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# IONOSPHERIC DATA IN JAPAN

FOR FEBRUARY 1953

Vol. 5 No. 2

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PREPARED BY THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FEBRUARY 1953

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## PREFACE

The origin of ionospheric sounding in Japan dates back to 1931 and the results of the work have been published in the form of the monthly "Ionospheric Data in Japan" since 1949. As a result of the reform of administrative structure of the Japanese Government effective on August 1, 1952, the observation, data coordination and publication were handed over to the charge of the Radio Research Laboratories newly set up within the Ministry of Postal Services.

The Radio Research Laboratories consists of three Divisions, i.e., First, Second and Administrative Divisions, located in Tokyo and five local radio wave observatories established at Wakkanai, Akita, Hiraiso, Inubo and Yamagawa, respectively.

The First Division has the following three 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; and

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 broadcast of URSIGRAM and physical basic studies of wave propagation in general.

The Second Division has the following two sections:

Frequency Standard Section which shall carry on researches on the frequency standard and broadcast the standard frequencies and time signals (J. J. Y.); and

Apparatus Section which shall carry on researches on radio apparatus used for radio regulatory purpose and conduct the approval service of types of radio equipments.

The Administrative Division shall conduct the general affairs of the Laboratories. 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 former Radio Regulatory Commission 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.

Shogo Amari  
Chief, Radio Research Laboratories,  
Ministry of Postal Services

Aug. 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° 03.2' 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. 45° 28.6' N  
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Feb. 1953

foF2

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	3.1	2.7	2.6	2.7	2.7	C	B	B	B	B	B	B	B	(6.0) <sup>P</sup>	(5.3) <sup>P</sup>	4.7 <sup>P</sup>	3.8	2.9	S	S	S	(2.8) <sup>S</sup>	2.8 <sup>F</sup>
2	2.8	(2.8) <sup>S</sup>	2.7	2.8	2.8	(2.8) <sup>A</sup>	2.1	3.8 <sup>P</sup>	5.2	5.8	5.8	5.8	6.1	6.1	6.1	6.0	5.3 <sup>F</sup>	(4.2) <sup>B</sup>	(3.1) <sup>P</sup>	A	S	3.0	2.9	S
3	C	C	C	C	C	C	C	C	B	B	B	7.9 <sup>P</sup>	6.1	6.1	6.1	5.6	5.5	3.5 <sup>P</sup>	2.5	A	S	A	A	S
4	3.4	3.5 <sup>P</sup>	3.2 <sup>P</sup>	3.2 <sup>P</sup>	3.6 <sup>P</sup>	(3.6) <sup>F</sup>	2.8 <sup>P</sup>	4.0 <sup>P</sup>	5.3	5.8	6.5	8.1 <sup>P</sup>	7.0	7.7 <sup>P</sup>	6.2	6.1	B	B	3.1	2.8	2.9	S	S	2.9
5	3.2 <sup>P</sup>	3.0	3.1	3.0 <sup>P</sup>	3.2 <sup>P</sup>	3.2 <sup>P</sup>	(3.2) <sup>S</sup>	3.4 <sup>P</sup>	B	B	B	B	B	B	B	B	B	3.3	2.6	2.1	S	S	(2.6) <sup>S</sup>	S
6	S	2.4 <sup>P</sup>	S	S	S	2.4 <sup>P</sup>	S	B	C	B	B	B	B	B	C	C	5.7	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	6.0	6.1	5.0 <sup>P</sup>	B	S	2.0	2.4	(2.7) <sup>P</sup>	2.7 <sup>P</sup>	3.1 <sup>P</sup>
8	SF	SF	2.8	3.1	(3.4) <sup>F</sup>	SF	S	B	5.5	B	B	B	B	B	B	B	B	B	A	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	5.8	(6.0) <sup>C</sup>	6.1	6.1	6.2	C	C	C	C	4.0	3.3	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(3.6) <sup>S</sup>	(3.6) <sup>S</sup>	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	5.5	2.7	C	C	C	C	C	5.9	5.3	4.7	4.2	4.5	3.8 <sup>P</sup>	5.3 <sup>P</sup>	4.8 <sup>P</sup>
12	4.2	3.0	4.3 <sup>P</sup>	(4.5) <sup>C</sup>	4.7	4.3 <sup>F</sup>	4.0 <sup>F</sup>	4.3	6.5	6.0	6.9 <sup>P</sup>	7.6	(7.0) <sup>C</sup>	6.1	6.8	(6.1) <sup>C</sup>	5.8	6.0	3.2	2.4	2.6	2.4	2.8	3.2
13	3.2	3.2	3.4	3.0	3.0	2.9	1.9	4.2 <sup>P</sup>	S	(5.8) <sup>S</sup>	6.4	7.4 <sup>P</sup>	8.0	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	S	S	B	5.6	B	B	6.4 <sup>P</sup>	A	S	S	3.0 <sup>P</sup>	3.4 <sup>P</sup>	3.1 <sup>P</sup>	3.2 <sup>P</sup>	3.2	3.2
15	3.1	3.1	C	C	C	C	C	C	C	S	S	5.0	S	2.4	(7.2) <sup>S</sup>	S	S	3.3	3.3	S	S	S	2.1	3.0
16	3.1	3.0	3.1	3.8 <sup>P</sup>	(3.2) <sup>F</sup>	(3.2) <sup>F</sup>	2.7 <sup>F</sup>	S	B	B	S	10.1	(10.7) <sup>S</sup>	7.9	6.2	6.5 <sup>P</sup>	5.5	4.4 <sup>P</sup>	S	2.8	(2.7) <sup>S</sup>	2.6	(2.6) <sup>S</sup>	2.7 <sup>P</sup>
17	3.1	(2.8) <sup>S</sup>	2.6	S	S	2.6	2.5	(4.1) <sup>C</sup>	5.7	(6.1) <sup>P</sup>	5.5	8.2	7.7	(6.8) <sup>P</sup>	6.6	6.1	5.5	(4.9) <sup>P</sup>	4.1	2.4	2.5	2.7	3.1	3.1
18	3.8 <sup>P</sup>	3.6 <sup>F</sup>	3.1 <sup>P</sup>	3.3 <sup>P</sup>	3.2 <sup>P</sup>	3.1	3.0	4.9 <sup>P</sup>	7.7 <sup>P</sup>	B	B	B	(6.6) <sup>F</sup>	(6.5) <sup>P</sup>	5.5	5.6	5.1	5.0	(4.1) <sup>C</sup>	3.2	3.2	3.3	3.8	3.6
19	C	C	C	C	C	C	C	C	C	C	C	7.2	7.1	6.4	6.0	5.7	(5.1) <sup>C</sup>	4.5 <sup>F</sup>	[3.9] <sup>C</sup>	3.3	3.3	3.6	3.2	4.5
20	4.1	4.4	4.5	4.7	4.0	4.6 <sup>P</sup>	3.3	4.8 <sup>P</sup>	5.8	5.3	6.0	B	B	5.5	5.5	5	6.1	4.6	3.1	3.4	3.5	3.7	3.3	3.5
21	3.7 <sup>P</sup>	3.9	3.5 <sup>P</sup>	4.2	4.8	4.5 <sup>P</sup>	4.8	4.5	B	5.7	5.5	6.1	B	5.8	(5.8) <sup>S</sup>	5.7	5.2	4.8	4.7	4.9	C	C	C	4.5
22	C	C	C	C	(3.4) <sup>P</sup>	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	6.1 <sup>P</sup>	S	3.0	2.7	S	S	2.6	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(3.1) <sup>S</sup>	2.9	S	S	S	S
25	S	2.7	S	S	1.8	2.7	S	B	B	B	B	7.3	(7.0) <sup>P</sup>	B	B	B	B	S	S	S	S	S	S	2.8
26	2.8	(2.7) <sup>S</sup>	2.6	2.5	2.6	2.7	2.8	4.0	B	B	B	B	B	B	C	B	B	(3.5) <sup>P</sup>	(3.0) <sup>S</sup>	[2.8] <sup>S</sup>	2.7	(3.2) <sup>P</sup>	S	S
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S	S	5F	2.7F	SF
28	2.8	(3.0) <sup>S</sup>	3.1	2.7 <sup>P</sup>	3.6 <sup>P</sup>	2.7	S	B	B	B	B	B	C	C	B	C	5.7	B	S	S	S	2.7F	SF	SF
29																								
30																								
31																								
Mean Value	3.3	3.2	3.2	3.4	3.4	3.2	3.0	4.2	5.9	5.7	6.3	7.2	7.3	6.5	6.2	5.9	5.4	4.3	3.4	3.1	3.0	3.1	3.1	3.4
Median Value	3.1	3.0	3.1	3.1	3.4	2.9	2.8	4.2	5.7	5.8	6.2	7.4	7.0	6.4	6.2	6.0	5.4	4.4	3.1	3.0	2.8	3.0	2.8	3.2
Count	13	16	13	13	15	15	11	10	7	7	8	12	10	11	13	13	14	15	19	16	12	13	14	14

Note: - Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 15.5 Mc in 2 min  
 Manual  Automatic

W 1

The Radio Research Laboratories  
Koganei-machi, Khatama-gun, Tokyo, Japan

Lat. 45° 23.6' N  
Long. 141° 41.1' E

# Wakkanai

## IONOSPHERIC DATA

135° E Mean Time

h<sub>p</sub>F<sub>2</sub>

Feb. 1953

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	320	290 <sup>F</sup>	300 <sup>F</sup>	340 <sup>F</sup>	(350) <sup>F</sup>	C	B	B	B	B	B	S B	B	(280) <sup>F</sup>	(260) <sup>B</sup>	240 <sup>P</sup>	340 <sup>P</sup>	340	S	S	S	(380) <sup>F</sup>	390 <sup>F</sup>
2	320	(310) <sup>F</sup>	S F	360 <sup>F</sup>	330 <sup>F</sup>	(360) <sup>A</sup>	380	(310) <sup>F</sup>	S B	S B	S B	B	B	B	B	310	(290) <sup>F</sup>	(220) <sup>B</sup>	(350) <sup>F</sup>	A	S	S	340	S
3	C	C	C	C	C	C	C	C	S B	B	B	B	310	300	310	330	320	270 <sup>P</sup>	300	A	S	A	S	S
4	380	(350) <sup>F</sup>	(340) <sup>F</sup>	(340) <sup>F</sup>	(350) <sup>F</sup>	(330) <sup>F</sup>	360 <sup>P</sup>	(320) <sup>F</sup>	310	300	340	(320) <sup>F</sup>	360	(320) <sup>F</sup>	310	290	B	B	B	350	340	S	S	400
5	440 <sup>F</sup>	400	420	370 <sup>F</sup>	380 <sup>F</sup>	340	(320) <sup>S</sup>	290 <sup>P</sup>	B	B	B	B	B	B	B	B	B	B	280	270	320	S	(340) <sup>S</sup>	S
6	S	370 <sup>F</sup>	S	S	S	320 <sup>F</sup>	S	B	C	B	B	B	B	C	C	C	320	C	C	C	C	C	C	C
7	S F	S F	390	360	(350) <sup>F</sup>	S F	S	B	270	B	B	B	B	B	B	B	B	B	A	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	B	C	280	310	310	C	C	C	C	250	300	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(300) <sup>S</sup>	(300) <sup>S</sup>	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	280	290	C	C	C	C	300	310	310	320	300	330	350 <sup>P</sup>	(340) <sup>F</sup>	340 <sup>P</sup>
12	320	290	(320) <sup>S</sup>	(320) <sup>S</sup>	320	(350) <sup>F</sup>	330 <sup>F</sup>	300	300	310	370 <sup>P</sup>	270	(260) <sup>C</sup>	260	270	(270) <sup>C</sup>	270	310	260	330	350	330	390	370
13	340	350	360	340	330	300	330	330 <sup>F</sup>	S	(240) <sup>S</sup>	(250) <sup>S</sup>	320 <sup>P</sup>	290	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	S	S	B	330	B	B	290 <sup>P</sup>	A	S	S	300 <sup>P</sup>	330 <sup>P</sup>	320 <sup>P</sup>	310 <sup>P</sup>	360	330
15	320	340	C	C	C	C	C	C	C	C	S	S	S	S	S	S	S	S	300	330	S	S	350	340
16	330	340	330	(350) <sup>F</sup>	(330) <sup>F</sup>	(300) <sup>F</sup>	350 <sup>F</sup>	S	B	B	C	370	(300) <sup>F</sup>	290	310	290 <sup>P</sup>	290	320 <sup>F</sup>	S	300	(310) <sup>S</sup>	320	(300) <sup>S</sup>	290 <sup>P</sup>
17	330	(320) <sup>S</sup>	320	S	S	330	280	(300) <sup>C</sup>	310	(290) <sup>F</sup>	(370) <sup>S</sup>	310	290	(280) <sup>P</sup>	310	300	310	(310) <sup>P</sup>	330	320	370	370	360	370
18	(330) <sup>F</sup>	360 <sup>F</sup>	350 <sup>F</sup>	(390) <sup>F</sup>	360	320	340	(290) <sup>F</sup>	(320) <sup>F</sup>	B	B	B	(270) <sup>F</sup>	(280) <sup>P</sup>	280	310	290	320	(330) <sup>C</sup>	340	350	360	360	340
19	C	C	C	C	C	C	C	C	C	C	C	290	290	310	320	300	(280) <sup>C</sup>	270 <sup>F</sup>	(280) <sup>C</sup>	300	380	360	350	S
20	S	350	340	310	350	(350) <sup>F</sup>	300	(300) <sup>F</sup>	300	290	300	B	B	310	B	S	300	340	320	330	310	310	330	340
21	(340) <sup>F</sup>	360	(320) <sup>F</sup>	340	330	320 <sup>F</sup>	300	260 <sup>F</sup>	B	310	310	300	B	300	S	S	260	290	300	340	C	C	C	370 <sup>P</sup>
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(350) <sup>F</sup>	S	420	S	S	S	S	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(270) <sup>S</sup>	310	S	S	S	S
25	S	320	S	S	310	320	S	B	B	B	B	270	B	B	B	B	B	B	S	(310) <sup>F</sup>	270 <sup>P</sup>	330	S	S
26	340	(360) <sup>S</sup>	390	330	330	350	330	(290) <sup>S</sup>	B	B	B	B	B	B	B	B	B	B	S	S	S	S	S	360
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	(260) <sup>F</sup>	(270) <sup>S</sup>	(290) <sup>S</sup>	310	(280) <sup>F</sup>	S	S
28	330	(340) <sup>S</sup>	340	340 <sup>P</sup>	320 <sup>P</sup>	340	S	B	B	C	B	B	C	C	B	C	(310) <sup>S</sup>	B	S	S	S F	(360) <sup>F</sup>	S F	S F
29																								
30																								
31																								
Mean	340	340	350	340	330	330	330	300	300	290	320	310	290	300	300	300	290	310	310	320	340	330	350	350
Minimum	330	340	340	340	330	330	300	310	290	290	310	320	290	300	310	300	290	310	300	320	340	330	360	350
Count	12	16	13	13	15	15	10	6	7	7	10	9	9	11	11	12	14	15	19	16	12	13	14	13

Note: - Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0... Mc to 15.5... Mc in \_\_\_ min  
 Manual  Automatic

h<sub>p</sub>F<sub>2</sub>

# Wakkanai

Lat. 45° 28.6' N  
Long. 141° 41.1' E

## IONOSPHERIC DATA

135° E Mean Time

Feb. 1953

h'F<sub>2</sub>

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	270	280	300	300	300F	[280]	270	250	B	B	B	S B	B	260	250	230	270	290	S	S	S	330F	330	
2	300A	300F	300	300F	300F	300F	320	280	S B	S B	S B	B	B	B	B	300	270	1300	320A	A	A	320A	300	S	
3	C	C	C	C	C	C	C	C	B S	300	300	300	310	300	300	300	280	250	300A	A	S	A	S	360	
4	300	300	300	300	300	290	310	290	300	250	330	320	330	300	310B	280	270	260	270	300	280	[320]	350	350	
5	340	340	320	320	310	300	270	260	B	B	B	B	B	B	B	B	B	B	220	300	270	[280]	300	[320]	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	280	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(270)B	270	250	A	C	C	C	C	
8	320F	340F	350	330	320	280F	280	250	260	[280]	290	[280]	280	B	B	B	B	230	A	C	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	230	240	C	C	C	C	
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	230	240	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	280	270	C	C	C	C	280	280	300	300	260	300	300	280	300	
12	240	200	270	[280]	300	300	300	280	290	300	300	260	[270]C	240	260	[250]C	260	280	280	300	300	300	280	300	
13	300	300	300	300	300	260	300	260	300	[240]S	250	310	290	C	C	C	C	C	C	C	C	C	C	C	
14	C	C	C	C	C	C	C	C	S	S	B	B	B	B	280	A	250	250	270	280	280	270	310	280	
15	280	300	C	C	C	C	C	C	C	S	S	300S	S	300S	[300]	S	S	S	300	A	A	S	300	300	
16	300	310	300	300	270	250	300	250	B	B	C	330	290	280	280	250	290	300	280	290	290	300	[280]	250	
17	300	300	300S	[300]	310	300	250	[260]	280	290	300	300	280	280	300	280	300	300	290	250	290	310	300	300	
18	270	270	290	320	280	230	280	260	270	300	280	290	270	280	280	280	280	240	[260]	280	300	300	300	300	
19	C	C	C	C	C	C	C	C	C	C	C	280	270	300	300	300	[260]	220	250	250	270	310	300	300	
20	300	290	270	260	290	250	260	250	280	280	300	330	280	300	300	300	300	270	280	300	280	290	300	300	
21	300	300	300	300	300	280	230	260	300	280	300	300	290	300	[300]	300	250	260	300S	300	280	290	300	300	
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	350	S	[420]	S	S	S	300	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	[280]	300	300	300	300	
25	260	290	290	270	300	290	290	B	B	B	B	260	(250)	B	B	B	B	A	270	260	260	290	S	S	
26	320	[340]	[350]	290	300A	300	290	270	B	B	B	B	B	B	B	B	B	B	260	290	A	A	A	300	330A
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	250	260	[280]	300	220	[260]	300	
28	300	[300]	300	300	300S	300	300	300	B	C	B	B	C	C	D	C	260	260	230	S	280	300	330	360	
29																									
30																									
31																									
Mean Value	300	300	300	300	300	280	280	260	280	280	290	300	280	290	290	290	270	270	270	280	280	290	300	310	
Median Value	300	300	300	300	300	290	280	260	280	280	300	300	280	300	290	280	270	260	270	280	280	290	300	300	
Count	16	17	16	16	17	16	14	14	9	10	10	13	13	11	14	14	16	21	24	16	15	16	19		

Note: - Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 15.5 Mc in 2 min  
 Manual  Automatic



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 40° 28.6' N  
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

foF1

Feb. 1953

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	B	B	B	SB	B	Q	Q	Q							
2								Q	SB	SB	B	B	B	B	B	B	Q							
3								C	SB	B	B	4.0	3.9	3.6	3.5	Q	Q							
4								Q	Q	Q	3.9	3.9	3.9	3.8	B	Q	Q							
5								Q	B	B	B	B	B	B	A	B	B							
6								A	C	B	B	B	B	C	C	C	Q							
7								C	C	C	C	C	C	C	B	Q	B							
8								Q	Q	B	B	B	B	B	B	B	B							
9								C	C	C	B	C	Q	Q	Q	C	C							
10								C	C	C	C	C	C	C	C	C	C							
11								C	Q	Q	Q	C	C	C	C	Q	Q							
12								Q	Q	3.4	3.6	3.8	3.8	3.7	3.6	3.8	Q							
13								Q	Q	3.9	3.6	3.8	3.8	S	C	C	C							
14								C	S	S	B	B	B	B	B	A	Q							
15								C	C	S	S	A	S	S	S	S	S							
16								Q	B	B	C	4.0	3.8	3.8	3.5	Q	Q							
17								C	Q	3.7	3.7	3.8	3.6	3.7	3.7	Q	2.6							
18								Q	Q	Q	Q	Q	3.9	S	Q	Q	Q							
19								C	C	C	C	3.8	3.9	3.8	3.6	L	C							
20								Q	Q	3.6	S	S	S	S	S	S	Q							
21								Q	S	3.4	S	A	S	S	C	S	Q							
22								C	C	C	C	C	C	C	C	C	C							
23								C	C	C	C	C	C	C	C	C	C							
24								C	C	C	C	C	C	C	C	C	C							
25								C	B	B	B	B	B	B	B	B	B							
26								Q	B	B	B	B	B	B	B	B	B							
27								C	C	C	C	C	C	C	C	C	2.9							
28								Q	B	C	B	B	C	C	B	C	Q							
29																								
30																								
31																								
Mean									3.6	3.7	3.9	3.8	3.8	3.7	3.6	-	2.8							
Median									3.6	3.6	3.8	3.9	3.8	3.8	3.6	-	2.8							
Count									5	4	7	7	6	5	-	2								

Note:-  
Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

foF1

Group 1. 0. Mc to 15.5 Mc in 2 min

Manual

Automatic

W 4

Lat. 40° 23.8' N  
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

h'f<sub>o</sub>F<sub>1</sub>

Feb. 1953

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	A	B	A	SA	A	Q	Q	Q							
2								Q	240	SB	B	B	240	B	B	B	Q							
3								C	SB	B	B	290	300	250	270	Q	Q							
4								Q	Q	Q	300	310	300	270	B	Q	Q							
5								Q	Q	B	B	B	B	B	A	B	210							
6								A	C	B	B	B	B	C	C	C	Q							
7								C	C	C	C	C	C	C	B	Q	250							
8								Q	Q	B	B	B	B	B	B	B	240							
9								C	C	C	B	C	Q	Q	Q	C	C							
10								C	C	C	C	C	C	C	C	C	C							
11								C	Q	Q	Q	C	C	C	C	Q	Q							
12								Q	Q	280	200	250	12200 <sup>3</sup>	200	250	C	Q							
13								Q	Q	220	230	210	270	C	C	C	C							
14								C	S	280	B	B	B	B	B	A	Q							
15								C	C	S	S	A	S	S	S	S	S							
16								Q	B	A	C	300 <sup>0</sup>	280	250	250	Q	Q							
17								C	Q	(260) <sup>0</sup>	250	210	280	270	300	Q	300							
18								Q	Q	Q	Q	Q	270	S	Q	Q	Q							
19								C	C	C	C	210	200	280	280	300	C							
20								Q	Q	260	S	S	S	S	S	S	Q							
21								Q	S	220	A	A	S	S	C	S	Q							
22								C	C	C	C	C	C	C	C	C	C							
23								C	C	C	C	C	C	C	C	C	A							
24								C	C	C	C	C	C	C	C	C	C							
25								B	B	B	B	B	B	B	B	B	B							
26								Q	B	B	B	B	B	B	B	B	270							
27								C	C	C	C	C	C	C	C	240	240							
28								Q	250	1260 <sup>0</sup>	260	B	C	C	220	C	Q							
29																								
30																								
31																								
Mean Value									240	250	250	250	260	250	260	300	250							
Median Value									240	260	250	250	270	260	260	300	240							
Count									2	7	5	7	9	6	6	2	6							

Note: -  
Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 15.5 Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

# IONOSPHERIC DATA

Lat.  $45^{\circ}23.6'N$   
Long.  $141^{\circ}41.1'E$

**Wakkanai**

**foE**

**Feb. 1953**

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	[2.1] <sup>S</sup>	2.6	2.7	2.7	2.7	2.5	2.3	2.1							
2								B	B	B	B	B	B	2.6	2.2	B	B							
3								C	B	[2.6] <sup>S</sup>	2.8	2.9	2.6	2.6	B	B	B							
4								A	B	2.2	2.7	2.8	2.8	2.8	2.5	2.1	B							
5								B	1.9	2.3	2.6	2.7	2.8	2.7	2.6	B	B							
6								A	C	2.6	2.7	3.0	2.6	C	C	C	A							
7								C	C	C	C	C	C	C	2.6	2.1	1.9							
8								B	B	2.6	2.6	2.8	2.7	A	A	A	2.0							
9								C	C	C	B	C	2.5	2.3 <sup>J</sup>	A	C	C							
10								C	C	C	C	C	C	C	C	C	C							
11								C	C	2.3	2.0	C	C	C	C	B	B							
12								B	B	2.5	2.6	2.7	[2.6] <sup>o</sup>	2.6	[2.5] <sup>A</sup>	[2.2] <sup>C</sup>	1.7							
13								1.6	2.1	2.2	2.6	2.8	3.2	C	C	C	C							
14								C	C	2.6	2.2	[2.4] <sup>B</sup>	2.6	2.6	2.6 <sup>S</sup>	2.2	2.0							
15								C	C	2.5	[2.6] <sup>S</sup>	A	A	S	S	2.4	2.4							
16								S	2.3	A	C	S	2.8	2.6	2.6	2.0	1.8							
17								C	A	2.6	2.6	2.7	2.4	2.6	2.5	2.2	1.8							
18								1.6	2.1	2.5	2.6	2.6	2.6	2.6	2.6	2.4	2.0							
19								C	C	C	C	2.7	2.7	2.6	2.6	2.3	C							
20								S	B	2.5	2.8	2.8	2.8	2.8	2.7	S	1.8							
21								1.8	[2.2] <sup>S</sup>	2.6	A	A	A	A	C	S	S							
22								C	C	C	C	C	C	C	C	C	C							
23								C	C	C	C	C	C	C	C	C	A							
24								C	C	C	C	C	C	C	C	C	C							
25								B	2.0	2.3	2.5	B	B	2.6	2.6	B	B							
26								B	2.0 <sup>J</sup>	B	B	B	B	B	B	2.1	2.0 <sup>B</sup>							
27								C	C	C	C	C	C	C	C	B	B							
28								B	B	C	2.8	B	C	C	2.6	C	B							
29																								
30																								
31																								
Mean Value								1.7	2.0	2.4	2.6	2.7	2.7	2.6	2.6	2.2	2.0							
Minimum Value								1.6	2.0	2.5	2.6	2.7	2.7	2.6	2.6	2.2	2.0							
Count								3	8	16	16	13	16	14	14	11	11							

