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IONOSPHERIC DATA IN JAPAN

FOR JUN 1951

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PREPARED BY THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR JUNE 1951

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PREFACE

The radio administration in Japan has hitherto been carried out by the Radio Regulatory Agency. With the reorganization of part of the government offices effective on June 1, 1950, the Radio Regulatory Commission was established and the work of researches on radio propagation has become to fall under the charge of the radio wave observatories, auxiliary organs of the Radio Regulatory Commission.

The radio wave observatories are composed of the Central Radio Wave Observatory located at Kokubunji, Tokyo, and five local radio wave observatories established at Wakkanai, Akita, Hiraiso, Inubo and Yamagawa respectively.

The Central Radio Wave Observatory has the following four sections:

Ionospheric Propagation Section which shall carry on researches on ionosphere and wave propagation;

Tropospheric Propagation Section which shall carry on researches on troposphere and wave propagation;

Data Coordination Section which shall conduct the collection and arrangement of observational results, supply of operational data relating to radio propagation, preparation of radio propagation forecasts and radio disturbance warnings, and physical basic studies of wave propagation in general; and

Administrative Section which shall conduct the general affairs of the observatory.

The ionospheric sounding is as heretofore being carried out by the four observatories at Wakkanai, Akita, Kokubunji (Tokyo) and Yamagawa.

This report provides the results of ionospheric sounding with symbols determined and in the form established on an international basis in the same way as followed by the Radio Regulatory Agency and it is hoped that it will make any contribution toward the progress in world-wide short wave communications.

This report is intended for distribution on request to the largest possible number of organizations concerned all over the world, and any and every information that the organizations concerned might forward to us in exchange therefor would be highly appreciated.

Uyeda Hiroyuki
Chief, Central Radio Wave Observatory,
Radio Regulatory Commission

July 1951

SITE OF THE IONOSPHERIC STATIONS

Ionospheric observation is carried out at four stations in Japan.

The stations are situated as follows :

	longitude	latitude	site
Wakkanai	141° 41.1' E	45° 23.6' N	Wakkanai-shi, Hokkaido
Akita	140° 08.2' E	39° 43.5' N	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	139° 29.3' E	35° 42.4' N	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7' E	31° 12.5' N	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

All symbols in the table are used in accordance with "Production and Reduction of Ionospheric Information" of "RESOLUTION OF THE IX GENERAL ASSEMBLY OF URSI SEPTEMBER 1950" (CRWO F25) except f_{\min} E and f_{\min} F for E and F regions respectively instead of f_{\min} , taken as f_{\min} s in the above Resolution, in order to avoid the interruption of preceding form of data.

Lat. 4° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

foF2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	5.4	5.1 ^F	4.8	4.5 ^F	4.8 ^F	5.2 ^V	5.2 ^Z	A	6.7	C	C	C	C	C	5.7	6.1	6.0	6.0	6.6	7.2	7.5	7.0	6.6	6.6	6.6
2	6.2	5.8	5.9	5.5	5.6	6.0	5.3	5.8	6.4	A	6.3	A	5.8	6.4	7.3	7.6	7.9	(8.5) ^F	8.0	7.2	7.2	6.8	6.3	6.0	6.0
3	6.4	6.0	5.2 ^J	4.0	(4.3) ^F	5.5	A	6.3	5.8	A	6.1	6.2	6.3	6.7	6.6	6.9	(7.4) ^F	7.3 ^F	A	7.5	7.4	7.4	A	A	6.0
4	6.1 ^F	5.8 ^F	6.1 ^F	4.8 ^F	4.8 ^F	5.6	5.8	6.4	6.8	6.4	6.1	6.2	A	5.6	5.8	6.2	6.3	6.6	7.5	7.8	6.8	7.8	7.6	6.7	6.7
5	5.8	5.3	5.5	5.3	5.3 ^F	6.2	7.7	6.4	(6.2) ^F	6.3	B	5.6	6.0	6.5	6.4 ^H	6.3	6.0	6.6	7.3	7.3	7.6	7.0	6.7	6.5	6.5
6	6.5	6.3	5.6	5.8	6.4	6.8	7.4	7.2	6.3	7.5	7.8	7.2	(6.8) ^F	6.5	6.9	7.1	7.1	7.7	8.1	7.8	8.1	6.6	6.0	6.5	6.5
7	5.9 ^H	5.9 ^H	5.1	5.5	4.8	4.5 ^V	6.4 ^K	A ^K	6.6 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K
8	A	6.1 ^F	6.2 ^F	5.4 ^F	4.3 ^F	5.8 ^F	6.8	6.9	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	5.7 ^K	5.8 ^K	6.5	6.3	5.8	A	6.4	5.8	6.8	6.8
9	A	5.7	5.5	4.5	5.0 ^H	6.2	6.8	A	A	A	A	6.5	A	B	6.2	6.5	6.6	6.4	A	6.8	6.9	7.1	7.4	7.2	7.2
10	6.5	5.8	5.4	5.4	6.1	6.6	6.4 ^H	C	C	C	C	C	C	C	C	6.9	6.6	6.5	6.6	6.6	7.6	7.6	7.6	7.4	
11	6.9	7.6	7.6	6.2	6.4	7.3	7.6	8.0	7.0	7.4	7.1	7.0	B	B	B	7.1	7.6	7.9	7.4	7.5	7.3	7.6	7.6	7.4	
12	7.3	7.0	6.2	6.1	5.9	6.5	6.1	6.4	7.0	5.6	7.0	7.2	6.7	7.2	6.9	7.1	6.7	6.6	7.1	7.4	(7.6) ^F	7.3	(7.2)	A	A
13	7.3	6.9	6.7	6.8	7.6	7.1	6.4 ^F	6.6	6.6	6.4	A	6.5	A	A	6.7	B	B	7.2	7.5	A	7.5	7.2	7.7	6.8	
14	6.4	7.1	6.5	5.8	5.3	5.7	A	7.0	7.0	7.6	7.3 ^V	6.7 ^V	6.8	A	6.7	6.3	7.6	A	A	A	A	A	A	6.7	T
15	7.1	7.8	7.5	7.5	6.5	A	7.5	6.7	A	A	A	A	A	A	6.8	6.7	6.5	6.3	A	A	A	A	A	6.9	6.9
16	(6.8) ^F	6.6	6.5	6.5 ^F	4.2	5.5	(5.1) ^H	5.8 ^F	5.8	C	C	B	6.3	6.9 ^P	6.9	A	A	A	A	A	A	7.9 ^F	7.8 ^F	7.9 ^F	7.9 ^F
17	7.3 ^F	(7.2) ^F	7.1 ^F	7.1 ^F	6.3 ^F	6.0 ^F	6.4	A	A	6.9	6.8	7.1	5.9 ^K	B ^K	6.2	6.5	6.6	6.8	6.9 ^T	6.6	7.5	7.5	7.3	7.4	7.4
18	6.8 ^H	6.6 ^H	6.4 ^H	6.2 ^H	6.3	C	A	A	A	A	A	8.5	8.1	7.8	6.1	6.3	7.1	6.3	6.1	7.2	7.2	7.7	6.5	A	6.4 ^K
19	6.5	(5.9) ^H	5.0 ^F	4.0 ^F	S	C	A	A	A	A	A	C	C	6.6	6.2	6.3	7.3	7.1	6.3	7.3	6.2	6.4	5.8	5.9	5.9
20	C	5.1 ^K	4.2 ^K	(4.6) ^H	A ^K	5.3	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	B ^K	A ^K	A ^K	5.2 ^K	5.1 ^K	5.6 ^K	6.0	6.2	6.2	6.3 ^T	5.8	
21	5.7 ^H	5.8 ^H	5.6 ^H	5.7	5.8 ^F	6.6	7.2	7.7	6.6 ^F	6.2	6.1	6.9	7.3	6.8	5.9	6.3	5.8	5.6	6.5	7.7	B	7.0	6.2	6.4	
22	6.2	6.0 ^H	6.1	5.9	6.0	6.3	6.3	6.3	A	A	A	6.2	6.2	6.6	6.3 ^V	5.8 ^V	5.7	A	A	6.7	7.3	6.8	7.1 ^F	5.6	
23	6.0 ^F	5.0 ^F	5.3	6.2 ^F	5.2	6.2	6.1	A	6.4 ^T	A	A	5.7	5.7	5.8	5.7	B	A	A	A	A	6.5	6.8	7.0	6.8	
24	6.1 ^H	6.5 ^F	6.7 ^F	6.6 ^F	6.2 ^F	6.4	6.5	C	C	C	C	C	C	C	C	C	A	5.8	A	A	6.2	6.2	7.0	6.8	
25	6.6	6.4	6.4	5.8 ^V	C	6.5	7.4	7.2	7.2	A	A	A	5.8	6.2	5.9	5.8	6.1	A	A	C	6.2	6.5	7.0	6.8	
26	6.1 ^F	6.9 ^F	5.3 ^F	4.7 ^F	4.7 ^F	4.7 ^K	4.8 ^K	5.0 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	5.3 ^K	5.6 ^K	5.8 ^K	5.9 ^K	5.5 ^K	5.9 ^H	6.0 ^F	6.2 ^H	6.6 ^F	6.6 ^F	(7.0) ^F	
27	6.2 ^F	5.9 ^F	5.3 ^F	5.2 ^F	5.0 ^F	4.7 ^K	A ^K	5.0 ^K	A ^K	A ^K	A ^K	5.0 ^K	A ^K	5.1 ^K	B ^K	6.0 ^K	5.8 ^K	5.4 ^K	6.1	6.0 ^F	6.0 ^F	6.1 ^F	5.9 ^F	5.1 ^F	
28	5.1 ^F	5.1 ^F	5.0 ^F	5.3 ^F	4.7 ^F	4.8 ^F	4.8 ^F	4.9 ^F	A ^K	A ^K	A ^K	A ^K	5.0 ^K	5.0 ^K	5.3 ^K	5.3 ^K	5.5 ^K	5.5 ^K	6.2	6.3	A	6.0	5.9 ^F	5.9 ^F	
29	(5.8) ^F	5.9 ^F	5.5 ^F	5.4 ^F	5.1 ^F	6.2 ^F	6.0	6.2	C	C	C	C	A	A	A	7.0 ^P	6.0	6.5	A	A	A	6.9 ^F	6.4 ^F	6.3 ^F	
30	6.5	6.5 ^F	6.0 ^F	6.7 ^F	5.6 ^F	5.6 ^F	6.4	8.0	8.6 ^F	(7.1) ^{TA}	6.2 ^F	A	A	A	6.5	6.2	6.1	A	A	7.4	A	A	A	6.6 ^F	
31																									
Mean Value	6.4	6.2	5.9	5.6	5.5	5.9	6.3	6.5	6.7	6.7	6.7	6.3	6.3	6.3	6.3	6.5	6.4	6.5	6.7	6.9	7.1	6.9	6.8	6.8	6.6
Median Value	6.4	6.0	5.8	5.6	5.3	6.0	6.4	6.4	6.6	6.6	6.6	6.5	6.2	6.5	6.2	6.3	6.3	6.4	6.6	7.2	7.3	7.0	6.7	6.6	6.6
Count	27	30	30	30	27	27	24	19	16	10	10	15	14	16	22	23	24	22	20	23	20	24	25	27	27

Sweep 1.0—Mc to 17.0 Mc in 1.5 min

Manual

W 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

Jun. 1951

f_oF₂

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	380	350	360	350	F	370	A	320	A	300	C	C	C	C	G	390	360	G	360	340	350	350	360	360	360
2	410	400	400	360	410	340	390	400	310	A	340	A	G	420	400	380	380	330	300	340	360	370	350	400	400
3	430	410	A	A	AF	G	A	A	A	A	A	390	G	360	370	A	(380)	360	A	310	310	A	A	(400)	(400)
4	(420)	A	(390)	350	340	330	G	G	320	310	340	G	A	G	390	380	370	330	310	300	310	350	320	340	340
5	370	330	360	370	400	340	310	310	A	300	B	B	A	380	330	B	330	350	340	350	360	370	370	380	380
6	380	340	390	360	330	330	320	300	G	350	330	340	(360)	380	400	400	350	400	330	330	310	290	400	410	410
7	410	390	350	340	400	500	430	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
8	A	A	(450)	(310)	360	F	A	400	370	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
9	A	410	370	380	330	H	420	A	A	A	A	A	A	B	A	410	380	370	A	A	A	A	390	360	390
10	400	380	380	410	350	320	400	C	C	C	C	C	C	C	C	360	310	400	320	310	340	390	370	370	390
11	410	360	370	340	340	350	340	300	310	330	370	400	B	B	B	G	390	350	350	380	A	(360)	370	(370)	A
12	370	450	400	410	370	340	400	380	310	G	300	400	400	400	400	360	G	380	350	380	A	310	370	390	410
13	490	390	410	410	410	320	300	370	400	G	A	A	A	A	A	A	B	340	340	A	A	A	A	A	A
14	410	410	340	360	360	350	A	A	380	330	A	B	A	A	A	400	290	A	A	A	A	A	A	A	T
15	390	400	380	370	H	370	310	G	A	A	A	A	A	A	A	410	400	470	A	A	(330)	C	C	400	440
16	(450)	460	420	(330)	JF	B	A	B	C	C	C	B	G	G	G	360	A	A	A	A	A	A	390	400	410
17	360	(430)	(420)	380	390	A	A	A	A	400	400	390	G	B	G	G	390	380	340	(360)	350	360	390	380	400
18	390	410	430	380	H	400	A	A	A	A	A	A	A	460	390	G	480	A	400	390	300	380	380	400	400
19	420	(390)	(360)	(400)	S	C	A	A	A	A	A	A	C	390	A	450	400	400	350	370	H	350	400	440	430
20	C	380	420	480	A	A	A	A	A	A	A	A	C	C	B	A	A	A	A	A	A	A	400	430	420
21	430	410	400	430	350	390	360	340	330	400	G	430	370	350	410	400	380	G	400	390	B	340	350	370	
22	370	420	410	390	310	320	340	G	A	A	A	500	A	400	B	420	470	A	A	A	A	400	400	400	
23	420	400	A	550	F	320	A	A	A	A	A	G	G	G	500	B	A	A	A	A	A	A	A	A	A
24	(390)	390	(360)	(380)	JF	320	340	C	C	C	C	C	C	C	C	A	450	A	A	A	A	A	A	A	A
25	400	380	370	340	C	C	440	410	A	A	A	A	A	G	A	450	450	A	A	C	A	450	A	400	400
26	390	350	F	340	KF	A	A	G	A	A	A	A	A	A	A	450	450	A	A	A	A	450	A	420	420
27	400	F	(360)	(400)	JF	460	A	A	A	A	A	A	A	A	A	490	490	A	A	A	A	400	420	(440)	(480)
28	400	(430)	(440)	(380)	490	450	A	A	A	A	A	A	A	A	A	490	410	400	370	340	A	A	350	400	370
29	(320)	330	350	350	390	350	310	330	C	C	C	C	C	C	C	A	370	A	400	380	A	A	350	A	A
30	370	370	330	340	F	320	380	370	300	A	380	A	A	A	A	A	A	A	A	A	A	A	A	A	A
31																									
Mean	400	390	380	380	360	370	360	360	340	350	360	410	400	390	390	410	390	370	360	340	350	380	380	380	400
Median	400	390	380	380	360	350	350	380	320	350	380	400	400	410	400	400	380	380	360	340	360	390	380	380	400
Count	27	27	28	29	27	22	18	14	10	9	8	9	12	16	17	20	24	20	20	18	18	23	24	25	25

Sweep 1.0 Mc to 17.0 Mc in 15 min

Manual

f_oF₂

W 2

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

f F2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	300	270	260	240 ^A	300	260	270 ^A	A	300	C	C	C	C	C	450	390	360	330	290	280	280	320	320	320	
2	300	300	300	290	330	280	390	400	310	A	380	A	480	420	400	380	350	300	280	320	300	300	300	300	
3	300	330	340	310 ^A	370 ^A	380 ^A	A	(360 ^A)	400	A	380	390	410	360	370	500 ^A	350 ^A	330	A	300	300	A	400	400	
4	300 ^F	400	300	280	300	310	360	320	310	310	340	350	A	390	390	370	370	300	300	300	300	290	290	290	
5	310	290	300	240	290	280	300	A	A	300	B	420	410	380	300 ^H	380 ^B	300	280	240	280	290	290	290	290	
6	300	290	290	240	290	240	300	300	400	340	320	320	(350 ^A)	380	390	390	300	400	310	270	250	250	300	320	
7	300 ^H	310 ^H	280	300	380	500 ^A	420 ^A	A ^K	400 ^A	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	
8	A	400	310 ^H	310	300	410	390	350	A	A	A	A	A	A	A	480	480	350	280	290	A	A	A	A	
9	A	330	330	320	300 ^H	350	400 ^A	A	A	A	A	A	A	A	A	410	370	370	A	380	310	310	340	300	
10	300	290	300	310	300	300	300	C	C	C	C	C	C	C	350	310	300	280	280	300	300	300	300	300	
11	310	300	310	280	300	240	300	300	310	310	370	400	B	B	B	340	340	300	300	270	300	300	300	310	
12	300	300	300	330	320	300	400	380	310	300	300	400	390	400	310	390	380	280	290	A	300	310	280	A	
13	290	290	300	310	280	260	260	370	400	480	A	400	A	A	A	B	B	390	320	A	300	340	360	380 ^A	
14	400 ^A	410	330	330	340	350	A	A	380	320	A	B	A	A	400	400	270	A	A	A	A	A	A	300	
15	320 ^H	320 ^H	320 ^H	300 ^H	300	A	300	350	A	A	A	A	A	A	400	400	470	400	A	300	C	C	400	330	
16	(330 ^F)	330	310	270	270	B	A	B	B	C	C	390	440	390	360	A	A	A	A	A	A	A	A	360 ^A	
17	350 ^F	280 ^F	280 ^F	300 ^F	300 ^F	A	A	A	A	400	400	390	500 ^K	490 ^K	420	390	380	340	320	330	310	330	340	290	
18	300 ^H	300 ^H	310 ^H	290 ^H	300	300	A	A	A	A	A	470 ^A	420 ^A	380	510	480	A	400	390	280	380 ^A	380 ^A	A	300 ^H	
19	300	300	300	280	290	280	A	A	A	A	A	C	C	390	420	450	400	350	(290 ^A)	300	300	310	400	390	
20	C	290 ^K	310 ^K	390 ^F	A	450 ^A	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	A ^K	400 ^A	500 ^K	360 ^K	380 ^K	300	300	310	330	
21	300 ^H	300 ^H	300	300	250	370	320	310	330	400	490	430	370	350	410	400	380	430	380	310	290	290	300	290	
22	240	300 ^H	330	300	240	290	340	330	A	A	A	500	A	A	B	400	450	A	A	A	A	400	380	A	
23	A	A	A	400 ^F	430 ^B	A	A	A	400	A	A	520	400	500	500	C	A	A	A	A	A	400	290	300	
24	310 ^H	320	300	320	(300 ^A)	A	A	C	C	C	C	C	C	C	C	A	450	A	400	420	A	A	270	300	
25	300	300	300	280	C	C	410	400	400	A	A	A	540	420	A	450	450	A	A	C	A	A	A	300	
26	310	280	300	330 ^K	330 ^K	350 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	520 ^K	490 ^K	A ^K	280 ^K	400 ^H	300 ^H	A	A	300 ^H	300 ^F	A	
27	A	350	300	320	380 ^A	450 ^A	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	590 ^K	480 ^K	490 ^K	490 ^K	(420 ^K)	350	330	300	300	320	300	
28	300	310	350	300	310 ^F	450 ^A	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	510 ^K	400 ^K	350 ^K	410 ^K	410 ^K	400	320	280	300	A	310	A	
29	300	270	300	270	280	260	260	330	C	C	C	C	A	A	A	A	350	A	400	360	A	A	320	380	420
30	320	270	290	290	290	260	360	300	280	A	380	A	A	A	A	330	A	440	A	A	A	A	A	380 ^F	340 ^F
31																									
Mean Value	310	310	310	310	310	330	340	340	350	370	410	440	440	420	400	400	380	360	320	310	310	310	310	330	330
Median Value	300	300	300	300	300	300	320	340	360	320	380	400	420	400	400	400	380	360	320	300	300	300	310	300	300
Count	25	29	29	30	28	25	19	14	14	9	9	13	12	16	19	22	24	22	20	20	21	22	24	25	

Sweep 1.0 Mc to 1.70 Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

foF1

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	Q	A	4.2	C	C	C	C	C	4.6	4.4	A	B	3.9					
2						Q	4.3	4.1	4.4	A	4.7	A	5.0	4.6	A	A	A	4.0	A					
3						A	A	A	A	A	A	A	A	4.6	A	A	A	A	A					
4						Q	A	4.3	(4.6) ^B	A	A	4.6	A	4.7	4.4	4.5	A	4.1	A					
5						Q	A	A	A	A	B	B	B	B	L	B	B	Q	Q					
6						Q	L	4.4	A	4.6	4.9	4.9	(4.8) ^F	4.7	4.7	S	4.2	4.4	4.0					
7						3.4	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						A	A	4.5 ^A	A	A	A	A	A	B	B	4.6	4.5	4.2	Q					
9						Q	A	A	A	A	A	A	A	4.9	4.9	4.8 ^A	4.5 ^B	A	A					
10						3.5	4.2	C	C	C	C	C	C	C	C	(4.8) ^B	4.5	4.0	Q					
11						Q	A	4.6	4.6	4.9	5.0	5.0	B	B	B	B	L	Q	3.4					
12						3.5	4.2	4.6	A	4.5	L	(5.0) ^B	L	(5.0) ^B	A	5.0	4.7	Q	Q					
13						A	A	4.3 ^J	4.6 ^J	5.1	A	A	A	A	A	A	B	4.7 ^J	A					
14						3.8 ^J	A	A	A	A	A	A	A	A	A	A	Q	A	A					
15						A	4.0	A	A	A	A	A	A	A	A	A	A	A	A					
16						B	A	B	B	C	C	B	5.2	5.1	5.4	A	A	A	A					
17						Q	A	A	A	A	5.2	A	5.4	5.3 ^F	(5.2) ^F	5.0	4.6	B	Q					
18						Q	A	A	A	A	A	A	A	4.9	5.1	A	A	A	Q					
19						Q	A	A	A	A	A	C	C	A	A	A	4.9	A	A					
20						A	A	A	A	B	A	A	A	B	A	A	4.4	4.3	A					
21						3.8	4.6	4.7	4.7	A	5.1 ^A	4.8	4.9	4.9	4.6	4.6 ^B	4.4	4.3	L					
22						3.9	4.4	4.6	A	A	A	5.0	A	A	B	4.5	A	A	A					
23						A	4.3 ^J	A	A	A	A	5.0	A	A	4.7	A	A	A	A					
24						L	4.4	C	C	C	C	C	C	C	C	C	4.5	A	A					
25						C	4.0	B	A	A	A	A	5.0	4.8	A	4.6	4.4	A	A					
26						A	A	A	A	A	A	A	A	A	B	B	B	A	A					
27						A	A	4.4	A	A	A	A	A	(4.8) ^F	4.5	4.4	4.3	3.9	A					
28						A	A	A	A	A	A	A	4.7	4.5 ^F	4.6 ^F	4.4	(4.4) ^A	A	3.6					
29						Q	Q	4.3	C	C	C	C	A	A	A	4.3	A	4.2	3.8					
30						Q	A	A	A	A	4.8	A	A	A	(4.6) ^B	A	4.8 ^J	A	A					
31																								
Mean Value						3.7	4.3	4.4	4.5	4.8	5.0	4.9	5.0	4.8	4.8	4.6	4.5	4.2	3.7					
Median Value						3.6	4.3	4.4	4.6	4.8	5.0	5.0	5.0	4.8	4.6	4.6	4.5	4.2	3.8					
Count						6	9	11	6	4	6	6	7	13	12	14	13	11	5					

Sweep 1.0 Mc to 17.0 Mc in 1.5 min Manual

foF1

W 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

f'F1

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	Q	A	A	C	C	C	C	C	260	A	A	A	290					
2						Q (300) ^B	280	A	260	A	360	A	280	A	A	A	A	A	A					
3						A	A	A	A	A	A	A	B	A	A	A	A	A	A					
4						Q	A	A	260	A	A	210	A	220	250	300	300	A	A					
5						Q	A	A	A	A	B	B	B	B	270	B	B	Q	Q					
6						Q	280	280	A	270	300	220	(220)	230	270	240	290	310	300					
7						300	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						A	A	A	A	A	A	A	A	B	B	270	270	310	Q					
9						Q	A	A	A	A	A	A	A	A	A	A	260	A	A					
10						280	260	C	C	C	C	C	C	C	C	B	290	250	Q					
11						Q	A	290	280	250	220	B	B	B	B	B	250	Q	270					
12						280	290	290	A	250	300	A	B	B	A	290	270	Q	Q					
13						A	A	A	A	A	A	A	A	A	A	A	B	300	A					
14						320	A	A	A	A	A	A	A	A	A	A	Q	A	A					
15						A	300	A	A	A	A	A	A	A	A	A	A	A	A					
16						240	A	A	A	C	C	B	B	B	B	330	A	A	A					
17						Q	A	A	A	A	A	A	A	300	B	B	B	B	Q					
18						Q	A	A	A	A	A	A	B	310	360	A	A	A	A					
19						Q	A	A	A	A	A	C	C	A	A	350	A	260	Q					
20						A	A	A	A	B	A	B	B	B	A	A	290	(350)	A					
21						290	280	A	A	A	A	A	300	250	250	250	280	280	300					
22						270	280	270	A	A	A	A	A	A	A	B	B	A	A					
23						A	A	A	A	A	A	A	A	A	A	240	A	A	A					
24						270	270	C	C	C	C	C	C	C	C	C	A	A	A					
25						C	B	B	A	A	A	A	300	A	A	A	A	A	A					
26						A	A	A	A	A	A	A	A	A	B	B	B	A	A					
27						A	A	A	A	A	A	A	A	220	270	280	280	290	A					
28						A	A	A	A	A	A	A	300	300	350	(280)	A	280	260					
29						Q	Q	280	C	C	C	C	A	A	A	A	300	A	300	300				
30						Q	A	A	A	A	250	A	A	A	A	A	A	A	A					
31						280	280	280	270	260	240	220	280	260	280	280	280	290	290					
Mean Value						280	280	280	270	260	240	220	280	260	280	280	280	290	290					
Median Value						280	280	280	260	250	300	220	300	250	270	280	280	280	290					
Count						8	8	6	3	3	5	2	5	7	11	9	11	11	11					

Sweep 1.0 — Mc to 17.0 Mc in 1.5 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

foE

135° E Mean Time

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	B	2.8	B	C	C	C	C	C	C	B	B	2.9	A	A				
2						1.9	2.7	3.1	3.1	3.6	B	B	B	B	B	A	3.0 ^B	2.7	2.2	A				
3						1.9	A	3.0	3.0	3.2	3.1	3.2 ^A	A	3.2	B	B	3.3	3.0	(2.6) ^B	2.2				
4						2.2	2.6	3.0	3.2	3.3	B	B	B	B	B	B	A	A	A	A				
5						2.3	2.6	2.9	B	B	B	B	B	B	B	B	B	B	B	A				
6						2.0	2.6	B	3.1 ^B	B	B	B	B	B	B	B	B	2.9	2.9	2.5				
7						2.0	2.9	3.1	3.4	A	A	A	A	B	A	B	3.1 ^B	2.7	2.7	B				
8						(2.2)	2.7 ^B	B	B	A	B	B	B	B	B	B	B	B	2.8	2.4				
9						2.2	2.8	3.2	B	B	B	B	B	B	B	B	B	3.2	A	A				
10						2.5	2.7	C	C	C	C	C	C	C	C	C	B	B	B	B				
11						B	B	A	3.1	3.3	3.4	B	B	B	B	B	B	B	3.0	2.4				
12						2.3	B	S	B	B	B	B	B	B	B	B	A	B	3.0	2.3				
13						2.4	2.7	3.1	3.4	3.6	3.5	B	B	B	B	B	B	B	B	B				
14						A	B	B	3.0	B	B	B	B	B	B	A	A	A	2.4	B				
15						A	2.9	A	A	A	B	B	B	B	B	B	A	B	B	A				
16						A	2.5	B	3.2 ^B	C	C	B	B	B	B	B	B	3.2	3.0	2.4				
17						2.6	B	B	B	B	B	B	B	B	B	B	B	B	2.8	A				
18						2.4	2.8	3.2	P	A	B	B	B	B	B	B	B	B	B	B				
19						2.2	2.7	3.0	3.0	B	B	B	C	C	A	B	B	A	B	2.5				
20						1.9	B	3.0	3.6	B	A	B	B	B	B	B	A	3.1	2.5	A				
21						2.2	2.7	3.1	3.2	B	B	B	B	B	A	B	B	A	3.1	A				
22						1.9	2.8	3.1	3.3	A	B	A	B	B	B	A	B	2.4	2.4					
23						N	N	3.1	3.3	B	B	B	B	B	B	3.2 ^B	B	A	B	B				
24						1.7 ^J	2.7	C	C	C	C	C	C	C	C	C	A	A	A	2.7 ^J				
25						C	2.4	B	3.4 ^B	(3.3) ^B	B	B	3.5	3.3	B	B	B	3.2	2.2	A				
26						A	A	2.8	3.2 ^B	3.4	B	B	3.4	3.6 ^B	B	B	B	B	A	B				
27						1.8	2.4	2.9	3.2	3.6	3.4	3.4	3.2	A	A	3.0	2.8	B	2.7	A				
28						2.0	2.7	2.9	2.7	3.3 ^A	3.6	A	A	B	B	B	B	3.3	A	A				
29						A	2.3 ^F	A	C	C	C	C	3.1 ^B	3.0 ^B	B	B	3.1 ^B	3.1	A	2.3				
30						1.9	2.7	A	A	A	B	A	A	B	A	A	3.0 ^B	2.7	2.2					
31																								
Mean Value						2.1	2.7	3.0	3.2	3.4	3.4	3.3	3.3	3.3	3.2	3.1	3.0	2.7	2.4					
Median Value						2.2	2.7	3.0	3.2	3.3	3.4	3.3	3.3	3.2	3.2	3.0	3.1	2.7	2.4					
Count						21	21	17	18	9	5	2	4	4	3	4	12	16	11					

foE

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 46° 23.6' N
Long. 141° 41.1' E

