ION. ANT.—18

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

January 1972—June 1972

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.

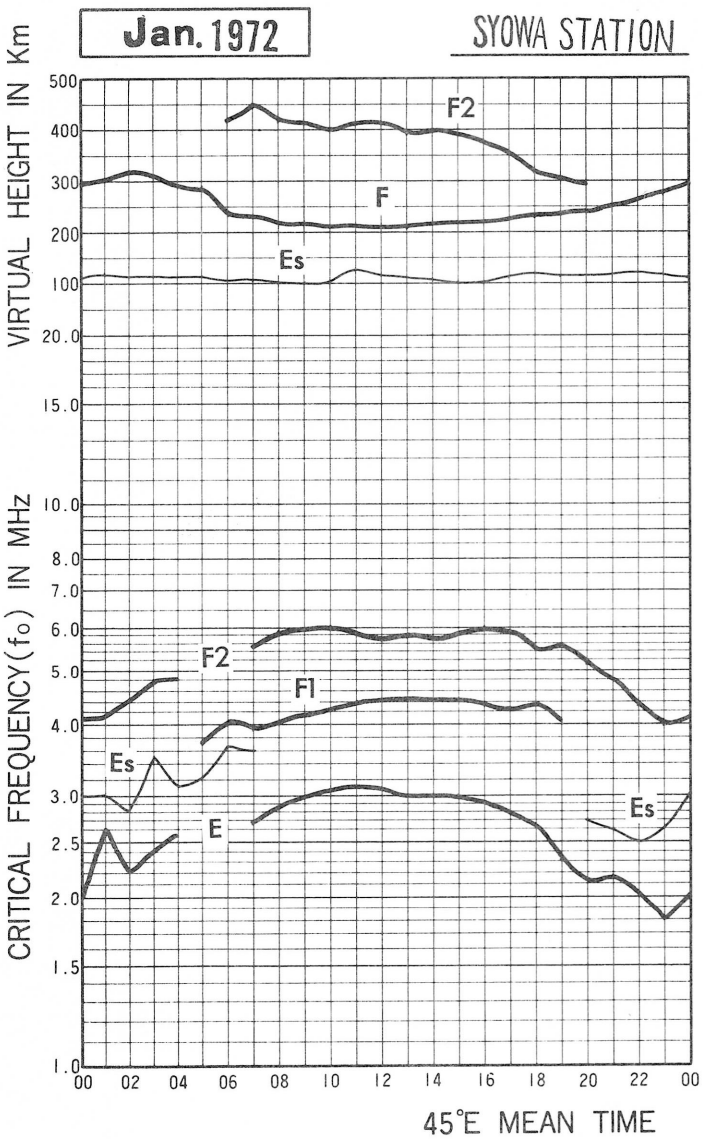
U Uncertain or doubtful numerical value.

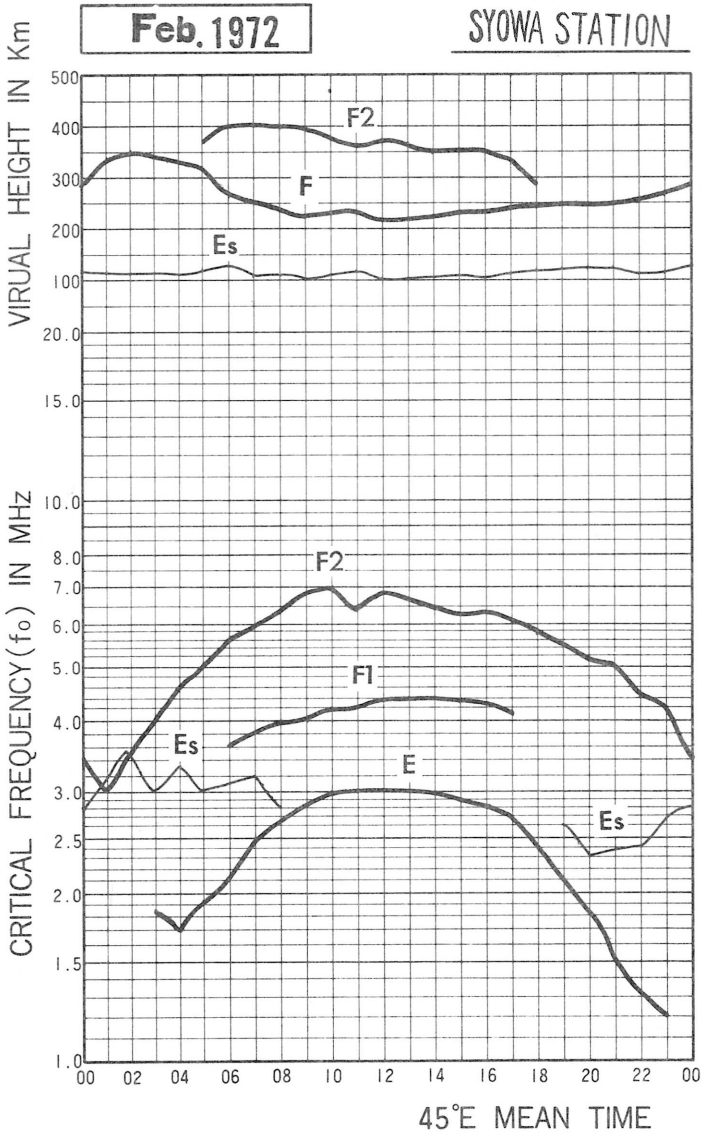
Z Measurement deduced from the third magnetoionic component.

c. f-plot

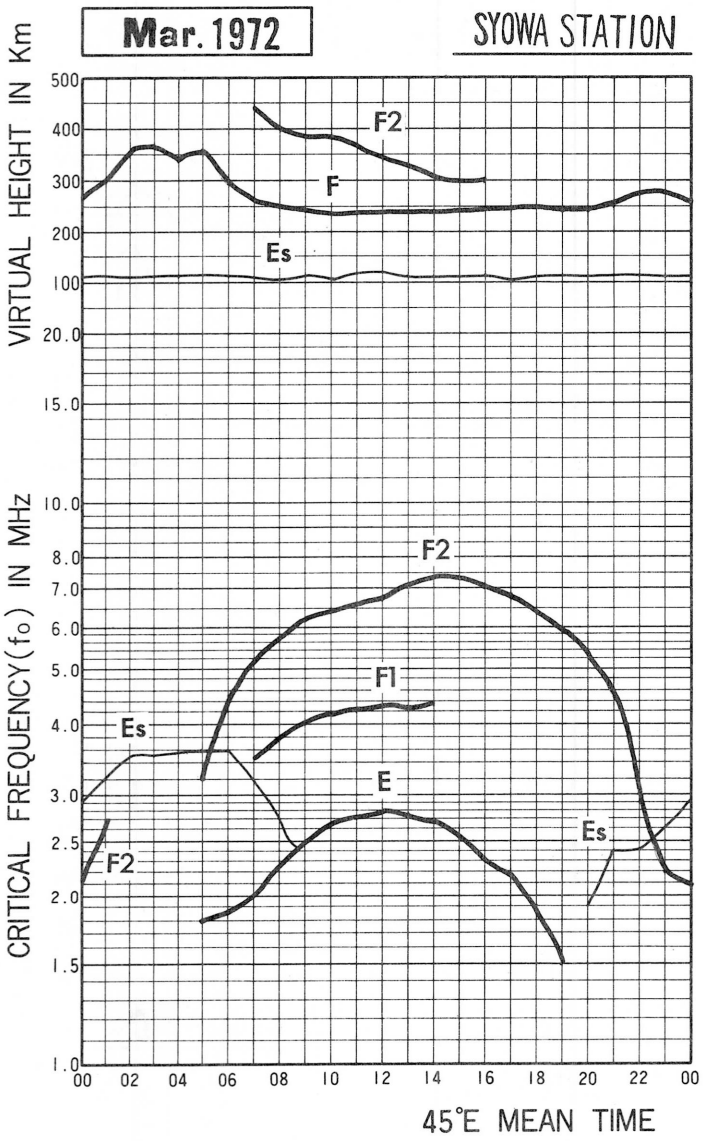
f-plots of ionospheric data are illustrated only the periods of the Regular World Days of every month.

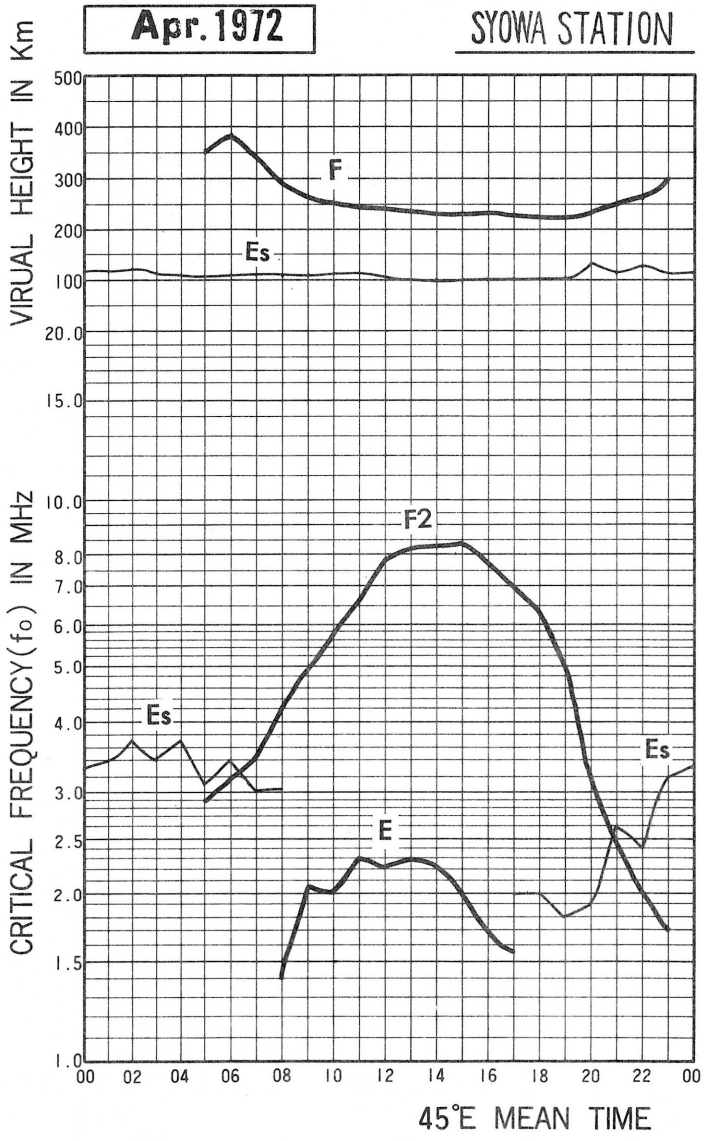
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS



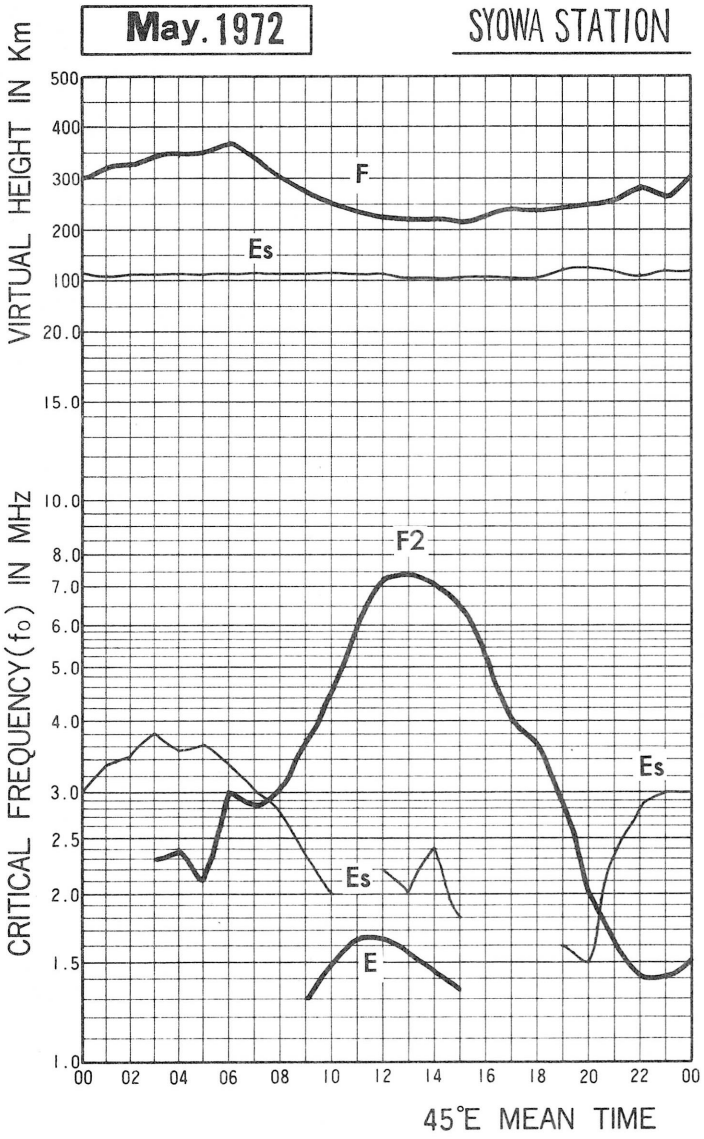


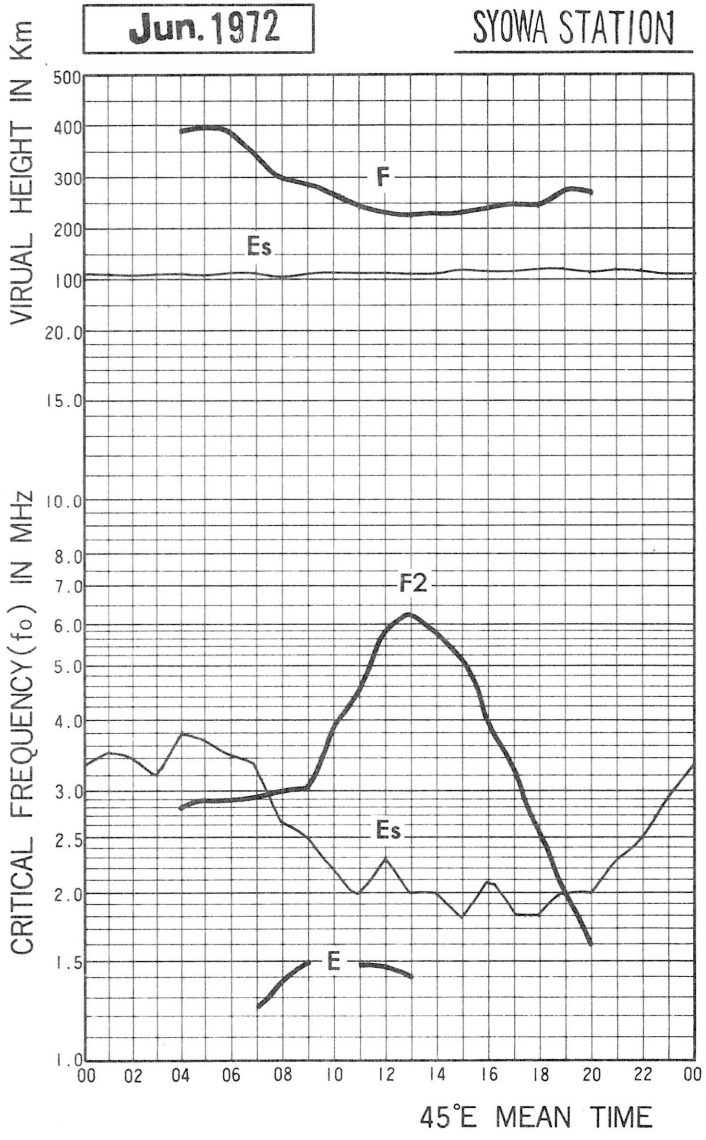
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA

JAN. 1972 | FOF2 (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	42	42	B	R	R	R	R	R	R 60	F 67	F 67	62	65	68	67	60	58	56	I R 54	55	56	53	J R 46	R
2	R	B	R	R	R	R	R	55	53	F 65	F 63	F 65	F 67	F 61	58	52	54	54	55	58	57	45	42	37
3	44	R 43	J R 46	50	R 54	60	70	I R 73	F 70	R	B	R	F 51	F 58	F 64	F 61	F 62	F 60	60	55	57	52	J R 46	R
4	49	43	44	R	A	B	B	B	F 63	F 61	B	R	U F 58	61	53	53	59	60	61	57	53	56	53	R 46
5	R	R	42	43	R	B	R	R	R	62	F 63	62	63	61	62	62	61	65	70	62	60	R	I R 47	R
6	R	R 52	59	66	70	78	R	R	U F 72	F	F	F 70	71	65	64	66	65	69	67	64	61	U F 57	R 57	60
7	53	R 54	J R 51	52	R	R	F 62	72	78	67	67	67	69	67	63	61	63	66	67	63	56	56	46	R
8	R	F	R 45	B	B	R	F	J R 71	79	F 79	F 68	70	76	71	67	61	60	66	71	69	68	U R 60	R	39
9	J F 40	R	R 43	R 47	R	R	A	R	R	R 50	F 53	53	R 50	55	52	58	60	64	68	68	62	J R 59	R	R
10	B	40	R	R	C	R	R	R	R	R 54	R	C	C	R	R	R	R	R 56	U R 63	58	R	R	R	R
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	R	R	R	A	R	B	R	R	52	56	54	55	59	60	57	58	59	R 54	53	51	51	53	55	U R 48
14	R 39	41	40	R	R	R	R	R	49	F 59	60	52	52	51	52	50	51	52	53	R 52	50	52	J R 51	J R 40
15	40	J R 39	R	R	R	R	B	B	R	C	U F 60	F 60	F 53	55	56	51	53	60	B	R	R	A	39	R
16	R	32	F	38	R	R	R	46	R	R	51	56	50	50	B	63	62	B	R	F	R	R	A	A
17	R	A	U F 38	A	R	B	B	B	B	B	R	U R 48	51	52	52	58	60	57	C	C	C	39	B	C
18	R 42	B	A	C	C	C	C	C	B	B	B	B	C	51	F 56	60	F 62	R	F 50	B	R	39	40	A
19	A	41	B	B	B	B	B	R	R	B	F 60	64	66	60	59	59	60	60	C	R	R	U R 43	41	R 42
20	C	C	C	C	C	C	C	C	C	C	C	C	R	61	64	R	68	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	70	F 78	C	F	F 70	69	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	F	R	R	R	R	B	B	50	F 50	B	F 59	58	43	B	A	A	A	B
23	B	B	A	B	B	B	B	B	B	R	R	B	B	B	R	F 53	60	F 59	47	49	41	40	41	A
24	B	B	B	41	R 42	F 44	R	45	C	B	F 52	F 55	F 54	B	52	F 57	50	F 53	53	53	50	50	35	B
25	B	F 40	B	F 48	B	R	47	R	B	R	R	B	F 55	F 55	54	58	60	58	62	F 55	50	37	43	42
26	A	A	A	B	A	B	F 55	R	F 58	B	B	60	F 60	F 57	62	B	U R 67	61	51	R	J R 47	45	43	R
27	A	B	B	B	B	B	B	R	B	F	F 66	B	B	63	67	63	61	59	B	56	40	R	40	39
28	B	A	B	R	R	B	B	R	51	59	U R 57	50	R	B	B	65	65	64	I R 51	B	R	A	A	B
29	B	R	R	F	42	B	R	R	B	B	55	46	R	51	52	50	52	52	R 43	40	42	38	R	B
30	F 40	B	A	B	R	B	R	45	51	53	52	53	52	52	55	56	52	52	48	50	45	41	43	32
31	35	40	35	B	B	B	B	B	B	50	F 55	F 55	56	56	51	52	57	58	58	57	41	40	38	36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	12	10	8	4	3	4	7	12	13	18	20	20	24	25	25	27	25	22	19	19	20	19	11
MED	41	41	44	48	48	60	58	55	59	59	F 60	58	57	58	57	58	60	59	54	56	51	48	43	40
UQ	44	43	R 46	51	62	69	66	72	71	F 65	F 66	64	66	61	64	61	62	61	63	60	57	54	46	R 44
LQ	40	40	40	42	42	52	51	46	52	54	54	53	52	52	52	53	58	56	51	52	46	40	40	38

The Radio Research Laboratories, Japan

JAN. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1972 | FOF1 (0.01 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	R	A	R	R 400	410	420	430	430	440	440	450	440	430	420	L	L	L		
2				A	L	A	A	390	400	410	430	430	450	460	460	460	450	L	L 410	L 410	U L 360			
3						370	H 410	390	R 410	R	B	440	450	470	R 460	430	420	420	L 400	U L 400	L	L		
4						B	B	B	410	450	B	450	U R 450	450	450	450	R 420	420	400	L				
5						B	A	R	400	400	410	440	R 430	H 450	R 450	440	430	410	400	L 410	L 340			
6			L	L	350	380	410	R 400	420	F 450	450	450	430	470	R 460	460	L 440	A	U L 400	L	L			
7				L	R 400	H 440	400	410	U R 410	R 420	440	450	I A 450	430	L	450	450	430	L	L	L			
8			L	B	B	370	380	380	400	420	430	A	A	L	450	460	L	440	L 410	L				
9					A	A	A	A	A	U A 410	420	H 460	450	460	450	450	430	430	410	A	A	L	L	
10					C	R	R	R	390	R	R	C	C	R	R 430	R	R	400	R 400	L	L			
11					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
12					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
13					A	B	R	R	450	430	400	440	430	430	420	420	430	L	R	L		L		
14					R	R	R	R	600	390	380	450	430	430	440	450	430	430	L 400		L			
15					R	R	B	B	A	C	A	440	440	410	440	440	410	420	B	R	360	R		
16					A	A	A	400	I R 400	410	A	420	410	400	B	R 400	410	B	R	F 400	A			
17					R	B	B	B	B	B	R	420	420	440	430	430	420	B	C	C	C			
18					C	C	C	C	B	B	B	B	C	420	420	420	410	410	410	B	A			
19					B	B	B	A	U R 390	B	400	B	430	450	440	440	420	410	C	R	R			
20					C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B			
21					B	B	B	B	B	B	B	R 450	C	B	B	B	C	B	B	B	B			
22					B	B	B	B	A	A	A	B	B	B	420	B	410	410	380	B	A			
23					B	B	B	B	B	A	420	B	B	B	420	B	B	R 410	400		L			
24					R	340	R	380	C	B	420	420	B	B	B	B	B	B	L	L				
25				L	B	A	A	R	B	A	A	B	H 450	R 450	I R 450	450	U L 450	420	400	L	L			
26					A	B	R	A	A	B	B	B	480	460	R 450	B	B	B						
27					B	B	B	R	B	A	R	B	B	B	450	R	B	440	B		L			
28						B	B	A	A	R	R	B	U R 450	B	B	B	R 450	410	400	B	R			
29					300	B	A	A	B	B	420	440	440	440	430	L	430	420	380					
30							R	380	390	400	410	H 420	430	430	420	H 440	L 430	L						
31							B	B	B	400	410	430	450	450	L	L	L	L	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	5	4	8	14	13	15	18	20	20	22	18	20	18	16	4	3			
MED					350	370	405	390	400	410	420	440	440	445	440	445	430	420	400	L 405	L 360			
UQ					375	380	410	400	410	420	425	450	450	455	450	450	440	430	410	L 410	360			
LQ					325	370	390	380	400	400	410	430	430	430	430	430	420	410	400	400	350			

JAN. 1972 | FOF1 (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1972 | FOE (0.01 MHZ) | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	B	B	B	A	A	A	A	R	295	310	310	310	310	300	310	305	295	265	235	250	220	210	300
2	300	B	A	A	A	A	A	A	A	A	300	305	305	A	A	A	300	300	275	220	220	350	330	H 200
3	200	260	270	295	300	305	250	265	270	A	B	U R 320	320	300	300	R	A	R	270	R 245	210	240	A	A
4	A	310	280	300	B	B	B	B	320	A	B	320	A	300	290	280	270	240	270	240	215	215	H 170	R 140
5	170	A	A	A	A	B	A	A	280	285	300	310	300	300	H 310	A	290	280	250	220	200	B	B	B
6	B	A	200	A	225	A	B	R 300	A	A	305	310	R 310	R 310	R 300	295	270	A	B	B	A	A	A	A
7	A	A	A	200	H 280	215	230	235	280	300	300	310	305	310	300	280	290	290	A	A	A	A	150	B
8	A	A	220	B	B	245	250	250	265	300	305	300	310	310	300	295	280	270	260	A	A	A	A	A
9	180	250	250	A 270	A	A	A	A	A	A	300	305	305	300	300	300	300	290	270	235	210	200	150	A
10	B	315	A	A	C	A	A	A	280	290	300	C	C	R	290	U R 280	280	R	260	R 230	190	A	A	A
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	275	A	A	A	A	B	A	305	280	290	305	310	300	300	300	300	300	290	260	225	220	200	A	165
14	300	300	270	A	A	A	A	A	300	300	305	300	300	305	R 300	300	275	280	265	240	205	150	140	R 130
15	160	180	180	B	A	A	B	B	A	C	A	305	300	295	295	300	A 280	275	B	B	300	R	320	A
16	B	150	140	170	A	A	A	A	A	A	A	A 290	290	290	B	B	B	B	A	220	A	B	B	B
17	A	A	A	A	A	B	B	B	B	B	320	300	A	300	R 290	305	300	B	C	C	C	230	B	C
18	C	B	B	C	C	C	C	C	B	B	B	B	C	A	R	300	270	B	A	B	R	A	220	A
19	A	A	B	B	B	B	B	A	290	B	310	B	310	300	300	305	290	B	C	B	C	C 220	290	A
20	A	C	C	A	A	A	B	B	C	C	300	C	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	B	B	A	A	A	B	B	B	A	B	300	290	270	B	A	A	A	B
23	B	B	A	B	B	B	B	B	B	A	340	B	B	B	300	B	B	B	300	240	290	R	R 200	A
24	B	B	B	A	A	A	A	A	C	B	A	310	B	B	B	B	B	B	B	R 240	220	A	B	B
25	B	A	B	240	B	A	A	R	B	A	A	B	320	B	B	B	B	B	B	225	A	220	A	A
26	B	B	A	B	A	B	B	A	A	B	B	B	320	320	310	B	B	B	B	A	A	205	200	A
27	A	B	B	B	B	B	B	A	B	A	B	B	B	B	B	B	B	290	B	230	A	A	A	300
28	B	B	B	A	B	B	B	A	A	A	A	B	B	B	B	B	B	B	B	B	A	A	B	B
29	B	A	200	210	230	B	A	A	B	B	B	310	300	R 300	H 310	305	295	280	290	260	210	225	A	B
30	A	B	B	B	A	B	A	A	300	300	A 300	A 305	300	305	310	300	290	260	I B 240	230	200	155	I B 150	130
31	A	A	B	B	B	B	B	B	B	R	310	300	310	290	300	300	280	265	260	230	190	140	310	310
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	7	9	7	4	3	3	5	10	8	16	18	18	18	19	16	19	15	15	17	15	14	13	8
MED	200	260	220	240	255	245	250	265	280	298	305	308	305	300	300	300	290	280	265	230	210	218	200	182
UQ	288	305	270	282	290	275	250	300	300	300	310	310	310	310	300	302	300	290	270	240	220	225	290	300
LQ	175	215	200	205	228	230	240	250	280	290	300	300	300	300	300	295	280	272	260	225	202	200	150	135

JAN. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JAN. 1972 | H'F (KM) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00·4 S. Long. 39° 35·4 E Sweep 0.5 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	300	330	B	R	A	R	A	R	200	215	200	210	H 195	220	190	200	200	210	205	240	240	250	295	R
2	370	B	A	A	300	A	A	H 230	H 200	H 190	210	225	200	210	230	205	200	250	230	245	225	280	345	260
3	270	250	290	375	280	290	240	210	210	A	B	200	220	215	H 210	210	200	215	210	220	250	260	295	250
4	315	320	310	290	A	B	B	B	250	230	B	250	210	210	200	200	215	A 240	240	225	220	250	230	250
5	300	300	E A 360	A	A	B	A	A	H 210	200	200	250	200	225	200	200	H 200	205	200	230	220	250	B 250	280
6	B	270	255	H 250	250	240	230	R	210	200	200	200	195	200	I A 205	200	200	A	A 250	A	230	240	270	250
7	245	270	310	280	R	210	230	215	210	200	210	220	I A 220	220	I A 215	200	225	230	230	210	210	230	250	R
8	270	260	340	B	B	H 300	220	225	195	245	E A 250	A	A	200	205	200	200	250	220	A 250	A	250	E A 350	310
9	280	290	340	A 350	A	A	A	A	A	A	205	200	H 210	200	195	215	200	210	230	A	A	250	245	300
10	B	350	R	A	C	A	A	A	200	250	210	C	C	205	200	220	220	200	210	215	210	A	A	A
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	270	R	A	A	A	B	A	270	210	205	H 195	200	H 200	200	210	215	225	220	220	215	250	250	250	250
14	350	390	R 480	A	R	A	A	A	245	225	205	200	205	200	210	200	220	220	225	A 230	230	A 250	250	260
15	265	300	300	A	A	R	B	B	A	C	A	H 220	210	200	230	210	215	290	B	R	270	R	400	A
16	A	330	A	290	A	A	A	A	A	A 240	A	215	200	210	B	B	240	B	A	260	A	A	A	A
17	A	A	380	A	A	B	B	B	B	B	R	220	215	H 200	220	240	210	B	C	C	C	265	B	C
18	A	B	A	C	C	C	C	C	B	B	B	B	C	200	240	240	230	230	225	B	A	A	250	A
19	A	305	B	B	B	B	B	A	240	B	215	B	240	250	210	215	210	200	C	B	240	300	270	A
20	A	C	C	A	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	B	B	A	A	A	B	B	B	H 240	B	215	260	H 240	B	A	A	A	B
23	B	B	A	B	B	B	B	B	B	A	215	B	B	B	250	B	B	250	260	300	325	270	280	A
24	B	B	B	320	R	300	R	260	C	B	230	H 200	B	B	B	B	B	B	265	260	250	255	A	B
25	B	300	B	370	B	A	A	R	B	A	A	B	205	B	B	215	I B 225	220	220	250	A	250	250	A
26	A	A	A	B	A	B	B	A	A	B	B	B	270	220	205	B	B	B	210	R	R	250	260	A
27	A	B	B	B	B	B	B	R	B	A	R	B	B	B	B	B	B	H 230	B	255	A	A	A	390
28	B	B	B	A	A	B	B	A	A	R	A	B	B	B	B	B	230	230	240	B	R	A	A	B
29	B	A	300	300	R	B	A	A	B	B	230	230	210	H 200	250	245	225	230	280	255	250	300	A	B
30	350	B	A	B	A	B	R	280	255	220	200	200	240	200	210	205	210	225	210	230	275	250	250	280
31	A	330	B 410	B	B	B	B	B	B	230	210	215	250	225	210	210	230	215	240	240	230	275	275	410
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	12	9	3	5	4	7	13	13	16	17	19	21	22	20	23	22	22	18	17	20	19	12
MED	290	300	318	300	280	290	230	230	210	220	209	215	210	205	210	210	215	228	228	240	240	250	255	270
UQ	332	330	370	350	290	300	235	265	240	230	214	220	220	220	230	215	225	240	240	255	250	268	283	305
LQ	270	280	300	290	265	240	225	220	200	200	200	200	200	200	205	200	200	215	210	225	225	250	250	250

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JAN. 1972 | H'F (KM)

IONOSPHERIC DATA

JAN. 1972 | F-MIN (0.1 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	23	B	32	11	26	25	19	13	10	10	13	13	14	12	12	10	11	16	10	15	13	11	20
2	26	B	14	14	10	20	20	10	10	10	10	10	11	13	11	10	10	10	10	9	10	10	13	11
3	13	11	12	13	13	13	12	10	12	22	B	13	14	12	20	14	13	13	15	17	14	11	13	15
4	13	13	14	10	35	B	B	B	13	12	B	18	15	20	14	13	12	18	20	20	11	10	12	11
5	11	16	15	19	10	B	25	15	15	13	10	10	11	12	12	14	12	10	11	14	16	26	25	20
6	33	16	16	13	14	15	30	15	12	11	10	28	17	14	16	13	12	25	24	24	13	13	15	19
7	15	12	12	11	15	13	12	10	10	10	10	10	10	11	10	11	10	11	10	10	12	10	11	21
8	10	13	10	B	B	12	10	11	14	10	10	E C 23	10	11	11	10	12	10	10	11	9	10	15	12
9	12	10	11	15	13	13	16	12	12	14	10	10	10	10	10	11	10	10	13	12	12	15	11	11
10	B	10	22	E C 20	C	17	19	15	13	16	E C 28	C	C	15	12	15	13	13	13	15	10	13	13	14
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	10	20	19	14	21	B	19	14	12	10	10	11	12	13	13	13	10	13	13	11	11	14	13	15
14	18	20	16	18	16	21	22	15	11	11	10	11	11	11	13	10	11	10	11	12	10	10	9	10
15	12	15	23	20	15	19	B	B	13	C	21	10	11	12	13	10	10	19	B	33	13	23	22	15
16	22	11	11	10	20	21	15	13	13	13	13	14	13	13	B	36	31	B	12	11	16	25	19	20
17	12	11	10	13	16	B	B	B	B	B	26	11	15	13	13	10	12	48	C	C	C	15	B	C
18	E C 23	B	21	C	C	C	C	C	B	B	B	B	C	15	23	21	14	28	12	B	11	11	20	15
19	12	15	B	B	B	B	B	20	23	B	26	50	18	14	15	13	18	27	C	33	E C 30	13	E C 23	20
20	14	C	C	18	18	18	27	28	C	C	23	C	61	49	58	52	59	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	38	45	C	46	46	47	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	41	40	22	21	21	B	B	46	21	B	22	22	18	B	20	19	20	B
23	B	B	19	B	B	B	B	B	B	22	20	B	B	B	E S 20	45	47	31	22	24	22	18	18	20
24	B	B	B	22	20	20	21	20	C	B	E C 21	E C 22	47	B	47	47	45	44	35	20	20	18	22	B
25	B	18	B	19	B	20	23	20	B	20	22	B	24	42	46	34	40	30	28	20	18	18	18	18
26	27	23	15	B	22	B	34	24	20	B	B	49	26	19	16	B	48	50	26	22	12	15	15	13
27	19	B	B	B	B	B	B	21	B	22	30	B	B	49	44	43	53	18	B	19	15	15	13	11
28	B	30	B	15	23	B	B	25	20	20	20	48	40	B	B	47	35	30	28	B	15	12	19	B
29	B	11	10	10	10	B	16	20	60	B	35	20	12	25	19	13	10	E C 13	10	16	18	14	14	B
30	11	B	20	B	12	B	20	16	17	19	12	12	12	22	20	11	11	17	27	12	12	15	16	10
31	15	14	27	B	B	B	B	B	B	20	13	11	14	12	16	14	11	20	14	20	14	11	13	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	29	28	28	28	27	28	28	28	27	27	29	27	26	29	29	29	28	29	27	28	28	29	29	28
MED	16	17	19	18	20	D B 26	25	20	15	20	20	U 16	14	14	16	14	12	19	16	20	14	14	15	16
UQ	B	B	B	B	B	B	B	34	D B 60	D B 22	28	48	26	42	23	43	33	30	28	28	18	18	20	20
LQ	12	12	13	14	14	18	19	14	12	12	10	11	11	12	13	11	10	13	12	12	12	11	13	12

