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IONOSPHERIC DATA IN JAPAN

FOR APRIL 1952

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PREPARED BY THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

CRWO—F 40

THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

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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

May, 1952.

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. 48° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

foF2

Apr. 1952

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	4.3J	4.0	S	S	4.3	5.0J	5.2	5.8	6.3	7.0	8.1	8.8	7.1	8.5J	8.2	7.6	8.4	7.6	6.8	7.0J	C	C	C	C	
2	C	C	C	C	C	C	C	C	0	6.7	7.1	6.2	7.3	7.8	8.4	7.1	7.0	6.2	6.1	5.9	6.3	5.8	4.8	4.8J	
3	4.5JF	3.9	4.0	3.8J	3.2	(3.8)S	4.5	6.3	5.8	5.7	6.2	7.5	7.4	8.0	7.2	7.0	7.0	6.4	6.6	6.3	6.1	5.4J	4.8	5.1	
4	4.4	4.5	4.2	4.2J	S	S	4.0	4.3	4.3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	6.1	7.3	6.7	7.7	8.6	8.1	6.8	6.1	6.6	7.2	6.2	6.1	6.0	5.6	4.7	
7	5.2	4.2	4.3	4.3	(3.6)P	3.9	B	C	B	C	C	C	C	C	C	C	(7.4)B	6.8	6.4	5.8	4.4J	4.7	5.2	4.7	
8	(4.6)S	4.4JF	4.3	(4.0)P	4.4	(4.8)S	5.3	6.6	7.5	7.3	7.8	7.8	(8.5)B	B	(8.1)B	(8.4)C	8.1	8.2	7.1	7.3	5.5	5.3J	5.5	M	
9	M	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	6.0	5.3	5.4	5.7	4.7	C	S	
10	(4.3)P	4.8	S	S	S	4.8	5.8	6.7	6.9	7.5	7.2	7.5	9.7	(9.6)M	9.5	8.3	8.0	7.3	7.2	6.0	(5.6)S	5.3	S	S	
11	S	S	5.2	S	S	5.3	5.3	6.3	7.6	8.4	8.3	8.8	7.9	7.7	7.3	C	C	C	C	C	C	C	C	5.2	
12	(5.2)S	5.3J	5.3	3.1	S	S	C	C	C	8.1	9.1	8.3	8.3	8.4	(8.0)S	7.5	C	C	C	C	C	C	C	C	
13	5.2	5.2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
14	4.8	4.8	4.5	4.3	C	C	5.4	5.7	6.5	7.0F	6.7	7.1	7.2	7.8	7.1	7.3P	6.7	6.3	6.1	5.7	(5.3)C	5.5	5.3	4.8	
15	C	C	C	C	C	C	C	C	C	4.4P	7.5J	C	A	5.8	7.1P	6.0	6.5	6.9	6.2	6.5	6.0	5.5	5.1	4.9	
16	4.7	4.8	4.8	4.2H	3.8	A	6.1	6.6F	(6.0)S	5.4	5.3J	5.5	A	5.9	6.2	6.5	5.7	5.8	5.8	A	S	2.8	2.8	C	
17	S	S	3.4P	4.1	2.5	(3.4)S	4.6	5.2	B	B	B	B	6.2	6.5	6.8	7.3J	7.1	6.8	5.5	5.0	4.3	4.5	4.8	C	
18	C	C	C	C	C	C	C	C	C	C	C	6.3	6.1	(6.4)C	6.7	6.8	6.8	6.0	(5.0)C	4.0	3.8	6.0	5.0	4.5	
19	4.0	4.2	4.5	4.1	3.9	(4.8)S	5.7P	5.5	4.9	5.5	5.5	7.1P	(8.0)B	8.9	8.2	8.0	6.7	6.6	6.1	5.7	(5.8)F	6.0	S	S	
20	5.1	4.8	(4.8)S	4.7	4.9	4.5	5.0	6.0	6.4P	(6.4)B	(6.5)B	5.6	6.8	6.6	(6.6)B	6.7	7.8J	7.4	7.4	(6.7)S	6.0	5.9	4.8	5.0	
21	S	S	S	4.2K	4.7P	5.0	5.4	5.7	6.5J	5.9	6.1	6.6P	6.4	6.5	7.4	6.4	(6.8)B	(6.7)B	(6.0)S	S	S	S	S	S	
22	S	S	S	3.5P	S	C	C	C	C	B	B	A	4K	4K	4K	5.0K	(8.7)B	5.3K	5.3K	A	A	A	A	2.9K	
23	4.0K	3.8K	2.9K	2.9K	3.0K	3.0K	4.4K	4.4K	B	B	5.6K	5.7K	5.5K	5.6K	C	C	C	C	C	4.6	4.2	S	S	4.6	
24	(3.9)S	3.2	4.2J	4.1J	4.3J	4.7J	5.8	6.4	6.2	6.7P	(6.3)B	5.8	6.5	7.5	(7.4)B	7.4	6.6	6.6	6.0	5.7J	(5.6)S	5.5J	S	S	
25	5.1	5.3	(4.2)S	3.1	3.3P	5.2	5.3J	5.4	5.6	6.0	6.2	6.5P	6.5	6.5	6.7	6.5	6.6	6.6	6.6	S	S	S	S	S	
26	S	S	5.4	5.1J	(4.8)S	4.5J	4.9	6.1	B	B	B	6.2	6.8	7.0	7.3	7.0	6.7	6.2	7.1	C	C	C	C	C	
27	5.5	C	C	C	C	C	6.0	5.8	5.9	C	C	C	C	C	C	C	C	C	C	C	5.4	5.1	(4.2)S	3.4P	
28	3.3P	3.9P	4.3	4.3	4.7	4.7J	5.4	(5.4)C	5.3K	5.7K	5.6K	5.2K	5.4K	5.7K	6.4K	6.3K	B	B	B	B	C	C	C	S	
29	3.5K	3.6K	(3.8)S	3.9P	S	S	5.3K	A	C	5.0K	(5.6)B	6.1K	6.0K	6.1K	6.3K	6.1K	6.3K	6.0K	6.1K	5.9J	S	S	S	S	
30	S	S	S	S	4.7K	4.3K	B	A	B	A	A	C	C	C	C	C	C	C	4.5	4.1	(4.0)S	4.0	3.9P	S	
31																									
Mean Value	4.5	4.4	4.4	4.0	4.0	4.5	5.3	5.9	6.1	6.5	6.8	6.6	7.1	7.3	7.3	7.0	7.0	6.6	6.2	5.8	5.4	5.4	4.7	4.4	
Median Value	4.6	4.4	4.3	4.2	4.3	4.7	5.3	5.8	6.2	6.4	6.5	6.6	6.8	7.2	7.2	7.0	6.7	6.6	6.1	5.8	5.6	5.5	4.8	4.7	
Count	18	17	17	18	15	16	19	18	15	18	19	20	21	20	22	21	21	21	21	23	22	18	17	15	13

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

IONOSPHERIC DATA

Apr. 1952

f_oF₂

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	S	420	S	S	420	(340) ^J	320	290	310	360	390	310	360	(340) ^J	330	320	300	320	(340) ^J	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	330	310	320	370	380	360	330	320	310	310	390	370	410	420	(400) ^F	
3	(420) ^{JF}	450	A	(340) ^J	360	(340) ^S	320	320	310	310	330	330	390	320	310	320	320	330	330	330	360	(320) ^J	400	410	
4	390	370	400	(350) ^J	S	S	320	330	310	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	310	320	380	340	340	320	300	300	330	330	400	390	360	400	(400) ^S	
7	440	420	420	400	(300) ^P	340	B	C	C	C	C	C	C	C	C	C	(280) ^P	280	310	320	(360) ^J	(310) ^J	460	400	
8	(400) ^S	(400) ^{JF}	380	(370) ^S	360	(340) ^S	320	300	300	310	340	320	(350) ^{PB}	(310) ^{PB}	(310) ^C	310	310	310	330	310	320	(320) ^J	S	14	
9	M	M	M	M	17	17	17	17	17	C	C	C	C	C	C	C	C	310	350	340	(400) ^S	(350) ^S	C	S	
10	(400) ^S	410	S	S	S	420	310	320	300	300	340	410	390	(360) ^M	330	320	330	330	310	310	(380) ^S	(440) ^S	S	S	
11	S	(360) ^J	420	S	S	310	(300) ^S	300	350	300	(310) ^J	320	330	300	310	C	C	C	360	(320) ^S	370	380	420	S	
12	S	400	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
13	420	400	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
14	360	340	350	340	C	C	C	C	C	310F	320	310	350	320	310	300F	C	C	C	C	C	C	C	C	
15	C	C	C	C	C	C	C	C	C	310F	(360) ^J	C	A	U	310F	320	340	360 ^S	350	370	340	320	310	320	390
16	420	400	390	330 ^H	390	A	280	330F	S	U	A	A	A	410	400	(320) ^S	A	A	290	A	A	S	320	350	
17	S	S	360F	330	320	S	B	320	B	B	B	B	380	370	380	(350) ^J	310	290	300	330	380	380	410	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	U	U	C	310	320	300	(330) ^C	360	380	370	370	330	
19	410	(390) ^S	370	330	350	(320) ^S	(280) ^F	310	310	340	U	360 ^F	290	370	350	B	350	320	320	310	300	310	320	S	
20	430	410	(400) ^S	370	330	330	340	360	320P	B	(320) ^{PB}	290	370	350	340	360	(320) ^{PB}	320	310	300	310	(320) ^S	320	S	
21	S	S	S	360P	(350) ^S	340	320	320	(300) ^J	310	320	380 ^F	360	350	340	350	350	320	320	320	(320) ^S	320	310	300	
22	S ^K	S ^K	S ^K	350 ^K	S ^K	C ^K	C ^K	C ^K	C ^K	C ^K	B ^K	A ^M	400 ^F	400 ^K	440 ^K	C	C	C	C	C	C	C	C	C	
23	S ^K	400 ^H	400 ^H	360 ^H	370 ^K	340 ^K	400 ^K	350 ^K	B ^K	B ^K	A ^M	440 ^K	U	400 ^K	C	C	C	C	310	300	320	(320) ^J	S	S	
24	(360) ^S	350	(380) ^J	(420) ^J	(360) ^J	(340) ^J	380	310	320	320F	(320) ^{PB}	320	370	320	(320) ^{PB}	320	310	300	320	(320) ^J	(320) ^J	(320) ^J	S	S	
25	370	(360) ^S	(370) ^S	380	360P	320	(320) ^S	350	390	360	370	(350) ^S	310P	310P	320	320	300	310	310	S	S	S	S	S	
26	S	S	350	(300) ^J	(300) ^S	(290) ^J	300	350	B	B	B	330	390	330	410	330	340	320	380	C	C	C	C	C	
27	370	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
28	370P	(400) ^J	380	370	360	(300) ^S	370	330	C	U ^K	A ^K	U ^K	U ^K	U ^K	400 ^K	B ^K	B ^K	S ^K	380 ^H	C ^K	C ^K	(370) ^S	350 ^F		
29	430 ^K	430 ^K	(390) ^K	350 ^K	S ^K	S ^K	310 ^K	A ^K	C ^K	U ^K	B ^K	U ^K	U ^K	B ^K	U ^K	380 ^K	330 ^K	370 ^K	S ^K	S ^K	S ^K	S ^K	S ^K		
30	S ^K	S ^K	S ^K	S ^K	370 ^K	340 ^K	B ^K	A ^K	B ^K	A ^K	A ^K	C	C	C	C	C	C	C	420	410	(400) ^S	390	370 ^F	S	
31																									
Mean Value	400	390	380	360	350	330	330	320	320	340	340	340	360	350	340	330	320	320	330	340	360	360	360	380	370
Median Value	400	400	380	350	360	340	320	320	310	310	330	320	320	320	330	320	320	320	330	330	370	370	360	390	380
Count	15	17	16	18	15	15	18	17	13	14	15	16	16	17	19	20	20	21	23	21	18	17	14	12	

f_oF₂

Sweep 1.0 Mc to 15.5 Mc in 2 min

Manual Automatic

W 2

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Apr. 1952

135° E Mean Time

f'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	S	400	S	S	400	320	300	270	290	360	350	300	340	310	310	300	300	280	290	290	300	300	300	310	
2	C	C	C	C	C	C	C	C	C	330	300	320	360	360	330	300	300	280	280	330	300	300	300	310	
3	310	390	A	320	350A	[320]S	290	300	310	300	310	300	360	310	310	300	300	280	300	270	300	300	350	350	
4	330	310	380	310	330	310	300	300	300	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	340	310	260	290	B	C	C	C	310	370	330	310	300	290	280	280	280	290	300	310	320	[360]S	
7	400S	380	340	310	320	290	B	C	C	C	C	C	C	C	C	C	260	270	280	300	320	280	310	320	
8	350	380	320	[320]S	310	340	250	300	300	290	300	300	330	300	300	[280]C	270	300	300	270	320	320	S	M	
9	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	300	300	300	300	300	300	[310]S	340	
10	320	320	310	330	320	320	280	270	300	300	330	330	360	340	310	300	300	280	280	270	300	300	350	S	
11	S	S	310	290	300	S	S	C	C	300	300	300	300	300	330	310	C	C	300	300S	330S	320	330	[320]S	
12	310S	310	330A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
13	330A	330A	C	C	C	C	C	C	C	290F	310	290	320	320	300	300	300	290	280	250	[360]C	310	300	320	
14	320	300	290	280	C	C	290	300	300	290F	310	290	320	320	300	300	300	300	300	300	300	300	320	310	
15	C	C	C	C	C	C	C	C	C	310	360	A	A	A	330	310	300	300	300	300	300	300	320	310	
16	330	300	290	270M	300	A	270	310	250	410	500A	400A	A	410	400	300	A	A	(270)A	(300)A	A	A	320	330	
17	S	S	340	300	310	[300]S	300	300	B	B	B	B	380	370	370	330	300	280	270	260	330	340	320	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	310	340	[320]C	310	300	280	[290]C	300	310	300	300	280	
19	320	420S	300	300	300	[380]A	270	300	300	280	450	360	370	360	310	300	300	300	290	280	300	310S	310	[320]S	
20	370	400S	[360]S	330	300	300	290	340	320	380	310	270	370	L	380	350	300	300F	280	280	300	300	300	320	
21	S	S	S	320	[300]S	300	290	340	300	300	280	310	370	360	310	300	310	300	300	300	300	300	300	320	
22	S	S	S	340K	S	C	C	C	C	C	B	B	380	340	[320]C	310	300	300	280	280	300	300	300	280	
23	420S	360K	390K	340K	330K	300K	400K	330K	510K	BK	460K	440K	GK	AK	430K	430K	350K	300K	350A	AK	SK	AK	390K	310K	
24	[320]S	330	370	320	320	[300]M	290	300	290	320	300	300	370	310	320	310	270	280	270	280	300	310	320	S	
25	330	330	350	360	300	280	270	L	L	360	370	320	310	340	320	320	290	290	280	250	260	S	S	320	
26	S	320	340S	260	230	260	270	300	300	[320]B	340	320	380	320	360	300	320	300	300	300	C	C	C	C	
27	300	C	C	C	C	C	290	320	370	C	C	C	C	C	C	C	C	C	C	C	310	300	[320]S	320	
28	310	310	320	310	300	280	300	[380]C	470K	400K	410K	400K	420K	390K	390K	400K	320K	290K	280K	300K	[290]K	280K	SK	SK	
29	400K	400K	AK	300K	SK	SK	SK	AK	C	SK	550K	470K	400K	380K	370K	380K	330K	360K	300K	280K	[290]K	300K	300K	SK	
30	AK	AK	AK	320K	AK	300K	B	AK	B	AK	AK	C	C	C	C	C	C	C	330	330	320	360	320	S	
31																									
Mean Value	340	350	330	310	300	290	310	310	330	340	360	330	350	340	340	320	300	290	290	290	290	300	310	320	320
Median Value	330	330	320	310	310	290	300	300	300	310	320	320	360	330	320	300	300	290	290	290	300	300	310	320	320
Count	17	18	17	19	17	17	19	17	16	19	20	20	21	21	22	21	21	22	24	23	24	21	18	17	16

Sweep 1.0 Mc to 15.5 Mc in 2 min Manual Automatic

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_oF1

Apr. 1952

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	Q	4.1J	4.6	4.5	4.5L	4.5	4.4	4.4	4.0	Q						
2							C	C	C	4.4	4.3	4.5	A	4.4	4.2	3.8	Q	Q						
3							Q	B	3.8	4.0	3.9	4.1	4.2L	4.4	4.3	3.9	C	Q						
4							Q	Q	Q	C	C	C	C	C	C	C	C	C						
5							C	C	C	C	C	C	C	C	C	C	C	C						
6							C	C	C	4.3	4.2	4.4	4.6	4.7	4.2	4.0	Q	Q						
7							B	C	B	C	C	C	C	C	C	C	Q	Q						
8							Q	(3.3)P	4.1L	4.0L	L	4.0	4.4	4.2	B	C	Q	Q						
9							C	C	C	C	C	C	C	C	C	C	Q	L						
10							Q	Q	3.9	4.1	4.3	4.3	4.4	4.7	4.3	4.2	3.8	Q						
11							B	L	B	4.2	4.2	4.0	Q	4.4	4.3	C	C	C						
12							C	C	C	Q	B	B	B	Q	4.4	B	C	C						
13							C	C	C	C	C	C	C	C	C	C	C	Q						
14							Q	Q	Q	Q	4.2	4.2	4.0J	4.0	3.9	3.3	Q	Q						
15							C	C	C	A	A	A	A	4.6	4.4	3.7	Q	Q						
16							Q	Q	Q	A	A	A	A	4.3	4.2	4.0J	A	A						
17							B	Q	B	B	B	B	4.7	4.7	A	A	3.9	3.2						
18							C	C	C	C	C	4.4	4.5	(4.4)C	4.4	4.2	Q	Q						
19							3.1	3.6	Q	Q	4.5F	4.5	4.7	A	4.5	4.0	4.0	L						
20							2.7	4.0	4.4	4.2J	4.2	Q	4.5	L	4.6	4.5	3.9	L						
21							L	Q	4.5	4.5	4.4	4.4	4.6	4.4	4.3	4.3	4.3L	A						
22							C	C	C	B	B	A	4.2	A	4.1	A	4.0	Q						
23							Q	Q	4.7	4.1	4.0	4.2	4.3	4.2	C	C	C	C						
24							Q	4.5	4.4	A	B	4.7	4.7	4.8	4.4	4.4	Q	Q						
25							Q	L	L	4.6	4.7	4.8	4.8	B	4.7	4.3	4.0	Q						
26							Q	Q	4.4	B	A	4.3	4.6	4.6	4.4	4.0	3.6	Q						
27							Q	4.0	4.3	C	C	C	C	C	C	C	C	C						
28							Q	C	4.2	A	A	4.5	4.5	A	4.3	A	Q	Q						
29							Q	A	C	B	B	4.7	B	B	B	4.6	4.3	4.0						
30							B	A	B	A	A	C	C	C	C	C	C	C						
31																								
Mean Value							2.9	3.9	4.3	4.2	4.3	4.4	4.5	4.5	4.3	4.1	3.9	3.6						
Median Value							2.9	4.0	4.4	4.2	4.2	4.4	4.5	4.4	4.4	4.2	4.0	3.6						
Count							2	5	10	11	12	17	17	17	18	17	11	2						

f_oF1

Sweep 1.0 Mc to 15.5 Mc in 2 min

Manual

Automatic

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Apr. 1952

f'F1

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	Q	Q	A	A	A	300 ^B	260 ^B	280	B	300 ^B	Q						
2							C	C	C	310	B	320 ^A	A	B	290	290	Q	Q						
3							Q	B	280	270	290	290	200	270	280	280	280	Q						
4							Q	Q	Q	C	C	C	C	C	C	C	C	C						
5							C	C	C	C	C	C	C	C	C	C	C	C						
6							C	C	C	280	250	210	300	280	280	280	Q	Q						
7							B	C	C	C	C	C	C	C	C	C	Q	Q						
8							Q	280	270	260	270	B	B	B	B	C	Q	Q						
9							C	C	C	C	C	C	C	C	C	C	Q	270						
10							Q	Q	280	260	250	250	240	A	300	240	240	Q						
11							B	B	B	270	270	260	Q	260	260	C	C	C						
12							C	C	C	Q	B	B	C	Q	B	B	C	Q						
13							C	C	C	C	C	C	C	C	C	C	C	Q						
14							Q	Q	Q	210	240	220	220	200	210	250	Q	Q						
15							C	C	Q	A	A	A	A	200	290	290	Q	Q						
16							Q	Q	Q	A	A	A	A	A	320	A	A	A						
17							C	C	A	A	B	B	A	A	A	A	B	260						
18							C	C	C	C	C	B	250	(260) ^A	260	270	Q	Q						
19							250	210	Q	Q	270	270	260	A	260	270	280	290						
20							220	B	290	300	A	Q	270	220	220	300	270	270						
21							260	Q	280	300	A	280	250	270	300	280	300	A						
22							C	C	C	A	A	A	250	A	250	A	310	Q						
23							Q	Q	A	270	260	(280) ^M	310	230	C	C	C	C						
24							Q	290	270	A	B	220	230	230	B	290	Q	Q						
25							Q	250	250	230	250	220	230	B	260	240	260	Q						
26							Q	Q	A	B	A	250	200	(250) ^B	300	260	300	Q						
27							Q	300	320 ^A	C	C	C	C	C	C	C	C							
28							Q	C	270	A	A	A	200	200	A	230	A	Q						
29							Q	A	C	B	B	B	B	B	B	270	280	280						
30							A	A	A	A	A	C	C	C	C	C	C	C						
31																								
Mean Value	240	270	280	280	280	280	260	260	260	260	260	260	250	240	270	270	280	270						
Median Value	250	280	280	280	270	260	260	260	260	260	260	260	250	250	280	280	280	280	270					
Count	3	5	9	9	10	9	13	13	15	16	15	13	16	15	10	5	5	5						

