ION. ANT.—20

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)

January 1973-June 1973

CONTENTS

RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

PREFACE

Vertical soundings of ionosphere at Syowa Station, Antarctica, have been carried out through the sponsorship of the Polar Research Center, National Science Museum, Ministry of Education and the data have been prepared at the Radio Research Laboratories.

LOCATION OF SYOWA STATION

Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
69°00.4'S	39°35.4'E	69.6°S	77.1°E

MAIN CHARACTERISTICS OF THE IONOSONDE USED AT SYOWA STATION

Item	Specification
Frequency Range	500 kHz ~ 15 MHz
Transmitting Power	10 kW (peak value)
Duration of Sweep	30 sec
Transmitted Pulse Width	100 μsec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power 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 running
Power Supply	100 Volt AC, 2.5 KVA
Transmitting Antenna	25 m height vertical delta terminated by 600Ω
Receiving Antenna	25 m height vertical delta terminated by 600Ω

SYMBOLS AND TERMINOLOGY

All symbols and terminology in the table of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction," 1961.

Terminology

f_0F2
f_0F1
f_0E — The ordinary wave critical frequency for the *F2*, *F1* and *E* layers respectively.

f_0Es — The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.

f-min — That frequency below which no echoes are observed.

M(3000)F2 — The maximum usable frequency factor for a path of 3000 km for transmission by *F2* layer.

h'F2 — The minimum virtual height of the ordinary wave trace for the highest stable stratification in the *F* region.

h'F — The natural and most significant *F* region virtual height parameter is that for lowest *F* region stratification. This will be denoted by *h'F*. Thus *h'F* is identical with the current *h'F2* when *F* region stratification is absent, e.g., at night, and with the current *h'F1* when *F1* stratification is present.

h'Es — The lowest virtual height of the trace used to give the f_0Es.

a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

A — Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.

B — Measurement influenced by, or impossible because of, absorption in the vicinity of *f*-min.

C — Measurement influenced by, or impossible because of, any nonionospheric reason.

D — Measurement influenced by, or impossible because of, the upper limit of the normal frequency range. Used in a qualifying sense, see below.

E — Measurement influenced by, or impossible because of, the lower limit of the normal frequency range. Used in a qualifying sense. see below.

F — Measurement influenced by, or impossible because of, the presence of spread echoes.

G — Measurement influenced or impossible because the ionization density is too small compared with that of a lower thick layer.

H — Measurement influenced by, or impossible because of, the presence of a stratification.

L — Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot readily be interpreted, for example, in the presence of oblique echoes.

O Measurement refers to the ordinary component.

R Measurement influenced by, or impossible because of, absorption in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

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 Intermittent trace.

Z Third magneto-ionic component present.

b. Qualifying Symbols

Used as a preceeding symbol on monthly tabulation sheets.

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.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

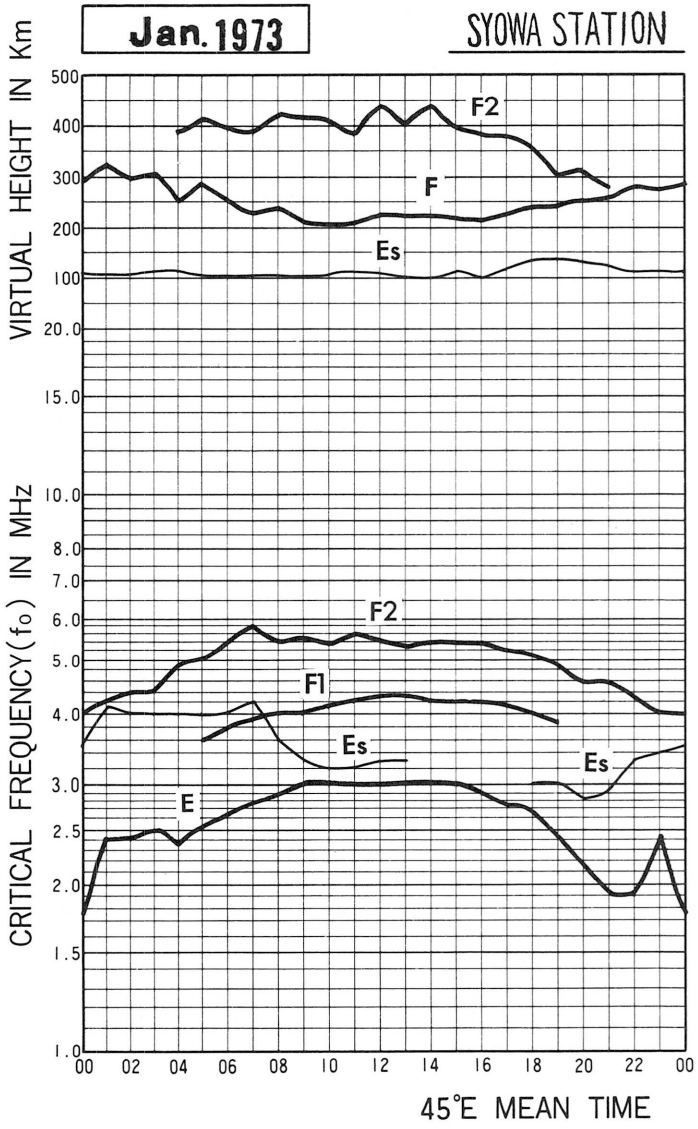
U Uncertain or doubtful numerical value.

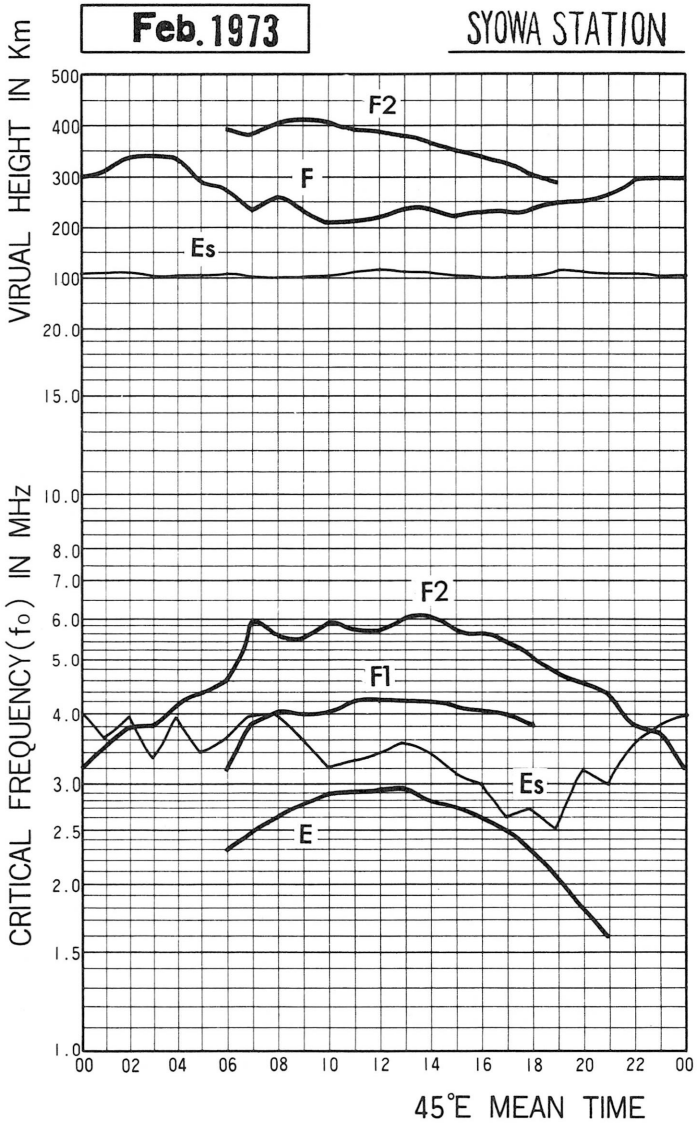
Z Measurement deduced from the third magnetoionic component.

c. f-plot

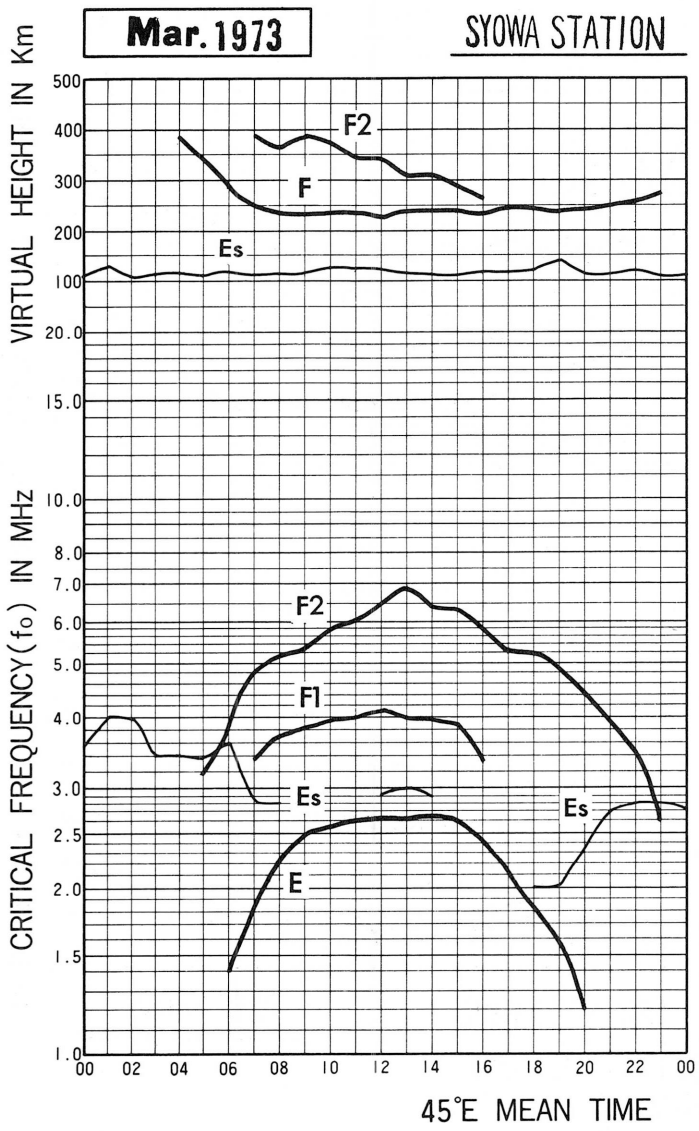
f-plots of ionospheric data are illustrated only the periods of the Regular World Days of every month.

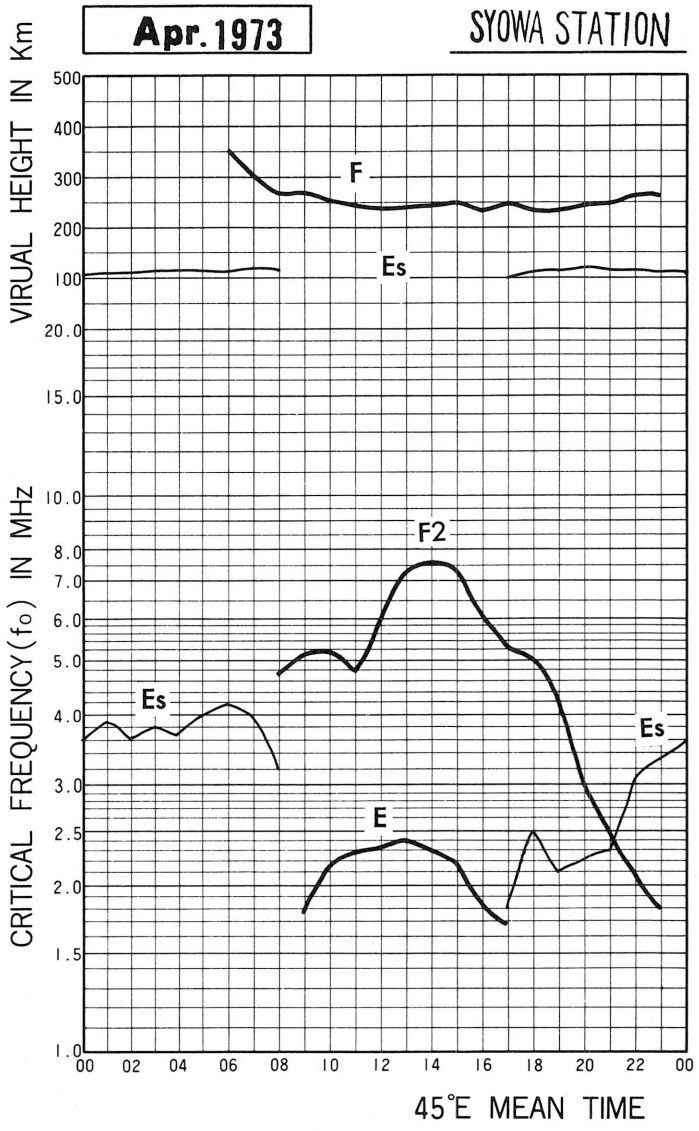
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



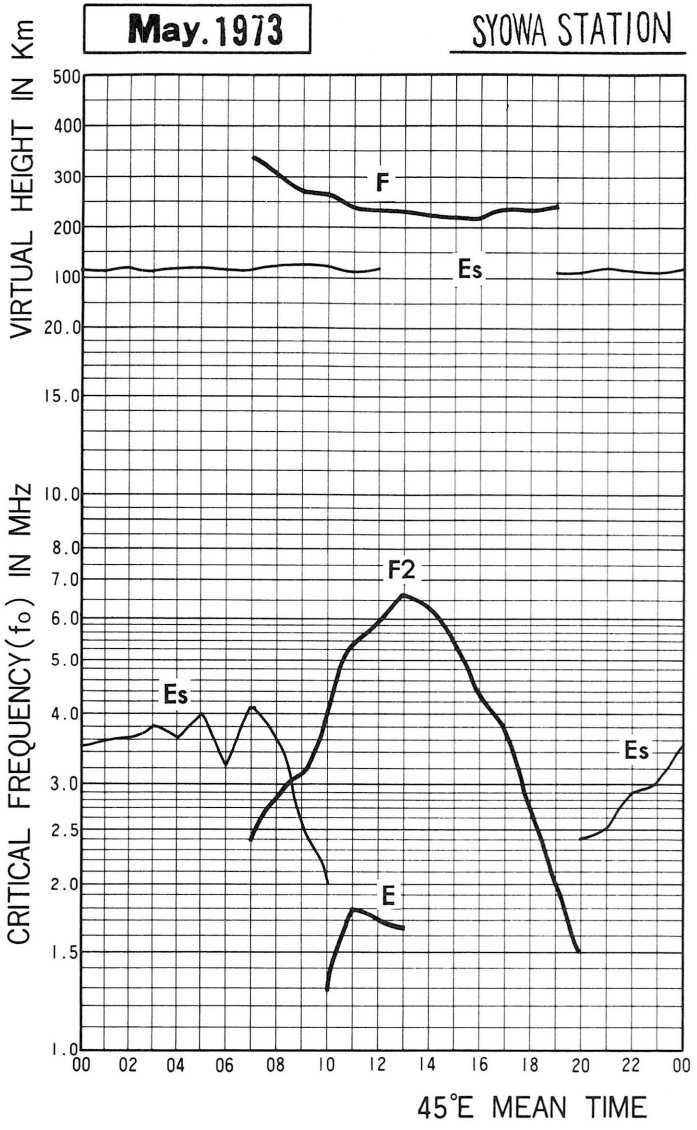


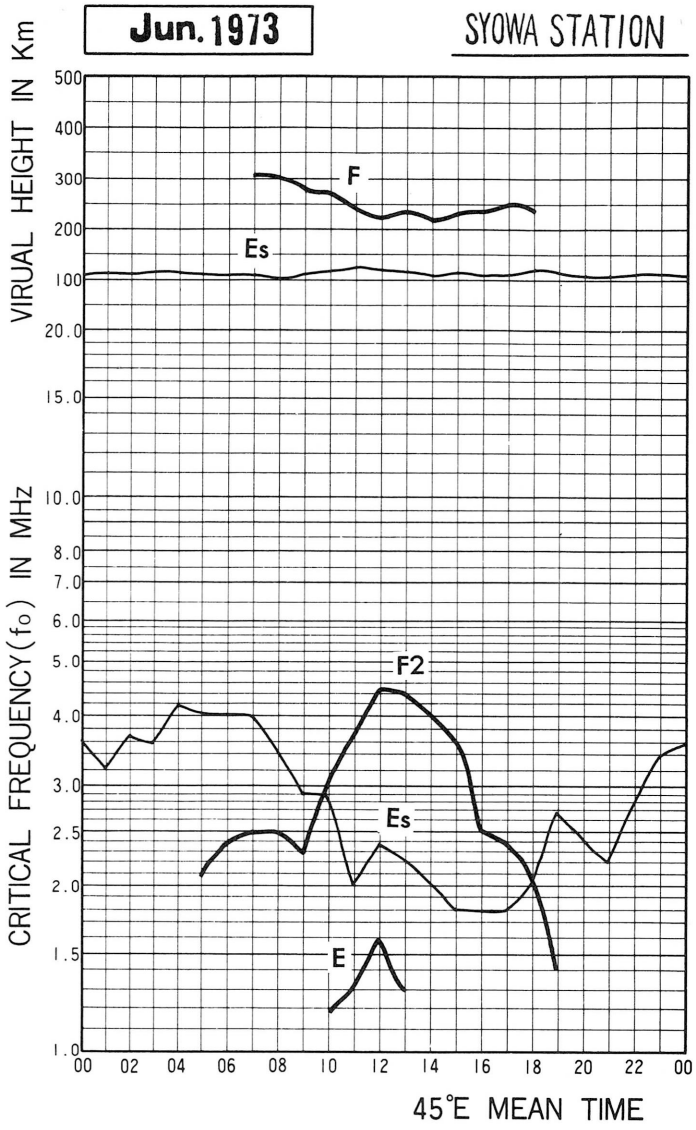
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA

JAN. 1973 | 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 40	F 42	A	R	R	B	46	R	R	B	R	R	F 51	I R 53	53	56	U R 50	50	50	50	46	48	43	F 43
2	F 41	F 45	F 45	F 46	F 48	F 51	F 62	F 67	F 72	69	68	67	63	57	55	55	55	F 57	56	52	55	52	53	48
3	50	55	58	F 58	62	J F 73	F	F 73	F 74	F 70	72	72	75	71	64	A	55	56	57	60	59	F 58	53	F 49
4	54	56	52	J F 47	A	U F 46	F 52	F 56	U F 56	U F 68	F 68	F 65	F 59	F 61	F 70	H 53	55	60	64	F 60	F	A	R	F 45
5	F	A	F 40	F 39	F	F	A	U F 45	F 51	F 51	F 53	F 54	F 50	U F 46	F 48	F 54	F 56	54	F 52	51	R	A	A	A
6	F	A	A	A	R	R	R	R	R	U R 43	F 46	F G 42	E G 42	E G 42	R 46	51	52	F 52	57	44	48	F 46	F 41	F 40
7	F 40	B	A	44	F 45	F 53	F 60	B 65	U F 65	U F 59	J F 66	J F 69	J F 59	F 53	56	56	F 61	F 59	50	48	E G 33	40	43	37
8	48	I R 41	F 44	B	F 42	F 51	F 54	R	44	F 50	F 53	54	58	F 60	64	71	U F 73	F 53	F 47	F	48	F 44	47	F 40
9	J F 35	F 40	F 44	46	F	R	F 46	47	U R 50	F 51	F 54	F 57	58	59	57	U R 53	55	F 52	52	45	F 50	F 50	F 46	R
10	U F 44	A	F	R	B	R	R	A	B	R	R	F 45	F 47	52	B	U R 61	R	A	F 46	F 50	45	F 39	42	F 39
11	F 39	A	A	B	B	B	F	B	B	R	F 44	B	B	52	55	F 66	U F 54	46	I R 44	F 45	F 38	40	F 44	A
12	U F 40	F	B	R	R	R	R	R	B	R	51	R	F	58	F 64	R 69	F 59	B	45	47	40	F 41	F 44	F 41
13	F 39	A	A	A	B	A	R	F 46	F 47	F 49	F 52	52	52	R 50	53	52	52	52	R	R	F 43	45	F 39	43
14	R 37	F 41	45	B	R	R	R	B	B	R	F	F 58	55	56	53	51	52	52	51	49	52	56	52	41
15	F 37	43	43	R	R	R	J R 62	F 63	63	F	F	F	F	F 57	F 55	59	F 61	57	F 54	53	53	F	R	F 35
16	44	A	A	40	41	F 50	F 59	F 58	B	F 53	U F 51	F 53	F	F 57	58	53	50	54	52	47	50	53	41	F
17	A	A	A	U R 42	R	R	F 44	F 49	F 54	F 60	60	60	58	56	57	55	F 54	53	52	54	54	50	F	F 35
18	F 40	F 43	F 47	F 50	U F 51	F	F	U F 58	F 65	F 71	F 66	69	F 66	64	62	53	F 51	56	51	F 49	50	F 51	50	F 49
19	53	53	F 57	B	U R 53	F	F	F 76	F 78	F 76	72	70	F 72	68	64	F 60	F 57	F 54	53	F 51	B	A	J F 45	A
20	F	F 37	A	A	F	A	R	R	R	R	R	E G 40	E G 40	E G 40	F 42	F 47	F 50	F 48	I R 44	F 45	42	36	A	A
21	F 32	A	A	F	B	R	A	R	R	R	R	B	B	B	B	B	F	R	U F 52	F 50	F 45	A	F 35	F 34
22	36	F 37	F 40	A	A	F 41	R	R	F 50	F 55	F 50	47	47	50	51	55	56	F 51	F 50	49	53	47	42	40
23	35	40	U A 39	F 46	R 50	F	A	F 57	F 53	F 58	F 65	61	54	50	54	J F 63	F	F	U F 52	F 40	J A 42	43	A	A
24	F 35	A	A	A	F	R	R	A	R	R	R	R	R	F 47	F 46	52	54	51	F 43	E G 40	F 39	U A 36	U F 35	A
25	F 33	A	A	F 34	B	F 44	R	R	U F 56	J F 55	F 47	F 48	53	52	54	B	U R 59	F 53	R	B	45	46	40	F 36
26	A	A	A	B	B	R	B	B	A	R	F	F 46	F 46	47	49	50	51	51	47	45	46	A	A	A
27	A	A	B	38	A	A	R	A	A	B	B	B	B	B	R 44	F 50	48	F 46	R	A	35	A	A	A
28	A	A	A	F 37	B	B	R	A	R	B	R	R	B	B	50	52	48	B	R	R	41	F 39	I A 35	F 31
29	B	B	B	A	B	B	R	R	F 44	B	B	B	R	R	U R 47	B	B	F 47	40	B	F 37	F 21	R	A
30	A	R	A	F	B	A	B	R	R 44	F 50	F 47	B	B	B	R	54	B	B	50	F 47	39	F 41	F	A
31	B	B	A	A	A	A	A	A	A	F 46	F 50	R	F 49	47	F 48	I R 49	49	50	46	F 45	48	46	F 28	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	21	13	12	13	8	8	9	13	17	18	20	20	21	26	28	27	26	25	27	25	28	24	21	18
MED	F 40	F 42	F 44	F 44	49	F 50	F 54	F 58	F 54	F 55	F 53	56	54	53	54	54	54	52	51	49	46	46	43	F 40
UQ	F 44	45	50	F 46	52	F 52	F 60	F 65	F 65	F 68	F 66	66	59	58	58	58	F 56	54	52	51	50	50	46	F 43
LQ	F 36	F 40	F 42	39	F 44	F 45	F 46	F 49	F 50	F 50	F 50	48	49	50	48	52	51	51	46	45	40	40	40	F 36

JAN. 1973 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1973 | 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	390	A	A	B	410	410	420	I B 420	420	B	B	410	I R 400	L 370	L	L		
2			L	330	350	380	380	F 390	400	410	420	430	430	440	440	430	420	410	L 400	L	L	L		
3			L	310	340	F 380	F 390	400	410	410	420	440	430	450	A	A	L 420	430	L	L 390	L	L		
4				L	A	A	F 380	F 390	390	400	410	420	I A 440	440	430	430	440	430	400		F 350	A		
5						F 370	I A 370	390	400	400	410	420	420	430	410	420	420	420	400	U L 400	A			
6					A	A	A	U R 390	A	R	420	R 420	420	420	420	R 420	420	400	400					
7					A	F 380	390	I B 400	410	F 420	420	430	450	450	430	420	420	420	U L 390	400	330	L		
8					F 330	340	A	A	410	410	420	440	430	420	420	420	400	410	F 410	R	360			
9						A	380	400	I A 400	400	420	420	420	B	B	B	B	410	400	L	L	L		
10					B	A	R	A	B	400	400	410	410	B	B	B	B	B		L	A			
11					B	B	F 380	B	B	F 410	410	B	B	U R 430	R 420	420	410		410	U F 400				
12					A	A	A	A	B	R 400	I B 410	I B 420	420	I B 420	R 430	430	R	B	400	L				
13					B	A	R	390	410	H 420	410	410	420	420	440	430	420	410	400	F 390	L	L		
14					A	A	F 370	B	B	R	410	B	R	430	U R 420	R	430	410	L	L	L	L		
15						A	380	400	B	R	420	430	440	450	450	I B 450	420	L 410	420	L	L			
16					A	F 330	380	390	B	410	410	420	430	440	I R 430	450	420	410	L	L	L	L		
17					A	A	380	380	390	400	410	410	440	440	440	410	420	410		L	L	L		
18				L	330	L	F 360	380	420	420	430	H 430	430	440	440	430	L	H 410	L	L	L	L		
19					B	R	R	390	400	420	430	430	440	440	I A 440	430	L	L	420	L	B	A		
20						A	R	A	A	A	400	400	400	400	400	F 400	F 400	400	400	L				
21						F 350	F 380	R	R	R	R	B	B	B	B	B	400	390	390	360				
22						F 360	390	380	390	400	410	410	430	420	430	420	420	L 410						
23					A	A	A	F 390	F 410	400	410	420	440	430	F 410	F 410	390	F 390						
24						A	A	A	R	F 410	410	I R 410	420	410	410	R 400	400	400	F 400	400	L			
25					B	F 340	R	A	U R 390	F 400	410	410	420	420	410	B	B	400	F	B				
26						A	B	B	A	400	400	400	400	420	410	420	400	I B 410	380	L 350	L			
27						A	A	A	A	B	B	B	B	B	410	410	F 410	400	350	A				
28						B	A	A	R	B	410	410	B	B	U R 410	410	390	B	360	340				
29						B	A	A	390	B	B	B	R 400	410	410	B	B	F 400	370	B				
30							B	A	A	390	390	B	B	B	U R 400	420	B	B	390	340				
31						A	A	A	A	390	410	410	430	430	420	430	F 420	400	L		L			
	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	4	9	15	15	15	22	28	25	25	25	27	23	22	25	21	11	3			
MED				320	335	F 360	380	390	400	400	410	420	430	430	420	420	420	410	400	390	350			
UQ					345	F 380	385	395	410	410	420	430	430	440	430	430	420	410	400	400	355			
LQ					330	F 340	380	390	390	400	410	410	420	420	410	415	400	400	390	355	340			

The Radio Research Laboratories, Japan

JAN. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JAN. 1973 | 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	305	A	A	A	A	B	A 300	A	A	B	A	310	300	I B 300	300	B	B	290	275	I B 245	220	A 190	A	A
2	160	A 180	130	A	230	H 250	A	290	270	285	295	290	295	I A 300	310	I A 300	290	285	265	235	A 210	A	A 130	120
3	140	A 130	A 140	170	240	H 230	260	275	295	300	305	310	A 295	A	A	A	A	280	270	250	210	B	A	A
4	A	A	A 250	240	A	A	A	A 250	280	290	310	300	270	I A 310	A 310	290	270	290	A	A 260	A	A	A	A
5	A	A	A	F 290	A	F 220	A	A	280	280	280	310	300	H 310	300	280	I A 290	270	270	I A 245	A	A	A	A
6	A	A	A	A	A	A	A	A	A	A	U R 290	300	305	310	B	B	A 300	B	275	B	B	200	A	310
7	A	B	A	A	A	315	A	B	A	A	A	300	A 300	A 300	I A 300	300	I A 295	290	265	A	R	200	A 215	A
8	A	B	A	B	250	F 280	A	A	A	300	300	290	310	310	300	300	280	275	250	A	220	190	190	290
9	A	A	300	280	A	A	A	A	A	300	290	300	B	B	B	B	B	275	260	B	A 230	200	190	A
10	A	325	A 230	A	B	A	A	A	B	310	315	300	A	B	B	B	B	B	270	F 250	210	A	A	A
11	A	A	B	B	B	B	A	B	B	315	310	B	B	A	310	300	290	K 285	B	A	A	210	370	330
12	A	B	B	B	A	A	A	A	B	B	B	B	305	B	B	B	A	B	290	240	A 350	350	365	325
13	320	A	B	A	B	A	B	A	A	310	300	290	300	B	310	310	I B 290	265	290	240	210	200	200	A
14	A	300	350	B	A	A	A	B	B	B	A	B	305	B	B	300	295	270	270	245	225	200	A	A
15	130	H 260	A	A	A	A	A	320	B	A	A 310	A 310	310	A 310	305	B	A	280	250	250	210	185	B	F 200
16	175	B	B	A	A	A	260	A	B	305	315	320	300	H 305	I B 300	300	I B 290	R 270	265	H 230	210	190	290	A
17	A	A	B	B	A	A	A	255	280	290	I A 300	300	320	310	305	300	290	285	B	255	220	170	170	B
18	A 130	A	A	A	185	220	250	270	300	300	300	305	300	I A 295	300	300	290	280	270	250	H 220	A	A	A
19	A	F 150	A	B	A	B	B	270	I B 285	295	300	320	310	A	A	A 300	290	270	250	230	B	A	A	A
20	A	A	A	A	A	A	A	A	A	A	A	300	300	310	290	290	275	270	B	230	A	A	A	A
21	A	B	A	A	B	A	A	A	A	B	A	B	B	B	B	B	A	B	B	250	225	A	230	190
22	230	240	A	B	A	A	A	A	300	300	290	295	300	300	295	290	280	250	250	240	230	170	125	120
23	220	A	A	A	R	A	A	F 280	280	290	300	290	300	295	A 295	295	280	270	270	230	210	A	A	A
24	A	A	A	A	A	A	A	A	A	A	A	A	A	305	300	I B 290	280	B	230	330	190	A	A	A
25	A	A	A	A	B	265	A	A	290	290	295	300	300	295	A	B	B	270	A	B	230	190	140	A
26	A	A	B	B	B	A	B	B	A	A	A	315	310	300	305	R 305	R 295	B	260	B	B	A	A	A
27	A	B	B	250	A	A	A	A	A	B	B	B	B	B	270	275	270	250	A	A	A	A	A	A
28	A	A	A	A	B	B	A	A	R	B	290	300	B	B	B	280	280	B	265	B	H 225	A	A	A
29	B	B	B	A	B	B	A	A	300	B	B	B	R 300	300	295	B	B	250	225	B	200	200	A	A
30	A	A	A	B	B	A	B	B	A	H 280	270	B	B	B	B	U R 260	B	B	B	210	215	170	A	A
31	B	B	B	A	B	A	A	A	A	A	300	290	290	275	I A 280	280	260	A	A 230	200	190	H 170	A 170	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	9	7	6	5	4	7	4	8	11	17	21	23	23	19	20	21	21	22	23	21	22	17	13	8
MED	175	240	240	250	235	250	260	272	285	300	300	300	300	300	300	300	290	272	265	245	218	190	190	245
UQ	230	280	300	280	245	272	280	285	298	300	305	310	305	310	305	300	290	285	270	250	225	200	230	318
LQ	140	165	A 140	240	208	225	255	262	280	290	290	298	300	300	295	290	280	270	250	230	210	185	170	155

The Radio Research Laboratories, Japan

JAN. 1973 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JAN. 1973 | 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

Day \ 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
1	J X 35	J X 61	42	40	42	B	35	45	35	B	35	G	G	E B 46	71	E B 50	E B 49	J X 57	J X 70	31	G	J X 27	J X 23	J X 31
2	J X 34	J X 51	22	J X 40	G	29	J X 61	J X 33	31	31	33	34	35	J X 33	J X 33	J X 34	34	33	G	J X 34	32	J X 26	J X 29	J X 24
3	19	J X 24	J X 26	24	27	J X 25	J X 27	J X 33	33	J X 64	33	39	J X 66	83	D	D	J X 80	30	J X 65	30	30	E B 23	J X 42	J X 63
4	J X 40	J X 40	37	26	J X 57	J X 51	42	G	G	G	G	J X 34	J X 76	J X 50	52	33	J X 37	30	J X 50	J X 34	36	J X 52	J X 39	J X 47
5	J X 96	J X 47	34	29	J X 49	J X 33	J X 62	J X 62	30	G	G	G	36	G	G	31	J X 34	J X 29	33	28	39	J X 79	J X 57	J X 46
6	J X 35	J X 61	82	J X 44	J X 39	43	39	36	44	37	G	G	G	G	E B 36	E B 41	35	29	39	41	30	J X 57	29	32
7	42	J X 82	45	37	33	35	32	E B 50	51	44	32	35	33	37	J X 33	35	J X 31	G 27	G	36	G	G	30	23
8	J X 26	35	J X 33	B	32	45	J X 64	44	37	J X 68	G	G	G	G	J X 125	G	32	G	31	31	G	26	28	30
9	J X 33	26	31	G	42	40	38	36	42	G	G	33	E B 37	E B 47	E B 50	E B 47	E B 49	G	31	E B 29	J X 35	J X 30	J X 26	J X 36
10	J X 35	J X 47	36	J X 34	J X 99	40	36	75	B	G	G	G	33	E B 45	B	E B 60	E B 60	J X 119	J X 71	J X 60	J X 62	J X 112	32	40
11	30	J X 61	J X 57	B	B	B	32	B	B	34	37	B	B	33	G	G	G	33	J X 36	35	29	29	52	J X 65
12	39	E B 39	B	40	40	J X 41	J X 46	45	B	E B 36	E B 46	E B 48	G	E B 50	E B 36	E B 34	35	B	G	31	J X 36	36	38	38
13	33	47	J X 45	49	B	J X 50	33	J X 44	42	G	G	G	34	E B 36	G	G	E B 32	G	G	30	27	30	26	32
14	26	J X 35	58	J X 62	40	43	30	B	B	38	35	F B 44	G	E B 36	E B 34	32	35	G	G	G	34	J X 29	21	J X 26
15	G	38	J X 38	43	J X 40	43	41	G	E B 57	34	35	34	G	33	32	E B 47	32	G	G	G	G	J X 23	33	30
16	29	J X 42	45	37	36	31	32	42	75	33	34	G	32	G	E B 35	G	E B 32	G	G	G	G	G	31	32
17	J X 80	41	J X 61	29	35	J X 39	28	G	G 26	G	35	G	G	G	G	G	G	G	E B 37	28	G	G	23	E B 18
18	30	J X 28	J X 36	24	22	25	J X 43	J X 43	G	G	G	G	38	43	G	G	G 25	31	30	G	G	22	19	J X 26
19	J X 26	J X 26	24	B	30	28	31	G	E B 32	G	G	40	35	J X 51	J X 64	J X 70	J X 69	28	J X 31	J X 30	B	J X 46	J X 41	44
20	40	J X 83	51	J X 43	40	45	34	45	53	41	34	36	34	36	34	G	29	G	E B 30	J X 64	34	35	J X 37	J X 89
21	44	35	40	J X 87	J X 68	35	J X 66	29	39	39	35	B	B	B	B	B	31	E B 34	29	28	33	39	34	26
22	27	31	27	40	45	J X 71	J X 59	38	39	G	33	35	32	31	G	32	31	G	G	G	G	J X 50	19	18
23	J X 30	J X 39	J X 62	40	G	39	J X 54	37	G	G	33	40	J X 92	J X 30	33	J X 63	30	36	J X 39	J X 41	J X 60	J X 27	38	42
24	J X 84	37	50	J X 52	J X 80	45	40	J X 60	J X 36	46	38	33	33	32	G	E B 38	G	E B 38	G	39	J X 22	36	J X 89	J X 52
25	J X 119	J X 44	36	30	B	J X 30	35	42	J X 32	G	32	34	J X 63	40	39	B	E B 56	G	34	B	31	24	J X 24	34
26	41	44	40	J X 86	B	40	B	B	51	40	33	G	36	G	G	33	G	E B 45	30	29	28	J X 35	36	J X 46
27	47	46	B	J X 62	45	55	45	55	45	B	B	B	B	B	30	33	G	G	29	40	J X 30	D	56	82
28	35	43	53	J X 35	B	B	40	J X 98	G	B	G	32	B	B	E B 37	G	G	B	G	E B 27	26	36	39	34
29	B	B	B	J X 37	B	B	40	40	G	B	B	B	G	35	31	B	B	G	G	B	26	G	37	J X 84
30	46	23	35	B	B	J X 64	J X 95	41	37	J X 33	G	B	B	B	E B 37	G	B	B	E B 27	29	G	21	J X 35	J X 39
31	B	B	40	J X 42	41	53	43	44	45	35	G	32	G	33	29	G	30	J X 57	J X 33	30	G	29	20	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	29	28	27	24	27	30	28	27	27	29	26	26	27	29	28	29	28	31	29	30	31	31	31
MED	35	J X 41	40	40	40	40	40	42	36	33	32	32	33	U 33	E G 33	E G 33	31	E G 28	30	30	28	29	33	34
UQ	J X 42	J X 47	50	J X 44	45	45	J X 46	45	44	38	34	34	36	U 40	U 35	U 38	34	U 32	34	34	34	38	38	J X 46
LQ	30	35	34	32	32	34	33	34	29	G	G	G	G	30	G	G	E G 29	G	G	28	G	24	26	30