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JAN. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1972 | M(3000)F2 (0.01) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	310	310	B	R	R	R	R	R	R 245	F 255	F 265	270	255	275	290	285	285	285	I R 290	300	305	310	J R 325	R
2	R	B	R	R	R	R	R	225	265	F 245	F 260	F 260	F 270	F 285	295	275	270	280	295	290	285	345	310	285
3	295	R 325	J R 320	275	R 270	250	260	I R 260	F 255	R	B	R	F 235	F 280	F 280	F 280	F 280	F 290	300	310	305	310	J R 285	R
4	305	315	295	R	A	B	B	B	F 255	F 245	B	R	U F 270	305	265	265	270	285	295	310	285	305	320	R 330
5	R	R	290	265	R	B	R	R	R	275	F 260	260	270	260	275	270	275	275	305	305	315	R	I R 315	R
6	R	R 295	280	290	270	270	R	R	U F 245	F	F	F 270	295	275	295	275	275	305	315	305	330	U F 315	R 315	315
7	310	R 280	J R 265	275	R	R	F 260	265	265	260	260	255	270	290	285	280	280	290	315	315	320	315	315	R
8	R	F	R 275	B	B	R	F	R	240	F 255	F 265	270	290	285	300	315	280	285	310	320	325	U R 320	R	285
9	J F 300	R	R 290	R 275	R	R	A	R	R	R 260	F 280	275	R 230	290	255	295	285	280	295	310	305	J R 305	R	R
10	B	300	R	R	C	R	R	R	R	R 280	R	C	C	R	R	R	R	R 300	U R 290	315	R	R	R	R
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	R	R	R	A	R	B	R	R	255	255	280	265	285	285	305	285	295	R 300	310	305	315	315	325	U R 315
14	R 300	290	250	R	R	R	R	R	220	F 270	265	265	260	255	270	240	280	290	300	R 310	300	315	J R 315	J R 325
15	310	J R 295	R	R	R	R	B	B	R	C	F	F 265	F 270	260	285	265	250	250	B	R	R	A	275	R
16	R	290	F	290	R	R	R	260	R	R	240	250	250	225	B	270	275	B	R	F	R	R	A	A
17	R	A	U F 265	A	R	B	B	B	B	B	R	U R 230	255	275	255	260	300	285	C	C	C	295	B	C
18	R 290	B	A	C	C	C	C	C	B	B	B	B	C	245	F 270	250	F 240	R	F 275	B	R	305	330	A
19	A	320	B	B	B	B	B	R	R	B	F 255	260	290	265	270	270	255	275	C	R	R	U R 280	325	R 310
20	C	C	C	C	C	C	C	C	C	C	C	C	R	265	250	R	265	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	270	F 255	C	F	F 255	245	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	F	R	R	R	R	B	B	245	F 240	B	F 255	295	255	B	A	A	A	B
23	B	B	A	B	B	B	B	B	B	R	R	B	B	B	R	F 250	280	F 270	280	290	290	315	295	A
24	B	B	B	315	R 250	F 240	R	220	C	B	F 250	F 255	F 265	B	260	F 270	310	F 290	315	320	320	320	285	B
25	B	F 300	B	F 270	B	R	255	R	B	R	R	B	F 255	F 290	250	245	265	275	305	F 310	315	310	335	310
26	A	A	A	B	A	B	F 275	R	F 240	B	B	250	F 260	F 235	240	B	U R 245	295	280	R	R	335	300	R
27	A	B	B	B	B	B	B	R	B	F	F 270	B	B	260	265	260	285	275	B	340	275	R	300	280
28	B	A	B	R	R	B	B	R	295	235	U R 245	260	R	B	B	260	260	280	I R 260	B	R	A	A	B
29	B	R	R	F	255	B	R	R	B	B	255	225	R	255	270	280	260	270	R 215	320	355	270	R	B
30	F 275	B	A	B	R	B	R	225	245	250	255	260	250	245	260	290	275	325	300	320	310	320	300	315
31	275	300	255	B	B	B	B	B	B	240	F 265	F 270	285	285	280	280	280	300	310	315	340	310	290	280
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	12	10	8	4	3	4	6	12	13	17	20	20	24	25	25	27	25	22	19	18	20	19	11
MED	300	300	278	275	262	250	260	242	250	255	F 260	260	268	270	270	270	275	285	298	310	312	312	315	310
UQ	310	312	290	290	270	260	268	260	260	260	F 265	268	278	285	285	280	280	295	310	318	320	318	322	R 315
LQ	290	292	265	272	252	245	258	225	242	245	255	255	255	255	255	260	262	275	280	305	300	305	298	285

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JAN. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JAN. 1972 | H'F2 (KM) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00·4' S. Long. 39° 35·4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	400	R	R	R	R 450	400	370	400	400	350	350	350	375	375	R 350	315	300	L		
2				R	R	R	R	560	410	430	400	410	365	350	350	400	406	L	345	345	290			
3						U R 450	380	R 405	380	R	B	R	580	385	390	370	350	340	315	300	300	280		
4						B	B	B	410	450	B	R	400	330	450	480	380	340	310	L				
5						B	R	R	R	375	400	400	400	400	380	375	365	350	300	300	280			
6			300	305	350	340	330	400	400	400	350	345	320	355	340	365	350	310	280	295	250			
7				330	R	R	410	375	350	400	400	380	I A 350	350	350	375	360	330	295	L	275			
8			360	B	B	R 410	R	360	400	350	390	350	350	300	300	300	L	350	300	260				
9					R	A	A	R	A	R 410	405	600	370	500	350	360	350	300	300	260	260	265		
10					C	R	R	R	R	R 395	R	C	C	R	R	R	R	365	325	L	340			
11					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
12					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
13					A	B	R	R	450	430	400	440	375	380	345	365	345	L	315	L		275		
14					R	R	R	R	600	390	380	450	450	470	450	575	400	370	290		L			
15					R	R	B	B	R	C	R	400	450	445	360	440	480	440	B	R	R	R		
16					A	R	R	450	R	R	500	440	490	550	B	390	375	B	R	F	R			
17					R	B	B	B	B	B	R	R	500	430	490	425	325	355	C	C	C			
18					C	C	C	C	B	B	B	B	C	500	430	450	460	R	405	B	R			
19					B	B	B	R	R	B	420	400	350	400	400	375	400	355	C	R	R			
20					C	C	C	C	C	C	C	C	B	390	B	B 390	B	B	B	B	B			
21					B	B	B	B	B	B	340	360	C	370	360	430	C	B	B	B	B			
22					B	B	480	R	A	R	A	B	B	540	545	B	415	340	500	B	A			
23					B	B	B	B	B	R	R	B	B	B	R	500	400	390	410		L			
24					R	490	R	R 600	C	B	500	470	450	B	475	410	B 345	365	L	300				
25				380	B	R	R	R	B	R	R	B	455	390	500	480	390	390	310	L	350			
26					A	B	410	480	525	B	B	450	420	520	470	B	440	370						
27					B	B	B	R	B	R 440	390	B	B	440	390	R	375	355	B		400			
28						B	B	R	375	475	R	B	R	B	B	390	380	355	R 445	B	R			
29					460	B	R	R	B	B	430	625	R	500	445	L	460	420	655					
30							R	545	455	450	455	450	495	500	440	360	400	L						
31							B	B	B	490	440	425	350	380	L	L	350	300	290	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	3	3	4	5	9	12	14	17	18	20	25	23	23	25	22	19	8	10	3	1	
MED			330	330	400	430	410	450	410	415	400	408	410	390	400	390	380	355	315	300	295	275	265	
UQ				355	430	470	410	545	452	450	430	450	472	470	460	435	400	370	378	308	340	278		
LQ				318	375	375	380	400	390	395	390	400	358	370	355	368	360	340	300	298	275	268		

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JAN. 1972 | H'F2 (KM)

IONOSPHERIC DATA

JAN. 1972 | FOES (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	27	31	B	35	37	32	40	32	G	G	G	36	37	37	G	G	G	G	G	G	G	G	G	G
2	G	B	35	35	30	37	40	35	33	33	35	40	G	J X 39	J X 46	53	G	G	G	30	29	G	G	G
3	G	G	G	G	G	G	G	28	G	J X 40	B	65	G	G	G	G	30	G	G	G	27	G	J X 26	27
4	31	G	G	G	J X 70	B	B	B	G	36	B	G	35	G	G	G	G	J X 33	33	G	27	G	22	25
5	26	J X 36	J X 34	36	31	B	37	37	G	G	G	G	G	G	G	33	34	30	G	G	24	E B 26	E B 25	E B 20
6	E B 33	J X 25	G	21	G	J X 27	E B 30	G	J X 46	J X 37	G	36	G	35	40	40	31	J X 43	35	36	27	J X 22	J X 36	J X 37
7	J X 56	J X 39	25	G	G	G	G	J X 33	G	G	G	37	79	37	J X 34	J X 36	36	J X 37	J X 33	J X 49	J X 27	J X 27	G	26
8	J X 19	22	25	B	B	G	G	G	31	G	42	J X 52	J X 88	34	33	J X 37	G	33	33	J X 64	J X 64	26	34	J X 28
9	29	30	30	36	42	J X 47	J X 53	45	47	41	G 30	G	G	G	G	G	J X 31	G	35	J X 44	J X 46	27	20	24
10	B	G	35	38	C	34	30	J X 37	G	G	G	C	C	35	32	G	G	G	G	G	G	33	25	39
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	G	35	J X 40	45	41	B	37	G	G	G	G	G	G	34	G	G	G	35	G	G	29	23	19	G
14	G	G	G	38	31	43	39	33	G	G	G	G	35	G	G	G	32	30	32	32	28	J X 51	J X 26	G
15	G	G	G	40	32	32	B	B	42	C	45	G	G	G	G	G	30	G	B	35	G	J X 80	G	38
16	36	27	27	26	42	39	39	39	38	36	40	32	G	G	B	E B 36	E B 31	B	39	G	42	38	43	70
17	30	41	J X 65	89	31	B	B	B	B	B	G	G	33	G	G	G	G	E B 48	C	C	C	G	B	C
18	33	B	J X 64	C	C	C	C	C	B	B	B	B	C	32	G	G	G	E B 28	32	B	41	31	28	J X 60
19	J X 74	41	B	B	B	B	B	40	G	B	G	E B 50	G	G	G	G	G	E B 27	C	E B 33	E C 30	G	G	32
20	31	C	C	35	31	33	42	41	C	C	G	C	E B 61	E B 49	E B 58	E B 52	E B 59	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	E B 38	E B 45	C	E B 46	E B 46	E B 47	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	E B 41	48	49	46	49	B	B	E B 46	35	B	G	35	G	B	81	J X 80	37	B
23	B	B	J X 58	B	B	B	B	B	B	43	G	B	B	B	G	E B 45	E B 47	E B 31	G	G	G	G	G	J X 48
24	B	B	B	28	27	30	37	36	C	B	41	G	E B 47	B	E B 47	E B 47	E B 45	E B 44	E B 35	G	43	J X 46	32	B
25	B	J X 49	B	35	B	39	37	G	B	J X 43	J X 44	B	35	E B 42	E B 46	E B 34	E B 40	E B 30	32	G	33	G	J X 40	37
26	J X 46	43	J X 99	B	J X 44	B	E B 34	50	53	B	B	E B 49	G	G	G	B	E B 48	E B 50	30	33	29	27	25	32
27	J X 64	B	B	B	B	B	B	28	B	42	35	B	B	E B 49	E B 44	E B 43	E B 53	G	B	27	27	32	32	G
28	B	40	B	32	36	B	B	40	40	35	38	E B 48	E B 40	B	B	E B 47	E B 35	E B 30	E B 28	B	27	J X 89	J X 90	B
29	B	30	27	G	G	B	41	40	72	B	E B 35	G	G	G	G	G	G	32	G	G	G	G	30	B
30	31	B	40	B	32	B	36	J X 40	G	G	36	34	G	G	G	G	G	G	E B 27	27	G	G	E B 16	G
31	33	34	E B 27	B	B	B	B	B	B	G	G	33	G	39	G	G	G	G	G	27	G	G	G	G
	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	20	20	19	19	14	19	22	20	20	25	22	23	26	27	27	28	26	23	23	26	27	26	22
MED	30	30	28	35	31	32	37	36	E G 31	34	E G 30	E G 34	G	E G 33	G	G	E G 30	E G 30	E G 28	E G 27	27	26	25	26
UQ	33	40	J X 40	37	39	39	40	40	44	40	38	U 40	35	U 36	E G 38	E B 42	E B 36	34	32	33	33	32	32	37
LQ	19	E G 22	E G 25	24	28	27	31	28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

The Radio Research Laboratories, Japan

JAN. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1972 | H'ES (KM) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	130	B	140	100	120	110	110	G	G	G	130	120	110	G	G	G	G	G	G	G	G	G	G
2	G	B	130	100	100	110	110	100	100	100	110	105	G	100	100	100	G	G	G	105	110	G	G	G
3	G	G	G	G	G	G	G	115	G	100	B	150	G	G	G	G	100	G	G	G	125	G	110	150
4	125	G	G	G	150	B	B	B	G	100	B	G	90	G	G	G	G	100	125	G	120	G	130	130
5	150	125	110	105	105	B	100	100	G	G	G	G	G	G	G	100	110	100	G	G	110	B	B	B
6	B	120	G	110	G	100	B	G	150	100	G	125	G	120	110	110	100	100	105	100	100	100	100	120
7	120	125	150	G	G	G	G	105	G	G	G	125	115	120	105	105	110	120	100	100	100	100	G	160
8	145	130	110	B	B	G	G	G	105	G	120	125	130	120	120	110	G	110	125	100	100	100	130	145
9	140	150	120	120	100	100	100	100	100	100	100	G	G	G	G	G	110	G	120	110	100	160	160	150
10	B	G	110	100	C	100	100	100	G	G	G	C	C	110	115	G	G	G	G	G	G	110	100	100
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	G	120	105	100	120	B	100	G	G	G	G	G	G	120	G	G	G	125	G	G	130	130	115	G
14	G	G	G	120	110	115	110	105	G	G	G	G	100	G	G	G	100	100	120	110	110	110	115	G
15	G	G	G	110	105	125	B	B	100	C	100	G	G	G	G	G	100	G	B	155	G	150	G	105
16	130	150	150	140	125	115	100	100	100	100	100	115	G	G	B	B	B	B	105	G	110	130	110	110
17	110	110	105	110	120	B	B	B	B	B	G	G	110	G	G	G	G	B	C	C	C	G	B	C
18	110	B	100	C	C	C	C	C	B	B	B	B	C	100	G	G	G	B	100	B	170	105	175	120
19	110	110	B	B	B	B	B	105	G	B	G	B	G	G	G	G	G	B	C	B	C	G	G	110
20	110	C	C	115	115	120	120	105	C	C	G	C	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	C	B	B	B	B	B	B	B
22	B	B	B	B	B	B	B	150	100	100	105	B	B	B	110	B	G	130	G	B	110	110	100	B
23	B	B	110	B	B	B	B	B	B	100	G	B	B	B	G	B	B	B	G	G	G	G	G	100
24	B	B	B	125	120	105	110	105	C	B	100	G	B	B	B	B	B	B	B	G	120	120	130	B
25	B	120	B	200	B	115	110	G	B	100	100	B	120	B	B	B	B	B	130	G	110	G	120	115
26	105	100	100	B	100	B	B	100	100	B	B	B	G	G	G	B	B	B	160	120	100	130	140	115
27	110	B	B	B	B	B	B	110	B	100	110	B	B	B	B	B	B	G	B	125	115	115	115	G
28	B	100	B	100	110	B	B	100	100	100	100	B	B	B	B	B	B	B	B	B	110	100	100	B
29	B	100	155	G	G	B	105	110	150	B	B	G	G	G	G	G	G	150	G	G	G	G	115	B
30	100	B	100	B	100	B	100	100	G	G	120	120	G	G	G	G	G	G	B	130	G	G	B	G
31	120	110	B	B	B	B	B	B	B	G	G	110	G	100	G	G	G	G	G	130	G	G	G	G
	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	15	15	14	15	15	11	13	18	10	11	11	9	7	9	6	5	7	9	10	11	18	15	17	14
MED	110	120	110	110	110	115	105	105	100	100	100	125	115	110	110	105	100	110	120	110	110	110	115	118
UQ	128	128	130	122	120	118	110	110	105	100	110	125	120	120	115	110	110	125	125	128	120	130	130	145
LQ	110	110	105	102	100	102	100	100	100	100	100	115	105	100	105	100	100	100	105	102	100	102	110	110

The Radio Research Laboratories, Japan

JAN. 1972 | H'ES (KM)

IONOSPHERIC DATA

JAN. 1972 | TYPES OF ES | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	R 1	R 1	L 1	R 1				H 1	H 1	H 1										
2			RL 11	R 1	R 1	R 1	R 1	R 1	R 1	R	H 1	C 1		L 1	L 1	L 2				L 1	L 1			
3								L 1		R 1		H 1					L 1				H 1		R 1	HL 11
4	R 1				L 1					R 1			L 1					C 1	H 1		H 1		H 1	H 1
5	R 1	R 1	R 1	R 1	R 1		R 1	R 1								L 1	H 1	R 1			C 1			
6		L 1		L 1		L 1			LR 11	R 1		H 1		H 1	H 1	H 2	H 1	L 1	C 1	L 1	L 1	R 1	L 2	L 1
7	R 1	L 1	CL 11					H 2				H 1	H 2	H 1	C 2	C 1	H 1	HL 11	C 2	L 3	L 1	L 2		R 1
8	R 1	R 1	H 1						H 1		H 2	H 2	H 1	H 1	H 1	H 1		H 2	H 1	L 3	L 3	L 2	R 1	H 1
9	R 1	H 1	C 1	R 1	R 1	R 1	R 1	R 1	R 1	R 1	L 1						H 1		H 2	C 2	C 3	R 1	R 1	R 1
10			R 1	L 1		R 1	L 1	R 1						C 1	H 1							R 1	R 1	R 1
11																								
12																								
13		R 1	R 1	R 1	R 1		R 1							H 1				H 1			H 1	H 1	L 1	
14				R 1	R 1	R 1	R 1	R 1					L 1				L 1	L 1	H 1	H 2	H 1	C 3	H 2	
15				R 1	R 1	R 1			R 1		R 1						R 1			R 1		N 1		R 1
16	R 1	H 1	H 1	H 1	R 1	R 1	R 1	R 1	R 1	R 1	R 1	H 1							R 1		R 1	R 1	R 1	R 1
17	R 1	R 1	L 1	RR 11	R 1								H 1											
18	R 1		R 1											R 1					R 1		L 1	R 2	H 1	L 2
19	L 2	R 1						R 1																R 1
20	R 1			R 1	R 1	R 1	R 1	R 1																
21																								
22								R 1	R 1	R 1	R 1				R 1			H 1			A 2	A 1	K 1	
23			R 2							R 1														R 1
24				R 1	R 1	R 1	R 1	R 1			R 1										C 1	C 1	K 1	
25		L 1		H 1		R 1	R 1			L 1	R 1		H 1						H 1		R 1		L 1	R 2
26	R 1	R 1	A 1		R 1			R 1	R 1										H 1	R 1	R 1	C 1	C 1	R 1
27	R 1							L 1		R 1	L 1									C 1	R 1	R 1	R 1	
28		L 1		R 1	R 1			R 1	R 1	R 1	L 1										R 1	A 1	A 1	
29		R 1	H 1				R 1	R 1	R 1									H 1					L 1	
30	K 1		R 1		R 1		L 1	R 1			H 1	H 1								H 1				
31	R 1	R 1										H 1		C 1						H 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																								

JAN. 1972 | TYPES OF ES

IONOSPHERIC DATA

FEB. 1972 | FOF2 (0.1 MHZ) | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 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	39	40	42	47	U R 47	U F 50	F 56	F 64	F 71	F 75	78	71	70	67	60	57	F 64	72	R	53	48	42	41	42
2	34	F 39	A	B	R	B	R	R	R	R	B	B	R	50	F 51	F 52	54	53	50	F 52	50	50	41	J F 42
3	R	F 23	41	B	R	R	B	R	50	65	65	61	58	64	F 62	F 62	F 59	59	57	51	B	35	40	38
4	39	45	R	R	B	R	B	B	F 51	F 54	F 56	F 56	57	59	55	B	60	57	54	54	B	51	45	43
5	F	F	F 36	R	F 53	R	J R 71	I R 66	74	80	77	74	F 70	70	64	63	63	F 61	65	63	50	31	R	35
6	34	A	A	R	42	R	R	R	R	F 49	54	53	59	55	52	50	53	55	53	51	50	48	R	B
7	R	R	A	R	B	A	R	F 50	51	52	54	58	F 52	50	50	51	52	50	51	50	46	R	R	A
8	A	A	B	B	R	R	B	R	A	F 45	42	47	B	52	52	55	51	50	51	48	51	47	43	F 39
9	40	R	U A 27	S 42	46	F 50	F 54	F 60	66	71	F 71	64	63	60	60	52	52	53	54	54	50	50	44	R
10	A	A	F 35	R 40	F	A	R	F 47	F 59	F 66	70	74	68	62	61	57	58	59	59	57	51	I A 52	54	42
11	R	A	R	40	B	B	58	R 63	I R 64	68	70	74	75	75	F 72	F 69	U F 63	62	U R 57	64	49	50	50	F 44
12	J R 43	F	F	C	C	C	C	C	R	F	U F 73	F 73	F 74	F 71	F 66	62	60	55	58	57	J R 58	R 55	R	R
13	R	59	R	R	R	R	R	U R 74	R	B	81	J R 84	84	87	F 79	82	90	J R 90	R	54	40	A	A	A
14	A	U F 27	B	B	B	F	B	B	R	J F 55	U F 60	F 60	F 64	F 69	R 69	F 65	63	60	54	56	52	48	42	R
15	A	A	B	R	B	B	B	62	B	B	B	B	U F 71	U F 73	U F 76	U R 70	F 67	F 71	F 67	65	61	J F 59	55	54
16	U F 32	U F 30	A	A	U A 44	50	B	R 58	F	F 69	F 71	J F 78	F 76	U F 73	68	68	67	66	59	57	52	50	R	F 23
17	31	A	R	B	F 56	U F 57	67	F	F	U F 75	U R 86	F	U R 87	93	U R 80	80	79	68	R	R	R	A	R	A
18	F 40	A	R	R	R	F 37	A	45	R	A	R	45	F 48	F 50	59	F 58	F 59	F 59	57	56	53	40	F 45	F 42
19	32	A	A	A	R	F	F 50	U A 43	U F 50	B	52	F 53	53	53	57	57	52	50	54	50	R 49	R	R	R
20	A	A	A	34	R	B	B	B	B	B	R	F 51	54	57	R	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	59	C	C	F 33
22	U F 27	J F 29	F	F 33	50	53	J R 63	75	86	88	90	90	J R 86	U R 83	J R 84	80	79	70	68	F 63	F 60	F 53	F	F
23	J F 34	F	F 33	F 43	49	56	R	R	85	93	93	93	95	96	90	81	81	80	78	72	65	F 55	60	F
24	27	A	48	R	F 44	B	U R 60	R	F 81	U F 80	R	F	F	F	F 96	F	R	R	F	F 44	F 45	U F 39	A	A
25	A	A	A	F	F 37	A	R	B	50	54	F 57	60	59	56	52	53	F 57	F 50	50	B	F 48	F	A	A
26	R	R	B	A	B	A	F 48	54	62	65	70	70	69	67	64	62	63	63	64	60	59	51	34	F
27	F	U F 23	F 24	F 28	F 31	R	U R 53	60	F 70	F 71	75	78	75	74	80	80	F 77	F 71	66	J R 67	59	U R 54	R	A
28	A	A	A	U R 46	F	F	F	R	R	R	50	R 56	55	63	67	62	63	60	60	54	53	49	F 40	F 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	13	9	8	9	11	7	10	14	15	19	22	23	24	26	26	24	25	25	22	24	24	21	14	13
MED	34	F 30	36	40	46	F 50	57	60	64	F 68	70	64	68	66	64	62	63	60	57	55	51	50	44	F 42
UQ	39	40	42	43	50	54	R 63	64	72	75	77	74	75	73	76	70	67	68	64	62	58	52	50	42
LQ	32	U F 27	F 30	34	43	F 50	F 53	50	51	54	56	56	58	56	57	56	57	55	54	52	49	47	41	F 35

FEB. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1972 | FOF1 (0.01 MHZ) | 45 E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	R	390	400	410	420	440	450	440	450	460	450	430	B	B	L				
2						B	A	R	A	A	B	B	H 440	440	430	430	430	R	B					
3						A	B	A	400	R 400	420	420	440	430	430	420	420	410	400	L				
4					B	A	B	B	400	400	410	410	410	420	B	B	B	410	400	B				
5					L	L	370	380	400	420	420	440	440	440	430	450	420	L	L	L	L			
6					A	R	A	A	A	390	410	410	420	440	430	L	420	L	L	L	L			
7					B	A	A	A 370	380	390	410	420	420	420	430	430	420	L 400	L	320	L			
8						R	B	A	A	F 390	400	410	B	400	420	420	450	400	L					
9						L	370	370	390	400	410	420	430	440	440	L	L	L	L					
10						A	B	370	380	390	400	410	430	430	440	L	L	L	L					
11							R	380	390	400	430	420	430	450	L 440	430	430	L	B					
12							C	C	400	420	430	430	440	450	450	430	L							
13						310	360	380	B	B	450	450	460	L	L 450	460	L 450	L 440						
14						310	B	B	B	U R 400	R 420	R 430	B	450	R 440	440	430	L						
15						B	B	R	B	B	B	B	B	B	450	I B 450	430	L						
16						A	B	R	400	420	430	440	H 450	450	450	L	430	L	L	L				
17							A	B	L	450	460	500	H 490	470	B	L	L	420	R					
18							A	370	R	A	R	410	440	450	430	L	440	L						
19							F 320	R 370	390	B	410	420	430	440	430	L 450	L	L 420	L					
20							B	B	B	B	R	450	R 430	R	B	C	C	C	C					
21							C	C	C	C	C	C	C	C	C	C	C	C	C					
22						L	L	L 410	430	L 470	L 470	470	480	480	480	U L 480	A							
23						L	350	400	430	460	C 480	490	L 490	L	L	L	L							
24							A	A	430	B	B	B	490	I B 460	460	B	R	F 390	F					
25							R	B	380	400	400	B	B	440	L 430	430	L 420							
26							340	380	400	410	I B 410	420	C	440	L	L	L							
27							L	L 390	U L 420	L 450	450	450	450	450	L	L	L							
28							L	F	A	A	A	U R 420	430	440	420	420	L	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						2	7	13	17	19	21	23	22	23	21	15	14	8	2	1				
MED						310	360	380	400	400	420	420	440	440	440	430	430	410	400	320				
UQ							370	390	410	420	440	450	450	450	450	450	430	420						
LQ							345	370	390	400	410	420	430	440	430	430	420	400						

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FEB. 1972 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

FEB. 1972 | FOE (0.01 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00·4 S. Long. 39° 35·4 E Sweep 0.5 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	220	275	290	300	R	A	250	250	265	290	300	300	300	290	300	I A 290	290	B	B	210	210	H 150	115	110
2	200	200	A	B	A	B	B	B	A	A	B	B	B	U R 300	R 300	290	B	B	B	220	190	180	150	A
3	A	A	A	B	A	A	B	A	300	280	300	290	300	295	A	A	295	R 270	B	A	B	A	H 160	130
4	A	A	C	250	B	A	B	B	A	260	A	B	320	300	B	B	B	B	B	B	B	B	B	B
5	F 130	A	A	H 170	180	210	210	240	250	280	290	295	290	H 280	A	A	295	250	A	B	170	A	B	A
6	B	A	A	A	A	A	A	A	A	290	290	290	300	270	H 290	A	A	A	A	200	180	170	A	B
7	B	A	A	A	B	A	A	A	265	260	A	300	300	300	280	275	270	270	H 235	210	B	190	A	A
8	A	A	B	B	A	A	B	A	A	270	275	290	B	B	310	300	280	270	250	220	A	225	A	A
9	A	A	A	A	170	195	200	220	270	285	300	A	A	300	A 280	280	265	290	240	190	200	160	120	A
10	A	A	A	A	A	A	B	A	265	280	290	290	A	A	290	300	295	260	250	230	A 180	A	A	130
11	A	A	B	A	B	B	A	250	R 250	285	300	300	290	A	A	A	A	A	B	B	A	A	A	A
12	A	A	110	C	C	C	C	C	B	295	300	285	290	A 265	A	A	A	A	A	220	A	150	A 140	B
13	B	B	B	B	B	180	A	A	B	B	300	300	300	305	A 280	R 300	305	280	B	220	A	A	A	A
14	A	A	B	B	B	210	B	B	B	A	B	B	B	B	B	R	B	B	R 250	B	A	A	A	A
15	A	B	B	220	B	B	B	B	B	B	B	B	B	B	B	B	300	B	250	B	A	A	125	110
16	A	A	B	A	B	A	B	285	270	A	R	R	310	310	300	280	290	280	B	230	B	B	B	B
17	B	A	A	B	A	A	B	B	305	H 300	315	315	310	A	B	B	A	285	A	A	A	A	A	A
18	A	A	B	A	A	A	A	A	A	A	A	320	310	310	320	305	280	280	255	220	B	B	A	B
19	A	A	R	A	A	A	A	A	A	B	310	305	315	310	300	280	270	270	240	B	B	A	A	A
20	B	A	B	A	A	B	B	B	B	B	A	B	B	R	B	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A
22	A	U A 120	A	A 125	150	200	215	230	250	270	290	300	300	300	310	300	270	I B 270	240	A 190	B	120	B	B
23	B	A	190	185	220	A	H 210	250	250	270	300	300	300	310	300	270	A	250	220	200	200	140	A	A
24	A	A	A	A	A	B	B	B	280	B	B	B	310	I B 300	300	B	A	280	A	A	230	A	A	A
25	A	B	A	A	A	B	A	B	A 310	340	A	B	B	295	295	290	B	F 270	230	B	180	U F 140	A	C
26	B	B	B	A	B	A	A	280	270	I A 275	B	B	B	295	290	270	270	A 240	195	A	150	130	A	A
27	A	A	130	130	130	H 160	H 190	H 230	240	260	290	300	300	300	280	280	260	240	225	180	F 140	110	B	A
28	A	A	A	A	A	H 190	200	A	B	A	A	B	R	300	290	270	270	I R 245	230	180	160	130	B	B
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	3	3	4	7	5	7	7	9	15	17	15	16	17	20	18	16	16	18	14	15	12	13	6	4
MED	200	200	160	185	170	195	210	250	265	280	300	300	300	300	298	285	280	270	240	210	180	150	132	120
UQ	210	238	240	235	180	205	212	250	275	290	300	300	310	302	300	300	295	280	250	220	200	170	150	130
LQ	165	160	120	150	150	185	200	230	250	270	290	290	300	295	290	278	270	250	230	195	165	130	120	110

FEB. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

FEB. 1972 | FOES (0.1 MHZ) | 45°E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	G	G	33	G 29	G	29	G	G	G	G	G	G	G	G	G	33	32	E B 49	E B 50	G	33	25	20	G
2	26	25	J X 56	B	39	B	70	39	39	47	B	B	E B 33	G	G	G	E B 31	E B 29	E B 42	27	23	28	J X 32	J X 26
3	26	J X 23	46	B	43	39	B	39	40	31	G	32	G	32	J X 75	39	G	G	E B 27	33	B	27	G	G
4	20	21	E C 25	27	B	37	B	B	31	G	33	E B 34	G	G	E B 49	B	E B 45	E B 35	E B 32	E B 38	B	E B 31	E B 32	23
5	17	27	27	G	G	G	G	G	27	34	33	G	G	G	36	J X 57	33	30	30	30	G	31	32	30
6	29	J X 62	40	32	30	30	40	40	J X 37	34	G	G	G	G	G	J X 34	34	J X 34	30	J X 39	J X 22	20	30	B
7	J X 34	33	39	30	B	J X 46	41	38	G	G	74	G	G	33	31	G	G	G	26	G	E B 22	G	23	32
8	65	35	B	B	35	30	B	40	45	G	G	33	B	E B 37	G	G	G	G 20	G	28	J X 34	G	18	16
9	25	J X 28	J X 30	J X 30	32	G	G	G	G	G	G	31	31	33	32	37	G	G	G	G	G	23	G	31
10	32	33	32	31	39	J X 44	38	32	G	G	G	G	33	32	G	G	G	32	28	G 19	34	J X 54	J X 28	G
11	33	J X 34	36	30	B	B	28	G	G	G	G	G	32	37	J X 42	38	J X 46	38	E B 38	E B 34	J X 62	J X 38	J X 19	17
12	24	J X 31	28	C	C	C	C	C	E B 29	31	39	J X 78	38	38	41	41	J X 45	45	J X 48	26	29	24	19	E B 16
13	E B 14	E B 14	E B 15	E B 26	E B 20	G	26	26	E B 50	B	41	J X 66	53	J X 97	J X 44	G	G	G	E B 38	35	29	J X 39	46	J X 60
14	J X 39	29	B	B	B	24	B	B	E B 43	32	E B 35	E B 37	E B 53	E B 33	E B 39	G	E B 32	E B 30	34	28	21	17	J X 22	31
15	42	33	B	G	B	B	B	40	B	B	B	B	E B 55	E B 48	E B 36	E B 53	G	E B 30	31	E B 31	J X 23	17	G	J X 30
16	J X 32	J X 34	36	41	43	35	B	G	G	33	G	G	G	G	G	G	G	G	E B 27	G	E B 20	E B 19	E B 20	E B 14
17	E B 18	J X 35	38	B	40	33	39	E B 49	45	G	33	33	34	34	E B 49	51	33	G	30	29	37	45	29	J X 42
18	59	J X 96	23	36	31	36	51	33	30	50	38	G	G	G	G	G	G	G	G	25	23	23	27	J X 32
19	30	52	J X 44	J X 30	35	J X 40	32	44	30	B	G	G	G	G	34	32	G	G	G	E B 24	E B 23	22	33	27
20	J X 71	J X 73	J X 72	20	38	B	B	B	B	B	33	E B 40	E B 35	G	E B 46	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	33	C	C	17
22	J X 22	18	20	20	19	G	G	G	G	G	G	G	G	G	G	35	74	36	28	J X 77	24	25	J X 26	28
23	13	25	26	G	G	24	25	30	G	G	G	36	G	G	G	G	J X 32	G	G	G	G	G	14	J X 23
24	28	27	J X 38	44	36	B	39	44	38	E B 46	E B 56	E B 55	G	E B 47	G	E B 53	29	G	J X 34	J X 34	G	50	J X 43	J X 70
25	53	51	J X 74	29	J X 34	39	J X 33	B	33	G	34	E B 47	E B 44	G	G	G	E B 31	G	G	B	G	22	30	34
26	26	27	B	J X 61	B	41	31	32	36	31	E B 53	E B 32	E B 45	35	34	30	G	27	G	23	G	26	25	J X 27
27	22	16	30	20	G	G	G	G	G	G	G	G	G	G	J X 33	30	29	G	G	22	G	G	25	42
28	33	53	40	40	30	30	29	32	42	J X 41	J X 44	E B 36	G	G	G	G	G	G	G	24	22	20	16	J X 16
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	23	21	20	21	19	22	25	23	25	25	26	27	27	25	26	26	26	25	25	26	26	26
MED	28	31	36	30	33	30	31	32	28	G	E G 33	E G 32	G	G	E G 32	E G 30	E G 29	E G 20	E G 28	26	23	24	24	27
UQ	34	35	40	32	38	39	39	40	38	33	U 36	E B 36	E G 35	33	U 37	36	32	U 30	U 32	U 31	29	31	30	32
LQ	22	25	28	20	20	24	E G 25	G	G	G	G	G	G	G	G	G	G	G	G	20	G	19	18	16

