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IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 1951

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PREPARED BY THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

CRWO—F 33

THE CENTRAL RADIO WAVE OBSERVATORY
THE RADIO REGULATORY COMMISSION

KOKUBUNJI, TOKYO, JAPAN

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CONTENTS

PREFACE

The radio administration in Japan has hitherto been carried out by the Radio Regulatory Agency. With the reorganization of part of the government offices effective on June 1, 1950, the Radio Regulatory Commission was established and the work of researches on radio propagation has become to fall under the charge of the radio wave observatories, auxiliary organs of the Radio Regulatory Commission.

The radio wave observatories are composed of the Central Radio Wave Observatory located at Kokubunji, Tokyo, and five local radio wave observateries established at Wakkanai, Akita, Hiraiso, Inubo and Yamagawa respectively.

The Central Radio Wave Observatory has the following four sections:

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

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

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, and physical basic studies of wave propagation in general; and

Administrative Section which shall conduct the general affairs of the observatory.

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

This report provides the results of ionospheric sounding with symbols determined and in the form established on an international basis in the same way as followed by the Radio Regulatory Agency 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.

Uyeda Hiroyuki
Chief, Central Radio Wave Observatory,
Radio Regulatory Commission

October 1951

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 dada.

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951 | 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	C	C	C	C	C	C	C	C	C	4.9	6.5	7.0^{J}	6.4	6.3	6.4	(6.4)^{C}	6.3	6.4	A	A	(8.1)$^{PJ}_{F}$	6.9^{F}	(6.2)$^{P}_{F}$	(6.1)$^{PJ}_{F}$
2	4.3	4.2	3.9	4.0	4.1	4.8	C	7.5	7.3	7.0	7.4	7.4	6.4	7.1	7.2	6.7	A	C	C	8.8	8.2	7.3	5.8	5.1
3	4.5	4.6	4.4	4.2	4.3	4.6	6.6	8.0	8.2	7.7	7.2	6.4	7.4	7.1	7.0	7.0	6.8	7.5	C	C	C	C	A	(5.7)$^{P}_{F}$
4	5.8	5.4	5.9	5.0	(5.0)^{P}	5.5	7.2	7.3	7.3	7.5	(7.8)$^{P}_{J}$	8.2	7.4	6.8	6.9^{J}	7.0	7.1	8.1	8.3	7.9	(7.8)$^{P}_{J}$	7.1	6.4^{J}	5.4
5	5.2	5.4	5.8	5.3	5.0	5.2	6.0	7.3^{P}	8.7	7.5	7.6	7.8	7.9	7.3	7.1	7.3	7.7	7.4	8.1	7.3	6.6	6.7^{J}	6.0^{J}	6.1^{J}
6	(5.7)$^{P}_{F}$	(5.5)$^{P}_{F}$	5.5	5.1^{J}	5.1^{J}	5.0	6.6	7.3	7.0	8.0	7.6	7.7	8.0	7.8^{P}	6.8	7.3	7.4	7.3	8.4	8.8	8.4	6.8	C	C
7	C	6.1	5.6	5.2	4.8	5.0	5.4	7.2	8.8	8.0	7.8	7.2	7.3^{P}	8.0	C	C	8.0	C	C	8.3	S	S	S	6.0
8	6.1	C	C	C	C	C	C	C	8.9	8.5	8.1	7.5	S	S	7.1	7.1	SB	A	8.6	(7.9)$^{P}_{J}$	(7.5)^{P}	7.5^{J}	6.6^{J}	(5.6)^{P}
9	5.7	5.3	5.2	4.9	4.8	5.2	6.5	C	C	C	C	C	C	C	C	C	C	7.8	7.8	8.6	7.8^{P}	(8.0)^{P}	6.7	5.5^{P}
10	5.1	5.0	5.2	5.1	B	4.4	5.4	6.5	6.8	6.5	5.5	6.5	(7.2)$^{P}_{E}$	6.7	6.7	7.5	6.8	7.3	7.7	7.5	6.5	6.0	4.7	(4.4)^{C}
11	4.0	4.3^{J}	4.3	4.2$^{J}_{H}$	4.2^{J}	4.6	5.5	6.0	6.2	6.0	5.8	6.1	A	6.3	5.8	5.7	5.7	(5.9)^{P}	6.0	(6.1)^{P}	(6.6)^{P}	6.2	6.0	S
12	S	S	S	3.5	3.2	3.4	5.0^{K}	4.7^{K}	W^{K}	A^{K}	A^{K}	5.1^{K}	B^{K}	5.6^{K}	6.3^{K}	6.0	5.8	6.2	5.7	5.7	A	A	A	C
13	C	C	C	C	C	C	C	A	6.1	5.9	6.0	6.2	[6.3]^{S}	6.4	6.9	6.2	6.9^{J}	7.3	8.2	6.8	6.7^{J}	S	4.5^{J}	4.5^{J}
14	4.3	3.6^{J}	3.6	3.5^{J}	4.0	A	5.0^{F}	4.6	5.6	5.5	5.8	S	6.8	6.6	A	7.5	6.7	6.5	6.1^{J}	6.3	6.6	(6.0)^{C}	5.4	C
15	C	C	C	4.4	3.8^{Z}	B	4.5	5.6	6.2	(6.4)^{B}	6.6	6.8	7.1	7.5	7.4	7.6	7.3	6.7	6.3	6.4	6.8	6.5	6.2	(5.6)^{C}
16	5.0	4.5	4.4	4.1^{J}	B	A	C	5.4	6.3^{J}	5.8^{V}	7.7	7.1^{J}	6.8	(6.7)^{C}	6.6^{Z}	6.6	6.2	6.7	6.5	5.6	4.9	4.8	5.0	4.3^{J}
17	(3.7)$^{S}_{K}$	(3.1)$^{P}_{K}$	3.5$^{J}_{K}$	S^{K}	S^{K}	S^{K}	4.0^{K}	B^{K}	4.4^{K}	4.4^{K}	B^{K}	B^{K}	5.3^{K}	(5.4)$^{C}_{K}$	5.4^{K}	5.6	5.8	5.5	(5.4)^{C}	5.3	(5.0)^{S}	4.6	(4.4)^{S}	4.2^{F}
18	3.8$^{J}_{F}$	(3.6)$^{S}_{F}$	3.4$^{J}_{F}$	3.9$^{J}_{F}$	3.9^{J}	(4.4)^{C}	5.0	5.0	5.8	5.8	6.5	(6.5)^{P}	6.3	6.0	6.4	6.4	6.4	(6.0)^{C}	5.6	(6.5)$^{P}_{J}$	(5.4)$^{P}_{J}$	5.1	5.1^{J}	4.4^{J}
19	5.2	4.3	3.8	3.7	3.0	3.4	(4.8)^{C}	6.3^{P}	6.4	7.0	7.1	6.8	6.9	7.2	C	C	C	6.7	6.0^{P}	7.0	6.8	6.5	5.5	4.9
20	C	C	C	C	C	C	C	C	C	C	(7.6)$^{P}_{J}$	7.6^{J}	(8.3)^{S}	9.0^{P}	9.0^{P}	S	S	7.4^{P}	6.8	6.9	5.6	6.1	6.1	6.4
21	4.6	2.8^{K}	2.8^{K}	3.2$^{Z}_{K}$	2.8^{K}	2.8^{K}	4.9^{K}	5.6^{K}	5.1$^{V}_{K}$	4.8^{K}	5.2^{K}	5.4^{K}	5.8^{K}	6.4^{K}	(6.2)$^{K}_{F}$	6.1^{K}	6.2	7.1	5.4	4.7	4.8	4.4	3.7	4.0
22	4.0^{H}	3.5	3.4$^{J}_{F}$	(3.2)$^{PJ}_{F}$	3.5^{F}	3.1^{F}	5.5^{H}	5.5	S	C	6.2	6.4	6.4	6.3	7.3^{P}	(7.6)^{P}	7.4^{HP}	7.3^{P}	7.2	6.5	4.7	4.4	4.0^{H}	3.7^{H}
23	3.4	3.7	3.5^{H}	3.1	A	2.8	4.8	5.8^{J}	C	C	C	C	C	C	C	C	7.1	7.0	5.2	5.3^{Z}	4.3^{F_2}	3.8^{J_F}	3.5^{P_F}	4.4
24	4.2	4.3	4.8^{Z}	4.3^{V}	(3.8)^{P}	3.8^{F}	4.1	4.6	5.6	6.8	7.2	7.4	6.6	7.0	(7.0)^{P_J}	6.9	7.0	6.9	(6.1)^{P}	5.2	4.6	4.2	4.0	4.0
25	3.8	3.9	4.1	4.1	2.3$^{J_F}_{H}$	3.4	5.2	6.3	7.0	8.9	8.5^{J}	(8.5)^{P}	(8.5)^{P_S}	(8.1)$^{J}_{P}$	(7.9)^{PJ}	7.5	7.1	6.6	6.7	6.4	5.8	5.4	4.9	4.6
26	4.2	3.5	3.7^{K}	2.6^{K}	A^{K}	3.2$^{F}_{K}$	3.7$^{F}_{K}$	W^{K}	W^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	5.3^{K}	5.2^{K}	5.5^{K}	5.1^{K}	4.8^{K}	4.5$^{F}_{K}$	4.7^{K}	4.0^{K}	3.8^{K}	3.6^{K}
27	3.0$^{F}_{K}$	3.0$^{F}_{K}$	2.8$^{F}_{K}$	2.8$^{F}_{K}$	2.6^{K}	3.3	5.3	5.7	6.3	6.7	6.9	(7.9)^{P_J}	(7.8)^{B}	7.7	8.3	8.5^{P}	8.2^{P}	(7.8)^{PJ}	6.2	6.4	6.2^{H}	6.3^{H}	6.0^{H}	5.8^{V_H}
28	5.9	5.2^{H}	4.8	4.5^{F}	4.5^{F}	4.1^{F}	5.9	6.5	8.9	9.0	9.2	8.8	9.5	9.5	8.7	8.1^{P}	8.0	8.7^{H}	(7.3)^{P_J}	7.9^{H}	6.5	A	5.1	5.1^{V}
29	4.9	4.8	4.8	4.8	4.5^{F}	4.7	6.2	6.9	7.5	8.5	9.3	8.3^{P}	8.8	9.1	8.3	8.3^{P}	8.0	8.0	7.0	6.8	6.7	5.8^{F}	5.1^{F_2}	A
30	4.8^{V_F}	4.4$^{J_F}_{H}$	5.0^{F_J}	4.3	4.2	4.9	5.7	6.0$^{J_F}_{H}$	9.2	8.6	9.0	9.0	9.0	(8.8)^{S}	8.6	B	B	(8.0)^{P}	A	S	S	5.7	6.4	5.1
31																								
Mean Value	4.6	4.4	4.4	4.1	4.0	4.2	5.4	6.2	6.9	6.9	7.2	7.2	7.3	7.2	7.0	6.9	6.9	7.0	6.7	6.7	6.3	5.8	5.3	5.0
Median Value	4.6	4.3	4.4	4.2	4.1	4.4	5.4	6.2	7.0	6.9	7.2	7.2	7.2	7.0	7.0	7.0	7.1	7.1	6.5	6.5	6.6	6.0	5.2	5.1
Count	24	24	24	25	21	22	24	24	25	24	25	25	24	26	25	24	24	27	6.5	27	26	25	26	25

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | h_pF2 | 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	C	C	C	C	C	C	C	C	C	340	410	(350)J	380	370	400	(360)C	320	320	A	A	(340)P F	300F	(360)P F	(310)P F
2	400	420	400	400	390	340	C	290	310	310	300	300	370	390	310	340	A	C	C	350	340	300	300	400
3	420	410	390	360	400	380	340	340	310	310	310	320	350	320	350	350	360	330	C	C	C	C	A	(400)P F
4	330	360	370	350	(380)P	340	310	310	330	300	(320)P J	340	320	360	(350)J	370	330	350	320	330	(380)P J	330	(340)J	380
5	430	440	410	370	380	320	320	340P	310	310	330	380	320	370	350	350	320	320	320	320	350	(400)J	(350)J	(320)J
6	(370)P J	(390)P J	360	S	(390)J	370	310	280	310	290	340	390	330	350P	300	360	330	370	350	350	360	390	C	C
7	C	390	420	430	390	350	320	360	320	290	320	310	A	330	C	C	350	C	C	340	S	S	S	380
8	380	C	C	C	C	C	C	C	300	300	310	340	S	S	350	310	BS	A	310	(310)P	(320)P	(320)J	(370)J	(390)P
9	440	440	380	410	430	380	310	C	C	C	C	C	C	C	C	C	C	340	350	380	350P	(340)P	360	420P
10	420	450	380	330	B	460	410	380	340	330	300	400	(400)P E	350	390	340	340	340	330	400	320	320	340	(400)C
11	450	(470)J	(480)B	(420)J H	(410)J	400	380	350	380	320	G	G	A	410	330	340	340	(350)P	330	(360)P	(350)P	370	S	S
12	S	S	S	390	430	400	G K	G K	W K	A K	A K	G K	B K	G K	380K	340	360	360	330	400	A	A	A	C
13	C	C	C	C	C	C	C	A	370	370	370	G	S	370	330	340	(350)J	320	320	300	(390)J	S	(360)J	(400)J
14	440	(460)J	470	(410)J	340	A	300F	340	G	G	430	S	320	390	A	320	340	320	(340)J	340	350	(380)C	400	C
15	C	C	C	450	450Z	B	430	G	330	(350)B	370	390	410	370	380	320	310	320	390	420	400	410	390	(410)C
16	430	410	(430)S	(410)J	B	A	C	A	(370)J	A	360	(320)J	340	(320)C	310Z	320	380	340	290	360	380	390	460	(450)J
17	(420)K S	(400)P K	(450)J K	S K	S K	S K	410K	B K	G K	G K	B K	B K	G K	C K	G K	340	330	370	(390)C	410	(410)J S	410	(400)S	380F
18	(450)F	(440)S	(430)F J	(450)J F	B	C	330	310	G	420	330	(300)P	G	G	370	360	320	(320)C	320	(360)P J	(360)P J	350	(380)J	(360)J
19	340	370	410	410	420	390	(360)C	320P	340	310	300	310	310	350	C	C	C	330	340F	300	350	390	380	320
20	C	C	C	C	C	C	C	C	C	C	(310)P J	(300)J	(320)S	340P	300P	S	S	320P	310	410	380	400	380	400
21	400	410K	410K	420Z K	400K	390K	380K	G K	350V K	G K	G K	G K	G K	340K	(320)K Z	300K	300	290	290	410	360	(410)S	440	410
22	360H	380	AF	(390)P J F	(380)F	360F	BH	270	S	C	340	310	310	320	310P	(320)P	310H P	310P	300	290	(400)S	390	400H	410H
23	330	330	310H	370	A	380	330	(300)J	C	C	C	C	C	C	C	C	290	280	320	350Z	340F Z	(370)J F	400F P	390
24	360	420	370Z	320V	(330)P	380F	290	300	370	320	350	360	350	360	(320)P J	300F	310	310	(340)P	390	400	410	390	A
25	470	480	420	360	(400)F	400	320	330	360	400	(370)J	(350)P	(350)P S	(350)P S	(360)P J	340	310	300	370	350	350	420	500	480
26	440	430	410K	520K	AK	AK	550F K	W K	W K	B K	B K	B K	B K	B K	550K	410	350K	340K	400K	440F K	390K	400K	420K	400K
27	400F K	430F K	450F K	440F K	420K	430	350	300	320	310	340	(340)P S	(320)B	310	360	310P	320P	(320)P J	350	400	480H	500H	480H	460V H
28	440	430H	400	400F	390F	350F	300	290	300	320	340	330	330	350	320	290P	320	280H	(260)P J	320H	280	A	400	440V
29	400	420	400	390	370F	320	290	280	320	310	300	300P	330	330	300	320P	300	300	280	330	300	300F	390F Z	A
30	410V F	(330)F H	(500)F J	420	380	330	320	(290)J H	300	290	300	270	330	(320)C	310	B	B	(290)P	A	S	S	330	A	350
31																								
Mean Value	410	410	410	400	390	370	350	310	330	330	340	330	340	350	350	340	330	320	330	360	360	370	390	390
Median Value	420	420	410	400	390	380	330	320	340	320	340	340	340	350	350	340	320	320	330	350	360	390	390	400
Count	24	24	23	24	20	20	23	23	25	23	25	25	22	25	25	24	24	27	25	27	26	25	24	24

h_pF2

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 2

5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951

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	C	C	C	C	C	C	C	C	C	340	410	350	380	370	400	[360]C	310	300	A	A	300	270	310A	300F
2	390	400A	370	360	320A	300	290	280	290	310	300	300	360	360	310	290	A	C	C	290	250	260	270	340
3	350	360	310	290	300	320	300	290	290	300	300	310	350	320	330	340	280	300	C	C	C	C	A	310
4	290	310	310	300	310	300	280	280	270	300	320	330	300	340	350	370	320	300	280	270	300	300	280	310
5	350	360	320	300	310	300	290	280	300	300	320	370	310	340	310	340	300	290	280	270	300	330	310	300
6	350B	330	310	330	380A	350A	270	280	290	280	310	360	300	330	300	350	300A	290	310A	300	300	360S	C	C
7	C	320	330	330	300	320	270	320	290	280	300	310	360A	310	C	C	300	C	C	300A	S	S	300	330A
8	310	C	C	C	C	C	C	C	290	300	300	300	320	300	300	300	300	A	280	230	270	310A	300	350
9	360	380	330	320	340	310	300	C	C	C	C	C	C	C	C	C	C	270	300A	310A	300	300A	330	330
10	340	370	340	300	A	440A	390A	380	340	320	240	400	360	330	390	320	290	300	310A	320A	290	280	280	[340]C
11	400	400	380	350H	380	320	350	350	380	320	300	450	A	400	330	270	290	300	260	300	310	290	400S	350
12	S	A	320	350A	370	320	420K	660K	WK	AK	AK	640K	BK	330K	380K	340	320	310	280	300	370A	A	A	C
13	C	C	C	C	C	C	C	A	360B	370	370	460	370	370	330	300	310	300	280	280	300	290	300	360S
14	410	420	400	370	300	A	300F	300	380	350	430	430	320	380	A	310	290	280	300	300	300	[320]C	350	C
15	C	C	C	370	400	B	320	380	320	310	300	390	400	360	370	300	290	280	320A	320	290	320	300	[320]C
16	350	300	400	410	A	A	C	470A	370	A	360	320	330	[320]C	300	310	350A	300A	280A	300A	330	300	380	370
17	400K	340K	410K	SK	390K	SK	320K	BK	440K	BK	BK	BK	410K	[400]CK	380K	300	300	300	[330]C	360	[330]S	300	[300]S	310
18	350F	340F	400F	380	B	C	300	310	500	420	330	300	340	400	360	350	290	[300]C	300	300	340	300	320	320
19	300	310	330	320	380	340	[320]C	290	270	300	300	300	310	330	C	C	C	270	300	270	300	300	300	300
20	C	C	C	C	C	C	C	C	C	C	300	290	300	320	290	280	280	250	230	320	270	290	290	310
21	330	350K	390K	400K	380K	360K	380K	320K	240K	630K	460K	460K	420K	340K	[320]CK	290K	250	260	250	310	300	280	340	350
22	300H	300	AF	300F	300F	300F	300H	260	300	[320]C	330	300	310	320	300	300	260H	260	230	220	290	300	310H	330H
23	270	280	250H	330	A	360	280	280	C	C	C	C	C	C	C	C	240	240	250	260	270	270	290	310
24	280	310	300	(300)A	200A	330	280	290	L	310	350	350	330	310	320	300	300	290	330	300	320	330	330	A
25	390	370	310	300	280H	330	280	290	350	360	360	340	320	330	360	340	300	300	280	280	290	340	400	390
26	380	360	340K	480K	AK	600AK	550FK	WK	WK	BK	BK	BK	BK	BK	550K	400K	340K	300K	340K	330K	380K	340K	350K	340K
27	370K	370K	380K	400K	350K	330	310	270	290	300	320	320	340	310	350	300	290	290	280	340A	330H	360H	370H	360H
28	300	300H	300	330	320	270	280	270	290	300	300	280	300	270	270	280	300	220HA	200A	210HA	250	A	350	340A
29	350	330	310	290	290	270	280	270	250	290	290	280	280	290	270	270	270	270	260	280	250	260	380A	A
30	390	340H	360	330	300	250	270	250H	260	240	280A	240	300B	[290]C	280	270	270	260	270	250	300	250	A	280
31																								
Mean Value	350	340	340	340	330	340	320	320	320	330	330	350	340	340	340	310	290	290	280	290	300	300	320	330
Median Value	350	340	330	330	320	320	300	290	300	310	310	320	330	330	330	300	300	290	280	300	300	300	310	330
Count	24	24	24	25	21	21	25	24	25	23	25	26	25	27	25	26	27	27	26	28	28	26	26	25

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 3

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | f_oF1 | 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						C	C	C	C	A	4.7	4.7	4.7	4.7	4.6	[4.2]^C	3.9	Q	A					
2						Q	A	4.0	4.3	4.6	4.8	B	L	L	4.7	Q	A	C	C					
3						Q	L	4.2	4.6	4.6	4.8	4.7	4.8	4.8	4.6	L	Q	Q	C					
4						Q	3.8	4.0	Q	4.6	4.5	4.8	4.6	L	4.6	4.6^J	4.4	Q	Q					
5						Q	3.5	3.8	A	4.5	4.8	5.1	5.0	4.8	4.5	4.4	4.0	Q	Q					
6						A	Q	A	4.2	4.7	5.0	L	5.0	5.2	4.8	4.6	A	Q	A					
7						Q	Q	L	4.5	A	A	4.9	A	4.7	C	C	A	C	C					
8						C	C	C	4.1	L	4.6	4.8	A	L	L	4.3	Q	A	Q					
9						Q	Q	C	C	C	C	C	C	C	C	C	C	Q	A					
10						A	A	4.0	4.4	4.6	Q	4.8	4.9	4.8	L	L	Q	Q	A					
11						Q	Q	4.2	4.3	4.8	4.9	4.8	A	L	L	Q	Q	Q	Q					
12						Q	3.7	4.2	4.2	A	4.1	4.5	4.5	4.5	4.6	4.5	3.6	Q	Q					
13						C	C	A	B	4.8^H	4.6	5.0	4.9	4.7	4.2	4.2	Q	Q	Q					
14						A	Q	3.1	4.4	L	4.6	L	4.8	L	A	4.6	Q	Q	A					
15						B	Q	A	4.3	A	4.5	5.2^H	L	4.8	5.0	4.4	Q	Q	A					
16						A	C	A	A	A	4.7	4.6	4.7	[4.4]^C	4.2	L	A	A	A					
17						S	Q	B	3.9	4.2	B	B	4.5	[4.4]^C	4.4	Q	Q	Q	C					
18						C	Q	C	4.2	4.4	4.5	4.8	4.9	L	L	L	3.8	C	Q					
19						Q	C	Q	Q	4.6	4.7	4.7	4.5	4.5	C	C	C	Q	Q					
20						C	C	C	C	C	4.5	4.8	4.7	L	L	B	B	Q	Q					
21						Q	3.3	4.3	Q	4.6^H	4.4^H	B	4.6	4.5	[4.4]^C	4.2	Q	Q	Q					
22						Q	Q	Q	A	C	B	Q	4.7	4.8	4.5	4.1	Q	Q	Q					
23						Q	Q	Q	C	C	C	C	C	C	C	C	Q	Q	Q					
24						Q	Q	Q	L	4.1	4.7	A	3.6	A	Q	4.5	L	Q	A					
25						Q	Q	Q	4.5	4.6	L	L	L	L	L	Q	Q	Q	Q					
26						A^K	3.0^K	3.3^K	3.9^K	3.8^K	B^K	4.0^K	4.1^K	4.0^K	4.1^K	B^K	L^K	Q^K	Q^K					
27						Q	Q	2.6	Q	L	4.8^H	L	5.0	4.9	4.8	L	Q	Q	Q					
28						Q	Q	Q	L	4.3	4.1	4.0	L	Q	Q	Q	Q	Q	Q					
29						Q	B	Q	Q	4.5	A	4.6	4.7	4.5	Q	Q	Q	Q	Q					
30						Q	Q	A	A	Q	A	A	B	C	L	3.7	3.8	Q	Q					
31																								
Mean Value							3.5	3.8	4.3	4.5	4.6	4.7	4.7	4.7	4.5	4.3	3.9							
Median Value							3.5	4.0	4.3	4.6	4.6	4.8	4.7	4.7	4.6	4.4	3.8							
Count							5	11	14	17	20	18	20	17	15	13	6							

f_oF1 | Sweep 1.0 Mc to 17.0 Mc in 2 min | ☐ Manual ☒ Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951

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						C	C	C	C	A	B	320^{B}	310^{B}	270	B	C	300^{B}	Q	A					
2						Q	A	250	A	230	250	B	270	280	300^{A}	Q	A	C	C					
3						Q	260	280	260	240	240	220	210	220	270	290	Q	Q	C					
4						Q	B	280^{A}	Q	280	B	260	250	250	280^{B}	280^{A}	280	Q	Q					
5						Q	280	260	A	240	220	260	220	260^{B}	240	280	280^{A}	Q	Q					
6						A	Q	A	250	240	280^{B}	250	260	270	250	250	A	Q	A					
7						Q	Q	280	260	A	A	A	A	250	C	C	A	C	C					
8						C	C	C	240	260	280	230	A	280	280	260	Q	A	Q					
9						Q	Q	C	C	C	C	C	C	C	C	C	C	Q	A					
10						A	A	270	A	250	Q	250	240	300^{B}	300^{B}	290	Q	Q	A					
11						Q	Q	A	270	290	250	A	A	290	260	Q	Q	Q	Q					
12						Q	310^{B}	300^{B}	B	A	A	270	300	290	270	300	290^{A}	Q	Q					
13						C	C	A	B	200^{H}	250	270	300	280	250	250	Q	Q	Q					
14						A	Q	270	300^{B}	290^{B}	260	270	220	270	A	B	Q	Q	A					
15						B	Q	A	280	A	270	270^{H}	270	270	270	290	Q	Q	A					
16						A	270	A	A	A	250	260	230	[240]^{C}	240	260	A	A	A					
17						S	Q	250	250	250	B	B	260	[260]^{C}	270	Q	Q	Q	C					
18						C	Q	C	270	280	260	250	230	250	290^{B}	270	270	C	Q					
19						Q	C	Q	Q	270	250	250	200	230	C	C	C	Q	Q					
20						C	C	C	C	C	200	240	200	270	250	B	250	Q	Q					
21						Q	320	300	Q	200^{H}	240^{H}	250	300	240	[240]^{C}	250	Q	Q	Q					
22						Q	Q	Q	A	C	B	Q	290	280	230	220	Q	Q	Q					
23						Q	Q	Q	C	C	C	C	C	C	C	C	Q	Q	Q					
24						Q	Q	Q	280	260	250	A	320^{B}	A	Q	280	280	Q	A					
25						Q	Q	Q	300	290	320	320^{B}	310	270	280	Q	Q	Q	Q					
26						A^{K}	360^{K}	320^{K}	300^{K}	310^{K}	B^{K}	300^{BK}	B^{K}	300^{K}	320^{K}	B^{K}	310^{K}	Q^{K}	Q^{K}					
27						Q	Q	200	Q	270	240^{H}	240	290	300	280	290	Q	Q	Q					
28						Q	Q	Q	260	240	230	250	260	Q	Q	Q	Q	Q	Q					
29						Q	B	Q	Q	250	A	250	280^{A}	250	Q	Q	Q	Q	Q					
30						Q	Q	A	A	Q	A	A	B	C	250	250	270^{B}	Q	Q					
31																								
Mean Value							300	270	270	260	250	260	260	270	270	270	280							
Median Value							300	280	270	260	250	250	260	270	270	280	280							
Count							6	12	13	20	18	21	23	25	21	16	9							

