

IONOSPHERIC DATA IN JAPAN

FOR OCTOBER 1984

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INTRODUCTION

This Series contains data on ionosphere (I), solar radio

emission (S) and radio propagation (P) obtained at the following stations under the Radio Research Laboratories, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.5'N	141°41.2'E	35.3°N	206.5°	Vertical Sounding (I)
Akita	39°43.5'N	140°08.0'E	29.5°N	205.9°	" (I)
Kokubunji	35°42.4'N	139°29.3'E	25.5°N	205.8°	" (I)
Yamagawa	31°12.1'N	130°37.1'E	20.4°N	198.3°	" (I)
Okinawa	26°16.9'N	127°48.4'E	15.3°N	196.0°	" (I)
Hiraiso	36°22.0'N	140°37.5'E	26.3°N	206.8°	Radio Receiving (S, P)
Inubo	35°42.2'N	140°51.5'E	25.6°N	207.0°	" (P)

A. IONOSPHERE

Ionospheric observations are carried out at five stations in Japan by means of vertical sounding method.

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily f -plot.

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

a. Characteristics of Ionosphere

$f_x I$	Top frequency of spread F trace
$f_o F_2$	Ordinary wave critical frequency
$f_o F_1$	for the F_2 , F_1 , E and E_s including particle E layers respectively
$f_o E$	
$f_o E_s$	
$f_b E_s$	Blanketing frequency of the E_s layer, e.g. the lowest ordinary wave frequency visible through E_s
f_{min}	Lowest frequency which shows vertical ionospheric reflections
$M(3000)F_2$	Maximum usable frequency factor
$M(3000)F_1$	for a path of 3000 km for transmission by F_2 and F_1 layers respectively
$h'F_2$	Minimum virtual height on the ordinary wave for the F_2 , whole F , E and E_s layers respectively
$h'F$	
$h'E$	
$h'E_s$	
Types of E_s	See below A. b. (iii)

b. Symbols

(i) Descriptive Letters

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

A	Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example E_s .
B	Measurement influenced by, or impossible because of, absorption in the vicinity of f_{min} .
C	Measurement influenced by, or impossible because of, any non-ionospheric reason.
D	Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.
E	Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.
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 a stratification.
K	Presence of particle E layer.
L	Measurement influenced 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 spure traces.

Q	Range spread present.
R	Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S	Measurement influenced by, or impossible because of, interference or atmospheric.
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
V	Forked trace which may influence the measurement.
W	Measurement influenced or impossible because the echo lies outside the height range recorded.
X	Measurement refers to the extraordinary component.
Y	Lacuna phenomena, severe layer tilt.
Z	Third magneto-electronic component present.

(ii) Qualifying Letters

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

A	Less than. Used only when $f_b E_s$ is deduced from $f_o E_s$ because total blanketing of higher layer is present.
D	Greater than.
E	Less than.
I	Missing value has been replaced by an interpolated value.
J	Ordinary component characteristic deduced from the extraordinary component.
M	Mode interpretation uncertain.
O	Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)
T	Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
U	Uncertain or doubtful numerical value.
Z	Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of E_s

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

f	The types are: An E_s trace which shows no appreciable increase of height with frequency.
l	A flat E_s trace at or below normal E layer minimum virtual height or below the particle E layer minimum virtual height.
c	An E_s trace showing a relatively symmetrical cusp at or below $f_o E$. (Usually a daytime type.)
h	An E_s trace showing a discontinuity in height with the normal E layer trace at or above $f_o E$. The cusp is not symmetrical, the low frequency end of the E_s trace lying clearly above the high frequency end of the normal E trace. (Usually a daytime type.)
q	An E_s trace which is diffuse and non-blanketing over a wide frequency range.
r	An E_s trace showing an increase in virtual height at the high frequency end similar to group retardation.
a	An E_s trace having a well-defined flat or gradually rising lower edge with stratified and

diffuse traces present above it.

s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.

d A weak diffuse trace at heights below 95 km associated with high absorption and large *f_{min}*.

n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.

k The designation k is used to show the presence of particle *E*. When *f_{oEs}* > *f_{oE}* (particle *E*) the *Es* type precedes k.

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

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

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

Upper quartile (UQ) is the median value 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.

B. SOLAR RADIO EMISSION

Solar radio observations are carried out on 100, 200 and 500 MHz at Hiraiso. Observation equipments are: a 5 meter parabolic reflector with a total-power receiver for 500 MHz and a 10 meter parabolic reflector with two polarimeters for 100 and 200 MHz. Observations are feasible almost from sunrise to sunset.

Time is expressed in hours, minutes and tenths of minutes U. T. and the unit of flux density is $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ for both components of polarization.

All symbols and terminology in the table of data are used in accordance with the "Descriptive Text of Solar-Geophysical Data, NOAA" and "Instruction Manual Monthly Report for Solar Radio Emission, WDC-C2".

a. Daily Data

Flux density. The three-hourly and daily mean values are given.

Variability. The three-hourly and daily mean values are given at 200 MHz only.

Variability is expressed in the following four grades.

- 0 quiet or no burst,
- 1 a few bursts,
- 2 many bursts,
- 3 very many bursts.

The number of bursts exceeding the mean flux level is counted.

Daily data with parenthesis mean that observation time does not exceed one third of the period.

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

1. distinct from the prevailing kind of activity,
2. correlated with other known solar phenomena,
3. remarkable change-over from one situation to another.

Type is denoted by numerical code and letter symbol in parallel as follows:

SGD Cord	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	Minor+
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
45	C	Complex
46	C	Complex F
47	GB	Great Burst
48	C	Major
49	GB	Major+

Flux density is the increase of flux over the level at which daily flux is calculated, or the increase of flux over the underlying burst when the event is superposed on another burst of long duration.

Polarization is expressed by the polarization degree and sense as follows:

- R or L right- or left-handed polarization,
- W, M or S weak, moderate or strong polarization,
- 0 almost zero or unable to detect polarization due to small increase of flux.
- 00 polarization degree of less than 1 percent.

The following symbols may be attached after numerical values in table, if necessary.

- D greater than, or later than,
- E less than, or earlier than,
- U approximate, or uncertain.

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

Field strength observation of 15 MHz standard waves transmitted from WWV and WWVH stations which are located respectively at Fort Collins, Colorado and Kauai, Hawaii, is carried out at Hiraiso. In order to avoid interference among the same frequency waves, the upper side-band of WWV or WWVH with the audio tone 600 Hz is picked up by the use of a narrow band pass filter with 80 Hz band width. Particulars of the transmitters and the receiver are summarized in the following table.

Characteristics	Transmitter		Receiver
	WWV	WWVH	
Station Call	WWV	WWVH	Hiraiso, Ibaraki
Location	Fort Collins, Colorado	Kauai, Hawaii	
latitude	40°41'N	22°00'N	36°22'N
longitude	105°02'W	159°46'W	140°38'E
Distance	9150 km	5910 km	-
Carrier Power	10 kW	10 kW	-
Modulation	50 %	50 %	-
Antenna	$\lambda / 2$ vertical	$\lambda / 2$ vertical	4.5 m vertical rod
Bandwidth	-	-	80 Hz for upper side-band
Calibration	-	-	Every an hour

The tabulated *field strength* in dB above one microvolt per meter is the peak average of the incident upper side-band field intensity in 45 seconds after the universal time indicated on the table. Abbreviated symbols are as follows:

CNT	number of observed values,
MED	median,
UD	value of the uppermost decile when they are ranked according to magnitude,
LD	value of the lowest decile when they are ranked according to magnitude,
U	uncertain,
E	less than,
C	influenced by, or impossible because of, any artificial accident,
S	influenced by, or impossible because of, interferences or atmospherics.

b. Radio Propagation Quality Figures

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and standard waves WWVH transmitted from Kauai.

Quality figures expressing radio propagation conditions are ranged over five grades as follows:

1	very poor (very disturbed),
2	poor (disturbed),
3	rather poor (unstable),
4	normal,
5	good.

Whole day quality figure ranged in grades of 1₀, 1₊, 2₋, 2₀, 2₊, 3₋, 3₀, 3₊, 4₋, 4₀, 4₊, 5₋, 5₀ stands for an average of six-hourly ones of the two circuits. Abbreviated symbols are as follows:

C	artificial accident,
S	propagational accident,
U	inaccurate.

Radio propagation conditions which can be described with a code in the following

N	normal,
U	unstable,
W	disturbed

are forecast 12 hours in advance and broadcast six per an hour from JJY Station.

Data on a *geomagnetic storm* correlated with a radio propagation disturbance are tabulated from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U. T.) is expressed in unit of hour and minute (or tenth of hour), and *range* in gamma. When they are uncertain quantitatively, /'s are replaced with them. Continuation of a geomagnetic storm is denoted by ---.

c. Sudden Ionospheric Disturbances

(i) SWF

The table of short wave fade-out (SWF) is prepared from the record of field intensities measured at Hiraiso.

Drop-out intensities of the 10 MHz, the 20 MHz, and the 25 MHz waves are respectively distinguished by marks ', '' and ''' from these of the 15 MHz wave for WWV and WWVH. Values of *start*, *duration*, *type*, and *importance* are obtained from data of the circuit whose drop-out intensity in dB is underlined as xx. When these quantities are not given correctly, they are accompanied by the following symbols.

D	greater than,
E	less than,
U	uncertain or doubtful.

Types of fade-out are as follows:

S	sudden drop-out and gradual recovery,
SL	slow drop-out taking 5 to 15 minutes and gradual recovery,
G	gradual and irregular in both drop-out and recovery.

Importance of fade-out is scaled according to its amplitude into nine ascending grades as 1₋, 1, 1₊, 2₋, 2, 2₊, 3₋, 3, 3₊.

Correspondence of solar optical flare, solar radio burst, and geomagnetic crochets to SWF is marked by X in accordance with interchange messages of IUWDS and observations at Hiraiso.

(ii) SPA

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio waves received at Inubo. The transmitting stations are listed in the following table.

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by —, and indistinguishable record is spaced out, and multi-peak event is marked by *.

Out of more than two circuits on which the same SPA event is observed, the *phase advance* on the circuit on which the SPA is the most remarkable or distinct is underlined. As for the underlined, *phase advance*, *start*, *end* and *maximum* times are obtained.

In table (i) SWF and (II) SPA, *date* indicates the day to which *start-time* of event belongs.

The following letters may be attached to the value, if necessary.

D	greater than,
E	less than,
U	uncertain or doubtful.

Transmitting Stations						
Name	Location (Geographic Coordinate)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Rugby	52° 22' N	001° 11' W	GBR	16.0	(750) 60	9550
Jim Creek	48° 12' N	121° 55' W	NLK	18.6	(1200) 130	7620
North West Cape	21° 49' S	114° 10' E	NWC	22.3	1000	6990
Aldra	66° 25' N	013° 09' E	Ω/N	13.6	10	7820
North Dakota	46° 22' N	098° 21' W	Ω/ND	13.6	10	9140
Haiku	21° 24' N	157° 50' W	Ω/H	13.6	10	6100
La Reunion	20° 58' S	055° 17' E	Ω/LR	13.6	10	10970

IONOSPHERIC DATA

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FXI (0.1 MHZ)

135 E Mean Time (G.M.T. + 9h)

Station	WAKKANAI				Lat.	45 23.5 N				Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X	X	X	X	X	A												X	X	X	X	X	X	X
2	X	X	X	X	X	X												X	X	X	X	X	X	X
3	X	X	X	X	X	X												X	X	X	X	X	X	X
4	X	X	X	X	X	X												X	X	X	X	X	X	X
5	X	X	X	X	X	X												X	X	X	X	X	X	X
6	X	X	X	X	X	X												X	X	X	X	X	X	X
7	X	X	X	X	X	X												X	X	X	X	X	X	X
8	X	X	X	X	X	A												X	X	X	X	X	X	X
9	X	X	X	X	X	X												X	X	X	X	X	X	X
10	X	X	X	X	X	X												X	X	X	X	X	X	X
11	X	X	X	X	X	X												X	X	X	X	X	X	X
12	X	X	X	X	X	X												X	X	X	X	X	X	X
13	X	X	X	X	X	X												X	X	X	X	X	X	X
14	X	X	X	X	X	X												X	X	X	X	X	X	X
15	X	X	X	X	X	X												X	X	X	X	X	X	X
16	X	X	X	X	X	X												X	X	X	X	X	X	X
17	X	X	X	X	X	X												X	X	X	X	X	X	X
18	X	X	X	X	X	X												X	X	X	X	X	X	X
19	X	X	X	X	X	X												X	X	X	X	X	X	X
20	X	X	X	X	X	X												X	X	X	X	X	X	X
21	X	X	X	X	X	X												X	X	X	X	X	X	X
22	X	X	X	X	X	X												X	X	X	X	X	X	X
23	X	X	X	X	X	X												X	X	X	X	X	X	X
24	X	X	X	X	X	X												A	A	A	A	A	X	X
25	X	X	X	X	X	X												X	X	X	X	X	X	X
26	X	X	X	X	X	X												X	X	X	X	X	X	X
27	X	X	X	X	X	X												X	X	X	X	X	X	X
28	X	X	X	X	X	X												X	X	X	X	X	X	X
29	X	X	X	X	X	X												X	X	X	X	X	X	X
30	X	X	X	X	X	X												X	X	X	X	X	X	X
31	X	X	X	X	X	X												X	X	X	X	X	X	X
CNT	31	31	31	31	31	29	11											10	30	30	30	30	31	31
MED	X	X	X	X	X	X	X											X	X	X	X	X	X	X
UQ	X	X	X	X	X	X	X											X	X	X	X	X	X	X
LQ	X	X	X	X	X	X	X											X	X	X	X	X	X	X

