

ION.ANT.— 26

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)

January 1976—June 1976

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RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN



INTRODUCTION

Vertical soundings of ionosphere at Syowa Station, Antarctica, have been carried out by the Radio Research Laboratories through the sponsorship of the National Institute of Polar Research of Japan.

LOCATION OF SYOWA STATION

Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
69° 00.4' S	39° 35.4' E	69.8° S	78.2° E

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

Items	Specifications
Frequency Range	500 kHz—15 MHz
Transmitting Power	10 kW (peak value)
Duration of Sweep	30 sec
Transmitted Pulse Width	100 μ sec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power source frequency)
Frequency Scale	every 1 MHz
Height Range	900 km
Height Scale	every 50 km
Total Receiver Gain	120 dB
Recording Method	35 mm film and video fax for ionograms
Power Supply	100 volt AC, 2.5 kVA
Transmitting Antenna and Receiving Antenna	30 m height vertical delta terminated by 600 Ω respectively

SYMBOLS AND TERMINOLOGY

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition 1972)".

a. Characteristics of Ionosphere

$f_x I$	Top frequency of spread F trace
$f_o F2$	Ordinary wave critical frequency for the $F2$, $F1$, E and E_s
$f_o F1$	including particle E layers respectively
$f_o E$	
$f_o E_s$	
f_{min}	Lowest frequency which shows vertical ionospheric reflections
$M(3000)F2$	Maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.
$h'F2$	Minimum virtual height on the ordinary wave for the $F2$,
$h'F$	whole F and E_s layers respectively.
$h'E_s$	
Types of E_s	See below b. (iii)

b. Symbols

(i) Descriptive Letters.

The following letters are entered after, or used to replace, a numerical value on the monthly tabulation sheets.

A	Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example, E_s .
B	Measurement influenced by, or impossible because of, absorption in the vicinity of f_{min} .
C	Measurement influenced by, or impossible because of, any non-ionospheric reason.
D	Measurement influenced by, or impossible because of, the upper limit of the normal frequency range.
E	Measurement influenced by, or impossible because of, the lower limit of the normal frequency range.
F	Measurement influenced by, or impossible because of, the presence of spread echoes.
G	Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.
H	Measurement influenced by, or impossible because of, the presence of stratification.
K	Presence of particle E layer.
L	Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.
M	Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.
N	Conditions are such that the measurement cannot be interpreted.
O	Measurement refers to the ordinary component.
P	Man-made perturbation of parameters—Presence of polar spur traces.
Q	Range spread present.
R	Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S	Measurement influenced by, or impossible because of, interference or atmospheric effects.
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
V	Forked trace which may influence the measurement.
W	Measurement influenced or impossible because the echo lies outside the height range recorded.
X	Measurement refers to the extraordinary component.
Y	Lacuna phenomena, severe layer tilt.
Z	Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets.

A	Less than. Used only when $f_b E_s$ is deduced from $f_o E_s$ because total blanketing of higher layer is present.
D	Greater than.
E	Less than.
I	Missing value has been replaced by an interpolated value.
J	Ordinary component characteristic deduced from the extraordinary component.

M	Mode interpretation uncertain.
O	Extraordinary component characteristic deduced from the ordinary component.
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
U	Uncertain or doubtful numerical value.
Z	Measurement deduced from the third magneto-electronic component.

(iii) Description of Type of *Es*

When more than one type of *Es* trace is present on the ionogram, the type for the trace used to determine f_oEs must be written first. the number of multiple traces is indicated after the type letter.

The types are :

f	An <i>Es</i> trace which shows no appreciable increase of height with frequency.
l	A flat <i>Es</i> trace at or below normal <i>E</i> layer minimum virtual height or below the particle <i>E</i> layer minimum virtual height.
c	An <i>Es</i> trace showing a relatively symmetrical cusp at or below f_oE .
h	An <i>Es</i> trace showing a discontinuity in height with the normal <i>E</i> layer trace at or above f_oE . The cusp is not symmetrical, the lower frequency end of the <i>Es</i> trace laying clearly above the high frequency end of the normal <i>E</i> trace.
q	An <i>Es</i> trace which is diffuse and non-blaketing over a wide frequency range.
r	An <i>Es</i> trace showing an increase in virtual height at the high frequency end similar to group retardation.
a	An <i>Es</i> trace having a well-defined fiat or gradually rising lower edge with stratified and diffuse tracedpresent above it.
s	A diffuse <i>Es</i> trace which rises steadily with frequency and usually emerges from another type <i>Es</i> trace.
d	A weak diffuse trace at heights below 95 km associated with high absorption and large f_{min} .
n	The designation 'n' is used to denote an <i>Es</i> trace which cannot be classified into one of the standard types.
k	The designation k is used to show the presence of particle <i>E</i> . When $f_oEs > f_oE$ (particle <i>E</i>) the <i>Es</i> type precedes k.

c. Definitions of the CNT, MED, UQ and LQ.

Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) of a set of numbers is the middle value when the numbers are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value the upper half of the values when they are ranked according to magnitude; the lower quartile (LQ) is the median value of the lower half.

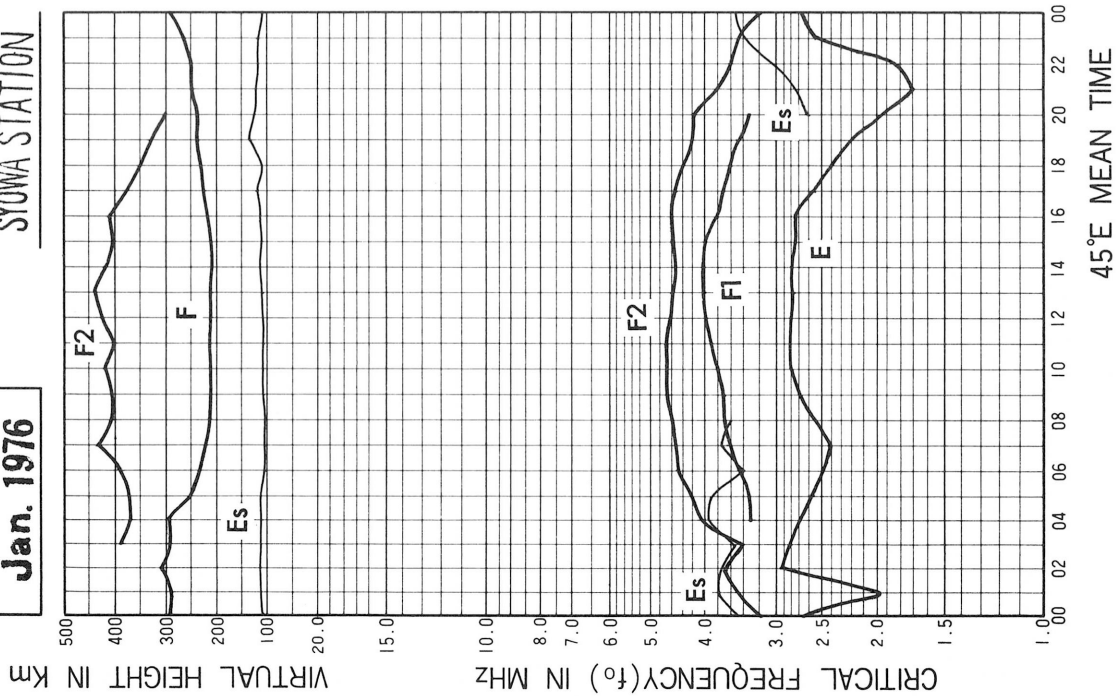
d. *f*-plot.

f-plots of ionospheric data are illustrated only the periods of the Regular World Days of every month.

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

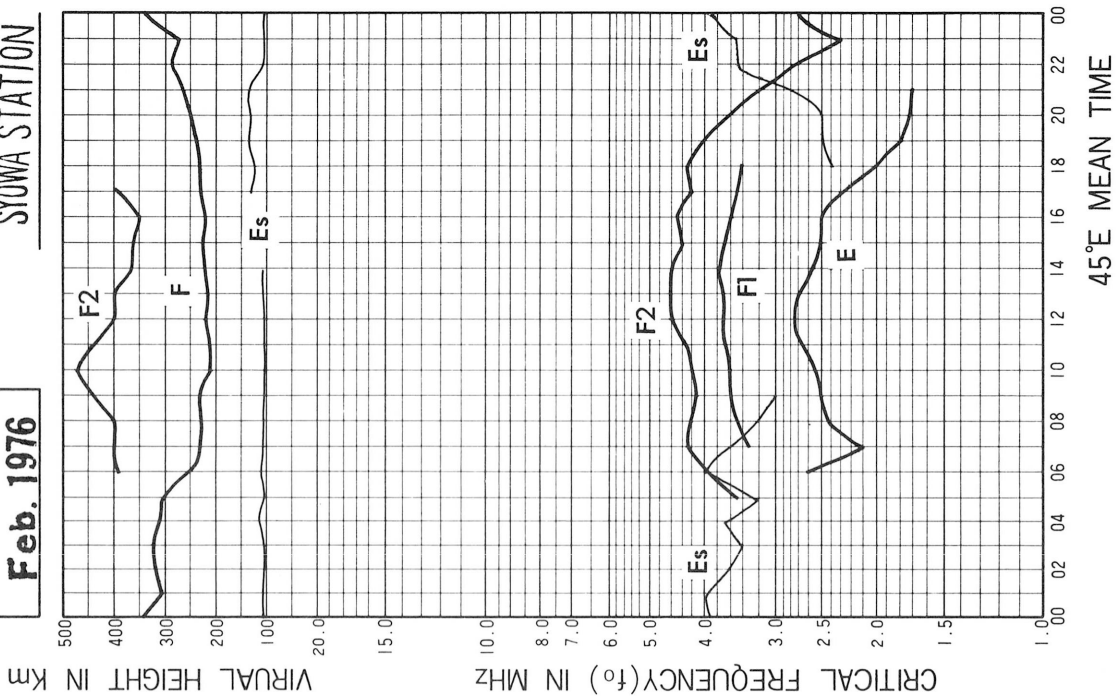
Jan. 1976

SYOWA STATION



Feb. 1976

SYOWA STATION



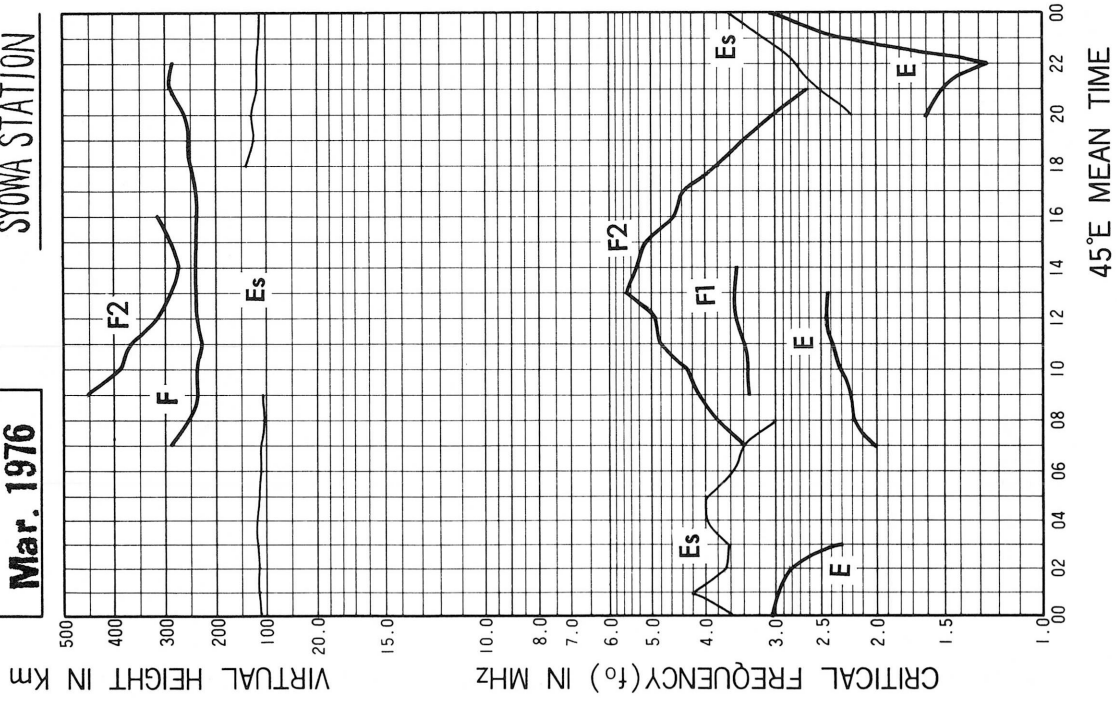
45°E MEAN TIME

45°E MEAN TIME

IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS

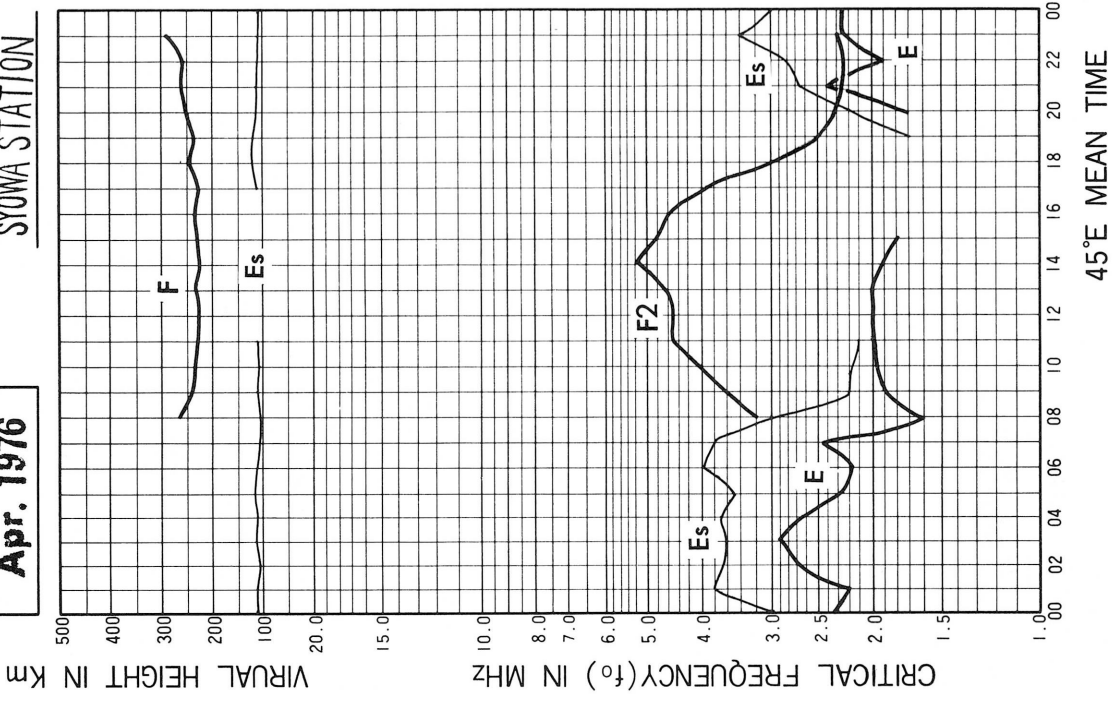
Mar. 1976

SYOWA STATION

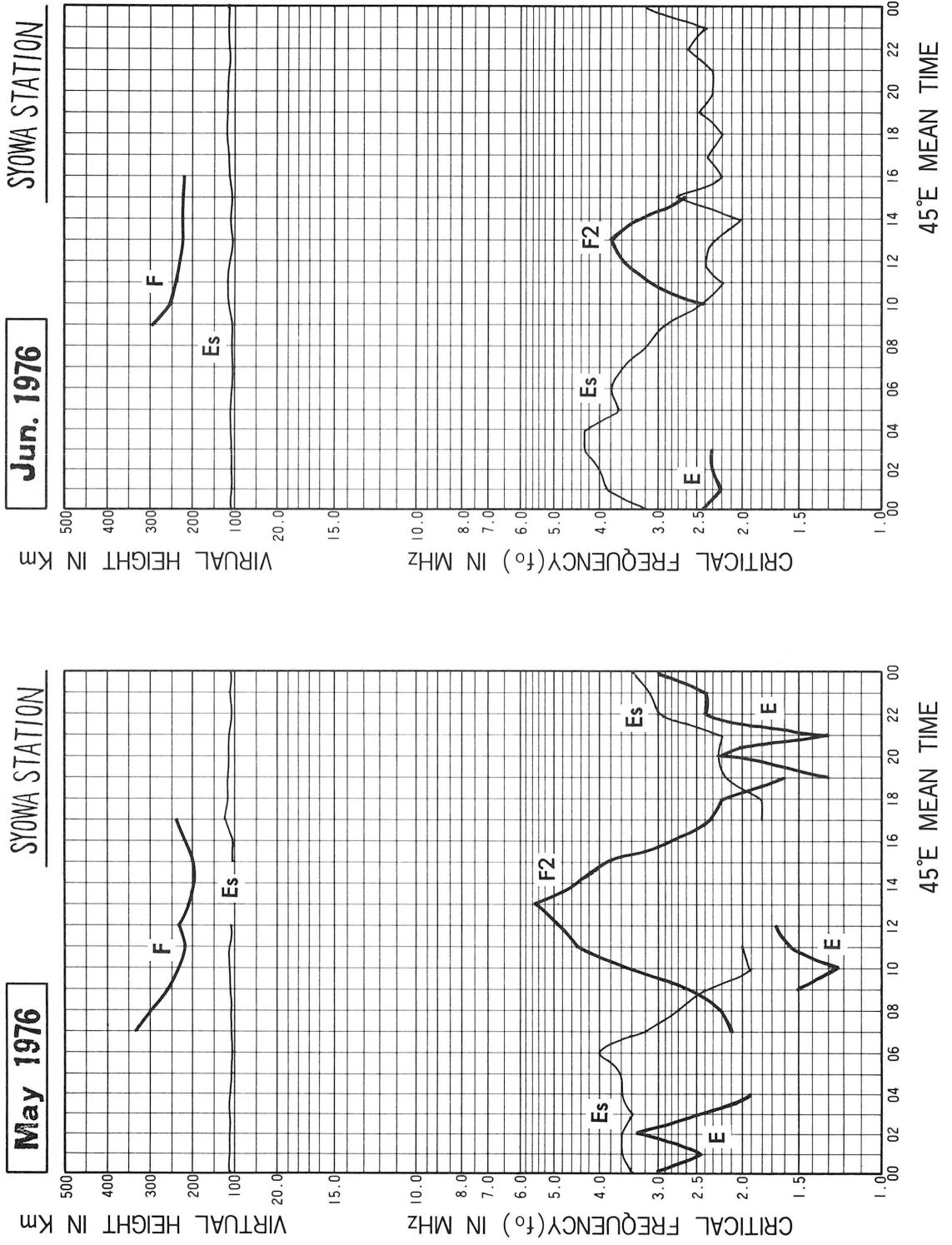


Apr. 1976

SYOWA STATION



IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



IONOSPHERIC DATA

JAN. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep MHz to 15 MHz in 30 sec in automatic operation																					
Hour 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	45	47	47	46	55	51	50	57	65	66	66	64	64	64	66	53	52	53	53	56	59	52	53	48			
2	47	48	42	44	53	62	60	59	63	64	68	66	63	62	54	52	53	53	56	55	56	53	53	52			
3	46	45	46	47	52	B	49	59	69	82	73	69	70	75	64	64	63	R	B	54	48	43	45	60			
4	56	C	B	57	Y	B	53	57	58	61	58	65	59	61	56	51	52	R	51	51	52	R	41	R			
5	40	A	A	A	A	A	A	74	55	B	R	49	50	52	51	B	53	52	52	52	54	49	45	41			
6	R	41	A	R	A	P	66	R	R	46	46	48	53	51	R	51	55	56	58	53	B	60	70	R			
7	43	A	A	R	R	R	R	55	A	B	R	44	48	46	48	R	52	50	50	46	44	40	40	39			
8	36	47	43	44	52	55	59	61	57	B	B	B	52	51	49	49	49	53	57	57	52	46	45	44			
9	43	42	40	46	47	51	56	55	56	53	53	49	49	46	48	57	53	51	49	A	57	61	51	51			
10	47	42	R	56	A	R	R	48	53	59	60	56	52	R	52	R	52	53	B	85	85	65	75	A			
11	51	106	A	A	A	66	A	R	A	43	46	46	45	45	44	44	43	47	42	38	55	A	67	A			
12	A	R	A	B	Y	R	R	A	43	46	50	52	48	50	49	46	46	51	49	45	52	41	C	41			
13	44	R	R	R	A	A	R	R	R	51	49	48	P	R	46	46	R	51	50	51	50	45	41	B			
14	36	41	45	A	H	R	R	53	53	56	57	59	58	52	52	R	B	P	48	50	R	43	45	45			
15	39	A	B	39	43	44	49	51	51	53	53	52	49	51	50	R	47	49	48	49	49	43	R	R			
16	R	R	B	39	A	A	R	46	51	54	52	54	49	50	52	50	49	52	50	42	40	R	53				
17	A	B	A	A	R	53	B	R	R	B	85	B	H	B	C	C	C	50	52	47	51	46	84	A			
18	40	A	R	52	67	95	R	R	A	85	R	R	46	B	B	B	B	P	49	49	46	45	44	34			
19	45	105	R	R	R	R	65	52	49	B	50	52	50	48	50	52	52	50	48	48	51	B	43	A			
20	A	57	59	55	55	60	50	A	B	53	55	52	53	52	55	55	49	49	50	48	45	36	A	42			
21	A	C	70	50	70	63	51	R	46	B	R	52	51	53	54	R	B	R	45	62	51	R	46	R			
22	A	B	38	65	A	53	B	R	A	43	47	47	44	47	45	47	48	47	R	40	115	58	A	A			
23	A	A	43	109	65	B	B	A	R	R	R	R	R	48	49	B	48	P	R	40	41	38	40	37			
24	28	35	R	B	B	42	R	48	R	R	48	46	R	B	B	B	B	C	B	46	R	37	34	39			
25	R	R	R	R	A	44	45	48	51	74	54	58	55	49	49	53	48	48	54	45	42	39	36	36			
26	41	38	39	42	46	52	53	53	66	53	54	53	55	50	49	49	47	46	49	47	50	46	42	42			
27	30	32	40	42	51	54	58	62	65	58	57	55	P	53	58	50	53	52	53	48	50	48	53	43			
28	41	47	R	39	40	43	53	55	56	56	57	54	56	57	57	58	52	53	52	51	57	52	46	38			
29	A	R	46	A	X	40	50	58	50	49	53	R	53	57	B	C	51	P	B	47	45	47	47	47			
30	41	35	34	37	X	44	67	57	53	52	53	53	57	60	58	53	53	52	57	52	51	43	43	42			
31	A	B	B	R	R	R	R	A	R	A	R	47	P	47	55	57	59	62	A	83	R	37	38	A			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	20	17	14	18	15	18	17	20	20	22	24	26	25	26	26	21	25	23	24	30	27	27	26	19			
MED	42	45	43	46	52	53	53	55	54	54	53	52	52	52	52	52	52	51	50	50	51	45	45	42			
UQ	46	48	46	55	55	62	58	58	60	61	58	57	56	57	55	55	53	53	52	53	54	51	53	48			
LQ	40	41	40	42	46	44	50	52	51	51	50	48	49	48	49	49	49	50	49	49	46	40	41	39			

JAN. 1976

FXI (0.1 MHz)

IONOSPHERIC DATA

JAN. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	U ₃₇ F	U ₃₈ F	U ₃₉ F	F	F ₄₅	F	F ₄₃	U ₄₈ F	F ₅₃	F ₅₄	F ₅₆	F ₅₆	F ₅₄	F ₅₈	F ₅₉	47	46	47	47	50	F ₅₁	F ₄₅	F ₄₆	42	
2	41	42	36	U ₃₈ R	F	U ₄₈ F	F	U ₅₁ F	57	58	61	60	57	57	J ₄₈ C	46	47	47	49	49	49	46	47	U ₄₂ F	
3	F ₃₁	F	F ₄₀	J ₄₁ F	F	B	43	F ₅₁	F ₆₁	F ₆₈	F ₆₃	F ₆₂	F ₆₂	F ₆₅	58	58	F ₅₀	R	B	48	F ₄₁	37	F ₃₉	F	
4	F ₃₂	C	B	F	Y	B	F ₄₅	U ₅₁ R	F ₅₂	F	F ₅₂	F ₅₆	F ₅₂	F ₅₄	50	F ₄₅	F ₄₆	P	45	F ₄₅	46	R	U ₃₄ F	R	
5	F ₃₂	A	A	A	A	A	A	A	F ₄₈	B	R	F	F	46	U ₄₃ F	B	U ₄₇ C	H ₄₄	F ₄₆	F ₄₆	F ₄₈	43	F	F ₃₅	
6	R	F	A	A	A	R	F	R	R	F	E ₃₈ G	F ₄₀	F ₄₆	F ₄₄	R	45	48	50	52	47	B	F	R	A	
7	F	A	A	A	A	A	R	F	A	B	R	E ₃₈ G	F	E ₄₀ G	42	R	U ₄₆ R	44	43	40	F ₃₂	F ₃₄	F ₃₃	F ₃₃	
8	F ₂₉	F ₃₆	F ₃₇	F ₃₈	F ₄₅	F ₄₅	F ₅₀	F ₅₅	F ₅₀	B	B	B	46	F ₄₅	F ₄₃	43	F ₄₂	47	51	51	45	40	J ₃₉ R	U ₂₈ F	
9	F ₃₇	S ₃₅	J ₃₄ F	J ₄₀ R	41	F ₄₃	F	F ₄₅	F ₄₆	47	F ₄₅	U ₄₃ R	U ₄₃ R	E ₄₀ G	U ₄₂ R	51	46	45	43	A	50	55	44	45	
10	40	J ₃₅ F	R	F	A	A	R	F ₄₁	F ₄₆	F ₅₂	U ₅₂ F	U ₅₀ R	F ₄₆	R	46	R	46	4R	B	F	R	F	A	A	
11	F	F ₄₅	A	A	A	F	A	A	A	F	E ₄₀ G	E ₄₀ G	E ₃₉ G	E ₃₈ G	E ₃₈ G	E ₃₇ G	F	E ₄₀ G	E ₃₁ G	A	A	A	A		
12	A	A	A	B	Y	R	R	A	E ₃₇ G	F ₃₉	44	46	42	42	F ₄₂	E ₄₀ G	U ₄₀ R	45	43	39	F	F ₃₃	C	F ₃₅	
13	F ₃₇	R	R	A	A	A	A	A	R	45	F ₄₃	F ₄₂	R	R	E ₄₀ G	E ₄₀ G	R	44	44	45	44	39	35	B	
14	30	F ₃₅	U ₃₇ F	A	R	A	R	U ₄₄ F	F ₄₅	F ₅₀	51	53	U ₅₀ C	46	46	R	B	P	42	F ₄₂	R	F	U ₃₅ F	J ₃₉ F	
15	U ₃₃ R	A	B	33	F ₃₇	F ₃₈	F ₄₂	45	45	47	47	45	43	45	44	R	41	43	42	43	42	U ₃₄ F	R	R	
16	R	R	B	33	A	A	R	F ₄₀	F ₄₃	F ₄₅	F ₄₆	C ₄₇	42	44	J ₄₆ R	44	43	46	43	44	F ₃₃	F ₃₄	R	F	
17	A	B	A	A	R	F	B	A	R	B	R	B	R	B	C	C	C	44	46	41	F ₄₃	U ₃₈ F	R	A	
18	F	A	A	34	A	F	R	R	A	R	R	R	E ₃₈ G	B	B	B	B	R	43	U ₄₁ F	F ₄₀	F	F ₃₈	F ₂₇	
19	F ₂₇	F ₃₂	R	R	B	A	R	F ₄₂	F ₄₁	B	F ₄₂	F ₄₆	F ₄₅	F ₄₂	43	46	46	44	F ₄₁	F ₄₁	45	B	F ₃₂	A	
20	A	F	F	F	F	F	F	A	B	F ₄₆	F ₄₈	45	47	F ₄₆	48	49	F ₄₂	F ₄₃	44	42	39	F ₂₈	A	F	
21	A	F	F	F	F	F	U ₄₅ R	R	U ₃₉ F	B	A	F	F	F ₄₆	F ₄₆	R	B	R	U ₃₅ F	A	R	A	F ₃₅	A	
22	A	B	F	B	A	F ₃₅	B	A	A	E ₃₇ G	41	41	E ₃₈ G	41	E ₃₉ G	41	42	41	R	F	A	A	A	A	
23	A	A	37	F	F	B	B	A	R	R	R	R	R	42	43	B	F ₄₁	B	A	34	F ₃₅	F ₃₂	F ₃₃	F ₃₁	
24	F	F ₂₇	R	B	R	36	A	42	A	R	B	F ₄₀	R	B	B	B	B	C	B	40	R	F ₃₁	F ₂₇	F ₃₃	
25	A	R	R	R	A	F	F ₃₈	F ₄₂	F ₄₅	F ₄₆	48	F ₅₁	47	43	43	47	42	42	U ₃₈ F	F ₃₈	U ₃₄ F	32	U ₂₈ F	F ₃₀	
26	U ₃₂ F	F ₃₂	U ₃₂ F	F	F ₃₉	F ₄₅	F ₄₅	F ₄₃	F ₄₈	47	F ₄₆	48	F ₄₆	49	F ₄₃	43	43	40	43	H ₄₃	F ₄₁	F ₄₄	40	36	
27	F	A	U ₃₄ F	F ₃₅	U ₄₃ S	F ₄₇	J ₄₉ F	J ₅₅ F	F	U ₅₁ F	50	48	R	F	F ₅₂	U ₄₅ F	47	46	47	F ₄₂	F ₄₄	J ₄₂ R	F	R	
28	F ₃₄	F ₄₀	R	F ₃₃	F ₃₃	U ₃₇ F	F	F ₄₇	F ₄₈	F ₄₈	F ₅₀	48	50	50	F ₅₀	52	46	47	F ₄₅	45	U ₄₆ F	U ₄₆ F	F ₃₇	32	
29	A	R	F	A	42	F	F ₄₀	F ₄₁	F ₄₃	F ₄₃	F ₄₄	B	47	51	R	B	F ₅₃	45	R	B	41	F ₃₉	F ₄₁	F	U ₃₅ F
30	R	U ₂₆ F	A	31	37	J ₅₀ F	F ₄₆	F ₄₅	F ₄₇	F ₄₇	F ₄₇	50	53	F ₅₁	47	F ₄₇	F ₄₆	F ₄₉	46	44	F ₃₆	U ₃₇ F	J ₃₆ R	R	
31	A	B	B	R	R	R	R	A	R	A	R	F	R	F	49	F ₅₀	F ₅₃	F ₄₆	A	A	A	F ₃₁	F ₃₁	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	14	12	9	10	9	10	11	18	19	18	23	23	22	24	26	21	25	23	24	26	22	22	19	15	
MED	F ₃₂	F ₃₅	F ₃₇	F ₃₄	F ₄₁	F ₄₂	F ₄₅	F ₄₅	F ₄₆	F ₄₇	F ₄₇	47	46	46	45	46	46	45	44	42	F ₄₂	F ₃₈	F ₃₆	F ₃₅	
UQ	F ₃₇	F ₃₉	F ₃₇	F ₃₈	43	F ₄₅	F ₄₇	F ₅₁	F ₄₉	F ₅₁	F ₅₀	50	50	50	48	49	46	47	46	45	46	F ₄₃	F ₃₉	F ₃₈	
LQ	F ₃₁	F ₃₂	F ₃₄	F ₃₃	F ₃₇	F ₃₇	F ₄₂	F ₄₂	F ₄₄	F ₄₅	F ₄₄	42	43	42	43	43	42	44	42	41	F ₃₉	F ₃₃	F ₃₃	F ₃₂	

JAN. 1976

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JAN. 1976

FOF1 (0.01 MHZ)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S, Long. 39° 35.4' E		Sweep MHz to 15 MHz in 30 sec in automatic operation																				
Hour 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				F 310	F 350	U F 350	U A 360	F 370	380	380	390	400	410	410	410	410	400	380	370	360	340	L	L	
2				U R 300	F 350	F 360	F 350	F 370	I B 380	400	400	410	400	410	410	400	390	390	U L 380	F 350	L	L	L	
3				F 300	F 350	B	A	A	390	390	400	400	400	400	420	400	F 380	R	B	360	320			
4					A	B	F 360	A	A	A	B	B	400	Y	C	F 400	400	R	F 350	L 370	L 340			
5				A	A	A	A	A	380	B	R	F 390	F 400	C 400	B	B	B	370	F 350	L	L			
6				A	A	F 360	U F 380	A	R 360	370	380	380	400	400	410	400	390	A	370	350	B			
7				A	A	A	A	F	A	B	R	380	400	400	400	380	380	380	360	L				
8			A	A	F 330	F 340	F 340	F 350	U F 370	B	B	B	B	C	400	U C 400	390	370	370	360	L	L	L	
9			L	R	330	360	370	380	B	U C 380	400	400	400	400	400	400	400	L	L	A	A	L	L	
10				A	A	370	360	370	380	400	400	F 400	400	400	400	400	C 380	380	B	A				
11				A	F	A	A	A	F	400	400	390	380	380	380	370	370	F 350	F 310	A				
12					U F 310	F	A	370	370	U P 380	380	400	400	400	400	C	380	370	350	L 350	L	L	L	
13				A	A	A	A	A	370	C	C	C 400	C	400	400	380	380	C	L	L	L			
14				B	A	A	370	370	370	380	B	Y	B	400	400	B	R	350	340	F	R			
15				U F 300	330	340	360	380	380	390	400	400	400	410	400	380	380	370	360	L 330				
16				A	A	R	370	370	370	C 380	400	400	400	410	400	390	380	L	350					
17					F	B	B	A	B	A	B	R	B	C	C	C	370	360	F 340	U R 330	F			
18					F	A	A	A	A	R	A	F 380	B	B	B	B	350	360	L	L				
19					A	F 330	A	F 370	B	380	390	400	400	400	390	390	380	370	U L 370	340				
20					F	A	A	B	U C 370	380	390	F 400	400	400	400	400	380	F 360	L	L	L			
21					A	R	A	F 370	B	A	F 400	F 400	400	400	390	B	R	F 350	A					
22						B	A	A	370	380	380	380	390	390	380	360	350	350	330	F				
23					F	B	B	A	A	A	C 370	370	R	C 380	380	B	360	B	A	F 300				
24					300	A	C	B	R	I C 370	380	380	R	B	B	B	B	C	B	F 340	320			
25					A	340	360	370	U H 380	380	380	380	U C 380	380	380	380	360	350	L					
26				L	F 300	F 320	F 320	370	380	F 370	380	380	400	390	400	390	380	L	L 360	L				
27					F 310	F 330	F 350	F 350	F 360	F 380	390	380	B	400	400	400	380	370	360	Y	L			
28					F 330	F	F 350	F 350	F 380	380	F 380	400	390	390	390	400	400	370	F 370	340	L	L		
29					A	F	F 340	F 360	F 360	F 370	F 370	B	R	C 390	B	C 390	B	R	B	L				
30					F	300	F 340	F 370	F 360	F 360	F 370	F 390	F 400	400	F 400	C 390	380	F 360	350	330				
31					A	A	A	R	A	R	370	H 370	370	380	C	370	360	340	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT				3	7	12	14	14	20	19	22	24	24	24	25	26	23	21	22	17	9			
MED				F 300	F 330	F 330	F 345	F 365	F 370	F 370	F 380	F 390	400	400	400	400	380	370	360	350	330			
UQ				F 305	F 350	F 345	F 360	F 370	F 380	F 380	F 390	400	400	400	400	400	390	380	370	360	340			
LQ				F 300	F 305	F 315	F 340	F 360	F 365	F 370	F 380	F 380	F 395	F 390	400	390	380	370	350	340	320			

JAN. 1976

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JAN. 1976

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION																									
	Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation																									
Hour 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	U F 160	A	A	K 270	A	A	230	270	270	280	270	290	A	A	A	A	260	A	230	195	150	180	130		
2	H 150	H 170	B	B	A 200	A	H 245	B	B	B	290	285	300	A	A	275	280	270	250	210	170	160	C	A		
3	A	150	K 300	150	A	B	A	A	A	245	270	275	260	A	275	270	A	270	P	B	225	C	210	H U K 280 U K 260		
4	A	C	B	A	A	B	275	A	A	A	B	B	Y	Y	290	275	275	P	260	200	200	420	K U K 200 K 360			
5	U K 250	A	B	A	A	A	A	A	A	B	R	300	275	270	B	B	B	P	U R 240	230	200	B	B	270 K		
6	K 330	K 270	B	A	A	U K 325	U K 300	A	A	H 300	275	280	275	I E 275	285	I C 270	255	250	F 240	200	B	K 360	K 370	B		
7	A	A	B	A	A	A	B	A	A	B	U A 300	280	275	280	275	270	270	255	250	215	H 200	R 200	150	190		
8	130	U K 290	295	K 270	260	260	240	245	270	C	B	B	B	F	B	B	A	A	250	220	220	190	170	130	U A 125	
9	K 220	U A 150	170	F 200	K 300	U A 270	U F 280	A	U A 250	B	310	280	280	C	270	270	260	255	H 250	F 220	H 190	A	C	U A 140		
10	U H 120	100	280	K U K 340	B	A	J K 310	260	260	H 250	280	270	280	H 270	250	280	U A 275	255	B	A	195	130	C	A		
11	170	U K 380	A	A	A	A	A	A	A	300	280	320	280	R 280	280	A	R	250	240	R 240	A	A	U K 370	B		
12	B	U K 270	A	B	B	245	A	A	330	U A 300	A	290	280	300	290	C	B	B	U P 270	250	220	300	170	A	K 310	
13	K 365	A	A	A	A	A	A	A	A	325	U C 300	280	280	C	290	290	280	280	260	B	225	200	H 180	H 180	B	
14	U K 280	A	U K 300	B	B	A	A	265	250	F 260	H 270	270	B	B	Y	B	B	P	B	H 250	B	A	F 160	180		
15	K 325	A	B	K 300	290	250	250	H 250	U A 250	270	270	270	300	A	C	A	275	260	240	230	225	200	J K 360	U K 320		
16	U K 350	A	B	U K 315	A	B	A	A	270	260	290	280	285	U A 270	280	280	270	C	240	215	170	145	J K 370	K 360		
17	A	B	B	A	300	K	B	B	B	A	B	B	B	F	B	C	C	C	255	230	B	210	H 180	A	B	
18	U K 300	A	A	U K 280	A	U K 300	A	A	A	A	A	A	320	B	B	B	B	P	B	220	190	A	170	A		
19	A	U K 230	K 360	A	B	A	275	A	A	B	B	A	290	275	265	250	A	B	B	235	220	250	K	B	A	130
20	B	U K 290	A	A	K 270	A	A	A	B	B	U R 300	280	280	300	300	H 280	280	H 250	250	220	190	H	A	B	A	
21	125	160	U H 160	U K 270	A	A	A	A	310	B	B	280	U R 290	B	B	B	B	P	230	A	B	140	U K 330	A		
22	C	B	250	B	B	A	B	A	A	270	B	295	270	275	275	275	A	260	315	U A 230	A	A	A	A		
23	B	B	U K 330	K 280	A	B	B	B	A	A	300	290	E	B	R 280	B	U R 275	P	A	R	R	170	170	A		
24	K 210	A	K 330	B	B	260	B	A	B	A	A	300	B	B	B	B	B	C	B	U R 230	B	F 175	155	A		
25	A	B	K 330	K 350	U K 275	290	K 330	270	270	270	270	R	B	P	B	300	U R 270	B	230	B	U R 225	220	H 170	H 170	A	
26	K 280	U K 225	K 280	A	190	U H 190	250	A	300	260	265	265	U A 275	270	290	275	270	R 255	240	220	C	H 160	C	A	120	
27	A	140	140	B	190	210	210	225	250	265	A	270	B	275	275	275	275	250	230	220	210	C	U R 140	B		
28	B	C	C	170	A	A	240	230	240	250	R 265	280	280	275	I C 275	275	A	A	A	240	175	B	A	K 265		
29	U K 290	A	C	A	A	A	200	235	240	260	275	A	B	F	B	B	Y	B	B	B	B	U A 195	145	A	A	
30	A	A	A	A	H 175	U R 190	A	U F 230	230	240	280	H 280	A	R 270	275	260	A	250	250	B	U A 190	A	A	A		
31	A	B	B	B	A	A	225	A	A	A	A	A	280	B	B	U R 260	240	230	A	A	A	H 150	A	A		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	16	14	13	11	11	12	13	10	16	17	19	22	20	17	19	17	15	19	19	24	21	20	17	14		
MED	K 265	U 198	K 295	K 280	K 270	255	250	240	255	270	280	280	280	275	280	275	275	255	240	220	195	170	180	225		
UQ	K 312	U K 270	K 330	K 308	K 282	280	280	260	270	270	295	290	290	280	290	275	275	260	250	230	210	190	K 330	K 310		
LQ	160	150	250	235	195	218	240	230	248	260	272	270	278	270	275	270	270	250	238	220	190	150	160	130		

The Radio Research Laboratories, Japan

JAN. 1976

FOE (0.01 MHz)

