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551. 510. 535. 05(52) (047.3)

IONOSPHERIC DATA IN JAPAN

FOR MARCH 1954

Vol. 6 No. 3

Issued in April 1954

PREPARED BY THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR MARCH 1954

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P R E F A C E

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

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

The First Division has the following three sections:

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

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

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

The Second Division has the following two sections:

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

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

The Administrative Division shall conduct the general affairs of the Laboratories. The ionospheric sounding is, as heretofore, being carried out by the four observatories at Wakkanai, Akita, Kokubunji (Tokyo) and Yamagawa.

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

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

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

Aug. 1952

SITE OF THE IONOSPHERIC STATIONS

Ionospheric observation is carried out at four stations in Japan.
The stations are situated as follows:

	longitude	latitude	site
Wakkanai	141° 41.1' E	45° 23.6' N	Wakkanai-shi, Hokkaido
Akita	140° 03.2' E	39° 43.5' N	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	139° 29.3' E	35° 42.4' N	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7' E	31° 12.5' N	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

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

IONOSPHERIC DATA

Wakanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

135° E Mean Time

Mar. 1954

foF2

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	3.9 ^{PF}	3.8 ^F	3.7 ^F	3.6	3.1 ^F	(3.0) ^{PF}	3.0 ^F	4.1	5.2	5.2	5.0	6.9	6.4	5.3	5.1	5.5	5.1	4.8	4.0	3.0	3.0	3.3 ^P	3.3 ^F	3.0	3.8 ^{PF}
2	F	(3.5) ^F	F	(3.0) ^F	(2.9) ^F	(3.0) ^F	(2.8) ^F	4.2	5.6	4.6	6.3	6.7	6.5	6.3	5.4	5.7	6.2	4.9	4.8	3.6	3.5	3.0 ^S	(3.4) ^F	3.8	3.8
3	3.9	4.0	(4.3) ^S	4.0 ^S	4.0	3.7 ^P	4.0	5.5	5.1	5.6	6.5	6.3	6.7	6.7	5.9	5.6	5.5	5.8	4.1	3.6	3.4	3.1	3.4	3.7 ^F	3.3 ^F
4	3.8 ^{PF}	4.0 ^S	S ^F	C	C	C	C	C	C	5.7	7.0	8.2 ^J	7.1	6.4	6.6	5.8	5.9	5.2	3.5	2.9	3.3 ^P	3.2 ^F	3.3	3.3	3.5
5	3.7 ^F	3.6 ^F	3.6 ^F	3.3 ^F	(3.2) ^F	(3.0) ^F	3.5 ^F	4.7	4.7 ^M	6.4	6.8	8.3 ^J	8.5 ^J	8.1	6.8 ^P	6.1	5.5	5.2	4.9 ^P	2.5	3.9 ^P	4.2	4.0	4.2	4.2
6	4.0	4.3	4.3 ^P	4.3	3.5	3.1	4.0 ^P	4.8	6.1	7.1	7.3	7.7	8.4	7.5	6.2	5.6	5.6	5.7	4.5	2.7	2.9	3.3 ^F	(3.3) ^F	F	F
7	F	(3.7) ^F	(3.7) ^F	(3.7) ^F	3.1 ^F	2.7 ^F	3.7	4.9	5.1	5.9	7.1	7.8	7.3	6.2	7.1	6.2	5.6	5.1	3.8	3.7	3.7	4.1	F	F	F
8	F	F	4.2 ^S	F	F	(3.8) ^F	4.8	(5.4) ^M	6.0	7.4	6.6	7.7	6.7	6.7	6.0	6.3	6.0	5.6	4.0	3.5	3.6	(3.9) ^F	4.0	(4.1) ^F	(4.1) ^F
9	F ^S	F ^S	F ^S	F ^S	(2.8) ^F	(2.8) ^F	3.7	4.8 ^J	5.7	5.3	5.5	6.0	6.7 ^J	6.4	5.8	6.0	6.2	5.5	4.5	(4.5) ^S	4.6	4.8	F	F	F
10	(3.8) ^F	(3.3) ^F	(2.9) ^F	(3.2) ^F	(3.5) ^F	F	4.4	4.2	5.0	5.5	5.7	5.5	6.7	7.7	6.1	6.1	5.8	5.5	4.5	(5.0) ^F	4.1	4.4	4.0 ^S	4.5 ^S	4.5 ^S
11	F	F	F	F	F	F	F	4.1	5.1 ^S	4.9	5.2	6.0	5.4	5.5	6.4	6.8	6.3	5.5	4.7	2.9	3.0 ^F	(3.1) ^F	(3.3) ^F	(3.4) ^F	(3.4) ^F
12	(3.5) ^F	(3.3) ^F	(3.7) ^F	3.5 ^F	3.5 ^F	3.6 ^F	4.1	4.9	5.2	5.5	5.4	6.4	5.5	5.5	5.5	5.5	6.1	5.8	4.6 ^S	4.0	3.8 ^P	3.5	3.0	3.0	3.2 ^F
13	3.5	(3.5) ^F	3.5 ^F	3.5 ^F	(3.3) ^F	(3.1) ^F	3.8	4.8	5.4	5.9	6.1	6.4	5.4	5.8	6.1	6.0	5.7	5.8 ^P	5.0	4.4	3.7	3.6	4.0 ^{PS}	4.2	4.2
14	4.5	F	F	F	F	F	3.5	C	C	C	C	C	C	C	C	C	C	C	5.0	4.3 ^F	3.8 ^F	3.5 ^F	4.3	(4.3) ^F	
15	(4.3) ^F	(4.3) ^F	4.5	3.6	3.5 ^F	3.2	3.7	5.5	5.3	5.8	7.0	7.2	8.5 ^P	6.5	6.7 ^J	6.3	5.8	5.9	4.8	(4.0) ^P	4.0	3.8	4.1	3.7	3.7
16	3.9	(3.8) ^{PF}	(4.0) ^{PS}	(3.6) ^F	(3.6) ^F	F	3.6	4.3	5.3	6.2	5.9	6.6	6.2	5.9	6.3	6.1	6.3	6.2	4.6	3.8 ^{PS}	3.8 ^{PS}	(3.6) ^F	(3.7) ^F	(3.5) ^F	(3.5) ^F
17	(3.5) ^F	3.7	3.5 ^F	(3.5) ^F	3.3	2.8 ^F	3.7	4.7	5.7	6.4	6.4	5.9	6.0	6.2	7.0	6.8	5.6	6.0	4.7	4.3	4.1	(4.0) ^C	3.9	3.8	3.8
18	C	C	C	C	C	C	C	C	C	6.7	6.8	7.3 ^S	6.5	6.5	6.2	6.1	6.0	5.6	4.7	4.8	4.5	4.7 ^P	4.6	4.5	4.5
19	4.2	3.5	3.3	(3.2) ^C	3.2	3.1 ^F	4.4	5.3	6.1	6.4	6.9	7.3	7.2	7.0	6.8	5.6	6.0	4.7	4.3	4.3	4.1	(4.0) ^C	3.9	3.8	3.8
20	3.8 ^{PF}	F	F	F	F	F	4.4 ^S	5.6	5.7	7.0	6.9	7.5 ^P	7.2	7.5	7.5 ^P	5.8	5.7	5.0	4.5	4.2 ^S	4.1	F ^S	F ^S	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	4.3	(4.8) ^C	5.3 ^S	5.9 ^S	4.5 ^S	(4.4) ^F
22	4.4 ^P	(4.3) ^P	C	C	C	C	C	C	C	6.0	7.0	6.3	6.2	6.6	6.0	6.2	5.6	5.1	4.3	3.8	4.0	3.6 ^F	F ^S	F ^S	F ^S
23	F ^S	F ^S	C	C	C	C	C	C	C	7.8 ^K	5.5 ^K	5.5 ^K	6.3 ^K	6.3 ^K	6.6 ^K	7.2 ^K	C ^K	C ^K	5.6 ^K	4.4 ^K	4.5 ^K	F ^{S^K}	C ^K	C ^K	C ^K
24	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	3.6 ^K	4.8 ^K	6.0 ^K	6.5 ^K	6.2 ^K	6.2 ^K	6.7 ^K	6.2 ^K	6.5 ^K	5.9 ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K
25	C ^K	C ^K	C ^K	C ^K	C	C	C	C	C	5.6	6.0	5.4	6.0	5.8	5.6	4.9	4.9	4.7	4.8	4.1	4.2	3.2	(3.6) ^S	(3.8) ^F	(3.8) ^F
26	F	F	(3.7) ^F	3.2 ^F	F	F	4.1	4.3	4.7	5.3	5.3	5.6	5.6	5.5	(5.4) ^F	5.2	5.5	5.3	4.7	4.3 ^P	(4.0) ^F	F ^S	F ^S	F ^S	F ^S
27	F	F	F	F	F	F	3.6	4.7	(5.0) ^C	5.4	5.7	6.0	6.3	(6.0) ^C	5.8	5.4	5.6	5.2	5.0	(4.6) ^F	F ^S	F ^S	F ^S	F ^S	F ^S
28	F ^S	F ^S	(4.8) ^F	(3.9) ^F	3.6 ^F	3.9 ^F	(4.4) ^S	4.7	4.7	C	C	C	C	C	C	C	C	C	5.8	4.4	4.6	(4.1) ^P	F ^S	F ^S	F ^S
29	(3.9) ^F	4.5 ^{PS}	(3.6) ^{PS}	3.7 ^F	3.4	3.0	4.3	4.7	5.0	5.8	6.0	6.4	6.0	5.3 ^K	5.2 ^K	5.5 ^K	5.1 ^K	5.4 ^K	6.2 ^K	6.0 ^K	5.4 ^K	5.1 ^K	4.7 ^S	4.7 ^S	4.7 ^S
30	4.3 ^S	3.9 ^S	4.0 ^S	3.9 ^S	3.8	3.6 ^F	4.6	5.4	5.6	6.4	6.6	6.3	6.4	6.3	5.7	5.9	5.4	5.1	6.1	(5.7) ^S	(4.2) ^P	4.3	(4.2) ^S	4.0	4.0
31	3.7	3.6	3.7	F	F	2.9 ^F	4.1	4.9	6.4	8.5	6.4	7.0	7.3	6.3	6.0	5.9	5.5	5.8	5.5	6.0	5.5	3.8 ^P	4.0	4.2 ^F	4.2 ^F
Mean Value	3.9	3.8	3.8	3.6	3.4	3.1	3.9	4.8	5.4	6.1	6.3	6.6	6.7	6.4	6.1	5.9	5.7	5.4	4.7	4.2	4.0	3.9	3.8	3.8	3.9
Median Value	3.9	3.8	3.7	3.6	3.4	3.0	3.8	4.8	5.3	5.9	6.4	6.4	6.5	6.3	6.1	5.9	5.7	5.4	4.7	4.2	4.0	3.8	3.8	4.0	3.9
Count	18	18	18	16	17	18	24	24	23	28	28	28	28	27	27	27	25	25	29	29	27	25	21	20	20

foF2

Survey 1-0 Mc to 22.0 Mc in 1 min

Manual

Automatic

W 1

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

Lat. 45° 28.6' N
Long. 141° 41.1' E

Wakanai

IONOSPHERIC DATA

135° E Mean Time

hPf2

Mar. 1954

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 (320) ^F	340 ^F (320) ^F	330 ^F (350) ^F	330	330 ^F (310) ^F	330 ^F (320) ^F	300 ^F (270) ^F	270	250	260	U	280	260	270	260	270	270	280	290	260	330	330 ^P (310) ^F	310 ^F (320) ^F	340 ^F (350) ^F
2	F	(330) ^F	F	(340) ^F	(310) ^F	(280) ^F	(270) ^F	240	250	250	300	270	280	280	260	300	260	250	250	300	280	320 ^S (320) ^S	340 ^S (320) ^S	340
3	340	340	(330) ^P	320 ^S	300	310 ^P	280	240	250	250	280	280	280	270	270	260	260	270	230	290	290	350	370	350 ^F
4	350 ^F (330) ^F	330 ^F (350) ^F	SF	C	C	C	C	C	C	300	290	(280) ^J	280	280	270	270	250	240	240	300	300 ^P (350) ^F	350 ^F (350) ^F	320 ^F (350) ^F	350 ^F (350) ^F
5	340 ^F (310) ^F	290 ^F (350) ^F	280 ^F (320) ^F	300 ^F (340) ^F	(320) ^F	(280) ^F	250 ^F	250	290 ^H	280	300	(300) ^J	(280) ^J	280	260 ^F	260	250	250	250 ^P	350	350 ^P (320) ^F	350 ^P (320) ^F	350	350
6	350	350	320 ^P	280	300	300	270 ^P	280	260	270	290	300	270	260	260	250	280	250	240	300	340	320 ^F (320) ^F	320 ^F (320) ^F	F
7	FS	(350) ^F	(320) ^F	SF	320 ^F	250 ^F	270	240	270	280	270	290	280	280	280	250	250	250	270	320	310	320	F	F
8	F	F	300 ^S	F	F	F	(300) ^F	250	(260) ^M	280	280	290	270	260	280	260	260	250	280	310	300	(320) ^F	340	(350) ^F
9	FS	FS	FS	FS	(330) ^F	(320) ^F	250	(260) ^J	270	260	310	290	(290) ^J	270	280	290	270	260	280	(320) ^S	330	290 ^S	F	F
10	(310) ^F	(350) ^F	(320) ^F	(340) ^F	(350) ^F	F	270	240	240	260	300	310	320	280	280	290	260	250	270	(310) ^F	350	310	300 ^S	370 ^S
11	F	F	F	F	F	F	F	280	300 ^S	260	310	290	300	310	300	280	260	280	260	270	340 ^F (350) ^F	350 ^F (350) ^F	340 ^F (350) ^F	350 ^F (350) ^F
12	(340) ^F	(350) ^F	(350) ^F	340 ^F	340 ^F	310 ^F	270	260	280	280	320	270	310	290	280	290	270	260	290 ^S	330	310 ^P	300	A	340 ^F
13	340	(340) ^F	340 ^F	320 ^F	(360) ^F	(360) ^F	270	260	290	280	280	270	280	280	280	280	280	280	260	290 ^S	320	320 ^S	330	330
14	330	F	F	F	F	(270) ^F	280	280	C	C	C	C	C	C	C	C	C	C	280	320 ^F	340	360 ^S	350 ^S	
15	(360) ^F	(360) ^F	350	340	370 ^F	290	260	250	290	300	310	310	280 ^P	200	(270) ^J	270	270	250	280	280	(350) ^P	340	350 ^S	350 ^S
16	370	(380) ^F	(320) ^S	(340) ^S	(320) ^F	F	290	290	320 ^F	270	290	300	280	280	280	280	270	250	260	320 ^F	320 ^F	(400) ^F	(370) ^F	(390) ^F
17	(370) ^F	330 ^P	360 ^F	(290) ^F	320 ^F	320 ^F	280	330	310	280	270	280	290	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	310	280	270	280	C	C	C	C	C	C	C	C	C	C	C
19	310 ^S	280 ^S	330 ^S	(320) ^C	310	320 ^F	270	260	260	310	290	300 ^S	290	290	270	270	280	250	260	300	320	370 ^P	350 ^S	320
20	380 ^P	F	F	F	F	F	300 ^S	270	300	270	290	270	280	(270) ^J	280	250	250	270	330 ^S	F	F	F	F	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	350 ^P	(380) ^P	C	C	C	C	C	C	C	300	290	270	300	290	280	270	270	260	280	320	320	370 ^P	350 ^S	320
23	FS	FS	C	C	C	C	C	C	C	280 ^K	280 ^K	290 ^K	300 ^K	310 ^K	320 ^K	300 ^K	C	C	C	C	280 ^F	280 ^F	FS	FS
24	C	C	C	C	C	C	C	C	330 ^K	300 ^K	340 ^K	320 ^K	330 ^K	320 ^K	280 ^K	290 ^K	C	C	C	C	280 ^K	350 ^K	C	C
25	C	C	C	C	C	C	C	C	C	340	290	340	320	330	290	280	290	280	270	330 ^S	(340) ^S	(340) ^S	340 ^S	(340) ^F
26	F	F	(320) ^F	290 ^F	F	F	250	300	360	U	U	330	330	350	(340) ^C	320	280	280	280	280	300	310	(360) ^S	(370) ^F
27	F	F	F	F	F	F	260	280 ^F	C	U	330	320	310	(300) ^C	300	300	270	270	270	(320) ^S	FS	FS	FS	F
28	SF	SF	(320) ^S	330 ^F	300 ^F	330 ^F	270	260	C	U	C	C	C	(300) ^C	300	C	C	C	C	FS	FS	FS	FS	FS
29	(370) ^F	320 ^S	(350) ^S	330 ^F	280	290	260	260	300	270	270	270	270	270 ^K	310 ^K	310 ^K	270 ^K	300 ^K	280 ^K	290 ^K	280 ^K	340 ^K	310 ^K	330 ^K
30	340 ^S	330 ^S	330 ^S	330 ^S	300 ^F	260	260	260	270	280	280	280	280	280	300	280	280	280	A	(280) ^S	360	(350) ^S	370	370
31	(350) ^J	360	320	F	F	250 ^F	270	290	310	280	270	310	290	280	290	290	280	280	300	290	270	330 ^P	290	340 ST
Mean Value	340	340	330	330	310	300	270	270	280	280	290	300	290	290	280	280	270	260	270	310	320	330	340	350
Median Value	340	340	330	330	310	300	270	260	280	280	290	290	290	280	280	280	270	260	280	310	320	330	340	350
Count	18	18	16	17	18	24	24	24	22	26	26	28	28	27	27	27	25	25	28	29	27	25	20	20

hPf2

Sweep 4.0 Mc to 2.2 Mc in 1 min

Manual Automatic

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

R'F2

Mar. 1954

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

W 3

Manual Automatic

Sweep 1.0 Mc to 2.2 Mc in _____ min

R'F2

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

Mar. 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	3.4	3.8	4.1	4.0 ^H	3.8	4.0	3.8	3.7	Q							
2								Q	3.4 ^L	3.6 ^L	4.1 ^H	4.1	4.1	3.9	3.8 ^L	L	L							
3								Q	L	3.5	3.8	4.1 ^H	4.2	4.0	4.0	3.0	L							
4								C	C	L	4.0 ^L	4.1	4.1	4.2	3.9	3.7	L							
5								Q	L	4.0 ^L	4.2	4.2	4.1	4.1 ^L	3.8	(3.6) ^L	L							
6								Q	3.7 ^L	4.0	4.1	4.1	4.1	4.0	3.9	3.5 ^L	L							
7								Q	Q	3.9	(4.0) ^L	4.1	4.2	4.1	4.0	3.7	3.5							
8								Q	M	4.1	4.0	4.2	4.1	4.0	3.9	3.8	L							
9								Q	3.5 ^L	3.3 ^L	4.3	4.2	4.1	4.1 ^H	3.9 ^L	L	L	2.2 ^L						
10								L	3.0 ^L	3.3 ^L	4.1 ^H	L	4.0	4.0 ^H	4.0	3.7	3.1 ^L							
11								2.6	3.6	3.7	4.0	4.1 ^H	4.1	4.0	4.0	3.7	3.2 ^L	L						
12								L	3.6 ^L	3.8 ^H	4.1	4.1	4.1	4.0	3.9	3.5	3.2 ^L	Q						
13								Q	3.5 ^L	4.0	4.1	4.0	4.1	4.2 ^H	4.0 ^H	3.7	3.4 ^L	2.3						
14								C	C	C	C	C	C	C	C	C	C	C						
15								Q	L	4.2	4.1	4.3	4.2	4.1	4.0	3.8 ^H	3.6 ^L	2.3						
16								L	3.7	3.8	4.1 ^H	4.2	4.2	4.2	4.1 ^H	3.8 ^H	L	Q						
17								3.5 ^L	3.8	4.0	4.1	4.2	4.3	C	C	C	C	C						
18								C	C	4.2	4.1	4.1	4.2	4.2	4.0	4.0	3.7	3.3 ^L	2.5 ^L					
19								Q	L	3.9	4.2	4.3	4.2	4.2	4.1 ^H	(3.7) ^L	L							
20								L	L	3.9 ^L	4.0	4.3	4.2	4.3	4.0 ^L	L	L	Q						
21								C	C	C	C	C	C	C	C	C	C	C						
22								C	C	4.1	4.2	4.2 ^H	4.2	4.2	4.1 ^L	3.7	(3.6) ^L	Q						
23								C	C	4.0	4.1	4.0	4.1 ^H	4.3	4.2	4.0	C	C						
24								3.6 ^L	3.8	4.0	4.2	4.2	4.1	4.2	4.0	3.7	C	C						
25								C	C	3.9	4.2	4.3 ^H	4.2	4.1	3.9	3.7	L	L						
26								L	3.9	3.8	4.1	4.2 ^F	4.1	4.1	(4.0) ^L	3.8	3.5 ^H	3.0 ^L						
27								Q	3.5 ^L	(3.8) ^F	4.1	4.1	4.2	4.2	4.0	3.8	3.3	L						
28								Q	Q	C	C	C	C	C	C	C	C	C						
29								Q	Q	L	4.0	4.2	4.2	4.2 ^F	4.1 ^H	3.8	3.6 ^L	3.0 ^L						
30								Q	Q	3.8 ^L	4.1 ^H	4.2 ^H	4.2	4.3 ^H	4.0 ^H	3.9	Q	A						
31								Q	3.5 ^L	4.0	4.0	4.2	4.3	4.2 ^H	4.1	3.8 ^H	3.6 ^H							
Mean Value								3.3	3.7	3.9	4.1	4.2	4.2	4.1	4.0	3.7	3.4	2.7	2.5					
Median Value								3.5	3.7	4.0	4.1	4.2	4.2	4.1	4.0	3.7	3.5	2.6	2.5					
Count								5	16	27	28	27	28	27	27	24	12	6	1					

foF1

Sweep 1.0 Mc to 2.2.0 Mc in _____ min

Manual

Automatic

W 4

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f'F1

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Z40	Z50	Z00	190 ^H	Z50	Z30	Z30	Z10	Q							
2								Q	Z50	Z30	Z30 ^H	Z40	Z30	Z40	Z30	Z50	Z50							
3								Q	Z20	Z20	Z20	Z40 ^H	Z40	Z40	Z40	Z30	Z40							
4								C	C	Z40	Z60 ^A	Z40	Z30	Z30	Z30	Z30	Z50							
5								Q	Z30	Z50	Z30	Z20	Z50	Z30	Z30	Z30	Z50							
6								Q	Z50	Z50	Z30	Z10	Z40	Z30	Z60 ^H	Z50 ^A	Z50							
7								Q	Q	Z50	Z30	Z40	Z40 ^A	Z30	Z50	Z50	Z40							
8								Q	M	A	Z50	Z10	Z20	Z20	Z30	Z40	Z50							
9								Q	Z30	Z20	Z10	Z40	Z20	Z20 ^H	Z30	Z50	Z40	Z30						
10								Z30	1230 ^A	Z30 ^A	Z20 ^H	Z70	Z30	Z60 ^H	Z30	Z20	Z30	Z30						
11								Z40	Z50	Z50	Z30	Z20 ^H	(Z30 ^H)	Z10	Z10	Z50	Z40	Z60						
12								Z40	Z50	Z10 ^H	Z30	Z50	Z50 ^A	Z60 ^A	Z40	Z50 ^A	Z70	A						
13								Q	Z40	Z40	Z40	Z10	Z30	Z40 ^H	Z20	Z40	Z50	Z40						
14								C	C	C	C	C	C	C	C	C	C	C						
15								Q	Z50	Z40	Z40	Z40	Z30	Z30	Z20	Z30 ^H	Z50	Z40						
16								Z70	Z40	Z40	Z20 ^H	Z30	Z20	Z20	Z10 ^H	Z20 ^H	Z40	Q						
17								Z50	Z40	Z40	Z40	Z20	Z20	C	C	C	C							
18								C	C	Z70	Z30	Z30	Z00	Z00	Z30	Z20	Z50 ^A	Z40	Z00					
19								Q	Z40	Z50	Z30	Z40	Z60	Z30	Z10 ^H	Z30	Z50	Z40	Z00					
20								Z50	Z60	Z40	Z40	Z30	Z20	Z20	Z40	Z20	Z40	Z50	Z40					
21								C	C	C	C	C	C	C	C	C	C	C						
22								C	C	Z70	Z30	Z20 ^H	Z00 ^H	Z20	Z20	Z50	Z40	Q						
23								C	C	Z40	Z30	Z20	Z30 ^H	Z50	Z40	Z50	C	C						
24								Z70	Z70	Z50 ^A	Z40	Z70	Z30	Z40	Z50	Z50	C	C						
25								C	C	Z20	Z30	Z20 ^H	Z20	Z20	Z10	Z30	Z50	Z50						
26								Z30	Z30	Z00	Z60 ^A	Z30 ^A	Z00	Z10	[Z20]	Z40	Z60 ^H	Z50						
27								Q	Z50	[Z40]	Z20	Z30	Z30	[Z30]	Z30	Z20	Z20	Z40						
28								Q	C	C	C	C	C	C	C	C	C	C						
29								Q	Z30	Z30	Z30	Z10	Z20 ^F	Z10	Z00 ^H	Z40	Z50	Z50						
30								Q	Z30	Z20 ^H	190 ^H	Z20	Z00 ^H	Z10 ^H	Z00 ^H	Z60	Q	A						
31								Q	Z60	Z60 ^A	Z60 ^A	Z20	Z20	Z20	Z40	Z30 ^H	Z40 ^H							
Mean Value								Z50	Z50	Z40	Z40	Z30	Z30	Z30	Z20	Z40	Z50	Z40	Z00					
Median Value								Z50	Z60	Z40	Z40	Z30	Z30	Z30	Z30	Z40	Z50	Z40	Z00					
Count								1	10	Z1	Z7	Z8	Z8	Z7	Z6	Z7	Z3	Z9	1					