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

Apr. 1952

f_oE

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							B	C	26	A	B	A	B	3.0	B	B	B	B						
2							C	C	C	B	A	A	A	B	B	2.7	B	A						
3							B	24	27	B	A	B	B	B	B	B	B	B						
4							B	24B	A	C	C	C	C	C	C	C	C	C						
5							C	C	C	C	C	C	C	C	C	C	C	C						
6							C	C	C	28B	B	B	B	B	B	28	25	B						
7							B	C	B	C	C	C	C	C	C	C	B	B						
8							B	26	B	B	A	A	B	B	B	C	25	B						
9							M	M	M	C	C	C	C	C	C	C	B	22						
10							2.1	26	26	3.2	3.4	A	A	A	B	28	26	B						
11							B	B	B	B	B	B	B	B	B	C	C	C						
12							C	C	C	B	B	B	B	B	B	B	C	C						
13							C	C	C	C	C	C	C	C	C	C	C	C						
14							1.8	26	29	3.2	3.4	A	A	B	A	22J	1.8J	A						
15							C	C	C	B	B	A	3.4	3.2F	B	3.0	2.7	2.4						
16							B	B	28	S	S	3.2	B	B	3.0	2.6	A	A						
17							B	B	A	A	B	A	A	A	A	A	2.8	B						
18							C	C	C	C	C	B	3.3	[3.3]C	3.3	2.9	B	B						
19							1.8	25	28	B	B	A	A	B	A	A	2.8	B						
20							B	25	A	A	3.1J	3.3J	3.6	B	B	A	2.8	2.5						
21							2.3	2.7	3.1	3.4	A	A	A	A	3.1	3.2	2.9	2.4						
22							C	C	C	C	A	A	A	A	A	A	2.5	2.2B						
23							S	A	28	2.9	B	M	B	3.0	C	C	C							
24							1.6	27	28	A	A	B	B	B	B	B	B	B						
25							2.2	2.5	3.0	B	3.3	B	B	B	B	B	2.9	2.5B						
26							B	26	B	B	3.0	3.3	3.5	B	3.4	3.0	2.5	2.0						
27							B	2.9	3.2	C	C	C	C	C	C	C	C							
28							1.9J	[2.5]F	3.1	3.4	3.4	A	B	B	A	A	A							
29							2.4	A	C	B	B	B	B	B	B	B	B	2.7						
30							A	B	B	3.1	3.3	C	C	C	C	C	C							
31																								
Mean Value							2.0	2.6	2.9	3.1	3.2	3.2	3.4	3.2	3.2	2.8	2.6	2.4						
Minimum Value							2.0	2.6	2.8	3.2	3.3	3.2	3.4	3.2	3.2	2.8	2.6	2.4						
Count							8	13	12	6	6	3	4	5	4	9	12	8						

f_oE

Sweep 1.0 Mc to 15.5 Mc in 2 min

Manual

Automatic

W 6

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Apr. 1952

135° E Mean Time

f'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						B	B	B	120	A	120	B	120	110	120	120	120	130						
2						C	C	C	120	C	120	110	A	B	B	120	110	A						
3						120	120	120	110	B	120	C	C	C	120	120	120	B						
4						B	B	A	C	C	C	C	C	C	C	C	C	C						
5						C	C	C	C	C	C	C	C	C	C	C	C	C						
6						C	C	C	C	B	B	B	120	B	B	120	120	B						
7						B	C	C	C	C	C	C	C	C	C	C	120	B						
8						120	120	B	B	B	B	B	B	B	B	C	110	B						
9						M	M	M	C	C	C	C	C	C	C	C	120	120						
10						130	120	120	120	120	120	A	A	A	120	120	130	120						
11						120	120	120	120	120	120	110	110	110	120	120	C	C						
12						C	C	C	C	B	B	B	130	B	B	B	C	C						
13						C	C	C	C	C	C	C	C	C	C	C	C	C						
14						110	100	100	100	100	100	A	A	110	A	100	100	A						
15						C	C	C	C	B	B	A	120 ^B	110	B	110	110	110						
16						B	B	B	150	100	110	110	110	110	110	A	A	A						
17						C	C	C	A	A	A	B	A	A	A	A	120	110						
18						C	C	C	C	C	C	B	120	[120] ^C	120	110	B	B						
19						120	120	120	120	120	120	A	110	A	120	A	120	120						
20						120	120	120	A	A	A	120	120	120	130	A	120	130						
21						140	140	120	120	120	B	B	A	A	120	120	120	130						
22						C	C	C	C	A	A	A	A	A	A	A	120	120						
23						S	A	A	120	110	120	[120] ^M	120	120	120	C	C	C						
24						120	120	150	A	A	A	B	B	B	B	B	B	B						
25						120	120	110	B	B	B	B	B	B	B	B	B	120						
26						B	120	B	B	B	100	100	110	B	110	100	120	110						
27						B	110	120	C	C	C	C	C	C	C	C	C	C						
28						130	[120] ^C	120	120	120	120	A	B	B	A	A	A	A						
29						130 ^B	A	B	B	B	B	B	B	B	B	B	B	B						
30						A	B	B	B	120	130	C	C	C	C	C	C	C						
31																								
Mean Value						120	120	120	110	120	110	110	120	110	120	110	120	120						
Median Value						120	120	120	120	120	110	110	120	110	120	120	120	120						
Count						12	13	14	11	10	7	11	9	10	11	11	17	12						

W 7

Automatic

Manual

Sweep 1.0 Mc to 15.5 Mc in 2 min

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

Lat. 45° 23.8' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Apr. 1952

fEs

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	S	E	S	S	S	E	B	B	G	4.0	5.0	3.7	G	G	G	G	G	G	G	2.5	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	G	G	5.0	5.2	B	B	G	G	4.0	2.3	4.0	2.8	2.3S	2.5	E	
3	E	E	3.6	2.6	3.4	S	G	G	4.0	G	3.8	G	B	G	G	G	G	G	2.5	E	E	E	E	E	
4	E	E	2.7	E	1.6	E	2.2	3.7	3.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	S	E	E	E	E	E	B	C	C	G	B	B	G	B	B	G	G	B	E	E	E	E	E	S	
7	S	E	E	E	S	S	G	G	G	B	C	C	C	C	C	C	C	B	S	S	S	S	S	E	
8	E	S	E	S	S	S	G	G	B	B	4.0	4.2	B	B	B	G	G	B	S	S	S	S	S	M	
9	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	G	E	E	E	E	E	E	
10	E	E	1.6	E	E	E	G	G	G	G	G	3.8Y	3.6Y	5.2Y	G	G	G	G	E	E	C	E	S	S	
11	S	S	E	S	S	S	G	G	G	G	B	B	G	B	B	C	C	C	E	S	S	E	E	S	
12	S	E	E	E	S	S	C	C	C	4.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
13	3.2	3.3	C	C	C	C	C	4.2	3.8	4.5	5.4Y	7.5	5.2	G	4.8	3.3	3.9	3.2	3.4	4.4	C	C	4.8	2.7	
14	3.6	3.0	3.2	3.2	C	C	C	C	C	5.0	4.7	5.1	6.8	G	5.0	3.8	6.7	6.0	6.0	6.0	4.8	3.2	3.0	1.8	
15	C	C	C	C	C	C	C	C	C	5.7	6.4	6.3	6.8	G	G	6.8	6.7	6.0	6.0	6.0	5.0	3.6	3.0	E	
16	E	E	E	E	E	5.5	B	B	G	4.0	B	B	4.1	3.9	6.2	5.0	G	G	3.0	E	E	E	E	C	
17	S	S	E	E	E	C	B	B	3.4	4.0	B	B	4.1	3.9	6.2	5.0	G	G	3.0	E	E	E	E	C	
18	C	C	C	C	C	C	C	C	C	C	C	B	G	C	G	G	B	B	C	E	E	E	E	E	
19	E	S	E	E	E	E	G	G	G	G	B	3.8	G	6.0	G	3.7	G	2.8	E	2.7	S	3.7	S	E	
20	E	S	C	E	E	E	G	G	5.0Y	3.8Y	4.0	G	G	G	G	4.0	G	1.6	3.0	3.0	E	S	S	E	
21	S	S	S	E	C	E	G	G	3.9	G	4.9	3.9	4.6	3.7	4.2	G	G	4.7	4.5	3.8	S	2.4	S	2.5	
22	S	S	S	2.2	S	C	C	C	C	3.8	3.6	5.6	4.6	5.5	5.4	4.2	G	3.6	5.0	5.0	3.4	3.4	E	2.4	
23	S	E	E	E	E	E	S	3.2	3.8	3.8	G	M	G	4.0	C	C	C	C	E	E	S	S	S	E	
24	S	E	E	E	E	M	G	3.7	G	6.0	3.8	B	B	B	B	B	B	B	E	E	E	E	S	S	
25	E	E	E	E	E	E	G	G	G	3.6	3.9	B	3.9	B	B	B	3.5	G	2.2	E	E	S	S	S	
26	S	S	S	E	E	E	B	G	3.9	B	4.3	G	G	B	G	G	G	4.0	5.0	C	C	C	C	C	
27	E	C	C	C	C	C	G	G	5.0	C	C	C	C	C	C	C	C	C	C	2.9	E	E	E	E	
28	E	E	E	E	E	E	3.6	C	G	5.4	5.0	4.7	B	B	5.5	5.0	5.0	3.4	3.0	5.0	C	4.0	S	S	
29	E	E	2.0	1.2	S	S	3.0	6.0F	C	B	B	B	B	B	B	3.7	B	G	B	E	S	E	E	S	
30	3.6	3.3	3.1	3.7	1.6	E	3.5	5.8	3.7	6.1	6.4	C	C	C	C	C	C	C	E	E	E	E	S	S	
31																									
Mean Value	3.5	3.2	2.7	2.6	2.2	4.2	3.1	4.4	4.0	4.6	4.7	4.9	5.0	4.7	5.2	4.4	4.8	3.8	3.5	3.8	4.0	3.4	3.3	2.4	
Median Value	E	E	E	E	E	E	G	G	3.4	3.8	4.0	3.9	G	G	G	3.3	G	G	1.6	E	E	E	E	E	
Count	14	15	17	19	14	14	14	16	19	20	18	15	18	13	15	17	19	18	21	22	15	19	12	14	

fEs

Sweep 1.0 Mc to 15.5 Mc in 2 min

Manual

Automatic

W 8

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

(M3000)F2

Apr. 1952

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	S	3.7	S	S	2.6	(2.9)J	3.0	3.2	3.0	2.8	2.7	3.0	2.8	(2.9)J	2.9	3.0	3.0	3.0	(2.9)J	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	3.0	3.0	3.1	2.8	2.7	2.8	2.9	3.0	3.0	3.1	2.6	2.6	2.5	2.5	(2.6)JF	
3	(2.5)JF	2.5	2.8	(2.8)J	2.9	(3.0)S	3.0	3.0	3.1	3.0	2.9	2.9	2.7	3.0	3.1	2.9	3.0	2.8	2.9	2.9	2.7	(2.9)J	2.7	2.6	
4	2.7	2.8	2.6	(2.8)J	S	S	2.9	2.9	3.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	3.1	3.0	2.7	2.8	2.8	3.0	3.1	3.1	2.9	2.9	2.6	2.7	2.8	2.6	2.6	
7	2.5	2.5	2.5	2.7	(3.1)P	2.9	B	C	C	C	C	C	C	C	C	C	(3.2)PB	2.2	3.1	2.9	(2.7)J	(3.0)J	2.6	2.6	
8	(2.6)S	(2.7)JF	2.7	(3.0)JP	2.8	(2.8)S	2.9	3.0	3.2	3.1	2.9	2.9	(2.9)PB	B	(3.1)PB	[3.1]C	3.1	3.0	3.0	3.0	3.0	(3.0)J	(2.9)S	M	
9	M	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	3.1	2.8	2.9	(2.5)S	(2.5)S	2.8	C	S	
10	(2.7)P	2.7	S	S	S	2.6	3.0	2.9	3.3	3.1	2.9	2.5	2.7	(2.8)H	C	C	2.9	2.9	3.0	3.0	[2.8]S	2.5	S	S	
11	S	S	2.6	S	S	3.0	(3.0)S	3.1S	2.8	3.1	(3.1)J	2.9	2.9	3.1	3.0	C	C	C	2.8	2.8	2.7	2.7	2.6	2.9	
12	(2.8)S	(2.6)J	2.9	2.9	S	C	C	C	C	C	C	C	2.9	2.8	(2.9)JS	3.0	C	C	C	C	C	2.7	2.6	2.9	
13	2.6	2.6	3.1	2.9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
14	2.8	2.9	3.1	2.9	C	C	2.9	3.0	3.2	3.1F	3.0	2.9	2.8	3.0	C	C	C	3.0	3.1	2.9	[2.7]C	2.5	2.7	2.7	
15	C	C	C	C	C	C	C	C	C	3.1P	(2.8)J	C	A	3.0	3.0P	3.0	2.8	2.8	2.9	2.7	2.9	2.8	2.7	2.6	
16	2.6	2.6	2.7	2.9	2.7	A	3.2	3.0F	[2.8]S	2.7	(2.5)J	2.7	A	2.7	2.6	2.9	2.9	A	3.1	3.2	A	S	3.1	2.8	
17	S	S	2.8P	3.0	3.0	[3.1]S	3.2	2.9	B	B	B	B	2.8	2.8	(2.9)J	3.1	3.2	3.2	3.0	3.0	2.8	2.7	2.7	2.7	C
18	C	C	C	C	C	C	C	C	C	C	C	3.0	3.0	[3.0]C	2.1	2.9	3.0	3.0	3.1	3.1	(2.9)JP	3.0	S	S	
19	2.5	2.6	2.7	3.0	2.9	(3.0)S	(3.2)J	3.0	3.1	2.8	2.6	2.9P	[2.8]B	2.7	2.9	3.0	3.1	3.0	3.1	3.1	2.9	3.1	3.1	2.7	
20	2.6	2.6	[2.6]S	2.6	2.7	2.9	2.8	2.8	3.0P	[3.0]B	(2.9)PB	3.2	2.8	2.8	[2.9]B	3.0	(3.0)J	3.0	2.9	[2.9]S	2.9	3.1	3.1	2.7	
21	S	S	S	2.8P	2.8	2.8	3.1	3.1	(3.2)J	3.1	3.1	2.7P	3.0	3.1	3.0	3.0	(3.0)PB	(2.8)PB	(2.9)JS	S	S	S	S	S	
22	S	S	S	2.8P	2.8	2.8	3.1	3.1	C	B	B	A	4K	A	2.6K	2.7K	(2.8)PK	2.7K	2.6K	A	A	A	A	3.1K	
23	2.7K	2.6K	2.8K	2.8K	2.8K	3.0K	2.7K	2.9K	B	B	2.5K	2.6K	2.8K	2.7K	C	C	C	C	3.1	2.9	2.7	S	S	2.7	
24	[2.8]S	2.9	(2.7)J	(2.6)J	(2.7)J	(3.0)J	2.7	3.0	2.9	3.0P	[3.1]B	3.2	2.8	3.0	[3.0]B	3.1	3.1	3.2	2.9	(3.1)J	[3.0]S	(3.0)J	S	S	
25	2.9	2.9	[2.8]S	2.7	2.9P	3.0	(3.1)J	2.8	2.6	3.0	2.9	(3.0)JP	3.0P	2.9	2.9	2.9	2.9	3.0	2.6	C	S	S	S	S	
26	S	S	2.9	(3.0)J	(3.0)S	(3.1)J	3.1	2.9	B	B	B	3.0	2.7	2.9	2.8	2.9	2.9	3.0	2.6	C	C	C	C	C	
27	2.8	C	C	C	C	C	2.9	2.9	2.8	C	C	C	C	C	C	C	C	C	C	(2.9)JP	2.9	2.7	[2.8]S	2.8P	
28	2.8P	(2.6)JP	2.7	2.7	2.8	(3.1)J	2.9	[2.6]C	2.4K	(2.8)K	2.8K	2.8K	2.7K	2.9K	2.8K	2.7K	B	B	S	2.8K	C	C	C	S	
29	2.6K	2.5K	[2.6]S	2.8P	S	S	3.0K	A	C	2.4K	[2.6]B	2.8K	2.7K	B	3.0K	2.8K	3.0K	2.8K	2.9K	(3.0)JK	S	S	S	S	
30	S	S	S	S	2.8K	3.0K	B	A	B	A	A	C	C	C	C	C	C	C	2.5	2.5	[2.6]S	2.7	2.7	S	
31																									
Mean Value	2.7	2.7	2.7	2.8	2.8	3.0	3.0	2.9	3.0	3.0	2.9	2.9	2.8	2.9	2.9	3.0	3.0	3.0	2.9	2.9	2.9	2.8	2.8	2.7	2.7
Count	17	17	17	18	15	16	19	18	15	18	19	20	21	20	22	21	21	21	23	22	22	18	17	15	13

Manual Automatic

Group 1.0 Me to 15.5 Me in 2 min

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

Lat. 45° 28.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

fminF

Apr. 1952

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	4.0S	2.0	S	S	2.5	2.6	2.0	2.8	3.2	4.0	4.2	4.0	3.8	3.8	3.5	4.0	3.1	3.1	2.2	2.2	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	3.8	4.0	4.0A	4.6A	4.0	3.6	3.4	3.0	3.2A	2.2A	3.0A	1.8	4.6S	2.2A	1.7	
3	1.4	1.7	3.6A	2.4A	2.4A	{2.2}S	2.1	3.2	3.0	3.2	3.5	3.7	3.6	3.5	3.5	3.3	3.0	2.8	3.3	1.8	2.2	2.0	2.0	2.2	
4	1.8	1.8	2.3A	2.6	1.8	1.2	2.2	3.0	3.4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	3.3	3.0	3.2	4.0	4.0	3.6	3.6	3.0	2.2	2.0	2.2	2.0	2.2	2.2	4.0S	
7	3.6S	2.2	1.2	1.4	1.4	2.2	B	C	C	C	C	C	C	C	C	C	3.9	2.6	2.8S	3.2S	3.4S	2.4S	2.4S	2.0	
8	1.5	2.4S	1.4	4.0S	2.4S	2.3S	2.5	2.7	3.4	3.6	3.8	3.7	4.0	4.0	4.0	{3.4}C	2.8	3.0	4.0S	2.6S	4.0S	4.0S	5.0S	M	
9	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	3.4	3.4	2.3	2.8	1.3	1.4	1.4	1.4	
10	1.4	1.4	1.3	1.3	1.3	1.4	2.2	2.9	2.9	3.6	3.3	3.4	3.4	4.0A	3.6	3.0	3.0	2.2	2.0	1.7	{4.0}S	1.2	S	S	
11	S	S	1.2	1.4 ^S	S	2.2	4.0	3.6	4.0	3.6	3.7	3.5	3.8	3.6	3.6	C	C	C	2.2	2.6A	3.4A	{2.4}C	1.4	1.8	
12	2.4S	2.0	2.0	2.2	S	S	C	C	C	4.0	4.5	4.4	4.5	4.0	4.0	4.0	C	C	C	C	C	C	C	C	
13	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
14	2.6A	2.4A	1.8	1.8	C	C	2.4	2.7	3.2	3.3	3.5	3.5	3.4	3.3	3.3	2.6	2.7	2.5	C	C	C	C	C	C	
15	C	C	C	C	C	C	C	C	C	4.6A	5.0	A	A	3.2	4.0	3.4	2.8	2.4	2.2	1.4	1.4	1.5	1.3	E	
16	E	1.3	1.3	1.3	1.2	A	2.2	3.0	3.0	4.3A	4.4A	4.8A	A	4.1	3.8	4.2A	4.9A	A	A	A	A	A	2.3A	2.0	
17	S	S	2.0	2.5	2.0	{3.0}S	4.0	3.3	A	A	B	B	4.2	4.1	5.0A	4.4A	3.4	2.5	2.3A	1.4	1.4	2.0	1.4	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	C	1.3B	3.6	3.3	3.6	2.8	(2.0)C	1.3	E	E	E	C	
19	1.3	3.6S	E	E	E	A	2.2	3.0	3.4	3.3	3.6	3.8	3.8	4.6A	3.4	3.1	3.3	2.6	2.0	3.7	3.8S	4.5	{3.4}S	2.2	
20	1.7	3.8S	{2.9}S	2.0	2.2	2.0	2.4	2.6	3.7	4.0	4.0	3.8	4.0	3.7	3.2	3.7	3.0	2.6	2.0	2.0	2.0	3.0S	3.6S	2.0	
21	S	S	S	2.0	{2.0}S	2.0	2.5	3.0	3.7	4.1	4.2A	4.0	4.1A	3.9	3.6	3.4	3.6	4.0A	4.0A	A	S	S	S	S	
22	S	S	S	2.2A	S	C	C	C	C	A	A	A	3.0	A	3.2	4.0A	3.4	2.2	3.8A	A	A	A	2.2	2.2	
23	3.5S	2.2	2.2	1.7	1.4	1.4	3.5S	2.2	4.0	3.4	3.4	{3.6}M	3.7	3.2	C	C	C	C	2.2	2.2	2.2	S	S	2.2	
24	{2.2}S	2.2	2.2	2.2	2.2	3.8C	2.2	4.0	3.3	4.8A	4.4	4.0	4.0	4.0	4.0	3.5	3.0	2.2	2.1	2.0	2.0	2.0	S	S	
25	2.0	2.3	2.0	2.0	2.0	2.0	2.9	3.3	3.5	3.5	4.0	3.8	4.6	4.6	4.0	3.6	3.5	3.4	2.3	1.4	1.4	S	S	2.2S	
26	{2.2}S	2.3S	4.5S	1.2	E	2.2	3.0	3.6	4.0A	{4.2}B	4.3	3.6	3.6	4.4	3.1	3.4	3.0	2.8	2.0A	C	C	C	C	C	
27	1.8	C	C	C	C	C	2.2	3.6	3.8	C	C	C	C	C	C	C	C	C	2.3A	2.2	2.2	{2.2}S	2.1		
28	2.0	2.0	2.0	2.1	2.1	2.0	2.6	{3.0}C	3.3	5.0A	4.6A	4.0A	3.5	3.4	4.5A	3.7	4.6A	2.0	2.3	3.6A	{2.8}C	2.0	S		
29	2.0	2.0	A	E	S	S	2.6	A	C	4.4	{4.2}B	4.1	4.6	4.8	4.6	3.5	3.0	2.9	2.8	2.0	{2.0}S	2.0	2.2	S	
30	A	A	2.3A	A	2.0	2.0	A	A	A	A	A	C	C	C	C	C	C	C	2.2	1.4	1.4	2.0	1.4	S	
31																									
Mean Value	2.1	2.2	2.2	2.0	1.9	2.2	2.6	3.1	3.5	3.9	4.0	3.8	3.9	3.9	3.8	3.5	3.3	2.7	2.5	2.3	2.3	2.4	2.3	2.3	
Median Value	2.0	2.2	2.0	2.0	2.0	2.1	2.4	3.0	3.4	3.9	4.0	3.8	3.8	4.0	3.6	3.5	3.0	2.6	2.2	2.2	2.0	2.0	2.2	2.0	
Count	18	17	18	2.0	1.7	1.6	1.9	1.8	1.7	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.2	2.2	2.4	2.2	2.4	2.2	1.9	1.8	1.6