IONOSPHERIC DATA

JAN. 1976

FOES (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																	
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	22	J A 26	J A 29	K 27	53	45	33	31	31	G	G	G	J A 38	47	45	J A 36	30	29	34	29	27	G	G		
2	G	G	E B 22	E B 25	25	31	25	E B 28	E B 42	E B 33	G	G	G	30	31	G	G	C 25	G	G	23	G	22	20	
3	22	J A 25	K 30	23	32	B	41	48	33	G	G	G	J A 37	34	33	31	G	B	B	G	E C 31	G	J A 32	J A 37	
4	J A 61	C	B	J A 30	35	B	G	45	42	40	E B 41	E B 50	G	G	G	45	G	B	G	G	J A 36	K 42	J A 24	K 36	
5	35	J A 39	47	J A 49	42	51	45	45	J A 39	B	G	G	G	G	E B 41	B	E B 40	E B 30	G	35	G	30	J A 62	34	
6	K 33	J A 39	45	40	43	52	32	42	38	G	G	G	31	J A 59	G	J A 36	J A 38	J A 46	30	G	B	K 36	K 37	42	
7	J A 75	42	65	43	43	43	34	J A 50	43	B	35	G	G	G	G	32	33	30	G	G	25	G	24	22	
8	22	38	39	38	J A 39	J A 37	J A 25	J A 32	35	B	B	B	E B 40	E B 31	E B 31	J A 39	J A 39	G	27	G	G	G	20	25	
9	J A 32	23	18	G	K 30	42	30	34	30	E B 41	G	G	40	J A 97	34	33	J A 45	G	G	J A 49	J A 51	J A 42	57	36	
10	J A 29	J A 33	35	J A 61	45	42	J K 31	G	G	31	G	30	G	31	J A 46	30	30	G	B	J A 40	27	J A 60	J A 51	95	
11	23	87	71	60	130	84	45	43	J A 46	G	35	35	G	G	32	31	G	30	G	G	J A 39	37	K 37	45	
12	J A 47	J A 39	46	B	67	32	72	44	36	31	35	G	G	32	G	E B 32	E B 30	G	29	G	K 30	G	D C 34	K 31	
13	K 36	42	42	35	55	43	42	42	41	G	31	G	G	G	G	32	37	31	38	G	J A 38	G	G	B	
14	30	J A 36	37	58	B	45	38	G	G	G	G	E B 50	E B 35	E B 40	G	E B 32	B	B	F B 38	G	31	31	20	25	
15	K 32	40	B	K 30	31	G	G	G	27	G	G	G	G	33	E B 31	30	36	35	G	G	G	30	J K 36	K 32	
16	K 35	40	57	35	42	103	32	35	G	G	G	G	G	34	30	G	G	G	G	G	G	J A 50	J K 37	K 36	
17	J A 47	105	51	43	35	E B 32	B	43	40	B	40	B	B	B	C	C	C	C	J A 61	E B 30	G	26	J A 32	44	
18	J A 52	J A 39	37	65	J A 41	65	40	38	53	40	35	43	G	B	B	B	B	F B 33	35	J A 59	J A 79	25	23	J A 24	
19	J A 26	J A 34	38	36	B	45	32	37	30	B	E B 31	35	32	43	J A 72	42	E B 29	E B 27	G	G	K 25	B	25	J A 41	
20	40	J A 84	J A 51	J A 52	32	28	J A 41	51	B	E B 35	G	G	28	32	32	G	31	G	G	25	G	27	35	20	
21	J A 37	J A 31	J A 41	K 27	70	40	35	J A 39	J A 43	B	42	G	G	E B 30	E B 30	E B 30	B	B	G	40	35	J A 39	J A 35	J A 40	
22	47	B	30	B	43	42	B	40	J A 57	G	E B 33	G	30	G	G	G	30	G	32	29	J A 41	J A 40	42	J A 40	
23	50	43	35	31	J A 101	B	B	60	C 39	J A 39	35	32	B	E B 32	G	B	G	B	J A 37	G	G	G	J A 22	J A 31	
24	26	J A 37	34	B	B	32	40	35	45	35	32	G	B	B	B	B	B	C	B	29	E B 23	24	G	33	
25	37	35	35	K 35	45	35	K 33	30	G	29	G	E B 30	E B 34	E B 34	34	26	E B 32	G	E B 24	G	G	15	G	17	
26	K 28	J A 24	K 28	24	25	26	35	33	35	G	31	37	35	25	31	G	G	G	G	G	E C 40	G	E C 16	19	
27	35	J A 34	23	30	27	G	32	G	42	G	30	31	B	G	G	G	G	G	G	25	G	30	17	E B 14	
28	17	18	24	25	30	23	J A 36	G	45	G	G	28	G	G	E C 30	28	J A 28	J A 34	45	J A 24	22	42	30	J A 34	
29	39	48	J A 41	J A 41	J A 41	38	G	G	G	30	30	B	E B 42	E B 34	B	G	E B 39	B	B	32	45	35	J A 61	30	
30	30	26	J A 31	32	27	G	J A 22	27	28	J A 46	G	30	J A 32	G	G	G	J A 27	G	G	E B 25	35	21	22	J A 34	
31	J A 51	B	B	47	30	35	36	J A 54	32	52	35	34	G	E B 30	E B 32	G	G	G	52	47	36	21	32	J A 50	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	28	28	28	28	28	28	31	30	25	30	28	27	28	27	26	26	24	27	31	30	30	31	30	
MED	35	38	37	35	40	39	34	37	36	E G 30	E G 30	G	G	E G 31	E G 31	28	E G 30	G	G	G	26	27	30	34	
UQ	44	41	46	45	44	45	40	44	42	U 33	35	32	U 31	33	32	32	34	30	32	31	36	37	36	40	
LQ	27	J A 28	30	30	30	32	30	29	30	G	G	G	G	G	G	G	G	G	G	G	G	G	21	24	

JAN. 1976

FOES (0.1 MHz)

IONOSPHERIC DATA

JAN. 1976

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION																							
	Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation																							
Hour 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	12	10	13	E ₁₀ C	10	13	11	10	E ₁₀ C	10	11	10	E ₁₅ C	9	10	17	E ₁₀ C	13	25	18	10	10	E ₁₀ C	10
2	10	8	22	25	8	9	E ₁₂ C	28	42	33	18	13	18	15	13	13	13	10	13	10	9	10	E ₁₇ C	10
3	10	E ₁₀ C	10	10	15	B	13	E ₁₀ C	E ₁₇ C	E ₁₀ C	E ₁₀ C	E ₁₅ C	E ₁₀ C	12	11	10	10	R	B	12	E ₃₁ C	E ₁₀ C	9	E ₁₀ C
4	10	C	B	9	20	B	12	18	22	23	41	50	27	25	21	12	10	R	19	12	10	14	E ₁₅ C	11
5	10	12	18	12	10	13	9	10	E ₂₆ C	B	22	13	17	11	41	B	40	30	20	18	15	20	21	8
6	20	10	28	14	18	E ₁₀ C	12	18	17	E ₁₅ C	10	12	E ₁₀ C	E ₃₀ C	E ₁₀ C	13	10	11	11	10	B	20	13	24
7	13	12	20	18	15	14	25	11	18	B	15	18	14	17	11	15	18	19	15	10	12	19	11	9
8	10	8	E ₁₄ C	15	10	9	E ₁₀ C	9	10	B	B	B	40	31	31	14	10	15	19	18	13	11	10	E ₁₀ C
9	E ₁₀ C	E ₁₀ C	E ₁₀ C	8	E ₁₀ C	10	E ₁₀ C	10	8	41	21	19	10	E ₁₅ C	10	E ₁₀ C	E ₁₀ C	12	13	11	E ₁₂ C	13	E ₁₅ C	10
10	E ₁₀ C	5	15	11	26	13	10	E ₁₀ C	16	E ₁₀ C	E ₁₀ C	10	10	10	E ₁₂ C	19	E ₁₅ C	E ₁₅ C	B	E ₁₁ C	9	E ₁₀ C	E ₁₅ C	E ₁₀ C
11	9	19	15	11	11	8	14	9	10	13	13	15	15	13	12	12	17	12	10	E ₁₀ C	9	E ₂₂ C	10	27
12	15	10	10	B	28	15	10	20	14	11	18	17	15	13	14	32	30	27	20	14	12	10	E ₁₁ C	10
13	10	18	30	20	21	15	19	21	20	15	11	10	12	19	14	11	11	11	28	14	11	14	E ₁₀ C	B
14	12	12	13	35	R	18	15	14	E ₁₅ C	11	15	50	35	40	20	32	B	B	38	10	23	E ₁₅ C	12	9
15	11	19	B	10	15	13	10	E ₁₅ C	10	E ₁₃ C	13	15	15	15	31	15	E ₂₀ C	15	10	10	11	10	E ₂₀ C	25
16	20	20	40	20	15	27	15	8	12	13	13	11	10	10	10	10	10	21	15	10	E ₁₂ C	10	12	12
17	E ₁₂ C	63	21	19	21	32	B	37	22	B	28	R	P	B	C	C	C	20	15	30	20	12	9	23
18	E ₁₀ C	10	9	10	E ₁₅ C	9	11	9	10	20	21	20	19	B	B	B	B	33	27	17	13	12	10	7
19	E ₁₀ C	10	15	18	B	18	23	13	17	B	31	18	13	15	12	13	29	27	19	10	18	B	12	8
20	21	E ₁₅ C	E ₁₀ C	E ₁₀ C	10	10	12	18	B	35	25	20	15	13	10	10	E ₁₀ C	12	21	15	12	10	23	10
21	10	E ₁₀ C	9	E ₁₀ C	10	15	13	15	E ₃₀ C	B	29	15	14	30	30	30	B	R	13	15	24	11	13	11
22	E ₁₅ C	B	7	B	28	E ₁₅ C	R	22	20	13	33	21	10	15	20	10	20	15	12	12	10	14	13	E ₁₀ C
23	18	18	7	13	10	B	B	28	21	15	20	19	R	32	23	B	26	R	14	12	12	10	10	12
24	18	12	15	B	B	21	28	20	41	18	22	22	R	B	B	B	B	C	B	22	23	10	12	E ₁₀ C
25	12	30	28	E ₂₀ C	22	22	14	13	10	E ₁₀ C	15	30	34	34	18	20	32	13	24	22	15	12	15	E ₁₀ C
26	10	14	12	12	10	15	17	12	12	12	10	11	11	9	13	12	17	E ₁₅ C	E ₁₀ C	13	E ₄₀ C	14	E ₁₆ C	11
27	10	10	10	20	14	14	E ₁₂ C	E ₁₀ C	E ₁₀ C	10	E ₁₀ C	9	R	22	15	14	17	15	18	21	10	E ₂₀ C	E ₁₀ C	14
28	12	E ₁₃ C	E ₂₀ C	10	10	E ₁₆ C	E ₁₅ C	9	E ₁₀ C	E ₁₀ C	9	9	10	12	E ₃₀ C	10	11	11	11	9	13	19	10	9
29	10	18	E ₂₀ C	12	12	E ₁₅ C	9	9	9	15	15	B	42	34	B	22	39	R	B	24	18	13	11	E ₁₀ C
30	10	10	E ₁₀ C	10	9	E ₁₀ C	E ₁₀ C	8	12	10	E ₁₂ C	11	10	13	18	12	8	10	10	25	18	12	E ₁₀ C	10
31	8	B	B	27	10	18	E ₁₇ C	14	E ₁₀ C	20	20	15	15	30	32	20	10	17	15	18	E ₁₅ C	E ₁₀ C	E ₁₀ C	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31	31	31
MED	10	12	14	12	15	14	12	12	14	15	15	15	15	15	15	14	16	15	18	13	12	12	11	10
UQ	12	18	22	20	21	18	17	18	20	34	22	20	30	30	30	22	30	30	24	18	17	14	14	12
LQ	10	10	10	10	10	11	10	10	10	10	12	12	10	12	12	12	10	12	13	10	10	10	10	10

JAN. 1976

F-MIN (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1976

M(3000)F2 (0.01)

45 E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep MHz to 15 MHz in 30 sec in automatic operation																						
Hour 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	U 295	F 320	F	F	F 265	F 260	F 255	F 265	F 280	F 285	F 280	F 275	F 295	F 305	F 300	F 280	F 290	F 315	F 320	F 330	F 310	F 320	F 330					
2	F 315	F 315	F 295	U 280	F 280	F 280	F	F	F 285	F 265	F 290	F 295	F 300	F 290	F 280	F 255	F 300	F 300	F 305	F 305	F 310	F 315	F 320	F 320				
3	F 320	F 270	F	F	F	B	F 285	F 255	F 280	F 280	F 270	F 270	F 285	F 310	F 270	F 270	F 250	F	B	F 325	F 325	F 315	F 320	F				
4	F 305	C	B	F	Y	B	F 260	F	R 250	F	F 245	F 285	F 270	F 295	F 290	F	F 260	F	B	F 305	F 300	F 295	F	F				
5	F 280	A	A	A	A	A	A	A	A	F 270	B	R	F	F	F 275	F	B 300	F 300	F 295	F 285	F 290	F 325	F	F 295				
6	R	F	A	A	A	R	F	R	R	F	G	R	F 280	F 250	R	F 270	F 325	F 290	F 310	F 300	B	F	R	A				
7	F	A	A	A	A	A	R	F	A	B	R	G	R	G	F 260	R	U 285	F 310	F 290	F 295	F 345	F 300	F 335	F 305				
8	F 310	F 310	F 295	F 285	F 285	F 275	F 280	F 275	F 260	B	B	B	F 265	F	F 280	F 280	F 245	F 275	F 290	F 305	F 305	F 300	R	U 295				
9	F 290	S	J	J	R	F	F	F	F	F	F 240	F 260	F 245	F 270	P	G	U 285	F 300	F 305	F 300	F 300	A	F 320	F 325	F 340	F 310		
10	F 300	F	R	F	A	A	R	F	F 260	F 265	F 285	F 285	R	F 320	R	F 275	R	F 250	F 245	B	F	R	F	A	A			
11	F	F 310	A	A	A	F	A	A	A	F	G	G	G	G	G	G	G	F 290	G	G	A	A	A	A				
12	A	A	A	B	Y	R	R	A	G	F 230	F 245	F 255	F 250	F 240	F 265	G	C	F 280	F 275	F 255	F	F 335	C	F 295				
13	F 295	R	R	A	A	A	A	A	R	F 260	F 250	F 240	R	R	G	G	R	F 290	F 300	F 310	F 320	F 310	F 335	B				
14	A	F 290	F	A	B	A	R	F	F 260	F 255	F 255	F 275	U 260	F 265	F 255	R	B	R	F 270	F 270	F	R	F	F 345				
15	A	A	B	F 300	F 280	F 265	F 275	F 280	F 245	F 270	F 275	F 265	F 240	F 275	R	R	F 255	F 300	F 280	F 295	F 285	U 305	R	R				
16	R	R	B	F 295	A	A	R	F 240	F 235	F 265	F 250	F 290	F 240	F 275	J 305	F 275	F 270	F 305	F 300	F 315	F 335	F 305	R	F				
17	A	B	A	A	R	F	B	A	R	B	R	B	R	B	C	C	C	F 275	F 295	F 300	F 305	F 345	R	A				
18	F	A	A	52	A	F	R	R	A	R	R	R	G	B	B	B	B	R	F 285	U 295	F 325	F	F 305	F 305				
19	F 270	F 310	R	R	B	A	R	F 260	F 245	B	F 240	F 285	F 270	F 245	F 250	F 285	F 285	F 280	F 295	F 280	F 290	B	F 345	A				
20	A	F	F	F	F	F	F	A	B	F	F 285	F 280	F 275	F 275	F 300	F 290	F 280	F 295	F 310	F 335	F 290	F 305	A	F				
21	A	F	F	F	F	F	F	A	B	F	F 285	F 280	F	F 275	F 255	R	B	R	F	A	R	A	F 300	A				
22	A	B	F	B	A	F 330	B	A	A	G	F 240	F 240	G	F 245	G	R	F 235	C	R	F	A	A	A	A				
23	A	A	F 270	F	F	B	B	A	R	R	R	R	R	B	F 260	F 260	B	F 250	B	A	F 300	F 285	F 290	F 325	F 330			
24	F	F 285	R	B	B	F 255	A	F 250	A	R	F 250	F 265	B	B	B	B	B	C	B	F 290	R	F 295	F 315	F 325				
25	A	R	R	R	A	F	F 260	F 265	F 270	F 260	F 260	F 280	F 270	F 255	F 250	F 300	F 285	F 265	F	F 315	U 320	F 355	F 305	F 315				
26	U 280	V 295	F	F	F 280	F 280	F 280	F 295	F 275	F 320	F 280	F 300	F 290	F 295	F 320	F 310	F 305	F 325	F 315	F 325	H	C	F 320	F 325	F 310			
27	F	A	F 305	F 305	F 300	F 300	F 270	F 295	F	F	F 270	F 290	R	F	F 295	F	F 300	F 275	F 305	F 310	F 330	R	F	R				
28	F 330	F 250	R	F 305	F 305	U 270	F	F 300	F 280	F 275	F 290	F 275	F 260	F 295	F 280	F 285	F 270	F 300	F 295	F 295	F	F	F 315	F 340				
29	A	R	F	A	F 335	F	F 285	F 270	F 265	F 260	F 250	F	F 270	R	B	F 305	F 310	B	B	F 320	F 325	F 315	F	R				
30	R	F	A	F 275	F 295	F 285	F 265	F 270	F 280	F 275	F 265	F 280	F 295	F 290	F 300	F 310	F 290	F 315	F 300	F 280	F 255	U 305	F 325	R				
31	A	B	B	R	R	R	R	A	R	A	R	F	R	F	F 280	F 270	F 240	F 250	A	A	A	F 325	F 310	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
CNT	12	10	6	9	9	10	10	15	18	16	24	22	21	22	24	18	24	22	22	26	20	20	16	14				
MED	F 298	F 308	F 288	F 295	F 285	F 278	F 272	F 265	F 265	F 265	F 258	F 278	F 270	F 275	F 278	F 282	F 280	F 290	F 298	F 300	F 315	F 312	F 320	F 312				
UQ	F 312	F 310	F 295	F 300	F 300	F 285	F 280	F 278	F 275	F 278	F 282	F 285	F 280	F 290	F 292	F 300	F 300	F 300	F 305	F 315	F 325	F 325	F 330	F 330				
LQ	F 285	F 290	F 270	F 280	F 280	F 265	F 260	F 258	F 245	F 260	F 245	F 265	F 250	F 245	F 255	F 270	F 250	F 275	F 290	F 290	F 290	F 305	F 312	F 305				

JAN. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

JAN. 1976

H'F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.				Long. 39° 35.4' E				Sweep MHz to 15 MHz in 30 sec in automatic operation														
Hour 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				F 405	F 400	F 380	F 450	R 430	F 390	F 370	F 350	F 350	F 375	F 330	F 310	F 345	F 395	F 380	F 335	F 300	F 270	L	L	
2				F 375	F 350	F 365	F 370	R	F 340	F 380	F 325	F 315	F 330	F 350	F 400	F 480	F 365	F 360	F 305	F 300	F 250	L	L	
3				F 380	F 410	F 415	F 440	F 440	F 365	F 325	F 350	F 350	F 355	F 300	F 380	F 395	F 480	F B	F B	F 295	F 295			
4				F Y	F B	F 440	F A	F 430	F 430	F 450	F 370	F 390	F 345	F 360	F	F 440	F P	F 345	F 330	F 330				
5				F A	F A	F A	F A	F A	F 420	F B	F R	F U F 500	F U F 560	F 410	F U C 510	F B	F 355	F 345	F 350	F L	F 300			
6				F A	F A	F R	F F	F A	F R	F F	F G	F R	F 405	F 490	F R	F 430	F 350	F 365	F 305	F 300	F B			
7				F A	F A	F A	F R	F F	F A	F B	F R	F G	F 550	F G	F 480	F 490	F 390	F 345	F 330	F L				
8				F 370	F 390	F 355	F 390	F 355	F 370	F 400	F B	F B	F U R 440	F U F 440	F 440	F U F 440	F 515	F 400	F 350	F 300	F L	F L	F L	
9				F L	F 400	F 400	F 400	F 430	F 450	F 425	F 490	F U H 440	F P	F G	F 400	F 340	F 350	F L	F L	F A	F 300	F 255	F 250	
10				F A	F A	F R	F 455	F 405	F 360	F U H 305	F R	F 330	F R	F 420	F R	F 420	F 450	F B	F F					
11				F A	F F	F A	F A	F A	F F	F G	F G	F G	F G	F G	F G	F G	F G	F G	F G	F G	F A			
12				F R	F R	F A	F G	F L	F 480	F 450	F 520	F 525	F 465	F G	F C	F 395	F 410	F L	F 400					
13				F A	F A	F A	F A	F A	F 455	F 505	F 540	F P	F R	F G	F G	F R	F 390	F 345	F 305	F L	F L			
14				F B	F A	F A	F 450	F 450	F 410	F 420	F B	F Y	F 450	F 490	F R	F B	F P	F 420	F U H 420	F R				
15				F 380	F 445	F 400	F 390	F 480	F 400	F 400	F 460	F 560	F 440	F R	F R	F 525	F 370	F 430	F 355	F 385				
16				F A	F A	F R	F 510	F 540	F 420	F 460	F 385	F 580	F 450	F 355	F 450	F U H 450	F 325	F L	F 320					
17				F F	F B	F A	F A	F B	F R	F B	F R	F B	F C	F C	F C	F 405	F 350	F 350	F 335					
18				F 325	F A	F R	F A	F R	F R	F A	F G	F B	F B	F B	F B	F R	F 380	F L	F L					
19				F A	F R	F 450	F 505	F B	F 510	F 390	F 450	F 545	F 530	F 400	F 395	F 390	F 380	F 400	F 340					
20				F F	F 345	F A	F B	F 425	F 355	F 400	F 395	F 420	F 350	F 370	F 420	F 380	F 330	F L	F L					
21				F F	F 375	F R	F B	F A	F 430	F 455	F 430	F 440	F R	F B	F P	F F	F A							
22				F B	F A	F A	F G	F 560	F 550	F G	F 550	F G	F U R 650	F 550	F C	F R	F R							
23				F F	F B	F B	F A	F R	F A	F R	F R	F P	F 455	F 460	F B	F 505	F R	F A	F 400					
24				F 470	F A	F 500	F B	F R	F 505	F 525	F B	F B	F B	F B	F C	F B	F 395	F R						
25				F F	F 455	F 430	F 395	F 430	F 420	F 370	F 405	F 500	F 510	F 345	F 400	F 450	F 550	F L						
26				F 390	F 385	F 360	F 380	F 360	F 380	F 300	F 400	F 345	F 390	F 450	F 340	F 365	F 360	F L	F 330	F L				
27				F 350	F 330	F 370	F 310	F 310	F 360	F 400	F 375	F B	F 350	F 340	F U F 450	F 350	F 380	F 365	F 305	F 250				
28				F 420	F F	F 330	F 365	F 390	F 350	F 400	F 415	F 350	F 350	F 350	F 430	F 330	F 350	F 350	F 275	F 250				
29				F 300	F F	F 350	F 420	F 445	F 450	F 490	F B	F 425	F 400	F B	F 325	F 325	F R	F B	F L					
30				F 340	F 340	F 315	F 400	F 395	F 390	F 410	F 385	F 345	F 350	F 360	F 350	F 380	F 300	F 340	F 390					
31				F 300	F R	F A	F R	F A	F R	F A	F R	F 410	F P	F R	F 390	F 390	F 450	F 475	F A	F A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT			1	5	10	12	14	16	19	18	23	23	23	25	25	21	24	20	21	17	13	2	1	
MED			F 370	F 390	F 368	F 372	F 378	F 430	F 405	F 405	F 420	F 400	F 425	F 440	F 420	F 400	F 410	F 380	F 350	F 330	F 300	F 252	F 250	
UQ			F 390	F 400	F 410	F 415	F 450	F 450	F 430	F 498	F 480	F 555	F 500	F 490	F 480	F 465	F 402	F 380	F 390	F 340				
LQ			F 380	F 350	F 335	F 355	F 380	F 385	F 370	F 378	F 372	F 390	F 350	F 360	F 350	F 362	F 352	F 335	F 300	F 275				

JAN. 1976

H'F2 (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1976

H'F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S, Long. 39° 35.4' E		Sweep MHz to 15 MHz in 30 sec in automatic operation																					
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	270	275	310	E A 295	345	A	A	U F 220	220	H 205	H 195	215	210	200	A	A	205	215	215	240	220	205	240	240	
2	240	230	275	B E 290	230	210	190	250	B	200	250	205	230	250	210	210	220	220	230	200	215	200	230	250	
3	A 225	275	360	H 250	A	B	A	A	240	225	200	225	240	210	225	215	205	B	B	245	E C 260	250	280	F	
4	290	C	B	F	A	B	225	A	A	A	B	B	225	Y	230	205	225	B	200	275	230	R	245	R	
5	390	A	A	A	A	A	A	A	A	B	R	F	200	205	B	B	B	230	205	245	A 230	270	F 255	A 350	
6	R	A	A	A	A	385	290	F	A	A	250	205	200	200	230	H 200	230	A	A	A	250	B	R	R	A
7	F	A	A	A	A	A	A	F	A	B	A	205	215	225	200	230	220	220	205	230	250	230	250	280	
8	295	310	A	A	330	250	200	220	210	B	B	B	B	220	200	200	240	240	245	205	220	230	240	265	
9	E A 345	275	270	275	R	295	240	F 245	200	B	200	220	205	220	A 210	200	A	210	245	A	A	A	245	220	
10	A 255	A 260	A	F	A	A	290	240	235	200	230	195	220	205	220	205	220	215	B	A	A	F	A	A	
11	290	325	A	A	A	F	A	A	A	F	240	305	230	230	230	245	240	F 260	240	290	A	A	A	B	
12	A	A	A	B	Y	U F 340	A	A	255	250	A	230	210	225	200	210	220	230	235	210	300	250	A	350	
13	400	R	R	A	A	A	A	A	A	250	250	C U C 225	H 190	C	230	205	250	250	A	210	210	230	245	B	
14	A	A	A	B	B	A	A	240	210	220	215	B	200	B	240	220	B	B	B	265	A	255	255	250	
15	A	A	B	E R 380	A	260	255	205	H 210	200	U H 190	U H 200	200	200	H 200	220	225	215	230	230	250	260	R	R	
16	R	A	B	A	A	A	A	200	210	H 190	200	240	200	200	H 200	H 195	205	220	270	220	240	250	R	305	
17	A	B	A	A	R	F	B	B	A	B	A	B	B	B	C	C	C	220	230	E B 250	240	230	A	B	
18	F 400	A	A	365	A	A	A	A	A	A	A	A	A	U H 220	B	B	B	B	B	250	260	A 230	240	280	300
19	A 370	340	R	A	B	A	260	A	225	B	210	200	210	200	210	230	230	210	220	225	250	B	250	A	
20	A	F	A	F	F	F	A	A	B	B	215	190	H 200	210	H 200	200	225	205	225	225	225	350	B	250	
21	A	F	F	U F 320	F	A	A	A	240	B	A	230	H 200	215	210	230	B	B	200	A	A	A	350	A	
22	A	B	315	B	A	255	B	A	A	220	235	220	210	205	195	205	290	240	295	250	A	A	A	A	
23	A	A	410	F	F	B	B	A	A	A	A	210	R	230	230	B	225	R	A	320	275	290	285	260	
24	F 370	A	R	B	B	A	A	A	B	230	A	200	R	B	B	B	B	C	B	275	230	280	255	A	
25	A	B	R	A	A	A	240	225	195	245	U H 200	240	200	B 240	210	215	235	225	225	250	230	280	280		
26	330	325	U F 350	295	255	235	U F 305	E A 300	245	200	200	200	220	250	200	200	H 210	210	H 200	225	C	230	240	240	
27	F 350	A	305	330	275	210	200	200	195	190	195	200	R	205	225	200	200	H 230	200	Y	220	F	230	230	
28	230	245	270	300	320	250	F 230	200	U H 205	230	195	230	190	H 230	205	205	205	225	A 245	230	230	225	280	285	
29	A	A	F	A	A	A	F	220	200	205	200	B	R	260	B	240	B	R	B	250	A 245	250	A 250	250	
30	265	E A 380	A	380	F	U H 200	225	200	195	240	240	220	225	205	245	205	200	195	205	E B 240	350	A 250	245	A	
31	A	B	B	A	R	A	A	A	A	A	A	U F 240	230	240	R 230	240	230	Y	A	A	A	280	310	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	16	12	10	11	6	11	12	14	17	18	20	24	25	25	25	25	23	21	22	26	22	22	22	17	
MED	291	284	312	298	298	250	235	220	210	212	208	212	210	215	210	210	220	220	228	235	232	250	250	260	
UQ	360	328	355	336	330	278	275	240	235	230	238	228	225	230	230	230	230	230	245	250	250	260	280	285	
LQ	260	268	275	U 277	255	222	212	200	205	200	200	200	200	205	200	205	208	215	205	225	225	230	245	250	

The Radio Research Laboratories, Japan

JAN. 1976

H'F (KM)

IONOSPHERIC DATA

JAN. 1976 H¹ES (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	145	130	115	105	105 ^K	100	100	100	100	95	G	G	G	100	95	95	100	125	120	130	125	125	G	G
2	G	G	B	B	130	100	100	B	B	B	G	G	G	100	100	G	G	100	G	G	110	G	150	145
3	140	150	105 ^K	125	110	B	110	100	130	G	G	G	100	105	110	100	G	R	R	G	C	G	105 ^K	130 ^K
4	100	C	B	100	105	B	G	100	100	100	B	B	G	G	G	105	G	R	G	G	125	110	115 ^K	110 ^K
5	110 ^K	110	100	100	100	100	100	100	100	B	G	G	G	G	B	B	B	R	G	130	G	140	150	105 ^K
6	125 ^K	110 ^K	100	100	100	100	100	95	100	G	G	G	E 140	110	G	120	110	110	130	G	B	125 ^K	110 ^K	125
7	100	100	100	100	100	100	105	100	100	B	100	G	G	G	G	145	140	120	G	G	155	G	150	150
8	140	100 ^K	125 ^K	105 ^K	100 ^K	100	95	105	140	B	B	B	R	B	B	100	100	G	110	G	G	G	130	130
9	130 ^K	140	110	G	100 ^K	125	150	100	100	B	G	G	125	110	110	130	115	G	G	125	110	100	105	125
10	130	130	110 ^K	100 ^K	100	100	100 ^K	G	G	105	G	110	G	105	105	120	100	G	B	100	150	145	100	100
11	100	175 ^K	105	100	100	110	100	95	100	G	140	150	G	G	150	100	G	150	G	G	105	125	100 ^K	105
12	100	110 ^K	125	B	150	130	155	105	100 ^K	100	100	G	G	175	G	B	B	G	155	G	105 ^K	G	105	105 ^K
13	105 ^K	110	115	110	100	100	100	100	100	G	100	G	G	G	G	145	150	130	110	G	150	G	G	B
14	110 ^K	110	130 ^K	180	B	100	100	G	G	G	G	B	R	B	G	B	R	R	B	G	125	140	155	150
15	110 ^K	110	B	100 ^K	110 ^K	G	G	G	100	G	G	G	G	100	B	100	125	125	G	G	G	190	110 ^K	150 ^K
16	105 ^K	105	175	130 ^K	130	125	100	100	G	G	G	G	G	105	110	G	G	G	G	G	G	130	115 ^K	105 ^K
17	105	110	100	100	110 ^K	B	B	120	100	B	100	B	R	B	C	C	C	G	125	B	G	100	105	110
18	100 ^K	100	100	125 ^K	100	150 ^K	145	100	100	100	100	100	G	B	B	B	B	R	130	125	125	125	150	100
19	110	110 ^K	140 ^K	115	B	100	160	100	130	B	B	105	125	115	105	105	B	R	G	G	130 ^K	B	130	115
20	115	100 ^K	105	100	130 ^K	100	100	120	B	B	G	G	100	100	120	G	100	G	G	140	G	125	125	125
21	120	130	120	110 ^K	150	105	95	100	110	B	105	G	G	B	B	B	B	R	G	100	115	115	115 ^K	105
22	100	B	100 ^K	B	105	125	B	100	100	G	B	G	125	G	G	G	110	G	105 ^K	155	105	105	105	100
23	100	100	100 ^K	185 ^K	100	B	B	100	100	100	130	145	R	B	G	B	G	R	100	G	G	G	130	130
24	140 ^K	105	125 ^K	B	B	145	105	100	165	105	100	G	R	B	B	B	B	C	B	175	B	175	G	100
25	105	120	E 145 ^K	110 ^K	110 ^K	120 ^K	100 ^K	130	G	105	G	B	R	B	105	105	B	G	B	G	G	125	G	150
26	100 ^K	105 ^K	110 ^K	115	160	140	115	100	100	G	115	105	100	100	160	G	G	G	G	G	C	G	C	120
27	105	130	125	120	150	G	125	G	100	G	100	105	R	G	G	G	G	G	G	155	G	150	150	B
28	145	140	140 ^C	125	105	110	100	G	100	G	G	100	G	G	C	100	100	95	95	100	145	130	150	120 ^K
29	120 ^K	195	120	110	105	110	G	G	G	100	130	B	B	B	B	G	B	R	B	130	125	120	115	150
30	115	115	110	100	150	G	100	100	110	105	G	105	100	G	G	G	105	G	G	B	120	135	130	100
31	100	B	B	110	100	125	105	105	100	100	105	100	G	B	B	G	G	G	105	120	115	150	105	100
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	27	26	28	24	25	24	24	11	13	10	8	12	11	14	12	8	11	13	18	22	26	28
MED	110	110	110	110	105	108	100	100	100	100	100	105	U 106	105	110	105	108	122	110	130	125	125	115	118
UQ	125	130	125	120	130	125	110	102	105	105	115	110	125	110	115	120	120	128	128	140	130	140	150	130
LQ	100	105	102	100	100	100	100	100	100	100	100	100	100	100	105	100	100	105	105	120	110	120	105	105

The Radio Research Laboratories, Japan

JAN. 1976 H¹ES (KM)

IONOSPHERIC DATA

JAN. 1976

TYPES OF ES

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	RA 11	CA 11	R 1	R 2	K 1	L 1	L 2	L 3	L 1	L 2				L 2	L 2	L 1	L 2	H 1	C 1	C 1	C 2	C 1			
2					RC 11	AL 11	L 1							C 1	C 1			L 1			C 1		H 1	RA 11	
3	R 1	RA 11	K 1	R 1	RA 11		R 2	R 2	H 1				C 2	C 2	C 1	C 2							RK 21	RAK 11	
4	LAR 11			AR 12	R 1			R 1	R 1	R 1						C 1					C 2	K 2	RK 11	K 3	
5	RAK 21	R 2	R 1	R 1	R 1	R 1	RA 11	R 1	RR 11											H 1		H 1	H 1	RK 12	
6	K 1	CK 12	R 1	RS 11	P 1	RSK 21	RKA 11	L 1	R 1				H 1	C 2		C 2	C 3	C 2	HA 11		S 1	K 1	KA 21	R 1	
7	RR 11	R 1	R 1	R 1	L 1	R 1	R 1	AR 11	R 1		C 1					H 1	H 1	H 1			H 1		R 1	RA 11	
8	R 1	RK 33	CK 22	CK 11	LK 21	L 2	L 2	C 1	H 1							C 1	C 3		C 1		H 1		R 1	RA 11	
9	RK 21	H 1	R 1		KL 12	RL 11	HL 11	RAL 11	C 1				H 1	C 1	C 1	H 1	C 2			H 3	C 3	L 2	R 2	CC 11	
10	H 3	H 2	CK 11	RK 12	R 1	R 1	K 2			C 2		C 1		C 1	C 1	C 1	R 1			RA 21	RA 21	AR 11	R 1	AR 11	
11	LA 11	AKR 11	RA 11	L 2	AR 11	AL 11	R 1	R 1	R 1		H 1	H 1			H 1	R 1		HA 11			R 2	R 3	K 2	R 1	
12	R 1	RAK 21	AL 11		AC 11	H 1	AR 11	R 1	RK 11	R 1	R 1			H 1					H 1		K 2		R 3	K 2	
13	K 3	R 2	R 1	R 1	R 1	R 1	R 1	R 1	L 1		R 1					H 1	H 1	H 1	C 1		H 1				
14	K 1	R 2	CK 11	AH 11		R 1	R 1															R 1	R 1	HA 11	HA 11
15	K 3	R 1		K 1	RK 11					R 2				L 1		C 1	H 1	H 1				A 1	K 2	K 1	
16	K 1	RAS 11	A 1	RK 11	RL 11	RA 11	L 1	RL 21						C 1	C 1							CR 11	K 4	K 3	
17	RA 11	A 1	R 1	R 1	RK 11			R 1	R 1		R 1								H 1			LA 11	R 2	RS 11	
18	RAK 11	R 1	R 2	ARK 11	RA 11	ARK 12	RR 11	R 1	R 2	R 1	L 1	R 1							H 1	H 1	H 2	RA 11	HA 11	RA 11	
19	RA 21	RK 11	RK 11	R 1		R 1	H 1	R 2	C 1			C 1	C 1	H 2	C 2	C 1					K 1		R 1	R 5	
20	RS 11	RAK 31	RA 21	RA 21	HAK 11	RA 11	R 1	RL 11						C 1	L 1	C 1		L 1			H 1		RA 11	R 1	RA 11
21	R 3	RA 31	CA 21	K 2	AC 11	R 1	L 1	R 1	R 1		R 1										R 1	C 1	R 3	RK 21	RS 21
22	R 1		ACK 11		R 1	RL 11		L 1	R 1					C 1			R 1				RK 11	R 1	RS 21	RS 21	RA 21
23	R 1	RS 11	RKS 11	HAK 11	RA 21			R 1	R 1	CA 11	H 1	H 1									R 1			R 1	C 2
24	CK 11	C 1	CK 11		H 1	C 1	C 1	H 1	R 1	R 1											H 1		RA 11		R 2
25	R 1	C 1	CK 11	K 2	RK 11	RK 11	K 1	H 1		C 1					C 1	L 1						C 1			RC 11
26	K 1	RK 11	K 2	R 1	H 1	H 1	RA 11	R 2	L 1		C 1	C 1	C 1	L 1	H 1										C 1
27	R 2	H 2	H 2	R 1	A 1		C 1		L 1		R 1	C 1									H 1		A 1	R 1	
28	H 1	H 1	R 1	R 1	R 2	RA 11	L 1		L 1							L 1	L 2	L 2	L 2	L 1	HA 11	C 1	RA 11	RK 14	
29	RK 13	AR 12	RA 21	R 3	R 2	RA 31				R 1	C 1									H 1	HL 11	C 1	C 2	AR 11	
30	C 1	R 1	R 2	LCA 11	PA 11		R 1	R 2	C 1	C 1		C 1	C 2				C 1				R 1	RA 11	RA 11	RA 2	
31	RA 21			R 1	RLS 11	C 1	R 1	RA 11	CS 11	RA 11	R 1	R 1								R 1	R 1	R 4	R 1	CR 11	RA 21
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

JAN. 1976

TYPES OF ES

IONOSPHERIC DATA

FEB. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S. Long. 39° 35' 4" E											Sweep MHz to 15 MHz in 30 sec in automatic operation												
Hour	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	48	A	A	A	R	A	B	R	R	R	O R 45	O R 46	O P 46	B	B	O R 49	P	P	B	O R 50	42	A	33	A	
2		A	A	B	B	H	B	B	B	46	O R 48	R	R	B	B	O R 48	O R 48	P	B	X 45	R	O R 41	R	R	
3		A	A	A	B	P	B	B	O R 43	O R 43	X 42	B	B	R	B	B	B	O P 53	B	R	O R 43	X 45	37	A	
4		A	A	45	B	B	B	A	R	O R 45	X 47	X 47	X 49	O R 50	O R 48	R	O R 47	O R 46	O P 50	C 49	44	B	X 35	44	A
5		C	A	A	A	C	O R 40	46	X 47	51	X 48	R	X 50	O P 48	X 49	O R 48	X 50	R 52	X 52	O R 49	42	45	40	38	R
6		A	A	O R 38	B	P	R	B	B	R	O R 44	X 46	O R 46	O P 47	O R 47	X 48	O R 50	O R 49	X 50	X 51	X 46	X 45	X 41	32	32
7	30	O R 31	A	A	R	A	A	A	A	R	47	48	48	O R 50	B	B	P	O P 59	B	65	A	A	A	A	
8		A	A	A	R	35	R	A	A	R	O R 46	B	B	R	B	B	48	B	Y 47	A	A	R	R	A	A
9		B	A	A	B	B	B	45	B	R	B	B	B	H	O R 49	B	B	B	P	C R 51	R	41	O R 39	O R 35	A
10		R	A	B	R	P	R	B	B	B	B	R	P	P	B	C	C	B	P	B	B	44	O R 41	A	R
11		B	A	B	B	R	B	R	X 49	O R 48	B	O R 50	O C 50	R	B	B	B	P	C	C	B	44	O R 46	42	O R 28
12		A	52	A	B	A	R	B	A	O R 46	46	B	B	R	R	O R 48	O R 48	X 53	O R 48	47	X 45	41	O R 36	R	26
13		A	B	B	U S 45	B	B	B	R	B	R	O R 47	X 43	O R 43	B	O R 46	B	O R 46	42	O R 39	B	B	A	A	A
14		A	R	A	B	R	R	R	B	B	R	O R 40	47	O R 49	R	O R 46	B	C	O R 41	B	41	B	36	34	R
15		A	R	A	40	P	X 52	53	52	53	55	54	58	O P 55	X 57	X 58	B	O R 50	X 48	X 45	42	B	R	32	31
16	30	R	A	O R 33	O R 38	38	41	R	50	51	X 52	X 52	O R 53	55	X 53	O R 51	52	X 48	X 52	X 51	X 49	X 48	A	O R 31	
17	28	R	R	A	P	R	O R 49	R	62	68	X 53	55	O R 54	O R 52	B	B	O R 48	O R 49	B	S 48	X 45	R	A	A	
18		A	A	R	A	A	A	46	A	A	A	49	O R 49	P	B	B	B	52	R	46	R	X 46	40	30	28
19		A	A	R	A	A	B	A	R	X 49	B	B	B	P	B	B	B	B	P	B	B	33	O R 29	A	A
20		A	A	A	A	A	O R 41	43	B	B	48	O R 48	B	P	B	B	B	62	P	43	X 43	O R 36	32	A	A
21		A	C 58	45	U S 55	A	B	B	A	O R 48	B	B	O R 49	O R 54	52	B	B	B	P	B	O R 44	41	A	A	A
22		A	A	A	R	U S 65	B	B	R	46	X 47	X 48	O R 48	X 53	B	O R 52	X 54	O R 51	O P 49	X 48	X 45	O R 40	C 38	X 33	A
23	31	X 31	O R 34	R	A	41	46	50	54	X 55	X 56	O C 60	C 60	X 60	X 53	C 56	O R 51	O R 50	X 50	O R 49	O R 46	O R 50	X 46	X 47	47
24	X 43	X 46	43	U S 42	X 43	47	U S 55	56	X 54	X 54	X 55	X 58	X 67	X 66	66	59	53	X 52	X 52	47	X 45	45	45	45	X 42
25	40	39	R	29	A	A	O R 51	51	56	63	67	68	62	62	59	C 61	X 52	X 53	X 51	X 47	X 45	S 44	S 39	R	
26		A	C 28	R	C 37	S 52	52	56	63	B	B	B	B	63	X 62	X 68	R	B	O R 48	B	O R 46	47	46	29	31
27		A	A	A	A	R	R	45	A	A	A	C	52	O R 51	O R 50	B	O R 49	O R 48	47	R	60	A	A	A	35
28		R	A	R	R	B	R	B	B	O R 41	45	B	B	P	B	B	B	52	P	42	R	40	84	A	B
29		A	B	R	A	B	A	A	B	B	B	B	B	P	B	O R 46	O R 45	51	51	58	S 48	40	A	A	A
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	7	7	5	7	5	7	12	8	15	16	17	18	17	14	13	14	18	19	16	20	21	20	15	10	
MED	31	32	43	40	43	41	46	50	49	48	48	50	O P 53	52	52	O R 50	51	49	49	46	44	41	35	31	
UQ	42	42	45	U S 44	S 52	50	52	54	54	54	53	55	55	X 60	X 58	54	52	52	X 51	48	X 45	46	40	35	
LQ	30	31	O R 38	35	38	40	45	48	O R 46	46	O R 47	O R 48	O P 48	O R 49	O R 48	O R 48	O R 48	48	46	44	41	37	32	28	

FEB. 1976

FXI (0.1 MHz)