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JAN. 1973 | FOES (0.1 MHz)

IONOSPHERIC DATA

JAN. 1973 | 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	26	10	12	24	B	10	24	15	B	25	19	15	46	27	50	49	23	27	25	11	9	11	12
2	13	12	9	9	10	9	8	9	8	9	9	9	10	10	10	10	9	10	9	9	9	9	8	7
3	7	7	8	8	8	9	9	9	10	10	9	10	10	11	13	12	E C 14	11	12	10	11	23	9	10
4	9	9	8	9	21	10	11	9	9	9	10	9	9	9	10	9	10	10	9	12	9	11	E C 20	10
5	9	7	9	8	13	8	26	12	9	9	8	10	10	9	9	14	10	E C 15	13	10	14	8	8	9
6	9	8	14	20	12	10	10	20	21	10	10	16	10	29	36	41	20	31	25	31	26	12	9	9
7	7	48	20	11	11	10	9	50	11	10	10	9	10	9	9	10	10	14	13	10	15	11	11	11
8	9	30	12	B	10	10	11	20	15	10	10	11	10	10	25	10	12	27	15	9	11	10	9	10
9	9	9	10	26	21	20	11	E C 12	15	10	10	23	37	47	50	47	49	14	12	29	14	12	14	20
10	8	9	8	15	80	15	10	16	B	28	21	20	21	45	B	60	60	51	17	18	10	10	10	14
11	E C 17	10	24	B	B	B	9	B	B	9	11	B	B	30	30	24	21	22	30	10	10	10	10	10
12	10	39	B	20	22	19	25	26	B	36	46	48	19	50	36	34	14	B	27	25	9	10	9	10
13	15	14	33	18	B	13	28	12	14	12	9	10	12	36	15	11	32	13	E C 25	9	15	9	8	9
14	8	10	17	50	22	26	14	B	B	31	26	44	20	36	34	26	13	12	16	10	10	11	9	8
15	8	9	13	22	25	12	10	9	57	16	14	16	20	10	21	47	22	21	15	14	13	14	21	8
16	10	30	37	12	20	10	10	10	64	19	9	22	20	20	35	26	32	24	18	13	15	10	12	14
17	12	11	22	26	21	14	10	9	12	10	10	12	20	19	20	14	20	15	37	25	21	14	9	18
18	11	12	10	13	9	10	9	20	28	15	21	14	13	13	10	10	11	11	10	14	11	13	14	10
19	10	9	9	B	21	25	28	20	32	12	11	10	16	13	11	10	9	9	9	E C 15	B	10	9	9
20	10	11	11	9	9	20	16	20	20	25	22	14	14	27	15	9	13	20	30	14	9	8	E C 11	10
21	8	30	10	14	55	9	10	14	25	27	13	B	B	B	B	B	25	34	26	21	10	9	8	10
22	10	8	21	27	15	13	15	19	11	15	15	10	10	11	12	15	15	11	14	12	12	9	7	8
23	17	10	13	12	24	14	E C 22	10	10	9	10	10	10	9	9	10	10	16	9	10	9	8	8	9
24	9	9	11	7	16	20	10	10	13	14	22	20	25	12	12	38	24	38	15	9	15	8	9	10
25	9	15	9	12	B	10	25	11	14	10	10	13	13	13	20	B	56	23	13	B	10	14	10	9
26	11	10	27	62	B	14	B	B	21	20	20	26	18	9	22	26	28	45	25	25	25	13	10	11
27	10	19	B	8	15	22	16	25	12	B	B	B	B	B	26	11	18	10	9	10	10	10	12	15
28	8	10	11	8	B	B	21	13	20	B	26	12	B	B	37	23	15	B	13	27	14	9	9	10
29	B	B	B	18	B	B	21	15	10	B	B	B	27	22	19	B	B	11	16	B	13	15	10	11
30	13	14	9	B	B	14	86	31	13	10	19	B	B	B	37	17	B	B	27	16	20	13	8	8
31	B	B	32	14	26	20	14	15	11	E C 15	10	10	10	13	10	12	10	14	12	16	10	8	9	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	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	10	11	12	14	21	14	11	15	15	13	11	14	16	19	20	17	18	16	15	14	11	10	9	10
UQ	12	22	23	26	68	20	22	22	26	26	22	24	23	40	34	40	30	29	25	25	15	12	10	11
LQ	9	9	10	10	14	10	10	10	11	10	10	10	10	10	12	10	11	12	12	10	10	9	9	9

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JAN. 1973 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1973 | 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 305	F 285	A	R	R	B	265	R	R	B	R	R	F 255	I R 270	265	265	R	285	280	315	310	315	300	F 325
2	F 295	F 300	F 300	F 280	F 280	F 260	F 270	F 270	F 270	260	280	280	290	300	285	290	280	F 310	315	325	325	320	320	315
3	300	285	280	F 275	275	J F 265	F	F 260	F 290	F 270	280	265	285	295	300	A	305	300	300	300	320	F 340	330	F 305
4	305	305	305	J F 285	A	F	F 260	F 260	F	F	F 265	F 270	F 260	F 245	F 300	H 245	260	265	300	F 305	F	A	R	F 275
5	F	A	F 285	F 310	F	F	A	F	F 260	F 255	F 255	F 280	F 260	F	F 255	F 260	F 280	295	F 290	290	R	A	A	A
6	F	A	A	A	R	R	R	R	R	R	F 260	G	G	G	R 230	R	255	F 275	315	320	335	F 295	F 295	F 300
7	F 275	B	A	295	F 265	F 270	F	R 245	F	F	F	J F 285	J F 280	F 250	270	260	F 275	F 320	300	270	G	300	350	290
8	315	R	F 290	B	F 250	F 255	F 240	R	R	F 270	F 260	265	250	F 255	265	250	U F 235	F 255	F	F	330	F 340	325	F 285
9	F	F 275	F 275	255	F	R	F 220	270	R	R	F 255	F 270	260	280	265	U R 285	265	F 265	275	320	F 310	F 300	F 315	R
10	U F 250	A	F	R	B	R	R	A	B	R	R	F 230	F 230	225	B	R	R	A	F 325	F 285	295	275	F 305	F 265
11	F 245	A	A	B	B	B	F	B	B	R	F 225	B	B	260	235	F 260	U F 235	325	R	F 290	F 290	325	F 295	A
12	A	F	B	R	R	R	R	R	B	R	255	R	F	270	F 240	R 260	F 215	B	295	310	255	F 295	F 320	F 290
13	F 255	A	A	A	B	A	R	F 230	F 235	F 255	F 265	275	240	R	270	250	255	255	R	R	F 270	310	F 305	320
14	R 295	F 295	300	B	R	R	R	B	B	R	F	F 290	255	270	275	255	285	275	275	270	295	295	325	315
15	F 305	295	265	R	R	R	J R 275	F 285	255	F	F	F	F	F 275	F 260	290	F 280	305	F 290	300	290	F	R	F 335
16	300	A	A	255	255	F 265	F 260	F 250	B	F 255	U F 270	F 285	F	F 270	300	275	300	290	300	305	300	315	305	F
17	A	A	A	U R 310	R	R	F 255	F 260	F 260	F 270	265	280	260	270	285	290	F 295	280	290	315	305	320	F	F 300
18	F 300	F 300	F 290	F 290	U F 275	F	F	U F 250	F 260	F 275	F 260	270	F 280	290	305	290	F 260	320	305	F 305	320	F 315	305	F 305
19	300	285	F 285	B	U R 275	F	F	F 260	F 270	F 275	270	270	F 280	310	295	F 300	F 300	F 315	300	F 285	B	A	F	A
20	F	F 275	A	A	F	A	R	R	R	R	R	G	G	G	F 205	F 240	F 235	F 235	R	F 300	315	330	A	A
21	F 280	A	A	F	B	R	A	R	R	R	R	B	B	B	B	B	F	R	F	F 300	F 305	A	F 295	F 295
22	305	F 285	F 295	A	A	F 270	R	R	F 240	F 260	F 255	250	225	275	255	280	300	F 315	F 310	295	315	325	315	315
23	285	300	A	F 275	R 255	F	A	F 270	F 280	F 250	F 275	F 285	265	255	230	J F 245	F	F	U F 295	F 320	A	315	A	A
24	F 285	A	A	A	F	R	R	A	R	R	R	R	R	F 240	F 220	275	275	290	F 265	G	F 305	A	F	A
25	F 290	A	A	F 245	B	F 270	R	R	U F 260	J F 265	F 240	F 250	255	255	240	B	U R 270	F 275	R	B	330	300	320	F 290
26	A	A	A	B	B	R	B	B	A	R	F	F 230	F 255	245	245	280	280	280	275	305	315	A	A	A
27	A	A	B	290	A	A	R	A	A	B	B	B	B	B	R	F 255	245	F 240	R	A	A	A	A	A
28	A	A	A	F 230	B	B	R	A	R	B	R	R	B	B	255	260	240	B	R	R	295	F 310	J A 295	F 290
29	B	B	B	A	B	B	R	R	F 235	B	B	B	R	R	R	B	B	F 280	225	B	F 305	F 325	R	A
30	A	R	A	B	B	A	B	R	R 275	F 250	F 235	B	B	B	R	275	B	B	290	F 330	335	F 295	F	A
31	B	B	A	A	A	A	A	A	A	F 260	F 300	R	F 250	R	F 260	R	300	305	325	F 310	315	285	F 285	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	19	12	11	13	8	7	8	12	13	14	19	20	21	23	26	24	25	25	23	25	26	23	19	18
MED	F 295	F 290	F 290	F 280	270	F 265	F 260	F 260	F 260	F 260	F 260	270	255	270	262	262	275	285	295	305	308	315	305	F 300
UQ	302	300	F 298	F 290	275	F 270	268	F 270	F 270	F 270	F 270	F 280	F 265	275	285	282	285	305	302	315	320	322	320	F 315
LQ	F 282	F 285	F 282	F 255	255	F 262	F 248	F 250	F 255	F 255	F 255	250	250	248	240	255	255	F 275	285	290	295	298	298	F 290

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JAN. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JAN. 1973 | 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	450	A	R	B	R	R	420	R 400	430	B	B	380	R 350	295	L	L		
2			L	350	355	420	360	350	350	335	340	330	330	340	380	350	350	310	280	L	260	L		
3			L	330	330	340	330	330	300	345	330	350	325	320	300	A	310	330	L	300	270	230		
4				L	A	A 550	410	395	450	420	370	360	400	A 425	330	280	400	380	300		540	A		
5						F	A	A	430	450	460	380	470	R	610	445	370	345	340	L	R			
6					A	A	A	R	A	R	450	G	G	G	R 600	R	460	400	300					
7					405	400	380	490	370	400	370	345	390	480	400	420	370	295	325	405	G	L		
8					455	440	450	R	R	430	440	400	420	390	380	400	430	450	F 440	F	300			
9						R	580	420	A	R	450	380	440	380	R 375	375	R 425	400	390	L	L	L		
10					B	A	R	A	B	R	R	580	580	565	B	B	B	A		L	A 330			
11					B	B	F	B	B	R	605	B	B	445	520	390	500		R	L				
12					A	A	A	A	B	R	R 505	B	430	400	450	420	550	B	370	L				
13					B	A	R	555	550	480	430	405	450	R	420	500	460	450	R	R	L	300		
14					A	A	R	B	B	R	390	375	430	400	400	490	375	395	L	L	L	280		
15						A	360	380	B	R	375	365	340	395	440	355	350	295	360	L	L			
16					A	410	380	425	B	450	F 425	400	430	365	325	400	355	345	L	L	L	275		
17					A	A	460	430	425	355	390	350	410	380	355	355	345	375		295	L	250		
18				300	340	350	410	A 390	370	335	380	350	350	345	325	350	L	300	L	L	L	L		
19					B 380	R 400	370	360	330	330	350	350	340	300	320	325	L	L	350	L	B	A		
20						A	R	A	A	R	R	G	G	G	L	525	500	510	R	L				
21						R	A	R	R	R	R	B	B	B	B	B	R	R	360	310				
22						455	R	R	495	400	440	505	600	430	480	375	325	300						
23					450	400	A	360	375	420	355	350	420	480	530	430	375	380	330					
24						A	R	A	R	A	R	R	R	510	615	430	380	360	450	G	L			
25					B	410	R	A	425	410	545	500	450	440	490	B	B	375	R	B				
26						A	B	B	A	R	R	540	510	500	500	400	400	380	380	305	L			
27						A	A	A	A	B	B	B	B	B	R	490	490	520	R	A				
28						B	A	A	R	B	R	R	B	B	475	450	500	B	R	R				
29						B	A	A	575	B	B	B	R	R	500	B	B	400	615	B				
30							B	R	420	450	540	B	B	B	R	390	B	B	360	245				
31						A	A	A	A	450	360	R	490	R	475	R	350	330	L		L			
	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	11	12	12	14	16	22	21	24	23	26	23	23	24	17	8	6	5		
MED				330	380	410	395	392	422	415	408	380	430	400	435	400	380	378	360	302	315	275		
UQ				340	428	430	450	428	450	450	450	500	480	480	500	438	460	400	380	358	540	280		
LQ				315	348	400	365	360	370	350	370	350	395	380	375	365	352	330	330	295	270	250		

JAN. 1973 | H'F2 (KM)

IONOSPHERIC DATA

JAN. 1973 | 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	350	380	A	A	A	B	300	A	A	B	215	200	200	I B 215	225	B	B	260	A 230	240	230	240	260	250
2	270	310	260	270	290	240	240	230	200	210	H 200	210	240	200	210	195	200	200	240	225	235	220	240	230
3	250	H 250	250	245	250	215	245	220	225	205	200	230	200	200	A	A	200	205	230	240	240	230	230	A 245
4	255	250	280	230	A	A	300	220	220	230	240	210	I A 240	230	230	210	220	240	E A 280	280	380	A	A	A 400
5	A	A	340	320	A	250	A	A	220	240	220	245	220	200	220	240	225	235	230	240	A	A	A	A
6	320	A	A	A	A	A	A	A	A	A	200	200	190	230	B 250	I B 230	230	B 250	250	A 250	260	255	350	330
7	A 350	B	A	355	A	350	250	B	250	210	190	220	230	205	200	230	220	205	220	A	250	255	250	245
8	260	B	345	B	250	300	A	A	A 280	200	220	200	190	235	H 205	220	230	275	240	A	250	245	240	330
9	A	A 310	350	400	A	A	A	A 260	I A 260	200	200	H 190	250	B	B	B	B	220	240	230	250	240	250	A
10	A	A	A	A	B	A	A	A	B	E R 260	H 225	H 210	230	B	B	B	B	B	245	A 250	A	A	325	A
11	A	A	A	B	B	B	250	B	B	210	210	B	B	R 250	225	220	230	240	250	340	300	270	355	A
12	A	B	B	A	A	A	A	A	B	230	B	B	210	I B 220	230	230	A	B	260	245	480	390	320	395
13	460	A	A	A	B	A	R	A	280	210	H 195	205	200	220	230	220	210	230	280	220	245	280	295	295
14	300	340	340	B	A	A	255	B	B	A	230	B	R	240	205	220	200	205	220	255	A 270	250	245	270
15	250	325	A 380	A	A	A	A	255	B	R	R	200	H 200	200	205	I B 220	200	215	230	230	230	260	R	250
16	280	A	B	A	A	A 310	H 240	250	B	210	205	200	210	200	220	205	210	225	225	205	235	240	310	A
17	A	A	A	305	A	A	250	205	205	210	200	200	210	240	210	210	225	225	B	210	230	230	230	280
18	260	250	290	300	250	220	220	220	230	200	200	195	220	I A 220	225	210	205	225	210	200	230	240	240	250
19	250	275	280	B	B	R	R	225	230	220	225	230	205	200	I A 215	200	200	195	195	225	B	A	A	A
20	A	375	A	A	A	A	A	A	A	A	210	210	230	A 250	200	H 200	210	230	225	260	310	280	A	A
21	A	B	A	A	B	A	A	R	A	A	A	B	B	B	B	210	E B 260	255	250	260	A	315	300	B
22	290	330	300	A	A	280	A	305	265	220	205	200	200	200	230	210	230	195	210	250	245	240	250	255
23	330	330	A	395	A	A	A	215	210	190	200	200	200	220	195	225	240	290	250	A 240	A	300	A	A
24	330	A	A	A	A	A	A	A	250	A	E A 275	R	255	205	H 200	I B 220	210	I B 245	240	340	255	A	A	A
25	360	A	A	505	B	295	A	A	230	200	200	200	230	A 250	A	B	B	210	A	B	250	280	250	A
26	A	A	A	B	B	A	B	B	A	A	230	220	225	240	250	210	215	I B 230	220	230	255	A	A	A
27	A	A	B	300	A	A	A	A	A	B	B	B	B	B	200	245	225	220	A	A	A	A	A	A
28	A	A	A	A	B	B	A	A	R	B	200	250	B	B	B 250	205	R 210	B	E R 290	E B 250	270	340	I A 330	390
29	B	B	B	A	B	B	A	A	250	B	B	B	R 250	225	230	B	B	200	240	B	260	255	300	A
30	A	A	A	B	B	A	B	A	A	225	220	B	B	B	B	225	B	B	295	220	230	255	A 360	300
31	B	B	B	A	A	A	A	A	A	250	200	250	240	260	205	230	200	220	230	E A 245	250	260	315	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	17	12	11	11	4	9	10	11	16	20	26	23	25	25	25	25	24	27	28	26	25	24	22	16
MED	290	318	300	305	250	280	250	225	230	210	204	205	220	220	220	220	211	225	235	240	250	255	278	275
UQ	330	335	342	375	270	300	255	252	255	225	220	220	230	240	230	225	226	240	249	250	260	280	320	330
LQ	260	262	280	285	250	240	240	220	220	202	200	200	200	200	205	210	202	208	225	225	235	240	245	250

JAN. 1973 | H'F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1973 | 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	100	120	100	100	110	B	100	100	100	B	110	G	G	B	100	B	B	120	150	130	G	130	110	110
2	130	125	140	110	G	110	100	100	110	110	110	110	110	100	100	100	100	100	G	100	100	100	100	110
3	100	100	100	120	120	100	100	100	110	120	100	100	100	125	100	100	100	120	110	125	120	B	105	100
4	100	100	100	100	100	100	105	G	G	G	G	100	100	100	100	105	100	100	100	100	105	110	150	100
5	125	180	105	120	105	100	130	150	100	G	G	G	110	G	G	110	100	100	160	100	110	100	110	100
6	140	100	100	100	100	100	100	105	100	100	G	G	G	G	B	B	165	130	130	130	140	125	120	105
7	100	170	100	100	110	100	100	B	100	100	100	110	110	100	100	100	100	100	G	100	G	G	150	145
8	130	130	110	B	100	120	100	100	100	125	G	G	G	G	140	G	105	G	150	100	G	130	130	100
9	100	100	100	G	110	100	100	100	100	G	G	125	B	B	B	B	B	G	100	B	130	125	145	125
10	100	120	130	110	180	100	100	175	B	G	G	G	100	B	B	B	B	155	145	145	135	190	100	110
11	120	100	110	B	B	B	100	B	B	100	170	B	B	120	G	G	G	150	150	100	105	100	100	195
12	110	B	B	130	100	100	100	105	B	B	B	B	G	B	B	B	100	B	G	150	100	110	100	120
13	130	100	105	100	B	100	130	100	100	G	G	G	125	B	G	G	B	G	G	160	130	155	150	105
14	140	130	170	200	155	105	100	B	B	100	105	B	G	B	B	130	100	G	G	G	130	125	120	110
15	G	150	120	110	100	100	100	G	B	100	120	110	G	120	130	B	120	G	G	G	G	170	115	100
16	130	110	100	100	115	100	150	100	150	110	100	G	110	G	B	G	B	G	G	G	G	G	110	125
17	100	100	100	150	130	100	100	G	100	G	100	G	G	G	G	G	G	G	B	150	G	G	150	B
18	130	110	130	100	100	155	100	145	G	G	G	G	105	100	G	G	100	150	150	G	G	100	100	100
19	100	100	120	B	125	140	175	G	B	G	G	110	110	100	100	115	120	100	100	100	B	150	105	100
20	105	130	100	100	140	100	110	110	100	105	110	130	120	125	155	G	100	G	B	180	100	105	100	110
21	100	100	100	170	150	100	150	100	110	105	100	B	B	B	B	B	110	B	155	150	140	100	150	130
22	175	130	130	125	105	160	120	110	100	G	130	120	120	100	G	110	110	G	G	G	G	130	120	115
23	125	100	120	110	G	100	100	100	G	G	100	100	130	100	100	110	100	140	150	130	130	130	100	100
24	125	100	100	100	140	100	100	175	100	105	150	100	110	140	G	B	G	B	G	150	100	100	150	100
25	105	105	100	105	B	105	120	100	110	G	100	130	100	100	100	B	B	G	105	B	130	140	125	105
26	110	100	110	150	B	100	B	B	100	105	105	G	145	G	G	120	G	B	130	130	135	110	105	110
27	100	105	B	160	100	105	100	100	100	B	B	B	B	B	125	170	G	G	100	100	105	200	160	190
28	100	100	100	100	B	B	100	150	G	B	G	150	B	B	B	G	G	B	G	B	180	100	100	100
29	B	B	B	100	B	B	100	100	G	B	B	B	G	100	105	B	B	G	G	B	150	G	105	130
30	130	100	100	B	B	150	170	120	100	125	G	B	B	B	B	G	B	B	B	155	G	170	100	150
31	B	B	110	100	100	100	105	100	100	100	G	140	G	120	100	G	120	120	100	120	G	180	140	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	28	28	28	26	22	27	30	23	20	15	16	14	16	15	14	11	17	13	17	22	20	26	31	30
MED	110	102	102	108	110	100	100	100	100	105	105	110	110	100	100	110	100	120	130	130	130	125	110	110
UQ	130	128	120	125	130	105	120	115	105	110	115	130	120	120	125	118	110	140	150	150	135	150	142	125
LQ	100	100	100	100	100	100	100	100	100	100	100	100	102	100	100	102	100	100	100	100	105	100	100	100

JAN. 1973 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1973 | 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	R 2	LL 11	R 1	R 1	R 1		R 1	R 1	R 1		R 1				L 1			H 1	H 1	C 1		H 1	L 1	L 1
2	H 1	H 2	R 1	C 2		H 1	LL 13	L 2	H 1	H 1	H 1	H 1	H 1	L 1	C 1	L 2	L 1	L 1		L 1	L 2	L 3	LH 14	H 1
3	R 1	C 1	LH 11	H 2	C 1	L 1	L 3	L 2	H 1	LH 11	L 1	R 1	C 2	HC 11	L 2	L 3	L 2	H 1	LH 11	H 1	H 1		L 2	L 3
4	L 3	L 2	C 2	R 1	L 1	R 2	R 1					C 2	C 2	L 2	L 2	H 1	C 2	CH 21	L 3	L 1	R 1	R 1	RR 11	R 3
5	LR 11	RRL 13	R 2	L 1	R 1	L 1	LL 11	LR 11	R 1				H 1			H 1	L 1	C 1	H 1	R 2	R 1	RR 11	R 3	R 1
6	RR 11	R 1	R 1	L 1	R 1	R 1	R 1	R 1	L 1	R 1							H 1	H 1	H 1	H 1	H 1	H 1	R 1	R 1
7	R 2	L 1	L 1	R 1	RL 11	R 1	LR 11		R 1	R 1	R 1	R 1	H 1	L 1	L 1	L 1	L 1	L 1		R 2			R 1	R 1
8	LL 11	R 1	R 1		R 1	RL 11	RR 11	L 1	R 1	L 1					H 1		R 1		H 1	R 1		R 1	H 1	R 1
9	R 2	R 1	R 2		R 1	L 1	R 1	R 1	R 1			H 1							R 1		C 1	C 1	HL 11	R 1
10	R 2	H 2	R 1	R 1	H 1	R 1	R 1	H 1					R 1					H 1	H 1	H 1	H 3	H 1	R 1	R 1
11	R 1	R 2	RR 11				R 1			R 1	H 1			L 1				H 1	H 1	R 1	R 1	R 1	R 2	H 1
12	R 2			LL 11	L 1	L 1	L 1	R 1									R 1			H 1	RL 11	R 1	R 2	R 1
13	R 2	R 1	R 1	R 1		R 1	R 1	L 1	R 1				H 1							H 1	C 1	R 1	HL 11	R 2
14	HR 11	H 1	HH 11	H 1	R 1	R 1	H 1			L 1	R 1					H 1	R 1				H 2	H 1	RL 11	LL 11
15		H 1	R 1	R 1	R 1	R 1	R 2			L 1	H 1	H 1		H 1	H 1		L 1					R 1	R 1	R 1
16	H 2	R 1	L 1	R 1	R 1	R 1	H 1	R 1	R 1	R 1	R 1												R 2	R 1
17	R 2	R 1	L 1	H 1	C 1	R 1	R 1		L 1		R 1									H 1			HH 11	
18	H 1	LL 11	LL 12	LH 11	L 1	H 1	RL 11	HR 11					H 1	L 2			L 2	HL 12	HL 11			L 1	L 1	R 1
19	L 1	LH 11	H 1		R 1	H 1	H 1					H 1	C 1	L 1	L 2	L 2	LL 12	R 1	L 1	L 2		RR 11	R 3	RL 21
20	R 3	RR 11	R 1	R 2	H 1	RL 11	RLS 11	R 1	RR 11	R 1	R 1	H 1	H 1	H 1	H 1		R 1			HH 11	R 2	R 2	R 2	R 2
21	R 1	L 1	R 1	HR 11	R 1	RL 11	HR 11	LS 11	L 1	RS 11	RS 11						R 1		H 1	H 1	H 1	R 2	HL 11	R 1
22	H 1	H 1	R 1	R 1	R 2	RLL 11	LRL 11	R 1	R 1		H 1	H 1	H 1	LH 11		H 1	H 1					H 1	H 1	HL 11
23	R 1	R 2	RLR 11	R 2		R 1	R 2	RL 11			L 1	L 1	LR 11	C 2	R 2	L 1	L 1	R 1	R 1	HL 11	H 3	H 1	R 3	R 2
24	LR 12	R 2	R 2	R 3	RR 11	R 1	R 1	RR 11	R 1	RS 11	HR 11	R 1	R 1	H 1						H 1	L 1	R 2	RR 11	R 1
25	RR 11	R 1	R 1	R 1		R 1	R 1	R 1	R 1		R 1	H 1	LH 11	C 2	L 1				R 1		H 1	H 1	H 1	R 3
26	R 2	R 2	R 1	R 1		L 1			R 1	R 1	R 1		H 1			H 1			H 1	H 1	H 1	L 1	R 2	R 1
27	R 2	R 1		H 1	R 1	R 1	R 1	R 1	RS 11						H 1	H 1			R 1	LS 21	R 1	RR 11	RR 12	RR 11
28	R 1	R 1	R 1	R 1			R 1	RL 11				H 1									H 1	R 3	R 2	R 2
29				R 1			L 1	R 1						L 1	L 1						R 1		R 1	RR 11
30	RR 11	L 1	R 1			RR 11	R 1	R 1	R 1	H 1										H 1		H 1	R 2	RR 12
31			R 1	R 1	R 1	R 1	R 1	R 1	R 1	R 1		H 1		H 1	R 1		H 1	LL 11	L 1	HC 11		R 1	H 1	R 2
	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

JAN. 1973 | TYPES OF ES

IONOSPHERIC DATA

FEB. 1973 | 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 15 MHz to 30 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 33	35	A	B	B	R	A	F 44	B	B	R	B	U R 49	F 50	F 55	U R 56	55	49	44	F	R	R 52	R	R
2	A	A	A	A	F 39	F	F 42	F	R	R	R	B	47	48	F 45	46	F 47	50	F 49	45	R	F 33	F 35	A
3	F	A	A	B	B	F 43	F	F 50	R	B	F 43	U F 45	F 47	B	51	B	B	52	51	45	F 41	F	U F 38	F 33
4	F 32	F 38	A	F 38	R	R	R	45	F 51	F 58	F 61	F 60	59	59	57	51	50	50	54	51	46	43	F 37	F
5	F	F	A	A	A	A	A	A	J F 59	B	61	F	J F 64	F 61	57	F 57	54	52	53	52	52	F 51	F 46	F 44
6	U F 32	F 27	A	S	U R 51	A	F	F 62	F 72	F 72	J F 70	J F 74	F 72	76	79	76	77	F 72	B	R	F 42	F 40	A	A
7	F 33	F 33	U F 38	F	F	F	F 45	A	F 55	F	I R 60	F	F	U F 62	F 67	F 69	J F 64	F 64	F 60	58	51	R	F 26	A
8	A	F	A	B	F	A	F	A	A	B	R	B	F	F	R	R	F 75	69	V 50	F 38	F	F	A	F
9	A	A	A	A	B	R	B	R	52	R	B	B	B	B	80	R	F	J F 56	F	F	40	F 39	R	A
10	F	A	B	R	R	51	F 59	J F 66	F 66	A	R	B	U F 52	B	64	65	F	F 62	62	F 58	54	F 45	R	A
11	A	A	F	S	A	A	A	A	F 51	F 56	F 59	F 57	60	F 59	62	65	62	60	60	55	52	51	46	37
12	U F 30	F 35	F	F	R	R	F	U F 72	F	F 63	R	F	F	F 62	63	66	65	F 65	B	F 55	53	U F 35	F	J F 34
13	U F 31	U S 36	F	45	S	J R 55	R 63	75	78	78	78	77	76	70	69	65	62	62	62	58	58	52	50	50
14	J R 53	F 45	R	J R 42	R	R	F	U F 60	J F 64	F 75	U F 82	J F 84	J F 88	U R 86	F 80	F 69	64	62	F 61	56	57	52	50	F
15	A	35	F 45	C	A	F	F	F	A	F 62	F 65	F 69	73	F 73	F 75	F 74	77	76	75	F 68	F 48	F	U F 32	A
16	A	A	F 32	U F 36	U F 46	F 50	U F 55	F	J F 57	55	F 58	F 65	U F 68	F 69	F 70	F 66	F 62	F 58	54	F 51	47	R	A	F
17	F	F	A	A	R	A	B	B	R	46	B	B	57	F 61	F 56	F 55	F 54	F 61	52	41	45	R	A	A
18	A	A	A	F	A	A	A	A	F	47	F 50	51	50	52	55	F 56	F 56	54	50	V 47	A	A	A	A
19	A	F	A	F	A	U F 45	F 47	F	F 52	F 54	F 52	F 53	54	56	55	52	53	50	45	46	F 35	A	A	A
20	A	A	A	F 36	F	J R 44	F	F 55	F 53	52	53	54	53	62	61	58	57	53	47	47	F 40	U F 30	A	A
21	A	A	A	A	F	R	R	A	F 44	F 45	F 45	45	45	46	50	50	I C 50	F 48	47	F 49	A	F	A	A
22	A	A	A	B	R	F	F 40	R	R	U F 45	I R 48	F 51	F	F 44	F 48	J R 51	60	F 50	F 48	F 34	F 32	F	F	B
23	A	A	F	A	A	F	F	B	B	A	B	R	B	B	B	R	F 41	R	R	A	A	A	A	A
24	A	B	A	A	A	B	R	A	B	B	R	B	B	B	B	F 47	B	U R 40	R	B	A	A	A	A
25	A	A	A	F	J F 37	39	F 44	B	B	B	B	B	B	B	B	B	49	B	B	F 30	A	A	A	A
26	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	45	49	B	44	F 31	F 29	F	A	A
27	A	A	A	A	A	U F 31	B	B	B	B	B	B	B	B	B	B	B	F 40	B	40	A	A	A	A
28	B	A	A	R	B	R	B	R	A	39	B	B	B	B	B	B	B	44	F 43	39	33	A	F 26	F
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	7	8	3	5	4	8	8	9	13	15	15	13	17	18	21	21	22	25	21	23	19	12	10	5
MED	F 32	F 35	F 38	F 38	F 42	44	F 46	F 60	F 55	F 55	F 59	F 57	57	61	61	57	56	54	51	47	46	F 44	F 38	F 37
UQ	F 33	37	F 42	42	U 48	50	F 57	F 66	F 64	F 62	F 63	F 69	68	F 69	69	66	64	F 62	60	55	52	52	46	44
LQ	U F 32	F 34	F 35	F 36	F 38	41	F 43	F 50	F 52	46	F 51	F 51	50	52	55	51	50	50	47	40	F 40	F 37	F 32	F 34

