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IONOSPHERIC DATA IN JAPAN

FOR JULY 1954

Vol. 6 No. 7

Issued in August 1954

PREPARED BY THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR JULY, 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 Resarch 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° 03.2′ E.	39° 43.5′ N.	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	139° 29.3′ E.	35° 42.4′ N.	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7′ E.	31° 12.5′ N.	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

All symbols in the table are used in accordance with "Production and Reduction of Ionospheric 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

Jul. 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	A	A	A	A	A	A	A	A	A	5.8	[5.2]^{A}	4.6	B	B	A	A	A	A	4.8	5.3^{J}	6.1	Fs	SF	4.3
2	SF	SF	SF	SF	F	A	A	4.2	A	A	A	A	A	A	A	A	A	A	3.7	A	A	A	A	A
3	A	F	F	F	F	(4.0)^{F}	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5.1	5.1	4.9	C	4.8	5.3	5.5	(5.2)^{S}	SF
5	C	C	C	C	C	C	C	C	4.8	5.3	[5.2]^{A}	5.0	A	A	A	C	B	C	4.2	4.4	C	C	C	SF
6	A	SF	SF	SF	3.9	C	5.1	C	6.3	A	A	C	C	C	C	C	A	A	A	(5.8)^{S}	(6.2)^{S}	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	A	B	4.4	[4.3]^{c}	4.2	(3.8)^{P}	4.1	4.5	(5.3)^{S}	SF	FS	4.2
8	3.8	3.6	3.7	F	A	3.8	4.0	4.4	4.0	4.3^{J}	A	A	A	A	A	4.6	[4.8]^{A}	4.8	A	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	5.1	5.2	4.8	A	A	B	4.9	A	A	4.5	4.5^{F}	5.6^{PF}	6F	SF	SF
10	A	A	A	SF	A	4.1	A	A	5.4	A	4.7	A	A	A	A	4.9	A	A	A	A	A	(5.3)^{S}	A	A
11	A	(4.5)^{Fs}	FS	FS	4.5^{F}	SF	A	A	C	C	C	C	C	C	C	C	C	C	4.7	5.8	5.9	(5.5)^{Fs}	5.1	4.6
12	(3.8)^{F}	F	F	F	(3.6)^{Fv}	[4.0]^{A}	4.5	A	A	5.1	5.2	4.9	A	A	A	4.6^{F}	A	A	4.6	A	A	SF	SF	SF
13	3.8^{F}	(3.8)^{F}	[3.6]^{F}	3.5^{F}	F	(4.1)^{F}	5.0	4.8^{F}	A	A	A	A	A	A	A	4.4^{P}	[4.6]^{A}	4.8	A	A	A	FS	SF	FS
14	SF	FS	FS	(3.8)^{PF}	[4.2]^{SF}	4.5^{F}	4.5	4.9	(4.5)^{P}	A	A	A	A	A	A	A	A	A	A	5.3	5.7	SF	SF	FS
15	FS	SF	FS	FS	FS	3.9	A	A	A	A	5.1	4.4	A	A	A	A	A	4.2	[4.8]^{A}	5.4	6.0	FS	SF	(4.6)^{F}
16	4.5^{F}	FS	FS	F	FS	4.0	A	A	A	A	A	A	A	A	A	A	4.4	4.1	A	A	5.2^{J}	5.0	4.6	4.1
17	3.9^{F}	3.5	(3.5)^{F}	3.9^{F}	3.5^{F}	3.6	4.0	4.8^{F}	4.6^{F}	5.5	5.2	A	A	A	A	A	4.6	[4.8]^{A}	4.9	5.6	SF	(6.1)^{Fs}	A	A
18	SF	(4.3)^{F}	FS	(3.8)^{F}	[3.9]^{SF}	4.0^{F}	4.5	[4.8]^{A}	5.0^{F}	A	A	A	A	5.3^{F}	[5.2]^{A}	5.2	5.3	5.3	5.1	5.1	5.8	(5.8)^{S}	SF	SF
19	4.0	[3.8]^{A}	(3.5)^{F}	(3.3)^{F}	[3.8]^{A}	4.2^{F}	[4.2]^{B}	4.2^{F}	5.2	5.3	A	A	A	4.9	4.9	4.6	A	A	4.6	5.7	A	FS	SF	A
20	FS	3.5^{F}	3.5^{F}	(3.5)^{F}	(3.5)^{F}	4.0^{F}	4.1	5.9	[5.5]^{A}	5.1	[5.0]^{A}	5.0^{F}	A	B	4.6	4.9	A	A	A	(4.5)^{Fs}	(5.8)^{S}	FS	(3.8)^{Fs}	FS
21	A	A	A	(3.6)^{Fs}	4.0^{F}	(4.0)^{F}	4.2	A	A	A	A	A	A	A	4.5	4.2	[4.1]^{A}	4.0	4.5	5.0	5.7	6.0	(5.0)^{S}	4.5
22	4.4^{F}	4.2^{F}	3.9^{F}	3.9^{F}	F	F	A	A	5.3	6.1^{F}	5.3	5.2	4.9	[4.8]^{A}	4.8	4.5	4.6	A	A	A	(5.5)^{S}	[4.8]^{SF}	(4.2)^{S}	3.9^{F}
23	FS	F	F	F	(3.5)^{F}	(4.5)^{Fz}	[4.5]^{A}	4.5	A	A	A	A	A	A	A	4.5	4.5	4.5	[4.8]^{A}	5.0	A	A	A	A
24	A	SF	F	(3.5)^{F}	3.4^{F}	4.4	4.5^{F}	[4.6]^{A}	4.7	A	A	4.9	4.9	4.6	5.3	5.0	4.5	4.6	4.9	5.6	(6.1)^{Fs}	(6.0)^{F}	FS	FS
25	FS	A	A	A	A	4.5^{V}	A	A	C	C	C	C	C	C	C	C	C	C	C	5.5	5.9	A	FS	FS
26	(4.5)^{F}	FS	FS	F	F	3.5	4.3^{V}	4.4^{P}	4.7	A	A	5.0	5.2	[5.0]^{A}	4.8	4.7^{F}	4.2	4.7	[5.1]^{A}	5.5	5.8	(5.5)^{SF}	SF$_{S}$	SF
27	(3.7)^{F}	(4.0)^{F}	(3.3)^{Fr}	A	A	A	A	A	(4.1)^{F}	A	A	A	A	A	A	5.0	5.2	4.6	4.7	5.2	6.3^{J}	5.5	(3.5)^{S}	[3.3]^{A}
28	3.1	2.8	2.9	[3.0]^{A}	(3.1)^{SF}	A	A	5.0	4.3	A	A	4.7	5.1	4.8	5.2	[5.0]^{A}	4.7	5.0	5.0	6.2	6.2	5.6	4.7	3.9^{V}
29	3.7^{F}	3.9	(3.6)^{F}	2.9	3.0	3.6	A	A	4.5	A	A	4.6	4.5^{J}	A	A	A	A	4.7	[4.9]^{A}	5.1	A	A	3.5^{F}	A
30	A	A	SF	A	SF	3.8^{F}	A	C	A	4.9	A	A	A	A	A	4.7	A	A	A	A	5.5	4.4	SF	F
31	A	F	(3.5)^{F}	F	F	A	4.7^{F}	[4.6]^{A}	4.6^{P}	4.8	4.9	A	A	A	5.0	4.8	5.3	5.6	5.3	5.7	[5.7]^{S}	5.7	4.3^{P}	3.5^{F}
Mean Value	3.9	3.8	3.5	3.5	3.7	4.0	4.4	4.7	4.8	5.2	5.1	4.8	4.9	4.9	4.9	4.7	4.7	4.7	4.7	5.3	5.8	5.5	4.4	4.1
Median Value	3.8	3.8	3.5	3.5	3.6	4.0	4.5	4.6	4.7	5.1	5.2	4.9	4.9	4.8	4.8	4.7	4.6	4.7	4.8	5.3	5.8	5.5	4.4	4.2
Count	11	11	10	11	13	19	14	13	16	11	10	11	5	6	10	19	15	16	19	22	20	14	10	10

foF2

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

W1

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Jul. 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	A	A	A	A	A	A	A	A	A	290	A	A	A	B	A	A	A	A	350	[320]^{A}	300^{A}	270^{A}	300^{A}	250
2	250	290	260	260	270	A	A	A	A	A	A	A	A	A	A	A	A	A	450	A	A	A	A	A
3	A	300^{F}	250^{F}	250^{F}	240	400^{F}	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	350	320	280	C	320	270	260	290^{A}	250
5	260	C	C	C	C	C	C	C	A	A	A	320	A	A	A	C	B	C	310	280^{L}	C	C	C	290^{S}
6	[270]^{A}	250	270	240	240	C	370	C	260	A	A	C	C	C	C	C	A	A	A	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	A	B	490	[470]^{C}	450	270	350	340^{A}	300^{A}	290	290^{A}	260^{A}
8	290^{A}	300	340^{A}	300^{F}	[320]^{A}	350^{L}	400	390	490	A	A	A	A	A	A	A	A	A	A	C	C	C	C	C
9	C	C	C	290	C	C	C	C	C	C	310	360^{A}	A	A	B	A	A	A	320	320	310	270	290	320^{A}
10	A	A	A	290	[300]^{A}	320	A	A	A	A	570	A	A	A	A	360	A	A	A	A	A	340^{A}	A	A
11	A	300^{AF}	280	260	240	260^{A}	A	A	C	C	C	C	C	C	C	C	C	C	330	270	250	250^{A}	250^{A}	260
12	260	260	260	240	260	A	A	A	A	290	350	380	A	A	A	450^{L}	A	A	350^{A}	A	A	270^{A}	280^{A}	280^{A}
13	260	290^{F}	290	270^{F}	260^{F}	370	300	310^{F}	A	A	A	A	A	A	A	470	A	A	A	A	A	260	250^{A}	280
14	290	300^{F}	270	270	250^{A}	380	350	320	470^{F}	A	A	A	A	A	A	A	A	A	A	A	310	300^{F}	[280]^{A}	250^{A}
15	270	250	250	250	290	350^{A}	A	A	A	A	340	520	A	A	A	A	A	420	[360]^{A}	300^{A}	290^{A}	260	200	270
16	270	280	280	320^{F}	290	260	A	A	A	A	A	A	A	A	A	A	500	370	A	A	260	260	260	240
17	250	270	240	260	210	300^{A}	450	400	460	310	300	A	A	A	A	A	360	A	A	270	300	260	A	A
18	260	290	260	250	300	340	310	[310]^{A}	310	A	A	A	A	370^{F}	[360]^{A}	350	350	300	290	270	260	280	260	240
19	250	[260]^{A}	280	A	A	290	[380]^{B}	460	A	290	A	A	A	400	360	350	A	A	360	300	[270]^{A}	240	300^{A}	[280]^{A}
20	250^{F}	280	300^{A}	320	270	360	440	270	[280]^{A}	290	A	A	A	A	370^{A}	320	A	A	A	290	300^{A}	AS	270	A
21	A	A	A	260	250	320	260	A	A	A	A	A	A	A	420	490	[460]^{A}	430	340	280	260	240	250^{A}	250
22	260	240	270	290	300^{F}	340^{F}	A	A	360^{A}	300	340	320	370	[360]^{A}	360	460	340	A	A	A	260	270	290	310
23	(300)^{S}	300^{F}	300^{F}	260	260	240	[310]^{A}	380	A	A	A	A	A	A	A	330	[320]^{A}	320	A	A	A	A	A	A
24	A	AS	290	250	260	270	A	A	390	A	A	400	350	460	320	[350]^{A}	380	380	310	290	300^{AF}	290	250	250
25	290	A	A	A	A	280	A	A	C	C	C	C	C	C	C	C	C	C	C	A	270	A	A	300^{A}
26	A	A	250^{F}	310^{A}	260	260^{A}	300	410	350^{A}	A	A	400	360	[370]^{A}	380	390	530	340^{A}	[320]^{A}	310	270	270	290	270
27	300^{F}	250	230	A	A	A	A	A	(400)^{F}	A	A	A	A	A	340	320	320	300^{A}	270	260	220	250^{A}	[260]^{A}
28	270	330^{A}	320	[300]^{A}	290^{A}	A	A	A	A	A	A	410	360	[350]^{A}	340	[380]^{A}	410	340	330	280	250	270	270	300
29	270	300	260	310	310	370	A	A	340	A	A	A	550	A	A	A	A	320	[300]^{A}	270	A	A	360	A
30	A	A	330^{A}	[310]^{A}	290	380^{A}	A	C	A	330	A	A	A	A	A	360	A	A	A	A	300	300	270^{F}	300
31	A	A	A	(330)^{A}	270^{F}	[320]^{A}	360	[340]^{A}	330	[380]^{A}	440	A	A	A	380	400	330	290	290	270	[260]^{A}	250	250	300
Mean Value	270	280	280	280	270	320	350	360	370	310	380	390	400	390	370	390	390	340	330	290	280	270	270	270
Median Value	270	290	270	270	270	320	360	360	360	300	340	390	360	370	360	360	360	320	330	280	270	270	270	270
Count	19	19	22	23	23	21	12	10	12	9	7	8	5	6	10	17	13	13	17	18	21	22	22	22

h'F2

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

W2

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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