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FXI (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station Hour Day	WAKKANAI				Lat. 45 23.5 N ·				Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	39	40	40	38	40	A	45	50	56	64	69	74	67	62	60	62	61	59	54	48	50	45	44	45				
2	44	44	44	44	44	45	49	53	60	70	71	71	69	63	61	60	64	63	55	57	53	45	41	41				
3	37	38	39	39	40	39	45	53	59	65	63	85	78	74	70	71	62	68	63	51	42	41	S	44				
4	43	41	42	43	44	45	47	54	70	67	70	77	64	67	68	73	61	62	65	60	52	41	39	39				
5	39	39	40	40	43	39	47	52	63	73	79	73	70	66	67	68	65	51	48	46	46	44	44	40				
6	39	38	37	39	43	36	44	56	64	81	74	74	76	71	73	68	63	64	60	52	51	43	43	41				
7	43	42	43	43	45	44	53	57	63	83	84	93	87	93	90	75	65	55	47	52	55	47	43	35				
8	36	35	39	40	33	A	A	50	65	82	76	79	88	78	76	71	68	71	53	48	47	47	49	44				
9	39	38	40	42	36	35	50	60	61	65	76	75	83	83	78	77	65	64	38	43	44	42	42	39				
10	41	43	42	43	42	43	45	60	63	81	83	87	83	78	70	65	73	59	46	45	48	43	45	42				
11	41	42	43	42	40	34	50	70	71	75	75	87	80	76	69	68	64	59	49	50	50	50	44	44				
12	41	40	36	34	33	31	40	43	53	58	54	77	72	67	69	64	59	55	55	F	F	F	F	47				
13	F	F	F	45	40	37	38	46	52	H	59	H	73	72	62	60	58	49	48	49	48	44	44	40				
14	38	33	37	40	37	35	36	51	56	61	62	71	68	68	61	70	64	57	43	39	38	38	39	39				
15	35	F	35	34	36	34	45	49	51	72	70	64	73	70	56	62	65	58	44	35	38	36	39	F				
16	F	F	F	F	47	40	41	50	67	63	66	66	81	82	61	59	67	62	52	55	50	F	F	F				
17	51	51	42	44	40	35	43	62	65	74	85	98	81	77	64	64	73	58	42	36	37	35	35	36				
18	34	35	37	36	39	35	38	53	61	75	78	82	84	69	68	59	65	53	45	45	43	40	40	40				
19	37	43	31	32	33	27	38	54	46	A	47	52	54	51	55	56	52	53	50	44	43	42	40	F				
20	F	F	F	F	28	23	31	46	52	A	A	73	79	63	69	64	67	56	44	40	34	29	30	35				
21	28	34	30	36	32	31	33	45	58	53	55	69	H	63	64	60	55	57	51	43	42	37	38	35	32			
22	35	34	34	30	31	23	42	47	53	62	79	73	61	71	64	65	57	51	51	51	51	43	41	37				
23	41	39	39	38	37	35	40	53	61	73	93	79	65	74	62	70	59	55	44	40	36	32	31	32				
24	33	34	36	36	40	28	33	47	67	75	93	84	90	71	63	64	58	A	A	A	A	A	32	38				
25	40	35	35	35	33	29	33	67	78	69	70	79	68	63	68	55	78	63	32	30	31	32	31	31				
26	29	32	34	35	F	40	40	63	74	80	92	72	87	65	62	68	67	65	53	48	47	40	37	34				
27	34	34	34	33	38	36	33	53	64	70	80	78	79	67	67	62	65	52	38	36	41	42	41	40				
28	42	42	42	35	38	31	34	61	66	66	H	70	83	88	69	58	59	61	40	30	34	33	35	36	38			
29	36	35	36	33	35	32	32	48	58	72	71	81	69	H	65	61	70	64	42	34	39	40	34	35	35			
30	35	36	37	37	33	26	30	51	63	73	74	77	72	68	63	68	58	44	38	40	36	32	33	33				
31	35	35	37	37	40	34	33	48	54	67	H	H	67	66	68	72	H	64	65	49	33	36	38	35	37	36		
CNT	30	28	30	30	30	29	30	31	31	29	30	31	31	31	31	31	31	30	30	30	29	28	29	28				
MED	38	38	37	38	38	35	40	53	61	70	72	77	73	69	64	64	64	56	46	45	43	41	40	39				
UQ	41	42	40	42	40	39	45	56	65	75	79	82	82	74	69	69	65	62	53	51	50	44	43	41				
LQ	35	35	35	35	33	31	33	48	56	65	67	72	68	66	61	61	60	51	42	39	38	35	35	35				

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984
FOF1 (0.01 MHz)
135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI							Lat.	45 23.5 N			Long	141 41.2 E			Sweep	1 MHz to 25 MHz in 24sec in automatic operation								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L 400	L 420	L 420	A	L 400	L										
2										410	420	410	420	440	L	L									
3											430	L 420	L	420	L 380										
4									L	L 410	A	430	A	A	A	L									
5									L	L 410	L 420	L 420	L 400	L 430											
6									L	L 410	L 400	L 410	L 430												
7									L	L 410	L	430	440	L	L 390										
8										L 410	L	L	390	L											
9										L 350	A	A	L 450	410											
10										L 350	L	A	L 410	L 410	L 410	L 380									
11										L	L	L 410	L 420	L	400										
12										L 360	400	L	420	410	A	A									
13										L	L	A	L 420	400	A	A									
14										L 380	A	L 410	L 410	L 400											
15										L	L 410	L	L 410	400											
16										370	L	L 410	L 410	A	L	A									
17										A	A	410	420	L 410											
18										410	400	420	410	L 400	L										
19										400	A	400	400	390	380	L 360									
20										340	A	A	A	A	400	L 390	L 380								
21										350	370	380	A	L	L										
22										A	H 400	L 410	L 390	L	L										
23										L	L	L 410	400	L											
24										A	A	L 420	A	L 400	L										
25										A	A	A	A	A	A										
26										L	L 410	400	L												
27											L	L													
28												460	360	L											
29											A	L													
30											L		390	L 360											
31												390	390												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								1	6	12	14	20	21	14	5										
MED								340	355	L 410	L 410	415	410	L 400	L 380										
UQ								370	L 410	L 420	L 420	410	L 410	L 380											
LQ								350	400	400	410	390	400	L 380											

IONOSPHERIC DATA

OCT. 1984

FOE (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		WAKKANAI							Lat. 45 23.5 N		Long 141 41.2 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	A					A	A										
2								A		235	260	290	295			280	250	200			S				
3								S		215	255	290	295	300		A	A	A	A						
4								A		200	255	280	290		A	A	A	A							
5								S		215	255	280		A	A	A	A	200			S				
6								A		210	250		A	A	A	295	290	280	255	210		S			
7								S		225	250	290	295	300	300	290	280	250			A	A			
8								A		S	215	250	280	295	300	305		A	A	245	200				
9								A	A	A	245		A	A	A	305	290	270	235	190		S			
10								A	A	S	210	240	265		A	A	A	285	240	200		S			
11								S		A	210	240	265		A	A	A	290	A	240		A	A		
12								S		A	240	280	295	300	300	290	265	230	190		S				
13								S		S	200	235	270	290	295	290	280		A	A	A	A	E		
14								S		S	195	230	260	280	280		A	A	A	A	A	S			
15								S		S	210	245	270	290	295	295		A	A	A	A	E			
16								S		S	205	A	270	275	280	280		A	A	225		A	A		
17								S		S	205	260	275		A	290	290	280		A	A	A	A		
18								S		S	200	235	260	275	280	290	285	265	225	180		S			
19								S		S	205	225		A	A	A	295	290	265		A	A	S		
20								S		S	190	225	250		A	295	290	275	240	205		A	S		
21								S		S	195	220	245		A	265	A	275		A	A	A	S		
22								S		S	230	250		A	A	290	275	250	210		S				
23								S		S	195	220		A	A	290	295	275	245	210		A			
24								S		S	190	230	260		A	280	280	270	240		A	A			
25								S		S	200	230	250	260		A	A	275		A	A	A			
26								S		S	A	A	A	A	A	A	A	A	A	A		A	A		
27								S		S	210						255					A	A		
28								S		S	195	225		A	275		A	A	A	205		A			
29								S		S	195	235	265		A	290	290	275	255	210		A			
30								S		S	195	230	250		A	A	A	240		A	A				
31								S		S	190	230	250	260	270		A	A	A	210		S			
								S		S	A	235	270		A	290	A	280	245	195		S			
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1		23	29	23	14	18	17	18	17	17	8	2						
MED							K		200	235	265	290	290	295	280	265	225	200		E					
UQ									210	245	278	295	295	300	290	280	240	200							
LQ									195	230	255	275	280	290	275	245	210	190							

OCT. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat. 45 23.5 N	Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	23	22	33	35	28	43	46	42	50	G	G	G	50	40	G	35	32	28	30	J A 48	35	26	30	J A 51	
2	J A 64	25	41	25	27	39	35	20	G	G	G	34	44	J A 63	J A 45	40	29	33	E S 16	22	24	32	31	31	25
3	22	21	50	31	25	21	J A 56	G	G	34	G	39	47	G	42	49	32	41	45	J A 83	J A 76	42	36	41	
4	E S 16	E S 13	21	20	35	31	29	G	35	44	65	73	54	62	64	50	G	19	23	E S 16	24	40	38	35	25
5	30	26	28	22	25	E S 16	E S 16	G	G	42	42	41	G	G	21	27	32	G	26	23	J A 64	39	39	37	39
6	31	39	31	35	50	34	27	G	G	G	G	G	G	G	G	G	26	27	35	26	27	31	28	27	
7	E S 16	E S 13	E S 16	25	26	E S 16	E S 16	G	G	G	G	23	22	G	34	34	28	26	29	35	34	J A 50	39	22	E S 16
8	E S 16	E S 16	31	30	43	J A 52	57	35	G	50	37	41	27	G	30	38	33	42	J A 64	41	38	31	30	23	
9	37	29	26	25	37	41	35	34	36	J A 48	51	42	G	40	G	G	16	15	24	27	E S 16	E S 16	26	26	
10	E S 16	E S 16	11	E S 13	25	E S 16	E S 17	G	32	23	J A 83	32	34	G	37	G	22	24	22	E S 16	E S 16	E S 16	E S 16	E S 16	
11	E S 16	E S 16	E S 16	E	E	E S 16	E S 18	27	27	33	G	G	G	G	18	G	34	26	E S 16	E S 16	E S 16	32	28	29	
12	E S 16	E S 16	E S 16	E S 13	E	E S 16	E S 16	G	29	G	35	46	38	52	J A 55	39	35	28	26	27	23	24	E S 12	E S 16	
13	21	E S 11	E	22	E S 16	E S 16	E S 16	G	G	38	37	J A 45	J A 46	39	J A 66	J A 56	J A 83	J A 51	J A 52	J A 50	39	32	30	26	
14	22	26	30	J A 50	53	39	31	G	G	38	50	45	43	43	33	38	40	52	53	35	E S 15	27	39	39	
15	36	E	23	J A 34	J A 30	31	E S 15	G	34	35	G	G	43	41	40	21	36	35	32	31	27	41	E S 15	31	
16	28	39	27	E	31	24	E S 15	G	G	G	45	34	J A 50	31	39	J A 43	40	30	30	33	23	E S 11	E S 33		
17	35	40	27	34	35	30	E S 15	J A 43	34	J A 50	J A 50	37	G	G	G	G	E S 15	27	E S 16	39	32	23	E S 15		
18	E S 15	E S 12	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	35	36	43	27	G	20	33	33	43	39	E S 18	E S 17	E S 16	E S 17	E S 16	
19	27	E S 16	E S 11	E S 15	E S 15	K 14	18	34	31	J A 64	48	G	G	G	G	29	27	30	E S 16	E S 16	24	E S 16	E S 15		
20	E S 11	22	35	28	24	21	39	J A 53	61	J A 96	J A 50	J A 88	G	29	35	43	31	34	J A 46	36	43	30	32		
21	28	27	J A 50	J A 63	28	E S 16	21	26	J A 54	J A 64	J A 65	J A 54	J A 45	36	G	G	21	23	34	J A 74	J A 52	39	39	27	
22	J A 52	37	31	27	E S 16	E S 16	G	40	50	42	G	G	G	G	G	20	27	E S 16	E S 16	31	31	22	31		
23	35	26	21	E S 16	E S 16	E S 16	E S 16	33	35	33	40	G	G	G	G	26	31	41	31	34	35	35	30	28	
24	31	E S 15	E S 16	E	E S 16	E S 16	30	J A 55	45	35	55	49	27	31	J A 52	J A 134	J A 72	J A 108	J A 86	J A 87	J A 93	J A 76	43		
25	31	26	22	35	31	35	J A 67	27	41	J A 55	57	57	49	J A 67	J A 55	J A 53	J A 53	50	41	26	E S 16	27	35	27	
26	27	23	E S 16	E S 16	24	24	26	26	36	38	40	40	30	40	28	35	J A 55	35	E S 16	E S 15	31	J A 64	43	30	
27	27	27	E S 16	J A 43	35	36	E S 15	G	27	34	G	50	43	50	38	G	37	33	31	33	27	E S 16	E S 16	16	
28	E S 15	E S 11	21	E S 13	31	E S 16	E S 16	24	G	G	34	G	G	G	G	23	26	27	E S 16	E S 16	J A 83	J A 50	50	J A 64	
29	46	J A 56	39	34	27	30	25	G	G	G	54	50	73	60	22	50	38	49	38	E S 16	E S 15	21	E S 16	28	
30	27	22	26	32	38	22	24	G	G	31	36	33	39	42	34	30	44	35	33	30	27	E S 16	E S 16	23	
31	32	29	30	31	E S 12	E S 16	24	26	G	40	49	24	34	G	G	32	30	31	35	30	39	32	37	31	
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	27	22	23	25	27	22	18	G	27	35	40	40	38	31	29	32	33	30	31	30	31	31	30	27	
UQ	32	27	30	34	33	32	28	28	36	46	50	46	48	42	38	38	39	41	36	38	39	39	36	32	
LQ	16	E S 14	16	16	16	E S 16	E S 16	G	G	E G 23	34	E G 22	G	G	G	G	26	26	22	E S 17	23	22	E S 16	23	

