

ION.ANT.—73

IONOSPHERIC DATA AT SYOWA STATION  
(ANTARCTICA)

January 2006 — December 2006

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**NiCT**

NATIONAL INSTITUTE OF INFORMATION  
AND COMMUNICATIONS TECHNOLOGY  
TOKYO, JAPAN

## INTRODUCTION

This data book gives summarized results for vertical soundings of the ionosphere at Syowa Station, Antarctica in 2006. The observations were conducted by the National Institute of Information and Communications Technology under the sponsorship of the National Institute of Polar Research of Japan. The location of the station, specifications of the ionosonde, and the symbols used in this data book are as follows:

## LOCATION of SYOWA STATION

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

## SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

Items	Specifications
Frequency Rang	1MHz - 15MHz
Transmitting Power	10kW (peak value)
Duration of Sweep	15 s
Transmitted Pulse Width	80 $\mu$ s
Pulse Repetition Frequency	100 Hz
Height Range	0 - 1500km
Recording Media	Hard drive
Power Supply	100V-AC, 2.0kVA
Transmitting Antenna and Receiving Antenna	30-m-high vertical delta antennas terminated by 600 $\Omega$

## OBSERVERS

Observer: Y. Ando

Scaler: K. Fukushima

## DESCRIPTION

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

## b. Characteristics of Ionosphere

fxI	Top frequency of spread F traces or oblique traces.
foF2	Ordinary wave critical frequency for the F2 layer.
fEs(ftEs)	Top frequency of Es layer as reflected overhead
fmin	Lowest frequency showing vertical ionospheric reflection.
h'F	Minimum virtual height of the ordinary wave F trace as a whole.

## Symbols

## ( i ) Descriptive Letters.

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

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

( ii )      Qualifying Letters

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

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

( iii )      Definitions of the CNT, MED, UQ and LQ

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

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

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

# IONOSPHERIC DATA STATION SHOWA-ST.

JAN. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	R	B	B	B	B	B	R	B	R	B	B	B	B	B	B	R	B	B	RO	XO	X	X
2	B	40	44	43	O	X	R	B	B	B	B	R	R	B	B	B	B	B	B	B	BO	X	XO	X
3	X	R	R	Y	O	X	R	R	R	Y	Y	B	R	Y	R	B	B	R	X	RO	X	X	B	O
4	X	XO	XO	XO	XO	XO	XO	XO	XO	XO	X	B	B	B	Y	R	B	B	R	B	BO	XO	XO	X
5	44	39	44	46	51	54	65	67	68	70														
6	44	38	42	50	52	60	64	72	67	70	72	71												
7	R	R	B	R	B	B	B	B	B	R	B	B	B	B	B	B	BO	X	B	B	B	RO	X	R
8	XO	X	R	R	BO	X	RO	X	R	R	R	R	R	R	B	B	RO	X	RO	XO	XO	XO	X	XO
9	44	42	38	41	49	49	50	66	67															
10	O	X	X	X	XO	XO	X	X	XO	X	B	B	B	B	A	R	A	X	R	RO	XO	X	XO	X
11	B	R	B	A	RO	XO	XO	X	B	Y	B	Y	Y	Y	B	R	A	A	O	X	X	B	XO	X
12	X	41	36	46	43	R	R	R	R	R	XO	X	Y	B	Y	A	R	R	RO	X	R	X	R	S
13	A	A	R	A	A	A	A	R	R	R	R	R	A	R	R	Y	RO	X	X	X				
14	R	R	X		X	R	RO	X	RO	X	R	B	Y	R	R	R	CO	XO	XO	X	X	X	X	X
15	37	38	38	41	B	R	A	R	R	R	B	B	R	R	R	RO	XO	XO	XO	XO	XO	X	A	A
16	A	B	SO	X	R	RO	XO	X	B	B	B	B	B	B	B	B	B	XO	X	R	A	A	B	A
17	B	A		B	B	B	B	R	R	Y	B	B	B	B	B	B	B	B	B	B	R	B	B	X
18	X	R	R	B	B	R	R	B	B	R	B	B	B	B	B	B	B	B	B	BO	X	B	B	X
19	R	R	B	B	B	B	A	B	B	B	B	B	B	R	Y	B	B	B	B	B				
20	R	A	R	B	B	B	B	B	B	B	Y	B	R	B	R	R	BO	X	B	B	B	A	A	Y
21	O	XO	X	B	B	R	B	B	B	B	C	Y	B	B	B	B	B	B	B	B	BO	XO	XO	XO
22	B	O	XO	X	B	B	B	B	B	B	B	B	B	B	B	B	B	BO	X	B	BO	XO	X	X
23	X	XO	X	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	R	X	XO	XO	R
24	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	BO	XO	XO	XO	XO
25	O	XO	XO	XO	XO	X	RO	X	R	B	B	B	B	R	B	B	B	B	R	B	BO	XO	X	R
26	R	R	R	B	R	B	B	B	R	B	R	B	B	B	B	B	B	B	B	RO	X	R	R	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	RO	X	B	R
28	O	XO	X	B	B	R	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	C	X	R
29	Y	B	B	B	B	R	B	B	B	R	B	B	BO	X	B	B	B	R	B	B	BO	XO	XO	XO
30	X	XO	X	BO	XO	XO	X	X																
31	44	46	50		45	49	50	65	67	70	75													
	36	42	45	48	R	R	B	B	B	B	B	B	B	B	BO	XO	XO	XO	XO	R	R	XO	X	
	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	11	8	7	7	9	5	5	3		2	1	1	3	4	9	9	14	17	24	22	19
MED	X	X	XO	XO	XO	XO	XO	X	XO	XO	XO		O	XO	XO	XO	XO	XO	XO	XO	XO	X	XO	X
UQ	44	44	50	50	52	64	67	67	72	71	75													
LQ	38	38	43	43	XO	XO	XO	X																

JAN. 2006 f<sub>XI</sub> (0.1MHz)

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# IONOSPHERIC DATA STATION SHOWA-ST.

JAN. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	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	R	B	B	B	B	B	R	B	R	B	B	B	B	B	B	R	B	B	R	R	42	44	38
2		B	F	F	R	R	B	B	B	B	B	B	R	R	B	B	B	B	B	B	B	B	R	44	44	44
3			R	R	Y	R	R	R	R	Y	Y	B	R	Y	R	B	B	R		R	R	J	R	R	B	R
4		37	33	38	40	45	48	59	61	62	64		B	B	Y	R	B	B	R	B	B	B	R	R	44	
5		F	F	S	R		S					R	B	B	B	B	R	R	B	B	B	J	R	R	R	
6		A	R	B	R	B	B	B	B	B	R	B	B	B	B	B	R	R	B	B	B	B	R	R	R	
7		R	S	R	B	R	R	R	R	Y	R	R	B	B	B	B	B	R		R	R	R	R	R	R	
8		38	36				44		54									R	R	40	34	42	41	38	39	
9		36	32	35	43	43	44		60	61		B	B	B	R	R	R	R	R	R	R	B	R	R	40	
10		R	J	R		R	S			R	B	B	B	B	A	R	A	J	R	R	R	R	R	F	R	
11		B	A	B	A	A		42	39	42		B	Y	B	Y	Y	B	R	A	A		B	J	R	R	
12		35	F	F		R	R	R	R		57	60		R	Y	B	Y	A	R	R	R	R	J	R	R	
13		A	A	A	A	A	A	A	R	R	R	R	R	A	R	R	Y	R	R	41	38	36	34	34	29	30
14		R	R		F	R	R	R	R	R	R	B	Y	R	R	R	R	C		R	R	J	R	J	R	
15		F	F	F	F	B	R	A	A	R	R	B	B	R	R	R	R	R	R	37	37	36	36	42	30	27
16		A	B	S	R	R	R	R	R	B	B	B	B	B	B	B	B	B	41	43	38	41	42	30	A	A
17		B	A	F	B	B	B	B	R	R	Y	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B
18		31	R	R	B	B	R	R	B	B	R	B	B	B	B	B	B	B	B	B	B	B	R	B	B	28
19		R	R	B	B	B	B	A	B	B	B	B	B	B	R	Y	B	B	B	B	B	B	J	R	B	A
20		R	A	R	B	B	B	B	B	B	B	Y	B	R	B	R	R	B	R	39	B	B	B	A	A	Y
21		R	R	B	B	R	B	B	B	B	C	Y	B	B	B	B	B	B	B	B	B	B	R	R	R	R
22		36	38																			46	48	46	38	
23		B	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	U	R	B	B	38	43	39
24		41	38	42	S	B	B	R	B	B	B	B	B	B	B	B	B	B	A			J	R	R	R	A
25		A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	36	36	37	36
26		U	S	R	R	R	R	R	R	B	B	B	B	R	B	B	B	B	B	R	B	B	B	R	R	R
27		45	42	44	44	44		48															43	40	44	44
28		R	A	R	B	R	B	B	B	R	B	R	B	B	B	B	B	B	B	B	B	B	36	A	A	B
29		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	B	A
30		R		B	B	R	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	41	R	B
31		37	28																							
32		Y	B	B	B	B	R	B	B	R	B	B	B	B	B	B	B	B	A	B	B	B	B	R	R	41
33			J	R		B	R			F	F	J	R	B	R	Y	B	B	J	R	R	R	R	R	R	S
34		38	40	44		39	43	44	59	58	60	69		60	60					52	49	43	40	37	40	32
35		F	F		R	R	R	B	B	B	B	B	B	B	B	B	B	B	R	R	R	R	J	R	R	F
36		27	36	39	42																		38	44	34	34
37		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
38	CNT	15	15	14	11	8	7	7	9	5	5	3		2	1	1	3	4	9	9	13	17	24	22	19	
39	MED	37	36	38	42	44	44	48	59	62	60	65		61	60	60	62	56	41	40	39	40	40	38	38	
40	UQ	38	38	44	44	46	58	61	61	66	65	69					62	62	55	46	44	45	44	44	44	
41	LQ	F	F	F	F		R	R										R	R	R	R	J	R	R	R	
42		32	32	31	37	41	43	39	43	60	58	60					58	48	38	38	36	37	37	36	34	

JAN. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

JAN. 2006 ftes (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	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	-32	B	B	B	B	B	B	34	B	26	B	B	B	B	B	B	32	B	B	B	23	22	20	23				
2	B	32	22	42	28	B	B	B	B	B	B	B	23	37	B	B	B	B	B	B	B	B	26	21	24					
3	22	34	26	20	22	32	38	26	25	25	B	B	38	25	34	B	B	26	22	22	28	B	B	B	22					
4	22	26	25	19	21	20	25	26	G	E	B	B	B	B	24	34	B	B	37	B	B	B	26	33	26					
5	26	19	26	G	18	G	22	17	34	29	31	G	E	B	B	B	33	58	B	B	B	B	22	19	32					
6	37	35	B	35	B	B	B	B	B	B	B	B	B	B	B	B	33	E	B	B	B	B	32	39	48	35				
7	33	40	35	B	37	36	22	34	G	26	26	27	B	B	B	B	B	34	B	K	25	27	K	E	B	22				
8	22	30	26	30	B	E	B	23	27	20	G	G	24	35	34	32	31	34	B	B	E	B	E	B	25	26	30			
9	29	20	27	21	24	24	25	23	25	B	B	B	B	34	44	34	B	30	41	22	B	27	E	B	17	19				
10	34	44	42	19	22	K	23	22	26	29	B	B	B	B	61	43	72	26	43	42	23	28	25	21	23					
11	B	39	B	46	36	G	25	22	33	B	B	B	24	28	30	B	39	58	64	E	B	36	B	E	B	32				
12	26	28	34	32	39	34	36	33	23	21	29	26	B	32	64	34	42	28	33	35	25	E	B	K	30					
13	36	38	32	37	43	43	43	34	26	24	32	G	21	42	34	31	24	26	30	32	32	24	24	25	32					
14	32	35	35	28	34	33	33	22	G	26	27	29	B	22	25	26	22	C	25	23	K	24	20	18	26					
15	22	23	22	25	B	38	42	44	28	34	B	B	B	35	34	33	30	32	26	26	22	25	33	45	42					
16	44	B	34	K	30	K	28	34	32	28	B	B	B	B	B	B	B	B	K	28	29	33	46	34	B	38				
17	B	44	32	B	B	B	B	34	33	25	B	B	B	B	B	B	B	B	B	B	B	B	27	B	B	23				
18	33	32	30	B	B	34	38	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	B	B	20	20				
19	32	31	B	B	B	B	33	B	B	B	B	B	B	B	37	28	B	B	B	B	B	B	E	B	B	32				
20	K	33	71	34	B	B	B	B	B	B	B	B	B	26	33	B	31	29	26	B	B	B	B	33	32	21				
21	32	36	B	B	33	B	B	B	B	C	B	B	B	B	B	B	B	B	B	B	B	B	E	B	E	B	B			
22	B	E	B	E	B	B	B	B	B	B	B	B	B	B	B	34	B	B	B	K	27	B	B	E	B	K	20			
23	17	26	25	B	B	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	32	32	36	26	37	36				
24	39	38	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	28	24	E	B	E	B	E	B	
25	34	E	B	16	20	25	21	24	32	B	B	B	B	32	B	B	B	B	B	32	B	B	E	B	22	22	23	33		
26	34	37	32	B	40	B	B	B	37	B	31	B	B	B	B	B	B	B	B	B	B	31	30	38	36	32	B			
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	26	22	E	B	B	34			
28	21	22	B	B	32	B	36	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	19	32	B				
29	24	B	B	B	B	36	B	B	G	26	B	B	B	30	B	B	B	B	36	B	B	B	B	E	B	E	B	E	B	
30	E	B	E	B	B	34	32	26	18	G	22	24	26	B	33	33	34	B	B	25	25	20	E	B	20	23	19	E	B	16
31	E	B	E	B	B	B	B	B	B	B	B	B	B	B	B	B	37	33	33	30	29	24	E	B	21	24	18	37		
	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	27	23	16	18	19	18	16	16	14	11	6	12	12	12	10	12	17	16	17	23	29	26	29						
MED	32	32	27	26	30	32	32	28	26	26	28	25	32	34	34	33	32	30	28	27	24	24	21	26						
UQ	34	38	34	34	36	34	36	34	30	34	32	32	34	36	36	34	50	36	32	32	28	27	32	34						
LQ	22	E	B	23	20	22	23	25	G	24	24	26	23	29	31	31	29	26	26	25	24	E	B	E	B	19	22			

# IONOSPHERIC DATA STATION SHOWA-ST.

JAN. 2006 fmin (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	20	B	B	B	B	B	24	B	15	B	B	B	B	B	B	28	B	B	23	19	21	14	
2	B	13	13	13	12	B	B	B	B	B	B	14	25	B	B	B	B	B	B	B	B	23	13	14	
3	14	19	14	14	14	17	14	14	18	17	B	23	17	22	B	B	15	14	14	23	21	22	B	12	
4	13	12	12	13	14	14	16	12	14	56	B	B	B	19	18	B	B	26	B	B	B	22	18	14	
5	14	12	13	11	12	13	13	13	13	15	55	B	B	B	B	20	21	B	B	B	26	13	14	14	
6	14	19	B	23	B	B	B	B	B	17	B	B	B	B	B	18	57	B	B	B	25	18	14	13	
7	14	14	17	B	18	20	14	15	19	16	14	B	B	B	B	B	21	B	17	15	23	13	13	14	
8	16	12	19	14	B	23	15	14	14	18	13	18	16	28	B	B	21	17	28	15	24	12	15	13	
9	14	12	13	14	14	19	17	13	20	B	B	B	20	19	28	B	23	20	20	B	20	20	13	12	
10	14	12	12	14	13	14	17	21	18	B	B	B	B	21	16	20	14	14	14	13	14	15	13	14	
11	B	14	B	17	16	15	14	13	B	16	B	20	19	18	B	20	16	21	28	18	B	19	24	15	
12	13	13	13	14	23	25	16	15	19	16	14	18	B	28	14	14	14	18	15	13	14	20	12	13	
13	14	16	15	13	14	13	13	12	13	14	13	14	14	17	15	16	13	18	15	14	14	13	14	13	
14	14	13	13	13	13	28	16	14	16	14	18	B	18	12	16	14	C	18	14	14	15	13	12	13	
15	14	17	14	14	B	19	16	17	15	16	B	B	23	16	19	15	17	14	14	13	13	18	14	14	
16	15	B	15	21	14	21	13	16	B	B	B	B	B	B	B	B	B	20	14	26	14	16	B	14	
17	B	27	12	B	B	B	B	20	22	19	B	B	B	B	B	B	B	B	B	B	22	B	B	13	
18	15	14	23	B	B	23	26	B	B	20	B	B	B	B	B	B	B	B	B	B	17	B	B	14	14
19	14	23	B	B	B	B	16	B	B	B	B	B	B	26	19	B	B	B	B	B	23	14	B	14	
20	23	29	20	B	B	B	B	B	B	B	B	B	19	20	B	22	20	B	B	B	B	15	13	13	
21	14	13	B	B	B	B	B	B	B	C	B	B	B	B	B	B	B	B	B	B	30	23	23	20	
22	B	23	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	28	14	13	
23	13	14	13	B	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	20	15	14	14	12	
24	15	18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	20	20	21	23	20
25	14	16	13	15	19	13	16	18	B	B	B	B	24	B	B	B	B	28	B	B	22	16	14	20	
26	13	14	18	B	32	B	B	B	23	B	18	B	B	B	B	B	B	B	B	26	24	14	25	14	
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	20	22	16	
28	17	13	B	B	B	28	19	B	B	B	B	B	B	B	B	B	B	B	B	B	C	15	18	B	
29	12	B	B	B	B	23	B	B	20	B	B	B	20	B	B	B	B	20	B	B	B	21	15	24	
30	14	14	17	B	18	13	19	13	14	16	15	B	17	20	28	B	B	16	15	15	20	13	13	16	
31	15	14	14	13	13	14	B	B	B	B	B	B	B	B	B	30	20	25	24	19	16	12	24	13	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	30	31	31	31	30	31	31	31	
MED	14	14	17	23	23	23	19	21	24	B	B	B	B	B	B	B	B	28	28	24	22	19	14	14	
U Q	B	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	23	23	16
L Q	14	13	13	14	14	15	16	14	18	16	18	B	20	21	21	20	21	18	15	15	14	14	13	13	

JAN. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN



# IONOSPHERIC DATA STATION SHOWA-ST.

JAN. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	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	B	B	B	B	B	A	B	210	B	B	B	B	B	B	210	B	B	220	218	E B E A	234	292
2	B	F	E A	E A	202	B	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	222	210	234	
3	E A	A	A	Y	190	A	A	A	Y	A	B	A	Y	A	B	B	A	194	210	208	E B	230	B	252	
4	248	244	E A	230	218	218	194	A	186	B	B	B	B	Y	A	B	B	A	B	B	B	222	226	236	
5	216	242	E A	224	208	196	196	184	184	Y	B	B	B	B	B	A	A	B	B	B	214	228	228	A	
6	A	A	B	A	B	B	B	B	B	A	B	B	B	B	B	184	B	B	B	B	A	A	A	A	
7	224	A	A	B	A	A	A	A	Y	A	A	B	B	B	B	B	A	B	200	198	214	226	226	238	
8	232	258	A	A	B	230	A	196	188	A	180	A	A	A	B	B	A	190	214	206	222	210	204	216	
9	E A	278	282	262	226	222	210	202	182	Y	B	B	B	A	A	A	B	A	A	202	B	A	216	218	216
10	246	E A	270	200	230	200	206	200	188	B	Y	B	Y	A	A	B	A	190	A	A	206	198	216	226	
11	B	A	B	A	A	A	A	A	A	B	Y	B	Y	A	A	B	A	A	A	190	172	B	E B	A	
12	242	A	A	A	A	A	A	A	A	196	202	190	Y	B	A	A	A	A	188	192	204	204	196	196	
13	A	A	A	A	A	A	A	A	A	192	192	A	A	A	A	A	Y	180	186	208	200	200	242	256	222
14	A	230	A	A	A	A	A	A	188	190	190	A	B	Y	A	190	196	C	186	204	194	194	198	212	244
15	246	260	268	268	B	A	A	A	A	A	A	B	B	A	A	A	A	192	200	200	186	186	A	A	A
16	A	B	188	194	A	A	190	184	B	B	B	B	B	B	B	B	B	B	204	216	A	A	A	B	A
17	B	202	A	B	B	B	B	A	A	Y	B	B	B	B	B	B	B	B	B	B	B	E A	B	B	A
18	228	A	A	B	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	240	B	B	256	230
19	A	A	B	B	B	B	A	B	B	B	B	B	B	B	A	A	B	B	B	B	B	222	222	B	A
20	A	A	A	B	B	B	B	B	B	B	Y	B	A	B	A	184	B	192	B	B	B	B	A	A	Y
21	A	224	B	B	A	B	B	B	B	C	Y	B	B	B	B	B	B	B	B	B	B	262	228	236	246
22	E B	E B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B	206	B	E B	B	B	A
23	226	246	268	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	224	198	216	222	A
24	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	212	206	242	238	226
25	234	230	270	260	262	204	210	A	B	B	B	B	B	B	B	B	B	B	B	A	B	B	210	218	254
26	A	A	A	B	A	B	B	B	A	B	A	B	B	B	B	B	B	B	B	B	E B	250	A	A	A
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	208	E B	232	260	B
28	Y E A	314	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C E A	A	B	
29	A	B	B	B	B	A	B	B	188	B	B	B	B	B	B	B	B	B	A	B	B	222	E Y E B	238	242
30	238	252	270	B	E A	248	214	214	192	192	192	B	Y	Y	Y	B	B	196	196	196	192	228	228	228	
31	234	218	242	242	E A	E A	B	B	B	B	B	B	B	B	Y	Y	Y	Y	Y	224	216	216	236	222	244
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	14	15	12	9	8	9	8	8	9	4	4					1	3	3	10	13	16	19	24	21	17
MED	234	244	248	228	216	207	199	186	188	192	191				190	184	190	193	204	206	207	222	227	236	
U Q	246	258	269	251	246	238	208	198	192	197	201				196	192	200	212	214	222	229	237	245		
L Q	228	230	242	212	205	202	192	183	187	191	185				184	180	188	198	197	198	198	217	220	227	

JAN. 2006 h'F (KM)

# IONOSPHERIC DATA STATION SHOWA-ST.

FEB. 2006 f<sub>XI</sub> (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	O X 45	X 47	R	B	B	B	57	O X 65	X 74	O X 73	O X 67	B	B	B	B	B	X 64	B	O X 52	X 51	O X 50	X 57	X 54			
2	O X 47	O X 52	A	Y	B	B	B	R	O X 66	X 68	B	B	R	R	B	B	B	O X 50	B	X 43	O X 52	R	A			
3	R	A	41	A	R	R	R	R	R	R	R	R	A	A	A	B	A	A	O X 50	X 48	X 44	X 44	A	R		
4	A	O X 36	X 40	X 38	R	A	R	B	B	R	B	B	B	B	C	C	O X 42	X 58	X 52	R	X 44	X 42	X 45	X 44		
5	X 44	X 42	O X 43	X 38	A		X 50	R	R	R	R	Y	B	R	R	R	X 43	X 42	X 42	O X 50	X 49	X 47	X 43	X 44		
6	X 45	44	43	43	44		R	70	R	B	B	B	B	B	B	B	B	B	B	O X 40	X 43	X 40	X 93	A		
7	A	B	B	B	B	B	B	B	Y	B	B	B	B	B	C	C	B	Y	X 44	X 46	X 47	X 41	X 37	O X 40		
8	A	A	B	B	B	B	R	R	R	R	B	B	B	B	B	B	B	Y	B	B	B	X 38	X 43	X 37		
9	34	32	33	42	42		R	44	B	B	R	R	A	A	R	R	B	B	A	R	R	O X 50	X 44	X 45	X 44	
10	R	32	33	35	42	43		B	B	X 64	X 62	B	O X 60	X 66	X 63	X 69	X 65	X 64	X 43	B	X 42	X 45	X 46	X 41	X 34	
11	O X 32	A	X 41	X 42	R	O X 39	R	B	A	B	B	B	R	O X 66	X 66	R	R	O X 44	X 63	X 43	X 44	X 39	X 33	X 28		
12	A	O X 54	X 34	R	R	B	B	A	A	R	R	R	R	R	R	R	X 57	X 58	X 53	X 49	X 45	X 44	X 43	X 42		
13	43	44	44	43	45	48	48		B	R	B	R	A	A	A	A	A	A	O X 52	R	X 49	X 44	X 34	B		
14	Y	O X 36	R	38	X 40	X 39	X 39	X 50	X 62	X 61	X 67	R	R	R	R	X	X	X 60	X 59	X 57	X 51	X 45	X 46	X 42	X 44	
15	44	42	38	38	43	44	44	X 49	X 64	X 65	B	R	O X 66	X 66	B	O X 81	X 81	X 66	X 54	X 54	X 54	X 53	X 44	X 44		
16	A	B	58	B	B	B	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	X 42	X 41	X 40	A	
17	O X 49	R	R	R	R	R	R	R	R	B	B	B	B	B	B	B	R	O X 51	X 43	X 58	X 49	X 39	X 42	X 39	X 41	
18	43	35	A	38	X 36	X 42	X 44	X 42	X 44				X 58	R	O X 67	X 66	B	B	B	B	B	O X 50	X 47	X 44	X 42	
19	42	42	37	R	B	B	B	A	A	B	B	B	B	B	X 68	X 64	X 60	X 60	X 65	X 62	X 53	X 40	X 32	A	A	
20	A	A	A	Y	B	B	B	B	O X 45	Y	Y	B	B	B	B	B	B	O X 43	B	B	B	O X 40	Y	R	A	
21	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	O X 40	Y	B	Y		
22	O X 40	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	B	B	B	
23	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 41	X 40	X 37	X 34	
24	X 34	B	R	O X 37	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 44	X 40	X 39	A
25	33	34	35	33	X	R	B	B	B	B	B	R	B	B	R	B	R	A	O X 50	X 46	X 44	X 44	X 43	X 45		
26	40	36	34	35	B	O X 36	B	X 49	B	B	B	B	B	B	X 58	R	X 59	X 56	X 53	X 46	X 46	B	A	O X 40	R	
27	A	A	A	B	R	R	B	A	B	B	B	B	B	R	R	R	O X 45	X 50	X 43	X 43	X 42	X 38	X 35	X 27		
28	O X 32	R	R	A	X 32	X 37	X 45	X 43	X 42	X 44	R	R	R	B	B	B	B	B	B	B	B	B	B	B	R	
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	16	15	14	13	8	9	9	6	8	6	2	1	3	4	4	5	11	14	13	16	24	22	19	15		
MED	X 42	X 42	X 39	X 38	X 42	X 42	X 45	X 49	X 63	X 64	X 67	X 60	O X 66	X 66	X 66	X 65	X 57	X 56	X 52	X 46	X 44	X 43	X 42	X 42		
U Q	O X 44	X 44	X 43	X 42	X 44	X 46	X 53	X 50	X 65	X 68			O X 66	X 67	X 68	X 74	X 60	X 63	X 54	X 50	X 49	X 44	X 44	X 44		
L Q	X 34	X 35	X 34	X 36	X 38	X 38	X 44	X 43	X 44	X 61			X 58	X 64	X 61	X 60	X 44	X 43	X 44	X 44	X 42	X 40	X 39	X 34		

# IONOSPHERIC DATA STATION SHOWA-ST.

FEB. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	F 36	R	B	B	B	33	S 59	F 61	R 67	R	B	B	B	B	B	B	58	B	R 46	R 45	R 44	J 51	B									
2	R 41	R 46	A	Y	B	B	B	A	R 60	R 62	R	B	B	R	R	B	B	B	44	B	37	46	R	A	R								
3	A	A	F 23	A	A	R	R	R	R	R	R	R	A	A	A	B	A	A	A	R	44	42	38	A	A								
4	A	S 30	R 34	F 27	A	A	R	B	B	R	B	B	B	B	C	C	R 36	J 52	R 46	R	J 38	R 36	39	38									
5	38	36	F 30	F 32	F 31	A	F 40	43	R	R	R	R	Y	B	R	R	R	37	36	36	44	43	39	F 34	38								
6	39	F 24	F 31	F 32	F 31	A	Y	R	B	B	B	B	B	B	B	B	B	B	B	B	34	37	34	R	A								
7	A	B	B	B	B	B	B	B	Y	B	B	B	B	B	C	C	B	Y	J	R	38	40	41	35	F 25	R 34							
8	A	A	B	B	B	B	R	R	R	R	B	B	B	B	B	B	B	B	Y	B	B	B	J	R	F 27								
9	F 24	F 22	F 23	F 28	F 30	R	F 34	B	B	R	R	A	A	R	R	B	B	A	R	D	R	39	44	38	R 39	F 34							
10	R	F 23	F 24	F 28	F 29	F 28	B	B	58	56	B	Y	R 60	J 57	R 63	R	59	58	37	R	36	J	R	40	35	F 23							
11	26	A	R	R	R	A	B	A	B	B	B	B	R	R	R	R	R	38	57	37	38	33	27	B	22								
12	A	A	R	A	R	B	B	A	A	R	R	R	R	R	A	R	J	R	J	R	J	R	39	38	37	F 32							
13	F 32	F 36	F 30	F 37	F 35	R	R	R	B	R	B	R	A	A	A	A	A	A	A	46	R	43	38	24	F 24	B							
14	Y	R	R	F 28	R	R	R	R	R	R	R	R	R	R	R	R	J	R	J	R	J	R	40	38	32	F 31							
15	F 34	F 24	F 28	F 30	F 33	R	38	38	43	R 58	59	B	R	R	B	R	60	60	75	75	60	48	48	47	38	R							
16	A	B	R	B	B	B	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	36	35	34	R	A						
17	R 43	R	R	R	R	R	R	R	R	R	B	B	B	B	B	B	R	R	R	R	R	45	37	52	43	J	R	33	36	33	31	F	
18	F 32	F 24	A	F 27	R	B	B	B	R	R	A	R	R	J	R	R	R	52	61	60	B	B	B	B	R	R	F	F	33	F			
19	F 33	F 31	F 28	R	B	B	B	A	A	B	B	B	B	B	62	58	J	R	J	R	54	59	56	47	34	26	R	A	A	A			
20	A	A	A	Y	B	B	B	B	R	Y	Y	B	B	B	B	B	B	B	B	B	R	B	B	R	Y	A	A	A	A	A			
21	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	34	Y	B	Y	Y	Y	Y	Y			
22	R 34	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	B	B	B	B	B	B	B	B		
23	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	35	34	31	28	A	A	A	A		
24	28	B	R	U	S	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	R	R	A	A	A	A	A		
25	F 23	F 25	F 25	F 27	R	B	B	B	B	B	B	R	B	B	B	B	B	R	A	44	40	38	38	31	34	F	F	34	F	F			
26	F 30	F 24	F 23	F 24	B	R	B	43	B	B	B	B	B	B	J	R	52	R	J	R	J	R	50	47	40	B	A	R	A	A			
27	A	A	A	B	R	R	B	A	B	B	B	B	B	B	R	R	R	39	44	37	37	36	32	29	21	A	A	A	A	A			
28	R 26	D 70	R	A	26	31	J	R	R	37	36	38	R	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	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	16	15	13	13	8	9	8	6	8	6	2		3	4	4	5	11	14	13	17	24	22	17	14									
MED	32	30	F 28	F 28	F 30	33	38	43	57	58	61		60	60	60	59	51	50	46	40	38	37	34	32									
U Q	38	36	30	32	34	39	40	44	59	62			60	61	62	68	54	57	48	44	43	38	37	34									
L Q	27	F 24	F 24	F 27	30	30	34	37	38	55			J	R	52	58	55	54	38	37	38	38	36	34	31	27							

FEB. 2006 foF2 (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

FEB. 2006 ftes (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D <sup>H</sup>	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	E B 14	27	B	B	B	24	22	22	46	66	B	B	B	B	B	B	34	B	25	E B 26	E B 30	E B 27	B
2	22	34	46	34	B	B	B	46	24	25	B	B	34	36	B	B	B	22	E B 23	22	33	40	31	
3	34	56	55	34	38	25	34	20	22	18	21	34	59	48	44	B	38	44	65	26	19	17	95	33
4	36	E B 21	K 29	24	37	43	25	B	B	33	B	B	B	B	C	C	24	25	E B 25	E B 24	22	17	E B 14	17
5	16	16	18	30	41	32	24	34	28	31	26	25	B	33	37	42	22	26	35	28	34	32	33	32
6	31	25	E S 16	18	18	35	34	33	B	B	B	B	B	B	B	B	B	B	B	25	39	39	42	53
7	57	B	B	B	B	B	B	B	34	B	B	B	B	B	C	C	B	25	25	21	20	17	25	38
8	54	58	B	B	B	B	32	41	36	22	B	B	B	B	B	B	B	25	B	B	B	22	35	E S 15
9	E S 14	34	20	E B 17	44	33	22	B	B	40	37	63	44	32	32	B	B	61	33	E B 28	24	17	E B 18	16
10	K E B 33	20	23	24	18	25	B	B	E B 53	E B 28	B	26	E B 54	E B 47	30	29	22	E B 26	E B 24	E B 22	23	17	22	
11	36	34	26	26	29	20	40	B	65	B	B	B	35	34	32	32	28	32	22	E B 22	26	22	B	15
12	32	32	34	32	31	B	B	G 34	40	25	24	30	36	34	38	30	24	24	17	22	18	18	E B 15	17
13	17	E B 15	E B 14	E S 16	18	24	21	E B 24	B	G 23	B	39	70	65	61	67	68	43	24	21	E B 19	E B 14	E B 13	B
14	23	36	33	K 26	19	K 20	20	20	18	25	32	36	39	33	33	27	27	K 24	K 23	21	18	E B 14	19	22
15	E S 14	E S 16	E S 16	E S 17	E S 16	26	34	26	G 22	24	B	24	36	42	B	E B 56	E B 56	E B 31	E B 24	21	K 19	K 18	34	34
16	44	B	31	B	B	B	42	42	17	B	B	B	B	B	B	B	B	B	B	B	E B 20	18	39	53
17	58	34	38	37	31	G 35	35	33	40	B	B	B	B	B	B	42	28	25	E B 30	E B 23	E B 20	E B 18	E B 38	E B 13
18	E S 16	25	39	32	33	20	42	25	20	38	32	26	32	28	K E B 30	27	B	B	B	E B 19	E B 13	E B 15	E S 15	
19	E S 15	20	32	27	B	B	B	42	40	B	B	B	B	E B 53	E B 52	30	30	31	E B 22	E B 19	E B 20	22	44	59
20	40	42	42	24	B	B	B	B	30	25	34	B	B	B	B	B	B	E B 28	B	B	34	26	38	43
21	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	35	E B 20	22	B	26
22	32	B	59	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
23	40	39	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 19	E B 19	E B 13	E B 14
24	E B 14	B	26	27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 23	18	33	42
25	E S 16	E S 16	E S 30	24	28	B	B	B	B	B	B	B	B	B	B	B	27	45	22	E B 23	E B 19	E B 18	E B 14	E B 13
26	E S 14	E S 15	E B 14	14	B	30	E B 21	B	B	B	B	B	B	B	28	E B 29	E B 27	K 23	K 20	19	B	40	43	39
27	52	80	39	B	32	24	B	44	B	B	B	B	B	42	31	26	29	23	22	19	16	14	14	16
28	34	42	39	36	29	G 18	17	E B 22	22	21	22	29	29	B	B	B	B	B	B	B	B	B	B	27
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	23	25	20	16	15	15	17	17	15	10	10	11	14	12	12	14	20	16	20	24	26	23	25
MED	32	32	31	26	30	25	32	33	26	25	29	30	36	35	32	30	28	26	23	22	20	18	33	26
U Q	38	39	39	32	35	33	35	42	40	33	34	36	54	47	41	42	30	33	32	25	24	23	39	38
L Q	E S 16	E S 16	E 22	E 21	18	20	22	22	G 22	G 23	23	26	34	33	30	28	24	24	22	21	E B 19	E B 17	E B 15	E B 16

FEB. 2006 ftes (0.1MHz)

IONOSPHERIC DATA STATION SHOWA-ST.

FEB. 2006 fmin (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		12	14	16	B	B	B	14	17	14	23	26	B	B	B	B	B	B	23	B	22	25	31	27	B	
2		20	12	20	28	B	B	B	22	13	18	B	B	23	28	B	B	B	19	B	23	14	12	21	14	
3		16	14	14	18	16	15	14	13	14	14	14	16	22	19	21	B	19	16	14	13	12	13	26	14	
4		19	21	15	14	20	27	16	B	B	28	B	B	B	B	C	C	20	18	25	24	18	13	14	12	
5		12	14	12	17	17	14	14	18	17	20	16	19	B	19	20	16	17	20	17	15	12	13	14	13	
6		13	14	E S	14	13	17	13	14	B	B	B	B	B	B	B	B	B	B	B	19	14	14	18	14	
7		13	B	B	B	B	B	B	B	19	B	B	B	B	B	C	C	B	18	15	15	13	13	13	13	
8		19	16	B	B	B	B	22	23	16	20	B	B	B	B	B	B	B	21	B	B	B	18	14	E S	
9		E S	14	13	14	17	15	16	16	B	B	22	20	29	18	21	26	B	B	30	22	28	14	13	E S	
10		14	20	16	17	13	13	B	B	53	28	B	B	19	54	47	19	21	14	26	B	24	22	13	E S	
11		14	20	17	13	23	14	22	B	22	B	B	B	30	20	20	26	22	16	19	22	14	14	B	15	
12		14	13	14	13	14	B	B	20	22	16	14	20	15	20	17	14	16	16	14	15	14	12	15	13	
13		14	15	14	E S	13	14	13	24	B	20	B	28	28	23	24	20	18	14	14	15	20	14	13	B	
14		12	13	14	14	14	13	14	13	14	13	14	17	16	15	13	17	12	14	13	13	13	14	14	16	
15		E S	E S	E S	E S	E S	E S	16	13	14	15	13	16	B	14	30	29	56	56	31	15	18	13	14	12	11
16		20	B	14	B	B	B	28	23	12	B	B	B	B	B	B	B	B	B	B	B	20	14	15	12	
17		13	21	22	18	24	22	22	21	23	B	B	B	B	B	B	B	24	24	20	30	23	20	18	13	13
18		E S	16	12	13	14	14	14	14	13	14	15	18	15	14	30	13	B	B	B	B	19	13	14	E S	
19		E S	15	13	13	17	B	B	B	20	14	B	B	B	53	52	18	20	18	22	19	20	13	18	20	
20		14	17	20	13	B	B	B	B	20	18	20	B	B	B	B	B	B	28	B	B	14	21	12	14	
21		20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	B	20	13	B	14	
22		13	B	30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	19	B	B	B	B	
23		13	22	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	19	19	13	14	
24		14	B	14	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	14	14	12	
25		E S	E S	E S	15	14	14	B	B	B	B	17	B	B	22	B	B	15	22	14	23	19	18	14	13	
26		E S	E S	E S	14	14	B	14	B	21	B	B	B	B	B	19	29	27	15	12	14	B	14	13	24	
27		23	14	16	B	23	16	B	18	B	B	B	B	B	20	25	20	14	23	22	19	16	14	14	E S	
28		13	15	21	15	14	13	13	22	13	13	18	13	20	B	B	B	B	B	B	B	B	B	B	13	
29																										
30																										
31																										
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT		28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	26	28	28	28	28	28	28	28	28	
MED		14	16	16	17	23	24	25	22	22	28	B	B	B	B	B	B	B	22	24	22	19	14	14	14	
UQ		16	21	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	18	20	16	
LQ		13	14	14	14	14	14	14	18	14	18	19	20	26	20	21	20	18	18	15	16	14	13	13	13	

FEB. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

FEB. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1	238	238	Q	A	B	B	B		208	194	186		Y	A	B	B	B	B	B	A	B	Y	222	230	230	B						
2	278	270		A	Y	B	B		188	188			B	B	A	A	B	B		208		B	214	222		A	A	A				
3	196	A	A		A	A	A	A		212		202	192	210						188		A	194	224	230		A	A				
4		A	E	B	A		A	A	A	B		B	A	B	B	B	C	C		202	208	198	220	224	224	218	Q	228				
5	222	228	260		A	A	A	A		202	182	188	188		204				182	202		A	220	230	224	Q	Q	E	A			
6	240	284	282	318	264		A	A	A	B	B	B	B	B	B	B	B	B	B	B	B		244	236	250		A	A	A			
7		A	B	B	B	B	B	B	B	A	B	B	B	B	B	C	C		B	A	A		218	218	218	256	E	A	A			
8		A	A	B	B	B	B	A	A	A	A	B	B	B	B	B	B	B	Y	B	B					228	232	250	E	S		
9	E	S	A	E	S	E	B	E	A	A		B	B	A	A	A	A	A	B	B	A		242	224	214	218	226	228	S	S		
10		A	280	294	E	S	E	A	A		B	B	B	Y	B	Y	Y	Y		202		B	202	218	212	224	290					
11	216		A	A	A	A		188		A	B	A	B	B	A	Y	A		208	220	202	222	222		A	A	B	E	B			
12		A	A		A	A	B	B	A	A		200	192	188	196	196		A		200	210	204	204	212	220	Q	Q	Q				
13	Q	Q	Q	Q	254	254	214	218	202		B			A	A	A	A	A	A				210	204	210	200	228			B		
14		A	230		A	Y	E	A		264	204	204	202	186	186				186	186	192	206	186	208	214	Q	Q	Q				
15	Q	Q	Q		E	A	E	A						B	Y	Y	B	B		248	214	208	224	234	216		A	A	A			
16		A	B	A	B	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B				218	228	248		A		
17	184		A	A	A	A	A	A	A	A	B	B	B	B	B	B	A		214	214	240	208	214	212		A		222				
18	S	E	A	A	A	E	A		300	264	222	220	204		A				B	B	B	B			210	212	232	214	Q			
19	E	S		A	A	B	B	B	A	A	B	B	B	B	B	B			196	196	210	210	214	220		A	A	A				
20		A	A	A	A	B	B	B	B	A	Y	A	B	B	B	B	B	B		212		B	B			216		A	A	A		
21		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A		B	E	B	A	B	A				
22	212		B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A				254		B	B	B	B	
23		A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				228	218	216	244			
24	246		B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				218	228	244		A	A		
25	E	S	E	S	E	S	E	A	A	B	B	B	B	B						216		A			220	218	218	220	Q			
26	Q	Q	E	B		B	A	B		B	B	B	B	B					216	192	210	198	208	224		B	A	220	A			
27		A	A	A	B	A	A	B	A	B	B	B	B	B	A	A	A			216	204	218	218	224	228		E	B	S			
28	208	198		A	A	A			222	206	190	204	190	210	202				B	B	B	B	B	B	B	B	B	B	B	A		
29																																
30																																
31																																
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
CNT	17	14	10	8	6	6	7	9	7	9	7	5	3	3	3	6	11	14	12	18	23	20	17	14								
MED	223	246	U	U	245	260	268	244	214	206	188	194	192	202	202	196	196	198	210	205	210	216	220	219	228	231						
U Q	246	280	E	S	E		E	A																								
L Q	214	238	240	256	264	214	208	202	186	187	188	187	196	192	186	192	196	202	206	208	216	214	218	228								

