2.3	2.4	2.7	2.8
15	1.3	S	S	S	E	E	1.2	1.5	1.7	2.2	2.6	2.6
16	2.0	1.8	1.7	1.2	1.1	1.7	1.4	1.8	C	C	C	C
17	1.6	1.2	1.3	1.0	1.2	1.2	1.0	1.3	1.4	2.4	2.4	2.8
18	2.4	1.6	1.5	1.1	1.1	E	1.4	1.5	1.9	2.2	2.4	2.6
19	1.7	1.1	S	S	E	1.3	1.1	1.4	1.7	2.1	2.3	2.5
20	1.9	S	E	E	E	E	2.0	1.7	2.0	2.7	2.5	2.7
21	E	S	E	1.3	F	F	1.2	1.4	1.6	2.3	2.6	2.5
22	E	1.6	1.6	E	E	E	1.7	1.6	1.8	2.7 ^{Ut}	2.8	3.0
23	E	E	E	E	E	E	1.5	1.6	2.2	2.4	2.5	2.7
24	1.5	E	E	C	C	C	C	C	C	2.2	2.4	2.6
25	C	C	C	C	C	C	C	C	C	C	2.5	2.7
26	C	1.4	1.2	F	F	1.2	1.3	2.0	1.9	2.4	2.2	2.7
27	1.7	1.1	F	E	E	1.1	1.4	1.4	2.1	2.3	2.6	2.5
28	2.4	2.0	1.8	1.4	1.0	1.4	1.7	2.0	2.0	2.4	2.7	2.9
29	2.1	2.3	1.6	1.3	E	E	1.4	1.5	1.6	C	2.4	2.9
30	1.4	E	E	E	E	E	1.4	1.8	2.1	2.4	2.8	2.8
Count	25	23	24	23	25	27	27	27	26	27	29	28
Median	1.5	1.4	1.2 _F	1.0	E	E	1.4	1.6	1.9	2.3	2.5	2.7
Mean	1.8	1.6	1.5	1.2	1.2	1.3	1.4	1.6	1.9	2.3	2.5	2.7

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic f_{min}
Unit Mc
Month June, 1963

TABLE 84
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77 5° E

12	13	14	15	16 ^m	17	18	19	20	21	22	23	Date
2.5	2.5	2.8	1.8	1.9	1.7	1.9	1.4	1.6	1.4	1.5	1.9	1
2.5	2.6	3.0	2.6	3.0	2.8	1.8	1.7	1.6	1.9	1.9	1.8	2
C	C	C	C	C	C	C	1.3	2.2	1.3	1.5	1.5	3
2.5	2.5	2.4	2.4	2.5	1.9	1.7	1.7	1.4	1.5	1.6	1.2	4
C	C	C	C	C	C	1.8	2.0	1.7	C	S	S	5
2.6	2.7	2.6	2.3	2.9	C	C	2.2	2.6	S	C	1.7	6
2.6	2.6	2.2	2.4	2.3	2.0	1.7	1.6	1.5	1.3	1.3	1.4	7
2.7	2.6	2.6	2.4	2.4	1.8	1.8	1.8	1.7	1.6	1.6	1.2	8
2.8	2.5	2.5	2.5	2.4	2.3	2.4	2.2	1.7	1.7	1.6	1.1	9
3.0	2.6	2.4	2.3	2.2	2.0	2.0	1.6	1.7	2.1	1.5	1.4	10
2.8	2.8	2.4	2.2	2.3	1.9	1.8	1.6	1.6	1.8	1.5	1.5	11
2.8	2.8	2.6	2.6	3.1	2.7	1.8	1.8	1.6	2.0	1.8	E	12
2.8	2.9	2.7	2.5	2.4	2.1	2.0	1.8	1.8	1.8	1.8	1.4	13
3.0	2.8	2.6	2.3	2.4	2.2	1.9	2.0	1.4	2.0	1.9	2.1	14
2.7	2.7	2.8	2.5	2.4	2.3	1.7	1.6	1.6	1.4	1.4	1.9	15
C	C	2.3	2.2	2.2	2.0	1.5	1.4	1.3	1.4	1.5	1.5	16
2.8	2.8	2.6	2.0	2.0	2.2	2.3	2.6	1.8	2.3	1.9	2.0	17
2.6	2.7	2.7	2.3	2.0	1.9	2.0	1.4	2.2	1.9	1.7	2.3	18
2.6	2.5	2.4	2.2	2.5	1.8	2.2	1.7	1.6	1.5	1.7	2.2	19
2.8	2.8	2.6	2.2	2.2	1.8	2.5	2.2	2.4	2.2	C	1.9	20
2.4	2.6	2.6	2.5	2.2	2.5	1.9	1.3	1.8	1.8	2.1	1.9	21
2.8	2.9	2.5	2.1	3.2	2.4	2.8	1.4	1.8	1.8	1.9	E	22
2.8	3.0	2.6	2.6	2.4	2.1	2.0	2.0	2.0	1.4	1.8	1.5	23
2.7	2.7	2.5	2.4	2.3	1.9	1.9	2.0	1.8	1.5	1.7	C	24
2.7	2.7	2.6	2.4	2.8	1.8	1.9	2.1	1.8	2.2	1.6	1.7	25
2.8	2.8	2.6	3.0	3.0	2.8	2.2	1.9	1.5	1.6	1.7	1.9	26
2.5	2.6	2.5	2.3	3.0	1.8	1.8	1.6	1.4	1.6	1.3	1.7	27
2.8	C	2.5	2.4	2.4	1.9	1.6	1.7	1.6	2.1	1.6	1.8	28
2.9	C	2.3	2.3	2.4	1.8	1.7	1.7	1.8	1.8	1.8	1.8	29
2.8	3.0	2.6	2.0	2.6	2.2	2.2	1.9	1.7	1.6	1.7	E	30
27	25	28	28	28	27	28	30	30	28	27	28	Count
2.8	2.7	2.6	2.4	2.4	2.0	1.9	1.7	1.7	1.8	1.7	1.7	Median
2.7	2.7	2.6	2.3	2.5	2.0	2.0	1.8	1.7	1.7	1.7	1.7	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic . fmin
Unit : Mc
Month : June, 1963.

TABLE 84 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	13	14	10	E	11	12	14	17	19	23	25	25
2	13	S	S	S	E	15	13	18	19	22	22	24
3	19	12	E	S	E	14	12	16	18	25	C	C
4	16	S	S	S	S	15	11	15	19	23	24	26
5	13	C	C	C	C	C	C	C	C	20	23	25
6	13	S	S	E	E	16	15	19	22	23	24	26
7	15	E	E	E	E	14	17	20	23	28	25	25
8	E	E	E	E	E	16	16	19	22	25	25	27
9	17	E	E	E	E	16	14	17	21	22	25	27
10	E	E	11	E	E	14	14	19	23	24	27	27
11	23	19	16	17	16	16	15	18	22	25	28	27
12	16	16	15	13	11	15	12	20	24	25	29	30
13	E	E	E	E	E	16	15	16	22	26	27	C
14	E	14	13	E	E	16	18	24	25	26	27	35
15	12	S	S	S	E	15	14	19	19	23	27	27
16	16	16	14	11	14	16	17	19	C	C	C	C
17	16	17	14	12	12	14	10	14	19	25	27	27
18	19	20	16	E	E	23	14	18	18	24	24	26
19	12	S	S	E	E	14	13	18	22	22	25	26
20	21	E	E	E	E	18	20	20	24	27	24	30
21	12	S	E	E	E	14	13	14	20	22	25	29
22	E	10	13	E	E	18	14	17	20	26	29	30
23	E	E	E	E	E	17	15	22	23	26	27	29
24	E	E	C	C	C	C	C	C	C	23	25	C
25	C	C	C	C	C	C	C	C	C	24	27	37
26	C	12	14	12	E	12	19	27	24	22	21	30
27	14	10	C	E	11	13	15	18	22	24	C	26
28	19	19	15	12	12	15	15	23	21	25	29	30
29	23	16	13	11	E	12	13	18	C	22	31	28
30	E	E	E	E	E	14	18	18	23	26	28	30
Count	28	22	21	23	26	27	27	27	25	29	27	26
Median	13	11	11	E	E	15	14	18	22	24	25	27
Mean	16	15	14	13	12	15	15	19	21	24	26	28

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds.