OCT. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

FBES (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat.	45 23.5 N				Long	141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation													
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	E	E	23	21	23	AA	32	27	36	G	G	G	42	32	G	34	28	20	E	E	22	E	E	27				
2	E	E	20	E	E	20	20	20	G	G	G	35	35	31	30	28	22	ES	E	E	23	E	E	E				
3	E	E	E	26	E	E	34	G	G	G	G	38	33	G	26	26	22	21	30	35	25	30	26	E				
4	ES	ES	E	E	E	E	20	G	31	39	58	41	41	46	57	33	G	19	22	ES	E	34	31	24	E			
5	20	E	24	E	E	ES	ES	G	G	30	31	32	G	G	G	24	G	19	E	E	E	E	24	21				
6	21	20	23	E	E	20	17	G	G	G	G	G	G	G	G	G	22	19	25	E	20	E	E	E				
7	ES	ES	ES	E	E	ES	ES	G	G	G	G	23	22	G	30	29	22	G	16	26	E	E	20	ES	ES	ES	ES	
8	ES	ES	23	E	29	AA	AA	28	G	38	31	35	26	G	23	23	36	28	24	20	E	20	E	E	E			
9	25	E	E	E	23	26	32	25	32	39	44	34	G	32	G	G	G	ES	E	E	ES	ES	E	E				
10	ES	ES	ES	ES	E	ES	ES	G	G	G	52	31	30	G	29	G	21	16	E	ES	ES	ES	ES	ES	ES	ES	ES	
11	ES	E	ES	E	E	ES	ES	25	21	G	G	G	G	G	G	G	G	17	ES	ES	ES	ES	20	E	E			
12	ES	ES	ES	ES	E	ES	ES	G	21	G	35	39	37	46	53	26	24	16	E	E	E	E	ES	ES	ES	ES	ES	
13	E	ES	E	E	ES	ES	ES	G	G	36	41	39	30	51	42	46	40	33	26	29	E	E	E	E	E			
14	E	E	E	25	21	20	21	G	G	37	42	34	33	36	32	28	20	44	26	22	ES	E	E	E	E			
15	E	E	E	21	E	E	ES	G	25	G	G	G	37	35	32	20	21	20	21	E	E	E	ES	E	E			
16	E	E	E	E	E	E	ES	G	G	G	32	G	43	G	38	40	21	20	E	E	E	E	ES	E	E			
17	23	30	E	E	30	E	ES	38	31	47	50	G	G	G	G	G	G	ES	E	ES	27	E	E	ES	ES	ES	ES	
18	ES	ES	E	ES	E	ES	ES	G	G	31	30	39	G	G	G	23	23	25	23	ES	ES	ES	ES	ES	ES	ES	ES	
19	E	ES	E	ES	E	ES	K	28	AA	64	33	G	G	G	G	20	20	20	ES	ES	E	ES	ES	ES	ES	ES	ES	
20	E	ES	E	E	E	E	20	29	37	AA	AA	AA	43	37	G	26	24	23	21	26	23	20	25	E	25	E	25	
21	E	E	23	20	E	ES	20	25	30	34	34	41	G	G	G	20	E	25	30	33	E	22	E	E	E	E	E	
22	29	E	E	E	E	ES	ES	G	32	40	30	G	G	G	G	G	19	E	ES	ES	ES	E	E	E	E	E	E	
23	21	E	E	ES	E	ES	ES	31	33	30	32	G	G	G	G	22	20	20	20	E	24	E	E	E	E	E	E	
24	E	ES	ES	E	E	ES	ES	G	40	40	34	54	38	26	25	30	53	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	E
25	20	E	E	20	20	E	21	23	32	54	49	46	40	50	40	51	39	38	22	E	ES	E	E	E	E	E	E	
26	E	E	ES	ES	E	E	E	25	G	35	28	35	29	30	G	23	50	E	ES	ES	ES	E	E	E	E	E	E	
27	E	E	ES	E	E	E	ES	G	G	27	G	30	31	32	27	G	27	23	21	21	E	ES	ES	ES	ES	ES	ES	ES
28	ES	ES	E	ES	E	ES	ES	G	G	G	29	G	G	G	G	G	19	E	ES	ES	ES	E	E	20	E	E	E	
29	23	20	30	E	E	E	E	G	G	G	45	31	33	40	22	31	22	32	24	ES	ES	E	ES	E	ES	E	E	
30	E	E	E	E	30	E	E	G	G	30	31	31	31	34	27	G	33	20	21	22	20	ES	ES	ES	E	E	E	
31	E	E	E	E	ES	ES	E	22	G	G	31	G	G	G	G	G	G	E	E	E	23	20	E	E	E	E	E	E
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	31	31	31	31
MED	E	E	E	E	E	E	E	G	G	30	31	31	30	26	24	23	21	20	20	E	E	E	E	E	E	E	E	E
UQ	18	ES	16	16	16	ES	20	25	31	38	38	38	37	33	30	29	26	22	24	20	23	16	ES	16	16	16	16	
LQ	E	E	E	E	E	E	ES	G	G	G	E	G	G	G	G	G	19	16	E	E	E	E	E	E	E	E	E	E

OCT. 1984

FBES (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1984

FMIN (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		WAKKANAI							Lat.	45 23.5 N				Long.	141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation							
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		E S ₁₆	E E S ₁₁	E	E	E E S ₁₆	16	18	18	18	17	19	18	17	16	12	E S ₁₆	E S ₁₆	E S ₁₂	E S ₁₂	E S ₁₆	E S ₁₆	E			
2		E S ₁₅	E E S ₁₅	E	E S ₁₃	E	11	12	13	16	17	18	17	16	16	17	11	E S ₁₆	E S ₁₆	E S ₁₆	E	E	E S ₁₁	E S ₁₆		
3		E S ₁₆	E S ₁₆	E	E	E E S ₁₆	E S ₁₆	11	17	19	19	19	19	18	18	16	11	E S ₁₂	E	E S ₁₆	E S ₁₆	E S ₁₁	E S ₁₃			
4		E S ₁₆	E S ₁₃	E S ₁₂	E S ₁₃	E S ₁₃	E S ₁₂	11	16	16	17	20	20	18	17	16	17	13	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₃	E S ₁₆			
5		E S ₁₁	E	E	E S ₁₆	E S ₁₃	E S ₁₆	E S ₁₆	16	17	17	17	18	16	17	16	16	13	E S ₁₆	E S ₁₇	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₂	E S ₁₆	
6		E	E	E S ₁₆	E S ₁₆	E S ₁₂	E S ₁₆	E S ₁₁	16	18	18	18	19	20	21	18	18	10	E	E S ₁₆	E S ₁₈	E S ₁₇	E S ₁₆	E S ₁₆	E S ₁₆	
7		E S ₁₆	E S ₁₃	E S ₁₆	E S ₁₂	E	E S ₁₆	E S ₁₆	11	17	17	17	16	18	17	18	11	12	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₆	E S ₁₆	
8		E S ₁₆	E S ₁₆	E	E	E	E	10	12	12	17	12	17	12	11	10	10	12	E S ₁₃	E S ₁₅	E S ₁₆	E S ₁₆	E	E	E S ₁₆	
9		E	E	E S ₁₆	E S ₁₁	E S ₁₃	E	E	10	12	12	18	19	18	18	17	10	10	E S ₁₅	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	E	E S ₁₆	
10		E S ₁₆	E S ₁₆	E S ₁₁	E S ₁₃	E	E S ₁₆	E S ₁₇	16	18	18	21	21	20	18	18	16	11	E	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	
11		E S ₁₆	E	E S ₁₆	E	E	E S ₁₆	E S ₁₈	16	17	21	20	20	20	11	16	16	16	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₂	E S ₁₆	
12		E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₃	E	E S ₁₆	E S ₁₆	16	12	15	18	16	11	17	17	12	13	E	E	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₂	E S ₁₆	
13		E	E S ₁₁	E	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	13	16	18	18	17	19	18	16	12	10	E S ₁₂	E S ₁₃	E S ₁₁	E S ₁₁	E S ₁₂	E S ₁₁	E S ₁₂	
14		E S ₁₁	E S ₁₃	E	E	E	E S ₁₅	E S ₁₆	16	13	13	19	18	17	16	18	11	10	E	E	E S ₁₅	E S ₁₅	E	E	E	
15		E	E	E	E	E	E	E S ₁₅	10	11	17	18	18	18	17	16	12	11	10	E	E	E	E S ₁₅	E S ₁₅	E	
16		E	E	E	E	E	E	E S ₁₅	10	11	11	17	18	18	18	12	11	10	E	E	E S ₁₅	E S ₁₅	E	E S ₁₁	E S ₁₂	
17		E	E	E	E	E	E	E S ₁₅	11	17	17	18	19	18	18	17	17	15	E S ₁₅	E	E S ₁₆	E S ₁₅	E S ₁₄	E	E S ₁₅	
18		E S ₁₅	E S ₁₂	E	E S ₁₅	E	E S ₁₅	E S ₁₅	12	11	16	18	18	19	19	16	13	16	E S ₁₅	E S ₁₅	E S ₁₈	E S ₁₇	E S ₁₆	E S ₁₇	E S ₁₆	
19		E S ₁₂	E S ₁₆	E S ₁₁	E S ₁₅	E S ₁₅	E	E S ₁₂	15	12	16	18	18	17	16	18	15	12	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₇	E S ₁₆	E S ₁₆	E S ₁₅	
20		E	E S ₁₁	E S ₁₃	E S ₁₁	E S ₁₁	E	E S ₁₆	16	20	18	20	19	18	19	16	17	17	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₂	E S ₁₆	
21		E S ₁₆	E S ₁₁	E	E	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₈	17	18	18	20	19	20	17	18	E S ₁₇	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₂	
22		E S ₁₇	E S ₁₁	E S ₁₁	E	E	E S ₁₆	E S ₁₆	16	17	19	20	21	20	22	19	19	16	E	E S ₁₆	E S ₁₆	E S ₁₁	E S ₁₂	E S ₁₅	E S ₁₅	
23		E S ₁₃	E S ₁₃	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	16	17	19	19	20	20	19	19	16	13	E	E S ₁₃	E S ₁₆	E S ₁₈	E S ₁₁	E S ₁₆	E S ₁₆	
24		E	E S ₁₅	E S ₁₆	E	E	E S ₁₆	E S ₁₆	E S ₁₇	18	17	17	19	20	18	16	16	16	E	E S ₁₅	E S ₁₅	E S ₁₁	E S ₁₂	E S ₁₃	E S ₁₃	
25		E S ₁₁	E S ₁₁	E	E	E S ₁₃	E	E S ₁₆	E S ₁₆	18	19	19	20	17	18	17	16	16	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E	
26		E S ₁₆	E	E S ₁₆	E S ₁₆	E	E	E S ₁₃	E S ₁₅	16	18	17	17	18	17	11	11	11	E	E S ₁₆	E S ₁₅	E S ₁₆	E S ₁₅	E S ₁₄	E	
27		E	E	E S ₁₆	E S ₁₄	E	E	E S ₁₅	E S ₁₅	17	19	19	18	17	17	13	13	13	E S ₁₃	E S ₁₁	E S ₁₁	E S ₁₁	E S ₁₆	E S ₁₆	E S ₁₆	
28		E S ₁₅	E S ₁₁	E S ₁₅	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	16	17	18	18	19	20	18	16	16	10	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₇	E S ₁₆	E S ₁₆	E S ₁₆	
29		E S ₁₆	E S ₁₃	E	E	E	E S ₁₆	E	16	18	18	19	20	20	19	17	17	E S ₁₂	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₅	E S ₁₃	E S ₁₆	E S ₁₂	
30		E S ₁₅	E S ₁₅	E S ₁₂	E S ₁₃	E S ₁₂	E S ₁₁	E S ₁₆	12	11	17	18	19	18	17	17	16	E S ₁₆	E S ₁₆	E S ₁₅	E S ₁₅	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₁	
31		E S ₁₆	E S ₁₃	E S ₁₃	E	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₃	12	17	18	19	18	18	17	16	E S ₁₇	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₂	E S ₁₃	E S ₁₃	E S 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		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		E S ₁₅	E S ₁₁	E S ₁₁	E S ₁₁	E	E S ₁₅	E S ₁₆	E S ₁₄	17	17	18	19	18	18	17	16	12	E S ₁₂	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₃	E S ₁₅	E S ₁₅
UQ		E S ₁₆	E S ₁₃	E S ₁₆	E S ₁₃	E S ₁₃	E S ₁₆	E S ₁₆	E S ₁₆	16	17	18	19	20	20	18	18	16	14	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆	E S ₁₆
LQ		E	E	E	E	E	E	E S ₁₄	E S ₁₂	12	12	17	18	18	18	17	16	12	11	E	E S ₁₃	E S ₁₅	E S ₁₂	E S ₁₂	E S ₁₁	E S ₁₂

OCT. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station		WAKKANAI								Lat. 45 23.5 N				Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation							
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		285	285	280	295	300	A	355	350	340	340	335	345	330	320	320	340	330	340	335	310	305	310	300	305
2		295	295	280	285	295	295	350	360	350	345	340	345	340	335	345	335	330	335	325	335	335	315	295	295
3		295	290	285	285	300	305	360	360	340	340	315	330	310	335	335	340	325	340	320	335	310	275	285 ^S	295
4		280	290	285	285	300	335	360	355	345	355	340	350	330	325	325	340	345	335	325	330	345	295	290	290
5		290	285	275	285	325	315	355	365	345	340	340	340	345	330	330	325	345	345	310	305	300	295	300	290
6		290	290	295	305	330	325	340	355	330	335	365	325	330	315	330	340	320	330	320	300	335	295	290	290
7		280	285	290	305	315	315	360	350	335	330	310	325	295	315	330	345	340	250	275	285	310	300	300	290
8		300	285	280	300	A	A	A	345	330	340	330	315	325	340	340	340	325	340	320	290	280	295	290	320
9		290	290	285	295	300	320	345	355	345	355	345	320	335	335	335	355	340	345	315	280	295	290	305	285
10		285	285	280	290	305	325	355	350	350	310	335	335	335	345	340	340	335	355	305	310	315	285	305	285
11		275	285	295	315	305	325	340	355	350	335	345	340	330	345	335	355	330	340	305	300	295	300	290	320
12		290	300	300	295	305	295	350	355	360	345	330	340	345	330	335	345	340	335	310	295	F	F	F	300
13		270 ^F	F	F	285	295	310	320	370	330	310 ^H	340	305 ^H	320	335	340	335	345	345	295	280	280	300	295	300
14		315	295	300	300	305	315	390	355	355	345	340	340	340	340	325	340	345	350	325	305	310	290	280	305
15		320	F	305	295	320	310	355	355	350	345	330	330	340	350	340	340	355	345	320	315	300	305	295	F
16		300 ^F	305 ^F	330	F	315	325	340	345	335	335	335	330	325	355	345	345	345	340	315	310	280	F	F	F
17		300	330	285	295	325	335	325	345	325	330	315	335	350	350	340	330	355	340	335	305	335	300	295	305
18		300	305	310	310	315	330	340	350	350	345	335	355	355	350	360	340	355	345	310	320	285	285	285	285
19		280	330	290	280	270	275	310	350	280	A	285	280	310	315	330	345	335	325	285	270	280	285	300	F
20		F	F	F	F	350	270	320	310	325	A	A	330	330	335	335	345	345	340	330	315	325	A	290	300
21		280	300	305	310	310	305	325	315	345	345	340	335	305 ^H	330	350	345	345	345	325	310	A	290	315	290
22		A	300	325	300	335	270	340	350	360	310	340	355	325	340	340	355	350	335	300	315	315	290	290	280
23		290	290	290	295	295	310	325	370	340	330	335	350	335	350	340	355	340	340	315	305	315	295	290	320
24		280	290	300	305	325	295	335	340	345	320	335	320	335	340	350	345	345	A	A	A	A	A	260	285
25		285	275	290	300	310	310	310	335	350	360	340	355	350	335	350	A	340	355	320	300	315	310	295	290
26		285	310	300	315	F	305	325	340	350	350	345	325	345	340	345	340	340	330	340	300	320	310	310	310
27		300	300	295	305	305	360	325	360	330	355	345	335	360	345	345	340	345	370	315	305	295	295	295	295
28		290	290	290	320	305	320	325	375	365	350	325	325	365	355	355	345	345	330	325	325	305	315	305	300
29		310	315	305	305	315	320	345	355	350	345	325	370	335	325 ^H	345	350	360	340	300	305	310	300	290	315
30		290	290	315	320	A	365	335	350	340	345	350	350	345	365	345	350	360	340	305	310	335	320	305	310
31		310	300	295	310	325	360	340	375	360	345	330 ^H	330 ^H	360	345	310 ^H	360	340	370	325	310	315	320	310	325
CNT		29	28	30	30	28	29	30	31	31	29	30	31	31	31	31	30	31	30	30	30	28	27	29	28
MED		290	290	292	300	308	315	340	355	345	345	335	335	335	340	340	342	345	340	318	305	310	295	295	298
UQ		300	300	300	305	322	325	355	358	350	345	340	345	345	345	345	345	345	345	325	315	318	308	300	308
LQ		285	288	285	295	300	305	325	348	335	335	330	325	328	330	332	340	338	335	305	300	295	290	290	290