fminF

Breep. 1.0 Mc to 15.5 Mc in 2 min

Manual Automatic

W10

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

Lat. 4° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

Apr. 1952

f_{min}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	S	E	S	S	S	E	B	B	1.4	1.4	2.2	3.0	2.4	1.4	2.2	2.1	1.4	1.4	1.4	1.4	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	1.4	1.4	1.4	2.6	B	B	2.2	1.8	1.7	1.8	2.0	1.3	4.0	2.1	E	
3	E	E	1.7	1.9	1.2	S	1.1	2.2	1.2	1.8	3.0	3.2	B	2.4	2.3	2.0	1.8	2.2	1.9	E	C	C	C	C	
4	E	E	1.2	E	1.1	E	1.7	2.4	2.2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	2.8	B	B	2.2	B	B	2.2	2.2	B	E	E	E	E	E	S	
7	S	E	E	E	E	E	B	C	1.4	C	C	C	C	C	C	C	1.7	B	S	S	S	S	S	E	
8	E	S	E	S	S	S	1.4	1.4	B	B	3.0	3.0	B	B	B	C	1.8	B	S	S	S	S	S	M	
9	M	M	M	M	M	M	1.7	1.7	1.7	C	C	C	C	C	C	C	1.4	1.4	E	E	E	E	C	S	
10	E	E	E	E	E	E	1.4	1.4	1.4	1.3	1.2	1.3	1.3	1.3	1.4	1.3	1.3	1.3	E	E	E	E	S	S	
11	S	S	E	S	S	E	1.2	1.3	1.4	1.4	1.5	1.5	1.3	1.4	2.2	C	C	C	E	S	S	E	E	S	
12	S	E	E	E	S	C	C	C	C	3.3	B	B	B	B	B	B	C	C	E	S	S	E	E	S	
13	E	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.2	1.2	1.2	C	C	C	
14	1.1	1.2	1.1	1.3	1.3	1.2	1.8	1.8	1.6	1.2	1.2	E	E	E	E	1.2	1.1	E	C	C	C	C	C	C	
15	C	C	C	C	C	C	C	C	C	3.6	3.9	2.3	3.2	2.0	3.3	2.2	1.2	1.2	1.2	1.2	2.6	2.0	2.0	E	
16	E	E	E	E	E	2.0	B	B	1.5	1.2	1.5	1.4	1.3	1.3	1.4	2.0	1.4	2.0	2.6	2.0	2.6	2.0	2.0	E	
17	S	S	E	E	E	C	B	B	2.0	2.0	B	B	2.3	2.2	2.3	1.5	1.4	1.5	1.4	E	E	E	E	C	
18	C	C	C	C	C	C	C	C	C	C	C	C	2.6	[2.6] ^c	2.7	2.2	B	B	E	E	E	E	E	C	
19	E	S	E	E	E	E	1.5	1.4	1.2	2.0	B	2.2	1.6	1.7	1.4	1.4	1.4	1.4	C	2.0	S	1.8	S	E	
20	E	S	S	E	E	E	1.4	1.4	1.4	1.4	2.4	2.6	2.2	2.2	2.4	1.6	1.6	1.6	1.2	2.0	E	S	S	E	
21	S	S	S	E	C	E	1.4	1.4	2.0	1.7	3.3	3.3	2.3	1.6	2.7	1.6	1.6	1.6	1.6	1.6	S	2.2	S	2.0	
22	S	S	S	E	C	C	C	C	C	1.4	1.4	1.4	2.2	2.2	2.6	1.4	1.4	1.4	1.4	1.4	2.2	1.4	E	2.2	
23	S	E	E	E	E	E	1.8	1.8	1.4	1.4	1.4	[1.8] ^h	2.2	2.2	C	C	C	E	E	E	S	S	S	E	
24	S	E	E	E	E	M	1.4	1.4	2.2	2.4	2.6	B	B	B	B	B	B	B	E	E	E	S	S	S	
25	E	E	E	E	E	E	1.6	2.2	3.4	3.1	B	B	3.7	B	B	B	2.2	1.5	1.4	E	E	S	S	S	
26	S	S	S	E	E	E	1.4	3.4	[2.3] ^B	1.2	1.2	1.2	2.7	[2.4] ^B	2.2	1.7	1.4	1.2	1.2	C	C	C	C	C	
27	E	C	C	C	C	E	B	E	1.2	C	C	C	C	C	C	C	C	C	C	2.1	E	E	S	E	
28	E	E	E	E	E	E	1.5	[1.8] ^c	2.2	2.2	2.4	2.2	B	B	2.4	2.2	2.0	2.0	2.2	2.2	[2.1] ^c	2.0	S	S	
29	E	E	E	E	E	S	2.0	E	C	B	B	B	B	B	B	3.3	B	2.0	B	E	S	E	E	S	
30	2.0	E	E	E	E	E	2.0	2.8	3.0	2.2	2.6	C	C	C	C	C	C	C	E	E	E	E	E	S	
31																									
Mean Value	1.6	1.2	1.5	1.6	1.2	2.0	1.5	1.8	1.8	2.0	2.2	2.3	2.3	1.8	2.3	1.9	1.6	1.6	1.6	1.8	2.0	2.1	1.7	1.8	
Median Value	E	E	E	E	E	E	1.4	1.4	1.5	1.8	2.3	2.0	2.2	2.0	2.3	2.0	1.4	1.4	1.2	E	E	E	E	E	
Count	14	15	17	19	15	15	14	17	19	19	18	16	18	15	15	17	19	18	22	22	16	20	13	14	

Manual Automatic

Sweep 1.0 Mc to 15.5 Mc in 2 min

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

Lat. 39° 48.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

foF2

Apr. 1952

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	5.1	4.3 ^F	5.3 ^F	4.6	4.3	4.9	6.0	6.6	7.2	C	C	C	C	C	C	C	C	9.4	7.8 ^T	7.3	6.6	4.9	4.5	4.0
2	3.2 ^Z	3.3	4.8 ^F	4.9 ^F	4.7	3.3	5.3	5.6	7.4	8.6 ^H	9.6 ^H	8.5	8.6 ^T	9.6	11.6	9.8	7.8	6.9	7.0	6.6 ^S	6.2 ^S	5.2	4.8	4.9
3	4.6	4.6 ^M	4.7 ^F	5.4	4.2	3.7	6.0	6.5	7.8	6.8	7.5	10.7 ^A	8.9	11.3	10.0	8.9	7.9	7.3	8.4 ^H	8.4	7.1 ^S	5.8	5.5	5.0
4	4.9	5.1	4.0	4.5	4.7	4.4	6.1	(6.0) ^B	5.9	6.5	8.4	8.8	8.0	8.8	9.1	8.6	8.1	7.4	6.9	6.0	5.6	5.5	5.3	5.2
5	5.2	5.1	4.7	4.5	3.7	4.4	5.0	5.2	6.6	5.6	7.4	6.3	6.7	6.7	7.4	6.8	C	B	5.3	5.5	5.6	5.3	5.4	5.1
6	5.2	4.7	5.0	6.0	3.3	3.8	4.6	6.4	6.4	7.3	7.6	7.8	8.9	10.8	9.1	7.4	6.5	5.9	7.0	6.2	5.4	5.4	(5.4) ^F	5.2 ^F
7	5.3	(5.1) ^S	4.9 ^F	5.2	4.4	3.5	5.0	6.9	7.4	8.4	9.8	9.7	9.2	8.8	8.6	7.9	7.8	7.6	7.8	6.7	(5.6) ^S	5.7 ^S	C	S
8	(5.1) ^S	4.9	4.5	4.7	4.7	4.6	6.1 ^T	6.6	C	C	C	C	C	C	C	C	C	8.3	8.0	7.1	5.3 ^S	5.3	5.4	F
9	F	F	4.9 ^F	(4.8) ^F	2.5 ^F	2.8	3.5	4.4 ^H	4.2	6.8	5.9	6.5	6.5	7.9	9.2	8.1	6.6	6.5	6.5	6.2	5.7	4.8	4.2	3.8
10	3.9	4.2	4.4	4.4	3.9	3.2	6.1	6.4	7.0	7.6	(7.5) ^T	7.8	9.0	10.6	10.8	10.5	8.5	7.4	7.3	6.3 ^T	3.6	3.5	3.7	4.6
11	3.9	4.4	4.0	4.3	3.7	4.4	6.1	6.6	7.9	8.7	9.5	8.0	7.4	6.5	7.6	8.2	8.6 ^F	6.9	7.3	7.5	6.8	5.2	5.2	5.5
12	5.2	5.3	5.5	4.2	3.1	3.5	6.0	7.6	8.6	8.0	8.1	8.2	7.4	8.0	8.3	8.5	7.4	6.6	7.2	6.8	6.1	5.5	5.1	4.8
13	5.2	5.1	4.8	4.7	3.8	4.4	5.8	6.2	8.5	8.9	8.3	7.8	7.2	7.9	9.2	9.3	9.5	9.0	7.0	5.0	(4.8) ^B	4.7	5.2	5.0
14	4.8	4.5	4.8	4.4	3.1 ^M	3.3	5.9	6.0	7.8	7.9	8.4	7.4	7.9	8.4	9.1	8.8	7.6	6.5	5.9	6.8	6.3 ^T	5.0	5.2	5.4
15	4.4 ^V	4.9	4.5	4.8 ^S	4.4	5.0	5.3 ^M	5.3 ^M	5.4 ^M	7.3	(7.8) ^B	8.3	8.4	7.8	8.7	8.3	7.1	6.5	6.6 ^M	6.8	6.3 ^T	5.2	5.0	4.8 ^F
16	4.2	4.7 ^F	4.0 ^F	4.0	3.4	3.2 ^F	6.1 ^F	6.5	6.2	6.5	6.1	7.0	7.1	6.7	7.8	7.4	6.6	6.1	7.8 ^T	6.5	5.5	4.5	4.8	4.2
17	3.4 ^F	3.8 ^F	3.6 ^F	4.1 ^F	(3.7) ^A	3.3	4.8	6.5	5.8	6.5	6.9	6.9	6.8	7.5	7.8	8.0	7.7	6.5	5.3	4.6	S	A	4.3	4.3 ^F
18	4.3 ^F	4.5 ^F	4.2 ^F	4.0	3.3	3.7 ^F	5.5	6.8	6.6 ^F	6.9	7.3	6.1	6.7	6.9	7.6	7.4	6.6	5.9	A	A	S	4.8 ^M	3.9	3.9
19	S	S	4.6 ^M	4.5 ^F	4.6 ^F	4.5	5.4	5.9 ^H	6.4	7.4	6.8	7.1	9.3	9.2	9.5	8.0	(7.6) ^C	7.1 ^F	7.3	6.7 ^S	6.1 ^F	5.8 ^F	F	S
20	4.7	4.6 ^M	4.5 ^V	4.9 ^V	5.3	3.9	4.9 ^V	6.0 ^V	7.6	8.2	7.5	(7.4) ^S	7.2 ^T	7.3	7.6	8.2	8.5	8.0	8.3	7.2	6.9	5.8	4.6	4.3
21	4.4	4.0	4.2	3.9	4.0	4.8	6.7	7.7	7.7	7.1	6.4 ^I	6.7	7.8	7.1	7.2	8.0	7.4	7.4	7.6	7.6	9.2 ^K	6.8 ^K	3.5 ^K	(3.2) ^K
22	3.0 ^K	3.0 ^K	3.8 ^F	4.0 ^K	2.8 ^F	3.8 ^K	3.3 ^K	4.9 ^K	A ^K	A ^K	B ^K	9 ^K	5.3 ^K	5.4 ^K	5.3 ^K	6.2 ^K	6.8 ^K	5.7 ^K	5.6 ^K	6.2 ^K	4.8 ^K	4.4 ^K	4.6 ^K	4.0 ^K
23	4.5 ^K	3.9 ^K	3.8 ^K	3.4 ^K	3.7 ^K	3.9 ^K	5.4 ^K	4.9 ^K	B ^K	5.9 ^K	5.0 ^K	A ^K	5.9 ^K	5.8 ^K	6.5 ^K	5.9 ^K	6.8	5.8	5.7	5.6	5.7	5.2	5.2	4.0
24	4.1	3.6	3.8	4.0	3.5 ^M	4.5 ^F	6.0 ^F	7.6	7.0	7.9	6.0	(6.1) ^B	6.6	7.3	7.4	7.2	7.1	6.3	6.4	6.6	6.6	5.7	5.1	4.7
25	4.7	4.6	4.0	3.9	3.9	4.4	6.0	6.2	6.3	7.3	6.8	6.3	7.1	6.7	6.9	7.5	8.1	6.9	7.0	6.1	5.1	5.3	5.2 ^F	4.3 ^F
26	5.2	5.1	5.2 ^S	5.2	3.3 ^S	3.9	4.6	6.3	7.4	7.9	7.1	7.0	7.4	7.6	7.9	7.2	6.5	6.5	6.6	7.4	7.4	6.5 ^F	5.4 ^F	6.0 ^F
27	F	F	5.4	4.7	4.3	4.2	6.3	6.6	6.5	8.4	7.2	6.6 ^M	6.5	8.0	8.2	8.5	8.6	8.1	7.4	BS	4.8	4.5	4.8	(4.7) ^S
28	4.6	4.5	4.5	4.3	4.4	4.5	5.4	5.7	6.5	(6.3) ^I	6.1 ^F	6.1 ^F	6.0 ^T	7.1 ^P	7.4	7.5	8.4	8.7	8.6	6.5	4.5	3.8	4.0	
29	3.6	3.8	4.1 ^F	4.1 ^F	3.3 ^F	4.2	4.6	4.7	5.2 ^K	B ^K	B ^K	B ^K	6.8 ^K	B ^K	7.5 ^K	6.5 ^K	7.0 ^K	7.0 ^K	B ^K	8.0 ^T	5.3 ^K	5.0 ^K	4.7 ^K	
30	4.4 ^K	4.3 ^K	A ^K	3.9 ^K	3.8 ^F	3.5 ^K	B ^K	4.8 ^K	A ^K	A ^K	A ^K	A ^K	A ^K	A ^K	4.5 ^K	5.2 ^K	5.1 ^K	5.5 ^K	4.9 ^K	4.6 ^K	5.3	5.0	5.1	4.1
31																								
Mean Value	4.5	4.4	4.5	4.5	3.9	4.0	5.4	6.1	6.8	7.4	7.4	7.5	7.4	7.8	7.9	7.9	7.5	7.0	6.9	6.5	5.8	5.2	4.8	4.6
Median Value	4.6	4.5	4.5	4.4	3.8	3.9	5.5	6.2	6.8	7.3	7.4	7.1	7.2	7.6	7.8	8.0	7.6	6.9	7.0	6.6	5.6	5.2	5.0	4.7
Count	27	27	29	30	30	30	29	30	26	25	25	25	27	27	28	28	27	29	28	28	28	29	28	27

Sweep 1.0 Mc to 17.0 Mc in 15 min

Manual Automatic

foF2

A 1

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

f_oF₂

Apr. 1952

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	350	350 ^F	410	320	270	280	280	260	270	C	C	C	C	C	C	C	C	280	(260)	270	280	310	330	330	
2	350 ^F	400	(350)	(270)	260	290	260	250	290	260 ^H	260	270	(300)	340	300	280	270	250	270	(280)	280	330	360	350	
3	340	360	330	320	350	310	270	270	250	250	320	310	300	310	280	300	280	270	300 ^H	250	(320)	380	400	320	
4	340	310	350	340	380	320	280	(280)	270	310	330	290	280	300	270	270	260	250	250	290	330	400	340	350	
5	360	360	330	320	310	320	270	340	280	U	290	300	290	300	290	290	C	B	310	300	340	290	330	330	
6	310	330	370	260	330	270	280	300	260	300	300	320	310	310	260	250	250	250	270	290	290	360	(350)	340	
7	370	(380)	340	290	230	300	220	270	300	290	290	310	300	280	280	270	270	270	270	(280)	280	280	C	S	
8	(380)	350	330	320	300	310	(240)	260	C	C	C	C	C	C	C	C	C	280	260	280	260	320	300	F	
9	F	F	300	(330)	330	330	280	340	230	270	360	U	360	320	290	260	250	270	280	310	300	300	320	340	
10	330	320	330	330	350	320	250	260	270	270	(290)	320	340	320	300	280	260	270	270	(240)	320	370	350	350	
11	350	340	320	300	310	270	270	270	290	290	280	240	290	270	280	300	270	270	290	280	270	300	340	380	
12	350	340	290	320	300	310	260	270	300	270	290	270	260	310	290	290	280	280	270	280	280	360	310	320	
13	340	320	320	300	330	300	300	280	270	270	270	280	290	330	300	300	270	270	250	270	(320)	380	380	340	
14	330	310	290	250	320	310	250	270	260	280	270	270	310	300	290	270	270	250	270	270	(320)	380	380	340	
15	340	340	360	350	320	330	280	280	280	280	320	(310)	300	290	280	260	250	240	290	270	(270)	320	390	370	
16	400	320	310	280	310	340	300	280	310	320	320	330	310	330	310	300	270	270	(250)	290	280	300	250	320	
17	360	(360)	(350)	(270)	(300)	330	270	270	290	330	300	300	360	300	310	290	(280)	280	280	260	240	260	A	330	
18	360	(300)	290	260	370	300	240	270	270	250	250	300	300	300	300	280	280	260	240	260	280	S	A	330	
19	S	S	300	280	310	300	260	240	290	300	300	300	300	300	280	280	280	260	A	A	S	260	290	320	
20	330	(370)	340	320	240	270	260	280	300	300	240	B	300	310	290	290	(280)	280	280	260	320	(350)	FS	S	
21	350	330	330	310	320	300	270	270	290	280	(260)	330	300	290	320	300	300	290	310	300	280	240	370	300	
22	440	(450)	(420)	(320)	(400)	320	290	U	A	A	B	G	U	U	U	320	300	300	270	280	310	350	390	350	
23	320	320	360	380	370	290	260	300	B	300	U	A	U	U	(270)	310	280	260	260	320	(310)	320	(300)	320	
24	310	330	320	280	340	310	300	240	250	260	280	B	300	290	280	290	280	270	280	300	290	300	320	330	
25	340	330	380	360	330	370	280	270	290	290	310	320	300	310	330	310	280	260	290	260	330	310	340	350	
26	320	310	340	290	280	270	250	280	270	290	300	320	320	310	300	290	280	290	260	290	280	350	340	330	
27	F	F	300	290	340	320	270	300	310	290	280	350	300	350	310	290	290	270	270	BS	280	300	330	(350)	
28	370	340	340	330	300	280	330	270	310	C	U	A	A	360	350	330	320	300	250	250	280	350	320	390	
29	370	360	(320)	(280)	320	300	270	280	U	B	B	B	330	B	300	310	300	310	B	(260)	320	380	300	350	
30	370	360	A	320	(320)	320	B	280	A	A	A	A	A	B	U	U	U	U	U	U	340	350	310	340	
31																									
Mean Value	350	350	340	310	320	270	280	280	290	290	300	300	310	300	290	280	280	270	280	280	280	300	330	340	340
Median Value	350	340	330	320	320	310	270	270	280	290	310	300	310	290	290	280	280	270	270	270	280	300	330	340	340
Count	27	27	29	30	30	30	29	29	25	23	23	21	24	24	26	27	26	29	28	28	28	29	27	27	27