Note: -  
Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

**foE**

Sweep 1.0 Mc to 15.5 Mc in 2 min  
 Manual  Automatic

**W 6**



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 46° 23.6' N  
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Feb. 1953

f<sub>o</sub>F<sub>2</sub>

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

Note: -  
Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 15.5 Mc in 2 min

Manual

Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 46° 28.6' N  
Long. 141° 41.1' E

IONOSPHERIC DATA

Wakkanai

Feb. 1953

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	E	E	E	E	C	B	5	3.0	5	3.7	3.6	3.9	3.8	5	5	E	2.2	S	S	S	E	E
2	2.4	E	2.4	E	E	2.6	E	B	5	BS	B	B	5	5	5	B	B	2.8	4.2	3.0	2.2	2.2	E	S
3	C	C	C	C	C	C	C	C	BS	5	B	5	5	5	5	5	5	3.5	3.6	3.3	S	S	S	E
4	E	E	2.6	2.6	3.0	E	E	3.4	5	5	5	5	5	5	5	5	5	E	E	E	E	S	S	E
5	E	E	E	E	E	E	E	B	5	5	5	5	5	3.0	3.8	B	5	E	E	E	E	S	S	E
6	E	E	E	E	E	E	E	3.0	C	5	5	5	5	C	C	C	2.6	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5	B	E	E	E	E	E	E
8	E	E	E	E	E	E	E	B	5	5	5	5	5	2.9	2.8	2.6	5	E	3.7	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	B	C	5	5	3.0	C	C	C	E	E	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E	E	E	C	C	C	C
11	C	C	C	C	C	C	C	C	C	5	5	5	5	5	5	C	B	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	B	5	5	5	5	5	5	3.6	C	5	2.4	2.4	2.5	E	2.4	2.4	E
13	E	E	E	E	E	E	E	5	5	5	5	5	5	5	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	S	5	5	5	5	5	5	5.0	5	E	2.6	E	E	E	E	E
15	E	E	C	C	C	C	C	C	C	5	S	3.9	3.0	S	S	5	5	S	E	2.6	3.0	S	S	E
16	E	E	E	E	E	E	E	S	5	3.0	C	S	5	5	5	5	5	1.7	E	E	E	E	E	E
17	E	E	S	S	E	E	E	C	2.2	5	5	5	5	5	5	5	5	E	E	2.4	E	E	E	E
18	E	E	E	E	E	E	E	5	5	5	5	5	3.0	5	5	5	5	E	C	E	3.0	E	E	E
19	C	C	C	C	C	C	C	C	C	C	C	5	5	5	5	5	5	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	S	5	5	5	5	5	5	5	5	5	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	5	S	5	3.0	6.0	3.0	3.0	S	S	5	1.6	S	E	E	C	C	E
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.5	2.9	2.5	S	S	S	S	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.4	3.0	E	E	E	E
25	1.6	E	E	E	E	E	E	B	5	5	5	B	B	5	5	B	B	2.6	2.2	2.2	2.3	E	E	S
26	E	C	1.8	1.4	1.5	2.3	2.4	5	2.5	B	B	B	B	B	2.7	5	5	1.6	2.6	2.6	2.6	2.6	E	2.3
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5	E	E	S	E	E	E	E
28	E	C	E	E	S	E	S	5	B	C	5	B	C	C	5	C	5	E	E	S	E	E	E	E
29																								
30																								
31																								
Mean Value	2.0	-	2.3	2.0	2.3	2.5	2.3	3.2	2.4	3.0	3.0	4.5	3.2	3.3	3.3	3.8	2.6	2.4	2.8	2.7	2.6	2.4	2.5	2.3
Median Value	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
Count	16	15	15	14	16	16	14	7	12	17	15	14	17	16	18	13	19	20	23	19	18	16	16	18

fEs

Group 1.0. Me in 15.5. Mc in 2. min

Manual

Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 45° 28.6' N  
Long. 141° 41.1' E

**Wakkanai**

**IONOSPHERIC DATA**

(M3000)F2

Feb. 1953

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

Note: -  
Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep L. D. Mc to 15.5 Mc in Z min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Khatama-gun, Tokyo, Japan

Lat. 45° 28.6' N  
Long. 141° 41.1' E

IONOSPHERIC DATA

Wakkanai

Feb. 1953

fminF

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]S	1.7	1.8	1.3	E	1.2F	[1.6]S	2.0	2.4	A	A	A	N	A	N	2.4	2.1	1.4	1.4	S	S	S	1.4F	1.4	
2	2.1A	1.6F	1.4	1.4F	2.0F	[1.7]A	1.4	2.2	1.9	SB	SB	B	3.4	B	B	4.5	2.1	[2.2]A	2.2A	A	A	2.0A	1.8	S	
3	C	C	C	C	C	C	C	C	C	4.5	[3.8]B	3.0	3.2	3.0	2.8	3.0	2.2	2.0	2.0A	A	S	A	S	2.0	
4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.2	2.3	2.3	3.4	3.1	3.1	2.7	2.5	2.2	1.4	1.4	1.4	1.5	[1.5]S	1.5	1.5	
5	1.5	1.4	E	E	E	E	1.5	1.4	2.2	B	B	B	B	B	A	B	2.4	1.6	1.4	1.4	1.4	[1.4]S	1.5	1.4	
6	1.4	1.5	1.6	1.4	1.4	1.5	2.0	A	C	B	B	B	B	B	C	C	1.4	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.7	2.0	1.8	1.4	1.5	1.2	1.3	1.5	1.4
8	E	E	E	1.4	2.0	1.2	1.4	1.7	2.4	[3.1]B	3.8	[4.5]B	5.2	B	B	B	2.4	1.4	1.4	A	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	5.0	[4.3]C	3.6	3.0	2.4	C	C	C	C	1.3	1.4	C	C	C	
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	3.4	3.4	C	C	C	C	2.4	2.0	1.4	1.8	1.4	1.4	2.0	1.4	1.8	
12	1.4	E	1.2	[1.5]S	1.8	1.4	1.6	1.8	2.6	2.8	2.6	2.9	3.0	3.0	2.6	[2.3]C	2.1	2.0A	1.4	1.4	1.4	2.0	1.4	1.8	
13	1.4	E	E	E	E	E	1.2	1.8	2.4	3.0	3.1	3.2	3.2	C	C	C	C	C	C	C	C	C	C	C	
14	C	C	C	C	C	C	C	C	C	2.7	[3.6]B	4.5	B	B	5.0	A	2.5	1.8	1.7	1.4	1.4	1.4	1.4	1.4	
15	1.4	E	C	C	C	C	C	C	C	S	S	A	S	6.0S	[6.2]S	S	S	S	2.2	A	A	S	E	1.8	
16	1.8	1.8	1.8	E	E	E	1.8	2.0	B	A	C	3.6S	3.4	3.6	2.9	3.0	2.1	2.0	1.7	1.4	1.6	1.4	[1.4]S	1.5	
17	1.3	E	2.0S	[1.6]S	1.2	E	1.5	[1.6]S	1.6	3.6	2.7	2.7	3.0	2.8	2.7	2.6	2.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	
18	E	E	E	E	E	E	1.4	1.8	2.5	2.6	2.7	3.6	3.0	4.7	3.4	2.5	2.0	1.8	[1.6]S	1.4	1.4	1.4	1.4	E	
19	C	C	C	C	C	C	C	C	C	C	C	2.7	2.8	2.9	2.9	2.5	[2.0]C	1.4	1.3	1.4	1.4	1.4	1.4	1.4	
20	1.4	E	E	E	E	E	1.4	2.2	1.5	2.5	4.0S	4.5S	4.5S	4.0S	4.3S	4.9S	2.2	1.4	1.4	1.3	1.4	1.4	1.3		
21	1.2	E	1.3	1.2	E	E	1.1	2.6	4.2	2.9	4.0	4.0A	4.5S	4.5S	[4.8]S	5.0S	2.2	2.2	3.6S	2.2	C	C	C		
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	4.5.0	A	2.4A	S	S	S	S	1.4	
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.4A	1.4	1.4	1.4	1.4	
25	1.4	1.4	1.3	1.3	E	E	1.4	B	B	B	B	5.7	6.0	B	B	B	B	A	2.0A	1.4	1.8	1.4	S		
26	1.4	[1.6]S	1.8	E	1.8	1.6	1.4	2.0	2.6	B	B	B	B	B	B	2.4	2.4	1.8	2.0A	A	A	A	1.4		
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.3	2.0	2.0	1.4	[1.7]S	2.0	1.4	[1.7]S	2.0	
28	1.8	C	E	E	2.8S	E	S	2.0	2.4	[2.7]S	3.0	B	C	C	2.8	[2.6]S	2.4	2.2	1.5	[1.5]S	1.5	1.4	1.5	1.4	
29																									
30																									
31																									
Mean Value	1.5	1.5	1.4	1.4	1.8	1.4	1.5	1.9	2.4	3.0	3.4	3.8	3.7	3.7	3.4	3.1	2.1	1.7	1.7	1.4	1.5	1.5	1.4	1.6	
Median Value	1.4	E	1.3	1.2	1.2	E	1.4	1.9	2.4	2.8	3.4	3.6	3.3	3.1	2.9	2.6	2.2	1.8	1.4	1.4	1.4	1.4	1.4	1.4	
Count	17	16	16	16	17	16	15	14	13	12	13	14	14	11	14	16	20	21	24	17	15	16	18	19	

Note: - Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Swamp 1.0... Mc to 15.5... Mc in 2... min  
 Manual  Automatic

fminF

W 10



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 46° 23.6' N  
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

f<sub>min</sub>E

Feb. 1953

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	E	E	E	E	C	B	1.1	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	E	2.0	S	S	S	E	E
2	1.4	E	1.4	E	E	1.4	E	B	1.4	1.2	{1.3}	1.4	1.5	1.4	1.4	1.3	1.4	1.4	1.4	E	1.4	1.4	E	S
3	C	C	C	C	C	C	C	C	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.2	S	E	E
4	E	E	E	1.2	1.4	E	E	B	1.4	1.4	1.2	E	1.4	1.4	1.4	1.3	1.4	E	E	E	E	S	E	E
5	E	E	E	E	E	E	E	B	1.5	1.5	1.4	1.2	1.3	2.2	1.4	1.4	1.3	E	E	E	E	S	E	2
6	E	E	E	E	E	E	E	1.4	C	E	E	1.4	1.4	C	C	C	1.2	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.8	1.3	1.4	B	E	E	E	E	E	E
8	E	E	E	E	E	E	E	B	1.4	1.4	1.9	1.4	1.4	1.4	1.3	1.4	1.4	E	1.4	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	B	C	1.4	1.4	1.4	C	C	C	E	E	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E	E	E	C	C	C	C
11	C	C	C	C	C	C	C	C	C	1.3	1.2	C	C	C	C	B	B	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	B	1.4	1.4	1.4	{1.4}	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	E	1.4	1.4	E
13	E	E	E	E	E	E	E	1.1	1.2	1.4	1.4	1.4	1.5	C	C	C	C	C	C	C	C	C	C	C
14	E	C	C	C	C	C	C	C	S	E	1.2	1.2	1.4	1.2	1.3	1.3	1.3	E	1.2	E	E	E	E	E
15	E	E	C	C	C	C	C	C	C	1.3	{1.4}	1.4	1.4	S	S	1.9	1.7	S	E	1.4	1.4	S	E	E
16	E	E	E	E	E	E	E	S	1.2	1.4	C	S	1.4	1.4	1.5	1.4	1.5	E	E	E	E	E	E	E
17	E	E	S	S	E	E	E	C	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.2	1.1	E	1.4	E	E	E	E	E
18	E	E	E	E	E	E	E	1.3	1.3	1.3	1.3	1.4	1.4	1.7	1.2	1.3	1.3	E	C	E	1.6	E	E	E
19	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	1.2	1.2	1.3	C	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	S	1.2	1.3	1.3	2.2	2.4	1.2	1.3	1.3	1.2	E	E	E	E	E	E	E
21	E	E	E	E	E	E	E	1.2	S	1.4	1.4	1.4	1.4	1.4	{1.4}	1.4	1.4	1.4	S	E	C	C	C	E
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	1.4	S	S	S	E	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	E	E	E	E
25	1.4	E	E	E	E	E	1.4	{1.4}	1.4	1.4	1.4	B	B	1.4	1.4	1.4	1.1	1.2	1.2	1.4	1.4	E	S	S
26	E	C	E	E	E	E	1.4	1.4	1.4	B	B	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4	1.3	E	1.5
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	1.3	E	E	S	E	E	E	E
28	E	C	E	E	S	E	S	1.4	B	C	1.4	1.5	C	C	1.5	{1.4}	1.4	B	E	S	E	E	E	E
29																								
30																								
31																								
Mean Value	1.4	—	1.4	1.2	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.5
Median Value	E	E	E	E	E	E	E	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	E	E	E	E	E	E	E
Count	1.6	1.5	1.5	1.4	1.6	1.6	1.4	8	1.3	1.8	1.8	1.8	1.9	1.7	1.9	2.0	2.1	2.0	2.3	1.9	1.9	1.6	1.6	1.8

Note: - Between 11th and 16th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 15.5 Mc in 2 min  Manual  Automatic

W 11

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.5' N  
Long. 140° 08.3' E

# Akita

## IONOSPHERIC DATA

Feb. 1953

foF2

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	4.1 <sup>F</sup>	3.6 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.7 <sup>F</sup>	2.9 <sup>F</sup>	2.5	4.2	5.1	5.7	5.9	6.4	7.9	6.0	6.3 <sup>J</sup>	6.0	5.3	4.5	3.6	3.2	3.0 <sup>F</sup>	3.4 <sup>V</sup>	3.1 <sup>F</sup>	3.2 <sup>F</sup>	(3.2) <sup>F</sup>
2	3.2 <sup>F</sup>	3.3 <sup>F</sup>	3.0 <sup>F</sup>	2.7 <sup>F</sup>	3.0 <sup>F</sup>	2.1 <sup>F</sup>	2.7 <sup>F</sup>	4.2	5.8	5.4	6.5	7.7	7.3	6.3	5.4	5.5	5.7	4.3	3.2	3.4	3.3	2.9 <sup>V</sup>	3.1 <sup>F</sup>	3.4 <sup>F</sup>	3.4 <sup>F</sup>
3	3.6 <sup>F</sup>	3.2 <sup>F</sup>	3.4 <sup>F</sup>	3.4 <sup>F</sup>	2.9 <sup>F</sup>	2.6 <sup>F</sup>	2.7 <sup>F</sup>	4.5	C	C	7.0	7.3	7.5 <sup>Z</sup>	6.6	5.9 <sup>J</sup>	5.3	(4.8) <sup>F</sup>	4.3	2.4	2.9	3.5	3.3	2.8	3.0 <sup>F</sup>	3.0 <sup>F</sup>
4	3.2 <sup>F</sup>	3.2 <sup>F</sup>	3.0 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	2.9	4.5	5.5	5.9 <sup>F</sup>	6.2	6.8	7.2	7.0	6.6	5.7	5.4	4.2	3.7	2.6	2.8	2.8	2.8	3.2 <sup>F</sup>	3.2 <sup>F</sup>
5	3.2 <sup>F</sup>	3.2	3.4	3.0	3.4	2.8	2.7	4.2	5.8	6.5	6.4 <sup>H</sup>	7.3	8.1	8.0	6.7	5.7	5.0	4.2	2.6	2.7	2.8	3.2	2.6	2.6	2.8
6	2.9	2.9	3.0	3.0	3.5	2.5	2.3	4.5	5.4	5.6	6.1	6.3 <sup>H</sup>	8.2	7.5	6.5	6.0	5.5	5.0	3.4	2.9	3.1	2.7	2.6	2.6	2.9 <sup>F</sup>
7	F	F	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.8 <sup>F</sup>	2.4 <sup>F</sup>	2.4 <sup>F</sup>	4.1	6.0	5.5	6.0	7.0	8.2	6.7	5.7	5.8	5.5	4.1	2.9	3.0	2.8	2.9	3.1 <sup>F</sup>	3.2 <sup>F</sup>	3.2 <sup>F</sup>
8	3.5	3.3 <sup>F</sup>	3.5 <sup>F</sup>	3.5 <sup>F</sup>	3.6	3.0	2.6	4.0	5.2	5.3	6.0	6.9	6.4	6.4	7.3	6.4	5.5	4.5	(3.8) <sup>F</sup>	3.0	2.7	2.8 <sup>F</sup>	3.0 <sup>F</sup>	3.4 <sup>F</sup>	3.4 <sup>F</sup>
9	3.2 <sup>F</sup>	3.4 <sup>F</sup>	3.3 <sup>F</sup>	3.2	3.3 <sup>F</sup>	3.3 <sup>F</sup>	2.9 <sup>F</sup>	4.5	5.4	5.8	5.7	6.3	7.0	7.3	6.2	6.3	5.4	4.9	4.4	3.8	3.0	3.3	3.2	3.2	3.2
10	3.4	3.3	3.6	3.5	3.8	2.5 <sup>F</sup>	2.4	4.6	5.4	6.2	6.8	7.4	7.8	7.0	5.6	6.1	6.7	5.7	3.7	3.8	2.8	2.9	2.9	3.2	3.2
11	3.2	3.3	3.3	3.3	3.4	2.3	1.8 <sup>F</sup>	4.1	5.7	5.9	6.1	8.0	7.7	7.2	6.7	6.4	5.3	4.7	3.9	4.5	4.3	3.8	3.9	3.9	4.0
12	4.0	3.5 <sup>F</sup>	3.4	3.5 <sup>F</sup>	3.8 <sup>F</sup>	3.5 <sup>F</sup>	3.3 <sup>F</sup>	5.4	5.8	6.7	6.4	6.6 <sup>H</sup>	8.3	7.1	6.6	6.5	6.1	4.6	3.4	3.6	2.5	2.8	3.0	3.0	3.2
13	3.3	3.3	3.3	3.2	3.9	2.3 <sup>F</sup>	1.8 <sup>V</sup>	4.0	5.5	5.5	6.2	7.6	8.6	6.8	(5.8) <sup>F</sup>	5.4	5.4	4.8	3.6	3.1	(2.8) <sup>F</sup>	2.5	2.8	2.8	3.0
14	2.9	2.9	2.9	2.8	3.1	2.2	2.1 <sup>V</sup>	4.6	5.3	6.0 <sup>H</sup>	4.6 <sup>H</sup>	6.9	5.9	8.1	6.6	6.2	6.0	4.9	3.7	3.6	3.6	3.5	3.1 <sup>F</sup>	3.5	3.5
15	3.7	3.8 <sup>F</sup>	3.7 <sup>F</sup>	3.8 <sup>F</sup>	3.5 <sup>F</sup>	3.3 <sup>F</sup>	2.8	4.7 <sup>F</sup>	5.9	5.7 <sup>F</sup>	6.4 <sup>H</sup>	7.2	8.2	8.0	6.4	6.0	5.5	4.7	3.2	3.3	2.9	2.6	(2.8) <sup>H</sup>	3.1	3.1
16	3.2	3.2	3.3	3.2	3.6 <sup>V</sup>	2.4	2.3	4.2	(5.9) <sup>F</sup>	6.0 <sup>H</sup>	6.5	7.4	10.7	8.5	6.3	5.0	(6.0) <sup>F</sup>	4.5	4.1	4.6	4.3	3.5	3.5	3.5	3.3
17	3.4	3.5	3.4	3.5	3.4	3.3	3.2	5.0	5.0	6.4	7.3	7.3	9.1	9.0	6.4	5.5	5.5	4.7	3.6	2.7	2.3	3.0	3.0	3.1 <sup>V</sup>	3.1 <sup>V</sup>
18	3.2	3.2	3.1	3.0	3.4	2.6	2.6	4.3	6.5	6.6	5.5 <sup>Z</sup>	7.6	8.2	6.5	6.2	6.0 <sup>F</sup>	5.3	4.7	3.8	3.5	3.5	2.9	3.1	3.1	3.5
19	3.7 <sup>F</sup>	4.0 <sup>F</sup>	4.0 <sup>F</sup>	4.0 <sup>F</sup>	4.0 <sup>F</sup>	3.5 <sup>F</sup>	3.2 <sup>F</sup>	M	M	5.9	5.6	5.7	7.0	5.9	5.8	5.7 <sup>F</sup>	6.0	4.6	3.6	3.8	3.2	3.2	3.2	3.2 <sup>F</sup>	3.5 <sup>F</sup>
20	3.5 <sup>F</sup>	3.4	3.2	3.2	3.1	2.8	2.7	4.5	6.2	5.4	5.7 <sup>F</sup>	6.2	6.3	7.3	6.1	6.6	5.8	5.5	3.5	3.3	3.5	3.5	3.3	3.2	3.2
21	3.5	3.5	3.8	3.6	3.7	3.0	3.5	4.2	5.5	6.5	5.9 <sup>H</sup>	6.0	6.6	6.4	6.2	6.5	5.5	5.0	4.0	4.2	4.1	4.2	3.8	3.9	3.9
22	4.0	4.0	4.0 <sup>F</sup>	3.9 <sup>F</sup>	4.3 <sup>F</sup>	3.7 <sup>F</sup>	2.3	4.1	5.4	5.4	5.4	6.7	7.5	8.2	6.2	5.4	6.1	5.8	4.7	3.7	2.9	3.2	3.1	3.2	3.2
23	3.3	3.4	3.2	3.0	3.2	2.8 <sup>F</sup>	3.3 <sup>F</sup>	5.7	5.3	5.5	6.0 <sup>F</sup>	6.2	5.6	6.7	7.6	6.5	6.7	5.8	5.5	5.1	4.2	4.3	4.4	4.4	4.4
24	4.9 <sup>F</sup>	4.6	F	3.9 <sup>F</sup>	3.6	2.8	2.6	3.8	5.4	5.4	7.2	10.5	7.3	6.1	5.5	5.5	5.5	4.8	3.8	4.0	3.4	3.4	3.5	3.5	3.5
25	3.6	2.6 <sup>F</sup>	3.2 <sup>F</sup>	3.0 <sup>F</sup>	2.6	2.6	2.8	5.2	4.8	5.4	6.5	7.0	6.6	7.6	6.7	6.0	6.0	6.5	4.4	4.1	4.0	4.0	3.4	3.1	3.0
26	3.1 <sup>F</sup>	3.0	3.0	2.9	3.1 <sup>F</sup>	2.9	3.2	5.4	6.0	(6.4) <sup>F</sup>	6.9	7.0	8.1	6.8	6.9	6.2	5.8	5.7	3.8	4.1	4.2	3.6	3.3	3.2	3.2
27	3.2 <sup>F</sup>	3.3 <sup>F</sup>	3.3	3.3	2.6	2.7	2.9	4.9	6.3	6.5	6.9	7.7 <sup>F</sup>	7.9	8.7	7.2	6.2	5.4	4.7	4.2	4.7	4.3	3.7	3.2	3.2	3.6
28	3.4	3.3 <sup>F</sup>	3.4 <sup>F</sup>	3.0	2.9 <sup>F</sup>	2.3 <sup>F</sup>	2.7	4.7	5.8	6.0	6.5	6.8	7.0	6.0	5.6	5.9	5.8	6.7	4.2	3.3	2.9	3.4 <sup>F</sup>	3.2 <sup>F</sup>	3.2	3.2
29																									
30																									
31																									
Mean Value	3.5	3.4	3.3	3.2	3.3	2.8	2.7	4.5	5.6	5.9	6.2	6.9	7.7	7.2	6.3	5.9	5.7	4.9	3.7	3.6	3.3	3.2	3.2	3.2	3.3
Median Value	3.4	3.3	3.3	3.2	3.4	2.8	2.7	4.5	5.5	5.9	6.2	7.0	7.8	7.0	6.3	6.0	5.5	4.7	3.7	3.6	3.2	3.2	3.1	3.2	3.2
Count	27	27	27	28	28	28	28	27	26	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28

