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IONOSPHERIC DATA IN JAPAN

FOR APRIL 1954

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PREPARED BY THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR APRIL 1954

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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 prevides 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° 08.2′ E	39° 43.5′ N	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	139° 29.3′ E	35° 42.4′ N	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7′ E	31° 12.5′ N	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

All symbols in the table are used in accordance with "Production and Reduction of Ionospheric Data Standards, Symbols and Conventions (Recommendation No. 6 of Stockholm) at VIth Plenary Assembly C.C.I.R. Geneva, 1951" 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.

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Apr. 1954 | **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	(4.0)F	F	F	F	Fs	2.8F	4.7	4.9	5.6	6.4	6.6	6.6	6.4	6.1	6.1	6.0	5.6	5.8	6.1	6.0	6.6	3.7	(3.7)Ps	4.1F
2	(4.2)Fs	Fs	Fs	M	Fs	F	4.8	4.7	5.4	5.7	5.8	6.8	7.5	6.4	6.1	6.4	6.2	6.1	5.5	5.0s	4.8s	Fs	Fs	Fs
3	Fs	(4.0)Fs	F	F	F	(3.3)F	4.1	4.8	5.5	6.7	7.3	(7.4)PV	6.4	5.7	5.6	5.8	7.2	6.7	7.0	7.5	6.6	3.7	3.3F	3.6F
4	3.6F	3.8F	[4.1]F	4.4F	4.5F	3.3F	(4.6)P	4.8	C	C	C	C	C	C	C	C	C	C	C	5.5	4.9	5.0	(4.8)s	4.5
5	4.0s	4.0s	(4.6)s	4.7s	(4.8)Fs	5.0	4.8s	5.5	6.0	6.6	7.0	7.1	7.0	6.5	6.0	5.8	5.5	5.2	5.5	6.5	6.1	5.5	4.0	3.6
6	(4.0)Fs	4.2F	4.0F	3.6F	3.3F	3.0F	4.0	4.3	[5.2]c	6.2	5.7	6.4	5.8	6.4	6.0	5.9	5.3	5.6	5.4	5.5	5.4	(5.3)s	5.0s	F
7	F	Fs	F	F	(3.6)F	3.6	4.2	4.9	5.7	6.2	6.0F	[5.8]c	5.6	6.0	5.6	5.6	5.6	4.8	C	C	5.7J	(4.7)P	4.5s	4.1
8	Fs	Fs	Fs	4.0s	3.7	3.7F	5.5s	4.8	5.7	5.6	5.5	6.8	6.8	7.1	7.2	6.6	6.3	5.8	5.3	4.8	4.5s	4.3s	C	C
9	C	C	C	C	C	C	C	C	C	C	(6.5)s	6.7	5.7	6.8	7.2	6.5	6.1	6.2	7.0s	7.0Ps	[5.8]s	4.5P	3.6	3.6
10	F	F	F	F	3.0F	3.2	(4.3)P	[4.9]A	5.5	5.8	5.7	6.5	6.5	6.5	6.8	6.3	5.6	5.7	6.4	(6.4)Ps	6.5	Fs	3.0F	[3.0]A
11	2.9F	3.0F	3.2FP	2.8FV	2.8F	3.3	4.4	5.0	5.4	C	C	C	C	6.0	6.1	5.7	5.1	5.3	5.8	6.7s	6.3	(4.5)s	(3.7)P	3.3P
12	3.1	(3.2)F	(3.7)F	(3.6)F	(3.6)JF	4.2Ps	4.2	3.8P	5.6	5.4	5.6H	6.2	6.7	6.6	7.7	7.9	6.4	4.7	4.7	6.0	5.4	5.4	4.5	4.8
13	4.8	5.5s	5.3	4.9s	4.5	4.9	4.1H	4.7	5.5	5.3Z	5.6P	5.4	[5.6]A	5.8	6.0	5.8	6.0	6.2	6.2	6.5P	6.0	4.9	3.8	3.5
14	3.5F	3.5	3.5	3.5F	3.5F	3.9	4.8J	5.2	5.4	5.7	6.0	6.2	6.3	6.3	7.1	6.6	7.1	6.1	6.5	6.6	6.2	6.0	4.3	4.0
15	4.1s	3.8P	3.7	3.7	3.8	4.3	4.8F	5.3F	5.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	6.2	5.2F	5.5	5.5	6.3	6.4	5.9	5.6	5.8	6.5	(6.5)s	(6.0)s	5.4	4.8
17	4.6	[4.6]F	(4.5)F	4.1F	3.8F	4.1	5.3	5.9	6.4	6.0	6.3	6.1	5.7	5.6	5.9	5.6	6.0	5.5	5.6	6.2	5.6	(5.0)s	(4.5)s	4.3s
18	4.3F	(4.3)F	[4.2]F	4.1F	3.5F	4.2	4.3	4.9	5.5	5.8	5.5	5.6	6.0	6.9	[6.8]c	6.6	6.1	5.5	6.1	6.7	6.0	5.4s	[5.1]F	4.8JF
19	(4.5)Fs	(4.1)F	(4.1)F	(4.0)F	3.9	4.3F	4.7	4.7	5.3	5.6	5.8	6.0	5.6	5.6	6.0	5.7	[5.8]c	5.9	6.2	6.7	6.0	5.5	4.3	4.5
20	(4.6)F	4.0F	3.9F	3.7F	3.4F	4.0	4.0	4.5	4.8	4.8	4.8	5.3	5.5	5.8	6.0	6.0	A	A	5.9	5.7	(4.8)s	5.0s	4.4	4.1
21	F	F	F	(4.0)F	(2.9)F	3.7H	4.1	4.2	(4.9)P	5.1F	5.6F	5.2	5.5	5.8	6.2	5.7	5.5	5.4	5.6	6.1	6.2	5.6	5.5	5.5
22	(5.0)JFs	Fs	Fs	(4.4)Fs	(3.5)F	3.8P	3.9	3.9	4.1	4.3	4.8	5.0	5.2	5.3	5.3	5.4	4.9	4.9	4.7	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	5.2	5.6	5.5	5.5	5.8	5.7	5.5	5.0	4.6	4.5	5.5	5.5	5.4s	(5.5)s	4.6
24	4.2	3.8P	(3.8)PF	3.5F	(3.4)VF	4.0H	4.9J	4.8	4.9	5.5	5.5	5.5	5.8	5.7	5.6	5.9	6.1	5.4s	5.4	5.9	5.7	(5.5)s	(4.8)s	(4.5)s
25	(4.4)s	4.3	F	F	(4.0)Fs	(4.6)s	(4.6)Ps	5.1	C	C	C	C	C	5.9	6.0	6.5	6.0	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	4.7F	A	A	5.5	6.6	6.5	6.5	5.7	5.8	6.7	(6.6)P	(5.6)JF	(4.8)P	4.0
28	3.7	3.7	3.5F	3.3F	(3.4)F	4.5	5.9	5.5	[5.4]A	5.3	5.4	5.6	6.4	6.6	6.5	6.4	6.0	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	5.0	5.2	5.1J	5.7	5.9	6.3	6.3	6.4	6.8	6.5	6.7	6.3F	(4.9)PF	4.6P	4.2
30	4.1	[4.0]A	4.0F	F	Fs	Fs	4.7	5.5	[5.6]A	5.6	5.4	[5.4]A	5.3	5.0	5.5	5.3	5.7	6.0	6.9	7.8	6.0V	Fs	4.4F	C
31																								
Mean Value	4.1	4.0	4.0	3.9	3.6	3.9	4.6	4.9	5.4	5.6	5.8	6.0	6.0	6.0	6.2	6.1	5.9	5.6	5.9	6.3	5.8	5.1	4.4	4.2
Median Value	4.1	4.0	4.0	4.0	3.6	4.0	4.6	4.8	5.4	5.6	5.6	5.9	5.8	5.9	6.1	6.0	6.0	5.6	5.8	6.4	6.0	5.2	4.5	4.1
Count	19	17	15	17	20	22	24	24	22	22	25	24	24	27	27	27	26	24	24	24	25	22	23	21

foF2

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 1

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

IONOSPHERIC DATA

Apr. 1954 | **f_0F2** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(340)F	F	F	F	Fs	300F	270	270	280	270	290	290	270	300	270	280	290	290	280	300	270	270	(350)PS	350F
2	(340)FS	Fs	Fs	M	Fs	F	250	240	280	280	300	310	280	290	290	290	270	270	270	290S	320S	Fs	Fs	Fs
3	Fs	(380)FS	F	F	F	(260)F	250	270	350	350	310	(260)PV	300	280	330	330	300	300	310	300	270	270	350F	340F
4	380F	370F	[340]F	310F	280F	300F	(280)P	270	C	C	C	C	C	C	C	C	C	C	C	290	340	340	(320)S	310
5	330S	330S	(350)S	330S	(320)PS	310	270S	270	270	290	290	290	280	300	300	300	280	290	300	310	310	300	300	350
6	(340)FS	340F	320F	300F	290F	270F	260	300	[290]C	280	290	290	320	290	310	280	280	280	270	310	350	(320)S	310S	F
7	F	Fs	F	F	(300)F	280	260	290	280	280	270F	[280]C	290	290	300	280	270	270	C	C	(290)J	(290)P	320S	330
8	Fs	Fs	Fs	330S	290	300F	240S	280	290	270	300	300	310	310	300	280	270	260	270	310	330S	320S	C	C
9	C	C	C	C	C	C	C	C	C	C	(300)S	260	310	300	300	290	280	280	300S	280PS	[280]S	280P	340	350
10	F	F	F	F	280F	280	(260)P	A	A	310	280	290	270	320	310	280	280	300	300	A	280	Fs	350F	[340]A
11	340F	320F	350PF	370F	350F	300	260	250	300	C	C	C	C	320	300	280	300	A	310	290S	290	(270)S	(330)F	340P
12	320	(380)F	(350)F	(340)F	(320)JF	290PS	270	U	320	300	430H	420	400	410	410	320	280	280	330	330	360	380	390	390
13	390	330S	320	330S	370	330	270H	300	320	U	350F	U	A	310	320	290	290	290	300	310P	300	290	320	350
14	370F	400	370	350F	330F	250	(270)J	260	270	290	290	290	300	300	310	320	280	280	300	310	300	310	310	360
15	330S	340P	340	330	290	280	280F	320F	U	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	280	U	U	360	320	310	300	290	300	330	(310)S	(300)S	310	310
17	350	[350]F	(350)F	320F	310F	310	300	290	260	280	290	290	310	280	310C	280	280	280	300	300	280	(300)S	(310)S	360S
18	370F	(380)F	[330]F	280F	310F	270	260	290	260	U	U	U	360	310	[300]C	290	280	300	310	300	310	320S	(320)F	(330)JF
19	(370)FS	(370)F	(350)F	(360)F	340	310F	250	290	300	U	280	280	U	U	310	330	[310]C	290	300	310	290	320	360	360
20	(340)F	340F	350F	330F	340F	260	280	U	U	U	U	U	U	330	A	320	A	A	270	300	(320)S	(320)S	330	350
21	F	F	F	(280)F	(290)F	270H	260	U	U	U	310	280	U	320	310	300	310	320	320	320	310	320	340	370
22	(360)JF	Fs	Fs	(300)FS	(300)F	290P	280	260	U	U	U	U	U	U	U	320	310	290	280	C	C	C	6	C
23	C	C	C	C	C	C	C	C	C	U	320	U	350	330	320	300	300	280	320	350	360	360S	(330)S	300
24	320	340P	(350)PF	340F	(350)VF	310H	(260)J	260	[280]A	300	300	U	320	330	320	310	280	290S	310	310	33	(300)S	(320)S	(360)S
25	(340)S	340	F	F	(320)FS	(270)S	(260)PS	270	C	C	C	C	C	330	300	280	280	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	U	A	A	370	310	320	340	310	330	340	(300)P	(310)JF	(310)P	340
28	350	330	380F	350F	(330)F	290	250	260	[290]A	320	340	U	320	310	320	280	300	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	U	S	S	360	350	310	300	300	280	290	290	290F	(320)PF	350P	330
30	340	[340]A	350F	F	Fs	Fs	270	A	A	270	U	A	A	U	U	A	330	330	320	280	260V	Fs	350F	C
31																								
Mean Value	350	350	350	330	320	290	270	280	290	290	310	300	310	320	310	300	290	290	300	310	310	310	330	340
Median Value	340	340	350	330	320	290	260	270	280	280	300	290	310	310	310	300	280	290	300	310	300	310	330	350
Count	19	17	15	17	20	22	24	19	16	14	19	14	17	24	24	26	26	23	24	23	25	22	23	21

f_0F2

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 2

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Apr. 1954

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	280	290F	270	270	210	260	250	250	280	270	290	280	270	290	270	280	270L	250	240	240	220	210	290	290
2	270	290	290	[260]M	230	210	230	240	260	280	300	300	280	290	290	280	270	250	230	230	250	250	260	290
3	300	310	260F	240F	220F	220	230	250	340	340	280	260	290	280	L	320	280	270	260	250	220	220	260	280
4	310	290	270	250	220	230	250	270	C	C	C	C	C	C	C	C	C	C	C	230	270	280	250	250
5	230	250	270	260	240	240	230	270	270	270	290	280	280	300	300	290	270	280	270	250	250	240	230	280
6	280	260	250	250F	240	240	250	300L	[290]C	280	290	290	320	290	310	280	[270]L	260	240	240	280	260	250	250F
7	290F	260	290F	250	240	240	240	280	280	270	270	[280]C	290	290	300	280	270	250	C	C	240	230	260	270
8	280	270	280	260	230	250	220	280	290	270	300	300	300	300	290	270	260	240	240	250	280	250	C	C
9	C	C	C	C	C	C	C	C	C	C	290	260	310	290	290	270	270	260A	260A	250A	240	230	270	310
10	320	310	290	290F	240	250	230	[280]A	330A	310	280	290	270	320	300	280	270	270	(300)A	(260)A	(260)A	(240)FA	300	[290]A
11	280	280	290	300	300	250	240	250	300	C	C	C	C	320	300	280	290L	290A	270A	260A	(240)A	230	260	270
12	290	310	290	260	260	250	240	270	320	300	430H	410	400	410	380	300	280	280	280	260	270	300	270	310
13	310	250	260	250	280	270	240H	300	320	330	350	340	[320]A	310	320A	290	280	270	260	250	260A	270A	260	290
14	310	330	300	290	270	230	250	260	270	290	290	290	300	300	300	310	260	260	260	250	250	250	230	290
15	280	280	260	260	240	240	250	320	330	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	280	290F	310	360	320	310	290	280	270	280	240	240	250	250
17	290	290F	260	250	250	270	250	290	260	280	290	290	310	280	310	280	280	260	270	250	250	240	250	280
18	280	290	270	230	230	250	240	280L	260	280	280	300	360	300	[290]a	280	270	260	260	250	270	250	260	260
19	270	280	270	260	270	260	240	290	300	290	280	280	300	310	310	320L	[300]C	270	(260)A	250	240	250	270	280
20	290	260	270	260	250	240	250	330	330	310	350	370	350	330	(330)A	320	A	A	260	250	310A	250	260	280
21	330F	280F	240F	230	250	230H	250	400	360	350	310	380	350	320	310	300	310	[290]L	270	250	250	250	270	290
22	280	280	260	210	240	250	260	250	L	520	390	390	380	370	360	320	310	280	250	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	360	320	320	350	330	320	300	300	260L	260	280	280	300	270	250
24	260	270	270	260	260	250H	260	260	[280]A	300	300	370	320	330	320	310	280	270	260	250	280	250	250	280
25	270	260	280F	290F	250	240	240	270	C	C	C	C	C	330	300	280	270	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	320F	A	A	370	300	320	320	300	280	270	(250)A	250	240	270
28	280	260	290	260	270	260	250	260	[290]A	320	340	340	320	310	320	280	300	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	280	S	S	360	350	310	300	300	260	250	240	230	250	260	250
30	280	[280]A	290	270F	260Fs	250	270	310A	[290]A	270	300	[320]A	350	370	330	(370)A	330	310	280	250A	250A	290A	280	C
31																								
Mean Value	280	280	270	260	250	250	240	280	300	310	310	310	320	320	310	300	280	270	260	250	260	250	260	280
Median Value	280	280	270	260	240	250	240	280	290	290	300	300	320	310	310	290	280	270	260	250	250	250	260	280
Count	24	24	24	24	24	24	24	24	21	22	24	23	24	27	26	27	26	24	24	24	25	25	24	23

h'F2

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 3

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

IONOSPHERIC DATA

Apr. 1954 | **foF1** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	3.4^{L}	3.8	4.1^{H}	4.3^{H}	4.3^{H}	4.2	4.2	4.0	3.8^{H}	L	Q						
2							Q	3.0^{L}	3.5^{L}	4.0	4.2	4.3^{H}	4.3	4.3	4.1^{L}	4.0	3.6	L						
3							Q	3.0	4.0	4.2	4.2	4.2	4.3	4.0^{H}	L	4.1	3.8	3.2						
4							Q	3.6^{L}	C	C	C	C	C	C	C	C	C	C						
5							C	3.3	3.8	4.0	4.3	4.3	4.3	4.3	[4.0]^{A}	3.8	[3.5]^{L}	3.2						
6							Q	(3.5)^{L}	[3.8]^{C}	4.0	4.1	4.3^{H}	4.3	4.3	4.3	4.0	[3.5]^{L}	3.0^{L}						
7							C	3.5^{L}	4.0	4.0	4.2	[4.2]^{C}	4.3	4.3^{H}	4.2	3.9	3.5	L						
8							Q	3.5	4.0	4.2	4.2	[4.2]^{A}	4.3^{F}	4.2	4.2^{H}	4.0	3.7	L						
9							C	C	C	C	S	4.3	4.2	4.2	4.2	A	A	A						
10							Q	A	A	4.2	4.3	4.3^{H}	4.2^{H}	4.3	4.1	A	A	A						
11							C	3.5^{L}	3.8	C	C	C	C	4.2	4.2	(4.0)^{A}	(3.7)^{L}	A						
12							Q	3.3	3.9	4.2	(4.2)^{B}	4.1	4.2	4.1	4.0	3.8	3.5	A						
13							Q	3.5	3.9	A	A	4.3	[4.2]^{A}	4.2	A	A	3.6	3.3^{L}						
14							L	3.7	3.9	4.1	4.3	4.3^{H}	4.4	4.3	4.3	4.2	3.7	LH						
15							C	3.8	4.0	C	C	C	C	C	C	C	C	C						
16							C	C	C	C	4.1	4.3^{F}	4.4^{H}	4.3	4.1^{H}	4.1	3.8	(3.3)^{L}						
17							C	3.8	4.0	4.1	4.2	4.3	4.3	4.3^{LH}	4.2	4.0	3.7	L						
18							2.4	3.7^{L}	3.9	4.1	4.3	4.3	4.4	4.4	[4.3]^{C}	4.2	3.7	L						
19							Q	3.7^{L}	3.9	4.1	4.3	4.4	4.3	4.3	4.2	4.1^{L}	[3.8]^{C}	(3.5)^{L}						
20							Q	3.7	3.9	4.1	4.2	4.2	4.3	4.3	[4.2]^{A}	4.0	A	A						
21							Q	3.7	3.9	3.9	[4.1]^{A}	4.3	4.3	4.2	4.1	4.0	3.8	L						
22							Q	Q	L	4.0	4.1	4.3^{H}	4.2	4.2	4.1	4.0	3.8	3.3						
23							C	C	C	4.1	4.2	4.2	4.2	4.3	4.1	4.0	3.7	L						
24							3.3^{L}	A	A	A	4.1	4.2	4.3	4.2	4.2	3.8	3.7	L						
25							Q	3.6	C	C	C	C	C	4.3	4.2	3.9	3.7	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	4.3	A	A	A	4.1	4.0	3.8	3.4^{L}						
28						Q	A	A	A	4.1	[4.2]^{A}	4.3	4.3^{H}	4.3	4.3	4.0	3.7	C						
29							C	C	C	4.0	S	S	4.3	(4.3)^{S}	4.1	4.0	3.8	3.5^{L}						
30							Q	A	A	A	A	A	A	4.3	4.2	A	A	A	3.0^{L}					
31																								
Mean Value							2.8	3.5	3.9	4.1	4.2	4.3	4.3	4.3	4.2	4.0	3.7	3.3	3.0					
Median Value							2.8	3.5	3.9	4.1	4.2	4.3	4.3	4.3	4.2	4.0	3.7	3.3	3.0					
Count							2	19	17	19	21	22	23	26	25	23	22	9	1					

foF1

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

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

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IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Apr. 1954

h'F1

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							230	230	250	250^{H}	210^{H}	200^{H}	200	210	200	200^{H}	250	Q						
2							Q	220	230	220	230	200^{H}	250	230	230	250	250	250						
3							Q	240	250	230	210	220	210	200^{H}	240	260	230	230						
4							Q	250	C	C	C	C	C	C	C	C	C	C						
5							C	240	240	240	220	230^{A}	240	210	[220]^{A}	240	250	250						
6							Q	240	[240]^{C}	240	220	200^{H}	230	210	230	250	240	250						
7							C	250	240	220	220^{F}	[210]^{C}	200	190^{H}	220	250	240	250						
8							Q	260	230	230	220	[220]^{A}	220^{F}	200^{F}	220^{H}	250	240	250						
9							C	C	C	C	220	230	260	270	230	A	A	A						
10							Q	A	A	A	270^{A}	220^{H}	220^{H}	210	230	A	A	A						
11							C	240	250	C	C	C	C	230	240	[240]^{A}	240	A						
12							Q	250	A	A	250	220	250	240	260	260	A	A						
13							Q	250	270	A	A	280^{A}	[260]^{A}	(230)^{A}	A	A	280^{A}	A						
14							260	250	250	230	220	220^{H}	200	210	230	250	250	240^{H}						
15							C	260	A	C	C	C	C	C	C	C	C	C						
16							C	C	C	C	A	220	210^{H}	220	220^{H}	260	260	260						
17							C	260	250^{A}	250	230	250^{B}	220	200^{H}	250	230	230	250						
18							200	250	240	250^{B}	260^{A}	230	230	210	(250)^{C}	(290)^{A}	260	260						
19							Q	240	250	250^{A}	270^{A}	250	200	260^{A}	220	230	[240]^{C}	250						
20							Q	260	A	A	240	230	220	210	[240]^{A}	260	A	A						
21							Q	250	240	230	[230]^{A}	230	230	230	220	220	260	250						
22							Q	Q	240	240	230	220^{H}	250	240	240	230	250	240						
23							C	C	C	240^{A}	250^{A}	230	230	220	230	230	240	250						
24							250	A	A	A	A	240	(230)^{A}	210	220	250	250	250						
25							Q	240	C	C	C	C	C	240	230	240	240	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	250^{A}	A	A	A	A	220	230	250						
28						Q	A	A	A	A	A	220^{A}	220^{H}	220	230	A	A	C						
29							C	C	C	230	230	250^{S}	220	220	220	240	250	230						
30							Q	A	A	A	A	A	A	(290)^{A}	250	A	A	A	270					
31																								
Mean Value							240	250	240	240	230	230	220	220	230	240	250	250	270					
Median Value							240	250	240	240	230	220	220	220	230	240	250	250	270					
Count							4	19	15	15	20	23	23	26	25	22	21	17	1					

h'F1

Sweep 1.0 Mc to 22.0 Mc in .1 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Apr. 1954 | **foE** | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	2.4^{F}	2.6	2.8	2.7	2.6	2.7	2.9	2.9	2.6	2.3	1.9						
2							B	2.4	2.6^{H}	2.7	2.8	2.8	2.8	[2.8]^{A}	(2.8)^{F}	(2.8)^{F}	2.4	B						
3							B	2.4^{F}	2.6	2.7	2.7	3.0	2.9	2.9	2.9	2.4	2.1	A						
4							B	2.4	C	C	C	C	C	C	C	C	C	C						
5							B	2.4	2.6^{H}	2.9	2.9	2.9	3.0	2.8	2.6	2.6	2.4	2.2						
6							2.0^{H}	2.5	[2.6]^{C}	2.7	2.9	2.9	3.0	3.0	2.9	2.7	2.3	2.1						
7							C	2.4	2.7	2.9	2.8	[2.9]^{C}	3.0	3.0	2.9	2.7	2.5	2.0						
8							1.9^{F}	2.4^{F}	2.7	2.8^{H}	2.9	2.8	[3.0]^{A}	(3.1)^{F}	3.1	2.7^{F}	2.5	1.9						
9							C	C	C	C	3.0	2.9	3.0	3.1	3.0	2.9	2.5	2.0						
10							1.8	2.5	2.8^{F}	2.8	3.0	B	B	3.0	[2.8]^{A}	2.6	2.4	2.0						
11							1.7	2.4	2.7	C	C	C	C	B	A	2.7	2.5	2.0						
12							2.0^{F}	2.4^{F}	2.7	2.8	2.8	3.0	3.0	3.0	2.9	2.7	2.5	2.0						
13							A	2.4^{F}	2.7	2.9	3.0	3.1	2.8	2.6	2.3	2.3	A	A						
14							2.0	2.5	2.7	2.8	2.9	3.0	3.0	3.0	[2.8]^{A}	2.7	2.4	FA						
15							2.0^{F}	2.5	2.7	C	C	C	C	C	C	C	C	C						
16							C	C	C	C	2.9	3.2	3.1	B	B	2.8	2.5	(2.0)^{S}						
17						B	2.1^{H}	2.5	2.8^{F}	2.8	3.1^{P}	3.1^{P}	3.1	3.0	[2.8]^{B}	2.7^{H}	2.5	2.2						
18						B	1.9	2.4	2.8	2.7	2.9	3.1	3.1	3.0	C	A	A	2.1						
19							1.9	2.5^{H}	2.8	3.0	3.0^{P}	3.1	3.1^{P}	3.0	2.9	2.4	[2.2]^{C}	2.1						
20							(2.2)^{F}	2.6	2.8^{F}	2.9	3.0	3.1	3.0	2.8	2.6	2.6	2.4	A						
21							2.2^{F}	2.5	2.7	2.9	3.1	3.0	3.0	A	A	2.5	2.4	2.2^{H}						
22						B	2.1^{F}	2.5	2.8	2.9	3.0	3.1^{H}	3.1	B	B	B	2.5	2.1^{F}						
23							C	C	C	2.9	3.1	3.1	[3.1]^{A}	3.1	3.0	2.7	2.5^{P}	2.2						
24						B	2.3^{F}	2.5	2.8	2.9	3.0	3.1	3.1	A	A	2.7	(2.5)^{A}	2.1						
25						B	2.2^{H}	2.6	3.0	C	C	C	C	3.0	2.9	2.6	2.5	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	3.1	3.2	3.1	3.1	3.0	3.0	2.5	1.9						
28						1.6	2.2^{F}	2.6^{F}	2.8	2.9	3.0	3.0	3.1	3.0	3.0	[2.7]^{A}	2.4	C						
29							C	C	C	2.9	3.1	3.1	3.1	[3.0]^{A}	3.0	2.8	2.5	2.3						
30							1.8	2.4	2.7	2.9	2.9	3.0	2.8	A	A	A	2.4	2.1	A					
31																								
Mean Value						1.6	2.1	2.5	2.7	2.8	2.9	3.0	3.0	3.0	2.9	2.7	2.4	2.1						
Median Value						1.6	2.0	2.4	2.7	2.9	3.0	3.0	3.0	3.0	2.9	2.7	2.5	2.1						
Count						1	17	24	23	22	25	24	24	21	20	24	25	20						

