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IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 1952

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PREPARED BY THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

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THE RADIO RESEARCH LABORATORIES

KOKUBUNJI, TOKYO, JAPAN

IONOSPHERIC DATA IN JAPAN FOR NOVEMBER 1952

CONTENTS

PREFACE

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

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

The First Division has the following three sections:

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

Tropospheric Propagation Section which shall carry on researches on troposhere 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 purposes and conduct the approval service of types ot radio equipments.

The Administrative Division shall conduct the general affairs of the Laboratories.

The ionospheric sounding is, as heretofore, being carried out by the four observatories at Wakkanai, Akita, Kokubunji (Tokyo) and Yamagawa.

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

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

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

Aug. 1952

SITE OF THE IONOSPHERIC STATIONS

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

	longitude	latitude	site
Wakkanai	141° 41.1′ E	45° 23.6′ N	Wakkanai-shi, Hokkaido
Akita	140° 08.2′ E	39° 43.5′ N	Tegata Nishishin-machi, Akita-shi, Akita-ken
Kokubunji	139° 29.3′ E	35° 42.4′ N	Koganei-machi, Kitatama-gun, Tokyo-to
Yamagawa	130° 37.7′ E	31° 12.5′ N	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

REMARKS ON SYMBOLS

All symbols in the table are used in accordance with "Production and Reduction of Ionospheric Information" of "RESOLUTION OF THE IX GENERAL ASSEMBLY OF URSI SEPTEMBER 1950" (CRWO-F25) except f_{min} E and f_{min} F for E and F regions respectively instead of f_{min}, taken as f_{min} s in the above Resolution, in order to avoid the interruption of preceding form of data.

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Nov. 1952 | **foF2** | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(3.3)^{FS}	[3.3]^{S}	3.3^{P}	[3.0]^{S}	2.8	(3.3)^{P}	3.9	5.2	7.2	8.6	(10.4)^{P}	[10.3]^{S}	10.2	6.5	6.6	6.4	6.2^{P}	6.0	4.9^{P}	4.8^{P}	4.0	(3.2)^{P}	3.3^{J}	[3.3]^{S}
2	(3.3)^{P}	3.5	(3.3)^{P}	[3.2]^{A}	3.2^{P}	(3.4)^{P}	3.5^{P}	4.5	[5.9]^{A}	7.3	8.0	9.0	7.9	6.7	6.5	6.3	7.1^{J}	4.8	3.4	2.9^{P}	[2.9]^{FS}	2.9^{F}	2.7^{FP}	[2.8]S
3	(2.8)^{FSP}	[3.0]^{S}	(3.1)^{P}	2.8	3.6	(2.9)^{P}	4.4^{P}	S	S	SB	(7.0)^{P}	7.2^{P}	(8.8)^{P}	B	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	S	5.6^{J}	6.1	(6.6)^{P}	7.9	6.2^{P}	5.5	3.1^{P}	2.6	[2.6]^{S}	(2.7)^{P}	(2.9)^{P}	(3.1)^{P}	3.1^{P}
5	3.1	3.2^{F}	3.4^{F}	3.5^{F}	3.4	3.2	3.2	4.8	5.7	5.9	6.7	8.2	6.6	6.2^{P}	5.6	6.0	(6.4)^{P}	3.7^{P}	2.6	2.5	3.0	3.2	3.2	2.8
6	2.8	2.5	2.9^{P}	3.1	3.2	3.2	4.2	5.4	6.0	6.5^{P}	8.6	9.4	7.5	6.5	6.9^{P}	7.0	6.3^{P}	5.6	4.7	4.1	S	S	2.4	2.6
7	SF	3.0^{P}	3.0^{F}	2.9	3.3	2.8	3.2^{P}	5.6	6.7	7.1	7.1	8.1	7.6	7.6	8.0	8.2	6.0	4.8	4.4	3.0^{P}	2.8	3.2	[3.2]^{S}	3.3F
8	3.4^{J}	[3.3]^{S}	3.2	3.3	3.5^{J}	2.8	3.2^{J}	5.7	7.5^{P}	7.0^{PJ}	6.6	6.6	8.6	7.3	6.2	7.6	6.2	4.7	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	7.8	7.0	6.7	8.1	6.7^{J}	C	C	C	2.9	C	C	C
10	3.0	C	C	C	C	C	C	C	C	C	7.7^{P}	6.4	8.1	6.6^{J}	6.0	6.0	(5.6)^{PJ}	3.2	3.0	(3.2)^{P}	3.0	2.8	3.2^{J}	2.9
11	2.3	3.4	3.4^{JF}	3.1^{FJ}	(3.3)^{P}	3.0	(3.2)^{P}	6.6	6.2	(6.8)^{P}	7.5	C	C	C	6.7	(6.5)^{P}	5.6	3.2	(3.3)^{P}	2.4^{P}	2.8	(3.0)^{P}	3.2^{P}	(3.2)^{P}
12	3.3	3.2^{J}	S	S	SF	S	(4.2)^{P}	5.6	C	C	C	C	C	C	C	C	C	C	C	3.5^{J}	3.1	(3.3)^{P}	3.0	3.2
13	3.3	3.4^{P}	3.4	3.5^{P}	3.9	3.2	C	C	5.3	C	C	C	C	7.5	6.7^{J}	6.0	5.4	3.4	3.2	3.4^{P}	3.2^{P}	3.2^{J}	3.3^{JF}	3.5^{JF}
14	3.7^{J}	3.8	[3.9]^{S}	4.0^{JF}	4.1	4.2^{P}	3.5^{J}	5.4^{J}	5.9	6.6	8.1	8.7	7.8	6.9	6.6	6.6	5.2	4.0	4.0	4.3	3.9	3.8	3.9	(3.9)^{P}
15	[4.0]^{S}	4.0	[4.1]^{S}	4.2	4.3	3.9	(3.2)^{P}	5.2	(7.0)^{P}	7.5	7.5	7.8	8.3	[7.4]^{C}	6.6	6.7	5.4	4.8	3.2	3.0^{P}	[2.8]^{A}	2.7	3.0^{P}	S
16	S	S	S	C	3.6^{P}	4.3^{J}	4.0	5.8	6.7	6.5	7.9^{J}	8.3	C	C	6.0	6.0	5.3	3.9	3.7	[3.8]^{A}	4.0	3.3	(3.3)^{PJ}	[3.8]^{SF}
17	4.3^{JPF}	4.3^{JPF}	4.7^{JF}	5.1	4.8	3.9	3.8^{PJF}	5.4	8.7	7.7	8.5	8.0^{P}	7.9	8.0	(6.6)^{P}	6.6	(4.9)^{P}	[4.2]^{S}	3.6^{J}	3.4^{P}	3.4^{J}	(3.4)^{P}	(3.7)^{PJ}	3.8
18	4.1	3.8	4.0^{P}	3.3	(3.4)$^{P}_{F}$	(3.2)^{P}	3.0	(6.7)^{P}	7.0$^{P}_{H}$	8.0^{P}	9.0	8.3	8.7	7.6	6.5	(7.5)^{P}	(6.5)^{P}	3.7^{FJ}	3.6^{FJ}	(5.6)^{PJF}	(5.5)^{PJF}	(4.5)^{PJF}	(4.1)^{PJF}	4.0^{JF}
19	4.3^{JF}	(5.1)^{PJF}	5.2^{JF}	(5.6)^{PJF}	C	C	C	C	C	C	(8.4)^{P}	8.8^{P}	7.5^{P}	8.0^{P}	(7.0)^{P}	(7.5)^{P}	C	S	S	4.0	S	SF	SF	SF
20	4.0^{JF}	4.1^{JF}	(4.2)^{JF}	(4.2)^{PJF}	C	C	C	C	C	6.7	6.9	8.0	7.9^{J}	5.8	6.2^{P}	5.2	4.7	(3.4)^{P}	2.6	3.2	(3.3)$^{P}_{S}$	(3.3)^{P}	3.0^{PF}	(3.5)^{PJF}
21	(3.3)^{PJF}	(2.8)^{PJF}	3.2^{F}	3.1	(3.5)^{PJF}	(3.9)$^{P-F}$	3.1	4.3	5.4^{H}	6.2	7.6	8.4	6.5	[6.6]^{S}	6.6	6.6	5.4	3.5	(3.4)^{P}	S	S	4.0^{P}	4.4	4.0
22	3.2	2.9	3.6	(3.3)^{P}	3.2	3.1	3.3^{P}	5.4	7.0^{P}	[8.6]^{B}	10.3^{P}	(10.5)^{P}	7.6^{H}	7.9	7.1	5.8^{P}	(4.9)^{P}	3.7^{J}	3.0^{P}	3.2	[3.6]^{S}	4.0$^{J}_{S}$	3.2	(3.1)$^{P}_{S}$
23	2.5	[2.9]^{S}	(3.3)$^{P}_{S}$	2.8	2.8^{P}	2.7	2.7	5.2^{J}	6.8	7.6	8.3	8.1	7.7^{P}	6.3^{P}	(6.6)^{P}	(6.7)^{P}	(5.0)^{P}	(4.8)^{P}	2.5	S	S	2.8^{P}	S	S
24	S	SF	3.2^{J}	(3.4)^{P}	3.2^{J}	3.1	3.2^{P}	S	6.2^{P}	5.7	7.0	7.3	7.5	6.9	6.5	6.6	4.6^{J}	3.8	3.0	(3.1)^{P}	3.4^{P}	(3.7)$^{P}_{S}$	[3.2]^{S}	(3.2)^{P}
25	(3.3)^{P}	2.9	3.2^{J}	3.3	(3.3)^{P}	8.2^{J}	2.8^{P}	S	6.8	7.8^{J}	8.4	B	7.7^{J}	6.5	(5.8)^{JP}	5.2^{P}	5.3^{J}	(3.8)^{P}	2.9	3.3^{P}	(3.2)$^{P}_{S}$	S	S	S
26	3.5	(3.4)^{P}	3.3	3.2	3.1	3.0	2.8	4.7	C	C	C	C	C	C	C	C	C	2.3	2.8^{P}	[3.0]^{SA}	3.2	2.9	2.8^{P}	[2.8]^{S}
27	2.8^{P}	2.8^{P}	(3.0)^{P}	3.2^{P}	3.4	(3.2)^{P}	3.0	S	9.0^{P}	8.1^{J}	7.9	7.6^{J}	C	C	C	C	C	C	5.2^{P}	S	C	(3.0)^{P}	3.0	C
28	S	3.1	3.1	2.9	S	A	A	4.4	6.5	[7.8]^{A}	9.2^{P}	9.4^{P}	B	B	6.1	6.0	5.2^{J}	3.1	A	A	3.0	3.2^{P}	3.2^{P}	3.2
29	2.5^{F}	(3.2)^{PF}	(2.6)^{PF}	3.2^{F}	2.7^{F}	2.5^{F}	2.2	SB	SB	6.6^{J}	7.4	8.6	8.0	7.5	5.9^{P}	5.6	4.6	S	S	A	S	S	3.6^{P}	[3.6]^{S}
30	(3.6)^{P}	(3.3)^{P}	3.3^{P}	3.5	3.5	3.4	2.9	4.4	B	B	B	9.2	(6.0)^{PJ}	5.7	6.0	5.5	(4.6)^{P}	3.3	[3.0]^{A}	2.8	3.3	3.0^{P}	2.6	2.4
31																								
Mean Value	3.3	3.4	3.5	3.5	3.4	3.3	3.3	5.3	6.7	7.2	8.0	8.2	7.8	6.9	6.5	6.5	5.5	3.9	3.4	3.3	3.3	3.3	3.2	3.3
Median Value	3.3	3.3	3.3	3.3	3.4	3.2	3.2	5.4	6.7	7.1	7.9	8.2	7.8	6.9	6.6	6.4	5.4	3.8	3.2	3.2	3.2	3.2	3.2	3.2
Count	24	25	25	25	23	23	23	19	20	21	24	24	23	23	26	26	25	24	23	22	22	22	24	22

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 1

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

IONOSPHERIC DATA

Nov. 1952 | **hpF2** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(410)^{PS}	[410]^{S}	410^{P}	[380]^{S}	350	(350)^{P}	310	330	320	310	(320)^{P}	S	300	310	310	330	320^{P}	320	340^{P}	350^{P}	320	(330)^{P}	(340)^{J}	[350]^{S}
2	(370)^{P}	350	(370)^{P}	[360]^{A}	350^{P}	(350)^{P}	350^{P}	290	[300]^{A}	310	330	280	290	270	280	300	(290)^{J}	300	310	340^{P}	[340]^{SF}	330^{F}	370^{PF}	[360]^{S}
3	(350)^{FJP}	[360]^{S}	(360)^{P}	400	350	(260)^{P}	330^{P}	S	S	SB	(200)^{P}	300^{P}	(260)^{P}	B	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	S	(270)^{J}	260	(310)^{P}	280	280^{P}	280	250^{P}	300	[330]^{S}	(360)^{P}	(360)^{P}	(340)^{P}	360^{P}
5	360	380^{F}	380^{F}	400^{F}	350	320	A	280	280	280	280	300	270	270^{P}	270	280	(280)^{P}	270^{P}	270	350	350	340	350	330
6	370	330	360^{P}	360	350	350	310	240	260	300^{P}	310	270	270	320	290^{P}	300	310^{P}	300	330	310	S	S	400	470
7	SF	390^{P}	360^{F}	340	320	300	330^{P}	290	280	280	[280]^{A}	290	310	300	310	290	270	290	300	320^{P}	350	390	[390]^{S}	390^{F}
8	(380)^{J}	[400]^{S}	410	390	(330)^{J}	290	(360)^{J}	370	320^{P}	(290)^{PJ}	300	290	300	300	320	310	280,	320	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	290	300	310	300	(290)^{J}	C	C	C	360	C	C	C
10	390	C	C	C	C	C	C	C	C	C	310^{P}	310	300	(320)^{J}	270	290	(280)^{PJ}	300	300	(360)^{P}	340	370	(370)^{JS}	390
11	330	360	(340)^{JF}	(370)^{JF}	(380)^{P}	330	(340)^{P}	290	290	(250)^{P}	280	C	C	C	290	(280)^{P}	290	320	(360)^{P}	340^{P}	360	(360)^{P}	420^{P}	(380)^{P}
12	410	(330)^{J}	S	S	SF	S	(320)^{P}	300	C	C	C	C	C	C	C	C	C	C	C	(320)^{J}	350	(360)^{P}	400	400
13	390	360^{P}	380	340^{P}	290	300	C	C	270	C	C	C	C	290	(290)^{J}	300	280	270	370	350^{P}	350^{P}	(390)^{J}	(390)^{JF}	(410)^{JF}
14	(330)^{J}	410	[380]^{S}	(340)^{JF}	350	290^{P}	(310)^{J}	(310)^{J}	310	300	310	300	280	300	280	300	280	290	280	340	330	330	360	(390)^{P}
15	[370]^{S}	350	[360]^{S}	360	310	270	(310)^{P}	300	(290)^{P}	290	300	270	270	[280]^{C}	300	320	290	290	290	310^{P}	[320]^{A}	330	370^{P}	S
16	S	S	S	C	360^{P}	(290)^{J}	290	310	310	300	(280)^{J}	290	C	C	280	270	270	280	(350)^{S}	[330]^{A}	310	340	(320)^{PJ}	[360]^{SF}
17	(400)^{FJP}	(400)^{JFF}	(390)^{JF}	360	310	350	(320)^{PF}	290	300	290	290	280^{P}	270	280	(290)^{P}	270	(290)^{P}	[320]^{S}	(340)^{J}	340^{P}	(330)^{J}	(350)^{P}	(330)^{PJ}	370
18	420	330	360^{P}	400	(380)^{PF}	(370)^{P}	380	(300)^{P}	290^{PH}	310^{P}	280	290	290	300	310	(310)^{P}	(300)^{P}	(300)^{FJ}	(310)^{FJ}	(330)^{PJF}	(330)^{PJF}	(330)^{FJF}	(310)^{PJF}	(310)^{JF}
19	(340)^{JF}	(380)^{JFP}	(360)^{JF}	(360)^{PJF}	C	C	C	C	C	C	(290)^{P}	300^{P}	280^{P}	300^{P}	(290)^{P}	(290)^{P}	C	S	S	320	S	SF	SF	SF
20	(410)^{JF}	(380)^{JF}	(370)^{JF}	(340)^{JFF}	C	C	C	C	C	290	310	310	(300)^{J}	300	320^{P}	300	300	(280)^{P}	350	330	(360)^{PS}	(330)^{P}	410^{PF}	(380)^{PF}
21	(360)^{PJF}	(350)^{PJF}	370^{F}	350	(350)^{PJF}	(340)^{PF}	300	370	320^{H}	310	310	280	250	S	290	270	290	320	(380)^{P}	S	S	400^{P}	340^{S}	420
22	300	420	420	(410)^{P}	430	420	340^{P}	300	270^{P}	[280]^{B}	300^{P}	(320)^{P}	280^{H}	290	270	270^{P}	(310)^{P}	(300)^{J}	340^{P}	340	[360]^{S}	(390)^{JS}	350	(330)^{JS}
23	440	[440]^{S}	(440)^{PS}	430	460^{P}	420	420	(320)^{J}	300	300	310	290	270^{P}	300^{P}	(310)^{P}	(290)^{P}	(320)^{P}	(320)^{P}	320	S	S	340^{P}	S	S
24	S	SF	(290)^{J}	(360)^{P}	(330)^{J}	350	330^{P}	S	300^{P}	280	320	300	310	290	310	270	(280)^{J}	320	310	(340)^{P}	360^{P}	(360)^{PS}	[330]^{S}	(300)^{P}
25	(350)^{P}	380	(400)^{J}	360	(360)^{P}	(310)^{J}	410^{P}	S	310	(300)^{J}	300	B	(270)^{J}	300	B	(330)^{SP}	(280)^{J}	(290)^{P}	310	320^{P}	(340)^{PS}	S	S	S
26	380	(370)^{P}	380	380	360	380	290	290	C	C	C	C	C	C	C	C	C	350	370^{P}	[360]^{SA}	340	390	360^{P}	[360]^{S}
27	360^{P}	360^{P}	(390)^{P}	440^{P}	410	(370)^{P}	330	S	290^{P}	(310)^{J}	320	(260)^{J}	C	C	C	C	C	C	320^{P}	S	C	(350)^{P}	320	C
28	S	440	400	370	S	A	A	350	330	[320]^{A}	320^{P}	300^{P}	B	B	290	310	(280)^{J}	380	A	A	350	360^{P}	370^{P}	430
29	440^{F}	(320)^{PF}	(360)^{PF}	380^{F}	400^{F}	350^{F}	350	SB	S B	(270)^{J}	320	290	270	280	250^{P}	290	280	S	S	A	S	S	360	[360]^{S}
30	(350)^{P}	(370)^{P}	340^{P}	350	330	330	350	310	B	B	B	260	(270)^{PJ}	250	300	270	(290)^{P}	330	[340]^{A}	350	320	340^{P}	340	400
31																								
Mean Value	380	370	380	370	360	330	320	310	300	290	300	290	280	290	290	290	290	300	330	340	340	360	360	380
Median Value	370	370	370	360	350	340	330	300	300	300	300	290	280	300	290	290	290	300	320	340	340	350	360	380
Count	24	25	25	25	23	23	22	19	20	21	24	23	23	22	25	26	25	24	23	22	22	23	24	22