FEB. 1973 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1973 | 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	A	R	B	B	R	B	B	400	410	I B 400	400	400	380	F 350				
2							U F 320	F	A	A	R	B	H 400	420	410	400	400	400	F 390	360	A			
3						L	F	370	A	B	390	390	410	B	410	B	B	B	L 380	L	L			
4							A	A	F 390	F 390	400	H 410	420	420	430	430	410	400	L	L				
5						A	A	A	390	B	B	420	420	420	440	430	420	U L 410	L	L				
6							A	F 420	410	410	430	420	430	430	A	B	430	400	B	R				
7							A	A	A	400	I R 400	420	420	430	R 420	420	420	400	L 390					
8							A	A	A	B	400	B	410	410	I B 410	R 410	I B 410	400	390	350				
9							B	A	A	A	B	B	B	B	B	B	420	400	L					
10						A	350	390	410	I A 410	410	B	420	B	U R 420	430	430	L 400	L	L				
11							A	A	410	410	420	420	I B 420	440	440	430	L 420	U L 400	L	L				
12							L	410	420	A	B	430	440	440	450	440	430	U L 400	B					
13						320	370	390	H 420	420	430	440	H 440	450	I A 440	420	L	L	L					
14						A	B	400	440	420	420	430	440	I B 440	430	L	U L 420	L	L					
15							A	F	A	420	420	430	440	440	L 440	U L 430	L	L 400	R					
16						L	L	L	400	400	420	430	U R 430	430	430	430	410	L	L					
17							B	B	A	A	B	B	410	420	420	410	400	390	370					
18							A	A	A	380	390	390	410	400	410	400	400	L 380	L	L 320	A			
19							F 320	F 350	F 360	370	390	410	400	400	400	410	U L 390	L	L					
20							A	F 350	370	380	390	410	400	410	410	400	390	L	L					
21							R	A	370	370	380	390	400	400	400	400	I C 390	L	L					
22							F 300	A	A	380	F 380	380	390	390	390	I B 380	I B 380	370						
23								B	B	A	B	A	B	B	B	380	360	350	R					
24							A	A	B	B	A	B	B	B	B	F 370	B	360	R					
25							L	B	B	B	B	B	B	B	B	B	380	B						
26							B	B	B	B	B	B	B	B	B	370	R 360	B	L					
27							B	B	B	B	B	B	B	B	B	B	B	F 350	B					
28							B	R	A	360	B	B	B	B	B	B	B	L						
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	5	8	12	15	16	16	20	19	20	21	22	18	6	4				
MED						320	F 320	390	405	400	400	420	420	420	420	410	405	400	385	350				
UQ							350	405	415	410	420	430	430	435	435	430	420	400	390	355				
LQ							F 320	360	380	380	390	400	405	405	410	400	390	380	380	335				

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FEB. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

FEB. 1973 | 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	A	A	B	B	A	A	A	B	B	R	B	B	310	B	B	B	B	B	220	B	A	A	A
2	A	A	A	A	A	A 230	230	280	A	A	R	B	300	285	280	275	270	260	240	200	180	145	A	A
3	A	A	A	B	B	A	A 240	250	A	B	310	305	280	B	B	B	B	B	245	A 220	160	F 180	A	A
4	A	A	B	A	A	B	A	A	A	290	280	285	290	300	275	280	I A 280	255	250	205	H 195	H 180	A	A
5	A	A	A	A	A	A	A	A	A	B	B	280	280	280	B	B	B	270	B	B	B	B	B	A
6	A	A	A	A	A	A	A	275	270	290	290	300	H 300	A	B	B	A	270	B	B	180	A	A	A
7	A	A	A	A	A	A	A	A	A	A	A	A	300	295	270	B	A	A	240	200	160	A	A	A
8	A	A	A	B	170	B	B	A	A	B	B	B	300	295	B	B	B	260	F 260	250	A	A	A	A
9	A	B	B	A	B	A	B	A	A	A	B	B	B	B	B	B	B	250	A	A	U F 220	A	A	A
10	A	A	B	A	B	A	230	280	A	A	A	B	B	B	B	B	A	A	B	H 210	180	H 165	B	B
11	B	B	A	A	B	B	B	A	A	280	270	290	I B 300	300	295	260	I A 255	I R 250	230	I A 210	165	130	A	135
12	A	A	A	A	A	A	A 265	250	300	A	B	340	300	300	290	280	A	A	B	B	190	F 160	F 130	A
13	A	A	150	S 150	155	160	210	240	260	275	290	290	295	300	295	A 270	260	265	A	220	170	A 120	A	A
14	A	A	A	230	A	B	B	A	260	270	H 290	290	A 290	B	A	A 265	A	A	A	210	180	A	A	A
15	A	A	A	C	A	A	A	A	A	A	300	310	320	305	A 295	A 250	A	A	B	A	A	A	A 210	A
16	A	A	A	A	A	A	180	230	250	B	290	300	I B 300	295	275	250	A 275	230	230	200	F 180	A	A	A
17	A	A	A	A	A	A	B	B	A	A	B	B	310	290	285	A 275	A 260	A 245	230	165	220	A	A	A
18	A	A	A	B	A	A	A	A	A	A	A	275	275	260	320	I A 270	260	240	210	160	A	A	A	A
19	A	A	A	A	B	A	A	A	A	A	A	280	285	280	280	255	A 250	225	200	190	180	A	A	A
20	A	A	A	A 250	F 260	A	A	210	220	230	270	270	270	270	A	A	A	230	205	160	205	A	A	A
21	A	B	A	A	A	A	B	A	240	250	260	255	260	260	U A 280	A	I C 260	U A 230	I A 205	200	A	A	A	A
22	A	A	A	B	A	A	260	A	A	A	A	A	295	275	270	B	B	225	230	F 210	A	A	A	B
23	A	A	A	A	A	A	200	B	B	B	B	A	B	B	B	280	R	240	A	A	A	A	A	B
24	B	B	A	A	A	B	A	A	B	B	B	B	B	B	B	270	B	B	A	B	A	B	B	A
25	A	A	A	A	170	A	210	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B	A
26	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	200	A	150	A	A	A
27	A	B	B	A	B	190	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	B	A
28	B	B	A	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	200	B	B	A	A	A
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	3	4	3	9	8	7	7	10	14	19	17	13	13	9	16	15	17	16	7	2	1
MED			150	230	170	190	230	250	260	275	290	290	295	295	280	270	A 260	248	230	205	180	160	170	135
UQ				240	215	210	240	278	265	285	290	300	300	300	295	275	A 270	260	240	210	192	172		
LQ				190	162	175	210	235	245	260	270	280	282	280	275	260	A 260	230	205	200	168	138		

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FEB. 1973 | FOE (0.01 MHZ)

IONOSPHERIC DATA

FEB. 1973 | 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	28	35	40	B	B	34	46	51	B	B	G	B	E B 46	39	E B 36	E B 45	E B 30	E B 28	27	29	35	J X 34	43	J X 46
2	J X 65	J X 57	46	35	33	26	30	G	39	46	G	B	33	33	G	G	G	G	29	G	J X 36	J X 27	37	48
3	D	54	48	B	B	35	27	27	41	B	33	G	G	B	E B 36	B	B	E B 44	30	J X 62	J X 22	19	25	J X 24
4	J X 24	J X 34	J X 62	89	35	38	38	44	J X 39	G	32	G	35	32	30	G	33	G	27	25	27	23	28	J X 30
5	31	30	J X 55	J X 87	46	50	52	J X 63	J X 61	B	E B 49	31	G	30	E B 38	E B 31	E B 30	G	E B 26	26	E B 35	22	J X 34	J X 34
6	J X 25	J X 31	34	44	44	J X 61	59	31	34	31	35	37	35	63	44	E B 50	30	G	B	40	J X 76	J X 28	36	39
7	40	33	32	44	40	J X 44	53	52	J X 44	35	32	35	35	33	35	E B 38	35	35	27	26	33	34	J X 24	41
8	J X 37	36	J X 46	B	J X 64	43	40	J X 52	52	B	E B 36	B	33	35	E B 46	34	E B 48	27	G	G	42	J X 42	J X 110	J X 37
9	J X 60	J X 52	J X 33	J X 39	B	34	B	J X 42	44	J X 51	B	B	B	B	E B 54	E B 60	E B 31	27	33	39	23	20	J X 36	45
10	40	J X 34	B	33	41	35	31	29	J X 64	J X 76	37	B	36	B	E B 37	E B 34	29	29	E B 26	G	G	G	29	J X 96
11	53	J X 51	42	30	45	47	52	48	43	G	G	30	E B 47	36	32	70	31	G	G	22	23	19	J X 22	J X 26
12	23	27	30	30	28	42	36	G	G	50	E B 49	G	G	G	32	40	32	26	B	E B 27	G	G	18	16
13	30	J X 32	21	24	16	20	21	G 24	28	30	33	33	33	J X 41	57	J X 52	32	J X 32	41	37	G 16	13	15	J X 26
14	J X 28	J X 25	28	27	40	40	E B 52	49	G	28	G	J X 76	31	E B 68	41	33	32	28	J X 54	J X 24	J X 36	24	J X 27	32
15	38	J X 34	J X 84	C	65	J X 27	52	J X 39	J X 81	50	G	G	G	J X 67	35	J X 34	30	27	E B 27	21	J X 31	J X 33	J X 29	J X 32
16	32	35	27	30	34	25	J X 25	G	G	E B 28	G 29	G	36	36	J X 64	34	28	J X 31	J G 23	J X 29	J X 22	23	44	50
17	40	36	48	J X 45	J X 51	J X 78	B	B	45	53	B	B	34	J X 62	34	31	J X 31	27	G	22	J X 32	35	J X 64	35
18	J X 37	J X 32	32	32	J X 49	45	44	J X 44	40	32	30	63	37	33	35	29	G	G	G	J X 22	38	32	36	J X 51
19	J X 42	J X 85	35	J X 62	J X 109	41	32	37	37	J X 36	31	33	37	J X 56	31	28	32	G	J X 35	G	G	32	41	35
20	J X 64	48	46	J X 26	G 18	J X 27	40	J X 29	G	G	31	40	J X 43	37	62	J X 46	J X 41	31	J X 24	18	G	17	J X 79	J X 73
21	40	J X 51	J X 53	35	27	J X 29	32	42	G	J X 64	36	32	32	41	J X 80	J X 29	C	28	23	23	J X 79	J X 51	65	J X 59
22	J X 80	D	J X 90	B	32	28	31	J X 36	41	38	32	33	G	34	37	E B 55	E B 47	28	J X 33	G	28	35	33	J X 84
23	J X 54	J X 45	32	40	35	24	33	B	B	J X 64	B	45	B	B	B	G	G	G	31	43	J X 100	38	44	J X 63
24	42	B	36	30	J X 60	B	35	J X 43	B	B	42	B	B	B	B	G	B	29	29	B	38	J X 72	43	J X 110
25	J X 101	J X 55	J X 74	J X 33	30	25	28	B	B	B	B	B	B	B	B	B	E B 35	B	B	J X 32	37	40	42	32
26	34	45	B	B	B	J X 33	B	J X 78	B	B	B	B	B	B	B	E B 30	E B 27	B	23	30	G	25	25	40
27	46	J X 45	J X 36	J X 31	46	28	B	B	B	B	B	B	B	B	B	B	B	E B 27	B	J X 52	35	J X 81	45	37
28	B	37	40	23	B	34	B	E B 25	J X 38	35	B	B	B	B	B	B	B	E B 26	27	E B 27	J X 58	J X 76	J X 65	J X 29
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	27	27	26	22	23	27	23	24	22	20	21	17	21	19	22	24	23	26	24	27	28	28	28	28
MED	40	J X 36	40	33	40	34	36	40	40	36	32	33	34	36	34	U 31	30	26	27	25	32	30	36	J X 38
UQ	54	J X 51	J X 48	44	48	42	47	48	44	50	34	37	36	U 44	U 44	U 40	32	28	30	31	38	36	44	J X 50
LQ	32	34	32	30	32	28	31	28	28	29	G 29	G	31	33	33	E G 29	E G 30	G	E G 23	22	22	21	28	J X 32

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FEB. 1973 | FOES (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1973 | 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	13	16	20	B	B	14	20	11	B	B	23	B	46	20	36	45	30	28	25	E C 14	25	9	11	21
2	7	8	9	9	9	8	9	9	11	14	24	B	26	15	12	15	15	15	10	10	12	18	8	10
3	10	10	15	B	B	9	E C 14	12	20	B	10	14	10	B	36	B	B	44	21	11	9	10	9	10
4	8	7	25	9	11	28	16	14	10	9	9	10	10	20	22	22	20	20	13	E C 10	10	9	9	8
5	12	11	20	14	10	11	20	9	10	B	49	13	11	13	38	31	30	20	26	23	35	20	15	10
6	9	9	13	13	14	13	11	9	10	9	10	15	10	10	32	50	22	14	B	25	12	9	10	E C 15
7	7	9	10	8	10	8	11	14	10	20	22	10	10	12	20	38	22	20	11	15	10	10	9	9
8	13	10	13	B	E C 13	22	26	15	12	B	36	B	22	9	46	31	48	20	13	14	10	9	9	11
9	13	20	27	10	B	11	B	20	18	22	B	B	B	B	54	60	31	E C 17	14	12	E C 15	10	9	13
10	10	11	B	20	24	12	11	10	9	20	15	B	32	B	37	34	25	23	26	13	16	9	19	22
11	20	29	14	8	26	34	26	20	12	10	10	11	47	12	10	10	15	20	16	15	14	9	9	9
12	7	8	9	11	14	14	9	9	E C 27	20	49	21	20	15	10	14	10	19	B	27	10	9	9	11
13	10	10	11	9	9	10	9	10	9	10	12	10	14	10	11	11	12	14	12	9	10	9	8	8
14	7	7	15	14	20	25	52	13	11	E C 11	8	9	20	68	22	12	16	10	10	9	9	7	7	8
15	8	8	9	C	16	9	20	11	15	10	10	25	15	19	20	13	10	12	27	14	13	10	9	8
16	7	9	10	8	9	10	10	12	12	28	15	23	31	10	10	13	15	12	10	9	8	16	9	9
17	8	9	9	8	8	13	B	B	11	16	B	B	25	17	12	10	9	9	21	9	14	7	8	9
18	8	9	10	24	9	15	10	20	12	9	11	8	10	10	10	16	16	11	12	8	9	8	13	10
19	7	9	9	9	29	9	10	12	9	20	15	10	10	10	10	9	E C 10	13	8	11	9	10	8	7
20	10	10	7	8	8	10	12	10	9	9	10	10	10	10	10	11	11	10	9	9	10	9	10	8
21	9	15	9	16	9	9	26	15	9	10	9	10	10	10	10	10	C	8	9	8	11	7	9	9
22	9	12	9	B	9	9	8	11	9	10	10	20	23	11	11	55	47	15	10	10	8	8	7	50
23	8	9	8	10	9	10	10	B	B	28	B	20	B	B	B	20	19	18	14	9	11	10	8	16
24	21	B	9	10	12	B	20	10	B	B	36	B	B	B	B	17	B	25	15	B	10	26	22	9
25	8	9	9	8	9	15	15	B	B	B	B	B	B	B	B	B	35	B	B	10	E C 13	9	16	10
26	9	10	B	B	B	25	B	48	B	B	B	B	B	B	B	30	27	B	18	16	12	9	9	9
27	12	26	25	8	27	16	B	B	B	B	B	B	B	B	B	B	B	27	B	20	13	16	14	12
28	B	15	9	15	B	20	B	25	34	14	B	B	B	B	B	B	B	26	15	27	24	14	10	9
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	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28
MED	9	10	10	10	12	12	16	12	12	20	18	20	22	16	22	21	22	18	14	12	10	9	9	10
UQ	12	14	18	18	26	18	26	20	30	B	D B 49	B	D B 47	B	50	48	33	24	26	16	14	10	10	12
LQ	8	9	9	8	9	10	10	10	10	10	10	10	10	10	10	12	15	12	10	9	10	9	8	9

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FEB. 1973 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1973 | 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 305	280	A	B	B	R	A	F 285	B	B	R	B	R	F 260	F 255	U R 285	275	265	255	F	R	R 320	R	R
2	A	A	A	A	F 290	F	F 275	F	R	R	R	B	265	290	F 225	270	F 240	280	F 300	265	R	F 320	F 285	A
3	F	A	A	B	B	F 290	F	F 325	R	B	F 250	F	F 250	B	290	B	B	290	315	305	F 315	F	U F 315	F 305
4	F 280	F 275	A	F 285	R	R	R	230	F 240	F 255	F 265	F 270	270	270	290	290	305	285	320	335	325	305	F 270	F
5	F	F	A	A	A	A	A	A	J F 245	B	245	F	J F 280	F 295	280	F 295	295	290	285	310	320	F 325	F 310	F 300
6	U F 295	F 250	A	S	U R 260	A	F	F 275	F 265	F 265	J F 255	J F 250	F 260	255	255	275	260	F 265	B	R	F 335	F 290	A	A
7	F 265	F 275	U F 265	F	F	F	F 280	A	F 250	F	R	F	F	F	F 260	F 285	J F 280	F 295	F 300	310	315	R	F 290	A
8	A	F	A	B	F	A	F	A	A	B	R	B	F	F	R	R	F 275	285	V 265	F 255	F	F	A	F
9	A	A	A	A	B	R	B	R	250	R	B	B	B	B	270	R	F	J F 265	F	F	320	F 310	R	A
10	F	A	B	R	R	255	F 270	J F 260	F 260	A	R	B	U F 270	B	290	290	F	F 295	305	F 310	310	F 310	R	A
11	A	A	F	S	A	A	A	A	F 255	F 255	F 255	F 255	280	F 270	275	285	290	290	300	310	305	320	315	275
12	U F 265	F 290	F	F	R	R	F	U F 255	F	F 250	R	F	F	F 275	270	290	305	F 310	B	F 310	310	U F 315	F	F
13	U F 270	U S 300	F	265	S	J R 275	R 270	275	260	265	270	270	285	280	305	315	290	310	340	320	330	320	300	300
14	R	F 265	R	J R 275	R	R	F	U F 265	J F 260	F 255	U F 250	J F 255	J F 260	U R 265	F 290	F 305	315	305	F 325	320	325	315	310	F
15	A	265	F 290	C	A	F	F	F	A	F 260	F 270	F 270	275	280	F 285	F 285	285	290	295	F 310	F 315	F	U F 295	A
16	A	A	F 250	U F 270	U F 260	F 270	U F 305	F	J F 280	255	F 265	F 260	U F 280	F 285	F 300	F 295	F 315	F 310	315	F 315	295	R	A	F
17	F	F	A	A	R	A	B	B	R	215	B	B	280	F 290	F 270	F 270	F 270	F 280	280	330	335	R	A	A
18	A	A	A	F	A	A	A	A	F	245	F 255	270	265	265	275	F 285	F 285	285	305	V 290	A	A	A	A
19	A	F	A	F	A	U F 250	F 245	F	F 250	F 255	F 270	F 280	275	285	305	290	300	315	295	305	F 290	A	A	A
20	A	A	A	F 285	F	J R 295	F	F 260	F 265	270	285	260	260	275	290	295	310	320	320	310	F 320	U F 295	A	A
21	A	A	A	A	F	R	R	A	F 245	F 245	F 245	250	260	250	280	280	I C 295	F 290	285	F 315	A	F	A	A
22	A	A	A	B	R	F	F 275	R	R	U F 235	R	F 260	F	F 245	F 230	R	265	F 270	F 290	F 295	F 275	F	F	B
23	A	A	F	A	A	F	F	B	B	A	B	R	B	B	B	R	F 225	R	R	A	A	A	A	A
24	A	B	A	A	A	B	R	A	B	B	R	B	B	B	B	F 250	B	U R 250	R	B	A	A	A	A
25	A	A	A	F	J F 285	275	F 305	B	B	B	B	B	B	B	B	B	270	B	B	F 265	A	A	A	A
26	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	230	255	B	315	F 290	F 295	F	A	A
27	A	A	A	A	A	U F 275	B	B	B	B	B	B	B	B	B	B	B	F 275	B	315	A	A	A	A
28	B	A	A	R	B	R	B	R	A	225	B	B	B	B	B	B	B	290	F 315	310	320	A	F 270	F
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	6	8	3	5	4	8	8	9	13	15	13	12	16	17	21	20	22	25	21	23	19	12	10	4
MED	F 275	F 275	F 265	F 275	F 272	275	F 275	F 265	F 255	F 255	F 255	F 260	270	275	280	285	285	290	300	310	315	F 315	F 298	300
UQ	F 295	285	F 278	F 285	288	282	F 292	F 275	F 260	F 258	F 270	F 270	280	F 285	290	292	300	295	315	315	322	320	310	F 302
LQ	U F 265	F 265	F 258	270	U 260	F 262	F 270	F 260	F 250	245	F 250	F 255	260	265	270	278	F 270	280	290	300	308	F 308	F 285	288

FEB. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

FEB. 1973 | 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						R	A	395	B	B	R	B	B	440	425	350	370	425	475	450				
2							425	F	R	A	R	B	475	400	600	445	520	370	340	405	R			
3						350	F	285	R	B	510	570	490	B	380	B	B	360	305	L	L			
4							A	550	475	395	370	370	390	375	350	380	350	350	290	255				
5						A	A	A	430	B	B 450	350	345	330	375	350	340	L	330	280				
6							400	360	310	330	385	375	375	360	355	330	345	350	B	R				
7							380	A	460	400	I R 430	405	360	400	380	330	330	310	300					
8							A	A	A	B	R	B	450	450	410	390	330	320	360	L				
9							B	A	480	A	B	B	B	B 600	355	B	330	385	L					
10						420	345	385	390	A	R	B	420	B	350	330	330	300	285	260				
11							A	A	490	420	415	420	370	375	370	330	305	325	L	L				
12							330	360	340	405	B	365	350	360	360	345	310	290	B					
13						340	350	335	350	320	340	350	300	330	300	290	L	L	250					
14						A	B	375	390	340	360	340	345	B	300	300	280	L	250					
15							A	F	A	400	355	350	330	320	325	300	300	295	265					
16						355	L	L	360	430	395	395	350	345	300	305	300	270	L					
17							B	B	A	590	B	B	360	345	355	380	375	310	345					
18							A	A	A	470	450	400	430	410	390	350	350	340	300	300	A			
19							450	440	420	410	405	375	390	350	325	345	300	295	L					
20							500	400	330	380	370	425	430	360	320	300	290	280	L					
21							R	A	475	475	500	480	470	495	390	400	C	L	L					
22							415	A	A	560	R	430	R 530	530	520	B	390	400						
23								B	B	A	B	A	B	B	B	R	580	R	R					
24							R	A	B	B	A	B	B	B	B	475	B	500	R					
25							290	B	B	B	B	B	B	B	B	B	400	B						
26							B	B	B	B	B	B	B	B	B	525	430	B	300					
27							B	B	B	B	B	B	B	B	B	B	B	L	B					
28							B	R	A	600	B	B	B	B	B	B	B	L						
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	10	10	14	16	14	16	20	19	22	21	22	19	14	6				
MED						352	390	380	405	408	400	385	382	375	358	345	335	325	300	290				
UQ						388	425	400	475	472	450	422	440	425	390	380	375	365	340	405				
LQ						345	345	360	350	388	370	358	350	348	325	330	305	298	285	260				

The Radio Research Laboratories, Japan

FEB. 1973 | H'F2 (KM)

IONOSPHERIC DATA

FEB. 1973 | 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	350	E A 425	A	B	B	A	A	R	B	B	R	B	B	250	240	I B 220	215	275	240	270	A	290	A	A
2	A	A	A	A	350	300	280	230	A	A	R	B	200	230	200	200	220	240	230	250	A	280	355	A
3	A	A	A	B	B	250	230	220	A	B	220	200	210	B	E B 260	B	B	B	225	230	230	290	295	320
4	295	305	A	A 360	A	A	A	A	A 330	220	210	200	200	H 195	230	220	220	225	245	230	240	250	A 325	A
5	300	A	A	A	A	A	A	A	340	B	B	210	200	H 195	E B 260	210	230	225	250	240	275	250	250	250
6	280	A 365	A	A 350	A	A	A	230	245	210	210	220	H 220	215	A	B	230	220	B	A	240	300	A	A
7	A	A	A	300	310	F 290	A	A	A	250	I R 250	250	200	210	205	E B 250	225	230	230	245	250	A	325	A
8	A	A	A	B	300	A	A	A	A	B	280	B	230	230	B	R 250	I B 230	230	230	250	A	A	A	A
9	A	A	B	A	B	A	B	A	A	A	B	B	B	B	B	B	225	200	A 280	320	250	260	A	A
10	A	A	B	A	A	A	270	270	A	A	260	B	240	B	B 250	220	210	220	230	240	250	250	A	A
11	A	B	355	280	A	A	A	A	295	210	210	200	I B 240	230	220	H 220	200	220	225	240	250	240	240	300
12	410	310	340	330	395	A	290	220	280	A	B	240	210	210	220	E A 255	200	220	B	250	250	245	260	275
13	325	320	330	330	285	260	240	245	210	245	210	210	200	260	A	225	210	230	A 200	220	240	230	235	235
14	250	295	A	350	A	A	B	A	H 210	H 200	220	200	215	I B 225	A	210	220	220	230	240	245	240	240	310
15	A	A	330	C	A	290	A	260	A	230	230	250	230	250	240	225	250	210	B 250	245	250	280	310	A
16	A	A	A	390	360	290	240	230	205	230	210	H 210	245	220	250	220	240	225	220	250	250	A	A	A
17	A	F	A	A	300	A	B	B	A	A	B	B	H 250	230	250	230	220	250	250	250	250	A	A	A
18	A	A	A	B	A	A	A	A	A	250	210	205	200	220	240	H 205	225	225	245	250	A	A	A	A
19	A	A	A	360	B	430	A	A	270	A 270	210	240	220	A 240	205	230	245	250	240	255	280	A	A	A
20	A	A	A	340	375	310	A	240	240	225	210	I A 230	210	A 250	A 230	A 230	A 250	230	230	250	250	310	A	A
21	A	A	A	A	300	255	A	A	260	230	220	210	230	220	250	210	I C 255	220	230	245	A	F	A	A
22	A	A	A	B	A	480	355	A	A	A	A	250	240	230	230	I B 250	I B 255	250	290	285	395	A	A	B
23	A	A	A	A	A	F	360	B	B	A	B	A	B	B	B	295	270	255	A	A	A	A	A	A
24	A	B	A	A	A	B	A	A	B	B	B	B	B	B	B	270	B	250	A	B	A	A	A	A
25	A	A	A	320	380	280	B	B	B	B	B	B	B	B	B	B	B	B	B	A 350	A	A	A	A
26	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	240	250	B	270	320	290	305	A	A
27	A	B	B	A	B	370	B	B	B	B	B	B	B	B	B	B	B	250	B	295	A	A	A	A
28	B	A	A	A	B	A	B	280	A	375	B	B	B	B	B	B	B	250	250	270	295	E A 300	300	450
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	7	6	4	11	10	12	8	10	11	13	15	16	20	19	17	22	23	25	22	25	19	16	11	7
MED	300	312	335	340	330	290	275	235	260	230	210	210	218	230	235	222	225	225	235	250	250	262	295	300
UQ	338	U A 342	348	355	375	340	322	260	288	250	225	240	235	235	245	240	248	250	250	270	262	292	318	315
LQ	288	305	330	325	300	270	240	230	225	220	210	202	200	218	220	220	220	220	230	240	248	248	245	262

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FEB. 1973 | H'F (KM)

IONOSPHERIC DATA

FEB. 1973 | 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	110	110	110	B	B	125	100	180	B	B	G	B	B	130	B	B	B	B	175	165	120	110	100	130
2	100	100	95	100	100	100	150	G	100	100	G	B	130	125	G	G	G	G	150	G	110	130	100	120
3	150	100	100	B	B	130	110	150	100	B	100	G	G	B	B	B	B	B	140	130	130	160	110	105
4	100	100	110	100	95	100	100	100	100	G	120	G	120	120	115	G	100	G	140	140	130	100	105	100
5	110	110	105	100	100	100	105	100	100	B	B	120	G	110	B	B	B	G	B	130	B	125	110	110
6	140	110	110	175	100	100	120	100	100	100	100	120	100	145	110	B	110	G	B	130	125	135	110	105
7	100	110	110	100	150	100	100	110	100	100	100	100	115	100	110	B	100	100	175	150	100	105	100	110
8	110	100	100	B	205	100	120	100	100	B	B	B	125	110	B	110	B	110	G	G	110	105	100	110
9	100	100	110	100	B	100	B	100	100	100	B	B	B	B	B	B	B	105	105	105	130	130	110	100
10	110	110	B	110	100	100	130	100	95	100	100	B	120	B	B	B	115	105	B	G	G	G	130	160
11	100	150	105	100	110	120	100	100	105	G	G	100	B	120	110	110	105	G	G	105	100	100	100	130
12	110	120	110	115	110	100	130	G	G	100	B	G	G	G	115	105	100	120	B	B	G	G	150	130
13	120	110	145	180	105	130	100	100	120	120	110	110	120	110	105	130	110	105	100	100	100	100	100	100
14	100	100	110	110	120	120	B	100	G	135	G	100	120	B	110	105	105	100	100	100	125	100	100	150
15	105	150	110	C	100	100	110	100	120	100	G	G	G	110	115	105	100	100	B	120	140	135	125	105
16	100	100	110	110	110	110	140	G	G	B	100	G	120	115	110	105	105	100	100	100	100	155	105	105
17	100	110	95	100	125	130	B	B	100	100	B	B	130	160	115	100	100	105	G	150	140	100	100	105
18	105	110	110	155	100	100	100	100	100	100	100	100	115	110	100	105	G	G	G	100	105	105	110	110
19	100	100	150	130	130	100	110	100	100	110	105	130	120	110	115	110	100	G	100	G	G	115	105	105
20	150	100	100	95	100	110	110	100	G	G	140	110	120	110	105	105	100	100	100	105	G	155	105	150
21	100	110	130	125	110	100	100	105	G	130	150	110	110	110	100	100	C	100	100	170	110	160	140	110
22	130	130	150	B	100	100	100	100	100	100	130	110	G	125	130	B	B	170	140	G	100	110	110	125
23	100	100	100	100	100	100	150	B	B	150	B	155	B	B	B	G	G	G	105	100	130	110	110	100
24	115	B	100	100	130	B	100	100	B	B	125	B	B	B	B	G	B	150	105	B	110	110	110	95
25	100	130	110	100	100	120	160	B	B	B	B	B	B	B	B	B	B	B	B	110	110	100	100	100
26	100	110	B	B	B	145	B	170	B	B	B	B	B	B	B	B	B	B	150	110	G	115	100	105
27	110	100	110	100	150	170	B	B	B	B	B	B	B	B	B	B	B	B	B	130	120	150	110	100
28	B	120	100	100	B	105	B	B	120	105	B	B	B	B	B	B	B	B	150	B	130	125	120	100
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	27	27	26	22	23	27	22	20	17	16	13	12	14	17	15	12	13	14	17	20	22	26	28	28
MED	105	110	110	100	105	100	110	100	100	100	105	110	120	110	110	105	100	105	105	115	115	112	108	105
UQ	110	110	110	115	122	120	130	102	100	115	125	120	120	125	115	110	105	110	150	135	130	135	110	122
LQ	100	100	100	100	100	100	100	100	100	100	100	100	115	110	108	105	100	100	100	102	105	105	100	100

FEB. 1973 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1973 | 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	R 1	R 1	R 1			RL 11	R 1	RR 11						H 1					H 1	R 1	R 1	R 2	R 2	R 1
2	R 3	RL 21	R 2	R 1	R 2	R 1	HL 11		R 1	R 1			H 1	H 1					H 1		R 1	R 1	R 2	R 4
3	H 1	R 1	R 1			RR 12	R 1	H 1	R 1		L 1								H 1	H 2	H 1	R 1	R 1	L 1
4	R 1	R 2	R 1	RR 21	R 1	R 1	R 1	R 1	R 2		H 1		H 1	H 1	C 1		L 1		H 1	H 1	H 1	L 1	R 1	R 2
5	R 1	R 2	RR 11	RR 11	R 2	R 2	R 1	R 2	R 2			H 1		H 1						H 1		L 1	C 1	C 2
6	R 1	C 2	R 1	RR 11	R 1	LR 21	RL 11	L 1	L 2	L 2	L 2	H 1	H 1	RR 11	L 1		L 1			H 1	H 1	R 2	R 2	R 3
7	LR 14	R 4	R 3	R 1	RL 11	RL 11	R 2	R 2	R 2	R 1	L 1	RL 11	HL 11	H 1	C 1		L 1	L 1	HL 11	H 1	LH 11	RS 21	LR 12	R 3
8	RL 21	R 2	R 2		RH 11	R 1	R 1	R 1	R 1				H 1	H 1		L 1		L 1			R 2	R 3	RR 11	R 1
9	R 1	L 1	L 1	R 2		R 1		R 1	R 1	R 1								R 1	R 1	R 1	L 1	RR 11	R 2	R 2
10	R 2	LR 21		R 1	R 1	R 1	CL 11	L 1	L 3	L 1	L 2		C 1				L 1	L 1					R 1	RRR 11
11	R 1	R 1	R 1	R 2	R 1	R 1	R 1	R 1	R 2			L 1		H 1	H 1	LC 11	C 1			L 1	L 1	L 1	L 2	R 1
12	R 3	RL 21	R 3	R 2	R 1	R 1	R 1			R 1					H 1	C 2	R 1	L 1					H 1	H 1
13	R 1	LR 11	R 1	R 1	L 1	R 1	L 1	L 1	H 1	H 1	H 1	H 1	H 1	C 2	C 3	H 1	L 1	L 2	L 2	L 3	L 1	L 1	L 1	L 2
14	L 3	LR 11	L 1	R 1	R 1	R 1		R 2		H 1		L 2	H 1		C 1	C 1	L 1	C 2	L 2	L 2	LL 12	L 2	L 2	RR 11
15	R 5	LR 12	RL 11		R 1	LR 11	LR 11	R 1	LR 11	R 1				C 1	C 1	C 1	R 2	R 1		L 1	RL 11	RL 11	R 3	R 6
16	R 6	R 1	RL 31	RL 32	RL 31	R 1	HL 12				L 1		C 1	H 1	C 2	C 2	L 1	L 2	L 2	L 2	L 1	R 1	R 1	RL 11
17	R 2	LL 11	R 1	R 2	RR 11	LL 11			R 1	R 1			H 1	H 1	H 1	R 2	H 1	R 1		H 1	LL 11	R 5	RR 11	R 4
18	R 5	R 5	R 5	RR 11	R 2	R 1	R 2	RR 11	R 2	RL 11	R 1	L 2	H 1	H 1	L 1	R 1				L 1	R 2	RS 31	RR 11	R 2
19	RL 21	LR 11	LL 11	RR 11	LL 11	RL 21	RL 11	R 2	R 2	RR 11	R 1	H 1	HL 11	H 3	H 1	H 1	L 1		L 1			R 2	R 5	R 6
20	LR 11	R 1	R 2	L 2	R 1	R 1	R 2	L 1			H 1	C 2	H 2	H 2	R 2	C 2	C 4	L 3	L 1	R 1		R 1	R 1	NR 11
21	R 2	RR 11	RR 21	R 1	R 2	LL 11	L 1	R 3		LL 11	H 1	C 1	H 1	H 2	L 1	R 2		R 2	R 2	H 1	RR 11	RL 11	RL 12	LR 12
22	LL 11	LR 11	RR 11		RL 11	R 2	L 1	R 1	R 2	R 2	RL 11	R 1		H 1	H 1			R 1	RL 11		RS 11	R 1	R 3	L 1
23	R 1	R 1	R 1	R 1	L 1	R 1	R 1			LL 11		H 1							R 1	R 2	LR 11	R 3	RL 61	R 2
24	R 1		R 1	R 1	L 1		L 1	R 1			L 1							H 1	L 1		RS 11	R 1	R 1	L 2
25	R 2	LRL 11	RL 11	RR 21	R 1	H 1	H 1													R 1	R 2	R 2	R 1	L 1
26	RL 21	RL 11				R 1		L 1											H 1	R 1		R 1	R 3	R 3
27	R 2	R 1	R 1	R 2	L 1	H 1														NR 11	R 1	RR 11	R 1	R 1
28		R 2	R 2	L 1		R 1			R 1	R 1									H 1		L 1	L 1	R 2	L 1
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																								