OCT. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1984

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9h)

Station	WAKKANAI				Lat. 45 23.5 N				Long. 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	A	L	L										
2										375	360	385	380	365	L	L								
3										355	360	385	A	L	L									
4										385			L	355	370									
5										L	A	A	A	A	A	L								
6										L	L	L	L	L	L									
7										L	365	375	385	350										
8										L	L	L	390	365	L	L								
9										A	A	A	L	375	365									
10										A	A	A	L	375	365									
11										400	L	A	L	L	L	L								
12										L	L	L	L	L	L	L								
13										L	L	L	A	A	A	A								
14										L	L	L	A	A	A	A								
15										L	L	L	A	A	A	A								
16										L	L	L	A	A	A	A								
17										380	L	390	390	A	L	A								
18										A	A	A	365	380	365	L								
19										365	390	A	395	410	L	L								
20										A	A	A	A	A	A	A								
21										L	L	L	A	A	A	A								
22										A	A	A	L	L	L	L								
23										L	L	L	365	370	L	L								
24										A	A	L	A	A	L	L								
25										A	A	A	A	A	A	A								
26										L	L	L	A	A	A	A								
27										365	375	L	L	L	L	L								
28										L	L	L	L	L	L	L								
29										A	A	A	L	L	L	L								
30										L	L	L	L	L	L	L								
31										L	L	L	L	L	L	L								
										405	380	L	L	L	L	L								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									4	8	13	16	16	11	5									
MED									370	365	375	380	370	365	360									
UQ									390	370	390	388	380	368	370									
LQ									340	365	360	365	365	360	340									

OCT. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1984

H^oF2 (KM)

135° E Mean Time (G.M.T. + 9h)

Station	WAKKANAI				Lat. 45 23.5 N				Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									255	260	255	255	255	255										
2									255	255	250	255	275	250 ^L										
3										300	260	265	250	255										
4								245	245	A	245	250	260	A	250									
5								255 ^L	250	245	240	245	275											
6								255 ^L	245	230	245	260												
7								245	255	250 ^L	255	295	255 ^L	250										
8								250	250 ^L	280 ^L	250	250 ^L												
9								245	240	245	265	255												
10								240	265 ^L	240	250	250	245	245										
11								235 ^L	250 ^L	245	245	245 ^L	240											
12								255	255	260 ^L	255	245	250	250										
13								285		245 ^L	260	280	245	255 ^A	250									
14								245	245	255	245	245												
15								250	250	265 ^L	250	250												
16								250	250	260	260	270	230	245										
17								250	285	245	230	235												
18								260	250	235	235	225	240											
19								420	A	390	375	330	305	285										
20							315	265	A	A	260	260	255	265										
21								250	255	260	255	245	275 ^L											
22								300	250	250	250	255												
23								255 ^L	245 ^L	240	245	245 ^L												
24								250	245	255	255	245	245 ^L											
25								235	250	235	240	255	240											
26								240	240	240	240													
27								235 ^L	240 ^L															
28										280	235	245 ^L												
29								250	240 ^L															
30								245			235	240												
31											225	235												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	15	22	27	30	28	25	12	2								
MED							315		250	250	250	252	250	250	250	250								
UQ									255	255	258	260	258	255	255									
LQ									245	245	245	240	245	245	245									

OCT. 1984

H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1984

H*F (KM)

135° E Mean Time (G.M.T. + 9h)

Station Hour Day	WAKKANAI				Lat. 45° 23' 5" N				Long. 141° 41' 2" E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	290	290	300	295	250	A	A	230	220	245	230	205	195	A	200	200	255	240	225	230	240	255	245	285	260
2	260	260	305	275	275	250	220	230	235	220	225	220	210	A	215	235	235	240	230	220	240	245	245	255	250
3	255	275	295	300	255	235	A	220	205	240	205	A	A	245	225	225	225	245	230	250	A	255	A	305	255
4	255	275	270	250	255	240	210	225	225	A	A	A	A	A	A	A	A	235	230	225	225	A	A	295	275
5	295	295	325	295	240	205	235	230	225	215	205	195	200	195	250	240	235	225	240	270	265	275	285	285	
6	295	305	305	260	235	245	215	225	205	225	205	195	200	225	235	245	245	230	240	250	235	255	280	290	
7	290	260	275	245	245	245	210	215	215	240	195	215	245	240	225	225	225	210	300	265	255	240	245	245	
8	255	300	305	265	A	A	A	210	200	A	225	245	210	210	240	245	240	225	235	275	285	255	250	225	
9	A	295	290	250	280	260	235	220	A	A	A	205	205	240	230	240	230	205	200	295	260	260	245	280	
10	275	285	290	255	235	230	200	210	200	205	A	205	205	230	215	240	240	205	220	225	245	250	250	290	
11	305	275	265	215	225	240	240	240	225	210	195	215	195	220	235	235	230	210	215	260	260	255	275	245	
12	270	255	255	295	250	275	230	215	225	205	A	A	A	A	A	235	215	225	240	250	245	260	270	240	
13	275	260	275	255	250	250	210	235	195	245	225	A	A	235	A	A	250	A	300	300	295	245	280	255	
14	245	275	280	295	255	280	230	230	230	A	A	215	230	A	240	245	225	A	225	260	245	275	300	260	
15	250	285	260	300	255	265	210	215	205	235	210	200	A	A	A	240	230	215	240	250	255	270	255	270	
16	280	275	250	250	240	225	205	230	220	200	245	205	A	230	A	A	235	210	245	250	255	250	265	265	
17	280	250	260	250	250	220	215	225	210	A	A	225	225	205	215	225	220	205	220	250	250	295	290	275	
18	255	250	240	240	230	215	210	205	220	205	205	A	205	210	230	235	220	220	250	240	260	275	300	295	
19	315	245	235	300	300	250	275	250	240	A	250	200	250	245	245	250	245	250	275	275	285	245	255	275	
20	330	280	305	275	240	345	275	A	A	A	A	A	A	225	240	240	245	225	245	A	255	260	A	315	A
21	310	280	A	280	285	285	255	245	A	A	A	A	225	A	240	240	235	225	255	A	A	305	270	305	
22	A	260	250	280	240	345	235	240	225	A	205	225	205	205	245	245	220	220	250	245	240	255	270	260	
23	275	255	275	260	255	260	215	220	245	240	240	225	205	230	240	225	225	225	225	245	270	270	300	250	
24	305	300	275	265	210	235	205	225	A	A	235	A	A	220	235	240	A	A	A	A	A	A	345	A	
25	275	305	300	295	250	295	290	245	240	A	A	A	A	A	A	A	240	225	245	275	260	255	285	290	
26	275	265	255	250	255	245	220	235	230	220	205	A	200	230	225	245	A	225	220	250	240	240	265	270	
27	285	275	285	290	270	200	215	205	205	205	195	205	230	230	235	225	220	205	250	255	275	255	260	280	
28	280	250	250	225	250	210	245	210	215	200	205	205	200	230	210	235	215	205	235	245	290	295	300	255	
29	295	290	A	260	250	250	225	205	220	230	A	210	235	250	240	245	215	A	A	245	225	275	285	265	
30	290	295	255	245	A	205	230	210	225	225	225	230	205	A	235	240	215	225	255	250	230	235	255	250	
31	275	280	285	275	225	200	225	205	210	225	225	200	200	225	205	230	225	195	235	275	250	255	255	225	
CNT	30	31	29	31	29	29	29	30	27	20	21	21	22	24	26	27	29	27	29	28	29	27	31	30	
MED	280	275	275	265	250	245	225	222	220	222	205	205	205	225	235	240	230	225	240	250	255	255	275	265	
UQ	295	290	295	292	255	260	235	230	228	232	225	220	230	230	240	245	240	225	250	268	260	272	292	280	
LQ	270	260	255	250	240	225	210	210	208	205	205	200	200	212	225	235	220	210	225	245	245	248	255	250	

OCT. 1984

H*F (KM)

IONOSPHERIC DATA

OCT. 1984

H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat. 45° 23' 5" N			Long 141° 41' 2" E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	A	110	110	110	105	110	110	110	115	125							S
2							A	A	105	105	105	105	105	105	A	A	A	S						
3							S		115	115	115	110	110	A	105	A	A	A	A					
4							A		125	115	110	A	A	A	A	A	A	S						
5							S		125	115	A	A	A	105	115	A	A	105	S					
6							A		125	115	110	110	110	115	125	110	120	A	A					
7							S		105	115	115	125	115	115	A	A	125	125	S					
8							A	A	105	A	A	A	A	130	125	125	120	125	S					
9							A		115	110	A	A	A	105	A	105	105	135	S					
10							S		130	125	125	115	120	A	105	A	105	A	A					
11							S	A	A	125	115	120	115	120	115	125	130	S						
12							S		130	125	105	115	110	110	110	110	A	A	E					
13							S		125	120	115	110	110	110	110	A	A	A	S					
14							S		125	110	110	110	110	105	105	105	105	A	E					
15							S		115	110	110	110	110	105	105	A	A	A	A					
16							S		120	115	110	A	110	105	115	110	A	A	A					
17							S		115	110	110	110	110	110	110	105	115	135	S					
18							S		120	115	110	A	A	120	115	120	A	A	S					
19							S	K 125	125	115	115	A	105	105	105	125	A	A	S					
20							S		130	130	115	120	105	A	105	A	A	A	S					
21							S		125	125	A	A	105	120	125	135	S							
22									135	125	125	A	105	105	125	110	135	A						
23									145	130	125	120	115	110	110	110	A	A						
24									145	125	125	120	120	A	A	A	A	A						
25							A		125	125	120	A	A	A	A	A	A	A						
26							S		120	110	A	A	A	A	A	120	A	A						
27									125	125	A	115	A	A	A	A	105	A						
28									145	130	125	A	115	120	110	135	120	A						
29									135	125	125	125	A	A	A	130	A	A						
30									125	120	115	120	115	120	115	A	130	S						
31							A		120	110	A	A	A	A	115	115	125	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						1		23	30	27	19	21	21	23	18	15	7							
MED						K 125		125	118	115	115	110	110	110	112	120	125							
UQ								130	125	125	120	115	115	115	125	125	132							
LQ								120	115	110	110	110	105	105	110	110	125							

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H°E (KM)

IONOSPHERIC DATA

OCT. 1984

H°ES (KM)

135 E Mean Time (G.M.T. + 9 h)

Station Hour Day	WAKKANAI				Lat. 45 23 5 N				Long 141 41 2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	105	105	105	105	105	105	105	105	105	G	G	G	105	105	G	145	125	125	120	110	105	110	105	105	
2	105	105	105	105	105	105	105	105	G	G	125	110	105	110	110	115	110	S	125	110	105	105	105	105	
3	105	105	125	100	100	105	110	G	G	120	G	105	105	G	105	105	105	105	105	105	105	105	105	105	
4	S	S	105	105	100	100	105	G	120	110	105	105	105	105	100	100	105	125	S	115	105	105	105	105	
5	105	100	100	110	105	S	S	G	G	105	105	105	G	100	105	105	G	105	100	105	105	105	105	105	
6	105	100	100	110	100	100	100	G	G	G	G	G	G	G	G	G	105	100	100	110	105	105	100	105	
7	S	S	S	105	105	S	S	G	G	G	100	100	G	100	100	100	120	125	110	120	105	105	105	S	
8	S	S	135	110	110	105	105	105	G	100	100	100	100	100	130	120	110	105	105	105	105	105	105	105	
9	105	105	105	105	115	110	105	115	110	105	105	105	G	105	G	G	105	S	110	125	S	S	100	100	
10	S	S	S	S	140	S	S	G	125	105	105	110	105	G	105	G	145	100	100	S	S	S	S	S	
11	S	E	S	E	E	S	S	105	105	130	G	G	G	G	100	G	125	120	S	S	S	105	100	100	
12	S	S	S	S	E	S	S	G	100	G	135	125	115	110	105	105	105	105	105	105	105	105	105	S	S
13	100	S	E	125	S	S	S	G	G	120	125	110	110	105	105	105	105	105	105	105	105	105	105	105	
14	105	105	125	105	105	105	105	G	G	125	120	115	115	105	105	105	105	105	125	105	S	110	110	105	
15	105	E	110	110	105	105	S	G	120	115	G	G	110	105	105	105	100	100	100	100	115	110	S	110	
16	105	105	105	E	100	100	S	G	G	G	105	120	115	115	110	105	105	105	100	105	105	E	S	110	
17	110	105	105	110	105	125	S	125	125	115	110	110	G	G	G	G	G	S	105	S	105	105	105	S	
18	S	S	E	S	E	S	S	G	G	110	105	100	105	105	100	100	100	100	100	S	S	S	S	S	
19	110	S	S	S	S	K	125	125	120	115	110	110	G	G	G	G	105	105	105	S	S	100	S	S	
20	E	S	105	125	105	105	130	115	115	120	105	120	105	G	105	105	105	105	105	105	105	105	105	105	
21	105	120	130	115	105	S	145	125	125	110	110	145	145	145	G	G	145	105	120	110	110	110	105	105	
22	105	105	105	105	E	S	S	G	110	105	105	G	G	G	G	G	115	105	S	S	120	135	120	110	
23	105	105	105	S	S	S	S	140	135	130	110	G	G	G	G	105	105	105	105	105	105	105	105	110	
24	105	S	S	E	E	S	S	145	130	120	115	115	105	105	105	105	105	105	105	110	105	105	105	105	
25	105	105	125	125	120	120	110	110	110	105	105	105	105	100	100	100	105	100	105	105	S	115	105	105	
26	105	105	S	S	125	100	100	115	110	110	105	105	105	100	105	105	100	100	S	S	105	105	105	100	
27	100	100	S	100	105	105	S	G	125	115	G	105	105	100	100	G	100	100	100	100	100	S	S	S	
28	S	S	105	S	110	S	S	140	G	G	105	G	G	G	110	G	100	105	S	S	120	115	110	130	
29	105	100	100	100	105	100	105	G	G	G	110	105	105	105	110	105	105	105	105	S	S	100	S	105	
30	110	110	105	105	105	110	105	G	G	115	115	110	105	105	105	105	105	105	105	105	105	S	S	105	
31	105	105	105	105	S	S	130	130	G	135	105	105	125	G	G	125	140	115	110	105	105	105	105	105	
CNT	22	18	21	21	22	18	16	15	17	23	25	23	21	20	22	22	29	28	25	22	24	24	22	24	
MED	105	105	105	105	105	105	105	115	115	115	105	105	105	105	105	105	105	105	105	105	105	105	105	105	
UQ	105	105	110	110	110	110	118	128	125	120	110	112	110	105	105	105	115	105	110	110	105	110	105	105	
LQ	105	105	105	105	105	100	105	108	110	108	105	105	105	100	100	105	105	102	100	105	105	105	105	105	