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FEB. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1972 | F-MIN (0.1 MHZ) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	10	11	12	27	19	15	13	11	10	11	20	20	16	13	11	10	49	50	10	10	11	10	10
2	10	10	20	B	24	B	29	31	26	27	B	B	33	26	24	20	31	29	42	14	12	10	11	9
3	11	9	12	B	15	21	B	20	10	10	10	10	11	10	20	20	19	21	27	13	B	10	12	10
4	11	10	E C 25	11	B	20	B	B	15	13	10	34	27	10	49	B	45	35	32	38	B	31	32	16
5	8	9	10	11	10	10	11	10	11	11	10	11	19	13	14	11	14	19	15	23	12	14	26	10
6	21	10	11	13	15	13	13	20	15	10	10	11	10	11	11	13	13	13	11	11	10	12	10	B
7	25	10	10	15	B	10	20	12	10	11	12	25	22	22	21	18	17	15	15	12	22	13	11	10
8	10	11	B	B	20	19	B	25	15	11	12	13	B	37	15	12	14	14	14	12	12	18	10	9
9	9	9	11	12	12	12	11	10	10	11	11	12	13	12	13	12	13	12	11	15	17	11	9	9
10	10	10	11	20	10	15	31	13	10	13	10	11	14	19	12	13	19	10	14	12	12	13	11	9
11	10	14	27	20	B	B	16	10	15	12	10	14	12	11	13	23	17	21	38	34	14	11	11	11
12	10	10	10	C	C	C	C	C	29	11	15	22	15	11	21	10	12	12	10	10	10	13	12	16
13	14	14	15	26	20	12	20	12	50	B	20	11	16	12	12	19	22	15	38	17	15	11	15	12
14	10	10	B	B	B	14	B	B	43	27	35	37	53	33	39	26	32	30	16	23	14	12	10	10
15	11	20	B	16	B	B	B	27	B	B	B	B	55	48	36	53	22	30	24	31	15	12	10	10
16	10	9	26	13	23	21	B	27	15	16	20	25	23	15	16	11	13	20	27	18	20	19	20	14
17	18	10	12	B	20	15	27	49	14	18	18	13	15	15	49	42	16	12	20	22	21	E C 11	14	10
18	12	E C 11	18	14	14	14	20	15	15	20	16	23	21	17	20	20	13	12	17	17	19	15	11	12
19	10	13	10	10	16	14	12	11	20	B	20	19	10	12	11	11	13	11	20	24	23	14	12	12
20	16	E C 12	18	13	14	B	B	B	B	B	24	40	35	25	46	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E C 23	C	C	11
22	9	10	10	11	11	14	14	13	14	13	12	15	26	15	20	12	16	28	13	13	13	11	10	10
23	10	9	10	14	11	15	10	12	13	11	14	12	13	20	14	10	12	12	11	12	11	10	9	9
24	10	10	12	13	9	B	27	26	10	46	56	55	20	47	24	53	13	10	13	10	10	10	9	9
25	10	15	10	11	10	24	19	B	14	10	15	47	44	20	15	15	31	11	14	B	16	10	9	E C 13
26	15	16	B	14	B	15	15	12	12	14	53	32	45	15	17	15	16	13	17	14	13	9	9	9
27	10	10	9	10	E C 12	9	10	12	10	10	10	15	20	15	12	15	15	20	18	13	12	9	11	10
28	10	10	11	9	9	10	12	11	29	22	17	36	27	26	15	14	13	19	18	13	15	10	10	10
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	27	26	26	26	26	26	27	27	27	27	27	27	27	26	26	26	26	26	27	26	26	27
MED	10	10	12	14	16	15	20	14	15	13	15	20	20	15	16	15	16	15	17	14	14	11	11	10
UQ	12	12	20	20	27	21	B	27	23	24	20	35	30	24	22	20	19	21	27	23	19	13	12	12
LQ	10	10	10	11	11	13	13	12	11	11	10	12	14	12	13	12	13	12	14	12	12	10	10	10

FEB. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1972 | M(3000)F2 (0.01) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	300	300	275	290	U R 255	U F 270	F 265	F 260	F 255	F 255	255	280	285	285	285	245	F 265	280	R	320	335	350	320	285
2	295	F 280	A	B	R	B	R	R	R	R	B	B	R	245	F 295	F 280	270	295	260	F 310	320	330	295	J F 285
3	R	F 285	315	B	R	R	B	R	230	260	260	270	250	265	F 275	F 290	F 255	255	265	315	B	285	300	315
4	295	295	R	R	B	R	B	B	F 265	F 260	F 255	F 250	265	270	255	B	280	280	295	330	B	315	300	305
5	F	F	F 260	R	F 285	R	J R 285	I R 250	255	265	275	270	F 275	285	280	280	280	F 285	310	315	290	280	R	285
6	270	A	A	R	275	R	R	R	R	F 230	250	260	265	280	270	280	275	310	320	320	330	315	R	B
7	R	R	A	R	B	A	R	F 260	270	270	255	265	F 280	265	255	275	300	300	315	290	305	R	R	A
8	A	A	B	B	R	R	B	R	A	F 240	225	245	B	280	265	290	275	280	315	290	315	325	330	F 295
9	300	R	U A 260	S 285	280	F 265	F 260	F 255	245	255	F 275	275	275	285	290	300	290	285	315	325	330	320	305	R
10	A	A	F 275	R 285	F	A	R	F 230	F 245	F 255	245	270	280	280	295	265	290	305	305	315	320	I A 310	315	310
11	R	A	R	275	B	B	250	R 300	I R 260	250	255	265	260	260	F 280	F 285	U F 285	320	U R 300	275	295	300	300	F 300
12	J R 280	F	F	C	C	C	C	C	R	F	U F 265	F 265	F 285	F 285	F 305	305	300	325	325	335	J R 330	R 335	R	R
13	R	280	R	R	R	R	R	U R 270	R	B	270	J R 260	275	275	F 280	240	235	R	R	305	275	A	A	A
14	A	U F 250	B	B	B	F	B	B	R	R	U F 250	F 260	F 255	F 260	R 275	F 290	285	295	295	305	310	315	285	R
15	A	A	B	R	B	B	B	250	B	B	B	B	U F 250	U F 245	U F 265	U R 255	F 270	F 280	F 300	310	310	J F 305	310	295
16	U F 280	U F 265	A	A	U A 250	270	B	R 240	F	F 245	F 255	J F 270	F 285	U F 275	265	280	290	305	300	300	325	285	R	F 285
17	260	A	R	B	F 275	U F 265	265	F	F	U F 265	U R 260	F	U R 265	255	U R 265	270	275	260	R	R	R	A	R	A
18	F 300	A	R	R	R	F 250	A	250	R	A	R	R	F 215	F 255	270	F 285	F 270	F 280	295	305	320	300	F 300	F 285
19	255	A	A	A	R	F	F 240	A	U F 235	B	240	F 250	245	255	255	265	255	260	280	300	R 305	R	R	R
20	A	A	A	285	R	B	B	B	B	B	R	F 255	255	250	R	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	290	C	C	F 310
22	U F 295	F	F	F 275	270	265	R	250	250	250	245	265	J R 250	U R 260	J R 275	280	290	300	305	F 315	F 315	F 300	F	F
23	F	F	F 250	F 255	265	245	R	R	250	260	250	255	265	275	285	280	285	300	295	320	315	F 305	300	F
24	260	A	250	R	F 240	B	U R 245	R	F 255	U F 255	R	F	F	F	F 225	F	R	R	F	F 275	F 290	U F 270	A	A
25	A	A	A	F	F 265	A	R	B	230	235	F 240	255	260	270	270	265	F 280	F 275	280	B	F 290	F	A	A
26	R	R	B	A	B	A	F 240	270	260	250	255	270	265	285	295	295	300	315	315	325	325	325	295	F
27	F	U F 295	F 265	F 285	F 275	R	U R 290	255	F 265	F 260	255	270	275	275	280	290	F 285	J F 295	305	J R 300	320	U R 310	R	A
28	A	A	A	U R 250	F	F	F	R	R	R	280	R 260	245	265	285	275	285	300	315	315	315	305	F 305	F 270
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	12	8	8	9	11	7	9	13	15	18	22	22	24	26	26	24	25	24	22	24	24	21	14	13
MED	288	F 282	262	285	270	F 265	260	255	255	255	255	265	265	270	275	280	280	295	302	312	315	310	300	F 295
UQ	298	295	275	285	275	F 268	265	260	260	260	260	270	275	280	285	290	290	302	315	320	322	320	310	305
LQ	265	F 272	255	F 275	260	258	F 245	250	245	F 250	250	255	252	260	265	268	270	280	295	300	300	300	300	F 285

The Radio Research Laboratories, Japan

FEB. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

FEB. 1972 | H'F2 (KM) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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					400	380	400	380	375	350	350	345	340	340	350	480	400	330	260	L				
2						B	A	R	R	A	B	B	R	530	400	430	400	R 350	B					
3						R	B	R	530	395	370	380	470	375	355	365	430	390	380	310				
4					B	R	B	B	420	415	430	450	405	390	B	B	350	365	350	270				
5					330	L	320	360	380	355	330	340	350	320	355	350	350	L	280	255	L			
6					400	R	A	R	R	500	450	450	400	370	430	L	400	300	280	L	250			
7					B	A	A	450	420	420	450	380	410	450	480	410	350	325	L	300	L			
8						R	B	R	A	530	640	525	B	410	440	360	450	390	L					
9						365	400	400	400	360	350	350	350	355	345	L	L	L	275					
10						A	R	530	410	395	400	360	330	365	330	L	325	280	L					
11							400	375	390	400	370	360	350	360	330	325	330	285	B 290					
12							C	C	370	370	375	350	340	320	330	300	L							
13						310	340	350	B 380	B	350	350	350	320	300	390	350	340						
14						370	B	B	B	410	420	430	B 420	375	350	330	340	305						
15						B	B	R	B	B	B	B	415	395	350	390	370	300						
16						375	B	480	405	400	380	350	325	350	305	320	320	L	250	L				
17							375	400	L	360	340	350	340	340	350	320	305	370	R					
18							A	480	R	A	R	R	640	480	400	350	380	L						
19							450	A 500	515	B	515	500	505	480	430	400	L	L	L					
20							B	B	B	B	R	500	480	470	380	C	C	C	C					
21							C	C	C	C	C	C	C	C	C	C	C	C	C					
22						350	L	355	350	370	360	330	350	350	330	345	260							
23						390	350	355	355	350	350	350	330	300	265	L	L							
24							R 425	R	360	370	360	B 400	420	400	410	460	R	R	F					
25							R	B	530	510	470	410	410	415	400	420	360							
26							450	400	400	400	390	360	C	330	315	L	L							
27							L	380	350	380	350	340	330	340	300	290	L							
28							L	R	A	R	R	430	480	400	325	350	310	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					3	7	10	15	18	20	22	24	24	27	26	20	19	13	8	4	1			
MED					400	370	400	400	395	395	372	360	375	370	350	355	350	330	280	285	250			
UQ					400	378	425	465	420	412	430	430	420	405	400	405	390	365	320	305				
LQ					365	358	350	368	370	365	350	350	340	340	330	328	328	300	268	262				

The Radio Research Laboratories, Japan

FEB. 1972 | H'F2 (KM)

IONOSPHERIC DATA

FEB. 1972 | H'F (KM) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	300	325	350	310	R	R	225	210	240	220	205	220	200	200	H 200	240	220	B	B	225	250	240	250	275
2	300	300	A	B	A	B	A	A	A	A	B	B	225	260	225	210	245	245	B	250	250	250	310	300
3	A	350	290	B	A	A	B	A	265	220	230	210	215	215	230	230	215	240	220	300	B	320	240	250
4	255	260	270	310	B	A	B	B	250	200	240	250	215	245	B	B	B	B 255	B 250	B	B	B 270	B	280
5	320	360	360	340	270	255	230	240	205	210	210	220	H 200	H 180	200	I A 230	230	230	250	250	250	A	A	A
6	B	A	A	A	A	A	A	A	A	240	255	230	H 200	240	215	230	230	240	230	A 250	230	250	A	B
7	B	A	A	A	B	A	A	A	225	200	230	250	220	210	215	215	220	200	230	230	250	290	310	A
8	A	A	B	B	A	A	B	A	A	225	230	225	B	245	240	225	210	210	240	250	255	250	245	250
9	270	340	A	345	360	320	245	245	230	210	200	200	195	220	200	225	200	H 220	230	250	240	245	240	A
10	A	A	A	A 360	260	A	B	270	230	210	205	225	210	210	230	210	230	225	225	250	260	I A 250	250	250
11	A	A	B	A	B	B	R	250	250	225	H 200	230	200	H 210	250	A 235	A 250	260	B	250	A 275	270	260	260
12	280	A 350	350	C	C	C	C	C	220	210	245	225	215	210	220	210	A 240	225	A	240	250	245	240	250
13	250	250	270	310	300	270	240	220	B	B	225	225	225	A	240	220	250	250	250	250	A	A	A	A
14	A	A 400	B	B	B	320	B	B	B	R	B 240	B 250	B	235	E B 250	225	230	250	240	250	250	250	280	A
15	A	A	B	310	B	B	B	A	B	B	B	B	B	B	220	I B 220	225	250	240	260	250	250	245	250
16	350	375	B	A	A	A	B	R	220	240	210	250	210	210	250	230	220	250	230	230	250	260	300	350
17	E B 340	A	A	B	370	350	A	B	250	210	235	350	220	220	B	B	200	240	R	R	R	A	A	A
18	A	A	R	A	A	A	A	A	220	A	A	250	245	250	220	250	240	245	250	260	255	260	260	270
19	A	A	A	A	A	A	360	A	A	B	275	250	215	250	220	240	235	H 210	250	260	255	R	350	A
20	A	A	A	380	A	B	B	B	B	B	R	B	240	R	B	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	290	C	C	250
22	280	300	340	340	320	330	260	250	225	H 215	230	220	205	210	240	225	A	240	240	A 260	245	245	250	250
23	250	A	375	350	330	330	280	250	245	220	250	230	220	250	230	220	230	245	245	230	250	250	230	255
24	A	A	390	A	A	B	A	A	290	B	B	B	230	B	250	B	R	260	250	A	350	A	A	A
25	A	A	A	350	370	A	A	B	310	290	250	B	B	240	H 215	250	240	250	270	B	280	290	A	A
26	A	A	B	A	B	A	A	305	260	250	B	250	C	230	230	225	220	240	240	240	240	230	300	360
27	A	345	350	360	330	280	260	245	245	225	230	225	220	220	200	230	230	230	245	230	230	225	A	A
28	A	A	A	A	400	390	300	A	A	A	A	B	270	250	240	220	240	240	255	250	250	240	245	300
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	11	12	10	12	10	9	9	10	18	18	20	21	22	23	24	23	23	25	21	22	23	21	18	16
MED	280	342	350	342	330	320	260	248	242	220	230	230	215	220	225	225	230	240	240	250	250	250	250	258
UQ	305	355	360	355	370	330	280	250	250	225	242	250	225	245	240	230	240	250	250	250	255	260	300	290
LQ	262	300	290	310	300	280	240	240	225	210	210	225	205	210	215	220	220	230	230	240	250	245	245	250

The Radio Research Laboratories, Japan

FEB. 1972 | H'F (KM)

IONOSPHERIC DATA

FEB. 1972 | H'ES (KM) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00·4 S. Long. 39° 35·4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	G	G	140	110	G	130	G	G	G	G	G	G	G	G	G	100	100	B	B	G	165	105	140	G
2	125	140	110	B	100	B	180	105	100	100	B	B	B	G	G	G	B	B	B	120	120	160	130	105
3	120	120	120	B	100	110	B	105	100	130	G	125	G	110	105	110	G	G	B	110	B	105	G	G
4	130	120	C	120	B	110	B	B	130	G	100	B	G	G	B	B	B	B	B	B	B	B	B	150
5	120	110	110	G	G	G	G	G	100	100	115	G	G	G	100	100	120	110	110	115	G	125	150	110
6	140	125	110	115	125	120	110	100	100	150	G	G	G	G	G	100	110	100	130	120	130	150	110	B
7	110	100	100	110	B	100	115	100	G	G	130	G	G	115	110	G	G	G	120	G	B	G	145	120
8	100	100	B	B	110	120	B	100	105	G	G	160	B	B	G	G	G	100	G	125	100	G	110	105
9	100	115	120	125	130	G	G	G	G	G	G	105	100	110	105	110	G	G	G	G	G	130	G	120
10	115	110	110	130	100	100	140	100	G	G	G	G	100	105	G	G	G	110	125	100	110	125	105	G
11	115	120	140	125	B	B	110	G	G	G	G	G	105	100	100	110	100	130	B	B	120	115	115	110
12	130	110	140	C	C	C	C	C	B	125	110	110	110	100	100	100	100	100	100	140	100	110	110	B
13	B	B	B	B	B	G	150	140	B	B	110	150	105	110	105	G	G	G	B	150	110	105	110	110
14	150	120	B	B	B	140	B	B	B	110	B	B	B	B	B	G	B	B	140	150	145	120	120	110
15	110	115	B	G	B	B	B	115	B	B	B	B	B	B	B	B	G	B	120	B	110	110	G	100
16	110	110	105	105	110	120	B	G	G	110	G	G	G	G	G	G	G	G	B	G	B	B	B	B
17	B	115	115	B	105	120	130	B	150	G	120	110	110	100	B	100	100	G	110	115	120	140	100	110
18	110	100	140	125	110	105	150	105	105	100	100	G	G	G	G	G	G	G	G	150	140	140	130	115
19	120	100	100	100	120	110	110	100	110	B	G	G	G	G	130	110	G	G	G	B	B	110	110	105
20	130	150	150	125	120	B	B	B	B	B	105	B	B	G	B	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	100	C	C	115
22	150	150	130	120	120	G	G	G	G	G	G	G	G	G	G	120	105	110	130	115	200	150	180	165
23	130	100	120	G	G	130	150	170	G	G	G	115	G	G	G	G	100	G	G	G	G	G	130	100
24	120	120	120	125	100	B	140	110	100	B	B	B	G	B	G	B	110	G	110	105	G	150	100	150
25	100	100	100	110	100	130	100	B	105	G	100	B	B	G	G	G	B	G	G	B	G	125	110	115
26	120	130	B	100	B	100	110	150	150	100	B	B	B	120	115	120	G	120	G	105	G	120	105	100
27	115	125	100	110	G	G	G	G	G	G	G	G	G	G	100	120	120	G	G	150	G	G	110	130
28	100	100	95	110	110	130	120	100	130	100	100	B	G	G	G	G	G	G	G	150	160	140	130	130
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	24	25	21	17	15	16	14	14	13	10	10	7	6	9	10	12	10	8	10	16	15	20	21	21
MED	120	115	115	115	110	120	125	105	105	105	108	115	105	110	105	110	102	110	120	120	120	125	110	110
UQ	130	120	130	125	120	130	150	115	130	125	115	138	110	110	110	115	110	115	130	150	142	140	130	120
LQ	110	100	105	110	100	108	110	100	100	100	100	110	100	100	100	100	100	100	110	112	110	110	110	105

FEB. 1972 | H'ES (KM)

IONOSPHERIC DATA

FEB. 1972 | TYPES OF ES | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00·4 S. Long. 39 35·4 E Sweep 05 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			H 1	L 1		R 1										L 1	L 1				H 1	L 1	H 1	
2	H 1	H 2	R 1		L 1		N 1	L 1	R 1	R 1										H 1	H 1	R 1	R 1	A 2
3	R 1	R 1	R 1		R 1	R 1		R 1	R 1	H 1		H 1		H 1	L 1	L 1				R 1		R 1		
4	L 1	LL 11		H 1		L 1			H 1		R 1													R 1
5	H 1	R 3	R 1						L 1	C 1	H 1				R 1	L 2	H 1	H 1	R 1	C 1		R 1	R 1	R 2
6	R 1	LR 11	R 2	R 1	R 1	R 1	R 1	R 1	R 1	H 1						C 1	HL 11	L 2	HL 12	CL 11	C 1	C 1	R 2	
7	R 1	R 1	R 1	R 1		A 1	R 1	R 1			LC 11			H 1	H 1				H 1				R 1	R 2
8	A 2	R 1			R 1	R 1		L 1	R 1			H 1						L 1		H 1	L 1		L 1	L 1
9	LR 11	R 2	R 2	R 2	R 1							CL 11	C 1	H 1	H 1	CL 11						L 1		R 2
10	R 4	R 3	R 4	R 1	R 1	R 1	R 1	R 1					R 1	R 1				H 1	HL 11	L 1	C 3	L 1	L 3	
11	R 3	R 1	R 1	R 1			R 1						H 1	L 2	L 2	H 1	C 2	HL 11			C 2	C 2	L 1	L 1
12	RL 11	R 1	H 1							HL 11	H 2	C 1	H 1	C 1	L 1	L 2	L 2	L 2	L 3	HL 12	L 2	C 1	H 1	
13							L 1	H 1			C 1	LC 11	C 1	H 2	H 2					H 1	R 1	R 1	R 1	RR 11
14	HR 11	R 1				H 1				L 1									H 1	H 1	H 1	L 1	R 1	R 2
15	R 2	R 1						R 1											C 1		C 1	C 1		LH 11
16	A 1	R 3	R 1	R 1	R 1	R 1				R 1														
17		R 3	R 1		R 1	R 1	R 1		H 1		H 1	H 1	H 1	C 1		L 1	L 2		R 1	L 1	N 1	A 3	R 1	R 1
18	L 2	L 2	L 1	RL 11	R 1	R 1	RR 11	R 1	R 1	R 1	R 1									H 1	H 1	H 1	L 1	C 1
19	R 3	R 1	R 1	R 1	R 1	R 2	R 2	R 1	R 1						H 1	H 1						L 1	R 1	R 2
20	LL 11	L 1	L 1	R 1	R 1						R 1													
21																					L 1			L 1
22	L 1	H 1	HL 11	H 1	H 1											HL 11	C 2	C 1	H 1	C 2	H 1	H 1	L 1	LL 11
23	L 1	R 1	R 1			R 1	H 1	H 1				H 1					L 1						L 1	L 1
24	R 3	R 3	R 3	R 3	R 2		R 1	R 1	R 1								L 1		R 1	L 1		RR 13	A 2	LR 14
25	R 1	R 1	R 1	RL 11	LR 12	R 1	L 1		R 1		R 1											R 1	R 3	R 6
26	RL 11	R 1		R 1		R 1	R 1	H 1	H 1	R 1				H 1	H 1	H 1		H 1		L 1		C 3	R 3	LR 11
27	LR 11	R 1	LR 11	R 1											LH 11	H 1	H 1			H 1			R 1	RR 16
28	R 2	R 1	R 1	RL 21	RL 21	H 1	H 1	R 1	R 1	R 1	R 1									H 1	H 1	H 1	H 2	R 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. 1972 | TYPES OF ES

IONOSPHERIC DATA

MAR. 1972 | FOF2 (0.1 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00·4' S. Long. 39° 35·4' E Sweep 0.5 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	F 44	F 43	45	50	S	60	70	71	81	J R 87	R 86	88	85	91	C	C	C	C	C	C	C	C	A
2	A	A	A	F	F	A	A	R	F 50	F 51	57	F 57	66	73	80	79	80	V 80	F 72	F 52	32	A	A	U F 21
3	A	A	B	R	A	A	R	R	49	R	B	B	B	U F 58	B	62	62	54	52	46	R	40	A	F 25
4	21	A	B	A	A	A	F 45	F 53	F 60	F 59	62	B	64	B	65	B	R	64	68	F 63	F 58	F 45	F 29	F 26
5	F 24	U R 28	A	A	A	B	A	U F 55	F 62	66	62	66	67	71	72	75	75	69	66	64	61	56	R	F 23
6	A	A	A	A	A	A	J R 40	J R 45	B	61	U F 72	F 70	F 63	66	R 68	67	65	58	60	60	51	46	F 39	B
7	B	B	R	A	A	F 39	F 51	U F 60	B	R	R	R	B	F 44	R	46	44	44	47	49	J F 41	A	F 23	A
8	A	A	F	F	F	B	R	49	F 51	F 52	F 55	60	62	64	65	62	62	59	55	47	F 26	F 25	F	J F 20
9	A	A	A	A	F	A	F 53	59	F 62	F 63	F 69	F 75	F 71	72	73	81	82	62	R 58	R	A	A	A	A
10	F 21	J F 24	F	F	F	F	45	52	58	63	69	73	75	73	72	69	67	61	63	59	53	47	41	39
11	33	27	F	A	F	A	R	F 45	F	B	F	F 61	F	F	F 75	71	70	H 68	63	63	57	52	U F 29	U F 14
12	F	F	F	F	F	F 23	F 39	51	60	68	78	81	88	90	82	77	74	71	70	65	56	49	R 45	F 40
13	U F 35	F 29	F 22	B	F	F	S	F	72	F 77	80	90	R 100	101	96	103	94	93	84	73	67	56	44	40
14	F	23	A	A	F	F	55	61	F	F	U F 81	J F 89	J F 91	92	88	87	86	82	80	67	58	55	F 48	F 37
15	F	F	J F 30	F 30	U F 30	F 32	42	57	J R 66	J F 78	R 86	94	101	F 105	J R 104	J R 104	J R 95	U R 87	U S 79	U S 78	R 66	49	F	F 19
16	F 18	F	A	B	R	U S 61	R	B	R	A	R	U R 53	F 63	64	69	U F 80	90	80	J F 59	44	F 35	U F 28	F	A
17	A	A	A	B	B	R	U R 42	R	B	B	51	F 50	53	F 58	62	69	70	F 61	F 58	R	F	A	A	B
18	B	B	B	B	B	B	B	R	R	B	B	B	B	U F 65	F 74	80	78	75	F 71	U S 70	51	34	16	U F 15
19	A	B	A	A	A	B	B	R	U F 58	62	F 63	70	70	71	73	70	70	72	69	J R 64	F 59	F 45	F 30	A
20	A	A	R	R	R	A	A	49	F 52	F 56	F 61	65	75	76	73	70	70	72	72	R	R	F	U F 27	F 16
21	A	A	A	B	B	F	F 45	52	57	63	66	75	81	81	78	75	77	69	70	70	F 56	43	R	F
22	A	A	F	F 45	A	A	R	R	A	F 62	F	F 65	F 67	74	67	67	60	58	61	58	R	R	R	A
23	A	A	A	A	F 40	F	F	R	55	65	79	83	86	C	J R 95	F 92	F	F	F	F	F	F 52	F	A
24	A	R	R	R	R	A	B	B	B	B	R	R 50	50	64	60	60	68	R	F	F	R	A	R	A
25	B	R	R	F	A	A	R	B	B	B	R 47	F 51	B	64	F 73	78	78	77	70	59	37	F 18	A	F
26	A	A	A	B	A	R	B	A	A	45	50	53	59	70	81	80	71	72	J R 67	57	F 43	J F 24	J R 29	A
27	B	A	A	B	B	R	R	B	B	B	B	B	B	B	B	51	50	50	47	45	37	F	A	A
28	B	A	A	A	A	A	A	R	R	43	50	52	56	52	57	56	53	53	52	45	38	29	23	21
29	F 21	20	17	16	F 16	F 17	F 26	34	40	R 43	53	F 58	63	73	72	93	F	B	F 60	R	A	A	A	B
30	B	B	A	B	A	A	B	R	B	B	B	B	B	B	52	59	58	51	F	B	A	A	A	A
31	B	B	B	A	B	B	R	B	R	R	B	B	50	51	B	B	B	47	43	40	R	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	7	4	4	4	5	12	15	16	19	21	24	24	26	27	28	26	27	27	23	20	19	13	14
MED	F 21	27	F 26	38	F 35	F 32	45	52	58	62	63	66	67	71	73	73	70	68	63	59	52	45	F 29	F 22
UQ	28	28	F 36	45	45	F 39	52	58	62	66	78	78	84	76	80	80	78	74	70	64	58	50	F 41	F 37
LQ	F 21	24	20	23	F 23	F 23	41	49	52	54	55	55	62	64	68	64	62	58	58	48	38	F 32	F 27	F 19

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MAR. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1972 | FOF1 (0.01 MHZ)

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

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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						L	L	L	L 400	420	440	L 460	460	450	L	C	C	C						
2						A	A	A	360	400	410	L 420	440	440	430	L	L	B						
3							A	A	A	A	B	B	B	400	B	410	B	L	U L 330					
4							A	360	370	390	400	B	B	B	B	B	B							
5							A	F 350	370	410	L	420	450	L 440	L	L	L							
6							B	A	B	B	B	420	430	B	L	L	L							
7							A	A	B	A	R	380	B	400	R	L								
8							A	330	L	L 400	420	420	430	430	L	L	L							
9							A	360	400	L 410	410	410	420	420	430	B	L	L						
10							L	L	L	410	410	420	430	420	L	L								
11							A	340	390	B	L	L	L	L	L	L	L							
12								L	L	L	L	L	L		R	L								
13								L		L	L	L	L	L	L									
14								L	L	L	L	L	L	L	L	L								
15										L	L	L	L	L	L	L								
16								B	R	A	F 410	A	450	L	440	420	L							
17								A	B	B	390	400	400	400	460	B		L						
18								A	A	B	B	B	B	L	B	B								
19								R	L	U L 400	400	420	420	L	L									
20								A	L	L	L	L	L	L	L	L								
21								330	L	L	L	L	L	L	L	L								
22									A	L	U L 420	L 420	U L 430	L	L	L								
23										L	L	L	L	C	L	A								
24									B	B	R	B	B	L 410	L	L	L							
25									B	B	B	400	B	B	L									
26										L		L	L	L	L									
27									B	B	B	B	B	B	B									
28												L	L	L	L	L								
29										L	L	L	L	L	410	B								
30										B	B	B	B	B	350	B								
31													L	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	6	8	10	12	11	10	6	2			1					
MED								345	380	405	410	420	430	420	430	415			U L 330					
UQ								360	400	410	420	420	445	440	440									
LQ								330	370	400	400	405	425	400	410									

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MAR. 1972 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1972 | FOE (0.01 MHZ) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	130	130	215	H 250	270	280	290	295	295	280	C	C	C	C	C	C	C	C	A
2	B	A	A	A	A	A	A	A	A	285	270	290	H 300	295	285	255	230	B	B	210	A	A	A	A
3	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	220	A 180	B	A	B	A	A 100
4	B	B	B	B	B	A	B	220	230	290	B	B	B	B	B	B	B	B	215	B	B	130	B	A
5	B	B	B	A	A	B	A	A	240	265	265	280	290	290	I B 290	265	A	220	180	170	120	100	A	A 125
6	A	A	A	B	A	B	B	A	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B
7	B	B	B	B	B	A	A	A	B	A	A	A	B	285	I B 285	270	245	I B 220	200	A	A	A	F 165	A
8	A	A	A	A	A	B	A	A	H 265	265	270	270	280	270	270	270	270	240	C	H 200	H 140	A	A	A
9	A	A	A	A	A	B	A	230	215	H 250	280	270	280	280	A 280	B	B	210	B	B	A	A	A	A
10	115	120	A 150	165	170	170	165	180	I A 230	H 240	265	265	270	275	R 270	250	220	B	B	B	B	B	B	B
11	A	A	A	A	A	A	B	A	A	B	A	A	F 300	280	270	265	U R 230	U R 220	200	B	B	B	A	B
12	A	A	B	A	A	B	U A 130	H 180	215	H 250	265	270	R	B	B	B	R	210	200	130	B	A	A	A
13	A	A	A	B	A	200	140	195	220	245	255	280	270	270	A 250	A	265	H 230	190	A	B	B	B	B
14	A 120	A	A	A	A	A	A	210	210	250	270	280	285	285	270	A	260	H 220	B	A	A	A	A	A
15	A	A	A	B	A	U S 100	120	175	S 220	A	A	H 280	270	255	230	240	H 240	200	175	B	B	A	A	S
16	B	B	B	B	B	B	B	B	A	A	A	A	A 290		R	B	B	230	A	A	A	A	A	A
17		B	B	B	B	A	A	A	B	B	A	300	I B 280	280	B	B	B	H 230	B	B	A	A	A	
18		B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
19		B	B	B	B	B	B	B	A	270	255	260	270	C 270	C	C	R 230	B	B	B	A	A	A	
20		A	B	B	B	B	A	A	225	H 230	255	255	R	A	A	R	A	200	B	110	B	B	B	
21		A	A	B	B	A	A	215	225	240	260	265	260	250	270	250	230	H 190	R	A	120	B	A	
22		A	A	A	B	A	A	B	A	A	240	A 260	275	275	265	250	215	190	160	A	A	A	A	
23		A	B	A	A	A	A	A	H 210	210	A	245	260	I C 260	265	A	B	B	B	A	A	B	A	
24		B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	
25		B	B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	115	
26			B	B	B	A	B	A	A	A	A 270	H 280	A	265	250	245	220	B	B	A	B	A		
27			B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	200	B	A	A	F 140		
28			B	B	B	A	A	A	B	B	260	260	I B 250	250	U R 230	B	B	210	A	B	B	B	B	110
29	120	B	120	125	125	125	140	150	170	210	220	250	B	240	220	B	B	B	R	A	A	A		
30			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	B		
31			B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	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	3	1	2	2	2	5	6	10	14	15	16	19	16	20	17	10	12	17	9	5	3	3	2	3
MED	120	120	135	145	148	130	135	202	222	250	265	270	278	275	270	252	230	220	190	170	120	130	140	A 110
UQ	120					170	140	215	230	268	270	280	288	285	280	265	252	220	200	200	130	135		118
LQ	118					125	130	180	215	240	255	260	270	262	250	250	225	200	180	130	120	115		105