IONOSPHERIC DATA

FEB. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S, Long. 39 35.4 E		Sweep MHz to 15 MHz in 30 sec in automatic operation																					
Hour 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	F 27	A	A	A	A	A	B	A	A	R	F 39	F 40	40	B	B	U F 42	B	P	B	F 42	F 34	A	F 25	A	
2	A	A	B	B	B	B	B	B	B	F	U F 42	R	B	B	B	U R 42	42	P	B	C 39	R	35	A	A	
3	A	A	B	B	A	B	B	37	F 37	E G 36	B	B	B	B	B	B	B	F 43	B	R	F 35	C 39	F	A	
4	A	A	F 38	B	B	R	A	R	U F 37	41	40	43	44	42	R	41	U C 40	44	43	F 36	B	29	F	A	
5	C	A	A	C	C	F 33	U F 40	41	F 45	42	R	44	47	43	42	44	46	46	F 43	J 35	F 38	J 32	F 27	A	
6	A	A	F	B	B	R	B	B	A	F 38	F 40	40	41	41	42	44	43	44	45	40	38	34	J 26	J 26	F
7	F	F 25	A	A	B	A	A	A	A	A	F 41	F 42	F 42	44	B	B	B	53	B	R	A	A	A	A	
8	A	A	A	R	U F 28	A	A	A	R	F 37	B	B	C	B	B	F 42	B	E G 35	A	A	R	A	A	A	
9	B	A	A	B	B	B	F	B	A	B	B	B	R	43	B	B	B	R	F	R	F 33	F 30	F 28	A	
10	A	A	B	A	B	R	B	B	B	B	R	B	R	B	C	C	B	B	B	B	F 36	F 33	A	A	
11	B	A	B	B	A	B	A	F 43	42	B	F 42	43	B	B	B	B	B	C	C	B	F 38	F 38	J 31	F 22	
12	A	F 26	A	B	B	A	B	A	U F 39	U F 40	B	B	R	R	42	42	47	42	41	39	F 35	F 28	A	F	
13	A	B	B	F	R	B	B	R	B	R	U F 39	E G 36	E G 37	B	40	B	F 40	F 35	33	B	B	A	A	A	
14	A	A	A	B	A	R	A	B	B	R	E G 36	F 40	43	R	40	B	C	E G 35	B	F 35	B	F 30	F 27	A	
15	A	R	A	B	R	U S 45	J F 46	F 45	F 46	F 46	F 44	F 51	49	50	F 51	B	F 43	42	38	F 34	B	R	F 25	F 23	
16	F	A	A	F 25	F 30	F 32	35	R	F 43	F 44	45	47	F 47	49	47	U F 45	F 45	41	45	45	43	41	A	U F 21	
17	F 22	A	A	A	B	R	F 42	R	F	F	U F 46	F 48	F 48	F 46	B	B	42	42	B	F 42	39	R	A	A	
18	A	A	A	A	A	A	F	A	A	A	F	F	R	B	B	B	F 45	R	F	R	40	F 29	U F 23	F	
19	A	A	A	A	A	B	A	R	F 42	B	B	B	R	B	B	B	B	B	B	B	F	U F 22	A	A	
20	A	A	A	A	A	F 35	F 35	B	B	F 41	F	B	R	B	B	B	F 55	P	F	C 37	F 27	F 20	A	A	
21	A	F	F	F	A	B	B	A	42	B	B	43	48	F 45	B	B	B	B	B	R 38	F 34	A	A	A	
22	C	A	A	R	F	B	B	A	F 40	F 41	42	42	46	B	46	48	45	43	42	38	34	F 31	27	A	
23	F 25	25	F	A	A	F 35	F 39	F 42	F 47	48	50	54	F 53	54	J R 47	50	45	44	44	43	40	42	J 40	F	
24	U R 36	J R 40	U F 36	F	C 37	F	F	F 47	48	48	J C 49	52	56	59	60	F 52	F 47	45	45	41	C 39	F 37	J 36	J R 36	
25	J 31	F	R	F 22	A	A	F 43	F 44	F 48	J 52	F 56	J 62	F 55	F 55	F 52	F 53	45	47	45	40	F 39	J 36	F	A	
26	A	F	R	F	F	F	F	R	B	B	B	B	F	56	F 61	R	B	42	B	40	F 41	F	F	F	
27	A	A	A	A	A	A	F	A	A	A	C	F 45	U F 45	F 43	B	F 43	F 41	F 40	A	R	A	A	A	F	
28	R	A	A	A	B	A	B	B	F 38	B	B	B	B	B	B	B	F	C	F	A	F 23	A	A	B	
29	A	B	R	A	R	A	A	B	B	B	B	B	B	B	F	U C 39	F 45	F	F	F	F 40	F 34	A	A	A
30																									
31																									
Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	5	4	2	2	3	5	7	7	13	14	15	17	16	14	12	14	17	18	11	18	20	18	11	5	
MED	F 27	26	F 37	F 24	F 30	F 35	F 40	F 43	F 42	F 41	F 42	43	46	46	46	44	45	42	43	40	F 37	F 32	F 27	F 23	
UQ	F 31	33			F 34	F 35	F 42	F 44	F 46	F 46	F 46	48	48	54	F 52	48	45	44	45	41	39	F 37	F 30	J 26	
LQ	F 25	25			F 29	F 33	F 37	42	F 40	F 38	F 40	42	42	43	42	42	42	41	42	37	F 34	F 29	F 26	F 22	

FEB. 1976

FOF2 (0.1 MHz)

IONOSPHERIC DATA

FEB. 1976

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00 4 S, Long. 39 35 4 E		Sweep		MHz to 15		MHz in 30		sec in automatic operation															
Hour 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	B	A	A	U R	350	350	370	B	B	380	P	R	B					
2							B	R	B	B		360	370	370	R	B	B	C	370	P	B	L			
3							R	R											P	F	B				
4							B	A	R																
5																									
6																									
7																									
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28																									
29																									
30																									
31																									
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	8	11	17	18	19	17	16	13	13	13	13	9	5	3				
MED							305	330	350	360	360	370	370	370	380	370	360	350	340	320					
UQ							315	335	350	360	370	370	380	380	390	380	370	360	340	320					
LQ							300	325	345	350	360	360	370	370	370	370	360	350	340	315					

The Radio Research Laboratories, Japan

FEB. 1976

FOF1 (0.01 MHz)

IONOSPHERIC DATA

FEB. 1976

FOF (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S, Long. 39° 35' 4" E										Sweep MHz to 15 MHz in 30 sec in automatic operation																	
Hour 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	B	B	A	R	A	R	A	A	A	260	R	275	B	B	B	R	R	B	B	215	200	185	A					
2	B	B	B	B	P	B	B	R	B	280	290	R	R	B	B	B	R	R	B	A	295	A	A	C					
3	A	B	B	B	A	R	R	A	A	275	B	B	P	B	B	B	B	235	B	B	B	170	A	A					
4	B	B	K 270	B	R	B	B	A	250	250	265	260	280	U 280	B	B	250	250	220	R	180	B	A	A					
5	C	B	A	C	C	A	215	I 220	C	240	250	280	R	275	270	270	H 270	A	260	R	250	B	B	165	125	120	A		
6	A	B	A	B	R	R	B	B	A	A	270	270	280	260	250	275	250	240	230	200	200	H	H	B	C				
7	A	U 220	K	A	B	R	B	A	A	A	265	260	290	H	270	B	B	B	P	B	A	A	A	A	A				
8	C	A	C	U 300	K	180	R	B	A	A	260	B	R	280	B	B	250	B	225	A	A	U 330	K	K	A	A			
9	B	B	A	B	R	B	K 290	B	A	B	B	B	R	B	B	B	B	R	200	B	U 175	H	H	A	A				
10	B	A	B	B	R	A	R	B	B	B	A	B	R	B	C	C	R	P	B	B	200	K	245	A	B				
11	B	B	B	B	R	B	A	A	U 275	R	B	A	295	R	B	B	B	B	C	C	B	A	B	A	A				
12	A	U 210	K	B	B	R	B	A	A	255	B	B	R	B	275	B	260	R	P	215	175	A	A	A	A				
13	B	B	B	U 260	K	R	B	R	A	B	A	260	260	U 270	A	B	B	Y	215	B	B	B	B	A	A				
14	B	B	B	B	R	A	A	B	B	A	U 270	R	270	275	H	270	H	U 250	R	B	C	R	B	200	B	U 150	H	A	A
15	280	K	550	K	A	B	U 320	K	230	H	210	220	235	265	260	250	A	290	B	R	230	200	160	B	B	A	C		
16	100	A	A	A	170	A	A	A	250	H	A	A	A	245	245	C	270	R	A	250	A	200	190	140	B	B	H	160	
17	A	A	B	A	B	B	A	B	A	A	A	B	270	R	P	B	B	B	B	R	B	170	C	B	A	A	A		
18	A	A	A	A	A	A	U 270	K	A	A	A	A	R	H	B	B	B	C	R	U 220	F	200	A	A	A	A	A		
19	B	A	A	B	R	B	A	K 320	A	B	B	B	R	B	B	B	B	R	R	B	B	B	B	A	A	A	A		
20	B	B	A	B	R	A	280	K	B	B	A	250	B	R	B	B	B	B	P	200	175	180	140	A	C				
21	B	U 220	K	A	U 300	K	B	B	B	A	B	B	B	R	255	B	B	B	R	B	B	B	A	B	B				
22	C	A	A	U 290	K	A	R	B	A	285	C	250	A	A	B	B	250	R	R	C	150	B	B	B	C				
23	A	A	A	A	A	A	200	H	205	210	235	B	R	275	270	265	B	B	R	200	B	B	B	C	C				
24	C	A	A	A	R	B	150	200	200	220	215	A	275	270	255	255	240	225	200	A	145	C	A	A					
25	B	C	A	A	R	A	A	A	245	240	250	260	260	260	250	250	A	210	A	A	C	125	A	A	C				
26	A	120	A	J 270	K	A	220	A	A	B	B	B	B	B	B	A	B	B	R	B	B	U 160	A	A	A	A			
27	C	A	B	A	A	A	U 310	K	A	A	A	C	U 275	A	280	255	B	B	B	210	H	C	270	A	A	C	C		
28	C	A	B	A	R	R	B	B	A	250	B	R	R	B	B	B	B	U 230	R	225	A	140	A	A	B				
29	B	B	A	A	R	B	K 330	B	B	B	B	R	R	B	245	U 250	R	240	F	230	180	U 170	150	A	A	B			
30																													
31																													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT	2	5	1	6	1	2	10	5	8	11	14	12	13	11	9	7	7	11	12	12	14	9	2	1					
MED	190	U 220	K	270	U 280	K	180	270	260	210	242	250	262	265	275	270	255	250	250	230	200	178	170	170	152	H	160		
UQ		U 220	K	300	K		290	K	220	262	258	270	272	280	270	270	258	250	238	220	200	200	200						
LQ		U 210	K	260	K		215	H	205	215	238	250	260	270	260	250	250	240	225	200	170	145	150						

The Radio Research Laboratories, Japan

FEB. 1976

FOF (0.01 MHz)

IONOSPHERIC DATA

FEB. 1976

FOFS (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S, Long. 39° 35' 4" E										Sweep MHz to 15 MHz in 30 sec in automatic operation													
Hour 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	J A 40	36	35	46	35	40	B	40	42	32	G	G	30	B	B	E B 29	P	P	B	J A 72	27	J A 36	K 18	33	
2	55	43	B	B	R	B	B	B	B	G	G	E B 33	R	B	B	E B 32	F R 30	R	B	32	32	J A 31	36	J A 37	
3	J A 41	36	40	B	40	B	B	34	32	32	B	B	P	B	B	B	B	G	B	E B 29	102	22	17	37	
4	39	J A 40	30	B	R	R	47	36	G	G	G	27	G	G	E B 32	E B 30	G	G	G	G	B	23	J A 31	88	
5	C	42	45	36	C	31	G	E C 26	G	G	G	G	G	G	29	30	G	30	E B 27	27	25	22	J A 31	J A 31	
6	58	J A 47	J A 36	B	B	G	B	B	37	30	G	G	G	30	27	G	31	G	G	25	G	G	25	22	
7	J A 26	J A 26	41	43	43	50	46	43	46	40	G	32	G	G	B	B	B	E P 41	B	J A 37	J A 40	68	J A 47	J A 47	
8	J A 48	J A 50	J A 39	K 30	22	31	54	50	30	G	B	R	G	B	B	G	B	30	J A 38	67	K 33	44	J A 46	J A 39	
9	B	45	40	B	B	B	J A 99	B	42	B	B	B	R	E B 34	B	B	R	E P 27	26	E B 22	G	G	J A 35	47	
10	30	J A 61	B	35	B	30	B	B	B	B	30	R	R	B	C	C	R	P	B	B	25	30	J A 99	35	
11	47	55	B	B	35	B	40	32	30	B	30	G	R	B	B	B	B	C	C	R	32	E B 17	15	25	
12	32	82	42	B	40	39	B	48	J A 37	G	B	B	R	E B 33	G	E B 28	G	E P 29	G	G	24	20	32	25	
13	90	B	B	J A 29	B	B	B	36	B	36	G	G	29	B	E B 38	B	G	G	32	B	B	33	J A 33	36	
14	35	30	36	B	33	32	41	B	B	30	G	G	G	G	G	B	C	E P 28	B	G	B	18	18	28	
15	54	35	J A 46	B	37	37	G	G	G	G	G	30	31	26	30	B	E B 28	22	G	24	B	32	16	15	
16	13	J A 28	35	J A 27	35	28	G	35	31	45	26	G	E C 30	G	G	28	G	25	26	25	G	26	J A 46	J A 24	
17	23	J A 26	J A 26	33	R	28	32	40	35	J A 62	E B 28	G	E R 31	E B 33	B	B	E B 34	E P 40	B	28	E C 23	29	J A 62	J A 47	
18	J A 40	56	J A 30	76	37	J A 70	J A 77	J A 43	J A 50	42	40	G	R	B	B	B	E C 27	E P 26	G	25	J A 39	J A 34	J A 24	J A 24	
19	J A 41	J A 61	35	42	42	B	49	K 32	32	B	B	B	P	B	B	B	R	P	B	B	E B 22	27	J A 39	J A 37	
20	70	J A 49	J A 57	40	43	33	K 28	B	B	34	G	G	R	B	B	B	E B 25	P	23	32	27	G	35	36	
21	54	J A 74	J A 47	40	45	B	B	52	35	B	B	E B 28	E P 36	G	B	B	R	P	B	E B 28	27	J A 37	J A 39	46	
22	J A 40	35	J A 49	K 29	J A 31	B	B	J A 37	G	30	G	J A 27	28	B	E B 31	G	F B 35	E P 25	F C 30	G	E B 23	31	E B 10	32	
23	19	19	J A 30	32	38	25	G	G	G	G	E B 34	E P 31	G	G	G	E B 29	E B 40	E B 27	22	E B 22	27	E B 25	57	33	
24	16	12	J A 24	17	27	E B 17	19	22	J A 26	23	31	31	29	30	30	G	G	24	25	25	17	23	J A 26	J A 25	
25	E B 10	J A 24	25	J A 25	32	J A 41	42	35	G	G	G	G	J A 26	32	30	32	24	23	J A 21	21	16	13	J A 24	31	
26	J A 29	19	J A 23	J K 27	43	29	J A 24	E B 24	B	B	B	B	E P 40	E B 33	31	E B 42	R	E P 28	B	E B 23	25	J A 27	J A 35	31	
27	J A 33	45	53	J A 61	30	32	J A 35	J A 48	J A 50	J A 46	C	30	G	27	B	E B 28	E B 27	26	J A 37	35	J A 60	D C 85	J A 61	J A 61	
28	J A 24	J A 45	30	30	R	32	B	B	28	J A 32	B	B	R	B	B	B	E B 25	G	25	32	G	J A 37	J A 37	114	
29	J A 30	B	26	45	B	J A 69	43	B	B	B	B	B	R	B	30	G	G	26	29	J A 26	J A 34	J A 41	J A 41	J A 41	
30																									
31																									
Hour 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	
CNT	27	27	25	20	19	20	19	21	22	22	19	20	18	16	14	15	18	22	18	25	25	29	29	29	
MED	39	40	36	34	37	32	40	36	32	30	G	G	E G 27	E G 26	28	E G 28		E G 26	24	25	25	27	J A 35	35	
UQ	48	J A 48	42	42	41	40	46	43	37	36	28	28	29	U 30	30	E B 30	E B 30	E P 28	28	32	32	34	J A 41	41	
LQ	28	29	30	29	32	28	22	32	G	G	G	G	G	G	G	G	G	E G 22	G	E G 22	E G 22	21	24	28	

FEB. 1976

FOFS (0.1 MHz)

IONOSPHERIC DATA

FEB. 1976

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA	STATION	Lat. 69° 00' 4" S	Long. 39° 35' 4" E	Sweep	MHz to 15	MHz in 30	sec in	automatic operation																
Hour 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	12	23	22	13	25	17	B	23	20	14	12	22	13	B	B	29	B	R	B	20	E ₁₀ C	E ₁₅ C	E ₁₀ C	E ₁₀ C	
2	22	27	B	B	B	B	B	B	B	12	15	33	R	B	B	32	30	R	B	18	23	E ₁₀ C	13	E ₂₀ C	
3	12	19	32	B	15	B	B	19	18	18	B	R	R	B	B	B	B	17	B	29	19	13	9	12	
4	20	15	E ₁₂ C	B	R	B		25	18	12	E ₁₅ C	E ₁₃ C	17	R	24	32	30	22	22	19	12	B	11	9	10
5	C	22	13	E ₃₀ C	C	14	E ₁₀ C	E ₂₆ C	E ₁₃ C	11	17	E ₁₅ C	10	11	13	18	21	E ₁₇ C	27	18	15	10	10	6	
6	10	18	E ₁₀ C	B	R	21	B	R	15	12	14	12	15	14	15	20	15	13	15	14	12	10	10	10	E ₁₅ C
7	E ₁₀ C	10	15	24	38	22	17	18	13	13	E ₁₀ C	14	E ₁₅ C	11	B	B	B	41	B	14	10	10	10	11	
8	E ₁₆ C	11	E ₁₅ C	6	8	21	25	15	18	E ₂₀ C	B	B	22	B	B	17	B	10	13	12	13	21	E ₁₅ C	12	
9	B	21	E ₁₀ C	B	B	B	17	B	23	B	B	B	R	34	B	B	B	27	15	22	12	15	E ₁₁ C	E ₁₀ C	
10	25	E ₁₃ C	B	25	R	19	B	B	B	B	23	B	R	B	C	C	B	R	B	B	13	E ₁₅ C	E ₁₁ C	17	
11	40	22	B	B	25	B	20	15	25	B	25	23	R	B	B	B	B	C	C	B	13	17	E ₁₂ C	11	
12	E ₁₀ C	14	22	B	33	29	B	22	12	15	B	B	B	33	26	28	22	29	18	12	16	14	E ₁₀ C	9	
13	22	B	B	8	B	B	B	22	B	22	13	13	15	B	38	B	20	11	22	B	B	29	E ₁₀ C	10	
14	23	15	22	B	27	17	22	B	B	22	21	19	18	17	22	B	C	28	B	16	B	10	E ₁₀ C	7	
15	13	17	10	B	20	14	12	11	7	10	22	20	18	E ₁₅ C	23	B	28	12	19	12	B	22	E ₁₀ C	E ₁₀ C	
16	7	11	11	10	18	14	12	11	10	10	10	13	E ₃₀ C	18	23	13	14	13	10	11	10	15	14	7	
17	9	E ₁₀ C	18	E ₁₅ C	B	23	13	23	17	10	28	21	31	33	B	B	34	40	B	13	E ₂₃ C	27	E ₁₅ C	E ₁₀ C	
18	6	E ₁₀ C	E ₁₀ C	10	E ₁₀ C	E ₁₀ C	14	15	15	15	E ₁₄ C	22	R	B	B	B	E ₂₇ C	26	15	19	15	10	E ₁₀ C	E ₁₀ C	
19	14	E ₁₀ C	14	26	21	B	20	14	15	B	B	B	R	B	B	B	B	R	B	B	22	19	E ₁₀ C	E ₁₀ C	
20	17	17	10	18	21	18	22	B	B	15	15	B	R	B	B	B	25	B	14	14	15	E ₁₀ C	E ₁₀ C	E ₁₅ C	
21	25	E ₁₅ C	5	E ₂₅ C	24	R	B	23	18	B	B	28	36	12	B	B	B	R	B	28	15	12	12	19	
22	E ₃₂ C	12	15	23	E ₁₅ C	B	B	12	14	12	12	E ₁₅ C	15	B	31	18	35	25	E ₃₀ C	12	23	14	10	E ₁₀ C	
23	E ₁₀ C	10	10	15	13	E ₁₂ C	14	11	12	14	34	31	23	15	17	29	40	27	17	22	24	25	E ₁₅ C	11	
24	E ₁₀ C	E ₁₀ C	E ₁₀ C	E ₁₀ C	12	17	10	12	13	13	18	18	20	22	15	16	21	22	12	E ₁₃ C	E ₁₀ C	E ₁₅ C	E ₁₀ C	7	
25	10	E ₁₀ C	E ₁₂ C	E ₁₀ C	18	14	10	7	9	E ₁₀ C	10	12	11	10	10	E ₂₀ C	15	16	15	E ₂₀ C	12	E ₁₀ C	E ₁₀ C	E ₁₀ C	
26	8	E ₁₀ C	E ₁₀ C	8	17	13	E ₁₁ C	24	B	B	B	B	40	33	12	42	B	28	B	23	15	E ₁₅ C	10	E ₁₀ C	
27	E ₁₆ C	E ₁₀ C	23	E ₁₀ C	14	E ₁₅ C	10	17	15	13	C	13	23	22	B	28	27	15	E ₂₅ C	13	12	E ₁₀ C	E ₁₂ C	E ₂₈ C	
28	E ₁₅ C	10	22	15	B	25	B	B	18	E ₂₀ C	B	B	R	B	B	B	25	20	15	12	12	E ₁₀ C	7	41	
29	10	B	12	E ₁₀ C	B	20	17	B	B	B	B	B	R	B	15	23	23	15	12	17	E ₁₀ C	7	E ₁₀ C	11	
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	29	29	29	28	29	29	29	29	29	28	29	29	29	28	28	28	28	28	29	29	29	29	29	
MED	U ₁₂	13	14	U ₁₉	24	21	20	20	17	14	22	22	30	33	D ₃₈ B	37	29	26	19	16	15	U ₁₂	E ₁₀ C	8	
UQ	22	19	22	B	R	R	B	B	25	22	B	B	R	B	B	B	B	40	B	22	23	15	11	12	
LQ	10	E ₁₀ C	E ₁₀ C	9	16	15	13	15	13	12	14	15	16	17	20	22	22	16	15	13	12	10	E ₁₀ C	E ₁₀ C	

FEB. 1976

F-MIN (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1976

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' -4' S. Long. 39° 35' -4' E											Sweep MHz to 15 MHz in 30 sec in automatic operation													
Hour 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	F 295	A	A	A	A	A	B	A	A	R	F 240	F 235	245	B	B	U 250	F	B	P	B	F 330	F 340	A	F 280	A	
2	A	A	B	B	B	B	B	B	B	F	F	R	B	B	B	R	275	P	B	C 300	R	A	A	A		
3	A	A	B	B	A	B	B	230	255	F	G	B	B	R	B	B	B	B	F	B	R	F 315	C 335	F	A	
4	A	A	F 275	B	B	B	A	R	F	265	255	270	265	C	R	C	C	275	280	300	F	B	310	F	A	
5	C	A	A	C	C	F 240	U 255	F 270	F 285	F 275	R	275	255	265	245	270	295	285	300	F 330	J 330	F 330	J 315	F	A	
6	A	A	F	B	B	R	B	B	A	F	F	240	260	260	260	310	280	305	315	325	315	315	J 350	F 310	J 310	
7	F 270	A	A	B	A	A	A	A	A	A	F 245	F 255	F 260	255	B	B	B	B	R	240	B	R	A	A	A	A
8	A	A	A	R	U 295	F	A	A	A	R	F	B	B	C	B	B	F 335	B	G	A	A	R	A	A	A	
9	B	A	A	B	B	B	F	B	A	B	B	B	B	280	B	B	B	B	P	F	R	F 335	F 315	F 270	A	
10	A	A	B	A	B	R	B	B	B	B	R	B	B	B	C	C	B	P	B	B	B	F 325	F 310	A	A	
11	B	A	B	B	A	B	A	F 280	240	B	F	265	B	B	B	B	B	B	C	C	B	F 315	F 265	J 300	F 305	
12	A	F 310	A	B	B	A	B	A	F	U 265	B	B	R	R	260	250	290	330	295	310	310	350	A	F		
13	A	B	B	F	B	B	B	R	B	R	F	G	G	B	250	B	F 295	F 360	320	B	B	A	A	A		
14	A	A	A	B	A	R	A	B	B	R	G	F 265	270	R	240	B	C	G	B	305	B	F 305	F 300	A		
15	A	R	A	B	R	U 265	F	280	275	285	250	280	280	295	F 315	B	300	315	300	320	F	B	R	320	305	
16	F	A	A	F 280	F 290	F 280	255	R	F 270	F 270	280	275	285	290	305	F	310	335	325	310	300	295	A	U 285		
17	F 280	A	A	A	B	R	F	F	F	U 285	290	290	285	B	B	B	R	C	B	330	310	R	A	A		
18	A	A	A	A	A	A	F	A	A	A	F	F	B	B	B	B	B	F 280	R	F	R	325	310	U 255	F	
19	A	A	A	A	A	B	A	R	F	B	B	B	R	B	B	B	B	B	B	B	B	F	F	A	A	
20	A	A	A	A	A	F 315	F 315	B	B	270	F	B	B	B	B	B	290	R	F	325	C 355	300	A	A		
21	A	F	F	F	A	B	B	A	250	B	B	255	295	260	F	B	B	B	R	B	340	F 330	A	A	A	
22	C	A	A	R	F	B	B	A	270	270	265	240	285	B	285	300	315	320	325	330	325	325	315	A		
23	F 290	310	F	A	A	F 305	F 295	F 285	F 285	280	270	285	285	300	J 285	R 310	330	320	345	335	325	335	J 325	F		
24	R	R	U 305	F	C 305	F	F	300	275	285	J 280	290	305	310	330	330	320	355	355	340	F	C 340	F 325	J 320	R	
25	J 295	F	R	F 275	A	A	280	285	285	F 270	F 285	J 290	290	325	310	330	330	340	350	350	355	F 310	F	A		
26	A	F	R	F	F	F	F	R	B	B	B	B	F	305	295	R	B	335	B	340	315	F	F	F	F	
27	A	A	A	A	A	A	F	A	A	A	C	265	F	265	B	300	270	275	A	R	A	A	A	A	F	
28	R	A	A	A	B	A	B	B	F	F 265	B	B	R	B	B	B	F	C	F	A	F 300	A	A	A	B	
29	A	B	R	A	R	A	A	B	B	B	B	R	B	B	F	C	F	F	F	F	325	F 275	A	A	A	
30																										
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	4	3	2	2	3	5	6	7	11	14	11	17	15	13	12	10	15	17	11	18	20	16	11	4		
MED	F 292	F 310	F 290	F 278	F 295	F 280	F 272	F 280	F 270	F 270	F 265	F 265	280	285	285	305	295	315	320	328	325	F 312	F 315	F 305		
UQ	F 295	310			300	F 305	F 295	F 285	F 280	F 275	280	280	280	300	F 308	F 330	312	335	335	335	335	F 328	F 320	F 308		
LQ	F 285	290			F 292	F 265	F 255	F 275	F 258	F 265	248	255	260	265	255	270	F 280	275	300	310	F 312	F 308	F 290	F 295		

The Radio Research Laboratories, Japan

FEB. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

FEB. 1976

H'F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S, Long. 39° 35' 4" E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																			
Hour 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	B	A	A	R	550	575	525	B	B	F	B	B	B						
2						B	B	B	B	C	540	540	R	R	B	B	R	440	P	B	L				
3						B	B	540	480	F	G	B	B	B	B	B	B	395	R						
4						B	A	R	F	455	500	430	440	C	R	C	C	390	400	375					
5						F	455	420	370	430	C	R	400	505	450	520	430	360	350	L					
6						B	B	R	535	F	590	490	495	465	350	405	350	295			L				
7						A	A	A	A	500	495	480	470	B	B	B	505	B							
8						A	A	R	F	B	B	C	B	B	400	B	G	A							
9						F	B	A	B	B	B	R	430	B	B	B	R	F	R						
10						B	B	B	B	R	B	R	B	C	C	B	P	B							
11						A	410	540	B	F	450	450	R	B	B	B	B	C	C						
12						B	A	A	480	F	B	B	R	R	C	480	500	350	L	340	305				
13						B	R	B	R	U	C	G	G	B	465	B	L								
14						A	B	B	R	G	460	430	R	R	B	C	G	B							
15						360	390	390	390	475	375	395	355	305	B	350	L	L							
16						405	A	400	415	400	400	380	350	330	420	C	320	L	L	L					
17						410	A	350	380	375	355	340	400	B	B	R	B	B							
18							A	A	A	F	500	F	550	R	B	B	B	390	R						
19						A	510	C	450	B	B	B	R	B	B	B	B	B							
20							B	B	440	C	B	R	B	B	B	B	330	B	F						
21							A	475	B	B	460	350	450	B	B	B	B	R							
22							A	C	C	480	450	450	540	385	B	395	340	310	L						
23						350	380	350	380	380	350	C	325	360	315	E	B	290							
24					L	L	300	360	355	380	350	325	300	275	260										
25						380	375	355	375	345	310	345	295	315	270	L	L	245							
26							R	B	B	B	B	325	320	310	270	B									
27							A	A	A	C	400	400	445	B	360	450	L								
28							B	F	540	450	B	B	R	B	B	B	300	400							
29							B	B	B	B	R	R	B	F	U	C	515	380	L						
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						6	8	13	15	15	18	16	13	11	13	13	R	4	2						
MED						392	400	400	440	475	440	398	400	360	360	350	398	318	340						
UQ						410	465	480	468	500	540	485	450	465	430	390	D	G	370						
LQ						360	378	360	385	390	375	348	325	312	315	320	370	270							

FEB. 1976

H'F2 (KM)

IONOSPHERIC DATA

FEB. 1976

H'F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S. Long. 39° 35' 4" E										Sweep MHz to 15 MHz in 30 sec in automatic operation															
		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	335	B	B	A	A	A	B	A	A	U A 260	205	230	225	B	B	225	B	B	B	A	250	225	A	350	A		
2	B	B	B	B	H	B	B	B	B	225	205	H	B	H	B	B	B	225	F	B	215	R	A	A	A		
3	A	A	B	B	A	B	B	A	325	F	260	B	H	F	B	B	B	B	205	B	250	235	250	330	A		
4	A	A	390	B	H	B	A	E A 315	200	225	205	210	200	H	R	220	230	200	240	220	245	B	275	F	A		
5	C	A	A	C	C	A	245	215	C	225	220	210	H	230	225	205	230	230	220	225	230	A	255	250	300	A	
6	A	A	A	B	B	295	B	B	A	245	220	200	245	230	225	205	200	230	225	230	225	290	250	280			
7	U F 400	400	A	A	B	A	A	A	A	A	200	210	220	195	H	B	B	B	F	B	A	A	A	A	A		
8	A	A	A	R	305	A	A	A	A	250	B	B	260	B	B	240	B	225	A	A	R	A	A	A	A		
9	B	A	A	B	B	B	F	B	A	B	B	B	B	B	260	B	B	B	F	230	240	255	250	260	350	A	
10	B	A	B	B	H	A	R	B	B	B	275	R	B	B	C	C	R	B	B	B	250	330	A	A			
11	B	B	B	B	A	B	A	275	250	B	Y 280	230	R	B	B	B	B	C	C	B	250	300	270	E A 350			
12	A	330	B	B	B	B	A	A	200	B	B	H	225	200	H	210	230	240	215	235	265	250	A	A			
13	B	B	B	300	B	B	B	A	B	A	225	210	210	B	B	B	225	220	A	B	B	B	A	A			
14	B	A	A	B	A	A	A	B	B	R	255	220	250	230	220	B	C	230	B	250	B	250	285	A			
15	A	R	A	B	A	360	R	240	205	H	215	205	H	195	250	200	H	245	B	220	210	220	255	B	A	280	270
16	340	A	A	A	355	E A 275	300	A	275	230	205	200	200	H	220	220	230	225	220	230	230	255	300	A	345		
17	350	A	B	A	B	A	U H 245	A	280	205	190	205	200	230	B	B	R	F	B	240	250	B	A	A			
18	A	A	A	A	A	A	F	A	A	A	F	205	R	B	B	B	245	240	F	225	290	260	300	360	F		
19	A	A	A	B	A	B	A	A	A	B	B	B	R	B	B	B	B	B	F	B	B	340	A	A	A		
20	A	A	A	A	A	325	340	B	B	240	250	B	B	B	B	B	220	R	200	250	350	315	A	A			
21	B	300	A	350	A	B	B	A	A	B	B	210	R	205	B	B	B	F	B	250	245	A	A	A			
22	C	A	A	R	A	B	B	A	275	250	C	220	H	190	210	B	E B 225	235	R	225	E C 250	220	H	255	250	250	A
23	350	300	A	A	A	E A 305	240	215	200	H	200	H	E B 250	205	B	225	200	250	240	B	225	230	235	250	250	250	250
24	255	245	250	260	272	270	230	215	215	205	190	210	225	205	200	200	210	210	230	230	220	230	230	230	260		
25	255	295	E A 420	380	A	A	A	A	215	230	200	205	205	H	210	195	H	200	205	230	220	225	225	240	340	A	
26	A	F	A	F	A	340	250	260	B	B	B	B	R	E B 240	215	B	B	F	B	245	250	280	A	F			
27	A	A	A	A	A	A	400	A	A	A	C	230	270	230	B	225	220	230	A	R	A	A	A	A	C		
28	A	A	A	A	B	A	B	B	A	F	250	B	B	B	B	B	240	230	240	A	300	A	A	A	B		
29	A	B	A	A	B	A	A	B	B	B	B	B	R	B	B	250	250	250	250	280	225	A	A	A	A		
30																											
31																											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	7	6	3	4	3	7	8	7	11	17	18	18	16	15	13	14	15	20	15	21	20	17	13	6			
MED	340	300	320	325	305	305	248	228	225	230	206	210	225	215	220	228	220	228	228	240	250	260	285	270			
UQ	350	330	398	365	330	332	320	259	275	250	250	220	248	230	230	235	228	230	232	250	258	300	340	U 312			
LQ	295	295	320	280	290	278	242	215	210	215	205	205	208	205	215	210	215	222	220	230	240	250	250	260			

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H'F (KM)

IONOSPHERIC DATA

FEB. 1976
H⁺ES (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' .4 S, Long. 39° 35' .4 E										Sweep MHz to 15 MHz in 30 sec in automatic operation														
Hour 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	190	95	100	100	115	100	B	100	100	105	G	G	125	B	B	B	B	R	B	125	150 ^K	100	105 ^K	105		
2	105	100	B	B	B	B	B	B	B	G	G	B	R	B	B	B	B	R	B	150	140 ^K	105	115	110		
3	105	110	130	B	100	B	B	100	105	120	B	B	R	B	B	B	B	G	B	B	125	150	155	110		
4	140	100	100 ^K	B	B	B	100	105	G	G	G	G	120	G	G	B	B	G	G	G	B	140	120	100		
5	C	100	100	125	C	C	105	G	C	G	G	G	G	G	120	110	G	125	B	155	150	130	120	105		
6	100	105	100	B	B	G	B	B	100	100	G	G	G	110	110	G	120	G	G	140	G	G	125	130		
7	110	105 ^K	100	105	110	100	100	100	100	100	G	100	G	G	B	B	B	R	B	105	100	140	100	100		
8	105	100	100	100 ^K	100	100	100	100	110	G	B	B	G	B	B	G	B	150	105	150	110 ^K	140 ^K	110	110		
9	B	100	100	B	R	B	K	B	100	B	B	B	R	B	B	B	B	R	160	B	G	G	105	100		
10	95	170	B	125	R	100	R	B	B	B	115	B	B	B	C	C	B	R	B	B	140	110 ^K	100	110		
11	125	120	B	B	110	B	100	105	135	B	105	G	R	B	B	B	B	C	C	B	140	B	120	110		
12	105	100 ^K	105	B	120	105	B	100	100	G	B	B	R	B	G	B	G	P	G	G	150	145	105	130		
13	110	B	B	100 ^K	R	B	B	120	B	100	G	G	115	B	B	B	G	G	125	B	B	130	100	105		
14	120	95	100	B	120	100	100	B	B	100	G	G	G	G	G	B	C	R	B	G	B	130	110	105		
15	160 ^K	110 ^K	105	B	115	115	G	G	G	G	G	125	110	110	110	B	B	105	G	140	B	120	125	150		
16	150	110	100	110	125	100	G	100	100	100	125	G	C	G	G	100	G	110	125	125	G	130	105	105		
17	105	100	125	190	B	150	110	110	105	100	B	G	B	B	B	B	B	B	B	125	C	140	105	100		
18	100	160	130	100	120	125	100 ^K	105	100	135	100	G	B	B	B	B	C	R	G	145	125	130	140	110		
19	100	110	110	100	100	B	100	100	100	B	B	B	R	B	B	B	B	R	B	B	B	155	110	100		
20	110	140	100	140	100	105	125 ^K	B	B	100	G	G	B	B	B	B	B	B	165	140	120	G	105	110		
21	105	100 ^K	100	120 ^K	120	R	B	100	100	B	R	B	B	G	B	B	B	R	B	B	150	115	105	100		
22	120	145	105	140 ^K	110	B	B	100	G	100	G	100	100	B	B	G	B	R	C	G	B	125	B	105		
23	150	145	125	100	100	105	G	G	G	G	B	B	G	G	G	B	B	R	120	B	110	B	100	105		
24	100	100	95	100	150	R	135	125	110	110	100	100	100	125	100	G	G	130	160	130	110	105	100	100		
25	B	140	110	105	115	120	115	95	G	G	G	G	100	100	100	100	110	105	105	100	130	130 ^C	140	110		
26	110	130	110	105 ^K	170	115	125	B	B	B	B	B	B	B	110	B	B	R	B	B	145	140	110	110		
27	100	115	100	100	120	120	110 ^K	105	110	100	C	100	G	E	G	130	B	B	B	180	100	145 ^K	160	100	100	115
28	95	95	95	90	B	115	B	B	100	105	B	B	B	B	B	B	B	G	150	100	G	105	100	190		
29	100	B	90	90	B	100	155 ^K	B	B	B	B	B	B	B	145	G	G	155	140	100	120	100	100	100		
30																										
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	26	27	25	20	19	18	15	17	16	14	5	6	6	5	7	3	2	8	11	16	18	24	28	29		
MED	105	105	100	102	115	105	110	100	100	100	105	100	105	110	110	100	115	128	125	135	135	130	105	105		
UQ	120	125	110	122	120	115	120	105	108	105	115	120	115	118	115	105		152	155	145	150	140	120	110		
LQ	100	100	100	100	105	100	100	100	100	100	100	100	100	110	105	100		108	112	115	120	108	100	100		

FEB. 1976
H⁺ES (KM)

IONOSPHERIC DATA

FEB. 1976

TYPES OF ES

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' .4 S, Long. 39° 35' .4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																			
Hour 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	ARL 11	L 1	L 1	R 1	R 1	RS 11		L 1	R 1	R 2			C 1							C 1	CKL 11	RS 21	K 1	R 2	
2	R 1	L 1																		H 1	HK 11	R 2	R 2	RS 31	
3	R 1	R 1	R 1		R 1			R 1	R 1	C 1										C 1	H 1	RA 11	R 2		
4	RR 11	R 1	RAK 11				R 1	R 1				H 1										R 1	R 2	R 2	
5		R 1	R 2	R 1		R 1								C 1	C 1		C 1		H 1	H 1	C 3	R 1	R 3		
6	R 2	R 1	R 1						R 1	R 1				C 2	C 2		C 2			C 1			AC 11	R 1	
7	R 2	RK 21	R 1	R 1	R 1	R 1	R 1	R 1	R 1	R 1		L 1								RS 11	RS 11	AR 11	RA 21	RA 31	
8	R 3	R 2	RA 21	K 3	RA 11	L 1	C 1	R 1	R 1									H 1	R 1	AR 12	KA 11	HKA 11	RA 21	R 3	
9		R 1	R 1				RAK 11		R 1											H 1			R 2	R 4	
10	L 1	AR 11		R 1		R 1					R 1										H 1	RK 11	RA 11	RA 11	
11	C 1	RS 11			R 1		R 1	R 1	C 1		C 1										C 1		C 1	RA 11	
12	R 3	ACK 11	R 1		R 1	C 1		C 1	R 2												H 1	H 1	RS 31	R 1	
13	RR 11			RK 21				RH 11		R 1			C 1							R 1		R 1	RS 31	R 3	
14	R 1	L 1	C 1		R 1	R 1	R 1			C 1												R 1	C 1	R 3	
15	HK 12	KA 11	RA 21		RA 11	RK 21						H 1	C 1	C 1	L 1			L 1		H 1		C 1	R 1	H 1	
16	H 1	R 1	R 2	R 1	R 1	R 1		R 2	LR 22	L 2	H 1				C 1		C 1	H 1	C 2		R 1	R 2	R 1		
17	R 1	R 3	R 1	RR 12		R 1	R 1	C 1	CA 11	C 1										C 1		R 1	RA 21	RA 11	
18	R 3	AR 15	RA 11	RA 21	RLA 21	RAL 11	LRK 11	RA 21	R 2	RL 11	CA 11									C 1	C 1	R 1	R 1	RA 21	
19	R 2	RL 21	R 2	R 1	R 1		R 1	K 1	R 1													R 1	RS 51	R 4	
20	C 2	HRL 12	R 2	RL 11	R 1	RA 11	K 1			R 1									A 1	HA 11	R 1		RL 31	RS 61	
21	RR 11	RLK 21	R 3	RK 11	RL 11			R 1	R 1												A 1	RA 21	R 3	AR 11	
22	R 1	RLA 11	R 1	KA 11	R 2			R 2		C 1		C 1	C 1									C 1		R 2	
23	RA 11	R 2	RL 31	R 1	R 2	R 1														C 1		C 1	C 2	RA 11	
24	C 2	L 1	L 1	LR 11	H 1		H 1	C 1	C 2	C 1	C 1	C 1	L 1	H 1	L 1				C 1	H 1	C 1	C 1	C 2	C 4	L 4
25		R 1	R 1	C 3	R 1	R 2	RL 21	R 1					L 2	C 1	C 1	L 1	C 1	C 2	C 1	L 1	H 1	R 1	RR 11	R 3	
26	R 3	H 3	RLA 31	K 4	RA 11	R 1	RA 11								C 1						C 1	RA 11	RA 21	RL 21	
27	R 1	RL 11	R 1	R 1	RS 21	R 2	RAK 31	R 2	R 2	RS 11		R 1		H 1				A 1	CS 11	RK 11	AR 12	RA 11	RA 21	RA 21	
28	L 1	L 1	L 1	L 1		R 1			R 1	R 1										H 1	R 2		RS 41	R 3	AA 11
29	RA 21		L 1	RA 11		R 2	HK 11								H 1			H 1	HA 11	AHL 11	AR 11	RS 31	RS 61	RS 21	
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