OCT. 1984

H°ES (KM)

IONOSPHERIC DATA

OCT. 1984

TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

Station		WAKKANAI							Lat. 45 23 5 N		Long 141 41 2 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation													
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F1	F2	F6	F5	F3	F7	L4	L3	C2				C4	C2		C3	C3	C1	F1	F2	F4	F2	F3	F3		
2	F3	F2	F3	F2	F2	F3	L2	L2			C2	C2	C2	C1	L2	L2	L1		F1	F2	F5	F3	F2	F2		
3	F2	F2	FF22	F6	F2	F1	L3			C2		C4	L2		L2	L2	L2	L2	F4	F3	F3	F5	F3	F2		
4			F1	F1	F5	F2	L3			C2	C4	L3	L2	L3	L4	L3	L3	L1	C3		F1	F7	F7	F7	F2	
5	F2	F3	F5	F2	F2					L2	L2	L3		L2	L2	L2		L2	F2	F3	F2	F2	F3	F3		
6	F3	F3	F2	FF13	F3	F2	L1										L2	L1	F2	FF21	F1	F2	F2	F2		
7				F2	F2						L2	L2		L2	L2	L2	C5	C1	F3	F2	F3	F3	F1			
8			F4	F4	F7	F4	L5	L5		L4	L2	L3	L2	L2	L2	CL31	C4	C2	F2	F3	F3	F2	F2	F1		
9	F4	F2	F2	F2	FF32	F3	L3	C3		C4	L3	L4	L3		L3		L1		F1	F1			F2	F2		
10					F1					C2	L1	C3	C1	L2		L3		CL21	L1	F2						
11							L2		L1	C1					L1		C2	C1				F2	F2	F2		
12									L2			CL21	CL31	CL32	C5	C6	L2	L3	L1	F1	F1	F1	F1			
13	F2			F2						C4	C2	C2	C3	C3	L4	L5	L3	L3	F3	F2	F3	F2	F3	F2		
14	F1	F2	FF22	F3	F4	F7	L2			C4	C2	C2	C2	C3	C3	C3	L2	L5	FF11	F3		F1	F2	F2		
15	F2		F2	F3	F4	F2				C2	C2			C2	C3	L3	L2	L3	L2	F2	F2	F1	F2	F2		
16	F2	F2	F2		F2	F2					L2	C1	C2	C2	C3	L4	L3	L1	F2	F2	F1			F2		
17	F3	F4	F2	F2	F4	F1		C3		C2	C3	C2	C2						F1		F3	F2	F2			
18										C2	L1	L2	L1	L1	L1	L2	L2	L2	F2							
19	F1					K1	C1	C2		C2	C4	L2				L1	L2	L2			F1					
20			F2	FF42	F2	F2	C2	C2		C3	C2	C4	C2	CL32		L2	L2	L3	L2	F3	F4	F3	F5	F2	F4	
21	F1	FF22	F3	F3	F2		F2	C2		C3	C3	L2	HL11	H1	H3			C1	FF21	FF32	FF31	F4	F2	F3	F2	
22	F4	F3	F3	F2						C5	C5	L2						L1	F1			F1	FF12	F1	F2	
23	F3	FF11	F1							C3	C3	C1	C2			L2		L2	F2	F3	F2	F3	F2	F2	F2	
24	F3									C1	C3	C6	C2	C3	L3	L2	L3	L3	L4	F5	F4	F6	F5	F4	F4	F6
25	F3	F2	F2	F3	F4	F3	F5	L3		C3	C3	C2	L3	L3	L3	L3	L4	L5	F3	F2	F1	F1	F2	F2	F2	
26	F2	F2			F2	F2	F2	C3		C3	C2	L2	L3	L2	L3	L1	L2	L4	F2			F3	F2	F3	F2	
27	F1	F1		F2	F2	F1				C1	L2		L2	L2	L3	L2		L3	F3	F3	F3	F2				
28			F1		F1					C2			L2			L2		L1	F1			F2	F3	F2	FF12	
29	F3	F3	F4	F2	F2	F2	F1					C2	L2	L2	L2	L1	L3	L3	F2	F3			F2		F2	
30	F2	F1	F2	F3	F4	F1	F1			C2	C3	C2	C2	C4	L4	L2	L4	F2	F2	F3	F2				F2	
31	F2	F1	F2	F2			F1	C2		C2	L2	L2	CL12			C1	C1	F1	F1	F2	F2	F3	F2	F1	F1	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT																										
MED																										
UQ																										
LQ																										

OCT. 1984

TYPES OF ES

IONOSPHERIC DATA

OCT. 1984

FXI (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		AKITA							Lat. 39 43.5 N		Long. 140 08.0 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		X 42		A 46		X 42													X 66	X 57	X 53	X 49	X 48	X 47	
2		X 50	X 50	X 50		52	53	53											X 74	X 60	X 57	X 43	X 42	X 41	
3		X 41	X 38	X 39		47	45	41											X 72	X 56	X 39	X 40	X 42	X 43	
4		X 44	X 43	X 42	X 42	X 43	X 44												X 75	X 58	X 45	X 39	X 40	X 43	
5		X 44		52	47	49	50	33											X 60	X 49	X 47	X 48	X 48	X 50	
6		X 46	X 45	X 43	X 45	X 45	X 35												X 60	X 52	X 53	X 45	X 47	X 46	
7		X 47	X 47	X 49	X 49	X 46	X 47												X 60	X 64	X 63	X 63	X 53	X 48	
8		X 42	X 42	X 47	X 50	X 45	X 37												X 70	X 56	X 54	X 54	X 50	X 48	
9		X 42	X 38	X 40	X 45	X 44	X 38												X 43	X 45	X 48	X 47	X 45	X 44	
10		X 43	X 43	X 43	X 44	X 44	X 52												X 50	X 56	X 43	X 40	X 49	X 45	
11		X 50	X 51	X 51	X 55	X 47	X 43												X 60	X 60	X 59	X 54	X 50	X 53	
12		X 50	X 51	X 47	X 45	X 50	X 40												X 57	X 56	X 61	X 61	X 58	X 59	
13			53	53	52	54	46	44											X 53	X 57	X 57	X 57	X 53	X 50	
14		X 45	X 41	X 43	X 43	X 37	X 38												X 45	X 41	X 42	X 41	X 43	X 43	
15		X 42		38	43	39	39	37											X 59	X 46	X 39	X 41	X 44	X 44	
16			43	50	46	45	45	35											X 60	X 59	X 61	X 62	X 62	X 65	
17			60	57	48	55	47	44											X 45	X 42	X 39	X 42	X 42	X 50	
18			46	44	42	39	39	35											X 50	X 52	X 44	X 46	X 45	X 45	
19		X 42	X 48	X 37	X 37	X 37	X 34												X 62	X 68	X 55	X 52	X 42	X 39	
20		X 36	X 38	X 39	X 41	X 32	X 30												X 52	X 45	X 41	X 40	A 40	X 40	
21		X 40	X 39	X 39	X 34	X 33	X 33												X 45	X 49	X 43	X 42	X 43	X 40	
22		X 39	X 42	A	A	X 32	X 28												X 49	X 54	X 50	X 43	X 46	X 47	
23		X 46	X 44	X 44	X 42	X 40	X 35												X 51	X 48	X 43	X 38	X 38	X 39	
24		X 38	X 41	X 40	X 42	X 47	X 28												X 46	A	X 47	X 50	X 48	X 49	
25			50	52	53	48	49	33											X 53	X 35	X 38	X 37	X 38	A	
26		A		44	40	38	36	35											X 63	X 51	X 52	X 42	X 38	X 38	
27		X 38	X 38	X 38	X 39	X 41	X 36												X 42	X 40	X 42	X 44	X 45	X 44	
28		X 42	X 44	X 41	X 42	X 39	X 36												X 41	X 43	X 40	X 39	X 42	X 41	
29		X 41	X 41	X 40	X 40	X 38	X 34												X 41	X 43	X 43	X 38	X 40	X 39	
30		X 38	X 41	X 43	X 43	X 34	X 26												A	A	X 41	X 38	X 37	X 39	
31		X 38	X 38	X 40	X 44	X 42	X 31												X 39	X 40	X 47	X 41	X 40	X 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		30	31	29	30	31	31												30	29	31	31	30	30	
MED		X 42	X 44	X 43	X 44	X 43	X 36												X 53	X 52	X 47	X 43	X 44	X 44	
UQ		X 46	X 49	X 47	X 48	X 46	X 42												X 60	X 57	X 54	X 50	X 48	X 48	
LQ		X 41	X 41	X 40	X 41	X 38	X 34												X 45	X 45	X 42	X 40	X 42	X 40	

OCT. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9h)

Station	AKITA																							Lat.	39 43.5 N		Long	140 08.0 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																												
1	36	F	A	F	36	31	45	52	56	62	72	72	70	67	66	65	66	59	60	51	47	43	42	41																												
2	44	44	44	F	F	F	58	62	56	I C	62	74	83	69	63	66	65	73	81	68	54	51	37	36	35																											
3	35	32	33	F	F	35	46	51	55	63	70	74	84	86	83	74	75	74	66	H	50	33	34	36	37																											
4	38	37	36	36	37	38	50	56	72	69	70	72	72	71	73	70	81	77	69	52	39	33	34	37																												
5	38	F	F	F	F	27	49	61	64	81	88	73	67	70	68	68	72	64	54	43	41	42	42	44																												
6	40	39	37	39	39	29	51	65	60	73	86	71	73	77	70	74	75	70	54	46	47	39	41	40																												
7	41	41	43	43	40	41	59	66	67	75	88	91	86	99	96	83	74	68	54	58	57	57	47	42																												
8	36	36	41	44	39	31	48	62	64	78	80	88	89	82	78	78	74	69	64	50	48	48	44	R	42																											
9	36	32	34	F	F	32	52	70	67	62	76	88	83	82	83	92	70	59	37	39	42	41	39	38																												
10	37	37	37	38	38	48	59	64	63	84	82	89	82	73	71	74	67	44	50	37	34	F	39																													
11	44	45	45	49	41	37	46	64	77	86	83	89	86	86	76	76	66	60	54	F	50	F	F	F	F																											
12	44	45	41	F	F	32	47	61	57	67	73	82	90	77	68	70	65	A	51	50	F	F	F	F																												
13	F	F	F	F	F	39	38	46	52	54	64	66	66	87	94	74	66	A	58	47	51	51	51	F	F	F																										
14	39	35	37	37	31	32	51	52	64	61	69	69	74	71	66	72	76	66	39	35	36	35	37	F	F																											
15	36	F	F	33	33	31	43	52	57	60	73	74	76	67	71	67	62	58	53	40	33	35	F	F																												
16	F	F	F	F	F	F	46	54	61	71	82	73	74	85	76	73	66	65	54	53	F	F	F	F																												
17	F	F	F	F	F	F	47	58	67	70	69	101	101	73	66	64	74	66	39	36	33	F	F	F																												
18	F	F	F	33	33	29	42	56	67	67	88	85	80	76	69	66	60	56	44	46	38	40	39	39																												
19	36	42	31	31	31	28	44	67	78	76	72	75	67	79	78	64	57	58	56	62	49	46	S	36	33																											
20	30	32	33	35	F	24	33	54	R	75	67	73	83	107	73	67	76	69	60	46	39	35	34	A	34																											
21	34	33	33	28	27	F	43	58	74	R	66	67	69	82	66	73	56	66	56	39	43	37	36	37	34																											
22	33	36	A	A	26	F	44	60	60	57	84	87	64	71	79	64	60	48	43	48	44	37	40	41																												
23	40	38	38	36	34	29	43	57	56	70	94	114	77	71	71	66	65	58	45	42	37	32	32	33																												
24	32	35	34	36	41	22	37	54	65	77	91	106	99	82	69	67	61	56	40	A	41	F	F	F	F																											
25	F	F	F	F	F	27	41	66	94	74	74	85	72	67	70	67	61	76	47	29	32	31	32	A																												
26	A	F	F	32	30	29	42	71	86	86	77	78	85	74	64	66	74	77	57	45	46	36	32	32																												
27	32	32	32	33	35	30	38	R	65	67	61	69	84	88	78	62	68	63	48	36	34	36	38	39	38																											
28	36	38	35	36	33	30	39	60	68	71	H	68	76	78	73	72	58	61	43	35	37	34	33	36	35																											
29	35	35	34	34	32	28	41	52	59	69	70	74	76	77	77	63	62	51	35	37	37	32	F	32	33																											
30	32	F	F	37	28	20	35	55	66	72	85	77	78	66	64	67	62	53	A	A	35	F	F	F	F																											
31	32	32	F	F	36	25	36	51	55	60	H	73	H	67	71	67	73	62	69	55	33	34	S	41	35	34	32																									
CNT	26	26	26	27	24	28	31	31	31	31	31	31	31	31	31	31	30	30	30	29	30	27	24	25																												
MED	36	36	36	36	34	29	45	58	64	69	74	78	78	74	71	67	66	60	47	46	40	37	37	37																												
UQ	39	41	39	38	38	32	48	63	68	74	84	86	86	82	76	72	74	68	54	51	47	42	42	41																												
LQ	34	33	33	34	32	27	42	54	58	62	70	73	72	70	68	65	62	56	39	39	36	34	35	34																												

OCT. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF1 (0.01 MHZ)

135 E Mean Time (G.M.T. + 9 h)

Station **AKITA** Lat. **39 43.5 N** Long **140 08.0 E** Sweep 1 MHz to 25 MHz in 24sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	430	L	L	430	L	L								
2									L	L	420	L	L	430	L	L	L	L						
3									L	L	420	L	A	A	L	L	A							
4									L	L	420	L	L	L	L									
5									L	L	420	L	L	L	L	L								
6									L	L	L	L	L	L	L	L								
7									L	L	L	L	L	L	L	L								
8									L	L	410	L	L	L	L	L	L							
9									L	L	L	L	L	L	L	L								
10									L	L	L	L	L	A	A	A								
11									L	L	370	A	L	L	L	L	L							
12									L	L	400	L	L	L	L	L								
13									L	L	A	A	A	L	L	A	A							
14									L	L	A	A	L	L	L	L	L							
15									L	L	L	L	L	L	L	L								
16									L	L	410	L	L	L	L	L								
17									L	L	A	A	L	L	L	L								
18									L	L	L	L	L	L	L	L								
19									L	L	L	L	L	L	L	L								
20									L	L	L	L	L	L	L	L	A							
21									L	L	L	L	L	L	L	L	410	300						
22									L	L	L	L	L	L	L	L	A	A						
23									L	L	L	L	L	L	L	L								
24									L	L	L	L	L	L	L	L								
25									A	L	A	L	L	L	L									
26									L	L	L	L	L	L	L	L								
27									L	L	L	L	L	L	L	L								
28									L	L	L	L	L	L	L	L								
29									L	L	L	L	L	L	L	L								
30									L	L	L	L	L	L	L	L								
31									L	L	L	L	L	L	L	L								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										5	5	8	6	1	2	1								
MED										420	420	425	420	430	405	300								
UQ										420	430	430	430											
LQ										400	410	420	420											