Jun. 1951

f'E

Wakkanai

135° E Mean Time

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

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

W 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

fEs

Wakkanai

Lat. 46° 23. 6' N
Long. 141° 41. 1' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	3.3 ^F	2.6 ^F	2.1	3.5	3.2	3.3	4.3 ^Y	6.9 ^Y	6.5 ^Y	C	C	C	C	C	G	G	4.6 ^Y	4.2	2.6	2.2	2.9	E	4.2	3.9	
2	E	E	E	E	G	G	G	G	4.6	7.2 ^Y	4.8	7.9	5.6 ^Y	5.8 ^Y	7.8	7.3	6.4 ^Y	G	6.7	6.4	5.4	3.4	2.3	2.2	
3	2.7	5.2	4.6	4.4	3.8	4.8	7.2	6.4	7.6	8.7 ^Y	7.6	6.4	5.8	G	6.4	7.5	7.3	5.7 ^Y	7.9	7.5	7.4	7.0	7.2	4.6	
4	5.0	6.3	2.0	2.6	E	4.6	5.3	5.7	5.3	6.2	6.9 ^Y	3.9 ^Y	6.9	4.5	4.8	6.5 ^Y	4.3 ^Y	4.5 ^Y	5.0	4.8	3.5	1.8	2.4	2.5	
5	3.4	3.2	E	E	G	G	6.0	8.0 ^Y	6.3	5.9	E	E	E	E	3.4	G	G	G	5.2	3.4 ^Y	4.2	2.4	2.6	1.8	
6	2.0	1.8 ^Y	2.0	2.0 ^Y	G	2.9 ^Y	4.2 ^Y	3.9 ^Y	5.7 ^Y	4.9 ^Y	5.9 ^Y	4.7 ^Y	C	C	6.9	G	G	4.8	6.7	5.4	3.8	1.8	2.4	E	
7	1.8	3.1	1.8	E	E	G	G	8.7 ^Y	7.6 ^Y	7.9	8.6 ^Y	8.1 ^Y	7.9 ^Y	7.7	7.8	8.4 ^Y	8.7 ^Y	8.1 ^Y	8.9 ^Y	8.5	8.6	7.8	8.8	8.6	
8	7.2	6.8	6.9	6.0	3.2	5.2 ^Y	5.3 ^Y	7.3 ^Y	(7.9) ^Y	7.4	7.2	7.8	7.6	E	E	E	G	4.2 ^Y	3.2	3.2	7.8	6.4	3.8	8.4	
9	8.5	7.5	4.4	3.8	G	4.2	7.2	8.2	7.0 ^Y	9.4 ^Y	9.7	6.6	9.0	5.7	5.3	5.0	G	5.8	8.2	6.2	4.2	5.7	5.4	4.3	
10	3.2	E	1.9	E	G	G	4.0	C	C	C	C	C	C	C	C	G	G	G	G	3.5	3.7	2.7	3.9	E	
11	E	E	E	E	G	2.0	G	4.0	4.6	5.9	4.8	E	E	E	6.3 ^Y	E	3.5	(5.7) ^Y	6.2	6.5	3.6	4.9	3.6	2.4	
12	1.5	E	E	2.6	3.0	3.7	4.8	G	5.8 ^Y	4.2	6.5	6.7 ^Y	E	G	4.6	4.8	G	5.0	6.3	7.4	3.9	3.8	4.6	7.4	
13	E	E	1.4	4.4	4.2	4.1	6.4	7.5	7.5 ^Y	7.2 ^Y	7.6 ^Y	6.4 ^Y	7.6 ^Y	7.8	7.4	E	E	6.2	5.7	7.4	6.2	6.8	5.6	6.2	
14	7.8	7.6	5.8	5.3	4.5	3.9 ^Y	7.8	7.4	6.3	7.6 ^Y	9.3	7.0 ^Y	7.4	8.2	7.1	5.5 ^Y	7.4 ^Y	7.9 ^Y	7.4	8.2	7.6	7.3	6.5	2.0	
15	2.9 ^B	3.3	4.7	4.2	6.3	7.2	4.6	3.2	7.4 ^Y	7.3 ^Y	7.5	7.2	7.3	7.4	5.7	7.3 ^Y	7.3	6.1 ^Y	6.8	2.8	C	C	7.3	E	
16	C	E	E	1.7	3.0	3.5	5.2	3.6 ^Y	G	C	C	E	E	E	E	7.4 ^Y	7.6	7.8	8.2	8.6	6.8 ^Y	6.7 ^Y	6.7 ^Y	7.9 ^Y	
17	7.2 ^F	4.4 ^F	3.9 ^F	3.1 ^F	3.3	6.7	6.4 ^Y	9.2	6.9 ^Y	5.2	5.7	7.5	5.7	5.0	E	E	G	3.8 ^Y	4.2	4.7	7.8	3.7	4.3	E	
18	3.4	E	E	E	G	6.0	7.8	7.8	7.8	8.0	8.8 ^Y	7.6	6.6	5.2	5.2 ^Y	6.7 ^Y	G	6.7	3.3	7.4	7.7	6.8	6.4	8.8	
19	3.2	3.4 ^S	5.1	3.5	3.0	G	G	G	G	G	G	C	C	5.7	6.7	5.8	6.2	3.1 ^Y	2.9 ^Y	5.6	3.6	3.0	6.2	3.4	
20	C	1.8	1.8	3.3	5.4	G	6.8	7.0 ^Y	8.5 ^Y	6.8	7.4 ^Y	7.2	5.3	5.2	7.6 ^Y	6.7 ^Y	G	4.6 ^Y	4.4	5.8	3.4	3.8	4.8	3.7	
21	2.3	3.4	3.7	2.2	1.6	4.2	4.2	5.2	5.2 ^Y	5.7 ^Y	5.1 ^Y	5.0 ^Y	G	4.1	G	G	3.4	G	3.0	3.2	3.4	2.4	1.8	1.8	
22	E	E	E	E	G	G	5.2	5.0	7.7 ^Y	7.8 ^Y	7.1 ^Y	5.7	5.5	5.8	E	4.7 ^Y	5.7 ^Y	6.8	8.3	6.0	5.0	E	E	E	
23	6.0	5.2	4.5	3.3	E	E	E	6.5	6.0 ^Y	6.8 ^Y	8.6	5.2	6.1	5.0	4.3 ^Y	4.4 ^Y	7.0	7.2	7.8	7.3	6.3	4.4	5.3	5.0	
24	4.1	6.6	7.2	3.8	3.6	4.8	C	C	C	C	C	C	C	C	C	6.8	5.8	5.9	5.1	4.5	6.6	8.2	3.2	2.8	
25	E	3.0	3.2	3.2	C	C	G	7.1	7.8	8.3	8.5	9.0	4.9	6.0	5.8	G	G	7.6	8.0	C	6.1	6.3	8.8	3.6	
26	4.3	2.0	1.8	2.0	2.8	4.7	5.2	5.9	9.0	8.8	6.2	7.8	8.6	G	G	6.4	E	6.0	3.5	E	3.0	4.2 ^F	6.2	7.2	
27	5.8	4.4	2.4	3.9	3.8	G	7.1	5.4	7.4	6.7	7.1	6.5	5.8	G	4.0	3.2	3.2	6.9	6.9	4.9	3.8	3.0	3.2 ^F	4.1	
28	3.8	6.3 ^F	5.7 ^F	3.8	2.6	5.2	7.5	6.4	7.0	7.8	7.7	8.0 ^Y	5.1	5.0	5.7	4.9	G	6.4	3.6	5.2	7.4	6.7	4.2	7.1	
29	4.9	2.0	2.9	3.1	2.7	3.3	3.7	4.4	C	C	C	C	8.0	6.7	8.2	4.1 ^Y	9.1	3.6	3.8	8.8	8.9	4.8	4.8	4.4	
30	4.6	3.5	3.7 ^F	3.7	3.3	3.2 ^Y	5.7	5.2	8.3	8.7	7.8 ^Y	8.9	11.2	1.0 ⁷	8.9	6.5	G	10.6	9.5	7.6	8.6	8.2	6.8	6.0	
31																									
Mean Value	4.3	4.2	3.6	3.5	3.5	4.4	5.7	6.2	6.9	7.1	7.2	6.9	6.9	6.1	6.3	6.0	6.1	6.0	5.9	5.8	5.5	5.0	4.9	4.9	
Median Value	3.4	3.2	2.2	3.2	2.8	3.5	5.2	6.2	7.0	7.2	7.2	6.7	5.8	5.0	5.5	4.8	3.3	5.7	6.0	5.8	5.0	4.4	4.7	3.8	
Count	28	30	30	30	24	24	30	28	27	25	25	25	25	27	28	30	30	30	30	29	29	29	29	30	30

fEs

Sweep 1.0— Mc to 17.0. Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 45° 2 3.6' N
Long. 141° 41.1' E

IONOSPHERIC DATA

Jun. 1951

(M3000)F2

135° E Mean Time

Wakanai

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.7	2.9 ^F	2.7	2.9 ^F	2.8 ^F	2.6 ^V	2.9 ^Z	A	3.2	C	C	C	C	C	2.7	2.7	2.6	3.0	2.7	2.9	2.9	2.7	2.8	2.8	2.7
2	2.6	2.7	2.7	2.8	2.6	2.8	2.7	2.8	3.2	A	2.7	A	2.5	2.6	2.6	2.8	2.6	(2.8) ^F	3.1	2.8	2.8	2.7	2.8	2.8	2.6
3	2.5	2.6	(2.9) ^F	3.2	(2.6) ^F	3.0	2.9	2.8	2.8	A	2.7	2.8	2.7	2.8	2.8	2.4	(2.7) ^F	2.8	(2.8) ^F	3.1	3.0	A	A	A	(2.7) ^F
4	(2.5) ^F	(2.5) ^F	(2.6) ^F	2.8 ^F	2.9	3.0	2.9	3.0	3.0	3.2	3.0	3.0	A	A	2.8	2.8	2.9	3.0	3.0	3.0	3.2	2.8	2.8	(2.9) ^F	2.8
5	2.7	3.0	2.8	2.7	2.6	2.6	3.0	A	A	3.3	B	2.6	2.7	2.7	2.8	2.8	2.9	2.9	2.8	2.9	2.8	2.8	2.9	2.8	2.8
6	2.7	2.9	2.6	2.8	2.9	2.9	3.1	3.1	3.0	2.8	2.9	2.9	(2.8) ^F	2.8	2.7	2.7	2.8	2.7	2.9	2.9	2.6	3.3	2.5	2.5	
7	2.6 ^H	2.7 ^H	2.8	3.0	2.6	2.4 ^K	2.7 ^K	A ^K	2.8	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A	A	A	A	A	A	A	A	A
8	A	(2.8) ^F	(2.8) ^F	(3.1) ^F	2.7 ^F	2.6	2.7	2.8	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	2.6	2.4 ^K	2.8	2.8	3.1	A	2.7	2.8	(2.7) ^F	
9	A	2.6	2.4 ^F	2.8	2.8 ^H	2.6	2.6	A	A	A	A	A	A	B	(2.5) ^B	2.6	2.7	2.7	2.9	2.8	2.8	2.7	2.8	2.8	2.8
10	2.6	2.7	2.7	2.5	2.7	3.0	2.7 ^H	C	C	C	C	C	C	C	C	2.7	3.0	2.7	2.9	2.9	2.7	2.8	2.8	2.5	
11	2.7	2.7	2.7	2.9	3.0	2.8	2.8	3.2	2.9	2.4	2.8	2.7	B	B	B	2.8	2.8	2.9	3.0	3.2 ^F	3.0	2.7	2.8	2.7	
12	2.7	2.6	2.6	2.6	2.7	2.9	2.8	2.8	3.0	3.1	3.1	2.8	2.8	3.3	2.7	2.9	2.7	2.9	2.7	2.9	(2.8) ^F	2.7	(2.8) ^F	A	
13	2.6	2.6	2.5	2.6	2.9	2.9	3.1 ^F	2.9	2.8	2.5	A	2.7	A	A	A	A	B	2.7	2.6	A	3.0	2.7	2.7	2.7	
14	2.5	2.6	2.6	2.8	2.8	2.9	2.9	A	2.7	2.9	A	2.7	2.6	A	A	B	2.5	2.6	2.6	A	A	A	A	T	
15	2.6 ^H	2.7 ^H	2.6	2.6	3.1	A	3.1	2.9	A	A	A	A	A	A	A	2.8	2.5	A	A	(3.2) ^F	C	C	2.6 ^F	2.5	
16	{2.5}	2.5	2.6	(2.4) ^F	3.3	(3.1) ^B	(2.8) ^F	2.7 ^F	2.4	C	C	B	2.6	2.6	3.0	A	A	A	A	A	A	2.6 ^F	2.6 ^F	2.7	
17	2.8 ^F	(2.5) ^F	(2.6) ^F	2.7 ^F	2.7 ^F	A	(2.6) ^A	A	A	2.8	2.9	2.6	2.5 ^K	2.5 ^K	2.8	2.8	2.7 ^K	2.8	(2.9) ^F	2.9	2.8	2.7	2.7	2.6	
18	2.7 ^H	2.6 ^H	2.6 ^H	2.7 ^H	2.7 ^H	2.7 ^H	2.7 ^H	S	A	A	A	2.5	2.4	2.7	2.7	2.5	2.7	2.8	2.8	3.2	2.8	2.7	2.7	2.4	
19	2.6	(2.6) ^F	2.8 ^F	(2.7) ^F	S	C	A	A	A	A	A	C	C	2.7	2.7	2.4	2.7	2.8	2.7 ^H	3.0	2.8	2.7	2.5	2.5	
20	C	2.7 ^K	2.5 ^K	(2.4) ^F	A ^K	2.4 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	B ^K	A ^K	A ^K	2.9 ^K	2.5 ^K	2.6 ^K	2.7 ^K	2.9	2.7	(2.7) ^F	2.6	
21	2.5 ^H	2.6 ^H	2.6 ^H	2.5	2.7 ^F	2.7	2.7	2.8	2.9 ^F	2.7	2.4	(2.4) ^B	2.8	2.8	2.7	2.8	2.8	2.6	2.7	2.7	B	3.0	2.9	2.7	
22	2.7	2.6 ^H	2.6	2.7	3.0	3.0	2.9	2.9	A	A	A	2.4	2.5	2.6	B	2.5	2.4	A	A	2.8	2.6	2.7 ^F	A	2.7	
23	2.5 ^F	2.8 ^F	2.4	2.2 ^F	2.5	3.2	3.0	A	(2.8) ^J	A	A	2.4	2.8	2.5	B	B	A	A	A	2.8	2.8	2.5	(2.6) ^F	(2.6)	
24	2.7 ^H	2.7 ^F	(2.9) ^F	(2.7) ^F	(2.8) ^F	3.0	2.9	C	C	C	C	C	C	C	C	A	2.5	A	A	2.7	2.7	A	2.6	2.6	
25	2.7	2.6	3.0	2.9 ^V	C	C	2.5	2.7	2.7	A	A	A	2.4	2.7	2.6	2.5	2.6	A	A	C	2.7	2.4	A	2.6	
26	2.7	2.9 ^F	3.0 ^F	2.7 ^F	(2.7) ^F	2.8 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	2.5 ^K	A ^K	2.8 ^K	2.7 ^H	2.7 ^H	2.6 ^F	2.7 ^H	2.4	(2.5) ^F	(2.4) ^F	
27	2.6 ^F	(2.8) ^F	(2.7) ^F	(2.5) ^F	(2.5) ^F	2.5 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	2.3 ^K	B ^K	2.4 ^K	2.6 ^K	2.9	2.7 ^F	2.8 ^F	2.8 ^F	2.6 ^F	2.7 ^F	
28	2.7 ^F	(2.5) ^F	(2.5) ^F	(2.7) ^F	2.9 ^F	2.5 ^F	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	2.6	2.8 ^F	2.6 ^F	2.8 ^F	2.7 ^K	2.6 ^K	2.7	2.9	A	A	2.8 ^F	AF	
29	(3.0) ^F	2.8 ^F	2.8 ^F	2.7 ^F	2.8 ^F	2.8 ^F	3.0	2.9	C	C	C	C	A	A	A	2.7 ^F	A	2.6	2.7	A	A	(2.8) ^F	(2.6) ^F	(2.6) ^F	
30	2.9	2.7 ^F	2.8 ^F	2.8 ^F	3.1 ^F	3.0 ^F	2.8	2.8	3.1 ^F	A	2.9 ^F	A	A	A	3.0 ^B	2.7	2.7	A	A	A	A	A	A	(2.8) ^F	
31																									
Mean Value	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.7	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.9	2.8	2.7	2.7	2.6
Median Value	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.7	2.6	2.8	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.6
Count	2.7	3.0	3.0	3.0	2.7	2.5	2.2	1.7	1.5	9	9	9	1.4	1.6	2.0	2.3	2.4	2.1	2.0	2.2	2.0	2.3	2.4	2.4	2.6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

fminF

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	2.8 ^A	2.4	1.4	3.3 ^A	A	(4.1) ^A	C	C	C	C	3.7	4.2 ^A	4.6 ^A	4.7	4.7	2.9	1.7	1.6	1.2	3.3	3.0
2	E	E	E	E	1.9	2.6	3.9	3.3	3.8	A	3.8	A	4.2	4.6	5.7	4.6	4.8	2.9	4.2	5.0	4.4	1.5	1.6	1.5
3	E	F	4.5 ^A	3.3	2.6	3.8	A	5.5 ^A	5.0	A	5.2	4.8	5.0	4.4	5.5	6.3 ^A	5.4	5.2	A	4.7	5.2	A	5.1	4.1
4	3.3	5.0	1.5	1.3	1.8	3.7	4.1	4.0	4.2	5.3	5.0	3.9	A	4.0	4.1	4.0	3.8	3.9	4.2	3.8	2.5	1.5	1.5	1.3
5	2.8	1.2	1.2	1.2	1.5	2.4	4.8	A	5.8	5.2	B	5.0	5.0	5.0	5.0	5.4	3.8	3.2	3.5	1.4	1.3	2.0	1.8	1.3
6	E	E	1.3	1.2	1.6	2.5	2.9	3.3	4.4	3.9	4.4	3.9	(4.0) ^A	4.0	3.8	3.8	3.8	3.8	3.2	2.7	1.7	2.0	2.2	1.2
7	1.3	1.7	1.3	1.3	2.7	2.1	4.7	A	6.0 ^A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
8	A	5.5	1.8	4.5	2.4	5.0	4.4	4.5	A	A	A	A	A	B	B	3.9	3.7	3.8	2.9	3.2	A	1.8	1.6	1.6
9	A	E	1.4	E	2.6	3.2	5.7 ^A	A	A	A	A	(6.4) ^A	A	(4.8) ^A	4.7	4.8	3.3	5.3	A	5.8	3.4	1.8	4.6	3.2
10	2.5	1.1	E	E	1.6	2.9	3.0	C	C	C	C	C	C	C	C	4.8	3.9	3.2	3.0	2.2	2.1	1.8	2.9	E
11	E	1.2	1.3	E	1.3	1.7	4.0	3.3	4.1	4.6	4.3	5.0	B	B	B	5.4	3.6	3.8	3.0	1.4	1.7	1.8	2.1	2.4
12	1.5	1.4	1.4	2.2	2.2	N	3.5	4.1	4.9	4.1	4.6	5.2	4.5	5.0	4.8	5.0	3.4	3.3	2.6	6.6 ^A	2.8	1.8	1.6	A
13	1.2	E	1.1	1.4	1.7	2.9	A	A	4.8	4.6	A	5.7 ^A	A	A	5.9 ^A	B	B	5.0	4.8	A	4.1	5.2	4.4	3.3
14	4.7	5.5	3.7	3.5	2.8	3.9	A	A	5.0	5.5	7.0	5.6	5.9	A	5.3	5.2	3.8	A	A	A	A	A	6.3	1.1
15	3.1	2.1	3.5	2.5	1.0	A	3.0	5.0	A	A	A	A	A	A	5.3	5.5	5.1	6.1	A	3.2	C	C	4.2	1.4
16	(1.3) ^A	1.2	1.2	1.2	2.6	2.8	A	5.1	5.1	C	C	5.4	4.9	4.7	4.9	A	A	A	A	A	A	4.4	4.9	3.8 ^A
17	5.8 ^A	E	E	1.2	1.8	6.1 ^A	6.1 ^A	A	A	5.2	4.9	5.2	5.1 ^A	4.6	4.8	4.4	4.2	5.4	3.4	4.3	3.4	3.6	3.5	E
18	1.4	1.1	E	E	1.8	3.7	A	A	A	A	A	7.5 ^A	5.3	4.3	4.4	5.0	A	4.3	4.9	4.0	4.0 ^A	5.4 ^A	A	1.1
19	2.2	2.2	1.6	1.5	1.7	2.8	A	A	A	A	A	C	C	5.5	5.5	4.0	4.1	2.9	(2.8) ^A	5.0	2.9	2.8	3.8	3.8
20	C	1.2	1.4	2.3	A	4.5 ^A	A	A	A	A	A	A	A	C	C	4.0	3.7	3.8	3.7	4.6 ^A	2.2	2.3	1.4	E
21	E	1.4	1.2	E	2.4	2.9	3.1	4.7	4.5	4.8	5.1	4.7	4.6	4.4	3.9	3.9	4.2	3.3	2.9	2.7	2.6	1.8	1.5	E
22	E	E	E	E	1.9	3.2	3.2	4.0	A	A	A	5.0	5.5	5.5	6.9	4.1	4.2	A	A	4.6	A	3.4	A	A
23	A	A	A	4.2	4.3	A	4.8	A	5.7	A	A	4.7	5.2	4.9	4.1	A	A	A	A	A	5.7	2.5 ^A	1.8	1.5
24	1.5	1.9	2.2	2.3	A	2.4	2.9	C	C	C	C	C	C	C	C	A	4.4	A	4.6	5.6	A	A	2.6	1.4
25	1.2	1.4	1.2	1.8	C	C	4.0	5.4	6.2 ^A	A	A	A	4.5	4.8	5.3	4.4	3.3	A	A	C	A	4.2	A	1.9
26	1.8	1.5	1.8	1.9	2.3	4.0	A	4.7 ^A	A	A	A	A	A	4.7	4.6	A	3.3	4.8	3.0	A	3.0	1.5 ^F	5.3 ^F	A
27	5.0 ^A	3.5	1.3	1.8	2.9	3.6	A	4.2 ^A	A	A	A	5.2 ^A	A	3.8	3.6	3.8	3.4	3.1	3.2	3.9	2.5	1.8	2.4	1.8
28	2.5	1.2	1.2	1.1	1.8	3.9	5.4	4.5	A	A	A	A	4.3	4.1	4.0	(4.0) ^A	4.4	3.0	2.7	2.7	2.2 ^F	A	2.8	5.7
29	2.5	E	E	E	1.5	2.2	2.8	4.0	C	C	C	C	A	A	A	4.0	A	3.5	2.7	A	A	3.6	3.2	4.2
30	3.6	1.2	1.5	2.2	2.9	2.4	4.5	4.4	5.7	7.0 ^A	4.2	A	A	A	3.5	5.8	5.0	A	A	7.0 ^A	A	A	3.7	5.7 ^F
31																								
Mean Value	2.6	2.1	1.8	2.1	2.3	3.2	4.0	4.4	5.0	5.0	4.4	5.2	4.9	4.7	4.7	4.6	4.0	4.0	3.4	3.9	3.0	2.6	3.1	2.6
Median Value	1.5	1.2	1.3	1.4	2.2	2.9	4.0	4.4	5.0	5.0	4.8	5.1	5.0	4.6	4.7	4.4	3.8	3.8	3.1	4.0	2.7	2.9	2.8	1.6
Count	2.6	2.9	2.9	3.0	2.7	2.6	2.2	1.7	1.6	1.0	1.0	1.6	1.4	1.8	2.3	2.3	2.4	2.2	2.0	2.2	2.0	2.3	2.6	2.6

fminF

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 46° 23.6' N
Long. 141° 41.1' E

Wakkanai

135° E Mean Time

Jun. 1951

fminE

IONOSPHERIC DATA

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E	E	E	E	E	1.3	1.4	1.4	1.3	1.6	C	C	C	C	1.8	1.7	1.7	1.6	1.6	1.3	1.2	E	1.2	1.2	
2	E	E	E	E	E	1.2	1.2	1.2	1.2	1.5	2.2	3.2	3.6	1.7	1.7	1.3	1.3	1.4	1.3	1.3	1.2	1.2	1.7	E	
3	E	E	E	E	E	1.3	1.3	1.5	1.4	1.5	1.4	1.6	1.6	1.5	1.9	1.9	1.7	1.6	1.4	1.3	1.4	1.6	1.2	1.2	
4	E	E	E	E	E	1.5	1.6	1.4	1.4	2.0	1.6	2.2	1.7	3.4	3.6	3.7	1.6	1.7	1.5	1.4	1.4	1.2	1.4	1.2	
5	E	E	E	E	E	1.2	1.2	1.3	1.3	3.4	E	E	E	E	3.2	E	1.7	1.6	1.3	1.2	1.2	1.2	1.1	E	
6	E	E	E	E	E	1.3	1.4	1.6	1.6	1.3	1.5	1.4	3.8	3.8	5.3	2.0	1.6	1.6	1.7	1.5	1.4	1.4	1.6	E	
7	E	E	E	E	E	1.4	1.4	1.4	1.7	1.7	1.7	1.7	3.1	3.1	3.9	3.7	1.4	1.5	1.4	1.4	E	1.5	1.3	E	
8	E	E	E	E	E	1.2	1.5	1.5	1.7	4.8	1.6	3.9	3.8	3.3	E	E	2.3	1.4	1.4	1.3	1.3	1.2	1.2	1.2	
9	E	E	E	E	E	1.3	1.3	1.4	1.6	1.7	1.8	4.0	3.9	3.7	3.3	3.2	2.4	2.3	1.5	1.5	1.4	1.2	1.3	1.3	
10	E	E	E	E	E	1.1	1.1	1.1	C	C	C	C	C	C	C	1.5	1.6	1.6	1.5	1.7	1.7	1.7	E	E	
11	E	E	E	E	E	1.7	1.6	1.6	1.8	1.6	1.7	E	E	E	5.3	E	3.3	1.5	1.4	1.2	1.3	1.2	2.1	1.5	
12	E	E	E	E	E	1.4	1.4	3.2	1.7	1.4	3.0	4.0	1.4	E	1.4	3.7	2.6	1.3	1.3	E	E	E	E	E	
13	E	E	E	E	E	1.2	1.3	1.4	1.3	1.3	1.8	3.1	3.1	3.2	4.0	4.1	E	3.8	2.9	1.6	1.1	1.2	1.2	1.2	
14	E	E	E	E	E	1.3	1.4	1.4	1.7	1.7	1.7	3.7	4.0	3.7	2.8	2.9	2.6	3.8	2.4	2.4	E	1.2	1.2	1.1	
15	E	E	E	E	E	1.1	1.2	1.4	1.7	2.7	2.6	3.8	4.3	4.3	4.4	4.3	2.9	2.9	1.5	1.4	C	C	1.2	E	
16	E	E	E	E	E	1.3	1.4	1.5	1.5	1.6	C	E	E	E	1.6	1.5	1.5	1.3	1.3	1.3	1.3	E	E	E	
17	E	E	E	E	E	1.3	1.3	3.6	4.1	4.5	4.0	4.6	4.6	4.9	E	E	2.4	2.3	1.4	1.4	1.4	1.3	1.3	E	
18	E	E	E	E	E	1.1	1.2	1.2	4.2	2.7	3.0	4.8	4.8	4.3	3.0	2.8	2.8	2.9	2.7	2.8	1.1	1.1	1.2	1.1	
19	E	E	E	E	E	1.5	1.4	1.7	1.7	2.5	2.4	C	C	C	2.2	3.7	2.8	1.4	1.4	1.4	1.2	1.1	1.6	1.1	
20	E	E	E	E	E	1.2	1.5	2.8	1.5	1.6	5.3	3.1	4.6	4.6	3.0	2.9	2.9	1.6	1.4	1.3	1.4	1.3	E	E	
21	E	E	E	E	E	1.3	1.3	1.4	1.3	2.5	2.9	2.9	3.0	3.0	2.9	2.7	1.6	1.5	1.3	1.2	1.2	1.2	1.2	E	
22	E	E	E	E	E	1.2	E	1.2	E	1.5	1.5	1.4	1.5	3.8	3.2	E	2.8	1.7	1.5	1.4	1.1	1.1	1.5	1.1	
23	E	E	E	E	E	1.6	1.5	1.4	1.5	1.6	2.8	4.0	4.0	4.0	3.2	3.0	1.5	1.3	1.5	1.4	1.5	1.2	1.2	1.1	
24	E	E	E	E	E	1.2	1.2	1.5	1.5	C	C	C	C	C	C	2.7	1.4	1.4	1.3	1.2	1.2	1.2	1.1	E	
25	E	E	E	E	E	1.1	E	C	1.2	5.0	1.8	2.9	3.1	3.1	3.1	2.8	2.0	1.5	1.2	C	1.5	1.3	1.4	1.2	
26	E	E	E	E	E	1.5	1.5	1.6	2.7	1.9	3.5	1.8	1.7	1.8	2.7	4.6	2.8	1.7	2.3	1.5	1.6	1.4	1.2	1.5	
27	E	E	E	E	E	1.1	1.1	1.8	1.6	1.8	2.7	2.9	1.6	1.7	2.7	2.4	1.6	1.4	1.5	1.6	1.3	1.5	1.2	1.2	
28	E	E	E	E	E	1.1	1.1	1.2	1.5	1.5	2.7	1.8	2.9	3.5	3.5	2.8	1.5	1.1	1.1	1.3	E	E	E	E	
29	E	E	E	E	E	E	E	1.4	1.4	C	C	C	1.6	1.6	1.8	1.6	1.6	1.3	1.3	1.3	1.3	1.2	1.2	1.2	
30	E	E	E	E	E	1.2	1.2	1.4	1.5	1.7	1.2	1.2	1.6	2.8	3.5	2.7	1.5	1.4	1.6	1.5	1.2	1.2	1.2	1.2	
31	E	E	E	E	E	1.2	1.2	1.2	1.2	2.0	2.4	2.8	2.9	3.1	3.0	3.2	2.0	1.8	1.6	1.5	1.3	1.3	1.3	1.2	
Mean Value	E	E	E	E	E	1.2	1.3	1.4	1.5	1.6	2.2	2.9	2.9	3.0	2.9	2.5	2.0	1.8	1.6	1.5	1.3	1.3	1.3	1.2	
Count	29	30	30	30	29	29	30	28	27	25	25	25	26	27	28	30	30	30	30	29	29	29	29	30	30

Manual

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

W 11

The Central Radio Wave Observatory
Koganéi-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