f'F1

Sweep 1.0 - Mc to 25.0 Mc in 1.0 min

Manual Automatic

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

IONOSPHERIC DATA

Lat. 43° 28.6' N
Long. 141° 41.1' E

Wakkanai

Mar. 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									22	[25] ^A	28	28	28	27	27	24	22 ^{PS}							
2								B	22	25	25	28	27	26	25	24	B							
3									24	[26] ^A	28 ^F	28	29	29	27	25	F							
4								C	C	24	26	25	[27] ^A	29	27	25	21 ^P							
5								21	24	27	27	30 ^F	29	29	28	26	A							
6								1.8	24	26	26	31 ^F	30 ^F	29	A	A	B							
7								F	25 ^F	24	25	A	A	29	28	25	B							
8								1.8	[22] ^M	25	27	[28] ^A	28	29	27	23	21							
9								A	A	26 ^H	27	27	27	25	25	25	21	B						
10								F	25 ^F	27	29	A	A	28 ^H	27	25	22 ^F							
11								1.9 ^F	23	[25] ^A	27	27	27	27	28	(27) ^F	(24) ^F	B						
12								2.1 ^S	24 ^F	27	28	28	28	26	25	[23] ^A	21	B						
13								(2.0) ^F	24	26	27	28	28	24	22	24	22	B						
14								C	C	C	C	C	C	C	C	C	C	C						
15								2.1 ^F	(24) ^A	(26) ^A	A	A	29	28 ^H	26	25	23 ^H	B						
16								1.9	24	24	28	29	30	28	26	25	23	1.8						
17								2.1	(24) ^F	A	A	29	29	C	C	C	C							
18								C	C	28	28	28	29	28	A	A	A	A						
19								2.2 ^F	25	27	27	29	28	30	28	27	22 ^S							
20								1.7	21	25	25 ^H	27	28	30	29	28	26	23	F					
21								C	C	C	C	C	C	C	C	C	C	C						
22								C	C	27	27	27	30	29	[28] ^C	27	23	1.7						
23								C	C	28	30	29	[28] ^A	27	27	26	C	C						
24								2.2 ^F	24	27	27	28 ^H	30 ^F	29	(27) ^F	25	C	C						
25								C	C	A	A	29	29	28	27	26	23	1.9						
26								2.1	24	25	B	A	A	27	[26] ^C	25	23	S						
27								2.0	23	[25] ^C	27	30	B	B	C	27	25	23	B					
28								2.2 ^F	C	C	C	C	C	C	C	C	C	C						
29								B	22	26 ^F	29	30	31	31 ^F	28 ^F	(27) ^F	24	(1.9) ^{SF}						
30								B	24	26	27	28	30	29 ^F	[28] ^A	27	24	20 ^F						
31								1.7	23	26	26	27	30	27	29	28	26	23						
Mean Value								1.8	21	24	26	27	29	28	27	25	23	1.9						
Median Value								1.7	21	24	26	27	28	29	27	25	23	1.9						
Count								3	19	22	26	24	24	24	26	25	19	5						

foE

Sweep 1.0... Mc to 2.2... Mc in ... min

Manual

Automatic

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

11:00

Mar. 1954

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

11:00

W 7

Swamp 1.0 Mc to 2.2 Mc in _____ min
 Manual Automatic

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

IONOSPHERIC DATA

Wakkanai

Mar. 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	E	2.2Y	E	2.0Y	2.3Y	E	E	B	3.5	3.5	G	G	G	G	G	G	G	E	2.3Y	2.4	2.5Y	2.7Y	2.3Y	3.5Y	
2	2.4F	2.3Y	2.3F	2.3Y	2.3Y	2.4Y	2.3	B	G	G	G	G	G	G	G	G	G	2.6Y	2.7	E	2.1	E	E	E	
3	E	E	E	2.3S	2.4Y	2.3Y	S	G	G	4.2Y	3.5Y	G	G	G	G	G	G	3.5Y	E	E	E	E	E	E	
4	2.5Y	2.7Y	2.7Y	C	C	C	C	C	3.5Y	4.4	3.7Y	4.2	3.8Y	G	G	3.3Y	2.3	E	3.4Y	E	E	E	E	E	
5	E	E	2.3	S	2.3Y	E	E	G	3.5Y	4.2Y	6.2	G	6.8Y	G	7.5Y	3.3Y	2.3	E	2.5Y	E	2.3Y	E	E	E	
6	2.3Y	2.3S	2.3Y	2.3Y	2.3Y	2.3S	E	G	3.4Y	3.7Y	4.3Y	G	5.8Y	G	5.9	3.5Y	2.7	E	E	E	E	1.9	E	E	
7	E	2.3S	3.1Y	4.3Y	3.5F	2.3F	E	G	3.5Y	4.1	4.2	4.0	4.3	G	G	G	G	4.2	2.5Y	2.5	E	E	E	3.0	
8	2.4	2.3S	2.2Y	2.3Y	2.4Y	2.3Y	2.1	G	M	4.8	5.1Y	4.1	3.5	3.8Y	G	G	G	E	1.9	2.4Y	2.4	E	E	E	
9	S	E	2.2S	F	E	E	E	2.4Y	4.2Y	3.7	4.0	4.1	6.5Y	3.8Y	3.5Y	G	G	B	E	2.4	E	E	E	E	
10	2.2S	2.3Y	2.3Y	2.3Y	2.3Y	2.5Y	2.3	3.0	3.7Y	4.0	G	3.5Y	4.2	G	G	G	2.6Y	E	2.1S	E	E	E	E	E	
11	E	2.4F	2.3F	2.1Y	1.8	E	E	G	G	3.7F	6.5	4.3Y	4.3	4.1	3.5Y	3.5Y	G	2.5Y	2.5Y	2.3Y	E	E	S	E	
12	2.2	S	3.5Y	3.6	4.0	2.6	2.9	2.5	G	G	G	G	4.4	4.2Y	3.6Y	3.8	G	B	2.3S	E	2.5	3.4	3.2	1.9	
13	2.9	2.4Y	2.4Y	2.5	2.3Y	2.4Y	2.1	3.8F	G	G	G	G	G	3.8	3.4Y	4.3Y	G	2.4Y	E	2.0	2.0	1.9	E	E	
14	2.3Y	2.0Y	1.9	2.4Y	2.3Y	1.9	2.1Y	C	C	C	C	C	C	C	C	C	C	C	3.5Y	2.6Y	2.2	2.4	E	E	
15	3.0Y	3.0Y	2.4Y	2.4S	E	2.4Y	E	G	G	G	4.1	6.0	3.5	G	G	G	2.9Y	B	2.4	E	1.8	E	E	2.2	
16	3.5Y	2.5F	2.5S	3.5Y	2.4Y	2.3	E	G	3.5Y	3.8	5.3Y	G	G	G	C	C	G	3.0	2.5Y	2.5	2.5	2.3S	E	E	
17	E	2.6Y	2.4Y	2.4F	2.4S	2.4	3.5Y	3.5	3.5Y	3.6Y	3.8Y	G	G	5.8Y	3.5	4.2	4.2	C	C	C	C	1.9	1.9Y	2.5F	
18	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	G	G	G	E	E	E	C	E	E	C
19	2.4F	2.4F	2.4Y	C	2.4Y	2.4F	2.4	G	G	3.5	G	3.1Y	G	G	G	G	G	G	E	2.4	E	E	E	C	
20	E	E	E	E	2.3	S	G	G	C	C	C	C	C	C	C	C	C	C	E	E	E	E	E	C	
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E	S	E	E
22	E	S	C	C	C	C	C	C	C	4.0Y	3.5	G	G	G	C	C	G	G	E	E	E	E	E	E	E
23	2.4	2.4Y	C	C	C	C	C	C	C	G	G	4.3Y	3.9Y	G	G	G	C	C	2.0Y	1.9	E	E	C	C	
24	C	C	C	C	C	E	1.8	G	3.6Y	4.5Y	4.2Y	4.8Y	3.3	2.4	4.1Y	4.1	C	C	C	C	C	C	C	C	
25	C	C	C	C	C	C	C	C	C	4.0Y	4.2Y	G	1.8	2.4	2.0	4.7F	2.7Y	3.5Y	2.0	E	E	E	E	E	
26	2.4	2.4	EY	2.2Y	E	2.3	3.2Y	G	3.8Y	6.5Y	4.3Y	4.0Y	3.5Y	G	C	3.5F	G	S	E	3.0	2.7Y	E	E	E	
27	2.4F	2.4Y	2.7F	2.4F	2.3	2.3	G	G	C	G	G	G	G	C	C	C	G	B	E	S	1.9	2.4	2.4	2.3	
28	2.4	E	E	E	E	E	3.0Y	2.9Y	C	C	C	C	C	C	C	C	C	C	E	E	E	1.8	1.8	E	E
29	E	E	E	E	E	E	B	G	G	G	4.7Y	4.3F	4.3F	4.3F	3.5	4.1Y	G	C	E	2.3Y	4.2Y	2.1Y	E	2.1	
30	1.8	2.4Y	E	E	E	2.1Y	B	5.4Y	4.7Y	G	G	G	G	G	3.5Y	G	4.2Y	6.2F	6.7	3.9	4.3Y	2.5F	2.5	1.8	
31	2.4	2.4Y	E	E	1.4	2.5Y	3.2	4.3	4.2	5.3	4.0	G	G	G	G	3.0Y	3.1Y	3.1	2.5	2.3	2.2	E	E	E	
Mean Value	2.5	2.4	2.5	2.6	2.4	2.3	2.6	3.5	3.8	4.1	4.5	4.3	4.2	3.8	4.0	4.0	3.2	3.4	2.7	2.6	2.5	2.3	2.4	2.4	
Median Value	2.3	2.3	2.3	2.3	2.3	2.3	2.0	G	3.5	3.6	3.6	G	G	G	G	G	G	2.4	2.0	2.3	E	E	E	E	
Count	2.6	2.5	2.5	2.2	2.2	2.4	2.2	2.2	2.1	2.8	2.8	2.8	2.8	2.6	2.5	2.7	2.5	2.0	2.9	2.7	2.9	2.8	2.6	2.7	

fEs

Sweep 1.0 Mc to 2.2.0 Mc in 1 min

Manual

Automatic

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.9 ^{PF} (3.0) ^F (2.8) ^J	3.0	3.0 ^F (3.0) ^{PF}	3.2	3.5	3.5	3.5	3.4	3.5	3.4	3.5	3.4	3.5	3.4	3.5	3.3	3.1	3.1	3.2	3.3	3.0	2.9 ^P (3.0) ^F (2.9) ^{PF}	3.0	2.9 ^P (3.0) ^F (2.9) ^{PF}
2	F (3.1) ^F	F (2.9) ^F	F (3.1) ^F	3.5	3.7	3.5	3.5	3.4	3.4	3.3	3.4	3.4	3.5	3.3	3.4	3.4	3.4	3.4	3.3	3.2	3.3	3.0 ^S (3.0) ^S	3.1	3.0 ^S (3.0) ^S
3	3.0	3.0	(3.0) ^F	3.1 ^S	3.2	3.2 ^P	3.3	3.6	3.5	3.5	3.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.2	2.9	3.0	2.9 ^F
4	3.0 ^{PF}	3.0 ^F	SF	C	C	C	C	C	C	3.1	3.2	(3.4) ^J	3.3	3.3	3.4	3.4	3.4	3.5	3.6	3.5	3.1	3.0 ^P	2.7 ^{FS} (2.9) ^{PF}	2.7 ^{FS} (2.9) ^{PF}
5	2.9 ^{PF}	3.3 ^F	3.3 ^F	3.0 ^F	(3.1) ^F	(3.3) ^F	3.4 ^F	3.5	3.1 ^H	3.3	3.5	(3.2) ^J	(3.2) ^J	3.3	3.4 ^P	3.4	3.4	3.3	3.3	3.3 ^P	2.8	2.9 ^P	2.8	2.9
6	2.9	2.9	3.0 ^P	3.3	3.1	2.9	3.2 ^P	3.2	3.4	3.4	3.3	3.1	3.4	3.4	3.4	3.5	3.3	3.6	3.5	2.9	2.8	2.9 ^{PF}	2.9 ^{PF}	F
7	SF	(2.9) ^F	(3.1) ^F	SF	2.9 ^F	3.4 ^F	3.6	3.3	3.3	3.2	3.3	3.3	3.3	3.5	3.4	3.4	3.5	3.5	3.2	3.1	3.1	3.0	F	F
8	F	F	3.1 ^{FS}	F	F	(3.1) ^{PF}	3.5	(3.4) ^M	3.4	3.3	3.2	3.3	3.3	3.5	3.3	3.4	3.5	3.5	3.4	3.1	3.1	(3.0) ^F	3.0	(2.9) ^F
9	FS	FS	FS	FS	(3.0) ^F	(2.9) ^F	3.5	(3.2) ^J	3.4	3.4	3.1	3.3	(3.2) ^J	3.4	3.4	3.3	3.3	3.4	3.2	(3.1) ^S	2.9	3.1 ^S	F	F
10	(3.1) ^{FS}	(2.8) ^{FS}	(3.3) ^F	(3.0) ^F	(2.8) ^F	F	3.3	3.6	3.6	3.5	3.3	2.7	3.0	3.3	3.3	3.2	3.7	3.4	3.3	(3.0) ^P	2.9	3.0	3.1 ^S	2.9 ^{FS}
11	F	F	F	F	F	F	F	3.3	3.2 ^S	3.5	3.0	3.4	3.2	3.1	3.3	3.3	3.4	3.1	3.3	3.3	2.9 ^F	(2.8) ^F	(2.8) ^F	2.9 ^{FS}
12	(2.8) ^F	(2.7) ^F	(2.8) ^F	2.9 ^F	3.0 ^F	3.1 ^F	3.4	3.4	3.2	3.4	3.2	3.4	3.2	3.3	3.4	3.3	3.4	3.5	3.2 ^S	3.0	3.2 ^P	3.0	2.8	2.9 ^F
13	2.9	(2.9) ^F	2.8 ^F	3.1 ^F	(3.1) ^F	(2.7) ^F	2.9	3.5	3.1	3.3	3.2	3.4	3.3	3.3	3.3	3.3	3.3	3.3 ^P	3.3	3.2	3.3	3.0	3.0 ^P	3.0
14	2.9	F	F	F	F	(3.2) ^F	3.3	3.6	C	C	C	C	C	C	C	C	C	C	C	C	3.0	3.0 ^P	3.0	
15	(2.8) ^F	(2.7) ^F	2.8	3.0	2.7 ^F	3.2	3.5	3.6	3.2	3.3	3.1	3.0	3.4 ^P	3.2	(3.5) ^J	3.4	3.4	3.4	3.2	(2.9) ^P	3.0	2.9	3.0	3.0
16	3.0	(2.9) ^F	(3.0) ^{PF}	(2.9) ^{FS}	(3.0) ^F	F	3.1	3.3	3.0 ^F	3.3	3.2	3.2	3.3	3.3	3.4	3.3	3.3	3.5	3.3	3.1 ^{FS}	3.1 ^{PF}	(2.7) ^F	(2.8) ^F	(2.8) ^F
17	(2.8) ^F	3.0 ^F	2.8 ^F	(3.1) ^F	3.1 ^F	2.9 ^F	3.3	3.0	3.1	3.2	3.4	3.4	3.2	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	3.1	3.2	3.1 ^S	3.3	3.3	3.3	3.4	3.3	3.4	3.3	3.1	3.1	2.8 ^P	2.8 ^F	3.1
19	3.0 ^{FS}	3.3 ^{FS}	2.9 ^F	(3.0) ^F	3.0	3.0 ^F	3.3	3.3	3.4	3.4	3.3	3.4	3.4	3.4	3.5	3.4	3.5	3.5	3.2	3.0	3.0	(2.9) ^F	2.8	2.9
20	2.8 ^{PF}	F	F	F	F	F	3.1 ^S	3.4	3.3	3.4	3.3	3.3 ^P	3.2	3.3	(3.3) ^J	3.3	3.6	3.2	3.3	3.0 ^{FS}	FS	FS	FS	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.0	(3.0) ^F	(2.9) ^S	2.9 ^S	(2.9) ^F
22	2.9 ^P	(2.7) ^P	C	C	C	C	C	C	C	3.3	3.2	3.3	3.1	3.3	3.2	3.2	3.3	3.3	3.2	3.0	3.0	3.3 ^F	FS	FS
23	FS	FS	C	C	C	C	C	C	C	3.3 ^K	3.4 ^K	3.2 ^K	3.1 ^K	3.1 ^K	3.0 ^K	3.1 ^K	C ^K	C ^K	3.2 ^K	2.8 ^K	2.9 ^K	FS	FS	FS
24	C ^K	C ^K	C ^K	C ^K	C ^K	3.2 ^{F_k}	3.1 ^K	3.1 ^K	3.0 ^K	3.1 ^K	3.1 ^K	3.0 ^{F_k}	3.1 ^K	3.0 ^K	3.0 ^K	3.3 ^K	C ^K	C ^K	C ^K	3.2 ^K	2.8 ^K	C ^K	C ^K	C ^K
25	C ^K	C ^K	C ^K	C ^K	C	C	C	C	C	3.0	3.2	2.8	3.0	3.1	3.3	3.2	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K	C ^K
26	F	F	(2.9) ^F	3.0 ^F	F	F	3.5	3.1	2.8	3.2	3.1	3.0	3.0	2.9	(3.0) ^C	3.2	3.2	3.1	3.1	3.1	3.1	2.9	(2.6) ^S	(2.7) ^F
27	F	F	F	F	F	F	3.4	3.1 ^F	(2.9) ^C	2.7	3.0	3.1	3.1	(3.2) ^C	3.2	3.0	3.3	3.2	3.1	(3.0) ^{PF}	(3.0) ^S	FS	FS	F
28	FS	FS	(3.0) ^{PF}	(2.9) ^{PF}	3.0 ^F	3.0 ^F	(3.5) ^S	3.3	C	C	C	C	C	C	C	C	C	C	3.2	3.0	2.9	(2.9) ^P	FS	FS
29	(3.0) ^{PF}	2.8 ^{FS}	(2.8) ^{FS}	3.0 ^F	3.2	3.1	3.4	3.3	3.0	3.3	3.2	3.4	3.5	3.2 ^K	3.0 ^K	3.0 ^K	3.2 ^K	3.1 ^K	3.2 ^K	3.1 ^K	2.9 ^K	2.8 ^K	3.0 ^K	2.9 ^K
30	2.9 ^S	3.0 ^S	2.9 ^S	3.0 ^S	3.1	3.1 ^F	3.3	3.1	3.4	3.2	3.3	3.2	3.3	3.3	3.2	3.3	3.1	3.1	3.3	(3.3) ^{FS}	(2.9) ^F	2.7	(2.8) ^S	2.8
31	(3.1) ^J	2.8	2.9	F	F	3.1 ^F	3.2	3.0	3.0	3.2	3.2	3.0	3.1	3.3	3.2	3.2	3.4	3.3	3.1	3.1	3.3	3.0 ^P	3.0	2.8 ^F
Mean Value	2.9	2.9	3.0	3.0	3.0	3.1	3.3	3.3	3.2	3.3	3.2	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.2	3.1	3.0	2.9	2.9	2.9
Median Value	2.9	2.9	2.9	3.0	3.0	3.1	3.3	3.3	3.2	3.3	3.2	3.3	3.2	3.3	3.3	3.3	3.4	3.4	3.2	3.1	3.0	2.9	2.9	2.9
Count	18	18	18	16	17	18	24	24	23	28	28	28	27	27	27	27	25	25	29	29	27	25	21	20

(M3000)F2

Sweep 1.0 Mc to 2.20 Mc in 1 min

Manual Automatic

W 9

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

IONOSPHERIC DATA

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

Mar. 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	1.5	E	1.1	E	1.0	1.6	2.0	2.4	2.9	3.0	3.2	2.9	3.2	3.1	2.7	2.4	2.7	2.1	1.6	1.7	1.7	1.7	1.6F	1.6
2	1.4	1.3F	1.3	1.3F	1.3	1.6F	2.3	2.6	2.7	3.0	3.2	3.2	3.2	3.2	2.9	2.7	2.3	1.7	1.6	1.7	1.6	1.6	1.6	1.6
3	1.3	1.3	1.3	E	1.3	1.5	2.2	2.5	2.7	3.3	3.2	3.2	3.2	3.1	2.8	2.7	2.4	2.0 ^A	1.6	1.6	1.6	1.6	1.6	1.6
4	1.5	1.5	1.5F	C	C	C	C	Q	2.8	3.5 ^A	3.1	3.0	3.1	3.1	2.8	2.6	2.3	1.7	1.6	1.6	1.5	1.5	1.5	1.5
5	1.3	E	1.2	1.1	E	E	1.6	2.3	2.6	3.1	3.1	3.1	3.1	3.3	2.8	2.6	2.2	1.7	1.6	1.6	1.6	1.6	1.6	1.7
6	1.3	1.0	E	1.1	E	E	1.6	2.3	2.6	2.6	3.1	3.1	3.2	3.0	3.4 ^A	3.2 ^A	2.4	1.7	1.6	1.6	1.6	1.6	1.6F	1.6F
7	1.5F	1.3	1.3	1.5F	1.2	1.6	2.4	2.6	2.9	3.1	3.3	3.3	3.6 ^A	3.0	3.1	2.7	2.4	2.3 ^A	1.9	1.7	1.6	1.6	1.6	1.6
8	1.5	1.0	1.2	1.2	E	1.2F	1.6	2.1	1.3.0 ^M	3.8 ^A	3.2	3.1	3.1	3.0	3.0	2.6	2.3	1.7	1.6	1.6	1.6	1.6	1.6	1.5F
9	1.5F	1.3F	1.1	E	E	1.4	2.3	2.7	2.9	3.1	3.3	3.2	3.2	3.1	3.1	2.8	2.4	1.7	1.6	1.6	1.6	1.6	1.6F	1.6F
10	1.3	1.3	E	1.1	1.0	1.5F	1.6	2.2	2.9	3.1A	3.0	3.2	3.5	3.4	3.1	2.7	2.4	1.9	1.6	1.6	1.6	1.6	1.6	1.6
11	1.2F	1.1	E	E	E	E	1.6	2.3	2.8	3.0	3.2	3.0	3.4 ^A	3.1	2.8	2.8	2.4	1.7	1.6	1.7	1.6	1.6	1.6	1.6
12	1.3	1.0	1.0	1.2	2.4 ^A	1.5	1.6	2.4	2.7	2.9	3.2	3.3	3.5 ^A	3.4 ^A	3.0 ^A	3.1 ^A	2.6	2.4	1.6	1.6	1.7	2.6A	2.6A	1.6
13	1.7	1.3F	1.4	E	1.3	1.3	1.8	2.6	2.6	2.4	3.1	3.1	3.2	3.1	3.1	2.8	2.4	1.7	1.6	1.6	1.6	1.6	1.6	1.6
14	1.5	1.0	E	1.2F	E	E	1.8	C	C	C	C	C	C	C	C	C	C	1.7	1.6	1.6	1.6	1.6	1.6	1.6
15	1.6	1.5	E	1.0	E	1.0	1.6	2.1	2.6	2.8	3.2	3.3	3.2	3.2	3.3	2.7	2.4	1.7	1.6	1.7	1.6	1.6	1.6	1.6
16	1.6	1.4	1.7 ^S	1.5	1.3	1.0	1.8	2.4	2.8	2.8	3.1	3.2	3.1	3.1	2.9	2.7	2.4	2.0	1.7	1.6	1.6	1.6	1.6	1.6
17	1.3	1.3	1.0	E	E	1.7	2.4	2.6	2.8	3.2	3.2	3.2	3.2	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	3.3	3.1	3.1	3.2	3.2	2.9	2.8	3.2 ^A	2.9 ^A	1.7	1.6	1.5	1.6	1.7	1.6
19	1.3	1.0	1.0	1.1 ^C	1.2	1.3	1.8	2.4	2.7	3.3	3.2	3.5	3.5	3.2	2.9	2.7	2.5	1.9	1.6	1.6	1.6	1.6	1.6	1.6
20	1.3	1.6	E	E	E	1.0	1.7	2.4	2.7	2.9	3.1	3.2	3.2	3.2	2.9	2.9	2.5	2.0	1.6	1.6	1.5	1.6	1.6	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	1.7	1.6	1.6	1.6	1.6	1.6
22	1.3	1.0	C	C	C	C	C	C	C	3.2	3.2	3.2	3.2	3.1	<3.5 ^C	2.8	2.4	2.0	1.6	1.6	1.6	1.6	1.6	1.6
23	1.5	1.3	C	C	C	C	C	C	3.2	3.1	3.3	3.1	3.0	3.0	2.9	2.7	C	C	1.6	1.6	1.6	1.6	1.6	1.6
24	C	C	C	C	C	E	1.7	2.5	3.0	3.5 ^A	3.4	3.2	3.2	3.2	3.0	3.0	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	3.0	3.3	3.1	3.2	2.9	2.9	2.8	2.5	2.0	1.6	1.6	1.6	1.6	1.6	1.6
26	1.4	1.0	E	E	E	2.5 ^A	2.5	3.0	3.2	3.7 ^A	3.5 ^A	3.1	3.1	3.1	1.3.0 ^C	2.8	2.4	2.4	1.6	2.0 ^A	1.7	1.6F	1.6	1.6F
27	1.3	1.3	1.3	E	E	1.0	2.0	2.5	2.7 ^C	2.9	3.2	3.4	3.4	3.2 ^F	2.9	3.1	2.6	2.2	1.7	1.6	1.6	1.6	1.6	1.6
28	1.2	1.0	E	E	E	1.0	2.0	2.8	C	C	C	C	C	C	C	C	C	1.7	1.6	1.6	1.6	1.6	1.6	1.6F
29	1.3	1.3	1.3	E	E	E	2.0	2.7	2.8	3.1	3.2	3.3	3.2F	3.2	2.9	3.2	2.8	2.4	1.6	1.6	2.0 ^A	1.6	1.4	1.6
30	1.5	1.3	1.0	E	E	1.9	2.4	2.6	2.6	3.1	3.1	3.4	3.1	3.4	3.1	3.2	3.3 ^A	3.7 ^A	5.2 ^A	2.7 ^A	1.6	1.6	1.6	1.6
31	1.3	E	E	E	1.5	1.5	2.4	2.7	3.3 ^A	3.6 ^A	3.3	3.2	3.2	3.3	3.1	3.2	2.5	2.4	1.8	1.7	1.6	1.6	1.6	1.6
Mean Value	1.4	1.2	1.2	1.2	1.5	1.2	1.8	2.4	2.7	3.0	3.2	3.2	3.2	3.2	3.0	2.8	2.5	2.1	1.8	1.7	1.6	1.6	1.6	1.6
Median Value	1.3	1.3	1.0	E	E	1.0	1.7	2.4	2.7	3.0	3.2	3.2	3.2	3.1	2.9	2.8	2.4	2.0	1.6	1.6	1.6	1.6	1.6	1.6
Count	27	27	25	24	24	25	25	24	23	28	28	28	28	27	26	27	25	25	29	29	29	29	28	27