Jul. 1954 | fEs | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	11.2F	7.7	6.3	6.7F	6.3F	7.9	11.5	9.2Y	10.9Y	5.7	7.2	6.5	4.5	4.1Y	6.0	7.0	10.5Y	8.0	5.0	12.5	6.1	6.4	7.3Y	3.0Y
2	3.0Y	5.7Y	2.3Y	3.0	2.3	4.8	7.2	6.0	8.5	8.0	6.4	6.0	6.2	10.4	6.5	6.7	10.5	10.6	11.5	12.5	14.5	12.0	6.4	6.0
3	6.7	2.5	3.2F	3.5YF	3.5F	3.5Y	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5.3Y	3.8	3.9Y	C	2.7	4.2	4.3F	7.0	7.3F
5	>3.3Fc	C	C	C	C	C	C	C	9.0	8.0	8.5Y	5.3	4.6	7.0	10.2	C	4.3Y	C	6.0	3.5	C	C	C	6.0
6	6.0	6.1	4.0	2.5	3.4	C	5.8	C	7.6	8.0	7.7	C	C	C	C	C	7.5	12.5	12.5	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	7.4	4.6	5.0	C	4.8	4.0Y	4.1	5.3	4.5	2.6	4.9	4.3
8	7.7	7.3	4.6Y	4.3F	5.7F	3.2F	4.3	4.7	5.3	5.0Y	7.0	9.1	7.6	10.9	5.7	4.4Y	7.0	6.2Y	7.6Y	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	4.3Y	6.4	7.5Y	7.4F	7.7F	4.3Y	7.6Y	7.5F	5.9Y	6.2	12.0	4.6	4.5	5.7Y	6.0
10	7.5	9.0	6.5	6.0F	7.3	4.7Y	7.9	8.0	6.4	7.8Y	4.6Y	7.7	10.5Y	6.5F	12.5	10.8FY	7.8	9.1	11.5F	11.5	7.1	12.0	6.3Y	5.9Y
11	6.6	7.5YF	5.2F	4.0F	2.7	6.0	6.5	7.1	C	C	C	C	C	C	C	C	C	C	G	2.4Y	E	3.5	5.7Y	3.9
12	4.2F	4.7	3.2	4.3	3.5F	6.6	4.7	8.8	8.1	5.9	6.0Y	4.8	6.8	9.2	11.1	9.1F	4.5	5.3	5.0	7.2	7.9	6.5	5.8	5.8
13	4.4	3.5	2.7F	3.0Y	2.5Y	2.5F	5.0	5.6	9.3F	6.7	10.3F	9.6F	8.0F	7.2	9.5	6.5	7.2	7.7	8.9	12.1	12.5	4.5	4.4	3.8
14	3.4	7.5	3.5Y	3.4	3.5	4.0	4.1	4.8	5.6Y	10.9	9.2	7.5	9.6	10.6	7.8F	8.7	7.1	(7.2)F	5.5	6.0	6.0	3.8	6.4	3.5
15	3.5	4.2	(3.2)YF	2.6	2.6	3.9	6.3	11.7F	7.5F	8.0F	5.0F	4.8	6.2	7.4	6.5	8.6	8.0	4.0	10.9F	5.7	5.8Y	4.8	4.1	2.3
16	4.4	3.5	2.5	4.0	3.5	3.9	4.2	4.9	6.0F	5.7Y	5.3F	6.5	7.0	5.5	5.0F	4.2	4.2	5.8	6.6	5.3	3.4	3.4	4.0	3.4Y
17	3.9	4.4	5.3	2.5F	3.5Y	9.5Y	4.2	4.7	3.5	4.4	4.3	6.0	6.3	5.6Y	7.3	9.1	3.6	6.5	8.7Y	9.4	6.5	5.8Y	10.0	9.0
18	2.7	4.8	3.5	3.5YF	4.2	3.0	3.9	7.8	5.8YF	10.8	9.5F	7.2	6.1	4.3	6.1F	6.0	4.7	6.1	5.7	3.4	2.7	6.0	9.5F	3.8
19	4.4	6.2	5.3Y	5.3	5.9	3.5Y	3.5Y	4.8	6.5	7.0	7.7	10.2F	7.3Y	6.0Y	5.2F	5.4	6.5	9.5	5.2Y	8.0	7.0	7.0F	7.2	7.2F
20	4.7	4.0	4.0	3.9Y	2.2	3.4	4.2	5.9	8.0	7.6	5.2	6.5	5.3	4.4	3.9Y	4.8Y	7.8	9.0	5.2	3.5	6.6	5.3Y	4.4	4.5
21	7.0	6.5F	4.7	4.6	6.5Y	2.5Y	6.2Y	5.5	7.2	8.0	8.7	7.8	7.6	5.3	4.1Y	4.0	6.0	4.4	4.5	3.5	3.7	2.5	4.2	2.7
22	2.7F	2.5F	2.5	3.4	3.5F	3.5Y	6.2	7.8	12.0	7.7	7.2F	7.0F	8.7FY	6.5	4.9	5.9	4.2	6.4	5.3	>6.0C	6.5FY	7.2S	6.5F	6.0F
23	4.4	4.6F	8.6FY	3.4Y	3.5	4.0Y	6.1	5.3	9.0	8.0	10.7	7.2	10.7	7.6Y	6.2	6.2F	6.0	7.2	4.1	7.7Y	8.5	10.2Y	9.0	7.2F
24	6.5	4.5F	3.9Y	6.0	6.0	4.7F	6.6	9.6	10.3F	9.5F	7.2F	7.4F	5.1Y	4.6Y	6.5F	5.7	3.9Y	4.2F	6.0	4.4	4.0	4.2	5.8Y	5.8Y
25	6.5Y	6.2	7.5F	9.0F	7.0	4.7	8.1	11.2	C	C	C	C	C	C	C	C	C	C	C	5.9	7.2	9.0FY	5.7Y	3.9
26	5.7	4.5	3.9	3.9F	4.0	4.2	G	4.2	5.7Y	6.4	6.2Y	6.0Y	6.0Y	5.7	3.9Y	G	4.6	7.2Y	8.5Y	4.1	5.0	7.2YF	4.4F	4.0F
27	5.7Y	3.5FY	5.0FY	7.0	5.5	4.8	5.8	7.2F	6.2F	9.0F	6.1F	5.7	6.3	7.0	6.0Y	10.1	5.4	9.5YF	5.3	5.0	7.2	4.5	4.0F	5.3F
28	5.8	5.5	4.5	6.0	4.0	6.0	9.2	8.0	5.2	8.5	5.7F	4.0YF	4.2YF	5.5	G	6.3	5.7Y	3.5Y	3.5	6.0	3.9	4.6	4.1	4.5
29	3.9	4.1	3.0F	4.0	4.7	4.2	6.0F	5.3	5.3YF	4.9	7.8	5.3	5.3	5.7	8.8Y	7.7	7.1	8.0	6.3	11.3F	6.1	(6.5)S	6.4	7.5
30	7.8	9.5F	6.5	11.0	8.0	6.0	11.6	C	6.2	5.7	9.0F	7.8	7.7	6.0	8.6	6.6Y	11.6	12.0	10.3	12.5	7.2	9.5	6.6	6.5
31	6.0	5.2	5.5	6.0	3.5	4.5	5.3	7.0	6.0	7.1	5.3	6.2	9.5Y	7.4	6.2Y	6.0	5.3	4.0	4.5	6.0	6.1	4.5	3.9	4.0
Mean Value	5.4	5.4	4.5	4.7	4.4	4.6	6.2	6.9	7.3	7.3	7.1	6.7	7.0	6.7	6.7	6.8	6.3	7.0	6.8	7.0	6.3	6.0	5.9	5.1
Median Value	5.7	4.8	4.0	4.0	3.5	4.2	5.9	6.5	6.5	7.6	7.1	6.5	6.9	6.5	6.1	6.3	6.0	6.5	5.8	6.0	6.1	5.3	5.7	4.9
Count	27	27	27	27	27	26	26	24	25	26	26	25	26	26	26	25	28	27	28	28	27	27	27	28

fEs

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

W3

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Jul. 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	A	A	A	AF	3.0F	3.9P	4.4	[5.0]A	5.6	A	A	A	A	A	4.7J	A	A	A	5.1PJ	6.1	6.0J	[5.4]A	4.9PF	4.1F
2	A	A	A	A	A	4.6	A	A	A	C	A	C	A	C	A	C	A	A	A	A	A	4.7	A	A
3	4.1	[4.2]A	4.3	3.4JF	3.2F	4.0	A	M	4.7	A	A	A	A	C	4.8	4.8	[4.8]A	4.9	[5.0]C	5.2	6.0	4.8F	A	A
4	4.3	4.4F	4.5PF	C	C	C	C	5.0	A	A	4.6J	[4.7]A	4.8	5.0	5.3	5.7	5.5	4.5H	4.0	4.5	(5.5)P	A	A	A
5	C	A	A	3.0F	3.0F	4.5	A	A	4.8	A	A	A	A	A	A	5.2	5.0	4.7	4.2	[4.6]A	5.0	4.7P	4.3F	4.0F
6	F	A	F	AF	2.9F	3.5F	4.6	6.8F	7.0F	A	A	A	A	A	A	A	5.4	[5.4]A	5.4	6.3	A	A	4.2JF	4.2A
7	4.1	[4.1]A	4.1ZF	3.0	3.3F	A	A	A	A	A	4.8P	A	A	A	4.5	[4.3]A	4.1	[4.3]A	4.5	5.0	5.3P	4.8	4.8	4.4
8	4.1	3.8	3.8	[3.8]AF	3.8F	4.3	4.1	A	C	C	C	C	C	C	C	C	C	3.4	4.4	4.2	5.2	4.8	4.8J	4.2F
9	3.9F	3.7F	3.3F	3.2F	3.6	3.2	A	A	A	5.5P	4.8	A	A	A	A	A	A	A	A	5.0	5.5	5.0P	5.0	4.8P
10	[4.6]A	4.4P	3.5	3.8F	3.0	3.5	[4.4]A	5.4	5.8	A	A	A	A	A	4.5	A	A	A	A	A	A	5.4	A	A
11	A	A	4.4F	3.6F	3.6F	3.6H	4.7	4.6	[4.6]A	4.7	5.1	A	A	5.0	5.0	5.0	[4.8]A	4.6	5.3	6.4	6.3	5.5	4.7	3.7
12	3.5F	3.2F	3.3F	3.1F	3.0F	3.6	4.5	5.5	A	A	A	A	A	5.0	A	A	A	A	A	5.7	6.0	A	A	4.2F
13	3.7	3.5F	[3.4]A	3.2F	3.4JF	3.5	5.3J	A	A	4.8	A	A	A	A	A	A	A	A	5.3	5.5	5.9	5.1	5.0J	4.8J
14	4.8J	4.3	4.0	4.0	3.4F	3.8	4.8	4.5P	5.5	6.0JP	5.3	A	A	A	A	A	5.0	5.5	6.0P	5.8	5.5	A	A	AF
15	4.5ZF	4.3	3.1F	3.5F	3.5F	3.5	[4.0]A	4.5	[4.7]A	4.9	G	A	A	A	A	4.4	4.3	[4.4]A	4.5P	4.3	[4.6]A	5.0	4.5	4.0P
16	4.0	3.8F	3.8F	3.7F	3.5ZF	4.0	A	A	4.3	A	A	A	A	A	4.5	[4.4]A	4.3	4.3	4.1	4.7P	5.5	4.9	4.9P	3.5F
17	3.6	3.6	3.4F	3.0F	3.3F	3.2	3.9	[5.2]A	6.5	5.8J	A	A	A	A	A	4.8	5.2	A	A	A	A	A	A	A
18	A	A	A	AF	3.7F	3.8F	4.2	4.4	(5.2)F	[5.4]A	5.6	A	A	A	A	5.5	6.4	6.5	[5.9]A	5.3	5.9JF	5.8	5.1F	[4.6]A
19	4.1F	3.2F	A	A	A	4.0	4.1	A	A	A	A	A	A	A	A	A	A	A	A	5.7	6.5F	6.8	A	A
20	A	A	A	A	A	3.5F	A	A	A	A	A	A	A	A	A	5.0	5.3	4.8	4.4	5.2	5.7	[5.1]A	4.5F	A
21	AF	4.1JF	3.4F	3.4F	3.5F	5.4	4.0J	A	A	A	A	A	A	A	A	B	4.7P	A	A	5.4	5.9	5.0F	4.6	3.9
22	4.0	4.0	4.0F	3.6	[3.7]A	3.8F	A	A	A	A	5.8	5.2	5.0	A	A	A	5.4	A	A	4.7P	5.5	4.9P	3.7	3.6F
23	3.6F	3.5F	3.2F	3.2F	3.5F	3.7	3.9	[5.0]A	6.2	6.3	A	A	A	A	4.9	4.9	5.1	4.3	4.1	4.7	A	C	A	4.3F
24	4.8PF	3.3F	3.3F	4.1F	3.1F	3.5F	A	C	5.5	5.9	4.8	5.7	5.2	C	C	C	C	C	C	C	C	C	A	F
25	F	3.3F	3.0F	3.1F	[3.3]AF	3.5	4.0	4.9	A	A	5.1	A	A	A	5.0	5.4	A	A	A	5.9	6.3P	F	4.8PF	4.8P
26	[4.8]AF	4.8P	5.1	3.2	2.6F	3.2	3.9H	5.0	A	A	A	5.3	5.0	5.1	5.4	5.2	4.7	4.5	5.0	A	A	A	A	A
27	A	4.0F	3.6	[3.4]A	3.1ZF	3.1	4.0	5.5	5.4	[5.0]A	4.6	5.2	4.7	4.8	4.3	5.3	A	A	A	5.8P	8.0	[5.2]A	2.4	A
28	A	A	A	2.8F	[3.0]A	3.2	3.5	5.2P	4.9J	A	A	A	5.3	5.5	5.3	5.3	5.3	5.2	5.6	6.7	7.2	4.8	4.4F	4.6F
29	3.5F	3.6F	3.5F	3.2F	3.3F	3.6	4.4F	4.1	4.8P	[4.8]A	4.7	A	A	4.7	5.3	4.9	A	A	A	A	5.4	5.0	A	AF
30	A	3.4F	3.2F	3.3F	3.5	4.5P	A	A	A	A	A	A	A	A	5.1	5.4	5.0	4.8	4.9	5.0	[5.0]B	5.0P	4.6	3.7F
31	[3.6]A	3.5F	3.5ZF	3.0VF	3.2VF	3.5	4.4	5.4	5.3	A	A	A	A	A	A	6.4	6.3	6.4	5.8	[5.6]A	5.5	5.5F	4.9PF	C
Mean Value	4.1	3.8	3.7	3.4	3.3	3.8	4.3	5.1	5.3	5.4	5.0	5.2	5.0	5.0	4.9	5.1	5.1	4.9	4.9	5.3	5.8	5.1	4.5	4.2
Median Value	4.1	3.8	3.5	3.2	3.3	3.6	4.2	5.0	5.3	5.4	4.8	5.2	5.0	5.0	5.0	5.1	5.0	4.7	5.0	5.3	5.6	5.0	4.7	4.2
Count	19	23	23	24	27	29	20	17	17	11	12	5	6	7	14	18	19	17	19	25	24	22	19	18