The Radio Research Laboratories, Japan

FEB. 1973 | TYPES OF ES

IONOSPHERIC DATA

MAR. 1973 | 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	B	B	R	45	F 48	50	55	C	C	C	C	C	C	51	45	F 36	F	F	A	A
2	A	A	A	B	B	B	B	B	R	B	B	B	B	B	B	B	51	39	B	A	R	A	A	A
3	A	B	A	A	A	J F 35	B	R	A	41	B	B	B	R	45	47	B	48	R 43	42	40	F 32	F 26	J F 23
4	F	F	A	A	A	A	F 43	F 47	F 51	50	52	53	53	57	57	56	58	50	47	44	F 41	F 36	F 31	F 26
5	F 25	F	F	A	F	F	F 45	54	F 55	60	61	67	67	66	61	63	62	56	51	F 49	B	A	A	A
6	A	A	A	A	F	R	R	R	A	B	B	R	B	F 46	R	42	48	40	R	A	A	A	A	A
7	A	A	F	A	F	F	R	48	R	F 47	F	F 46	C 51	F 52	F 56	F 55	50	48	46	46	J F 34	F	F	F
8	F	F	A	A	A	F 29	F 36	F 45	51	51	51	56	58	F 61	F 57	F 61	F 60	U F 59	F 58	F 50	U F 46	U F 39	J F 35	A
9	A	A	R	A	A	A	R	A	F	B	52	54	B	U F 69	U F 59	J F 59	F 59	F 59	61	53	F 49	F 45	F 35	F 26
10	A	A	F	A	A	F 50	F	F 52	F 56	F 56	F 60	F 62	67	74	67	66	59	53	50	49	F 45	F 32	F	A
11	A	A	A	F	43	R	R	F 54	F 53	F 53	F 59	F 61	65	F 71	J F 68	F 65	F 59	57	53	53	U R 44	R	R	F 25
12	A	30	A	R	A	A	R	F 50	F 56	F 58	F 59	B	R	F 71	R 72	70	65	58	F 59	F 56	F 48	R	A	B
13	A	F 39	F	F	F	F	U F 38	F 46	F 50	57	60	65	63	70	77	75	67	69	F 63	F 60	F 53	U F 46	U F 39	F
14	F	A	A	32	U F 21	F	U F 33	F 44	F 50	F 55	65	F 74	F 82	R 86	83	84	F 70	60	61	57	46	F 41	U F 73	U F 33
15	F 29	F 24	F 24	F 20	F 18	F 22	F 37	F 48	F 55	F 63	F 75	79	R 86	90	88	C	C	C	F 55	51	F 47	F 40	J F 36	F 31
16	U F 30	F 29	F 29	J F 27	F 25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	R	F	F	S	R	F	F	F 52	J R 55	F 63	I R 70	74	F 71	65	61	60	56	F 54	F 45	F 31	A	A
18	A	C	C	C	C	C	C	C	C	C	F 56	F 58	F 62	I C 67	R 69	75	B	R	F	F 43	F 30	A	A	A
19	A	A	B	A	A	R	R	R	R	R	R	B	B	B	B	B	F 38	A	R	A	A	A	A	A
20	A	B	B	A	R	B	B	R	B	B	B	B	B	B	B	B	46	R	F	F	A	A	A	B
21	A	A	C	B	R	B	R	C	C	C	C	C	B	B	B	C	C	C	B	A	A	A	A	A
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	39	B	B	B	B	A	A	A	A
23	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 37	B	A	A	A	A
24	A	A	A	B	A	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	F
25	B	B	B	B	B	B	B	R	B	B	B	B	B	C	C	C	C	36	R	R	A	A	A	A
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	33	22	A	B	C
27	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	F	B	A	A	A	A
28	A	A	A	B	A	B	R	B	B	B	B	40	B	B	B	B	75	B	B	V 35	U R 36	A	A	B
29	A	B	B	B	B	B	R	B	B	B	R	40	B	B	B	B	49	47	49	F 36	B	B	A	U R 17
30	A	A	A	A	B	A	A	A	F 35	37	40	R	B	B	57	F 63	B	B	B	45	F 31	A	J F 24	A
31	F	B	B	B	A	A	B	B	B	B	B	B	B	59	57	60	57	52	B	B	A	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	3	4	2	3	4	4	6	11	11	14	14	14	11	15	16	17	18	18	16	19	16	9	8	7
MED	F 29	F 30	F 26	F 27	F 23	F 32	F 38	F 48	F 51	52	58	60	65	69	64	63	59	52	52	49	F 44	F 39	F 35	F 26
UQ	F 30	34		30	34	F 42	F 43	F 51	F 55	F 57	F 60	F 65	68	72	72	66	62	59	58	53	F 46	F 41	F 38	F 28
LQ	F 27	F 26		F 24	F 20	F 26	F 36	F 46	F 50	50	52	53	60	60	57	56	50	48	46	42	35	F 32	F 28	F 24

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MAR. 1973 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1973 | 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	340	370	I R 370	380	C	C	C	C	C	C	L						
2							B	B	A	B	B	B	B	B	B	B	L 380							
3								U R 320	A	350	B	B	B	390	400	390	B	L						
4							A	H 340	370	380	380	400	410	400	400	L 400	L							
5							L	350	L 380	390	L 410	410	410	410	L	L	L							
6								F	A	B	B	R	B	380	380	L	L	320	R					
7								A	A	F 380	F 390	380	C 380	390	390	390	L	L						
8							L	330	L 350	380	400	400	400	U L 400	L	L	L							
9								B	L	B	B	B	B	400	400	L	L	L						
10									L	350	L 410	410	410	400	410	L	L							
11								L	L	390	400	420	420	420	U L 410	L	L	L						
12									U L 360	U L 400	410	B	B	420	B	B	B							
13								L	380	390	L	410	R	R	L 400	L	L							
14										L	410	R	L	L	R	L	L							
15										L	L		L	L										
16									C	C	C	C	C	C	C	C	C	C						
17								F 300	F 350	360	390	400	400	L 400	L	L								
18									C	C	390	U L 400	L	C	L	L 390	B							
19									A	U F 380	R	B	B	B	B	B	320	A						
20									B	B	B	B	B	B	B	B	330	A						
21									C	C	C	C	B	B	B	C	C	C						
22									B	B	B	B	B	B	B	330	B	B						
23									B	B	B	B	B	B	B	B	B	B						
24									B	B	B	B	B	B	B	B	B	B						
25									B	B	B	B	B	C	C	C	C	L						
26										B	B	B	B	B	B	B	B							
27										B	B	B	B	B	B	B	B							
28										B	B	360	B	B	B	B	B							
29										B	330	350	B	B	B	B								
30										330	L	340	B	B	L	L	B							
31										B	B	B	B	B	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								6	7	13	12	12	7	11	8	5	3	1						
MED								335	370	380	395	400	410	400	400	390	330	320						
UQ								340	375	390	410	410	410	405	405	390	355							
LQ								320	355	360	385	370	400	395	395	390	325							

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MAR. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1973 | 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	A	B	A	B	B	B	270	240	I A 255	A	C	C	C	C	C	C	B	B	F 190	A	A	A	B
2	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	265	B	B	A	A	C	A	A
3	A	B	A	B	B	240	B	B	A	A	B	B	B	R	260	260	B	B	B	B	B	B	A	105
4	A	A	A	A	A	A	A	H 210	H 220	H 260	230	250	275	260	A	260	240	230	U R 200	A	A	A	A	A
5	A	A	A	A	A	140	A 150	190	220	250	250	260	260	240	290	275	250	A	A	A	B	A	B	A
6	A	A	B	A	A	A	A	A	A	B	B	R 275	B	270	270	260	230	210	B	B	A	A	A	A
7	A	A	A	A	A	A	A	A	A	A	A 260	I A 260	C 260	A	A	250	R	U C 210	180	150	A	A	A	A
8	A	A	A	A	A	A	125	170	210	230	255	260	265	A 255	260	A	A	A	195	R 160	115	A	C	A
9	A	A	B	A	A	A	A	B	A	B	B	B	B	B	A	H 255	I B 230	210	165	B	B	B	A	A
10	A	B	A	A	A	A	A	275	240	250	265	270	265	260	A	A	A	H 210	170	145	120	B	B	B
11	B	B	A	A	A	B	A	A	220	260	H 255	265	270	H 270	270	265	250	R 210	170	A 160	115	A	A	A
12	A	A	A	B	A	B	A	A	230	240	250	B	B	B	B	B	B	B	B	150	B	A	A	B
13	B	280	A	H 260	190	A	145	I A 180	215	230	260	260	B	B	H 270	255	230	210	180	B	B	B	A	A
14	A	A	A	A	A	100	130	180	210	B	B	B	I B 260	A	A	U A 260	230	210	180	B	B	B	B	C
15	B	A	A	B	B	B	B	170	200	240	250	R 260	275	U A 270	260	C	C	C	160	150	B	B	B	U S 95
16	A	A	125	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	A	A	A	A	A	170	200	215	250	260	255	A	A	260	240	200	190	A	A	A	A	A
18		C	C	C	C	C	C	C	C	C	R 260	270	255	I C 250	250	220	B	B	A	A	J A 140	A	A	A
19		A	B	A	A	A	A	A	A	A	A	B	B	B	B	B	275	A	A	B	A	C	B	B
20		B	B	A	A	B	B	A	B	B	B	B	B	B	B	B	R	A	A	185	A	A	B	
21		A	C	B	A	B	B	C	C	C	B	B	B	B	B	C	C	C	B	A	C	A	B	
22			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 130	A		
23			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B		
24		A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A		
25			B	B	B	B	B	A	B	B	B	B	B	C	C	C	C	B	B	A	A	A		
26			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	B		
27				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A		
28				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	250	H 200	A		
29				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
30				B	B	B	A	A	A	F 250	220	B	B	B	B	R	B	B	B	B	120	B	115	
31				B	B	A	B	B	B	B	B	B	B	B	B	B	B	280	B	B	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	1	3	4	9	11	11	12	11	10	8	8	11	10	10	10	9	8		1	2
MED		280	125	H 260	190	140	138	180	220	250	252	260	262	260	265	260	240	210	180	160	120		115	100
UQ						190	148	210	225	252	260	268	270	270	270	260	250	210	190	185	135			
LQ						120	128	170	210	235	250	260	260	252	260	255	230	210	170	150	118			

MAR. 1973 | FOE (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1973 | 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	J X 29	29	40	J X 54	B	B	38	G	G	J X 63	35	C	C	C	C	C	C	E B 24	E B 23	G	J X 42	112	J X 84	J X 64
2	J X 72	J X 45	50	46	B	B	B	B	40	B	B	B	B	B	B	B	G	E B 26	B	32	25	J X 82	J X 75	J X 65
3	J X 75	J X 112	J X 46	33	31	29	B	E B 28	42	J X 30	B	B	B	G	G	G 24	B	E B 25	E B 35	23	E B 24	E B 19	15	J X 23
4	J X 32	J X 26	J X 27	41	48	37	33	28	27	G 24	G	G	G	36	J X 44	G	G	G 15	G	19	J X 62	J X 24	13	J X 62
5	33	J X 27	25	J X 54	J X 25	J X 15	G 15	G 15	G 22	G 25	G 25	29	30	31	30	28	27	25	J X 32	19	B	41	43	40
6	J X 47	38	60	30	J X 53	27	36	32	45	B	B	G	B	29	29	G	G	J X 23	29	38	38	J X 34	29	27
7	30	30	J X 50	J X 59	J X 34	J X 28	37	32	38	34	30	30	30	32	29	G	G	G	G	G	J X 26	19	J X 22	17
8	18	J X 24	30	26	29	32	21	24	G	G	G	G	29	30	G	J X 30	J X 32	26	G	G	J X 21	J X 32	J X 32	29
9	J X 34	31	J X 102	46	45	48	39	50	34	B	E B 45	E B 42	B	E B 29	30	G	E B 25	G	23	20	E B 15	34	J X 46	24
10	33	J X 70	J X 107	J X 87	J X 68	38	J X 42	G 25	30	G	G	G	27	30	32	29	25	G	G 14	17	15	10	J X 26	23
11	32	J X 104	40	36	35	J X 40	J X 34	30	28	G	27	28	120	J X 115	28	G	G	G	G	18	G	29	19	J X 21
12	28	42	31	32	J X 53	38	37	30	G	G	G	B	E B 49	E B 32	E B 56	E B 50	E B 34	E B 22	E B 22	G	22	34	J X 70	B
13	J X 49	31	31	30	24	J X 25	G	J X 26	G	G	G	G	E B 31	E B 33	G	G 23	G	23	G 17	E B 37	E B 21	J X 35	J X 21	34
14	23	27	27	24	J X 24	14	J X 27	G 17	G	E B 28	E B 32	E B 31	E B 30	27	29	28	G	G	20	E B 19	E B 13	E B 14	14	E C 17
15	18	21	17	15	17	17	E B 16	G	G	G	G	G	29	31	29	C	C	C	G	G	E B 15	E B 10	E B 9	17
16	J X 24	18	J X 30	J X 24	19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	J X 32	J X 31	J X 35	27	30	26	G	G	29	31	28	30	J X 39	G	J X 28	J X 20	J X 24	J X 24	18	J X 26	34	J X 53
18	D S 70	C	C	C	C	C	C	C	C	C	30	G	G 25	C	G	G	B	39	21	J X 24	17	J X 50	J X 54	37
19	J X 36	J X 61	J X 56	39	48	35	41	41	41	35	33	B	B	B	B	B	35	46	30	68	J X 41	J X 37	42	44
20	J X 56	B	B	35	24	B	B	23	B	B	B	B	B	B	B	B	G	36	J X 22	28	35	J X 64	J X 118	82
21	J X 57	J X 69	C	B	28	B	33	C	C	C	B	B	B	B	B	C	C	C	B	82	38	J X 64	40	J X 51
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 30	B	B	B	B	27	40	42	45
23	40	B	39	35	B	B	B	B	53	B	B	B	B	B	B	B	B	B	29	B	J X 31	J X 34	J X 77	40
24	68	54	42	B	38	43	50	40	B	B	B	B	B	B	B	B	B	B	B	B	30	28	36	J X 98
25	B	B	J X 86	B	B	B	B	40	B	B	B	B	B	C	C	C	C	24	32	28	40	J X 50	36	J X 87
26	43	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 20	G	J X 89	J X 75	C
27	41	B	B	32	32	B	B	B	B	B	B	B	B	B	B	B	B	B	35	B	J X 35	42	J X 35	36
28	J X 80	J X 69	J X 35	B	38	B	27	B	B	B	B	E B 28	B	B	B	B	E B 48	B	B	28	J X 66	31	37	35
29	37	B	B	B	B	B	36	B	B	B	E B 27	E B 31	B	B	B	B	E B 37	E B 30	E B 28	19	B	B	22	12
30	18	57	68	30	B	J X 62	39	43	32	G	32	E B 28	B	B	E B 27	G	B	B	B	30	55	56	26	32
31	19	J X 50	B	34	50	34	J X 74	B	B	B	B	B	B	E B 50	E B 34	E B 27	E B 27	G	B	B	J X 38	75	47	J X 129
	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	22	23	23	22	18	21	20	19	15	17	16	12	15	17	17	18	21	22	25	28	29	30	28
MED	35	40	40	34	34	33	36	28	28	G	E G 27	E G 28	29	30	29	E G 23	E G 25	E G 23	U 20	20	26	34	36	36
UQ	J X 52	J X 61	53	44	48	38	39	36	39	29	31	29	30	32	31	U 26	U 28	25	29	28	38	J X 50	J X 47	J X 58
LQ	28	27	30	30	25	27	27	U 22	G	G	G	G	28	30	27	G	G	G	E G 14	E G 18	16	28	22	24

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MAR. 1973 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1973 | 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	7	8	20	10	B	B	26	18	15	22	26	C	C	C	C	C	C	24	23	10	10	9	E C 10	13
2	12	9	10	34	B	B	B	B	30	B	B	B	B	B	B	B	26	26	B	E C 16	9	E C 16	10	9
3	7	40	12	15	19	15	B	28	20	12	B	B	B	26	16	20	B	25	35	20	24	19	9	10
4	8	8	10	10	11	14	10	11	10	10	13	15	15	15	15	14	17	11	11	10	10	9	8	8
5	8	8	8	10	10	9	E C 10	12	11	9	10	11	12	10	12	13	13	12	10	11	B	10	18	8
6	7	9	24	9	9	9	9	13	13	B	B	26	B	16	22	14	13	10	26	25	8	8	9	9
7	9	9	8	10	9	9	13	14	15	10	16	10	E C 23	14	E C 21	15	E C 22	13	15	12	9	9	9	9
8	8	8	8	9	7	8	10	12	10	20	20	13	15	13	11	10	10	10	16	14	10	9	E C 15	7
9	7	9	22	10	9	15	16	36	15	B	45	42	B	29	24	16	25	14	15	17	15	14	9	7
10	7	15	10	9	10	10	10	9	9	10	10	9	12	19	12	18	19	14	11	12	10	9	9	9
11	10	17	10	10	15	26	20	12	9	10	10	12	21	15	10	10	19	20	10	10	10	10	11	9
12	9	8	10	30	15	25	18	10	15	13	14	B	49	32	56	50	34	22	22	13	14	8	12	B
13	20	13	10	10	9	E C 10	10	10	13	14	12	15	31	33	18	16	22	14	11	37	21	15	8	9
14	6	E C 9	8	8	7	9	7	8	14	28	32	31	30	23	24	22	13	13	14	19	13	14	13	E C 17
15	9	8	8	11	11	13	16	15	16	18	18	22	21	16	14	C	C	C	14	12	15	10	9	9
16	9	9	10	E C 10	E C 10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	9	8	10	8	E C 12	11	10	10	11	10	23	12	11	10	10	10	9	9	9	9	9	9
18	9	C	C	C	C	C	C	C	C	C	E C 27	15	21	C	10	16	B	24	15	9	9	10	9	8
19	10	9	31	13	16	15	E C 15	10	15	13	15	B	B	B	B	B	20	12	10	22	9	9	21	28
20	10	B	B	11	10	B	B	19	B	B	B	B	B	B	B	B	17	20	12	11	13	13	15	31
21	10	12	C	B	15	B	24	C	C	C	B	B	B	B	B	C	C	C	B	10	E C 20	13	17	9
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	B	B	B	B	9	9	10	13
23	15	B	15	18	B	B	B	B	49	B	B	B	B	B	B	B	B	B	18	B	10	20	22	13
24	13	10	10	B	14	20	27	27	B	B	B	B	B	B	B	B	B	B	B	B	9	11	10	9
25	B	B	40	B	B	B	B	20	B	B	B	B	B	C	C	B	21	20	10	E C 14	10	10	16	C
26	29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	20	10	14	35	C
27	20	B	B	15	21	B	B	B	B	B	B	B	B	B	B	B	B	B	12	B	9	10	10	9
28	15	25	20	B	27	B	22	B	B	B	B	28	B	B	B	B	48	B	B	21	10	10	10	26
29	12	B	B	B	B	B	21	B	B	B	27	31	B	B	B	B	37	30	28	13	B	B	10	10
30	9	9	21	15	B	21	14	20	20	21	21	28	B	B	27	9	B	B	B	24	11	20	10	10
31	9	22	B	25	18	14	48	B	B	B	B	B	B	50	34	27	27	20	B	B	10	10	9	14
	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	30	29	29	28	28	28	30	29	29	27	28	27	27	28	30	30	30	30	30	28
MED	9	10	12	12	15	20	20	18	16	25	30	31	B	33	26	22	25	20	16	14	10	10	10	9
UQ	13	40	31	34	B	B	B	B	B	B	B	B	B	B	B	B	B	D B 30	B	24	14	14	15	13
LQ	8	9	10	10	10	10	11	12	13	12	14	15	23	16	14	14	18	13	11	11	9	9	9	9

MAR. 1973 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1973 | 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	B	B	R	260	F 260	R	270	C	C	C	C	C	C	315	320	F 280	F	F	A	A
2	A	A	A	B	B	B	B	B	R	B	B	B	B	B	B	B	295	280	B	A	R	A	A	A
3	A	B	A	A	A	J F 295	B	R	A	240	B	B	B	R	295	270	B	315	R 325	335	320	F 315	F 290	J F 305
4	F	F	A	A	A	A	F 275	F 270	F 270	265	270	285	285	295	305	330	330	325	340	340	F 315	F 295	F 315	F 310
5	F 280	F	F	A	F	F	F 290	F 275	F 280	280	275	295	300	295	285	305	305	315	320	F 320	B	A	A	A
6	A	A	A	A	F	R	R	R	A	B	B	R	B	F 260	R	240	280	245	R	A	A	A	A	A
7	A	A	F	A	F	F	R	250	R	F 240	F	F	C 270	F 270	F 285	F 290	320	310	320	305	J F 295	F	F	F
8	F	F	A	A	A	F 260	F 255	F 280	295	280	260	270	270	F 310	F 290	F 295	F 300	F	F 310	F 320	U F 325	U F 305	J F 285	A
9	A	A	R	A	A	A	R	A	F	B	270	280	B	U F 290	U F 270	J F 300	F 295	F 290	310	320	F 305	F 310	F 295	F 270
10	A	A	F	A	A	F 270	F	F 280	F 285	F 285	F 270	F 275	270	295	285	305	320	325	330	320	F 330	F 290	F	A
11	A	A	A	F	250	R	R	F 280	F 265	F 260	F 260	F 275	260	F 280	J F 285	F 310	F 295	305	295	300	U R 295	R	R	F 275
12	A	300	A	R	A	A	R	F 260	F 280	F 265	F 250	B	R	F 275	R 285	315	325	315	F 315	F 315	F 290	R	A	B
13	A	F 255	F	F	F	F	U F 265	F 250	F 260	265	265	295	270	275	290	295	300	320	F 315	F 315	F 320	U F 305	U F 310	F
14	F	A	A	250	U F 260	F	F	F 285	F 285	F 275	290	F 280	F 280	R 290	290	310	F 530	305	330	330	325	F 315	F	F
15	F 295	F 270	F 270	F 250	F 240	F 260	F 295	F 300	F 290	F 275	F 295	280	R 285	300	305	C	C	C	F 325	315	F 340	F 330	J F 310	F 290
16	U F 300	F 310	F 275	J F 295	F 280	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	R	F	F	S	R	F	F	F 265	J R 275	F 275	I R 290	290	F 310	325	330	335	340	F 315	F 310	F 325	A	A
18	A	C	C	C	C	C	C	C	C	C	F 285	F 275	F 280	I C 290	R 285	270	B	R	F	F 325	F 285	A	A	A
19	A	A	B	A	A	R	R	R	R	R	R	B	B	B	B	B	F 205	A	R	A	A	A	A	A
20	A	B	B	A	R	B	B	R	B	B	B	B	B	B	B	B	245	R	F	F	A	A	A	B
21	A	A	C	B	R	B	R	C	C	C	C	C	B	B	B	C	C	C	B	A	A	A	A	A
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	225	B	B	B	B	A	A	A	A
23	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 325	B	A	A	A	A
24	A	A	A	B	A	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	F
25	B	B	B	B	B	B	B	R	B	B	B	B	B	C	C	C	C	270	R	R	A	A	A	A
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	315	320	A	B	C
27	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	F	B	A	A	A	A
28	A	A	A	B	A	B	R	B	B	B	B	250	B	B	B	B	320	B	B	V 305	U R 260	B	B	B
29	A	B	B	B	B	B	R	B	B	B	R	280	B	B	B	B	335	330	330	F 335	B	B	A	U R 275
30	A	A	A	A	B	A	A	A	F 275	245	270	R	B	B	310	F 315	B	B	B	335	F 295	A	F	A
31	F	B	B	B	A	A	B	B	B	B	B	B	B	315	325	335	315	315	B	B	A	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	3	4	2	3	4	4	5	11	11	13	14	13	11	15	16	17	18	17	16	19	16	9	6	6
MED	F 295	F 285	F 272	F 250	F 255	F 265	F 275	F 275	F 280	F 265	270	280	280	290	290	305	310	315	322	320	F 312	F 310	F 302	F 282
UQ	F 298	305		272	F 270	F 282	F 290	F 280	F 285	F 275	275	280	285	295	305	315	325	320	330	328	F 322	F 315	F 310	F 305
LQ	F 288	F 262		250	245	F 260	F 265	F 260	F 268	F 260	265	F 275	270	278	285	290	295	305	315	315	F 295	F 305	F 290	F 275

The Radio Research Laboratories, Japan

MAR. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1973 | 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	400	430	R	375	C	C	C	C	C	C	275						
2							B	B	A	B	B	B	B	B	B	B	350							
3								R	A	530	B	B	B	R	370	420	B	L						
4							365	395	395	390	395	310	370	330	310	300	270							
5							L	340	330	320	350	310	300	300	L	290	L							
6								F	A	B	B	R	B	445	R	L	L	520	R					
7								450	R	495	F	F	410	400	355	315	290	L						
8							L	350	330	350	400	375	365	300	L	L	L							
9								B	L	B	B 400	370	B	330	360	300	300	L						
10									L	285	350	350	345	295	320	280	255							
11								330	L	395	370	345	310	320	305	290	250	260						
12									320	340	400	B	380	350	B 325	280	260							
13								L	390	350	300	310	345	310	290	275	250							
14										L	320	310	280	275	280	255	245							
15										L	290		275	260										
16									C	C	C	C	C	310	260	C 250	C	C						
17								380	F	380	380	345	300	295	L	L								
18									C	C	350	340	L	I C 305	310	310	B							
19									A	R	R	B	B	B	B	B	750	A						
20									B	B	B	B	B	B	B	B	450	R						
21									C	C	C	C	B	B	B	C	C	C						
22									B	B	B	B	B	B	B	R 600	B	B						
23									B	B	B	B	B	B	B	B	B	B						
24									B	B	B	B	B	B	B	B	B	B						
25									B	B	B	B	B	C	C	C	C	L						
26										B	B	B	B	B	B	B	B							
27										B	B	B	B	B	B	B	B							
28										B	B	500	B	B	B	B	255							
29										B	R 510	R 415	B	B	B	B								
30										530	L	R	B	B	280	270	B							
31										B	B	B	B	E B 290	250									
	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	7	6	11	14	12	11	16	13	14	12	3						
MED							365	380	360	380	372	345	345	308	310	290	265	275						
UQ								398	395	445	400	372	368	330	325	310	325	398						
LQ								345	330	345	350	310	300	295	280	275	252	268						

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MAR. 1973 | H'F2 (KM)

IONOSPHERIC DATA

MAR. 1973 | 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

Day \ 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
1	A	A	A	A	B	B	A	290	240	I A 250	280	C	C	C	C	C	C	240	250	290	A	A	A	A
2	A	A	A	B	B	B	B	B	A	B	B	B	B	B	B	B	250	270	B	A	A	A	A	A
3	A	B	A	A	A	330	B	B	A	270	B	B	B	245	250	235	B	240	280	260	250	260	275	295
4	325	460 A	A	A	A	A	A	250	210	230	215	245	245	250 A	A	220	225	220	245	230	245	240	235	250
5	270	340 A	A	A	375	310	250	240	230	220	210	235	220	210	220	240	225	225	250	250	B	A	A	A
6	A	A	B	A	A	A	A	A	A	B	B	R	B	210	250	240	240	245	A	A	A	A	A	A
7	A	A	A	A	A	320	A	A	A	260	220	220	225	230	250	240	230	230	245	260	270	295	330	A
8	A	355 A	A	A	A	365	280	240	240	220	220	240	220	245	210	230	230	240	240	240	240	A 240	265	A
9	A	A	B	A	A	A	A	B	A	B	B	B	B	240	230	230	235	250	240	230	230	250	255	330
10	A	A	A	A	A	360	A	320	255	210	210	230	230	220	240 A	235	230	235	240	245	230	250	A	A
11	A	B	A	A	A	A	A	260	220	230	230	H 210	225	245	240	225	230	245	260	240	250	290	A	390
12	A	330	A	B	A	A	A	335	255	250	230	B	B	B 270	B	B	B	250	250	240	260	A	A	B
13	B	410	380	400	395	350	295	250	230	245	240	250	235	B 250	245	240	240	250	230	E B 260	240	250	240	A
14	A	A	A	460	400	320	280	250	245	240	245	230	230	245	240	240	230	230	230	230	230	240	250	250
15	260	310	285	E B 360	E B 400	345	260	240	260	230	210	225	215	230	235	C	C	C	220	225	230	230	250	275
16	280	270	280	300	320	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	320	A	A	A	A	290	250	230	240	240	240	230	230	230	235	225	220	225	220	280	A	A
18	A	C	C	C	C	C	C	C	C	C	255	225	220	I C 240	240	230	B	250	245	240	325	A	A	A
19	A	A	B	A	A	A	A	A	A	215	200	B	B	B	B	B	A	A	A	A	A	A	A	B
20	A	B	B	A	A	B	B	R	B	B	B	B	B	B	B	B	E R 320	A	310	350	A	A	A	B
21	A	A	C	B	A	B	A	C	C	C	C	C	B	B	B	C	C	C	B	A	A	A	A	A
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 325	B	B	B	B	A	A	A	A
23	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	295	B	A	B	B	A
24	A	A	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	250
25	B	B	B	B	B	B	B	A	B	B	B	B	B	C	C	C	C	330	A	A	A	A	A	A
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	260	270	A	B	C
27	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	305 A	B	A	A	A	A
28	A	A	B	B	B	B	A	B	B	B	B	265	B	B	B	B	B	B	B	260	390	A	A	B
29	A	B	B	B	B	B	A	B	B	B	B 275	E B 290	B	B	B	B	B 250	250	B 240	240	B	B	A	A
30	A	A	A	A	B	A	A	A	A	280	260	B 260	B	B	250	240	B	B	B	250	A 295	B	F 275	A
31	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	245	250	260	B	B	A	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	4	7	4	4	5	8	5	11	11	15	16	14	11	15	14	16	15	19	19	20	16	11	9	7
MED	275	340	302	380	385	338	280	250	240	230	230	235	225	240	240	236	232	245	245	241	248	250	255	275
UQ	302	382 A	350	430	400	355	280	290	252	250	250	248	232	245	250	240	242	250	255	260	270	270	275	312
LQ	265	320	282	315	375	320	260	245	230	225	212	225	220	230	230	230	230	232	240	235	230	240	250	250

The Radio Research Laboratories, Japan

MAR. 1973 | H'F (KM)

IONOSPHERIC DATA

MAR. 1973 | 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 15 MHz to 30 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	110	110	130	100	B	B	115	G	G	130	120	C	C	C	C	C	C	B	B	G	150	100	170	100
2	150	150	110	150	B	B	B	B	130	B	B	B	B	B	B	B	G	B	B	110	110	100	100	105
3	130	150	120	130	130	145	B	B	100	110	B	B	B	G	G	120	B	B	B	150	B	B	125	120
4	150	105	130	100	100	105	100	105	100	100	G	G	G	110	105	G	G	100	G	100	100	130	125	140
5	100	120	100	100	100	100	100	100	110	110	100	130	120	120	110	100	110	100	100	150	B	120	120	100
6	100	110	180	100	190	105	105	120	110	B	B	G	B	140	130	G	G	100	120	120	110	110	110	110
7	120	120	110	110	110	100	120	120	100	110	130	110	115	110	120	G	G	G	G	G	105	130	120	110
8	110	105	110	110	120	120	140	130	G	G	G	G	120	110	G	105	105	120	G	G	130	110	105	120
9	105	110	150	110	100	105	125	110	100	B	B	B	B	B	110	G	B	G	145	140	B	115	130	150
10	110	140	110	100	100	100	100	95	110	G	G	G	110	115	110	105	110	G	110	155	140	110	100	110
11	130	130	120	130	120	110	110	110	130	G	E G 150	120	120	110	110	G	G	G	G	145	G	130	145	105
12	175	195	110	100	100	110	105	100	G	G	G	B	B	B	B	B	B	B	B	G	150	110	100	B
13	110	150	110	110	120	110	G	100	G	G	G	G	B	B	G	110	G	105	105	B	B	125	130	110
14	180	110	110	105	105	140	100	100	G	B	B	B	B	125	130	120	G	G	130	B	B	B	120	C
15	175	130	130	130	130	130	B	G	G	G	G	G	E G 140	130	130	C	C	C	G	G	B	B	B	100
16	100	100	110	100	100	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	120	130	125	130	120	145	G	G	130	125	130	110	105	G	100	100	100	115	105	130	120	100
18	105	C	C	C	C	C	C	C	C	C	150	G	130	C	G	G	B	125	150	100	100	110	100	110
19	110	130	110	120	115	125	110	105	110	110	105	B	B	B	B	B	150	110	105	175	105	105	110	120
20	110	B	B	100	95	B	B	110	B	B	B	B	B	B	B	B	G	120	115	160	120	105	130	110
21	105	105	C	B	115	B	150	C	C	C	B	B	B	B	B	C	C	C	B	120	105	180	120	145
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	150	110	115	115
23	115	B	100	110	B	B	B	B	160	B	B	B	B	B	B	B	B	B	140	B	110	110	130	110
24	115	150	105	B	125	120	120	140	B	B	B	B	B	B	B	B	B	B	B	B	110	110	110	125
25	B	B	185	B	B	B	B	120	B	B	B	B	B	C	C	C	C	160	125	110	110	110	110	170
26	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	G	145	130	C
27	120	B	B	100	120	B	B	B	B	B	B	B	B	B	B	B	B	B	100	B	105	130	110	110
28	105	140	110	B	125	B	150	B	B	B	B	B	B	B	B	B	B	B	B	175	140	105	120	115
29	110	B	B	B	B	B	110	B	B	B	B	B	B	B	B	B	B	B	B	130	B	B	120	125
30	125	140	125	130	B	110	115	125	120	G	130	B	B	B	B	G	B	B	B	140	125	125	125	120
31	125	115	B	125	125	120	150	B	B	B	B	B	B	B	B	B	B	G	B	B	120	150	105	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	28	22	23	23	22	18	19	17	12	6	8	4	8	10	10	6	5	10	13	17	21	26	29	27
MED	110	125	110	110	118	110	115	110	110	110	128	122	120	112	110	108	110	108	115	140	110	110	120	110
UQ	128	140	128	128	125	125	122	120	125	110	135	128	128	125	130	120	110	120	130	150	130	130	125	120
LQ	105	110	110	100	100	105	105	100	100	110	112	115	118	110	110	105	105	100	105	115	105	110	110	110