foF2

Energy 0.95 Mc to 22.0 Mc in 6 min

Manual  Automatic

A1

The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

IONOSPHERIC DATA

**A k i t a**  
Lat. 39° 48.5' N  
Long. 140° 08.3' E

135° E Mean Time

Feb. 1953

f<sub>o</sub>F<sub>2</sub>

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) <sup>F</sup>	280 <sup>F</sup>	(320) <sup>F</sup>	310 <sup>F</sup>	320 <sup>F</sup>	(370) <sup>F</sup>	300	260	240	260	250	280	260	250	(270) <sup>J</sup>	250	270	280	280	260	290 <sup>F</sup>	350 <sup>VF</sup>	(350) <sup>F</sup>	(290) <sup>F</sup>	
2	320 <sup>F</sup>	320 <sup>F</sup>	(360) <sup>F</sup>	(330) <sup>F</sup>	300 <sup>F</sup>	310 <sup>F</sup>	(250) <sup>F</sup>	260	250	260	260	280	250	280	250	260	250	250	290	270	320	300 <sup>V</sup>	300 <sup>F</sup>	(360) <sup>J</sup>	
3	(340) <sup>F</sup>	(330) <sup>F</sup>	(330) <sup>F</sup>	(340) <sup>F</sup>	290 <sup>F</sup>	350 <sup>F</sup>	300 <sup>F</sup>	250	C	C	260	260	290 <sup>H</sup>	250	(240) <sup>J</sup>	240	(260) <sup>C</sup>	270	230	340	300	280	330	370 <sup>F</sup>	
4	310 <sup>F</sup>	(370) <sup>F</sup>	340 <sup>F</sup>	340 <sup>F</sup>	300 <sup>F</sup>	(250) <sup>F</sup>	290	250	230	(260) <sup>J</sup>	270	240	270	290	280	260	250	280	250	240	310	300	340 <sup>F</sup>	350 <sup>F</sup>	
5	350 <sup>F</sup>	330	320	340	310	280	230	250	260	240	300 <sup>H</sup>	280	270	260	260	240	250	270	270	280	320	270	320	370 <sup>F</sup>	
6	350	340	330	320	250	280	300	240	240	250	270	350 <sup>H</sup>	290	260	270	260	250	240	250	280	260	280	300	(340) <sup>F</sup>	
7	F	F	390 <sup>F</sup>	320 <sup>F</sup>	300 <sup>F</sup>	350 <sup>F</sup>	300 <sup>F</sup>	270	250	250	250	270	290	280	280	280	250	250	300	300	290	320	340 <sup>F</sup>	340 <sup>F</sup>	
8	320	360 <sup>F</sup>	360 <sup>F</sup>	350 <sup>F</sup>	300	290	270	250	250	260	260	270	270	280	280	260	250	260	260 <sup>A</sup>	(260) <sup>A</sup>	270	240 <sup>F</sup>	300 <sup>F</sup>	(330) <sup>F</sup>	
9	(320) <sup>F</sup>	300 <sup>F</sup>	310 <sup>F</sup>	350	350 <sup>F</sup>	300 <sup>F</sup>	250 <sup>F</sup>	240	250	260	280	280	290	260	260	270	250	250	250	250	290	310	310	330	380
10	370	350	320	310	280	250 <sup>F</sup>	310	260	250	270	310	280	260	300	240	280	270	240	310	260	320	310	350	360	
11	350	350	340	330	290	240	310 <sup>F</sup>	250	250	250	270	280	260	300	280	240	240	240	330	290	310	320	360	360	
12	320	290 <sup>F</sup>	340	330 <sup>F</sup>	(310) <sup>F</sup>	290 <sup>F</sup>	300 <sup>F</sup>	260	240	260	290	300 <sup>H</sup>	300	280	260	250	250	230	290	280	300	300	370	360	
13	360	350	320	320	240	350 <sup>F</sup>	230 <sup>V</sup>	250	250	250	310	270	270	280	(280) <sup>F</sup>	250	250	240	260	330	(330) <sup>A</sup>	330	340	350	
14	360 <sup>F</sup>	340	370	330	250	310	290 <sup>V</sup>	250	240	330 <sup>H</sup>	370 <sup>H</sup>	250	(350) <sup>H</sup>	280	250	270	240	260	280	310	300	320	350	330	
15	310	310 <sup>F</sup>	320	350 <sup>F</sup>	330 <sup>F</sup>	270 <sup>F</sup>	310	280 <sup>P</sup>	250	260 <sup>P</sup>	340 <sup>H</sup>	290	280	270	250	260	260	250	300	310	290	350	(340) <sup>F</sup>	320	
16	310	350	330	340	290 <sup>F</sup>	350 <sup>F</sup>	290	250	(240) <sup>F</sup>	360 <sup>H</sup>	330	360	290	270	250	240	(260) <sup>F</sup>	250	320	290	290	300	320	330	
17	330	320	350	360	350	350	290	250	290	310	280	330	300	280	250	250	250	240	280	260	360	310	360	360 <sup>V</sup>	
18	340	330	320	350	280	280	320	260	270	260	280 <sup>Z</sup>	250	280	270	280	250 <sup>P</sup>	250	230	260	290	270	320	340	350	
19	330 <sup>F</sup>	320 <sup>F</sup>	360 <sup>F</sup>	340 <sup>F</sup>	280 <sup>F</sup>	330 <sup>F</sup>	300 <sup>F</sup>	M	M	260	260	280	300	300	270	270 <sup>P</sup>	250	260	300	270	310	320	360	350 <sup>F</sup>	
20	330 <sup>F</sup>	320	300	320	300	290	250	270	250	260	250 <sup>F</sup>	300	290	290	280	300	250	250	260	320	300	270	310	330	
21	330	340	320	310	300	280	260	250	280	260	(290) <sup>H</sup>	250	290	280	290	250	250	240	280	300	290	310	310	330	
22	330	330	320 <sup>F</sup>	350 <sup>F</sup>	300 <sup>F</sup>	290 <sup>F</sup>	230	240	230	260	270	290	300	260	300	270	270	240	260	250	290	330	340	340	
23	340	310	330	330	360 <sup>F</sup>	330 <sup>F</sup>	280	240	240	(300) <sup>F</sup>	270	250	250	310	270	280	260	(270) <sup>A</sup>	280	330	270	280	340	340	
24	(340) <sup>F</sup>	350	F	330 <sup>F</sup>	290	300	280	270	240	280	300	340	270	260	270	280	250	260	300	300	350	380	380	350	
25	290	350 <sup>F</sup>	350 <sup>F</sup>	350 <sup>F</sup>	320	340	270 <sup>F</sup>	270	260	300	340	280	310	300	270	270	280	250	290	310	320	330	310	330	
26	370 <sup>F</sup>	410	340 <sup>F</sup>	340	340 <sup>F</sup>	340	300	290	250	(260) <sup>A</sup>	270	280	280	270	280	270	270	250	290	320	330	250	380	370	
27	370 <sup>F</sup>	340 <sup>F</sup>	310	320	300	350	290	300	270	260 <sup>F</sup>	300	260 <sup>F</sup>	270	280	250	260	250	250	300	280	280	330	360	320	
28	300	360 <sup>F</sup>	360 <sup>F</sup>	290	280 <sup>F</sup>	300 <sup>F</sup>	310	280	270	300	260	270	280	250	280	280	280	260	250	250	320	310 <sup>F</sup>	370 <sup>F</sup>	340	
29																									
30																									
31																									
Mean Value	330	330	340	330	300	310	280	260	250	270	290	280	280	280	270	260	260	250	280	290	300	310	340	340	
Minimum Value	330	330	330	330	300	290	250	250	250	260	280	280	280	280	270	260	250	250	280	280	300	320	340	350	
Count	27	27	27	28	28	28	27	27	26	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	

Sweep 0.85 Mc to 2.20 Mc in 6 min

Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 39° 43.6' N  
Long. 140° 08.3' E

A k i t a

IONOSPHERIC DATA

Feb. 1953

h'F2

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	260 <sup>F</sup>	230	250 <sup>F</sup>	250	250 <sup>F</sup>	300 <sup>F</sup>	260	250	230	250	250	270	250	250	250	250	270 <sup>A</sup>	250 <sup>F</sup>	230 <sup>A</sup>	230	250 <sup>F</sup>	280 <sup>F</sup>	300 <sup>F</sup>	250 <sup>F</sup>
2	260 <sup>F</sup>	250 <sup>F</sup>	270 <sup>F</sup>	260 <sup>F</sup>	250 <sup>F</sup>	280 <sup>F</sup>	230	230	230	250	250	260	240	270	240	250	240	220	230	230	260 <sup>A</sup>	(300) <sup>A</sup>	250	300 <sup>F</sup>
3	270 <sup>F</sup>	260 <sup>F</sup>	260 <sup>F</sup>	260 <sup>F</sup>	250	280 <sup>F</sup>	230	230	C	C	260	260	270	240	240	230	(230) <sup>F</sup>	230	230	230	280	250	230	310 <sup>F</sup>
4	260 <sup>F</sup>	260 <sup>F</sup>	250	260	240	220	250	220	230	240	260	230	260	280	260	250	240	230	230	220	220	270	300	290
5	300	270	260	280	260	240	220	230	250	230	260 <sup>H</sup>	280	270	250	250	230	230	230	230	250	270	250	270	330
6	310	300	280	260	220	230	270	230	230 <sup>A</sup>	230	260	(260) <sup>H</sup>	270	250	250	240	230	220	220	220	250	240	250	270 <sup>F</sup>
7	340 <sup>F</sup>	290 <sup>F</sup>	330 <sup>F</sup>	270	250	270 <sup>F</sup>	250 <sup>F</sup>	240	240	240	240	260	290	260	260	270	240	220	250	250	250	270	270 <sup>F</sup>	270 <sup>F</sup>
8	260	300 <sup>F</sup>	300 <sup>F</sup>	280 <sup>F</sup>	250	230	230	230	240	250	260	260	260	270	250	250	240	250	(240) <sup>A</sup>	260	220 <sup>F</sup>	280	300 <sup>F</sup>	300 <sup>F</sup>
9	250 <sup>F</sup>	250 <sup>F</sup>	280 <sup>F</sup>	280	280	250 <sup>F</sup>	240	230	240	230	250	270	270	260	260	260	240	220	220	240	260	260	270	320
10	310	300	260	280	220	200	270	230	230	240	300	260	250	280	240	270	250	220	240	220	270	270	300	300
11	300	280	270	260	230	200	(220) <sup>F</sup>	240	230	240	260	270	250	280	250	240	230	220	250	240	240	250	270	290
12	260 <sup>F</sup>	230	270	270	250 <sup>F</sup>	230	230	230	230	240	280	300 <sup>H</sup>	280	260	250	240	230	210	230	240	240	280	310	310
13	300	280	260	250	230	200	230	240	240	230	310	260	260	270	260	240	240	230	240 <sup>A</sup>	270	(280) <sup>A</sup>	290 <sup>A</sup>	300	300
14	320	300	310	250	220	280	250	240	240	210	310 <sup>H</sup>	250	240 <sup>H</sup>	280	250	260	230	210	250	250	250	250	270	290
15	260	250	270	290	270	220	250	250	250	260	340 <sup>H</sup>	280	280	250	260	250	250	230	260	260	250	250	270	270
16	260	260	260	260	240	210	250	230	230	250 <sup>H</sup>	320	300	270	250	240	230	250	230	230	240	250	250	270	280
17	280	260	250	290	290	250	240	230	230	280	260	300	270	260	250	250	240	230	230	240	280	270	300	290
18	280	260	260	280	240	230	270	240	250	260	270	250	270	260	280	250	230	230	230	250	250	(260) <sup>A</sup>	290	290
19	270 <sup>F</sup>	260 <sup>F</sup>	290 <sup>F</sup>	270 <sup>F</sup>	230 <sup>F</sup>	250 <sup>F</sup>	250	240	(240) <sup>F</sup>	240	260	270	290	300	270	250	250	230	240	230	250	250	290	290
20	280 <sup>F</sup>	250	250	250	250	250	230	240	240	250	250	300	280	260	270	270	240	240	230	260	250	250	290	300 <sup>F</sup>
21	290	280	270	260	250	210	230	230	230	250	270 <sup>H</sup>	250	290	270	270	250	240	230	230	250	240	(260) <sup>A</sup>	290	290
22	290	260	250 <sup>F</sup>	280 <sup>F</sup>	240 <sup>F</sup>	220	200	230	220	250	260	270	300	250	270	270	260	230	230	230	250	250	290	290
23	290	260	260	270	270	260 <sup>F</sup>	230	230	230	260	300	260	250	310	260	270	250	(250) <sup>F</sup>	250	270	220	250	300 <sup>A</sup>	280
24	280	270	280	250	250	270	260	250	230	270	300	330	250	250	260	270	240	230	250	250 <sup>F</sup>	280	300	300	290
25	250	300	270	270	250	300	240	250	250	(280) <sup>F</sup>	330	270	300	290	260	260	270	230	230	260	260	260	250	280
26	300 <sup>F</sup>	350	280 <sup>F</sup>	260	260	290	250	250	240	(260) <sup>F</sup>	270	270	270	260	260	250	250	230	240	270	270	220	330	330 <sup>A</sup>
27	330 <sup>F</sup>	280	260	270	250	330	250	250	250	260	290	250	260	270	250	250	240	230	240	230	240	270	270	270
28	250	280	280	240	250	250	270	260	270	280	260	260	270	250	280	250	260	250	210	250	280	260	300	280
29																								
30																								
31																								
Mean Value	280	270	270	270	250	250	240	240	240	250	280	270	270	270	260	250	240	230	240	250	250	260	280	290
Minimum Value	280	260	260	260	250	250	240	240	240	250	260	270	270	260	260	250	240	230	230	250	250	260	280	290
Count	28	28	28	28	28	28	28	28	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28

h'F2

Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual  Automatic

A 3



The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 39° 43.5' N  
Long. 140° 08.2' E

**A k i t a**

**IONOSPHERIC DATA**

foF1

Feb. 1953

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	3.4	3.6	3.9	4.2 <sup>L</sup>	3.7	4.0	3.5 <sup>L</sup>	L	Q							
2								Q	2.9	Q	3.9	4.2	3.9	L	Q	3.2	Q							
3								Q	C	C	4.2	4.2	4.6 <sup>H</sup>	4.0	3.9	3.4	C							
4								Q	Q	Q	3.8	4.1 <sup>L</sup>	4.3	4.1 <sup>H</sup>	3.5	L	Q							
5								Q	L	Q	3.8 <sup>L</sup>	4.5 <sup>H</sup>	4.2	4.2	4.0	3.7 <sup>L</sup>	Q							
6								Q	Q	3.5	4.0	[4.2] <sup>L</sup>	4.4	4.2	4.0	3.3 <sup>L</sup>	Q							
7								Q	L	L	4.0	4.2	4.4	4.0	Q	L	Q							
8								Q	2.7	L	4.0	4.2	4.2	[4.0] <sup>L</sup>	3.7	3.7	Q							
9								Q	Q	Q	3.8	4.4 <sup>H</sup>	3.9	4.3	3.8	3.5	L							
10								Q	Q	L	4.2	4.2	4.1	4.2	4.0	3.4	3.0							
11								Q	Q	Q	3.8 <sup>L</sup>	4.2 <sup>L</sup>	4.3	[4.2] <sup>L</sup>	4.0 <sup>L</sup>	3.7 <sup>L</sup>	2.6							
12								Q	3.1 <sup>L</sup>	3.6	4.3 <sup>L</sup>	4.9	4.8 <sup>L</sup>	Q	4.0	3.7	Q							
13								Q	Q	L	4.5 <sup>H</sup>	4.2	4.2	4.0	3.9 <sup>L</sup>	3.6	Q							
14								Q	Q	Q	3.4	4.2	4.6	4.1	4.0	3.5	L							
15								Q	Q	Q	(3.8) <sup>L</sup>	4.1	4.1	4.2	4.0	3.7	3.5 <sup>L</sup>	Q						
16								Q	Q	Q	4.0	[4.0] <sup>L</sup>	4.2	3.8	3.7	[3.1] <sup>L</sup>	L							
17								Q	Q	Q	3.9 <sup>L</sup>	4.0	4.2 <sup>H</sup>	4.2	4.0	3.9	3.6	Q						
18								Q	Q	Q	3.9 <sup>L</sup>	4.0 <sup>H</sup>	3.8	3.9	4.0	3.9 <sup>H</sup>	3.5 <sup>L</sup>	2.8						
19								Q	M	L	3.8	3.9	4.3 <sup>L</sup>	[4.0] <sup>L</sup>	3.9	L	L							
20								L	L	L	3.9	4.1	4.0	4.0 <sup>H</sup>	3.9	3.7 <sup>L</sup>	3.3 <sup>L</sup>							
21								Q	Q	Q	4.0	4.2	4.1	Q	4.1 <sup>L</sup>	4.0	3.4	Q						
22								Q	L	3.6	3.6 <sup>L</sup>	3.7	4.3	4.0	4.0 <sup>L</sup>	3.5	3.1 <sup>L</sup>							
23								Q	L	3.7	3.9 <sup>H</sup>	3.8 <sup>L</sup>	3.5	4.2	4.0	3.6 <sup>L</sup>	Q							
24								Q	Q	L	3.7	4.1	4.2	4.0	3.9	3.5 <sup>L</sup>	2.9 <sup>L</sup>							
25								Q	L	L	4.1 <sup>H</sup>	4.0	4.2	4.1	3.9	[3.5] <sup>L</sup>	3.1 <sup>L</sup>							
26								L	3.4	[3.7] <sup>A</sup>	4.0 <sup>L</sup>	4.1 <sup>L</sup>	4.2	4.2 <sup>L</sup>	4.0 <sup>L</sup>	3.8	3.0							
27								Q	L	4.0	4.2	4.0 <sup>L</sup>	4.2	4.2	4.0	3.7	3.3 <sup>L</sup>							
28								Q	3.7 <sup>L</sup>	3.8	4.0	4.2	4.2	4.0	3.9	L	L							
29																								
30																								
31																								
Mean Value									3.2	3.8	4.0	4.1	4.2	4.1	3.9	3.5	3.0							
Median Value									3.2	3.8	4.0	4.2	4.2	4.0	3.9	3.5	3.0							
Count									6	12	28	28	2.7	2.6	2.6	2.3	9							

Sweep 0.85 Mc to 2.20 Mc in 6 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kifutama-gun, Tokyo, Japan

Lat. 39° 43.5' N  
Long. 140° 08.2' E

**A k i t a**

**IONOSPHERIC DATA**

**f'F1**

**Feb. 1953**

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	220	250	250	230	240	240	250	250	Q								
2								Q	210	Q	250	230	200	210	Q	190	Q								
3								Q	C	C	250	220	210 <sup>H</sup>	220	220	220	C								
4								Q	Q	Q	220	200	220	200 <sup>H</sup>	240	240	Q								
5								Q	230	Q	200	220 <sup>H</sup>	230	240	220	230	Q								
6								Q	Q	210	200	210	270	240	220	240	Q								
7								Q	220	200	220	B	280	210	Q	230	Q								
8								Q	200	230	250	240	200	250	250	250	Q								
9								Q	Q	Q	200	200	200	220	250	250	240								
10								Q	Q	220	260	240	230	210	230	230	230								
11								Q	Q	Q	230	260	240	230	230	230	240								
12								Q	220	210	210	250	230	Q	A	250	Q								
13								Q	Q	220	200 <sup>H</sup>	220	290	200	220	220	Q								
14								Q	Q	Q	190	270	220	280	240	210	230								
15								Q	Q	240	240	210	180	230	220	220	Q								
16								Q	Q	Q	200	250	260	220	240	220	250								
17								Q	Q	240	200	210 <sup>H</sup>	270	240	230	230	Q								
18								Q	Q	250	200 <sup>H</sup>	(220 <sup>H</sup> )	230	230	200 <sup>H</sup>	230	220								
19								Q	M	220	200	200	210	220	250	250	250								
20								230	240	230	220	210	200	210 <sup>H</sup>	220	240	240								
21								Q	Q	250	200	250	Q	270	240	230	Q								
22								Q	220	200	220	240	230	250	220	210	240								
23								Q	230	230	210 <sup>H</sup>	240	210	230	280	250	Q								
24								Q	Q	Q	220	200	310	290	220	220	240								
25								Q	240	210	200 <sup>H</sup>	200	250	230 <sup>A</sup>	250	240 <sup>A</sup>	250								
26								240	250 <sup>A</sup>	(250 <sup>A</sup> )	270	240	250	220	220	240	230								
27								Q	250	250	230	220	230	260	240	220	220								
28								Q	250	230	230	240	210	210	230	250	240								
29																									
30																									
31																									
Mean Value								240	230	230	220	230	230	230	230	230	240								
Minimum Value								240	230	230	220	230	230	230	230	230	240								
Count								2	13	20	28	27	27	27	25	28	14								

**f'F1**

Sweep 0.5 Mc to 2.0 Mc in 6 min  
 Manual  Automatic

**A 5**

**A k i t a**

**IONOSPHERIC DATA**

**f<sub>o</sub>E**

**Feb. 1953**

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								B	2.2	2.7	2.7	2.9	3.0	2.8	2.7	2.4 <sup>F</sup>	1.8							
2								B	2.1	2.5	2.8	2.9	2.9	3.0	(2.8) <sup>F</sup>	2.5	1.9							
3								B	C	C	2.8	3.0	3.0	2.9	2.8	2.5	C							
4								B	2.2	2.8	2.9	3.0	3.0	3.0	2.8	2.5	1.8							
5								A	2.3	2.5	2.8	3.0	3.1	3.0	2.8	2.6	1.8							
6								B	A	A	2.9	2.9	3.0	3.0	2.8	2.5	2.3 <sup>H</sup>							
7								B	2.1	2.5	2.9	3.0	3.0	2.9	2.7 <sup>A</sup>	2.6	2.1							
8								B	2.0	2.5	2.9	3.0 <sup>F</sup>	3.0	3.0	(2.8) <sup>A</sup>	2.7 <sup>A</sup>	2.4							
9								B	2.2 <sup>F</sup>	2.5	2.8	3.0	3.0	3.0	2.8	2.6	2.2							
10								B	2.3	2.7	2.8	3.2	3.1	2.8	2.8	2.6	2.0							
11								A	2.2	2.7	2.8	3.0	2.9 <sup>H</sup>	3.1	2.9 <sup>A</sup>	2.7	2.2							
12								B	2.2	2.7	2.7	2.7	3.0	2.7	2.7	2.5	2.3							
13								B	2.2 <sup>F</sup>	2.5	2.7	3.0	3.0	3.0	2.8	2.5	A							
14								A	2.1	2.5	(2.5) <sup>A</sup>	2.9	2.9	2.9	2.8	2.5	1.8							
15								B	2.3 <sup>F</sup>	2.7	A	A	A	2.9	2.7 <sup>A</sup>	2.5 <sup>H</sup>	A							
16								B	2.2	A	A	2.9	2.8	2.9	2.8	2.3	2.2							
17								1.6	A	A	2.8	2.8	2.9	2.8	2.7	2.4	2.2	1.7						
18								B	2.3	2.5	2.8	2.8	2.8	2.8	2.7	2.5	2.2							
19								1.8	[2.2] <sup>M</sup>	2.6	2.8	3.1	2.9	3.0	2.8	2.5	2.1							
20								B	2.4	2.6	2.8	2.9	2.9	3.0	2.8	2.5	2.3 <sup>F</sup>	1.7						
21								1.8	(2.3) <sup>F</sup>	2.8	2.9	2.9	3.0	3.0	2.8	2.5	2.2	1.7						
22								1.6	2.3	(2.6) <sup>A</sup>	2.8	3.0	3.0	3.0	2.8	A	A	1.6						
23								1.5 <sup>B</sup>	2.2	2.5	2.8	3.2	2.9	3.0	2.8	2.6	2.2							
24								1.6	2.2	2.5	2.7	2.8	3.0	2.9	2.8	2.5	2.1							
25								1.5 <sup>B</sup>	2.1	2.5	2.7	2.8	3.0	A	A	2.5	2.1	1.7						
26								A	A	A	A	2.9	3.0	3.0	2.8	2.6 <sup>A</sup>	2.1							
27								1.6	2.2	2.6	A	A	A	3.0	2.8	2.6	(2.1) <sup>H</sup>	1.6						
28								1.8	2.3	2.7	2.8	3.0	3.0	2.9	2.8 <sup>A</sup>	2.5	2.2	1.7						
29																								
30																								
31																								
Mean Value								1.6	2.2	2.6	2.8	2.9	3.0	2.9	2.8	2.5	2.1	1.7						
Median Value								1.6	2.2	2.5	2.8	3.0	3.0	3.0	2.8	2.5	2.2	1.7						
Count								9	2.4	2.3	2.4	2.6	2.6	2.7	2.7	2.7	2.4	7						

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.5' N  
Long. 140° 08.5' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Feb. 1953

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								B	130	120	120	110	100	110	110	120 <sup>F</sup>								
2								B	120	120	110	110	100	A	A	110	130							
3								B	C	C	110	110	100	110	110	110	C							
4								B	120	120	110	110	110	110	110	110								
5								A	120	110	110	110	110	120	120	120								
6								B	A	A	120	110	110	110	110	120	120 <sup>H</sup>							
7								B	120	110	110	110	110	110	120 <sup>A</sup>	120	120							
8								B	130	110	110	110	110	110	110	110	140							
9								B	110 <sup>F</sup>	110	110	110	110	110	110	120	120							
10								B	120	110	110	110	110	110	110	110	120							
11								A	120	110	110	110	110 <sup>M</sup>	110	110	120	120							
12								B	120	120	110	110	110	110	120	100	130							
13								B	130	110	110	110	110	110	110	120	A							
14								A	120	110	110 <sup>A</sup>	110	110	110	110	110	120							
15								B	110 <sup>F</sup>	110	A	A	A	A	A	110 <sup>H</sup>	A							
16								B	110	A	A	110	110	110	110	120 <sup>A</sup>	130							
17								140	A	A	110	110	110	110	110	130	140	110						
18								B	120	120	110	120	110	110	110	120	130							
19								160	140 <sup>M</sup>	110	110	110	110	110	110	110	120							
20								B	120	120	130	130	130	110	110	110	110	B						
21								140 <sup>B</sup>	120 <sup>A</sup>	110	110	110	110	110	110	110	150							
22								B	130	120	110	110	110	110	130	A	A	130						
23								B	120	110	110	110	110	110	120	120	120							
24								140	120	110	110	110	110	110	120	120	120							
25								B	120	110	110	110	110	A	A	120	120	140						
26								A	A	A	A	A	A	A	110	110	120							
27								130	110	110	A	A	A	100	100	100	A	B						
28								120	110	110	110	110	110	110	110	110	120	120						
29																								
30																								
31																								
Mean Value								140	120	110	110	110	110	110	110	110	120	130						
Median Value								140	120	110	110	110	110	110	110	110	120	130						
Count								6	24	23	24	26	25	25	25	27	23	5						