FEB. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

MAR. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	R	A	R	R	B	R	R	B	B	B	B	B	B	Y	B	X	X	X	X	X	X	X	X
2	34		A	A	A	A	O	X	B	X	R	B	B	B	R	B	B	R	O	X	B	O	X	X
3	34	57	53		A	A	41		R	R	R	O	X	X	X	X	O	X	O	X	X	X	45	42
4	30	34		R	A	A	R	O	X	O	X	R	R	R	O	X	O	X	O	X	O	X	46	45
5	35	39	36		A	Y		43	39	38	44	43		X	R	B	O	X	X	O	X	X	48	44
6	37	28		R	B	A	O	X	R	R	O	X	O	X	O	X	O	X	O	X	X	X	32	A
7	A	Y	B	B	A	A	R	R	R	B	R	B	B	B	B	B	B	B	B	B	B	O	X	X
8	O	X	R	R	A	A	B	R	B	B	O	X	B	B	B	B	B	O	X	O	X	X	X	A
9	A	A	A	A	A	A	B	X	R	R	R	R	B	O	X	O	X	O	X	O	X	X	X	A
10	A	A	A	B	A	B	R	B	A	B	B	B	B	B	B	B	B	O	X	O	X	X	B	
11	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	X	R	
12	54		A	A	A	R	B	B	B	X	R	B	B	B	B	O	X	O	X	B	B	O	X	B
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B
14	B	Y	R	R	B	B	B	X	R	X	B	B	B	B	B	B	B	O	X	O	X	O	X	R
15	O	X	O	X	A	B	A	B	B	B	B	B	R	R	X	O	X	X	X	X	O	X	X	A
16	B	B	Y	R		A	R	B	A	R	O	X	R	B	B	B	B	B	B	B	X	X	B	R
17	A	A	B	B	R	B	B	X		O	X	O	X	X	X	O	X	O	X	O	X	X	B	B
18	B	B	Y	Y	B	O	X	X		B	B	B	B	B	B	B	B	B	B	A	B	A	A	A
19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	A	R
20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	A
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B
23	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B
24	B	B	B	R	A	A	B	B	B	B	B	B	B	B	A	B	O	X	O	X	O	X	X	B
25	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
26	R	B	B	Y	B	B	A	B	B	B	B	B	B	B	X	X	O	X	B	B	B	B	B	A
27	A	B		B	B	R	B	B	R	R	B	B	B	B	O	X	O	X	X	X	X	X	B	B
28	A	44	B	R	A	B	R	B	B	B	B	B	R	R	X	X	B	X	X	X	X	X	B	B
29	B	A	A	R	B	B	B	B	B	O	X	O	X	B	B	X	X	B	X	X	X	X	X	B
30	A	B	A	R	B	R	A	B	R	O	X	O	X	C	X	X	B	O	X	O	X	X	X	B
31	A	A	B	A	B	B		X	X	O	X	O	X	X	O	X	R	O	X	X	O	X	O	X
	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	3		1	4	5	7	7	8	7	3	7	10	14	16	13	17	20	19	22	14	8	7
MED	34	36	53		53	42	O	X	39	36	44	48	51	61	63	62	64	63	58	50	46	41	36	35
UQ	38	44	64		46	46	O	X	42	50	54	58	68	66	65	67	66	64	52	48	45	39	39	38
LQ	32	28	36		38	33	X		36	42	44	44	43	56	59	62	52	50	49	44	39	32	31	33

MAR. 2006 f<sub>XI</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

MAR. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	R	A	R	R	B	R	A	B	B	B	B	B	B	Y	B	J	R	R	R	42	39	36	32	31	27		
2	F	A	A	A	A	A	R	B	R	R	B	B	B	R	B	B	B	R	R	R	40	40	34	33	28	28		
3	F	A	A	A	A	F	R	R	R	R	R	R	57	56	56	58	56	45	44	40	39	31	27	24	F			
4	F	F	R	A	A	R	R	R	R	R	R	R	60	59	56	57	R	R	R	46	47	39	35	31	24	F		
5	F	F	F	A	Y	F	F	F	F	R	B	R	R	52	58	58	63	52	40	42	38	33	33	25	25			
6	F	R	A	B	A	R	R	R	R	R	F	R	63	67	57	60	J	R	J	R	50	44	26	A	A	A		
7	A	Y	B	B	A	A	R	A	B	R	B	B	B	B	B	B	B	B	B	B	B	R	33	28	20	F	A	
8	R	R	A	A	A	B	A	B	B	R	B	B	B	B	B	B	R	45	44	42	36	B	B	R	A	A		
9	A	A	A	A	A	A	B	J	R	R	R	R	B	R	R	R	R	J	R	J	R	R	31	29	A	A		
10	A	A	A	B	A	B	R	B	A	B	B	B	B	B	B	B	B	R	R	R	43	40	38	R	B	B	B	
11	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	B	B		
12	R	A	A	A	R	B	B	B	30	R	B	B	B	B	R	R	B	B	R	39	39	F	29	25	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	
14	B	Y	A	A	B	B	B	30	R	J	R	B	B	B	R	58	58	S	U	R	R	R	R	R	R	R	F	
15	22	22	A	B	A	B	B	B	B	B	B	R	R	J	R	R	J	R	R	46	42	40	35	31	B	A	R	
16	B	B	Y	R	A	A	R	B	A	A	R	R	B	B	B	B	B	B	B	35	34	J	R	F	B	R	B	
17	A	A	B	B	R	B	B	30	F	32	51	52	55	59	62	62	64	59	57	42	34	33	24	F	B	B	B	
18	B	B	Y	Y	B	F	R	30	F	B	B	B	B	B	B	B	B	B	B	A	B	A	A	A	A	A	A	
19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	A	R	R	R	R	
20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B	
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	A	A	A	
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	25	B	B	A	A	
23	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	B	
24	B	B	B	R	A	A	B	B	B	B	B	B	B	A	B	R	R	R	R	40	32	23	22	R	R	B	A	
25	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	
26	A	B	B	Y	B	B	A	B	B	B	B	B	B	55	59	62	R	B	B	B	B	B	A	A	R	R	R	
27	A	B	A	B	B	A	B	B	R	R	B	B	B	R	R	J	R	J	R	R	44	35	27	B	B	B	B	
28	A	F	B	A	A	B	R	B	B	B	B	B	R	R	61	52	B	B	J	R	46	38	32	25	B	B	B	
29	B	A	A	A	B	B	B	B	B	R	R	B	B	61	58	58	F	B	44	31	29	26	22	R	R	B	A	
30	A	B	A	R	B	A	A	B	R	R	R	C	J	R	R	B	J	R	R	R	44	37	33	20	F	B	B	B
31	A	A	B	A	B	B	F	21	30	36	38	37	37	37	68	66	60	S	R	R	46	44	32	24	16	F	A	S
	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	5	1			4	5	7	7	8	7	3	7	10	14	16	13	17	20	19	22	13	7	7				
MED	F	F	F			F	R			R	R		R	56	58	57	R	R	R	44	40	35	30	28	25	F	F	
U Q	27	28				R		R		R		F	R	59	61	60	R	R	R	46	42	39	33	32	28	28		
L Q	F					F	F			R	R		R	R	R	R	R	R	R	43	38	32	25	23	24	F	F	
	21	22				26	26	30	32	38	38	37	50	53	56	46	44	43	38	32	25	23	24	21				

MAR. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN



IONOSPHERIC DATA STATION SHOWA-ST.

MAR. 2006 ftes (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1	71	33	43	26	29		B	35	39		B	B	B	B	B	26	B	23	20	E	B	E	B	B								
2	25	34	33	33	38	37	25		B	E	B	B	B	B	27		B	B	E	B	E	B	B	B								
3	E	B	32	34	44	35	20	18	19	20	25		G	G	32	21	25	33	33	E	B	35	19	E	B	E	B	E	B	S		
4	E	S	16	25	33	39	40	35	36	17	21	22	24	23	30	32	32	24	24	26	18	16	E	B	E	B	E	B	B			
5	E	S	E	S	16	16	25	35	27	30	19	19	24	21	23		28	29	25	32	20	24	22	26	E	B	E	B	B			
6	20	34	26		B	32	36	27		G	G	22	27	28	29		28	26	24	20	20	18	E	B	19	44	56	42				
7	43	25		B	B	34	36	30	40		B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	24	18	30				
8	37	26	37	42	43		B	36		B	E	B	B	B	B	B	B	B	E	B	B	E	B	B	B	B	B	33	33			
9	35	70	34	35	42	34		18		G	G	18	22	24		27	25	24	23	22	17	17	18	E	S	14	40	44				
10	38	32	39		B	40		25		B	40		B	B	B	B	B	B	B	E	B	E	B	B	33	B	B	B				
11	35	68			B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	24	33	B				
12	K	33	36	44	40	25		B	B	E	B	E	B	B	B	B	B	B	29	26		B	E	B	E	B	E	B	B			
13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	B	B	B	B			
14		B	24	33	32		B	B	B	E	B	E	B	E	B	B	B	B	E	B	E	B	B	B	E	B	E	B	E	B	S	
15	E	S	E	S	16	16	37		B	43		B	B	B	B	G	G	23	23	34	27	27	20	20	17	14	14		30	18		
16		B	B		17	24	28	41	32		B	41	32	26	E	B	27		B	B	B	B	B	B	23	17	18		29	B		
17	31	32		B	B	26		B	E	B	28	21	22	28	26	27	27	34	31	18	20	16	14	16	20		B	B	B			
18		B	B	21	19		B	E	S	E	S	16	16	16	21		B	B	B	B	B	B	B	B	39	B	B	32	40	70	70	
19		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	28	B	B	35	26	32	
20		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	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	B	B	B	B	B	B	B	B	B	B	B	B	B	90	34	34	39		
22		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E	B	B	B	B		
23		B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	B	B	B	B		
24		B	B	B	26	42	33		B	B	B	B	B	B	B	B	36		27	28	22	29	17	13	13		B		40			
25	66		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	34	26		
26	25		B	B	17		B	B	33		B	B	B	B	B	B	B	B	E	B	E	B	E	B	B	B	B	B	44	37	36	
27	45		B	34	B	B	35		B	B	32	32		B	B	B	B	B	E	B	E	B	E	B	B	27	22	18	12	B	B	
28	34	34		B	34	27		B	33		B	B	B	B	B	B	B	B	26	26	53	28		B	17	13	13	13	B	B		
29		B	31	39	24		B	B	B	B	E	B	E	B	B	B	B	B	B	E	B	E	B	E	B	B	K	E	B	E	B	B
30	48		B	35	33		B	33	38		B	18	20	29		C	E	B	E	B	B	B	B	B	E	B	E	B	E	B	B	
31	39	44		B	33		B	E	S	E	B	16	14	16	23	20	29	23	29	50	23	E	B	E	B	E	B	E	B	E	B	
CNT	20	19	17	17	16	13	15	11	15	16	10	8	9	14	15	16	14	18	22	19	25	20	19	20								
MED	34	32	34	33	34	35	30	18	21	23	23	25	27	28	27	26	22	21	E	B	E	B	E	B	18	20	30	32				
UQ	41	34	38	37	41	36	35	28	25	28	27	28	30	32	32	30	24	E	B	23	28	20	22	34	36	38						
LQ	E	22	25	30	25	28	32	19	16	20	22	22	24	24	27	25	25	20	E	B	E	B	E	B	E	B	E	B	E	B	E	

MAR. 2006 ftes (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

MAR. 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	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	20	14	15	14	B	23	24	B	B	B	B	B	B	19	B	16	14	26	24	14	20	12	14	
2	12	13	14	14	13	16	18	B	12	26	B	B	B	24	B	B	B	28	24	B	16	19	13	13	
3	13	13	17	20	15	13	12	12	13	18	14	16	15	14	14	14	14	23	16	14	14	14	13	<sup>E</sup> 16	
4	<sup>E</sup> 16	<sup>S</sup> 16	16	14	18	24	14	14	13	14	14	15	20	16	16	17	18	14	12	12	16	14	13	13	
5	<sup>E</sup> 16	<sup>S</sup> 16	<sup>E</sup> 16	<sup>S</sup> 15	14	14	13	12	12	13	13	15	B	18	18	14	12	14	14	14	13	14	13	12	14
6	16	12	15	B	18	14	13	12	15	14	15	16	19	14	13	17	13	13	13	13	19	15	13	27	
7	12	15	B	B	24	23	23	20	B	25	B	B	B	B	B	B	B	B	B	B	B	18	13	12	13
8	13	14	19	22	24	B	20	B	B	30	B	B	B	B	B	B	23	14	24	18	B	B	13	14	
9	22	19	21	24	18	23	B	14	14	13	14	14	B	14	16	14	19	13	13	12	14	14	12	13	
10	14	14	13	B	15	B	18	B	22	B	B	B	B	B	B	B	B	28	28	18	14	B	B	B	
11	14	13	B	B	B	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	13	14	B	
12	13	13	14	14	14	B	B	B	20	25	B	B	B	B	20	26	B	B	28	22	15	14	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	17	B	B	B	
14	B	12	13	12	B	B	B	20	23	24	B	B	B	B	30	28	24	14	20	20	20	16	15	<sup>E</sup> 16	
15	<sup>E</sup> 16	<sup>S</sup> 16	<sup>E</sup> 16	<sup>S</sup> 14	15	B	B	B	B	B	B	17	13	16	20	19	14	13	12	14	14	B	13	13	
16	B	B	12	12	13	19	21	B	14	19	19	27	B	B	B	B	B	B	B	14	13	14	13	B	
17	12	14	B	B	14	B	B	28	15	13	28	18	15	12	14	18	13	20	16	14	12	<sup>E</sup> 15	<sup>S</sup> 15	B	
18	B	<sup>E</sup> 16	<sup>S</sup> 16	<sup>E</sup> 16	<sup>S</sup> 16	<sup>E</sup> 16	<sup>S</sup> 17	12	15	B	B	B	B	B	B	B	B	B	18	B	17	14	18	13	
19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	19	B	B	14	17	21	
20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	B	B	
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	38	18	13	22	
22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	B	B	14	
23	B	21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	B	B	B	
24	B	B	B	14	25	23	B	B	B	B	B	B	B	25	B	27	28	22	29	17	13	13	B	15	
25	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	13	
26	15	B	B	13	B	B	24	B	B	B	B	B	B	28	28	40	B	B	B	B	B	14	18	26	
27	13	B	22	B	B	16	B	B	17	19	B	B	B	30	28	26	27	22	18	12	B	B	B	B	
28	13	13	B	21	19	B	27	B	B	B	B	B	26	26	53	28	B	17	13	13	13	B	B	B	
29	B	12	15	12	B	B	B	B	B	24	27	B	B	27	24	24	B	15	18	15	18	16	B	12	
30	13	B	21	24	B	21	20	B	14	14	29	C	25	42	B	26	23	21	15	14	12	B	B	B	
31	17	20	B	18	B	<sup>E</sup> 16	<sup>S</sup> 16	14	12	23	14	29	14	29	50	16	20	18	19	16	12	13	13	12	
	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	30	31	30	31	31	31	31	31	31	31	31	31	31	
MFD	16	19	21	24	25	B	B	B	B	30	B	B	B	B	B	40	B	23	20	18	16	16	15	16	
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
L Q	13	13	15	14	15	19	18	20	14	19	27	29	25	25	20	19	19	14	15	14	14	14	13	13	

MAR. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

MAR. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1		A	A	A	A	A	B	A	A	B	B	B	B	B	B	A	B	210	200	220	222	234	224	232	246		
2		A	A	A	A	A	A	A	B	228	206	B	B	B	182	B	B	B	216	218	B	218	230	230	232		
3		S	A	A	A	A	A	E A	202	202	192	192	210	210	192	202	202	212	198	218	210	216	226	252	302		
4		S	E S	258	268	A	A	A	A	210	196	192	192	192	194	Y	210	Y	204	218	218	212	204	208	236	268	
5		234	222	240	A	A	234	260	192	220	198	184	B	188	188	192	192	196	202	204	204	206	214	226	220		
6		236	E S	300	A	B	A	A	A	198	198	198	200	200	198	214	198	190	204	212	226	E B	270	226	A	A	
7		A	A	B	B	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	250	250	262	A	A
8		212	A	A	A	A	B	A	B	B	262	B	B	B	B	B	B	198	198	210	218	B	B	218	A	A	
9		A	A	A	A	A	A	B	Y	202	212	176	A	B	190	200	206	216	210	210	210	218	246	A	B	B	B
10		A	A	A	B	A	B	A	B	A	B	B	B	B	B	B	B	B	B	238	228	236	A	B	B	B	
11		A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E A	A	A	B	
12		200	A	A	A	A	B	B	B	208	218	B	B	B	B	218	206	B	B	E B	220	220	214	228	B	B	
13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	240	B	B	B	
14		B	A	A	A	B	B	B	218	202	192	B	B	B	B	224	214	194	200	206	206	228	266	290	234		
15		S	S	A	B	A	B	B	B	B	B	B	212	210	E A	258	218	206	206	202	220	204	218	B	A	A	
16		B	B	Y	A	A	A	A	B	A	A	200	206	B	B	B	B	B	B	B	222	246	246	B	A	B	
17		A	A	B	B	A	B	B	E B	290	198	198	212	198	214	200	200	230	212	200	192	192	222	234	B	B	
18		B	B	A	A	B	S E S	A	248	212	216	B	B	B	B	B	B	B	B	B	A	B	A	A	A	A	
19		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A	A	A	
20		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	
21		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	180	186	A	
22		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	B	B	A	
23		B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	B	B	B	
24		B	B	B	A	A	A	B	B	B	B	B	B	B	B	A	B	224	218	204	210	206	222	266	B	A	
25		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
26		A	B	B	Y	B	B	A	B	B	B	B	B	B	B	E B	202	228	218	B	B	B	B	A	A	A	
27		A	B	A	B	B	A	B	B	A	A	B	B	B	B	E B	246	232	216	228	200	200	E B	B	B	B	
28		A	238	B	A	A	B	A	B	B	B	B	B	B	216	198	E B	282	218	B	Q	Q	Q	E B	B	B	
29		B	A	A	A	B	B	B	B	E B	250	208	B	B	E B	206	214	222	B	200	196	218	E B	E B	B	A	
30		A	B	A	A	B	A	A	B	240	188	238	C	198	E B	262	212	212	200	200	204	224	E B	B	B	B	
31		A	A	B	A	B	B	S	236	218	218	218	226	224	202	242	224	202	202	210	242	202	E B	A	E A	268	
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT		5	4	2			1	3	8	12	13	10	7	9	12	14	15	14	18	20	19	22	15	9	7		
MED		234	248	254			234	248	208	205	198	200	206	210	196	211	214	208	202	210	211	221	227	229	246		
U Q		241	E S	279				260	227	219	218	212	212	215	E	E B	228	222	212	206	219	226	240	E B	257	268	
L Q		206	230					E A	240	200	200	192	192	198	196	191	202	206	198	200	204	204	218	224	222	232	

MAR. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

APR. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Y	Y	A	A	A	R	30	O X	X	46	O X	48	X	X	X	X	O X	O X	X	X	X	B	B	B
2	B	B	B	B	B	B	B	34	44	54	B	B	52	70	65	66	64	50	41	34	28	B	B	B
3	B	B	B	B	B	B	B	36	49	49	58	66	68	67	72	67	64	56	42	40	30	B	B	B
4	B	B	A	A		B	44	34	42	50	B	66	67	B	83	B	75	65	50	R	A	A	A	A
5	A	B	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
6	61	R	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	S
7	A	A	B	B	B	R	B	B	O X	X	X	X	B	B	O X	X	X	O X	O X	X		B	B	B
8	B	B	Y	R	A	B	B	R	O X	O X	O X	X	B	O X	O X	X	X	B	B	B	B	B	B	A
9	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	X	A	O X	O X	R	A	A
10	B	B	B	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	X	B	B	B	O X	B	B	B	B
12	B	R	R	B	Y	B	B	O X	X	O X	O X	O X	X	X	X	X	X	X	X	B	B	B	B	B
13	B	B	B	Y	Y	B	B	O X	O X	O X	B	B	B	B	B	B	B	B	B	A	R	B	B	B
14	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X	A	A	B	B	A
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	O X	A	B
16	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X	Y
17	Y	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	O X	B	B	B	B	B	B
18	A	B	B	B	B	B	B	B	B	X	B	B	B	B	R	R	B	O X	B	B	B	B	B	B
19	Y	B	R	A	A	R	A	B	B	B	R	B	B	B	B	B	B	O X	B	B	B	B	B	B
20	B	B	B	B	B	B	B	B	O X	B	X	O X	O X	X	X	X	X	O X	X	B	Y	Y	Y	A
21	B	Y	R	A	R	A	A	42	42	44	B	B	O X	O X			O X	B	29	A	Y	A	A	
22	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	R	A	A	A	A	O X	R
23	O X	A	R	R	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
24	B	B	A	B	R	A	B	B	B	B	B	B	B	B	X	B	B	B	B	B	B	B	B	B
25	B	44	A	A	B	B	R	Y	O X	X	X	B	O X	O X	O X	O X	X	X	B	B	B	B	B	B
26	B	B	B	B	R	B	A	A	B	B	B	B	X	X	X	X	X	X	X	X	B	B	B	B
27	B	B	B	R	R		A	A	B	O X	O X	X	X	X	X	X	X	X	X	B	B	B	A	O X
28	O X	B	A	A	B	B	A	R	B	B	B	B	O X	O X	B	B	B	B	B	B	B	Y	B	A
29	A	A	A	O X	Y	B	B	B	B	O X	O X	X	B	B	O X	X	B	B	O X	B	B	B	B	B
30	B	B	A	S	B	B	B	B	O X	O X	O X	X	X	O X	O X	X	X	X	B	B	B	B	B	B
31									32	48	53	65	64	79	72	82	51	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	3	1		1	1	1	2	7	9	12	11	10	12	12	16	14	13	14	13	8	5	1	3	1
MED	O X	44		O X	69	34	37	34	42	47	51	58	60	66	68	66	64	49	38	34	31	38	38	37
U Q	61							38	46	49	51	65	68	69	72	70	68	51	42	38	36		89	
L Q	O X							O X	X	O X	X	X	O X	X	X	X	X		O X	X	X		O X	
	34							30	37	44	45	51	54	60	62	63	56	42	32	30	29		37	

APR. 2006 f<sub>XI</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

APR. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	Y	Y	A	A	A	R	F	R	21	32	41	37	45	38	J	R	J	R	49	43	33	28	F	B	B	B			
2	B	B	B	B	B	B	B	F	25	38	48	R	B	B	46	64	59	60	58	44	35	24	F	B	B	B			
3	B	B	B	B	B	B	B	F	28	43	43	J	R	J	R	62	61	66	61	58	50	36	34	24	B	B	B		
4	B	B	A	A	A	B	F	F	25	36	44	R	B	F	58	61	B	77	B	69	59	44	R	A	A	A			
5	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A			
6	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	S			
7	A	A	B	B	B	R	B	B	B	R	35	42	J	R	B	B	R	62	58	47	45	35	33	F	B	B	B		
8	B	B	Y	R	A	B	B	A	R	38	43	45	J	R	B	B	R	57	56	59	63	B	B	B	B	A			
9	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	43	A	R	32	32	A	A	A		
10	B	B	B	R	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A			
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	59	B	B	B	B	R	24	B	B	B	B		
12	B	R	R	B	Y	B	B	R	22	34	43	39	55	50	62	62	61	51	40	31	B	B	B	B	B	B			
13	B	B	B	Y	Y	B	B	24	B	38	36	R	B	B	B	F	B	B	B	B	A	R	B	B	B	B			
14	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	32	A	A	B	B	A	A			
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	32	A	B			
16	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y			
17	Y	B	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	R	34	B	B	B	B	B	B			
18	A	B	B	B	B	B	B	B	B	B	30	B	B	B	B	B	B	B	A	B	R	24	B	B	B	B			
19	Y	B	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	R	27	B	B	B	B			
20	B	B	B	B	B	B	B	B	B	R	39	B	B	R	R	54	64	58	56	J	R	J	R	45	45	Y	Y	Y	A
21	B	Y	A	A	A	A	A	F	28	F	29	F	B	B	72	68	R	F	60	57	44	B	F	21	A	Y	A	A	
22	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	R	A		
23	R	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
24	B	B	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
25	B	A	A	A	B	B	R	Y	28	38	39	B	B	R	45	45	64	57	58	33	B	B	B	B	B	B			
26	B	B	B	B	A	B	B	A	A	B	B	B	B	57	62	54	J	R	J	R	F	30	28	19	B	B	B	B	
27	B	B	B	A	A	A	A	A	B	B	R	45	45	51	52	58	52	52	J	R	41	24	B	B	B	A	R	31	
28	R	B	A	A	B	B	B	A	A	B	B	B	B	42	43	R	R	B	B	B	B	B	B	B	B	Y	B	A	
29	A	A	A	R	Y	B	B	B	B	B	R	45	51	R	B	B	R	J	R	B	B	R	25	B	B	B	B	B	
30	B	B	A	S	B	B	B	B	R	26	42	47	59	J	R	R	58	73	66	76	45	29	F	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	2			1			1	7	9	12	11	10	12	12	15	14	13	14	13	8	5	1	2	1					
MED	R			R			F	F	36	40	45	52	54	60	59	60	57	43	32	26	24	32	32	31					
U Q	30			28			21	25	36	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					
L Q							28	40	43	45	58	62	63	66	61	60	45	36	32	28									
							24	28	38	39	45	48	54	56	57	50	34	26	22	22									

APR. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

APR. 2006 ftEs (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1		19	21	36	42	34	22	E	B	E	S		E	S	E	S		E	B		E	B		E	S	B	B	B	
2		B	B	B	B	B	B	B	E	B	E	B	B	B	E	B	E	B	E	B	E	B	E	B	B	B	B	B	
3		B	B	B	B	B	B	B	E	B	B	E	B		E	B		E	B	E	B	E	B	B	B	B	B	B	
4		B	B					B	E	B	E	S						B	E	B	E	B	E	B					
5		70		71				30																					
6		36	28		89	43	35	43	36																				
7		34	36		B	B		29																					
8		B	B		16	22	38																						
9		34	37	32	48	70																							
10		B	B	B																									
11		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
12		B	K																										
13		B	B	B																									
14		Q																											
15		30	56	38																									
16		40		43																									
17		26		B	B	B	B																						
18		54		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
19		17	B	37	42	44	32	K																					
20		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
21		B		26	32	35	33	E	B																				
22		35	34	44	34																								
23		36	34	31	34	33	32	34																					
24		B	B																										
25		B		32	53	58																							
26		B	B	B	B																								
27		B	B	B																									
28		42	B	33	33																								
29		34	34	33	32	21																							
30		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		14	11	17	16	15	7	11	14	11	12	12	10	12	12	16	15	14	15	15	13	13	8	10	13				
MED		34	34	35	34	33	32	30	26	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B
U Q		40	36	40	45	38	35	38	36	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B
L Q		30	26	32	28	24	22	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B	E	B

APR. 2006 ftEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

APR. 2006 fmin (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	14	27	20	23	15	19	<sup>E</sup> 17	12	13	13	<sup>E</sup> 24	<sup>S</sup> 25	17	13	14	20	14	14	13	<sup>E</sup> 14	<sup>S</sup>	B	B	B
2	B	B	B	B	B	B	<sup>E</sup> 17	<sup>S</sup>	20	25	B	B	28	29	27	28	21	24	18	12	13	B	B	B	
3	B	B	B	B	B	B	B	17	12	15	21	15	16	15	26	18	14	22	14	14	13	B	B	B	
4	B	B	17	23	14	B	<sup>E</sup> 23	<sup>S</sup> 14	13	19	B	22	17	B	30	B	55	23	18	20	28	24	13	14	
5	13	B	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	20	12	14	13
6	12	12	B	14	26	16	16	18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12
7	12	13	B	B	B	20	B	B	B	B	B	B	B	B	25	23	20	22	22	16	15	B	B	B	
8	B	B	13	14	21	B	B	14	19	25	19	25	B	20	26	28	23	B	B	B	B	B	B	13	
9	13	12	13	14	17	B	B	30	B	B	B	B	B	B	B	B	B	14	16	13	14	13	14	12	
10	B	B	B	23	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	13
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	29	B	B	B	14	B	B	B	B	
12	B	13	16	B	12	B	B	14	15	20	20	24	20	28	22	20	19	19	15	B	B	B	B	B	
13	B	B	B	13	14	B	B	16	B	B	B	B	B	B	21	B	B	B	B	12	15	B	B	B	
14	13	13	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	13	16	B	B	21	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	17	15	18	
16	30	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	13
17	20	B	B	B	B	B	21	B	B	B	B	B	B	B	B	B	B	B	26	B	B	B	B	B	
18	38	B	B	B	B	B	B	B	B	B	23	B	B	B	B	B	28	28	14	B	B	B	B	B	
19	13	B	20	26	20	20	15	B	B	B	28	B	B	B	B	B	B	B	16	B	B	B	B	B	
20	B	B	B	B	B	B	B	B	B	23	B	29	24	29	32	30	24	16	12	B	12	14	15	13	
21	B	13	12	13	13	14	13	13	19	14	B	B	56	55	23	23	23	22	B	13	18	12	12	12	
22	14	15	19	21	B	B	28	B	B	B	B	B	B	B	B	B	B	B	17	14	22	14	13	12	13
23	12	12	14	13	13	14	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
24	B	B	14	B	15	20	B	B	B	B	B	B	B	B	29	B	B	B	B	B	B	B	B	B	B
25	B	13	21	18	B	B	17	13	18	18	24	B	32	32	26	23	20	15	B	B	B	B	B	B	
26	B	B	B	B	13	B	B	20	13	B	B	B	20	23	31	25	16	13	12	12	B	B	B	B	
27	B	B	B	16	12	13	21	21	B	B	20	29	22	18	22	22	15	13	13	B	B	B	B	13	14
28	16	B	15	16	B	B	B	23	22	B	B	B	27	20	B	B	B	B	B	B	B	B	13	B	13
29	13	14	13	14	15	B	B	B	B	B	25	28	B	B	50	30	B	B	16	B	B	B	B	B	
30	B	B	16	16	B	B	B	B	14	16	20	21	22	26	23	19	20	13	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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	B	B	26	24	B	B	B	B	B	B	B	B	B	B	41	B	B	B	B	B	B	B	B	B	B
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q	13	13	16	16	14	20	21	17	19	21	23	28	25	28	26	23	20	17	15	14	15	24	14	13	

APR. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

APR. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	Y	Y	A	A	A	A	B	E S	238	220	184	202	196	208	208	214	214	200	194	190	E A E S	B	B	B		
2	B	B	B	B	B	B	B	E S	236	220	E B	B	B	E B	220	220	220	204	204	188	188	210	204	B	B	B
3	B	B	B	B	B	B	B	E B	238	200	222	192	224	206	230	212	212	200	196	190	198	210	B	B	B	
4	B	B	A		A	B	B		250	206	210	B	216	200	B	B	B	B	202	198	A	A	A	A	A	
5	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	
6	268	244	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	
7	A	A	B	B	B	A	B	B	B	E B	E B	B	B	B	226	212	202	204	216	226	226	B	B	B	B	
8	B	B	Y		A	B	B	A	224	218	230	224	B	230	212	218	210	B	B	B	B	B	B	B	A	
9	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	256	A	238	208	A	A	A	A	
10	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	B	B	B	B	
12	B	A	A	B	Y	B	B	E B	272	230	212	208	230	204	208	208	208	192	192	198	B	B	B	B	B	
13	B	B	B	Y	Y	B	B	E B	270	210	214	B	B	B	206	B	B	B	B	A	A	B	B	B	B	
14	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	B	A	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B	
16	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	208	
17	Y	B	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	216	B	B	B	B	B	B	B	
18	A	B	B	B	B	B	B	B	B	B	E B	B	B	B	B	A	A	B	E B	224	B	B	B	B	B	
19	Y	B	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	196	B	B	B	B	B	B	
20	B	B	B	B	B	B	B	B	B	230	B	218	224	210	216	204	198	206	204	B	Y	Y	Y	A	A	
21	B	Y	A	A	A	A	A	A	Q	Q	B	B	E B	E B	B	Q	Q	Q	B	242	A	A	A	A	A	
22	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A	A	
23	220	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
24	B	B	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
25	B	A	A	A	B	B	A	A	E B	274	222	228	E B	E B	228	200	202	192	202	202	B	B	B	B	B	
26	B	B	B	B	A	B	B	A	A	B	B	B	B	212	216	212	196	184	178	202	202	B	B	B	B	
27	B	B	B	A	A	A	A	A	B	B	A	214	204	212	224	206	196	202	210	B	B	B	A	224		
28	222	B	A	A	B	B	B	A	A	B	B	B	B	E B	B	B	B	B	B	B	B	B	Y	B	A	
29	A	A	A		A	B	B	B	B	B	B	220	236	B	B	252	202	B	B	202	B	B	B	B	B	
30	B	B	A	A	B	B	B	B	E B	238	210	202	190	200	206	194	194	186	186	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	3	1	1	3				6	9	12	10	10	12	12	16	14	13	14	12	8	5		2	1		
MED	222	244	236	200				E	244	222	216	207	217	207	212	214	206	199	202	199	217	209	211	224		
U Q	268			226				E	270	238	226	230	224	225	230	222	212	203	206	207	233	242				
L Q	220			174				E	238	213	210	202	202	204	208	210	202	194	192	193	206	206				

APR. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN



# IONOSPHERIC DATA STATION SHOWA-ST.

MAY 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	30	X	X	O	X	O	X	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	34	52	62	71	72	66	O	X	S	X	O	X	B	B	B	B
3	A	B	B	B	B	B	R	R	O	X	O	X	X	O	X	R	X	X	B	B	B	B	B	B
4	B	R	R	B	B	B	B	B	30	40	X	B	B	76	87	103	99	R	B	A	A	R	A	R
5	R	O	X	A	B	B	B	B	B	B	B	B	B	B	B	B	O	X	O	X	O	X	B	B
6	R	R	B	A	A	R	R	B	B	B	B	B	B	64	68	58	54	43	O	X	51	A	A	A
7	A	A	R		35	42	49	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y
8	B	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	62	B	B	B	S	S	S	S
9	R	Y	R	R	A	B	B	B	B	B	X	B	B	X	B	O	X	B	B	B	B	B	B	B
10	B	R	Y	Y	B	B	B	B	B	O	X	O	X	B	B	B	O	X	X	B	B	B	B	B
11		76	A	A	B	A	Y	B	B	B	X	B	B	B	B	B	B	B	B	B	B	B	R	X
12	O	X	B	A	B	B	B	B	R	R	B	B	B	B	B	B	B	B	B	B	B	B	R	B
13	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
14	R	A	R	B	B	B	B	B	B	B	B	B	B	60	X	B	B	B	B	B	B	B	B	O
15	O	X	R	R	R	A	R	R	R	B	B	X	B	B	B	B	O	X	B	B	B	B	B	B
16	B	R	Y	R	B	B	B	B	B	33	43	55	58	58	61	50	31	X	B	B	B	B	B	B
17	B	B	Y	R	A	B	B	B	B	B	R	B	O	X	X	X	X	O	X	O	X	O	X	B
18	A	A	A		88	A	A	R	O	X	B	B	C	C	O	X	B	B	B	O	X	40	59	56
19	A	O	X	A	B	A	A	B	A	A	B	B	B	B	O	X	O	X	B	B	B	B	B	Y
20	A	A	B	A	A	R	B	B	B	R	O	X	B	B	B	B	B	B	B	B	B	B	B	R
21	A	A	A	B	B	B	R	B	B	O	X	O	X	O	X	O	X	B	B	B	B	B	B	B
22	B	B	B	R	B	B	B	R	R	O	X	O	X	B	R	O	X		B	B	B	B	A	Y
23	R	A	A	R	Y	B	B	R	R	B	B	B	R	X	X	X	O	X	B	B	B	B	B	B
24	B	A	Y	B	B	B	B	B	B	B	B	B	B	B	A	O	X	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	R	B	X	R	O	X	A	B	B	B	B	B
26	Y	Y	B	B	A	A	A		34	36	30	43	49	51	50	54	37	O	X	B	B	B	B	B
27	B	A	B	B	B	R	R	B	B	R		43	49	62	55	44	32	B	B	B	B	Y	Y	
28	B	Y	B	B	B	B	B	B	B	B	B	O	X	O	X	O	X	B	B	B	B	B	B	A
29	A	A	B	A	A	A	A	A	B	O	X	X	X	X	X	49	36	34	B	B	B	B	B	Y
30	O	X	A	A	A	R	R	R	X	X	X	X	X	X	X	X	X	B	B	B	B	B	A	O
31	B	B	B	X	B	R	A	A	Y	B	B	X	O	X	O	X	X	O	X	B	B	B	B	B
				38								42	49	52	44	36	31	28						
CNT	4	2		3	1	1	1	2	6	13	16	12	13	17	18	19	15	6	4	2	1	1	2	2
MED	O	X	O	X						X	X	X	X	X	X	X	X	X	O	X	O	X	X	X
U Q	59			88					36	42	46	60	72	63	62	58	42	38	44					
L Q	O	X							30	30	39	46	53	52	45	40	34	28	27					

MAY 2006 f<sub>XI</sub> (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

MAY 2006 foF2 (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	B	B	B	B	B	B	B	B	F	J	R	J	R	R	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	20	39	52	62	77	F	R	D	S	R	F	B	B	B	B	B	A
3	A	B	B	B	B	B	A	A	R	F	F	S				D	R	F	F	B	B	B	B	B	
4	B	R	R	B	B	B	B	B	F		B	B	F	F	R	U	S	D	R	A	A	A	A	R	A
5	A	R	A	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	R	B	B	B	Y	A	
6	A	A	B	A	A	A	A	B	B	B	B	B	B	58	58	F	F	F	F	R	A	A	A	A	F
7	A	A	A	F	F	F	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	
8	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	J	R	B	B	B	S	S	S	S	S
9	R	Y	R	R	A	B	B	B	B	B	J	R	B	B	J	R	B	R	B	B	B	B	B	B	B
10	B	R	Y	Y	B	B	B	B	B	R	R	B	B	B	B	F	R		B	B	B	B	B	B	B
11	A	A	A	B	A	Y	F	B	B	J	R	B	B	B	B	B	B	B	B	B	B	B	R	J	R
12	R	B	A	B	B	B	B	R	R	34		B	B	B	B	B	B	B	B	B	B	R	B	A	A
13	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
14	R	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R
15	R	A	R	R	A	R	R	A	B	B		B	B	B	B	R	R	B	B	B	B	B	B	B	B
16	B	R	Y	R	B	B	B	B	B	F		R	J	F	R	F		B	B	B	B	B	B	B	B
17	B	B	Y	A	A	B	B	B	B	B	R	B	B	R	J	R	R	R	R	R	R	B	B	A	A
18	A	A	A	A	A	A	A	R	B	F	F	B	C	C		B	F	B	B	R	F	F	A	A	
19	A	R	A	B	A	A	B	A	A	B	B	B	B	B	B	R	R	R	B	B	B	B	Y	Y	
20	A	A	B	A	A	A	B	B	B	R	R	B	B	B	B	B	B	B	B	B	B	B	R	A	
21	A	A	A	B	B	B	A	B	B		R	R	R	R	R	B	B	B	B	B	B	B	B	S	
22	B	B	B	R	B	B	B	R	R	22	33	44	50	47	43		F	B	B	B	B	A	Y	Y	
23	A	A	A	A	Y	B	B	A	R	23	33	41		R	J	R	R	B	B	B	B	B	B	B	
24	B	A	Y	B	B	B	B	B	B	B	B	B	B	A	R	R	A	B	B	B	B	B	B	B	
25	B	B	B	B	B	B	B	B	B	B	B	R	B	J	R	R	R	A	B	B	B	B	B	B	
26	Y	Y	B	B	A	A	A	F	F	F	F	F	J	F	F	F	R	B	B	B	B	B	B	B	
27	B	A	B	B	B	A	A	B	B	R	F	F	R	R	38	26		B	B	B	B	Y	Y	B	B
28	B	Y	B	B	B	B	B	B	B	B	F	F	F	56	49	38	26	F	B	B	B	B	B	A	
29	A	A	B	A	A	A	A	A	B	R	J	R	F	F	F	F	F	B	B	B	B	B	Y	Y	
30	R	A	A	A	A	A	A		24	25	26	39	40	50	J	R	J	R	B	B	B	B	A	R	A
31	B	B	B		B	A	A	A	Y	B	B		36	43	46	38	30	25	22		B	B	B	Y	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	3	2		2	1	1	1	2	6	13	16	12	13	17	19	19	16	5	4	2		1	2	1	
MED	R	R			F	F	F		F					R				R	R	R		F	R	R	
U Q	35	30		28	27	24	22	24	24	26	34	42	52	50	47	42	30	22	25	26		30	30	29	
L Q	36								27	34	40	54	64	57	56	52	37	30	38						
	34								F	F	F		J	R											
									20	22	30	39	47	45	38	34	25	20	20						

# IONOSPHERIC DATA STATION SHOWA-ST.

MAY 2006 ftes (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	B	B	B	B	B	B	B	B	BE	BE	B	E	BE	B	B	B	B	B	B	B	B	B	B	B		
2	B	B	B	B	B	B	B	B	BE	S	15	21	23	E	BE	BE	B	E	BE	B	B	B	B	B	37	
3	Q	B	B	B	B	B	B	36	34	26	E	BE	BE	BE	BE	BE	BE	B	E	B	B	B	B	B		
4	B	25	25	B	B	B	B	B	BE	S	E	S	B	BE	BE	BE	BE	B	B	B	B	B	B	B		
5	34	20	45	B	B	B	B	B	B	B	B	B	B	B	B	B	BE	B	E	B	B	B	B	24	32	
6	35	33	B	39	41	35	33	B	B	B	B	B	BE	BE	BE	BE	B	E	B	K	40	38	37	46	43	
7	94	59	32	35	44	48	72	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	42	
8	B	36	34	B	B	B	B	B	B	B	B	B	B	B	BE	B	B	B	B	B	S	S	S	S	S	
9	30	22	31	24	32	B	B	B	B	BE	B	B	B	BE	B	BE	B	B	B	B	B	B	B	B	B	
10	B	19	21	18	B	B	B	B	BE	BE	B	B	B	B	B	E	BE	B	B	B	B	B	B	B	B	
11	65	42	42	B	42	25	18	B	BE	B	B	B	B	B	B	B	B	B	B	B	B	B	K	19	41	
12	58	B	71	B	B	B	B	38	26	B	B	B	B	B	B	B	B	B	B	B	B	24	B	35	37	
13	37	B	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	25	26	
14	23	37	35	B	B	B	B	B	B	B	B	B	B	BE	B	B	B	B	B	B	B	B	B	B	35	
15	36	30	33	33	34	32	32	30	B	B	17	B	B	B	BE	B	B	B	B	B	B	B	B	B	B	
16	B	K	28	22	30	B	B	B	BE	BE	B	K	E	BE	BE	BE	BE	B	B	B	B	B	B	B	B	
17	B	B	25	33	43	B	B	B	B	B	28	BE	BE	B	E	BE	BE	BE	BE	BE	B	B	B	34	34	
18	35	42	43	44	43	38	38	32	BE	B	13	17	B	C	C	E	B	BE	B	B	B	39	37	72	50	59
19	91	42	44	B	40	43	B	34	38	B	B	B	B	BE	BE	BE	BE	B	B	B	B	B	B	17	16	
20	30	39	B	38	37	32	B	B	B	E	B	B	B	B	B	B	B	B	B	B	B	B	B	21	31	
21	31	32	33	B	B	B	B	B	BE	B	14	16	28	23	28	29	B	B	B	B	B	B	B	B	35	
22	B	B	B	26	B	B	B	35	22	E	BE	B	B	B	E	BE	BE	BE	B	B	B	B	B	37	22	36
23	40	71	42	32	27	B	B	37	26	B	B	B	B	E	BE	BE	BE	BE	B	B	B	B	B	B	B	
24	B	37	17	B	B	B	B	B	B	B	B	B	B	43	27	B	B	B	B	B	B	B	B	B	B	
25	B	B	B	B	B	B	B	B	B	B	BE	B	BE	BE	B	26	39	B	B	B	B	B	B	B	B	
26	17	28	B	B	41	66	43	27	16	E	B	13	24	18	24	18	15	14	13	B	B	B	B	B	B	
27	B	58	B	B	B	32	29	B	BE	B	14	32	15	16	20	17	17	B	B	B	B	20	33	B	B	
28	B	19	B	B	B	B	B	B	B	B	19	E	BE	BE	B	18	20	17	31	14	16	B	B	B	32	
29	43	58	B	36	43	43	31	41	BE	B	16	16	14	21	16	14	14	19	B	B	B	B	B	22	26	
30	38	43	38	40	38	38	32	34	E	BE	BE	B	B	E	BE	BE	B	B	B	B	B	B	B	40	42	44
31	B	B	B	37	B	34	44	35	21	B	B	22	23	22	19	14	13	15	B	B	B	B	B	B	16	
	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	18	22	19	14	13	12	12	11	11	15	17	13	14	19	20	20	17	6	5	4	5	7	14	18		
MED	36	36	34	34	41	36	32	34	21	E	B	18	18	22	23	22	18	16	18	18	40	37	37	30	35	
UQ	43	42	42	38	43	43	40	37	26	E	B	18	24	24	24	28	28	22	21	23	43	42	38	40	42	42
LQ	31	28	25	30	36	32	32	32	E	S	E	B	16	16	20	20	18	14	14	13	13	26	22	33	22	31

MAY 2006 ftes (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

MAY 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT.69°00.4'S LON.039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		B	B	B	B	B	B	B	B	B	14	20	13	24	58	B	B	B	B	B	B	B	B	B	B
2		B	B	B	B	B	B	B	B	B	E S	15	12	13	16	23	23	22	13	15	12	B	B	B	B
3			B	B	B	B	B				18	16	18	14	18	21	21	24	22	20	16	13	13	B	B
4		B		12	13	B	B	B	B	B	E S	16	15	B	B										
5		20	16	17		B	B	B	B	B	B	B	B	B	B	B	B								
6		14	12		B	22	18	23	14	B	B	B	B	B											
7		13	16	12	12	12	12	14		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8		B	23	24		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	S	S	S	S	S
9		13	11	12	12	18		B	B	B	B	B													
10		B		14	12	13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11		12	21	21	B	20	21	13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12		11	B	60		B	B	B	B	24	20														
13		12	B	23		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14		18	14	13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15		13	15	19	23	19	20	23	16	B	B	14													
16		B	14	18	15	B	B	B	B	B	B														
17		B	B	12	19	20		B	B	B	B	22													
18		13	12	15	14	17	17	24	21	B	B	13	14												
19		20	12	20	B	23	18		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
20		13	16		25	22	23		B	B	B	B	20												
21		19	12	17	B	B	B		B	B															
22		B	B	B		B	B	B		19	13	16	15	12											
23		11	13	16	23	23		B	B	14	14														
24		B	18	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
26		12	13		B	B																			
27		B	18		B	B	B		B	B															
28		B	13		B	B	B	B	B	B	B	14	14	13	16	14	14	17							
29		26	20		B	19	21	18	14	16	B														
30		14	15	19	20	21	15	22	21	13	13	14	15	13	16	15	22								
31		B	B	B		B	18	14	14	11															
		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	30	30	31	31	31	31	31	30	30	30	30	30
MED		20	16	21	B	B	B	B	B	B	B	24													
U Q		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q		13	13	15	19	21	20	18	20	15	14	14	18	22	21	19	17	14							

MAY 2006 fmin (0.1MHz)

IONOSPHERIC DATA STATION SHOWA-ST.