The Radio Research Laboratories, Japan

MAR. 1973 | H'ES (KM)

IONOSPHERIC DATA

MAR. 1973 | 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	LR 13	R 4	RL 11	L 1			R 1			HR 11	R 1										RR 11	LR 11	NR 12	R 1
2	RR 11	HR 11	RL 11	R 1					R 1											R 1	R 1	RR 11	RR 22	R 1
3	RR 12	L 1	RL 11	RL 11	R 1	H 1			R 1	RL 11						L 1				H 1			R 1	C 1
4	LR 12	R 2	R 2	R 2	R 2	R 1	R 1	L 1	L 1	L 1				C 1	C 1			L 1		L 1	L 1	LL 11	LL 11	LL 13
5	L 2	CL 11	R 2	L 2	LR 31	L 1	L 1	L 1	LL 11	L 1	L 2	H 1	H 1	C 1	L 1	L 1	L 1	L 2	L 4	R 1		R 2	R 2	R 3
6	R 3	RL 51	RR 11	R 3	RR 11	R 1	R 3	R 2	R 2					H 1	C 1			L 1	L 1	R 1	R 4	R 5	R 5	R 7
7	R 5	R 3	L 3	R 3	RL 21	R 2	R 1	R 2	R 1	RL 11	H 1	R 1	H 1	L 1	L 1						LR 11	R 2	L 1	R 2
8	R 2	R 3	R 4	R 4	RL 51	RL 11	H 1	H 1					C 1	C 1		L 2	L 2	RL 11			H 3	L 4	L 4	R 4
9	R 3	R 3	HLR 11	RL 11	R 3	R 2	R 1	R 1	R 1						L 1				H 1	H 1		LL 21	LL 12	RL 11
10	R 6	RR 11	RR 11	R 1	L 1	R 2	R 2	L 2	LL 11				R 1	C 1	C 3	L 1	L 1		L 1	HL 11	HL 11	LR 11	LR 12	R 1
11	R 4	LR 11	RL 51	R 2	R 2	R 1	R 1	R 1	HL 11		H 1	H 1	H 1	L 1	L 1					R 1		R 1	L 1	L 1
12	RR 12	HR 11	R 3	L 1	R 2	R 1	R 1	R 2													H 1	R 4	RRR 11	
13	L 1	H 1	R 3	H 2	H 2	LR 11		L 2								L 1		L 1	L 1			LL 11	LL 12	R 3
14	HR 12	RL 21	R 1	R 2	LR 11	H 1	L 1	L 1						C 1	L 1	L 1			C 1				H 1	
15	H 1	H 1	R 1	L 1	H 1	H 1							H 1	H 1	H 1									L 1
16	LR 11	L 1	L 1	L 1	L 1																			
17			LL 11	LL 11	R 1	R 1	R 1	R 1			H 1	H 1	C 1	C 1	C 2		L 1	L 1	L 1	H 1	L 1	RL 11	R 5	LR 21
18	R 3										H 1		L 1					R 1	L 1	L 1	L 1	R 2	R 2	R 3
19	RF 21	LL 21	R 1	R 2	R 1	LL 11	R 1	R 2	R 1	R 1	R 1						H 1	R 1	R 1	R 1	R 2	RR 11	R 1	R 1
20	R 2			R 1	L 1			R 1										R 1	R 1	H 1	R 1	R 2	R 1	F 1
21	FF 22	RR 11			R 1		R 1													R 1	R 2	RRL 11	R 2	RR 13
22																					H 1	R 1	R 2	R 1
23	R 2		R 1	R 1					R 1										H 1		R 2	R 1	FR 11	R 1
24	R 1	RL 12	R 1		R 1	R 1	R 1	R 1													R 4	R 2	R 2	RF 11
25			LL 11					R 1										H 1	R 1	R 1	R 3	R 3	R 1	FR 11
26	F 1																					RL 11	L 1	
27	R 1			R 1	R 1														R 1		R 2	R 2	R 2	R 2
28	R 1	R 1	R 1		L 1		R 1													H 1	H 1	R 4	R 4	R 1
29	R 1						R 1													L 1			R 1	R 1
30	RR 11	R 2	R 1	R 1		R 1	R 1	L 1	R 1		H 1									R 1	C 2	L 1	C 1	RF 41
31	R 4	R 1		R 1	R 1	R 2	L 1														R 1	RR 11	R 2	F 2
	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

MAR. 1973 | TYPES OF ES

IONOSPHERIC DATA

APR. 1973 | 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	F	F 36	F	A	A	A	R	R	B	B	B	B	B	B	B	B	R	A	A	U F 18	A	B	A
2	B	A	A	F	A	B	B	B	R	B	B	R 37	B	B	B	B	40	F 35	A	A	A	A	A	A
3	A	A	A	A	F	A	B	B	B	B	B	B	B	B	B	50	B	46	B	B	B	A	A	A
4	A	A	A	A	A	A	A	A	A	45	B	B	61	63	66	66	F 59	52	50	F 42	F 29	F 17	16	F
5	A	A	A	F	A	A	A	F 49	F 47	R	J R 50	B	F 61	I C 63	75	F	F	F 54	F 48	U F 45	F 32	F 22	F 22	F 17
6	F 16	A	F 21	R	F	U F 35	F 32	36	F 42	H 57	B	R	F	75	F 75	F 78	F 76	J R 66	F 50	F 39	U F 32	F 25	F 21	F 19
7	F 18	F 16	A	B	A	A	F	F	F 50	F 57	F 61	67	F 72	F 72	F 81	83	71	59	F 51	U S 43	F 32	U F 28	F 21	F 22
8	F 17	F 18	A	F 28	U F 30	F	F	F 32	F 44	U F 60	F 62	U F 72	83	J R 90	J R 90	95	U F 80	F	F 53	F 50	F 46	F 34	A	A
9	A	A	A	A	A	A	R	R	51	B	F	F	F 73	F 76	76	79	63	56	53	43	F 39	F 26	F 16	U F 16
10	A	A	A	A	A	F 32	F	F	F 48	59	R 68	R 75	80	79	74	74	67	54	F 48	F 39	F 31	F 28	F 22	F 18
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A
12	A	A	A	A	F 27	F 27	F 26	F 29	35	43	52	58	R 78	R	R	76	78	54	F	F 32	F	F 24	F 22	F 22
13	C	C	C	C	C	C	C	C	C	C	C	R	55	R	U R 94	R	B	B	R	R	B	A	A	C
14	C	A	A	A	R	F	A	A	A	B	B	B	B	B	B	R	B	34	B	A	F	A	A	A
15	A	F	F	A	F	F	A	A	R	F 35	F 44	F 44	46	R	B	U R 54	45	36	F 33	B	17	R	12	A
16	37	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	R 43	B	R	R	R	A	A	A
18	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	A	B
19	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	A	B	B	B	B	B	R	B	B	B	C	B	B	B	B	B	B	R	R	A	A	A
21	B	A	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A	A	B	A
22	B	B	A	B	B	A	A	A	B	B	B	B	B	B	B	B	41	F 40	A	A	R	A	A	A
23	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	A	A
24	A	A	A	A	A	A	B	B	R	B	B	B	B	B	B	B	B	B	B	B	19	F 17	A	A
25	A	A	A	A	R	A	A	A	B	B	B	R 48	45	B	B	B	42	B	F 39	F 33	21	A	A	C
26	A	A	A	F	R	R	A	R	A	B	40	46	48	50	B	52	58	F 63	B	A	A	A	A	A
27	A	A	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	F 35	B	B	R	R	A	A
28	A	B	A	A	B	A	B	B	B	F 32	39	40	B	B	B	F 62	72	B	B	B	R	F	U F 24	A
29	F	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	45	52	R 55	R	R	A	A	A
30	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	B	B	R 43	30	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	4	2	2	1	2	3	2	4	7	8	8	9	11	8	8	11	15	16	11	9	11	9	9	6
MED	F 18	F 17	F 28	F 28	F 28	F 32	F 29	F 34	F 47	51	51	48	61	74	76	74	59	52	F 50	F 42	F 31	F 25	F 21	F 18
UQ	28					F 34		42	F 49	58	62	67	76	78	86	78	72	55	52	F 43	F 32	F 28	F 22	F 22
LQ	F 16					F 30		F 30	F 43	39	42	44	52	63	74	58	44	38	F 44	F 39	20	F 22	F 16	F 17

APR. 1973 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

APR. 1973 | 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	B	B	B	B							
2									A	B	B	R 330	B	B	B	B	L							
3										B	B	B	B	B	B									
4											B	B	B	L	L									
5											B	B	B	C	B									
6																								
7												L	L	L										
8													L											
9												L												
10																								
11																								
12											L	L	L											
13											C	B	360	340	310 L	B								
14																								
15										280	L	L												
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																L								
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		1	1	1	1									
MED										280		R 330	360	340	310 L									
UQ																								
LQ																								

The Radio Research Laboratories, Japan

APR. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

APR. 1973 | 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	A	B	A	A	A	B	B	B	B	B	B	B	B	B	A	B	A	B		
2				A	A	B	B	B	A	B	B	B	B	B	B	B	B	190	A	A	A	A		
3					A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
4					A	B	B	A	A	280	B	B	B	B	B	B	B	B	B	B	B			
5					A	A	A	A	A	B	B	B	B	C	B	230	R	A	A	B	A			
6					A	A	A	A	A	A	B	B	R	B	B	U A 200	A	A	A	A	B			
7					B	A	A	175	165	185	205	230	250	250	240	220	190	165	B	B	B			
8			A	150	A	A	B	B	B	A	225	230	240	250	B	B	B	B	B	A	B			
9					B	A	A	A	B	B	B	230	245	240	I A 230	220	180	160	A	A	B			
10					B	A	A	R	165	170	200	200	225	220	220	200	R 180	170	110	C	B			
11					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			
12					A	165	A	140	150	165	A	220	R	B	B	R 230	180	A	B	B	B			
13					C	C	C	C	C	C	C	B	220	210	B	B	B	B	B	B	B			
14					A	A	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A			
15						A	A	A	A	R	A	A	210	B	B	B	B	B	B	B				
16						C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
17						C	C	C	C	C	C	C	C	B	B	B	B	B	A	B				
18						B	B	B	B	B	B	B	B	B	B	B	B	B	C	C				
19						B	B	B	B	B	B	B	B	B	B	B	B	C	C	C				
20						B	B	B	B	B	B	B	C	B	B	B	B	B	B	A				
21						B	B	B	B	B	B	B	B	B	B	B	B	B	B	145	A			
22						B	B	B	B	B	B	B	B	B	B	B	B	C	A	A				
23						B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
24						A	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
25						B	B	B	B	B	B	B	B	B	B	B	B	B	A	A				
26						A	B	A	B	B	U R 265	B	B	B	B	245	280	B	B	A				
27						B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
28							B	B	B	B	R	B	B	B	B	A	A 170	B	B					
29							B	B	B	B	B	B	B	B	B	B	B	B	A					
30							B	B	B	B	B	B	B	B	B	B	B	B	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				1		1		2	3	4	4	5	6	5	3	7	6	4	1	1				
MED				150		165		158	165	178	215	230	232	240	230	220	180	168	110	145				
UQ									165	232	245	230	245	250	235	230	190	180						
LQ									158	168	202	220	220	220	225	210	180	162						

APR. 1973 | FOE (0.01 MHZ)

IONOSPHERIC DATA

APR. 1973 | 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	J_{60}^{X}	J_{41}^{X}	J_{53}^{X}	30	J_{40}^{X}	J_{40}^{X}	J_{42}^{X}	34	38	B	B	B	B	B	B	B	B	29	J_{67}^{X}	J_{109}^{X}	J_{35}^{X}	J_{60}^{X}	J_{99}^{X}	J_{30}^{X}
2	B	J_{75}^{X}	61	J_{25}^{X}	38	B	B	130	37	B	J_{95}^{X}	E_{28}^{B}	B	B	B	B	E_{26}^{B}	25	29	45	J_{45}^{X}	81	J_{37}^{X}	41
3	40	J_{37}^{X}	73	J_{57}^{X}	J_{60}^{X}	52	B	B	B	B	B	B	B	B	B	E_{38}^{B}	B	E_{23}^{B}	B	B	B	J_{35}^{X}	22	33
4	33	31	J_{33}^{X}	J_{94}^{X}	93	32	50	50	40	G	B	B	E_{45}^{B}	E_{27}^{B}	E_{28}^{B}	E_{35}^{B}	E_{22}^{B}	E_{20}^{B}	E_{28}^{B}	E_{18}^{B}	17	E_{11}^{B}	26	J_{46}^{X}
5	26	25	29	21	39	28	J_{39}^{X}	J_{26}^{X}	18	E_{26}^{B}	E_{38}^{B}	B	E_{50}^{B}	C	E_{49}^{B}	G	G	22	23	E_{20}^{B}	25	27	26	J_{23}^{X}
6	J_{23}^{X}	J_{23}^{X}	J_{23}^{X}	22	20	32	J_{35}^{X}	J_{45}^{X}	J_{33}^{X}	28	B	E_{35}^{B}	G	E_{27}^{B}	E_{26}^{B}	21	22	22	19	11	E_{10}^{B}	15	29	12
7	13	18	29	B	37	41	33	G	G_{13}	G	G_{18}	28	G	G	G_{21}	23	G	19	E_{13}^{B}	E_{17}^{B}	J_{23}^{X}	12	J_{24}^{X}	22
8	J_{24}^{X}	22	29	J_{25}^{X}	J_{25}^{X}	15	30	E_{15}^{B}	E_{20}^{B}	25	G	G	G	G	E_{42}^{B}	E_{50}^{B}	E_{30}^{B}	E_{36}^{B}	E_{18}^{B}	J_{15}^{X}	E_{17}^{B}	E_{15}^{B}	33	35
9	32	J_{40}^{X}	31	J_{77}^{X}	J_{44}^{X}	J_{51}^{X}	41	41	E_{46}^{B}	B	E_{27}^{B}	28	27	27	J_{29}^{X}	J_{28}^{X}	J_{22}^{X}	J_{17}^{X}	20	17	J_{23}^{X}	J_{22}^{X}	15	18
10	29	32	35	50	45	32	22	G	17	G	G	G	G	25	G_{21}	G	G	J_{22}^{X}	32	E_{10}^{C}	12	28	J_{34}^{X}	J_{20}^{X}
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	J_{41}^{X}
12	46	39	32	27	27	35	17	G	G	18	20	G	G	E_{26}^{B}	E_{23}^{B}	G	G	15	E_{10}^{B}	E_{10}^{B}	E_{9}^{B}	14	23	J_{16}^{X}
13	C	C	C	C	C	C	C	C	C	C	C	E_{47}^{B}	G_{20}	G	E_{24}^{B}	E_{45}^{B}	B	B	34	33	B	38	34	C
14	C	39	29	75	J_{27}^{X}	J_{41}^{X}	51	58	60	B	B	B	B	B	B	E_{26}^{B}	B	22	B	37	J_{27}^{X}	27	35	30
15	30	25	J_{32}^{X}	38	J_{37}^{X}	J_{69}^{X}	45	34	27	G	24	J_{20}^{X}	G	E_{34}^{B}	B	E_{28}^{B}	E_{20}^{B}	E_{25}^{B}	E_{20}^{B}	B	15	13	E_{10}^{B}	23
16	32	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	E_{27}^{B}	B	28	22	16	J_{32}^{X}	J_{31}^{X}	J_{50}^{X}
18	B	B	J_{69}^{X}	B	B	29	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	J_{41}^{X}	40
19	J_{77}^{X}	J_{51}^{X}	B	B	37	B	B	48	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	J_{69}^{X}	B	B	B	B	B	39	B	B	B	C	B	B	B	B	B	B	31	28	J_{79}^{X}	J_{31}^{X}	J_{76}^{X}
21	B	50	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	G	J_{49}^{X}	39	J_{41}^{X}	36
22	B	B	46	B	B	58	50	40	B	B	B	B	B	B	B	B	E_{27}^{B}	E_{19}^{C}	J_{41}^{X}	50	20	37	J_{64}^{X}	J_{82}^{X}
23	J_{51}^{X}	40	52	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J_{33}^{X}	B	22	21	J_{32}^{X}	29
24	27	28	32	J_{37}^{X}	35	40	B	B	31	B	B	B	B	B	B	B	B	B	B	B	J_{17}^{X}	J_{37}^{X}	22	36
25	J_{37}^{X}	35	43	45	32	J_{59}^{X}	78	J_{59}^{X}	B	B	B	E_{30}^{B}	E_{36}^{B}	B	B	B	E_{30}^{B}	B	J_{26}^{X}	21	17	21	J_{96}^{X}	C
26	84	83	47	44	42	42	60	33	45	B	G	E_{37}^{B}	E_{22}^{B}	E_{34}^{B}	B	G	G	E_{25}^{B}	B	38	28	38	J_{43}^{X}	J_{40}^{X}
27	J_{53}^{X}	J_{49}^{X}	B	B	33	B	B	B	B	B	B	B	B	B	B	B	B	E_{26}^{B}	B	B	18	21	J_{26}^{X}	31
28	36	B	39	40	B	41	B	B	B	E_{22}^{B}	G	E_{27}^{B}	B	B	B	24	19	B	B	B	25	J_{22}^{X}	22	J_{33}^{X}
29	J_{105}^{X}	J_{72}^{X}	42	J_{94}^{X}	B	33	B	B	B	B	B	B	B	B	B	B	E_{21}^{B}	E_{26}^{B}	J_{36}^{X}	32	28	37	30	J_{120}^{X}
30	40	J_{44}^{X}	J_{36}^{X}	32	J_{71}^{X}	B	47	J_{53}^{X}	B	B	B	B	B	B	B	B	B	E_{30}^{B}	E_{21}^{B}	B	30	30	19	21
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	21	22	23	19	19	19	15	17	15	9	10	12	12	10	9	14	16	18	19	19	24	26	27	26
MED	36	39	36	38	37	40	42	40	32	E_{18}^{G}	E_{19}^{G}		E_{20}^{G}		E_{26}^{B}	E_{25}^{G}		U_{18}	25	21	22	28	31	33
UQ	J_{51}^{X}	J_{49}^{X}	50	54	43	46	50	50	39	U_{22}	U_{24}	E_{32}^{B}	E_{32}^{B}	E_{27}^{B}	E_{29}^{B}	E_{35}^{B}	E_{26}^{B}	E_{26}^{B}	32	35	28	37	J_{36}^{X}	J_{41}^{X}
LQ	29	28	32	26	32	32	34	26	18	G	G	E_{20}^{G}	G	G	E_{23}^{B}	G	G	20	20		17	21	24	23

The Radio Research Laboratories, Japan

APR. 1973 | FOES (0.1 MHZ)

IONOSPHERIC DATA

APR. 1973 | 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	12	9	15	20	12	9	19	B	B	B	B	B	B	B	B	21	10	22	9	14	37	13
2	B	16	10	9	10	B	B	40	20	B	70	28	B	B	B	B	26	9	9	10	10	10	9	17
3	13	9	9	9	9	17	B	B	B	B	B	B	B	B	B	38	B	23	B	B	B	9	9	9
4	12	21	20	9	10	20	18	15	12	14	B	B	45	27	28	35	22	20	28	18	10	11	10	9
5	10	9	11	10	10	10	10	10	12	26	38	B	50	C	49	21	20	15	10	20	9	12	11	9
6	9	9	10	15	9	9	9	14	18	21	B	35	20	27	26	18	15	13	12	9	10	10	9	9
7	9	9	11	B	16	10	10	9	10	15	15	13	14	14	18	9	16	9	13	17	10	10	9	13
8	10	9	9	E C 10	9	10	19	15	20	17	19	15	15	17	42	50	30	36	18	10	17	15	9	9
9	10	10	9	20	18	10	14	10	46	B	27	18	14	14	10	11	10	11	10	10	10	9	9	9
10	9	10	13	26	16	9	10	10	11	15	13	16	17	18	18	18	11	9	9	E C 10	9	9	9	9
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14
12	17	13	13	10	9	9	9	9	13	16	17	16	20	26	23	20	16	12	10	10	9	9	10	10
13	C	C	C	C	C	C	C	C	C	C	C	47	15	19	24	45	B	B	18	25	B	20	15	C
14	C	12	11	15	13	14	18	20	23	B	B	B	B	B	B	26	B	15	B	16	10	9	9	10
15	10	10	9	9	9	11	14	14	15	12	10	16	15	34	B	28	20	25	20	B	12	11	10	9
16	9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	27	B	15	15	10	10	13	19
18	B	B	17	B	B	20	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	13	21
19	12	26	B	B	12	B	B	36	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	10	B	B	B	B	B	24	B	B	B	C	B	B	B	B	B	B	10	10	15	19	15
21	B	10	B	10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	10	9	10	28	11
22	B	B	10	B	B	25	22	25	B	B	B	B	B	B	B	B	27	F C 19	10	10	10	10	9	20
23	25	16	9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	B	13	10	9	9
24	9	9	10	10	15	12	B	B	20	B	B	B	B	B	B	B	B	B	B	B	10	10	9	9
25	11	12	14	17	26	24	26	24	B	B	B	30	36	B	B	B	30	B	10	11	15	10	10	C
26	10	10	14	11	15	10	22	14	18	B	26	37	22	34	B	20	11	25	B	10	10	9	10	10
27	11	10	B	B	26	B	B	B	B	B	B	B	B	B	B	B	B	26	B	B	9	15	9	9
28	11	B	19	17	B	13	B	B	B	22	15	27	B	B	B	18	13	B	B	B	12	14	9	9
29	10	26	9	13	B	19	B	B	B	B	B	B	B	B	B	B	21	26	15	19	9	10	10	18
30	20	20	10	E C 25	10	B	16	29	B	B	B	B	B	B	B	B	B	30	21	B	9	13	10	9
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	25	26	26	26	26	26	26	26	26	26	26	27	26	27	28	28	28	27	26	26	26	26	27	26
MED	11	11	11	14	15	18	22	24	24	B	B	B	B	B	B	D B 50	28	25	18	16	10	10	10	10
UQ	17	21	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	13	10	14
LQ	10	9	10	10	10	10	14	14	18	21	26	28	20	27	35	20	18	14	10	10	9	10	9	9

APR. 1973 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

APR. 1973 | 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

Day \ 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
1	A	F	F 290	F	A	A	A	R	R	B	B	B	B	B	B	B	B	R	A	A	U F 280	A	B	A
2	B	A	A	F	A	B	B	B	R	B	B	R 220	B	B	B	B	250	F 255	A	A	A	A	A	A
3	A	A	A	A	F	A	B	B	B	B	B	B	B	B	B	315	B	285	B	B	B	A	A	A
4	A	A	A	A	A	A	A	A	A	305	B	B	295	290	310	325	F 305	315	320	F 335	F 305	F 295	265	F
5	A	A	A	F	A	A	A	F 280	F 285	R	J R 310	B	F 330	I C 310	295	F	F	F 335	F 325	U F 310	F 320	F 310	F 320	F 270
6	F 250	A	F 285	R	F	U F 255	F 280	265	F 305	R 300	B	R	F	320	F 315	F 335	F 335	J R 325	F 340	F 310	U F 330	F 320	F 310	F 305
7	F 290	F 265	A	B	A	A	F	F	F 290	F 300	F 320	315	F 300	F 285	F 310	325	345	340	F 335	U S 325	F 345	U F 320	320	F 320
8	F 295	F 270	A	F 250	U F 250	F	F	F 300	F 325	U F 315	F 325	F	315	J R 290	J R 285	290	U F 315	F	F 330	F 300	F 315	F 325	A	A
9	A	A	A	A	A	A	R	R	275	B	F	F	F 315	F 330	315	330	335	320	325	325	F 315	F 325	F 315	U F 315
10	A	A	A	A	A	F 250	F	F	F 290	305	R 305	R 290	315	330	340	335	345	325	F 315	F 310	F 325	F 320	F 340	F 305
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A
12	A	A	A	A	C	C	C	C	C	C	C	C	C	R	R	C	C	C	F	C	F	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	R	C	R	C	R	B	B	R	R	B	A	A	C
14	C	A	A	A	R	F	A	A	A	B	B	B	B	B	B	R	B	C	B	A	F	A	A	A
15	A	F	F	A	F	F	A	A	R	C	C	C	C	R	B	C	C	C	C	B	C	R	C	A
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	C	B	R	R	R	A	A	A
18	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	A	B
19	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	A	B	B	B	B	B	R	B	B	B	C	B	B	B	B	B	B	R	R	A	A	A
21	B	A	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A	A	B	A
22	B	B	A	B	B	A	A	A	B	B	B	B	B	B	B	B	290	F 260	A	A	R	A	A	A
23	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	A	A
24	A	A	A	A	A	A	B	B	R	B	B	B	B	B	B	B	B	B	B	B	315	F 295	A	A
25	A	A	A	A	R	A	A	A	B	B	B	R 320	310	B	B	B	325	B	F 295	F 335	365	A	A	C
26	A	A	A	F	R	R	A	R	A	B	310	285	290	300	B	310	290	F 280	B	A	A	A	A	A
27	A	A	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	F 300	B	B	R	R	A	A
28	A	B	A	A	B	A	B	B	B	F 290	310	R	B	B	B	F 305	305	B	B	B	R	F	F	A
29	F	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	245	240	R 275	R	R	A	A	A
30	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	B	B	R 325	325	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	3	2	2	1	1	2	1	3	6	6	6	5	8	8	7	9	12	13	10	8	10	8	6	5
MED	F 290	F 268	F 288	F 250	U F 250	F 252	F 280	F 280	F 290	302	310	R 290	312	305	310	325	310	315	F 325	F 318	F 318	F 320	F 318	F 305
UQ	F 292							F 290	F 305	305	F 320	R 315	315	325	315	330	335	325	F 330	330	F 330	F 322	F 320	F 315
LQ	F 270							272	F 285	F 300	310	R 285	298	290	302	310	290	F 280	315	F 310	F 315	F 302	F 310	F 305

The Radio Research Laboratories, Japan

APR. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1973 | 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	B	B	B	B							
2									A	B	B	R	B	B	B	B	L							
3										B	B	B	B	B	B									
4											B	B	B 325	285	275									
5											300	B	270	C	300									
6																								
7												L	L	L										
8													245											
9												L												
10																								
11																								
12											L	L	250											
13											C	B	425	500	330	340								
14																								
15										470	320	L												
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																290								
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		5	2	3	2								
MED										470	310		270	392	300	315								
UQ													325		315									
LQ													250		288									

The Radio Research Laboratories, Japan

APR. 1973 | H'F2 (KM)

IONOSPHERIC DATA

APR. 1973 | 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

Day \ 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
1	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	A	A	A	330	A	B	A
2	B	B	A	A	A	B	B	B	A	B	B	E B 300	B	B	B	B	B 310	330	A	A	A	A	A	A
3	A	A	A	A	A 350	A	B	B	B	B	B	B	B	B	B	B 290	B	290	B	B	B	A	A	A
4	A	B	B	A	A	B	A	A	A	300	B	B	B	250	250	260	250	240	B 250	230	250	E B 290	A	A
5	A	A	A	A	A	A	A	325	280	B 255	B	B	B	C	B	245	230	225	240	250	250	A 295	270	310
6	A 360	A	A	A	A	410	350	430	300	270	B	B 260	230	240	240	230	225	210	220	230	225	245	250	260
7	300	E C 375	A	B	A	A	F 385	285	250	245	235	225	225	250	240	240	220	220	220	225	225	230	260	255
8	B 295	330	A	400	370	345	350	290	250	240	245	235	245	240	230	250	225	230	225	230	240	245	A	A
9	A	A	A	330	A	A	A	A	B	B	265	240	240	240	240	230	220	215	220	230	230	250	260	A
10	A	A	A	B	A	E A 445	350	295	250	250	240	230	235	230	225	235	220	220	210	210	275	230	230	250
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A
12	B	A	A	A	A	380	370	300	295	265	250	250	225	220	230	220	230	200	200	220	250	280	E B 340	300
13	C	C	C	C	C	C	C	C	C	C	C	B	240	280	320	B	B	B	A	A	B	B	A	C
14	C	A	A	A	A	A	A	A	A	B	B	B	B	B	B	E B 300	B	390	B	A	A 360	A	A	A
15	A	300	F	A	A	A	A	A	A	280	240	200	250	E B 300	B	250	230	260	250	B	B	A	B	A
16	410	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B 300	B	A	A	A	A	A	A
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	A	B
19	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	A	B	B	B	B	B	A	B	B	B	C	B	B	B	B	B	B	A	A	A	A	A
21	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A	A	B	A
22	B	B	A	B	B	B	B	A	B	B	B	B	B	B	B	B	340	300	A	A	A	A	A	B
23	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
24	A	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	E A 300	275	A	A
25	A	A	A	A	B	B	B	A	B	B	B	260	E B 295	B	B	B	B 270	B	275	250	250	A	A	C
26	A	A	A	A	A	A	A	A	A	B	300	B 300	280	290	B	275	290	270	B	A	A	A	A	A
27	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	320	B	B	A	A	A	A
28	A	B	B	B	B	A	B	B	B	B 280	275	250	B	B	B	285	210	B	B	B	A	A	A	A
29	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	350	B 345	300	A	A	A	A	A
30	B	B	A	C	A	B	A	B	B	B	B	B	B	B	B	B	B	B 250	B 270	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	4	3		2	2	4	5	6	6	9	8	11	10	10	8	13	16	17	12	9	12	9	6	5
MED	330	315		365	360	378	350	298	265	265	248	245	239	242	240	248	230	250	232	230	250	248	258	260
UQ	385	341				419	370	325	295	280	270	258	248	U 265	245	268	295	300	260	230	275	278	265	300
LQ	298	315				362	350	290	250	250	240	232	230	240	230	235	222	220	220	225	235	245	250	255

The Radio Research Laboratories, Japan

APR. 1973 | H'F (KM)

IONOSPHERIC DATA

APR. 1973 | 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

Day \ 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
1	130	140	150	105	120	110	110	110	115	B	B	B	B	B	B	B	B	125	105	105	170	100	160	130
2	B	130	100	110	110	B	B	180	125	B	105	B	B	B	B	B	B	150	110	110	110	110	110	110
3	110	120	110	180	170	105	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	110	110	110
4	130	130	125	110	125	110	110	110	115	G	B	B	B	B	B	B	B	B	B	B	100	B	130	120
5	110	110	110	125	115	125	110	120	100	B	B	B	B	C	B	G	G	100	145	B	130	130	130	100
6	170	110	125	140	110	105	180	130	120	130	B	B	G	B	B	110	100	100	105	110	B	130	100	120
7	110	120	110	B	110	110	110	G	100	G	110	110	G	G	115	110	G	100	B	B	110	130	110	100
8	100	100	110	150	110	130	110	B	B	150	G	G	G	G	B	B	B	B	B	100	B	B	110	110
9	115	115	115	120	100	100	110	105	B	B	B	140	140	E G 150	100	100	100	100	100	100	125	130	120	170
10	110	125	120	110	120	110	130	G	100	G	G	G	G	120	120	G	G	100	105	C	120	100	100	110
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	105
12	110	110	110	110	110	125	100	G	G	115	110	G	G	B	B	G	G	150	B	B	B	150	120	120
13	C	C	C	C	C	C	C	C	C	C	C	B	100	G	B	B	B	B	140	120	B	125	125	C
14	C	130	140	110	140	145	120	100	100	B	B	B	B	B	B	B	B	180	B	125	115	105	115	120
15	120	130	160	160	130	110	100	120	110	G	100	115	G	B	B	B	B	B	B	B	110	115	B	130
16	100	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	140	160	140	100	110	110
18	B	B	120	B	B	120	B	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	100	110
19	100	130	B	B	100	B	B	125	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C
20	C	B	100	B	B	B	B	B	110	B	B	B	C	B	B	B	B	B	B	105	110	115	105	105
21	B	175	B	95	B	B	B	B	B	B	B	B	B	B	B	B	B	B	150	G	100	105	120	120
22	B	B	105	B	B	140	105	125	B	B	B	B	B	B	B	B	B	C	105	105	155	110	160	140
23	110	110	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	B	125	120	120	105
24	110	105	110	110	120	100	B	B	110	B	B	B	B	B	B	B	B	B	B	B	150	105	110	110
25	110	100	100	110	130	150	165	100	B	B	B	B	B	B	B	B	B	B	110	140	150	150	115	C
26	100	110	100	105	105	110	120	120	120	B	G	B	B	B	B	G	G	B	B	115	125	110	110	105
27	175	110	B	B	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	140	130	110
28	120	B	120	120	B	100	B	B	B	B	G	B	B	B	B	115	110	B	B	B	115	130	105	110
29	140	110	100	100	B	130	B	B	B	B	B	B	B	B	B	B	B	B	140	120	110	110	110	115
30	100	105	100	C	100	B	105	130	B	B	B	B	B	B	B	B	B	B	B	B	110	110	175	110
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	21	22	23	18	19	19	15	13	12	3	4	3	2	2	3	4	3	9	13	13	21	24	26	26
MED	110	112	110	110	115	110	110	120	110	130	108	115	120	U 128	115	110	100	100	110	110	120	112	112	110
UQ	120	130	120	125	122	128	120	125	118	140	110	128			118	112	105	150	140	120	130	130	125	120
LQ	110	110	102	110	110	108	108	110	100	122	102	112			108	105	100	100	105	105	110	108	110	110

The Radio Research Laboratories, Japan

APR. 1973 | H'ES (KM)