1'E

Sweep 0.85 Mc to 2.2 Mc in 6 min

Manual

Automatic

A 7

The Radio Research Laboratories  
Koganei-machi, Kibitama-gun, Tokyo, Japan

Lat. 39° 43.6' N  
Long. 140° 08.3' E

# IONOSPHERIC DATA

## Akita

fEs

Feb. 1953

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.9	E	E	E	E	E	E	B	G	3.5	G	G	G	3.5	4.3Y	3.5F	5.0	4.8	2.8	2.5	3.3	2.2	2.8	2.2	
2	2.2	2.2	1.8	2.3	2.5F	2.2F	2.5	2.3	G	G	G	G	3.5	3.6	3.6	G	G	E	E	2.0	3.7	3.5	4.0	2.3F	
3	2.3F	2.3F	2.3F	2.1F	E	E	E	2.3	C	C	3.5	3.5	3.5	G	3.5	G	C	2.4	2.1	1.8	1.7	2.1	8.5	3.4	
4	2.2	1.8	2.2	E	2.8	2.4	E	B	G	3.4	4.5	5.5	3.5	3.4	G	3.4	G	2.6	2.5	2.2	3.8	2.4	2.3	2.2	
5	2.3F	2.6	E	E	2.3Y	E	E	2.5	G	3.5	3.5	3.5	G	2.5	2.5	G	G	E	E	E	E	E	E	E	
6	E	E	E	E	E	E	E	B	4.3	3.5F	3.5	G	G	G	G	G	G	1.8	2.0	E	E	E	E	E	
7	E	E	E	2.5	E	2.3	2.2	B	G	G	3.5	G	G	3.5	3.0	3.4	3.4	2.2	2.2	E	E	2.1	E	2.3	
8	E	E	E	E	E	E	E	B	3.4	G	G	3.7	4.3	3.5	3.5	3.5	2.9	3.4	5.5	4.5	2.5	2.9F	5.0	3.5	
9	2.6	2.5	3.5	2.5	2.2	E	E	2.2F	3.5	3.5	3.5	G	G	3.9	3.7	G	3.4	3.1	3.3	E	2.2	2.5	2.3	2.4	
10	2.1	E	E	E	2.3	2.2	E	B	3.0	3.5	G	G	G	G	G	G	G	2.3	2.5	2.0Y	2.2	2.1	2.0Y	2.1	
11	E	E	E	2.4Y	1.9Y	2.5F	2.3F	3.2	G	4.0Y	G	3.5	G	3.5	3.5	G	2.8Y	2.3	2.6	2.2Y	2.0	2.3	2.1	2.5F	
12	E	1.5	1.8	3.5	2.7F	E	E	2.5Y	3.3Y	G	G	3.9	3.5	5.2	4.6	3.5	3.1	E	2.2Y	E	E	2.3	1.8	2.4	
13	E	1.8	1.9Y	E	E	2.1	2.3	2.3	3.3	3.1	3.5F	4.4	4.2	G	G	3.5	3.1	4.3	4.2	3.5	4.4	2.5	3.0	2.2Y	
14	2.5	2.3	2.1Y	E	2.1	E	E	2.6	3.0Y	3.3	4.6	G	3.5	3.5	3.4	3.8	G	2.1	E	2.0	2.0	2.8	E	E	
15	E	E	E	E	E	E	E	2.2	3.1	G	4.0	3.6	G	3.6	3.4	3.4	2.9	2.4	2.4	E	E	E	5.2	4.0Y	
16	2.4F	2.4Y	2.4	2.4	2.3	2.2Y	2.5	2.3	2.9	4.2	3.4	G	3.5	3.5	3.4	3.5	3.5	2.1	2.2	2.5Y	2.0	2.5Y	2.6	2.5	
17	2.5	2.3F	2.2Y	2.3	E	2.2Y	2.3	2.3	3.5	3.5	4.1Y	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5	3.1Y	1.9	2.0	3.5	2.7	
18	2.5F	2.3F	2.2F	E	2.1	2.2F	2.2	G	3.3	3.4	3.4	3.5	3.5	3.4	G	3.4	2.8	3.6F	3.1F	2.5F	2.3F	5.5F	2.0	3.1Y	
19	2.4F	2.8F	2.5F	2.3Y	E	2.2F	2.2F	G	M	3.5	3.5	3.5	5.2	4.3	3.5	G	2.6	2.5	2.6	2.3	2.1	1.8	2.0	E	
20	2.2	E	2.3Y	E	E	2.2	E	1.9	3.3	4.3	3.5	4.3	3.5	3.5	G	3.2	3.5	2.7	2.9	2.5	2.1	2.0	2.3	2.0	
21	E	2.2	2.3	2.4	E	2.3	E	1.8	3.5	3.5	G	3.5	4.7	3.5	3.5	3.4	2.3	G	2.3	2.3	2.2Y	2.3	1.8	2.5	
22	5.2	2.5F	2.3	2.3Y	2.9	2.2	E	2.0	3.0	3.5	3.8	3.5	3.5	3.4	3.5	3.4	2.9	2.1	3.1F	2.5	2.8	2.5	E	2.3	
23	2.7	2.4Y	E	1.9	2.5Y	2.3Y	2.0	G	G	3.4	G	G	G	G	G	G	4.1	5.6	3.0	3.4	7.0	2.4	4.1	2.1	
24	E	2.0F	E	2.2Y	2.1	E	E	1.9	G	G	G	G	4.8Y	3.5	3.4	G	G	2.4	E	3.1F	2.8	4.2	2.2	2.3	
25	1.9	2.2	2.0	2.1F	E	2.2	E	2.6	3.5	G	3.5	G	G	4.3	4.5	3.6	G	2.8	2.0	2.5	2.4	1.7	3.1	2.5	
26	3.1Y	2.0	2.0	1.6	2.0	2.1	2.4	2.5	3.7	7.5	5.3	3.5	3.7	4.1	4.0	3.5	3.5	2.6Y	2.1	2.0	2.1	1.9	2.7	4.2	
27	4.5	3.3	2.5F	3.1F	2.3F	2.8	2.2	2.2	G	2.9	3.8	5.2	5.4	3.5	G	3.3	2.9	G	E	2.5	3.1	5.4	3.5	2.5	
28	2.3	2.3	E	E	E	2.3	2.2	2.6	3.2	3.1	3.5	3.4	G	3.4	3.4	3.3	2.9	G	E	3.5	1.8	2.2Y	E	2.3	
29																									
30																									
31																									
Mean	2.7	2.3	2.3	2.4	2.3	2.3	2.3	2.3	3.3	3.7	3.8	3.9	4.0	3.6	3.6	3.4	3.2	2.9	2.7	2.6	2.8	2.6	3.1	2.6	
Mean	2.2	2.2	2.0	2.0	2.0	2.2	E	2.3	3.0	3.4	3.5	3.5	3.5	3.5	3.4	3.4	2.9	2.4	2.4	2.3	2.2	2.3	2.3	2.3	
Count	28	28	28	28	28	28	28	22	26	27	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28

Sweep 0.55 Mc to 2.2 Mc in 6 min  Manual  Automatic



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Lat. 39° 45.6' N  
Long. 140° 08.3' E

Akita

Feb. 1953

(M3000)F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.9) <sup>F</sup>	3.2 <sup>F</sup>	(2.8) <sup>F</sup>	3.0 <sup>F</sup>	2.9 <sup>F</sup>	(2.7) <sup>F</sup>	3.2	3.5	3.6	3.6	3.5	3.3	3.6	(3.2) <sup>F</sup>	3.6	3.3	3.3	3.3	3.4	3.3 <sup>F</sup>	3.0 <sup>F</sup>	(2.8) <sup>F</sup>	(3.1) <sup>F</sup>	(2.8) <sup>F</sup>
2	3.0 <sup>F</sup>	3.0 <sup>F</sup>	(2.7) <sup>F</sup>	(2.7) <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	(3.5) <sup>F</sup>	3.5	3.6	3.4	3.5	3.3	3.6	3.3	3.5	3.4	3.6	3.4	3.2	3.5	3.0	3.1 <sup>V</sup>	3.1 <sup>F</sup>	(2.8) <sup>F</sup>
3	(2.8) <sup>F</sup>	(2.8) <sup>F</sup>	(2.9) <sup>F</sup>	(2.4) <sup>F</sup>	3.1 <sup>F</sup>	2.8 <sup>F</sup>	3.0 <sup>F</sup>	3.5	C	C	3.4	3.4	3.4 <sup>2</sup>	3.4	(3.6) <sup>F</sup>	3.6	[3.4] <sup>C</sup>	3.3	3.7	2.9	3.3	3.3	3.0	2.8 <sup>F</sup>
4	3.0 <sup>F</sup>	(2.8) <sup>F</sup>	3.0 <sup>F</sup>	2.9 <sup>F</sup>	3.2 <sup>F</sup>	(3.4) <sup>F</sup>	3.2	3.5	3.7	(3.4) <sup>F</sup>	3.3	3.6	3.5	3.2	3.3	3.5	3.6	3.3	3.5	3.7	3.0	3.2	3.0 <sup>F</sup>	2.9 <sup>F</sup>
5	2.8 <sup>F</sup>	2.9	3.1	3.0	3.2	3.2	3.7	3.6	3.6	3.7	3.1 <sup>H</sup>	3.3	3.4	3.6	3.4	3.6	3.5	3.3	3.2	3.3	3.0	3.4	3.0	2.8
6	2.8	2.9	3.0	3.2	3.7	3.2	3.1	3.6	3.7	3.6	3.4	3.0 <sup>H</sup>	3.2	3.4	3.2	3.4	3.5	3.6	3.4	3.2	3.4	3.1	3.0	(2.7) <sup>F</sup>
7	F	F	2.6 <sup>F</sup>	3.1 <sup>F</sup>	3.2 <sup>F</sup>	2.8 <sup>F</sup>	3.5	3.5	3.5	3.5	3.4	3.2	3.3	3.4	3.3	3.3	3.6	3.5	3.1	3.1	3.3	3.1	2.9 <sup>F</sup>	3.0 <sup>F</sup>
8	3.1	2.9 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	3.2	3.2	3.3	3.5	3.5	3.3	3.4	3.3	3.3	3.2	3.5	3.5	3.6	3.3	[3.3] <sup>A</sup>	3.3	3.1 <sup>F</sup>	3.2 <sup>F</sup>	3.0 <sup>F</sup>	(2.9) <sup>F</sup>
9	(3.1) <sup>F</sup>	3.2 <sup>F</sup>	3.1 <sup>F</sup>	3.0	3.0 <sup>F</sup>	3.1 <sup>F</sup>	3.7	3.7	3.5	3.5	3.3	3.3	3.1	3.5	3.5	3.4	3.5	3.4	3.6	3.3	3.1	3.1	2.9	2.8
10	2.7	2.9	3.2	3.1	3.3	3.4 <sup>F</sup>	3.0	3.5	3.6	3.4	3.2	3.4	3.5	3.2	3.6	3.2	3.4	3.6	3.0	3.5	3.0	3.1	2.8	2.8
11	2.9	2.9	3.0	3.0	3.3	3.6	3.0 <sup>F</sup>	3.5	3.4	3.4	3.4	3.4	3.5	3.2	3.2	3.6	3.7	3.6	3.0	3.2	3.0	3.1	2.8	3.0
12	3.2	3.4 <sup>P</sup>	3.0	3.1 <sup>F</sup>	(3.1) <sup>F</sup>	3.1 <sup>F</sup>	3.0 <sup>F</sup>	3.4	3.6	3.3	3.2	3.3 <sup>H</sup>	3.2	3.4	3.4	3.5	3.5	3.7	3.2	3.4	3.0	3.0	2.9	2.9
13	2.9	3.0	3.1	3.1	3.8	2.9 <sup>F</sup>	3.8 <sup>V</sup>	3.6	3.7	3.5	3.2	3.5	3.4	3.3	(3.3) <sup>P</sup>	3.4	3.5	3.7	3.5	3.0	[2.9] <sup>A</sup>	2.8	3.0	2.9
14	2.7	3.0	2.8	3.1	3.5	3.0	3.1 <sup>V</sup>	3.6	3.8	2.8 <sup>H</sup>	3.0 <sup>H</sup>	3.6	(2.8) <sup>H</sup>	3.3	3.6	3.4	3.6	3.3	3.3	3.1	3.3	3.1	3.0 <sup>F</sup>	3.0
15	2.9	3.1 <sup>F</sup>	3.0 <sup>F</sup>	2.9 <sup>F</sup>	3.2 <sup>F</sup>	3.4 <sup>F</sup>	3.1	3.3 <sup>P</sup>	3.5	3.5 <sup>P</sup>	3.1 <sup>H</sup>	3.2	3.2	3.5	3.4	3.5	3.6	3.5	3.1	3.0	3.2	2.7	[2.9] <sup>A</sup>	3.1
16	3.1	2.9	3.0	3.0	3.3 <sup>V</sup>	3.1	3.0	3.5	(3.5) <sup>P</sup>	2.9 <sup>H</sup>	3.0	2.8	3.3	3.4	3.5	3.7	(3.5) <sup>P</sup>	3.5	3.1	3.3	3.3	3.1	3.1	3.0
17	3.0	3.1	2.9	2.8	2.9	2.8	3.1	3.4	3.2	3.1	3.2	3.1	3.2	3.4	3.5	3.5	3.6	3.6	3.5	3.4	2.7	3.0	2.8	3.0 <sup>V</sup>
18	2.9	3.0	3.0	3.0	3.3	3.1	2.9	3.5	3.4	3.6	3.3 <sup>2</sup>	3.7	3.4	3.4	3.3	3.5 <sup>P</sup>	3.4	3.7	3.6	3.2	3.4	3.1	3.0	2.9
19	3.2 <sup>F</sup>	3.2 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.3 <sup>F</sup>	3.0 <sup>F</sup>	3.1 <sup>F</sup>	M	M	3.5	3.5	3.3	3.2	3.2	3.5	3.4 <sup>P</sup>	3.5	3.5	3.1	3.4	3.1	3.1	2.9 <sup>F</sup>	3.0 <sup>F</sup>
20	3.0 <sup>F</sup>	3.0	3.2	3.1	3.2	3.2	3.4	3.3	3.5	3.5	3.6 <sup>P</sup>	3.2	3.2	3.2	3.3	3.2	3.6	3.6	3.4	3.1	3.3	3.4	3.1	3.0
21	2.9	3.1	2.9	3.1	3.3	3.3	3.4	3.5	3.3	3.7	(3.3) <sup>H</sup>	3.6	3.2	3.2	3.2	3.6	3.6	3.7	3.3	3.2	3.3	3.1	3.1	3.0
22	2.9	3.1	3.2 <sup>F</sup>	3.0 <sup>F</sup>	3.2 <sup>F</sup>	3.4 <sup>F</sup>	3.6	3.7	3.8	3.4	3.2	3.4	3.2	3.3	3.5	3.2	3.4	3.6	3.5	3.7	3.3	3.0	3.0	3.0
23	3.0	3.2	3.1	3.1	2.7 <sup>F</sup>	2.9 <sup>F</sup>	3.3	3.7	3.8	3.6	(3.2) <sup>2</sup>	3.4	3.6	3.2	3.5	3.3	3.4	3.4	3.3	3.1	3.4	3.4	3.1	3.1
24	(2.8) <sup>F</sup>	3.0	F	3.1 <sup>F</sup>	3.3	3.2	3.4	3.4	3.7	3.4	3.4	2.9	3.5	3.4	3.4	3.4	3.6	3.5	3.3	3.2	3.0	2.7	2.8	2.9
25	3.4	2.8 <sup>F</sup>	3.0 <sup>F</sup>	2.8 <sup>F</sup>	2.9	2.8	3.3	3.5	3.5	3.1	3.0	3.3	3.0	3.2	3.4	3.4	3.3	3.5	3.2	3.1	3.1	3.0	3.1	3.0
26	2.8 <sup>F</sup>	2.6	3.0	3.0	3.0 <sup>F</sup>	2.9	3.1	3.2	3.6	[3.6] <sup>A</sup>	3.5	3.4	3.4	3.5	3.3	3.4	3.4	3.5	3.3	3.1	3.0	3.7	2.8	2.8
27	2.8 <sup>F</sup>	3.0 <sup>F</sup>	3.1	3.0	3.1	2.7	3.2	3.3	3.4	3.5	3.1	3.5 <sup>F</sup>	3.3	3.4	3.6	3.4	3.7	3.5	3.1	3.4	3.3	3.1	2.8	3.2
28	3.2	2.9 <sup>F</sup>	3.0 <sup>F</sup>	3.3	3.3 <sup>F</sup>	2.9 <sup>F</sup>	3.1	3.4	3.4	3.2	3.4	3.5	3.3	3.6	3.4	3.3	3.3	3.5	3.5	3.4	3.1	3.1 <sup>P</sup>	2.9 <sup>F</sup>	3.1
29																								
30																								
31																								
Mean Value	3.0	3.0	3.0	3.0	3.2	3.1	3.2	3.5	3.6	3.4	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.3	3.3	3.2	3.1	3.0	2.9
Median Value	2.9	3.0	3.0	3.0	3.2	3.1	3.2	3.5	3.6	3.5	3.3	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.3	3.2	3.2	3.1	3.0	3.0
Count	27	27	27	2.8	2.8	2.8	2.7	2.7	2.6	2.7	2.8	2.8	2.8	2.8	2.8	2.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

(M3000)F2

Sweep 0.85... Mc to 22.0 Mc in 6 min

Manual

Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 39° 43.5' N  
Long. 140° 08.3' E

**Akita**

**IONOSPHERIC DATA**

fminF

Feb. 1953

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.5 <sup>F</sup>	E	E	1.1	E	E	1.5	2.0	2.5	3.2	3.3	3.2	3.4	3.4	2.7	2.5	4.2 <sup>A</sup>	3.0 <sup>A</sup>	[2.0] <sup>A</sup>	1.5	1.5 <sup>F</sup>	1.5 <sup>F</sup>	1.5 <sup>F</sup>	1.5 <sup>F</sup>
2	1.5 <sup>F</sup>	1.1	E	E	E	E	1.5	1.5	2.1	2.9	3.3	3.2	3.0	3.1	2.9	2.6	2.4	1.5	1.4	1.5	2.2 <sup>A</sup>	2.2 <sup>A</sup>	1.9	1.5 <sup>F</sup>
3	1.5 <sup>F</sup>	1.5	E	E	E	E	1.5 <sup>F</sup>	1.5	C	C	3.0	3.3	3.2	3.4	2.9	2.5	(2.2) <sup>F</sup>	2.0	1.5	1.4	1.5	1.6	1.5	1.4 <sup>F</sup>
4	1.4 <sup>F</sup>	1.4 <sup>F</sup>	E	E	E	E	1.4	1.5	1.8	2.8	3.1	3.2	3.3	3.0	2.8	2.8	2.3	1.7	1.4	1.4	1.5	1.4	1.5	1.4
5	1.5	E	E	E	E	E	1.4	1.9	2.4	3.0	3.0	3.4	3.6	3.3	3.0	2.9	2.2	1.7	1.4	1.5	1.5	1.5	1.4	1.4
6	1.4	1.4	E	E	E	E	E	1.7	(2.2) <sup>F</sup>	2.7	2.9	3.5	3.6	3.3	3.0	2.8	2.5	1.8	1.5	1.4	1.5	1.5	1.5	1.4 <sup>F</sup>
7	1.4 <sup>F</sup>	E	E	E	E	E	E	1.4	1.8	2.2	2.6	3.2	3.8	3.2	3.4	2.9	2.4	1.7	1.5	1.5	1.5	1.5	1.5 <sup>F</sup>	1.5
8	1.5	E	E	E	E	E	E	1.5	1.9	2.2	2.5	3.2	3.3	3.7	3.4	3.2	2.9	2.4 <sup>A</sup>	[2.3] <sup>A</sup>	2.2 <sup>A</sup>	1.5 <sup>F</sup>	1.5 <sup>F</sup>	1.5 <sup>F</sup>	1.5 <sup>F</sup>
9	1.5	1.1	1.4	E	E	E	E	1.5	1.9	2.6	3.0	2.8	3.1	3.2	3.4	2.9	2.5	2.1 <sup>A</sup>	[1.8] <sup>A</sup>	1.4	1.7	1.5	1.5	1.5
10	1.5	1.5	1.1	1.1	E	E	E	1.5	1.8	2.5	2.8	3.7	3.8	3.4	3.0	2.9	2.8	2.4	1.6	1.5	1.4	1.5	1.5	1.4
11	1.5	E	E	E	E	E	E	1.5	1.8	2.4	2.9	3.4	3.0	3.2	2.9	2.8	2.2	1.7	1.6	1.4	1.5	1.4	1.4	1.6 <sup>F</sup>
12	1.4	1.4	1.4	1.4	E	E	E	1.4	1.7	2.3	2.5	2.9	3.6	3.3	4.0 <sup>A</sup>	3.6	3.1	2.4	1.4	1.4	1.4	1.4	1.5	1.6
13	1.4	E	1.1	E	E	E	E	1.4	2.0	2.6	2.9	3.1	3.3	3.5	3.0	2.9	2.6	2.5	1.6	(1.6) <sup>A</sup>	1.5	1.7	1.7	1.5
14	1.5	1.5	(1.3) <sup>A</sup>	1.1	1.1	E	E	1.5	2.0	2.2	2.7	2.5	3.4	3.6	3.0	2.8	2.2	1.8	1.4	1.4	1.4	1.6	1.4	1.4
15	1.4	1.4	1.4	E	E	E	E	1.4	2.0	2.5	2.7	3.0	3.1	3.0	2.9	2.6	2.9	1.6	1.5	1.4	1.5	1.4	1.7	1.5
16	1.7	E	1.4	1.2	E	E	E	1.5	2.0	2.5	3.1	2.8	3.3	3.6	3.2	2.7	2.6	1.8	1.5	1.4	1.4	1.5	1.7	1.6
17	1.4	1.2	E	E	E	E	E	1.5	2.0	2.5	2.8	2.8	3.5	3.5	3.3	2.9	2.7	2.4	1.7	1.5	1.5	1.4	1.5	1.5
18	1.5	1.1	E	E	E	E	E	1.4	1.9	2.6	2.8	3.1	3.5	3.4	3.2	2.8	2.4	1.8	1.9 <sup>F</sup>	1.8	1.5	2.2 <sup>A</sup>	1.4	1.5
19	1.4 <sup>F</sup>	1.4 <sup>F</sup>	1.4 <sup>F</sup>	E	E	E	E	1.5	1.8	(2.2) <sup>F</sup>	2.6	2.9	2.9	3.0	3.2	2.8	2.3	2.1 <sup>A</sup>	1.5	1.5	1.5	1.5	1.5	1.5
20	1.5	E	E	E	E	E	E	1.5	1.9	2.4	2.7	2.9	3.0	3.0	2.8	2.7	2.3	1.7	1.5	1.5	1.5	1.5	1.5	1.5
21	1.5	1.2	E	E	E	E	E	1.5	1.9	2.5	3.2	3.1	3.5	3.7	3.5	3.2	2.7	2.3	1.8	1.4	1.4	1.4	1.4	1.5
22	2.0 <sup>A</sup>	1.5	E	E	E	E	E	1.1	2.2	2.5	2.4	3.1	3.4	3.3	3.2	2.9	2.7	2.4	1.8	1.6	1.5	1.9	1.5	1.5
23	1.7	1.2	1.1	1.1	E	E	E	1.0	2.0	2.5	2.7	2.8	3.4	3.1	3.2	3.3	2.8	2.3	5.1 <sup>A</sup>	1.5	2.5 <sup>A</sup>	1.6	2.5 <sup>A</sup>	1.6
24	1.4	E	E	E	E	E	E	1.0	2.0	2.4	2.7	2.7	3.6	3.4	3.0	2.8	2.5	2.3	1.7	1.4	1.4 <sup>F</sup>	1.5	1.5	1.5
25	1.4	1.3	1.1	E	E	E	E	1.4	1.8	2.2	2.6	2.7	2.9	3.2	3.4	3.3	2.9	2.3	2.0	1.5	1.7	1.5	1.6	1.6
26	1.5 <sup>F</sup>	1.3	E	1.0	E	E	E	1.5	1.8	A	A	2.8	3.3	3.3	3.1	3.2	2.6	2.3	2.1 <sup>A</sup>	1.5	1.5	1.5	1.5	(1.5) <sup>A</sup>
27	1.5	1.5	1.4	1.3	E	E	E	1.7	2.5	2.7	2.8	3.0	3.4	3.4	2.8	2.6	2.3	2.2	1.4	1.4	1.5	1.5	1.5	1.5
28	1.4	1.0	1.0	1.0	1.0	1.0	1.1	1.4	2.3	2.6	2.8	3.2	3.4	3.0	3.0	2.7	2.5	2.1	1.5	2.1 <sup>A</sup>	1.4	1.4	1.4	1.5
29																								
30																								
31																								
Mean Value	1.5	1.3	1.3	1.1	1.0	1.2	1.5	1.9	2.4	2.8	3.0	3.3	3.3	3.2	3.0	2.7	2.5	2.0	1.5	1.6	1.5	1.6	1.6	1.5
Median Value	1.5	1.2	E	E	E	E	1.5	1.9	2.5	2.8	3.0	3.4	3.3	3.2	3.0	2.8	2.4	1.8	1.5	1.5	1.5	1.5	1.5	1.5
Count	28	28	28	28	28	28	28	28	26	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28

Sheep 6.85 Me to 22.0 Me in 6 min

Manual

Automatic

The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 35° 43.5' N  
Long. 140° 08.2' E