Characteristic fmin
Unit Mc
Month June, 1963

TABLE 84 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10·2° N.
Longitude 77·5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2.4	2.6	2.2	2.4	2.0	1.6	1.4	1.4	1.4	1.8	1.7	1.6	1
2.8	2.7	2.8	3.2	2.8	1.7	1.5	1.6	1.7	2.0	1.7	1.8	2
C	C	C	C	C	C	C	C	1.3	1.5	1.5	1.3	3
2.6	2.6	2.4	2.5	2.3	2.2	1.7	1.5	1.3	1.6	1.7	1.8	4
C	C	C	1.9	2.0	C ₁	1.7	C	1.6	S	S	C	5
2.8	2.6	2.3	2.6	C	C	2.0	2.3	2.2	S	1.7	1.4	6
2.5	2.4	2.5	2.4	2.4	1.8	1.8	1.6	1.3	1.6	1.3	1.6	7
2.7	2.6	2.3	2.5	2.3	2.1	1.8	2.0	1.5	1.6	1.3	1.6	8
2.8	2.6	2.3	2.0	2.2	2.3	2.0	1.5	1.5	1.6	1.4	1.4	9
2.8	2.7	2.4	2.6	2.1	1.8	1.4	1.6	1.8	1.6	1.8	3.0	10
2.8	2.6	2.4	2.7	2.0	1.8	1.7	1.7	1.7	1.5	1.2	1.7	11
2.8	2.7	2.5	2.4	3.1	1.9	1.8	1.8	1.8	1.9	1.6	E	12
2.9	2.7	2.5	2.4	2.7	2.0	1.8	1.6	1.6	1.5	1.6	1.1	13
2.8	2.6	2.5	2.5	2.8	2.2	1.9	1.6	2.0	2.0	1.9	1.9	14
2.8	2.6	2.5	2.8	2.6	1.9	1.9	1.4	1.5	1.6	1.8	2.4	15
C	2.2	2.2	2.3	2.2	1.9	1.5	1.4	1.4	1.4	1.5	1.7	16
2.8	2.7	2.5	2.4	2.3	2.4	2.0	2.2	2.1	1.9	2.4	2.2	17
3.1	2.7	2.2	2.2	2.3	1.9	1.3	1.3	1.6	1.9	1.6	1.5	18
2.6	2.5	2.3	2.7	2.5	1.6	1.8	2.3	1.8	2.2	1.8	1.2	19
2.6	2.5	2.4	2.2	1.9	1.7	2.1	1.8	2.1	2.2	1.8	E	20
2.6	2.6	2.4	3.0	2.6	2.2	1.8	1.6	1.9	1.9	2.3	1.2	21
2.9	3.2	2.8	3.2	2.9	2.3	2.2	1.8	1.8	1.8	1.9	E	22
2.8	2.8	2.8	2.4	2.4	2.1	1.8	1.8	1.8	1.9	1.5	1.9	23
2.8	2.7	2.4	2.4	2.2	1.7	2.0	1.9	1.7	1.9	C	C	24
2.6	2.6	2.5	3.0	1.9	C	1.8	2.0	1.8	1.8	1.6	C	25
3.0	2.6	3.3	2.7	2.8	2.3	2.2	1.0	1.8	1.7	2.1	1.9	26
2.5	2.7	2.4	3.0	2.3	1.5	1.5	1.7	1.7	1.5	1.5	2.5	27
2.8	C	2.5	2.5	2.0	1.7	1.8	1.3	1.3	1.8	1.8	2.2	28
2.8	2.6	2.3	2.3	2.2	1.8	1.9	1.5	1.8	1.8	1.6	2.0	29
2.8	2.6	2.5	2.6	2.2	1.9	1.5	2.3	2.0	1.6	1.7	1.4	30
2.7	2.7	2.8	2.9	2.8	2.6	2.9	2.9	3.0	2.8	2.8	2.7	Count
2.8	2.6	2.4	2.5	2.3	1.9	1.8	1.6	1.7	1.8	1.7	1.6	Median
2.7	2.6	2.4	2.5	2.4	1.9	1.8	1.7	1.7	1.8	1.7	1.8	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'F2
 Unit Km
 Month June, 1963

TABLE 85
 Ionospheric Data
 75°E Mean Time

Latitude 10.2° N.
 Longitude 77.5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1								290	325	325	370	380
2								L	300	360	L	LH
3								L	L	LH	360	C
4								L	350	350	400	450
5								C	C	340	400	425
6							L	290	305	390	380	425
7								260	275	315	370	370
8								L	330	370	400	410
9								270	L	395	400	L
10								275	300	315	385	385
11							250	280	340	L	L	425
12							280	310	320	360	385	445
13							270	280	300	310	360	390
14								285	L	370	400	415
15								I	330	380	405	460
16								L	C	C	C	C
17							L	L	340	355	380	395
18								L	330	L	400	370
19								L	L	L	460	405
20								300	305	340	340	370
21								L	L	I	500	435
22								L	L	360	390	385
23								L	L	400	450	430
24								C	C	370	390H	430
25								C	C	C	330H	365
26							L	L	300	330	325	340
27							L	L	280	320	370	350
28							L	260	300	320	365	360
29							L	L	L	C	325	L
30								280	L	L	345	340
Count							3	12	17	21	27	25
Median								280	305	355	385	395
Mean								280	315	350	385	400

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic : h'F2
 Unit · Km
 Month June, 1963

TABLE 85
 Ionospheric Data
 75°E Mean Time

Latitude 10·2° N.
 Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
425	385	360	L	L	300							1
440	395	A	L	L								2
C	C	C	C	C	C	C						3
425	415	400	340	315	300							4
C	C	C	C	C	C							5
440	440	420	380	335	C							6
420	380	380	330	320	L							7
450	410	400	360	L	L							8
430	440	380	365	L	L							9
400	415	390	360	320	L							10
380	420	A	A	315	300							11
420	415	400	360	360	325							12
420	425	420	L	L	L							13
400	425	385	L	320	305							14
380	400	385	360	340								15
C	C	395	L	360	L							16
440	360	385	340	300	295	270						17
365	360	370	360	315	L							18
435	400	390	370	320								19
380	400	370	310	290	275							20
400	400	340	355	300	265							21
360	330	340	320	280	290							22
385	360	340	A	300	275							23
430	420	430	370	L	I							24
365	395	400	350	380	A							25
360	370	340	315	300	280							26
345	380	320	320	280	A							27
365	C	350	I	L								28
380	C	395	385	320	280							29
375	360	330	325	310	280							30
27	25	26	20	21	13	1						Count
400	400	385	360	315	290							Median
400	395	380	350	320	290							Mean

Sweep 1·0 Mc. to 25·0 Mc in 27 seconds.