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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						C	C	C	C	B	B	B	B	B	B	C	B	B	B					
2						B	2.0	2.8	2.8[B]	B	B	B	B	B	A	A	B	C	C					
3						B	A	2.3[J]	A	B	B	B	B	B	B	3.2	2.8	2.2	C					
4						B	B	2.8	A	B	B	B	B	B	B	A	B	A	B					
5						B	2.2	B	A	A	A	B	B	B	B	3.1	A	2.0[B]	A					
6						A	A	2.5	A	B	B	B	B	B	B	3.4	3.0	2.2	B					
7						B	A	2.7	3.0	B	A	B	B	B	C	C	2.8	C	C					
8						C	C	C	2.9[J]	A	3.4	B	B	A	A	A	3.2	2.4[A]	A					
9						B	2.0	C	C	C	C	C	C	C	C	C	C	2.2	A					
10						B	2.0	2.6	3.1[J]	A	B	B	B	A	B	B	2.7	B	A					
11						B	A	A	A	B	B	B	B	B	B	B	(2.8)[B]	2.3	A					
12						E	2.1	2.5	2.9	A	A	B	B	B	B	B	2.7	2.2	B					
13						C	C	A	3.1	B	B	B	B	B	B	B	2.7	B	A					
14						A	A	2.4	B	B	B	B	B	B	3.2[B]	B	B	2.0[B]	B					
15						B	2.1[B]	2.6	B	B	A	3.4	B	B	B	A	2.6	2.1	B					
16						B	B	2.5[B]	B	B	B	B	B	C	B	3.1	2.7	B	B					
17						A	B	B	B	B	B	B	B	C	B	B	2.9	B	C					
18						C	A	C	2.8	B	B	B	B	B	B	2.9	B	C	B					
19						B	C	C	B	3.0	B	B	B	B	C	C	C	A	B					
20						C	C	C	C	C	3.4	B	B	B	3.0	2.8	B	2.0	B					
21						A	1.9[J]	2.6	(2.7)[A]	2.9	A	B	B	B	C	2.6	2.2	2.0	A					
22						A	2.1[P]	2.3[P]	3.1	(3.0)[J]	2.8	B	B	3.1	3.2	2.8	2.5	1.9	B					
23						1.3	2.0	2.3	C	C	C	C	C	C	C	C	A	A	B					
24						1.3[J]	2.0	2.5	2.7[J]	3.2	S	(3.3)[B]	2.8	(3.3)[B]	2.8[P]	A	2.8	2.4	B					
25						A	1.6	2.5	2.6	B	B	B	B	B	3.0	A	2.5	1.8	E					
26						A	1.5	2.1	2.4	2.5	2.8	B	3.1	B	B	B	B	B	B					
27						A	1.8	2.0	2.6	(3.1)[B]	(3.4)[B]	B	3.1	B	B	B	(2.4)[B]	A	A					
28						A	(1.9)[B]	(2.2)[B]	(2.7)[B]	3.2	2.9	3.2	B	2.8	2.8	2.4	2.4	A	A					
29						E	(1.5)[B]	B	B	(3.1)[B]	B	B	B	B	B	(2.7)[P]	(2.2)[J B]	A	A					
30						E	A	2.4	B	A	A	(3.0)[B]	B	C	B	A	(2.8)[B]	2.1[J]	A					
31																								
Mean Value						1.3	1.9	2.5	2.8	3.0	3.1	3.2	3.0	3.1	3.0	2.9	2.7	2.1						
Median Value						E	2.0	2.5	2.8	3.0	3.2	3.2	3.1	3.1	3.0	2.8	2.7	2.1						
Count						5	15	19	14	8	6	4	3	3	6	10	19	5						

foE

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 6

6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951

f'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						C	C	C	C	B	B	B	B	B	B	C	B	B	B					
2						B	120	120	B	B	B	B	B	B	A	A	B	C	C					
3						B	A	120	A	B	120	B	B	110	B	120	120	120	C					
4						B	B	130	A	B	B	B	B	B	B	A	130	A	B					
5						B	120	120	A	A	A	B	B	B	B	130	A	B	A					
6						A	A	130	A	B	130	B	B	B	B	150	120	B	B					
7						B	A	120	120	B	B	B	B	B	C	C	130	C	C					
8						C	C	C	100	100	120	B	B	A	A	A	110	130	A					
9						B	120	C	C	C	C	C	C	C	C	C	C	120	A					
10						B	B	120	130	A	120	B	B	A	B	B	120	B	A					
11						B	A	A	A	B	B	B	B	B	B	110	B	B	A					
12						E	B	130	120	A	A	B	B	B	B	120	120	B	B					
13						C	C	A	120	120	120	B	B	130	B	100	120	B	A					
14						A	A	130	B	B	B	B	B	B	B	B	120	B	B					
15						B	B	150	B	B	A	130	B	B	B	B	130	120	B					
16						B	120	B	B	B	B	B	B	C	B	110	B	B	B					
17						A	B	B	B	120	100	B	110	[120]C	120	B	120	B	C					
18						C	A	C	130	B	B	B	B	B	B	120	B	C	B					
19						B	C	C	120	120	B	B	B	B	C	C	C	A	B					
20						C	C	C	C	C	100	100	100	100	100	100	100	110	B					
21						A	120	120	100	100	A	100	100	100	[100]C	100	100	110	A					
22						A	110	110	100	[100]C	100	100	100	100	100	100	110	100	B					
23						130B	110	110	C	C	C	C	C	C	C	C	A	A	B					
24						100	110	100	100	100	130	B	B	B	130	A	120	130	B					
25						A	100	110	110	110	B	B	B	130	130	A	130	130	E					
26						A	130	130	150	120	120	120	150	B	B	B	B	B	B					
27						A	100	110	110	110	B	110	150	B	100	120	120	A	A					
28						A	100	110	150	130	120	120	120	120	130	110	160	B	A					
29						E	B	B	B	B	B	B	B	B	B	110	120	A	A					
30						E	A	130	120	B	B	B	B	C	100	A	100	100	A					
31																								
Mean Value						120	110	120	120	110	120	110	120	110	110	110	120	120						
Median Value						120	120	120	120	110	120	110	110	120	110	110	120	120						
Count						2	12	19	15	11	11	11	11	8	9	14	20	10						

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	C	C	C	C	C	C	C	C	C	5.0	B	B	B	B	B	C	B	3.7	8.6	8.0	9.0	8.0	4.3	4.4
2	3.4	4.2	3.8Y	E	3.2	B	5.2	4.9	4.9	B	B	4.0	B	B	4.6	4.6Y	9.0	C	C	4.6	4.8	3.0	3.1	3.7
3	4.0	4.3	3.0	3.0	E	3.1	2.8	G	3.2	4.6	G	4.0	B	G	B	G	G	3.0	C	C	C	C	6.4	2.4
4	E	3.1	E	2.1	E	B	G	3.6	3.8	3.6	B	3.8	3.9	5.0	B	5.0	G	2.6	B	3.0	3.2	3.4	E	2.4
5	E	E	E	E	E	B	2.7	G	5.3	4.3	3.5	5.4	3.7	B	B	G	3.2	G	2.3	3.6	3.0	5.0	4.0	3.9
6	B	3.0	2.5	3.0	4.3	4.8	3.4	5.5	3.3	3.6	G	B	B	B	B	G	5.6	G	5.2	E	E	2.6S	C	C
7	C	E	E	E	E	B	2.6	3.2	G	5.8	5.6	4.6	8.5	B	C	C	5.1	C	C	5.8	5.0S	S	2.7	3.5
8	3.5	C	C	C	C	C	C	C	3.8	6.2	5.8	5.0	5.4	4.0	5.0	5.0	4.2	6.6Y	4.7	3.1	3.9	5.7	E	E
9	4.0	3.1	E	2.8	2.7	B	G	C	C	C	C	C	C	C	C	C	C	4.8	5.4	5.5	7.6	7.4	5.8	E
10	E	E	4.0	3.0	3.1	3.6	4.5	G	4.6	3.9	G	3.9	4.2	3.8	B	B	5.8	B	5.8	3.4	5.0	E	2.8	C
11	E	E	E	2.6	E	3.0	3.2	3.5	3.2	B	B	5.2	7.1	4.0	B	G	4.8	G	3.2	3.3	S	E	2.2S	E
12	S	3.2S	E	2.6	E	E	G	G	4.1Y	6.6	8.0	B	4.2	4.2	G	G	4.7	3.6	3.2	3.4	5.4	4.6	5.2	C
13	C	C	C	C	C	C	C	6.8	G	G	G	B	B	G	B	G	3.2	B	3.7	E	E	E	E	S
14	E	E	E	2.4	E	5.1	2.4	2.8	B	B	B	B	B	B	7.0	B	4.1	4.3	4.1	2.9	E	C	E	C
15	C	C	C	E	2.8	3.1	3.0	4.6	B	5.4	4.8	G	B	B	B	3.4	G	2.8	5.9	E	2.4	2.6	E	C
16	E	E	3.2	3.4	3.2	5.7	G	5.1	5.5	9.0	B	B	B	C	B	G	5.1	5.2	5.0	5.9	E	E	E	E
17	E	E	3.0	S	E	2.4Y	B	B	B	G	G	4.4	G	C	G	B	G	2.2	C	3.1	3.1	E	S	E
18	E	E	E	E	3.1	C	2.1	C	G	B	B	B	B	B	B	G	B	C	B	E	S	E	E	E
19	E	E	E	E	E	B	C	C	G	G	B	B	B	B	C	C	C	2.2	B	E	E	E	E	S
20	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	G	G	B	E	E	E	E	E
21	1.5	1.5	2.7	2.9	3.2	2.7	3.4	3.5	G	4.4	4.0	G	G	G	C	G	5.0	4.6	3.2	E	2.0	E	E	1.4
22	1.3	1.7	2.4	1.7	2.8	2.6	3.0	G	4.7	C	G	G	G	5.3	G	G	G	G	B	E	2.6	E	E	2.0
23	E	E	2.3	5.7	4.0	G	G	3.5	C	C	C	C	C	C	C	C	3.4	3.2	5.5	2.9	3.2	2.8	2.2	1.8
24	E	E	2.5	3.4	2.2	3.3	G	4.0	3.8	G	G	6.8	G	4.9	3.7	4.0	3.8	4.0	5.8	2.6	2.1	2.0	2.3	4.0
25	2.8	E	1.5	1.8	2.6	1.5	2.4	G	G	G	B	B	B	G	G	3.0	G	2.1	E	E	E	E	E	E
26	E	E	E	E	3.4	3.6	2.6	G	G	G	G	G	G	B	B	B	B	B	B	E	E	E	E	E
27	E	E	E	E	E	2.1	3.2	G	4.3	G	G	G	G	B	4.0	G	G	3.4	3.2	3.4	2.6	E	E	E
28	E	E	E	2.9	2.2	2.0	G	G	G	G	G	G	G	G	G	4.0	3.5	4.1	2.3	3.5	4.5	5.5	3.1	2.9
29	3.4	E	2.5	E	E	E	G	B	B	G	5.0	4.1	4.6	4.6	B	4.6	4.0Y	3.5Y	2.3	2.4	3.5	6.6	6.8	7.2
30	3.6	1.9	E	E	1.4	1.4	2.1	7.4	6.3	5.7	6.8	7.5	B	C	G	4.0	G	5.8	6.8	4.8	3.0	4.4	5.0	5.0
31																								
Mean Value	3.1	2.9	2.8	2.9	2.9	3.1	3.0	4.5	4.3	5.2	5.4	4.9	5.2	4.5	4.9	4.2	4.7	3.7	4.5	4.0	4.0	4.0	4.0	3.4
Median Value	E	E	E	2.1	2.2	2.7	2.5	3.4	3.6	3.8	G	4.0	G	3.9	G	G	3.5	3.3	4.4	3.0	2.0	2.0	E	1.8
Count	23	25	25	25	26	19	24	22	22	22	19	19	16	14	12	21	25	24	20	29	27	27	28	23

fEs

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 8

11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951

(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	C	C	C	C	C	C	C	C	C	3.0	2.6	(2.8)^{J}	2.8	2.9	2.7	(2.8)^{C}	3.0	2.9	A	A	(2.9)$^{P}_{F}$	3.1^{F}	(2.8)$^{P}_{F}$	(3.0)$^{PJ}_{F}$
2	2.6	2.5	2.6	2.6	2.6	2.9	C	3.3	3.0	3.0	3.0	3.0	2.9	2.7	2.9	2.8	A	C	C	2.8	2.9	3.0	3.1	2.6
3	2.6	2.6	2.7	2.7	2.6	2.8	2.9	2.9	3.0	3.0	3.0	2.9	2.8	2.9	2.8	2.9	2.7	2.9	C	C	C	C	A	(2.6)$^{P}_{F}$
4	3.0	2.8	2.7	2.8	(2.8)^{P}	2.9	3.1	3.0	2.9	3.1	(3.0)$^{P}_{J}$	2.9	3.0	2.9	(2.9)^{J}	2.8	2.9	2.7	2.9	2.9	(2.6)$^{P}_{J}$	2.8	(2.8)^{J}	2.6
5	2.6	2.5	2.5	2.8	2.7	3.0	3.0	2.9^{P}	3.1	3.0	3.0	2.7	3.0	2.7	2.7	2.9	3.0	3.0	3.0	3.0	2.8	(2.7)^{J}	(2.9)^{J}	(3.0)^{J}
6	(2.8)$^{P}_{J}$	(2.7)$^{P}_{J}$	2.8	(2.9)^{J}	(2.7)^{J}	2.8	3.0	3.2	3.0	3.1	2.8	2.7	2.9	2.8	3.1	2.9	2.9	2.7	2.8	2.9	2.8	2.7	C	C
7	C	2.6	2.6	2.5	2.6	2.8	3.0	2.8	3.0	3.2	3.0	3.0	3.1^{P}	3.0	C	C	2.8	C	C	2.8	S	S	S	2.7
8	2.7	C	C	C	C	C	C	C	3.1	3.1	3.2	2.9	S	S	2.8	3.0	SB	A	3.1	(3.1)$^{P}_{J}$	3.0^{P}	(3.0)^{J}	(2.5)^{J}	(2.7)^{P}
9	2.5	2.5	2.7	2.5	2.5	2.7	3.0	C	C	C	C	C	C	C	C	C	C	2.8	2.8	2.7	2.9^{P}	(2.8)^{P}	2.8	2.6^{P}
10	2.6	2.4	2.7	3.0	B	(2.3)^{B}	2.7	2.8	2.9	2.9	3.0	2.8	(2.8)$^{P}_{Z}$	2.8	2.7	2.9	2.8	2.9	2.9	2.6	2.9	2.9	2.8	(2.6)^{C}
11	2.4	(2.3)^{J}	2.3	(2.6)$^{J}_{H}$	(2.6)^{J}	2.7	2.7	2.8	2.9	3.1	3.1	2.6	A	2.6	3.1	2.8	2.8	(2.8)^{P}	2.9	(2.7)^{B}	(2.8)^{P}	2.7	2.7	S
12	S	S	S	2.7	2.6	2.6	2.7^{K}	2.1^{K}	W^{K}	A^{K}	A^{K}	2.2^{K}	B^{K}	3.1^{K}	2.8^{K}	3.0	2.8	2.7	3.0	2.6	A	A	A	C
13	C	C	C	C	C	C	C	A	2.8	2.9	2.8	2.6	(2.7)$^{S}_{J}$	2.8	2.9	2.8	(2.9)^{J}	3.0	2.9	3.1	(2.6)^{J}	S	(2.8)^{J}	(2.6)^{J}
14	2.6	(2.5)^{J}	2.4	(2.5)^{J}	2.9	A	3.1^{F}	2.8	2.9	2.9	2.6	S	3.0	2.7	A	2.9	2.8	3.0	(2.9)^{J}	2.9	2.8	(2.7)^{C}	2.6	C
15	C	C	C	2.4	2.5^{Z}	B	2.5	2.7	2.9	(2.8)$^{B}_{J}$	2.7	2.7	2.5	2.8	2.7	3.0	3.0	3.0	2.6	2.5	2.6	2.6	2.6	(2.6)^{C}
16	2.5	2.6	2.4	(2.6)^{J}	B	A	C	2.5	(2.8)^{J}	2.5^{F}	2.9	(2.9)^{J}	2.9	(3.0)^{C}	3.1^{Z}	3.0	2.7	2.9	3.3	2.6	2.6	2.7	2.4	(2.4)^{J}
17	(2.5)$^{S}_{K}$	(2.6)$^{P}_{K}$	(2.4)$^{J}_{K}$	S^{K}	S^{K}	S^{K}	2.5^{K}	B^{K}	2.5^{K}	2.4^{K}	B^{K}	B^{K}	2.9^{K}	(2.9)$^{C}_{K}$	2.9^{K}	2.8	2.9	2.7	(2.6)^{C}	2.6	(2.6)^{S}	2.6	(2.6)^{S}	2.6^{F}
18	(2.4)$^{F}_{J}$	(2.4)$^{S}_{J}$	(2.5)$^{F}_{J}$	(2.4)$^{J}_{F}$	B	C	3.0	3.1	2.5	2.6	2.9	(3.2)^{P}	3.0	2.7	2.9	2.9	3.0	(3.0)$^{C}_{J}$	3.0	(2.8)$^{P}_{J}$	(2.8)$^{P}_{J}$	3.0	(2.7)^{J}	(2.8)^{J}
19	2.9	2.7	2.6	2.6	2.6	2.6	(2.8)^{C}	3.0^{P}	2.9	3.0	3.0	3.1	3.1	2.8	C	C	C	2.8	2.8^{P}	3.1	2.8	2.6	2.7	2.9
20	C	C	C	C	C	C	C	C	C	C	(2.9)$^{P}_{J}$	(3.0)^{J}	(3.0)^{S}	3.0^{P}	3.1^{P}	S	S	2.9^{P}	3.0	2.6	2.7	2.7	2.7	2.6
21	2.6	2.5^{K}	2.6^{K}	2.6^{ZK}	2.6^{K}	2.6^{K}	2.8^{K}	3.1^{K}	2.8^{VK}	2.3^{K}	2.6^{K}	2.6^{K}	2.7^{K}	3.0^{K}	(3.1)$^{C}_{K}$	3.2^{K}	3.1	3.1	3.0	2.5	2.7	2.6	2.5	2.5
22	2.8^{H}	2.6	(2.7)$^{F}_{F}$	(2.6)$^{F}_{F}$	2.7^{F}	2.8^{F}	3.0^{H}	3.3	S	C	2.9	3.0	3.1	3.1	3.0^{P}	(3.0)P	3.0^{HP}	3.0^{P}	3.1	3.2	(2.6)^{S}	2.5	2.7^{H}	2.6^{H}
23	3.0	2.9	3.0^{H}	2.7	A	2.6	2.9	(3.1)^{J}	C	C	C	C	C	C	C	C	3.2	3.2	2.9	2.8^{Z}	2.9$^{F}_{Z}$	(2.7)$^{F}_{F}$	2.6$^{F}_{P}$	2.7
24	2.8	2.6	2.8^{Z}	3.0^{F}	(2.8)^{P}	2.8^{F}	3.2	3.1	2.8	3.0	2.9	2.9	2.9	2.8	(3.0)$^{P}_{J}$	3.0	3.1	3.1	(2.9)P	2.6	2.6	2.5	2.6	2.5
25	2.4	2.4	2.5	2.9	(2.6)$^{F}_{H}$	2.7	3.0	3.0	2.8	2.7	(2.8)^{J}	(2.9)^{P}	(2.8)$^{P}_{S}$	(3.0)^{PJ}	(2.9)$^{P}_{J}$	2.9	3.1	3.2	2.6	2.8	2.8	2.5	2.3	2.3
26	2.5	2.5	2.7^{K}	2.1^{K}	A^{K}	2.1$^{F}_{K}$	2.2$^{F}_{K}$	W^{K}	W^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	2.2^{K}	2.3^{K}	2.7^{K}	2.8^{K}	2.6^{K}	2.5$^{F}_{K}$	2.7^{K}	2.7^{K}	2.6^{K}	2.7^{K}
27	2.7$^{F}_{K}$	2.4$^{F}_{K}$	2.5$^{F}_{K}$	2.5$^{F}_{K}$	2.6^{K}	2.5	2.8	3.1	3.0	3.1	2.9	(2.9)$^{P}_{J}$	(3.0)^{P}	3.1	2.9	3.1^{P}	3.0^{P}	(3.2)$^{P}_{J}$	2.8	2.6	2.3^{H}	2.3^{H}	2.3^{H}	2.4^{VH}
28	2.4	2.4^{H}	2.7	2.7^{F}	2.7^{F}	2.8^{F}	3.0	3.1	3.1	3.0	2.8	2.8	2.8	2.8	3.0	3.2P	(3.1)S	3.2^{H}	(3.2)^{PJ}	3.0^{H}	3.1	A	2.6	2.5^{V}
29	2.6	2.5	2.7	2.6	2.7^{F}	3.0	3.2	3.3	3.3	3.0	3.0	3.1^{P}	3.0	2.9	3.1	3.0^{P}	3.2	3.1	3.3	3.0	3.0	3.1^{F}	2.8$^{F}_{Z}$	A
30	(2.6)^{VF}	(2.5)$^{F}_{H}$	(2.3)$^{F}_{F}$	2.6	2.6	2.9	3.0	(3.2)$^{F}_{H}$	3.1	3.2	(3.1)^{S}	3.2	2.9	(3.0)^{C}	3.0	B	B	(3.1)P	A	S	S	2.9	2.8	2.8
31																								
Mean Value	2.6	2.5	2.6	2.6	2.6	2.7	2.9	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	2.9	2.8	2.8	2.7	2.7	2.6
Median Value	2.6	2.5	2.6	2.6	2.6	2.8	3.0	3.0	2.9	3.0	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6
Count	24	24	24	25	20	21	24	24	25	24	25	25	24	26	25	24	24	27	25	27	26	25	26	25

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 9

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | fmin F | 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	C	C	C	C	C	C	C	C	C	4.1A	4.5	4.2	4.1	3.6	4.5	[4.0]C	3.5	4.0	A	A	2.2A	2.2A	3.3A	3.8A
2	2.5A	3.2A	2.0A	1.7	2.0A	2.2	3.9A	3.6	4.0A	3.8	3.8	4.7	4.0	4.2	4.2A	3.7A	A	C	C	2.8A	1.6	2.3A	2.6A	1.6
3	E	1.6	1.9	1.6	1.6	2.2	2.2	3.2	3.6	3.8	3.8	3.8	3.6	3.6	3.7	3.8	2.9	3.6	C	C	C	C	A	1.8
4	1.8	1.9	2.0	2.0A	1.8	1.8	3.6	3.6	3.6	4.0	4.0	4.1	3.8	4.0	4.0	4.0A	3.0	3.0	3.5	2.0A	3.8	3.8	E	2.2
5	2.2	2.0	1.6	1.8	1.7	2.4	2.3	3.0	4.6A	3.6	3.8	4.3A	3.8	4.0	3.7	3.7	3.3	3.3	2.2	1.8	2.0	2.0	2.0A	2.0A
6	3.6	2.0	1.8	1.9	4.0A	3.5A	2.2	4.3A	3.7	3.8	4.5	4.0	4.1	4.1	3.9	4.0	4.8A	2.7	5.0A	2.0	3.7	4.0S	C	C
7	C	1.8	2.2	1.8	1.8	2.3	2.2	2.8	3.4	5.0A	4.8A	4.8	7.0A	3.9	C	C	4.3A	C	C	6.0	S	S	2.5A	3.0A
8	2.0A	C	C	C	C	C	C	C	3.5	3.8	3.6	3.8	5.3A	4.4	4.0A	3.5	3.5	A	3.5A	1.4	3.0A	6.0	2.0	2.0
9	2.0A	1.9	2.0	2.0A	1.5	1.6	2.2	C	C	C	C	C	C	C	C	C	C	2.8	4.6A	4.8A	4.0A	5.4A	4.0A	1.8
10	1.4	1.6	2.8A	3.4	A	3.0A	4.3A	3.0	4.0A	3.2	3.8	3.9	4.4	4.2	4.0	3.5	3.1	3.0	5.1A	3.4A	3.6A	2.0	1.8	[1.9]C
11	2.0	1.8	1.8	1.8	2.0	2.0A	3.5	3.5A	3.2	3.7	3.8	4.8	A	3.8	3.5	3.9	3.7	3.0	1.6	2.8A	3.8S	1.7	5.2S	1.7
12	S	A	1.5	2.2A	1.6	E	2.6	3.4	4.0	A	4.0	4.0	4.0	3.9	3.7	3.6	3.4A	3.4	2.2	1.8	4.0A	A	A	C
13	C	C	C	C	C	C	C	A	4.8	3.2	3.8	3.6	4.0	3.6	3.6	3.6	3.6	3.5	2.2A	3.6	2.0	2.0	2.0	3.1S
14	2.2	1.9	2.0	2.0	1.8	A	2.4	2.9	3.8	4.0	3.6	3.8	3.7	3.8	A	3.7	3.2	2.2	3.0A	2.8A	1.9	(1.9)C	1.9	C
15	C	C	C	2.0	2.0	A	2.8	3.6A	3.6	4.6	3.7	4.0	3.7	4.0	3.5	3.6	2.6	2.7	3.6A	1.8	1.8	1.8	2.0	[2.0]C
16	1.9	2.0	3.0A	3.7	A	A	2.4	4.8A	4.3A	5.1A	3.8	3.6	3.8	[3.6]C	3.4	3.1	4.2A	4.0A	4.2A	3.8A	1.6	1.8	2.0	2.2
17	1.8	2.0	2.2A	S	1.8	S	2.4	2.9	3.2	3.2	B	A	3.5	(3.4)C	3.4	3.6	3.2	2.3	(2.6)C	2.8A	A	1.8	S	2.0
18	1.6	1.9	1.8	1.9	3.8	[3.0]C	2.3	3.4	3.1	3.4	3.4	3.8	3.9	3.8	4.0	3.0	3.3	(2.6)C	2.0	2.0	3.2S	2.0	1.8	2.0
19	2.2	1.8	1.8	1.6	1.6	1.8	C	4.0	3.4	3.4	3.8	3.9	3.6	3.6	C	C	C	2.2	2.0	1.8	2.4	2.3	1.7	3.0S
20	C	C	C	C	C	C	C	C	C	C	3.8	4.4	3.6	3.8	3.3	4.8	3.0	2.2	1.6	1.5	1.3	1.3	1.3	1.3
21	1.2	1.4	1.7	1.6	1.7	1.4	2.6	3.2	3.0	3.7	3.6	3.9	3.8	3.7	(3.3)[illegible]	2.9	3.5	3.0	1.3	1.2	1.8	1.5	1.4	1.5
22	1.2	1.7	A	1.3F	1.8F	1.8	2.4	2.6	4.0	[4.2]C	4.4	4.0	3.9	4.4	3.4	3.2	2.6	2.0	1.4	1.4	2.0A	1.5	1.3	1.4
23	1.2	E	1.3	1.3	A	1.6	2.1	3.1	C	C	C	C	C	C	C	C	3.3	3.2A	2.3	1.5	1.4	1.4	1.3	1.2
24	1.1	1.2	1.3	A	A	2.0	2.3	3.4	3.6	3.6	3.8	5.7A	3.2	4.3A	4.2	3.7A	3.3	2.8	4.5A	1.9	1.4	1.3	2.0A	3.5A
25	1.5	1.3	E	1.2	E	1.3	2.0	2.8	3.1	3.2	3.8	3.8	3.8	3.6	3.4	3.2	2.8	2.4	E	1.3	1.3	1.6	1.5	1.3
26	1.2	1.2	1.3	1.2	A	2.8A	2.2	2.3	3.2	3.3	B	3.6	3.8	3.2	3.2	3.6	2.3	2.2	2.2	1.6	1.8	1.5	1.7	1.4
27	1.5	1.5	1.2	1.5	E	1.5	2.0	2.0	3.7	3.6	3.5	3.4	4.0	4.5	3.2	3.0	3.2	2.3	1.7	2.8A	1.3	1.3	1.4	1.5
28	1.3	1.3	1.2	1.5	2.2A	E	2.1	2.7	3.1	3.4	3.4	3.5	3.6	3.3	3.4	3.5	3.1	A	A	A	4.5A	A	3.4	2.9A
29	3.0A	1.8	1.2	1.2	1.2	1.2	3.4	3.4	3.4	3.6	5.0A	4.0	4.2A	3.7	4.0	3.4	3.5	2.4	2.9	1.6	1.5	1.7	3.7A	A
30	2.9A	E	E	E	E	E	2.4	4.1A	4.4A	4.1	6.8A	4.8A	6.5	(4.8)C	3.2	3.2	3.4	3.4	3.5A	3.0A	2.2A	1.8	5.6	1.8
31																								
Mean Value	1.9	1.8	1.8	1.8	2.0	2.1	2.6	3.3	3.7	3.8	4.0	4.1	4.1	3.9	3.7	3.6	3.3	2.9	2.8	2.4	2.4	2.2	2.3	2.1
Median Value	1.8	1.8	1.8	1.8	1.8	1.8	2.4	3.2	3.6	3.7	3.8	4.0	3.8	3.8	3.6	3.6	3.3	2.8	2.3	2.0	2.0	1.8	2.0	2.0
Count	24	24	24	24	21	22	25	25	26	26	26	27	27	28	25	26	27	26	25	27	27	26	26	26