MAY 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT.69°00.4'S LON.039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	E B	210	204	200	E B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	Q	214	196	196	186	196	188	184	184	170		B	B	B	B	A
3	A	B	B	B	B	B	A	A	Q	264	212	198	198	188	202	194	188	194	206	212		B	B	B
4	B	A	A	B	B	B	B	B	E S	278	240		B	E B	E B	244	244	222	242		A	A	A	A
5	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	B	A	E B	B	B	B	A
6	A	A	B	A	A	A	A	B	B	B	B	B	B	222	204	190	Q	E B	A	A	A	A	A	F
7	A	A	A			F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
8	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	208		B	B	B	S	S	S	S
9	A	Y	A	A	A	B	B	B	B	B	204		B	B	240	194		B	B	B	B	B	B	B
10	B	A	A	Y	B	B	B	B	B	B	234	206		B	B	206	202	196		B	B	B	B	B
11	A	A	A	B	A	A	190	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B
12	E A	B	A	B	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
13	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
14	A	A	A	B	B	B	B	B	B	B	B	B	B	216		B	B	B	B	B	B	B	B	244
15	212	A	A	A	A	A	A	A	A	B	B		B	B	B	204		B	B	B	B	B	B	B
16	B	A	Y	A	B	B	B	B	E B	238	202	196	192	202	196	190	190		B	B	B	B	B	B
17	B	B	A	A	A	B	B	B	B	B	A	B	202	208	184	194	206	E B	E B	230		B	B	A
18	A	A	A	A	A	A	A	182	E B	248	232		B	C	C	196	196		B	B	214	196	214	A
19	A	A	A	B	A	A	B	A	A	B	B	B	B	B	224	200	E B	B	B	B	B	B	B	Y
20	A	A	B	A	A	A	B	B	B	A	246		B	B	B	B	B	B	B	B	B	B	B	A
21	A	A	A	B	B	B	A	B	E B	258	234	212	210	208	198		B	B	B	B	B	B	B	A
22	B	B	B	A	B	B	B	A	E B	288	202	216		190	202	192	198		B	B	B	B	A	A
23	A	A	A	A	A	B	B	A	A	B	B	B	206	198	208	196	206		B	B	B	B	B	B
24	B	A	Y	B	B	B	B	B	B	B	B	B	B	A	218		B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	216	Q	188	200		A	B	B	B	B	B	B
26	Y	A	B	B	A	A	A	222	E B	264	252	214	190	192	184	186	202	202		B	B	B	B	B
27	B	A	B	B	B	A	A	B	E B	258	214	202	202	188	188	188		B	B	B	B	Y	A	
28	B	Y	B	B	B	B	B	B	B	Q	248	232	196	206	208	208	182		B	B	B	B	B	A
29	A	A	B	A	A	A	A	A	E B	254	224	204	210	196	184	200	200		B	B	B	B	B	A
30	256	A	A	A	A	A	A	A	E B	310	258	228	222	202	202	202	202		B	B	B	B	A	A
31	B	B	B	A	B	A	A	A	A	B	B	A	244	208	202	208	188	202	224		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	1		2	1		1	2	6	13	16	13	14	18	20	20	16	5	3	2	1	1	3	1
MED	246	254		217	198		190	202	E B	248	214	204	200	202	200	196	199	E B	E B	222	196	214	216	244
U Q	256								E B	278	258	230	219	210	208	208	202	216	E B	E B	243	268	E A	224
L Q	212								246	224	203	197	192	196	188	190	195	188	212					214

MAY 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

JUN. 2006 f<sub>x</sub>I (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

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

JUN. 2006 f<sub>x</sub>I (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

JUN. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	Y	B	B	R	A	A	A	A		B	R	43	F	R	B	B	B	B	B	B	B	A	A
2	A	A	A	R	B	B	B	B	B	26	B	B	R	R	R		B	B	B	B	B	B	B	B
3	B	A	A	A	A	A	A	A	Y	F	30	36	F	42	R	F		A	B	B	B	B	B	B
4	B	A	A	A	Y	A	B	B	B	B	F	36	41	F	F	22	B	Y	Y	A	B	B	B	A
5	B	A	A	B	B	B	B	B	B	A	A	R	R	F	F	Y	B	B	B	B	B	Y	Y	A
6	B	A	A	A	A	A	B	A	Y	Y	B	B	B	B	B	B	R	B	B	A	A	B	A	B
7	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	Y	A	A
8	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	B
9	B	B	B	B	B	B	B	B	R	B	B	B	B	B	F	B	B	B	B	B	B	B	A	A
10	A	A	A	B	B	B	B	B	B	B	B	B	R	B	B	R	B	B	B	B	B	A	R	A
11	A	B	B	B	A	A	B	A	A	B	B	B	B	B	F	B	F	B	B	B	B	B	B	A
12	A	A	B	A	A	A	A	B	B	B	F	R	B	B	B	R	B	B	B	B	B	B	B	B
13	B	B	A	A	A	A	A	B	B	B	R	34	32	36	F	F	F	B	B	B	B	B	B	B
14	B	R	A	A	A	A	A	A	B	B	B	F	F	F	A	A	R	B	B	B	B	B	B	B
15	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
16	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
17	B	B	A	B	A	A	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	Y
18	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	A	A	R	R	A	B	A	A	B	B	B	31	36	37	34	27	R	B	B	B	B	Y	B	Y
20	Y	B	A	A	Y	A	A	Y	B	B	F	F	34	35	32	26	F	B	R	A	B	B	B	B
21	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y
22	A	A	A	A	A	A	A	B	B	B	B	B	B	F	F	F	A	A	A	B	A	B	B	A
23	A	A	A	A	B	B	A	Y	B	B	B	F	33	31	R	30	B	B	A	Y	A	B	B	C
24	C	C	C	C	C	C	C	C	C	C	C	C	F	F	F	F	B	A	B	B	B	B	B	B
25	B	R	A	A	A	A	A	R	F	R	R	30	30	28	26	17	F	B	R	B	B	B	B	B
26	A	A	A	A	A	A	R	A	A	A	F	F	F	F	F	F	B	B	R	R	B	B	A	A
27	A	A	B	A	A	B	B	A	R	B	F	F	F	F	F	F	A	B	B	B	R	B	B	A
28	A	A	A	A	A	A	R	F	F	F	B	B	B	B	B	B	B	B	B	B	A	B	A	A
29	A	A	A	A	A	R	B	A	A	A	R	B	B	B	B	B	B	R	B	B	B	R	A	A
30	A	A	B	B	A	A	B	A	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B
31																								
H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT				1		1		2	2	3	7	14	15	15	16	14	4	1						
MED				R		R		28	F	F	F	32	35	32	F	F	23	R						
U Q				44		35			29	25	20	32	35	32	33	24								
L Q										26	27	34	41	40	40	32	30							
										F	F	F	F	F	F	F	20							
										21	20	28	31	29	28	21								

JUN. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

JUN. 2006 f<sub>TEs</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	20	B	B	26	84	40	42	29	31	B	28	E B	16	18	E B	B	B	B	B	B	B	39	44	
2	68	46	63	32	B	B	B	B	B	B	B	B	E B	E B	E B	E B	B	B	B	B	B	B	B	B	
3	B	31	32	33	57	43	34	32	17	16	16	18	18	E B	E B	E B	E B	24	B	B	B	B	B	B	
4	B	22	36	57	18	30	B	B	B	B	E B	E B	B	13	13	16	32	14	16	K	B	B	B	33	
5	B	34	39	B	B	B	B	B	B	30	44	17	20	19	15	20	B	B	B	B	B	B	18	24	
6	B	25	31	35	45	43	B	38	23	20	B	B	B	B	B	B	E B	20	B	B	40	44	B	43	
7	56	60	73	B	72	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	44	B	22	42	
8	71	44	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	44	B	38	
9	B	B	B	B	B	B	B	B	31	B	B	B	B	B	E B	B	B	B	B	B	B	B	B	34	
10	29	38	35	B	B	B	B	B	B	B	B	B	E B	B	B	E B	B	B	B	B	B	B	38	25	
11	33	B	B	B	42	33	B	33	38	B	B	B	B	B	E B	B	B	E B	16	B	B	B	B	B	
12	25	35	B	32	34	34	33	B	B	E B	E B	B	B	B	E B	B	B	B	B	B	B	B	B	B	
13	B	B	33	36	38	43	36	B	B	B	22	16	16	E B	E B	E B	E B	E B	B	B	B	B	B	B	
14	B	26	32	66	38	36	44	28	B	B	B	E B	18	18	20	61	38	26	B	B	B	B	B	B	
15	34	70	B	32	32	31	33	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	37	43	
16	40	39	34	B	44	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
17	B	B	33	B	25	35	B	B	26	B	B	B	B	B	B	B	B	B	B	B	B	B	23	36	
18	32	32	31	24	34	40	38	31	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
19	31	44	28	28	38	B	36	37	B	B	B	18	20	17	21	15	B	B	B	B	B	B	B	18	
20	25	B	56	61	24	33	33	19	B	E B	E B	K	K	K	E B	K	B	B	25	35	B	B	B	B	
21	B	B	B	B	B	B	B	44	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	17	
22	26	26	26	41	25	44	35	B	B	B	B	B	B	E B	E B	B	32	35	33	B	B	B	B	39	
23	28	34	57	29	B	B	32	16	B	B	B	26	E B	18	17	17	B	B	37	18	29	B	B	C	
24	C	C	C	C	C	C	C	C	C	C	C	E B	E B	E B	K	E B	B	B	B	B	B	B	B	B	
25	B	22	25	37	44	38	25	28	E B	14	23	23	17	34	25	48	33	B	27	B	B	B	B	B	
26	28	40	37	36	34	27	27	39	31	34	14	14	33	24	34	13	B	B	24	24	B	B	27	24	
27	29	26	B	32	36	B	B	32	25	E B	E B	B	13	14	32	25	17	25	26	B	B	B	B	32	
28	36	34	43	91	83	48	30	34	E B	17	25	B	B	B	B	B	B	B	B	B	28	B	35	40	
29	46	37	67	43	38	44	B	33	37	32	E B	23	B	B	B	B	B	E B	13	B	B	B	20	44	
30	43	38	B	B	40	34	B	38	B	B	B	B	B	B	B	E B	B	B	B	B	B	B	B	B	
31																									
CNT	18	23	20	18	22	18	14	17	11	8	10	14	15	15	17	16	7	8	5	6	6	7	12	17	
MED	32	34	34	36	38	37	34	33	26	28	E B	16	18	18	18	17	19	E B	24	24	34	25	23	38	32
U Q	43	40	50	43	44	43	36	38	31	32	23	18	27	25	26	24	26	31	34	40	44	37	42	40	
L Q	28	26	32	32	32	33	32	30	E B	17	22	E B	E B	17	17	E B	E B	E B	20	18	28	18	20	30	25

JUN. 2006 f<sub>TEs</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN



# IONOSPHERIC DATA STATION SHOWA-ST.

JUN. 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	14	B	B	13	16	20	14	18	18	B	20	16	13	14	B	B	B	B	B	B	B	14	14	
2	12	13	14	13	B	B	B	B	B	B	B	B	24	29	30	29	B	B	B	B	B	B	B	B	
3	B	12	12	12	18	23	15	12	11	12	12	14	13	16	18	14	12	17	B	B	B	B	B		
4	B	14	20	14	14	13	B	B	B	B	13	13	12	13	13	13	B	B	B	B	B	B	20		
5	B	12	13	B	B	B	B	B	B	14	16	17	20	13	15	15	B	B	B	B	B	13	11	13	
6	B	13	12	13	12	13	B	14	13	13	B	B	B	B	B	B	20	B	B	B	13	13	29	B	
7	15	29	56	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	B	14	12	14
8	19	12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	B	15	B	
9	B	B	B	B	B	B	B	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	12	12	
10	22	13	27	B	B	B	B	B	B	B	B	B	27	B	B	20	B	B	B	B	B	12	12	14	
11	24	B	B	B	21	23	B	22	15	B	B	B	B	B	14	B	16	B	B	B	B	B	B	14	
12	12	13	B	16	13	14	21	B	B	B	14	23	B	B	B	20	B	B	B	B	B	B	B	B	
13	B	B	12	18	14	13	13	B	B	B	14	14	12	14	12	14	14	B	B	B	B	B	B	B	
14	B	13	12	14	13	12	13	13	B	B	B	18	14	13	12	13	12	B	B	B	B	B	B	B	
15	20	28	B	14	18	19	14	14	B	B	B	B	B	B	B	B	B	B	B	B	B	13	14	20	
16	18	20	23	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	
17	B	B	22	B	18	24	B	B	18	B	B	B	B	B	B	B	B	B	B	B	B	12	13	13	
18	13	12	13	14	22	14	16	16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
19	16	15	14	14	15	B	14	14	B	B	B	12	20	14	21	15	B	B	B	B	12	B	B	13	
20	14	B	14	16	13	22	14	14	B	B	15	13	13	12	13	12	B	13	13	B	B	B	B	B	
21	B	B	B	B	B	B	B	20	B	B	B	B	B	B	B	B	B	B	B	B	13	B	B	12	
22	12	13	13	13	12	12	12	B	B	B	B	B	B	20	16	14	13	12	12	B	21	B	B	14	
23	13	14	12	12	B	B	15	12	B	B	B	15	18	14	13	B	B	13	14	14	B	B	B	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	18	19	12	12	14	B	13	B	B	B	B	B	
25	B	12	13	24	14	13	12	12	14	13	12	13	13	12	12	14	B	18	B	B	B	B	B	B	
26	12	12	13	13	15	13	13	13	13	13	14	14	15	13	12	13	B	B	12	15	B	B	12	13	
27	13	12	B	12	13	B	B	13	14	B	13	14	13	14	13	13	12	B	B	B	14	B	B	12	
28	14	14	13	14	14	14	23	14	17	13	B	B	B	B	B	B	B	B	B	22	B	13	13	13	
29	13	23	22	16	13	12	B	21	13	24	23	B	B	B	B	B	B	13	B	B	B	13	12	14	
30	14	14	B	B	20	20	B	27	B	B	B	B	B	B	B	24	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	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	29	
MED	19	14	20	16	18	22	B	21	B	B	B	B	B	B	20	26	B	B	B	B	B	B	B	20	
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
L Q	13	12	13	14	13	13	14	14	16	21	14	14	15	13	13	14	B	18	B	B	B	B	13	13	

JUN. 2006 fmin (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

JUN. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	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	A	A	A	322	BEA	262	206	220	194	B	B	B	B	B	B	B	A	A
2	A	A	A	190	B	B	B	B	B	B	B	B	210	218	200	254	EB	B	B	B	B	B	B	B	B
3	B	A	A	A	A	A	A	A	YE	A	310	212	212	212	198	194	214	204	A	B	B	B	B	B	B
4	B	A	A	A	Y	A	B	B	B	B	214	200	198	196	190	192	Y	B	Y	Y	A	B	B	B	A
5	B	A	A	B	B	B	B	B	B	A	A	A	218	184	214	188	Y	B	B	B	B	B	Y	A	A
6	B	A	A	A	A	A	B	A	A	A	B	B	B	B	B	B	EB	B	B	B	A	A	B	A	B
7	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	266	B	B	B	A	B	A	A	A
8	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	B
9	B	B	B	B	B	B	B	B	A	B	B	B	B	B	Q	B	B	B	B	B	B	B	A	A	A
10	A	A	A	B	B	B	B	B	B	B	B	B	200	B	B	200	B	B	B	B	B	A	A	A	A
11	A	B	B	B	A	A	B	A	A	B	B	B	B	B	Q	B	Q	B	B	B	B	B	B	B	A
12	A	A	B	A	A	A	A	B	B	BE	BE	BE	B	B	B	204	B	B	B	B	B	B	B	B	B
13	B	B	A	A	A	A	A	B	B	B	240	226	224	192	192	170	194	208	B	B	B	B	B	B	B
14	B	A	A	A	A	A	A	A	B	B	B	B	214	204	200	Q	A	A	A	B	B	B	B	B	B
15	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
16	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
17	B	B	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	Y
18	A	A	A	A	A	A	206	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	A	A	A	A	A	B	A	A	B	B	B	194	194	196	198	204	B	B	B	B	A	B	B	Y	Y
20	A	B	A	A	A	A	A	Y	B	BE	B	Q	244	210	200	190	184	212	EB	B	A	A	B	B	B
21	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	B	Y	Y
22	A	A	A	A	A	A	A	B	B	B	B	B	B	194	206	192	B	B	A	A	B	A	B	B	A
23	A	A	A	A	B	B	A	Y	B	B	B	194	196	196	210	B	B	A	Y	A	B	B	B	C	C
24	C	C	C	C	C	C	C	C	C	C	C	204	208	202	202	202	Q	B	A	B	B	B	B	B	B
25	B	A	A	A	A	A	208	220	EB	A	A	210	202	210	Q	192	188	B	A	B	B	B	B	B	B
26	A	220	A	A	A	A	A	A	A	AE	B	244	188	178	194	198	188	Q	B	B	A	A	B	B	A
27	A	A	B	A	A	B	B	A	A	BE	B	226	194	184	202	192	192	Q	A	B	B	B	A	B	B
28	EA	A	A	A	A	A	AE	A	Q	A	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A
29	A	A	A	A	A	226	B	A	A	A	A	B	B	B	B	B	B	EB	B	B	B	B	A	A	A
30	A	A	B	B	A	A	B	A	B	B	B	B	B	B	B	EB	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		1	2	2	2	2	6	14	15	15	16	14	4	1							
MFD	EA	222	220	190		226	207	254	259	316	AE	B	233	204	200	198	196	203	EB						
UQ											EB	244	218	206	210	203	212	237							
LQ											214	194	192	194	191	192	200								

JUN. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

JUL. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	O X 32	X 39	A	B	R	R	B	A	B	B	B	B	B	B	O X 39	X 41	B	B	B	B	B	B	B	B	
2	B	B	B	B	B	B	B	R	B	B	B	B	B	O X 47	B	B	B	B	R	B	B	B	B	B	
3	B	B	B	B	57	B	A	R	R	R	O X 31	X 35	O X 45	X 43	B	O X 42	B	B	B	B	B	B	B	B	
4	Y	A	B	B	B	A	A	A	A	B	B	B	O X 44	X 45	O X 57	X 41	R	Y	B	B	B	A	A	A	
5	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	
6	B	A	B	B	B	B	R	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
7	Y	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	
8	R	R	A	A	A	R	B	B	R	B	B	O X 42	X 42	B	B	B	B	B	B	B	B	B	B	B	
9	R	Y	A	B	B	B	B	B	B	B	X 29	X 39	X 44	X 43	X 42	X 31	B	B	B	B	B	B	B	B	
10	R	A	A	A	B	B	B	A	B	B	X 32	X 36	X 38	X 47	X 47	X 55	B	B	F	A	A	A	A	A	
11	A	A	A	A	O X 38	A	Y	B	B	O X 26	X 32	B	X 43	B	B	B	B	B	R	B	A	R	B	90	
12	X 43	A	A	O X 42	A	B	A	R	B	B	B	B	O X 38	B	O X 48	B	B	B	B	B	B	R	Y	R	
13	R	O X 35	O X 41	R	B	A	B	R	R	B	B	B	X 42	B	O X 49	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 42	B	O X 40	R	B	B	B	A	R	B	B	
15	A	A	R	R	B	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	R	A	A	Y	B	B	B	B	B	B	B	B	O X 43	B	B	B	B	B	B	B	B	B	B	
17	B	B	B	B	B	B	R	R	B	B	B	X 42	O X 48	B	X 47	O X 41	B	B	B	B	B	B	B	B	
18	B	B	B	R	A	B	B	B	B	B	B	O X 45	B	B	B	B	B	B	B	R	B	B	B	B	
19	B	R	A	B	A	A	B	B	B	B	B	B	X 43	A	A	B	B	B	R	B	B	B	B	R	
20	B	B	R	Y	A	A	A	B	Y	Y	A	X 43	X 44	O X 40	O X 38	X 39	R	B	R	R	R	B	A	B	
21	A	Y	A	A	O X 34	A	R	B	Y	R	33	X 42	O X 40	O X 50	O X 50	X 38	27	B	B	B	B	B	B	B	
22	Y	B	R	R	R	A	R	A	B	B	B	X 43	X 44	X 42	X 42	X 38	29	X	A	A	B	Y	B	B	A
23	A	A	A	A	A	A	A	R	A	A	36	45	B	B	A	42	35	X	B	B	B	B	B	R	
24	A	A	A	B	B	B	B	B	B	B	B	B	R	O X 49	X 46	X 46	X 39	B	B	B	A	A	B	B	A
25	A	A	A	A	A	A	B	B	R	B	B	B	B	O X 46	O X 54	B	36	B	B	B	B	B	B	B	
26	A	A	A	A	A	A	A	A	B	B	B	O X 44	B	O X 46	X 43	X 38	B	B	B	B	B	B	B	B	
27	B	B	B	B	B	A	A	B	B	O X 33	X 36	O X 50	O X 48	X 47	X 43	X 42	36	X	B	A	Y	B	B	B	A
28	A	A	A	R	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y	
29	Y	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
30	B	B	B	A	R	Y	B	B	B	B	B	B	B	B	O X 47	X 52	B	B	B	B	A	B	B	B	B
31	B	B	B	R	A	A	Y	B	B	B	B	B	B	B	X 61	B	X 44	45	X 42	A	B	R	R	A	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	2	3	1	4						2	7	13	14	16	14	16	5	1						1	
MED	X 38	O X 39	O X 41	O X 40						O X 30	X 32	X 43	X 44	X 46	X 46	X 40	X 35	X 42						90	
U Q		62		50							36	44	46	47	49	42	40								
L Q	O X 35			O X 36							X 31	X 40	X 42	X 43	X 42	X 38	28								

JUL. 2006 f<sub>XI</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

JUL. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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 26	R 33	A	B	R	A	B	A	B	B	B	B	B	B	33	35	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	R	B	B	B	B	B	R 41	B	B	B	B	B	R	B	B	B	B
3	B	B	B	B	Y	B	A	R	A	A	25	29	R 39	F 34	B	R 36	B	B	B	B	B	B	B	B
4	Y	A	B	B	B	A	A	A	A	B	B	B	R 38	F 35	F 44	R 35	A	Y	B	B	B	A	A	A
5	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
6	B	A	B	B	B	B	R	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	Y	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
8	A	A	A	A	A	A	B	B	A	B	B	B	R 36	B	B	B	B	B	B	B	B	B	B	B
9	A	Y	A	B	B	B	B	B	B	B	23	33	38	F 30	F 32	25	B	B	B	B	B	B	B	B
10	R	A	A	A	B	B	B	A	B	B	26	30	32	F 37	F 38	J 49	B	B	F	A	A	A	A	A
11	A	A	A	A	R 32	A	Y	B	B	R 20	26	B	J 37	R 32	B	B	B	B	R	B	A	R	B	A
12	J 37	R 33	F 33	A	A 36	R 36	A	B	A	A	B	B	B	R 32	B	R 42	B	B	B	B	B	R	Y	R
13	R 29	R 35	R	R	B	A	B	A	A	B	B	B	B	B	R 36	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R 36	B	R 34	R	B	B	A	A	B	B
15	A	A	R	R	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	R	A	A	Y	B	B	B	B	B	B	B	B	R 37	B	B	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	A	A	B	B	B	B	R 36	42	B	41	35	B	B	B	B	B	B	B
18	B	B	B	R	A	B	B	B	B	B	B	B	R 39	B	B	B	B	B	B	R	B	B	B	B
19	B	A	A	B	A	A	B	B	B	B	B	B	F 32	A	A	B	B	B	R	B	B	B	R	
20	B	B	A	Y	A	A	A	B	Y	Y	A	37	J 38	R 34	R 32	33	R	B	A	A	A	B	A	B
21	A	Y	A	A	R 28	A	R	B	Y	R	24	36	36	R 44	R 44	32	F 17	B	B	B	B	B	B	B
22	Y	B	A	A	A	A	A	A	B	B	B	B	37	38	J 36	R 36	F 28	23	A	A	B	Y	B	A
23	A	A	A	A	A	A	A	R	A	A	F 27	F 35	B	B	A	F 35	29	B	B	B	B	B	B	R
24	A	A	A	B	B	B	B	B	B	B	B	B	R 43	J 40	R 40	33	B	B	B	A	A	B	B	A
25	A	A	A	A	A	A	B	B	A	B	B	B	R 40	R 48	B	F 28	B	B	B	B	B	B	B	B
26	A	A	A	A	A	A	A	A	B	B	B	R 38	B	40	37	32	R	B	B	B	B	B	B	B
27	B	B	B	B	B	A	A	B	B	R 27	30	44	R 42	41	J 37	R 36	30	B	A	Y	B	B	B	A
28	A	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y
29	Y	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	A	A	Y	B	B	B	B	B	B	B	B	R 41	R 46	B	B	B	B	A	B	B	B
31	B	B	B	R	A	A	Y	B	B	B	B	B	B	J 55	R 55	B	F 38	34	36	A	B	R	R	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	3	1		3					2	7	13	14	16	14	16	5	1						
MED	R 32	R 33	R 35		R 32					R 24	26	36	R 38	R 38	39	34	29	36						
U Q		R 33			R 36						27	38	40	41	43	36	32							
L Q		R 29			R 28						24	32	36	36	36	32	20							

JUL. 2006 foF2 (0.1MHz)

IONOSPHERIC DATA STATION SHOWA-ST.

JUL. 2006 f<sub>TEs</sub> (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	34	38	33	B	25	32	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
2	B	B	B	B	B	B	B	34	B	B	B	B	B	B	B	B	B	B	B	B	32	B	B	B	
3	B	B	B	B	23	B	38	30	32	35	14	14	20	23	B	B	B	B	B	B	B	B	B	B	
4	21	33	B	B	B	32	70	32	27	B	B	B	B	24	24	32	28	33	22	B	B	45	44	50	
5	45	40	43	42	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	42	
6	B	65	B	B	B	B	20	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
7	16	32	37	B	B	42	36	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	26	
8	25	25	35	33	34	24	B	B	29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
9	24	18	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
10	23	38	41	33	B	B	B	26	B	B	B	B	B	B	B	B	B	B	B	45	46	43	40	44	34
11	54	36	35	33	37	33	17	B	B	B	B	B	B	B	B	B	B	B	B	19	B	32	21	B	44
12	58	72	44	45	37	39	B	37	32	B	B	B	B	25	27	B	B	B	B	B	B	26	19	27	17
13	17	34	40	33	B	43	B	32	30	B	B	B	B	29	30	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	48	36	B	B
15	58	57	33	32	B	37	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	34	47	36	23	B	B	B	B	B	B	B	B	23	B	B	B	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	43	39	B	B	B	B	B	15	28	25	23	B	B	B	B	B	B	B	B
18	B	B	B	26	72	B	B	B	B	B	B	B	B	24	B	B	B	B	B	B	22	B	B	B	B
19	B	30	39	B	36	59	B	B	B	B	B	B	B	30	48	42	B	B	B	B	B	B	B	24	
20	B	B	30	23	37	30	33	B	24	23	33	19	20	18	22	20	26	B	B	B	30	29	27	32	
21	32	20	30	34	30	44	26	B	24	28	17	24	19	22	17	16	13	B	B	B	B	B	B	B	
22	16	B	26	25	26	53	34	33	B	B	B	B	B	24	18	24	24	27	26	59	44	17	B	30	
23	58	30	30	68	57	58	44	33	39	31	22	16	B	B	34	19	23	B	B	B	B	B	B	22	
24	33	31	39	B	B	B	B	B	B	B	B	B	B	25	27	28	24	19	B	B	31	32	B	32	
25	33	38	43	37	35	54	B	B	37	B	B	B	B	26	20	B	16	B	B	B	B	B	B	B	
26	40	57	57	44	34	36	43	34	B	B	B	B	B	24	27	26	19	B	B	B	B	B	B	B	
27	B	B	B	B	B	40	33	B	B	B	B	B	B	12	17	24	18	18	19	20	16	41	19	30	
28	44	44	42	34	44	88	B	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	B	17	19
29	22	36	32	38	43	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	33	25	17	B	B	B	B	B	B	B	B	23	27	B	B	B	B	35	B	B	B	
31	B	B	B	32	44	35	18	B	B	B	B	B	B	B	29	16	15	17	36	B	26	29	41	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	19	21	21	19	18	19	14	12	10	7	8	14	15	17	15	16	8	3	7	7	8	6	7	12	
MED	33	36	37	33	36	39	34	33	31	28	16	24	20	23	24	20	24	22	36	31	30	32	32	30	
UQ	45	42	42	38	43	53	43	34	35	35	20	24	27	28	27	20	26	59	44	35	38	40	44	38	
LQ	22	30	32	32	26	32	26	32	27	13	14	17	19	20	19	17	16	17	30	22	26	21	27	23	

JUL. 2006 f<sub>TEs</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

JUL. 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D H	00	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	14	14	B	15	20	B	19	B	B	B	B	B	B	20	18	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	20	B	B	B	B	B	29	B	B	B	B	B	23	B	B	B	B
3	B	B	B	B	14	B	13	12	13	12	14	14	20	23	B	20	B	B	B	B	B	B	B	B
4	18	13	B	B	B	12	14	13	22	B	B	B	24	15	14	28	26	13	B	B	B	12	12	14
5	14	20	27	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	16	17
6	B	13	B	B	B	B	20	B	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	11	12	18	B	B	22	20	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13
8	14	14	14	13	20	14	B	15	B	B	B	22	B	B	B	B	B	B	B	B	B	B	B	B
9	14	13	23	B	B	B	B	B	B	B	14	17	20	20	20	14	B	B	B	B	B	B	B	B
10	12	13	28	16	B	B	B	16	B	B	16	23	15	12	12	20	B	B	14	13	17	13	12	22
11	26	14	19	21	14	12	13	B	B	13	13	B	19	B	B	B	B	B	13	B	13	14	B	12
12	14	13	14	14	14	20	B	19	14	B	B	B	16	B	27	B	B	B	B	B	16	13	12	13
13	12	12	14	24	B	14	B	22	21	B	B	B	29	B	30	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	B	21	12	B	15	17	B
15	15	30	20	26	B	16	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	15	19	16	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	16	16	B	B	B	15	28	B	18	23	B	B	B	B	B	B	B	B
18	B	B	B	14	13	B	B	B	B	B	B	B	24	B	B	B	B	B	B	B	14	B	B	B
19	B	13	14	B	16	18	B	B	B	B	B	14	20	26	B	B	B	B	B	16	B	B	B	12
20	B	B	12	15	13	16	13	B	20	17	14	19	14	15	22	20	20	B	15	13	12	B	13	B
21	15	14	14	13	13	13	14	B	18	14	13	12	13	13	17	12	13	B	B	B	B	B	B	B
22	12	B	12	12	13	42	13	14	B	B	B	15	18	14	13	13	12	13	13	B	13	B	B	13
23	14	13	14	13	14	12	15	28	14	13	14	12	B	B	24	13	13	B	B	B	B	B	B	14
24	13	13	14	B	B	B	B	B	B	B	B	25	27	28	24	19	B	B	B	22	14	B	B	14
25	13	14	16	13	14	18	B	B	25	B	B	B	26	20	B	16	B	B	B	B	B	B	B	B
26	12	14	13	20	21	24	23	19	B	B	B	24	B	27	26	19	B	B	B	B	B	B	B	B
27	B	B	B	B	B	14	14	B	B	12	12	13	12	14	14	20	16	B	14	14	B	B	B	14
28	14	13	20	20	13	15	B	B	28	B	B	B	B	B	B	B	B	B	B	B	B	B	13	14
29	16	14	20	27	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	12	12	11	B	B	B	B	B	B	B	23	27	B	B	B	B	17	B	B	B	B
31	B	B	B	24	13	20	12	B	B	B	B	B	B	29	B	16	15	12	18	B	13	13	19	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	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	14	20	24	20	20	B	B	B	B	B	B	B	29	B	28	B	B	B	B	B	B	B	B
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q	13	13	14	14	13	14	14	19	21	B	16	17	20	20	20	19	26	B	B	B	17	B	B	14

JUL. 2006 fmin (0.1MHz)

IONOSPHERIC DATA STATION SHOWA-ST.

JUL. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	212	224	A	B	A	A	B	A	B	B	B	B	B	B	226	196	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	A	B	B	B	B	B	210	B	B	B	B	A	B	B	B	B	B
3	B	B	B	B	Y	B	A	A	A	A	228	216	204	194	B	206	B	B	B	B	B	B	B	B
4	Y	A	B	B	B	A	A	A	A	B	B	B	210	214	188	226	A	A	B	B	B	A	A	A
5	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
6	B	A	B	B	B	B	236	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	Y	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
8	A	A	A	A	A	A	B	B	A	B	B	224	B	B	B	B	B	B	B	B	B	B	B	B
9	A	A	A	B	B	B	B	B	B	B	B	B	226	226	202	212	194	194	B	B	B	B	B	B
10	A	A	A	A	B	B	B	A	B	B	242	232	200	200	220	202	B	B	206	A	A	A	A	A
11	A	A	A	A	218	A	Y	B	B	B	264	216	B	196	B	B	B	B	A	B	A	A	B	A
12	A	252	226	A	A	A	B	A	A	B	B	B	B	E	A	B	B	B	B	B	B	A	A	A
13	A	A	206	226	A	B	A	B	A	A	B	B	B	272	B	254	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	222	212	B	A	B	B	B	B	A	A	B
15	A	A	A	A	B	A	A	B	B	B	B	B	B	228	212	B	B	B	B	B	B	B	B	B
16	B	A	A	A	A	B	B	B	B	B	B	B	B	220	B	B	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	A	A	B	B	B	B	204	192	B	196	198	B	B	B	B	B	B	B
18	B	B	B	A	A	B	B	B	B	B	B	B	208	B	B	B	B	B	B	A	B	B	B	B
19	B	A	A	B	A	A	B	B	B	B	B	B	204	A	A	B	B	B	A	B	B	B	B	A
20	B	B	A	A	A	A	A	B	A	A	A	A	218	202	182	202	196	A	B	A	A	A	B	A
21	A	A	A	234	252	A	A	B	A	A	218	218	202	210	192	198	204	B	B	B	B	B	B	B
22	A	B	A	A	A	A	A	A	B	B	B	220	200	200	190	200	192	A	A	B	Y	B	B	A
23	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	216	196	210	B	B	B	B	B	B	A
24	A	A	A	B	B	B	B	B	B	B	B	212	220	206	200	200	B	B	B	A	A	B	B	A
25	A	A	A	A	A	A	B	B	A	B	B	B	232	212	B	204	B	B	B	B	B	B	B	B
26	A	A	A	A	A	A	A	A	B	B	B	226	B	216	208	210	B	B	B	B	B	B	B	B
27	B	B	B	B	B	A	A	B	B	B	Q	Q	262	228	200	190	188	190	208	200	B	A	Y	B
28	A	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	Y
29	Y	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30	B	B	B	A	A	Y	B	B	B	B	B	B	B	Q	196	186	B	B	B	B	A	B	B	B
31	B	B	B	A	A	A	Y	B	B	B	B	B	B	224	B	196	232	274	Q	E	A	A	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	3	1	1	3		1			2	7	14	14	16	15	16	5	1	1					
MED	232	224	226	234	218		236			E	B	263	226	217	202	210	198	200	204	E	A	274	206	
U Q	226			252							228	224	220	215	216	207	221							
L Q	206			218							218	204	200	198	190	196	196							

JUL. 2006 h'F (KM)

# IONOSPHERIC DATA STATION SHOWA-ST.

AUG. 2006 f<sub>x</sub>I (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
3	A	B	B	B	A	B	A	B	B	B	B	O X 48	O X 49	X 50	B	B	B	B	B	B	B	B	B	B
4	B	Y	B	R	R	R	B	B	B	B	O X 42	X 45	X 44	X 45	X 42	X 43	X 36	B	B	R	B	B	B	B
5	Y	R	B	A	A	A	A	A	A	O X 30	X 38	O X 45	B	B	O X 42	X 44	X 34	X 37	B	B	B	B	B	B
6	A	A	A	B	A	A	A	A	B	X 28	39	41	O X 48	X 51	R	O X 46	X 35	B	B	B	A	B	B	B
7	R	Y	R	A	A	B	O X 40	A	A	A	B	B	B	B	B	B	A	B	A	A	A	A	A	A
8	A	A	A	B	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y
9	A	A	A	A	A	A	B	B	B	B	B	R	O X 50	B	B	B	B	R	B	B	B	B	B	A
10	A	A	A	B	A	R	Y	B	R	X 34	X 41	R	R	B	R	X 43	X 39	X 29	X 31	X 28	B	B	B	Y
11	A	A	A	A	B	B	A	O X 40	B	O X 32	X 39	B	B	B	B	B	R	B	B	B	B	B	B	B
12	B	A	R	A	A	A	B	A	B	B	B	B	B	B	B	O X 46	X 38	B	O X 35	B	B	B	R	R
13	A	Y	Y	A	A	A	A	B	R	O X 42	X 44	X 48	O X 52	X 47	X 43	X 39	B	O X 32	A	A	A	A	B	R
14	B	B	A	A	A	A	Y	B	X 27	39	44	X 53	R	R	O X 50	X 45	X 46	X 36	A	A	A	A	B	B
15	B	R	A	A	B	R	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	A	A	A	A	B	B	X 28	35	44	X 48	O X 49	X 47	X 43	X 40	X 44	X 32	28	B	B	B	B	B
17	R	A	A	A	B	B	B	B	A	A	B	B	X 60	O X 51	X 48	X 48	X 44	X 30	31	B	R	B	B	A
18	73	A	A	A	B	B	B	B	B	B	B	B	B	B	B	X 44	B	B	B	B	B	B	B	B
19	A	A	A	A	A	A	R	B	30	39	B	B	R	R	R	O X 51	X 64	X 57	A	A	A	A	A	R
20	A	A	B	A	B	R	B	B	B	B	B	O X 43	X 45	X 46	B	O X 49	X 44	X 36	28	X	Y	Y	B	B
21	A	A	A	R	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R
22	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	A	R	A	R	A	A
23	O X 40	A	B	A	A	B	A	B	B	B	B	B	B	B	B	O X 50	B	B	B	B	B	B	B	B
24	Y	R	A	R	A	B	R	R	A	O X 39	X 41	X 44	B	X 44	R	O X 48	X 46	X 40	X 36	X 30	B	A	R	X
25	B	A	R	A	A	R	B	B	R	B	B	O X 49	B	B	B	O X 46	X 44	X 36	B	B	B	B	B	B
26	B	B	B	A	O X 41	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	A	C	A	B	R	B	A	A	A	X 42	O X 49	X 53	O X 64	X 63	B	B	B	B	32	C	C	C	C	A
28	O X 36	90	A	O X 39	A	B	B	B	B	B	B	B	B	B	B	B	O X 50	B	B	B	B	A	R	A
29	A	A	B	B	B	B	R	B	B	B	O X 42	X 42	X 40	B	B	B	B	B	B	B	B	B	B	B
30	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y	A	
31	O X 40	A	A	R	R	R	Y	B	O X 39	B	R	X 42	B	X 54	B	B	B	O X 43	X 44	X 33	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4	1		1	1		2	1	4	10	11	13	10	10	6	15	14	11	8	3			1	2
MED	O X 40	90		O X 39	O X 41		68	O X 40	X 29	X 37	X 42	X 45	X 49	X 48	X 43	X 46	X 44	X 36	X 32	X 30			X 33	50
U Q	56								34	39	44	48	52	51	48	48	46	40	36	33				
L Q	O X 38								X 28	X 32	X 39	X 42	X 45	X 46	X 42	X 43	X 38	X 32	X 30	X 28				

AUG. 2006 f<sub>x</sub>I (0.1MHz)



IONOSPHERIC DATA STATION SHOWA-ST.