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MAR. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1972 | FOES (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 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 24	J X 24	J X 24	18	14	19	G	G 15	G	G	G	32	33	47	32	C	C	C	C	C	C	C	C	J X 29
2	J X 106	J X 34	J X 39	26	J X 36	40	50	J X 41	42	G	G	G	G	32	32	31	27	E B 40	E B 27	J X 27	28	34	33	24
3	J X 29	34	B	J X 20	41	J X 40	44	43	41	39	B	B	B	E B 36	B	E B 36	E B 55	G	20	28	J X 22	J X 66	33	19
4	23	30	B	J X 37	J X 49	53	32	G	G	G	E B 30	B	E B 55	B	E B 54	B	E B 57	E B 25	G	E B 25	E B 24	27	E B 12	J X 21
5	27	26	37	50	41	B	47	J X 34	G	G	G	G	32	32	35	49	29	25	G	G 16	18	18	32	26
6	30	32	28	J X 51	J X 56	40	E B 31	40	B	E B 50	E B 45	E B 31	G	E B 50	E B 33	E B 31	E B 29	E B 33	E B 32	E B 30	E B 30	E B 19	J X 26	B
7	B	J X 63	42	53	J X 53	33	J X 55	45	B	52	35	37	B	G	E B 35	G	G	E B 27	23	J X 20	29	30	21	28
8	32	50	J X 60	25	J X 41	B	40	34	G	G	G	30	29	G	G	G	G	G	J X 26	G	G	26	J X 22	J X 41
9	J X 42	J X 26	J X 37	J X 46	31	40	42	G	27	G	G	G	G	G 26	35	E B 70	E B 28	G	E B 27	E B 28	33	30	35	31
10	22	21	22	24	G	20	17	G	J X 34	G	G	G	G	32	33	30	25	E B 26	E B 26	E B 20	E B 13	E B 10	E B 9	13
11	J X 24	J X 24	J X 35	J X 52	J X 52	J X 54	36	35	49	B	34	39	32	36	29	G	G	G	G	E B 18	20	J X 38	18	19
12	13	17	16	17	16	E B 13	17	G	G	G	G	G	G	E B 35	E B 32	27	G	G 21	G 20	G	E B 12	21	J X 28	14
13	J X 23	J X 30	24	B	40	G	G	G 17	30	G	G	G	G	G	29	31	G	G	G	17	E B 14	12	E B 10	E B 10
14	40	J X 32	38	39	J X 41	J X 32	J X 44	G	G	G	G	G	G	G	G	32	J G 26	G	E B 22	21	18	13	19	14
15	15	13	17	E B 11	J X 26	G	G	G	G	J X 28	29	G	35	32	32	29	27	G	G	19	J X 33	15	J X 29	J X 16
16	J X 27	J X 23	32	B	21	45	39	B	29	52	39	43	35	32	G	E B 31	E B 34	31	30	23	J X 26	J X 23	22	28
17	39	41	J X 45	B	B	35	36	42	B	B	32	G	E B 30	G	E B 34	E B 49	E B 30	G	E B 23	E B 32	22	J X 33	27	B
18	B	B	B	B	B	B	B	44	38	B	B	B	B	E B 32	E B 43	E B 48	E B 31	E B 29	E B 20	E B 14	E B 19	E B 15	17	20
19	24	J X 24	J X 28	J X 33	39	B	B	E B 30	27	G	G	G	30	G	E C 30	E C 31	G	E B 22	E B 22	E B 16	16	14	17	30
20	35	J X 38	23	33	34	J X 40	42	32	G	G	G	G	G	29	32	G	29	G	E B 26	G	E B 11	27	J X 16	16
21	28	62	30	B	B	35	J X 28	32	G	G	G	30	32	29	G 25	G	G	G	G	16	G	E B 12	23	26
22	34	J X 33	J X 26	J X 35	43	52	34	37	54	27	27	29	35	G	G	G	G	G 17	18	21	J X 27	30	30	J X 58
23	J X 54	J X 62	47	39	35	J X 32	J X 25	J X 27	G 17	G	J X 28	30	31	C	G	J X 86	J X 55	J X 71	E B 34	J X 22	21	19	17	J X 65
24	82	38	40	38	35	J X 47	B	B	B	53	35	E B 44	E B 43	E B 31	E B 29	E B 32	E B 27	E B 56	E B 47	E B 25	28	33	22	34
25	38	31	E B 29	J X 35	J X 36	37	J X 37	B	B	B	E B 42	E B 31	B	E B 47	E B 27	E B 30	E B 27	E B 25	E B 18	E B 15	E B 20	G	24	J X 26
26	30	J X 34	39	B	38	29	B	40	40	31	29	G	28	30	G	G	G	E B 21	E B 20	23	E B 19	20	J X 27	38
27	B	53	51	B	B	30	36	B	B	B	B	B	B	B	B	E B 39	E B 25	G	29	28	28	32	43	J X 39
28	B	J X 89	J X 74	40	37	40	40	23	40	E B 37	G	29	E B 31	G	G	E B 24	E B 23	G	21	E B 17	E B 14	E B 13	E B 11	G
29	15	14	G	G	G	16	G	G	G	G	G	G	E B 36	G	G	E B 56	E B 27	B	G	33	39	37	32	B
30	B	38	J X 63	B	34	J X 54	B	J X 34	B	B	B	B	B	B	E B 29	E B 37	E B 45	E B 27	J X 32	B	34	35	41	J X 61
31	B	B	B	38	B	B	28	B	40	J X 40	B	B	E B 35	E B 49	B	B	B	E B 38	E B 20	E B 13	19	35	46	38
	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	29	27	23	26	26	26	26	24	25	26	25	25	27	28	28	29	29	30	29	30	30	30	28
MED	29	32	35	35	36	36	36	32	27	G	G	G	E G 31	E G 31	E G 30	E G 31	E G 27	E G 21	E G 22	E G 20	19	24	24	26
UQ	38	38	41	40	41	40	42	40	40	U 32	30	30	34	33	32	E B 38	E B 29	E B 27	E B 27	U 23	28	33	32	36
LQ	24	24	24	24	31	29	U 21	G	G	G	G	G	G	G	G	E G 24	G	G	E G 18	E G 16	E B 16	14	17	18

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MAR. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1972 | F-MIN (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 MHz to 15 MHz in 30 sec in automatio 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	8	8	9	10	9	10	10	9	13	15	12	19	15	20	15	C	C	C	C	C	C	C	C	9
2	14	10	12	9	9	15	E C 16	12	13	19	11	11	14	14	13	18	18	40	27	11	11	13	13	10
3	14	10	B	12	21	25	25	20	27	34	B	B	B	36	B	36	55	20	11	25	16	17	9	9
4	11	13	B	15	17	15	22	14	12	13	30	B	55	B	54	B	57	25	20	25	24	10	12	10
5	10	10	12	10	14	B	14	12	11	13	13	14	16	15	31	21	20	19	12	12	10	9	10	10
6	10	12	12	19	14	36	31	20	B	50	45	31	23	50	33	31	29	33	32	30	30	19	21	B
7	B	50	32	32	21	13	15	19	B	20	19	19	B	25	35	23	12	27	20	13	10	10	10	10
8	10	10	10	10	11	B	13	12	10	13	15	10	16	12	15	10	9	11	E C 22	11	9	10	10	9
9	9	9	9	10	9	18	14	12	12	12	12	10	11	10	13	70	28	15	27	28	10	10	9	9
10	10	10	10	10	10	10	12	12	12	11	11	12	12	12	22	20	19	26	26	20	13	10	9	9
11	9	9	10	10	E C 14	16	20	14	10	B	24	20	15	12	21	23	21	20	15	18	16	12	9	10
12	10	10	13	13	12	13	12	12	13	14	10	10	20	35	32	25	17	15	10	10	12	9	9	10
13	9	10	10	B	10	12	10	10	10	10	15	12	11	13	12	15	18	14	14	13	14	10	10	10
14	10	9	12	12	12	11	10	11	11	12	11	12	13	15	12	11	10	12	22	10	10	9	9	9
15	9	9	10	11	9	9	10	11	12	14	14	13	12	11	11	11	11	15	10	15	20	10	9	E S 12
16	10	10	11	B	19	21	20	B	20	14	10	15	20	20	19	31	34	13	14	13	10	10	9	10
17	12	11	14	B	B	15	14	21	B	B	22	18	30	25	34	49	30	20	23	32	10	9	10	B
18	B	B	B	B	B	B	B	27	22	B	B	B	B	32	43	48	31	29	20	14	19	15	12	10
19	10	20	16	24	20	B	B	30	21	20	E C 24	E C 22	19	E C 25	E C 30	E C 31	20	22	20	16	11	10	9	10
20	22	12	20	22	22	20	12	15	14	14	14	15	24	25	20	15	15	15	26	11	11	12	12	10
21	10	10	12	B	B	12	12	12	12	14	13	14	12	13	15	14	19	11	10	11	10	12	10	10
22	10	10	10	10	22	15	14	32	13	12	11	18	14	12	13	13	12	10	10	9	9	10	10	10
23	9	11	20	14	12	10	10	10	11	10	10	10	12	C	12	14	25	48	34	12	10	16	10	10
24	12	18	16	27	16	15	B	B	B	49	32	44	43	31	29	32	27	56	47	25	E C 12	10	14	9
25	31	26	29	10	15	12	14	B	B	B	42	31	B	47	27	30	27	25	18	15	20	10	10	10
26	15	15	25	B	18	15	B	20	22	21	21	13	13	14	12	19	20	21	20	19	19	11	14	10
27	B	13	18	B	B	14	12	B	B	B	B	B	B	B	B	39	25	18	20	11	11	10	10	11
28	B	10	16	26	22	16	15	20	30	37	17	21	31	22	21	24	23	17	15	17	14	13	11	10
29	10	11	10	10	10	11	11	14	15	15	21	17	36	21	20	56	27	B	16	10	10	13	16	B
30	B	28	15	B	20	28	B	26	B	B	B	B	B	B	29	37	45	27	12	B	10	15	10	10
31	B	B	B	27	B	B	15	B	24	25	B	B	35	49	B	B	B	38	20	13	10	10	14	17
	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	30	31	30	30	30	30	30	30	30	30	31
MED	10	10	13	15	16	15	14	15	14	15	16	18	20	21	21	24	22	20	20	14	11	10	10	10
UQ	18	14	20	D B 32	22	23	21	26	28	43	31	31	40	35	32	37	29	27	23	20	16	13	12	10
LQ	10	10	10	10	11	12	12	12	12	13	12	12	14	13	14	15	18	15	14	11	10	10	9	10

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MAR. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1972 | M(3000)F2 (0.01) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	F 290	F 265	275	265	S	260	270	240	260	J R 250	R 270	270	270	265	C	C	C	C	C	C	C	C	A
2	A	A	A	F	F	A	A	R	F 225	F 245	250	F 255	240	275	270	280	280	V 300	F 320	F 300	305	A	A	U F 265
3	A	A	B	R	A	A	R	R	230	R	B	B	B	U F 240	B	285	305	310	280	290	R	300	A	F 300
4	250	A	B	A	A	A	F 250	F 250	F 240	F 245	255	B	250	B	255	B	R	295	310	F 315	F 320	F 300	F 260	F 270
5	F 250	U R 230	A	A	A	B	A	U F 255	F 255	270	260	270	270	275	280	295	320	320	325	330	325	300	R	F 275
6	A	A	A	A	A	A	R	R	B	245	U F 255	F 280	F 270	275	R 270	300	320	295	315	325	330	310	F 285	B
7	B	B	R	A	A	F 225	F 250	U F 285	B	R	R	R	B	F 250	R	295	295	275	275	280	J F 280	A	F 285	A
8	A	A	F	F	F	B	R	235	F 265	F 270	F 270	265	275	275	290	300	295	320	320	275	F 260	F 240	F	F
9	A	A	A	A	F	A	F 265	260	F 260	F 250	F 260	F 265	F 270	260	245	270	280	290	R 310	R	A	A	A	A
10	F 285	F	F	F	F	F	240	255	260	255	275	265	270	275	290	305	310	325	335	315	320	315	310	310
11	305	285	F	A	F	A	R	F 240	F	B	F	F 260	F	F	F 295	315	315	H 325	315	325	320	325	U F 310	U F 250
12	F	F	F	F	F	F 270	F 280	285	260	260	275	275	280	290	305	310	320	310	330	335	340	325	R 295	F 325
13	U F 315	F 275	F 265	B	F	F	S	F	270	F 260	265	265	R 270	285	265	275	285	310	320	330	330	325	320	315
14	F	260	A	A	F	F	275	260	F	F	U F 260	J F 270	J F 275	275	285	295	300	315	325	330	310	325	F 335	F 305
15	F	F	F	F 265	U F 275	F 280	280	265	J R 290	J F 275	R 265	260	285	F 285	J R 280	J R 290	J R 305	U R 320	U S 315	U S 335	R 335	325	F	F 265
16	F 250	F	A	B	R	U S 260	R	B	R	A	R	R	F 270	265	245	U F 235	250	275	F	300	F 315	U F 285	F	A
17	A	A	A	B	B	R	U R 250	R	B	B	235	F 235	230	F 240	240	285	305	F 290	F 300	R	F	A	A	B
18	B	B	B	B	B	B	B	R	R	B	B	B	B	U F 265	F 285	300	310	315	F 320	U S 315	305	310	295	U F 265
19	A	B	A	A	A	B	B	R	U F 250	270	F 260	270	270	295	290	300	285	305	305	J R 310	F 320	F 310	F 300	A
20	A	A	R	R	R	A	A	245	F 265	F 255	F 275	260	275	275	290	300	310	305	305	R	R	F	U F 305	F 315
21	A	A	A	B	B	F	F 245	245	255	295	275	280	285	285	280	295	300	315	315	325	F 320	320	R	F
22	A	A	F	F 265	A	A	R	R	A	F 275	F	F 260	F 260	245	280	295	305	300	310	295	R	R	R	A
23	A	A	A	A	F 235	F	F	R	265	270	270	275	265	C	J R 270	F 270	F	F	F	F	F	F 310	F	A
24	A	R	R	R	R	A	B	B	B	B	R	R 245	235	295	280	265	270	R	F	F	R	A	R	A
25	B	R	R	F	A	A	R	B	B	B	R 260	F 275	B	315	F 310	320	320	325	325	315	325	F 290	A	F
26	A	A	A	B	A	R	B	A	A	290	280	275	285	295	295	315	325	335	R	310	F 325	F	R	A
27	B	A	A	B	B	R	R	B	B	B	B	B	B	B	B	295	300	310	305	300	285	F	A	A
28	B	A	A	A	A	A	A	R	R	290	285	290	285	280	300	315	315	320	325	310	315	310	315	295
29	F 275	250	255	240	F 240	F 235	F 260	295	275	R 245	275	F 275	265	255	285	240	F	B	F 300	R	A	A	A	B
30	B	B	A	B	A	A	B	R	B	B	B	B	B	B	255	270	280	300	F	B	A	A	A	A
31	B	B	B	A	B	B	R	B	R	R	B	B	270	290	B	B	B	320	310	320	R	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	6	3	4	4	5	11	14	16	19	21	23	24	26	27	28	26	27	25	23	20	18	12	13
MED	F 275	268	F 265	265	F 252	F 260	F 260	258	260	260	265	270	270	275	280	295	305	310	315	315	320	310	F 302	F 295
UQ	F 295	F 285	F 265	270	270	F 270	270	270	265	272	275	275	275	285	290	300	315	320	320	325	325	325	312	F 310
LQ	F 250	250	260	252	F 238	F 235	F 250	245	245	252	260	260	265	265	268	278	285	300	305	300	308	F 300	F 290	F 265

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MAR. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAR. 1972 | H'F2 (KM) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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						L	L	L	400	350	305	330	330	325	340	C	C	C						
2						A	A	A	520	475	425	400	420	350	325	280	L	270						
3							A	A	A	A	B	B	B	460	B	335	B 320	L	325					
4							450	440	400	430	400	B	E B 430	B	B 400	B	300							
5							A	440	395	345	L	375	370	325	L	L	250							
6							540	A	B	E B 450	355	340	375	350	L	L	250							
7							450	355	B	A	R	R	B	545	R	355								
8							A	400	L	400	400	395	350	350	310	300	L							
9							425	350	380	400	375	350	350	375	395	B	300	L						
10							L	L	L	370	340	345	335	320	280	270								
11							R	500	495	B	L	L	320	290	290	L	L							
12								L	L	L	300	L	L		255	250								
13								L		L	315	300	300	280	L									
14								L	L	L	L	L	290	290	260	L								
15										L	L	L	260	L	245	245								
16								B	R	A	R	R	390	L	405	410	L							
17								A	B	B	R 540	530	530	480	440	305		L						
18								A	R	B	B	B	B	L	300	270								
19								R	L 350	380	350	330	300		L									
20								450	L	L	L	L	310	305	L	L								
21								460	L	L	L	L	300	280	L	L								
22									A	L	380	370	355	L	L	L								
23										L	L	L	L	C	300	300								
24									B	B	R	B	B 525	330	L	L	L							
25									B	B	B	390	B	275	250									
26										R 380		L	L	L	L									
27									B	B	B	B	B	B	B									
28												L	L	L	L	275								
29										L	L	L	L	350	370	375								
30										B	B	B	B	B	R	340								
31													L	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							4	8	6	10	12	12	19	19	16	14	5	1	1					
MED							450	440	400	382	378	360	342	325	305	300	300	270	325					
UQ							495	455	495	415	400	392	377	350	382	340	300							
LQ							438	378	395	350	328	342	315	295	270	270	250							

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MAR. 1972 | H'F2 (KM)

IONOSPHERIC DATA

MAR. 1972 | H'F (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 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	255	270	325	320	310	290	250	245	250	240	225	220	230	I A 230	230	C	C	C	C	C	C	C	C	A
2	A	A	A	400	A	A	A	A	A	325	250	240	250	240	240	240	225	B	250	280	330	A	A	A
3	A	A	B	A	A	A	A	A	A	B	B	B	B	B 270	B	E B 275	B	250	255	320	255	295	A	315
4	A	A	B	A	A	A	A	300	240	250	250	B	B	B	B	B	B	240	250	250	250	280	340	340
5	A	A	A	A	A	B	A	A 350	250	230	210	220	240	230	B 255	A 250	230	245	240	240	225	240	A	A
6	A	A	A	A	A	B	B	A	B	B	B	250	230	I B 230	240	250	250	255	250	240	B 250	245	B 275	B
7	B	B	B	B	A	540	A	A	B	A	A	250	B	275	B 260	250	250	270	300	300	320	A	380	A
8	A	A	A	410	330	B	A	A	240	H 200	230	230	240	225	235	250	240	H 230	250	300	350	A	340	A
9	A	A	A	A	290	A	A	295	250	230	230	225	210	230	240	B	250	245	250	295	A	A	A	A
10	405	A	A	425	400	380	290	250	250	250	240	220	250	210	240	230	230	240	245	230	225	220	230	250
11	270	290	A	A	A	A	A	A	A	B	270	A	290	245	225	240	240	245	240	245	240	250	260	B
12	340	310	400	R	400	350	290	250	245	240	225	220	240	250	225	220	H 210	240	230	220	225	220	240	245
13	250	300	A	B	A	325	290	245	240	230	240	245	220	210	225	230	245	245	215	220	220	215	220	250
14	260	A	A	A	A	375	A	250	240	225	240	230	225	240	225	240	240	230	230	205	220	215	220	245
15	250	260	315	340	320	305	255	260	240	240	230	220	240	215	210	220	230	225	220	220	215	210	300	430
16	A	A	A	B	R	A	A	B	R	A	205	A	250	250	250	B 270	B 300	300	280	290	255	A 290	A	A
17	A	A	A	B	B	A	A	A	B	B	280	250	B 250	250	B 255	B	250	255	275	B	A	A	A	B
18	B	B	B	B	B	B	B	A	A	B	B	B	B	B 250	B	B	250	240	230	245	230	280	B	A
19	A	B	B	B	B	B	B	R	275	270	220	245	225	C 250	210	C 240	250	250	245	230	230	240	275	A
20	B	A	A	B	B	A	A	A	260	250	245	245	240	245	240	240	250	245	250	245	245	240	250	A
21	A	A	A	B	B	A	A 400	A	275	245	245	240	230	240	250	240	245	240	250	225	225	250	320	A
22	A	A	A	340	A	A	A	B	A	280	250	230	230	230	240	230	240	240	240	250	265	A	A	A
23	A	A	A	A	A	410	355	300	255	250	250	230	230	I C 250	250	A	A 255	B	250	240	240	250	295	A
24	A	A	A	B	A	A	B	B	B	B	B	B	B	270	250	B 270	275	B	B	295	A	A	A	A
25	B	B	B	A	A	A	A	B	B	B	B	260	B	B	240	250	240	230	230	240	240	300	A	A
26	A	A	B	B	A	A	B	A	A	A	265	255	250	240	240	240	230	230	230	230	250	260	A	A
27	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B 300	250	250	290	290	325	340	A	A
28	B	A	A	B	A	A	A	A	A	B	270	260	270	240	250	250	250	250	250	240	230	245	260	300
29	340	370	440	R	475	A	345	280	270	275	250	240	B 290	250	250	B	230	B	240	A	A	A	A	B
30	B	B	A	B	B	B	B	A	B	B	B	B	B	B	E B 275	B	B	280	A	B	A	A	A	A
31	B	B	B	B	B	B	R	B	A	A	B	B	B	B	B	B	B	B 280	250	230	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	8	6	4	6	7	8	8	11	15	17	22	22	22	26	26	22	26	26	28	27	24	20	15	8
MED	265	295	362	370	330	362	290	260	250	245	242	240	240	240	240	240	245	245	250	240	240	248	275	275
UQ	340	310	420	410	400	395	350	298	258	250	250	250	250	250	250	250	250	250	250	285	255	280	310	328
LQ	252	270	320	340	315	315	272	250	240	230	230	225	230	230	230	240	230	240	235	230	225	230	245	248

The Radio Research Laboratories, Japan

MAR. 1972 | H'F (KM)

IONOSPHERIC DATA

MAR. 1972 | H'ES (KM) | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	95	95	100	100	140	120	G	100	G	G	G	130	125	110	110	C	C	C	C	C	C	C	C	115
2	150	100	110	100	120	100	100	100	105	G	G	G	G	120	115	105	110	B	B	130	150	120	115	120
3	150	110	B	95	105	100	100	110	110	110	B	B	B	B	B	B	B	G	110	170	145	150	100	140
4	120	110	B	110	100	100	120	G	G	G	G	B	B	B	B	B	B	B	G	B	B	120	B	100
5	115	110	115	100	100	B	105	110	G	G	G	G	125	120	120	110	110	130	G	110	100	140	110	120
6	110	110	115	100	100	140	B	110	B	B	B	B	G	B	B	B	B	B	B	B	B	B	130	B
7	B	115	135	125	110	120	120	110	B	100	105	110	B	G	B	G	G	B	130	155	100	100	110	100
8	110	100	120	95	105	B	100	100	G	G	G	120	125	G	G	G	G	G	110	G	G	150	100	110
9	115	105	105	100	120	115	115	G	130	G	G	G	G	100	100	B	B	G	B	B	110	115	105	105
10	130	130	130	125	G	100	105	G	100	G	G	G	G	115	110	110	110	B	B	B	B	B	B	100
11	95	100	110	100	140	100	100	100	115	B	110	100	140	115	120	G	G	G	G	B	140	110	105	145
12	170	140	140	120	125	B	140	G	G	G	G	G	G	B	B	120	G	105	100	G	B	100	100	100
13	95	150	105	B	100	G	G	100	100	G	G	G	G	G	105	105	G	G	G	100	B	100	B	B
14	165	150	110	110	110	110	110	G	G	G	G	G	G	G	G	100	105	G	B	100	100	100	100	100
15	100	105	130	B	100	G	G	G	G	110	105	G	110	105	105	110	115	G	G	100	100	100	110	150
16	150	130	115	B	95	110	120	B	100	100	100	110	120	125	G	B	B	140	140	140	120	120	130	110
17	110	100	100	B	B	115	110	115	B	B	110	G	B	G	B	B	B	G	B	B	120	110	100	B
18	B	B	B	B	B	B	B	100	110	B	B	B	B	B	B	B	B	B	B	B	B	B	175	180
19	120	125	110	110	105	B	B	B	120	G	G	G	120	G	C	C	G	B	B	B	130	140	150	110
20	130	130	110	120	115	110	110	130	G	G	G	G	G	110	105	G	105	G	B	G	B	100	180	100
21	115	115	125	B	B	100	110	110	G	G	G	120	110	110	110	G	G	G	G	105	G	B	150	130
22	110	110	110	120	100	100	110	120	105	120	130	115	110	G	G	G	G	100	100	100	100	125	105	105
23	100	110	105	110	120	120	100	100	100	G	100	110	100	C	G	100	100	100	B	100	100	100	100	110
24	110	110	110	140	130	115	B	B	B	125	105	B	B	B	B	B	B	B	B	B	110	110	110	110
25	110	125	B	170	100	100	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	G	115	120
26	125	125	120	B	120	120	B	105	100	120	130	G	110	110	G	G	G	B	B	100	B	150	120	105
27	B	140	110	B	B	115	110	B	B	B	B	B	B	B	B	B	B	G	130	130	120	150	120	145
28	B	160	105	100	110	115	100	130	110	B	G	155	B	G	G	B	B	G	100	B	B	B	B	G
29	140	130	G	G	G	150	G	G	G	G	G	G	B	G	G	B	B	B	G	110	110	110	110	B
30	B	125	100	B	130	170	B	130	B	B	B	B	B	B	B	B	B	B	110	B	115	105	105	120
31	B	B	B	105	B	B	120	B	105	110	B	B	B	B	B	B	B	B	B	B	150	130	110	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	25	29	25	21	24	23	21	18	14	8	9	9	11	11	10	8	7	5	9	14	18	24	26	26
MED	115	115	110	110	110	115	110	110	105	110	105	115	120	110	110	108	110	105	110	108	112	112	110	110
UQ	130	130	120	120	120	120	115	115	110	120	110	120	125	118	115	110	110	130	130	130	130	135	120	120
LQ	110	110	105	100	100	100	100	100	100	105	105	110	110	110	105	102	105	100	100	100	100	100	105	105

The Radio Research Laboratories, Japan

MAR. 1972 | H'ES (KM)

IONOSPHERIC DATA

MAR. 1972 | TYPES OF ES | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	L 2	L 1	LR 11	LH 11	LL 11	LH 11		L 1				H 1	H 1	C 1	C 1									R 3
2	LL 11	R 1	R 2	R 2	AL 11	R 1	R 1	R 1	R 2					H 1	H 1	C 1	C 1			R 1	R 1	R 2	R 2	R 1
3	NR 11	RL 21		L 1	R 1	R 1	R 1	R 1	R 1	L 1									R 1	R 1	L 1	L 1	R 3	RL 21
4	N 2	R 2		RL 11	R 1	R 1	R 1															R 1		LH 11
5	R 2	R 2	R 4	R 2	R 2		R 1	R 2					H 1	H 1	H 1	C 1	L 1	H 1		L 1	L 1	H 1	R 1	R 1
6	R 3	R 3	R 3	R 1	R 1	R 1		R 1															L 1	
7		R 1	R 1	R 1	R 1	RL 11	A 1	R 1		R 1	L 1	R 1							H 1	R 1	R 2	R 2	R 1	R 3
8	R 4	R 2	A 1	L 1	R 2		R 1	R 1				H 1	H 1						L 1			R 1	LR 11	L 4
9	C 4	C 3	C 6	L 5	NL 11	R 1	R 2		H 1					L 1	L 2						R 3	R 2	R 4	R 5
10	C 2	H 1	H 2	H 2		L 2	L 1		L 2					H 1	C 1	C 1	C 1							L 1
11	L 3	L 2	R 4	R 2	R 1	R 1	R 1	R 1	R 1		L 1	R 1	H 1	C 1	C 1						H 1	C 3	R 1	N 1
12	R 1	R 1	H 1	L 1	R 1		H 1									H 1		L 1	L 1			L 3	L 1	L 1
13	L 1	LL 11	RL 21		R 2			L 1	L 1						C 2	L 2				L 1		L 1		
14	NL 11	HR 12	R 2	R 1	R 3	R 2	RL 21									C 2	L 2			L 2	L 1	R 2	L 5	L 1
15	L 2	L 2	R 1		L 1					R 1	HL 11		C 1	C 2	C 2	C 1	H 1			L 1	L 1	L 2	RL 11	N 1
16	N 1	N 2	R 5		L 1	R 1	L 1		L 1	R 1	R 1	R 1	R 1	C 1				H 1	H 1	R 2	L 1	L 2	L 3	R 3
17	R 2	R 2	L 1			R 1	R 1	R 1			R 1										R 1	R 4	R 4	
18								R 1	R 1														R 1	R 1
19	R 2	R 1	R 1	R 1	R 1				L 1				H 1								L 1	L 1	R 1	R 4
20	R 1	R 2	L 1	R 1	R 1	R 1	R 1	R 1						L 1	L 1		L 2					L 1	L 1	F 1
21	R 4	R 3	R 2			R 1	R 1	R 2				H 1	H 1	H 2	L 1					L 1			R 1	A 1
22	R 4	RL 21	R 3	A 1	R 1	R 1	R 1	R 1	R 2	R 1	HL 11	C 1	L 1					L 1	L 1	L 2	L 3	R 4	R 2	NN 11
23	R 2	R 2	RL 11	R 2	R 3	RR 21	L 2	L 2	L 1		L 2	C 2	C 1			L 2	L 1	L 1		L 1	L 1	L 1	L 1	AF 11
24	A 1	R 1	R 1	R 1	R 1	R 1				R 1	L 1										R 2	R 4	R 1	R 2
25	R 1	R 1		NNL 11	R 1	R 2	R 1																R 2	R 3
26	R 1	R 1	R 1		R 1	R 1		R 1	R 1	R 1	H 1		C 1	L 1						L 1		N 1	R 1	R 2
27		R 1	R 1			R 1	R 1												R 1	R 2	R 2	R 1	R 2	R 1
28		NR 12	R 1	R 1	R 1	RL 11	R 1	L 1	R 1			H 1							L 1					
29	H 1	H 1				HL 11														R 2	R 2	R 3	R 1	
30		R 1	N 1		R 1	LL 11		R 1											R 2		R 2	R 1	R 1	N 2
31				R 1			R 1		R 1	R 1											R 1	R 1	R 2	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

MAR. 1972 | TYPES OF ES

IONOSPHERIC DATA

APR. 1972 | FOF2 (0.1 MHZ) | 45 E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	A	R	B	40	R	B	B	B	52	B	55	53	47	B	35	F 24	A	A
2	A	B	B	B	B	B	B	B	B	B	R	43	48	50	50	50	46	46	I R 41	R 38	30	B	B	B
3	A	R	R	R	A	29	F 32	32	42	F 50	58	F 65	J R 71	F 75	J F 70	67	F 68	58	F 51	F 45	F	F 22	F 18	F 16
4	A	A	A	A	A	F	B	B	R	F	F	F 65	F	89	90	J R 89	79	70	F 63	51	F 21	A	A	A
5	A	A	A	B	A	U F 28	33	F 37	B	B	42	54	63	64	62	F 78	R	B	B	J R 65	48	F 25	U R 21	B
6	R	B	B	B	B	B	B	B	B	57	66	F 71	80	96	B	103	F 96	87	83	F	47	F 23	F 16	B
7	R	F	F 20	F 20	F 20	U F 21	F	B	B	U F 60	F	F 80	F 98	R	B	F	F	R	83	F	F	F	F 21	F 21
8	F 21	A	B	B	F	F	F 28	F	F 41	50	62	F 70	82	94	100	J R 98	R 96	J R 86	J F 64	F 48	F 35	A	A	A
9	F	F 20	A	B	A	A	F	F	U F 52	F 60	F 71	77	88	95	R 97	95	R	91	J R 75	61	F 40	F 28	U F 24	R 19
10	F 19	F 20	F 20	F 20	F 20	F 19	F 22	J F 19	49	56	U F 68	J R 86	95	102	103	J R 93	95	93	68	51	F 40	F 25	A	A
11	A	A	A	A	A	U F 37	A	B	R	U F 56	F 65	F 70	F 82	F 81	F 79	81	79	80	72	53	47	32	F 26	A
12	A	A	A	A	R	F	F	R 46	F 47	U F 60	F 75	F 79	F 78	80	81	81	82	88	75	F	F 25	B	F 20	B
13	A	A	A	A	B	R	F	R	R	F 45	B	67	F	91	97	105	J R 101	82	F	F 49	B	A	A	R
14	A	A	B	B	B	A	A	B	R	R	51	61	80	U R 98	J R 99	95	98	R	R	R	B	B	B	B
15	A	A	B	A	B	A	F 32	F 38	46	B	U R 55	R	R	C	C	C	C	C	C	C	C	C	C	C
16	A	A	A	A	A	A	B	A	A	F 51	F 58	60	73	82	R 85	85	80	70	58	50	F 32	F 20	F 17	A
17	A	B	B	A	A	B	A	A	39	F 42	F 58	63	71	81	82	84	86	72	72	52	F 35	U R 25	A	A
18	A	A	A	A	A	A	R	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	B	B	B	B	B	R	B	B	B	51	R	51	59	72	90	F	U F 77	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	R 33	F 50	U F 55	U F 65	F 78	F 75	80	U F 77	J F 74	F 66	F 66	J F 51	F 32	A	A	A
21	B	A	A	B	B	B	A	B	A	B	B	B	B	B	R	B	B	F	F 76	R	R	A	A	A
22	A	A	A	A	A	U F 25	F 27	F	F	41	R 58	61	75	75	78	72	59	F 52	F 39	U F 27	F	A	A	A
23	A	B	A	A	A	A	A	A	J F 42	U R 48	F 54	F	63	F 72	72	67	U F 65	F	F	B	31	A	A	A
24	A	A	A	A	A	U F 32	F 33	F	F 44	50	58	66	78	82	U R 86	84	66	58	40	35	F 27	F 22	F 20	F 17
25	A	A	B	A	31	U F 32	A	A	F	U F 50	F 60	70	F 69	74	77	83	U F 70	U F 60	F	F 37	F 23	F 20	F 17	F 17
26	F 16	F 17	A	A	A	F 35	J F 34	F 30	F 38	F 55	U F 70	R	95	97	90	78	70	F 46	F 40	F 50	F 28	F 18	F 19	F 16
27	F	U F 15	A	A	U F 29	U F 29	23	F	F	F	U F 67	F 80	84	93	J R 89	R	64	U F 55	46	F 34	F 28	A	F	F
28	A	A	A	A	A	A	A	A	R	A	F 46	B	B	B	B	B	F	F 49	R	F	F	A	A	A
29	A	A	A	A	A	B	B	F	A	A	B	B	B	B	F	F	F	B	R	R	R	A	A	A
30	A	A	A	A	A	B	B	B	A	A	42	44	48	B	B	B	F 77	B	F	R	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	4	2	2	4	10	9	6	11	18	22	21	22	22	22	21	21	21	19	17	18	12	11	6
MED	F 19	F 18	F 20	F 20	F 24	U F 29	F 32	F 34	F 42	F 50	F 58	66	78	82	82	84	77	70	64	50	F 32	F 24	F 20	F 17
UQ	F 20	F 20			30	U F 32	F 33	F 38	46	F 56	F 66	F 71	82	94	90	93	86	82	74	51	F 40	F 25	F 21	F 19
LQ	F 18	F 16			F 20	U F 25	F 27	F 30	40	48	54	61	69	75	72	78	66	F 55	46	F 38	F 28	F 21	F 18	F 16