fmin F

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Wakkanai

Lat. 45° 23.6' N
Long. 141° 41.1' E

Sep. 1951

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	C	C	C	C	C	C	C	C	C	3.3	B	B	B	B	B	C	B	2.2	1.9	1.5	1.8	1.8	1.9	1.3
2	1.8	2.3	1.3	E	1.4	B	1.4	2.2	2.8	B	B	3.6	B	B	2.4	2.4	3.0	C	C	2.0	1.6	1.6	1.6	1.6
3	E	1.3	1.3	1.3	E	1.6	1.5	2.1	2.0	3.8	2.8	3.6	B	2.2	B	1.8	1.5	1.8	C	C	C	C	1.8	1.8
4	E	1.8	E	1.8	E	B	2.0	2.0	2.0	3.5	B	3.4	3.6	3.4	B	2.0	2.0	1.8	B	1.8	2.0	2.1	E	2.2
5	E	E	E	E	E	B	1.4	1.4	2.0	2.4	2.8	3.4	3.5	B	B	2.3	2.3	2.0	1.4	2.0	2.0	2.0	1.5	1.5
6	B	2.0	2.0	1.2	1.5	1.5	1.5	1.7	2.2	3.4	3.1	B	B	B	B	2.2	1.5	2.1	2.3	E	E	1.9	C	C
7	C	E	E	E	E	B	1.8	1.8	2.2	3.4	3.3	3.9	3.8	B	C	C	2.0	C	C	1.4	1.9	S	1.9	1.8
8	1.4	C	C	C	C	C	C	C	1.4	1.4	2.4	3.7	3.7	2.5	1.8	2.5	1.7	1.5	1.8	2.0	1.8	1.8	E	E
9	1.9	2.0	E	1.9	2.0	B	1.6	C	C	C	C	C	C	C	C	C	C	1.4	1.4	1.8	1.8	1.8	1.8	E
10	E	E	2.0	1.8	1.2	1.8	1.9	1.7	2.2	2.3	1.4	3.4	4.0	2.6	B	B	2.4	B	1.9	1.8	1.9	E	2.0	C
11	E	E	E	2.0	E	1.8	1.8	1.8	2.0	B	B	3.7	3.6	3.6	B	2.0	2.8	1.8	1.5	1.5	S	E	1.5	E
12	S	2.0	E	1.5	E	E	1.9	1.8	2.0	3.4	3.6	B	3.8	3.8	3.4	2.0	1.8	1.9	1.8	1.8	1.4	1.8	2.0	C
13	C	C	C	C	C	C	C	2.0	1.8	2.4	2.6	B	B	2.6	B	2.2	2.0	B	2.0	E	E	E	E	S
14	E	E	E	2.0	E	1.9	1.7	2.0	B	B	B	B	B	B	3.2	B	2.0	2.0	2.0	1.5	E	C	E	C
15	C	C	C	E	2.0	1.7	2.1	2.2	B	3.4	2.8	2.3	B	B	B	2.8	2.0	1.8	1.5	E	1.8	2.1	E	C
16	E	E	2.0	2.0	1.8	1.9	2.0	2.5	3.6	3.6	B	B	B	C	B	2.2	2.4	2.1	1.8	1.6	E	E	E	E
17	E	E	1.1	S	E	1.4	B	B	B	2.5	1.6	1.6	2.6	2.3	2.0	B	1.9	2.0	[1.9]C	1.8	1.7	E	S	E
18	E	E	E	E	2.0	[1.9]C	1.8	[1.9]C	2.0	B	B	B	B	B	B	2.0	B	C	B	E	S	E	E	E
19	E	E	E	E	E	B	C	C	1.8	2.7	B	B	B	B	C	C	C	1.8	B	E	E	E	E	S
20	C	C	C	C	C	C	C	C	C	C	1.5	1.5	1.7	2.2	1.8	1.7	1.6	1.6	B	E	E	E	E	E
21	E	E	E	E	E	E	1.4	1.7	1.6	1.4	1.6	1.8	1.7	1.7	[1.6]C	1.4	1.2	1.2	1.3	E	1.2	E	E	1.3
22	1.1	1.1	1.2	1.3	1.1	1.1	1.2	1.4	1.5	[1.6]C	1.8	1.7	1.8	1.8	2.0	1.4	1.3	1.3	B	E	1.2	E	E	1.8
23	E	E	E	E	E	1.2	1.3	1.4	C	C	C	C	C	C	C	C	1.4	1.4	1.5	1.5	1.4	1.4	1.3	1.2
24	E	E	1.1	1.2	1.1	1.1	1.5	1.5	1.9	1.8	2.3	3.3	2.7	3.3	1.7	1.8	1.8	1.5	1.5	1.4	1.2	1.1	E	E
25	E	E	E	1.4	E	E	E	E	1.2	1.5	B	B	B	2.8	1.9	1.8	1.8	1.2	E	E	E	E	E	E
26	E	E	E	E	1.1	1.1	1.1	1.3	1.6	1.5	1.7	2.1	2.0	B	B	B	B	B	B	E	E	E	E	E
27	E	E	E	E	E	E	1.2	1.2	1.4	1.4	3.2	1.4	2.5	B	1.5	1.5	1.4	1.2	1.3	1.3	1.3	E	E	E
28	E	E	E	E	E	1.2	E	1.4	2.2	2.2	2.2	2.2	1.7	2.1	2.2	1.7	1.4	1.8	1.4	1.5	1.4	1.4	1.4	1.3
29	1.5	E	1.2	E	E	E	1.5	B	B	3.1	3.4	3.5	3.3	3.2	B	1.7	1.5	1.5	E	E	E	E	E	E
30	E	E	E	E	E	E	1.3	1.8	1.7	3.2	3.1	3.0	B	C	2.2	1.6	1.4	1.3	1.2	1.3	1.5	1.2	1.3	1.5
31																								
Mean Value	1.5	1.8	1.7	1.5	1.5	1.8	1.6	1.8	2.0	2.6	2.5	2.8	2.9	2.7	2.3	1.9	1.9	1.7	1.7	1.6	1.6	1.7	1.7	1.6
Median Value	E	E	E	E	E	1.2	1.5	1.8	2.0	2.5	2.6	3.3	3.0	2.6	2.0	2.0	1.8	1.8	1.5	1.4	1.4	E	E	E
Count	23	25	25	25	26	20	24	23	22	23	19	19	16	15	13	21	25	24	21	29	27	27	28	23

Sweep 1.0 Mc to 17.0 Mc in 2 min ☐ Manual ☒ Automatic

W 11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | f_oF2 | 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	4.6	4.6	4.5	4.5	4.7	5.3^{S}	5.2^{S}	6.7	6.7	(6.7)^{P}	6.6	8.1	8.4	6.7	6.3	6.7	7.0	A	A	A	6.7^{PJ}	6.6	5.9^{J}	5.1
2	(4.8)^{PF}	4.7^{F}	4.6^{F}	4.5^{F}	4.2^{V}	4.7^{V}	6.8	7.2	A	A	7.3^{P}	7.4	6.8	A	8.4	7.6	6.6	6.7	8.1	8.4	8.1	7.8	5.2	4.2^{F}
3	4.2	4.1	4.1	4.0	4.2	4.3	6.8	9.3	B	7.5^{J}	6.7	7.0	7.2	7.5	7.3	7.5	6.9	7.9	S	S	S	6.4	S	5.8
4	F	(6.0)^{PF}	5.4	4.8	4.8	4.9	6.6^{H}	7.3	7.4	7.4	8.6	8.6	8.4	7.2	7.3	6.9	7.8	8.6	9.1	7.1^{S}	6.2^{S}	6.0^{V}	5.9	5.7^{F}
5	5.5	5.3	5.3	5.5	5.2	5.2	6.4	8.3	(8.4)^{P}	7.4	7.6	8.1	8.3	8.2	8.5	7.6^{H}	7.4^{H}	7.6	8.2	(8.5)^{PS}	5.6	5.5	5.3	5.4
6	S	5.2^{S}	5.3	5.0	4.8	4.8	6.9	8.0	7.0	8.0	7.2	7.8	8.4	8.1	8.0	7.6	8.3	8.3	8.7	8.3	(7.2)^{PS}	6.8	7.1	6.8
7	6.6	6.2	(6.1)^{PS}	5.9	5.8	6.0^{P}	B	7.9	9.4	8.9	7.5	7.8	7.8	8.3	8.4	8.9	9.2	9.0	8.9	8.1	A	4.9	A	7.1
8	5.6	5.9	6.1	5.3	5.2	4.9	7.0	8.1	10.2	9.4	8.7	7.8	8.0	8.5	7.8	7.8	8.4	8.9	9.1	8.7	7.2	5.8	(7.0)^{PJF}	6.5
9	6.4	6.0	5.5	5.2^{H}	4.8	5.1	7.0	7.8	7.8	8.2	A	8.2	8.3	7.9	7.6	8.5	8.2	8.7	9.0	9.1	8.5	A	7.1	A
10	6.0	5.4	5.8^{ZF}	6.1^{F}	(5.2)^{PZ}	4.3	6.1	8.2	8.8	8.7	7.5	7.5	7.4	8.0^{H}	7.4^{H}	8.1^{H}	7.9	8.4	8.4	7.2^{S}	C	C	4.8	3.6^{H}
11	4.1	3.9	3.7	3.9	3.9	4.5	5.9	7.2	7.1	6.5	7.1	6.6	7.8	8.4^{P}	6.4	5.9	5.8	6.6	6.9	S	S	5.7	4.9	4.1
12	3.8	3.9	3.9	4.0	2.7^{V}	3.4	B	4.1^{K}	5.0^{K}	5.9^{K}	6.0^{JK}	5.7^{K}	5.8^{JK}	6.0^{K}	6.2^{K}	6.2	6.3	6.4	6.3	5.4	4.8	4.6	4.8	4.9
13	4.4	4.4	4.7	4.4^{F}	(4.6)^{PF}	4.7^{V}	5.6	6.6	6.4	6.8	6.8	7.3	7.9	7.3	6.6	6.5	7.0	(7.4)^{P}	8.6^{H}	S	4.7^{H}	4.2	4.6	4.5
14	4.4	4.0	4.0	3.6	3.3	3.2	6.8^{H}	5.5^{V}	7.2^{H}	7.7	7.0^{H}	8.5	8.0	7.2	7.5	7.3	7.3	7.0	6.7	(6.7)^{P}	6.0	5.8	5.3	5.3
15	5.2	5.0	4.8^{H}	4.6	3.8	3.8	6.0	6.5	8.9	6.8	C	C	7.6	8.3	8.1	7.6	7.5	7.0	7.3	6.9	5.8	5.4	6.7	5.7^{H}
16	5.4	5.0	4.8	4.5	4.4	4.5^{F}	A	7.9	8.3	8.0	9.0	8.4	7.8	8.6	7.9	7.5^{H}	6.8	8.2	9.0	7.1	S	5.2	4.8	4.9
17	3.6^{K}	3.5^{K}	3.2^{K}	3.0^{K}	3.4^{K}	A^{K}	4.8^{K}	5.3^{K}	5.6^{K}	B^{K}	7.1	6.8	6.8	6.2	6.4	6.7	6.3	6.0^{P}	6.6	5.6	5.2	4.3	4.3	4.2
18	3.4	3.1	3.4	3.5	3.5	5.2	4.2	6.5^{H}	5.7^{VH}	6.4	7.4^{H}	6.5	6.2	6.1	6.2	6.8	6.9	6.4	6.3	6.3	6.2	5.7	5.4	5.4
19	5.1	4.5	4.0^{H}	4.0^{H}	3.5^{H}	3.5	5.7	6.5	7.3^{P}	7.7	7.7	7.8	8.1	7.9	8.4	7.8	7.8	7.6	6.4	6.9	6.7	6.0	4.8	5.0
20	4.6	4.3	3.5	3.8	3.4	4.1	5.0	7.4	6.2^{V}	9.4^{H}	9.0	8.9	8.9	9.2	9.3	8.9	7.4	7.3	S	6.9	7.2^{S}	6.7	5.7	(7.6)^{P}
21	5.0	4.5	3.6	3.2	2.9	3.1	6.4	5.9	6.7^{J}	6.0^{K}	5.3^{K}	6.3^{K}	7.0^{K}	6.3^{K}	7.9	7.3	7.2	7.3	6.9	5.0	5.0	4.6	4.3	4.4
22	4.5	4.0	3.6	3.4	3.4^{F}	3.6^{PF}	5.4	A	7.2^{H}	6.4^{V}	7.2	8.0	7.2	7.1	7.8	7.6	8.2	8.2	7.6	6.1	4.3	4.5^{H}	4.2	4.1
23	5.0^{P}	4.0	4.0	4.0	4.1	4.4	5.6	7.1	7.4	7.0	B	A	B	9.2	8.5	8.1	7.7	A	5.9	A	A	4.6	(5.0)^{PJF}	4.8
24	F	A	A	4.0^{JF}	3.5^{F}	3.5^{F}	5.0	6.0	6.8	8.2	8.9	8.4	8.2	8.2	8.1	8.4	8.3	8.5	7.4	5.5	4.2	4.5	4.6	4.5
25	4.6	4.3^{JF}	4.3^{JF}	4.4	4.3^{H}	4.8^{H}	5.8	7.5	C	C	C	C	C	8.5	8.7	8.6	7.1	(7.4)^{C}	7.6^{P}	6.8	6.4	5.2	5.2	4.9
26	4.7	4.5	3.5	3.1^{K}	2.7^{VK}	2.6^{K}	3.3^{K}	3.5^{K}	6.1^{K}	B^{K}	G^{K}	5.1^{K}	5.1^{K}	G^{K}	5.6^{K}	5.4^{K}	6.3^{K}	6.0^{K}	5.5^{HK}	5.6	4.5^{PS}	4.9^{S}	5.6^{ZS}	5.6^{H}
27	5.2	4.7^{F}	4.0^{F}	3.3^{F}	3.1	3.5	5.1	5.9	B	7.0	8.2	8.9	9.6	9.7	9.3	10.8	10.2	9.6	7.7	4.9	5.8	5.6	5.0	4.6
28	4.5	4.6	5.1	4.9	5.3	4.9	5.7	8.0	8.3	8.9	8.4	10.2	9.7	9.9	9.2	8.6	9.5	9.4^{S}	8.4^{S}	7.1	6.1	4.8	4.9	5.3
29	5.1	4.9	4.8	4.7	4.8	4.4	5.6^{H}	6.9	S	7.9	8.6	9.6	9.8	9.2	8.7	9.1	8.8	9.1	8.7	7.4	6.9	6.2	4.8	5.1
30	4.6	4.7	4.3^{F}	4.3^{F}	4.7	3.8	5.5	7.1	6.9	9.8	9.8	10.1	9.7	10.1	9.0	9.3^{P}	8.8	8.7	(8.0)^{PJ}	6.9	A	A	4.8	4.8
31																								
Mean Value	4.8	4.7	4.5	4.3	4.1	4.3	5.8	6.9	7.3	7.6	7.7	7.8	7.9	8.0	7.8	7.7	7.6	7.6	7.7	6.9	6.1	5.5	5.3	5.2
Median Value	4.7	4.6	4.3	4.4	4.2	4.4	5.7	7.1	7.2	7.6	7.4	7.8	8.0	8.1	7.9	7.6	7.4	7.8	7.7	6.9	6.1	5.5	5.0	5.0
Count	27	29	29	30	30	29	27	29	25	26	26	27	28	29	30	30	30	28	27	25	23	27	28	29

f_oF2 | Sweep 1.0 Mc to 17.0 Mc in 15 min | ☒ Manual ☐ Automatic | A 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Sep. 1951

f_0F2

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	400	300	430	400	350	280 S	250 S	330	A	(290) P	350	330	290	A	310	310	260	A	A	A	(270) PS	300	(290) J	320
2	(330) PF	390 F	380 F	370 F	340 V	300 V	240	240	A	A	A	280	300	A	320	290	300	310	310	320	290	270	A	F
3	340	340	330	340	350	350	300	260	B	(260) J	A	300	330	310	300	320	300	300	S	S	S	370	S	350
4	F	(350) PF	300	310	320	290	270 H	250	280	290	310	300	310	290	310	320	350	280	350	250 S	330 S	350 V	320	360 F
5	350 F	360	320	300	320	330	310	280	(260) F	240	300	300	310	320	290	310 H	300 H	290	300	(270) PS	350	330	360	360
6	S	350 S	330	330	350	350	290	240	250	300	280	A	320	290	290	330	290	300	300	300	(310) PS	350	350	330
7	330	350	(360) PS	350	320	300 P	B	280	260	280	280	290	320	310	310	300	290	270	260	280	A	370	A	300
8	320	360	320	320	390	380	280	280	280	260	280	300	B	320	300	310	300	280	270	280	290	310	(440) PSF	360
9	320	360	310	340 H	350	320	310	270	240	260	A	280	270	290	310	320	300	320	300	290	310	A	350	A
10	360	400	390 ZF	310 F	(300) PZ	370	350	270	310	300	290	330	290	330 H	330 H	310 H	310	280	300	310 S	C	C	310	420 H
11	430	430	400	370	330	340	300	300	290	290	270	A	330	300 P	290	A	290	310	290	S	S	290	310	400
12	400	410	360	290	350 V	360	B	290 K	9 K	460 K	9 K	9 K	B K	B K	360 K	320	290	280	300	280	300	400	390	360
13	400	390	390	360 F	(400) PF	330 V	310	300	270	340	340	350	300	280	300	300	310	(310) P	280 H	S	320 H	330	370	350
14	400	380	420	340	320	310	290 H	270 V	290 H	300	310 H	340	290	300	290	310	260	280	300	(300) P	310	A	380	360
15	370	300	360 H	320	350	390	290	300	280	260	C	C	300	300	300	290	290	280	280	300	350	340	340	350 H
16	400	320	370	400	300	290 F	A	290	260	300	300	260	310	280	300	300 H	320	300	260	230	S	410	430	280
17	460 K	470 K	430 K	460 K	420 K	A K	340 K	320 K	380 K	B K	310	300	300	300	310	280	290	280 P	300	320	270	310	340	310
18	390	390	400	410	360	360	340	310 H	330 VH	360	280 H	280	300	330	320	300	280	270	300	310	300	360	390	340
19	320	310	330 H	300 H	400 H	370	270	240	380 P	270	280	290	310	290	290	270	270	260	330	310	300	310	330	320
20	330	350	380	380	430	320	250	230	250 V	310 H	300	310	280	300	310	290	260	250	S	450	320 S	390	320	(310) P
21	290	440	380	380	380	370	260	310	(330) J	280 K	300 K	320 K	350 K	340 K	260	270	270	260	250	370	360	360	400	400
22	360	340	370	380	370 F	310 PF	260	A	280 H	280 V	340	280	290	300	320	300	300	280	300	250	400	380 H	410	450
23	330 P	350	240	280	280	290	280	260	260	300	B	A	B	300	280	A	280	A	250	A	A	A	(290) PJF	320
24	F	A	A	(270) JF	340 F	340 F	250	260	310	300	280	270	280	300	290	290	290	280 c	260	250	360	370	400	350
25	380	(340) JF	(330) JF	350	350 H	330 H	270	250	c	c	c	c	c	310	280	270	270	(280) c	280 P	290	320	390	400	390
26	380	370	300	410 K	410 VK	370 K	400 K	270 K	340 K	B K	9 K	9 K	9 K	9 K	420 K	310 K	300 K	300 k	360 KH	350	340 PS	350 S	340 ZS	340 H
27	320	330 F	340 F	340 F	340	330	250	250	B	300	270	270	320	300	320	290	280	280	260	340	370	370	360	360
28	320	310	330	340	330	290	240	270	270	250	280	290	290	290	280	290	270	250 S	250 S	270	330	350	350	370
29	360	360	340	320	330	B	270 H	230	S	250	270	280	270	270	280	290	280	260	260	300	290	280	340	350
30	340	380	350 F	370 F	300	270	230	230	230	290	290	290	300	290	280	280 P	280	260	(250) PJ	250	A	A	320	310
31																								
Mean Value	360	360	350	350	350	330	290	270	280	290	300	300	300	300	310	300	290	280	290	300	320	350	360	350
Median Value	360	360	360	340	350	330	280	270	280	290	300	300	300	300	300	300	290	280	290	300	320	350	350	350
Count	27	29	29	30	30	28	27	29	24	26	24	25	26	27	30	28	30	28	27	25	23	25	27	28

Sweep 1.0 Mc to 17.0 Mc in 15 min. ☒ Manual ☐ Automatic

A 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	350A	250	320A	320	290	250	230	260	300	270	330	300	280	300	310	310	260	A	A	A	270A	290	290A	250
2	260	300A	280	300A	270	260	230	230	A	A	300	280	300	A	300	290	260	280	250	260	280	260	A	A
3	(300)A	310	310	310	310	280	280	250	270	260	310	300	330	310	300	310	290	280	270	250	A	A	320	350
4	340	290	260	240	270	250	220H	240	A	270	300	300	290	270	300	300	350	270	240	240	(300)A	270	260	260
5	300	310	280	240	250	300	260	260	250	230	300	300	300	310	280	230H	250H	250	250	240	230	290	300	300
6	300A	300	280	260	270	290	250	230	240	280	260	310A	310	280	290	300	280	280	260	240	260	350A	280	270
7	(300)A	270	270	270	240	250	230	250	250	270	260	290	300	300	300	300	270	250	250	230	A	A	A	250
8	270	270	260	260	300	300	240	270	260	260	270	260	B	290	270	300	280	250	250	220	220	250	340	290
9	250	260	280	270H	280	270	240	250	230	260	A	280	270	270	300	300	260	260	270	240	250	A	270	270
10	310A	310A	330	260	(290)A	310	(310)A	250	290	280	280	320	280	300H	310H	300H	300	270	250	250	C	C	230	290H
11	340	330	310	300	300A	310	A	270	270	290A	270	A	330	290	290	300A	290	290	250	(230)	250	240	230	360A
12	330	340	310	260	240A	300	260	230K	470K	460K	430K	350K	420K	B K	360K	300	260	250	240	240	240	350	320	310
13	320	310	300	290	290	260	300	290	260	310A	L	350	300	270	300	280	300	250	240H	A	260AH	290	310	320
14	310	300A	310	280	260	280	250H	230	220H	300	300H	340	280	300	280	300	250	240A	250	230	270	A	280	270
15	290	250	270H	270	290	330	240	250	260	260	C	C	290	290	280	270	280	250	230	260	320	270	260	260H
16	300	260	280	300	260	240	A	290	260	290	290	250	290	270	280	270H	280	290	220A	210	A	350	350	250
17	370K	360K	360K	420KA	390KA	A K	320K	L K	380K	B K	310	300	300	300	300	280	250	240	260	240	250	260	280	280
18	320	340	300	300	300	280	A	260H	L	360	270H	280	300	L	320	300	270	230	250	260	250	250	290	280
19	240	240	270H	240H	290H	290	240	210	360	270	280	290	300	280	280	270	260	230	230	250	240	270	260	260
20	280	280	330	330	360	290	230	230	240	220H	290	280	260	290	270	260	250	220	250	270	260	310	240	250
21	230	380	(320)A	330	300	320	260	300	300	L K	300K	310K	300K	L K	250	260	250	240	220	280	300	290	320	310
22	290	300	250	330	320	280	230	A	240H	260	340	280	290	300	300	280	280	250	240	230	260	320H	310	320
23	260	280	230	250	240	270	260	250	240	300	300B	A	290	290	270	(300)A	260	A	220	A	A	230	290	310
24	300	A	(340)A	240	280	270	230	230	300	300	280	270	280	290	270	280	260	250	230	230	310	300	330	280
25	310	310	300	270	240H	270H	240	240	C	C	C	C	C	300	270	260	250	(240)C	230	240	250	300	340	330
26	330	310	230	330K	400K	340K	320K	270K	340K	B K	G K	560K	570K	G K	420K	300K	270K	250K	220KH	290	310A	290	280	240H
27	260	260	260	250	280	300	220	220	B	250	270	270	300	290	290	260	240	230	210	290	330	320	320	320
28	270	260	270	250	250	220	220	260	240	240	260	270	260	250	240	270	260	230	220A	220	230	250	280	290
29	280	300	310	240	250	B	210H	220	220	230	250	250	260	260	260	260	240	230	240A	240	220	220	240	240
30	290	290	300	310	250	210	210	230A	220	250	260	270	270	270	250	270	250	210	240	220A	A	A	260	270
31																								
Mean Value	300	300	290	280	290	280	250	250	280	290	290	300	310	290	290	280	270	250	240	240	270	280	290	290
Median Value	300	300	290	270	280	280	240	250	260	270	290	290	300	290	290	280	260	250	240	240	260	290	280	280
Count	30	29	30	30	30	28	27	28	25	25	26	26	28	26	30	30	30	28	29	27	24	24	28	29

h'F2 | Sweep 1.0 Mc to 17.0 Mc in 15 min | ☒ Manual ☐ Automatic

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The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Sep. 1951 | foF1 | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							0	A	A	A	4.8	A	A	A	4.7	4.5	4.1	A						
2							0	0	A	A	A	4.9	A	A	A	4.4	0	A						
3							L	0	4.6	4.7	A	A	A	A	A	A	4.2	3.6						
4							0	L	A	A	A	5.1 H	4.9	4.8	4.6	4.6	4.2 J	A						
5							L	L	B	B	B	5.0	5.0	4.8	4.2 B	0	0	0						
6							0	L	L	4.4 J	L	A	5.0	5.0	5.0	4.3	0	0						
7							0	L	4.1	L	L	L	B	A	4.9	4.6	L	A						
8							0	L	A	A	B	5.2	B	5.0	A	A	A	0						
9							0	A	A	A	A	A	A	0	A	A	A	L						
10							A	0	L	A	A	4.9	A	B	B	4.6	L	3.8						
11							A	A	A	A	A	A	B	A	A	A	L	L						
12							0	0	4.6	4.5	4.9	4.8	A	4.9	4.7	4.5	0	0						
13							A	A	A	A	L	4.8 J	L	4.9	5.0	4.4	L	0						
14							0	0	0	4.7	4.8	5.0	4.7	4.8	4.4	A	0	A						
15							0	0	4.6	B	C	C	B	B	L	L	0	0						
16							A	A	0	L	4.7	B	4.9	4.7	4.8	4.6	L	L						
17							3.2	L	4.3 H	4.4	4.6	4.8	4.6	B	4.5	4.4	0	0						
18							A	0	L	4.8	4.8	B	B	L	L	L	L	0						
19							0	0	A	4.6	L	5.0 J	L	4.8	4.4	4.3 J	4.0	0						
20							0	0	A	0	L	4.6	4.7	4.8 H	B	L	L	0						
21							0	L	3.8	L	4.0	B	L	L	4.5	4.4	0	0						
22							0	A	4.4	L	4.7	4.7	4.8	L	4.6	L	L	0						
23							0	0	A	4.6	A	A	B	B	4.8	A	3.5	A						
24							0	0	L	L	4.6 J	A	A	4.8	A	0	0	0						
25							0	0	C	C	C	C	C	5.0	4.8	4.1	L	C						
26							0	0	3.8	B	4.1	4.2	B	4.1	4.4	L	0	0						
27							0	0	B		L	L	L	L	L	0	0	0						
28							0	0	L	L	5.0	4.8	L	L	4.4	L	L	0						
29							0	0	B	0	0	L	L	0	4.0	3.7	0	0						
30							0	A	0	A	5.0	L	4.7	5.2	L	0	0	A						
31																								
Mean Value							3.2	—	4.3	4.6	4.7	4.8	4.8	4.8	4.6	4.4	4.0	3.7						
Median Value							3.2	—	4.4	4.6	4.8	4.8	4.8	4.8	4.6	4.4	4.1	3.7						
Count							1	—	8	8	12	14	9	14	18	14	5	2						