135° E Mean Time

foF2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	5.8	5.0	4.9F	4.6	4.7	5.1	6.7	7.0	6.8	5.7	5.4	5.9	6.0	6.1	5.8	6.2	6.4	A	7.3S	7.8S	S	6.8S	S	5.9S
2	4.9F	5.9F	(6.0)F	5.6F	6.0F	6.5F	6.0	6.0	7.0	6.3	6.4	6.7	6.4	7.5	8.5	(8.6)P	9.4B	9.6	A	7.7	6.6	(6.5)P	S	S
3	6.0	6.0V	5.8	4.9F	5.8	5.7	5.9J	A	6.7	5.7	5.7	7.2	7.4	7.6	7.6	6.6	8.3	8.0	A	A	A	A	A	B
4	F	5.3F	(6.1)F	4.5F	(4.9)F	5.2	7.7	7.6	7.5	5.8	5.6	5.6	6.4	6.3J	5.9V	6.6	7.6	7.4	7.8	7.8	7.7S	7.0S	7.4S	6.6
5	6.0	6.0	5.4	5.0F	5.0F	6.2	7.8	8.1	A	6.5	B	B	B	7.1	7.4	7.7	7.0	6.6	7.1	7.5	6.8	6.5	6.5	6.5
6	6.6	6.4	5.8	5.6	5.7	6.8	6.7	7.3	6.2	6.7	7.4	7.4	7.8	7.5	7.4	7.3	8.1	8.8	B	10.6	8.5	(5.5)H	B	B
7	5.2	5.6	5.4	5.1	5.1	5.1	6.9	8.0	A ^k	A ^k	5.4 ^k	A ^k	A ^k	A ^k	5.2	5.6	6.4	6.8	7.0	6.9	A	4.7	4.7	6.3
8	6.3 ²	5.7H	6.3H	5.9F	4.8	(6.0)F	6.6	7.1	6.5	A ^k	A ^k	G ^k	G ^k	B ^k	B ^k	6.1 ^k	6.1	A	6.5	6.0	(6.0)P	(6.4)P	(6.3)F	
9	F	5.8F	5.1F	BF	BF	5.3	5.3P	6.9	6.8	6.2	A	A	7.6	7.2	6.7 ^k	7.0 ^k	8.2 ^k	A	6.8	A	A	A	7.8'	7.2F
10	6.3F	6.0H	5.6	5.4H	5.5	6.2	6.7	7.7	6.8	6.9	A	7.8	6.4	6.4J	7.4	7.7	7.4	6.9	6.7	7.0	7.5	7.5	7.5	7.3
11	7.1H	7.1	7.2	6.9	6.6	6.6	8.3	8.2	7.8	7.8	7.3	7.5	7.6	8.7	8.3	8.3	8.5	8.4	8.0	8.1	(7.3)P	8.0	8.0S	8.3
12	8.4S	(8.1)S	7.9S	6.6H	5.8F	7.1	6.9	C	C	(6.2)A	7.3	7.5	7.0	C	C	C	C	7.4	7.5	7.9	7.3	A	8.0P	8.6 ²
13	6.9	7.8 ²	8.3 ²	7.7	8.3 ²	7.8	7.1	A	A	6.7	6.8	A	BH	B	7.1	B	B	7.7	A	A	A	(7.5)P	7.0	(6.8)P
14	5.6	(6.2)H	(7.8)F	6.1	5.7H	5.6H	7.0	7.0	7.5	(7.4)P	(6.7)A	(7.0)P	6.8P	7.4	7.5	7.2	7.5	8.0	A	A	A	F	F	F
15	8.4F	F	F	8.2F	7.2	6.2	7.0	A	8.4 ^H	7.4	(7.5)B	B	A	A	A	7.5	6.2	8.1	9.0	9.5	A	A	A	A
16	A	7.3	B	7.4	4.6	5.2	5.3	5.8	6.4	7.3	7.4	8.0	8.7	7.3P	A	A	7.2B	7.0	A	A	A	A	A	A
17	S	S	B	(6.2)F	A	F	6.5	A	A	(6.8)J	A	A	A	6.7	7.0	7.6	7.8	7.8	7.5	8.1	7.0	7.3	[7.2]F	7.2
18	6.9H	6.7	6.7	6.1	5.6	6.2H	8.1P	9.1P	A	A	8.2	B	9.4J	B	A	A	A	A	7.2	7.0	8.3P	A	A	A
19	A	A	A	4.1	4.4	4.8H	A	A	A	A	A	A	A	A	A	A	A	8.6	7.9	8.1	6.0S	A	A	(6.3)E
20	6.1F	6.2F	5.9F	5.2F	3.9F	A ^k	A ^k	9.7 ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	(5.8)K	5.7 ^k	5.7 ^k	5.7	5.8	5.5	5.5
21	5.1	5.3S	(5.6)E	5.6F	5.6F	5.6F	6.4	6.9	6.4 ^V	6.3	6.8	7.0	8.1	7.8	7.7	7.0	6.5	6.2	6.8	S	S	6.4	S	6.6
22	6.6	6.7	6.4	6.3	5.4	6.0	6.6	6.5	7.6	7.0	6.8	A	A	A	A	6.5B	5.7	6.2	6.8	7.3	6.8	6.5	(6.9)P	6.0
23	6.2	6.2F	(5.5)F	5.8F	5.8F	5.8F	6.6V	7.1	7.5	A	A	A	A	A	A	A	6.6	A	A	A	A	A	A	A
24	A	AF	(6.5)F	(6.9)F	F	5.8	6.4	A	6.4	6.6	A	A	A	A	A	6.6	A	A	A	A	A	A	A	AF
25	F	F	7.4F	5.8F	F	5.5F	F	8.7	A	A	A	A	A	C	C	C	6.7	6.8	6.7	A	A	A	A	AF
26	A	6.9	5.2F	4.0 ^k	4.2 ^k	4.6 ^k	5.4 ^k	4.9 ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	B ^k	5.0 ^k	5.4 ^k	6.2 ^J	6.6	7.0	A	A	A
27	A	F	B	(4.5)F	4.4F	5.6 ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	A ^k	C ^k	5.7 ^k	5.9 ^k	C ^k	A ^k	A ^k	6.4	6.0	5.6	4.9	F
28	5.2	4.9 ²	5.0F	4.7F	5.1F	5.4 ^k	6.6 ^k	5.9 ^k	A ^k	A ^k	A ^k	B ^k	5.5 ^k	5.5 ^k	6.1 ^k	5.9 ^k	5.6 ^k	5.7 ^k	6.5	6.7	5.3	5.1	4.8	A
29	A	A	5.8 ^J	(4.8)F	A	A	A	C	7.5 ^J	6.7	6.6	A	7.4	7.6	8.2	8.0	8.3	7.5	7.2 ^B	7.5 ^B	7.4 ^B	A	6.7F	6.3F
30	6.3	6.0	6.5	6.4	5.7	5.6	6.2	A	8.9	6.8	5.9	6.2	6.8	A	(8.4)P	7.0	6.7	A	7.6	7.5	A	A	6.1J	A
31																								
Mean Value	6.3	6.2	6.2	5.8	5.4	5.8	6.7	7.3	7.2	6.6	6.7	6.9	7.2	7.1	7.1	7.0	7.0	7.3	7.1	7.5	6.9	6.4	6.6	6.7
Min Value	6.2	6.0	6.0	5.6	5.4	5.7	6.6	7.1	6.9	6.7	6.8	7.0	7.0	7.3	7.4	7.0	7.0	7.4	7.1	7.5	7.0	6.5	6.8	6.6
Count	20	23	26	27	25	26	24	20	18	20	17	13	17	15	18	20	23	22	21	21	16	16	16	16

foF2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

f_oF₂

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	320	330	320	330	310	300	270	290	280	A	A	A	G	340	310	350	320	A	320 ^S	310 ^S	S	300 ^S	S	390 ^S
2	330 ^F	340 ^F	330 ^F	340 ^F	350 ^F	300 ^F	300 ^F	300	310	300	380	360	A	380	360	330 ^P	330 ^B	300	A	290	320	(380) ^P	S	S
3	300	430 ^V	340 ^V	A	400 ^F	A	A	A	260	280	G	A	320	300	330	A	300	300	A	A	A	A	A	B
4	F	370 ^F	(420) ^F	300 ^F	(380) ^F	350	290	270	280	300	G	G	340	(320) ^F	G	330	350	330	340	340	340 ^S	310 ^S	310	
5	340	320	340	360 ^F	330 ^F	320	260	220	A	A	B	B	B	350	310	300	300	340	310	310	300	320	320	
6	320	320	350	310	300	260	280	270	290	320	330	300	330	320	340	330	340	360	B	300	B ^S	(320) ^H	B	
7	340	350	350	310	310	400	A	320	A	A	G	A	A	B	G	A	380	300	320	300	A	310	A	
8	330 ^Z	380 ^H	340 ^H	320 ^F	340	(400) ^P	330	360	310	A	A	G	G	B	B	A	400 ^K	A	320	310	A	(350) ^P	(420) ^P	
9	F	(310) ^F	310 ^F	BE	BE	330	340 ^F	310	300	A	A	A	340	350	390	A	300	A	300	A	A	A	A	370
10	310 ^F	320 ^H	320	320 ^H	350	280	300	260	280	320	A	A	A	A	340	310	320	290	300	310	310	370	320	360
11	350 ^H	320	330	330	330	350	320	300	330	310	350	350	370	310	320	310	330	330	330	320	290	A	380	310 ^S
12	330 ^S	(350) ^F	330 ^F	400 ^H	360 ^F	370	320	C	C	A	A	350	360	C	C	C	C	C	330	310	300	320	(350) ^P	350 ^Z
13	330	350 ^Z	340 ^Z	330	280 ^Z	260	320	A	A	400	G	A	B	B	370	B	B	340	A	A	A	A	A	350 ^Z
14	380	(440) ^F	(330) ^F	300	330 ^H	G	A	320	340	(320) ^P	A	B	350 ^F	A	360	A	340	340	A	A	A	(320) ^F	310	(330) ^P
15	(350) ^F	F	F	(300) ^F	290	320	370	A	390 ^H	290	A	B	A	A	A	350	360	360	360	330	A	A	A	A
16	A	400	350	260	320	280	300	320	360	370	300	410	360	330 ^P	A	A	320 ^B	A	A	A	A	A	A	A
17	S	S	B	(340) ^F	A	F	300	A	A	A	A	A	A	A	380	340	310	290	300	310	280	340	(350) ^C	360
18	340 ^H	340	340	350	340	430 ^H	350 ^P	300 ^P	A	A	400	B	(350) ^V	B	A	A	A	A	A	A	350 ^P	A	A	A
19	A	A	A	300	340	410 ^H	A	A	A	A	A	A	A	A	A	A	A	320	300	270	A	A	A	AF
20	320 ^F	(300) ^F	(340) ^F	(350) ^F	(310) ^F	A	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	360
21	350	340 ^S	(320) ^F	SE	(300) ^F	270 ^F	310	290	A	G	B	340	330	310	360	320	330	380	350	S	S	340	S	380
22	370	360	330	270	310	290	310	300	330	360	270	A	A	A	A	400 ^B	380	320	320	300	290	330	(320) ^P	330
23	350	(300) ^F	(350) ^F	(340) ^P	(330) ^F	320	A	320	A	A	A	A	A	A	A	A	A	320	A	A	A	A	A	A
24	A	AF	(370) ^F	(390) ^F	F	280	350	A	330	A	A	A	A	A	A	A	A	A	A	A	A	A	A	AF
25	F	F	330 ^F	350 ^F	F	(370) ^F	F	A	A	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A
26	A	270	(310) ^F	290 ^K	350 ^K	A	A	A	A	A	A	A	A	A	A	A	A	A	310	A	A	350	A	A
27	A	F	B	(370) ^F	350 ^F	240 ^K	A	A	A	A	A	A	A	A	A	A	A	A	(330) ^V	310	290	A	A	A
28	370	310 ^Z	310 ^F	320 ^F	290 ^F	380 ^K	A	270 ^K	A	A	A	A	A	A	A	A	A	A	A	A	280	300	330	F
29	A	A	(290) ^V	(360) ^F	A	A	A	C	(270) ^V	A	310	A	340	A	330	310	300	280	310 ^B	270 ^B	280 ^B	A	(320) ^F	(340) ^F
30	330	330	320	330 ^F	290	310	240	A	300	310	A	B	350	A	(310) ^P	320	320	A	310	260	A	A	A	A
Mean Value	340	340	340	330	330	330	310	300	310	320	330	350	350	330	340	330	330	330	320	300	320	340	340	350
Median Value	340	340	340	330	330	320	310	300	300	320	380	360	350	320	350	320	320	320	330	310	300	320	320	350
Count	20	23	26	27	25	25	19	17	16	13	11	8	14	10	18	16	22	19	19	19	14	16	14	15

Sweep 1.0— Mc to 17.0— Mc in 1.5 min Manual

A 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

135° E Mean Time

f'F2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	260	280	250	260	250	280	270	280	270	A	A	400 ^A	340	340	310	350	320	A	290	250	230	230	280	320 ^E
2	280	300	310 ^A	310 ^A	(340 ^A)	250	300	300	310	300	380	360	360	340	340	330	330	290	A	250	270	300	310	300
3	270	280	290	A	A	A	A	A	260	280	320	310 ^A	310 ^A	310 ^A	310 ^A	330	290	A	A	A	A	A	A	350
4	350	280	310	260	280	350	290 ^A	260	280	300	310	330	340	320	380	330	330	330	(330 ^A)	(340 ^A)	(340 ^A)	(340 ^A)	300	280
5	280	290	280	300 ^A	290	230 ^A	210	210	A	(280 ^A)	B	(320 ^B)	B	320	310	290	290	280	250	290	250 ^B	230	300 ^A	260
6	260	260	270	270	250	240	250	260	L	320	310	300	300	320	330	330	330	340	320	250	220 ^A	250 ^H	300 ^A	300
7	300 ^A	270	250	240	260	400	A	310	A	A	A	B	A	B	450 ^K	A	380	300	(300 ^B)	A	310 ^A	A	310	310
8	300	310 ^H	280 ^H	280	300	350 ^A	310	360	310	A	A	G	G	B	B	370 ^K	400 ^K	A	310	250	A	300	300	320
9	300	250	(300 ^A)	300 ^A	290	260	240	310	300	340	A	A	340	350	390	A	280	A	300 ^A	A	A	A	320 ^A	290 ^A
10	230	270 ^H	270	270 ^H	(300 ^A)	220	220	240	280	320	A	350 ^A	(360 ^A)	A	340	300	310	280	260	280	270	300	280	290
11	300 ^H	280	260	260	270	230	290	290	C	A	A	350	360	310	320	310	290	290	310	300	270	290	(350 ^A)	290
12	280	280	290	230 ^H	310 ^F	(360 ^A)	320	C	A	A	A	350	360	C	C	C	B	C	310	300	270	350 ^A	(350 ^A)	290
13	310	300	300	300	250	240	320	A	A	400	390	A	370 ^H	(300 ^A)	370	B	B	330	A	A	A	310 ^A	270	300
14	320	300 ^H	260	250	250 ^H	320 ^H	A	310	330	300	A	B	350	330	(340 ^A)	330 ^A	330 ^A	290	A	A	A	320	300	320
15	300	310 ^A	260	240 ^F	240 ^F	(310 ^A)	370	A	290 ^H	290	A	A	A	A	A	350	360	340	300	310	A	A	A	A
16	A	(350 ^A)	290	230	220	250	290	A	350	350	300	380	320	330	A	A	A	A	A	A	A	A	A	A
17	A	(350 ^A)	A	320 ^A	A	280	290	A	A	A	A	A	A	320 ^A	380	340	300	280	290	300	280	280	(280 ^C)	290
18	260 ^H	270	260	260	290	290 ^H	310	270	A	A	390	A	320	310	A	A	A	A	A	(320 ^A)	A	300 ^A	A	(350 ^A)
19	A	A	A	280	310	270 ^H	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
20	260	240	A	A	300 ^E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	300 ^K	300 ^A	270	270	290
21	310 ^A	280	290	(350 ^A)	(300 ^A)	240	290	280	A	390	B	340	320	300	320	320	300	320 ^A	320	280	320 ^A	(310 ^A)	290	300
22	300	290	270	230	250	270	300	290	310	360	270	A	A	A	A	400	380	320	300	260	240	310	310	320
23	300	300	280	320 ^A	280	(360 ^A)	310	330	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
24	A	A	340 ^A	370	330	350	350	A	330	A	A	A	A	A	A	A	A	A	A	300 ^A	300 ^A	A	A	A
25	290	310 ^A	230	280	270	370 ^F	(250 ^A)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
26	A	260	260	260 ^K	280 ^K	A	320 ^K	A	A	A	A	A	A	A	A	B	420 ^K	370 ^K	310	290	270	290 ^F	A	A
27	A	270 ^F	AF	300 ^F	290 ^K	A	A	A	A	A	A	A	A	A	A	380 ^K	C	A	A	280	280	290	300	340
28	350	250	(270 ^A)	310 ^A	270	380 ^K	320 ^K	270	A	A	A	A	A	A	A	410 ^K	340 ^K	320 ^K	320 ^K	290 ^A	320 ^A	330 ^A	(300 ^A)	A
29	A	A	260	(320 ^A)	A	A	A	C	270	A	310	A	330	350	320	310	290	270	290	250	230	A	300	290
30	290	(300 ^A)	260	240	260	270	220 ^A	A	280	310	A	380 ^B	350	A	310	310	320	A	300	240	A	A	A	A
31																								
Mean Value	290	290	280	280	280	290	290	280	300	320	330	350	340	330	350	330	330	310	300	280	280	300	300	300
Median Value	300	280	270	280	280	280	290	280	300	320	320	350	340	320	340	330	320	300	300	280	270	300	300	300
Count	23	27	26	28	27	26	23	16	16	15	10	12	17	16	18	18	22	20	23	21	17	19	20	20

Steep 1.0 — Mc to 17.0 — Mc in 15 min Manual

f'F2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

f'F1

Akita

Lat. 38° 43.5' N
Long. 140° 08.2' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	22.0	A	A	A	23.0 ^A	23.0 ^A	22.0	24.0 ^A		B	A	A					
2						Q	A	24.0	A	A	21.0	A	A	A	A	A	A	A	A	A				
3						A	A	A	23.0 ^A	21.0	(27.0) ^A	A	27.0 ^A	A	A	A	A	A	A	A				
4						A	A	A	A	A	27.0 ^A	27.0 ^A	22.0	27.0 ^A	28.0 ^A	27.0 ^A	A	A	A	A				
5						Q	Q	A	A	A	B	A	B	25.0 ^A	26.0 ^A	27.0 ^B	A	A	A					
6						Q	Q	A	22.0	22.0 ^A	21.0	23.0	22.0	B	23.0	28.0	25.0	A	A	A				
7						A	A	A	A	A	A	A	28.0 ^A	25.0 ^B	A	A	A	A	A					
8						A	A	A	A	A	A	25.0 ^A	20.0	B	26.0 ^B	A	A	A	A					
9						Q	Q	A	A	A	A	A	A	21.0	A	A	A	A	A					
10						Q	Q	22.0 ^A	A	A	A	A	A	A	A	A	(28.0) ^A	25.0	A					
11						Q	23.0	24.0 ^A	22.0	21.0	27.0 ^A	A	20.0	20.0	25.0	24.0	A	A	A					
12						A	A	C	C	A	A	B	21.0	C	C	C	C	A	A					
13						Q	A	A	A	32.0 ^A	26.0 ^A	A	22.0	A	23.0	B	B	31.0	A					
14						25.0	A	26.0	A	A	A	B	B	A	A	A	A	A	A					
15						A	26.0 ^A	A	Q	B	A	A	B	A	A	A	A	A	A					
16						Q	A	A	28.0	A	25.0 ^A	24.0 ^A	A	24.0 ^B	A	A	A	A	A					
17						26.0	A	A	A	A	A	A	A	A	A	A	29.0 ^B	A	A					
18						Q	27.0	A	A	A	A	A	A	B	A	A	A	A	A					
19						Q	A	A	A	A	A	A	A	A	A	A	A	A	A					
20						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
21						Q	A	A	A	A	A	(36.0) ^A	22.0	A	A	A	A	A	A					
22						24.0	23.0	A	A	A	A	A	A	A	A	A	A	24.0 ^A	A					
23						A	A	A	A	A	A	A	A	A	A	A	(30.0) ^A	27.0	A					
24						Q	(25.0) ^A	23.0	A	A	A	A	A	A	A	A	A	A	A					
25						A	A	A	A	A	A	A	A	C	C	C	A	A	A					
26						A	A	A	A	A	A	A	A	A	A	A	(37.0) ^A	A	A					
27						24.0	A	A	A	A	A	A	A	C	25.0 ^A	(30.0) ^A	C	A	A					
28						A	A	B	A	A	A	B	A	A	A	A	A	A	A					
29						A	A	C	A	A	A	A	A	A	A	A	A	24.0	Q					
30						A	A	A	A	A	A	(34.0) ^A	25.0 ^A	A	A	A	A	B	25.0					
31						A	A	A	A	A	A	A	A	A	A	A	29.0	B	A					
Mean Value						25.0	25.0	24.0	24.0	24.0	25.0	28.0	22.0	24.0	25.0	27.0	29.0	27.0	24.0					
Median Value						24.0	25.0	24.0	22.0	22.0	26.0	26.0	22.0	24.0	25.0	27.0	29.0	26.0	24.0					
Count						4	5	6	4	4	7	6	9	8	10	8	6	4	2					

f'F1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 38° 43.5' N
Long. 140° 08.2' E

IONOSPHERIC DATA

Akita

135° E Mean Time

Jun. 1951

foE

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	2.6	2.8	3.1	3.2	A	B	A	B	3.4	2.8	2.5	2.1					
2						2.2 ^v	2.4	2.8 ^A	3.0	3.3	3.3	3.3	B	B	3.4	3.1	2.9	2.5	2.1					
3						A	2.4	2.7	3.0	3.1	3.3	3.1	B	B	3.2	3.2	3.0	2.6	A					
4						B	2.1 ^v	A	A	B	B	A	B	A	A	A	A	2.8	A					
5						A	A	A	3.1	A	B	B	B	B	A	B	A	A	2.0					
6						1.8	2.7 ^A	3.0	3.4	A	A	A	A	B	B	3.4	3.1	2.8	A					
7						1.9	2.6	2.9	3.2	3.4	B	B	B	3.6	B	B	3.1	2.8	A					
8						2.0	A	3.0	3.2	3.4	B	B	B	B	B	3.2	3.2	2.8	A					
9						2.0	2.6	A	3.3	3.4	3.3	3.3	B	A	A	A	A	2.8 ^B	A					
10						A	A	3.0	A	B	A	A	A	B	B	A	A	A	A					
11						2.0	2.8	3.1	3.4	3.5	B	B	B	B	B	3.6	A	A	A					
12						2.3	2.8	3.0	[3.2] ^C	3.4	3.5	B	3.8	C	C	C	3.0	2.3						
13						1.9	2.5	2.8	3.4	A	A	A	A	B	B	B	B	B	A					
14						A	A	B	A	A	B	B	B	B	A	3.4 ^v	A	3.0	A					
15						A	2.7	3.1	3.4	B	A	B	B	B	A	B	3.5	3.1	2.7					
16						2.2	2.8	A	A	A	A	B	B	B	B	A	3.4	A	A					
17						2.4	2.9	A	B	B	B	B	B	B	B	B	A	3.1 ^A	A					
18						2.3	2.6 ^B	3.4	3.4	3.5	B	B	B	B	B	B	A	A	A					
19						A	2.8	A	3.3	B	B	B	B	B	B	B	A	A	A					
20						2.4	2.8	3.0	3.2	B	B	B	B	B	B	B	B	B	A					
21						2.2	2.6	2.9	3.2	3.4	B	B	B	B	B	B	A	A	A					
22						1.9	2.7	2.9	3.2	3.4	B	B	B	B	B	B	A	3.0	2.4					
23						2.0 ^v	2.5 ^v	2.7 ^v	3.4	3.6	A	A	A	A	A	A	A	3.0	A					
24						A	2.7	3.0	A	A	A	A	A	A	A	A	A	A	A					
25						A	2.6	B	A	A	B	B	B	C	C	C	A	A	A					
26						B	2.4	2.7 ^B	A	A	A	A	A	A	A	3.4	B	A	A					
27						1.9	2.6	2.8	3.2	A	A	A	B	C	3.2	A	C	A	A					
28						A	2.4	2.9	3.3	3.5	B	B	B	B	3.3	A	A	2.6	A					
29						A	A	E	3.0	3.3	3.4	A	A	B	A	A	A	A	A					
30						A	A	A	A	3.5	A	A	A	A	A	A	A	A	A					
31																								
Mean Value						2.0	2.6	2.9	3.2	3.4	3.3	3.2	3.8	3.6	3.3	3.4	3.1	2.8	2.3					
Median Value						2.0	2.6	2.9	3.2	3.4	3.3	3.3	3.8	3.6	3.3	3.4	3.1	2.8	2.2					
Count						1.6	2.3	2.0	2.1	1.5	6	3	1	1	5	7	8	15	6					

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

R'E

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	11.0	11.0	10.0	10.0	10.0	A	10.0	A	11.0	10.0	11.0	11.0	11.0					
2						12.0	11.0	A	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0				
3						A	12.0	11.0	11.0	11.0	11.0	11.0	11.0	B	11.0	11.0	11.0	11.0	A					
4						B	11.0	A	A	B	B	A	B	A	A	A	A	11.0	A					
5						A	A	10.0	10.0	A	B	B	B	11.0	A	10.0	A	A	10.0					
6						12.0	A	11.0	10.0	10.0	A	A	A	11.0	11.0	11.0	11.0	11.0	A					
7						12.0	11.0	11.0	10.0	11.0	11.0	B	11.0	11.0	11.0	B	11.0	11.0	A					
8						11.0	A	B	11.0	11.0	B	B	10.0	11.0	11.0	11.0	11.0	11.0	A					
9						11.0	11.0	A	11.0	11.0	11.0	11.0	11.0	A	A	A	A	B	A					
10						10.0	10.0	10.0	A	10.0	A	A	A	B	B	A	A	A	A					
11						11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0	10.0	A*					
12						12.0	11.0	11.0	(11.0) ^C	11.0	11.0	11.0	11.0	C	C	C	C	11.0	11.0					
13						11.0	11.0	11.0	11.0	A	A	A	10.0	10.0	10.0	B	B	B	A					
14						A	A	10.0	11.0	A	B	B	B	A	11.0	A	11.0	A	A					
15						A	11.0	11.0	11.0	11.0	A	B	B	A	B	10.0	10.0	10.0	11.0					
16						A	A	A	A	10.0	A	B	B	B	B	A	11.0	A	A					
17						A	11.0	11.0	B	B	B	B	B	B	B	A	A	A	A					
18						11.0	11.0	11.0	10.0	10.0	B	B	B	B	10.0	B	A	A	A					
19						A	11.0	A	11.0	11.0	11.0	11.0	11.0	11.0	B	B	A	A	A					
20						11.0	11.0	11.0	10.0	B	10.0	10.0	10.0	B	B	B	B	A	A					
21						11.0	11.0	11.0	11.0	11.0	10.0	11.0	11.0	10.0	10.0	A	A	A	A					
22						10.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	B	B	A	A	11.0	11.0					
23						11.0	11.0	11.0	11.0	11.0	A	A	A	A	A	A	A	11.0	A					
24						A	11.0	11.0	A	A	A	A	A	A	A	A	A	A	A					
25						A	11.0	B	A	A	B	B	B	C	C	C	A	A	A					
26						B	11.0	11.0	A	A	A	A	A	A	11.0	B	B	A	A					
27						11.0	11.0	11.0	11.0	A	A	A	11.0	C	11.0	A	C	A	A					
28						A	11.0	11.0	10.0	11.0	11.0	11.0	11.0	11.0	10.0	A	A	11.0	A					
29						A	A	C	11.0	11.0	11.0	11.0	A	11.0	A	A	A	A	A					
30						A	A	A	A	11.0	A	A	A	A	A	A	A	A	A					
31																								
Mean Value						11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0					
Median Value						11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0					
Count						15	23	21	22	20	14	11	13	11	13	9	9	14	6					

Sweep 1.0 Mc to 17.0 Mc in 1.5 min Manual

R'E

A 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

fEs

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.8	3.8	3.4	4.6	4.9	3.8	4.4	G	5.2	6.4	6.0	6.8	6.4Y	4.2Y	G	4.4	4.0	8.6	4.8	4.3	3.4F	2.6	3.0	3.8
2	3.0	3.4	3.8	4.6	4.4	G	3.8	4.2	6.2	5.0Y	5.0Y	5.2Y	7.0Y	4.6Y	6.6Y	8.8Y	8.6	7.2	8.6	4.4	3.8	3.2	3.4	4.4
3	3.8	4.2	3.0	9.2	5.8	6.8	7.0	7.8	8.6	6.0	7.7	6.3Y	G	5.4	9.0Y	9.2	6.4	6.6	8.6	12.0	11.0	7.0	6.8	5.8
4	4.2	4.6	6.8	3.7	3.1	4.1	7.2	4.5	5.2	6.8	5.2	6.8	4.6	4.2	4.2	4.2	4.0	6.6	7.0	6.8	6.4	5.0	5.0	4.2
5	4.0	3.2	3.0	3.2	3.0	2.2B	3.8	6.5	7.4	6.8	5.3	5.2	E	4.3Y	4.3	G	7.0	3.8	4.6	4.8	3.1	2.6	4.7	3.3
6	E	2.3	E	E	E	G	3.4	5.0	5.4	5.0	5.0	4.2	4.0	G	5.0Y	G	G	4.6	5.6	2.7	2.3	3.2	2.6	2.9
7	3.3	2.3	2.4F	2.6F	2.6	4.6F	8.8	7.7	6.9	9.7	4.9Y	7.8	7.6Y	4.6Y	4.8Y	5.6	5.1	5.4	4.0	6.8	7.4	4.8	4.2	6.8
8	6.5	4.4	3.6	3.6	2.8	4.6	6.0	5.8	6.0	6.4Y	6.6Y	4.5	E	4.5Y	6.4Y	5.0	8.2	5.8	4.2	9.5	6.2	6.4	6.4	5.5
9	5.3	3.6	5.0	2.4	G	4.0	5.0	6.0	6.6Y	5.6	9.2Y	1.4Z	5.6Y	3.8Y	5.2	8.2	4.6	7.6	6.0	7.8	9.0	8.9	6.2	5.6
10	5.0	3.8	3.8	3.3	3.2	2.4	4.2	3.8	5.7	5.9Y	1.0Z	7.3	6.5	7.0	6.6	4.0	4.7	3.7	3.6	4.0	3.6	3.8	3.0	3.1
11	7.7	2.0	2.3	E	2.3Y	1.7	G	4.6	5.1Y	5.6Y	5.9Y	6.1Y	G	G	4.4Y	4.8	5.6	4.2	8.4	5.6	9.6	5.6	6.8	4.6
12	4.6	6.4F	4.8F	3.6F	3.0F	6.6	8.2	C	C	7.0Y	7.1Y	4.6Y	G	C	C	C	C	4.7	5.0	5.4	5.2	9.4	8.2	2.2
13	4.0	4.6	4.0	4.8	3.8	7.6	7.0	11.2	13.4	7.8	6.2	11.2	5.2	6.4	4.2Y	E	E	7.8Y	9.6	7.6	7.0	5.4	4.6	4.6
14	4.0	3.8	4.9	4.8	3.7	2.7	7.5	4.5Y	9.2	6.2	7.2	4.7	4.8	7.0	6.2	7.4	6.8	4.3	13.4	14.6	13.0	6.7	5.8	5.0
15	5.2	5.8F	5.8	3.4	7.8	6.1	6.0	9.1Y	5.0	7.4Y	7.0	7.2	10.5	11.7	14.5	5.9Y	4.9	5.6	4.8	7.3	8.9	9.8	8.9	7.8
16	7.0	6.6	2.6	E	1.6	2.4	5.6	5.2Y	5.0	4.6	4.6	4.6	4.8	E	10.4	10.4Y	6.0Y	8.2	9.2	13.1F	13.3	9.2	8.7	6.8
17	6.3	6.2	6.4	5.2	8.0	2.2	5.2	7.2Y	10.8	9.2	12.7	13.5	9.0	6.4	6.2	5.0	3.6	6.2	4.6	7.0	5.4	3.6	C	4.0
18	3.0	2.2	2.4	2.3	2.2	G	G	5.8	8.4Y	1.45Y	9.2	6.6	5.0	4.9	7.4Y	8.4Y	7.1	8.4G	9.6	7.2	8.4	10.0	10.2	8.2
19	9.0	9.5	9.0	3.6	4.2	4.6	7.0	10.5	14.4	8.8Y	14.8Y	12.4Y	11.0Y	10.2Y	10.4	13.6	11.8	6.6	6.4	6.0	6.7	7.2	9.1	6.7F
20	3.2F	3.0F	4.0F	4.2F	3.9F	7.6	7.8	8.0	14.7	13.0	13.7Y	9.6Y	6.3Y	7.6	9.5	9.6	7.0	4.9	3.2	4.8	4.6	3.4	4.2	2.4
21	4.5	6.8Y	5.2F	5.2	6.1	3.5	4.6	5.1	7.5	5.6	4.8Y	4.4Y	4.4Y	6.4Y	5.6Y	4.3Y	4.2	5.6	5.6	3.6	3.8	4.6	2.9	3.0
22	2.7	1.2	1.1	E	1.4	2.6	G	5.2	5.8	5.8Y	6.0Y	13.2Y	13.5Y	12.2	9.4	5.6	4.5	4.5Y	4.2	4.3	4.8	4.2	8.6	6.8
23	3.6	3.8	4.6	5.6	4.0	3.4	6.0	7.2	8.6	9.6	9.2B	10.2	9.8	8.6	9.1	10.2	6.6	9.2	12.5	10.0	13.0	9.6	7.0	9.0
24	10.0	9.5	5.2	4.3	5.0	4.2	6.8	8.8	5.8	7.2	10.6	10.0	13.6B	13.4	10.4	7.0	8.2	9.4	9.7	10.6	10.2	9.8	7.6B	6.8F
25	4.6	4.8	3.6	4.6	3.8	5.0F	8.4	8.6	10.0	7.5	13.5	12.0	9.0	C	C	C	7.5	6.4	6.6	8.2	6.4	6.8	9.2	7.8
26	7.9	7.1	4.2	3.8	G	4.9	5.6Y	5.2Y	8.2	7.6	9.8	11.6	11.8	7.2	6.4Y	E	4.3	5.0	3.8	3.9	7.3Y	7.8F	7.6	6.1
27	7.0	5.0F	4.8F	3.2F	G	5.0	6.6	6.6	7.2	7.2	12.3	9.4	9.4Y	C	6.1	5.5	C	6.2	9.4	6.0	4.6	5.6	5.0	6.6
28	4.6	7.3	3.3F	4.6	4.6	4.0	5.8	3.7	7.1	7.4	7.8Y	G	6.4F	5.1Y	5.8	5.1	4.4	4.2	3.7	6.5	9.4	7.0	9.4	7.3
29	6.4	6.0	3.6	3.5	5.0	6.0	7.0	C	5.4	6.2	4.2Y	7.6	5.8	7.1	4.6	6.0	6.6	3.6	4.0	3.5	3.2	10.4	2.8F	4.2
30	3.8	4.0	5.0Y	2.0	1.9	3.8B	5.4	9.4	4.8	7.9	6.9	4.6	6.5	9.0	6.2	4.2	3.3	7.0	6.6	4.6	8.6	8.8	6.8	8.7
Mean Value	4.9	4.5	4.2	4.1	3.9	4.3	6.1	6.6	7.6	7.3	8.0	8.0	7.5	7.0	6.9	6.8	5.6	6.1	6.5	6.6	7.1	6.4	6.2	5.5
Median Value	4.4	4.1	3.9	3.6	3.4	4.0	5.9	5.9	6.9	6.9	7.0	7.0	6.4	6.4	6.2	5.6	5.0	6.2	5.9	6.0	6.8	6.4	6.4	5.6
Count	30	30	30	30	30	30	30	28	29	30	30	30	30	27	28	28	28	28	30	30	30	30	29	30