Characteristic h'F2
Unit Km
Month . June, 1963.

TABLE 85 (Contd)
Ionospheric Data
75°E Mean Time

Latitude · 10·2° N
Longitude · 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1								320	335	360	375	390
2							280	290	340	L	L	420
3								L	L	L	C	C
4								L	L	405	400	L
5										320	430	400
6							L	290	390	355	400	445
7							L	270	300	335	375	400
8							260	L	360	L	355	445
9							275	315	400	430	380	430
10							255	280	315	380	370	430
11							280	L	L	385	420	400H
12							L	L	L	L	410	440
13							280	300	320	350	380	L
14							280	L	360	385	440	420
15							L	330	340	360	440	370
16							285	330	C	C	C	C
17									350	360	380	440
18								L	360	380	365	350
19								L	360	405	455	420
20							270	305	300	330	L	400
21							L	L	L	440	420	450
22							L	L	350	370	410	365
23							L	L	L	380	450	420
24										400H	400	C
25										360H	360	350
26							L	270	320	325	330	340
27							270	L	340	350	C	360
28							L	270	300	340	350	340
29							L	290	C	330	360	380
30							L	295	350	330	345	390
Count							10	14	19	25	25	25
Median							280	290	340	360	380	400
Mean							275	295	340	365	390	395

Sweep 1·0 Mc to 25 0 Mc in 27 seconds.

Characteristic h'F2
Unit Km
Month . June, 1963

TABLE 85 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N,
Longitude 77 5 E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
415	390	355	L	L	L							1
410	340	L	L	L	L							2
C	C	C	C	C	C							3
445	405	360	330	300	L							4
C	C	C	330	300	C							5
430	440	400	350	C	C							6
L	410	330	320	310	L							7
440	430	L	L	L	L							8
450	400	370	350	L	L							9
L	430	380	325	L	L							10
A	410	A	L	330	300							11
425	405	380	380	L	L							12
440	425	400	365	L	285							13
435	420	A	340	300	300							14
410	410	380	L	340								15
C	380	L	L	360								16
400	400	365	310	290	280							17
375	380	350	330	285								18
425	390	405	340	300								19
395	370	330	310	300								20
370	360	345	L	280								21
355	335	335	L	280								22
370	360	330	320	275								23
420	380	400	340	370								24
360	400	365	340	280	C							25
365	345	A	L	295								26
380	340	A	A	A								27
365	C	L	335	305								28
345	380	370	340	295								29
370	325	325	310	290								30
24	27	20	19	20	5							Count
405	390	365	335	300	285							Median
400	385	365	335	305	290							Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic · h'F
Unit Km
Month June, 1963

TABLE 86
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude · 77·5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	280	305	280	265	255	300	245	235	220	210	200	200
2	S	325	340	310	E	E	245	225	215	200	190 _H	190
3	380	360	360	S	270	300	255	220	200 _H	180 _H	220	C
4	310	E	S	S	S	E	240	235	230	200	190	190
5	F	C	C	C	C	C	C	C	C	180 _H	180 _H	175 _H
6	270	S	S	300	E	E	235	225	195	205	180	200
7	S	300	E	E	E	E	230	235	180 _H	220	215	215
8	F	E	E	E	E	340 _F	250	210 _H	195 _H	190	180 _H	200
9	340 _{UF}	S	E	E	E	E	245	230	205	180	180	200
10	345	E	E	A	E	E	250	230	215	200	200	195 _H
11	340	F	F	F	340	245	240	225	200	190	190 _H	190
12	260	325	F	F	F	E	260	220	200	185 _H	200	220
13	E	E	E	E	E	E	240	235	220	200	200	200
14	235	260	F	E	E	E	250	220	205	200 _H	190	185
15	340	F	F	F	E	E	260	235	220	195 _H	200	200
16	335	380	400	F	F	F	250	225	C	C	C	C
17	235	240	260	245	250	260	245	230	215	210	200	200
18	300	325	305	300	365	E	255	200 _H	200 _{II}	210	200	200
19	410	415	S	S	E	340	240	220	215	200	200	190
20	340	S	E	E	E	E	245	225	220	200	200	200
21	E	S	E	E	E	E	245	205	200	200	180 _{II}	220
22	265	320 _{UF}	F	E	E	E	240	225	195	185	175	180
23	E	E	E	E	E	E	225	200	195 _H	190	180	190
24	310	E	E	C	C	C	C	C	C	200 _{II}	190	180
25	C	C	C	C	C	C	C	C	C	C	200	180 _H
26	C	250	230	230	E	320	240	220	215	210	190	A
27	F	F	E	E	E	E	220	215	200	180	200	200
28	290	F	F	340	F	280	230	210	200	190	180	190
29	260	280	260	275	265	230	230	205	215	C	190	180
30	F	F	F	E	E	E	220	210	180 _{II}	A	160 _H	205
Count	22	19	18	19	23	26	27	27	26	26	29	27
Median	320	325	E	E	E	E	245	225	200	200	190	200
Mean	310	315	305	285	290	290	240	220	205	195	190	195

Sweep 1 0 Mc to 25 0 Mc in 27 seconds.

Characteristic h'F
Unit Km.
Month June, 1963.

TABLE 86
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

12	13	14	15	16	17	18	19	20	21	22	23	Date
200	200	210	200 _H	230	245	255	220	230	245	275	280	1
200	200	A	210	210	240	270	240	235	255	290	340	2
C	C	C	C	C	C	C	C	225	235	250	280	3
200	200	205	A	210	230	250	220	220	240	280	A	4
f _o C	C	C	C	C	C	250	215	230	260	275	S	5
185	180	180 _H	220	205	C	C	230	240	S	C	330	6
210	210	215	220	220	240	250	220	230	260	310	385	7
185 _H	200	200	200	235	240	255	215	220	240	275	270	8
195	190	200 _H	220	220	240	250	215	235	260	270	280	9
200	200	210	200	220	220	255	235	235	235	240	280	10
200	A	A	A	220	A	260	240	240	240	240	270	11
200	190	190 _H	220	230	235	255	225	230	240	270	E	12
200	200	200	200	220	235	260	230	235	245	265	260	13
200	185	220	A	230	230	260	260	260	285	310	345	14
190	200	200	230	205	260	260	265	245	260	260	300	15
C	C	200	190 _H	250	245	250	245	240	230	250	250	16
200	195	200	A	A	225	250	265	260	270	275	275	17
A	200	210	220	220	230	260	275	270	260	310	375	18
180	210	200	220	220 _H	270	255	265	270	240	260	300	19
205	A	A	A	220	225	255	240	260	275	C	S	20
200	200	205	215	220	220	240	240	260	260	310	F	21
170 _H	200 _{EA}	180 _H	200	210	205	235	220	205	240	260	E	22
180	170	210	A	200	210	230	205	205	200	S	270	23
190	180	180 _H	200	190	220	240	200	205	260	295	C	24
180 _H	185	180	190	180 _H	A	240	240	220	235	230	225	25
210	190	200	215	200	220	235	230	240	230	260	F	26
200	A	A	A	190	A	A	A	260	240	250	270	27
185	C	180	180	180	215	240	225	230	230	210	245	28
190	C	200	190	A	215	240	220	215	225	270	305	29
200	190	A	200	195	A	225	200	205	220	240	260	30
26	22	23	21	26	23	27	29	30	29	27	24	Count
200	200	200	200	220	230	250	230	235	240	270	280	Median
195	195	200	205	215	230	250	230	235	245	270	290	Mean

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic · h'F
Unit Km
Month . June, 1963.