APR. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

APR. 1972 | FOF1 (0.01 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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										L	350	B	B	B	L	B	L							
2										B	R 360	L	L	L	L									
3											L	L		L										
4										L			L	L										
5												L	L	B										
6												L	B	L	B									
7													B	B	B									
8																								
9																								
10																								
11										B			L											
12													L		L									
13																								
14																								
15																								
16																								
17												L												
18																								
19											L	R	L		L									
20																								
21																								
22																								
23													L											
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2													
MED											355													
UQ																								
LQ																								

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APR. 1972 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

APR. 1972 | FOE (0.01 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 MHz to 15 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				B	B	A	A	A	B	210	B	B	B	B	B	B	B	B	B	B	B	A		
2				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
3				B	A	A	A	U R 160	B	B	200	210	R	230	230	210	A	A	A	A	C			
4				B	B	B	B	B	B	230	230	240	240	R 240	240	A	B	180	A 120	230	A			
5				B	B	A	A	A	B	B	B	R	B	B	230	R 200	B	B	B	B	B			
6					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
7			130	A	A 130	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	120	A
8	A				A	A	A	A	A	B	B	230	245	I A 240	230	210	I A 185	160	A	B	A			
9					A	A	A	140	170	200	I A 220	235	I A 240	240	235	H 220	190	H 165	A	A	A	B		
10		B	B	B	B	A	A	B	135	B	B	B	B	B	R 230	R 220	A	A	A	B	B			
11					A	A	A	B	B	B	B	R 260	260	265	240	H 210	165	150	A	A	B	R	A	
12					B	A	A	A	A	250	I A 200	A 200	I A 235	230	210	190	165	155	A	C	A	B	A	
13					B	A	B	A	A	B	B	B	B	240	B	B	B	B	B	B	B			
14					B	B	B	B	B	B	B	240	B	B	B	R	B	A	B	B	B			
15					B	A	A	U A 150	A	B	B	B	B	C	C	C	C	C	C	C	C			
16					B	A	B	B	A	A	215	230	A	250	215	B	B	A	A	B	B		B	
17					B	B	B	A	A	220	A 215	260	H 220	225	220	200	B	B	B	120	B			
18					B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B			
19					B	B	B	B	B	B	B	A	B	B	B	A	B	B	B	B	B			
20					B	B	B	B	B	B	B	B	B	210	U R 200	B	A	120	B	B	B			
21						B	B	B	B	B	B	B	B	B	B	B	B	B	A	B				
22						A	A	A	150	160	170	180	A	A	A	A	A	F 140	B	B				
23						A	C	B	140	B	B	B	220	220	200	B	B	B	B	B	B			
24						A	A	A	165	A 160	200	210	200	210	A	A 190	A	A	A	B	B	B	B	
25					A	A	A	A	R 130	B	170	200	A 200	B	B	B	140	A	A	B				
26						A	A	B	120	135	175	195	200	200	190	A 140	A 135	A	A	A				
27					A	A	A	A	A	A	A	A	200	200	190	165	A	A	A	C	B			
28						A	B	B	B	A	A	B	B	B	B	B	B	A	A	A				
29						B	B	A	A	B	B	B	B	B	B	A	A	B	B	A				
30						B	B	B	B	A	A	R	R	B	B	B	B	B	A	C				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT			1		1			3	7	8	10	13	11	14	14	11	6	7	1	2			1	
MED			130		A 130			U 150	140	205	200	230	220	230	225	200	165	155	A 120	175			120	
UQ								U 155	158	225	215	240	240	240	230	210	185	162						
LQ								145	132	160	175	200	200	210	200	190	140	145						

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APR. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

APR. 1972 | FOES (0.1 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	36	30	J X 33	40	41	37	42	28	B	G	E B 32	B	B	B	E B 28	B	E B 27	E B 52	E B 22	B	E B 25	25	J X 64	53
2	64	B	B	B	B	B	B	B	B	B	E B 32	E B 27	E B 26	E B 28	E B 25	E B 25	E B 35	E B 26	E B 27	E B 16	E B 13	B	B	B
3	J X 26	16	20	17	29	23	26	G	E B 20	E B 20	23	24	G	G	G	G	22	20	20	22	J X 24	J X 24	J X 16	21
4	31	43	43	40	50	31	B	B	E B 58	G	G	G	G	G	G	J X 24	E B 21	G	20	G	18	J X 34	34	38
5	J X 66	42	50	B	42	J X 27	40	32	B	B	E B 29	G	E B 26	E B 44	G	G	E B 47	B	B	E B 20	E B 20	E B 19	E B 15	B
6	17	B	B	B	B	B	B	B	B	E B 38	E B 40	E B 25	E B 70	E B 30	B	E B 26	29	E B 27	E B 21	E B 38	E B 20	18	16	B
7	17	19	20	17	19	16	J X 25	B	B	E B 25	E B 30	E B 38	E B 56	E B 78	B	E B 58	E B 26	E B 70	E B 26	E B 25	20	J X 26	J X 34	J X 24
8	J X 25	30	B	32	33	J X 29	J X 24	25	20	E B 27	E B 26	G	G	30	G	G	20	23	18	J X 25	J X 26	33	23	29
9	25	23	30	J X 44	40	40	25	G	J X 27	G	23	G 22	28	J X 26	G	G	G	G 12	J X 26	17	13	E B 10	E B 11	E B 15
10	E B 13	J X 19	E B 10	15	J X 21	J X 15	J X 25	E B 11	G	E B 21	E B 25	E B 27	E B 25	E B 26	G	G	22	25	23	18	E B 13	E B 9	30	33
11	30	31	30	45	J X 35	27	J X 43	B	39	E B 37	E B 34	G	G	G	G	G	J X 17	18	16	13	18	G	J X 23	30
12	42	32	J X 37	J X 84	30	40	50	33	36	G	25	27	25	G	22	22	18	18	J X 26	27	14	B	20	32
13	46	42	50	27	B	16	28	34	35	E B 26	B	E B 60	E B 27	G	E B 49	E B 38	E B 32	E B 45	E B 31	E B 19	B	31	30	39
14	42	J X 49	B	B	B	J X 45	35	B	40	40	34	G	E B 49	E B 39	E B 29	G	27	22	18	E B 15	B	B	B	B
15	26	29	B	30	B	J X 32	33	20	26	B	E B 49	E B 56	E B 50	C	C	C	C	C	C	C	C	C	C	C
16	J X 53	J X 33	30	J X 64	45	J X 51	B	38	40	27	G	28	30	G	G	E B 22	E B 22	17	20	E B 21	18	J X 12	E B 10	J X 25
17	30	34	30	J X 44	J X 46	B	J X 32	40	35	G	J X 23	G	G	G	G	G	E B 22	E B 20	E B 17	16	21	E B 14	J X 26	35
18	34	J X 64	J X 53	45	J X 26	J X 53	38	43	B	B	B	B	B	B	B	B	B	B	B	B	B	42	J X 57	34
19	34	B	B	B	B	40	30	B	B	B	E B 26	28	E B 27	E B 26	E B 20	J X 22	E B 25	E B 24	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	E B 26	E B 22	E B 26	E B 25	E B 23	G	G	E B 20	20	16	16	23	E B 13	32	34	46
21	B	J X 65	35	B	B	46	46	B	J X 59	B	B	B	B	B	E B 34	B	B	E B 26	J X 40	37	25	42	J X 65	32
22	34	34	31	32	J X 26	J X 26	18	14	G	G	G	21	28	J X 24	30	21	15	G	E B 11	17	E C 15	34	51	J X 50
23	J X 122	47	38	34	38	J X 34	40	35	26	E B 27	23	E B 32	G	G	G	E B 46	E B 32	E B 22	E B 34	B	E B 16	35	23	38
24	J X 62	J X 79	J X 95	J X 34	33	J X 31	31	23	32	22	J X 26	23	G	J X 24	J X 26	23	J X 26	J X 23	J X 24	E B 11	J X 24	E B 12	E B 11	J X 22
25	23	J X 26	J X 62	28	44	30	41	33	G	20	21	23	23	E B 24	E B 26	E B 20	G	16	J X 17	J X 20	E B 13	16	11	16
26	E B 10	E B 11	J X 35	42	J X 38	23	20	E B 12	G 11	17	G 17	G 19	24	22	J X 22	17	17	J X 26	17	16	J X 32	E B 9	E B 10	E B 9
27	E B 10	50	J X 50	30	15	J X 29	J X 42	J X 39	J X 29	21	22	23	G	G	21	J X 25	J X 26	J X 24	J X 27	E C 18	J X 22	33	19	20
28	J X 32	43	45	53	J X 52	40	46	J X 42	30	52	40	B	B	B	B	B	E B 39	J X 36	28	J X 72	J X 70	38	40	41
29	J X 45	J X 70	J X 39	J X 34	J X 36	B	34	J X 27	35	59	B	B	B	B	E B 65	30	J X 33	B	37	23	23	J X 32	J X 90	110
30	J X 125	J X 39	60	J X 38	J X 54	B	B	B	J X 45	40	35	G	G	B	B	B	E B 21	B	27	J X 26	30	32	J X 44	J X 52
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	26	23	23	22	24	24	20	23	24	26	25	25	23	24	24	27	25	26	25	25	25	26	24
MED	33	34	37	34	37	31	34	30	30	E G 22	E G 26	E G 23	E G 25	E G 24	E G 20	E G 22	E G 22	U 20	U 20	U 18	19	26	24	32
UQ	46	47	50	44	44	40	42	36	37	U 27	E B 32	E B 27	E B 28	E B 27	E B 27	24	E B 28	E B 26	26	24	24	33	J X 40	40
LQ	25	29	30	30	29	26	26	17	U 20	E G 17	22	G	G	G	G	G	U 18	17	18	E G 16	E B 15	E G 14	16	23

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APR. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

APR. 1972 | F-MIN (0.1 MHZ) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	20	12	20	25	20	15	16	18	B	19	32	B	B	B	28	B	27	52	22	B	25	10	10	12
2	10	B	B	B	B	B	B	B	B	B	32	27	26	28	25	25	35	26	27	16	13	B	B	B
3	10	10	11	14	14	13	11	15	20	20	18	20	17	17	20	15	13	10	E C 15	11	E C 15	9	9	10
4	10	14	21	20	17	17	B	B	58	21	19	19	19	21	17	17	21	15	9	16	10	9	9	20
5	10	15	9	B	20	10	20	12	B	B	29	23	26	44	16	15	47	B	B	20	20	19	15	B
6	15	B	B	B	B	B	B	B	B	38	40	25	70	30	B	26	26	27	21	38	20	10	10	B
7	10	10	9	10	10	9	8	B	B	25	30	38	56	78	B	58	26	70	26	25	9	9	9	10
8	9	11	B	25	11	9	9	9	13	27	26	21	17	15	15	11	14	10	10	11	9	13	10	10
9	9	9	10	30	14	11	11	11	10	13	12	15	13	12	13	13	11	10	9	9	9	10	11	15
10	13	10	10	9	10	9	10	11	11	21	25	27	25	26	18	21	17	15	13	15	13	9	10	10
11	10	10	22	14	10	13	11	B	31	37	34	23	18	17	18	14	10	9	10	9	11	9	9	9
12	14	11	16	15	23	14	12	20	14	14	13	11	11	14	14	14	12	12	9	E C 18	9	B	9	23
13	13	20	15	13	B	13	19	18	20	26	B	60	27	20	49	38	32	45	31	19	B	10	11	10
14	13	20	B	B	B	20	19	B	25	25	26	18	49	39	29	20	20	16	16	15	B	B	B	B
15	10	10	B	21	B	12	11	12	16	B	49	56	50	C	C	C	C	C	C	C	C	C	C	C
16	15	17	13	13	13	10	B	17	15	14	19	15	20	20	15	22	22	12	11	21	14	9	10	9
17	10	23	22	19	21	B	18	15	12	15	12	15	26	13	15	10	22	20	17	11	14	14	9	9
18	10	9	14	10	13	20	30	16	B	B	B	B	B	B	B	B	B	B	B	B	B	26	20	E C 19
19	20	B	B	B	B	30	25	B	B	B	26	22	27	26	20	13	25	24	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	26	22	26	25	23	20	19	20	13	9	12	10	13	13	14	15
21	B	15	22	B	B	31	20	B	31	B	B	B	B	B	34	B	B	26	15	13	12	13	10	10
22	11	13	13	12	14	12	11	9	10	14	15	15	16	15	14	13	13	10	11	10	E C 15	10	10	10
23	17	30	20	18	20	11	E C 15	14	10	27	18	32	20	20	17	46	32	22	34	B	16	11	18	13
24	10	13	10	13	23	10	10	11	10	11	11	11	11	11	12	10	10	10	10	11	10	12	11	10
25	9	10	23	12	12	10	15	12	11	15	14	13	13	24	26	20	13	20	11	13	13	10	9	9
26	10	11	10	13	10	10	10	12	9	10	11	12	11	13	12	11	10	10	9	9	E C 14	9	10	9
27	10	9	E C 13	10	9	10	11	10	10	11	16	13	12	15	12	10	10	11	9	E C 18	9	10	9	10
28	10	13	12	11	21	11	19	20	20	15	18	B	B	B	B	B	39	12	11	9	10	9	10	10
29	10	9	10	14	13	B	26	10	14	26	B	B	B	B	65	21	10	B	20	10	10	13	10	12
30	10	20	10	10	10	B	B	B	25	14	14	18	18	B	B	B	21	B	12	E C 15	19	11	10	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	30	30	30	30	30	30	29	30	30	29	29	29	29	29	29	29	29	29	29	29
MED	10	13	16	14	18	13	17	16	20	22	25	22	24	21	19	20	21	16	12	14	13	10	10	10
UQ	14	20	23	30	B	30	26	B	58	37	32	38	50	44	34	38	27	27	22	20	19	13	11	19
LQ	10	10	10	12	12	10	11	12	11	14	15	15	17	15	15	13	13	10	10	10	10	9	9	10

APR. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

APR. 1972 | M(3000)F2 (0.01) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 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	A	R	B	275	R	B	B	B	310	B	310	B	325	B	330	F 295	A	A
2	A	B	B	B	B	B	B	B	B	B	R	315	280	295	320	320	325	325	I R 325	R 305	335	B	B	B
3	A	R	R	R	A	250	F 280	300	290	F 310	300	F 310	R	F 320	R	315	F 325	330	F 325	F 335	F	F 320	F 305	F 265
4	A	A	A	A	A	F	B	B	R	F	F	F 275	F	285	300	J R 300	315	315	F 270	275	F 285	A	A	A
5	A	A	A	B	A	U F 255	240	F 250	B	B	280	280	300	315	305	F 280	R	B	B	J R 310	325	F 320	U R 310	B
6	R	B	B	B	B	B	B	B	B	295	290	F 300	290	295	B	295	F 315	320	315	F	335	F 340	F 290	B
7	R	F	F 260	F 260	F 260	U F 260	F	B	B	U F 295	F	F 315	F 295	R	B	F	F	R	300	F	F	F	F 335	F 285
8	F 250	A	B	B	F	F	F 270	F	F 255	320	325	F 315	300	310	310	J R 315	R 335	R	F	F 335	F 335	A	A	A
9	F	F 250	A	B	A	A	F	F	U F 300	F 310	F 310	300	295	315	R 320	330	R	320	J R 335	330	F 350	F 315	U F 335	R 300
10	F 280	F 280	F 275	F 260	F 250	F 265	F 285	F	290	285	U F 295	J R 295	305	315	310	J R 315	315	340	340	325	F 325	F 320	A	A
11	A	A	A	A	A	U F 245	A	B	R	U F 250	F 265	F 285	F 305	F 305	F 300	320	315	315	315	320	320	340	F 290	A
12	A	A	A	A	R	F	F	R 240	F 265	U F 290	F 295	F 300	F 290	300	305	295	310	325	320	F	F 320	B	F 350	B
13	A	A	A	A	B	R	F	R	R	F 255	B	280	F	295	310	315	R	315	F	F 315	B	A	A	R
14	A	A	B	B	B	A	A	B	R	R	290	290	310	U R 305	J R 300	315	315	R	R	R	B	B	B	B
15	A	A	B	A	B	A	F 255	F 285	265	B	U R 290	R	R	C	C	C	C	C	C	C	C	C	C	C
16	A	A	A	A	A	A	B	A	A	F 295	F 295	285	310	295	R 320	325	340	330	330	335	F 360	F 350	F 295	A
17	A	B	B	A	A	B	A	A	245	F 275	F 310	325	300	295	305	310	325	330	335	340	F 345	U R 330	A	A
18	A	A	A	A	A	A	R	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	B	B	B	B	B	B	B	B	B	290	R	285	300	295	290	F	U F 310	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	R 305	F 310	U F 315	U F 315	F 325	F 320	320	U F 325	F	F 330	F 320	J F 335	F 345	A	A	A
21	B	A	A	B	B	B	A	B	A	B	B	B	B	B	R	B	B	F	F 305	R	R	A	A	A
22	A	A	A	A	A	U F 250	F 260	F	F	300	R 305	320	345	325	330	350	335	F 325	F 335	U F 315	F	A	A	A
23	A	B	A	A	A	A	A	A	J F 260	R	F 285	F	270	F 315	315	315	U F 320	F	F	B	355	A	A	A
24	A	A	A	A	A	U F 245	F 275	F	F 300	315	320	305	330	325	U R 325	345	350	325	330	345	F 335	F 330	F 340	F 280
25	A	A	B	A	290	U F 280	A	A	F	U F 320	F 315	330	F 325	325	340	350	U F 345	U F 320	F	F 350	F 340	F 350	F 305	F 305
26	F 295	F 295	A	A	A	F 275	J F 270	F 275	F 290	F 320	U F 315	R	330	325	340	345	360	F 350	F 345	F 340	F 355	F 335	F 315	F 315
27	F	U F 280	A	A	U F 295	U F 260	260	F	F	F	U F 330	F 335	345	345	J R 350	R	355	U F 325	350	F 340	F 320	A	F	F
28	A	A	A	A	A	A	A	A	R	A	F 285	B	B	B	B	B	F	F 275	R	F	F	A	A	A
29	A	A	A	A	A	B	B	F	A	A	B	B	B	B	F	F	F	B	R	R	R	A	A	A
30	A	A	A	A	A	B	B	B	A	A	305	305	315	B	B	B	F 340	B	F	R	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	4	2	2	4	10	9	5	11	17	22	21	21	22	21	21	19	19	18	17	18	12	11	6
MED	F 280	F 280	F 268	F 260	F 275	U F 258	F 270	F 275	F 290	F 295	F 298	305	305	312	310	315	325	325	325	335	F 335	F 330	F 310	F 292
UQ	F 288	F 288			292	U F 265	F 275	F 285	295	F 310	F 315	315	325	320	320	325	340	330	335	F 340	F 345	F 340	F 335	F 305
LQ	F 265	F 265			F 255	U F 250	F 260	F 250	F 262	F 285	F 290	290	295	295	305	310	315	318	315	315	F 325	F 320	F 300	F 280

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APR. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1972 | H'F2 (KM) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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										L	R 500	B	B	B	L	B	255							
2										B	R	L	L	L	L									
3											L	L		240										
4										L			L	L										
5												L	290	275										
6												L	B	270	B									
7													260	B	B									
8																								
9																								
10																								
11										410			255											
12													L		245									
13																								
14																								
15																								
16																								
17												250												
18																								
19											L	R	L		280									
20																								
21																								
22																								
23													L											
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										1	1	1	3	3	2		1							
MED										410	R 500	250	260	270	262		255							
UQ													275	272										
LQ													258	255										

APR. 1972 | H'F2 (KM)

IONOSPHERIC DATA

APR. 1972 | H'F (KM) | 45 E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	A	A	A	B	250	B	B	B	B	265	B	250	B	240	B	265	330	A	A
2	A	B	B	B	B	B	B	B	B	B	B	230	240	250	240	245	B 265	250	250	250	235	B	B	B
3	A	A	A	R	A	A 410	385	320	270	250	240	240	225	220	230	230	230	220	220	230	220	240	300	330
4	A	A	B	B	A	280	b	B	B	245	250	250	230	250	230	230	230	240	280	330	325	A	A	B
5	A	A	A	B	A	A	510	A 410	B	B	B 275	255	240	B	245	240	B 275	B	B	240	245	290	B	B
6	R	B	B	B	B	B	B	B	B	B 300	B 290	230	B	250	B	230	220	225	220	B 250	245	270	A 330	B
7	A	A	A	A	400	380	350	B	B	260	255	250	B	B	B	B 250	240	B	240	225	275	340	295	330
8	450	A	B	B	A	410	390	350	290	260	255	240	240	230	220	210	210	205	200	210	245	A	A	A
9	A	A	A	B	A	A	365	300	260	245	240	230	240	240	230	225	200	210	205	215	200	240	260	E B 300
10	B 325	300	300	325	340	330	330	290	250	250	250	240	240	230	220	210	225	220	200	210	215	230	A	A
11	A	A	B	A	A	A	A	B	B	B	305	260	230	250	240	240	240	230	210	210	250	250	320	A
12	A	A	A	A	B	A	A	A	A	275	245	240	230	230	240	240	230	225	220	270	290	B	280	B
13	A	B	A	A	B	R	A	A	A	310	B	B	240	240	B 250	240	230	B 240	250	250	B	A	A	A
14	A	A	B	B	B	B	A	B	A	A	305	250	B 250	B 245	250	230	230	240	220	225	B	B	B	B
15	A	A	B	B	B	A	A	315	300	B	B	B	B 275	C	C	C	C	C	C	C	C	C	C	C
16	A	A	A	A	A	A	B	A	A	300	250	245	260	250	240	230	230	220	220	230	225	245	260	A
17	A	B	B	B	B	B	A	A	A	300	260	250	245	245	230	230	230	225	225	215	225	240	A	A
18	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C
19	B	B	B	B	B	B	b	B	B	B	B 270	270	B 260	255	260	250	250	260	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	B 325	260	250	240	240	220	230	210	220	220	210	220	225	A	A	A
21	B	A	B	B	B	B	A	B	B	B	B	B	B	B	265	B	B	260	245	A	R	A	A	A
22	A	A	A	A	A	A	395	325	290	250	240	240	230	220	225	210	205	205	210	205	C 270	A	A	A
23	A	B	B	B	B	A	A	A	325	300	250	290	250	250	230	B	B 240	240	240	B	250	A	A	A
24	A	A	A	A	B	A	A 395	330	280	260	250	245	240	225	215	215	200	210	200	210	220	250	250	375
25	A	A	B	A	375	360	A	A	260	245	230	230	230	225	225	210	210	200	210	225	230	245	250	275
26	B 300	B 310	A	A	A	350	340	340	280	230	215	230	220	215	205	200	200	195	200	210	210	240	B 220	260
27	B	B	A	A	350	350	A 380	330	270	220	220	220	210	220	205	210	200	225	205	210	230	A	250	300
28	A	A	A	A	A	A	A	A	A	A	A 340	B	B	B	B	B	290	350	A	A	A	A	A	A
29	A	A	A	A	A	B	B	A	A	A	B	B	B	B	B	300	310	B	A	A	A	A	A	A
30	A	B	A	A	A	B	B	B	A	A	295	255	270	B	B	B	220	B	275	A	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	1	1	4	6	10	10	12	19	23	23	23	21	23	23	27	23	24	21	21	13	11	7
MED	B 325	305	300	325	362	355	382	328	280	260	250	240	240	240	230	230	230	225	220	225	235	245	260	300
UQ	388				388	395	395	340	295	288	272	250	248	250	242	240	240	240	240	240	250	270	298	330
LQ	B 312				345	340	350	315	265	248	242	235	230	225	225	210	215	215	208	210	225	240	250	278

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APR. 1972 | H'F (KM)

IONOSPHERIC DATA

APR. 1972 | H'ES (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 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	115	120	100	120	120	125	115	130	B	G	B	B	B	B	B	B	B	B	B	B	B	125	170	110
2	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
3	120	145	145	140	130	140	115	G	B	B	115	110	G	G	G	G	150	100	100	100	100	100	145	180
4	150	110	110	115	110	140	B	B	B	G	G	G	G	G	G	105	B	G	160	G	165	105	110	110
5	150	105	120	B	115	130	120	100	B	B	B	G	B	B	G	G	B	B	B	B	B	B	B	B
6	125	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	100	B	B	B	B	130	140	B
7	115	160	145	130	130	125	100	B	B	B	B	B	B	B	B	B	B	B	B	B	140	120	115	150
8	110	120	B	110	120	100	100	95	100	B	B	G	G	105	G	G	100	100	100	100	100	105	150	110
9	110	105	105	115	100	100	120	G	100	G	110	110	105	100	G	G	G	100	100	100	125	B	B	B
10	B	110	B	100	100	100	100	B	G	B	B	B	B	B	G	G	100	100	100	100	B	B	120	120
11	115	120	145	105	100	120	110	B	110	B	B	G	G	G	G	G	100	100	100	130	150	G	140	120
12	105	120	130	125	130	110	120	110	100	G	120	110	105	G	110	105	110	100	100	140	130	B	140	130
13	105	105	100	130	B	95	130	125	100	B	B	B	B	G	B	B	B	B	B	B	B	110	120	105
14	100	100	B	B	B	110	120	B	105	100	110	G	B	B	B	G	100	100	100	B	B	B	B	B
15	105	115	B	120	B	100	100	125	125	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C
16	130	105	110	105	100	100	B	100	100	120	G	110	120	G	G	B	B	100	130	B	130	120	B	130
17	115	130	140	100	100	B	120	100	105	G	100	G	G	G	G	G	B	B	B	125	130	B	120	110
18	120	140	130	170	110	105	115	110	B	B	B	B	B	B	B	B	B	B	B	B	B	110	125	135
19	125	B	B	B	B	125	135	B	B	B	B	105	B	B	B	100	B	B	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	B	B	B	B	B	G	G	B	145	100	100	100	B	120	125	120
21	B	120	130	B	B	125	120	B	100	B	B	B	B	B	B	B	B	B	140	110	130	110	100	105
22	100	110	110	100	120	115	120	125	G	G	G	110	105	105	100	100	110	G	B	100	C	100	150	110
23	150	105	120	115	110	100	110	110	180	B	115	B	G	G	G	B	B	B	B	B	B	110	140	110
24	110	180	100	110	130	120	115	140	130	120	110	105	G	100	100	100	100	100	100	B	100	B	B	100
25	110	120	150	120	110	140	120	110	G	110	120	110	100	B	B	B	G	100	100	100	B	115	110	100
26	B	B	120	110	105	110	170	B	110	110	100	110	100	100	100	100	100	90	90	90	95	B	B	B
27	B	130	105	110	115	95	105	100	110	170	180	150	G	G	100	100	100	100	90	C	100	110	150	140
28	120	110	100	100	110	100	105	100	100	100	100	B	B	B	B	B	B	120	115	100	110	105	100	105
29	180	110	110	105	115	B	110	120	110	100	B	B	B	B	B	100	105	B	120	105	160	110	110	100
30	95	100	125	110	180	B	B	B	100	100	100	G	G	B	B	B	B	B	125	120	110	120	105	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	25	25	22	23	22	24	24	16	17	9	12	10	6	5	5	8	13	14	18	15	16	18	21	22
MED	115	115	120	110	112	110	115	110	105	110	110	110	105	100	100	100	100	100	100	100	128	110	125	110
UQ	125	120	130	120	120	125	120	125	110	120	118	110	105	105	100	102	110	100	120	115	135	120	140	130
LQ	105	105	105	105	105	100	108	100	100	100	100	110	100	100	100	100	100	100	100	100	100	105	110	105

The Radio Research Laboratories, Japan

APR. 1972 | H'ES (KM)

IONOSPHERIC DATA

APR. 1972 | TYPES OF ES | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 05 MHz to 15 MHz in 30 sec in automatio 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 2	F 1	R 1	R 1	R	R 1	R 1														R 2	RR 11	R 2
2	R 2																							
3	R 1	N 1	R 1	R 1	R 1	R 1	R 2				C 1	C 1					HL 11	L 1	L 1	R 1	L 1	F 1	F 1	RF 11
4	RR 13	R 2	R 1	R 1	R 1	R 1	R 1									L 1			RC 11		R 1	R 2	R 3	R 1
5	NR 11	R 1	R 4		R 1	R 1	R 1	R 1																
6	F 1																L 1					R 1	R 1	
7	R 1	RF 11	H 1	R 1	R 1	RL 11	L 2														R 1	R 2	LR 11	NR 13
8	R 3	R 2		R 1	RL 11	L 1	L 1	L 2	L 1					L 1			L 1	L 2	L 1	L 1	LR 21	R 1	RR 11	R 2
9	R 2	R 3	R 4	R 1	R 1	R 1	R 1		L 1		CL 11	L 1	L 2	L 1				L 1	L 1	L 1	LL 11			
10		L 1		L 1	L 1	L 1	L 1										L 1	L 1	L 1	L 1			R 1	R 3
11	R 3	R 3	R 1	R 2	R 3	R 2	R 2		R 1								L 1	L 1	L 1	R 1	R 1		R 1	R 4
12	R 2	R 2	R 2	R 1	R 1	R 2	R 1	R 1	R 1		H 1	H 1	C 2		L 1	R 1	L 1	L 1	L 1	R 1	L 1		R 1	R 1
13	R 2	R 1	R 1	R 1		L 1	R 1	R 1	R 1													R 4	R 3	R 5
14	R 1	F 1	-			R 1	R 1		L 1	R 1	R 1						L 1	L 1	L 1					
15	R 2	R 3		R 1		R 1	R 2	R 1	R 1															
16	RR 11	R 1	R 2	R 2	R 2	R 2		R 1	R 1	R 1		R 1	R 1					L 1	LL 11		R 1	R 1		R 1
17	R 5	R 1	R 1	R 1	R 1		R 1	R 1	R 2		RL 11									H 1	H 1		R 1	R 4
18	R 4	RR 11	RR 11	RR 12	R 1	R 1	R 1	R 1														R 1	R 1	R 1
19	R 1					R 1	R 1					L 1				L 1								
20																	R 1	R 1	L 1	L 1		R 1	R 2	R 2
21		R 2	RF 12			R 1	R 1		RR 11										R 1	R 2	R 1	R 1	A 1	R 1
22	R 1	R 2	R 1	R 1	R 2	R 1	R 1	L 1				C 1	L 1	L 1	R 3	R 1	L 1			L 1		R 3	RR 11	R 2
23	NR 11	R 1	R 1	R 1	R 1	R 2	R 2	R 3	R 1		R 1											R 3	R 2	R 1
24	R 2	NR 11	R 1	R 1	R 1	RL 11	R 2	RL 11	L 1	R 1	L 1	L 1		L 1	L 1	L 1	L 1	L 1	L 1		L 1			FR 11
25	R 3	R 3	N 1	R 2	R 1	RL 11	R 1	R 1		C 1	H 1	L 1	L 1					L 1	L 1	L 1		F 1	F 1	F 1
26			R 3	R 2	R 2	R 1	R 1		L 1	C 2	L 1	L 1	L 1	L 1	L 1	L 1	L 1	L 2	L 1	L 1	L 1			
27		F 1	R 1	R 2	R 2	L 1	R 1	LR 11	R 1	RR 11	R 1	RL 11			L 1	L 1	L 1	L 1	L 1		L 1	R 3	R 1	R 1
28	R 3	R 2	R 2	R 1	R 1	R 2	R 1	R 1	R 1	R 1	R 1							R 2	R 1	A 1	A 1	R 3	R 1	R 2
29	ARF 14	RR 13	R 4	R 1	R 2		L 1	R 1	L 1	R 1						R 1	RS 21		R 1	R 1	RR 12	R 1	A 1	A 1
30	F 3	F 1	FRF 12	RF 21	RF 11				R 1	R 1	R 1								R 1	R 1	R 3	R 4	R 2	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																								