fminF

Sweep 1.0 Mc to 3.0 Mc in 1.0 min

Manual

Automatic

W 10

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

Lat. 45° 23.6' N
Long. 141° 41.1' E

Wakkanai

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f_{min}E

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

f_{min}E

Sweep 1.0 Mc to 2.2 Mc in 1 min Manual Automatic

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

Lat. 39° 43.5' N
Long. 140° 08.2 E

IONOSPHERIC DATA

Akita

Mar. 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	3.6	3.6	3.6	2.9F	2.9F	2.6	4.5	5.9P	4.5	5.7	6.8	6.6	6.1	5.5	5.4	4.8	5.5	4.3	3.4	3.0	3.4F	3.3F	3.6F
2	3.5F	3.5F	3.3F	3.1F	3.3	2.4	2.8	4.4	5.0	5.4	4.8	7.6	7.8	6.5	5.7	5.4	6.4	6.1	4.1	3.5	3.6	3.2	3.2	3.6F
3	3.6F	3.9F	3.9	3.7	3.6	3.4F	3.7	5.0	5.2	5.5	5.5	[7.2]	9.0	7.1	6.7	5.5	5.5	6.5	5.1	3.1	3.5	3.6	3.5	3.6
4	3.7	4.4F	4.4F	4.5F	4.0F	3.6F	4.1F	4.5	5.5	5.5	6.7	8.1	8.9	8.5	6.6	6.8	6.0	5.8	3.8	2.5	3.0	3.1	3.1F	3.1F
5	3.3F	3.6	2.8	2.7F	2.9F	2.6F	3.1	4.5	4.6	6.6	7.6	8.1	8.9	8.7	6.8	6.2	5.5	5.0	4.6	3.5	3.6	3.9	3.9	4.2F
6	4.0F	4.0F	4.1F	4.1F	3.2F	3.4F	3.6	5.2	5.8	7.0	7.2	7.7	9.2	9.1	6.8	5.9J	5.3	5.5	4.0	2.7	2.8	3.1	3.3	3.3F
7	3.2F	3.1F	3.4F	3.0F	2.5F	2.3F	3.0F	5.3	5.3	5.6	7.1	8.1	9.5	8.2	7.2	7.0	5.6	5.2	4.1	3.1	3.4	3.6	3.5	3.9F
8	4.1F	4.1F	4.6F	3.9F	3.4F	2.9F	3.0	5.0	6.0J	5.5	7.0	7.8	8.6	7.8	6.6	6.2	6.2	6.1	4.5	2.9F	3.2F	3.0F	3.5F	3.2F
9	3.5F	3.1F	3.8F	3.8F	3.1F	3.0F	3.6	4.5	5.5	5.8	6.2	7.5	8.4	7.4	6.4	6.0P	C	C	C	C	C	C	C	C
10	3.3F	3.1F	3.3F	2.7F	2.9F	3.0F	3.5	4.7	4.8	4.9	5.9	6.4	7.4	8.0	7.1	6.5	6.4	5.1	3.9	4.3	4.0	4.1	4.2V	4.0
11	4.4	F	F	4.0F	3.4F	3.0F	3.5	4.8P	C	C	C	C	C	C	C	C	6.5	5.7	M	M	3.5	3.5	4.0F	3.4F
12	3.3F	3.2	3.2F	3.2F	2.9F	3.6F	3.5	5.0P	4.9P	5.5	5.7	6.2	6.2	6.2	5.8	6.1	6.0	6.2	4.8	4.1	3.8	3.6	3.7	3.5F
13	3.5F	3.9F	4.1F	3.9F	3.9F	2.5F	3.5	5.1	5.6	5.9	6.5	6.1	6.2	5.9	6.5	6.5	6.7	6.8	5.3	4.2	3.8	3.0	3.1	3.3
14	3.5	3.7	3.5	3.5F	3.2F	2.3F	3.5	5.0	5.8	6.7	6.4	7.0	7.0	8.1	7.8	7.0	6.5	[5.6]	4.7	4.4	4.2	2.9F	3.1F	3.5F
15	3.6F	3.8F	(4.3)F	4.5F	4.0F	3.2F	4.3	4.8	5.6	6.7	8.6	8.3	8.6	8.2	7.0	6.2	7.0	5.8	4.2	3.4	3.8	3.7	3.9	3.6
16	3.7	3.7	3.6	3.5	3.5	2.9	4.0	4.8	6.1	7.0	7.0	6.9	7.3	6.8	6.2	6.0	6.8	6.6	4.8	3.7	4.0	(3.9)F	3.8	3.8V
17	3.7F	3.9F	3.7	3.5F	3.0F	2.9F	3.8F	4.8	6.4	7.0	6.8	7.0	6.1	6.2	6.1	6.6	6.1	6.0	5.2	4.0	4.2	3.9	4.0	3.8
18	3.6	3.5	3.6	3.1	3.2	2.8	4.0	5.4	5.6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	6.8	6.5	7.2	7.4	8.3	6.8	6.0	5.7	6.0	4.3	3.6	3.7	3.6	3.6	3.7
20	3.5F	3.4F	3.3F	3.3F	2.5	2.4	4.0	5.5	6.5	6.9	7.6	7.3	7.7	8.9	7.4	6.4	6.2	5.3	4.5	3.6	3.8J	3.5	3.5	3.6
21	3.8F	3.7	3.3	3.5F	3.3F	3.2F	3.8	5.3	5.7	6.2	7.3	7.4	7.2	7.8	7.5	5.5	6.0	5.4	3.0	4.5	4.8P	4.8	4.7	4.7
22	4.6	4.4F	4.5	4.2	3.6F	3.2F	3.7	4.5	5.6	6.5	7.5	7.9	7.6	7.1	7.4	6.4	6.1	5.4	4.3	3.7	3.5	3.7	3.6	3.6F
23	4.1F	4.1F	4.1	4.1F	2.9F	2.9F	3.9	4.4	6.3	7.7K	7.8K	5.6K	5.5K	6.4K	7.6K	9.0K	7.7K	6.0K	5.0K	4.0K	4.2K	4.5K	4.2F	4.1F
24	3.9K	4.0K	4.0K	3.6K	1.9K	2.2K	3.4K	4.7K	5.8K	8.6K	7.1K	7.5K	7.0K	8.5K	6.6K	6.0K	6.3K	6.2K	5.9K	4.5K	4.8P	4.5K	4.1K	3.7K
25	4.0K	4.2	4.5K	5.1K	4.1	3.5	4.0	4.8	5.6	5.5	6.2	7.3	8.4	8.0	6.1	5.8	5.1	5.9	4.7	4.0	3.6	3.4	3.2	3.5
26	3.7	3.6	3.5	3.5	2.5	2.3	3.9	4.5	5.2	5.7	6.1	6.5	7.5	6.9	7.3	6.0	5.4	5.7	4.7H	4.7P	4.2	3.7	3.8	3.8P
27	3.7	3.7	4.0	3.5	3.5	3.5	3.6	4.9	5.0	5.0	6.1	7.0	7.2	7.0	7.3	6.4	5.5	5.1	4.6	4.2	4.0	4.0	3.8F	3.8F
28	3.6F	3.8F	3.7F	3.5F	2.9F	2.7F	4.5	5.1	5.2	5.7	6.3	6.0	6.0	6.1	5.8	5.1	5.7	5.4	5.7	4.6	4.0	4.0	3.8	3.7
29	3.5F	3.9	3.5	3.4	3.5	2.8	4.2	4.9	5.2	6.1	6.9	6.6	6.1	5.3K	5.5K	5.5K	5.6K	5.6K	6.5K	6.1K	5.1K	4.7K	4.7K	4.7K
30	4.2	4.0	3.8	3.7	3.5	3.3	4.7	5.9	6.5	5.8	5.7	6.5	6.6	6.8	5.5	6.2	6.0	6.1	5.6	5.4	[4.7]	4.0	4.0	4.0
31	3.7	3.5	3.8F	3.8	2.7F	2.5F	4.1	4.8	6.4	7.8	8.1	7.5	8.0	8.0	6.7	6.2	5.9	5.7	6.3P	6.0	4.8	3.4	3.4	3.5
Mean Value	3.7	3.8	3.8	3.7	3.2	2.9	3.7	4.9	5.6	6.2	6.7	7.1	7.5	7.4	6.6	6.2	6.0	5.8	4.8	4.0	3.9	3.7	3.7	3.7
Median Value	3.6	3.8	3.7	3.6	3.2	2.9	3.7	4.8	5.6	5.9	6.7	7.2	7.4	7.4	6.7	6.2	6.0	5.7	4.7	4.0	3.8	3.6	3.7	3.6
Count	30	29	29	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	28	29	29	29	29

A1

Manual Automatic

Sweep 0.85 Mc to 22.0 Mc in 2 min

foF2

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

Lat. 39° 43.5' N
Long. 140° 08.3' E

Akita

IONOSPHERIC DATA

135° E Mean Time

h_pF₂

Mar. 1954

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	350 ^F	340	340	310 ^F	310 ^F	300 ^F	260	270	260 ^P	250	270	270	280	270	250	270	250	280	250	270	340	320 ^F	310 ^F	260 ^F
2	260 ^F	300 ^F	300 ^F	300 ^F	260	250	270	240	260	260	270	270	260	260	260	270	260	230	260	320	300	290	350	350 ^F
3	340 ^F	330 ^F	320	270	290	310 ^F	270	240	240	260	310	[270] ^C	270	260	280	280	270	250	230	320	300	300	330	330
4	320	360 ^F	370 ^F	350 ^F	270 ^F	300 ^F	260 ^F	250	250	260	300	300	280	270	270	270	250	230	240	310	340	370	370	420 ^F
5	350 ^F	280	260	280 ^F	250 ^F	250 ^F	270	240	260	300	300	300	280	270	260	250	250	240	260	300	340	350	340	390 ^F
6	350 ^F	340 ^F	300 ^F	300 ^F	300 ^F	320 ^F	290	250	270	270	260	270	270	270	250	(255)	260	240	230	310	330	310	320	360 ^F
7	360 ^F	350 ^F	290 ^F	270 ^F	300 ^F	300 ^F	280 ^F	240	260	300	300	300	270	280	280	250	250	240	270	280	300	340	300	(420)
8	(340)	300 ^F	300 ^F	300 ^F	350 ^F	320 ^F	290	260	(260)	260	300	280	290	260	250	260	260	240	240	300 ^F	320 ^F	300 ^F	(340)	310 ^F
9	330 ^F	(300)	340 ^F	(300)	320 ^F	320 ^F	250	240	270	270	270	280	280	250	270	270	270	270	270	270	270	270	270	270
10	350 ^F	350 ^F	300 ^F	310 ^F	330 ^F	300 ^F	260	240	260	250	310	300	300	280	270	270	270	220	260	340	300	310	320	330
11	340	F	F	300 ^F	(340)	310 ^F	260	250 ^P	C	C	C	C	C	C	C	C	270	240	M	M	350	320	(360)	350 ^F
12	350 ^F	320	350 ^F	320 ^F	330 ^F	(280)	260	260 ^P	250	280	300	270	280	270	280	260	260	270	250	280	300	310	290	350 ^F
13	340 ^F	(330)	340 ^F	(390)	(360)	350 ^F	270	240	250	290	270	270	300	280	270	290	270	250	250	260	270	280	350	360
14	360	350	350	370 ^F	300 ^F	350 ^F	260	270	280	280	310	270	320	300	280	260	250	[260] ^A	280	310	270	370 ^F	350 ^F	320 ^F
15	330 ^F	280 ^F	(360)	360 ^F	300 ^F	290 ^F	270	260	280	320	300	310	300	270	280	270	260	240	270	350	350	340	360	330
16	350	340	320	340	290	310	270	250	290	270	270	300	280	260	270	280	260	260	260	300	300	(350) ^P	350	370
17	360	360 ^F	310	310 ^F	350 ^F	340 ^F	290 ^P	300	280	250	290	260	280	280	280	270	260	260	260	300	330	350	350	350
18	350	340	290	360	330	340	250	250	290	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	390 ^F	350 ^F	320 ^F	340 ^F	260	320	280	260	270	260	270	270	310	280	270	260	260	240	270	330	330	340	350	340
21	350 ^F	310	330	290 ^F	360 ^F	(320)	270	250	260	280	300	280	310	300	270	260	260	270	250	270	(320)	340	370	370
22	370	340 ^F	310	270	290 ^F	310 ^F	250	270	300	300	300	290	280	280	270	280	270	250	260	290	340 ^P	350	340	350
23	350 ^F	340 ^F	290	260 ^F	300 ^F	300 ^F	250	270	300	300	300	260	270	270	290	280	270	250	260	270	330	320	350	350 ^F
24	400 ^K	330 ^K	280 ^K	280 ^K	260 ^K	(340) ^K	280 ^K	280 ^K	350 ^K	270 ^K	280 ^K	280 ^K	320 ^K	370 ^K	330 ^K	280 ^K	250 ^K	250 ^K	260 ^K	320 ^K	350 ^K	350 ^K	380 ^K	370 ^K
25	350 ^K	330 ^K	350 ^K	280 ^K	260	340	300	280	260	270	340	310	330 ^K	270 ^K	260 ^K	270 ^K	A ^K	250 ^K	280 ^K	320 ^K	330 ^K	340 ^K	330 ^K	350 ^K
26	360	360	340	290	270	250	260	260	300	300	300	330	320	330	280	270	270	260	250H	270 ^P	330	350	340	350 ^P
27	340	330	310	290	330	310	270	280	270	U	300	310	310	300	300	260	270	250	280	290	360	320	(370)	(350) ^F
28	350 ^F	370 ^F	310 ^F	300 ^F	(310)	320 ^F	260	250	280	280	270	320	300	280	280	300	280	260	260	260	320	330	350	350 ^F
29	270 ^F	350	330	310	280	280	250	260	270	290	280	270	280	300 ^K	300 ^K	290 ^K	300 ^K	290 ^K	270 ^K	310 ^K	310 ^K	330 ^K	350 ^K	320 ^K
30	330	320	330	310	300	320	270	260	250	260	310	300	300	270	270	300	270	250	260	270	[300] ^A	330	380	330
31	350	360	(350)	250	230 ^F	260 ^F	250	300	300	290	270	300	300	290	300	270	260	270	270	280	260	300	(360) ^F	340
Mean Value	340	330	320	310	300	310	270	260	280	280	270	270	280	280	270	270	260	250	260	300	320	330	340	350
Median Value	340	340	320	300	300	310	270	260	270	270	300	290	280	280	270	270	260	250	260	300	330	330	350	350
Count	30	29	29	30	30	30	30	30	29	28	29	29	29	29	29	29	28	29	128	28	29	29	29	29

h_pF₂

Automatic Manual

Swamp 0.85 Mc to 22.0 Mc in 2 min

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

IONOSPHERIC DATA

Akita

Mar. 1954

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

Sweep 0.85 Mc to 22.0 Mc in 2 min
 Manual Automatic

R'F2

A3

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

Lat. 39° 43.6' N
Long. 140° 08.3' E

A k i t a

IONOSPHERIC DATA

foF1

Mar. 1954

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								L	36	Q	39 ^H	38	38 ^L	41	[38] ^L	35	[29] ^L							
2								Q	L	37 ^L	39 ^M	40	41	40 ^L	40 ^L	35 ^L	35 ^L							
3								Q	L	L	41	[40] ^C	40	41	40	L	L							
4								Q	L	L	40 ^L	42	42	41	40	37	L							
5								Q	L	39	42	42	40	40	39	37	[29] ^L	21						
6								Q	(36) ^L	38	40	41	41	40	38	36	L							
7								Q	L	L	40 ^M	42	42	42	39	37	[29] ^L	21 ^L						
8								L	36 ^L	37	40	42	42	41	39	L	L							
9								Q	35 ^L	(38) ^L	40	41	42	41	40	36 ^L	C							
10								L	L	Q	40	42	42	42	40	38	34 ^L							
11								L	C	C	C	C	C	C	C	C	L	L						
12								Q	L	39	[40] ^A	41 ^H	41	[40] ^A	40 ^L	38	35 ^L	L						
13								Q	L	40	40	42	43	43	41	(40) ^M	36 ^L	L						
14								Q	L	40	[41] ^L	42	43	42	41	38 ^L	35							
15								Q	L	41	40	44	44 ^L	43	42	A	A							
16								Q	L	41	43 ^L	42	43 ^L	43 ^L	42	[38] ^L	35	L						
17								L	37	40	[41] ^L	42	43	42	41	39 ^L	L	L						
18								Q	L	C	C	C	C	C	C	C	C							
19								C	C	40	42	43 ^L	44 ^L	43 ^L	42	37 ^L	L	L						
20								Q	L	41	42	43	44	42	41 ^L	37 ^L	L							
21								Q	L	(42) ^L	43 ^L	44 ^L	45 ^L	44	41	(36) ^L	35 ^L							
22								L	L	41	42	43 ^L	44 ^L	42	42	39 ^L	L							
23								Q	L	42 ^H	40	40 ^L	(42) ^L	45	42	40	35 ^L							
24								Q	LH	A	42	42 ^L	[42] ^L	42	40	A	A	A						
25								27	(36) ^L	40	43	42 ^H	42	41	42	37	L							
26								(28) ^L	38 ^L	39	40	42	42	42	40	38	36	29						
27								L	37	40	40	42	43	42	40	38	35 ^L							
28								L	L	40	41	43	43	42	41	L	L							
29								Q	39	40	41	42	42	42 ^L	41	40 ^L	39 ^L	L						
30								L	38 ^L	40	42	42	43	42	41 ^L	40	A	L						
31								L	A	40	42 ^L	43	43	42	[41] ^L	40	36							
Mean Value								28	37	40	41	42	42	42	40	38	34	24						
Median Value								28	36	40	41	42	42	42	41	38	35	22						
Count								2	10	23	29	29	29	29	29	24	15	4						

foF1

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual Automatic

A 4

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

Lat. 39° 48.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

Mar. 1954

R'F1

135° E Mean Time

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

R'F1

Group 0.85 Mc to 2.20 Mc in 2 min

Manual Automatic

A5

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

Lat. 39° 43.5' N
Long. 140° 09.3' E

Akita

IONOSPHERIC DATA

135° E Mean Time

foE

Mar. 1954

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	23 ^A	24	29	30	33	30	30	26	23							
2								1.7	24	26	28	29	31	30	28	25	23							
3								1.7	23 ^H	26	28	[29] ^C	30	30	27	24	23							
4								1.9	24	27	28	28	[29] ^A	30	28 ^A	27	23							
5								2.1	24	29	29	[30] ^A	32	30	29	27	23							
6								2.3	24	27	27	30	30	30	29	28	23	1.7						
7								1.8	24	28	28	28	A	A	28	26	24							
8								1.9	24	27	A	A	A	30	A	A	24							
9								1.8	[24] ^A	29	[30] ^A	30 ^A	30	[29] ^A	28	27	C							
10								2.2 ^F	2.5	28	29	32	31	31	29	28	23							
11								2.3	C	C	C	C	C	C	C	C	2.3	1.8						
12								1.9	24	28	29	29	30	29	28	26	23							
13								2.0 ^F	2.3	27	28	29	29	29	28 ^A	27	24	1.6						
14								2.3	2.5	26	27	27	[28] ^A	30	28	[26] ^A	23							
15								2.0	2.2	27	A	A	30	[30] ^A	29	A								
16								2.0	2.5	27	27	29	29	30	[28] ^A	27	24	1.8						
17								2.0	2.4	A	A	30	30	30	29	27	25	1.9						
18								2.1	2.4	C	C	C	C	C	C	C								
19								C	C	30	31	31	31	32	30	27	24	1.8						
20								2.3	2.5	27	30	31	32	30	29	27	23	1.8						
21								2.0	2.5	28	29	31	30	30	29	28	26	1.9						
22								2.1	2.5 ^A	29	28	28	30	31	30	28	24	1.8						
23								2.0	2.5	28	30	30	[30] ^A	30	30	27	24	2.0 ^F						
24								2.2	2.5	27	28	30	A	A	A	27	25	1.7						
25								2.2	2.5	26	A	A	30	29	28	27	24							
26								2.1	2.4	[26] ^A	29	30	30	30	29	26	A							
27								2.1	2.6	28	28	30	30	30	28	27	23	2.0						
28								2.2	2.5	30	30 ^A	29	30	31 ^F	29	27	24	2.0						
29								2.0	2.3	27	28	29	31	32	30	27	25	2.0						
30								1.7	2.3	26	28	27	[28] ^A	30	29	27	24	2.1 ^H						
31								1.8	2.4	25	28	[28] ^A	27	[28] ^A	30	29	27	[24] ^A	2.1 ^a					
Mean								1.8	2.1	24	27	29	30	30	29	27	24	1.9						
Median								1.8	2.1	24	28	30	30	30	29	27	24	1.9						
Value								3	3.0	29	28	25	26	27	27	27	27	1.6						
Count																								