FEB. 1976

TYPES OF ES

IONOSPHERIC DATA

MAR. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S, Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	A	A	B	B	B	B	B	B	O R 46	O R 46	R	B	B	X 44	B	O R 38	R	A	A	A	A	
2	A	A	A	A	A	B	R	B	B	B	R	B	B	B	R	B	B	O R 45	O R 42	B	33	33	R	A	
3	A	A	B	A	R	B	B	B	B	B	B	B	R	B	B	B	B	B	O R 42	42	57	A	R	A	
4	A	B	B	A	B	B	R	O R 42	O R 42	O R 42	R	O R 49	O R 47	B	B	B	B	O R 44	O R 39	O R 39	O R 27	20	A		
5	R	R	O R 34	R	R	O R 36	B	R	R	B	R	B	B	B	B	O R 61	O R 49	O R 48	O R 49	44	33	O R 26	R	A	
6	A	A	A	A	A	R	B	B	B	B	B	B	R	B	B	B	O R 44	O R 46	45	R	A	R	A	A	
7	B	B	A	A	B	B	B	R	B	B	B	B	R	B	B	B	B	B	O R 41	43	R	A	A	A	
8	A	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	40	44	R	B	R	R	
9	A	A	B	B	R	43	B	B	B	B	B	B	B	R	B	B	B	O R 38	O R 42	B	R	A	A	R	
10	A	A	B	B	A	B	B	B	B	B	B	B	B	R	B	B	B	B	O R 36	R	R	R	A	O R 33	
11	A	A	A	B	84	B	B	B	B	B	B	B	B	R	B	O R 42	B	R	B	B	30	A	B	A	
12	A	A	A	B	B	B	B	B	B	B	B	B	B	R	B	B	B	O R 51	R	B	B	33	R	R	R
13	A	A	A	A	B	B	B	R	38	B	B	B	B	R	O R 48	B	B	B	O R 46	B	B	O R 39	O R 31	A	
14	A	A	A	A	A	A	B	B	A	B	B	B	R	B	B	O R 46	B	O R 47	O R 48	O R 41	O R 33	O R 29	A	C	
15	55	R	A	A	A	A	R	B	B	R	B	B	B	R	O R 56	56	54	O R 51	X 51	B	R	27	27	R	R
16	A	U C 60	U C 46	U C 67	U A 83	42	A	A	O R 39	43	44	B	O R 47	51	O R 46	X 47	X 46	B	47	37	B	A	A	A	
17	A	A	A	B	A	A	B	B	R	R	B	B	R	B	B	O R 62	B	B	B	45	48	50	A	25	
18	A	A	A	R	R	B	R	42	X 44	45	O R 48	B	O R 49	B	B	O R 58	B	B	B	O R 41	O R 39	O R 33	A	O R 34	
19	A	A	A	A	45	A	A	X 40	B	O R 51	B	B	R	O R 61	O R 63	B	B	R	R	B	O R 39	R	A	A	
20	A	A	A	A	72	A	R	80	48	51	49	O R 49	R	76	75	72	O R 69	63	B	O R 51	O R 38	34	O R 36	C	
21	R	A	A	A	35	37	D C 38	55	B	O C 49	X 52	B	O P 59	O R 66	67	67	66	O R 62	B	O R 43	44	33	O R 29	O R 26	
22	B	B	45	40	37	46	58	42	O R 46	O R 54	O R 54	X 57	X 62	X 63	O R 59	O R 59	O R 57	O R 51	O R 49	45	O R 39	29	R	O R 20	
23	C	C	C	C	C	C	C	C	C	C	O R 59	X 62	O R 62	X 68	O R 62	B	X 62	X 51	X 45	X 43	45	A	A	O R 25	
24	A	A	B	A	A	A	A	O R 39	45	47	49	X 51	X 55	X 60	61	O R 59	O R 58	X 52	45	O R 41	30	B	B	B	
25	A	R	56	33	28	31	38	43	S 52	56	56	O R 62	O R 60	66	66	X 66	X 66	X 58	X 51	X 50	41	35	31	28	23
26	S 34	57	67	B	A	A	A	R	B	B	65	65	A	R	52	86	R	45	88	A	42	A	A	A	
27	64	B	A	A	A	B	B	43	B	B	B	B	B	B	O R 41	O R 43	X 44	B	B	B	R	A	B	A	
28	B	A	B	B	104	48	R	B	R	B	B	B	B	B	O R 50	52	O R 48	O R 47	B	O R 36	B	A	A	A	
29	A	A	R	A	R	B	B	B	B	B	B	B	B	R	B	B	O R 63	O R 60	O R 54	55	47	40	C	C	
30	C	C	O R 38	O R 38	A	A	31	39	45	C 67	66	C	C	83	70	65	65	O R 61	C	C	C	C	C	C	
31	C	C	C	D C 45	R	B	A	A	R	X 42	X 45	B	R	B	O R 51	O R 52	X 61	O R 50	B	O R 37	45	O R 36	R	O R 21	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	18	18	20	14	5	8
CNT	3	2	6	5	8	7	4	9	9	11	12	7	9	12	15	16	17	18	18	18	20	14	5	8	
MED	55	58	46	40	58	42	38	42	45	49	50	57	O R 55	62	O R 59	59	O R 57	O R 50	O R 45	42	39	33	O R 29	O R 25	
UQ	60		56	C 5	84	44	U 53	43	46	52	58	62	O R 60	67	64	66	62	52	49	44	44	36	O R 31	O R 30	
LQ	44		O R 38	58	36	36	34	40	42	44	46	50	O R 49	O R 54	O R 50	O R 52	O R 48	O R 46	O R 42	O R 41	33	29	28	O R 22	

MAR. 1976

FXI (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	A	A	B	B	B	B	B	B	F 38	F 40	R	B	B	U 38	R	F 30	A	A	A	A	A	
2	A	A	A	A	A	B	R	B	B	B	R	B	B	R	B	B	B	F 38	F 36	B	U 27	J 25	F	A	A
3	A	A	B	A	A	B	B	B	B	B	B	B	R	B	B	B	B	B	F 36	J 36	F	A	A	A	
4	A	B	B	A	R	B	B	R	F 36	F 36	F 36	C	F 43	F 41	B	B	B	B	F 38	F 33	F 31	F 21	F	A	
5	A	A	U 26	A	A	U 28	B	R	R	B	R	B	R	B	B	F	U 43	F 41	F 42	J 38	F	F 17	A	A	
6	A	A	A	A	A	A	B	B	B	B	B	B	R	B	B	B	U 38	F 40	F 36	R	A	R	A	A	
7	B	B	A	A	B	B	R	B	B	B	B	B	B	B	B	B	R	B	F 32	F 21	A	A	A	A	
8	A	B	A	B	A	B	B	B	B	B	B	B	R	B	B	B	B	B	F 33	F 28	A	B	A	A	
9	A	A	B	B	A	F	B	B	B	B	B	B	B	R	B	B	B	U 32	F 36	B	R	A	A	R	
10	A	A	B	B	A	B	B	B	B	B	B	B	R	B	B	B	B	B	F 29	R	R	A	A	F	
11	A	A	A	B	B	B	B	B	B	B	B	B	R	B	U 36	B	R	B	B	B	F	A	B	A	
12	A	A	A	B	R	B	B	B	B	B	B	R	R	B	B	B	F	R	B	B	F	R	R	R	
13	A	A	A	A	B	B	B	R	F 32	B	B	B	R	F 41	B	B	B	B	F 40	B	B	B	F 28	F 23	A
14	A	A	A	A	A	A	B	B	A	B	B	B	C	B	B	40	R	41	42	35	27	F 20	A	C	
15	R	R	A	A	A	A	A	B	B	R	B	B	B	F 50	F 50	F 48	45	45	B	B	F	F	A	A	
16	A	A	R	F	A	F	A	A	U 33	U 35	J 38	B	40	45	40	41	40	R	F 40	F 30	B	A	A	A	
17	A	A	A	B	A	A	B	B	R	A	B	B	B	B	B	C 56	R	B	B	F	F	B	A	F	
18	A	A	A	A	A	B	A	F 36	F 38	F 39	F 42	B	43	B	B	52	B	B	B	F 35	F 30	F 26	A	F	
19	A	A	A	A	A	A	A	34	B	F 42	B	B	R	U 55	C 57	B	B	R	R	B	F	R	A	A	
20	A	A	B	A	F	A	A	Y	F	F	F 43	F 43	R	F	F	F	F	F 55	B	F 45	F 30	F	F	C	
21	A	A	A	A	F 30	J 30	R	F	B	F 41	F 46	B	F 52	F 60	U 61	J 60	F	U 58	C	B	37	U 32	F	U 21	F 18
22	B	B	R	F 30	F 31	F 32	F	F 35	40	48	48	51	56	57	53	53	51	44	F 42	F 37	U 32	F	A	14	
23	C	C	C	C	C	C	C	C	C	C	C	53	56	56	62	56	B	55	45	J 39	37	F 29	A	A	F
24	A	A	B	A	A	A	A	F 32	F 37	F 41	F 43	F 45	F 49	F 54	F 52	F 51	F 51	46	F 39	F 34	F	B	B	B	
25	A	R	C	U 27	F 21	F	J 25	F	F 44	J 49	J 50	F 56	U 53	F 60	C 59	60	52	45	44	F 33	U 25	F	F 18	F	
26	F	Y	F	B	A	A	A	A	B	B	F	F	A	R	F	F	A	F 29	F	A	F	A	A	A	
27	A	B	A	A	A	B	B	F	B	B	B	B	R	B	E 35	37	38	R	B	B	R	A	B	A	
28	B	A	B	B	Y	F	R	B	A	B	B	B	R	B	B	F 43	F 45	42	41	B	R 30	B	A	A	A
29	A	A	A	A	A	B	B	B	B	B	B	B	R	B	B	B	57	54	U 47	F	J 40	F 33	C	C	
30	C	C	32	F	A	A	F	F 33	U 38	J 49	F	C	C	U 70	J 62	J 56	F	U 52	C	C	C	C	C	C	
31	C	C	C	F	A	B	A	A	A	36	39	B	R	B	B	45	46	55	44	B	F 30	U 30	F	A	F 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT			2	2	2	3	1	5	8	10	10	6	9	11	13	13	13	18	17	16	11	8	3	3	
MED			29	28	26	F 30	J 25	F 34	F 38	F 41	F 43	F 48	F 49	55	52	51	45	44	F 38	F 34	F 30	F 26	F 21	F 15	
UQ					31		F 35	F 39	F 48	F 48	56	53	60	57	56	52	46	F 42	F 37	F 32	F 28	F 22	F 16		
LQ					29		F 33	F 34	F 36	F 39	43	43	48	43	45	40	40	F 36	F 30	F 28	F 20	F 20	F 14		

The Radio Research Laboratories, Japan

MAR. 1976

FOF2 (0.1 MHz)

IONOSPHERIC DATA

MAR. 1976

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION	Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep	MHz to 15 MHz in 30 sec in automatic operation																		
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	B	B	B	340	350	350	B	B	350	B						
2								B	B	B	F	330	B	R	B	350	B	B	330					
3								B	B	B	B	B	R	B	B	B	B	B	B					
4								A	310	330	330	340	R	340	350	B	B	B	B					
5								A	A	B	340	B	R	B	B	B	B	L		L				
6								B	B	B	B	B	340	B	B	B	L	F	F					
7								A	B	B	B	B	R	B	B	B	B							
8								B	B	B	B	B	B	B	B	B	B	B						
9								B	B	B	B	B	R		B	B	B							
10								B	B	B	B	B	R	B	B	B	B							
11									B	B	B	B	R	B	330	B	320							
12									B	B	B	B	R	B	B	B	340							
13									A	B	B	B	R	360	B	B	B							
14									A	B	B	B	340	B	B	L								
15									B	A	B	B	R	360	350	L	L	L						
16									A	330	340	B	B	350	L	350	330							
17									A	A	B	B	R	B	B	B	B							
18							290		L	330	330	R	B	350	B	B	B	B						
19									B	F	B	B	B	B	B	B	B	B						
20									L	L	360	F	B	B	C	L	L	B						
21									B	330	L	B	L	B	B	L								
22										L	L	U	C	360	370	L	L	L						
23										C	L	L	R	U	L	370	B	B						
24									300	320	350	L	U	L	360	360	L							
25											L	L	B	L	L									
26										B	A	F	Y	F	F	F	A							
27										B	B	B	B	B	350	320	L							
28										B	B	B	R	B	F	L	B							
29										B	B	B	R	B	B	B								
30											B	C	C	L										
31										F	320	330	B	R	B									
Hour 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
CNT								1	2	7	8	4	7	8	5	3	4	2	1					
MED								290	305	330	335	340	350	355	350	320	335	325	F	310				
UQ									330	345	350	355	360	350	335	345								
LQ									325	330	340	340	350	340	310	325								

MAR. 1976

FOF1 (0.01 MHz)

IONOSPHERIC DATA

MAR. 1976

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		B	B	A	A	B	B	B	B	B	B	B	R 250	B	B	B	225	R	R	B	A	A	A	
2		C	B	B	A	B	A	B	B	B	270	R	R	B	B	B	R	R	B	B	B	U A 140	C	
3		A	B	A	A	B	B	B	B	B	R	B	R	B	B	B	B	R	R	B	B	B	B	A
4		B	B	A	B	B	B	A	R 225	230	235	B	R 270	B	B	B	R	R	R	B	R	B	100	U K 260
5	K 120	K 150	A	A	A	U K 210	B	B	B	B	B	B	R	B	B	B	R	R	190	U F 175	B	U A 120	A	
6		B	A	B	A	B	B	B	B	B	B	R	R	B	B	B	R	230	A	A	A	A	A	
7		B	A	B	B	B	B	B	B	B	B	B	R	B	B	B	R	R	160	160	150	A	A	
8			K 280	B	A	B	B	B	B	B	B	B	R	B	B	B	R	R	170	A	A	B	A	K 300
9		U K 250	B	B	B	K 270	B	B	B	B	B	B	B	B	B	B	R	R	B	B	160	A	C	K 320
10			B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	B	B	160	A	A	U K 220
11			B	B	B	B	B	B	B	B	B	B	R	B	B	B	R	R	B	B	B	B	A	B
12	K 370		B	B	B	B	B	B	B	B	B	B	R	B	B	B	R	R	B	B	U A 180	130	A	K 125
13	J K 290		C	B	B	B	B	B	A	B	B	B	R	245	B	B	B	R	R	B	B	B	B	A
14			B	B	B	C	B	B	B	B	B	B	R	B	B	B	R	R	R	R	B	B	B	
15	K 270	J K 320	A	A	A	A	B	B	B	A	B	B	B	B	B	B	R	R	R	B	A	A	90	K 115
16	K 175			U K 200	A	130	A	B	U K 310	A	H 230	B	B	R	B	200	185	R	R	A	B	B		
17	K 320	U K 325		B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	R	R	B	B	B	U K 130
18	U K 340			B	B	B	B	H 200	H 210	H 220	B	B	B	B	B	B	R	R	R	R	B	B	B	U K 260
19	K 350	U K 275		B	B	B	A	K 280	B	270	B	B	R	B	B	B	R	R	R	B	B	B	B	J K 380
20	K 320	K 330	K 320	K 300	A	A	A	Y 215	A	210	A	B	R	240	B	B	R	R	R	R	B	B	B	K 135
21		K 270		U K 290	U K 225	A	100	B	B	B	B	B	R	B	B	230	B	R	R	B	B	B	U K 125	
22			K 230	K 230	B	A	A	B	B	B	B	B	240	B	B	B	R	R	R	R	A	A		
23			C	C	C	C	C	C	C	C	B	U B 250	B	B	B	B	220	R	B	B	A	A		U K 160
24			B	A	A	A	A	A	240	200	230	230	235	225	U R 230	220	200	160	B	B	B	B		
25			U K 220		A	A	A	130	F 190	200	230	B	B	B	250	B	B	R	R	B	C	B		
26			K 275		A	U K 320	B	B	B	B	A	A	Y 270	A	A	A	A	A	A	B	U K 230	U K 320		
27					K 190	B	B	B	B	B	B	B	R	B	B	B	220	R	R	B	B	C		
28			K 375		Y	C	B	B	B	B	B	B	R	B	B	B	R	R	B	B	B	B	U K 280	
29	K 280		K 285		B	B	B	B	B	B	B	B	B	B	B	B	C	R	B	R	B	B		
30			U K 290	U K 210	B	A	170	A	A	220	B	C	C	B	B	B	R	R	C	C	C			
31					B	B	A	B	A	A	250	B	R	B	B	B	R	R	B	B	A	160	K 340	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	8	7	5	2	4	2	3	6	7	6	2	4	4	2	3	5	2	3	2	5	6	5	11
MED	K 305	K 298	K 280	U K 230	K 208	K 240	135	200	220	220	232	240	245	242	240	220	220	195	170	168	160	U 150	K 125	K 220
UQ	K 340	K 328	K 288	K 290		K 295		240	240	225	250		R 260	258		225	220		180		U 180	U K 280	K 135	K 280
LQ	K 270	K 260	K 252	U K 210		170		165	210	205	230		238	232		210	200		165		160	U A 130	100	K 145

MAR. 1976

FOE (0.01 MHz)

IONOSPHERIC DATA

MAR. 1976

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S. Long. 39 35.4 E		Sweep MHz to 15 MHz in 30 sec in automatic operation																					
Hour 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	32	37	J A 41	J A 36	J A 36	B	B	B	B	B	B	E B 27	G E B 33	B	B	G	B	E B 20	32	J A 37	J A 40	32	J A 42		
2	J A 36	J A 46	35	34	J A 46	B	23	B	B	B	G	B	B	E B 26	B	B	E B 25	E B 26	B	E B 19	18	J A 24	J A 34		
3	J A 38	J A 39	B	J A 36	J A 29	B	B	B	B	B	R	B	R	B	B	B	B	B	29	J A 37	26	J A 72	J A 26	J A 35	
4	47	107	B	J A 36	B	R	R	35	G	G	G	E B 32	28	E B 30	B	B	B	B	E B 32	E B 28	E B 18	15	J A 20	K 26	
5	22	21	J A 25	33	27	J A 39	B	31	34	B	E B 30	B	B	B	B	E B 40	E B 38	E B 22	G	28	27	15	J A 24	J A 34	
6	J A 36	35	J A 39	45	47	32	B	53	B	B	B	B	E B 37	B	B	B	E B 26	G	30	30	J A 39	22	J A 76	J A 99	
7	D S 70	B	J A 36	43	B	B	B	33	B	B	B	B	B	B	B	B	B	B	19	G	23	J A 46	J A 40	J A 46	
8	J A 79	B	K 28	B	44	52	B	B	B	B	B	B	R	B	B	B	B	B	G	17	27	B	J A 26	70	
9	J A 82	37	B	B	32	J A 70	B	B	B	B	B	B	R	E B 28	B	B	B	E B 23	E B 25	B	G	J A 39	J A 86	K 32	
10	37	60	B	B	42	B	B	B	B	B	B	B	R	B	B	B	R	B	E B 22	27	22	J A 26	J A 34	J A 27	
11	35	42	42	B	R	68	B	B	B	B	B	B	R	B	E B 27	B	E B 28	B	B	B	E B 19	J A 34	B	28	
12	83	37	67	B	R	R	B	B	B	B	B	B	B	B	B	B	B	E B 25	B	B	B	20	G	21	22
13	36	50	J A 36	32	R	B	66	30	30	B	B	B	R	G	B	B	B	E B 34	B	B	B	30	15	J A 38	
14	J A 39	40	41	45	64	35	B	B	44	B	B	B	E B 30	B	B	E B 27	B	E B 32	E B 27	E B 23	23	24	J A 27	J A 42	
15	35	77	J A 45	42	58	J A 36	35	B	B	35	B	B	R	E B 25	E B 27	E B 23	F	E B 25	E B 21	B	B	16	17	J A 23	23
16	57	57	28	24	J A 36	J A 29	J A 46	45	J A 39	22	G	B	E B 37	G	E B 26	G	G	B	22	33	B	J A 36	27	31	
17	K 32	100	40	43	56	J A 58	B	B	34	41	B	B	B	B	B	E B 52	B	B	B	E B 25	23	B	J A 25	21	
18	K 34	48	J A 86	33	33	B	33	G	G	G	E B 30	B	E B 28	B	B	E B 50	B	B	R	E B 20	21	15	J A 35	K 26	
19	K 35	J A 77	43	34	35	45	J A 37	35	B	G	B	B	R	E B 50	E B 51	B	B	E B 31	E B 35	B	E B 21	E B 24	J A 42	J K 38	
20	K 32	K 33	K 32	K 30	50	42	35	40	25	G	27	E B 40	R	27	E B 26	E B 25	E B 45	E B 27	B	E B 28	30	J A 37	28	C	
21	23	K 27	J A 33	J A 37	J A 26	20	31	E B 16	B	E B 27	E B 25	B	E B 28	E B 46	E B 39	24	E B 38	E B 45	R	E B 25	E B 15	E B 13	K 12	14	
22	B	B	27	J A 49	30	21	30	E B 22	E B 25	E B 24	E B 26	E B 26	G	E B 27	E B 27	E B 27	E B 33	E B 27	E B 20	G	J A 27	J A 34	20	17	
23	C	C	C	C	C	C	C	C	C	C	E B 27	30	E B 45	E B 31	E B 44	B	G	E B 23	E B 20	20	15	36	J A 34	27	
24	J A 65	45	B	J A 37	J A 39	J A 40	J A 38	30	G	G	G	G	25	25	G	G	G	G	E B 16	E B 16	E B 15	B	B	B	
25	J A 34	20	K 22	J A 26	22	15	14	19	20	G	G	E B 38	E B 38	E B 28	G	E B 25	F	E B 22	E B 20	E B 17	E C 17	E B 13	E B 13	15	E B 12
26	E S 14	Y	34	83	J A 49	J A 52	55	36	B	B	D C 75	32	J A 59	32	34	30	35	23	30	J A 34	J A 74	J A 61	J A 88	J A 46	
27	J A 29	B	J A 56	39	J A 54	B	B	35	B	B	B	B	R	B	E B 27	E B 21	G	R	B	B	J A 29	J A 39	112	J A 72	
28	B	43	35	B	Y	27	28	B	42	B	B	B	R	B	E B 25	E B 23	E B 33	E B 24	B	E B 24	B	34	J A 26	J A 24	
29	K 28	34	K 28	41	30	B	B	B	B	B	B	B	R	B	B	B	E C 50	E R 44	E B 23	E B 15	E B 14	24	C	C	
30	C	C	J A 35	J A 61	41	41	J A 28	J A 34	30	30	E B 40	C	C	E B 32	E B 24	E B 22	E B 20	E B 22	C	C	C	C	C	C	
31	C	C	C	J A 24	J A 69	B	43	41	36	27	G	B	B	B	E B 32	E B 40	E B 40	E B 28	B	16	30	K 16	K 34	E C 10	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	26	23	24	24	24	18	15	17	14	13	14	8	12	15	16	16	19	19	19	22	27	27	27	27	
MED	36	42	36	36	40	40	35	34	30	E G 22	E G 26	E B 31	E R 29	E B 28	E B 27	E B 25	E B 26	E R 24	E B 22	E G 24	22	26	J A 27	31	
UQ	J A 47	54	J A 42	43	50	52	40	36	36	27	E B 30	E R 35	E R 38	E B 32	E B 33	E B 35	F B 36	E R 30	E B 28	28	27	J A 36	J A 34	J A 40	
LQ	32	36	30	33	31	29	29	30	E G 20	G	G		E G 26		E B 26	E B 22		E B 22	E B 20	E E 17	E B 17	16	J A 24	24	

MAR. 1976

FOES (0.1 MHz)

IONOSPHERIC DATA

MAR. 1976

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	10	20	14	14	E C 15	B	B	B	B	B	B	27	15	33	B	B	22	R	20	20	8	10	8	22	
2	E C 12	E C 10	19	25	17	B	15	B	B	B	22	B	B	B	26	B	R	25	26	B	19	8	E C 20	7	
3	21	E C 10	B	16	11	B	B	B	B	B	B	B	B	B	B	B	R	R	23	16	19	14	E C 10	E C 11	
4	11	32	B	13	B	B	B	16	20	20	18	32	25	30	B	B	B	B	32	28	18	15	7	7	
5	7	9	8	E C 12	12	13	R	23	29	B	30	B	R	B	B	40	38	22	18	14	20	E C 11	E C 10	8	
6	E C 10	15	12	17	15	23	B	45	B	B	B	R	32	B	B	B	26	20	13	15	10	E C 10	7	10	
7	55	B	10	29	R	B	B	24	B	B	B	B	R	B	B	B	B	B	14	13	E C 10	E C 10	7	13	
8	E C 10	B	10	B	12	42	B	B	B	B	B	B	R	B	B	B	B	B	15	15	10	B	7	20	
9	15	24	B	B	22	12	B	B	B	B	B	B	R	B	B	B	B	23	25	B	13	10	E C 13	17	
10	15	E C 10	B	B	25	B	B	B	B	B	B	B	R	B	B	B	B	B	22	19	12	E C 10	10	12	
11	12	E C 15	23	B	R	40	B	B	B	B	B	B	R	B	B	27	B	28	R	B	B	19	7	B	10
12	15	20	22	B	B	B	B	B	B	B	B	B	R	B	B	B	25	B	B	B	10	8	6	E C 10	
13	E C 10	17	E C 22	23	B	B	50	22	15	B	B	B	R	23	B	B	R	34	B	B	B	14	11	8	
14	10	28	20	24	22	E C 20	B	B	B	B	B	B	30	B	B	B	32	27	23	20	14	14	40	E C 40	
15	E C 21	10	12	10	14	17	22	B	B	20	B	B	R	25	27	23	25	21	B	B	E C 10	E C 10	8	10	
16	10	E C 10	E C 18	E C 10	E C 10	E C 10	15	25	16	15	15	B	37	23	26	15	12	R	15	13	B	E C 10	11	12	
17	13	16	23	38	21	21	B	B	28	25	B	B	R	B	B	52	B	R	B	25	13	B	E C 10	9	
18	E C 10	13	22	27	26	B	20	E C 15	15	12	30	B	28	B	B	50	B	R	B	20	19	13	10	9	
19	E C 10	11	12	15	20	23	15	14	B	19	B	R	B	50	51	B	B	31	35	B	21	24	E C 10	E C 10	
20	9	E C 10	26	16	13	14	15	37	12	15	18	40	R	22	26	25	45	27	B	28	18	20	13	C	
21	E C 10	E C 10	13	E C 10	7	E C 10	7	16	B	27	25	B	28	46	39	20	38	45	B	25	15	13	12	11	
22	B	B	15	11	18	10	11	22	25	24	26	26	23	27	27	27	33	27	20	E C 10	10	9	E S 10	E S 12	
23	C	C	C	C	C	C	C	C	C	C	C	27	25	45	31	44	B	18	23	20	15	9	E	12	E S 15
24	10	24	B	25	14	15	15	15	14	12	14	17	16	15	14	13	15	15	16	16	15	B	B	B	
25	13	10	10	E C 10	6	E C 10	E C 10	E C 10	11	11	E C 15	38	38	28	21	25	22	20	17	E C 17	13	13	E C 10	12	
26	E S 14	Y	13	25	13	10	22	31	B	B	23	E C 16	16	15	17	15	14	13	12	15	E C 10	E C 14	14	E C 10	
27	E C 10	B	11	20	E C 15	B	B	22	B	B	B	B	R	B	27	21	20	B	R	B	E C 15	E C 10	28	21	
28	B	22	28	B	Y	E C 25	21	B	32	B	B	B	R	B	25	23	33	24	B	24	B	10	E C 15	9	
29	E C 10	12	19	20	25	B	B	B	B	B	B	R	R	B	B	B	E C 50	44	23	15	14	E C 15	C	C	
30	C	C	10	E C 20	20	15	10	10	11	19	40	C	C	32	24	22	20	22	C	C	C	C	C	C	
31	C	C	C	10	15	B	12	24	19	19	20	B	R	B	32	40	40	28	B	14	11	E C 14	10	E C 10	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	27	29	30	29	30	30	30	30	30	31	30	30	31	31	31	31	31	30	30	30	30	29	28	
MED	10	15	U 17	20	17	24	D B 50	34	B	B	B	B	B	B	51	52	38	32	26	20	14	11	9	10	
UQ	14	24	23	29	25	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	19	14	12	13	
LQ	E C 10	10	12	12	12	14	15	22	19	19	24	40	30	28	26	24	24	23	18	15	10	E E 10	10	10	

The Radio Research Laboratories, Japan

MAR. 1976

F-MIN (0.1 MHz)

IONOSPHERIC DATA

MAR. 1976

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION	Lat. 69° 00.4' S, Long. 39° 35.4' E							Sweep	MHz to 15 MHz in 30 sec in automatic operation															
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	B	B	B	B	B	B	F 265	F 275	R	B	B	U C 270	B	F 300	A	A	A	A	A
2	A	A	A	A	A	B	R	B	B	B	R	B	B	B	R	B	B	F 290	F 285	B	U F 315	J F 310	A	A
3	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	F 320	F	F	A	A	A
4	A	B	B	A	B	B	B	R	F 280	F 235	F 230	C	F 280	F 275	B	B	B	B	F 315	F 330	F 325	F 285	F	A
5	A	A	U F 300	A	A	F	B	R	R	B	R	B	B	B	B	F	U R 300	F 315	F 300	J F 280	F	F 295	A	A
6	A	A	A	A	A	A	B	B	B	B	B	B	B	R	B	B	B	U C 290	F 285	F 270	R	A	R	A
7	B	B	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	U F 295	F 320	F	A	A	A
8	A	B	A	B	A	B	B	B	B	B	B	B	B	R	B	B	B	B	F 305	F 315	F	A	B	A
9	A	A	B	B	A	F	B	B	B	B	B	B	B	R	R	B	B	B	U R 320	F 300	B	R	A	A
10	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	F 300	R	R	A	A	F
11	A	A	A	B	B	B	B	B	B	B	B	B	B	R	B	U R 250	B	R	B	B	B	F	A	B
12	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	B	B	B	F	R	R
13	A	A	A	A	B	B	B	R	F 245	B	B	B	B	B	F 295	B	B	B	F 325	B	B	B	F 285	F 285
14	A	A	A	A	A	A	B	B	A	B	B	B	C	B	B	B	F 295	B	F 325	F 340	F 320	F 315	F 295	A
15	R	R	A	A	A	A	A	B	B	R	B	B	B	B	F 290	F 300	F 290	F 325	F 295	B	B	F	F	A
16	A	A	R	F	A	F	A	A	F	F	F	B	F 275	F 310	F 300	F 295	F 270	B	F 340	F 315	B	A	A	A
17	A	A	A	B	A	A	B	B	R	A	B	B	B	B	B	C 320	B	B	B	F	F	B	A	F
18	A	A	A	A	A	B	A	F 270	F 315	F 250	F 265	B	F 280	B	B	B	B	B	B	F 315	F 300	F 290	A	F
19	A	A	A	A	A	A	A	B	F 280	F 260	B	B	B	B	U F 290	C 315	B	B	R	R	B	F	R	A
20	A	A	B	A	F	A	A	Y	F	F	F 275	F 280	R	F	F	F	F	F 330	B	F 320	F 305	F	F	C
21	A	A	A	A	F	R	R	F	B	C	F 285	B	F 310	F 330	F	F	F	U C 345	B	F 325	F	F	U F 285	F 280
22	B	B	R	F 285	F 275	F 295	F	F 315	F 305	F 325	F 290	F 290	F 305	F 320	F 340	F 335	F 355	F 355	F 340	F 350	F 330	F	A	F 300
23	C	C	C	C	C	C	C	C	C	C	F 310	F 305	F 305	F 310	F 320	B	F 355	F 350	J C 340	F 350	F 330	F	A	F
24	A	A	B	A	A	A	A	F 250	F 290	F 280	F 300	F 280	F 305	F 315	F 325	F 335	F 355	F 350	F 350	F 335	F	F	B	B
25	A	R	C	U F 325	F 280	F	J F 310	F	F 320	F 325	F 310	F 320	U F 340	F 315	F 330	C 350	F 350	F 350	F 340	F 355	F	F	F 305	F
26	F	Y	F	B	A	A	A	A	B	B	F	F	A	R	F	F	A	F 350	F	F	A	F	A	A
27	A	B	A	A	A	B	B	F	B	B	B	B	B	B	B	G	F 280	C 290	B	B	B	R	A	B
28	B	A	B	B	Y	F	R	B	A	B	B	B	B	B	B	F 300	F 310	F 310	F 320	B	F 300	B	A	A
29	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	F 325	F 335	U F 305	F	J F 325	F 315	C
30	C	C	250	F	A	A	F	F 295	U F 290	J F 295	F	C	C	F	J F 320	J F 350	F	U F 330	C	C	C	C	C	C
31	C	C	C	F	A	B	A	A	A	255	275	B	B	B	B	F 310	F 325	F 340	F 355	B	F 300	U F 300	F 295	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT			2	2	2	1	1	5	7	8	9	6	9	10	12	11	13	18	17	15	9	8	3	3
MED			275	305	278	295	310	280	290	270	285	285	305	310	312	320	325	330	305	320	315	295	285	300
UQ								F 295	F 310	F 310	F 300	F 305	F 305	F 315	F 322	F 335	F 350	F 350	F 340	F 332	F 325	F 302	F 295	F 318
LQ								F 270	F 285	F 252	F 275	F 280	F 280	F 290	F 300	F 295	F 290	F 320	F 300	F 315	F 305	F 288	F 285	F 290

MAR. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1976 H'F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	B	B	B	F 450	440	R	B	B	C 450	P						
2								B	B	B	R	B	R	B	R	B	B		370					
3								B	B	B	B	B	R	B	B	B	B	B	B					
4								A	F 430	570	600		R	400	430	B	B	B	B					
5								A	A	B	R	B	B	B	B	B	400	B	L		L			
6								B	B	B	B	B	R	B	B	B	B	L		375	430			
7								A	B	B	B	B	R	B	B	B	B	B						
8								B	B	B	B	B	R	B	B	B	B	B						
9								B	B	B	B	B	R	R	B	B	B	B						
10								B	B	B	B	B	B	B	B	B	B	B						
11								B	B	B	B	B	B	B	U R 550	B	R							
12								B	B	B	B	B	R	B	B	B	B		310					
13								540	B	B	B	B	B		375	B	B	B						
14								A	B	B	B	B	C	B	B	L								
15								B	R	B	B	B	B		350	325	L	L		325				
16								A	F	F 500	B	B	440	330	L	380	380							
17								A	A	B	B	B	B	B	B	E B 325	B	B						
18								400	L	455	E C 450	B	C	B	B	B	B	B						
19								B	450	B	B	B	B	B	B	B	B	B						
20								L	L	410	C 400	C 400	B	290	260	250	250							
21								B	C	L	B	B	L	275	255	240								
22									280	L	340	310	310	275	255	255								
23									C	290	295	295	285	275	B	B								
24									395	380	340	L	310	280	270									
25										L	L	L	255	280	250									
26									B	F	F	Y	R	F	F	A								
27									B	B	B	R	B	G		390	L							
28									B	B	B	R	B		350	300	290							
29									B	B	B	B	B	B	B	B								
30											300	C	C	265										
31									470	400	B	R	B											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	3	6	8	4	7	11	10	8	5	3	1					
MED								400	430	452	388	370	310	285	272	U 295	310	370	430					
UQ									485	470	475	425	420	340	350	385	380	372						
LQ									412	380	320	318	302	278	255	252	290	348						

MAR. 1976 H'F2 (KM)

IONOSPHERIC DATA

MAR. 1976

H'F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																
Hour / 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	B	A	A	A	B	B	B	B	B	B	B	220	205	B	B	B	210	B	255	A	A	A	A	B
2	A	A	A	B	A	B	R	B	B	B	B	H 240	B	R	B	240	B	B	245	B	B	275	300	C	A
3	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	R	E A 280	270	290	A	A	A	A
4	A	B	B	A	B	B	B	A	250	220	H 225	B	240	245	B	B	B	B	E 280	E B 280	245	300	395	A	
5	A	A	A	A	A	340	B	B	B	B	E B 255	B	B	B	B	B	B	230	260	290	300	335	A	A	
6	A	A	A	A	A	B	B	B	B	B	B	B	E R 255	B	B	B	250	250	U H 325	A	A	A	A	A	
7	B	B	A	B	R	B	B	A	B	B	B	R	R	B	B	B	B	B	250	305	A	A	A	A	
8	A	B	A	B	A	B	B	B	B	B	B	B	R	B	B	B	B	B	265	270	A	B	A	A	
9	A	A	B	B	A	F	B	B	B	B	B	B	R	250	B	B	B	R	E B 290	B	R	A	A	R	
10	A	A	B	B	A	B	B	B	B	B	B	B	R	B	B	B	B	R	B 270	A	A	A	A	U F 345	
11	A	A	B	B	B	B	B	B	B	B	B	B	R	B	245	B	B	B	B	B	300	A	B	A	
12	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	240	B	B	B	F 375	R	A	A	
13	A	A	A	B	R	B	B	A	A	B	B	B	R	235	B	B	B	B	B	B	B	280	285	A	
14	A	A	A	A	A	A	B	B	A	B	B	B	255	B	B	240	B	270	250	260	F 290	310	A	C	
15	A	R	A	A	A	A	A	B	B	A	R	B	R	210	235	230	240	250	B	B	F 355	325	A	A	
16	A	A	A	F	A	A	A	A	A	H 230	250	B	R	230	225	220	245	B	H 230	290	B	A	A	A	
17	A	A	B	B	A	A	B	B	A	A	B	B	R	B	B	B	B	B	B	F 280	270	B	A	F 355	
18	A	A	B	B	R	B	A	300	250	250	B	B	240	B	B	B	B	B	B	250	A 220	295	A	A	
19	A	A	A	A	A	A	A	380	B	260	B	B	R	B	B	B	B	B	250	245	B	260	B	A	A
20	A	A	B	A	F	A	A	Y	250	230	205	B	R	H 200	240	240	B	245	B	E B 245	255	275	290	C	
21	A	A	A	A	400	320	280	270	B	240	250	B	225	B	B	230	250	230	B	245	240	255	295	E A 320	
22	B	B	R	380	350	340	310	250	B 250	250	230	220	240	240	U B 225	230	240	220	220	225	220	260	A	A	
23	C	C	C	C	C	C	C	C	C	C	240	230	R	E B 250	B	B	240	225	215	220	235	A	A	F	
24	A	B	B	B	A	A	A	A	295	240	240	220	210	230	210	230	235	220	220	230	E B 270	B	B	B	
25	A	A	360	290	S 325	S 380	300	255	240	220	225	250	B	240	225	H 245	230	220	225	215	230	260	275	B	
26	S	Y	U F 330	B	A	A	B	B	B	B	A	235	Y	F	310	350	A	230	250	A	F	A	A	A	
27	A	B	A	B	A	B	A	B	B	B	B	R	B	B	270	245	280	B	B	B	A	A	B	B	
28	B	A	B	B	Y	305	A	B	B	B	B	B	R	B	B	260	250	B	260	B	B	B	A	A	A
29	A	A	A	A	R	B	B	B	B	B	B	B	B	B	B	B	C	265	250	240	250	240	C	C	
30	C	C	475	U F 300	A	A	F	300	290	250	B	C	C	E B 255	240	240	230	H 235	C	C	C	C	C	C	
31	C	C	C	F	A	B	A	A	A	265	290	B	R	B	B	255	E B 300	250	230	B	255	255	310	A	305
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT			3	3	3	5	3	6	7	11	11	6	8	11	13	13	13	18	18	17	19	13	5	4	
MED			360	300	350	340	300	285	250	240	240	225	236	235	240	240	240	238	250	252	258	295	290	332	
UQ			418	340	375	340	305	300	270	250	248	235	244	244	255	245	250	250	265	280	290	310	295	F 350	
LQ			345	295	338	320	290	255	250	230	228	220	218	230	225	230	235	230	230	240	242	260	285	308	

MAR. 1976

H'F (KM)

IONOSPHERIC DATA

MAR. 1976

H'ES (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	125	100	100	100	100	B	B	B	B	B	B	B	G	B	B	B	G	B	B	115	100	100	100	110	
2	105	100	90	95	95	B	95	B	B	B	G	B	B	B	B	B	B	B	B	B	B	120	150	100	
3	100	100	B	95	100	B	B	B	B	B	B	B	B	B	B	B	B	B	125	125	150	110	100	110	
4	100	140	B	125	B	B	B	100	G	G	G	B	140	B	B	B	B	B	B	B	B	B	170	110	
5	130 ^K	130 ^K	150	105	115	100 ^K	B	100	105	B	B	B	B	B	B	B	B	B	B	G	145	145	150	105	110
6	100	100	100	100	105	100	B	100	B	B	B	B	B	B	B	B	B	B	G	125	110	110	100	105	100
7	100	B	95	110	B	B	B	120	B	B	B	B	B	B	B	B	B	B	B	150	G	150	115	105	110
8	115	B	125 ^K	B	120	125	B	B	B	B	B	B	B	B	B	B	B	B	B	G	150	120	B	110	150 ^K
9	100	130 ^K	B	B	110	155 ^K	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	G	105	100	105 ^K
10	105	100	B	B	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	145	105	105	120 ^K
11	105	120	100	B	B	140	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	100	B	140 ^K	
12	125 ^K	110	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	140	G	100	135 ^K
13	100 ^K	100	100	125	B	B	180	110	110	B	B	B	B	G	B	B	B	B	B	B	B	B	145	110	105
14	100	115	125	115	150	125	B	B	100	B	B	B	B	B	B	B	B	B	B	B	B	125	130	120	120
15	125 ^K	155 ^K	110	100	105	105	120	B	B	100	B	B	B	B	B	B	B	B	B	B	B	130	130	120	145 ^K
16	140 ^K	180	100	120 ^K	115	125	115	100	100 ^K	115	G	B	B	G	B	G	G	B	150	120	B	110	115	110	
17	110 ^K	125 ^K	110	120	100	100	B	B	100	105	B	B	B	B	B	B	B	B	B	B	B	130	B	115	125 ^K
18	110 ^K	180	100	100	120	B	105	G	G	G	B	B	B	B	B	B	B	B	B	B	B	130	105	110	105 ^K
19	110 ^K	100 ^K	105	120	125	100	105	180 ^K	B	G	B	B	B	B	B	B	B	B	B	B	B	B	B	110	110 ^K
20	110 ^K	110 ^K	145 ^K	125 ^K	165	125	105	140	130	G	130	B	B	145	B	B	B	B	B	B	B	125	120	125 ^K	C
21	110	110 ^K	150	105 ^K	105 ^K	125	95	B	B	B	B	B	B	B	B	110	B	B	B	B	B	B	B	100	100 ^K
22	B	B	120 ^K	125 ^K	105	100	95	B	B	B	B	B	B	B	B	B	B	B	B	B	G	100	100	100	150
23	C	C	C	C	C	C	C	C	C	C	C	B	130	B	B	B	B	G	B	B	105	105	115	110	170 ^K
24	120	100	B	100	100	100	105	100	G	G	G	G	125	120	G	G	G	G	B	B	B	B	B	B	B
25	130	110	110 ^K	170	150	100	100	100	100	G	G	B	B	B	G	B	B	B	B	C	B	B	100	B	
26	S	Y	165 ^K	130	105	110 ^K	115	125	B	B	125	110	105	130	120	125	120	145	145	110	100 ^K	130 ^K	100	125	
27	100	B	115	100	175 ^K	B	B	180	B	B	B	B	B	B	B	B	B	G	B	B	B	125	100	125	150
28	B	175 ^K	130	B	Y	125 ^C	120	B	110	B	B	B	B	B	B	B	B	B	B	B	B	115 ^K	110	110	
29	110 ^K	130	135 ^K	105	140	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	B	140	C	C	
30	C	C	110 ^K	180 ^K	110	105	125	100	140	100	B	C	C	B	B	B	B	B	C	C	C	C	C	C	
31	C	C	C	130	155	B	100	115	100	125	G	B	B	B	B	B	B	B	B	B	140	130	145 ^K	110 ^K	C
CNT	25	23	24	24	24	18	15	14	10	5	2	2	3	3	1	2	1	1	5	10	18	22	27	25	
MED	110	110	110	112	112	108	105	105	102	105	128	120	125	130	120	118	120	145	145	122	128	115	110	110	
UQ	120 ^K	130	128	125	132	125	118	125	110	115			132	138					150	140	140	130	115	135 ^K	
LQ	100	100	100	100	105	100	100	100	100	100			115	125					125	110	110	105	100	110	