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

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IONOSPHERIC DATA

Jul. 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	A	A	A	AF	240	240^{A}	A	A	A	A	A	A	A	A	380	A	A	A	A	260	A	A	260^{A}	260^{A}
2	A	A	A	A	A	250	A	A	A	C	A	C	A	C	A	C	A	A	A	A	A	220	A	A
3	280	[240]^{A}	210	290	260	220	A	M	310	A	A	A	A	C	370	350	[320]^{A}	290	[270]^{C}	250	250	250^{F}	A	A
4	250	260^{F}	220^{F}	C	C	C	C	A	A	A	A	A	350	360	310	A	250	290	290^{L}	260	250	A	A	A
5	C	A	A	AF	250^{F}	210	A	A	280	A	A	A	A	A	A	310	280	270	260	[260]^{A}	250	230	250^{F}	270
6	AF	A	AF	AF	240^{F}	450	330	240	230	A	A	A	A	A	A	A	290	A	A	A	A	A	230	A
7	A	A	230	A	250	A	A	A	A	A	380	A	A	A	420	[400]^{A}	370	[330]^{A}	290	250	230^{A}	250	280	250
8	250	260	250	[240]^{AF}	220^{A}	240	270	A	C	C	C	C	C	C	C	C	C	A	270	250^{A}	270^{A}	260	270	[260]^{AF}
9	260^{A}	250	250^{F}	AF	220	A	A	A	A	260	320	A	A	A	A	A	A	A	A	240	220	[220]^{A}	230	250
10	[240]^{A}	220	250	250	220	300	[280]^{A}	270	A	A	A	A	A	A	420	A	A	A	A	A	A	270	A	A
11	A	A	A	250	220	220^{AH}	250	A	A	380	300	A	A	310	[320]^{A}	320	[320]^{A}	320	260	250^{A}	200^{A}	230	190	230
12	250^{A}	260	250	220	220	300	270	250^{A}	A	A	A	A	A	380	A	A	A	A	A	250^{A}	A	A	A	250^{A}
13	240	A	A	290^{AF}	250^{F}	210	200	A	A	300	A	A	A	A	A	A	A	A	260	250	240	250	250	250
14	250	260	260	250	240	[290]^{L}	340	370	310	260	270	A	A	A	A	A	370	330	290	260	250^{A}	A	A	A
15	250^{F}	240	A	290	200	250	[310]^{A}	370	[380]^{A}	400	G	A	A	A	A	450	400	[380]^{A}	350	A	A	260	[280]^{A}	290
16	290	250	270	260	300^{F}	A	A	A	370	A	A	A	420	[420]^{A}	410	[400]^{A}	400	330	330	[300]^{A}	280	300^{A}	260	250^{AF}
17	260	270	260	220	260	450	430	[360]^{A}	290	270	A	A	A	A	A	380	300	A	A	A	240	A	A	A
18	A	A	A	310^{A}	250	250	260	370	320	[300]^{A}	280	A	A	A	A	350	300	A	A	300	250	250	240^{F}	[240]^{A}
19	240	250	A	A	A	A	L	A	A	A	A	A	A	A	A	A	A	A	A	340^{A}	280^{A}	210	A	A
20	A	A	A	A	A	350	A	A	A	A	A	A	A	A	A	380	300	300	320	260	250^{A}	[250]^{A}	250^{A}	A
21	AF	A	AF	A	260	210	200	A	A	A	A	A	A	A	A	410	310	A	A	260	240	240	250	270
22	250^{F}	250	280	250	[260]^{A}	280	A	A	A	A	290	330	300	A	A	A	290	A	A	270	250	230	260	250
23	250	260	280	260	230	230	410	[340]^{A}	260^{A}	250	A	A	A	A	370	350	290	300^{L}	A	250	A	C	A	250^{F}
24	210^{A}	240^{F}	240^{F}	230^{F}	240	330	A	C	280	270	440	330	330	C	C	C	C	C	C	C	C	C	340^{A}	280^{F}
25	290^{F}	260	250	210^{A}	A	A	240	330	A	A	A	A	A	A	360	310^{A}	A	A	A	270^{A}	240	270	250	A
26	AF	260	240	210^{F}	240	290	350^{H}	260	A	A	A	320	380	360	320	310	290	300	300	A	A	A	A	A
27	A	260	200^{A}	[250]^{A}	300^{A}	430	370^{A}	250	240^{A}	[340]^{A}	430	320	420	370	570	320	A	A	A	A	200^{A}	[280]^{A}	350	A
28	A	A	A	260	[260]^{A}	250^{A}	210	300	A	A	320	[340]^{A}	350	340	350	330	330	260	280	240	220	210^{A}	310^{A}	240^{F}
29	250	260^{F}	230	260	250^{F}	310	250^{F}	230	340	[360]^{A}	370	A	A	400	440	A	A	A	A	A	250	240	A	AF
30	A	A	270^{F}	270	270	240	A	A	A	A	A	A	A	A	350	300	310	300	270	240	250^{A}	260	240	250^{F}
31	[260]^{A}	280	260	250	[260]^{A}	260	A	A	260^{A}	A	A	A	A	A	A	A	300	250	250	[250]^{A}	250	280^{A}	240	C
Mean Value	250	250	250	250	250	280	290	300	300	310	340	330	360	370	380	350	320	300	290	260	240	250	260	260
Median Value	250	260	250	250	250	250	270	300	290	300	320	330	350	360	370	350	300	300	280	260	250	250	250	250
Count	18	19	19	21	26	25	17	13	13	11	11	5	7	8	14	16	19	14	15	22	22	22	20	17

h'F2

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

A 2

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Jul. 1954 | **fEs** | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	10.3	6.9	3.5F	3.5	2.2Y	3.6	5.5	8.4	11.1	12.1	6.5	13.9	10.4	6.5	4.2	6.6	7.1	10.8	6.6	10.3	6.3	5.5	6.5	4.4
2	5.5	7.4	6.5	7.0	7.4	7.1	11.0	12.1	10.9	C	13.5	C	14.0	C	10.5	C	4.4	5.6	5.0	5.7	7.1	4.3	5.6	6.6
3	6.4	7.1	4.3	5.2	3.6	2.8	7.3	M	6.4	8.7	14.0	11.2	10.3	C	6.0	4.9	6.5	6.5Y	C	7.0Y	6.7	7.0	9.7	10.4
4	6.3	5.5	6.1Y	C	C	C	C	6.2	10.0	6.5	6.2Y	10.3	4.8	5.6Y	4.5	7.2	4.7	3.6	3.5	3.5	6.5Y	7.0	7.8	7.0
5	C	7.3	5.0F	4.0	4.3	4.0F	7.3	10.2	7.2	6.2	7.8	9.3Y	11.7	8.3	5.7	5.4	5.4	4.7	4.2	6.5	4.3	3.8	5.6	4.0
6	3.9F	4.3	4.2F	5.6F	4.2	3.0	5.3	6.4	6.5	9.0	12.4	8.0	7.2	8.6	6.3	12.0	6.4	7.7	7.1	13.9	14.0	9.0	7.5	7.0F
7	7.0	7.1	4.7F	6.1	3.5F	5.7F	8.0	7.8	9.7	15.4	6.8	5.7	12.9	10.3	7.5	6.4	4.7	4.2	3.7	4.2	4.9	3.6	5.0	3.5
8	3.5	4.0	5.3	4.3	3.1	3.0	G	7.2	C	C	C	C	C	C	C	C	C	8.0	5.6	4.5	6.5	4.1	4.2	4.3
9	6.5	4.3	3.1	4.1	4.7	4.0	7.2	6.5	9.7	4.2	4.5	6.5	4.0	9.5	10.0	10.3	12.0	11.0Y	7.0	3.1	2.6	6.5	4.1	5.4
10	5.5	6.7Y	6.0	3.2	3.0	3.4	5.8	11.0Y	6.5	11.1	10.7	13.5	13.7Y	13.7	6.3	12.6	14.1	11.0	7.5Y	7.0	6.7	4.9Y	6.5	5.4
11	7.0	7.0	4.5	4.2	3.5	3.2	6.5	5.1	13.5Y	10.0Y	5.3	10.5Y	7.2	10.5	6.7	G	6.7	5.2	4.1	5.4	3.8	5.7	4.3	4.1
12	3.5	3.4	3.0	3.0Y	3.0	2.7	3.9	5.6	6.0	12.5	8.5	10.0	7.0	6.4	6.1	5.5	8.2	12.5	7.8	4.5	6.7	8.0	6.6	6.4
13	4.4	4.2	4.2	4.0F	2.3F	2.5Y	G	4.3	6.3	5.4	6.3	11.0	7.6	6.5	8.0	9.4	11.5	8.0	4.6	4.3	3.5	3.5	2.4	3.0
14	2.3	2.9	2.8	3.0	2.4	3.0	4.4	3.8	5.3	6.1	6.4	13.9	10.0	13.8	7.9	6.7	5.2	5.0	5.4	5.7	13.0	7.1	5.4	5.4
15	4.6	6.8	3.7	4.3	3.1	G	5.2	5.5Y	9.5Y	8.0	4.7	8.0	6.0	8.0	12.0	5.2	4.2	12.5	7.2Y	6.0Y	8.0	3.5	5.0Y	4.1
16	4.3	2.3	3.5	6.6	5.0	4.2	4.9	4.5	5.1	7.5	5.6Y	7.9	4.5	7.9	5.1	5.3	3.5	4.2	4.4	4.0	4.3	7.0	6.4	5.4Y
17	2.9	3.5F	3.0F	3.1F	3.5F	2.9	3.5	5.6	6.7	6.5	6.5	5.2	6.2	6.5	5.5	4.1	4.5	7.4	6.4	7.2	7.1	5.7	4.5	6.2
18	6.5	6.5	7.8	4.3	3.5F	3.3	3.5	4.0	4.4	7.9	10.5	9.5Y	7.1	7.0	5.9	10.0	4.7	9.2Y	9.2	12.0	4.2	5.6Y	7.1	7.8
19	10.5Y	6.4	7.8	8.8	5.7F	4.8	3.8	5.6	6.5	8.5	7.9	15.0	12.0	9.5	13.5	10.4	6.5	6.5	12.5	11.6	7.0	3.0	7.0	7.1
20	5.5	6.5	4.3	4.1	4.0F	3.5	8.0	7.9	10.5	7.1	8.6	12.2	12.3	6.5	7.7	7.0	4.4Y	4.2	3.1	4.2	4.0	10.7	4.4	4.2
21	4.1F	4.4	7.0	4.3F	3.5F	4.2F	4.1	7.0Y	5.1	10.3	9.4	11.5Y	9.8	8.0	9.0	4.3	4.7	6.5	6.8	7.2	7.1	4.2	4.9	3.8
22	6.4	3.7	4.4F	5.4FY	6.8	4.3	6.2	10.5Y	9.3Y	10.5	6.5	5.5	6.5	10.4	5.6	10.0	3.8	12.0F	7.8	4.0	3.5	3.6	3.1	3.1
23	2.9	2.2	2.2	2.3	2.4	2.5	3.1	7.0	6.5	6.9	7.7	7.5	6.4	6.2	4.4	6.5	7.2	6.8	7.1	4.2	7.2	C	7.0	4.2
24	3.5	4.2	3.1	4.2	3.2	2.9	7.8	C	6.5Y	7.9	5.5	5.4	6.5	C	C	C	C	C	C	C	C	C	6.5Y	4.2
25	5.5F	2.5	3.4	3.3	8.0	3.3	3.1	4.1	8.5	11.4	14.7	9.4	5.4	9.4Y	5.4	6.7	14.5	14.9	10.5	4.5	4.5	4.5	4.5	6.4
26	4.5	4.0	3.5	2.9	2.4	2.4	3.1	5.1	5.1	9.2	7.1	7.1	4.5	4.2	5.3	G	4.3	6.5	6.5	10.5	7.0	6.5	5.3	7.3
27	6.4	3.5	3.7	4.0	3.5	G	5.3	5.4Y	7.1	9.8	7.2	7.2	4.1	3.6	4.1	6.4	9.0	12.0	10.2	7.0Y	7.0	5.3	6.5	4.2
28	7.0	7.2	4.7	6.3	5.4	3.2	3.5	5.7	11.0Y	13.7	12.0	8.0	4.0	G	G	G	3.4	3.2	3.3	3.1	4.1	4.0Y	4.5	53Y
29	6.2Y	4.0F	2.5F	2.8Y	4.2	5.6	7.0	4.2	4.4	8.2	4.0	7.2	8.0	G	10.8	12.0	15.2	12.0	7.1	8.3	4.2	4.3	6.5	6.5
30	6.5	4.1	3.5F	3.5	4.4	5.4	4.4	8.4	10.5Y	11.0	10.5	14.0	11.9	11.5	5.2	4.5	5.0	3.7	4.1	3.1	4.1	3.5	3.4	3.5
31	5.5	4.0	4.3	4.0	4.0	4.0	4.6	5.4	5.0	M	9.5	6.6	5.6	7.0	7.7	8.0	4.5	5.5	4.5	7.5	4.2	4.8	4.1F	C
Mean Value	5.5	5.0	4.4	4.4	4.0	3.7	5.5	6.6	7.7	9.0	8.2	8.9	8.1	8.2	7.0	7.5	6.8	8.7	6.3	6.3	6.0	5.4	5.5	5.3
Median Value	5.5	4.3	4.2	4.1	3.5	3.3	5.0	5.7	6.6	8.6	7.4	9.3	7.2	7.9	6.1	6.6	5.2	6.6	6.5	5.7	6.4	4.9	5.4	5.4
Count	30	31	31	30	30	30	30	29	30	28	30	29	30	27	29	28	29	30	29	30	30	29	31	30