Sweep 1.0 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

A 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	A	A	A	A	A	A	A	A	250	250	A						
2							Q	Q	A	A	A	240 A	A	A	A	260	Q	A						
3							240	Q	210	230 A	A	A	A	A	A	A	240	220						
4							Q	220	A	A	A	230 H	220	210	230	270	300	A						
5							240	240	B	B	B	220	220	230 B	220	Q	Q	Q						
6							Q	220	210	210	230	A	230	250	250 A	270	Q	Q						
7							Q	220	220	250	220	220	B	A	260	240	240	A						
8							Q	A	A	A	A	230	B	230	A	A	A	Q						
9							Q	A	A	A	A	A	A	Q	A	A	A	230						
10							A	Q	(260) A	A	A	220	A	B	B	240	210	260						
11							A	A	A	A	A	A	B	A	A	A	250	260						
12							Q	Q	A	B	B	A	A	230	230	250	Q	Q						
13							A	A	A	A	220	230	B	210	260 B	220	220	Q						
14							Q	Q	Q	250	230	230 A	260	220 A	240	A	Q	A						
15							Q	Q	220	B	C	C	B	B	250	250	Q	Q						
16							A	A	Q	270	250	B	210	230	210	230	240	270						
17							260	240	230 H	190	B	230 B	B	B	(270) B	B	Q	Q						
18							A	Q	220	260 A	230	B	B	230	220	210	230	Q						
19							Q	Q	A	220	250	250	200	220	210	240	230	Q						
20							Q	Q	A	Q	200	200	250	200 H	B	240	220	Q						
21							Q	260	230	230	220	B	B	(260) B	230	230	Q	Q						
22							Q	A	210	230	250 B	250	220	210	240	250	250	Q						
23							Q	Q	A	A	B	A	B	B	(260) B	A	220	A						
24							Q	Q	240	230	260 A	A	A	260	A	Q	Q	Q						
25							Q	Q	C	C	C	C	C	260	240	220	230	C						
26							Q	Q	A	B	240 B	B	B	260	230	230	Q	Q						
27							Q	Q	B	Q	250 B	250 B	260 B	260 B	260	Q	Q	Q						
28							Q	Q	220	220	220	210	210	210	210	220	250	Q						
29							Q	Q	B	Q	Q	220	B	Q	210	210	Q	Q						
30							Q	A	Q	A	220	210	220	240	220	Q	Q	A						
31																								
Mean Value							250	230	220	230	230	230	230	230	230	240	240	250						
Median Value							240	230	220	230	230	230	220	230	230	240	240	260						
Count							3	6	11	12	15	16	11	19	21	19	15	5						

h'F1 | Sweep 1.0 Mc to 17.0 Mc in 15 min | ☒ Manual ☐ Automatic

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The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Sep. 1951

foE

135° E Mean Time

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

Sweep 1.0 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

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The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	110	A	A	A	A	A	A	A	100	110	A						
2							A	110	110	A	A	A	A	A	A	A	110	110						
3							110	A	A	110	A	A	A	A	A	A	110	110						
4							A	A	A	A	A	A	110	110	B	110	A	A						
5							A	110	A	110	A	A	B	B	A	A	100	100						
6							A	110	A	A	A	A	A	A	A	A	A	A						
7							120	110	110	110	110	A	A	A	A	A	110	A						
8							120	110	110	110	110	110	110	110H	A	110	110	110						
9							A	A	A	A	110	A	A	A	A	A	A	110						
10							A	110	110	100	A	A	110	A	A	A	A	110						
11							110	110	A	110	110	110	110	110	110	110	110	110						
12							A	A	110	110	A	110	110	110	A	110	110	110						
13							A	A	A	A	110	110	110	100	110	110	110	110						
14							A	100	100	100	100	100	110	110	A	A	110	A						
15							110	110	A	A	C	C	110	A	110	A	100	A						
16							A	A	A	A	A	110	110	110	110	A	110	110						
17							A	110	110	110	110	110	B	110	110	B	110	110						
18							A	A	100	A	100	100	B	110	110	110	110	110						
19							A	A	A	110	110	110	110	110	110	100	110	120						
20							120	110	A	100	100	100	100	110H	110	A	110	A						
21							A	130	110	A	A	A	110	110	110	100	110	A						
22							A	A	110	A	110	110	110	110	110	110	110	130B						
23							120	110	110	110	110	120	B	110	110	110	120	A						
24							A	100	A	A	A	A	A	110	110H	110	110	110						
25							A	110	C	C	C	C	C	A	A	A	A	C						
26							130	110	110	A	110	110	110	110	110	A	110	110						
27							A	120H	110	110	110	110	110	110	A	120	120	110						
28							B	A	120	110	110	110	110	110	110	100	110	B						
29							A	A	A	120	A	110	120	A	110	110	110	A						
30							A	A	A	110	A	A	A	100	A	A	A	A						
31																								
Mean Value							120	110	110	110	110	110	110	110	110	110	110	110						
Median Value							120	110	110	110	110	110	110	110	110	110	110	110						
Count							8	18	14	16	15	16	17	19	15	15	24	17						

h'E

Sweep 1.0 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

A 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Akita

Lat. 39° 43.5' N
Long. 140° 08.2' E

Sep. 1951

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	4.6	3.4	2.8	2.4	2.5	2.4	3.2	4.6	5.6	4.6^{Y}	4.6	5.8	7.2	6.1	9.0	G	4.8	11.5	9.2	7.2	6.6	5.2	6.8	5.6
2	E	4.4	3.6^{F}	5.2	3.6	3.2	3.3	4.5	8.4	11.3	8.6	6.4	6.1	8.2	8.4	3.6	G	4.2	4.0	6.0	6.2	5.8	4.6	4.0
3	4.2	3.6	3.8	3.2	3.2	1.8	G	4.8	3.2	4.3	6.4	6.4^{Y}	5.5	6.4	6.2	5.6	3.5	3.6	4.0	3.5	5.0	4.0	4.4	5.2
4	5.4	4.6	3.5	3.8	3.2	2.6	3.6	3.8	6.4	5.2	5.2	4.2	G	G	B	G	4.8	4.2	3.4	6.0	4.9	3.2	4.6	E
5	1.8^{Y}	E	E	E	E	B	2.2	3.0	2.9	G	3.5	3.5	B	B	3.4^{Y}	3.6	4.7	3.7	3.5	2.8	3.0	2.6	3.3	3.6
6	3.2	3.0	2.8	2.7	2.3	B	3.0	3.4	3.8	3.4	5.0	6.2	4.3	4.6	4.0	3.8	3.2	3.6	3.8	3.8	2.8	4.2	2.8	3.6
7	3.8	1.3	3.6	2.7	2.8	3.4	3.6	3.8	3.8	4.4	4.2^{Y}	3.8	3.6	5.6^{Y}	5.6	4.2	5.0	5.0	4.6	7.0	8.6	4.2	9.4	3.8
8	4.6	3.4	3.2	3.0	2.3	B	3.2	3.7	5.0	5.0	4.5	4.7	4.2	4.8	6.3	6.0	5.2	3.6	3.0	2.6	E	7.2	6.2	3.6
9	3.8	2.6	3.0	3.6	2.6	E	2.0	4.0	4.6	6.0	10.2	6.6	5.8	3.4	5.6	5.2	4.6	4.4	4.0	3.2	3.0	8.4	3.8	10.0
10	6.0	5.4	4.0	3.4	4.8	3.4	4.0	4.4	4.8^{Y}	5.1	6.8	3.8	4.5	3.6^{Y}	3.7	3.2	3.0	G	4.5	3.6	C	C	2.6	2.6
11	2.6	E	E	2.2	2.4	3.8	4.6	4.8	4.6	6.0	7.0	6.0	4.8	6.0	5.0	6.5	5.0	3.8	3.7	3.6	3.5	4.8	3.4	3.8
12	3.2	3.0	2.2	2.8	2.1	2.2	3.0	2.5	4.0	G	3.4	4.0	4.6	G	4.2	3.8	4.4	3.8	3.4	3.2	2.8	4.6	3.8	3.4
13	2.9	1.8	2.6	2.1	2.2	G	3.8	4.0	3.8	5.8	G	G	G	G	G	G	3.6	3.6	4.5	4.6	3.2	2.7	2.0	E
14	2.6	2.6	2.6	2.1	2.6	2.4	3.8	3.7	3.3	4.2	G	4.2	4.2	4.2	3.6	5.0	4.6	4.4	6.6	3.6	4.5	6.8	E	3.0
15	2.2^{Y}	2.6	2.4	2.4	3.2	2.8	3.4	4.0	4.4	3.2	C	C	G	4.0	G	3.7	G	4.7	3.8	3.8	4.2	3.4	4.0	3.6
16	3.8	3.4	2.6	5.5	2.6	3.6	7.8	4.8	5.1	4.2	4.2	G	G	G	G	3.2	3.6	4.0	3.6	5.4	5.0	3.8^{F}	3.3	2.6
17	2.4	E	2.1	3.6	3.8	4.4	2.6	3.4	3.4	G	G	G	B	G	G	B	4.4	G	2.6	2.7	3.4	2.4	1.9	2.1
18	E	E	2.0	E	2.0	3.0	3.4	3.7	3.4	4.1	6.2^{Y}	G	B	G	G	G	3.1	2.6	2.8	E	2.1	E	E	E
19	E	E	E	E	E	2.6	2.5	3.6	4.0	G	G	G	G	G	G	4.1	G	2.7	B	E	E	2.2	1.8	E
20	E	E	2.3	E	E	E	G	G	6.8	3.7	G	G	3.8	G	G	3.2	G	3.6	B	2.0	E	E	E	E
21	E	3.1	3.3	2.6	2.3	2.1	3.4	3.7	3.6	3.4	3.8^{Y}	3.7	G	G	G	3.8	4.2	3.3	3.0	2.7	E	E	2.8	2.0
22	2.3	2.2^{Y}	2.4^{Y}	3.6	2.5	2.4	3.4	9.2	G	3.5	G	G	G	G	G	G	3.6	2.9	B	2.8	E	E	2.6	2.8
23	3.0	2.2	2.4	2.0	2.2	2.8	4.8	4.6	5.4	4.6	6.1^{Y}	9.8	B	6.6	G	7.8	4.6	8.4	5.8	6.0	7.0	5.0	4.0	3.0
24	3.0	6.0	7.4	4.6	2.5	3.6	2.8^{Y}	3.8	4.4	5.0	7.6	5.4	5.0	4.4	6.2	4.2	G	G	2.8	2.6	6.6	3.4	3.5	2.9
25	3.0	3.9	4.0	2.2	2.2	2.2	2.0	G	C	C	C	C	C	4.0	3.6	3.2	3.2	C	2.2	E	E	E	E	2.6
26	E	E	E	E	2.5	1.5	G	2.6	4.3	3.8	3.4	G	G	G	3.2	3.2	G	G	2.0	E	2.8	E	E	E
27	E	1.8	2.2	2.0	E	E	2.7	2.5	G	G	G	G	G	G	3.6	3.4	G	G	B	E	2.2	E	2.4	E
28	E	2.6	2.0	2.4	2.4	2.4	3.0	3.0	4.0	3.6	4.8^{Y}	3.9	3.8	G	G	G	4.0	4.1	5.2	3.9	2.7	2.9	2.8	4.6
29	E	3.4	E	2.0	3.4	2.6	2.8	3.0	3.0	4.1	4.2	G	G	4.0	G	G	3.6	3.6	4.2	3.4	3.0	E	E	E
30	E	E	2.4	2.4	1.9	1.3	3.0	4.0	4.0	6.4	3.7	4.3	4.0	4.2	4.0	6.0	4.0	4.6	4.2	3.6	7.2	8.0	3.8	4.4
31																								
Mean Value	3.4	3.2	3.0	3.0	2.7	2.7	3.4	4.0	4.4	4.8	5.4	5.7	4.8	5.0	4.8	4.4	4.1	3.3	4.0	4.0	4.4	4.5	3.8	3.2
Median Value	2.6	2.6	2.5	2.4	2.4	2.4	3.1	3.8	4.0	4.2	4.2	3.8	3.8	3.6	3.6	3.6	3.6	3.6	3.8	3.4	3.0	3.4	3.0	3.0
Count	30	30	30	30	30	27	30	30	29	29	28	28	25	29	29	29	30	29	26	30	29	29	30	30

Sweep 1.0 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | (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	2.7	3.0	2.5	2.6	2.8	3.2[S]	3.4[S]	2.8	3.3	(3.1)[P]	2.8	3.0	3.1	3.1	3.3	3.2	3.3	A	A	A	(3.5)[PJ]	3.3	(3.3)[J]	3.0
2	(2.9)[PF]	2.6[F]	2.7[F]	2.7[F]	2.9[V]	3.1[V]	3.6	3.6	A	A	3.3[P]	3.3	3.3	A	3.2	3.3	3.1	3.0	3.0	2.9	3.2	3.3	3.3	2.8[F]
3	2.6	2.6	2.9	2.9	2.9	2.9	3.0	3.4	B	(3.5)[J]	3.2	3.3	3.0	3.3	3.2	3.2	3.1	3.1	S	S	S	2.7	S	3.0
4	F	(2.8)[PF]	3.1	3.1	3.0	3.2	3.3[H]	3.5	3.1	3.1	3.0	3.2	3.0	3.3	3.0	2.9	3.0	3.3	3.5	3.5[S]	2.9[S]	2.9[V]	3.0	2.7[F]
5	2.8	2.8	3.0	3.1	3.0	2.9	2.9	3.3	(3.4)[P]	3.4	3.3	3.2	3.1	3.0	3.2	3.1[H]	3.2[H]	3.2	3.1	(3.3)[FS]	2.8	2.8	2.8	2.8
6	S	2.9[S]	3.0	2.9	2.9	2.8	3.2	3.6	3.5	3.2	3.2	3.2	3.0	3.2	3.2	2.9	3.2	3.1	3.1	3.1	(3.1)[FS]	2.8	2.8	2.9
7	2.9	2.8	(2.8)[FS]	2.9	3.0	3.1[P]	B	3.3	3.5	3.3	3.3	3.2	2.9	3.1	3.1	3.0	3.1	3.3	3.3	3.3	A	2.8	A	3.1
8	2.9	2.7	2.9	2.9	2.6	2.6	3.1	3.1	3.3	3.5	3.4	3.0	2.9	2.9	3.2	3.1	3.2	3.2	3.2	3.2	3.1	3.0	(2.4)[PJF]	2.7
9	3.0	2.8	3.0	2.8[H]	2.8	3.0	3.0	3.3	3.5	3.4	A	3.2	3.3	3.2	3.0	2.9	3.0	2.9	3.2	3.1	3.0	A	2.8	A
10	2.8	2.7	2.7[ZF]	3.0[F]	(3.1)[PZ]	2.6	2.8	3.3	3.2	3.2	3.2	3.0	3.1	3.0[H]	3.3[H]	3.2[H]	3.2	3.3	3.2	3.0[S]	C	C	3.1	2.6[H]
11	2.5	2.5	2.6	2.8	2.8	2.8	3.1	3.0	3.1	3.2	3.3	2.8	3.0	3.1[P]	3.2	3.3	3.2	3.0	3.2	S	S	3.1	3.0	2.6
12	2.6	2.6	2.8	3.2	2.9[V]	2.8	B	3.2[K]	2.7[K]	2.4[K]	(2.7)[KJ]	2.9[K]	(2.7)[KJ]	3.0[K]	2.9[K]	2.9	3.2	3.2	3.1	3.1	3.0	2.6	2.6	2.7
13	2.6	2.6	2.7	2.8[F]	(2.6)[PF]	2.9[V]	3.0	3.0	3.3	2.9	2.9	2.9	3.1	3.2	3.3	3.2	3.1	(3.1)[P]	3.2[H]	S	3.1[H]	2.9	2.7	2.8
14	2.6	2.8	2.5	3.0	3.0	3.0	3.2	3.2	3.3[H]	3.1	2.9[H]	2.9	3.1	3.1	3.1	3.0	3.3	3.3	3.0	(3.1)[P]	3.0	3.0	2.7	2.8
15	2.7	3.0	2.8[H]	2.7	2.7	2.7	3.2	3.0	3.3	3.4	C	C	3.1	3.1	3.1	3.1	3.2	3.3	3.1	3.1	2.8	2.9	2.8	2.8[H]
16	2.6	2.9	2.7	2.6	3.0	3.3[F]	A	3.2	3.3	3.2[B]	3.2	3.3	3.0	3.3	3.3	3.1[H]	3.0	3.1	3.4	3.7	S	2.7	2.5	3.2
17	2.4[K]	2.4[K]	2.5[K]	2.4[K]	2.5[K]	A[K]	2.9[K]	3.0[K]	2.8[K]	B[K]	3.0	3.2	3.2	3.2	3.2	3.4	3.2	3.2[P]	3.3	3.0	3.2	3.0	2.9	3.0
18	2.7	2.7	2.5	2.5	2.8	2.7	2.8	3.0[H]	2.9[HV]	2.9	3.3[H]	3.4	3.3	2.9	3.0	3.2	3.3	3.4	3.0	3.0	3.1	2.8	2.7	2.9
19	3.0	3.0	3.0[H]	3.1[H]	2.6[H]	2.8	3.3	3.5	2.8[P]	3.3	3.3	3.2	3.2	3.2	3.2	3.3	3.2	3.3	2.9	3.1	3.2	3.1	2.9	3.0
20	2.9	2.8	2.7	2.7	2.6	3.0	3.4	3.7	3.3[V]	3.0[H]	3.1	3.1	3.2	3.1	3.0	3.2	3.5	3.5	S	2.4	3.0[S]	2.7	3.0	(3.1)[P]
21	3.1	2.4	2.7	2.6	2.6	2.6	3.4	3.0	(2.9)[J]	3.4[K]	3.2[K]	3.0[K]	2.8[K]	2.8[K]	3.4	3.3	3.2	3.4	3.4	2.7	2.8	2.8	2.6	2.7
22	2.8	2.8	2.8	2.7	2.8[F]	3.1[PF]	3.3	A	3.4[H]	3.1[V]	3.0	3.3	3.3	3.2	3.1	3.1	3.1	3.3	3.3	3.4	2.6	2.6[H]	2.6	2.5
23	3.0[P]	2.8	3.6	3.2	3.3	3.1	3.2	3.5	3.3	3.1	B	A	B	3.1	3.3	3.0	3.2	A	3.2	A	A	3.3	(3.1)[PJF]	3.0
24	F	A	A	(3.4)[JF]	2.9[F]	2.9[F]	3.4	3.2	3.0	3.2	3.1	3.3	3.4	3.1	3.2	3.2	3.3	3.2	3.4	3.4	2.8	2.7	2.7	2.8
25	2.6	(2.8)[JF]	(2.8)[JF]	2.8	2.8[H]	3.0[H]	3.2	3.3	C	C	C	C	C	3.0	3.3	3.4	3.2	(3.2)[S]	3.2[P]	3.2	2.9	2.7	2.6	2.7
26	2.7	2.8	3.1	2.5[K]	2.6[V][K]	2.7[K]	2.6[K]	3.3[K]	3.0[KB]	B[K]	9[K]	2.3[K]	2.3[K]	9[K]	2.6[K]	3.0[K]	3.1[K]	3.0[K]	2.7[KH]	2.7	2.8[PS]	2.9[S]	2.9[ZS]	2.8[H]
27	2.9	2.9[F]	2.9[F]	2.9[F]	2.8	3.0	3.6	3.5	B	3.1	3.4	3.3	3.1	3.1	2.9	3.1	3.2	3.3	3.2	3.0	2.8	2.8	2.8	2.8
28	3.0	3.1	2.9	2.9	2.9	3.1	3.4	3.3	3.3	3.6	3.2	3.3	3.2	3.1	3.2	3.2	3.4	3.5[S]	3.5[S]	3.3	2.9	2.8	2.8	2.8
29	2.7	2.8	2.9	3.0	3.0	3.5	3.2[H]	3.6	S	3.4	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.4	3.3	3.1	3.1	3.1	2.8	2.7
30	2.8	2.7	2.9[F]	2.7[F]	3.1	3.2	3.5	3.5	3.6	3.2	3.2	3.2	3.2	3.2	3.3	3.3[P]	3.2	3.6	(3.5)[PJ]	3.4	A	A	2.9	3.0
31																								
Mean Value	2.8	2.8	2.8	2.8	2.8	3.0	3.2	3.3	3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.1	3.2	3.2	3.2	3.1	3.0	2.9	2.8	2.8
Median Value	2.8	2.8	2.8	2.8	2.8	3.0	3.2	3.3	3.3	3.2	3.2	3.2	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.1	3.0	2.8	2.8	2.8
Count	27	29	29	30	30	29	27	29	25	26	26	27	28	29	30	30	30	28	27	25	23	27	28	29

(M3000)F2 | Sweep 1.0 Mc to 17.0 Mc in 15 min | ☒ Manual ☐ Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Akita

Lat, 39° 43.5' N
Long. 140° 08.2' E

Sep. 1951 | $f_{min}F$ | 135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0[A]	2.0[A]	1.7	1.6	1.8	1.6	2.2	4.0[A]	6.0[A]	4.6[A]	4.4[A]	4.6[A]	5.6[A]	5.6[A]	4.5[A]	3.8	3.6	A	A	A	5.5[A]	4.0[A]	4.6[A]	2.2[A]
2	1.2	A	1.2	A	1.6	2.0	2.5	3.7[A]	A	A	6.2[A]	4.3	5.4[A]	A	4.4[A]	3.9	4.0	3.8	3.2[A]	2.0[A]	5.4[A]	5.4[A]	4.4[A]	3.4[A]
3	3.0[A]	2.4[A]	3.0[A]	2.6[A]	2.2[A]	1.8	2.2	3.8[A]	3.2	4.3[A]	5.7[A]	5.4[A]	5.5[A]	5.4[A]	5.2[A]	5.1[A]	3.2	2.4	4.0[A]	3.4[A]	A	4.4	3.0[A]	4.5[A]
4	5.0[A]	2.1[A]	2.4[A]	2.1[A]	1.9	1.4	2.3	3.5	6.0[A]	4.8[A]	5.2[A]	4.3	4.2	4.0	4.2	4.0	4.0[A]	4.0[A]	2.4	4.4[A]	A	2.2[A]	1.6	1.2
5	E	E	E	1.2	1.2	1.4	1.8	2.8	4.5	4.6	5.6	4.2	4.3	4.2	3.6	3.5	3.8[A]	3.2	2.5	2.5[A]	2.2[A]	1.8	2.4[A]	2.0[A]
6	3.0[A]	2.4[A]	2.2[A]	2.2[A]	1.3	1.6	2.3	3.0	3.6	3.6	4.1	A	4.3	4.4	4.0	3.8	3.2	3.0	3.0[A]	2.6[A]	2.2[A]	5.2	2.0[A]	2.2[A]
7	A	1.3	1.6	1.6	1.2	1.7	2.4	2.9	3.8[A]	4.4[A]	4.2	4.2	4.9	4.8	4.4[A]	3.6	3.1	4.6[A]	2.8	2.0[A]	A	3.8[A]	A	2.0[A]
8	1.6	1.6	1.6	1.6	1.8	1.8	2.1	4.3	4.6[A]	4.8[A]	5.6	4.4	7.1	4.1	4.9[A]	4.9[A]	4.3[A]	2.8	2.0	1.7	1.5	2.1[A]	3.0[A]	2.4[A]
9	1.4	1.7	2.0[A]	1.8	1.8	1.2	2.3	4.0[A]	4.3[A]	5.4[A]	A	6.6[A]	4.8[A]	4.4	5.4[A]	5.0[A]	3.8[A]	2.3	2.2	2.0[A]	2.4[A]	A	2.4[A]	1.8
10	A	A	2.1[A]	1.9	4.1[A]	1.8	4.2[A]	3.4	4.2	4.6[A]	5.2[A]	4.1	5.0	5.2	5.0	3.3	3.2	2.4	2.4	2.6[A]	C	C	1.5	1.5
11	1.4	1.2	1.2	1.2	2.2[A]	1.8	4.4[A]	3.9[A]	4.8	5.4[A]	5.5[A]	5.6[A]	5.4	5.2[A]	4.8[A]	5.2[A]	4.0[A]	2.8	2.6	A	2.0[A]	2.8[A]	1.7	2.8[A]
12	2.0[A]	1.7	1.9	1.2	1.4	1.5	2.2	2.4	4.5	4.3	4.4	4.3	5.2	4.2	3.5	3.6	3.8[A]	2.4	1.8	2.2[A]	1.8	2.3[A]	2.8[A]	2.4[A]
13	1.8	E	E	E	1.4	1.8	4.2	4.0[A]	4.2	A	3.6	4.0	4.6	4.0	4.5	3.5	3.0	2.4	1.9	A	2.8[A]	1.8	1.8	1.8
14	1.5	1.4	E	E	E	1.8	1.9	2.8	3.2	4.2[A]	4.2	4.2[A]	4.2[A]	4.3[A]	4.0	4.5[A]	2.8	4.2[A]	3.6[A]	1.6	2.8[A]	5.2[A]	1.5	1.9
15	1.5	1.3	1.4	1.4	1.2	1.4	N	N	2.8	5.5	C	C	5.0	6.0	4.3	3.8	3.5	2.2	1.8	1.6	3.8[A]	1.6	1.8	2.3[A]
16	2.0[A]	2.3[A]	2.0[A]	2.2[A]	1.5	2.0[A]	A	4.3[A]	3.6	4.2[A]	4.0	5.1	3.8	4.2	3.6	3.4	3.2	3.0	A	1.6	A	1.5	1.5	1.7
17	1.2	E	E	1.8	2.4[A]	3.3[A]	2.4	2.8	3.2	3.4	4.4	4.0	4.4	4.4	4.2	4.3	3.4	2.8	1.9	1.6	1.6	1.4	1.5	1.6
18	1.4	1.1	E	E	E	1.6	3.0[A]	2.8	3.3	4.2	4.0	4.8	4.8	4.0	3.4	3.2	2.8	2.4	2.0	1.5	1.4	1.5	1.4	1.6
19	E	E	E	E	E	1.1	2.1	2.5	4.0[A]	3.3	3.8	4.0	4.0	4.0	3.4	4.3	2.9	2.4	1.8	1.6	1.6	2.2[A]	1.6	1.4
20	1.4	E	1.6	E	E	E	2.1	2.8	4.8[A]	3.6	4.2	4.0	4.2	4.0	4.4	3.2	3.0	2.2	1.6	1.6	1.6	1.5	1.5	1.5
21	1.2	2.0[A]	2.2[A]	1.8	1.7	1.3	1.8	3.0	3.0	3.3	3.5	4.4	4.0	4.0	3.8	3.8	3.0	2.2	1.9	1.8	1.5	1.5	1.5	1.5
22	1.2	1.7	E	E	1.4	1.5	1.8	A	3.0	4.0	4.3	4.1	4.0	3.9	3.4	3.1	3.0	2.4	1.6	2.8[A]	1.7	1.7	1.6	1.8
23	1.4	1.2	2.0[A]	1.7	2.0[A]	2.2[A]	2.3	2.5	4.7[A]	4.0	5.6	A	5.0	4.8[A]	4.2	6.8[A]	2.6	A	2.2[A]	A	A	4.0[A]	4.0[A]	3.0[A]
24	1.6	A	4.1[A]	2.5[A]	E	1.6	2.0	3.2	3.2	3.4	4.6[A]	4.8[A]	4.6[A]	4.4[A]	5.0[A]	4.0	3.0	3.0	2.2	2.2[A]	2.0[A]	1.9	1.7	1.5
25	1.6	E	E	1.2	1.4	1.6	1.6	2.8	C	C	C	C	C	4.2	4.2	3.2	3.0	[2.3][C]	1.6	1.6	1.6	1.6	1.6	1.6
26	1.2	E	E	E	1.8	1.5	2.0	2.6	3.4	3.2	3.2	4.0	4.5	3.4	3.2	3.2	2.6	2.2	1.8	1.6	3.0	1.6	1.6	1.6
27	1.2	E	E	E	E	1.1	1.7	2.7	B	3.8	4.4	4.4	4.4	4.2	4.0	3.2	2.8	2.3	1.6	2.0	2.2[A]	1.6	1.6	1.6
28	1.2	1.2	1.3	1.5	E	E	2.0	3.4	3.4	3.4	3.8	4.0	3.8	3.4	3.3	3.2	2.7	1.8	A	1.4	1.6	1.8	2.4[A]	2.0[A]
29	1.4	1.5	2.6	1.4	E	4.0	2.6	3.0	4.0	4.1	4.2	3.8	4.2	4.2	3.4	3.2	2.9	2.6	A	3.4[A]	1.6	1.6	1.4	1.4
30	1.2	1.2	1.2	1.5	1.3	1.2	1.9	A	3.0	5.2[A]	4.1	4.1	4.0	4.1	4.0	4.2[A]	3.5	4.0[A]	4.4	A	A	A	1.6	2.2[A]
31																								
Mean Value	1.8	1.6	2.0	1.7	1.8	1.7	2.4	3.2	3.9	4.2	4.5	4.5	4.7	4.3	4.2	3.9	3.3	2.8	2.3	2.2	2.3	2.5	2.1	2.0
Median Value	1.4	1.3	1.5	1.5	1.4	1.6	2.2	3.0	3.8	4.2	4.3	4.2	4.5	4.2	4.2	3.8	3.2	2.4	2.1	2.0	2.0	1.8	1.6	1.8
Count	28	27	30	29	30	30	28	27	27	27	27	26	29	29	30	30	30	28	26	25	23	27	29	30