AUG. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
2	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
3	A	B	B	B	A	B	A	B	B	B	B	R	R	R	B	B	B	B	B	B	B	B	B	B	
4	B	Y	B	A	R	A	B	B	B	B	R	R	R	R	R	R		B	B	R	B	B	B	B	
5	Y	A	B	A	A	A	A	A	A		R	R	B	B	R	R	R	R	B	B	B	B	B	B	
6	A	A	A	B	A	A	A	A	B	J	R	F		R	R	R	R	B	B	B	A	B	B	B	
7	R	Y	R	A	A	B	R	A	A	A	B	B	B	B	B	B	A	B	A	A	A	A	A	A	
8	A	A	A	B	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y	
9	A	A	A	A	A	A	B	B	B	B	B	R	R	B	B	B	B	A	B	B	B	B	B	A	
10	A	A	A	B	A	R	Y	B	R		R	R	R	B	R		R	R	R	R	B	B	B	Y	
11	A	A	A	A	B	B	A	R	B	R	R	B	B	B	B	D	R	F	B	B	B	B	B	B	
12	B	A	R	A	A	A	B	A	B	B	B	B	B	B	B	R	R	B	R	B	B	B	R	R	
13	A	Y	Y	A	A	A	A	B	R	R	R	R	R	R	R	R	B	R	A	A	A	B	A	A	
14	B	B	A	A	A	A	Y	B		F	J	R	R	R	R	R	R	A	A	A	A	B	B	B	
15	B	R	A	A	B	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	B	A	A	A	A	B	B		F		R	R	J	R	R	34	38	26	F	B	B	B	B	
17	A	A	A	A	B	B	B	B	A	A	B	B	J	R	R	R	J	R	F	B	A	B	B	A	
18	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
19	A	A	A	A	A	A	R	B	F	F	B	B	R	R	R	R	45	58	J	R	A	A	A	J	R
20	A	A	B	A	B	R	A	B	B	B	B	R	R	R	B	R	43	38	R	Y	Y	B	B	A	
21	A	A	A	A	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	R
22	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	A	R	A	R	A	A	
23	R	A	B	A	A	B	A	B	B	B	B	B	B	B	B	R	44	B	B	B	B	B	B	B	
24	Y	R	A	A	A	B	R	R	A	R	J	R	R	B	J	R	R	R	R		B	A	R	J	R
25	B	A	R	A	A	R	B	B	R	B	B	R	B	B	B	B	R	R	R	B	B	B	B	B	
26	B	B	B	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
27	A	C	A	B	R	B	A	A	A		R	R	R	R	B	B	B	B	F	C	C	C	C	A	
28	R	A	A	R	A	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	A	R	A	
29	A	A	B	B	B	B	A	B	B	B	R	J	R	R	B	B	B	B	B	B	B	B	B	B	
30	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y	A	
31	R	A	A	R	R	R	Y	B	R	B	R	J	R	B	J	R	B	B	R	R	A	A	A	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	3			1	1		1	1	4	10	11	13	10	10	6	16	14	11	8	3			1	1	
MED	R			R	R		R	R		R	R	R	R	R	R	R	R	R				J	R	J	R
U Q	34			33	35		34	34		28	33	38	42	46	45	42	42	40	34	30	27				
L Q	R								21	25	33	36	39	40	36	38	30	26	22	22					

AUG. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

AUG. 2006 ftEs (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	58	35	B	B	B	43	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
2	33	37	43	35	39	B	B	B	37	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
3	38	B	B	B	44	B	36	B	B	B	BE	BE	B	B	B	B	B	B	B	B	B	B	B	B			
4	B	19	B	31	25	24	B	B	B	BE	BE	BE	BE	BE	BE	BE	B	B	B	21	B	B	B	B			
5	19	24	B	31	42	42	43	39	31	17	24	27	B	BE	B	27	32	20	36	B	B	B	B	B			
6	32	70	34	B	34	44	32	113	BE	S	16	20	22	18	20	22	19	14	B	B	B	36	B	B			
7	25	25	30	32	42	B	31	42	41	60	B	B	B	B	B	B	B	B	B	46	41	34	33	43	70		
8	42	41	35	B	34	36	B	B	B	32	B	B	B	B	B	B	B	B	B	B	B	B	B	24	19		
9	34	35	60	74	36	36	B	B	B	B	BE	BE	BE	B	B	B	B	B	32	B	B	B	B	B	37		
10	38	38	33	B	32	31	18	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	B	B	B	16		
11	33	44	32	43	B	B	40	30	BE	B	13	24	B	B	B	BE	B	26	21	B	B	B	B	B	B		
12	B	28	25	41	27	36	B	32	BE	B	B	B	B	B	BE	BE	BE	B	29	20	15	B	B	B	17	16	
13	25	17	18	32	32	39	33	BE	BE	B	12	20	19	21	29	25	25	24	BE	B	19	62	32	42	25	33	
14	B	B	26	36	33	25	14	B	22	16	18	22	22	24	33	25	18	35	42	58	40	B	B	B	B		
15	B	29	38	44	B	30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
16	B	B	40	34	38	43	B	B	BE	BE	B	BE	B	32	31	27	24	27	26	18	B	B	B	B	B		
17	24	32	41	30	B	B	B	B	28	34	B	B	36	24	28	27	20	13	19	B	26	B	B	42	42		
18	58	44	42	33	B	B	B	B	B	B	B	B	B	B	BE	B	B	B	B	B	B	B	B	B	B		
19	34	43	44	40	36	42	26	BE	BE	B	16	18	B	B	29	26	26	20	20	13	43	43	57	45	43	32	
20	90	67	B	45	B	33	62	B	B	B	BE	BE	BE	BE	B	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	40	
21	76	32	59	36	B	40	38	38	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	42	30	32	
22	71	66	B	B	B	B	B	B	31	B	B	B	B	B	B	B	B	B	B	35	27	39	25	35	36		
23	38	41	B	41	43	B	36	B	B	B	B	B	B	B	BE	B	B	B	B	B	B	B	B	B	B		
24	14	26	32	33	42	B	33	24	33	24	28	28	BE	B	BE	B	23	24	24	19	17	13	26	B	32	20	42
25	B	58	33	34	32	24	B	BE	B	B	BE	B	B	B	BE	BE	BE	BE	BE	BE	B	B	B	B	B	B	
26	B	B	B	36	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
27	34	C	32	B	24	B	42	45	38	24	24	24	25	23	B	B	B	B	B	44	C	C	C	C	90		
28	43	58	79	39	33	B	B	B	B	B	B	B	B	B	B	BE	B	29	B	B	B	B	B	30	20	32	
29	34	41	B	B	B	B	B	B	B	BE	B	B	BE	B	B	B	B	B	B	B	B	B	B	B	B	B	
30	B	31	34	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
31	37	42	32	24	21	16	17	BE	B	BE	B	BE	B	BE	B	B	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	23	26	22	23	21	17	17	8	14	13	12	16	13	12	10	16	15	12	13	10	10	7	11	16			
MED	34	38	34	35	34	36	33	38	30	18	24	24	28	24	26	24	20	20	28	26	35	33	25	36			
UQ	43	44	42	41	40	42	39	44	37	28	25	26	30	26	28	28	21	29	44	41	40	45	43	42			
LQ	32	29	32	32	32	28	28	31	BE	BE	B	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	

AUG. 2006 ftEs (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

AUG. 2006 fmin (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	12	22	B	B	B	20	17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	15	15	17	20	22	B	B	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
3	12	B	B	B	23	B	20	B	B	B	B	25	30	15	B	B	B	B	B	B	B	B	B	B
4	B	13	B	23	20	13	B	B	B	B	20	18	22	20	18	18	13	B	B	13	B	B	B	B
5	13	12	B	12	20	18	16	14	14	13	<sup>E</sup> 24	<sup>S</sup> 27	B	B	27	27	20	15	B	B	B	B	B	B
6	20	14	14	B	12	13	17	14	<sup>E</sup> 16	<sup>S</sup> 14	22	18	20	22	19	14	B	B	B	B	19	B	B	B
7	15	13	12	12	17	B	23	24	23	28	B	B	B	B	B	B	20	B	14	17	13	12	13	39
8	13	14	12	B	24	23	B	B	B	24	B	B	B	B	B	B	B	B	B	B	B	B	12	12
9	12	12	12	16	26	27	B	B	B	B	B	22	22	B	B	B	B	18	B	B	B	B	B	11
10	13	14	18	B	24	23	15	B	13	16	24	26	26	B	29	24	17	15	18	13	B	B	B	11
11	12	12	21	25	B	B	15	13	B	13	16	B	B	B	B	26	14	B	B	B	B	B	B	B
12	B	12	12	13	15	24	B	18	B	B	B	B	B	B	B	29	20	B	15	B	B	B	12	13
13	13	13	13	13	12	13	20	B	12	20	13	18	29	25	17	16	19	13	13	13	13	B	11	19
14	B	B	12	24	14	12	12	B	13	12	12	16	17	19	19	19	18	13	13	14	14	B	B	B
15	B	14	14	12	B	13	B	B	B	B	B	28	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	12	13	11	13	B	<sup>E</sup> 17	<sup>S</sup> 15	18	14	84	16	16	14	14	12	11	B	B	B	B	B	
17	14	13	13	14	B	B	B	B	14	28	B	B	23	24	28	27	20	13	12	B	13	B	B	14
18	18	19	22	28	B	B	B	B	B	B	B	B	B	B	B	23	B	B	B	B	B	B	B	B
19	21	15	15	12	13	13	12	B	16	18	B	B	21	20	26	12	13	13	14	13	18	17	12	14
20	20	54	B	17	B	23	23	B	B	B	B	24	30	28	B	28	20	19	13	13	12	B	B	13
21	19	14	23	25	B	28	28	23	B	B	B	B	B	B	B	B	B	B	B	B	B	12	20	21
22	13	14	B	B	B	B	B	B	13	B	B	B	B	B	B	B	B	B	15	14	13	14	14	14
23	15	16	B	28	23	B	16	B	B	B	B	B	B	B	B	30	B	B	B	B	B	B	B	B
24	12	12	12	22	18	B	17	14	13	18	28	28	B	23	20	14	19	13	13	11	B	12	13	13
25	B	19	21	20	19	16	B	B	17	B	B	21	B	B	B	22	20	20	B	B	B	B	B	B
26	B	B	B	14	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	13	C	12	B	14	B	14	17	14	16	20	19	20	23	B	B	B	B	13	C	C	C	C	14
28	13	14	14	13	14	B	B	B	B	B	B	B	B	B	B	B	29	B	B	B	B	13	13	12
29	14	23	B	B	B	B	B	B	B	B	28	17	28	B	B	B	B	B	B	B	B	B	B	B
30	B	13	12	12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	B	14	12
31	13	11	13	12	13	12	12	B	19	B	26	22	B	23	B	B	B	26	28	14	18	28	12	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	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31
MED	15	14	15	20	22	27	23	B	B	B	B	28	B	B	B	30	B	B	B	B	B	B	B	39
U Q	B	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q	13	13	12	13	14	13	16	24	14	18	24	22	26	23	27	22	19	18	14	14	18	B	13	13

AUG. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

AUG. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHZ TO 15.0MHZ IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
2	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
3	A	B	B	B	A	B	A	B	B	B	B				B	B	B	B	B	B	B	B	B	B	
4	B	A	B	A	A	A	B	B	B	B								B	B	A	B	B	B	B	
5	Y	A	B	A	A	A	A	A	A	E S	E S							E B		B	B	B	B	B	
6	A	A	A	B	A	A	A	A	B E S	E S	Q								B	B	B	A	B	B	
7	A	A	A	A	A	B		A	A	A	B	B	B	B	B	B	A	B	A	A	A	A	A	A	
8	A	A	A	B	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	Y
9	A	A	A	A	A	A	B	B	B	B	B			B	B	B	B	A	B	B	B	B	B	A	
10	A	A	A	B	A	A	Y	B E B	E B	E B				B				E B	B		B	B	B	Y	
11	A	A	A	A	B	B	A		270	214	216	216	210		202	210	200	270	238	198					
12	B	A	A	A	A	A	B	A	B	B	B	B	B	B	B										
13	A	Y	A	A	A	A	A	B																	
14	B	B	A	A	A	A	Y	B																	
15	B	A	A	A	B	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	B	A	A	A	A	B	B E S	E S													B	B	B	
17	A	A	A	A	B	B	B	B	A	A	B	B										B	A	B	
18	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B										
19	A	A	A	A	A	A	A	B																	
20	A	A	B	A	B	A		B	B	B	B E B	E B										Y	Y	B	
21	A	A	A	A	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	
22	A	A	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	A	A		206	A	A	
23	218	226		B	A	A	B	A	B	B	B	B	B	B	B								B	B	
24	Y	A	A	A	A	B	A	A	A	Y E B	E B											A	B	A	
25	B	A	A	A	A	A	B	B															B	B	
26	B	B	B	A		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
27	A	C	A	B	A	B	A	A	A E A	A												A	C	C	
28	A	196	A	212	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	
29	A	A	B	B	B	B	A	B	B	B E B	E B											B	B	B	
30	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	A	A	
31	204	A	A	A	A	A	Y	B														A	A	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	2	2		1	1		2	1	7	9	12	15	13	12	10	16	14	11	7	3	1		1	1	
MEB	211	211		212	204		206	216	231	207	209	210	213	200	203	207	198	213	224	250	206		218	216	
U Q									E	E A								E B							
L Q									226	204	202	202	209	195	196	198	194	196	212	198					

AUG. 2006 h'F (KM)

IONOSPHERIC DATA STATION SHOWA-ST.

SEP. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1		B	A	A	A	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	B	A	A	R	A				
2		A	B	B	B	B	B	A	A	B	B	B	B	B	O	X	O	X	O	X	B	B	B	O	X	A			
3		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
4		A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B	A	A	A	A			
5		A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	Y			
6		Y	B	A	B	B	R	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A			
7		R	R	B	R	Y	A	R	B	B	O	X	B	B	B	B	B	B	O	X	B	B	B	B	A	A			
8		B	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	O	X	X	X	B	B	B	B			
9		R	R	A	B	A	A	B	X	B	O	X	B	B	B	B	B	B	O	X	X	X	X	B	B	B			
10		Y	B	B	R	A	A	A	X	B	B	B	B	B	B	B	B	B	O	X	O	X	O	X	B	B	B	X	
11		A	A	R	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	X	O	X	O	X	B	B	B	B	
12		B	A	A	A	A	A	B	O	X	O	X	X	B	B	B	B	B	O	X	O	X	O	X	B	B	B	A	
13		R	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	R	O	X	O	X	B	B	B	
14		B	B	B	B	B	B	B	B	O	X	B	B	B	O	X	O	X	O	X	B	X	B	R	O	X	O	X	
15		B	B	B	B	R	B	B	O	X	O	X	B	B	B	R	R	B	R	O	X	O	X	X	B	B	B	B	
16		B	B	B	B	B	Y	B	X	O	X	R	O	X	B	R	X	O	X	X	X	X	X	X	X	X	R		
17		B	B	B	B	B	B	B	X	R	R	R	O	X	B	B	B	B	B	B	B	B	B	B	B	R	A		
18		A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	B	A		
19		B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B		
20		A	O	X	B	A	A	R	B	B	B	B	R	B	B	B	B	B	O	X	O	X	X	X	B	B	B		
21		B	B	B	B	B	B	B	B	B	B	B	B	R	R	O	X	B	B	B	O	X	B	B	B	B	B		
22		B	Y	R	R	Y	B	B	B	B	B	B	B	B	O	X	R	O	X	R	B	O	X	O	X	X	O	X	B
23		B	B	Y	A	R	X	X	X	X	B	B	B	B	B	B	B	B	B	B	O	X	O	X	B	B	A		
24		A	A	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	R	O	X	Y	Y	A	
25		A	A	B	R	A	A	A	R	B	B	B	B	B	B	B	B	B	B	O	X	B	B	O	X	Y	B	A	
26		A	A	A	R	A	A	A	B	B	B	B	B	B	B	B	X	X	X	X	B	O	X	O	X	Y	A	A	
27		R	A	B	A	A	B	B	B	B	Y	B	R	R	B	B	R	B	B	B	X	X	X	X	B	B	B		
28		B	B	B	B	B	O	X	B	B	B	B	B	B	B	O	X	B	B	B	B	B	O	X	B	O	X	B	
29		B	A	B	A	A	O	X	B	R	R	R	R	O	X	R	R	X	X	C	O	X	O	X	X	X	R		
30		A	A	R	A	A	A	O	X	O	X	B	B	B	B	O	X	B	O	X	O	X	X	B	R	A	A		
31																													
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
CNT			1	1		1	3	2	7	7	5		2	3	7	7	9	10	14	16	15	14	6	7	1				
MED			O	X			X		X	O	X	O	X	O	X	O	X	O	X	O	X	X	X	O	X	X			
U Q			33	43		53	33	38	39	44	47		56	54	52	54	49	51	45	42	38	32	31	27	31				
L Q							O	X		X	O	X		O	X	O	X	X	X	X	O	X	X	X	X				
							36		42	44	49			67	66	58	56	54	49	44	40	36	33	30					
							X		O	X	X			O	X	O	X	X	X	X	O	X	X	X	X				
							30		33	39	42			54	48	45	43	50	42	40	34	32	30	24					

SEP. 2006 f<sub>XI</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

SEP. 2006 foF2 (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	B	A	A	A	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	B	A	A	R	A	
2	A	B	B	B	B	B	A	A	B	B	B	B	B	R	R	R	J	R	R	R	B	B	B	R	A
3	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
4	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	A	A	A	A	
5	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	Y	
6	Y	B	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	
7	R	R	B	A	Y	A	A	B	B	R	B	B	B	B	B	B	R	B	B	B	B	B	A	A	
8	B	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	45	43	30	26	B	B	B	B
9	R	R	A	B	A	A	B		B	R	B	B	B	B	B	R	J	R	F	F	F	B	B	B	
10	Y	B	B	R	A	A	A	F	B	B	B	B	J	R	J	R	B	R	R	R	R	B	B	J	R
11	A	A	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B		30	36	26	B	B	B	B
12	B	A	A	A	A	A	B	R	R		B	B	B	R	R		R	R	R	B	B	B	B	A	
13	R	B	B	B	B	B	A	B	B	B	B	B	B	43	39	42	45	38	34						
14	B	B	B	B	B	B	B	B		B	B	B	R	R	R	B	J	R	B	R	R	F	R	B	
15	B	B	B	B	R	B	B	R	42	43		B	B	R	R	B		R		F	30	26	B	B	
16	B	B	B	B	B	Y	B	30	38	43	R	R	R	J	J	R					F		A		
17	B	B	B	B	B	B	B	F	J	R	R	R	R	B	B	J	R	B	B	B	B	B	R	A	
18	A	A		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	B	A
19	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	
20	A	R	B	A	A	R	B	B	B	B	R	B	B	B	B	B	R	R		F	F	B	B		
21	B	B	B	B	B	B	B	B	B	B	B	B	R	R	B	B	B	B	B	B	B	B	B	B	
22	B	Y	A	R	Y	B	B	B	B	B	B	B	B	R	R	R	R	B	R	R	R	R	R	B	
23	B	B	Y	A	A		F			B	B	B	B	B	B	B	B	B	B	B	F	B	A	A	
24	A	A	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	R	R	Y	Y	A	
25	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	R	B	B	R	Y	B	A	
26	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	J	R	F	B	R	R	Y	A	A	
27	A	A	B	A	A	B	B	B	B	Y	B	A	R	B	B	R	B	B		J	R	B	B	B	
28	B	B	B	B	B	F	R	B	B	B	B	B	B	R	B	B	B	B	B	36	36	F	R	B	
29	B	A	B	A	A	R	B	R	R	R	R	R	R	J	J	R	C	R	R	R	F	F	R	A	
30	A	A	A	A	Y	A	A	R	R	B	B	B	B	R	B	B	B	R	R	42	43	37	33	17	
31								37	33					42		43		38	39	34					
	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	2	8	7	5		2	3	7	7	9	10	14	16	15	14	6	6	1	
MED		R				24	30	30	38	41		R	48	46	48	43	45	39	36	31	26	F	R	R	
U Q					R		R		R				R	R	J	J	J	R					R		
L Q					F		F	R					R	R	J	R		44	36	33	28	25	F		

SEP. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION SHOWA-ST.

SEP. 2006 f<sub>TEs</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	55	53	58	B	B	B	25	B	B	B	B	B	B	B	B	B	B	B	B	35	33	25	64			
2	57	B	B	B	B	B	39	42	B	B	B	B	BE	BE	BE	B	16	24	19	B	B	B	40	41			
3	43	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
4	33	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	BE	B	B	32	40	42	33		
5	35	33	B	B	68	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	38	21		
6	18	B	33	B	B	34	B	30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	36		
7	34	30	B	34	26	44	33	B	BE	B	B	B	B	B	B	BE	B	B	B	B	B	B	B	32	29		
8	B	33	35	35	36	34	B	38	B	B	B	B	B	B	B	B	25	20	16	13	B	B	B	B	B		
9	26	25	33	B	33	33	BE	B	BE	B	B	B	B	B	B	K	23	23	21	14	13	14	B	B	B		
10	22	B	B	22	36	35	34	21	BE	B	B	B	B	B	B	B	BE	BE	BE	BE	B	B	B	B	41		
11	32	37	29	36	B	B	B	B	B	BE	B	B	B	B	B	B	BE	BE	BE	BE	B	B	B	B	B		
12	B	35	34	36	42	39	BE	BE	BE	B	B	B	B	BE	BE	BE	BE	BE	BE	BE	B	B	B	B	35		
13	25	B	B	B	B	B	40	B	B	B	B	B	B	B	B	B	B	B	BE	BE	BE	BE	B	B	B		
14	B	B	B	B	B	B	B	B	25	B	B	B	B	28	27	25	B	21	BE	BE	BE	BE	BE	BE	B		
15	B	B	B	B	25	B	BE	BE	BE	BE	B	B	B	BE	BE	B	B	BE	BE	BE	BE	B	B	B	B		
16	B	B	B	B	B	16	BE	B	18	21	19	22	28	B	K	K	K	K	BE	BE	BE	BE	BE	B	S		
17	B	B	B	B	B	B	33	31	24	26	25	25	25	B	BE	B	B	B	B	B	B	B	B	B	24	59	
18	37	36	40	68	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	34	
19	B	B	B	B	39	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	16	
20	32	37	B	37	33	24	B	B	B	BE	B	B	B	B	B	B	BE	BE	BE	BE	BE	B	BE	B	B	B	
21	B	B	B	B	B	B	B	B	B	B	B	B	B	24	28	28	B	B	BE	B	B	B	B	B	B	B	
22	B	23	29	24	17	B	B	B	B	B	B	B	B	B	28	30	26	29	BE	BE	BE	BE	BE	BE	B	B	
23	B	B	17	38	21	SE	SE	B	17	21	B	B	B	B	B	B	B	BE	BE	BE	BE	BE	B	B	53	48	
24	39	60	35	33	B	49	36	44	42	42	B	B	B	B	B	B	B	B	B	B	25	20	16	16	40		
25	39	33	B	33	36	36	34	31	B	B	B	B	B	B	B	B	B	BE	B	B	BE	B	B	B	32		
26	37	33	41	34	38	34	36	B	B	B	B	B	B	B	B	B	22	23	18	BE	BE	BE	B	B	35	40	
27	32	36	B	42	34	B	B	B	B	21	B	B	32	30	B	BE	B	B	B	BE	BE	BE	BE	B	B	B	
28	B	B	B	B	BE	SE	SE	B	16	14	B	B	B	B	BE	B	B	B	B	BE	BE	BE	BE	B	B	B	
29	B	30	B	37	34	22	B	19	21	25	G	G	26	28	28	28	CE	BE	BE	BE	BE	BE	BE	B	26		
30	35	35	32	32	25	34	35	BE	BE	B	B	B	BE	B	BE	B	BE	BE	BE	BE	B	B	B	B	22	38	53
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	17	17	12	16	16	15	10	15	9	9	5	4	6	11	9	10	12	14	18	16	17	13	17	17			
MED	34	33	34	36	34	34	34	23	24	23	23	26	26	27	28	24	BE	BE	BE	BE	BE	BE	BE	BE	36		
UQ	38	36	38	38	37	36	36	33	29	28	28	30	28	29	31	28	30	26	24	20	20	20	28	38	44		
LQ	29	32	30	33	26	22	33	19	21	22	G	G	25	26	28	25	22	20	18	14	14	12	14	30			

SEP. 2006 f<sub>TEs</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

SEP. 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	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	13	21	23	B	B	B	16	B	B	B	B	B	B	B	B	B	B	B	B	14	22	18	13
2	42	B	B	B	B	B	23	22	B	B	B	B	B	28	29	28	11	20	19	B	B	B	12	12
3	16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
4	14	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	31	B	13	12	13	19
5	19	18	B	B	16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	12
6	12	B	13	B	B	20	B	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	12
7	21	16	B	23	19	27	26	B	B	29	B	B	B	B	B	B	28	B	B	B	B	B	13	14
8	B	12	12	14	26	12	B	22	B	B	B	B	B	B	B	B	25	20	16	13	B	B	B	B
9	12	13	13	B	28	19	B	18	B	28	B	B	B	B	B	18	14	16	14	13	14	B	B	B
10	14	B	B	12	20	13	15	21	B	B	B	B	19	20	23	B	32	20	19	18	B	B	B	12
11	14	13	14	14	B	B	B	B	B	B	24	B	B	B	B	B	B	26	18	16	B	B	B	B
12	B	12	13	19	20	18	B	19	27	23	B	B	B	30	29	28	23	23	26	B	B	B	19	
13	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	19	B	B	B	20	15	19	B	18	B	24	20	20	13	13	B
15	B	B	B	B	14	B	B	20	23	22	B	B	B	29	32	B	23	24	19	19	14	B	B	B
16	B	B	B	B	B	14	B	18	20	13	15	16	B	17	19	16	12	14	15	14	13	13	14	18
17	B	B	B	B	B	B	B	14	13	14	17	16	18	B	B	28	B	B	B	B	B	B	12	13
18	18	13	13	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	20	B	29
19	B	B	B	B	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	B
20	13	14	B	20	19	16	B	B	B	B	29	B	B	B	B	B	32	21	11	13	12	12	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	22	25	20	B	B	B	24	B	B	B	B	B
22	B	14	12	12	12	B	B	B	B	B	B	B	B	22	13	15	29	B	26	17	20	12	13	B
23	B	B	12	13	13	E S	17	20	13	14	B	B	B	B	B	B	B	26	21	B	20	B	13	13
24	14	14	23	12	B	15	24	24	20	20	B	B	B	B	B	B	B	B	B	16	13	13	13	12
25	13	18	B	26	19	16	18	19	B	B	B	B	B	B	B	B	B	23	B	B	15	13	B	13
26	12	16	17	26	26	23	20	B	B	B	B	B	B	B	B	12	23	15	B	23	13	12	13	12
27	20	24	B	24	22	B	B	B	B	18	B	27	21	B	B	25	B	B	19	16	18	B	B	B
28	B	B	B	B	E S	16	14	B	B	B	B	B	B	29	B	B	B	B	B	20	19	19	13	B
29	B	13	B	28	14	13	B	14	12	12	18	15	17	26	15	19	C	30	20	16	15	12	13	13
30	15	12	19	14	21	21	20	26	25	B	B	B	B	26	B	27	B	26	24	19	B	12	12	20
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30
MED	20	18	B	27	27	B	B	B	B	B	B	B	B	B	B	B	B	B	26	22	20	B	14	20
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q	14	13	14	14	19	16	23	19	25	28	B	B	B	28	29	28	24	23	19	16	14	13	13	13

SEP. 2006 fmin (0.1MHz)



IONOSPHERIC DATA STATION SHOWA-ST.

SEP. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
2	A	B	B	B	B	B	A	A	B	B	B	B	E	E	B		E	E	B	B	B	B		A
3	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
4	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E	B	B	A	A	A	A
5	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
6	Y	B	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
7	A	A	B	A	A	A	A	B	B		B	B	B	B	B	B		B	B	B	B	B	A	A
8	B	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	202	214	202	208		B	B	B
9	A	A	A	B	A	A	E	B	E	B	B	B	B	B	B	204	204	190	206	230	202		B	B
10	A	B	E	A	A	A	B	B	B	B	B	B				B	224	192	202	208		B	B	226
11	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B		212	218	246		B	B	B
12	B	A	A	A	A	A	B		B	B	B	B	B	B	B	B	200	238			B	B	B	A
13	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	218	222	250		B	B
14	B	B	B	B	B	B	B	B		B	B	B				B	202	B	208	240	240	228	250	B
15	B	B	B	B	A	B	E	B		B	B	B	B	B	B	B	202	202	204	234	216		B	B
16	B	B	B	B	B		B	240	192	214	196	226		176	220	214	196	202	192	206	210	E	B	S
17	B	B	B	B	B	B	B	A	E	A	244	202	202	194	194		B	B	B	B	B	B	A	A
18	A	A		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B
19	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y
20	A		B	A	A	A	B	B	B	B	B	B	B	B	B	B	224	202	200	208	210	210		B
21	B	B	B	B	B	B	B	B	B	B	B	B	186	202	202		B	B		210		B	B	B
22	B	A	A	A	Y	B	B	B	B	B	B	B	B	200	200	194	220		206	226	E	B	226	252
23	B	B	Y	A	A	S	E	A		B	B	B	B	B	B	B	B	214	216		246	B	B	A
24	A	A	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	A	A	Y	Y
25	A	A	B	A	A	A	A	A	A	B	B	B	B	B	B	B		224		B		248	Y	B
26	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	216	188	202		228	256	Y	A
27	A	A	B	A	A	B	B	B	B	Y	B	A		206	B	B	204	B	B	206	200	234	B	B
28	B	B	B	B	E	S		B	B	B	B	B		194		B	B	B	B		214	220	214	270
29	B	A	B	A	A	A	B		216	216	216	210	190	184	220	224	202		216	216	208	220	220	274
30	A	A	A	A	Y	A	A		230	242	B	B	B	B	206	B	216	B	216	224	234		A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1	1	1		2	2	7	7	7	5	3	6	11	9	10	12	14	18	15	13	6	6	1
MED		216	196	E A 260		246	258	230	U 208	212	208	194	194	202	209	215	212	204	208	218	225	220	E 251	226
U Q								240	244	230	224	226	194	214	E B 228	216	224	216	218	234	247	228	E B 270	
L Q								216	194	204	199	190	186	200	201	204	202	202	204	208	213	214	230	

SEP. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

OCT. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	A	A	A	B	A	B		B	B	B	B	B	B	B	B	B	B	B	B	B	X	A	R	R	Y		
2	B	A	B	B	A	R	B	O	X	B	B	B	B	B	B	B	B	B	B	B	31	B	A	O	X	A	
3	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B	B	B	B	B	
4	A	A	A	R	B	B	R	O	X	R	B	B	B	B	B	B	O	X	O	X	43		B	B	A		
5	A	Y	A	A	A	A	X	O	X	O	X	R	B	B	O	X	X	X	O	X	O	X	O	X	A	A	
6	A	A	A	R		X	O	X	O	X	R	R	R	R	R	R		B	B	B	O	X	O	X	A	A	
7	53	44		R	B		X	B	B	B	B	B	B	B	B	O	X	O	X	R	O	X					
8	A	B	A	B	B	B	B	O	X	R	O	X	R	R	B	Y	B	B	B	B	O	X	B	B	B	R	
9	A	R	R	R	A	O	X	R	R	B	B	B	B	B	R	X	B	X	O	X	O	X	X	O	X	B	
10	A	B	Y	O	X	B	O	X	R	O	X	R	R	R	O	X	X	X	O	X	O	X	R	O	X	X	
11		O	X	R	X	B		X	O	X	O	X	R	R	R	R	O	X	O	X	O	X	R	O	X	X	
12	B	R	B	A	A	B	O	X	O	X	R	R	R	O	X	O	X	O	X	X	R	X	O	X	X	X	
13	A		A	O	X	A	O	X	A	A	R	B	B	B	B	B	B	B	B	B	B	B	A	O	X	B	
14	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	R	
15	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y	Y		
16	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A		
17	A	B	B	B	B	B	R	O	X	R	R	B	B	B	B	B	B	B	B	B	O	X	O	X	O	X	
18	A	A	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B	
19	B	B	B	O	X	B	O	X	R	B	R	R	R	R	B	B	B	B	B	B	B	B	B	O	X	B	
20	38	40	38		B	B	A	O	X	O	X	B	B	O	X	B	R	O	X	X	X	B	R	R	O	X	
21	93	60		R	A	B	B	R	R	B	B	B	B	B	B	B	B	O	X	R	O	X	B	B	A	B	
22	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	R	
23	O	X	B	B	B	B	B	O	X	R	R	R	R	B	R	B	B	B	B	B	B	X	X	X	X	X	
24	B	A	B	O	X	B	X	O	X	O	X	R	B	B	B	B	B	B	B	B	B	B	B	O	X	X	
25	B	A	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	R	O	X	O	X	B	O	X	X	
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	O	X	X	X	X	X	X	
28	A	A	A	B	B	A	B	A	X	B	B	B	B	B	B	B	B	B	B	B	B	R	B	A	A	A	
29	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	O	X	O	X	A	A
30	R	B	A	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	O	X	B	B	B	
31	B	O	X	O	X	B	B	B	B	R	R	B	B	B	B	B	B	X	O	X	O	X	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	5	6	2	5	2	8	6	12	6	4	1	2	1	3	6	6	9	10	13	14	16	14	17	10			
MED	41	42	38	O	X	40	44	44	50	51	55	63	67	66	65	66	58	54	51	47	42	40	35	33			
U Q	73	60		O	X	41	47	47	52	53				67	68	71	66	57	53	49	44	41	39	37			
L Q	34	O	X		X	37	44	40	43	50				56	63	57	51	49	47	44	40	37	33	31			

OCT. 2006 f<sub>XI</sub> (0.1MHz)

IONOSPHERIC DATA STATION SHOWA-ST.