**Akita**

**IONOSPHERIC DATA**

**f<sub>minE</sub>**

**Feb. 1953**

135° E Mean Time

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

**f<sub>minE</sub>**

Group 0.5E Mc to 22.0 Mc in 6 min  Manual  Automatic

**A 11**



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

foF2

Feb. 1953

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	2.7F	2.6F	2.5F	2.5F	2.5F	F	F	B	B	5.7	B	6.5	6.7	7.5P	6.0	5.8]C	5.6	4.5P	4.5	4.0P	3.0	3.0P	F	F
2	F	3.2	C	C	C	2.5	2.4F	3.7P	(6.0)B	5.8	6.6	(7.3)P	[7.0]B	6.6	6.9	5.8	5.7	B	B	A	A	B	F	2.6P
3	2.5F	2.6F	2.8	2.8P	2.7P	2.4	2.3	4.3F	5.0P	6.5	T	B	8.7	[8.2]B	7.6	6.0	5.3P	(4.7)P	3.2	2.8	[3.0]B	3.2	2.5	2.6P
4	2.8	[2.8]B	2.9	2.8	3.2	2.5	2.4	B	B	B	6.7	6.6	B	6.6	6.6	6.5P	5.5P	[4.6]B	3.7P	3.3	2.7	(3.3)P	2.9	F
5	F	3.2P	[3.0]F	2.8	3.3P	2.6	2.4	4.5P	7.0P	6.5P	6.6	7.5	8.2	8.5P	8.4	6.9	5.5	4.2	[3.4]C	2.7P	2.9	3.0P	2.8P	2.8P
6	2.8P	2.9P	3.5	3.5	B	2.2	2.1	(4.5)P	B	B	7.2P	5.7	B	B	7.2	6.1	5.8	4.5	3.5	2.6	2.5	2.7	2.5P	F
7	F	F	2.9	3.1	(3.3)P	2.5	2.3P	B	B	5.5	[5.8]B	6.1	B	B	5.6	5.5	6.1	4.2	2.6	2.9	[2.8]B	2.7P	3.0P	B
8	BF	BF	BF	B	B	2.7	2.5	[3.7]B	(4.9)P	[5.4]B	6.0P	6.4P	B	B	7.5	6.5P	6.0	A	A	AF	2.8P	2.8	2.5	M
9	M	M	M	M	M	M	M	M	M	M	M	(6.4)P	B	B	7.2	6.0	5.5	4.8	4.0P	3.5P	3.3P	2.9P	[2.8]B	2.8P
10	[2.9]B	3.0P	B	B	3.2	2.5F	2.5	B	B	6.1	6.1	5.5	B	B	7.2	6.5	5.5	5.5	3.5	B	2.9	2.8	2.8	2.7
11	2.9P	3.0	3.0	3.4P	3.7P	2.3	2.4	B	B	6.3	5.8	8.0	7.1	(8.6)P	7.2	B	6.7	5.0	3.7	3.4P	3.6	2.8	2.8P	M
12	B	(3.3)P	3.2	3.3P	3.4	3.3	B	B	6.8P	B	B	B	B	B	B	5.7P	5.8	(5.3)P	3.1	2.8	B	A	2.5	2.7F
13	B	3.3	3.2	B	B	1.4	2.0	B	5.0P	B	B	B	B	B	7.0P	[6.6]B	6.2	5.8	5.0	2.8P	3.5P	3.5	2.8P	3.2P
14	2.8P	2.9	2.9	3.2	2.7	2.0	2.2	B	B	B	B	B	B	B	7.0P	[6.6]B	6.2	5.8	5.0	2.8P	3.5P	3.5	2.8P	3.2P
15	3.5P	3.5	3.3P	3.5P	3.4P	3.0	3.0P	5.5P	5.9P	B	B	B	B	B	7.0P	[6.6]B	6.2	5.8	5.0	2.8P	3.5P	3.5	2.8P	3.2P
16	C	C	C	C	2.4	2.3	2.3	B	(4.9)P	B	B	B	B	M	M	5.4	4.5	4.5	4.0	(3.9)P	(3.7)P	3.2	3.3P	3.0
17	3.0	3.3P	3.3P	3.0	3.1	3.1	3.0	[4.0]B	5.1	6.6	(8.7)P	(8.6)B	8.6	[7.8]B	6.9P	6.5	5.5	5.1P	3.4	2.9	2.6	2.8	2.9	3.0
18	3.0	3.0	3.1	3.1	3.2	C	C	C	C	B	7.0	7.3	C	B	B	B	B	B	4.0	3.3	3.2	2.8	2.9	3.0P
19	2.8P	B	B	BF	BF	3.1	3.3	[4.6]B	5.8	5.8	5.5	6.6	6.2	7.0	6.3	6.5	6.3	5.3	3.4P	[3.4]B	3.3P	3.0P	3.2	3.2P
20	3.3	3.4	3.3	3.3P	3.4	2.7	2.6	B	B	C	C	C	C	C	(7.1)P	6.3	[5.8]C	5.2	4.0	3.2P	[3.2]C	3.2P	3.0P	3.0P
21	[3.1]C	3.2	[3.2]C	3.2P	C	2.6	(2.7)P	[4.1]C	(5.5)P	[6.0]C	6.5	6.2H	6.0	7.2	7.6	6.7	[5.8]C	5.0	C	B	C	C	C	C
22	C	(4.0)P	C	B	B	3.0	2.4	4.6	C	C	C	C	C	C	9.1	6.5P	6.4	4.7	3.4	2.8	3.0	3.1	3.0P	3.0P
23	3.2	3.2	3.0	3.0	3.0	3.0P	3.9P	5.2	5.4P	4.9P	6.4	C	5.9	6.3	7.9P	7.3	7.0	5.6	5.3P	5.0P	5.1	4.3	3.4	3.8
24	3.9	4.2P	F	3.5	3.4	2.8	2.8	4.2	5.4	5.8	6.0	6.3H	[7.3]	8.3	6.3	5.8	5.5	4.8	4.5	4.2	3.4	3.5	3.7	3.8
25	4.0	2.8	2.5	2.6	2.6	2.5	2.9	5.0	5.6	6.0	7.4P	7.0P	B	7.5	6.2	5.9	6.7	5.2P	4.0	3.9	3.6P	3.4	2.9	
26	3.0	3.0P	3.0F	3.0	3.0	3.0	3.4P	6.7	7.2P	6.2	5.7H	7.1	9.2	7.7	7.1	6.5	5.7	6.3P	4.2	4.0	4.2	3.9	2.9	3.0
27	3.2	3.3	3.4	3.0	3.1	3.0	3.0	4.4	6.6	B	(7.5)P	B	B	B	B	6.3	5.7	5.1	4.3	4.7	4.5	3.5	3.4	3.4P
28	3.5	3.4F	3.2	(3.1)F	F	2.1F	2.7	4.8	[5.9]P	7.0	6.7	6.6	7.0	6.4	5.8	6.3	6.5	7.3	5.3	3.5	3.0	3.2	3.1F	(3.0)P
29																								
30																								
31																								
Mean	3.1	3.2	3.0	3.1	3.1	2.6	2.6	4.6	5.8	6.0	6.5	6.8	7.3	7.4	7.0	6.2	5.9	5.2	3.9	3.5	3.3	3.1	3.0	3.0
Maximum	3.0	3.2	3.0	3.1	3.2	2.6	2.5	4.5	5.6	6.0	6.5	6.6	7.0	7.2	6.9	6.3	5.8	5.0	3.7	3.4	3.2	3.0	2.9	3.0
Minimum	1.9	2.3	2.0	2.1	1.9	2.5	2.4	1.6	1.8	1.7	1.9	1.8	1.3	1.5	2.3	2.6	2.7	2.3	2.5	2.4	2.5	2.5	2.4	2.0
Count																								

Swng. 1.0 Mc to 17.2 Mc in 2 min

Manual

Automatic

K 1

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 36° 42.4' N  
Long. 139° 29.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

hpF2

Feb. 1953

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	260 <sup>F</sup> [260] <sup>F</sup>	270 <sup>F</sup> [270] <sup>F</sup>	280 <sup>F</sup> [280] <sup>F</sup>	300 <sup>F</sup>	F	F	F	B	B	B	B	270	270	320 <sup>P</sup> 340	[300] <sup>C</sup>	250	310 <sup>F</sup>	270	[260] <sup>F</sup>	320	320 <sup>F</sup>	F	F	F	F
2	F	300	C	C	C	340	310	250 <sup>F</sup> [240] <sup>F</sup>	270	290	[270] <sup>F</sup>	270	[380] <sup>B</sup>	290	280	280	270	B	B	A	A	B	F	F	370 <sup>F</sup>
3	320 <sup>F</sup>	310 <sup>F</sup> [320] <sup>F</sup>	330 <sup>F</sup> [320] <sup>F</sup>	330 <sup>F</sup>	350	350	300	260 <sup>F</sup>	260 <sup>F</sup>	300	T	B	B	250	[260] <sup>B</sup>	260	250 <sup>F</sup> [280] <sup>F</sup>	280 <sup>F</sup> [280] <sup>B</sup>	270	330	[300] <sup>B</sup>	270	340	340 <sup>F</sup>	340 <sup>F</sup>
4	330	[320] <sup>B</sup>	320	320	300	300	300	B	B	B	300	270	B	B	300	270 <sup>F</sup>	280 <sup>F</sup>	[280] <sup>B</sup>	270	260	320	[310] <sup>F</sup>	370	F	F
5	F	350 <sup>F</sup> [340] <sup>F</sup>	330	330	270 <sup>F</sup>	310	320	250 <sup>F</sup>	270 <sup>F</sup>	250 <sup>F</sup>	260	300	300	270	270	250	250	260	230	260	320	320 <sup>F</sup>	320 <sup>F</sup>	400 <sup>F</sup>	400 <sup>F</sup>
6	360 <sup>F</sup>	390 <sup>F</sup>	330 <sup>F</sup>	300	B	340	320	[230] <sup>F</sup>	B	B	270 <sup>F</sup>	270 <sup>F</sup>	B	B	B	270	260	260	230	260	290	300	330 <sup>F</sup>	330 <sup>F</sup>	F
7	F	F	370	350	[280] <sup>F</sup>	310	310 <sup>F</sup>	B	B	B	240	[260] <sup>B</sup>	290	B	B	260	260	230	250	300	[310] <sup>B</sup>	320 <sup>F</sup>	300 <sup>F</sup>	B	B
8	BF	BF	BF	B	B	270	300	[280] <sup>B</sup>	[250] <sup>F</sup>	[260] <sup>B</sup>	280 <sup>F</sup>	290 <sup>F</sup>	B	B	B	270	[260] <sup>F</sup>	260	B	A	AF	340 <sup>F</sup>	330	330	M
9	M	M	M	M	M	M	M	M	M	M	M	M	M	B	B	270	270	270	270 <sup>F</sup>	320 <sup>F</sup>	280 <sup>F</sup>	290 <sup>F</sup>	[320] <sup>B</sup>	340 <sup>F</sup>	340 <sup>F</sup>
10	[340] <sup>B</sup>	340 <sup>F</sup>	B	B	270	320 <sup>F</sup>	330	B	260	270	280	260	B	B	270	270	250	250	260	270	290	330	340	350	350
11	320 <sup>F</sup>	340	320	300 <sup>F</sup>	260 <sup>F</sup>	290	370	B	B	B	260	260	B	B	280 <sup>F</sup> [260] <sup>B</sup>	250	240	B	360	[320] <sup>A</sup>	280 <sup>F</sup>	280 <sup>F</sup>	B	B	B
12	B	[290] <sup>F</sup>	320	310 <sup>F</sup>	290	310	B	B	260 <sup>F</sup>	250	290	260	340	[270] <sup>B</sup>	280	B	270	260	270	330 <sup>F</sup>	260	350	330 <sup>F</sup>	M	M
13	B	330	320	B	B	400	330	B	270 <sup>F</sup>	B	B	B	B	B	B	[260] <sup>F</sup>	260	[260] <sup>B</sup>	250	280	B	A	360	310 <sup>F</sup>	310 <sup>F</sup>
14	320 <sup>F</sup>	320	320	290	260	320	310	B	B	B	B	B	B	B	310 <sup>F</sup> [280] <sup>B</sup>	260	260	240	[280] <sup>F</sup>	280 <sup>F</sup>	[280] <sup>F</sup>	360	320 <sup>F</sup>	370 <sup>F</sup>	370 <sup>F</sup>
15	300 <sup>F</sup>	320	330 <sup>F</sup>	350 <sup>F</sup>	280 <sup>F</sup>	320	330 <sup>F</sup>	330 <sup>F</sup> [260] <sup>F</sup>	280 <sup>F</sup>	B	B	B	B	B	B	270 <sup>F</sup>	260	[250] <sup>B</sup>	240	320	[300] <sup>F</sup>	300	340	320	320
16	C	C	C	C	[250] <sup>F</sup>	320	320	B	[260] <sup>F</sup>	B	B	B	B	B	M	250	230	B	310	[250] <sup>F</sup>	[260] <sup>F</sup>	270	330 <sup>F</sup>	310	310
17	350	330 <sup>F</sup>	320 <sup>F</sup>	350	350	320	300	[380] <sup>B</sup>	260	320	[280] <sup>F</sup>	290	290	[270] <sup>B</sup>	[250] <sup>F</sup>	280	260	[240] <sup>F</sup>	310	310	280	350	330	310	310
18	340	330	310	330	260	C	C	C	C	B	B	280	C	B	B	270	B	B	280	300	300	300	320	400 <sup>F</sup>	400 <sup>F</sup>
19	[290] <sup>F</sup>	B	BF	BF	BF	BF	C	[270] <sup>B</sup>	240	250	280	300	330	280	300	260	270	300	280 <sup>F</sup>	[280] <sup>B</sup>	290 <sup>F</sup>	300 <sup>F</sup>	350	330 <sup>F</sup>	330 <sup>F</sup>
20	320	340	330	350 <sup>F</sup>	230	320	270	B	B	C	C	C	C	C	C	[260] <sup>F</sup>	260	[260] <sup>C</sup>	250	[260] <sup>B</sup>	[280] <sup>F</sup>	290 <sup>F</sup>	300 <sup>F</sup>	350	300 <sup>F</sup>
21	[320] <sup>C</sup>	350	[340] <sup>C</sup>	320 <sup>F</sup>	C	A	4280 <sup>F</sup>	[280] <sup>C</sup>	[280] <sup>F</sup>	[380] <sup>C</sup>	270	300 <sup>M</sup>	300	310	270	250	[260] <sup>C</sup>	270	C	B	C	C	C	C	C
22	C	[310] <sup>F</sup>	C	B	B	250	240	250	C	C	C	C	C	B	B	260	290 <sup>F</sup>	270	240	260	270	350	340	320	[340] <sup>F</sup>
23	340	320	300	320	330	340 <sup>F</sup>	240 <sup>F</sup>	250	240 <sup>F</sup>	240 <sup>F</sup>	280	C	280	320	[270] <sup>F</sup>	260	250	250	280 <sup>F</sup>	330 <sup>F</sup>	280	320	370	350	350
24	350	350 <sup>F</sup>	F	290	300	330	280	260	250	250	280	350 <sup>M</sup>	[300] <sup>T</sup>	240	250	250	240	250	280	300	330	330	370	350	350
25	370	280	300	330	330	340	280	260	250	280	310	270 <sup>F</sup>	270 <sup>F</sup>	B	270	270	270	260	270 <sup>F</sup>	320	360	320 <sup>F</sup>	300	370	370
26	350	360 <sup>F</sup>	340 <sup>F</sup>	310	350	350	300 <sup>F</sup>	250	250 <sup>F</sup>	260	290 <sup>M</sup>	280	280	270	280	260	260	250 <sup>F</sup>	270	330	300	320 <sup>F</sup>	330	320	320
27	340	330	[320] <sup>A</sup>	320	320	350	360	270	290	B	[310] <sup>F</sup>	B	B	B	B	250	240	240	270	330	280	350	300	380 <sup>F</sup>	380 <sup>F</sup>
28	350	350 <sup>F</sup>	340	[360] <sup>F</sup>	F	320 <sup>F</sup>	330	290	[330] <sup>B</sup>	370	280	260	250	280	270	280	280	260	250	280	340	310	380 <sup>F</sup>	[350] <sup>F</sup>	[350] <sup>F</sup>
29																									
30																									
31																									
Mean Value	330	330	320	320	290	320	310	260	260	270	280	280	290	280	270	260	260	260	260	270	300	300	310	330	350
Median Value	340	330	320	320	280	320	300	260	260	260	280	280	280	280	270	260	260	260	260	270	300	300	320	330	340
Count	19	23	20	21	19	24	24	16	18	17	19	18	13	15	23	26	27	23	25	24	25	25	24	20	20

K 2

Manual  Automatic

Sweep 1.0 Mc to 17.2 Mc in 2 min

hpF2

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 28.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

**R'F2**

**Feb. 1953**

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	250	220	240	250	250	320	260	230	210	250	270	270	270	250	300	(280) <sup>C</sup>	250 <sup>A</sup>	280 <sup>A</sup>	270 <sup>A</sup>	230	270	260	280	270	
2	270	250	C	C	C	240	280	240	240	250	290	270	250	270	270	250	250	220	220	A	A	220	290	300	
3	320	250	250	260	230	290	270	220	230	L	260	250	250 <sup>B</sup>	250	260	250	230	230	250	300	260	230	300	330	
4	300	260	250	250	220	220	270	230	240	240	270	250	270	270	300	260	240	220	240	240	270	270	320	330	
5	320	300	270	250	230	240	300	230	250	250	260	290	280	260	250	240	240	220	(240) <sup>C</sup>	270	280	270	270	350	
6	320	300	270	250	210	210	310	220	230	260	250	270 <sup>B</sup>	270	260	260	250	240	220	200	220	250	250	300	300	
7	340	330	300	270	240	250	290	250	270	240	(260) <sup>B</sup>	280	270	270	260	250	240	220	230	250	240	290	260	300	
8	300	290	290	270	240	210	270	230	240	260	270	290	250	290	260	250	240	220	A	AF	270	270	300	M	
9	M	M	M	M	M	M	M	M	M	M	M	280	300	300	270	250	240	240	240	250	240	270	280	320	
10	340	280	270	240	210	220	300	220	240	260	250	300	260	280	260	240	240	240 <sup>A</sup>	210	240	250	280	290	340	
11	300	280	260	250	210	220	370	240	270	240	250	300	260	280	260	250	240	220 <sup>A</sup>	240	(300) <sup>A</sup>	250	260	300	310	
12	270	250	240	250	240	240	250	250	250	250	280	260	340	260	270	260	250	220	230	270	230	300	300	310	
13	300	260	250	240	200	360	320	230	240	270	310	270	280	260	270	240	240	220	210	250	250	(280) <sup>A</sup>	320	340	
14	310	270	270	260	220	260	300	230	270	260	300	250	260	300	250	250	240	220	250	250	250	280	270	320	
15	270	250	270	280	230	250	250	250	250	260	280	B	B	B	250	260	250	220	220	260	260	250	270	250	
16	C	C	C	260	210	(320) <sup>A</sup>	300	230	250	B	B	300	250	M	M	240	230	230	250	250	240	230	270	280	
17	310	270	260	290	280	250	260	230	250	310	280	250	280	270	250	270	250	230	240	260	260	310	280	260	
18	300	270	280	290	230	C	C	C	C	250	250	270	280	B	B	B	B	B	240	240	250	250	270	280	
19	270	250	250	280	220	220	250	250	230	250	270	290	(280) <sup>B</sup>	270	270	260	250	280	230	250	250	260	300	300	
20	290	250	250	280	220	260	230	230	B	C	C	C	C	C	250	250	250	230	220	260	250	260	260	300	
21	290	290	280	270	230	(240) <sup>M</sup>	250	(240) <sup>C</sup>	240	260	270	270 <sup>H</sup>	280	300	300	270	(240) <sup>C</sup>	230	230	250	260	250	260	300	
22	300	290	280	270	270	210	220	230	C	C	C	C	280	280	270	250	260	230	210	220	270	280	270	310	
23	290	250	250	250	270	280	220	230	230	240	280	250	270	300	270	250	250	230	230	240	270	300	350	280	
24	290	260	290	230	230	260	240	240	250	250	260	300 <sup>H</sup>	(270)	240	250	240	230	230	230	240	250	220	310	280	
25	260	230	250	280	260	290	240	240	240	280	310	270	260	290	260	260	250	240	220	260	300	250	250	320	
26	310 <sup>A</sup>	300	290	250	270	290	260	240	240	240	250	280	260	270	270	260	240	230	210	260	250	210	330	290	
27	330 <sup>A</sup>	290	(290) <sup>A</sup>	290	300	290	290	240	240	250	300	250	260	300	260	240	250	240	250	240	240	240	290	250	300
28	310	270	290	300	250	250	250	250	260	280	280	260	250	260	250	270	270	270	210	210	260	260	320	320	
29																									
30																									
31																									
Mean Value	310	270	270	260	240	260	270	240	230	260	270	270	270	270	260	250	240	230	230	250	260	260	290	300	
Median Value	300	270	270	260	230	250	270	230	240	250	270	270	270	270	260	250	240	230	230	250	250	260	280	300	
Count	26	26	25	26	26	26	26	26	24	23	24	25	25	25	26	27	27	27	27	26	27	28	28	27	

Group 1.0 Mc to 1.722 Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

foF1

Feb. 1953

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	4.0 <sup>L</sup>	[4.0] <sup>L</sup>	4.0 <sup>L</sup>	A	A	C	A								
2								Q	Q	L	3.8 <sup>L</sup>	4.1	4.3	4.1	3.8 <sup>L</sup>	L	L								
3								Q	Q	L	T	4.3	4.2	4.0	4.0 <sup>L</sup>	L	Q								
4								Q	Q	A	4.3 <sup>L</sup>	4.3 <sup>L</sup>	B	B	4.3 <sup>B</sup>	L	Q								
5								Q	Q	4.0 <sup>L</sup>	3.8	4.3	4.4	[4.3] <sup>B</sup>	4.2	3.7 <sup>L</sup>	L								
6								Q	Q	L	B	B	L	Q	4.2	A	Q								
7								Q	3.2 <sup>L</sup>	L	L	4.4 <sup>H</sup>	4.5	[4.4] <sup>A</sup>	4.4 <sup>B</sup>	3.8	Q								
8								Q	Q	3.3 <sup>B</sup>	3.7 <sup>L</sup>	[4.1] <sup>B</sup>	4.5 <sup>B</sup>	4.1	4.1	4.0	A								
9								M	M	M	M	4.2	4.2	[4.2] <sup>B</sup>	4.2 <sup>L</sup>	Q	A								
10								Q	A	4.0 <sup>L</sup>	4.2	[4.1] <sup>L</sup>	4.0 <sup>B</sup>	[4.0] <sup>A</sup>	4.0	[3.5] <sup>L</sup>	3.0								
11								Q	3.5 <sup>L</sup>	Q	3.8	4.2 <sup>B</sup>	[4.2] <sup>B</sup>	4.2	4.0 <sup>L</sup>	3.3	A								
12								Q	Q	3.8 <sup>L</sup>	4.1	4.4	4.9	4.4	4.3	3.7	L								
13								Q	Q	L	4.3	4.3	4.4 <sup>B</sup>	4.4	4.0	L	Q								
14								Q	3.9	3.7 <sup>L</sup>	3.9	4.2	4.3 <sup>B</sup>	(4.0) <sup>B</sup>	4.0 <sup>L</sup>	3.9 <sup>L</sup>	3.0 <sup>L</sup>								
15								Q	3.0 <sup>L</sup>	L	B	B	B	B	4.1 <sup>L</sup>	3.7 <sup>L</sup>	Q								
16								Q	Q	B	4.2 <sup>B</sup>	4.2	4.4	M	M	3.3	3.0								
17								Q	L	L	4.5	4.5 <sup>B</sup>	4.4 <sup>B</sup>	4.1	4.1	3.7	Q								
18								C	C	4.0 <sup>L</sup>	4.2	4.0	B	B	B	B	B								
19								Q	3.3	4.0 <sup>B</sup>	4.1	4.1	[4.0] <sup>B</sup>	3.9	[3.8] <sup>L</sup>	3.8	Q								
20								Q	Q	C	C	C	C	C	3.9	3.6	C								
21								C	C	C	4.2	4.1	4.1	[4.2] <sup>T</sup>	4.2	3.9	C								
22								Q	C	C	C	C	C	4.1	3.8	3.6	3.3 <sup>L</sup>								
23								Q	3.2	3.6	3.5	4.0	4.1	4.2 <sup>L</sup>	4.2	4.0 <sup>L</sup>	3.1 <sup>L</sup>								
24								Q	L	3.9 <sup>L</sup>	4.1 <sup>L</sup>	4.2	[4.2] <sup>T</sup>	4.2	4.0	3.7	Q								
25								Q	3.5 <sup>L</sup>	4.0 <sup>L</sup>	4.2	4.1	4.3	4.3	4.0	3.6 <sup>L</sup>	3.2								
26								Q	L	3.7	4.0	4.3 <sup>L</sup>	4.3	4.4	4.0	3.6 <sup>L</sup>	Q								
27								Q	L	4.1	4.5	4.2 <sup>A</sup>	4.2	4.2	4.2	3.7	3.5								
28								Q	3.7 <sup>L</sup>	4.0 <sup>L</sup>	4.2	4.1	4.2	4.2 <sup>L</sup>	[4.0] <sup>L</sup>	3.8 <sup>L</sup>	3.5 <sup>L</sup>								
29																									
30																									
31																									
Mean Value									3.4	3.9	4.1	4.2	4.3	4.2	4.1	3.7	3.2								
Median Value								3.4	4.0	4.1	4.2	4.2	4.2	4.2	4.0	3.7	3.2								
Count								8	13	21	24	22	21	25	20	20	8								

foF1

Sweep 1.0 Mc to 17.2 Mc in 2 min  Manual  Automatic

K4



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 39.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