hpF2

* Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 2

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Nov. 1952

h'F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	370	390	300	310	290	310	270	270	290	280	310	300	300	270	300	270	270	270	260	300	270	300	300	320
2	310	300	310	[300]A	280	300	300	280	[290]A	300	310	270	270	270	260	260	260	250	250	280	250	260	330F	310
3	300	[300]S	310	380S	300	210	270	270	260	270	280	280	250	270	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	S	270	260	280	270	250	250	220	300A	[310]S	320	330	300	320
5	350	370	350	300	280	280	300A	260	260	270	270	290	250	270	270	250	270	240	250	300	290	300	300	280
6	320	300A	350	310	300	270	270	240	250	290	280	270	250	290	270	270	300	250	270	250	[260]S	260	330	410
7	350	370	340F	310	290	270	270	260	240	260	[270]A	280	260	280	300	270	250	260	300	300	320	320	300	330F
8	300	320	350	330	280	250	320	300	260	260	280	270	260	280	290	300	260	280	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	280	280	290	280	250	C	C	C	300	C	C	C
10	340	C	C	C	C	C	C	C	C	C	290	280	280	280	260	270	250	270	230	300	290	320	300	310
11	300	300	300	300	300	300	300	250	270	250	270	C	C	C	270	260	260	300	340	270	300	320	350	340
12	330	300	280	320	340	300	260	250	C	C	C	C	C	C	C	C	C	C	C	270	290	300	320	340
13	330	300	310	280	230	260	C	C	240	C	C	C	C	280	270	270	250	220	270	280	270	320	330	340F
14	290	300	290	290	300	250	270	280	270	300	290	280	270	290	270	260	240	230	230	270	290	280	300	300
15	300	300	290	300	270	230	270	270	280	260	270	270	250	[260]C	270	270	250	250	250	250	[280]A	300	330	260
16	300	330	330	[320]C	300	250	260	270	280	290	250	280	C	C	270	260	240	260	300	[280]A	250	270	280	300
17	320	320	310	280	240	230	280	250	280	270	280	260	260	270	260	260	240	[270]A	300	260	290	300	300	300
18	330	280	270	320	300	270	320	280	250H	280	260	260	270	270	280	280	270	260	260	290	280	270	270	250
19	290	310	300	280	C	C	C	C	C	C	260	260	260	280	280	270	C	A	A	270	260	280	316F	320
20	360	320	300	300	C	C	C	C	C	260	290	300	280	270	270	270	250	260	280	280	290	280	310F	320
21	290	300	300	270	290	260	250	240	230H	280	270	260	240	280	270	250	240	240	300	330	300	340	270	310
22	240	290	340	310	350	340	290	270	250	[260]B	270	250	250H	280	270	260	260	260	280	300	[300]S	290	310	280
23	S	S	380	370	390	360	370	290	280	270	290	280	260	280	280	270	280	300	280	300	290	310	300	270
24	330	320	300	290	300	300	270	270	270	260	290	290	280	280	290	260	250	270	260	290	300	310	300	290
25	270	290	320	300	300	270	[260]B	260	270	280	290	300	260	260	[260]B	260	250	260	270	280	290	300	300	290
26	330	320	320	320	300	300	250	270	C	C	C	C	C	C	C	C	C	300	310	[310]SA	310	350	330	[320]S
27	300	300	310	380	320	290	290	300	280	280	310	260	C	C	C	C	C	C	280	A	C	320	320	[320]C
28	310	380	320	300	S	A	A	A	300	[300]A	300	280	270	270	270	270	270	350	A	A	330	300	300	360B
29	380	270	320	320F	320	300	300	280	270	260	300	280	260	260	230	250	220	250	270	[260]A	260	280	310	[300]S
30	300	330	300	270	300	280	290	260	[260]B	260	270	250	250	250	260	260	280	280	[300]A	320	270	300A	310	B
31																								
Mean Value	320	320	310	310	300	280	280	270	270	280	280	270	260	270	270	260	250	260	280	290	290	300	310	310
Median Value	310	300	310	300	300	280	270	270	270	270	280	280	260	280	270	260	250	260	280	280	290	300	300	310
Count	27	26	27	27	24	24	23	23	23	23	25	25	24	25	26	26	25	25	24	25	27	27	27	26

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | foF1 | 135° E Mean Time | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	3.4	3.6	4.5	4.5L	Q	A	Q	Q							
2								L	A	3.6	4.2	3.8	3.8	B	Q	Q	Q						-	
3								Q	S	Q	B	B	(4.0)B	3.8	C	C	C							
4								C	C	C	S	A	A	Q	Q	Q	Q							
5								Q	Q	4.0	4.2	3.9	Q	L	Q	Q	A							
6								Q	Q	A	A	3.9	3.8	3.8	Q	Q	A							
7								Q	Q	Q	A	L	Q	Q	Q	Q	Q							
8								Q	Q	3.4	Q	B	Q	A	A	Q	Q							
9								C	C	C	C	C	3.8	3.4	B	Q	Q							
10								C	C	C	B	Q	B	Q	Q	Q	Q							
11								Q	2.9	Q	3.4	C	C	C	Q	Q	Q							
12								Q	C	C	C	C	C	C	C	C	C							
13								C	Q	C	C	C	C	B	3.1	Q	Q							
14								Q	Q	B	3.9	3.7	3.7	3.3	2.8	A	Q							
15								Q	Q	Q	3.6	B	Q	C	Q	A	Q							
16								Q	2.8	Q	Q	L	C	C	Q	Q	Q							
17								Q	Q	Q	L	3.8	A	Q	Q	Q	Q							
18								Q	Q	3.2	Q	B	Q	Q	Q	Q	Q							
19								C	C	C	B	B	Q	Q	L	Q	Q							
20								C	C	Q	Q	Q	S	3.3	Q	Q	Q							
21								Q	Q	Q	Q	Q	3.7	L	Q	Q	Q							
22								Q	A	B	4.0	3.9	3.8	3.1	Q	Q	Q							
23								Q	Q	Q	B	B	B	L	Q	Q	Q							
24								Q	Q	3.1	(3.4)L	3.8	3.9	3.5	B	Q	Q							
25								Q	Q	A	A	B	Q	B	B	B	Q							
26								Q	C	C	C	C	C	C	C	C	C							
27								Q	Q	L	3.9	B	C	C	C	C	C							
28								A	Q	A	B	B	B	B	A	A	Q							
29								Q	S.B	Q	B	B	B	B	B	Q	Q							
30								Q	B	Q	B	B	Q	Q	Q	B	B							
31																								
Mean Value									2.9	3.5	3.8	3.9	3.9	3.5	3.0									
Median Value									2.8	3.4	3.9	3.8	3.8	3.4	3.0									
Count									2	6	9	8	9	7	2									

foF1

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Nov. 1952

h'F1

135° E Mean Time

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

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | foE | 135° E Mean Time | Wakkanai | Lat. 45° 23.6' N | Long. 141° 41.1' E

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

foE

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Nov. 1952 | h'E | 135° E Mean Time

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

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | **fEs** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.5	2.2	E	E	E	E	E	G	G	3.8	4.0	G	G	G	6.0	4.0	G	E	3.0	2.8	2.8	2.6	2.7	2.6
2	2.2	2.0	2.2	4.5	3.0	2.0	E	G	6.5	3.7	4.0	G	G	G	G	G	3.0	2.4	E	E	E	E	2.3	E
3	2.4	S	E	E	2.4	E	E	3.0	2.8	2.8	G	G	2.1	G	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	G	4.4	5.5	3.7	3.9	3.8	3.0	2.4	2.8	3.0	2.6	2.9	2.3	4.0
5	4.6	3.3	2.8	2.4	2.4Y	2.8	4.2	4.0	3.9	3.8	G	G	4.0	3.4	G	3.2	3.2	2.8	1.6	E	E	E	E	E
6	E	2.4	2.8	2.7	2.8	E	E	G	5.0	5.5	4.5	4.5	3.8	3.4	3.8	3.8	6.5	2.4Y	2.3	2.1	E	E	3.0	3.7
7	2.1F	2.9F	3.0F	2.9F	3.0	2.1	E	G	G	2.7	9.0	4.5	4.0	5.0	6.0	4.0	3.0	2.6	2.7	2.8	E	E	2.2	E
8	2.7	3.0	2.2	E	1.2	E	E	G	2.6	3.6	G	B	5.5	3.8	4.0	3.6	4.0	E	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	3.8	C	C	C	E	C	C	C
10	E	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	G	E	E	E	E	E	E	E
11	E	E	E	E	E	2.3	2.2	G	G	G	G	C	C	C	3.2	2.6	2.7	4.0	4.0	E	E	E	E	E
12	E	E	E	E	E	E	E	G	C	C	C	C	C	C	C	C	C	C	C	E	E	2.9	2.2	2.4
13	2.8	2.1	2.8	2.2	2.4	2.2	C	C	G	C	C	C	C	G	G	G	B	2.7	1.6	E	E	E	E	E
14	E	E	E	E	E	E	1.6	B	G	G	G	G	G	2.6	G	3.8	2.6	3.0	2.2	2.1	2.4	2.3	1.6	E
15	2.3	E	1.6	2.3	2.3	E	E	G	2.9	3.6	G	G	3.5	C	G	3.4	B	E	E	2.4	4.3	2.4	E	2.4
16	1.6	2.2	2.2	C	E	1.6	E	G	G	G	3.8	3.8	C	C	4.5	2.7	2.6	2.9	2.2	4.5	E	E	E	E
17	E	E	E	E	2.0	E	2.2	B	4.0	3.0	G	G	3.8	G	3.8	G	2.3	3.0	2.8	E	E	E	E	E
18	2.8	2.2	E	E	E	E	E	2.6	G	3.6	3.8	G	4.0	G	G	G	2.2	E	E	2.9	2.6	E	2.3	E
19	2.6	1.6	E	E	C	C	C	C	C	C	B	G	B	G	3.4	G	2.7	2.8	2.4	2.7	E	3.0	2.2	2.4
20	E	2.0	2.2	2.4	C	C	C	C	C	4.0	G	G	G	G	G	G	2.6	2.4	2.3	E	E	2.2	E	E
21	E	E	E	E	E	E	E	B	G	G	G	G	3.0	1.8	G	G	G	E	E	2.4	E	2.2	2.8	E
22	E	E	2.2	E	2.4	4.3	2.8	4.2	B	6.0	5.4	G	G	2.8	G	2.2	2.3	1.7	E	1.6	E	E	E	E
23	S	S	E	E	E	E	E	B	G	G	G	G	G	G	G	2.6	B	E	2.6	E	2.4	2.2	E	2.3
24	E	E	2.4	2.6	2.2	2.4	2.4	2.8	2.7	2.7	2.9	3.8	3.3	3.8	G	G	3.4	2.9	E	E	E	E	E	E
25	E	E	E	E	E	E	B	G	G	6.0	6.0	2.9	G	2.6	2.4	2.4	1.6	E	E	E	E	E	2.2	2.3
26	2.8	2.6	1.6	E	E	E	2.3	B	C	C	C	C	C	C	C	C	C	E	E	2.9	E	E	E	S
27	E	E	E	E	E	E	E	B	G	G	G	G	C	C	C	C	C	C	4.0	2.9	C	E	2.8	C
28	E	1.6	E	E	S	3.9	4.0	4.4	3.8Y	9.1	2.8	G	G	G	3.8	3.8	4.0	3.0	3.8	4.1	4.2	E	E	E
29	E	E	2.4Y	3.9	2.5	E	2.3	G	G	G	G	3.9	3.1	G	G	B	B	E	E	5.0	E	2.2	E	S
30	E	E	E	E	2.4	E	E	4.0	2.8	G	G	G	B	G	B	G	B	1.6	3.8	2.2	2.8	2.5	E	E
31																								
Mean Value	2.6	2.3	2.3	2.8	2.2	2.6	2.7	3.6	3.7	4.3	4.6	3.3	3.8	3.3	4.1	3.3	3.1	2.7	2.8	2.9	3.0	2.5	2.1	2.6
Median Value	E	1.6	E	E	1.6	E	E	G	G	3.0	G	G	2.6	G	G	2.4	2.7	2.4	2.2	2.1	E	E	E	E
Count	27	25	27	26	24	25	23	18	22	23	25	24	22	24	25	25	21	26	26	27	27	27	27	24

fEs

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 8

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

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Nov. 1952

(M3000)F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.6)$^{B}_{S}$	[2.6]S	2.7P	[2.8]^{S}	3.0	(2.9)^{P}	3.1	2.8	3.0	3.1	(3.0)P	[3.0]S	3.1	3.0	3.0	3.0	3.0P	3.0	2.9P	2.9P	3.0	(3.0)^{P}	(2.9)^{J}	[2.9]^{S}
2	(2.9)P	2.9	(2.8)^{P}	[2.8]^{A}	2.9P	(2.9)^{P}	2.9P	3.2	[3.1]^{A}	3.0	3.0	3.2	3.1	3.3	3.2	3.1	(3.1)^{J}	3.1	3.1	2.9P	[2.9]^{SF}	3.0F	2.8^{PF}	[2.9]S
3	(3.0)^{FFP}	[3.0]^{S}	(2.9)^{P}	2.7	2.9	(3.3)^{P}	2.9P	S	S	SB	(3.2)^{P}	3.1P	(3.3)P	B	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	S	(3.3)^{J}	3.4	(3.1)^{R}	3.2	3.2P	3.4	3.5P	3.1	[3.0]^{S}	(2.8)P	(2.8)^{P}	(2.9)P	2.9P
5	2.9	2.8F	2.7F	2.6F	2.8	3.0	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3P	3.4	3.3	(3.2)^{P}	3.3P	3.3	2.8	2.8	2.9	2.9	2.8
6	2.8	3.0	3.0P	2.9	2.8	2.8	3.1	3.6	3.4	3.1P	3.1	3.3	3.4	3.1	3.1P	3.2	3.1P	3.2	2.9	3.1	S	S	2.6	2.4
7	SF	2.8P	2.8F	2.8	3.1	3.1	2.9^{P}	3.2	3.2	3.2	3.3	3.2	3.1	3.2	3.1	3.1	3.2	3.3	3.1	3.1P	2.8	2.7	[2.7]^{S}	2.7F
8	(2.7)^{J}	[2.6]^{S}	2.6	2.7	(2.9)^{J}	3.1	(2.8)^{J}	2.7	3.0P	(3.2)^{PJ}	3.0	3.1	3.1	3.1	3.0	3.1	3.3	2.9	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	3.2	3.1	3.1	3.1	(3.2)^{J}	C	C	C	2.7	C	C	C
10	2.7	C	C	C	C	C	C	C	C	C	3.1P	3.1	3.2	(3.0)^{J}	3.4	3.2	(3.2)^{PJ}	3.0	3.0	(2.8)P	2.9	2.7	(2.8)^{J}	2.7
11	3.0	2.8	(2.9)^{FJ}	(2.8)^{FJ}	(2.6)^{P}	3.0	2.8P	3.1	3.3	(3.4)P	3.4	C	C	C	3.3	(3.2)P	3.2	2.9	(2.9)P	2.9P	2.8	(2.8)^{P}	2.6P	(2.8)P
12	2.7	(3.0)^{J}	S	S	SF	S	(3.0)^{P}	3.1	C	C	C	C	C	C	C	C	C	C	C	(3.0)^{J}	2.8	(2.8)^{P}	2.6	2.6
13	2.7	2.7P	2.7	2.9P	3.2	3.2	C	C	3.4	C	C	C	C	3.3	(3.2)^{J}	3.1	3.1	3.3	2.8	2.9P	2.8P	(2.7)^{J}	(2.7)^{FJ}	(2.6)^{FJ}
14	(2.9)^{J}	2.6	[2.8]^{S}	(2.9)^{FJ}	2.9	3.0P	(3.1)^{J}	(3.1)^{J}	3.1	3.1	3.1	3.2	3.3	3.2	3.3	3.1	3.3	3.1	8.3	2.8	3.0	3.0	2.8	(2.6)^{P}
15	[2.8]S	2.9	[2.8]^{S}	2.8	3.1	3.3	(3.1)^{P}	3.2	(3.2)P	3.2	3.1	3.2	3.2	[3.1]^{C}	3.0	3.0	3.1	3.2	3.1	3.0P	[3.0]^{A}	2.9	2.7P	S
16	S	S	S	C	(2.8)^{P}	(3.1)^{J}	3.2	3.1	3.1	3.1	(3.3)^{J}	3.2	C	C	3.1	3.4	3.3	2.8	(2.8)^{S}	[2.9]^{A}	3.0	2.8	(3.0)^{PJ}	[2.8]^{FS}
17	(2.6)^{JFP}	(2.6)^{JFP}	(2.6)^{JF}	2.8	3.0	2.8	(3.0)^{PJF}	3.2	3.3	3.2	3.3	3.2P	3.3	3.2	(3.2)P	3.3	(3.1)P	(3.0)^{S}	(2.9)^{J}	2.9P	(3.0)^{J}	(2.9)P	(2.9)^{PJF}	2.8
18	2.6	2.9	2.8P	2.6	(2.7)^{PF}	(2.8)^{P}	2.8	(3.1)P	3.2^{H}	3.0P	3.2	3.2	3.2	3.2	3.1	(3.1)^{P}	(3.2)P	(3.2)^{FJ}	(3.1)^{FJ}	(2.9)^{PJF}	(2.9)^{PJF}	(2.9)^{PJF}	(3.0)^{PJF}	(3.1)^{JF}
19	(2.8)^{JF}	(2.8)^{JFP}	(2.8)^{JF}	(2.9)^{JFP}	C	C	C	C	C	C	(3.1)^{P}	3.0^{P}	3.2P	3.2P	(3.1)^{P}	(3.2)P	C	S	S	3.1	S	SF	SF	SF
20	(2.7)^{JF}	(2.7)^{JF}	(2.7)^{JF}	(2.9)^{JFP}	C	C	C	C	C	3.1	3.0	3.1	(3.2)^{J}	3.1	3.0	3.2	3.1	(3.2)P	2.8	3.0	(2.8)^{PS}	(3.0)^{P}	2.6^{PF}	(2.8)^{PJF}
21	(2.8)^{JFP}	(2.8)^{JFP}	2.8F	2.8	(2.9)^{PJF}	(2.9)^{PF}	3.0	3.2	2.9H	3.1	3.1	3.2	3.5	[3.4]^{S}	3.2	3.3	3.2	(3.0)P	(3.1)^{J}	2.9P	3.0	[2.8]^{S}	(2.6)^{PS}	2.9	(3.0)^{PS}
22	3.2	2.6	2.6	(2.6)^{P}	2.6	2.6	3.0P	3.2	3.2F	[3.2]^{B}	3.2P	(3.3)^{P}	3.1H	3.2	3.3	3.2P	(3.0)P	(3.1)P	2.9P	3.0	[2.8]^{S}	(2.6)^{PS}	2.9	(3.0)^{PS}
23	2.5	[2.5]S	(2.5)^{PS}	2.5	2.5P	2.6	2.6	(3.0)^{J}	3.1	3.2	3.1	3.1	3.3P	3.1P	(3.0)P	(3.2)P	(3.0)P	(3.0)P	2.9	S	S	2.9	S	S
24	S	SF	(2.6)^{J}	(2.7)^{P}	(3.0)^{J}	2.8	2.9P	S	3.1P	3.2	3.1	3.1	3.0	3.2	3.2	3.4	(3.3)^{J}	3.1	3.0	(2.9)^{P}	2.8P	(2.7)^{PS}	[3.0]^{S}	(3.2)^{P}
25	(2.8)^{P}	2.7	(2.6)^{J}	2.9	(2.8)^{P}	(3.2)^{J}	2.6^{P}	S	3.2	(3.1)^{J}	3.2	B	(3.4)^{J}	3.1	(3.2)^{JP}	2.9P	(3.2)^{J}	(3.1)P	3.1	3.0P	(2.9)^{PS}	S	S	S
26	2.8	(2.7)^{P}	2.8	2.8	2.8	2.7	3.2	3.3	C	C	C	C	C	C	C	C	C	2.9	2.8P	[2.8]^{SA}	2.9	2.7	2.8P	[2.8]^{S}
27	2.8P	2.8P	(2.8)^{P}	2.5P	2.6	(2.9)^{P}	3.0	S	3.2P	(3.1)^{J}	3.1	(3.5)^{J}	C	C	C	C	C	C	3.0P	S	C	(2.9)^{P}	3.0	C
28	S	2.6	2.7	2.8	S	A	A	2.9	3.0	[3.0]^{A}	3.0^{P}	3.2P	B	B	3.2	3.1	(3.3)^{J}	2.8	A	A	2.9	2.9P	2.8P	2.5
29	2.5F	(3.0)^{PF}	(2.8)^{PF}	2.7F	2.7F	3.0F	2.8	S,B	SB	(3.3)^{J}	3.1	3.2	3.3	3.2	3.4P	3.0	3.2	S	S	A	S	S	2.8P	[2.8]^{S}
30	(2.9)^{P}	(2.8)^{P}	2.9P	2.9	3.0	3.0	2.7	3.0	B	B	B	3.4	(3.5)^{PJ}	3.5	3.1	3.4	(3.2)^{P}	3.0	[2.9]^{A}	2.8	3.0	2.9P	2.8	2.7
31																								
Mean Value	2.8	2.8	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.2	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	2.9	2.8	2.8	2.8
Median Value	2.8	2.8	2.8	2.8	2.9	3.0	3.0	3.1	3.2	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.9	2.9	2.9	2.8	2.8
Count	24	25	25	25	24	23	23	19	20	21	24	24	23	23	26	26	25	24	23	22	22	23	24	22