TABLE 86 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10·2° N
Longitude · 77 5° E.

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	A	300	265	260	270	270	240	230	215	200	200	200
2	305	S	S	S	E	265	235	225	200	195	200	200
3	380	360	360	S	260	280	230	210	195	180 _H	C	C
4	375	S	S	S	S	265	235	225	220	200	200	200
5	F	C	C	C	C	C	C	C	C	200	180 _H	180
6	260	S	S	E	E	260	235	200 _H	180 _H	180 _H	180	200
7	340	E	E	E	E	270	230	225	180 _H	220	220	215
8	E	E	E	E	F	270	230	200	180 _H	180 _H	220	200
9	420	435	E	E	E	355	240	190 _H	200	185	200	190
10	E	E	S	L	E	255	230	220	205	200	200	200
11	F	F	F	F	300	260	225	215	190	220	200	200
12	270	F	F	F	F	260	240	220	200 _H	200	185	200
13	E	E	E	E	A	250	240	230	210	200	190	C
14	260	300	F	E	E	260	230	220	210	195	185	200
15	340	F	F	F	E	280	240	240	215	200	200	190
16	340	400	F	F	F	265	240	230	C	C	C	C
17	235	260	265	240	250	265	235	220	210	210	205	200
18	320	345	305	380	A	300	215 _H	200 _H	210 _H	195	205	A
19	410	S	S	E	E	275	240	225	205	200	190	185
20	400 _{UF}	E	E	E	E	265	235	A	220	205	195	200
21	330	S	E	E	E	250	200 _H	215	200	180 _H	180	200 _H
22	A	310 _F	300	E	E	260	235	215	190 _H	180	175	170
23	E	E	E	E	E	240	215	195	180 _H	180	185	180
24	E	E	C	C	C	C	C	C	C	200	190	C
25	C	C	C	C	C	C	C	C	C	190	185	190
26	C	230	240	250	E	250	230	180 _H	185	200	190	200
27	F	F	C	E	F	250	220	210	200	180 _H	C	190 _H
28	300	F	310	F	A	230	220	200	195	190	190	185
29	270	260	260	270	260	240	220	210	C	200	180	190
30	280	F	E	E	E	230	215	200	180 _H	170	160	200
Count	23	17	16	19	20	27	27	26	25	29	27	25
Median	340	400	360 _{DF}	E	E	260	230	220	200	200	190	200
Mean	325	320	290	280	270	265	230	215	200	195	190	195

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic . h'F
Unit Km
Month June, 1963

TABLE 86 (contd)
Ionospheric Data
75°E Mean Time

Latitude . 10 2° N
Longitude 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
200	210	200	220	235	240	235	220	240	270	300	275	1
195	220	A	220	220	240	260	230	240	270	315	340	2
C	C	C	C	C	C	C	230	240	260	280	280	3
210	200	A	A	230	245	225	220	230	260	280	F	4
C	C	C	210	225	C	230	C	260	S	S	C	5
190	200	200	210	C	C	240	240	245	F	300	320	6
210	200	210	220	230	255	230	215	260	300	345	400	7
215	200	200	225	240	245	230	210	225	255	280	F	8
200	180	200H	A	235	240	225	220	245	270	270	315	9
195	200	200	220	225	245	240	235	225	240	255	300	10
A	A	A	A	A	245	250	240	240	235	245	285	11
195	190	190H	215	235	240	240	215	235	260	270	E	12
200	200	200	200	220	240	245	230	245	250	280	245	13
190	180H	A	A	235	245	260	260	260	305	340	360	14
200	190	225	210	220	240	260	260	260	270	280	320	15
C	200	195	200H	220	250	250	240	235	245	245	250	16
200	195	A	210	220	255	280	270	250	270	275	275	17
A	190	190H	A	200	245	270	265	250	290	330	370	18
200	210	200H	A	230	270	250	280	250	260	280	305	19
200H	A	220	220	235	245	245	235	260	F	260	E	20
195	195H	220	220	225	235	230	260	270	280	F	280	21
180	A	215	200	200	220	220	205	220	240	310	E	22
170	165	A	220	205	210	220	210	200	235	275	345	23
190	180	190	195	195	220UA	200	200	240	300	C	C	24
190	190	185	180	A	C	230	235	225	220	220	C	25
200	190	A	210	220	230	230	230	240	240	280	340	26
190	200	A	A	A	220	A	260	260	240	260	280	27
190	C	180	180	210	230	240	230	235	210	225	260	28
180	190	190	A	200	225	230	215	230	240	280	F	29
180	A	A	200	200	220	220	200	220	235	240	A	30
25	23	19	21	25	26	28	29	30	27	27	23	Count
195	195	200	210	220	240	240	230	240	260	280	315	Median
195	195	200	210	220	240	240	235	240	255	280	305	Mean

Sweep 1 0 Mc to 25 0 Mc, in 27 seconds

Characteristic · h'E
 Unit Km
 Month June, 1963

TABLE 87
 Ionospheric Data
 75°E Mean Time

Latitude 10·2° N.
 Longitude 77 5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1							115	110	105	105	A	A
2							120	120	115	A	A	A
3							120	A	110	A	A	C
4							125	110	105	A	A	A
5							C	C	A	A	A	C
6							120	115	120	A	110	110
7							120	120	110	120	A	A
8							120	110	110	A	A	A
9							120	120	105	A	A	A
10							125	110	120	110	A	A
11							115	110	A	A	A	A
12							115	115	A	A	A	A
13							120	115	A	A	A	A
14							115	115	A	A	A	A
15							115	A	A	A	A	A
16							120	115	C	C	C	C
17							110	110	A	A	A	A
18							120	110	A	110	115	120
19							120	110	A	A	A	A
20								A	A	A	110	A
21							120	115	A	A	A	A
22							135	115	105	A	A	A
23							115	A	A	A	A	A
24							C	C	C	A	A	A
25							C	C	C	C	100	A
26							105	105	100	A	A	A
27							115	A	A	A	A	A
28							130	100	A	A	A	A
29							115	100	A	C	A	A
30							115	110	A	A	A	A
Count							26	22	11	4	4	2
Median							120	110	110			
Mean							120	110	110			

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic . h'E
Unit Km
Month · June, 1963

TABLE 87
Ionospheric Data
75°E Mean Time

Latitude : 10 2° N
Longitude : 77·5° E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
A	110	120	A	120	120							1
A	A	A	A	B								2
C	C	C	C	C	C							3
110	A	115	115	120	105							4
C	C	C	C	C	C							5
110	110	115	115	B	C							6
A	A	110	120	120	120							7
A	A	A	115	120	120							8
A	110	110	115	120								9
A	110	110	115	120	120							10
A	A	A	A	A	A							11
A	A	A	115	B	B							12
A	A	A	A	115	120							13
A	A	A	A	A	A							14
A	A	A	115	115								15
C	C	A	A	A	120							16
A	A	115	A	A	130							17
A	115	120	A	A	A							18
A	A	110	110	A	A							19
A	A	A	A	A	A							20
A	A	120	115	120								21
A	A	100	A	B								22
A	A	A	A	115	120							23
A	A	A	A	105	105							24
A	A	A	A	B	A							25
A	A	A	B	B	B							26
A	100	100	A	B	A							27
A	C	A	A	A	A							28
A	C	A	A	A	A							29
A	A	A	A	110	A							30
2	6	12	10	12	10							Count
	110	110	115	120	120							Median
	110	110	115	115	120							Mean