The Radio Research Laboratories, Japan

MAR. 1976

H'ES (KM)

IONOSPHERIC DATA

MAR. 1976
TYPES OF ES

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S, Long. 39° 35.4' E		Sweep	MHz to 15 MHz in 30 sec in automatic operation																				
Hour 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	R1	L1	R2	R1	P2															RS11	RS21	R2	RL21	R1	
2	R4	R3	L1	L1	R1		L1															R1	RA11	RFS51	
3	R1	RA11		L1	R1													C1	C1	H1	R1	R1	R1	RF51	
4	R1	A1		RL21				R1					H1									A1		K6	
5	HK31	HKL31	R4	RL21	R2	RK11		R1	R1										R1	H1	R1	R3	RS51		
6	RA21	R2	R1	R1	R2	L1		R1										R1	RS11	RS21	R1	RA11	RA21		
7	F1		R1	R1				C1										H1		RA11	RA51	RS61	RS31		
8	AR13		KL31		PLS11	R1													C1	R2		RR2	AK11		
9	AR11	CK11			CS11	AK11															R2	AR11	K1		
10	R1	R4			R1														R1	H1	RA21	R3	RK21		
11	R2	RA11	R1			H1															RS31		HK22		
12	RRK11	R2	R1																		R2		R2	HK11	
13	LK14	R1	R1	R1			A1	C1	R1													A1	R1	RS41	
14	R3	R1	R1	R1	AR11	R1			R1											C1	H1	C1	F1		
15	K1	AK13	R2	RA11	R2	R1	R1				L1									H1	RA11	C3	CK11		
16	ARK11	AR11	FA11	CAK11	RL42	RA41	RA21	R1	CK11	R2								H1	R1		R2	R1	RA11		
17	K2	CK11	RR11	RA11	R2	R1			R1	R1										H1		RA21	RK11		
18	K5	AR12	RR11	L1	R1		R1													H1	C1	RS31	KL21		
19	K5	RAK11	R2	R2	R1	R1	R2	HK11														RS51	KS61		
20	K5	K5	K1	K4	RAC11	R3	R2	H1	C1		R2			H1						C1	C1	ACK11			
21	R2	K2	RR11	RK13	RK12	RL11	AH11									C1							K1	F1	
22			CK11	CK11	L1	L1	L2														C1	F2	F1	F1	
23												H1								C1	C1	RL21	R2	HK11	
24	AR13	R1		R1	R2	R1	R2	R1						C1	C1										
25	H1	R1	K1	AF11	RA11	R1	L1	L1	L1															F1	
26			CK11	A1	R3	RKA23	RA11	C1		S1	R1	R1	R1	A1	R1	RA11	RS11	C1	H1	RA11	BAK51	HK22	EA21	REA22	
27	F3		RF11	R1	RAK11			H1													R2	RS31	A1	RR11	
28		HK11	R1			R1	R1		R1														KR31	R2	R3
29	K4	R1	K1	R1	H1																	R1			
30			RKA12	ARK11	R1	R2	R1	R1	HL11	L1															
31				RA31	AR11		R1	R1	R1	R1										H1	H1	KA11	KS61		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

MAR. 1976
TYPES OF ES

IONOSPHERIC DATA

APR. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	O ₂₃ R	O ₂₁ R	A	A	R	B	R	B	A	A	C ₉₆	Y	R	B	53	R	B	O ₃₇ R	U ₁₁₁ A	A	U ₄₀ A	A	A	A	
2	A	A	A	A	A	R	A	R	B	A	B	B	O ₅₁ P	O ₄₉ R	O ₅₁ R	X ₅₆	67	65	55	O ₄₂ R	30	B	26	X ₅₂	
3	76	U ₁₁₅ A	A	A	B	30	A	A	A	B	B	R	B	B	B	O ₄₉ R	45	R	A	67	A	A	A	A	
4	A	B	B	A	A	R	B	B	B	B	B	B	R	B	B	B	O ₄₀ R	R	C ₃₅ R	R	O ₂₅ R	R	A	A	
5	B	B	B	B	R	R	B	B	R	B	B	R	R	B	B	B	R	R	B	B	O ₃₁ R	A	A	B	
6	B	B	B	B	R	B	B	B	B	B	B	B	R	B	B	B	B	O ₃₇ R	O ₄₀ R	R	R	A	A	A	
7	A	B	32	B	A	C	A	B	O ₃₂ R	O ₃₇ R	O ₃₈ R	B	R	B	B	B	C	R	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R	B	B	A	R	A	A	
9	A	B	A	A	B	A	B	B	A	O ₃₅ R	O ₃₉ R	O ₄₂ R	O ₄₅ R	O ₄₆ R	O ₄₆ R	O ₄₈ R	O ₄₆ R	O ₄₈ R	O ₃₇ R	B	R	O ₃₆ R	A	A	
10	B	B	B	B	A	A	A	A	B	R	B	B	P	B	O ₄₇ R	B	B	B	O ₃₆ R	O ₃₁ R	A	A	A	A	
11	A	A	A	35	A	A	A	A	O ₄₃ R	O ₄₁ R	O ₄₇ R	X ₅₁	X ₅₆	C ₅₈	X ₆₂	B	R	55	B	B	B	A	A	A	
12	A	A	A	55	A	R	A	B	B	B	O ₄₃ R	B	B	B	B	B	O ₅₈ R	O ₄₉ R	O ₄₃ R	O ₃₉ R	C	C	C	B	
13	A	O ₃₅ R	R	R	A	B	A	A	B	B	B	54	51	O ₅₀ R	B	B	B	X ₄₄	40	X ₃₆	O ₂₄ R	O ₂₁ R	A	A	
14	B	45	A	A	A	A	A	A	B	B	B	B	R	B	B	O ₄₇ R	R	B	O ₄₃ R	40	B	32	O ₂₁ R	A	
15	A	A	A	B	A	A	R	O ₃₇ R	O ₄₁ R	X ₄₃	X ₄₆	X ₄₈	X ₅₁	X ₅₂	X ₅₄	X ₅₅	X ₅₁	X ₄₅	37	32	28	O ₂₅ R	C	O ₂₁ R	
16	R	A	A	A	A	A	A	B	R	O ₄₂ R	50	X ₅₁	X ₅₂	58	X ₅₇	X ₅₄	55	Y ₅₁	C	29	25	O ₂₃ R	X ₂₁	A	
17	A	A	B	A	A	R	A	A	O ₄₁ R	X ₄₃	52	X ₅₆	58	X ₆₃	67	64	X ₅₃	X ₄₇	O ₄₃ R	31	O ₂₇ R	O ₂₉ R	R	57	
18	30	R	R	A	R	37	45	40	68	48	X ₅₆	68	X ₆₈	73	64	X ₆₅	O ₅₉ R	52	35	29	O ₂₈ R	O ₂₂ R	A	A	
19	B	B	B	X ₃₆	31	32	42	52	55	65	73	66	72	83	X ₇₈	R	R	52	65	38	A	A	B	30	
20	25	A	R	R	46	47	60	R	36	43	X ₅₂	65	64	X ₆₆	X ₇₉	X ₇₉	R	44	34	O ₂₈ R	O ₂₁ R	O ₂₁ R	O ₁₉ R	O ₁₉ R	
21	O ₂₃ R	37	U ₅₇ S	D ₈₅ C	C ₅₈	57	45	55	55	55	O ₆₂ R	64	73	78	79	84	Y ₇₃	O ₅₀ R	45	43	O ₃₄ R	O ₃₃ R	O ₂₃ R	O ₂₁ R	
22	O ₃₈ R	38	A	O ₄₄ R	A	37	U ₆₇ S	A	55	45	A	B	48	B	B	B	B	65	67	A	O ₂₉ R	R	R	R	
23	A	A	A	B	R	B	A	A	B	B	B	44	48	O ₅₁ R	O ₅₁ R	47	O ₄₃ R	R	O ₃₄ R	O ₃₁ R	O ₂₁ R	C	R	R	
24	R	R	58	R	R	37	46	51	R	B	O ₄₀ R	B	R	B	65	59	O ₅₂ R	R	C ₃₅ R	R	R	A	C	R	
25	A	A	A	R	R	A	A	A	R	B	B	X ₄₂	O ₄₅ R	X ₄₆	45	X ₄₃	O ₃₉ R	37	32	O ₃₂ R	B	B	B	A	
26	B	A	A	R	E	A	A	A	R	B	O ₄₃ R	O ₅₁ R	O ₅₀ R	O ₅₁ R	B	B	O ₄₃ R	O ₄₀ R	C ₄₁ R	B	B	B	32	25	
27	A	A	U ₆₇ C	A	A	A	A	R	A	B	A	O ₄₀ R	X ₄₂	X ₄₄	45	44	X ₃₈	42	C ₃₂ R	R	O ₂₀ R	O ₂₁ R	A	A	
28	A	A	A	A	A	A	A	A	A	37	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	O ₂₅ R	A	A	A	A	
30	U ₅₇ S	B	B	A	A	A	A	A	B	B	O ₃₇ R	44	B	B	67	O ₅₄ R	X ₅₂	R	B	B	B	B	A	36	
31																									
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	7	6	4	5	3	7	6	5	9	12	15	15	16	15	17	14	16	19	21	15	15	10	6	8	
MED	30	38	58	44	46	37	46	51	43	43	O ₄₇ R	51	51	52	57	54	O ₅₂ R	47	O ₄₀ R	32	O ₂₈ R	O ₂₃ R	22	28	
UQ	48	45	62	55	52	42	60	52	55	46	54	60	61	64	67	X ₆₄	56	52	43	38	30	O ₃₂ R	26	44	
LQ	24	O ₅₅ R	44	36	38	34	45	40	O ₄₁ R	O ₃₉ R	O ₄₂ R	44	48	O ₅₀ R	51	47	O ₄₃ R	43	C ₃₅ R	O ₃₀ R	O ₂₄ R	O ₂₁ R	O ₂₁ R	O ₂₁ R	

The Radio Research Laboratories, Japan

APR. 1976

FXI (0.1 MHz)

IONOSPHERIC DATA

APR. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA	STATION	Lat.	69° 00.4' S.	Long.	39° 35.4' E	Sweep	MHz to	15 MHz in	30 sec in	automatic operation														
Hour 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	17	15	A	A	B	B	B	B	A	A	Y	Y	B	B	F	R	B	F	A	A	F	A	A	A	
2	A	A	A	A	A	R	A	A	B	A	B	B	45	43	45	50	J ₅₉	J ₅₂	F	F ₃₅	U ₂₃	B	F	46	
3	F	A	A	A	B	F	A	A	A	B	B	B	B	B	B	B	F ₄₂	F ₃₇	R	A	F	A	A	A	
4	A	B	B	B	A	A	B	B	B	B	B	B	R	B	B	B	U ₃₄	B	F ₂₉	R	F	R	A	A	
5	B	B	B	B	B	B	B	B	A	B	B	B	R	B	B	B	B	B	B	B	F	A	A	B	
6	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	U ₃₁	F ₂₈	R	R	A	A	A	
7	A	B	F	B	A	C	A	B	26	31	F ₃₂	B	R	B	B	B	C	R	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	A	R	A	
9	A	B	B	A	B	A	B	B	A	29	33	36	U ₃₉	C ₄₀	40	U ₄₀	C ₄₂	U ₄₀	C ₄₂	31	B	A	F	A	
10	B	B	B	B	B	A	A	A	B	A	B	B	B	B	41	B	B	B	B	F ₂₉	F	A	A	A	
11	A	A	A	F	A	A	A	A	F	32	35	41	45	50	52	56	B	C	F	B	B	B	A	A	
12	A	A	A	F ₃₀	A	A	A	B	B	B	37	B	R	B	B	B	52	43	F ₃₆	F ₃₂	C	C	C	B	
13	A	29	A	A	B	B	A	A	B	B	B	B	F ₄₇	F ₄₅	44	B	B	B	C ₃₈	F ₃₄	F ₃₀	18	F ₁₂	A	
14	B	F	A	A	B	A	A	B	B	B	B	B	R	B	B	R	41	B	F	J ₃₄	B	F ₁₅	R	A	
15	A	A	A	B	A	A	A	U ₂₈	F ₃₄	37	40	42	45	46	47	49	45	39	F ₃₁	F ₂₅	F ₂₁	F ₁₅	J ₁₃	F ₁₃	
16	R	A	A	A	A	A	A	B	R	36	F ₄₄	45	46	F ₅₁	51	48	48	44	C	F ₂₂	F ₁₈	F ₁₅	F ₁₅	A	
17	A	A	B	A	A	R	A	A	F	37	F ₄₅	F ₅₀	F ₅₁	F ₅₆	F ₆₀	F ₅₇	47	40	F ₃₇	U ₂₄	F ₂₀	F ₁₇	A	F	
18	F	R	R	A	B	F	C	F	J ₃₂	F	50	F ₆₂	F ₆₁	J ₆₇	F ₅₇	58	U ₅₂	F	F	F	U ₁₈	F ₁₃	C	C	
19	B	B	B	J ₃₀	F ₂₄	F	F ₃₆	J ₄₆	F	F	U ₅₈	F	F	77	72	R	R	F	F	J ₂₉	A	A	B	F ₂₀	
20	U ₁₇	F	A	A	A	F	F	F	R	J ₃₀	F ₃₇	46	F ₅₈	F ₅₆	C ₆₀	J ₇₃	J ₇₃	R	F ₃₇	F ₂₇	F ₂₀	15	F ₁₅	F	F
21	F ₁₅	F ₁₅	R	R	R	F	F	F	F	F	F	U ₅₅	F ₆₇	F ₇₂	U ₇₄	F ₇₇	67	F ₄₂	F ₃₇	J ₃₂	F ₂₆	F ₂₁	F ₁₅	F ₁₅	
22	32	F ₃₂	A	F	A	U ₃₀	F	A	F	F	A	B	R	B	B	B	B	J ₄₈	F	A	F	R	R	R	
23	A	A	A	B	R	B	A	A	B	B	B	F	F ₄₁	F ₄₃	F ₄₃	41	37	B	F ₂₆	F ₂₂	15	C	R	R	
24	R	R	R	R	R	F ₃₀	F	F	R	B	34	B	B	B	F	F	46	R	F	A	R	A	C	R	
25	A	A	A	A	A	A	A	A	R	B	B	36	37	40	F ₃₉	37	33	F ₃₀	F ₂₅	F ₂₄	B	B	B	A	
26	B	B	A	A	B	A	A	A	R	B	F ₃₆	F ₄₀	44	45	B	B	37	C ₃₃	F ₃₂	B	B	B	F ₁₅	F ₁₆	
27	A	A	A	A	A	A	A	R	A	B	A	F ₃₄	F ₃₆	38	38	38	32	F ₃₁	F ₂₅	R	F ₁₂	F ₁₃	A	A	
28	A	B	B	A	A	A	A	A	A	F ₃₀	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	F ₁₆	A	A	A	A	
30	F	B	B	A	A	A	A	A	B	B	31	F ₃₇	R	B	R	61	48	46	B	B	B	B	A	F	
31																									
Hour 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	
CNT	4	4		2	1	2	1	2	5	8	14	13	14	15	15	13	16	15	14	13	10	8	5	5	
MED	17	22		J ₃₀	F ₂₄	F ₃₀	F ₃₆	F ₃₇	F ₃₂	36	40	45	45	46	51	48	46	39	F ₃₀	F ₂₅	F ₁₈	F ₁₅	F ₁₅	F ₁₆	
UQ	24	30							F ₃₂	37	F ₄₆	F ₅₀	F ₅₁	58	60	57	50	42	F ₃₄	F ₃₂	F ₂₁	F ₁₆	F ₁₅	F ₂₀	
LQ	F ₁₆	15							J ₃₀	30	34	37	41	43	42	41	37	F ₃₅	F ₂₇	F ₂₂	F ₁₅	F ₁₃	F ₁₅	F ₁₅	

APR. 1976

FOF2 (0.1 MHz)

IONOSPHERIC DATA

APR. 1976

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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											Y	U R	R	B	F	F								
2												R	R	R	B	B								
3												R	B	R	B	B								
4												B	R	R	B	B								
5												R	B	R	B	B								
6												R	R	R	B	B								
7											U C	B	R	B	B									
8												C	C	C	C									
9													L	L	L									
10												B	R											
11											L					L								
12																								
13												U L												
14												320												
15														L										
16																								
17													L											
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27														L										
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											1	2			1	1								
MED											U C U	310			F	F								
UQ											290				300	290								
LQ																								

APR. 1976

FOF1 (0.01 MHz)

IONOSPHERIC DATA

APR. 1976

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																		
Hour 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	K ₉₅ U ₁₂₅	K ₃₀₀ K ₃₃₀	B	B	B	B	B	B	B	B	Y	A	B	B	B	B	B	B	K ₃₂₀	A	A	U ₃₂₀ K				
2	U ₃₅₀ K ₂₇₅		K ₂₂₀	B	K ₃₀₀	B	A	B	B	B	B	B	B	B	B	200	175	B	B	B	B			K ₃₂₀		
3				B	U ₁₈₀ K	R	B	B	B	B	B	B	R	B	B	B	B	A	U ₃₀₀ K	A	U ₂₂₅ K					
4				R	B	B	B	B	B	B	B	B	R	B	B	B	B	R	E	R	B	155	A	170	K ₂₅₀ K ₃₂₀ U ₃₂₀ K	
5				R	B	B	B	B	B	B	B	B	B	B	B	B	B	R	E	R	B	200	K ₃₂₀			
6					B	B	B	B	B	B	B	B	B	B	B	B	B	K ₂₃₀	B	A	250	K			K ₃₃₀	
7	K ₃₁₀				C	B	B	B	B	220	Y	B	B	B	B	B	B	C	R	C	C					
8					C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B				K ₁₈₀	
9					U ₃₂₀ K	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	U ₂₀₀ K		K ₃₅₀	
10					B	B	B	B	A	B	B	R	B	B	B	B	B	R	B	B	B	U ₁₀₀ K				
11			J ₃₄₀ K		B	C	A	190	R	B	215	B	215	A	B	B	B	B	B	B	B				U ₃₀₀ K	
12		U ₃₀₀ K		U ₂₄₀ K	B	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B					
13	K ₂₅₀ U ₁₈₀ K	U ₂₉₀ K	K ₃₀₀		B	A	B	B	B	B	B	B	R	B	B	B	B	R	B	B	B	U ₁₀₀ K	U ₃₅₀ K	K ₃₅₀		
14		U ₂₂₀ K			B	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B				K ₁₃₀	
15					305	K ₃₅₅	205	K ₁₉₀	160	U ₁₇₀ R	B	U ₂₀₀ R	200	A	200	U ₁₈₅ A	A	A	A	A				U ₁₀₀ K		
16	U ₁₃₀ K	140	K ₁₉₀			B	B	B	B	U ₂₃₀ K	210	H	200	200	U ₂₁₀ R	190	H	175	130	130	C				K ₂₃₀	
17		U ₂₈₅ K			330	K ₂₅₀	B	B	B	170	200	200	200	U ₂₀₀ R	B	B	B	R	B	B				200	K ₁₈₀	
18			U ₂₀₀ K		U ₂₀₀ K	C	A	C	A	180	180	210	H	200	190	B	B	C	A	U ₁₁₀ K	U ₁₂₀ K					
19	B	B	B	U ₂₁₀ K	U ₁₃₀ K		U ₂₃₀ K	A	A	A	U ₁₇₀ B	B	200	200	B	B	B	B	B	B					K ₁₀₅	
20	U ₁₀₀ K	190	K ₂₅₀	K ₂₂₀	U ₂₀₀ K	U ₁₈₀ K	120	R	A	120	C	A	180	200	200	180	180	A	A	A						
21			K ₁₇₅	U ₁₅₀ K	U ₂₄₅ K	U ₂₂₅ K	U ₂₃₀ K	A	C	H	165	H	195	200	215	200	200	H	B	B	B	B	U ₁₃₀ K		115	K ₁₁₅
22	U ₂₀₀ K	U ₂₇₀ K		K ₃₂₀	U ₂₂₅ K	U ₃₀₀ K	A	A	A	A	B	B	B	B	B	B	B	A	B					240	K ₂₂₀ K ₃₃₀	
23	U ₃₅₀ K				B	A	B	B	B	B	B	A	B	210	A	B	B	B	B						150	K ₁₆₀
24	215	K ₃₀₀ J	K ₃₀₀ J	K ₃₀₀ K	J ₂₈₀ K	220	110	140	A	B	B	B	B	R	B	B	B	B	R	K ₁₉₀		U ₁₆₀ K	K ₃₀₀		230	K
25	J ₂₇₀ K			J ₂₉₀ K		B	A	C	B	B	A	R	B	A	170	165	B	B								U ₃₁₀ K
26			K ₃₁₀		B	U ₃₅₀ K	C	B	C	U ₁₉₀ A	B	B	B	B	B	B	U ₂₆₀ K	225	K						90	K
27	U ₁₆₀ K	U ₁₈₀ K	120	K		B	U ₃₀₀ K	B	B	B	A	180	170	150	150	130	B	B				U ₁₀₅ K	100	K ₃₆₀	K ₃₅₀	
28	K ₃₆₀					K ₃₃₀	B	B	A	215	K	B	C	C	C	C	C	C	C	C	C					
29					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C					
30				U ₃₇₀ K		B	B	B	B	A	A	R	B	B	B	B	B	B	B						130	U ₁₂₅ K
31																										
Hour 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		
CNT	12	11	10	11	6	11	6	4	3	6	6	7	9	7	7	6	4	3	5	2	7	9	12	15		
MED	K ₂₃₂	U ₂₂₀ K	K ₂₇₀	K ₂₉₀	K ₂₆₂	U ₂₂₅ K	218	K ₂₄₅	160	192	198	200	200	200	190	178	148	230	K ₂₂₅	U ₁₂₀ K	U ₁₇₀ K	K ₂₄₀	K ₁₉₀	K ₂₃₀		
UQ	K ₃₃₀	U ₂₈₀ K	K ₃₀₀	K ₃₁₀	K ₃₀₅	K ₃₁₀	U ₂₃₀ K	U ₃₂₅ K	175	220	210	200	210	200	200	185	170	245	K ₃₀₀		212	K ₃₀₀	K ₃₂₅	K ₃₂₅		
LQ	U ₁₄₅ K	U ₁₈₀ K	190	K ₂₂₀	U ₂₀₀ K	U ₂₁₀ K	120	165	140	170	180	185	200	200	185	170	130	180	190	K	U ₁₄₀ K	U ₁₀₀ K	K ₁₃₀	K ₁₄₂		

APR. 1976

FOE (0.01 MHz)

IONOSPHERIC DATA

APR. 1976

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation																									
Hour 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	12	17	K 30	J A 76	B	B	B	B	J A 59	40	Y	34	R	B	E B 24	E B 23	B	E B 28	K 32	81	J A 78	45	D C 84	J A 59		
2	54	82	J A 47	J A 36	38	K 30	J A 69	32	B	J A 39	B	B	E B 38	E B 33	E B 32	G	G	E B 19	E B 18	E B 25	E B 18	B	J A 30	K 32		
3	33	J A 64	42	77	B	J A 26	41	43	54	B	B	B	B	B	B	B	E B 25	27	K 30	102	J A 60	J A 79	36	90		
4	J A 65	44	B	35	C 37	31	B	B	B	B	B	B	B	B	B	B	B	B	B	30	J A 26	K 17	K 25	J A 47		
5	75	B	35	B	R	B	B	B	35	B	B	B	R	B	B	B	B	R	R	B	B	K 20	K 32	J A 37	D C 85	
6	B	35	B	B	R	B	B	B	B	B	B	B	R	B	B	B	B	30	E B 19	25	K 25	J A 32	J A 34	K 33		
7	K 31	J A 81	J A 59	B	45	C	35	B	E B 23	K 22	G	R	B	B	B	B	C	B	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R	R	B	B	J A 27	K 18	J A 38		
9	J A 30	B	36	J A 49	B	72	B	B	40	E B 23	E B 25	E B 30	E B 24	E B 22	E B 30	E B 22	E B 23	E B 32	E B 22	B	30	J A 26	K 35	41		
10	B	B	52	B	36	35	32	43	B	32	B	B	B	B	E B 30	B	B	R	E B 17	E B 18	45	27	32	J A 29		
11	J A 29	35	J K 34	44	51	38	J A 41	36	26	E B 21	G	23	G	J A 25	E B 21	B	E B 29	E B 23	B	B	B	32	K 30	35		
12	66	50	J A 46	33	43	35	J A 37	B	B	B	31	B	B	B	B	B	E B 45	E B 40	E B 23	E B 21	C	C	C	B		
13	30	26	K 29	K 30	45	B	53	43	B	B	B	E B 24	E B 24	E B 23	B	B	B	E B 17	E B 15	E B 13	E B 15	12	K 35	J A 49		
14	B	J A 60	42	55	55	56	42	37	B	B	B	B	B	B	B	E B 34	B	B	E B 24	E B 18	B	17	K 13	J A 26		
15	J A 62	42	45	B	K 30	K 35	J A 29	K 19	G	G	E B 20	G	G	E B 19	20	18	G	20	23	14	30	J A 24	J A 25	J A 26	C	11
16	K 13	J A 25	25	40	J A 37	J A 50	40	B	28	K 23	G	21	G	G	G	G	G	G	C	E B 11	J A 26	30	E C 10	K 23		
17	J A 34	33	B	40	K 33	K 25	52	40	35	20	G	G	G	G	E B 20	E B 22	E B 18	E B 15	E B 17	15	J A 22	E B 12	K 20	K 18		
18	E B 17	18	25	36	B	K 20	C	J A 27	E C 30	J A 24	23	20	G	20	21	E B 20	E B 26	E C 20	J A 23	J A 23	J A 22	32	22	J A 24		
19	B	B	B	29	J A 22	J A 32	40	J A 49	J A 26	20	28	E B 21	G	G	E B 23	E B 50	E B 35	E B 18	E B 12	E C 14	J A 36	J A 30	B	J A 26		
20	18	28	K 25	30	31	K 18	J A 19	17	G	E C 15	21	G	G	G	22	G	J A 22	J A 24	J A 27	22	J A 19	17	E C 10	E C 10		
21	19	21	J A 24	K 15	28	J A 30	31	J A 34	E C 15	G	G	G	G	G	G	E B 19	E B 32	E B 22	E B 17	15	E B 15	E B 15	K 11	22		
22	22	J A 29	47	32	J A 30	J A 34	J A 61	J A 58	J A 64	J A 44	J A 68	B	E B 35	B	B	B	B	J A 31	E B 22	J A 76	35	24	K 22	K 33		
23	K 35	40	46	B	B	B	40	48	B	B	B	E B 31	27	E B 22	G	20	E B 30	B	E B 17	E C 10	21	C	K 15	K 16		
24	27	J A 32	J K 30	K 30	J K 28	K 22	15	17	J A 24	B	E B 28	B	B	B	E B 60	E B 24	E B 28	E B 31	31	24	20	K 30	42	K 23		
25	J K 27	53	36	J K 29	J A 30	J A 36	46	J A 41	31	B	B	25	D C 25	E B 20	20	G	G	E B 11	E B 10	E B 16	B	B	B	J A 34		
26	45	42	K 31	26	B	J A 39	40	K 35	25	B	30	25	E B 40	E B 35	B	B	E B 24	30	26	B	B	B	14	16		
27	26	J A 31	J A 41	J A 49	48	J A 36	40	K 30	55	B	43	21	G	G	G	G	G	E B 11	E B 20	E B 9	18	15	K 36	K 35		
28	K 36	66	59	J A 61	51	44	42	38	42	22	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	J A 41	50	J A 41	J A 49	
30	J A 29	52	B	J A 50	J A 39	J A 66	44	J A 49	B	B	35	29	R	B	E B 41	E B 34	E B 30	B	B	B	B	B	26	13		
31																										
Hour 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		
CNT	24	24	23	22	20	22	22	20	19	15	16	16	16	15	17	16	18	20	22	22	21	22	24	27		
MED	30	38	36	36	37	35	40	38	30	22	22	21	E G 19	E G 20	E B 21	E B 20	E B 24	E B 22	E B 22	U	17	22	27	28	32	
UQ	40	52	46	J A 49	45	39	44	43	41	28	30	26	E B 26	E B 22	E B 30	E B 24	E B 30	U	27	27	25	J A 35	32	36	40	
LQ	24	28	30	30	30	K 30	35	31	24	20	G	E G 20	G	G	E G 18	G	E G 18	E P 16	E B 17	E B 14	19	17	16	22		

The Radio Research Laboratories, Japan

APR. 1976

FOES (0.1 MHz)

IONOSPHERIC DATA

APR. 1976

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																
Hour 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	9	9	E C 10	20	B	B	B	B	22	30	Y	18	R	B	24	23	B	28	11	12	E C 10	11	E C 10	E C 15
2	25	10	10	E C 15	15	18	23	13	B	22	B	B	38	33	32	17	9	19	18	25	18	B	10	E C 10
3	E C 12	14	E C 21	22	B	10	27	30	C 30	B	B	B	R	B	B	B	25	12	17	E C 12	E C 10	11	24	12
4	E C 12	35	B	25	13	26	B	B	B	B	B	B	B	B	B	B	23	R	11	10	10	10	8	7
5	26	B	23	B	B	B	B	B	23	B	B	B	R	B	B	B	B	B	B	B	E C 10	E C 10	12	31
6	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	19	10	E C 12	9	14	13
7	12	37	8	B	20	C	15	B	23	19	18	B	R	B	B	B	C	R	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	8	E C 10	9
9	E C 10	B	22	19	B	25	B	B	20	23	C 25	C 30	24	22	C 30	22	23	32	22	B	E C 25	10	E C 10	17
10	B	B	35	B	25	19	22	22	B	17	B	B	R	B	30	B	B	B	17	18	E C 10	10	8	E C 10
11	E C 10	E C 10	10	8	19	25	E C 20	12	15	21	21	22	20	18	21	B	29	23	B	B	B	17	E C 15	E C 18
12	10	17	E C 10	E C 10	20	19	18	B	B	B	25	B	B	B	B	B	45	40	23	21	C	C	C	B
13	13	7	E C 10	10	27	B	23	18	B	B	B	24	24	23	B	B	B	17	15	13	15	9	8	E C 10
14	B	10	18	17	29	28	20	23	B	B	B	R	B	B	B	34	B	R	24	18	B	E C 15	12	E C 10
15	18	15	E C 10	B	15	10	9	12	13	15	20	15	15	15	15	14	11	E C 10	E C 10	E C 10	E C 10	7	C	9
16	8	E C 10	10	E C 20	11	E C 15	17	B	22	22	15	13	15	19	14	15	12	E C 10	C	11	E C 10	E C 10	E C 10	10
17	9	10	B	17	E C 26	15	15	20	20	15	E C 15	12	15	18	20	22	18	15	17	10	E C 10	12	11	8
18	17	15	17	26	B	13	C	9	E C 30	10	10	12	14	10	12	20	26	E C 20	10	E C 10	E C 10	E C 10	E C 15	E C 15
19	B	B	B	E C 12	10	10	8	12	E C 15	E C 15	17	21	15	14	23	50	35	18	12	E C 14	7	E C 10	B	8
20	E C 10	E C 14	8	6	7	13	10	10	9	E C 15	15	E C 15	15	16	16	15	E C 10	10	9	E C 10	E C 10	E C 10	E C 10	E C 10
21	E C 10	E C 10	8	8	C 10	E C 10	9	E C 10	E C 15	12	14	16	15	15	15	19	32	22	17	E C 13	15	15	10	12
22	12	11	10	8	E C 15	E C 10	15	15	13	11	15	B	35	B	B	B	B	E C 15	22	E C 20	9	E C 10	E C 10	E C 10
23	9	28	22	B	B	B	16	14	B	B	B	31	19	22	18	17	30	B	17	E C 10	9	C	E C 10	10
24	E C 20	9	E C 10	9	E C 10	E C 10	9	E C 10	E C 10	B	28	B	B	B	60	24	28	31	15	19	8	E C 10	E C 30	18
25	15	16	17	18	10	13	23	11	E C 20	B	B	15	21	20	11	15	15	11	10	16	B	B	B	E C 15
26	28	18	13	14	R	14	16	10	E C 20	B	E C 20	15	40	35	B	B	24	15	13	B	B	B	8	E C 11
27	E C 10	E C 15	10	19	23	21	19	23	20	B	23	18	12	15	13	12	10	11	20	9	9	8	10	7
28	7	20	21	15	16	28	30	16	E C 10	12	B	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E C 10	10	12	E C 10	C
30	E C 10	40	B	20	14	25	21	15	B	B	15	E C 20	R	B	41	34	30	B	B	B	B	B	10	E C 10
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	27	27	28	28	28	27	27	27	27	27	27	26	28	26	28	27	26	26	28
MED	11	15	14	18	20	19	20	17	22	26	25	24	35	33	30	34	28	22	17	13	10	10	9	9
UQ	22	32	22	26	B	27	25	B	B	B	B	B	B	B	B	B	B	R	22	23	U 19	15	12	U 13
LQ	E C 10	10	10	10	13	12	15	12	U 13	15	16	16	15	18	17	18	18	14	12	10	E C 10	E C 10	E C 10	C 10

APR. 1976

F-MIN (0.1 MHz)

IONOSPHERIC DATA

APR. 1976

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	270	245	A	A	B	B	B	B	A	A	Y	Y	R	B	F	R	B	F	A	A	F	A	A	A					
2	A	A	A	A	A	R	A	A	B	A	B	B	310	320	320	320	F	F	F	330	315	B	F	300					
3	F	A	A	A	B	F	A	A	A	B	B	B	R	B	B	B	310	F	285	R	A	F	A	A					
4	A	B	B	B	A	A	B	B	B	B	B	B	R	B	B	B	U F	B	F	R	F	R	A	A					
5	B	B	B	B	B	B	B	B	A	B	B	B	R	B	B	B	B	B	B	B	F	A	A	B					
6	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	290	U F	R	R	A	A	A					
7	A	B	F	B	A	C	A	B	280	290	240	F	B	B	B	B	C	B	C	C	C	C	C	C					
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R	B	B	B	A	R	A					
9	A	B	B	A	B	A	B	B	A	310	295	310	U C	295	325	U C	330	340	U C	330	345	325	B	A	F	A	A		
10	B	B	B	B	B	A	A	A	B	A	B	B	R	B	B	300	B	B	B	295	F	A	A	A	A				
11	A	A	A	F	A	A	A	A	305	F	290	310	305	330	335	C	320	B	C	F	B	B	B	A	A	A			
12	A	A	A	285	A	A	A	B	B	B	300	B	R	B	B	B	B	345	335	315	320	C	C	C	B				
13	A	325	A	A	B	B	A	A	B	B	B	335	F	335	295	B	B	B	340	325	335	345	310	F	A	A			
14	B	F	A	A	R	B	A	A	B	B	B	B	B	B	B	R	295	R	B	F	F	B	F	R	A				
15	A	A	A	B	A	A	A	F	305	F	310	320	325	340	335	360	345	345	350	350	350	335	305	C	310				
16	R	A	A	A	A	A	A	B	R	305	330	345	320	340	345	335	340	340	C	F	340	335	345	335	A				
17	A	A	B	A	A	R	A	A	F	315	310	320	310	320	350	365	355	345	325	F	365	300	355	A	F				
18	F	R	R	A	R	F	C	F	F	F	345	345	370	F	345	370	F	F	F	F	U F	340	345	C	C				
19	B	B	B	255	F	F	280	J F	285	F	F	F	F	F	F	360	345	R	R	F	F	J F	310	A	A	B	F	310	
20	U F	295	A	A	A	F	F	F	R	J F	305	325	320	345	335	350	J R	355	R	R	F	365	355	F	305	265	F	F	
21	F	300	R	R	R	F	F	F	F	F	F	340	325	350	320	315	345	360	335	330	J F	345	325	335	325	280			
22	330	330	A	F	U F	275	F	A	F	F	A	B	R	B	B	B	B	B	F	F	A	F	R	R	R				
23	A	A	A	B	B	B	A	A	B	B	B	F	315	320	325	335	325	B	310	320	275	C	R	R					
24	R	R	R	R	R	F	F	F	R	B	290	B	B	B	F	F	300	R	F	A	R	A	C	R					
25	A	A	A	A	A	A	A	A	R	B	B	310	350	330	335	350	350	335	320	285	B	B	B	A					
26	B	B	A	A	B	A	A	A	R	B			320	340	B	B	350	C	F	330	B	B	B	335	325				
27	A	A	A	A	A	A	A	R	A	B	A	F	300	305	340	340	340	340	330	320	R	315	310	A	A				
28	A	B	B	A	A	A	A	A	A	F	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	F	A	A	A	A				
30	F	B	B	A	A	A	A	A	B	B	C	265	R	B	330	360	335	R	B	B	B	B	B	A	F				
31																													
CNT	4	4		2		2	1	1	4	8	11	12	14	14	15	12	14	13	14	12	10	8	3	5					
MED	282	312		270		F	268	F	280	J F	285	305	308	310	322	325	332	335	342	340	335	322	325	320	322	335	310		
UQ	312	328							305	F	312	325	340	F	340	340	345	355	350	345	330	F	342	335	F	345	335	F	310
LQ	268	272							292	295	298	308	310	320	322	335	325	335	F	310	F	308	F	305	308	330	300		

APR. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1976

H'F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																
Hour 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											Y	A	R	B	F	R								
2											B	B	R	B	560									
3											B	B	B	B	275									
4											B	B	R	B	B									
5											B	B	H	B	B									
6											B	B	R	B	B									
7											550	B	R	B	B									
8											C	C	C	C										
9												L	350	L										
10												B	B											
11											295				260									
12																								
13												275												
14																								
15														L										
16																								
17												260												
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27														L										
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	2	2	1	3									
MED											422	268	328	275	275									
UQ															418									
LQ															268									

APR. 1976

H'F2 (KM)

IONOSPHERIC DATA

APR. 1976

H^oF (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	390	A	A	B	B	B	B	B	A	B	Y	A	B	B	295	270	B	B	A	A	U F	A	A	A	
2	A	A	A	A	A	R	A	A	B	A	B	B	B	B	245	245	230	235	B	275	B	A	375		
3	F	A	C	B	B	F	B	B	B	B	B	B	B	B	B	380	345	R	A	275	A	A	A		
4	A	B	B	B	A	H	B	B	B	B	B	B	B	B	B	B	B	E A	370	A	F	R	A	A	
5	B	B	B	B	R	R	B	B	A	B	B	B	B	B	B	B	B	B	B	B	R	A	A	B	
6	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	380	350	A	R	A	A	A	
7	A	B	A	B	B	C	A	B	B	290	245	Y	H	R	B	B	B	C	B	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R	B	B	B	A	R	A	
9	A	B	B	B	R	A	R	B	B	280	B	C	220	240	250	240	H	240	240	260	B	C	340	A	A
10	B	B	B	B	R	B	B	B	B	A	B	B	B	B	B	B	B	B	B	270	B	A	A	A	A
11	A	A	A	F	B	B	A	A	300	260	250	240	230	230	225	B	225	250	B	B	B	A	A	A	
12	A	A	A	370	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	250	270	C	C	C	B
13	A	265	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	230	245	240	B	B	A	A
14	B	A	B	A	R	B	A	A	B	B	B	B	B	B	B	B	B	B	280	280	B	H	R	A	
15	B	A	A	B	A	A	A	350	270	250	240	230	240	230	230	230	205	205	215	230	225	260	C	290	
16	R	A	A	A	A	A	A	B	A	240	245	230	230	240	230	230	220	220	C	240	220	250	245	A	
17	A	A	B	A	A	R	A	A	A	210	240	230	225	230	225	220	205	220	230	220	240	240	A	F	
18	F	B	A	B	B	430	C	A	C	290	215	230	225	205	215	200	205	205	195	200	240	250	C	C	C
19	B	B	B	455	350	F	F	360	315	260	230	230	205	210	230	205	250	210	200	210	230	A	A	B	280
20	285	A	A	A	440	440	460	A	245	230	240	225	215	215	205	205	200	205	205	250	E C	A	C	C	
21	C	C	A	R	380	350	400	350	245	225	220	210	205	210	200	220	205	210	240	230	250	255	300	A	
22	300	300	A	360	A	360	F	A	A	A	A	B	B	B	B	B	B	205	280	A	A	R	R	R	
23	A	B	A	B	B	B	A	A	B	B	B	B	280	255	250	250	E B	270	B	265	225	E A	C	R	R
24	R	R	R	R	R	445	375	390	A	B	E B	B	B	B	B	260	285	B	340	B	A	A	C	R	
25	A	A	A	A	A	A	B	A	A	B	B	265	255	240	225	225	240	225	250	B	B	B	B	A	
26	B	B	A	A	B	A	A	A	R	B	340	240	B	255	B	B	240	285	295	B	B	B	255	250	
27	A	A	A	A	B	B	A	R	A	B	A	255	245	245	225	225	240	230	B	B	320	300	A	A	
28	A	B	B	A	A	A	B	A	A	310	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	F	A	B	A	A
30	F	B	B	A	A	B	B	A	B	B	A	275	B	B	250	225	245	B	B	B	B	B	A	U F	395
31																									
CNT	3	2		3	3	6	4	4	6	11	11	13	13	14	15	15	18	17	19	11	11	8	3	5	
MED	300	282		370	380	435	388	350	265	240	240	230	225	230	225	230	236	225	250	240	250	258	255	290	
UQ	345			412	410	445	430	370	290	270	246	240	240	240	250	248	245	240	278	245	268	288	278	375	
LQ	292			365	365	360	368	332	245	228	235	225	215	220	215	222	205	205	232	230	238	248	250	280	