Sweep 11.0 — Mc to 17.0 — Mc in 1.5 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

135° E Mean Time

Jun. 1951

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.9	2.9	2.9F	3.0	3.0	3.1	3.3	3.2	3.2	3.1	A	2.8	3.1	3.0	3.1	3.0	3.2	A	3.0 ^S	3.1 ^S	S	3.1 ^S	S	2.6 ^S	
2	3.0F	(2.7)F	(2.7)F	(2.7)F	3.0F	3.1F	3.1F	3.1	3.0	3.3	2.9	2.8	3.3	2.8	2.8	(2.9)P	3.0 ^B	3.2	A	3.2	2.9	(2.7)P	S	S	
3	3.1	2.5V	2.9	A	2.6F	A	A	A	3.4	3.3	3.1	(2.5)P	3.1	3.2	3.0	A	3.1	3.1	A	A	A	A	A	B	
4	F	2.7F	(2.6)F	3.1F	(2.6)F	2.8	3.1	3.4	3.3	3.2	3.2	3.1	2.9	(3.0)P	(2.9)P	3.0	2.9	2.9	3.0	3.0 ^S	3.0 ^S	3.1 ^S	3.0	3.0	
5	2.9	3.0	2.9	2.8F	2.9F	3.0	3.3	3.7	A	3.5	B	B	B	3.1	3.0	3.2	3.1	2.8	3.1	3.2	3.1 ^S	3.0	2.9	3.0	
6	3.0	3.0	2.8	3.0	3.1	3.4	3.3	3.4	3.1	3.0	3.1	3.1	3.1	3.2	2.9	3.0	2.9	2.8	B	3.1	B ^S	(2.9)H	B	B	
7	3.0	2.8	2.8	3.0	3.1	2.9	A	3.1	A	A	A	A	A	A	B	2.6 ^K	2.8	3.1	3.0	3.0	A	3.0	2.9	2.7	
8	3.0 ²	2.6H	2.8H	3.0F	2.9	(2.6)F	2.9	2.8	3.1	A	A	A	A	A	B	2.7 ^K	2.7 ^K	A	3.0	3.0	A	(2.8)P	(2.6)P	(2.5)P	
9	F	(3.1)F	3.1F	3.0F	BF	2.9	3.5P	3.0	3.2	3.1	A	A	A	3.0	2.9	2.9	3.0	A	3.2	A	A	A	2.7F	2.9F	
10	3.0F	2.9H	2.9	2.9H	2.8	3.1	3.1	3.3	3.2	3.0	A	3.0	2.9	A	3.0	3.1	3.1	3.3	3.1	3.0	3.1	2.7	3.0	2.8	
11	2.8H	2.9	2.9	3.0	3.0	3.1	3.0	3.1	2.9	3.2	2.9	3.0	2.8	3.1	2.9	3.0	3.0	2.9	3.0	3.1	(2.8)P	2.8	3.0 ^S	2.8	
12	2.9S	(2.8)F	2.8F	2.8F	2.8F	3.0	C	C	(2.9)A	2.9	2.8	2.8	C	C	C	C	C	C	3.0	3.0	3.0	3.0	A	(2.8)P	
13	3.0	2.9Z	2.9Z	2.9	3.2Z	3.3	3.1	A	A	2.8	2.8	A	BH	B	2.8	B	B	2.8	A	3.2	A	A	2.7F	2.9F	
14	2.8	(2.5)H	(2.9)F	3.1	2.9H	2.8H	2.6	3.1	3.0	(3.0)P	(2.9)A	(2.9)P	3.0P	3.0	2.9	3.1	2.8	2.8	A	A	A	A	F	F	
15	(2.8)F	F	F	(3.1)F	3.1	3.0	2.8	A	2.9H	3.3	B	B	A	A	A	2.8	2.9	2.8	2.7	2.9	A	A	A	A	
16	A	2.7	2.7	3.2	3.0	3.1	3.2	2.9	2.7	2.8	3.1	2.7	2.8	3.1P	A	A	3.0 ^B	2.8	A	A	A	A	A	S	
17	S	S	B	(2.9)F	A	F	3.0	A	(3.0)P	A	A	A	A	3.0	2.8	3.0	3.0	3.2	3.1	3.0	3.2	2.8	(2.8)C	2.9	
18	2.9H	2.8	2.9	2.8	2.9	2.5H	2.7P	3.1P	A	A	2.7	B	(2.9)P	B	A	A	A	A	3.0	A	2.7P	A	A	A	
19	A	A	A	3.1	2.9	2.7H	A	A	A	A	A	A	A	A	A	A	A	A	2.9	3.1	3.2	3.2 ^S	A	(2.8)F	
20	2.9F	(2.9)F	(2.9)F	(2.7)F	(2.6)F	A	A	A	A	A	A	A	A	A	A	A	A	A	(2.9)F	3.1 ^K	3.1	2.9	2.9	2.8	2.7
21	2.9	3.0 ^S	(3.0)F	5F	(3.1)F	3.2F	3.0	3.2	A	2.9	2.7	2.9	3.0	2.9	2.9	3.0	2.9	2.8	2.9	5	5	(2.8)S	S	2.8	
22	2.8	2.8F	2.9	3.3	3.0	3.2	3.1	3.1	2.8	2.9	3.4	A	A	A	A	2.8 ^B	2.8	3.0	2.9	3.1	3.1	3.0	(2.9)P	2.9	
23	2.7	(3.0)F	(2.7)F	(2.9)P	(2.9)F	3.0	2.8V	3.0	3.0	A	A	A	A	A	A	A	A	3.1	A	A	A	A	A	A	
24	A	AF	(2.7)F	(2.7)F	F	3.1	2.9	A	3.0	3.1	A	A	A	A	A	A	A	A	A	A	A	A	A	AF	
25	F	F	2.8F	2.8F	F	(2.8)F	F	2.8	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
26	A	3.3	(3.0)F	3.1 ^K	2.7F	A	(3.1)K	2.9 ^K	A	A	A	A	A	A	A	A	2.8 ^K	2.8 ^K	(3.0)P	3.1	3.1	A	A	A	
27	A	F	B	(2.6)F	2.7F	3.2 ^K	A	A	A	A	A	A	A	A	A	2.8 ^K	C	A	A	3.2	3.1	2.9	3.0	F	
28	2.7	3.0P	3.0F	2.9F	3.1F	2.8 ^K	3.1 ^K	3.3	A	A	A	B	3.0 ^K	2.7 ^K	3.1 ^K	3.1 ^K	3.2 ^K	3.1 ^K	3.1 ^K	3.2	3.2	2.9	3.0	2.9	
29	A	A	(3.2)P	(2.9)F	A	A	A	C	(3.4)P	2.8	3.1	A	2.9	2.9	3.1	3.0	3.1	3.2	3.1 ^B	3.3 ^B	3.2 ^B	A	(2.7)F	(2.8)F	
30	2.9	2.9	3.1	3.1	3.1	3.1	3.5	A	3.1	3.1A	A	2.9	2.9	A	(3.0)P	3.0	3.2	A	3.1	3.3	A	A	(2.8)F	A	
31																									
Mean Value	2.9	2.9	2.9	2.9	2.9	3.0	3.1	3.2	3.1	3.1	3.0	2.9	3.0	3.0	2.9	3.0	3.0	3.0	3.0	3.1	3.0	2.9	2.9	2.9	2.8
Median Value	2.9	2.9	2.9	2.9	2.9	3.0	3.1	3.1	3.1	3.0	2.9	2.9	2.9	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.8
Count	2.0	2.3	2.6	2.7	2.5	2.5	2.3	2.0	1.7	2.0	1.3	1.3	1.7	1.4	1.8	2.0	2.3	2.2	2.1	2.0	1.6	1.6	1.6	1.6	1.6

(M3000)F2

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 38° 43.5' N
Long. 140° 08.2' E

Akita

fminF

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.5	2.2	1.2	1.8	2.0	3.6	3.8	3.3	5.4	5.3	5.3	5.4	4.2	4.0	3.8	4.4	5.0	A	4.2	2.8	2.6	1.5	2.4	2.6
2	1.5	E	A	A	4.0	2.2	2.5	2.8	5.6	4.5	4.2	4.4	5.5	4.8	5.4	7.0	7.6	7.0	A	2.8	2.8	1.8	1.4	1.2
3	1.2	1.4	2.0	A	4.0	A	A	A	3.9	3.8	4.4	5.3	4.7	4.5	A	A	6.2	6.2	A	A	A	A	A	4.2
4	2.0	1.8	1.3	2.4	2.0	3.7	6.0	4.2	4.4	4.6	4.4	4.3	4.1	4.2	4.2	4.2	4.0	5.0	A	A	A	A	1.8A	1.6
5	1.6	2.0	2.0	A	1.8	A	2.4	4.3	A	5.9	B	4.4	B	4.2	4.1	3.8	4.9	3.8	4.0	4.3	4.0	2.6	3.6	1.4
6	F	E	E	E	1.3	2.3	3.1	4.4	4.5	4.8	4.0	4.2	4.0	5.4	4.2	4.2	3.8	4.0	2.2	1.9	A	2.0	A	1.4
7	A	1.2	E	E	1.9A	4.0	6.4	4.2	A	A	4.8	A	A	4.4	4.0	5.2	4.5	4.8	4.0	5.6	A	3.6	4.0	2.0
8	4.0	1.2	E	1.4	1.8	4.2	4.0	5.5	5.3	4.3	A	4.2	4.0	4.7	4.0	5.4	4.7	A	4.8	2.8	A	2.4	1.9	1.6
9	1.4	1.4	A	A	E	2.1	3.0	5.5	5.2	5.4	A	A	5.6	6.4	4.8	6.6	4.6	A	5.6	6.6	A	A	A	3.4
10	1.6	E	1.2	1.2	A	2.4	2.4	A	5.6	5.4	A	4.8	5.6	6.2	5.6	4.2	4.2	3.4	3.2	3.4	3.0	2.8	1.9	2.2
11	A	1.1	1.5	E	1.5	2.4	3.0	4.1	4.2	4.3F	4.7	5.6	4.2	4.0	4.4	4.4	4.2	3.8	6.6	4.8	6.2	5.2	4.6	1.5
12	2.4	1.7F	2.8	F	1.3	1.4	A	5.4	C	6.0	6.4	5.4	4.4	C	C	C	C	4.4	4.4	4.2	3.8	7.1	6.8	3.6
13	3.8	3.3	2.6	2.8	2.4	2.3	6.0	A	A	4.8	4.6	A	4.4	5.8	4.2	B	B	4.2	A	A	A	5.0	3.0	3.8
14	2.7	E	1.5	1.7	2.0	2.3	6.2A	3.9	5.4	5.0	6.2	6.1	5.6	6.2	5.6	6.6	6.0	4.0	A	A	A	2.0	1.8	1.6
15	1.6	AF	4.4F	1.5	4.2	A	4.1	A	4.7	5.0	7.2	A	A	A	A	5.6	4.8	4.6	3.8	6.8	A	A	A	A
16	A	4.2	1.2	E	1.4	2.7	4.3	4.0	4.6	4.7	4.6	4.6	5.6	4.4	A	A	5.3	6.2A	A	A	A	A	A	A
17	A	4.8	A	4.0	A	3.0	4.8F	A	A	6.9A	A	A	A	5.6	5.6	4.2	4.3	4.4	4.4	4.2	5.0	2.4	[2.2] ^C	2.0
18	2.4	1.3	1.2	1.2	1.2	2.3	2.7	5.2	A	A	6.2	B	5.3	6.1	A	A	A	A	6.2	6.3	5.0	A	4.1	A
19	A	A	A	2.0	2.0	2.8	A	A	A	A	A	A	A	A	A	A	A	5.6	5.5	4.6	5.6	A	A	A
20	1.2	2.0	A	A	2.0	F	A	A	A	A	A	A	A	A	A	A	A	5.9	2.6	4.2	2.3	2.6	2.1	1.4
21	A	1.7	2.7	4.0	A	2.8	4.1	4.8	6.8	5.2	6.0	4.4	4.2	6.0	4.4	4.4	3.8	3.8	4.7	2.6	A	A	1.9	1.2
22	E	E	E	E	1.8	2.1	2.7	4.2	4.7	5.2	5.6	A	A	A	A	5.1	4.1	3.3	3.6	4.0	1.8	3.6	4.2	3.6
23	1.4	2.6	2.0	3.8	3.8	2.9	5.6A	5.4	6.6	A	A	A	A	A	A	5.2	5.4	A	A	A	A	A	A	A
24	A	4.9A	3.9	4.0	3.5	3.5	3.0	4.3	5.2	6.3A	A	A	A	A	A	5.2	6.1A	A	A	A	A	A	A	A
25	1.6	A	1.8	2.8F	1.7	4.3F	A	8.0A	A	A	A	A	A	A	C	C	6.1A	5.4	5.8	A	5.2	A	A	A
26	A	5.2	3.8	2.8	E	4.5A	4.9	4.6A	A	A	A	A	A	A	A	B	4.0	4.3	3.6F	3.5	3.9F	2.8F	A	A
27	A	2.6F	A	E	1.8F	2.5	A	A	A	A	A	A	A	C	4.2	4.1	C	A	4.0	5.0	4.2	2.0	2.8	3.0
28	3.8	1.5	3.2F	3.4	3.2	4.1	5.6	4.4	A	A	A	B	5.2	4.7	4.5	3.7	3.4	3.5	3.0	5.7	3.9	4.0	3.8	A
29	A	A	4.0	3.5	A	A	A	C	5.0	6.2A	4.3	A	5.0	4.6	4.8	5.8	5.6	4.1	3.0	2.2	2.0	A	1.5	2.8
30	2.2	A	1.4	1.4	1.4	3.6	A	A	4.2	5.6	5.6	4.3	5.3	A	4.6	4.1	4.6	A	5.6	2.5	A	A	5.8A	A
31																								
Mean Value	2.1	2.4	2.3	2.5	2.3	3.0	4.2	4.6	5.1	5.2	5.2	5.0	4.8	5.0	4.7	5.0	4.8	4.6	4.3	4.1	3.8	3.1	3.1	2.3
Median Value	1.6	1.7	1.6	1.7	1.8	2.8	4.1	4.3	5.1	5.2	4.8	4.5	4.8	4.7	4.4	4.8	4.6	4.4	4.1	4.2	3.9	2.6	2.6	2.0
Count	2.0	2.5	2.4	2.5	2.6	2.4	2.3	1.9	1.8	2.1	1.7	1.4	1.8	1.9	1.8	2.0	2.3	2.2	2.2	2.2	1.6	1.7	2.0	2.0

Sweep 1.0 - Mc to 17.0 - Mc in 1.5 min Manual

The Central Radio Wave Observatory
Kogansai-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

Jun. 1951

fminE

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E	E	E	E	E	1.6	1.6	1.6	1.8	1.8	1.8	2.0	2.2	1.9	2.0	2.0	2.0	2.0	1.6	1.4	1.4	1.4	1.4	1.4	
2	E	E	E	E	E	1.5	1.6	1.6	1.7	1.9	1.9	2.0	2.0	1.8	1.8	1.8	1.8	1.6	1.4	1.4	1.2	1.3	1.4	1.2	
3	1.2	E	E	E	E	1.8	1.8	1.8	1.7	1.7	2.2	2.0	2.2	4.0	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.2	
4	E	E	E	E	E	1.5	1.6	1.9	1.7	3.8	3.9	2.9	3.9	2.0	2.0	2.0	2.0	2.0	1.8	1.8	1.6	1.6	1.4	1.2	
5	1.2	E	E	E	E	1.4	1.5	1.7	1.7	1.9	4.6	4.2	E	2.1	2.2	2.1	1.8	1.7	1.6	1.5	1.4	1.4	1.4	1.6	
6	E	E	E	E	E	1.5	1.7	1.7	1.8	1.8	2.0	2.2	2.8	1.9	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.5	1.5	1.9	
7	E	E	E	E	E	1.4	1.6	1.6	1.8	2.0	2.2	4.0	2.2	2.0	2.0	4.0	1.8	1.6	1.6	1.6	1.6	1.6	1.6	E	
8	E	E	E	1.2	1.4	1.6	1.7	2.8	1.8	1.9	2.0	4.0	E	2.0	2.0	1.9	1.8	1.6	1.6	1.5	1.4	1.4	1.2	1.2	
9	E	E	E	E	E	1.5	1.6	1.2	1.8	2.2	2.2	2.0	2.0	2.4	2.4	2.2	2.4	2.0	1.5	1.5	1.4	1.4	1.4	E	
10	E	E	E	1.2	1.2	1.2	1.4	1.4	1.8	2.2	2.1	2.1	2.1	4.0	4.0	3.0	1.8	1.8	1.6	1.5	1.5	1.5	1.5	1.2	
11	E	E	E	E	E	1.4	1.6	1.6	1.8	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.2	1.8	1.5	1.5	1.5	1.5	1.5	E	
12	E	E	E	E	E	1.4	1.7	1.8	(1.8) ^C	1.9	2.0	2.0	2.1	C	C	C	C	1.9	1.6	1.5	1.4	1.4	1.2	1.2	
13	E	E	E	E	E	1.4	1.6	1.6	1.6	1.8	1.9	2.0	2.3	2.2	2.1	F	E	4.2	2.2	1.8	1.7	1.7	1.7	1.7	
14	1.7	E	E	E	E	1.4	2.0	1.9	2.6	2.2	3.6	4.0	4.0	3.8	2.2	2.0	1.8	2.0	2.0	1.8	1.6	1.8	1.6	1.2	
15	1.2	E	E	E	E	1.6	1.7	1.7	1.8	2.2	3.3	4.2	5.4	2.3	3.8	2.3	2.0	2.1	1.8	1.6	1.4	1.4	1.4	1.2	
16	E	E	E	E	E	1.6	1.6	1.8	2.0	2.2	2.8	3.6	3.8	E	4.2	3.0	2.0	2.0	1.4	1.4	1.5	1.4	1.4	1.2	
17	E	E	E	E	E	1.4	1.7	2.1	4.2	4.1	4.1	4.4	4.2	4.0	4.2	3.1	2.0	2.0	2.0	2.0	1.8	1.8	1.8	1.2	
18	E	E	E	E	E	1.4	1.4	1.9	2.1	2.1	5.2	4.6	4.2	4.3	3.0	4.0	2.0	1.8	1.8	1.6	1.6	1.5	1.5	1.4	
19	1.2	1.2	1.2	1.2	1.6	1.7	1.8	1.7	2.0	2.0	2.0	2.0	2.2	2.2	4.8	3.8	1.6	1.6	1.5	1.5	1.5	1.5	1.4	E	
20	E	E	E	E	E	1.4	1.4	1.4	1.9	4.3	2.1	3.0	2.3	4.0	4.0	4.0	3.6	1.8	1.7	1.5	1.5	1.5	1.4	E	
21	E	E	E	E	E	1.5	1.6	1.6	1.8	1.8	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.8	1.7	1.5	1.5	1.5	1.5	1.4	
22	E	E	E	E	E	1.5	1.6	1.7	1.8	2.0	2.0	2.0	2.0	4.0	4.2	2.9	2.0	1.8	1.5	1.6	1.5	1.5	1.4	1.2	
23	E	E	E	E	1.3	1.8	2.0	1.8	1.8	2.2	2.2	2.2	2.2	2.2	2.4	3.2	1.9	1.9	1.6	1.6	1.6	1.6	1.4	1.4	
24	1.4	E	E	E	E	1.4	1.6	1.7	1.8	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	1.7	1.8	1.6	1.6	1.4	1.4	
25	1.4	E	E	E	E	1.4	1.6	1.4	3.0	1.8	4.0	4.0	4.0	C	C	C	1.6	1.7	1.6	1.6	1.4	1.4	1.5	1.5	
26	1.2	1.2	E	E	E	1.6	1.6	1.6	2.1	2.1	2.0	2.0	2.0	2.8	2.0	E	3.8	1.8	1.6	1.5	1.5	1.4	1.4	1.4	
27	E	E	E	E	E	1.3	1.5	1.6	1.7	2.7	2.2	2.4	2.6	(2.4) ^C	2.2	1.8	(1.7) ^C	1.6	2.0	2.0	2.0	2.0	2.0	E	
28	E	E	E	E	E	1.4	1.6	1.6	1.9	2.0	1.9	2.0	2.2	1.9	1.8	1.9	1.8	1.7	1.5	1.5	1.6	1.6	1.6	1.3	
29	1.2	1.3	1.5	1.6	1.6	1.6	(1.7) ^C	1.8	1.8	1.8	1.8	1.8	1.8	2.3	2.2	1.8	1.6	1.6	1.4	1.4	1.4	1.4	1.5	E	
30	E	E	E	1.2	1.2	1.2	1.4	1.4	1.9	2.1	2.1	2.3	2.4	1.8	2.0	2.0	1.8	1.6	1.5	1.6	1.5	1.5	1.5	1.1	
31																									
Mean Value	1.3	1.2	1.4	1.3	1.4	1.5	1.6	1.8	2.0	2.2	2.5	2.7	2.7	2.6	2.6	2.5	2.0	1.9	1.7	1.6	1.5	1.5	1.5	1.3	
Median Value	E	E	E	E	E	1.4	1.6	1.7	1.8	2.0	2.1	2.2	2.2	2.2	2.2	2.0	1.8	1.8	1.6	1.6	1.5	1.5	1.4	1.2	
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	28	28	28	29	30	30	30	30	30	30	30	

Sweep 1.0 Me to 17.0 Me in 1.5 min Manual

fminE

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

foF2

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.8' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	6.0 ^F	5.5 ^F	4.8 ^F	4.7 ^F	(4.6) ^S	5.4 ^S	7.0	8.0	6.4	5.6	(6.0) ^C	6.3	6.9	6.2	6.4	6.9	A	7.0	A	(8.6) ^P	(7.6) ^P	(6.7) ^F	(6.4) ^S	6.6	
2	(6.1) ^F	(6.0) ^F	(5.9) ^S	(5.8) ^F	(5.2) ^F	(5.9) ^F	7.3	6.7	7.0	6.6	6.4	7.2	7.8	8.6	9.6	9.6	(10.8) ^S	S	(10.6) ^S	(7.8) ^P	S	(8.6) ^S	C	B	
3	FS	(5.8) ^F	FS	FS	FS	A	C	7.0	7.0	7.6	6.5	6.6	7.8	8.6	8.6	8.6	9.0	8.6	9.0	(9.4) ^P	A	A	S	FS	
4	FS	(5.6) ^F	(4.9) ^F	4.2 ^F	3.8 ^F	4.9	7.6	8.4 ^A	A	A	A	A	6.9	6.6	6.6	5	7.8 ^P	8.0 ^P	8.7	AS	8.4	A	A	A	
5	(6.2) ^F	(6.2) ^F	5.4	(5.1) ^F	5.2 ^F	5.8	7.2	7.8 ^S	5.9 ^S	5.9 ^S	5.6 ^J	A	7.0	B	8.9	8.6	6.9 ^S	7.0	7.0	A	B	B	(6.7) ^S	(6.6) ^S	
6	6.6	6.2	6.0 ^F	5.9 ^F	6.0 ^F	6.6	7.3	7.1	6.4	6.9	7.1	7.9	8.1	8.8	8.2	8.2	8.7	(8.4) ^J	8.2 ^J	BS	S	6.1 ^S	(6.2) ^S	6.2	
7	(6.1) ^J	5.6 ^P	5.4 ^J	5.5 ^P	5.0 ^F	(5.3) ^S	6.5 ^F	A	A	A ^K	A ^K	A ^K	5.7 ^K	5.8 ^K	5.8 ^K	6.0 ^K	6.9	7.5	7.2	6.4	5.2	A	5.6 ^F	6.0 ^F	
8	5.7 ^F	6.0 ^F	6.2 ^F	5.5	5.5 ^F	6.9	6.9	6.4	6.2	A ^K	A ^K	B ^K	B ^K	5.7 ^K	6.3 ^K	6.7 ^K	6.8 ^K	A ^K	6.9	A	6.0 ^S	6.2 ^F	FS	FS	
9	6.8 ^V	6.2	5.0 ^J	(4.7) ^S	BS	5.8	6.4	7.0	7.6	6.3	6.6	7.2	(7.6) ^S	8.4	7.8	8.7	(8.8) ^C	8.8	7.4	A	A	A	A	B	
10	7.1 ^F	(6.9) ^F	5.1 ^J	(5.0) ^S	4.9 ^J	6.4	7.0	A	A	A	A	A	7.0	A	A	(8.3) ^S	7.8	A	A	S	(7.2) ^F	7.1 ^F	C	C	
11	C	C	C	C	C	C	C	C	7.1	7.4 ^F	7.2	B	9.4	9.4	9.8	9.2	8.5	8.5	8.9	(8.0) ^P	B	M	M	BS	
12	BS	F	7.0 ^F	6.7 ^F	6.3	6.2	6.6	A	6.4	A	8.0	(7.4) ^S	7.3	8.4	8.2	8.2 ^S	8.1 ^S	7.8	(7.8) ^F	(8.0) ^P	A	A	A	BS	
13	A	B	BS	B	B	8.5	8.0 ^S	A	A	6.3 ^A	A	AS	7.8	7.5	8.0 ^S	B	B	8.6	B	(8.2) ^S	(8.2) ^S	6.8 ^F	8.0 ^J	FS	
14	FS	6.8 ^F	FS	6.8 ^F	5.8 ^F	(5.8) ^T	5.9	6.8	7.3 ^P	A	7.5	7.5	A	7.6	8.0	7.8	7.8	8.6	9.1	(8.6) ^S	A	A	A	F	
15	S	S	BS	BS	7.5 ^F	5.9 ^F	A	7.0 ^P	A	8.0	6.8	A	8.6	9.4	8.9	B	7.9 ^S	(8.7) ^C	9.5 ^P	S	8.2 ^S	6.8	SF	SF	
16	FS	7.8 ^F	(7.6) ^F	(7.2) ^F	5.0 ^J	5.1	A	6.2	7.5 ^F	7.0	7.9 ^F	7.2 ^S	7.9	A	A	7.8	7.4	(7.2) ^P	8.2	8.5	A	FS	(8.5) ^F	B	
17	7.0 ^S	B	A	(7.2) ^F	7.1 ^F	7.2	6.8	A	M	M	M	C	C	M	8.3	8.9	9.0	A	A	7.9 ^P	A	(6.8) ^A	A	6.9 ^F	
18	6.9	A	6.8 ^F	5.9	5.8 ^V	5.8	7.4 ^P	9.1	8.6	A	8.6 ^S	9.0 ^P	11.0 ^P	A	A	A	A	A	A	7.3	7.3	6.4 ^P	A	A	
19	A	A	5.9 ^F	A	5.4	A	A	A	A	A	A	A	A	A	A	A	A	A	A	8.5 ^S	5.2	5.4	A	A	
20	A	(5.9) ^F	(4.8) ^F	(4.7) ^F	AS ^K	(5.0) ^F	AS ^K	AS ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	(6.2) ^{KP}	6.5 ^K	6.3 ^K	6.2 ^K	6.1 ^K	5.8 ^K	5.8	5.6	A	5.3 ^F	
21	A	A	A	A	A	5.6	B	A	A	6.8 ^A	7.8	7.8 ^P	C	C	(8.2) ^P	7.4	7.4	7.0	BS	BS	(7.4) ^P	6.5	7.0 ^S	6.8	
22	7.0 ^F	6.9	7.0	6.6	6.0	6.4	6.8	7.7	7.0	7.4 ^P	7.2	7.4	8.2	8.5	8.2	7.4	6.5	6.8	(7.8) ^S	A	(7.6) ^S	6.5 ^V	FS	A	
23	A	(6.6) ^A	A	5.7 ^F	6.4 ^Z	5.8 ^F	6.6 ^V	7.1 ^S	A	A	A	A	A	A	A	6.6	6.6 ^J	A	A	A	6.7	A	A	A	A
24	7.0 ^S	A	A	6.0 ^F	5.8 ^F	6.4	6.5	6.4	6.9	7.3 ^S	A	A	A	A	B	8.8 ^S	8.4 ^S	(7.7) ^P	7.3	7.0	F	AS	S	S	
25	F	FS	F	(6.7) ^F	F	(6.6) ^F	7.0	8.8	8.2 ^P	(6.2) ^P	6.0	6.4	A	A	5.6 ^K	A ^K	5.3 ^K	5.6 ^K	5.9	6.8	(6.8) ^P	5.5	B	AS	
26	A	FS	FB	7.2 ^F	F	6.0 ^V	6.2	4.6 ^K	A ^K	A ^K	A ^K	A ^K	5.5 ^K	A ^K	A ^K	A ^K	A ^K	C ^K	C	A	7.1 ^V	6.0	5.6	5.5 ^P	
27	BF	(6.6) ^S	A	(3.7) ^F	(3.9) ^K	4.7 ^K	(5.2) ^K	A ^K	A ^K	5.3 ^K	A ^K	A ^K	A ^K	A ^K	6.3 ^K	6.8 ^K	6.5	6.6	(7.5) ^P	6.8	(7.5) ^P	6.8	5.2	BS	
28	A	A	A	B	B	B	6.1	6.8	5.1 ^K	A ^K	A ^K	A ^K	5.9 ^K	6.3 ^K	6.8 ^K	9.2 ^P	9.2	7.9 ^P	7.3	7.3	7.0	6.4	6.4	6.5	
29	B	B	BS	(4.7) ^F	3.9	3.9 ^P	5.2	A	T	T	T	T	T	8.5 ^S	8.6	9.2 ^P	7.2 ^S	6.8	(7.7) ^F	7.1 ^S	5.8	A	BS	A	
30	6.7	(6.5) ^F	6.3	5.3	B	(4.1) ^P	(5.8) ^P	7.3	9.1	6.7	6.3	6.6	7.6	(8.7) ^P	8.6	8.6	7.2 ^S	6.8	(7.7) ^F	7.1 ^S	5.8	A	BS	A	
31	Mean Value	6.6	6.3	5.9	5.7	5.5	5.8	6.7	7.2	7.1	6.6	6.9	7.3	7.6	7.9	7.8	7.7	7.6	7.8	7.7	7.8	6.9	6.4	6.7	6.4
	Median Value	6.7	6.2	5.9	5.6	5.4	5.8	6.8	7.0	7.0	6.6	7.0	7.2	7.6	8.4	8.2	8.2	7.8	7.7	7.7	7.8	7.0	6.4	6.4	6.6
	Count	13	17	16	22	20	26	23	19	17	16	16	13	16	19	22	21	24	23	21	19	17	17	10	8