foE

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | h'E | 135° E Mean Time | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	130	120	120	110	110	110	110	110	120	130	140						
2							B	120	120^{H}	110	120	110	110	110	110^{F}	130	130	B						
3							B	130^{F}	120	110	110	110	110	110	120	120	110	A						
4							B	130	C	C	C	C	C	C	C	C	C	C						
5							B	120	120^{H}	120	110	110	120	120	120	120	120	130						
6							120^{H}	120	[120]^{C}	120	120	120	120	130^{A}	120	120	120	130						
7							C	130	120	110	110	[110]^{C}	110	120	120	120	120	130						
8							140	120^{F}	120	110^{H}	110	110	[110]^{A}	110^{F}	120	110^{F}	120	130						
9							C	C	C	C	110	110	110	110	110	120	120	130						
10							140	120	110	110	120	120	120	120	[120]^{A}	120	130	130						
11							130	120	120	C	C	C	C	120	[120]^{A}	120	120	130						
12							130^{F}	120^{F}	120	120	120	120	120	110	110	110	130	130						
13							A	130^{F}	120	110	110	110	110	110	110	110	A	A						
14							130	120	120	120	110	110	110	110	[120]^{A}	130	130	FA						
15							130^{F}	130^{S}	120	C	C	C	C	C	C	C	C	C						
16							C	C	C	C	110	110	110	120	110	120	110	110						
17						B	130^{H}	120	120	110	110	110	110	110	110	110^{H}	110	120						
18						B	130	120	120	110	110	120	110	120	C	A	A	120						
19							130	120^{H}	110	120	110	110	120	120	110	120	[120]^{C}	130^{A}						
20							130^{F}	120	110^{F}	110	110	110	120	110	120	110	120	A						
21							130^{F}	120	110	110	110	110	110	110	[110]^{A}	110	120	130^{H}						
22						B	120^{F}	120	120	120	110	110^{H}	110	120	120	110	110	110^{F}						
23							C	C	C	110	110	110	[110]^{A}	110	110	110	110	120						
24						B	120^{F}	120	110	120	110	110	120	A	A	120	120	130						
25						B	130^{H}	120	110	C	C	C	C	110	110	110	120	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	110	110	110	110	110	110	120	120						
28						140	120^{F}	110^{F}	110	110	110	110	110	120	110	[110]^{A}	110	C						
29							C	C	C	110	110	110	110	[110]^{A}	110	110	120	120						
30							110	110	110	110	110	110	110	A	A	A	120	120	A					
31																								
Mean Value						140	130	120	120	110	110	110	110	110	110	120	120	130						
Median Value						140	130	120	120	110	110	110	110	110	110	120	120	130						
Count						1	17	24	23	22	25	25	25	25	24	25	25	20						

h'E

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | **fEs** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	2.3^{Fs}	S	2.3^{sY}	2.3^{Y}	2.2^{Ys}	B	4.0^{Y}	3.8	4.0^{Y}	G	G	G	G	5.4^{Y}	G	3.5	2.4	2.7	E	E	2.4^{Y}	2.1^{Y}	2.4
2	2.2	2.5^{Y}	3.0^{Y}	M	2.3^{Y}	2.4	B	4.0^{Y}	G	G	5.5^{Y}	G	4.2^{YF}	4.2^{Y}	G	G	G	B	E	2.3^{s}	2.3^{s}	E	2.2^{s}	2.3
3	E	2.3^{sY}	2.4^{Y}	2.3^{s}	E	(2.3)^{s}	B	G	G	G	4.2^{Y}	G	G	G	G	G	G	2.6^{Y}	E	2.1	2.0	2.5	2.4	2.3
4	2.4	2.4	2.3	1.9^{Y}	2.4^{Y}	2.2^{Y}	B	G	C	C	C	C	C	C	C	C	C	C	C	2.1^{Y}	2.4^{Y}	E	E	2.4
5	2.4^{s}	2.3^{sY}	2.4^{YF}	E	E	E	B	G	G	G	4.0^{Y}	4.5	G	9.5^{Y}	5.2	G	G	G	E	1.9	E	E	E	E
6	E	E	E	E	2.4	E	G	G	G	G	G	4.0	G	3.6	G	G	G	G	2.1^{Y}	2.4^{Y}	2.3^{Y}	E	E	E
7	2.4^{Y}	E	E	2.3^{s}	2.4^{s}	7.2^{Y}	5.9^{Y}	G	G	5.4^{Y}	4.2.	C	G	G	G	G	G	G	C	C	1.9	E	E	E
8	E	2.2	E	E	E	2.2	G	G	G	4.0	7.5^{Y}	5.3	6.3^{FY}	4.3^{FY}	4.3^{FY}	G	G	G	2.3	2.9^{Y}	2.7^{Y}	E	C	C
9	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	4.7	4.8	4.8	4.3	5.9^{Y}	2.6	6.6^{Y}	E	E
10	3.4	2.4^{Y}	2.3	2.9	2.5^{Y}	E	G	6.9	5.9	6.3^{Y}	4.4^{Y}	G	G	G	4.7	6.0^{Y}	6.2^{Y}	3.6^{Y}	6.1^{Y}	7.1^{Y}	5.7^{Y}	6.0^{Y}	5.6^{Y}	5.9^{YF}
11	6.0^{YF}	6.9^{YF}	3.3	2.5^{Y}	E	2.2^{Y}	G	4.4^{Y}	6.1^{Y}	C	C	C	C	G	4.1^{Y}	4.8	G	5.3	5.7	4.4	6.0	2.5^{Y}	E	E
12	E	E	E	E	2.2	2.4	G	G	4.4^{Y}	4.8	G	G	G	G	G	G	4.1	4.2	2.7	2.7	3.4^{Y}	2.5^{Y}	E	2.1^{Y}
13	2.4^{Y}	E	2.9^{Y}	E	2.3^{Y}	2.3^{Y}	2.9^{YF}	G	4.4^{Y}	5.0^{Y}	6.0	10.0^{Y}	7.3	4.1	6.0	5.3	4.5	4.0	2.7	2.5	3.7	6.1	2.6	2.4
14	2.2	E	2.0^{YF}	2.4^{F}	2.6	E	G	G	G	G	G	G	G	G	4.0	2.4	2.4^{Y}	2.5^{F}	2.9	3.0^{Y}	2.5^{Y}	2.4^{Y}	2.1	E
15	E	2.3^{Y}	E	E	2.4	S	G	4.0	5.2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	6.4^{Y}	G	4.0^{Y}	G	G	G	G	2.5	3.5^{Y}	3.5^{Y}	4.3^{Y}	2.4	1.9	E
17	2.5	2.4^{Y}	2.4^{Y}	E	E	B	G	3.7^{Y}	4.3^{Y}	4.7	G	G	G	G	G	G	G	G	2.3	3.5	3.0	2.5	2.3	2.6
18	2.4	2.1^{Y}	2.4^{F}	E	2.4^{F}	B	G	G	G	G	4.4^{Y}	6.0^{Y}	4.2^{Y}	G	C	5.1	3.5^{Y}	G	3.5^{Y}	E	4.2	2.3	E	E
19	2.4^{s}	2.1	E	2.4	2.4	2.3^{Y}	G	G	G	G	4.7	G	G	G	4.7^{Y}	4.2^{Y}	C	2.4	3.8	2.4^{Y}	2.4	E	E	2.2^{s}
20	E	E	2.3^{Y}	3.3	2.3^{YF}	2.3	G	G	5.3^{F}	5.0	G	G	G	4.3^{Y}	6.0	4.2^{Y}	7.6	7.8	4.0	3.0	4.5^{Y}	2.4	E	E
21	E	2.4^{Ys}	2.4	1.8	2.2^{Y}	2.4	G	G	4.0^{Y}	G	5.4	G	G	G	3.5^{Y}	G	G	G	G	2.0	E	E	E	2.4	2.4
22	2.5	2.6	2.4^{Y}	1.9	E	B	G	3.8^{Y}	G	G	G	G	G	G	G	G	G	G	2.9^{Y}	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	4.5^{Y}	G	G	4.0^{FY}	G	G	G	G	G	2.5	E	E	E	2.4^{sY}	E
24	E	E	E	E	2.4^{Y}	B	3.5	4.5	6.5^{Y}	5.8	4.7^{Y}	4.6^{Y}	4.8^{Y}	4.7^{Y}	5.0	G	4.0^{Y}	G	1.9	2.5^{Y}	3.0^{Y}	2.5	E	2.2^{Y}
25	2.3^{Y}	2.4^{Y}	2.0^{Y}	E	E	B	G	G	C	C	C	C	C	G	4.0	G	G	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	7.5	6.0	6.3	4.7^{Y}	4.8	G	3.7^{Y}	3.4^{Y}	3.5^{Y}	2.7	3.6^{Y}	4.3	2.2	2.4
28	2.4^{Y}	E	E	2.5^{YF}	E	G	4.8	4.9	6.5	4.6	6.0	5.4	G	G	4.5	5.8	5.2^{Y}	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	G	G	4.9	G	3.5^{F}	G	G	G	G	2.8	E	E	2.6	3.0	4.6^{Y}
30	6.2^{YF}	7.8^{YF}	4.6^{YF}	5.5^{Y}	7.4^{Y}	5.7^{Y}	7.4	5.4	7.0	8.4	8.2	7.0	6.1	5.6^{Y}	3.5^{Y}	5.8	6.3	4.6	4.7^{Y}	4.8	6.1^{Y}	3.5^{Y}	2.4^{Y}	C
31																								
Mean Value	2.9	3.0	2.6	2.6	2.7	2.9	5.0	4.6	5.3	5.2	5.5	5.8	5.2	4.9	4.6	4.8	4.7	3.9	3.3	3.2	3.4	3.3	2.6	2.8
Median Value	2.4	2.3	2.3	1.9	2.3	2.2	G	G	3.9	4.0	4.2	G	G	G	3.8	G	G	2.4	2.8	2.5	2.6	2.4	2.0	2.2
Count	23	24	23	23	24	18	19	24	22	22	25	24	25	27	26	27	26	24	24	24	25	25	24	23

fEs

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 8

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

IONOSPHERIC DATA

Apr. 1954 | **(M3000)F2** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.8)F	F	F	F	FS	3.0F	3.3	3.3	3.3	3.4	3.2	3.2	3.4	3.2	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	(3.0)PS	2.8F
2	(2.9)FS	FS	FS	M	FS	F	3.4	3.5	3.3	3.3	3.2	3.0	3.2	3.1	3.2	3.2	3.3	3.4	3.3	3.0S	2.9S	FS	FS	FS
3	FS	(2.7)FS	F	F	F	(3.3)F	3.4	3.2	2.9	2.8	2.9	(3.3)PV	3.1	3.3	3.0	2.9	3.1	3.0	3.1	3.1	3.3	3.3	2.8F	2.9F
4	2.8F	2.8F	[3.0]F	3.2F	3.1F	3.0F	(3.1)P	3.3	C	C	C	C	C	C	C	C	C	C	C	3.2	2.8	2.8	(3.0)S	3.0
5	3.0S	3.0S	(2.8)S	2.9S	(3.0)PS	3.0	3.2S	3.4	3.3	3.2	3.2	3.2	3.3	3.0	3.2	3.2	3.3	3.1	3.0	3.0	3.1	3.2	3.0	2.8
6	(2.8)FS	2.9F	3.0F	3.1F	3.1F	3.3F	3.5	3.1	[3.2]C	3.3	3.3	3.2	3.1	3.2	3.1	3.3	3.2	3.3	3.2	3.0	2.8	(2.8)S	2.9S	F
7	F	FS	F	F	(3.0)F	3.3	3.4	3.1	3.3	3.1	3.3F	[3.3]C	3.3	3.2	3.2	3.3	3.3	3.2	C	C	(3.1)J	(3.0)P	2.9S	2.9
8	FS	FS	FS	2.9S	3.2	3.1F	3.4S	3.3	3.3	3.4	3.2	3.2	3.1	3.1	3.2	3.3	3.3	3.5	3.3	2.9	2.9S	2.9S	C	C
9	C	C	C	C	C	C	C	C	C	C	(3.1)S	3.4	3.2	3.2	3.2	3.2	3.3	3.2	3.1S	3.2PS	[3.2]S	3.2P	3.0	2.9
10	F	F	F	F	3.2F	3.1	(3.3)P	[3.2]A	3.2	3.1	3.4	3.2	3.3	3.0	3.1	3.3	3.3	3.2	3.1	(3.4)PS	3.3	FS	2.8F	[2.8]A
11	2.9F	2.9F	2.8FP	2.6VF	2.8F	3.0	3.4	3.6	3.2	C	C	C	C	3.1	3.2	3.3	3.1	3.2	3.1	3.1S	3.3	(3.2)S	(2.9)P	2.9P
12	3.0	(2.7)F	(2.9)F	(2.9)F	(3.0)JF	3.1PS	3.5	3.4P	3.1	3.1	2.6H	2.5	2.5	2.4	2.4	3.0	3.2	3.1	2.8	2.9	2.7	2.6	2.6	2.6
13	2.6	2.9S	2.9	2.8S	2.7	3.0	3.2H	3.1	3.0	3.0Z	3.1P	3.0	[3.1]A	3.2	3.1	3.2	3.2	3.2	3.2	3.0P	3.1	3.2	3.1	2.8
14	2.8F	2.6	2.8	2.8F	3.0F	3.5	(3.2)J	3.4	3.5	3.3	3.1	3.2	3.1	3.0	3.1	3.0	3.3	3.2	3.1	3.0	3.1	3.0	3.0	2.8
15	2.9S	2.9P	3.0	3.0	3.1	3.2	3.1F	2.7F	2.9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	3.3	3.4F	3.2	2.9	3.1	3.1	3.1	3.2	3.1	2.9	(3.0)S	(2.9)S	2.9	2.9
17	2.8	[2.8]F	(2.7)F	2.9F	3.1F	3.0	3.0	3.2	3.4	3.3	3.3	3.2	3.2	3.1	3.2	3.3	3.3	3.3	3.2	3.2	3.2	(3.0)S	(3.0)S	2.8S
18	2.8F	(2.7)F	[3.0]F	3.2F	3.0F	3.3	3.4	3.2	3.6	3.5	3.5	3.3	2.8	3.0	[3.1]C	3.2	3.2	3.1	3.0	3.1	3.1	2.8S	[2.8]F	(2.9)F
19	(2.6)FS	(3.0)F	(2.8)F	(2.8)F	2.8	3.0F	3.3	3.1	3.2	3.3	3.3	3.2	3.3	3.3	3.2	3.0	[3.1]C	3.2	3.0	3.1	3.1	3.0	2.7	2.8
20	(2.8)F	2.9F	2.9F	2.9F	2.9F	3.3	3.2	3.0	3.1	3.2	3.0	2.8	3.0	3.0	3.0	3.0	A	A	3.3	3.1	(2.9)S	(2.8)S	2.9	2.8
21	F	F	F	(3.3)F	(3.1)F	3.3H	2.9	2.8	(2.9)P	2.8F	3.3F	2.8	3.0	3.1	3.1	3.1	3.1	3.1	3.0	3.0	2.9	3.0	2.7	2.7
22	(2.8)JF	FS	FS	(3.0)FS	(3.1)F	3.2P	3.2	3.4	2.7	2.5	2.8	2.8	2.8	2.8	2.9	3.0	3.1	3.1	3.1	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	2.8	3.2	3.1	3.0	3.1	3.1	3.2	3.0	3.2	2.9	2.8	2.7	2.7S	(2.9)S	3.1
24	2.9	2.9P	(2.8)FP	2.8F	(2.8)VF	3.0H	(3.4)J	3.5	3.2	3.0	3.2	3.0	3.1	3.1	3.1	3.1	3.2	3.1S	2.9	3.0	2.8	(3.0)S	(2.9)S	(2.7)S
25	(2.8)S	2.9	F	F	(3.0)FS	(3.2)S	(3.3)PS	3.3	C	C	C	C	C	3.4	3.3	3.2	3.1	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	3.0F	A	A	2.8	3.0	3.0	2.8	3.1	2.9	2.9	(3.0)P	(2.9)JF	(3.0)P	2.8
28	2.8	2.9	2.7F	2.7F	(2.9)F	3.1	3.2	2.8	[2.9]A	3.0	2.9	3.0	3.0	3.0	3.0	3.2	3.1	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	3.4	3.0	(2.8)J	2.9	2.7	3.0	3.1	3.1	3.3	3.1	3.2	3.1F	(2.8)PF	2.8P	2.9
30	2.9	[2.8]A	2.8F	F	FS	FS	3.3	3.1	[3.3]A	3.5	3.3	[3.2]A	3.0	2.8	3.1	2.8	3.0	2.9	3.0	3.2	3.3V	FS	2.8F	C
31																								
Mean Value	2.8	2.8	2.9	2.9	3.0	3.1	3.3	3.2	3.2	3.2	3.1	3.1	3.1	3.0	3.1	3.1	3.2	3.2	3.1	3.1	3.0	3.0	2.9	2.8
Median Value	2.8	2.9	2.8	2.9	3.0	3.1	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	3.2	3.1	3.0	3.1	3.0	2.9	2.8
Count	19	17	15	17	20	22	24	24	22	22	25	24	24	27	27	27	26	24	24	24	25	22	23	21

(M3000)F2 Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 9

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

IONOSPHERIC DATA

Apr. 1954 | **fminF** | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.3	1.3F	1.0	1.0	E	1.3	2.0	2.6	3.1	3.2	3.1	3.1	3.2	3.1	2.9	2.8	2.6	2.4	1.7	1.6	1.6	1.6	1.6	1.7
2	1.3	1.3	1.5	[1.4]M	1.2	1.0	2.4	2.6	2.9	2.9	3.3	3.2	3.5	3.2	3.1	2.8	2.5	2.1	1.6	1.6	1.6	1.6	1.6	1.6
3	1.3	1.0	1.0F	E	E	E	2.3	2.6	3.1	3.2	3.1	3.1	3.2	3.2	3.1	2.9	2.5	2.1	1.6	1.6	1.7	1.7	1.6	1.6
4	1.5	1.3	E	1.2	1.2	1.3	2.0	2.6	C	C	C	C	C	C	C	C	C	C	C	1.6	1.6	1.7	1.6	1.7
5	1.3	1.2	1.3	1.0	E	1.3	2.0	2.6	3.0	3.2	3.4	3.7A	3.4	3.3	4.5A	2.9	2.6	2.3	1.7	1.7	1.6	1.6	1.6	1.5
6	1.5	E	E	E	E	<1.2M	2.2	2.6	[2.9]C	3.2	3.3	3.2	3.2	3.2	3.2	2.9	2.6	2.3	1.6	1.7	1.6	1.6	1.6	1.6F
7	1.3F	1.0	E	E	1.2	1.3	2.2	2.8	3.0	3.2	3.3F	[3.3]C	3.3	3.1	3.1	3.1	2.7	2.4	C	C	1.6	1.6	1.6	1.6
8	1.3	1.0	1.0	E	E	1.2	2.4	2.6	2.9	3.1	3.3	4.5A	3.3F	3.2F	3.2	2.9	2.7	2.4	1.7	1.6	1.9	1.6	C	C
9	C	C	C	C	C	C	C	C	C	C	3.3	3.2	3.5	3.5	3.2	4.0A	4.0A	3.9A	3.5A	4.0AS	1.7	1.6	1.6	1.6
10	1.5	1.4	1.3	1.3	1.4	1.8	2.9	[3.8]A	4.8A	3.9A	3.9A	3.3	3.3	3.3	3.4	4.6A	4.5A	3.1A	5.2A	A	A	A	1.8	[1.6]A
11	1.3	1.3	1.2	E	E	1.4	2.4	3.1	3.3	C	C	C	C	3.4	3.4	4.0A	2.9	4.5A	3.3A	3.4A	(2.8)A	1.7	1.7	1.6
12	1.7	1.1	E	E	E	1.5	2.1	3.1	3.6A	3.9A	3.3	3.3	3.4	3.1	3.4	3.1	3.3A	3.4A	2.1A	1.8	1.7	2.1A	1.6	1.6
13	1.7	1.0	1.5	1.2	1.2	1.4	2.1	2.8	3.2	4.0A	4.5A	3.9A	[3.6]A	(3.4)A	4.9A	4.1A	3.4A	2.4	1.9	1.6	3.1A	3.4A	1.7	1.7
14	1.4	1.0	1.3	1.2	1.3	1.5	2.4	3.0	3.1	3.1	3.3	3.3	3.5	3.3	3.2	3.3	2.6	2.4	<2.4C	2.4A	1.7	1.7	1.6	1.6
15	1.6	1.0	E	E	E	1.5	2.4	3.0	3.7A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	3.8A	3.4	3.3	3.3	3.1	3.1	3.2	2.4	2.5A	2.1A	1.7	1.7	1.6	1.6
17	1.7S	1.3	1.1	E	E	1.6	2.5	3.0	3.5A	3.3	3.5	3.9	3.5	3.4	3.4	3.0	2.6	2.3	2.3A	2.0A	2.0A	1.6	1.6	1.7
18	1.3	1.2	E	E	E	1.5	2.1	2.9	3.2	3.6	3.8	3.4	3.4	3.3	[3.6]C	4.0A	2.8	2.4	1.8	1.7	3.2A	1.6	1.6	1.4
19	1.3S	1.0	E	E	1.5	1.8	2.4	2.8	3.1	3.5A	3.9A	3.4	3.4	3.6A	3.2	2.8	[2.6]C	2.4	[2.0]A	1.6	1.7	1.6	1.6	1.6
20	1.4	1.0	1.2	1.1	E	1.6	2.5	3.1	3.8A	4.0A	3.2	3.4	3.4	3.4	(5.3)A	3.3	A	A	3.9A	2.4A	3.8A	1.7	1.6	1.6
21	1.4F	1.0F	1.2	E	1.3	1.6	2.4	2.8	3.1	3.3	4.4A	3.4	3.4	3.3	3.1	2.8	2.7	2.4	2.0A	1.6	1.6	1.6	1.6	1.6
22	1.6	1.5	1.3	E	E	1.6	2.4	2.9	3.3	3.2	3.4	3.3	3.5	3.3	3.1	2.8	2.7	2.4	2.3A	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	3.5A	3.5A	3.3	3.4	3.2	3.1	2.9	2.7	2.4	1.7	1.6	1.6	1.7	1.6	1.6
24	1.5	1.1	E	E	E	1.7	2.3	3.5A	4.4A	4.3A	3.8A	3.3	(3.7)A	3.2	3.3	3.0	2.7	2.4	1.9	1.7	2.4A	1.6	1.6	1.6
25	1.4	1.2	1.0F	E	1.3	2.0	2.5	2.8	C	C	C	C	C	3.5	3.4	2.9	2.6	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	3.8A	A	A	4.4A	3.8A	3.1	2.9	2.4	2.1	1.7	(1.8)A	1.6	1.7	1.6
28	1.3	1.1	E	E	E	2.0	4.2A	4.1A	[3.9]A	3.7A	4.5A	3.6A	3.4	3.3	3.1	3.9A	3.6A	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	3.4	3.4	3.4	3.4	3.2	3.2	3.1	2.0	2.5	1.6	1.6	1.6	1.6	1.7	1.6
30	1.3	[1.4]A	1.5	1.2	1.6FS	2.4A	2.1A	4.7A	[4.6]A	4.4A	4.5A	[4.5]A	4.5A	3.9A	3.5	4.7A	4.4A	3.7	2.1	3.8A	4.5A	2.5A	1.6	C
31																								
Mean Value	1.4	1.2	1.2	1.1	1.3	1.6	2.4	2.9	3.4	3.5	3.6	3.5	3.4	3.3	3.4	3.3	2.9	2.6	2.3	2.0	2.1	1.8	1.6	1.6
Median Value	1.4	1.1	1.0	E	E	1.5	2.4	2.8	3.2	3.4	3.4	3.4	3.4	3.3	3.2	3.1	2.7	2.4	2.0	1.7	1.7	1.6	1.6	1.6
Count	24	24	24	24	24	24	24	24	22	22	25	24	24	27	27	27	26	24	23	23	24	25	24	23

fminF

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 10

13

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Apr. 1954 | foE | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	1.8^{Fs}	[1.6]^{s}	1.5^{s}	E	1.6^{s}	1.4	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.7	1.8	1.7	1.6	1.6	E	E	1.6	1.7	1.6
2	1.9	1.1	E	M	E	1.3	1.6	1.6	1.6	1.7	1.6	1.7	1.6	1.7	1.8^{F}	1.7	1.6	1.7	E	1.7^{s}	1.8^{s}	E	1.7^{s}	2.0
3	E	1.7	1.3	1.8^{s}	E	1.6^{s}	1.6	1.7	1.6	1.7	1.6	1.6	1.7	1.8	1.7	1.7	1.6	1.4	E	1.6	1.6	2.1	1.9	1.6
4	1.4	1.7	1.7	E	E	E	1.5	1.6	C	C	C	C	C	C	C	C	C	C	C	1.8	1.8	E	E	2.1
5	2.0^{s}	1.6^{s}	E	E	E	E	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.6	1.6	1.4	1.6	E	1.7	E	E	E	E
6	E	E	E	E	1.6	E	1.4	1.4	[1.5]^{c}	1.6	1.8	1.6^{c}	1.7	1.6	1.6	1.7	1.6	1.6	1.8	1.4	1.6	E	E	E
7	1.7	E	E	1.5^{s}	1.5^{s}	1.3	1.7	1.7	1.6	1.6	1.6	[1.6]^{c}	1.7	1.7	1.7	1.6	1.6	1.6	C	C	1.8	E	E	E
8	E	2.0	E	E	E	1.8	1.6	1.6	1.4	1.6	1.7	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.4	E	C	C
9	C	C	C	C	C	C	C	C	C	C	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	E	E
10	1.3	1.4	E	E	E	E	1.6	1.7	1.6	1.6	1.7	1.8	1.8	1.7	1.7	1.8	1.6	1.6	1.3	1.6	1.6	1.6	1.6	1.6
11	1.4^{F}	1.3	1.2	E	E	1.7	1.5	1.6	1.6	C	C	C	C	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	E	E
12	E	E	E	E	1.7	1.7	1.6	1.6	1.7	1.6	1.6	1.8	1.9	1.6	1.8	1.6	1.7	1.6	1.6	1.5	1.6	1.6	E	1.8
13	1.2	E	E	E	E	1.0	1.6^{F}	1.7	1.8	1.6	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7
14	1.7	E	E	1.5	1.0	E	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.6	1.6^{F}	<2.4^{c}	1.7	1.6	1.7	1.7	E
15	E	1.0	E	E	1.6	S	1.6^{F}	1.7	1.7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	1.7	1.7	1.8	1.7	1.7	1.6	1.7	1.4	1.6	1.6	1.6	1.7	1.7	E
17	1.2^{s}	1.0	1.5	E	E	1.4	1.4	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6
18	1.7	E	1.7^{F}	E	1.6^{F}	1.4	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.7	[1.6]^{c}	1.6	1.6	1.6	1.6	E	1.6	2.0	E	E
19	1.7^{s}	2.0	E	E	E	1.3	1.6	1.4	1.6	1.6	1.7	1.7	1.7	1.6	1.6	1.7	[1.6]^{c}	1.6	1.6	1.4	1.6	E	E	1.7
20	E	E	E	E	E	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.7	1.6	1.6	1.6	2.0	E	E
21	E	1.6^{s}	E	1.7	1.0	2.0	1.6^{F}	1.6	1.7	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	E	E	E	1.6	1.7
22	1.1	E	E	1.7	E	1.4	1.4	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.6	1.7^{F}	1.6	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	1.6	1.6	2.0	1.7	1.7	1.6	1.6	1.6	1.6	1.6	E	E	E	1.7	E
24	E	E	E	E	1.6	1.4	1.6	1.6	1.7	1.6	1.6	1.7	1.6	1.7	1.7	1.6	1.6	1.6	1.4	1.6	1.6	2.0	E	1.7
25	1.3	1.0	1.0	E	E	1.4	1.6	1.6	1.6	C	C	C	C	1.6	1.6	1.6	1.6	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	1.7	1.7	1.6	1.6	1.5	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.7	1.6
28	1.3	E	E	1.7	E	1.3	1.6	1.6	1.7	1.7	1.8	1.8	1.8	2.1	1.7	1.6	1.6	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	1.6	1.7	1.6	1.7	1.6	1.6	1.7	1.6	1.6	1.6	E	E	1.6	1.6	1.6
30	1.3	E	E	E	E	1.4	1.4	1.4	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.4	1.6	1.6	1.6	1.6	1.8	C
31																								
Mean Value	1.5	1.5	1.4	1.6	1.5	1.5	1.6	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	1.7	1.7	1.7
Median Value	1.3	1.0	E	E	E	1.4	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Count	23	24	24	23	24	23	24	24	23	22	25	25	25	27	27	27	27	25	23	24	25	25	24	23