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

Lat. 39° 48.5' N
Long. 140° 08.2' E

A k i t a

IONOSPHERIC DATA

135° E Mean Time

foF1

Apr. 1952

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	C	C	C	C	C	C	C	C	Q	A						
2							Q	Q	Q	A	Q	Q	4.8	4.4 ^H	4.4	4.0	L	A	Q						
3							Q	Q	3.8	4.0	5.0	A	A	4.4	4.4	4.2	4.0	4.0	Q						
4							Q	L	4.2 ^L	A	4.6	B	B	3.9	A	L	3.7	Q	A						
5							Q	Q	Q	B	4.5	4.7	4.6	4.4	4.5	4.3	C	Q	Q						
6							Q	L	Q	4.7	L	4.8	4.8 ^H	4.6	4.5 ^H	4.2	3.8	Q	Q						
7							Q	L	Q	4.2	A	L	5.0	4.6	4.5	4.4	Q	Q	Q						
8							Q	Q	C	C	C	C	C	C	C	C	C	Q	Q						
9							Q	Q	Q	Q	4.4	B	L	L	4.6	3.9	3.7	3.0	Q						
10							Q	Q	4.0	L	L	L	L	L	4.6	L	L	L	Q						
11							Q	L	4.5 ^L	L	4.6	4.5	4.6	4.3	4.4	L	4.0	Q	Q						
12							Q	Q	Q	4.7	4.8	L	4.7	4.7	4.6	4.6 ^J	4.2	L	Q						
13							Q	Q	3.9	4.2	4.5	4.7	4.7	4.5	A	A	A	A	Q						
14							Q	Q	L	L	(4.6) ^L	(4.7) ^L	4.6	4.6	4.5	(4.5) ^L	(3.9) ^L	Q	Q						
15							Q	Q	Q	4.4	A	A	4.7	B	B	4.2	3.8	Q	Q						
16							Q	Q	A	A	4.6	4.4	A	B	4.8	4.6	3.8	Q	Q						
17							Q	Q	A	4.4	4.6	4.6	4.7	4.4	4.6	4.2	A	Q	A						
18							Q	Q	Q	Q	Q	L	4.5	4.2	4.6	4.2	4.0	Q	A						
19							Q	Q	L	A	4.8	4.7	4.7	4.6	4.5	4.2	A	A	Q						
20							Q	L	4.1	4.4	4.6	4.6	4.6	4.7	4.8	4.6 ^H	3.8	Q	Q						
21							Q	Q	A	4.4	4.6	4.8	4.2	A	4.3	4.0	3.8	Q	Q						
22							Q	3.5	A	A	3.9	4.3	4.3	4.4	4.4	4.1 ^H	4.0	3.6	Q						
23							Q	L	4.1	4.3	L	A	4.6	4.5	4.5	4.4	L	Q	A						
24							L	Q	4.1	4.2	A	A	4.7	4.6	4.2	4.1	L	Q	Q						
25							L	3.9	4.3	4.5	4.5	4.6	4.6	4.6	4.6	4.3	4.1	Q	Q						
26						2.3 ^J	A	4.2 ^L	4.4 ^J	5.0	5.0	4.8	4.9	4.6	4.4 ^H	4.2	L	Q	Q						
27							Q	L	4.4	4.6	Q	A	4.8	4.9	A	4.2	A	Q	Q						
28							L	3.9	A	C	4.6	A	A	A	A	4.4	3.8	3.6	Q						
29							Q	3.8	4.0	4.6	B	B	4.6	B	4.8	A	4.2	3.1	2.9						
30							Q	Q	A	A	A	A	A	B	4.2	4.1	3.8	3.4	L						
31																									
Mean						2.3		3.9	4.2	4.4	4.6	4.6	4.7	4.5	4.5	4.2	3.9	3.5	2.9						
Median						2.3		3.9	4.1	4.4	4.6	4.7	4.7	4.6	4.6	4.2	3.8	3.5	2.9						
Value						1		5	12	16	16	13	21	21	22	23	18	6	1						
Count																									

Sweep 1.0 Mc to 17.0 Mc in 15 min

Manual Automatic

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1952

R/F1

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	230	230	C	C	C	C	C	C	C	C	Q	A					
2							Q	Q	Q	A	Q	Q	220	230 ^H	230 ^H	230	230	A	Q					
3							Q	Q	230	230	220	A	A	220	A	230	250	230	Q					
4							Q	250	250	A	250	220	B	210	A	240	210	A	A					
5							Q	Q	250	240	250	230	220	220	230	230	C	Q	Q					
6							Q	230	Q	220	200	A	220 ^H	220	220	210	210	210	Q	Q				
7							Q	220	Q	230	A	230	280	220	210	220	Q	Q	Q					
8							Q	Q	C	C	C	C	C	C	C	C	C	Q	Q					
9							Q	Q	Q	Q	230	250	B	240	260 ^B	230	240	230	Q					
10							Q	Q	220	240	230 ^A	230 ^A	210	200	250	230	230	230	Q					
11							Q	220	220	220	220	210	200	210	230	A	260	Q	Q					
12							Q	Q	Q	230	230	230	230	240 ^B	220	250	250	240	Q					
13							Q	Q	220	230	230	230	220	230	A	A	A	A	Q					
14							Q	Q	240	A	250 ^B	240	A	210	230	230	240	Q	Q					
15							Q	Q	Q	270	A	A	A	B	B	230	230	Q	Q					
16							Q	Q	A	230	A	A	A	B	260	230	270	Q	Q					
17							Q	Q	A	250	B	A	A	A	260	230	A	Q	Q					
18							Q	Q	Q	Q	Q	A	250 ^A	A	210	260	250	Q	A					
19							Q	Q	240	A	A	250	290	200	B	220	A	A	Q					
20							Q	220	230	220	200	190	200	200	210	240 ^H	210	Q	Q					
21							Q	Q	A	230	240	230 ^B	200	A	220	220	220	Q	Q					
22							Q	240	A	A	260	240	240	230	230	240 ^H	230	270	Q					
23							Q	230	230	210	210	A	210	230	210	230	270	Q	A					
24							180	Q	220	210	A	A	220	250	220	240	240	Q	Q					
25							240	230	240	220 ^H	220	210	210	230	230	240	260	Q	Q					
26							230	A	270	A	240	230	230	220	180 ^H	250	250	Q	Q					
27								Q	280	270	240	Q	A	230	240	A	230	A	Q					
28								220	220	A	C	230 ^H	A	A	A	220	260	260	Q					
29								Q	240	260	230	B	210	B	A	A	260	220	240					
30								Q	Q	260	A	A	A	B	230	240	230	230	260					
31																								
Mean Value							230	210	240	240	230	230	230	220	230	230	240	240	250					
Max Value							230	220	230	240	230	230	220	220	230	230	240	240	230	250				
Count							1	3	13	16	17	18	15	19	20	20	22	22	8					

R/F1

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual Automatic

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

Lat. 39° 48.5' N
Long. 140° 08.3' E

Akita

IONOSPHERIC DATA

135° E Mean Time

foE

Apr. 1952

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							2.2	2.4	2.9	C	C	C	C	C	C	C	C	2.0	A					
2							1.9	2.3	2.8	A	B	3.2	3.3	3.3	3.1	A	2.9	A	B					
3							1.9	2.2	3.0	3.1	3.2	3.2	3.1	A	A	A	2.7	2.4	B					
4							A	2.4	2.8	A	A	A	A	A	B	A	2.6	2.2	A					
5							2.1	2.3	2.9	2.9	3.1	3.0	3.4	3.3	3.1	3.0	C	A	A					
6						1.2	1.8	2.4	2.7	2.8	3.4	A	3.2	3.2	3.1	2.9	2.6	2.3	A					
7							1.9	2.4	2.8	2.8	A	A	A	B	3.2	3.1	2.6	2.4	A					
8							1.8	2.5	C	C	C	C	C	C	C	C	C	A	1.7					
9						1.2	1.8	2.6	3.0	3.0	3.0	A	A	A	A	3.2	2.9	2.7	A	B				
10							1.9	2.6	2.9	3.0	3.1	3.1	3.4	A	A	2.8	A	2.2	1.7					
11							2.0	2.4	2.8	2.8	3.2	3.2	3.3	3.2	3.2	B	2.6	2.4	1.9					
12							B	2.6	3.0	3.0	3.0	3.4	3.3	3.3	3.0	3.2	3.0	2.3	B					
13							A	2.8	3.2	A	3.5	A	3.4	3.4	3.4	A	A	A	A					
14						1.1	2.0	2.5	2.8	2.7	2.6	2.7	A	A	A	A	2.9	2.8	A					
15						1.4	1.9	2.8	2.8	3.1	3.4	3.4	3.4	3.5	3.0	2.9	2.7	2.1	B					
16							2.1	2.6	3.0	3.2	3.2	3.4	3.3	3.3	3.2	B	2.8	2.4	A					
17							B	2.6	2.7	3.2	3.3	A	A	3.1	3.2	A	A	2.4	A					
18							A	A	2.6	3.0	A	3.4	B	3.2	3.2	3.0	2.8	2.3	A					
19							2.1	2.7	3.2	3.3	3.3	3.4	A	3.2	3.2	3.0	A	A	A					
20							2.2	2.7	2.9	3.2	3.4	3.4	3.4	3.4	3.3	A	A	A	1.8 ⁷					
21							A	A	A	3.0	B	B	3.4	3.4	3.2	3.0	2.9	A	B					
22							2.2	2.6	2.8	3.1	3.5	3.4 ⁷	A	A	A	A	A	A	B					
23							2.0	2.5	2.9	3.1	3.3	A	A	A	A	A	2.9	2.4	A					
24						1.5	2.0	2.6	3.0	3.2	3.2	A	3.6	3.6	3.2	3.4	3.0	2.2 ⁷	1.9					
25							2.0	2.5	3.0	3.2	A	B	B	3.2	3.2	3.0	2.8	A	A					
26							2.3	2.8	2.9	3.1	3.3	3.4	3.3	3.3	3.2	3.1	2.8	2.4	B					
27							2.1	2.7	2.9	3.2	3.3	3.4	3.3	3.3	3.3	3.2	2.9	2.5	1.9					
28							2.0	2.7	2.9	(3.2) ⁶	3.4	3.4	3.4	3.4	3.4	3.4	2.9	2.6	A					
29							2.0	2.6	2.9	3.2	3.3	3.4	3.3	3.4	3.2	3.1	2.8	2.3	2.0					
30							2.2	2.4	2.8	3.0	A	3.2	3.3	3.2	3.2	3.2	2.7	A	1.9					
31																								
Math Value						1.3	2.0	2.5	2.9	3.1	3.2	3.3	3.3	3.3	3.2	3.1	2.8	2.3	1.9					
Median Value						1.2	2.0	2.6	2.9	3.1	3.3	3.4	3.3	3.3	3.2	3.0	2.8	2.4	1.9					
Count						5	24	28	28	24	22	18	18	20	21	18	21	20	8					

Manual Automatic

Sweep 1.0 Mc to 17.0 Mc in 15 min

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

Lat. 39° 48.6' N
Long. 140° 08.3' E

IONOSPHERIC DATA

Akita

135° E Mean Time

Apr. 1952

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							120 ^B	110	110	C	C	C	C	C	C	C	C	B	A						
2							B	100	A	C	110	110	110	110	110	A	120	A	B						
3							120	110	110	110	110	110	110	110	A	A	A	110	A	B					
4							A	110	110	A	A	A	A	A	B	A	110	110	A	B					
5							B	110	110	110	110	110	110	110	110	110	C	A	A						
6						E	120 ^B	110	110	110	110	A	110	110	110	110	110	100	A						
7							110	110	110	110	A	A	A	110	110	110	110	120	A						
8							B	110	C	C	C	C	C	C	C	C	C	A	B						
9							110	120	110	110	110	A	A	A	120	110	110	A	B						
10							110	110	110	110	110	110	110	110	A	110	A	A	B						
11							140	A	110	110	110	110	110	110	110	110	A	110	B						
12							B	110	110	110	110	110	110	110	110	110	B	120 ^B	110	B					
13							A	110	110	A	110	A	110	110	110	110	A	A	A						
14							E	110	110	110	110	110	110	110	110	110	A	A	A						
15							120 ^B	130	110	120	120	110	110	120	110	120	110	110	A						
16							110	110	110	110	110	110	110	110	110	110	110	110	110	B					
17							B	120	110	110	100	A	A	110	110	110	110	130	A						
18							A	A	110	110	A	110	110	110	110	110	A	A	A						
19							110	110	110	110	A	110	100	110	110	110	110	110	A						
20							120	140	110	110	110	110	A	110	110	110	A	A	A						
21							A	A	A	110	110	110	110	110	A	A	A	120 ^B	110						
22							110	110	110	110	110	110	110	110	110	110	110	110	A	B					
23							110	110	110	110	110	A	A	A	A	A	A	110	B						
24							110	110	110	110	110	A	A	A	A	A	110	110	A						
25							110	110	110	A	110	110	110	110	100	110	110	100	110						
26							130	110	110	110	110	110	110	110	110	110	110	110	110	B					
27							110	110	110	110	110	110	110	110	110	110	110	110	110	B					
28							110	110	110	110	110	110	110	110	110	110	110	110	110	B					
29							B	110	110	110 ^C	110	110	110	110	110	110	110	110	110	A					
30							110	110	110	110	110	110	110	110	110	110	110	110	110	B					
31							110	110	110	110	A	110	110	110	110	110	110	110	A	130					
Mean							110	120	110	110	110	110	110	110	110	110	110	110	110						
Median							110	110	110	110	110	110	110	110	110	110	110	110	110						
Value							5	20	27	27	24	24	20	20	21	21	19	21	17						
Count																			4						

135° E

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual Automatic

A 7

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

fEs

Apr. 1952

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	E	2.2	E	E	E	G	G	G	C	C	C	C	C	C	C	C	G	3.2	2.8	2.8	E	E	E	
2	E	E	E	2.4	E	E	G	4.0	2.8	5.4	5.0	G	G	G	G	3.4	G	4.2	3.4	C	4.4	4.5	4.5	2.3	
3	3.2	3.0	3.0	3.2	2.0	2.0	G	G	4.2	4.4	4.4	5.6	5.8	4.2	4.9	3.8	G	2.4	3.9	2.6	5.0	3.8	E	E	
4	E	2.4	2.3	2.4	2.0	E	3.2	4.2	4.4	4.4	4.0	3.8	3.8	3.4	4.4	3.3	G	G	3.0	3.2	2.4	2.6	E	E	
5	E	2.6	2.4	2.4	1.4	E	2.2	2.6	3.8	4.7	G	4.8	4.3	G	G	G	C	2.9	3.4	E	E	E	E	E	
6	E	E	E	E	2.0	G	G	G	4.6	4.5	G	4.8	G	G	G	G	G	2.6	3.1	2.7	2.4	1.9	1.8	E	
7	E	E	E	E	E	1.8	G	G	G	4.2	5.6	6.4	5.1	G	G	G	G	G	2.6	2.2	E	2.5	C	E	
8	E	E	1.8	2.2	E	E	G	G	C	C	C	C	C	C	C	C	C	3.4	G	E	E	2.2	2.2	E	
9	E	E	E	2.2	E	G	G	G	G	G	3.6	3.4	3.7	3.6	G	G	G	2.2	B	E	E	E	E	E	
10	E	E	1.2	E	E	E	G	G	G	G	4.8	4.8	G	4.1	3.4	3.8	3.6	G	G	E	2.3	2.0	E	E	
11	E	E	E	E	E	E	G	3.1	G	G	4.6	4.0	G	G	G	4.0	G	G	G	2.4	2.4	2.4	E	2.4	
12	E	E	E	E	E	E	2.4	G	G	G	3.7	G	G	G	G	G	G	G	G	2.9	2.2	2.0	2.4	E	
13	2.4	E	2.2	2.3	2.2	2.3	G	G	G	3.5	G	3.9	G	G	4.6	6.6	4.2	4.0	3.0	3.0	4.6	3.4	4.4	2.8	
14	3.6	3.2	1.4	2.2	E	G	G	3.0	3.9	5.2	3.2	4.7	5.2	3.8	4.0	4.1	3.8	4.0	3.3	E	E	E	E	E	
15	E	E	E	E	E	E	G	2.6	G	3.8	4.4	4.7	4.5	G	G	3.6	3.4	3.3	2.0	2.3	2.5	2.4	E	E	
16	E	E	E	2.4	1.4	1.2	3.4	4.2	5.2	5.4	4.4	4.0	5.2	G	G	G	G	3.6	3.4	2.8	2.8	3.0	2.0	3.2	
17	2.6	2.2	1.6	1.8	3.8	1.3	2.8	4.2	5.2	4.4	G	5.1	5.1	5.0	3.4	5.2	6.4	4.8	3.6	3.7	4.2	5.8	4.3	2.9	
18	3.8	2.9	1.4	E	E	3.2	2.8	2.6	4.7	5.6	6.2	3.9	4.0	G	G	G	3.4	4.8	7.4	6.3	5.6	5.4	E	E	
19	4.5	2.6	1.5	2.2	1.2	1.2	3.2	G	G	4.9	5.1	4.9	5.6	G	G	4.5	C	4.2	3.0	3.6	4.7	3.4	3.4	3.4	
20	3.8	3.3	3.2	2.6	3.2	2.2	G	G	3.6	3.7	G	3.4	3.4	3.8	3.2	3.3	3.4	3.4	G	E	E	E	E	E	
21	E	E	E	E	E	E	2.4	2.8	4.0	G	G	G	G	6.4	G	G	4.8	7.0	2.8	2.8	E	E	E	C	
22	E	E	1.2	1.3	1.2	1.4	G	G	4.8	4.8	G	4.7	3.4	4.3	3.4	3.0	2.6	3.2	3.2	2.2	E	E	E	E	
23	1.8	1.4	1.4	1.2	1.2	2.8	G	G	4.2	G	G	10.7	4.0	4.0	4.5	4.3	3.7	4.5	4.2	2.4	E	E	E	E	
24	E	2.0	2.8	2.0	2.0	2.0	G	G	3.5	G	5.0	5.2	G	4.4	4.0	4.2	G	G	G	2.2	2.2	2.2	E	E	
25	E	E	E	E	E	E	G	G	G	3.7	G	G	G	G	G	G	3.8	4.5	4.0	2.4	2.2	E	E	E	
26	E	E	E	E	E	E	G	3.8	4.8	5.0	4.4	4.6	4.8	4.6	4.2	G	3.1	3.8	5.2	5.2	4.9	5.5	3.0	2.5	
27	3.3	E	E	1.2	1.2	G	G	4.2	4.7	4.2	4.2	4.3	3.8	3.9	5.2	4.1	4.8	3.7	3.5	6.6	4.2	3.2	2.6	3.6	
28	2.6	2.6	1.8	1.6	2.0	1.8	G	G	4.6	C	4.6	5.8	6.2	10.4	5.8	G	G	G	2.8	3.4	2.8	2.2	2.2	3.0	
29	2.0	1.8	E	E	E	1.5	G	G	G	4.9	G	G	G	G	G	4.8	4.0	3.0	2.6	E	E	E	E	E	
30	2.4	3.8	5.2	2.8	3.6	2.3	4.6	4.4	4.9	4.8	4.9	5.2	5.0	G	G	3.8	G	3.0	G	E	E	E	E	E	
31																									
Mean Value	3.1	2.6	2.2	2.1	2.0	1.9	3.0	3.7	4.3	4.5	4.6	4.9	4.6	4.7	4.2	4.1	4.0	3.8	3.5	3.1	3.4	3.2	3.0	2.9	
Median Value	E	E	1.3	1.4	E	E	G	G	3.9	4.4	4.1	4.7	3.8	G	G	3.4	3.0	3.2	3.0	2.4	2.4	2.3	2.3	E	
Count	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.6	3.0	2.9	2.9	3.0	3.0	3.0	2.9	