The Radio Research Laboratories, Japan

APR. 1976

H^oF (KM)

IONOSPHERIC DATA

APR. 1976

H⁺ES (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S, Long. 39 35.4 E		Sweep	MHz to 15 MHz in 30 sec in automatic operation																						
Hour 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	K 175	K 110	K 110	K 140	R	B	B	B	120	115	Y	125	R	B	B	B	B	R	K 155	175	160	K 145	100	100			
2	K 105	K 110	100	K 120	100	K 120	160	100	B	100	B	B	R	B	B	G	G	B	B	B	B	B	105	K 115			
3	110	100	100	125	B	K 125	130	105	100	B	B	B	R	B	B	B	R	140	K 110	150	K 100	100	110	100			
4	110	125	B	140	120	90	B	B	B	B	B	B	B	B	B	B	B	R	130	115	110	K 110	110	K 100			
5	120	B	130	B	R	B	B	B	100	B	B	B	B	B	B	B	R	R	B	B	K 140	K 105	110	100			
6	B	110	B	B	B	B	B	B	B	B	B	R	B	B	B	B	B	K 155	B	125	105	K 110	110	K 105			
7	K 110	105	150	B	100	C	115	B	B	K 120	G	B	R	B	B	B	C	R	C	C	C	C	C	C			
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P	B	B	B	100	K 125	105			
9	105	B	105	115	B	K 130	B	B	100	B	B	B	R	B	B	B	B	R	B	B	C	K 105	K 115	105			
10	B	B	100	B	125	120	120	115	B	100	B	B	R	B	B	B	B	B	B	B	B	115	K 125	105	105		
11	100	115	K 110	180	100	130	100	100	120	B	G	140	G	100	B	B	B	B	B	B	B	100	K 110	K 110			
12	100	K 150	100	K 130	100	130	105	B	B	B	110	B	R	B	B	B	B	B	R	B	C	C	C	B			
13	K 150	K 150	K 100	K 110	105	B	100	100	B	B	B	B	R	B	B	B	B	B	R	B	B	K 190	K 105	K 150			
14	B	K 115	100	100	100	100	100	100	B	B	B	B	B	B	B	B	B	B	B	B	B	145	B	100			
15	105	105	100	B	K 100	K 110	K 105	K 125	G	G	B	G	100	100	100	100	95	100	100	95	125	110	C	K 160			
16	K 140	K 130	K 150	105	100	100	100	B	100	K 130	G	105	G	G	G	G	G	G	C	B	100	95	C	K 150			
17	110	K 115	B	100	K 120	K 125	105	110	110	125	G	G	G	G	B	B	B	R	B	100	100	B	K 160	K 150			
18	B	155	K 155	K 130	B	K 125	C	100	C	100	100	100	G	100	100	B	B	C	100	K 100	K 95	105	105	95			
19	B	B	B	K 105	K 155	K 125	K 105	K 150	115	140	120	B	G	G	B	B	B	R	B	C	115	115	B	K 130			
20	K 130	K 175	K 100	K 130	K 130	K 130	120	130	G	C	105	G	G	G	145	G	100	100	125	95	95	95	C	C			
21	95	100	K 90	K 140	K 140	K 100	K 180	140	C	G	G	G	G	G	G	B	B	R	B	K 140	B	B	K 100	K 130			
22	K 130	K 110	100	K 110	110	K 115	K 150	100	100	100	100	B	R	B	B	B	B	110	B	100	100	K 100	K 110	K 100			
23	K 110	100	100	B	B	B	100	100	B	B	B	B	115	B	G	120	B	R	B	C	115	C	K 145	K 140			
24	K 160	K 100	K 110	K 110	K 110	K 115	110	155	110	B	B	B	B	B	B	B	B	B	K 130	K 130	K 130	K 110	105	K 115			
25	K 110	105	100	K 110	100	110	100	100	100	B	B	100	105	B	100	G	G	R	B	B	B	B	B	K 115			
26	100	100	K 105	115	B	100	105	K 100	105	B	100	100	P	B	B	B	B	K 110	K 115	B	B	B	K 130	110			
27	K 165	K 115	K 115	K 105	100	105	130	K 115	100	B	130	115	G	G	G	G	G	R	B	B	K 125	K 170	K 105	K 110			
28	K 100	105	100	100	100	K 115	115	100	100	K 100	B	C	C	C	C	C	C	C	C	C	C	C	C	C			
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	170	105	150	100	100		
30	125	140	B	K 150	110	110	100	100	B	B	100	120	R	B	B	B	B	R	B	B	B	B	K 160	K 125			
31																											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	23	24	23	22	20	22	22	20	14	10	8	8	3	3	4	2	2	6	8	12	17	20	21	26			
MED	K 110	110	100	115	102	115	105	100	100	108	102	110	105	100	100	110	98	110	120	120	110	110	K 110	K 110			
UQ	K 130	K 128	K 110	K 130	120	K 125	120	120	110	125	115	122	110	100	122			140	130	145	125	135	K 115	K 130			
LQ	105	105	100	105	100	105	100	100	100	100	100	100	102	100	100			100	105	100	100	100	105	100			

The Radio Research Laboratories, Japan

APR. 1976

H⁺ES (KM)

IONOSPHERIC DATA

APR. 1976

TYPES OF ES

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	HK ₁₁	RK ₁₁	K ₄	AK ₁₁					RS ₁₁	RS ₁₁		RS ₂₁							KC ₁₁	AR ₁₁	AR ₁₁	AK ₁₁	RA ₂₁	R ₁	
2	CK ₁₁	RK ₃₁	R ₃	RK ₁₂	R ₁	K ₁	HR ₁₁	R ₁		R ₁													R ₁	K ₄	
3	RA ₁₁	R ₁	R ₁	AR ₁₁		RAK ₁₁	R ₁	R ₁	R ₁									RL ₁₁	K ₁	AR ₁₁	RAK ₁₁	RA ₁₁	R ₁	RA ₁₁	
4	AR ₁₁	R ₁		R ₁	R ₂	L ₁													H ₁	R ₂	K ₁	K ₂	R ₃	LK ₁₄	
5	R ₂		R ₁						RA ₁₁												K ₁	KS ₅₁	R ₂	R ₂	
6		F ₁																	HK ₁₁	R ₁	K ₁	RS ₄₁	BS ₂₁	K ₂	
7	K ₂	R ₁	AR ₁₁		F ₁		R ₁			K ₁															
8																						FR ₁₁	K ₁	R ₄	
9	R ₂		R ₁	R ₁		HK ₁₁			R ₁												R ₁	RK ₁₁	K ₆	R ₂	
10			R ₁		R ₁	R ₂	R ₁	R ₁		R ₁											F ₃	HAK ₁₁	R ₂	R ₄	
11	R ₅	R ₅	K ₄	RR ₁₁	R ₁	R ₁	R ₂	R ₂	C ₁			H ₁		C ₁								F ₁	KA ₁₁	RA ₁₁	
12	R ₃	ARK ₁₁	RA ₅₁	HK ₂₁	R ₁	RS ₁₁	RS ₁₁	1				C ₁													
13	HK ₁₁	RK ₁₁	K ₄	K ₄	R ₁		RR ₁₁	R ₁															AK ₁₁	K ₅	AK ₁₁
14		RAK ₂₁	R ₁	R ₁	R ₁	R ₁	R ₁	R ₁																K ₁	R ₂
15	FR ₁₁	R ₂	R ₃		K ₁	KL ₂₁	RL ₁₁	K ₁					L ₁	L ₁	L ₁	L ₁	L ₂	L ₁	L ₁	L ₁	L ₁	FF ₁₁	F ₁	RK ₁₁	
16	K ₁	RK ₁₁	RAK ₁₁	R ₁	R ₂	BS ₂	R ₁		R ₁	K ₁		L ₁									A ₁	A ₁		KL ₁₁	
17	RA ₁₁	RK ₁₄		R ₁	K ₁	K ₁	RL ₁₁	R ₁	R ₁	C ₁										F ₁	F ₁		K ₁	K ₁	
18		F ₁	HK ₁₁	F ₁		K ₁		L ₁		C ₂	C ₂	L ₁		L ₁	L ₁				L ₁	LK ₂₁	LK ₁₁	FF ₁₁	F ₁	F ₁	
19				CK ₁₁	HK ₁₁	RFA ₁₁	AK ₁₁	AR ₁₂	R ₁	R ₁	C ₁										RF ₂₁	R ₂		HAK ₁₁	
20	HK ₁₁	HLK ₁₁	K ₁	HKL ₁₁	HKL ₁₁	K ₁	C ₁	H ₁				C ₁			H ₁		L ₁	C ₁	HL ₁₁	F ₁	F ₁	F ₁			
21	F ₁	F ₁	LK ₁₁	K ₁	HK ₁₁	LAK ₁₁	HKH ₁₁	HH ₁₁													HK ₁₁			K ₁	RK ₁₁
22	RK ₁₂	RK ₂₁	R ₄	KL ₅₁	R ₅	RKS ₂₁	AK ₁₁	RA ₂₁	RA ₁₁	RA ₁₁	RA ₁₁								C ₁	F ₁	R ₂	K ₂	K ₄	K ₅	
23	K ₄	R ₁	R ₁					R ₁	R ₂														R ₁	K ₁	K ₁
24	HK ₁₁	RK ₁₅	K ₅	K ₅	K ₄	K ₃	C ₁	H ₁	R ₁											CK ₁₁	F ₁	RK ₁₁	KL ₇₁	R ₁	K ₁
25	K ₁	RA ₁₁	R ₂	K ₁	R ₃	RS ₁₁	R ₁	R ₂	R ₁			R ₁	C ₁		LL ₁₁										RK ₁₅
26	R ₁	R ₁	K ₁	R ₁		R ₁	R ₂	K ₂	R ₁		R ₁	R ₁								RK ₂₁	K ₁			RK ₁₁	R ₁
27	HKL ₁₁	RK ₂₁	RK ₅₁	R ₁	R ₁	R ₁	RC ₁₁	K ₁	R ₁		HR ₁₁	C ₁									CK ₁₁	HK ₁₁	KS ₆₁	KS ₇₁	
28	K ₆	RA ₁₁	R ₁	R ₁	RR ₁₁	RK ₁₁	R ₁	R ₁	R ₃	RK ₁₁															
29																					AF ₁₁	RS ₂₁	AR ₁₁	RA ₃₁	R ₂
30	RA ₁₁	F ₁		RK ₁₁	R ₂	R ₁	R ₁	R ₂			R ₁	R ₁												RK ₁₁	CK ₁₁
31																									
Hour 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	
CNT																									
MED																									
UQ																									
LQ																									

APR. 1976

TYPES OF ES

IONOSPHERIC DATA

MAY. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S, Long. 39 35.4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																			
Hour 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	O R 22	A	A	A	B	A	R	R	B	B	B	B	R	B	O R 61	X 62	O R 47	O R 40	O R 40		32	B	B	B	A
2	B	C	A	C	A	A	B	B	O R 42	41	O R 42	X 46	O R 43	B	C 70	B	74	R	B	R	R	A	57	R	
3	B	A	C	A		B	B	B	A	B	B	B	R	B	B	B	B	R	R	A	A	A	A	A	
4	A	A	A	A	A	A	A	B	B	B	B	B	R	B	B	B	B	R	B	R	A	A	A	A	
5	A	A	B	B	A	B	B	B	B	A	B	O R 36	X 42	B	B	B	B	B	B	B	B	A	A	B	
6	B	B	B	A	B	A	A	B	B	R	O R 36	B	B	B	B	B	B	B	B	B	B	B	A	A	
7	A	A	B	A	B	B	B	A	A	O R 33	O R 38	O R 39	42	B	O R 43	X 41	X 40	O R 29	B	B	B	B	B	A	
8	B	B	A	B	A	A	B	B	B	A	B	B	O R 45	X 46	44	X 43	X 36	R	B	R	B	R	C	A	
9	C	C	C	C	54	A	A	C	A	O R 33	X 41	C	51	C	X 46	X 46	C	C	C	C	C	C	B	R	
10	R	26	31	A	35	30	R	39	A	45	50	61	61	73	O R 58	56	36	32	32	O R 28	B	O R 20	A	A	
11	A	A	A	A	A	A	A	A	30	35	B	R	R	65	73	65	46	43	B	O R 19	O R 20	A	A	A	
12	A	A	A	A	A	A	A	A	R	R	41	51	65	67	57	O R 52	B	R	B	B	B	R	B	46	
13	A	A	A	A	A	A	R		27	37	43	53	X 72	X 71	X 73	O R 60	X 47	34	32	40	O R 26	O R 24	O R 17	B	B
14	R	50	43	36	33	30	A	33	32	37	45	56	81	73	76	54	32	26	26	O R 24	B	B	B	B	
15	B	A	26	22	41	A	A	29	32	D C 36	S 55	67	67	68	66	63	45	R	B	O R 19	A	B	B	A	
16	A	A	A	A	A	A	A	A	O R 43	S 51	47	54	58	64	59	S 52	36	36	O R 24	O R 22	C 19	A	O R 17	O R 21	
17	O R 22	57	42	U S 42	U S 43	S 42	55	U C 57	26	42	52	U C 60	X 59	X 76	52	46	O R 32	O R 28	B	B	B	R	O R 18	R	
18	A	U S 35	S 31	S 30	S 29	36	54	30	32	36	45	55	U S 67	D C 55	52	52	35	O R 19	O R 18	B	A	R	A	A	
19	A	66	46	S 41	U S 45	57	U S 56	U C 57	36	35	45	52	54	56	53	43	31	O R 25	B	B	B	R	A	A	
20	A	A	A	O R 51	A	A	A	A	B	B	B	B	O R 41	B	B	B	O R 32	B	O R 32	O R 27	A	A	35	A	
21	B	B	A	B	A	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	A	A	
22	A	A	A	A	A	A	A	A	34	32	B	B	B	55	57	O R 41	R	O R 31	B	O R 35	B	R	A	A	
23	A	B	B	A	A	A	O R 28	O R 24	44	55	32	B	B	55	77	65	55	B	O R 31	A	68	A	A	A	
24	A	A	A	R	C 37	B	B	A	A	B	B	65	R	61	51	O R 41	O R 27	O R 26	O R 18	R	B	A	R	B	
25	R	A	56	A	A	A	O R 37	U S 47	C 57	B	B	B	B	76	62	54	52	32	22	O R 22	B	B	A	A	
26	A	A	U S 27	42	A	A	A	A	28	30	42	55	65	57	52	55	O R 28	R	O R 18	R	A	A	A	A	
27	A	C	A	O R 29	O R 27	28	30	46	35	R	37	B	55	O R 52	B	B	B	B	B	B	B	R	R	U C 25	
28	A	A	A	A	A	A	A	B	A	A	A	B	R	B	B	C	B	B	A	A	A	A	A	A	
29	B	B	B	A	B	B	B	B	A	B	32	O R 43	R	B	B	B	O R 42	O R 30	O R 26	26	R	R	A	A	
30	B	B	67	B	B	A	B	B	B	R	B	B	B	B	B	B	B	B	B	R	R	C	A	B	
31	A	B	A	B	A	A	A	A	B	B	A	B	R	B	B	B	B	R	O R 26	B	U A 31	R	A	A	
CNT	2	5	9	8	10	6	6	10	14	15	17	15	17	17	20	19	19	14	13	11	5	2	4	3	
MED	O R 22	50	42	38	39	33	46	36	34	36	42	55	58	64	58	52	36	O R 30	O R 26	O R 26	24	O R 18	26	25	
UQ		57	46	42	45	42	55	U 47	42	43	47	60	65	73	64	56	46	32	O R 32	O R 28	31		46	36	
LQ		55	31	30	33	30	O R 30	29	32	34	38	48	43	55	52	44	32	O R 26	O R 22	O R 22	O R 20		O R 18	23	

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MAY. 1976

FXI (0.1 MHz)

IONOSPHERIC DATA

MAY. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' .4 S, Long. 39° 35' .4 E		Sweep MHz to 15 MHz in 30 sec in automatic operation																													
Hour 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	U ₁₅	F	A	A	A	B	A	A	R	B	B	B	B	B	B	55	56	F ₄₁	F ₃₄	F ₃₃	F	B	B	B	A								
2		B	C	B	C	B	A	B	B	F ₃₆	F ₃₅	36	40	37	B	F ₄₉	B	F	R	B	R	R	A	A	R								
3		B	B	C	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	R	A	A	A	A	A								
4		A	A	A	A	A	A	A	B	B	B	B	B	R	B	B	B	B	B	B	A	A	A	A	A								
5		A	B	B	B	A	B	B	B	B	A	B	30	36	B	B	B	B	B	B	B	B	A	A	B								
6		B	B	B	A	B	A	A	B	B	A	30	B	B	B	B	B	B	B	B	B	B	B	A	A								
7		A	A	B	A	B	B	B	A	A	F ₂₅	F ₃₀	33	36	B	37	35	33	F ₂₂	B	B	B	B	B	A								
8		B	B	A	B	B	B	B	B	B	A	B	B	37	40	F ₃₈	37	30	A	B	R	B	R	C	A								
9		C	C	C	C	F	A	A	C	A	F	26	35	C	44	C	40	40	C	C	C	C	C	B	A								
10		A	F ₁₃	U ₂₄	A	F	U ₂₂	R	F ₃₁	A	F	F	51	J	F ₅₄	F ₅₂	F	F ₅₀	F ₃₀	F ₂₆	F ₂₆	F ₂₀	B	14	A	A							
11		A	A	A	A	A	A	A	A	F	F	B	R	R	U ₅₁	F	R	F	J	F ₃₁	B	F	F ₁₄	A	A	A							
12		A	A	A	A	A	A	A	A	R	A	F ₃₅	45	56	F ₅₈	F ₅₀	46	B	B	B	B	B	A	B	Y								
13		A	A	A	A	A	A	A	F ₂₀	F ₂₁	F ₃₀	47	66	66	67	F ₅₂	V ₄₀	F ₂₈	F ₂₅	F ₂₄	F ₁₈	F ₁₇	11	B	B								
14		R	R	F	F	F	F	A	F ₂₇	F	J	F ₃₁	F ₃₈	F ₄₉	J	F ₅₉	J	F ₆₂	F	U	F ₃₅	F	F	F	B	B	B	B					
15		B	A	F	F	F	A	A	F ₂₂	F ₂₄	F	F	F	F	J	F ₆₂	F	J	F ₄₅	J	F ₂₈	R	B	U ₁₃	A	B	B	A					
16		A	A	A	A	A	A	A	A	F ₃₂	F	F ₄₁	V ₄₈	51	F ₅₆	F	J	F ₄₂	J	F ₂₈	J	F ₂₆	F	U ₁₅	F ₁₂	A	U ₁₁	R	F				
17		F ₁₂	C	F	F	F	F	F	F	F	R	J	F ₃₇	F	J	F ₅₃	J	R	J	F ₇₀	J	F ₄₅	J	F ₃₉	C	26	22	B	B	B	R	F	A
18		A	A	F	F	F	F	F	F	F	F	F	F	U	F ₅₃	F	45	U	F ₃₈	F	13	12	B	A	U ₁₁	C	C						
19		A	A	A	F	F	F	F	F	F	F	J	F ₄₄	F ₄₇	50	46	36	F	F	17	B	B	B	A	A	A							
20		A	A	A	U ₄₃	A	A	A	A	B	B	B	B	U	F ₃₃	B	B	B	F	26	B	F	F	A	A	F ₂₉	A						
21		B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A						
22		A	A	A	A	A	A	A	A	F	F	B	B	B	J	F ₄₈	J	F ₅₁	F ₃₅	R	F	23	B	F	B	R	A	A					
23		B	B	B	A	A	A	U ₂₀	F ₁₆	F ₁₅	F ₂₂	F ₂₇	B	B	F	U	F ₄₅	U	F ₄₆	F	B	U	F ₂₅	A	R	A	A	A					
24		A	A	A	R	A	B	B	A	A	B	B	F	R	F	U	F ₅₅	U	F ₄₀	F ₃₄	U	C	F	18	12	A	B	B	A	B			
25		R	A	S	A	A	A	U ₃₁	F ₃₃	F	B	B	B	R	F	F	U	F ₃₄	J	F ₃₀	F	25	F	F	14	B	B	A	A				
26		A	A	F	F	A	A	A	A	F	F	F	J	F ₄₆	F	F	F	F	F	F	20	A	F	A	A	A	A	A					
27		A	C	A	F	F	F	F	U	F ₁₇	A	J	F ₃₀	B	F	F	B	B	B	B	B	B	B	B	A	A	A	F					
28		A	A	A	A	B	A	A	B	A	A	A	B	B	B	B	B	C	B	R	A	A	A	A	A	A	A						
29		B	B	B	A	B	B	B	B	A	B	F	F	C	B	B	B	B	F	34	F	F	F	F	A	A	A	A					
30		B	B	A	B	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	R	A	C	A	B						
31		B	B	B	B	A	A	A	B	B	B	A	B	R	B	B	B	B	B	B	20	B	A	R	A	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
CNT	2	1	1	5	1	3	4	8	9	8	13	11	14	13	13	17	13	13	8	6	3	3	2										
MED	F ₁₄	F ₁₃	U ₂₄	F ₂₀	F ₁₈	F ₂₁	F ₂₀	F ₂₁	F ₂₂	F ₂₆	F ₃₅	45	49	55	45	39	28	23	22	F	F	16	14	11	20								
UQ				F ₂₂	F ₂₂	U ₂₆	F ₂₉	F ₂₇	F ₃₀	F ₃₇	48	54	J	F ₆₂	50	45	30	F ₂₆	F ₂₆	F ₂₀	F ₁₆	12											
LQ				F ₂₀	F ₁₈	F ₁₈	F ₁₈	F ₁₉	F ₂₄	F ₃₀	38	37	F	50	40	35	F ₂₆	F ₂₀	14	U	F ₁₄	F ₁₃	11										

MAY. 1976

FOF2 (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1976

FOF1 (0.01 MHZ)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION	Lat. 69° 00' 4" S		Long. 39° 35' 4" E		Sweep	MHz to 15		MHz in 30		sec in automatic operation														
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
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10																								
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27																								
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

MAY. 1976

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1976

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00' 4" S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	K 120	U K 150	K 240	U K 350				K 250	B	B	B	B	B	B	B	B	B	B						K 315		
2								B	U K 250	B	B	B	B	B	B	B	B	B		K 205	K 220					
3								B	B	B	B	B	B	B	B	B	B	B		U K 100	U K 225	K 305	K 350			
4		K 310		U K 270				B	B	B	B	B	B	B	B	B	B	B			K 290					
5					K 275			B	B	B	B	B	B	B	B	B	B	B					U K 250			
6								B	B	C	A	B	B	B	B	B	B	B					K 110	K 315		
7	U K 330			U K 250				B	A	A	K 240	B	B	B	B	A	A	B						U K 130		
8	K 320							B	B	A	B	B	B	C	160	C	B	B					K 90			
9								C	A	150	B	C	C	C	B	A	C	C						K 150		
10		U K 100	U K 100		U K 140	U K 140	K 160	U K 230	A	K 255	B	U A 160	180	B	B	A	A	A				U K 115	U K 150			
11	K 160	K 220						B	A	A	B	B	B	B	B	B	R	R								
12								A	B	K 315	A	U C 170	B	B	B	B	B	B				U K 100				
13	K 350							A	130	A	150	160	160	C	C	A	A	A								
14	K 150	K 245		U K 140				A	A	A	130	C 170	B	B	B	A	A	U A 110								
15				U K 110				A	A	A	U A 130	135	A	A	A	A	A	R								
16				U K 350				B	U K 220	A	U A 120	155	R	C	A	120	C	C			U K 110					
17			U K 250	U K 160	U K 120	U K 130	K 115		C	A	110	U A 160	170	B	B	B	B	B								
18				U K 190					C	B	U F 120	U F 150	C	A	A	A	A									
19									B	A	U A 90	U A 125	130	B	U R 150	A 110	C	U K 105								
20				U K 330					B	B	B	B	K 230	B	B	B	B	R					U K 230			
21									B	B	B	B	B	B	B	B	B	B						U K 370		
22									U A 120	U A 150	B	B	B	B	B	B	B	B			K 130	U K 170		K 370		
23				K 325	K 320		U K 130	K 110	C	90	120	B	B	B	B	B	B	B			K 350	U K 280	U K 310	K 320		
24	U K 360	U K 330	K 330	K 330	K 240				A	B	B	B	B	B	B	B	B	U K 110								
25	U K 125	K 310	U K 350						C	B	B	B	B	B	130	U R 115	U R 105	C						K 315		
26	K 300								A	115	A	U A 140	U A 150	A	A	A	B							U K 160		
27				U K 175	K 125	U K 100	U K 100		A	A	A	B	B	B	B	B	B	B								
28									B	B	B	B	B	B	B	B	C	E								
29									B	B	U A 125	B	B	B	B	B	B	B			U K 130	K 125		K 260	K 100	
30					U K 140				B	B	B	B	B	B	B	B	B	B			U K 160					
31									B	B	B	B	B	B	B	B	B	B						K 130	K 150	K 160
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	9	7	7	11	6	4	4	4	4	6	10	10	6		3	3	1	4		7	5	7	8	10		
MED	K 300	K 245	U K 330	U K 250	K 190	U K 135	K 122	K 205	U 175	150	122	U 158	165		150	115	U R 105	U 110		U K 130	K 225	U K 130	K 240	K 238		
UQ	K 330	K 310	K 350	U K 328	K 275	K 140	K 145	K 240	U K 235	K 255	K 130	U 160	180		155	118		112		K 182	U K 280	K 238	K 288	K 320		
LQ	K 150	K 185	K 245	U K 150	U K 125	U K 115	K 108	K 145	125	115	U A 120	U 140	150		140	112		U K 108		U K 120	K 220	K 108	K 155	K 150		

The Radio Research Laboratories, Japan

MAY. 1976

FOE (0.01 MHz)

IONOSPHERIC DATA

MAY. 1976

FOFS (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station Day	SYOWA STATION																							Lat. 69° 00' 4" S	Long. 39° 35.4' E	Sweep	MHz to 15 MHz in 30 sec in automatic operation																						
	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	K12	J A 29	27	45	B	36	32	K 25	B	B	R	B	R	B	E B 44	E B 33	E B 23	20	F B 14	E B 13	B	B	B	37																									
2	J A 79	C	J A 44	42	40	C 30	102	B	33	E B 20	E B 20	E B 20	E B 21	B	E B 27	B	37	36	B	26	K 22	J A 49	J A 24	20																									
3	46	J A 76	C	J A 155	J A 46	B	B	83	J A 37	B	B	B	R	B	B	B	B	B	26	J A 36	J A 27	K 30	K 35	J A 48																									
4	J A 56	K 31	31	J A 35	40	32	40	B	B	B	B	R	B	B	B	B	B	B	B	27	34	J A 93	J A 40	33																									
5	40	C 103	B	B	33	B	B	B	B	B	B	E B 23	E B 24	B	B	B	B	B	B	B	B	22	J A 28	B																									
6	45	45	42	30	B	J A 36	J A 45	B	B	32	30	B	R	B	B	B	B	B	B	B	B	B	J A 30	K 31																									
7	56	74	35	40	B	B	57	J A 56	J A 47	J A 36	27	E B 20	32	B	E B 21	23	20	E B 14	B	B	B	B	B	J A 26																									
8	K 32	103	46	B	37	53	B	B	B	J A 36	B	B	25	G	24	22	C 18	27	B	16	B	11	C	J A 31																									
9	C	C	C	C	J A 86	J A 56	J A 51	C	44	24	E B 29	C	G	C	E B 19	16	C	C	C	C	C	C	C	B	K 15																								
10	18	D C 25	J A 36	J A 59	J A 25	19	K 16	J A 37	42	34	E B 20	20	23	E B 31	E B 22	18	J A 27	22	J A 20	J A 32	B	15	20	J A 26																									
11	J A 29	35	J A 29	J A 26	51	J A 46	J A 49	35	J A 29	J A 31	B	E B 29	E B 35	E B 24	E B 21	E B 31	E B 23	G	B	13	J A 14	J A 31	J A 40	126																									
12	J A 71	J A 39	50	53	37	35	J A 38	J A 39	27	40	25	23	E B 21	E B 29	E B 24	E B 32	B	B	B	B	B	15	B	Y																									
13	K 35	J A 44	J A 35	42	J A 35	C 29	22	15	G	16	21	23	32	22	G	22	18	17	15	11	13	E C 10	B	B																									
14	20	K 24	J A 31	J A 30	J A 30	C 37	J A 39	J A 31	J A 26	16	18	20	E B 18	E B 19	E B 19	20	15	20	14	20	B	B	B	B																									
15	B	J A 60	J A 37	J A 18	J A 29	J A 30	J A 30	J A 23	J A 22	J A 25	18	20	23	19	16	16	J A 26	15	B	32	J A 30	B	31	J A 25																									
16	J A 29	J A 26	J A 76	42	32	34	57	56	27	21	J A 25	G	E B 19	E C 20	15	20	J A 14	16	J A 26	22	E C 10	J A 28	J A 25	J A 15																									
17	J A 15	C 19	30	J A 21	21	K 13	18	E C 10	D C 35	J A 24	16	18	G	E B 15	E B 14	E B 12	E B 22	E B 16	B	B	B	11	15	12																									
18	J A 29	J A 25	J A 24	J A 34	J A 57	42	J A 39	13	J A 20	12	16	22	E C 20	19	J A 40	J A 24	23	J A 28	J A 44	23	J A 20	15	15	15																									
19	15	J A 26	J A 26	J A 29	J A 26	25	20	E C 10	J A 25	32	24	18	G	E B 15	13	15	13	12	B	B	B	13	J A 33	J A 52																									
20	J A 51	J A 39	J A 53	K 33	65	C 37	J A 52	J A 34	B	B	B	B	K 23	B	B	B	E B 20	B	E C 18	21	J A 38	J A 36	J A 29	J A 30																									
21	58	J A 37	J A 37	B	43	C 47	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	33	J A 31	J A 59																									
22	42	J A 50	52	45	J A 34	J A 50	J A 46	43	25	21	B	B	R	E B 24	E B 24	E B 20	E B 13	E B 13	B	25	B	K 17	J A 34	K 37																									
23	J A 34	46	42	32	K 32	J A 26	15	12	E C 10	G	G	B	B	E B 22	E B 20	E B 16	E B 12	R	J A 29	K 35	J A 30	K 31	J A 28	K 32																									
24	K 36	K 33	K 33	K 33	36	R	B	J A 30	J A 25	B	B	E B 22	E B 42	E B 26	E B 17	E B 21	E B 16	J A 19	J A 16	13	B	D C 17	13	B																									
25	14	K 31	D C 84	J A 50	J A 51	J A 47	J A 31	25	11	B	B	B	R	E B 19	G	G	G	19	18	16	B	B	31	J A 29																									
26	K 30	J A 29	J A 26	31	31	J A 48	41	34	J A 27	15	16	28	20	29	J A 26	16	E B 15	17	15	16	J A 20	J A 25	J A 21	J A 32																									
27	32	J A 31	J A 31	27	22	J A 18	J A 25	J A 24	J A 24	J A 20	J A 19	B	C 27	E B 23	B	B	B	B	B	B	B	13	15	J A 28																									
28	J A 26	J A 24	J A 48	47	32	D C 55	D C 55	65	J A 60	53	40	B	B	B	B	C	B	R	32	33	J A 40	J A 40	J A 41	J A 47																									
29	43	45	42	J A 30	B	B	B	B	D C 34	B	14	23	E B 33	B	B	B	E B 16	J A 24	J A 20	22	23	21	26	J A 59																									
30	C 47	36	J A 35	B	B	31	B	B	B	C 27	B	B	B	B	B	B	B	B	B	16	K 16	J A 24	C	33	46																								
31	J A 30	B	45	55	51	54	40	44	B	B	32	B	R	B	B	B	B	B	E B 11	B	22	15	U C 27	J A 26																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																									
CNT	29	28	28	26	26	26	24	22	22	22	19	16	20	17	20	19	20	18	15	21	15	23	24	26																									
MED	34	36	J A 36	34	36	36	40	32	27	24	19	20	E G 23	E B 22	E B 20	U 18	U 16	18	18	22	J A 23	22	J A 30	J A 31																									
UQ	46	46	46	45	46	47	50	43	U 38	33	26	22	U 26	E B 24	E B 24	21	23	27	J A 26	27	J A 30	J A 31	J A 34	46																									
LQ	29	28	J A 31	J A 30	31	30	28	23	J A 24	20	16	20	E B 19			16		14	14	16	20	15	23	J A 26																									

MAY. 1976

FOES (0.1 MHz)

IONOSPHERIC DATA

MAY. 1976

F-MIN (0.1 MHZ)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA	STATION	Lat.	69	00.4	S.	Long.	39	35.4	E	Sweep	MHz to 15	MHz in 30	sec in automatic	operation											
Hour 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	9	8	13	22	B	20	20	15	B	B	B	B	B	B	44	33	23	15	14	13	B	B	B	12		
2	30	C	23	E ₃₀	25	15	42	B	15	20	20	20	21	B	27	B	24	19	B	12	11	10	15	E ₁₀		
3	26	C	C	11	11	B	B	71	18	B	B	B	B	B	B	B	B	B	12	E ₁₀	E ₁₀	7	E ₁₀	12		
4	10	15	15	10	25	15	15	B	B	B	B	B	B	B	B	B	B	B	B	B	10	11	9	11	10	
5	12	20	B	B	13	B	B	B	B	20	B	23	24	B	B	B	B	B	B	B	B	13	E ₁₀	B		
6	25	25	20	13	B	15	15	B	B	E ₂₀	15	B	B	B	B	B	B	B	B	B	B	B	E ₁₀	E ₁₀		
7	22	E ₁₀	22	15	B	B	26	20	14	E ₁₂	17	20	20	B	21	14	13	14	B	B	B	B	B	8		
8	21	43	E ₁₀	B	25	26	B	B	B	11	B	B	27	14	12	E ₂₀	14	22	B	14	B	8	C	7		
9	C	C	C	C	E ₁₀	15	13	C	12	10	29	C	15	C	19	E ₁₀	C	C	C	C	C	C	B	E ₁₀		
10	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	9	E ₁₀	8	11	20	20	10	17	31	22	11	E ₁₀	10	E ₁₀	12	B	10	10	E ₁₂		
11	9	E ₁₀	E ₁₀	E ₁₀	E ₁₀	11	11	14	11	11	B	29	35	24	21	31	23	11	B	10	9	8	E ₁₀	10		
12	E ₁₀	8	28	23	14	19	E ₁₀	E ₁₀	15	23	14	15	21	29	24	32	B	B	B	B	B	10	B	Y		
13	8	12	C	14	E ₁₀	10	E ₁₀	8	8	E ₁₀	10	13	14	16	14	10	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	B	B	
14	10	E ₁₀	E ₁₀	9	E ₁₀	E ₁₀	10	8	E ₁₀	E ₁₀	12	16	18	19	19	13	12	10	8	10	B	B	B	B		
15	B	E ₁₀	E ₁₀	6	6	6	10	9	E ₁₀	E ₁₀	E ₁₀	13	15	14	10	E ₁₀	8	11	B	12	10	B	20	E ₁₀		
16	8	8	20	12	13	12	15	12	10	E ₁₀	E ₁₀	15	19	E ₂₀	13	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀	E ₁₀		
17	9	E ₁₂	11	E ₁₀	E ₁₀	8	E ₁₀	E ₁₀	E ₁₀	8	E ₁₀	13	15	15	14	12	22	16	B	B	B	8	E ₁₀	E ₁₀		
18	E ₁₀	10	7	E ₁₀	E ₁₀	8	9	E ₁₀	8	E ₁₀	11	E ₂₀	12	E ₁₀	E ₁₀	7	E ₁₀	8	19	C	E ₁₀	9	E ₁₀	E ₁₀		
19	8	6	6	E ₁₀	E ₁₀	14	E ₁₀	7	7	7	E ₁₀	12	15	10	9	E ₁₀	10	B	B	B	E ₁₀	E ₁₀	E ₁₀	9		
20	E ₁₀	13	12	25	13	11	13	10	B	B	B	B	20	B	B	B	20	B	E ₁₈	8	C	9	E ₁₀	10	C	
21	41	20	16	B	20	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	E ₁₀	9		
22	E ₁₀	13	13	11	E ₁₀	10	13	E ₁₀	C	9	10	B	B	B	24	24	20	13	13	B	10	B	11	E ₁₀	7	
23	17	31	21	13	12	10	C	E ₁₀	E ₁₀	7	10	B	B	22	20	16	12	B	E ₁₀	20	E ₁₀	E ₁₀	8	8		
24	8	10	14	14	16	B	B	10	C	10	B	B	22	42	26	C	17	21	16	C	9	11	B	E ₁₀	B	
25	12	9	C	13	C	19	E ₁₀	8	E ₁₀	B	B	B	B	C	19	12	10	F	C	F	C	E ₁₅	E ₁₀	B	E ₁₀	
26	E ₁₀	6	E ₁₀	8	11	15	12	10	E ₁₀	7	E ₁₀	E ₁₀	11	E ₁₀	E ₁₀	11	15	10	E ₁₀	8	10	E ₁₀	10	7		
27	E ₁₀	E ₂₀	E ₁₀	13	E ₁₀	F	E ₁₀	E ₁₀	E ₁₀	11	E ₁₀	B	20	23	B	B	B	B	B	B	B	10	8	8		
28	6	E ₁₀	9	19	23	16	16	44	15	26	22	B	B	B	B	C	B	B	E ₂₀	14	E ₁₀	7	9	10		
29	23	24	25	E ₁₀	B	B	B	B	22	B	E ₁₀	17	33	B	B	B	16	E ₁₀	12	E ₁₀	12	E ₁₀	11	9		
30	29	25	C	B	B	13	B	B	B	16	B	B	B	B	B	B	B	B	B	B	15	13	C	14	C	
31	16	B	17	26	11	17	18	27	B	B	21	B	B	B	B	B	B	B	B	11	B	E ₁₀	12	13	9	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	29	29	30	31	31	31	30	31	31	31	30	31	30	31	30	30	30	30	30	30	29	30	30		
MED	10	11	13	13	13	15	14	11	12	U	14	20	26	22	28	22	20	18	16	D	B	D	B	10	10	9
UQ	22	20	20	22	24	20	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	15	12		
LQ	8	U	8	C	10	E ₁₀	10	10	10	C	9	10	15	18	18	14	10	12	10	E ₁₀	10	C	10	E ₁₀	8	

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MAY. 1976

F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1976

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION																							Lat.	69 00.4 S.		Long.	39 35.4 E		Sweep	MHz to 15 MHz in 30 sec in automatic operation														
Hour 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	F	A	A	A	B	A	A	R	B	B	B	B	B	B	B	365	355	345	F	F	F	F	B	B	B	A																			
2	B	C	B	C	B	A	B	B	290	290	305	325	300	B	F	305	B	F	P	B	R	R	A	A	R																				
3	B	B	C	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	R	B	R	A	A	A	A																				
4	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A																				
5	A	B	B	B	A	B	B	B	B	A	B	305	330	F	B	B	B	B	B	B	B	B	A	A	B																				
6	B	B	B	A	B	A	A	B	B	A	295	B	B	B	B	B	B	P	B	B	B	B	B	A	A																				
7	A	A	B	A	B	B	B	A	A	F	300	F	300	335	335	B	345	330	350	350	F	B	B	B	A																				
8	B	B	A	B	B	B	B	B	B	A	B	B	325	345	355	365	340	A	B	R	B	R	C	A																					
9	C	C	C	C	F	A	A	C	A	F	305	345	C	350	C	C	C	C	C	C	C	C	C	B	A																				
10	A	F	U	F	A	F	U	F	R	F	290	A	F	F	F	J	F	F	290	F	F	A	B	330	A	A																			
11	A	A	A	A	A	A	A	A	A	F	F	B	R	R	F	F	R	F	F	F	F	F	F	A	A	A																			
12	A	A	A	A	A	A	A	A	R	A	F	315	310	340	360	355	350	B	B	B	B	B	A	B	Y																				
13	A	A	A	A	A	A	A	F	F	F	250	270	F	300	330	345	345	360	F	V	F	F	F	365	B	B																			
14	R	R	F	F	F	F	A	F	F	J	F	F	F	F	F	F	F	F	F	F	F	F	B	B	B	B																			
15	B	A	F	F	F	A	A	F	F	F	300	325	330	F	F	F	F	F	F	J	F	A	A	B	B	A																			
16	A	A	A	A	A	A	A	A	F	F	F	355	355	335	F	F	F	F	J	F	J	F	A	C	F																				
17	F	C	F	F	F	F	F	F	F	F	265	F	F	F	R	F	F	C	340	365	B	B	B	R	F	A																			
18	A	A	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	285	300	F	B	A	A	C	C																			
19	A	A	A	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	B	B	A	A	A																			
20	A	A	A	U	F	A	A	A	A	B	B	B	B	U	F	B	B	B	290	B	F	R	A	A	F	A																			
21	B	B	A	B	B	B	B	B	B	B	B	B	R	R	B	B	B	B	B	P	B	B	B	B	A	A																			
22	A	A	A	A	A	A	A	A	F	F	295	315	B	B	F	F	335	R	F	315	B	F	B	R	A	A																			
23	B	B	B	A	A	A	U	F	290	F	265	295	F	320	B	B	F	F	F	F	B	F	A	R	A	A	A																		
24	A	A	A	R	A	B	B	A	A	B	B	B	F	P	365	U	F	F	C	365	310	A	B	B	A	B																			
25	R	A	S	A	A	A	U	S	280	F	F	B	B	B	B	F	F	U	F	J	F	F	B	B	A	A																			
26	A	A	F	F	A	A	A	A	F	F	F	F	F	F	F	F	F	F	F	A	F	A	A	A	A	A	A																		
27	A	C	A	F	F	F	F	F	290	290	U	F	295	A	J	F	B	F	335	B	B	B	B	A	A	F																			
28	A	A	A	A	B	A	A	B	A	A	A	B	B	B	B	C	B	B	R	A	A	A	A	A	A	A																			
29	B	B	B	A	B	B	B	B	A	B	F	325	315	C	B	B	B	B	F	F	F	F	A	A	A	A																			
30	B	B	A	B	B	A	B	B	B	A	B	B	B	P	B	B	B	B	B	B	B	R	A	C	A	B																			
31	B	B	B	B	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	335	B	A	R	A	A	A																			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																					
CNT	1	1	1	5	1	3	4	8	9	8	12	8	11	7	10	11	12	12	7	4	3	2	1																						
MED	F	F	U	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F																			
UQ				325		288	285	292	295	310	335	348	348	360	365	368	348	350	322	335	340																								
LQ				320		280	262	278	270	292	305	312	328	345	350	342	335	328	300	315	330																								