OCT. 2006 foF2 (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT.69°00.4'S LON.039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1		A	A	A	B	A	B		B	B	B	B	B	B	B	B	B	B	B	B	25	A	R	R	Y					
2		B	A	B	B	A	R	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	A					
3		A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	37	B	B	B	B					
4		A	A	A	R	B	B	R	R	R	B	B	B	B	B	B	B	R	R	R	R	F	B	B	A					
5		A	Y	A	A	A	A	J	R	38	39	43	43	R	R	B	R	60	54	60	57	58	45	40	A	A				
6		A	A	A	R	F	25	29	38	R	J	R	R	R	R	R	R	B	B	B	B	R	R	F	F					
7	26		R	R	B	F	31	24	33	F	J	F	B	B	B	B	B	R	U	R	R	J	R	F	A	F	A			
8		A	B	A	B	B	B	B	B	34	45	R	R	R	B	Y	B	B	B	B	B	B	B	B	B	R				
9		A	R	R	A	A	R	R	R	R	B	B	B	B	R	J	R	B	J	R	R	R	R	R	R	B				
10		A	B	Y	R	B	33	A	R	R	R	R	R	R	R	J	R	J	R	J	R	R	R	R	F	F				
11	F	20	R	R	29	B	F	30	42	42	47	R	R	R	R	R	R	U	S	R	B	R	33	28	23	F	B			
12	B	R	B	A	A	B	R	R	R	R	R	R	R	R	R	R	R	R	J	R	S	R	R	R	R	R	F	R		
13	A	A	A	R	A	R	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	A	R	A	A	B	B			
14	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	R				
15	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y	Y				
16	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A				
17	A	B	B	B	B	B	R		R	R	B	B	B	B	B	B	B	B	B	B	B	R	R	F	R	R				
18	A	A	A	A	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	34	30	F	B			
19	B	B	B	R	B	R	R	B	R	B	R	R	R	R	B	B	B	B	U	R	R	R	F	F	F	F				
20	F	28	F	F	B	B	B	A	R	R	B	B	B	B	R	R	R	R	J	R	J	R	B	R	R	S	Y			
21	Y	Y	A	A	B	B	A	R	B	B	B	B	B	B	B	B	B	B	R	R	R	B	B	A	A	B	B			
22	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A	A	A			
23	R	B	B	B	B	B	B	R	R	R	R	A	B	A	B	B	B	B	B	B	B	B	43	38	34	24	20	F	F	
24	B	A	B	R	B	R	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A	B	B		
25	B	A	A	A	B	B	B	B	B	B	B	R	B	B	B	B	B	R	R	R	R	B	R	R	F	F	F	F		
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	R	J	R	J	R	F	A	A	A		
28	A	A	A	B	B	A	B	A		37	B	B	B	B	B	B	B	B	B	B	B	R	B	A	A	A	A	A		
29	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	R	R	A	A	A		
30	A	B	A	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	F	F	F	F	
31	B	R	R	B	B	B	B	R	R	B	B	B	B	B	B	B	B	B	R	R	R	B	B	B	A	A	A	A	A	
		25	31															37	34	46										
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT		4	3	2	5	2	8	6	12	6	4	1	2	1	3	6	6	9	10	13	14	16	14	16	8	8				
MED		27	25	30	30	28	32	38	38	44	45	49	57	61	60	59	60	52	48	45	41	36	34	26	24	24	F	F	F	F
U Q		32	28		32		35	41	41	46	47				61	62	65	60	51	47	43	38	35	30	24	F	F	F	F	
L Q		23	22		27		30	38	34	37	44				50	57	51	45	43	41	38	34	29	24	22	F	F	F	F	

# IONOSPHERIC DATA STATION SHOWA-ST.

OCT. 2006 ftEs (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		80	44	33	B	65	B		B	B	B	B	B	B	B	B	B	B	B	B	20	34	22	25	16
2		B	36	B	B	35	29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	33	35	43
3		69	B	B	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
4		35	34	37	28	B	B	34	25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	37
5		28	16	34	43	37	34	21	26	27	21	24	B	B	B	B	B	B	B	B	B	B	B	B	39
6		42	29	32	21	18	17	19	21	28	26	24	24	32	28	29		B	B	B	B	B	B	B	B
7		30	30	26	B	B	B	20	16	20							40	55	18	22	20	14	43	32	23
8		35	B	65	B	B	B	B		28	26	28	27	B	25		B	B	B	B	B	B	B	B	28
9		39	37	31	32	38	30	20	21		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10		34	B	16	23	B	23	32	31	25	30	26	32	32	32	30	30	24	24	19	B	B	B	B	B
11		22	21	21	22	B	31	27	29	23	25	32	30	33	33	29	27	26	24	B	B	B	B	B	B
12		B	24	B	44	44		23	25	24	24	30	30	29	29	34	53	26	22	20	B	B	B	B	B
13		35	44	44	37	37	35	40	37	27											33	43	38	39	B
14		72	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	25
15		67	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	16
16		29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	32
17		37	B	B	B	B	B	25	B	24	24	24	B	B	B	B	B	B	B	B	B	B	B	B	B
18		27	31	37	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19		B	B	B	19	B	17	17		B	21	B	B	B	B	B	B	B	B	B	B	B	B	B	B
20		B	B	B	B	B	B	42	21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21		44	40	33	56	B	B	36	25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
22		B	27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
23		40	B	B	B	B	B	B	24	24	25	32	36	B	36	B	B	B	B	B	B	B	B	B	B
24		B	36	B	22	B	B	32	22	22	25	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25		B	44	34	40	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
26		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28		48	44	33	B	B	34	B	43	30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29		68	41	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
30		33	B	34	B	B	B	B	B	32	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
31		B	B	21	B	B	B	B	22	26	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		22	19	17	14	8	11	14	18	16	8	9	8	5	9	7	6	11	13	14	17	19	25	26	23
MED		36	34	33	32	37	30	24	25	26	25	28	30	32	29	29	29	24	24	22	21	19	22	24	25
UQ		48	41	36	40	41	34	34	29	28	26	31	32	32	32	30	40	27	26	24	24	29	32	37	37
LQ		30	24	24	22	28	17	20	22	24	24	25	26	30	26	28	28	24	22	22	20	16	14	14	14

OCT. 2006 ftEs (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

OCT. 2006 fmin / (0.1MHz)      45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E      SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	17	19	24	B	18	B		B	B	B	B	B	B	B	B	B	B	B	B	13	13	12	17	13	
2	B	20	B	B	13	21	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	12	12	22	
3	39	B	B	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	27	B	B	B	B	B	
4	12	14	20	18	B	B	20	19	25	B	B	B	B	B	B	B	30	22	18	12	12			13	
5	13	13	13	14	23	26	12	13	23	19	21	B	B	29	20	17	21	24	22	24	19	13	13	12	
6	13	13	13	14	12	13	13	12	13	14	17	19	26	20	24		B	B	B	23	20	13	14	E S 14	
7	13	12	13	B	E S 20	16	14	B	B	B	B	B	B	B	B	40	55	13	13	20	14	14	12	11	
8	18	B	26	B	B	B	B	16	14	15	18	16	B	20	B	B	B	B	B	20	B	B	B	14	
9	19	15	25	28	19	19	15	14	B	B	B	B	B	29	16	B	16	27	22	19	17	22	16	B	
10	13	B	13	18	B	15	20	17	14	15	15	14	15	20	16	13	16	15	16	17	15	14	13	E S 13	
11	18	17	18	16	B	15	90	12	14	13	14	16	28	20	29	21	15	24	B	21	18	13	13	B	
12	B	12	B	14	18	B	15	19	13	14	14	15	19	16	14	53	19	13	13	23	26	19	16	14	
13	13	14	27	14	16	16	21	20	14	B	B	B	B	B	B	B	B	B	B	20	14	12	22	B	
14	14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	14		15	
15	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	12	13	
16	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	14	14	
17	14	B	B	B	B	B	18	24	20	20	B	B	B	B	B	B	B	B	B	27	22	150	15	13	
18	14	14	18	29	B	B	B	23	B	B	B	B	B	B	B	B	B	B	B	B	B	14	14	B	
19	B	B	B	19	B	13	12	B	18	B	18	18	21	B	B	B	B	B	28	23	15	12	12	12	
20	13	13	13	B	B	B	14	13	28	B	B	B	B	B	B	B	16	13	18	B	22	19	17	13	
21	16	12	14	14	B	B	24	19	B	B	B	B	B	B	B	B	19	26	18	B	B	17	20	B	
22	B	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	17	15	22	
23	15	B	B	B	B	B	B	16	19	18	20	29	B	27	B	B	B	B	B	16	12	12	13	12	
24	B	22	B	12	B	B	B	14	11	B	B	B	B	B	B	B	B	B	B	B	22	14		B	
25	B	16	16	24	B	B	B	B	B	B	20	B	B	B	B	B	27	23	23	B	18	12	20	14	
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	26	22	20	14	17	14	21
28	16	21	19	B	B	24	B	14	12	B	B	B	B	B	B	B	B	B	B	18	B	14	16	13	
29	14	18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	20	29	12	12	14	
30	23	B	21	B	B	B	B	B	23	B	B	B	B	B	B	B	B	B	B	B	25	B	B	E S 15	
31	B	14	11	B	B	B	B	18	20	B	B	B	B	B	B	B	20	20	23	B	B	15	13		
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	29	29	29	29	29	28	29	29	29	29	29	29	29	29	29	30	30	30	30	30	30	30	30	
MED	16	18	25	B	B	B	B	20	25	B	B	B	B	B	B	B	B	B	B	24	21	14	14	14	
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	17	22	
L Q	14	14	15	17	22	20	16	15	14	20	20	24	B	28	B	B	21	24	22	20	14	12	13	13	

OCT. 2006 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

OCT. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	A	A	A	B	A	B		B	B	B	B	B	B	B	B	B	B	B	B	E A	A	A	A	Y			
2	B	A	B	B	A	A	B		B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A			
3	A	B	B	A	B	B	B		B	B	B	B	B	B	B	B	B	B	E B	B	B	B	B	B			
4	A	A	A	R	B	B	A		A	B	B	B	B	B	B	B	226	204	210	202	Q	A	B	B	A		
5	A	Y	A	A	A	A	E A		A	B	B	B	B	B	B	B	206	206	202	206	214	222		A	A		
6	A	A	A	A	A	E A	258		222	216	212	200	206	206	210	190	194		B	B	B	218	200	208	234	230	
7	A	A	A	B		E S	280		248	236		B	B	B	B	B		E B	244	212	202	208	202	Q	A	E A	260
8	A	B	A	B	B	B	B		E A	264	220	230	200		A	B	A	B	B	B	B	218	B	B	B	A	
9	A	A	A	A	A	A	A		A	B	B	B	B		196	214		B									
10	A	B	Y	A	B	A	A																		E S	252	
11	E S	254	A	A	A	B	A																			B	
12	B	A	B	A	A	B	E A		228	204	192	192	200	208	208	A	202	206	208	220		B	198	198	228	226	B
13	A	A	A		A	A	A		A	A	B	B	B	B	B	B	B	B	B	B	B	A		A	A	B	
14	A	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	228	A	A	B	A	
15	A	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	Y	
16	A	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
17	A	B	B	B	B	B	A		E B	242	208		A	B	B	B	B	B	B	B	B	228	214	222	240	B	
18	A	A	A	A	B	B	B		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B			B	
19	B	B	B	B	B	A																					
20	Q	Q	E A	B	B	B	A		A	A																	
21	242	232	274																								
22	216	A	A	A	B	B	A		A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
23	220	B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
24	B	A	B	A	B	B																					
25	B	224	A	A	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
26	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
27	C	C	C	C	C	C	C		C	C	C	C	C	C	C	C	B	B								A	
28	A	A	A	B	B	A	B		A																		
29	A	A	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	A	196	B	A	A	A	
30	A	B	A	B	B	B	B		B	A	B	B	B	B	B	B	B	B	B	B	B	E B	B	B	B	S	
31	E B	268	A	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	4	3	1	1	1	2	7	12	14	7	9	6	5	6	7	5	11	13	13	16	15	14	17	8			
MED	224	228	E A	274	236	280	E	253	225	214	205	214	204	206	200	197	210	214	208	210	210	208	211	220	233	239	
U Q	248	E B	268				E A	246	236	212	220	209	208	209	202	214	231	220	218	215	218	226	226	247	263		
L Q	218	224																									

OCT. 2006 h'F (KM)

# IONOSPHERIC DATA STATION SHOWA-ST.

NOV. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	B	B	B	B	B	B	B	X	B	B	B	B	B	B	B	B	X	B	B	X	A	A	
2	A	A	A	B	B	A	A	A			B	B	B	B	B	B	B	B	B	B	X	B	A	A	B
3	B	B	B	R	B	B	B	A	B	B	B	B	B	B	B	X	B	B	R	X		A	X	X	35
4		X	X																						
5		38	35	46	42	41																			
6	A	A	X	R	R	X	X																		
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
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24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
CNT	13	13	15	12	9	7	6	6	9	6	3	2	5	5	2	4	3	5	7	18	17	16	20	16	
MED	47	46	44	45	50	54	58	67	66	66	66	70	70	67	64	64	63	48	45	48	47	46	46	44	
UQ	50	50	47	52	54	58	67	72	75	71	73		72	74		65	63	54	52	51	50	48	48	48	
LQ	41	39	40	42	40	41	55	59	54	62	65		68	64		52	51	45	43	44	44	43	42	41	

NOV. 2006 f<sub>XI</sub> (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

NOV. 2006 foF2 (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	R	B	B	R	F	A	A		
2	A	A	A	B	B	A	A	A		B	B	B	B	B	B	B	B	B	B	B	R	A	A	B		
3	B	B	B	R	B	B	B	A	B	B	B	B	B	B	B	R	B	B	A		A	40	41	24		
4	F	R	R	F	F	B	R	R	R	B	B	B	B	B	B	B	B	B	R	R	F	B	A	A		
5	A	A	R	R	B	B	R	R	J	R	R	B	B	R	B	B	B	B	B	B	R	40	39	30	24	
6	A	A	R	R	R	R	R	R	J	R	R	R	J	R	B	R	R	U	R	R	R	44	41	38	31	
7	F	B	F		R	J	R	R	J	R	R	R	R	R	J	R	R	R	B	R	R	43	38	41	40	
8	F	J	F	J	R	R	R	R	J	R	R	R	R	R	B	R	B	R	J	R	J	R	R	42	42	
9	F	F	F	F	B	B	R	R	R	R	R	R	R	R	R	R	R	R	R	J	R	R	B	A		
10	F	F	A	A	F	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	R	R	R	B		
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	F	A		
12	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	J	R	
13	F	F		B	B	R	R	R	R	B	B	B	B	R	B	B	B	B	B	B	R	R	R	39	42	35
14	R	R	R	R	R	J	R	R	R	B	B	B	R	B	B	B	B	B	B	R	R	R	B	B	A	
15	B	A	A	B	A	A	B	B	R	A	R	R	B	Y	B	B	B	B	B	B	R	R	B	R	F	
16	F	A	R	A	B	B	B	B	B	B	R	R	R	B	R	B	R	R	B	B	R	R	R	R	35	
17	37	40	41	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	29	
18	R	F	R		R	R			R	R	Y	Y	A	B	B	B	B	B	Y	R	R	A	A	J	R	
19	F	F	F	R	J	R	R	Y	Y	Y	B	B	B	B	R	R	B	B	B	B		R	40	40	38	
20	41	42	38	44	R	R	A	R	R	B	R	B	R	R	R	B	R	B	R	R	R	R	R	R	R	
21	43	43	44	47	47	48	50		R	R	R	R	B	B	R	B	R	B	B	B	B	B	R	46	42	41
22	A	40	44	46	48	52		60	60	56	67	R	J	R	R	R	R	R	R	R	R	R	J	R	B	
23	A	A	F	F	R	A	R	R	R	B	R	B	R	R	B	B	B	B	B	A		R	A	R	A	
24	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	Y	R	R	
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	
26	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	B	
27	B	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	
28	B	R	F		B	R	B	R	R	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
29	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	R	J	R	R	R	R	A	
30	A	R	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	Y	A	A	A	A	R	R	
31																										
CNT	13	13	15	12	9	7	6	6	9	6	3	2	5	5	2	4	3	5	7	18	17	16	20	16		
MED	F	40	37	39	44	48	52	61	60	60	60	64	64	61	58	58	57	42	39	42	41	40	40	36		
U Q	42	42	41	46	48	52	61	66	69	65	67		66	68		59	57	48	46	45	44	42	42	42		
L Q	F	F	F	F	F	R		R	J	R	R		R	R		R	R	R	R	R	R	R	R	F		
D	30	31	29	36	32	35	49	53	48	56	59		62	58		46	45	39	37	38	36	37	36	32		



IONOSPHERIC DATA STATION SHOWA-ST.

NOV. 2006 ftEs (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23														
1		33	40	B	B	B	B	B	B	32	B	B	B	B	B	B	B	B	B	B	B	B	25	25	37														
2		31	44	72	B	B	34	35	34		B	B	B	B	B	B	B	B	B		26	B	35	33	B														
3		B	B	B	26	B	B	B	40		B	B	B	B	B	B	B	B	B	33	44	67	30	E	B	27													
4		36	36	33	34	34	B	32	32	36		B	B	B	B	B	B	B	B	30	E	B	31	B	29	45													
5		38	31	30	31	B	B	40	G	29	27	29		B	B	B	B	B	B	B	E	B	33	K	22	33													
6		35	44	32	36	34	E	B	E	B	23	G	30	28	28	32	32	B	30	29	28	E	B	17	21	18	17	E	S	16									
7	E	S	B		E	B	19	22	20	22	25	31	34	31	29	33	24	25	28	B	K	22	22	18	15	E	B	E	B	16	16								
8	E	B	E	S		18	16	18	23	E	B	24	25	26	26	27	33	32		B	E	B	B	E	B	E	B	E	B	14	13								
9	E	B	E	B		17	16		B	B	24	26	29	34	29	32	33	33	34	28	28	24	23	22	32	22		B		43	B								
10		33	23	42	43	29	37		43		B	B	B	B	B	B	B	B	B	B	B	B	28	26	26	34													
11		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E	B	28	22	25	39											
12		B	26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E	B	B	E	B	17	E	B	14						
13	E	B	E	B	B	B	B	34	28	25	20		B	B	B	E	B	B	B	B	B	B	B	E	B	E	B	E	B	16	31								
14	E	B	E	B	B	26	20	22	22	26	27	29	56		B	B	E	B	B	B	B	B	26	E	B	E	B	B	B	B	B	38							
15	B	33	31	B	35	32	B	B	B	33	36	34	27		B	22	B	B	B	B	B	B	E	B	E	B	B	B	B	B	23	25							
16	25	58	32	60	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E	B	E	B	E	B	18	18						
17	E	S	E	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	17						
18	26	E	B	18	16	21	20	22		25	27	27	24	36		B	B	B	B	B	B	B	E	B	28	28	43	43	25										
19	E	S	E	B	17	18	23	30	24	22	26	26		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	20	16						
20	E	B	E	B	E	B	28	26	43	35	32	36		B	B	B	B	B	B	B	B	B	E	B	B	K	E	B	E	B	19	30	31						
21	E	B	E	B	E	B	16	21	36	34	24	32	36	36	57		B	B	B	B	B	B	B	B	B	B	E	B	B	B	30	30	27						
22	53	40	24	18	23	27	26	30		E	B	54	36	36	42	31	56	39	34	44	35	26	27	24	21	16													
23	40	36	21	19	33	34	35	32	33		B	30		B	E	B	E	B	B	B	B	B	B	B	B	B	B	B	B	B	26	31	56	34					
24	B	B	B	B	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
26	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
27	B	B	B	B	B	B	B	B	B	26		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
28	B	E	B	E	B	B	34	B	B	31	31	25		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
29	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
30	36	33	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	25	25	36	32	33	30	32										
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		20	24	20	18	13	16	15	17	18	12	12	9	11		9	8	6	9	8	14	19	22	24	26	25													
MED		26	28	24	22	23	32	26	27	29	29	30	32	32	U	30	32	29	28	24	26	24	26	23	22	31													
UQ		36	36	32	33	34	34	35	32	33	36	34	38	38	E	B	E	B																					
LQ	E	B	E	B	18	18	21	25	24	24	26	26	28	28	31	30	30	28	25	23	24	22	22	19	18	18													

NOV. 2006 ftEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

NOV. 2006 fmin (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	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	23	B	B	B	B	B	B	19	B	B	B	B	B	B	B	B	29	B	B	23	12	13	12	
2	18	14	28	B	B	15	20	18		B	B	B	B	B	B	B	B	B	16	B	13	29	B		
3	B	B	B	20	B	B	B	20		B	B	B	B	B	B	28	B	B	29	20	18	13	20	13	
4	12	13	24	14	16	B	28	24	21	B	B	B	B	B	B	B	B	B		21	12	B	21	16	
5	16	21	22	20	B	B	18	15	14	13	20	B	B	20	B	B	B	B	B	29	13	11	12	18	
6	16	28	19	20	17	27	24	16	18	20	20	20	20	17	B	16	15	14	24	12	12	11	11	<sup>E</sup> <sub>S</sub> 16	
7	<sup>E</sup> <sub>S</sub> 15	B	13	12	19	12	13	17	13	17	20	21	18	19	19	20	22	B	12	14	16	12	16	16	
8	13	<sup>E</sup> <sub>S</sub> 16	13	13	15	19	24	19	15	16	22	22	20	B	55	B	13	16	13	23	16	18	14	13	
9	12	14	13	12	B	B	19	18	18	14	19	18	20	14	16	15	22	17	17	20	15	13	B	13	
10	12	18	14	16	20	21	B	17	B	B	B	B	B	B	B	B	B	B	B	22	15	13	26	B	
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	23	13	13	19	18
12	B	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	29	13	14	
13	18	20	28	B	B	23	18	18	14	B	B	B	29	56	B	B	B	B	B	22	22	15	16	14	
14	17	20	14	13	14	14	13	27	29	56	B	B	56	B	B	B	B	B	20	28	24	B	B	21	
15	B	14	20	B	20	16	B	B	16	18	20	14	B	19	B	B	B	B	B	26	22	B	23	13	
16	16	20	13	26	B	B	B	B	B	B	23	26	22	B	21	B	20	18	B	B	19	13	18	18	
17	<sup>E</sup> <sub>S</sub> 16	19	16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	12	
18	11	20	12	14	15	15	16		17	17	21	20	16	B	B	B	B	B	29	28	22	20	20	14	
19	<sup>E</sup> <sub>S</sub> 16	18	13	12	17	13	13	14	16	16	B	B	B	B	20	24	B	B	B	B		19	14	12	
20	16	19	20	13	20	17	20	22	20	B	24	B	30	30	20	B	23	B	29	14	27	12	14	12	
21	16	18	16	13	13	14	14	15	14	22	22	57	B	B	21	B	20	B	B	B	30	16	19	B	
22	14	15	13	13	13	16	15	15	54	28	29	20	22	56	19	20	15	14	15	27	17	13	12	B	
23	13	16	16	12	21	17	14	12	12	B	15	B	56	55	B	B	B	B	19	20	15	14	12	15	
24	B	B	B	B	B	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	14	13	20	
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	B	B	
26	B	28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	20	27	18	B	
27	B	B	B	B	B	B	B	B	14	B	B	B	B	B	B	B	B	B	B	B	B	B	23	23	
28	B	21	23	14	B	21	B	16	20	21	B	B	B	B	B	B	B	B	B	B	B	B	B	21	
29	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	18	15	14	14	13	18	17	
30	20	21	B	21	B	B	B	B	B	B	B	B	B	B	B	B	B	18	15	14	19	20	20	16	
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	29	29	30	30	30	30	30	30	30	30	30	29	30	29	30	30	30	
MED	16	20	21	20	B	25	B	22	20	B	B	B	B	B	B	B	B	B	B	26	19	14	18	16	
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	29	23	21	
L Q	15	18	14	13	17	16	18	16	16	20	22	26	29	56	55	B	23	29	18	20	15	13	14	13	

IONOSPHERIC DATA STATION SHOWA-ST.

NOV. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEET 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	B	B	B	B	B	B	208	B	B	B	B	B	B	B	B	216	B	B	230	E A	A	A	
2	A	A	A	B	B	A	A	A		B	B	B	B	B	B	B	B	B	B	242	B	A	A	B	
3	B	B	B	A	B	B	B	A	B	B	B	B	B	B	B	192	B	B	A	222	A	250	Q	A	
4	A	A	A	A	A	B	A		A	B	B	B	B	B	B	B	B	B	A	226	240	B	A	A	
5	A	A	A	A	B	B	A		202	198	208	B	B	210	B	B	B	B	B	230	E A	196	A	A	
6	A	A	A	A	A E B	280	212	214	196	206	204	Y	204	186	B	196	208	208	208	216	216	216	Q	232	
7	E S	B	A	A	238	202	198	228	226	198	196	204	190	188	Y	204	188	B	212	212	212	Q	228		
8	Q	Q	Q	E A E A	294	250	214	200	200	Y	A	A	A	B E B	288	194	198	194	210	224	224	212	Q		
9	Q	Q	Q	B	B		212	212	188	Y	A	A	A	Y	204	194	190	194	196	220	220	216	B	A	
10	A	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	260	266	A	A	B	
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	236	A	A	244	A	
12	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	232	226	
13	260	286	E B	B	B	A	A	A	216	B	B	B	Y	B	B	B	B	B	B	208	206	220	224	224	
14	228	246	A	A	Q	200	200	194	B	B	B	B	B	B	B	B	B	B	236	242	226	B	B	A	
15	B	A	A	B	A	A	B	B E A	252	A	A	A	B	Y	B	B	B	B	B	230	216	B	E A	262	
16	Q	A	A	A	B	B	B	B	B	B	A	214	202	B	B	198	194	B	B	226	226	224	238		
17	228	242	260	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Q	266		
18	E A E B	286	260	272	246	216	222		208	202	Y	Y	A	B	B	B	B	B	Y	230	238	A	A	226	
19	250	270	260	238	230	252	228	Y	Y	Y	B	B	B	B	A	A	B	B	B	B		234	238	250	
20	258	254	254	250				196	A	B	A	B	A	A	A	B	A	B	B	210	202	236	234	252	246
21	230	E B	232	230	E A	240	214	204	A	A	A	B	B	B	A	B	204	B	B	B	B	230	230	236	
22	A E A	260	236	230	228	228	228	190	B	Y	Y	A	Y	B	A	194	A	A	202	216	220	222	206	B	
23	A	A	A	188	A	A	A	A	A	B	234	B	B	B	B	B	B	B	B	218	242	E A	A	A	
24	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	
26	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	242	E A E A	244	260	B	
27	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	E B	A	
28	B E B	282	B	A	B	A	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	240	
29	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	208	224	224	224	240	A	
30	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	A	A	A	A	E A	246
31																									
CNT	11	12	9	10	8	8	9	10	10	3	4	2	3	3	2	5	6	5	8	18	18	16	19	14	
MED	237	247	260	234	236	222	214	203	202	202	206	209	202	188	246	194	196	198	208	222	225	223	235	234	
U Q	258	276	265	E A	250	251	225	214	216	206	221		204	210		200	204	212	211	230	240	239	244	246	
L Q	228	242	245	230	229	216	206	200	196	198	200		190	186		193	190	194	199	216	220	220	224	228	

NOV. 2006 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

DEC. 2006 f<sub>XI</sub> (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	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	B	R	R	A	R	R	R	R	B	B	B	B	B	B	O	X	X	B	O	X	X	R	R
2		R	B	R	R	B	R	B	R	Y	R	B	B	B	B	R	X	Y	R	B	B	O	X	O	X	X
3		B		B	B	R	B	A	R	Y	R	O	X	R	Y	R	R	R	B	O	X	X	O	X	X	
4		R	R	R	Y	X	O	X	X	X	X	Y	R	R	B	B	O	X	R	B	O	X	Y	O	X	O
5			X	O	X	X	X	O	X	R	O	X	X	O	X	O	X	R	B	B	B	R	B	O	X	O
6		O	X	O	X	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11		B	B	B	B	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B
17		B	B	B	O	X	B	B	B	R	B	Y	R	B	B	R	B	B	R	R	O	X	X	X	O	X
18		O	X	A	O	X	X	X	B	B	B	B	B	B	B	B	B	B	O	X	B	B	O	X	B	B
19		B	O	X	A	A	R	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	R	R	O	X
20		A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O	X	R	B
21		B	B	B	B	B	O	X	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	O	X	A
22		A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	R	B	O	X	R	B
23		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B
24		B	A	A	B	B	B	B	R	B	B	B	B	B	B	B	B	R	B	B	B	O	X	X	O	X
25		B	B	B	B	B	B	B	B	R	R	B	B	B	B	R	R	B	B	B	B	B	O	X	B	B
26		O	X	O	X	R	R	R	O	X	R	Y	R	R	B	B	B	B	R	R	O	X	O	X	X	B
27		X	O	X	X	X	X	X	O	X	X	O	X	B	B	B	R	R	R	R	A	A	A	O	X	O
28		X	X	X	X	R	O	X	X	X	X	X	X	R	R	R	Y	R	R	R	O	X	A	A	O	X
29		O	X	O	X	B	B	R	O	X	X	X	X	R	X	B	R	B	R	B	R	X	R	X	X	B
30		B	X	B	O	X	B	R	O	X	O	X	X	R	R	R	R	R	A	O	X	R	X	X	O	X
31		O	X	X	R	R	B	R	R	O	X	O	X	O	X	R	Y	B	B	R	R	A	A	O	X	X
		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	10	5	5	5	7	5	5	7	5	7	3	2		1	1	1	5	2	8	13	14	12	10	
MED		O	X	X	O	X	O	X	X	X	O	X	X	O	X	X		O	X	X	O	X	O	X	O	X
UQ		42	42	44	46	52	50	63	63	67	71	69	71	66		64	58	43	44	44	45	44	44	48	46	
LQ		O	X	O	X	O	X	O	X	X	O	X	X	X					O	X		O	X	O	X	O
		44	44	47	49	57	62	69	78	76	80	71	79						46		46	50	50	52	49	
		X	X	X	O	X	X	X	X	X	O	X	X	O	X					O	X		O	X	X	X
		40	41	42	38	50	50	54	62	66	69	63	69						43		43	42	42	44	42	

DEC. 2006 f<sub>XI</sub> (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

DEC. 2006 foF2 (0.1MHz) 45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

D	H	00	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	R	B	A	R	A	A	A	R	R	R	B	B	B	B	B	R	R	B	R	R	R	R	R	A
2	R	B	A	A	B	R	B	R	Y	A	B	B	B	B	B	R	J	R	Y	R	B	B	R	R	R
3	B	F	B	B	R	B	A	R	Y	R	R	R	Y	R	R	R	R	B	R	J	R	R	R	R	R
4	R	R	R	Y		R	J	R		J	R	Y	R	R	B	B	R	R	B	U	R	Y	R	R	R
5	F	31	33	34	34	51	58		68	70	68	65	65	64											
6	R	U	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	B	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B
17	B	B	B	R	B	B	B	B	R	B	Y	R	B	B	B	B	B	B	R	R	R	R	J	R	R
18	R	A		R	J	R	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	R	R	B
19	B	R	A	A	R	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	R	A
20	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	R	R	B	B
21	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	R	A
22	A	A	B	B	B	B	B	B	R	B	B	B	B	B	B	B	B	B	B	B	R	B	R	R	B
23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B
24	B	A	A	B	B	B	B	R	B	B	B	B	B	B	B	B	B	R	B	B	B	R	36	35	39
25	B	B	B	B	B	B	B	B	R	R	B	B	B	B	B	R	R	B	B	B	B	B	38	B	B
26	R	R	R	R	R	R	R	Y	R	R	B	B	B	B	R	R	B	R	R	R	R	J	R	B	B
27	34	36	37	40	51	56	61		64	63	63														
28	38	38	38	R	46	55	64	76	73	80	75	73													
29	R	R	R	B	B	R	R	R	57	56	60		62		55										
30	B	34	B	42	B	R	R	R	44	57	61	65	65												
31	R	J	R	R	R	B	A	R	60	63	57	63													
	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	10	5	5	5	6	5	5	7	5	7	3	2			1	1	1	5	2	8	13	14	12	10
MED	R	R	R	R	J	R	R	R	R	R	R	R	R	R		R	J	R	R	R	R	R	R	R	R
UQ	36	36	38	40	46	50	57	57	61	65	63	65	60			58	52	37	38	38	39	38	38	42	40
LQ	38	38	41	43	51	56	62	72	70	74	65	73													
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	38	38	41	43	51	56	62	72	70	74	65	73													
	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
	34	34	36	32	44	44	48	56	60	63	57	63													

DEC. 2006 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

DEC. 2006 ftes (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	40	31	B	33	35	47	32	36	26	33	32	B	B	B	B	B	26	28		B	B	B	26	36					
2	30		B	34	38		B	30	25	42		B	B	B	33	26	24	25		B	B	25	34	27	E	17			
3		20	B	B		B	41	30	25	25	24	29	25	30	26	28		24	18	G	K	K	E	B	K	18			
4	33	28	26	25	23	20	29	22	25	25	28	32		B	32	28		26	26	E	B	K	26	E	B	E	19		
5	17	18	16	20	26	26	36	40	24	25	36	38	32	32		B	B		B	B	B	24	E	B	E	B	E	B	
6	E	B	E	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
11	B	B	B	B	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
17	B	B	B		B	B	B	B	E	B	B	G		B	B		B	B		28		B	B	B	B	B	B		
18	16	38	26	33	37		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
19		33	94	43	34		B		37	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
20	70	34	43		B	B	B	B	B	B	B	B	B	B	B	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	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
22	33	34		B	B	B	B	B	B		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B		
24	B	44	74		B	B	B	B	32	B	B	B	B	B	B	B	26	B	B	B	B	22	23	E	B	30			
25	B	B	B	B	B	B	B	B		24	25		B	B	B	B	25	26		B	B	B	B	B	B	B	B		
26	17	20	24	27	30	32	25	25	25	28		B	B	B	B	35	33		B	29	27	K	K	B	K	22			
27	18	30	27	20	27	25	20		G	B	E	B	21		B	B	B		36	40	43	35	58	40	90	38	34	25	
28	18	20	21	40	20	24	22	25	19		G		29	34	27	38	32	26	31	42	39	32	45	56	34	18	B		
29	22	E	B		B		35	26	33	28	24	34	26	26		B		25		B		31	38	24	19		B		
30		B	K		B		35	32	25	25	29	37	28	31	25	G	32	32	31	39	23	45	44	33	23	K	22		
31	24	22	25	35	32		B	G		39	22	28	25	30	27	29	22		B	B		37	26	35	58	31	22	18	19
	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	16	12	12	10	10	10	12	14	12	10	8	6	5	10	8	8	12	11	11	19	18	14	14					
MED	24	28	26	30	31	26	30	30	25	25	30	30	28	30	32	28	28	26	30	29	25	24	24	22					
U Q	33	34	38	36	34	35	36	34	28	31	34	33	31	35	35	32	34	32	35	40	36	33	32	30					
L Q	18	21	24	23	26	24	25	25	25	25	24	28	26	24	32	26	26	25	25	25	K	23	22	20	19				

DEC. 2006 ftes (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

# IONOSPHERIC DATA STATION SHOWA-ST.

DEC. 2006 fmin (0.1MHz)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	17	25	B	29	14	14	23	22	15	24	14	B	B	B	B	B	13	14	B	22	22	22	13	14
2	16	B	22	21	B	14	B	19	20	15	B	B	B	B	19	16	12	18	B	B	21	17	12	17
3	B	13	B	B	23	B	22	17	19	18	20	20	19	28	16	19	B	20	14	13	13	20	14	13
4	13	19	23	16	18	14	13	14	14	13	20	20	B	B	21	20	B	15	16	28	13	14	18	19
5	13	13	12	15	13	13	14	14	13	14	14	18	20	16	B	B	B	B	23	B	19	24	23	24
6	24	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	B	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
17	B	B	B	18	B	B	B	B	28	B	20	22	B	B	17	B	B	16	18	29	23	23	20	B
18	13	19	15	13	14	B	B	B	B	B	B	B	B	B	B	B	B	29	B	B	B	B	B	B
19	B	14	20	15	14	B	B	22	B	B	B	B	B	B	B	B	B	B	B	B	15	14	14	16
20	16	14	13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	B	B	21	14	B	B
21	B	B	B	B	B	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	19	26	15	14
22	24	30	B	B	B	B	B	B	21	B	B	B	B	B	B	B	B	B	28	B	15	24	20	B
23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	14	B	B	B
24	B	35	23	B	B	B	B	27	B	B	B	B	B	B	B	B	19	B	B	B	17	19	21	24
25	B	B	B	B	B	B	B	B	23	20	B	B	B	B	22	20	B	B	B	B	21	B	B	16
26	13	15	20	19	22	14	20	16	20	19	B	B	B	B	26	24	B	20	15	14	12	13	B	14
27	13	14	14	12	12	13	15	B	20	56	17	B	B	B	29	20	19	20	18	16	16	14	19	13
28	14	12	15	15	14	18	12	13	13	18	18	17	20	13	20	20	18	23	19	14	13	15	14	14
29	16	28	21	B	B	18	21	16	20	16	14	15	18	B	23	B	17	B	27	27	14	13	B	
30	B	14	B	19	B	14	14	13	13	16	13	14	16	15	15	14	14	17	14	14	12	14	13	14
31	13	12	14	22	26	B	16	13	15	15	23	20	20	14	B	B	29	19	19	24	13	16	12	12
	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	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31
MED	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	24	B	B
U Q	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
L Q	16	14	20	19	22	18	21	17	20	18	20	22	B	B	23	24	29	20	19	24	14	14	15	14

DEC. 2006 fmin (0.1MHz)

# IONOSPHERIC DATA STATION SHOWA-ST.

DEC. 2006 h'F (KM)

45°E MEAN TIME (G.M.T. + 3 H)

LAT. 69°00.4'S LON. 039°35.4'E SWEEP 1.0MHz TO 15.0MHz IN 15.0SEC IN MANUAL SCALING

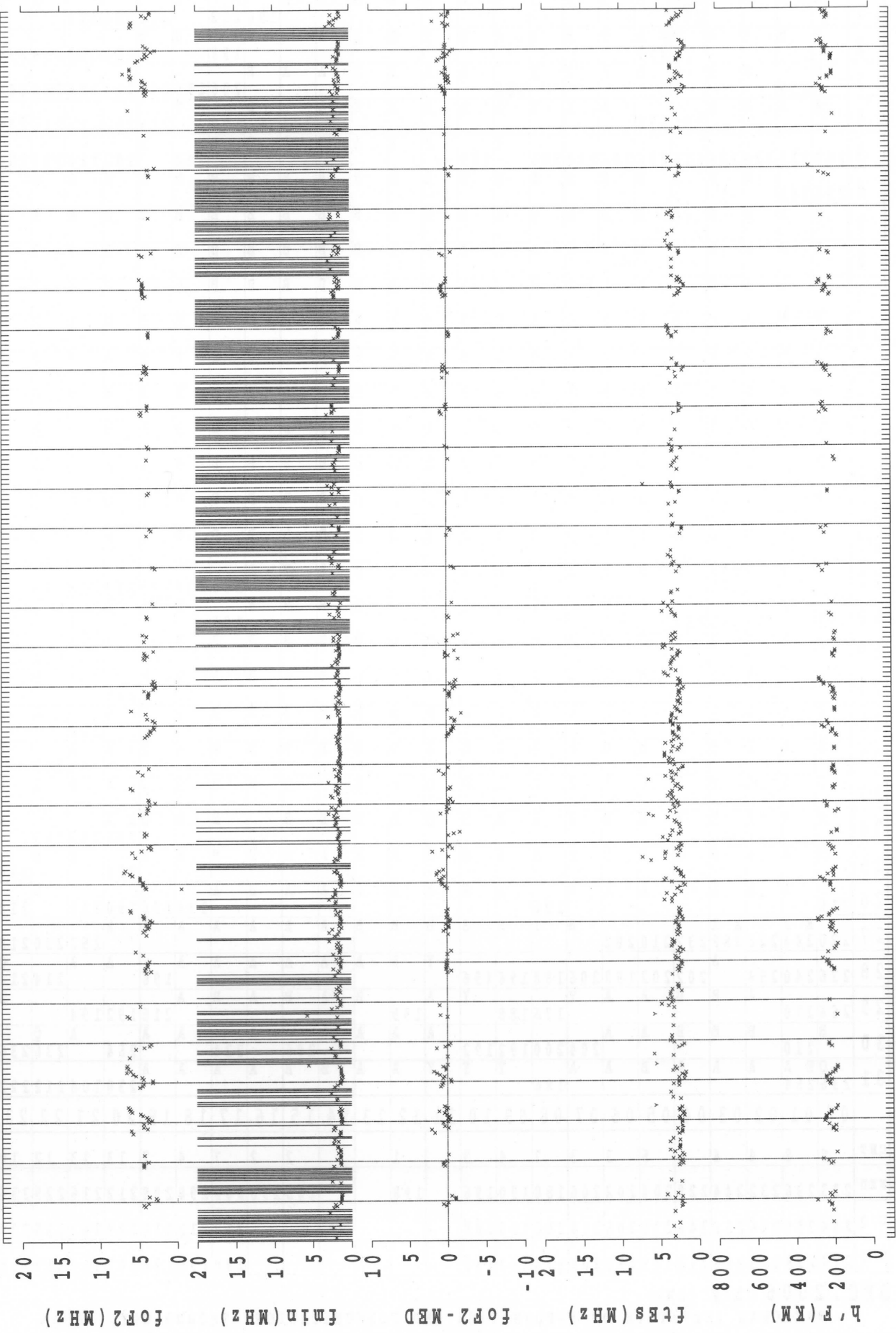
H D	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	B	A	E A 246	A	A	A	A	A	A	B	B	B	B	B	196	212	B	204	204	214	A	A	
2	A	B	A	A	B	E A 250	B	A	Y	A	B	B	B	B	A	Y	A	198	B	B	228	252	234	234	
3	B	256	B	B	A	B	A	A	A	186	A	A	Y	A	A	A	B	206	196	208	214	206	228	246	
4	A	A	A	A	256	196	A	A	Y	A	A	A	B	B	A	204	B	190	Y	214	202	214	216	238	
5	230	218	220	226	216	206	206	214	206	Y	200	A	Y	A	B	B	B	B	200	B	202	216	230	250	
6	236	242	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
8	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
11	B	B	B	B	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
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15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B	B	
17	B	B	B	E A 246	B	B	B	B	174	B	Y	A	B	B	A	B	B	200	224	234	210	228	228	B	
18	252	A	238	258	232	B	B	B	B	B	B	B	B	B	B	B	B	190	B	B	B	214	B	B	
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27	220	E A 244	226	E A 258	232	210	202	B	Y	B	B	B	B	A	A	A	A	A	A	A	A	A	252	230	218
28	226	240	254	A	202	202	198	206	188	196	196	Y	A	A	A	A	A	A	A	196	A	A	214	214	
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31	Q E A 236	254	A	A	A	B	A	A	186	Y	Y	Y	A	A	B	B	A	A	A	A	230	206	212	222	
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U Q	244	255	246	258	246	230	206	214	200	194	200							212	212	216	229	240	235	238	
L Q	223	229	223	236	216	199	198	204	176	187	192							190	195	196	202	210	217	218	

DEC. 2006 h'F (KM)

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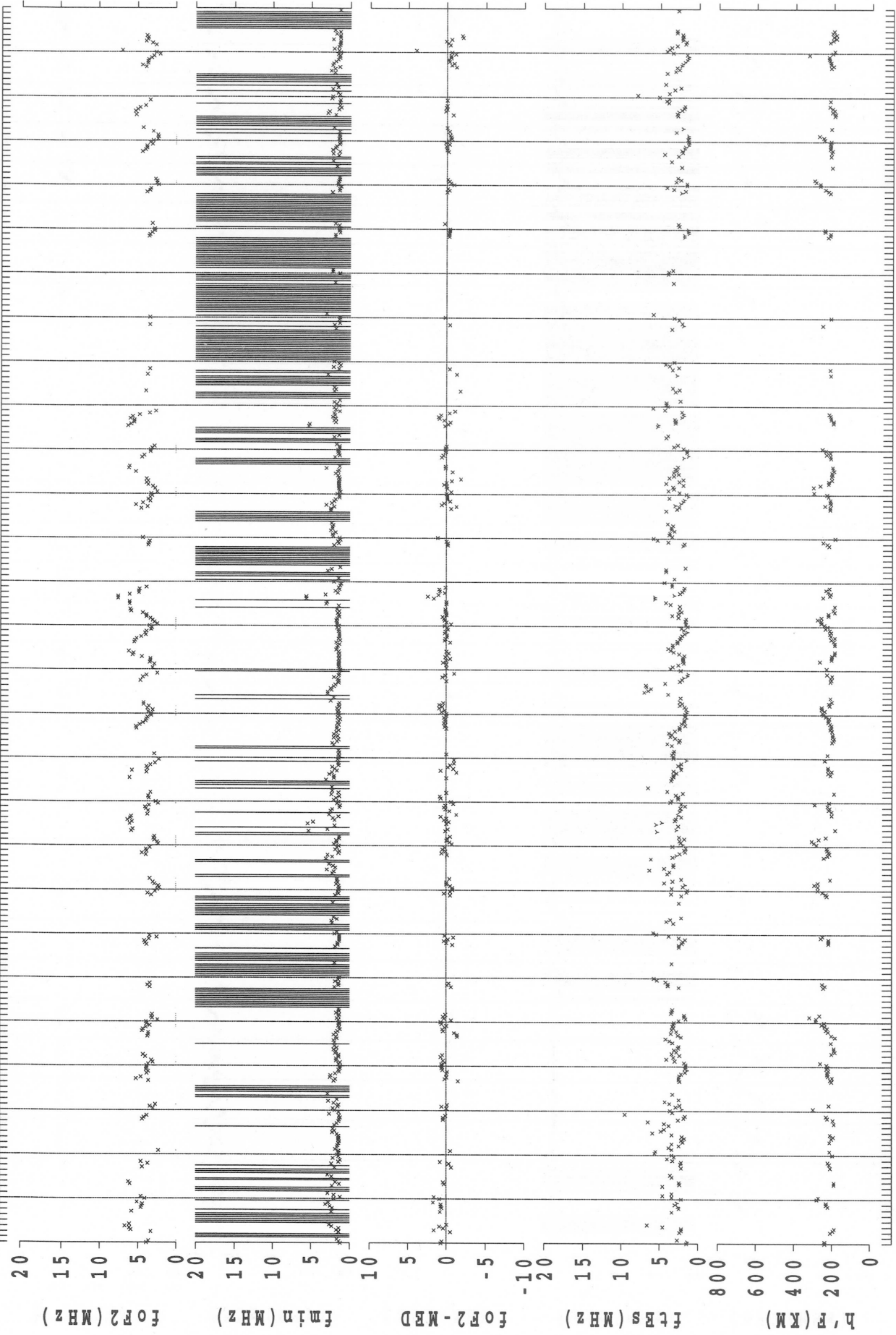