foE

Sweep 1.0 Mc to 22.0 Mc in 1 min ☐ Manual ☒ Automatic

W 11

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

IONOSPHERIC DATA

Apr. 1954 | foF2 | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' 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	3.6	3.4F	3.3F	3.5	2.7F	2.5	4.3	5.2	5.4	5.9P	7.0	7.9	7.5	6.3	6.3	6.2	5.5	5.9P	7.0	6.5	4.9	3.2	3.2	3.3
2	3.3	A F	A F	A F	3.1F	3.2ZF	4.4	4.8	5.3	5.3	6.2	6.9	8.1	7.8	6.9	6.8	7.0	6.2	5.9	4.3	3.8	4.2F	4.0F	3.7F
3	3.5F	3.2F	3.2F	3.2F	3.2F	2.5F	4.0	4.5	4.8	6.8	9.0	8.3	5.4	5.7	5.8	6.6	7.7	7.8	7.9	7.8	5.9	2.9	3.0	3.5
4	3.7	3.6	3.8F	4.1	3.7F	3.2F	4.4	5.6	6.1	7.1	7.0	5.4	6.5	6.5	5.6	6.5	6.5	7.0	7.4	6.8	4.3	4.4V	4.5	4.1
5	3.9	3.5	3.6	3.8	3.7	3.9	5.2	5.7	5.9	6.5	7.5	6.6	7.0	7.7	7.1	6.0	6.2	5.6	6.2P	6.5	6.0	5.5	4.0	3.5
6	3.5	3.9	3.7F	3.9F	3.6F	3.0	4.5	5.3	6.1	6.2	7.0	6.4	7.0	7.3	7.0	6.3	6.3	5.6	6.0	5.5	5.0	5.1	4.6	4.5
7	3.7	3.7	3.9	4.1	3.8	3.3F	4.7	5.3	6.0	6.0	6.9	6.4	5.5	6.2	6.3	6.3	5.8	5.9	6.7	6.2	5.1	4.7	4.2	4.2
8	4.0	3.9	3.9	3.7	3.6	3.9P	4.8	5.2	C	C	C	C	C	C	C	C	C	6.0	5.1	4.1	4.0	4.0	3.6	3.6F
9	3.2F	3.2F	3.3F	3.4	2.5	2.8	4.9	5.0	6.5	6.2	6.8	7.5	6.0	6.8	8.6	7.8	8.0	7.0	7.0	6.7	5.3	3.5	3.0F	3.3F
10	[3.1]A	2.9JF	3.1F	A	A	2.9	5.1J	5.3	6.2	[6.2]A	6.3	[8.0]S	9.6	C	C	C	C	C	A	C	4.7	A	A	3.2F
11	3.3F	[3.2]AF	3.0F	2.8F	2.7	3.3F	4.6	4.8	5.2	5.6	C	C	C	5.6	(5.9)S	(6.0)P	5.5	5.7	A	A	5.7Z	4.5F	3.7F	3.9F
12	3.5F	3.5	3.3F	3.6F	4.2ZF	4.6F	5.5	4.0	C	5.7H	5.9	7.0	8.6	8.5	8.6	8.8	7.8P	5.4	[6.1]A	6.8	6.1P	[5.3]A	4.5	4.0
13	4.5	4.8F	4.7F	4.0F	3.3F	3.6F	5.7	5.3	5.5	6.1	6.5	6.4	6.6	6.8	6.1	7.0	6.5	7.0	7.0	6.7	6.5	4.5	3.6	3.6
14	3.5	3.2	3.2	3.2	3.0	3.6	4.8	5.2	6.0	6.1	6.2	6.3	7.1	6.8	7.4	8.0	8.1	7.4	6.9	6.9	5.9	5.0	4.7	4.2
15	4.2	3.8	3.8P	3.8P	3.7	4.1	4.8	5.7	6.7	6.5	5.7	6.0	6.6	7.2	7.0	7.2	6.1	6.2	7.0	7.7	8.0	3.9	3.7	3.7
16	3.5F	3.7JF	3.5F	3.7F	3.7	3.6	4.5	6.2	5.3	5.4	6.5	6.1	6.4	6.6	6.0	7.5	7.4	6.8	6.7	6.5	6.7	6.4	5.0JF	4.8P
17	4.4JF	4.0F	4.0F	4.1F	3.5F	3.5F	5.3	6.0	7.3	6.1	6.2	6.2	5.9	6.0	6.7	6.9	6.6	6.6	6.5	6.9	6.1	4.5	3.7	3.8
18	3.9	4.0	3.7F	3.6	3.2V	3.5	4.7	4.8	5.8P	5.7	5.5	5.5	6.4	7.9	7.7	7.4	6.6	5.5	6.3	7.0	6.7	[5.6]A	4.5	4.6
19	4.5	4.5	4.1	4.0	3.9	C	C	5.0	6.3	6.3	6.5	6.1	5.8	6.0	6.4	6.5	6.6	6.6	7.0	6.9	6.5	4.5	4.0	4.3
20	4.3	4.3	4.0	3.9	3.6	4.0	5.1	5.1	5.7	5.3	5.2	5.5	6.5	6.3	6.8	[7.2]A	7.7	7.0	6.0	5.8	[4.7]A	3.6	4.0F	4.0F
21	3.6F	3.7F	3.7JF	3.7F	2.7F	3.3F	4.2	5.0	5.2	5.8	5.6	5.6	6.4	6.5	6.4	6.5	5.7	5.4	5.6	6.8	6.4	4.8	4.8	4.8
22	4.7	4.8F	4.7F	4.4F	3.1F	3.6	4.5	4.2	4.4	5.0	5.8	6.0	6.8	6.8	6.5	6.3	5.9	5.7	4.9	5.1	5.3P	5.3	5.5	4.8
23	4.2	3.8	3.7	3.5	3.3	3.5	4.0	4.9P	5.2	5.3	5.6	5.8	6.1	6.6	6.1	5.5	5.3	5.3	4.9	5.5	5.5	5.2	5.0	4.7
24	4.5	4.0	3.8	3.7	3.5	4.7	6.0	4.3	5.0	5.4	6.0	5.5	6.5	6.5	6.6	5.8	6.6	5.7	5.9P	6.3	5.0	4.9	4.7	4.3
25	4.0	4.0	4.0	3.5F	3.5F	4.2F	5.4	5.3	5.2	5.7	6.3	6.8	7.1	7.5	7.6	6.6	6.4	6.5	5.7	6.4	6.1	4.7	4.9	4.6
26	4.7	4.2JF	4.1F	3.6F	3.4JF	4.2F	4.6	5.3	5.4	5.7	5.5	5.8	5.8	6.0	7.0	7.5	7.6	8.0	6.0	5.3	5.0	4.5	4.5	4.5
27	4.0	4.0	4.0	3.5	3.5F	4.2	5.2	5.2	5.0	5.4	5.7	5.2	5.5	6.1	7.3	7.3	6.3	6.8	6.9	7.3P	8.3	4.4	3.6	3.5
28	3.3	3.4	3.5	3.5	3.5F	4.7	5.2	5.3	4.9	5.4	5.7	5.7	6.4	7.0	7.6	7.4	5.7	6.0	6.8	8.5	8.0	4.2	2.9H	3.0
29	3.1F	2.9F	2.8F	2.7F	2.7F	4.2	5.6	5.5	5.2	5.1	5.1	5.1	5.6	6.0	7.1	7.5	7.5	[7.2]A	7.0	[6.8]A	6.5	A	A	A
30	A	A F	3.3F	3.4F	3.4F	4.5	5.0	5.4	5.4	5.6	5.6	5.4P	5.1	5.1	A	A	A	6.5	A	A	6.0	3.5F	[3.6]A	3.6F
31																								
Mean Value	3.8	3.8	3.7	3.6	3.4	3.7	4.9	5.2	5.6	5.8	6.2	6.3	6.6	6.6	6.8	6.9	6.6	6.4	6.4	6.4	5.8	4.5	4.1	4.0
Median Value	3.7	3.8	3.7	3.6	3.5	3.6	4.8	5.2	5.4	5.7	6.2	6.1	6.4	6.6	6.8	6.8	6.5	6.2	6.5	6.7	5.9	4.5	4.0	4.0
Count	29	28	29	28	29	29	29	30	28	29	28	28	28	28	27	27	27	29	27	27	30	28	28	29

foF2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A 1

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1954

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	330	370F	380F	260	310F	280	250	250	250	300P	300	280	270	270	270	280	260	280P	260	250	250	300	350	350
2	350	A F	A F	A F	300F	270F	220	220	260	280	290	330	300	280	290	280	270	250	250	250	A	370F	350F	360F
3	380F	380F	350F	280F	230F	320F	230	250	320	350	280	260	270	290	310	320	290	280	280	270	250	290	350	350
4	380	370	350F	290	270F	250F	270	290	270	270	250	320	300	290	300	290	300	270	280	250	350	380Y	340	330
5	320	340	330	330	320	280	270	240	270	300	290	280	300	290	280	290	280	280	300P	300	320	250	320	340
6	340	360	350F	290F	300F	260	240	260	270	270	280	300	300	300	280	280	260	270	250	290	350	310	300	320
7	310	350	290	320	250	280F	260	290	270	260	270	280	300	330	270	280	270	270	260	280	300	320	330	340
8	340	340	310	310	300	270P	250	270	C	C	C	C	C	C	C	C	C	250	240	270	330	350	350	370F
9	360F	350F	310F	250	230	300	250	260	290	300	300	280	310	320	310	270	270	260	270	270	280	280	360F	380F
10	[360]A	(350)J F	350F	A	A	260	(260)J	260	290	A	A	C	C	C	C	C	C	C	A	C	240	A	A	380F
11	350F	[360]A F	360F	350F	350	300F	250	240	270	U	C	C	C	U	(300)P	(300)P	300	300	A	A	370Z	340F	350F	330F
12	330F	350	370F	330F	310Z F	280F	260	260	C	BH	390	440	370	400	370	320	270P	290	[300]A	320	270P	(340)A	400	420
13	390	350F	300F	300F	360F	330F	260	300	300	310	270	280	300	300	310	300	290	270	280	300B	260	300	320	380
14	370	380	360	340	320	270	250	240	270	270	260	300	300	300	310	300	270	270	270	270	300	320	320	350
15	340	350	330F	300F	310	260	240	290	260	260	280	280	300	300	300	290	280	280	290	270	240	300	370	340
16	340F	(350)J F	350F	330F	270	260	270	260	A	A	290	290	320	300	320	290	280	280	300	310	290	270	(360)J F	340P
17	(350)J F	340F	340F	290F	330F	320F	270	280	270	270	290	290	330	[310]A	290	290	300	280	290	280	260	290	340	350
18	350	340	350F	270	250V	290	250	250	260P	250	280	320	330	300	280	280	260	290	300	300	270	[300]A	340	330
19	330	340	350	310	280	C	C	260	280	270	270	270	A	300	310	300	290	300	280	280	250	260	320	250
20	340	330	330	330	320	310	340	270	270	U	U	U	300	320	320	[300]A	290	260	270	280	[320]A	350	350F	340P
21	350F	340F	(350)J F	240F	260F	280F	270	300	270	280	300	330	310	300	300	290	290	290	320	300	280	300	300	360
22	340	350F	300F	270F	330F	270	250	U	U	U	U	330	320	310	300	290	280	270	270	330	330P	340	330	330
23	320	330	320	300	300	270	260	300P	U	U	U	U	330	300	290	300	300	280	300	330	350	360	330	350
24	330	340	320	310	340	270	240	230	[260]A	280	290	U	U	300	300	300	290	270	280T	260	320	350	320	330
25	330	320	300	350F	310F	250F	230	240	280	300	300	310	320	280	280	290	280	270	270	290	260	310	330	320
26	330	(340)J F	310F	300F	(340)J F	240F	250	270	300	290	320	320	320	360	330	330	290	270	250	300	300	300	350	370
27	330	350	330	350	320F	270	250	260	270	290	U	U	U	370	340	270	310	290	320	310P	260	270	390	A
28	A	360	310	350	350F	250	240	240	U	U	U	A	340	330	300	290	300	320	310	280	240	260	330H	360
29	350F	340F	330F	320F	290F	260	240	240	250	U	U	U	U	U	320	300	290	[300]A	310	[280]A	250	A	A	A
30	A	A F	340F	330F	310F	260	260	270	250	U	U	U	U	U	A	A	A	A	A	A	290	390F	[390]A	390F
31																								
Mean Value	340	350	330	310	300	280	250	260	270	280	290	300	310	310	300	290	280	280	280	280	290	310	340	350
Median Value	340	350	330	310	310	270	250	260	270	280	290	300	300	300	300	290	290	280	280	280	280	300	340	350
Count	28	28	29	28	29	29	29	29	24	19	20	20	22	25	27	27	27	28	27	27	29	28	28	28

foF2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A2

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

IONOSPHERIC DATA

Apr. 1954 | **h'F2** | 135° E Mean Time | **Akita** | Lat. 39° 43.5' N | Long. 140° 08.2' 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	280	300	300	200	230	240	230	240	240	300	290	270	260	270	270	280	250	260	250	220	210	240	300	300
2	300	AF	AF	AF	260^{F}	220	210	220	250	280	290	300	290	270	280	270	260	230	220	220	A	300	290	300^{F}
3	310	300	270^{F}	220	200	270	220	250	[300]^{L}	340	260	250	270	280	310	310	270	250	250	230	200	260	290	290
4	300	280	280	230	220	200	240	290	260	260	250	L	300	290	300	290	290	250	250	220	240	300	260	260
5	250	250	280	250	270	240	240	230	270	300	280	280	300	290	270	290	260	260	250	240	250	220	250	280
6	290	280^{F}	270^{F}	220	220	220	230	260	270	270	270	300	290	290	280	270	260	250	240	230	250	250	250	250
7	250	300	250	250	240	250	220	280	270	260	260	280	300	330	270	280	270	260	240	240^{A}	230	250	260	270
8	280	270	240	250	230	220	220	L	C	C	C	C	C	C	C	C	C	240	220	230	250	290	300	310
9	300	280	260	220	210	250	220	250	280	280	280	280	310	320	300	270	260	250	240	230	220	260^{A}	300^{A}	330
10	[320]^{A}	310	300	A	A	250	250	250	290	A	A	320	280	260	280	270	270^{A}	280	[250]^{A}	220	210	A	A	330^{A}
11	330^{A}	AF	A	A	A	260	230	240	270	290	320	280	280	350	300	300	280	(300)^{A}	A	A	230^{A}	280^{F}	290^{F}	280
12	270	300	300	270	250	240	240	L	290	300^{H}	390	400	350	370	330	300	250	250	[260]^{A}	260	250^{A}	[300]^{A}	340^{A}	350
13	300	270	240	240	270^{F}	270	250	L	300	310	270	280	290	300	310	280	280^{A}	260	250^{A}	[240]^{A}	230	230	260	300
14	300	310	300	280	240	240	230	230	270	270	260	300	300	300	310	280	260	250	230	230^{A}	230	250	250	290
15	280	280	270	240	250	220	220	280	260	260	280	280	300	290	300	280	280	280	270^{A}	250	220^{A}	220	320	280
16	300^{F}	290	270	260	240	230	250	250^{A}	A	A	290	290	320	300	320	290	270	270	260	260	260	250	300^{F}	270
17	280	300^{AF}	290	240	260	270	240	280	260	270	[280]^{A}	290	330	[310]^{A}	290	290	290	270	250	240	230	280	280	290
18	300	280	280	230	220	250	240	240	260	250	280	320	330	300	270	280	250	280	260	250	220	[270]^{A}	320	270
19	270	270	270	250	240	C	C	250	270	270	270	270	A	300	310	290	280	270	250	240	230	[230]^{A}	230	290
20	270	270	260	260	260	260	240	270	260	270	320	340	300	320	320	[300]^{A}	270	240	250^{A}	A	A	300^{A}	(320)^{A}	290
21	290	270	280^{F}	200	200	250	250	290^{A}	270	280	300	330	310	300	300	290	280	270	270	240	220	240	280	280
22	270	280	250	220	250^{F}	250	250	L	L	360	320	330	310	300	290	290	270	250	240	260	250	270	240	260
23	250	260	270	240	240	240	230	[270]^{L}	310	300	300	310	330	300	290	300	290	270	260	260	270	290	250	260
24	260	260	250	250	280	250	220	230	[260]^{A}	280	290	320	320	300	300	300	280	260	250^{A}	240^{A}	240^{A}	270	250	280
25	250	260	250	300^{F}	260^{F}	220	220	230	280	300	300	310	310	280	280	280	280	260	250	240^{A}	230^{A}	250^{A}	280	260
26	270	290	260	250	270	230	250	270	300	290	320	320	320	350	310	300	270	250	220	250^{A}	240	270	280	290
27	270	290	270	210	250	240	230	250	270	(290)^{A}	300	340	370	370	320	270	300	270	280	250	220	210	A	A
28	A	290	300	290	270	230	230	230	250	310	310	[320]^{A}	340	320	300	280	300	300	280	240^{A}	220	210	260^{H}	230
29	290	290	280	280^{F}	250	240	230	230	250	270	330	370	350	340	310	290	270	[260]^{A}	260	[250]^{A}	240^{A}	A	A	A
30	A	AF	300^{A}	260	250	230^{A}	250^{A}	250	250	310	310	310	350	330	A	A	A	A	A	230^{A}	250	320	[310]^{A}	300
31																								
Mean Value	280	280	270	240	240	240	230	250	270	290	290	300	310	310	300	290	270	260	250	240	230	260	280	290
Median Value	280	280	270	250	250	240	230	250	270	280	290	300	310	300	300	290	270	260	250	240	230	260	280	280
Count	28	27	28	27	28	29	29	26	27	27	28	28	28	29	28	28	28	29	28	28	28	28	27	28

h'F2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1954 | **foF1** | 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	L	3.6L	4.2	4.2	4.2	4.3	4.3	4.0L	4.0L	3.6L	L						
2							Q	Q	L	3.7	4.2	4.1L	4.3	4.2	4.2	4.0L	3.6	3.1L						
3							Q	L	L	4.1	4.2	4.3	4.1	4.1L	4.2	4.1	3.7	3.0L						
4							Q	(3.7)L	3.8	4.0	4.1	[4.2]L	4.4	4.2	4.1H	4.0	3.7L	L						
5							Q	L	(3.9)L	4.1	4.1	4.2H	4.3L	4.2	4.1	3.8L	3.6L	L						
6							Q	3.5	3.9L	4.1L	4.3	4.4	(4.4)L	(4.3)L	4.2	(4.0)L	3.7	Q						
7							Q	L	3.9L	4.0	4.1	4.3	4.3L	4.6L	4.0	3.9	L	L						
8							Q	L	C	C	C	C	C	C	C	C	C	L						
9							Q	Q	A	4.0L	[4.2]L	4.5	4.4	4.5	4.3	4.0	3.8L	L						
10							A	A	A	A	A	4.3	4.3	4.3	4.2	4.0	A	A						
11							Q	L	L	4.1	4.2	4.2	4.3	4.5L	4.0	4.0A	L	A						
12							L	L	4.0L	4.2L	4.2	4.3H	4.3	4.2	4.0	3.8	3.5	Q						
13							L	L	(4.0)L	(4.3)L	4.3	4.2A	4.5	4.3	4.2L	4.0	A	L						
14							L	L	3.7	L	L	4.5L	4.5	4.4	4.3	4.0	3.8L	L						
15							Q	3.7	4.0	4.1	4.3	4.3	4.4L	(4.5)L	4.4	4.0	3.7L	A						
16							A	A	A	A	A	4.4L	4.5	4.4	4.5	4.2	3.8L	L						
17							Q	A	A	A	A	4.3	(4.5)L	[4.4]A	4.2	[4.0]A	3.7	A						
18							Q	L	L	4.0	4.3	4.4	4.5	4.4	A	A	3.5	L						
19							C	3.2L	4.0L	4.1	4.1	4.1H	A	L	4.3	4.0	3.7L	L						
20							Q	3.6L	3.9	[4.0]A	4.2	4.4L	4.3	4.2	4.2	A	A	A						
21							Q	A	A	4.2	4.2	4.3	4.4	4.3	4.2	4.0	L	L						
22							L	L	L	4.1	4.1	4.3	4.2H	4.2H	4.1	3.9	3.7H	3.3L						
23							Q	L	3?	4.0	4.1	4.1	4.3	4.2	4.1	4.0	3.7	L						
24							L	(3.4)L	[3.8]A	4.1L	[4.2]A	4.3	4.4	[4.3]A	4.2	4.0	3.8	L						
25							Q	L	3.8L	(4.2)L	4.3	4.5	4.5	4.3	4.2	4.0	3.8	3.4						
26							A	3.7	4.0	4.1	4.3L	4.4H	4.3	4.2	4.1	3.8	3.5	A						
27							A	A	A	A	A	4.1	4.2	4.3	4.3	3.9	[3.7]A	3.5L						
28							L	3.5L	A	A	4.0	[4.0]A	4.1	4.3	4.2	4.0	A	L						
29							L	3.5L	4.0L	4.1	4.4	4.4	4.3	4.1	4.0	3.9	3.6	A						
30							A	3.6H	[3.8]A	4.1	4.3	4.3	4.3	4.1	A	A	A	A						
31																								
Mean Value								3.5	3.9	4.1	4.2	4.3	4.3	4.3	4.2	4.0	3.7	3.3						
Median Value								3.6	3.9	4.1	4.2	4.3	4.3	4.3	4.2	4.0	3.7	3.3						
Count								10	17	23	24	29	28	28	27	26	21	5						

foF1

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | h'F1 | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	250	220	200	220	210	230	210	200	240	240	250						
2							Q	Q	220	[210]A	200	210	240	220	250	[250]A	250	220						
3							Q	230	230	220	250	200	200	200	220	260	230	220						
4							Q	230	240	240A	240	210	210	210	200H	250	250	250						
5							Q	240	230	230	200	200H	220	250	220	220	240	250						
6							Q	240	240	240	230	230	210	220	230	240	240	Q						
7							Q	230	240	220	220	210	230	220	200	250	250	250						
8							Q	230	C	C	C	C	C	C	C	C	C	230						
9							Q	Q	A	230	230	240	220	A	220	230	250	240						
10							A	A	A	A	A	220	A	A	A	240A	A	A						
11							Q	240	240	[220]A	200	230	[220]A	220A	A	A	250	A						
12							240	230	250	220	220	200H	270A	260A	250	250	250	Q						
13							250	230	260A	210	250	A	A	220A	230	240	[240]A	240A						
14							230	220	210	[230]A	250	[220]A	200	210	210	220	250	250						
15							Q	250	[240]A	220	220A	210	220	260	230A	230	A	A						
16							A	A	A	A	A	A	220A	210	220	270	270	260						
17							Q	A	A	A	A	220A	210	A	A	A	240	A						
18							Q	240	230	230A	220	C	A	240A	A	A	240	230A						
19							C	240	260	250	230	200H	A	A	220A	240	240A	240						
20							Q	250	A	A	230	220	210	190	A	A	A	A						
21							Q	A	A	240	250	210	260	220	210	[230]A	250	260						
22							240	250	240	250	220	210	220H	190H	210A	230	220H	240						
23							Q	250	240	240	230	200	230	220	220	220	220	240						
24							240	230	[240]A	240	A	A	210	[220]A	240A	250A	250	240						
25							Q	230	260	250	250	230	200	200	190	250	230	250						
26							A	250	[250]A	250A	240	210H	[210]A	210	190H	210	250	A						
27							A	A	A	A	A	A	(250)A	220	250	230A	[240]A	250						
28							240	230	A	A	A	A	220	240A	220	240	[240]A	240						
29							240	230	220	220	220	210	220	200	220	240	220	A						
30							A	240H	[240]A	240	240	270	230	220	A	A	A	A						
31																								
Mean Value							240	240	240	230	230	220	220	220	220	240	240	240						
Median Value							240	240	240	230	230	210	220	220	220	240	240	240						
Count							7	23	21	23	23	23	25	25	23	24	25	20						

h'F1 | Sweep 0.85 Mc to 22.0 Mc in 2 min | ☐ Manual ☒ Automatic | A5

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5′ N
Long. 140° 08.2′ E

Apr. 1954

foE

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						1.2	1.8	2.2	2.7	2.8	2.8	3.0	3.0	3.0	[2.9]^{A}	2.8	A	A						
2							1.7	2.5	2.7	2.6	3.0	2.9	2.9	3.0	3.0	A	A	A						
3							AF	2.4^{F}	2.8	2.8	2.9	2.9	3.1	3.0	2.8	2.7	A	A						
4							1.7	2.4	2.5	2.8	2.9	A	A	3.0	2.9	2.7	[2.2]^{A}	1.8						
5							1.9	2.5	2.7	2.9	3.0	3.2	3.1	3.0	2.9	2.7	[2.4]^{A}	2.0						
6							2.1	2.5	2.8	3.0	3.0	3.0	3.1^{H}	3.1	3.0	2.8	2.5	2.0						
7							1.7^{F}	2.5	2.7	2.8	3.0	3.1	3.1	3.1	2.9	2.8	2.7	2.3						
8							2.0	2.4	C	C	C	C	C	C	C	C	C	A						
9							1.9	2.4	2.7	3.0	3.0	3.2	3.2	3.2	3.0	2.8	2.6	2.1						
10							1.7	2.3	2.6	2.9	3.0	3.0	3.0	3.0	3.0	2.8	2.5	A						
11							2.0	2.3	2.7	2.8	2.9	3.0	3.0	3.0	2.9	2.8	2.6	2.2						
12							1.8	2.4	2.7^{H}	3.0	[3.0]^{A}	2.9	2.9	3.0	3.0	2.8	2.5	2.0						
13							1.7	2.5	2.7	2.9	3.1	3.1	3.0	2.8	2.5	A	A	A						
14							2.0	2.5	2.8	2.8	3.1	3.0	3.0	[2.9]^{A}	2.8	2.8	2.5	2.2						
15							2.0	2.5	2.8	2.7	[2.8]^{A}	3.0	3.1	3.2	3.1	3.0	2.7	2.2^{F}						
16							2.0	2.5	2.8	2.9	3.0	3.1	2.9	A	A	A	A	AF						
17							2.0	2.4	2.8	3.0	3.0	A	A	2.9	A	A	A	A						
18							1.9	2.5	3.0	2.8	2.9	2.9	3.1	2.8	2.8	A	A	A						
19							C	2.5	2.7	3.0	3.1	3.1	3.0	2.8	2.8	A	A	2.3	1.6					
20						1.4	1.9	2.5	3.0	3.0	3.0	3.0	2.9	[2.8]^{A}	2.8	[2.8]^{A}	2.7	2.2						
21							2.2	2.5	2.8	3.0	3.0	3.0	3.0	A	A	A	A	2.2	1.7					
22							2.0	2.3	2.7	3.0	3.1	3.1	3.1	3.0	2.7	2.8	2.6	2.3						
23							2.0	2.6	2.7	2.9	3.0	3.0	3.0	[3.0]^{AF}	3.0	2.8	2.5	2.1						
24							1.9	2.5	2.8	3.0	3.1	3.0	3.0	2.7	2.8	2.7	A	2.4						
25							1.8	2.5	2.9	3.2	[3.2]^{C}	3.2	3.2	3.1	3.1	2.9	2.7	2.5						
26							2.2	2.5	2.9	3.1	3.2	3.2	3.3	3.2	3.1	2.8	2.6	2.2	1.6					
27							2.1	2.5	2.7	3.0	3.1	3.1	3.1	3.2	3.0	2.9	A	A						
28							2.0	2.5	2.7	2.8	A	A	3.0	A	A	A	2.7	2.3						
29							2.0	2.6	2.8	3.1	3.1	3.1	3.1	3.1	3.1	3.0	2.7^{F}	2.2						
30							2.0	2.4	2.8	2.9	A	A	A	3.2	3.0	2.8	2.5	2.1						
31																								
Mean Value						1.3	1.9	2.5	2.8	2.9	3.0	3.0	3.0	3.0	2.9	2.8	2.6	2.2	1.6					
Median Value						1.3	2.0	2.5	2.7	2.9	3.0	3.0	3.0	3.0	2.9	2.8	2.6	2.2	1.6					
Count						2	28	30	29	29	27	25	26	26	25	21	18	20	3					