foE

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual Automatic

A 6

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

Lat. 38° 43.5' N
Long. 140° 03.2' E

Akita

IONOSPHERIC DATA

f_oF₂

Mar. 1954

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

f_oF₂

Mar. 1954

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual Automatic

A7

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

fEs

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	1.9	1.8	2.3	2.2	2.2	3.0	3.0	3.0	4.1	4.1	4.1	G	G	G	G	G	3.0	2.3	2.3	2.3	2.3	2.2	E	
2	E	3.1	2.8	3.0	3.0	2.9	G	G	G	G	3.5	4.0	G	G	G	G	4.2	3.5	3.0	3.0	2.2	2.8	2.5	2.1	
3	2.2	2.6	E	2.8	1.8	2.9	E	E	G	2.9	3.5	C	3.0	G	G	G	3.2	2.3	2.8	2.2	2.4	E	1.8	E	
4	1.7	2.3	1.7	2.1	2.3	2.1	G	G	3.0	G	G	4.1	4.5	4.3	4.0	2.8	G	E	2.1	3.1	2.1	2.3	2.5	1.9	
5	1.9	2.3	2.4	2.4	2.5	E	E	G	G	4.3	4.2	4.2	3.7	G	G	G	3.4	3.3	3.0	2.7	2.6	2.6	2.3	2.3	
6	2.3	2.2	2.8	2.3	3.0	2.7	G	G	3.5	G	4.3	4.7	3.7	4.2	4.1	3.5	G	3.1	3.1	3.0	2.3	2.3	2.3	E	
7	1.8	1.8	1.8	2.2	1.8	2.8	3.0	G	G	G	4.2	5.0	5.6	4.0	G	4.5	G	2.7	3.5	3.0	2.3	2.3	2.4	2.3	
8	3.0	2.3	1.5	2.3	3.0	2.5	G	G	3.5	4.7	4.2	4.1	4.3	4.3	3.5	3.5	G	3.0	3.0	3.0	2.4	E	1.8	E	
9	E	E	1.8	1.6	E	2.0	E	G	3.4	3.5	4.3	4.8	3.5	5.1	G	2.8	C	C	C	C	C	C	C	C	
10	E	1.8	E	E	E	1.8	E	G	4.3	4.4	4.4	G	G	G	G	G	G	3.5	2.4	1.9	1.9	1.6	2.5	1.8	
11	E	2.3	3.1	3.1	2.4	2.4	2.3	3.1	C	C	C	C	C	C	C	C	2.9	2.4	M	M	E	E	2.1	E	
12	1.8	2.2	2.0	2.2	2.8	2.4	2.2	2.9	3.2	3.5	5.3	4.3	4.3	5.1	G	G	G	2.3	E	E	2.3	1.9	2.3	2.3	
13	3.2	3.1	3.0	2.3	2.3	E	2.5	3.3	G	4.1	G	G	G	3.5	3.4	G	G	G	3.1	1.9	1.8	1.7	2.0	E	
14	2.2	3.0	2.3	2.7	2.2	2.3	2.5	3.0	G	3.2	4.5	4.2	4.6	3.8	4.2	4.2	4.2	4.2	6.6	4.2	1.8	2.9	E	5.4	4.2
15	1.8	4.3	2.8	2.4	3.0	2.3	E	G	G	4.2	5.1	4.5	4.0	4.2	3.4	6.3	5.4	4.0	3.4	2.9	2.9	2.2	2.2	3.1	
16	2.2	2.9	2.9	2.9	2.5	F	E	E	4.0	4.1	5.1	4.1	4.3	4.2	3.5	G	3.5	2.4	2.2	2.5	E	2.2	2.1	2.5	
17	2.1	1.9	3.3	2.5	3.0	3.0	F	G	3.3	4.0	4.2	4.1	4.4	4.2	G	G	G	3.5	2.5	2.3	2.2	2.3	1.8	E	
18	E	E	2.2	2.4	3.0	2.3	2.0	2.3	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
19	C	C	C	C	C	C	C	C	C	4.2	3.6	3.5	3.5	G	4.3	3.5	3.1	2.2	E	E	2.3	1.8	E	E	
20	E	1.9	2.0	2.0	2.3	E	2.5	G	3.0	4.2	4.0	3.5	4.1	3.5	1.9	2.3	2.1	G	E	E	2.1	E	2.3	2.5	
21	2.1	1.8	1.8	2.3	2.3	1.9	2.6	3.2	3.5	G	G	G	G	G	G	G	G	3.1	E	2.2	2.3	1.8	E	E	
22	E	2.2	E	E	E	2.2	2.3	2.6	3.2	G	G	G	4.0	G	G	G	G	G	E	E	E	E	E	E	
23	E	E	1.8	2.1	2.2	1.8	E	2.8	G	G	4.2	3.8	4.2	4.2	4.2	3.5	G	3.1	2.2	1.8	1.7	E	E	E	
24	E	E	E	1.8	2.0	1.8	3.0	G	G	5.0	4.2	4.1	4.5	4.5	6.5	7.1	6.8	4.6	5.5	3.0	1.8	1.8	1.9	2.2	
25	E	1.7	2.2	2.2	2.5	E	1.9	G	G	4.2	4.5	5.7	G	4.2	4.1	4.1	3.8	4.2	3.1	3.1	2.3	E	E	E	
26	1.8	2.2	2.2	2.0	2.0	2.8	2.0	G	G	3.5	G	G	4.2	4.3	4.2	4.3	3.7	3.4	3.5	2.7	2.9	3.0	2.3	2.9	
27	2.9	2.1	1.9	3.0	2.9	2.2	G	G	G	G	3.5	3.5	3.5	G	3.0	G	G	2.0	2.2	E	E	E	1.9	2.1	
28	2.1	E	E	2.3	E	3.1	3.5	3.3	G	G	4.0	4.2	4.2	4.2	4.1	G	2.9	4.1	2.5	2.1	2.1	E	E	E	
29	1.8	2.1	2.1	1.7	1.8	E	2.0	2.9	G	G	4.5	G	4.5	4.3	G	G	G	3.5	2.9	2.8	2.2	E	2.0	3.6	
30	E	E	2.1	1.5	E	E	G	G	G	4.3	4.5	G	G	G	G	4.8	4.2	3.5	3.5	3.5	7.0	6.6	4.2	3.5	
31	2.6	2.2	2.4	2.3	2.0	2.3	3.0	3.5	4.5	4.2	4.0	6.7	4.0	3.8	4.2	4.2	4.1	2.9	2.9	2.3	E	E	E	2.3	
Mean Value	2.2	2.3	2.3	2.3	2.4	2.3	2.5	3.0	3.5	4.0	4.4	4.4	4.1	4.2	3.9	4.1	3.8	3.3	3.0	2.5	2.5	2.4	2.4	2.6	
Median Value	1.8	2.2	2.0	2.3	2.2	2.3	G	G	G	3.5	4.1	4.1	4.0	3.5	3.0	2.3	2.1	3.1	2.8	2.3	2.2	1.8	2.1	1.9	
Count	30	30	30	30	30	30	30	30	29	29	29	28	29	29	29	29	29	29	29	28	28	29	29	29	

fEs

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual

Automatic

A8

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.8	2.9	2.8	3.0	3.0F	3.1F	3.3	3.3	3.5P	3.4	3.2	3.2	3.3	3.4	3.6	3.3	3.4	3.2	3.4	3.2	2.8	3.0F	3.0F	3.4F
2	3.3F	3.0F	3.0F	3.0F	3.4	3.3	3.2	3.5	3.4	3.4	3.6	3.4	3.4	3.6	3.4	3.4	3.5	3.7	3.4	2.8	3.3	3.2	2.9	(2.7)
3	3.0F	3.0F	3.0	3.3	3.1	3.0F	3.3	3.6	3.6	3.5	3.2	(3.3)	3.4	3.4	3.5	3.2	3.4	3.4	3.6	2.9	3.1	3.1	3.0	3.1
4	3.1	2.8P	2.8F	3.0F	3.2F	3.3F	3.4F	3.4	3.4	3.5	3.0	3.2	3.3	3.3	3.4	3.5	3.5	3.6	3.5	2.9	2.9	2.8	2.8	2.6F
5	2.7F	3.3	3.2	3.2F	3.3F	3.3F	3.2	3.5	3.3	3.4	3.5	3.2	3.3	3.4	3.3	3.5	3.6	3.6	3.3	3.0	3.0	2.9	3.0	2.7F
6	2.9F	3.0F	3.1F	3.1F	3.1F	3.1F	3.2	3.6	3.3	3.4	3.5	3.2	3.2	3.4	3.6	(3.6)	3.5	3.7	3.5	3.0	2.9	3.1	3.0	2.7F
7	2.7F	2.8F	2.2F	3.3F	3.1F	3.0F	3.2F	3.5	3.5	3.1	3.2	3.1	3.4	3.3	3.3	3.5	3.6	3.6	3.2	3.1	3.0	2.8	3.1	(2.5)
8	(2.9)	2.9F	3.2F	3.1F	2.7F	3.0F	3.3	3.5	(3.5)	3.4	3.1	3.4	3.2	3.4	3.6	3.5	3.6	3.7	3.5	3.0F	3.0F	3.0F	(2.7)	3.0F
9	2.9F	(3.1)	3.1F	(3.1)	3.1F	3.0F	3.5	3.6	3.4	3.4	3.2	3.2	3.3	3.5	3.3	3.4P	C	C	C	C	C	C	C	C
10	2.7F	2.8F	3.0F	3.0F	2.8F	3.0F	3.4	3.5	3.5	3.4	3.1	3.1	3.1	3.2	3.4	3.4	3.4	3.7	3.3	2.8	3.0	2.9	3.0	3.0
11	2.9	F	F	3.0F	(2.7)	3.0F	3.4	3.5P	C	C	C	C	C	C	C	C	3.4	3.6	M	M	2.9	3.0	(2.7)	2.8F
12	2.8F	3.0	2.8F	3.1F	3.1F	(3.3)	3.4	3.3P	3.4P	3.3	3.1	3.2	3.3	3.4	3.3	3.4	3.4	3.5	3.3	3.3	3.1	3.0	3.2	2.8F
13	3.0F	(2.9)	2.9F	(2.6)	(3.1)	2.8F	3.4	3.6	3.5	3.3	3.4	3.5	3.2	3.3	3.3	3.2	3.5	3.7	3.5	3.3	3.3	3.2	2.8	2.8
14	2.8	2.9	3.0	2.8F	3.1F	2.8F	3.4	3.4	3.2	3.4	3.1	3.2	3.1	3.2	3.3	3.5	3.6	(3.4)	3.3	3.0	3.3	2.7F	2.9F	3.0F
15	3.0F	3.1F	(2.9)	2.8F	3.0F	3.2F	3.3	3.4	3.4	3.1	3.2	3.1	3.2	3.4	3.4	3.4	3.5	3.7	3.3	2.7	2.9	2.9	2.8	3.0
16	2.9	2.8	3.0	2.9	3.1	2.9	3.3	3.5	3.2	3.4	3.4	3.1	3.3	3.4	3.5	3.4	3.5	3.5	3.5	3.1	3.0	(2.8)	2.8	2.7V
17	2.7F	2.8F	3.1	2.9F	3.1F	2.9F	3.1P	3.1	3.3	3.4	3.3	3.5	3.3	3.5	3.4	3.4	3.4	3.3	3.4	3.0	2.9	2.8	2.9	2.8
18	2.8	2.9	3.3	2.8	2.9	2.8	3.5	3.5	3.3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	3.6	3.4	3.3	3.3	3.5	3.5	3.5	3.4	3.7	3.2	3.0	3.0	2.9	2.8	3.0
20	2.6F	2.8F	3.0F	2.8F	3.4	3.1	3.2	3.4	3.3	3.4	3.4	3.2	3.1	3.3	3.3	3.5	3.5	3.2	3.4	3.1	(3.0)	2.9	2.9	2.8
21	2.9F	3.1	2.8	3.1F	2.7F	(2.8)	3.3	3.5	3.5	3.3	3.2	3.3	3.1	3.3	3.4	3.3	3.5	3.5	3.3	3.0	2.9F	2.9	2.7	2.8
22	2.9	3.0F	3.1	3.4	3.3F	2.9F	3.5	3.3	3.2	3.1	3.2	3.3	3.2	3.2	3.3	3.4	3.5	3.6	3.4	3.2	2.9	3.0	2.8	2.8F
23	2.8F	2.9F	3.2	3.4F	3.0F	3.1F	3.4	3.2	3.1	3.1K	3.4K	3.5K	3.1K	2.8K	3.0K	3.3K	3.7K	3.6K	3.4K	3.0K	2.8K	2.8K	2.7F	2.8K
24	2.6K	3.0K	3.4K	3.4K	3.4K	(2.7)	3.2K	3.2K	2.9K	3.4K	3.2K	3.3K	3.0K	3.3K	3.6K	3.4K	3.3K	3.5K	3.3K	3.0K	2.9K	2.8K	2.9K	2.9K
25	2.9K	3.0K	2.8K	3.3K	3.4	2.8	3.1	3.3	3.6	3.3	2.9	3.0	3.0	3.3	3.2	3.3	3.2	3.4	3.3	3.4	2.9	3.1	2.7	2.8
26	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.4	3.1	3.2	3.2	2.9	3.0	3.0	3.3	3.4	3.3	3.3	3.4H	3.0	2.8	2.9	2.8P	
27	3.0	3.0	3.0	3.1	2.9	3.1	3.3	3.3	3.4	3.0	3.2	3.1	3.1	3.2	3.1	3.5	3.4	3.4	3.3	3.1	2.8	3.1	(2.6)	(2.7)
28	2.9F	2.7F	2.9F	3.1F	(2.9)	3.0F	3.5	3.6	3.4	3.3	3.5	3.1	3.2	3.3	3.4	3.2	3.3	3.4	3.4	3.0	3.0	3.0	2.8	2.9
29	3.2F	2.8	3.0	3.0	3.2	3.2	3.5	3.4	3.2	3.3	3.4	3.4	3.3	3.2K	3.2K	3.2K	3.2K	3.2K	3.2K	3.0K	3.0K	3.0K	2.8K	3.0K
30	2.9	3.0	3.0	3.1	3.1	3.0	3.2	3.4	3.5	3.6	3.2	3.2	3.2	3.3	3.2	3.2	3.4	3.6	3.4	3.3	(3.2)	3.0	3.0	3.0
31	2.9	2.8	(2.8)	3.4	3.6F	3.2F	3.6	3.2	3.1	3.2	3.3	3.1	3.2	3.2	3.2	3.3	3.5	3.3	3.3P	3.2	3.4	2.9	(2.7)	2.9
Mean Value	2.9	2.9	3.0	3.1	3.1	3.0	3.3	3.4	3.4	3.3	3.2	3.2	3.2	3.3	3.4	3.4	3.4	3.5	3.4	3.0	3.0	2.9	2.9	2.9
Median Value	2.9	2.9	3.0	3.1	3.1	3.0	3.3	3.4	3.4	3.4	3.2	3.2	3.2	3.3	3.3	3.4	3.4	3.5	3.4	3.0	3.0	2.9	2.8	2.8
Count	30	29	29	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	28	29	29	29	29

(M3000)F2

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

fminF

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

fminF

Sweep 0.85 Mc to 22.0 Mc in 2 min

Manual

Automatic

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

Lat. 39° 43.5' N
Long. 140° 08.2' E

Akita

IONOSPHERIC DATA

Mar. 1954

f_{minE}

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	1.5	1.5	1.0	1.5	1.0	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	1.7	1.5	1.5	1.6	1.5
2	E	1.0	1.0	E	1.0	1.0	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.6	1.5	1.6	1.5	1.6	1.6	1.6	1.5
3	1.5	1.5	E	1.5	1.5	1.5	E	1.5	1.5	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.5	1.5	1.5	1.5	E	1.7	E	E
4	1.6	E	1.5	1.5	1.6	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.5	1.5	1.5	E	1.7	1.5	1.7	1.5	1.5	1.6
5	1.7	1.5	E	E	1.0	E	E	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
6	1.5F	1.5F	E	E	1.0F	E	1.7	1.5	1.5	1.6	1.7	1.7	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.7	E
7	1.6	1.5	1.5	1.5	1.0	1.0	1.7	1.5	1.5	1.5	1.6	1.6	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.7	1.5	1.5
8	1.5	1.0	1.0	E	E	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	E	1.6	E
9	E	E	1.5	1.5	E	1.5	E	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	C	C	C	C	C	C	C	C
10	E	1.5	E	E	E	1.6	E	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0	E	1.7	1.6	1.6	1.7	1.6
11	E	1.5	1.5	E	E	E	1.6	1.5	C	C	C	C	C	C	C	C	1.5	1.5	M	E	E	E	1.8	E
12	1.7	E	1.3	E	E	E	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.7	E	E	1.6	1.7	1.6	1.6
13	1.0	E	E	E	E	E	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.5	1.7	1.6	1.5	1.6	1.5	E
14	1.0	E	E	E	E	E	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.6	1.5	1.6	1.5	1.5	1.7	1.5	E	1.5	1.5
15	1.7	E	E	E	E	E	E	1.5	1.5	1.5	1.6	1.7	1.7	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.5
16	1.7	E	E	E	E	E	E	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	E	1.6	1.5
17	1.5	1.5	E	E	E	E	1.5	1.5	1.5	1.5	1.6	1.7	1.6	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.5
18	E	E	E	E	E	E	1.6	1.5	1.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.5	1.5	1.5	E	1.7	1.6	E	E
20	E	1.5	1.4	1.3	E	E	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.5	E	1.8	E	1.5	1.5	1.6
21	E	1.7	1.5	E	E	1.4	1.5	1.5	1.5	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.5	1.5	E	1.7	1.7	1.7	E	E
22	E	E	E	E	E	E	E	1.5	1.5	1.6	1.5	1.6	1.7	1.7	1.5	1.5	1.5	1.5	E	E	E	E	E	E
23	E	E	1.5	1.5	1.7	1.5	E	1.5	1.5	1.5	1.5	1.7	1.6	1.7	1.5	1.6	1.5	1.5	1.7	1.7	1.5	E	E	E
24	E	E	E	E	1.5	1.3	1.5	1.5	1.5	1.7	1.7	1.7	1.5	1.5	1.5	1.5	1.7	1.5	1.5	1.5	1.7	1.7	1.7	1.6
25	E	1.5	E	E	1.5	E	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.8	E	E
26	1.7	1.0	E	E	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.8	1.7	1.8	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6
27	1.5	1.5	1.5	E	E	E	1.5	1.5	1.6	1.7	1.6	1.7	1.6	1.6	1.5	1.5	1.5	1.5	1.5	E	E	E	1.7	1.6
28	1.6	E	E	E	E	E	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.7	E	E	E
29	1.7	1.5	1.7	1.4	1.7	E	1.5	1.5	1.5	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.7	E	1.5	1.5
30	E	E	1.5	1.4	E	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	1.5	1.5	1.5	1.5	1.5	1.5
31	E	E	E	E	1.5	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	1.5	2.0A	E	E	E	1.6
MEAN Value	1.5	1.4	1.4	1.4	1.4	1.3	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
Median Value	1.2	1.0	E	E	E	E	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Count	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	28	28	29	29	29

f_{minE}

Sweep 0.85 Mc to 22.2 Mc in 2 min

Manual

Automatic

A 11

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

Lat. 35° 42.4' N
Long. 139° 28.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f_oF₂

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.4	3.3	3.4	3.5	2.8	2.8	2.3	4.8	5.7	5.5	7.2	6.5	6.5	6.7	6.1	5.5	5.0	5.5	5.2	3.2	3.1	3.2	3.5	3.4 ^{MF}
2	F	F	F	3.8 ^F	3.6	2.0 ^F	2.9	4.1	4.9	6.4	5.7	6.9	8.6	8.0	6.4	6.1	6.3	7.0	4.0	3.5	3.5	3.4	2.6	3.0 ^F
3	3.2 ^F	3.4 ^F	3.5	3.6	3.5	3.0	3.2	4.9	5.1	5.4	5.5	6.6	8.7	9.2 ^J	6.9	5.9	[6.2] ^c	6.6	6.5	3.0	3.5 ^P	3.5 ^z	3.3	3.5
4	3.7	3.9 ^F	4.0 ^F	4.2 ^F	3.5	3.1	3.6	5.1	5.7	6.0	6.4	8.5	9.7	9.8	8.5	7.6	6.9	5.6	4.0	2.5	2.8	2.9	3.0	3.0
5	3.0 ^F	3.4	3.3	2.9	2.5 ^F	2.2 ^F	3.0	4.7	5.2	6.5	7.7	9.2	9.3	9.3 ^D	(8.0) ^J	6.6	5.6	5.0	4.1	3.5 ^P	3.3	3.6	3.9	3.5 ^{MF}
6	3.7 ^{MF}	3.5	4.0	3.4	3.2 ^F	3.0 ^F	3.6	5.5	5.5	7.3	8.1	8.1	10.3	10.0	7.7	6.5	5.9	5.6	3.9	3.3	2.7	3.0	3.1	3.7 ^F
7	3.3 ^{MF}	3.2 ^F	3.8	3.4	2.2	2.3	3.0	4.9	5.0	6.0	6.8	9.3	10.5 ^F	C	C	C	6.5	5.0	4.1	3.1	3.5 ^F	3.3	3.8	3.4
8	3.4	4.2 ^{MF}	4.9 ^F	3.9 ^F	2.8 ^F	3.5 ^{MF}	3.5	5.4	5.9	6.0	M	M	M	M	M	M	M	M	M	M	2.9	3.0	3.0	3.0 ^F
9	3.2 ^F	3.4 ^F	3.9 ^F	3.3 ^F	3.2 ^F	3.2 ^F	3.8	4.9	5.5	6.5	7.0	9.0	9.0	9.0	6.8	6.5	7.0	7.0	5.2	4.0	3.8	3.6	3.0	3.0
10	3.2 ^F	3.1 ^F	3.4	3.5	3.3	3.0	3.4 ^F	5.0 ^F	5.4 ^P	5.0	5.6	7.5	9.0	9.4	7.6	8.2 ^P	7.4 ^P	5.4	4.0	3.8	3.9 ^{MF}	3.8	3.0	3.4 ^F
11	3.4 ^{MF}	[3.8] ^F	4.3 ^F	F	F	3.4 ^F	3.6	5.6	5.3	6.0	5.5	6.1	7.0	8.0	7.0	6.1	6.7	6.4	5.1	3.3	3.1	3.3	3.1	3.2
12	3.1 ^{MF}	3.2 ^F	2.8 ^F	3.0 ^F	2.9	2.9	3.6	4.9	5.1	5.9	6.4	6.5	7.4	7.3 ^P	6.4	6.2	6.2	6.2	5.7	4.5	3.6	3.3	3.3	3.0
13	3.0 ^V	3.1	3.1 ^F	2.9 ^F	2.4	2.1	3.5	4.8	6.2	6.0	7.0	6.6	6.5	7.2	6.6	7.1	7.9 ^P	6.4	5.7	4.2	3.5	[3.0] ^A	2.6	2.9
14	3.4 ^F	3.8 ^{MF}	3.6	3.6	3.2 ^F	2.9 ^F	4.0	5.1	6.0	7.0	9.2	9.5	7.7	8.8	8.8	7.4	6.4	5.2	4.5	4.6	4.6	A	F	3.6 ^F
15	3.5 ^F	3.9	3.6	3.5	3.5	3.4	4.1	5.5	6.0	7.6	7.6	7.5	7.9	8.3	7.2	6.3	6.5	6.7	5.1	3.7	3.5	3.7	3.7 ^{MF}	3.7 ^P
16	3.3	3.3	3.8	3.0 ^F	2.7	2.8 ^F	3.6	5.5	7.0	6.5	7.4	8.0	6.6	6.4	6.1	6.5	6.0	6.0	6.0	4.8	4.3	4.2	4.2	3.9
17	3.7	3.9	3.8	3.2	3.2	3.0	4.1	5.6	6.0	5.7	6.5	9.0	7.6	7.7	7.0	7.2	6.4	5.2	4.3	4.8	4.8	4.8	4.9	4.7
18	4.4	3.6	2.9	2.7	2.5	2.5	4.1	5.9	7.0	7.1	6.3	7.0	8.5	(9.2) ^B	8.4 ^J	7.0	6.0	6.1	5.1	3.4	3.5	3.5	3.5	3.6
19	3.5	3.4 ^{MF}	3.5 ^F	3.2 ^F	2.6 ^{MF}	2.3 ^F	3.9	5.6	6.2	7.6	7.9	8.7	9.1	10.0	9.4	7.6	6.2	6.0	4.7	3.9	(4.2) ^F	3.8	3.8 ^P	3.7
20	4.3 ^F	(4.2) ^{MF}	3.7	3.4 ^{MF}	2.6 ^F	2.7 ^F	3.8 ^P	5.5	5.6	6.6	7.4	8.5	8.5	9.5	8.0	6.0	5.5	6.2	4.9	4.3 ^F	4.5	4.5	4.7 ^{MF}	4.6 ^F
21	4.9 ^F	4.4	4.4	3.9 ^F	3.3	2.5 ^F	4.1	4.9	5.7	6.7	8.0 ^P	8.5	9.3	9.0	8.9	7.5	6.6	5.6	4.7	3.6	2.9	3.1	3.4	3.8
22	4.3 ^{MF}	4.2 ^{MF}	4.6 ^F	3.3 ^F	F	F	4.5	4.5	6.0	7.3	9.2 ^K	6.1 ^K	5.3 ^K	6.5 ^K	9.6 ^K	9.8 ^K	8.2 ^K	5.8 ^K	5.0 ^K	4.1 ^K	3.9 ^K	4.3 ^K	4.3 ^K	4.5 ^K
23	4.3 ^K	4.4 ^{MF}	C	C	C	C	3.9 ^K	5.5 ^K	5.6 ^K	9.0 ^K	7.9 ^K	6.9 ^K	7.5 ^K	9.9 ^K	7.5 ^K	6.4 ^K	6.7 ^K	6.4 ^K	5.6 ^K	[5.0] ^A	4.5 ^K	4.1 ^K	4.4 ^{MF}	4.2 ^K
24	4.2 ^K	4.5 ^K	4.3 ^K	5.9 ^K	3.3 ^F	3.3 ^F	4.1	5.5	6.0	6.3	6.0	8.7	10.8	9.7	8.0 ^P	6.1	5.8	6.5	6.4	3.9	3.2	3.5	3.3	3.5
25	3.6	3.6	3.6	3.5	2.5 ^F	2.0 ^F	4.0	4.9	5.5	6.2	7.0	7.5	8.6	9.6	9.0	6.8	6.4	5.5	5.0	4.5	4.0	3.9	3.7 ^F	3.8
26	3.8	3.9	3.8	3.3	3.2	3.6	3.7	5.6	5.6	5.4	6.7	7.7	7.9	8.5 ^P	8.7	7.7	5.6	5.4	4.6	4.1	3.9	4.2	3.7	3.8
27	(4.4) ^F	3.7 ^F	3.7	3.4	2.6	2.7 ^F	4.6	5.3	5.6	6.5	6.4	6.0	6.5	7.1	6.5	6.4	6.2	6.2	5.5	4.9	3.5	3.6	3.6	3.6
28	3.6	3.5 ^P	3.5	3.2	3.2 ^F	2.7 ^F	4.0	5.2	5.5	6.5	6.5	6.6	6.4	5.6 ^K	5.5 ^K	5.6 ^K	[6.0] ^A	6.3 ^K	6.5 ^K	6.1 ^K	[5.4] ^A	4.7 ^K	[4.6] ^K	4.5 ^K
29	4.2	4.0	3.8	3.6	3.4	3.2	4.4	6.5	6.6	6.3	5.9	6.4	6.9	7.1	6.5	6.1	7.0	6.2	5.4	5.6	4.5	4.4 ^F	4.2 ^F	4.2 ^F
30	3.8	3.7 ^F	3.8 ^F	4.1 ^F	2.4 ^F	2.2 ^F	4.4	5.0	6.7	7.5	9.0	8.5	8.7	8.7	8.5	7.4	6.8 ^P	6.3	6.5	5.7	4.4	3.5	3.4	3.5
Mean Value	3.7	3.7	3.7	3.5	3.0	2.8	3.7	5.2	5.8	6.5	6.8	7.6	8.2	8.5	7.6	6.8	6.4	6.0	5.1	4.1	3.8	3.7	3.6	3.7
Median Value	3.6	3.7	3.8	3.4	3.0	2.8	3.8	5.2	5.7	6.5	6.9	7.5	8.5	9.0	7.5	6.5	6.4	6.2	5.0	4.0	3.6	3.6	3.6	3.6
Count	30	30	29	29	28	30	31	31	31	30	30	30	30	29	29	29	30	30	30	30	31	30	30	31