Manual Automatic

Sweep 1.0 Mc to 17.0 Mc in 15 min

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

Lat. 39° 43.6' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

fminF

Apr. 1952

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	1.2	1.2	1.2	1.2	1.2	1.2	2.2	2.5	2.9	C	C	C	C	C	C	C	C	2.3	A	1.7	1.7	1.7	1.7	1.7
2	E	E	E	E	E	E	2.6	2.6	3.0	4.2 ^A	3.6	4.1	3.8	3.3	3.4	3.0	3.0	A	A	C	3.8 ^A	4.0 ^A	A	1.9
3	A	1.2	1.2	1.2	1.2	1.2	2.1	2.5	3.4	3.3	3.4	5.0 ^A	5.4 ^A	3.4	4.5 ^A	3.2	3.1	2.4	1.6	A	A	1.8	1.5	1.5
4	1.2	2.0 ^A	1.4	1.1	1.4	E	1.8	2.7	3.0	4.2 ^A	4.2	3.8	5.4	3.6	4.4 ^A	3.3	2.8	3.0	3.8 ^A	2.6 ^A	1.6	1.8	1.6	1.8
5	1.6	2.0 ^A	1.3	1.2	E	1.2	2.1	2.4	3.4	3.4	3.6	3.6	3.8	3.5	3.5	3.0	3.0	2.9	2.3	1.8	1.8	1.6	1.5	1.4
6	1.4	1.2	E	E	1.5	1.2	2.4	2.6	2.8	2.8	3.4	4.2	3.4	3.3	3.2	2.9	2.7	2.4	1.9	1.5	1.5	1.5	1.5	1.5
7	1.3	E	E	E	E	E	2.2	2.7	3.0	3.4	5.0 ^A	4.0	4.2	3.8	3.2	3.1	3.0	3.1	1.8	1.6	1.6	1.6	1.6	1.6
8	1.1	E	E	1.3	E	1.2	2.2	2.7	C	C	C	C	C	C	C	C	C	2.8	1.8	1.8	1.5	1.5	1.5	1.5 ^F
9	1.2 ^F	E	E	E	E	1.6	2.2	2.7	3.0	3.2	3.5	3.5	4.1	3.8	4.0	3.3	3.0	2.2	1.7	2.0 ^A	1.6	1.6	1.4	1.2
10	1.2	1.2	1.2	1.2	1.2	1.4	2.2	2.6	2.9	3.7	3.8	4.2	3.4	3.4	3.5	3.2	2.8	2.3	1.7	1.7	1.6	1.6	1.6	1.6
11	E	E	E	E	E	1.3	2.3	2.4	3.1	3.2	3.4	3.4	3.6	3.5	3.4	4.2	2.6	2.4	1.9	1.6	1.5	1.5	1.5	1.5
12	1.6	1.1	1.2	1.2	1.2	1.2	2.4	2.8	3.8	3.3	3.7	3.6	4.2	4.4	3.8	3.4	3.0	2.5	1.6	1.6	1.6	1.7	1.6	1.6
13	1.6	1.2	1.4	1.6	A	E	2.3	3.2	3.2	3.4	3.5	3.7	3.7	3.7	5.0 ^A	5.2 ^A	4.2 ^A	3.8 ^A	1.9	1.6	A	3.0 ^A	2.6 ^A	2.6 ^A
14	2.0 ^A	1.3	E	E	E	1.4	2.4	3.0	3.1	4.0 ^A	3.7	3.6	4.4 ^A	3.6	3.3	3.1	2.8	3.3	2.2	1.7	1.7	1.7	1.7	1.7
15	E	E	E	E	1.2	1.4	2.6	3.0	4.0 ^A	3.8	4.4 ^A	4.6 ^A	4.5 ^A	4.4	5.6	3.5	2.9	2.6	1.9	1.5	1.5	1.5	1.4	1.4
16	1.2	E	E	E	1.2	1.7	2.2	2.8	4.8 ^A	5.0 ^A	3.7	4.4	4.5 ^A	4.4	3.2	3.3	3.1	3.4 ^A	2.8	A	A	2.0 ^A	2.0 ^A	1.4
17	1.4	1.4	1.1	E	A	1.7	2.8 ^A	2.9	4.0 ^A	3.8	4.2	4.3	4.2	4.0	3.6	3.5	4.4 ^A	2.7	2.9 ^A	2.2 ^A	2.3 ^A	A	3.9 ^A	1.8
18	3.3 ^A	1.7	1.3	E	1.2	2.5 ^A	2.6	2.9	3.0	3.8	4.2	3.8	4.1	3.8	3.6	3.3	3.4	2.6	A	A	3.3 ^{AN}	2.4 ^A	1.5	1.5
19	1.5	3.0 ^{AP}	E	E	E	E	2.2	2.7	3.2	4.3 ^A	4.5 ^A	4.1	3.8	3.7	4.3	3.2	A	3.6 ^A	2.8 ^A	1.7	1.5	2.6 ^A	3.2 ^A	2.8 ^A
20	A	A	A	1.3	A	E	2.4	2.8	3.3	3.2	3.4	3.4	3.5	3.4	3.2	3.2	3.0	2.5	2.0	1.6	1.6	1.6	1.6	1.6
21	1.2	E	1.2	1.2	1.2	1.4	2.4	2.8	A	3.4	4.1	4.1	3.6	5.1	3.4	3.3	3.1	3.2	2.2	2.3 ^A	1.7	1.7	1.7	1.7
22	1.2	E	1.1	1.3	1.2	1.6	2.3	2.7	A	A	3.6	3.4	3.4	3.4	3.4	3.0	2.4	2.6	1.6	1.8	1.4	3.0 ^A	1.4	1.4
23	1.3	E	E	E	E	1.7	2.1	2.7	3.0	3.2	3.3	A	3.2	3.8	3.5	3.4	3.3	2.4	A	1.8	1.5	1.6	1.5	1.5
24	1.4	1.4	1.8	E	1.2	1.6	2.2	2.9	3.2	3.5	4.9 ^A	5.2 ^A	4.2	4.0	3.8	3.4	3.0	2.4	1.9	1.7	1.7	1.7	1.7	1.6
25	1.4	E	E	E	E	1.7	2.5	3.0	3.4	A	3.8	4.0	3.7	3.4	3.6	3.3	3.2	2.5	2.2	2.0 ^A	1.6	1.6	1.4	1.4
26	1.4	1.4	E	E	E	2.0	3.4 ^A	2.9	4.5 ^A	4.6	3.7	4.3	3.8	3.6	3.4	3.4	3.3	2.5	1.6	4.2 ^A	4.3 ^A	3.5 ^A	1.9	1.5
27	1.9 ^F	E	E	E	1.3	1.8	2.4	2.9	3.4	4.0	4.2	4.2	3.8	3.6	4.8	3.5	4.0 ^A	2.6	1.9	1.5	A	1.6	1.5	2.2 ^A
28	1.4	1.6	E	E	1.4	1.6	2.6	3.0	4.0 ^A	4.1	5.6 ^A	6.1 ^A	5.4 ^A	5.4 ^A	5.2 ^A	3.2	2.9	2.6	1.9	A	A	1.8	1.8	1.6
29	1.2	1.2	E	E	E	1.7	2.2	2.9	3.3	3.4	B	B	3.8	5.4	4.0	4.0	3.0	2.4	2.0	1.6	1.5	1.6	1.6	1.6
30	1.5	3.0 ^A	A	A	3.0 ^A	1.6	2.8	2.8	3.3	A	4.2	A	A	3.7	3.4	3.2	2.9	2.4	2.0	1.6	1.6	1.4	1.4	1.4
31																								
Mean Value	1.5	1.6	1.3	1.3	1.5	1.5	2.4	2.8	3.4	3.7	3.9	4.1	4.1	3.9	3.8	3.4	3.1	2.7	2.1	1.9	1.9	1.9	1.8	1.6
Median Value	1.3	1.2	E	E	1.2	1.4	2.3	2.8	3.2	3.5	3.7	4.1	3.8	3.7	3.6	3.3	3.0	2.5	1.9	1.7	1.6	1.7	1.6	1.6
Count	28	28	28	29	27	3.0	3.0	2.9	2.7	2.5	2.7	2.5	2.7	2.8	2.8	2.8	2.7	2.9	2.6	2.5	2.5	2.9	2.9	3.0

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual

Automatic

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Apr. 1952

fminE

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	1.2	E	1.5	E	E	E	1.8	1.8	1.8	C	C	C	C	C	C	C	C	1.8	1.6	1.7	1.7	E	E	E
2	E	E	E	1.6	E	E	1.6	1.6	1.7	1.8	1.9	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	{1.6}^c	1.5	1.5	1.5	1.5
3	E	E	E	1.2	1.2	1.2	1.4	1.4	1.4	1.7	1.8	1.8	1.8	1.8	1.9	1.7	1.6	1.6	1.6	1.6	1.8	1.7	E	E
4	E	1.5	1.1	E	1.2	E	1.5	1.5	1.6	1.6	2.0	2.0	2.0	1.8	3.0	1.7	1.6	1.5	1.5	1.6	1.6	1.6	E	E
5	E	1.2	E	E	E	E	1.7	1.6	1.8	1.7	1.9	1.8	2.0	1.9	1.7	1.6	{1.6}^c	1.5	1.5	E	E	E	E	E
6	E	E	E	E	1.6	E	1.5	1.7	1.7	1.6	1.6	1.7	1.8	1.8	1.8	1.6	1.6	1.7	1.5	1.5	1.5	1.5	E	E
7	E	E	E	E	E	E	1.5	1.6	1.6	1.8	1.8	1.8	2.4	2.0	1.8	1.8	1.8	1.6	1.7	1.8	E	1.8	C	E
8	E	E	E	1.7	E	E	1.5	1.5	C	C	C	C	C	C	C	C	C	1.6	1.5	E	E	1.5	1.7	E
9	E	E	E	E	E	E	1.5	1.6	1.6	1.8	2.0	2.0	2.0	2.0	2.2	1.9	1.9	1.7	1.7	1.6	E	E	E	E
10	E	E	E	E	E	E	1.8	1.6	1.8	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	E	1.6	1.6	E	E
11	E	E	E	E	E	E	1.5	1.6	1.8	1.7	1.8	1.8	2.0	2.9	1.8	3.2	2.1	1.8	1.6	1.5	1.5	1.5	E	1.5
12	E	E	E	E	E	E	2.2	1.4	1.4	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.6	1.6	1.8	1.7	1.7	E	1.5
13	1.8	E	E	E	E	E	1.5	1.5	1.6	1.5	1.7	1.9	1.7	1.7	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	E	E
14	1.2	E	E	E	E	E	1.5	1.6	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
15	E	E	E	E	E	E	1.2	1.6	1.6	1.8	1.9	1.8	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	E	E	E	E
16	E	E	E	E	E	E	1.5	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.6	1.6	1.8	1.5	1.5	1.5	E	E
17	1.2	1.2	1.2	E	E	E	1.6	1.5	1.5	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.6	1.6	1.6	1.4	1.4	1.4	1.4
18	1.2	1.2	E	E	E	1.3	1.5 ^F	1.5	1.6	1.8	1.8	2.2	2.0	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
19	1.5	E	E	E	E	E	1.4	1.8	1.8	1.5	1.8	2.0	1.9	2.0	1.8	1.9	1.6	1.6	1.6	1.4	1.5	1.5	E	E
20	1.1	E	E	E	E	E	1.6	1.6	1.7	1.6	1.6	1.8	1.7	1.8	1.8	1.6	1.6	1.7	1.6	1.5	1.5	1.5	1.5	1.5
21	E	E	E	E	E	E	1.4	1.4	1.4	1.5	1.6	1.6	1.9	1.7	1.7	1.8	1.7	1.7	1.8	1.7	E	E	E	C
22	E	E	E	E	E	E	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.8	2.0	1.8	1.8	1.6	1.5	1.5	E	1.6	1.4	1.4
23	1.3	E	E	E	E	E	1.6	1.6	1.6	1.6	1.9	1.7	1.8	1.8	2.0	1.6	1.5	1.5	1.5	1.5	E	E	E	E
24	E	1.3	E	E	E	E	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.7	1.7	1.6	1.7	1.7	1.7	E	E
25	E	E	E	E	E	E	1.3	1.7	1.5	1.6	1.7	1.8	1.9	1.8	1.6	1.5	1.5	1.5	1.5	1.6	1.4	E	E	E
26	E	E	E	E	E	E	1.6	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.6	1.4	1.5	1.5	1.5	1.8
27	1.4	E	E	E	E	E	1.1	1.5	1.5	1.6	2.0	2.0	2.0	1.8	1.7	1.6	1.6	1.6	1.5	1.7	1.6	1.6	1.5	1.5
28	1.6	E	E	E	E	E	1.6	1.6	1.7	1.8	{1.8}^c	1.7	1.9	1.8	1.8	1.8	1.8	1.6	1.6	1.4	1.4	1.4	1.4	1.4
29	1.2	1.2	E	E	E	E	1.5	1.6	1.6	1.6	1.8	1.9	1.8	2.0	2.0	1.8	1.8	1.8	1.6	1.6	1.6	E	E	E
30	1.2	1.5	E	E	E	E	1.1	1.5	1.5	1.6	2.2	2.4	1.9	1.6	1.8	1.8	1.8	1.8	1.6	1.6	E	E	E	E
31																								
Mean Value	1.3	1.3	1.3	1.5	1.3	1.3	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	1.9	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.5	1.5
Median Value	E	E	E	E	E	E	1.5	1.6	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5
Count	30	30	30	30	30	30	30	30	29	28	28	28	28	28	28	28	28	30	29	30	30	30	29	29

Sweep 1.0 Mc to 17.0 Mc in 1.5 min

Manual Automatic

fminE

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

Lat. 35° 42.4' N
Long. 139° 28.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

foF1

Apr. 1952

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	Q	L	(4.5) ^L	L	L	(4.5) ^L	4.4	4.5	4.1	Q	L	Q					
2							Q	Q	Q	A	L	4.6	4.8	5.0	4.0	L	L	Q						
3							Q	Q	Q	(4.6) ^L	A	A	A	4.7 ^L	4.6	L	B	L						
4							Q	Q	Q	A	A	A	L	4.2 ^L	L	4.0	4.0	Q						
5							Q	L	L	5.0	4.8	4.8	A	4.5	4.5	4.3	3.6	Q						
6					Q		Q	Q	L	A	4.4	4.6	L	4.6	4.5	L	L	Q						
7							Q	Q	L	4.6	4.8	4.5	4.6	A	4.1 ^L	4.2	3.7	L						
8							Q	Q	Q	L	L	4.4	4.7	4.8	Q	4.6	3.9	Q		Q				
9							Q	3.4	3.9	4.6 ^J	4.7	4.5	B	4.6	4.7 ^H	4.2	4.0	Q		Q				
10							Q	Q	Q	4.6	A	4.5	4.7	L	4.7	4.2	4.0	L		Q				
11							Q	Q	L	4.6	4.7	4.7	4.5	4.7	4.4	4.4	3.9	Q						
12							Q	4.0	4.5	L	4.5	4.6	4.5	4.7	4.4	L	4.1	Q						
13							Q	4.2	4.1	4.3	4.7	6.0	4.8	4.7	4.7	A	A	A						
14						Q	Q	Q	L	4.4	4.4	4.8	4.8	4.6	4.6	4.2	L	L		Q				
15							Q	Q	L	4.3	4.5	4.7	4.6	4.6	4.3	4.2	4.0	L		Q				
16							Q	Q	Q	A	4.4	A	4.7 ^J	4.5	4.4	4.0	L	A						
17							Q	Q	Q	L	4.4	4.3	4.4	4.8	4.2	4.1	L	L		Q				
18							Q	Q	L	L	A	A	4.4	4.6	B	4.2	L	L						
19							Q	Q	Q	4.5 ^J	A	A	4.6	L	A	A	A	A		L				
20							(2.7) ^L	3.9	3.9	4.8	4.7	4.6	4.7	4.2	4.6	4.7	4.0	L						
21							L	L	4.1	4.5	4.5	4.8	4.2 ^J	4.2	4.6	(4.4) ^L	L	L						
22							L	3.7	A	B	4.1	4.3	4.3	4.5	4.3	4.2	3.7	3.4	A					
23							3.5	Q	4.1 ^B	4.3	4.7	4.4	4.5	A	4.4	4.0	4.2	Q						
24							Q	4.2	4.1 ^B	B	L	4.5	5.1	4.7	4.7	4.4	4.2 ^J	L						
25						Q	Q	Q	4.2	4.6	4.5	5.1	4.8	4.7	4.5	4.2	L	A						
26							Q	Q	4.4	4.4	4.5	4.6	4.7	4.7	4.6	A	L	Q						
27							Q	Q	4.1	A	A	A	4.6	4.5	L	A	A	Q						
28							Q	L	A	Q	L	N	A	4.6	4.6	4.3	4.4	4.2	Q					
29							L	3.8	4.3	4.8	4.8 ^H	4.8	A	4.6	4.5	4.4	4.3	Q						
30							Q	L	A	B	4.3	A	4.3	4.2 ^B	4.3	3.9	4.2	L						
31																								
Mean Value							3.1	3.9	4.2	4.5	4.6	4.7	4.6	4.6	4.5	4.2	4.0	3.8						
Median Value							3.1	3.9	4.1	4.6	4.5	4.6	4.6	4.6	4.5	4.2	4.0	3.8						
Count							2	7	11	17	19	21	22	26	26	22	16	2						

foF1

Swng 1.0 Mc to 1.7 Mc in 2 min

Manual Automatic

K 4

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

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

RFI

Apr. 1952

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	220	A	250	200	240	270	A	240	Q	260	Q					
2							Q	Q	Q	A	270	240	270	270	270	260	260	270						
3							Q	Q	Q	A	A	A	A	240	230	270	B	270						
4							Q	Q	Q	A	A	A	260	230	240	250	250	Q						
5							Q	280	270	A	270	A	A	240	230	260	250	Q						
6					Q		Q	Q	250	A	230	260	310	230	230	230	240	Q						
7							Q	Q	250	220	220	220	250	A	220	220	220	220	260					
8							Q	Q	Q	250	220	230	220	210	Q	230	230	Q	Q					
9							Q	240	270	A	200	B	260	200	260	210	220	Q	Q					
10							Q	Q	Q	230	A	230	230	210	200	250	230	Q	Q					
11							Q	Q	260	240	220	220	210	220	240	250	230	Q						
12							Q	220	230	230	220	210	220	260	200	220	250	Q						
13							Q	230	230	210	230	230	250	230	240	A	A	A						
14						Q	Q	Q	250	240	250	230	250	250	240	260	260	260	Q					
15							Q	Q	260	230	250	270	250	280	220	270	260	260	Q					
16							Q	Q	Q	250	250	A	A	250	260	B	280	A						
17							Q	Q	Q	A	230	210	220	A	A	260	220	240	Q					
18							Q	Q	250	260	A	A	220	250	B	250	A	A	280					
19							Q	Q	Q	230	A	A	270	A	A	A	A	A	A					
20							280	230	230	240	220	A	220	220	250	250	250	260	Q					
21							260	220	240	230	200	210	300	B	270	230	250	A						
22							250	320	250	250	240	240	240	250	230	240	240	270	260					
23							260	Q	A	A	250	220	220	A	A	B	250	Q	Q					
24							Q	Q	260	B	220	220	260	A	A	A	A	250	Q					
25							Q	Q	250	A	260	230	220	230	250	220	270	A						
26							Q	Q	Q	260	200	A	220	B	A	260	A	250	Q					
27							Q	Q	Q	230	A	A	A	A	B	290	A	Q						
28							Q	250	A	Q	A	N	A	200	230	250	260	250	Q					
29							270	220	220	250	220	230	A	270	230	250	270	Q	Q					
30							Q	Q	280	A	A	A	250	220	240	240	240	210	Q					
31																								
Mean Value							260	250	250	240	240	230	240	240	240	250	250	250	270					
Median Value							260	244	250	240	240	240	240	230	240	250	250	250	260	260				
Count							5	11	19	18	19	21	22	23	23	25	23	12	2					