Sweep 1.9 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	1.2	E	E	1.4	1.6	1.6	2.0	2.0	2.2	2.2	2.2	2.2	1.9	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.2
2	E	E	E	E	E	1.4	1.6	1.6	1.9	1.9	2.4	2.4	2.2	2.3	2.2	1.7	1.6	1.6	1.8	1.8	1.8	1.8	1.8	1.8
3	E	1.2	E	E	1.4	1.5	1.6	1.7	1.8	2.0	3.1	2.2	2.2	2.0'	2.0	1.8	1.8	1.6	1.6	1.4	1.4	1.5	1.5	1.4
4	1.4	E	E	E	E	2.1	1.6	1.8	2.0	2.4	2.6	2.6	2.6	2.2	B	1.8	1.8	1.6	1.6	1.5	1.5	1.5	1.5	E
5	E	E	E	E	E	B	1.4	1.4	1.8	1.8	2.2	3.0	B	B	2.1	1.9	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.3
6	1.1	E	E	E	E	B	1.6	1.6	1.9	1.9	2.2	2.1	2.0	1.8	1.8	1.8	1.6	1.6	1.8	2.0	1.7	1.7	1.6	1.6
7	1.4	1.1	1.1	E	E	1.6	1.6	1.6	1.8	1.8	2.4	2.4	2.5	2.3	2.2	1.8	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.2
8	E	E	E	E	1.6	B	1.7	1.8	1.7	1.8	2.2	2.2	2.1	1.8	1.9	1.6	1.6	1.5	1.5	1.4	E	1.4	1.4	1.2
9	1.2	E	E	E	E	E	1.7	1.8	1.8	1.6	2.1	2.0	2.2	2.4	2.6	2.0	2.0	1.7	1.8	1.6	1.6	1.6	1.6	1.4
10	1.4	1.2	E	E	E	E	1.4	1.5	1.8	1.9	2.1	2.2	2.2	2.2	2.0	1.8	1.7	1.5	1.4	1.5	C	C	1.5	1.5
11	1.8	E	E	E	E	E	1.4	1.6	1.7	1.9	2.0	2.0	2.0	2.1	2.2	1.7	1.8	1.8	1.6	1.5	1.5	1.5	1.4	1.4
12	1.4	E	E	E	E	E	1.6	1.5	1.6	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.6	1.6	1.6	1.6	1.6	1.6	1.8
13	E	E	E	E	E	E	1.7	1.5	1.8	1.6	1.8	1.9	1.7	1.8	2.0	1.9	1.6	1.6	1.5	1.5	1.6	2.2	1.8	E
14	1.5	E	E	E	E	E	1.5	1.6	1.7	1.7	1.8	1.8	2.0	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.5	1.5	E	1.5
15	E	E	E	E	E	1.2	1.2	1.4	1.6	2.0	C	C	1.8	1.8	2.0	2.1	1.7	1.6	1.5	1.9	1.6	1.6	1.5	1.6
16	E	E	E	E	E	E	1.5	1.7	1.8	1.7	1.9	1.9	1.9	1.9	1.8	1.6	1.6	1.6	1.6	1.4	1.4	1.5	1.4	1.5
17	E	E	E	E	E	E	1.6	1.6	1.6	1.9	2.2	2.2	B	2.2	1.9	B	1.9	1.6	1.6	1.6	1.6	1.4	1.5	1.5
18	E	E	E	E	E	1.6	1.6	1.6	1.6	1.7	1.7	1.6	B	2.2	1.9	1.7	1.6	1.6	1.6	E	1.9	E	E	E
19	E	E	E	E	E	E	1.7	1.7	1.8	1.8	1.9	2.6	2.6	1.9	1.8	1.8	1.8	1.6	B	E	E	1.4	1.4	E
20	E	E	E	E	E	E	1.5	1.5	1.6	1.6	1.9	2.2	2.1	1.8	1.8	1.8	1.7	1.8	B	1.9	E	E	E	E
21	E	E	E	E	E	E	1.6	1.7	1.7	1.8	1.8	2.0	2.2	2.4	1.8	1.7	1.6	1.6	1.5	1.7	E	E	1.4	1.7
22	1.8	1.2	E	E	E	E	1.5	1.5	1.8	1.8	2.2	1.7	1.8	1.8	2.2	1.7	1.8	1.6	B	1.8	E	E	1.6	1.8
23	1.4	1.2	E	E	1.5	1.6	1.6	1.6	1.8	2.1	2.1	3.2	B	2.1	1.9	2.0	1.7	1.5	1.4	1.7	1.6	1.7	1.8	1.6
24	1.6	1.2	E	E	E	E	1.5	1.6	1.8	1.8	2.0	2.0	2.0'	1.8	1.8	1.8	1.8	1.6	1.8	1.5	1.5	1.5	1.5	1.5
25	1.2	E	E	1.2	1.2	1.4	1.4	1.4	C	C	C	C	C	2.0	2.1	2.0	1.7	(1.6)C	1.6	E	E	E	E	1.6
26	E	E	E	E	E	E	1.5	1.7	1.7	1.7	1.8	1.8	2.0	2.0	1.8	1.6	1.6	1.6	1.6	E	1.6	E	E	E
27	E	E	E	E	E	E	1.5F	1.6	2.1	2.0	2.2	2.2	2.1	2.1	2.0	1.7	1.7	1.6	B	E	1.8	E	1.6	E
28	E	E	E	E	E	E	2.0	2.0	1.8	2.0	1.9	1.9	1.9	1.9	2.0	1.8	1.7	1.6	1.4	1.4	1.4	1.4	1.4	1.4
29	E	1.3	E	1.4	E	1.5	1.8	1.8	1.8	1.8	1.8	1.9	2.3	1.9	1.8	1.8	1.8	1.8	1.8	1.6	1.6	E	E	E
30	E	E	E	E	E	E	1.5	1.6	1.7	2.1	2.2	2.2	2.0	2.0	1.6	1.6	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6
31																								
Mean Value	1.4	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.8	1.9	2.1	2.2	2.1	2.0	2.0	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.5	1.5
Median Value	E	E	E	E	E	E	1.6	1.6	1.8	1.8	2.1	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.4
Count	30	30	30	30	30	27	30	30	29	29	28	28	25	29	29	29	30	30	26	30	29	29	30	30

fminE

Sweep 1.0 Mc to 17.0 Mc in 15 min ☒ Manual ☐ Automatic

A 11

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

foF2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	(4.8)^{P}	4.4	[4.5]^{S}	4.6	5.1^{P}	T	T	T	6.9	A	9.1^{P}	9.6	8.1	6.9	7.6	7.7^{P}	(7.5)^{P}	(8.2)^{P}	8.7^{P}	6.4	A	SF	A
2	(5.6)^{JF}	(5.5)^{PF}	(5.6)^{PF}	(5.5)^{PF}	(5.8)^{JF}	(5.6)^{PF}	7.0	6.8	7.0	7.1	7.9	(8.4)^{P}	7.8^{P}	7.3	8.1	8.7	7.8	7.5	(8.6)^{P}	9.4^{P}	9.0	7.8	(5.0)^{P}	3.5
3	3.9	3.9	3.9^{F}	3.8	3.9^{F}	4.0^{F}	6.4	9.2	8.7	7.8^{J}	7.0	7.2^{J}	7.5	7.6	8.4	8.2	8.2^{P}	8.2	(9.4)^{PS}	B	B	5.9	5.8	(5.5)^{PF}
4	BF	BF	A	A	A	6.8^{J}	7.0	7.7	7.9	7.4	8.4	8.8	8.5	8.3	7.3	7.3	8.1^{P}	(8.3)^{S}	(8.5)^{PS}	7.9^{PS}	[6.6]^{C}	5.4^{S}	5.4^{S}	5.3
5	5.7	5.2	6.0	5.4	4.0	4.8	6.6	8.9	8.2^{J}	7.4	7.8	9.1	9.5	9.7^{J}	9.4	7.9	7.7	9.0	9.1	7.4	5.6	5.7	[5.6]^{BS}	5.4
6	5.7	5.2	5.5	5.0	4.7	4.5^{H}	7.9	8.9	7.3	6.4	7.9	7.8	8.8	8.9	8.9	7.9^{S}	8.6	9.1	8.9	(8.2)^{PS}	7.4	6.6	6.8	7.2
7	6.7	6.3	6.7	6.0^{Z}	5.8	5.7	8.5	8.5	9.1	8.7	7.8	8.1	8.4	8.8	9.0	9.9	9.9	9.4	(9.5)^{PS}	(8.3)^{P}	6.7	(6.6)^{PF}	S	(8.4)^{P}
8	6.4^{F}	5.8	5.8	4.9	4.8	6.1	7.5	8.6	9.9^{J}	(9.5)^{P}	8.5^{F}	8.1	(8.4)^{P}	9.0	8.4^{P}	8.3	8.8	9.5	B5	9.1	7.3	6.1	(5.6)^{PS}	4.2
9	6.7	6.1	5.6	C	C	5.4^{VH}	7.6	8.8^{F}	8.9^{H}	(8.0)^{P}	8.1^{P}	9.3	8.0	8.0	(8.2)^{P}	8.5	8.7	(9.0)^{A}	10.5^{J}	8.9	7.5	7.3	7.2	6.7
10	5.9	5.5	5.9	6.3	5.6	4.3	6.5	9.4^{V}	9.6	8.5^{J}	8.2^{P}	7.9^{P}	(8.2)^{P}	8.0	7.7^{J}	8.8	8.7	9.5	9.2	8.0^{P}	7.9^{J}	5.2^{P}	4.9	5.0^{H}
11	3.9	3.9^{P}	3.8	4.0	[4.4]^{C}	(4.7)^{P}	6.2	7.5	8.0	7.2	7.8	7.3	7.6	8.1	6.8	6.4	6.4	6.6	7.5	6.8	5.8	(6.1)^{PS}	5.3	A
12	A	3.6	3.8	4.0	3.2	3.2	4.5	5.5^{K}	6.0^{K}	6.0^{K}	6.4^{K}	7.0^{VK}	6.4^{K}	6.6^{K}	6.8	6.7	6.8	6.5	6.5	4.9^{P}	[4.6]^{B}	4.2	4.4	4.5
13	4.2	4.0	3.3	3.5	4.2	3.5	6.2	6.8	7.5	6.8	7.8	7.9	8.8	7.5	7.2	7.1	7.2	7.4	8.8^{J}	7.7	4.8	4.1^{J}	(4.0)^{M}	4.0
14	4.2	4.1	3.8^{P}	3.9	3.5	A	6.0	6.7	7.1	7.5	7.7	8.1	8.9	A	(8.2)^{JF}	6.8	7.4	8.7	6.9	7.0	5.5	5.7	5.1	5.5
15	4.9	5.4	4.7	4.8	4.0	3.9	6.4	7.5	(8.1)^{P}	8.1	7.2^{H}	(8.8)^{JP}	[8.8]^{C}	8.9	8.4^{P}	8.4^{J}	7.3	7.7	(7.5)^{PS}	7.3^{F}	6.5^{F}	5.8^{JF}	BF	(6.1)^{PF}
16	4.8^{F}	5.3^{F}	5.0	5.0	4.5	4.3	5.8	8.3	9.0	9.0	9.0	9.5^{J}	8.6	10.0^{J}	9.0	8.3	7.4	C	C	B5	A	4.8	4.4	4.6
17	(3.2)^{KP}	3.2^{K}	3.3^{K}	3.3^{K}	3.2^{K}	3.2^{K}	5.3^{k}	7.5^{K}	6.4^{K}	6.8^{K}	(9.4)^{P}	8.6	7.1	7.3	7.2	6.9	6.5	6.9	(7.0)^{P}	6.5	(6.3)^{PH}	4.9	4.9	4.5
18	2.9	B	3.4^{J}	[3.3]^{S}	3.2^{S}	3.3^{P}	6.0	6.3	7.1	7.3	7.9	7.3	6.5	6.1	6.9	7.4	7.2	7.2	6.5	6.6	6.3	5.7^{S}	5.3	5.8
19	5.3	4.5	4.3	4.1	3.4	3.4	5.4	7.1^{P}	7.4	7.7	7.8^{J}	8.5	9.0	8.9	8.8	7.9	8.2	7.7^{PS}	6.6	6.7	6.1	5.3	4.9	5.0
20	4.6	4.2	3.7	3.7	3.3^{J}	4.2	6.0	7.8	7.4	9.3	10.4^{J}	10.0	(10.0)^{P}	9.7	(10.0)^{P}	(9.0)^{P}	8.2^{J}	7.6	7.7	6.4	7.3	5.4^{S}	6.2	6.9
21	5.5	4.0	4.0	3.6^{J}	3.3	2.9	6.9	6.6	7.2	7.9^{P}	7.6	9.1^{P}	9.8	10.8	(10.4)^{P}	7.3	7.5	7.9	8.0	4.7	4.3^{PS}	4.7	(4.4)^{P}	4.4
22	4.5	4.0	3.7	3.4	3.4	3.4	6.3	7.1	6.6	7.7^{J}	7.1^{J}	9.4^{J}	8.1^{J}	(8.1)^{P}	7.9	8.1	8.8	9.8	7.6^{B}	6.1	4.0	4.6	C	A
23	C	C	B	A	2.6	2.6	5.6	(9.1)^{P}	8.5	8.1	8.6	8.8	10.3^{P}	10.0	9.2	8.9	9.3^{H}	A	7.1	4.9	3.7^{J}	5.4	5.2	(4.8)^{PS}
24	5.0^{F}	4.8	5.0^{F}	3.8^{F}	3.7^{F}	4.2	6.3	7.8	8.7	9.5	9.2	8.8	8.7	9.2	9.0	8.9	8.4	8.4	8.7	5.9	A	4.3	4.1	4.7
25	C	C	C	C	C	C	C	C	C	C	10.0	10.3	9.1	8.7	9.7	8.7	(8.1)^{PB}	7.8	7.7	7.1^{S}	5.5	5.3	5.3	5.2
26	5.2	5.0	C	C	C	C	C	C	C	C	C	C	G^{K}	G^{K}	G^{K}	G^{K}	5.7^{K}	6.5^{K}	5.6^{KP}	5.4	5.5	(5.5)^{P}	B	(5.4)^{P}
27	5.6	5.0	4.4	4.3	4.2	4.4^{F}	5.7	6.3	6.8	8.9	9.7	10.8	10.4	10.9	10.0	B	10.4	9.8	8.1	5.5^{H}	S	(5.6)^{BS}	6.0	5.9
28	6.4	5.6	5.0	4.7	4.8^{H}	4.6	6.5	8.0	(8.3)^{P}	8.4	9.1	10.5^{J}	(10.9)^{P}	11.0	9.7	9.4	(10.2)^{PB}	(11.5)^{PB}	9.6	6.5	5.0	(4.8)^{PS}	(4.8)^{PS}	5.2
29	5.2	5.0	4.9	5.4	5.0	3.9	5.5	8.2	10.6	9.1	8.8	11.7	11.1	9.2	9.6	9.9	9.6	9.6	9.1^{JP}	6.1^{P}	5.4	5.3	5.0	5.0^{S}
30	4.4	4.4^{J}	4.3	4.1	4.5	3.8	5.9	7.4	8.0	8.7	10.8	11.3	10.7^{J}	10.8^{J}	10.2	9.8	10.4^{P}	B	9.2	6.5	4.9	4.3^{F}	5.0	4.9
31																								
Mean Value	5.1	4.8	4.6	4.4	4.1	4.3	6.4	7.7	8.0	7.9	8.4	8.9	8.8	8.8	8.5	8.2	8.2	8.3	8.1	6.9	6.0	5.5	5.2	5.3
Median Value	5.2	4.9	4.4	4.1	4.1	4.2	6.3	7.7	8.0	7.8	8.0	8.8	8.8	8.8	8.4	8.2	8.2	8.2	8.2	6.8	6.0	5.4	5.1	5.2
Count	25	26	26	25	26	27	27	27	27	28	28	29	30	29	30	29	30	27	28	28	26	29	25	27

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

K 1

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	A	(420)P	390	S	350	290P	T	T	T	290	A	A	290	290	340	320	300P	(300)P	(310)P	290P	260F	A	SF	A
2	(340)JF	(380)PF	(420)PF	(400)PF	(370)JF	(310)PF	270	240	260	290	300	(320)P	300P	310	330	310	300	290	(300)P	280P	270	BF	(350)P	(340)A
3	370	360	350F	350	360F	350F	290	270	240	(270)J	290	(310)J	340	340	330	330	340P	310	(310)PS	B	B	330	370	(420)PF
4	BF	BF	A	A	A	A	290	280	270	300	320	320	320	300	310	370	330P	[300]S	(280)PS	260PS	[310]C	360S	350S	360
5	390	350	380	320	310	380	290	280	(260)J	280	310	340	340	(320)J	300	290	290	300	290	270	380	380	BS	400
6	380	370	330	350	370	380H	290	250	230	250	300	320	350	350	310	310S	310	300	310	(280)PS	340	350	370	350
7	330	380	380	360V	330	320	260	250	290	290	280	330	340	320	340	320	300	290	(310)PS	(290)P	350	(430)PF	S	(310)P
8	330F	370	330	360	360	300	290	300	(270)J	(270)P	290F	310	(310)P	310	300P	310	320	310	BS	280	300	380	(360)PS	370
9	390	360	320	C	C	330H	270	230F	270H	(220)P	280P	290	270	310	(310)P	290	330	(290)A	(290)J	290	310	350	350	330
10	350	430	380	310	250	380	350	330V	290	(300)J	330P	330P	(320)P	320	(330)J	310	310	300	290	270P	(270)J	320P	290	450H
11	420	320P	380	390	(380)C	(360)P	310	290	260	300	320	350	390	320	320	280	310	310	310	320	340	(310)PS	300	A
12	A	430	420	300	310	320	280	490K	310K	410K	GK	350VK	GK	GK	310	320	320	290	310	250P	B	380	400B	360
13	360	410	350	320	330	250	290	270	270	300	340	330	320	300	310	320	310	300	(300)J	250	390	A	M	400
14	380	380	390P	390	310	A	290	250	290	300	310	320	320	A	(310)JF	310	290	290	260	300	(350)A	(320)S	400	400
15	380	330	350	340	370	410	270	290	(290)P	280	300H	(350)JP	(340)C	330	300P	(290)J	300	300	(290)PS	320F	380F	(350)JF	BF	(340)PF
16	390F	350F	370	360	330	300	300	300	310	300	300	(300)J	350	(300)J	300	310	280	C	C	BS	A	470	440	330
17	(500)PK	440K	430K	410K	360K	410K	320K	290K	350K	350K	(310)P	300	350	310	290	280	270	290	(310)P	290	(360)PH	390	380	350
18	310	B	(410)J	S	320S	330P	300	290	300	330	300	290	300	300	320	300	270	270	300	330	320	370S	390	360
19	330	320	350	300	360	390	280	290P	270	290	(300)J	310	320	310	310	290	300	280PS	280	320	320	320	380	370
20	350	350	420	400	(390)J	370	290	290	290	320	(290)J	320	(310)P	330	(300)P	(300)P	(270)J	260	330	320	320	410S	320	360
21	270	320	370	(370)J	390	400	270	250	290	280P	330	330P	300	310	(280)P	260	290	290	260	320	340PS	380	(390)P	390
22	370	340	360	420	420	370	280	290	290	(280)J	(310)J	(300)J	(300)J	(320)P	330	320	300	260	250B	250	340	380	C	A
23	C	C	B	A	320	380	310	(310)P	270	320	310	330	300P	320	310	310	300H	A	300	400	(360)J	400	400	(320)PS
24	360F	350	330F	330F	360F	330	290	310	320	320	290	300	310	300	320	290	290	290	260	270	A	400	380	380
25	C	C	C	C	C	C	C	C	C	C	290	280B	280	280	300	260	(260)PB	260	290	320S	320	400	430	420
26	400	360	C	C	C	C	C	C	C	C	C	C	GK	GK	GK	GK	350K	290K	280PK	420	440	(430)P	B	(350)P
27	310	310	440	350	370	370F	260	250	250	290	320	290	310	300	310	B	270	260	250	380H	S	(370)PS	400	440
28	360	370	310	350	370H	330	260	260	(270)P	280	280	(330)J	(300)P	310	290	310	(300)PB	(280)PB	250	240	310	(390)PS	(390)PS	370
29	340	350	380	330	290	300	330	280	300	270	330	310	280	310	310	300	280	260	(240)JP	250P	320	340	350	340S
30	340	(370)J	390	410	330	270	250	260	270	330	300	300	(300)J	(310)J	310	300	290P	B	270	290	360	A	330	320
31																								
Mean Value	360	370	370	360	350	340	290	280	280	300	300	320	320	310	310	300	300	290	290	300	330	370	370	370
Median Value	360	360	380	350	360	340	290	280	270	290	300	320	320	310	310	310	300	290	290	290	340	380	380	360
Count	25	26	26	23	26	26	27	27	27	28	28	28	30	29	30	29	30	27	28	28	25	26	23	27

hpF2

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

K 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

h'F2

135° E Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	350	340	230	320	250	280	250	290	290	A	A	270	270	300	300	290	280	250	220	210^{A}	A	230	A
2	330^{AF}	280	310^{A}	270	270	250	240	230	240	290^{A}	300	300	290	310	330	300	280	290	290	240	230^{A}	A	300	310^{A}
3	330	300	320	300^{A}	300^{A}	260	250	250	230	260	270	310	300	310	320	310	300	280	270	270^{A}	230	290	310	370
4	340	250	A	A	A	A	220^{F}	260	270	260	310	280	310	280	310	360	310	270^{A}	250	240	(280)^{C}	320^{A}	280	280
5	290	320	300	280	250	300	280	250	260	270	290	330	290	290	290	280	290	270	230^{A}	220^{A}	250	270	330^{A}	320^{A}
6	310^{A}	310^{A}	270	260	270	310^{H}	240	240	210	230	270	280	310	330	300	310^{S}	290	280	260	230	270	240	320	270
7	260	300^{A}	300^{A}	280	250	240	240	240	230	250	260	310	300	290	330	290	270	260	250	250^{A}	280	360^{A}	A	270
8	270	280	250	270	280	270	270	240	260	250	270	310	290	310	300	310	300	290	(250)^{A}	230	230	240	280	330
9	340^{A}	300	310^{A}	C	C	270^{H}	240	220	220^{AH}	220	280	280	260	300	290^{A}	280	270	270	260	250	230	310^{A}	260	250
10	270	320	320	250	240^{F}	300	290	260	260	280	280	310	300	300	300	300	300	270	240	220^{A}	210^{A}	200	220	340^{H}
11	350	230	300	310	(280)^{C}	260	260	250	260	300	320	350	390	310	A	280	290	260	260	250	240^{F}	250	250^{F}	A
12	A	380	400^{A}	250	250^{A}	290	260	490^{K}	310^{K}	400^{K}	390^{K}	350^{K}	330^{K}	350^{K}	310	320	320	270	240	250^{A}	260	330	340^{A}	300
13	270	320	310	320	290	220	230	260	250	300	330	320	320	300	310	260	300	280	300	220^{A}	210	A	M	330^{A}
14	300	300^{A}	330^{A}	330^{A}	270	A	250	240	270	300	300	300	310	A	300	290	290	290	260	280	250^{A}	290	340	300
15	290	270	280	250^{F}	280	330	240	280	290	260	230^{H}	330	[320]^{C}	310	290	290	240	240	240	290^{A}	A F	290	260	250
16	290	300	300	280	250	270	260	240	310	300	290	280	340	280	280	300	280	290	(260)^{C}	230^{A}	A	400	350^{A}	280
17	280^{K}	340^{K}	350^{K}	340^{K}	360^{K}	390^{K}	300^{K}	290^{K}	350^{K}	340^{K}	290	300	350	290	290	270	250	260	280^{A}	220^{A}	260^{H}	290	310	290
18	290	300	320	310	270	250	250	270	290	310	300	280	300	300	310	300	250	250	250	260	240	260	280	280
19	250	240	270	250	260	330	230	250	250	270	290	290	310	300	310	270	230	260	230	250	250	250	250	280
20	280	260	330	330	360	320	230	230	260	310	280	300	300	310	290	290	260	250	270	250	300^{A}	350	300	300
21	230	260	350^{A}	310	350	370	270	230	280	270	320	320	310	290	270	240	250	250	220^{A}	270^{A}	300	290	290	290
22	300	260	280	340	340	310	260	240	250	280	300	300	300	300	310	300	290	240	220	200	330	A	A	A
23	C	C	240^{A}	240^{A}	320	300	260	290	240^{A}	260	260	300	290	300	290	270	270^{H}	A	280	A	310	300	310	280
24	300	270	250	210	220	300	250	250	280	290	280	280	300	300	290	290	260	270	240	220	A	320	360^{A}	340
25	C	C	C	C	C	C	C	C	C	C	280	270	260	280	290	250	260	240	240	240	240	310	350	350
26	340	300	250	C	C	C	C	C	C	C	C	C	G^{K}	G^{K}	G^{K}	G^{K}	300^{K}	250^{K}	260^{K}	310	330	300	300	270
27	260	250	240	270	290	300	230	220	230	260	300	260	260	270	290	270	240	220	210	230^{H}	290	300	280	320
28	300	250	220	250	230^{H}	260	230	250	250	250	260	310	290	280	270	270	280	250	220	210	210	280	310	290
29	280	300	300^{A}	A	280^{A}	A	250^{A}	280	280	250	260	290	250	250	290	260	250	240	220	250	A	300^{A}	A	280
30	280	320	330	310	250	220	220	240	230	300	280	280	280	290	290	270	240	250	220	220	310^{A}	A	290	260
31																								
Mean Value	290	290	300	280	280	290	250	260	270	280	290	300	300	300	300	290	280	260	250	240	260	290	300	300
Median Value	290	300	300	280	280	290	250	250	260	280	280	300	300	300	300	290	280	260	250	240	250	290	300	290
Count	26	28	28	25	26	25	28	28	28	28	28	28	30	29	29	30	30	29	30	29	26	25	26	27

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

K 3

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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							A	A	L	L	A	A	5.0	4.8	A	4.7	L	4.0						
2							Q	Q	A	A	4.9	A	A	5.0	5.2	Q	B	(3.6)A						
3							Q	4.2	A	A	B	B	B	B	B	L	L	L						
4							A	A	A	A	L	5.2	L	4.9	4.9	5.2	L	A						
5							Q	Q	L	L	L	L	5.2	5.0	L	4.8	4.4	L						
6							Q	Q	A	L	L	L	5.2	L	L	L	L	L						
7							Q	Q	Q	4.8	L	L	L	L	L	4.4	L	L						
8							Q	Q	L	L	Q	L	5.2	A	L	L	L	L						
9							L	Q	A	L	L	L	L	A	A	L	L	A						
10							L	A	A	A	L	L	5.1F	5.0	4.5	4.5	L	L						
11							Q	Q	L	A	A	5.0	5.1	5.2	A	4.5	L	Q						
12							Q	4.1	L	4.6	5.0	5.0	5.1	5.0	L	L	L	L						
13							Q	Q	Q	L	5.0	A	5.1	L	A	Q	A	A						
14							Q	A	A	A	L	L	B	A	A	4.5	L	A						
15							Q	L	L	L	4.2	L	C	5.2	L	L	Q	Q						
16							Q	A	L	L	L	L	L	4.8	L	L	L	L						
17							A	L	4.8	L	4.8	4.8	L	4.8	L	4.6	Q	Q						
18							Q	A	L	4.7	L	4.8	4.9	L	L	L	L	Q						
19							Q	Q	L	L	4.8	L	5.3	5.0	L	L	Q	Q						
20							Q	Q	L	5.6	L	L	L	L	4.6	L	L	Q						
21							L	A	L	4.7	L	5.0	L	L	L	Q	Q	A						
22							Q	Q	A	A	L	L	L	L	4.8	L	L	L						
23							Q	L	A	A	Q	4.7	B	4.6	L	B	Q	A						
24							Q	Q	A	4.3	L	L	L	L	L	L	L	L						
25							C	C	C	C	L	A	A	L	L	L	L	L						
26							C	C	C	C	C	C	4.2	4.4	4.4	4.6	B	Q						
27							Q	Q	Q	L	L	4.6	L	L	L	L	Q	Q						
28							Q	L	L	L	L	L	L	L	L	L	L	Q						
29							A	L	L	L	L	L	4.8	L	L	L	A	Q						
30							Q	Q	Q	L	L	L	L	L	L	L	Q	Q						
31																								
Mean Value								4.2	4.8	4.8	4.8	4.9	5.0	4.9	4.7	4.6	4.4	3.8						
Median Value								4.2	4.8	4.7	4.8	4.9	5.1	5.0	4.7	4.6	4.4	3.8						
Count								2	1	6	6	8	12	13	6	9	1	2						

foF1

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

K 4

29

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

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

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

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	A	2.8	A	B	A	3.5^{B}	3.3^{B}	3.2	B	B	A	A					
2							A	2.5	A	A	A	A	A	B	B	B	3.1	2.3	A					
3							2.0^{J}	2.3^{J}	A	A	B	B	B	B	A	B	3.0	B	A					
4							A	A	2.8^{J}	3.3	3.2^{J}	3.4	A	3.6	3.4	A	A	A	A					
5							A	2.4^{J}	2.8	3.1^{B}	B	B	B	3.0	2.9	2.9	3.0	A	A					
6							2.2^{A}	2.6	A	A	A	B	A	A	A	A	2.9	2.3	A					
7							A	2.8	3.0	3.1	3.2	3.2	3.0	B	B	B	2.9^{B}	2.3^{H}	A					
8							2.0	2.5	2.9	B	B	B	B	B	A	2.9	2.6	A	A					
9							A	A	A	3.3	3.6	3.6	3.5	3.5	A	3.0	2.9	2.4	A					
10							A	A	A	3.0	A	A	B	3.5	A	A	B	2.4	1.4					
11							A	1.7	3.0	3.2^{B}	3.4	B	B	3.8^{H}	3.5	3.3	2.8	A	1.5					
12							A	A	B	3.1	3.6	B	3.7	3.6	3.4	3.2	2.8	A	A					
13							A	A	A	A	3.0	A	B	B	3.0	B	A	A	A					
14							1.8	2.5	2.9	A	A	A	A	A	3.2	2.8	2.7	2.1	A					
15							1.8	2.3	2.5	2.8	2.8	A	C	3.4	A	3.2	2.8	2.3	1.4					
16							A	A	A	A	B	A	A	A	3.2	2.9	2.7	A	C					
17							A	A	2.9^{J}	B	B	B	B	B	B	B	2.7	2.1	A					
18							A	A	A	3.0	3.3	B	3.4	A	A	A	A	2.3	1.4^{J}					
19							1.8	2.5	2.6	A	A	B	B	3.6^{H}	B	3.0	A	2.2^{J}	B					
20							A	A	A	3.2	B	B	3.5	B	3.2	-B	2.5	2.4	A					
21							A	2.5	(2.6)^{A}	A	3.1^{B}	B	3.1^{B}	3.5	B	2.9	2.6	A	A					
22							A	2.4	2.7	A	A	B	3.3	B	3.1^{B}	2.8	2.7	1.8	1.1					
23							1.6	2.6	2.8	2.8	B	B	B	B	B	B	2.7	A	A					
24							2.3	A	A	2.9^{J}	A	A	3.4	3.2	2.9	2.8	2.5	2.0^{J}	A					
25							C	C	C	C	B	B	B	B	3.2^{B}	3.0^{B}	B	B	A					
26							C	C	C	C	C	C	A	B	B	B	2.8	2.6^{J}	1.8^{J}					
27							1.6	2.5	2.9	2.9	B	B	3.6	B	B	B	2.9	A	A					
28							A	A	A	3.2	3.3	B	B	3.0	2.9	2.9	2.7	2.0^{A}	A					
29							A	A	A	3.0	3.1	3.5^{H}	3.5	3.0	3.0	B	2.5^{J}	A	A					
30							A	A	2.9	A	B	A	B	A	A	A	2.6	1.8	A					
31																								
Mean Value							1.9	2.4	2.8	3.1	3.2	3.4	3.4	3.4	3.2	3.0	2.8	2.2	1.4					
Median Value							1.8	2.5	2.8	3.1	3.2	3.4	3.5	3.5	3.2	2.9	2.7	2.3	1.4					
Count							9	14	15	15	11	4	11	13	14	14	23	16	6					

foE

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

K 6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

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							A	A	110	A	110	A	100	110	100	100	100	A	A					
2							120	110	A	A	A	A	A	100	100	110	100	100	A					
3							A	110	A	A	120	110	B	B	A	110	110	110	A					
4							A	A	110	100	120[A]	110	A	110	110	110	A	A	A					
5							A	110	110	110	110	110	110	110	110	100	100	110	A					
6							A	110	A	A	A	100	A	A	A	A	100	100	A					
7							A	110	100	110	110	110	110	110	100	110	100	100[H]	A					
8							110	110	100	100	100	100	100	100	100	100	100	110	A					
9							A	A	A	100	100	100	100	100	100	100	100	110	A					
10							A	A	A	100	A	A	100	100	110	A	120	110	B					
11							A	110	100	100	110	100	110	120[H]	110	120	110	A	130					
12							A	A	110	110	110	110	110	100	110	100	110	A	A					
13							A	A	A	A	100	A	110	110	110	110	A	A	A					
14							120	110	110	A	A	A	A	A	100	100	110	110	A					
15							110	110	110	110	110	A	C	100	100	100	100	100[A]	110[A]					
16							A	A	A	A	100	A	A	A	100	100	120	A	C					
17							A	A	110	100	B	100	110	100	100	100	110	120	A					
18							A	A	A	100	100	100	110	A	100	A	A	120	120					
19							110	110	110	A	A	110	110	110[H]	110	110	A	110	B					
20							A	A	110	110	90	100	100	100	100	100	100	100	A					
21							A	110[A]	110	A	110	100	100	110	110	110	110	A	A					
22							120	110	110	A	100	100	100	100	100	100	100	120	100					
23							110	110	110	110	110	110	B	100	100	110	100	A	A					
24							120	A	A	110	A	A	120	110	110	110	110	110	A					
25							C	C	C	C	(100)[B]	100	100	110	100	100	100	130	A					
26							C	C	C	C	C	C	A	100	100	100	120	110	110					
27							110	110	110	110	100	110	110	110	110	110	110	A	A					
28							A	A	A	100	100	100	100	110	110	110	110	110	A					
29							A	A	A	100	100	100[H]	100	110	100	100	110	A	A					
30							120	A	110	A	100	A	100	A	A	A	100	110	A					
31																								
Mean Value							120	110	110	100	110	100	110	110	100	110	110	110	110					
Median Value							120	110	110	100	100	100	110	110	100	100	100	110	110					
Count							10	14	17	17	22	20	21	24	27	26	26	20	5					