135° E Mean Time

**Feb. 1953**

**R'F1**

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

Group 1.0 Mc to 17.2 Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 28.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

f<sub>o</sub>E

Feb. 1953

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								B	2.3	2.6	2.9	3.0	3.2	3.2	3.0 <sup>A</sup>	[2.6] <sup>C</sup>	2.2 <sup>A</sup>							
2								B	A	2.5	2.8	3.0	[3.0] <sup>A</sup>	3.0	3.0	2.3 <sup>A</sup>	2.0 <sup>A</sup>							
3								2.0	2.5 <sup>A</sup>	A	A	3.0	[3.1] <sup>A</sup>	3.2	3.0 <sup>B</sup>	2.6 <sup>H</sup>	2.2 <sup>H</sup>							
4								B	2.2	2.5	A	A	A	3.2	3.0	2.7	A							
5								B	2.6 <sup>F</sup>	2.7	3.2	3.1	3.2	3.0	2.9	2.7	2.4							
6								B	2.4 <sup>F</sup>	2.3	2.8 <sup>A</sup>	[2.9] <sup>A</sup>	3.0	3.2	3.0	2.7	2.0							
7								2.0	2.2	2.8 <sup>A</sup>	2.8	3.0	[3.1] <sup>A</sup>	3.2	2.9	2.5	2.1							
8								B	2.2	2.7	2.8	3.1 <sup>B</sup>	3.3	3.2	3.2	3.2 <sup>B</sup>	2.4							
9								M	M	M	M	3.0	3.0	2.9	2.9	2.8	2.4							
10								B	A	2.5	3.0	[3.0] <sup>A</sup>	3.0	[3.0] <sup>A</sup>	3.0	[2.6] <sup>A</sup>	2.2							
11								1.9	2.5	A	A	A	A	3.3	[2.8] <sup>A</sup>	2.4	2.2							
12								B	A	2.5	2.8	3.0	2.8	3.1	2.7	2.6	2.0							
13								B	2.5	2.6	[2.8] <sup>A</sup>	3.1	3.1	3.3	3.2	2.5	2.1							
14								1.7	2.3	2.4	2.7	3.0	3.3	[3.2] <sup>A</sup>	3.0	2.5	2.1							
15								1.7	2.4	2.5 <sup>A</sup>	2.9	3.0	3.2	B	A	2.6	A							
16								A	A	2.7	3.0	3.1	3.0	M	M	2.6	2.4							
17								1.9	[2.3] <sup>A</sup>	2.7	A	A	A	3.0	[2.8] <sup>A</sup>	2.7	A							
18								C	2.3	2.7	2.8	2.9	3.0	B	B	B	B							
19								B	2.1	2.6	2.8	3.0	3.1	3.0	2.9	2.7	2.2 <sup>A</sup>							
20								B	2.2	2.5	2.7 <sup>B</sup>	C	C	C	2.9	2.7	2.4							
21								C	B	C	A	3.2	3.1	[3.0] <sup>T</sup>	3.0	2.7	2.3							
22								2.1	C	C	C	C	C	C	C	2.7	2.4							
23								1.7	2.3	2.6	2.9	2.8	C	C	2.9	2.7	2.3							
24								1.8	2.2	2.6	2.8	2.8	[2.8] <sup>T</sup>	2.8	A	A	2.3							
25								1.8	2.3	2.6	2.7	3.2	3.1	3.0	(3.0) <sup>B</sup>	2.5	2.2							
26								2.0	2.2	A	A	A	A	3.0	[2.8] <sup>A</sup>	2.6	2.3							
27								B	2.3	2.7	2.9	[3.0] <sup>A</sup>	3.0	3.0	3.0	2.8	A							
28								A	2.0 <sup>A</sup>	2.6 <sup>F</sup>	2.9	2.9	2.9	3.0	2.9	2.7	2.4 <sup>F</sup>							
29																								
30																								
31																								
Mean Value								1.9	2.3	2.6	2.9	3.0	3.1	3.1	3.0	2.6	2.2							
Minimum Value								1.8	2.3	2.6	2.8	3.0	3.1	3.0	3.0	2.6	2.2							
Count								11	21	22	20	22	21	22	23	26	23							

f<sub>o</sub>E

Group 1.0 Mc to 1.7 Mc in 2 min  Manual  Automatic

K 6

The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 36° 42.4' N  
Long. 139° 28.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

**AE**

**Feb. 1953**

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2								B	140	120	120	120	120	120	120	(120) <sup>C</sup>	120							
3								B	A	120	120	120	(120) <sup>A</sup>	120	120	120	130	110						
4								130	120	A	A	120	(120) <sup>A</sup>	120	110	110	120							
5								140	130	120	A	A	A	120	110	110	A							
6								B	120	120	110	120	120	110	120	120	130							
7								B	130	120	120	(120) <sup>A</sup>	110	110	120	120	130							
8								150	120	(120) <sup>A</sup>	120	110	(110) <sup>A</sup>	100	100	130	130							
9								B	130	120	120	120	120	120	120	120	120							
10								M	M	M	M	120	120	120	120	120	130							
11								B	A	110	120	(120) <sup>A</sup>	110	(110) <sup>A</sup>	110	(120) <sup>A</sup>	130							
12								B	110 <sup>A</sup>	A	A	A	A	120	(120) <sup>A</sup>	120	120							
13								B	A	120	120	110	120	120	120	120	130							
14								B	130	110	(110) <sup>A</sup>	110	110	110	120	120	120							
15								B	130	120	110	110	120	(120) <sup>A</sup>	120	110	130							
16								150	130	120	110	110	110	110	(120) <sup>A</sup>	120	A							
17								A	A	120	120	110	110	M	M	130	130 <sup>A</sup>							
18								120	(120) <sup>A</sup>	120	A	A	A	A	A	A	A							
19								C	130	110	120	110	110	B	B	B	B							
20								B	120	110	110	110	100	100	110	130	120							
21								B	120	110	120	110	C	C	120	120	120							
22								C	B	C	A	110	110	(110) <sup>A</sup>	110	120	130							
23								B	C	C	C	C	C	C	C	120	120							
24								160	120	120	110	110	C	C	120	120	120							
25								150	110	120	110	(110) <sup>A</sup>	(110) <sup>A</sup>	110	A	A	120							
26								140	110	110	110	110	110	120	120	120	120							
27								120	120	A	A	A	A	110	(120) <sup>A</sup>	120	120							
28								B	120	110	120	(120) <sup>A</sup>	110	110	110	110	A							
29								A	A	120	110	120	110	100	120	110	120							
30																								
31																								
Mean Value								140	120	120	120	110	110	110	170	170	170							
Median Value								140	120	120	120	110	110	110	120	120	120							
Count								9	20	22	20	23	21	23	23	25	23							

Sweep 1.0 Mc to 7.2 Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

**Kokubunji Tokyo**  
Lat. 35° 42.4' N  
Long. 139° 28.3' E

**IONOSPHERIC DATA**

**Feb. 1953**

**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	2.2	1.5	E	2.5	2.5	E	E	2.3	3.2	3.3	3.5	G	G	5.0	6.0	C	5.0	3.7	4.2	2.8	2.5	2.4	2.4	E	
2	E	E	C	C	C	E	E	2.3	3.2	3.0	G	G	3.6	3.8	3.5	3.3	3.0	3.3	2.6	3.2	2.6	2.5	2.5	E	
3	E	E	E	E	E	E	E	2.5	4.0	3.4	3.0	G	3.9	G	G	3.2	2.5	2.6	E	E	E	E	E	E	
4	E	2.5	E	E	E	E	E	G	2.9	3.5	3.5	4.5	3.6	G	3.3	G	2.6	2.6	3.0	2.6	E	2.5	2.3	E	
5	2.5	2.3	E	E	E	E	E	2.4	G	3.2	3.3	G	G	4.0	3.5	G	2.8	2.3	C	E	E	E	E	E	
6	E	E	2.5	E	E	E	E	B	2.9	3.5	3.5	3.5	G	G	4.2	4.2	3.5	3.2	2.6	2.3	2.2	E	2.2	E	
7	E	E	2.3	E	E	E	E	G	G	3.0	G	3.2	3.6	6.0	G	3.0	2.4	2.6	E	2.2	E	E	E	E	
8	2.1	E	2.0	E	E	E	E	2.5	G	G	G	G	G	G	3.6	3.7	3.1	2.9	6.5	3.6	F	4.4	2.5	M	
9	M	M	M	M	M	M	M	M	M	M	M	G	G	G	4.0	G	4.0	4.0	3.5	E	E	E	E	E	
10	2.5	E	2.5	E	E	E	E	B	3.8	4.0	G	3.0	G	4.0	4.0	3.0	2.8	3.7	2.6	E	2.4	2.7	2.0	E	
11	E	E	E	E	E	E	E	2.0	3.2	3.5	3.8	3.9	4.0	G	3.2	3.2	3.8	4.0	3.6	3.0	E	E	2.6	2.2	
12	2.5	E	E	E	E	E	E	G	3.1	3.2	3.7	4.0	4.5	G	4.0	3.5	3.2	2.5	E	E	2.3	2.3	2.3	E	
13	E	E	2.5	E	E	E	E	G	2.5	G	3.6	3.6	G	G	G	3.4	3.2	2.6	E	E	2.7	3.5	2.6	2.6	
14	3.3	2.5	2.6	2.6	2.5	2.6	2.6	2.4	3.7	4.3	4.0	G	G	4.0	3.5	3.3	2.7	2.6	2.3	2.3	2.0	2.2	2.5	2.5	
15	E	E	E	E	E	E	E	2.5	3.0	3.2	G	G	G	G	3.6	G	3.0	2.7	2.5	2.5	E	E	E	2.7	
16	C	C	C	2.5	4.0	3.2	2.5	3.0	3.2	G	G	G	3.7	M	M	G	3.2	3.2	3.2	2.6	2.5	2.5	2.5	2.5	
17	E	E	E	E	E	E	E	G	2.6	3.2	4.0	5.5	6.0	G	3.8	3.9	2.6	2.9	3.0	2.5	2.7	2.5	E	E	
18	E	E	2.5	E	E	C	C	C	C	G	G	G	3.6	B	B	B	B	3.0	3.0	2.8	2.7	2.5	E	E	
19	2.8	E	E	E	E	E	E	B	2.9	G	G	G	G	G	G	3.1	4.1	4.1	3.2	3.5	2.7	2.5	2.4	2.5	
20	E	E	E	E	E	E	E	2.5	2.6	G	C	C	C	C	3.2	3.2	G	2.6	2.9	2.8	2.3	E	E	E	
21	E	E	E	2.5	2.6	2.3	2.3	C	G	C	4.0	G	G	T	G	G	G	2.7	2.4	E	E	E	E	E	
22	E	2.4	2.4	E	E	E	E	2.5	C	C	C	C	C	C	C	C	G	2.6	2.6	2.6	2.5	E	E	2.5	
23	2.9	E	1.3	2.5	2.5	E	E	2.8	G	G	G	G	C	C	G	G	3.0	2.5	2.4	E	5.0	4.0	4.9	2.5	
24	3.7	2.3	E	E	E	E	2.4	2.3	G	G	5.5	G	T	3.7	3.6	3.2	G	2.5	2.3	2.6	2.3	2.5	3.3	E	
25	E	1.7	2.0	2.4	E	E	E	G	3.6	3.6	5.5	G	G	G	G	G	3.2	2.7	2.5	2.7	2.5	4.3	2.5	3.2	
26	3.2	3.2	2.9	2.3	E	E	E	2.6	G	4.3	4.6	4.7	4.3	4.0	4.0	3.4	3.3	2.9	2.0	2.1	2.0	2.0	E	3.2	
27	2.8	2.5	3.7	2.9	2.6	2.0	C	2.8	G	G	G	4.8	G	G	G	G	3.8	2.8	2.5	2.5	2.0	2.4	2.7	2.5	
28	4.0	2.6	3.0	2.5	2.5	E	E	2.6	3.0	3.0	G	G	G	G	G	G	3.1	2.5	E	E	2.4	2.5	E	2.0	
29																									
30																									
31																									
Mean Value	2.9	2.4	2.5	2.5	2.5	2.5	2.4	2.5	3.1	3.4	3.8	4.1	4.1	4.3	3.8	3.4	3.2	2.9	3.0	2.7	2.5	2.8	2.6	2.6	
Median Value	E	E	1.3	E	E	E	E	2.4	2.9	3.2	3.0	G	G	G	3.5	3.0	3.0	2.7	2.6	2.5	2.3	2.4	2.2	2.5	
Count	2.6	2.6	2.5	2.6	2.6	2.6	2.5	2.2	2.5	2.5	2.5	2.6	2.4	2.2	2.5	2.6	2.7	2.8	2.7	2.8	2.8	2.8	2.8	2.7	

**fEs**

Swgp. I.O. Mc to 17.2. Mc in 2 min

Manual

Automatic



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 29.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

135° E Mean Time

(M3000)F2

Feb. 1953

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	3.2 <sup>F</sup> [3.2] <sup>F</sup>	3.1 <sup>F</sup> [3.1] <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>	3.1 <sup>F</sup>
2	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
3	2.9 <sup>F</sup> [3.0] <sup>B</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
4	2.9 <sup>F</sup> [3.0] <sup>B</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
5	2.8 <sup>F</sup> [2.8] <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>
6	2.8 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>	2.6 <sup>F</sup>
7	2.8 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>
8	2.8 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>
9	2.8 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>
10	2.8 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>
11	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>
12	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>
13	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>
14	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
15	3.1 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
16	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
17	2.9 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
18	2.8 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
19	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
20	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
21	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
22	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
23	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
24	2.8 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>
25	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>	2.7 <sup>F</sup>
26	2.9 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.8 <sup>F</sup>
27	2.9 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>	3.0 <sup>F</sup>
28	2.8 <sup>F</sup>	2.8 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>	2.9 <sup>F</sup>
29																								
30																								
31																								
Mean Value	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Median Value	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Count	19	23	20	21	19	25	24	16	18	17	19	18	13	15	23	26	27	23	25	24	25	25	24	20

Swing 1.0 Mc to 17.2 Mc in 2 min  Manual  Automatic

**IONOSPHERIC DATA**

135° E Mean Time

f min F

Feb. 1953

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	1.2	E	1.0	1.4	E	1.7	1.7	2.3	3.3	3.3	3.3	3.6	4.3 <sup>A</sup>	3.3	[2.8] <sup>C</sup>	2.3	[2.9] <sup>A</sup>	3.5 <sup>A</sup>	3.2 <sup>A</sup>	1.5	1.7	1.7	1.6	
2	1.7	E	C	C	C	E	1.7	1.8	2.6	2.7	3.1	3.4	3.3	3.3	3.1	[2.8] <sup>A</sup>	2.5	2.0	1.6	A	1.8	1.8	1.8	1.9	
3	1.6	1.0	E	E	E	E	1.7	2.0	2.5	3.1	3.5	3.2	3.3	3.6	3.5	3.0	2.8	1.8	1.7	1.7	1.8	1.8	1.8	1.8	
4	1.6	1.8	E	E	E	E	1.1	1.8	2.6	3.3	3.3	3.5	3.5	4.5	3.3	3.0	2.3	1.7	1.7	1.9	1.7	1.6	1.7	1.7	
5	1.6	1.2	E	E	E	E	1.7	1.8	2.7	2.7	3.3	3.3	3.3	4.8	3.3	2.8	2.4	1.8	[1.8] <sup>C</sup>	1.7	1.7	1.7	1.6	1.7	
6	1.6	E	E	E	E	E	1.7	1.7	2.9	3.3	3.2	3.4	3.3	3.6	3.3	3.5	3.1	2.7	1.7	1.6	1.7	1.7	1.6	1.7	
7	1.6	E	E	E	E	E	1.7	2.0	2.5	3.3	3.4	3.5	4.4	5.4 <sup>A</sup>	3.5	2.9	2.6	1.8	1.6	1.7	1.7	1.7	1.7	1.7	
8	1.6	E	E	E	1.4	E	1.7	1.8	2.8	2.8	2.9	3.3	3.8	3.2	3.5	3.4	3.0 <sup>A</sup>	2.2	A	AF	1.7	1.8	1.7	M	
9	M	M	M	M	M	M	M	M	M	M	M	3.6	3.3	4.8	3.5	3.1	3.3 <sup>A</sup>	A	A	1.8	1.7	1.6	1.6	1.7	
10	1.7	1.4	1.2	E	E	1.0	1.7	1.9	3.0 <sup>F</sup>	3.1	3.1	3.2	3.6	3.5 <sup>A</sup>	3.4	3.0	2.4	[2.0] <sup>A</sup>	1.7	1.7	1.6	1.7	1.6	1.7	
11	1.7	1.3	E	E	E	E	2.0	1.9	2.8	3.0	3.3	3.5	4.5	3.3	3.3	2.7	3.3 <sup>A</sup>	2.3 <sup>A</sup>	2.8 <sup>A</sup>	[2.2] <sup>A</sup>	1.7	1.6	1.8	1.8	
12	1.7	1.2	E	E	E	E	1.7	2.0	2.7	2.8	3.0	3.4	3.4	3.4	3.3	2.8	2.4	1.8	1.7	1.6	1.8	1.8	1.8	1.7	
13	1.5	E	E	E	E	E	1.6	2.2	2.8	3.0	3.4	3.5	3.4	3.5	3.3	3.0	1.8	2.0	1.8	1.7	1.8	[1.8] <sup>A</sup>	1.7	1.8	
14	1.7	1.2	1.6	1.5	[1.4] <sup>A</sup>	1.3	1.7	1.9	2.9 <sup>A</sup>	3.5 <sup>A</sup>	3.3	3.5	3.3	3.3	3.3	3.0	3.4	1.9	1.6	1.6	1.6	1.6	1.7	1.7	
15	1.6	E	E	E	E	E	1.6	1.9	2.9	2.8	5.0	[4.5] <sup>B</sup>	4.0	3.5	3.5	2.7	2.7	2.0 <sup>A</sup>	1.6	1.6	1.7	1.6	1.6	1.0	
16	C	C	C	1.6	1.3	2.0 <sup>A</sup>	1.6	2.2	2.7	2.7	3.5	3.1	3.3	M	M	2.7	2.4	2.2 <sup>A</sup>	1.8	1.8	1.9	1.7	1.7	1.9	
17	1.9	E	E	E	E	E	1.7	2.0	2.4	3.1	3.3	3.5	3.7	3.3	3.3	3.0	2.7	1.8	1.8	1.8	1.9	1.9	1.9	1.9	
18	1.9	1.2	1.9	1.8	E	C	C	C	C	3.5	3.3	3.5	3.5	B	B	B	B	2.2 <sup>A</sup>	1.9	1.7	1.7	1.7	1.7	2.0 <sup>A</sup>	
19	1.7	1.2	E	E	1.0	1.2	1.0	1.5 <sup>F</sup>	2.1	2.5	2.8	3.0	3.3	3.3	3.3	2.8	2.3	3.3 <sup>A</sup>	[2.7] <sup>A</sup>	1.9	1.8	1.7	1.6	1.8	
20	1.7	1.0	E	E	1.0	1.0	E	1.8	2.1	[2.6] <sup>B</sup>	3.2	C	C	C	C	2.8	3.8	1.9	2.2 <sup>A</sup>	2.2 <sup>A</sup>	1.9	1.8	1.8	1.8	
21	1.3	1.1	1.3	1.3	1.4	[1.6] <sup>A</sup>	1.9	[2.6] <sup>C</sup>	3.3	[3.2] <sup>C</sup>	3.2	3.3	3.2	[3.3] <sup>T</sup>	3.4	3.2	2.4	1.9	1.9	1.9	2.2	2.2	2.2	1.9	
22	1.4	1.9	1.9	1.3	2.2	E	E	2.2	C	C	C	C	C	C	3.3	2.8	2.4	1.8	1.6	1.6	1.6	1.6	1.6	1.6	
23	1.7	E	E	E	E	E	1.6	2.1	2.5	2.8	3.3	3.4	[3.4] <sup>S</sup>	3.5	3.0	3.0	2.3	1.7	1.5	1.5	3.6 <sup>A</sup>	3.0 <sup>A</sup>	2.5 <sup>A</sup>	1.5	
24	1.7	E	E	E	E	E	1.5	1.8	2.4	2.8	3.0	3.0	[3.2] <sup>T</sup>	3.4	3.0	2.8	2.6	2.0 <sup>A</sup>	1.5	1.7	1.6	1.7	1.8	1.5	
25	1.4	E	E	E	E	E	1.5	2.1	2.5	2.8	4.0 <sup>A</sup>	3.3	3.3	3.3	3.3	2.8	2.6	2.0 <sup>A</sup>	1.8	1.9	1.5	1.5	1.5	1.7	
26	[1.5] <sup>A</sup>	1.3	E	E	E	E	1.5	2.0	2.2	2.8	3.5	3.4	3.4	3.3	3.4	2.8	2.3	2.0 <sup>A</sup>	1.5	1.5	1.6	1.6	1.6	1.7	
27	1.8	1.5	3.2 <sup>A</sup>	2.0	2.1	1.5	1.7	2.5	3.0	3.3	3.5	4.2 <sup>A</sup>	3.5	3.7	3.5 <sup>B</sup>	2.8	2.3	2.2 <sup>A</sup>	1.8	1.7	1.7	1.5	1.5	1.7	
28	2.2	1.3	1.7	E	1.4	1.3	1.5	2.3	2.8	3.1	3.3	3.5	3.3	3.5	3.0	3.0	2.9	2.1 <sup>A</sup>	1.6	1.6	1.6	1.7	1.5	1.6	
29																									
30																									
31																									
Mean	1.7	1.3	1.7	1.4	1.5	1.4	1.7	2.0	2.7	3.0	3.3	3.5	3.5	3.7	3.3	2.9	2.6	2.1	1.9	1.8	1.8	1.8	1.7	1.7	
Max	1.7	1.2	E	E	E	E	1.7	2.0	2.7	3.0	3.3	3.4	3.4	3.5	3.3	2.8	2.4	2.0	1.7	1.7	1.7	1.7	1.7	1.7	
Min	1.7	1.2	E	E	E	E	1.7	2.0	2.7	3.0	3.3	3.4	3.4	3.5	3.3	2.8	2.4	2.0	1.7	1.7	1.7	1.7	1.7	1.7	
Count	26	26	25	26	26	26	26	26	25	26	25	26	26	26	26	27	27	27	26	26	27	28	28	27	

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 28.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

f<sub>min</sub>E

Feb. 1953

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	1.4	E	E	E	E	E	1.9	1.7	1.5	1.7	1.8	1.8	1.7	1.7	(1.6) <sup>C</sup>	1.5	1.5	1.7	1.5	1.7	1.5	1.7	1.7	E	
2	E	E	C	C	C	E	E	2.0	1.7	1.7	1.7	1.7	1.9	1.9	1.7	1.5	1.6	1.7	1.6	1.6	1.7	1.7	1.8	1.6	E	
3	E	E	E	E	E	E	M	1.6	1.6	1.6	1.7	1.7	1.8	1.7	1.6	1.6	1.6	1.6	E	E	E	E	E	1.9	E	
4	E	2.2	E	E	E	E	E	1.8	1.6	1.7	1.7	1.7	1.9	1.7	1.7	1.7	1.7	1.9	1.6	1.6	1.7	1.7	1.6	1.7	E	
5	1.7	E	E	E	E	2.0	E	2.0	1.6	1.3	1.7	1.5	1.7	1.6	1.7	1.6	1.6	1.8	C	E	E	E	E	E	E	
6	E	E	2.0	E	E	E	E	E	1.6	1.6	1.7	1.9	1.8	1.6	1.7	1.6	1.6	1.6	1.6	1.8	1.6	E	E	E	E	
7	E	E	1.9	E	E	E	2.0	1.7	1.7	1.6	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.8	E	1.9	E	E	E	E	E	
8	1.6	E	E	E	E	E	E	2.1	1.6	1.7	1.6	1.8	1.7	1.9	1.7	1.8	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	M	
9	M	M	M	M	M	M	M	M	M	M	M	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	E	E	E	E	1.7	E	
10	1.6	E	E	E	E	E	E	E	1.4	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.7	E	1.9	1.7	1.7	E	E	
11	E	E	E	E	E	E	E	1.6	1.7	1.7	1.7	1.9	1.8	1.8	1.7	1.8	1.6	1.6	1.6	1.6	1.6	E	E	1.7	1.8	
12	1.5	E	E	E	E	2.0	E	E	1.6	1.6	1.6	1.7	1.8	1.7	1.7	1.6	1.6	1.8	E	E	2.0	1.7	1.7	E	E	
13	E	E	E	E	E	E	E	1.6	1.7	1.6	1.7	1.7	1.6	1.7	1.7	1.7	1.7	2.0	E	E	1.6	1.5	1.7	1.6	E	
14	1.7	1.1	E	E	E	E	E	E	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.6	1.6	1.9	1.7	1.2	1.6	2.0	E	
15	E	E	E	E	E	E	E	E	1.6	1.9	1.6	1.7	1.9	1.9	2.0	1.9	1.7	1.9	2.0	1.7	E	E	E	E	E	
16	C	C	C	E	E	E	E	1.8	1.7	1.8	1.9	1.7	1.8	M	M	1.8	1.8	1.7	1.6	1.8	1.8	2.0	2.0	2.0	E	
17	E	E	E	E	E	E	E	1.8	1.8	1.7	1.7	1.8	1.6	1.6	1.6	1.6	1.8	1.6	1.8	1.8	1.8	1.9	E	E	E	
18	E	E	E	E	E	C	C	C	1.7	1.7	1.7	1.7	2.0	2.0	B	B	B	1.7	1.7	1.7	1.7	E	E	1.6	E	
19	1.8	E	E	E	E	E	E	1.8	1.3	1.6	1.6	1.7	1.7	1.7	1.6	1.6	1.7	1.2	1.7	1.6	2.2	1.8	1.9	1.9	E	
20	E	E	E	E	E	E	E	2.2	1.8	1.9	2.0	2.0	C	C	1.6	1.7	1.9	1.5	1.8	1.8	E	E	E	E	E	
21	E	E	E	1.0	E	1.3	E	C	2.2	(1.9) <sup>C</sup>	1.6	1.7	1.7	(1.6) <sup>1</sup>	1.6	1.7	2.0	1.5	1.9	E	E	E	E	E	E	
22	B	1.9	1.0	E	E	E	E	1.9	C	C	C	C	C	C	C	1.7	1.7	1.6	1.7	1.6	1.6	E	E	1.6	E	
23	1.6	E	E	E	E	E	E	1.6	1.8	2.0	1.7	1.8	C	C	1.6	1.4	1.7	2.0	1.9	E	1.5	1.5	1.6	1.5	E	
24	1.5	E	E	E	E	E	E	1.9	1.5	1.6	1.6	1.7	(1.7) <sup>1</sup>	1.7	1.7	1.6	1.6	1.6	1.8	1.7	1.8	1.8	1.5	E	E	
25	E	1.5	1.4	E	E	E	E	E	1.4	1.5	1.6	1.8	1.6	1.8	1.7	1.7	1.7	1.5	1.5	1.6	1.5	1.7	1.6	1.5	E	
26	1.3	E	E	E	E	E	E	1.4	1.6	1.2	1.7	1.7	1.6	1.7	1.7	1.7	1.6	1.5	1.8	1.7	1.7	1.5	E	1.5	E	
27	1.6	E	E	E	E	1.8	(1.8) <sup>C</sup>	1.7	1.7	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.7	1.5	1.8	1.7	1.0	1.5	1.6	1.7	E	
28	1.6	1.3	1.3	E	E	E	E	E	1.5	1.8	1.8	1.8	1.8	1.8	1.9	1.7	1.7	1.8	E	E	1.7	1.6	E	1.6	E	
29																										
30																										
31																										
Mean Value	1.6	1.6	1.5	1.0	1.7	1.6	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.7	1.7	
Median Value	E	E	E	E	E	E	E	E	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	
Count	26	26	25	26	26	26	25	23	26	26	26	27	25	24	25	27	27	28	27	28	28	28	28	28	27	