foE

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1954

h'E

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						1·50	140	110	110	110	110	110	110	110	[110]^{A}	110	A	A						
2							140	120	110	110	110	100	100	100	100	A	A	A						
3							AF	110^{F}	110	100	100	100	100	100	100	110	A	A						
4							150^{B}	120	110	110	110	A	A	110	110	110	[110]^{A}	110						
5							140	120	[120]^{A}	110	110	110	130^{A}	[120]^{A}	100	100	[120]^{A}	130						
6							140	150^{A}	130^{A}	110	110	110	110^{H}	130^{A}	120^{A}	120^{A}	120^{A}	120						
7							140	120	110	110	100	110	110	110	100	100	120	120						
8							140	110	C	C	C	C	C	C	C	C	C	A						
9							130	110	110	110	100	110	100	110	110	110	110	120						
10							130	110	110	110	110	110	110	100	110	110	110	A						
11							120	110	110	110	110	110	100	110	100	110	110	120						
12							130	110	110^{H}	110	[100]^{A}	100	100	100	110	110	120^{A}	120^{A}						
13							120	120	110	110	110	110	110	100	110	A	A	A						
14							130	110	110	100	110	110	100	[100]^{A}	110	110	110	120						
15							120	110	110	110	[100]^{A}	100	110	100	100	100	110	120^{F}						
16							130	120	110	110	110	100	100	A	A	A	A	AF						
17							130	120	110	100	110	100	110	110	A	A	A	A						
18							120	110	110	110	110	110	110	100	110	110	A	A						
19							C	A	110	110	110	110	110	100	110	110	[110]^{A}	110	140					
20						150	120	110	110	110	110	110	110	[110]^{A}	110	[110]^{A}	110	120						
21							150	110	110	110	110	110	100	A	A	A	A	120	110					
22							120	110	110	100	110	110	110	110	110	110	110	120						
23							120	110	110	110	110	110	100	110	100	110	100	120^{A}						
24							130	110	100	110	110	100	100	100	110	100	[110]^{A}	120						
25							120	110	110	110	100	100	110	110	110	110	100	110						
26							120	110	110	100	100	110	100	100	110	110	110	120	130					
27							120	110	110	110	100	110	110	100	100	110	A	A						
28							110	110	110	110	A	A	110	A	A	A	110	110						
29							120	110	110	100	100	100	100	100	100	110	100	110						
30							120	110	100	110	100	100	100	100	100	100	110	120						
31																								
Mean Value						150	130	110	110	110	110	110	110	110	110	110	110	120	130					
Median Value						150	130	110	110	110	110	110	110	100	110	110	110	120	130					
Count						2	28	29	29	29	28	27	28	26	25	23	20	20	3					

h'E

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

A7

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

IONOSPHERIC DATA

Apr. 1954 | **fEs** | 135° E Mean Time | **Akita** | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.9	2.0	1.7	E	2.2^{Y}	G	2.9	G	G	3.9	4.1	3.0	G	G	3.9	4.2	3.9	3.5	4.2	3.3	3.1	3.0	E	4.1
2	4.1	5.0	4.3	4.3	3.5	2.2^{FY}	2.1	G	4.5	4.0	4.2	3.9	3.8	3.5	3.5	4.2	3.7	3.1	3.0^{Y}	3.1	4.5	3.1	2.8	2.3
3	2.5	2.0	2.0	2.3^{Y}	2.0^{Y}	2.3	2.3^{F}	3.0	4.0	4.0	4.0	4.0	G	G	G	3.5	3.7	4.0^{Y}	2.9	3.5	2.5	3.5	2.5	2.3
4	2.5	1.8	2.2	2.3	2.4	2.8	G	3.0	G	G	G	4.2	4.0	G	G	G	3.1	3.0^{Y}	E	2.2	2.1	2.1^{Y}	2.2^{Y}	2.4^{Y}
5	2.5	2.2^{Y}	2.4	2.2^{Y}	2.3	2.4	G	G	3.1	3.5	4.6	3.5	4.2	3.6	G	G	3.5	G	2.3	2.2	E	2.2	E	E
6	E	1.7	2.2	1.7	3.0^{Y}	E	3.0	3.5	3.5	3.7	G	3.8	3.5	3.5	3.3	3.0^{Y}	2.6^{Y}	2.3	2.1	1.8	E	1.8	E	E
7	E	E	E	2.5	2.3	1.8	3.0^{FY}	4.0^{Y}	G	4.7	3.8	4.0^{Y}	G	G	G	G	3.5	3.5	2.9	3.6	E	E	E	2.3
8	E	1.8	E	E	E	E	2.9^{Y}	G	C	C	C	C	C	C	C	C	C	3.3	3.5	2.9	2.4^{Y}	E	3.5^{Y}	3.1
9	2.5	2.5^{Y}	2.8	2.0^{Y}	3.3^{F}	2.5	G	4.1	4.7	G	4.2	G	G	4.6	4.5	G	G	3.5	2.3^{Y}	3.5	4.2	3.5	4.2	3.5
10	6.3	3.0	3.1	4.3	3.6	2.9	4.3	4.1	4.6	8.0	7.0	>5.6^{C}	5.0^{Y}	>5.6^{C}	>5.6^{C}	5.3^{Y}	>5.6^{C}	11.8	>5.6^{C}	3.0	4.5	>5.6^{C}	>5.6^{C}	3.0
11	4.2^{F}	5.0^{F}	4.2	3.5	3.3	3.0^{Y}	G	G	4.4	4.7	4.2	4.4	4.4	>5.6^{C}	4.5	4.9	4.0	5.5	>5.6^{C}	>5.6^{C}	>5.6^{C}	3.5	4.0	3.5
12	3.0^{Y}	2.9^{Y}	2.3^{Y}	2.2^{Y}	2.0^{Y}	E	G	G	3.3	4.2	3.9	4.0	4.1	4.8	4.0	4.3	3.5	3.5	6.7	3.1	5.7	5.6	3.5	4.2
13	3.3^{F}	3.0^{F}	2.2	2.5	2.3^{Y}	2.2^{Y}	G	G	4.3	4.0	4.3	5.0	4.4	4.4	4.0	4.4	5.7	3.0	4.5	4.1	4.4^{Y}	4.2	3.1	3.5
14	2.7	1.9^{Y}	1.9^{Y}	2.1^{Y}	2.0^{FY}	2.2^{Y}	G	G	G	4.7	4.7	4.9	4.2	4.5	4.0	G	G	G	3.1	3.9	2.7	E	3.0	2.3
15	2.3	2.3	2.5	2.3	2.9	2.3	G	G	4.5	4.2	4.3^{Y}	4.1^{Y}	G	G	3.1	G	G	4.3	5.3	5.2	3.8	2.4	4.1	2.5
16	2.2^{Y}	2.3^{Y}	2.1^{Y}	1.9	3.2	2.1^{F}	3.6	5.5	5.5	6.5	5.3	5.3	4.5	4.2	3.8	6.8	6.7	5.5^{F}	3.3	3.6	4.2	6.5	5.4	4.6
17	3.3	3.5	2.5	2.7	3.1^{Y}	3.5	3.6	4.8	5.1	5.3	5.4	4.4	4.0	6.5	4.5	5.6	4.2	5.4	4.4	3.1	2.3	2.6	3.0	3.1
18	3.0	2.5^{Y}	2.3^{F}	2.2^{Y}	2.0^{Y}	2.3^{Y}	G	3.1	G	3.8	4.1	4.0	5.3	4.6	5.5	6.5	6.5	4.7^{F}	3.5^{F}	>2.9^{C}	3.1	5.5	3.5	3.0^{Y}
19	2.9	2.2	2.0	E	E	C	C	3.0	3.5	4.5	4.3	4.7	6.3	6.8	4.3	4.2	4.1	3.5	4.6	4.0	4.5	4.5	2.5	2.2
20	1.9	1.9	E	2.3	1.9	3.0^{Y}	3.2	3.8	4.5	5.0	G	4.2	G	4.5	4.5	9.3	4.7	5.7	4.4	4.7	6.5	7.1	4.5	4.2
21	4.2	1.9	1.6	2.3	E	E	2.5	4.4	4.6	G	G	4.2	4.8	4.3	5.4	5.3	6.5^{Y}	3.9	2.7	2.6	2.8	2.3^{F}	E	E
22	2.5	3.2	2.8^{F}	3.0^{F}	2.5^{F}	2.3^{F}	G	G	G	3.5	G	G	G	G	4.0	G	G	G	2.7	2.7	2.0	2.9	2.3	2.3
23	2.2	2.3	2.3	2.0^{Y}	2.2	2.1^{Y}	3.0^{Y}	G	G	4.3	4.4	4.0	4.0	4.2	3.5	G	3.2	3.5^{Y}	3.5	3.0	2.3	2.2^{FY}	E	2.1
24	2.1^{Y}	2.2^{Y}	E	2.0^{Y}	E	2.3^{Y}	G	G	5.3	4.7	5.3	4.8	3.5	5.4	4.2	4.2	3.6	G	3.5	3.3	3.1	2.3	2.4	4.0
25	1.9	2.5	E	4.1^{Y}	2.1^{Y}	2.8^{Y}	G	G	4.5	4.3	G	G	G	4.0	G	G	G	G	3.5	3.5	3.2	4.2	2.8	E
26	2.2	3.4	2.4	2.4	2.0^{Y}	2.0^{Y}	4.1	4.0	4.2	4.5	4.1	G	2.8	2.8	3.6	G	4.4	4.5	3.5	3.5	3.0	3.2	2.7	2.2
27	2.3^{Y}	2.2^{Y}	2.3	2.3	2.1^{Y}	3.1	4.1	4.5	4.6	5.5	4.3	5.3	4.7	G	G	6.1	12.5	6.5	4.2	3.3	E	1.9	4.2	6.5
28	5.6	3.8	3.5	3.0	2.3	3.3	3.0	4.0	5.0	5.2	6.5^{Y}	6.6	4.5	4.5	4.2	4.1	4.2	G	4.0	3.5	4.3	2.7	1.9	E
29	1.9	1.8	1.8^{Y}	2.3	2.3	2.3	3.2	G	4.0	G	5.5^{Y}	5.5	4.5	4.2	G	3.5	G	11.5	7.2^{Y}	8.0	4.5	8.0	9.6	7.8
30	6.5	4.4	3.5	3.0	3.3	4.2	4.4	G	5.1	3.7	3.9	3.8	4.6	4.5	7.0	9.0	9.7	11.8	13.5	7.0	4.2	4.0	4.3	4.3
31																								
Mean Value	3.1	2.7	2.5	2.6	2.5	2.6	3.2	3.9	4.4	4.6	4.6	4.4	4.3	4.5	4.3	5.2	4.9	5.0	4.1	3.6	3.6	3.6	3.6	3.4
Median Value	2.5	2.3	2.2	2.3	2.3	2.3	2.5	G	4.3	4.2	4.2	4.1	4.0	4.2	4.0	4.2	3.7	3.5	3.5	3.5	3.1	3.0	2.9	2.8
Count	30	30	30	30	30	29	29	30	29	29	29	29	29	29	29	29	29	30	30	29	30	30	30	30

fEs

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1954 | (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	3.0	2.7F	2.6F	3.3	3.0F	3.2	3.5	3.6	3.5	3.1P	3.1	3.4	3.4	3.4	3.4	3.4	3.4	3.3P	3.4	3.5	3.4	3.0	2.8	2.8
2	2.9	AF	AF	AF	3.1F	3.1ZF	3.8	3.8	3.5	3.3	3.2	3.0	3.2	3.3	3.3	3.3	3.4	3.5	3.6	3.6	2.8	2.7F	2.8F	2.8F
3	2.7F	2.7F	2.8F	3.1F	3.8F	3.0F	3.6	3.4	2.9	2.8	3.3	3.4	3.3	3.1	3.1	3.0	3.1	3.3	3.2	3.4	3.5	3.1	2.8	2.8
4	2.7	2.7	2.8F	3.2	3.4F	3.5F	3.2	3.3	3.4	3.4	3.6	2.9	3.2	3.3	3.2	3.2	3.2	3.3	3.3	3.6	2.8	2.7V	2.9	2.9
5	3.0	2.9	3.0	2.9	3.3	3.2	3.4	3.6	3.4	3.1	3.3	3.2	3.1	3.2	3.2	3.3	3.3	3.2	3.2P	3.2	3.0	3.4	3.0	2.8
6	2.9	2.8	2.8F	3.0F	3.1F	3.3	3.5	3.5	3.4	3.3	3.4	3.1	3.2	3.1	3.3	3.3	3.4	3.3	3.5	3.2	2.8	3.1	3.0	3.1
7	3.1	2.9	3.1	2.9	3.4	3.2F	3.3	3.2	3.5	3.5	3.4	3.4	3.1	3.1	3.4	3.3	3.4	3.3	3.4	3.2	3.1	3.0	2.9	2.9
8	3.0	3.0	3.0	3.2	3.3	3.3P	3.5	3.3	C	C	C	C	C	C	C	C	C	3.5	3.6	3.2	2.9	2.8	2.8	2.7F
9	2.7F	2.6F	3.0F	3.5	3.6	3.0	3.5	3.4	3.2	3.0	3.2	3.3	3.3	3.0	3.1	3.3	3.3	3.4	3.3	3.4	3.3	3.2	2.9F	2.7F
10	[2.8]A	(2.8)JF	2.9F	A	A	3.4	(3.6]J	3.4	3.2	[3.0]A	2.8	[3.0]C	3.3	C	C	C	C	C	A	C	3.5	A	A	2.6F
11	2.9F	[2.9]AF	2.9F	3.0F	2.9	3.0F	3.6	3.6	3.3	3.5	C	C	C	3.1	(3.3]P	(3.3]P	3.2	3.1	A	A	3.3Z	2.8F	2.7F	3.0F
12	2.9F	2.8	2.7F	3.0F	3.0ZF	3.2F	3.4	3.5	C	2.9H	2.7	2.5	2.7	2.6	2.8	3.1	3.3P	3.1	[3.0]A	2.9	3.4P	[3.0]A	2.6	2.6
13	2.6	2.8F	3.1F	3.0F	2.7F	2.9F	3.5	3.1	3.2	3.1	3.4	3.3	3.1	3.3	3.1	3.2	3.2	3.4	3.2	3.2	3.3	3.1	2.9	2.7
14	2.7	2.7	2.8	2.8	2.9	3.3	3.5	3.6	3.5	3.4	3.4	3.1	3.2	3.1	3.1	3.2	3.3	3.4	3.3	3.3	3.1	3.0	2.9	2.8
15	2.8	2.8	2.9P	3.1P	3.1	3.4	3.6	3.3	3.5	3.5	3.3	3.3	3.2	3.1	3.2	3.3	3.2	3.3	3.2	3.4	3.6	3.0	2.8	2.9
16	3.0F	(2.9)JF	2.9F	2.9F	3.4	3.4	3.3	3.6	3.4	3.3	3.1	3.3	3.1	3.3	3.1	3.2	3.3	3.2	3.1	3.0	3.2	3.4	2.8JH	2.9P
17	(2.8)JF	2.8F	2.8F	3.2F	2.9F	3.0F	3.2	3.4	3.3	3.4	3.2	3.3	3.1	3.1	3.3	3.3	3.1	3.3	3.2	3.2	3.4	3.2	2.9	2.9
18	2.8	2.9	2.8F	3.3	3.4V	3.1	3.6	3.5	3.6P	3.6	3.3	3.0	3.0	3.1	3.2	3.3	3.4	3.2	3.2	3.2	3.4	A	T	2.9
19	2.9	2.8	2.9	3.1	3.0	C	C	3.5	3.3	3.4	3.4	3.4	3.3	3.1	3.0	3.3	3.2	3.2	3.3	3.2	3.5	2.8	3.0	2.9
20	3.0	3.0	3.0	2.7	3.0	3.0	3.6	3.5	3.6	3.5	3.2	3.1	3.1	3.1	3.0	[3.1]A	3.2	3.5	3.4	3.4	[3.1]A	2.8	2.8F	2.9F
21	2.8F	2.8F	(2.7)JF	3.6F	3.3F	3.2F	3.2	3.2	3.3	3.4	3.3	3.2	3.1	3.2	3.2	3.2	3.3	3.2	3.0	3.2	3.2	3.2	2.7	2.8
22	2.9	2.9F	3.1F	3.4F	2.9F	3.3	3.5	3.2	3.1	3.0	3.2	3.0	3.0	3.1	3.3	3.2	3.3	3.4	3.3	2.9	2.8P	2.9	2.9	2.9
23	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.0P	3.2	3.1	3.3	3.2	3.1	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	2.8	3.0	2.8
24	2.9	2.9	3.1	3.1	3.0	3.4	3.8	3.7	3.3	3.3	3.3	3.2	3.0	3.1	3.3	3.2	3.3	3.3	3.3P	3.4	2.8	2.8	2.9	2.9
25	3.0	3.0	3.0	2.7F	2.9F	3.5F	3.8	3.7	3.4	3.2	3.1	3.1	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.1	3.4	3.1	2.8	3.0
26	2.9	(3.1)JF	2.9F	2.9F	(2.8)JF	3.5F	3.5	3.4	3.3	3.3	3.0	3.1	3.1	2.8	3.0	3.0	3.2	3.4	3.5	3.2	3.1	3.3	2.7	2.7
27	3.0	2.8	3.0	2.6	2.8F	3.5	3.4	3.5	3.3	3.4	3.3	3.1	2.9	2.9	3.0	3.3	3.1	3.2	3.0	3.2P	3.5	3.2	2.7	2.9
28	2.7	2.8	3.1	2.8	2.8F	3.4	3.5	3.6	3.6	3.3	3.3	2.9	2.9	3.1	3.2	3.2	3.1	3.1	3.1	3.3	3.7	3.3	2.8H	2.7
29	2.9F	2.9F	2.9F	2.9F	3.1F	3.3	3.7	3.8	3.5	3.5	3.1	2.9	3.0	3.1	3.0	3.2	3.2	[3.1]A	3.0	[3.2]A	3.5	A	A	A
30	A	AF	2.8F	2.9F	3.0F	3.4	3.4	3.2	3.5	3.2	3.2	3.1P	3.0	3.1	A	A	A	3.0	A	A	3.2	2.6F	[2.6]A	2.7F
31																								
Mean Value	2.9	2.8	2.9	3.0	3.1	3.3	3.5	3.4	3.4	3.3	3.2	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.2	3.2	3.0	2.8	2.8
Median Value	2.9	2.8	2.9	3.0	3.0	3.3	3.5	3.5	3.4	3.3	3.3	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.2	3.2	3.0	2.8	2.8
Count	29	28	29	28	29	29	29	30	28	29	28	28	28	28	27	27	27	29	27	27	30	27	27	29

(M3000)F2

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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23

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Apr. 1954

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	1.0	1.0	E	E	E	1.2	2.2	2.6	3.0	3.3	3.5	3.2	3.3	3.3	3.2	3.4	2.4	2.8	2.5A	[2.2]A	1.8	1.5	1.5	1.5
2	1.5	A	A	A	1.5	1.3	2.2	2.5	3.1	3.3	3.3	3.3	3.4	3.4	3.2	3.5	2.8	2.2	1.5	A	A	1.5	1.5	1.5
3	1.4	1.0	E	E	E	1.3	2.2	2.6	3.0	3.2	3.2	3.3	3.2	3.2	3.2	3.1	2.8	2.3	1.7	2.3A	1.5	2.0A	1.5	1.5
4	1.6	E	E	1.4	1.4	E	2.2	2.6	2.8	3.4A	3.3	3.4	3.2	3.0	2.9	3.0	2.5	2.2	1.5	1.5	1.5	1.5	1.5	1.5
5	1.4	1.0	1.7	E	1.4	1.5	2.1	2.5	3.1	2.9	3.1	3.3	3.4	3.5	2.9	2.8	2.5	2.2	1.6	1.5	1.5	1.5	1.5	1.5
6	1.5	1.0	E	E	1.0	E	2.3	2.8	2.8	3.0	3.3	3.5	3.4	3.3	3.0	2.9	2.6	2.4	1.5	1.5	1.5	1.5	1.5	1.5
7	1.4	1.0	E	E	1.4	1.3	2.1	2.7	3.2	2.8	3.4	3.4	3.5	3.4	3.1	3.2	2.9	2.5	2.1A	[1.8]A	1.5	1.5	1.5	1.5
8	1.4	E	E	E	E	E	2.4	3.0	C	C	C	C	C	C	C	C	C	2.3	2.2A	1.7	1.6	1.5	2.2A	1.6
9	1.4	1.0	1.5	E	E	1.7	2.3	2.5	4.0A	3.2	3.1	3.5	3.3	3.9	3.3	3.1	3.0	2.6	1.5	1.5	1.5	2.6A	1.9	1.7
10	[1.6]A	1.6	1.5	A	A	1.6	3.4A	3.5A	4.2A	[4.8]A	5.5A	3.4	3.8	3.8	4.0A	A	4.8A	3.5A	[2.6]A	1.8	1.7	A	A	A
11	A	AF	2.3AF	2.3AF	2.2A	1.7	2.1	3.0	2.8	4.0A	3.3	3.1	3.7	[3.7]A	3.7	4.0A	A	4.5A	A	A	A	1.8F	1.5	1.5
12	1.5	1.4	1.0	1.0	1.0	1.5	2.0	2.6	3.0	3.4	3.2	3.2	3.5	3.5	3.4	[3.2]A	3.0	2.5	[2.2]A	1.9	4.0A	A	A	1.7
13	1.3	1.3	1.0	E	E	1.3	2.1	2.5	3.5	3.4	3.2	4.2A	3.6	[3.4]A	3.3	3.0	4.9A	A	A	5.0A	1.5	1.5	2.0A	1.5
14	1.4	1.0	E	1.0	E	1.0	2.4	2.6	3.3	3.9A	3.4	4.1A	3.2	3.2	3.0	2.8	2.6	2.2	2.3A	[2.0]A	1.6	1.5	2.1A	1.5
15	1.5	1.5	1.3	1.3	1.1	1.3	2.3	2.9	3.7	3.3	3.7	3.4	3.5	3.4	3.6	3.1	3.2	3.3A	4.3A	4.6A	[3.0]A	1.5	1.8	1.5
16	1.4F	E	E	E	1.7	1.5	2.8	5.0A	4.6A	4.9A	4.5A	4.0A	3.7	3.3	3.1	3.4	2.9	2.7	2.5A	2.7A	3.0A	2.9A	2.1A	1.7
17	1.8	[1.6]A	1.5	1.3	1.4	1.5	2.7	4.0A	4.1A	4.5A	5.0A	A	3.5	5.5A	3.7	4.2A	3.0	4.5A	2.5A	1.7	1.6	1.5	1.6	1.5
18	1.5	1.3	1.0	1.2	1.0	1.4	2.4	2.8	3.4	3.7A	3.5	4.1	4.0A	3.6	4.5A	5.3A	3.0	2.3	1.7	1.5	1.5	[2.0]A	2.5A	1.5
19	1.5	1.0	1.0	E	E	C	C	2.8	3.0	3.1	3.2	3.8	5.2A	4.0A	[3.6]A	3.2	3.0	2.5	A	A	A	3.2A	1.5	1.5
20	1.4	E	E	E	E	1.4	2.5	3.1	3.7	4.1A	3.3	3.2	3.2	3.2	3.6	[3.8]A	3.9A	4.8A	3.6A	4.3A	[3.2]A	2.2A	2.6A	1.5
21	1.0	1.0	1.0	E	E	1.6	2.3	3.6A	3.8A	3.4	3.5	3.5	3.6	3.4	3.5A	3.4	2.8	2.3	2.8A	1.7	1.5	1.5	1.5	1.5
22	1.5	1.5	1.4	E	E	1.5	2.3	3.1	3.4	3.0	3.1A	3.5	3.2	3.2	[3.1]	3.0	2.7	2.5	2.0A	1.9	1.5	1.5	1.5	1.5
23	1.4	1.0	E	1.0	E	1.7	2.4	2.6	2.8	3.4	3.6	3.5	3.5	3.4	3.1	2.9	2.5	2.4	2.4A	1.7	1.5	1.5	1.5	1.5
24	1.3	1.0	1.0	E	E	1.5	2.4	3.0	4.5A	3.5	4.4A	4.0A	3.3	4.7A	3.5	3.5	2.7	2.4	A	A	A	1.5	1.5	1.5
25	1.1	1.2	1.0	1.0	1.0	1.6	2.3	3.1	3.0	3.2	3.7	3.5	3.3	3.3	3.2	3.2	2.8	2.5	1.7	A	A	2.1	1.5	1.5
26	1.3	1.0	1.0	1.0	1.0	1.7	3.2A	3.1	3.6	3.6	3.7	3.5	3.8	3.3	3.2	3.0	3.2	3.3	2.7A	[2.1]A	1.5	1.7	1.8	1.5
27	1.4	1.4	1.0	E	E	2.2	3.3A	3.2	4.0A	4.8A	4.5A	3.8	3.8	3.3	3.5	3.5	3.7A	2.5	3.3A	1.6	1.5	1.5	1.6	3.3A
28	2.8A	1.4	1.5	1.3	E	1.4	2.2	3.1	3.9A	4.5	3.5	5.0A	3.3	3.6	3.3	3.2	3.6	2.5	3.2A	A	A	1.7	1.5	1.5
29	1.1	1.0	1.0	E	E	1.4	2.4	2.7	3.1	3.2	3.3	3.3	3.4	3.2	3.3	3.0	2.8	[3.1]A	3.4A	A	A	A	A	A
30	A	AF	A	1.2	1.3	[2.4]A	3.5A	2.7	3.9A	3.5	3.6	3.7	3.5	3.6	A	A	A	6.0A	A	A	3.5A	1.7	[1.6]A	1.5
31																								
Mean Value	1.4	1.2	1.3	1.3	1.3	1.5	2.4	3.0	3.5	3.6	3.6	3.6	3.5	3.5	3.4	3.3	3.1	2.9	2.4	2.2	1.9	1.8	1.7	1.6
Median Value	1.4	1.0	1.0	E	E	1.5	2.3	2.8	3.4	3.4	3.4	3.5	3.5	3.4	3.3	3.2	2.9	2.5	2.3	1.8	1.5	1.5	1.5	1.5
Count	28	27	28	28	29	29	29	30	29	29	29	28	29	29	28	27	27	29	25	22	23	27	27	28

fminF

Sweep 0.85 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | fminE | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