Sweep 1.0 Mc to 17.2 Mc in 2 min Automatic

K 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

f_pF₂

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	340 ^S (380) ^F	370 ^F (350) ^F	320 ^F (360) ^S	330 (330) ^F	300 ^S (330) ^F	270 (330) ^F	250 (330) ^F	280	280	A	C	350	300	340	350	A	A	310	A	(280) ^S	(240) ^F	(340) ^P	(360) ^S	340	
2																									
3	FS	(350) ^F	FS	FS	A	C	A	310	280 ^S	280	G	350	A	300	310	310	320	320	290	(250) ^P	A	A	A	B	
4	FS	(340) ^F	(300) ^F	250 ^F	330 ^B	280	A	A	A	A	A	A	A	A	A	A	300 ^P	340	340	AS	310	A	A	FS	
5	(340) ^F	(330) ^F	320	(350) ^F	300	260 ^S	240 ^S	A	A	A	A	A	A	A	A	A	340	300	A	A	B	B	(340) ^S	A	
6	340	340	340 ^F	340 ^F	330 ^F	280	290	260	300	A	320	340	350	310	330	A	350	C	AS	BS	S	S	(380) ^S	380	
7	B	330 ^P	(310) ^J	310 ^J	320 ^F	(300) ^S	380 ^F	A	A	A	A	A	A	A	A	A	370	300	290	280	B	A	380 ^F	380 ^F	
8	370 ^F	380 ^F	330 ^P	350 ^F	350	380 ^V	330	A	350	A	A	A	A	A	A	A	A	A	A	A	A	A	(400) ^F	FS	
9	350 ^V	300	(370) ^J	(380) ^S	BS	300	300	320	270	310	A	370	(310) ^S	360	420 ^K	370 ^K	(320) ^S	290	280	A	A	A	A	FS	
10	320 ^F	(350) ^J	(340) ^J	(340) ^J	(340) ^J	270	280	A	A	A	A	A	A	A	A	A	330	340	320	A	A	A	A	B	
11	C	C	C	C	C	C	C	C	340	310 ^F	360	B	B	350	A	(310) ^S	280	A	A	A	A	A	A	C	
12	BS	F	320 ^F	370 ^F	370	330	310	A	350	A	320	(320) ^S	360 ^S	350	320	(330) ^S	310 ^S	310	320	(300) ^F	B	M	M	BS	
13	A	B	BS	B	B	270	270 ^S	A	A	A	A	AS	340	330	340 ^S	B	B	330	B	(320) ^S	(320) ^S	A	A	BS	
14	FS	410 ^F	FS	320 ^F	310 ^F	(320) ^T	340	360	330 ^P	A	A	A	A	A	A	A	360	340	320	(300) ^S	A	A	A	FS	
15	S	S	BS	BS	270 ^F	280 ^F	A	260 ^P	A	290	G	A	390	320	330	B	380 ^S	340 ^P	340 ^P	S	280 ^S	410	SF	SF	
16	FS	380 ^F	(340) ^F	(250) ^V	(320) ^S	(280) ^P	A	410	310 ^P	A	330 ^P	340 ^S	300	A	A	A	A	A	A	(330) ^P	A	FS	(380) ^P	B	
17	310 ^S	B	A	(320) ^F	330 ^F	290	340	A	M	M	M	C	M	A	A	A	310	A	A	280 ^P	A	A	A	340 ^F	
18	350	A	320 ^F	340	380 ^V	380	320 ^P	340	360	A	390 ^S	440 ^P	350 ^P	A	A	A	A	A	A	A	A	A	A	A	
19	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
20	A	(280) ^F	S	(400) ^F	AS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
21	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
22	380 ^F	320	300	310	320	340	290	270	290	260 ^P	350	360	350	360	320	A	(320) ^P	330	340	BS	BS	(290) ^F	390	370	
23	A	(310) ^A	A	350 ^F	350 ^Z	320 ^F	340 ^V	300 ^S	330	310 ^S	A	A	A	A	A	A	(320) ^S	340	(340) ^P	S	260 ^S	(350) ^S	380	A	
24	A	A	A	A	A	320 ^V	290	320	330	310 ^S	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
25	F	FS	F	(310) ^F	F	(380) ^F	360	310	230 ^F	(340) ^F	G	B	A	A	A	A	A	A	A	A	A	A	A	A	
26	A	FS	BF	260 ^K	F	330 ^V	310	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
27	FB	(320) ^F	A	(370) ^F	(350) ^F	250 ^K	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
28	A	A	A	B	B	B	A	B	G	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
29	B	B	BS	(300) ^F	300 ^B	300 ^P	A	A	T	T	T	T	T	T	T	T	330 ^S	350	350 ^P	300	A	A	350	360	
30	350	(330) ^P	300	280	B	(290) ^F	(350) ^P	320	280	330	360	G	350	(350) ^J	320	300	300 ^S	320	(280) ^P	260 ^S	A	A	BS	A	
31																									
Mean	350	340	330	330	330	310	310	300	310	300	350	360	340	340	340	330	320	320	330	310	290				
Median	350	340	320	340	330	300	300	310	310	300	360	360	350	350	340	330	320	320	330	320	300	310	370	370	360
Count	11	17	14	22	19	25	20	15	15	10	12	12	15	16	18	15	21	21	16	19	15	15	10	8	

f_pF₂

Sweep 1.0 Mc to 17.2 Mc in 2 min

Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 29.8' E

Kokubunji Tokyo

135° E Mean Time

f'F2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	230 ^F	250	250	250	250	280	250	240	280	300	(320) ^C	350	290	340	350	360	A	300	270	250	230 ^F	230	280	280	
2	320	280	(360) ^A	320	(300) ^A	240	260	260	300 ^A	280	330	350	330	330	340	280 ^A	280 ^A	(260) ^A	230	230 ^A	AS	330 ^A	C	A	
3	260	250	260 ^F	290	280 ^F	A	C	300	270	270	320	350	A	280	300	290	280	290	260	240	A	A	260	250	
4	AF	290	250	200 ^A	280	250	270	A	A	A	A	A	310	A	330 ^A	310	290	280	300 ^A	AS	280 ^A	A	A	A	
5	250 ^F	260 ^A	250	300	330	250	250	230	270 ^A	280 ^A	B	A	340	A	300	270	270	290	330 ^A	A	A	250	250	310	
6	260	250	260 ^F	260	240	230	260	240	300	350	300	330	330	300	300	A	310	(300) ^C	300 ^A	A	200	240	280	300 ^A	
7	280	270	250	240	270	250	350	A	A	A	A	A	A	420 ^K	410 ^K	(430) ^A	360	280	270	240 ^F	A	A	300 ^F	300 ^A	
8	300 ^A	320 ^F	250	260	280	310	330	A	350	A	A	B	B	470 ^K	420 ^K	370 ^K	(320) ^K	A	300 ^A	A	A	360 ^A	380 ^A	A	
9	320 ^A	250	330 ^A	300 ^F	270	270	270	310	270	300	A	370	310	340	350	320	300	260	260	A	330	360	A	330	
10	250	240	310	(310) ^B	310	250	260	A	A	A	A	A	330	A	A	300	270	A	A	A	280	300	C	C	
11	C	C	C	C	C	C	C	C	280	310	310	B	B	330	360 ^A	310	300	320	260	230	A	M	M	370	
12	350	310	280 ^F	280 ^A	290 ^A	300	290	A	320 ^A	A	310	310	360	330	310	320	300	300	280	260	A	A	A	270	
13	A	270 ^A	270 ^A	260	240	240 ^A	260 ^A	A	A	A	A	A	380	340	330	B	B	320	A	290	250	270	330 ^F	280 ^F	
14	350	330 ^F	(280) ^F	230	250 ^F	(280) ^T	320	300	320	A	A	350	350	A	A	340	340	350	310	280	270	A	A	350 ^F	
15	300 ^F	250	300 ^A	270 ^F	230 ^F	230	A	250	A	280	390	A	370	300	310	B	370	(330) ^C	290	280	230	280	A	370 ^F	
16	350 ^F	300 ^F	310	210	260	280	A	410	310	370	320	300	300	A	A	AS	A	300	300	280	A	270	350	320	
17	310	300	A	300	270	260	300	300	A	M	C	C	C	M	A	A	A	A	A	280	A	A	A	270	
18	320	A	250	280	310 ^F	330	300	310	290	A	370	430	330	A	A	A	A	A	A	320 ^A	(300) ^A	A	A	A	
19	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C	C	310	260	230	270 ^A	A	A	
20	A	(240) ^F	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	330 ^F	310 ^K	260 ^K	260	310 ^S	A	320 ^A
21	A	A	A	A	A	250	A	A	A	A	350	370	C	C	340	320	330	320	290	250	260	280 ^S	290	280	
22	290	250	230	220	220	240	250	270	250	260	350	350	330	340	300	340	350	340	280	A	260	280	350	A	
23	A	(300) ^A	A	310	300	240	320	290	A	A	320	A	A	A	A	420	340	A	A	A	A	230 ^F	A	A	
24	A	A	A	A	A	260	270	310	320	300	A	A	A	A	A	300	300	310	310	270	300	300 ^F	300	A	
25	AF	AF	270 ^S	(280) ^A	260 ^F	320 ^F	350	270	230	300	390	330	A	A	A	A	330	300	310	300	300	300 ^F	300	A	
26	A	290	250 ^F	220	260 ^F	250	300	A	A	A	A	A	400 ^K	390 ^K	A	A	B	410 ^K	360 ^K	280	230	230	B	310 ^F	
27	BF	260	A	310 ^F	280 ^F	220 ^K	A	A	A	A	A	A	A	A	A	350 ^K	360	C	C	A	250	240	320	A	
28	A	A	A	280	260	B	350	B	400 ^K	A	A	A	450 ^K	320 ^K	350 ^K	360	320	320	T	250	240	B	A	A	
29	A	A	A	270	270	260	A	A	T	T	T	T	T	330	310	310	280	330	320	250	240	280	280	350	
30	300	260	240	230	220	220	250	300	260	330	360	430	350	350	300	280	300	300	260	250	A	A	A	A	
31	Mean Value	300	270	270	270	260	290	290	300	300	340	360	340	350	340	320	310	310	280	260	260	290	310	310	
	Median Value	300	260	260	270	250	270	290	290	290	300	330	330	330	330	340	320	300	310	280	260	260	280	300	
	Count	17	22	21	25	26	25	21	15	17	13	15	14	16	17	21	20	22	24	23	22	19	18	17	

Sweep 1.0 - Mc to 17.2 - Mc in 2 min Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3E

IONOSPHERIC DATA

Jun. 1951

foF1

135° E Mean Time

Kokubunji Tokyo

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	L	L	L	A	A	C	(4.6) ^A	L	A	A	A	A	A					
2						Q	L	A	A	A	A	(4.8) ^A	(4.7) ^B	A	A	A	A	A	A					
3						A	C	L	L	L	L	4.8	(4.6) ^B	A	A	L	L	L	L					
4						Q	A	A	A	A	A	A	A	A	A	A	A	4.2 ^B	L	A				
5						Q	A	A	A	A	A	B	A	L	A	L	L	L	L					
6						Q	L	Q	A	A	A	4.9	A	A	L	A	L	L	L					
7						Q	A	A	A	A	A	A	A	A	L	A	A	A	A					
8						Q	A	A	A	A	A	A	B	L	L	L	A	A	A	3.8	A			
9						Q	L	L	L	L	L	L	L	L	L	A	4.5	L	L					
10						Q	Q	A	A	A	A	A	A	A	A	A	L	L	L					
11						C	C	C	A	A	A	B	B	L	A	A	L	L	L					
12						L	L	A	A	A	L	L	L	L	L	L	L	L	L					
13						A	A	A	A	A	A	A	5.0	5.2	5.0 ^B	B	B	A	A					
14						T	L	L	A	A	A	5.2	A	A	B	4.9	L	L	L					
15						Q	A	A	A	L	L	A	L	5.2	L	B	4.9	C	A					
16						Q	A	4.8	A	A	A	A	A	A	A	A	A	A	A					
17						A	A	A	M	M	M	C	C	M	A	A	A	A	A					
18						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
19						A	A	A	A	A	A	A	A	A	C	C	C	C	L					
20						A	A	A	A	B	A	A	A	A	B	B	A	A	A					
21						Q	A	A	A	A	A	L	C	C	L	L	L	L	L					
22						Q	L	4.6	A	A	A	5.1	A	A	A	A	A	A	A					
23						Q	L	A	A	A	A	A	A	A	A	A	B	A	A					
24						Q	B	L	A	A	A	A	A	A	A	A	A	4.3	L	L				
25						L	A	A	A	L	B	B	A	A	A	A	A	B	A					
26						Q	A	A	A	A	A	A	A	A	A	A	B	B	3.8	L				
27						Q	A	A	A	A	A	A	A	A	A	A	A	C	C					
28						B	A	L	L	A	A	A	4.7 ^A	4.6	A	L	(3.9) ^B	3.9 ^B	T					
29						Q	A	A	T	T	T	T	T	A	A	A	A	A	A					
30						Q	L	4.2 ^J	4.4	4.4 ^J	A	5.0	A	A	A	B	B	L	Q					
31																								
Mean Value						4.5	4.6	4.4	4.8	4.9	4.8	4.9	4.8	4.9	5.0	4.7	4.3	3.8						
Median Value						4.6	4.6	4.4	4.8	4.9	4.8	4.9	4.7	5.0	5.0	4.7	4.2	3.8						
Count						3	2	1	1	1	1	7	3	4	1	2	4	3						

Sweep 1.0 Mc to 17.2 Mc in 2 min Automatic

foF1

K4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35°42.4'N
Long. 139°29.3'E

Kokubunji Tokyo

135° E Mean Time

foE

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	2.2	2.7	3.0	3.1	(3.3) ^c	3.5	A	A	β	3.1	2.8	2.4	1.8					
2						A	2.2	2.8	3.2	3.3	3.4	3.4 ^β	3.4 ^β	3.3	3.1 ^s	3.1	2.8	2.4	A					
3						A	C	2.6	3.1	A	A	3.5	3.5 ^β	3.4 ^β	3.1 ^β	2.8	2.3	1.8						
4						A	2.4 ^f	3.1	3.2	3.2	B	B	B	3.2 ^β	3.2	2.9	2.8	2.6	1.9					
5						1.8	2.4	2.9	A	A	A ^s	B	B	B	A	B	3.2 ^β	2.6	1.5					
6						1.7 ^A	2.4	2.9	A	3.4	3.5	3.6	B	B	3.5 ^β	3.3	3.2	C	A					
7						1.7	2.4 ^f	2.9	3.2 ^β	(3.3) ^β	3.4	A	A	B	3.5	3.4	3.2 ^s	2.7	2.0					
8						1.8	2.4	2.9 ^s	(3.0) ^β	3.1 ^s	3.4 ^β	B	B	B	B	B	B	2.7	1.9					
9						1.9	2.4	2.8	3.1	(3.3) ^β	3.5 ^β	B	B	A	B	B	3.1 ^s	2.7	2.1					
10						A	2.5	3.0 ^s	(3.0) ^β	3.1	(3.3) ^β	3.5 ^β	B	A	A	3.3 ^A	3.1 ^s	2.7	A ^f					
11						C	C	C	3.3	3.4	3.5	B	B	B	B	3.5	3.5	3.2 ^s	2.7	2.1				
12						A	2.7	3.1 ^s	3.4	3.6	B	B	B	B	B	3.3 ^s	3.3	2.8	2.1 ^A					
13						A	2.5 ^f	3.0 ^s	3.3	3.4 ^s	B	A	3.7	(3.5) ^β	3.3	B	B	B	1.6					
14						2.0	(2.4) ^f	2.7	3.1	3.4	B	B	B	B	B	3.5	3.3	2.9	2.2 ^A					
15						A	2.6	3.1	3.2	B	B	B	B	B	B	B	3.3 ^β	(2.8)	2.2					
16						2.1	2.6	3.0 ^β	3.3	B	B	B	B	B	B	3.5	3.3	2.9	2.2					
17						1.7	2.8	3.3	M	M	M	C	C	M	M	A	A	A	A					
18						1.9	2.6	2.9 ^s	(3.1) ^β	3.3 ^β	B	B	3.6	A	B	A	A	A	A					
19						A	2.6 ^s	3.1	3.2	3.4 ^s	3.5	B	B	C	C	C	C	A	A					
20						1.9	2.3	3.0	3.4	B	3.6	B	B	B	B	B	B	A	A					
21						A	2.7	2.9	3.3	B	B	3.6 ^β	C	C	B	A	A	2.3 ^A	A					
22						2.0 ^H	2.5	3.0	(3.2) ^β	3.4	B	A	A	A	B	B	A	A	A					
23						A	2.6 ^f	3.0	3.3	3.5	3.6 ^β	3.4	A	A	B	A	B	B	2.2 ^s					
24						A	2.4	B	B	B	B	B	B	B	A	A	A	A	A					
25						A	2.6	B	3.2 ^s	3.3 ^β	B	B	B	B	B	B	F	2.7 ^s	2.2 ^f					
26						2.0	2.4	2.8	3.2 ^s	3.3 ^s	3.5	3.5	B	A	B	B	2.8	2.6 ^s	2.0 ^A					
27						1.8 ^A	2.3	2.8	3.0	3.2	A	B	B	B	B	A	C	C	A					
28						A	2.3	2.8	3.3	B	B	B	B	B	3.2	2.8	A	2.7 ^A	A	T				
29						A	2.2	B	T	T	T	T	T	T	A	A	A	A	A					
30						1.6 ^A	2.2	2.7	A	A	A	B	A	A	A	A	A	A	A					
31						1.9	2.5	2.9	3.2	3.3	3.4	3.5	3.5	3.4	3.3	3.3	3.1	2.9	2.0					
Mean Value						1.8	2.4	2.9	3.2	3.3	3.5	3.5	3.5	3.4	3.4	3.3	3.2	2.7	2.0					
Median Value						1.4	2.8	2.5	2.4	1.9	1.3	8	3	6	8	11	16	18	16					
Count																								

foE

Sweep 1.0 Mc to 17.2 Mc in 2 min

Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N
Long. 139° 29.3E

Kokubunji Tokyo

IONOSPHERIC DATA

07 E

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	100	100	100	100	(100) ^C	100	A	A	100	100	100	100	100					
2						A	100	100	100	100	100	100	100	100	100	100	100	100	100					
3						A	C	100	100	A	100	100	100	100	100	100	100	100	100					
4						A	100	A	100	100	100	100	100	100	100	100	100	100	100					
5						120	100	100	A	A	B	100	100	100	A	100	100	100	100					
6						110	110	100	A	100	100	100	100	100	100	100	100	100	C	A				
7						120	100	100	100	100	100	A	A	100	100	100	100	100	100					
8						120	100	100	100	100	100	B	100	100	100	100	100	100	100					
9						120	110	100	100	100	100	B	100	100	A	B	100	100	100					
10						A	100	100	100	100	100	100	100	100	100	100	100	100	100					
11						C	C	C	100	100	100	B	B	100	100	100	100	100	100					
12						A	110	100	100	100	100	100	100	100	100	100	100	100	100					
13						A	100	100	100	100	100	A	110	110	100	B	B	B	110					
14						110	100	100	100	100	100	100	B	100	100	100	100	100	100					
15						A	110	100	100	100	100	B	110	110	B	B	100	100	100					
16						100	100	100	100	B	110	B	B	100	100	100	100	100	100					
17						110	100	100	M	M	C	C	M	M	A	A	A	A	A					
18						110	100	100	100	100	100	B	B	100	A	B	A	A	A					
19						A	110	100	100	100	100	B	B	C	C	C	C	C	A					
20						120	100	100	100	B	100	100	100	100	100	100	100	100	100					
21						A	100	100	100	100	100	100	C	C	110	A	A	110	A					
22						110	100	100	100	100	100	A	A	A	B	B	A	A	A					
23						A	100	100	100	100	100	A	A	110	A	B	100	100	100					
24						A	100	100	100	100	100	100	100	100	A	A	100	100	100					
25						A	100	B	100	100	100	100	100	100	100	100	100	100	A					
26						130	110	100	100	100	100	100	100	A	100	B	100	100	100					
27						120	100	100	100	100	A	100	B	100	B	A	C	C	A					
28						A	110	100	100	100	100	100	100	100	100	100	100	100	A					
29						A	100	100	T	T	T	T	T	T	A	A	A	A	A					
30						110	110	100	A	A	A	100	A	A	A	A	A	A	A					
31						120	100	100	100	100	100	100	100	100	100	100	100	100	100					
Mean Value						120	100	100	100	100	100	100	100	100	100	100	100	100	100					
Median Value						120	100	100	100	100	100	100	100	100	100	100	100	100	100					
Count						14	28	27	25	23	23	18	16	19	17	16	21	18	15					

Sweep 1.0 Mc to 17.2 Mc in 2 min Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35°42.4'N
Long. 139°29.3E

Kokubunji Tokyo

135° E Mean Time

fEs

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	3.8 ^S	3.7 ^F	4.6 ^S	6.6	2.4 ^F	3.8 ^S	3.9 ^S	4.7 ^Y	4.6	6.8	C	6.6	4.2	5.3	7.0	7.6	8.2	9.4 ^S	7.0 ^S	3.1 ^F	3.5 ^S	2.3	3.6 ^Y		
2	3.8 ^S	3.8 ^F	5.8	3.7	3.8	3.4	3.6	4.5	6.8	6.2	6.2	5.5 ^Y	5.0 ^Y	G	6.8	8.2	8.8 ^S	7.2 ^S	6.6	4.6 ^S	7.8	C	3.7		
3	3.1	2.9	3.2	3.5 ^Y	2.5	12.2	C	6.6	6.8	5.8	3.8	G	7.8	6.7	5.4	5.2	4.6 ^Y	5.3 ^S	6.0	8.2 ^Y	8.9	7.4	6.5	3.8 ^F	
4	3.7 ^F	3.8 ^F	2.9 ^F	2.4	2.4	3.1	6.5 ^Y	9.4	9.0	8.2	8.4	7.2 ^S	6.6 ^Y	6.8 ^Y	5.0 ^Y	6.4	G	6.8	7.1 ^S	10.4 ^S	6.8	7.2 ^Y	6.8 ^Y	9.8	
5	3.2 ^F	3.6 ^F	4.2 ^F	2.8 ^F	2.1	3.1	5.0 ^Y	5.6	6.8	6.8	E	8.4 ^Y	5.4 ^Y	6.7 ^Y	3.7 ^Y	6.3 ^Y	3.8 ^Y	3.7 ^Y	6.8	6.8 ^Y	4.5 ^Y	3.7	2.9 ^S	3.7	
6	2.8	1.9	2.0 ^F	2.6 ^S	E	2.5 ^Y	2.9	4.6 ^Y	5.2 ^Y	6.6 ^Y	5.6 ^Y	5.4 ^Y	5.4 ^Y	6.6 ^Y	5.6 ^Y	9.4 ^S	5.8 ^Y	C	7.0 ^S	6.4 ^Y	2.3 ^Y	2.9	2.3 ^S	3.1	
7	2.5 ^F	2.3	2.1	2.4 ^S	2.1 ^Y	3.8 ^Y	6.8 ^Y	8.9 ^S	8.8 ^Y	13.4 ^Y	13.6	13.6	13.6	13.6	13.6	5.4 ^S	5.1 ^Y	4.6 ^Y	5.6 ^Y	3.7 ^Y	3.7 ^Y	5.8 ^Y	3.8	3.8	
8	5.7 ^Y	3.5	3.0 ^F	2.4 ^F	E	3.8	6.2	8.2 ^Y	7.2 ^Y	12.4 ^Y	9.0 ^Y	E	G	G	G	G	10.8 ^Y	9.0	6.8 ^Y	9.8 ^S	9.6 ^F	5.2 ^F	6.0 ^S		
9	6.0	3.6	3.7 ^F	2.8 ^S	E	G	4.3 ^Y	3.7	6.0 ^Y	5.0 ^Y	7.0	5.2 ^Y	6.7 ^S	6.6 ^Y	E	E	G	3.8	6.6	8.5 ^S	6.8 ^F	6.8 ^Y	5.6 ^F	6.8 ^F	
10	3.6	2.6 ^S	3.6	3.0	3.7 ^F	2.9 ^F	4.6	7.4	7.6 ^Y	11.8 ^Y	8.8 ^Y	11.8 ^S	7.2 ^Y	12.0 ^F	13.6	5.2	5.6 ^Y	11.5 ^S	12.2	6.8	3.8	5.1 ^Y	C	C	
11	C	C	C	C	C	C	C	C	5.7	7.2	6.1 ^Y	E	E	G	13.6	7.0 ^Y	5.6 ^S	6.8	3.9	2.9	5.2	M	M	6.8	
12	5.8 ^F	5.7 ^F	5.4 ^F	3.7 ^F	3.7 ^F	2.9	2.8	9.4 ^S	12.0	8.9	6.6	6.7 ^Y	G	G	G	G	4.6 ^Y	4.5 ^Y	5.5	4.5 ^Y	7.6 ^F	8.4 ^F	7.0 ^S	3.8 ^F	
13	6.8 ^F	5.2 ^F	6.8 ^F	6.0 ^F	3.8	4.2	12.8 ^F	9.4 ^S	7.6	9.9	9.4 ^Y	9.8 ^Y	4.3 ^Y	G	G	E	E	6.0	4.8	6.5	5.2 ^F	8.2 ^F	5.8 ^S	3.2 ^F	
14	3.9 ^S	5.2 ^S	3.6 ^F	3.4 ^S	3.8 ^F	G	3.9 ^S	5.2 ^Y	8.9	10.6 ^Y	9.4 ^Y	5.5 ^Y	8.1 ^Y	9.4 ^Y	G	5.2 ^Y	5.0 ^Y	4.2 ^S	3.8 ^S	6.0	7.0 ^Y	6.8 ^F	6.0 ^S	6.0 ^S	
15	5.8 ^F	5.6 ^F	7.7 ^F	5.7 ^F	6.5 ^F	3.8	7.1 ^S	6.5	12.0 ^Y	5.6 ^Y	G	10.8 ^Y	G	4.5 ^Y	3.6	E	G	C	5.9 ^Y	6.8 ^Y	3.0	3.7 ^F	5.5 ^Y	4.8 ^Y	
16	3.7 ^Y	6.8 ^F	6.5 ^F	2.9	3.3	G	6.4 ^Y	4.7 ^Y	6.9 ^Y	6.8 ^Y	7.1 ^S	6.8 ^F	9.3 ^Y	11.0	10.8	7.7 ^Y	7.1	7.6	5.6 ^S	6.8 ^Y	12.4	6.8 ^F	6.8	3.7	
17	6.8 ^F	6.4 ^F	7.6 ^F	6.8 ^F	3.5 ^F	4.3 ^S	5.9	9.4 ^S	M	M	C	C	C	M	9.4	8.6	7.0	10.7	8.6 ^S	8.9 ^Y	13.6 ^F	11.2 ^F	9.6 ^F	5.7 ^S	
18	6.6 ^F	6.8 ^F	5.4 ^F	5.1 ^F	3.7 ^F	3.0	5.2 ^Y	7.0 ^S	5.6	9.8	13.6	11.4 ^F	10.3	13.6	11.0	13.6 ^Y	11.0 ^Y	11.8	9.4 ^S	7.1	6.8 ^F	10.9 ^Y	9.0	9.6	
19	8.8	11.2 ^F	6.8 ^F	12.0 ^F	7.0 ^F	5.2 ^F	6.8	11.1	9.8 ^Y	13.6	11.4 ^F	8.6 ^Y	11.1 ^Y	C	C	C	C	6.8	3.7	3.8	3.7 ^F	5.5 ^Y	11.1 ^Y	10.6 ^F	
20	13.6 ^F	5.7 ^F	3.8 ^F	6.3 ^Y	6.8 ^Y	5.8	6.4 ^Y	11.2	7.6	12.0 ^Y	13.6	13.6	10.9	4.2 ^Y	G	6.6 ^Y	6.9	6.0	5.7	3.8	3.7 ^Y	4.6 ^F	6.8 ^F	3.8	
21	7.4 ^S	4.8 ^S	6.3	5.3	5.5 ^Y	3.5 ^F	5.9 ^Y	9.3 ^S	10.6	6.8	9.8	5.1 ^Y	C	C	C	3.7	7.0	3.8	3.8	5.9 ^Y	4.6	5.3 ^Y	3.1 ^F	2.3	
22	2.9	2.3	E	2.0	2.3 ^F	G	5.6 ^Y	5.9	6.8	6.8	6.7	6.4 ^F	6.6	7.6	6.4 ^Y	6.4 ^Y	6.8 ^F	4.5 ^S	4.3	7.2 ^S	6.8 ^F	3.8 ^F	6.0	6.8 ^F	
23	7.2 ^F	9.2	6.6 ^F	5.6 ^F	3.7 ^F	2.8	3.6	8.9 ^Y	7.5	7.8	6.8 ^S	11.0 ^S	9.6 ^S	11.2	11.0 ^F	7.2 ^Y	13.1	13.6	13.0 ^S	12.8 ^F	13.6 ^F	11.0 ^F	9.0 ^Y	9.0 ^Y	
24	6.6	8.6	5.6 ^S	7.2 ^F	3.6 ^F	6.7	3.8	3.6	6.2	5.4	13.6	13.6	12.9 ^Y	D	14.0	7.0 ^Y	3.7	4.2 ^Y	4.3 ^Y	4.9 ^Y	D	D	6.0 ^F	5.4 ^S	
25	6.0 ^F	6.8 ^S	5.6 ^S	6.1 ^F	4.6 ^F	3.7	5.6	10.6 ^Y	6.8 ^Y	3.6	G	5.1 ^Y	13.6	12.6	8.4	7.8 ^Y	G	4.8 ^F	3.8 ^F	6.8	9.4 ^F	9.2 ^Y	6.6 ^F	6.8 ^F	
26	9.6 ^F	6.8 ^F	3.7 ^F	2.3 ^F	2.4 ^F	3.7	5.3	5.1	6.8	6.8	7.8 ^S	7.8 ^S	6.8	4.8 ^Y	6.6	E	5.0 ^Y	3.8	3.7	3.8	2.5	2.4 ^S	3.7 ^Y	6.5 ^Y	
27	3.8 ^F	5.6 ^F	6.8 ^F	3.8 ^F	2.4 ^F	3.4 ^Y	6.0 ^Y	7.0	8.0	6.8	14.7	10.3	14.0	13.3	13.7	12.0	C	C	6.8	3.8 ^Y	3.1	2.9	3.6 ^Y	3.0	
28	6.8 ^Y	8.6 ^Y	6.8	3.6 ^Y	3.7 ^Y	3.1	5.4 ^Y	5.3 ^Y	6.5	12.8	11.1	9.0	5.0	7.2 ^F	11.8 ^F	8.8	3.6	3.5 ^Y	T	2.9	3.0	3.7	3.1	6.6 ^Y	
29	3.7	3.7	3.6 ^Y	3.7	3.0	2.7	5.6 ^Y	7.8 ^Y	T	T	T	T	T	8.7	6.6	7.2	5.6 ^Y	6.9	7.0	5.5	3.9 ^Y	3.8	3.1 ^F	2.8	
30	3.9	2.7 ^Y	2.4 ^Y	2.6	E	2.2 ^Y	3.8 ^Y	4.6	6.8	5.5	7.4	6.2	7.0	5.6	3.7	3.7 ^Y	3.8 ^Y	3.6 ^Y	5.3 ^S	6.2 ^Y	6.5 ^Y	7.0 ^S	3.8	7.1 ^F	
31																									
Mean Value	5.2	5.2	4.9	4.4	3.7	4.0	5.4	7.1	7.5	7.8	8.2	7.6	8.0	8.0	7.3	7.1	6.4	6.2	6.4	6.3	5.5	5.8	5.7	5.3	
Median Value	5.7	5.2	4.6	3.7	3.5	3.4	5.4	7.0	6.8	6.8	7.8	7.0	6.8	6.7	6.4	6.4	5.4	6.0	5.9	6.6	5.2	5.8	5.8	5.4	
Count	29	29	29	29	29	29	28	29	28	28	27	27	27	27	29	29	28	27	29	30	30	29	27	29	