Automatic

Manual

Sweep 1.0 Mc to 17.2 Mc in 2 min

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

IONOSPHERIC DATA

Apr. 1952

foE

135° E Mean Time

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 28.3' 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							1.8	2.5	2.9	2.9	3.1	A	A	A	3.3	3.0	2.7	2.3	B					
2							E	A	A	3.0	3.1	B	B	B	B	B	2.5	2.1						
3							A	A	3.0 ^F	3.1	A	3.0	A	B	B	B	2.6	B						
4							B	2.4	B	A	3.1	3.1	B	B	B	2.3	2.7	B						
5							1.5	2.5	3.1	3.1	B	3.4	3.3	3.3	3.3	2.9	BH	1.8 ^T						
6					1.4		B	2.3	2.9 ^H	3.1 ^H	(3.1) ^A	A	A	3.3	B	2.8	2.4	A						
7							A	A	B	2.9	3.1 ^B	A	B	A	3.2	A	A	A						
8							2.3	2.9	B	A	B	B	B	B	B	B	A	A	A					
9							1.6 ^T	A	2.9	3.1	3.3	A	B	A	B	2.8	2.8	2.2	1.6					
10							B	2.4	2.8	3.1	A	3.2	A	3.3	3.1 ^A	3.0	2.7	2.2	1.7					
11							B	B	2.9 ^T	3.2	3.2	B	B	3.4	3.3	B	A	A						
12							A	2.8	3.0	3.2 ^H	3.9	9.5	3.3	3.3	3.1	B	2.7	2.4						
13							1.6	2.7	3.0	3.2	3.2	3.4	3.5	3.6	3.3	3.0	2.9	A						
14					1.6		2.1	2.5	2.9	3.1	3.3	3.2	3.0	3.0	A	3.2	2.7	2.2	1.5					
15							2.0	2.7	3.1	3.2	3.3	3.2	3.4	3.4	3.1	3.0	2.7	2.2	B					
16							1.9	2.7	3.1	3.0	A	A	A	B	B	B	A	2.2						
17							2.0	2.5	3.1	3.2	3.3	A	A	A	A	3.0 ^T	3.0	A	2.5	A				
18							2.1	2.8	A	B	3.3	B	A	A	A	2.8	2.6	A	B					
19							A	A	3.0	B	3.3	3.2 ^B	A	3.4	3.3	A	2.5	A	A					
20							2.0	2.9	3.2	B	3.2	3.5	A	3.4	3.2	3.0	2.7	A	A					
21							2.4	2.7	2.9	3.1	3.2	B	3.2	B	B	3.0	3.1	A						
22							2.0	2.5	2.9	A	3.2	3.2	3.3	3.6	A	B	2.7	2.3	A					
23							A	2.6	A	3.0	3.1 ^B	B	3.0	A	A	2.9	2.9 ^A	A	A					
24							2.1	2.5	2.8	B	B	3.5	A	B	A	B	A	2.3	A					
25						E	2.0	2.6	2.9	3.2	3.3	3.3	3.3	3.3	3.1	2.9	A	2.4						
26							A	2.6 ^T	B	3.2	A	A	B	A	B	A	2.8	2.2 ^T	A					
27							1.2	2.0	2.5	3.1	3.1	3.3	3.6	A	3.4 ^B	B	3.1	2.8	2.3					
28							2.1 ^T	2.8	3.0	3.3	3.4	3.5	3.5	3.4	3.0 ^B	A	A	2.3	A					
29							2.2	2.6	2.7	3.0	B	B	A	3.7	3.4	3.1	3.1	A	A					
30							1.5	2.1	2.6	2.8	A	3.2	3.1	3.3	3.2	2.9	2.9	A	2.0					
31																								
Mean Value							1.4	2.0	2.6	2.9	3.1	3.2	3.3	3.2	3.3	3.1	2.9	2.7	2.2	1.7				
Median Value							1.4	2.0	2.6	2.9	3.1	3.2	3.2	3.3	3.4	3.2	3.0	2.7	2.2	1.6				
Count							5	20	24	23	22	17	11	16	15	18	21	16	4					

foE

Sweep 1.0 Mc to 17.2 Mc in 2 min

Manual

Automatic

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

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Apr. 1952

K'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							170	A	110	100	A	A	A	A	120	110	110	120	B					
2							E	A	A	110	110	110	110	B	B	100	100	120						
3							A	A	110	110	A	A	A	110	B	B	110	120						
4							B	100	100	A	110	120	110	110	B	110	120	110						
5							110	110	110	120	120	120	120	120	120	120	120	120						
6						150	B	120	120	120	120	A	A	120	110	110	110	A						
7							A	A	110	110	A	A	110	A	110	A	A	A						
8							150	110	110	A	B	B	B	B	B	B	A	A						
9							A	A	110	120	100	A	B	A	B	100	100	110	B					
10							B	110	110	110	A	110	A	120	110	110	110	110	150					
11							B	110	110	110	110	B	B	130	110	B	A	A						
12							A	100	100	110	110	120	130	100	110	110	110	110						
13							110	100	100	100	110	110	110	110	120	110	110	110						
14						B	130	120	120	100	110	110	110	110	110	A	110	110	130					
15							130	120	110	110	110	110	110	110	100	100	100	100	110					
16							130	120	110	120	A	A	A	120	130	120	A	120						
17							110	120	120	100	100	A	A	A	120	110	A	110	A					
18							140	120	A	100	100	B	A	A	A	110	100	A	B					
19							A	100	100	100	100	110	A	110	120	A	120	A	A					
20							120	120	120	110	110	110	A	120	120	110	120	A						
21							110	110	110	110	110	120	120	120	120	110	120	A						
22							130	120	120	110	110	110	110	120	120	110	110	110	A					
23							A	110	A	110	110	100	110	A	A	110	A	A						
24							120	110	100	110	B	120	A	B	A	B	A	110	A					
25							120	110	110	110	110	110	120	110	110	100	A	130						
26							A	120	130	100	A	A	110	A	100	A	100	110	A					
27						160	110	100	110	110	110	110	A	B	B	110	110	110						
28							100	100	100	120	120	120	120	130	B	A	A	110	A					
29							110	110	110	120	120	120	A	120	120	120	120	A						
30						120	130	120	120	110	110	110	110	130	110	110	110	A	140					
31																								
Mean Value						140	120	110	110	110	110	110	110	120	110	110	110	110	130					
Median Value						150	120	110	110	110	110	110	110	120	110	110	110	110	140					
Count						3	18	24	27	28	24	20	15	19	18	22	21	18	4					

Sweep 1.0 Mc to 17.2 Mc in 2 min Manual Automatic

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

Lat. 35° 42.4' N
Long. 139° 28.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

fEs

Apr. 1952

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	2.2	1.8	E	E	2.7	3.1	3.7	4.4	4.4	4.4	3.4	6.2	G	3.8	3.5	3.6	B	2.2	3.2	E	E	E	
2	E	E	E	E	E	1.8	3.4	3.4	3.7	5.4	5.3	G	G	B	B	G	G	3.3	3.7	3.2	2.4	5.0	4.6	3.8	
3	5.1	3.5	2.6	2.6	3.0	2.5	2.6	3.1	3.9	4.8	6.5	7.8	5.7	4.6	B	B	G	2.8	4.7	7.8	3.3	3.8	4.6	E	
4	2.1	2.4	2.3	2.8	2.4	E	B	G	G	6.8	5.8	4.6	G	G	B	G	G	G	2.2	2.8	5.2	3.3	3.3	6.2	
5	4.4	3.0	2.5	2.1	2.2	2.1	2.4	G	3.4	4.8	4.6	4.8	5.4	4.4	G	G	G	G	1.9	2.0	2.1	2.0	E	E	
6	E	1.8	E	E	1.6	G	2.3	G	G	5.4	4.4	4.8	7.8	4.4	G	G	G	2.2	2.4	2.4	2.0	E	E	E	
7	E	E	E	1.6	E	1.5	2.7	3.1	G	5.0	4.2	4.2	G	6.2	G	3.5	3.2	2.7	2.7	2.5	F	E	E	E	
8	E	E	E	E	E	E	G	G	3.4	4.4	B	B	B	B	B	4.1	3.9	3.6	2.5	2.5	2.3	E	2.1	2.2	
9	E	2.2	1.5	E	1.9	E	2.3	2.8	3.6	5.2	5.0	4.7	B	3.8	B	4.2	G	G	G	E	E	E	E	E	
10	E	E	E	E	E	E	B	G	G	4.3	5.4	4.5	4.8	G	4.1	G	G	G	G	2.7	2.2	E	E	E	
11	E	E	E	E	E	E	G	G	G	G	G	4.0	B	4.3	4.1	3.4	3.5	3.3	4.6	3.8	3.5	2.3	E	E	
12	E	1.2	E	E	E	1.4	1.9	G	G	G	G	G	G	G	G	3.4	6.9	3.4	3.6	2.5	1.7	E	E	2.1	
13	E	2.0	2.5	1.4	E	E	G	G	G	G	G	G	G	G	4.8	6.2	G	G	2.8	2.3	4.2	4.7	3.6	2.1	
14	2.0	4.2	E	3.4	E	G	G	G	G	G	G	4.4	4.7	4.9	4.7	G	G	G	G	2.7	2.0	2.1	3.6	2.2	
15	E	E	E	E	E	E	G	3.6	4.3	3.9	4.4	G	G	G	G	G	3.5	2.5	G	E	1.6	E	E	E	
16	E	1.4	E	E	E	E	G	G	4.2	3.8	9.5	10.7	5.1	G	G	G	4.4	5.2	3.9	E	E	3.0	E	2.2	
17	2.6	3.8	4.4	2.7	1.6	3.6	G	G	4.1	5.0	4.8	5.0	5.8	6.5	8.9	4.4	3.8	3.2	3.6	2.8	4.2	4.6	4.7	4.6	
18	4.1	5.7	5.3	6.3	5.0	3.9	G	G	5.4	6.0	6.8	4.8	3.6	3.6	3.6	3.6	4.4	5.5	3.1	2.8	4.5	4.0	3.6	3.4	
19	4.5	4.5	3.8	2.3	2.0	E	3.3	3.6	5.4	5.7	9.6	5.4	4.5	4.8	7.8	8.5	4.6	10.9	10.0	4.2	3.3	3.4	3.2	5.4	
20	2.0	3.5	3.5	3.6	2.0	3.2	4.7	G	G	3.8	G	5.0	4.0	4.8	4.8	G	3.1	3.3	2.4	E	1.8	E	2.4	E	
21	5.4	2.9	2.8	2.3	E	E	G	G	4.4	4.1	G	G	5.4	G	G	G	3.2	5.0	8.2	6.1	3.9	E	E	E	
22	E	E	E	E	3.2	2.4	G	3.8	4.9	5.0	4.4	G	G	G	4.0	G	G	G	2.8	5.6	2.8	2.4	2.2	E	
23	2.2	2.4	E	2.0	2.3	2.2	2.5	4.4	4.2	5.0	4.5	4.4	4.4	5.8	4.6	G	3.8	3.6	3.0	4.2	4.4	1.8	E	E	
24	E	E	E	E	E	E	G	G	4.7	4.8	B	G	G	B	4.4	B	3.8	G	1.7	2.7	2.1	2.0	E	E	
25	E	E	E	E	E	G	G	G	G	4.5	4.2	4.9	G	G	G	G	5.0	5.2	3.8	2.6	5.0	3.8	2.6	2.4	
26	E	E	E	E	E	2.1	2.9	G	G	4.5	5.2	4.9	G	4.4	G	3.7	G	G	3.2	3.0	5.8	5.6	3.0	4.6	
27	5.9	4.0	E	E	1.5	G	G	5.9	4.4	5.6	6.3	7.5	7.9	4.5	G	5.6	9.3	6.4	4.6	3.9	2.9	2.9	2.4	3.2	
28	4.0	3.0	4.6	5.3	3.6	E	G	G	7.3	7.7	6.4	4.4	6.4	G	G	3.8	3.5	G	2.8	2.1	2.3	2.2	2.2	2.0	
29	5.3	2.8	1.3	E	E	E	G	G	3.4	G	G	4.6	5.2	G	G	G	G	2.9	2.0	E	E	E	2.0	6.0	
30	5.4	2.8	2.0	2.4	2.4	G	3.8	4.0	5.4	5.5	5.0	5.2	G	G	3.8	3.7	3.8	3.8	2.7	3.0	2.7	2.3	C	2.0	
31																									
Mean Value	4.4	3.0	3.2	2.8	2.5	2.5	3.0	3.6	4.4	5.0	5.4	5.3	5.4	4.9	4.8	4.5	4.8	4.1	3.5	3.3	3.0	3.2	3.1	3.4	
Median Value	E	2.0	E	1.6	E	E	G	G	3.5	4.8	4.7	4.5	4.5	G	G	G	3.5	3.3	2.8	2.6	2.6	2.2	2.1	2.0	
Count	30	30	30	29	30	30	28	30	30	30	28	29	27	27	25	28	30	30	30	30	30	30	29	29	

fEs

Sweep 1.0 Mc to 17.0 Mc in 2 min

Manual Automatic

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

Lat. 35° 42.4' N
Long. 139° 29.3' E

IONOSPHERIC DATA

Kokubunji Tokyo

f_{minE}

135° E Mean Time

Apr. 1952

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	1.9	1.2	E	1.4	1.8	1.5	1.6	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	B	1.7	2.0	E	E	E	
2	E	E	E	E	E	1.6	1.6	1.6	1.4	1.4	2.1	2.2	B	B	B	1.3	1.8	1.8	1.3	1.3	1.5	1.6	1.5	1.7	
3	1.2	1.1	1.1	1.1	1.3	1.1	1.8	1.9	1.4	1.4	1.4	1.6	1.6	1.6	B	B	1.8	1.3	1.3	1.5	1.7	1.4	1.5	1.7	
4	E	1.2	1.1	1.1	1.4	E	1.5	1.4	2.0	1.4	2.0	2.0	2.0	2.0	B	1.4	1.4	1.3	1.5	1.7	1.4	1.5	1.7	1.3	
5	1.2	1.1	1.1	1.1	1.1	1.1	1.3	1.6	1.8	1.4	1.6	2.0	2.0	2.0	2.0	2.0	1.4	1.3	1.4	1.6	1.4	1.6	1.4	E	
6	E	1.4	E	E	1.4	E	1.6	1.4	1.4	1.4	1.4	2.0	2.0	2.0	2.0	1.6	1.5	1.4	1.4	1.6	1.6	E	E	E	
7	E	E	E	1.1	E	1.1	1.4	1.2	1.8	1.9	2.1	2.9	2.0	1.9	2.0	2.1	1.9	2.0	1.7	1.5	E	E	E	E	
8	E	E	E	E	E	E	1.8	1.9	1.8	2.0	B	B	B	B	B	3.3	2.0	1.7	1.6	1.6	1.7	E	1.8	1.8	
9	E	1.2	E	E	1.3	E	1.4	1.4	1.4	1.4	2.2	2.0	B	B	B	1.2	1.4	1.2	1.4	E	E	E	E	E	
10	E	E	E	E	F	E	1.6	1.6	1.6	1.2	1.6	1.6	2.0	1.4	1.6	1.6	1.4	1.5	2.1	2.1	2.1	1.5	E	E	
11	E	E	E	E	E	E	1.8	1.8	1.9	1.2	1.6	3.2	B	3.1	2.1	3.1	1.2	1.2	1.2	1.6	1.6	1.5	E	E	
12	E	E	E	M	E	1.2	1.5	1.6	1.4	1.2	1.2	2.0	3.1	E	1.2	1.2	1.3	E	1.4	1.8	1.5	E	E	1.1	
13	E	E	1.1	1.1	E	E	1.2	1.2	1.2	1.3	1.4	1.6	1.9	2.7	2.2	1.4	1.3	1.2	1.4	1.3	1.4	1.3	1.5	1.4	
14	1.2	1.2	E	1.2	E	1.4	1.4	1.4	1.4	1.2	1.2	1.2	1.3	1.4	1.1	1.1	1.1	1.7	1.2	1.4	1.3	1.8	1.2	1.3	
15	E	E	E	1.5	E	E	1.3	1.4	1.2	1.5	1.6	1.2	1.2	1.4	1.4	1.2	1.2	1.6	1.4	E	1.3	E	E	E	
16	E	1.2	E	E	E	E	1.2	1.2	1.2	1.6	1.6	3.1	2.0	2.2	1.6	1.6	1.6	1.4	1.3	E	E	1.4	E	1.4	
17	1.1	1.1	1.1	1.2	1.3	1.1	1.3	1.2	1.5	1.4	1.3	2.0	1.5	1.6	1.6	1.6	1.5	1.4	1.4	1.6	1.6	1.6	1.8	1.6	
18	1.6	1.3	1.3	1.3	1.1	1.2	1.4	1.6	2.0	1.3	2.0	3.2	2.0	1.6	2.0	1.6	1.6	1.7	2.0	1.7	2.0	1.9	1.8	1.6	
19	1.8	1.2	1.1	1.1	1.9	E	1.4	1.4	1.3	1.5	1.2	1.4	1.5	2.0	2.1	1.4	1.4	1.4	1.3	1.3	1.3	1.4	1.1	1.4	
20	1.5	1.2	1.5	1.2	1.1	1.1	1.2	1.2	1.2	1.4	1.8	3.1	2.8	2.0	2.2	1.6	1.4	1.2	1.2	E	1.4	1.4	1.1	1.4	
21	1.9	1.1	1.1	1.6	E	E	1.2	1.2	1.4	1.8	2.0	2.2	2.0	2.2	2.0	2.0	1.4	1.4	1.4	1.4	1.6	E	E	E	
22	E	E	E	E	1.2	1.2	1.6	1.4	1.4	1.3	1.3	1.5	3.0	3.2	2.1	1.3	1.4	1.4	1.4	2.0	1.6	1.4	1.4	E	
23	1.4	1.2	E	1.1	1.1	1.3	1.5	1.7	1.9	1.6	1.9	1.6	2.1	2.0	1.7	1.6	1.4	1.3	1.4	1.4	1.4	1.4	E	E	
24	E	E	E	E	E	E	1.4	1.6	1.6	1.5	B	2.4	3.0	B	2.0	B	1.4	1.3	1.3	1.5	1.3	1.6	E	E	
25	E	E	E	E	E	1.1	1.3	1.4	1.4	1.4	1.5	2.1	2.2	2.4	2.0	2.0	1.6	1.4	1.4	1.4	1.6	1.6	1.6	1.4	
26	E	E	E	E	E	1.2	1.6	1.6	1.6	1.4	1.6	2.8	2.7	2.4	2.6	2.0	1.4	1.4	1.9	2.0	2.0	1.8	2.0	1.8	
27	1.9	1.4	E	E	1.3	1.1	1.4	1.4	1.5	2.0	2.9	3.5	3.5	3.4	3.5	2.4	1.7	1.4	1.4	1.4	1.3	1.5	1.6	1.6	
28	1.5	1.2	1.2	1.2	1.2	E	1.5	1.8	1.6	2.0	1.6	2.0	2.0	2.8	3.1	2.2	2.2	1.5	1.6	1.9	1.3	1.6	1.4	1.3	
29	1.9	1.2	1.1	E	E	E	1.2	1.4	1.8	2.0	2.0	2.1	2.0	2.0	2.0	1.8	1.4	1.4	E	E	E	E	1.4	1.4	
30	1.6	1.2	1.2	1.4	1.1	1.2	1.5	1.4	1.4	1.3	1.3	2.0	2.6	2.7	2.0	1.9	1.7	1.6	1.7	1.8	1.9	1.2	1.4	1.6	
31																									
Mean Value	1.5	1.2	1.2	1.2	1.3	1.2	1.4	1.5	1.5	1.5	2.1	2.1	2.0	2.0	2.0	1.7	1.5	1.4	1.4	1.6	1.6	1.5	1.5	1.8	
Minimum Value	E	1.1	E	1.1	E	E	1.4	1.4	1.5	1.4	1.6	2.0	2.0	2.0	2.0	1.6	1.4	1.4	1.4	1.5	1.4	1.4	1.3	1.2	
Count	30	30	30	29	30	30	28	30	30	30	28	29	27	27	25	28	30	30	29	30	30	30	30	30	30