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 9

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

IONOSPHERIC DATA

Nov. 1952 | **fminF** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N, Long. 141° 41.1' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.4	E	E	E	1.2	1 1	1.4	1.9	2.7	3.2	3.3	3.4	3.0	3.3	5.0A	3.2	1.8	1.4	1.8	1.8	1.8	2.0A	1.4	2.0
2	E	E	1.8	A	E	E	1.2	1.9	[2.6]A	3.2	3.0	2.9	3.3	3.8	2.6	2.3	2.4	1.2	1.2	1.2	1.2	1.2	1.3F	2.0S
3	E	S	1.2	1.9S	E	E	1.7	2.1	1.9	2.8	4.8	5.0	3.5	2.9	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	S	3.8A	4.0A	3.1	3.2	2.4	1.9	1.4	2.1A	[2.0]A	1.8	2.0A	1.8	2.0A
5	2.3A	2.2A	2.0A	1.4	E	1.8	3.0A	2.1	1.2	3.0	2.8	3.1	3.0	3.0	2.2	2.1	3.0	2.0A	1.8	1.4	1.4	1.8	2.0	1.4
6	E	1.8	2.0A	1.6	1.8	E	1.4	2.0	2.4	4.5A	3.9A	3.5	3.0	3.6	3.0	3.2	5.0A	1.5	1.5	1.5	[1.4]S	1.4	1.4	1.3
7	E	2.0	1.9F	1.9	1.9	1.2	1.5	2.0	2.9	3.0	6.5A	3.2	3.0	3.6	3.6	3.2	2.8	2.0A	3.6	2.0A	1.7	1.4	1.4	1.4F
8	1.4	1.8	1.5	E	E	E	1.7	2.2	2.4	3.0	3.0	4.0	3.4A	3.6A	3.4A	2.6	2.0	2.0	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	3.0	3.0	3.2	2.6	1.9	C	C	C	1.4	C	C	C
10	1.8	C	C	C	C	C	C	C	C	C	3.5	2.8	3.8	2.7	3.0	2.2	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4
11	E	1.5	1.5	E	E	1.6	1.4	2.0	2.4	2.5	2.8	C	C	C	2.6	2.1	1.4	2.3A	2.4A	1.4	1.4	1.8	1.9	1.5
12	E	E	E	E	E	E	1.4	2.4	C	C	C	C	C	C	C	C	C	C	C	1.4	1.4	1.4F	1.4	E
13	1.4	E	1.2	E	E	1.4	C	C	2.3	C	C	C	C	5.0	3.4	2.1	1.5	1.6	1.4	1.5	1.4	1.4	1.4	1.4
14	1.4	E	E	E	E	E	1.4	1.9	2.5	3.2	3.5	3.3	3.0	2.7	2.5	3.1A	1.5	2.1A	1.4	1.4	1.9	1.4	1.3	1.4
15	1.4	E	E	1.3	E	E	1.4	1.9	2.6	2.8	3.2	4.5	3.6	[3.4]C	3.2	3.1A	1.6	1.3	1.4	1.5	[1.7]A	1.9	1.4	1.4
16	1.4	E	1.2	C	E	E	1.3	1.8	2.2	2.8	2.7	3.3	C	C	2.9	2.4	1.9	2.4A	1.9	[1.7]A	1.5	1.4	1.5	1.4
17	E	E	E	E	E	E	1.5	1.9	3.6A	2.8	2.8	3.0	3.8A	3.0	2.3	2.0	2.6A	[2.3]A	2.0A	1.1	1.5	1.1	1.8	1.5
18	1.8	1.4	E	E	E	E	1.4	2.0	2.3	2.6	2.7	4.0	3.6A	3.0	3.6	2.4	1.9	1.4	1.5	2.3A	1.4	1.4	1.4	1.4
19	1.4	E	E	1.2	C	C	C	C	C	C	5.0	5.1	3.6	3.4	3.0A	3.0	1.9	A	A	1.3	1.3	1.6	1.5F	1.6
20	E	E	E	E	C	C	C	C	C	3.0	3.0	3.0	2.9	2.7	2.7	2.2	1.9	2.0A	1.2	1.2	1.2	1.2	1.2F	1.3
21	E	E	E	E	E	E	1.2	1.8	2.6	2.5	3.2	3.3	2.8	3.1	2.7	2.2	2.0	1.3	1.4	2.0A	1.4	1.4	1.4	1.5
22	E	E	1.4	E	1.5	1.3	1.5	2.8A	2.1	[2.8]B	3.4	3.2	3.0	2.4	2.4	2.3	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.5
23	2.0S	S	E	E	E	1.3	1.6	1.5	2.1	2.3	3.8	3.9	3.8	2.6	2.4	2.0	1.6	1.8	1.5	1.4	[1.4]S	1.5	1.5	1.5
24	E	E	1.3	1.4	1.5	1.4	1.5	2.2	2.4	2.6	3.0	2.8	2.7	3.1	3.7	2.2	2.6A	1.9	1.4	1.8	1.5	1.3	1.4	1.4
25	E	1.1	1.6	E	E	E	2.0	1.5	2.3	3.8A	3.8A	4.5	3.5	3.8	5.0	3.6	1.4	2.2	1.5	2.0	1.4	1.4	1.5	2.1A
26	1.8	1.8	1.2	E	E	E	E	1.4	C	C	C	C	C	C	C	C	C	1.4	1.4	(1.4)A	1.4	1.4	1.4	[1.4]S
27	1.4	E	E	E	E	1.2	1.5	1.4	2.2	3.0	3.1	4.5	C	C	C	C	C	C	3.0A	A	C	2.0	1.9	[1.6]C
28	1.4	1.3	E	E	S	A	A	3.6A	2.4	[3.1]A	3.8	5.0	3.9	3.7	3.9	3.9	3.6A	2.0A	A	A	2.1A	1.8	1.5	2.0
29	1.4	E	1.6	1.8	E	E	1.4	2.0	2.8	2.8	5.0	4.6	3.6	3.6	3.6	2.4	1.4	2.0	1.4	[1.4]A	1.4	1.5	1.6	[1.5]S
30	1.4	2.0	1.4	1.4	1.8	E	1.4	1.4	[1.9]A	2.4	3.6	4.7	3.6	3.4	2.8	3.8	2.4	1.9	[1.8]A	1.8	1.5	2.0A	1.8	2.0
31																								
Mean Value	1.7	1.7	1.5	1.5	1.6	1.4	1.5	2.0	2.4	3.0	3.6	3.8	3.3	3.2	3.1	2.6	2.1	1.8	1.7	1.6	1.5	1.5	1.5	1.6
Median Value	1.4	E	1.2	E	E	E	1.4	2.0	2.4	2.8	3.3	3.5	3.4	3.1	3.0	2.4	1.9	1.9	1.5	1.5	1.4	1.4	1.4	1.5
Count	28	25	27	25	24	24	23	24	23	23	25	25	24	25	26	26	26	25	24	25	27	27	27	27

fminF

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 10

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

IONOSPHERIC DATA

Nov. 1952 | **fminE** | 135° E Mean Time | **Wakkanai** | Lat. 45° 23.6' N | Long. 141° 41.1' E

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

Sweep 1.0 Mc to 15.5 Mc in 2 min ☐ Manual ☒ Automatic

W 11

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Nov. 1952 | **foF2** | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	4.0	3.9	4.4F	3.8F	3.1	2.9	4.2	6.6	7.8	7.4	9.2	7.7	9.1	7.7	6.8	6.6	6.7	6.6	6.4	4.9	4.3	3.5H	3.4	3.4
2	3.3	3.3	3.3	3.3	3.6	3.2F	3.6	6.6J	7.5	6.9	8.5	9.5	9.3	7.4	7.7	7.6	7.2	6.4	5.7	3.3	3.0	3.1	2.8	3.1JF
3	3.6JF	3.3JF	3.4	3.2	3.4	3.4	4.0	5.8	6.9	7.4	8.1	8.8	8.6	7.0	6.3	6.8	7.2	5.2	2.9	3.1	4.0	3.3	3.7	3.3
4	3.1	A	A	3.3	3.0	3.0	3.2	5.5	8.9	9.0	7.3	7.5	6.3	6.1	7.1	7.8	5.7	4.3	4.2	2.8	3.0	3.1	3.3	3.1
5	3.0	3.3F	3.4	3.6F	3.4VF	3.2H	3.3	5.3	7.2	7.4	6.7	6.4	8.1	7.3	6.5	6.3	6.0	4.8	2.6	2.6	3.1	3.1	2.7	2.8
6	2.6	3.0	3.5	3.6JFH	3.2F	3.0F	3.7	5.9	7.0	5.6	7.2	9.9	9.0	6.5	6.7	7.3	7.0H	5.9	4.0	4.8	2.8	2.8	2.7	2.7
7	3.0	3.2	3.1	2.9	3.0F	3.7H	4.0	6.5	7.0	6.7	8.1	7.8	7.4	7.5	(7.9)P	7.9J	6.9	(5.6)B	4.2	4.2	4.0	A	A	3.8VF
8	3.4JF	3.5F	3.2JF	3.3F	3.9F	3.6F	3.1ZF	6.5	7.7	7.8	7.7	8.5	9.9	9.6	9.2	8.5	8.7	4.9	4.0	3.2	3.2	3.3F	(3.4)A	3.4F
9	3.3F	3.5F	3.2	3.4	3.4	3.5	3.1	7.1	6.3	8.1	6.1	8.4	9.1	(8.4)C	7.6	7.8	7.5	4.1	3.9	3.6	3.6	3.2	3.6	3.5
10	3.9FH	3.7	3.4	4.3	4.2	BE	(3.4)PH	6.3H	7.2	7.0	7.1	8.2	7.3	7.5	6.9	6.2	5.7	3.5	2.9	3.1	3.1	2.9	3.2JF	3.1
11	3.0	3.2	3.3	3.3	3.1	3.3	3.1	5.6	7.0	6.9	BS	7.6	7.9	8.4	6.1	6.6	5.9	3.7	2.8	3.4	2.8	2.9	3.1	3.2
12	3.3	3.4	3.4	3.4	3.4F	3.3F	3.6	5.1	7.3	7.2	6.7	8.2	9.0	8.2	6.2	7.5	5.7	4.9V	3.3	2.9	3.0	3.1	3.2	3.2
13	3.3H	3.4	3.5	3.4	3.2	3.0	3.0	4.9	6.0	5.5	6.9	7.7	7.8	7.4	7.1	6.1	5.2	3.9	A	A	3.5	3.4	3.4	(3.4)C
14	3.3	3.6	3.4	4.4PJF	4.5PJF	3.4F	3.2F	5.4	6.7	7.7	7.5	7.3	7.9	7.2	7.6	6.8	6.8	4.9	4.5	3.6	4.2	3.9	3.5	3.6
15	3.7	3.9	3.6	3.6	3.8	3.1	3.0	5.6	6.6	7.5	7.2	7.9	8.8	7.7	7.2	6.8	5.9	4.4	3.9	2.6	3.2	2.7	2.7	2.8J
16	2.9	3.2	3.1	3.2	3.5	2.9	3.3	5.5	6.2	6.4	7.2	7.8	8.0	7.3	7.0	7.3	5.6P	4.0	3.4	3.8	3.0	(2.8)A	2.7JF	3.1
17	3.2	3.5	4.0	4.2	4.2	3.2	3.5	6.3	7.4	8.7	M	M	M	(8.0)PJ	7.5	7.3	5.7	3.3	3.3	3.6	3.6	3.6	3.8	3.5V
18	3.7V	3.7V	3.6	3.4V	3.4	3.0	3.2	7.5	(7.3)T	7.1	7.7	9.1	7.0	7.4	6.8	6.8	5.8	5.6	5.1	5.0	5.0P	4.2	4.7	(4.6)B
19	4.5	4.8P	5.1	5.5	5.2	4.0	4.0	(5.8)M	7.5	8.7	8.6	8.2	7.7	7.7	6.6	7.0	5.9	4.3	3.6H	3.4	3.3	3.3	2.8	3.4F
20	3.3	3.5VF	3.4JF	3.4F	3.5V	3.2V	3.3Z	7.0	7.0	6.9	7.5	8.6P	8.0	6.8	6.1	5.7	5.5	3.4	2.9	3.0	3.1	3.1	2.9	2.8
21	2.8	3.1	3.0	2.9	3.0	2.5	2.8	5.4	6.5	6.7	6.7	7.9	7.2	6.8	6.7	6.8	5.2	3.3	3.5	3.7	3.7	3.7	3.9	2.7
22	3.2	2.6	2.7	2.8	2.7	2.4	3.7	6.6	6.0	7.4	9.5	9.6	7.5	7.0	7.0	6.2	4.8	4.0	3.7	4.0	3.4	3.6	3.3	3.3
23	2.7	2.8	2.8	3.0	2.7	2.8	3.2	6.0	7.7	7.0	8.4	9.6	8.0	7.3	6.9	6.8	4.5	4.9	3.7	A	A	2.7	2.8F	(2.9)A
24	3.0F	3.0	2.9F	3.1	2.8F	2.5F	2.9	5.6	5.9	8.4J	6.2	7.4	7.4	7.2	7.5	6.5	5.6	(4.7)B	3.8	3.3	(3.2)A	3.2F	3.3F	3.2
25	2.8	2.8	3.0	3.2	3.3	3.1	2.9	5.4	6.0	7.9	9.1	8.1	9.0	7.5J	7.5	5.9	5.3	3.4Z	2.8	3.3	3.5	3.5	3.4	3.5
26	3.4	3.3V	3.3	3.1	3.0V	2.8VF	3.0F	5.8	6.1	8.0	9.5	8.5	7.1	6.2	6.8	6.7	5.2	3.3	2.7	3.2	3.7	2.8	3.3	2.9
27	2.5	2.7	3.0	3.0	3.2	2.9V	2.7F	5.1P	8.8	9.0	7.1	11.0	7.2	6.1	7.0	8.7	7.1	5.3	5.0	4.6P	3.1	2.6	3.1	3.0
28	3.3	3.0	3.2	3.2	3.2	3.2	2.8J	[4.8]A	6.9	8.0	9.1	10.9	7.8	7.2	6.0	6.0	5.8P	4.2	3.1	3.2	3.2	3.1	(3.0)A	2.8
29	2.9F	2.9F	2.5	3.3V	3.0	2.8JF	3.8V	5.3	5.8	6.3	7.4	8.4P	(7.7)C	7.0	6.7	6.4	5.4	4.3	3.9	3.4F	A	A	A	A
30	A	3.3F	3.3F	(3.2)A	3.2	2.8F	(3.8)A	4.7	6.7	7.8	8.7	8.7H	7.0P	6.6	6.5	5.4	5.2	3.4	3.2	3.2	3.3V	3.0F	2.4F	(2.8)A
31																								
Mean Value	3.2	3.3	3.3	3.4	3.4	3.1	3.3	5.9	7.0	7.4	7.8	8.5	8.0	7.3	7.0	6.9	6.0	4.5	3.8	3.5	3.4	3.2	3.2	3.2
Median Value	3.3	3.3	3.3	3.3	3.2	3.1	3.2	5.7	7.0	7.4	7.5	8.2	7.9	7.3	6.9	6.8	5.8	4.3	3.7	3.4	3.2	3.1	3.2	3.2
Count	29	29	29	30	30	29	30	30	30	30	28	29	29	30	30	30	30	30	29	28	28	28	28	29

foF2

Sweep 1.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A 1

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

IONOSPHERIC DATA

Nov. 1952 | foF2 | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300F	370	320F	340F	340	350	270	270	240	230	250	260	260	290	250	260	270	270	260	240	250	310H	310	310
2	310	310	360	350	320	310F	340	(270)J	260	260	290	280	260	260	300	250	250	250	310	250	300	310	290	(370)JF
3	(340)JF	(350)JF	360	320	310	290	260	250	270	240	250	260	260	250	250	260	270	250	A	310	300	300	320	320
4	310	A	A	300	320	310	280	280	280	250	250	230	230	260	250	230	230	220	230	[260]A	290	290	250	270
5	320	350F	320	380F	330F	310H	250	240	250	240	240	230	290	230	250	260	240	220	280	300	280	250	220	290
6	290	340	310	(330)JFH	310F	320F	250	210	220	210	280	260	230	240	270	250	250H	270	240	230	300	270	260	310
7	300	340	290	220	250F	300H	300	230	290	230	250	260	270	230	(250)P	(250)J	220	[260]B	300	240	260	A	A	320VF
8	(350)JF	330F	(330)JF	320F	330F	270F	310EF	230	230	250	260	280	270	260	260	270	260	220	270	290	320	320F	[320]A	310F
9	310F	320F	300	290	340	270	290	220	220	240	260	260	260	[260]C	250	250	230	230	296	310	320	310	320	320
10	310FH	320	350	280	280	FB	(380)PH	250H	230	240	240	240	250	240	250	240	220	200	230	310	300	320	(330)JF	320
11	300	300	260	300	310	300	300	240	230	220	BS	270	270	260	230	230	230	230	220	280	280	270	310	330
12	330	310	300	310	330F	310F	290	220	240	250	250	280	240	240	250	240	230	250V	280	290	320	300	300	300
13	320H	330	320	320	270	250	300	230	250	220	290	270	240	250	250	220	220	250	A	A	290	280	340	[330]C
14	320	310	300	(320)PJF	(270)PJF	210F	270F	230	220	240	250	260	250	260	260	240	220	250	230	250	340	320	310	310
15	320	310	310	300	230	250	250	240	220	250	250	270	270	270	270	250	240	270	220	260	270	270	270	(400)J
16	340	320	[330]A	340	290	230	250	250	230	250	260	260	250	250	250	240	220P	270	300	270	300	[300]A	(300)JF	380
17	350	320	360	300	360	270	370	260	270	270	M	M	M	(270)PJ	250	250	230	280	320	310	340	290	320	350V
18	340V	320V	380	330V	340	290	300	300	[270]T	240	260	250	270	260	260	250	250	280	290	300	300P	300	360	[380]B
19	370	370P	340	300	280	300	250	[250]M	250	270	250	260	300	270	270	250	250	300	320H	290	310	330	340	400F
20	350	350VF	(340)JF	320F	300V	290V	300Z	260	230	270	250	250P	270	250	250	240	250	250	250	320	300	310	310	340
21	310	350	320	290	260	260	300	250	270	260	270	260	250	290	270	240	250	270	290	340	330	380	300	350
22	300	310A	[330]A	350	360	360	270	230	240	250	280	240	230	270	250	260	250	280	320	340	280	310	310	300
23	250	320	370	380	370	350	300	260	240	260	270	240	260	270	250	240	240	270	230	A	A	320	360F	[340]A
24	320F	400	330F	320	270F	350F	270	240	240	(250)J	240	250	240	260	240	230	240	[250]B	260	300	[320]A	330F	280F	270
25	300	330	340	320	330	330	300	250	250	260	240	250	270	(240)J	240	220	200	240R	280	300	280	340	350	300
26	330	320V	370	350	350V	290VF	270F	230	250	280	250	240	250	250	280	240	250	250	320	360	280	300	330	230
27	350	360	330	370	330	270V	330F	230P	300	280	250	250	250	240	280	270	230	310	270	270P	270	290	370	320
28	410	370	370	310	350	340	(320)J	[280]A	250	270	270	250	250	250	230	250	[280]A	300	380	320	320	280	[310]A	340
29	350F	310F	340	340V	310	(340)JF	320V	230	240	240	260	250P	[240]C	240	260	250	230	260	[260]A	250F	A	A	A	A
30	A	330F	320F	[300]A	290	310F	[290]A	270	260	250	230	250H	250P	260	260	250	250	240	300	270	280V	240F	300F	[310]A
31																								
Mean Value	320	330	330	320	310	300	290	250	250	250	260	260	260	260	260	250	240	260	280	290	300	300	310	320
Median Value	320	330	330	320	320	300	300	240	240	250	250	260	250	260	250	250	240	250	280	290	300	300	310	320
Count	29	29	29	30	30	29	30	30	30	30	28	29	29	30	30	30	30	30	28	28	28	28	28	29