fEs

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

A 3

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

IONOSPHERIC DATA

Jul. 1954 | foF2 | 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	3.2F	3.0ZF	[2.8]AF	2.6F	3.0F	3.1	4.5	[5.7]A	6.9	A	A	A	A	A	A	5.3	A	A	A	A	6.1	4.9	4.2	4.3
2	3.7	A	A	4.0F	3.3JF	4.0	A	A	A	A	A	A	A	A	A	4.0	4.1J	4.2	4.2	4.4	5.0	A	A	AF
3	AF	AF	4.2F	3.8F	3.3F	4.0	A	A	A	5.8	A	A	A	5.5	A	A	5.0	5.0	[5.4]A	5.9	A	A	A	A
4	A	A	A	3.1F	2.6JF	3.2	4.5	A	A	A	A	A	A	A	A	A	A	A	4.4	4.7	5.5	5.0	[4.8]A	4.6F
5	A	A	A	2.8F	3.1F	4.4J	3.9	4.2	4.9	A	A	A	A	A	A	A	A	A	A	A	5.0	4.3	3.5F	3.5
6	3.9FP	AF	A	A	A	3.3	4.5	7.1	A	A	A	A	A	A	5.5J	5.1	A	A	5.9P	[6.0]A	6.1	A	A	4.1F
7	4.0F	4.2	[3.6]A	3.1	[3.4]A	3.7	A	A	A	5.5	A	A	A	A	A	4.7	[4.4]A	4.2	[4.7]A	5.2	5.5	4.0F	3.7F	(3.7)FP
8	4.4F	A	A	3.9JF	3.8	4.6	4.7	[4.6]A	4.5	4.7	A	A	A	A	A	4.6	[4.6]A	(4.7)P	4.9	5.0	5.5	4.7	(4.5)F	4.5F
9	4.5	(4.0)JF	C	C	C	C	A	A	5.4	(5.6)A	5.7	A	A	A	A	A	A	A	A	(5.5)P	5.6	5.5	5.0ZF	[4.6]A
10	4.3F	4.1JF	4.1JF	4.0F	3.3F	[3.8]A	4.3	5.7	5.9	(4.6)A	[4.8]A	5.0J	[4.7]A	4.4	A	A	A	A	A	5.1	5.3	5.0	4.9	A
11	A	A	3.9JF	4.0F	3.2F	3.3	5.2	5.0	4.6	A	A	A	A	A	5.3	5.2	5.5	5.4	5.9	6.5	6.7	5.5	[4.7]C	3.9JF
12	3.9JF	4.1F	4.1F	3.4	3.1	3.3	4.9P	4.9	A	A	A	A	A	A	5.4	5.5	5.0P	4.9	5.2	6.6	5.5	A	A	A
13	A	A	A	3.0F	3.1F	3.9	4.5	4.3	A	A	A	A	5.1	[5.1]A	5.1J	A	A	A	5.7	6.0	5.9	4.7	4.5F	4.6F
14	4.9F	4.5	4.5F	3.8F	3.8F	3.7	4.3	4.4	7.4	6.6	5.0	A	A	A	A	A	5.5	6.2	6.8	6.6	5.8	4.2	[4.4]A	4.5F
15	4.5F	4.2F	3.0	3.0	(3.1)F	3.6	3.9	A	A	5.1	A	A	A	B	A	5.2	A	A	5.2	5.7	5.5P	4.6	[4.4]A	4.2
16	4.1	3.7J	3.8	4.0	3.8F	3.5	3.9	A	A	A	A	A	5.2	5.3	4.8	4.9	4.7	4.3	[4.6]A	5.0	5.5	4.8F	4.5F	A
17	A	A	3.0F	3.2F	3.2F	2.6	3.8	5.0	A	A	A	A	A	A	5.0	5.4	5.5	5.5	5.5	6.2	C	C	C	C
18	C	C	C	3.4F	3.1F	4.0	4.0	4.1	5.6	5.5	6.2	A	A	B	5.2	5.8	6.6	7.2	5.8	6.0	6.0	6.0	5.5	A
19	AF	AF	A	C	2.4J	C	C	C	C	A	A	A	A	A	A	A	A	A	3.1	A	6.6	6.0	[4.8]A	3.5P
20	AF	A	AF	2.6	3.3F	3.3F	[4.6]A	5.8	4.8	4.9	5.0	4.9	4.8	5.2	[5.4]A	5.6	5.4	4.6	4.6	5.6	5.5	5.5	3.3	3.9
21	3.7F	4.2	4.2	3.5F	3.5	4.2	3.6	3.7	4.5	A	A	A	5.0	A	A	4.9	4.7	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	A	6.7	[6.1]A	5.5	A	A	4.6	5.6	4.5	4.4	4.7	5.2	C	C	C
23	C	C	C	C	C	C	C	C	C	A	C	C	A	A	A	A	A	A	A	5.2	6.0	5.3P	(4.7)P	4.5
24	[4.0]A	3.4F	3.4F	3.4F	3.0F	3.2	[4.4]A	5.6	6.4P	6.0	[5.9]A	5.8	A	A	5.2	5.5	4.9	4.8	5.3	6.5	7.0	4.9	3.6	A
25	A	A	3.4F	3.3	2.2	2.3	4.2	5.4	6.1	5.6	5.8	A	A	A	A	5.5	4.9	5.3	5.5	6.1	(7.0)P	4.5	B	4.4
26	5.1	(5.0)F	5.7J	2.9F	2.0	3.0	4.3	5.7	5.0	C	C	5.1	[5.2]A	5.4	[5.0]A	5.6	5.0J	4.6	5.5	5.8	4.5	4.5	AF	5.1JF
27	4.3JF	4.2	2.8F	2.7F	[2.8]A	2.9	4.3	A	A	A	A	5.1	5.2	4.8	5.0	5.4	A	A	A	A	A	A	A	2.9F
28	3.0J	3.0F	3.2F	2.9F	2.3F	3.0	3.8H	5.8	4.7	5.6	A	A	5.1	5.8	5.7	6.0	6.4	6.2	7.0	7.9P	7.0	5.9J	5.7	F
29	4.7	F	5.0F	4.2	4.3JF	4.5F	5.6	5.0	4.4	5.5	A	A	A	A	4.9	[5.3]A	5.7	A	A	A	5.9	[5.6]A	5.2P	3.9F
30	[3.6]A	3.4F	3.2	3.2F	3.3F	3.2	3.4	5.0	5.2	[5.2]A	5.1	4.7	A	A	5.5	6.1	5.8	[5.4]A	5.1	5.8	5.4	5.0	4.4	4.1
31	4.1	3.8JF	3.8F	3.7F	3.2F	3.3	4.6	[4.8]A	5.4	4.5	A	A	A	A	5.3	5.9	7.1	7.8	6.0	5.9	5.3	4.4	[4.4]A	4.5F
Mean Value	4.1	3.9	3.8	3.4	3.1	3.5	4.3	5.1	5.4	5.4	5.6	5.2	5.1	5.2	5.2	5.3	5.3	5.3	5.2	5.5	5.8	5.0	4.5	4.2
Median Value	4.1	4.1	3.8	3.4	3.2	3.3	4.3	5.0	5.2	5.5	5.7	5.1	5.1	5.2	5.2	5.4	5.2	5.0	5.3	5.9	5.5	4.9	4.5	4.2
Count	19	15	19	26	27	27	24	20	17	15	9	7	9	8	15	22	20	18	23	25	27	23	21	20

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

Jul. 1954 | **f_0F2** | 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	370 F	330 Z F	(340) A F	340 F	300 F	A	A	A	A	A	A	A	A	A	A	U	A	A	A	A	270	270	340	350
2	370	A	A	360 F	(320) J F	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	300	A	A	AF
3	AF	AF	320 F	350 F	340 F	280	A	A	A	290	A	A	A	310	A	A	U	A	A	290	A	A	A	A
4	A	A	A	320 F	(310) J F	250	350	A	A	A	A	A	A	A	A	A	A	A	330	310	300	300	(280) A	260 F
5	A	A	A	340 F	300 F	(220) J	U	A	A	A	A	A	A	A	A	A	A	A	A	A	270	280	320 F	280
6	360 F	AF	A	A	A	U	U	250	A	A	A	A	A	A	A	U	A	A	300 P	(280) A	270	A	A	300 F
7	340 F	290	(300) A	310	(290) A	270	A	A	A	A	A	A	A	A	A	U	A	A	A	300	250	340 F	380 F	(310) F
8	350 F	A	A	(320) J F	310	260	270	A	A	A	A	A	A	A	A	U	A	(330) P	300	300	290	320	(320) F	350 F
9	300	(330) J F	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	(350) P	300	360	300 Z F	(330) A
10	360 F	(290) J	(300) J F	320 F	340 F	A	A	290	A	A	A	A	A	A	A	A	A	A	A	300	300	310	350	A
11	A	A	(320) J F	280 F	310 F	310	250	270	U	A	A	A	A	A	U	U	300	330	320	310	270	270	(280) C	(300) J F
12	(310) J F	370 F	320 F	320	310	300	280 P	300	A	A	A	A	A	A	U	310	U	U	350	300	300	A	A	A
13	A	A	A	350 F	350 F	300	260	U	A	A	A	A	A	A	A	A	A	A	280	290	280	320	380 F	330
14	330 F	350	350 F	290 F	310 F	300	U	U	290	250	U	A	A	A	A	A	370	320	290	260	290	350	(360) A	370 F
15	300 F	310 F	300	340	(360) F	260	A	A	A	A	A	A	A	B	A	U	A	A	320	280	310 P	310	(320) A	320
16	320	(300) J	320	280	320 F	360	A	A	A	A	A	A	U	U	U	U	U	A	A	300	310	350 F	320 F	A
17	A	A	330 F	340 F	350 F	260	U	U	A	A	A	A	A	A	A	340	330	(320) A	310	280	C	C	C	C
18	C	C	C	310 F	340 F	270	250	U	300	330	290	A	A	B	U	350	350	310	310	290	340	340	270	A
19	AF	AF	A	C	(330) J	C	C	C	C	A	A	A	A	A	A	A	A	A	400	A	260	260	(290) A	320 P
20	AF	A	AF	370	350 F	310 F	(280) A	250	U	U	U	U	U	U	A	350	300	340	330	320	320	290	240	360
21	340 F	350	300	360 F	250	230	U	A	U	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	A	280	A	A	A	A	A	290	U	310	310	270	C	C	C
23	C	C	C	C	C	C	C	C	C	A	C	C	A	A	A	A	A	A	A	A	300	310 P	(300) P	300
24	(320) A	350 F	300 F	290 F	300 F	300	A	A	300 P	250	(290) A	330	A	A	U	310	340	360	330	310	240	250	360	A
25	A	A	320 F	240	310	250	330	300	280	290	A	A	A	A	A	320	350	330	350	290	(270) P	280	B	360
26	330	(320) F	(240) J	270 F	350	280	340	280	310	C	C	U	A	A	A	270	U	A	280	250	370	340	AF	(310) J F
27	(360) J F	330	310 F	340 F	(320) A	310	A	A	A	A	A	U	U	U	U	A	A	A	A	A	A	A	A	380 F
28	(330) J	330 F	370 F	360 F	360 F	280	330 H	A	A	310	A	A	U	360	340	340	310	320	320	300 P	270	(310) J	310	F
29	300	F	280 F	300	(350) J F	310 F	240	250	U	U	A	A	A	A	U	A	290	A	A	A	280	(280) A	290 P	310 F
30	(330) A	350 F	320	330 F	310 F	290	220	320	U	A	U	U	A	A	360	320	A	A	310	300	290	290	310	310
31	350	(350) J F	340 F	320 F	330 F	310	290	(280) A	260	U	A	A	A	A	U	A	300	280	280	300	260	290	(300) A	310 F
Mean Value	340	330	310	320	320	280	280	280	290	290	290	330	—	340	350	320	320	320	320	300	290	310	320	320
Median Value	330	330	320	320	320	280	280	280	300	300	290	330	—	340	350	320	310	320	310	300	290	310	320	320
Count	19	15	19	26	27	23	13	10	6	6	3	1	—	2	2	9	11	10	19	23	27	23	21	20

f_0F2 | 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

Jul. 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	300	300F	300F	310	260	A	A	A	A	A	A	A	A	A	A	320	A	A	A	A	260A	250A	330A	310A
2	370A	A	A	330A	270F	250A	A	A	A	A	A	A	A	A	A	A	370	350	330A	A	280A	A	A	A
3	A	A	230F	250F	280F	240	A	A	A	290	A	A	A	310	A	A	350	320A	[300]A	260A	A	A	A	A
4	A	A	A	250	260F	240	350	A	A	A	A	A	A	A	A.	A	A	A	330	300A	290A	300A	[260]A	220A
5	A	A	A	290F	250F	210	L	420	270	A	A	A	A	A	A	A	A	A	A	A	250A	260A	260A	250A
6	300	300F	A	A	A	430	350	250	A	A	A	A	A	A	A	400	A	A	290A	[260]A	230	A	A	270AF
7	330A	250A	[260]A	280	[280]A	270A	A	A	A	320A	A	A	A	A	A	380	[410]A	440	[350]A	260	220	290	330F	290F
8	330A	A	A	270	260	250	260	[320]A	380	380	A	A	A	A	A	400	[360]A	330	300	260	250	290	320A	320A
9	290A	300	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	300A	280A	300A	250	[290]A
10	330A	260	240	260F	300A	[340]A	380	290	270A	330	[360]A	380	A	A	A	A	A	A	A	260A	280A	300A	310A	A
11	A	A	250	220A	240F	260	250A	280	380	A	A	A	A	A	360	360	300	330	300A	280A	230	210	[230]C	250F
12	250F	270	270	270	260	240	280	290	A	A	A	A	A	A	360	310A	370	340	350	260	250A	A	A	A
13	A	A	A	330AF	300F	260	260	480	A	A	A	A	460	[430]A	400	A	A	A	280	280A	250A	250A	300F	280
14	250	280	270F	240F	230	270	380	450	270	250	340	A	A	A	A	A	370	300	280	220A	240	A	A	320A
15	250	270AF	280	300A	310A	240	A	A	A	300	A	A	A	B	A	340	A	A	310	250	230A	260	[270]A	280
16	280	240	300	240	240	360	400	A	A	A	A	A	370	330	430	360	360	A	A	280	250A	280A	290	A
17	A	A	320AF	260F	280F	260	320	360	A	A	A	A	A	A	A	330	330	[300]A	280	270A	C	C	C	C
18	C	C	C	260	270	260A	230A	480	300	330	290	A	A	B	400	350	340	300A	250	240	280	250	220A	[220]A
19	210AF	260AF	A	C	300A	260	C	C	C	A	A	A	A	A	A	A	A	A	390	A	260	250A	[260]A	280
20	330A	[320]A	300AF	300	300F	240	[240]A	250	300	330	350	360	450	360	[360]A	350	300	340	330	250	250	220	210	310
21	310	300A	260	300A	220	220	230	[300]A	370	A	A	A	380	A	A	370	340	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	A	280	[320]A	350	A	A	A	290	350	[300]L	260	240	C	C	C
23	C	C	C	C	C	C	C	C	C	A	C	C	A	A	A	A	A	A	A	A	270A	260A	250A	250A
24	[270]A	290	270F	240	270F	250	A	A	300	250	[290]A	330	A	A	370	310	340	360	330	270	210	200	330	A
25	A	A	220F	210A	300	240	290	300	260	290	280	A	450	350	A	320	350	330	300	260	260A	270A	330A	310A
26	280	270F	220	200A	320	250	340	280	310	C	C	350	A	A	A	270	310	340	280	230	330A	290	330	280
27	300	300A	230	270	[280]A	280	A	A	A	A	A	370	350	450	420	A	A	A	A	A	A	A	A	290
28	310	290	300	270F	310F	220	LH	A	290A	310	A	A	450	360	340	340	310	310	280	250A	230	250	240	290F
29	250	290F	230	250	280	250	240	250	250	300	A	A	A	A	430	[340]A	260	A	A	A	240A	[250]A	260A	260F
30	[280]A	300	270	270F	240	260	220	320	270	[280]A	300	400	690	[480]A	360	320	280	[280]A	270	250	240	240	250	250
31	270	320	290	260F	260	240	290	[280]A	260	370	A	A	A	A	430	360A	300A	250	250	240	220	270A	[280]A	280
Mean Value	290	280	270	270	270	260	300	330	300	310	310	360	430	380	390	350	330	340	300	260	250	260	280	280
Median Value	290	290	270	260	270	250	280	300	290	300	300	360	450	360	380	340	340	330	300	260	250	260	260	280
Count	21	19	20	26	27	27	18	17	15	14	8	7	9	8	12	19	20	17	22	23	27	22	22	22

h'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

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Jul. 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						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
2							A	A	A	A	A	A	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	A	A						
4							3.3	A	A	A	A	A	A	A	A	A	A	A	A					
5						L	L	A	A	A	A	A	A	A	A	A	A	A	A					
6						A	3.2	A	A	A	A	A	A	A	A	4.0	A	A	A					
7							A	A	A	A	A	A	A	A	A	4.0	A	A						
8						2.7L	A	A	A	A	A	A	A	A	A	A	A	A	A					
9							A	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	4.2	A	A	4.4	A	A	A	A	A	A					
11							A	A	4.1	A	A	A	A	A	4.3	4.0	A	A						
12						Q	3.4	3.8	A	A	A	A	A	A	A	A	A	3.7	A					
13							3.4L	4.0	A	A	A	A	A	A	A	A	A	A	A					
14						2.2L	3.4	3.8	A	A	4.3	A	A	A	A	A	A	3.5	A					
15						Q	A	A	A	A	A	A	A	4.1	A	A	4.0	A	A					
16						2.7	A	A	A	A	A	A	4.2	4.2	4.1	4.0	3.8	A						
17							2.9	3.8	A	A	A	A	A	A	A	A	A	A	A					
18							A	3.6	4.0H	A	A	A	4.3	4.3	4.0	A	A	A						
19							C	C	C	A	A	A	A	A	A	A	A	A	A					
20							A	3.8H	4.0	4.1	4.2	4.3	4.2	4.2	4.2	[4.0]A	3.9	3.5	3.2					
21							3.5	[3.7]A	3.9	A	A	A	A	A	A	A	A	C	C					
22							C	C	C	A	A	A	A	A	A	A	4.0	3.9L	L					
23							C	C	C	A	C	C	A	A	A	A	A	A	A					
24							A	A	A	4.2	A	A	A	4.4	A	A	3.9	3.4	3.2					
25							2.8	3.6	A	A	A	A	A	A	A	A	3.9	3.6	L					
26							3.2L	3.8	4.0	C	C	4.3	4.4	A	A	A	3.9	A						
27							A	A	A	A	A	A	4.2	4.3	4.1	A	A	A						
28							L	A	A	4.1	A	A	4.3	[4.2]A	4.1	4.0	3.9	3.6	3.0					
29							A	3.8	L	A	A	A	A	A	A	A	A	A	A					
30							Q	A	3.7	A	A	4.1	4.3	[4.2]A	4.1	4.0	A	A	L					
31							3.5	A	A	4.2	A	A	A	A	A	A	A	A	3.2L					
Mean Value						2.5	3.3	3.8	4.0	4.2	4.3	4.2	4.3	4.2	4.1	4.0	3.9	3.6	3.2					
Median Value						2.7	3.4	3.8	4.0	4.2	4.2	4.3	4.3	4.2	4.1	4.0	3.9	3.6	3.2					
Count						3	10	10	6	5	2	3	8	8	7	7	8	7	4					