K 11

Automatic

Manual

Sheep 1.0 Mc to 1.7 Mc in 2 min

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

R'F2

Apr. 1952

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	310 ^A	300	300	300	260	200	250	240	250	260	270	270	270	280	270	260	250	250	240	230	[220] ^C	200 ^A	300 ^A	300	300 ^A
2	300	350	310	240	200	320	260	240	230	270	260	280	280	300	280	270	250	240	250	220	220 ^A	290 ^A	300	300	270
3	290	250	310	250 ^A	240	290	270	220	240	240	250	300	280	290	250	250	260	240	230 ^A	220 ^A	200 ^A	350	300 ^A	300	290
4	270 ^A	300 ^F	260	320	280	250	230	230	250	250	280	270	270	290	270	250	250	220	230 ^A	210 ^A	210 ^A	280 ^A	300	270	
5	290	340 ^A	270	240	220	300	280 ^A	220	240	[260] ^C	290	250	250 ^A	260	280	260	240	240	250	220 ^A	C	C	C	C	C
6	C	C	290	220	210 ^H	280	250	240	240	240	300	310	280	270	250	250	250	240	250 ^A	210 ^A	210 ^A	230	300	300	M
7	M	M	M	M	M	M	M	M	C	C	C	250	290	290	260	250	250	250	250	220	210	200 ^H	330	320	320
8	300	270	300	C	C	C	C	C	240	[260] ^C	280	260	260	290	280	270	250	260	230	240 ^A	210	220	300 ^A	290	290
9	300	290	300	230	200	300 ^F	240	260	[270] ^C	280	250	300	290	260	260	250	250	240	240	230	220	240	310	310	310
10	310	290	250	220	310	290	240	210	230	270	280	280	C	C	C	C	240	240	240	210	230 ^C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	270	270	300	290	260	270	260	250	250	250	220 ^A	260 ^A	300	300	300
12	300	270	270	210	200	300	[270] ^C	240	C	C	C	C	C	C	C	C	C	C	C	230	220	260 ^A	300	300	300
13	280	290	260	220	220	260	240	240	240	260	280	290	290	280	270	260	260	240	240	250	240 ^A	A	350	300	300
14	260	260	250	210	250	270	250	240	240	250	290	240	240	280	270	C	C	C	C	240	230	250	300	290	290
15	270	290	280	C	C	C	C	230	[260] ^C	300	280	280	280	290	300	270	250	250	250	220 ^A	220 ^A	210	220	320	310
16	340 ^F	300 ^H	230	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	320 ^A
17	350 ^F	300 ^F	250	230	250 ^F	330 ^F	250	240	260	290	300	290	300	300	260	250	250	250	220	220	220	A	A	270	260
18	280	250	220	250	300 ^A	350 ^A	230	240	230	250	300	300	A	A	290 ^A	290 ^A	A	290 ^A	220	220 ^A	250 ^A	A	310	300	300
19	300	300 ^A	250	A	A	300 ^A	240	210	240	220	300	350	300	A	300	300 ^A	290 ^A	230	290 ^A	210 ^A	240	200	300	300	310
20	300	330 ^A	240	250	210 ^F	210 ^A	250	250	220	250	370 ^A	A	290	300	270	250	C	240	240	240	200	200	300	300	300
21	300	290 ^H	C	C	C	C	C	C	C	270	270	340	320	290	300	290	260 ^A	270 ^A	[260] ^C	250 ^A	210 ^A	200 ^A	A	300 ^F	300 ^F
22	40 ^H	[380] ^C	350 ^C	260 ^K	350 ^K	300 ^K	200 ^K	250 ^K	300 ^K	A	A	A	340 ^K	350 ^K	310 ^K	A	320 ^A	300 ^K	250	250 ^A	230 ^A	A	A	A	350 ^A
23	300 ^A	260	260	250	240	270	250	220	240	250	340	C	C	C	C	250	250	250	230	210 ^A	240	A	A	A	A
24	A	270	270	250	220	260	250	240	230	C	C	C	C	C	C	C	C	C	C	240 ^A	230 ^A	240	280	270	270
25	280	280	260	280	260	320	250	240	250	240	250	340	330	300	300	280	270	250	250	250	C	C	C	C	C
26	240	240	210 ^A	200 ^A	260 ^A	250	240	C	C	C	C	C	C	C	C	C	C	C	C	240 ^A	230 ^A	240	280	270	270
27	C	C	300 ^F	250 ^H	240	310	220	C	C	C	C	C	C	C	C	C	C	C	C	210	210 ^A	240	C	C	C
28	C	C	C	C	C	C	C	C	250 ^A	270	[280] ^C	280	380	380	A	300	290	260	240	A	200 ^A	A	330 ^A	A	A
29	A	310	300	250	300 ^H	270	230	220	240	A	340	C	C	C	C	C	C	C	C	210	230	220	310	330	330
30	310	300 ^A	240	260	300	220	230	240	[240] ^C	250	340	C	C	C	C	C	C	C	C	250	250	230	280	300	300
31																									
Mean Value	300	290	270	250	250	280	240	230	240	260	290	290	300	290	280	270	260	250	240	230	220	240	240	310	300
Median Value	300	290	270	250	240	290	250	240	240	260	280	290	290	290	280	260	250	250	240	230	220	230	220	300	300
Count	23	25	26	22	22	23	23	22	23	22	24	22	22	22	21	22	21	22	22	22	26	25	19	21	23

Sweep 1.0 Mc to 22.0 Mc in 3 min

Manual Automatic

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

IONOSPHERIC DATA

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

foF1

Apr. 1952

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	3.8	L	L	5.0	5.0	4.5	5.0	4.6	3.7	L						
2								Q	4.5	L	4.6	5.0 ^H	5.0	5.0	4.5	4.0	3.5	L						
3								Q	3.7	L	3.8	L	5.0	4.8	L	4.7	L	4.5	Q					
4								Q	Q	A	L	A	A	5.0	A	A	A	A	Q					
5								Q	Q	C	A	A	A	5.0	4.7	4.5	4.4	Q						
6								Q	4.0	L	L	5.0	4.7	4.8	A	4.3	4.0	Q						
7								M	M	M	4.0	5.0	L	4.8	4.6	4.5 ^H	3.6	3.8						
8								C	L	C	L	L	5.0 ^H	4.8	4.7	5.0	A	L						
9								Q	4.5	L	4.4	4.9	5.0	4.8	4.5	4.5	L	Q						
10								Q	Q	Q	4.6	4.7	5.1	C	C	C	4.3	3.5						
11								C	C	C	L	4.9	5.0	5.0	4.6	4.5	L	4.0						
12								Q	C	C	C	C	C	C	C	C	C	C						
13								Q	Q	L	B	5.0	4.7	4.8	A	4.5	4.2	Q						
14								Q	Q	L	4.5	4.5	4.6	4.8	A	C	C	C						
15								Q	4.5	C	4.5	4.6	4.7	4.7	4.7	4.5	4.4	4.0						
16								C	C	C	C	C	C	C	C	C	C	C						
17								Q	4.4	4.5	4.5	4.7	5.0 ^H	4.7	4.5	4.2	L	L						
18								Q	Q	L	L	A	A	A	A	A	A	A						
19								Q	Q	Q	A	A	A	A	A	A	A	A						
20								Q	Q	L	A	A	A	4.8	4.3	4.1	C	C						
21								C	C	4.5	4.6	4.5	4.7	4.5	[4.4] ^C	4.2	A	A						
22								Q	Q	A	A	4.7	4.8	A	A	A	4.3	A						
23								Q	L	L	4.8	4.9	4.8	4.9	4.8	4.5	4.0	L						
24								Q	Q	C	C	C	C	C	C	C	C	C						
25								Q	4.2	4.3	4.4	4.7	5.2	4.9	4.7	4.5	A	A						
26								C	C	4.7	C	C	C	C	C	C	C	C						
27								C	C	C	C	C	4.8	A	A	A	A	4.0						
28								C	A	A	C	A	5.0	4.7	A	4.5	A	3.8						
29								Q	Q	A	5.0	C	C	C	C	C	C	C						
30								Q	C	4.5	A	C	C	C	C	C	C	C						
31																								
Mean Value								4.0	4.4	4.5	4.8	4.9	4.8	4.8	4.6	4.4	4.1	3.8						
Median Value								4.0	4.5	4.5	4.9	4.8	4.8	4.8	4.6	4.5	4.2	3.8						
Count								5	10	11	16	17	18	14	16	10	10	10						

foF1

Sweep 1.0 Mc to 22.0 Mc in 2. min
 Manual Automatic

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

f'F1

Apr. 1952

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	230	220	200 ^H	210	240	210	220	200	230	250						
2								Q	Q	220	210 ^H	220	220	200	230	210	230	220						
3								Q	210	200	200	240	250	230	240	220	220	Q						
4								Q	Q	A	250 ^A	A	A	A	A	A	A	A						
5								Q	Q	C	A	A	A	260 ^A	220	210	220	Q						
6								Q	230	210	200	260	250	250	A	250 ^A	230	G						
7								M	M	M	200	200	240	240	210	210 ^H	200	250						
8								C	220	210 ^C	200	210	200	240	220	220	A	210						
9								Q	C	250	250 ^A	210	260	250	210	220	210	Q						
10								Q	Q	240	210	220	C	C	C	C	A	210						
11								C	C	C	210	200	200	250	250	240 ^B	220	A						
12								Q	C	C	C	C	C	C	C	C	C	C						
13								Q	Q	250	B	250	210	A	A	A	250	240	Q					
14								Q	Q	240	A	210	230	250	A	C	C	C						
15								Q	C	220	240	220	210	210	250	230	240	230						
16								C	C	C	C	C	C	C	C	C	C	C						
17								Q	220	230	250	260	230 ^H	220	220	210	240	230						
18								Q	Q	250	280	A	A	A	A	A	A	A						
19								Q	Q	Q	A	A	A	A	A	A	A	A						
20								Q	Q	210	A	A	A	240 ^A	240	240	C	C						
21								C	C	250	240	250 ^A	250	250	210	260	A	A						
22								Q	Q	A	A	A	A	A	A	A	300	A						
23								Q	230	220	200	200	220	240	B	A	A	240	240					
24								Q	Q	C	C	C	C	C	C	C	C	C						
25								Q	240	220	210	200	210	250	290	B	A	A						
26								C	C	230	C	C	C	C	C	C	C	C						
27								C	C	C	C	C	A	A	A	A	A	250						
28								C	A	A	C	A	250	250	A	A	A	240						
29								Q	Q	A	250	C	C	C	C	C	C	C						
30								Q	C	A	A	C	C	C	C	C	C	C						
31																								
Mean Value									230	230	220	220	230	240	230	230	230	240						
Median Value									230	220	210	210	240	240	220	220	230	240						
Count								7	17	17	16	16	16	18	13	14	13	10						

Y 5

Manual Automatic

Sweep 1.0 Mc to 2.20 Mc in 2 min

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

IONOSPHERIC DATA

Yamagawa

Apr. 1952

foE

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								1.8	2.7	2.8	3.0	3.1	3.1	3.3	3.3	3.3	3.1	A	1.8 ^H					
2								2.1 ^H	2.5	3.0	3.0	3.2	3.3	3.2	3.4	3.2	2.9	2.5	A					
3								2.2	2.6	2.8	3.0	3.6	3.7	3.2	3.3	3.2	3.0	A	1.7 ^B					
4								2.0	2.6	2.9	3.1	3.3	3.2	3.5	3.3	3.2	2.8	2.5	A					
5								2.4	[3.0] ^C	[3.0] ^C	3.3	3.5	3.5	3.5	3.3	3.1	2.9	2.5	A					
6								1.9	2.5	2.9	3.0	3.0	2.9	A	A	A	A	A	1.7					
7								M	M	M	3.0	3.1	3.3	A	A	A	2.8	2.5	1.8					
8								C	2.5	[2.8] ^C	3.1	3.3	3.5	3.7	3.1	3.0	2.7	2.4	A					
9								2.3 ^H	[2.6] ^C	3.0	3.1	3.2	A	3.2	B	3.2	3.0	A						
10								2.3 ^F	2.3	3.0	3.1	3.3	C	C	C	C	A	2.5	1.4					
11								C	C	C	3.2	3.3	3.4	3.4	3.3	2.9 ^F	2.7	A	2.0					
12								2.2	C	C	C	C	C	C	C	C	C	C	C					
13								2.0	2.6	2.9	B	3.5	3.4	3.5	3.4	3.0	A	A	1.9					
14								2.1	2.8	3.1	3.1	3.4	3.6	A	A	C	C	C	C					
15								2.1	[2.6] ^C	3.0	3.3	3.4	3.5	3.5	3.2	3.0	2.8	2.5	A					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								2.1	2.9	3.1	3.2	3.1	3.1	3.2	3.1	3.1	3.0	2.6	2.0					
18								2.2 ^H	2.8	3.1	3.1	A	3.2	3.4	3.2	3.2	3.0	2.5	1.7					
19								2.3	2.9	3.0	3.2	3.4	3.3	3.3	3.2	3.2	3.0	2.5	A					
20								2.2	2.6	2.8	A	A	3.0	3.0	A	2.5	C	C	A					
21								C	C	2.8	3.2	3.3	3.5	3.4	3.4	3.2	3.1	A	C					
22								2.2	2.8	A	3.2	3.3	3.2	A	3.0	A	3.0	2.6	2.0					
23								2.1	A	3.0	A	3.3	3.3	3.4	3.4	3.1	3.0	2.6	A					
24								B	A	C	C	C	C	C	C	C	C	C	C					
25								2.1	2.7	3.0	3.2	3.3	3.3	3.4	3.2	3.0	3.0 ^H	2.7	C					
26								C	C	3.2	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	3.3	3.5	3.3	3.1	2.9	2.7	1.7					
28								C	2.8	3.1	[3.2] ^C	3.2	3.3	3.3	A	A	3.0	A	A					
29								2.3	2.7	3.1	3.4	C	C	C	C	C	C	C	C					
30								2.2	[2.6] ^C	3.0	3.2	C	C	C	C	C	C	C	C					
31																								
Mean Value								2.1	2.7	2.9	3.1	3.3	3.3	3.4	3.3	3.1	2.9	2.5	1.8					
Median Value								2.2	2.6	3.0	3.2	3.3	3.3	3.4	3.3	3.1	3.0	2.5	1.8					
Count								2.1	2.1	2.3	2.2	2.1	2.2	1.9	1.7	1.9	1.9	1.4	1.1					

foE

Sweep 1.0 Mc to 22.0 Mc in 2 min

Manual

Automatic

Y 6

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

f_oF₂

Apr. 1952

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								110	100	100	100	100	100	100	100	100	100	A	A ^H						
2								110 ^H	100	100	100	100	100	100	100	100	100	100	A	A					
3								110	100	100	100	100	100	100	100	100	100	100	A	100					
4								110	100	100	100	100	100	100	100	100	100	100	A	A					
5								A	100	[100] ^c	100	100	100	100	100	100	100	100	A	A					
6								110	100	100	100	100	100	A	A	A	A	A	A	120					
7								M	M	M	100	100	100	A	A	A	100	100	100	130					
8								C	100	[100] ^c	100	100	100	100	100	100	100	100	A	A					
9								110 ^H	[100] ^c	100	100	100	A	100	100	100	100	100	A	A					
10								110 ^F	100	100	100	100	C	C	C	C	A	A	100	100					
11								C	C	C	100	100	100	100	100	100	B	100	A	100					
12								110	C	C	C	C	C	C	C	C	C	C	C	C					
13								110	100	100	B	100	100	100	100	100	A	A	A	100					
14								110	100	100	100	100	100	A	A	C	C	C	C	C					
15								110	[100] ^c	100	100	100	100	100	100	100	100	100	110	A					
16								C	C	C	C	C	C	C	C	C	C	C	C	C					
17								110	100	100	100	100	100	100	100	100	100	100	110	120					
18								110 ^H	100	100	100	A	100	100	100	100	100	100	110	110					
19								110	100	100	100	100	100	100	100	100	100	100	A	A					
20								100	100	100	A	A	100	100	A	100	C	C	A	A					
21								C	C	100	100	100	100	100	100	100	100	A	C	C					
22								120	110	A	100	100	100	A	100	A	100	100	110	110					
23								110	A	100	A	100	100	100	100	100	100	100	A	A					
24								B	A	C	C	C	C	C	C	C	C	C	C	C					
25								110	100	100	100	100	100	100	100	100	100	100 ^H	100 ^F	C					
26								C	C	100	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	100	100	100	100	100	100	100	110					
28								C	100	100	[100] ^c	100	100	100	A	A	100	A	A	A					
29								110	100	100	100	C	C	C	C	C	C	C	C	C					
30								110	[100] ^c	100	100	C	C	C	C	C	C	C	C	C					
31																									
Mean Value								110	100	100	100	100	100	100	100	100	100	100	100	110					
Median Value								110	100	100	100	100	100	100	100	100	100	100	100	100					
Count								20	21	23	22	21	22	19	18	18	19	13	10						

Sweep 1.0 Mc to 2.2.0 Mc in 2 min

Manual Automatic

Y 7

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

fEs

Apr. 1952

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	3.5	2.1	E	E	2.1	E	2.1	G	G	G	G	G	G	G	4.4	4.9	3.0	2.5	C	3.0	2.1	2.2	2.1		
2	2.3	2.1	2.1	E	E	E	2.2	G	G	G	G	G	G	G	G	G	G	G	3.1	2.8	4.3	5.3Y	3.0	2.8	
3	5.9	4.3F	5.0F	4.5F	2.7	E	E	G	G	G	G	G	G	G	G	G	G	3.5	2.5	2.9	2.5	E	3.2	2.4	
4	5.9	2.3	2.1	2.1	3.2	2.0	3.0	G	G	4.7	4.8	5.0	6.0	G	6.0	5.1	5.5	3.4	3.0	4.0	3.3	2.5	4.7		
5	2.5	4.8	4.3Y	2.4	2.2	2.5	4.0	G	G	G	5.4	5.5	6.0	5.4	G	G	G	G	3.1	3.7	C	C	C	C	
6	C	C	2.5	E	2.0	2.0	E	G	G	G	4.8	4.6Y	3.7	3.7	5.5	4.6	3.8	4.2	4.0	3.5	2.7	E	E	M	
7	M	M	M	M	M	M	M	M	M	M	G	G	G	4.3	3.8	G	G	G	2.3	2.1	E	E	E	2.3	
8	E	E	E	E	C	C	C	C	C	C	G	G	G	G	G	4.7	4.0	3.0Y	4.1	2.1	E	E	3.1	E	
9	E	E	E	E	E	1.9	G	G	C	4.6	5.0	G	4.6	G	G	G	G	3.5	G	2.6	2.1	E	2.0	E	
10	1.9	E	E	E	2.0	2.4	E	G	G	G	G	6.0	C	C	C	C	5.1	G	3.7	2.7	3.7	C	C	C	
11	C	C	C	C	C	C	C	C	C	C	C	G	G	C	C	C	G	4.5	G	2.7	3.4	2.9	2.5	2.7	
12	E	E	E	E	E	E	C	G	C	C	C	C	C	C	C	C	C	C	C	3.0	2.0	E	E	E	
13	E	E	E	E	E	E	E	3.9	G	4.5	B	G	G	4.5	5.5	G	4.5	3.4	4.5	3.2	4.4	3.9	4.0	4.5	
14	E	E	E	E	2.5	2.0	E	E	G	4.5	5.0	4.7	4.3Y	4.7	5.6	C	C	C	C	2.9	2.6	2.4	2.0	1.8	
15	3.0	E	E	E	C	C	C	C	C	C	G	G	G	G	G	G	G	G	3.4	2.7	E	E	2.6	E	
16	2.0	E	E	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.0	
17	3.3	3.0	3.2	2.5	2.1	E	G	3.5	G	4.6	5.0	4.0	G	4.3Y	G	4.5	3.2	G	3.6	6.0	7.5Y	6.0Y	6.0Y	6.0Y	
18	3.8	3.4	3.1F	3.3	4.2	4.0	G	3.5	G	4.6	5.0	6.0	8.5Y	6.2	7.0Y	9.0Y	11.3Y	8.5Y	7.0Y	5.5	6.0	5.6	4.8	4.5Y	
19	5.3Y	3.8	5.0Y	6.1	4.1	3.4	3.2	G	5.0	6.0	6.0	6.4Y	6.0	12.0Y	6.0	7.8Y	8.7Y	6.0	7.5	6.0Y	4.5Y	2.0	E	2.3	
20	2.4	3.5	2.4	3.2	3.4	3.4	E	G	3.8	4.0Y	6.1	8.7Y	5.1Y	4.7Y	3.7Y	G	G	C	2.7	2.6	E	E	E	2.0	
21	3.1Y	2.5	C	C	C	C	C	C	C	5.0	4.9	5.0	G	G	G	6.0	7.4	C	6.0	4.7F	3.9F	4.8F	2.8		
22	E	C	E	2.3	2.0	2.3	B	3.5	3.8	5.1	6.0	5.1	4.9	5.8	6.0Y	6.0Y	G	5.0	6.0	4.5	3.9	5.2	5.5Y	4.3	
23	3.0	3.1	E	E	E	E	E	G	4.0	G	3.8	G	7.9	G	G	5.0	4.5	4.0	3.5	3.3	2.5	4.5	4.4	3.1Y	
24	3.8	E	E	E	E	E	E	2.3	G	C	C	C	C	C	C	C	C	C	C	3.6	3.1	2.9	2.2	E	
25	E	E	E	E	E	E	E	2.8	G	G	G	G	G	G	G	5.0	4.7	4.8	5.0	C	C	C	C	2.5	
26	2.4	3.5	7.5Y	2.9	3.2	2.4	2.7	C	C	C	C	C	C	C	C	C	C	C	C	C	4.0	C	C	C	
27	C	C	2.3	E	E	E	E	C	C	C	C	5.0	7.7	6.0	5.6	5.0	3.9	3.8	2.3	2.5Y	E	C	C	C	
28	C	C	C	C	C	C	C	C	5.1	5.2	C	5.7	G	G	8.5Y	5.2	6.0	4.2	4.0	8.5Y	3.4	6.0	4.3	4.3Y	
29	4.0	2.2	1.8	2.8	2.1	E	B	G	G	7.5	6.0	C	C	C	C	C	C	C	C	2.2	E	E	3.2		
30	2.4F	3.8	2.5	2.4	E	E	E	G	3.6	C	5.2	6.8Y	C	C	C	C	C	C	2.3	2.4	2.3	2.3	2.3	2.3	
31																									
Mean Value	3.4	3.2	3.4	2.9	2.7	2.7	2.9	3.4	4.2	5.1	5.4	5.6	5.5	5.8	5.5	6.0	5.6	4.7	4.0	3.5	3.4	4.2	3.4	3.2	
Median Value	2.4	2.2	E	2.1	2.0	E	E	E	G	4.0	4.8	4.0	G	G	3.7	G	4.5	4.0	3.4	3.0	2.9	2.4	2.6	2.5	
Count	2.5	2.4	2.6	2.3	2.3	2.3	2.0	2.2	2.0	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2.7	2.6	2.5	2.4	2.5	