Sweep 1.0 Mc to 17.2 Mc in 2 min  Manual  Automatic

K 11

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 42.4' N  
Long. 139° 29.3' E

**Kokubunji Tokyo**

**IONOSPHERIC DATA**

YPF2

Feb. 1953

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	90F [80]F	80F [60]F	50F	50F	B	7.50	90	80P	110	[90]C	70	90P	90	(100)P	80	80	80	80	80	80	80	80	80	80	80
2	F 90	C 60	120F	70P	(60)B	90	70	(50)P	[60]B	60	70	80	80	80	80	80	80	80	80	80	80	80	80	80	80
3	100F	90P	80	70F	120F	70	100	90P	80P	40	T	B	50	[40]B	40	80	50P	(80)P	80	70	[70]B	70	80	80	60F
4	70	[70]B	70	60	70	70	70	B	B	50	80	80	B	B	50	70P	70P	(70)B	70P	60	90	(90)P	80	80	F
5	F 110P	[100]F	80	70P	80	70P	90	80	70P	80P	50	70	60	70P	90	60	80	110	[100]C	100P	80	70P	80P	80P	80P
6	70P	90P	90P	70	B	140	80	(70)P	B	B	60P	(50)P	B	B	60	80	60	80	80	110	120	100	90F	FB	
7	F	F	80	70	(80)F	90	90F	B	B	60	[60]B	60	B	B	30	50	30	50	60	80	[80]B	80P	90P	B	
8	BF	BF	BF	B	B	80	100	[80]B	(50)P	[60]P	70P	70P	B	B	100	(70)P	70	B	A	AF	60P	80	70	M	
9	M	M	M	M	M	M	M	M	M	M	M	(40)P	B	B	70	90	60	90	60P	90P	70P	50P	[50]B	50P	
10	[60]B	70P	B	B	60	80F	80	B	70	60	70	80	B	70	70	90	60	60	60	B	70	70	70	60	
11	90P	60	60	60P	50P	80	130	B	B	60	90	B	B	80P	[80]B	70	60	B	60	[60]A	70P	50P	B	B	
12	B	(50)P	60	50P	70	70	B	B	80P	50	60	60	40	(50)B	70	B	60	70	80	60	70	60	70P	M	
13	B	70	70	B	B	60	170	B	B	80P	B	B	B	B	(70)P	60	(70)B	60	80	B	A	60	80P	80P	
14	70P	70	70	90	100	80	110	B	B	B	B	B	B	40P	[60]B	80	70	80	(60)P	100P	(70)P	70	60P	80P	
15	70P	80	90P	100P	80P	80	100P	(80)P	90P	B	B	B	B	50P	70	50P	70	[80]B	80	100	(90)P	100	90	80	
16	C	C	C	80P	(60)P	100	80	B	(60)P	B	B	B	M	M	M	50	50	B	80	(90)P	(90)P	80	100P	60	
17	70	70P	80P	50	70	80	80	[60]B	50	70	(40)P	[40]B	50	[50]B	(50)P	70	70	(60)P	90	90	90	70	120	90	
18	90	70	90	80	50	C	C	C	C	B	70	60	C	B	B	B	B	B	90	70	70	80	80	100P	
19	(80)P	B	B	BF	BF	120	100	[80]B	70	60	70	50	80	80	100	90	80	70	70P	[80]B	90P	70P	100	80P	
20	80	70	80	100P	70	100	130	B	B	C	C	C	C	C	(70)P	50	[60]C	80	(60)B	80P	[100]C	110P	80P	90P	
21	[80]C	80	[80]C	80P	C	A	(80)P	[90]C	(100)P	[80]C	50	100M	100	60	80	50	[60]C	80	C	B	C	C	C	C	
22	C	(90)P	C	B	B	60	160	50	C	C	C	C	C	B	50	80P	50	70	70	50	70	110	90	(70)P	
23	80	60	70	80	70	80F	70P	50	70P	50P	70	C	50	90	(80)P	70	60	50	50	70P	70P	80	70	100	
24	100	100F	F	40	90	70	80	90	60	50	150	50M	[60]P	60	60	50	60	70	70	100	80	70	80	90	
25	70	70	100	70	70	70	120	80	50	50	70	40P	40P	B	50	80	90	40	80P	100	80	70F	70	80	
26	100	100P	60P	90	110	60	60P	40	50P	50	110M	60	50	60	70	70	90	110P	100	120	70	50	70	80	
27	70	70	[80]A	80	80	100	90	80	40	B	(60)P	B	B	B	B	70	60	50	90	70	80	100	100	90P	
28	80	100P	70	(60)P	F	90F	110	60	[60]B	60	80	90	80	120	90	90	60	120	100	80	120	110	70F	(120)P	
29																									
30																									
31																									
Mean Value	80	80	80	70	70	80	100	70	70	60	70	70	60	70	70	70	60	80	80	80	80	80	80	80	
Median Value	80	70	80	70	70	80	100	80	60	60	70	60	60	60	70	70	60	70	70	80	80	80	80	80	
Count	19	23	20	21	19	24	24	16	18	17	19	18	13	15	22	26	27	23	25	24	25	25	24	20	

YPF2

Sweep 1.0 Me to 17.2 Mc in 2 min

Manual  Automatic



IONOSPHERIC DATA

135° E Mean Time

Feb. 1953

foF2

Yamagawa

Lat. 31° 12.6' N  
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0	2.3	2.0	1.9	2.0	c	c	c	c	c	c	c	c	c	c	c	c	4.9J	(4.9)P	3.8	2.4	2.7	2.6	2.4
2	2.4	2.8	2.6	2.8	2.2	[2.2]c	2.1	2.9	T	T	8.0	[7.8]T	(7.5)P	6.8	6.1	6.1	T	T	4.3P	3.0	[2.8]c	2.6J	2.5	2.3
3	2.5	2.5	2.4J	2.6	2.3	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	[4.7]T	3.2H	3.0	2.5	2.6	2.6
5	(2.5)P	3.0	2.9J	S	4.0	2.2	2.4	3.0H	T	T	c	6.1	[1.8]T	11.5	12.4P	(12.0)P	9.1	T	T	2.9	2.9	2.8	2.6	2.8
6	2.8	2.9	3.0	3.1	3.5J	3.3P	1.8	2.9	4.6	T	T	6.2	6.3	7.3	9.5	6.9	6.0	[5.9]T	5.8P	3.3	2.8	2.4	2.6	2.5
7	2.5	2.7	2.9	3.1	3.3	2.5	2.5	3.0	T	T	5.4	6.1	6.3P	7.0	6.0	6.1	5.4	A	A	4	2.5	3.4	2.5	2.6
8	2.4	2.9	3.0	3.0	3.3	3.0	2.4	3.3	(4.0)P	T	T	6.3P	6.7	6.4	7.9J	7.3J	6.6	5.3	4.7	3.5	2.9	2.8	2.4	2.6
9	2.5	2.8	3.0	2.8	3.0	3.3	2.4	3.4	5.0	b2	[6.1]T	6.0	6.7	[6.6]P	7.2	7.2	T	T	4.5P	3.8	3.5	3.0	3.1	3.0
10	3.0	2.0	3.3	3.5	3.3	2.6	2.2	3.5	5.0	(5.1)P	T	T	6.9	7.9	(9.1)P	7.8P	S	T	T	3.4	3.6	3.0	2.9	3.0
11	[3.1]c	3.2	3.2	3.4	3.8	2.1	1.8	3.0	5.2	b0	b2	T	T	7.4J	[7.1]T	6.8	[5.3]c	3.8	2.9	4.2	4.4	3.8	3.4	3.1
12	3.1	3.5	3.5	F	F	c	2.3	3.6	6.4	c	S	7.4	c	c	c	6.4	5.5	4.3	[3.6]c	2.9	3.0	3.1	2.9	3.0P
13	3.0	3.2	3.4	3.5	4.0	[3.0]c	1.9	3.1	4.9	c	c	9.6P	9.6	(9.4)T	9.1	c	S	c	2.9	2.9	2.9	2.5	2.7	
14	2.7F	2.9	3.1	2.8P	c	c	1.8	3.2	4.9	[5.8]T	6.7	[6.9]T	7.1J	7.1J	9.2J	8.4P	6.3	[5.6]T	4.8P	3.4	(4.0)P	3.0	2.8	2.8
15	2.9	3.2	3.2	3.3	3.7	2.8	2.8	3.7	6.2P	7.4	7.5	7.9	9.4P	7.4P	8.5	7.5	6.5	5.1	4.2	2.7	2.9	3.1	2.7	3.0
16	3.1	3.2	c	c	c	c	1.4	3.4	(5.0)P	7.0	[8.0]T	8.9	10.6	T	T	(4.9)P	[5.2]c	5.4P	[5.2]T	4.9	3.5	3.4	2.5	2.5
17	2.8	2.9	3.1	3.1	3.4	3.0	3.0	3.6	5.2	6.4	8.1J	c	c	8.7	T	6.5	6.0J	(5.9)P	4.4	3.2	2.8	2.7	3.0	3.0
18	2.4	2.6	2.7	2.8	3.1	c	c	c	5.2	c	c	8.6	7.9	7.5	8.3	6.3P	T	M	M	3.2	2.8	3.0	3.0	2.5
19	2.5	2.8	2.7	2.9	3.2	2.8	2.5	4.0J	5.2	4.8J	[5.6]T	6.4J	[6.7]T	7.0	T	T	T	A	4.7	3.3	(3.1)P	3.2	2.9P	2.9
20	2.9	3.3P	2.8	2.7	2.9J	2.3	2.3	3.4	5.3P	c	T	T	(6.5)P	7.0	S	S	S	S	T	3.9P	2.5H	2.8	2.7	2.6
21	2.5	2.6	2.5	2.9	[2.6]c	2.4J	2.0	3.6	4.8	4.9P	[5.6]c	6.4	6.1J	[7.0]T	7.9	(8.5)P	[7.0]T	5.4	4.7	[4.4]T	4.0	[3.2]A	2.5	2.7P
22	2.9	3.0J	3.0F	3.0F	[3.0]F	3.1	2.4	3.8	4.6	5.0	[5.6]T	7.2	[7.7]S	8.2	T	6.8J	7.1	S	T	3.7	3.2	2.6	2.9	3.0
23	2.5F	2.6	2.8	2.8F	2.8F	2.9F	[3.3]T	3.7	c	c	7.0P	6.7	6.7	T	S	S	6.9	6.2J	[5.7]c	5.2	[4.2]c	3.2	[3.2]c	3.1
24	3.5	[3.4]A	(3.3)P	3.5	3.8	2.3	2.4	3.5	T	c	T	c	T	(10.3)P	7.3	[6.3]T	5.3	5.0	5.4	[4.0]T	2.6	3.3	3.1	3.3
25	3.4	3.6	2.5	2.5	2.8	c	c	c	c	T	T	T	7.2	8.0	c	T	5.8J	[6.2]c	6.7	T	T	T	2.4	[2.6]c
26	2.7	2.8	2.8	c	c	c	c	e	c	c	5.1	6.9	[8.2]T	9.4	[7.8]T	6.1	6.5	7.0	6.4	[5.9]S	5.4P	[4.0]c	2.5	2.8
27	3.0	3.5	2.4	2.6	2.9	2.8	2.7	3.8	T	T	7.0	10.4	9.0	8.0	c	c	c	c	4.9	[4.8]c	4.7	(4.3)P	4.0	2.7
28	2.9	3.1	A	c	T	S	2.5H	4.2J	b2	6.3	7.5	8.0	7.1	6.9	6.4J	6.8	S	S	4.2	4.2	2.7	3.0	3.0	[2.8]A
29																								
30																								
31																								
Mean	2.8	3.0	2.9	2.9	3.1	2.7	2.3	3.4	5.2	5.9	6.5	7.4	7.6	7.8	8.1	7.2	6.3	5.5	5.0	3.7	3.3	3.1	2.8	2.8
Median	2.9	2.9	2.9	2.9	3.1	2.8	2.4	3.4	5.0	6.0	6.2	7.0	7.2	7.4	7.9	6.8	6.3	5.4	4.8	3.5	3.0	3.0	2.7	2.8
Count	27	27	25	22	22	19	23	23	16	11	13	19	20	22	17	20	17	15	20	25	26	26	27	27



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

# IONOSPHERIC DATA

Feb. 1953

f<sub>o</sub>F<sub>2</sub>

135° E Mean Time

Yamagawa

Lat. 31° 12.6' N  
Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.50	2.90	2.50	3.40	2.60	C	C	C	C	C	C	C	C	C	C	C	C	(2.50)J	(2.50)P	2.30	2.50	3.50	2.70	3.30	
2	3.40	2.80	2.50	2.40	[2.80]C	3.00	2.80	2.80	T	T	(2.40)B	(3.00)T	(3.20)P	2.90	2.70	2.70	T	T	2.50P	[2.50]C	2.50	[2.50]J	2.60	3.00	
3	3.40F	3.00	(3.20)J	3.00	2.70	3.00	3.20	2.80	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	T	2.50H	2.70	2.80	2.90	3.40
5	(3.20)P	3.50	(3.00)J	S	2.50	3.00	3.00	2.80H	T	T	C	3.00	(3.00)T	2.40	2.90P	(2.50)J	2.50	T	T	3.00	2.90	2.90	3.00	3.00	3.50
6	3.30	3.40	3.00	3.20	(2.40)J	2.50P	[2.60]B	2.70	2.40	T	T	3.00	3.00	3.00	3.00	2.80	2.70	[2.40]T	2.20P	A	2.90	2.50	3.40	3.00	
7	3.30	3.40	3.40	3.20	2.50	3.00	3.00	2.60	T	T	2.70	2.70	3.30P	3.00	2.50	2.70	2.50	A	A	A	2.60	2.50	3.00	3.00	
8	3.30	3.20	3.40	3.00	2.80	2.50	3.20	2.70	(2.40)P	T	T	3.00P	T	2.50	(3.00)T	(3.00)J	2.80	2.30	2.30	2.70	[2.60]A	2.60	3.00	3.00	
9	3.40	3.50	3.10	3.20	2.80	2.30	3.20	2.50	2.70	[2.60]T	2.60	2.80	T	T	(2.80)P	2.60	T	T	2.50P	2.40	2.80	2.70	3.20	3.20	
10	3.50	3.40	3.20	2.90	2.50	2.70	3.30	2.50	(2.80)P	T	T	2.90	3.20	(2.70)J	2.60P	S	T	T	T	3.20	2.90	2.90	3.40	3.40	
11	[3.40]C	3.30	2.90	2.90	2.20	3.10	B	2.80	2.70	2.50	2.80	T	T	(2.60)T	[2.60]T	2.50	[2.40]C	2.40	2.90	3.40	2.70	2.80	3.00	3.00	
12	3.00	3.00	2.60	F	F	C	2.60	2.90	T	C	S	3.00	C	C	C	2.60	2.40	2.20	[2.60]C	3.00	3.00	3.10	3.00	3.20P	
13	3.30	3.30	3.00	2.70	2.30	C	B	2.60	2.70	C	C	2.80P	2.70	T	2.60	C	S	C	C	2.30	2.80	2.80	3.00	3.50	
14	3.00F	3.30	2.50	2.90P	C	C	B	2.60	2.50	T	2.80	T	(2.50)T	T	(2.90)J	2.50P	2.50	[2.50]T	2.50P	3.00	(3.00)P	2.50	3.00	3.50	
15	3.00	3.00	3.20	3.50	2.50	3.30	3.40	2.80	2.60P	2.50	2.80	2.40	2.80P	2.90P	2.80	2.70	2.70	[2.80]C	2.40	2.70	3.30	2.50	2.70	3.10	
16	3.00	3.00	C	C	C	C	3.00	2.80	(2.70)J	3.00	[3.20]T	3.30	2.50	T	(2.60)P	(2.60)P	[2.80]C	2.40P	T	2.90	2.70	2.60	2.70	3.00	
17	3.50	3.60	3.50	3.10	3.00	2.90	2.70	2.90	2.60	3.30	(2.90)J	C	3.00	T	(2.50)T	2.50	(2.50)J	(2.50)P	2.40	2.70	2.80	3.10	2.70	2.50	
18	3.40	3.40	3.10	3.20	2.80	C	C	C	C	C	C	2.70	2.50	3.10	2.80	2.70P	T	M	M	2.80	3.00	3.10	2.70	2.90	
19	3.30	3.40	3.20	3.20	2.70	2.90	(2.40)J	(2.40)J	2.30	(2.40)J	T	(2.80)T	3.10	T	T	T	T	A	2.30	2.50	(2.60)P	3.00	3.00P	3.00	
20	3.30	3.00P	2.90	3.30	(2.50)J	2.60	2.50	2.50P	2.50P	C	T	(2.80)P	3.00	S	S	S	S	S	T	2.30P	3.40H	3.00	2.70	2.80	
21	3.00	3.20	3.20	3.10	C	B	3.40	2.50	2.50	2.50P	[2.60]C	2.80	(2.70)T	T	2.90	(2.60)P	[2.60]T	2.50	2.50	[2.80]T	3.00	[3.00]A	3.10	3.20P	
22	3.10	(3.00)J	2.70	3.00F	[2.80]F	2.50	2.50	2.50	2.20	2.70	[2.80]T	2.80	S	2.90	T	(2.80)J	2.80	S	T	2.50	2.60	2.80	3.10	2.70	
23	3.30F	2.70	(3.00)F	4.00F	4.00F	3.00F	[2.80]T	2.50	C	C	2.70P	2.60	T	T	S	S	2.50	(2.50)T	[2.60]C	2.80	[2.80]C	2.90	[3.10]C	3.30	
24	3.50	[3.50]A	(3.50)P	2.80	2.30	3.30	3.30	2.70	T	C	T	C	(2.50)P	2.50	[2.50]T	2.50	2.50	2.60	[2.60]T	2.50	2.50	2.50	3.10	3.40	
25	3.30	3.00	2.50	3.50	3.00	C	C	C	C	T	T	T	2.90	2.90	C	T	(2.60)T	[2.60]C	2.50	T	T	T	2.50	[3.00]C	
26	3.50	3.50	2.80	C	C	C	C	C	C	C	U	2.80	T	2.70	[2.70]T	2.70	2.80	2.50	2.40	S	2.80P	[3.20]C	3.50	3.20	
27	3.50	2.80	2.40	2.90	2.90	3.20	2.90	2.70	T	T	2.80	2.60	2.50	3.20	C	C	C	C	2.40	[3.00]C	3.00	[2.90]P	2.50	3.30	
28	3.40	3.00	A	C	T	S	4.00H	(2.60)J	2.40	2.60	2.70	2.70	2.50	2.70	(3.30)J	2.90	S	S	2.40	2.50	3.00	3.10	2.90	[2.90]A	
29																									
30																									
31																									
Mean Value	3.30	3.20	3.00	3.10	2.70	2.90	3.00	2.70	2.50	2.70	2.80	2.80	2.70	2.90	2.80	2.70	2.60	2.50	2.50	2.50	2.70	2.80	2.90	3.00	3.10
Median Value	3.30	3.20	3.00	3.00	2.70	2.90	3.00	2.70	2.50	2.60	2.80	2.80	2.80	2.90	2.80	2.60	2.60	2.50	2.50	2.50	2.70	2.80	2.90	3.00	3.10
Count	27	27	25	22	21	17	20	23	15	10	11	18	18	19	17	20	16	14	18	23	26	26	27	27	

f<sub>o</sub>F<sub>2</sub>

Sweep 1.0 - Mc in 22.0 - Mc in 2 min  Manual  Automatic

Y 2

Lat. 31° 12.6' N  
Long. 130° 37.7' E  
**Yamagawa**

**IONOSPHERIC DATA**

135° E Mean Time

**f<sub>o</sub>F<sub>2</sub>**

**Feb. 1953**

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	230	250	230	320	250	C	C	C	C	C	C	C	C	C	C	C	C	230 <sup>A</sup>	220 <sup>A</sup>	210	240	290	270	300
2	310	260	230	230	250	260	240	280	240	260	240	280	240	300	280	270	260	230	210	210	(230) <sup>C</sup>	250	250	290
3	300 <sup>F</sup>	290	300	250	250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	280	270	250	240	200 <sup>A</sup>	210 <sup>H</sup>	220 <sup>A</sup>	230	250	320 <sup>A</sup>
5	300	300	300	280	230	250	300	230 <sup>M</sup>	220	250	(260) <sup>C</sup>	280	250	260	250	250	250	220	210	220	250	250	260	300
6	300	290	250	240	220	200	260	250	230	270	250	290	280	270	270	250	250	220	200	240 <sup>A</sup>	260	230	300	270
7	300	300	280	250	250	250	280	250	230	240	250	260	320	280	250	260	240	A	A	A	250	240	270	290
8	300	290	280	260	240	240	290	250	230	250	250	300	250	250	250	250	240	230	210	230	260	250	280	270
9	300	310	270	300	250	220 <sup>A</sup>	300	200 <sup>A</sup>	230	250	250	260	280	290	270	(240) <sup>A</sup>	240	230	230	200	240	250	280	310 <sup>B</sup>
10	300 <sup>A</sup>	300	300	250	230	240	300	230	230	280	280	270	280	280	250	240	250	220	210	270	240	260	290	300
11	(29) <sup>C</sup>	280	240	250	200	200	350	250	240	250	280	270	C	C	C	250	230	200	(220) <sup>C</sup>	240	250	240	290	
12	240	260	230	250 <sup>F</sup>	240	(240) <sup>C</sup>	240	250	240	230	(260) <sup>C</sup>	280	260	240	(240) <sup>C</sup>	240	240	C	C	210	240	280	320	
13	290	270	270	240	210	(260) <sup>C</sup>	320	250	240	290	(280) <sup>C</sup>	260	260	310	240	240	240	C	C	210	240	280	300	
14	300 <sup>F</sup>	300	250	250	C	C	310	230	240	290	280	280	250	300	280	250	240	230	200	250	250	280	300	
15	300	270	280	280	230	300	300	240	240	250	270	270	270	260	260	250	250	230	200	240	240	280	270	
16	260	270	C	C	C	C	290	240	240	300	310	310	250	240	240	260	250	250	220	220	240	240	250	
17	300	300	280	270	250	230	240	240	240	320	270	260	260	280	280	250	250	T	M	230	250	270	240	
18	260	300	270	280	240	C	C	C	C	C	C	250	250	310	280	250	250	A	A	220	250	270	250	
19	290	250	290	270	240	230	250	220	230	240	(240) <sup>C</sup>	280	270	300	270	250	270	250	220	220	250	260	270	
20	300	250	240	280	240	220	250	220	230	250	(240) <sup>C</sup>	280	270	320	280	250	250	240	230	200	210 <sup>H</sup>	250	240	
21	280	270	300	250	220	220	300	230	230	220	(240) <sup>C</sup>	280	270	270	280	250	250	240	230	(240) <sup>C</sup>	250	260	280	
22	300	270	250	250	280 <sup>F</sup>	220	250	230	230	220	(240) <sup>C</sup>	280	270	280	250	270	270	240	230	230	240	250	260	
23	300 <sup>F</sup>	250	250	270 <sup>F</sup>	300 <sup>F</sup>	260	220	210	230	C	C	260	250	330	290	250	250	240	(240) <sup>C</sup>	230	220	270	280	
24	300	(320) <sup>A</sup>	330 <sup>A</sup>	250	210	280	280	240	240	(240) <sup>C</sup>	280	(220) <sup>C</sup>	290	240	250	(260) <sup>C</sup>	250	250	(240) <sup>C</sup>	230	210	260	250	
25	290	250	210	310	270	C	C	C	C	250	290	280	280	280	(260) <sup>C</sup>	250	250	(240) <sup>C</sup>	220	210	260	270	280	
26	320	320	260	C	C	C	C	C	230	(280) <sup>C</sup>	270	280	300	260	250	270	280	250	220	270	230	(280) <sup>C</sup>	320	
27	300	240	210	290	250	300 <sup>A</sup>	250	250	240	270	280	250	300	280	C	C	C	C	290	(270) <sup>C</sup>	250	220	270	
28	300	280	A	C	270	200	320 <sup>H</sup>	240	230	250	260	250	250	270	300	280	S	S	220	200	230	270	250	
29																								
30																								
31																								
Mean Value	290	280	260	270	240	240	280	240	230	260	270	280	270	290	270	260	250	230	220	230	240	250	260	280
Minimum Value	300	280	270	260	240	240	290	240	230	250	270	280	270	280	270	250	250	230	220	220	250	250	260	290
Count	27	27	25	24	24	21	23	23	23	23	23	25	24	25	25	22	22	21	24	26	27	27	27	

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.6' N  
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