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

Jul. 1954 | h'F1 | 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						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
2							A	A	A	A	A	A	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	A	A	A					
4							240	A	A	A	A	A	A	A	A	A	A	A	A					
5						220	240	A	A	A	A	A	A	A	A	A	A	A	A					
6						A	A	A	A	A	A	A	A	A	A	230	A	A	A					
7							A	A	A	A	A	A	A	A	A	220	A	A						
8						250	A	A	A	A	A	A	A	A	A	A	A	A	A					
9							A	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	240	A	A	200	A	A	A	A	A	A					
11							A	A	220	A	A	A	A	A	210	200	A	A						
12						Q	220	210	A	A	A	A	A	A	A	A	A	240	A					
13							230[A]	250	A	A	A	A	A	A	A	A	A	A	A					
14						230	230[A]	220	A	A	A	A	A	A	A	A	A	250[A]	A					
15						Q	A	A	A	A	A	A	A	240	A	A	230	A	A					
16						290	A	A	A	A	A	A	A	210	210	200[A]	220	A						
17							220[A]	230	A	A	A	A	A	A	A	A	A	A	A					
18							A	210	210[H]	A	A	A	250	200	180	A	A	A						
19							C	C	C	A	A	A	A	A	A	A	A	A	A					
20							A	200[H]	190	200	220	200	200	220	240	[220][A]	210	230	230					
21							200	[220][A]	250	A	A	A	A	A	A	A	A	C	C					
22							C	C	C	A	A	A	A	A	A	A	220	220	230					
23							C	C	C	A	C	C	A	A	A	A	A	A	A					
24							A	A	A	230	A	A	A	220	A	A	230	210	250					
25							190	230	A	A	A	A	A	A	A	A	230	240	280					
26							220	230	230	C	C	230	230	A	A	A	250	A						
27							A	A	A	A	A	A	230	[220][A]	220	A	A	A						
28							200	A	A	A	A	A	220	[220][A]	220	200	250	230	250					
29							A	220[A]	210	A	A	A	A	A	A	A	A	A	A					
30							Q	A	280	A	A	180	A	A	A	230	A	A	250					
31							230[A]	A	A	200	A	A	A	A	A	A	A	A	250					
Mean Value						250	220	220	230	220	220	200	220	220	210	210	230	230	250					
Median Value						240	220	220	220	220	220	200	220	220	220	220	230	230	250					
Count						4	11	10	7	4	1	3	6	7	6	7	8	7	7					

h'F1

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

K 5

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

IONOSPHERIC DATA

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

Jul. 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						A	2.2	2.6	3.0	A	A	A	A	A	A	A	3.2	(2.9)^{A}	2.6					
2							2.1	2.5	2.9	3.0	3.2	3.4	3.3	3.2	3.2	3.0	2.8	2.5	A					
3							2.3	2.6	2.9	3.1	3.1	3.0	3.2	A	A	A	A	A	A					
4							2.4	2.5	2.9	3.0	3.2	3.2	[3.2]^{A}	(3.1)^{A}	A	A	A	A	A					
5						1.5	2.1	2.5	A	A	3.2^{A}	3.3	3.2	A	A	A	A	A	A					
6						A	A	2.5	3.0	3.2	3.2	3.2	3.2	3.4	3.3	3.2	2.8	2.5	(2.0)^{A}					
7							2.0	2.4	2.9	3.0	3.0	3.1	3.2	3.2	A	A	2.2	A						
8						1.7	2.3	2.6	3.0	3.0	3.2	3.3	3.3	3.3	3.2	3.0	2.8	2.5	2.0					
9							2.1	2.5	2.7	3.0	3.0	[3.0]^{A}	3.1	3.2	3.0	A	A	A	A					
10							2.2	2.5	2.9	3.0	3.1	3.3	3.3	3.2	3.2	3.0	2.8	2.5	A					
11							2.2^{A}	2.4	2.8	3.0	3.2	3.2	3.2	3.2	3.2	3.0	2.8	A						
12						1.6	2.2	2.6	2.8	3.0	3.1	3.2	[3.1]^{A}	3.0	3.1^{A}	3.1	2.8	2.4	A					
13							A	2.5	3.0	3.0	[3.2]^{A}	3.3	3.3	3.2	3.1	(2.9)^{A}	2.2	A	A					
14						1.5	1.9	A	A	3.0	3.0	A	A	A	A	A	A	A	A					
15						A	2.3	2.4	2.8	(2.9)^{A}	3.0	3.0	3.0	3.0	3.0	3.1	2.7	(2.3)^{A}	A					
16						A	2.1	2.5	2.8	3.0	A	A	A	A	A	A	A	A						
17							A	2.5	2.5	3.0	A	A	A	A	A	A	2.8	2.5	A					
18							(2.3)^{F}	2.5	2.7	2.9	3.0	3.0	3.2	[3.2]^{A}	3.2	3.0	2.7	2.4						
19							C	C	C	A	3.1	3.2	(3.1)^{A}	(3.0)^{A}	[3.0]^{A}	2.9	2.7	2.4	A					
20							A	2.3	A	A	A	A	A	A	A	A	2.7	2.3	A					
21							2.1	(2.4)^{A}	2.8	3.0	3.0	A	A	A	A	A	2.9	C						
22							C	C	C	A	A	3.1	A	A	A	3.0^{A}	2.7	A	A					
23							C	C	C	A	C	C	A	A	A	A	A	A	A					
24							2.0	2.5	A	A	3.0	3.0	3.0	A	A	A	2.4	2.4	A					
25							1.9^{A}	2.5	2.9	3.0	3.0	3.2	3.3	3.2	3.2	3.0	2.8	2.5	A					
26							2.0	2.4	2.6	C	C	3.0	3.1	3.2	3.2	3.0	2.8	A						
27							1.9	2.3	2.6	2.6	2.8	A	A	A	A	A	A	A						
28							A	2.5	A	A	3.0	3.0	(3.1)^{A}	3.2	3.2	A	A	A	A					
29							A	A	A	2.8	3.1^{A}	3.2	3.2	3.2	3.2	3.0	2.8	2.5^{F}	A					
30							2.2	2.4	2.5	2.9	(3.0)^{A}	3.0	A	A	A	A	2.8	2.4	A					
31							A	2.5	2.8	3.0	3.2	3.2	3.2	3.1	3.1	A	A	A	A					
Mean Value						1.6	2.1	2.5	2.8	3.0	3.1	3.2	3.2	3.2	3.2	3.0	2.8	2.5	2.2					
Median Value						1.6	2.1	2.5	2.8	3.0	3.1	3.2	3.2	3.2	3.2	3.0	2.8	2.5	2.3					
Count						4	21	26	22	22	24	23	21	18	16	14	21	15	3					

foE

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

K 6

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

IONOSPHERIC DATA

Jul. 1954 | h'E | 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						A	120	120	110	A	A	A	A	A	A	A	110	(110)A	110					
2							110	110	110	110	110	110	110	110	110	110	110	120	A					
3							120	110	110	110	110	110	110	A	A	A	A	A	A					
4							110	110	110	110	110	110	(110)A	110	A	A	A	A	A					
5						120	120	110	A	A	A	110	110	A	A	A	A	A	A					
6						A	A	110	110	110	110	110	110	110	110	110	110	110	(120)A					
7							110	110	110	110	110	110	110	110	A	A	110	A						
8						130	110	110	110	110	110	110	110	110	110	110	110	120	120					
9							110	110	110	110	110	(110)A	110	110	110	A	A	A	A					
10							110	110	110	110	110	110	110	110	110	110	110	120	A					
11							A	110	110	110	110	110	110	110	110	110	110	A						
12						140	110	110	110	110	110	110	[110]A	110	(110)A	110	110	110	A					
13							A	110	110	110	(110)A	110	110	110	110	110	110	A	A					
14						120	120	A	A	110	110	A	A	A	A	A	A	A	A					
15						A	130	110	110	(110)A	110	110	110	110	110	110	110	120	A					
16						A	120	110	110	110	A	A	A	A	A	A	A	A						
17							A	110	110	110	A	A	A	A	A	A	110	110	A					
18							110	110	110	110	110	110	110	(110)A	110	110	110	110						
19							C	C	C	A	110	110	110	110	(110)A	110	110	110	A					
20							A	110	A	A	A	A	A	A	A	A	110	120	A					
21							120	(120)A	110	110	110	A	A	A	A	A	110	C	C					
22							C	C	C	A	A	110	A	A	A	A	110	A	A					
23							C	C	C	A	C	C	A	A	A	A	A	A	A					
24							110	110	A	A	110	110	110	A	A	A	110	130	A					
25							A	110	110	110	110	110	110	110	110	110	110	120	A					
26							110	110	110	C	C	110	110	110	110	110	110	A						
27							120	110	110	110	110	A	A	A	A	A	A	A						
28							A	110	A	A	110	110	(110)A	110	110	A	A	A	A					
29							A	A	A	110	[110]A	110	110	110	110	110	110	110	A					
30							120	110	110	110	(110)A	110	A	A	A	A	110	130A	A					
31							A	110	110	110	110	110	110	110	110	A	A	A	A					
Mean Value*						130	120	110	110	110	110	110	110	110	110	110	110	120	120					
Median Value						120	110	110	110	110	110	110	110	110	110	110	110	120	120					
Count						4	19	26	22	22	23	23	21	18	16	13	21	15	3					

h'E

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

K 7

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

IONOSPHERIC DATA

Jul. 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	5.5	4.4F	6.5F	5.6F	3.6	4.5	5.0	6.5	9.0	10.5	10.2	10.0	10.2	10.3	9.0	4.5	6.0	10.0	8.5	10.0	5.6	5.3	3.8	3.9
2	4.5	4.7	5.5	4.3	2.5	4.3	9.0Y	10.0	9.7	10.0	7.0	8.5	6.5	6.0	7.0	5.5	5.0	4.5	4.7	5.2	8.5	5.5	7.0	5.0
3	4.3	4.4	2.0	3.5	5.0	2.9	4.7	6.9	6.9	6.5	9.4	6.6	7.5	5.2	6.6	7.0	6.5	5.6	6.6	5.5	9.5	9.5	7.2	6.7
4	7.0	7.1	6.6	3.5	4.5	3.2	3.8	9.0	7.5	6.8	6.5	10.1	10.4	9.6	8.0	8.3	8.2	7.0	4.2	5.0	5.0	5.0	6.6	6.5
5	8.5Y	7.0	4.8	4.3	3.5	2.9	3.4	5.0	5.0	5.5	6.7	10.7	7.0	8.2	8.5	10.0	10.0	10.5	9.0	7.0	5.5	3.8	4.5	6.9
6	5.1	3.2	5.0	5.0	5.0	3.2	6.5	5.5	6.0	8.7	10.4	9.5	10.5	13.5Y	6.5	4.5	10.4	10.0	7.0	10.0	6.7	6.5	5.8	4.5
7	4.5	7.0	6.7	4.5	5.7	5.8	7.5	10.2	6.5	7.1	9.8	15.0Y	8.0	11.0	10.2	5.5	4.5	5.0	7.2	3.2	3.2	4.0	4.5	4.5
8	7.2	6.8	7.2	4.7	3.0	3.2	4.5	5.5	5.5	5.7Y	6.5	6.5	7.4	6.5	6.5	5.1	5.8	7.0	4.5	4.3	7.0	3.2	4.5	4.0
9	4.7	4.5	C	C	C	C	5.4	5.6	6.5	7.0	6.5	10.0	5.7	10.0	6.8	10.1	6.5	8.5	10.4	10.0Y	6.5	9.5	3.1	10.0
10	5.0	5.7	4.5	4.8	4.8	5.9	4.5	5.5	6.1	5.3	10.5	8.2	7.2	6.0	5.0	7.2	8.3	7.0	7.5	6.5	4.8	5.7	5.5	7.0
11	7.3	7.0	4.5	3.2	E	2.7	5.3	6.8	4.4	12.5Y	9.5	7.0	8.0	10.0	G	5.5	5.2	6.0	5.2	5.0	4.5	6.0	C	3.2
12	2.5	3.8	3.5	3.0	2.5	2.5	3.2	4.3	5.7	10.5	7.3	6.4	6.4	7.0	4.5	6.5	5.0	4.5	4.5	10.0	7.0	9.0	7.0	5.9
13	5.8F	7.2	6.5	4.5	3.2	3.6	3.5	4.0	5.3	9.1	10.0	10.1	9.0	10.0	9.5	10.0	10.2	10.0	5.6	5.1	3.6	3.2	3.1	2.5
14	2.6	2.5	2.4	2.9	2.5	2.3	3.8	4.7	5.6	6.3	5.2	5.4	6.8	8.6	6.7	10.0	6.5	4.0	4.0	3.6	7.0	7.0	6.5	4.5
15	4.5	5.6Y	5.0	5.5	3.7	2.5	4.2	6.6	8.5	5.6	10.0	8.6	9.0	G	10.0	5.5	5.5	6.8	4.5	2.3	2.5	3.0	4.3	4.0
16	3.8	3.2	4.1	3.1F	3.1	3.5	4.3	6.0	6.5	6.0	7.0	6.2	6.5	5.1	4.5	4.8	4.5	5.5	8.5	4.5	3.0	7.0F	3.8	7.0
17	7.0	5.0	4.3	3.2	5.0F	4.3	3.2	4.0	9.0	6.8	9.0	10.0	10.0	7.0	7.0	4.5	4.3	5.6	4.0	6.0	C	C	C	C
18	C	C	C	3.1F	3.0	7.0	3.8	3.5	4.5	5.5	5.7	>5.6C	5.2	3.8	G	5.6	4.5	6.8	5.0	4.0	2.0	4.5	6.5Y	7.0
19	6.5F	5.6	7.0	C	5.0	>3.0C	C	C	C	6.9	6.2	10.1	7.2	7.1	10.2	10.3	7.0	10.0	8.5	9.0	10.0	5.9	5.7	3.5
20	4.7	4.8	5.0	5.0	3.3	3.5	5.0	6.8	6.6	5.1	7.0	6.5	4.4	4.0	5.5	5.6	4.3	3.6	4.5	3.5	3.0	3.0	6.8	4.0
21	3.6	3.8	3.7	3.2	3.1	3.3	3.2	5.5	4.6	7.0	9.0	7.2	6.5	10.1	8.5	5.5	4.5	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	10.0	9.5	9.0	7.0	10.0	10.0	6.7	5.7	6.5	4.5	3.0	2.5	C	C	C
23	C	C	C	C	C	C	C	C	C	10.0	C	C	7.0	6.5	10.0	7.4	8.7	6.6	7.0	5.5	4.5	7.0	7.0	5.5
24	6.0	3.2	3.2	5.0	3.8	5.5	8.5	7.0	7.0	7.0	7.4	10.0	8.5	7.0	7.2	10.0	4.3	4.2	3.8	4.0	3.2	3.0	4.0	7.0
25	5.8	4.7	3.2	3.2	5.6	2.3	3.2	3.6	6.0	6.0	6.5	6.7	5.3	7.2	4.7	7.0	6.0	6.0	3.5	5.0	7.0Y	9.5Y	4.5	4.5
26	4.5	3.0F	3.2	3.1F	2.5	3.2	3.3	5.1	5.4	C	C	7.0	5.8	5.5	7.5	4.6	3.6	7.0	7.0	3.2	4.5	3.2	4.4	2.4
27	4.0	4.3	2.5	2.5	4.5	3.0	4.8	10.0	7.0	6.0	6.5	6.1	4.5	5.0	5.0	5.5	10.0	10.0	7.0	6.8	7.0Y	5.3	4.5	2.4
28	5.5	3.0	7.5	4.7F	4.4	3.2	5.0	4.8	7.0	7.0	9.0	10.2	7.0	5.2	4.5	5.5	4.4	4.0	3.2	3.2	3.2	3.2	4.5	4.5
29	4.5	4.0	3.2	3.0	2.2	4.5	7.4	5.5	5.7	5.5	7.4	6.8	9.0	10.0	6.9	10.5	10.0	10.2	9.0	9.5	6.6	7.0	5.6	4.5
30	6.5	5.0	4.9	2.5	3.2	4.3	4.1	7.0	5.5	6.5	4.5	5.5	8.5	8.7	5.2	4.5	5.5	6.9	4.2	3.2	2.9	2.8	2.6	2.9
31	3.0	4.6	6.5	3.2	2.0	3.0	4.0	5.5	5.5	4.9	7.2	7.0	10.5	8.5Y	6.5	6.5	5.6	5.3	3.5	3.6	3.0	7.0	5.3	5.7
Mean Value	5.1	4.8	4.8	3.9	3.7	3.7	4.8	6.1	6.4	7.2	7.8	8.3	7.5	7.8	7.2	6.8	6.3	6.8	5.9	5.6	5.1	5.5	5.1	5.0
Median Value	4.8	4.6	4.8	3.5	3.4	3.2	4.4	5.5	6.0	6.8	7.3	8.2	7.2	7.1	6.8	5.6	5.7	6.7	5.1	5.0	4.8	5.4	4.5	4.5
Count	28	28	27	27	28	27	28	28	28	30	29	29	31	31	31	31	31	30	30	30	29	28	27	28