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

K 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	7.9	4.1	4.1	3.1	4.0	2.7	4.6	4.7	4.8	6.4	9.6	15.5	G	4.6	5.6	4.6	4.8	3.2	2.7	3.7	5.5	9.8	5.5	7.4
2	5.6	5.6	6.5	3.2	3.6	3.5	4.0	3.8	5.0	6.7	5.6	6.2	6.2	G	G	G	G	4.6	4.2	3.8	7.4	3.8	5.2	3.4
3	3.9	2.7	3.6	2.9	3.5	2.5	4.2	6.0	6.2	4.5	G	5.1^{Y}	B	B	5.0	G	G	4.2	5.1	6.3	7.0^{Y}	4.0	3.6	3.6
4	3.6	4.4	7.5	9.2	8.6	7.4	5.5	4.6	5.6	5.9	3.7	6.0	4.4	G	G	5.2	4.3	5.4	5.2	4.0	C	3.9	2.8	2.2
5	2.4	6.9	5.6^{Y}	5.3^{Y}	2.9	3.0	2.7	7.0^{Y}	G	G	G	G	G	G	4.8	4.5	4.0	3.2	4.9	3.1	2.5	2.4	4.2	3.8
6	3.8	3.4	2.7	2.5	2.8	2.5^{F}	3.0	G	3.3	3.5	4.4	G	4.5	4.2	3.8	3.8	G	3.9	2.9	3.4	2.8	2.4	4.1	2.6
7	1.3	6.5^{Y}	7.2	6.1	6.0^{Y}	5.9	10.0	6.0	4.6	4.6	4.2	4.2	3.8	G	G	G	4.0	G	2.8	3.7	4.0	3.8	6.0^{F}	5.3
8	3.3	2.7	3.6^{F}	3.2^{F}	3.2	3.6	4.8	7.0	4.8	4.6	5.2	5.2	4.8	7.3	7.0	G	4.2	3.8	7.2	3.5	3.0	2.2	2.2	2.7
9	5.4	5.1	5.0	C	C	2.5	3.6	4.1^{F}	4.9	4.4	4.4	5.8	6.2	8.6	7.7	4.8	5.0	11.9	4.8	7.5	2.9	4.7	4.7	4.2
10	2.3	2.6	2.5	2.4^{F}	2.9	2.8	3.4	5.4	5.7	7.5	3.6	3.7	4.4^{Y}	4.6	4.5	3.5	G	G	3.0	2.8	5.0	6.2^{Y}	2.6	2.9
11	2.5	2.5	2.3	2.4	C	2.2	3.8	3.4	4.6	5.8	5.3	G	4.9	G	5.3	G	G	2.6	2.8	2.5	3.5	2.4	4.0	5.7
12	5.5	2.8	3.4	2.5	2.3	2.5	2.5	3.3	G	G	G	G	G	G	G	G	4.0	3.8	3.2	3.8	3.7	3.1	2.9	2.5
13	2.0	2.3	3.0^{F}	2.6	2.0	2.0	3.2	4.6^{F}	4.8	4.5	G	5.4	4.3	5.3	5.3	G	5.3	5.6	8.3	3.8	2.4	4.6	M	2.4
14	3.4	2.6	2.2	2.8	2.5	5.2	3.1	4.0	5.1	6.5	5.0	3.5	3.8	8.9	6.5	G	4.8	9.0	6.5	5.8	7.5	3.6	3.8	3.6
15	3.0	2.6	2.2	2.8^{F}	2.6	2.4	3.9	4.5	4.6	4.3	4.8	4.6	C	4.4	3.7	G	3.8	2.8	6.2	7.0	6.6	6.9	2.6	3.2
16	2.4	4.0	2.5	3.5	2.8	2.5	3.5	3.8	7.1	4.4	G	3.6	3.9	3.6	G	G	3.7	3.5	C	3.8	5.6	3.8	3.6	3.8
17	2.5	2.5	2.5	2.4	3.2	3.5	3.8	3.2	G	G	G	G	G	G	G	G	G	4.3	7.4	3.8	2.6	2.8	2.8	2.4^{Y}
18	2.4	2.6	1.6	1.8	1.4	1.4	2.9	4.4	3.9	G	G	G	G	3.6	3.5	3.5	2.8	G	2.5	2.3	E	E	E	E
19	E	E	1.5	E	2.1	2.5	G	G	3.7	3.7	3.6	G	G	G	G	G	2.8	G	2.5	2.0	2.1	2.5	E	2.3
20	2.2	2.4	2.5	2.2	E	E	2.8^{Y}	3.4^{Y}	3.5	G	G	G	G	G	G	G	G	8.0	2.6	2.0	2.4	2.3	2.0	2.0
21	2.4	2.0	4.0	2.6	2.7	2.4^{Y}	3.3	3.8	4.1	4.5	5.0	G	4.4	G	G	G	G	4.6	4.8	4.3	E	1.7	E	E
22	1.6	2.0	2.8	2.6	2.3	G	2.9	3.6	4.4	5.4	3.5	G	G	G	G	G	G	3.2	3.8	4.6	2.8	3.7	C	4.9
23	C	C	4.6	5.0	5.4^{Y}	2.0	3.3	4.4	6.6	5.0	G	4.5	4.2	G	G	G	G	9.8	5.2	5.1	2.3	5.7	2.8	2.7
24	2.5	1.3	E	E	E	2.4	G	3.5	5.0	G	4.2	5.4	G	G	G	G	3.9	G	3.6	2.8	7.2^{F}	2.8	3.4	3.4
25	C	C	C	C	C	C	C	C	C	C	G	5.0	5.8	5.4	4.6	G	G	G	3.2	2.6	2.3	2.2	2.1	2.3
26	2.4	1.7	C	C	C	C	C	C	C	C	C	C	3.8	G	G	G	2.0	3.6	G	2.6^{Y}	E	E	1.6	E
27	E	E	E	E	E	E	G	3.3	4.3	G	G	G	G	G	G	3.7	G	2.4	3.5	2.0	2.4	2.3	E	E
28	2.0	2.2	2.2	1.5	1.6	2.5	3.2^{Y}	2.8	3.5	G	G	G	G	4.2	G	G	G	3.8	2.2	2.4	2.3	2.3	2.3^{Y}	2.2
29	2.8^{Y}	2.8	2.8	4.8^{F}	4.5	3.1	3.1	4.3^{F}	4.7	3.7	4.6	G	G	4.3^{Y}	G	G	4.6	6.0	4.6	5.0	4.6	3.8	2.6	3.0
30	2.4	2.4	2.5	2.5	2.2	2.5	3.3	3.5	G	4.4^{Y}	G	3.8	4.1	5.0	5.3	4.1	G	G	2.6	3.5	4.5	4.5	3.6^{Y}	2.5
31																								
Mean Value	3.1	3.2	3.5	3.3	3.3	3.0	3.8	4.3	4.8	5.0	4.8	5.5	4.6	5.3	5.2	4.2	4.0	4.9	4.0	3.8	4.0	3.7	3.4	3.3
Median Value	2.4	2.6	2.8	2.6	2.8	2.5	3.3	3.9	4.6	4.4	3.6	3.6	3.8	G	G	G	2.4	3.7	3.6	3.7	2.9	3.4	2.8	2.7
Count	28	28	28	27	26	28	28	28	28	28	29	29	28	29	30	30	30	30	29	30	29	30	28	30

fEs

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

K 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

(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	A	(2.6)P	2.7	S	2.8	3.2P	T	T	T	3.2	A	3.0P	3.3	3.2	2.9	3.1	3.2P	(3.3)P	(3.1)P	3.3P	3.3F	A	SF	A
2	(2.8)JF	(2.8)PF	(2.6)PF	(2.6)PF	(2.7)JF	(3.6)PF	3.4	3.5	3.4	3.2	3.1	(3.1)P	3.1P	3.0	3.0	3.1	3.1	3.0	(3.2)P	3.3P	(3.3)B	2.8	(2.8)P	2.8
3	2.7	2.8	2.8F	2.8	(2.9)F	2.8F	3.2	3.4	3.5	(3.3)J	3.1	(3.0)J	3.0	2.8	2.9	2.9	3.0P	3.0	(3.0)PS	B	B	2.9	2.8	(2.6)PF
4	BF	BF	A	A	A	A	3.1	3.2	3.4	3.0	3.0	2.9	3.1	3.2	3.2	2.8	3.0P	(3.1)S	3.2PS	3.4PS	(3.1)C	2.8S	2.9S	2.8
5	2.7	2.8	2.7	3.0	3.1	2.8	3.2	3.4	(3.4)J	3.3	3.0	2.9	2.8	(3.0)J	3.1	3.2	2.9	3.2	3.2	3.2	2.7	2.7	BS	2.6
6	2.6	2.7	2.9	2.8	2.7	2.8H	3.2	3.4	3.5	3.3	3.1	2.9	2.8	2.8	3.0B	3.2S	3.1	3.2	3.1	(3.1)PS	2.9	2.9	2.8	2.8
7	3.0	2.7	2.8	2.9Z	3.1	2.9	3.4	3.6	3.1	3.3	3.3	3.0	2.9	3.0	3.0	3.0	3.2	3.2	(3.1)PS	(3.1)P	2.8	(2.5)PF	S	(3.0)P
8	2.9F	2.7	3.0	2.8	2.9	3.1	3.1	3.2	(3.3)J	(3.4)P	3.2F	3.1	(3.0)P	3.1	3.1P	3.0	(3.0)B	3.2	BS	3.2	3.1	2.7	(2.7)PS	2.8
9	2.7	2.8	3.0	C	C	3.0VH	3.3	3.5F	3.4H	(3.6)P	3.4P	3.4	3.2	3.2	(3.1)P	3.2	2.9	(3.3)A	(3.1)J	3.2	3.0	2.8	2.9	2.9
10	2.8	2.5	2.7	3.0	3.4	2.6	2.8	2.8V	3.2	(3.2)J	3.0P	3.0P	(2.9)P	3.0	(2.9)J	3.0	3.1	3.1	3.2	3.3P	(3.3)J	3.0PS	3.2	2.5H
11	2.6	3.0P	2.8	2.7	[2.8)C	(2.8)P	3.1	3.1	3.5	3.1	3.1	2.8	2.7	3.0	3.0	3.3	3.1	3.0	3.0	3.0	2.8	(3.6)PS	3.0	A
12	A	2.5	2.5	3.1	3.1	3.2	3.3	2.4K	3.0K	2.6K	2.8K	2.9VK	3.1K	3.0K	3.2	3.0	3.0	3.2	3.1	3.3P	B	2.8	2.7	2.8
13	2.7	2.8	3.0	3.0	2.9	3.4	3.1	3.5	3.3	3.2	3.1	2.9	3.1	3.2	3.1	3.1	3.1	3.1	(3.2)J	3.3	2.7	A	M	2.7
14	2.6	2.6	2.6P	2.7	3.0	A	3.2	3.5	3.1	3.2	3.0	3.0	3.0	A	(3.0)JF	3.0	3.2	3.2	3.3	3.1	3.0	3.2	2.7	2.7
15	2.7	3.0	2.8	3.0	2.8	2.6	3.3	3.2	(3.3)P	3.3	2.9H	(2.8)JP	[2.8)C	2.9	3.2P	(3.2)J	3.1	3.1	(3.4)PS	3.0F	2.7F	(2.8)JF	BF	(2.7)PF
16	2.6F	2.9F	2.7	2.7	2.8	3.0	3.0	3.1	3.2	3.1	3.3	(3.2)J	2.9	(3.2)J	3.2	3.0	3.3	C	C	BS	A	2.5	2.5	3.0
17	(2.3)PK	2.5K	2.5K	2.3K	2.8K	2.5K	3.1K	3.2K	2.9K	2.7K	(3.1)P	3.2	3.0	3.2	3.2	3.3	3.2	3.3	(3.1)P	3.1	(2.8)PH	2.7	2.7	2.8
18	3.2	B	(2.6)J	S	2.9S	2.9P	3.0	3.2	3.2	2.9	3.1	3.2	3.2	3.2	3.0	3.1	3.3	3.3	3.1	3.0	3.0	2.7S	2.7	2.8
19	3.0	3.0	2.8	3.1	2.7	2.7	3.2	3.2P	3.3	3.2	(3.2)J	3.0	3.1	3.1	3.1	3.3	3.1	3.2PS	3.2	3.0	2.9	3.0	2.6	2.8
20	2.8	2.7	2.5	2.6	(2.5)J	2.7	3.1	3.3	3.2	3.1	(3.3)J	3.1	(3.1)P	2.9	(3.1)P	(3.2)P	(3.4)J	3.3	3.0	3.0	3.0	2.7S	3.1	2.8
21	3.2	3.0	2.7	(2.7)J	2.7	2.7	3.3	3.3	3.3	3.2P	3.0	3.0P	3.0	3.0	(3.3)P	3.4	3.2	3.3	3.2	2.9	2.9PS	2.8	(2.6)P	2.7
22	2.7	2.9	2.7	2.5	2.6	2.7	3.2	3.1	3.2	(3.3)J	(3.0)J	(3.3)J	(3.2)J	(2.9)P	3.0	3.1	3.1B	3.3	3.3B	3.5	2.9	2.6	C	A
23	C	C	B	A	2.9	2.6	3.2	(3.1)P	3.4	3.0	3.1	2.9	3.3P	3.1	3.1	3.1	3.2H	A	3.1	2.8	(2.7)J	2.6	2.7	(3.1)PS
24	2.8F	2.9	2.9F	2.8F	2.7F	3.0	3.1	3.0	3.0	3.0	3.1	3.0	3.0	3.2	3.1	3.2	3.2	3.2	3.4	3.2	A	2.8	2.6	2.6
25	C	C	C	C	C	C	C	C	C	C	3.2	3.3	3.2	3.2	3.2	3.3	(3.4)PB	3.3	3.2	3.0S	2.9	2.6	2.6	2.6
26	2.6	2.8	C	C	C	C	C	C	C	C	C	C	GK	GK	GK	GK	2.8K	3.1K	3.2PK	2.6	2.5	(2.6)P	B	(2.8)P
27	3.1	3.0	2.9	2.8	2.8	2.7F	3.5	3.4	3.5	3.2	3.0	3.2	3.2	3.2	3.2	B	3.4	3.3	3.4	2.7H	S	(2.8)PS	2.6	2.4
28	2.8	2.7	3.0	2.8	2.7H	2.8	3.3	3.3	(3.3)P	3.2	3.3	(3.0)J	(3.2)P	3.1	3.2	3.0	(3.1)PB	(3.3)PB	(3.4)B	3.4	3.0	(2.6)PS	(2.8)PS	2.9
29	2.9	2.8	2.7	2.9	3.2	3.2	2.9	3.0	3.2	3.3	2.9	3.2	3.3	3.1	3.1	3.1	3.1	3.3	(3.5)JP	3.6P	3.0	2.9	2.8	3.0S
30	2.9	(2.7)J	2.7	2.6	3.0	3.3	3.5	3.5	3.2	2.9	3.2	3.1	(3.1)J	(3.1)J	3.0B	3.0B	3.2P	B	3.2	3.1	2.7	A	2.9	3.0
31																								
Mean Value	2.8	2.8	2.8	2.8	2.9	2.9	3.2	3.2	3.3	3.2	3.1	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.1	2.9	2.8	2.8	2.8
Median Value	2.8	2.8	2.7	2.8	2.8	2.8	3.2	3.2	3.3	3.2	3.1	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.1	2.9	2.8	2.7	2.8
Count	25	26	26	23	26	26	27	27	27	28	28	29	30	29	30	29	30	27	28	28	25	27	23	27

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

K 9

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	A	2.5^{A}	2.5^{A}	2.3^{A}	2.6^{A}	1.7	3.7^{A}	4.8^{A}	4.1^{A}	4.8^{A}	A	8.3^{A}	3.8	4.1	4.8^{A}	4.0	4.0^{A}	2.2	2.1	2.3^{A}	A	A	4.1^{A}	A
2	4.6^{A}	2.0^{A}	3.2^{A}	1.8	1.1	1.9	2.6	2.6	4.0^{A}	5.9^{A}	3.7	5.6^{A}	5.7^{A}	4.1	4.1	4.4	3.3	2.4	4.4^{A}	4.0	A	4.0	2.7^{A}	2.6^{A}
3	2.0^{A}	1.9	2.1^{A}	A	A	1.3	2.6	3.8^{A}	5.2^{A}	4.5^{A}	4.9	5.6	4.9	4.5	6.1	4.0	3.3	3.4	4.4^{A}	6.3^{A}	5.6^{A}	3.4^{A}	2.7^{A}	3.4^{A}
4	2.5^{A}	2.0^{A}	A	A	A	6.0^{A}	2.5$^{A}_{F}$	3.5^{A}	5.1^{A}	4.6^{A}	4.2	4.5^{A}	4.2	4.0	4.0	4.3^{A}	3.4	4.4^{A}	4.2^{A}	2.1A	[2.8]^{C}	3.6^{A}	1.3	1.3
5	1.1	1.2	E	E	1.1	1.1	1.8	2.7	3.2	3.6	3.7	4.0	4.1	4.0	4.8^{A}	4.1A	3.7	2.5	A	A	1.8	1.3	3.3^{A}	2.7^{A}
6	2.8^{A}	2.8^{A}	1.1	E	1.3	1.7	2.4	2.8	3.6	2.8	3.8	4.1	4.1	4.0	3.6	3.5	3.5	3.5	1.8	2.5^{A}	1.8	1.3	2.5^{A}	1.4
7	1.4	A	A	1.4	E	1.3	2.0	2.9	3.4	3.8	4.0	4.0	4.0	3.8	3.8	3.6	3.6	2.7	2.2	3.9^{A}	3.3^{A}	3.2^{A}	A	3.6^{A}
8	3.1^{A}	2.1^{A}	1.2	1.4	1.2	1.5	2.0	N	3.8	4.2	5.2	4.6^{A}	4.4	7.2^{A}	4.6^{A}	3.7	4.0^{A}	3.5A	3.8^{A}	3.6^{A}	2.7^{A}	1.8	1.6	2.0^{A}
9	4.2^{A}	3.6^{A}	4.0^{A}	C	C	1.6	3.5A	2.9	A	3.8	4.4	4.8^{A}	4.0	6.2	5.6^{A}	3.5	3.5^{A}	4.2A	4.2^{A}	2.7^{A}	2.0^{A}	4.3^{A}	2.0^{A}	1.6
10	1.2	E	1.1	1.1	1.5	1.8	2.0	5.4^{A}	5.7^{A}	6.1A	4.0	4.0	4.1	4.1	4.0	3.9	3.0	A	2.2	A	2.0	1.3	1.6	2.0^{A}
11	1.2	1.1	1.2	E	C	E	2.0	2.9	3.4	4.8^{A}	5.8	(4.4)^{B}	4.1	4.3	5.4	3.4	4.0	2.5	1.6	1.7	2.0$^{A}_{F}$	1.2	1.5	A
12	A	1.8	2.7^{A}	1.7	1.7	1.2	2.0	2.6	3.4	3.3	3.8	4.0	4.1	4.1	3.8	3.6	3.3	2.4	1.7	3.7^{A}	3.1^{A}	2.8^{A}	2.2^{A}	1.6
13	1.1	1.2	1.2	2.2^{A}	1.9	1.8	2.0	3.1	3.4	4.3^{A}	4.0	4.9^{A}	4.0	4.5^{A}	5.3^{A}	3.8	4.8^{A}	4.6^{A}	7.0^{A}	A	2.2^{A}	4.3^{A}	M	1.8
14	1.2	A	2.0^{A}	2.2^{A}	1.3	A	2.2	3.8	4.0^{A}	5.2^{A}	4.5^{A}	4.0	5.0	A	6.1A	3.7	3.7	6.8^{A}	5.5^{A}	5.0A	2.9^{A}	2.6^{A}	2.4^{A}	2.0^{A}
15	1.6	2.0^{A}	1.6	E	1.2	1.2	2.1	3.6^{A}	4.6^{A}	3.5	3.4	3.4	[3.6]^{C}	3.8	3.6	3.3	3.2	2.6	2.3	4.7^{A}	4.9$^{A}_{F}$	1.9	1.3	2.5^{A}
16	1.3	2.9^{A}	1.7	1.5^{F}	E	1.3	2.0	3.7	4.2^{A}	4.0	4.4	4.3	4.0	3.6	4.1	3.5	3.3	3.3	C	A	A	2.0^{A}	2.0^{A}	1.1
17	1.1	1.1	1.2	1.7	2.5^{A}	2.4^{A}	3.2^{A}	2.6	3.3	3.6	3.6	3.7	3.6	3.7	3.5	3.6	3.4	3.6A	5.0^{A}	A	1.3	2.2^{A}	2.1	1.6
18	2.1	1.1	E	E	E	E	2.4	4.0^{A}	3.6	3.4	3.7	4.0	3.8	3.6	3.5	3.2	N	2.4	1.6	1.5	1.2	1.2	1.2	E
19	E	E	E	E	E	E	2.0	2.6	3.4	3.7	3.6	4.0	4.0	3.8	3.6	3.4	2.8	2.4	2.0	1.4	1.3	1.5	1.2	1.3
20	1.1	E	E	1.2	E	1.2	1.9	2.6	3.5	3.5	4.1	4.0	4.1	4.2	4.0	3.7	3.0	2.2	1.5	1.5	1.2^{A}	1.6	1.7	1.7
21	1.5	1.6	2.7^{A}	2.0^{A}	1.8	1.2	2.0	2.5	3.2	3.5	4.1A	4.1	4.0	4.0	3.6	3.5	3.2	2.7	A	3.4^{A}	1.2	1.3	1.2	1.2
22	1.2	1.2	E	E	1.6	E	2.0	2.6	4.0^{A}	6.2	4.2	3.8	4.3	3.5	3.5	4.1	2.8	2.0	1.3	2.0^{A}	2.0^{A}	3.4^{A}	A	A
23	C	C	A	2.0^{A}	1.9	E	2.0	3.3	A	4.4	4.1	4.2	5.0	4.1	4.3	4.8	3.1	A	4.8^{A}	4.8	1.5	2.0^{A}	1.9	1.8
24	2.0^{A}	E	E	1.1	E	1.3	2.3	2.8	4.0^{A}	3.5	3.6	4.0	3.7	3.8	3.4	3.3	2.9	2.0	2.6^{A}	1.1	A	2.0^{A}	2.5^{A}	1.5
25	C	C	C	C	C	C	C	C	C	C	4.6	4.8^{A}	5.6^{A}	4.2	4.0	3.6	4.0	3.1	1.9	1.2	1.2	1.2	1.2	1.1
26	1.1	1.1	1.4	C	C	C	C	C	C	C	C	C	3.3	4.1	4.1	3.9	4.0	2.9	2.0	2.0^{A}	1.3	1.3	1.2	1.2
27	1.3	E	E	E	E	E	1.9	2.6	3.6	4.2	4.1	4.1	4.0	4.0	3.8	3.3	3.2	2.4	2.0	1.6	1.6	1.2	1.2	1.6
28	1.1	1.3	1.1	1.2	1.4	E	2.2	2.5	3.2	3.6	3.6	4.0	3.8	3.9	4.0	3.5	3.2	2.0	1.4	1.4	1.4	1.5	1.5	1.5
29	1.6	1.1	A	4.4^{A}	3.5^{A}	3.0^{A}	2.7	4.1A	4.2^{A}	3.5	3.5	4.0	4.0	3.6	4.1	3.5	4.5	2.1	2.2	5.0^{A}	4.4^{A}	3.6^{A}	4.0	2.6^{A}
30	2.2^{A}	1.8	1.6	1.3	1.3	1.3	2.1	2.6	3.2	4.1	3.6	3.7	3.7	4.6 A	3.8	3.4	2.6	2.2	1.9	2.1A	3.3^{A}	3.9^{A}	2.2^{A}	1.8
31																								
Mean Value	1.8	1.8	1.9	1.8	1.7	1.8	2.3	3.2	3.9	4.2	4.1	4.4	4.2	4.2	4.2	3.7	3.5	3.0	2.9	2.9	2.3	2.3	2.0	1.8
Median Value	1.4	1.2	1.2	1.3	1.3	1.3	2.1	2.9	3.6	3.9	4.0	4.0	4.0	4.0	4.0	3.6	3.3	2.6	2.2	2.3	2.0	2.6	1.9	1.6
Count	26	26	25	25	24	27	28	27	26	28	28	29	30	29	30	30	29	28	27	25	26	29	27	27