f_oF₂

Sweep 1.0 Mc to 1.7.2 Mc in 2 min

Manual Automatic

K 1

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 28.3' E

Mar. 1954

f_pF₂

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	370	340	350	300	310	320	250	260	230	340	270	260	280	270	250	240	260	260	250	270	310	320	300	(340) ^F
2	F	F	F	270 ^F	240	250 ^F	300	230	240	270	310	330	300	260	270	270	280	240	250	280	310	280	310	340 ^F
3	330 ^F	320 ^F	300	270	270	280	280	240	250	250	290	320	310	(260) ^N	250	250	(250) ^N	250	250	260	320 ^F	290 ^Z	300	330
4	330	330 ^F	310 ^F	300 ^F	250	300	270	250	260	280	330	310	290	270	260	260	240	240	240	260	360	340	350	340
5	380 ^F	300	260	280	260 ^F	330 ^F	300	250	280	310	300	290	280	270 ^F	(280) ^N	250	240	240	270	290 ^F	330	340	330	(360) ^F
6	330 ^F	350	300	300	300 ^F	300 ^F	290	260	290	280	300	300	300	270	250	260	240	230	250	270	320	310	300	350 ^F
7	380 ^F	380 ^F	280	250	230	300	270	240	260	280	330	310	280 ^F	C	C	C	250	230	240	270	320 ^F	300	310	340
8	320	(270) ^F	270 ^F	260 ^F	330 ^F	(300) ^F	270	250	250	M	M	M	M	M	M	M	M	M	M	M	M	M	M	350 ^F
9	340 ^F	340 ^F	300 ^F	300 ^F	260 ^F	310 ^F	250	240	260	270	300	280	280	260	270	250	260	250	230	280	280	280	280	340
10	350 ^F	370 ^F	310	290	280	330	270 ^F	240 ^F	250 ^F	U	340	320	310	280	280	290	240 ^F	230	250	330	(330) ^F	270	300	320 ^F
11	340 ^F	(340) ^F	330 ^F	F	F	330 ^F	270	230	260	250	280	310	310	270	260	260	290	230	260	280	350	300	350	300
12	(350) ^F	300	350 ^F	330 ^F	310	270	260	250	260	280	290	300	270	270	270	280	270 ^F	250	260	270	300	280	270	350
13	350 ^F	290	320 ^F	270 ^F	310	310	270	240	250	270	270	260	280	270	270	280	270 ^F	250	250	270	300	280	270	350
14	350 ^F	330 ^F	320 ^F	310 ^F	290	270	260	270	260	270	270	280	330	290	270	260	240	250	280	320	280	310	F	350 ^F
15	300 ^F	(300) ^F	300	280	320 ^F	320 ^F	260	250	280	320	310	280	300	300	270	260	240	250	280	300	350	310	F	350 ^F
16	370 ^F	300	340	280	310	300	260	240	310	280	270	270	270	280	270	260	270	250	250	300	350	310	380 ^F	380 ^F
17	370	370	290	280 ^F	330	320 ^F	280	270	260	270	270	270	280	260	260	270	240	250	260	290	320	310	310	330
18	320	320	280	350	350	330	270	270	250	280	320	300	260	270	270	260	250	240	290	340	340	350	320	300
19	280	280	300	300	330	320	270	250	260	250	260	310	300	(270) ^N	(270) ^N	270	260	250	230	330	340	340	360	370
20	340	(370) ^F	330 ^F	270 ^F	300 ^F	330 ^F	270	260	260	280	300	280	300	290	270	270	260	240	260	320	(350) ^F	350	360	370
21	380 ^F	(330) ^F	260	(280) ^F	350 ^F	330 ^F	260 ^F	250	270	280	300	290	320	290	260	310	260	250	250	340 ^F	320	320	(340) ^F	330 ^F
22	330 ^F	310	300	280 ^F	F	F	240	250	370	290	250 ^K	250 ^K	300 ^K	370 ^K	320 ^K	260 ^K	250 ^K	230 ^K	270 ^K	290 ^K	370 ^K	360 ^K	370 ^K	390 ^K
23	(320) ^F	(360) ^F	280 ^F	270 ^F	F	F	240	250	370	290	250 ^K	250 ^K	300 ^K	370 ^K	320 ^K	260 ^K	250 ^K	230 ^K	270 ^K	290 ^K	370 ^K	360 ^K	370 ^K	390 ^K
24	370 ^F	(370) ^F	C ^K	C ^K	C ^K	C ^K	370 ^F	260 ^F	360 ^F	290 ^K	260 ^K	300 ^K	340 ^K	280 ^K	250 ^K	280 ^K	250 ^K	250 ^K	270 ^K	(300) ^K	320 ^K	350 ^K	(320) ^F	330 ^K
25	430 ^F	310 ^F	310 ^F	310 ^F	290 ^F	290 ^F	280	260	260	270	310	340	300	300	300	260	260	260	240	250	400	330	350	350
26	340	330	310	270	250 ^F	310 ^F	250	260	290	300	330	330	320	300	300	280	270	230	250	300	320	310	330 ^F	350
27	350	300	280	290	360	290	250	250	250	360	330	310	320	330 ^F	290	270	260	260	270	290	340	340	370	350
28	(350) ^F	340 ^F	300	270	310	320 ^F	250	250	270	210	270	300	300	290	280	270	270	260	260	250	310	330	340	330
29	330	320 ^F	310	300	300 ^F	270 ^F	250	260	270	260	280	280	260	310 ^K	300 ^K	290 ^K	(280) ^N	260	270 ^K	270 ^K	(280) ^N	300 ^K	(300) ^K	300 ^K
30	300	320	320	300	310	320	280	250	270	270	280	310	300	(300) ^N	300	280	260	250	260	290	280	370 ^F	340 ^F	340 ^F
31	350	380 ^F	(390) ^F	270 ^F	230 ^F	340 ^F	260	270	300	300	300	300	320	300	270	270	280 ^F	270	270	270	260	320	360	360
Mean Value	340	330	310	290	290	310	270	250	270	280	290	300	300	280	270	270	260	250	260	280	320	320	330	340
Median Value	340	330	300	280	300	320	270	250	260	280	300	300	300	270	270	270	260	250	250	280	320	320	340	340
Count	30	30	29	29	28	30	31	31	31	29	30	30	30	29	29	29	30	30	30	31	31	29	30	31

f_pF₂

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

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

K'F2

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

K'F2

Sweep L.O. Mc to 2.2 Mc in 2 min

Manual Automatic

K 3

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

IONOSPHERIC DATA

Lat. 35° 42.4' N
Long. 139° 28.3' E

Kokubunji Tokyo

Mar. 1954

f_oF₁

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								L	3.5L	4.1L	4.1	4.2	4.4H	4.3	4.0	3.8L	3.4	2.3						
2								2.5	3.3	4.0	4.3L	4.4L	4.3	4.2	4.0	4.0	3.5L	L						
3								Q	3.3	Q	4.2L	4.3	4.2	4.2	4.0H	4.0	C	L						
4								Q	L	4.0H	4.3	4.2	[4.2]A	4.2	4.1	4.0	3.5	L						
5								Q	L	4.2	4.3	4.2	4.2	4.2	4.1	3.7	3.3	Q						
6								Q	L	4.1	4.1	4.4	4.2	4.2	4.1	4.0L	3.5	L						
7								Q	L	4.0L	4.4	4.3	4.3H	C	C	C	3.5	Q						
8								Q	4.0H	M	M	M	M	M	M	M	M	M						
9								Q	L	4.0H	4.2L	4.2	4.3H	4.2H	4.1	3.9	3.6	L						
10								2.6	3.2L	4.4L	4.3L	4.4H	4.4	4.2	4.0	3.8H	3.6	L						
11								L	L	4.0	4.0L	4.4	4.4	4.2	4.1	4.0	3.6	L						
12								Q	L	4.0	4.2H	4.3	4.2	4.2	4.2	4.1	3.5	L						
13								Q	3.8L	4.0	4.3	4.3	[4.3]A	4.3	4.2	4.0	3.7	L						
14								Q	3.7L	4.0	4.2	4.3	4.4	A	A	4.0	3.5	L						
15								Q	L	4.2	4.4	[4.4]A	4.5	4.4	4.1	4.0	3.7	L						
16								Q	4.2L	4.3L	4.3	4.4	4.5	4.4	4.4	4.0	L	L						
17								3.6L	4.0L	4.0	4.2	4.4	4.4	4.4	4.2	4.0	3.5	L						
18								L	3.9L	4.1L	4.5	4.4	4.4	4.5	4.2	4.0H	L	Q						
19								Q	4.0	4.2	4.2	4.5H	4.5	4.5H	4.2	4.1	3.5	Q						
20								Q	3.9L	4.1L	4.4	4.4	4.5	4.4	4.3	4.0L	3.5H	Q						
21								Q	L	4.2	4.3	4.5	4.5	4.3	4.3	3.9L	L	Q						
22								Q	4.0L	4.3	4.4	4.4	4.4	4.4	4.3	4.0	3.6	Q						
23								Q	3.9L	4.3	4.4	4.3	4.4	4.5	4.3	4.0	3.6	L						
24								Q	L	4.4L	4.2	4.2	[4.4]A	4.5	A	A	A	A						
25								Q	2.7L	3.8L	4.2	4.2L	4.4	4.5H	4.3	4.1	4.0	3.5L	A					
26								Q	L	3.8	4.0	4.3H	4.4	4.4	4.1	4.0	3.8	L						
27								Q	3.5L	3.8L	L	4.2	4.3	4.4	4.1	4.0	3.5	3.2L						
28								L	3.8L	4.1	4.2	4.4	4.2H	4.3H	4.2	4.0	3.8L	L						
29								Q	4.0	4.0	4.2	4.3	4.3	A	A	A	A	3.2						
30								Q	3.5	4.0	4.2	4.4	4.3	A	A	4.0	3.7	L						
31								Q	4.1	4.2	4.2	4.3	4.4H	4.3H	[4.2]A	4.0	3.8L	3.2L						
Mean Value								—	3.1	3.8	4.1	4.3	4.4	4.3	4.2	4.0	3.6	3.0						
Median Value								—	3.1	3.9	4.1	4.2	4.4	4.4	4.3	4.1	4.0	3.5	3.2					
Count								—	6	2.2	2.8	3.0	3.0	2.9	2.5	2.5	2.7	2.4	4					

f_oF₁

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

Lat. 35° 42.4' N
Long. 139° 29.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f'F1

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							230	210	[200] ^A	200	200	220 ^H	220	240	230	210	210							
2							220	200	250	220	230	210	230	230	230	220	230	230						
3							Q	200	Q	240	250	250	230	200 ^H	190	[220] ^C	240							
4							Q	240	220 ^H	220	210	[210] ^H	210	210	230	230	230	230						
5							Q	240	250	230	220	210 ^H	[220] ^A	220	240	220	240	Q						
6							Q	220	220	220	220	200 ^H	210	220	230	230	220	230						
7							Q	240	230	230	230	200 ^H	C	C	C	C	230	Q						
8							Q	210 ^H	M	M	M	M	M	M	M	M	M	M						
9							Q	230	210 ^H	200	210	210 ^H	220	220	230	230	250	240						
10							210	220	250	230	200 ^H	210	210	200	180 ^H	230	230	230						
11							230	230	230	220	210	220	210	230	220	230	230	240						
12							Q	230	210	200 ^H	230	240	230	230	230	230	210	240						
13							Q	230	220	240	210	A	A	A	A	A	250	230						
14							Q	230	250 ^A	A	A	A	A	A	A	230	240	230						
15							Q	240	240	220	[240] ^A	250	210	210	250	220	220	220 ^A						
16							Q	210	230	220	240 ^A	210 ^A	230	220	230	240	240	240						
17							230	240	220	210	[220] ^A	240	230	220	220	220	220	230						
18							230	220	220	190	210	200	220	220	200 ^H	220	220	Q						
19							Q	240	220	200	200 ^H	200	200 ^H	230	220	220	220	Q						
20							Q	230	210	210	240	220	210	200	210	200 ^H	Q							
21							Q	Q	230	230	230	210	210	220	230	220	230	Q						
22							Q	Q	230	240	240	200	200	240	220	240	Q							
23							Q	Q	230	230	210	220	220	210	220	230	220	240						
24							Q	250	230	230	230 ^A	A	A	A	A	A	A	A						
25							Q	220	230	220	200	200	190 ^H	230	210	250	250	A						
26							Q	230	210	220	190 ^H	A	230	230	230	220	220	230						
27							Q	240	230	200	210	200	210	220	230	220	220	220						
28							230	230	210	200	210	180 ^H	210 ^H	240	240	250	250	250						
29							Q	230	230	220	200	230	A	A	A	A	A	250						
30							Q	240	230	230	210	200	A	A	A	230	250 ^A	250						
31							Q	Q	A	230	200	200	200 ^H	[210] ^A	220	250 ^A	250	250						
Mean Value							230	230	230	220	220	210	220	220	220	230	230	230						
Median Value							230	230	230	220	210	210	220	220	230	230	230	230						
Count							—	12	30	29	29	27	26	24	24	26	28	21						

f'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

Lat. 35° 42.4' N
Long. 138° 59.3' E
Kokubunji Tokyo

IONOSPHERIC DATA

foE

Mar. 1954

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	2.4 ^A	2.7	A	A	A	3.0	3.0	3.0	2.8	2.3	1.5						
2							1.4	2.3	2.6	2.9	(3.0) ^A	3.0	3.0	3.0	3.0	2.7	2.4	A						
3							1.7	2.3	2.7 ^F	3.0 ^H	3.0 ^F	3.1	3.2	3.0	3.0	AF	C	1.9						
4							1.7	2.5	2.7	2.9	2.9	(3.0) ^A	3.1	3.0	2.8	2.5	1.8							
5							A	2.3	2.8	A	A	A	A	A	3.0	2.7	A	A						
6							1.8	2.6	2.7	2.8	A	A	A	3.0	3.0	2.8	2.3	A						
7							1.9	2.5	2.8 ^F	3.0 ^F	(3.1) ^A	3.2	C	C	C	C	2.3 ^F	A						
8							1.8	2.7	M	M	M	M	M	M	M	M	M	M						
9							1.7	2.5 ^A	2.8	2.9	3.0	3.0	3.0	3.0	3.0	2.8	(2.3)	1.8 ^F						
10							1.9	2.5	2.7	3.0	3.0	3.1	3.2	2.9	2.5	2.4 ^F	1.7							
11							2.2	2.4	2.7	(3.0) ^A	A	A	A	A	3.0	2.7	2.4 ^F	A						
12							1.8	2.4	2.7	2.9	3.0	3.2	3.0	3.0	2.7	2.4	1.8							
13							1.9	2.4	2.7	2.9	3.0	2.9 ^A	2.9	2.9	(2.6) ^A	2.4	A							
14							1.7	2.3	2.7	2.9	2.9	A	A	A	A	A	2.3	A						
15							1.9	2.4	(2.6) ^A	2.8	A	A	A	A	3.0	(2.7) ^A	2.4	A						
16							2.0	2.5	2.8	3.0	A	A	A	A	A	A	A	A						
17							2.0	2.5	(2.7) ^A	(2.8) ^A	A	A	A	3.2	(3.0) ^F	2.8	2.5	1.9						
18							2.3 ^F	2.5	2.7	3.0	3.0	3.2	3.1	3.0	2.8	A	A							
19							2.2	2.5	(2.9) ^A	(3.0) ^A	3.0	3.2	3.2	3.0	1.2.9	A	A							
20							1.9	2.3	2.9	3.1	3.2	3.3	3.0	3.0	2.9	2.4	A							
21							1.5	2.2	2.5	3.0	3.0	(3.0) ^A	3.0	3.0	2.9	2.5	A							
22							B	2.1	2.6	3.0	3.0	A	A	A	3.0	2.9	2.5	1.7						
23							1.7	2.1	2.5	2.8	3.0	A	A	3.0	2.9	2.7	(2.3) ^F	1.8						
24							A	2.3	2.4	2.8	2.9	A	A	A	3.1	3.0	2.9	2.5	1.9					
25							1.4	2.2	2.4	A	A	A	A	A	3.0	2.8	2.4	A						
26							A	2.0	2.4	(2.6) ^A	2.9	3.0	3.2	3.0	3.0	(2.8) ^A	2.5	A						
27							1.8	2.2	2.5	2.7	A	A	A	A	3.0	3.0	(2.4) ^F	2.2 ^F						
28							2.0	2.5	2.8	3.0	3.2	3.0	3.0	2.9	2.7	2.3	2.0							
29							2.2	2.6	2.8	3.0	3.0	3.0	3.0	3.2	3.0	2.8	2.5	2.1						
30							1.7	2.3	2.6	2.8	3.0	3.0	3.1	3.2	3.0	2.7	2.5	1.8						
31							1.5	2.1	2.5	2.8	2.8	2.9	2.9	A	A	A	A	A						
Mean Value							1.6	2.0	2.5	2.8	2.9	3.0	3.1	3.1	3.0	2.8	2.4	1.9						
Median Value							1.6	2.0	2.5	2.7	3.0	3.0	3.1	3.0	3.0	2.8	2.4	1.8						
Count							6	2.9	3.1	2.9	2.6	1.9	1.7	2.1	2.6	2.5	2.4	1.5						

foE

Sweep 1.0 Mc to 1.7.2 Mc in 2 min

Manual

Automatic

K 6

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

Lat. 35° 42.4' N
Long. 139° 23.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

135° E

Mar. 1954

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

135° 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

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

Mar. 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	E	1.7	2.5	1.4	2.5	2.0	E	3.0	4.4	4.3	3.5	3.5	G	G	3.5	3.2	G	2.7	2.7	2.7	2.4	2.4	1.9	2.2
2	2.5	2.4	2.0	2.5	3.0	2.4	2.5	G	G	3.0	3.7	3.2	3.5	3.1	3.5	3.0	3.2	2.8	3.0	2.7	2.5	2.4	E	E
3	1.7	E	1.8	2.4	2.0	2.3	E	G	2.7	3.2	2.7	3.2	G	3.0	2.9	4.0	C	2.7	2.5	2.5	E	E	1.7	1.8
4	E	1.8	2.0	2.4	2.6	2.0	2.4	2.7	2.8	4.0	4.5	4.5	6.8	4.7	3.5	4.0	3.2	2.5	E	2.5	2.8	2.2	1.8	E
5	E	E	2.5	E	2.4	2.4	E	3.0	3.4	4.0	4.8	4.7	5.0	5.5	3.5	4.0	4.0	4.5	4.2	3.5	3.5	3.0	2.7	
6	2.0	2.0	1.4	3.2	3.0	2.8	2.6	2.7	3.2	3.6	4.5	5.0	4.8	4.3	4.0	2.7	3.2	3.5	3.0	3.0	3.2	2.5	2.4	2.5
7	2.3	1.4	1.4	3.0	2.5	2.5	2.4	2.5	2.9	3.5	4.5	4.5	4.0	C	C	C	3.3	2.8	2.5	2.3	2.5	2.0	2.4	2.4
8	E	3.0	3.0	2.5	3.3	3.2	3.0	2.6	3.7	M	M	M	M	M	M	M	M	M	M	M	M	2.6	2.5	1.8
9	E	E	2.3	1.8	E	1.9	2.3	3.6	3.3	G	3.0	3.5	3.5	3.5	2.8	3.5	4.4	2.4	2.8	2.4	2.5	E	E	E
10	E	E	1.9	1.9	E	2.6	E	G	G	4.7	4.4	G	3.3	3.5	3.5	3.2	3.5	2.5	2.2	E	E	E	E	E
11	2.1	2.4	2.4	2.5	2.3	2.0	2.1	2.6	3.2	4.0	4.6	5.5	4.5	3.7	G	G	3.0	2.8	2.4	E	E	E	E	E
12	E	2.0	2.2	2.5	1.9	2.3	2.2	2.5	3.0	3.5	3.4	3.5	4.5	3.7	G	3.2	3.0	2.8	E	E	E	E	E	E
13	3.0	3.2	2.5	2.5	2.0	2.3	E	2.5	G	3.2	4.2	3.9	5.4	4.8	4.5	4.3	3.3	2.7	2.7	2.2	3.2	3.2	1.7	1.7
14	3.0	2.3	3.2	3.2	2.4	2.9	2.5	3.5	3.8	4.5	5.2	5.2	7.0	7.2	7.5	4.5	4.5	3.2	3.0	2.3	1.9	3.2	2.5	4.0
15	4.4	2.5	2.9	2.2	E	2.6	4.3	3.2	4.0	4.0	4.6	6.8	5.5	3.2	3.2	4.4	3.2	4.5	2.9	3.0	2.7	3.0	3.4	3.5
16	4.5	2.0	2.5	3.2	2.0	2.4	2.5	3.2	4.0	4.5	5.9	4.3	5.0	5.0	4.5	4.5	3.6	3.0	4.2	5.8	7.0	4.5	4.6	3.2
17	2.8	1.8	3.0	2.9	3.1	2.5	2.6	2.5	3.2	3.2	4.4	5.5	3.8	3.2	3.0	G	3.2	2.8	2.2	2.1	2.2	2.2	2.2	2.3
18	2.3	2.0	2.0	2.5	2.0	3.0	2.5	G	3.2	3.0	3.0	3.0	3.0	G	G	3.2	3.2	3.2	2.6	2.5	2.4	2.3	E	E
19	1.8	2.3	2.2	3.2	2.5	2.3	2.5	G	3.2	3.2	3.2	G	2.8	G	G	3.5	3.0	3.2	3.1	3.0	2.0	E	2.2	1.8
20	2.0	2.4	2.2	2.3	2.2	2.0	2.5	3.2	G	3.5	3.5	3.5	3.7	3.6	3.5	3.5	2.8	2.0	E	E	2.4	E	E	2.1
21	2.2	2.3	2.9	2.2	2.0	1.6	G	2.6	2.9	4.0	4.3	3.9	4.5	2.9	3.0	G	2.9	2.8	2.5	E	2.4	E	E	E
22	E	E	E	E	E	2.4	G	2.9	3.3	3.0	3.5	4.0	4.7	4.5	3.5	G	3.4	2.8	E	2.2	E	2.5	E	E
23	E	E	E	2.0	2.3	2.5	2.3	2.9	3.7	3.5	4.5	4.0	4.0	3.7	3.2	3.5	3.2	3.5	2.6	1.7	2.0	2.2	E	E
24	E	2.9	C	C	C	2.3	3.0	2.7	3.5	4.4	4.6	5.7	5.2	6.5	5.5	6.5	6.0	6.5	4.1	7.0	4.2	3.0	E	3.0
25	2.5	3.0	4.5	3.3	3.0	2.1	G	2.5	4.4	4.5	4.3	3.9	4.4	4.5	3.5	3.2	3.0	4.9	4.5	4.8	3.3	E	E	E
26	E	3.0	2.5	2.5	2.5	2.5	3.0	3.6	3.5	3.9	G	4.5	3.8	3.0	3.7	5.6	3.5	3.5	3.9	6.6	2.8	3.0	2.9	2.8
27	2.5	2.0	2.5	2.4	2.5	E	2.7	3.2	3.8	3.8	3.7	3.8	3.8	3.6	3.5	3.3	3.5	2.9	E	E	E	E	E	E
28	1.8	E	E	2.3	2.4	2.0	3.2	3.1	3.8	G	3.6	3.7	3.5	3.9	3.0	3.4	3.9	3.4	3.0	2.1	2.1	E	E	E
29	2.2	E	2.0	2.2	2.0	2.0	2.7	3.3	3.3	G	4.0	G	3.8	5.0	5.5	5.7	6.0	4.5	3.1	4.2	7.1	4.0	2.3	E
30	2.0	1.7	2.0	2.5	2.3	2.3	2.7	3.7	4.0	4.5	4.5	4.0	6.0	6.5	7.0	6.0	4.0	3.9	3.5	3.0	3.4	4.3	4.2	4.5
31	2.1	2.4	2.3	2.7	2.6	2.4	3.5	3.2	4.4	4.7	6.0	4.5	3.5	4.2	6.5	4.7	4.0	4.3	3.9	3.2	2.3	2.3	1.9	2.2
Mean Value	2.5	2.3	2.4	2.5	2.4	2.4	2.5	2.9	3.5	3.9	4.1	4.3	4.3	4.3	4.1	4.0	3.6	3.3	3.1	3.2	3.0	2.9	2.6	2.6
Median Value	2.0	2.0	2.2	2.5	2.4	2.3	2.5	2.7	3.3	3.6	4.3	4.0	3.9	3.6	3.5	3.5	3.3	3.0	2.8	2.5	2.4	2.3	1.8	1.8
Count	31	31	30	30	30	31	31	31	31	30	30	30	29	29	29	29	29	29	30	30	30	31	31	31