fEs

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

K 8

17

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

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

(M3000)F2

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

K 9

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

IONOSPHERIC DATA

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

Jul. 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	1.4	1.5	1.6	1.4	1.8	2.8[A]	4.2[A]	[5.4][A]	6.5[A]	A	A	A	A	A	A	4.0[A]	A	A	A	A	5.0[A]	3.2[A]	3.4[A]	2.7[A]
2	2.8[A]	A	A	2.5[A]	1.3	3.5[A]	A	A	A	A	A	A	A	A	A	3.8[A]	3.7[A]	3.8[A]	3.8[A]	4.2[A]	3.4[A]	A	A	A
3	A	A	1.3	1.3	1.3	1.7	A	A	A	4.3[A]	A	A	A	4.2[A]	A	A	4.0[A]	4.3[A]	[3.6][A]	3.0[A]	A	A	A	A
4	A	A	A	1.5	1.3	1.9	3.0	A	A	A	A	A	A	A	A	A	A	A	3.2[A]	[3.6][A]	4.0[A]	A	A	1.5
5	A	A	A	1.5	1.9	1.9	2.9	4.0[A]	4.2[A]	A	A	A	A	A	A	A	A	A	A	A	3.2[A]	3.0[A]	2.4[A]	2.1[A]
6	1.7	1.8	A	A	A	2.7[A]	3.0[A]	5.0[A]	A	A	A	A	A	A	5.5[A]	3.2	A	A	4.6[A]	[3.0][A]	1.5	A	A	2.5[A]
7	[2.6][A]	2.7[A]	[2.2][A]	1.8	[2.2][A]	2.7[A]	A	A	A	4.9[A]	A	A	A	A	A	3.4	[3.6][A]	3.7[A]	[2.2][A]	2.8[A]	1.5	1.7	2.0	2.0
8	A	A	A	1.1	1.4	1.8	3.5[A]	[3.8][A]	4.0[A]	4.1[A]	A	A	A	A	A	4.0[A]	[3.8][A]	3.5[A]	3.4[A]	2.1	2.9[A]	2.3[A]	A	A
9	2.8[A]	2.3[A]	C	C	C	C	A	A	5.0[A]	[5.2][A]	5.5[A]	A	A	A	A	A	A	A	A	2.9[A]	3.5[A]	2.4[A]	1.8	A
10	A	1.5	1.4	1.4	A	A	3.6[A]	3.9[A]	5.4[A]	4.0[A]	[4.4][A]	4.7[A]	3.7	4.3[A]	A	A	A	A	A	3.0[A]	3.5[A]	3.5[A]	3.5[A]	A
11	A	A	2.0	A	E	2.0	[3.0][A]	3.9[A]	3.5	A	A	A	A	A	3.5	3.0	4.0[A]	3.9[A]	3.9[A]	4.0[A]	2.4[A]	1.5	[1.6][C]	1.6
12	1.6	1.4	1.6	1.6	1.4	1.6	2.5	3.3	A	A	A	A	A	A	4.2[A]	4.9[A]	3.8[A]	3.1	3.4[A]	2.1	3.5[A]	A	A	A
13	A	A	A	A	1.2	2.1	[2.8][A]	3.5	A	A	A	A	4.5[A]	[4.4][A]	4.4[A]	A	A	A	4.0[A]	4.2[A]	3.0[A]	2.1[A]	1.9	1.5
14	1.5	1.5	1.4	1.4	1.2	1.6	[2.6][A]	3.5	5.0[A]	5.2[A]	4.0[A]	4.1[A]	A	A	A	A	4.0[A]	3.1[A]	3.1[A]	2.5[A]	2.2	3.5[A]	A	A
15	1.7	2.5[A]	1.7	A	A	1.7	3.6[A]	A	A	4.4[A]	A	A	A	3.8	[3.9][A]	4.0[A]	3.0	[3.5][A]	4.0[A]	2.0	2.1[A]	1.5	[1.6][A]	1.6
16	1.5	1.3	1.7	1.2	1.3	2.0	3.5[A]	A	A	A	A	A	4.0[A]	3.0	3.0	[3.0][A]	3.1	4.0[A]	[3.2][A]	2.5	2.5[A]	2.8[A]	2.7[A]	A
17	A	A	2.3[A]	1.2	1.4	1.8	2.7[A]	3.3	A	A	A	A	A	A	4.8[A]	4.1[A]	4.0[A]	4.9[A]	3.0[A]	5.0[A]	C	C	C	C
18	C	C	C	1.7	1.2	2.8[A]	[2.8][A]	2.8	3.4	4.2[A]	4.3[A]	[4.0][A]	3.6	3.5[A]	4.0[A]	4.3[A]	4.0[A]	5.3[A]	3.0[A]	2.2[A]	1.5	1.5	2.5[A]	A
19	AF	2.7[A]	A	C	A	1.6	C	C	C	A	A	A	A	A	A	A	A	A	2.4[A]	[3.7][A]	5.0[A]	4.3[A]	[2.2][A]	2.0
20	2.4[A]	A	AF	1.7	1.5	1.5	[2.4][A]	3.2	3.0	3.5	3.7	3.5	3.5	3.6	3.7	4.0[A]	3.0	2.5	2.2	2.0	1.6	1.5	2.0	1.9
21	2.0	[1.7][A]	1.4	A	E	1.7	2.2	3.4[A]	3.5	A	A	A	4.3[A]	A	A	4.3[A]	4.0	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	A	4.8[A]	[4.8][A]	4.8[A]	A	A	4.3[A]	3.3	2.5	2.0	1.5	1.4	C	C	C
23	C	C	C	C	C	C	C	C	C	A	C	C	A	A	A	A	A	A	A	4.6[A]	3.9[A]	3.5[A]	2.5[A]	2.5[A]
24	[2.0][A]	1.5	1.2	1.8	1.9	1.8	A	A	4.0[A]	3.6[A]	[3.9][A]	4.2[A]	[3.8][A]	3.4	4.2[A]	4.5[A]	3.1	2.6	2.2	2.3	2.0	1.4	A	A
25	A	A	E	A	1.7	1.5	2.5	3.0	4.0[A]	4.5[A]	5.0[A]	[4.6][A]	4.3[A]	4.2[A]	[4.2][A]	4.2[A]	3.5	3.0	2.9	1.8	4.5[A]	3.5[A]	A	A
26	1.7	1.5	1.4	[1.4][A]	1.4	1.5	2.3	3.2	3.7	C	C	3.9	3.5	5.0[A]	[4.5][A]	4.0[A]	3.5	3.9[A]	4.0[A]	2.0	[1.8][A]	1.7	[1.6][A]	1.5
27	2.8	[2.2][A]	1.4	1.3	[1.6][A]	1.8	4.0[A]	A	A	A	A	4.3[A]	3.6	4.0[A]	3.5	5.0[A]	A	A	A	A	A	A	A	1.5
28	1.6	1.3	1.2	E	E	1.2	2.2	5.0[A]	4.0[A]	3.9[A]	A	A	3.5	4.3[A]	3.5	3.4	3.2	2.9	2.1	2.2[A]	1.9	1.7	2.1[A]	1.7
29	2.0	1.9	1.2	1.1	E	1.5	3.2[A]	[3.0][A]	2.9	4.2[A]	A	A	A	A	4.3[A]	[4.2][A]	4.1[A]	A	A	A	2.8[A]	[3.2][A]	3.6[A]	1.6
30	[1.6][A]	1.5	1.7	E	E	2.1	2.3	4.0[A]	3.5	[3.8][A]	4.1[A]	3.3	4.0[A]	[4.0][A]	4.0[A]	3.5	5.0[A]	[3.8][A]	2.5	1.5	1.9	1.5	1.8	1.6
31	1.5	2.0	1.7	E	E	1.5	A	A	4.2[A]	3.5	A	A	A	A	4.2[A]	5.0[A]	5.0[A]	4.0[A]	2.9	1.6	2.1[A]	3.5[A]	[2.5][A]	1.5
Mean Value	2.0	1.8	1.6	1.5	1.5	1.9	2.9	3.7	4.1	4.2	4.4	4.1	3.9	4.0	4.1	4.0	3.7	3.6	3.1	2.8	2.8	2.5	2.3	1.8
Median Value	1.7	1.6	1.4	1.4	1.3	1.8	2.8	3.5	4.0	4.2	4.3	4.2	3.8	4.0	4.2	4.0	3.8	3.7	3.1	2.5	2.5	2.4	2.2	1.6
Count	18	18	19	21	24	27	22	18	17	15	9	10	13	13	17	22	21	19	23	26	27	22	18	17

fminF

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

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

Jul. 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	1.3	1.2	E	E	1.0	E	1.3	1.5	1.4	1.5	2.2	2.2	2.1	2.1	2.1	1.5	1.5	1.5	1.5	1.4	1.5	1.6	1.5	1.5
2	1.4	1.3	1.0	E	E	E	1.4	1.4	1.5	1.5	1.6	2.1	2.3	2.1	1.5	1.6	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.5
3	1.4	1.3	1.5	1.4	1.3	1.0	1.4	1.3	1.5	1.5	1.5	2.1	2.1	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5
4	1.4	1.3	E	E	E	E	1.3	1.5	1.5	1.5	1.5	1.5	2.1	2.1	2.1	1.5	1.4	1.5	1.5	1.3	1.3	1.5	1.5	1.5
5	1.7	1.1	1.1	1.2	1.0	1.1	1.3	1.4	1.5	1.5	1.5	1.5	2.1	2.1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
6	1.4	1.3	1.1	E	1.0	E	1.4	1.5	1.5	1.5	1.5	2.1	2.1	2.1	2.1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
7	1.4	1.0	E	E	E	E	1.5	1.5	1.5	1.5	1.5	2.1	2.2	2.2	1.8	1.5	1.5	1.4	1.4	1.4	1.5	1.4	1.5	1.5
8	1.4	E	E	E	E	E	1.4	1.5	1.5	1.5	1.5	1.5	2.1	1.5	2.1	1.5	1.4	1.5	1.5	1.4	1.5	1.5	1.5	1.4
9	1.4	1.2	C	C	C	C	1.3	1.5	1.4	1.5	2.2	2.1	1.6	2.1	1.5	1.5	1.5	1.4	1.5	1.4	1.5	1.5	1.5	1.5
10	1.4	1.4	E	E	E	E	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.4	1.4	1.5	1.4	1.5	1.5
11	1.4	1.3	E	E	E	1.4	1.4	1.5	1.5	1.3	2.1	2.1	2.1	2.2	2.1	1.5	1.5	1.5	1.4	1.4	1.5	1.5	(1.5)C	1.5
12	1.4	1.4	1.2	E	1.0	1.2	1.4	1.4	1.5	1.4	1.5	2.1	2.1	1.5	1.5	1.4	1.5	1.5	1.7	1.5	1.4	1.5	1.5	1.5
13	1.4	1.3	E	E	E	1.0	1.4	1.4	1.5	1.5	2.1	2.1	2.1	2.0	2.1	1.5	1.4	1.4	1.4	1.4	1.5	1.5	1.3	1.3
14	1.3	1.3	E	E	1.0	E	1.3	1.5	1.5	1.5	1.5	1.5	2.1	1.5	1.4	1.4	1.4	1.4	1.3	1.5	1.5	1.4	1.5	1.5
15	1.3	1.0	E	E	E	1.4	1.4	1.4	1.5	1.5	2.1	1.5	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.4	1.6	1.5	1.5	1.4
16	1.3	1.3	1.2	1.0	E	1.4	1.4	1.4	1.4	1.5	2.2	2.1	2.2	2.1	2.1	2.1	1.4	1.4	1.5	1.4	1.3	1.5	1.4	1.5
17	1.4	1.3	E	1.2	1.0	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.6	2.1	2.1	1.4	1.4	1.4	1.4	1.4	1.5	C	C	C
18	C	C	C	E	E	1.2	1.4	1.4	1.4	1.5	1.7	1.7	1.4	1.5	1.8	1.6	1.4	1.5	1.5	1.5	1.2	1.4	1.2	1.5
19	1.4	1.0	E	C	1.0	1.3	C	C	C	1.5	1.5	1.5	1.5	1.4	2.1	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	1.5	1.4	E	1.2	1.2	1.3	1.4	1.5	1.5	2.1	2.1	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.5	1.5	1.4	1.4	1.3	1.4
21	1.4	E	E	E	E	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	1.4	1.7	1.4	1.5	2.1	2.1	1.4	1.5	1.4	1.3	1.5	1.7	C	C	C
23	C	C	C	C	C	C	C	C	C	1.5	C	C	2.1	1.5	1.5	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.4
24	1.3	1.3	E	E	E	E	1.5	1.4	1.4	1.5	1.4	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.3	1.4	1.5	1.4	1.4	1.5
25	1.3	1.4	E	E	E	1.4	1.3	1.4	1.4	1.4	1.5	1.6	1.5	1.4	1.4	1.4	1.3	1.5	1.4	1.5	1.5	1.4	1.3	1.5
26	1.3	1.0	E	1.0	E	1.4	1.4	1.3	1.5	C	C	1.5	1.4	1.5	1.5	1.5	1.4	1.5	1.3	1.5	1.5	1.5	1.5	1.4
27	1.4	1.4	E	E	E	1.2	1.4	1.3	1.5	1.4	1.5	1.4	1.4	2.2	1.6	1.5	1.4	1.5	1.5	1.5	1.6	1.4	1.4	1.5
28	1.4	1.3	E	E	E	E	1.4	1.5	1.5	1.5	1.5	1.5	1.5	2.1	1.5	1.7	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4
29	1.4	1.0	E	E	E	1.2	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.3	1.4	1.6	1.6	1.5	1.5	1.6
30	1.3	1.2	E	E	E	1.2	1.4	1.4	1.5	1.5	2.3	2.1	2.1	2.1	1.5	2.1	1.5	1.5	1.4	1.4	1.4	1.5	1.3	1.6
31	1.4	1.3	E	E	E	1.3	1.4	1.3	1.4	1.5	2.1	1.5	2.2	2.1	1.3	1.4	1.5	1.4	1.5	1.4	1.5	1.5	1.5	1.4
Mean Value	1.4	1.2	1.2	1.2	1.1	1.3	1.4	1.4	1.5	1.5	1.7	1.7	1.8	1.8	1.7	1.5	1.4	1.5	1.4	1.5	1.5	1.5	1.4	1.5
Median Value	1.4	1.3	E	E	E	1.2	1.4	1.4	1.5	1.5	1.5	1.5	2.1	2.0	1.5	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.5	1.5
Count	28	28	27	27	28	28	28	28	28	30	29	30	31	31	31	31	31	30	30	30	30	28	28	28