APR. 1972 | TYPES OF ES

IONOSPHERIC DATA

MAY. 1972 | FOF2 (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00. 4 S. Long. 39 35. 4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	B	A	A	A	A	B	R	B	B	B	B	B	B	B	U R 67	61	B	B	B	A	B	R	A
2	A	A	B	B	A	A	R	B	B	38	42	43	B	B	B	B	R	B	F 40	F 31	F	F 15	A	A
3	A	B	A	A	A	F	F 23	U F 25	F 26	35	44	50	60	66	69	F 65	F 59	F	F 42	F 31	F 21	B	B	A
4	21	A	A	F	F 20	F 21	F	R	R	U F 43	F	F 69	F	F	F 71	U F 60	F 49	58	52	B	F 20	16	B	B
5	R	R	F 32	F 30	A	A	A	A	A	41	U F 60	F 70	F 74	F 72	F 75	F 69	R	J R 45	F 41	24	B	B	R	R
6	A	A	A	A	A	F 33	U F 34	F	F	F	J F 51	F 56	B	R	R	J F 71	R	F	F 38	F	F 17	A	A	A
7	A	B	B	A	A	A	F 28	F	F 30	F 40	55	71	72	74	R	J R 66	F 52	F 32	F 40	U F 31	F 19	F 16	F 15	F 14
8	F	F	A	F 21	F 32	F 32	U F 32	F	F	F	53	F 68	86	84	F	J R 72	F 50	J F 45	F 37	F 29	F 23	F 18	F	F 17
9	U F 17	B	B	U F 20	F 20	F 20	U F 22	F 20	F	F 37	F 54	42	B	B	F	R	F	R	F	F 32	A	A	B	A
10	A	B	A	R	J R 31	B	B	A	A	34	43	R	R	R	U R 107	R	R	R	R	R	B	23	A	A
11	A	B	A	B	A	A	F 29	F 27	F 29	F 32	B	R	J F 86	82	92	77	F 62	57	J F 46	U F 31	B	A	A	A
12	A	A	B	A	F	A	A	A	B	B	B	B	F 74	F	F	R	F	B	B	B	B	A	A	A
13	R	R	R	A	B	A	A	F 30	U F 30	F 40	U F 56	62	82	97	J R 100	F	F 58	R	F 35	F 25	F	A	A	A
14	A	A	A	A	A	A	A	A	A	R	45	58	F 65	F 79	R 85	83	F 82	F	F	U F 32	F 20	A	A	A
15	B	A	B	B	A	A	A	U F 30	F 30	F 37	F 55	F 63	91	J R 96	84	U F 78	J F 55	F 48	F 32	F 32	F 19	B	B	F
16	A	F	F	A	A	A	F	F	U F 40	F	F 42	F 48	F 50	51	49	43	39	F 32	F 22	F 16	F 13	F 16	F 16	F
17	A	A	A	A	F	F	F	F	A	F	F 50	J R 68	F 69	J R 82	R	J F 68	F 58	J F 69	F 40	B	B	A	A	A
18	A	R	R	R	A	A	B	A	B	B	B	R	68	74	R	81	R 61	F	R	B	B	B	14	B
19	B	A	A	A	A	F	F 30	F 30	U R 30	F 38	J F 60	77	79	89	84	F 50	J F 53	U F 40	F	U F 28	R 22	A	B	B
20	F 14	A	A	B	B	A	A	B	F	46	B	66	73	75	75	69	F 51	F	F	F 20	F 19	F 14	U F 13	F 15
21	F 15	A	F	U F 23	U F 24	A	F	F	F	F	F	F 60	U F 69	F 70	U F 62	U F 60	U F 40	F	F	F	F	F	F 14	U F 13
22	F	F	F	A	A	A	A	F 33	I A 36	F 37	R 45	F 62	F 73	F 79	F 72	66	F 46	F 40	F 28	F 22	F 22	F 18	F 13	A
23	A	A	F 27	A	45	A	U F 32	F	F	F	F	F	F 73	F 66	F 61	48	R	F 41	F 38	F 28	A	A	A	A
24	A	A	A	B	C	C	A	B	A	A	A	40	F 49	F 50	F 48	F 50	F 39	U F 30	F 23	18	F 16	B	B	A
25	F 15	F	A	A	F 19	F 20	F 19	F 19	F 20	F 28	U F 36	F	F	F	F 56	F 45	J F 42	F 33	F	A	B	A	A	A
26	A	F	A	A	B	A	A	F	A	A	U F 36	F	F 58	61	65	F	F	F 30	F 27	F 23	F 21	A	A	B
27	A	B	A	B	B	A	F 32	F	F 29	F 28	44	50	58	61	F 43	F	F 31	U F 30	B	F 30	F	B	B	A
28	A	A	A	B	B	A	A	A	U F 24	F	F 40	55	74	F	F	F 52	F	R	F	A	A	A	A	B
29	A	A	A	U F 32	A	A	A	B	F 32	F 30	F 40	B	B	B	B	F	F	R	30	B	B	B	B	B
30	B	35	A	A	A	B	B	B	B	F 23	F 41	U R 45	R	61	63	52	34	B	F 27	B	B	B	B	B
31	B	B	B	B	B	B	A	B	B	B	B	B	U R 51	U R 53	B	R	R	F 30	F 25	F 21	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	5	1	2	5	7	5	10	8	12	17	21	21	22	21	19	22	20	16	19	19	13	8	6	4
MED	F 15	35	F 30	U F 23	F 24	F 21	F 30	F 28	F 30	F 37	F 45	60	72	74	71	66	F 52	F 40	F 37	F 28	F 20	F 16	F 14	F 14
UQ	F 17			U F 30	32	F 32	U F 32	F 30	F 31	F 40	F 54	F 68	74	82	84	71	F 58	F 46	F 40	F 31	F 21	18	F 15	F 16
LQ	F 15			U F 21	F 20	F 20	F 23	F 22	F 28	F 32	F 42	50	F 60	61	F 62	F 52	F 41	F 31	F 28	F 22	F 19	F 16	F 13	F 14

MAY. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1972 | FOF1 (0.01 MHZ) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 MHz to 15 MHz in 30 sec in automatio operation

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

The Radio Research Laboratories, Japan

MAY. 1972 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1972 | FOE (0.01 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	B	B	B	B	B	B	B	B				
2						B	B	B	B	B	B	R	B	B	B	B	B	B	B	A				
3						A	140	A	B	A	220	R 190	A	A	A	A	A	B	C	B				
4	A 100					A	A	B	B	R	B	B	190	B	B	A	A	B	B	B				
5	170	220	215	210	A	A	A	A	A	A	170	A	A 180	A	A	165	A	B	A	B				
6						A	A	A	A	A 130	160	B	B	B	B	B	B	B	A	B				
7						A	A	A 150	105	A	A 150	U R 165	R	A	B	130	B	A	B	A	A	A		
8				A 140	A	120	A	B	B	A	A	R 170	A	A	A	A	A 125	A 115	A	A	B	100	A	
9						B	B	B	B	A	B	B	B	B	B	B	B	B	B	B				
10				B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B				
11						A	A	135	A	A 130	B	B	200	B	B	C	A	B	B	A				
12						C	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
13	230	270	290	A	B	B	A	A	R 115	F 125	A	B	A	A	B	R 140	B	B	B	B				
14						B	B	B	A	A	B	B	B	A	B	B	B	A	B	B	A			
15						B	A	A	U A 150	A 115	U A 150	B	B	B	B	A	B	U A 170	B	B				
16						A	A	A	A	A	A	A	200	A 170	A	150	A	A	110	B	B	100	A	A
17						130	A	A 130	B	A	A	U A 180	A	180	160	130	B	B	B	B				
18						B	B	A	B	B	B	B	B	B	B	B	B	B	B	B			110	
19						A	A	150	A	A 170	A	A	A	A	A	A	A	A	B	B				
20						B	B	B	A	A	B	A 160	140	A	A	B	B	B	A	B	B			
21				A	A	A	A	A	A	A	A	A	150	A	A	A	A	B	B					
22							B	A	B	A	A	A	A	A	A	A	A	A	A	B				
23			A	A	A	A	A	A	A	A	120	A	A	A 140	A	A	A	A	A	B				
24							A	B	B	B	B	A	A	A	145	A	B	B	B	B				
25						A	A	A	B	B	B	A 150	B	B	A	A	A	B	B					
26							A	A	B	A	A	A 140	150	150	A 130	B	B	B	B	A	B			
27							A	A	A	A	135	B	A	160	B	105	B	B	B	A	100			
28							B	A	A	A	A	A	140	F 140	A	B	B	B	B					
29				U A 245	A	A	A	B	A	A	A	B	B	B	B	B	B	B	B					
30							B	B	B	160	B	B	B	B	B	B	B	B	B					
31							B	B	B	B	B	B	B	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	3	2	2	3		2	1	4	3	6	7	7	8	6	3	6	1	2	1		1	2	1	
MED	170	245	252	A 210		125	140	142	115	A 130	150	A 165	165	155	145	135	A 125	A 142	110		100	100	110	
UQ	200			228				150	132	A 160	165	R 175	195	170	152	150								
LQ	135			175				132	110	A 125	142	A 155	145	140	138	130								

MAY. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

MAY. 1972 | FOES (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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 66	B	J X 33	J X 66	J X 50	48	B	35	B	B	B	B	B	B	B	E B 48	E B 48	B	B	B	J X 31	B	22	J X 41
2	45	J X 37	B	40	30	J X 73	31	B	B	E B 30	E B 35	G	B	B	B	B	E B 37	B	E B 15	15	J X 15	J X 14	J X 35	40
3	J X 86	B	40	39	34	24	J X 24	19	E B 11	20	G	G	J X 26	21	J X 23	J X 32	31	E B 25	24	E B 12	E B 13	B	B	22
4	J X 25	J X 26	J X 32	J X 25	J X 27	J X 23	J X 28	32	33	32	28	E B 20	21	E B 21	E B 27	J X 18	26	E B 22	E B 22	B	E B 15	E B 13	B	B
5	27	G	G	G	40	34	40	40	33	22	19	20	J X 31	21	20	22	15	E B 20	17	E B 20	B	B	16	15
6	30	J X 63	35	J X 35	J X 33	26	J X 32	15	J X 24	J X 25	18	E B 20	B	E B 48	E B 46	E B 20	17	E B 16	15	21	15	J X 25	J X 30	30
7	31	B	41	41	J X 45	J X 34	21	18	G	17	J X 22	G	G	19	21	G	E B 10	13	11	11	12	12	12	11
8	24	J X 23	J X 29	J X 24	29	20	18	E B 10	E B 10	18	17	G	J X 21	33	28	J X 31	23	35	40	J X 16	E B 10	G	17	17
9	19	B	B	16	J X 21	18	J X 23	11	E B 10	13	17	E B 25	B	B	E B 36	E B 56	E B 25	E B 25	E B 18	E B 14	26	33	44	38
10	46	83	38	33	25	B	B	42	J X 37	29	E B 22	E B 47	E B 71	E B 70	E B 72	E B 70	E B 50	E B 58	E B 33	18	B	27	31	40
11	41	B	40	40	40	37	32	23	19	26	B	E B 42	23	J X 32	J X 26	E C 23	16	E B 12	18	29	B	J X 27	34	36
12	34	40	44	J X 45	31	J X 36	51	J X 40	B	B	B	B	E B 37	E B 48	E B 49	E B 47	E B 22	B	B	B	B	23	22	27
13	28	G	33	J X 75	B	32	J X 40	23	14	G	18	J X 25	22	21	E B 20	G	E B 14	E B 16	E B 12	E B 12	21	34	J X 32	36
14	53	42	J X 65	38	J X 53	54	53	J X 53	J X 45	34	E B 32	E B 30	28	23	E B 34	E B 19	E B 20	17	E B 10	E B 10	14	J X 26	30	34
15	29	35	B	B	32	44	J X 40	J X 38	22	J X 23	17	E B 19	G	E B 26	E B 27	J X 23	E B 15	20	E B 13	E B 13	J X 24	B	B	J X 45
16	J X 46	J X 39	J X 33	J X 55	60	J X 52	J X 35	J X 30	34	35	J X 25	22	J X 34	22	J X 32	J X 22	J X 24	J X 17	G	J X 28	13	J X 31	J X 24	20
17	22	J X 24	J X 35	30	23	J X 25	18	J X 25	26	18	23	J X 52	J X 21	J X 30	J X 22	19	26	E B 22	E B 17	B	B	J X 24	J X 18	20
18	28	29	30	41	J X 43	J X 45	B	43	B	B	B	E B 43	E B 40	E B 26	E B 48	E B 49	E B 20	E B 25	E B 24	B	B	B	16	B
19	22	J X 31	21	23	J X 41	30	21	16	33	J X 36	25	23	29	24	21	13	14	14	E B 12	20	20	22	B	29
20	J X 25	J X 25	58	42	40	J X 53	J X 50	B	40	29	B	J X 24	21	28	J X 28	J X 26	E B 20	E B 23	18	23	15	30	28	18
21	24	J X 20	J X 23	J X 27	J X 23	J X 40	J X 26	J X 27	18	19	J X 25	17	18	19	26	21	17	12	16	16	19	J X 13	13	16
22	J X 32	28	25	J X 25	35	J X 45	42	31	40	31	30	23	J X 22	22	27	J X 37	J X 24	J X 13	15	E B 10	E B 12	E B 12	17	25
23	34	J X 35	J X 33	J X 35	J X 35	J X 34	32	J X 25	J X 22	J X 106	17	J X 23	J X 23	17	J X 25	J X 22	17	J X 25	J X 24	J X 22	30	J X 23	46	33
24	J X 34	J X 33	69	B	C	C	33	B	J X 45	J X 55	52	39	33	20	22	16	E B 13	E B 14	18	16	E B 11	B	B	20
25	22	J X 33	J X 22	J X 25	J X 26	J X 25	J X 33	16	20	23	J X 24	17	E B 22	E B 19	22	14	18	E B 14	J X 38	J X 33	B	17	17	15
26	J X 24	32	J X 36	J X 106	B	40	J X 40	J X 34	J X 50	45	J X 24	J X 24	18	17	16	E B 21	26	13	E B 10	12	J X 34	J X 25	35	J X 33
27	J X 34	B	J X 75	B	56	53	J X 35	29	17	17	G	E B 24	17	G	E B 20	15	13	E B 18	B	28	27	29	67	40
28	32	42	J X 34	B	B	J X 35	42	34	J X 39	23	15	17	17	G	J X 23	E B 23	E B 20	E B 21	E B 18	J X 39	35	28	33	J X 40
29	30	38	26	J X 52	J X 65	31	44	B	40	J X 33	30	B	B	B	B	E B 25	E B 27	29	E B 23	B	B	B	B	B
30	B	J X 33	32	J X 25	48	B	B	B	B	G	E B 20	E B 30	E B 26	E B 22	E B 24	E B 20	E B 16	B	E B 14	B	B	B	B	B
31	B	50	40	40	D	58	J X 52	40	B	B	B	B	E B 38	E B 31	B	E B 20	E B 27	E B 16	E B 13	E B 16	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	29	25	28	27	27	28	27	26	25	27	25	27	26	27	27	30	31	27	28	24	21	22	23	26
MED	30	J X 33	34	J X 38	35	36	33	30	26	24	U 20	E G 23	22	20	U 24	U 18	E B 20	E B 18	E B 17	16	15	24	28	30
UQ	34	39	40	42	46	46	41	38	39	32	25	U 26	U 27	U 26	E B 30	E E 31	E B 26	E B 24	U 20	22	26	28	34	38
LQ	25	J X 26	30	J X 25	30	28	27	19	18	18	17	18	20	19	22	U 16	14	13	E B 13	E B 12	12	14	17	20

MAY. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1972 | F-MIN (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 05 MHz to 15 MHz in 30 sec in automatio 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	E C 23	20	19	10	B	26	B	B	B	B	B	B	B	48	48	B	B	B	10	B	11	10
2	15	20	B	25	15	25	18	B	B	29	35	19	B	B	B	B	37	B	15	11	11	10	10	10
3	9	B	12	15	11	10	10	10	11	14	13	15	13	11	11	13	15	25	E C 14	12	13	B	B	10
4	9	9	9	10	10	9	9	20	26	15	21	20	14	21	27	14	13	22	22	B	15	13	B	B
5	11	12	12	10	15	10	21	15	12	12	12	11	10	13	12	10	11	20	10	20	B	B	10	9
6	20	15	10	10	11	10	10	10	10	10	12	20	B	48	46	20	15	16	11	12	10	10	9	10
7	10	B	20	17	15	10	12	10	10	10	12	15	15	15	16	12	10	9	10	8	8	8	9	9
8	9	9	10	10	11	10	10	10	10	9	11	14	17	13	13	11	11	10	10	10	10	9	10	10
9	9	B	B	9	9	9	9	9	10	10	14	25	B	B	36	56	25	25	18	14	9	10	26	10
10	10	20	19	21	12	B	B	20	12	26	22	47	71	70	72	70	50	58	33	15	B	11	10	11
11	13	B	19	29	20	11	10	10	9	10	B	42	19	20	20	E C 23	10	12	14	10	B	10	10	20
12	13	16	23	12	11	E C 16	14	26	B	B	B	B	37	48	49	47	22	B	B	B	B	15	11	15
13	16	10	21	10	B	22	12	12	10	9	13	21	17	E C 15	20	10	14	16	12	12	9	9	9	10
14	10	10	14	27	15	26	20	20	14	12	32	30	25	14	34	19	20	10	10	10	10	9	9	13
15	25	20	B	B	15	14	11	10	10	10	12	19	19	26	27	11	15	16	13	13	10	B	B	11
16	16	11	11	14	17	12	12	12	12	11	13	11	14	12	10	10	12	10	10	9	10	9	9	9
17	9	9	9	10	9	9	10	10	19	11	16	10	11	11	12	10	15	22	17	B	B	10	12	10
18	9	10	9	16	12	26	B	14	B	B	B	43	40	26	48	49	20	25	24	B	B	B	10	B
19	18	14	15	12	15	10	10	10	10	10	11	12	10	15	12	10	10	10	12	12	13	13	B	26
20	10	9	10	21	22	15	23	B	10	10	B	10	10	10	10	14	26	23	12	10	10	10	10	10
21	10	9	9	9	9	12	10	10	10	9	10	14	13	14	10	9	10	10	10	9	9	9	9	9
22	9	9	9	9	10	14	17	10	26	15	21	11	11	10	19	10	10	10	10	10	12	12	9	9
23	10	10	10	12	11	14	11	9	10	9	9	9	9	11	10	10	9	9	10	10	10	7	10	12
24	10	11	14	B	C	C	11	B	20	14	20	15	11	10	11	11	13	14	13	11	11	B	B	11
25	10	9	10	10	9	9	10	12	13	14	15	14	22	19	15	12	12	14	14	14	B	12	11	10
26	9	9	9	18	B	12	11	11	20	15	11	10	12	11	10	21	13	11	10	8	9	9	9	20
27	14	B	16	B	23	25	11	10	11	10	12	24	13	14	20	10	11	18	B	11	9	20	20	15
28	10	14	17	B	B	12	24	12	11	11	10	11	10	12	11	23	20	21	18	10	9	10	10	20
29	12	E C 15	10	10	10	E C 15	13	B	15	12	17	B	B	B	B	25	27	20	23	B	B	B	B	B
30	B	25	15	15	25	B	B	B	B	15	20	30	26	22	24	20	16	B	14	B	B	B	B	B
31	B	33	30	31	36	34	26	36	B	B	B	B	38	31	B	20	27	16	13	16	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	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	10	13	13	15	15	12	12	12	12	12	15	19	17	15	20	14	15	16	13	12	11	11	10	11
UQ	14	22	20	23	20	22	20	23	23	15	27	30	38	28	41	23	21	24	18	18	B	B	D B 26	20
LQ	10	10	10	10	11	10	10	10	10	10	12	12	12	12	12	10	11	10	10	10	10	10	10	10

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MAY. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1972 | M(3000)F2 (0.01) | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	B	A	A	A	A	B	R	B	B	B	B	B	B	B	U R 330	325	B	B	B	A	B	R	A
2	A	A	B	B	A	A	R	B	B	290	350	325	B	B	B	B	R	B	F 325	F 305	F	F 280	A	A
3	A	B	A	A	A	F	F 260	U F 260	F 290	290	325	300	315	320	315	F 335	F 330	F	F 335	F 340	F 335	B	B	A
4	325	A	A	F	F 260	F 250	F	R	R	U F 315	F	F 335	F	F	F 330	U F 350	F 305	330	340	B	F 350	315	B	B
5	R	R	F 305	F 295	A	A	A	A	A	315	U F 330	F 330	F 340	F 335	F 355	F 340	R	R	F 355	335	B	B	R	R
6	A	A	A	A	A	F 275	U F 275	F	F	F	J F 335	F 320	B	R	R	J F 340	R	F	F 335	F	F 305	A	A	A
7	A	B	B	A	A	A	F 285	F	F 295	F 325	325	340	340	340	R	R	F 325	F 345	F 335	U F 355	F 340	F 315	F 305	F 320
8	F	F	A	F 285	F 280	F 295	U F 280	F	F	F	330	F 325	335	345	F	R	F 340	F	F 350	F 345	F 350	F 335	F	F 355
9	U F 295	B	B	U F 280	F 265	F 250	U F 275	F 270	F	F 295	F 315	270	B	B	F	R	F	R	F	F 330	A	A	B	A
10	A	B	A	R	J R 290	B	B	A	A	295	300	R	R	R	U R 325	R	R	R	R	R	B	315	A	A
11	A	B	A	B	A	A	F 240	F 265	F 265	F 315	B	R	F	330	340	335	F 325	315	J F 325	U F 325	B	A	A	A
12	A	A	B	A	F	A	A	A	B	B	B	B	F 310	F	F	R	F	B	B	B	B	A	A	A
13	R	R	R	A	B	A	A	F 260	U F 290	F 320	U F 315	320	325	340	J R 330	F	F 345	R	F 330	F 350	F	A	A	A
14	A	A	A	A	A	A	A	A	A	R	310	310	F 295	F 325	R 305	315	F 315	F	F	U F 350	F 300	A	A	A
15	B	A	B	B	A	A	A	U F 220	F 255	F 295	F 340	F 325	310	R	335	U F 320	F	F 315	F 360	F 345	F 325	B	B	F
16	A	F	F	A	A	A	F	F	U F 250	F	F 260	F 270	F 300	295	300	305	285	320	F 295	F 315	F 310	F 325	F 300	F
17	A	A	A	A	F	F	F	F	A	F	F 320	J R 355	F 325	J R 315	R	J F 325	F 325	J F 335	F 320	B	B	A	A	A
18	A	R	R	R	A	A	B	A	A	B	B	R	340	340	R	335	R 330	F	R	B	B	B	285	B
19	B	A	A	A	A	F	F 265	F 285	R	F 285	F	325	330	345	355	F 320	F	F	F	U F 320	R 320	A	B	B
20	F 285	A	A	B	B	A	A	B	F	325	B	335	340	335	325	335	F 325	F	F	F 350	F 340	F 330	U F 310	F 305
21	F 320	A	F	U F 280	U F 280	A	F	F	F	F	F	F 325	U F 350	F 340	U F 340	U F 335	U F 315	F	F	F	F	F	F 305	U F 300
22	F	F	F	A	A	A	A	F 275	A	F 290	R 310	F 355	F 315	F 330	F 335	335	F 325	F 350	F 320	F 365	F 365	F 320	F 370	A
23	A	A	F 305	A	290	A	U F 245	F	F	F	F	F	F 355	F 345	F 330	335	R	F 315	F 340	F 340	A	A	A	A
24	A	A	A	B	C	C	A	B	A	A	A	300	F 305	F 320	F 315	F 350	F 315	U F 350	F 350	300	F 315	B	B	A
25	F 305	F	A	A	F 275	F 265	F 265	F 265	F 290	F 295	U F 305	F	F	F	F 340	F 335	J F 335	F 335	F	F	B	A	A	A
26	A	F	A	A	B	A	A	F	A	A	U F 305	F	F 320	325	325	F	F	F 300	F 325	F 325	F 335	A	A	B
27	A	B	A	B	B	A	F 250	F	F 310	F 285	340	340	330	360	F 305	F	F 295	U F 300	B	F 300	F	B	B	A
28	A	A	A	B	B	A	A	A	U F 270	F	F 300	315	335	F	F	F 340	F	R	F	A	A	A	A	B
29	A	A	A	U F 280	A	A	A	B	F 265	F 285	F 300	B	B	B	B	F	F	R	350	B	B	B	B	B
30	B	330	A	A	A	B	B	B	B	F 300	F 325	U R 335	R	345	335	330	330	B	F 315	B	B	B	B	B
31	B	B	B	B	B	B	A	B	B	B	B	B	U R 330	U R 340	B	F	R	F 350	F 320	F 335	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	5	1	2	5	7	5	10	8	10	17	20	21	21	20	19	20	18	13	19	19	13	8	6	4
MED	F 305	330	F 305	U F 280	F 280	F 265	F 265	F 265	F 280	F 295	F 318	325	330	338	330	F 335	F 325	F 330	F 335	F 335	F 335	F 318	F 305	F 312
UQ	F 320			F 285	285	F 275	U F 275	F 272	F 290	F 315	330	335	340	342	338	F 338	F 330	F 345	F 345	F 348	F 340	F 328	F 310	F 338
LQ	F 295			U F 280	F 270	F 250	F 250	F 260	F 265	F 290	F 305	315	F 315	325	320	328	F 315	F 315	F 322	F 322	F 315	315	F 300	F 302

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MAY. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1972 | H'F2 (KM) | 45 E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69 00.4' S. Long. 39 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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. 1972 | H'F2 (KM)

IONOSPHERIC DATA

MAY. 1972 | H'F (KM) | 45° E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	B	C	B	B	A	B	B	B	B	B	B	B	B	B	E B 240	B	B	B	B	A	B	A	A
2	A	B	B	B	B	B	A	B	B	B 310	265	250	B	B	B	B	B 250	B	230	250	250	A	A	A
3	A	B	A	A	A	A	420	360	300	300	250	250	240	245	225	210	225	240	230	220	250	B	B	A
4	280	A	A	A	A	A	A	A	B	270	220	230	220	215	225	200	220	250	200	B	B 245	B	B	B
5	A	430	350	370	A	A	B	A	A	250	225	210	220	210	205	200	210	B 230	220	B	B	B	A	A
6	B	A	A	A	A	A 400	345	310	280	230	240	240	B	B 250	230	215	210	200	220	240	250	A	A	A
7	A	B	B	B	A	A	A 340	300	290	240	220	225	205	210	200	205	200	190	220	210	200	250	B 255	B 240
8	A	A	A	300	400	330	325	290	250	220	220	200	210	210	205	200	200	240	230	225	200	250	295	260
9	A	B	B	320	345	350	360	350	300	250	240	B 250	B	B	230	B	225	240	230	250	A	A	B	A
10	A	B	B	360	350	B	B	A	A	B	270	B	B	B	B	B	B 250	B	B	300	B	340	A	A
11	A	B	B	B	B	A	430	350	330	300	B	230	220	215	220	250	200	200	225	255	B	A	A	B
12	A	A	B	A	A	A	A	B	B	B	B	B	250	250	230	230	230	B	B	B	B	A	A	A
13	370	305	R	A	B	B	A	350	300	250	240	200	220	220	215	195	200	240	210	225	A	A	A	A
14	A	A	A	B	A	B	B	B	A	A	B 275	260	250	225	240	220	230	200	230	230	290	A	A	A
15	B	B	B	B	A	A	A	A	380	270	225	210	230	210	240	210	230	230	225	250	245	B	B	A
16	A	A	340	A	A	A	A	A	480	A 400	350	300	280	250	250	240	250	275	270	260	280	290	330	A
17	A	A	A	A	A	410	380	350	B	290	250	205	210	230	200	210	200	240	260	B	B	A	A	A
18	A	320	R	A	A	B	B	A	B	B	B	B	250	220	B	250	230	220	230	B	B	B	290	B
19	B	A	A	A	A	A	375	340	A	300	225	210	220	210	210	200	200	205	230	225	260	A	B	B
20	A	A	A	B	B	A	B	B	A	250	B	210	210	210	225	210	230	240	225	230	225	E B 250	B	B 260
21	A 300	A	A	330	345	A	340	330	330	270	215	210	200	205	200	200	220	200	220	230	B 250	A	270	A
22	A	330	300	A	A	A	A	A	B	300	280	230	230	215	230	225	200	200	220	210	225	230	240	A
23	A	A	300	A	300	A	A 455	340	290	255	250	220	205	200	195	200	210	245	200	230	A	A	A	A
24	A	A	A	B	C	C	A	B	A	A	A	305	250	245	225	220	220	250	225	300	270	B	B	A
25	A	A	A	A	A 380	350	A 380	360	A 325	310	255	250	250	255	205	210	215	230	240	B	B	A	A	A
26	A	A	A	B	B	A	A	A	A	A	260	230	225	240	220	220	250	265	230	250	250	A	A	B
27	A	B	A	B	B	B	A	330	280	255	240	240	200	200	200	200	205	B 250	B	275	270	B	B	B
28	A	A	B	B	B	A	B	A	350	220	260	225	225	230	215	220	230	260	B 250	A	A	A	A	B
29	A	A	A	400	295	A	A	B	A	345	290	B	B	B	B	210	B	250	215	B	B	B	B	B
30	B	A 280	A	A	B	B	B	B	B	330	260	230	220	225	220	210	225	B	260	B	B	B	B	B
31	B	B	B	B	B	B	B	B	B	B	B	B	B 250	B 230	B	220	230	225	250	B 260	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	3	5	4	6	7	5	11	13	14	23	24	25	25	26	25	28	29	26	27	21	16	6	6	3
MED	300	320	320	345	345	350	375	340	300	270	250	230	220	220	220	210	220	240	230	240	250	250	280	B 260
UQ	335	330	345	370	365	400	400	350	330	300	262	250	250	240	230	220	230	250	230	255	265	290	295	260
LQ	290	305	300	320	322	350	342	330	290	250	225	210	210	210	205	200	205	205	220	225	235	250	255	B 250

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MAY. 1972 | H'F (KM)

IONOSPHERIC DATA

MAY. 1972 | H'ES (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 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	105	B	110	160	160	125	B	110	B	B	B	B	B	B	B	B	B	B	B	B	105	B	110	110
2	100	110	B	110	130	110	110	B	B	B	B	G	B	B	B	B	B	B	B	140	100	130	105	110
3	100	B	105	115	100	100	140	175	B	115	G	G	100	100	100	100	100	B	100	B	B	B	B	150
4	110	110	100	100	110	110	115	130	120	130	155	B	140	B	B	100	100	B	B	B	B	B	B	B
5	140	G	G	G	110	110	105	100	100	110	130	100	100	100	100	100	100	B	100	B	B	B	160	150
6	120	180	105	110	110	105	150	100	120	120	100	B	B	B	B	B	100	B	130	120	160	120	110	110
7	115	B	105	100	100	100	110	130	G	100	100	G	G	110	155	G	B	150	150	130	130	120	120	150
8	160	140	110	115	110	125	150	B	B	105	100	G	110	100	100	100	100	100	100	100	B	G	150	150
9	130	B	B	120	100	100	100	125	B	160	110	B	B	B	B	B	B	B	B	B	140	110	125	100
10	105	95	100	130	110	B	B	100	100	125	B	B	B	B	B	B	B	B	B	130	B	190	110	110
11	100	B	100	120	125	100	110	125	110	125	B	B	120	100	100	C	100	B	125	115	B	110	110	130
12	120	120	110	100	115	110	100	115	B	B	B	B	B	B	B	B	B	B	B	B	B	130	120	120
13	150	G	150	110	B	100	105	115	150	G	100	115	110	100	B	G	B	B	B	B	130	100	105	110
14	100	100	100	125	100	110	105	100	105	110	B	B	130	100	B	B	B	100	B	B	145	120	110	130
15	140	110	B	B	110	105	100	105	115	100	110	B	G	B	B	110	B	130	B	B	125	B	B	100
16	110	110	110	105	110	110	120	120	105	120	150	105	100	105	100	100	100	100	G	100	160	130	100	130
17	150	110	110	110	110	100	110	125	130	120	120	100	100	100	100	100	100	B	B	B	B	130	160	140
18	110	110	110	105	100	130	B	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	180	B
19	130	125	125	115	110	100	100	100	100	115	115	110	110	110	110	110	150	140	B	120	130	115	B	105
20	150	130	115	110	105	100	100	B	100	110	B	100	110	100	100	130	B	B	100	100	120	95	110	110
21	110	110	125	120	120	110	120	120	160	110	100	110	140	150	100	100	100	100	105	120	110	110	150	150
22	130	110	120	110	110	100	100	105	105	130	100	100	100	100	110	100	100	100	100	B	B	B	100	130
23	110	110	115	100	100	100	110	100	90	110	150	100	100	100	105	100	100	100	100	100	115	120	110	110
24	140	110	100	B	C	C	100	B	100	100	100	105	100	100	130	130	B	B	150	140	B	B	B	150
25	150	100	120	125	110	100	160	120	115	110	100	110	B	B	110	110	110	B	115	115	B	110	120	150
26	130	130	110	155	B	100	100	110	130	100	110	105	140	120	100	B	100	130	B	150	95	110	110	120
27	105	B	115	B	100	100	110	120	110	100	G	B	105	G	B	130	130	B	B	160	125	125	110	100
28	100	105	110	B	B	115	105	100	120	115	130	110	110	G	110	B	B	B	B	110	105	100	100	105
29	125	110	120	120	180	125	100	B	100	105	125	B	B	B	B	B	B	100	B	B	B	B	B	B
30	B	130	130	110	105	B	B	B	B	G	B	B	B	B	B	B	B	B	B	B	B	B	B	B
31	B	120	115	130	100	105	100	130	B	B	B	B	B	B	B	B	B	B	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	29	23	27	26	27	28	27	25	21	24	19	13	18	16	16	15	15	11	12	16	16	19	23	26
MED	120	110	110	112	110	105	105	115	110	110	110	105	110	100	100	100	100	100	102	120	125	120	110	120
UQ	140	122	118	120	110	110	112	125	120	120	128	110	120	108	110	110	100	130	128	135	135	128	122	150
LQ	105	110	105	110	100	100	100	100	100	105	100	100	100	100	100	100	100	100	100	105	108	110	110	110

The Radio Research Laboratories, Japan

MAY. 1972 | H'ES (KM)