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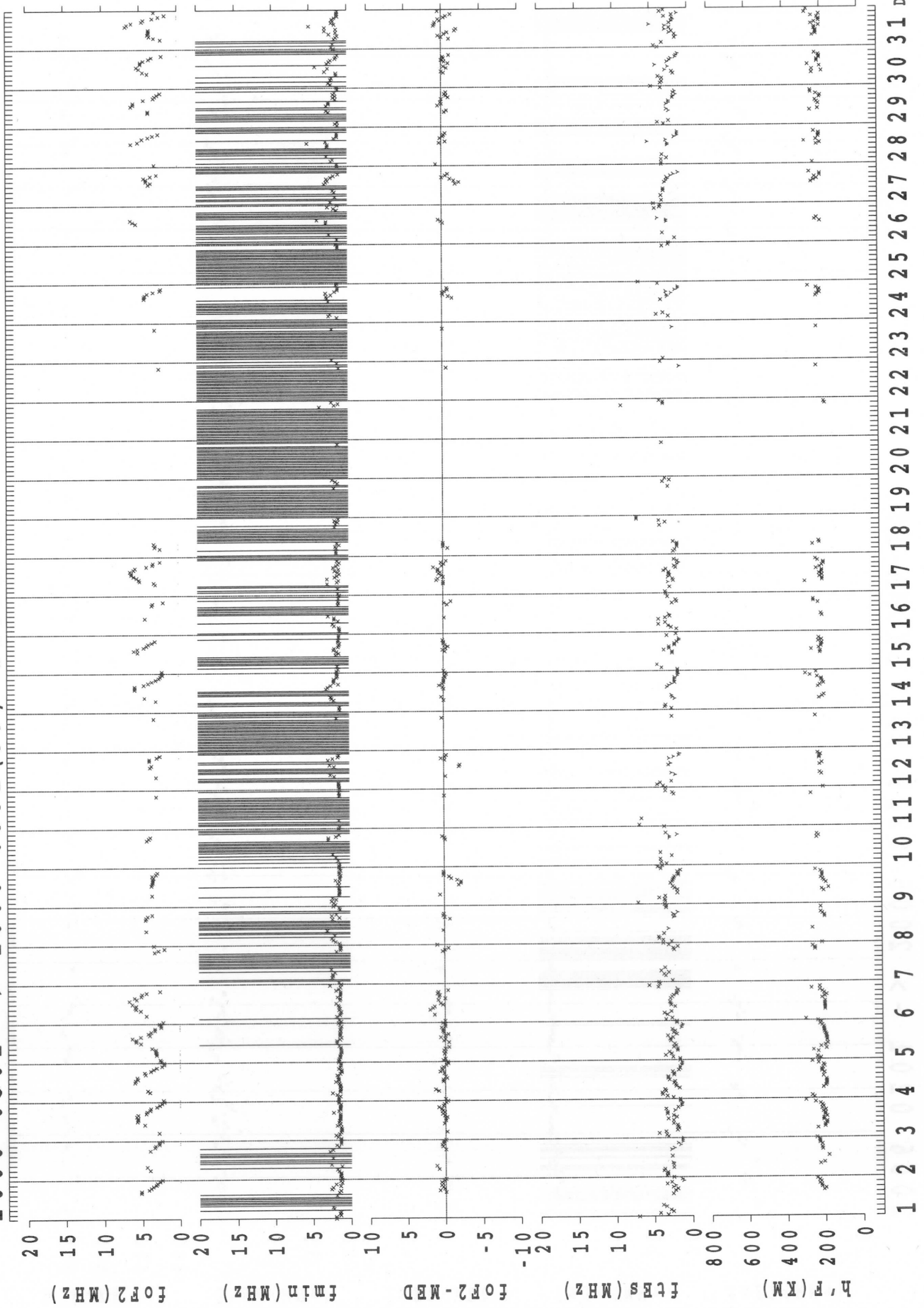


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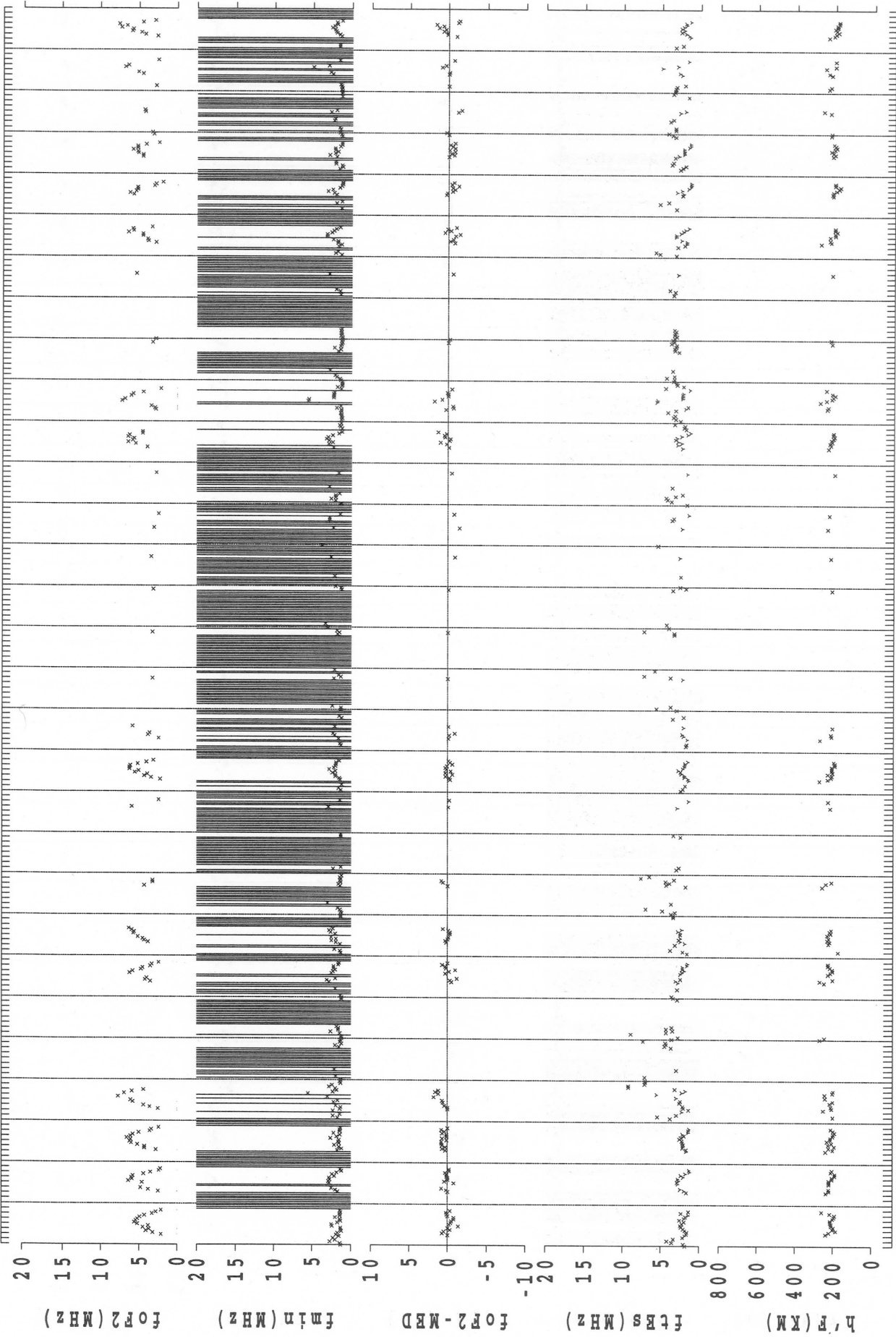
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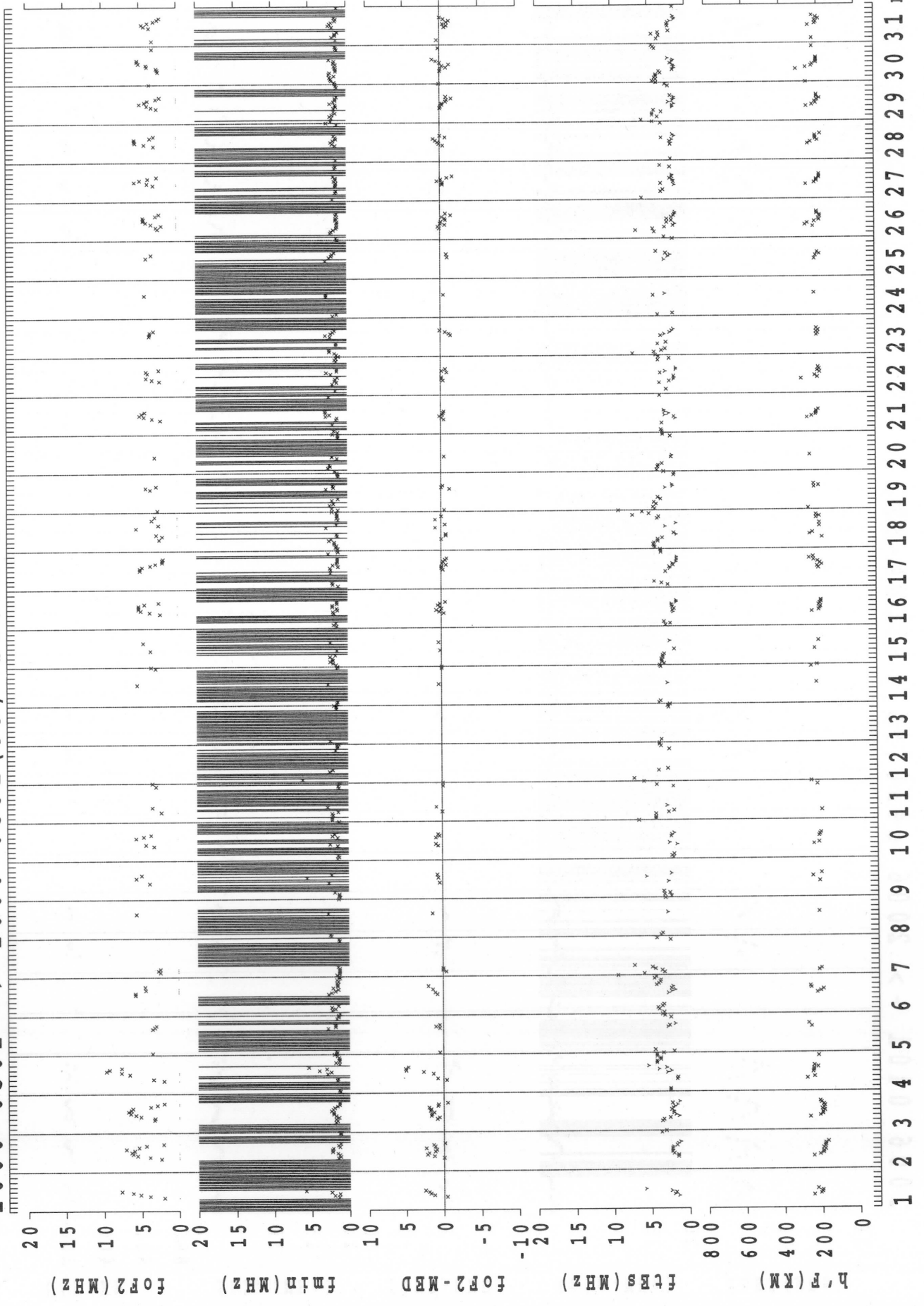
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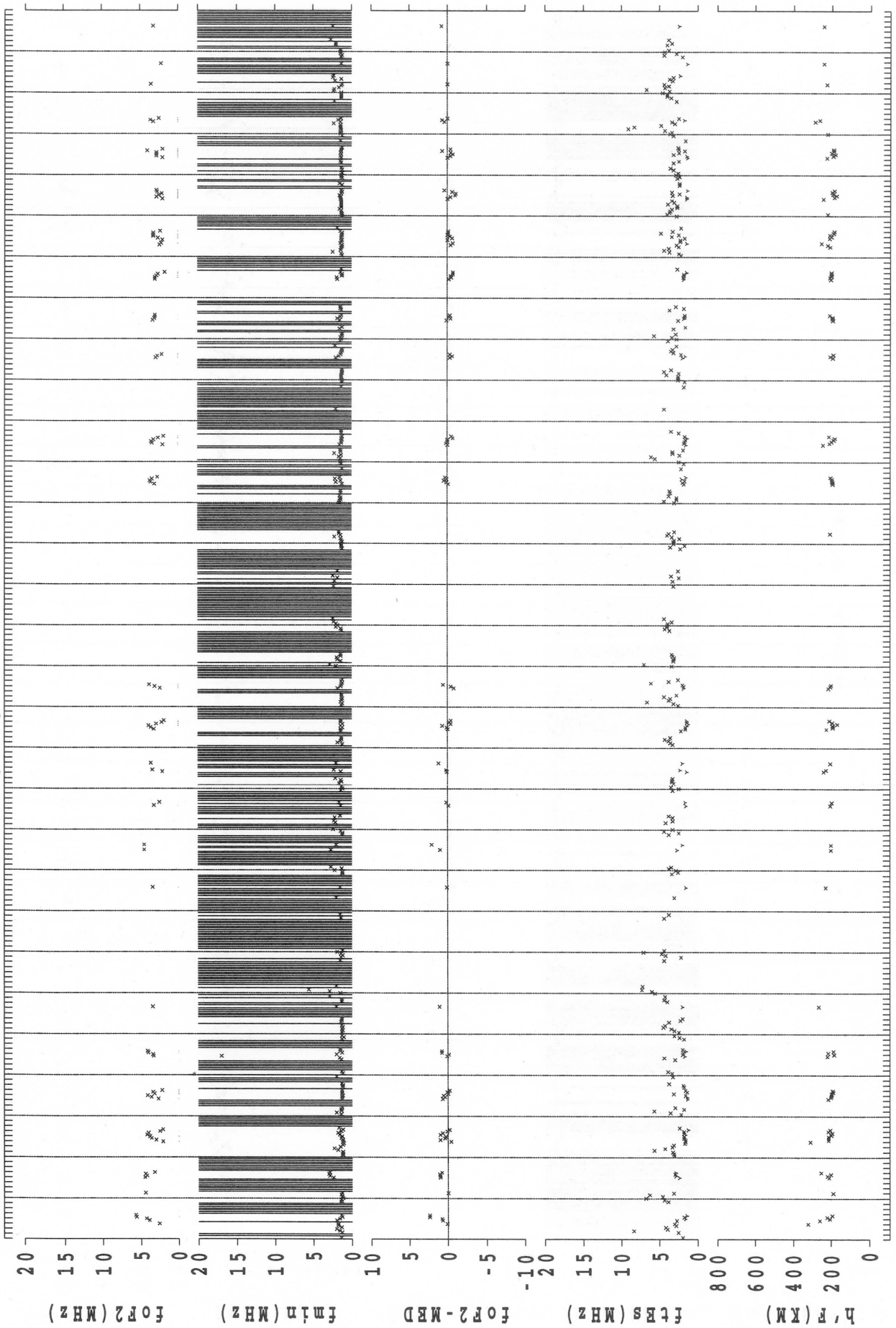


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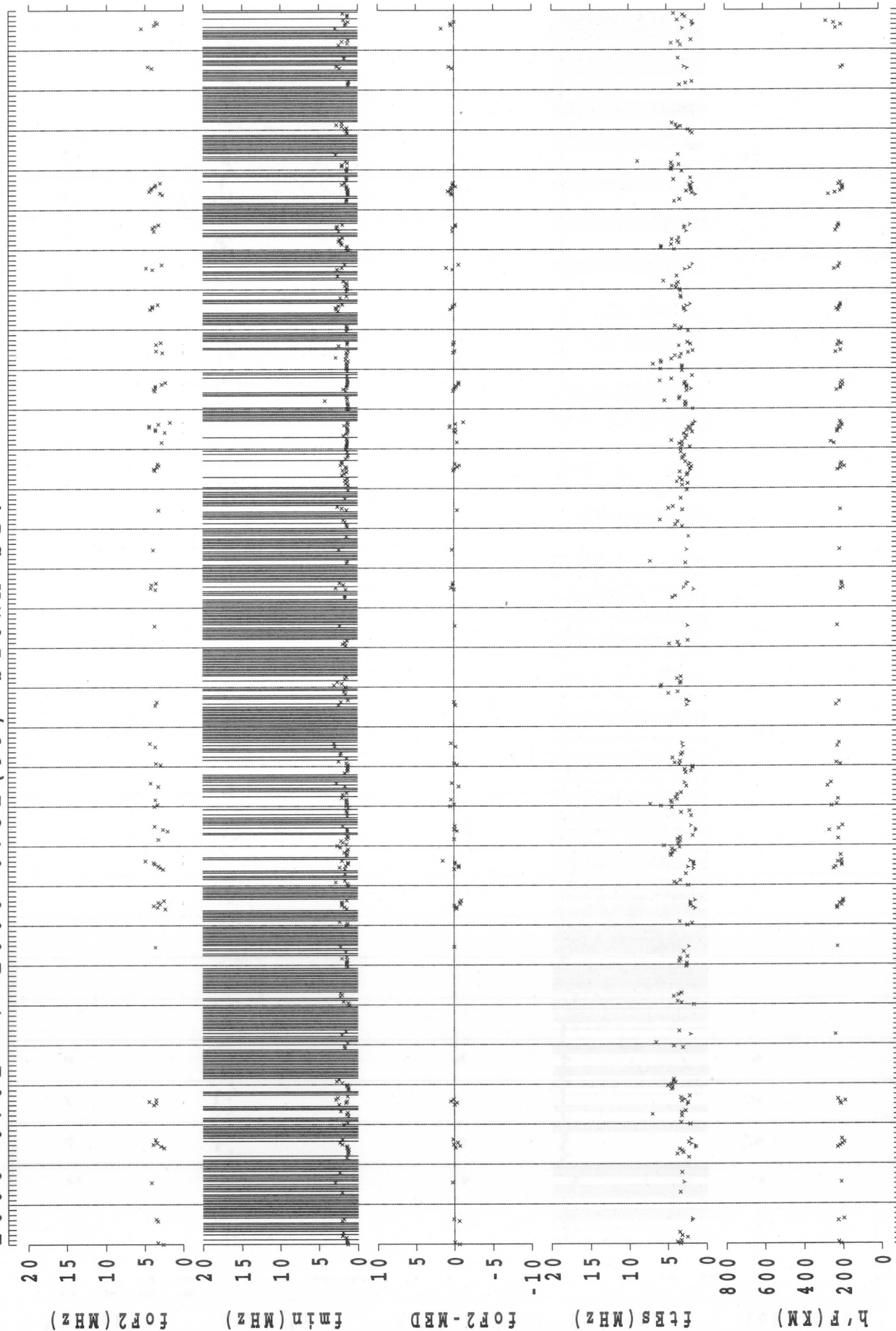


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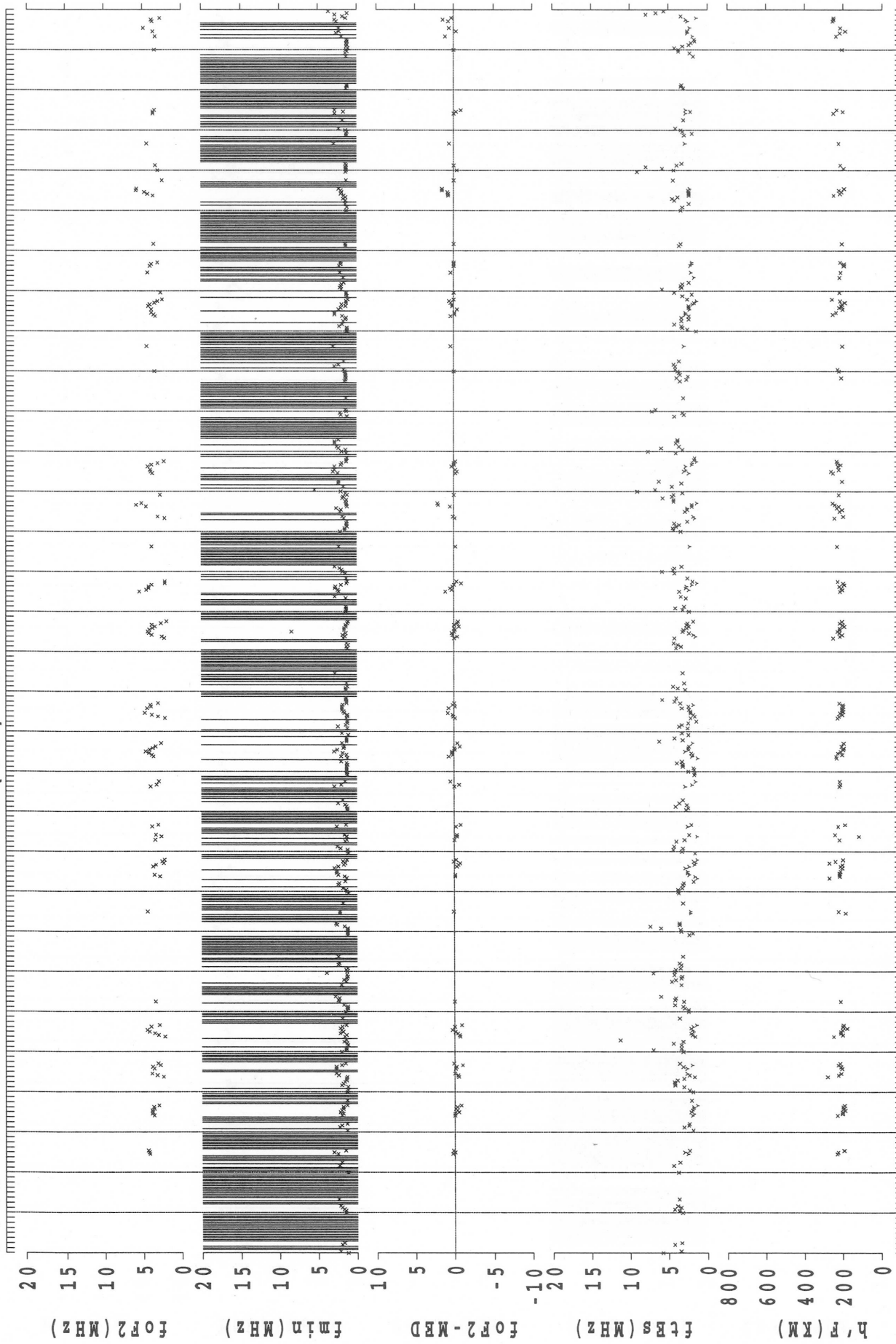


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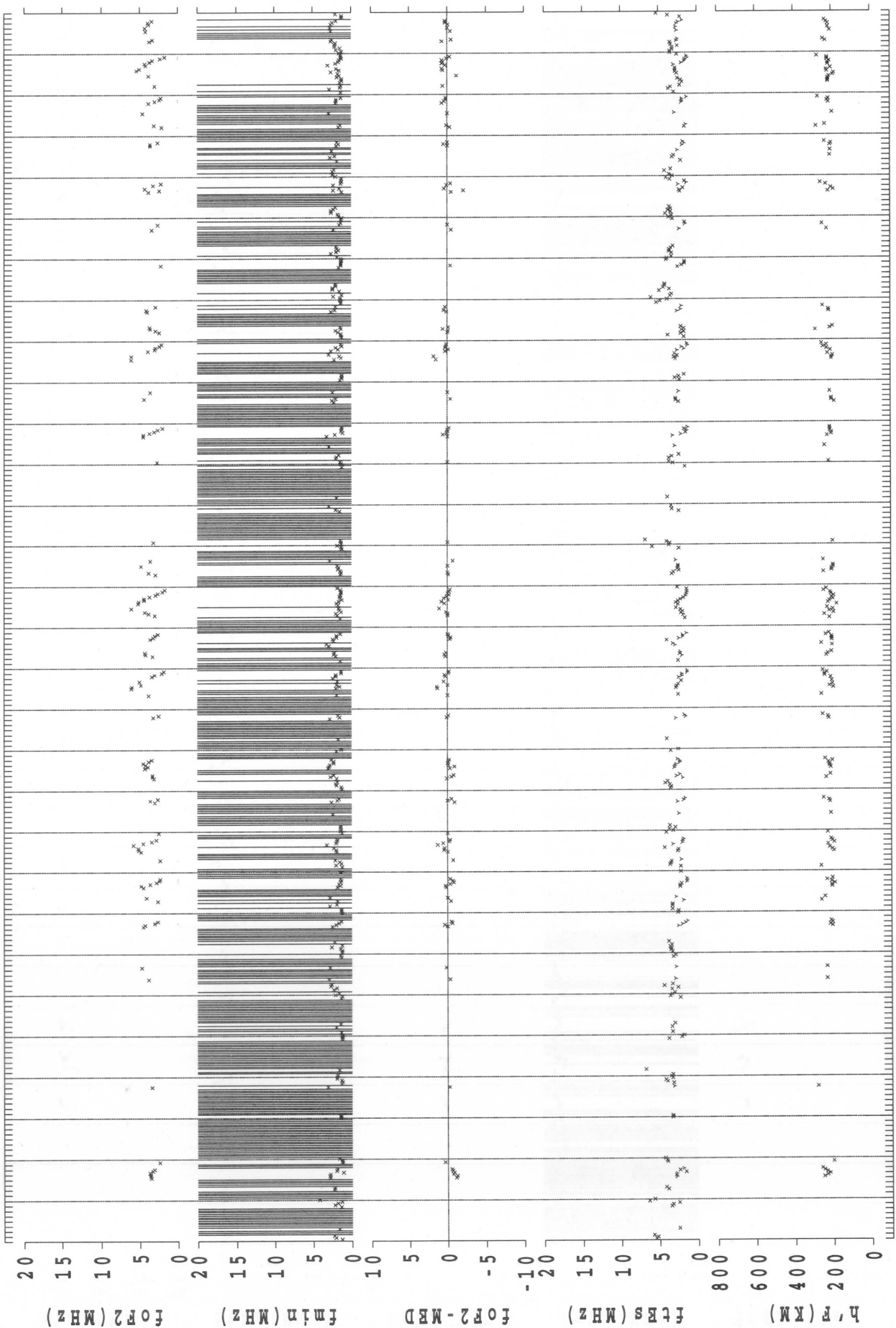
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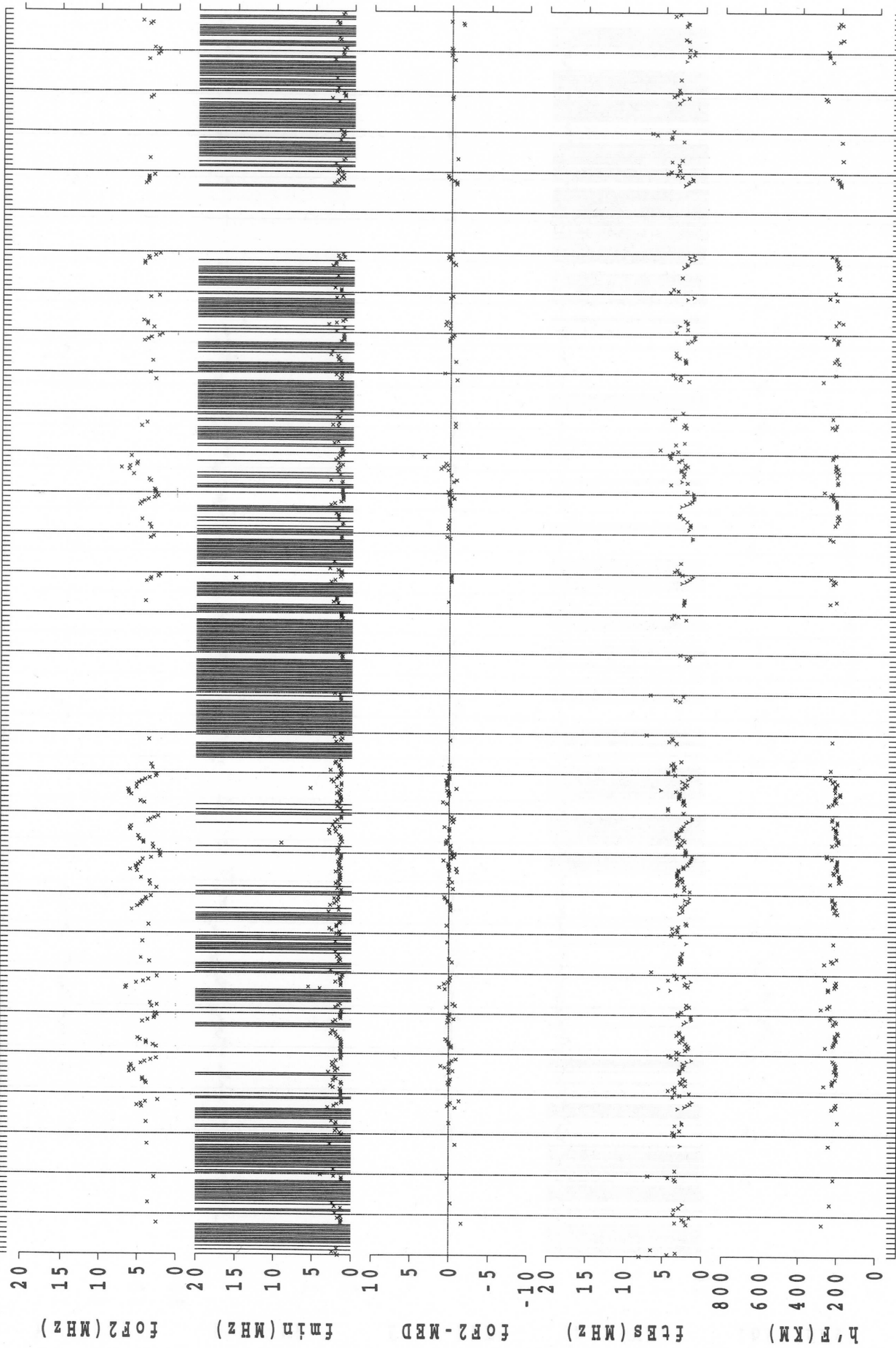


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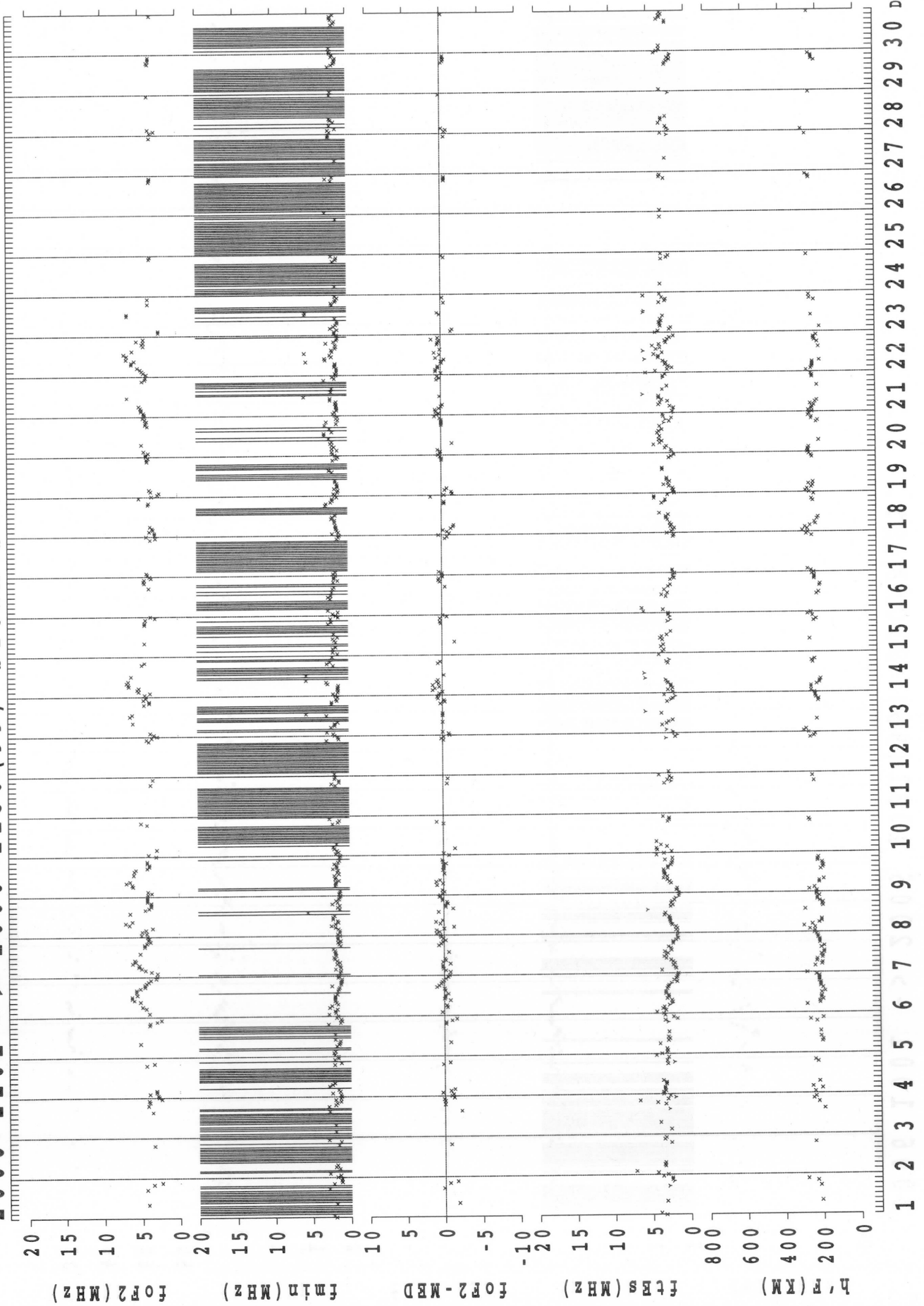


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 DAY/45' BMT

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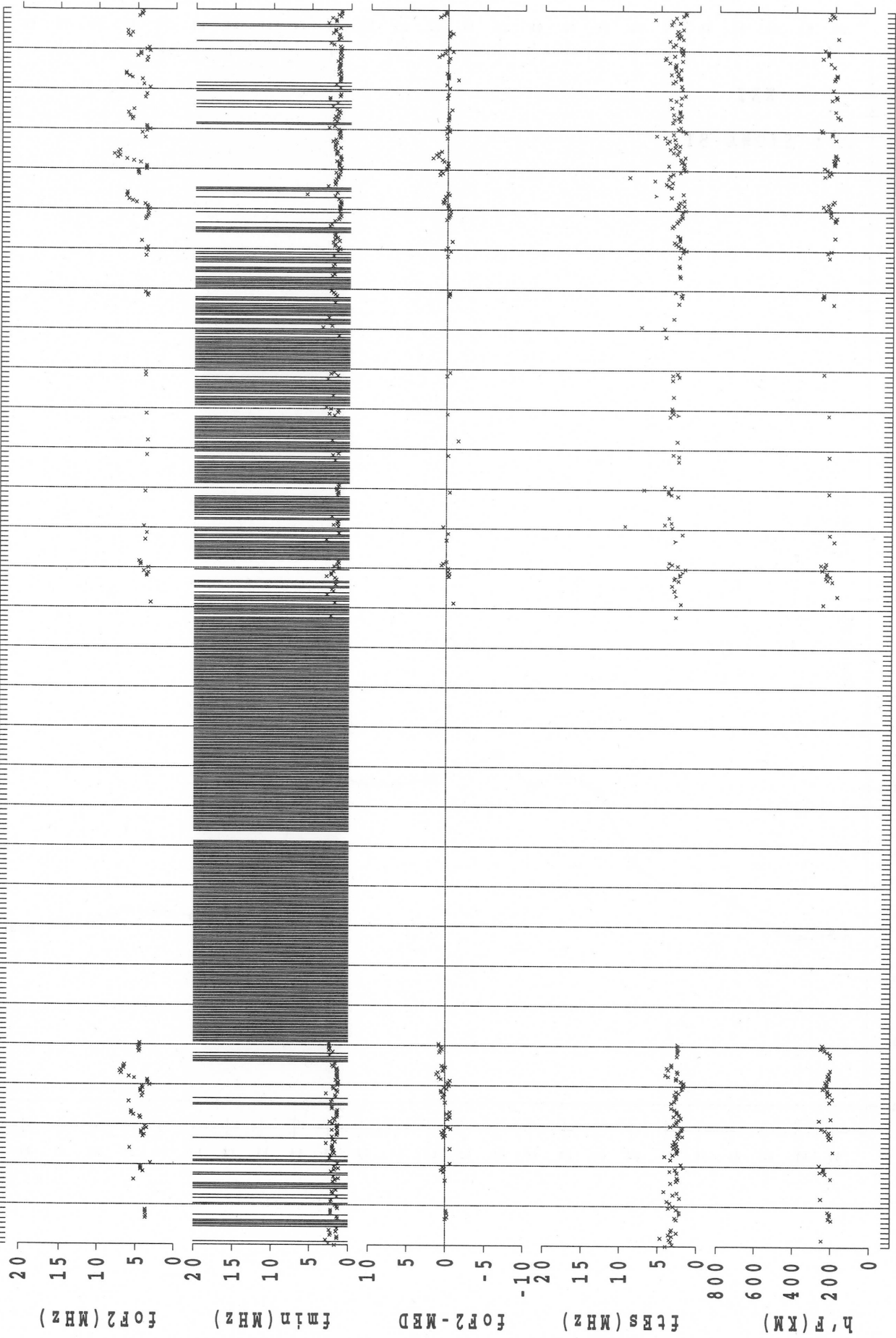


2006 1101 -> 2006 1130 (99) SYOWA-ST.