Sweep 1 0 Mc to 25 0 Mc. in 27 seconds

Characteristic : h'E
Unit Km
Month : June, 1963

TABLE 87 (Contd)
Ionospheric Data
75°E Mean Time

Latitude : 10.2° N
Longitude : 77.5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1						155	110	105	105	110	A	A
2							110	110	110	A	A	A
3							A	A	A	A	C	C
4							105	105	110	A	A	A
5							C	C	C	A	A	A
6							115	115	110	A	110	110
7							120	110	115	130	A	A
8							120	110	A	A	A	A
9							110	115	A	A	A	A
10							115	115	110	110	115	115
11							115	105	A	A	A	A
12							110	A	A	A	A	A
13							115	105	A	A	A	C
14							115	115	A	A	A	B
15							A	A	A	A	A	A
16							115	115	C	C	C	C
17							110	105	A	A	A	A
18							115	105	A	A	110	A
19							115	110	A	A	A	A
20							135	A	A	115	A	A
21							115	105	A	A	A	A
22							120	110	110	A	A	A
23							A	A	A	A	A	A
24							C	C	C	A	A	C
25							C	C	C	A	A	B
26												
27						140	115	B	A	100	A	A
28							105	A	A	A	A	A
29							100	A	A	A	A	A
30							A	100	C	A	B	A
							120	A	A	A	A	A
Count						2	23	18	7	5	3	2
Median							115	110	110	110		
Mean							115	110	110	115		

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic h'E
Unit · Km
Month June, 1963

TABLE 87 (Contd.)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N.
Longitude 77·5° E.

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
110	A	A	120	120	120							1
A	120	A	B									2
C	C	C	C	C	C							3
110	A	110	120	120								4
C	C	C	A	115	C							5
110	115	115	120	C	C							6
A	A	120	120	120	135							7
A	A	110	120	120								8
A	115	115	110	120								9
110	110	110	120	120	135							10
A	A	A	A	A	115							11
A	A	A	115	B								12
A	A	A	115	B	115							13
A	A	A	A	A								14
A	A	A	115	120								15
C	A	A	A	115	120							16
A	A	A	A	A	A							17
A	115	A	A	A								18
A	A	A	A	120								19
115	A	A	A	A								20
A	120	115	B									21
A	A	A	B									22
A	A	A	A	120								23
A	A	A	110	110								24
A	A	A	B	A	C							25
A	A	B	110	B								26
A	100	100	B	A								27
A	C	A	105	A	105							28
A	A	A	A	A								29
A	A	A	110	110	A							30
5	7	8	14	13	7							Count
110	115	110	115	120	120							Median
110	115	110	115	120	120							Mean

Sweep 1 0 Mc to 25·0 Mc. in 27 seconds

Characteristic h'Es
Unit Km
Month June, 1963

TABLE 88
Ionospheric Data
75°E Mean Time

Latitude . 10 2° N
Longitude : 77.5° E.

Date	00	01	02	03	04	05	06	07	08	09	10	11
1		120	135	105	110		G	100	100	100	100	100
2							140	G	105	100	100	100
3							125	110	120	100	100	C
4							105	105	100	100	100	100
5		C	C	C	C	C	C	C	C	100	100	100
6							G	110	100	100	100	100
7							G	G	G	G	100	100
8	120						G	105	100	100	100	100
9							G	G	100	100	100	100
10				110			115	G	100	100	100	100
11							G	G	100	100	100	100
12							G	G	100	100	100	100
13							G	G	100	100	100	100
14						100	G	G	100	100	100	100
15	100						G	100	100	100	100	100
16					100		G	G	C	C	C	C
17							105	105	100	100	100	100
18					110		110	105	100	100	100	100
19							115	105	100	100	100	100
20								105	100	105	100	100
21				100			G	110	100	100	100	100
22	120						150	105	100	100	100	100
23							G	100	100	100	100	100
24				C	C	C	C	C	C	100	100	100
25	C	C	C	C	C	C	C	C	C	C	G	100
26							G	G	G	100	100	100
27							G	100	100	100	100	100
28	100						G	100	100	100	100	100
29			100	100			G	G	100	C	100	100
30							G	G	100	100	100	100
Count	4	1	2	4	3	1	8	15	24	26	28	28
Median							115	105	100	100	100	100
Mean							120	105	100	100	100	100

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic . h'Es
 Unit Km
 Month June, 1963

TABLE 88
 Ionospheric Data
 75°E Mean Time

Latitude 10 2' N
 Longitude 77 5' E

12	13	14	15	16	17	18	19	20	21	22	23	Date
100	100	100	100	100	G							1
100	100	120	100	G		115	110					2
C	C	C	C	C	C	C	110					3
100	100	100	115	G	100						110	4
C	C	C	C	C	C	100	100					5
100	100	100	G	G	C	C	105	100	140			6
100	100	100	G	G	G							7
100	100	100	100	G	G							8
100	100	100	100	G	120							9
100	100	100	100	G	G						100	10
100	100	100	100	100	100						115	11
100	100	100	G	G	C							12
100	100	100	100	G	G							13
100	100	100	100	100	100	115	100	100				14
100	100	100	G	G	130	125			110			15
C	C	100	100	100	G	140						16
100	100	100	100	100	G	100	100	115			110	17
100	110	100	100	100	100	110	100					18
100	100	100	100	110	100	100						19
100	100	100	100	100	100							20
100	100	110	140	G		135			100		120	21
100	100	100	100	G							130	22
100	100	100	100	120	G					95		23
100	100	100	100	G	G						C	24
100	100	100	100	B	100	100						25
100	100	100	G	G	G			100				26
100	100	G	100	G	100	100	100	100	100	C	C	27
100	C	100	100	100	100				100			28
100	C	100	100	100	100	100						29
100	100	100	100	G	100						100	30
27	25	27	23	11	13	12	8	5	5	1	7	Count
100	100	100	100	100	100	105	100	100	100		110	Median
100	100	100	100	105	105	110	105	105	110		110	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic h'Es
Unit Km.
Month June, 1963

TABLE 88 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	115	120	105	110		G	G	100	100	100	100	100
2							G	100	100	100	100	100
3							110	110	100	100	C	C
4							110	105	100	100	100	100
5		C	C	C	C	C	C	C	C	100	100	100
6							110	105	100	100	100	100
7							G	G	G	G	100	100
8							110	105	100	100	100	100
9							G	100	100	100	100	100
10				110			G	140	100	100	100	100
11							G	100	100	100	100	100
12	120						G	100	100	100	100	100
13					105		G	G	100	100	100	C
14							G	G	100	100	100	100
15	120						100	100	100	100	100	100
16							G	G	C	C	C	C
17							105	100	100	100	100	100
18				110	100		110	100	100	100	100	100
19						110	110	105	100	100	100	100
20							G	100	100	100	100	100
21			105				110	105	100	100	100	100
22	125						105	105	100	100	100	100
23							100	100	100	100	095	100
24			C	C	C	C	C	C	C	100	100	C
25	C	C	C	C	C	C	C	C	C	100	100	100
26						G	G	B	100	G	100	100
27			C				G	100	100	100	C	100
28	100				100		G	100	100	100	100	100
29		100	100				100	G	C	100	100	100
30							G	100	100	100	100	100
Count	5	2	3	3	3	1	12	21	24	27	27	26
Median	120						110	100	100	100	100	100
Mean	115	.					105	105	100	100	100	100