Sweep 1.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A2

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

IONOSPHERIC DATA

Nov. 1952 | h'F2 | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

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

h'F2

Sweep 1.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A 3

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Nov. 1952

f_0F1

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	Q	Q	4.5^L	4.0^L	4.0^L	Q	Q							
2								Q	(4.0)^L	4.1	Q	3.9	Q	4.4^L	Q	L	Q							
3								Q	Q	L	4.0	Q	4.0	L	L	L	Q							
4								Q	L	(3.7)^L	4.0	4.0	[3.8]B	3.7	Q	Q	A							
5								Q	Q	Q	A	Q	Q	Q	Q	Q	Q							
6								Q	L	Q	A	Q	L	Q	Q	Q	Q							
7								Q	Q	Q	L	Q	4.8^L	L	A	A	A							
8								Q	Q	3.7	Q	(3.9)^L	[3.8]L	3.6	L	L	Q							
9								Q	Q	L	L	L	L	C	A	L	Q							
10								Q	Q	Q	L	L	4.2^L	4.0	Q	Q	Q							
11								Q	Q	L	Q	L	L	4.5	Q	Q	Q							
12								Q	Q	Q	4.2	4.5	[4.2]L	3.8	L	Q	Q							
13								Q	L	Q	3.8	Q	4.1	L	L	Q	Q							
14								Q	Q	4.1	L	L	4.2	A	A	A	A							
15								Q	Q	L	3.8	3.9	[3.8]L	3.8	L	Q	Q							
16								Q	Q	L	L	L	L	L	Q	Q	Q							
17								Q	Q	L	M	M	M	L	L	Q	Q							
18								Q	Q	Q	L	4.1^L	4.1^L	Q	Q	Q	Q							
19								Q	Q	3.7	4.1^L	4.0^L	Q	Q	Q	Q	Q							
20								Q	Q	L	3.7	3.9	4.1	4.0	Q	Q	Q							
21								Q	Q	Q	L	L	L	L	Q	Q	Q							
22								Q	3.8^L	Q	Q	3.8^L	4.0	L	Q	Q	Q							
23								Q	Q	Q	L	4.1	L	Q	Q	Q	Q							
24								Q	Q	L	Q	3.9^L	Q	4.4^L	Q	Q	Q							
25								Q	Q	Q	Q	L	L	Q	Q	Q	Q							
26								Q	Q	Q	3.9	3.7	(3.6)^L	3.5	Q	Q	Q							
27								Q	L	Q	Q	3.8	3.8	3.4	3.8	Q	Q							
28								A	Q	Q	4.0	3.7^L	3.9^L	Q	Q	Q	A							
29								Q	Q	Q	A	Q	C	3.2	3.2	2.7	Q							
30								Q	Q	Q	L	L	L	L	C	Q	Q							
31																								
Mean Value									3.9	3.9	3.9	4.0	4.1	3.9	3.7	2.7								
Median Value									3.9	3.7	4.0	3.9	4.0	3.8	3.8	2.7								
Count									2	5	9	14	16	13	3	4								

Sweep 1.0 Mc to 17.0 Mc in 10 min — Manual — from 1st to 14th
Sweep 0.85 Mc to 20.0 Mc in 6 min — Automatic — from 15th to 30th

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

IONOSPHERIC DATA

Nov. 1952 | h'F1 | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

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

h'F1

Sweep 1.0 Mc to 17.0 Mc in 10 min — Manual from 1st to 14th
Sweep 0.85 Mc to 22.0 Mc in 6 min — Automatic from 15th to 30th

A 5

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Nov. 1952

foE

135° E Mean Time

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

Sweep 1.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A 6

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

IONOSPHERIC DATA

Nov. 1952 | h'E | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

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

h'E

Sweep 1.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc to 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A 7

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Nov. 1952

fEs

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.2	2.5	2.8	2.8	2.4	2.6	3.6	4.0	4.2	4.5	4.4	4.8	G	G	3.4	5.2	4.4	4.2	5.7	4.8	2.5	E	E	E
2	2.2	2.4	E	1.8	E	E	E	G	3.0	3.8	3.6	3.2	4.7	G	3.0	3.0	3.4	4.4	4.0	3.5	E	E	E	E
3	2.4	1.9	2.3	2.4	1.9	1.4	2.1	2.8	2.8	4.8	3.5	3.1	4.1	5.5	3.4	3.4	3.4	4.0	3.5	2.6	3.0	2.8	3.2	2.8
4	3.0	5.4	4.8	2.2	3.0	3.2	3.1	3.9	3.5	3.8	4.4	3.7	3.6	3.4	3.4	4.6	4.8	4.4	3.8	3.0	2.4	1.9	1.9	2.5
5	2.5	3.8	2.4	2.7	2.2	E	E	2.4	3.6	3.6	5.2	4.0	4.4	3.7	G	G	3.0	3.2	2.4	E	2.6	E	E	2.3
6	2.9	4.7	2.6	2.2	2.6	E	E	2.4	3.2	3.2	5.3	4.2	3.7	4.2	4.2	3.4	3.3	3.2	3.2	2.4	2.5	2.7	2.4	2.0
7	E	2.4	2.6	2.8	2.3	1.8	2.4	4.4	4.2	4.5	3.9	3.7	3.3	4.7	5.0	6.1	5.2	5.0	4.7	3.0	5.8	6.2	6.6	3.0
8	2.4	3.0	2.4	2.2	2.4	3.4	2.0	3.0	3.5	4.8	4.3	3.5	G	G	G	G	G	1.8	2.8	2.9	2.5	2.6	5.7	5.4
9	4.9	3.8	3.1	2.6	2.4	2.4	E	2.2	2.8	G	G	G	G	C	5.9	3.5	3.3	3.4	2.4	2.0	3.0	2.5	2.8	2.4
10	2.7	2.4	3.1	E	E	E	E	B	G	4.5	G	G	G	G	3.6	3.2^{Y}	3.4	3.4	3.5	2.9	2.6	2.4	2.6	2.1
11	2.1	1.7	1.6	1.4	E	E	E	G	G	G	G	G	G	G	G	G	2.4	2.5	2.3	2.0	2.2	3.4	2.8	2.8
12	2.6	2.3	2.6	2.0	E	E	2.3	G	G	G	3.6	G	G	G	G	3.6	G	E	E	E	2.0	2.2	2.0	E
13	2.4	E	E	2.2	2.0	2.2	2.0	G	G	3.4	3.2	3.4	3.5	3.4	3.5	G	2.5	4.0	6.7	5.2	3.4	2.6	2.4	C
14	1.9	2.0	E	E	2.2	1.9	2.0	G	G	G	G	3.7	3.0	4.8	4.4	4.2	4.0	4.4	4.6	2.9	2.5	1.8	E	E
15	E	E	1.6	E	E	E	E	G	3.2	3.8	3.9	4.5	4.1	4.2	3.5	3.5	2.7	E	E	1.8	E	3.5	3.0	4.9
16	5.8	3.5	3.7	2.5	2.6	2.1	2.1	G	3.2	3.5	G	4.5	4.1	4.2	5.0	4.6	3.4^{Y}	2.5^{Y}	2.5	2.6	2.7	4.9	E	3.5
17	3.5^{Y}	2.1	1.9	2.5	4.2	4.8	5.4	6.5^{Y}	4.3	4.6	M	M	M	3.9	3.4	3.2	1.8	2.6	2.7	2.8	2.3	2.1	2.2	2.7
18	2.0	4.2	3.7	3.7	2.5	2.1	2.5	2.3	3.3^{Y}	G	3.4	3.5	4.2	4.9	3.5	3.4	3.2	3.0	2.9	2.5	E	E	E	E
19	2.2	1.8	2.1	2.5	2.1	2.2	E	2.8^{Y}	3.1^{Y}	3.4	5.4	G	G	G	3.5	5.2	3.1	2.4	2.7	3.2	2.3	2.9	3.5	3.4
20	1.8^{Y}	3.5	2.0	2.2	2.3	E	E	G	2.9	3.5	G	3.4	3.5	G	3.4	3.2	3.1	3.4	3.4	3.1	E	E	E	E
21	2.4	2.2^{Y}	2.3^{Y}	2.0	E	2.9^{Y}	2.2	3.2	3.4	G	G	3.8	G	G	G	3.1^{Y}	G	2.4	2.2	E	2.3	3.7	3.1	3.8
22	3.5	4.0	3.5	3.2	2.5	2.4	E	2.7	3.5	G	4.1	3.6	3.4	3.6	3.7	G	4.0	3.0	2.3	3.1	2.0	2.1	2.4	2.2
23	3.3	1.9	2.3	2.2	2.2	2.5	E	3.0	3.7	4.7	4.5	3.7	3.5	3.4	3.4	3.0	3.3	2.8^{Y}	3.1	4.9	4.8	2.4	2.2	7.2
24	2.9	3.2	2.2^{Y}	1.8	2.0	2.3	2.4	3.5	3.6	5.0	7.4	3.5	G	4.0	3.2	3.2	3.6	3.6	2.5	4.3	9.4	4.3	2.8^{F}	2.5
25	2.5	2.5	2.3	2.3^{Y}	2.4	2.2	2.4	2.8	3.1	3.5	G	G	3.5	G	G	G	2.9	2.7	3.0	3.1^{Y}	3.0	3.5	2.4	2.4
26	3.1	2.4	2.4	2.4	3.3	2.3	2.0^{Y}	2.5	G	3.5	3.4	G	3.4	G	3.5	3.5	3.5	3.5	2.8	E	3.5	4.7	2.4	2.5
27	2.4	2.3	2.4	3.0	2.7	3.1	2.2	2.5	4.0	3.5	3.5	3.5	3.5	3.5	4.6	5.4	3.0	3.0	3.1	2.5	7.0	6.8	3.2	3.4
28	2.5	2.4	2.5	2.5	2.4	2.0	4.3	9.5	11.6	7.4	7.2	5.3	4.2	3.9	4.6	4.6	6.9	7.2	4.3	11.5	5.8	4.3	6.5	3.7
29	3.5	3.2	4.2	4.8	3.5	2.8	E	G	3.4	3.4	3.5	3.9	C	3.5	3.5^{Y}	3.1^{Y}	3.1^{Y}	3.1	2.4	2.3	7.2	5.3	4.3	4.1
30	4.2	2.4	2.3	7.3	3.6^{Y}	4.2	4.2	11.2	3.9	5.5	3.5	3.8	3.4	3.0	C	4.7	5.0	4.6	4.5	4.3	3.5	3.0	7.5	4.5
31																								
Mean Value	2.8	2.9	2.6	2.6	2.6	2.6	2.7	3.9	3.8	4.2	4.3	3.8	3.7	4.0	3.9	3.9	3.5	3.5	3.4	3.4	3.6	3.4	3.4	3.3
Median Value	2.5	2.4	2.4	2.4	2.4	2.2	2.0	2.5	3.2	3.5	3.5	3.5	3.4	3.4	3.5	3.4	3.3	3.2	3.0	2.9	2.6	2.6	2.4	2.5
Count	30	30	30	30	30	30	30	29	30	30	29	29	28	29	29	30	30	30	30	30	30	30	30	29

Sweep 4.0 Mc to 17.0 Mc in 10 min
Sweep 0.85 Mc To 22.0 Mc in 6 min

Manual from 1st to 14th
Automatic from 15th to 30th

A 8

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

IONOSPHERIC DATA

Nov. 1952 | **(M3000)F2** | **135° E Mean Time** | **Akita** | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.8F	2.8	3.0F	2.9F	2.8	2.8	3.3	3.3	3.4	3.7	3.6	3.3	3.3	3.1	3.4	3.4	3.2	3.3	3.4	3.5	3.4	3.1H	3.1	3.0
2	3.0	3.0	2.8	2.8	3.0	3.2F	3.1	(3.3)J	3.3	3.3	3.3	3.2	3.5	3.5	3.2	3.4	3.4	3.4	2.9	3.3	3.1	3.0	3.2	(2.7)JF
3	(2.9)JF	(2.9)JF	2.9	3.0	3.2	3.2	3.3	3.5	3.4	3.7	3.5	3.4	3.4	3.5	3.4	3.4	3.3	3.5	3.1	2.9	3.1	3.1	2.7	3.0
4	3.0	A	A	3.1	3.0	3.0	3.2	3.3	3.4	3.5	3.6	3.6	3.6	3.4	3.5	3.6	3.6	3.7	3.6	[3.4]A	3.2	3.2	3.5	3.3
5	3.0	2.8F	3.0	2.7F	3.3FV	3.1H	3.3	3.6	3.6	3.5	3.4	3.6	3.2	3.2	3.5	3.5	3.5	3.6	3.1	3.1	3.2	3.5	3.7	3.2
6	3.3	2.8	3.1	(3.0)JFH	3.0F	2.9F	3.3	3.9	3.7	3.8	3.2	3.3	3.5	3.4	3.2	3.4	3.6H	3.3	3.5	3.5	3.1	3.2	3.4	3.0
7	3.0	2.9	3.3	3.7	3.5F	3.1H	3.5	3.6	3.5	3.5	3.5	3.4	3.3	3.6	(3.4)P	(3.3)J	3.8	[3.4]B	3.1	3.5	3.5	A	A	3.0FV
8	(2.8)JF	2.9F	(2.8)JF	3.0F	2.9F	3.4F	3.1ZF	3.5	3.6	3.5	3.3	3.4	3.3	3.5	3.4	3.2	3.4	3.6	3.2	3.1	3.0	3.0F	[3.1]A	3.2F
9	3.0F	3.0F	3.2	3.2	2.9	3.2	3.2	3.8	3.8	3.6	3.4	3.4	3.4	[3.4]C	3.5	3.5	3.6	3.5	3.2	≤0	3.0	2.9	3.0	2.9
10	2.9FH	3.0	2.9	3.2	3.1	BF	(2.7)FH	3.3H	3.6	3.4	3.6	3.6	3.5	3.6	3.3	3.6	3.7	4.0	3.7	3.1	3.1	3.0	(2.9)JF	3.0
11	3.1	3.2	3.0	3.2	3.1	3.3	3.0	3.5	3.6	3.7	BS	3.2	3.6	3.5	3.6	3.7	3.7	3.7	3.7	3.3	3.2	3.4	3.0	3.0
12	2.9	3.0	3.1	3.0	3.0F	3.0F	3.1	3.6	3.4	3.4	3.5	3.2	3.4	3.4	3.3	3.5	3.6	3.4V	3.3	3.1	3.0	3.2	3.1	3.1
13	3.0H	2.9	3.0	3.0	3.3	3.5	3.6	3.5	3.5	3.8	3.2	3.5	3.6	3.5	3.6	3.9	3.8	3.3	A	A	3.3	3.2	2.9	[3.0]C
14	3.1	3.3	3.2	(2.9)PJF	(3.2)PJF	3.7F	3.5F	3.5	3.7	3.6	3.4	3.5	3.5	3.5	3.3	3.6	3.6	3.4	3.5	3.3	2.8	3.0	3.1	3.1
15	3.1	3.1	3.1	3.2	3.6	3.3	3.5	3.5	3.7	3.4	3.5	3.3	3.4	3.3	3.5	3.5	3.6	3.4	3.8	3.1	3.4	3.3	3.0	(2.5)J
16	2.9	3.0	3.0	3.0	3.3	3.7	3.4	3.6	3.7	3.4	3.5	3.5	3.4	3.4	3.7	3.5	3.7P	3.5	3.2	3.1	3.3	[3.4]A	(3.5)JF	2.7
17	2.5	2.9	2.8	3.3	2.5	3.6	2.8	3.6	3.3	3.6	M	M	M	(3.4)PJ	3.4	3.3	3.6	3.2	3.0	3.1	2.9	3.0	3.1	2.9V
18	3.0V	3.1V	3.1	3.0V	3.2	3.3	3.1	3.0	[3.3]T	3.6	3.5	3.5	3.3	3.4	3.3	3.5	3.3	3.2	3.2	3.2	3.1P	3.1	2.8	[2.8]P
19	2.7	2.8P	3.0	3.2	3.2	3.0	3.4	[3.5]M	3.6	3.4	3.7	3.5	3.2	3.4	3.3	3.5	3.4	3.6	3.2	3.1H	3.3	3.2	3.0	2.7F
20	2.9	3.1VF	(3.0)JF	3.2F	3.3V	3.2V	3.1Z	3.5	3.8	3.4	3.5	3.4P	3.4	3.5	3.5	3.6	3.4	3.8	3.5	3.1	3.2	3.1	3.1	2.9
21	3.1	3.0	3.0	3.4	3.4	3.3	3.2	3.5	3.4	3.4	3.4	3.5	3.7	3.3	3.3	3.6	3.5	3.5	3.2	2.9	3.0	2.7	3.3	2.7
22	3.1	2.8	2.7	2.9	2.8	2.9	3.5	3.8	3.7	3.2	3.4	3.6	3.7	3.4	3.4	3.5	3.5	3.3	3.0	2.8	3.2	3.1	3.1	3.1
23	3.4	2.9	2.5	2.7	2.7	2.8	3.1	3.5	3.6	3.4	3.4	3.6	2.9	3.4	3.5	3.4	3.6	3.4	3.9	A	A	3.0	2.9F	[3.0]A
24	3.1F	2.7	3.1F	3.2	3.5F	3.0F	3.4	3.7	3.7	(3.7)J	3.7	3.6	3.6	3.4	3.4	3.6	3.4	[3.4]B	3.5	3.3	[3.2]A	3.0F	3.2F	3.4
25	3.1	2.9	3.0	3.1	3.0	2.9	3.2	3.4	3.5	3.6	3.6	3.5	3.2	(3.6)J	3.7	3.8	3.9	3.5Z	3.2	3.1	3.4	2.9	3.1	3.2
26	3.0	3.1V	2.7	3.0	2.9V	3.1VF	3.4F	3.1	3.5	3.2	3.5	3.7	3.5	3.4	3.2	3.5	3.4	3.6	2.7	2.8	3.4	3.1	3.0	3.8
27	2.7	2.8	3.0	2.9	3.1	3.2V	3.0F	3.7P	3.3	3.3	3.4	3.2	3.6	3.6	3.4	3.4	3.5	3.0	3.4	3.5P	3.4	3.2	2.8	3.1
28	2.6	2.7	2.8	3.1	2.9	3.0	(3.0)J	[3.2]A	3.5	3.5	3.4	3.7	3.6	3.4	3.6	3.5	3.4P	3.2	2.8	3.0	3.0	3.2	[3.0]A	2.8
29	3.0F	3.0F	2.8	3.0V	3.1	(3.0)JF	2.8V	3.7	3.6	3.5	3.4	3.6P	[3.6]C	3.6	3.3	3.4	3.5	3.5	3.7	3.5F	A	A	A	A
30	A	3.0F	3.1F	[3.2]A	3.3	3.2F	[3.3]A	3.4	3.5	3.3	3.9	3.7H	3.5P	3.3	3.5	3.5	3.3	3.2	3.0	3.3	3.3V	3.6F	3.0F	[3.0]A
31																								
Mean Value	3.0	2.9	3.0	3.1	3.1	3.2	3.2	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.5	3.5	3.4	3.3	3.2	3.2	3.1	3.1	3.0
Median Value	3.0	2.9	3.0	3.0	3.1	3.2	3.2	3.5	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.5	3.6	3.4	3.2	3.1	3.2	3.1	3.1	3.0
Count	29	29	29	30	30	29	30	30	30	30	28	29	29	30	30	30	30	30	29	28	28	28	28	29

(M3000)F2

Sweep 1.0 Mc to 17.0 Mc in 10 min — Manual — from 1st to 14th
Sweep 0.85 Mc to 22.0 Mc in 6 min — Automatic — from 15th to 30th

23

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

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Nov. 1952 | **fminF** | 135° E Mean Time

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

Sweep 1.0 Mc to 17.0 Mc in 10 min Manual from 1st to 14th
Sweep 0.85 Mc To 22.0 Mc in 6 min Automatic from 15th to 30th