OCT. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

OCT. 1984

FOE (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39° 43' 5" N				Long. 140° 08' 0" E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	A	A	A	A	A	A	A	300	270	225							
2							S	A	I	C	270	290	305	310	315	A	A	A	A	S				
3							S	A	A	A	A	A	A	A	A	A	A	A	S					
4							S	230	A	A	A	A	A	A	300	265		A	S					
5							S	A	A	A	A	315	320	310	300	270		A	S					
6							S	230	A	A	310	320	315	310	290	265	220		S					
7							S	235	A	300	305	315	320	310	290	265	225		S					
8							S	A	265	295	A	A	A	A	285		A	A	S					
9							S	A	A	A	A	A	A	305	285	255		A	S					
10							A	A	260	290	A	A	A	A	A	A	A	A	S					
11							S	A	265	A	A	315	315	305	280	250		A	S					
12							S	A	260	280	300	310	315	305	280	255		A	S					
13							S	210	255	280	A	A	A	A	A	A	A	A	S					
14							S	A	A	A	A	A	A	A	280	250	210		S					
15							S	220	A	A	A	A	A	A	A	A	A	A	S					
16							S	215	A	A	A	315	A	300	A	A	A	S	S					
17							S	A	255	275	295	A	A	300	A	245		A	S					
18							S	225	A	A	A	A	A	300	280	250		A	S					
19							S	A	A	A	A	A	A	290	270	245		A	S					
20							S	A	A	A	A	A	A	A	A	A	A	A	S					
21							S	A	A	A	A	300	290	280	255		A	A	S					
22							S	205	A	A	A	A	A	A	A	A	A	A	S					
23							S	200	R	245	A	A	A	A	A	A	A	A	S					
24							S	205	A	A	A	A	A	A	295	270	235		A	S				
25							S	A	A	A	A	A	A	A	A	A	A	A	S					
26							S	A	A	A	A	A	A	A	A	A	A	A	S					
27							S	A	A	A	A	305	A	290	A	A	A	A	S					
28							S	200	255	290	300	305	300	300	270	230	195		S					
29							S	200	255	A	A	A	A	A	290	265	230		A	S				
30							S	200	240	A	295	305	A	A	A	240		A	S					
31							S	205	A	290	300	305	310	290	270	240		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								14	11	9	8	12	9	16	17	17	5							
MED								208	255	290	300	310	315	300	280	250	220							
UQ								225	262	290	305	315	315	305	290	265	225							
LQ								200	255	280	298	305	310	290	270	240	210							

OCT. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		AKITA		Lat. 39 43.5 N				Long 140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation													
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A	41	25	53	35	44	51	16	44	36	38	38	35	37	36		35	32	36	54	16	24	19	20	25
2	J A	24	24	25	35	44	44	29	50	31							44	44	36	36	16	15	15	20	16
3	E S	15	16	16	20	16	15	16	29	30	40	38	51	51	64	46	50	54	29	19	18	21	20	15	37
4	J A	31	19	29	24	21	41	21		35	41	66	57	71	54			35	42	43	44	50	38	44	24
5	E S	15	21	23	18	16	16	17	50	32	33	34					32	29	22	15	16	15	23	46	24
6	J A	20	20	18	15	15	15	16		38	40							25	28	20	23	15	15	16	15
7	E S	16	16	16	16	16	16	20	26	30									16	15	15	15	15	15	15
8	E S	16	16	16	15	17	16	26	31	31	36	35	34	32	31			26	24	24	22	30	52	26	29
9	E S	15	18	16	18	28	16	17	26	36	33	34	44	34				32	40	41	25	52	21	22	23
10	E S	15	15	15	16	15	21	25	32	30								42	42	89	76	48	25	33	18
11	J A	20	16	15	15	15	15	22	30									29	29	25	47	25	15	24	15
12	E S	15	15	15	16	15	15	16	31	35	43	46	37	39	36	36	30	46	134	57	24	24	20	18	16
13	E S	15	15	15	23	16	15	16		36	40	50	52	43	54	57	66	83	27	41	51	29	41	52	42
14	J A	42	29	23	25	28	23	50	43	35	45	50	45	40	38				44	41	38	41	27	20	19
15	E S	16	15	15	50	23	23	17		38	35	43	49	37	37	36	36	46	26	15	15	15	34	50	15
16	E S	15	23	25	31	34	25	20	27	32	34	46						74	64	93	50	29	15	15	20
17	J A	21	50	50	44	29	20	21	25	50	36	46	76	44				44	44	25	25	29	28	28	16
18	E S	15	16	19	15	15	16	15		31	41	32	32	51	37	20	28	28	25	15	18	24	15	15	16
19	J A	24	29	20	24	20	16	19	40	37	44	53	38	44	32			24	44	32	44	20	20	15	15
20	E S	15	16	15	25	24	16	17	22	44	70	50	31	54	53	44	61	26	24	24	21	25	25	53	31
21	J A	24	25	15	20	20	20	22	36	43	36	32						28	24	24	20	20	16	16	21
22	J A	25	30	54	44	26	24	16	30	38	30	46	50	44	54	66	73	46	32	26	24	21	20	16	15
23	J A	29	27	15	15	15	15	16	24									50	38	33	38	24	42	26	32
24	J A	24	29	24	19	16	15	16	27	47	40	58	50	36				20	16	23	48	24	23	25	20
25	J A	24	26	18	15	48	16	32	30	50	36	50	80	37	32	43	36	48	29	31	18	16	19	27	48
26	J A	54	23	20	29	24	16	22	34	51	46	47	54	96	70	92	46	29	16	16	16	25	44	32	25
27	J A	25	24	45	26	19	16	16	24	29	33	34	40	33	30	44	52	36	34	24	16	30	25	20	23
28	J A	18	15	15	15	15	21	15											18	16	16	16	74	88	34
29	E S	15	37	20	20	20	18	20	24	32	36	44	44	57				30	36	30	24	27	15	15	15
30	E S	16	29	24	26	26	18	19		30	32	42						42	67	88	51	90	42	34	27
31	J A	20	26	16	15	15	20	16	30	44								27	36	15	20	23	16	25	24
	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	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A	20	23	18	20	20	16	17	27	35	36	44	37	37	32	29	31	32	28	25	23	24	23	24	21
UQ	J A	24	26	24	26	26	21	22	32	38	40	48	50	49	50	44	36	45	39	41	41	29	31	32	26
LQ	E S	15	16	15	16	16	16	23	30	33	34	24	27					26	24	20	16	16	19	17	16

OCT. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat.	39 43.5 N				Long	140 08.0 E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	25	20	A A 53	28	30	E E S 16	32	35	37	35	35	36	35	G	35	30	G	E S 42	16	20	E	E	E	
2	E	20	18	E	E	E	18	25	24	C	G	G	G	34	35	30	28	G E S 16	E S 15	E S 15	18	E E S 16		
3	E S 15	E S 16	E S 16	E	E S 16	E S 15	E S 16	26	30	32	34	37	46	59	41	30	50	25	E	E	E	E E S 15	23	
4	E	E	23	22	20	32	18	G	30	33	35	38	42	32	G	G	30	31	21	43	22	E	18	E
5	E S 15	E	E	E	E S 16	E S 16	E S 17	G	30	31	34	G	G	G	G	30	27	21	E S 15	E S 16	E S 15	18	E	E
6	E	E	E	E S 15	E S 15	E S 15	E S 16	G	27	30	G	G	G	G	G	18	G	18	20	E S 15	E S 15	E S 16	E S 15	
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	19	25	30	G	G	G	23	22	G	G	G	E S 16	E S 15	E S 15	E S 15	E S 16	E S 15	E S 15
8	E S 16	E S 16	E S 16	E S 15	E	E S 16	19	29	30	35	35	34	32	31	G	28	25	19	45	19	19	24	21	20
9	E S 15	E	E	E	E	E S 16	E S 17	25	30	31	32	34	33	G	G	G	26	33	E	E	37	E	E	E
10	E S 15	E S 15	E S 15	E S 16	E S 15	E	21	30	29	G	35	33	35	53	41	41	40	47	E	37	21	E	28	E
11	E	E S 16	E S 15	E S 15	E S 15	E S 15	21	25	G	30	43	25	G	G	G	30	26	25	E	E	E	E S 15	19	E S 15
12	E S 15	E S 15	E S 15	E S 16	E S 15	E S 15	E S 16	26	29	34	37	37	38	36	34	30	28	A A 134	23	E	E	E	E E S 16	
13	E S 15	E S 15	E S 15	E	E S 16	E S 15	E S 16	G	34	40	48	51	40	35	51	56	A A 83	G	35	23	E	39	18	20
14	25	28	E	E	E	E	47	25	30	42	44	42	35	37	G	23	G	18	22	E	20	E	E	E
15	E S 16	E S 15	E S 15	E	E	E S 17	G	30	33	37	38	33	31	30	28	22	G E S 15	E S 15	E S 15	E S 15	E	E	E S 15	
16	E S 15	E	E	21	19	E	G	26	30	32	34	G	33	37	31	47	44	E	20	E	E S 15	E S 15	E	
17	E	E	E	22	28	E	20	25	20	36	43	65	40	G	29	27	28	20	E	19	23	E	E E S 16	
18	E S 15	E S 16	E	E S 15	E S 15	E S 16	E S 15	G	31	31	32	32	32	23	19	18	22	18	E S 15	E	E	E S 15	E S 16	E S 16
19	E	E	E	E	E	E S 16	18	32	34	33	33	32	36	26	G	G	22	29	23	20	E	E	E S 15	E S 15
20	E S 15	E S 16	E S 15	20	20	E S 16	E S 17	22	30	37	34	31	30	29	30	54	22	22	22	E	18	E A A 53	24	
21	E	18	E S 15	E	E	E	19	30	28	29	30	G	G	G	G	24	20	18	E	E	E S 16	E S 16	E S 15	E
22	23	28	A A 54	A A 44	20	E S 16	25	31	30	33	34	31	35	41	51	31	22	E	E	19	E	E S 16	E S 15	
23	27	20	E S 15	E S 15	E S 15	E S 15	24	G	29	42	52	31	37	29	25	37	18	22	26	23	29	E	25	
24	E	25	20	E	E S 16	E S 15	E S 16	24	30	32	32	50	31	G	G	G	20	E S 16	E A A 48	21	18	E	E	
25	E	23	E S 15	E S 15	E S 16	30	28	50	31	45	37	32	31	30	32	46	G	19	E	E S 16	E	E A A 48		
26	A A 54	E	E	E	E S 16	G	32	25	30	31	37	52	43	42	26	20	E S 16	E S 16	E S 16	18	20	21	20	
27	E	E	E	21	E S 16	E S 16	24	28	30	30	28	33	20	30	31	34	31	20	E S 16	E	20	E	19	
28	E	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	G	G	G	G	G	G	G	G	G	E S 18	E S 16	E S 16	E S 16	E	E	18
29	E S 15	E	E	E	E	E	G	G	28	30	32	32	34	G	29	21	20	G	E	E S 15	E S 15	E S 15	E E S 15	
30	E S 16	22	E	E	E	E	G	G	29	31	32	G	33	30	29	G	28	21	A A A A 88	51	21	E	E	E
31	E	E	E S 16	E S 15	E S 15	E S 16	24	28	G	G	G	G	G	G	G	20	34	E S 15	E	18	E S 16	E	19	E
	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	31	31	31	31	31	31	31	31
MED	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	25	30	31	34	33	33	29	29	27	27	18	16	16	16	E	E E E 15	E E E 15
UQ	E S 16	19	E S 16	E S 16	E S 16	E S 16	18	26	30	33	36	37	36	35	32	30	32	25	22	20	20	17	17	18
LQ	E	E	E	E	E	E S 16	G	28	30	32	E G 23	26	G	G	E G 18	21	E G 16	E	E	E E 15	E	E	E	E

OCT. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FMIN (0.1 MHz)