Sweep 1.0 Mc. to 25.0 Mc. in 27 seconds

Characteristic h'Es
Unit Km.
Month June, 1963

TABLE 88 (Contd)
Ionospheric Data
75°E Mean Time

Latitude 10 2° N
Longitude 77 5' E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
100	100	100	120	G	130	105		105		100		1
100	110	120	G		120	110						2
C	C	C	C	C	C	C	100					3
100	100	100	115	G				100				4
C	C	C	100	G	C							5
100	100	105	G	C	C	100	105	120				6
100	100	105	G	G	G	105						7
100	100	100	100	G								8
100	100	105	125	G								9
100	100	100	G	G	G							10
100	100	100	100	100	G						115	11
100	100	100	G	G	125							12
100	100	100	100	G	G							13
100	100	100	100	100	100	115	100				100	14
100	100	100	G	G	135		120	130				15
C	100	100	100	G	G							16
100	100	100	120	100	100	100	115					17
100	G	100	100	100	100	140	100		135			18
100	100	100	110	G	100	100						19
100	105	100	100	100	100	100						20
100	100	130	G								120	21
100	100	100	G		090							22
100	100	100	125	G						090		23
100	100	100	G	G	100					C	C	24
100	100	100	G	100	C							25
100	100	115	G	G				100				26
100	G	120	120	100	100	100	100	100	C	C	100	27
100	C	100	G	100	G			100				28
100	100	100	100	100	100							29
100	100	100	G	G	100	090				100	100	30

27	25	28	16	9	13	10	6	7	1	3	5	Count
100	100	100	100	100	100	100	100	100			100	Median
100	100	105	110	100	110	100	105	110			105	Mean

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic (M 3000) F₂
Unit
Month June, 1964

TABLE 89
Ionospheric Data
75°E Mean Time

Latitude 10°2' N.
Longitude 77°5' E

Date	00	01	02	03	04	05	06	07	08	09	10	11
1	3 25	3 15	3 20	3 30	3 25	3 00i	3 25	3 20	3 00	2 70	2 60	2 50
2	2 95	2 70	S	S	E	E	3 20	3 25	3 20	2 75H	2 30H	2 35
3	2 75	2 75	2 90	S	S	2 70U	3 10	2 90	2 60	2 60	2 35	C
4	3 05	S	S	S	S	E	2 95	2 85	2 60	2 50	2 45	2 45
5	F	C	C	C	C	C	C	C	C	2 40	2 50	2 40
6	3 35	S	S	3 15	E	E	3 20	3 10	2 90	2 60	2 45	2 45
7	S	F	E	E	E	E	3 30	3 45	3 20	3 10	2 85	2 55
8	F	E	E	E	E	F	3 20	3 00	2 75	2 50	2 30	2 55
9	2 80U	F	E	E	E	E	3 35	3 30	3 00	2 40H	2 45	2 40
10	2 80	E	E	A	E	E	3 30	3 35	3 05	2 75	2 40	2 40
11	2 90F	F	F	F	F	F	3 25	3 15	3 00	2 60	2 20H	2 50
12	3 35	3 00	F	F	F	E	3 30	3 05	2 90	2 60	2 35U	2 30
13	E	E	E	E	E	E	3 35	3 30	3 20	3 10	2 90	2 60
14	3 30	3 25	F	E	E	E	3 15	3 20	3 00	2 60	2 40	2 40
15	F	F	F	F	E	E	3 00	3 00	2 90	2 55	2 40	2 35
16	2 95U	2 75i	2 70i	F	F	F	3 20	3 15	C	C	C	C
17	3 40	3 35	3 20	3 35	3 20	2 75	3 20	2 90	2 60	2 50	2 40	2 30
18	3 15	2 95U	F	F	F	E	3 05	2 70	2 50	2 55	2 50	2 65
19	2 55	2 60S	2 65	S	E	2 85i	3 10	2 70	2 40	2 50	2 40	2 45
20	F	S	E	E	E	E	3 40	3 25	3 15	2 90	2 70	2 20H
21	L	S	E	E	E	E	3 25	2 90	2 70	2 30	2 30	2 55
22	F	F	F	E	E	E	3 35	3 00	2 50	2 45U	2 70H	2 70
23	E	E	E	E	E	E	3 30	3 00	2 70	2 55	2 45	2 60
24	3 05	E	E	C	C	C	C	C	C	2 85	2 35H	2 55
25	C	C	C	C	C	C	C	C	C	C	2 40H	2 80
26	C	3 40	3 60U	3 50	E	2 85U	3 10	3 40	3 25	2 60	2 90	3 00
27	F	F	F	E	E	E	3 20	3 10	2 80	2 50	2 50	2 75
28	3 20	F	3 15F	2 95	F	R	3 45	3 35	3 25	2 85	2 50	2 60
29	3 20	3 10	3 30	3 15	3 15	3 45	3 20	3 15	3 15	C	2 80	2 40
30	F	F	F	F	F	E	3 45	3 30	2 90	2 35	2 60	2 60
Count	17	11	8	6	3	6	27	27	26	27	29	28
Median	3 05	3 00	3 20	3 20	—	2 85	3 20	3 15	2 90	2 60	2 45	2 50
Mean	3 05	3 00	3 10	3 25	—	2 95	3 25	3 10	2 90	2 60	2 50	2 50

Sweep 1.0 Mc to 25.0 Mc in 27 seconds

Characteristic : (M 3000) F₂
 Unit .
 Month June, 1963

TABLE 89
 Ionospheric Data
 75°E Mean Time

Latitude : 10°2' N.
 Longitude . 77°5' E.