IONOSPHERIC DATA

MAY. 1972 | TYPES OF ES | 45 E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69 00. 4 S. Long. 39 35. 4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	R 1		R 1													R 1		R 1	R 3
2	R 1	R 1		R 1	RF 11	R 1	R 1													R 1	F 1	N 1	R 5	R 2
3	R 2		R 2	R 2	R 3	R 2	R 1	RL 11		R 1			R 1	L 1	L 1	L 1	L 1		L 1					R 1
4	H 2	F 4	F 3	F 2	R 2	RR 21	RL 21	R 1	L 1	R 1	H 1		H 1			L 1	L 1							
5	HL 11				R 1	R 2	R 1	R 1	R 2	R 1	H 1	R 1	L 1	L 1	L 1	C 1	L 1		L 1				R 1	R 1
6	R 1	NRR 11	R 2	R 1	R 3	R 2	R 1	L 1	LL 11	L 1	L 1						L 1		L 1	L 1	R 1	R 1	R 3	R 4
7	R 3		RR 11	R 1	R 2	R 2	R 1	H 1		LL 11	L 1			L 1	R 1			R 1	R 1	R 1	R 1	R 1	R 1	R 1
8	R 1	RF 11	R 1	LR 11	R 1	R 1	R 1			L 1	L 1		L 1	L 1	R 1	R 4	L 1	R 2	L 2	L 1			R 1	R 1
9	R 1			RF 11	FR 11	FR 11	LR 11	L 1		RR 11	L 1										R 1	R 2	R 1	R 1
10	R 2	RRR 11	R 1	R 1	R 1			R 1	R 1	L 1										R 1		RR 11	R 4	R 2
11	R 2		R 1	R 1	R 1	R 2	R 3	R 1	RL 11	R 1			C 1	L 1	L 1		R 1		R 1	R 1		R 3	R 3	R 1
12	R 1	R 1	R 1	R 2	R 2	R 2	R 2	R 1														R 1	R 1	R 1
13	H 1		H 1	R 3		L 1	R 2	R 1	H 1		L 1	L 1	L 1	L 1							R 1	R 4	R 5	R 5
14	R 3	R 2	F 2	R 1	R 1	R 1	R 1	R 1	R 2	RR 11			R 1	L 1				L 1			R 1	R 1	R 5	R 2
15	R 1	R 1			R 1	R 2	R 2	R 3	R 2	LR 11	C 1					L 1		L 1			R 1			R 1
16	R 2	R 2	R 2	R 2	RS 11	R 3	R 3	RL 31	R 1	RR 21	RR 11	R 1	L 1	L 1	L 1	L 1	L 2	L 1		L 1	L 1	L 1	LR 11	RL 11
17	R 1	R 1	R 4	R 3	R 3	L 1	R 2	RL 21	R 1	R 1	R 1	L 1	R 1	LH 11	L 1	L 1	L 1					FF 11	RF 11	R 2
18	R 4	R 4	R 3	R 1	R 2	R 1		R 1															H 1	
19	F 1	F 1	R 1	R 1	R 2	R 2	R 4	L 1	R 2	H 1	L 2	R 1	LL 11	L 1	R 1	L 1	R 1	R 1		R 1	F 1	R 1		F 1
20	R 1	R 2	R 4	R 1	R 1	R 1	R 1		R 3	R 1		LH 11	C 1	R 1	L 2	L 1			L 1	L 1	R 1	FR 11	F 1	R 1
21	F 1	R 1	R 1	L 2	LR 12	RL 21	R 1	LR 11	RL 11	R 1	LR 11	L 1	H 1	R 1	L 1	L 1	L 1	L 1	L 1	F 1	F 2	F 1	R 1	R 1
22	A 1	R 1	R 1	R 1	R 1	R 2	R 1	R 3	R 1	RR 11	R 1	L 1	L 1	L 1	L 1	L 3	R 1	L 1	L 1				F 1	R 1
23	R 3	R 2	L 1	L 1	R 2	R 2	R 2	LR 21	LL 11	L 1	R 1	LR 11	LR 11	L 1	R 1	L 1	LR 11	L 1	L 1	R 1	R 3	R 4	R 3	R 2
24	RR 21	R 2	R 2				R 1		R 1	R 1	R 1	R 1	R 1	R 1	H 1	R 1			L 1	R 1				N 1
25	R 1	R 2	R 1	F 3	FF 32	L 1	LR 11	L 1	L 1	L 1	LL 11	L 1			L 1	L 1	LR 11		L 1	L 1		F 1	F 1	R 1
26	F 3	F 2	F 3	NR 11		R 1	R 2	R 2	RR 11	R 1	R 1	R 1	H 1	H 1	HL 11			R 1		R 1	LR 11	R 4	R 7	R 1
27	R 2		F 1		F 1	R 1	R 2	R 2	L 1	L 1			L 1			L 1	R 1			RL 11	RR 11	R 1	R 1	R 1
28	R 2	R 1	R 1			RF 31	R 1	R 2	L 1	R 1	L 1	L 1	C 1		L 1					R 2	R 3	R 3	R 6	R 1
29	R 2	R 1	R 2	L 1	LLR 11	R 1	R 1		RR 11	R 1	R 1							L 1						
30		F 1	R 1	F 2	R 1																			
31		R 1	R 1	R 1	FF 11	R 1	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. 1972 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1972 | FOF2 (0.1 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 05 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	A	A	A	A	F 35	U F 30	F 28	F 39	42	B	U R 65	F 60	60	B	B	B	B	B	B	B	U A 17
2	A	A	F 32	A	A	F	F	F	F 30	F 31	F	F 43	J F 61	F 67	B	J F 49	F	F 26	R	U F 19	F 19	13	12	B
3	B	F 14	A	B	B	B	B	J F 30	B	F 30	F 36	F	49	B	B	B	B	B	B	B	B	R	A	A
4	U A 31	U A 25	A	R	A	F 25	A	A	B	F	U F 40	B	B	60	62	61	F 49	F	F	F 22	F 15	A	B	A
5	B	B	A	B	B	A	B	B	A	B	B	B	B	B	B	B	B	F	B	B	B	A	A	C
6	A	A	A	C	C	F	F 29	J F 25	U F 27	F 31	F 43	R	71	63	55	F	J F 39	F 32	F 36	F 30	B	17	15	U F 15
7	A	B	B	A	U F 27	F 29	A	A	F 33	F 32	F 40	46	F	F 67	F	F	B	B	R	F 24	A	A	A	A
8	B	A	A	A	A	A	A	A	B	F 29	F	F 48	F 70	R 70	R 53	43	F 41	J R 45	R	B	B	B	B	A
9	A	A	B	B	B	A	A	J F 40	F 40	R	R	F 51	70	65	60	68	J R 32	30	B	B	17	15	B	B
10	A	F 17	R	A	A	A	A	F 21	U A 17	21	B	R	F	U F 71	F	F	F	A	F 20	F 18	F 16	B	B	A
11	F 16	A	F 21	U F 18	A	F	U A 29	F	C	C	F 31	F	R	R	J R 55	F	F 33	F 30	C	17	B	B	B	C
12	F 17	R	A	A	28	A	F	F	F	F	F	U F 52	F 62	63	60	F	F 29	U F 25	F 23	F 19	13	B	13	A
13	U A 13	F 15	18	F 18	A	A	F	F	F	F	F	F	F	F	F 57	F 46	U F 30	U F 25	F 19	18	A	F	A	A
14	A	A	B	B	A	U A 35	F 30	30	F 31	F 31	F 39	F 51	F 62	F 66	65	71	J R 39	F 32	F 27	F 18	F 17	F 17	F	A
15	A	A	A	A	A	A	A	B	A	B	B	41	F 58	F 59	F 51	52	F 39	F 40	F 22	F 20	F 21	A	B	A
16	A	A	A	A	U F 30	U F 30	F	F	A	F 32	F 41	F	F 54	J F 68	F	U R 53	33	F 39	F	F 30	B	R	A	A
17	A	B	B	B	B	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	R	B	A	B	B	B	B	B	A	B	R	F	C	R	A	A	R	B
19	A	A	A	B	B	B	B	B	B	B	B	B	B	F 31	37	B	B	B	B	B	B	B	A	A
20	A	A	A	A	A	B	B	A	A	20	B	F 41	55	R	R	R	F	A	A	B	B	B	B	A
21	A	A	A	F	F	U F 22	F 22	I A 28	F 30	U F 31	F	F	F	F	U F 52	F	F 29	B	B	B	B	R	R	A
22	A	A	B	B	A	A	A	A	F	U F 28	F 32	F 40	B	B	F	R	B	B	B	B	B	B	A	A
23	A	A	A	A	A	A	A	A	B	B	A	B	B	B	U F 55	B	B	F	B	B	R	A	C	A
24	A	B	A	B	B	A	A	F 20	F 20	F 21	B	44	F 55	F 61	F	R	R 41	50	R	A	A	A	A	B
25	A	A	B	A	A	F 29	F 30	F 30	F 28	F 29	F 32	39	U R 57	F	F 64	42	F 34	U F 32	F 30	U F 19	F 14	R	B	B
26	J A 25	A	A	U A 25	F 28	F 26	F 29	F 30	I R 32	F 35	F 42	U F 45	F	F 58	J F 62	F 50	F 40	R	F 27	F 24	B	B	F 17	A
27	A	A	A	A	A	A	F 28	F 28	A	B	B	B	B	B	F	F 42	B	B	B	B	B	A	A	A
28	B	A	B	B	A	B	B	A	A	B	B	B	B	B	B	B	R 43	U R 44	B	B	B	A	A	A
29	A	A	A	A	B	A	B	A	B	B	32	F 44	52	62	B	B	F 51	F 45	F 45	30	B	A	A	A
30	B	A	B	B	A	A	F 25	J F 23	B	B	B	B	R 59	U R 53	F	B	F 33	F 29	F 23	B	15	A	B	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	5	4	3	3	4	7	8	12	11	15	12	14	14	17	15	12	17	15	10	14	9	4	4	2
MED	A 17	F 16	F 21	U F 18	F 28	F 29	F 29	F 29	F 30	F 30	F 39	F 44	58	F 63	57	51	F 39	F 32	F 25	F 20	F 16	16	14	U 16
UQ	A 25	21	F 26	U 22	29	F 30	F 30	F 30	F 32	F 31	F 40	F 48	F 62	F 67	61	60	F 41	F 42	F 30	F 24	F 17	17	16	
LQ	F 16	F 14	20	F 18	F 28	F 26	F 26	F 24	F 28	F 28	F 32	F 41	55	60	54	F 44	F 33	F 30	F 22	F 18	F 15	14	12	

JUN. 1972 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1972 | FOF1 (0.01 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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																								
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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. 1972 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1972 | FOE (0.01 MHZ) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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								220	U A 150	B	R 120	A	B	B	B	B	B	B						
2								A	A	150	110	F 130	A	A	B	A	A	A	B					
3							B	A	B	B	B	A	B	B	B	B	B	B	B					
4	220	A					A	B	B	A	B	B	B	B	B	B	B	B	B	A				
5							B	B	B	B	B	B	B	B	B	B	B	B	B					
6							A	A	A 125	A	A	A	U A 140	A 120	A	A	A	A	A	A				
7										A 155	A	B	B	B	B	B	B	B	B					
8							B	B	B	B	B	A	A	B	B	B	B	B	B					
9							B	A	A 170	B	B	H 170	A	R 140	A	B	B	B	B					
10							C	110	B	B	B	B	B	B	A	B	A	B	B					
11							A	A	C	C	A	A	B	B	B	B	B	B	C					
12							A	A	A	A	A	A	120	120	A	A	A	A	B					
13							A	A	A	A	A	110	A 120	A	A	A	A	A	A					
14							A	A	A	A	A	225	155	160	A	A	A	A	B	A	B	B		
15							B	B	B	B	B	B	B	B	H 160	B	B	A	B	100	R 110			
16							A	A	A	A	U A 150	A	B	B	A	B	B	B	B	A				
17							B	B	B	B	B	B	B	B	B	B	B	B	B					
18							B	B	B	B	B	B	B	B	B	B	B	B	C					
19							B	B	B	B	B	B	B	B	B	B	B	B	B					
20							B	B	A	A	B	B	B	B	B	B	B	B	B					
21						A	A	B	A	A	A	A	A	A	A	B	B	B	B					
22							B	A	B	A	C	A	B	B	B	B	B	B	B					
23							B	B	B	B	B	B	B	B	B	B	B	B	B					
24							B	A	A	A	B	B	A	A	B	B	B	B	B					
25						A 190	120	110	100	H 110	B	B	B	B	A	B	B	B	B		B			
26	A				180	A	A 140	A	A	A	A 160	125	160	140	115	B	B	B	B	B				
27							U A 150	A	A	B	B	B	B	B	B	B	B	B	B					
28							B	B	A	B	B	B	B	B	B	B	B	B	B					
29							B	B	B	B	A	165	170	B	B	B	B	B	A					
30							A	U A 140	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	1	3	4	4	3	4	6	6	5	2					1	1			
MED	220				180	A 190	A 140	125	A 138	150	135	148	148	140	138					100	R 110			
UQ							A 145	180	A 160	152	A 155	170	160	140										
LQ							130	110	112	130	115	125	A 120	120										

The Radio Research Laboratories, Japan

JUN. 1972 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1972 | FOES (0.1 MHZ) | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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	39	B	46	JX 37	46	36	31	26	16	G	17	B	EB 48	EB 17	EB 25	B	B	B	B	B	B	B	18
2	29	32	JX 26	JX 39	41	29	18	32	42	JX 21	JX 15	14	19	JX 30	B	13	JX 23	JX 25	EB 14	EB 11	EB 10	EB 10	EB 10	B
3	B	JX 16	JX 39	42	33	B	B	23	B	31	JX 33	30	25	B	B	B	B	B	B	B	B	14	20	17
4	JX 34	30	30	20	38	30	JX 63	34	B	17	EB 12	B	B	EB 21	EB 18	EB 42	EB 17	30	17	20	12	37	B	40
5	B	45	JX 32	40	B	JX 63	33	53	JX 56	B	B	B	B	B	B	B	B	EB 21	B	B	B	JX 16	27	JX 25
6	JX 43	40	JX 61	C	C	JX 28	23	15	17	15	16	24	JX 28	JX 23	JX 22	JX 25	22	31	31	14	B	EB 13	23	15
7	27	b	B	30	20	JX 21	39	42	24	18	22	EB 18	EB 20	EB 28	EB 23	EB 24	B	B	EB 15	EB 12	JX 22	JX 23	27	38
8	JX 36	41	41	32	25	JX 61	42	66	B	EB 20	23	31	23	EB 56	EB 31	EB 37	EB 16	EB 32	EB 22	B	B	B	B	30
9	43	48	B	B	B	JX 58	49	JX 33	23	33	EB 21	G	17	G	15	EB 27	EB 22	EB 21	B	B	16	JX 24	B	JX 23
10	18	23	16	19	20	JX 26	19	G	22	22	B	EB 45	EB 21	JX 23	JX 23	17	JX 26	29	17	16	EB 10	B	B	18
11	JX 23	30	18	JX 16	27	37	JX 32	JX 33	C	C	JX 28	JX 23	EB 42	EB 45	EB 26	EB 20	EB 14	EB 11	C	JX 22	B	B	b	JX 24
12	18	14	22	31	JX 24	JX 44	32	32	JX 23	JX 38	32	18	JX 16	17	20	JX 53	20	13	31	EB 10	JX 22	B	JX 23	19
13	JX 23	JX 28	31	19	42	JX 52	JX 45	22	18	12	16	22	JX 23	JX 23	27	12	JX 23	JX 23	18	JX 28	31	JX 23	JX 26	35
14	JX 42	JX 33	JX 83	JX 45	JX 38	JX 37	JX 34	X 34	20	27	JX 27	G	JX 27	17	JX 22	JX 22	32	JX 23	11	JX 22	EB 10	JX 22	JX 37	36
15	JX 53	JX 41	34	31	43	50	40	B	36	B	B	EB 26	28	EB 20	G	EB 16	JX 22	12	EB 11	JX 25	22	JX 25	JX 35	JX 27
16	JX 33	28	37	31	JX 27	35	JX 43	JX 41	46	52	JX 38	JX 31	EB 20	EB 27	JX 26	JX 25	JX 44	JX 21	EB 13	18	B	16	JX 20	30
17	JX 39	b	36	B	38	52	38	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	b	B
18	66	JX 65	B	B	B	36	33	B	JX 118	B	B	B	B	B	JX 73	B	30	20	C	JX 22	JX 87	64	17	JX 108
19	30	32	JX 65	B	B	B	B	B	B	B	B	B	B	EB 25	EB 31	B	B	B	B	B	B	29	JX 73	28
20	29	29	35	30	JX 39	B	B	41	33	37	B	EB 29	EB 25	23	20	EB 15	JX 22	JX 57	65	35	24	b	b	25
21	32	JX 35	JX 33	30	JX 15	JX 25	18	JX 38	32	JX 25	20	JX 22	JX 67	JX 65	51	20	21	B	B	B	27	17	15	29
22	44	40	40	JX 43	JX 43	JX 48	45	JX 38	36	29	EC 15	18	B	B	EB 38	EB 46	B	B	B	B	B	b	JX 24	59
23	JX 81	JX 83	34	32	36	JX 42	39	40	B	B	34	B	B	B	EB 35	B	B	EB 37	B	B	18	38	50	33
24	31	B	JX 80	JX 88	43	52	43	JX 33	24	JX 34	B	28	25	24	EB 21	EB 45	EB 23	EB 34	EB 25	35	29	34	34	48
25	38	JX 73	50	41	38	JX 25	JX 23	JX 24	G	G	EB 16	EB 35	32	30	JX 23	25	EB 10	JX 16	JX 39	15	EB 10	12	B	B
26	JX 32	34	32	30	21	20	JX 22	JX 41	JX 26	33	22	17	20	17	23	20	EB 17	EB 26	EB 14	JX 16	B	B	19	JX 25
27	JX 25	JX 52	JX 43	35	30	37	20	30	36	B	B	B	B	B	24	JX 40	B	B	B	B	B	JX 26	34	JX 68
28	JX 40	JX 43	43	40	40	B	b	40	JX 31	B	B	B	B	B	b	B	EB 31	EB 27	B	B	B	23	JX 21	37
29	33	35	32	35	38	JX 52	B	JX 55	B	B	JX 29	G	23	EB 30	B	B	EB 21	EB 14	18	EB 20	B	21	33	35
30	35	JX 50	32	33	40	JX 32	21	JX 22	B	B	B	B	EB 43	EB 39	EB 22	B	EB 19	EB 14	JX 18	B	JX 15	14	B	18
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	25	25	26	25	27	21	19	19	21	20	22	24	21	21	22	17	17	16	21	20	27
MED	33	35	34	32	38	JX 37	34	33	26	25	22	U 20	23	U 20	U 20	U 18	21	U 18	18	20	20	23	25	29
UQ	JX 41	JX 44	43	40	40	JX 52	42	40	36	33	28	U 26	27	EB 30	U 26	EB 37	JX 23	U 26	25	JX 22	26	26	34	36
LQ	29	30	32	30	27	JX 29	23	30	23	17	16	17	19	21	U 18	U 16	EB 19	U 14	EB 14	14	11	16	20	24

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JUN. 1972 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1972 | F-MIN (0.1 MHZ) | 45°E Mean Time (G. M. T.+ 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	15	B	21	15	19	17	12	13	13	10	11	B	48	17	25	B	B	B	B	B	B	B	11
2	10	10	10	12	20	10	10	10	15	11	10	10	10	10	B	10	9	10	14	11	10	10	10	B
3	B	9	10	26	21	B	B	14	B	20	18	14	20	B	B	B	B	B	B	B	B	10	11	11
4	13	13	13	15	13	19	11	20	B	13	12	B	B	21	18	42	17	12	11	9	10	10	B	10
5	B	25	14	18	B	22	27	35	28	B	B	B	B	B	B	B	B	21	B	B	B	10	10	E C 24
6	10	10	11	C	C	13	10	10	10	10	9	10	10	10	10	11	10	10	12	10	B	13	10	9
7	9	B	B	19	12	13	22	14	10	11	12	18	20	28	23	24	B	B	15	12	9	10	10	13
8	29	14	12	12	11	11	20	17	B	20	16	15	14	56	31	37	16	32	22	B	B	B	B	10
9	13	12	B	B	B	25	15	12	13	28	21	13	13	13	13	27	22	21	B	B	14	12	B	20
10	14	10	12	14	11	10	E C 15	10	14	18	B	45	21	20	13	15	12	15	15	10	10	B	B	11
11	9	10	9	9	10	9	9	10	C	C	13	12	42	45	26	20	14	11	C	13	B	B	B	E C 20
12	10	12	9	10	10	11	10	9	9	8	8	9	9	9	10	9	9	10	10	10	10	B	10	10
13	12	11	12	12	10	11	10	10	10	8	9	9	9	9	9	9	9	9	9	9	9	10	9	10
14	E C 17	12	20	21	10	10	10	10	10	9	10	10	10	10	10	10	9	9	10	9	10	10	10	10
15	10	10	E C 16	13	14	13	12	B	13	B	B	26	21	20	13	16	15	10	11	9	10	14	20	12
16	9	10	11	11	9	10	9	10	13	12	11	10	20	27	15	19	19	15	13	10	B	12	12	15
17	18	B	22	B	24	22	18	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	43	27	B	B	B	26	23	B	25	B	B	B	B	B	30	B	18	15	C	12	15	12	13	20
19	12	12	15	B	B	B	B	B	B	B	B	B	B	25	31	B	B	B	B	B	B	20	11	11
20	11	12	11	14	12	B	B	14	12	10	B	29	25	20	15	15	15	15	20	25	20	B	B	14
21	11	10	11	10	11	10	11	21	12	10	13	10	10	12	12	17	13	B	B	B	23	10	12	10
22	12	13	20	20	12	19	12	11	14	10	E C 15	10	B	B	38	46	B	B	B	B	B	B	14	10
23	10	11	18	16	20	20	12	16	B	B	20	B	B	B	35	B	B	37	B	B	14	10	E C 21	10
24	10	B	14	50	21	15	15	12	10	10	B	20	15	13	21	45	23	34	25	11	10	11	10	21
25	12	12	20	14	10	10	10	10	9	9	16	35	36	21	12	20	10	12	11	10	10	10	B	B
26	9	9	10	9	10	9	9	9	13	12	12	10	12	10	9	15	17	26	14	10	B	B	9	9
27	9	9	10	10	10	10	10	10	11	B	B	B	B	B	18	22	B	B	B	B	B	9	10	16
28	27	15	20	19	17	B	B	21	12	B	B	B	B	B	B	B	31	27	B	B	B	11	12	11
29	10	12	16	17	27	20	B	20	B	B	15	13	11	30	B	B	21	14	10	20	B	14	10	10
30	20	13	20	22	14	10	12	11	B	B	B	B	43	39	22	B	19	14	13	B	10	10	B	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	29	29	30	30	30	29	29	30	30	30	30	30	30	30	30	28	30	30	30	30	30
MED	12	12	14	16	13	13	12	12	13	13	16	16	21	26	20	24	18	18	18	16	22	12	12	11
UQ	18	14	20	21	21	22	22	20	B	B	B	B	B	B	35	B	B	B	B	B	B	B	B	U 18
LQ	10	10	11	12	10	10	10	10	11	10	12	10	12	13	13	15	13	12	12	10	10	10	10	10

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JUN. 1972 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1972 | M(3000)F2 (0.01) | 45° E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	B	A	A	A	A	F 285	U F 300	F 285	F 305	315	B	U R 340	F 340	365	B	B	B	B	B	B	B	U A 305
2	A	A	F 315	A	A	F	F	F	F 300	F 325	F	F 325	J F 330	F 345	B	J F 345	F	F 335	R	U F 290	F 315	310	315	B
3	B	F 300	A	B	B	B	B	J F 275	B	F 265	F 305	F	335	B	B	B	B	B	B	B	B	R	A	A
4	U A 330	U A 320	A	R	A	F 250	A	A	B	A	U F 275	B	B	325	325	330	F 305	F	F	F 320	F 280	A	B	A
5	B	B	A	B	B	A	B	B	A	B	B	B	B	B	B	B	B	F	B	B	B	A	A	C
6	A	A	A	C	C	F	F 260	J F 280	U F 280	F 290	F 325	R	350	350	330	F	J F 360	F 320	F 335	F 360	B	355	285	U F 285
7	A	B	B	A	U F 250	F 255	A	A	F 290	F 315	F 295	310	F	F 330	F	F	B	B	R	F 290	A	A	A	A
8	B	A	A	A	A	A	A	A	B	F 265	F	F 300	F 330	R 330	R 310	300	F 295	J R 310	R	B	B	B	B	A
9	A	A	B	B	B	A	A	J F 270	F 285	R	R	F 310	330	345	335	340	J R 320	300	B	B	330	320	B	B
10	A	F 295	R	A	A	A	A	F 285	U A 265	270	B	R	F	U F 350	F	F	F	A	F 300	F 315	F 325	B	B	A
11	F 295	A	F 320	U F 280	A	F	U A 260	F	C	C	F 300	F	R	R	J R 345	F	F 335	F 350	C	295	B	B	B	C
12	F 295	R	A	A	275	A	F	F	F	F	F	U F 325	F 325	345	350	F	F 295	F	F 350	F 315	310	B	310	A
13	U A 310	F 305	310	F 280	A	A	F	F	F	F	F	F	F	F	F 335	F 325	U F 300	U F 320	F 340	335	A	F	A	A
14	A	A	B	B	A	U A 250	F 255	265	F 290	F 255	F 280	F 280	F 325	F 320	320	360	J R 320	F 345	F 360	F 335	F 325	F 275	F	A
15	A	A	A	A	A	A	A	B	A	B	B	300	F 310	F 340	F 315	325	F 310	F 350	F 310	F 300	F 335	A	B	A
16	A	A	A	A	U F 265	U F 260	F	F	A	F 280	F 290	F	F 315	J F 325	F	U R 320	305	F 310	F	F 335	B	R	A	A
17	A	B	B	B	B	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	R	B	A	B	B	B	B	B	A	B	R	F	C	R	A	A	R	B
19	A	A	A	B	B	B	B	B	B	B	B	B	B	F 315	295	B	B	B	B	B	B	B	A	A
20	A	A	A	A	A	B	B	A	A	265	B	F 315	340	R	R	R	F	A	A	B	B	B	B	A
21	A	A	A	F	F	U F 255	F 275	I A 265	F 265	U F 315	F	F	F	F	U F 315	F	F 310	B	B	B	B	R	R	A
22	A	A	B	B	A	A	A	A	F	U F 280	F 330	F 300	B	B	F	R	B	B	B	B	B	B	A	A
23	A	A	A	A	A	A	A	A	B	B	A	B	B	B	U F 290	B	B	F	B	B	R	A	C	A
24	A	B	A	B	B	A	A	F 255	F 260	F 255	B	320	F 335	F 330	F	R	R 295	310	R	A	A	A	A	B
25	A	A	B	A	A	F 255	F 265	F 295	F 285	F 310	F 330	315	U R 315	F	F 350	320	F 305	U F 345	F 335	U F 315	F 300	R	B	B
26	J A 300	A	A	U A 280	F 255	F 270	F 270	F 245	I R 260	F 275	F 310	U F 315	F	F 310	J F 325	F 320	F 315	R	F 295	F 290	B	B	F 300	A
27	A	A	A	A	A	A	F 270	F 280	A	B	B	B	B	B	F	F 335	B	B	B	B	B	A	A	A
28	B	A	B	B	A	B	B	A	A	B	B	B	B	B	B	B	R 335	U R 325	B	B	B	A	A	A
29	A	A	A	A	B	A	B	A	B	B	300	F 330	340	355	B	B	F 325	F 320	F 315	355	B	A	A	A
30	B	A	B	B	A	A	F 250	J F 285	B	B	B	B	R 320	U R 320	F	B	F 320	F 310	F 350	B	335	A	B	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	5	4	3	3	4	7	8	12	11	15	12	14	14	17	15	12	17	14	10	14	9	4	4	2
MED	A 300	F 302	F 315	U F 280	F 260	F 255	F 262	F 278	F 285	F 280	F 302	F 315	330	F 330	325	328	F 310	F 320	F 335	F 315	F 325	315	305	U 295
UQ	U A 310	312	F 318	F 280	270	F 258	F 270	F 285	F 290	F 300	F 318	F 320	335	345	338	342	F 320	F 345	F 350	F 335	F 330	338	312	
LQ	F 295	F 298	312	280	F 252	F 252	F 258	F 265	F 265	F 265	F 292	F 300	F 320	F 325	315	320	F 305	F 310	F 310	F 295	F 310	292	292	

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JUN. 1972 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1972 | H'F2 (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 MHz to 15 MHz in 30 sec in automatio 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																								
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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. 1972 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1972 | H'F (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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	A	A	A	330	280	240	230	230	B	E B 245	205	225	B	B	B	B	B	B	B	A
2	A	A	310	A	B	A	390	390	A	255	230	215	215	210	B	190	200	240	275	B 280	250	B	B	B
3	B	E A 345	A	B	B	B	B	350	B	A 375	A 310	230	230	B	B	B	B	B	B	B	B	A	A	A
4	290	E A 320	A	A	A	A	A	A	B	280	270	B	B	230	230	B 250	230	230	250	280	B 300	A	B	A
5	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	250	B	B	B	A	A	C
6	A	A	A	C	C	A	400	310	290	280	230	A	200	200	200	200	200	255	300	290	B	B 260	A	A
7	A	B	B	B	480	A	B	A	315	270	250	240	240	240	235	240	B	B	250	270	A	A	A	A
8	B	B	A	A	A	A	B	A	B	E B 400	255	250	230	I B 220	B 225	B	240	E B 275	245	B	B	B	B	A
9	A	A	B	B	B	B	A	380	330	B	300	240	215	210	225	230	B	B 270	B	B	E B 265	E B 280	B	B
10	B	A	A	B	A	A	C	330	B	B	B	B	225	220	200	205	230	A	A	275	260	B	B	A
11	A 340	280	290	A 350	A	A	A 390	325	C	C	300	245	B 240	B 250	225	230	210	230	C	B 275	B	B	B	C
12	310	A	A	A	380	A	295	260	250	A	260	210	220	210	215	200	250	260	230	250	B	B	E B 290	B
13	B	E B 330	A	A	A	A	A	330	270	240	220	225	210	200	200	200	240	220	220	A 290	A	A	A	A
14	C	A	B	B	A	A	A 390	A 395	300	A	310	275	230	220	200	220	225	225	210	230	240	275	A	A
15	A	A	C	A	A	A	A	B	A	B	B	B 300	270	225	235	230	240	205	H 230	275	280	B	B	A
16	A	A	A	A	400	410	380	A	A	350	295	230	250	230	230	230	A 300	250	210	245	B	A	A	B
17	B	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	R	B	A	B	B	B	B	B	B	B	A	A	C	A	A	A	A	B
19	A	A	A	B	B	B	B	B	B	B	B	B	B	E B 300	B	B	B	B	B	B	B	B	A	A
20	A	A	A	B	A	B	B	A	A	325	B	B 250	230	260	200	195	280	225	B	B	B	B	B	B
21	A	A	A	A	A	380	370	B	350	270	250	225	220	220	225	220	250	B	B	B	B	A	A	A
22	A	A	B	B	A	B	A	A	A	330	250	250	B	B	B 260	B 250	B	B	B	B	B	B	B	A
23	A	A	B	B	B	B	A	A	B	B	A	B	B	B	B 260	B	B	B 275	B	B	A	A	C	A
24	A	B	A	B	B	A	A	A	A 425	A 370	B	250	230	240	210	E B 240	B 300	B 290	290	A	A	A	A	B
25	A	A	B	B	A	430	360	300	275	250	270	E B 300	265	230	230	250	190	210	240	255	280	A	B	B
26	A	A	A	A	370	370	370	A 425	A	365	270	240	B 270	B	225	B	270	280	240	B	B	A	B	A
27	A	A	A	A	A	A	390	A 355	A	B	B	B	220	225	200	210	280	250	280	300	B	B	290	A
28	B	B	B	B	B	B	B	B	A	B	B	B	B	B	225	230	B	B	B	B	B	A	A	B
29	A	A	B	B	B	B	B	A	B	B	320	250	B	B	B	B	B 300	250	B	B	B	A	A	A
30	B	A	B	B	A	A	E B 410	350	B	B	B	B	205	220	B	B	225	230	245	250	B	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	4	2	1	4	4	11	14	10	15	18	19	20	21	22	20	19	20	15	14	7	3	2	
MED	310	E E 325	300	A 350	390	395	385	340	295	280	265	240	230	222	225	225	240	248	245	275	265	B 268	290	
UQ	325	E E 338			440	420	390	380	330	349	300	250	240	235	230	232	275	262	262	280	280	276		
LQ	300	290			375	375	370	325	275	262	250	230	218	220	200	202	225	228	230	250	250	268		

JUN. 1972 | H'F (KM)

IONOSPHERIC DATA

JUN. 1972 | H'ES (KM) | 45 E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.5 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	110	B	105	100	105	100	110	115	125	G	105	B	B	B	B	B	B	B	B	B	B	B	130
2	110	110	110	110	110	150	120	105	100	100	145	110	105	100	B	145	100	140	B	B	B	B	B	B
3	B	115	105	110	105	B	B	110	B	110	105	110	120	B	B	B	B	B	B	B	B	130	170	155
4	140	130	110	130	115	120	100	120	B	130	B	B	B	B	B	B	B	80	130	150	150	120	B	105
5	B	110	105	110	B	100	100	100	100	B	B	B	B	B	B	B	B	B	B	B	B	100	110	110
6	100	110	105	C	C	110	100	110	100	150	110	110	100	100	110	130	115	130	110	125	B	B	160	150
7	105	B	B	110	125	105	110	100	105	120	140	B	B	B	B	B	B	B	B	B	160	105	150	110
8	130	100	105	110	110	100	100	100	B	B	110	110	115	B	B	B	B	B	B	B	B	B	B	120
9	110	105	B	B	B	100	100	110	120	100	B	G	105	G	150	B	B	B	B	B	110	100	B	130
10	120	110	110	130	130	100	100	G	100	140	B	B	B	100	110	110	100	100	105	100	B	B	B	170
11	150	170	130	120	110	110	110	140	C	C	150	125	B	B	B	B	B	B	C	120	B	B	B	100
12	120	150	125	110	110	170	150	150	100	115	110	130	100	125	110	100	100	100	110	B	110	B	100	110
13	130	125	120	120	100	100	100	125	130	100	140	125	110	110	110	110	110	100	100	95	95	100	120	110
14	100	120	110	105	100	110	150	110	110	100	100	G	100	100	100	100	130	100	120	115	B	100	140	105
15	100	100	100	120	100	100	100	B	100	B	B	B	110	B	G	B	100	120	B	100	130	110	150	120
16	120	120	110	115	110	120	130	100	100	100	110	110	B	B	105	110	120	110	B	160	B	160	145	125
17	130	B	120	B	100	105	110	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	130	115	B	B	B	105	120	B	175	B	B	B	B	B	125	B	125	110	C	120	110	120	120	105
19	110	105	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	110	110
20	210	110	110	120	130	B	B	100	110	100	B	B	B	130	130	B	130	130	120	120	120	B	B	140
21	95	110	115	110	110	100	120	110	110	120	160	110	110	120	150	140	130	B	B	B	110	130	145	105
22	110	110	110	120	110	130	100	100	110	110	C	100	B	B	B	B	B	B	B	B	B	B	100	110
23	120	140	120	130	125	115	110	110	B	B	110	B	B	B	B	B	B	B	B	B	150	110	110	105
24	110	B	100	110	110	100	110	100	115	105	B	110	125	120	B	B	B	B	B	110	110	120	110	120
25	110	110	100	110	110	105	100	100	G	G	B	B	105	110	110	120	B	130	140	130	B	170	B	B
26	125	115	110	110	110	130	100	115	80	120	150	130	150	110	125	130	B	B	B	130	B	B	140	120
27	100	100	110	110	110	110	110	110	100	B	B	B	B	B	125	125	B	B	B	B	B	110	110	115
28	100	110	110	105	110	B	B	100	100	B	B	B	B	B	B	B	B	B	B	B	B	120	110	110
29	110	110	115	115	125	100	B	100	B	B	110	G	130	B	B	B	B	B	130	B	B	150	110	110
30	120	110	110	110	105	110	125	105	B	B	B	B	B	B	B	B	B	B	130	B	115	105	B	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	27	27	26	25	25	26	25	26	20	17	14	13	14	11	13	11	11	12	10	13	12	19	19	27
MED	110	110	110	110	110	105	110	110	102	110	110	110	110	110	110	120	115	110	120	120	112	120	120	110
UQ	128	118	115	120	110	115	120	110	112	120	145	125	120	120	125	130	128	130	130	130	140	130	145	122
LQ	108	110	105	110	105	100	100	100	100	100	110	110	105	100	110	110	100	100	110	110	110	105	110	110