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

fminE

Sweep 0.85 Mc to 23.0 Mc in 2 min ☐ Manual ☒ Automatic

A11

25

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Apr. 1954 | **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	3.5	3.5	3.5F	3.0F	2.5F	2.2	4.6	5.5	5.5	5.5	7.0	8.6	8.7	7.4	6.1	6.5	6.4	6.3P	7.9P	7.2P	A	3.0	3.0F	(3.2)F
2	3.2F	3.1	3.0	3.0F	(3.1)F	3.0F	4.2	5.2	4.9	6.3	6.3	7.6	9.0	9.0	7.8J	8.3P	7.0	7.0	6.2	4.0	[3.6]A	3.2	3.3F	3.4JF
3	3.0F	3.1F	[3.2]AF	3.2	2.4	1.9F	3.9	4.8	4.8	6.5	9.2	8.6	5.7	5.5	6.3	7.0	8.6	9.7P	(10.0)B	9.3P	4.4	2.5	2.5	3.0
4	3.3ZF	3.3F	3.5F	3.6JF	3.8JF	2.6JF	4.3	5.8	8.0	6.6	5.9	5.6	6.9	7.3P	6.2	6.6	6.8	8.4P	8.5	8.4J	3.7H	3.9	4.0	4.2
5	4.0	3.8	3.8	3.9	3.4	3.9	5.8	[5.7]C	5.6	6.0	6.9	7.5	7.3	8.4P	8.8	7.8	7.7P	7.0	7.1	6.6	6.1	5.1	4.0	3.7
6	3.4	3.4	F	F	3.2F	3.2F	4.8	5.5	6.1	7.0	6.8	C	7.6	8.6	8.4	7.9	6.6	5.9	6.4	5.7	4.9	4.9	4.8	4.7
7	4.4	3.8	4.2	3.6	3.8	3.2	4.4	5.6	5.8	6.5	6.6	6.6	6.5	6.6	7.9	6.4	6.1	6.9	B	5.9	4.8P	4.3	4.0	4.3P
8	4.1	4.0	3.9T	3.6	3.7	3.3	4.6	5.5	6.1	6.6	7.0	7.9	9.2	10.1	9.8	10.0	8.6	7.4P	5.6	4.4	3.6	3.6	3.5	3.4JF
9	3.4F	3.5F	3.6	3.6	[2.9]A	2.2	4.9	4.7	5.9	7.0	7.0	8.2	7.9o	7.3	9.0	9.6	9.0	8.8	7.7P	7.3P	4.8	3.1	[3.0]A	3.0
10	3.1	2.7	2.7F	2.6	[2.6]A	2.6F	5.3	5.6	5.9	6.2	6.8H	[8.6]A	10.4P	10.3P	C	C	C	9.0	B	B	4.1	A	A	A
11	2.8	[2.9]AF	(3.0)A	A	AF	3.0F	5.5	5.4	5.1	6.0	7.0	8.1P	7.5P	7.0	6.3	6.4	6.0	6.6	B	(7.6)B	3.1	F	AF	AF
12	3.5JF	4.0F	3.6F	3.4JF	3.9F	4.0F	5.7	5.6	6.3	6.6	5.5H	B	9.5	9.2	(9.5)B	9.7	9.1	6.4	5.8	7.2	6.9	3.5	3.6F	3.5
13	3.7	4.0F	4.2	3.5	2.9	2.9	5.9	6.0	5.6	6.0	7.0	6.6	7.0	7.4	7.1	8.0P	8.1	7.6P	7.6	7.1	5.2P	[4.1]A	3.0	3.2
14	3.3	3.0	3.2F	3.1	3.4	3.6	5.5	5.6	5.0	6.0	6.9	6.9	7.7	8.0P	8.2P	8.9	10.0	9.1	8.1P	(7.2)P	5.7	4.6	4.6	4.4
15	4.3	4.3	4.1	3.9	3.5	3.6	5.0	5.9	8.0J	6.1	6.3	7.4	7.4	7.7	8.5	8.3	7.9	[8.2]C	8.6	(9.3)P	7.4P	[5.2]A	3.0	[3.2]A
16	3.3	3.1F	3.4JF	3.5	3.7	3.3F	5.6	6.3	5.6	[5.6]A	5.6	6.5	7.9	[7.4]A	6.9	7.7	8.7	8.0	[7.5]A	7.0	7.2P	5.5	AF	AF
17	AF	3.7	AF	AF	AF	3.4F	5.1	5.8	6.7	6.9	6.4	6.4	6.7	7.5	[7.8]B	(8.1)J	7.6	7.4	7.6	B	6.0	3.9	3.5	3.6
18	3.6	3.6	3.7	3.7	2.2F	3.0	5.3	5.4	5.6	5.5	5.5	6.0	7.1	8.4	8.8	8.3	7.2P	6.4	6.9	7.1	7.0	3.7	3.5	4.0
19	4.5	4.2	4.1F	4.0F	3.6F	3.9F	4.8	5.5	6.3	6.5	7.3P	6.1	6.2	A	A	A	7.5	8.2P	7.7P	7.4P	7.2	A	M	4.0
20	4.2F	4.4	4.2	3.9F	3.8F	3.7F	5.5	5.4	6.1	6.0	5.2	5.9	7.2	[7.6]A	7.9	9.0	9.2P	7.3	6.5	5.9	4.0	3.0	3.3P	4.1
21	3.8F	F	3.7F	3.5F	F	3.2	5.1	5.0H	6.0	6.0	6.4	5.9	7.7	7.7	7.2	[6.8]A	6.5	6.1	6.5	7.7P	6.6	3.9	3.8	3.9
22	4.5F	4.4JF	5.0JF	3.8JF	2.9JF	3.0	5.0	4.8	5.2	6.1	7.0	7.5	8.5	8.7	8.2P	7.9	7.5	6.0	6.1	5.9	6.1	6.0	5.4	5.2
23	F	4.6F	4.4	3.6	3.0	3.2	4.4	5.0	5.5	5.5	6.0	6.1	7.5	7.3	6.9	6.2	6.0	6.1	5.9	6.1	6.0	5.4	5.2	5.2
24	5.2	4.7	4.4	4.0	4.0	5.0	5.5	5.0	5.5	5.5	5.8	5.8	7.5	8.0	7.2	6.5	6.7	6.7	7.5	6.4	4.2	4.4	4.3F	4.2
25	4.1	4.0	3.8	3.4F	3.1JF	4.7P	4.9	5.2	5.2	5.5	6.0	7.7	8.5	9.2	8.5	7.4	7.0	6.8	6.1	6.4	6.4P	4.1	4.2	4.2F
26	3.9F	3.9JF	3.6JF	F	F	4.1	4.8	5.5	[5.6]A	5.6	5.6	6.5	7.1	7.6	8.0	8.6	9.0	8.4P	7.1	5.4	4.6	4.5	4.4	4.1
27	4.0	3.9	3.8	3.6	3.5	4.1	5.2P	5.8	5.6	5.5	5.8	5.4	5.8	7.0	8.0	8.8	7.1	7.5	7.9	8.7	8.8	4.1	3.2	3.4
28	3.6	3.6F	3.5F	AF	3.5F	4.6	5.2	5.2	5.0	5.3	6.1	6.3	6.5	[7.2]A	8.0J	8.1P	C	A	8.0P	8.9	7.2	2.7	2.6	2.7
29	2.8	A	A	A	2.9F	4.2F	6.0	5.2	A	A	5.5	5.6	5.8	6.6	8.0P	8.8	8.5P	[8.0]A	7.6	7.6	5.5	3.9	A	A
30	AF	3.4JF	3.4F	3.4JF	3.0F	3.9	6.5	5.4	5.8	5.5	5.8	A	A	5.7	5.5	6.4	6.8	A	A	A	5.5	4.0J	3.9F	4.3F
31																								
Mean Value	3.7	3.7	3.7	3.5	3.2	3.4	5.1	5.4	5.8	6.1	6.4	6.9	7.5	7.8	7.7	7.9	7.6	7.4	7.2	6.9	5.5	4.1	3.7	3.8
Median Value	3.6	3.8	3.7	3.6	3.3	3.3	5.1	5.5	5.6	6.0	6.4	6.6	7.5	7.6	8.0	8.0	7.5	7.4	7.5	7.1	5.5	4.0	3.6	4.0
Count	27	28	27	24	26	30	30	30	29	29	30	27	29	29	28	28	28	28	26	27	29	27	25	26

foF2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 1

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

IONOSPHERIC DATA

Apr. 1954 | **h_pF2** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	330	320	300^{F}	250^{F}	250^{F}	280	260	240	260	300	320	300	260	260	300	280	280	280^{P}	270^{P}	230^{P}	A	310	350^{F}	(360)^{F}
2	330^{F}	350	320	320^{F}	(300)^{F}	280^{F}	230	240	A	270	300	320	320	300	(270)^{J}	260^{P}	270	A	A	260	[300]^{A}	350	340^{F}	(350)^{F}
3	380^{F}	350^{F}	[320]^{A}	300	230	240^{F}	250	230	270	330	290	250	270	320	320	320	310	290^{P}	(270)^{B}	250^{P}	220	340	350	360
4	350$^{Z}_{F}$	350^{F}	350^{F}	(290)$^{J}_{F}$	(250)$^{J}_{F}$	(260)$^{J}_{F}$	270	210	250	250	260	300	310	280^{P}	290	310	300	290^{P}	270	(240)^{J}	280^{H}	390	350	330
5	330	320	330	310	320	300	230	[250]^{C}	270	290	280	300	330	320^{P}	280	300	280^{P}	270	280	290	270	280	320	340
6	340	340	F	F	250^{F}	260^{F}	250	240	260	260	280	C	300	310	270	290	260	250	270	250	310	340	340	300
7	320	350	350	330	260	290	270	240	270	280	280	270	300	330	290	290	290	270	B	260	300^{P}	330	330	340^{P}
8	340	310	(300)^{J}	310	270	280	240	320	280	270	300	330	310	300	300	270	250	250^{P}	240	300	320	350	330	(370)^{F}
9	370^{F}	360^{F}	270	240	[280]^{A}	310	230	230	300	270	360	300	290	320	320	280	290	260	270^{P}	250^{P}	260	300	[340]^{A}	380
10	340	380	380^{F}	320	[300]^{A}	290^{F}	250	240	250	290	390^{H}	[350]^{A}	310^{P}	280^{P}	C	C	C	280	B	B	220	A	A	A
11	360	[340]$^{A}_{F}$	(320)^{A}	A	AF	280^{F}	240	230	270	340	320	[310]^{A}	300^{P}	[310]^{A}	320	300	300	280	B	(250)^{B}	240	F	AF	AF
12	(330)$^{J}_{F}$	340^{F}	300^{F}	(320)$^{J}_{F}$	300^{F}	320^{F}	240	250	310	260	440^{H}	B	370	370	(350)^{B}	310	250	280	310	310	230	430	380^{F}	370
13	380	360^{F}	280	270	340	400	250	250	260	330	280	300	310	300	300	290^{P}	300	270^{P}	270	260	260^{P}	[290]^{A}	320	360
14	370	370	340^{F}	290	310	280	240	230	230	290	290	330	290	310^{P}	310^{P}	320	280	270	260^{P}	(260)^{P}	260	330	340	360
15	360	330	320	290	310	290	270	280	(240)^{J}	280	320	300	300	310	310	290	270	[280]^{C}	280	(260)^{P}	240^{P}	[290]^{A}	340	[340]^{A}
16	350	370^{F}	(360)$^{J}_{F}$	330	220	270^{F}	250	240	240	[260]^{A}	290	340	320	[320]^{A}	330	300	300	300	[300]^{A}	300	260^{P}	250	AF	AF
17	AF	390	AF	AF	AF	330^{F}	[290]^{A}	250	270	250	270	320	310	300	[300]^{B}	(290)^{J}	280	280	280	B	250	270	360	360
18	350	340	270	250	230^{F}	310	240	250	240	260	360	340	330	310	290	280	270^{P}	300	280	290	250	250	360	360
19	350	340	350^{F}	300^{F}	300^{F}	270^{F}	230	240	280	270	260^{P}	280	310	A	A	A	290	290^{P}	270^{P}	270^{P}	280	A	M	350
20	330^{F}	320	330	310^{F}	340^{F}	310^{F}	230	250	260	260	U	350	330	[340]^{A}	340	290	280^{P}	270	270	270	380	350	370^{P}	340
21	350^{F}	F	320^{F}	220^{F}	F	310	240	270^{H}	260	270	290	U	310	290	300	[290]^{A}	280	290	300	280^{P}	250	310	370	370
22	370^{F}	(350)$^{J}_{F}$	(280)$^{J}_{F}$	(250)$^{J}_{F}$	(310)$^{J}_{F}$	290	240	250	300	320	310	310	320	320	300^{P}	310	270	270	270	310	300	300	350$^{F}_{P}$	310
23	F	310^{F}	280	280	300	280	260	270	270	310	310	350	310	290	290	300	280	280	270	310	310	340	360	360
24	350	340	320	310	310	270	220	220	240	U	320	350	310	300	290	280	300	270	260	260	310	360	360^{F}	320
25	330	320	290	300^{F}	(310)$^{J}_{F}$	260^{P}	220	230	260	310	350	320	310	300	280	300	270	270	280	280	270^{P}	300	350	340^{F}
26	350^{F}	(350)$^{J}_{F}$	(350)$^{J}_{F}$	F	F	250	250	250	[270]^{A}	290	320	340	400	400	340	370	290	290^{P}	260	270	300	320	350	340
27	330	330	340	310	310	250	240^{P}	240	260	330	300	U	360	350	350	300	290	300	340	300	250	240	370	350
28	360	350^{F}	320^{F}	AF	330^{F}	250	220	[240]^{A}	250	330	320	320	380	A	A	310^{P}	C	A	290^{P}	260	230	330	350	340
29	330	A	A	A	350^{F}	250^{F}	220	A	A	A	U	U	U	350	320^{P}	300	280^{P}	[280]^{A}	270	270	(280)^{A}	280	A	A
30	AF	(350)$^{J}_{F}$	350^{F}	(310)$^{J}_{F}$	280^{F}	260	230	250	270	300	300	A	A	300	U	320	A	A	A	A	260	(300)^{J}	330^{F}	350^{F}
31																								
Mean Value	350	340	320	290	290	280	240	250	260	290	310	320	320	310	310	300	280	280	280	270	270	320	350	350
Median Value	350	340	320	300	300	280	240	240	260	280	300	320	310	310	300	300	280	280	270	260	260	310	350	350
Count	27	28	27	24	26	30	30	29	28	28	28	24	28	28	26	28	27	27	25	27	29	27	25	26

h_pF2 | Sweep 1.0 Mc to 17.2 Mc in 2 min | ☐ Manual ☒ Automatic | **K 2**

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

IONOSPHERIC DATA

Apr. 1954 | h'F2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	270	230F	200	230	230	240	230	250	300	320	270	260	260	300	280	270	270A	240!	210	270A	270	300	320AF
2	300F	290	270	270	270	220	210	220	A	270	300	300	290	270	270	250	250	A	A	220A	[260]A	300	310A	300F
3	340	350	300F	240	200	220	240	230	270	330	270	240	270	320	320	310	290	260	230A	210	200	240	300	270
4	280	300	300	230F	200	230	240	270	250	240	260	300	300	270	290	300	280	260	240	220A	220AH	320A	290	270
5	250	250	250	250	240	240	220	[240]C	260	290	270	290	300	300	270	280	270	250	240	240	220	230	250	270
6	280	270	250F	250F	210	210	230	230	250	250	270	300	290	290	270	270	250	230	240	220	240	250	250	250
7	260	280	270	250	210	230	230	230	270	270	270	270	290	320	280	270	290	260	230A	210	230A	260	270	270
8	270	250	250	240	230	200	210	L	280	260	300	320	300	270	270	260	250	230	220A	240	240	300	270	320F
9	330A	290	240	220A	[240]A	270	220	220	300A	270	L	290	270	310	300	260	270	240	240	210	200	250	[300]A	340
10	300A	350A	330A	270	[240]A	220	230	230	250	290	330H	[320]A	310A	270	C	C	C	250	240A	220A	210	A	A	A
11	350A	300F	300A	A	AF	250F	220	230	260	340	320	290	290	[300]A	320	290	290	270	250A	230A	200	250F	360	330AF
12	270F	270	250	250F	230	260	220	250	290	260	LH	460	350	330	300	270	240	260	270A	270A	210A	330	340	300
13	320	290	240	240	280	310	240	250	260	330	280	300	310	290	300	290	270	250	240	220A	230A	[240]A	250	330A
14	340	330	300	250	240	240	230	230	230	270	290	300	280	300	290	280	260	240	230	240A	230	250	280	280
15	290	270	270	240	250	250	230	250	240	260	310	290	280	310	290	270	270	[260]C	250A	220A	220A	[280]A	340A	[320]A
16	290	300F	270F	260	200	250	240	240	240	[260]A	290	340	300	270A	320	290	270	260	[250]A	240A	230	240	310AF	330AF
17	290AF	310	300A	[300]AF	300	250	[250]A	250A	270A	250	270	320	310	300	290	270	270	270	250	230	210	210	300	320A
18	310	290	250	210	190	250	220	250	240	260	L	340	330	290	270	270	260	300A	250	250	210	200	310	320
19	290	260	260	250F	220	230	210	240	280	270	260	280	310	A	A	A	270	260	250A	230A	230A	A	M	300
20	270	260	260	250	270	265	220	250	260	260	L	350	320	[320]A	320	280	260	250	240A	230A	350A	330A	350A	310
21	300	320AF	250A	210	300F	270	240	240AH	260A	270	280	400	300	280	300	[290]A	280	280	250	240A	220	230	300	300
22	300	270F	230F	200	270	250	230	240	290	320	310	300	300	290	290	290	270	260A	250A	250	250	230	300	250F
23	290F	250F	230	230	210	240	250	260	270	310	310	350	300	290	290	300	270	270	250	250	260	270	300A	290
24	270	260	250	240	260	250	210	220	240	350	300	350	310	270	290	280	280	250	240	220	300A	310A	240	270
25	260	260	240	230	250F	230	210	230	260A	300A	350	320	290	280	260	270	260	250	250	230A	220A	230	300	290
26	300F	290	300F	290F	280F	220	230	250	[270]A	290	320	340	340	340	310	300	270	250	230A	250A	250	260	280	300
27	290	260	270	230	250	230	240	240	260	330	300	370	360	340	320	270	270	280	290A	240	210	200	300	300
28	290	270	290	320A	260	230	210	[230]A	250	L	320	320	350A	A	A	290	C	A	270	230	200	310A	350A	300
29	260	A	A	A	270F	230	220	A	A	A	320	350	370	350	300	280	270	[260]A	240A	220A	[230]A	240	A	A
30	310A	310F	310	250	230	250A	230	240	270	300	300	300	[300]A	300	370	320	A	A	A	A	250A	270	290	290
31																								
Mean Value	290	290	270	250	240	240	230	240	260	290	300	320	310	300	300	280	270	260	250	230	230	260	300	300
Median Value	290	280	260	240	240	240	230	240	260	270	300	310	300	300	290	280	270	260	240	230	230	250	300	300
Count	30	29	29	28	29	30	30	28	28	28	26	30	30	28	27	28	27	27	28	29	30	28	27	28

h'F2 | Sweep 1.0 Mc to 17.2 Mc in 2 min | ☐ Manual ☒ Automatic | K 3

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

IONOSPHERIC DATA

Apr. 1954 | **foF1** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							2	Q	L	L	4.3	4.3	4.3	4.3	4.5	A	A	A						
2							Q	Q	A	A	4.3	4.5	4.3	4.3	4.3	[4.0]A	3.8L	A						
3							L	Q	3.7L	4.1	4.2	4.2	4.3	4.5L	4.2	4.0	4.0	3.5L						
4							Q	3.5	3.9	4.1	4.3	L	4.5H	4.3H	4.2	4.2	3.9L	L						
5							L	C	3.7	4.2	4.3	4.4	4.2	4.5H	4.2	4.0	3.8	3.1L						
6							Q	Q	3.9	4.0	4.3	4.4	4.3	4.3	4.3	4.1	3.7L	L						
7							Q	3.4L	3.9L	4.2	4.3	4.4	4.5	4.4	4.3	4.1L	4.0L	A						
8							Q	L	4.2	4.3L	4.4	4.5	4.4	4.5H	4.3	A	A	A						
9							Q	Q	A	4.2	L	4.4	4.4	4.5	4.3	4.0	4.0	L	L					
10							Q	L	L	4.1L	L	A	A	A	C	C	C	A						
11							L	L	A	A	A	A	A	A	4.5	4.0	4.0	A						
12							L	4.0	4.2L	4.2H	4.5L	4.7	4.5	4.4	4.2	A	A	A						
13							L	3.4L	4.0	[4.1]A	4.2	4.6L	4.5	4.5	4.3	4.2	4.0	3.5L						
14							Q	L	A	A	4.2	A	A	A	A	A	4.0	3.3						
15							Q	L	4.0	4.0L	[4.2]A	4.5	4.5	4.5	4.5	[4.2]A	4.0	C						
16							A	A	Q	A	4.2	4.5H	4.5	[4.5]A	4.5	[4.2]A	4.0	L						
17							A	A	A	A	4.3	[4.4]A	4.5	4.6	4.3	4.2	4.0	3.5L						
18							Q	L	3.9	4.1L	L	4.5	4.3	4.3	4.4	4.2	A	A						
19							Q	3.5	4.1	A	M	4.3L	A	A	A	A	4.0	A						
20							L	A	4.0	A	L	4.5	4.5	[4.4]A	4.2	A	A	A						
21							A	A	A	4.2	4.3	4.7	4.4	4.4H	A	A	A	A						
22							A	A	A	A	4.3	4.4	4.4	4.2	A	4.1	A	A						
23							L	L	4.0	4.1	4.3	4.5H	4.4	4.3	4.2	4.1	3.9	3.4L						
24							L	L	A	L	L	A	4.6	[4.4]A	4.2	4.1	3.9	3.4						
25							Q	Q	A	A	4.3L	4.4	4.4	4.3	4.2	4.1	4.0	3.5L						
26							A	L	A	A	4.4	4.3	4.5	[4.4]A	4.3	4.1	3.9	A						
27							Q	3.8L	4.0	A	A	4.5	4.3	4.3	[4.2]A	4.2	4.0	3.7L						
28							Q	A	4.0L	L	4.2	4.4	A	A	A	A	C	A	L					
29							A	A	A	A	4.2	4.3	4.3	4.3	4.1	4.0	A	A						
30							3.2L	3.7L	3.9	4.2H	4.2	A	A	4.3	4.2	A	A	A						
31																								
Mean Value							3.2	3.6	4.0	4.1	4.3	4.4	4.4	4.4	4.3	4.1	3.9	3.4	—					
Median Value							3.2	3.5	4.0	4.1	4.3	4.4	4.4	4.4	4.3	4.1	4.0	3.5	—					
Count							1	7	16	15	22	24	24	25	24	20	19	9	—					

foF1

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 4

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

IONOSPHERIC DATA

Kokubunji Tokyo Lat. 35° 42.4' N Long. 139° 29.8' E

Apr. 1954 | h'F1 | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							2	2	240	210	230	[240]^{A}	250^{A}	[240]^{A}	230^{A}	A	A	A						
2							Q	Q	A	A	240^{A}	240	220	210	240	[240]^{A}	230	A						
3							200	2	A	A	230	200	250^{A}	230	250	250	230	230						
4							Q	240	240	220	200	210	200^{H}	200^{H}	210	240	240	250						
5							240	[230]^{C}	220	230	240	210	200	190^{H}	240	230	230	250						
6							Q	Q	220	220	220	190	220	220	240	220	230	240						
7							Q	240	230	240	200	190	230	210	200	250	230	A						
8							Q	270	240	250^{A}	230	200	220	200^{H}	210^{A}	A	A	A						
9							Q	Q	A	230	240	210	210	230	240	240	220	240	250					
10							Q	240	240	240	(250)^{A}	A	A	A	C	C	C	A						
11							230	240	A	A	A	A	A	A	A	230	230	A						
12							240	230	230	220^{H}	220	A	A	A	250	A	A	A						
13							250	230	230	[230]^{A}	230	230^{A}	A	A	A	250	240	250						
14							Q	250	A	A	200	A	A	A	A	A	260	240						
15							Q	240	230	220^{A}	[210]^{A}	200	200	220	M	A	250^{A}	C						
16							A	A	Q	A	230	190^{H}	250^{A}	[220]^{A}	200	[240]^{A}	270	260						
17							A	A	A	A	A	A	A	200	200	220	250	240						
18							Q	230	220	220	250^{A}	210	200	250	250^{A}	220	A	A						
19							Q	240	230	A	M	A	A	A	A	A	260	A						
20							230	A	A	A	A	210	220	A	A	A	A	A						
21							A	A	A	250^{A}	240	240	210	AH	A	A	A	A						
22							A	A	A	A	230	200	A	A	A	A	A	A						
23							240	240	230	210	200	200^{H}	200	230	220	200	230	270						
24							220	220	[240]^{A}	270^{A}	230^{A}	A	A	A	210^{A}	240	230	240						
25							Q	Q	A	A	240	230	230	220	220	250	270	260						
26							A	260^{A}	A	A	220	230	A	A	230	320	A	A						
27							Q	250^{A}	A	A	A	A	270	A	A	230	250	270						
28							Q	A	220	220	230	240	A	A	A	A	C	A	260					
29							A	A	A	A	210	230	230	210	210	260	A	A						
30							230^{A}	220	200	190^{H}	200	A	A	A	170	A	A	A						
31																								
Mean Value							230	240	230	230	220	210	220	220	220	240	240	250	260					
Median Value							230	240	230	220	230	210	220	220	220	240	240	250	260					
Count							9	17	16	17	25	21	18	16	19	18	18	13	2					

h'F1 Sweep 1.0 Mc to 19.2 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | foE | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							1.7	2.3^{F}	2.7^{F}	2.7^{F}	2.8	2.9	2.9	[2.9]^{A}	2.9	2.7	A	A						
2							1.9	2.3^{F}	2.7	2.8	3.0	2.9	A	A	3.0^{A}	[2.8]^{A}	2.6	2.1						
3							1.6	2.2	2.5	2.9	3.0	3.0	3.0	3.2	3.0	A	A	A						
4							1.7	2.5^{F}	2.7	2.9	3.0	2.9	A	B	3.0	2.8	2.5	A						
5							1.5	[2.0]^{A}	2.6	A	A	A	A	A	3.0	2.7	2.5^{F}	2.1^{F}						
6							A	2.2	2.7	2.9	3.0	3.0	3.2	3.2	3.0	2.9	2.6	2.2						
7							1.9	2.3	2.8	3.0	3.0	[3.0]^{A}	3.1	[3.0]^{A}	3.0	[2.8]^{AF}	2.6	2.2						
8							2.0	2.6^{F}	2.8	3.0	3.0	3.1	3.2	3.1	A	A	A	A						
9							1.7	2.3	2.6	2.9	3.0	3.0	[3.0]^{A}	3.1	3.0	2.8	2.6	A	A					
10							A	A	2.8^{A}	3.0	3.0	[3.1]^{A}	3.2	3.0	C	C	C	A						
11							2.0	2.3	2.7	2.9	3.0	2.8	3.0	3.0	A	A	AF	A						
12							1.8	2.4	2.7	[2.8]^{A}	3.0	2.9	3.0	3.0	3.0	2.9	2.5	2.0						
13							1.9	2.3	2.7	3.0	3.0	3.1	3.1	2.8	A	A	A	A						
14							2.0	2.4	2.8	3.0	3.2	3.2	3.2	3.0	A	A	A	A						
15							2.0	2.4	2.8	3.0	3.0	[3.0]^{A}	3.0	3.2	[3.1]^{M}	3.0	2.6	C						
16							2.0	2.4	2.8	3.0	3.0	3.2	[3.1]^{A}	3.0	3.1	3.0	2.8	2.2						
17							2.1	2.5	2.9	3.0	A	A	A	A	A	3.0	A	A						
18							1.8	[2.3]^{A}	2.8	3.0	A	A	A	A	A	A	A	A						
19							A	2.5	2.8	3.0	[3.1]^{M}	3.2	3.2	3.0	[2.8]^{A}	2.6	A	A						
20							2.2	2.4	2.8	3.0	3.1	3.1	3.0	A	A	2.8	2.5	A						
21							2.0	2.6	2.7	3.0	3.0	A	A	A	A	A	2.6	2.2^{A}						
22							1.8	2.5	2.8	3.0	3.1	3.1	3.2	3.0	3.0	2.6	2.4	A						
23							2.1^{F}	2.4	2.7	2.9	3.0	3.0	B	A	3.1	3.0	A	A						
24							2.0	2.4	2.8	3.0	3.0	3.2	3.2	3.0	[2.9]^{A}	2.8	2.6	2.2						
25							2.0	2.5	2.7^{F}	2.9	3.1	3.2	[3.1]^{A}	3.0	3.1	3.0	2.6	2.2						
26							2.1	2.5	2.8	3.1	3.2	3.3	3.3	3.2	3.2	3.0	2.6	2.0						
27							2.1^{F}	2.4	3.0	3.0	3.2	3.2	3.2	A	A	A	2.9^{F}	2.3						
28							2.1	2.4	2.7	3.0	3.1	A	A	A	3.0	3.0	[2.6]^{C}	2.1	A					
29							2.2	2.5	2.8	3.0	3.2	3.1	3.2	3.1	[3.0]^{A}	3.0	2.7^{F}	2.2						
30							1.9	2.3	2.5	A	A	3.1	3.1	3.1	3.0	3.0	2.7	2.2						
31																								
Mean Value							2.0	2.4	2.7	3.0	3.0	3.1	3.1	3.0	3.0	2.9	2.6	2.2	—					
Median Value							2.0	2.4	2.8	3.0	3.0	3.1	3.1	3.0	3.0	2.9	2.6	2.2	—					
Count							27	29	30	28	26	25	22	20	20	21	19	14	—					

foE

Sweep 1.0 Mc to 7.2 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Kokubunji Tokyo Lat. 35° 42.4' N Long. 139° 29.3' E