fminE

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

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

Jul. 1954 | ypF2 | 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	60F	70 2F	[60]AF	60F	100F	A	A	A	A	A	A	A	A	A	A	U	A	A	A	A	50	80	50	80
2	60	A	A	30F	(70)JF	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	50	A	A	AF
3	AF	AF	70F	80F	50F	80	A	A	A	60	A	A	A	50	A	A	U	A	A	60	A	A	A	A
4	A	A	A	90F	(90)JF	60	70	A	A	A	A	A	A	A	A	A	A	A	80	60	60	80	[60]A	50F
5	A	A	A	70F	50F	(40)J	U	A	A	A	A	A	A	A	A	A	A	A	A	A	60	70	50F	60
6	40FP	AF	A	A	A	U	U	40	A	A	A	A	A	A	A	U	A	A	70P	[60]A	50	A	A	80F
7	60F	90	[90]A	90	[80]A	80	A	A	A	A	A	A	A	A	A	U	A	A	A	60	60	60F	70F	(90)JF
8	70F	A	A	(80)JF	90	60	80	A	A	A	A	A	A	A	A	U	A	(70)P	80	60	60	80	(80)F	50F
9	80	(40)JF	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	(80)P	60	80	70 2F	[80]A
10	90F	(70)JF	(60)JF	80F	60F	A	A	60	A	A	A	A	A	A	A	A	A	A	A	50	80	60	40	A
11	A	A	(90)JF	90F	60F	80	50	50	U	A	A	A	A	A	U	U	30	100	70	70	60	60	[80]C	(90)JF
12	(90)JF	70F	70F	80	70	90	70P	100	A	A	A	A	A	A	U	70	U	U	50	60	50	A	A	A
13	A	A	A	50F	100F	70	40	U	A	A	A	A	A	A	A	A	A	A	70	90	100	80	90F	50
14	70F	60	70F	80F	90F	100	U	U	80	50	U	A	A	A	A	A	50	80	70	80	90	100	[80]A	70F
15	50F	90F	70	50	(40)F	80	A	A	A	A	A	A	A	B	A	U	A	A	80	80	60P	80	[80]A	80
16	50	(100)J	80	90	80F	40	A	A	A	A	A	A	U	U	U	U	U	A	A	80	70	50F	70F	A
17	A	A	60F	60F	50F	80	U	U	A	A	A	A	A	A	A	30	40	[60]A	80	70	C	C	C	C
18	C	C	C	60F	60F	70	90	U	50	40	60	A	A	B	U	70	60	60	70	80	70	70	60	A
19	AF	AF	A	C	(80)J	C	C	C	C	A	A	A	A	A	A	A	A	A	60	A	50	80	[80]A	80P
20	AF	A	AF	80	80F	100F	[100]A	100	U	U	U	U	U	U	A	50	60	40	60	80	70	60	100	90
21	70F	60	50	60F	60	70	U	A	U	A	A	A	A	A	A	A	A	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	A	40	A	A	A	A	A	40	U	90	80	70	C	C	C
23	C	C	C	C	C	C	C	C	C	A	C	C	A	A	A	A	A	A	A	A	100	80P	(60)P	60
24	[60]A	60F	90F	70F	60F	100	A	A	60P	30	[30]A	30	A	A	U	40	70	90	70	80	60	70	70	A
25	A	A	60F	50	50	100	60	30	40	40	A	A	A	A	A	40	40	60	70	60	(60)P	60	B	50
26	70	(50)F	(60)J	100F	50	90	60	110	30	C	C	U	A	A	A	30	U	A	80	60	60	50	AF	(60)JF
27	(40)JF	70	60F	60F	[60]A	60	A	A	A	A	A	U	U	U	U	A	A	A	A	A	A	A	A	60F
28	(70)J	60F	60F	60F	50F	90	100H	A	A	70	A	A	U	90	60	70	90	80	50	60P	60	(80)J	90	F
29	60	F	70F	90	(70)JF	90F	60	50	U	U	A	A	A	A	U	A	60	A	A	A	50	[60]A	60P	40F
30	[40]A	50F	80	60F	40F	50	60	60	U	A	U	U	A	A	20	50	A	A	50	90	90	60	60	70
31	30	(60)JF	60F	70F	50F	60	50	[40]A	20	U	A	A	A	A	U	A	60	70	80	100	90	100	[100]A	90F
Mean Value	60	70	70	70	70	80	70	60	50	50	40	30	—	70	40	50	50	70	70	70	70	70	70	70
Median Value	60	60	70	70	60	80	60	60	60	40	40	30	—	70	40	50	50	70	70	70	60	70	70	70
Count	19	15	19	26	27	23	13	10	6	6	3	1	—	2	2	9	11	10	19	23	27	23	21	20

ypF2

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

Jul. 1954 | foF2 | 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	AS	3.1	A	A	A	2.5^{F}	4.2^{J}	5.6	A	A	A	A	A	A	C	A	A	A	6.5	A	A	5.9	S	S
2	3.7^{S}	F	F	F	3.7^{F_S}	3.5^{F}	4.6	4.4	[4.4]^{A}	4.5	4.6	4.9	B	B	5.1	A	A	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	A	A	A	A	5.2	5.2	[5.3]^{A}	5.4	5.3	6.1^{J}	6.0	4.8	3.9^{F_S}	3.9^{S}	A
4	A	A	A	F	F	2.3^{S}	[3.8]^{A}	5.4	[5.4]^{A}	5.5	5.0	[5.2]^{A}	5.3	5.9	A	A	A	5.6	5.9	[6.2]^{A}	6.5	5.3	4.1	A
5	FS	AS	3.2^{F}	F	F	F	4.6	4.5	4.8	[4.8]^{A}	4.7	A	A	4.8	A	A	6.2	6.0	6.3	5.8	5.5	4.3	3.0	3.0
6	2.8^{F}	F	FS	FS	2.3^{J_F}	[3.6]^{A}	4.8	4.9	4.7	4.6	4.8^{J}	A	A	A	5.2	5.3	5.8	6.6	6.4	A	A	A	A	AS
7	A	A	A	A	A	A	3.6	[4.4]^{A}	5.3	5.8	A	A	A	A	A	4.7	4.9	5.2	5.0	5.7	[4.7]^{A}	3.7	F	F
8	A	3.0^{F}	A	A	AS	2.9	4.1^{J}	4.7	5.3	4.9	A	A	A	A	A	5.3	5.3	[5.2]^{A}	5.2	[5.4]^{A}	5.7	5.5	AS	AS
9	FS	A	AS	FS	FS	2.5	3.7	[4.8]^{C}	5.9	5.2^{J}	4.6	5.2	A	A	A	A	5.2	5.5	5.5	5.5	6.2	6.1	A	A
10	2.8	A	A	2.5	2.4	3.2	4.2	5.1	5.3	4.3	5.0	4.7	[5.0]^{A}	5.2	A	A	A	5.6	5.2	4.9	5.3^{H}	C	C	C
11	C	C	C	C	C	C	C	C	C	4.9^{J}	5.1	A	A	5.1	5.6	6.4	6.1	6.2	6.5	S	A	5.4	4.7	A
12	F	F	F	3.5^{F}	[3.4]^{F}	3.3^{S}	3.9	4.9	5.6	4.6	A	A	A	A	6.0	6.4	6.2	5.6	5.8	5.9	5.2	4.8^{J}	[4.2]^{A}	3.6
13	3.5^{S}	A	A	A	3.0	[3.4]^{F}	3.9	4.5	[4.8]^{A}	5.0	4.9	[4.8]^{A}	4.6	4.9	5.9	5.8	6.4	6.6	7.8	7.4	5.3	4.9	4.4	[4.2]^{S}
14	4.1^{J}	4.2^{J}	3.9	4.2	2.7^{J_F}	2.4	3.3	4.9	6.7	4.9	4.8	A	A	A	A	A	A	A	6.7^{J}	6.5	6.5	5.0^{J}	A	AS
15	AS	A	AS	2.3^{F_S}	F	F	3.7	A	C	C	C	C	C	C	C	C	C	C	6.5	6.6^{J}	[5.5]^{A}	4.4^{H}	3.4	3.1
16	A	A	3.1	3.0	3.2^{F}	F	3.8	4.8	5.6	A	A	5.1	5.9	6.7	[6.6]^{A}	6.6	A	A	A	5.4	6.1	AS	AS	AS
17	AS	3.2	[3.2]^{F_S}	3.2	2.8	[3.1]^{A}	3.4	5.2	6.6	4.9^{H}	5.1	A	B	B	5.4	6.1	6.4	6.3	6.1	7.3	[5.6]^{S}	4.0	3.5	3.6
18	3.7	3.5	3.5	3.3^{S}	[2.8]^{F}	2.4	3.5	4.1^{P}	5.5	5.6	5.7	A	A	A	A	A	6.0	6.6	7.4	6.5	6.7	6.5	4.4	3.7
19	3.0^{F}	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	6.5	A	A	A	A	AS
20	A	FS	FS	S	S	S	3.8	[4.6]^{A}	5.5	5.5	5.2	A	A	C	5.1	5.9	[5.6]^{C}	5.2	5.0	5.3	5.8	5.9	4.2^{S}	2.7
21	2.7^{J}	FS	A	3.3	2.7^{J}	[3.2]^{A}	3.6	3.9	6.1	5.4	C	C	C	C	C	6.5	C	A	A	6.1	S	4.8$^{\bar{X}}$	A	A
22	A	C	3.1^{F}	A	A	M	C	C	C	7.0	6.0	[5.6]^{A}	5.2	5.4	[6.3]^{A}	7.2	[6.0]^{A}	4.7	4.7	5.8	5.4	[4.6]^{A}	3.7	AS
23	S	FS	FS	FS	3.2^{F}	2.5	3.8	4.9	6.7	5.7	4.9	[4.8]^{A}	4.8	4.8	5.1	5.5	5.7	5.1	4.4	4.5	5.2^{H}	5.2	C	A
24	3.5	A	C	A	2.4	2.6	3.5^{H}	[4.8]^{A}	6.1	6.1	6.0	5.5	6.1	5.5	5.2	5.4	5.5	5.2	6.5	7.7^{J}	6.5	5.9	3.3	3.2
25	3.7	A	AS	FS	2.4^{J}	2.3^{F}	3.8	4.4	6.2	6.5	4.7	A	A	A	5.2	5.2	[5.4]^{A}	5.7	6.4	6.3	6.5	5.7	5.3	FS
26	FS	5.1	[3.8]^{F_S}	2.6	2.2F	2.3^{F}	3.9	5.1	5.6^{H}	4.8	[4.7]^{A}	4.6	4.9	5.5	7.0	[6.4]^{A}	5.7	6.1	5.6	4.7	A	4.3^{J}	5.1^{H}	5.1
27	FS	F	F	3.6$^{\bar{X}}$	3.1	3.1	[4.3]^{A}	5.5	[5.2]^{A}	4.9	A	A	5.9	6.2	6.0	5.6	A	A	A	8.3	6.8	4.4^{J_S}	3.7	4.1^{J_S}
28	3.9	3.8	C	C	3.2^{F}	2.5	3.2	4.4	6.6	5.6	5.5	[5.2]^{A}	4.9	5.4	6.6	A	A	7.3	8.0	6.6	5.8	5.5	5.5	4.8^{J}
29	4.9	4.9	5.0	3.6	3.4	3.0^{F}	A	A	5.0	5.7	4.7	5.2	5.3	5.7	5.5	[6.4]^{A}	7.4	6.0	5.7	5.5	4.8	4.8	4.6	5.0^{J}
30	[4.1]^{S}	3.2	3.1	[2.8]^{A}	2.4	2.1	3.5	5.6	5.1	4.5	4.9	4.9	[5.1]^{B}	5.3	5.9	6.5	6.7	6.1	[6.3]^{A}	6.5^{J}	6.7	4.9	4.1^{J}	[4.0]^{S}
31	4.0^{J_F}	F	F	3.2F	FS	2.7	3.9	5.5	C	C	A	5.2	A	A	6.0	7.7	8.5	8.2	8.2^{J}	7.7	6.7	4.4^{H}	3.8	3.8
Mean Value	3.6	3.8	3.5	3.2	2.9	2.8	3.9	4.8	5.6	5.2	5.0	5.1	5.3	5.4	5.7	6.0	6.0	5.9	6.2	6.2	5.8	5.0	4.2	3.9
Median Value	3.7	3.5	3.2	3.2	2.8	2.6	3.8	4.8	5.5	5.0	4.9	5.2	5.2	5.4	5.6	6.0	5.9	5.7	6.3	6.0	5.8	4.9	4.1	3.8
Count	14	9	9	13	18	22	26	25	24	25	20	14	12	15	19	20	20	23	27	26	24	26	19	14