IONOSPHERIC DATA

APR. 1973 | 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	RF 12	RR 11	RR 11	R 2	RL 11	L 1	R 2	L 1	R 1									R 1	L 1	LR 11	HL 12	R 1	NF 1	RF 11
2		RF 11	RS 11	RL 11	RL 21			N 1	R 1		L 1							H 1	R 1	R 3	R 2	LR 11	R 2	R 1
3	R 1	R 4	RF 21	RR 14	LL 11	R 1																R 3	R 2	R 3
4	R 1	RF 11	R 1	FR 21	RR 11	R 1	R 1	R 1	RL 11												LH 11		RF 11	F 1
5	R 1	R 3	R 3	R 1	R 3	R 2	R 3	R 1	L 1									L 1	HL 11		RL 11	R 1	R 1	F 1
6	NF 11	RN 11	R 1	R 1	R 2	LR 12	LLL 111	RR 11	R 1	R 1						L 1	L 1	L 1	L 1	L 1		R 1	F 1	F 1
7	R 1	R 1	R 1		R 1	RL 31	R 5		L 1		L 1	L 1			L 1	L 1		L 1			L 1	F 1	F 2	F 1
8	F 1	FR 11	R 1	HL 11	LR 12	R 1	L 1			H 1										L 1			R 4	R 4
9	R 2	R 4	R 5	RR 11	R 1	R 2	R 1	R 1				H 2	H 1	H 1	L 1	L 1	L 1	L 1	L 1	L 1	LL 11	FF 11	F 1	RF 11
10	R 3	R 4	R 2	R 1	R 2	R 2	R 1		L 1					C 1	L 1			L 1	L 1		L 1	F 2	R 1	F 1
11																								F 1
12	R 1	R 1	R 1	R 4	R 3	L 1	L 1			C 1	L 1							R 1				R 1	R 1	R 1
13													L 1						R 1	R 1		R 1	R 1	
14		R 2	R 2	R 1	R 1	RR 11	R 1	R 1	R 1									LL 11		R 2	A 1	R 3	R 3	R 3
15	R 3	R 2	F 1	RR 11	R 1	R 1	R 1	R 1	R 1		R 1	L 1									F 1	F 1		R 1
16	R 1																							
17																			L 1	R 1	R 1	RS 21	R 1	R 1
18			FF 11			R 1																	R 1	R 1
19	FF 11	R 1			R 1			R 1																
20			R 2						R 1											R 2	R 1	FF 11	R 1	R 1
21		RRR 12		F 1															H 1		R 2	R 2	R 1	R 2
22			R 3			L 1	L 1	R 1											R 2	R 3	R 1	R 3	RR 13	FRF 11
23	F 1	R 1	R 2																R 1		R 1	F 2	F 3	R 3
24	R 3	R 2	R 2	R 1	R 2	R 2			R 1												RR 11	FR 11	R 1	R 4
25	R 2	R 1	R 2	R 1	F 1	L 1	LR 11	L 1											LR 11	R 1	F 1	R 1	R 1	
26	RR 11	RR 11	R 1	R 2	R 1	R 1	R 1	R 1	R 1											R 4	R 2	R 4	R 1	F 2
27	FFF 11	R 3			R 1																R 1	R 1	FR 12	R 3
28	R 2		R 1	R 1		R 1										L 1	L 1				RF 11	R 1	R 1	R 3
29	FR 11	R 1	R 1	R 1		R 1													RR 11	R 1	R 2	R 2	R 3	FR 11
30	F 1	R 1	R 1	R 1	R 1		R 1	L 1													R 2	R 1	RR 11	R 1
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

APR. 1973 | TYPES OF ES

IONOSPHERIC DATA

MAY. 1973 | 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	B	B	B	A	B	A	B	B	B	F 59	64	U R 67	71	68	63	56	F 34	F 30	B	B	R	A
2	A	A	A	B	B	B	B	A	A	R	40	48	F 55	61	57	53	47	U R 42	F 28	18	B	B	B	B
3	A	A	A	A	B	B	B	A	B	B	B	59	67	74	75	B	R	F 48	F 31	B	B	R	A	A
4	A	A	A	B	B	B	A	A	B	B	B	R 55	F 65	F 75	80	F 73	65	F 62	R	22	B	B	A	A
5	A	A	B	B	A	A	R	A	F 32	F 40	48	54	62	68	78	69	J R 52	39	F 25	F 17	U F 15	F	A	A
6	A	A	F 25	F 27	F 26	F 26	F	F	F	36	R	B	B	R 78	79	F 59	F 48	38	F 28	19	F 16	A	A	A
7	A	A	A	A	A	A	A	A	F 44	B	R	U F 57	F	U F 76	F	F	F 58	F 53	F 39	F 38	F 27	A	A	A
8	A	A	A	A	A	A	B	A	B	B	B	B	B	R	B	B	F	B	B	A	B	A	B	B
9	B	B	B	B	B	A	A	F 25	U F 25	B	B	U F 47	B	B	B	B	B	F 48	B	29	B	R	B	A
10	A	A	A	A	A	A	B	A	B	B	43	F 57	F 63	67	65	F 74	42	U F 38	U F 33	R	B	R	R	A
11	A	A	A	A	A	A	U F 29	F	F 27	F 37	F 42	B	B	B	B	U R 44	B	F 37	F 27	F 28	B	B	R	A
12	F	A	A	B	A	R	F 25	F 25	F	F 32	38	52	63	R 68	U F 61	68	U H 40	U F 30	F 25	F 18	B	B	A	A
13	A	B	B	B	A	B	B	A	U F 30	F 29	F 34	B	B	B	75	R	B	F 29	F 22	R	A	A	A	A
14	A	A	B	A	A	B	A	A	A	B	A	B	B	B	B	B	B	R	B	A	A	A	A	B
15	B	A	A	B	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
16	B	A	B	B	B	B	B	A	B	B	B	B	B	B	B	F 35	B	28	B	B	R	B	A	A
17	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 40	B	A	A	A	A	A
18	A	B	A	B	R	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A
19	B	A	B	B	B	B	R	A	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A	A
20	A	A	A	B	B	A	B	B	A	B	B	B	B	B	B	56	R	B	B	J R 23	A	F	A	A
21	A	A	B	B	B	B	B	B	B	B	B	F 22	F 25	B	F	C	B	B	B	B	B	B	A	A
22	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
23	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	F	B	B	R	A	A	A
24	A	B	A	A	B	B	B	A	B	B	B	B	F 51	56	54	B	32	B	B	B	B	B	B	B
25	R	R	R	A	R	R	R	A	F	F	U F 38	B	B	R	F 53	F 50	U F 36	B	B	B	F 14	A	B	A
26	A	A	A	A	R	A	A	A	B	B	C	C	45	F 55	U F 62	B	B	B	B	B	B	B	B	R
27	A	A	A	A	A	A	A	A	A	B	B	R	F 59	U F 56	F 60	F 48	F 44	F 27	B	B	B	R	A	A
28	B	A	A	A	A	A	A	A	F 29	F 30	B	F 55	U F 50	R	F	F	F 42	F	B	B	B	B	A	A
29	A	A	A	F 26	20	F 22	F 24	F 22	F 21	F 29	F 41	U F 51	J F 51	U F 58	F	J F 44	F	F	F 21	B	R	B	R	B
30	B	A	F	A	A	A	F	F	F	U F 25	U F 32	U F 45	F	F 56	F 42	F 29	F 28	F 31	F 18	F 12	E	E	F 12	B
31	B	U F 13	F	F 17	F 17	F 18	A	U F 18	F 17	F	U F 36	49	F 59	F 48	F 49	F 31	F 29	F 27	F 21	F 14	A	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	3	3	3	3	4	8	8	10	14	14	15	15	15	14	17	13	12	5	1	1	
MED		U F 13	F 25	F 26	F 20	F 22	F 25	F 24	F 28	F 31	F 39	F 53	F 59	67	62	F 53	43	F 38	F 27	F 20	F 15	E	F 12	
UQ				F 26	23	F 24	F 27	F 25	F 31	F 36	42	F 57	63	71	75	68	52	F 48	F 31	28	F 16			
LQ				F 22	18	F 20	F 24	F 20	F 23	F 29	U F 36	F 48	F 51	F 56	F 56	F 44	F 36	F 30	F 22	F 18	F 14			

MAY. 1973 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1973 | 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																								
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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																								

The Radio Research Laboratories, Japan

MAY. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1973 | 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 1 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	A	B	B	B	B	B	B	B	A	B	B	B					
2							B	B	B	B	B	B	R	R	A	B	B	B	B					
3							B	B	B	B	B	B	B	B	B	B	B	A	B					
4							B	A	B	B	B	B	B	B	B	B	B	B	B					
5							B	A	A	170	A	A	A	U R 235	B	B	B	120	B					
6							A	B	A	B	B	B	B	B	B	B	B	B	A					
7							A	B	A	B	B	U A 190	180	200	B	B	130	B	A					
8							B	A	B	B	B	B	B	B	B	B	B	B	B					
9							B	A	A	B	B	B	B	B	B	B	B	B	B					
10							B	A	B	B	B	R	A	U A 160	A	A	B	B	B					
11							B	A	A	A	A	B	B	B	B	B	B	B	B					
12							B	A	A	B	165	180	190	I B 165	160	A	A	B	B					
13							B	A	A	B	B	B	B	B	B	B	B	B	B					
14							B	A	A	B	B	B	B	B	B	B	B	B	B					
15							B	B	B	B	B	B	B	B	B	B	B	B	B					
16							B	B	B	B	B	B	B	B	B	B	B	B	B					
17							B	B	B	B	B	B	B	B	B	B	B	A	B					
18							B	A	B	B	B	B	B	B	B	B	B	B	B					
19							B	B	B	B	B	B	B	B	B	B	B	B	B					
20								B	S	B	B	B	B	B	B	B	B	B						
21								B	B	B	B	B	B	B	B	C	B	B						
22								B	B	B	B	B	B	B	B	B	B	B						
23								B	B	B	B	B	B	B	B	B	B	B						
24								B	B	B	B	B	A	B	B	B	B	B						
25								B	A	A	135	B	B	B	B	B	B	B						
26								B	B	B	C	C	B	B	B	B	B	B						
27								B	B	B	B	B	B	B	B	B	B	B						
28								B	A	B	B	A	160	B	B	B	A	B						
29								B	A	A	A	U A 130	A	A	A	A	B	B						
30								A	A	B	U A 120	A	A	A	A	A	B	B						
31								B	B	B	110	A	120	120	A	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	4	3	4	5	1		1	1						
MED										170	128	U A 180	170	165	160		130	120						
UQ											150	185	185	200										
LQ											115	155	140	160										

The Radio Research Laboratories, Japan

MAY. 1973 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1973 | 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	33	B	B	J X 52	B	40	B	35	B	B	B	E B 27	E B 30	E B 37	E B 28	20	E B 15	E B 31	E B 15	E B 19	B	B	J X 24	35
2	40	J X 59	38	B	34	B	B	J X 74	40	32	E B 22	E B 26	G	G	22	E B 20	E B 38	E B 27	E B 20	J X 24	B	B	B	B
3	28	J X 60	J X 46	45	70	B	B	38	B	B	B	E B 48	E B 37	E B 28	E B 38	B	E B 28	J X 24	21	B	B	18	32	32
4	39	43	40	45	B	B	39	34	B	B	B	E B 43	E B 25	E B 35	E B 28	E B 22	E B 28	E B 30	E B 18	E B 15	B	B	27	32
5	30	36	40	43	30	35	29	55	30	G	J X 26	J X 25	29	G	E B 26	E B 21	E B 15	G	E B 10	15	J X 24	J X 40	J X 34	29
6	28	J X 33	40	J X 30	J X 24	17	15	27	17	27	E B 45	B	B	E B 45	E B 22	E B 21	E B 15	18	16	E B 12	20	23	42	49
7	40	J X 32	60	38	J X 36	J X 54	32	J X 59	J X 36	B	30	22	22	G	E B 21	E B 20	15	E B 10	J X 22	16	13	23	23	30
8	59	36	36	39	40	43	B	41	B	B	B	B	B	E B 46	B	B	E B 20	B	B	39	B	38	B	B
9	46	B	B	B	50	45	35	28	J X 29	B	B	29	B	B	B	B	B	E B 15	B	E B 19	B	19	B	22
10	30	59	32	39	36	42	B	42	B	B	31	G	20	17	37	26	E B 17	E B 16	E B 18	E B 21	B	23	18	30
11	29	J X 30	29	28	J X 40	40	40	40	J X 35	18	21	B	B	B	B	E B 27	B	E B 21	E B 19	E B 16	B	B	18	23
12	J X 21	J X 41	44	B	40	23	E B 13	15	13	E B 13	G	G	G	E B 22	G	71	12	E B 15	E B 18	E B 12	B	B	17	30
13	36	43	39	52	J X 64	B	B	J X 44	20	22	E B 20	B	B	B	E B 46	E B 38	B	E B 19	E B 12	15	30	33	35	24
14	39	J X 24	60	35	62	B	72	62	40	B	38	B	B	B	B	B	B	22	28	33	34	28	J X 41	65
15	33	33	32	B	J X 28	27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J X 38	39	38	B
16	40	56	B	B	B	B	B	41	B	B	B	B	B	B	B	E B 22	B	E B 23	B	B	22	B	32	32
17	30	J X 47	B	B	B	35	B	B	B	B	B	B	B	B	B	B	B	29	B	J X 37	J X 30	38	36	36
18	J X 42	B	J X 39	39	18	B	33	34	B	B	B	B	B	B	B	B	B	B	B	B	B	18	35	32
19	58	55	B	B	B	B	30	40	B	B	B	B	B	B	B	B	B	B	B	B	27	28	31	38
20	42	35	J X 52	B	36	D S 35	B	B	D S 40	B	B	B	B	B	B	E B 26	E B 37	B	B	E B 20	32	22	35	44
21	35	35	B	B	B	B	B	B	B	B	B	E B 17	E B 20	B	E B 49	C	B	B	B	B	B	B	28	28
22	J X 70	39	36	B	B	86	72	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J X 25	29	28
23	B	71	27	B	D S 40	B	B	B	B	B	B	B	B	B	B	B	B	E B 21	B	B	22	24	24	26
24	J X 44	41	39	32	43	40	B	39	B	B	B	B	22	E B 45	E B 25	B	E B 22	B	B	B	B	B	B	B
25	17	19	17	74	19	26	23	J X 47	J X 39	J X 30	19	B	B	E B 49	E B 20	E B 26	E B 15	B	B	B	E B 10	J X 26	B	22
26	25	28	30	J X 34	E B 36	J X 46	J X 56	J X 59	B	B	C	C	E B 27	E B 32	E B 27	B	B	B	B	B	B	B	B	18
27	30	35	33	40	43	40	31	J X 54	55	B	B	E B 32	E B 25	23	E B 22	E B 21	E B 19	E B 15	B	B	B	J X 16	39	J X 40
28	40	J X 46	35	37	27	42	J X 42	J X 34	J X 29	E B 25	B	J X 34	J X 24	E B 27	E B 22	E B 24	J X 14	E B 18	B	B	B	B	20	24
29	30	30	34	33	27	J X 30	20	J X 30	J X 38	30	18	J X 23	J X 24	J X 46	20	24	19	16	12	B	16	30	15	B
30	19	22	17	J X 24	J X 41	J X 46	83	83	60	30	16	18	29	20	16	17	20	E B 13	E B 11	E B 10	E	E	E B 10	B
31	B	J X 24	J X 23	J X 20	J X 16	15	J X 30	J X 54	32	E B 10	16	18	17	J X 24	J X 29	J X 26	J X 25	J X 27	13	J X 14	J X 26	J X 29	18	J X 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	25	20	24	21	18	25	16	11	13	15	16	18	19	18	18	21	15	17	15	21	25	25
MED	35	36	36	38	36	40	32	41	36	25	20	E G 25	U 20	E B 28	E B 25	E B 23	E B 19	E B 19	E B 18	E B 16	24	25	29	30
UQ	40	46	40	44	42	43	42	J X 54	40	30	U 28	E B 30	E B 28	E B 45	E B 28	E B 26	E B 25	E B 24	E B 20	21	30	30	35	35
LQ	30	31	32	32	28	30	29	34	29		17	18	20	E G 20	E B 22	E B 21	E B 15	E B 15	E B 12	E B 15	18	22	20	26

MAY. 1973 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1973 | 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	B	B	26	B	26	B	13	B	B	B	27	30	37	28	17	15	31	15	19	B	B	13	10
2	16	20	20	B	28	B	B	25	22	20	22	26	17	15	15	20	38	27	20	13	B	B	B	B
3	10	14	11	16	28	B	B	15	B	B	B	48	37	28	38	B	28	10	14	B	B	10	10	10
4	18	15	20	30	B	B	22	14	B	B	B	43	25	35	28	22	28	30	18	15	B	B	10	10
5	10	19	30	22	19	24	17	14	10	10	10	11	13	13	26	21	15	10	10	10	9	9	9	9
6	10	10	11	10	10	9	9	10	10	22	45	B	B	45	22	21	15	14	10	12	9	9	10	12
7	10	9	13	9	9	10	10	18	10	B	24	18	15	15	21	20	9	10	9	11	9	11	9	10
8	15	13	14	15	19	10	B	10	B	B	B	B	B	46	B	B	20	B	B	9	B	10	B	B
9	20	B	B	B	26	20	14	12	10	B	B	24	B	B	B	B	B	15	B	19	B	14	B	10
10	9	20	9	20	20	21	B	12	B	B	21	17	15	15	12	11	17	16	18	21	B	10	9	10
11	10	9	9	9	12	25	13	13	9	12	11	B	B	B	B	27	B	21	19	16	B	B	10	9
12	9	10	19	B	16	16	13	11	10	13	15	15	16	22	13	10	10	15	15	12	B	B	9	9
13	11	22	18	28	12	B	B	11	14	16	20	B	B	B	46	38	B	19	12	10	11	13	10	9
14	E C 13	9	30	10	14	B	22	9	16	B	20	B	B	B	B	B	B	18	25	10	10	9	10	23
15	25	15	14	B	12	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	9	15	10	B
16	31	9	B	B	B	B	B	18	B	B	B	B	B	B	B	22	B	23	B	B	15	B	9	9
17	10	9	B	B	B	26	B	B	B	B	B	B	B	B	B	B	B	10	B	11	10	10	10	11
18	12	B	12	27	10	B	26	15	B	B	B	B	B	B	B	B	B	B	B	B	B	10	9	10
19	32	10	B	B	B	B	16	26	B	B	B	B	B	B	B	B	B	B	B	B	9	10	10	9
20	18	E S 12	12	B	30	20	B	B	E S 24	B	B	B	B	B	B	26	37	B	B	20	10	9	9	E S 15
21	10	9	B	B	B	B	B	B	B	B	B	17	20	B	49	C	B	B	B	B	B	B	10	9
22	11	9	13	B	B	70	48	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	E S 11	E C 10
23	B	26	21	B	E C 19	B	B	B	B	B	B	B	B	B	B	B	B	21	B	B	15	9	10	10
24	9	26	19	19	24	27	B	23	B	B	B	B	18	45	25	B	22	B	B	B	B	B	B	B
25	13	15	13	13	10	20	18	16	15	10	11	B	B	49	20	26	15	B	B	B	10	13	B	12
26	10	10	19	24	36	20	16	15	B	B	C	C	27	32	27	B	B	B	B	B	B	B	B	13
27	10	9	10	E S 10	20	19	15	18	24	B	B	32	25	19	22	21	19	15	B	B	B	10	9	10
28	25	10	15	18	9	10	10	10	10	25	B	12	10	27	22	24	11	18	B	B	B	B	10	9
29	9	10	9	10	10	10	9	10	9	10	10	10	10	12	10	12	12	10	10	B	12	17	10	B
30	15	10	9	9	9	9	9	9	9	10	10	11	11	10	10	13	14	13	11	10	E	E	10	B
31	B	9	10	9	9	9	10	9	10	10	10	9	10	9	10	9	9	9	9	10	12	9	10	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	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	30	31	31	31	31	31	31	31	31
MED	11	10	15	24	19	24	22	15	24	B	B	D B 48	37	45	28	26	28	21	B	20	B	13	10	10
UQ	18	20	26	B	33	B	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	10	13
LQ	10	9	12	12	10	18	14	11	10	18	20	17	16	20	22	20	15	14	14	12	10	10	10	10

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MAY. 1973 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1973 | 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	B	B	B	A	B	A	B	B	B	F 315	325	U R 345	340	335	325	320	F 325	F 350	B	B	R	A
2	A	A	A	B	B	B	B	A	A	R	290	290	F 305	325	315	320	315	U R 315	F 330	290	B	B	B	B
3	A	A	A	A	B	B	B	A	B	B	B	305	330	320	315	B	R	F 335	F 315	B	B	B	R	A	A
4	A	A	A	B	B	B	A	A	B	B	B	R 315	F 315	F 320	325	F 315	340	F 340	R	315	B	B	A	A
5	A	A	B	B	A	A	R	A	F 300	F 330	330	320	335	325	340	340	J R 335	340	F 340	F 355	U F 335	F	A	A
6	A	A	F 295	F 295	F 270	F 270	F	F	F	305	R	B	B	R 320	340	F 340	F 315	340	F 320	315	F 325	A	A	A
7	A	A	A	A	A	A	A	A	F 260	B	R	U F 295	F	U F 290	F	F	F 300	F 310	F 280	F 305	F 310	A	A	A
8	A	A	A	A	A	A	B	A	B	B	B	B	B	R	B	B	F	B	B	A	B	A	B	B
9	B	B	B	B	B	A	A	F 240	F	B	B	U F 320	B	B	B	B	B	F 300	B	330	B	R	B	A
10	A	A	A	A	A	A	B	A	B	B	310	F 315	F 345	340	340	F 350	355	U F 290	F	R	B	R	R	A
11	A	A	A	A	A	A	U F 275	F	F 265	F 310	F 325	B	B	B	B	U R 330	B	F 325	F 300	F 330	B	B	R	A
12	F	A	A	B	A	R	F 280	F 280	F	F 320	340	315	325	R 355	U F 310	345	U H 300	U F 315	F 355	F 335	B	B	A	A
13	A	B	B	B	A	B	B	A	U F 295	F 300	F 305	B	B	B	345	R	B	F 320	F 360	R	A	A	A	A
14	A	A	B	A	A	B	A	A	A	B	A	B	B	B	B	B	B	R	B	A	A	A	A	B
15	B	A	A	B	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
16	B	A	B	B	B	B	B	A	B	B	B	B	B	B	B	F 295	B	305	B	B	R	B	A	A
17	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 300	B	A	A	A	A	A
18	A	B	A	B	R	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A
19	B	A	B	B	B	B	R	A	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A	A
20	A	A	A	B	B	A	B	B	A	B	B	B	B	B	B	290	R	B	B	J R 305	A	F	A	A
21	A	A	B	B	B	B	B	B	B	B	B	F 275	F 280	B	F	C	B	B	B	B	B	B	A	A
22	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
23	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	F	B	B	R	A	A	A
24	A	B	A	A	B	B	B	A	B	B	B	B	F 355	345	345	B	345	B	B	B	B	B	B	B
25	R	R	R	A	R	R	R	A	F	F	F	B	B	R	F 340	F 340	F	B	B	B	F 320	A	B	A
26	A	A	A	A	R	A	A	A	B	B	C	C	310	F 335	F	B	B	B	B	B	B	B	B	R
27	A	A	A	A	A	A	A	A	A	B	B	R	F 320	U F 320	F 335	F 315	F 330	F 315	B	B	B	R	A	A
28	B	A	A	A	A	A	A	A	F 275	F 275	B	F 325	F	R	F	F	F 310	F	B	B	B	B	A	A
29	A	A	A	F 270	250	275	F 260	F 280	F 285	F 285	F 320	U F 315	J F 335	F	F	F	F	F	F 340	B	R	B	R	B
30	B	A	F	A	A	A	F	F	F	U F 360	U F 315	F	F	F 345	F 340	285	F 305	F 330	335	F 335	E	E	F 350	B
31	B	F	F	F 280	F 255	F 280	A	F	F 245	F	U F 315	325	F 340	F 335	F 335	F 355	F 345	F 315	F 350	F 350	A	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	3	3	3	3	3	7	8	9	13	13	14	14	14	13	17	12	12	4		1	
MED			F 295	F 280	F 255	F 275	F 275	F 280	F 275	F 308	F 315	F 315	F 325	330	340	F 332	325	F 315	F 332	F 330	F 322		F 350	
UQ				F 288	F 262	F 278	F 278	F 280	F 290	F 325	F 325	F 320	F 335	345	340	F 340	340	F 330	F 345	F 342	F 330			
LQ				F 275	252	272	F 268	F 260	F 262	F 292	F 310	F 305	F 315	320	F 325	F 315	F 310	F 310	F 318	310	F 315			

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MAY. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1973 | 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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	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. 1973 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1973 | 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	B	B	B	A	B	B	B	260	250	B 230	230	225	220	B 230	230	230	B	B	A	A
2	A	B	B	B	B	B	B	B	B	A	285	B 265	260	240	230	230	B	275	B 250	E B 280	B	B	B	B
3	A	A	A	A	B	B	B	A	B	B	B	E B 275	250	245	240	B	220	210	270	B	B	A	A	A
4	B	A	B	B	B	A	A	B	B	B	B	E B 280	250	255	225	220	230	235	230	E B 295	B	B	A	A
5	A	B	B	B	B	B	A	A	300	250	245	235	230	230	210	220	215	210	200	225	280	A	A	A
6	A	A	A	A 310	340	320	345	340	300	A 300	B 300	B	B	B 230	220	210	210	230	235	270	260	A	A	A
7	A	A	A	A	A	A	A	A	395	B	330	250	255	260	240	235	230	220	240	245	250	A	A	A
8	A	A	A	A	A	A	B	A	B	B	B	B	B	E B 290	B	B	245	B	B	A	B	A	B	B
9	B	B	B	B	B	B	A	A 410	A	B	B	265	B	B	B	B	B	260	B	270	B	B	B	A
10	A	A	A	B	B	B	B	A	B	B	285	230	210	230	210	205	195	265	255	B 270	B	A	A	A
11	A	A	A	A	A	B	A	A	340	250	250	B	B	B	B	230	B	250	E B 300	250	B	B	A	A
12	A	A	B	B	A	A	300	330	310	240	250	230	230	200	195	200	H 180	210	225	230	B	B	A	A
13	A	B	B	B	A	B	B	A	300	275	270	B	B	B	280	E B 260	B	295	285	A	A	A	A	A
14	A	A	B	A	A	B	B	A	A	B	A	B	B	B	B	B	B	B	B	A	A	A	A	B
15	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
16	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	285	B	B	B	B	B	B	A	A
17	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	320	B	A	A	A	A	A
18	A	B	A	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A
19	B	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
20	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	265	B 280	B	B	E B 340	A	A	A	A
21	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B 300	C	B	B	B	B	B	B	A	A
22	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
23	B	B	B	B	C	B	B	B	B	B	B	B	B	B	B	B	B	225	B	B	B	A	A	A
24	A	B	B	B	B	B	B	B	B	B	B	B	210	E B 250	230	B	255	B	B	B	B	B	B	B
25	A	B	A	A	A	A	A	A	A	300	270	B	B	E B 250	220	225	B 220	B	B	B	B 280	B	B	B
26	A	A	B	B	B	A	A	A	B	B	C	C	265	235	225	B	B	B	B	B	B	B	B	A
27	A	A	A	A	B	B	A	A	B	B	B	250	230	230	230	225	235	250	B	B	B	A	A	A
28	B	A	B	B	A	A	A	A	A 380	E B 380	B	250	210	250	225	230	220	230	B	B	B	B	A	A
29	A	A	A	A	A	A 350	345	310	300	260	240	220	200	220	195	230	200	225	225	B	A	B	A	B
30	B	A	A	A	A	A	A	A	E A 310	200	260	200	200	215	215	225	A 280	230	B 230	B	E	E	E B 250	B
31	B	E B 290	B	A	A 365	E A 360	A	A 320	E B 270	275	230	230	205	200	205	190	210	230	210	E A 245	B	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	2	3	3	5	10	10	12	14	15	18	19	18	17	19	14	12	4		1	
MED		E B 290		A 310	352	A 335	345	330	302	262	265	241	230	231	225	225	220	230	231	U 245	270		E B 250	
UQ						A 352	345	340	340	288	285	258	250	245	230	230	235	255	252	B 272	280			
LQ						335	322	320	300	250	248	230	210	230	212	220	210	225	225	234	255			

The Radio Research Laboratories, Japan

MAY. 1973 | H'F (KM)

IONOSPHERIC DATA

MAY. 1973 | 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	110	B	B	115	B	105	B	105	B	B	B	B	B	B	B	110	B	B	B	B	B	B	150	125
2	110	110	125	B	130	B	B	120	110	115	B	B	G	G	100	B	B	B	B	105	B	B	B	B
3	110	110	110	110	130	B	B	105	B	B	B	B	B	B	B	B	B	105	160	B	B	160	110	115
4	120	120	110	110	B	B	100	105	B	B	B	B	B	B	B	B	B	B	B	B	B	B	125	120
5	125	110	110	110	130	130	130	110	120	G	100	100	100	G	B	B	B	G	B	150	140	140	110	120
6	120	175	180	125	105	125	100	125	130	130	B	B	B	B	B	B	B	165	130	B	105	130	110	120
7	120	145	105	115	130	130	110	105	100	B	125	150	130	G	B	B	110	B	105	100	110	110	110	115
8	125	125	125	120	125	110	B	105	B	B	B	B	B	B	B	B	B	B	B	110	B	110	B	B
9	115	B	B	B	100	110	115	120	115	B	B	125	B	B	B	B	B	B	B	B	B	125	B	120
10	110	125	100	110	120	120	B	100	B	B	115	G	125	115	110	115	B	B	B	B	B	135	120	120
11	120	115	110	110	120	100	100	120	125	125	125	B	B	B	B	B	B	B	B	B	B	B	150	115
12	120	115	120	B	100	120	B	115	150	B	G	G	G	B	G	135	105	B	B	B	B	B	150	120
13	125	125	125	125	110	B	B	100	130	125	B	B	B	B	B	B	B	B	B	165	135	135	120	115
14	120	140	120	110	115	B	110	110	125	B	120	B	B	B	B	B	B	150	130	110	105	105	110	100
15	110	105	120	B	110	125	B	B	B	B	B	B	B	B	B	B	B	B	B	B	100	120	115	B
16	125	100	B	B	B	B	B	100	B	B	B	B	B	B	B	B	B	B	B	B	150	B	110	110
17	115	130	B	B	B	130	B	B	B	B	B	B	B	B	B	B	B	110	B	105	105	110	110	110
18	115	B	115	130	90	B	110	110	B	B	B	B	B	B	B	B	B	B	B	B	B	115	110	110
19	120	110	B	B	B	B	120	110	B	B	B	B	B	B	B	B	B	B	B	B	115	105	115	110
20	110	115	120	B	105	105	B	B	105	B	B	B	B	B	B	B	B	B	B	B	115	120	115	110
21	120	105	B	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	B	B	B	110	110
22	170	100	105	B	B	130	130	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	110	110
23	B	125	125	B	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	120	150	110
24	110	110	110	110	125	110	B	120	B	B	B	B	125	B	B	B	B	B	B	B	B	B	B	B
25	130	130	130	105	125	120	130	150	125	100	140	B	B	B	B	B	B	B	B	B	B	130	B	140
26	105	100	130	130	B	100	100	105	B	B	C	C	B	B	B	B	B	B	B	B	B	B	B	150
27	105	110	110	110	125	125	120	120	110	B	B	B	B	125	B	B	B	B	B	B	B	140	110	110
28	120	110	120	130	105	105	100	105	100	B	B	110	100	B	B	B	115	B	B	B	B	B	125	110
29	110	110	110	110	110	100	110	130	125	165	120	110	100	110	110	145	125	125	120	B	100	105	130	B
30	120	110	110	130	130	125	110	110	175	110	150	115	115	110	100	105	100	B	B	B	E	E	B	B
31	B	130	140	110	125	130	100	150	110	B	135	130	125	110	110	100	100	105	105	100	105	100	140	120
	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	25	20	23	21	17	25	16	7	9	7	8	5	5	6	6	6	6	8	13	20	24	25
MED	120	112	120	110	120	120	110	110	122	125	125	115	120	110	110	112	108	118	125	108	110	120	115	115
UQ	120	125	125	125	125	125	120	120	128	128	135	128	125	115	110	135	115	150	130	130	130	132	128	120
LQ	110	110	110	110	108	105	100	105	110	112	120	110	100	110	100	105	100	105	105	102	105	110	110	110

The Radio Research Laboratories, Japan

MAY. 1973 | H'ES (KM)