Apr. 1954 | h'E | 135° E Mean Time

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

h'E

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | fEs | 135° E Mean Time

Kokubunji Tokyo
Lat. 35° 42.4' N
Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.3	2.2	2.3Y	2.5	2.2	2.2	2.9	3.2	4.0	4.3	4.3	5.0	6.0	6.7	5.7	6.7	9.0Y	6.5	3.0	2.7	5.0	3.5	2.6	3.5
2	2.8	3.0	2.2	4.3	3.2	2.3	2.7	4.2	5.2	5.5	5.0	4.5	4.2	4.8	4.3	5.5	4.0	6.8	9.0	4.8	3.5	5.0	4.8	4.5
3	5.6	4.5	3.8	3.0	2.4Y	2.8YF	2.9	3.5	4.1	4.7	4.4	4.8	4.7	4.2Y	4.7	4.7	4.0	3.5	4.5	1.9	2.5	1.7	2.4	2.5
4	2.5	2.4Y	3.0	2.4	2.3	2.2Y	2.5	3.8	3.9	4.0	4.0	3.9	4.0	3.2	3.0	3.0	2.8	2.9	3.0	4.8	4.0	3.0	2.3	2.5
5	2.5	2.6	2.4	E	E	2.4	2.5	C	3.3	3.8	3.5	3.7	3.7	3.3	3.0	2.8	3.2	3.0	3.0Y	2.5	2.4	E	E	E
6	E	E	2.1	2.0	2.2	2.0	3.0	3.3	3.3	4.0	4.1	G	G	3.2	3.0	3.2	3.0	2.5	2.9	2.5	E	E	E	E
7	E	E	E	2.0	2.0	3.0	2.9	2.9	4.0	4.6	4.4	4.5	3.8	4.0	3.6	3.2	3.0	4.4	6.0	3.0	2.7	E	E	E
8	E	E	2.1	2.0	2.1Y	1.9	2.8	3.0	4.4	4.8	4.6	4.3	4.2Y	3.1	4.5	5.5	5.3	4.2	4.6	3.5	2.6	2.4	3.0	4.5
9	3.0	2.8	3.0	3.5	4.0	2.5	3.0	4.0	6.8Y	4.3	4.4	4.5	4.2	5.2	4.2	4.0	3.7	3.2	2.3Y	2.0	3.0	3.3	4.5	3.3
10	3.3	4.5	4.5	4.6	4.2	1.9	2.8	3.0	3.5	4.5	5.7	10.5	8.6	5.7	C	C	C	5.6	4.7	4.0	4.4	5.0	4.5	4.5
11	4.8	4.4	4.3	3.5	3.2	2.8	2.5	3.4	4.5	5.6	6.8	9.0	6.5	10.0	7.0	5.5	4.0	5.4	5.4	7.0	9.0Y	2.6	4.7	4.0
12	2.6	3.0	2.9	2.5	2.1	2.1	G	G	3.8	4.0	4.8	6.5	5.5	5.5	5.5	5.5	5.0	4.5	4.2	4.3	3.5	5.0	3.0	3.0
13	3.0	2.7Y	3.2	2.6	2.2	2.9	2.8	G	4.0	5.5	4.3Y	4.5	5.0	4.7	5.3	3.9	5.0	3.6	2.7	3.0	7.8	7.2	3.2	3.2
14	3.2	3.2	3.2	2.5	2.4Y	3.0	2.7	4.3	4.7	4.7	G	5.2	5.8	5.7	5.5	5.3	3.6	3.0	4.2	5.7	4.5	3.8	3.5	3.5
15	2.4	2.7	2.5	2.5	2.9	2.5	3.0	3.8	4.0	4.7	5.9	5.5	4.8	G	M	6.9	4.0	C	4.2	4.5	6.5	7.0	4.3	5.7
16	4.5	3.0	2.0Y	2.4Y	1.9Y	2.5	4.7	4.7	5.5	7.0	4.8	4.6	5.5	7.4	G	6.0Y	4.3	3.9	9.0	4.5	4.4	7.5	6.0	4.7
17	5.5	7.0	6.0	5.2	3.5	3.0	5.2	5.5	7.0	5.5	5.6	6.5	4.8	4.0	4.5	3.2	5.5	3.2	4.7	2.5	2.4	E	E	3.2
18	3.7	3.0Y	2.9	E	2.2	E	2.5	3.2	3.6	4.4	4.8	6.5	5.5	5.3	6.7	6.7	10.2	6.8	3.5	3.2	2.4	2.3	2.0	3.2
19	4.0	5.2	1.9Y	1.9	2.5Y	2.4	3.0	3.0	4.0	5.4	M	5.0	5.4	7.0	10.0	10.0	5.6	4.7	5.2	4.9	5.6	5.5	M	1.9
20	2.4	2.4Y	2.0	2.0Y	2.0	2.4	3.2	4.3	4.5	5.6	4.9	4.8	4.5	10.0	4.5	5.8	5.0	4.5	4.2	4.5	5.8	5.7F	4.7F	4.7
21	4.9F	3.8	4.3	2.7	2.7YF	2.7	4.4	4.7	5.5	4.5	4.5	4.0	4.0	5.0	8.5	7.5	6.0	5.0	4.0	3.0	2.8	3.0	2.3	2.7
22	E	E	2.2	3.0	3.2F	2.5	3.0	4.0	4.7	5.5	4.8	4.5	4.4	4.5	5.2	5.5	6.5	7.0	4.8	2.7	2.5	3.0	3.0	E
23	E	2.2Y	2.4Y	2.3Y	2.4	2.3	3.2	3.9	4.4	4.4	4.3	3.9	G	4.0	G	3.2	3.7	4.5	3.0	3.2	3.3	2.9	3.0	3.0
24	2.7	2.4Y	2.4Y	2.5	2.4Y	2.5	3.2	4.0	4.7	5.5	4.6	5.5	5.0	5.3	4.5	4.5	3.1	2.6	3.0	2.5Y	4.5	3.5	2.6	2.5
25	4.0	2.4	2.5	2.2	E	2.9Y	2.8	4.7	4.9	5.2	4.8	G	5.0	4.2	G	G	4.1	3.9	4.0	4.0	4.2	2.6	3.7	4.6
26	4.8	3.9	4.7	2.5	2.5F	2.6	3.7	4.3	7.0	7.1	4.7	4.7	5.0	5.7	G	3.5	4.7	5.0	3.9	4.6	4.1	2.3Y	2.5	2.5
27	3.0	3.0	4.2	3.4Y	1.9	2.3	3.4	4.5	4.9	5.4	5.2	4.6	4.5	4.7	4.0	4.3	4.3	4.2	5.4	3.2	E	2.0	E	E
28	2.5Y	3.1Y	4.0	4.3	3.3	3.0	3.6	6.0	4.2	4.1	4.8	4.7	5.9	10.5	9.0	5.4	C	10.3	7.1	3.8	4.3	3.0	3.5	2.9Y
29	4.0	4.8	7.0	7.0	4.8F	4.7	5.6	5.6	9.0	5.6	4.4	4.5	4.2	4.1	4.5	4.5	10.3	10.0	6.9	3.2	8.5	8.5	5.7	7.0
30	5.4	3.2	3.4	2.7	1.9	3.3	3.8	3.8	3.7	3.8	4.7	7.0	9.2	5.2	4.5	5.6	8.0	7.2	8.6	8.9	4.5	6.0	4.5	3.0
31																								
Mean Value	3.6	3.4	3.2	3.0	2.7	2.6	3.3	4.0	4.7	4.9	4.8	5.3	5.1	5.4	5.2	5.1	5.0	4.9	4.7	3.8	4.3	4.1	3.6	3.6
Median Value	3.0	3.0	2.9	2.5	2.4	2.5	3.0	3.9	4.4	4.7	4.7	4.6	4.8	4.9	4.5	5.3	4.3	4.5	4.2	3.4	4.0	3.0	3.0	3.1
Count	30	30	30	30	30	30	30	29	30	30	29	30	30	30	28	29	28	29	30	30	30	30	29	30

fEs

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Apr. 1954 | **(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	3.0	3.0	3.0^{F}	3.1^{F}	3.1^{F}	3.2	3.4	3.4	3.3	3.2	3.0	3.2	3.4	3.3	3.1	3.2	3.3	3.2^{P}	3.5^{P}	3.6^{P}	A	3.1	2.8^{F}	(2.7)^{F}
2	2.9^{F}	2.9	3.0	3.0^{F}	(3.0)^{F}	3.1^{F}	3.5	3.6	3.2	3.4	3.3	3.0	3.1	3.2	(3.4)^{J}	3.4^{P}	3.3	A	A	3.3	[3.1]^{A}	2.9	3.0^{F}	(2.8)^{F}
3	2.7^{F}	2.9^{F}	[3.0]$^{A}_{F}$	3.1	3.6	3.4^{F}	3.4	3.6	3.2	3.0	3.3	3.5	3.4	3.1	3.0	3.0	3.1	3.1^{P}	(3.3)^{B}	3.4^{P}	3.5	2.8	2.7	2.8
4	2.8$^{Z}_{F}$	2.8^{F}	2.8^{F}	(3.1)$^{J}_{F}$	(3.3)$^{J}_{F}$	(3.2)$^{J}_{F}$	3.3	3.2	3.5	3.4	3.3	3.2	3.1	3.2^{P}	3.2	3.1	3.2	3.3^{P}	3.4	(3.5)^{J}	3.2^{H}	2.6	2.8	2.9
5	3.0	2.9	3.0	2.8	3.0	3.0	3.6	[3.4]^{C}	3.3	3.2	3.1	3.2	2.9	3.1^{P}	3.3	3.2	3.3^{P}	3.3	3.2	3.2	3.2	3.2	2.9	2.9
6	2.9	2.9	F	F	3.6^{F}	3.4^{F}	3.5	3.5	3.4	3.4	3.2	C	3.0	3.1	3.2	3.2	3.4	3.5	3.3	3.3	3.0	2.8	2.8	3.0
7	2.9	2.8	2.8	3.0	3.3	3.1	3.2	3.5	3.3	3.3	3.2	3.3	3.1	3.0	3.2	3.2	3.2	3.2	B	3.5	3.1^{P}	2.9	3.1	2.9^{P}
8	3.0	3.1	3.2^{J}	3.0	3.3	3.2	3.5	3.0	3.2	3.2	3.1	2.9	3.1	3.1	3.2	3.2	3.4	3.6^{P}	3.5	3.0	3.0	2.7	2.9	(2.7)^{F}
9	2.7^{F}	2.8^{F}	3.3	3.6	[3.3]^{A}	3.0	3.6	3.6	3.1	3.3	2.8	3.1	3.2	3.0	3.1	3.3	3.2	3.4	3.3^{P}	3.5^{P}	3.3	3.1	[2.9]^{A}	2.7
10	2.9	2.8	2.7^{F}	3.0	[3.1]^{A}	3.2^{F}	3.5	3.6	3.5	3.2	2.7^{H}	[3.0]^{A}	3.2^{P}	3.3^{P}	C	C	C	3.3	B	B	3.6	A	A	A
11	2.8	[2.9]$^{A}_{F}$	(3.0)^{A}	A	AF	3.2^{F}	3.6	3.5	3.3	3.0	3.0	3.3^{P}	3.3^{P}	[3.2]^{A}	3.1	3.2	3.1	3.2	B	(3.6)^{B}	3.3	F	AF	AF
12	(2.8)^{F}	3.0^{F}	3.0^{F}	(3.0)^{F}	3.0^{F}	2.9^{F}	3.5	3.5	3.1	3.3	2.4^{H}	B	2.8	2.9	(2.9)^{B}	3.1	3.4	3.2	3.1	3.0	3.6	2.5	2.6^{F}	2.7
13	2.7	2.7^{F}	3.2	3.3	2.8	3.0	3.5	3.4	3.4	3.0	3.2	3.1	3.1	3.5	3.1	3.3^{P}	3.2	3.4^{P}	3.4	3.4	3.1^{P}	[3.0]^{A}	3.0	2.8
14	2.7	2.8	2.9^{F}	3.1	3.0	3.2	3.5	3.7	3.4	3.0	3.2	3.0	3.5	3.1^{P}	3.1^{P}	3.1	3.2	3.3	3.5^{P}	(3.4)^{P}	3.4	2.9	2.9	2.8
15	2.8	2.9	3.0	3.1	3.3	3.1	3.3	3.2	(3.6)^{J}	3.2	3.0	3.1	3.1	3.1	3.1	3.2	3.2	[3.2]^{C}	3.3	(3.3)^{P}	3.6^{P}	[3.3]^{A}	3.0	[3.0]^{A}
16	2.9	2.7^{F}	(2.7)^{F}	3.0	3.6	3.2^{F}	3.5	3.4	3.6	(3.4)^{A}	3.3	2.9	3.0	[3.0]^{A}	3.0	3.2	3.2	3.2	[3.2]^{A}	3.1	3.4^{P}	3.5	AF	AF
17	AF	2.8	AF	AF	AF	3.0^{F}	3.6	3.4	3.3	3.5	3.2	3.1	3.1	3.2	[3.2]^{B}	(3.3)^{J}	3.3	3.3	3.2	B	3.5	3.3	2.8	2.8
18	2.8	3.0	3.4	3.5	3.5^{F}	3.0	3.5	3.5	3.6	3.5	2.8	3.0	3.0	3.1	3.2	3.2	3.3^{P}	3.2	3.2	3.2	3.6	3.5	2.9	2.9
19	2.9	3.0	2.8^{F}	3.2^{F}	3.0^{F}	3.3^{F}	3.7	3.6	3.3	3.4	3.4^{P}	3.3	3.1	A	A	A	3.2	3.1^{P}	3.3^{P}	3.3^{P}	3.1	A	M	2.8
20	3.0^{F}	3.0	2.9	3.2^{F}	2.8^{F}	3.1^{F}	3.7	3.5	3.5	3.5	3.1	3.0	3.0	(3.0)^{A}	2.9	3.2	3.4^{P}	3.2	3.2	3.3	2.7	3.0	2.8^{P}	2.9
21	2.8^{F}	F	3.1^{F}	3.7^{F}	F	3.1	3.6	3.2^{H}	3.2	3.3	3.2	2.8	3.1	3.2	3.0	[3.1]^{A}	3.2	3.1	3.2	3.3^{P}	3.4	2.9	2.7	2.7
22	2.7^{F}	(2.8)$^{F}_{F}$	(3.2)$^{Z}_{F}$	(3.4)$^{Z}_{F}$	(3.0)$^{Z}_{F}$	3.2	3.6	3.5	3.2	3.1	3.0	3.0	3.1	3.1	3.2^{P}	3.0	3.3	3.3	3.3	3.0	3.1	3.1	2.9$^{F}_{F}$	3.0
23	F	3.1^{F}	3.2	3.3	3.0	3.1	3.4	3.3	3.4	3.2	3.1	3.0	3.0	3.1	3.2	3.1	3.2	3.4	3.3	3.1	3.1	2.9	2.8	2.9
24	2.9	2.9	3.0	3.0	3.0	3.3	3.6	3.6	3.7	3.0	2.9	3.0	3.1	3.2	3.1	3.2	3.2	3.3	3.4	3.3	3.0	2.8	2.8^{F}	2.9
25	2.9	3.0	3.2	3.4^{F}	(3.0)$^{Z}_{F}$	3.3^{P}	3.5	3.6	3.5	3.0	2.9	3.0	3.1	3.2	3.2	3.2	3.2	3.3	3.2	3.2	3.3^{P}	3.1	2.9	2.9^{F}
26	2.8^{F}	(2.8)$^{Z}_{F}$	(2.8)$^{Z}_{F}$	F	F	3.6	3.5	3.5	[3.4]^{A}	3.3	3.1	3.0	2.7	2.7	3.1	2.8	3.2	3.2^{P}	3.5	3.3	3.1	2.9	2.8	2.9
27	2.9	2.9	2.9	3.0	3.0	3.5	3.5^{P}	3.6	3.5	3.2	3.2	2.9	2.9	2.9	2.8	3.2	3.2	3.2	3.0	3.1	3.5	3.6	2.7	2.9
28	2.7	2.7^{F}	3.0^{F}	AF	3.0^{F}	3.4	3.6	[3.6]^{A}	3.6	3.0	3.1	3.1	2.8	A	A	3.2^{P}	C	A	3.2^{P}	3.4	3.6	3.0	2.8	2.9
29	3.0	A	A	A	2.9^{F}	3.5^{F}	3.8	3.3	A	A	3.3	3.0	2.9	2.9	3.1^{P}	3.2	3.2^{P}	[3.3]^{A}	3.4	3.4	3.4	3.2	A	A
30	AF	(2.9)$^{Z}_{F}$	2.9^{F}	(3.1)$^{Z}_{F}$	3.3^{F}	3.3	3.6	3.3	3.4	3.2	3.2	A	A	3.2	3.0	3.0	A	A	A	A	3.2	(3.0)^{J}	2.9^{F}	3.0^{F}
31																								
Mean Value	2.8	2.9	3.0	3.2	3.1	3.2	3.5	3.5	3.4	3.2	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.3	3.0	2.8	2.9
Median Value	2.9	2.9	3.0	3.1	3.0	3.2	3.5	3.5	3.4	3.2	3.1	3.0	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.3	3.0	2.8	2.9
Count	27	28	27	24	26	30	30	30	29	29	30	27	29	28	27	28	27	27	25	27	29	27	25	26

(M3000)F2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Apr. 1954 | **fminF** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.3	1.1	E	E	E	E	2.0	2.5	2.9	3.5	3.5	4.1 A	4.0 A	4.0 A	3.7 A	4.0 A	3.8 A	4.5 A	2.0 A	2.0 A	2.6 A	1.6	1.8	2.0 A
2	1.3	1.4	1.3	1.8	1.7	1.0	2.0	2.8	4.1 A	4.3 A	3.9 A	3.4	3.6	3.5	3.4	4.4 A	3.0	5.5 A	(2.0) A	A	A	1.7	2.2 A	1.5
3	2.0 A	1.9	1.7	1.5	E	E	1.9	2.5	3.5 A	3.8 A	3.3	3.7	4.0 A	3.7	3.8	3.4	2.7	2.1	3.7 A	1.5	1.5	1.6	1.4	1.3
4	1.3	1.0	1.9	E	E	E	1.9	2.5	3.3	3.3	3.3	3.4	3.3	3.3	3.2	3.1	2.5	2.2	2.5 A	3.5 A	2.5 A	2.1 A	1.5	1.5
5	1.3	1.3	1.0	E	E	E	2.0	2.7	2.8	3.2	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.2	1.6	1.5	1.5	1.4	1.5	1.3
6	1.0	1.0	E	E	E	E	2.2	2.6	2.8	3.4	3.5	3.5	3.5	3.5	3.3	3.0	2.6	2.5	1.9	1.3	1.3	1.3	1.3	1.5
7	1.3	1.0	E	E	E	1.0	2.1	2.6	3.4	3.5	3.5	3.5	3.7	3.3	3.3	3.5	2.9	3.5 A	(2.8) A	2.0 A	(1.8) A	1.6	1.3	1.3
8	1.2	1.0	E	E	E	1.0	2.1	2.6	3.5	4.0 A	3.8	3.7	3.5	3.3	(4.0) A	4.6 A	4.0 A	3.3 A	3.5 A	2.4 A	1.5	1.5	1.3	1.4
9	(1.4) A	1.5	1.3	A	A	1.4	2.3	3.2	4.3 A	3.6	3.5	3.4	3.7	3.4	3.5	3.0	2.9	2.3	1.5	1.3	1.9	1.8	(1.6) A	1.5
10	2.0 A	1.9	(1.8) A	1.6	(1.3) A	1.0	2.2	2.8	3.3	3.8	4.1 A	(6.0) A	8.0 A	4.9 A	C	C	C	4.5 A	4.0 A	3.2 A	2.0 A	A	A	A
11	2.1 A	AF	A	A	AF	1.5	2.0	2.8	3.9 A	4.7 A	5.0 A	6.8 A	5.2 A	6.1 A	4.0 A	3.3	2.7	4.0 A	3.8 A	(2.8) A	1.8	1.9	1.6	(1.4) A
12	1.3	1.0	1.0	1.0	E	1.0	1.9	2.5	2.9	3.4	3.2	4.0 A	4.0 A	4.1 A	3.6	4.0 A	3.4 A	3.4 A	3.4 A	3.0 A	(2.5) A	2.0 A	1.9	1.5
13	1.5	1.3	1.5	1.6	1.5	1.4	2.1	2.5	3.2	4.5 A	3.4	3.8 A	4.3 A	4.1 A	4.2 A	3.0	3.3	2.7	1.9	(2.0) A	2.1 A	(1.7) A	1.3	(1.6) A
14	2.0 A	1.3	1.2	1.2	E	1.0	2.5	2.5	3.8 A	4.0 A	3.4	4.5 A	5.0 A	5.0 A	4.3 A	4.5 A	3.0	2.3	3.4 A	4.5 A	2.1 A	1.6	1.8	1.3
15	1.3	1.3	1.5	1.3	1.7	1.5	2.2	3.0 A	3.2	3.8 A	5.0 A	3.5	3.5	3.5	(4.0) M	4.5 A	A	C	3.5 A	2.1 A	A	A	2.1 A	(1.7) A
16	1.3	1.4	E	E	E	1.5	3.5 A	4.0 A	3.5	(3.6) A	3.8 A	3.8	3.9 A	6.4 A	3.4	4.2 A	3.3	3.3	(2.8) A	2.3 A	3.0 A	2.2 A	AF	AF
17	2.9 AF	1.7	2.3 A	(2.0) AF	1.8	1.3	4.9 A	(5.2) A	5.5 A	4.4 A	4.1 A	5.0 A	4.1 A	3.5	3.4	3.0	3.3	2.5	2.4	1.7	1.6	1.6	1.6	(1.6) A
18	1.7	1.4	1.7	E	E	1.2	2.2	2.7	3.3	3.7	4.0 A	3.5	3.5	3.6	3.8 A	3.5	5.0 A	5.0 A	1.7	2.1 A	1.7	1.6	1.7	2.1 A
19	2.1 A	1.3	E	E	E	1.3	2.3	2.9	3.3	4.3 A	(4.2) M	4.0 A	4.8 A	A	A	A	3.5	4.0 A	4.6 A	A	A	A	M	1.5
20	1.3	1.2	E	E	1.0	1.3	2.5	3.5 A	3.7 A	4.4 A	4.0 A	3.6	3.8	(3.8) A	3.8 A	5.0	4.3 A	3.7 A	3.5 A	4.0 A	2.9 A	A	A	2.8 A
21	1.5	(1.8) A	2.2 A	1.6	1.2	1.4	3.8 A	(4.2) A	4.6 A	3.8	3.8	3.7	3.5	3.8 A	5.3 A	(5.4) A	5.4 A	3.6 A	2.2 A	2.1 A	2.1 A	1.8	1.6	1.7
22	1.6	1.0	E	1.2	1.3	1.7	2.2	3.3 A	3.9 A	4.0 A	3.5	3.6	4.0 A	4.0 A	4.2 A	3.9 A	4.2 A	4.0 A	3.5 A	1.8	1.6	1.6	1.9	1.6
23	1.2	1.0	E	E	E	1.4	2.3	2.7	3.3	3.5	3.5	3.5	3.5	3.5	3.3	3.0	2.9	2.8	2.3 A	2.4 A	2.3 A	1.9	(1.9) A	1.9
24	1.5	1.2	E	E	E	1.3	2.2	3.1	4.0 A	4.0 A	A	4.5 A	4.3 A	4.6 A	(4.0) A	3.3	2.7	2.5	2.0 A	1.5	3.1 A	2.5 A	1.5	1.9
25	1.3	1.5	1.2	E	E	1.3	2.4	3.1	4.0 A	4.3 A	3.6	3.5	3.5	3.5	3.2	3.5	3.4	2.9	3.4 A	A	A	1.9	2.0 A	1.4
26	1.5	1.3	1.2	E	E	1.5	3.0 A	A	A	4.3 A	3.8	3.7	4.0 A	4.4 A	3.5	3.5	3.5 A	3.6 A	3.2 A	(2.4) A	1.5	1.5	1.7	2.0 A
27	2.0 A	1.0	E	E	1.0	1.4	2.5	[3.2] A	3.9 A	4.3 A	4.5 A	4.0 A	4.0	4.0 A	4.0	3.5	3.0	2.6	4.2 A	2.0 A	1.3	1.3	1.3	1.5
28	1.4	1.3	2.2 A	2.1 A	E	1.5	2.8	5.0 A	3.5	3.5	3.9	3.7	4.7 A	[6.4] A	8.0 A	5.0 A	C	A	1.9	2.5 A	2.6 A	2.1 A	2.1 A	1.6
29	1.0	A	A	A	E	1.5	3.1 A	A	A	A	3.5	3.7	3.5	3.5	3.5	3.6	5.0 A	(4.5) A	4.0 A	2.5 A	5.0 A	2.2 A	A	A
30	(2.7) A	1.4	1.8	1.2	E	2.7 A	(2.8) A	2.8	3.0	3.3	3.5	4.2 A	[4.1] A	4.0 A	3.5	4.9 A	5.7 A	A	A	A	3.5 A	2.2 A	2.1 A	1.8
31																								
Mean Value	1.6	1.3	1.6	1.5	1.4	1.4	2.5	3.1	3.6	3.9	3.8	4.0	4.1	4.1	3.9	3.8	3.5	3.3	2.9	2.3	2.2	1.8	1.7	1.6
Median Value	1.4	1.3	1.2	E	E	1.3	2.2	2.8	3.5	3.8	3.6	3.7	4.0	3.8	3.6	3.5	3.3	3.3	2.8	2.1	2.0	1.7	1.6	1.5
Count	30	28	28	27	28	30	30	28	28	29	29	30	30	29	28	28	27	27	29	26	26	26	25	27

fminF

Sweep 1.0 Mc to 12.2 Mc in 2 min ☐ Manual ☒ Automatic

K 10

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Apr. 1954 | **fminE** | 135° E Mean Time