Swamp 1.0 Mc to 17.2 Mc in 2 min

Manual Automatic

K 8

fEs

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

Lat. 35° 42.4' N
Long. 139° 28.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0	3.0	2.9	3.1	3.0	3.0	3.4	3.4	3.6	2.9	3.4	3.2	3.2	3.3	3.5	3.4	3.3	3.4	3.4	3.2	3.0	3.0	3.0	(2.8)F
2	F	F	F	3.3F	3.5	3.4F	3.1	3.6	3.5	3.2	3.1	2.9	3.2	3.4	3.2	3.4	3.3	3.6	3.3	3.2	3.0	3.1	3.0	2.8F
3	2.8F	2.9F	3.0	3.3	3.2	3.2	3.1	3.5	3.4	3.4	3.3	3.0	3.2	(3.4)F	3.6	3.4	(3.4)C	3.4	3.4	3.4	3.0F	3.1 ²	3.1	3.0
4	3.0	2.9F	3.1F	3.1F	3.6	3.1	3.3	3.5	3.4	3.2	2.9	3.1	3.2	3.2	3.4	3.5	3.6	3.5	3.5	3.2	2.8	2.9	2.9	3.0
5	2.7F	3.1	3.3	3.2	3.2F	2.9F	3.0	3.4	3.3	3.0	3.2	3.2	3.2	3.3P	(3.4)F	3.4	3.5	3.5	3.2	3.2P	3.0	2.9	2.8	(2.8)F
6	2.9F	2.8	3.1	3.2	3.0F	3.0F	3.1	3.4	3.2	3.2	3.3	3.0	3.1	3.3	3.6	3.3	3.6	3.7	3.4	3.3	3.1	3.1	3.1	2.8F
7	2.8F	2.8F	3.2	3.5	3.6	3.2	3.3	3.5	3.4	3.2	2.9	3.1	3.3P	C	C	C	3.5	3.5	3.4	3.2	3.0F	3.2	3.1	2.9
8	3.0	(3.3)F	3.2F	3.1F	3.0F	3.0F	3.4	3.4	3.4	M	M	M	M	M	M	M	M	M	M	M	M	M	M	2.9F
9	3.0F	2.9F	3.0F	3.2F	3.6F	3.1F	3.4	3.5	3.4	3.3	3.1	3.3	3.3	3.4	3.3	3.4	3.4	3.5	3.6	3.2	3.2	3.2	3.3	3.1
10	2.8F	2.9F	3.1F	3.1F	3.1	3.2	3.0	3.2P	3.5P	3.0	3.0	3.2	3.1	3.2	3.4	3.2P	3.7P	3.5	3.4	3.0	(2.9)F	3.2	3.1	3.0F
11	2.9F	(3.0)F	3.0F	F	F	3.0F	3.3	3.6	3.3	3.6	3.3	3.1	3.1	3.3	3.4	3.4	3.2	3.5	3.5	3.1	2.9	3.1	2.9	3.1
12	(3.0)F	3.1F	2.8F	3.0F	3.1	3.4	3.4	3.5	3.3	3.3	3.2	3.2	3.4	3.4P	3.4	3.3	3.3	3.4	3.4	3.3	3.1	3.3	3.3	2.9
13	2.9F	3.0F	2.9F	3.2F	3.1	3.0	3.4	3.5	3.4	3.5	3.2	3.4	3.4	3.4	3.3	3.2	3.4P	3.4	3.5	3.3	3.4	(3.1)A	2.8	2.7
14	2.9V	2.9	3.1F	3.1F	3.1	3.2	3.4	3.3	3.4	3.3	3.3	3.2	3.0	3.2	3.4	3.5	3.5	3.4	3.3	2.9	3.2	A	F	2.8F
15	3.0F	(3.1)F	3.0	3.2	2.9F	3.0F	3.3	3.5	3.3	3.0	3.1	3.2	3.1	3.2	3.3	3.3	3.2	3.5	3.5	3.1	2.9	3.1	2.9	3.1
16	2.7F	3.1	2.9	3.2	3.0	3.0	3.2	3.4	3.1	3.2	3.4	3.3	3.2	3.3	3.4	3.4	3.3	3.5	3.5	3.1	2.9	3.0	2.7F	2.7P
17	2.8	2.8	3.1	3.2F	2.9	2.8F	3.1	3.3	3.4	3.3	3.4	3.4	3.2	3.5	3.3	3.3	3.5	3.4	3.3	3.1	2.9	3.0	3.0	2.9
18	3.0	3.0	3.2	2.8	2.8	3.0	3.3	3.3	3.4	3.2	2.9	3.2	3.4	3.4	3.2	3.4	3.4	3.5	3.1	2.9	2.9	2.8	3.0	3.1
19	3.2	3.2	3.1	3.1	2.9	2.9	3.2	3.5	3.4	3.4	3.4	3.1	3.2	(3.3)B	(3.4)F	3.3	3.4	3.5	3.6	2.9	2.9	2.9	2.8	3.0
20	2.8	(2.7)F	2.9F	3.2F	3.0F	2.9F	3.3	3.4	3.4	3.4	3.0	3.2	3.1	3.2	3.2	3.4	3.2	3.5	3.4	3.0	(2.8)F	2.8	2.7P	2.8
21	2.7F	(3.0)F	3.4	(3.2)F	2.8F	3.0F	3.3P	3.4	3.3	3.2	3.2	3.1	3.0	3.2	3.5	3.1	3.4	3.4	3.4	3.0F	2.9	3.0	(2.9)F	3.0F
22	2.8F	3.0	3.1	3.2F	3.3	3.4F	3.6	3.3	3.1	3.2	3.2P	3.2	3.1	3.2	3.2	3.4	3.4	3.6	3.4	3.3	2.8	2.9	2.8	2.8
23	(3.1)F	(2.8)F	3.3F	3.3F	F	F	3.5	3.5	3.1	2.9	3.5K	3.5K	3.2K	2.8K	3.1K	3.3K	3.6K	3.6K	3.3K	3.2K	2.8K	2.8K	2.7K	2.8K
24	2.7K	(2.8)F	C K	C K	C K	2.8F	3.3K	3.4K	2.8K	3.3K	3.4K	3.1K	2.9K	3.2K	3.6K	3.3K	3.5K	3.4K	3.3K	(3.2)K	3.0K	2.8K	(3.0)F	3.0K
25	2.5K	3.0K	3.1K	3.5K	3.1F	2.8F	3.2	3.3	3.5	3.4	3.0	3.0	3.1	3.1	3.1P	3.4	3.4	3.3	3.5	3.4	2.8	3.0	2.8	2.8
26	2.9	2.9	3.1	3.4	3.4F	3.0F	3.4	3.4	3.2	3.1	3.0	2.9	3.1	3.1	3.2	3.3	3.4	3.6	3.5	3.2	3.0	3.0	2.9F	2.8
27	2.8	3.1	3.2	3.1	2.8	3.2	3.4	3.5	3.5	2.8	2.9	3.1	3.0	3.0P	3.2	3.5	3.3	3.3	3.2	3.1	2.8	2.8	2.8	2.8
28	(2.8)F	2.9F	3.1	3.2	3.0	2.9F	3.5	3.4	3.3	3.3	3.5	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.4	3.4	3.0	2.9	2.9	3.0
29	2.9	3.0P	3.1	3.1	3.1F	3.3F	3.4	3.4	3.4	3.3	3.3	3.2	3.3	3.1K	3.2K	3.2K	(3.2)A	3.3K	3.3K	3.2K	(3.1)A	3.0K	(3.0)F	3.0K
30	3.1	3.0	3.0	3.1	3.0	3.0	3.1	3.4	3.3	3.3	3.3	3.0	3.1	3.2	3.2	3.2	3.4	3.4	3.3	3.2	3.1	2.8F	2.8F	2.92
31	2.8	2.8F	(2.7)F	3.1F	3.5F	2.8F	3.4	3.4	3.1	3.2	3.2	3.1	3.1	3.2	3.3	3.3	3.2P	3.3	3.3	3.3	3.4	3.0	2.7	3.0
Mean Value	2.9	3.0	3.1	3.2	3.1	3.0	3.3	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.4	3.5	3.4	3.2	3.0	3.0	2.9	2.9
Median Value	2.9	3.0	3.1	3.2	3.1	3.0	3.3	3.4	3.4	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.4	3.5	3.4	3.2	3.0	3.0	2.9	2.9
Count	30	30	29	29	28	30	31	31	31	30	30	30	30	29	29	29	30	30	30	30	31	30	30	31

K 9

Manual Automatic

Group 1.0. Me to 1.7.2. Me in 2 min

(M3000)F2

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

Lat. 35° 42.4' N
Long. 139° 29.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

Mar. 1954

f minF

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	E	E	1.0	E	1.0	1.2	1.9	2.5	3.4 ^A	3.1	3.4	3.2	3.4	3.4	2.9	2.4	1.8	1.5	1.4	1.3	1.5	1.3	1.3
2	1.3	1.3	E	1.3	1.3	1.4	1.4	2.1	2.6	3.4	3.2	3.4	3.4	3.3	3.4	2.8	2.4	2.0	1.5	1.5	1.4	1.5	1.3	1.3
3	1.2	E	E	E	E	1.4	1.4	2.3	2.6	3.1	3.4	3.5	3.4	3.0	3.0	2.8	(2.4) ^C	2.0	1.5	1.4	1.4	1.4	1.3	1.3
4	1.3	1.0	E	E	E	1.4	1.4	2.4	2.9	3.0	3.0	3.5	4.3 ^A	(3.6) ^A	3.0	3.0	2.5	1.9	1.3	1.4	1.3	1.3	1.3	1.7
5	2.0	2.0	1.3	1.0	E	1.3	1.4	2.4	2.9	3.4	3.3	3.3	1.3.6 ^A	3.8 ^A	3.3	2.8	2.5	(2.6) ^M	2.8 ^A	2.4 ^A	2.4 ^A	2.1	1.7	1.6
6	1.4	1.2	1.0	1.6	1.4	1.4	1.5	2.3	2.6	3.0	3.4	3.4	3.3	3.3	3.2	2.8	2.3	2.0	1.5	1.5	1.6	1.5	1.5	1.5
7	1.4	1.3	E	E	E	1.3	1.4	2.4	2.8	3.0	3.3	3.5	3.5	C	C	C	2.3	2.1	1.5	1.4	1.5	1.4	1.5	1.4
8	1.4	1.4	E	1.1	1.5	1.7	1.6	2.3	3.0	N	M	M	M	M	M	M	M	M	M	M	1.7	1.7	1.5	1.5
9	1.4	1.2	1.0	E	E	E	1.5	2.3	3.0	3.1	3.5	3.5	3.4	3.4	3.4	3.1	3.0	2.0	1.5	1.5	1.4	1.5	1.5	1.4
10	1.4	1.0	E	E	E	1.0	1.5	2.2	2.9	3.4	3.4	3.4	3.2	3.5	3.0	2.6	2.7	2.2	1.5	1.5	1.4	1.4	1.5	1.4
11	1.4	1.4	1.4	E	1.1	E	1.5	2.2	2.7	3.3	3.4	3.0	3.3	3.3	3.4	2.8	2.4	1.9	1.4	1.4	1.5	1.5	1.5	1.5
12	1.4	1.4	1.2	1.2	E	1.3	1.2	2.2	2.7	2.9	3.0	3.5	3.5	3.5	3.5	2.8	2.4	2.3	1.5	1.4	1.4	1.4	1.6	1.7
13	1.2	1.9	1.4	1.4	E	1.3	1.5	2.3	2.8	2.9	3.4	3.4	4.4 ^A	4.0 ^A	3.6 ^A	3.5 ^A	2.7	2.0	1.9	1.6	1.5	(1.5) ^A	1.5	1.5
14	1.5	1.4	1.4	1.2	1.2	1.4	1.7	2.8	3.0	3.7 ^A	3.8 ^A	4.0 ^A	4.1 ^A	6.5 ^A	5.0 ^A	3.0	3.1	2.1	2.1 ^A	1.5	1.5	(1.5) ^A	1.5	1.6
15	1.4	1.4	E	E	E	1.0	1.5	2.6	3.0	3.0	3.0	3.0	3.6	3.3	3.1	3.4	2.6	2.4	1.5	1.5	1.5	1.5	(1.4) ^A	1.2
16	1.9	1.2	1.0	E	E	E	1.5	2.3	2.9	3.0	3.0	3.8 ^A	1.3.6 ^M	3.5	3.2	2.9	3.0	2.1	2.8 ^A	2.2 ^A	1.6	3.3 ^A	2.1 ^A	1.3
17	1.2	E	1.3	1.1	1.0	1.0	1.4	2.2	2.9	3.0	3.4	4.0 ^A	3.6	3.4	3.4	2.9	2.5	2.0	1.5	1.4	1.3	1.2	1.5	1.3
18	1.3	E	E	E	E	E	1.6	2.3	2.7	3.2	3.4	3.5	3.4	3.3	3.4	2.8	2.4	2.1	1.9	1.6	1.6	1.5	1.2	1.3
19	1.2	1.3	E	E	E	E	1.7	2.4	2.7	3.0	3.3	3.5	3.5	3.4	3.3	2.9	2.5	2.2	1.7	2.0 ^A	1.3	1.2	1.2	1.3
20	1.3	1.0	E	E	E	E	1.7	2.5	2.8	3.0	3.4	3.5	3.8	3.2	3.0	3.0	2.4	2.2	1.5	1.3	1.3	1.2	1.3	1.3
21	1.2	1.0	E	E	E	E	1.7	2.9	2.9	3.3	3.2	3.4	3.5	3.5	3.4	2.9	2.7	2.3	1.6	1.0	1.5	1.5	1.3	1.0
22	1.0	1.0	E	E	E	1.0	1.8	2.8	3.0	3.3	3.5	3.4	3.5	3.5	3.3	2.9	2.9	2.2	1.4	1.5	1.5	1.5	1.5	1.4
23	1.2	1.0	E	E	E	1.0	1.7	2.5	3.0	3.3	3.5	3.4	3.5	3.3	3.0	2.9	2.5	2.0	1.5	1.3	1.3	1.0	1.3	1.2
24	1.0	1.0	C	C	C	1.3	2.2	2.3	2.8	3.3	3.8 ^A	4.9 ^A	4.3 ^A	5.0 ^A	4.0	4.2 ^A	5.0 ^A	A	A	A	2.6 ^A	1.4	1.2	1.5
25	1.3	1.2	1.0	E	E	1.0	1.5	2.3	2.8	3.4	3.3	3.4	3.4	3.4	3.0	3.4	2.5	A	A	1.5	1.3	1.4	1.3	1.3
26	1.2	1.0	E	E	E	1.2	1.8	2.5	2.8	3.2	3.3	4.0 ^A	3.7	3.4	3.3	2.8	2.5	2.2	(2.8) ^M	3.5 ^A	1.6	2.0	1.7	1.6
27	1.6	1.0	E	1.0	E	1.2	1.9	2.5	2.7	3.4	3.3	3.5	3.5	3.4	3.3	3.0	2.6	2.3	1.5	1.2	1.3	1.3	1.2	1.3
28	1.3	1.0	E	E	E	1.2	2.3	2.5	3.0	3.2	3.4	3.2	3.2	3.5	3.3	3.2	3.0	2.7	1.9	1.2	1.5	1.2	1.2	1.5
29	1.0	1.3	E	E	E	E	1.9	2.5	3.0	3.2	3.3	3.5	4.1 ^A	4.5 ^A	4.1 ^A	4.1 ^A	(3.4) ^M	2.6	2.4 ^A	3.5 ^A	(2.5) ^M	1.5	1.4	1.3
30	1.3	1.0	E	E	E	E	1.8	2.6	3.2	3.0	3.3	3.0	4.8 ^A	6.0 ^A	5.1 ^A	3.0	3.2 ^A	(3.0) ^M	2.8 ^A	2.1 ^A	1.5	(2.2) ^A	3.0 ^A	1.8
31	1.3	1.3	E	E	1.2	1.2	2.3	2.5	3.5 ^A	2.8	3.5	3.5	3.3	3.3	4.2 ^A	3.2	3.5 ^A	2.7	2.9 ^A	1.6	1.4	1.4	1.4	1.5
Mean Value	1.3	1.3	1.2	1.2	1.3	1.2	1.6	2.4	2.8	3.2	3.3	3.6	3.6	3.7	3.6	3.0	2.7	2.2	1.8	1.7	1.5	1.5	1.5	1.4
Median Value	1.3	1.2	E	E	E	1.0	1.5	2.4	2.9	3.2	3.3	3.5	3.5	3.4	3.3	2.9	2.5	2.2	1.5	1.5	1.5	1.5	1.4	1.4
Count	31	31	30	30	30	31	31	31	31	30	30	30	30	29	29	29	30	28	28	29	31	31	31	31

f minF

Sweep 1.0 Mc to 1.2.2 Mc in 2 min

Manual

Automatic

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

Lat. 35° 42.4' N
Long. 139° 39.8' E

Kokubunji Tokyo

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f_{min}E

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

f_{min}E

Sweep 1.0 Mc to 17.2 Mc in 2 min

Manual Automatic

K 11

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

Lat. 35° 42.4' N
Long. 139° 28.3' E

Kokubunji Tokyo

IONOSPHERIC DATA

YPF2

Mar. 1954

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	60	70	60	60	40	30	100	60	60	70	50	160	80	60	50	40	70	60	60	80	40	80	50	(80) ^{JF}	
2	F	F	F	80 ^F	60	140 ^F	100	60	60	80	60	80	50	60	80	50	60	60	60	70	90	80	80	60 ^F	
3	80 ^F	90 ^F	70	50	80	70	80	60	50	60	60	70	40	(50) ^J	50	50	150 ^C	50	50	50	40 ^P	70 ²	60	70	
4	70	70 ^F	60 ^F	60 ^F	50	60	40	40	50	70	80	60	40	60	50	50	60	40	70	40	80	60	70	60	
5	80 ^F	60	60	70	100 ^F	80 ^F	90	60	60	90	60	50	60	(50) ^J	40	50	60	60	80	70 ^P	70	60	80	(50) ^{JF}	
6	70 ^F	50	60	60	100 ^F	100 ^F	60	50	60	60	50	80	60	50	60	60	50	40	70	80	50	60	60	70 ^F	
7	40 ^F	70 ^F	70	60	70	60	70	40	50	80	70	70	40 ^P	C	C	C	60	70	60	70	60 ^F	50	50	60	
8	50	(90) ^{JF}	70 ^F	60 ^F	60 ^F	(100) ^{JF}	40	70	70	M	M	M	M	M	M	M	M	M	M	M	M	60	70	50 ^F	
9	50 ^F	50 ^F	70 ^F	50 ^F	40 ^F	60 ^F	60	60	70	60	50	60	50	60	50	60	50	60	60	70	80	60	60	40	
10	80 ^F	50 ^F	50	60	60	60	80 ^P	60 ^P	70 ^P	U	40	40	60	50	50	50 ^P	60 ^P	40	60	70	(50) ^{JF}	80	70	40 ^F	
11	60 ^F	(60) ^{JF}	70 ^F	F	F	70 ^F	60	50	80	30	50	40	70	70	60	40	40	60	40	100	70	60	70	70	
12	(50) ^{JF}	50 ^F	70 ^F	60 ^F	60	50	50	50	40	60	60	60	50	50	40	50	50	50	50	50	60	60	50	70	
13	50 ^F	90 ^F	80 ^F	70 ^F	100	70	50	60	50	60	40	40	70	60	50	60	50 ^P	50	50	90	60	[60] ^A	70	90	
14	50 ^V	80	80 ^F	60 ^F	110	80	60	80	50	40	50	40	60	40	50	50	60	70	70	60	60	60	A	F	
15	90 ^F	(60) ^{JF}	50	70	80 ^F	80 ^F	90	50	60	80	50	70	50	50	70	50	50	40	100	80	70	80	90	60	
16	50 ^F	60	60	60	60	60	90	70	70	70	50	80	50	50	40	50	60	30	40	70	70	A	70 ^F	70 ^P	
17	60	70	60	70 ^F	70	80 ^F	60	60	50	50	50	60	60	60	70	60	60	60	60	70	70	70	60	90	
18	60	80	80	100	70	70	40	50	80	80	60	60	60	50	80	50	50	60	70	60	60	60	50	60	
19	70	80	40	80	70	80	70	50	50	50	80	60	50	(50) ^B	70	70	50	50	50	80	60	60	60	60	
20	70 ^F	(80) ^{JF}	70 ^F	60 ^F	100 ^{HF}	80 ^F	90	40	60	50	90	70	80	60	70	50	70	40	60	80	(50) ^F	60	80 ^P	40	
21	70 ^F	(70) ^{JF}	60	(50) ^{JF}	90 ^F	60 ^F	90 ^F	50	70	50	70	60	60	60	40	50	50	60	50	40 ^F	80	60	(80) ^{JF}	50 ^F	
22	70 ^F	70	50	80 ^F	70	70 ^F	30	50	70	50	60 ^P	70	60	50	60	60	30	40	60	70	80	60	60	60	
23	(60) ^{JF}	(60) ^{JF}	40 ^F	50 ^F	F	F	40	50	60	80	30 ^K	50 ^K	50 ^K	60 ^K	60 ^K	50 ^K	50 ^K	70 ^K	70 ^K	60 ^K	50 ^K	50 ^K	50 ^K	40 ^K	
24	80 ^K	(60) ^K	C	C	C	50 ^K	80 ^K	50 ^K	80 ^K	50 ^K	70 ^K	80 ^K	90 ^K	50 ^K	50 ^K	50 ^K	50 ^K	50 ^K	60 ^K	[60] ^{HA}	70 ^K	70 ^K	(70) ^K	70 ^K	
25	80 ^K	70 ^K	50 ^K	60 ^K	60 ^F	70 ^F	60	50	40	50	110	40	50	30	80 ^P	50	70	60	40	60	80	70	70	70	
26	50	70	40	50	70 ^F	90 ^F	70	60	70	60	50	70	60	60	70	40	50	50	50	60	60	70	70	60	
27	70	60	70	60	80	60	60	40	50	80	70	70	80	60 ^P	50	50	70	80	70	60	90	100	70	90	
28	(90) ^F	60 ^F	70	80	90	80 ^F	50	60	60	80	80	50	60	60	50	50	50	50	50	50	80	70	50	50	
29	70	60 ^P	60	90	90 ^F	80 ^F	50	50	50	60	60	60	70	50 ^K	[70] ^A	50 ^K	[70] ^A	90 ^K	60 ^K	60 ^K	60 ^K	80 ^K	[70] ^K	60 ^K	
30	90	80	80	60	80	80	80	50	60	80	40	80	40	[80] ^A	60	60	50	50	80	60	70	70 ^F	100 ^F	70 ^Z	
31	60	60 ^F	(80) ^{JF}	70 ^F	90 ^F	70 ^F	60	50	50	50	50	50	50	50	50	80	60 ^P	40	50	80	60	80	90	80	
Mean Value	70	70	60	70	80	70	70	50	60	60	60	60	60	50	60	50	60	60	60	70	70	70	70	60	60
Median Value	70	70	70	60	80	70	60	50	60	60	60	60	60	50	50	50	50	60	60	70	70	70	60	70	60
Count	30	30	29	29	28	30	31	31	31	29	30	30	30	29	29	29	30	30	30	30	31	29	30	31	