A 10

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

IONOSPHERIC DATA

Nov. 1952 | fminE | 135° E Mean Time | Akita | Lat. 39° 43.5' N | Long. 140° 08.2' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	1.2	E	1.2	1.2	1.4	1.8	1.5	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	E	E	E
2	1.6	1.1	E	1.1	E	E	E	1.5	1.5	1.7	1.7	1.7	1.7	1.7	2.0	1.6	1.6	1.4	1.4	1.4	E	E	E	E
3	1.8	1.2	E	E	E	E	1.7	1.6	1.5	1.5	1.5	1.7	1.6	1.5	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.4	1.3
4	1.4	1.2	1.2	E	E	E	1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.7	1.5	1.5	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
5	1.1	1.1	E	E	1.2	E	E	1.5	1.6	1.7	1.6	1.7	1.7	1.4	1.5	1.7	1.5	1.7	1.7	E	1.4	E	E	1.8
6	1.4	1.2	E	E	E	E	E	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.7	1.7	1.7	1.7
7	E	E	E	E	E	1.2	1.2	1.4	1.5	1.6	1.5	1.4	1.4	1.3	1.5	1.5	1.3	1.5	1.4	1.5	1.5	1.5	1.5	1.3
8	1.3	E	E	E	E	E	1.6	1.4	1.4	1.7	1.7	1.7	1.8	1.7	1.6	1.6	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3
9	1.1	E	1.1	1.1	1.2	1.1	E	1.7	1.6	1.6	1.6	1.8	1.6	(1.6)C	1.5	1.5	1.4	1.5	1.5	1.4	1.3	1.2	1.2	1.2
10	1.2	E	E	E	E	E	E	8	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.4
11	1.1	1.2	E	1.2	E	E	E	1.5	1.6	1.5	1.6	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.3	1.6	1.2
12	1.2	E	1.9	1.1	E	E	1.7	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	E	E	E	1.6	1.5	1.5	E
13	1.1	E	E	1.2	1.2	1.3	1.3	1.3	1.4	1.3	1.4	1.4	1.5	1.4	1.3	1.3	1.4	1.3	1.3	1.7	1.7	1.7	1.7	(1.6)C
14	1.4	1.4	E	E	E	1.2	1.5	1.5	1.4	1.5	1.6	1.6	1.5	1.6	1.6	1.4	1.6	1.4	1.4	1.4	1.3	1.7	E	E
15	E	E	1.2	E	E	E	E	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	E	E	1.7	E	1.4	1.4	1.4
16	1.4	E	E	E	E	1.7	1.7	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.3	1.4	E	1.4
17	1.5	1.5	1.5	E	E	E	1.4	1.4	1.4	1.4	M	M	M	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.5	1.5	1.4
18	1.5	1.1	E	1.2	E	1.6	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	E	E	E	E
19	1.4	1.6	1.4	E	E	1.5	E	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.6	1.5	1.4	1.4
20	1.5	E	E	1.4	1.4	E	E	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	E	E	E	E
21	1.4	1.4	1.4	1.4	E	1.4	1.7	1.5	1.4	1.4	1.4	1.5	1.4	1.6	1.4	1.4	1.5	1.8	1.5	E	1.6	1.4	1.4	1.4
22	E	E	E	E	E	1.4	E	1.4	1.4	2.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.3	1.7	1.4	1.5
23	1.5	E	E	E	E	E	E	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.4
24	1.4	E	E	1.5	E	E	1.5	1.4	(1.4)M	1.4	1.4	1.4	1.5	1.3	1.5	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5
25	1.5	1.4	1.4	1.5	1.4	1.5	1.6	1.4	1.4	1.4	1.5	1.6	1.5	1.5	1.6	1.5	1.3	1.3	1.4	1.5	1.4	1.5	1.5	1.5
26	1.5	1.4	E	E	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.5	1.4	1.4	1.5	1.4	1.4	E	1.5	1.4	1.4	1.5
27	1.4	1.5	1.7	E	E	E	1.6	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.4	1.4	1.4
28	1.6	1.4	E	E	E	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
29	1.4	E	E	E	E	E	E	1.4	1.4	1.4	1.4	1.4	(1.4)C	1.5	1.4	1.4	1.6	1.4	1.4	1.6	1.4	1.4	1.4	1.4
30	1.4	E	E	E	E	1.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
31																								
Mean Value o	1.3	1.2	1.4	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.4
Mean Value x	1.5	1.4	1.4	1.4	1.4	1.5	1.6	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.5	1.4	1.4
Median Value o	1.2	E	E	E	E	E	1.2	1.5	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.3
Median Value x	1.4	E	E	E	E	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Count o	14	14	14	14	14	14	14	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Count x	16	16	16	16	16	16	16	16	16	16	15	15	15	16	16	16	16	16	16	16	16	16	16	16

Note: -
o: Values for the interval from 1st to 14th.
x: Values for the interval from 15th to 30th.

fminE

Sweep 1.0 Mc to 17.0 Mc in 10 min Manual from 1st to 14th
Sweep 0.85 Mc to 22.0 Mc in 6 min Automatic from 15th to 30th

A 11

25

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Nov. 1952

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	3.2	C	FB	3.4 P	2.7	2.5	(5.4) B	8.4	8.5	9.5 HP	(9.6) B	9.7 P	8.8 H	7.6 H	7.0	7.2	7.0	7.4 P	6.3 P	5.5	4.2 P	3.1	3.0	3.3
2	(3.4) P	3.2	3.2	3.2	3.3 J	3.3	3.7	6.5	(7.4) P	8.1 P	8.6	9.6	8.7	9.1	8.1	7.3	6.5	5.8	A	AF	AF	2.8	2.7	2.7 V
3	3.0 F	3.0	2.9	3.1	2.9	3.3	3.7	6.5	6.3	8.2	9.4 P	9.2 P	7.9	8.5	7.5	7.0	7.0	5.8	2.9	2.8	(2.9) AF	3.0 P	2.8	3.0
4	2.9	2.8	2.7 F	2.8 F	2.6	2.5	3.6	5.7	(8.9) P	9.1	8.6	8.1	6.6	6.2	7.3	8.4	6.8 P	AF	AF	AF	3.3	3.3 P	3.4	3.2
5	3.0	3.2	3.0 F	2.8	3.1	2.8	3.7	6.2 P	7.5	8.0 J	7.4	6.1	7.1	(7.0) B	6.8	6.5	6.7	4.8 P	(3.8) AF	2.8	3.1	3.1	2.5	2.6
6	2.6	2.7	(2.9) F	3.0 FF	3.2 F	2.8	3.7	5.8 P	5.6	5.9	6.5	7.0	10.0 JP	9.0 P	7.4 P	8.1 P	7.0	6.0	4.2	4.5	2.5 H	2.7	2.9	2.8
7	3.0	3.2	3.5	3.8	2.5 F	2.5	3.6	6.0	7.4 P	6.5	7.5	8.0	8.2	9.7 P	8.2	7.5	6.5	4.4	3.8	4.9	2.9	2.7 F	2.9 F	3.1 F
8	(3.2) F	3.4 PF	3.3 F	3.3 F	3.4 F	3.1 F	3.3	7.5 P	6.7	7.2	7.6	8.0	B	B	8.2	8.1	7.1	5.8	3.6	3.6	3.0	3.0	3.5	3.4
9	3.3	3.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	(6.7) P	(7.5) P	7.5 P	8.5	8.0	7.4 P	7.5	7.4	6.5	6.0	4.7 P	2.5	2.8	3.0	3.0	3.0 V	3.2
11	3.2	3.0	3.3	3.3	2.9	3.0	3.2	(6.0) P	6.7	6.1	7.5	7.2	8.2	7.5 P	7.3	6.5	5.7	4.1	3.0	3.1	(3.5) P	3.0	3.0	3.3
12	3.4	3.2	3.3	3.2	3.7 P	3.4	3.9	5.2	7.4 P	6.7	7.2	8.3	B	8.5	(8.0) P	7.3	6.1	(4.6) C	3.2	3.1	2.9	3.3	3.1	3.2
13	3.3	3.3	C	C	C	C	C	C	C	C	C	C	8.2	C	C	C	C	4.1	2.6	2.8	3.0	3.0	3.1	3.2
14	(3.2) P	(3.5) P	3.3	3.5	4.2	2.8 F	3.2	5.5	(7.5) P	(7.4) M	7.2	7.5	7.5	8.1	8.3 P	6.4	5.7	7	A	3.1	3.3	3.3	3.1	3.3
15	3.5	3.7	3.7	(3.7) T	3.7	2.8	3.2	6.1	(6.6) B	7.0 P	8.3 P	8.0	8.3	C	C	C	C	C	4.5	3.0	2.9	3.3 P	2.2 F	2.7
16	A	AF	3.2	3.0	3.8	3.0	2.9	(5.9) P	6.2	6.5	(8.0) P	7.5 P	8.0	(7.8) B	7.6 P	6.7	6.3	4.3	3.5	3.8	3.3	2.5	2.6 F	2.7
17	2.8 F	3.1 F	3.3	(3.7) P	2.7 F	2.7 F	3.2	5.9	7.6 J	B	B	7.8 P	7.3	7.2	(7.1) B	7.0	B	3.6	3.0	3.3	3.6	(4.2) JP	3.2	3.0
18	3.3	3.4 FP	3.2 F	3.2	3.0 F	2.9 F	3.0 F	6.2	B	6.7	C	C	C	C	(7.3) P	6.6	6.1	5.1	4.0 P	3.8	3.7	(3.4) P	(3.4) F	3.4
19	F	F	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.9	2.9	3.0	2.9
20	3.0	3.1	2.9	3.3	2.9	2.9	3.2	7.0 P	(6.8) C	6.5	7.5	7.4 P	(8.7) PF	8.6	(6.6) JP	5.7	5.5	4.3	2.9	2.7	3.3 F	2.7	3.0 F	2.9
21	3.1	C	C	3.3	3.4	2.0 F	2.6	5.6	7.0 P	6.6	8.2 JF	6.7	9.0	7.1	7.2	7.0 P	5.2	4.5	C	C	C	C	C	C
22	2.8	2.8	2.7	3.0	2.8	2.5 F	3.4	M	M	T	8.0 J	B	8.2	6.6	7.2	6.7 S	5.5	4.1	4.0	4.1	(4.2) A	4.2 P	3.3	3.3
23	(3.0) C	2.7	2.7	2.9	2.8	2.7 F	3.3 J	6.2	7.4 P	9.0 P	9.0	(8.8) B	8.7 P	8.4 JP	7.5	6.6	5.3	4.1	5.0 P	3.3 P	3.0	F	AF	(3.0) PF
24	AF	AF	2.7 F	3.0 F	3.0 F	2.5 F	2.9 P	5.9	6.2	7.5	(7.5) P	C	C	C	C	C	C	C	3.7 P	3.0	A	F	SF	SF
25	2.5 SF	(2.8) C	3.0 S	3.2 F	3.2 F	2.8	3.1	5.6	6.8 P	7.9 J	B	8.7	7.9	7.8	6.9	7.4 JP	5.7	3.5 P	B	A	3.2	3.2 F	3.3	3.2
26	2.8	2.8	2.7	2.8	2.8	2.7 F	2.8 F	[4.0] C	6.2	7.5	(8.0) B	8.6	7.4	6.5	6.5	6.5	6.3	4.4	2.7 F	3.0	AF	AF	3.0 F	3.0 F
27	2.5 Z	2.6	2.7	2.7	2.9	2.8 F	2.5 F	6.7 JP	7.5	(8.2) B	9.0	8.6	7.7	6.2	6.5	7.6 P	(8.5) P	5.0	4.3	3.9	3.3	2.7 F	2.8	AF
28	AF	(3.4) S	3.0	3.0	3.1	3.0	(3.4) P	6.6 P	[8.0] A	9.3	(9.7) P	8.8	8.7	7.8	6.4	5.7	6.0	4.3	AF	AF	3.6 P	(3.2) AF	2.8 FP	AF
29	AF	AF	2.7	2.5 F	2.7 FF	2.9 JF	3.9 P	7.0	6.2	7.0	8.3	9.0	7.9	6.7	6.4	6.6	5.8	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	7.3	8.1	7.0 H	7.0	7.6	6.5	5.8	5.8	5.3	4.0	3.7	3.0	3.9 F	2.6	(2.5) FF	2.5 F
31																								
Mean Value	3.0	3.1	3.0	3.1	3.1	2.8	3.4	6.2	7.1	7.5	8.1	8.1	8.1	7.6	7.2	6.9	6.2	4.7	3.7	3.5	3.3	3.1	3.0	3.0
Median Value	3.0	3.1	3.0	3.2	3.0	2.8	3.3	6.1	7.3	7.5	8.0	8.0	8.1	7.6	7.3	6.7	6.1	4.4	3.7	3.1	3.2	3.0	3.0	3.0
Count	23	22	23	25	25	25	25	25	25	25	24	24	24	23	25	25	24	23	21	22	24	24	25	24

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

K 1

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

IONOSPHERIC DATA

Nov. 1952 | **hpF2** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N, Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	400	C	FB	270 F	360	390	(320) B	260	260	300 PH	(280) B	270 P	280 H	260 H	270	260	260	280 P	270 P	270	290 P	300	320	350
2	(310) P	350	400	350	(300) J	330	260	270	(260) P	250 P	300	260	310	270	260	250	250	250	A	AF	AF	310	300	390 V
3	390 F	350	390	330	360	260	290	250	250	290	300 P	260 P	280	280	250	270	260	260	310	310	(320) AF	320 P	350	350
4	320	330	360 F	350 F	310	340	290	270	(270) P	260	250	240	250	250	280	250	240 P	AF	AF	AF	310	350 P	290	300
5	320	370	360 F	350	310	320	290	250 P	250	(240) J	230	270	280	[270] B	260	250	250	290 P	(300) AF	300	330	280	340	300
6	310	360	(390) F	300 PF	300 F	320	260	250 P	230	240	290	300	(280) JP	300 P	280 P	290 P	250	250	270	270	300 H	280	340	400
7	370	360	330	230	350 F	350	300	250	260 P	270	260	300	290	280 P	270	250	250	270	340	290	290	340 F	390 F	390 F
8	(380) F	350 FP	320 F	340 F	270 F	340 F	310	250 P	240	250	270	300	B	B	260	270	260	250	290	310	330	350	320	330
9	320	360	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	(260) P	(260) P	280 P	270	270	280 P	300	250	230	250	260 P	350 V	340	330	320	380 V	350
11	320	340	330	300	320	310	300	(250) P	270	260	250	260	280	270 P	250	260	230	250	300	320	(290) P	330	340	340
12	350	350	340	340	310 P	300	260	250	260 P	270	270	280	B	270	(260) P	260	250	(280) C	320	270	350	330	330	360
13	350	350	C	C	C	C	C	C	C	C	C	C	280	C	C	C	C	250	280	310	340	310	370	370
14	(360) P	(350) P	330	300	260	290 F	300	250	(260) P	(250) M	240	270	270	270	250 P	240	230	T	A	280	320	310	330	340
15	340	300	330	[240] T	260	270	300	250	[260] B	260 P	270 P	290	280	C	C	C	C	C	270	270	330	280 P	350 F	380
16	A	AF	370	350	270	250	350	(260) P	240	250	(270) P	280 P	290	(280) B	260 P	240	250	250	270	280	290	240	390 F	400
17	390 F	370 F	320	(250) P	270 F	340 F	300	300	(270) J	B	B	250 P	250	270	(260) B	260	B	260	330	330	350	(280) JP	300	310
18	350	300 PF	350 F	340	330 F	320 F	300 F	300	B	250	C	C	C	C	(260) P	260	270	300	270 P	340	310	(350) P	(350) F	350
19	F	F	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	330	300	320	360
20	340	340	350	280	300	320	320	260 P	[250] C	240	270	300 P	(260) PF	270	(250) JF	250	250	280	290	300	280 F	310	320 F	340
21	350	C	C	270	240	350 F	350	260	250 P	250	(250) JF	280	260	270	250	250 P	240	280	C	C	C	C	C	C
22	350	340	370	350	400	390 F	290	M	M	T	(290) J	B	260	270	260	240 S	250	280	290	350	(320) A	280 P	320	330
23	[350] C	370	360	380	390	380 F	(300) J	250	250 P	270 P	280	[270] B	260 P	(270) JF	250	250	240	300	270 P	260 P	320	F	AF	(350) PF
24	AF	AF	370 F	330 F	290 F	350 F	310 P	250	260	260	(250) P	C	C	C	C	C	C	C	310 P	290	A	F	SF	SF
25	280 SF	(320) C	360 S	310 F	340 F	320	310	260	260 P	(280) J	B	250	310	270	260	(250) JF	270	250 P	B	A	270	350 F	350	340
26	290	340	360	350	310	320 F	320 F	[300] C	280	270	[260] B	250	250	250	250	250	250	240	310 F	340	AF	AF	340 F	300 F
27	370 Z	400	320	380	340	300 F	340 F	(260) JF	360	[360] B	250	280	240	250	270	280 P	(240) P	270	260	270	240	350 F	350	AF
28	AF	(320) S	380	340	380	350	(310) P	260 P	[260] A	260	(250) P	260	260	250	250	250	290	280	AF	AF	300 P	(300) AF	300 FF	AF
29	AF	AF	280	330 F	330 FP	(380) JF	300 P	250	230	260	250	250	250	250	250	250	250	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	250	260	250 H	230	240	260	250	240	270	320	270	270	300 F	240	(250) VF	340 F
31																								
Mean Value	340	350	350	320	320	330	300	260	260	260	260	270	270	270	260	250	250	270	290	300	310	310	330	350
Median Value	350	350	360	330	310	320	300	260	260	260	260	270	280	270	260	250	250	270	290	300	320	310	340	350
Count	23	22	23	25	25	25	25	25	25	25	24	24	24	23	25	25	24	23	21	22	24	24	25	24

hpF2

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

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Nov. 1952

h'F2

135° E Mean Time

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

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

K 3

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

IONOSPHERIC DATA

Nov. 1952 | foF1 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	Q	4.1	4.0	4.1	3.8	3.8	L	Q	Q							
2								Q	4.3	3.8 L	4.5 L	4.2 L	4.2 L	[4.1] L	4.0 L	Q	Q							
3							Q	Q	3.5 L	3.5	4.2	4.3 L	[4.2] L	4.0 L	3.8 L	Q	Q							
4							Q	Q	4.0 L	4.0 L	4.2 L	4.3 L	L	L	L	A	A	AF						
5							Q	Q	3.7 L	4.0 L	4.2	4.0	L	L	L	Q	Q	A						
6								Q	Q	3.6	4.1	4.3	4.5	4.4	4.0 L	3.6 L	Q							
7							Q	Q	L	A	4.1 L	4.2 L	[4.2] A	4.3 L	4.0 L	3.3	L	A						
8							Q	Q	L	L	A	L	L	4.4 L	4.0 L	L	Q	Q						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10								Q	Q	L	4.3 L	4.2	L	3.7	4.0	L	Q							
11								Q	L	L	3.9 L	4.2 L	4.2 L	4.0 L	3.7 L	L	Q	Q						
12								Q	Q	L	4.2	4.0	4.5	4.1 L	4.0 L	3.2 A	Q	Q						
13								C	C	C	C	C	4.2	C	C	C	C	Q						
14								Q	Q	M	M	L	L	L	4.0 L	A	A							
15								Q	Q	L	4.2 L	4.2 L	L	C	C	C	C							
16								Q	3.3	4.0 L	4.3 L	L	L	4.3 L	L	Q	Q	Q						
17							Q	Q	3.5 L	4.0	4.2 L	4.4	4.1	L	L	Q	Q	Q						
18							Q	L	Q	Q	C	C	C	C	L	Q	Q							
19								C	C	C	C	C	C	C	C	C	C							
20							Q	Q	C	L	4.0 L	[4.2] L	4.3	4.2 L	4.0 L	A	Q							
21								Q	Q	Q	Q	4.4 L	4.3 L	4.0 L	L	Q	2.5							
22							Q	M	M	T	3.5	3.6	L	A	A	Q	Q	Q						
23								Q	L	L	L	4.2 L	4.2	4.2	L	Q	Q							
24								Q	Q	S	B	C	C	C	C	C	C							
25								Q	Q	L	4.0	4.2 L	4.1 L	3.7	[3.4] L	3.0	Q	Q						
26								C	3.1	4.1 L	4.2 L	3.7 L	4.0	3.7 L	L	Q	Q	Q						
27								Q	L	L	L	L	4.0 L	L	L	2.9 L	Q							
28								Q	A	A	A	3.9	4.2 L	4.0	3.5	3.5	Q							
29								Q	3.3	L	L	L	L	3.7	Q	Q	Q							
30								C	Q	3.8 L	4.0 L	[4.1] L	4.2	3.5	Q	Q	Q							
31																								
Mean Value									3.6	3.9	4.1	4.1	4.2	4.0	3.9	3.3	2.5							
Median Value									3.5	4.0	4.2	4.2	4.2	4.0	4.0	3.2	2.5							
Count									8	10	18	20	16	18	12	6	1							

foF1

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

K 4

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

IONOSPHERIC DATA

Nov. 1952 | h'F1 | 135° E Mean Time

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

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

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

K 5

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

IONOSPHERIC DATA

Nov. 1952 | foE | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N, Long. 139° 29.3' E