MAY. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1976

H'F₂ (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2																								
3																								
4																								
5																								
6																								
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30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

MAY. 1976

H'F₂ (KM)

IONOSPHERIC DATA

MAY. 1976

H'F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S, Long. 39° 35.4' E											Sweep MHz to 15 MHz in 30 sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	A	B	A	A	R	B	B	B	B	R	B	B	240	200	220	250	225	235	B	B	B	A
2	B	C	B	C	R	A	B	B	340	250	260	230	240	B	255	B	A	A	B	A	R	A	A	R	
3	B	B	C	A	A	B	B	A	B	B	B	B	R	B	B	B	B	B	A	A	A	A	A	A	
4	A	A	A	A	R	A	A	B	B	B	B	B	R	B	B	B	B	R	B	A	A	A	A	A	
5	A	B	B	B	A	B	B	B	B	B	B	B	260	B	B	B	B	B	B	B	B	A	A	B	
6	B	B	B	A	R	A	A	B	B	C	A	B	R	B	B	B	B	B	B	B	B	B	A	A	
7	A	A	B	A	R	B	B	B	A	A	300	260	250	B	250	235	245	245	B	B	B	B	B	A	
8	B	B	A	B	R	B	B	B	B	A	B	B	260	240	225	230	240	A	B	R	B	A	C	A	
9	C	C	C	C	F	A	A	C	A	A	300	250	C	220	C	200	200	C	C	C	C	C	C	A	
10	A	300	U F 230	A	F	370	R	330	A	F	300	245	230	205	230	205	195	210	250	250	A	B	280	A	
11	A	A	A	A	A	A	A	A	A	A	A	B	290	260	220	210	230	250	200	B	B	255	A	A	
12	A	A	A	A	A	A	A	A	A	A	A	255	250	250	210	205	230	B	B	B	B	B	A	B	
13	A	A	B	A	A	A	A	A	370	380	280	230	210	200	200	195	200	240	225	230	245	230	C	B	
14	R	R	A	305	320	F	A	305	300	245	240	200	200	200	200	200	220	230	A	275	B	B	B		
15	B	A	F	280	A	A	A	345	270	265	215	200	195	195	195	200	190	A	B	B	A	B	A		
16	A	A	A	A	A	A	A	A	345	250	205	210	230	200	200	200	175	220	A	290	240	A	C		
17	E A 235	C	300	U F 300	U H 300	U F 320	F	C	300	240	200	220	215	200	195	200	B	B	230	B	B	B	R		
18	A	A	A	245	290	325	300	265	260	240	225	200	200	200	195	200	200	A	A	B	C	B	C		
19	A	A	A	A	C	C	B	C	325	250	215	205	200	200	200	200	200	265	R	B	B	C	C		
20	A	B	B	320	A	A	A	A	B	B	B	B	325	A	B	B	B	R	C	A	A	A	320	B	
21	B	B	B	B	R	B	B	B	B	B	B	B	R	B	B	B	B	R	B	B	B	B	A	A	
22	A	B	B	A	A	A	A	A	285	260		B	B	R	220	220	230	185	250	B	355	B	R		
23	B	B	B	A	A	A	360	345	310	275	240	B	R	245	225	240	295	B	A	A	320	A	A		
24	A	A	A	R	A	B	B	A	A	B	B	205	280	210	200	200	B	250	B	B	B	B	C	B	
25	R	A	A	A	R	A	A	330	260	B	B	B	R	225	200	205	225	200	C	C	B	B	A	A	
26	A	A	A	E A 280	A	A	A	A	290	280	250	225	235	200	195	200	250	A	C	A	B	C	A	A	
27	C	C	A	310	F	300	310	310	F	A	230	R	205	225	B	B	B	B	B	B	B	A	A	F	
28	A	A	A	B	R	A	A	B	A	B	A	B	B	B	B	C	B	R	B	A	A	A	A	A	
29	B	B	B	A	R	B	B	B	B	B	270	245	275	B	B	B	B	225	A	A	295	A	A	A	
30	B	B	A	B	R	A	B	B	B	A	B	B	R	B	B	B	B	R	R	B	R	A	C	B	
31	B	B	B	B	A	B	B	B	B	B	B	B	R	B	B	B	B	R	B	245	B	A	R	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	1	1	2	7	3	4	3	8	12	13	16	15	20	17	20	19	16	12	4	6	4	1	1		
MED	E A 235	300	265	300	300	322	310	330	300	260	240	220	232	210	200	200	222	238	238	282	248	280	320		
UQ				308	310	348	335	345	332	280	252	238	260	225	222	230	242	250	248	295	288				
LQ				280	295	310	305	308	278	250	220	205	202	200	198	200	200	222	228	245	235				

MAY. 1976

H'F (KM)

IONOSPHERIC DATA

MAY. 1976

H^oEs (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																			
Hour 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	K 100	K 125	K 110	K 150	B	100	105	130	B	B	B	B	B	B	B	B	B	125	B	B	B	B	B	K 110			
2	150	C	105	105	105	110	130	B	105	B	B	B	B	B	B	B	110	105	B	K 130	K 105	100	100	100			
3	110	100	C	145	115	B	B	150	110	B	B	B	B	B	B	B	B	B	130	K 115	K 105	K 100	K 105	100			
4	150	K 100	100	K 100	110	100	100	B	B	B	B	B	B	B	B	B	B	B	B	115	K 190	150	100	100			
5	100	150	B	B	K 105	B	B	B	B	100	B	B	B	B	B	B	B	B	B	B	B	110	110	B			
6	115	100	100	105	B	100	100	B	B	100	100	B	B	B	B	B	B	B	B	B	B	B	K 100	K 105			
7	K 150	K 130	110	K 105	B	B	100	100	100	100	110	B	B	B	B	100	130	B	B	B	B	B	B	K 150			
8	K 125	100	100	B	100	110	B	B	B	100	B	B	100	G	105	145	130	120	B	110	B	K 185	C	105			
9	C	C	C	C	150	100	100	C	100	110	B	C	G	C	B	100	C	C	C	C	C	C	C	K 150			
10	130	K 95	K 120	K 125	110	K 130	K 125	K 100	100	150	B	100	130	B	B	100	95	125	95	120	B	K 160	140	K 140			
11	K 125	K 105	100	100	100	100	100	100	100	100	B	B	B	B	B	B	B	G	B	150	105	120	100	150			
12	150	100	110	110	100	125	105	100	105	110	110	100	B	B	B	B	B	B	B	B	B	K 150	B	Y			
13	K 105	K 105	100	100	100	115	120	115	G	110	110	105	105	105	G	100	100	125	110	100	120	C	B	B			
14	K 110	K 105	110	K 110	130	120	95	130	160	105	105	105	B	B	B	100	100	100	95	110	B	B	B	B			
15	B	175	125	110	100	110	100	105	110	100	150	140	130	100	95	145	95	95	R	115	120	B	105	140			
16	130	130	K 145	K 100	105	110	100	100	K 100	105	95	G	R	C	100	150	125	120	130	K 115	C	110	90	125			
17	170	145	K 150	K 115	K 140	K 150	K 140	C	100	105	105	140	G	B	B	B	B	B	B	B	B	110	140	180			
18	130	120	125	K 120	110	190	120	150	105	150	100	100	C	100	100	100	100	95	95	145	125	110	105	160			
19	100	100	100	95	95	105	90	C	90	105	100	140	G	B	100	100	95	K 130	B	B	B	150	140	105			
20	100	110	105	K 120	150	100	100	100	B	B	B	B	K 130	B	B	B	B	B	R	C	155	105	100	K 105	105		
21	100	100	105	B	100	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	145	105	K 105		
22	100	100	100	100	100	105	100	100	105	110	B	B	B	B	B	B	B	B	B	B	110	B	K 105	105	K 100		
23	100	100	105	K 105	K 105	100	K 130	K 100	C	G	G	B	B	B	B	B	B	B	R	120	K 110	K 115	K 105	K 105	K 105		
24	K 105	K 110	K 110	K 115	K 180	B	B	100	110	B	B	B	B	B	B	B	B	B	K 100	100	130	B	115	105	B		
25	K 130	K 100	K 115	100	100	105	100	K 110	C	B	B	B	B	B	G	G	G	130	145	135	B	B	K 110	110			
26	K 100	100	100	105	130	100	100	100	90	90	140	165	100	95	95	95	B	140	100	100	100	110	K 130	105			
27	110	110	110	K 110	K 110	K 100	K 95	K 95	95	95	90	100	B	105	B	B	B	B	B	B	B	95	180	115			
28	125	125	105	100	100	100	120	100	100	100	95	B	B	B	B	C	B	B	R	125	125	110	100	105	180		
29	100	100	125	100	B	B	B	B	100	B	120	115	B	B	B	B	B	B	115	125	K 125	K 140	130	K 110	K 150		
30	105	115	100	B	B	K 100	B	B	B	105	B	B	B	B	B	B	B	B	B	B	B	120	C	120	100		
31	100	B	100	100	100	100	100	105	B	B	105	B	B	B	B	B	B	B	B	B	B	110	K 150	K 125	K 110		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	29	28	28	26	26	26	24	20	20	20	15	10	8	4	6	11	10	14	12	19	14	22	24	26			
MED	110	105	105	105	105	102	100	100	100	105	105	110	105	100	100	100	100	120	115	115	112	110	105	110			
UQ	130	122	112	K 115	115	110	120	112	108	110	110	140	130	102	100	122	125	125	128	130	120	150	122	150			
LQ	100	100	100	100	100	100	100	100	100	100	100	100	102	98	95	100	95	100	98	110	105	105	105	105			

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MAY. 1976

H^oEs (KM)

IONOSPHERIC DATA

MAY. 1976
TYPES OF ES

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION		Lat. 69° 00' - 4' S, Long. 39° 35' - 4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																						
Hour 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	K1	RK11	RK11	RRK11		R1	R1	K1										R1						RK13					
2	A1		R1	R1	RR11	R2	A1		RK11								CS11	R1		RK11	K1	R3	FA11	R1					
3	R1	RR11		AR12	R1			A1	RA11										R1	RK31	RK15	K6	K5	R2					
4	AR11	K1	R1	CK11	R1	F1	R1													R1	AK12	AR12	RS21	RA11					
5	R1	RR11			RAK11					R1												R1	RK15						
6	R1	R1	R1	R2		R1	R2			R1	RL11												LK11	K5					
7	RK11	AF11	F1	RK11			F1	R1	R2	R1	RK11		C1			L1	R1							RCK11					
8	K1	FA11	R3		R1	R1				R2			R1		C1	H1	R1	R1		R1		HAK11		R6					
9					AR11	R1	R2		R1	R1						C2								K3					
10	RA11	LK11	CK11	F2	AHK11	RK11	K1	L2	R2	RK11		L1	H1			L1	L2	CL11	L2	RA11		RK11	R1	RK11					
11	HK31	RK12	R2	R3	R3	R3	FR13	R2	R1	R2											F1	F1	R1	RFA21	AR11				
12	AR12	R2	CK11	RA11	R2	R1	R2	R4	R1	CK11	C1	C1												HK11					
13	K6	R5	R1	R2	R3	R2	R3	C3		C3	C2	C1	C1	C1		C3	L1	RL11	F1	F1	R1								
14	CK21	K4	R3	RK11	RF21	RF23	RA21	ARA11	HRL11	C2	C2	C1				L1	L1	LH11	R1	F1									
15		AF11	F1	CLK11	FA11	RAF11	R2	RL21	C2	LC11	RC11	H1	C1	L1	L1	RL11	L1	L1		F1	F1		F1	FR11					
16	F2	FA31	AK11	R2	R2	RA21	R1	R2	RK31	R2	LC12				L1	HH11	R1	R1	RAF11	CAK11		AF11	F1	FF11					
17	FR11	R1	K1	CK31	HK11	KAC11	AK11		L1	C2	C1	C1										F1	F1	R1					
18	R1	R1	R1	RK11	RA11	A1	RA11	A1	C2	H1	C1	L1		LH11	C2	C2	L1	F1	R1	F1	F1	F1	F1	FF11					
19	F2	F1	F1	F2	F1	FA11	R1		L1	CH11	CH11	RC11			L1	L1	L1	CK11				F1	AR11	RA31					
20	R4	R3	R3	KA11	AR12	RS21	R1	R1													RAR11	RS31	RS51	RK12	R1				
21	R1	R1	R2		R1	F1																	R1	RS41	AK15				
22	R3	R3	R2	RA11	RA41	RA11	R2	R2	R1	R1												RK21	K1	R5	KA61				
23	R1	R1	R1	K2	K3	R1	RK21	LK11												R1	K1	RK14	KA61	R3	K5				
24	KS61	K4	K2	K2	RK11			R2	R2												LK11	F1	F1	R1					
25	HK11	K5	RK11	R2	R2	R3	R6	RK11	R1																				
26	K6	R3	R1	R2	R1	R2	R2	R2	L1	C1	R1	AR11	LH11	LH11	LA11	L1			R1	FF11	FA11	FA11	FF11	HK11	R1				
27	R1	R4	RS51	RK11	CAK11	CRK11	CK21	FAR11	LA11	LA11	CL11		C1										F1	RF11	R1				
28	R5	R1	R5	R1	R1	R1	R1	R1	R1	R1	R1									R1	R1	RS61	RS71	RS61	AR12				
29	F1	F1	R1	R3					L1		C1	C1							R1	R1	RAK11	RAK11	RA11	K3	RAK31				
30	R1	R1	R2			RK21				R1											K1	R1		RS11	R1				
31	RS11		R1	R1	R1	R1	R1	R1			R1											RA11	CK11	RK11	RK21				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT																													
MED																													
UQ																													
LQ																													

MAY. 1976
TYPES OF ES

IONOSPHERIC DATA

JUN. 1976

FXI (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00' 4" S. Long. 39° 35' 4" E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	B	A	B	A	A	A	R	R		22	33	R	R	B	B	B	R	R	B	B	R	R	A	A
2	A	A	B	B	A	A	O R 26	O R 22	R	A	B	B	O R 48	B	B	B	B	B	B	B	B	R	16	B	R
3	A	B	A	A	B	A	A	A	A	A	R	O R 42	51	54	54	O R 38	O R 31	R	A	A	A	A	A	U S 56	
4	A	A	A	A	A	A	B	B	A	O R 30	R	B	B	B	B	B	B	R	B	B	B	B	B	B	R
5	A	B	B	A	B	B	B	A	B	A	B	B	R	O R 52	O R 47	B	B	R	O R 32	R	A	A	A	A	
6	A	A	B	A	A	A	A	A	A	B	B	B	O R 43	B	B	B	B	R	A	B	B	B	O R 18	R	
7	A	A	A	A	A	A	A	A	A	B	B	B	O R 49	O R 51	44	B	26	R	R	B	B	B	B	A	
8	A	A	A	A	A	A	A	B	B	B	B	O R 43	R	B	B	B	R	R	B	B	B	B	B	A	
9	A	A	R	A	A	A	A	A	A	A	O R 29	O R 38	54	B	C	B	B	R	A	R	A	R	R	R	
10	A	R	C	A	A	32	32	31	A	R	32	45	45	38	43	X 31	O R 27	A	B	B	B	A	B	A	
11	A	A	A	A	B	B	U A 85	A	B	B	B	B	R	B	B	B	B	32	B	A	A	A	A	A	
12	A	A	A	A	A	A	A	A	A	A	B	B	R	B	B	B	B	R	B	B	B	R	A	R	R
13	A	50	R	A	R	36	35	55	B	B	B	O R 34	B	B	B	A	R	A	B	B	B	B	B	36	
14	R	A	A	A	A	A	21	O R 20	A	B	B	33	42	41	55	36	A	A	R	A	A	A	A	R	
15	A	A	A	A	23	21	22	22	23	24	34	37	45	43	39	30	A	A	A	A	R	A	R	A	
16	A	30	A	27	A	A	A	A	X 39	33	32	35	42	44	54	28	A	O R 22	O R 23	A	R	O R 22	A	A	
17	A	A	A	A	A	A	A	A	A	40	54	41	55	66	B	B	B	B	B	B	B	A	R	A	A
18	A	A	A	A	A	A	B	A	B	A	B	B	R	B	B	B	B	B	B	B	A	A	A	A	A
19	A	A	A	A	A	A	A	A	A	R	O R 31	B	O R 42	51	O R 39	33	R	B	B	B	C	B	A	R	
20	R	A	A	A	A	A	A	A	O R 22	O R 21	28	36	B	B	R	B	O R 21	31	B	B	A	A	R	R	
21	R	A	R	A	22	24	24	23	O R 23	26	32	41	42	44	45	33	20	R	R	O R 21	O R 18	O R 20	O R 18	O R 19	
22	A	A	A	A	A	35	37	A	17	26	35	37	O R 42	O R 51	O R 41	O R 33	O R 22	R	22	O R 18	R	A	R	A	
23	A	A	A	A	R	A	A	A	O R 41	30	35	42	X 39	43	52	32	A	O R 21	O R 20	B	B	C	B	A	
24	A	R	A	A	A	30	A	R	A	32	28	37	66	54	55	34	O R 21	O R 20	C	A	R	A	A	A	
25	A	A	56	A	A	A	B	A	B	B	B	B	B	B	O R 32	34	O R 31	R	B	B	B	B	B	A	A
26	A	B	B	B	B	B	B	O R 26	O R 24	O R 28	X 28	O R 38	37	O R 41	44	32	A	A	R	R	A	O R 18	A	A	
27	A	A	B	B	B	B	A	A	A	A	O R 28	O R 32	O R 42	O R 43	43	O R 34	O R 26	R	C	O R 19	O R 24	O R 21	O R 18	B	A
28	A	A	B	C	B	B	B	B	B	B	B	B	R	B	B	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	R	B	B	A	A	A	A	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT		2	1	1	2	6	8	7	7	11	14	16	17	15	15	13	9	5	5	3	2	5	2	3	
MED		40	56	27	22	31	29	23	O R 23	28	32	38	43	44	44	33	O R 26	O R 22	O R 22	O R 21	O R 20	O R 18	O R 18	36	
UQ					35	36	28	32	31	34	42	49	52	53	34	O R 27	31	O R 23	O R 22		O R 20			46	
LQ					24	23	22	22	25	28	36	42	43	42	32	O R 21	O R 21	O R 20	O R 20		O R 18			28	

The Radio Research Laboratories, Japan

JUN. 1976

FXI (0.1 MHz)

IONOSPHERIC DATA

JUN. 1976

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																						
Hour 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	B	A	B	A	A	A	R	R	F	F ₂₇	B	R	B	B	B	B	R	B	B	A	A	A	A						
2	B	B	B	B	R	A	U ₂₀	F ₁₆	A	A	B	B	42	B	B	B	B	R	B	B	A	F	B	R						
3	A	B	A	A	B	A	A	A	A	A	R	F ₃₅	F	U ₄₂	F	U ₂₉	F	A	A	A	C	A	A	A						
4	A	A	A	A	R	A	B	B	A	F	A	B	R	B	B	B	B	B	B	B	B	B	B	A						
5	A	B	B	A	R	B	B	A	B	A	B	B	R	46	41	B	B	B	F ₂₅	A	A	A	A	A						
6	A	A	B	A	R	A	A	A	A	B	B	B	37	B	B	B	B	B	A	B	B	B	F	R						
7	A	A	A	A	A	R	B	A	A	B	B	B	43	44	J ₃₇	F	F	B	B	B	B	B	B	A						
8	A	A	A	B	A	R	A	B	B	B	B	B	F ₃₇	R	B	B	B	R	B	B	B	B	B	A						
9	A	A	R	A	A	A	A	A	A	A	F	F ₃₁	F	F	C	B	B	R	A	A	A	A	A	A						
10	A	A	C	A	A	F	F	F	A	A	F ₂₄	F	F ₃₇	F ₃₂	F ₃₃	25	U ₂₁	A	B	B	B	B	B	A						
11	A	A	A	A	R	B	B	A	B	B	B	B	R	B	B	B	B	F	B	A	A	A	A	B						
12	A	A	A	A	A	A	A	A	A	A	B	B	R	B	B	B	B	B	B	A	A	A	A	A						
13	A	A	A	A	R	F	F	F	B	B	B	28	R	B	B	A	B	B	B	B	B	B	B	A						
14	A	A	A	A	A	A	F	F	A	B	B	F	F	F ₃₃	F	F	F	A	A	A	A	A	A	A						
15	A	A	A	A	F	F	F	F ₁₅	U ₁₆	F	U ₂₆	U ₂₈	U ₃₄	F	J ₃₂	F	A	A	A	A	A	R	A	A						
16	A	F	A	F	A	A	A	A	33	F ₂₆	F ₂₆	F ₂₈	F ₃₆	F	U ₃₆	F	A	F	F	A	A	F ₁₃	A	A						
17	A	A	A	A	A	A	A	A	A	F	F	R	F	F	B	B	B	B	B	A	A	A	A	A						
18	A	A	A	A	A	B	B	A	B	A	B	B	R	B	B	B	B	B	B	A	A	A	A	A						
19	C	A	B	C	A	A	A	B	A	A	F ₂₄	B	F ₃₆	F ₄₂	33	F	R	R	B	B	C	B	A	A						
20	A	A	A	A	A	A	A	A	U ₁₆	F	F ₂₂	F ₃₀	B	B	R	B	15	F	B	B	A	B	A	R						
21	A	A	R	A	F	U ₁₆	F	F ₁₆	F ₁₆	F	J ₂₄	J ₃₄	J ₃₄	J ₃₈	J ₃₈	F	F	A	A	F ₁₃	F	F	F	F						
22	A	A	A	A	A	F	F	A	F	F	F	F ₃₂	F ₃₆	F ₄₃	F ₃₁	F	F	A	F	F	A	C	A	A						
23	A	A	A	A	A	A	A	A	F	F	J ₂₆	U ₃₂	J ₃₃	J ₃₆	F	F	A	F	F	B	B	C	B	A						
24	A	A	A	A	A	F	A	R	A	F	F	J ₃₁	U ₃₅	F	F	F	F	F	C	A	C	C	A	A						
25	A	A	A	B	A	A	B	A	B	B	B	B	B	B	B	26	F ₂₇	F ₂₅	B	B	B	B	B	A	A					
26	B	B	B	B	B	B	B	F	F	F	22	32	30	F ₃₃	F	F	A	A	R	R	A	F	A	C						
27	B	B	B	B	B	B	A	A	B	A	22	26	36	37	F ₃₃	F ₂₈	F	B	F	F	F ₁₂	F ₁₃	F ₁₄	F ₁₁	B	A				
28	A	A	B	C	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C					
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C					
30	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	A	A	A						
31																														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
CNT						1	1	3	4	2	10	13	13	11	10	6	3	1	4	2	1	2								
MED						U ₁₆	U ₂₀	F ₁₆	F ₁₆	F ₂₃	F ₂₄	F ₃₁	F ₃₆	F ₃₈	F ₃₃	F ₂₆	F ₂₁	F ₁₄	F ₁₄	F ₁₃	F ₁₄	F ₁₂								
UQ								16	24		F ₂₆	F ₃₂	37	42	F ₃₇	F ₂₃				F ₂₀										
LQ								F ₁₆	F ₁₆		F ₂₂	F ₂₈	34	34	F ₃₂	F ₂₅	18			F ₁₂										

JUN. 1976

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 1976

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
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28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

JUN. 1976

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUN. 1976

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00.4' S.		Long. 39° 35.4' E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																
Hour 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	K 340					U K 160	U K 270	K 215	K 140	U C 100	105		B	R	B	B	B							
2							U K 115	U K 100		A	B	B	R	B	B	B								U K 130
3	K 350		U K 260								B	B	C	K 215	C	130	U B 120	U K 150	U K 100					
4											B	C	B	R	B	B	B							K 130
5	K 340				K 310						B	B	B	B	B	B	B							
6		U K 360									B	B	B	R	B	B	B							K 150
7		U K 340	U K 315								B	B	B	R	B	A	B							
8		U K 420									B	B	B	B	B	B	B							
9				K 140						B	A	A	150	R	B	C	B							U K 120
10	U K 100						U K 170			A	A	B		125	A	A	A							
11	K 280				K 230			K 350			B	B	B	R	B	B	B							K 350
12					U K 280						B	B	B	B	B	B	B							
13		K 160			K 200	K 170	K 150				B	B	B	B	B	B	B							
14	K 160				K 240	K 160	U K 160				B	B	B	U A 150	A	A	120		K 250	K 140			K 100	U K 90
15											C	C	A	A	U C 100	A	A							
16											A	A	A	A	B	A	B							
17									120		A	A	A	A	B	B	B							U K 120
18											B	B	B	R	B	B	B							
19										A	125	B	C	B	B	B	B							
20	K 140	K 220							U K 140		A	A	A	R	B	B	B							K 120
21		U K 160	K 205		U K 120						C	A	A	A	A	110	C							
22					U K 160						C	A	A	C	C	A	B							
23		U K 120									A	C	A	U A 110	U F 120	A	A							U K 130
24											A	A	A	C	A	A	A							U K 350
25											B	B	B	R	B	B	B							
26								K 160	U K 130		A	110	A	120	110	110	120	K 210			K 120	U K 125		
27									K 310		B	B	B	B	B	B	B	K 130						
28											B	B	B	B	B	B	C							
29											C	C	C	C	C	C	C							
30		K 205									C	C	C	C	C	C	B							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	7	4	5	3	3	4	4	4	2	3	2	5	3	3	3	3	2	1	2	2		1	8
MED	K 242	U K 220	K 232	K 230	K 170	K 160	U K 165	K 188	K 140	110	110	128	A 125	U 110	110	120	150	K 175	K 140	K 235	U K 122		K 100	U K 130
UQ	K 340	U K 350	U K 288	K 280	K 205	K 160	U K 220	K 282	K 225		118		150	115	120	120	K 180							K 140
LQ	K 150	K 160	K 172	K 200	K 145	K 155	U K 138	K 130	U K 135		108		120	105	110	120	K 140							U K 120

JUN. 1976

FOE (0.01 MHz)

IONOSPHERIC DATA

JUN. 1976

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station **SYOWA** STATION Lat. 69 00.4 S, Long. 39 35.4 E Sweep MHz to 15 MHz in 30 sec in automatic operation

Hour 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	K 34	42	42	35	J A 37	J A 30	K 27	K 21	K 14	16	16		B	R	B	B	B	R	B	B	B	16	16	J A 39	36
2	J A 49	42	44	B	42	43	23	22	22	32		B	B	E R 26	B	B	B	R	B	B	15	J A 24	B	J A 24	
3	K 35	B	J A 40	46	46	J A 45	45	C 57	42	42	25	21	C 26	22	C 16	21	D C 16	20	J A 28	30	J A 38	J A 35	24	J A 99	
4	D C 104	42	J A 36	J A 36	77	J A 46	85	B	32	E B 15	25	B	B	B	B	B	B	R	B	B	B	B	B	J A 18	
5	K 34	46	B	K 31	57	B	53	67	57	D C 35	B	B	B	E B 30	E B 21	B	B	B	B	33	26	43	22	J A 26	J A 35
6	J A 39	J A 77	86	J A 62	J A 50	J A 49	J A 40	J A 36	J A 26	B	B	B	E R 31	B	B	B	B	R	25	B	B	B	J A 16	K 15	
7	J A 26	J A 48	145	J A 52	42	53	75	35	J A 30	B	B	B	E R 35	E B 26	20	B	13	R	B	B	B	B	B	22	
8	J A 34	J A 49	70	D C 46	44	51	56	B	B	B	B	D C 25	R	B	B	B	R	24	B	B	B	B	B	32	
9	32	J A 27	18	J A 31	J A 36	J A 36	J A 39	J A 47	43	J A 27	J A 29	J A 23	26	B	E C 30	B	B	R	32	27	42	J A 19	17	22	
10	46	J A 19	J A 72	J A 99	J A 57	J A 36	J A 47	40	42	J A 29	23	25	22	26	32	J A 32	J A 29	25	B	B	B	25	B	21	
11	K 28	J A 42	J A 41	J A 50	37	74	B	72	B	B	B	B	R	B	B	B	B	J A 39	B	K	J A 35	J A 44	J A 37	J A 38	J A 69
12	56	J A 41	J A 42	K 28	J A 37	J A 49	52	J A 39	45	J A 49	B	B	R	B	B	B	R	B	B	19	J A 30	16	17		
13	J A 26	22	J A 20	25	J A 19	J A 24	J A 24	J A 19	B	B	B	E B 22	B	B	B	40	B	51	B	B	B	B	B	J A 29	
14	K 16	J A 29	J A 39	23	24	J A 26	J A 24	J A 24	55	53	B	E B 23	33	J A 29	54	J A 35	J A 41	25	20	J A 76	52	J A 30	D C 46	16	
15	22	J A 29	J A 34	J A 74	J A 44	J A 20	J A 36	J A 36	J A 24	J A 34	J A 47	J A 21	J A 59	21	J A 48	J A 37	J A 30	J A 29	25	23	13	J A 26	16	23	
16	36	J A 39	J A 30	36	46	J A 49	J A 49	J A 50	J A 30	J A 25	J A 30	16	13	D C 15	34	J A 26	34	16	J A 30	J A 29	J A 19	20	J A 26	J A 25	
17	20	J A 34	J A 41	J A 49	J A 51	J A 42	40	J A 49	J A 38	31	16	19	J A 30	17	B	B	B	B	B	B	J A 25	17	J A 21	J A 36	
18	J A 39	J A 39	J A 51	J A 49	45	37	B	68	43	B	B	B	R	B	B	B	B	R	B	23	30	J A 26	25	J A 32	
19	J A 34	J A 41	42	J A 42	J A 39	35	J A 37	D C 35	J A 40	J A 26	15	B	26	J A 34	E B 27	J A 26	22	R	B	B	C	B	J A 26	16	
20	20	J A 27	J A 29	J A 39	J A 76	J A 32	26	22	16	J A 17	J A 21	13	B	B	E B 25	B	J A 19	21	B	B	22	23	15	J A 17	
21	20	36	20	J A 30	25	J A 24	J A 26	J A 16	16	55	11	15	J A 24	14	16	D C 15	14	16	14	E C 10	24	J A 17	12	13	
22	J A 30	J A 26	J A 20	23	23	22	J A 29	J A 26	J A 26	25	25	52	E C 20	D C 25	52	E B 13	20	16	13	J A 17	12	15	10	J A 18	
23	24	30	J A 35	J A 79	J A 26	J A 27	43	J A 49	36	J A 27	J A 28	25	18	J A 30	J A 24	J A 29	J A 39	24	J A 18	B	B	22	B	J A 29	
24	J A 27	J A 25	J A 39	J A 72	J A 77	52	J A 34	23	44	J A 59	J A 59	33	30	20	J A 33	D C 35	D C 44	J A 26	C	D C 25	12	J A 42	J A 44	D C 44	
25	J A 35	J A 42	88	55	J A 46	J A 29	B	42	B	B	B	B	B	B	B	E B 22	E B 11	E B 15	B	B	B	B	35	J A 61	
26	J A 40	J A 49	B	42	B	B	26	16	17	16	14	15	17	G	G	G	21	25	12	12	K	J A 25	J A 19	J A 26	J A 26
27	J A 23	J A 24	42	43	42	B	J A 38	31	K 31	J A 29	24	D C 16	E B 26	E B 27	E B 13	E B 12	K 13	R	14	13	E C 10	E C 10	B	J A 19	
28	J A 30	31	34	J A 47	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	J A 25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	R	B	B	23	40	J A 44	J A 34	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	27	26	27	26	24	24	25	22	21	16	16	17	15	17	14	15	14	12	13	19	21	20	28	
MED	32	J A 39	J A 40	J A 45	43	J A 36	38	36	32	29	24	22	U 24	U 23	U 20	27	22	24	22	25	23	J A 23	26	J A 24	
UQ	36	J A 42	44	J A 52	J A 50	49	48	J A 49	42	42	J A 28	25	U 28	28	33	J A 35	32	26	29	30	34	J A 30	J A 36	J A 34	
LQ	25	J A 28	J A 34	33	37	J A 28	J A 26	23	24	J A 25	16	16	U 20	19	E G 20	13	16	20	14	17	16	19	16	18	

The Radio Research Laboratories, Japan

JUN. 1976

FOES (0.1 MHz)

IONOSPHERIC DATA

JUN. 1976

F-MIN (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69 00.4 S.		Long. 39 35.4 E		Sweep		MHz to 15 MHz in 30 sec in automatic operation																	
Hour 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 C 10	19	13	23	12	11	E C 10	12	12	E C 10	E C 10	B	H	B	B	B	B	B	B	E C 10	E C 10	E C 10	9		
2	16	15	25	B	17	10	11	10	14	9	B	B	26	B	B	B	B	B	B	8	7	B	E C 10		
3	E C 10	B	10	13	22	12	10	E C 10	13	12	16	E C 20	E C 20	16	12	12	12	E C 10	E C 10	10	E C 20	11	9	8	
4	E C 10	12	E C 10	7	21	14	41	B	20	15	E C 20	B	B	B	B	B	B	B	B	B	B	B	E C 10		
5	E C 10	25	B	15	23	B	27	19	28	21	B	B	B	30	21	B	B	B	E C 20	E C 10	16	E C 10	8	E C 10	
6	11	13	30	16	20	E C 20	11	9	E C 10	B	B	B	31	B	B	B	B	B	16	B	B	B	E C 10		
7	8	6	7	8	14	22	22	19	10	B	B	B	35	26	12	B	10	B	B	B	B	B	12		
8	7	15	17	25	15	24	16	B	B	B	B	20	B	B	B	B	B	21	B	B	B	B	9		
9	9	7	E C 10	9	16	10	10	15	25	11	12	12	21	B	E C 30	B	B	B	19	14	13	11	E C 10	11	
10	10	8	E C 20	10	E C 10	12	12	9	11	10	E C 10	13	11	11	9	E C 10	9	12	B	B	B	15	B	11	
11	12	9	16	10	25	62	B	20	B	B	B	B	B	B	B	B	B	13	B	E C 10	E C 10	E C 10	9	20	
12	E C 10	E C 10	E C 10	6	10	10	13	11	15	12	B	B	B	B	B	B	B	B	B	B	E C 10	E C 10	E C 10	10	
13	E C 10	10	6	E C 10	E C 10	7	E C 10	6	B	B	B	22	B	B	B	22	B	30	B	B	B	B	E C 10		
14	8	6	E C 10	8	E C 10	E C 10	E C 10	7	12	32	B	23	14	12	11	11	E C 10	10	E C 10	10	12	10	8	8	
15	10	9	E C 10	E C 10	7	7	E C 10	E C 10	E C 10	E C 10	E C 15	E C 10	E C 10	8	8	7	8	E C 10	E C 10	10	E C 10	E C 10	E C 10	6	
16	10	E C 10	9	E C 12	E C 10	12	11	E C 10	10	E C 10	E C 10	11	E C 10	13	10	13	12	E C 10	E C 10	7	E C 10	7	7	6	
17	15	9	12	10	12	10	E C 10	13	14	E C 10	E C 10	E C 10	E C 10	E C 10	B	B	B	B	B	B	12	E C 10	E C 10	10	
18	10	9	10	11	13	20	B	21	B	21	B	B	B	B	B	B	B	B	B	15	E C 20	13	E C 13	7	
19	E C 17	12	16	E C 20	12	11	E C 10	20	E C 10	10	11	B	E C 20	13	27	17	E C 20	B	B	B	B	E C 10	9		
20	E C 10	6	6	E C 10	13	E C 10	E C 20	9	E C 10	E C 10	8	E C 10	B	B	25	B	10	E C 10	B	B	14	16	10	8	
21	E C 10	6	6	11	10	10	E C 10	10	10	10	7	10	8	E C 10	8	E C 10	E C 10	E C 10	E C 10	E C 10	E C 10	8	E C 10	8	9
22	E C 10	8	9	E C 10	E C 10	6	6	E C 10	E C 10	E C 10	6	12	E C 20	E C 20	11	13	11	E C 10	E C 10	E C 10	8	E C 10	8	E C 9	
23	10	12	E C 10	8	E C 10	10	E C 20	15	11	8	E C 15	E C 10	E C 10	E C 10	E C 10	E C 10	E C 10	E C 10	E C 10	E C 10	B	B	E C 13	B	12
24	10	9	E C 10	6	E C 10	6	7	E C 20	E C 20	10	E C 10	E C 10	E C 20	7	E C 10	E C 10	E C 10	E C 10	C	E C 10	E C 10	E C 10	8	E C 10	
25	E C 9	10	10	15	E C 10	13	B	20	B	B	B	B	B	B	22	11	15	B	B	B	B	B	E C 10	10	
26	15	20	B	20	B	B	20	10	E C 10	E C 10	E C 10	10	9	E C 10	E C 10	E C 10	E C 12	E C 10	E C 10	E C 10	8	6	6	E C 12	
27	15	14	20	19	23	B	E C 10	6	22	15	12	14	26	27	13	12	10	B	E C 10	E C 10	E C 10	E C 10	B	E C 10	
28	E C 9	8	20	E C 20	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	C	16	11	E C 10	E C 10
31																									
Hour 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	
CNT	29	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	27	28	28	28
MED	9	10	10	10	12	12	10	11	13	12	U 14	21	26	28	23	D B 22	U 16	D B 30	B	B	12	9	9	9	
UQ	10	14	17	16	20	21	21	20	26	D B 32	B	B	B	B	B	B	B	B	B	B	B	D B 16	B	10	
LQ	E C 10	8	10	10	E C 10	10	10	10	10	E C 10	E C 10	10	E C 12	11	10	11	10	E C 10	E C 10	10	10	E C 10	8	8	

JUN. 1976

F-MIN (0.1 MHz)

IONOSPHERIC DATA

JUN. 1976

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station	SYOWA STATION				Lat. 69° 00.4' S.	Long. 39° 35.4' E	Sweep	MHz to 15 MHz in 30 sec in automatic operation																							
Hour 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	B	A	B	A	A	A	R	R	F	F	R	R	B	B	B	B	B	B	B	A	A	A	A							
2	B	B	B	B	R	A	F	250	A	A	B	B	350	B	B	B	B	B	B	B	A	F	B	R							
3	A	B	A	A	B	A	A	A	A	A	R	F	F	F	F	U	F	F	A	A	A	C	A	A							
4	A	A	A	A	B	A	B	B	A	F	A	B	B	B	B	B	B	B	B	B	B	B	B	A							
5	A	B	B	A	B	B	B	A	B	A	B	B	R	340	330	B	R	B	295	A	A	A	A	A							
6	A	A	B	A	R	A	A	A	A	B	B	B	350	B	B	B	B	B	A	B	B	B	F	R							
7	A	A	A	A	A	B	B	A	A	B	B	B	345	345	360	B	F	R	B	B	B	B	B	A							
8	A	A	A	A	A	B	A	B	B	B	B	F	R	B	B	B	B	R	B	B	B	B	B	A							
9	A	A	R	A	A	A	A	A	A	A	F	F	F	B	C	B	B	P	A	A	A	A	A	A							
10	A	A	C	A	A	F	F	F	A	A	F	F	360	345	365	360	U	F	A	B	B	B	B	A							
11	A	A	A	A	B	B	B	A	B	B	B	B	R	B	B	B	R	F	B	A	A	A	A	B							
12	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	R	B	B	A	A	A	A							
13	A	A	A	A	R	F	F	F	B	B	B	330	R	B	B	A	B	R	B	B	B	B	B	A							
14	A	A	A	A	A	A	F	F	A	B	B	F	F	F	F	F	A	A	A	A	A	A	A	A							
15	A	A	A	A	F	F	F	F	U	F	F	R	F	F	F	F	A	A	A	A	R	A	A	A							
16	A	F	A	F	A	A	A	A	305	320	300	320	305	F	F	F	A	F	F	A	A	F	A	A							
17	A	A	A	A	A	A	A	A	A	F	F	F	F	F	B	B	B	R	B	B	A	A	A	A							
18	A	A	A	A	A	A	B	A	B	A	B	B	R	B	B	B	B	R	B	A	A	A	A	A							
19	C	A	B	C	A	A	A	B	A	A	F	B	345	355	335	F	R	B	B	B	C	B	A	A							
20	A	A	A	A	A	A	A	A	F	F	310	F	325	R	B	R	B	365	F	B	B	A	B	A							
21	A	A	R	A	F	F	F	F	290	270	F	J	F	F	F	J	F	F	A	A	F	F	F	F							
22	A	A	A	A	A	F	F	A	F	F	F	330	345	345	325	365	F	A	350	F	A	C	A	A							
23	A	A	A	A	A	A	A	A	F	F	J	R	F	R	F	F	365	A	330	360	B	B	C	B	A						
24	A	A	A	A	A	F	A	R	A	F	F	J	F	F	F	F	F	F	C	A	C	C	A	A							
25	A	A	A	B	A	A	B	A	B	B	B	B	B	B	B	310	335	320	F	B	B	B	B	A	A						
26	B	B	B	B	B	B	B	F	F	F	295	345	350	F	F	F	A	A	R	R	A	F	A	C							
27	B	B	B	B	B	B	A	A	B	A	295	310	330	350	340	355	F	R	335	370	355	C	B	A							
28	A	A	B	C	R	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C							
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C							
30	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	R	B	B	B	A	A	A							
31																															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23							
CNT								3	3	2	9	10	9	8	8	6	3	1	4	2	1	1									
MED								F	F	F	F	F	345	348	338	358	320	330	342	362	355	355									
UQ								278	298		315	330	350	352	358	365	342		355												
LQ								258	280		295	325	345	345	328	335	315		315												

The Radio Research Laboratories, Japan

JUN. 1976

M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1976

H'F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION	Lat. 69° 00' 4" S.		Long. 39° 35' 4" E		Sweep	MHz to 15 MHz in 30 sec in automatic operation																		
Hour 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
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30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

JUN. 1976

H'F2 (KM)