Sweep 1.0 Mc to 17.2 Mc in 2 min Automatic

fEs

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 35°42.4'N
Long. 139°29.38E

Jun. 1951

(M3000)F2

Kokubunji Tokyo

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.8 ^F	2.7 ^F	(3.0) ^F	2.9 ^F	(3.0) ^S	3.0 ^S	3.4	3.3	3.1	3.3	(3.2) ^C	3.0	3.2	3.0	2.9	2.9	A	3.1	A	(3.2) ^P	(3.2) ^P	(2.8) ^P	(2.8) ^P	3.0	
2	(2.8) ^F	(2.8) ^F	(2.8) ^S	(2.9) ^F	(2.8) ^F	3.4	3.2	3.2	3.2	3.2	2.9	2.9	2.8	2.7	2.7	A	(3.0) ^P	S	(3.3) ^P	(3.4) ^P	S	(2.8) ^S	C	B	
3	FS	(2.8) ^F	FS	FS	A	C	3.1	3.3	3.3	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.1	2.9	3.1	(3.4) ^P	A	A	S	FS	
4	FS	(2.9) ^F	(3.0) ^F	3.4	2.8 ^F	3.2	A	A	A	A	A	A	3.2	A	3.0	S	3.0 ^P	3.1 ^P	2.9	AS	3.1	A	A	A	
5	(2.9) ^F	(2.8) ^F	3.1	(2.8) ^F	2.9 ^F	3.1	3.5 ^S	3.5 ^S	3.3	3.1	S	B	A	3.0	2.9	3.2	3.3	3.2	3.1	A	B	B	(2.8) ^P	(2.8) ^S	
6	2.8	2.9	2.8	2.9	3.0	3.3	3.3	3.4	3.1	2.9	2.9	2.8	2.8	3.0	2.9	A	2.8	(3.0) ^C	(3.2) ^S	BS	S	2.7 ^S	(2.7) ^S	2.7	
7	B	2.8	2.9	2.8	2.9	3.0	2.7	A	A	A	A	A	A	2.7	2.7	(2.6) ^K	2.7	3.1	3.2	3.1	2.9	A	2.7 ^F	2.7	
8	2.7	2.7	2.9	2.8	2.8	2.7	A	A	2.9	A	A	A	B	2.6	2.7	2.8	2.9	A	3.2	A	A	2.7 ^S	(2.7) ^F	FS	
9	2.8	3.1	(2.7) ^J	BS	3.1	3.0	3.0	3.4	3.0	3.0	2.8	2.8	(3.1) ^S	2.8	2.8	2.8	(3.0) ^C	3.2	3.2	A	A	A	A	A	
10	3.0 ^F	(2.7) ^F	(2.9) ^J	(2.9) ^J	3.4	3.3	A	A	A	A	A	A	3.0	A	A	(3.1) ^S	3.2	A	A	S	(2.9) ^F	2.8 ^F	C	C	
11	C	C	C	C	C	C	C	C	2.9	3.0 ^P	2.9	B	B	2.8	3.0	2.9	3.0	2.8	3.1	(3.1) ^J	B	M	M	BS	
12	BS	F	2.9 ^F	2.8 ^F	2.8	2.9	3.0	A	2.8	A	3.0	(3.0) ^S	2.9 ^S	2.9	2.8	3.0	(2.9) ^S	3.0 ^S	(2.8) ^P	(2.9) ^P	A	A	A	BS	
13	A	B	BS	B	B	3.3	3.2	S	A	A	A	AS	2.9	2.9	2.9	2.9 ^S	B	2.9	B	(2.9) ^S	(3.0) ^S	2.8 ^F	2.7 ^Z	FS	
14	FS	2.7 ^F	FS	3.0 ^F	3.0 ^F	(3.0) ^F	2.9	2.8	2.9	A	2.9	2.8	2.9	2.8	2.8	2.9	2.8	2.9	3.0	(3.0) ^S	A	A	A	A	
15	S	S	BS	BS	3.1 ^F	3.0 ^F	A	3.3 ^P	A	3.1	2.8	A	2.7 ^S	2.9	2.9	B	2.7	(2.8) ^C	2.9 ^P	S	3.0	2.6	SF	SF	
16	SF	2.7 ^F	(2.9) ^P	(3.4) ^V	(3.0) ^J	3.1	A	2.6	3.2 ^P	2.8	2.9 ^P	2.9	2.9	A	A	3.1	2.8	(3.0) ^P	2.8	2.9	A	SF	(2.8) ^P	B	
17	3.1 ^S	B	A	(3.0) ^F	3.1 ^F	3.2	2.8	A	M	M	M	C	C	M	2.9	2.9	3.1	A	A	3.2 ^P	A	A	A	2.9 ^F	
18	2.9	A	2.9 ^F	2.8	2.7 ^F	2.6	2.9	2.7	2.6	A	2.7 ^S	2.5	2.7	A	A	A	A	A	A	2.9	2.9 ^F	2.7 ^P	A	A	
19	A	A	2.8 ^F	A	2.7	A	A	A	A	A	A	A	A	C	C	C	C	(2.9) ^S	(2.9) ^S	3.2 ^S	(2.7)	2.6	A	A	
20	A	(3.2) ^F	S ^K	(2.6) ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	(2.7) ^K	2.9 ^K	3.0 ^K	3.0 ^K	3.0 ^K	3.1 ^K	(3.1) ^P	2.9	2.9	2.8 ^F	
21	A	A	A	A	3.2	B	A	A	A	A	2.8	2.6	C	C	(2.8) ^P	(3.0) ^P	2.9	2.9	BS	.8S	(3.1) ^P	2.6	2.7 ^S	2.7	
22	2.7	3.0	3.0	2.9	2.8	3.0	3.3	3.0	3.1	3.5 ^P	2.9	2.7	2.8	2.7	2.9	2.8	2.9	2.9	BS	(3.0) ^S	A	(3.0) ^S	2.8 ^V	FS	
23	A	(3.0) ^A	A	2.8	2.8 ^Z	2.8 ^V	2.8 ^V	2.8 ^V	3.1 ^S	A	A	A	A	A	2.7	(3.1) ^J	A	A	A	A	2.8	A	2.8	A	A
24	2.9 ^S	A	A	A	3.0 ^F	3.0 ^F	3.1	2.9	2.9	3.0 ^S	A	A	A	A	(2.9) ^P	2.9	2.9	2.9	2.9	S	AS	A	FS	F	
25	F	SF	F	(2.9) ^F	(2.6) ^F	2.6	3.0	3.6 ^P	(2.9) ^P	2.8	2.8	A	A	A	B	2.9 ^S	2.9 ^S	2.9 ^S	(3.1) ^P	2.9	F	AS	S	S	
26	A	FS	BF	3.3 ^F	F	2.8 ^V	3.0	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	2.7 ^F	2.8 ^K	AS ^K	BS ^K	2.7 ^K	2.7 ^K	2.8	2.9	(3.0) ^P	2.6	B	AS	
27	FB	(2.9) ^S	A	(2.7) ^F	(2.8) ^B	3.5 ^K	A	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	AS ^K	C ^K	C	3.3 ^V	3.1	2.7	2.9 ^F	B	
28	A	A	A	B	B	B	3.1	3.6	2.8 ^K	AS ^K	AS ^K	AS ^K	2.6 ^K	3.1 ^K	2.9 ^K	2.8	2.9	2.9	T	(3.1) ^J	3.0	3.1	BS	A	
29	B	B	BS	(3.1) ^F	3.1	3.0 ^P	A	A	T	T	T	T	T	2.9 ^S	2.8	2.7	3.1	3.0	3.0	3.1	3.1	2.8	2.6	2.6	
30	2.8	(2.9) ^P	3.2	3.2	B	(3.1)	(2.8) ^P	3.1	3.2	3.1	2.8	2.7	2.9	(2.9) ^P	3.1	3.1	3.2 ^S	2.9	(3.2) ^F	3.5 ^S	3.0	A	BS	A	
31																									
Mean	2.7	2.9	2.9	2.9	2.9	3.0	3.1	3.1	3.1	3.1	2.9	2.8	2.9	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.0	2.8	2.7	2.8	
Minimum	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.8	2.9	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.0	2.8	2.7	2.8	
Value	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.8	2.9	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.0	2.8	2.7	2.8	
Count	12	17	15	22	20	25	21	16	17	14	14	13	16	18	22	21	24	23	20	19	17	16	10	8	

Recep. 1.0 Mc to 11.2 Mc in 2 min Automatic

K 9

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35°42.4'N
Long. 139°29.8'E

IONOSPHERIC DATA

Jun. 1951

fminF

135° E Mean Time

Kokubunji Tokyo

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1.3	1.4	1.2	1.5	1.3	3.2	2.3	3.3	4.1	4.8	4.4	4.1	4.8	5.1	4.8	6.2	A	5.2	4.9	5.5	2.0F	1.5S	1.3S	1.8	
2	2.9	1.3	4.7S	2.4	A	1.2	3.2	4.1	6.0A	5.0A	4.8	4.8	4.6	4.1	6.0	6.1A	6.8A	AS	A	AS	6.8A	6.8A	C	A	
3	1.4	1.4F	2.1F	1.3	1.6	A	C	4.6A	4.1	A	A	4.1	5.5	5.0	5.0	5.0	4.1	4.8	5.0	6.4	A	A	1.5	1.4	
4	AF	1.3	1.8	A	1.1	2.0	5.4	A	A	A	A	5.2A	6.3A	6.3A	5.0	5.3	3.4	3.3	6.2A	A	5.6	A	A	A	
5	1.1F	2.3	2.7	1.8	1.3	3.0	4.2	4.4	5.0A	4.8A	5.9	A	5.2	B	4.7	4.1	4.2	3.4	6.2A	A	A	2.2A	1.6	4.4S	
6	1.4	1.2	1.2	1.1	1.1	2.3	3.2	4.1	4.6	5.8	4.9	4.9	5.7	6.2	5.4	A	4.6	C	A	A	1.3	1.8	1.3	2.3F	
7	1.5	1.3	1.4	1.3	1.3	2.0	4.6S	A	A	A	A	A	4.9	4.7	5.0	5.0	4.9	3.5A	4.6	3.4	A	A	1.5F	A	
8	A	2.2F	1.5	1.2	1.2	3.4	5.5	5.8A	5.0A	A	A	B	B	4.2F	5.0	4.6	6.3A	A	6.1A	A	4.4	5.0A	A	A	
9	4.5A	2.8	3.2A	1.1F	1.2	1.9	3.3	3.5	5.1	4.4	6.2	5.9	6.1	5.3	5.5	4.4	4.5	3.2	5.2	A	5.0S	4.4	A	4.6	
10	2.2	1.2	3.4	A	(3.4)	3.4	4.1	A	A	A	A	A	5.7	A	A	4.6	5.0	A	A	A	3.5	3.2	C	C	
11	C	C	C	C	C	C	C	C	4.9	6.0	4.8	B	B	5.1	8.8	6.9	5.1	6.2	3.2A	1.9	A	M	M	5.2	
12	4.9	4.5	2.4	A	A	2.3	4.2	A	5.0A	A	5.4	5.2A	5.4	5.2	4.4	5.4	4.1	3.5	4.8	3.5	A	A	A	1.8	
13	A	4.4	5.0	3.3	2.3	A	5.2	A	5.8	A	A	5.5	5.0	5.1	5.0	B	B	6.5	A	6.1	2.8	2.5	4.5	1.5	
14	(2.0F)	3.3F	1.4	1.8	2.8	2.0	2.9	4.6	5.1	A	6.4	4.9	B	7.2	5.1	4.7	4.6S	3.5	3.0	5.3	A	A	A	4.4	
15	2.8	1.3	A	1.4	2.6	3.3	A	5.0	4.7	5.4	5.4	A	5.6	4.9	4.9	B	4.3	[4.8]	5.2	5.8	2.5	1.5	A	4.4	
16	3.3F	A	4.6	E	1.7	2.4	A	4.4	4.4	6.1	5.4	5.2	6.6	A	A	6.9A	6.9A	4.8	3.4	5.0	A	1.6	6.0	4.6	
17	6.0	6.0	A	4.9	2.2	3.3	5.1	A	M	M	M	C	C	M	7.5	7.6	6.6	A	A	6.5	A	A	A	2.4	
18	4.8	A	2.0	3.4	2.2F	2.2	3.4	5.2	4.6	A	6.6	6.2	8.0	A	A	B	A	A	A	6.0A	5.0	5.0	A	A	
19	A	A	5.1	A	4.8	A	A	A	A	A	A	A	A	C	C	C	C	5.0	3.0	3.2F	3.3A	3.2	A	A	
20	A	(2.2F)	4.5	2.7A	3.2A	4.8	A	A	A	A	A	A	A	5.0	5.8	5.9A	5.6A	5.0	4.9	3.2	1.5	3.4	A	A	
21	A	A	A	A	A	3.0	A	A	A	A	6.1A	4.9	C	C	5.1	4.6	5.0	3.4	5.2	4.1	5.1	2.4A	1.9	1.2	
22	1.3	1.3	1.2	1.2	1.3	2.2	3.1	4.5	4.8	4.6	5.1	4.9	6.0	6.0	6.1	6.4	5.0	3.3	3.5	A	3.2	3.2	5.0	A	
23	A	6.0	A	A	3.3	2.3	3.4S	4.8	A	A	6.2	A	A	A	6.1	6.2	A	A	A	A	2.2	A	A	A	A
24	6.0F	A	A	A	2.0	3.2	4.8	3.4	5.0	4.8	A	A	A	A	5.5	5.5	3.5	3.3S	3.2S	3.3S	3.3S	AS	AF	AF	
25	AF	A	4.4S	A	2.2F	2.2	5.0	4.9	5.4	4.5	5.1	5.5	A	A	A	7.4	5.0	4.2	4.4	4.8S	4.8F	2.7	A	A	
26	A	4.8S	2.2F	1.3	1.1F	3.3	4.6	4.5	A	A	A	A	4.9	4.9	A	B	4.5	3.4	2.8	3.2	2.6S	1.6	A	2.8	
27	A	1.2	A	1.4F	1.2F	2.7	A	A	A	4.6	A	A	A	A	A	A	C	C	A	3.4	2.5	1.8	2.0	A	A
28	A	A	A	1.8	1.8	A	A	4.7	4.5	A	A	A	4.7	4.3	5.6A	4.8	3.4	3.2	T	2.0	2.3	4.8	A	A	
29	A	A	3.4	3.3	2.7	2.7	5.0	A	T	T	T	T	T	5.0	5.6	5.2	4.4	6.9	6.5	4.4	2.5	3.5	1.8	2.0	
30	2.0	1.3	1.1	1.6	1.1	2.0	3.3	4.6	4.2A	4.7A	5.0	4.7A	4.9	4.8	4.9	4.5	5.2	3.0	3.3	1.6	5.0	A	A	A	
31																									
Mean Value	2.9	2.5	2.8	2.1	2.0	2.6	4.1	4.5	4.8	5.0	5.4	5.1	5.5	5.2	5.5	5.5	4.9	4.4	4.6	4.2	3.3	3.1	2.8	3.0	
Median Value	2.2	1.4	2.3	1.6	1.8	2.4	4.2	4.6	4.9	4.8	5.4	4.9	5.3	5.1	5.1	5.3	4.8	3.5	4.8	4.1	3.0	3.0	1.8	2.4	
Count	17	21	22	22	26	25	21	18	17	15	17	14	16	19	22	23	24	23	22	21	20	20	12	15	

Sweep 1.0 Mc to 17.2 Mc in 2 min Automatic

fminF

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35°42.4'N
Long. 139°29.8E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

fminE

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	1.1	1.2F	1.1	1.1	1.0	1.3	1.3	1.3	1.4	1.9	{2.0}	2.0	2.0	2.2	1.9	1.5	1.3	1.3	1.3	1.1S	1.2E	1.2S	1.4S	1.1S	
2	1.0	1.1	1.0	1.1	1.0	1.3	1.3	1.3	1.2	1.3	1.4	1.9	2.1	1.8	1.6	1.5S	1.3	1.3	1.2	1.1S	1.3S	1.2S	{1.1}	1.0	
3	1.0	E	1.0	E	E	1.1S	{1.2}	1.2	1.3	1.3	1.3	2.1	1.8	2.2	1.9	1.4	1.3	1.3	1.3	1.2	1.1S	1.3S	1.2S	1.2F	
4	1.1F	1.1	1.1F	1.1	1.3	1.1	1.2	1.3	1.3	1.4	2.2	2.2	2.2	2.1	1.8	1.7	1.4S	1.3	1.3	1.2	1.1S	1.4S	1.2S	1.1	
5	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3	1.4	2.2	E	2.2	2.2	2.3	1.5S	1.3	1.4	1.3	1.2	1.2	1.3S	1.3	1.3	1.1	
6	1.1	1.4	1.4F	1.1F	E	1.3	1.3	1.3	1.4F	2.0	2.2	2.2	2.2	2.6	2.1	1.5S	1.3	{1.3}	1.3	1.1	1.7	1.1	1.6	1.1	
7	1.0F	1.0	E	1.1	1.1	1.3	1.3	1.3	1.3	1.5	2.2	2.2	2.2	2.2	1.8	2.2	1.5	1.3	1.3	1.2	1.1	1.3	1.3	1.3S	
8	1.1	1.1	1.1	1.1	E	1.3	1.3	1.5	1.5	1.4	2.2	E	2.2	2.2	2.2	2.2	1.3	1.4	1.5	1.3F	1.4F	1.3	1.1	1.1S	
9	1.0	1.1	1.0	1.3	E	1.3	1.3	1.4	1.7	2.1	3.4	2.2S	2.2	3.4	3.4	E	1.8	1.3	1.3	1.3	1.1	1.4S	1.3	1.3	
10	1.1	1.0	1.1	1.0	1.0	1.1F	1.2F	1.3	1.3	1.3	1.9S	2.1	2.2	2.2	1.4	1.4	1.4	1.3	1.3	1.3	1.3S	1.3S	1.1	C	
11	C	C	C	C	C	C	C	C	1.3	2.1	1.6	E	E	2.2	2.2	1.5	1.5	1.4S	1.3	1.1S	1.1S	1.1	M	M	
12	1.1	1.1	1.0	1.0	1.2	1.9	1.9	1.9	1.9	2.0	1.8	2.2	2.2	2.2	2.2	2.1	1.5	1.4	1.3	1.1	1.4	1.3S	1.1F	1.1	
13	1.1F	1.1	1.1	1.1F	1.1	1.4	1.4	1.3	1.3	1.4	2.2	2.2	3.4	3.0	3.0	E	E	4.5	1.2	1.1	1.1	1.1S	1.2S	1.1	
14	1.1	1.0	1.1F	1.1	1.4	1.4	1.4	1.4	1.5S	1.8	1.5S	2.0	4.1	3.0	2.5	2.2	1.9	1.5S	1.4	1.3S	1.3	1.2F	1.2S	1.2	
15	1.1	1.2F	1.1	1.1	1.0	1.3	1.5	1.4S	2.0	2.2	2.2	4.4	3.4	3.4	3.4	E	2.1	{1.7}	1.3S	1.3	1.2S	1.1S	1.3S	1.1	
16	1.1	1.1	1.1	1.2	1.1	1.3	1.4	1.5	1.7	4.6	3.3	4.3	4.4	4.4	4.5	2.1	2.2	1.3	1.3	1.1	1.3S	1.3S	1.1S	1.1	
17	1.1	1.0	1.1	1.1F	1.1	1.3	1.6	1.4	M	M	M	C	C	M	M	2.2	1.7	1.7	1.3	1.1S	1.1S	1.1S	1.1S	1.2	
18	1.1	1.1F	1.1F	1.1	1.1F	1.4	1.3	1.5	2.2	2.2	2.2	4.6	3.6	3.4	2.2	3.3	1.8	1.3	1.3	1.1	1.4	1.1S	1.1	1.1	
19	1.1	1.0	1.0	1.0	1.1	1.3	1.4	1.4	1.4	2.2	2.2	4.1	4.1	4.1	C	C	C	1.5	1.4	1.1	1.1	1.4	1.1	1.1F	
20	1.1	1.1	1.1	1.1	1.1	1.4F	1.4	1.5	1.8	5.0	2.2	2.3	2.2	2.2	2.2	2.2	1.5	1.4	1.4	1.3	1.1	1.4F	1.3	1.1S	
21	1.1	1.1	1.2	1.2	1.1	1.3	1.4	1.3	1.4	1.9	2.2	2.2	C	C	2.6	1.9	2.0	1.3	1.3	1.3	1.3	1.3S	1.1S	1.4	
22	1.1	1.1	E	1.4	1.1	1.3	1.4	1.4	1.3	1.7	1.6	3.2	3.4	3.4	3.6	3.4	2.2	1.4	1.3	1.3	1.3	1.3	1.3	1.4	
23	1.0F	E	1.0F	1.1	E	1.1	1.2	1.3	1.3	1.9	1.7	2.6	2.2	3.4	2.2	4.5	1.7	2.1S	1.3	1.3	1.3	1.4	1.3	1.2S	
24	E	1.1	1.0S	1.0	1.0	1.1S	1.3	1.3	1.3	1.3	1.4S	2.2S	2.2S	3.0S	2.2S	2.1S	1.6S	1.3S	1.3S	1.3S	1.4	1.4	1.1F	1.1S	
25	1.0F	E	E	E	E	1.3S	1.3	3.6	1.8	1.7	2.3	2.4	3.4S	3.3	3.3	2.5	1.8S	1.4S	1.3	1.3	1.2S	1.4S	1.3S	1.2S	
26	1.0	1.1	1.1F	E	1.0F	1.3	1.3	1.4	1.7	1.5S	1.5S	1.5S	1.5S	1.5S	1.7	E	2.2	1.4S	1.3	1.2	1.1S	1.1S	1.2	1.1S	
27	1.1	1.1	1.1	1.1F	1.1	1.3	1.2	2.0	1.3	1.3S	2.9	2.0	4.2	1.9	3.5	1.9	2.2	C	C	1.1	1.3	1.4	1.4	1.2	
28	1.1	1.1	1.1	1.1	1.0	1.3	1.4	1.4	1.8	2.0	2.0	1.9	1.5	1.6	1.3	1.4	1.4	1.3	T	1.3	1.4	1.3	1.4	1.4	
29	1.1	1.1	1.1	1.1	1.1	1.3	1.4	1.4	T	T	T	T	1.8	2.0	2.0	1.4	1.4	1.2	1.2S	1.2	1.2	1.3	1.4	1.5	
30	1.4	1.1	1.2	1.1	E	1.3	1.4	1.3	1.4	1.4	1.2	1.3	1.6	2.1	2.3	1.9	1.5S	1.3	1.3	1.3	1.3	1.1	1.1	1.2	
31																									
Median Value	1.1	1.1	1.1	1.1	1.1	1.3	1.4	1.5	1.5	2.0	2.0	2.5	2.6	2.6	2.4	2.1	1.6	1.5	1.3	1.2	1.3	1.2	1.3	1.3	1.2
Count	24	24	24	24	24	24	28	24	28	28	28	28	27	28	28	24	28	29	24	30	30	24	28	28	28

Sweep 1.0-Mc to 1.7-Mc in 2 min. Automatic

K 11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

YPF2

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 39.3E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	9.0 ^F	8.0 ^F	8.0 ^F	6.0 ^S	6.0 ^S	10.0 ^S	8.0	8.0	11.0	A	C	6.0	6.0	4.0	9.0	A	A	6.0	A	(1.0) ^P	(9.0) ^P	(9.0) ^P	(7.0) ^F	5.0	
2	(5.0) ^F	(7.0) ^F	(7.0) ^F	(9.0) ^F	(7.0) ^F	(9.0) ^F	6.0	8.0	A	7.0	7.0	9.0	10.0	9.0	10.0	A	(8.0) ^S	S	(1.0) ^P	(8.0) ^P	S	(8.0) ^S	C	B	
3	SF	(9.0) ^F	SF	SF	SF	A	C	5.0	6.0 ^S	4.0	G	4.0	A	5.0	9.0	9.0	7.0	7.0	7.0	(7.0) ^P	A	A	S	SF	
4	SF	(8.0) ^F	(8.0) ^F	(7.0) ^F	(6.0) ^F	A	6.0	A	A	A	A	A	5.0	A	6.0	S	10.0	7.0	7.0	7.0	7.0	A	A	A	
5	(9.0) ^F	(9.0) ^F	9.0	(9.0) ^F	(7.0) ^F	9.0	7.0 ^S	7.0 ^S	A	17.0 ^S	B	A	4.0	B	10.0	6.0	7.0 ^S	5.0	A	A	B	B	(1.0) ^P	(1.0) ^P	
6	10.0	8.0	8.0 ^F	8.0 ^F	9.0 ^F	7.0	9.0	6.0	7.0	A	9.0	9.0	10.0	9.0	9.0	A	7.0	C	AS	BS	S	7.0 ^S	(8.0) ^S	8.0	
7	B	11.0 ^P	(1.0) ^P	10.0 ^P	10.0 ^P	(1.0) ^S	7.0 ^F	A	A	A	A	A	A	A	G	G	G	G	G	G	G	S	7.0 ^S	(8.0) ^S	8.0
8	9.0 ^F	8.0	9.0	10.0	9.0	10.0 ^F	6.0	A	6.0	A	A	A	B	G	5.0 ^K	9.0 ^K	A	A	A	A	A	(7.0) ^S	(8.0) ^F	10.0 ^F	
9	10.0 ^V	8.0	(1.0) ^S	(8.0) ^S	BS	10.0	10.0	6.0	6.0	12.0	A	8.0	(7.0) ^S	9.0	9.0	8.0	(8.0) ^S	7.0	9.0	A	A	A	A	A	B
10	11.0 ^F	(12.0) ^F	(7.0) ^F	(8.0) ^B	(8.0) ^F	5.0	6.0	A	A	A	A	A	7.0	A	A	(8.0) ^S	7.0	A	A	A	A	(8.0) ^P	8.0 ^P	C	
11	C	C	C	C	C	C	C	C	8.0	7.0 ^P	8.0	B	B	7.0	A	8.0	10.0	9.0	9.0	(9.0) ^P	B	M	M	BS	
12	BS	F	9.0 ^F	8.0	8.0	10.0	9.0	A	10.0	A	1.00	(8.0) ^S	8.0 ^S	9.0	8.0	(9.0) ^S	9.0 ^S	7.0	(1.0) ^P	(9.0) ^P	A	A	A	BS	
13	A	B	BS	B	B	6.0	9.0 ^S	A	A	A	A	AS	8.0	10.0	9.0 ^S	B	B	8.0	B	(1.0) ^S	(7.0) ^S	6.0 ^F	6.0 ^Z	FS	
14	FS	6.0 ^F	FS	6.0 ^F	9.0 ^F	(9.0) ^F	9.0	9.0	8.0 ^P	A	A	10.0	A	A	10.0	8.0	9.0	9.0	9.0	(9.0) ^P	A	A	A	F	
15	S	S	BS	BS	10.0 ^F	13.0 ^F	A	7.0	5.0 ^P	A	8.0 ^P	9.0 ^S	11.0	A	A	10.0	8.0	9.0	8.0	(9.0) ^P	A	A	A	F	
16	SF	8.0 ^F	(8.0) ^F	(1.0) ^P	(1.0) ^P	(1.0) ^P	A	7.0	A	9.0	G	A	9.0	A	A	A	A	A	(8.0) ^P	9.0	9.0	A	A	SF	
17	7.0 ^S	B	A	(8.0) ^F	7.0 ^F	9.0	12.0	A	M	M	M	C	C	M	A	A	A	A	A	A	A	SF	(7.0) ^P	B	
18	5.0	A	8.0 ^F	7.0 ^F	9.0	8.0 ^P	9.0	9.0	11.0	A	8.0 ^S	8.0 ^P	9.0 ^F	A	A	A	5.0	A	A	A	A	A	A	6.0 ^F	
19	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
20	A	(8.0) ^F	S ^K	(1.0) ^P	AS ^K	A ^K	A ^K	A ^K	A	A	A	A	A	A	C	C	C	C	C	C	C	(8.0) ^S	5.0 ^S	A	
21	A	A	A	A	A	8.0	B	A	A	A	9.0	10.0 ^P	C	C	(7.0) ^P	8.0 ^S	8.0 ^S	7.0	BS	BS	BS	9.0 ^S	9.0	6.0 ^S	
22	8.0 ^F	5.0	7.0	9.0	8.0	9.0	12.0	8.0	14.0	6.0 ^P	7.0	8.0	10.0	9.0	8.0	A	8.0	6.0	(9.0) ^S	A	9.0 ^S	6.0 ^V	FS	A	
23	A	(8.0) ^A	A	8.0 ^F	7.0 ^F	10.0 ^F	7.0	9.0	A	A	A	A	A	A	A	A	A	A	A	A	A	11.0	A	A	A
24	A	A	A	A	A	7.0 ^V	10.0 ^P	7.0	9.0	7.0 ^P	G	B	A	A	A	A	(1.0) ^S	8.0	11.0	10.0	S	AS	A	FS	F
25	F	SF	F	(9.0) ^F	(9.0) ^F	8.0	9.0	9.0	7.0 ^P	(7.0) ^P	G	B	A	A	A	B	10.0 ^S	11.0 ^S	(9.0) ^P	10.0	T	F	AS	S	
26	A	FS	BF	8.0 ^F	F	10.0 ^V	6.0	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	B ^K	G ^K	T ^K	10.0	6.0	(9.0) ^P	12.0	B	AS	
27	FB	(12.0) ^F	A	(9.0) ^F	(5.0) ^K	9.0 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	C ^K	A	7.0 ^V	11.0	7.0 ^P	B	AS	
28	A	A	A	B	B	B	A	B	G ^F	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	8.0	T	8.0	T	(8.0) ^P	8.0	B	BS	A	
29	B	B	BS	(6.0) ^F	9.0 ^B	8.0 ^P	A	A	T	T	T	T	T	T	11.0 ^S	13.0	9.0 ^P	6.0	A	A	7.0	8.0 ^P	9.0	8.0	
30	8.0	(9.0) ^P	6.0	8.0	B	(1.0) ^P	(1.0) ^P	8.0	10.0	4.0	7.0	G	7.0	(9.0) ^P	T	8.0	7.0 ^S	10.0	(8.0) ^P	6.0 ^S	A	A	8.5	A	
31	Mean Value	8.0	8.0	8.0	8.0	9.0	8.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	Value	9.0	8.0	8.0	8.0	9.0	8.0	7.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	Count	11	17	14	22	19	25	20	15	10	12	12	15	16	18	15	21	21	16	19	15	15	10	8	