IONOSPHERIC DATA

MAY. 1973 | 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

Day \ 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
1	R 3			R 1		R 1		R 1								L 1							R 1	R 4
2	R 2	F 1	R 1		R 1			R 1	R 1	R 1					R 1					F 1				
3	R 3	RR 21	R 3	R 1	R 1			R 1										L 1	R 1			R 1	R 5	R 3
4	F 2	R 1	R 1	R 1			R 1	R 1															R 1	R 3
5	R 2	R 1	R 1	R 1	R 1	R 1	R 1	R 2	R 1		L 1	L 1	L 1							F 1	R 1	FFR 11	R 3	R 2
6	R 2	RFR 11	RR 12	FR 12	F 4	R 1	L 3	L 1	R 1	R 1								R 1	R 1		F 1	R 2	R 3	R 3
7	R 4	R 3	R 2	R 3	R 4	R 3	R 2	LR 11	R 2		R 1	L 1	R 1				L 1		L 1	F 1	R 1	R 1	R 3	R 4
8	R 1	R 1	R 1	R 2	R 1	R 1		R 2												R 2		RS 21		
9	R 1				R 1	R 1	R 2	R 1	R 1			R 1										R 1		R 1
10	R 3	R 1	FR 11	R 1	R 1	R 1		R 1			R 1		L 1	L 1	L 1	L 1						R 1	R 1	FRR 11
11	R 2	R 2	R 3	R 3	R 2	R 1	R 1	L 1	R 1	L 1	RL 11												F 1	R 2
12	R 1	R 3	R 1		R 1	F 1		L 1	L 1							LR 11	L 1						R 1	R 2
13	R 4	R 1	R 1	R 1	R 1			R 2	R 1	R 1										R 1	R 1	R 1	R 3	R 2
14	R 2	R 4	R 1	R 2	RF 11		R 1	RR 11	R 1		R 1							R 1	R 1	R 2	R 2	R 2	R 3	F 1
15	R 1	R 1	R 1		R 1	F 1															R 3	R 1	R 3	
16	R 1	R 2						R 1															R 3	R 2
17	R 4	R 3				R 1												R 1		R 2	R 1	R 4	R 5	R 2
18	R 2		R 3	R 1	F 1		R 1	R 1														F 1	R 4	R 4
19	F 1	FR 12					R 1	R 1													R 2	R 2	R 2	R 4
20	R 1	R 1	F 1		F 1	R 1			R 1												R 2	R 1	R 4	R 2
21	R 1	R 2																					R 2	R 3
22	FRR 11	R 3	R 2			F 1	F 1															R 1	R 2	R 3
23		R 1	R 1		R 1																R 1	R 2	RR 11	R 2
24	R 3	F 1	F 1	F 1	F 1	F 1		RL 11					R 1											
25	R 1	R 1	R 1	FR 11	R 1	R 1	R 1	RR 11	R 1	LR 11	H 1											RF 11		R 1
26	R 1	R 2	R 1	R 1		R 1	R 1	R 2																R 1
27	R 4	R 3	R 6	R 2	R 1	R 1	F 1	R 1	R 1					L 1								R 1	R 3	R 2
28	R 1	R 1	R 2	R 1	R 2	R 2	R 3	RL 41	R 1			R 1	LH 11				L 1						R 2	R 2
29	R 4	R 4	R 3	R 3	FR 11	F 1	R 1	L 2	L 3	LR 11	L 1	LH 11	LL 11	L 1	L 1	L 1	LL 11	L 1	F 1		F 1	F 1	F 1	
30	F 1	F 1	FR 11	FF 11	R 1	R 2	F 3	R 3	LLR 11	R 1	RL 11	L 1	R 1	L 1	L 1	L 1	L 1							
31		F 1	F 1	F 3	R 1	F 1	F 4	LL 11	L 1		R 1	H 1	HL 11	LH 11	L 1	L 1	L 1	L 1	R 1	F 1	F 1	F 2	R 1	R 1
	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. 1973 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1973 | 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	F	F	U F 24	F 21	F 29	U F 30	U F 25	F 23	U F 30	J F 37	U F 51	U F 45	U F 49	F	F	J F 25	F	A	A	A	A	B
2	U A 11	F 12	A	F 17	A	F	F	F	A	A	F	F	B	U F 55	J F 73	F	F 56	F	F	A	A	A	A	A
3	A	A	A	F	A	A	A	A	A	B	B	B	B	B	B	F 40	B	B	B	B	B	B	A	A
4	A	A	A	A	A	A	A	B	A	A	B	B	B	B	R	B	B	F 34	B	A	B	A	A	A
5	A	B	B	A	B	B	B	A	R	B	B	B	B	B	B	B	B	B	F 22	B	B	R	A	A
6	A	A	A	B	B	B	B	B	B	B	U F 30	U R 43	B	B	U R 40	36	B	B	22	B	B	B	A	R
7	A	F 17	A	A	A	A	F	F 23	F 25	F 23	F 32	F 40	42	46	F 40	F 38	F 17	F 18	F 13	A	A	B	B	B
8	B	A	A	A	A	A	C	A	B	B	B	F	F 50	F 47	F 45	F 33	F 25	F 20	F	13	A	A	B	A
9	A	A	U F 20	A	A	A	A	A	A	F 32	U F 30	F 39	39	43	F 37	U F 36	F 24	F 22	F 20	U F 11	F 14	F 12	A	A
10	A	A	A	A	A	A	A	A	F 29	A	A	F 34	39	41	B	F 31	F 29	B	R	A	U F 15	A	A	A
11	A	B	A	F	F	A	A	B	B	B	B	B	B	B	B	B	B	R	B	A	A	A	B	A
12	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A	A	B
13	B	B	A	A	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	R	B	A	A
14	A	A	B	B	B	B	B	B	A	F 20	F 23	B	B	B	B	B	B	B	B	B	B	B	A	A
15	A	A	A	A	B	B	A	B	A	B	B	38	U R 58	B	R	B	B	B	B	B	R	R	A	A
16	A	A	B	B	B	B	B	F 29	F 22	U F 17	F 29	B	B	48	F 38	37	B	U F 25	B	B	B	B	A	A
17	A	A	B	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
18	A	A	A	A	A	A	B	A	A	A	B	U F 32	B	B	B	B	B	B	B	B	A	A	A	A
19	A	A	A	B	B	B	B	A	B	B	B	B	B	B	45	B	B	B	B	B	B	A	A	A
20	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	41	A
21	A	A	B	B	A	B	A	B	A	B	B	R 37	U R 39	49	B	B	B	B	B	A	B	B	B	B
22	A	A	A	U F 24	A	A	A	16	F 17	18	F 28	F 32	F 40	F 40	J F 34	F 29	A	A	A	A	F 16	A	A	R
23	A	U F 26	U F 21	A	F 21	F 22	U F 27	J F 27	F	F 19	F 28	J R 37	F 51	F 43	36	37	23	F 16	16	J A 15	A	F 13	11	A
24	F 12	A	A	U F 31	A	B	B	B	A	A	F 35	U F 34	B	B	B	U F 44	B	F	U F 51	R	A	F	A	A
25	A	A	A	A	F	F	R	A	U F 29	R	26	F 38	J R 30	F 43	U F 40	F 31	F	F 30	F	F 16	B	B	B	A
26	A	A	F	A	A	A	17	F 19	F 18	B	B	U R 39	F 48	F	F 39	F 36	27	F 23	A	A	A	12	A	U F 12
27	F 16	A	A	A	18	U F 16	F 20	A	F	F 32	F 30	F 36	50	J R 27	U F 36	F 29	F 22	A	A	A	R	A	A	A
28	A	A	A	A	A	F	B	B	A	F 36	F	B	B	B	B	B	F 41	F 45	B	B	B	B	A	A
29	A	A	A	A	32	F	A	A	A	B	B	B	B	B	B	B	B	F	A	A	A	A	A	A
30	A	A	A	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	A	B	R	A	U F 24	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	3	4	3	4	6	7	9	11	14	12	12	13	13	9	10	6	4	3	3	3	1
MED	F 12	F 17	U F 20	U F 24	22	F 21	F 24	F 25	F 25	F 23	F 30	F 37	45	44	F 40	F 36	F 25	F 24	F 21	14	F 15	F 12	24	U F 12
UQ	F 14	F 22		U F 28	28	F 22	F 28	F 29	F 27	F 32	F 30	F 39	F 50	48	F 45	F 37	F 29	F 30	F 22	16	F 16	F 12	32	
LQ	12	F 14		F 20	20	F 18	18	F 19	F 20	F 19	F 28	F 34	39	42	F 37	F 31	F 23	F 20	F 16	12	F 14	12	18	

JUN. 1973 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1973 | 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																								
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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																								

The Radio Research Laboratories, Japan

JUN. 1973 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1973 | 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	A	A	A	A	A	U F 135	A	A	A	A						
2								A	B	B	U A 190	A	B	B	B	B	B	B						
3								B	A	B	B	B	B	B	B	B	B	B						
4								B	A	A	B	B	B	B	B	B	B	B						
5								A	A	B	B	B	B	B	B	B	B	B						
6								B	B	B	A	170	B	B	B	B	B	B						
7								A	120	A	A	A	A	B	B	B	B	B						
8								A	B	B	B	B	U S 190	A	A	A	B	A						
9								A	A	A	A	130	130	120	C	A	C	A 110						
10								A	A	A	B	A	A 240	A	B	B	B	B						
11								B	B	B	B	B	B	B	B	B	B	B						
12								B	B	B	B	B	B	B	B	B	B	B						
13								C	C	C	C	C	C	C	B	B	B	B						
14								B	B	A	120	B	B	B	B	B	B	B						
15								B	B	B	B	B	B	B	B	B	B	B						
16							B	175	F 160	A	115	B	B	B	B	B	B	B						
17								B	B	B	B	B	B	B	B	B	B	B						
18								B	B	B	B	S	B	B	B	B	B	B						
19								S	B	B	B	B	B	B	B	B	B	B						
20								B	B	B	B	B	B	B	B	B	B	B						
21								B	B	B	B	B	B	A	B	B	B	B						
22				140				A	125	A	A 120	A 130	A	U A 130	A	A	A	A						
23						U A 130		A	A	B	B	130	135	A 130	B	A	A	A						
24								B	B	B	A	130	B	B	B	B	B	270	A					
25								A	A	B	A	A	B	B	B	A 150	A	B						
26							150	120	B	B	B	B	U A 180	A	A	A	B	B						
27	95			105	110	A 110	110	A	A	A	110	115	A 135	130	U A 130	A	A	A						
28								B	A	A	B	B	B	B	B	B	A	B						
29								B	B	B	B	B	B	B	B	B	B	B						
30								A	B	B	B	B	B	B	B	B	B	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	1			2	1	2	2	2	3		5	6	6	5	1	1		2						
MED	95			122	110	A 120	130	148	125		120	130	158	130	U A 130	A 150		190						
UQ									142		A 120	130	U A 190	U A 130										
LQ									122		115	130	135	130										

The Radio Research Laboratories, Japan

JUN. 1973 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1973 | 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	J X 36	J X 38	J X 40	J X 36	J X 41	J X 36	30	J X 36	J X 24	J X 24	J X 35	J X 33	J X 32	J X 29	J X 29	J X 27	20	J X 24	E B 10	J X 32	J X 34	18	J X 22	J X 34
2	J X 27	13	J X 24	J X 15	J X 27	J X 29	J X 29	32	J X 54	56	30	23	B	E B 25	E B 25	E B 21	E B 25	E B 46	E B 20	J X 40	J X 39	J X 41	J X 42	42
3	J X 36	26	J X 28	J X 35	J X 63	J X 47	J X 52	48	30	B	B	B	B	B	B	E B 26	B	B	B	B	B	B	18	35
4	38	J X 54	J X 42	41	39	59	55	B	J X 29	30	B	B	B	B	E B 33	B	B	E B 15	B	38	B	22	J X 41	J X 85
5	J X 77	40	40	34	B	45	47	J X 30	20	B	B	B	B	B	B	B	B	B	E B 16	B	B	18	23	22
6	30	31	32	52	40	40	B	B	B	B	15	G	B	B	E B 32	E B 13	B	B	E B 20	B	B	B	21	17
7	J X 51	28	22	32	34	J X 40	28	J X 32	16	20	30	J X 28	22	30	J X 27	E B 10	E B 12	E B 11	15	13	17	B	B	B
8	B	19	20	21	32	J X 37	C	48	B	B	B	E B 23	22	21	22	D S 30	E B 10	12	12	20	J X 18	18	B	J X 34
9	J X 34	31	J X 102	46	45	48	39	50	34	B	E B 45	E B 42	16	14	J X 22	J X 27	J X 29	17	E B 10	12	J X 16	11	25	36
10	J X 44	J X 46	36	J X 52	J X 52	57	J X 61	44	J X 45	40	J X 35	D S 37	D S 33	26	B	E B 25	E B 21	B	15	J X 28	18	J X 27	J X 54	40
11	J X 76	B	28	J X 34	J X 80	44	J X 37	B	B	B	B	B	B	B	B	B	B	26	B	29	J X 39	J X 52	B	J X 84
12	36	J X 60	B	B	49	B	B	123	B	B	B	B	B	B	B	B	B	B	B	26	J X 34	25	J X 33	B
13	79	B	38	J X 84	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	25	B	30	33
14	J X 52	43	B	B	B	60	B	B	J X 33	17	J X 30	B	B	B	B	B	B	B	B	B	B	B	26	26
15	35	J X 33	J X 58	J X 36	46	60	53	B	40	B	B	E B 22	E B 35	B	35	B	B	B	B	B	16	17	23	34
16	36	28	39	42	J X 42	50	B	25	J X 20	J X 33	J X 27	B	B	E B 26	E B 25	E B 23	B	E B 14	B	B	B	B	29	J X 40
17	35	35	32	40	J X 38	50	50	36	B	B	B	B	B	B	B	B	B	B	B	32	37	39	J X 34	42
18	44	J X 80	59	51	31	40	B	51	J X 54	J X 44	B	27	B	B	B	B	B	B	B	B	28	31	36	43
19	41	J X 44	43	B	70	B	B	44	B	B	B	B	B	B	E B 20	B	B	B	B	B	B	46	40	41
20	52	J X 83	B	J X 91	B	J X 44	B	B	B	B	B	B	B	B	B	B	B	B	B	B	40	17	J C 26	26
21	34	J X 50	B	B	46	B	40	B	J X 44	B	B	E B 29	32	23	B	B	B	B	B	17	B	B	B	J X 36
22	52	J X 32	J X 29	20	30	34	22	30	17	J X 28	J X 26	17	J X 26	23	J X 22	J X 35	J X 26	J X 26	J X 30	J X 24	12	J X 17	21	13
23	J X 30	J X 32	J X 61	J X 26	16	32	17	17	15	E B 10	E B 10	17	17	J X 30	J X 24	16	17	24	16	J X 23	J X 24	18	16	15
24	15	17	28	J X 27	J X 44	B	B	B	52	50	35	G	B	B	B	E B 20	B	G	J X 34	39	J X 98	J X 60	J X 89	J X 40
25	35	J X 31	25	J X 23	J X 35	19	25	31	30	J X 27	26	18	E B 27	E B 23	E B 16	20	14	E B 14	19	20	B	B	B	16
26	30	32	28	38	27	20	18	15	E B 11	B	B	E B 26	22	19	17	16	E B 20	34	39	52	J X 24	E B 10	13	11
27	G	20	J X 51	16	15	15	15	J X 46	J X 40	16	G	23	J X 36	J X 18	14	20	22	J X 26	22	J X 26	12	15	12	16
28	15	J X 19	16	J X 24	48	30	55	B	45	J X 42	J X 32	B	B	B	B	B	16	E B 22	B	B	B	B	J X 34	28
29	J X 63	J X 34	96	J X 49	J X 64	22	J X 74	J X 54	J X 50	B	B	B	B	B	B	B	B	E B 25	J X 40	29	J X 31	29	J X 44	J X 45
30	J X 44	J X 39	80	78	50	48	43	J X 59	42	B	B	B	B	B	B	B	B	B	34	B	15	J X 34	28	J X 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	29	28	26	26	26	25	20	20	22	14	14	16	12	13	15	15	12	16	16	18	20	21	25	28
MED	36	J X 32	37	36	42	40	40	40	34	29	29	U 20	U 24	22	U 20	U 18	U 18	U 18	20	27	24	22	28	34
UQ	J X 51	J X 44	51	49	49	48	52	49	J X 44	42	34	26	32	26	U 26	26	22	26	32	32	J X 36	34	J X 36	40
LQ	34	28	28	J X 26	32	32	26	30	20	20	26	18	22	20	21	17	14	E B 14	14	20	16	17	22	24

The Radio Research Laboratories, Japan

JUN. 1973 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1973 | 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	14	10	10	10	10	9	10	9	9	9	9	10	9	10	9	9	9	9	10	9	9	10	10	18
2	10	9	9	9	9	9	10	10	20	22	10	13	B	25	25	21	25	46	20	14	11	9	10	9
3	9	10	9	9	10	10	13	13	12	B	B	B	B	B	B	26	B	B	B	B	B	B	16	10
4	9	9	12	13	13	24	22	B	11	10	B	B	B	B	33	B	B	15	B	13	B	10	10	13
5	10	25	26	10	B	27	37	10	12	B	B	B	B	B	B	B	B	B	16	B	B	12	10	9
6	EC 16	10	ES 11	20	32	27	B	B	B	B	11	14	B	B	32	13	B	B	20	B	B	B	13	10
7	10	10	EC 12	10	12	12	9	10	9	9	9	10	10	20	13	10	12	11	10	10	10	B	B	B
8	B	9	9	10	11	10	C	10	B	B	B	23	13	14	ES 15	10	10	9	10	9	9	13	B	ES 11
9	16	9	9	10	14	12	10	10	10	9	9	9	10	9	EC 17	9	EC 16	9	10	9	9	9	9	9
10	11	13	12	9	12	12	12	10	10	11	17	12	19	ES 21	B	25	21	B	9	9	9	9	10	9
11	10	B	12	9	12	25	10	B	B	B	B	B	B	B	B	B	B	20	B	12	11	11	B	11
12	10	15	B	B	23	B	B	86	B	B	B	B	B	B	B	B	B	B	B	12	12	12	10	B
13	25	B	12	14	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	13	B	9	9
14	19	15	B	B	B	23	B	B	15	10	10	B	B	B	B	B	B	B	B	B	B	B	9	9
15	9	13	10	18	28	34	20	B	25	B	B	22	35	B	25	B	B	B	B	B	9	10	9	9
16	9	10	19	18	22	29	B	10	10	10	11	B	B	26	25	23	B	14	B	B	B	B	9	9
17	11	15	25	18	14	25	13	13	B	B	B	B	B	B	B	B	B	B	B	20	11	9	9	10
18	10	15	13	12	15	11	B	20	16	18	B	ES 21	B	B	B	B	B	B	B	B	ES 10	9	ES 9	15
19	13	12	15	B	26	B	B	ES 18	B	B	B	B	B	B	20	B	B	B	B	B	B	ES 9	10	10
20	20	11	B	34	B	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	10	10	EC 28	12
21	18	15	B	B	22	B	14	B	15	B	B	29	21	16	B	B	B	B	B	10	B	B	B	18
22	10	10	10	10	10	10	10	10	9	9	10	10	EC 12	10	9	10	10	10	10	10	9	10	9	10
23	9	9	9	10	10	9	9	9	9	10	10	10	12	12	15	10	9	9	10	9	9	9	9	10
24	9	9	10	10	EC 14	B	B	B	21	20	11	10	B	B	B	20	B	15	10	20	10	10	EC 18	10
25	EC 19	9	9	9	9	10	14	12	10	15	15	13	27	23	16	12	11	14	11	11	B	B	B	10
26	10	10	10	11	10	10	10	10	11	B	B	26	14	9	13	10	20	14	14	13	11	10	10	9
27	9	10	EC 11	10	9	9	9	10	11	10	9	10	10	10	10	10	10	10	10	10	10	10	10	11
28	12	13	11	13	10	10	20	B	10	10	13	B	B	B	B	B	10	22	B	B	B	B	11	10
29	10	15	53	11	10	9	13	30	25	B	B	B	B	B	B	B	B	25	10	10	10	10	10	10
30	13	9	10	21	25	18	10	10	20	B	B	B	B	B	B	B	B	B	13	B	10	9	9	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	30	30	30	30	29	29	28	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30
MED	10	10	12	11	12	12	14	12	15	22	B	26	B	B	DB 33	DB 26	B	36	20	14	11	10	10	10
UQ	14	15	19	18	23	27	B	B	25	B	B	B	B	B	B	B	B	B	B	B	B	B	U 14	11
LQ	10	9	10	10	10	10	10	10	10	10	10	11	14	15	16	10	12	14	10	10	10	9	9	9

JUN. 1973 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1973 | 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	F	F	F	F 270	F 270	U F 290	F	F 305	U F 300	F	F	U F 32	F	F	F	J F 340	F	A	A	A	A	B
2	A	A	A	F 295	A	F	F	F	A	A	F	F	B	U F 310	F	F	F 290	F	F	A	A	A	A	A
3	A	A	A	F	A	A	A	A	A	B	B	B	B	B	B	F 350	B	B	B	B	B	B	A	A
4	A	A	A	A	A	A	A	B	A	A	B	B	B	B	R	B	B	F 310	B	A	B	A	A	A
5	A	B	B	A	B	B	B	A	R	B	B	B	B	B	B	B	B	B	F 315	B	B	R	A	A
6	A	A	A	B	B	B	B	B	B	B	F	U R 320	B	B	U R 350	305	B	B	310	B	B	B	A	R
7	A	F 295	A	A	A	A	F	F 270	F 280	F 305	F 315	F 330	355	345	F 345	F 355	F 335	F 335	F 345	A	A	B	B	B
8	B	A	A	A	A	A	C	A	B	B	B	F	F 340	F 355	F 355	F 360	F 320	F 340	F	310	A	A	B	A
9	A	A	U F 285	A	A	A	A	A	A	F 280	F	F 335	335	330	F 325	U F 335	295	F 305	F 350	F	F 350	F 275	A	A
10	A	A	A	A	A	A	A	A	F 285	A	A	F 295	335	330	B	F 330	F 345	B	R	A	F	A	A	A
11	A	B	A	F	F	A	A	B	B	B	B	B	B	B	B	B	B	R	B	A	A	A	B	A
12	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A	A	B
13	B	B	A	A	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	R	B	A	A
14	A	A	B	B	B	B	B	B	A	F 285	F 325	B	B	B	B	B	B	B	B	B	B	B	A	A
15	A	A	A	A	B	B	A	B	A	B	B	305	U R 330	B	R	B	B	B	B	B	R	R	A	A
16	A	A	B	B	B	B	B	F 305	F 325	U F 325	F 310	B	B	345	F 320	340	B	U F 310	B	B	B	B	A	A
17	A	A	B	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
18	A	A	A	A	A	A	B	A	A	A	B	U F 295	B	B	B	B	B	B	B	B	A	A	A	A
19	A	A	A	B	B	B	B	A	B	B	B	B	B	B	310	B	B	B	B	B	B	A	A	A
20	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	315	A
21	A	A	B	B	A	B	A	B	A	B	B	R 325	R	345	B	B	B	B	B	A	B	B	B	B
22	A	A	A	F	A	A	A	A	F 280	A	F 320	F 330	F 345	F 325	F	F 350	A	A	A	A	F 330	A	A	R
23	A	F	F	A	F 265	F 275	F	F	F	F 275	F 285	J R 340	F 330	F 320	315	340	385	F 295	340	A	A	F 330	A	A
24	F 315	A	A	U F 355	A	B	B	B	A	A	F 285	U F 290	B	B	B	U F 290	B	F	F	R	A	F	A	A
25	A	A	A	A	F	F	R	A	U F 265	R	285	F 335	R	F 335	F	F 330	F	F 340	F	F 305	B	B	B	A
26	A	A	F	A	A	A	265	F 275	F 295	B	B	R	F 325	F	F 325	F 315	315	F 350	A	A	A	340	A	A
27	F 305	A	A	A	290	F	F 275	A	F	F 325	F 315	F 315	340	R	U F 335	F 295	F 345	A	A	A	R	A	A	A
28	A	A	A	A	A	F	B	B	A	F 305	F	B	B	B	B	B	F 295	F 295	B	B	B	B	A	A
29	A	A	A	A	280	F	A	A	A	B	B	B	B	B	B	B	B	F	A	A	A	A	A	A
30	A	A	A	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	A	B	R	A	U F 305	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	3	2	3	4	6	8	9	12	9	11	9	13	9	10	5	2	2	3	2	
MED	F 310	F 295	U F 285	F 325	280	F 272	F 270	F 282	F 282	F 305	F 310	F 322	335	F 330	F 325	F 335	F 320	F 322	F 340	308	F 340	F 330	310	
UQ					285		F 272	F 298	F 295	F 315	F 315	F 332	340	345	F 345	F 350	F 345	F 340	F 345			335		
LQ					272		268	F 272	F 280	F 282	F 285	F 300	330	F 322	F 320	F 315	F 295	F 305	315			F 302		

The Radio Research Laboratories, Japan

JUN. 1973 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1973 | 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																								
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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

JUN. 1973 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1973 | 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

Day \ 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
1	B	A	A	A	320	390	355	300	250	260	245	225	210	200	200	195	195	200	A 200	B	B	B	A	B
2	B	A	A	300	A	A	A	A	A	A	300	300	B	295	220	B 250	300	B	230	A	A	A	A	A
3	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	230	B	B	B	B	B	B	B	A
4	A	A	A	A	A	B	B	B	A	A	B	B	B	B	B 240	B	B	255	B	A	B	A	A	A
5	A	B	B	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B 310	B	B	A	A	A
6	C	A	A	B	B	B	B	B	B	B	270	230	B	B	B 230	240	B	B	B	B	B	B	A	A
7	A	A	A	A	A	A	A	E A 330	280	275	240	275	200	220	210	200	E B 245	B 250	E B 250	A	A	A	B	B
8	B	A	A	A	A	A	C	A	B	B	B	260	220	230	215	220	H 200	F 240	A	B	A	B	B	A
9	A	A	A	A	A	A	A	A	A	310	280	245	200	230	C 210	200	E C 260	250	225	B	A	A	A	A
10	A	B	A	A	A	A	A	A	A	A	A	300	260	260	B	E B 260	255	B	A	A	A	A	A	A
11	A	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B	A
12	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
13	B	B	A	B	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	A	B	A	A
14	B	B	B	B	B	B	B	B	A	A 330	250	B	B	B	B	B	B	B	B	B	B	B	A	A
15	A	A	A	B	B	B	B	B	B	B	B	280	B 250	B	A	B	B	B	B	B	A	A	A	A
16	A	A	B	B	B	B	B	330	295	U A 240	275	B	B	B 230	B 230	B 250	B	265	B	B	B	B	A	A
17	A	A	A	B	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
18	A	A	A	A	B	A	B	B	A	A	B	E B 340	B	B	B	B	B	B	B	B	A	A	A	B
19	A	A	A	B	B	B	B	A	B	B	B	B	B	B	260	B	B	B	B	B	B	A	A	A
20	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	255	A
21	B	B	B	B	B	B	A	B	A	B	B	B 280	A	250	B	B	B	B	B	A	B	B	B	B
22	A	A	A	290	A	A	A	A	A 370	A	250	215	210	200	210	210	A	A	A	A	235	A	A	A
23	A	F 280	A	A	A	390	310	E A 340	300	B 270	200	220	225	225	225	210	215	A	A	A	A	A 250	A	B
24	A 350	A	A	290	A	B	B	B	A	A	330	300	B	B	B	310	B	295	400	A	A	A	A	A
25	C	A	A	A	A	A	A	A	A	A	A 325	240	B	230	215	230	A	235	A	A	B	B	B	A
26	A	A	A	A	A	A	410	350	300	B	B	B	230	225	215	225	B	A	A	A	A	B	B	A
27	330	A	A	A	A 360	A	A 380	A	A	260	225	230	225	230	210	245	240	A	A	A	A	A	A	A
28	A	A	A	A	A	A	B	B	A	325	290	B	B	B	B	B	275	270	B	B	B	B	A	A
29	A	A	A	A	A	F	A	B	B	B	B	B	B	B	B	B	B	280	A	A	A	A	A	A
30	A	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	A	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		3	2	2	4	5	6	8	13	15	10	13	14	15	9	10	6		1	1	1	
MED	340	F 280		290	340	390	368	315	298	272	270	242	222	230	215	228	U 230	252	234		235	A 250	255	
UQ				295			395	340	300	318	290	285	230	230	230	245	260	270	B 310					
LQ				290			332	330	280	260	245	228	210	225	210	210	208	240	225					

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JUN. 1973 | H'F (KM)

IONOSPHERIC DATA

JUN. 1973 | 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 15 MHz to 30 MHz in 30 sec in automatic operation

Day \ 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
1	125	125	110	110	130	110	115	110	110	110	100	150	120	100	110	150	110	140	B	100	115	100	100	125
2	105	145	100	130	100	100	100	120	105	105	120	130	B	B	B	B	B	B	B	125	120	150	110	110
3	110	130	125	140	105	150	110	110	100	B	B	B	B	B	B	B	B	B	B	B	B	B	150	110
4	110	100	100	100	105	105	110	B	110	100	B	B	B	B	B	B	B	B	B	110	B	120	115	100
5	100	115	110	100	B	115	115	110	115	B	B	B	B	B	B	B	B	B	B	B	B	145	105	105
6	105	110	110	140	110	105	B	B	B	B	120	G	B	B	B	B	B	B	B	B	B	B	145	140
7	110	115	105	110	125	110	105	105	100	100	100	120	115	125	105	B	B	B	140	120	105	B	B	B
8	B	145	110	130	110	100	C	100	B	B	B	B	115	120	120	100	B	100	125	120	110	130	B	145
9	150	150	130	120	115	115	100	100	100	100	175	100	135	105	130	100	100	100	B	130	110	175	125	110
10	120	100	100	130	105	105	110	100	100	105	110	120	120	120	B	B	B	B	130	100	150	130	130	100
11	100	B	110	105	120	110	115	B	B	B	B	B	B	B	B	B	B	130	B	120	100	105	B	115
12	150	110	B	B	130	B	B	120	B	B	B	B	B	B	B	B	B	B	B	115	110	110	100	B
13	110	B	100	100	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	120	B	100	100
14	105	100	B	B	B	100	B	B	110	120	110	B	B	B	B	B	B	B	B	B	B	B	105	105
15	105	125	110	120	125	110	100	B	105	B	B	B	B	B	125	B	B	B	B	B	130	140	110	110
16	100	100	100	110	110	125	B	100	125	115	120	B	B	B	B	B	B	B	B	B	B	B	110	100
17	110	125	120	105	100	110	105	110	B	B	B	B	B	B	B	B	b	B	B	165	110	105	100	100
18	105	115	100	100	120	105	B	100	100	110	B	130	B	B	B	B	B	B	B	B	110	100	100	105
19	110	115	100	B	105	B	B	105	B	B	B	B	B	B	B	B	B	B	B	B	B	100	110	100
20	110	100	B	180	B	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	110	125	140	150
21	115	120	B	B	105	B	100	B	100	B	B	B	115	120	B	B	B	B	B	110	B	B	B	140
22	150	105	115	105	100	110	100	100	100	100	110	105	100	100	100	130	130	130	100	100	110	100	115	120
23	100	135	165	130	110	150	145	100	150	B	B	145	150	130	130	100	100	100	100	100	100	100	110	175
24	105	145	115	100	125	B	B	B	100	100	110	G	B	B	B	B	B	G	105	120	150	125	115	100
25	125	110	130	115	130	110	125	120	110	125	130	120	B	B	B	130	130	B	115	160	B	B	B	130
26	110	115	120	120	120	125	145	140	B	B	B	B	130	100	100	100	B	120	125	120	115	B	150	155
27	G	115	120	125	115	115	115	145	100	155	G	130	130	130	110	145	130	100	125	115	100	100	110	175
28	180	145	105	115	100	110	105	B	100	110	125	B	B	B	B	B	100	B	B	B	B	B	130	110
29	105	130	170	105	130	120	145	125	125	B	B	B	B	B	B	B	B	B	100	110	115	110	110	110
30	120	100	130	115	110	105	110	110	100	B	B	B	B	B	B	B	B	B	120	B	120	110	130	115
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	26	26	26	25	20	20	21	14	12	10	10	10	9	8	7	8	11	18	20	20	25	28
MED	110	115	110	115	110	110	110	110	100	108	115	125	120	120	110	115	110	110	120	118	110	110	110	110
UQ	120	130	120	130	125	115	115	120	110	115	122	130	130	125	125	138	130	130	125	120	120	130	130	135
LQ	105	108	100	105	105	105	102	100	100	100	110	120	115	100	105	100	100	100	102	110	110	100	105	102

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JUN. 1973 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1973 | 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	R 4	R 5	R 2	R 1	R 1	R 2	RR 14	L 2	R 1	L 2	L 2	LL 11	L 1	L 1	LR 11	L 1	L 1	LL 11		F 1	FR 11	F 2	F 1	F 1
2	F 1	R 1	FF 11	F 1	F 1	F 1	F 1	R 1	RL 11	R 1	R 1	H 1								R 2	R 3	RR 12	R 2	R 4
3	R 3	R 5	R 5	FF 11	R 4	FR 11	F 1	R 2	R 1														R 1	R 3
4	R 4	R 2	R 2	R 2	R 2	R 1	R 1		R 1	R 1										R 1		R 1	R 2	F 1
5	F 1	R 1	R 1	R 2		R 1	R 1	R 1	R 1													F 1	FF 11	R 2
6	R 2	R 2	R 3	RR 11	R 1	R 1					L 1												R 1	R 1
7	F 3	F 1	R 2	R 6	R 1	R 3	R 2	LLR 11	L 2	L 1	L 1	L 1	L 1	L 1	L 1				F 1	R 1	F 1			
8		RR 21	R 1	R 1	R 2	R 2		R 2					R 1	R 1	L 1	L 1		R 1	F 1	RF 11	F 1	R 1		FFF 11
9	FR 11	RR 11	RF 11	R 2	R 2	RF 21	R 2	R 2	R 2	R 2	RR 11	LH 11	H 1	L 1	L 1	L 1	L 1	C 1		F 1	F 1	R 1	R 4	R 3
10	R 2	R 2	R 2	FR 13	R 2	R 2	R 1	R 1	R 1	R 3	R 1	L 1	L 1	R 1					F 1	FR 11	R 1	R 2	R 3	R 2
11	F 1		F 1	R 2	RR 11	R 1	F 2											L 1		R 2	R 2	R 2		R 1
12	RR 11	FR 11			F 1			L 1												R 1	F 1	R 1	R 2	
13	F 1		R 1	F 1																	R 1		R 2	R 3
14	R 1	R 1				R 1			R 1	L 1	C 1												R 2	R 3
15	R 5	R 1	R 3	R 1	R 1	R 1	R 1		L 1						R 1						F 1	R 1	R 2	R 4
16	R 4	R 2	F 1	R 1	R 1	R 1		R 1	L 1	L 1	L 1												R 4	R 3
17	R 2	R 1	R 1	R 1	R 1	R 1	R 2	R 2												R 1	R 3	R 4	R 4	R 3
18	R 2	R 2	RR 11	R 1	R 1	R 1		R 1	R 1	R 1		L 1									R 1	R 5	R 3	R 1
19	R 1	R 1	R 1		R 1			R 1														R 4	R 3	R 2
20	R 1	R 2		F 1		R 1															F 1	R 1	R 1	R 1
21	R 1	R 2			R 1		R 1		R 1				R 1	L 1						FF 11				F 1
22	FR 12	R 1	FF 22	L 1	R 2	RF 22	R 3	L 1	RR 31	L 3	C 1	L 1	L 1	L 1	LH 11	LL 11	RR 11	L 2	FF 11	F 2	F 1	F 1	F 1	F 1
23	FR 11	R 1	FF 11	RR 21	R 1	LL 11	F 1	LL 11	R 1			C 1	C 1	CL 11	R 1	L 1	R 1	L 1	F 1	F 2	F 3	F 1	F 1	R 1
24	FR 11	RF 11	R 1	FR 11	RF 11				L 1	R 1	R 1								R 1	R 1	FF 11	RR 11	N 1	R 1
25	R 1	R 3	R 4	R 3	FF 11	R 1	R 1	R 2	R 3	R 1	R 1	L 1				R 1	L 1		R 1	R 1				R 1
26	R 3	R 4	R 1	R 2	R 2	R 1	C 1	R 1					C 1	R 1	L 1	L 1		R 1	F 1	F 1	F 1		N 1	N 1
27		R 1	F 3	C 1	C 2	C 1	C 1	RR 11	R 1	R 1		C 1	C 1	C 1	L 1	L 1	RL 11	L 1	FF 11	F 1	F 1	F 1	F 1	R 1
28	R 1	R 1	F 1	F 1	RS 21	R 1	R 1		R 1	R 1	R 1						L 1						FF 11	R 2
29	F 2	F 1	F 1	R 1	RR 11	R 1	FR 11	R 1	R 1										R 2	R 1	FR 11	R 1	R 1	R 2
30	F 1	R 1	R 2	R 1	R 1	R 1	R 1	R 1	R 1										R 1		N 1	R 3	RF 21	R 1
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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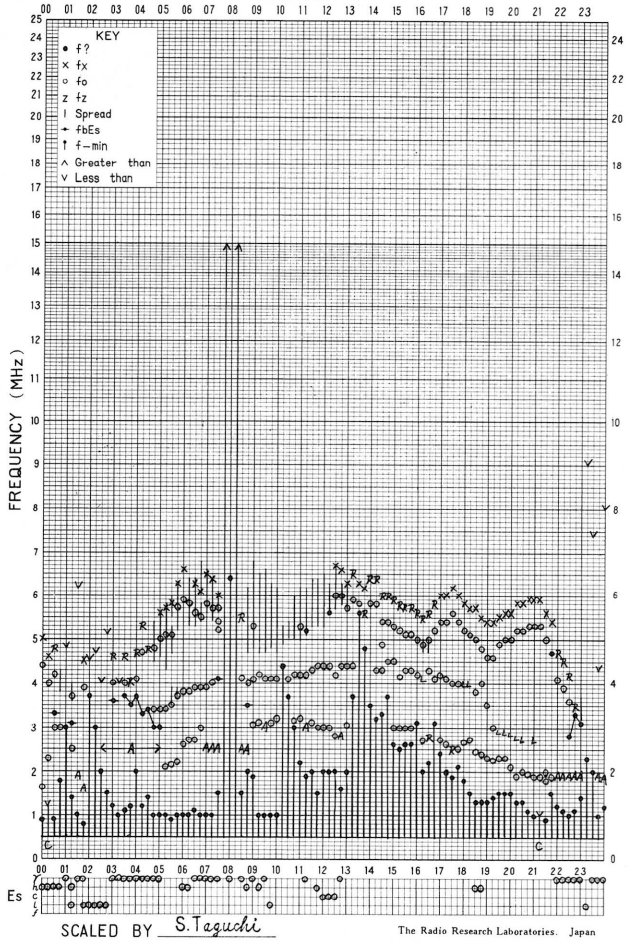
JUN. 1973 | TYPES OF ES

f-PLOT OF IONOSPHERIC DATA

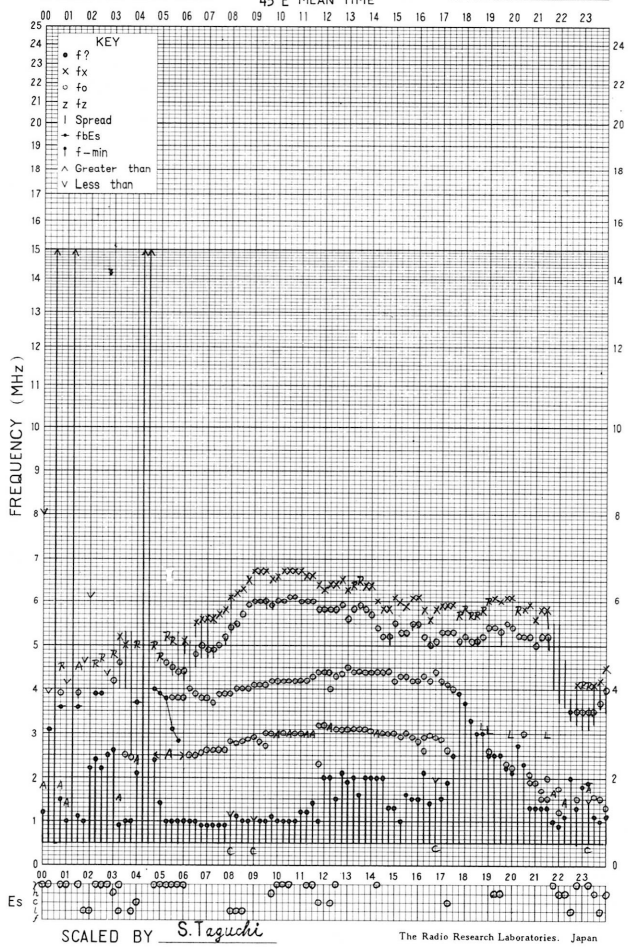
STATION SYOWA STATION 45°E MEAN TIME DATE Jan. 16. 1973