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

fminE

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

IONOSPHERIC DATA

Apr. 1954 | **ypF2** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	70	80	50^{F}	70^{F}	90^{F}	70	40	60	50	50	80	40	60	60	50	60	70	70^{P}	40^{P}	50^{P}	A	70	90^{F}	(80)^{F}
2	70^{F}	80	80	80^{F}	(60)^{F}	70^{F}	70	40	A	50	60	70	70	50	(50)^{J}	50^{P}	50	A	A	90	[80]^{A}	70	70^{F}	(80)^{JF}
3	100^{F}	70^{F}	[80]^{AF}	100	70	110^{F}	60	60	90	70	50	50	50	80	80	80	50	60^{P}	(50)^{B}	60^{P}	80	100	100	90
4	70^{ZF}	60^{F}	60^{F}	(60)^{JF}	(60)^{JF}	(90)^{JF}	70	80	50	50	90	50	90	70^{P}	60	60	50	60^{P}	50	(50)^{J}	140^{H}	110	90	70
5	70	90	70	90	70	100	50	[50]^{C}	50	60	70	60	70	50^{P}	60	70	70^{P}	50	60	60	70	60	80	60
6	50	60	F	F	50^{F}	60^{F}	60	60	60	60	60	C	80	60	60	80	50	60	50	100	70	90	80	70
7	80	70	70	40	70	70	80	40	50	50	60	60	70	60	60	60	60	60	B	40	70^{P}	70	50	50^{P}
8	50	50	(50)^{J}	50	60	60	80	60	70	90	60	60	50	50	50	70	50	50^{P}	40	100	70	80	70	(70)^{JF}
9	70^{F}	60^{F}	50	40	[60]^{A}	80	40	70	80	50	100	70	80	70	50	50	60	80	60^{P}	60^{P}	90	90	[100]^{A}	100
10	60	80	70^{F}	70	[60]^{A}	60^{F}	40	50	70	60	110^{H}	[80]^{A}	50^{P}	40^{P}	C	C	C	60	B	B	60	A	A	A
11	60	[70]^{AF}	(80)^{A}	A	AF	60^{F}	60	80	80	80	60	[60]^{A}	50^{P}	[60]^{A}	70	60	70	60	B	(50)^{B}	70	F	AF	AF
12	(80)^{JF}	60^{F}	60^{F}	(80)^{JF}	90^{F}	80^{F}	40	50	80	60	180^{H}	B	60	50	(70)^{B}	50	50	70	90	60	80	80	70^{F}	70
13	70	90^{F}	70	80	100	100	50	70	50	80	50	60	60	60	60	60^{P}	60	50^{P}	50	50	40^{P}	[60]^{A}	80	90
14	80	70	60^{F}	60	90	70	50	40	110	90	60	80	50	50^{P}	60^{P}	50	70	50	50^{P}	(50)^{P}	80	70	60	100
15	90	80	60	70	90	60	60	70	(30)^{J}	60	70	50	60	50	60	60	80	[60]^{C}	40	(50)^{P}	60^{P}	[60]^{A}	60	[60]^{A}
16	60	80^{F}	(90)^{JF}	70	50	70^{F}	40	60	30	[40]^{A}	50	80	80	[80]^{A}	90	50	50	50	[60]^{A}	60	50^{P}	50	AF	AF
17	AF	60	AF	AF	AF	70^{F}	[70]^{A}	70	40	50	50	50	60	50	[40]^{B}	(40)^{J}	50	50	60	B	60	80	50	50
18	60	40	40	50	70^{F}	90	70	60	30	50	60	60	60	60	60	80	50^{P}	60	60	40	50	100	50	60
19	80	70	70^{F}	60^{F}	40^{F}	90^{F}	70	50	70	40	60^{P}	40	60	A	A	A	60	60^{P}	60^{P}	50^{P}	70	A	M	60
20	60^{F}	60	80	60^{F}	60^{F}	70^{F}	50	60	30	60	U	50	50	[60]^{A}	60	60	50^{P}	70	70	110	80	50	50^{P}	60
21	50^{F}	F	60^{F}	60^{F}	F	60	40	50^{H}	60	70	60	U	60	60	70	[80]^{A}	80	60	70	60^{P}	50	120	80	90
22	90^{F}	(70)^{JF}	(60)^{JF}	(60)^{JF}	(80)^{JF}	80	60	60	50	50	80	70	60	70	50^{P}	70	60	60	50	90	60	60	80^{FP}	60
23	F	50^{F}	90	70	100	80	60	60	50	40	60	40	70	80	60	90	50	40	50	70	60	60	70	50
24	50	60	50	70	70	60	80	80	30	U	90	60	80	70	60	60	60	50	60	50	90	100	80^{F}	90
25	70	70	60	60^{F}	(90)^{JF}	60^{P}	80	60	50	100	90	70	60	50	60	60	60	50	70	70	50^{P}	70	70	70^{F}
26	70^{F}	(80)^{JF}	(100)^{JF}	F	F	40	60	40	[40]^{A}	50	60	40	60	80	50	60	60	70^{P}	40	50	60	60	70	60
27	50	70	60	60	60	40	60^{P}	40	40	30	80	U	60	90	70	60	60	50	50	60	50	50	110	60
28	80	50^{F}	70^{F}	AF	50^{F}	40	60	[60]^{A}	50	40	60	50	50	A	A	60^{P}	C	A	40^{P}	60	50	70	100	60
29	60	A	A	A	80^{F}	50^{F}	30	A	A	A	U	U	U	70	50^{P}	60	70^{P}	[60]^{A}	60	60	[70]^{A}	80	A	A
30	AF	(40)^{JF}	40^{F}	(50)^{JF}	80^{F}	60	50	80	70	60	40	A	A	50	U	80	A	A	A	A	70	(50)^{J}	70^{F}	50^{F}
31																								
Mean Value	70	70	70	70	70	70	60	60	60	60	70	60	60	60	60	60	60	60	60	60	70	70	80	70
Median Value	70	70	60	60	70	70	60	60	50	60	60	60	60	60	60	60	60	60	50	60	70	70	70	60
Count	27	28	27	24	26	30	30	29	28	28	28	24	28	28	26	28	27	27	25	27	29	27	25	26

ypF2

Sweep 1.0 Mc to 17.2 Mc in 2 min ☐ Manual ☒ Automatic

K 12

37

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Apr. 1954 | 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	3.3	3.4	3.2	2.9^{J}	2.5	2.1	2.8	5.2	C	C	C	C	C	C	C	C	C	7.0	(8.6)$^{J}_{P}$	(7.9)$^{J}_{P}$	3.4	[3.3]^{A}	3.2	3.1
2	3.2	3.1	3.1	3.0	3.1	2.4	3.2	4.4	5.8	6.0	6.1	(8.9)^{P}	10.5	12.0	11.5	11.7^{J}	10.3	9.7^{J}	7.1	(4.7)^{P}	[4.1]^{A}	3.5^{H}	FS	3.6$^{JF}_{H}$
3	[3.2]^{A}	2.9$^{J}_{F}$	3.6	4.4	2.9	[2.9]^{A}	2.9	4.8	5.3	6.5	(8.3)$^{P}_{S}$	8.0	6.4	6.0	7.6	8.5	[10.0]^{A}	(11.5)$^{P}_{S}$	A	A	4.0	3.4	3.0	2.5
4	2.5	2.5	2.5	3.2	2.2	A	A	C	(7.6)$^{J}_{P}$	5.8	5.3	5.8	7.4	8.8	7.9	7.1	8.2$^{J}_{P}$	(9.8)^{P}	S	7.9	3.9	2.5	3.5^{H}	3.8
5	3.9F	3.8	3.6	3.5^{F}	3.0	3.2	4.4	5.6	6.2	6.1	6.9	7.0	(8.3)^{P}	9.7	11.2	C	C	(9.5)$^{P}_{S}$	7.9$^{P}_{S}$	S	S	4.1	3.0	2.9
6	2.9	3.0	3.0	3.4	3.1$^{JF}_{H}$	2.7F	3.8F	5.7	6.2	6.4	6.6	6.7	8.2	9.4	8.5	9.3	8.5	7.1	6.9^{J}	6.9	6.0	4.5	4.2	3.9
7	C	C	C	C	2.9	2.5	3.8	5.2	5.8	5.8	6.6	7.2	7.7	9.0	9.5	9.2	8.6	7.9	S	S	5.1	3.9	(4.0)$^{J}_{Ps}$	S
8	3.8$^{J}_{Ps}$	3.4^{J}	3.3	3.8$^{J}_{F}$	2.9	2.3	2.8	5.0	6.8	6.9	6.6	7.6	8.9	10.8	12.7	12.4	10.1	7.0	5.8	(5.0)$^{P}_{S}$	4.8^{H}	3.5	3.6	3.6
9	3.6	3.6	3.9	4.1	2.9	2.6F	3.5	4.7	5.5	6.7	6.9	C	C	C	C	C	C	10.2	9.0	(9.6)^{P}	(6.7)$^{J}_{P}$	2.6	[2.6]^{A}	2.6
10	2.6	3.0	2.6$^{J}_{F}$	2.9F	2.5	[3.0]^{A}	3.4	[4.4]^{A}	5.3	6.2	7.2	9.1	10.2^{J}	10.7^{P}	11.3	11.6	11.1	11.6	11.1	[7.9]^{S}	4.7	3.7	3.6	[3.5]^{A}
11	3.4	[3.6]^{S}	3.8	3.4	3.1	3.2$^{J}_{F}$	5.1	5.0	[5.8]^{C}	6.5	8.5	7.0	8.4	9.5	9.1	9.5	9.3	C	S	8.0	S	3.3	3.1	[3.2]^{S}
12	3.2	A	A	3.5	3.0	3.2	4.5	6.2	5.9	5.6	[6.7]$^{P}_{S}$	7.8	9.9	9.9	10.4	11.1	11.1	8.4	6.8	8.4	10.1^{P}	A	3.8^{J}	3.1^{J}
13	3.8	4.1	4.9	3.6	3.0	3.0	4.8	6.0	5.8	6.7	7.0	8.3	8.4	S	S	10.8$^{J}_{P}$	10.2	9.7^{J}	10.1$^{J}_{P}$	10.5	7.2	2.7	2.7	2.8
14	2.9	3.0^{J}	2.9	3.6	A	A	4.4	5.3	5.2	6.0	6.0	7.8	9.0	9.7	10.4^{J}	10.9	11.2	11.0	9.5	9.2	6.8	A	A	S
15	A	4.0	3.7	A	A	A	4.6	6.8	C	C	C	C	C	C	C	C	C	C	11.4^{J}	10.5	6.5	A	A	A
16	A	A	A	2.8^{V}	2.5F	2.4	4.6	6.0	5.8	5.4	[6.1]^{A}	6.8	9.5	9.6	9.3	A	10.1^{J}	10.3	10.4	9.5	8.4	5.2	[4.6]^{A}	4.0^{P}
17	[4.0]^{A}	3.9	4.2^{J}	3.5	2.6F	2.6	4.3	5.8	6.2	[6.1]^{A}	6.0	6.0	7.8	9.9	10.0	10.9^{J}	10.3	9.8	9.4	7.7^{J}	7.3^{P}	3.7	3.1	3.4
18	3.1	3.4	3.6F	3.7	2.3	2.3	4.2	5.5	5.2	5.0	5.3	6.5	7.9^{P}	8.9	9.4	9.0	8.9	8.4	7.9^{P}	8.2	8.5	3.8	3.2	3.5
19	3.6F	3.6F	3.3	3.4^{X}	3.5	3.4^{XF}	4.1	5.8	5.8	6.0	7.3	5.7	6.4	7.9^{J}	8.4	8.6	10.6	10.0	8.7	7.8^{P}	7.8^{P}	4.7	4.1	4.3
20	[4.6]$^{E}_{S}$	4.8	3.9	[3.5]^{F}	3.1$^{F}_{J}$	[4.3]^{F}	5.5^{F}	5.8	5.5	6.1	6.0	6.3	7.5	8.3	9.0	10.9^{J}	11.2	9.0	7.9	8.0	5.4	3.4	F	A
21	A	F	3.4F	3.3F	1.8F	F	4.1	5.3	[5.4]^{A}	5.6	5.9	6.8	9.2	8.9	8.5	9.0	8.5	8.0	8.4	8.5	6.7	3.7	3.2	3.3
22	3.4^{F}	3.5^{F}	4.1	2.6	F	F	4.3	4.8	5.3	6.1	7.0	8.1	9.4	10.8	11.5	12.0	12.0	8.9	7.7	7.6	7.0	5.5	4.6	4.4
23	3.8	3.8	3.7	3.0	2.9F	2.7	4.1	5.5	5.5	5.5	5.9	7.1	8.4	9.5	8.7	8.5	8.9	7.6	6.5	7.0	8.0	5.5	4.4	4.4^{J}
24	4.4^{J}	4.4^{J}	[4.1]^{B}	3.8	3.7	3.4	5.1	5.1	5.1	5.2	5.2	6.8	8.8	9.6	9.1	8.6	9.5	9.4	8.4	7.0	[5.6]^{A}	4.1	4.0	[3.8]^{A}
25	3.5F	3.5F	3.6F	3.1	3.0	3.0^{X}	4.1	5.1	5.0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	5.5	5.3	5.9	6.4	8.0	9.2	9.3	10.1^{J}	9.5	9.0	8.1^{J}	(7.9)^{P}	5.8	S	S	3.9$^{J}_{P}$
27	4.0	3.7	3.6	3.6	3.3	3.0	4.6	5.3	5.5	5.8	[6.0]^{A}	6.2	C	C	8.8	9.6	C	C	9.7	10.0	9.0	4.6	3.5	[3.8]^{S}
28	4.0	3.8	4.0	3.7	3.6	4.2^{P}	4.8^{V}	5.1	5.2	5.5	5.8	5.9	6.9	8.0	9.3^{P}	9.0	(10.4)$^{J}_{P}$	9.7	10.0^{P}	10.1^{P}	6.5	A	A	A
29	2.7	2.8^{J}	3.0	3.0	3.1F	3.2	4.6	5.1	5.1	A	A	A	8.2	9.1	9.7	10.5	9.9	9.2	9.8	7.0	6.3^{P}	4.4	3.8	3.7
30	3.5	3.4	3.2	3.3	3.2	2.5	4.6	5.7	5.8	5.2	5.4	6.2	7.9^{P}	8.1	8.5	9.0	A	A	A	A	B	5.6	4.6	4.5
31																								
Mean Value	3.5	3.5	3.5	3.4	2.9	2.9	4.2	5.4	5.7	5.9	6.4	7.0	8.4	9.3	9.6	9.9	9.9	9.2	8.6	8.1	6.4	4.0	3.6	3.6
Median Value	3.5	3.5	3.6	3.4	3.0	3.0	4.3	5.3	5.5	6.0	6.1	6.8	8.3	9.4	9.3	9.6	10.1	9.4	8.5	7.9	6.5	3.8	3.6	3.6
Count	25	25	26	27	26	24	28	28	28	26	26	25	25	24	25	24	23	25	24	25	26	24	23	24

foF2

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y1

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

IONOSPHERIC DATA

Apr. 1954 | **h_pF2** | 135° E Mean Time | **Yamagawa** | Lat. 31° 12.5' N, Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	380	330	290	(280)J	330	(300)B	320	280	C	C	C	C	C	C	C	C	C	300	(280)JP	(250)JP	280	A	A	380
2	370	350	400	(360)F	270	310	260	250	260	270	360	(380)P	340	300	300	(280)J	290	(260)J	240	(260)P	[310]A	360H	FS	(360)JFH
3	[360]A	(360)JF	410	300	(340)B	[310]A	280	250	280	300	(340)DS	290	370	U	340	330	[310]A	(290)DS	A	A	250	230	240	350
4	350	380	370	290	A	A	A	C	(240)JP	250	260	320	340	300	310	330	(330)JP	(300)P	S	260	260	290	410H	380
5	340F	330	340	320F	320	330	280	250	260	300	280	310	(340)P	350	330	C	C	(290)DS	290DS	S	S	260	350	360
6	360	360	350	280	(330)JFH	(310)F	260F	250	250	260	290	360	360	330	310	290	290	290	(280)J	300	270	320	350	370
7	C	C	C	C	290	320	280	250	250	280	290	320	350	330	320	300	300	300	S	S	250	350	(350)JFS	S
8	(340)JFS	(320)J	320	(280)JF	(250)B	(290)B	260	260	260	300	320	370	360	340	310	270	270	280	260	(280)DS	390H	320	390	390
9	400	360	310	250	300	280F	290	250	290	300	340	C	C	C	C	C	C	280	280	(280)P	(220)JP	310	A	A
10	360	400	(350)JF	250F	250	[270]A	290	[280]A	260	340	350	370	(340)J	310P	300	300	290	290	270	[260]S	250	370	350	[350]A
11	350	[350]S	350	320	310	(300)JF	240	240	[280]C	310	280	(330)A	350	310	310	300	300	C	S	250	S	300	350	[350]S
12	350	A	A	260	300	300	260	250	260	230	[340]BS	450	350	370	340	320	280	300	330	310	250P	A	(390)J	(320)J
13	410	350	(260)B	250	350	350	270	250	260	300	320	300	380	S	S	(320)JP	300	(290)J	(280)JP	260	250	240	360	390
14	370	(380)J	350	280	A	A	250	250	240	310	290	350	320	320	(320)J	320	300	280	270	260	250	A	A	S
15	A	350	350	A	A	A	270	250	C	C	C	C	C	C	C	C	C	C	(260)J	250	230	A	A	A
16	A	A	A	300V	250F	250	260	240	240	240	[310]A	380	320	300	310	A	(300)J	300	260	270	260	340	[360]A	370P
17	[340]A	300	(250)J	220	310F	320	260	260	250	A	A	330	380	310	320	(300)J	300	290	260	(260)J	280P	240	360	360
18	350	330	300F	250	260	370	270	240	240	250	U	340	330P	330	300	300	300	300	300P	300	250	280	390	380
19	350F	350F	350	320X	360	270FX	250	250	250	290	270	A	350	(350)J	350	350	300	270	260	260P	280P	290	380	380
20	[340]FS	300	310	F	A	F	240F	250	A	250	300	350	350	350	370	(320)J	290	290	280	250	260	360	F	A
21	A	F	260F	250F	350F	F	260	250	A	A	A	370	350	300	340	320	300	300	300	270	240	240	400	390
22	370F	350F	250	230	F	F	260	250	290	300	320	340	340	340	330	310	290	280	300	280	270	250	360	330
23	350	360	310	260	350F	320	280	260	290	290	330	330	340	310	320	330	290	300	290	330	260	260	400	(360)J
24	(350)J	(310)J	[310]B	310	290	300	250	240	250	A	A	380	340	310	300	320	300	280	250	250	[320]A	390	400	[380]A
25	350F	310F	300F	290	320	300X	250	250	250	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	A	330	360	360	340	330	(320)J	280	300	(270)J	(260)P	270	S	S	(340)JP
27	350	330	360	250	300	250	240	250	300	260	[300]A	350	C	C	360	300	C	C	310	290	260	290	390	[380]S
28	360	330	300	350	340	270P	240V	250	260	290	350	350	360	390	320P	340	(300)JP	270	270P	250P	230	A	A	A
29	360	(350)J	300	290	250F	240	220	240	A	A	A	A	350	340	310	290	290	290	250	250	310P	300	350	350
30	380	330	310	250	250	290	250	250	270	270	340	380	340P	340	340	300	A	A	A	A	B	260	310	370
31																								
Mean Value	360	340	320	280	300	300	260	250	260	280	310	350	350	330	320	310	300	290	280	270	270	300	360	360
Median Value	350	350	310	280	300	300	260	250	260	290	320	350	350	330	320	320	300	290	280	260	260	290	360	370
Count	25	25	26	26	24	23	28	28	24	22	22	24	25	23	25	24	23	25	24	25	26	23	21	23

h_pF2 | Sweep 1.0 Mc to 22 Mc in 2 min | ☐ Manual ☒ Automatic | Y2

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Apr. 1954

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	320	290	250	250	300	270	280	250	C	C	C	C	C	C	C	C	C	300	270	220A	210	A	A	340
2	320	300	320	280F	250	270	240	220	250	270	350	360	320	280	290	270	270	240	230	240	280A	310H	350F	320H
3	[330]A	340	340	260	A	A	260A	250	240A	290	290	280	370	370	340	320	[300]A	280	A	A	230	220A	220	340
4	340	360	350A	260	A	A	A	C	240	250	260	310	320	290	300	310	310	290	240	240	220	(290)A	350H	330
5	300	290	280	260	260	270	250	240	250	290	280	310	320	330	290	C	C	260	260	250	220	210	290	340
6	310	300	300	240	270H	260	250	230	240	260	290	360	350	310	310	270	290	280	270	250	250	250	290	290
7	C	C	C	C	240	250	250	240	250	270	280	320	340	310	300	290	300	290	260	250	240	(330)A	310	290
8	300	260	300	250	230	270	240	240	260	300	320	350	350	320	300	260	260	250	240	240	250H	(300)A	330	(340)A
9	360	300	260	230	250	250	240	240	250	300	320	C	C	C	C	C	C	260	260	240	210	230A	A	A
10	350A	360A	330AF	220	240	[240]A	250A	[240]A	240	300	330	340	330	300	290	290	280	260	240	240A	240	300	300	[320]A
11	350	340	290	270	300	290F	210	220	[260]C	300	260	310	330	300	300	300	280	[260]C	250	230A	210	250A	340	330A
12	310	A	A	250	260	260	250	240	250	230	[320]B	410	330	350	310	300	250	270	300	270	220A	220A	350	310
13	390A	320	250	240	300	300	250	240	240	300	310	290	360	320	290	300	270	270	250	240	210A	200A	330	390
14	350	330	320	260	A	A	230	220	240	300	290	340	300	300	300	300	290	250	250	240	220	A	A	310
15	[320]A	320	330A	A	A	A	260	240	C	C	C	C	C	C	C	C	C	C	240	230A	220	A	A	A
16	A	A	A	290	250	250	240	240	240	240	[300]A	370	300	290	280A	320A	280	280	270	240A	220A	330	[320]A	320
17	[290]A	260	250	200	300F	270	250	240	250	[270]A	290	320	360	300	300	280	270	270	250	230	230	200	300	320
18	330A	290	260	220	200	340	250	240	230	250	310	340	310	300	280	290	280	270	250	250	200	210	330	310
19	300	300	300A	310A	280	220AF	240	240	240	290	260	300A	350	340	320	330	280	250	250	240	250A	240A	320	340A
20	300	250	250	300F	360	300	210	250	270	250	300	350	350	330	350	300	270	250	250	240	200A	280	400	A
21	A	260F	250	210A	300	250F	240	250	[280]A	310A	310A	360	300	290	310	300	280	280	270	250A	220	220A	350	350
22	340	310	240	230	310	310	240	240	270	300	320	330	310	310	300	290	260	250	260	250	250A	240	300	290
23	300	300	270	230	250	300	250	250	290	290	330	320	320	290	300	300	280	290	280	280	240	220	320	310
24	300	290	280	250	250	260	240	240	250	300	(410)A	370	310	300	290	300	290	260	250	220	[280]A	350	340A	[330]A
25	320F	290F	280F	270	280	250	220	240	250	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	260	330	330	360	350	330	300	300	260	270	250	240	240	230	290	300
27	300	300	310	250	280	240	220	240	250	260	[300]A	350	[360]C	370	340	290	C	C	300	260	220A	210A	370A	330
28	350	300	270	280	270	230	220	240	250	290	350	340	350	350	300	320	290	250	240A	230A	210	A	A	A
29	320	320	270	250	220	220	210	220	250A	A	A	A	340	340	300	280	270	280	230A	220A	240	260	280	310
30	370	310	300	250	220	250	240A	250	270	270	340	380	320	320	310	290	A	A	A	210	240	230A	260	330
31																								
Mean Value	330	300	290	250	270	270	240	240	250	280	310	340	330	320	300	300	280	270	260	240	230	250	320	320
Median Value	320	300	280	250	260	260	240	240	250	290	310	340	330	310	300	300	280	270	250	240	220	240	320	320
Count	26	26	26	27	25	25	28	28	28	26	26	25	26	26	26	25	23	26	27	28	29	25	24	25

h'F2

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y3

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

IONOSPHERIC DATA

Apr. 1954 | foF1 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

foF1

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y4

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Apr. 1954

h'F1

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	C	C	C	C	C	C	C	C	C	280	260					
2								Q	250	250	A	A	A	A	A	A	A	Q	Q					
3								Q	Q	250	230	[260]A	290	A	A	A	A	A	A					
4								C	240	250	220	210	170H	250	230	240	220	220	Q					
5								Q	250	220	220	240	210	230H	250	C	C	260	Q					
6								Q	240	240	230	220	230	210	[230]B	250	(280)B	B	Q					
7								Q	240	230	210	240	210	200	200	200	270	270	260					
8								Q	Q	A	A	230	220	A	A	A	230	240	A					
9								Q	Q	250	250H	C	C	C	C	C	C	270A	Q					
10								A	Q	B	230	270	250	A	A	A	A	A	A					
11								220	C	260	A	A	A	A	A	A	A	C	A					
12								Q	A	A	260	BS	A	A	A	A	A	A	A					
13								Q	Q	B	B	290B	250	A	A	A	250	240	Q					
14								Q	Q	270	[280]A	290	A	B	A	A	A	260	A					
15								Q	C	C	C	C	C	C	C	C	C	C	Q					
16								Q	Q	A	A	A	A	A	A	A	230	230	Q					
17								A	Q	A	A	A	250A	(300)A	A	A	250	250	Q					
18								Q	Q	220	300	220	300	220	250	[250]A	250A	250A	Q					
19								Q	Q	250	A	A	240	250	[260]A	270H	250	240	Q					
20								Q	A	A	250A	A	A	A	A	A	230	240	Q					
21								Q	A	A	A	A	A	250	A	A	B	A	A					
22								Q	Q	A	A	A	A	A	A	B	240	240	Q					
23								Q	250	A	A	A	A	A	230	A	B	A	A					
24								Q	A	A	A	B	290	A	B	240	210A	250A	A					
25								A	A	M	M	M	M	M	M	M	M	M	M					
26								M	A	A	A	A	A	B	B	B	B	220	Q					
27								A	230	A	A	A	C	B	B	B	C	C	A					
28								Q	A	A	260	250	B	B	B	280	250	A	A					
29								Q	A	A	A	A	A	A	A	A	A	A	A					
30								220	[220]A	230	200	A	A	A	A	A	A	A	A					
31																								
Mean Value								220	240	240	240	250	240	240	240	250	240	250	260					
Median Value								220	240	250	230	240	240	240	230	250	250	240	260					
Count								2	8	12	13	11	12	8	7	7	13	16	2					