YPF2

Sweep 1.0 Mc to 17.2 Mc in 2 min

Automatic

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

foF2

Jun. 1951

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	6.7 ^F	6.5 ^J	6.6	5.5	5.2 ^H	6.4 ^Z	6.6	7.9	6.0	6.7	7.0	7.1	7.1	7.3	A	8.1	9.1	9.4	8.7	8.1 ^J	A	6.7	6.9 ^S	7.0 ^H
2	6.6 ^P	6.5 ^J	6.8 ^H	5.9 ^H	5.9	6.3 ^P	7.8	7.3	9.1	8.0	9.4	A	8.4	8.4	9.1	9.5	11.1 ^J	12.3	11.7	7.9	5.7	5.7 ^S	7.0 ^F	6.4 ^E
3	6.4 ^J	6.8	(6.4) ^F	6.0 ^H	5.6	5.6	5.7	7.5	C	A	A	6.6	7.1	7.8	8.4	8.7	9.0	9.8	10.3	A	A	A	A	6.2 ^E
4	(6.0) ^F	6.8	(6.4) ^F	6.4	5.5	5.3	7.0 ^V	7.5	C	C	A	A	8.5	8.2	A	8.8	9.0	9.3	9.8	9.7	8.9	8.9	8.2	6.7
5	6.4	6.0	(7.1) ^P	(6.7) ^H	5.8	(5.8) ^H	7.2	7.7	8.3	7.3	A	A	8.6	9.0	8.3	8.6	9.4	9.4	8.2	8.0	7.9	7.9	7.9	7.4
6	7.0	F	7.9	6.7	5.8	6.1	7.1	6.6	6.9	7.1	A	8.6	9.5	11.3	9.3	9.6	9.8	9.6	8.9	A	A	6.6	C	6.5
7	5.5	6.5	6.3	6.4	5.5	5.7	6.0	6.6	7.3	7.3	A	A	A	7.3	7.2	7.5	7.7	7.6	7.3	A	(6.2)	A	A	F
8	6.2 ^F	6.9	A	A	A	4.7	6.7	A	A	A	A	A	A	6.1	(6.8)	7.2	7.6	7.7	5.9 ^K	(6.1)	7.0	6.0	5.3	4.8
9	5.8	7.2 ^F	A	5.4	5.5	5.8	6.9	6.7	A	A	A	7.8	9.2	A	A	9.3	9.7	B	8.8	A	A	A	7.9	7.6
10	(8.4) ^F	8.2 ^F	7.8	6.7	A	6.0	5.9	6.0	6.1	7.2	7.9	7.5	8.1	8.2	9.5	10.4	10.4	10.3	9.9	9.5	9.0	8.4	7.9	7.1
11	6.9	8.0 ^F	8.2	6.9	6.1	6.4	6.4	C	C	C	C	C	C	C	C	C	C	C	C	9.7	9.1	7.2	6.9	(7.4) ^F
12	8.0 ^F	8.7	8.4	7.6	7.5	7.0	6.3	6.9	A	7.2	7.4	G	7.2	8.2	9.2	9.1	8.9	8.7	7.9	7.5	7.3	7.4	5.2	7.7
13	7.4	8.4	7.0	7.1	6.9	6.8	7.2	8.0	9.3	A	A	A	10.8	A	8.1	7.9	8.5	9.4	9.8	(10.3) ^A	8.2	7.2	6.8	7.0 ^F
14	8.0 ^F	8.0 ^F	8.5 ^H	8.2 ^F	4.8	4.7	4.9	6.6	8.0	8.7	8.1	A	9.2	9.0	9.0	9.2	9.8	11.2	10.8	10.0	8.3	8.1	8.3	7.5
15	9.0 ^H	8.9	8.0	8.7	7.9	7.3	5.9	8.2	8.4	7.4	A	A	A	A	9.4	9.2	9.2	9.5	11.3	11.0	8.9	A	A	7.6
16	8.7	F	8.3	7.9	6.3	6.6	6.5	7.2	C	A	A	9.8	9.2	10.2	9.2	8.6	7.9	8.0	8.7	8.5	(8.5) ^F	8.5	8.9	9.0
17	9.0	8.9	7.7	(7.4)	7.0	6.6	6.5	8.3	9.6	A	8.4	A	A	A	A	A	A	A	9.3	8.7	8.6	7.9	7.6	7.4
18	7.3 ^V	8.6	F	6.9	5.6	4.8	5.9	5.9	7.7	A	A	8.6	10.1	10.7	10.4	A	8.9	9.0	8.7	8.0	7.4	7.2	7.1	6.3
19	F	7.4 ^F	7.0	A	A	6.2 ^F	A	A	A	A	A	A	A	A	A	A	A	10.4	10.5	9.4	8.7	8.3	8.6	5.0
20	A	A	A	A	A	4.6	5.0 ^K	5.3	A	A	A	A	A	A	A	7.2	A	7.5	6.7	6.2 ^Z	5.6	4.7	4.8	5.7
21	(5.7) ^H	6.0	5.6	5.5	A	5.7	6.2	6.1	A	6.9	7.8	A	7.8	9.9	10.0	9.9	9.7	10.6	8.8	8.7	7.9	S	6.1	6.6
22	F	8.2 ^F	7.7	7.1	8.2	6.6	6.6	C	C	C	C	C	C	C	C	C	C	C	C	C	7.0	A	A	A
23	A	A	6.6	F	F	S	6.2	6.7	7.4	A	7.5	9.0	7.6	7.4	6.6	7.4	8.2	10.4	8.0	6.8	6.7	A	6.1	6.1
24	A	A	A	A	(8.0) ^F	F	5.8	F	A	A	A	A	A	A	10.3	8.8	9.1	8.8	C	C	C	C	C	C
25	C	7.0	7.3	6.9	5.4	5.6	5.2	8.2	7.1	6.4	6.9	6.8	7.1	8.0	8.6	9.9	9.3	8.4	8.3	8.6	8.4	7.3	A	A
26	AS	A	6.8	7.0	6.6	5.5	7.2	6.1	S	S	S	9.6	A	A	6.4	6.7	7.1	6.6	7.6	8.2	7.7	5.6	5.6	5.6
27	6.6	6.7	7.0	5.1	4.5	3.5	4.2	4.9	4.8	5.1	A	(6.4)	6.6	6.0	6.4	7.0	7.6	A	A	A	BS	BS	FS	
28	BS	BS	B	B	B	B	B	B	B	B	A	A	A	8.0	9.1	9.1	8.9	A	A	8.4	9.6	9.0	7.2	6.7
29	6.1	6.1	6.5	4.6	3.4	3.5	4.8	6.3	7.0	7.3	A	A	A	8.7	9.4	8.5	A	A	A	8.0	8.1	6.7	6.2	5
30	6.9	7.1	8.1	S	4.2	3.8	5.3	8.0	7.4	7.6	A	7.4	8.1	8.9	9.3	9.0	9.3	7.3	7.8	7.4	A	A	A	A
31	Mean Value	7.0	7.4	7.3	6.6	5.9	5.7	6.1	7.0	7.5	7.2	8.0	8.3	8.4	8.6	8.6	9.0	9.2	8.8	8.5	7.8	7.2	7.0	6.7
	Median Value	6.8	7.1	7.0	6.7	5.8	5.8	6.2	6.8	7.4	7.2	7.8	7.4	8.1	8.2	9.1	8.8	9.0	9.4	8.7	8.2	7.9	7.2	7.0
	Count	22	23	24	23	23	27	28	24	15	14	10	13	18	20	22	25	24	23	26	23	20	20	24

Manual

Sweep 1.0-Mc to 18.5-Mc in 1.5 min

Y 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

f_oF₂

135° E Mean Time Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(3.50) ^F	(3.60) ^J	3.50	3.30	3.00	3.50 ^Z	3.00	2.80	2.80	3.10	3.60	A	3.60	3.40	A	3.60	3.60	3.00	3.00	(4.50) ^P	A	3.80	S	(4.00) ^H
2	3.90 ^H	(3.70) ^J	3.70	3.90 ^H	3.70	3.00 ^P	3.00	2.80	2.60	3.30	2.80	A	A	(3.00) ^J	(2.90)	3.10	(3.30) ^J	3.10	2.90	(2.80) ^A	(4.00) ^P	(3.90) ^S	(4.00) ^F	(3.50) ^F
3	(3.10) ^F	3.80	(3.70) ^F	3.90 ^H	3.80	3.60 ^F	A	A	A	A	A	A	A	3.50	3.40	3.50	3.30	3.50 ^F	3.00	A	A	A	A	4.00 ^F
4	A	3.60	(3.70) ^A	3.80	3.30	2.80	3.40	A	C	C	A	A	3.20	3.20	A	3.50	3.30	3.50	3.60	3.00	2.80	2.70	2.90	2.90
5	2.70	3.20	(3.20) ^H	(4.30) ^F	3.20	(4.20) ^F	2.90 ^V	2.60 ^V	2.60	A	A	A	A	A	A	A	3.50	3.30	3.50	3.10	3.00	3.30	3.50	3.30
6	3.60	F	3.00 ^H	3.00	3.00	2.90 ^P	3.00	2.70	(3.00) ^J	3.00	A	3.90	3.80	3.80	(3.80) ^K	3.90	3.40	2.70	A	A	S	C	(3.90) ^J	
7	3.60	3.40 ^P	3.00	2.90	3.10	3.60	3.10	(3.10) ^H	(3.10) ^J	3.20	A	A	A	A	3.90	3.80	3.60	3.00	A	(3.50) ^P	A	A	A	F
8	(3.40) ^F	4.50 ^F	A	A	A	3.60	3.10 ^P	A	A	A	A	A	A	A	3.60	3.70	3.70	3.10	3.80	A	3.10	3.50	3.50	3.90
9	3.80	3.40 ^F	A	3.90 ^F	(3.50) ^F	3.30	2.90 ^P	3.80	A	A	A	A	A	A	3.60	3.70	3.70	3.10	3.80	A	3.10	3.50	3.50	3.90
10	(3.50) ^F	(3.50) ^F	3.10 ^A	3.10	3.00	3.00	2.60 ^F	3.00	A	3.10 ^Z	3.00	3.90	3.60	3.70	3.50	3.70	3.60	3.40	3.20	3.10	2.80	3.00	3.40	3.60
11	3.20	(3.40) ^F	3.10 ^F	2.90 ^F	4.00 ^F	3.50 ^F	3.00	C	C	C	C	C	C	C	C	C	3.60	3.40	3.20	3.10	2.80	3.00	3.40	3.30
12	(3.90) ^F	3.50	3.70	3.30	4.20	3.90	3.60	(3.30) ^J	A	A	3.00	C	C	C	4.30	3.00	3.40	3.60	3.00	3.30	2.90	3.10	3.60	(3.80) ^C
13	4.10	3.80 ^H	3.10 ^H	3.00	3.00	2.90	3.00	2.80	2.50	A	A	A	2.60	A	3.40	3.70	3.80	3.50	3.70	3.00	3.30	3.80	3.40	3.60
14	(3.90) ^F	(4.00) ^F	(3.40) ^F	(2.60) ^F	2.90	3.10 ^F	2.70	(3.10) ^J	3.50	3.00	3.20	A	3.30	3.60	4.00	3.70	(3.60) ^J	3.50	3.30	3.50	3.60	3.90 ^Z	(3.90) ^J	(4.30) ^F
15	4.10 ^H	3.50	3.90	3.80	3.60	3.30	3.40	3.00	(3.00) ^A	(2.90) ^A	A	A	A	A	(4.00) ^S	4.10	4.10	4.00	3.70	3.40	3.00	A	A	(4.00) ^J
16	4.00 ^F	F	3.00	3.00	3.80	3.70	3.00	3.50	C	A	A	3.60	3.60	3.60	A	3.60	3.50	3.50	3.00	3.00	(3.20) ^C	3.50	4.00	3.90
17	A	3.60	3.90	C	(3.40) ^F	3.20	3.10	3.60	3.40	A	(4.00) ^J	A	A	A	A	A	A	A	A	A	A	A	A	3.80
18	4.00 ^H	3.80 ^H	F	3.50	3.20	3.20 ^F	3.00	A	A	A	A	4.20	3.60	4.00	3.80	A	(3.50) ^J	3.30	3.30	3.00	3.80	(3.60) ^B	4.20	A
19	F	(3.70) ^F	3.40	A	A	(3.30) ^F	A	A	A	A	A	A	A	A	A	A	A	3.20	3.00 ^H	(2.80) ^J	2.80	2.80	3.00	3.30
20	A	A	A	A	A	F	4.00 ^K	5.00	4.70	A	A	A	A	A	A	A	A	A	A	A	3.20 ^B	(3.00) ^K	3.00 ^K	3.70 ^K
21	(3.80) ^H	3.80 ^H	(3.10) ^F	3.40	A	3.20	2.90	2.80	A	A	3.20	A	4.20	3.80	3.70	A	3.60	3.40	3.20	(2.90) ^J	2.90	S	3.80	4.00
22	F	(3.70) ^F	(2.90)	(3.50) ^H	(3.40)	3.30	3.30	C	C	C	C	C	C	C	C	C	C	C	C	C	(2.60) ^A	A	A	AF
23	A	A	3.90	F	F	S	2.90	3.00	3.10	A	3.60	3.10	3.00	3.90	4.00	4.00	3.30	3.10	3.00	3.20	3.50	A	3.90	A
24	A	A	A	A	(3.80) ^F	FS	2.60 ^F	A	A	A	A	A	A	A	A	3.50	3.10	3.60	3.70	C	C	C	C	C
25	C	3.50	3.20	3.10	3.50	3.20	3.10	3.00	2.60	3.70	3.70	A	A	A	3.60	3.60	3.50	3.40	3.50	3.40	3.20	3.10	3.30	A
26	AS	A	3.70 ^S	3.40	3.90	3.00	3.20	3.00	S	S	S	A	A	A	A	A	A	3.50	3.90 ^{MH}	A	A	BS	BS	FS
27	3.50	4.20	3.00	3.30	3.30	3.20	2.50 ^K	3.00	2.90	A	A	A	A	A	A	A	4.00	3.80	A	A	A	BS	BS	FS
28	BS	BS	B	B	B	B	B	B	B	A	A	C	A	A	3.90	3.70	3.50	A	A	A	A	A	3.00	3.70
29	3.70	3.50	2.90	2.60	3.80	3.20	3.30	3.00	A	A	A	A	A	A	3.50	3.50	3.20	A	A	3.00	3.00	3.00	3.70	3.90
30	3.80	3.60	2.70	S	3.20	2.10	3.30	2.90	2.90	3.00	A	4.00	3.70	3.50	3.20	3.00	3.00	3.00	A	3.00	A	A	A	A
31																								
Mean Value	3.70	3.60	3.30	3.40	3.50	3.30	3.10	3.10	2.90	3.10	3.30	4.00	3.60	3.70	3.60	3.60	3.40	3.20	3.10	3.10	3.10	3.40	3.70	3.70
Median Value	3.80	3.60	3.20	3.40	3.50	3.30	3.00	3.00	2.90	3.10	3.20	4.00	3.60	3.80	3.60	3.60	3.60	3.40	3.20	3.00	3.00	3.30	3.70	3.80
Count	20	23	24	22	23	27	27	27	13	9	10	9	15	19	19	21	24	23	23	20	21	18	18	22

f_oF₂

Sweep 1.0 Mc to 18.5 Mc in 1.5 min

Manual

Y 2

39

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

RF2

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.00 ^A	3.00 ^A	2.90	2.80	2.80 ^N	2.80	2.70	2.80	2.70	3.00	3.60 ^A	3.40	3.80	A	3.50	3.30	3.00	3.00	4.50	A	3.70	3.20	3.20	3.20 ^H
2	3.00 ^H	3.00	3.10	2.90	3.00	2.90	2.70	2.80	2.50	2.70	2.80	A	2.70	2.80	2.80	2.80	2.90	2.90	2.80 ^A	4.00 ^A	3.30	3.30 ^F	3.30	3.30
3	3.40	3.50 ^A	2.90	3.40 ^H	3.00 ^F	2.90	2.90	3.80 ^A	A	A	3.80 ^A	4.10	3.50	3.40	3.50	3.40	2.90	3.20	2.90	A	A	A	A	4.00 ^E
4	A	3.50	3.60	3.60 ^F	3.70	3.00	2.50	2.70	C	C	A	3.20	3.20	(3.20)	3.30	3.30	2.90	2.80	2.60	2.50	2.60	2.60	2.60	2.60
5	2.50	3.00	2.50	3.00 ^A	3.00	3.00	2.50	2.30	2.40	A	A	4.00 ^A	A	3.50 ^A	3.60 ^A	3.40	3.00	2.40	2.90	2.90	3.00	3.00	2.80	2.70
6	2.90	3.30 ^A	2.50	2.50 ^H	2.70 ^H	2.50	2.50	2.50	2.90	3.00	3.80 ^A	3.60	3.20	3.40	3.80 ^K	3.70	3.00	2.40	A	A	3.70	C	3.90	3.90
7	3.20 ^A	3.00 ^A	2.70	2.60	3.10 ^A	3.10 ^A	2.70 ^H	3.00 ^H	3.00 ^A	3.20	A	A	3.90	3.80	3.70	3.70	3.40	2.90	3.00 ^A	A	2.90	A	A	3.20
8	3.20 ^F	3.20	A	A	(3.20)	3.00	2.60	A	A	A	A	G	G	5.50 ^K	4.30 ^K	3.70	3.60	3.00	3.60 ^K	3.00 ^A	3.00	3.00	3.00	3.20
9	3.30	3.50	A	3.20	3.10	2.40	2.60	3.70 ^A	A	A	A	4.10	3.90 ^A	A	A	3.40	3.70	B	A	A	A	A	3.60 ^A	2.90
10	3.30	3.50	A	3.20	A	2.60	2.10	2.40	3.20	3.10	3.00	3.90	3.50	3.70	3.10	3.20	3.10	3.00	3.00	2.60	2.60	2.80	3.10	2.90
11	2.90	2.90	2.90	2.20	3.00	2.90	2.50	C	C	C	C	C	C	C	C	C	C	C	C	2.80	2.50	2.60	3.30	3.40 ^C
12	3.50 ^A	2.90	3.00	2.90	3.10	2.50	2.50	2.50	A	(4.00)	3.00	G	4.30	4.00	3.40	3.10	3.20	3.00	3.00	3.00	3.20	3.30	3.30	3.00
13	3.80	3.00 ^H	2.40 ^H	2.60	2.50	2.60	2.50	2.50	2.50	A	A	A	2.60 ^A	A	3.30	3.50	3.30	3.20	3.50	A	3.00	3.80	3.60	3.90
14	3.60	3.60	2.70 ^H	2.40	2.20	2.50	2.50	3.00	3.10	3.00	3.00	4.00	3.30	3.40	3.70	3.60	3.40	3.00	2.70	2.60	3.30	2.80	3.30	3.50
15	3.20	3.00	3.20	3.00	3.20	2.80	2.80	2.80	3.00 ^A	2.90 ^A	A	A	A	A	3.60	4.00	3.90	3.70	3.10	2.80	2.90	A	A	3.90
16	3.50	3.50 ^E	2.90	2.50	3.80	3.50 ^A	2.90	3.10	C	A	A	3.60	3.60	3.40	3.40	3.60	3.50	3.50	3.50	3.00	(3.00)	3.00	3.80	3.60
17	3.60 ^A	3.50	3.90 ^A	C	2.90	2.80	2.50	3.30 ^A	3.40	A	4.00	A	A	A	A	A	A	A	A	A	A	A	3.60 ^A	3.10
18	3.00 ^H	3.00 ^H	2.70	2.60	3.00 ^A	3.00	2.60	3.40	A	A	A	4.00	3.40	3.80	3.50	A	3.50	3.20	3.20	2.50	3.40	2.80	3.40 ^A	4.30 ^A
19	A	3.40	2.90	A	A	2.80	A	3.40	A	A	A	A	A	A	A	A	A	A	A	A	3.00	2.50	2.80	3.00
20	3.50	A	A	A	A	2.80	A	4.60 ^K	A	A	A	A	A	A	A	A	A	A	A	A	3.00	2.80	2.80	2.90
21	3.00	3.00 ^A	3.00	3.00	A	2.80	2.50	2.60	A	3.70	3.20	A	4.20	3.50	3.40	3.60	3.30	3.20	3.00	2.40	2.40	2.20	3.50	3.80
22	3.00	2.80 ^A	2.40	2.70	2.60	2.70	2.50	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	A	AF
23	A	A	3.80	3.00 ^A	3.00	2.80	2.60	2.60	3.00	A	3.60	2.80	2.60	3.80	3.90	3.80	3.20	2.90	2.90	2.60	2.90	2.60	3.70	4.00
24	A	A	A	A	3.30	2.60 ^F	2.50	2.50	A	A	A	A	A	A	3.00	3.00	3.20	3.30	C	C	C	C	C	C
25	C	3.00	2.80	3.00 ^A	3.50	2.90	2.80	3.00	2.50	3.70	3.70	4.70	A	A	3.60	3.40	3.30	3.30	3.00	2.80	2.60	2.70	A	A
26	A	A	3.20	3.10	3.60	2.90	3.00	3.00	A	A	2.60 ^K	A	A	A	4.00 ^K	3.70 ^K	3.50 ^K	3.80 ^K	3.20	2.90	2.10	2.70	3.20	3.40
27	3.00 ^A	3.20	2.70	3.20	2.70	3.10 ^K	2.20	2.70	2.50 ^H	4.20	A	4.40	3.60	4.80	4.10	3.90	3.70	A	A	A	A	A	A	3.20
28	3.60	A	A	A	A	A	2.70	2.50	2.80	A	A	C	A	3.90	3.50	3.30	3.20	A	3.00	2.80	2.70	2.20	3.00	3.00
29	3.20	3.10	2.40	2.30	3.00 ^A	2.80	2.70	3.00	3.90	(3.20)	A	A	A	3.40	3.30	3.20	A	A	2.80	2.60	2.50	2.70	S	3.10
30	3.00	3.10	2.70	2.20	2.20	2.00 ^A	2.50	2.90	2.80	2.70	A	4.00	3.70	3.50	3.20	3.00	2.90	3.00	3.00	2.80	A	A	A	A
31																								
Mean Value	3.20	3.10	2.90	2.80	3.00	2.80	2.70	2.90	2.90	3.20	3.30	3.90	3.60	3.70	3.50	3.50	3.30	3.10	2.90	2.90	2.80	2.90	3.30	3.30
Median Value	3.20	3.00	2.90	2.90	3.00	2.80	2.60	2.80	2.80	3.10	3.10	4.00	3.60	3.50	3.40	3.50	3.30	3.00	3.00	2.80	2.80	2.80	3.30	3.20
Count	24	25	24	24	25	29	29	26	16	13	10	14	17	19	23	24	24	23	24	21	22	20	20	26

Sweep 1.0 - Mc to 18.5 - Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

foF1

135° E Mean Time

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	L	A	A	L	A	A	L	4.8	A	4.6	A	Q	L					
2						Q	Q	Q	Q	Q	Q	A	A	Q	A	Q	A	A	A					
3						A	A	A	A	A	A	A	A	A	A	A	4.5	A	A					
4						Q	Q	C	C	C	C	A	A	A	A	4.7	L	L	L					
5						Q	Q	A	A	A	A	A	A	A	A	A	A	L	L	Q				
6						Q	Q	L	A	A	A	A	A	5.0 ^A	A	A	4.7	L	L	Q				
7						Q	L	A	A	A	A	A	A	A	A	A	4.5	4.4	A					
8						Q	A	A	A	A	A	4.7	5.1	B	A	A	A	A	A					
9						Q	A	A	A	A	A	A	A	A	A	L	A	5.3	L					
10						Q	Q	A	L	5.5	A	A	A	A	5.4 ^J	5.0	4.8	4.5	L					
11						Q	Q	C	C	C	C	C	C	C	C	C	C	C	C					
12						Q	Q	A	A	A	A	5.9	5.6	5.5	4.9	4.8	L	L	L					
13						Q	Q	Q	Q	A	A	A	A	A	A	A	Q	4.9	A					
14						Q	L	L	L	5.0	A	A	5.3	5.5	5.6	A	4.8	4.8	A					
15						Q	Q	A	A	A	A	A	A	A	A	L	L	4.6	L					
16						A	L	C	A	A	A	A	A	A	A	L	L	A	A					
17						Q	A	A	A	A	A	A	A	A	A	A	A	A	A					
18						Q	A	A	A	A	A	A	A	L	A	A	A	A	A					
19						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
20						Q	A	A	A	A	A	A	A	A	A	A	A	A	L	L				
21						Q	L	A	L	A	A	A	A	L	B	A	A	Q	Q					
22						Q	C	C	C	C	C	C	C	C	C	C	C	C	C					
23						Q	L	L	A	L	L	L	Q	A	A	A	A	4.5	A					
24						Q	A	A	A	A	A	A	A	A	L	4.6	4.6 ^H	L	L	C				
25						Q	L	A	L	A	A	A	A	A	A	4.7	4.5 ^H	4.3	L					
26						L	L	S	A	A	A	A	A	A	A	A	A	L	L					
27						Q	A	A	A	A	A	A	A	L	4.5	4.5	A	A	A					
28						B	B	L	A	A	C	A	A	L	A	4.5	A	A	A					
29						Q	L	A	A	A	A	A	A	A	4.6	A	A	A	A					
30						Q	L	L	L	A	A	4.4	4.7	A	4.5	4.4	4.4	4.3	A					
31																								
Mean Value										5.0	5.5	5.0	5.2	5.2	4.9	4.6	4.6	4.6						
Median Value										5.0	5.5	4.7	5.2	5.2	4.8	4.6	4.6	4.6						
Count										1	1	3	4	4	6	10	8	9						

foF1

Step 1.0 Mc to 18.5 Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

R'F1

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	250	A	250	A	A	A	230	A	A	A	Q	250					
2							Q	Q	Q	Q	Q	A	A	Q	A	Q	A	A	A					
3							A	A	A	A	A	A	A	A	A	240	220	A	A					
4							Q	Q	C	C	A	A	A	A	A	230	260	260	270					
5							Q	Q	Q	A	A	A	A	A	A	A	A	270	Q					
6							Q	Q	220	A	A	A	A	230	A	A	300	260	Q					
7							Q	240	A	A	A	A	A	A	A	A	310	290	A					
8							Q	A	A	A	A	230	290 ^B	B	A	A	A	A	A					
9							Q	A	A	A	A	A	A	A	A	A	A	280	260					
10							Q	Q	A	240	A	A	A	A	A	210	210	210	270					
11							Q	Q	C	C	C	C	C	C	C	C	C	C	C					
12							Q	Q	A	A	A	240	240	220	280	250	270	280	A					
13							Q	Q	Q	A	A	A	A	A	A	A	Q	300	A					
14							Q	240	250	A	A	A	240	220	210	A	270	250	A					
15							Q	Q	A	A	A	A	A	A	A	260	270	280	A					
16							A	280 ^A	C	A	A	A	A	A	A	320 ^A	320 ^A	A	A					
17							Q	A	A	A	A	A	A	A	A	A	A	A	A					
18							Q	A	A	A	A	A	A	330	A	A	A	A	A					
19							A	A	A	A	A	A	A	A	A	A	A	260	Q					
20							Q	A	A	A	A	A	A	A	A	A	A	220	210					
21							Q	220	A	A	A	A	A	200	B	A	A	Q	Q					
22							Q	C	C	C	C	C	C	C	C	C	C	C	C					
23							Q	240	250	A	260	260 ^A	Q	A	A	A	A	280	A					
24							Q	A	A	A	A	A	A	A	220	200	210	230	C					
25							Q	270	A	240	260	A	A	A	A	260 ^A	230 ^H	230	250					
26							280	260	S	S	A	A	A	A	A	A	A	270	300 ^A					
27							Q	A	A	A	A	A	A	220	A	A	A	A	A					
28							B	B	(260 ^A)	A	A	C	A	B	A	A	A	A	A					
29							Q	260	A	A	A	A	A	A	230 ^A	A	A	A	A					
30							Q	260	220	220	A	200	200	A	200	260	240	300 ^A	A					
31							280	250	240	240	260	230	240	240	230	250	260	260	260					
Mean Value							280	260	240	240	260	240	240	220	220	250	260	270	260					
Median Value							1	9	5	5	2	4	4	7	5	9	12	17	17					
Count																								

Sweep 1.0-Mc to 18.5-Mc in 1.5 min

Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

foE

Jun. 1951

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	2.4	2.9	3.1	3.2	3.4	3.2	3.3	A	3.6	A	2.9	A					
2							1.6	2.6	A	A	A	A	A	A	A	A	A	3.4	2.8	A				
3							A	AF	A	A	3.2	A	3.5	A	A	A	A	A	2.9	2.3				
4							A	C	C	C	A	A	A	A	A	A	A	A	2.9	2.5				
5							2.0	A	A	A	A	A	A	A	A	3.5	A	A	A	A				
6							1.8 ^A	2.2 ^J	A	A	A	3.8	3.8	3.8	3.8	3.8	3.4	A	A					
7							A	2.4	3.0 ^A	A	3.4	3.4	A	3.7	3.7	3.6	3.3	3.0	2.6					
8							A	2.7	3.1	3.4	3.5	A	3.5	3.6	3.7	3.7	3.5	A	A					
9							2.4	A	A	A	A	A	A	A	A	A	A	B	2.7 ^J					
10							A	2.8	A	3.5	3.6	A	A	A	A	A	3.6	3.4	2.9 ^J	2.4 ^J				
11							A	C	C	C	C	C	C	C	C	C	C	C	C					
12							2.3	2.4	3.3	3.5	3.6	3.6	3.7	3.8	3.7	3.6	A	2.6	A					
13							2.2	A	A	A	A	A	A	A	A	A	B	A	A					
14							1.7	2.7	3.1	3.6	3.8	A	A	4.0	3.8	3.8	3.6	3.2	2.7					
15							A	A	A	3.6	A	A	A	A	A	A	3.8	3.4	2.8					
16							A	A	C	A	A	A	A	3.6 ^J	3.4	3.1 ^J	3.1	2.6	2.1					
17							A	A	A	3.2 ^J	A	A	A	A	A	A	A	A	A					
18							1.9	2.2 ^J	2.9 ^J	A	A	A	A	A	A	A	A	A	A					
19							1.8	2.7	A	A	A	A	A	A	A	A	A	A	A					
20							2.0	2.7	3.1	3.2	3.7	3.8	A	3.5	3.8	A	3.3	A	A					
21							A	A	A	3.4	3.5	3.5	3.5	3.5	3.4	A	3.0 ^J	A	A					
22							A	C	C	C	C	C	C	C	C	C	C	C	C					
23							2.2	A	3.0 ^J	A	A	A	A	A	A	A	A	3.1	2.5					
24							1.9	2.5	2.9	3.4	A	A	3.5	A	A	A	3.3	3.0	C					
25							A	A	3.0 ^J	3.4	3.3 ^J	3.5	A	A	A	A	3.8	3.3	B	A				
26							A	2.8	3.0	3.2	3.6	3.6	3.7	3.6	3.6	3.6	3.4	3.0	A					
27							A	2.7	A	A	3.4	3.4	A	A	A	3.4	3.4	A	2.5					
28							A	A	A	3.0	A	C	A	A	A	3.8	A	A	A					
29							2.2	2.8	A	A	A	A	3.5	3.6	3.7	A	A	A	A					
30							A	2.2	A	A	A	A	A	A	A	A	A	3.0	2.5					
31																								
Mean							2.0	2.5	3.0	3.3	3.4	3.6	3.5	3.6	3.6	3.6	3.4	3.0	2.5					
Mean							2.0	2.6	3.0	3.4	3.5	3.5	3.5	3.6	3.7	3.6	3.4	3.0	2.5					
Value							1.3	1.6	1.1	1.3	1.2	9	9	11	13	11	13	14	11					
Count																								

foE

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

f'E

Jun. 1951

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	110	110	110	110	110	110	110	A	110	A	130	A					
2							110	110	A	A	A	A	A	A	A	A	A	140	110	A				
3							A	AF	A	A	110	A	120	A	A	A	A	A	120	120				
4							A	A	C	C	A	A	A	A	A	A	A	A	120	120				
5							110	A	A	A	A	A	A	A	A	110	A	A	A	A				
6							120	100	A	A	A	100	110	100	100	100	110	A	A					
7							A	100	A	A	100	110	A	100	120	110	100	110	110					
8							A	100	120	100	100	A	100	120	100	100	100	A	A					
9							110	A	A	A	A	A	A	A	A	A	A	A	B	120				
10							A	100	A	A	100	A	A	A	A	A	100	100	100	110				
11							A	C	C	C	C	C	C	C	C	C	C	C	C	C				
12							110	110	100	100	100	100	100	100	100	100	100	A	100	A				
13							140	A	A	A	A	A	A	A	A	A	B	A	A					
14							100	110	100	100	110	A	A	A	110	110	120	100	110	120				
15							A	A	A	110	A	A	A	A	A	A	A	140	110	110				
16							A	A	A	C	A	A	A	A	A	100	100	100	100	100				
17							A	A	A	110	A	A	A	A	A	A	A	A	A	A				
18							110	110	110	A	A	A	A	A	A	A	A	A	A	A				
19							100	110	A	A	A	A	A	A	A	A	A	A	A	A				
20							130	100	100	100	110	100	A	100	100	100	A	100	A	A				
21							A	A	A	110	100	100	100	100	100	100	100	110	A	A				
22							A	C	C	C	C	C	C	C	C	C	C	C	C	C				
23							100	A	100	A	A	A	A	A	A	A	A	110	100					
24							120	110	100	100	A	A	100	A	A	A	A	100	110	C				
25							A	A	110	A	100	100	A	A	A	A	100	100	110	A				
26							A	110	100	100	100	100	100	100	110	110	110	100	100	A				
27							A	100	A	A	100	110	A	A	110	110	A	A	A	A				
28							A	A	A	120	A	C	A	A	120	A	A	A	A	A				
29							130	110	A	A	A	A	100	100	100	A	A	A	A	A				
30							A	100	A	A	A	A	A	A	A	A	A	A	110	100				
31																								
Mean Value							110	110	110	110	100	100	100	100	110	110	110	110	110	110				
Standard Deviation							110	110	100	100	100	100	100	100	100	100	100	100	100	100				
Count							13	16	10	12	12	9	9	11	13	12	13	15	10					