12	13	14	15	16	17	18	19	20	21	22	23	Date
2 45	2 50	2 50	2 55	2 65	2 90	3 20	3 25	3 30	3 25	3 10	3 20	1
2 35	2 60	2 70	2 90	3 05	3 15	3 20	3 20	3 35	3 25	3 00	2 85	2
C	C	C	C	C	C	C	C	3 25	3 40	3 30	3 10	3 25
2 40	2 50	2 50	2 75	2 95	3 10	3 30	3 30	3 45	3 35	3 20	A	4
C	C	C	C	C	C	3 30	3 45	3 30	3 30	3 30	ES	5
2 35	2 40	2 40	2 60	2 80	C	C	3 40	3 35	3 35	C	3 00F	6
2 15	2 40	2 50	2 75	2 85	3 05	3 20	3 30	3 15	3 10us	2 80	2 60F	7
2 45	2 30	2 45	2 45	2 55	2 85	3 10	3 40	3 30	3 20	3 10	3 10	8
2 50	2 35	2 45	2 60	2 65	2 95	3 25	3 40	3 40	3 25	3 15	3 00	9
2 50	2 35	2 40	2 60	2 80	2 90	3 00	3 15	3 40	3 30	3 20	3 05	10
2 50	2 45	2 70	A	2 55	2 75	2 90	3 10	3 20	3 30	3 30	3 20JF	11
2 40	2 45	2 40	2 40	2 60	2 80	2 90	3 15	3 30	3 35	3 50UR	E	12
2 20H	2 25	2 35	2 45	2 60	2 80	2 95	3 10	3 30	3 20	3 10	3 20	13
2 50	2 50	2 35	2 55	2 85	3 05	3 15	3 15	3 15	3 15	3 05	2 60UF	14
2 50	2 50	2 50	2 75	2 75	3 00	2 95	2 95	3 05	3 00	3 10us	2 95	15
C	C	2 40	2 35	2 55	2 75	2 95	3 10	3 40	3 30	3 25	3 30	16
2 35	2 60	2 60	2 90	3 10	3 05	3 00	3 10	3 15	3 05	3 05	3 20F	17
2 65	2 50	2 60	2 75	2 90	3 00	2 90	2 90	3 00	3 05	2 70	2 65	18
2 40	2 45	2 45	2 60	2 80	3 05	3 15	2 90	3 15	3 30	3 20	3 10UF	19
2 50	2 50	2 55	2 80	3 05	3 25	3 15	3 30	3 15	3 20	C	F	20
2 55	2 60	2 70	2 90	3 10	3 40	3 45	3 30	3 20	3 20	F	F	21
2 60	2 80	2 80	3 05	3 20	3 40	3 50	3 45	3 65	3 50	3 20	E	22
2 60	2 75	2 80	2 90	3 15	3 25	3 30	3 40	3 55	3 55	3 30UR	3 20	23
2 50	2 55	2 50	2 50	2 65	2 80	3 25	3 45	3 40	3 20	3 20	C	24
2 80	2 65	2 45	2 55	2 80	3 20	3 20	3 20	3 25	3 50	3 55	3 50	25
2 85	2 70	2 70	2 80	3 00	3 25	3 40	3 40	3 30	3 40	3 10	3 05F	26
2 70	2 65	2 75	2 80	2 80	2 90	3 00	3 10	3 20	3 50	3 45	3 30	27
2 60	C	2 60	2 60	2 75	2 70	2 65	3 00	3 10	3 45	3 40	3 30	28
2 45	C	2 50	2 60	2 70	2 95	3 10	3 30	3 40	3 35	3 15	F	29
2 60	2 65	2 90	3 00	3 00	3 15	3 30	3 55	3 50	3 50	3 40	3 40us	30
27	25	28	27	28	27	28	30	30	30	27	22	Count
2 50	2 50	2 50	2 60	2 80	3 00	3 15	3 25	3 30	3 30	3 20	3 15	Median
2 50	2 50	2 55	2 70	2 85	3 00	3 15	3 25	3 30	3 30	3 20	3 10	Mean

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M 3000) F2
 Unit .
 Month . June, 1963.

TABLE 89 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude 77·5° E

Date	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130
1	2 70	F	3 30	3 35	3 15	3 05	3 20	3 10	2 90	2 60	2 60	2 50
2	2 85	2 85	S	S	E	3 15	3 20	3 30	3 00	2 60 ^H	2 30 ^H	2 35
3	2 80	2 80	2 85	S	S	3 00	3 10	2 75	2 65	2 45	C	C
4	2 90	S	S	S	S	3 15	2 90	2 65	2 50	2 45	2 50	2 35
5	F	C	C	C	C	C	C	C	C	2 25	2 50	2 50
6	S	S	S	E	E	3 25	3 15	2 95	2 65	2 40	2 45	2 35
7	F	E	E	E	E	3 05	3 40	3 10	3 25	2 95	2 70	2 35
8	E	E	E	E	E	3 10	3 10	2 90	2 65	2 30	2 45	2 40
9	2 60 ^{UF}	F	E	E	E	3 30	3 30	3 10	2 70	2 15 ^H	2 50	2 45
10	E	E	S	E	E	3 30	3 40	3 20	2 95	2 50	2 30	2 30
11	F	F	F	F	F	F	3 30	3 10	2 80	2 35	2 30 ^H	2 45
12	3 15	F	F	F	F	3 20 ^F	3 20	3 00	2 75	F	2 15 ^H	2 35
13	E	E	E	E	A	3 25	3 35	3 25	3 20	3 00	2 75	C
14	3 25	2 95	F	E	E	3 20	3 20	3 05	2 80	2 30	2 40	2 35
15	S	F	F	F	E	3 00	2 95	2 90	2 75	2 50	2 40	2 40
16	2 85 ^F	2 65	F	F	F	F	3 20	3 05	C	C	C	C
17	3 40	3 35	3 25	3 35 ^F	3 55 ^{UR}	3 15	3 00	2 70	2 55	2 35	2 35	2 40
18	2 85	3 15 ^{UF}	F	F	A	2 85	2 80	2 50	2 55	2 60	2 60	2 65
19	2 60	2 70 ^{US}	S	E	E	3 05	2 80	2 55	2 75	2 50	2 35	2 45
20	F	E	E	E	E	3 30	3 30	3 10	3 10	2 90	2 50	2 35 ^H
21	S	S	E	E	E	3 20	3 10	2 90	2 45	2 40	2 50	2 45
22	A	F	S	E	E	3 40	3 20	2 75	2 50	2 70	2 55	2 65
23	E	E	E	E	E	3 40	3 10	2 75	2 60	2 60	2 45	2 55
24	E	E	C	C	C	C	C	C	C	2 70	2 50	2 45
25	C	C	C	C	C	C	C	C	C	2 40 ^H	2 80 ^H	2 85
26	C	3 50 ^R	3 40	3 40	E	3 30	3 40	3 30	3 10	2 70	3 00	3 00
27	F	F	C	E	F	F	3 30	3 00	2 65	2 60	C	2 80
28	3 15	F	3 10	F	A	3 40	3 30	3 20	3 05	2 70	2 60	2 70
29	3 20	3 30	3 20	3 10	3 25	3 30	3 25	3 15	C	2 90	2 60	2 25 ^H
30	F	F	F	F	F	3 15 ^{UF}	3 35	3 15	2 60	2 60	2 65	2 60
Count	13	9	6	4	3	24	27	27	25	28	27	27
Median	2 85	2 95	3 20			3 20	3 20	3 05	2 75	2 55	2 50	2 45
Mean	2 95	3 05	3 20			3 20	3 20	3 00	2 80	2 55	2 50	2 50