h'F1

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y5

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

IONOSPHERIC DATA

Apr. 1954 | foE | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

foE

Sweep 1.0 Mc to 22 Mc in _____ min ☐ Manual ☒ Automatic

Y6

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

IONOSPHERIC DATA

Apr. 1954 | hE | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

h'E | Sweep 1.0 Mc to 22 Mc in 2 min | ☐ Manual ☒ Automatic | Y7

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

IONOSPHERIC DATA

Apr. 1954 | fEs | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	3.7	C	C	C	C	C	C	C	C	C	3.4F	3.2	2.4	2.8	4.6	4.0	2.2
2	E	1.8	1.8	E	1.9	1.8	E	3.0	G	G	6.4	6.4	7.1	5.9	4.0	5.0	5.0	4.0	3.2	3.8	4.5	2.4	2.4	4.3
3	3.7	2.0Y	3.6	4.0	2.2	3.4	2.8	G	3.4	4.5	4.6	5.5	6.5	5.3	6.4	7.2	10.2	6.0	8.0YF	6.0	3.0	3.6	2.4	E
4	2.3	2.4	1.8	2.4	2.6	2.5	2.9	C	3.3Y	4.6	3.3	G	G	3.9Y	4.2	4.6	3.6	3.2	3.1	3.2	2.5	2.4	2.2	E
5	E	E	E	E	E	2.2	2.3	3.0Y	G	G	G	G	G	G	G	C	C	G	3.1	E	E	E	E	E
6	E	E	1.2	E	E	E	E	3.1	3.6	3.8	4.2	4.5	4.5	G	3.8	3.4	G	G	3.3	3.6	3.3	3.5	E	E
7	C	C	C	C	E	E	E	3.4	3.9	3.9	4.5	4.6	4.3	G	3.9	3.5Y	3.1Y	4.1	3.2Y	5.0	4.3	3.8	2.2	1.9
8	1.8	E	E	E	E	E	E	G	3.6	4.6	4.8	4.4	4.1	5.3	4.8	5.3	G	3.5	3.4	3.3	2.5	2.4Y	3.0	3.9
9	E	2.6	E	3.0	E	E	E	G	G	4.2	4.6	C	C	C	C	C	C	4.2	3.4	2.8	3.2	2.6	3.3	3.1
10	2.8	4.2	2.2	2.2	2.3	4.7	3.0	6.5	3.8	3.2	3.4	B	G	4.8	4.7	7.5	6.3	6.0	3.5	3.6	3.4	2.1	2.6	6.0
11	5.7	3.5	3.2Y	2.8Y	3.3Y	2.5Y	2.6	3.1	C	4.6	5.4	6.0	6.5	5.4	5.4	6.0	7.0	C	4.0	4.0	2.4	3.1	4.2	6.0
12	5.0	4.7	8.8Y	3.0	3.1	E	G	3.2	5.0	4.5	4.7	5.7Y	6.3	6.6	8.6	8.9	6.4	6.5	5.0	4.0	5.6	3.6	3.2	3.0
13	3.7	3.6	3.3	2.9	2.4	2.4	2.4	G	3.3	3.7	3.7	3.5	5.6	6.1Y	4.9Y	5.7	3.6	2.7	2.7	2.6	3.2	2.5	2.4	2.8
14	2.5	2.4	3.0	3.7	3.3	3.3	3.5	G	G	6.2	6.2	4.7	5.7	G	6.4	6.5	4.7	3.7	9.0F	5.5	4.5	4.5	5.5	4.3
15	5.6	4.5	2.9	5.0	7.1	5.6F	4.6	4.3YF	C	C	C	C	C	C	C	C	C	C	4.8	5.5	4.3	4.7	5.2	4.7
16	4.0	4.3	3.0	3.5	3.3	2.3	3.0	3.8	4.5	5.3	6.1	5.9	5.4	5.4	7.2	11.0	G	G	3.2	6.6	2.8	6.5	7.0	4.6
17	5.7	4.3	3.5	2.3	2.3	4.5Y	5.5	4.1	5.6	8.2	6.3	5.5	5.2	5.3Y	6.8	4.1	3.5Y	2.4	3.2	2.6	2.7	2.3	2.3	2.4
18	4.2	2.7	2.3	4.5	2.7	2.3	G	G	3.5	3.7	4.5	4.5	4.6	4.5	4.6	8.3	6.7	5.5	3.8	3.3	2.7	2.3	2.1	E
19	E	3.0F	3.5	4.0	4.0	2.4	2.7	3.3	4.2	4.7	5.7	5.7	4.5	4.5	4.5	3.0	G	G	G	2.8	5.5	4.2	3.2	5.8
20	8.6	10.0Y	6.0	5.3	3.6F	3.0F	2.4	5.9	5.6	5.1	5.0	6.1	5.8	6.5	5.0	6.0	3.6.	3.6	4.0	4.2	3.2S	2.4	6.0F	5.8
21	6.5	5.9	5.8	3.2	3.6	2.7	2.8	2.8	6.5	6.0	5.8	5.3	5.5	G	4.8Y	6.3	G	5.6	4.6	3.2	4.0	3.7	2.4	2.4
22	2.3	E	2.4	E	2.4	E	2.4	G	4.2	5.5	8.5Y	6.6	5.9	5.9	6.1	3.5	G	G	G	3.1	3.7	4.0	4.1	2.1
23	2.4	2.4	2.4	E	2.4	2.3	2.7	2.7	3.5	4.9	5.0	4.7	3.8	4.6	3.3	3.5	G	6.6	4.4	3.7	2.7	E	2.1	2.1
24	2.4	E	E	E	E	E	G	3.6	3.7	5.0	5.9	G	3.5	6.1	3.7	5.9	5.9	3.7	5.9	3.2	5.9	3.5	3.2	5.9
25	3.3	2.4	2.8	2.4	2.3F	2.1	3.0	4.0	4.2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	5.6	5.4	5.2	5.1	5.3	7.1	G	G	G	G	3.5	3.0	2.4	3.2	3.7	2.4
27	E	E	E	2.4	3.4	E	2.9	4.1	3.5	3.8	6.0	5.7	G	G	G	G	C	C	6.8	5.3	2.7	3.5	5.9	2.7
28	2.3	2.4	2.4	2.3	2.2Y	2.4	2.4	4.5	4.2Y	4.5	4.7	G	G	G	G	3.6	G	4.6	7.0	5.3	7.0	6.7	5.9	5.2
29	3.3	2.7	2.6	2.2	2.1	2.4	2.7	3.6	5.0	7.0	8.0	12.0	12.0F	12.0	13.5	8.7	7.2	11.5	7.7	5.9	3.5F	8.6	2.4	3.2
30	5.9	5.5	3.6	2.7F	E	2.4	5.0	G	4.5	G	G	5.9	4.5Y	5.5	6.5	9.0	9.4	15.0	13.2	13.2	6.0	5.9	6.0Y	3.2
31																								
Mean Value	4.0	3.7	3.3	3.2	3.0	2.9	3.1	3.8	4.3	4.9	5.3	5.6	5.6	5.5	5.6	5.9	5.7	5.3	4.8	4.3	3.7	3.8	3.7	3.8
Median Value	2.6	2.5	2.5	2.4	2.3	2.3	2.6	3.2	3.8	4.6	5.0	5.3	4.9	5.3	4.8	5.7	3.6	3.7	3.5	3.6	3.2	3.5	3.2	3.0
Count	28	28	28	28	29	29	29	28	27	27	27	25	26	26	26	25	24	26	29	29	29	29	29	29

fEs

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y8

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

IONOSPHERIC DATA

Apr. 1954 | (M3000)F2 | 135° E Mean Time | **Yamagawa** | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.7	3.0	3.1	(3.3)^{J}	3.0	3.1	3.0	3.3	C	C	C	C	C	C	C	C	C	3.1	(3.3)$^{J}_{P}$	(3.5)$^{J}_{P}$	3.2	[3.0]^{A}	2.8	2.7
2	2.8	2.9	2.7	2.9^{F}	3.3	3.1	3.4	3.5	3.4	3.5	2.8	(2.8)^{P}	3.0	3.2	3.1	(3.5)^{J}	3.4	(3.5)^{J}	3.6	(3.4)^{P}	[3.2]^{A}	2.9^{H}	FS	(2.8)$^{JF}_{H}$
3	[2.8]^{A}	(2.9)$^{J}_{F}$	2.6	3.2	2.9	[3.0]^{A}	3.1	3.5	3.4	3.3	(2.8)$^{P}_{S}$	3.3	2.9	2.9	3.0	3.0	[3.2]^{A}	(3.3)$^{P}_{S}$	A	A	3.6	3.6	3.7	2.9
4	3.0	2.8	2.8	3.3	3.7	A	A	C	(3.8)$^{J}_{P}$	3.6	3.3	3.0	2.8	3.2	3.1	2.9	(3.1)$^{J}_{P}$	(3.2)^{P}	S	3.4	3.4	3.2	2.6^{H}	2.8
5	2.9^{F}	3.0	3.0	3.1^{F}	3.0	2.9	3.4	3.6	3.5	3.1	3.4	3.2	(2.8)^{P}	2.9	3.1	C	C	(3.2)$^{P}_{S}$	3.2$^{P}_{S}$	S	S	3.4	2.8	2.8
6	2.9	2.8	2.9	3.2	(3.0)$^{JF}_{H}$	3.2^{F}	3.4^{F}	3.5	3.6	3.5	3.5	2.9	2.9	3.1	3.2	3.3	3.4	3.3	(3.4)^{J}	3.1	3.3	3.0	2.9	2.8
7	C	C	C	C	3.1	3.0	3.2	3.5	3.4	3.2	3.3	3.1	2.9	3.0	3.0	3.2	3.1	3.2	S	S	3.6	3.0	(2.9)$^{J}_{PS}$	S
8	(2.9)$^{J}_{PS}$	(2.9)^{J}	3.0	(3.3)$^{J}_{F}$	3.6	3.2	3.3	3.6	3.5	3.3	3.0	2.8	2.8	3.0	3.1	3.4	3.4	3.4	3.4	(3.3)$^{P}_{S}$	3.3^{H}	3.0	2.8	2.8
9	2.7	2.9	3.1	3.6	3.1	3.2^{F}	3.2	3.6	3.2	3.1	2.8	C	C	C	C	C	C	3.3	3.3	(3.2)^{P}	(3.7)$^{J}_{P}$	3.0	[3.0]^{A}	3.0
10	2.8	2.6	(2.8)$^{J}_{F}$	3.5^{F}	3.6	[3.4]^{A}	3.1	[3.2]^{A}	3.4	3.0	2.9	2.8	(3.0)^{J}	3.3^{P}	3.1	3.3	3.3	3.3	3.5	[3.6]^{S}	3.6	2.7	2.8	[2.8]^{A}
11	2.7	[2.8]^{S}	2.8	2.9	2.9	(3.1)$^{J}_{F}$	3.7	3.7	[3.4]^{C}	3.0	3.4	3.0	2.9	3.1	3.1	3.1	3.1	C	S	3.4	S	3.1	2.9	[2.9]^{S}
12	2.9	A	A	3.1	3.2	3.1	3.4	3.3	3.3	3.9	[3.2]$^{B}_{S}$	2.4	2.9	2.8	2.8	3.0	3.3	3.1	3.0	3.0	3.6^{P}	A	(2.7)^{J}	(3.0)^{J}
13	2.6	2.9	3.3	3.5	2.8	2.8	3.4	3.6	3.4	2.9	3.3	3.2	2.7	S	S	(3.0)$^{J}_{P}$	3.1	(3.3)^{J}	(3.4)$^{J}_{P}$	3.5	3.4	3.6	2.7	2.7
14	2.7	(2.9)^{J}	2.9	3.4	A	A	3.6	3.7	3.5	3.2	3.3	2.8	3.1	3.2	(3.1)^{J}	3.0	3.2	3.4	3.4	3.5	3.6	A	A	S
15	A	2.8	2.8	A	A	A	3.4	3.5	C	C	C	C	C	C	C	C	C	C	(3.5)^{J}	3.5	3.7	A	A	A
16	A	A	A	3.0^{V}	3.4^{F}	3.3	3.4	3.8	3.9	3.7	[3.2]^{A}	2.7	3.1	3.2	3.0	A	(3.3)^{J}	3.0	3.3	3.2	3.4	2.8	[2.8]^{A}	2.8^{P}
17	[3.0]^{A}	3.1	(3.5)^{J}	3.7	3.0^{F}	2.9	3.4	3.4	3.6	[3.4]^{A}	3.3	3.0	2.8	3.0	3.1	(3.3)^{J}	3.2	3.1	3.5	(3.5)^{J}	3.2^{P}	3.6	2.8	2.8
18	2.9	3.0	2.9^{F}	3.6	3.3	2.8	3.3	3.7	3.7	3.7	2.9	3.0	2.9^{P}	3.0	3.1	3.2	3.2	2.9	3.1^{P}	2.9	3.6	3.3	2.8	2.8
19	2.8^{F}	2.8^{F}	2.8	2.9$^{\overline{F}}$	2.8	3.2$^{\overline{F}}$	3.4	3.5	3.4	3.4	3.3	3.3	2.9	(2.9)^{J}	2.9	2.9	3.1	3.3	3.3	3.3^{P}	3.1^{P}	3.2	2.7	2.7
20	[3.0]$^{F}_{S}$	3.2	3.1	[3.0]^{F}	(2.9)$^{J}_{F}$	[3.2]^{F}	3.6^{F}	3.7	3.5	3.6	3.3	2.9	2.9	2.9	2.8	(3.1)^{J}	3.3	3.2	3.1	3.3	3.3	2.9	F	A
21	A	F	3.4^{F}	3.4^{F}	2.9^{F}	F	3.4	3.5	[3.4]^{A}	3.3	3.1	2.7	3.1	3.2	3.0	3.0	3.0	3.1	3.2	3.4	3.4	3.7	2.6	2.8
22	2.7^{F}	3.0^{F}	3.5	3.5	F	F	3.4	3.5	3.3	3.3	3.0	2.9	3.0	2.9	3.0	3.1	3.3	3.2	3.1	3.2	3.2	3.4	2.8	2.9
23	3.0	2.8	3.1	3.3	2.8^{F}	2.9	3.3	3.5	3.4	3.2	3.1	3.0	2.9	3.1	2.9	2.9	3.2	3.1	3.2	2.9	3.5	3.2	2.6	(2.8)^{J}
24	(2.8)^{J}	(3.0)^{J}	[3.0]^{B}	3.0	3.4	3.2	3.6	3.8	3.6	3.4	2.8	2.7	3.1	3.2	3.2	3.1	3.1	3.3	3.4	3.6	[3.1]^{A}	2.6	2.6	[2.6]^{A}
25	2.6^{F}	2.8^{F}	3.0^{F}	3.1	3.0	3.0$^{\overline{F}}$	3.5	3.5	3.6	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	3.5	3.2	3.1	2.8	2.9	3.0	3.0	(3.2)^{J}	3.3	3.1	3.5^{J}	(3.3)^{P}	3.3	S	S	(2.9)$^{J}_{P}$
27	2.8	2.9	2.9	3.4	3.2	3.5	3.7	3.6	3.4	3.4	[3.2]^{A}	2.9	C	C	2.9	3.2	C	C	3.1	3.4	3.5	3.2	2.7	[2.8]^{S}
28	2.9	2.9	3.0	2.9	3.0	3.3^{P}	3.6^{V}	3.6	3.5	3.4	3.0	3.1	2.8	2.6	3.1^{P}	3.0	(3.2)$^{J}_{P}$	3.5	3.2^{P}	3.5^{P}	3.6	A	A	A
29	2.8	(3.0)^{J}	3.1	3.3	3.5^{F}	3.3	3.9	3.7	3.6	A	A	A	2.9	3.1	3.2	3.1	3.3	3.3	3.5	3.4	2.9^{P}	3.0	2.9	2.9
30	2.8	2.9	3.1	3.4	3.4	3.2	3.6	3.5	3.4	3.5	3.0	2.7	2.9^{P}	2.9	2.9	3.3	A	A	A	A	B	3.3	3.1	2.6
31																								
Mean Value	2.8	2.9	3.0	3.3	3.1	3.1	3.4	3.6	3.5	3.4	3.1	2.9	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.2	2.8	2.8
Median Value	2.8	2.9	3.0	3.3	3.0	3.2	3.4	3.5	3.4	3.4	3.2	2.9	2.9	3.0	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.2	2.8	2.8
Count	25	25	26	27	26	24	28	28	28	26	26	25	25	24	25	24	23	25	24	25	26	24	23	24

(M3000)F2 | Sweep 1.0 Mc to 22 Mc in 2 min | ☐ Manual ☒ Automatic | Y9

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Apr. 1954 | **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	1.7	1.4	1.4	1.4	1.4	1.4	1.5	2.2	C	C	C	C	C	C	C	C	C	3.0	2.4	[2.1]A	1.8	[2.4]A	2.9A	1.8
2	1.6	1.5	1.4	E	1.7	1.1	1.4	2.3	2.9	3.5	3.8	4.7A	4.5A	4.6A	4.0A	3.9	4.7A	2.4	2.0	1.9	[1.8]A	1.8	1.8	1.6
3	[1.2]A	0.9	1.8	2.0A	2.4	[2.3]A	2.2A	2.2	A	3.2	3.3	4.5A	3.8	4.4A	5.7A	6.5A	[6.0]A	5.5A	A	A	2.8A	[2.3]A	1.8	1.8
4	1.6	1.6	1.9	1.6	2.0A	A	A	C	2.7	3.8A	3.5	3.3	3.1	3.7	3.4	3.2	2.9	2.5	2.5	2.0A	1.7	2.0A	1.9	1.8
5	1.8	1.7	1.5	1.1	1.0	1.2	1.7	2.3	2.8	3.0	3.3	3.3	3.6	3.7	3.7	C	C	2.8	2.0	1.6	1.6	1.5	1.6	1.6
6	1.4	1.2	1.3	E	E	E	1.4	2.0	3.0	3.1	3.7	3.8	3.8	3.6	4.2	3.8	3.9	3.3	2.3	2.0A	2.0A	1.8	1.6	1.6
7	C	C	C	C	E	E	1.7	2.8	3.2	3.2	3.5	3.9	3.6	3.6	3.4	3.1	3.5	3.2	2.5	2.2A	2.1A	3.0A	1.8	1.6
8	1.7	1.3	1.8	1.8	1.5	1.4	1.6	2.5	2.9	3.8	4.3A	3.6	3.4	4.5A	4.1	4.6A	3.3	2.9	2.8	1.8	2.2A	2.6	1.7	2.5A
9	1.4	1.6	1.4	1.4	1.4	1.4	1.6	2.3	2.7	3.4	3.5	C	C	C	C	C	C	3.3	2.6	1.9	2.0A	1.8	[2.1]A	2.4A
10	2.0A	2.0A	2.0F	1.6	1.6	[1.9]A	2.2A	[2.6]A	2.9	4.1	3.4	3.9	4.0	5.0	4.8	7.6	6.3A	5.5A	3.8	[3.0]A	2.2A	1.8	1.8	[1.9]A
11	2.0A	2.0A	2.1A	2.0A	1.7	1.7	1.7	2.3	[3.2]C	4.0A	4.7A	5.0A	6.0A	5.0A	4.5A	5.2A	6.0A	[4.9]C	3.8A	[2.8]A	1.7	2.0	2.2A	A
12	1.3	A	A	1.8	2.0A	1.2	2.3	2.6	4.2A	3.8	3.9	4.5A	4.5A	4.5A	6.0A	6.0A	5.5A	6.0A	3.9A	3.2A	A	A	1.7	1.7
13	2.5A	2.2A	1.7	1.9	1.8	1.7	1.7	2.4	2.8	4.2	4.4	4.1	4.0	5.5A	4.5A	4.8A	3.1	2.5	2.0	1.7	A	A	1.6	1.7
14	1.6	1.5	1.0	2.5A	A	A	1.6	2.5	2.9	4.2A	5.0A	4.2	4.7A	4.3	4.5A	4.1A	4.0A	3.0	5.2A	4.4A	3.8A	A	A	2.5A
15	[2.5]A	2.5A	A	A	A	A	3.2A	2.7	C	C	C	C	C	C	C	C	C	C	2.9	[3.4]A	3.8A	A	A	A
16	A	A	A	1.1	1.8	1.6	2.3A	3.0	2.7	4.1A	[4.6]A	5.2A	4.8A	4.7A	5.7A	[4.4]A	3.2	2.6	2.5	A	A	4.0A	[3.0]A	2.1A
17	[1.8]A	1.6	1.7	1.6	1.7	1.5	3.0A	3.0	3.0	[4.1]A	5.2A	4.8A	4.2A	4.2	4.5A	4.2	3.1	2.6	1.8	1.7	1.8	1.6	2.1A	1.7
18	[1.7]A	1.7	1.5	1.0	E	1.3	1.6	2.6	2.9	3.6	4.2A	3.7	4.2A	3.7	3.8	4.2A	[4.0]A	3.8	2.7	2.2A	1.8	1.8	1.7	1.7
19	E	1.6	A	A	1.5	[1.8]A	2.0A	2.7	3.2	3.7	4.9A	5.1A	4.0	3.8	5.2	3.8	3.6	2.8	2.6	2.6	A	A	2.5	[2.8]A
20	3.0A	1.6	1.3	E	2.7A	1.6	1.6	2.6	4.8A	4.1A	4.0	4.9A	5.0A	4.3A	4.4A	4.2	3.1	2.7	1.7	3.4A	[2.6]A	1.7	2.0A	A
21	A	1.5	1.8	[1.4]A	1.1	1.6F	2.0	3.2	[4.2]A	5.2A	5.0A	4.3A	4.3A	4.1	4.1	5.3A	4.0	4.9A	3.8A	1.9	3.2A	[2.4]A	1.7	1.8
22	1.7	1.8	1.9	1.6	1.6	1.6	1.9	2.6	2.9	4.7A	5.5A	6.0A	4.7A	4.9A	5.5A	4.0	3.0	2.7	2.6	2.5A	[2.8]A	3.2	2.0A	1.8
23	1.7	1.7	1.7	1.7	1.7	1.9	1.9	2.9	3.3	4.7A	4.7A	4.5A	4.5	4.2A	3.5	4.1	4.1	6.0A	3.8A	3.2A	1.9	1.7	1.6	1.8
24	1.9	1.8	1.8	1.8	1.9	1.6	1.7	2.9	4.6	4.5A	4.8A	4.5	4.1	4.5	4.5	3.4	[3.2]A	3.0	4.3A	2.7A	[2.6]A	2.6A	A	A
25	1.7	1.8F	1.7	1.6	1.6	1.6	1.9	3.4A	3.8A	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	4.5A	4.7A	4.8A	4.7A	4.8A	5.5A	4.5	4.2	4.3	3.0	2.6	1.9	1.7	1.8	1.9	1.8
27	1.9	1.7	1.7	1.6	2.0A	1.7	2.0	[2.6]A	3.3	4.1	[4.4]A	4.8A	[5.0]C	5.3	4.2	4.3	C	C	6.6A	5.3A	A	A	2.8A	1.8
28	1.6	1.5	1.6	1.2	1.0	1.6	1.8	2.7	4.0A	4.3A	4.0	4.0	4.2	4.0	4.2	4.0	3.2	4.0A	A	A	A	A	A	A
29	1.6	1.7	1.7	1.7	E	1.5	2.0	3.2	A	A	A	A	4.3A	7.5A	4.1A	4.4A	4.2A	4.2A	3.2A	[2.4]A	1.6	2.5A	1.6	2.2A
30	2.8A	1.7	1.7	1.6	E	1.5	[2.0]A	2.5	3.9A	3.5	3.3	4.5A	4.3A	4.7A	5.5A	6.5A	4.2A	A	A	1.7	1.6	[1.6]A	1.6	1.6
31																								
Mean Value	1.8	1.7	1.6	1.6	1.7	1.6	1.9	2.6	3.4	3.9	4.2	4.4	4.3	4.5	4.5	4.6	4.0	3.6	3.1	2.5	2.2	2.2	2.0	1.9
Median Value	1.7	1.6	1.7	1.6	1.6	1.6	1.8	2.6	3.1	4.0	4.2	4.5	4.2	4.4	4.4	4.2	4.0	3.0	2.6	2.2	2.0	1.9	1.8	1.8
Count	26	26	24	26	27	26	28	28	26	26	26	25	26	26	26	25	24	26	26	26	23	22	25	24

fminF

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y 10

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

IONOSPHERIC DATA

Apr. 1954 | **fminE** | 135° E Mean Time | **Yamagawa** | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	E	E	E	1.5	C	C	C	C	C	C	C	C	C	1.6	1.8	1.5	1.6	1.5	1.6	1.6
2	E	1.6	1.6	E	E	0.9	E,	1.6	1.5	1.7	1.6	1.5	1.6	1.5	1.6	1.8	1.8	1.8	1.8	1.5	1.6	1.6	1.8	1.6
3	1.3	E	E	E	1.0	1.0	1.2	1.8	1.6	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.6	1.5	1.7	1.8	1.8	1.8	E
4	1.6	1.6	1.6	1.6	1.4	1.4	1.4	[1.4]C	1.5	1.6	1.6	1.7	1.6	1.7	1.6	1.7	1.5	1.5	1.7	1.5	1.7	1.6	1.7	E
5	E	E	E	E	E	1.9	1.7	1.5	1.5	1.3	1.6	1.6	1.7	1.7	1.5	C	C	1.5	1.6	E	E	E	E	E
6	E	E	E	E	E	E	E	1.6	1.5	1.5	1.5	1.6	2.2	1.6	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.6	E	E
7	C	C	C	C	E	E	E	1.6	1.5	1.6	1.7	1.8	1.7	1.7	1.6	1.6	1.6	1.4	1.5	1.8	1.4	1.5	1.8	1.7
8	1.6	E	E	E	E	E	E	1.7	1.6	1.6	1.6	1.6	1.7	1.6	1.5	1.5	1.5	1.7	1.5	1.5	1.7	1.6	1.5	1.5
9	E	1.3	E	1.5	E	E	E	1.7	1.6	1.6	1.8	C	C	C	C	C	C	2.0	1.8	1.7	1.7	1.7	1.8	1.7
10	1.6	1.8	2.0	E	1.1	E	1.7	[2.6]A	1.6	1.8	1.8	2.0	2.2	2.0	2.0	1.8	2.2	1.8	1.8	1.6	1.6	1.7	1.8	1.8
11	1.7	1.6	1.0	1.0	E	1.0	2.1	2.1	[2.1]C	2.1	2.2	2.2	2.2	2.3	2.2	2.0	2.1	[2.0]C	1.7	1.6	2.0	1.6	1.7	1.5
12	1.6	1.0	1.0	1.0	E	E	1.6	1.2	1.1	1.6	1.6	1.7	1.7	1.8	1.8	1.6	1.5	1.5	1.6	1.3	1.6	1.6	1.5	1.6
13	1.7	E	E	E	E	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.7	1.7	1.6	1.7	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.6
14	1.7	E	E	E	E	1.0	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
15	1.6	E	E	E	E	1.6F	1.6	1.6F	C	C	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.6	1.6	1.6
16	E	E	E	E	1.0	1.0	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6
17	1.5	E	1.2	E	E	1.0	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.6	3.0S	1.5	1.0	1.6	1.6	1.6	1.6	1.6	1.6
18	1.6	E	E	E	E	1.0	1.7	1.5	1.5	1.6	1.7	1.6	1.8	1.5	1.6	1.7	1.5	1.6	1.5	1.5	1.6	1.7	1.7	E
19	E	E	E	E	E	1.0	1.6	1.5	1.5	1.5	1.6	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.6	1.6	1.6	1.6
20	1.1	1.7	E	1.0	E	1.0	1.7	1.5	1.5	1.6	1.6	1.9	1.6	1.7	1.5	1.5	1.5	1.0	1.6	1.6	1.6	1.6	1.6F	1.6
21	E	1.0	E	E	E	1.0	1.6	1.1	1.1	1.5	1.6	1.9	1.8	1.9	1.8	1.9	1.7	1.7	1.7	1.7	1.6	1.6	1.7	1.9
22	1.7	E	2.0	E	2.1	E	1.7	1.7	1.9	1.9	1.9	2.0	1.9	2.0	1.9	1.9	1.9	1.8	1.9	1.7	1.7	1.6	1.7	1.7
23	1.7	2.0	2.0	E	2.0	2.0	1.7	1.6	1.8	1.8	2.0	1.9	1.8	2.2	1.9	1.9	1.9	1.6	1.6	1.7	1.7	E	1.7	1.8
24	1.7	E	E	E	E	E	1.7	1.6	1.6	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.7	1.7	1.6	1.6	1.7
25	1.7	1.7	1.6	1.7	1.7	1.6	1.6	1.6	1.7	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	1.7	1.7	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.7	1.7	1.6	1.7	1.8	1.6	2.0
27	E	E	E	E	1.0	E	1.7	1.7	1.7	1.9	1.9	2.0	2.0	1.9	1.9	1.6	C	C	1.8	1.8	1.7	1.6	1.6	1.7
28	1.9	1.8	E	E	E	1.7	1.5	1.6	1.5	1.5	1.6	1.7	1.9	1.8	1.7	1.5	1.5	1.0	1.6	1.6	1.6	1.6	1.6	1.6
29	1.2	E	E	E	1.5	1.8	1.7	1.2	1.1	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.7
30	1.7	1.5	E	E	E	1.0	1.6	1.2	1.2	1.6	1.5	1.7	1.9	1.7	1.7	1.6	1.5	1.5	1.2S	1.6	1.6	1.6	1.6	1.6
31																								
Mean Value	1.6	1.6	1.6	1.3	1.4	1.3	1.6	1.6	1.5	1.6	1.7	1.7	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
Median Value	1.6	E	E	E	E	1.0	1.6	1.6	1.5	1.6	1.6	1.7	1.7	1.7	1.6	1.7	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Count	28	28	28	28	29	29	29	29	28	27	27	26	26	26	26	25	24	27	29	29	29	29	29	29

fminE

Sweep 1.0 Mc to 22 Mc in 2 min ☐ Manual ☒ Automatic

Y 11

IONOSPHERIC DATA IN JAPAN FOR APRIL 1954

電波觀測報告　第6巻　第4号

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