YPF2

Sweep 1.0 Mc to 11/2 Mc in 2 min

Manual

Automatic

K 12

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

foF2

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	2.9	2.6	2.9	2.3 ^J	1.8	2.1	3.6	5.9	C	S	5.9	7.5 ^J	7.5 ^J	(7.7) ^P	6.6	6.3	5.4	5.2	4.3	3.6	2.9	3.0	3.2F
2	3.2F	2.9F	3.1F	3.8	3.3F	1.9	2.1F	3.9	5.5	5.1	5.9	7.6	7.3	8.3	7.2	7.3P	7.9 ^S	7.6	5.5	3.4	3.3	3.1	2.5	2.5
3	2.7	2.8	3.1	3.3	3.0	2.5	2.2	3.8	[4.2] ^C	4.7	5.9	6.5	8.5	9.6	7.8P	5.5	5.6	6.2	6.5	4.5	3.5 ^S	3.2	3.5	3.3
4	3.1	3.2	3.4	3.6	3.1	2.3	2.1	4.0	C	C	C	C	C	C	C	C	C	C	4.8	3.1	2.8	2.9 ^F	2.9	3.0F
5	2.9	3.1 ^H	3.3F	3.8	3.2	1.9	2.0	4.2	5.0	6.0	7.7	(8.7) ^P	9.1 ^J	10.3	9.4 ^J	8.3 ^J	7.3 ^J	5.1	5.0	4.3	2.8	3.0	3.3	3.2
6	3.8	3.3	3.6	3.5	3.6P	(3.2) ^P	2.5	4.6 ^H	5.4 ^H	6.5	7.2	7.3P	9.0	10.7 ^P	9.1	8.6	7.5	5.9	4.7	3.7	2.9	2.7	3.0 ^J	(3.5) ^P
7	3.2 ^J	3.1 ^F	3.6 ^S	3.8	3.2	2.8	2.7	4.3	5.3	5.7	6.5	8.0P	8.3	9.6 ^P	9.3	9.1	8.4	5.9	5.1	3.6	2.9	3.1	3.4	3.0
8	3.1	3.5	3.5	3.1	[3.0] ^F	2.9F	2.7	4.4	6.1	5.5	6.5 ^H	7.2	8.7	S	S	S	5	6.6	[5.2] ^C	3.7	2.7	2.8	2.9	[2.8] ^C
9	2.8	2.8 ^X	3.0	3.4	3.4	2.2	[3.2] ^C	4.3	5.5	6.3	6.2	7.8	8.8 ^P	10.4	9.4 ^J	7.8	7.0	6.8	7.1	5.2	2.8 ^H	3.0	2.8	2.8F
10	3.0	3.1	3.3	S	2.8	2.4 ^F	2.2	C	S	5.0	5.9	7.8	10.3	10.5 ^P	9.4	(9.6) ^P	S	6.0	5.3	3.8	3.4	3.3	2.6	2.4
11	2.3 ^J	2.6F	2.4 ^F	3.2	2.9	2.1	2.2F	5.0	5.4	5.6	5.4	6.8	8.7	9.4	8.0	6.2	7.7	7.7	5.9	4.9	3.2	3.3	3.0	2.8 ^S
12	2.9 ^S	3.0 ^H	2.9	3.3F	3.3	2.7	2.2	4.5	6.8	5.9	6.0	6.8	6.9	7.7	8.4 ^S	7.1	6.8	6.5	7.0	5.8	3.9 ^J	3.0	2.8	2.6
13	2.6	2.7	3.0	3.0	3.0F	2.5F	2.8F	4.9	6.1	5.6	5.9	7.3	7.4	8.4	8.8	8.8	8.2	7.0	6.7	5.3	3.6	2.8	2.4	2.6F
14	3.0	2.9	3.0	3.0	2.9	2.3	2.4	4.6	6.4	6.1	5.7	6.2	7.5	10.3	10.7	8.8	6.5	5.5	4.8	5.0	4.8	3.0	2.6 ^H	2.6
15	3.0	[3.3] ^A	3.6	2.9	2.6	2.5	2.7	5.0	5.3	7.0	10.3 ^J	10.6	8.9	10.6	10.0 ^P	(9.2) ^P	B	6.8	5.1	4.2	3.6	3.7	3.9	4.0
16	3.7	3.8	3.7F	[3.6] ^A	3.5	2.7F	2.9F	5.3	5.7	6.7	7.6	8.3 ^S	9.0	11.0	10.6	8.6	7.6	6.7	5.9	4.6	4.0	3.8	3.2	3.2
17	3.2	3.0 ^X	3.5F	3.2	2.4	2.4 ^V	2.4	2.5	5.0	5.9	7.2	7.1	7.5	8.6	8.2	7.0	7.0	6.4	6.5	5.9	5.3	4.3 ^H	3.2	3.1
18	3.2	3.2	3.3F	3.4	3.1	2.8	2.7	5.8	C	C	C	C	C	C	C	C	C	5.7	5.4 ^H	5.6	5.1	4.3	4.9	
19	4.4	3.9	3.6 ^H	3.2	2.8	2.7	2.8	6.3	S	6.9	6.2F	7.4	9.3	11.7 ^P	11.1	(10.1) ^P	7.4	6.7	6.8	4.2	3.0 ^H	3.1	3.2	2.9 ^F
20	3.4	3.0F	3.2	3.4	2.2	2.6	2.3	5.6	5.8	6.3	7.3	8.1	[10.4] ^C	12.7	12.6	10.4	9.4	7.2	5.8	4.4	3.6	3.8F	(3.0) ^P	3.5F
21	3.9	4.0 ^H	4.4	2.7	2.6	2.6F	2.8	4.9	5.6	6.5	7.6	8.1	9.6	10.1	10.0	7.9	6.3	6.6	6.3	5.1	4.0	4.4 ^H	4.2	4.1
22	3.7F	3.7 ^H	3.7	4.0	3.5	3.4	2.9	4.7	5.8	6.4	8.0	8.2	[9.5] ^S	(10.8) ^S	11.1P	9.8P	8.8	6.3	5.6	4.2	3.3	3.1	3.1	3.4
23	3.4 ^H	3.5	3.6	3.4	2.9	2.3	2.6	4.5	5.9	6.8 ^H	9.4 ^K	6.1 ^K	5.4 ^K	6.9 ^K	10.3 ^K	11.2 ^K	9.0 ^K	6.4 ^K	4.8 ^K	4.2 ^K	3.6 ^K	3.8 ^K	4.1 ^K	4.2 ^K
24	4.3 ^K	[5.0] ^S	5.8 ^K	3.2 ^K	2.3 ^K	2.3 ^K	2.3 ^K	4.8 ^K	6.5 ^K	7.3 ^K	5.8 ^K	6.2 ^K	7.7 ^K	11.1 ^K	(9.7) ^P	6.3 ^K	6.9 ^K	6.8 ^K	6.6 ^K	5.7 ^K	3.8 ^K	A ^K	S ^K	A ^K
25	4.6 ^F	4.4 ^K	4.4 ^K	4.3 ^K	2.5F	F	2.8 ^F	5.7	7.2	5.9	6.2	7.7	9.6 ^J	9.7	10.6	7.5	6.4	7.4	6.3	4.9	3.3 ^H	3.5	3.5	3.7
26	3.6	3.6	3.7	4.1	C	C	2.2	5.2	6.0	C	C	C	C	C	C	C	C	C	C	4.6 ^J	[4.4] ^A	4.3	3.6	2.4
27	3.0	3.8	3.9F	3.1	2.7	2.9	2.9F	5.0 ^H	6.5	6.3	8.6	9.3	10.5	11.1	(12.2) ^P	10.8	7.5	5.9	4.6	4.4	4.5 ^S	3.9	3.8	3.8
28	3.9	3.8	3.9	3.9	2.7	2.6	3.3	4.7	5.9	7.6	6.2	6.2	7.6	9.2	8.8	7.2	7.6	7.2	6.3	6.1	4.4	3.2	3.1	3.2
29	3.2	3.2	3.3	3.2	2.6F	2.6	3.7	5.3	7.3	6.5	6.5	5.8	7.3	8.6	8.1 ^J	6.4 ^J	6.7 ^H	7.0	(6.4) ^P	5.0 ^J	(4.4) ^V	4.2 ^H	[4.2] ^S	4.2 ^X
30	4.0	3.8 ^H	3.3	3.3 ^H	3.0	2.8	3.3	5.8	8.0 ^J	8.0	6.5	5.9	7.3	8.0 ^P	8.4	8.0	7.2 ^P	6.9	6.0	[5.5] ^S	5.0	[4.4] ^A	3.9	3.7 ^J
31	3.9	3.5	3.4	3.0	2.5	2.7	2.9	5.2	6.5	7.5	7.5 ^J	7.3	9.0	11.0 ^P	9.7 ^P	8.2 ^J	7.9	(8.1) ^P	5.6	5.9	4.3	3.2	3.3	3.2
Mean	3.3	3.4	3.5	3.4	2.9	2.5	2.6	4.8	6.0	6.3	6.9	7.4	8.4	9.8	9.5	8.2	7.4	6.6	5.8	4.7	3.8	3.5	3.3	3.3
Median	3.2	3.2	3.4	3.3	2.9	2.6	2.7	4.8	5.9	6.3	6.5	7.3	8.8	10.1	9.4	8.2	7.4	6.6	5.8	4.6	3.6	3.2	3.2	3.2
Count	31	31	31	30	29	31	30	27	27	27	27	27	28	27	27	27	25	28	30	31	31	30	30	30

foF2

Sweep 0.8 Mc to 20.0 Mc in 1.5 min

Manual

Automatic

Y1

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

IONOSPHERIC DATA

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

Mar. 1954

f_pF₂

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	340F	300	320	410	(330) ^J	[320]B	320	280	270	C	C	S	310	(260) ^J	(270) ^J	260	260	240	250	280	270	330	350	350F	
2	320F	(340)F	340F	280	260F	320	360F	270	270	280	350	270	300	290	300	310P	300 ^S	250	260	A	270	300	310	A	
3	350	380	320	270	260	290	300	250	[260]C	280	350	350	330	280	280P	300	300	300	250	280	330 ^S	360	350	350	
4	380	360	360	320	280	270	310	280	C	C	C	C	C	C	C	C	C	C	250	320	340	(390) ^Z	410	390F	
5	380	370 ^H	360F	290	240	380	370	270	260	330	310	(310) ^J	(300) ^J	320	(280) ^J	(260) ^J	(250) ^J	260	260	290	280	380	350	380	
6	370	360	340	290	300P	(310) ^J	B	280 ^H	300 ^H	310	300	330P	350	310P	290	290	270	250	270	300	330	380	A	(420)F	
7	(350) ^J	(310) ^J	(300) ^S	260	260	290	340	260	260	310	350	350P	320	320P	300	310	260	250	[260]A	270	380	400	330	360	
8	380	350	310	290	[320]F	350F	310	260	270	290	340 ^H	330	320	S	S	S	S	250	[380]C	300	280	370	340	[360]F	
9	390	360 ^X	330	300	250	290	[280]F	280	280	290	300	310	(330) ^J	290	(280) ^J	300	290	290	260	250	300 ^H	350	340	330F	
10	360	360	340	S	250	(360) ^J	360	C	S	270	400	380	340	300P	300	(310) ^P	S	260	260	250	250	(300)B	280	B	
11	(350) ^J	340F	(330) ^J	290	240	360	340F	240	250	260	320	350	320	290B	270	300	310	260	250	270	300	330	310	320 ^S	
12	330 ^S	350 ^H	370	340F	290	280	380	310	270	310	290	U	310	300	300 ^S	300	300	280	270	300	(280) ^J	340	310	330	
13	370	370	360	320	330F	340F	330F	260	260	260	290	290	310	300	300	310	270	260	250	280	290	330	350	370F	
14	410	350	350	340	290	320	330	300	260	260	290	300	400	330	290	270	766	260	300	320	300	260	400 ^H	A	
15	370	[340]A	320	310	270	290	320	260	280	380	(340) ^J	300	330	310	300P	(290) ^J	B	250	250	330	360	370	410	380	
16	370	360	400F	[330]A	260	330F	340F	290	310	310	300	350 ^S	320	310	290	300	280	270	260	300	300	330	360	390	
17	400	400 ^Z	340F	280	300 ^J	330	340	270	290	290	280	280	290	290	290	290	280	270	270	300	290	300 ^{PS}	300	330	
18	360	350	310F	380	400	310	340	280	C	C	C	C	C	C	C	C	C	C	260	310H	300	320	310	330	
19	300	290	300H	320	350	320	360	290	S	250	290F	360	340	300P	300	(280) ^P	260	260	250	300	310 ^H	370	380	(350) ^J	
20	360	390F	340	290	340	280	390	260	290	290	340	330	C	300	290	290	260	250	290	340	(390) ^F	(330) ^P	410F		
21	360	320H	260	260	350	340F	330	270	300	310	340	320	340	300	280	280	300	290	260	290	300	380 ^H	410	390	
22	390F	350 ^H	310	290	S	410	300	260	300	310	320	320	S	(360) ^S	300P	290P	270	270	270	260	310	400	390	390	
23	360H	310	300	280	270	280	280	240	310	360 ^H	270 ^K	290 ^K	350 ^K	450 ^K	350 ^K	270 ^K	260 ^K	250 ^K	250 ^K	270 ^K	360 ^K	400 ^K	440 ^K	400 ^K	
24	390 ^K	[340]K	280 ^K	290 ^K	330 ^K	350 ^K	340 ^K	300 ^K	310 ^K	310 ^K	270 ^K	400 ^K	380 ^K	300 ^K	(280) ^S	280 ^K	290 ^K	270 ^K	250 ^K	300 ^K	A	A	S	A	
25	(340) ^J	320 ^H	360F	(270) ^K	300F	F	(340) ^J	290	260	290	420	370	(310) ^J	290	280	270	290	250	250	250	310 ^H	370	340	370	
26	350	350	330	250	C	C	320	270	300	C	C	C	C	C	C	C	C	C	C	A	A	350	340	(310)B	
27	350	330	290F	320	340	310	260F	300 ^H	290	340	330	310	310	320	(300) ^P	250	280	250	300	210 ^S	330	350	380	380	
28	380	350	320	270	290	300	290	250	260	260	280	300	340	320	300	320	280	250	260	250	280	380	370	390	
29	380	360	330	300	(360) ^F	340	270	280	290	270	290	300	340	300	(290) ^J	(330) ^J	340 ^H	290	(260) ^J	(270) ^J	(260) ^S	360 ^H	[360] ^S	350 ^F	
30	A	360H	350	340 ^H	320	310	330	300	(280) ^J	260	300	340	350	300P	290	290	290 ^F	280	280	[270] ^S	260	A	A	(370) ^J	
31	370	390	380	340	310	280	290	260	290	280	(300) ^J	350	360	300 ^P	280 ^P	(300) ^J	300	(280) ^P	260	270	280	340	360	(370) ^S	
Mean Value	360	350	330	300	300	320	330	270	280	290	320	330	310	290	290	290	280	260	260	290	300	350	350	370	
Median Value	360	350	330	290	300	320	330	270	280	290	300	320	330	300	290	290	280	260	260	290	300	360	350	370	
Count	30	31	31	30	29	29	30	30	27	27	27	26	26	27	27	27	25	28	30	29	29	29	28	27	

f_pF₂

Sweep 0.8 Mc to 2.0 Mc in 1.5 min

Manual

Automatic

Y2

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

IONOSPHERIC DATA

138° E Mean Time

Mar. 1954

R'F2

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

R'F2

Sweep 0.8 Mc to 20.0 Mc in 1.5 min
 Manual Automatic

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

Mar. 1954

R'F1

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	Q	Q	C	C	220A	200	190	220	220H	210	210						
2							Q	Q	Q	Q	240	260	240A	240A	210	250	250H	240	A					
3							Q	C	Q	Q	290	260	230	200H	250	230	250	260						
4							Q	C	C	C	C	C	C	C	C	C	C	C						
5							Q	Q	Q	260	260	250	290	200	280	[260A]	240	Q						
6							Q	Q	Q	240	220	280	230	240	230	240	250	Q						
7							Q	Q	Q	250	250	250	220	250	250	260A	250	A						
8							Q	Q	Q	Q	230	280A	210	300A	250	250	250	A						
9							Q	Q	Q	250	250	230	250	230	A	A	230	250						
10							C	Q	Q	Q	230	230H	250A	[240A]	230	210	210	240						
11							Q	Q	Q	Q	210	[230A]	250	230	240	250	250	250						
12							Q	240	250	250	220H	250	250	250	240	250	240	250						
13							Q	Q	Q	Q	240	250	240	250	230	260	240A	240						
14							Q	A	Q	250	220	260	270	250	[250A]	250	250	250						
15							Q	Q	Q	A	A	A	210	250A	A	A	A	250						
16							Q	Q	Q	260	250	250	[260A]	[260A]	250	240	250	250						
17							Q	Q	Q	230	220	250	250	230	220	220	250	Q						
18							Q	C	C	C	C	C	C	C	C	C	C	C						
19							Q	250	240	220	250	210	250	250	250	250	250	250						
20							Q	Q	Q	250	230	230	260	210	250	240	240	240						
21							Q	260	240	240	220H	200	240	220	210	240	220	220						
22							Q	Q	Q	250	250	240	210	240	270A	240	250	260						
23							Q	250	260	240A	240	250	260A	250	260A	250	230	250						
24							Q	260	250	240	290	300	A	A	A	A	280	250						
25							Q	Q	Q	250	210	A	A	A	250A	A	A	A						
26							Q	250	C	C	C	C	C	C	C	C	C	C						
27							Q	260	230	[240A]	260	280	250	240	220	230	230	230						
28							Q	250	250	220	200	200	[220B]	240	250	250	250	250						
29							Q	250	240	240	210	210	250	[250A]	(250)B	[250]B	250	250						
30							270	250	240	230	220	230	250	250	250	250	[260A]	260A	250					
31							Q	Q	Q	250	A	A	210	200	250	240	[250A]	260						
Mean Value							250	250	240	240	240	240	240	240	240	240	250	250						
Median Value							270	250	250	240	250	240	240	240	250	250	250	250						
Count							1	10	20	25	25	27	26	25	24	26	22	1						

Y5

Manual Automatic

Sweep 0.8 Mc to 2.0 Mc in 15 min

R'F1

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

foF1

Mar. 1954

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	C	C	4.2	4.2L	4.4	4.2	3.9H	3.8	2.6						
2								Q	Q	Q	4.5	4.3	4.3	4.2	4.2	4.1	4.0H	3.7	A					
3								Q	C	Q	4.1	4.3	4.2	4.3H	4.2	[4.0]L	3.8	L						
4								Q	C	C	C	C	C	C	C	C	C	C						
5								Q	Q	4.0	4.1	4.3	5.3	4.3	4.3	[4.1]A	3.9	Q						
6								Q	Q	3.9	4.1	4.3	4.4	4.2	4.2	4.2	3.9	Q						
7								Q	Q	L	4.1	4.3	4.3	4.2	4.2	4.2	3.8L	A						
8								Q	Q	Q	3.9	4.2	4.4	4.3	4.2	4.4	3.8	A						
9								Q	Q	L	4.2	4.3	4.5	4.3	4.3	B	L	L						
10								Q	Q	Q	4.5	4.5H	4.4	[4.4]A	4.4	4.2	4.0	3.6						
11								Q	Q	Q	L	4.6	4.5	4.5	4.3	4.3	4.1	3.8	3.6					
12								Q	L	4.1	4.0	4.5H	4.3	4.3	4.3	4.1	3.8	3.6						
13								Q	Q	Q	L	L	4.3	4.3	4.0	4.2	3.6	3.4J						
14								Q	A	L	L	3.8	4.5	4.5	[4.4]A	4.2	3.9	3.0						
15								Q	Q	A	A	4.5	4.5	4.4	[4.3]A	4.2	[3.8]A	3.5						
16								Q	Q	3.9	4.2	4.7	[4.6]A	4.5	4.4	4.4	3.8	3.3						
17								Q	Q	L	4.3	4.5	4.5	4.6	4.3	4.1	4.1	Q						
18								Q	C	C	C	C	C	C	C	C	C	C						
19								Q	L	4.0	4.3	4.6	4.6	4.6	4.4	4.2	4.2	3.6L						
20								Q	Q	4.2	4.5	4.5	4.5	4.5	4.4	4.2	3.8	3.5						
21								Q	4.1	L	L	4.5H	4.5	4.5	4.4	4.2	L	3.2						
22								Q	Q	4.0	4.4	4.6	4.6	4.5	4.6	4.4	4.1	3.0						
23								Q	L	3.8	4.3	4.2	(4.5)L	4.6	4.4	4.3	3.8	3.4						
24								Q	L	4.1	3.8	4.8	4.6	A	4.4	A	4.1	3.6						
25								Q	Q	4.3L	L	A	A	A	4.1	A	A	A						
26								Q	3.4	C	C	C	C	C	C	C	C	C						
27								Q	L	4.0	4.2	4.2	4.5	4.5	4.3	4.1	4.1	L						
28								Q	L	L	4.5	4.3	4.5	4.2	4.4	[4.2]L	4.1	L						
29								Q	3.8L	[4.0]L	4.3	[4.5]L	4.7	4.6	[4.4]A	4.3	4.2	3.3						
30								L	4.0	4.3	4.3	4.7	4.5	4.4	4.3	4.2	[4.1]L	4.0	2.7					
31								Q	Q	4.1	[4.3]A	4.5	4.5	4.5	4.3	4.1	[3.9]A	3.7						
Mean Value								—	3.8	4.1	4.2	4.4	4.5	4.4	4.3	4.2	3.9	3.4	2.7					
Median Value								—	3.9	4.0	4.3	4.5	4.5	4.4	4.3	4.2	3.9	3.5	2.7					
Count								—	4	14	21	26	27	26	27	25	25	18	1					

foF1

Sweep ϕ ϕ Mc to 2.0 Mc in 15 min

Manual Automatic

Y 4

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

foE

Mar. 1954

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	2.0	C	A	A	A	A	A	A	A	A							
2									1.9	2.0	2.8	2.9	A	A	A	2.9	2.7	[24]A	2.1						
3								B	C	2.6	2.9	3.0	3.0	3.2	2.5	2.9	2.6	2.2							
4								1.8	C	C	C	C	C	C	C	C	C	C							
5								1.9	2.0	2.7	3.0	2.8 ^J	[27]A	2.6	A	A	A	A							
6								B	2.2	2.8	2.9	2.9	[31]A	3.3	3.1	3.0	A	A							
7								1.8	2.3	[26]A	2.9	3.1	2.8	2.8	A	A	A	A							
8								B	2.1	A	A	3.0	3.0	A	A	A	A	2.2							
9								B	2.3	2.8	2.8	[28]A	2.9 ^J	3.2	A	A	2.8	2.4							
10								C	A	2.7	2.9	A	A	A	3.2	3.0 ^H	2.6	2.2	1.8						
11								A	2.5	2.7	2.9	3.0	3.0	A	3.2	3.0	2.8	2.4							
12								B	2.5	2.6	3.0	3.1	3.2	3.1	3.1	2.9	2.4	2.3	1.5 ^J						
13								20	2.5	2.8	3.2 ^H	AF	A	A	A	2.8 ^J	A	A							
14								A	2.2	2.5	2.9	3.0	3.2	3.2	3.0	3.0	2.7	2.0							
15								1.8	[22]A	2.7	3.0	3.1	3.2	3.0	A	A	2.6	2.4							
16								1.8 ^B	2.3	2.7	3.0	2.9	2.8	2.9	2.9	2.9	2.5	2.5							
17								1.8	2.5	2.6	2.8 ^J	2.8	A	A	2.6	3.0	2.8 ^H	A							
18								B	C	C	C	C	C	C	C	C	C	C							
19								1.9 ^A	2.3	2.7 ^F	[28]A	3.0	3.2	3.3	3.2	3.0	2.7	A							
20								1.8	2.3	2.6	2.6	2.9 ^J	3.2	[30]A	2.8	3.0	2.8	2.4	1.8 ^A						
21								2.2	2.5 ^H	3.0 ^H	[31]A	3.2	[34]A	3.5	3.3	[30]A	2.8	A							
22								1.7 ^F	2.4	2.5	2.9	3.2	3.2	A	A	A	2.7	2.6	1.8 ^A						
23								2.1	2.3	2.6	2.9	3.1	3.2	3.1	3.0	2.8	2.6	2.3	1.8						
24								B	2.2	2.7	2.8	2.9	3.0	3.1	3.0	3.0	2.9	2.3	1.8						
25								1.8	2.4 ^H	2.5	2.5	A	A	A	A	A	A	A	A						
26								1.8 ^B	2.3	C	C	C	C	C	C	C	C	C	C						
27								1.8	2.3	2.6	A	A	3.2	3.1	2.9	2.9	2.8	2.3	2.0						
28								1.8	2.4	2.7	3.0	3.0	3.2	3.2	A	A	2.8	A							
29								1.9	2.5	2.7	3.3	3.0	3.1	3.2 ^A	A	A	2.4	A							
30								A	2.6	2.8	2.9	3.1	3.2	3.3	3.2	3.1	3.2	2.5	2.0						
31								A	A	2.7	2.7	A	A	A	3.0	[28]A	2.6	2.6							
Mean Value								1.9	2.3	2.7	2.9	3.0	3.1	3.1	3.0	2.9	2.7	2.4	1.8						
Median Value								1.8	2.3	2.7	2.9	3.0	3.2	3.2	3.0	3.0	2.7	2.4	1.8						
Count								1.8	2.6	2.6	2.5	2.2	2.1	1.8	1.6	1.8	2.1	1.7	9						

Y6

Manual Automatic

Sweep 0.8 Mc to 20.0 Mc in 1.5 min

foE

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f_oF₂

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

f_oF₂

Sweep 0.8 Mc to 20.0 Mc in 1.5 min Manual Automatic

Y7

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

IONOSPHERIC DATA

Yamagawa
Lat. 31° 12.5' N
Long. 130° 37.7' E

Mar. 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	2.7	3.1	2.4	2.4	2.0	E	E	2.0	G	C	C	3.8	3.9	3.6	3.8	2.9	3.4	2.3	1.9	2.5	2.5	E	E	E
2	2.0	2.2Y	3.3	2.4	2.0	E	2.1	G	G	G	G	G	4.4	4.2	4.6	G	3.3	3.6	4.2	2.9	2.2	2.0	2.6	2.4
3	E	E	E	E	E	E	E	B	C	G	G	G	G	G	4.4	3.8	3.8	G	E	2.0	2.1	E	E	E
4	E	E	E	1.8	E	2.1	E	2.0	C	C	C	C	C	C	C	C	C	C	3.1	2.9	2.6	E	1.8	E
5	E	E	E	E	E	E	E	G	3.0	3.8	4.3	6.7	7.3	4.6	3.4	5.4	3.0	3.2	4.1	E	E	2.4	2.2	E
6	2.1	2.4	E	E	1.8	E	E	2.0	G	4.0	3.9	3.9	5.3	4.4F	5.0	3.7	4.4	3.3	3.3F	3.8	2.8	3.1	4.3	2.5
7	E	2.1	E	2.0	E	E	2.4	G	G	3.2	G	G	4.5	5.6	5.3	6.6	4.6	4.8	6.1	4.5	3.0	2.8	2.9	E
8	E	E	E	E	E	E	E	B	G	3.2F	3.8	4.6	4.2	4.6	5.6	4.4	3.4F	3.0	C	2.2	2.2	3.2	2.8	C
9	E	E	E	E	E	E	C	B	G	3.2	G	3.2	G	G	3.6	5.4	G	G	3.0	2.4	E	E	E	E
10	E	E	E	E	E	E	E	C	2.4	3.5	4.0	4.4	5.3	5.3	4.0	3.3	3.1	G	G	E	2.2	E	E	E
11	E	2.0	E	E	E	E	E	3.3	G	G	G	5.0	4.0	3.5	G	G	G	3.2	2.2	2.1	2.1	E	3.0	E
12	E	E	E	3.0	E	E	E	B	G	G	G	4.2F	4.1	4.2Y	G	3.9	G	3.3	2.6	3.0	3.4	E	E	E
13	E	2.4Y	1.1	2.4F	2.4	1.0	E	G	G	3.2	G	4.5	4.5	4.5	3.7	G	3.4	2.3	2.2	3.1	3.6	E	E	E
14	E	1.0	2.6	E	E	E	E	3.0	3.6	G	G	4.5	4.4	4.6	6.0	4.4	4.0	4.0	2.6	2.0	2.0	1.8	2.0	3.0
15	6.3	6.9	5.2	3.5	3.0	2.4	E	3.0	4.6	5.4	5.2	4.4	4.3	6.9	7.4	5.8	5.8	4.2	3.3	1.8	E	E	E	E
16	2.9	4.0	3.2	4.3	E	1.9	E	G	3.9	4.2	4.7	7.8	7.4	6.8	5.0	G	3.6F	3.6F	1.8	E	E	E	E	E
17	2.2	2.6	1.9	2.2	2.8	3.1	2.2	G	G	G	4.1	G	4.3	3.0	G	4.4	G	3.2	E	2.1	2.1	E	E	E
18	E	E	E	E	E	E	E	B	C	C	C	C	C	C	C	C	C	C	3.4	3.0	2.6	2.6	E	E
19	E	E	E	E	E	E	E	3.1	3.4	G	4.0	3.3	3.9	G	G	G	G	3.1	2.6	E	2.0	E	2.0	2.1
20	2.2	E	E	1.9	E	E	E	G	G	G	3.8	G	G	4.0	3.6	4.6Y	G	G	2.0	E	E	2.6	2.2	E
21	E	E	E	E	E	E	E	G	G	G	4.0	G	3.6	G	G	3.2	G	3.0	2.5	E	E	E	E	E
22	E	E	E	E	E	E	E	G	G	G	G	G	G	4.0	4.5	4.2Y	3.2	3.7	2.3	E	2.0	2.0	E	E
23	E	E	2.0	E	E	E	E	G	G	G	4.3	3.9	G	4.6	3.4	G	G	G	G	E	E	E	E	E
24	E	E	E	1.6	E	E	2.0	G	G	3.9	G	4.0	4.6	4.8	4.8	4.9	4.2	4.1	G	3.6	4.3	4.8	3.4	6.1
25	3.0	2.6	2.6	2.0	3.2	E	E	G	3.6	4.1	5.1	6.6	5.5	4.8	4.0	4.2	4.5	3.3	3.2	4.9	3.8	2.3	2.6	2.0
26	2.2	2.0	E	1.3	2.6	2.4	2.2	3.6	3.8	C	C	C	C	C	C	C	C	C	C	4.8	5.0	2.6	2.6	2.4
27	3.0	2.4	2.4	E	E	1.5	2.4	G	3.4	G	5.0	4.6	G	G	G	G	G	G	G	E	E	E	E	E
28	E	E	E	E	E	E	E	3.4Y	3.7	3.2	4.4Y	G	G	G	4.0F	4.2	4.2	3.6	3.8	3.2	3.1	E	E	E
29	E	E	E	E	E	E	E	G	3.2	4.2	4.2	4.5	4.5	3.3	4.6	3.3	G	2.8	5.3	5.3	3.2	2.5	2.9	2.6
30	4.6	3.2	E	E	E	E	E	3.0	3.6	3.9	G	G	4.3	5.2	6.2	4.9	4.5F	4.8	G	1.9	2.0	4.8	3.3	2.7
31	2.4	2.7	2.0	E	E	2.2	E	3.5	3.2	5.0	6.3	5.1	4.0F	3.9	G	4.7	5.9	2.2	3.8	2.4	3.0	2.7	2.0	1.9
Mean	3.0	2.8	2.6	2.4	2.5	2.1	2.2	2.9	3.5	3.9	4.5	4.7	4.7	4.6	4.6	4.4	4.0	3.4	3.2	3.0	2.8	2.8	2.7	2.8
Median	E	E	E	E	E	E	E	G	G	3.2	4.0	3.8	4.2	4.2	4.0	4.0	3.4	3.2	2.6	2.2	2.2	2.2	1.8	E
Count	31	31	31	31	31	31	30	25	28	27	27	28	28	28	28	28	28	28	29	31	31	31	31	30