fEs

Sweep 1.0 Mc to 22.0 Mc in 2 min

Manual

Automatic

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Apr. 1952

(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	2.8	2.8	2.7	[2.8] ^S	2.8	3.5	3.0	3.5	3.3	3.3	3.0 ^P	2.9	3.3 ^P	3.0	3.1	2.9	3.4	3.3	3.4	3.3	3.2	3.1	2.9	[3.0] ^P
2	2.7	2.6	2.5 ^P	3.3	3.7	2.8	3.1	B	[3.7] ^P	3.2	3.2	3.1	3.1	3.0	3.1	3.2	[3.3] ^P	3.1	3.4	[3.5] ^P	3.3 ^P	2.7 ^P	[2.8] ^P	2.9
3	2.9	2.9	2.8	3.2 ^P	3.1	2.8	2.9	3.5	3.4	3.2	2.9	3.1	3.2	3.1	3.5	3.2	3.1	[3.2] ^P	[3.3] ^P	[3.4] ^P	[3.5] ^P	2.5	2.8	2.8
4	3.3 ^P	[2.8] ^S	3.0 ^S	F ₅	2.9	3.1	3.3	3.2	3.4	[3.2] ^P	3.0 ^P	[3.4] ^P	3.2	3.2	3.3 ^P	[3.2] ^P	3.2	[3.4] ^P	3.4	3.2	[3.5] ^P	2.8	2.8	2.9
5	3.0	2.8	3.0	3.2	3.4	2.6	3.0	[3.5] ^P	3.4 ^P	3.7	3.5	2.9	3.1	[3.1] ^P	[3.2] ^P	3.3	3.3	3.4	3.2	C	C	C	C	C
6	C	C	2.8	3.2	2.8 ^H	3.1	3.4	3.1	M	3.7	3.5	2.9	2.9	3.1	3.4	3.3	3.6	3.3	3.1	B	3.4	3.2	2.8	M
7	M	M	M	M	M	M	M	M	M	M	M	3.3	3.1	[3.2] ^P	3.2	3.3	3.3	3.3	[3.3] ^P	[3.5] ^P	2.7 ^H	2.7	2.8	
8	2.9	2.9	2.9	C	C	C	C	C	3.6	[3.4] ^P	3.1 ^P	2.9 ^P	3.1	3.1	3.0 ^P	[3.2] ^P	3.1	3.4	[3.3] ^P	[3.2] ^P	3.2	2.8	2.8	
9	2.9	3.1	3.0	3.3	3.5	2.9 ^F	3.5	C	C	[3.2] ^P	3.2	[3.1] ^P	3.0 ^P	3.3	3.2	3.4	[3.3] ^P	3.4	3.2	3.3 ^P	3.2	2.9	2.7	[2.7] ^P
10	2.8	2.9	3.2	3.4	2.5	2.9	3.2	3.5 ^P	3.5	3.3	C	C	C	C	C	C	[3.2] ^P	3.5	3.3	3.4	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	3.1	[2.9] ^P	3.1	3.1	3.2	3.1	3.2	[3.2] ^P	3.4	3.3	3.3	3.0	2.8	2.8
12	2.8	2.9	3.1	3.6 ^P	3.4	2.8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.2	3.0	2.7	2.9
13	3.0	3.0	3.1	3.4	3.3	2.9	3.4	3.4	3.4	3.2	B	C	C	C	C	C	C	C	C	3.2	A	2.7	[2.9] ^P	
14	3.0	3.0	3.0	3.3	3.5	2.9	3.2	[3.5] ^P	[3.3] ^P	3.3	3.1	[3.1] ^P	3.1	2.9	3.2	C	C	C	C	3.3	3.3	2.9	2.8	2.9
15	3.1	2.8 ^P	2.8	C	C	C	C	3.2	[3.2] ^P	3.1	[3.1] ^P	3.3	3.3	C	C	3.2	[3.2] ^P	3.3	3.6	[3.5] ^P	3.0	2.7 ^H	2.7	2.7
16	2.8 ^F	3.0 ^F	3.4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.7
17	2.5 ^P	F	F	3.4	3.2 ^F	F	3.3	[3.2] ^P	3.2	3.3	3.2	3.1	C	C	3.4	3.3 ^P	3.2	3.4	3.6 ^P	3.3	[2.8] ^P	A	3.0	3.2 ^F
18	3.0	3.1	3.3	3.0	2.8 ^F	S	3.5	3.7	3.2 ^H	3.6	3.2	3.2	[3.3] ^P	3.0	3.2	3.1	A	3.2	3.3	3.4	A	2.8	2.9	2.9
19	[3.1] ^P	[2.9] ^P	3.2	A	A	F	[3.4] ^P	[3.5] ^P	3.6	3.3	3.1	[2.8] ^P	[3.1] ^P	A	3.1	3.1	3.3	[3.2] ^P	C	C	3.5 ^P	3.2	2.8	2.9
20	2.9	F	2.9	3.0	3.4	3.7	3.2	3.4	3.7	3.7	2.9	A	[3.3] ^P	3.3 ^P	C	C	C	C	C	C	C	3.5	2.8 ^H	2.8
21	2.8	2.8 ^H	C	C	C	C	C	C	C	C	3.7	3.3	3.0	[3.0] ^P	C	C	C	[3.2] ^P	[3.2] ^P	[3.3] ^P	3.6 ^K	A ^K	2.4 ^K	2.8
22	2.5 ^F	[2.6] ^P	2.6 ^K	3.0 ^K	2.6 ^K	3.1 ^K	3.8 ^K	2.6 ^K	[3.2] ^P	C ^K	3.0 ^K	3.0 ^K	C ^K	C ^K	C ^K	C ^K	3.1 ^K	3.6 ^K	[3.4] ^P	3.3	A	A	[2.8] ^P	2.8
23	2.8	3.0	2.9	2.9	3.1	3.0	3.3	[3.4] ^P	3.5 ^P	[3.4] ^P	3.1	3.1 ^P	[3.2] ^P	[3.2] ^P	C	C	3.4	3.4	3.3	[3.5] ^P	C	C	C	C
24	C	C	C	C	3.3	3.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	3.0	2.9	3.0	2.8	2.9	2.9	3.1	[3.3] ^P	[3.5] ^P	3.6	3.0	[2.8] ^P	[3.0] ^P	[3.0] ^P	3.1	3.1 ^P	3.2	[3.3] ^P	C	C	C	2.9	2.8	[2.9] ^P
26	2.9 ^P	3.1	3.3	3.2	2.9	3.0	3.3	C	C	C	3.1	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	2.8 ^X	3.0 ^H	F	F	3.1	C	C	C	C	C	C	3.1	3.1	3.2	3.2	3.3	[3.4] ^P	[3.3] ^P	3.4 ^P	3.1	C	C
28	C	C	C	C	C	C	C	C	3.4	[3.4] ^P	3.4	2.7	2.6	A	2.9	3.2	3.2	[3.3] ^P	C	A	3.4	A	AS	A
29	A	2.7	2.8	3.2	3.0 ^H	2.8 ^H	3.5	3.5	3.6	A	3.0 ^P	C	C	C	C	C	C	C	C	[3.5] ^P	[3.4] ^P	3.3	2.7	2.8
30	2.6	2.8	[2.9] ^C	3.0	2.8	3.2	3.3	3.4	[3.4] ^P	3.4	3.2	C	C	C	C	C	C	C	C	3.0	3.4	3.2	2.8	2.8
31																								
Mean Value	2.9	2.9	3.0	3.2	3.1	3.0	3.3	3.4	3.4	3.3	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.0	2.8	2.8
Median Value	2.9	2.9	3.0	3.2	3.0	2.9	3.2	3.4	3.4	3.3	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.4	3.3	3.4	3.0	2.8	2.8
Count	23	22	24	20	21	19	21	19	21	22	22	20	20	17	16	17	19	21	19	20	23	19	20	23

Sweep 1.0 Mc to 2.2.0 Mc in 2 min

Manual

Automatic

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

Lat. 31° 12.5' N
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IONOSPHERIC DATA

fminF

Apr. 1952

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	1.5	1.6	1.7	1.6	1.5	1.6	2.5	2.7	3.1	3.2	3.5	3.9	3.5	3.6	3.4	3.2	3.0 ^A	2.0	1.6	1.9 ^C	2.2 ^A	2.0 ^A	A	
2	1.7	1.6	1.6	1.6	1.5	1.6	1.6	2.4	3.0	3.3	3.5	4.0	3.5	3.2	3.5	3.2	2.9	2.6	1.9	1.6	A	2.5 ^A	1.6	2.0 ^A	
3	1.6	2.3 ^A	1.7	3.0 ^A	1.6	1.6	1.6	2.2	2.7	3.1	3.2	3.7	4.0	3.6	3.5	3.2	3.0	2.6	2.3	A	A	1.6	A	1.6	
4	4.3 ^A	1.6 ^F	1.6	1.6	1.6	1.6	2.1 ^A	2.4	2.8	4.1	4.2 ^A	4.3 ^A	5.1 ^A	4.3	4.5 ^A	5.3 ^A	4.3 ^A	A	A	A	A	2.1 ^A	1.7	1.8	
5	1.6	1.7	1.6	1.6	1.6	1.7	2.4 ^A	2.5	3.3	[4.0]	4.7 ^A	4.8 ^A	5.9 ^A	4.5 ^A	3.9	3.2	3.0	3.1	2.5	2.8 ^A	C	C	C	C	
6	C	C	1.5	1.4	1.4	1.4	1.6	2.5	2.9	3.4	3.3	4.3	4.0	4.3	5.1 ^A	4.0	3.2	3.5 ^A	3.3 ^A	2.8 ^A	2.1 ^A	1.6	1.6	M	
7	M	M	M	M	M	M	M	M	M	M	3.3	3.5	3.9	3.9	3.5	3.1	3.0	2.8	2.1	1.6	1.6	1.6	1.6	1.6	
8	1.6	1.6	1.6	C	C	C	C	2.9	[3.2]	3.1	3.6	3.4	4.0	3.7	3.4	3.1	3.9 ^A	2.5	2.2	3.3 ^A	1.6	1.7	A	1.6	
9	1.6	1.6	1.5	1.6	1.6	1.7 ^F	2.2	3.4	[3.2]	3.1	4.2	3.9	4.1	4.0	3.9	3.4	3.0	2.9	2.1	1.6	1.5	1.6	1.6	1.6	
10	1.6	1.6	1.6	1.4	1.4	1.6	1.7	2.6	3.0	3.2	3.6	3.8	C	C	C	4.0 ^A	2.5	2.3	2.0	A	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	C	3.6	3.8	3.7	4.3	4.0	4.2	3.1	3.6 ^A	2.1	1.6	A	2.8 ^A	1.7	1.7	
12	1.6	1.6	1.6	1.6	1.6	1.6	[2.2]	2.7	C	C	C	C	C	C	C	C	C	C	C	C	A	1.6	1.6	1.6	
13	1.6	1.6	1.6	1.6	1.6	1.6	1.7	3.1	3.1	3.9	4.5	4.0	4.0	4.6	5.0	4.0	3.7	3.2	3.9	2.0	A	A	1.6	3.0 ^A	
14	1.6	1.4	1.6	1.6	1.6	1.6	1.6	2.6	3.3	3.9	4.3 ^A	4.0	3.9	4.1	5.0 ^A	C	C	C	C	2.0 ^A	1.9	1.6	1.6	1.6	
15	1.7	1.6	1.6	C	C	C	C	2.5	[2.9]	3.3	3.7	3.8	3.9	3.8	4.0	3.7	3.1	2.7	2.3	A	1.6	1.6	1.8	1.7	
16	1.6 ^F	1.6 ^F	1.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.0 ^A	
17	1.8 ^F	1.6 ^F	1.6 ^F	1.5	1.5	1.6 ^F	1.9	2.8	3.1	3.5	4.0	4.2	4.0	3.9	3.9	3.5	3.2	2.8	2.3	A	5.3 ^A	A	2.0 ^A	1.8	
18	1.9	1.6	1.4	1.6	A	2.3 ^A	1.8	2.8	3.1	3.9	4.3 ^A	4.4 ^A	7.3 ^A	5.5 ^A	6.5 ^A	5.0 ^A	A	6.0 ^A	A	4.5 ^A	6.7 ^A	A	1.8	1.6	
19	1.6	2.0 ^A	1.6	A	A	A	1.7	2.7	2.9	3.4	5.4 ^A	5.3 ^A	7.3 ^A	A	6.6	7.5 ^A	8.3 ^A	A	6.8 ^A	A	4.0 ^A	1.6	1.6	1.7	
20	1.6	A	1.6	1.9	A	A	2.0	2.6	2.8	3.3	5.5 ^A	A	4.5 ^A	4.2 ^A	3.3	2.5	C	C	2.1	1.9	1.6	1.6	1.6	1.6	
21	1.4	1.5	C	C	C	C	C	C	C	4.3 ^A	3.9	4.3 ^A	4.0	4.3	3.6	3.8	5.5 ^A	7.0 ^A	[6.2] ^C	5.5 ^A	A	A	A	1.6 ^F	
22	1.6	[1.5]	1.4	1.6	1.6	1.6	1.6	2.5	3.6	A	A	4.3 ^A	A	5.2 ^A	A	5.7 ^A	4.0	4.3 ^A	2.2	4.1 ^A	A	A	A	4.3 ^A	
23	2.0 ^A	1.6	1.6	1.6	1.6	1.6	1.6	2.7	2.7	3.1	3.3	3.6	3.5	3.9	4.5	4.1	3.0	2.9	2.0	A	1.7	A	A	A	
24	A	1.7	1.6	1.7	1.6	1.6	2.1	2.7	3.1	3.6	3.7	3.6	C	C	C	C	C	C	C	2.8 ^A	2.5 ^A	1.6	1.6	1.6	
25	1.6	1.6	1.4	1.3	1.6	2.0	2.1	2.8	3.3	3.6	3.7	3.6	4.3	4.2	4.4	4.2	4.5	4.2	C	C	C	C	C	1.6	
26	1.6	1.4	A	A	2.0 ^A	1.4	1.8	C	C	4.0	C	C	C	C	C	C	C	C	C	C	A	C	C	C	1.6
27	C	C	1.6 ^F	1.6	1.3	1.6	1.9	C	C	C	C	C	4.5 ^A	8.0	7.8	4.9	4.8	2.8	A	1.6	1.9	1.6	C	C	
28	C	C	C	C	C	C	C	C	4.5 ^A	4.3 ^A	C	4.8	4.1	4.2	A	4.4	4.3 ^A	3.3	3.1	A	2.4 ^A	A	A	A	
29	A	1.6	1.6	1.7	1.6	1.6	1.9	2.5	3.0	A	4.0	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.7	2.3 ^A	
30	1.7	A	1.4	1.6	1.6	1.6	1.9	2.4	[3.4] ^C	4.5 ^A	6.4 ^A	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.6	1.6	
31																									
Mean Value	1.8	1.6	1.5	1.7	1.6	1.6	1.9	2.6	3.1	3.6	4.1	4.0	4.5	4.3	4.5	4.1	3.9	3.4	2.8	2.4	2.4	1.8	1.7	1.9	
Median Value	1.6	1.6	1.6	1.6	1.6	1.6	1.9	2.6	3.0	3.4	3.9	4.0	4.0	4.2	4.0	3.9	3.2	3.0	2.3	2.0	1.8	1.6	1.6	1.6	
Count	22	23	25	21	20	21	23	22	23	22	23	22	22	22	21	22	21	22	19	19	18	18	18	22	22

fminF

Swamp 1.0 Mc to 2.2.0 Mc in 2 min

Manual Automatic

Y 10

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

Lat. 35° 12.5' N
Long. 139° 37.7' E

Yamagawa

IONOSPHERIC DATA

fminE

Apr. 1952

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	1.6	1.7	E	E	1.8	E	1.8	1.6	1.6	1.7	1.7	1.8	1.7	1.7	1.7	2.0	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6
2	1.6	1.7	E	E	E	E	1.7	1.6	1.6	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
3	1.6F	1.6F	1.6F	1.6F	1.6	E	E	1.6	1.6	1.7	1.7	1.9	1.9	1.9	2.0	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6
4	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.8	[1.8]	1.7	1.8	1.8	1.8	1.8	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
5	1.6	1.6	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.8	1.7	1.8	1.9	1.9	1.9	1.7	1.5	1.5	1.4	1.5	C	C	C	C
6	C	C	1.8	E	1.7	1.7	1.6	1.6	1.6	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.5	1.5	1.6	1.4	E	E	E	M
7	M	M	M	M	M	M	M	M	M	M	M	1.7	1.7	2.0	1.6	1.7	1.5	1.6	1.6	1.7	1.7	E	E	1.7
8	E	E	E	C	C	C	C	C	1.6	[1.6]	1.6	1.6	1.7	2.0	1.8	1.7	1.7	1.6	1.6	1.6	1.7	E	1.6	E
9	E	E	E	E	E	1.7	1.6	1.6	[1.6]	1.6	1.6	1.8	1.8	1.9	2.2	2.0	1.6	1.5	1.6	1.6	1.7	E	1.7	E
10	1.6	E	E	1.8	1.7	E	1.5	1.6	1.6	1.6	1.8	1.8	C	C	C	1.6	1.6	1.6	1.5	1.7	1.6	C	C	C
11	C	C	C	C	C	C	C	C	C	1.8	1.9	2.2	2.0	1.9	2.0	3.1	1.7	1.8	1.4	1.6	1.6	E	1.5	E
12	E	E	E	E	E	E	C	1.6	C	C	C	C	C	C	C	C	C	C	C	C	C	E	E	E
13	E	E	E	E	E	E	1.6	1.6	1.6	1.7	[1.8]	2.0	2.0	1.9	2.3	2.3	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6
14	E	E	E	1.7	1.8	E	E	1.6	1.6	1.8	1.8	2.0	2.0	2.0	1.9	C	C	C	C	1.6	1.6	1.6	1.7	1.7
15	1.5	E	E	C	C	C	C	1.6	[1.6]	1.6	1.9	2.0	2.0	1.9	2.3	1.9	1.6	1.6	1.4	1.6	E	E	1.5	E
16	1.8	E	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.6
17	1.6	1.6	1.6	1.6	1.7	E	1.5	1.6	1.9	1.6	1.9	1.6	2.0	2.0	2.0	1.9	1.6	1.5	1.5	1.5	1.8	1.6	1.5	1.6
18	1.5	1.4	1.7F	1.6	1.5	1.4	1.5	1.6	1.7	1.4	1.7	2.0	2.0	2.2	2.2	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6
19	1.6	1.5	1.5	1.6	1.4	1.6	1.5	1.6	1.6	2.0	2.0	2.3	2.0	2.2	2.0	2.0	1.9	1.6	1.6	1.6	1.6	1.9	E	1.8
20	1.7	1.7	1.6	1.6	1.6	1.6	E	1.6	2.1	2.3	2.1	2.5	2.0	2.4	2.0	1.6	C	C	1.5	1.6	E	E	E	1.7
21	1.6	1.6	C	C	C	C	C	C	C	1.6	2.0	2.0	2.2	2.0	2.0	1.7	1.6	1.6	[1.6]	1.6	1.5	1.6F	1.6F	2.0
22	E	C	E	1.9	1.7	1.8	B	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6
23	1.6	1.6	E	1.7	E	E	E	1.5	1.6	1.6	2.0	2.0	2.0	2.3	2.0	2.4	1.9	1.6	1.6	1.6	1.6	1.6	1.6	1.9
24	1.6	E	E	E	E	E	E	2.0	1.6	C	C	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.7	E
25	E	E	E	E	E	E	1.5	1.5	1.6	1.9	2.0	2.0	2.0	2.3	2.0	1.9	2.0	1.5	C	C	C	C	1.7	E
26	1.6	1.6	1.1	1.5	1.6	1.7	1.5	C	C	2.2	C	C	C	C	C	C	C	C	C	C	1.6	C	C	C
27	C	C	1.9	E	E	E	1.5	C	C	C	C	C	2.2	2.3	2.0	1.7	1.7	1.5	1.5	1.9	1.5	E	C	C
28	C	C	C	C	C	C	C	C	1.6	1.9	[2.0]	2.0	2.0	2.0	2.0	2.0	2.0	1.5	1.5	1.5	1.6	1.6	1.6	1.5
29	1.6	1.6	1.6	1.6	1.7	E	B	1.6	1.6	2.2	C	C	C	C	C	C	C	C	C	1.9	E	E	1.6	1.6
30	1.7F	1.4	1.6	1.6	E	E	1.6	1.6	[1.8]	2.0	2.0	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.8	1.9
31																								
Mean Value	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.2	1.7	1.6	1.5	1.6	1.6	1.6	1.6	1.7
Median Value	1.6	1.4	E	1.6	1.6	E	1.5	1.6	1.6	1.8	1.9	1.9	2.0	2.0	2.0	1.9	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Count	25	24	24	23	23	23	20	22	23	24	25	23	23	23	23	22	22	22	22	22	27	25	24	25

IONOSPHERIC DATA IN JAPAN FOR APRIL 1952

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