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

foE

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

K 6

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

IONOSPHERIC DATA

Nov. 1952 | h'E | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

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

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

Nov. 1952 | fEs | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.6	C	2.5	2.3Y	2.2Y	E	B	3.3	3.2	3.3Y	3.7	3.7	3.1	4.3	4.3	4.5	4.0	3.5	3.2	4.3Y	3.2F	2.5F	2.5	2.5F
2	2.5F	2.9F	2.5YF	2.5	2.5	E	2.5Y	2.7	3.0	G	G	G	G	G	3.3	3.2	4.0	4.2	4.2	5.9	4.3	3.3	2.7	4.0
3	2.9	3.5	2.5YF	2.5Y	2.5F	2.5	2.5F	3.0F	3.3	3.7	3.6	4.0	G	3.5	3.1	3.2	3.0	2.5F	2.9F	2.5F	3.9	3.5F	2.5	2.6
4	2.5F	2.5F	2.5F	3.1F	2.5F	2.5YF	2.5	2.6	3.7	3.5	3.6	3.5	4.7	3.5	4.0	4.3	5.2	4.5	5.3	4.7Y	4.1	3.6	2.9	2.5
5	2.8Y	3.0	3.0	2.5Y	E	E	2.5	2.5	3.2	3.5	3.9	3.9	3.7	G	G	3.4	2.8	3.5	3.1F	2.5	2.5	2.9	2.4	2.5
6	2.9	3.2F	3.0F	2.8	2.6F	2.6F	2.5Y	2.4	3.2	3.6	4.2	8.6	6.0	5.8F	G	3.0	3.2	3.2	2.6	2.9	2.4F	2.7	2.4	2.9
7	2.9	3.0	2.5Y	2.6Y	2.9	2.5YF	2.5	3.2	4.3	6.0	8.0	7.0	8.6	6.0F	5.0F	5.7	6.5F	5.5F	4.0	3.0F	3.1	3.0F	4.0	4.0
8	4.3	4.2	2.9F	2.5YF	2.6	2.6F	2.5	G	3.5	4.5	6.0	3.9	4.3	5.0	4.0	3.7	3.2	3.2	2.5F	3.5	2.9	E	2.5	2.5
9	3.9	4.3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	2.5	3.0	G	G	3.8	G	3.2	G	2.6	3.5Y	3.2	2.8	2.3	2.3	2.4	2.6	2.3
11	2.5F	2.5YF	2.5YF	2.5Y	2.5Y	E	3.0Y	G	3.0	3.2	4.3	G	G	G	3.8	3.6	3.0	4.2Y	2.5	2.3F	2.4	2.3	E	2.5
12	2.6	2.3Y	E	E	E	E	2.4F	2.5F	G	G	G	G	4.0	3.7	3.2Y	4.2	3.8	3.9	3.2	3.1	4.4	2.1	2.5Y	2.2
13	2.7	2.5	C	C	C	C	C	C	C	C	C	C	3.8	C	C	C	C	3.0	3.2	2.3	2.1	2.3Y	2.7	2.2
14	2.4	1.9Y	2.5	E	2.4Y	2.5YF	2.4	2.5	G	M	M	G	3.7	3.7	G	4.3	4.4	T	4.1	2.6Y	3.0	2.4	2.4	2.4
15	2.4	2.5	2.9	2.5Y	E	E	E	G	G	4.0	4.0	6.3	4.6	C	C	C	C	C	2.3	2.4	2.3F	E	2.7F	2.6F
16	4.0	7.0	3.9F	3.2F	3.7F	3.1	2.5	2.5	G	G	4.0	G	4.2	5.0	4.3	4.2	2.8	3.7	2.5F	E	2.5	E	2.6	2.3
17	E	E	E	E	2.5F	2.5	2.5	2.6	G	4.0	4.3	4.5	5.5	4.3	5.0F	5.5Y	4.0F	2.5F	2.5	2.3	2.0	E	E	E
18	3.0	2.5YF	3.9	3.6Y	2.6	2.5YF	B	3.0	G	4.0	C	C	C	C	4.0	3.9	3.2	2.2	E	E	E	E	E	2.5
19	E	E	E	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E	E	2.5	2.4F
20	2.5F	2.5YF	2.5YF	4.0F	2.6	2.5Y	2.2	3.0	C	3.5	G	G	4.0	4.2	4.7	4.0	3.5	2.5	2.4	3.0F	3.1	2.5	E	E
21	E	C	C	2.5F	2.7	2.5F	2.7	2.8	4.3	3.7	3.7	G	G	3.6	G	G	2.7F	E	C	C	C	C	C	C
22	2.5	2.3	2.5F	E	E	E	B	M	M	T	3.8	3.9	3.7	5.2	5.7	4.0F	3.3S	3.5SF	3.2	3.3	4.3F	2.6F	2.6	2.5
23	C	2.4	2.4	2.4	2.5	2.2	2.5F	2.6	3.7F	4.2	4.7	5.2F	5.0F	5.0	4.7F	4.0F	2.6	3.0	3.1	2.9	4.0F	2.5F	4.2	3.2
24	4.9F	3.7F	2.8	E	2.5Y	2.5F	2.5	2.6	4.2	4.7	7.0	C	C	C	C	C	C	C	3.2	3.0S	4.5S	3.3F	3.2SF	3.2
25	2.5SF	C	2.5	2.5F	2.6F	2.2	2.5F	2.5F	4.0F	3.8F	3.4F	G	G	G	4.0F	2.7	3.0	4.0F	3.0F	3.8F	3.3F	2.3	3.3F	2.6F
26	2.5F	2.5F	2.5F	2.6F	2.5F	2.5YF	2.5F	C	3.2F	3.7	G	3.2	G	3.5	3.0	3.0F	4.0F	3.2F	2.6F	2.5F	3.3F	5.5F	3.1F	2.8F
27	2.3F	2.5YF	2.5YF	2.5	2.9F	2.5F	2.4	2.5	3.2	4.0F	4.6F	4.2F	3.8F	3.6	4.2F	3.0F	2.5F	2.5	3.8F	2.0F	3.1F	2.9F	3.0F	3.2F
28	2.6F	3.0F	3.3YF	3.5F	1.8Y	E	2.4F	2.5	5.0	5.5	5.6F	4.5F	5.0F	4.3F	4.2F	3.3F	3.7	4.0F	4.2Y	3.8	4.5F	5.5F	3.5F	6.5F
29	5.7F	4.7F	3.0	2.4FY	2.5FY	2.5FY	2.5	2.5	3.0	3.5Y	3.6	6.0F	5.0F	3.8F	3.0F	3.6F	3.6F	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	3.8F	3.8F	3.8F	3.2F	3.8F	3.3F	3.8YF	3.8F	4.0F	3.0F	2.7F	2.5	2.5F	2.5F	2.6F	2.5
31																								
Mean Value	3.0	3.1	2.8	2.8	2.6	2.5	2.5	2.7	3.8	4.0	4.5	4.7	4.5	4.2	4.1	3.8	3.6	3.4	3.2	3.0	3.2	3.0	2.9	2.9
Median Value	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.2	3.7	3.8	3.8	3.8	3.7	4.0	3.7	3.5	3.2	3.0	2.8	3.1	2.5	2.6	2.5
Count	27	25	25	25	25	25	23	24	26	25	25	25	26	24	25	25	25	24	26	26	27	27	27	27

fEs

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

K 8

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Nov. 1952

(M3000)F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.7	C	F B	3.3 P	2.8	2.7	[3.1]B	3.5	3.5	3.2 PH	[3.2]B	3.3 P	3.1 H	3.3 H	3.3	3.3	3.2	3.2 P	3.3 P	3.3	3.2 P	3.1	3.0	2.8
2	(3.0)P	2.9	2.6	2.8	(3.0)J	2.9	3.2	3.3	(3.3)P	3.5 P	3.1	3.4	3.1	3.4	3.3	3.5	3.5	3.5	A	AF	AF	3.1	3.1	2.8V
3	2.8F	2.9	2.7	3.0	2.8	3.3	3.2	3.5	3.4	3.2	3.2 P	3.4 P	3.2	3.3	3.4	3.3	3.4	3.4	3.1	3.0	[3.0]JF	3.0 P	2.8	2.8
4	3.0	2.9	2.8F	2.8F	3.0	2.9	3.0	3.2	(3.3)P	3.5	3.5	3.5	3.5	3.5	3.2	3.4	3.5P	AF	AF	AF	3.0	2.7P	3.2	3.1
5	2.9	2.8	2.8F	2.8	3.0	3.0	3.1	3.5P	3.4	(3.5)J	3.7	3.3	3.3	[3.4]B	3.5	3.4	3.5	3.4P	[3.3]4F	3.2	2.9	3.2	2.9	3.0
6	3.0	2.8	(2.7)F	3.1VF	3.1F	3.0	3.2	3.6P	3.6	3.6	3.2	3.1	(3.3)JP	3.1P	3.2P	3.2P	3.4	3.4	3.3	3.3	3.1H	3.1	2.9	2.6
7	2.8	2.8	2.9	3.6	2.9F	2.9	3.0	3.5	3.3P	3.3	3.3	3.2	3.2	3.3P	3.3	3.4	3.4	3.1	2.8	3.2	3.1	2.8F	2.6F	2.6F
8	(2.7)F	2.9FP	2.9F	2.9F	3.2F	2.9F	3.0	3.4P	3.5	3.5	3.3	3.2	B	B	3.4	3.3	3.4	3.5	3.2	3.0	2.9	2.9	3.0	3.0
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	3.0	2.8	C	C	C	C	C	(3.4)P	(3.3)P	3.2P	3.4	3.3	3.2P	3.0	3.5	3.6	3.4	3.5P	2.8	2.9	2.9	3.0	2.8V	2.9
11	3.0	3.0	3.0	3.0	2.9	3.0	3.1	(3.5)P	3.3	3.5	3.5	3.5	3.3	3.3P	3.5	3.4	3.6	3.4	3.1	3.0	(3.2)P	2.9	2.9	3.0
12	2.9	2.8	3.0	2.9	3.0P	3.1	3.4	3.4	3.3P	3.3	3.4	3.2	B	3.2	(3.3)P	3.4	3.6	[3.3]C	3.0	3.3	2.8	3.0	3.0	2.9
13	2.9	2.8	C	C	C	C	C	C	C	C	C	C	3.3	C	C	C	C	3.4	3.1	3.1	3.0	3.0	2.8	2.7
14	(2.8)P	(3.0)P	3.0	3.3	3.4	3.2F	3.1	3.6	(3.4)P	[3.4]M	3.4	3.3	3.4	3.3	3.4P	3.6	3.6	T	A	3.2	3.0	3.0	3.0	2.9
15	2.9	3.1	2.9	[3.0]T	3.4	3.2	3.2	3.4	[3.4]B	3.3P	3.5P	3.2	3.2	C	C	C	C	C	3.3	3.3	3.0	3.2P	3.0F	2.7
16	A	AF	2.8	2.9	3.3	3.5	2.8	(3.4)P	3.5	3.4	(3.3)P	3.2P	3.1	[3.2]B	3.3P	3.5	3.4	3.4	3.3	3.4	3.2	3.5	2.7F	2.6
17	2.8F	2.8F	3.0	(3.3)P	3.3F	2.8F	3.1	3.1	(3.4)J	B	B	3.4P	3.5	3.2	[3.3]B	3.4	B	3.4	3.0	3.0	2.9	(3.2)3P	3.1	3.0
18	2.9	3.1PF	2.9F	3.0	2.9F	2.9F	3.1F	3.1	B	3.3	C	C	C	C	(3.4)P	3.3	3.2	3.1	3.2P	2.8	2.9	(2.8)P	[2.8]F	2.9
19	F	F	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	2.9	3.1	3.0	2.8
20	3.0	2.9	2.9	3.2	3.1	3.0	3.0	3.4P	[3.4]C	3.5	3.3	3.1P	(3.4)PF	3.3	(3.4)JP	3.5	3.6	3.1	3.1	3.0	3.2F	3.0	3.0F	2.8
21	2.8	C	C	3.3	3.5	2.8F	2.8	3.4	3.5P	3.4	(3.5)JF	3.3	3.5	3.3	3.4	3.4P	3.4	3.2	C	C	C	C	C	C
22	2.6	2.8	2.7	2.9	2.6	2.7F	3.2	M	M	T	(3.3)J	B	3.4	3.3	3.4	3.5S	3.6	2.9	3.0	2.8	(3.0]A	3.3P	3.0	2.9
23	[2.8]C	2.7	2.8	2.7	2.7	2.7F	(3.1)J	3.4	3.4P	3.3P	3.2	[3.4]B	3.5P	(3.3)JP	3.4	3.4	3.5	3.0	3.2P	3.3P	3.1	F	AF	(2.9)F
24	AF	AF	2.8F	2.9F	3.2F	2.8F	3.1P	3.5	3.5	3.4	(3.5)P	C	C	C	C	C	C	C	2.9P	3.1	A	F	SF	SF
25	3.2SF	[3.0]G	2.8S	3.1F	3.0F	2.9	3.1	3.4	3.4P	(3.2)J	B	3.5	3.0	3.2	3.3	(3.5)JP	3.5	3.4P	B	A	3.2	2.9F	3.0	2.9
26	3.2	2.9	2.8	2.8	3.1	3.1F	3.0F	[3.1]C	3.2	3.3	[3.6]B	4.0	3.4	3.4	3.4	3.6	3.4	3.5	3.0F	3.0	AF	AF	2.9F	3.1F
27	2.6Z	2.6	2.8	2.7	3.0	3.1F	2.8F	(3.4)JP	2.8	[3.2]B	3.5	3.2	3.5	3.3	3.3	3.3P	(3.5)P	3.2	3.4	3.3	3.5	2.8F	2.8	AF
28	AF	(3.0)S	2.8	2.8	2.8	2.8	(3.0)P	3.4P	[3.4]A	3.4	(3.6)P	3.6	3.4	3.4	3.4	3.5	3.3	3.3	AF.	AF	3.1P	[3.1]4F	3.1FP	AF
29	AF	AF	3.1	2.9F	2.9FP	(2.7)JF	3.1P	3.4	3.8	3.4	3.4	3.6	3.4	3.4	3.5	3.5	3.5	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	3.5	3.3	3.1H	3.6	3.5	3.5	3.4	3.6	3.4	2.9	3.3	3.2	3.2F	3.5	(3.4)VF	2.9F
31																								
Mean Value	2.9	2.9	2.8	3.0	3.0	3.0	3.1	3.3	3.4	3.4	3.4	3.4	3.3	3.3	3.4	3.4	3.5	3.3	3.1	3.1	3.1	3.1	2.9	2.9
Median Value	2.9	2.9	2.8	2.9	3.0	2.9	3.1	3.4	3.4	3.4	3.4	3.3	3.4	3.3	3.4	3.4	3.4	3.4	3.1	3.2	3.0	3.0	3.0	2.9
Count	23	22	23	25	25	25	25	25	25	25	24	24	24	23	25	25	24	23	21	22	24	24	25	24

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

K9

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

IONOSPHERIC DATA

Nov. 1952 | **fminF** | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N | Long. 139° 29.3' E

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

fminF

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

K 10

35

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

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Nov. 1952

fminE

135° E Mean Time

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

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

K 11

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

IONOSPHERIC DATA

Nov. 1952 | yp F2 | 135° E Mean Time | Kokubunji Tokyo | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	80	C	FB	60 P	90	100	(80) B	60	90	100 PH	(100) B	110 P	80 H	70 H	100	70	110	70 P	90 P	80	130 P	70	70	120
2	(90) P	100	110	100	(100) J	120	80	130	(70) P	70 P	70	80	60	60	70	70	80	70	A	AF	AF	80	100	60 V
3	60 F	100	70	80	90	90	70	60	70	80	100 P	60 P	80	70	110	80	70	140	60	90	(110) AF	130 P	100	110
4	80	80	110 F	100 F	120	70	130	130	(80) P	60	70	60	50	70	80	70	70 P	AF	AF	AF	90	110 P	60	100
5	90	90	80 F	90	90	90	80	70 P	70	(60) J	40	60	70	(60) B	50	60	50	50 P	(60) AF	80	70	70	100	100
6	100	90	(60) F	100 JF	60 F	80	90	50 P	60	60	80	90	(70) JP	70 P	70 P	90 P	100	70	80	70	300 H	120	110	110
7	80	90	70	60	100 F	100	150	100	90 P	90	90	50	60	70 JP	70	70	70	130	100	80	80	110 F	70 F	80 F
8	(70) F	100 FP	100 F	80 F	80 F	70 F	70	60 P	50	50	60	70	B	B	60	70	50	50	90	90	110	90	80	80
9	80	80	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	(60) P	(90) P	90 P	80	100	100 P	100	60	70	100	70 P	100	80	120	80	70 V	80
11	80	60	70	90	90	110	100	(90) P	60	50	80	90	60	60 P	60	80	70	90	100	80	(60) P	90	90	80
12	90	90	70	100	90 P	80	80	90	80 P	80	70	80	B	80	(90) P	100	60	(70) C	80	70	80	70	70	50
13	60	80	C	C	C	C	C	C	C	C	C	C	60	C	C	C	C	90	120	90	80	100	130	90
14	(90) P	(60) P	70	50	60	100 F	70	70	(70) P	(60) M	60	70	60	70	60 P	50	70	T	A	70	50	90	70	60
15	60	60	70	(60) T	50	60	50	50	[80] B	110 P	60 P	60	110	C	C	C	C	C	80	130	120	100 F	100 F	90
16	A	AF	90	80	90	70	100	(110) P	80	80	(80) P	70 P	80	(80) B	70 P	60	70	80	70	70	70	90	70 F	100
17	100 F	90 F	80	(70) P	120 F	110 F	70	100	(60) J	B	B	60 P	80	80	[80] B	90	B	50	100	70	60	(90) JP	110	100
18	60	110 FP	80 F	60	110 F	110 F	100 F	80	B	70	C	C	C	C	(60) P	80	100	70	90 P	80	90	(90) P	(80) F	70
19	F	F	F	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	80	70	90	90
20	60	110	90	70	70	100	90	90 P	(80) C	80	80	100 P	(70) PF	70	(80) JP	90	80	110	110	100	70 F	90	90 F	60
21	100	C	C	80	70	80 F	100	70	60 P	60	(60) JF	60	100	70	60	80 P	100	80	C	C	C	C	C	C
22	100	100	90	100	90	70 F	60	M	M	T	(60) J	B	80	80	70	60 S	60	80	60	90	(90) A	90 P	80	110
23	(100) C	100	80	80	70	70 F	(60) J	70	80 P	80 P	70	(60) B	60 P	(100) JP	70	80	70	100	110 P	130 P	80	F	AF	(70) PF
24	AF	AF	80 F	70 F	90 F	80 F	90 P	70	60	60	(50) P	C	C	C	C	C	C	C	90 P	110	A	F	SF	SF
25	70 SF	(80) C	90 S	90 F	60 F	80	70	60	70 P	(70) J	B	60	100	80	90	(50) JP	50	100 P	B	A	50	70 F	50	80
26	70	60	60	80	90	80 F	80 F	(80) C	80	70	(70) B	70	70	70	100	60	90	100	110 F	70	AF	AF	80 F	100 F
27	120 Z	100	100	80	100	100 F	110 F	(70) JP	90	(80) B	60	70	60	100	80	60 P	(100) P	120	80	60	60	100 F	80	AF
28	AF	(70) S	90	120	80	100	(60) P	70 P	(70) A	70	(50) P	50	60	100	100	100	110	70	AF	AF	70 P	(80) AF	90 FP	AF
29	AF	AF	100	100 F	120 FP	(90) JF	120 P	90	50	70	50	50	70	50	70	50	80	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	50	90	150 H	70	90	90	100	70	60	130	80	100	60 F	60	(60) JF	70 F
31																								
Mean Value	80	90	80	80	90	90	90	80	70	70	70	70	70	80	80	70	80	90	90	90	90	90	80	80
Median Value	80	90	80	80	90	90	80	70	70	70	70	70	70	70	70	70	70	80	90	80	80	90	80	80
Count	23	22	23	25	25	25	25	25	25	25	24	24	24	23	25	25	24	23	21	22	24	24	25	24