fEs

Resp. 0.2 Mc to 20.0 Mc in 1.5 min

Manual

Automatic

Y8

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

(M3000)F2

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.8F	3.0	3.0	2.7	(3.0)J	3.1	3.1	3.2	3.4	C	C	S	3.1	(3.5)J	(3.4)J	3.4	3.5	3.8	3.6	3.2	3.3	3.0	2.8	2.8F
2	3.0F	3.0F	2.9F	3.3	3.3F	3.0	2.8F	3.5	3.5	3.2	2.9	2.5	3.3	3.4	3.2	3.1P	3.2PS	3.5	3.5	3.1	3.4	3.1	3.1	3.2
3	2.8	2.8	3.0	3.3	3.5	3.2	3.6	3.4	[3.3]C	3.2	3.0	2.8	(3.0)B	3.4	3.3P	3.2	3.2	3.2	3.6	3.3	3.0PS	2.7	2.9	2.9
4	2.8	2.9	3.1	3.2	3.3	3.3	3.1	3.3	C	C	C	C	C	C	C	C	C	C	3.6	2.9	2.8	2.8F	2.6	2.8F
5	2.7	2.8H	2.9F	3.2	3.6	2.7	2.9	3.3	3.4	3.1	3.2	(3.2)XP	(3.2)J	3.2	(3.4)J	(3.7)J	(3.8)J	3.4	3.4	3.1	3.2	2.8	2.8	2.7
6	2.7	2.8	3.0	3.2	3.0P	(3.0)P	2.9	3.4H	3.1	3.2	3.0P	2.9	3.1P	3.2	3.2	3.5	3.7	3.4	3.1	2.9	2.7	(3.0)J	(2.7)P	
7	(3.0)J	(3.2)J	(3.1)S	3.5	3.4	3.3	3.0	3.3	3.4	3.1	2.9	2.9P	3.0	3.1P	3.3	3.2	3.4	3.5	3.3	3.4	2.7	2.7	3.0	2.8
8	2.7	2.9	3.1	3.2	(3.0)F	2.8F	3.0	3.3	3.4	3.2	3.0H	3.0	3.0	S	S	S	S	3.4	[3.3]C	3.2	3.2	2.7	2.9	[2.8]C
9	2.6	2.8E	3.0	3.2	3.5	3.1	[3.2]C	3.2	3.3	3.4	3.3	3.2	(3.0)P	3.4	(3.5)J	3.3	3.3	3.4	3.5	3.8	3.1H	2.8	3.0	3.0F
10	2.8	2.8	2.9	S	3.5	(2.9)P	2.8	C	S	3.2	2.7	2.8	3.1	3.2P	3.2	(3.1)P	S	3.4	3.4	3.6	3.6	3.3	3.2	3.0
11	(3.0)J	2.8F	(2.9)J	3.4	3.6	2.8	2.9F	3.6	3.8	3.5	3.0	3.0	3.1	3.3	3.4	3.2	3.2	3.4	3.4	3.3	3.0	3.0	3.1	3.0PS
12	3.0PS	2.9H	2.8	3.0F	3.3	3.2	2.7	3.0	3.4	3.2	3.3	3.2	3.1	3.3	3.3PS	3.3	3.2	3.3	3.4	3.2	(3.4)J	2.8	3.0	2.8
13	2.8	2.7	2.8	2.9	2.9F	2.9F	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.4	3.5	3.6	3.3	3.2	2.8	3.0	2.8F
14	2.5	2.8	2.9	2.9	3.1	3.0	3.0	3.1	3.5	3.4	3.1	3.2	2.7	3.0	3.4	3.5	3.6	3.5	3.2	3.0	3.2	3.3	2.7H	2.8
15	2.8	(3.0)A	3.2	3.2	3.4	3.3	3.0	3.5	3.7	2.7	(3.0)J	3.2	2.9	3.2	3.2P	(3.2)P	B	3.5	3.6	3.0	2.8	2.9	2.6	2.8
16	2.7	2.8	2.7F	[3.1]A	3.5	2.9F	2.9F	3.1	3.1	3.1	3.0	2.9PS	3.0	3.2	3.3	3.2	3.4	3.4	3.4	3.2	3.1	2.9	2.7	2.7
17	2.6	2.6Z	2.9F	3.3	3.1P	3.0	2.9	3.4	3.3	3.2	3.4	3.4	3.3	3.4	3.3	3.4	3.4	3.2	3.4	3.2	3.2	3.0PS	3.1	3.0
18	2.8	3.0	3.0F	2.7	2.7	3.0	2.8	3.4	C	C	C	C	C	C	C	C	C	C	C	3.3	3.1H	3.2	3.0	3.1
19	3.1	3.2	3.1H	3.0	2.8	2.9	2.8	3.3	S	3.7	3.2F	2.8	2.9	3.1P	3.2	(3.3)P	(3.4)S	3.3	3.6	3.2	3.0H	2.8	2.8	(3.0)J
20	2.8	2.6F	3.0	3.3	2.9	3.2	2.7	3.3	3.2	3.3	3.0	3.1	[3.2]C	3.2	3.1	3.2	3.4	3.6	3.5	3.1	3.0	2.6F	(3.0)P	2.7F
21	2.9	3.0H	3.5	3.5	2.8	2.9F	2.9	3.4	3.2	3.1	3.0	3.2	3.1	3.3	3.4	3.3	3.2	3.4	3.4	3.3	3.1	2.7H	2.7	2.7
22	2.7F	2.9H	3.1	3.2	3.6	2.6	3.1	3.5	3.2	3.0	3.1	3.1	(2.8)S	(2.7)PS	3.2P	3.2P	3.4	3.3	3.3	3.5	3.0	2.7	2.8	2.7
23	2.8H	3.0	3.3	3.3	3.3	3.3	3.2	3.5	3.0	2.7H	3.6K	3.3K	2.8K	2.5K	2.9K	3.3K	3.5K	3.5K	3.7K	3.5K	2.9K	2.6K	2.6K	2.8K
24	2.8K	[3.0]E	3.2K	3.1F _k	2.9F _k	2.9F _k	3.2K	3.2K	3.1K	3.4K	2.7K	2.7K	2.7K	3.3K	(3.3)PS	3.4K	3.3K	3.5K	3.5K	3.2K	3.0K	A	5	A
25	(2.9)E	3.0H _k	3.1F _k	3.3F _k	3.0F	F	(2.8)J	3.2	3.4	3.4	2.6	2.9	(3.3)J	3.5	3.4	3.5	3.4	3.6	3.6	3.5	3.1H	2.8	3.0	2.7
26	2.9	2.9	3.0	3.6	C	C	3.0	3.3	3.1	C	C	C	C	C	C	C	C	C	C	(3.2)J	3.0	3.0	3.0	3.0
27	3.0	3.0	3.4F	2.9	2.9	3.1	3.3F	3.3H	3.3	2.9	3.0	3.1	3.0	3.1	(3.2)P	3.6	3.4	3.5	3.6	3.1	3.1PS	3.0	2.8	2.8
28	2.7	2.9	3.0	3.4	3.2	3.1	3.3	3.6	3.3	3.4	3.3	3.0	3.0	3.1	3.2	3.0	3.3	3.5	3.3	3.4	3.3	2.7	2.9	2.8
29	2.8	2.9	3.0	3.2	2.8F	2.8	3.3	3.3	3.2	3.5	3.4	3.2	3.1	3.3	(3.3)J	(3.1)J	3.4	(3.4)J	(3.4)J	(3.4)J	(3.4)J	(2.8)S	2.9E	2.9E
30	3.0	2.9H	2.9	2.9H	3.0	3.0	3.0	3.2	(3.3)J	3.5	3.2	3.0	2.9	3.2P	3.2	3.4	3.4P	3.4	3.3	[3.4]S	3.5	[3.2]A	2.9	(2.8)J
31	2.8	2.6	2.7	3.0	3.1	3.3	3.4	3.4	3.3	3.4	(3.3)J	2.8	2.8	3.1P	3.3P	(3.2)J	3.2	(3.2)P	3.4	3.4	3.3	2.9	2.8	2.8
Mean Value	2.8	2.9	3.0	3.2	3.2	3.0	3.0	3.3	3.3	3.2	3.1	3.0	3.0	3.2	3.3	3.3	3.4	3.4	3.5	3.3	3.1	2.9	2.9	2.8
Median Value	2.8	2.9	3.0	3.2	3.1	3.0	3.0	3.3	3.3	3.2	3.1	3.0	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.4	3.1	2.8	2.9	2.8
Count	3/	3/	3/	3/	3/	2.9	3.1	3.0	2.7	2.7	2.7	2.7	2.8	2.7	2.7	2.7	2.5	2.8	3.0	3/	3/	3/	3.0	3.0

(M3000)F2

SwEEP ϕ δ Mc to 20.0 Mc in \sqrt{S} min

Manual Automatic

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

Lat. 31° 12.6' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

Mar. 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	1.6	2.1A	1.6	1.6	1.4	1.6	1.7	1.7	2.3	C	C	A	3.1	3.2	3.2	2.9	2.4	2.3	2.0	2.6A	1.6	1.6	1.7	1.6F
2	1.5	1.5F	1.4	E	A	0.8	1.6	1.9	2.7	2.0	3.2	3.4	A	A	3.2	3.1	2.8	2.4	3.1A	3.2	2.0A	1.6	1.8	2.3A
3	1.4	1.4	E	1.3	1.5	1.5	1.7	1.8	(2.4) ^C	C	C	3.5	3.4	3.2	3.6A	3.2	3.1	2.8	2.1	1.7	1.7	2.0	1.8	1.7
4	1.7	1.6	1.2	1.2	1.2	1.3	1.6	2.0	C	C	C	C	C	C	C	C	C	C	C	2.0A	2.1A	1.8	1.6	1.5
5	1.4	1.0	E	E	E	1.4	1.6	1.9	2.5	2.9	3.5	3.4	3.6	3.4	3.4	4.8A	3.0	2.6	1.9	1.5	1.6	1.7	1.5	1.5
6	1.3	1.4	1.8	1.8	1.6	1.8	2.4	1.8	2.5	3.0	3.0	3.8	3.5	3.4	3.2	3.3	2.9	2.7	2.5A	2.6A	2.1A	2.2A	3.3A	2.0A
7	1.8	1.8	1.4	1.8	1.8	1.4	2.2	2.0	2.6	3.0	3.4	3.8	3.5	3.7	3.6	3.6	2.9	3.8A	4.5A	A	A	2.2A	1.8	1.7
8	1.4	1.5	1.6	E	F	E	1.4	1.7	2.8	2.9	3.1	3.9	3.4	3.8	3.4	3.0	2.8	3.0	(2.3) ^C	1.6	1.6	2.2A	2.0A	(1.9) ^C
9	1.8	1.6	1.5	1.4	1.4	1.3	(1.6) ^C	1.9	2.7	3.0	3.4	3.4	3.6	3.6	2.8	4.5A	2.7	2.5	2.2A	(2.0)A	1.8	1.8	1.5	1.7
10	1.5	1.3	1.0	1.0	1.0	1.8	2.2	(2.5) ^C	2.8	3.2	3.0	3.5	3.8	4.6A	3.2	3.0	3.1	2.6	1.9	1.8	1.6	1.6	1.8	2.1
11	1.6	1.8F	1.5F	1.5	1.3	1.5	1.6	2.4	2.7	3.0	3.3	3.9	3.7	3.6	3.5	3.5	2.9	2.5	1.7	2.0A	1.6	1.7	1.7	1.8
12	1.6	1.8	1.3	1.0	1.4	1.0	1.6	1.8	2.7	3.1	3.2	3.4	3.6	3.6	3.5	3.3	2.8	2.8	1.9	2.2A	2.6A	1.5	1.8	1.6
13	1.6	1.3	1.0	1.0	1.3	1.5	1.6	2.0	2.7	3.1	3.5	3.3	3.7	3.5	3.7	3.6	3.0	1.8	2.2	1.6	1.8	1.6	1.6	1.6
14	1.5	1.3	E	1.4	1.6	1.6	1.6	2.4	2.8	2.8	3.0	3.3	3.6	3.5	4.5A	3.5	2.8	2.2	2.2	1.8	1.6	1.6	1.8	2.3A
15	1.8	(1.8)A	1.8	1.6	1.6	1.7	1.6	1.8	2.5	4.4A	4.3A	4.1	3.9	A	4.6A	3.9A	4.7A	2.7	(2.0)A	1.4	1.6	1.6	1.7	1.6
16	(2.0)A	2.3A	1.8	(1.8)A	1.7	1.4	1.7	2.2	2.6	2.9	3.1	3.0	4.8A	4.0A	2.9	3.1	2.7	2.4	1.8	1.8	1.6	1.8	1.6	1.6
17	1.6	1.8	E	1.2	1.5	1.5	1.7	1.8	3.1	3.3	3.2	3.6	3.2	3.4	2.8	3.2	3.1	2.0	1.8	2.0A	1.7	1.6	1.5	1.5
18	1.5	1.4	1.4	1.4	E	E	1.0	2.0	C	C	C	C	C	C	C	C	C	C	2.3	1.8	1.8	1.8	1.5	1.5
19	1.4	1.4	1.3	1.3	1.4	1.4	1.5	2.1	2.8	2.8	3.1	3.8	3.6	3.8	3.5	3.7	3.2	2.5	2.1	1.8	1.6	1.6	1.7	1.7F
20	1.7	1.7	1.4	1.7	1.7	1.5	1.5	2.4	2.7	2.9	3.3	3.2	3.6	3.1	3.4	3.1	3.2	2.7	2.3	1.4	1.6	1.8	1.6	1.5
21	1.5	0.8	E	1.4	1.6	1.4	1.6	2.3	2.8	3.0	3.6	3.7	3.7	3.6	3.4	3.2	3.3	2.6	2.1	1.6	1.5	1.5	1.6	1.7
22	1.4	1.8	1.6	E	3.0 ^S	1.8	1.8	2.2	2.9	3.3	3.5	3.7	3.5	3.7	3.8	3.2	2.9	2.7	2.1	1.7	1.6	1.7	1.7	1.7
23	1.7	1.6	1.6	1.8	1.6	1.5	1.6	2.1	2.8	3.1	3.5	3.5	3.7	3.8	3.5	3.0	2.8	2.6	1.8	1.7	1.7	1.7	1.5	1.6
24	1.5	1.5	1.4	1.6	1.4	1.3	1.7	2.1	2.6	3.1	3.3	4.0A	3.9	4.5A	4.0A	3.6	3.4	2.8	1.9	1.8	3.2A	(3.2)A	3.2	(2.7)A
25	2.2A	2.0A	2.0A	1.8	1.6	1.5	1.7F	2.2	2.9	2.8	3.5 ^A	5.6A	5.0A	4.8A	4.0A	4.5	3.6A	3.3	2.6	(2.4)A	2.3A	1.8	1.7	1.6
26	1.5	1.3	1.2	1.6	A	A	1.6	2.8	2.7	C	C	C	C	C	C	C	C	C	C	4.4A	(3.3)A	2.2A	2.6A	1.8
27	2.2A	1.7	1.5	1.6	1.6	1.4	1.5	2.6	2.9	2.9	4.1A	3.1	3.9	3.6	3.6	3.2	3.0	2.6	2.1	1.6	1.5	1.7	1.6	1.7
28	1.7	1.4	1.4	1.3	1.3	1.3	1.8	2.5	2.9	3.2	3.1	3.2	3.4	3.8	3.6	3.4	3.0	2.8	1.8	1.9	(1.8)A	1.6	1.6	1.6
29	1.4	1.1	1.2	E	E	1.2	1.5	2.2	2.7	3.0	3.3	3.4	3.7	3.9	4.7	3.9	3.8	3.0	5.0A	4.0A	1.8	1.7	(1.8) ^S	1.8
30	3.5A	1.5	E	E	1.0	E	0.9	2.4	2.6	3.0	3.3	3.5	3.6	3.4	3.4	3.3	3.5	3.7A	2.0	1.7	1.8	(2.6)A	3.3A	2.3A
31	2.2A	1.8	2.0A	1.7	1.6	1.8	1.8	2.0	3.4	3.4	5.5A	4.1A	3.3	3.4	3.5	3.5	4.5A	2.9	2.3	2.4A	2.0A	1.7	1.6	1.6
Mean Value	1.7	1.6	1.5	1.5	1.5	1.5	1.6	2.1	2.7	3.0	3.4	3.6	3.7	3.7	3.6	3.5	3.1	2.7	2.3	2.0	1.9	1.8	1.7	1.8
Median Value	1.6	1.5	1.4	1.4	1.4	1.4	1.6	2.1	2.7	3.0	3.3	3.5	3.6	3.6	3.5	3.3	3.0	2.6	2.1	1.8	1.7	1.7	1.7	1.7
Count	31	31	31	31	28	30	31	31	29	27	27	27	27	26	28	28	28	28	28	30	30	31	31	31

fminF

Sweep 0.8 Mc to 2.0 Mc in 1.5 min

Manual Automatic

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

Lat. 31° 12.5' N
Long. 130° 37.7' E

Yamagawa

IONOSPHERIC DATA

135° E Mean Time

Mar. 1954

f_{minE}

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	1.3	1.6	1.2	1.8	E	E	1.8	1.6	C	C	1.7	1.7	1.7	1.7	1.5	1.4	1.7	1.8	1.3	1.7	E	E	E
2	1.2	E	E	E	E	1.6	1.5	1.4	1.6	1.5	1.7	1.6	1.7	1.7	1.5	1.6	1.5	1.6	1.8	1.6	1.6	1.6	1.7	1.6
3	E	E	E	E	E	E	B	C	C	1.4	1.5	1.5	C	C	C	1.3	1.6	1.6	E	1.7	1.7	E	E	E
4	E	E	E	1.4	E	1.7	E	1.6	C	C	C	C	C	C	C	C	C	C	1.5	1.4	1.5	E	1.5	E
5	E	E	E	E	E	E	E	1.2	1.3	1.5	1.5	1.5	1.5	1.5	2.0	1.8	1.8	1.8	1.6	E	1.8	1.7	E	E
6	1.6	E	E	E	1.6	E	E	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.6	1.7	1.7	
7	E	1.4	E	1.6	E	E	1.4	1.7	1.7	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.2	1.5	1.7	1.6	1.6	E	
8	E	E	E	E	E	E	E	B	1.5	1.6	1.6	1.6	1.6	1.8	1.8	1.6	1.8	1.6	1.6	1.8	1.6	1.6	1.6	C
9	E	E	E	E	E	E	E	C	1.4	1.5	1.5	1.6	1.5	1.5	1.8	1.8	1.8	1.8	1.6	1.6	E	E	E	E
10	E	E	E	E	E	E	E	C	1.8	1.5	1.6	1.6	1.7	1.6	1.6	1.5	1.5	1.6	1.5	1.6	1.8	E	E	E
11	E	1.6	E	E	E	E	E	1.5	1.6	1.4	1.5	1.5	1.6	1.7	1.6	1.7	1.6	1.5	1.2	1.8	1.6	E	1.7	E
12	E	E	E	1.0	E	E	E	B	1.4	1.5	1.5	1.6	1.6	1.5	1.5	1.4	1.4	1.6	1.4	1.6	1.5	E	E	E
13	E	1.2	E	1.8	E	0.8	E	1.6	1.4	1.5	1.8	1.8	1.7	1.8	1.7	1.8	1.8	1.6	1.8	1.5	1.6	E	E	E
14	E	E	E	E	E	E	E	1.8	1.6	1.5	1.5	1.6	1.5	1.6	1.5	1.4	1.5	1.5	1.6	1.8	1.6	1.6	1.8	1.5
15	1.4	1.3	1.8	1.7	1.6	1.4	E	1.6	1.8	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.7	1.5	1.6	E	E	E	E
16	1.5	1.3	1.2	1.6	E	1.4	E	1.8	1.6	1.4	1.4	1.6	1.6	1.5	1.6	1.7	1.5	1.5	1.6	1.6	1.6	E	E	E
17	1.4	1.3	E	E	E	0.9	1.8	1.3	1.4	1.5	1.6	1.6	1.6	1.8	1.8	1.8	1.8	1.6	E	1.6	1.7	E	E	E
18	E	E	E	E	E	E	E	B	C	C	C	C	C	C	C	C	C	C	1.6	1.8	1.6	1.8	E	E
19	E	E	E	E	E	E	E	E	1.6	1.5	1.4	1.5	1.6	1.6	1.6	1.4	1.6	1.6	1.5	E	1.8	E	1.7	1.7
20	1.7	E	E	1.7	E	E	E	1.7	1.5	1.8	1.5	1.8	1.6	1.8	1.8	1.5	1.6	1.5	1.5	E	E	1.6	1.7	E
21	E	E	E	E	E	E	E	1.4	1.5	1.8	1.6	3.0	3.1	1.8	2.5	1.8	1.8	1.8	1.8	E	E	E	E	E
22	E	E	E	E	E	E	E	2.0	1.6	1.5	1.5	1.7	1.7	2.3	1.6	1.6	1.6	1.5	1.5	E	1.8	E	E	E
23	E	E	E	E	E	E	E	1.7	1.7	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.4	1.5	E	E	E	E	E
24	E	E	E	1.4	E	E	1.8	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.4	1.6	1.6	1.6	1.6	1.6	1.7	1.6
25	1.8	E	E	E	E	E	E	1.6	1.6	1.6	1.5	1.8	1.8	1.8	1.7	2.3	1.8	1.8	1.8	1.7	1.8	1.8	1.5	1.5
26	1.5	1.3	E	E	1.0	1.0	1.6	1.8	1.6	C	C	C	C	C	C	C	C	C	C	1.5	1.6	1.8	1.8	1.8
27	1.8	1.6	E	E	E	E	1.8	1.6	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.7	E	E	E	E	E
28	E	E	E	E	E	E	E	1.6	1.5	1.6	1.8	1.8	2.1	2.2	1.8	2.2	1.8	1.6	1.6	1.3	1.5	E	E	E
29	E	E	E	E	E	E	E	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.8	1.6	1.8	1.8	1.6	1.4	1.4	1.4	1.4	1.6
30	0.9	E	E	E	E	E	E	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6	1.7	1.6
31	1.7	0.9	1.4	E	E	1.8	E	1.8	1.6	1.6	1.5	1.6	1.6	1.5	1.7	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.7	1.6
Mean Value	1.6	1.3	1.6	1.5	1.5	1.3	1.7	1.6	1.6	1.5	1.5	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6
Median Value	E	E	E	E	E	E	E	E	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.4	E
Count	31	31	31	31	31	31	30	25	28	27	27	28	28	28	28	28	28	28	28	31	31	31	31	30

f_{minE}

Sweep 0.8 Mc to 2.4 Mc in 1.5 min Manual Automatic

Y11

IONOSPHERIC DATA IN JAPAN FOR MARCH 1954

電波傳播月報 第6卷 第3号

1954年4月25日 印刷
1954年4月30日 発行

(不許複製非売品)

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

発行所

郵政省電波研究所
東京都北多摩郡小金井町小金井新田一之久保573
電話 国分寺 138, 139, 151

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