IONOSPHERIC DATA

JUN. 1976

H'F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S. Long. 39° 35' 4" E		Sweep MHz to 15 MHz in 30 sec in automatic operation																									
Hour 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	B	B	B	R	A	A	R	R	F	240	B	B	B	B	B	R	R	R	B	A	A	A	A					
2	B	B	B	B	B	A	A	A	B	A	B	B	240	B	B	B	R	R	R	B	A	A	B	265					
3	A	B	A	A	B	A	A	A	A	A	A	250	230	225	215	220	240	A	A	A	C	A	A	A					
4	A	A	A	A	B	A	B	B	B	B	C	R	B	B	B	B	R	B	B	B	B	B	B	A					
5	A	B	B	A	B	B	B	B	B	B	B	B	B	250	240	B	R	R	C	A	B	A	A	A					
6	A	A	B	B	R	C	A	A	A	B	B	B	250	B	B	B	R	R	B	B	B	B	A	R					
7	A	A	A	A	A	B	B	B	A	B	B	B	R	225	200	B	180	R	B	B	B	B	B	B					
8	A	A	B	B	A	B	A	B	B	B	B	250	B	B	B	B	R	R	B	B	B	B	B	A					
9	A	A	A	A	A	A	A	A	B	A	A	245	230	B	C	B	B	R	B	A	A	A	A	A					
10	A	A	C	A	A	340	380	F	320	A	A	250	240	200	200	200	240	200	A	B	B	B	B	A					
11	A	A	A	A	B	B	B	A	B	B	B	B	R	B	B	B	B	A	B	A	A	A	A	B					
12	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	R	B	B	A	A	A	A					
13	A	A	A	A	A	A	A	A	B	B	B	B	250	R	B	B	B	R	B	B	B	B	B	A					
14	A	A	A	A	A	A	A	A	A	B	B	B	B	210	200	220	210	A	A	A	A	A	A	A					
15	A	A	A	A	F	F	A	C	A	C	260	255	205	225	200	200	A	A	A	A	A	A	A	A					
16	A	F	A	C	A	A	A	A	A	300	275	250	250	240	210	220	220	A	290	F	A	A	A	A					
17	B	A	A	A	A	A	A	A	A	A	305	260	240	245	255	B	B	B	R	R	B	A	A	A					
18	A	A	A	A	A	B	B	B	B	B	B	B	B	R	B	B	B	R	R	A	C	A	A	A					
19	C	A	B	C	A	A	A	B	A	A	305	B	225	205	B	240	C	R	B	B	C	B	A	A					
20	A	A	A	A	A	A	C	A	A	430	F	325	280	240	B	B	250	B	F	A	250	B	B	A	U	F	280		
21	A	A	R	A	A	F	A	F	E	A	330	F	C	245	225	U	F	220	200	210	180	A	A	C	C	A	C	A	F
22	A	A	A	A	A	F	F	A	C	C	200	240	200	220	230	215	215	A	225	C	A	C	A	C					
23	A	A	A	A	A	A	C	C	F	U	F	C	255	210	215	200	220	200	A	E	A	A	B	B	C	B	A		
24	A	A	A	A	A	F	A	A	C	300	220	230	230	215	200	F	A	C	C	C	C	C	A	A					
25	A	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	250	250	R	R	B	B	B	A	A				
26	B	B	B	B	B	B	B	R	290	A	220	195	200	215	200	220	A	A	R	R	A	A	A	C					
27	B	B	B	B	B	B	A	A	B	B	A	C	300	260	230	225	200	F	R	C	E	C	C	B	A				
28	A	A	B	B	B	B	B	B	B	B	B	B	R	P	B	B	C	C	C	C	C	C	C	C					
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C					
30	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	R	B	B	B	A	A	A					
31																													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT					1	1	1	3	4	8	12	15	16	15	15	11	6	3	1	1	1			2					
MED					F	F	F	F	A	E	C	245	225	U	F	220	200	210	180	A	A	C	C	A	C	A	F		
UQ					345	340	380	320	315	298	250	240	228	215	220	220	218	280	225	E	C	C							
LQ								360	380	302	258	250	240	225	228	230	250	285											
								305	295	273	230	228	212	200	200	205	200	258											

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H'F (KM)

IONOSPHERIC DATA

JUN. 1976

H[°]E S (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA STATION		Lat. 69° 00' 4" S		Long. 39° 35' 4" E		Sweep		MHz to 15 MHz		in 30 sec		in automatic operation														
Hour	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		K 105	K 105	100	115	100	K 100	K 100	K 110	K 120	150	130		R	R	B	B	B	R	B	B	140	145	110	105	
2		100	100	110	B	100	100	K 150	K 115	120	130		B	B	R	B	B	B	R	B	B	140	100	B	K 110	
3		K 110	B	K 110	105	100	100	100	95	100	110	110	115	K 130	115	150	120	K 145	K 130	120	105	110	105	110	100	
4		100	100	100	100	130	100	120	B	100	B	120	B	B	B	B	B	B	B	R	B	B	B	B	K 125	
5		K 100	K 105	B	K 110	115	B	100	100	105	100		B	B	B	B	B	B	R		150	120	110	115	105	105
6		120	K 160	K 105	100	100	100	105	110	105		B	R	R	R	B	B	B	R	R		130	B	B	B	K 150
7		105	K 100	K 105	100	100	100	100	100	100		B	B	B	R	B	B	B	R	R	B	B	B	B	B	120
8		100	K 155	K 150	100	105	105	100		B	B	B	B	115	B	B	B	B	R		115	R	B	B	B	100
9		100	130	K 130	100	120	100	100	100	100	100	100	105	110	B	C	B	B	R		115	110	110	105	145	K 125
10		K 110	K 110	125	105	100	110	K 140	100	100	100	100	100	100	100	100	100	100	100	B	B	B		105	B	140
11		K 110	105	105	K 130	115	150		R	K 150										120		K 100	100	100	110	130
12		100	100	100	K 110	125	100	105	100	100	100		R	R	R	B	B	B	R	R	B	B	125	110	145	140
13		130	K 140	100	K 140	K 100	K 90	100	100		B	B	B	B	R	B	B	B	115	B	110	B	B	B	B	140
14		K 110	100	110	125	105	K 130	K 100	110	100	140		R	B	100	115	140	115	150	K 105	K 105	100	100	110	K 120	K 115
15		110	125	120	100	130	140	125	100	105	100	100	100	100	100	125	105	100	100	100	100	105	100	100	100	95
16		105	130	100	110	100	100	100	100	100	95	100	120	100	100	140	115	100	125	100	100	120	100	95	95	
17		130	105	105	100	100	100	105	100	95	100	150	100	90	100	B	B	B	B	R	B	155	K 120	110	105	
18		100	100	100	100	105	90	B	100	B	100		B	B	R	B	B	B	R	R		130	125	120	140	100
19		125	105	100	110	110	110	100	100	100	100	110		B	110	100	B	100	125	R	B	B	C	B	105	100
20		K 110	K 175	K 100	105	100	100	110	105	110	K 100	110	110		R	B	B	B	100	130	B	B	105	130	150	K 140
21		105	K 105	K 110	K 120	K 105	100	90	100	115	100	100	130	100	100	100	100	140	125	120	C	100	100	150	140	
22		125	125	105	K 120	105	120	120	110	105	100	145	100		C	105	110	B	105	100	120	100	130	130	155	125
23		125	K 115	120	105	100	100	100	105	105	110	110	105	165	100	100	100	130	100	100	B	B	110	B	K 130	
24		120	125	110	100	130	100	100	110	105	150	150	100	110	100	100	100	100	90	C	120	150	100	100	K 100	
25		110	105	105	100	90	100	B	110	B	B	B	B	R	B	B	B	B	R	R	B	B	B	B	100	100
26		105	100	B	100	R	B	100	K 110	K 120	100	150	130	135	G	G	G	K 105	115	150	K 145	K 100	95	105	100	
27		105	100	105	110	110	B	95	90	K 115	100	100	115		R	B	B	B	120	R	140	125	C	C	B	155
28		105	105	120	100	B	B	R	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C
29		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30		K 150	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	130	110	105	105
31																										
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT		29	27	26	27	26	24	24	25	22	20	16	14	12	11	10	10	14	14	12	12	18	20	20	28	
MED		110	105	105	105	105	100	100	100	105	100	110	108	105	100	105	100	112	112	120	108	115	108	110	112	
UQ		120	125	110	110	115	108	108	110	110	110	138	115	120	110	140	115	130	125	135	122	130	118	142	135	
LQ		105	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	102	100	100	100	102	100	

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JUN. 1976

H[°]E S (KM)

IONOSPHERIC DATA

JUN. 1976

TYPES OF ES

0
45 E Mean Time (G. M. T. + 3 h)

Station **SYOWA** STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep MHz to 15 MHz in 30 sec in automatic operation

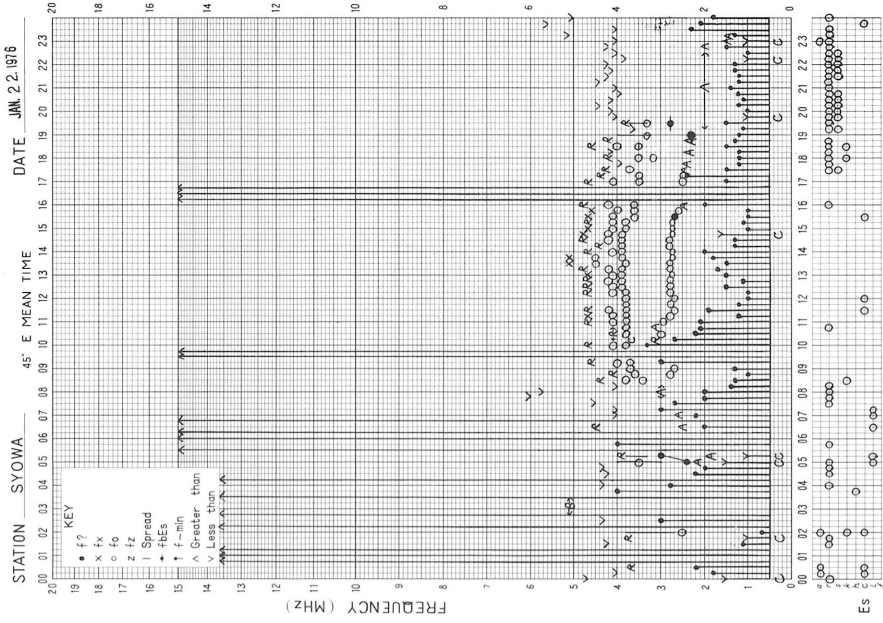
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	K3	R2	R1	R1	R2	RK31	K3	K1	K1	HA11	H1										R1	RR11	R5	R5	
2	R2	R2	R1		R1	R2	HK11	CK21	F1	R1											R1	FR11		RK11	
3	K6		RKA15	R2	RR11	R2	R3	R2	R1	R2	C1	C1	HK11	C1	H1	CA11	HK11	HAK11	R1	R2	R3	R2	R2	RA21	
4	R2	RA21	RF21	RA11	AR11	R2	RA11		R1		R1													CK11	
5	KA51	R1		KA21	AR11		R1	R1	R1	L1									F1	RA11	R2	RA31	RA31	RA51	
6	R3	AK12	R1	R2	R1	R2	R3	R2	R3										F1				F1	K1	
7	R1	RK35	CK21	R1	R2	R1	R1	R1	R2						R1		R1							R1	
8	R4	HK11	AR12	R1	R2	R1	R1					R1							F1					R2	
9	R4	RF21	HK22	RA31	R1	R3	R1	R1	R1	R2	L1	R1	R1						F1	R1	R1	R1	RR11	HK11	
10	CAK21	F1	F1	FA31	FFA11	RA11	HAK11	BA21	R2	RA11	RA11	C1	C1	C1	L1	L2	R1	F1				F1		R1	
11	K2	RS51	RA21	HKS11	R1	F1		RK12											R1		K2	RS31	RS51	RS31	RA11
12	R5	RA31	R3	KA61	RF31	R3	R2	R2	R1	R1											R1	R5	R1	R2	
13	R3	HKA12	R3	HK12	LK13	LK13	F1	FA11								C1			F1					R1	
14	K1	R5	R1	R1	K1	HKL15	LK13	RA11	R1	R1			L1	C1	AC11	C1	A1	K2	CK11	F3	R3	R1	HK21	HK11	
15	R1	R2	RA11	RA11	RR21	AF11	RF11	RA11	RA11	R1	CA21	CA11	AL11	H1	C1	R2	F2	F3	F1	F1	F1	R1	F2	FF11	
16	R6	RR11	R3	F1	FA31	R2	RS31	R2	R2	LA21	LR11	R1	L1	L1	AL11	C1	R1	RF11	R1	R2	R1	R2	F2	F1	
17	R1	R5	R2	R3	R3	R4	RS41	R2	R1	RA11	R1	RA11	L2	R1							HK11	R1	R3	R3	
18	R5	RF31	R3	R2	R2	F1		R1		R1										F1	R1	R1	R1	RS61	
19	FF1	R4	R1	R1	RS	R2	RS	R1	RA51	R2	C1		C1	C1		L1	F1						FR11	RA11	
20	RK11	RK11	R4	R4	F2	R3	R1	R3	RK11	L1	CB5	C1						F1	AF11		F1	FA11	R1	RK11	
21	R1	RK12	K1	R4	CK11	F1	F1	F1	R1	C1	C1	H1	L1	L1	LA11	L1	R1	R1	R1		FA11	F1	R1	A1	
22	R2	R2	R3	RK11	R1	RA11	R2	R3	C2	CA11	AC11	C1		C1	R1		F1	F2	R1	F1	R1	F1	RA11	R1	
23	R1	CK11	F1	F4	R2	RS11	RS11	RA11	RA11	RA11	CA11	CA11	HL11	L1	C1	L1	F2	F1	F1			F1		HK11	
24	R1	R2	R1	RF21	RF13	RA11	RA11	F1	RA11	AR11	AR11	RA11	A1	RA11	L2	L2	R3	FR11		RF21	R1	R5	RS41	RK13	
25	RA51	RA41	RS	R2	R1	R2		R1															R4	R3	
26	R2	R1		R1		F1	K1	RK11	LC11	H1	C1	H1					K3	R3	F1	K1	LHK11	F1	R1	RA41	
27	R1	R1	R2	R2	R1		R2	R1	KR11	R1	R1	R1					K1		F1	R1				F1	
28	R4	R5	R1	R2																					
29																									
30	CK11																					R1	BSA21	R4	RS41
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

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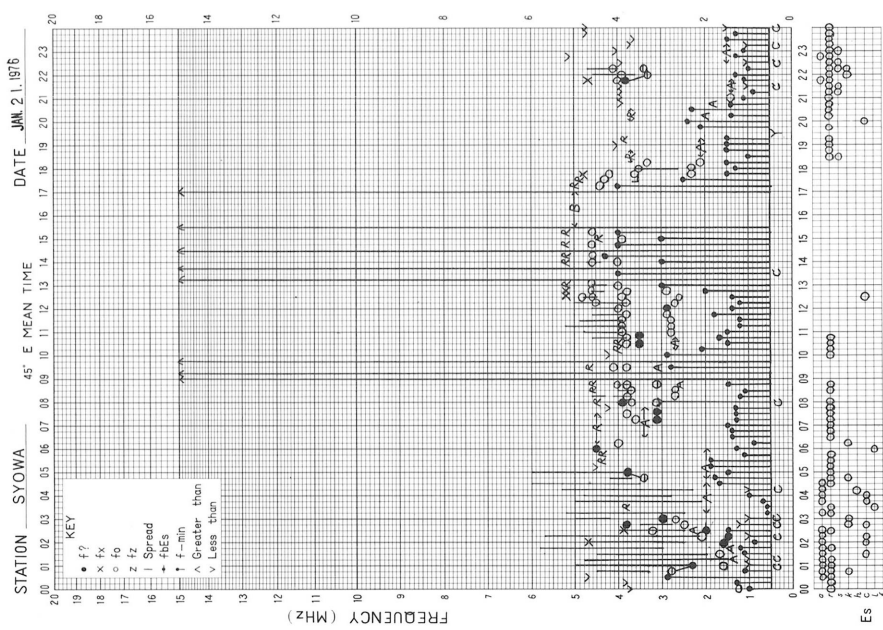
JUN. 1976

TYPES OF ES

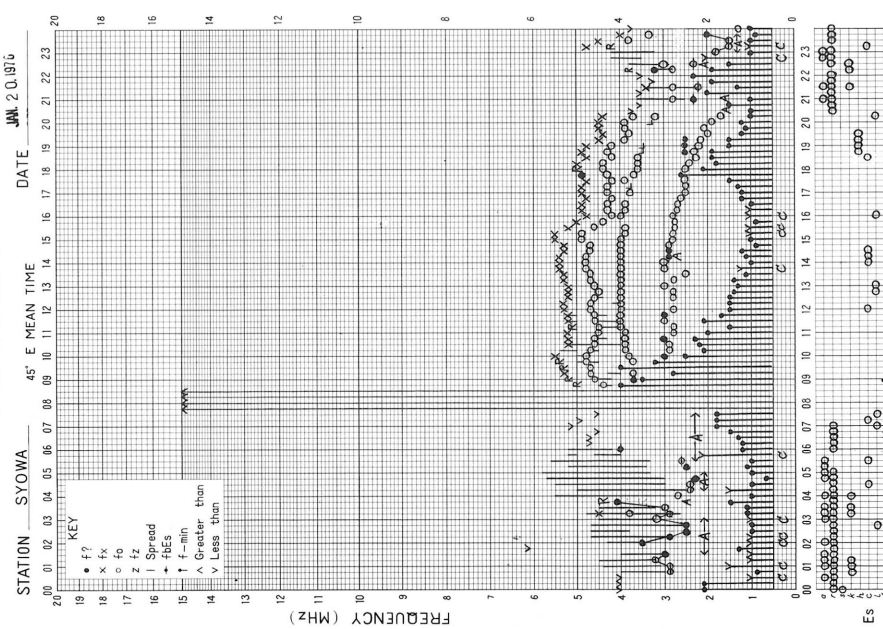
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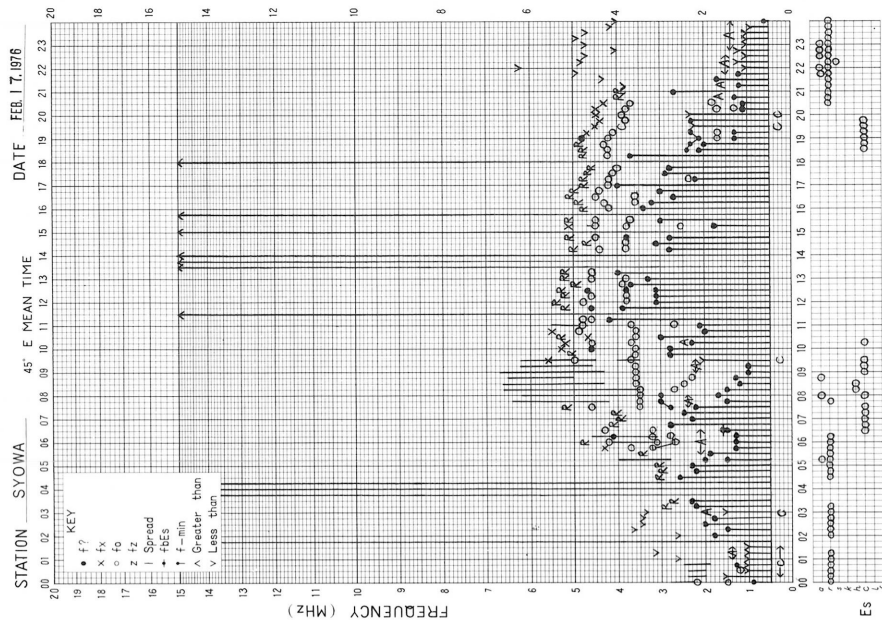
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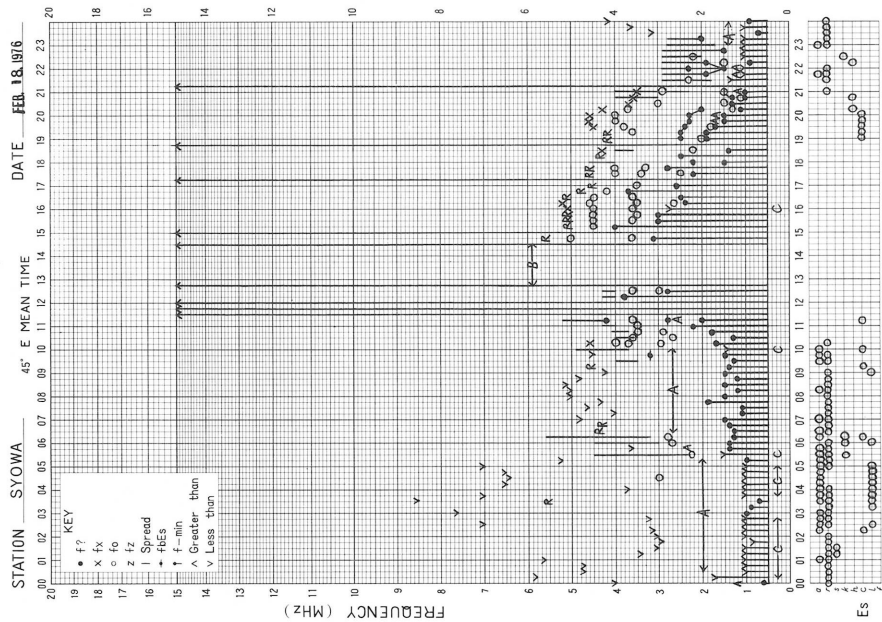
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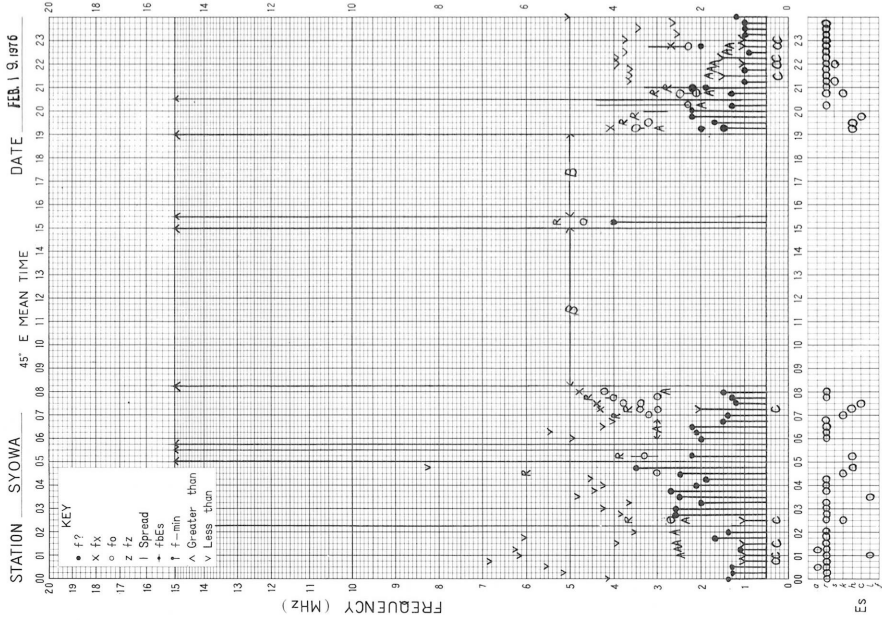
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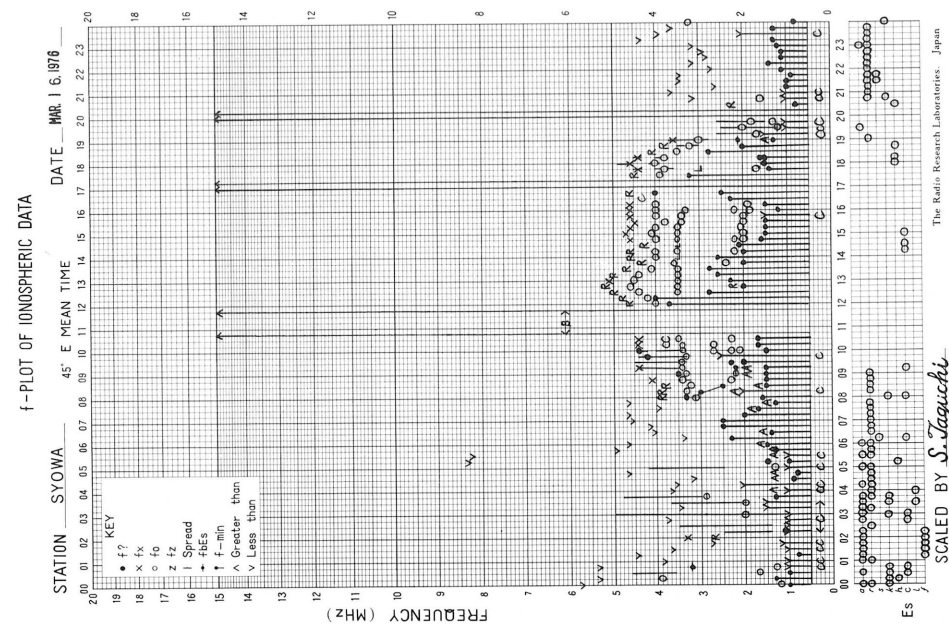
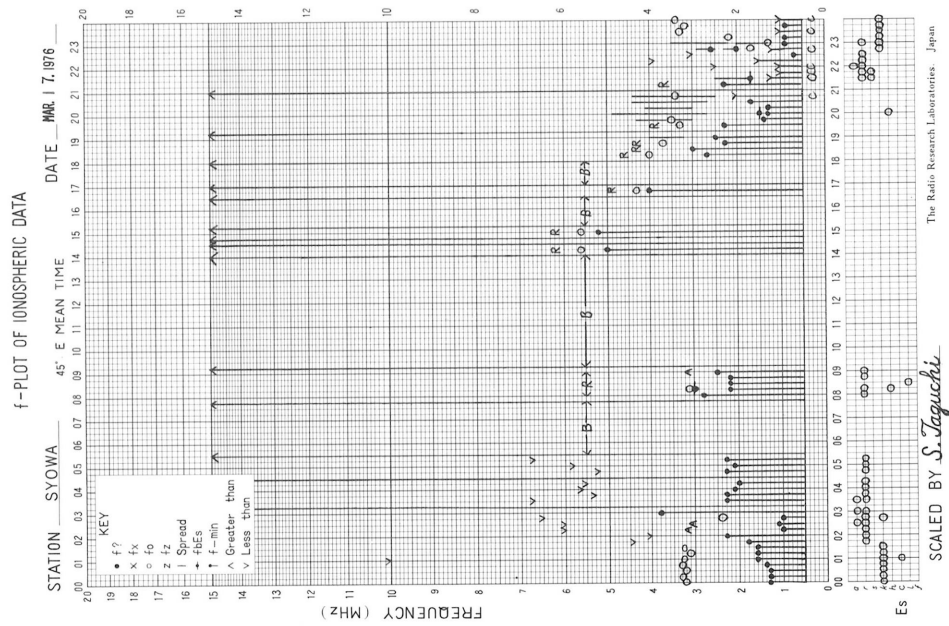
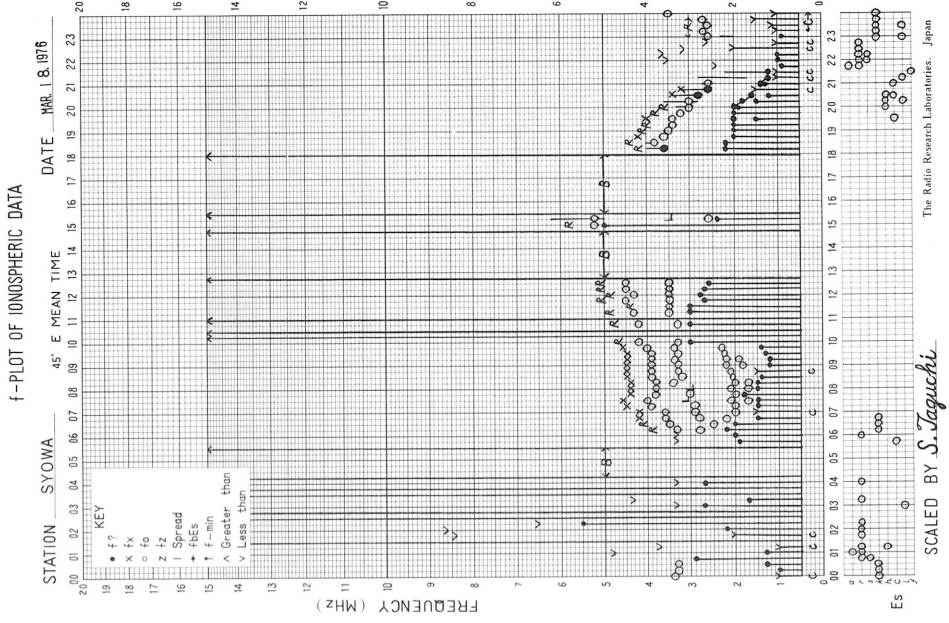


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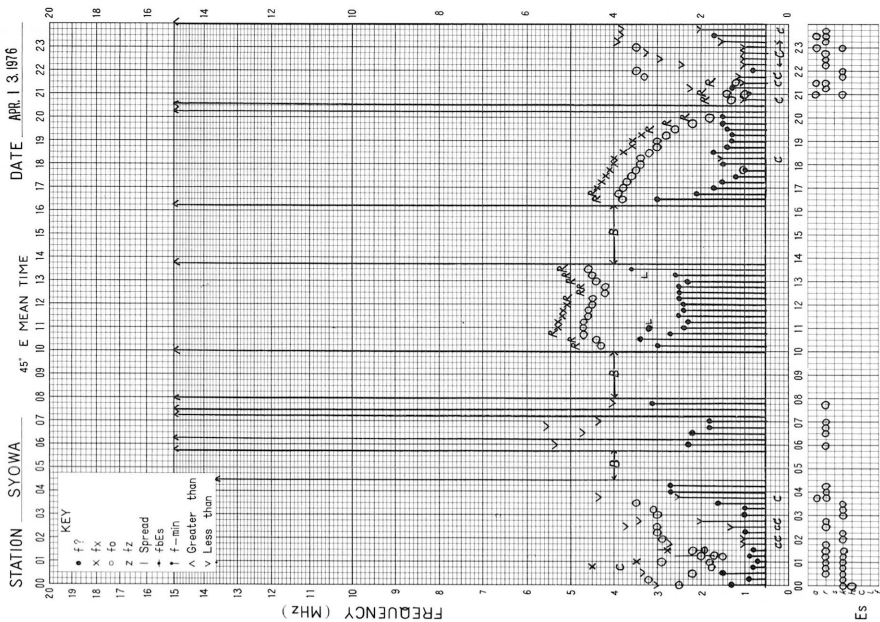


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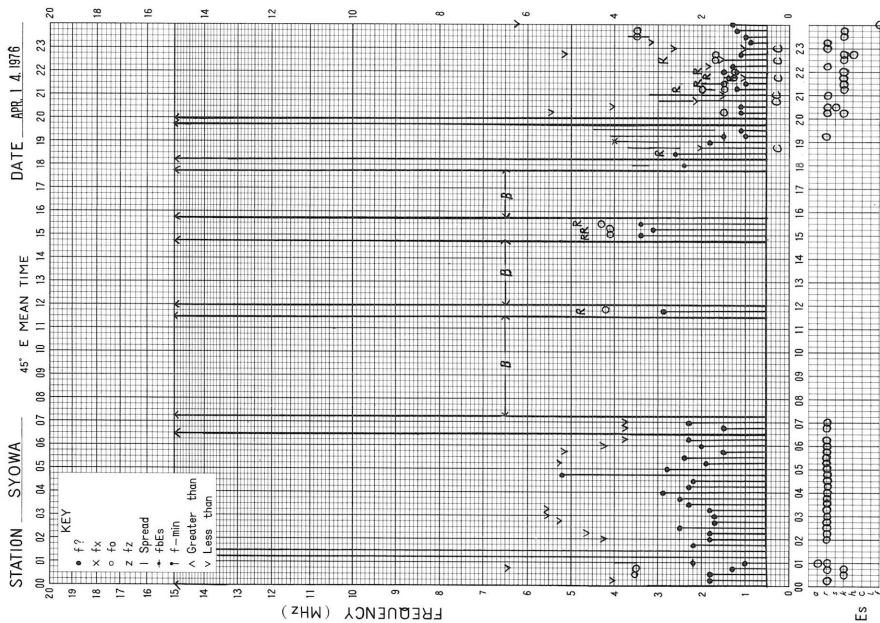




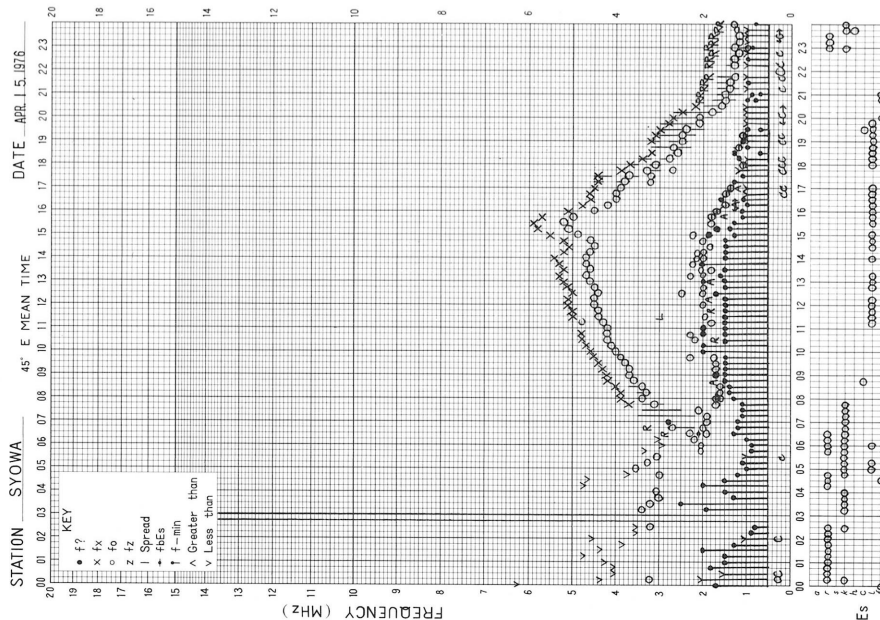
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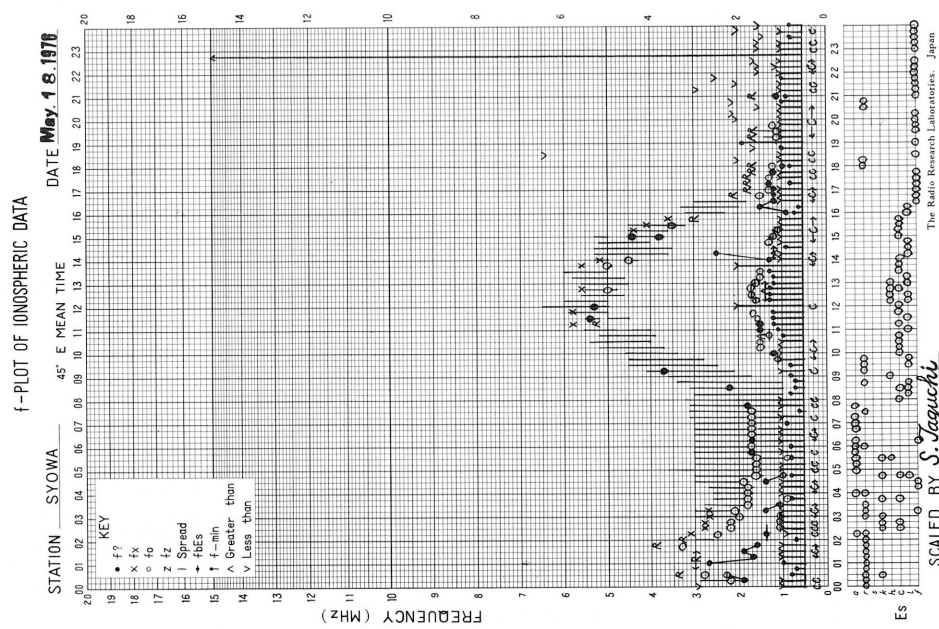
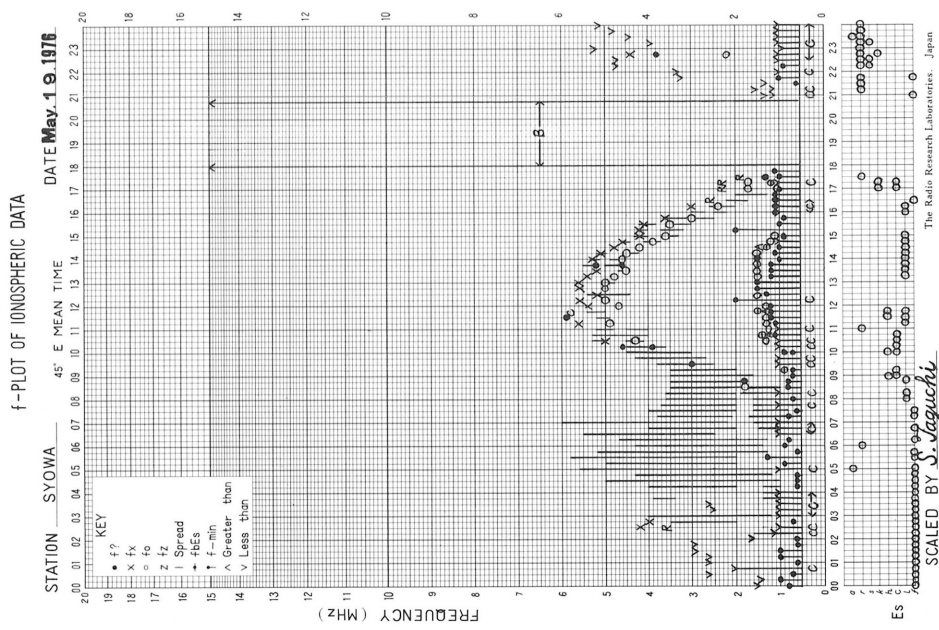
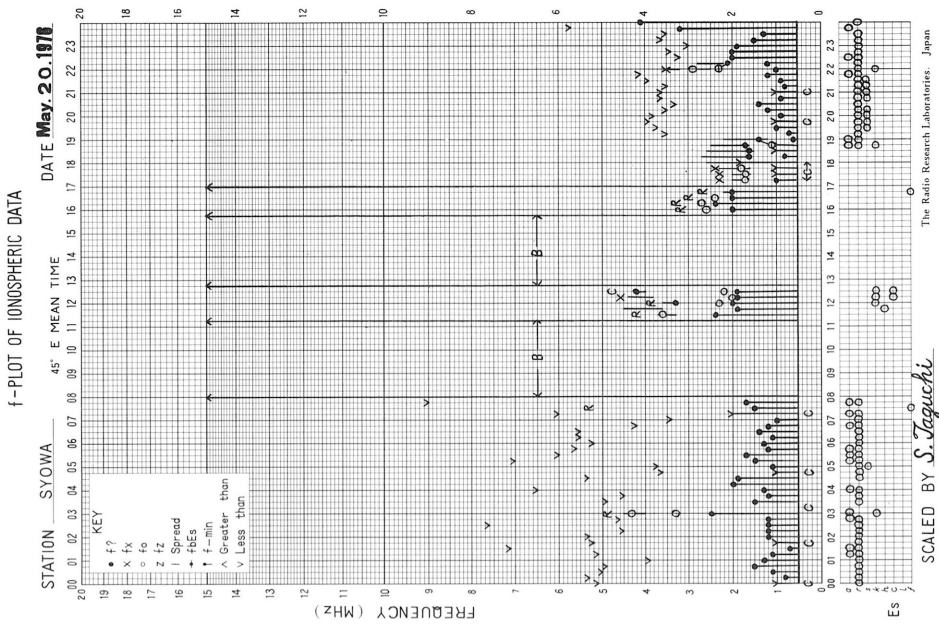


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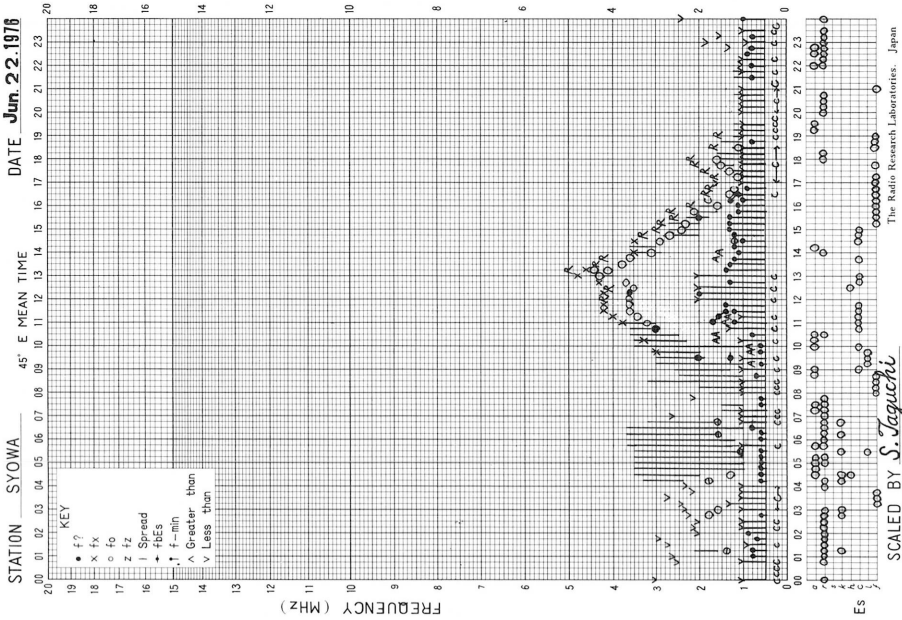


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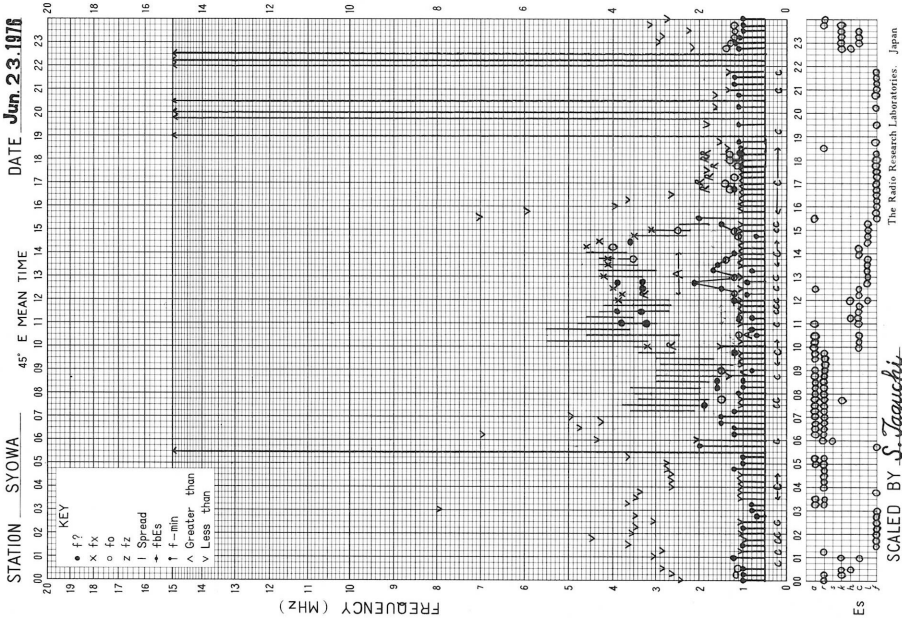




f-PLOT OF IONOSPHERIC DATA



f-PLOT OF IONOSPHERIC DATA



f-PLOT OF IONOSPHERIC DATA