135 E Mean Time (G.M.T. + 9h)

Station		AKITA							Lat.	39 43.5 N			Long	140 08.0 E			Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1		E 16	E 15	E 15	E 15	E 12	E 15	E 16	16	17	17	17	17	18	17	17	17	17	E 16	E 16	E 16	E 15	E 15	E 15	E 15		
2		E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	17	C	17	18	17	17	17	17	16	E 16	E 16	E 15	E 15	E 15	E 15	E 16		
3		E 15	E 16	E 16	E 15	E 16	E 15	E 16	16	17	17	17	17	18	18	18	17	16	E 16	E 15	E 15	E 16	E 16	E 15	E 16		
4		E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	19	17	17	17	17	17	E 16	E 16	E 16	E 16	E 15	E 15	E 16		
5		E 15	E 15	E 15	E 15	E 16	E 16	E 17	16	17	17	17	18	18	17	18	17	16	E 16	E 15	E 16	E 15	E 16	E 15	E 15		
6		E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	17	18	16	18	17	17	17	18	16	E 15	E 16	E 15	E 15	E 15	E 16	E 15		
7		E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	18	16	16	18	17	17	16	E 16	E 15	E 15	E 15	E 16	E 15	E 15		
8		E 16	E 16	E 16	E 15	E 15	E 16	E 16	16	16	16	19	20	19	19	18	16	E 16	E 16	E 16	E 16	E 15	E 16	E 15	E 16		
9		E 15	E 15	E 16	E 15	E 15	E 16	E 17	16	17	17	17	17	17	19	17	17	16	E 16	E 16	E 16	E 15	E 15	E 16	E 15		
10		E 15	E 15	E 15	E 16	E 15	E 15	E 16	E 16	16	17	17	16	17	18	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 15		
11		E 15	E 16	E 15	E 15	E 15	E 15	E 16	E 16	18	17	17	17	16	21	19	17	E 16	E 16	E 15	E 16	E 16	E 15	E 15	E 15		
12		E 15	E 15	E 15	E 16	E 15	E 15	E 16	E 16	17	16	18	16	16	16	17	16	E 16	E 16	E 16	E 15	E 15	E 15	E 15	E 16		
13		E 15	E 15	E 15	E 15	E 16	E 15	E 16	16	17	17	16	17	17	17	17	16	16	E 16	E 16	E 15	E 15	E 15	E 16	E 16		
14		E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	17	17	17	17	17	16	E 16	E 15	E 15	E 15	E 15	E 15	E 16		
15		E 16	E 15	E 15	E 15	E 15	E 15	E 17	16	16	17	17	17	18	17	16	16	16	E 16	E 15	E 15	E 15	E 15	E 15	E 15		
16		E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	17	17	18	17	18	16	E 16	E 16	E 16	E 15	E 15	E 15	E 15	E 16		
17		E 15	E 15	E 15	E 15	E 15	E 15	E 15	16	16	18	17	18	18	18	18	16	17	E 16	E 15	E 15	E 15	E 15	E 15	E 16		
18		E 15	E 16	E 15	E 15	E 15	E 16	E 15	16	17	16	17	17	17	17	16	16	16	E 16	E 15	E 15	E 16	E 15	E 15	E 16		
19		E 15	E 15	E 15	E 15	E 15	E 16	E 16	E 16	16	17	17	17	17	17	17	17	16	E 16	E 16	E 15	E 15	E 16	E 15	E 15		
20		E 15	E 16	E 15	E 15	E 15	E 16	E 17	E 17	16	17	17	17	17	17	17	16	16	E 17	E 15	E 16	E 15	E 16	E 15	E 16		
21		E 15	E 15	E 15	E 15	E 15	E 15	E 16	E 18	16	18	18	18	18	18	16	18	16	E 15	E 16	E 16	E 16	E 16	E 15	E 15		
22		E 15	E 15	E 15	E 14	E 15	E 15	E 16	E 16	17	17	18	18	17	17	16	16	16	E 15	E 15	E 15	E 16	E 16	E 16	E 15		
23		E 16	E 15	E 15	E 15	E 15	E 15	E 16	E 17	17	17	18	E 24	18	17	16	16	16	E 15	E 16	E 16	E 15	E 16	E 16	E 15		
24		E 15	E 15	E 15	E 15	E 16	E 15	E 16	E 16	17	17	18	17	18	17	16	17	E 16	E 16	E 15	E 15	E 15	E 15	E 15	E 15		
25		E 15	E 15	E 15	E 15	E 15	E 16	E 16	E 16	16	17	17	17	16	17	16	16	E 16	E 16	E 16	E 15	E 16	E 15	E 15	E 15		
26		E 16	E 15	E 16	E 15	E 15	E 16	E 15	E 16	17	16	17	17	17	17	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 15		
27		E 16	E 16	E 16	E 15	E 16	E 16	E 16	E 16	17	17	17	17	17	16	18	16	16	E 16	E 15	E 16	E 16	E 18	E 15	E 15		
28		E 16	E 15	E 15	E 15	E 15	E 16	E 15	E 16	16	17	18	18	19	18	16	17	15	E 18	E 16	E 16	E 16	E 16	E 16	E 15		
29		E 15	E 15	E 15	E 15	E 14	E 15	E 15	E 16	16	18	17	17	17	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15	E 15		
30		E 16	E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	17	18	17	17	16	E 16	E 16	E 16	E 15	E 15	E 15	E 15		
31		E 16	E 15	E 16	E 15	E 15	E 15	E 16	E 16	16	16	17	18	16	19	17	17	E 16	E 15	E 15	E 15	E 16	E 15	E 15	E 15		
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT		31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31		
MED		E 15	E 15	E 15	E 15	E 15	E 15	E 16	E 16	17	17	17	17	17	17	17	17	16	E 16	E 16	E 15	E 15	E 15	E 15	E 15		
UQ		E 16	E 15	E 15	E 15	E 15	E 16	E 16	E 16	17	17	18	18	18	18	17	17	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16		
LQ		E 15	E 15	E 15	E 15	E 15	E 15	E 16	E 16	16	17	17	17	17	17	16	16	E 16	E 16	E 15	E 15	E 15	E 15	E 15	E 15		

OCT. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39 43.5 N				Long 140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation														
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	305	F	A	F	360	F	365	360	380	345	345	340	325	340	335	345	350	345	345	340	315	310	320	305			
2	310	300	295	F	F	F	375	370	380	I C	340	335	340	360	335	335	330	345	345	360	325	330	310	305	315		
3	320	310	300	F	F	325	370	360	365	345	340	315	325	315	325	330	345	340	370	350	H	285	295	275	300		
4	320	305	305	310	330	350	365	355	350	360	340	335	335	330	340	340	345	350	355	365	335	320	295	315			
5	305	F	F	F	F	315	365	365	355	355	350	370	330	340	350	340	350	360	350	325	305	295	305	315			
6	300	305	315	330	365	325	350	380	370	325	360	340	340	335	350	335	355	350	340	320	330	315	310	305			
7	290	300	300	315	315	305	355	380	375	320	325	305	310	315	330	335	360	355	300	310	310	315	320	330			
8	295	275	315	315	360	305	335	370	345	335	325	335	335	345	335	345	350	335	335	335	290	310	285	R	315		
9	305	310	310	F	F	310	345	365	380	355	340	330	320	320	335	360	370	355	340	295	290	315	310	310			
10	315	305	300	320	345	F	375	365	345	360	305	330	335	330	340	340	350	375	325	325	340	295	F	290			
11	300	305	315	350	350	355	325	355	345	365	335	335	330	335	340	355	355	360	330	F	F	F	F	F			
12	290	285	310	F	F	310	335	375	370	345	340	330	345	340	340	355	355	A	315	315	F	F	F	F			
13	F	F	F	F	F	320	350	365	355	360	335	315	315	345	350	360	A	360	300	310	305	335	310	F	F		
14	300	315	300	335	320	300	365	375	370	355	360	340	350	345	350	340	355	370	345	320	305	315	315	F	315		
15	360	325	F	F	330	325	310	345	370	380	310	330	330	340	345	345	360	365	360	360	350	305	310	F	F		
16	F	F	F	F	F	F	F	F	335	365	375	335	350	355	350	315	340	350	360	350	355	330	305	F	F	F	F
17	F	F	F	F	F	F	F	F	355	350	360	360	320	335	345	360	350	355	350	360	355	360	325	F	F	F	F
18	F	F	F	F	345	345	355	380	340	350	335	330	350	340	355	370	360	370	335	325	305	305	280	285	F	F	
19	295	325	310	295	280	285	320	360	340	320	285	320	315	320	335	345	350	325	285	335	310	320	305	S	305		
20	285	295	270	310	F	285	335	335	R	355	320	330	295	355	340	350	340	355	365	340	340	310	325	A	290		
21	325	305	345	300	345	285	325	345	340	R	360	345	315	365	355	360	340	355	345	325	290	325	315	315	295		
22	295	345	A	A	305	295	340	360	355	335	340	360	380	325	360	355	365	355	295	295	300	310	305	315	F	F	
23	305	325	320	310	325	300	345	370	320	330	315	350	345	340	360	365	350	360	335	325	335	A	300	295	F	F	
24	300	300	295	330	360	310	355	360	325	325	315	335	340	340	345	360	355	355	345	A	320	295	310	300	F	F	
25	F	F	F	F	F	295	335	335	370	360	340	350	365	345	340	360	325	365	375	305	310	310	305	A	F	F	
26	A	F	F	F	325	315	340	355	370	350	345	335	330	350	345	340	340	355	350	315	330	375	305	305	F	F	
27	285	310	295	305	330	330	350	R	350	360	375	330	350	340	360	340	365	365	365	375	325	320	310	300	290	F	F
28	315	315	315	335	335	310	345	375	365	365	H	345	350	345	340	360	360	350	320	325	325	340	315	305	F	F	
29	310	315	315	345	345	320	365	370	390	375	340	360	340	335	370	365	365	370	335	300	360	325	300	305	F	F	
30	320	F	F	F	400	325	365	365	380	350	345	350	360	350	350	355	365	360	A	A	350	F	F	F	F		
31	325	320	F	F	390	360	355	380	400	365	H	345	H	390	335	350	360	345	370	345	335	330	S	335	335	340	345
CNT	26	26	26	27	24	28	31	31	31	31	31	31	31	31	31	31	30	30	30	29	30	26	24	25	F	F	
MED	305	308	310	315	335	312	350	365	360	350	340	335	340	340	345	355	355	355	338	325	318	312	305	305	F	F	
UQ	320	320	315	330	355	328	365	372	372	360	345	350	348	345	350	360	360	360	350	335	330	320	315	315	F	F	
LQ	295	300	300	310	322	302	340	358	345	335	330	330	330	335	340	340	350	350	325	310	305	310	300	300	F	F	

OCT. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1984

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9h)

Station	AKITA							Lat.	39° 43.5' N			Long	140° 08.0' E			Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	380	L	L	390	L	L								
2									L	I	C	L	395	390	L	L	L	L						
3									L		395	L	A	A	L	L	A							
4									L	L	390	L	395	L	L	L								
5									L		375	L	L	L	L	L	L							
6									L	L	L	L	405	L	L	L	L							
7									L	L	L		410	L	L	L	L							
8									L	L	380	L	L	L	L	L	L							
9									L	L	L	L	L	L	L	L	L							
10									L	L	L	L	L	A	A	A								
11									L	410	A	L	L	L	L	L								
12									L	395	L	L	L	L	L									
13									A	A	A	L	L	A	A									
14									L	A	A	L	L	L	L	L								
15									L	L	L	L	L	L	L	L								
16									L	380	405	L	L	L	L	L								
17									L	A	A	L	L	L	L									
18									L	L	L		385	L	L									
19									L	L	360	L	L	L	L									
20									L	L	L	L	L	L	L	A								
21									L	L	L	L	L	L	375	405								
22									L	L	L	380	395	L	L	A	A							
23									L	L	L	A	395	L	L									
24									L	L	L	A	L	L	L									
25									A	L	A	L	L	L										
26									L	L	L	L	A	A	A									
27									L	L	L	L	L	L										
28									L	L	L	L	400	L	L	L								
29									L	L	L	L	L	L	L									
30									L	L	L	L	L	L	L									
31									L	L	L	L	L	L										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										5	5	8	6	1	2	1								
MED										390	380	398	390	390	378	405								
UQ										395	395	405	395											
LQ										390	380	388	385											

OCT. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1984 H^oF2 (KM)

135 E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39 43.5 N				Long 140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									225	270	255	255	270	270	260	260	240							
2									225	I ^c 260	270	255	245	265	265	260	250							
3										245	260	290	255	265	270	255	A 240							
4									240	230	250	250	260	260	260									
5									240	245	245	230	295	270	255	255								
6									220	250	240	250	260	270	255	255								
7									220	270	250	245	270	290	250	220								
8									250	260	255	275	250	235	280	245	235							
9									225	230	255	250	245	255	255	240								
10									215	245	255	255	250	255	240									
11									230	230	250	250	250	270	240	240								
12									235	240	255	270	245	250	240									
13									250	260	A	270	245	230	A									
14									240	240	250	255	245	250	250	245								
15									340	250	250	250	240	260	245									
16									240	250	250	270	250	245	240									
17									240	250	270	240	240	240	230									
18									240	250	240	235	255	240										
19									270	340	280	305	290	255	235									
20									250	255	260	310	245	240	255	250								
21									245	230	280	265	245	260	250	230								
22									225	270	265	240	240	280	240	A 240								
23									230	255	275	235	230	255	240									
24									280	250	255	250	245	250	240									
25									225	230	225	240	230	240										
26									230	240	240	230	250	245	240									
27									220	235	250	250	235	230										
28									225	230	235	245	245	270	245									
29									230	240	235	260	260	240										
30									240	255	230	240	240	240	250									
31									225	240	240	260	250	250										
CNT									20	31	31	30	31	31	30	18	4							
MED									230	240	250	250	250	255	250	242	240							
UQ									240	255	258	255	260	268	255	255	245							
LQ									225	230	242	240	245	245	240	240	238							

OCT. 1984 H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1984

H^oF (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat.	39 43.5 N				Long.	140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	A	A	A	A	A	220	210	220	A	220	220	210	200	205	220	A	A	230	A	215	250	235	240	245			
2	270	260	270	295	245	250	210	220	210	I C	200	200	210	220	230	235	A	230	205	220	220	220	270	255			
3	250	290	295	275	270	245	210	225	220	210	210	205	A	A	A	230	A	225	205	200	240	290	295	A			
4	265	270	A	A	250	A	205	220	200	220	210	205	A	200	245	240	250	230	225	A	220	245	280	285			
5	270	285	285	295	230	E S	285	210	220	225	200	200	H	195	195	195	245	245	240	215	220	225	250	280	270	250	
6	265	280	270	230	210	255	230	220	205	200	200	200	200	235	245	240	240	225	205	235	A	230	255	250	275		
7	280	280	255	230	230	250	225	215	210	210	200	195	235	230	230	215	230	230	230	260	220	245	220	225			
8	265	E S	325	275	250	210	265	220	225	220	225	225	215	240	220	220	235	240	225	A	225	275	A	295	250		
9	260	270	280	260	220	235	220	230	220	205	200	210	200	225	220	240	220	215	200	290	A	265	280	260			
10	270	280	295	265	220	245	260	210	210	210	205	235	220	A	A	A	235	230	205	A	A	E S	290	A	E S	295	
11	280	275	235	210	205	230	215	220	225	200	A	210	200	210	H	195	A	230	215	220	270	255	245	240	275		
12	255	255	255	280	240	245	240	210	210	200	A	A	220	225	A	230	230	A	230	245	260	250	270	235			
13	255	250	275	245	230	245	220	220	225	A	A	A	A	235	A	A	A	220	A	275	255	240	270	235			
14	A	A	290	240	215	255	A	210	210	A	A	A	220	A	200	H	210	230	210	210	240	A	275	270	265		
15	225	240	275	260	245	250	230	215	225	205	A	A	200	205	200	230	220	210	210	210	235	250	260	235			
16	255	270	280	275	225	245	210	225	230	220	230	210	205	200	A	A	A	230	A	205	260	230	250	225	270		
17	250	220	260	A	A	255	230	220	225	A	A	A	A	210	220	220	240	205	205	230	A	245	E S	285	275		
18	275	245	230	240	230	230	205	210	230	210	210	210	200	200	225	235	215	210	210	225	235	260	300	285			
19	325	250	225	270	305	E S	300	230	240	250	225	220	215	A	235	240	230	225	255	270	220	255	230	E S	290	240	
20	250	E S	320	E S	315	280	A	E S	335	270	245	A	A	240	195	195	230	235	A	225	210	225	225	265	260	A	A
21	240	290	225	E S	295	235	E S	340	250	255	220	210	200	190	200	H	210	200	230	220	200	255	245	260	245	300	
22	A	A	A	A	A	E S	270	240	230	225	200	205	230	205	A	A	A	220	220	240	250	250	245	270	260		
23	A	A	260	245	245	250	E S	280	230	225	205	220	A	A	220	A	210	225	225	210	230	245	250	A	280	A	
24	300	A	275	240	205	E S	270	235	230	220	220	220	A	220	220	220	230	215	210	220	A	245	275	270	270		
25	290	A	280	250	210	E S	300	A	230	A	200	A	A	200	205	240	240	A	210	200	240	260	250	270	A		
26	A	260	235	270	250	A	250	225	230	220	205	200	A	A	A	A	230	235	220	205	235	235	220	275	A	275	
27	280	275	300	285	245	200	225	205	220	205	200	240	230	235	225	230	220	220	A	210	250	265	280	280	300		
28	285	255	250	235	245	255	215	205	220	210	195	200	240	200	240	220	225	195	235	235	240	235	270	295	A		
29	260	260	250	245	220	260	220	205	210	215	210	205	200	240	235	220	215	200	210	260	215	225	290	280			
30	285	A	280	220	200	E S	310	210	220	220	205	230	230	210	220	230	240	225	210	A	A	220	240	260	260		
31	265	255	275	245	200	210	210	200	200	205	205	200	190	235	220	225	220	205	200	255	240	230	250	235			
CNT	26	25	28	27	27	30	29	31	28	27	23	22	25	25	24	24	26	29	27	27	28	29	29	27			
MED	265	265	274	250	230	246	220	220	220	210	205	208	205	220	225	230	228	215	210	240	242	248	270	262			
UQ	280	278	280	274	245	E S	270	230	228	225	218	220	215	220	230	238	238	235	225	225	255	255	260	280	276		
LQ	255	255	250	240	212	245	210	212	210	202	200	200	200	205	220	222	220	210	205	225	230	240	260	248			