foF2

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

Y1

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Jul. 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	300	290	A	A	A	200$^{A}_{F}$	300	280	A	A	A	A	A	A	C	A	A	A	A	A	┤	200^{A}	280^{A}	300^{A}
2	350	310	310	300F	260	240	240	270	[340]^{A}	410	470	390	B	B	370	A	A	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	A	A	A	A	(400)^{A}	420	[400]^{A}	370	[330]^{A}	290	[300]^{A}	300^{A}	230	220^{A}	A
4	A	A	A	300F	300$^{A}_{F}$	(310)^{A}	[280]^{A}	240	[320]^{A}	(400)^{A}	370	A	A	A	A	A	A	400^{A}	350^{A}	A	A	250^{A}	260	[280]^{A}
5	310^{F}	300	260	330$^{A}_{F}$	290	250	220	240^{A}	280^{A}	[320]^{A}	370	A	A	480	A	A	350	350	290	240	250	200^{A}	260	290
6	320$^{A}_{F}$	300F	300F	300F	270	[250]^{A}	230	250	300	360	A	A	A	A	(390)^{A}	390	(400)^{A}	330	320	A	A	A	A	270
7	A	A	A	A	A	A	400	[380]^{A}	350	270	A	A	A	A	A	490	400	A	(350)^{A}	250^{A}	[280]^{A}	(300)^{A}	300F	350F
8	[330]^{A}	310	A	A	290^{A}	250	270	310	300	360	A	A	A	A	A	390	A	A	320^{A}	[300]^{A}	280^{A}	290^{A}	[300]$^{A}_{S}$	300
9	330^{A}	[300]^{A}	260	250	270F	(270)^{A}	250	[260]^{C}	280^{A}	[320]^{A}	350	430	A	A	A	A	360	340	280	[260]^{A}	250	250	A	A
10	300	A	A	360^{A}	290	250	[260]^{A}	260	260	340	350	400	[440]^{A}	(490)^{A}	A	A	A	300	300^{A}	320^{A}	260^{H}	C	C	C
11	C	C	C	C	C	C	C	C	C	A	A	A	A	410^{A}	410	340	330^{A}	(310)^{A}	310	270	[240]^{A}	210^{A}	290	[300]^{A}
12	300	290	260	280F	300$^{A}_{F}$	300	240^{A}	300	250^{A}	350	A	A	A	A	(380)^{A}	340	320	300	290	250	260^{A}	300	[300]^{A}	310
13	300	A	A	A	290	260	220	280	[300]^{A}	330	400	A	640	520	350	360	[340]^{A}	320	270	240	250	260	270	260
14	260	270	270	250	200	270	240^{H}	350	230	300	600	A	A	A	A	A	A	A	300^{A}	250	260	A	A	290
15	270	[270]^{A}	270	300	260F	300F	250	A	C	C	C	C	C	C	C	C	C	C	300	260^{A}	[240]^{A}	220$^{A}_{H}$	310	340^{A}
16	A	A	300F	280F	290	280	240	330	A	A	A	(400)^{A}	360	330	A	A	A	A	A	260	260	300^{A}	A	A
17	250	250	250F	300^{A}	310	[360]^{A}	410	290	240	310^{H}	340	A	B	B	430	350	340	290	290	240^{A}	[260]^{A}	280	270	290
18	300^{A}	310	280	300^{A}	250F	240	250	L	280	280^{A}	(460)^{A}	A	A	A	A	A	370	330	310	270	240	220^{A}	250	270
19	270	350	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	340	A	A	A	A	300^{A}
20	[300]^{A}	300	300	300	300	300	(350)^{A}	[320]^{A}	300	500	330	A	A	C	450	350	[350]^{C}	350	350	290	260	230	220	250
21	310	400	[310]^{A}	220	230	[240]^{A}	240	(280)^{A}	260	250	C	C	C	C	C	340	A	A	A	260	250	250^{A}	A	A
22	A	A	350F	A	A	M	C	C	C	270	330	[360]^{A}	390	400	[340]^{A}	280	[330]^{A}	380	350	270	A	A	330^{A}	350
23	290	290	300	250	240	270	280	320	250	(290)^{A}	290	[400]^{A}	500	500	410	360	320	300	350	[300]^{A}	250^{H}	A	C	A
24	A	A	C	A	A	300^{A}	250$^{A}_{H}$	[260]^{A}	280	310	350	360	320	390	400	410	350	400	310^{A}	270	230	230	260	310
25	310	[280]^{A}	260	300F	300	300F	250	380	290	250	A	A	A	A	A	380	[360]^{A}	350	290	300	260	300	290	350
26	300F	230	250	280	[290]^{A}	300	250	290	250^{H}	A	A	A	480	410	310	A	A	300	260	250	[300]^{A}	340	290^{H}	250
27	330	310^{A}	290	260	310	300^{A}	[260]^{A}	230^{A}	[290]^{A}	350	A	A	380	340	360	420	A	A	A	260	210^{A}	250	300	270
28	300	290	C	C	280	280	A	A	260	310	310	[380]^{A}	460	410^{A}	350	A	A	320	270	240	A	290	260	260
29	320	330	250	270	290	230F	A	A	320	270^{A}	400	(400)^{A}	440	370	380	[360]^{A}	330	310	300	260	260	260	(300)^{A}	350
30	310	320	330^{A}	290	(360)^{A}	(400)^{A}	330^{A}	270	260	300	350	410	[420]^{B}	440	380	340	310	340	[300]^{A}	260^{A}	250	210^{A}	300	310
31	300	300F	300	300F	250	270	300	250^{A}	C	C	A	A	A	A	400^{A}	[360]^{A}	310^{A}	290	290	250	210^{A}	230^{H}	300	290
Mean Value	300	300	290	290	280	280	270	290	280	320	380	390	440	420	380	370	350	330	310	270	250	250	280	300
Median Value	300	300	280	300	290	270	250	280	280	310	350	400	440	410	380	360	340	330	300	260	260	250	290	300
Count	24	22	20	21	24	26	25	23	23	23	16	10	11	14	17	18	18	21	26	26	24	24	22	24

h'F2

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

Y2

23

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

IONOSPHERIC DATA

Jul. 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	5.8	6.2	5.9	5.8	5.9	5.9	9.4	12.2	11.3	8.6	9.5	12.4	13.0	12.4	C	7.3	8.7	9.2	10.6	11.9	10.6	4.3	4.3	5.8
2	5.8	3.3	3.0	3.2	2.4	2.4^{F}	3.0	4.3	6.3	G	5.2	G	4.8^{Y}	3.6	5.0	7.6	6.3	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	11.7	12.0^{Y}	13.3	12.4	11.5	8.5^{Y}	9.5	8.5^{Y}	6.5	12.6^{Y}	13.4	5.8	5.8^{F}	5.5	5.8
4	5.9^{F}	6.1^{F}	6.0^{F}	3.4^{F}	5.9	3.8	4.5	5.8	6.0	5.9	5.4	5.9	5.7	6.4	14.4	18.5	6.6	5.7	5.8	8.6	8.8	6.1	4.2	8.9
5	5.9	6.3	3.2	3.5	2.4	3.0	3.4	4.6	5.0	8.7	6.2	5.6	13.4	5.0	12.1	9.8	5.2	5.1	4.9	4.3	3.5	2.4	2.4	2.4
6	4.4^{F}	3.0^{F}	3.0	5.8	3.5	5.8	5.9^{F}	3.7	5.8	5.4	5.8	6.3	9.0	10.5	6.6	4.7	5.8	6.4	5.8	9.0	9.0	9.0	10.7	7.0
7	5.9	5.9	5.9	5.6	4.6^{Y}	3.0	3.4	5.9	5.8	5.9	6.0	6.2	6.3	9.6	13.1	6.0	7.0	5.6	4.9	3.6	7.0	5.9^{F}	5.8^{F}	6.0
8	4.7	5.8	6.0^{Y}	5.9	6.3	6.0	3.3	3.8	3.5	10.4^{Y}	8.6	15.2	7.2	7.2	5.6	6.0	5.9	6.4	5.2	7.1	5.1	8.6	8.6	5.9
9	5.5^{Y}	3.8	5.8	5.2	3.5^{F}	3.2	3.5	C	6.3	7.2	9.6^{F}	8.5	8.1^{Y}	5.6	6.4	9.5	5.7	4.9	5.1	6.2	3.4	9.0	5.8	4.4
10	10.0$^{Y}_{F}$	6.5	4.6	2.4	2.4	4.2	5.1	3.7	4.3	G	5.8	12.3^{Y}	8.8^{Y}	9.0^{F}	12.5	10.2	9.0	4.7	5.9	5.1	4.0	C	C	C
11	C	C	C	C	C	C	C	C	C	10.7	9.5	8.5	9.0	7.7	5.8	8.7^{Y}	10.5$^{Y}_{F}$	12.0	5.8	2.3	6.7^{F}	3.5^{F}	5.9	5.7
12	3.3	3.5	4.5	5.7	4.5	5.9	4.2	4.3	7.0	6.4	8.8^{Y}	6.5	5.9	6.3	6.1	6.2	6.2	5.8	3.6	5.0^{Y}	5.2	6.4	5.6	3.6
13	3.7	6.3	5.8	5.0	5.0	2.4	2.4	4.3	6.5	5.2	5.8	5.9	5.2	4.8	5.5	3.6	6.6	3.7	3.5	2.7	3.2	6.2	3.0	E
14	2.6	2.6	2.3	E	E	2.1	3.0	4.8	5.0	4.8	8.8	8.8	12.4^{Y}	10.5	11.5	9.2	10.0	9.1	12.5	6.3	5.7	9.0	10.5	8.8
15	8.5^{Y}	6.6	5.8^{F}	3.2^{S}	2.9^{F}	2.4	2.9	5.4	C	C	C	C	C	C	C	C	C	C	8.8	6.6	5.8	4.2	3.5	3.2
16	3.7	5.9	5.2	3.0	2.4	3.2	2.4^{F}	3.7	6.8	7.0	9.1	7.5	6.7	6.6	9.1	8.8	6.6	8.6	7.2	4.8	5.7	5.7	6.5	8.6
17	5.9	5.7	3.0^{F}	5.8	5.6	5.8	7.4	4.6^{F}	3.5	3.8	4.2	5.3	3.8	B	G	4.9	G	6.5	5.8	3.6	3.6	3.3	2.3	3.2^{S}
18	3.3	3.1	2.4	3.2	3.2^{F}	2.3	2.4^{F}	3.3	3.5	5.3	7.0	14.6	11.5^{F}	12.3	9.0	9.4	9.0	6.4	3.7	3.1	2.4	2.4	5.8	3.8
19	3.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	8.2	4.5	11.0	9.1	5.9	4.5	6.3
20	6.0	3.2	5.8	5.2	5.0	4.2	5.6	6.1	6.0	7.0	5.5	9.1	12.6	C	3.6	3.6	C	3.5	3.8	2.4	2.4^{F}	2.4	2.4	4.2
21	3.6^{F}	3.4	3.9	2.3	3.1	5.9	G	4.0	5.6	5.8	C	C	C	C	C	5.9	C	9.7	12.7	5.9	5.9	5.7	7.0	9.3
22	8.6^{Y}	C	5.8^{Y}	4.8	5.8	M	C	C	C	8.8^{Y}	6.2	9.3	3.7	4.7^{Y}	12.0	3.5	8.5^{Y}	4.7	3.3	3.7	5.0	8.6	5.8	5.8
23	3.5	3.3	2.4	3.1^{Y}	2.4	2.3	3.1	3.4	3.8	6.5	5.9	7.9^{Y}	G	G	4.4	3.4	3.5	3.8	4.3	3.7	2.4	5.0	C	5.9
24	5.9	5.2	C	4.7	4.2	5.2	3.0	11.5	6.8	6.1	6.2	6.2	4.6^{Y}	6.5	6.5^{F}	6.4	6.5	6.5	5.3	4.7	4.2	2.7^{S}	2.4	2.4
25	2.4	4.2	5.9	3.0	2.3	2.4^{Y}	3.1	5.0	5.9	5.0	5.8	6.0	8.5	8.0	6.2	5.0	7.5	3.8	3.8	5.7	5.5	5.8	3.7^{S}	4.8^{S}
26	5.8	5.7	4.2	2.9	3.2	2.8	2.7	3.7	5.2	5.4	7.2	7.5	10.0	12.2	10.0	6.6	9.0	6.0	3.5	2.6	3.5	3.4	2.4	3.5
27	2.9	2.4	2.4^{Y}	2.4	2.4^{Y}	3.5	5.1	6.0	8.3	8.9	8.9	8.9	6.6	6.4	5.1^{F}	5.8	8.5	10.6	12.8	6.5	5.8	3.4^{F}	2.4	3.0^{F}
28	2.4	3.6	C	C	3.7	3.5	4.1	8.7	7.0	6.2	G	9.5	5.3	7.1	6.2	9.5	6.6	6.2	5.9	4.2	5.8	3.1	2.4	2.4
29	3.9	2.6	2.4	3.7	3.4	3.0	7.2	12.5	11.2	10.5	6.5	6.5	6.5	6.2	6.2	6.7	4.5	6.6	5.6	5.9	3.2	3.5	5.9	4.0
30	4.7^{Y}	6.3	4.1^{Y}	5.7^{Y}	3.2^{Y}	3.5	4.4	3.5	5.9	4.5	4.8	3.6	G	G	5.6	9.0	9.0	6.1	6.9	5.9	5.1	3.5	3.0	2.9
31	2.8	3.6	2.4^{F}	2.4^{Y}	2.4	2.6	3.9	5.3	C	C	6.4	6.3	6.6	6.1	6.2	7.8	7.5	6.3	3.3	3.5	3.2	2.0	3.4	5.9
Mean Value	4.9	4.6	4.3	4.1	3.8	3.7	4.2	5.5	6.1	7.0	7.1	8.3	8.0	7.8	8.2	7.4	7.3	6.5	6.2	5.6	5.2	5.1	4.8	5.1
Median Value	4.7	4.2	4.4	3.5	3.4	3.2	3.4	4.6	5.9	6.2	6.2	7.5	6.6	6.6	6.2	6.7	6.6	6.3	5.4	5.0	5.2	5.0	4.4	4.8
Count	29	27	26	27	28	27	27	26	25	28	28	28	28	26	27	29	27	29	30	30	30	29	28	29

fEs

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

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IONOSPHERIC DATA IN JAPAN FOR JULY 1954

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編集兼発行人　好川得太郎
東京都北多摩郡小金井町小金井新田一之久保573

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