fminF

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

K 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Kokubunji Tokyo

Lat. 35° 42.4' N
Long. 139° 29.3' E

Sep. 1951

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	1.9	1.7	1.8	1.7	1.7	1.9	2.0	2.0	2.1	2.1	2.0	1.9	2.0	2.0	2.0	1.3	1.2	1.1	1.1	1.5	1.2	1.2	1.2
2	1.2	1.1	E	E	E	E	1.3	1.2	1.5	1.9	1.9	2.0	2.1	2.0	1.9	1.9	2.0	1.6	1.2	E	1.1	1.3	1.2	1.3
3	E	1.4	E	E	E	1.1	1.2	1.3	2.0	1.9	1.9	2.1	B	B	2.5	2.1	1.9	1.6	1.5	1.9	1.9	1.9	1.9	1.9
4	1.9	1.3	1.3	1.3	1.2	1.2	1.3	1.5	1.4	1.9	2.1	2.0	2.0	2.1	2.3	1.9	1.4	1.7	1.6	1.4	1.8	1.6	1.2	2.0
5	2.1	4.6	1.1[F]	1.1	1.5	1.7	1.1	1.9	1.5	1.8	2.1	2.0	2.1	2.3	2.1	1.4	1.6	1.2	1.2	1.1	1.1	1.2	1.1	1.1
6	1.1	1.1	E	E	E	E	1.2	1.2	1.5	1.8	1.8	2.0	1.9	1.9	2.0	2.0	1.5	1.2	1.1	1.2	E	1.2	1.2	1.2
7	E	E	E	E	E	1.3	1.3	1.4	1.6	1.8	2.0	2.1	2.2	2.1	2.1	2.0	1.4	1.4	1.2	1.2	1.2	1.2	1.6	1.3
8	1.1	E	E	E	1.2	1.3	1.5	1.6	1.3	1.6	2.0	1.8	1.8	2.0	1.6	1.4	1.4	1.4	1.2	1.8	1.4	1.2	1.3	1.2
9	1.2	1.1	1.1	1.1	C	1.1	1.1	1.1	E	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.1
10	1.1	E	E	2.0[F]	1.1	E	1.2	1.8	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.7	1.6	1.4	1.3	1.3	2.0	1.3	1.3	1.2
11	1.2	E	E	E	C	E	1.2	1.2	1.3	1.6	2.0	2.1	2.0	2.0	1.9	1.8	1.3	1.3	1.2	1.1	1.3	1.6	1.3	1.3
12	1.3	1.3	1.3	E	E	1.2	1.2	1.4	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.3	1.2	1.2	1.3	1.4	1.2	1.2	1.2	1.2
13	1.6	1.2	1.2[F]	1.2	1.2	1.3	1.2[F]	1.2	1.2	1.2	1.4	2.0	2.0	2.0	1.9	1.6	1.2	1.2	1.2	1.2	1.2	1.2	[1.2][M]	1.3
14	1.1	E	E	E	E	E	1.2	1.2	1.2	1.3	1.6	1.8	1.8	1.9	1.9	1.4	1.4	1.3	1.2	1.3	1.1	1.2	1.2	1.6
15	1.1	1.1	1.1	E	E	1.2	1.2	1.2	1.2	1.4	1.8	2.0	[2.0][C]	2.0	1.9	1.8	1.8	1.4	1.2	1.2	1.2	1.2	1.8	1.3
16	1.3	E	E	E	E	E	1.2	1.5	1.5	2.0	2.0	2.0	1.9	2.0	1.9	1.9	1.9	2.2	[1.6][C]	1.1	1.1	1.1	1.1	1.1
17	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.4	2.0	2.1	[2.2][B]	2.2	2.1	2.1	2.1	2.4	2.0	1.2	1.2	1.3	1.2	1.1	1.3	1.3
18	2.1	1.2	E	E	E	E	1.1	1.3	1.4	1.4	1.4	1.6	2.1	2.0	1.8	1.6	1.3	1.2	1.2	1.2	E	E	E	E
19	E	E	E	E	1.4	E	1.2	1.2	1.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.8	2.0	1.8	1.3	1.2	1.6	E	1.3
20	1.1	1.3	E	1.5	E	E	1.2	1.5	1.4	1.5	1.8	1.9	1.9	1.9	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.7	1.7	1.7
21	1.4	1.6	1.6	1.7	1.6	1.2	1.2	1.5	1.4	1.6	1.6	2.0	2.0	1.9	1.9	1.9	1.4	1.3	1.3	1.2	E	1.3	E	E
22	1.4	1.4	E	E	E	E	1.2	1.2	1.2	1.6	1.6	2.0	2.0	1.9	2.0	1.6	1.6	1.3	E	1.7	E	1.2	2.0	1.6
23	C	C	1.3	E	E	E	1.2	1.2	1.2	1.4	2.2	2.0	3.9	2.3	2.0	1.8	1.5	1.4	1.3	1.5	2.0	1.3	1.3	1.4
24	1.2	E	E	E	E	1.5	1.3	1.3	1.3	1.6	1.6	1.6	1.4	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1[F]	1.1	1.1	1.1
25	C	C	C	C	C	C	C	C	C	C	2.5	2.2	2.0	2.4	2.0	2.0	1.3	1.3	1.2	1.2	1.2	1.2	1.8	1.9
26	E	1.3	1.2	C	C	C	C	C	C	C	C	C	1.8	1.6	1.3	1.3	1.2	1.2	1.3	1.2	E	E	1.3	E
27	E	E	E	E	E	E	1.2	1.2	1.2	1.7	2.0	2.1	2.0	2.0	2.0	1.9	2.0	1.3	1.3	1.3	1.2	1.2	E	E
28	1.4	1.1	1.1	E	E	E	1.2	1.7	1.9	1.6	1.6	1.4	1.6	1.5	1.4	1.2	1.3	1.3	1.4	2.0	1.7	1.6	1.5	1.6
29	1.2	1.3	E	E	E	E	1.2	1.7	1.7	1.4	1.5	1.4	1.4	1.2	1.4	1.4	1.4	1.6	1.2	1.2	1.2	1.4	1.3	1.2
30	1.2	E	E	E	E	E	1.3	1.3	1.4	1.8	1.9	2.0	1.9	1.9	2.0	1.6	1.5	1.4	1.3	1.3	1.4	1.4	1.2	1.5
31																								
Mean Value	1.4	1.5	1.3	1.4	1.3	1.3	1.2	1.4	1.5	1.7	1.9	1.9	2.0	1.9	1.9	1.7	1.5	1.4	1.3	1.3	1.3	1.3	1.4	1.4
Median Value	1.2	1.1	E	E	E	E	1.2	1.3	1.4	1.6	1.9	2.0	2.0	2.0	1.9	1.8	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.3
Count	28	28	29	28	26	28	28	28	28	28	29	29	29	29	30	30	30	30	30	30	30	30	30	30

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

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | ypF2 | 135° E Mean Time | **Kokubunji Tokyo** | Lat. 35° 42.4' N | Long. 139° 29.3' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	(90)^{P}	80	S	90	70^{P}	T	T	T	100	A	A	60	90	100	70	50^{P}	(50)^{P}	(80)^{P}	60^{P}	100^{F}	A	FS	A
2	(80)^{JF}	(70)^{PF}	(70)^{PF}	(100)^{PF}	(90)^{JF}	(90)^{PF}	50	80	60	90	70	(70)^{P}	80^{P}	110	80	80	90	100	(60)^{P}	60^{P}	110	BF	(90)^{P}	(100)^{A}
3	120	100	110^{F}	90	60^{F}	100^{F}	80	40	60	(90)^{J}	90	(80)^{J}	60	110	110	130	70^{P}	80	(80)^{PS}	B	B	110	90	(80)^{PE}
4	BF	BF	A	A	A	A	100	110	50	90	90	130	60	60	50	80	70^{P}	[80]^{S}	(80)^{PS}	80^{PS}	[70]^{C}	60^{S}	80^{S}	70
5	70	90	120	90	80	80	80	80	(80)^{J}	60	90	110	110	(80)^{J}	120	70	90	60	60	100	80	100	BS	80
6	130	80	80	100	110	70^{H}	80	60	110	170	100	100	80	70	100	50^{S}	100	80	80	(150)^{PS}	80	90	80	100
7	80	90	50	60^{B}	60	110	80	40	90	60	70	60	80	70	50	90	70	70	(60)^{PS}	(90)^{P}	70	(80)^{PF}	S	(90)^{P}
8	100^{F}	100	80	100	70	130	100	70	(60)^{J}	(60)^{P}	50^{F}	60	(110)^{P}	70	100^{P}	90	100	30	BS	80	80	80	(110)^{PS}	90
9	70	90	60	C	C	70^{VH}	90	110^{F}	50^{H}	(120)^{P}	40^{P}	30	80	40	(80)^{P}	80	90	(60)^{A}	(90)^{J}	70	80	90	80	100
10	100	80	90	80	60	110	120	100^{V}	60	(70)^{J}	70^{P}	90^{P}	(90)^{P}	80	(90)^{J}	110	80	100	60	80^{P}	(70)^{J}	70^{P}	100	70^{H}
11	90	60^{P}	60	70	[80]^{C}	(100)^{P}	70	90	50	160	60	80	50	100	80	60	90	90	70	70	130	(80)^{PS}	120	A
12	A	110	90	100	70	80	50	70^{K}	50^{K}	150^{K}	G^{K}	80^{VK}	G^{K}	G^{K}	60	80	60	60	70	90^{P}	B	50	70^{B}	100
13	130	70	70	70	110	100	100	60	150	60	40	100	40	90	70	70	90	60	(60)^{J}	70	190	A	M	50
14	120	110	100^{P}	70	90	A	60	60	80	80	100	90	110	A	(80)^{JF}	110	70	60	90	80	(50)^{A}	(40)^{S}	70	90
15	90	70	90	70	80	110	90	70	(60)^{P}	70	130^{H}	(90)^{JP}	[80]^{C}	80	60^{P}	(60)^{J}	90	70	(60)^{PS}	90^{F}	70^{F}	(110)^{JF}	BF	(90)^{PF}
16	100^{F}	100^{F}	120	140	130	140	110	130	50	80	40	(60)^{J}	100	(80)^{J}	60	90	50	C	C	BS	A	60	80	80
17	(110)^{KP}	120^{K}	100^{K}	130^{K}	80^{K}	100^{K}	70^{K}	60^{K}	120^{K}	100^{K}	(70)^{P}	50	50	50	60	50	100	50	(70)^{P}	90	(80)^{PH}	100	80	90
18	60	B	(90)^{J}	S	120^{S}	90^{P}	110	90	70	110	70	70	70	60	100	90	90	80	90	70	90	80^{S}	90	80
19	70	80	100	80	120	100	110	60^{P}	80	60	(60)^{J}	110	70	60	110	60	100	70^{PS}	100	80	140	70	120	90
20	90	130	80	110	(140)^{J}	150	110	50	80	50	(40)^{J}	60	(90)^{P}	100	(100)^{P}	(70)^{P}	(60)^{J}	130	60	140	120	60^{S}	80	60
21	140	120	110	(100)^{J}	70	90	80	120	50	110^{P}	100	70^{P}	80	70	(80)^{P}	80	100	60	110	140	90^{PS}	120	(80)^{P}	80
22	80	70	110	90	70	70	90	90	90	(50)^{J}	(100)^{J}	(40)^{J}	(30)^{J}	(90)^{P}	60	40	90	80	90^{B}	60	80	110	C	A
23	C	C	B	A	100	120	60	(90)^{P}	50	70	60	80	50^{P}	70	90	70	70^{H}	A	70	70	(100)^{J}	90	80	(80)^{PS}
24	80^{F}	80	90^{F}	130^{F}	140^{F}	90	180	110	70	80	90	60	90	60	50	70	80	70	70	90	A	40	100	90
25	C	C	C	C	C	C	C	C	C	C	70	50	80	70	50	80	(60)^{PB}	90	70	80^{S}	70	120	50	90
26	110	120	C	C	C	C	C	C	C	C	C	C	G^{K}	G^{K}	G^{K}	G^{K}	90^{K}	90^{K}	80^{PK}	80	90	(60)^{P}	B	(70)^{P}
27	70	110	80	100	100	100^{F}	60	90	80	70	60	90	80	80	60	B	50	90	60	90^{H}	S	(60)^{PS}	100	110
28	60	130	90	110	100^{H}	120	60	70	(70)^{P}	80	60	(60)^{J}	(70)^{P}	70	70	90	(70)^{PB}	(60)^{PB}	80	90	100	(100)^{PS}	(80)^{PS}	50
29	80	110	120	110	80	50	100	90	60	80	80	50	70	70	70	80	70	90	(80)^{JP}	50^{P}	60	90	100	70^{S}
30	70	(80)^{J}	70	60	70	70	60	40	100	90	60	70	(70)^{J}	(80)^{J}	100	90	70^{P}	B	60	90	150	A	80	80
31																								
Mean Value	90	90	90	90	90	100	90	80	70	90	80	70	80	80	80	80	80	70	70	90	90	80	90	80
Median Value	90	90	90	100	80	100	80	80	70	80	70	70	80	70	80	80	80	70	70	80	80	80	80	80
Count	25	26	26	23	26	26	27	27	27	28	27	28	28	27	29	28	30	27	28	28	25	26	23	27

ypF2

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

K 12

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The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Sep. 1951 | 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	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	C	C	SH	S
3	(5.3)P	5.3	5.4Z	4.4	4.8	4.5	5.2	C	C	C	C	C	C	C	C	C	C	C	C	(5.7)P	(5.3)C	4.9J	4.8JH	5.0P
4	C	C	4.9H	4.7	4.2	3.8	4.4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	4.6	C	C
5	C	5.7	(5.5)JP	(5.1)C	4.8	4.6	5.2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5.3P
6	5.9P	5.2	(5.3)C	5.4JP	4.8	4.7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	5.3J
7	(4.4)JP	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	(5.4)P	(5.2)C	5.1PS
8	5.1	4.5	[4.6]M	4.7	4.7	4.1	5.0J	C	C	C	C	C	C	C	C	C	C	C	C	C	C	4.8	(4.6)C	(4.4)JS
9	C	C	(4.2)JPS	4.0JS	4.1JPH	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	C	C	C	C	C	C	C	C	11.4	11.1	10.6P	S	S	8.4JS	5.7	4.7	4.5
11	4.6	4.8	4.3	4.2	4.2	3.9	5.1	7.7	7.3	7.2	8.2J	8.6	8.2	8.4J	8.6	7.2	7.5	(8.1)S	(8.8)J	S	S	5.4	5.8	4.6
12	3.7	3.5F	3.9	3.9	A	2.1	3.8	5.5	6.6	5.8	7.5	C	C	C	7.7	(8.2)P	7.7	S	S	7.8	5.8	5.2	5.0	5.3
13	5.1	4.9	4.7	4.7	4.6	4.2	3.5	6.0	T	T	T	T	T	T	T	T	T	T	T	T	T	4.2	4.2	4.3
14	4.4	4.2	4.0	4.3	3.8J	3.4	4.4	B	C	C	C	C	C	C	C	C	C	C	C	C	A	A	T	T
15	T	T	5.2	T	4.5	4.1	T	T	7.1	B	B	B	B	B	B	B	B	9.3	S	S	6.8J	4.3	S	A
16	5.0	5.4	5.2	4.4	4.4	2.6	4.2	B	B	8.3	9.2P	(10.5)JP	10.4	B	B	9.3	9.7J	(10.5)P	(7.8)P	B	A	C	C	C
17	6.0	5.4	4.1	4.4	3.7F	4.3	A	B	7.3	B	11.2P	9.1	8.0	(10.7)JB	10.4J	(8.2)P	7.4	7.7PS	S	S	6.5	6.7	5.8	4.8S
18	4.6V	4.4	4.3	4.1	4.4	3.0	4.1	7.2	(9.4)P	(7.9)P	7.9P	(9.6)P	8.5J	8.8	[9.0]B	9.3	9.1	8.7J	[8.0]S	7.3	7.3	5.5	(5.4)JP	(6.0)PS
19	5.7J	5.2	4.7	4.7	3.1	3.3	3.6	7.3	9.3	[8.6]S	7.9P	9.8	11.3	[11.2]T	11.2P	(9.7)P	(8.2)PS	8.4JS	8.0JS	7.7	7.3P	5.2	5.0	5.0
20	5.0	4.8	4.4	4.0	3.6	3.8	3.9	6.1	8.1	10.0	[10.8]M	(11.7)P	[12.5]B	13.3P	12.9	12.3P	B	S	(7.5)P	T	S	S	5.6P	M
21	C	5.1	4.8	4.6	4.1	3.9	C	C	C	C	8.0P	C	C	13.1	12.9	C	C	11.0	S	5.0	A	A	5.9	5.5
22	5.3	5.7P	4.8	4.5	4.6	4.3	4.7	B	C	7.6	7.7P	10.1	(10.9)P	C	C	11.8	B	S	(8.2)PS	S	A	(5.4)PS	S	5.1
23	5.4	C	C	C	C	C	C	(7.2)PS	9.0	C	M	M	M	S	S	S	S	C	S	C	S	6.2	6.2	(6.2)S
24	6.2	5.9	4.6	C	C	C	4.0	C	S	S	9.6	S	S	S	S	S	(9.9)PS	10.6	S	S	6.0	4.5	5.0	(4.8)S
25	4.5	4.8	4.7	4.1	2.9	2.9	2.9	C	9.0J	9.3	C	C	C	C	11.1	10.4	S	S	S	B	5.6J	5.2	5.6	C
26	C	5.8	4.9	3.0J	2.5	2.5	3.0	(6.6)J	7.4	6.0K	BK	(11.1)PK	(9.4)CK	7.7K	9.7JK	10.0K	8.6JK	8K	7.4K	5.8K	6.0P	6.0P	S	S
27	(5.7)JP	6.0	5.4P	4.6	4.5	4.4	5.0	B	B	7.9	9.7	12.7	12.1	[12.0]S	12.0J	12.2	[12.0]B	11.8	9.5PZ	7.0S	A	S	S	S
28	S	S	5.7	5.2	4.5	4.7	4.5	7.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	10.2J	9.7	9.9	11.0	11.9	[11.8]S	11.7	12.2	11.7P	12.1	11.9	10.4P	6.5P	(4.9)PS	5.7	5.3
30	5.0	4.9	4.2	4.2	4.3	5.7	3.3	B	B	B	B	12.3	[12.3]S	12.3	12.9	12.8	[12.8]B	12.9J	11.0	7.7	4.7	4.4H	4.4H	5.0
31																								
Mean Value	5.1	5.1	4.7	4.4	4.1	3.9	4.2	6.7	8.2	8.0	9.0	10.6	10.5	11.0	11.0	10.4	9.6	10.1	8.8	7.2	6.4	5.2	5.2	5.1
Median Value	5.1	5.2	4.7	4.4	4.4	4.0	4.2	7.0	8.1	7.9	8.7	10.5	10.9	11.5	11.2	10.2	9.4	10.6	8.1	7.3	6.2	5.2	5.2	5.0
Count	19	20	24	22	22	22	19	9	11	11	12	11	11	10	12	14	12	12	10	9	12	19	17	18

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

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...ne Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | foF2 | 135° E Mean Time | Yamagawa | Lat. 31° 12.5' N | Long. 130° 37.7' E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	C	C	SH	S
3	(330)P	360	340Z	320	330	(320)F	290	C	C	C	C	C	C	C	C	C	C	C	C	(260)P	C	(270)J	(370)JH	360P
4	C	C	330H	300	330	330	300	C	C	C	C	C	C	C	C	C	C	C	C	C	C	280	C	C
5	C	380	(350)JP	(320)C	300	350	310	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	330P
6	350P	300	[290]C	(280)JP	370	360	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(350)J
7	(320)JP	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	310P	[280]C	(260)JS
8	320	350	[350]M	350	350	320	(330)J	C	C	C	C	C	C	C	C	C	C	C	C	C	C	300	[300]C	(300)JS
9	C	C	C	(300)JS	310	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	C	C	C	C	C	C	C	C	340	320	300P	S	S	(270)JS	270	350	380
11	430	390	380	400	350	320	300	260	250	(310)B	(310)J	310	350	(300)J	300	310	330	(300)S	(290)J	S	S	260	300	410
12	450	430F	490	A	A	420	350	310	320	310	370	C	C	C	300	(320)P	300	S	S	280	320	390	400	390
13	370	420	390	370	340	370	300	280	T	T	T	T	T	T	T	T	T	T	T	T	T	420	400	450
14	470	400	470	460	(320)J	310	330	B	C	C	C	C	C	C	C	C	C	C	C	C	A	A	T	T
15	T	T	330	T	320	350	T	T	250	B	B	B	B	B	B	B	B	390	S	S	(300)J	A	S	A
16	400	380	330	350	350	400	350	B	B	300	330P	(350)JP	350	B	B	310	(330)J	(330)P	(250)P	B	A	C	C	C
17	360	400	500	400	460F	380	A	B	(320)B	B	320P	(300)B	(350)B	(300)JB	(300)J	(300)P	300	300PS	S	S	300	310	330	330S
18	380V	400	440	420	350	300	350	290	(260)P	(280)P	320P	(300)BP	(290)J	340	[330]B	(320)B	(310)B	(290)J	[300]S	310	250	380	(340)JP	(380)PS
19	(300)J	340	310	270	350	430	350	250	260	[280]S	300P	300	310	[300]T	300P	(300)P	(300)PS	(290)JE	(280)JE	310	250P	350	360	400
20	360	360	350	460	410	430	420	310	270	300	[300]M	(300)B	B	B	B	320P	B	S	B	T	S	S	350P	M
21	C	330	400	370	400	440	C	C	C	C	300P	C	C	350	300	C	C	300	S	270	A	A	370	400
22	420	350P	370	410	400	400	300	B	C	270	330P	320	(310)P	C	C	340	B	S	(250)S	S	A	(390)PS	[400]S	400
23	360	C	C	C	C	C	C	(280)PS	260	C	M	M	M	S	S	S	S	C	S	C	S	400	400	[360]S
24	330	330	350	C	C	C	330	C	S	S	320	S	S	S	S	S	(320)PS	(310)S	S	S	280	410	400	[390]S
25	380	310	300	250	400	360	370	C	(290)J	300	C	C	C	C	320	330	S	S	S	B	(260)J	390	440	C
26	C	350	310	(240)J	350	450	500	(370)J	270	270K	BK	(370)PK	CK	BK	(400)JK	340K	(310)JK	SK	250K	410K	400P	400P	S	S
27	(280)JP	290	300P	360	350	320	250	B	B	270	320	300	300	[310]S	(320)J	310	[300]B	280	270PZ	340S	A	S	S	S
28	S	S	300	270	320	290	270	240	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	(270)J	270	300	320	300	[320]S	340	320	300P	280	280	270P	300P	(300)PS	340	350
30	350	360	420	400	380	250	300	B	B	B	B	310	[320]S	320	310	300	[300]B	(300)J	270	250	300	420H	410H	370
31																								
Mean Value	370	360	370	350	360	360	330	290	270	290	320	320	320	320	320	320	310	310	270	300	290	350	360	370
Median Value	360	360	350	350	350	360	330	280	270	280	320	310	310	320	310	320	300	300	270	280	300	360	360	380
Count	19	20	23	21	22	22	19	9	11	11	12	11	9	8	11	14	12	12	9	9	11	18	18	18

foF2

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

Y 2

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Sep. 1951

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	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	A	C	A	A	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A	280[H]	350
3	320	300[A]	300[A]	300[A]	280	280	260	C	C	250	A	A	C	C	C	C	C	270	270	250	230	200	270[H]	320[A]
4	300	240	250[H]	250	260	270[A]	250	A	A	260	C	C	C	C	C	C	C	250	250	230	220	250	310[A]	300
5	300[A]	300	300	250	240	290	300	250	230	250	C	C	C	C	C	C	C	290	A	A	220[A]	260	300[A]	300
6	300[A]	260	260	250	260	290	280	240	220	C	C	C	C	C	C	C	C	290	270	A	240	250	280	320
7	260	300	300	M	M	M	M	M	M	C	C	C	C	C	C	C	C	(260)[S]	A	A	280[A]	290	290	250
8	290[A]	350[A]	310[A]	340[A]	300	300	300	250	C	C	C	C	C	C	C	C	C	C	250	250	AF	300[A]	340[A]	300
9	260[H]	250	300	270	300	270[H]	290	250	C	C	C	C	C	C	C	C	C	C	280	A	220[A]	(240)[C]	260	C
10	C	C	C	C	C	C	C	C	C	A	A	C	C	C	C	300	300	270	250	220	230	220[A]	320[A]	350
11	350	300	310	300	290	250	300	240	250	300	300	(300)[B]	330	(310)[B]	300	300	320	270	250	300	270	220[A]	260	400[A]
12	450[A]	390	450[A]	550[A]	A	400[A]	300	250	320	210	350	C	C	C	290	300	280	280	250	240	250	250	320	290
13	300	340	310	300	250	200	250	240	270	260	T	T	310	[300][T]	300	300	350	260[A]	250[A]	250	250	250	320	350
14	350	310	350	410[A]	220[A]	260	300	260	C	C	C	C	C	C	C	C	C	C	C	C	A	A	200[A]	310[A]
15	300	250	210	270	260	310	260	260	230	250	250	320	300	300	300	300	300	250	240	230	250	300[A]	270	A
16	400[A]	320	300	250	230	350	300	250	240	300	300	310	300	310	[300][B]	300	300	270	250	A	A	C	C	C
17	250	340	380	300	380	300	A	A	290	280	260	290	320	300	280	270	270	250	250	240	240	260	250	260
18	270	310	320	300	280	250	270	260	250	230	300	280	280	300	310	290	280	240	250	250	210	250	290	280
19	250	240	230	250	210	350	290	230	230	250	290	290	290	280	280	270	270	240	250	250	220	240	290	300
20	280	290	260	370	320	350	310	240	240	270	[280][M]	280	300	300	300	280	270	250	250	290	300	310	300	280
21	240	250	300	270	320	350	C	C	C	C	290	C	C	300	260	C	C	260	240	230[A]	A	A	300	300
22	310	270	270	300	310	270	270	250	(260)[C]	260	330	300	270	300	320	300	270	250	250	250	A	350[A]	A	350
23	290	C	C	C	C	C	C	250	240	C	M	M	M	270	S	S	260	C	A	C	A	310[A]	310	290
24	260	250	270[A]	C	C	C	270	[260][C]	250	270	270	270	300	260	290	280	300	S	220[A]	220	210[A]	340	310[A]	330
25	330[A]	280	260	200[A]	350[A]	300	300	C	250	250	270	280	280	290	290	300[A]	270	250	240	240	230	250	330	C
26	C	280	250	220	220	400	360	330	250	230[K]	B[K]	340[K]	C[K]	B[K]	350[K]	290[K]	290[K]	250[F][K]	220[A][K]	300[K]	300	300	280	280
27	250	250	230	270	260	250	220	220	230	230	300	280	270	280	300	270	250	250	230	290[A]	A	330[A]	290	330[A]
28	300	230	240	230	250	250	240	220	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	240	250	280	300	270	270	280	270	270	250	240	220[A]	210	250	250	280
30	300	300	330	320	300	230	230	220	220[A]	240	250	280	[270][S]	260	300	280	260	250	240[A]	220	210[A]	300[H]	350[H]	300
31																								
Mean Value	300	290	290	290	280	290	280	250	250	250	290	290	290	290	300	290	280	260	250	250	240	270	290	310
Median Value	300	290	300	270	270	290	280	250	240	250	280	290	300	300	300	290	280	250	250	240	230	260	290	300
Count	25	25	25	23	22	23	22	20	19	19	15	14	14	16	17	17	18	22	23	20	20	24	26	24