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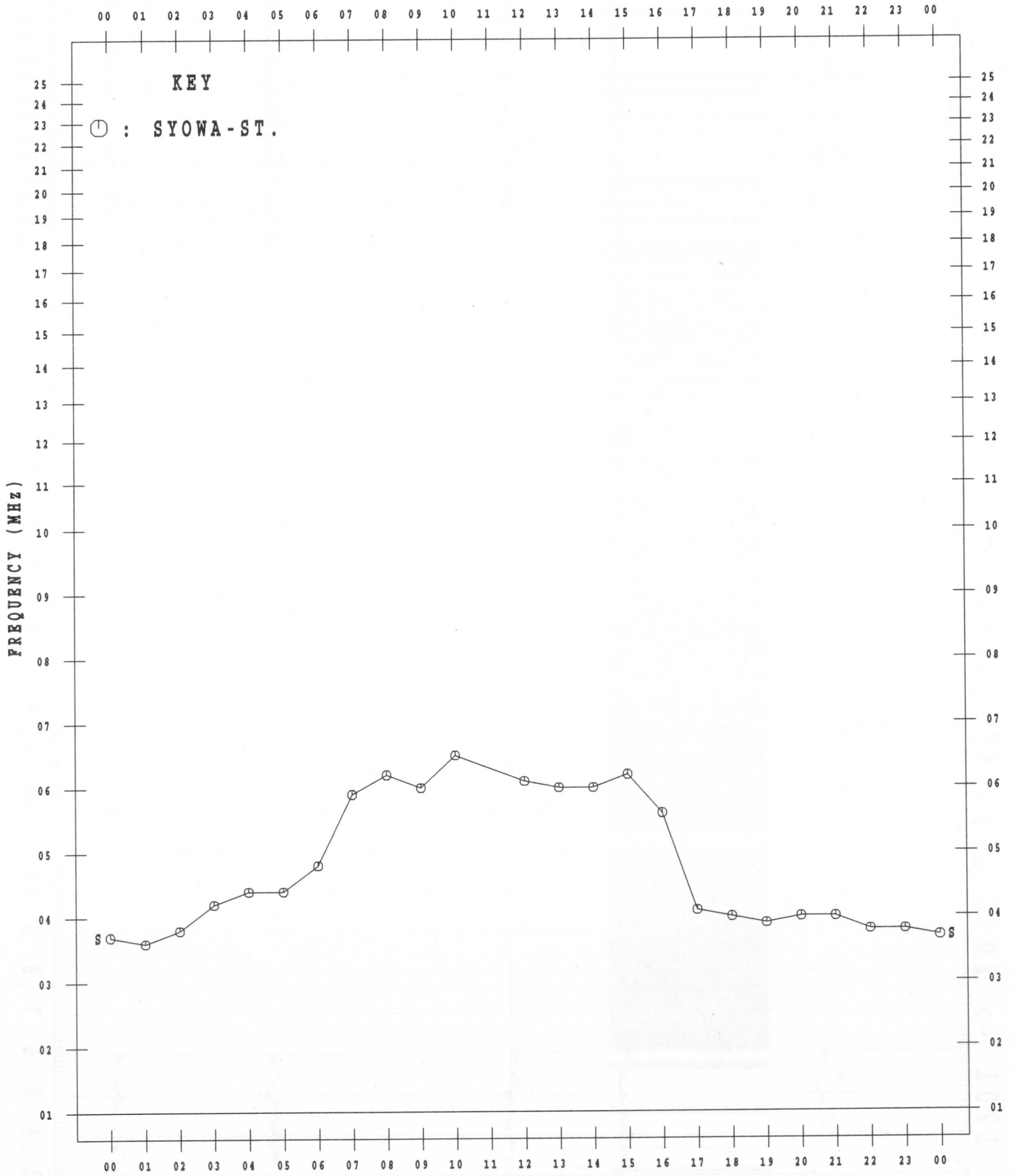
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# MONTHLY MEDIAN VALUES OF foF2

45° E MEAN TIME

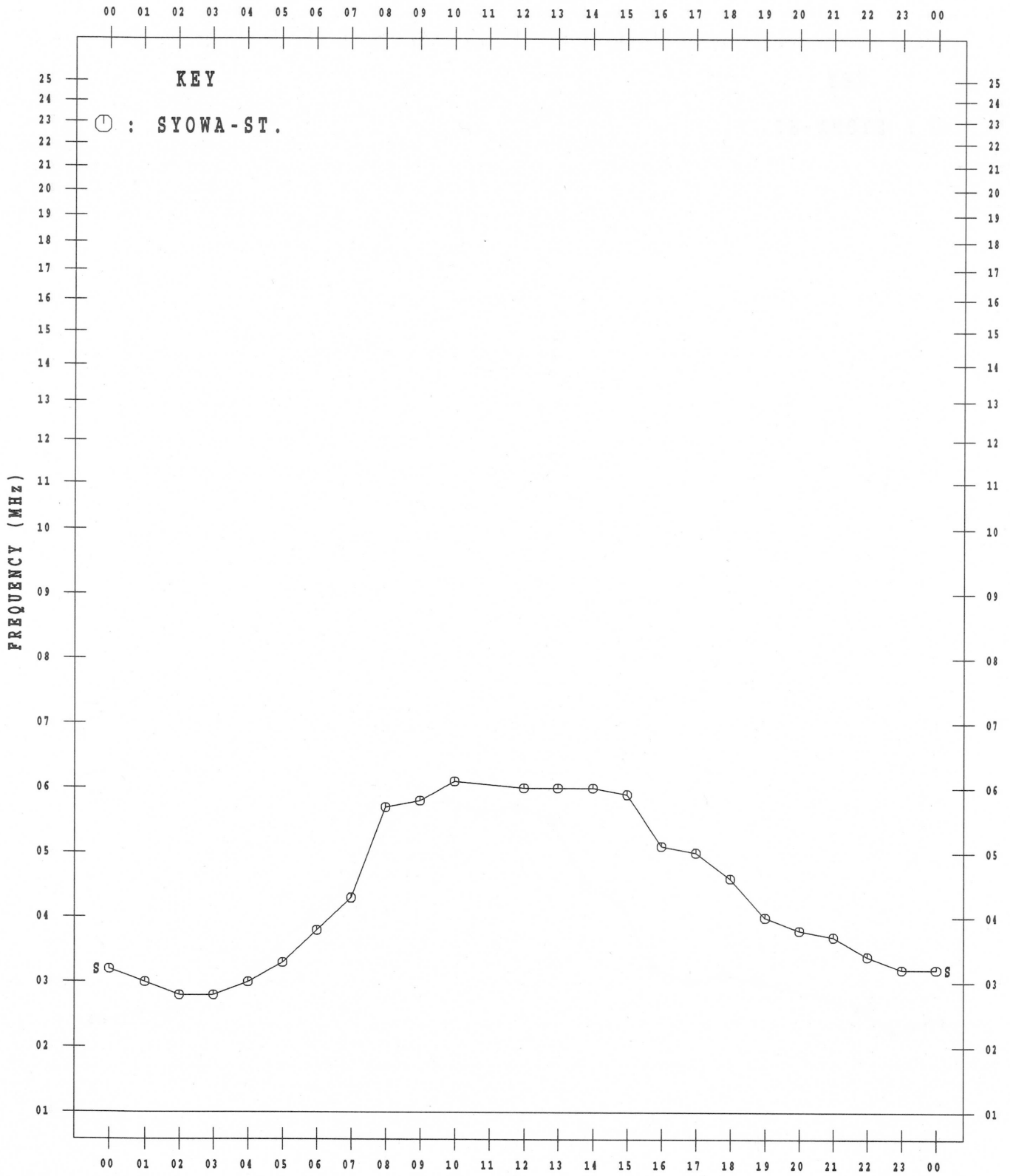
JAN. 2006



# MONTHLY MEDIAN VALUES OF f<sub>o</sub>F<sub>2</sub>

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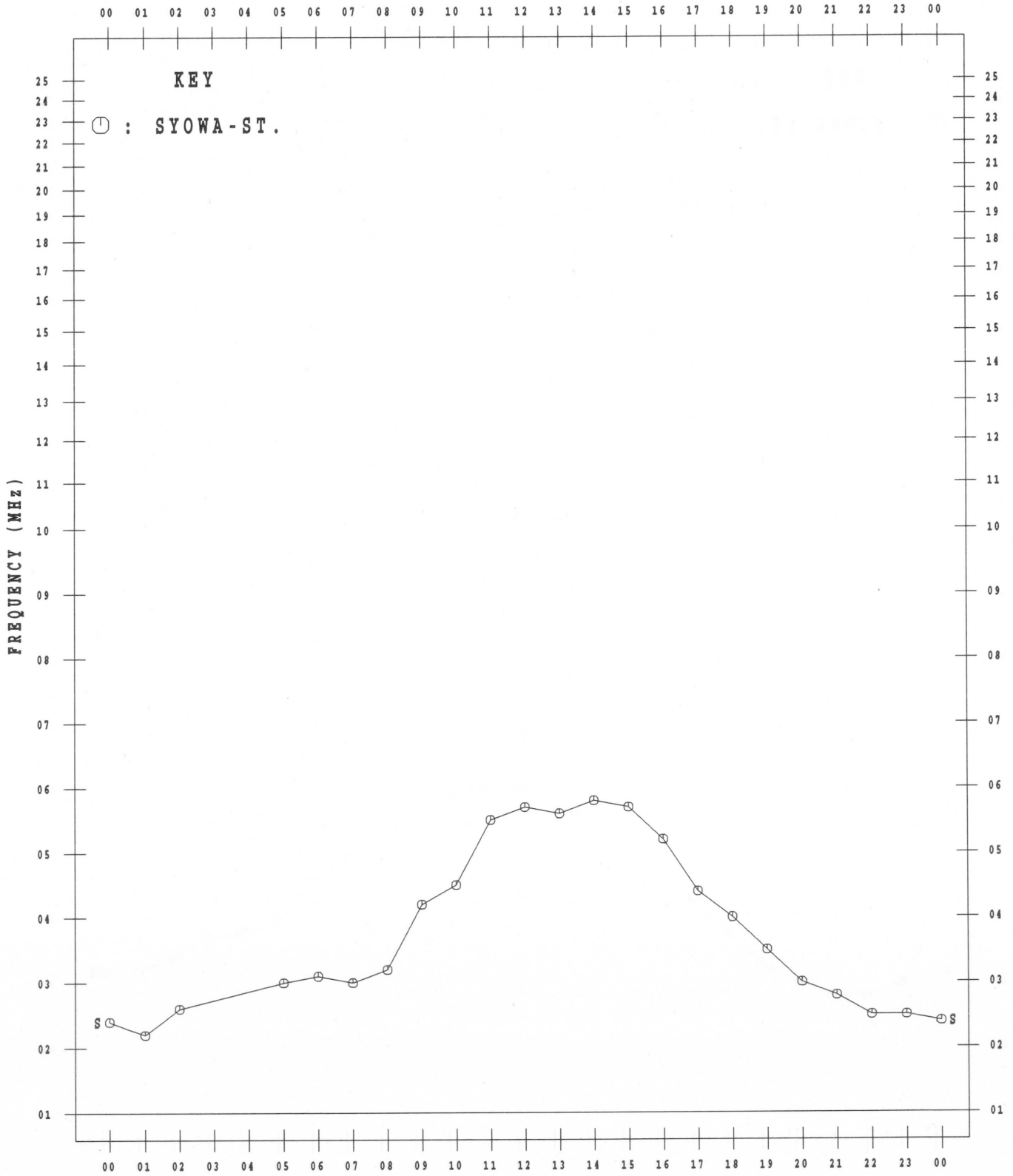
FEB. 2006



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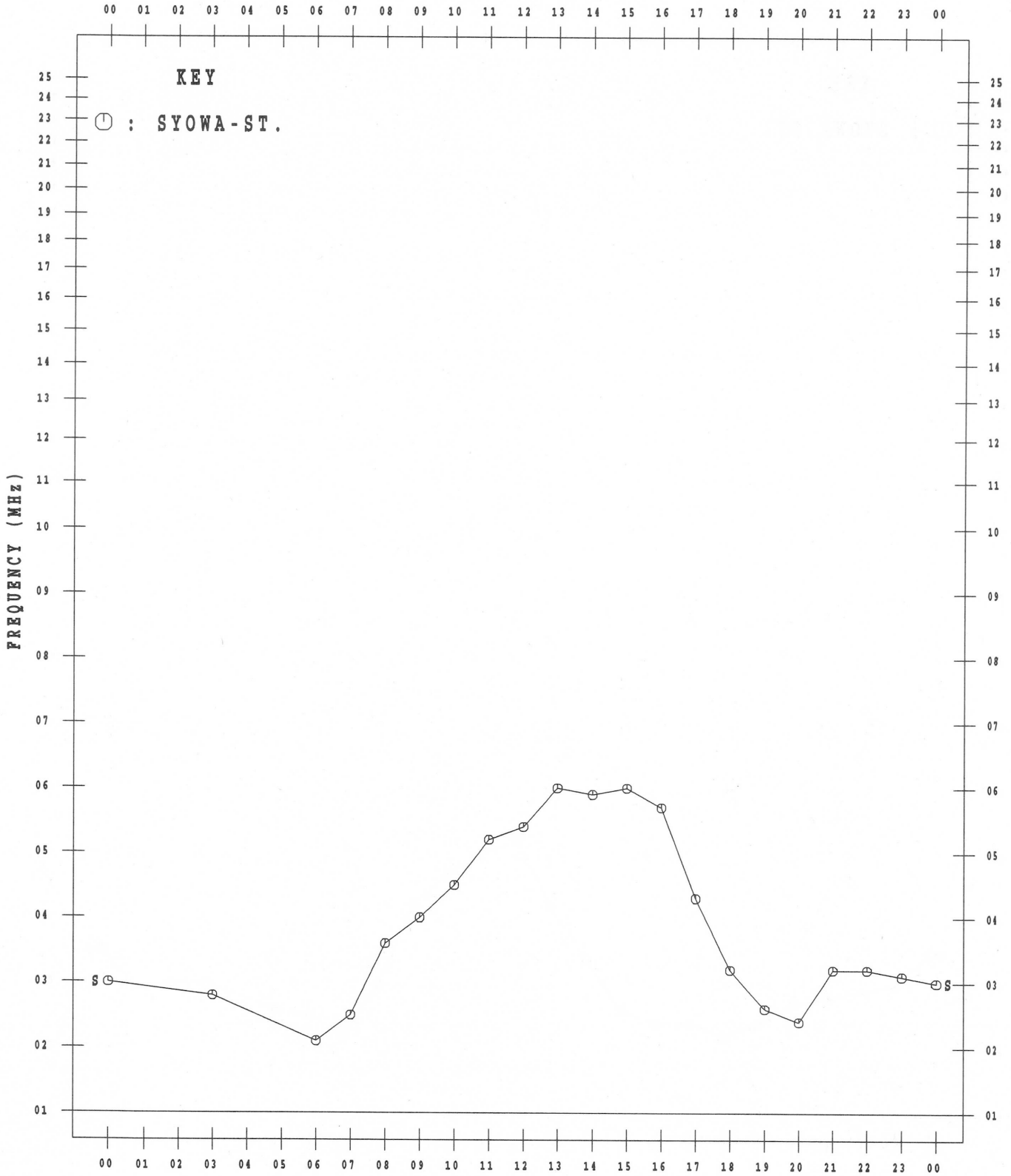
MAR. 2006



# MONTHLY MEDIAN VALUES OF f<sub>o</sub>F<sub>2</sub>

45° E MEAN TIME

APR. 2006

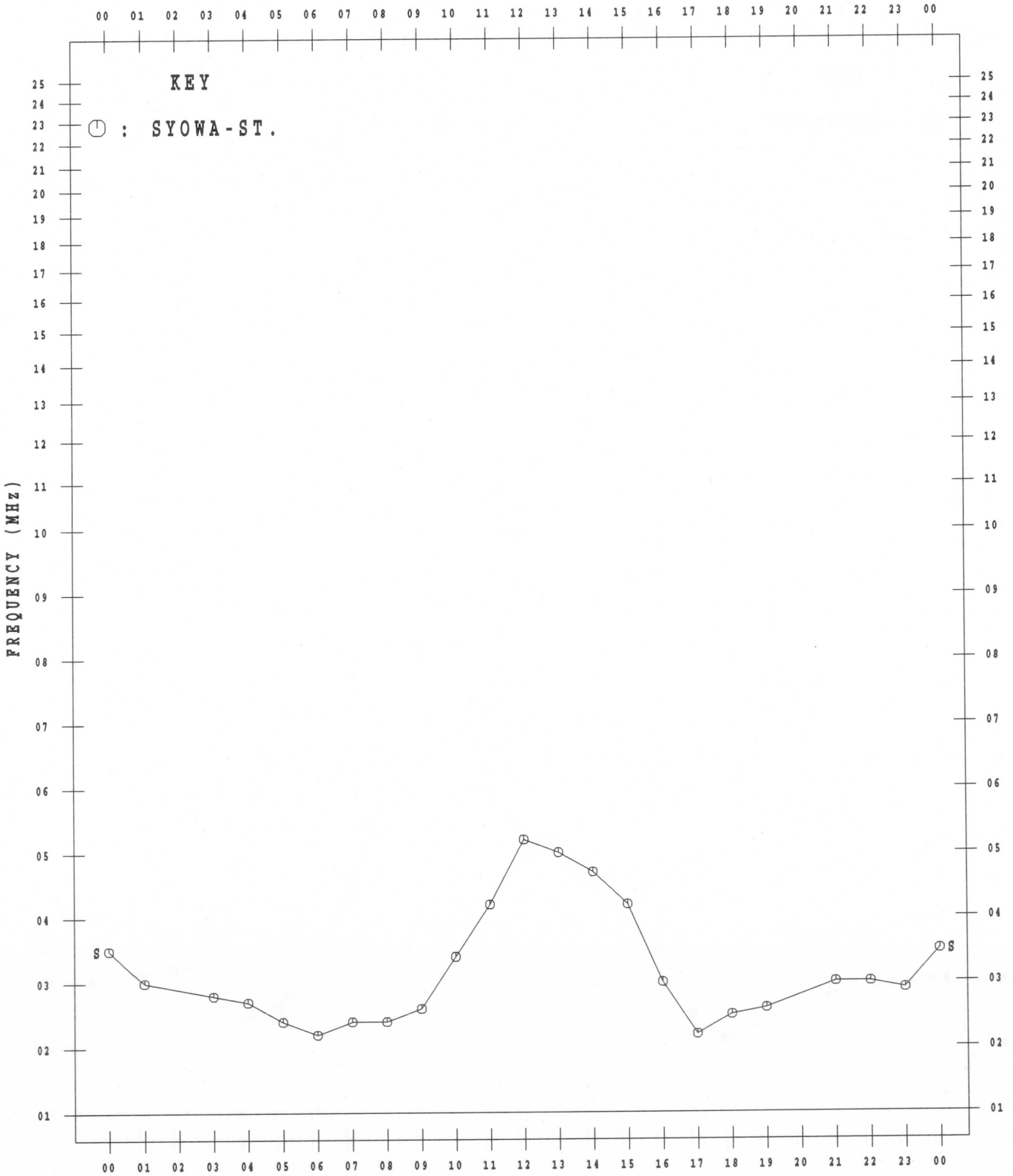




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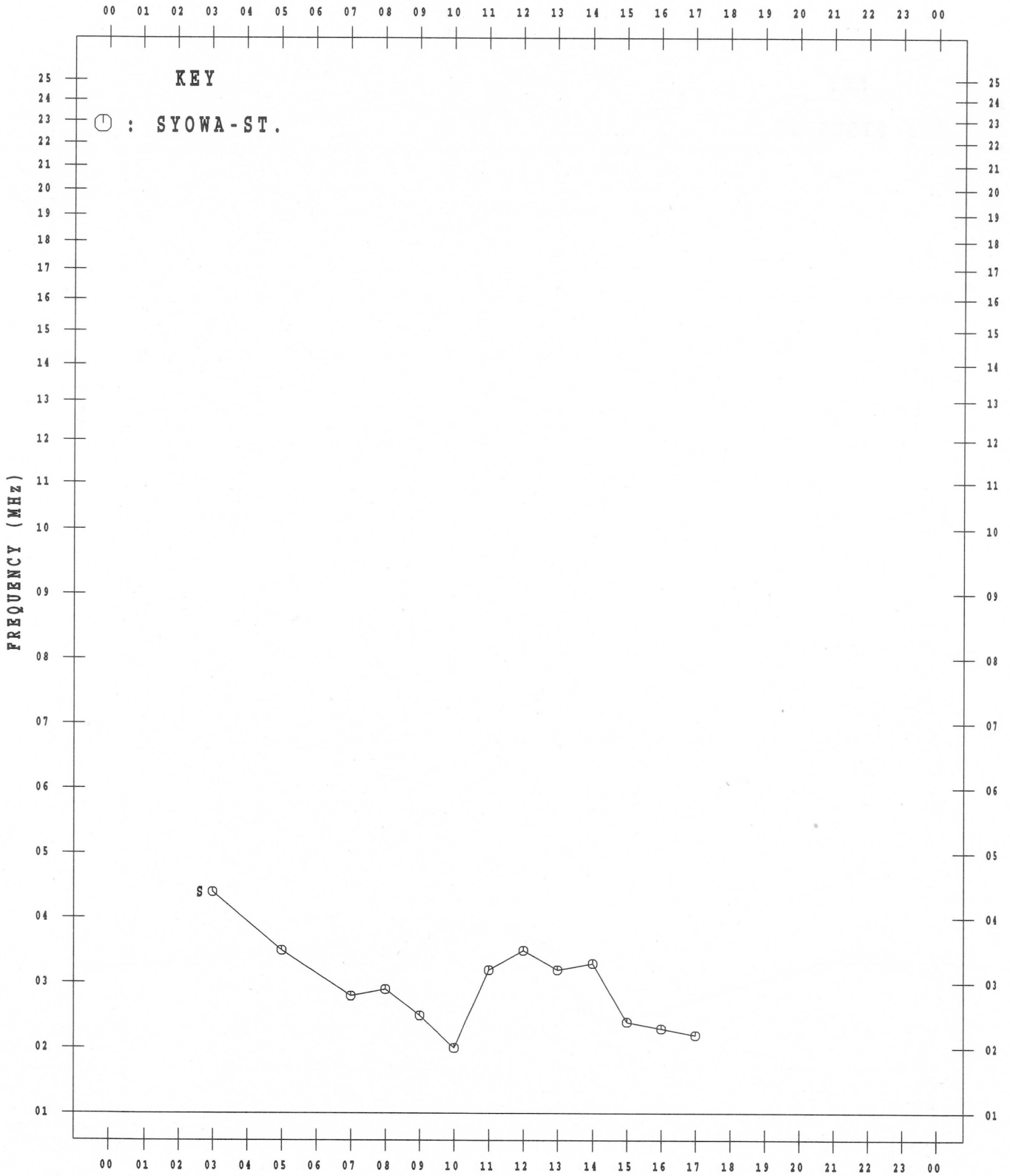
MAY 2006



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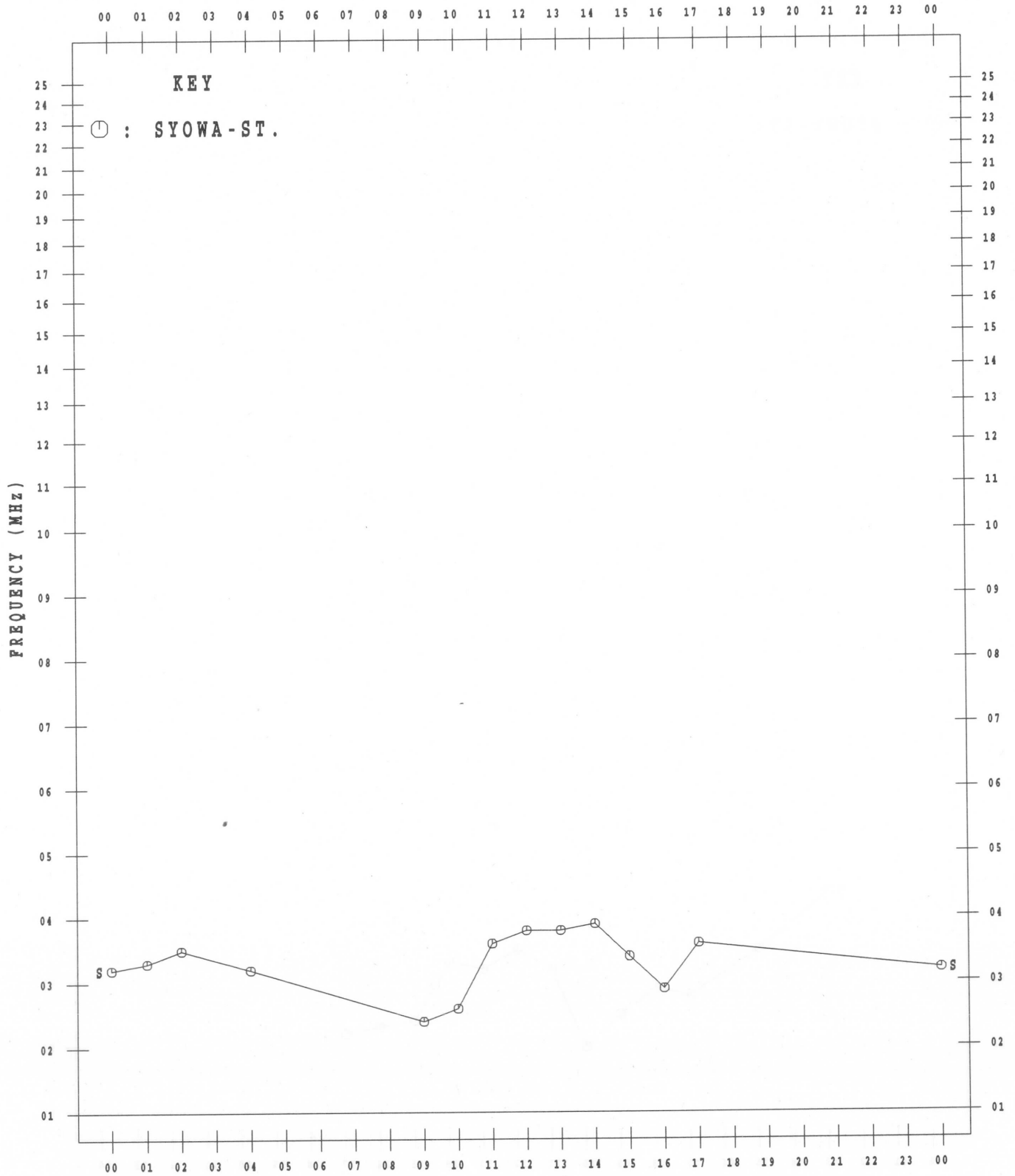
JUN. 2006



# MONTHLY MEDIAN VALUES OF foF2

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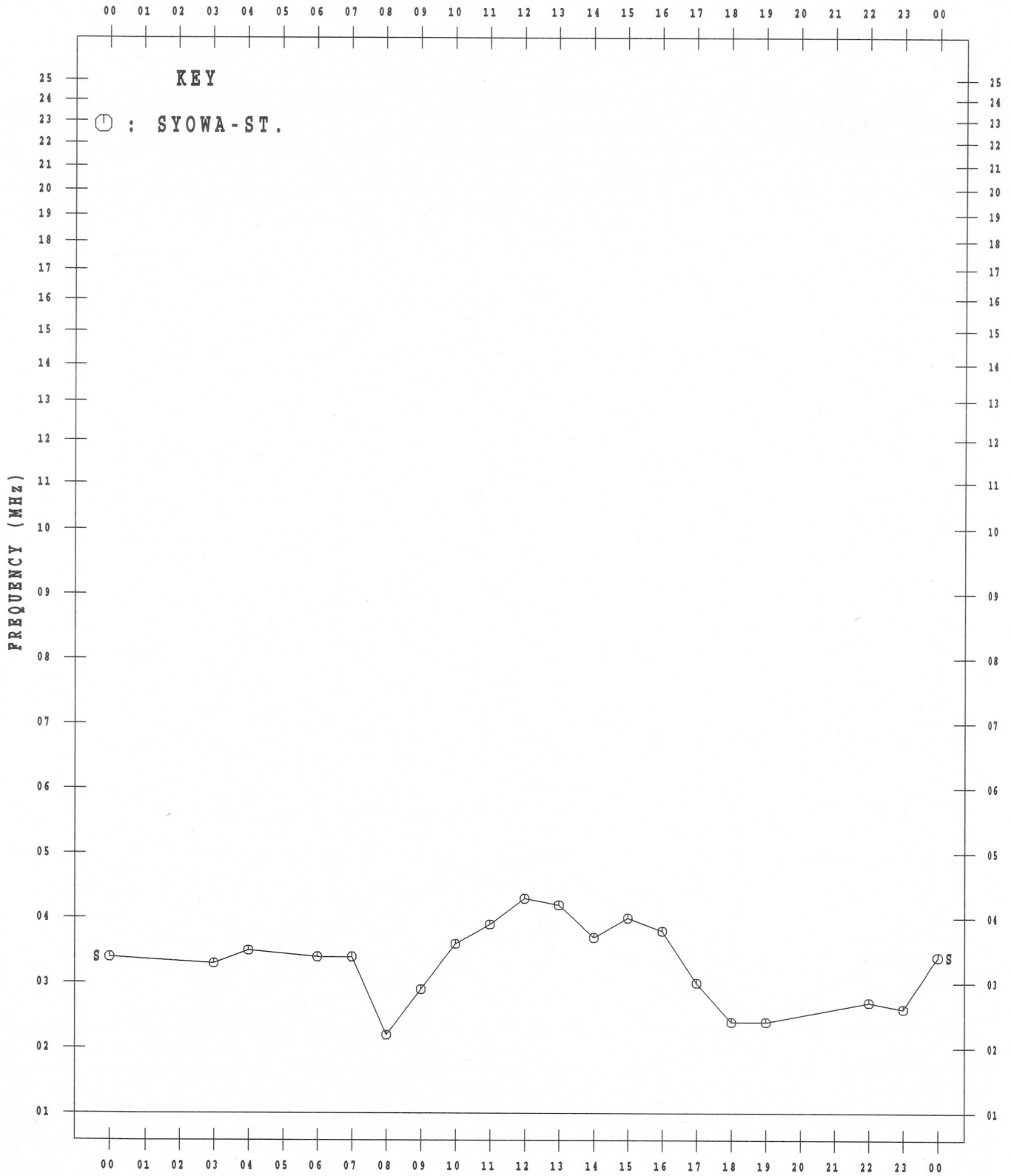
JUL. 2006



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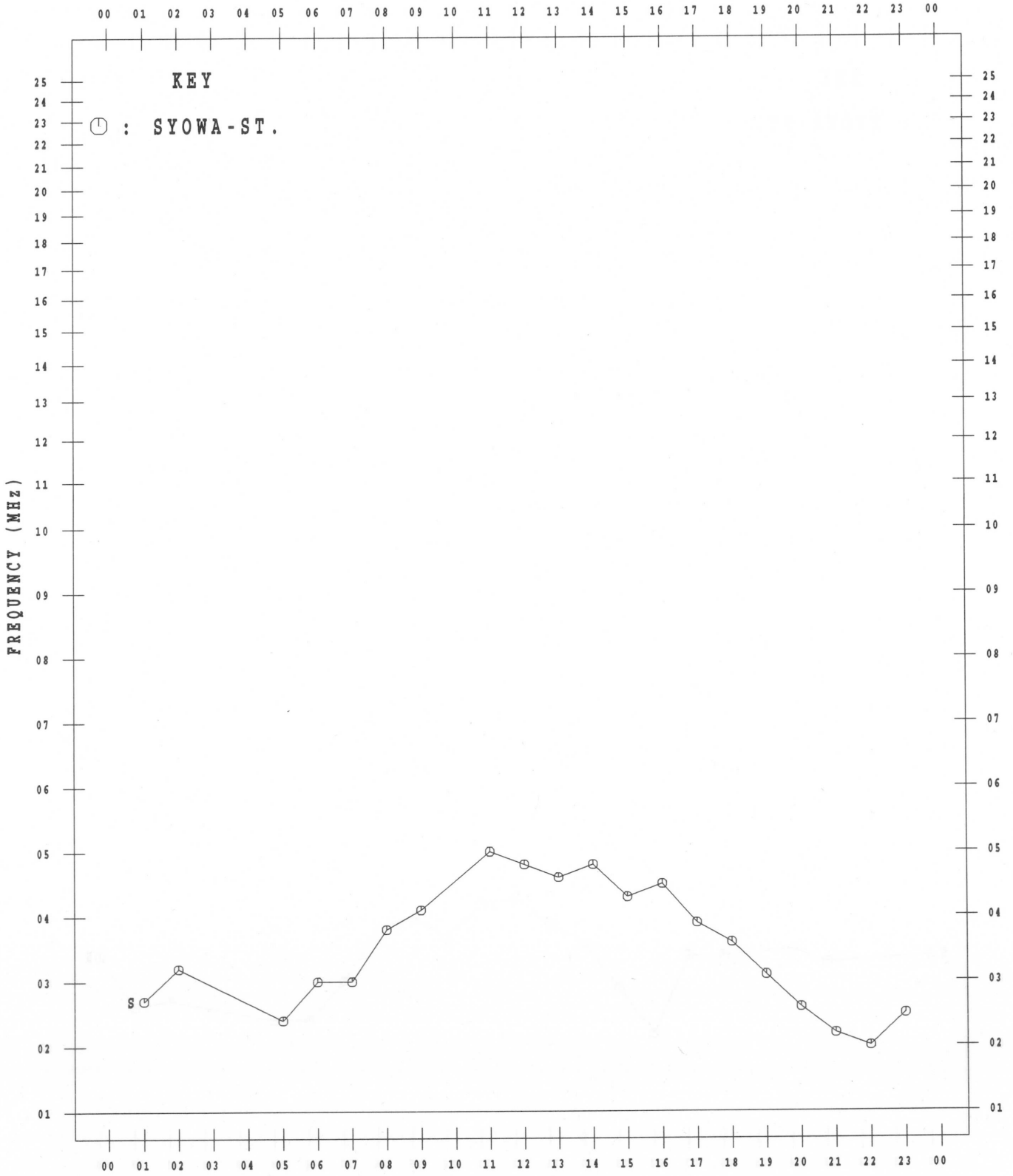
AUG. 2006



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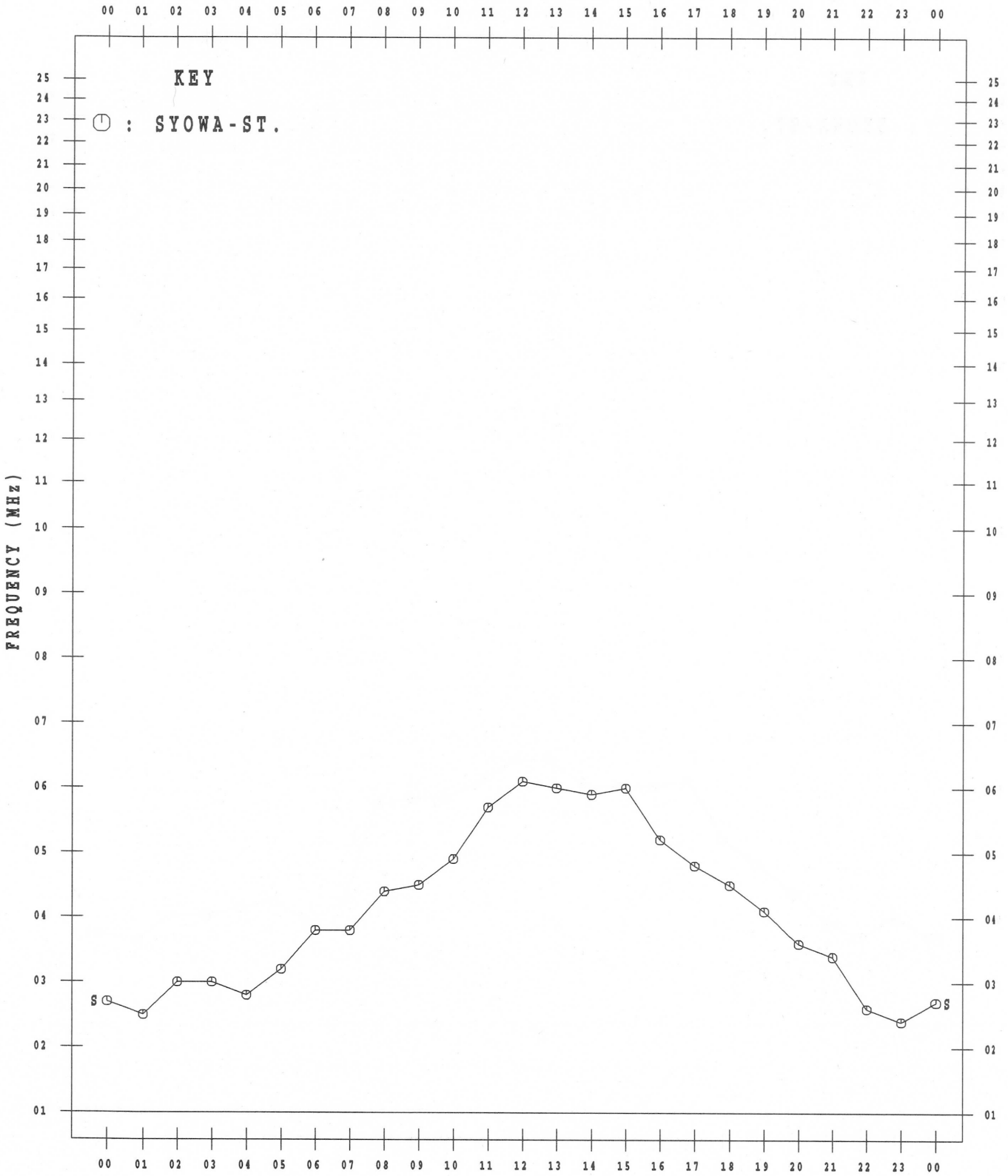
SEP. 2006



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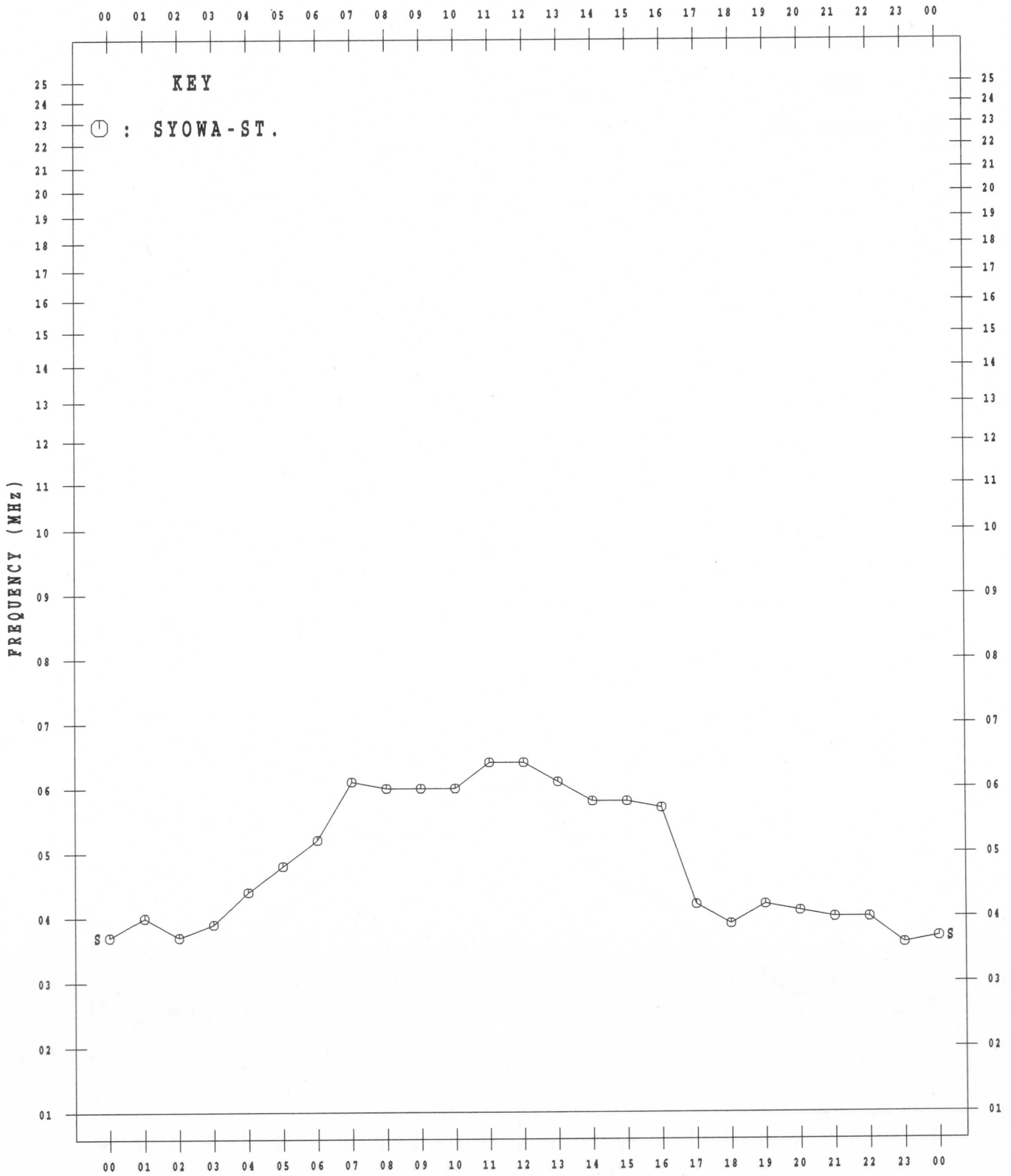
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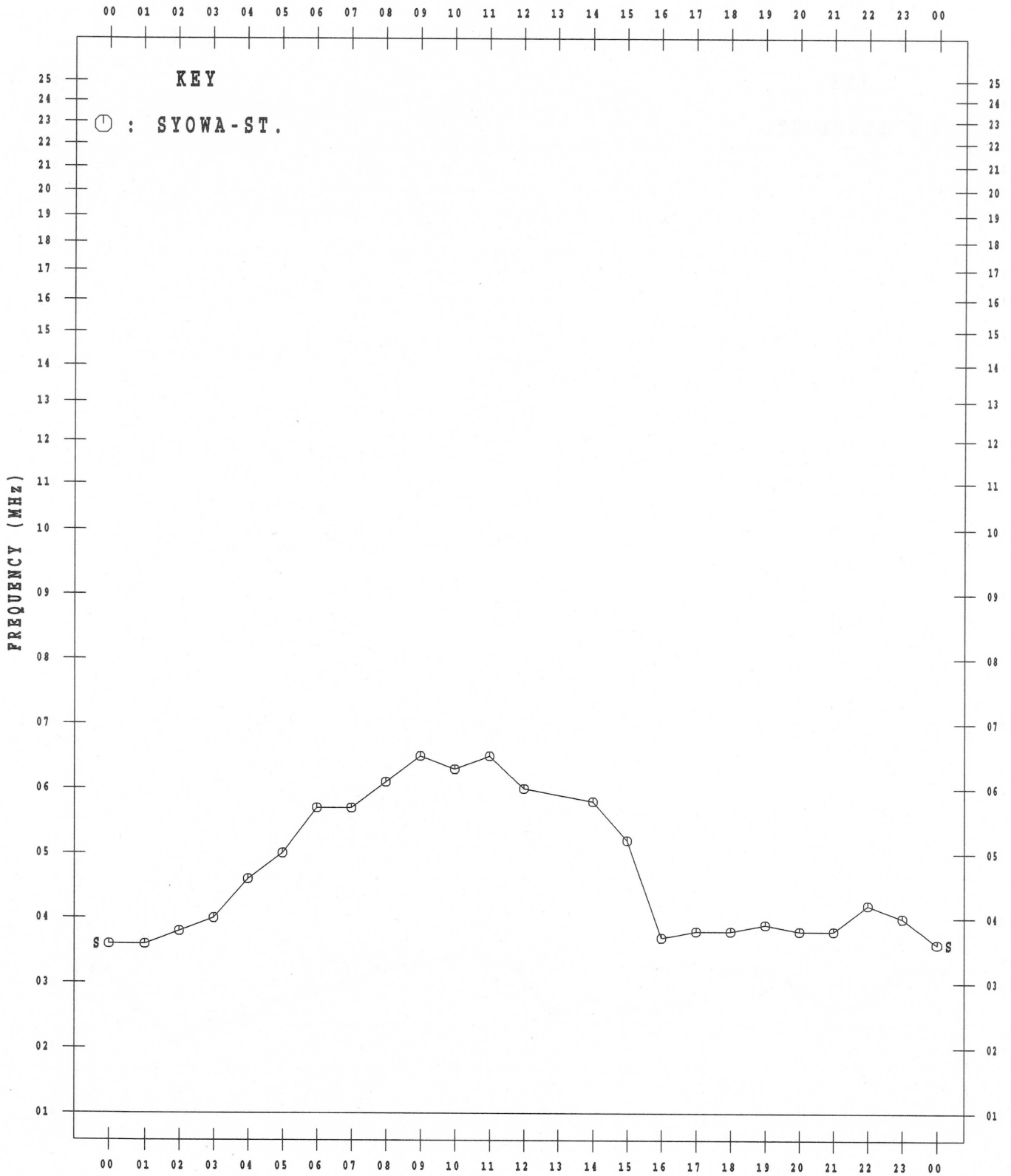
NOV. 2006