Sweep 1 0 Mc to 25 0 Mc in 27 seconds

Characteristic (M 3000) F2
 Unit
 Month June, 1963

TABLE 89 (Contd.)
 Ionospheric Data
 75°E Mean Time

Latitude 10 2° N.
 Longitude , 77 5° E

1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330	Date
2 45	2 45	2 55	2 60	2 75	3 10	3 35	3 35	3 30	3 15	3 10	3 20	1
2 50	2 65	2 85	3 00	3 15	3 15	3 25	3 30	3 30	3 10	2 80	2 85	2
C	C	C	C	C	C	C	3 40	3 30	3 30	3 20	3 15	3
2 50	2 40	2 65	2 85	3 00	3 10	3 30	3 35	3 30	3 20	2 85	F	4
C	C	C	2 85	3 10	C	3 40	C	3 35	3 40	3 35	C	5
2 40	2 40	2 45	2 70	C	C	3 25	3 30	3 40	F	2 95	3 00	6
2 20	2 40	2 65	2 80	2 90	3 05	3 30	3 30	3 10	2 85	2 70 _F	2 55 _{UF}	7
2 35	2 35	2 40	2 50	2 70	2 95	3 30	3 30	3 40	3 30	3 05	F	8
2 40	2 45	2 50	2 65	2 75	3 05	3 40	3 40	3 25	3 10	3 10	2 90	9
2 35	2 40	2 45	2 70	2 80	2 90	3 00	3 30	3 35 _{US}	3 25	3 20	2 90	10
2 45	2 75	2 55	2 60	2 60	2 85	3 00	3 15	3 30	3 25	3 40	3 05	11
2 40	2 50	2 40	2 75	2 65	2 80	3 10	3 30	3 25	3 35	3 30	E	12
2 20	2 35	2 40	2 50	2 65	2 85	3 00	3 20	3 20	3 25	3 00	3 25	13
2 40	2 45	2 45	2 75	2 95	3 10	3 15	3 20	3 15 _s	3 05	2 80 _F	2 85 _{JS}	14
2 55	2 50	2 60	2 70	2 80	2 90	3 00	3 00	3 05	3 05 _s	3 05	2 95	15
C	2 40	2 40	2 45	2 70	2 80	2 90	3 05	3 35 _{US}	3 20	3 30	3 25	16
2 50	2 60	2 70	3 00	3 10	3 20	3 15	3 10	3 15	3 00	3 15	3 15	17
2 55	2 60	2 65	2 85	2 95	2 90	2 85	2 95	3 15	2 80	2 70	2 65	18
2 45	2 45	2 40	2 70	3 00	3 10	3 05	3 00	3 30	3 10	3 15	2 95	19
2 30	2 50	2 65	2 90	3 00	3 15	3 30	3 45	3 20	R	2 90 _{UF}	E	20
2 60	2 65	2 80	3 00	3 20	3 30	3 40	3 15	3 10 _{US}	3 05	F	F	21
2 65	2 90	2 90	3 15	3 20	3 35	3 45	3 45	3 60	3 40	F	E	22
2 75	2 70	2 90	3 00	3 30	3 30	3 45	3 55	3 45	3 60	3 25	R	23
2 60	2 60	2 45	2 55 _H	2 60	2 95	3 40	3 50	3 45	3 10	C	C	24
2 70	2 55	2 40	2 70	2 90	C	3 30	3 25	3 55	3 55	3 60	C	25
2 75	2 65	2 70	2 90	3 10	3 30	3 45	3 35	3 35	3 25	3 00	2 75 _F	26
2 70	2 70	2 85	2 80	2 80	2 90	3 00	3 15	3 30	3 40	3 40	3 20	27
2 70	C	2 40	2 70	2 85	2 65	2 95	3 10	3 20	3 50	3 40	3 20	28
2 85	2 65	2 70	2 65	2 90	3 00	3 20	3 35	3 45	3 25	3 00	F	29
2 55	2 80	2 95	2 95	3 10	3 20	3 60	3 40	3 45	3 20	3 45	A	30
27	27	28	29	28	26	29	29	30	28	27	18	Count
2 50	2 50	2 60	2 75	2 90	3 05	3 25	3 30	3 30	3 20	3 15	3 00	Median
2 50	2 55	2 60	2 75	2 90	3 05	3 20	3 25	3 30	3 20	3 20	3.00	Mean

Sweep 1.0 Mc. to 25 0 Mc. in 27 seconds

ERRATA FOR INTERNATIONAL OBSERVATORY BULLETIN NO. CLXXI

Part I
Solar Data

Page No.	Title, Paragraph	Text	Read as
3	Tabular heading 3rd line - Col. 7	Mean height ,	Mean height "
4	1st line	decrease being	decrease, the decrease being
6	Part II - Para I 4th line	maneto- grams	magnetograms
6	Part III 5th line	foE foEs	foE, foEs
9	April 23, Col. 6	90°E	90°E
9	April 23, Col. 9 1st line	become	became
9	May 27, Col. 9 1st line	Actual	Actual
10	April 14 (1st BSL) Col. 9 1st line	A Observation	As Observation
11	April 20, Table II 2nd line	under date 20	30

Part II
Magnetic Data

Page No.	Table No.	Date/Line.	Hour/Column.	Read	for
17	5	Mean	15	2.9	2.2
18	6	30	14	39.5	39.1
19	6	12	16	39.6	38.6
20	7	17	03	39.2	39.1
20	7	20	06	39.9	39.1
20	7	9	11	38.5	3.5
23	8	9	26	0700	0710
24	9	26	13	38.3	48.5
24	9	27	13	38.4	48.4
25	9	5	15	38.6	48.1
30	12	23	08	602	602
33	13	4	<u>Maximum</u> Mag	655	625
33	13	5	<u>Maximum</u> Mag	655	625

Contd..... 2

Page No.	Table No.	Date/Line.	Hour/Column.	Read	for
37	15	4	Date	4	4
44	19	23	02	192	190
50	22	4	09	160	160
50	22	7	10	178	173

Part III
Ionospheric Data

Page No.	Table No.	Line/Date	Hour/Column.	Read	for
112	38	23	0030	3.6	0.93
114	39	1	07	2.0	2.2
136	44	18	0030	Delete 125	
136	44	23	0030	125	Nil
136	44	22	0230	Delete 120	
136	44	23	0230	100	Nil
149	47	Mean	1530	4.4	4.5
155	49	23	17	6.2	1.2
155	49	19	18	Delete 2.9	
155	49	18	18	2.9	Nil
167	52	20	15	3.20	4.20
167	52	21	16	2.85	L
167	52	22	16	Delete 250	
179	55	14	18	100	110
183	56	31	23	3.25	5.15
189	57	9	2330	U ¹	U ¹
214	64	3	00	300	390
228	-	-	-	April	May
230	68	8	08	8.0	8.5
231	68	26	22	2.9	2.5
232	68(Contd)	31	0930	7.9H	7.4
232	68(Contd)	31	1030	7.4	7.9H
236	69(Contd)	Count	1130	24	22
243	71	06	13	8.8	11.8
243	"	21	16	7.2	7.4
243	"	7	19	3.7	-
243	"	3	19	5.6	3.7
243	"	8	20	3.2	-
244	71(Contd)	31	0730	9.0	3.0
244	"	1	1130	9.6	9.2
247	72	4	14	3.5	5.5
249	72(Contd)	29	1230	3.7	3.8
249	"	30	1230	4.0	3.7
260	75(Contd)	27	0030	E	C
261	"	10	1530	200B	210B
271	78	23	18	3.20	2.20
273	78(Contd)	3	1430	2.60	3.60

Contd..... 3

Page No.	Table No.	Line/Date	Column/ Hour.	Rea.	or
273	78(Contd)	2	1530	2.55	2.15
273	"	3	1530	280	2.17
273	"	4	1530	270	2.18
273	"	2	1630	2.75	2.75
273	"	3	1630	2.75	2.75
273	"	4	1630	2.80	2.31
274	79	2	5	E	
275	79(Contd)	Count	0930	28	2.13
277	"	"	0930	28	2.14
276	"	28	1030	7.2	2.15
252	81	1	06	1.9H	1.94
291	83	5	18, 19	2.0, 2.1	
291	83	6	18, 19, 20	2.2, 2.7, 2.8	2.0
					2.1
315	89	5	23	F	2.1

N.B. - Pages 291 to 315 may be seen under Page 290 instead of Page 290

amb/-