SCALED BY S.Taguchi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jan. 17. 1973



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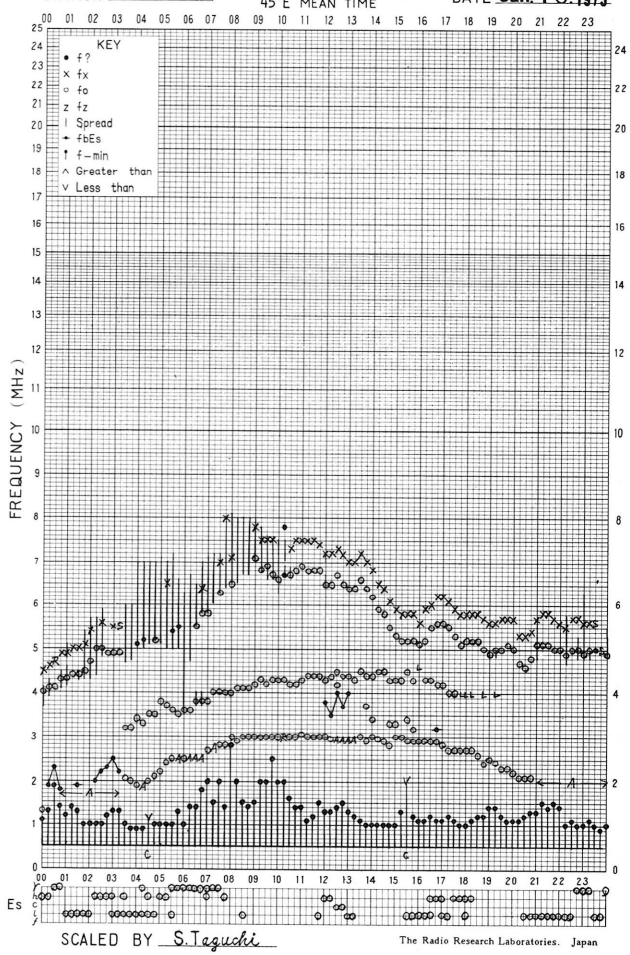
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jan. 18. 1973



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f-PLOT OF IONOSPHERIC DATA

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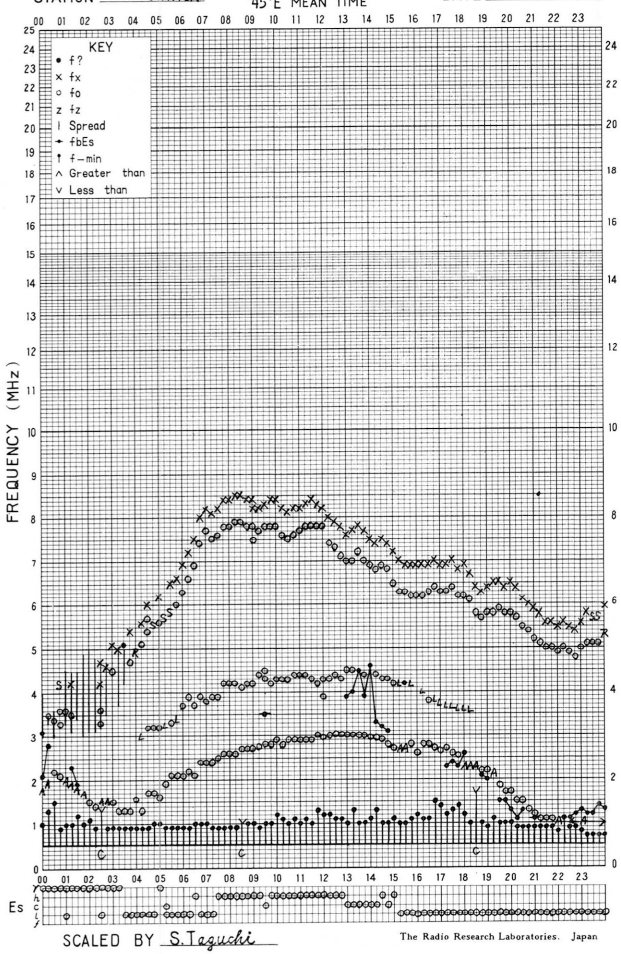

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f-PLOT OF IONOSPHERIC DATA

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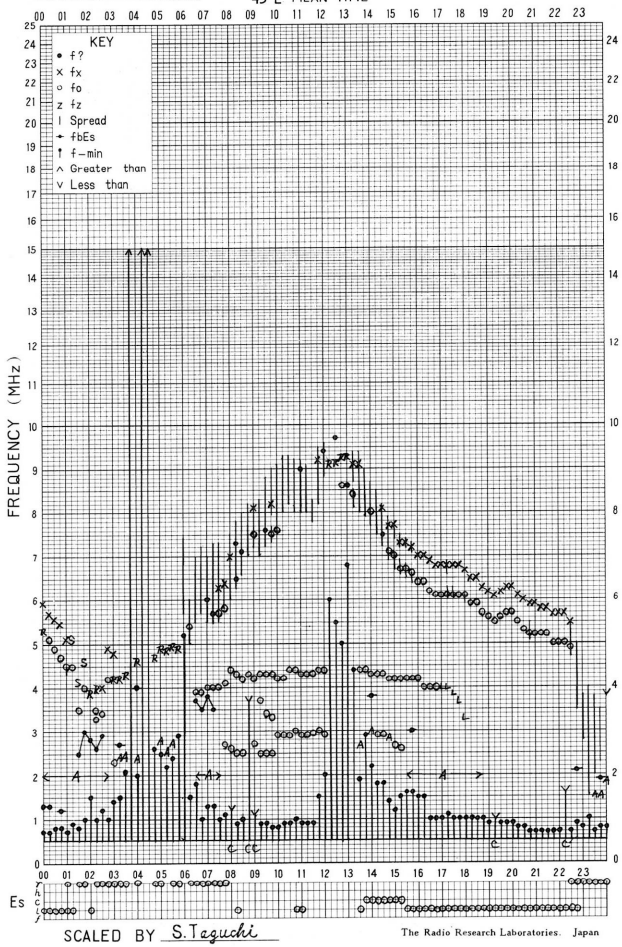

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f-PLOT OF IONOSPHERIC DATA

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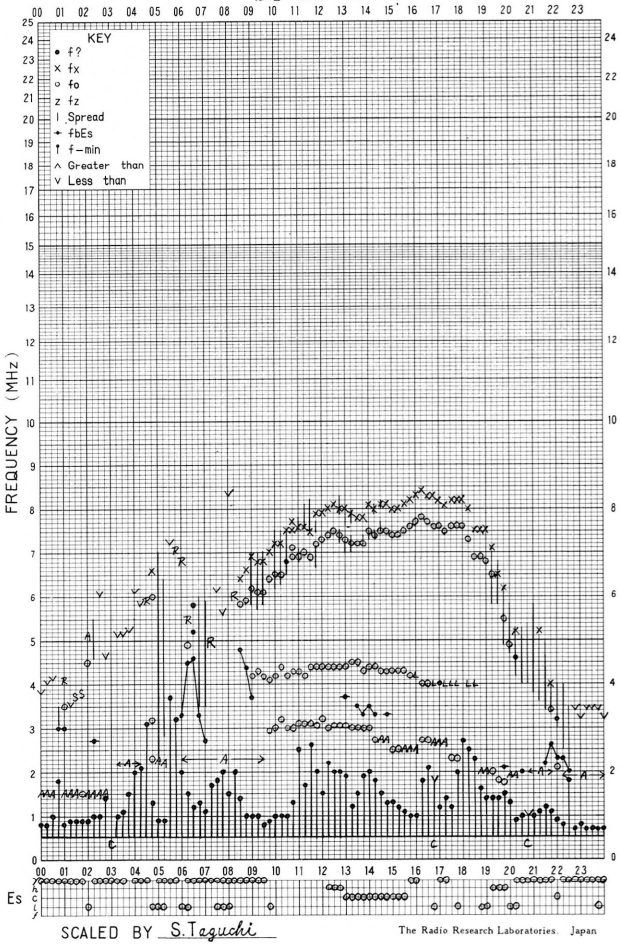

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f-PLOT OF IONOSPHERIC DATA

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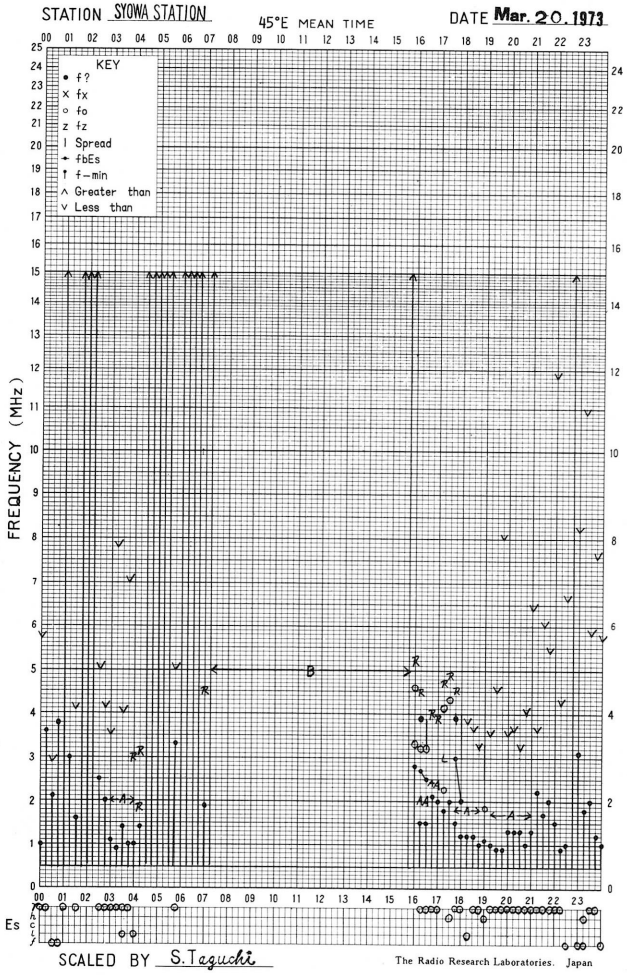

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f-PLOT OF IONOSPHERIC DATA

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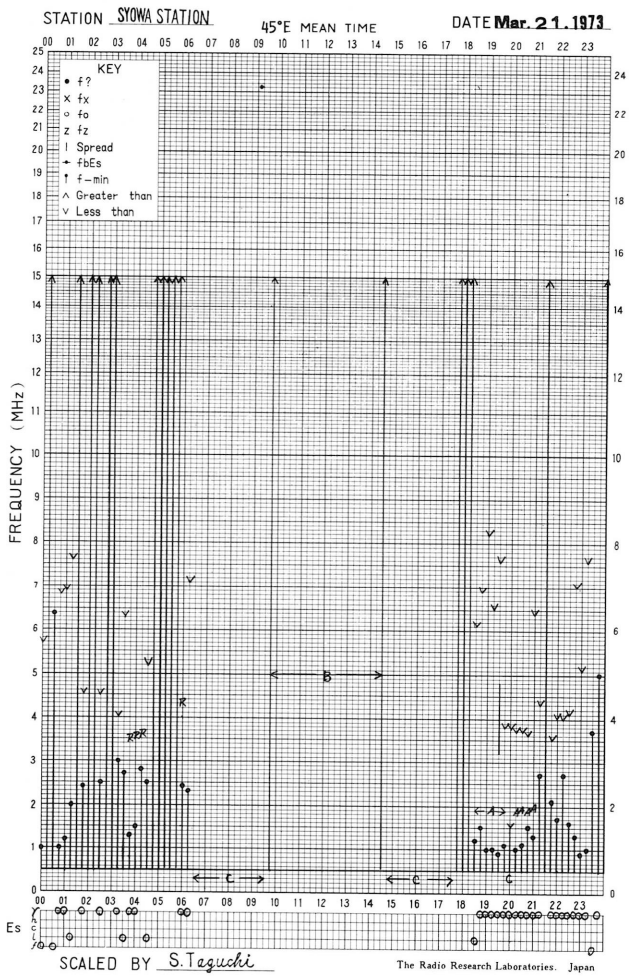

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f-PLOT OF IONOSPHERIC DATA

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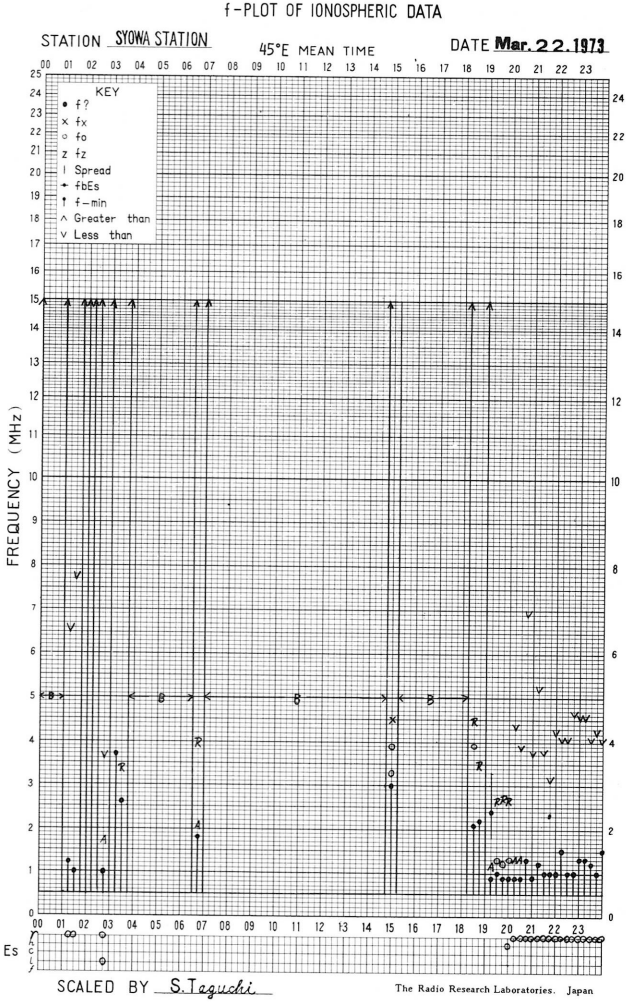

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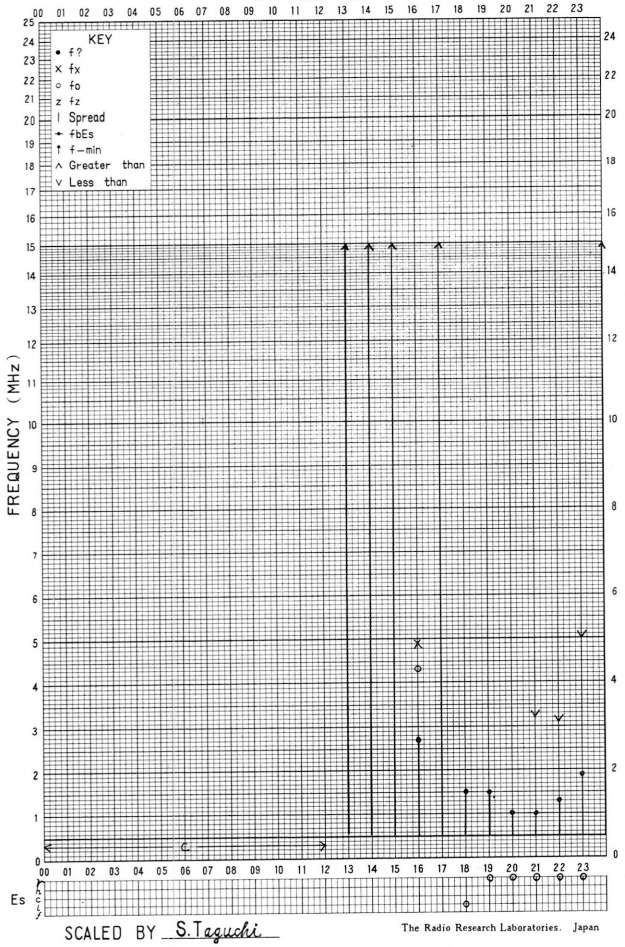
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Apr. 17. 1973



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f-PLOT OF IONOSPHERIC DATA

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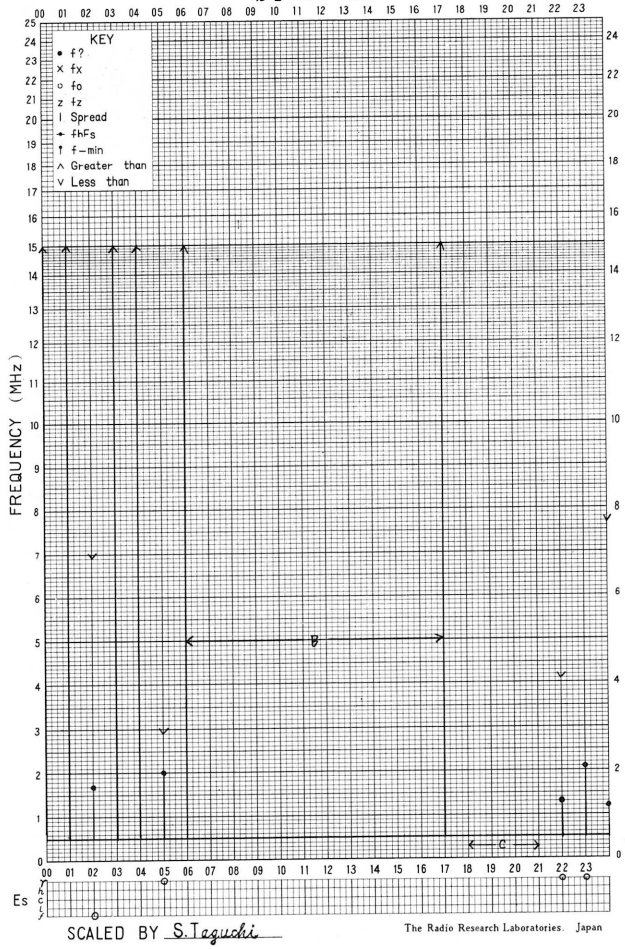

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f-PLOT OF IONOSPHERIC DATA

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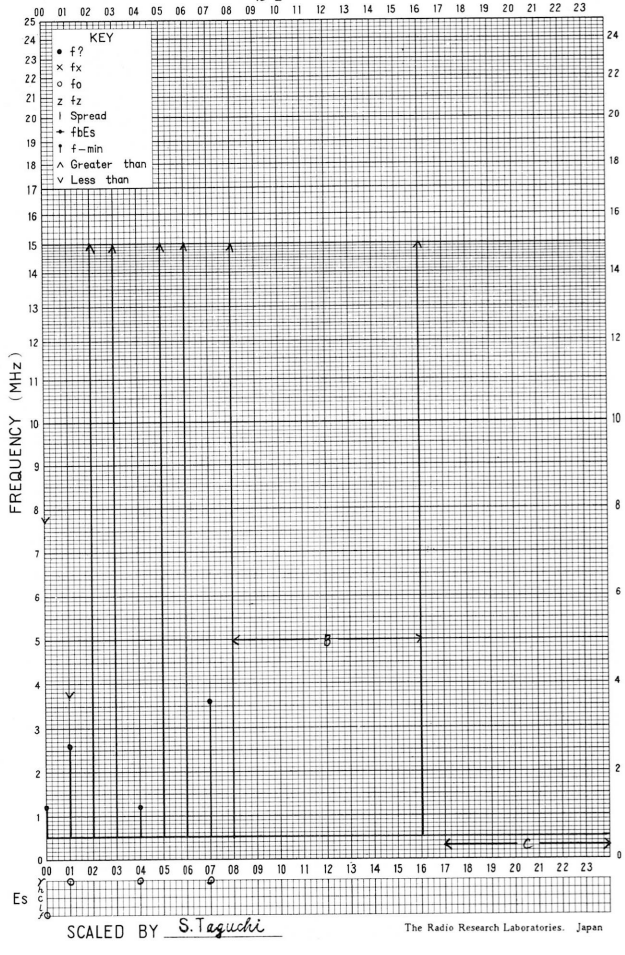

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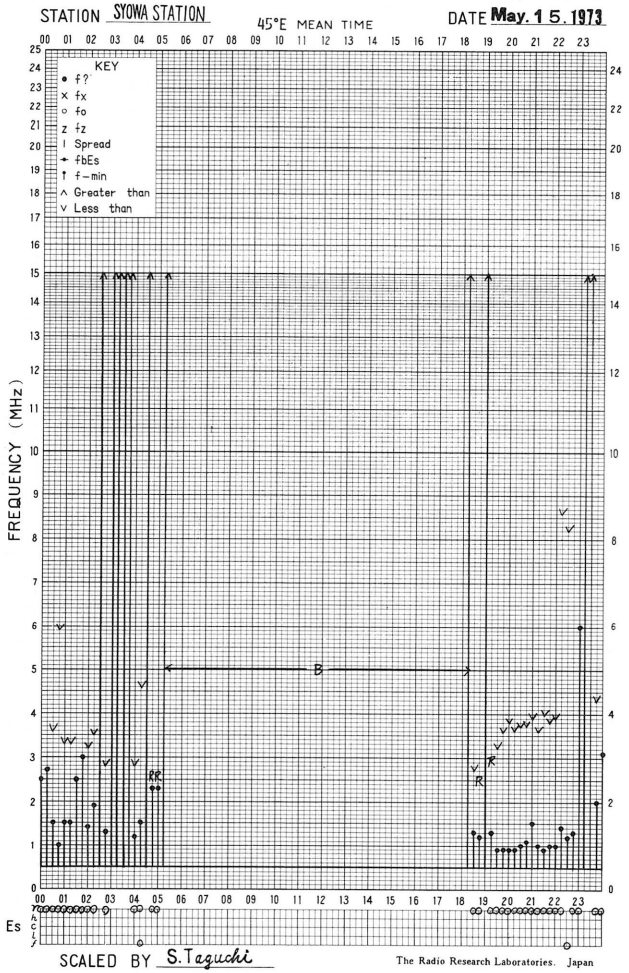
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE May. 15. 1973



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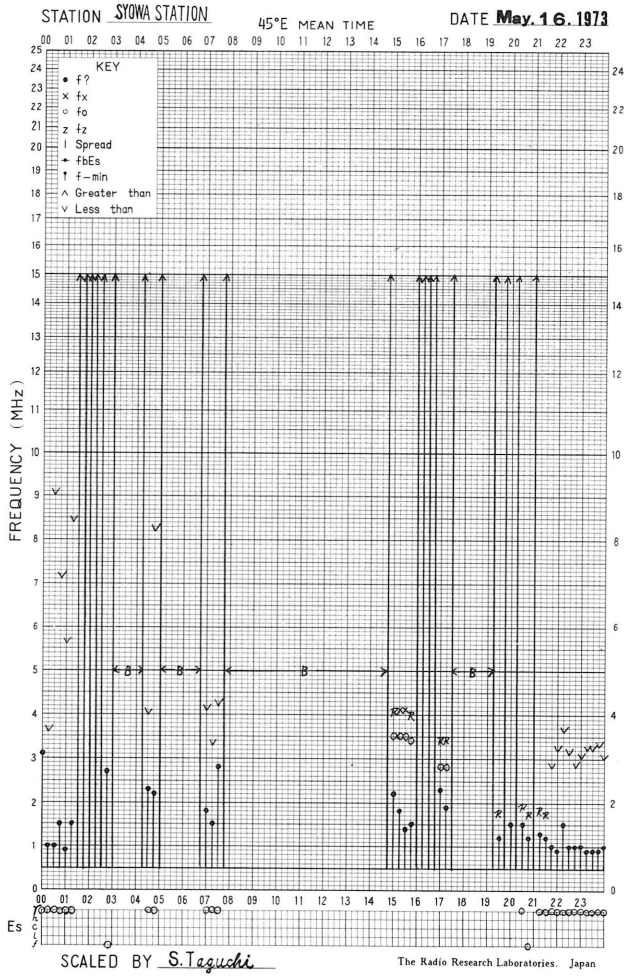
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE May. 16. 1973



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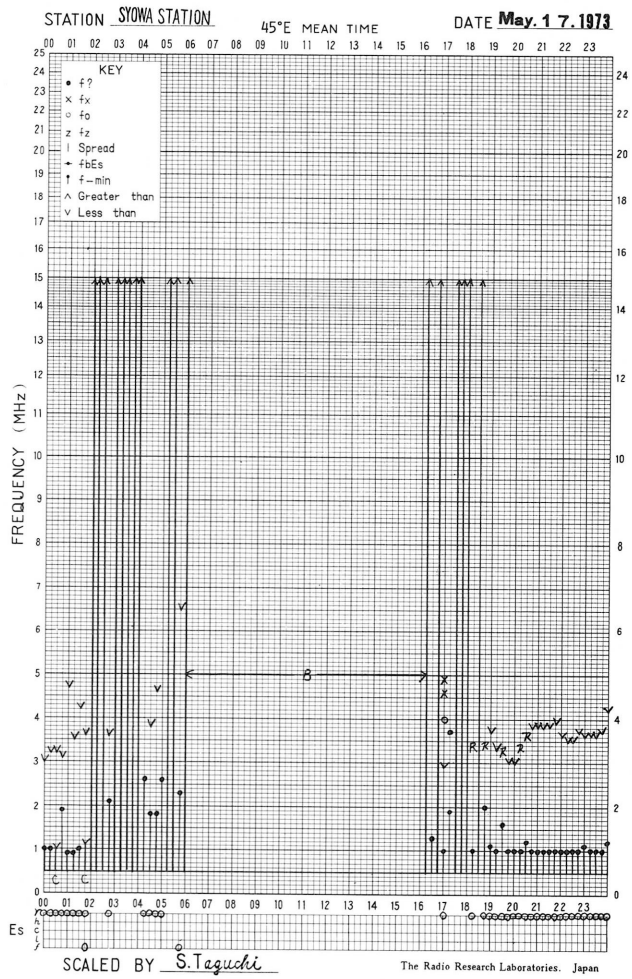
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE May. 17. 1973



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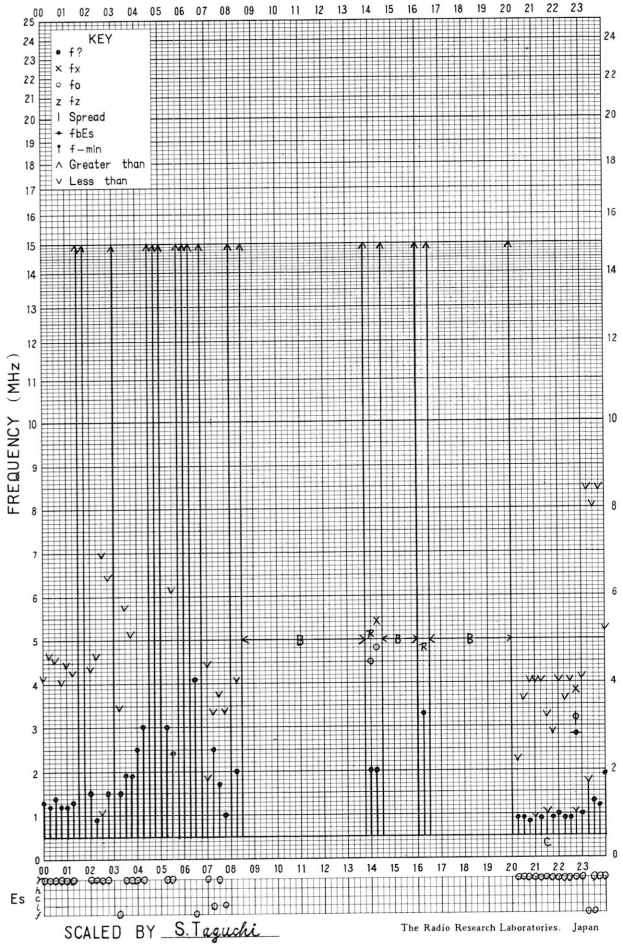
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jun. 19. 1973



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f-PLOT OF IONOSPHERIC DATA

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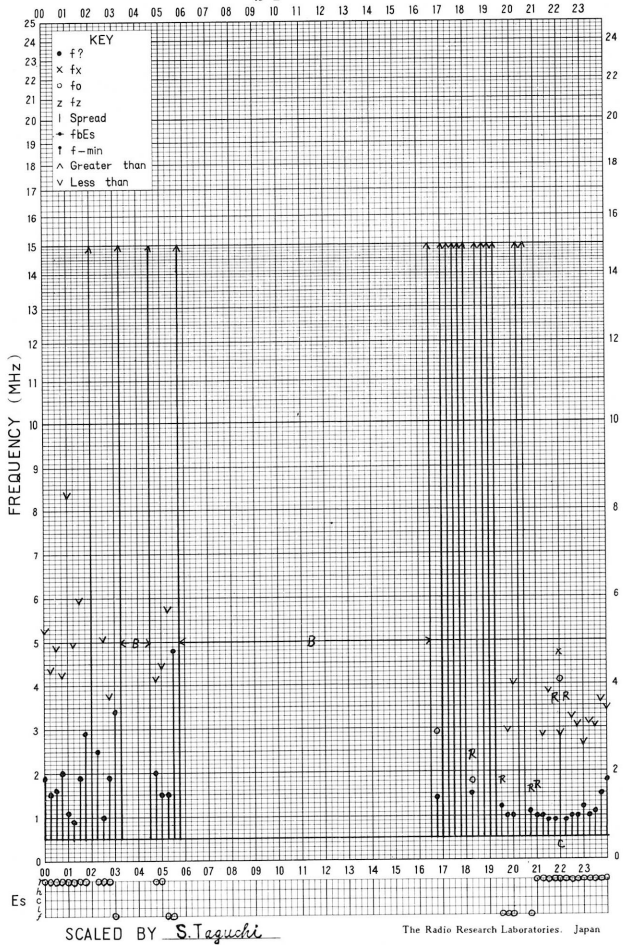

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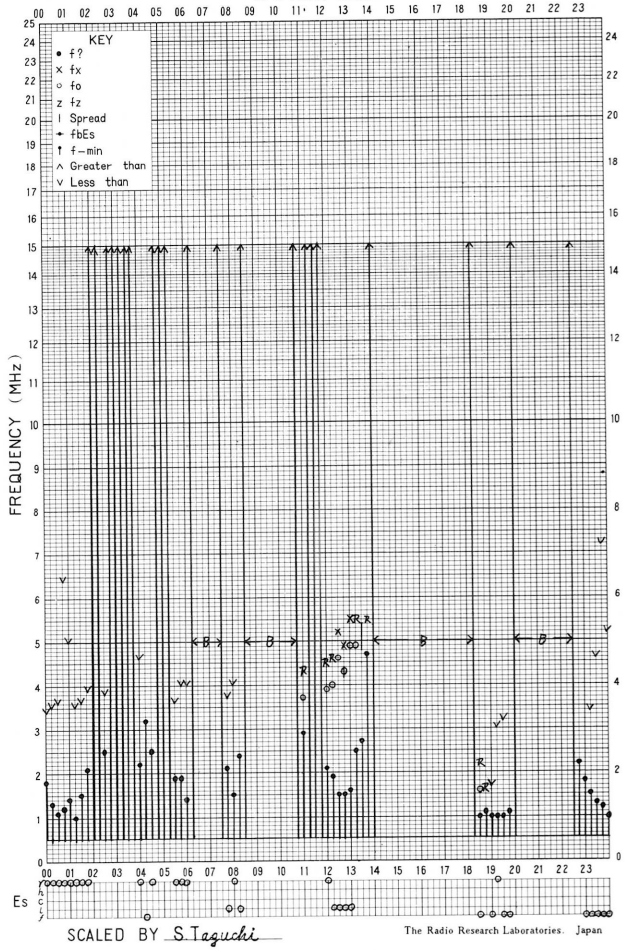
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jun. 21. 1973



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