138° E Mean Time

Feb. 1953

foF1

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								C	C	C	C	C	C	C	C	C	C	A						
2								Q	Q	4.0	4.0	4.4	4.3	4.5	4.0 <sup>J</sup>	4.0	3.7	Q						
3								Q	C	C	C	C	C	C	C	C	C	C						
4								C	C	C	C	C	C	4.4	4.2	4.5	3.8	3.0						
5								Q	Q	Q	C	4.2	4.3	4.5	4.4	4.2	3.5	2.7						
6								Q	4.0	4.2	4.5	4.3	4.3	4.4	4.4	[4.2] <sup>A</sup>	4.0	Q						
7								Q	2.5	L	L	4.2	4.6 <sup>H</sup>	A	C	4.2	Q	A						
8								Q	Q	3.6	4.0	4.5	4.3	4.5	4.4	4.2	3.7	Q						
9								A	Q	Q	4.2	4.3	4.3	4.4	4.4	4.1	A	A						
10								Q	4.0	4.2	T	A	4.4	4.4	4.2	4.0	3.7	Q						
11								Q	Q	4.0	4.3	4.2	4.5	4.4	4.0	4.0	C	Q						
12								Q	C	C	4.2	4.1	C	C	C	3.5	Q	Q						
13								Q	Q	4.2	[4.3] <sup>C</sup>	4.4	4.5	4.3	4.1	C	Q	C						
14								Q	Q	3.6 <sup>H</sup>	4.0 <sup>H</sup>	4.3	4.3	[4.2] <sup>T</sup>	4.2	4.2	3.7	Q						
15								Q	Q	4.0	4.2	4.5 <sup>H</sup>	4.5	4.4	4.4	4.2	3.2	Q						
16								Q	3.4	4.1	4.5 <sup>H</sup>	4.5	4.6 <sup>H</sup>	4.2	3.8 <sup>J</sup>	3.6	C	Q						
17								Q	Q	4.0	4.2	4.5	4.3	4.3 <sup>H</sup>	[4.2] <sup>B</sup>	4.0	3.5	Q						
18								C	C	C	C	4.2	4.3	4.5	4.2	[3.8] <sup>B</sup>	3.5	M						
19								Q	Q	3.8	4.1	4.5	4.6	4.5	[4.2] <sup>B</sup>	4.0	A	A						
20								Q	Q	C	B	4.3	4.4	4.4 <sup>H</sup>	4.6	4.0	3.7	L						
21								Q	Q	3.7	[4.2] <sup>C</sup>	4.6	4.5	4.5	4.1	4.0	3.7	Q						
22								Q	Q	Q	B	4.5 <sup>B</sup>	[4.5] <sup>B</sup>	4.5 <sup>B</sup>	4.2	3.8	3.8	2.8						
23								Q	2.8	C	C	4.3	4.4 <sup>H</sup>	4.5 <sup>H</sup>	4.4	4.1	3.7	3.0						
24								Q	2.8	[3.4] <sup>C</sup>	4.0 <sup>J</sup>	[4.3] <sup>C</sup>	4.6	4.4 <sup>H</sup>	4.5	[4.0] <sup>B</sup>	3.4	2.7						
25								C	C	4.0	4.2	4.5	4.6	4.5	[4.2] <sup>C</sup>	4.0	3.5	C						
26								C	Q	C	4.2	4.1	4.5	4.5	4.3	4.0	S	L						
27								Q	Q	4.0	[4.2] <sup>A</sup>	4.4	4.6	[4.6] <sup>A</sup>	4.5	C	C	C						
28								Q	Q	4.0	4.2	4.3	4.5	4.3	4.5	4.2	S	S						
29																								
30																								
31																								
Mean									2.9	3.9	4.2	4.4	4.5	4.4	4.3	4.0	3.6	2.8						
Median									2.8	4.0	4.2	4.4	4.5	4.4	4.2	4.0	3.7	2.8						
Value									4	1.6	1.9	2.4	2.3	2.4	2.4	2.4	1.6	5						
Count																								

foF1

Sweep L O Mc to Z Z O Mc in Z min

Manual

Automatic

Y 4

IONOSPHERIC DATA

Feb. 1953

R/FI

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								C	C	C	C	C	C	C	C	C	C	A						
2								Q	Q	240	230	210	200	200	240	206	240	Q						
3								Q	Q	C	C	C	C	C	C	C	C	C						
4								C	C	C	C	C	C	230	200	230	230	240						
5								Q	Q	C	C	190	[210]B	230	210	200A	200A	220A						
6								Q	Q	190	240	220	190	250	270	[240]A	220	Q						
7								Q	200	230	220	210	200H	A	C	266	Q	A						
8								Q	Q	240	250	280	[260]A	250A	250	250	210	Q						
9								A	Q	Q	240	240	230	B	A	A	A	A						
10								Q	Q	240	230	210	[220]A	240	230	250	230	Q						
11								Q	Q	230	230	200	240	240	200	230	C	Q						
12								Q	Q	C	240	200	C	C	C	210	Q	Q						
13								Q	Q	240	[240]C	250	200	200	220	C	Q	C						
14								Q	Q	190H	200	220	200	200	190	240	220	Q						
15								Q	Q	250	230	190H	200	230	220	250	200	Q						
16								Q	210A	240	220H	240	200H	[210]B	220	250	C	Q						
17								Q	Q	240	246	220	190	190H	[220]B	250	240	Q						
18								C	C	C	C	250	240	200	190	[210]B	230	M						
19								Q	Q	220	200	220	190	200	[220]B	250	A	A						
20								Q	Q	C	210	200	220	180H	220	250	210	240						
21								Q	Q	230	[220]C	220	200	190	240	250	240	Q						
22								Q	Q	Q	210	220	210	220	240	230	220	240						
23								Q	200	C	C	240	200H	240H	240	240	230	220						
24								Q	240	[240]C	230	[220]C	200	200H	240	200	220	230						
25								C	C	240	240	220	210	230	[220]C	220	220	C						
26								C	Q	C	220	230	250	240	230	220	230	240						
27								Q	Q	240	240	A	A	A	250	C	C	C						
28								Q	Q	220	220	210	200	200	200	210	210	210						
29																								
30																								
31																								
Mean Value									210	230	230	220	210	220	230	230	220	230						
Median Value								200	240	230	220	200	200	220	220	240	220	240						
Count								4	17	22	24	23	22	22	23	23	18	8						



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.6' N  
Long. 130° 37.7' E

IONOSPHERIC DATA

Yamagawa

foE

Feb. 1953

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								C	C	C	C	C	C	C	C	C	C	A						
2								A	2.2	2.4	2.9	3.0	3.1	3.0	3.0	2.6	A	A						
3								B	C	C	C	C	C	C	C	C	C	C						
4								C	C	C	C	C	C	3.2	3.0	(2.8) <sup>A</sup>	2.5	A						
5								B	2.3	2.4	(2.7) <sup>C</sup>	3.0	3.0 <sup>J</sup>	3.1	3.0	2.8	A	A						
6								B	2.0	2.5	2.8	3.0	3.0	3.1	3.0	2.9	2.5	2.2						
7								B	1.9	2.4	2.7	3.0	3.0	(3.0) <sup>A</sup>	3.0	2.8	2.5	A						
8								B	1.8	2.4	2.8	3.0	(3.0) <sup>A</sup>	3.0	3.0	2.9	2.1	2.0						
9								A	1.9	2.5	2.8	3.0 <sup>J</sup>	3.0	3.0	3.0	2.8	A	A						
10								B	1.8	2.3	2.6	2.8	3.0	3.0	3.0	2.8	2.4	B						
11								B	1.9	2.8	3.0	3.0	3.0 <sup>A</sup>	(3.0) <sup>C</sup>	2.9	2.8	C	B						
12								B	2.3	(2.6) <sup>C</sup>	2.9	3.0	C	C	C	A	A	1.4 <sup>J</sup>						
13								B	2.0	2.5	(2.8) <sup>C</sup>	3.1	3.0	(3.0) <sup>A</sup>	2.9	(2.6) <sup>C</sup>	2.2	C						
14								B	A	2.2	2.6	2.9	2.9	2.8	2.8	2.9	2.4	2.2						
15								B	2.2	2.7	2.9	2.9	2.9	3.0	2.8	2.9	2.4 <sup>A</sup>	2.2						
16								B	A	A	2.7	3.0	3.1	3.0	2.8	2.6	(2.4) <sup>C</sup>	2.1						
17								B	2.0	2.3	2.8	3.0	3.1	3.0	3.0	2.9	2.5	2.2						
18								C	C	C	C	2.9	3.2	3.0	2.9	2.8	2.7	M						
19								B	2.0	2.5	2.9	3.0	3.0	3.0	3.0	3.0	2.6	A						
20								B	2.0	(2.4) <sup>C</sup>	2.9	3.0	3.0	3.0	3.0	2.9	2.7	2.0						
21								B	2.2	2.5	(2.7) <sup>C</sup>	2.9	(3.0) <sup>A</sup>	3.2	3.0	2.9	2.7	2.2						
22								B	2.2	2.6	2.8	3.0	3.1	3.1	3.1	2.9	2.5	2.0						
23								B	2.2	C	C	2.9	2.9	3.0	2.9	2.8	2.6	A						
24								B	2.0	(2.4) <sup>C</sup>	2.8	(2.9) <sup>C</sup>	3.0	3.0	2.9	2.9	2.5	2.2						
25								C	C	2.5	2.7	2.9	2.9	3.0	(3.0) <sup>C</sup>	2.9	2.5	C						
26								C	2.0	(2.4) <sup>C</sup>	2.7	3.0	3.0	3.0	3.0	2.9	2.6	2.2						
27								B	2.3	2.6	2.7	A	A	A	A	C	C	C						
28								B	1.9	(2.4) <sup>A</sup>	2.9	(3.0) <sup>A</sup>	3.1	3.1	3.0	2.9	2.7	2.1						
29																								
30																								
31																								
Mean Value									2.1	2.5	2.8	3.0	3.0	3.0	3.0	2.8	2.5	2.1						
Median Value									2.0	2.4	2.8	3.0	3.0	3.0	3.0	2.9	2.5	2.2						
Count									21	22	23	24	23	24	24	24	20	13						

foE

Swamp 1.0 Mc to 2.0 Mc in 2 min

Manual  Automatic



The Radio Research Laboratories  
Koganei-machi, Kitakama-gun, Tokyo, Japan

Lat. 31° 12.5' N  
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

R'E

Feb. 1953

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

Sweep 1.0 Mc to 22.0 Mc in 2 min  Manual  Automatic

Y7

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 35° 12.5' N  
Long. 130° 37.7' E

**Yamagawa**

**IONOSPHERIC DATA**

**fEs**

**Feb. 1953**

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	2.5	1.9	2.0	2.0Y	E	C	C	C	C	C	C	C	C	C	C	C	C	3.9	4.0	2.2	2.4	2.4	2.0	E	
2	E	E	2.0	2.0	2.2	G	2.4	4.0	3.0	3.5	3.8	C	G	G	3.6	3.5	3.5	2.5	1.9	E	C	E	2.4	E	
3	E	E	E	E	E	E	E	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
4	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	3.8	G	3.5	3.5	2.3	2.8	E	2.2	3.0	
5	2.2	E	2.5	2.8	2.0Y	E	E	B	G	3.5	C	G	G	3.6	G	4.0	3.5	2.3	2.2	2.0	1.9	E	E	E	
6	E	E	2.2	2.3	E	E	E	1.8	G	G	G	G	G	3.6	4.9	3.4	G	1.9	3.0	3.0	2.0	2.0	2.5	E	
7	E	2.0	2.0	E	E	E	E	B	G	G	3.5	G	G	5.0	6.0	4.8	4.2	9.5	7.0	4.1	E	E	E	E	
8	2.0	E	1.8	1.7	E	2.5	2.0	B	G	G	G	4.0	4.6	3.9	G	G	3.0	2.3	2.2	3.4	3.0	2.3	2.2	2.2	
9	2.0	2.0	2.5	3.5	2.9Y	2.9	2.7	4.0	3.0	G	G	G	G	3.9	4.5	3.8	3.8	2.5	2.3	2.5	2.5	3.0Y	2.0	2.5	
10	2.1	2.1	3.5	E	E	2.0	2.2	B	G	G	G	3.8	5.0	4.8	4.0	4.1	3.6	2.4	2.3	2.1	2.3	2.0	2.0	2.0	
11	C	2.0	2.4	E	2.3	E	E	2.1	G	G	G	G	3.5	3.5	3.8	G	C	2.2	3.3	2.5	2.3	2.2	E	E	
12	E	E	E	E	2.2	C	E	2.2	3.0	C	G	G	3.8	C	3.4	2.9	G	C	C	E	2.0	1.8	E	E	
13	E	E	2.5Y	E	E	C	E	1.8	G	C	4.5	3.8	3.5	3.8	0	2.8	C	C	C	2.0	1.8	2.0	2.9F	2.5	
14	E	E	3.5F	3.2	E	C	2.1	B	3.0	3.0	G	G	3.5	G	3.1	G	G	G	2.0	E	3.0	3.5	2.4	2.2	
15	E	E	E	E	E	E	2.2	B	G	G	G	G	G	G	3.6	G	3.3	3.0	E	2.2	2.0	2.2	1.8	2.5	
16	E	2.7	G	C	C	C	E	2.5	3.6	3.8	G	G	G	G	G	3.6	C	3.2	E	E	2.3	2.3Y	2.3	E	
17	E	E	E	E	1.8Y	E	E	2.0	G	G	G	G	G	G	G	G	G	3.1	2.5	2.0	E	2.4	2.0	2.0	
18	E	E	E	E	E	C	C	C	C	C	C	G	G	3.2	G	3.7	G	M	M	2.4	E	E	E	E	
19	2.0	E	E	E	E	E	2.4	B	G	G	G	G	G	G	G	5.0	6.0	3.5	2.7	2.3	2.3	1.8	E	3.5	
20	2.5	E	E	E	E	E	B	B	3.0	C	G	G	G	G	3.5	3.5	3.5	3.0	2.0	2.0	2.2	2.3	1.8	2.0	
21	2.0	E	E	E	E	C	B	E	2.0	3.3	C	G	3.5	G	G	G	G	3.0	2.7	3.5	3.4	4.2	E	2.5	
22	E	E	E	2.3	2.5F	2.1Y	3.0F	2.1	G	G	G	G	G	G	G	G	3.6	3.1	E	E	E	E	E	E	
23	E	2.5	2.5Y	2.5Y	2.0Y	2.0Y	E	2.1	G	C	C	G	G	3.5	G	G	3.5	3.0	C	E	C	E	C	2.0	
24	E	4.0	3.2	2.5	2.0	E	E	B	G	C	G	C	G	G	G	G	G	G	E	2.2	E	E	3.0	2.2	
25	2.2	2.5Y	E	2.0Y	E	C	C	C	C	G	G	G	3.6	G	C	G	3.8	C	2.0	E	E	E	2.4	C	
26	E	2.4	2.7	C	C	C	C	C	G	C	3.8	G	G	G	3.5	G	G	G	3.2	3.1	2.5	C	2.0	2.5	
27	E	E	2.0	2.4	3.0	2.2	2.3	G	G	G	5.0	6.0	7.0	5.0	C	C	C	C	4.8	C	2.3	2.3	2.3	E	
28	E	3.0	3.7	2.5	3.0	3.0	2.0	G	G	3.5	3.6	3.5	G	G	G	G	G	G	2.2	E	E	2.0	2.5	3.1	
29																									
30																									
31																									
Mean Value	2.2	2.6	2.5	2.4	2.4	2.4	2.3	2.4	3.0	3.4	3.9	4.1	4.1	4.3	4.0	4.0	3.6	3.7	2.9	2.5	2.5	2.4	2.3	2.4	
Median Value	E	E	2.0	1.7	E	E	E	2.1	G	G	G	G	G	G	3.3	G	3.3	3.0	2.3	2.2	2.3	2.0	2.0	2.0	
Count	26	27	26	25	23	17	23	13	23	19	20	24	24	25	24	23	23	23	23	26	25	26	26	26	

**fEs**

Sweep J.L.O. Mc to 22.0. Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.5' N  
Long. 130° 37.7' E

**Yamagawa**

**IONOSPHERIC DATA**

(M3000)F2

Feb. 1953

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

Sweep 1.0 Mc to 22.0 Mc in 2 min  Manual  Automatic

The Radio Research Laboratories  
Koganei-machi, Kibitama-gun, Tokyo, Japan

Lat. 31° 12.6' N  
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

fminF

Feb. 1953

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	1.6	1.0	1.5	1.4	c	c	c	c	c	c	c	c	c	c	c	c	A	A	1.5	1.6	1.6	1.6	1.6
2	1.6	1.6	1.6	1.4	1.6	1.4	1.6	2.0	2.5	2.9	3.0	3.2	3.2	3.5	3.1	3.0	2.8	2.3	1.6	1.6	[1.6]°	1.6	1.6	1.6
3	1.6F	1.6	1.6	1.0	1.6	1.6	1.6	1.6	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
4	c	c	c	c	c	c	c	c	c	c	c	c	c	3.3	3.1	3.2	2.7	2.1	[1.8]°	1.6	[1.6]°	1.5	1.6	[1.6]°
5	1.6	1.6	1.6	1.6	E	E	1.6	1.6	2.5	3.2	[3.2]°	3.1	4.0	3.5	3.2	3.0	[2.8]°	2.5A	1.6	1.5	1.6	1.6	1.6	1.6
6	1.6	1.6	1.4	E	1.6	1.6	1.6	1.6	2.5	2.5	3.4	3.4	3.2	4.0	3.9	4.3A	2.8	2.4	1.8	[1.8]°	1.7	1.6	1.6	1.6
7	1.6	1.6	E	E	1.4	1.6	1.6	1.6	2.0	3.2	3.5	3.7	3.9	4.5A	[3.8]°	3.0	2.7	A	A	A	1.6	1.6	1.6	1.6
8	1.6	1.6	1.4	1.0	1.6	1.7	1.6	1.6	2.5	3.1	3.6	4.0	4.0	4.0A	3.3	3.5	2.8	3.0	1.9	1.8	[1.7]°	1.6	1.6	1.6
9	1.6	1.6	1.4	1.6	1.6	[1.6]°	1.6	[1.9]°	2.2	3.4	2.5	3.7	3.6	4.0	4.0	4.0A	A	A	1.6	1.6	1.6	1.7	1.6	A
10	A	1.6	2.0A	1.6	1.6	1.4	1.6	1.6	2.2	3.1	3.2	3.3	5.5	3.1	3.1	3.5	2.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6
11	[1.6]°	1.6	1.0	1.4	E	E	1.6	1.6	2.5	3.0	3.6	3.1	3.4	3.5	3.2	3.1	[2.4]°	1.6	2.6A	1.6	1.6	1.5	1.6	1.6
12	1.6	1.6	1.6	1.6F	1.4	[1.5]°	1.6	1.6	2.3	[2.8]°	3.2	3.0	c	3.4	3.0	[2.8]°	2.6	1.6	[1.6]°	c	1.6	1.6	1.6	1.6
13	1.6	E	1.7	E	1.4	[1.5]°	1.6	1.6	2.5	2.9	[3.0]°	3.1	4.0	3.4	3.0	[2.8]°	2.6	c	c	1.6	1.6	1.6	1.6	1.6
14	1.6	1.9	2.0A	1.6	C	[1.5]°	1.6	1.6	2.5	2.5	2.8	3.3	3.5	3.2	3.1	3.3	2.7	2.4	1.6	1.6	1.6	[1.5]°	1.6	1.6
15	1.6	1.7	1.6	1.3	E	1.8	1.6	1.5	2.5	2.9	3.1	3.1	3.1	3.5	3.4	3.3	2.9	2.4	1.5	1.6	1.6	1.6	1.5	1.6
16	1.6	1.6	c	c	c	c	E	1.6	2.5	2.3	3.3	3.5	3.4	3.9	3.4	2.7	[2.6]°	2.6	1.6	1.6	1.6	1.6	1.6	1.5
17	1.6	E	E	E	E	E	1.6	1.6	2.5	2.9	3.3	3.0	3.2	3.0	4.4	3.3	3.0	2.2	1.6	1.6	1.6	1.6	1.6	1.6
18	1.4	1.5	1.3	E	1.0	c	c	c	c	c	c	3.5	3.5	3.3	3.2	4.1	3.0	M	M	1.6	1.6	1.6	1.6	1.6
19	1.6	1.6	1.3	1.5	E	E	1.5	1.6	2.5	2.7	3.0	3.1	3.1	3.5	4.4	3.5	A	A	2.4	1.7	1.6	1.6	1.6	1.6
20	1.6	E	E	E	1.0	E	1.6	1.6	2.3	[2.6]°	3.0	3.2	3.3	3.3	3.2	3.1	2.7	2.2	1.6	1.6	1.6	1.6	1.6	1.7
21	1.6	E	1.6	E	E	2.3	1.5	1.6	2.3	2.7	[3.0]°	3.2	3.2	3.2	3.4	3.2	2.7	2.4	1.8	[1.8]°	1.9	1.6	1.6	1.6
22	1.6	E	1.6	1.6	1.4F	1.0	1.8	1.6	2.4	2.9	3.1	3.4	3.2	3.4	3.4	3.0	2.9	2.2	1.8	1.6	1.6	1.6	1.5	1.5
23	1.6F	1.6	1.8	1.7F	E	E	1.6	1.6	2.3	c	c	3.4	3.3	3.5	3.1	3.0	2.6	2.2	[1.9]°	1.6	[1.6]°	1.6	[1.6]°	1.7
24	1.7	A	A	1.6	1.7	E	1.6	1.6	2.5	[2.8]°	3.1	[3.2]°	3.3	3.3	3.2	2.9	2.5	2.4	1.5	1.6	1.6	1.6	1.6	1.6
25	1.6	2.1	1.0	1.5	1.6	c	c	c	c	3.0	3.1	3.2	3.1	3.2	[3.1]°	3.0	2.8	[2.2]°	1.6	1.5	1.6	1.6	2.0A	[1.8]°
26	1.6	1.6	1.6	c	c	c	c	c	2.5	[2.8]°	3.1	3.1	3.5	3.3	3.0	3.2	2.8	2.4	[2.4]°	2.5A	1.7	[1.6]°	1.6	1.5
27	1.6	E	1.0	1.5	1.6	[1.6]°	1.6	1.8	2.5	2.7	3.0	4.3A	4.3A	4.5A	3.8	c	c	4.0A	[2.8]°	1.6	1.6	1.6	1.5	
28	1.5	1.6	A	C	1.6	E	1.6	2.0	2.5	2.7	3.0	3.1	3.2	3.2	3.0	2.9	2.7	2.2	1.7	1.6	1.5	1.6	1.6	[1.6]°
29																								
30																								
31																								
Mean	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.7	2.4	2.9	3.1	3.3	3.5	3.5	3.4	3.2	2.7	2.2	1.9	1.7	1.6	1.6	1.6	1.6
Maximum	1.6	1.6	1.4	1.4	1.4	1.4	1.6	1.6	2.5	2.9	3.1	3.2	3.4	3.4	3.2	3.1	2.7	2.2	1.6	1.6	1.6	1.6	1.6	1.6
Minimum	1.6	1.6	1.4	1.4	1.4	1.4	1.6	1.6	2.3	2.3	2.3	2.5	2.4	2.5	2.5	2.5	2.3	2.0	2.3	2.6	2.7	2.7	2.7	2.6
Count	26	26	24	24	24	24	23	23	23	23	23	25	24	25	25	25	23	20	23	26	27	27	27	26

fminF

Swing 1.0 Mc to 2.2 D. Mc in 2 min

Manual

Automatic



The Radio Research Laboratories  
Koganei-machi, Kitatama-gun, Tokyo, Japan

Lat. 31° 12.5' N  
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

fminE

Feb. 1953

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	1.6	1.6	E	E	C	C	C	C	C	C	C	C	C	C	C	C	1.5	1.5	1.6	1.6	1.6	1.6	E
2	E	E	1.6	1.6	1.6	1.0	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6	E	C	E	1.6	E
3	E	E	E	E	E	E	E	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5
5	1.6	E	1.6	1.0	1.6	E	E	E	1.6	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	E
6	E	E	1.6	1.6	E	E	E	E	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.5	E
7	E	1.6	1.6	E	E	E	E	B	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.4	1.5	1.5	1.6	1.6	E	E	E	E
8	1.6	E	1.6	1.6	E	1.0	1.6	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.6	1.6
9	1.6	1.6	1.6	1.4	1.0	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
10	1.6	1.6	1.6	E	E	1.6	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
11	1.6	1.6	1.6	E	1.6	E	E	1.6	1.5	1.5	1.6	1.6	1.5	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
12	E	E	E	E	1.6	C	E	1.6	1.6	1.6	1.5	1.6	C	C	C	1.6	1.6	1.7	C	E	1.6	1.6	E	E
13	E	E	E	E	E	C	E	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	C	C	1.6	1.6	1.6	1.6	1.6
14	E	1.5	1.6	E	E	C	1.6	1.6	1.5	1.5	1.5	1.4	1.6	1.5	1.5	1.4	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.6
15	E	E	E	E	E	E	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.5	1.5	1.8	1.7	1.6	1.6	1.6
16	E	1.6	C	C	C	C	E	1.6	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	E	1.6	1.6	1.7	E
17	E	E	E	E	E	E	E	1.8	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.8	E	1.6	1.6	1.7
18	E	E	E	1.8	E	C	C	C	C	C	C	1.8	1.5	1.6	1.6	1.6	1.8	M	M	1.5	E	E	E	E
19	1.6	E	E	E	E	E	1.7	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.6	1.5	1.7	1.6	E	1.7
20	1.5	E	E	E	E	E	E	B	1.6	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.8	1.6	1.6	1.6	1.6	1.7
21	1.6	E	1.6	E	E	C	E	C	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6	1.5	1.8	1.6	1.6	1.6	1.6	1.6
22	E	E	E	1.8	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.6	E	1.6
23	E	1.6	E	E	E	E	E	1.8	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.6	E	E
24	E	1.6	E	1.0	1.6	E	E	B	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.7	E	E	1.6	1.6
25	1.5	E	E	E	E	C	C	C	C	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.8	E	E	1.6	C
26	E	1.6	1.0	C	C	C	C	C	1.6	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.5
27	E	E	1.6	E	E	E	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.5	1.5	C	C	1.6	1.6	1.6	1.6	1.6	1.5	E
28	E	E	E	E	1.6	E	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7	E	E	1.6	1.5	1.5
29																								
30																								
31																								
Mean Value	1.6	1.6	1.6	1.5	1.5	1.3	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
Median Value	E	E	E	E	E	E	E	E	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6
Count	27	27	26	25	23	18	23	18	23	24	24	25	24	25	25	25	25	24	23	27	25	27	26	26

Swamp J.L.D. Mc to 2.50 Mc in 2 min  Manual  Automatic

Y11



IONOSPHERIC DATA IN JAPAN FOR FEBRUARY 1953

電波觀測報告 第5卷 第2号

1953年3月25日 印刷  
1953年3月30日 發行

(不許複製非売品)

編集兼  
發行 人

好 川 得 太 郎  
東京都北多摩郡小金井町小金井新田一之久保573

發行所

郵 政 省 電 波 研 究 所  
東京都北多摩郡小金井町小金井新田一之久保573  
電 話 国分寺 138, 139, 151

印刷所

今 井 印 刷 所  
東京都新宿区筑土八幡町8番地