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45°E MEAN TIME

DEC. 2006

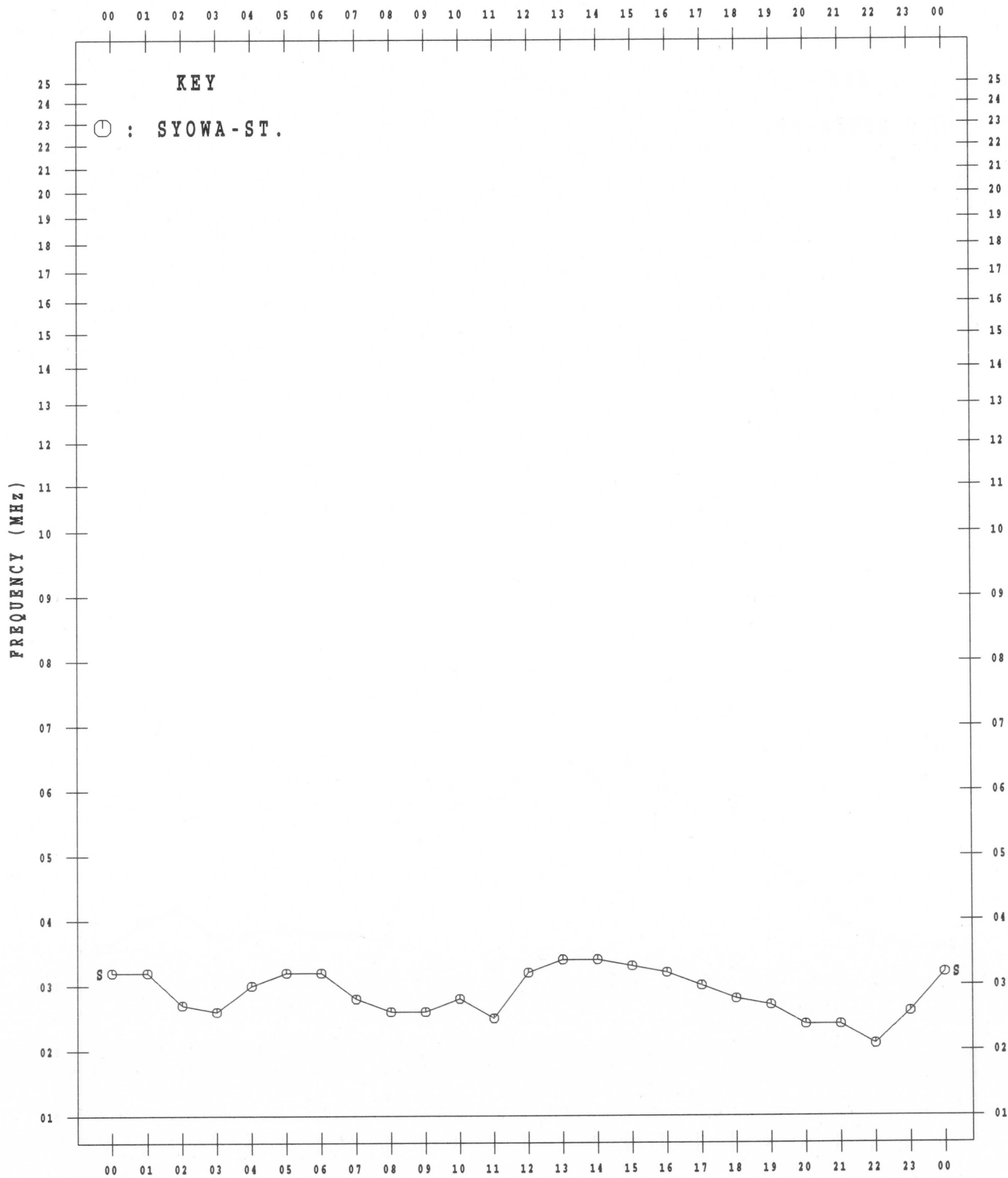




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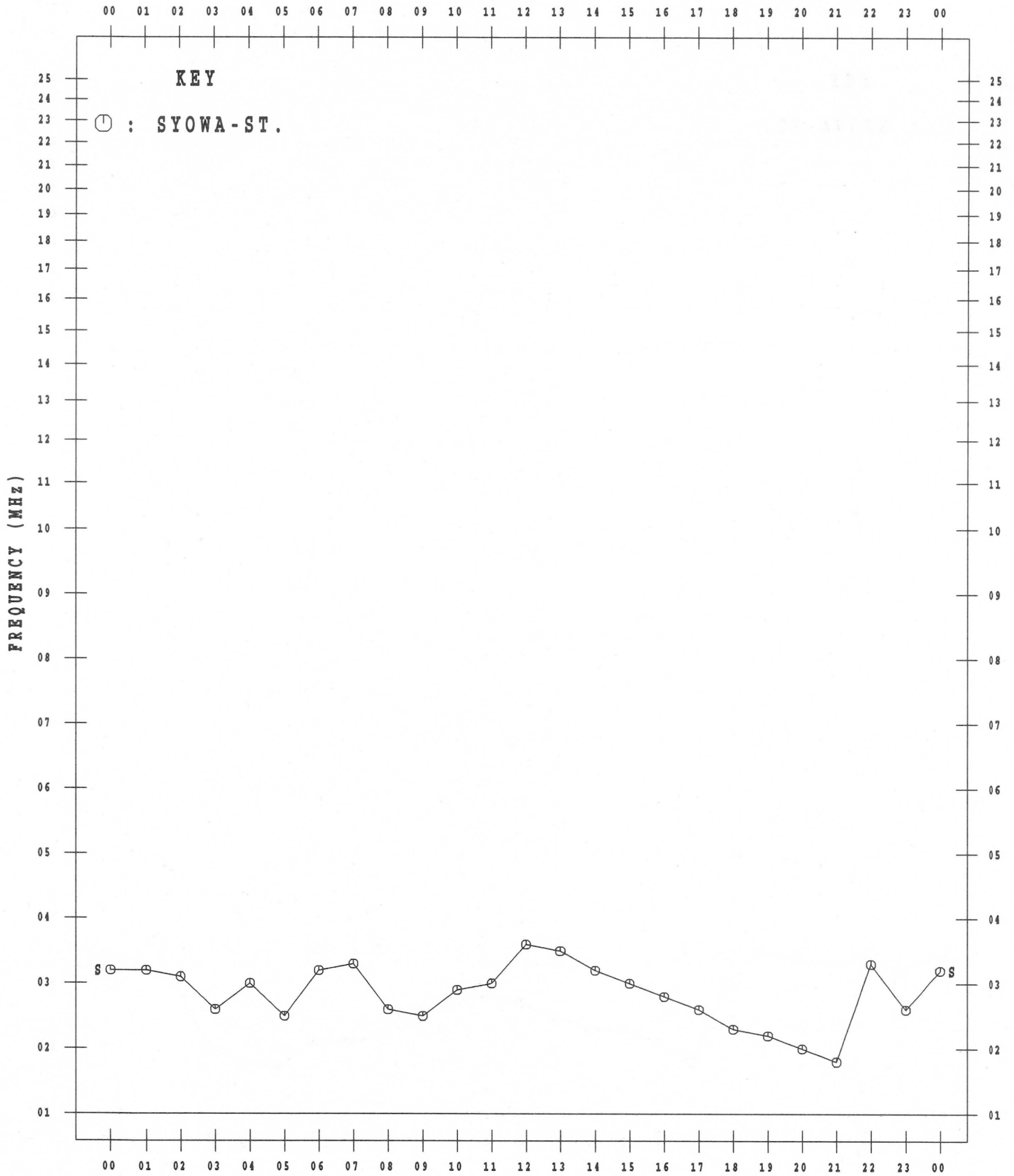
JAN. 2006



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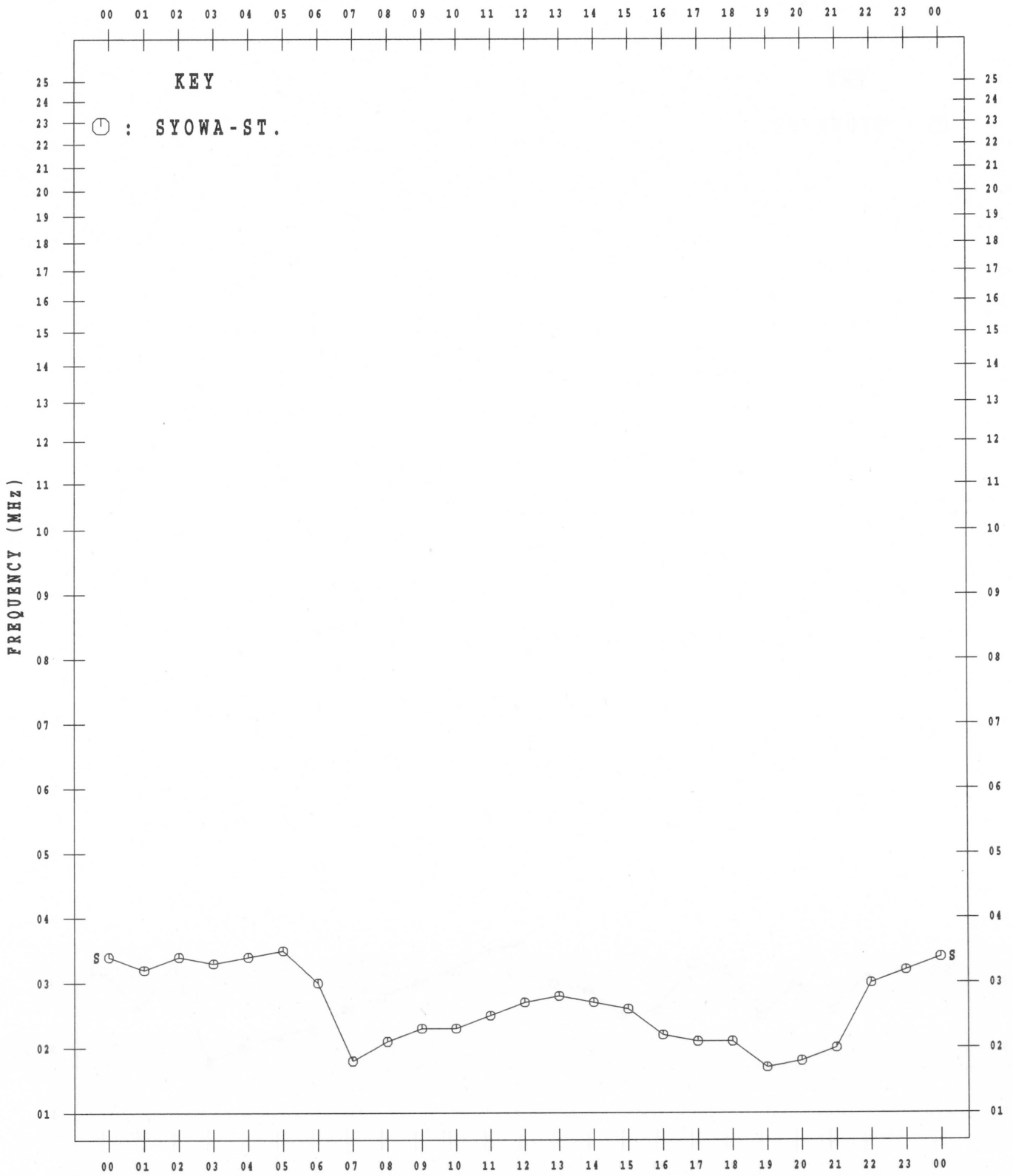
FEB. 2006



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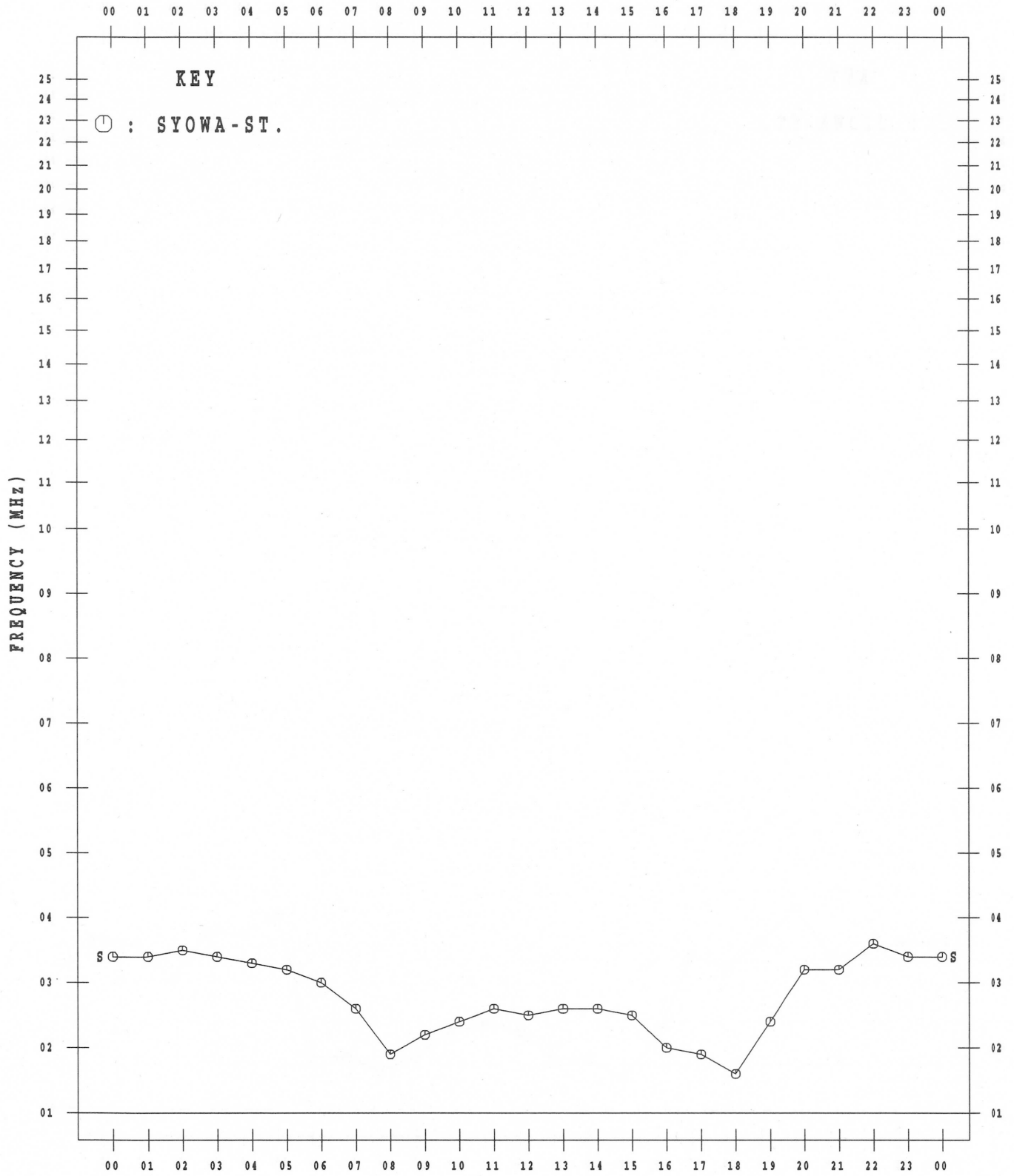
MAR. 2006



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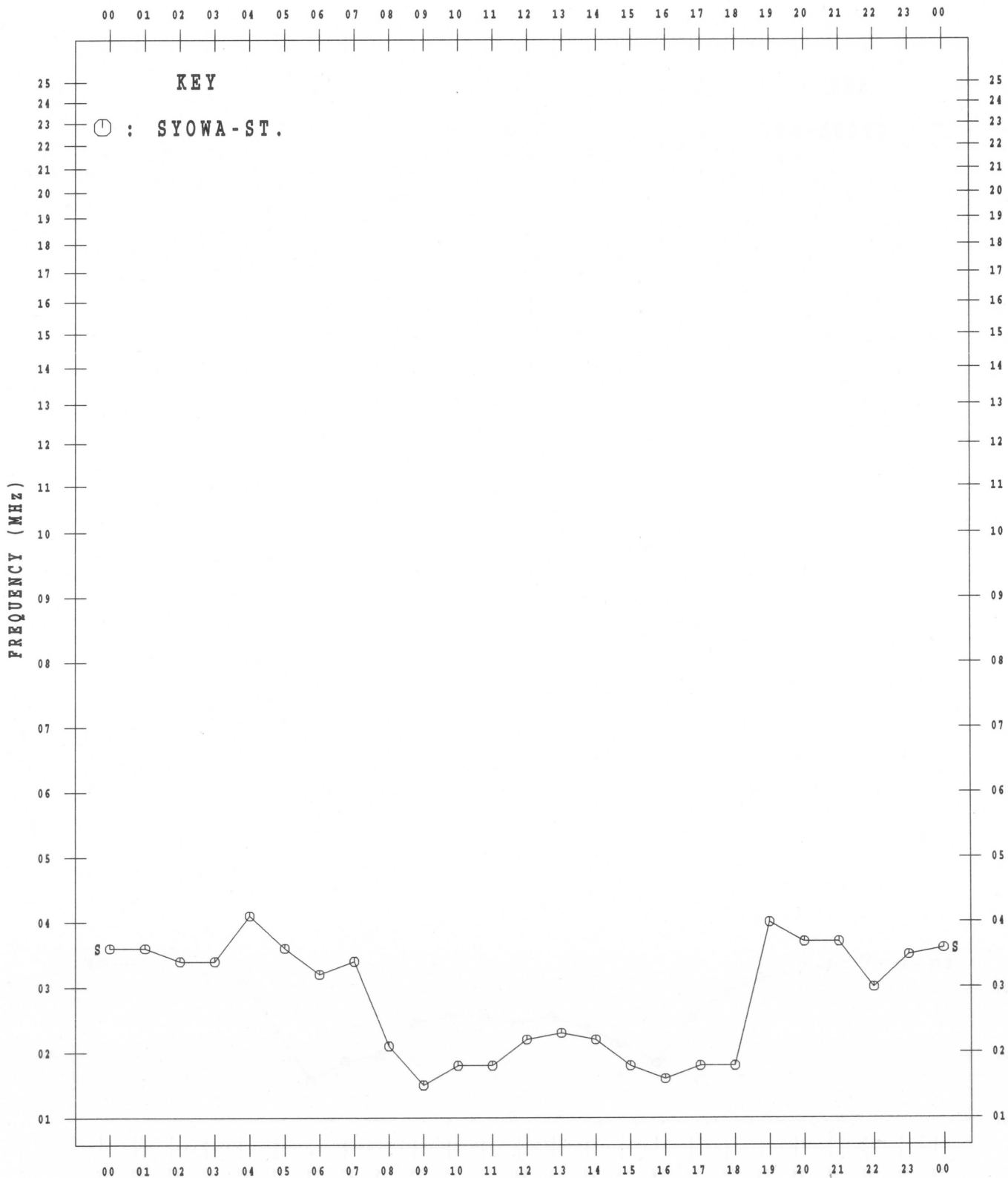
APR. 2006



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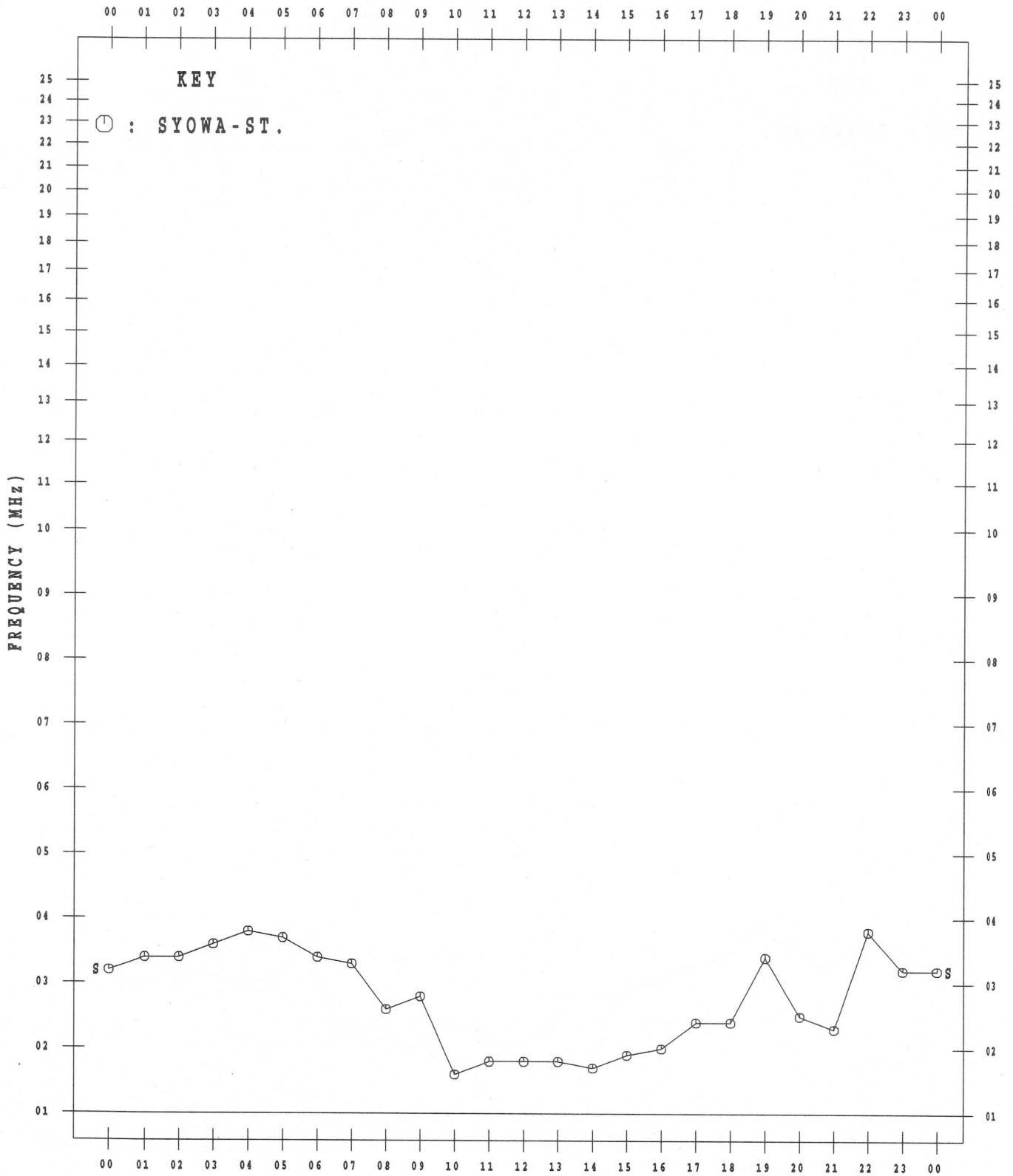
MAY 2006



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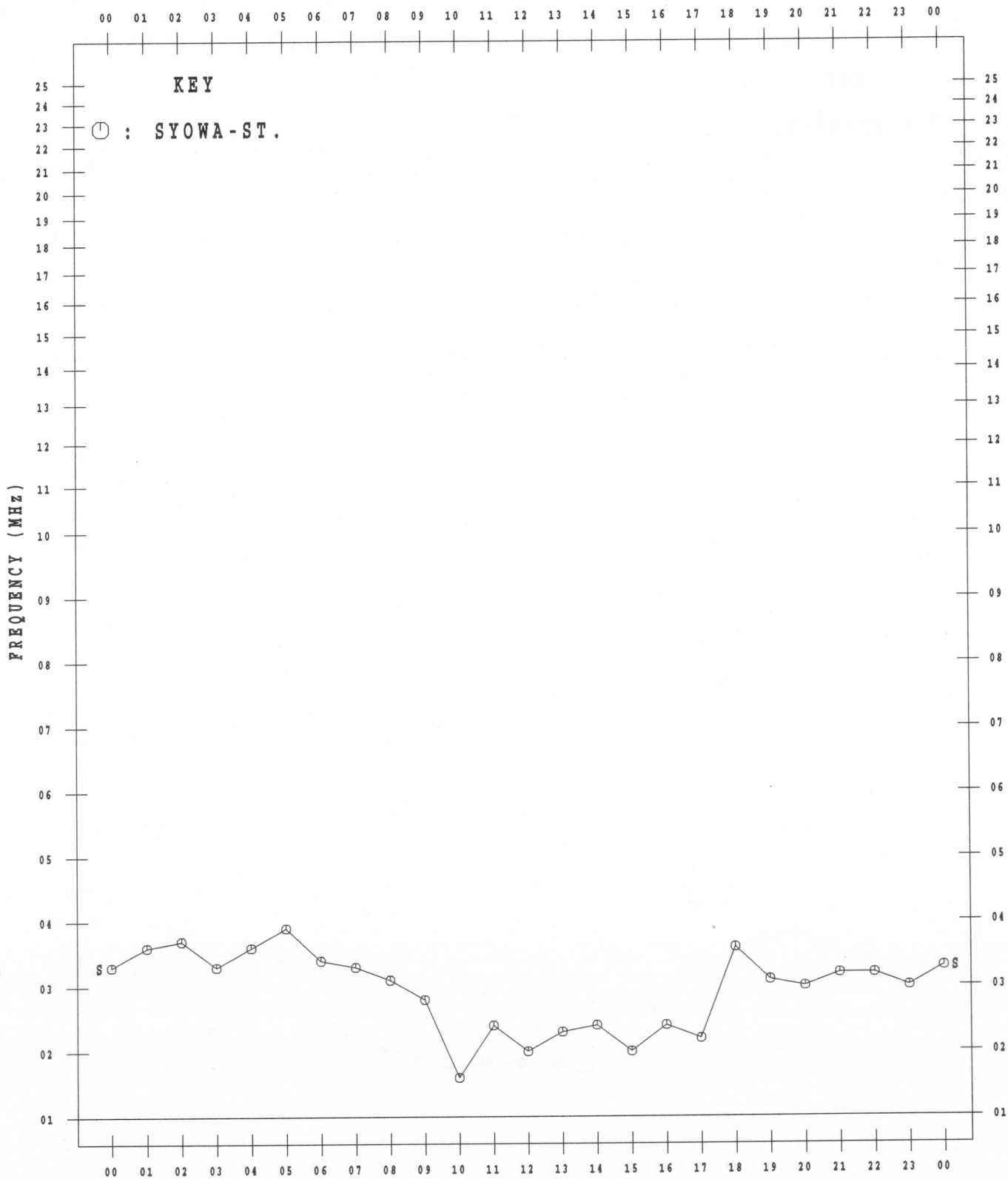
JUN. 2006



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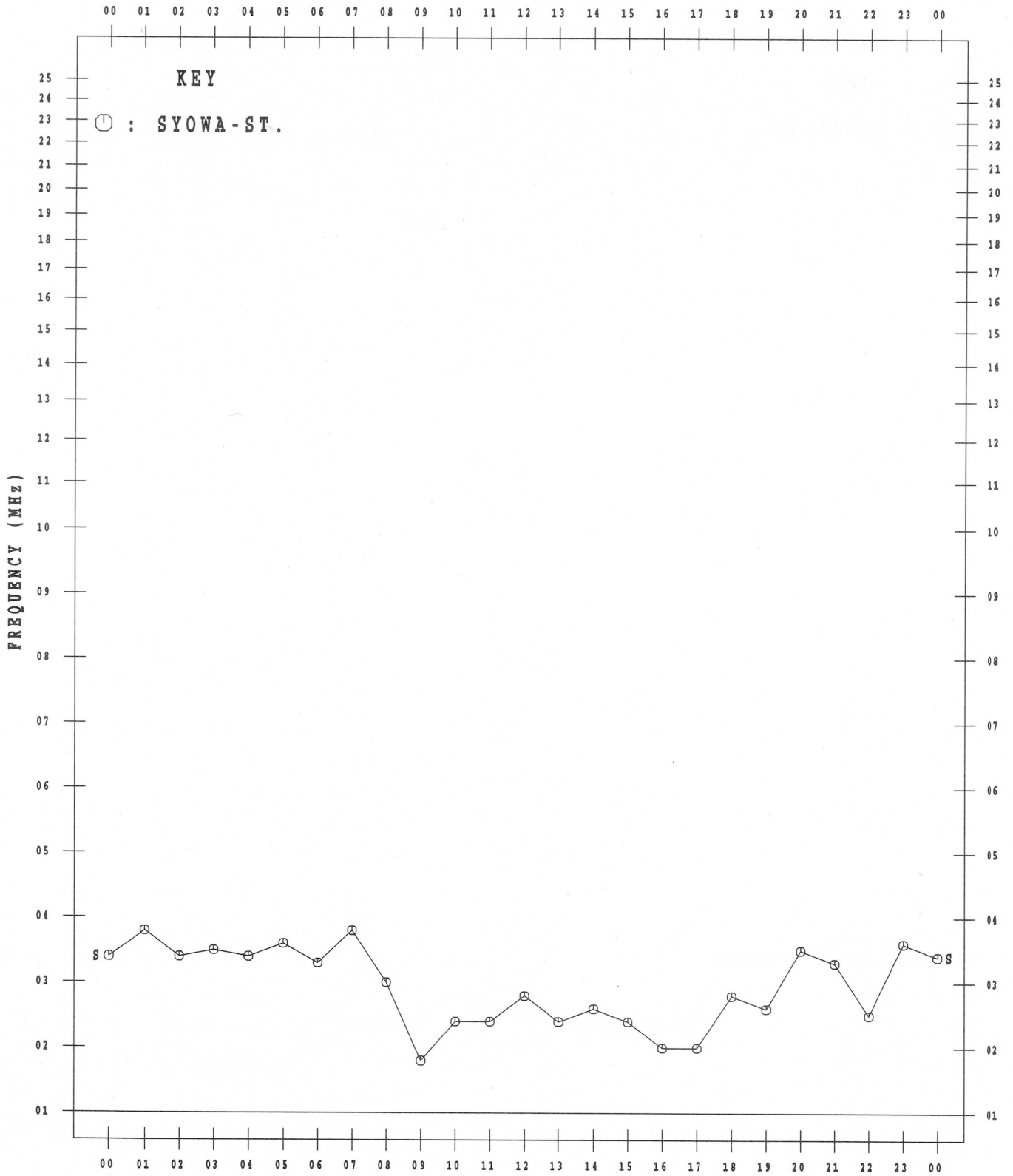
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AUG. 2006

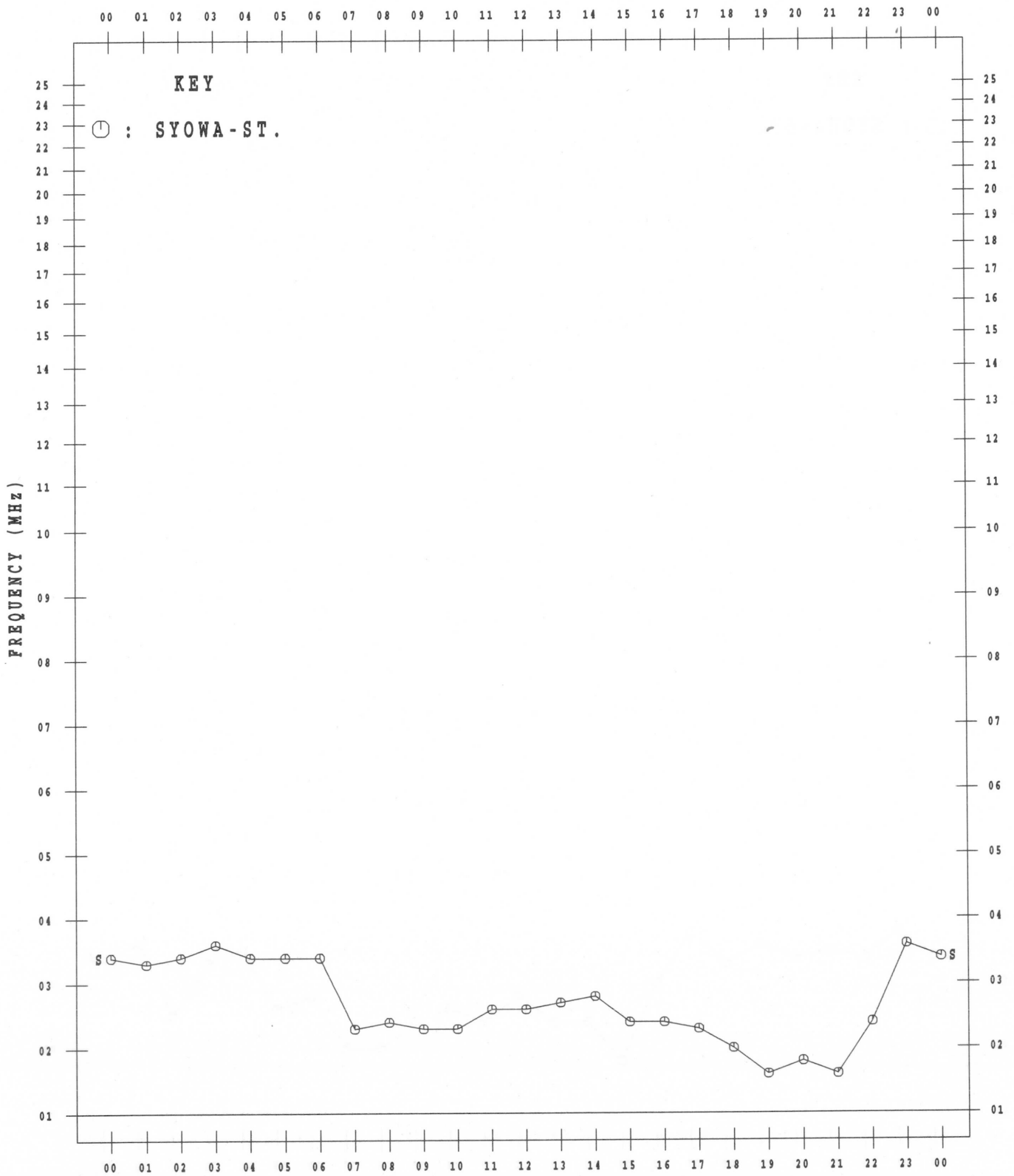




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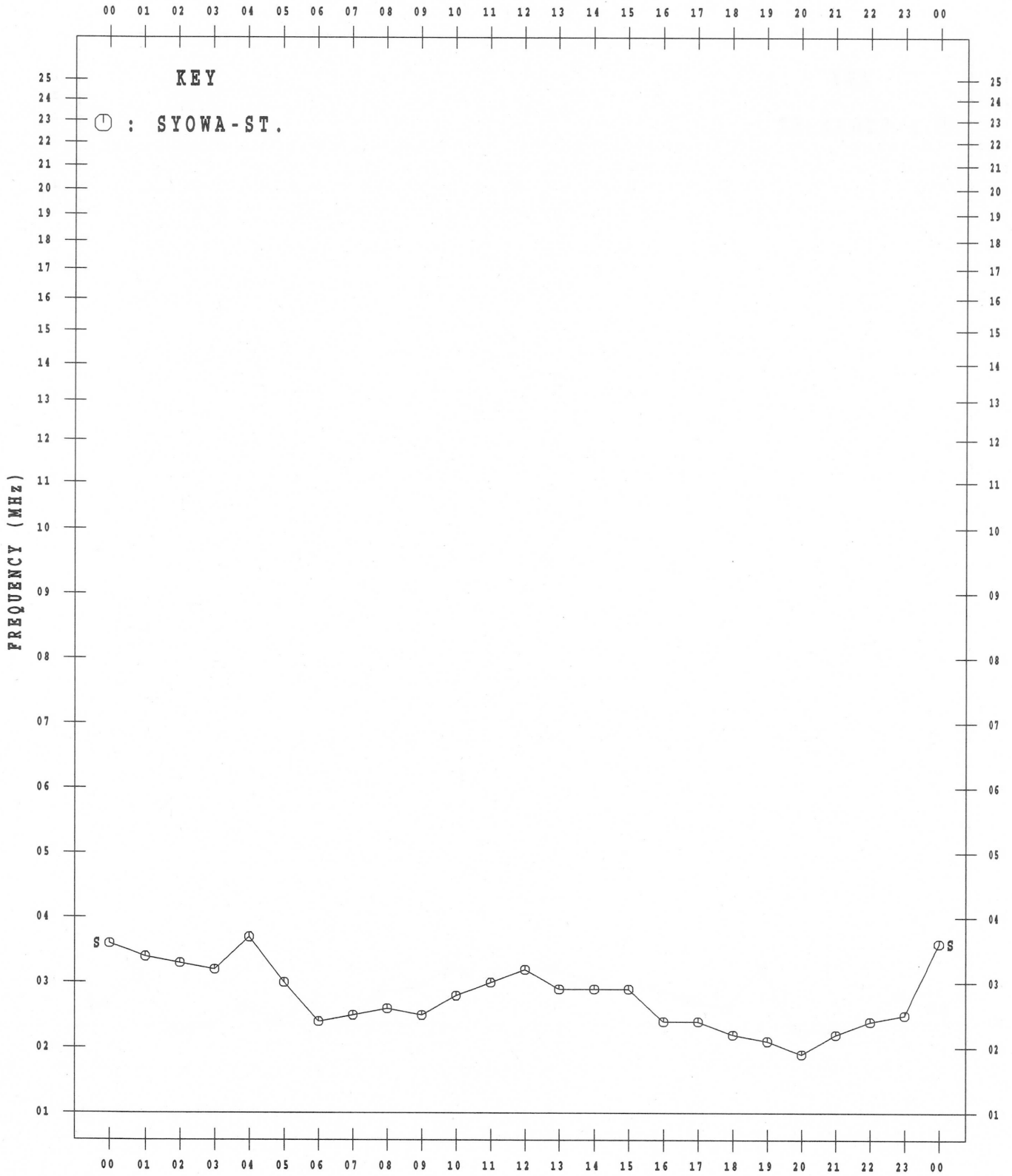
SEP. 2006



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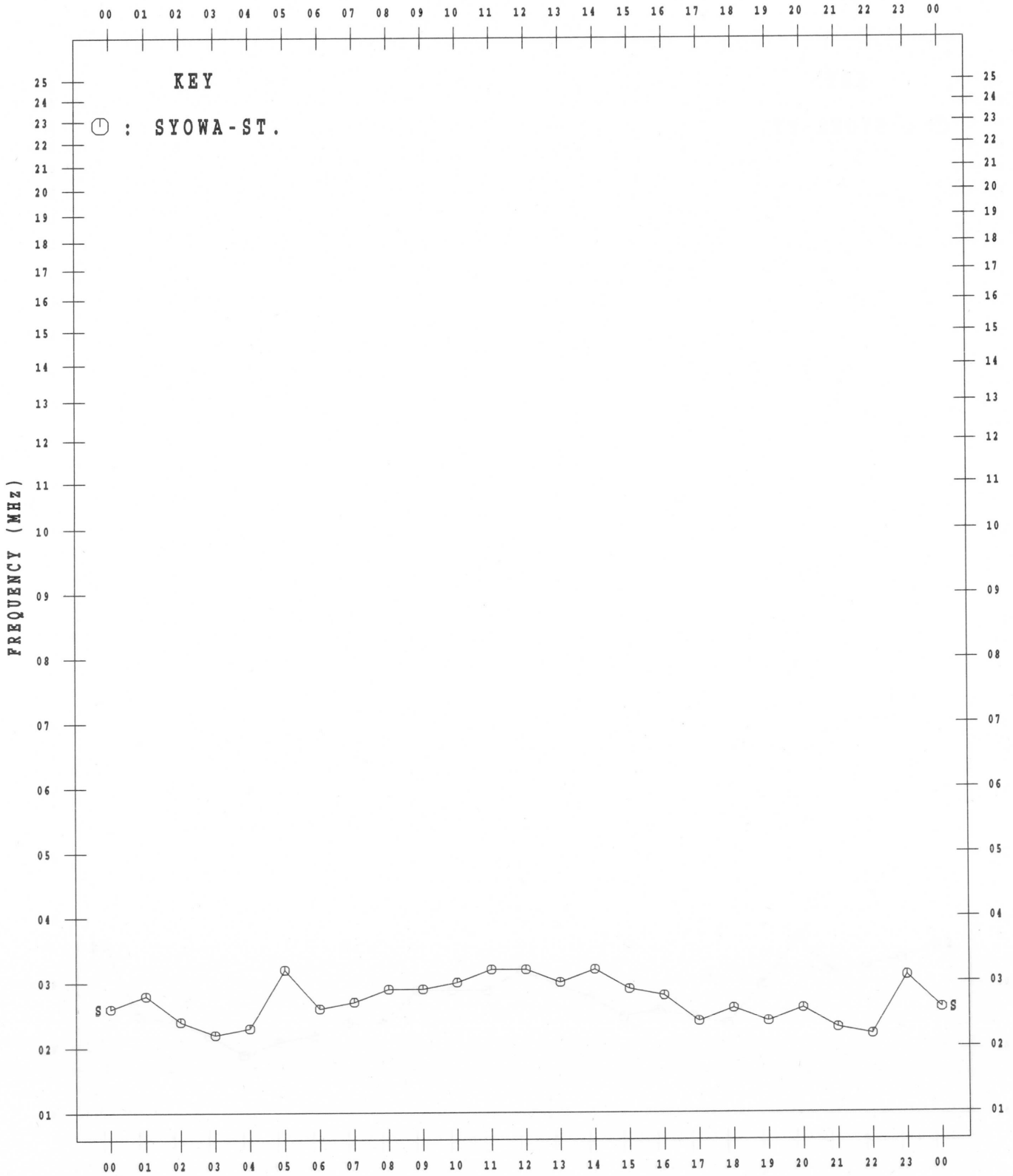
OCT. 2006



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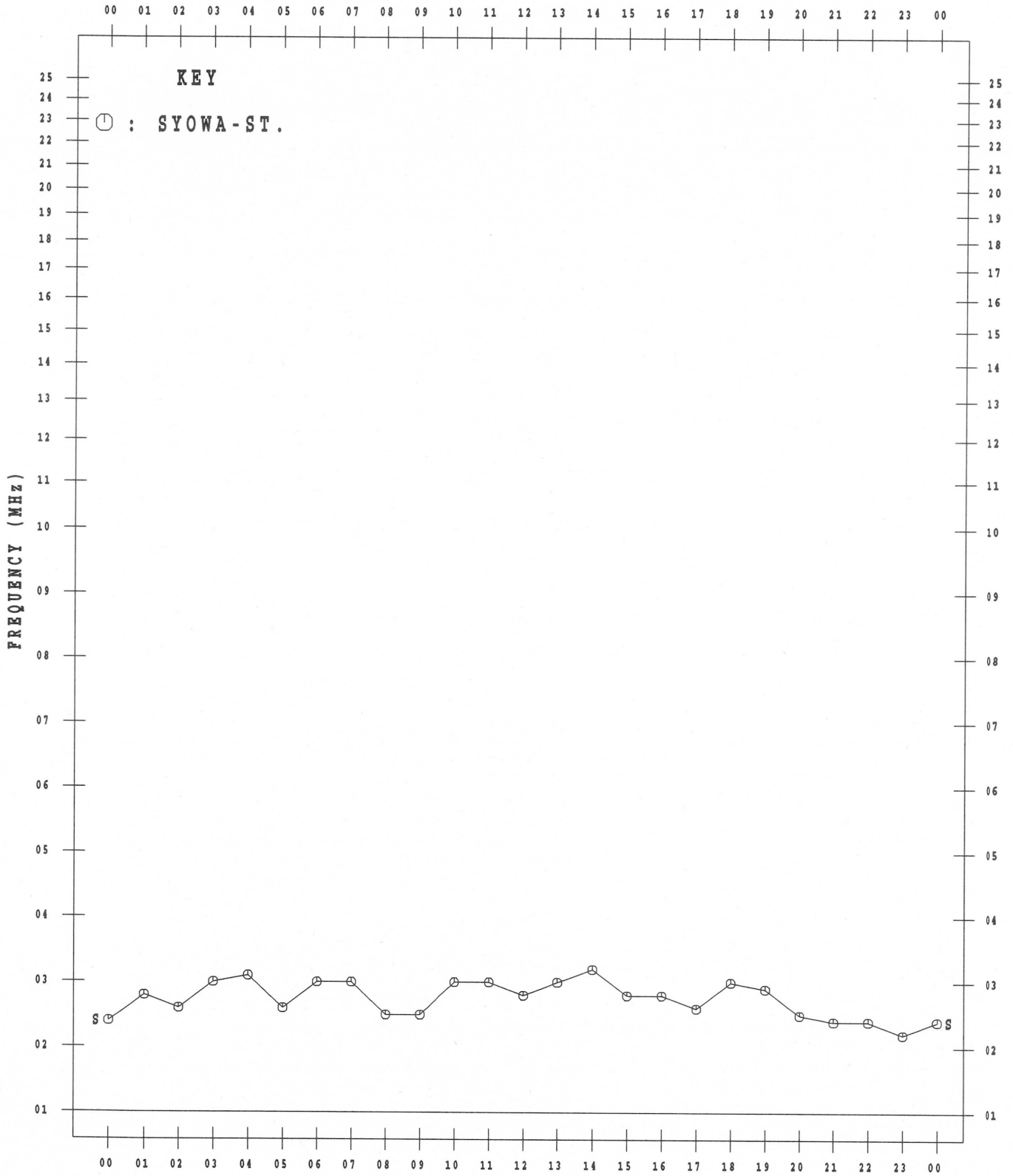
NOV. 2006



# MONTHLY MEDIAN VALUES OF f<sub>tEs</sub>

45° E MEAN TIME

DEC. 2006



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IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)  
ION.ANT.—73 January 2006 — December 2006 (Not for Sale)

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〒184-8795 東京都小金井市貫井北町4丁目2-1

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