yp F2

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

K 12

37

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1952

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	2.6	2.7	2.9	3.0	2.8	2.5	2.5	5.1^{P}	8.4	9.9^{J}	12.0	8.0	8.5	9.4	8.2^{J}	8.6	7.5	S	C	A	4.8^{P}	4.1	3.8	3.8
2	3.7	C	C	C	C	3.0	3.3	(5.5)^{P}	6.4^{P}	7.9	8.2	10.1	10.4	11.5	12.4	10.6	8.4	7.5	6.0	3.9	[3.8]^{A}	3.7	2.5^{H}	2.4
3	2.5	2.7	2.6	3.2	2.9	2.9	2.3	(5.2)^{P}	[6.6]^{C}	8.0	10.0	11.2	9.6^{J}	12.0	13.3	12.7^{J}	8.5^{J}	7.1^{J}	5.0	3.5	3.6	3.7^{P}	2.9	3.2
4	3.0	2.9	3.0	3.4	3.0	2.4	2.7	(5.8)$^{P}_{J}$	7.3	7.4^{P}	10.1^{J}	8.9	7.9	6.7^{J}	8.5	9.2^{P}	8.0^{P}	5.5	[4.2]^{A}	2.8	3.4	3.5	2.7	3.0
5	2.6	2.8	2.9^{P}	2.8	3.1	2.7	C	T	T	T	7.4	7.3	7.1	(8.6)$^{P}_{J}$	9.9^{J}	7.6^{J}	[7.1]^{S}	6.6^{J}	4.9	A	A	A	A	2.5
6	2.9	2.7	2.7	2.9	C	C	3.3	5.2	5.5	6.0^{J}	[6.8]^{C}	7.5	8.7	10.4	9.7^{P}	9.0	9.0	8.1	[6.2]^{C}	4.4	3.0	2.7	C	C
7	C	C	C	C	C	C	C	C	C	T	C	8.0^{H}	9.0	10.0	[9.5]^{C}	9.0	7.5	6.0	5.1	4.6	[3.8]^{T}	3.1	2.5	2.7
8	2.9^{V}	3.0	3.1	3.1$^{J}_{F}$	3.6	2.9	2.9	T	T	5.4	[6.7]^{T}	8.0	11.2	12.1	11.7	9.5	9.1	(8.0)^{P}	A	A	3.5	[3.4]^{A}	3.2	2.9
9	3.1	2.9	3.0	3.1	3.0	3.0	3.2	T	T	(6.9)$^{J}_{P}$	[6.8]^{T}	6.6^{P}	8.0	10.5	9.7^{J}	8.6	8.7	(6.7)^{P}	3.7	3.4^{H}	3.5^{H}	3.5	3.1	2.9
10	3.1	3.1	3.3	3.1	3.7	3.4	2.6	4.9	[6.4]^{T}	8.0^{J}	8.2	9.3^{J}	7.2	7.4	8.4^{J}	7.9	5.6	5.9^{P}	4.0	2.5	3.2	3.2	2.8	2.7
11	2.9	3.1	3.1	3.2	3.1	2.3	2.4	4.9	(5.0)$^{J}_{P}$	7.0	8.6	C	T	7.0	9.1^{J}	7.0	6.5^{J}	[5.2]^{T}	3.9	2.9	4.1^{J}	3.0$^{P}_{H}$	2.8	2.9
12	3.0	3.0	3.0	3.0	3.5	3.0	2.4	4.5	5.3	[6.1]^{T}	(6.9)$^{J}_{P}$	8.5	8.1	8.5	9.6^{J}	7.3	6.0	4.8	4.8	2.9	2.9	2.9	3.0	3.0
13	3.1	3.2	3.2	3.5	4.0	2.2	2.3	4.4^{J}	5.5	6.4^{J}	8.0^{J}	8.4	8.4^{P}	8.6	8.0	8.1	6.0	4.5	3.7	2.5	2.7	2.9	[2.8]^{A}	2.7
14	2.9	3.1	3.2	3.1	4.0^{P}	2.4	1.9	4.2	[5.3]^{T}	6.4^{J}	(6.5)^{P}	7.8	7.1	9.0	[8.2]^{S}	7.3	(6.0)$^{J}_{P}$	C	C	3.4	3.3	3.3	3.1	2.9
15	3.0	3.3	3.2	2.9	3.1	2.1	2.3	4.4	(5.5)^{P}	7.4	6.7^{J}	8.1^{P}	6.8^{P}	8.6	8.5	8.5	7.4	5.5	[4.6]^{C}	3.7^{J}	2.9	3.3	2.3	2.4
16	2.8	2.7	2.7	2.9	C	C	C	4.4	[5.6]^{C}	6.7^{J}	5.5	5.9	8.2	8.6	[8.1]^{C}	7.6	[6.5]^{C}	(5.4)$^{J}_{P}$	3.6	[3.6]^{F}	3.5	2.8	2.3	2.3
17	2.4	2.5	2.9	3.4	2.1^{J}	[2.2]^{C}	2.2	4.5^{J}	(7.1)^{P}	8.1^{J}	8.7	7.9	7.3	7.0	8.2^{P}	8.1	S	C	3.0^{H}	4.0	3.9	3.6	2.5	2.4
18	2.4	[2.6]^{C}	2.8	2.7^{P}	3.1	2.5	2.5	5.0	[6.0]^{C}	7.0	C	C	8.1	8.7	9.2^{P}	7.6^{J}	7.5	7.3	4.9	3.9	3.2	3.1	2.7	2.5
19	2.8	2.9	3.5	4.0	4.7	2.0	2.0	4.2	6.3^{P}	7.5	[7.7]^{T}	7.9	[8.2]^{T}	8.5	8.5	7.5	6.8^{P}	(6.6)$^{J}_{P}$	3.6	[3.4]^{A}	3.1	3.5	3.2	3.2
20	3.2	3.2	3.0	2.9	3.3	2.2	2.2	4.3	[6.2]^{C}	8.0	[7.9]^{C}	7.8^{J}	8.0	9.1^{P}	8.0	[6.8]^{C}	5.7	[5.2]^{C}	4.6	2.9	3.4	2.9	2.7	2.7
21	2.9	2.9	2.9	2.9	3.3	1.8	2.0	4.0	(6.0)$^{J}_{P}$	[6.5]^{S}	7.0	7.3	8.7	[8.4]^{T}	8.2	8.0	5.5	5.0	(5.1)$^{J}_{P}$	3.1	3.7	4.0	2.9	3.4
22	2.3	2.5	2.7	2.8	2.5	2.7	2.9	T	T	(6.4)^{P}	8.0^{P}	9.2	10.2^{J}	8.4	8.6	7.3	(6.4)^{P}	5.5	4.4	[3.8]^{C}	3.3^{J}	[3.6]^{C}	3.8^{P}	[3.4]^{A}
23	3.0	[2.8]^{A}	2.5	[2.6]^{A}	2.6	2.8	3.0	5.0^{P}	6.8^{J}	(6.1)^{P}	8.1	10.7	9.5^{P}	[9.2]^{C}	9.0	7.9^{P}	5.6	5.0	4.5	(4.8)^{P}	A	A	A	2.7
24	[2.7]^{A}	2.7	2.7^{P}	2.4^{V}	2.9	2.9^{F}	2.5	4.7	[5.6]^{T}	6.4^{P}	7.3	8.1	7.6	7.2	7.9	6.7^{J}	6.5^{J}	6.9^{J}	[4.4]^{A}	[3.7]^{A}	3.1^{P}	3.0	[2.8]^{C}	2.4
25	2.5	2.7	2.9	2.9	2.9	2.5	2.6	4.4^{J}	[6.1]^{S}	6.9^{J}	7.4	8.4	(8.7)$^{J}_{P}$	(8.9)$^{J}_{P}$	8.5	6.8	[6.4]^{J}	(5.8)$^{J}_{P}$	3.6	2.6	3.0	3.4	2.5	2.7
26	2.7	[2.5]^{A}	[2.7]^{A}	2.9	3.1	2.5	2.2	4.1	5.7^{P}	8.2	7.9	9.0	[8.1]^{S}	7.8^{J}	6.6	6.6	[6.0]^{T}	4.9	3.6	3.6	3.2	3.6	3.2	3.5
27	2.5	2.7	2.8	2.6	2.8	2.5	2.1	4.5	C	C	9.3	7.3	8.6	8.8	6.9	7.8	7.5	[6.6]^{S}	3.8	[4.2]^{A}	4.8	[3.5]^{A}	2.4	2.6
28	2.6	3.3	2.5	2.8	2.5	2.8	2.7	(4.7)$^{J}_{P}$	C	C	11.4	7.5	9.1	7.7	7.4	6.4	5.9	5.8^{P}	4.7	3.7	3.4	2.8^{F}	2.8	2.3
29	A	A	3.0	2.5	2.7	2.4^{F}	2.8	[4.6]^{T}	(5.7)^{P}	[6.0]^{T}	6.9	8.1	8.4	6.3	7.1	7.9	7.2	4.8	3.0	3.8	[3.4]^{C}	3.7	4.4	[3.5]^{C}
30	2.2	2.6^{P}	2.8	2.5	2.6	[2.6]^{C}	[2.9]^{C}	4.4^{J}	7.4^{P}	7.0	[7.0]^{C}	7.5	[8.6]^{C}	[7.4]^{C}	[6.4]^{C}	[6.2]^{C}	[5.6]^{C}	[5.2]^{C}	4.5	3.8	3.4	3.5	3.4	2.4
31																								
Mean Value	2.8	2.9	2.9	3.0	3.1	2.5	2.5	4.7	6.2	7.1	8.0	8.2	8.5	8.7	8.8	8.0	6.9	6.0	4.3	3.5	3.5	3.3	2.9	2.8
Median Value	2.8	2.8	2.9	2.9	3.0	2.5	2.5	4.5	6.0	7.0	7.8	8.0	8.4	8.6	8.5	7.8	6.5	5.8	4.4	3.6	3.4	3.4	2.8	2.7
Count	28	27	28	28	26	27	27	25	23	26	28	28	29	30	30	30	29	27	27	27	28	28	27	29

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

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

Y 1

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

IONOSPHERIC DATA

Nov. 1952 | hpF2 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

hpF2

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

Y 2

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1952

h'F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	340	260	360	250	270	270	260	260	250	250	230	220	260	260	270	260	240	A	C	A	C	230	270	290
2	250	C	C	C	C	C	230	220	230	250	250	250	240	260	250	240	230	220	200	210^{A}	[220]^{A}	240	250$^{A}_{H}$	280
3	330	320	310	250	230	230	230^{A}	210	C	C	250	250	250	280	250	240	220	220	200	220^{A}	250	250^{A}	290	270
4	250	280	300	260	220	310	260	230	220^{A}	250	250	250	250	250	270	250	210^{A}	210	[260]^{A}	300^{A}	300	200^{A}	250	250
5	270	290	270	270	260	230	[220]^{C}	220	220	220	250	250	250	260	250	240	230	200	200	A	A	A	A	270
6	280	300	300	290	C	C	240	210	200	250	[260]^{C}	280	370	250	260	250	240	210	[210]^{C}	210	220^{A}	250	C	C
7	C	C	C	C	C	C	C	C	C	250	[260]^{C}	280^{H}	310	270	[260]^{C}	250	240	210^{A}	200^{A}	260	200^{A}	230	300	300^{A}
8	300	300	280	280	250	210	270	220	200	220	250	300	270	250	250	250	250	210^{A}	A	A	300^{A}	[280]^{A}	270^{A}	[280]^{A}
9	280	260	300^{A}	280	280	270	250	220	220	240	250	250	270	260	250	250	230	200	210^{A}	250^{H}	250^{H}	240	250	260
10	270	250	250	250	220	350	270	230	240	250	270	240	250	290	250	230	230	200^{A}	200^{A}	270	270	240	250	290
11	280	270	250	240	220	230	260	200	230	250	250	[250]^{C}	250	250	250	240	220	200	200	300	240	210^{H}	260	300
12	290	250	260	300	250	200	250	220	220	250	260	270	250	270	250	240	210^{A}	200	200^{A}	220	260	250	270	270
13	290	290	270	250	220	200	260	220	230	250	250	260	260	250	250	230	220	200	200	310^{A}	(310)^{A}	280	[300]^{A}	320
14	340	300^{A}	270	250	220	200	350^{B}	210^{A}	210^{A}	250	280	250	260	260	250	240	230	200	[250]^{C}	300^{A}	250	250	250	300
15	300	260^{A}	230	230	220	230	250	210	210	250	250	250	250	270	250	250	230	210^{A}	200^{A}	250	300^{A}	240	250	320
16	300	260	310	300^{A}	C	C	C	C	C	250	230	250	250	250	[250]^{C}	250	220	200^{A}	200^{A}	240	210	230	300	340
17	350	350	290	200	200	[230]^{C}	260	240	240	250	250	250	270	250	250	250	230	200	230^{H}	300^{A}	250	240	240	290
18	300	270	290	290	260	230	250	240	[240]^{C}	240	C	C	250	270	250	250	240	220	200^{A}	230	270	250	250	300
19	290	340	250	250	210	200	330	240	240	240	230	250	250	270	250	240	230	210^{A}	200	[240]^{A}	270	250	290	290
20	280	250	250	<280	230	210	260	250	240	250	250	250	250	250	250	230	210	210	200	230	250	250	290	280
21	290	270	260	290	200^{A}	B	310	220	240	240	260	260	250	250	250	240	200	220	200	250	280	240	260	250
22	320	300	340	300	310	290	250	210	220	250^{B}	250	250	250	280	250	240	230	220	210	250	260	230^{A}	250	[250]^{A}
23	250	[280]^{A}	320^{A}	[310]^{A}	300	320	270	220	220	220	260	270	240	[240]^{C}	250	250	210	200^{A}	250	270	A	A	A	A
24	A	300	350^{A}	350	290	250^{F}	260	220	220	240	250	250	250	250	250	230	220^{A}	210	[210]^{A}	[230]^{A}	240	250	[230]^{C}	290
25	300	300	300	270	250	290	260	240	220	240	250	250	250	280	250	240	210	210	200	200^{A}	260	240	250	250
26	260	[260]^{A}	[290]^{A}	280	250	260	300	240	230	230	[240]^{C}	250	250	250	240	250	220	210	210	220^{A}	260	230	320^{A}	220
27	300^{A}	350	310	340	300^{A}	250	[300]^{A}	250	C	C	220	250	250	250	250	260	230	220	250	[250]^{A}	250	[240]^{A}	260	350
28	360	270	300	280	330	300	300	240	C	C	240	250	250	240	250	240	220^{A}	240	210	240	250	240	250	340
29	A	A	300^{A}	[300]^{A}	290	[300]^{A}	260	230^{A}	210	250	260	250	230	270^{A}	250	250	230	200^{A}	[230]^{A}	240	[240]^{C}	250	230	[240]^{C}
30	330	300	270	270	250	[270]^{C}	[280]^{C}	[250]^{C}	220	220	230	280	[240]^{C}	[230]^{C}	[240]^{C}	[240]^{C}	[220]^{C}	[210]^{C}	[210]^{C}	[220]^{C}	220	240	220	300
31																								
Mean Value	300	290	290	280	250	250	270	230	220	240	250	260	260	260	250	240	220	210	210	250	250	240	260	290
Median Value	290	280	290	280	250	250	260	220	220	250	250	250	250	260	250	240	220	210	200	240	250	240	250	290
Count	27	27	28	28	26	25	28	28	25	27	29	29	30	30	30	30	30	29	28	27	27	28	27	28

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | foF1 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	3.3	3.9	4.2	4.4	[4.5]B	4.6	5.0	[4.2]L	3.5	A						
2								Q	3.4	4.2	4.0	4.2	4.3	4.5	4.0	4.0	3.5	Q						
3								Q	C	C	4.5H	4.4	4.5	4.5	4.4	4.0	Q	Q						
4								Q	A	4.0	4.5	4.5H	[4.4]A	4.2	4.4	4.0	A	Q						
5								Q	Q	3.7	4.0	4.2	4.5	4.5	4.2	Q	Q	Q						
6								Q	Q	L	C	A	4.7	4.3	4.4	4.0	L	Q						
7								C	C	L	C	4.3	[4.6]A	4.9H	C	A	A	A						
8								Q	Q	Q	4.3	4.3	4.7	4.4	4.3	3.8	3.5	Q						
9								Q	3.5	4.0	4.0	3.9	4.4	4.7	4.3	Q	Q	Q						
10								Q	3.0	3.6	4.1	4.5	4.5	4.7	4.0	4.0	3.4J	Q						
11								Q	3.6	4.0	4.3	[4.4]C	4.5	4.3	4.5	C	Q	Q						
12								Q	Q	3.7	4.4	4.4	4.5	4.4	4.2	3.7	A	Q						
13								Q	2.7	4.0	4.5H	4.5	4.4	[4.4]A	4.4	Q	3.2	Q						
14								Q	A	4.0L	4.5	[4.5]C	4.5	4.4	4.2	Q	Q	Q						
15								Q	Q	3.8	4.0L	4.5H	4.5	4.7	4.5	4.1	3.7	A						
16								C	C	4.0	4.0	4.3	A	A	4.2	4.0J	3.5	A						
17								Q	3.5	4.2	4.5H	4.5	4.4J	4.2H	[4.0]L	3.8	Q	Q						
18								Q	C	L	C	C	4.5	4.5	4.0	3.7L	2.8	Q						
19								Q	Q	L	4.2	4.5	4.2	4.5H	4.2	4.2	A	A						
20								Q	Q	4.0	4.3	4.2	4.5	4.5	4.4	Q	Q	Q						
21								Q	Q	4.0	4.4	4.5	4.5	4.4H	4.3	3.7	3.0	Q						
22								Q	Q	B	4.3	4.5	4.4	5.0H	4.3	3.5	Q	Q						
23								Q	Q	3.5	3.8	4.6	4.5	[4.4]C	4.4	3.8H	A	A						
24								Q	Q	L	4.0	4.5	[4.4]C	4.4	[4.1]A	3.7	A	A						
25								Q	Q	Q	4.3	4.5	4.5	4.3	4.4	3.7	3.0	Q						
26								Q	Q	4.0	4.0	4.3	4.5	[4.2]A	4.0	3.5	Q	Q						
27								Q	C	C	4.0	4.4	4.5	4.2	4.0	4.3H	Q	Q						
28								Q	C	C	3.8	4.5H	4.2	4.4	4.0	3.3	A	Q						
29								A	Q	4.0	4.3	4.3	4.3	[4.2]A	4.3	3.7	A	Q						
30								C	Q	4.0	4.0	4.4	[4.2]C	[4.2]C	[4.1]C	[3.8]C	C	C						
31																								
Mean Value								—	3.3	3.9	4.2	4.4	4.5	4.4	4.3	3.8	3.3	—						
Median Value								—	3.4	4.0	4.2	4.4	4.5	4.4	4.3	3.8	3.4	—						
Count									7	19	27	28	29	29	29	23	10							

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

foF1

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | h'F1 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | foE | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30-minutes.

foE

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | h'E | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