JUN. 1972 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1972 | TYPES OF ES | 45°E Mean Time (G. M. T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.5 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 2		R 1	R 1	R 1	R 1	R 1	R 1	H 1		L 1												R
2	R 2	R 2	R 2	R 2	R 1	RR 12	R 1	R 3	R 1	L 1	H 1	L 1	L 1	L 2		R 1	L 1	LL 11						
3		F 1	F 3	R 1	R 1			R 1		R 1	R 1	L 1	L 1									R 1	FF 11	RFF 11
4	H 1	L 1	R 2	RF 11	R 1	R 1	R 2	R 1		L 1								L 1	R 1	R 1	R 1	R 1		R 3
5		R 1	R 1	R 2		R 1	L 1	L 1	R 1													FR 11	R 2	R 1
6	R 5	R 3	F 2			R 2	R 1	R 1	L 1	RL 11	L 2	L 2	LH 11	LH 11	L 1	R 1	R 1	RL 11	R 2	L 1			R 1	R 1
7	R 3			R 1	R 1	R 1	R 1	L 2	R 1	H 1	R 1										RR 11	FN 11	RR 11	R 3
8	R 1	R 2	R 2	R 2	R 1	F 2	R 1	R 1			R 1	R 1	R 1											RR 11
9	R 2	R 2				R 1	R 1	R 1	R 1	L 1			L 1		L 1						F 1	F 1		F 1
10	F 1	F 1	F 1	R 1	FF 11	F 2	L 1		L 1	L 1				L 1	L 3	L 1	L 1	L 1	L 1	F 1				R 1
11	R 1	FF 11	R 1	R 2	R 2	R 1	R 3	LL 11			LL 11	L 1								F 1				F 1
12	FR 11	F 1	R 1	R 2	R 1	FF 11	LL 11	LL 11	LR 11	L 2	L 2	RL 12	LH 11	H 1	L 1	L 2	L 1	L 1	L 1		F 1		F 1	F 1
13	R 1	F 1	F 1	FF 11	R 3	R 2	R 3	RL 11	RL 11	LL 11	R 1	LH 1	L 1	L 1	L 1	R 1	LR 11	L 1	L 1	F 2	F 1	F 1	R 1	F 3
14	F 3	R 2	R 1	R 1	R 2	R 4	LL 13	L 4	R 1	R 2	R 1		LH 11	L 2	L 1	L 2	LL 11	L 1	L 1	R 1		F 1	N 1	R 2
15	RR 21	R 1	R 1	R 2	R 1	R 1	R 1		R 1				L 1				L 1	L 1		L 1	H 1	F 1	F 1	R 2
16	R 3	R 3	R 2	R 3	R 2	RF 12	NL 11	R 2	R 1	RL 11	CR 11	L 1			L 1	L 1	L 1	L 1		H 1		F 1	R 1	R 1
17	R 1		R 1		F 1	R 1	R 1	R 1																
18	N 1	R 1				R 1	L 1		LL 11						N 1		R 1	L 1		F 1	F 1	F 2	R 1	F 1
19	R 1	R 1	N 1																			F 1	F 2	R 2
20	R 2	R 2	R 2	R 1	R 1			R 1	R 1	RR 11				R 1	H 1		L 1	L 1	L 1	F 1	F 1			R 1
21	FR 11	R 2	R 2	R 1	R 1	FR 11	R 1	R 1	R 1	R 1	LL 11	N 1	H 1	C 1	LL 11	L 1	L 1				R 1	RR 11	F 1	R 1
22	R 2	R 1	R 1	R 1	R 1	R 1	R 1	RR 11	R 1	L 1		L 1											FFR 11	R 3
23	F 1	FR 11	R 1	R 1	F 1	R 1	R 2	R 1			R 1										R 1	R 3	R 2	R 3
24	R 4		F 2	F 1	R 1	R 2	R 2	LR 11	R 1	L 1		R 1	R 1	R 1						R 2	R 2	R 1	R 3	R 1
25	R 2	R 2	R 1	R 2	R 3	R 1	L 1	L 1					R 1	R 1	L 1	R 1		L 1	L 1	F 1		N 1		
26	L 3	R 6	R 5	R 3	R 1	RL 21	L 2	LL 21	L 1	RL 11	R 1	C 1	H 1	C 1	CL 11	LL 11				R 1			R 1	F 1
27	R 4	R 4	R 3	R 3	R 2	R 4	L 1	R 2	R 2						L 1	L 1						R 3	R 4	R 1
28	R 1	R 2	R 1	R 1	R 1			RR 11	R 2													R 1	R 2	R 2
29	R 3	R 3	R 1	R 2	R 1	R 1		L 1			R 1		H 1						C 1			R 1	R 4	R 6
30	RF 11	F 1	R 1	R 1	R 2	R 2	R 1	L 1											L 1		F 1	F 1		F 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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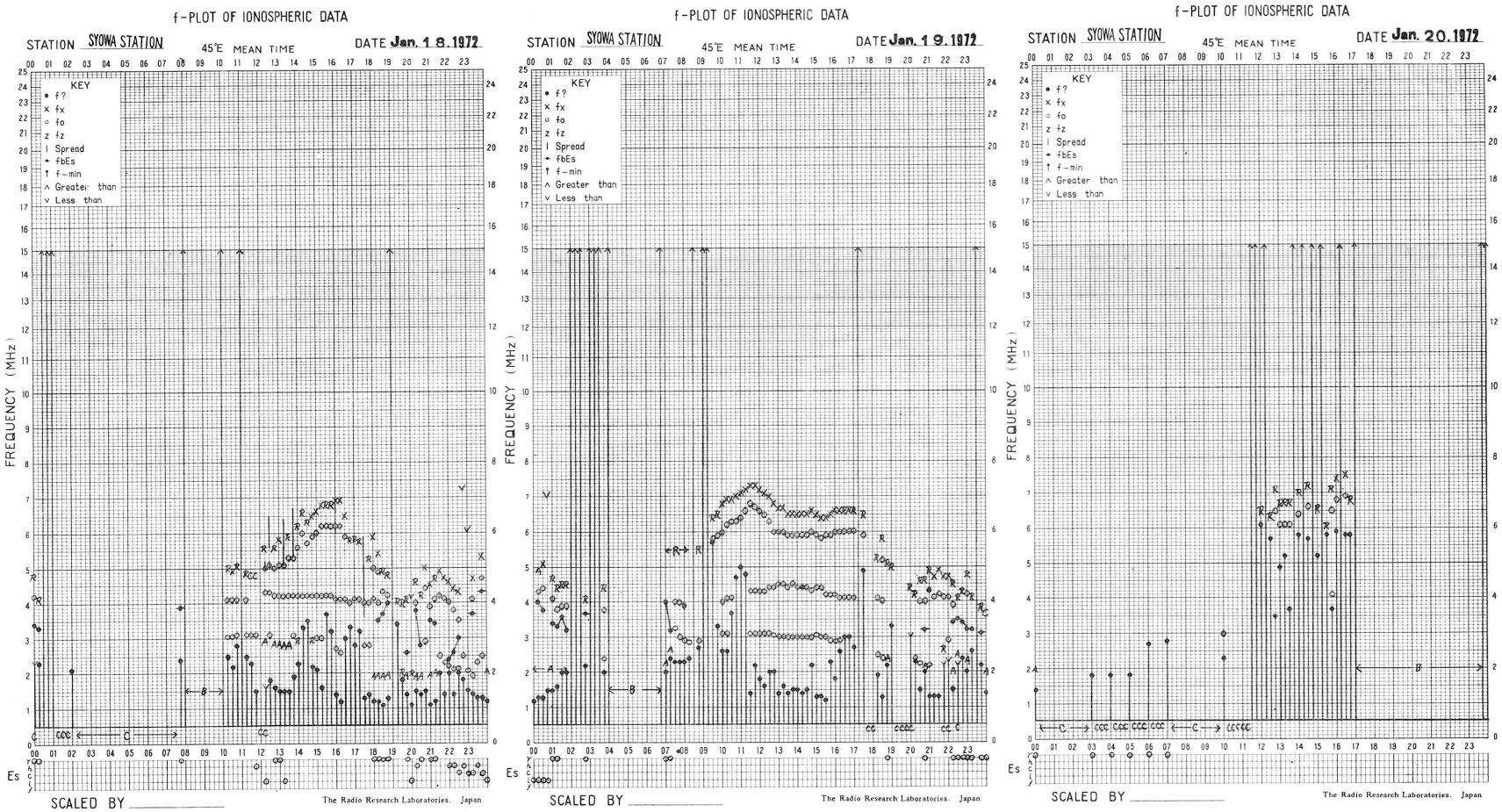
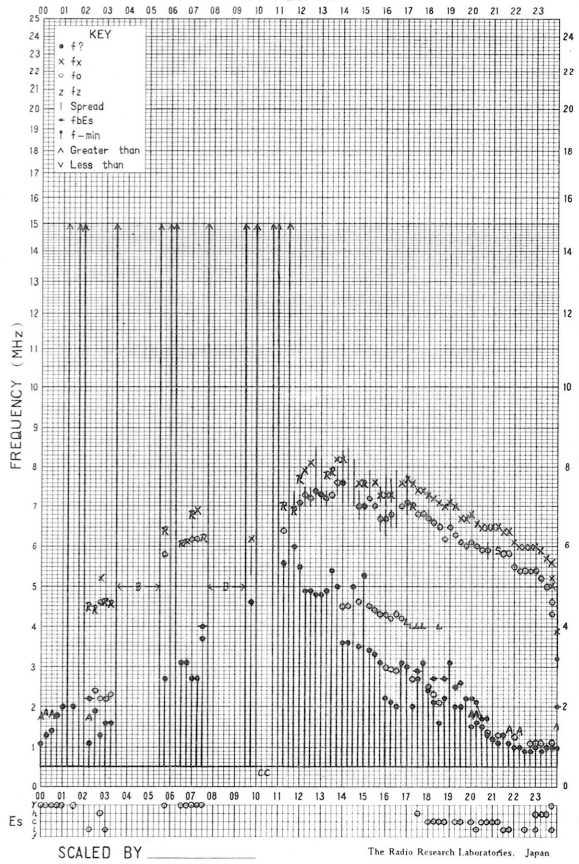
JUN. 1972 | TYPES OF ES


f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Jan. 18. 1972
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan
f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Jan. 19. 1972
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan
f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Jan. 20. 1972
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Feb. 15. 1972



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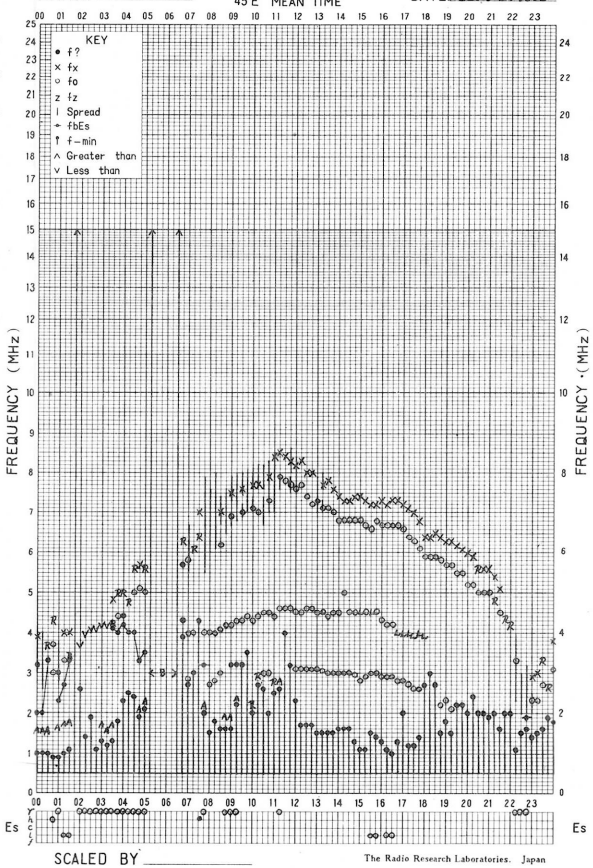

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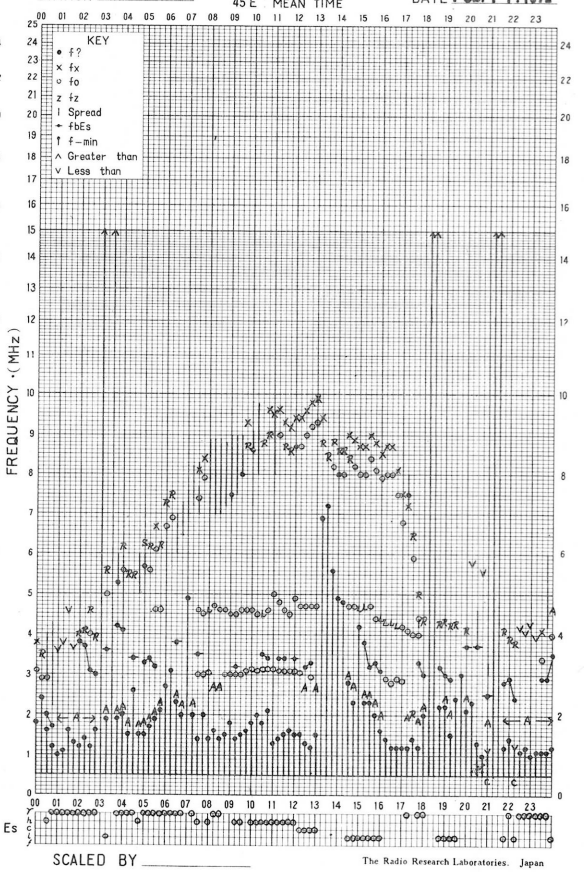
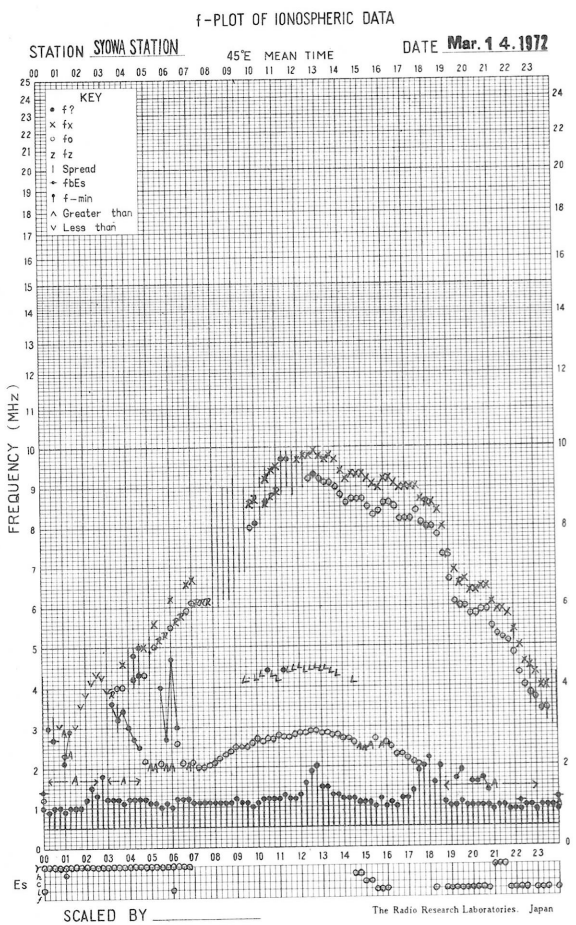
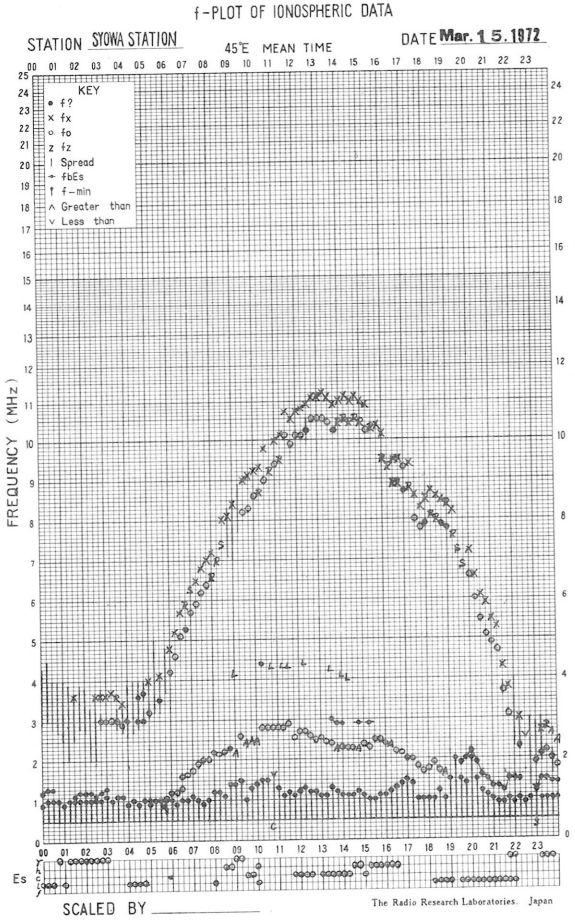
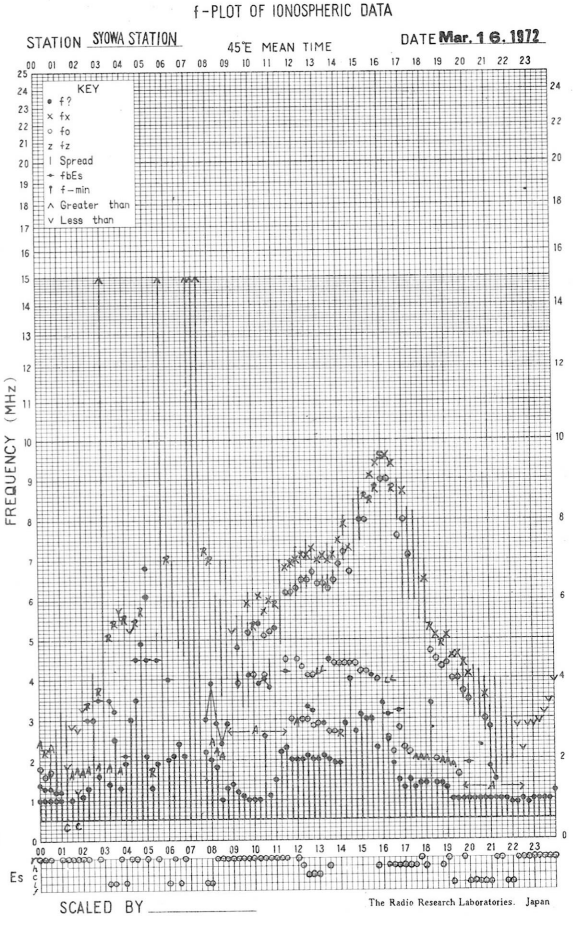
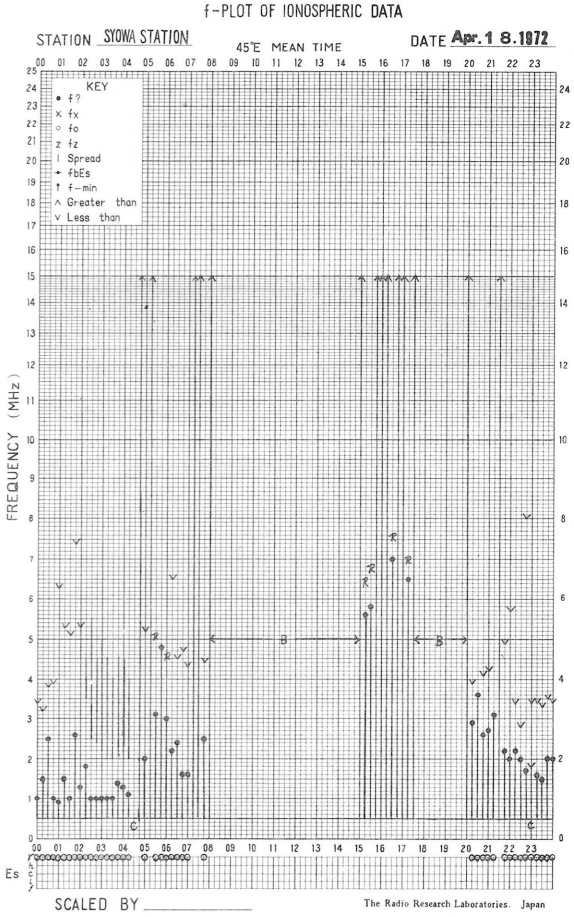
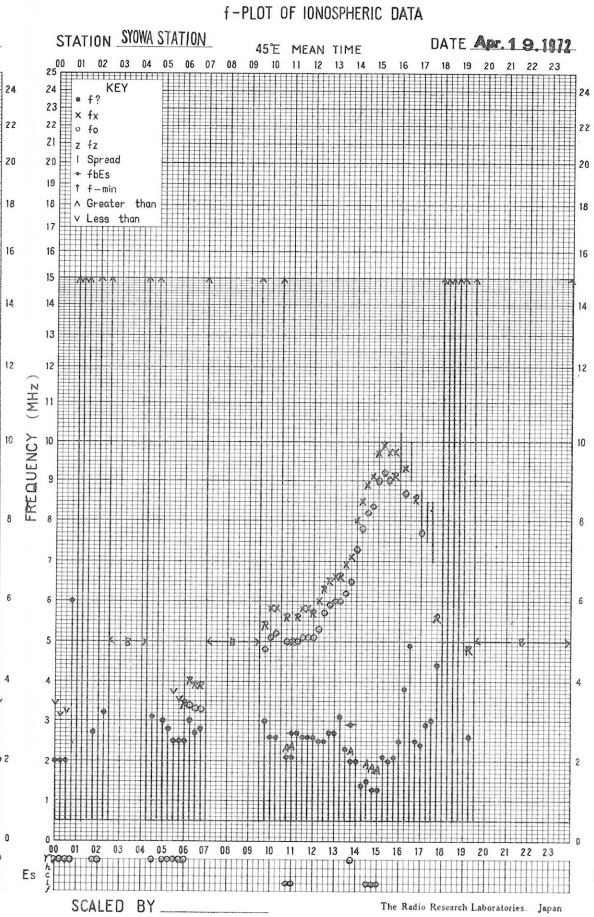


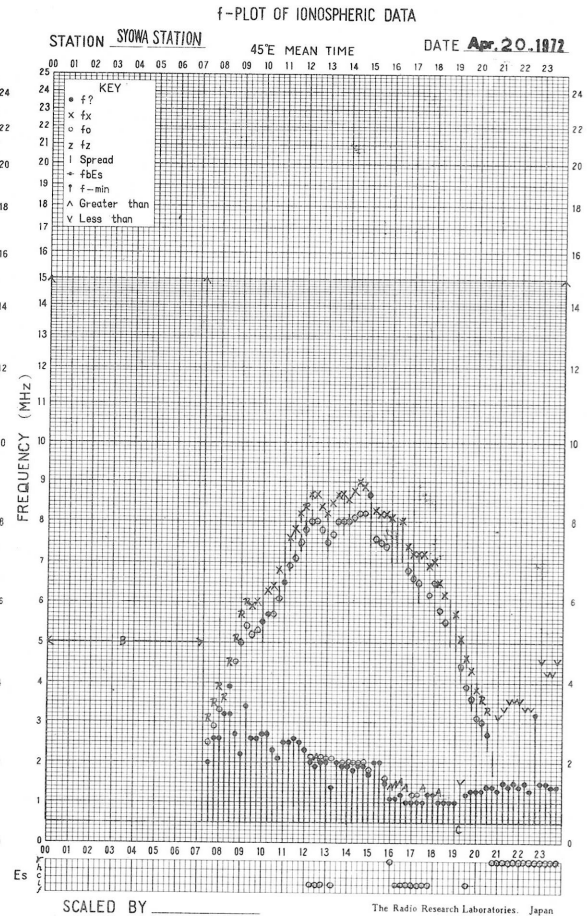

f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Mar. 14. 1972
KEY
• f?
× fx
○ fo
z fz
! Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Mar. 15. 1972
KEY
• f?
× fx
○ fo
z fz
! Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Mar. 16. 1972
KEY
• f?
× fx
○ fo
z fz
! Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Apr. 18. 1972
KEY
• f?
× fx
○ fo
z fz
| Spread
+ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION SYOWA STATION
45°E MEAN TIME
DATE Apr. 19. 1972
KEY
• f?
× fx
○ fo
z fz
| Spread
+ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan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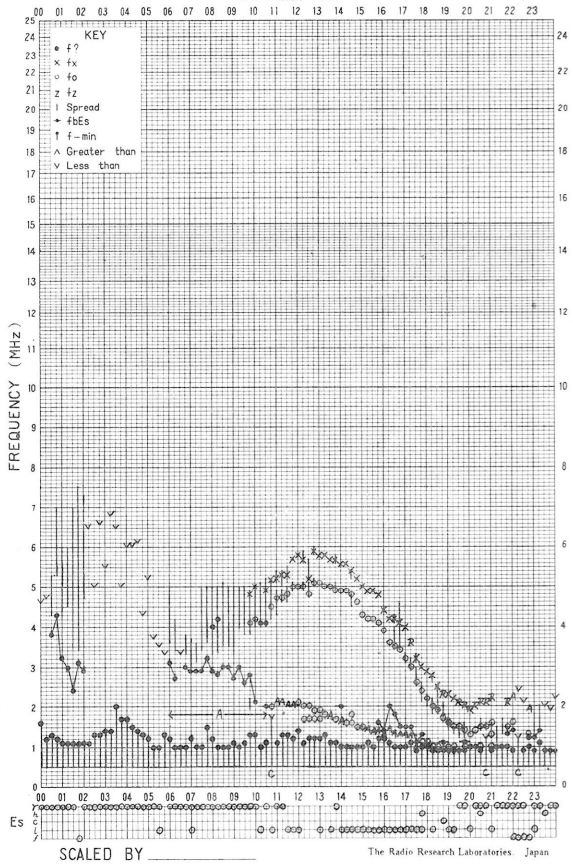
STATION SYOWA STATION
45°E MEAN TIME
DATE Apr. 20. 1972
KEY
• f?
× fx
○ fo
z fz
| Spread
+ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE May. 16. 1972



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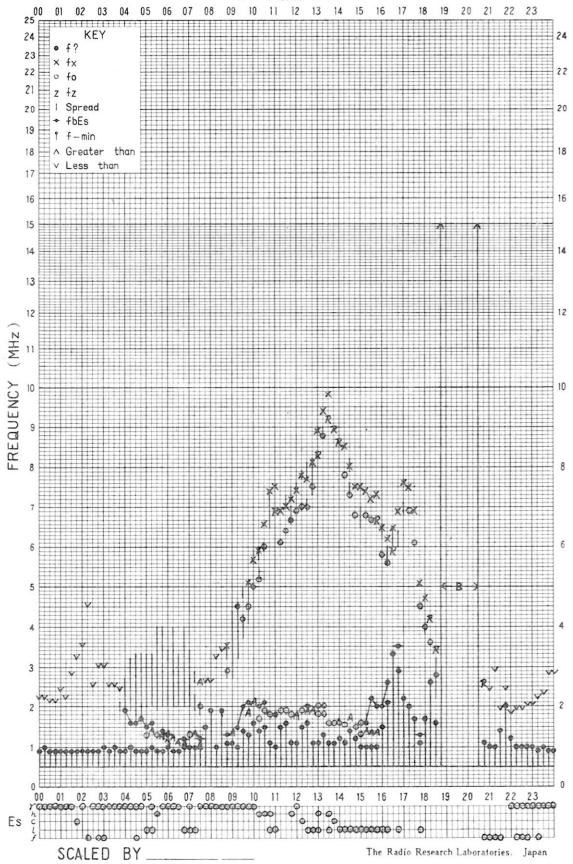
f-PLOT OF IONOSPHERIC DATA

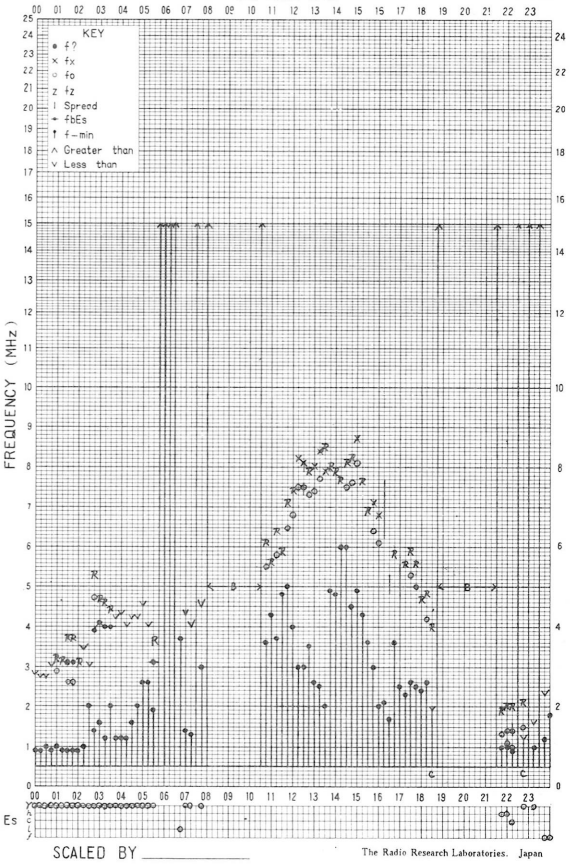
STATION SYOWA STATION 45°E MEAN TIME DATE May. 17. 1972



SCALED BY _____ The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

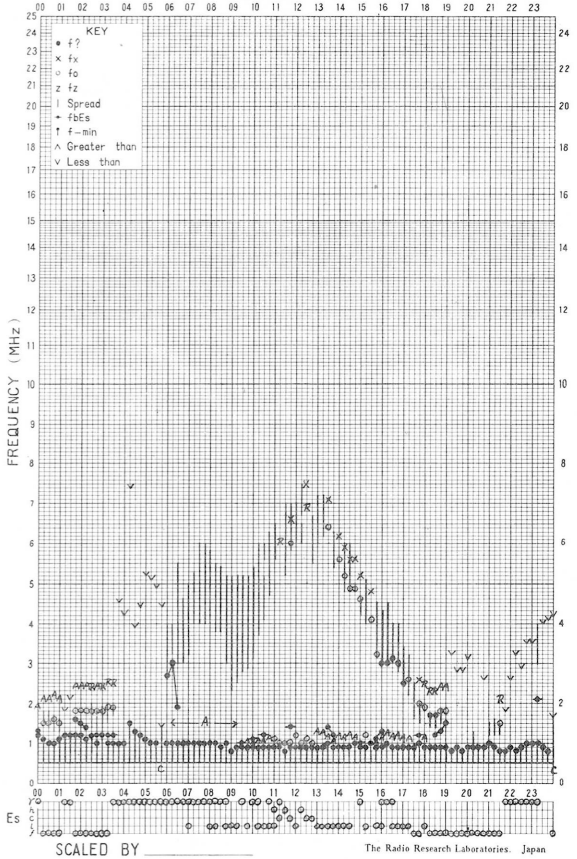
STATION SYOWA STATION 45°E MEAN TIME DATE May. 18. 1972



SCALED BY _____ The Radio Research Laboratories. Japan

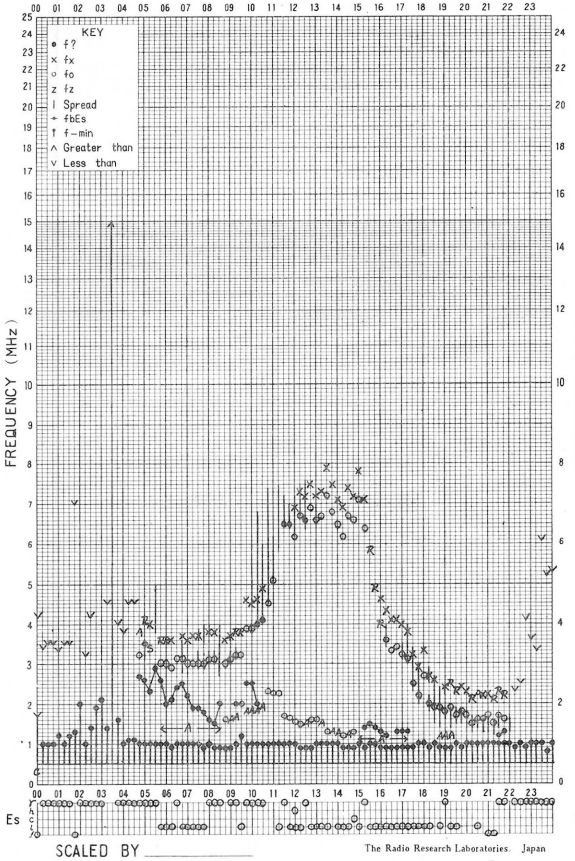
f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jun. 13. 1972



f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jun. 14. 1972



f-PLOT OF IONOSPHERIC DATA

STATION SYOWA STATION 45°E MEAN TIME DATE Jun. 15. 1972