Sweep 1.0 Mc to 18.5 Mc in 1.5 min Manual

Y 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

fEs

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	4.0	5.0	3.0	3.2	2.6	1.8	3.0	G	5.8	6.0	7.3	7.2	6.8	6.2	9.8	5.3	5.6	8.8	8.2	8.6	8.8	5.9	4.6	3.8	
2	2.6	2.4	4.1	1.8	2.4	1.9	2.7	4.3	6.8	3.6	8.4	11.6	9.0	7.0	4.8	8.0	7.4	7.4	7.2	14.6	5.4	4.0	5.6	6.9	
3	4.2	6.2	5.7	4.0	4.0	4.4	7.4	8.2	14.8	16.2	10.1	12.5	8.8	8.4	7.4	4.8	4.8	5.0	6.4	12.8	10.2	15.6	8.8	6.6	
4	5.9	5.6	3.8	4.8	3.8	3.8	5.4	5.6	C	C	16.0	D	16.0	9.2	15.0	5.8	3.8	5.1	4.7	5.6	6.2	6.6	5.0	4.2	
5	4.8	11.8	3.8	3.6	5.4	4.6	3.5	6.2	7.0	7.4	9.2	12.0	9.0	9.4	8.8	7.8	6.8	5.4	6.2	5.4	6.6	5.8	5.4	2.8	
6	2.6	4.8	1.8	2.6	2.8	2.2	3.0	4.8	4.3	6.6	8.8	5.8	6.8	6.8	7.0	9.2	6.6	5.2	5.2	9.8	9.2	5.4	C	5.0	
7	4.0	3.2	3.8	3.0	5.3	2.9	3.6	5.8	9.0	11.4	9.4	11.4	11.6	6.8	6.2	7.4	5.4	5.5	7.5	8.6	3.4	8.0	7.2	9.5	
8	6.8	9.0	7.0	8.0	7.4	4.4	3.8	8.6	9.9	8.8	9.2	4.0	3.9	6.0	7.4	6.1	4.2	7.8	7.6	7.6	5.8	5.0	4.6	3.8	
9	4.4	4.1	9.2	5.2	2.8	2.8	4.2	8.8	8.5	8.7	9.2	5.9	7.9	10.5	10.7	6.3	6.7	2.4	G	11.0	8.8	7.1	8.0	8.0	
10	8.8	8.4	8.8	8.0	8.4	4.2	2.4	4.8	6.2	5.7	7.5	8.7	12.0	10.0	9.5	4.8	G	3.9	4.6	4.2	4.4	3.8	4.0	4.4	
11	4.8	3.4	4.6	3.8	3.8	2.4	2.8	C	C	C	C	C	C	C	C	C	C	C	C	3.8	3.8	7.2	4.6	C	
12	4.0	2.6	3.4	3.8	3.4	2.2	3.6	6.4	9.0	12.0	12.3	7.4	5.6	7.2	G	G	4.4	6.8	7.0	4.5	5.5	7.1	5.6	4.3	
13	6.0	7.6	3.8	2.6	4.2	3.8	5.2	6.8	8.8	14.0	14.2	14.4	10.4	12.6	6.8	6.6	F	4.7	7.7	11.0	13.8	7.2	6.8	8.6	
14	6.8	5.8	5.2	5.3	3.3	3.8	3.7	4.0	5.2	4.4	8.8	9.4	5.2	4.4	G	7.4	5.8	3.4	2.4	4.4	6.2	6.2	4.6	4.4	
15	4.4	3.8	3.8	6.8	3.6	3.8	3.2	5.6	9.4	6.6	9.4	15.0	11.0	6.8	6.6	4.2	G	4.8	5.0	6.4	6.2	9.8	9.8	7.4	
16	5.0	5.6	5.0	4.6	6.4	6.8	5.0	5.0	C	10.0	10.4	9.4	8.6	8.4	10.5	7.2	5.5	10.0	7.8	7.4	7.6	7.2	6.8	7.4	
17	8.8	6.4	7.0	C	2.8	3.6	3.8	5.4	9.4	9.8	7.0	12.0	11.1	10.0	13.4	12.8	11.1	14.0	10.0	8.0	10.2	9.4	7.2	8.4	
18	8.8	9.0	8.0	6.5	5.9	5.0	3.9	9.0	12.0	10.0	14.0	7.0	6.6	6.0	10.2	17.0	8.0	9.4	6.4	6.8	7.1	4.5	6.6	6.8	
19	8.7	6.3	8.8	10.4	8.8	6.8	7.4	8.6	10.4	17.3	14.8	14.0	10.2	15.0	D	13.2	14.2	4.2	3.8	4.8	6.8	7.8	7.0	9.0	
20	9.2	D	12.0	9.2	6.6	5.4	5.0	5.0	10.0	10.0	11.4	9.2	15.6	15.9	15.9	14.2	9.8	5.0	4.4	4.0	3.6	2.4	2.4	4.4	
21	2.2	3.4	4.6	3.8	4.8	5.6	2.8	4.6	9.2	8.3	5.4	8.4	6.4	4.7	4.0	9.4	6.8	4.2	3.5	2.4	2.4	3.8	3.4	5.2	
22	2.4	2.4	2.2	6.2	6.2	6.2	3.8	5.6	C	C	C	C	C	C	C	C	C	C	C	C	C	5.2	8.3	5.8	
23	9.2	9.6	6.8	4.6	3.2	3.8	5.6	7.4	6.6	9.0	5.0	6.0	7.2	4.8	5.4	4.0	5.2	4.0	5.0	4.8	4.8	8.0	6.8	8.2	
24	12.4	14.5	10.8	8.4	6.2	3.4	3.4	8.0	12.4	D	D	D	D	16.2	7.5	4.4	G	3.0	C	C	C	C	C	C	
25	C	5.6	3.8	3.8	G	E	3.2	3.8	5.6	4.8	G	6.9	7.2	5.6	6.0	G	G	G	G	C	C	C	C	C	
26	5.6	8.4	7.2	4.6	8.6	4.2	3.0	5.2	7.4	7.0	8.8	15.4	12.4	13.4	14.6	10.4	7.2	4.3	4.2	5.3	3.9	3.7	4.2	4.0	
27	5.0	6.8	5.6	5.1	4.2	3.6	3.2	7.4	7.2	8.0	17.0	15.4	8.0	8.2	7.4	6.2	7.8	13.3	7.1	13.3	5.8	5.3	5.0	3.4	
28	4.9	3.8	3.8	3.4	3.6	3.2	3.4	4.4	4.6	10.4	7.0	C	10.2	5.0	5.8	4.2	7.4	10.0	10.4	3.0	5.8	3.4	4.2	3.4	
29	3.6	3.4	4.0	3.4	3.0	3.0	3.2	4.4	7.2	7.0	10.3	11.4	7.2	5.1	8.8	12.3	7.4	3.2	4.6	2.4	2.8	2.0	2.8		
30	3.8	3.2	2.4	2.6	1.8	2.6	2.6	4.4	4.2	4.2	7.8	5.6	5.2	7.4	4.4	G	4.8	5.0	7.2	6.3	8.0	6.8	6.7	6.4	
31																									
Mean Value	5.6	5.9	5.5	4.9	4.7	3.9	3.7	6.0	8.1	8.7	10.0	10.0	9.0	8.5	8.5	7.7	7.1	6.2	6.1	6.8	6.2	6.0	5.8	5.8	
Median Value	4.9	5.6	4.6	4.6	3.9	3.8	3.6	5.5	8.0	8.7	9.2	9.4	8.9	7.3	7.2	6.4	6.0	5.0	6.2	6.0	5.8	5.8	5.6	5.5	
Count	29	30	30	29	30	30	30	28	26	27	28	27	28	28	28	28	28	28	28	27	28	29	28	28	

fEs

Sweep 1.0-Mc to 18.5-Mc in 1.5-min

Manual

Y 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

(M3000)F2

135° E Mean Time

Y a m a g a w a

Lat. 31° 12.5' N
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.8)F	(2.9)J	2.9	3.0	3.1 ^H	2.8 ^Z	3.1	3.3	3.4	3.2	2.9	(3.0) ^A	2.7	2.9	A	2.8	2.8	3.2	3.0	(2.6)P	A	2.8	(2.6) ^S	(2.7)H
2	(2.7)F	(2.8)J	2.8 ^H	2.8	2.8	3.1 ^P	3.2	3.4	3.5	3.0	3.0	A	(3.2) ^J	(2.8) ^J	3.2	3.2	(3.0) ^J	3.1	3.4	(2.7) ^A	2.8 ^S	2.9 ^F	(2.9) ^J	(2.9) ^J
3	(2.7)F	(2.7)F	(2.7)F	2.7	2.7	2.8	2.9	2.9	A	A	A	2.8	2.8	2.9	3.0	3.0	3.0	2.8	3.1	A	A	A	A	2.7
4	(2.8)F	2.8	2.9	3.0	2.8	3.0	3.3	3.0	C	C	A	A	2.9	3.0	A	2.9	2.9	2.8	3.1	3.3	3.4	3.3	3.2	3.2
5	3.4	3.0	(3.0) ^F	(2.6) ^P	3.0	(2.5) ^H	3.1	3.5 ^V	3.4	2.8	A	A	(2.7) ^F	A	A	(2.9) ^J	2.9	3.1	3.2	3.0	2.9	2.9	2.8	3.0
6	2.7	F	3.2	3.1	3.1 ^H	3.2	3.2	3.4	(3.4) ^J	3.2	A	2.7	2.8	2.7	2.8	2.8	2.8	3.0	3.4	A	A	2.9	C	(2.8) ^J
7	2.8	2.9 ^P	3.0	3.4	3.1	2.9	3.0 ^H	(2.9)H	(3.2) ^J	3.0	A	A	2.7	2.7	2.8	2.8	2.8	3.1	3.2	A	(2.9) ^A	A	A	F
8	(2.9)F	2.6 ^F	A	A	A	2.8	3.1 ^P	A	A	A	A	G	G	G	2.3 ^K	2.8 ^K	2.8 ^K	3.2	2.8 ^K	A	3.1	2.9	2.9	2.6
9	2.8	2.9 ^F	A	2.7	(2.9)F	3.0	3.3 ^P	2.9	A	A	A	2.6 ^Z	2.8	2.9	2.8	2.8	2.8	2.7	B	3.1 ^S	A	A	A	2.8
10	(2.8)F	(2.9)F	(2.9)A	2.9	A	3.3	3.4	3.3	3.2	3.0 ^Z	3.2	2.8	2.9	2.9	2.9	2.8	2.9	3.0	3.0	3.1	3.4	3.3	2.9	3.0
11	3.0	(2.8)F	3.0	3.2	2.8 ^F	2.8 ^F	3.3	C	C	C	C	C	C	C	C	C	C	C	C	3.4	3.3	2.9	2.8	(2.8) ^P
12	(2.7)F	(2.9)F	2.7	3.0	2.5	2.7	2.9	(3.1) ^J	A	A	A	3.2	G	2.7	2.8	3.0	2.9	2.8	3.1	3.2	2.9	3.2	2.8	2.9
13	2.6	2.8	(3.0)F	3.2	(3.1) ^B	3.3	3.2	3.3	3.6	A	A	A	A	3.6	A	2.9	2.9	2.8	2.8	A	(3.2) ^J	(2.7) ^J	(2.7) ^J	2.9
14	(2.7)F	(2.9)F	(3.3)F	3.2	3.1 ^F	3.3	(3.1) ^J	3.3	2.9	3.1	3.2	A	2.9	2.8	2.7	2.8	(2.7) ^J	2.9	3.0	2.9	2.7	(2.7) ^Z	2.6 ^F	2.6 ^F
15	2.5 ^H	2.8	2.7	2.8	2.9	2.9	2.8	3.2	3.2	3.4	A	A	A	A	A	2.6	2.7	2.7	2.8	3.0	3.1	A	A	(2.7) ^J
16	(2.7)F	F	3.3	3.0	2.9	2.8	3.0	2.8	C	A	A	2.8	2.9	(2.8) ^B	(3.1) ^A	2.8	2.9	2.9	2.9	(3.0) ^C	2.8	2.7	2.7	2.7
17	2.8	2.8	2.8	C	(2.9)F	3.1	3.1	2.8	2.8	A	(2.8) ^J	A	A	A	A	A	A	A	A	2.9	(2.5) ^A	2.9	2.7	2.7
18	(2.6)H	2.9 ^F	F	3.0	3.0	3.1 ^F	3.0	2.9	A	A	A	2.6	2.8	2.8	2.7	A	(2.9) ^J	2.9	3.0	3.0	2.7	(2.8) ^B	2.5 ^H	(2.7) ^J
19	F	(2.8)F	2.9 ^F	A	A	(2.9)F	A	A	A	A	A	A	A	A	A	A	A	3.1	3.0 ^H	(3.2) ^J	3.2	3.4	3.2	3.2
20	A	A	A	A	F	2.8 ^{KF}	2.5	2.6	A	A	A	A	A	A	A	A	A	3.0 ^K	3.0 ^K	(3.3) ^Z	3.2	3.3	2.8	(2.9) ^V
21	(2.7)H	2.6 ^H	(3.0)F	2.9	A	2.8	3.3	3.2	A	2.9	3.1	A	2.6	2.7	2.7	2.8	2.8	C	C	3.2	S	2.6	2.7	2.7
22	F	(3.1)F	(3.1) ^J	(2.8)P	(2.9) ^J	3.0	3.0	C	C	C	2.9	2.9	3.0	2.8	2.7	2.8	3.1	3.1	3.1	2.9	2.9	A	A	2.7
23	A	A	A	F	F	S	3.2	3.1	3.1	A	A	A	C	C	C	C	C	C	C	3.5	A	A	A	2.7
24	A	A	A	A	(2.7)F	F	3.3 ^F	A	A	A	A	A	A	A	2.9	3.0	2.8	2.8	2.8	C	C	C	C	C
25	C	2.9 ^F	3.0	3.1	2.8	2.8	3.1	3.2	3.3	2.8	2.7	2.5	A	2.8	2.9	2.8	2.8	2.9	3.1	3.0	3.2	3.0	A	A
26	A	2.9 ^S	3.0	2.8	3.1	3.2	3.4	S	S	S	3.5 ^K	A	A	A	A	2.9 ^K	3.0	3.0	2.7 ^H	2.8	3.3	3.0	2.6	2.7
27	2.9	2.6 ^V	3.2	2.9 ^V	2.9	3.0 ^K	3.4	3.0	3.2	2.7	A	(2.7) ^A	2.9	2.6 ^K	2.7 ^K	2.7 ^K	2.8 ^K	A	A	A	BS	BS	BS	FS
28	BS	BS	B	B	B	B	B	B	B	A	A	C	A	2.7	2.8	2.8	2.9	A	2.8	3.0 ^H	3.3	2.9	2.7	2.7
29	2.8	2.9	3.3	3.3	2.7	3.0	2.9	3.1	3.0	A	A	A	A	2.8	2.9	(2.9) ^S	A	A	3.1	3.2	3.1	(3.1) ^S	S	(2.9) ^J
30	2.7	2.9	3.5	S	3.1	3.8	3.1	3.5	3.2	3.2	A	2.7	2.9	2.9	3.0	3.3	3.1	3.0	3.3	A	A	A	A	A
31																								
Mean Value	2.8	2.8	3.0	3.0	2.9	3.0	3.1	3.1	3.2	3.0	3.1	2.7	2.9	2.8	2.9	2.9	2.9	2.9	2.9	3.0	3.1	3.0	2.8	2.8
Median Value	2.8	2.8	3.0	3.0	2.9	3.0	3.1	3.1	3.2	3.0	3.0	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.9	3.0	2.9	2.8	2.8
Count	22	23	24	22	23	27	28	24	15	12	10	13	17	19	21	25	24	23	26	21	23	20	20	24

Sweep 1.0 Mc to 1.8.5 Mc in 1.5 min Manual

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

fminF

Jun. 1951

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	1.8	1.8	E	1.4	2.8	4.2	4.1	5.8	6.5	4.5	3.8	A	4.5	4.5	4.0	5.2	A	A	5.2	1.6	1.2	
2	A	E	1.3	E	2.4	1.8	2.1	3.3	3.2	2.8	4.2	A	A	3.6	A	4.2	5.6	5.8	6.6	6.6	4.8	2.3	2.4	3.4	
3	2.7	4.6	3.2	2.6	2.2	2.4	2.4	6.3	A	A	5.9	6.6	4.6	5.3	3.9	3.6	4.2	6.4	A	A	A	A	A	4.9	
4	5.3	1.4	1.8	2.6	1.8	A	2.0	1.8	C	C	A	A	7.0	6.2	A	3.8	3.6	3.6	2.7	2.2	1.6	2.8	2.8	1.4	
5	2.2	4.0	2.4	A	3.2	2.7	2.1	2.1	2.8	6.6	A	A	8.0	9.1	8.0	7.8	5.6	3.2	2.2	4.6	3.4	4.0	2.0	1.8	
6	2.0	A	1.2	1.4	1.4	1.6	2.0	2.8	3.2	5.2	A	6.0	4.8	4.4	5.4	8.2	4.3	3.2	2.8	A	A	5.8	(5.6)	5.5	
7	A	A	2.0	2.3	A	A	2.3	2.8	5.8	5.4	A	A	A	5.2	5.6	4.6	4.2	3.9	6.6	A	1.7	A	A	1.7	
8	A	3.0	A	(2.0)	A	A	2.0	A	A	A	4.2	4.6	5.3	5.2	5.5	4.8	4.8	3.6	A	6.0	A	A	A	1.4	
9	1.2	2.0	A	3.0	2.4	1.6	3.7	5.3	A	A	A	5.5	7.3	A	A	6.2	6.5	2.7	2.8	A	A	A	6.4	3.0	
10	4.0	6.7	6.6	2.0	A	2.2	2.0	2.8	5.4	3.9	6.4	5.2	6.0	5.9	5.1	3.9	3.6	3.3	3.3	2.2	3.6	2.6	2.8	2.2	
11	2.2	1.8	2.0	A	2.0	1.8	2.0	C	C	C	C	C	C	C	C	C	C	C	C	2.3	2.0	1.4	4.6	C	
12	1.4	1.8	1.8	3.5	1.8	1.5	2.5	2.7	A	7.1	5.4	4.2	4.7	4.2	4.4	4.0	3.7	4.4	5.6	4.5	5.8	1.9	A	1.7	
13	2.7	A	2.1	2.0	1.8	2.0	2.2	3.0	A	A	A	A	A	A	A	5.2	3.0	4.1	7.6	A	7.2	5.6	3.6	3.0	
14	4.6	3.8	2.8	3.6	2.2	1.7	2.0	2.9	3.2	4.4	5.5	7.0	4.6	4.1	4.0	5.4	4.2	3.4	4.0	2.0	6.1	1.6	1.4	3.0	
15	2.2	A	1.6	A	1.4	1.6	2.8	3.2	7.2	6.4	A	A	A	A	5.4	4.2	3.8	3.8	4.2	3.0	6.0	A	A	5.8	
16	3.2	5.6	3.6	3.2	5.0	5.0	4.0	3.6	C	A	A	7.6	7.0	7.2	8.4	6.2	5.1	5.2	7.0	6.6	A	A	6.6	6.2	
17	7.8	7.0	6.4	C	3.0	1.6	2.0	5.3	A	A	7.0	A	A	A	A	A	A	A	8.0	7.6	7.8	7.4	6.4	3.6	
18	A	A	4.5	2.5	A	A	2.1	6.7	A	A	A	6.0	7.0	4.5	8.0	A	7.0	6.8	6.4	2.8	5.2	3.0	3.4	5.5	
19	A	4.4	2.8	A	A	2.0	A	A	A	A	A	A	A	A	A	A	A	3.4	2.6	2.0	2.4	6.8	A	A	
20	1.6	A	A	A	4.8	2.6	3.0	4.1	A	A	A	A	A	A	A	6.8	A	2.8	A	2.2	1.8	1.8	1.8	1.2	
21	A	A	2.4	2.0	A	1.8	2.0	3.0	A	5.4	4.8	8.3	6.4	4.3	6.3	8.2	5.8	4.8	4.2	E	2.4	A	4.0	4.4	
22	1.8	A	E	1.8	1.8	1.8	1.8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	A	
23	A	A	4.0	A	A	2.0	2.2	3.0	3.6	A	4.4	4.2	4.8	4.8	5.2	3.4	5.2	3.6	4.0	3.4	2.8	A	3.6	5.4	
24	A	A	A	A	3.8	2.1	2.5	2.7	A	A	A	A	A	A	4.2	3.7	3.4	3.2	C	C	C	C	C	C	
25	C	A	A	A	E	E	1.5	A	4.8	3.8	4.3	6.0	6.4	5.3	6.0	4.3	3.4	3.6	2.8	2.4	2.4	1.8	A	A	
26	A	A	1.8	4.8	4.8	2.6	2.4	3.8	A	A	6.2	A	A	A	6.0	5.8	5.8	3.1	3.8	3.9	A	2.7	1.8	1.5	
27	A	3.4	3.6	3.8	1.6	2.5	2.1	3.9	3.8	4.8	A	6.0	4.6	4.4	4.2	4.4	4.4	A	A	A	A	A	A	1.9	
28	3.4	A	A	A	A	A	2.8	4.2	4.5	A	A	C	A	5.4	5.6	4.2	6.0	A	A	2.4	5.4	2.0	A	A	
29	2.8	2.8	2.1	2.0	A	1.4	2.0	A	6.2	A	A	A	A	5.3	4.1	4.0	A	A	3.6	3.0	2.0	1.4	2.0	2.0	
30	E	3.8	2.8	3.0	3.0	A	2.2	3.2	3.6	A	A	5.6	3.6	6.6	3.6	3.8	3.4	4.1	A	5.5	A	A	A	A	
31																									
Mean Value	3.0	3.7	2.9	2.7	2.6	2.1	2.3	3.6	4.3	5.0	5.4	5.9	5.6	5.2	5.4	5.0	4.6	4.0	4.5	3.8	3.9	3.3	3.5	3.1	
Median Value	2.4	3.6	2.4	2.5	2.1	1.8	2.1	3.1	4.0	5.0	5.5	6.0	4.8	5.2	5.2	4.4	4.4	3.6	4.0	3.0	3.4	2.6	3.1	3.0	
Count	18	16	23	19	22	24	29	24	14	12	11	15	17	20	21	25	24	24	21	21	21	20	18	23	

fminF

Sweep 1.0 Mc to 18.5 Mc in 1.5 min

Manual

Y 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Jun. 1951

fminE

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	1.2	1.8	2.0	2.1	2.0	2.0	2.1	2.0	1.8	2.0	1.8	1.8	1.6	1.2	1.2	1.2	1.2
2	E	E	E	1.4	E	E	E	2.0	2.0	2.2	2.2	2.6	2.4	2.8	2.4	2.2	2.0	1.6	1.6	1.5	E	E	1.1	1.1
3	E	E	E	E	E	1.1	1.1	1.1	1.6	1.6	1.8	1.9	1.9	2.1	2.1	2.2	2.1	1.6	1.5	1.5	E	E	E	E
4	1.1	E	E	E	E	E	E	1.4	C	C	2.0	1.8	2.0	2.0	2.0	1.8	1.6	1.5	1.2	1.2	1.2	E	E	E
5	E	E	E	E	E	E	E	1.5	1.2	1.8	2.4	1.8	1.8	1.6	1.8	1.8	1.8	1.8	1.8	1.6	1.6	E	E	E
6	E	E	E	E	E	E	E	1.2	1.4	1.6	2.1	2.6	2.2	2.2	2.1	2.2	2.0	1.6	1.6	1.4	1.2	1.4	[1.5]	1.6
7	E	E	E	E	E	E	E	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	2.0	1.6	1.7	1.7	1.1	1.1	1.1	E	E
8	E	E	E	E	E	1.3	1.6	1.8	1.6	1.7	1.7	2.0	2.0	2.1	2.0	1.9	2.0	1.6	1.6	1.4	1.4	1.2	E	E
9	E	E	E	E	E	E	E	1.6	1.4	2.3	2.3	2.5	2.3	2.7	2.7	2.1	2.0	1.8	1.7	1.5	E	E	E	E
10	1.1	E	E	E	E	E	E	1.2	E	1.3	1.6	2.0	2.0	2.1	2.0	2.0	2.0	1.7	1.5	1.2	1.2	E	E	E
11	E	E	E	E	E	E	E	1.2	C	C	C	C	C	C	C	C	C	C	C	1.6	E	E	E	C
12	E	E	E	E	E	E	E	1.6	1.7	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.0	1.4	E	E	E	E	E
13	E	E	E	E	E	1.2	1.6	1.8	2.0	2.2	2.4	2.6	2.6	2.6	2.8	3.6	2.6	2.0	1.8	1.3	E	1.5	E	1.1
14	E	E	E	E	E	E	1.1	1.6	1.7	1.7	1.8	2.0	2.0	2.0	2.0	1.8	1.6	1.7	1.8	1.6	E	1.3	E	E
15	E	E	E	E	E	E	1.4	1.6	2.0	1.8	2.2	2.8	2.6	2.6	3.2	2.4	2.2	1.8	1.8	1.6	E	E	E	E
16	E	E	E	E	E	E	E	1.6	[1.8]	2.1	2.0	2.2	2.2	2.2	2.3	2.2	1.7	1.6	1.6	1.6	1.6	1.6	1.4	1.2
17	1.2	E	E	E	C	E	1.4	E	2.0	2.2	2.4	2.4	3.4	3.6	3.6	2.6	2.0	1.8	1.8	1.3	E	1.5	E	1.1
18	E	E	E	E	E	E	E	1.6	1.7	1.6	1.8	3.0	2.6	2.8	2.8	2.4	1.6	2.0	1.7	1.1	E	1.3	E	E
19	E	E	E	E	E	E	E	1.7	1.8	2.0	2.2	1.8	3.0	1.8	1.6	2.1	1.8	2.1	2.1	1.6	1.4	1.4	1.2	E
20	E	E	E	E	E	E	E	1.7	1.6	2.4	1.7	1.7	1.6	1.8	1.7	2.0	1.7	1.8	1.7	1.6	E	1.8	1.8	E
21	E	E	E	E	E	E	E	1.8	1.7	1.7	2.0	1.9	2.0	1.7	2.0	1.7	2.0	2.0	1.8	1.8	E	1.2	1.4	1.8
22	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	C	C	C	C	C	E	E	E	E
23	E	E	E	E	E	E	E	1.2	2.0	2.0	2.4	2.4	2.6	2.8	2.8	2.6	2.0	1.7	1.2	1.2	E	E	E	E
24	E	E	E	E	E	E	E	1.2	1.6	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.0	C	C	C	C	C	C
25	C	E	E	E	E	E	E	1.4	1.8	1.8	1.8	1.8	2.2	2.0	2.6	2.8	2.2	1.8	1.4	1.6	1.8	1.6	1.6	1.4
26	1.4	E	E	E	E	E	E	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.7	1.5	1.5	1.5	1.4	1.7	1.5
27	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.2	1.4	1.8	2.0	2.0	2.0	2.0	1.8	1.7	1.7	1.5	1.5	1.5	1.5	1.4	1.3	1.4
28	1.9	1.2	1.4	1.4	1.2	1.6	1.6	3.0	1.6	3.0	[2.4]	1.8	1.8	1.8	1.8	1.8	1.7	1.5	1.5	1.5	1.5	1.4	1.7	1.5
29	E	E	E	E	E	E	E	1.6	1.4	1.2	1.6	1.9	1.7	1.7	1.7	1.6	1.6	1.8	1.2	1.4	1.4	1.4	1.4	1.4
30	E	E	E	E	E	E	E	1.8	E	2.0	2.2	2.6	3.2	3.0	2.4	2.2	2.0	1.8	1.6	1.6	E	E	E	E
31																								
Mean Value	1.3	1.2	1.3	1.3	1.2	1.3	1.5	1.5	1.8	1.9	2.1	2.2	2.2	2.2	2.2	2.1	1.9	1.8	1.6	1.5	1.4	1.4	1.4	1.3
Median Value	E	E	E	E	E	E	1.2	1.6	1.8	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.0	1.8	1.6	1.5	E	1.1	E	E
Count	29	30	30	29	30	30	30	28	27	27	28	28	28	28	28	28	28	28	27	28	29	29	29	28

Sweep 1.0 - Mc to 18.5 Mc in 1.5 min Manual

IONOSPHERIC DATA IN JAPAN FOR JUN 1951

電波觀測報告 第3卷 第6号

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(不許複製非売品)

編 集 兼
發 行 人

菅 野 菊 雄
東京都北多摩郡小金井町小金井新田一之久保573

發 行 所

電波監理委員会 中央電波觀測所
東京都北多摩郡小金井町小金井新田一之久保573
電 話 国分寺 138, 139, 151

印 刷 所

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