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

IONOSPHERIC DATA

Nov. 1952 | fEs | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.5	2.2	2.1	2.5	1.8	2.3	2.3	2.7	3.4	3.7	3.7	G	3.6	3.5	G	5.5	3.8	5.0	C	4.9	C	2.6	2.5	2.3
2	2.2	C	C	C	C	C	2.2	2.5	3.5	G	G	G	4.5	3.6	3.5	G	3.2	3.0	2.5	3.0	4.4	2.5	2.1	2.9
3	2.2	2.0	2.0	2.3	2.2	2.3	3.0	2.5	C	3.5	3.5	3.8	3.7	3.7	3.8	3.6	2.7	2.5	2.1	2.9	3.8	3.5	3.0	3.0
4	1.8	2.8	2.3	2.5	2.5	2.4	2.3	B	7.0Y	3.5	3.6	3.7	4.9	G	G	3.8	4.6	3.5	4.2	3.5	3.0	2.9	2.4	2.1
5	2.0	2.0	E	2.5	2.2	2.5	C	2.8	G	3.5	4.0	4.0	4.0	4.0	3.8	3.5	3.5	2.3	2.1	3.7	4.0	4.2	4.7	3.0
6	2.3	2.5	2.3	2.5	C	C	2.4	2.0	3.2	4.0	C	5.3	4.4	6.0	6.0	3.7	3.0	2.5	C	E	3.2	3.0	C	C
7	C	C	C	C	C	C	C	C	C	4.6	C	3.7	5.3	6.0	C	6.1	6.0F	4.2	4.7	3.6	3.5	2.5	2.5	3.0
8	2.5	2.5	E	E	2.5F	2.5F	2.5	3.0	3.5	3.7	3.8	3.8	3.8	3.8	3.8	4.9	5.0	3.8F	6.0	3.8	3.6	4.0	3.0	3.5
9	E	2.5	5.0Y	3.0Y	3.0	2.5	2.4	2.4	G	G	G	3.7	4.0	3.7	3.7	4.5	3.5	3.5	3.0	2.6	2.1	2.5	2.4	2.1
10	2.1	E	E	E	E	2.4	2.2	2.2	G	3.4	3.6	4.0	3.8	G	4.7	3.8	3.8	3.8	3.0	E	1.9	1.8	E	2.1
11	3.5	1.8	2.1	3.5	2.0	E	2.0	3.0	3.0	G	3.8	C	G	4.2	3.5	3.6	3.5	2.5	2.5	2.0	E	1.8	2.5	2.0
12	2.5	2.0	E	E	2.0	E	2.5	2.1	2.9	G	G	G	G	3.7	3.7	4.4	4.8	5.0	4.4	2.4	2.0	2.3	2.1	2.2
13	E	E	E	E	E	E	E	2.3	G	3.5	G	4.5	G	5.1	4.1	8.0Y	3.8	3.1	2.4	2.9	3.3	2.6	3.5	3.1
14	2.8	3.0	3.0	3.1	2.5	3.0	2.5	3.0	4.2	3.8	3.9	C	4.0	G	4.0	5.2	3.8	3.5	C	3.8	3.5	2.5	2.4	2.9
15	3.5	3.5	E	3.0	2.5	2.0	E	G	3.5	G	3.8	3.8	5.5	5.0	5.0	4.7	4.0	3.6	C	3.5	3.0	2.4	3.5	2.2
16	E	2.3	2.5	3.6	C	C	C	C	G	G	3.8	3.8	6.0	6.0	4.1	5.5	3.8	4.5	3.3	2.2	E	E	1.8	2.0
17	3.4	E	E	2.1	E	C	2.1	G	G	3.5	3.8	4.8	3.8	3.8	3.8	3.5	3.1	2.4	2.5	3.0	4.0	E	E	E
18	3.8	C	2.5	C	2.9	2.1	2.1	2.2	C	3.7	C	C	3.8	4.3Y	G	G	2.9	2.7	3.0	3.4	2.1	E	E	E
19	1.8	E	E	2.2	2.4	2.5	E	2.3	G	G	G	G	G	G	3.8	3.8	4.5	4.7	2.4	4.0	2.9	3.0	E	E
20	1.9	2.3	2.0	2.4	2.1	2.0	2.1	2.1	3.2	3.9	4.0	3.8	4.9	3.8	3.8	3.8	3.6	2.7	E	2.2	2.9	2.5	2.3	E
21	2.4	3.5	2.9	2.9	2.5	2.5	2.3	2.1	3.8	3.5	3.8	3.8	3.8	3.8	3.8	3.5	3.4	G	E	E	E	E	E	2.1
22	2.1	2.5	2.5	2.3Y	2.2	E	E	B	3.1	B	3.8	3.8	G	3.8	5.0	G	G	2.1	2.5	2.1	E	2.4	3.8	4.0
23	2.0	3.6	2.1	3.1Y	2.5	2.5	2.5	B	G	3.5	3.6	4.8	3.6	C	4.8	3.5	4.3	5.5	3.8	4.7	5.4	3.7	3.5	3.9
24	6.0	3.4	5.0	3.7Y	2.9	2.1	2.1	G	3.1	4.6	4.6	4.7	6.0	4.8	6.1	3.8	4.7	4.2	6.0	5.0	2.1	2.3	C	2.3
25	5.0	5.2Y	3.3	2.9	2.3	2.5	2.3	2.2	3.5	3.5	4.0	3.8	3.8	3.8	3.8	3.6	3.7	3.1	2.5	3.0	2.7	2.4	2.8	2.4
26	2.4	5.0	4.0	C	2.5	2.5	E	2.0	G	3.8	3.8	4.2	C	5.3	3.8	4.8	2.9	2.5	2.2	2.3	2.3	3.0	4.9	2.5
27	3.2	3.7	2.9	2.5	2.9	2.4	2.7	2.5	C	C	4.3	4.0	3.8	4.0	G	G	4.0	3.1	4.0	7.0	4.2	4.9	3.0	3.0
28	3.0	2.9Y	2.3	E	2.2	E	E	2.1	C	C	3.7	3.5	3.8	G	3.5	3.5	6.0	4.5	3.3	3.0	4.7	4.1F	3.3	3.0
29	5.3	7.0Y	4.3	3.5	3.6Y	3.5Y	2.5	3.0	4.2	4.7	C	4.7	4.1	6.3	4.3	4.5	4.2	3.7	3.8	2.5F	C	2.8	2.2	C
30	2.2	E	2.5Y	2.8	3.8	C	C	C	3.4	3.5	3.5	G	C	C	C	C	C	C	C	3.0	2.5	2.2	2.5	2.2
31																								
Mean Value	2.9	3.1	2.9	2.8	2.5	2.4	2.4	2.4	3.7	3.8	3.8	4.1	4.3	4.4	4.2	4.4	3.9	3.5	3.3	3.3	3.2	2.9	2.9	2.7
Median Value	2.4	2.5	2.3	2.5	2.4	2.4	2.2	2.2	3.1	3.5	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.5	3.0	3.0	3.0	2.5	2.5	2.3
Count	29	27	28	26	26	24	26	24	25	27	26	27	28	28	28	29	29	29	25	30	28	30	28	28

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

fEs

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

Y 8

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

IONOSPHERIC DATA

Nov. 1952 | (M3000)F2 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

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

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

Y 9

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

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Nov. 1952 | 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	1.6	1.6	1.4	1.4	1.4	1.6	2.0	2.6	2.6	3.1	3.3	3.6	3.2	3.7	3.0	2.5	A	C	A	C	1.6	1.6	1.6
2	1.6	C	C	C	C	C	1.6	1.7	2.5	2.8	3.0	3.1	3.3	3.1	3.1	2.8	2.5	2.3	1.6	A	A	1.6	1.6	1.6
3	1.6	1.4	1.4	1.5	1.4	1.6	[1.8]^{A}	2.0	[2.5]^{C}	3.0	3.0	3.4	A	A	3.2	3.0	2.7	1.9	1.6	[1.8]^{A}	1.9	2.0^{A}	1.6	1.6
4	1.6	1.6	1.5	1.6	1.6	1.6	1.5	1.6	[2.2]^{A}	2.8	3.0	3.1	4.5^{A}	3.3	3.1	3.0	[2.8]^{A}	2.7	[2.4]^{A}	2.0^{A}	2.2^{A}	[1.9]^{A}	1.6	1.6
5	1.6	1.6	1.6	1.4	1.7	1.6	[1.8]^{C}	2.0	2.5	3.4	2.9	3.4	3.3	3.7	3.5	3.3	3.4	2.1	1.6	A	A	A	A	1.6
6	1.5	1.6	1.6	1.6	C	C	1.6	1.7	2.4	3.5	[4.0]^{C}	4.5^{A}	3.6	4.0^{A}	3.6	2.5	2.5	1.9	[1.7]^{C}	1.5	[1.6]^{A}	1.6	C	C
7	C	C	C	C	C	C	C	C	C	2.9	[3.0]^{C}	3.0	6.6	3.3	[3.9]^{C}	4.5^{A}	3.0	2.0	[2.4]^{A}	2.7^{A}	[2.2]^{A}	1.6	1.6	[1.6]^{A}
8	1.6	1.6	1.4	1.4	1.5	1.4	1.5	1.7	2.5	3.2	3.3	3.2	3.5	3.2	3.4	2.9	A	A	A	A	A	A	2.4^{A}	2.7^{A}
9	1.5	1.6	[1.7]^{A}	1.8	1.7	1.3	1.5	1.8	2.5	2.9	3.2	3.1	3.2	3.4	3.3	3.0	2.7	2.0	[1.8]^{A}	1.5	1.6	1.5	1.6	1.6
10	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	2.5	3.0	3.2	[3.2]^{A}	3.2	3.0	3.4	3.0	A	A	A	1.5	1.6	1.6	1.5	1.5
11	1.6	1.6	1.4	1.6	E	1.4	1.6	1.9	2.8	2.9	3.0	[3.2]^{C}	3.3	3.1	3.0	2.7	2.3	1.9	1.6	1.6	1.6	1.6	1.6	1.6
12	1.6	1.4	1.0	1.6	1.4	1.6	1.6	1.8	2.7	3.2	3.5	3.0	3.1	3.1	3.3	A	A	2.5	[2.0]^{A}	1.5	1.6	1.6	1.6	1.5
13	1.6	1.4	1.6	1.4	1.4	1.5	1.6	1.7	2.4	2.9	3.2	3.1	3.3	[3.4]^{A}	3.5	3.0	2.3	2.4	1.6	2.0^{A}	[1.8]^{A}	1.6	[1.6]^{A}	1.7
14	1.7	[1.8]^{A}	1.8	1.6	1.7	1.4	1.6	2.2	[2.6]^{A}	3.1	3.5	[3.6]^{C}	3.7	3.8	3.5	2.8	2.5	C	C	A	2.1^{A}	1.5	1.6	1.9
15	1.5	2.0^{A}	E	1.4	1.6	1.5	1.6	1.7	2.7	2.9	3.3	3.3	3.3	3.2	3.0	A	A	A	A	2.5^{A}	[2.0]^{A}	1.6	1.6	1.6
16	1.6	1.6	1.4	A	C	C	C	C	2.7	3.2	3.0	3.7	5.3^{A}	4.3^{A}	3.0	2.8	2.7	A	A	1.6	1.6	1.6	1.6	1.6
17	1.5	1.6	1.0	1.4	1.3	[1.4]^{C}	1.5	1.8	2.5	3.0	3.2	3.4	3.3	3.2	3.2	2.8	2.5	2.0	1.6	[1.6]^{A}	1.6	1.6	1.6	1.6
18	1.6	1.4	1.6	1.6	1.8	1.4	1.6	1.6	2.5	3.3	C	C	3.3	[3.2]^{A}	3.1	2.9	2.3	1.7	2.0^{A}	2.5^{A}	1.6	1.6	1.5	[1.6]^{C}
19	1.6	1.6	1.0	1.6	1.0	1.6	1.6	1.9	2.5	2.9	3.1	3.2	3.2	3.3	3.0	A	A	A	1.6	[1.6]^{A}	1.6	2.0^{A}	1.6	1.6
20	1.6	1.4	1.6	[1.6]^{C}	1.6	1.4	1.5	1.6	2.5	3.1	3.2	3.2	3.4	3.2	3.1	2.8	[2.2]^{A}	1.6	<1.6	1.5	1.6	1.6	1.6	1.5
21	1.6	1.6	1.8	1.6	[1.6]^{A}	1.6	1.6	1.6	2.1	2.8	3.3	3.2	3.4	3.2	3.0	2.8	2.5	2.0	1.6	1.6	1.6	1.6	1.6	1.6
22	1.5	1.5	1.6	1.6	1.4	1.6	1.6	1.6	2.4	5.7^{B}	3.5	3.5	3.1	3.2	3.8	2.6	2.5	1.9	1.6	1.6	1.5	[2.0]^{A}	2.5^{A}	[2.2]^{A}
23	1.8	A	A	A	1.6	1.4	1.6	1.6	2.4	2.5	3.0	[3.0]^{A}	3.1	C	A	2.7	2.9	[3.0]^{A}	3.0	3.6^{A}	A	A	A	2.5^{A}
24	[2.0]^{A}	1.6	2.0^{A}	1.6	1.6	1.4	1.6	1.6	2.5	2.7	[3.6]^{A}	4.4^{A}	4.6^{A}	[4.2]^{A}	6.5	3.0	A	A	A	A	1.6	1.5	[1.6]^{C}	1.6
25	1.6	1.6	1.6	1.5	1.4	1.5	1.6	1.6	2.8	3.0	3.2	3.3	3.2	3.0	3.2	2.8	[2.6]^{A}	1.9	1.6	[1.6]^{A}	1.6	1.6	1.7	1.5
26	1.6	A	A	1.4	1.0	1.6	1.6	1.6	2.4	2.8	[3.0]^{A}	[3.2]^{C}	[3.3]^{C}	4.3^{A}	2.9	3.0	2.4	1.7	1.5	[1.6]^{A}	1.6	1.8	[1.7]^{A}	1.5
27	[1.7]^{A}	1.9	1.6	1.6	[1.4]^{A}	1.6	1.7	1.6	C	C	3.2	3.2	3.2	3.3	3.1	2.8	2.8	2.3	2.1	[1.8]^{A}	2.7^{A}	[2.4]^{A}	1.6	1.6
28	1.6	1.6	1.6	E	1.6	1.3	1.6	1.6	C	C	2.9	3.1	3.0	3.0	2.9	2.5	[2.8]^{A}	3.0^{A}	1.5	1.6	2.3^{A}	1.7	1.6	1.7
29	A	A	2.5^{A}	2.2^{A}	2.2^{A}	[1.9]^{A}	1.5	[2.0]^{A}	2.4	A	C	A	3.5	5.1^{A}	2.9	3.0	3.5^{A}	[2.8]^{A}	2.7^{A}	1.6	[1.6]^{C}	1.6	1.5	[1.5]^{C}
30	1.5	1.6	1.5	1.6	1.5	[1.5]^{C}	[1.5]^{C}	[1.8]^{C}	2.5	2.9	3.0	3.3	[3.2]^{C}	[3.1]^{C}	[3.0]^{C}	[2.9]^{C}	[2.4]^{C}	[2.0]^{C}	[1.7]^{C}	[1.5]^{C}	1.5	1.6	1.5	1.7
31																								
Mean Value	1.6	1.6	1.6	1.6	1.5	1.5	1.6	1.8	2.5	3.1	3.2	3.3	3.6	3.4	3.4	2.9	2.6	2.2	1.8	1.8	1.8	1.7	1.7	1.7
Median Value	1.6	1.6	1.6	1.6	1.6	1.5	1.6	1.7	2.5	2.9	3.2	3.2	3.3	3.2	3.2	2.9	2.5	2.0	1.6	1.6	1.6	1.6	1.6	1.6
Count	28	25	26	26	26	26	28	28	27	27	28	28	29	28	29	27	24	22	23	24	25	27	27	29

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

fminF

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

Y 10

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

IONOSPHERIC DATA

Nov. 1952 | fminE | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	[1.6]^{C}	1.6	1.5	1.6	1.6	1.6
2	1.6	C	C	C	C	C	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6
3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	[1.5]^{C}	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.6	1.8	1.5	1.5	1.5	1.5	1.6
4	1.6	1.4	1.6	1.6	1.6	1.4	1.6	[1.6]^{B}	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.6	1.6
5	1.6	1.6	E	1.6	1.7	1.6	[1.6]^{C}	1.6	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.7	1.5	1.5	1.5	1.5	1.5
6	1.5	1.5	1.6	1.3	C	C	1.6	1.6	1.5	1.5	[1.5]^{C}	1.5	1.6	1.6	1.5	1.5	1.5	1.6	C	E	1.5	1.6	C	C
7	C	C	C	C	C	C	C	C	C	1.5	[1.5]^{C}	1.5	1.6	1.5	[1.4]^{C}	1.4	1.5^{F}	1.5	1.6	1.5	1.5	1.6	1.6	1.5
8	1.6	1.6	E	E	1.6^{F}	1.6^{F}	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5^{F}	1.5	1.5	1.5	1.5	1.5	1.6
9	E	1.6	E	E	E	1.6	1.5	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
10	1.6	E	E	E	E	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.6	E	1.6	1.6	E	1.6
11	1.5	1.6	1.6	1.0	1.6	E	1.6	1.5	1.5	1.5	1.4	[1.5]^{C}	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	E	1.6	1.6	1.6
12	1.6	1.6	E	E	1.6	E	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6
13	E	E	E	E	E	E	E	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.5	1.6	1.6	1.5	1.5	1.5	1.5
14	1.4	1.4	1.4	1.4	1.4	E	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.5	1.5	1.5	1.5	C	<1.6	1.5	1.5	1.6	1.5
15	1.6	1.2	E	1.4	1.6	1.6	E	1.5	[1.5]^{C}	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.7
16	E	1.6	1.6	1.3	C	C	C	C	1.6	1.5	1.5	1.5	1.7	1.5	1.5	1.5	1.4	1.5	1.5	1.6	E	E	1.6	1.6
17	1.5	E	E	1.6	E	C	1.7	1.5	1.5	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	E	E	E
18	1.5	1.5	1.6	1.5	1.3	1.6	1.7	1.6	1.5	1.4	C	C	1.5	1.6	1.5	1.5	1.5	1.5	[1.5]^{C}	1.5	1.6	E	E	E
19	1.6	E	E	1.7	2.2	1.6	E	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	<1.6	1.5	1.5	1.5	1.5	1.6	1.5	E	E
20	1.6	1.9	1.6	[1.6]^{C}	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	E	1.6	1.5	1.6	1.7	E
21	1.6	E	E	1.0	1.0	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.5	1.5	1.6	1.6	1.5	1.6	E	E	E	E	E	1.7
22	1.9	1.6	1.4	E	1.6	E	E	B	1.5	[1.5]^{B}	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	E	1.6	1.5	1.5
23	1.6	E	1.6	E	1.4	1.6	1.5	1.6	1.5	1.6	1.5	1.5	1.5	[1.5]^{C}	1.5	1.5	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
24	1.5	1.5	1.4	1.0	1.4	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.7	1.6	[1.6]^{C}	1.6
25	1.5	1.4	1.4	1.5	1.5	1.4	1.6	1.9	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.5	1.6	1.5	1.5	1.6	1.6	1.5	1.5
26	1.6	1.4	1.4	[1.4]^{C}	1.5	1.7	E	1.6	1.6	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.5
27	1.5	1.4	1.5	1.3	1.0	1.5	1.5	1.6	C	C	1.6	1.5	1.6	1.5	1.5	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.6
28	1.4	E	1.6	E	1.6	E	E	1.6	C	C	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
29	1.5	1.4	1.6	1.4	E	E	1.6	1.5	1.5	1.5	[1.5]^{C}	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.6	1.6^{F}	[1.6]^{C}	1.6	1.6	[1.6]^{C}
30	1.7	E	E	1.5	1.5	C	[1.6]^{C}	[1.6]^{C}	1.5	1.5	1.5	1.5	1.5	1.5	[1.5]^{C}	[1.5]^{C}	[1.5]^{C}	[1.6]^{C}	[1.6]^{C}	[1.6]^{C}	1.6	1.6	1.6	1.6
31																								
Mean Value	1.6	1.5	1.5	1.4	1.5	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	1.6	1.5	1.5	1.6	1.6	1.6
Median Value	1.6	1.4	1.4	1.4	1.5	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	1.5	1.5	1.5	1.6	1.5	1.6
Count	29	28	28	28	26	24	28	27	27	28	29	29	30	30	30	29	30	30	28	29	30	30	29	29

Note: -
Between 24th and 30th the interpolated values are calculated by the measurement at interval of 30 minutes.

Sweep 1.0 Mc to 22.0 Mc in 2 min ☐ Manual ☒ Automatic

IONOSPHERIC DATA IN JAPAN FOR NOVEMBER 1952

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