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

Y 3

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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							M	M	M	C	C	C	C	C	C	C	A	A	C					
2							C	C	C	C	C	C	C	C	C	C	4.7	4.5	A					
3							Q	C	C	L	A	A	L	C	C	L	C	3.5	L					
4							Q	A	A	L	C	C	C	C	C	4.5	4.5	L	L					
5							L	Q	L	B	C	C	C	C	C	C	C	4.3	A					
6							Q	B	Q	C	C	C	4.8	C	C	4.2	4.4	L	Q					
7							M	M	M	C	C	C	C	C	C	C	C	L	C					
8							Q	B	C	C	C	C	C	C	C	C	4.4	C	Q					
9							Q	Q	C	4.4	C	C	C	C	C	C	C	C	C					
10							C	C	C	A	A	C	C	C	C	L	L	L	Q					
11							L	Q	Q	L	L	L	L	4.9	5.1	L	4.9	L	A					
12							A	Q	4.5	Q	L	C	C	C	L	L	4.5	L	Q					
13							Q	Q	T	T	T	T	L	L	L	L	L	A	Q					
14							Q	Q	C	C	C	C	C	C	C	C	C	C	C					
15							Q	Q	Q	L	L	L	L	L	L	L	L	Q	A					
16							Q	Q	Q	L	L	5.1	L	L	L	L	L	L	Q					
17							A	A	L	L	4.8	L	L	L	L	L	L	Q	Q					
18							Q	L	L	4.7	L	5.0	L	L	L	L	L	Q	Q					
19							Q	Q	Q	T	L	5.0	L	L	L	L	L	Q	Q					
20							Q	Q	L	L	L	L	L	L	L	L	L	Q	Q					
21							C	C	C	C	4.7	C	C	L	5.0	5.0	C	L	Q					
22							Q	Q	C	L	L	5.2	5.0	5.2	L	L	L	L	A					
23							C	Q	Q	C	M	M	M	4.9	S	S	L	C	A					
24							Q	C	Q	L	L	4.9	L	5.0	L	4.7	L	S	A					
25							Q	C	Q	L	5.1	4.9	L	L	A	A	A	Q	Q					
26							Q	L	Q	Q	5.0	5.2	[5.4]^{c}	5.6	L	L	L	Q	Q					
27							Q	Q	A	Q	L	5.0	L	A	L	L	L	Q	Q					
28							Q	Q	C	C	C	C	C	C	C	C	C	C	C					
29							C	C	Q	L	5.0	L	L	L	4.6	L	L	Q	Q					
30							Q	Q	Q	L	L	L	L	4.8	4.9	L	Q	Q	Q					
31																								
Mean Value									4.5	4.5	4.9	5.0	5.1	5.1	4.9	4.6	4.6	4.1						
Median Value									4.5	4.6	5.0	5.0	5.0	5.0	5.0	4.6	4.5	4.3						
Count									1	2	5	8	3	6	4	4	6	3						

foF1

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

Y 4

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Sep. 1951

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

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

Y 5

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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							M	M	M	A	A	C	C	C	C	B	B	2.5	1.8					
2							C	C	C	C	C	C	C	C	C	C	(3.3)^{J}	2.3	2.2					
3							B	A	C	B	B	B	B	C	C	A	B	2.6	(2.0)^{A}					
4							B	A	A	A	C	C	C	C	C	A	B	2.3	1.7					
5							B	2.0	2.5	B	C	C	C	C	C	C	B	2.5^{H}	2.0					
6							B	1.7	A	B	B	B	B	C	C	B	B	2.6	A					
7							M	M	M	C	C	C	C	C	C	C	B	B	A					
8							B	2.1	C	C	C	C	C	C	C	C	B	2.6	A					
9							B	2.2	B	A	C	C	C	C	C	C	C	2.4	1.9					
10							C	C	A	B	A	B	B	C	C	A	A	2.5^{A}	A					
11							1.5^{J}	2.1	2.7	3.0	3.3	3.4	3.7	3.4	3:0^{J}	A	A	2.5	2.0					
12							A	2.1	2.7	2.7	3.3	C	C	C	3.4	3.3	3.0	2.5	2.0					
13							1.4^{J}	A	2.6	3.1	A	3.4	3.2	B	A	3.1	2.9	2.3	A					
14							B	A	C	C	C	C	C	C	C	C	C	C	C					
15							B	A	2.0	A	3.6	A	A	A	3.3	A	A	A	A					
16							1.6	2.2	2.7	A	A	3.5	3.3	3.6	[3.2]^{B}	2.8	A	A	A					
17							A	A	A	B	3.2	3.5	3.4	3.3	3.4	3.3	2.8	2.3	1.9					
18							1.2^{J}	2.4	2.4	2.8	A	A	3.5	3.5	3.4	3.2	2.9	2.4	1.9					
19							B	2.2	2.8	3.1	A	3.4	3.4	3.4	A	2.8	2.7	2.4	A					
20							B	2.1	2.3	A	3.0	A	3.3	3.5	3.3	2.8	2.6	2.2	1.9					
21							C	C	C	C	3.0	C	C	A	A	A	C	2.5	A					
22							B	2.1	(2.4)C	2.8	A	A	3.4	3.4	3.3	3.2	2.9	A	A					
23							C	2.1	2.6	C	M	M	M	A	A	A	B	C	A					
24							1.5^{J}	(2.1)C	2.7	A	A	3.3	3.3	A	3.4	3.2	2.8	S	A					
25							B	C	2.6	3.0	[3.1]^{B}	3.2	3.4	3.4	B	3.1^{A}	2.7	A	A					
26							B	2.0	2.6	A	A	A	C	3.3	3.1	2.9	2.6	A	A					
27							B	1.8	2.6^{B}	3.0	3.3	3.4	3.4	3.4	3.3	2.9	2.6	2.2	1.7					
28							B	1.9	C	C	C	C	C	C	C	C	C	C	C					
29							C	C	2.4	2.6	2.9	3.0	A	3.3	3.3	3.1^{H}	2.7	2.3	B					
30							B	A	2.2	2.8	(3.1)^{B}	A	3.4^{A}	A	3.3	3.2	2.7	2.3^{H}	A					
31																								
Mean Value							1.4	2.1	2.5	2.9	3.2	3.3	3.4	3.4	3.3	3.1	2.8	2.4	1.9					
Median Value							1.5	2.1	2.6	2.9	3.2	3.4	3.4	3.4	3.3	3.1	2.8	2.4	1.9					
Count							5	16	17	10	10	9	12	11	13	14	14	20	12					

foE

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

Y 6

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.[illegible]
Long. 130° 37.7' E

Sep. 1951

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

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

Y 7

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	M	M	M	M	M	M	M	M	M	4.4	4.4	C	C	C	C	G	4.0Y	5.7	2.8	4.5	4.3	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	4.4	5.5	5.9	4.9	5.0	4.4Y	4.4
3	5.1Y	4.2	4.0	4.6	3.1	2.8	2.6	3.2	C	4.4Y	5.1Y	6.0Y	4.2	C	C	4.2Y	G	G	3.0Y	G	2.8	2.1Y	4.0Y	2.6
4	2.8	2.2	E	1.2	2.2Y	3.1	4.2Y	5.0	4.5	3.6	C	C	C	C	C	4.2	G	G	3.1	2.5	2.2	2.5	3.9	2.1
5	2.2	E	E	E	E	2.0	2.2	G	G	G	C	C	C	C	C	C	4.4Y	5.0	5.6	5.1	2.3Y	2.3	3.2	3.4
6	3.0	E	2.1	E	E	E	B	G	2.7Y	G	G	G	G	C	C	G	4.0Y	4.3Y	3.4	4.4Y	2.4	2.7	2.2	3.8
7	3.5	E	1.9	M	M	M	M	M	M	C	C	C	C	C	C	C	G	4.4	5.0Y	2.9	4.3	2.7	E	1.8
8	3.4	4.4	4.4	4.2	2.4	E	2.8	3.5	C	C	C	C	C	C	C	C	G	G	3.1	3.5	4.4F	4.4	4.4	E
9	E	E	E	E	E	2.0	B	G	G	4.3	C	C	C	C	C	C	C	4.0Y	4.2Y	4.5Y	2.8	C	4.1	C
10	C	C	C	C	C	C	C	C	4.1	7.0Y	5.4Y	4.4Y	4.6Y	C	C	4.2	5.6	4.6Y	4.2	4.0	2.9	4.4	4.4	6.0Y
11	3.2F	3.4	2.3F	2.3	2.2	E	G	2.8	4.2	4.8	4.9	4.8Y	4.4	4.2	4.1	4.3	4.0	4.2	4.6	7.4Y	5.2	6.8Y	5.6	6.0
12	5.6	3.1	4.8	5.0	4.3	2.8	3.3	2.4	3.0	4.0Y	G	C	C	C	G	G	4.2	4.6	3.3	2.8	2.5	1.9	2.2	2.1
13	2.4	2.4	2.2	1.7	1.8	1.9Y	2.2	4.2	4.2	4.9	4.4	G	4.4	G	4.3	5.0	G	4.0	4.0	2.4	3.1	2.3	2.3	1.9
14	1.8	E	2.2	5.2	2.3	2.3	2.3	3.0	C	C	C	C	C	C	C	C	C	C	C	C	5.6	8.8	4.3	3.3
15	2.3	2.1	2.1	2.1	1.7	E	E	3.2	4.4	4.2	4.4	5.1	4.4Y	5.2	G	4.5	5.1	4.4	5.2	5.6	E	10.8	4.4	5.8
16	4.4	4.8	3.4	3.1	3.3	2.3	2.2	3.2	3.2	4.4	4.2	4.8	G	G	G	G	4.2	3.5	4.1	5.0	6.0	C	C	C
17	4.5	4.5	2.4	2.1Y	5.0	5.6Y	5.8	5.7	3.3	3.2	3.8	G	4.0	G	G	G	G	G	G	E	1.7	8.7F	2.4F	2.3
18	2.4	1.8Y	2.2	1.8Y	C	E	2.3	G	3.6	3.9	4.4	4.2	4.0Y	4.4	G	G	G	G	G	2.1	2.4	1.8	E	E
19	E	E	E	2.4	E	E	2.2F	G	G	G	4.2	G	G	G	4.4	G	G	G	2.5	2.0	E	E	E	E
20	E	E	2.0Y	E	E	E	B	G	3.5	4.1	G	4.4	3.9	G	G	G	G	3.9	3.2	2.4	1.7	1.8	E	E
21	E	2.1	1.7	2.1	4.6	2.4	C	C	C	C	4.4	C	C	5.1	4.4	4.1Y	C	G	3.2	4.4	5.7	5.3	4.3Y	3.3
22	E	E	E	E	1.8	2.3	2.3	G	C	4.2	4.7	5.0	G	G	G	G	G	3.3	5.7	4.2	5.8	4.5	5.1	4.1
23	3.2	C	C	C	C	C	C	3.3	5.4	C	M	M	M	4.5	4.8	4.4	G	C	7.2Y	C	6.0Y	5.6	2.8	2.2
24	E	2.1	3.2	C	C	C	G	C	4.0Y	4.6	5.0	G	G	4.0	G	3.7	4.3	S	5.6F	2.4	4.1	4.0Y	4.4	3.3
25	3.3	3.6	2.3	3.3	3.5	2.1Y	2.1	C	G	G	G	4.5	5.0	5.0	5.0	5.8	6.0	4.4Y	3.2	E	2.2	2.3	3.0Y	C
26	C	2.0	E	E	2.3	2.1	B	3.3	4.3	4.4	4.5	4.1	C	G	G	3.7	4.2	3.4	4.4	3.3	3.5	E	E	E
27	E	E	1.7	1.7	E	E	B	G	4.4	6.3	6.0	5.1	5.5	5.8	4.1Y	5.0	G	G	2.4	5.0	8.6	5.0	4.7	4.1
28	E	E	E	E	1.8	1.8Y	1.8	G	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	4.5	4.5	4.5	5.6	5.8Y	G	G	G	G	4.0Y	3.2	3.8	4.4	4.3	4.4	2.5
30	3.2	2.7	2.5	2.4	2.0Y	1.8	3.1	3.3	3.8	G	G	4.1	4.0	4.2	G	G	G	G	3.5	2.3	4.1	2.6	4.2	3.3
31																								
Mean Value	3.3	3.0	2.6	2.7	2.8	2.5	2.7	3.5	3.9	4.5	4.8	4.8	4.5	4.7	4.4	4.4	4.5	4.2	4.0	3.9	3.9	4.3	3.9	3.4
Median Value	2.4	2.1	2.1	2.1	2.1	2.0	2.2	2.9	3.8	4.2	4.4	4.4	4.0	4.0	G	3.7	G	4.0	3.4	3.5	3.5	3.4	4.0	2.6
Count	25	25	25	23	22	23	18	22	21	23	21	18	17	17	18	23	26	26	28	27	29	26	27	25

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

Y 8

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | (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	M	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	C	C	SH	S
3	(2.9)P	2.8	2.9Z	2.9	3.1	3.1	3.1	C	C	C	C	C	C	C	C	C	C	C	C	(3.5)P	[3.4]C	(3.2)J	(2.7)JH	2.7P
4	C	C	3.1H	3.1	2.9	2.9	3.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.4	C	C
5	C	2.7	(2.8)JP	[2.9]C	3.1	2.8	3.1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.0P
6	2.9P	3.2	[3.2]C	(3.3)JP	2.6	2.8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	(2.9)J
7	(3.0)JP	M	M	M	M	M	M	M	M	C	C	C	C	C	C	C	C	C	C	C	C	(3.2)P	[3.2]C	(3.1)PS
8	3.0	3.1	[3.0]M	2.9	3.1	3.2	(2.9)J	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.2	[3.2]C	(3.1)JPS
9	C	C	S	(3.2)JS	(3.1)JPH	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	C	C	C	C	C	C	C	C	2.9	3.1	3.1P	S	S	(3.2)JS	3.1	2.8	2.7
11	2.5	2.7	2.7	2.7	2.9	2.9	3.1	3.4	3.4	3.0	(3.0)J	3.0	2.9	(3.1)J	3.1	3.2	3.1	(3.2)S	(3.0)J	S	S	3.3	3.2	2.6
12	2.5	2.4F	2.3	2.3	A	2.5	2.6	3.0	3.1	3.1	2.8	C	C	C	3.2	(2.9)P	3.3	S	S	3.1	2.9	2.6	2.6	2.7
13	2.7	2.5	2.6	2.7	3.0	2.9	3.1	3.2	T	T	T	T	T	T	T	T	T	T	T	T	T	2.6	2.6	2.4
14	2.6	2.7	2.5	2.5	(2.9)J	2.9	29	B	C	C	C	C	C	C	C	C	C	C	C	C	A	A	T	T
15	T	T	2.9	T	2.7	3.2	T	T	3.6	B	B	B	B	B	B	B	B	3.4	S	S	(3.1)J	3.1	S	A
16	2.7	2.7	2.8	2.9	3.2	2.6	2.7	B	B	3.1	3.0P	(2.9)JP	2.8	B	B	3.1	(3.0)J	(2.9)P	(3.3)P	B	A	C	C	C
17	2.8	2.5	2.3	2.5	2.3F	2.7	A	B	(3.1)B	B	3.0P	3.1	2.8	(2.9)JB	(3.0)J	(3.1)P	3.1	3.3PS	S	S	3.2	3.0	2.9	2.9S
18	2.7V	2.7	2.5	2.6	2.9	3.0	2.9	3.3	(3.3)P	(3.2)P	2.9P	(3.2)P	(3.0)J	2.9	[2.9]B	(2.9)B	(3.1)B	(3.0)J	[3.0]S	3.0	3.2	2.8	(2.8)JP	(2.6)PS
19	(2.9)J	2.9	3.1	3.1	2.8	2.5	2.8	3.4	3.3	[3.2]S	3.1P	3.0	3.2	[3.2]J	3.2P	(3.0)P	(3.1)PS	(3.1)JPS	(3.2)JPS	3.0	3.2P	2.8	2.8	2.6
20	2.8	2.7	2.8	2.4	2.5	2.5	2.4	3.1	3.2	3.1	[3.0]M	(3.0)P	[3.0]B	(3.0)P	2.9	(3.0)P	B	S	(3.2)P	T	S	S	2.8P	M
21	C	3.0	2.6	2.7	2.6	2.6	C	C	C	C	3.0P	C	2.9	3.2	C	C	C	3.1	S	3.0	A	A	2.6	2.5
22	2.5	2.8P	2.7	2.6	2.7	2.7	3.0	B	C	3.3	3.0P	3.1	(2.9)P	C	C	2.9	B	S	(3.5)S	S	A	(2.6)PS	[2.6]S	2.5
23	2.8	C	C	C	C	C	C	(3.4)PS	3.4	C	M	M	M	S	S	S	S	C	S	C	S	2.6	2.6	[2.8]S
24	2.9	2.9	2.9	C	C	C	3.0	C	S	S	3.0	S	S	S	S	S	(2.9)PS	3.1	S	S	3.2	2.7	2.5	[2.6]S
25	2.7	3.0	3.0	3.4	2.7	2.8	2.8	C	(3.1)J	3.1	C	C	C	C	3.1	2.9	S	S	S	B	(3.2)J	2.6	2.5	C
26	C	2.8	3.0	(3.5)J	2.6	2.4	2.3	(2.8)J	3.1	3.2K	BK	(2.7)PK	(2.6)CK	2.5K	(2.6)JK	2.9K	(3.0)JK	SK	3.4K	2.5K	2.6P	2.5P	S	S
27	(3.1)JP	3.1	3.0P	2.8	2.9	3.0	3.2	B	B	3.2	3.1	3.2	3.1	[3.0]S	(3.0)J	3.0	[3.2]B	3.3	3.2PS	3.0S	A	S	S	S
28	S	S	3.1	3.0	3.0	3.0	3.2	3.5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	(3.3)J	3.3	3.2	3.0	3.1	[3.0]S	3.0	3.1	3.1P	3.3	3.3	3.2P	2.9P	(3.0)PS	2.9	2.7
30	2.8	2.8	2.6	2.7	2.8	3.3	2.9	B	B	B	B	3.1	[3.0]S	3.0	3.1	3.2	[3.2]B	(3.1)J	3.4	3.4	3.0	2.6H	2.6H	2.8
31																								
Mean Value	2.8	2.8	2.8	2.8	2.8	2.8	2.9	3.2	3.3	3.2	3.0	3.0	2.9	3.0	3.0	3.0	3.1	3.2	3.3	3.1	3.1	2.9	2.8	2.7
Median Value	2.8	2.8	2.8	2.8	2.9	2.8	2.9	3.3	3.3	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.2	3.0	3.2	2.8	2.8	2.7
Count	19	20	23	22	22	22	19	9	11	11	12	11	11	10	12	14	12	12	10	9	12	19	18	18

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

Y 9

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Yamagawa

Lat. 31° 12.5' N
Long. 130° 37.7' E

Sep. 1951 | fmin F | 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	M	M	M	M	M	M	M	M	M	3.8[A]	4.2[A]	C	C	C	C	C	4.2	A	A	A	A	A	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.9	3.8[A]	A	A	A	A	1.9	2.3[A]
3	2.9[A]	2.0[A]	1.9	3.0[A]	2.0[A]	1.8	1.9	3.0[A]	[3.4][C]	3.9	A	A	4.0[A]	C	C	3.8	3.8	2.9	2.9	1.6	1.6	1.5	1.6	2.0[A]
4	2.0[A]	1.6	1.6	1.6	1.6	2.3[A]	2.0	A	A	3.8	C	C	C	C	C	C	3.8	3.6	2.0	2.0[A]	1.7	1.9	3.0[A]	1.9
5	1.9	1.6	1.6	1.2	1.6	1.6	1.6	2.2	3.4	3.8	C	C	C	C	C	C	A	3.8[A]	A	A	A	1.6	2.0[A]	2.0[A]
6	1.6	1.6	1.6	1.6	1.2	1.6	1.6	3.6	2.6	4.0	3.8	4.0	4.0	C	C	3.8	3.8[A]	3.7[A]	3.6	A	1.6	2.2[A]	1.6	3.0[A]
7	1.7	2.0	1.8	M	M	M	M	M	M	C	C	C	C	C	C	C	4.0	3.9[A]	A	A	3.9[A]	1.9	1.6	2.3
8	3.3[A]	3.6[A]	3.3[A]	3.4[A]	2.0[A]	1.6	2.3	3.7	C	C	C	C	C	C	C	C	4.0	3.8	3.0[A]	3.7	AF	3.8[A]	3.8[A]	2.0
9	1.7	1.6	1.6	1.7	2.3	1.7	1.7	3.0	3.9	3.9	C	C	C	C	C	C	4.2	[4.0][C]	3.3	A	A	C	2.1[A]	C
10	C	C	C	C	C	C	C	C	A	A	A	C	C	C	C	3.5	3.5	2.9	2.7	2.7[A]	1.6	A	A	2.3
11	1.7	2.0[A]	1.7	1.6	1.7	1.6	1.6	2.3	2.9	3.6	4.1	4.2	4.5	4.2	3.8	3.4	3.3	3.0	3.7[A]	6.4[A]	3.2[A]	A	3.7[A]	3.4[A]
12	3.3[A]	1.9	2.9[A]	3.8[A]	A	1.7	3.4[A]	2.2	2.7	3.1	3.7	C	C	C	4.0	3.7	3.3	2.9	2.0	1.7	1.9	1.6	1.6	1.6
13	1.6	1.4	1.5	1.6	1.1	1.0	1.6	2.0	3.0	3.5	3.8	3.8	4.1	3.6	3.7	3.9	3.2	2.5	A	1.6	1.6	1.6	1.6	1.6
14	1.6	1.6	1.6	3.0[A]	A	2.0[A]	1.6	2.0	C	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A
15	1.4	1.6	1.6	1.6	1.6	1.9	1.9	3.0	2.9	3.2	A	4.8[A]	A	4.1	3.9	3.7	3.8	3.0	3.0[A]	2.9[A]	2.1[A]	3.6[A]	1.9	A
16	3.8[A]	2.9[A]	2.6[A]	1.9	2.1[A]	1.9	1.6	2.5	3.0	4.0[A]	3.6	3.6	3.5	3.9	3.9	3.2	3.0	2.6	3.0[A]	A	A	C	C	C
17	1.6	1.9	1.6	1.3	1.5	1.5	A	A	2.9	4.0	3.6	3.7	3.7	4.0	3.5	3.7	2.9	2.5	1.9	1.6	1.6	1.6	1.6	1.6
18	1.6	1.2	1.0	1.1	1.6	1.6	1.6	2.5	2.5	3.1	3.4	3.8	4.0	3.6	3.6	3.5	3.0	2.6	2.1	1.5	1.6	1.6	1.6	1.6
19	1.5	1.6	E	1.6	E	1.6	1.6	2.2	2.8	3.1	3.3	3.5	3.5	3.6	3.5	3.3	2.9	2.4	1.8	1.6	1.6	1.0	1.4	1.6
20	1.4	1.6	1.6	1.6	1.2	1.6	1.6	2.1	3.0	3.1	3.4	3.7	3.7	3.7	3.5	3.3	3.0	3.1	1.9	1.6	2.0[A]	1.6	1.6	1.6
21	1.6	1.0	1.6	1.6	1.5	1.6	C	C	C	C	3.1	C	C	4.5[A]	3.7	3.2	[2.9][C]	2.6	2.3	A	A	A	1.6	1.6
22	1.6	1.2	E	1.6	1.1	E	1.6	2.1	[2.5][C]	2.9	3.3	A	3.6	3.8	3.7	3.2	3.0	2.6	6.8	3.2[A]	A	3.0[A]	A	2.7[A]
23	1.7	C	C	C	C	C	C	2.1	2.7	C	M	M	M	4.0	A	3.8	3.0	C	A	C	A	A	1.7	1.6
24	1.6	1.9	2.4[A]	C	C	C	1.6	[2.2][C]	2.9	3.2	3.7	3.8	3.6	3.7	3.6	3.4	3.4	3.6[S]	2.0	1.6	A	2.1[A]	A	2.9[A]
25	2.3[A]	1.6	1.5	A	2.1[A]	1.6	1.4	[2.2][C]	2.9	3.2	4.1	4.6	4.1	3.9	6.9	5.3[A]	5.6[A]	2.6	2.1[A]	1.6	1.6	1.5	1.6	C
26	C	1.6	1.5	1.6	1.6	1.6	1.6	2.0	2.9	3.2	3.4	3.7	[3.6][C]	3.6	3.3	3.0	2.9	2.8[F]	2.9[A]	1.9	1.8	1.6	1.6	1.6
27	1.6	1.6	E	1.6	1.6	1.6	1.6	2.2	3.1	3.1	4.0	A	3.8	4.8[A]	A	A	2.9	2.3	1.7	4.6[A]	A	A	1.6	2.6[A]
28	1.6	1.6	1.6	1.0	1.5	1.2	1.2	2.0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	3.0	3.8	5.0[A]	3.8	3.8	3.4	3.1	2.9	2.4	1.6	A	1.7	1.7	1.7	1.7
30	1.6	1.9	1.5	1.6	1.6	1.2	1.6	2.4	2.6	3.1	3.4	A	3.5	3.7	3.4	3.3	2.3	2.3	A	1.6	A	1.9	2.0	1.6
31																								
Mean Value	1.9	1.8	1.9	1.8	1.6	1.6	1.8	2.4	2.9	3.4	3.7	4.0	3.8	3.9	3.8	3.6	3.4	3.0	2.7	2.4	1.9	2.0	1.9	2.0
Median Value	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.2	2.9	3.2	3.6	3.8	3.8	3.8	3.6	3.5	3.2	2.9	2.3	1.6	1.6	1.6	1.6	1.9
Count	25	25	25	22	21	23	22	22	20	22	18	13	16	17	16	22	26	26	21	18	16	19	23	23

fmin F

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

Y 10

The Central Radio Wave Observatory
Koganei-machi, Kitatama-gun, Tokyo, Japan

IONOSPHERIC DATA

Sep. 1951 | 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	M	M	M	M	M	M	M	M	M	2.0	2.9	C	C	C	C	2.0	1.9	1.6	1.6	1.5	1.6	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	3.7	1.6	1.6	1.4	1.6	1.6	1.6	1.6
3	1.6	E	1.1	1.6	1.6	1.6	1.5	2.0	[2.0]^{C}	1.9	3.3	3.3	3.6	C	C	3.0	3.2	1.6	1.4	1.9	1.5	1.7	1.6	1.1
4	1.3	1.6	E	1.1	E	1.6	1.6	1.6	2.0	2.0	C	C	C	C	C	2.9	1.9	1.6	1.2	1.4	1.6	1.3	1.6	1.6
5	1.6	E	E	E	E	1.6	1.6	1.6	1.6	2.0	C	C	C	C	C	C	2.0	1.6	1.6	1.5	1.6	1.6	1.5	1.5
6	1.7	E	2.0	E	E	E	B	1.6	1.6	2.0	2.0	2.0	2.0	C	C	2.0	2.0	1.6	1.5	1.5	1.5	1.5	1.6	1.2
7	1.6	E	1.7	M	M	M	M	M	M	C	C	C	C	C	C	C	2.0	1.6	1.6	1.5	1.6	1.2	E	1.6
8	1.6	1.6	1.3	1.3	1.6	E	1.4	1.6	C	C	C	C	C	C	C	C	1.8	1.6	1.6	1.6	1.6^{F}	1.6	1.6	E
9	E	E	E	E	E	1.7	B	1.6	1.9	2.0	C	C	C	C	C	C	C	1.9	1.3	1.5	1.6	(1.6)C	1.6	C
10	C	C	C	C	C	C	C	C	1.6	1.6	2.0	2.0	2.0	C	C	1.9	1.6	1.6	1.3	1.6	1.6	1.6	1.6	1.6
11	E	1.1	1.6^{F}	1.6	1.7	E	1.7	1.6	1.6	1.6	2.0	1.9	2.1	2.1	1.9	1.6	1.6	1.5	E	1.6	1.6	1.6	1.6	1.6
12	1.6	1.6	E	E	1.2	E	1.6	1.4	1.5	1.6	2.0	C	C	C	2.0	1.6	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.6
13	1.6	1.6	1.6	1.5	1.6	E	1.6	1.6	2.0	1.9	1.7	1.9	2.0	1.7	1.9	1.9	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6
14	1.6	E	1.4	1.6	1.5	1.6	1.6	1.6	C	C	C	C	C	C	C	C	C	C	C	C	1.6	1.6	1.6	1.6
15	1.6	1.6	1.6	1.6	1.6	E	E	1.6	1.4	1.6	1.8	2.2	1.9	2.1	2.0	1.9	1.6	1.5	1.5	1.5	E	1.6	1.6	1.6
16	1.6	1.6	1.6	1.6	1.5	1.2	1.6	1.6	2.0	1.6	2.0	2.1	2.1	2.1	2.0	1.6	1.6	1.4	1.6	1.6	1.6	C	C	C
17	1.1	1.0	1.0	E	E	1.0	1.4	1.6	1.6	2.0	2.0	2.0	2.3	2.0	1.9	3.0	1.6	1.6	1.6	E	1.6	E	1.6^{F}	1.6
18	1.6	E	1.6	E	C	E	1.7	1.6	1.7	1.6	2.0	1.6	1.6	1.9	1.9	1.9	1.7	1.6	1.6	1.7	1.5	1.6	E	E
19	E	E	E	1.6	E	E	1.6^{F}	1.6	1.5	1.6	1.7	1.9	2.0	1.8	1.8	2.0	1.6	1.2	1.5	1.6	E	E	E	E
20	E	E	E	E	E	E	B	1.6	1.6	1.6	1.9	2.0	2.0	2.0	2.0	1.6	1.6	1.5	1.6	1.5	1.6	1.7	E	E
21	E	1.6	1.6	E	E	1.6	C	C	C	C	2.0	C	C	2.0	2.0	2.0	[1.8]C	1.7	1.6	1.5	1.5	1.6	1.6	1.6
22	E	E	E	E	1.7	1.7	1.2	1.6	[1.6]^{C}	1.6	1.9	2.0	1.9	2.0	1.9	1.6	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.5
23	1.6	C	C	C	C	C	C	1.6	1.6	C	M	M	M	2.0	2.1	2.0	2.0	[1.8]C	1.6	(1.6)C	1.6	1.1	1.2	1.6
24	E	1.6	E	C	C	C	1.6	[2.0]^{C}	2.5	1.7	1.6	2.0	2.0	1.6	1.6	1.6	1.6	[1.6]^{S}	1.6	1.6	1.4	1.5	1.6	1.6
25	1.5	E	1.9	1.2	E	1.1	1.6	[1.6]^{C}	1.6	1.6	2.9	2.0	2.0	1.9	1.6	1.5	1.5	1.6	1.6	E	1.8	1.7	1.6	C
26	C	1.6	E	E	1.6	1.7	B	1.6	1.6	1.6	2.0	1.6	[1.8]^{C}	2.0	2.0	1.6	1.6	1.6	1.4	1.6	1.6	E	E	E
27	E	E	1.6	1.6	E	E	B	1.6	1.6	1.6	1.6	1.9	1.9	2.1	2.0	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.6	1.6
28	E	E	E	E	1.7	E	1.6	1.6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	1.7	2.0	2.0	2.2	2.0	1.9	1.7	1.6	1.6	1.6	1.5	E	1.5	1.0	1.5	1.6
30	1.6	1.6	1.6	E	1.1	1.6	1.2	1.6	1.6	1.7	1.9	2.0	1.9	1.9	1.6	1.6	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.6
31																								
Mean Value	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.8	2.1	2.0	2.1	1.9	1.9	1.9	1.8	1.6	1.5	1.6	1.6	1.5	1.6	1.5
Median Value	1.6	E	1.3	E	1.4	1.0	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	1.9	1.9	1.6	1.6	1.6	1.5	1.6	1.6	1.6	1.6
Count	25	25	25	23	22	23	18	24	23	23	21	18	18	17	18	23	27	28	28	28	29	27	27	25

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

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IONOSPHERIC DATA IN JAPAN FOR SEPTEMBER 1951

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