OCT. 1984

H^oF (KM)

IONOSPHERIC DATA

OCT. 1984

H[°]E (KM)

135 E Mean Time (G.M.T. + 9 h)

Station	AKITA																								
Lat.	39 43.5 N						Long.	140 08.0 E						Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							S	110	110	110	110	105	105	105	110	110	115							S	
2							S	A	A	I	C	105	105	105	105	105	110	110						S	
3							S	110	110	110	110	105	105	105	105	110	110							S	
4							S	110	110	110	105	105		A	A	105	110	115						S	
5							S	115	105	105	105	105	105	100	110	110	110							S	
6							S	110	A	105	105	105	100	105	110	110	115							S	
7							S	110	110	100	100	110	110	110	110	110	110							S	
8							S	115	110	110	110	110	110	110	110	110							S	S	
9							S	110	110	105	105		A	A	105	105	105						A	S	
10							S	S	110	105	105	105	105	105		A	A	A						S	
11							S	S	110	A	A	110	105	110	110	110							S	S	
12							S	S	110	110	110	110	110	110	110	110							S	S	
13							S	115	110	110	110	105	105	105		A	A	A					S		
14							S	A	105	105	110	105	110		A	105		A	110					S	
15							S	110	110	110	105		A	A	A	A	A	A						S	
16							S	115	110	100	105	105	105	105	110	105							S	S	
17							S	115	A	110	110	110	105	110		A	105		A				S		
18							S	115	105	105		A	A	A		110	110		A				S		
19							S	S	110	105	110	105		A	A	100	105		A				S		
20							S	S	110	110	105	105	105		A	A	A	A						S	
21							S	S	110	110	110	105	100	100	100		A	A						S	
22							S	S	110	110	105		A	A	A	A	A							S	
23							S	S					A	A	A	A	A							S	
24							S	S	110	110	110		A	A	100	105	115						S	S	
25							S	S	110	110		A	A	A	A	A	110						S	S	
26							S	S	105		A	A	A	A	A	A	A						S	S	
27							S	S	105		A	A	A	A	110		A	A						S	
28							S	S															S	S	
29							S	S	110	110	110	105		A	105	110		A	A				S		
30							S	S	110	110	110	110	110	110		A	110						S	S	
31							S	S	110	110	110	110	100	110	105		A						S	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								13	28	28	26	22	19	21	20	19	8								
MED								110	110	110	110	105	105	105	110	110	110								
UQ								115	110	110	110	110	110	110	110	110	115								
LQ								110	110	105	105	105	105	105	105	110	110								

OCT. 1984

H[°]E (KM)

IONOSPHERIC DATA

OCT. 1984
H°ES (KM)
135° E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39° 43' S N	Long. 140° 08' 0 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	110	125	120	110	115	S	110	110	110	110	110	105	110	G	140	125	115	110	S	110	105	105	105
2	105	100	100	100	100	100	105	100	105	C	G	G	G	120	115	115	110	110	S	S	S	100	100	S
3	S	S	S	105	S	S	S	110	115	110	110	110	105	105	105	115	110	105	110	105	105	100	S	105
4	105	100	100	100	100	95	105	G	120	110	105	105	100	100	G	G	135	120	100	110	105	105	100	100
5	S	105	100	100	S	S	S	105	110	110	105	G	G	G	G	145	130	120	S	S	S	105	105	100
6	100	100	100	S	S	S	S	G	100	110	G	G	G	G	G	G	95	95	95	90	S	S	S	S
7	S	S	S	S	S	S	140	155	115	G	G	100	100	G	G	G	G	S	S	S	S	S	S	S
8	S	S	S	S	130	S	135	140	135	125	120	120	125	120	G	155	120	110	110	110	105	100	100	105
9	S	100	S	100	120	S	S	115	110	110	110	105	105	G	G	G	100	100	100	100	95	100	110	110
10	S	S	S	S	S	115	150	130	140	G	110	110	110	105	100	100	100	100	105	100	95	110	110	110
11	110	S	S	S	S	S	135	130	G	100	95	100	G	G	G	145	120	110	110	105	105	S	105	S
12	S	S	S	S	S	S	S	145	135	135	130	140	135	130	130	140	120	105	100	100	100	105	105	S
13	S	S	S	110	S	S	S	G	145	120	110	105	105	105	105	105	105	135	105	105	105	100	100	100
14	100	100	100	100	100	105	100	100	125	120	115	110	110	105	G	100	G	105	105	105	105	100	105	105
15	S	S	S	105	100	100	S	G	120	110	105	105	105	105	100	105	100	105	S	S	S	105	110	S
16	S	105	105	100	100	100	105	130	115	110	110	G	110	G	110	105	105	105	105	105	105	S	S	130
17	100	120	105	110	110	100	135	140	100	120	120	110	105	G	105	110	100	100	105	100	100	100	100	S
18	S	S	105	S	S	S	S	G	105	105	105	100	100	100	100	100	100	100	S	100	110	S	S	S
19	105	100	100	100	100	S	120	120	115	110	110	105	105	105	G	G	100	100	100	105	110	110	S	S
20	S	S	S	100	100	S	S	130	110	110	110	110	125	100	115	110	100	100	105	100	105	105	100	100
21	105	100	S	100	100	100	150	140	130	110	115	G	G	G	G	100	100	120	100	100	S	S	S	105
22	105	105	100	100	100	100	S	130	110	110	105	100	100	100	100	100	100	100	100	100	95	95	S	S
23	105	105	S	S	S	S	S	160	G	120	110	105	105	100	105	105	105	105	100	100	100	105	105	105
24	100	100	100	100	S	S	S	150	110	110	115	105	100	G	G	G	145	S	110	105	105	105	100	100
25	100	100	100	S	110	S	110	110	110	110	105	100	100	100	105	110	120	145	110	120	S	105	105	105
26	105	100	100	100	100	S	110	110	110	100	100	100	100	100	100	95	115	S	S	S	95	105	100	100
27	100	100	100	100	100	S	S	125	110	100	105	100	100	100	100	100	100	100	100	S	100	95	95	95
28	100	S	S	S	S	100	S	G	G	G	G	G	G	G	G	G	G	S	S	S	S	115	120	105
29	S	105	105	100	105	100	100	100	145	120	110	105	105	G	150	105	105	100	120	S	S	S	100	S
30	S	100	100	105	100	105	100	G	120	120	130	G	110	110	105	G	115	105	110	105	105	105	100	100
31	100	100	S	S	S	100	S	135	130	G	G	G	G	G	G	100	115	S	100	105	S	105	100	100
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	17	20	17	20	18	14	15	24	28	26	26	23	24	19	17	23	28	26	24	22	21	24	23	20
MED	105	100	100	100	100	100	110	130	115	110	110	105	105	105	105	105	105	105	105	105	105	105	100	105
UQ	105	105	105	105	110	105	135	140	128	120	115	110	110	108	110	115	120	110	110	105	105	105	105	105
LQ	100	100	100	100	100	100	105	110	110	110	105	100	100	100	100	100	100	100	100	100	100	100	100	100

OCT. 1984
H°ES (KM)
The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA											Lat. 39° 43' 5" N · Long. 140° 08' 0" E											Sweep 1 MHz to 25 MHz in 24 sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
1	F ₃	F ₂	F ₃	F ₅	F ₅	F ₁	C ₃	C ₂	C ₂	C ₂	C ₁	C ₁	C ₂	C ₁	H ₂	C ₂	C ₁	F ₇		F ₂	F ₂	F ₃	F ₂										
2	F ₂	F ₃	F ₄	F ₂	F ₂	F ₃	L ₁	L ₂	L ₂					C ₁	C ₁	C ₂	C ₃	C ₁				F ₃	F ₄										
3				F ₂				C ₂	C ₂	C ₁	C ₁	C ₂	C ₃	C ₄	C ₂	C ₂	C ₃	L ₂	F ₁	F ₁	F ₁	F ₁	F ₂										
4	F ₂	F ₂	F ₃	F ₃	F ₂	F ₃	L ₁		C ₁	C ₂	C ₁	C ₂	L ₃	L ₁			H ₃	C ₃	F ₂	F ₄	F ₂	F ₂	F ₃	F ₂									
5		F ₁	F ₂	F ₁				LC ₁₂	C ₂	C ₁	C ₁				H ₁		C ₁	C ₂				F ₂	F ₂	F ₁									
6	F ₁	F ₁	F ₁						L ₁	C ₁							L ₁	L ₂	F ₂	F ₃													
7							H ₃	H ₁	C ₂			L ₁	L ₁																				
8				F ₁		H ₁	H ₂	H ₁	C ₁	C ₁	C ₁	C ₁	C ₁	C ₁		H ₁	C ₂	C ₃	F ₆	F ₃	F ₂	F ₅	F ₄	F ₄									
9		F ₂		F ₂	FF ₁₁			C ₁	C ₂	C ₁	C ₁	L ₂	L ₂				L ₃	L ₅	F ₁	F ₂	F ₄	F ₁	F ₁	F ₂									
10					F ₂	H ₂	C ₄	HL ₁₁		C ₂	C ₂	C ₂	C ₂	C ₄	L ₄	L ₅	L ₄	L ₄	F ₂	F ₃	F ₁	F ₁	F ₃	F ₁									
11	F ₁					H ₂	C ₁		L ₃	L ₃	L ₂					H ₁	C ₂	C ₃	F ₁	F ₂	F ₂		F ₂										
12						H ₂	H ₂	H ₁	C ₁	H ₁	HL ₂₁	CL ₂₂	CL ₁₁	H ₁	C ₂	L ₃	F ₂	F ₁	F ₁	F ₁	F ₁	F ₂											
13				F ₂				H ₂	C ₂	C ₃	C ₃	C ₃	C ₂	L ₄	L ₄	L ₃	H ₁	F ₄	F ₅	F ₂	F ₆	F ₂	F ₃										
14	F ₃	F ₅	F ₄	F ₂	F ₂	L ₃	L ₂	C ₂	C ₃	C ₂	C ₂	C ₂	L ₂		L ₂		L ₁	F ₂	F ₂	F ₃	F ₁	F ₁	F ₁										
15				F ₁	F ₂	F ₂		C ₂	C ₂	C ₂	L ₂	L ₂	L ₂	L ₂	L ₂	L ₂	L ₁					F ₁	F ₁										
16		F ₂	F ₂	F ₃	F ₆	F ₂	L ₁	C ₂	C ₂	C ₂			C ₁		C ₄	L ₃	L ₂	F ₂	F ₃	F ₂			F ₁										
17	F ₂	F ₁	F ₂	F ₂	F ₄	F ₁	H ₂	H ₂	LC ₁₂	C ₂	C ₃	C ₃	C ₂		L ₂	C ₁	L ₂	L ₂	F ₁	F ₂	F ₃	F ₁	F ₂										
18			F ₁						C ₃	C ₃	L ₂	L ₁	L ₁	L ₁	L ₁	L ₁	L ₁		F ₁	F ₂													
19	F ₃	F ₃	F ₂	F ₂	F ₁		C ₂	C ₂	C ₃	C ₂	C ₂	C ₂	L ₂	L ₁			L ₂	L ₃	F ₂	F ₂	F ₁	F ₁											
20				F ₅	F ₃			C ₂	C ₂	C ₂	C ₂	C ₂	C ₁	LH ₂₁	CL ₂₂	CL ₃₂	L ₂	L ₁	F ₃	F ₁	F ₂	F ₂	F ₅	F ₂									
21	F ₂	F ₂		F ₁	F ₁	H ₂	H ₂	C ₂	C ₁	C ₁					L ₂	L ₁	C ₁	F ₁	F ₁					F ₂									
22	F ₃	F ₄	F ₆	F ₇	F ₅	F ₂		C ₂	C ₂	C ₂	C ₂	L ₂	L ₂	L ₂	L ₃	L ₄	L ₃	L ₂	F ₁	F ₁	F ₂	F ₁											
23	F ₅	F ₂					H ₂		C ₁	C ₃	L ₃	L ₂	L ₃	L ₂	L ₂	L ₄	L ₁	F ₃	F ₃	F ₃	F ₄	F ₂	F ₄										
24	F ₃	F ₅	F ₃	F ₂			H ₂	C ₂	C ₂	C ₁	L ₃	L ₂				H ₁		F ₁	F ₄	F ₄	F ₂	F ₂	F ₂										
25	F ₂	F ₅	F ₁		F ₁		C ₃	C ₃	C ₄	C ₃	L ₄	L ₂	L ₂	L ₂	L ₂	C ₃	C ₂	H ₁	F ₂	F ₁		F ₂	F ₂	F ₃									
26	F ₅	F ₂	F ₂	F ₂	F ₄		C ₁	C ₄	C ₁	L ₂	L ₂	L ₂	L ₃	L ₂	L ₃	L ₂	CL ₂₁				F ₁	F ₂	F ₂	F ₃									
27	F ₂	F ₂	F ₂	F ₂	F ₂			C ₂	C ₂	L ₁	L ₁	L ₂	L ₁	L ₂	L ₂	L ₂	L ₃	L ₄	F ₂		F ₂	F ₂	F ₂	F ₂									
28	F ₁					F ₂																F ₁	F ₂	F ₂									
29		F ₂	F ₂	F ₂	F ₂	F ₁	L ₁	L ₁	H ₁	C ₁	C ₂	C ₁	L ₁		H ₁	L ₂	L ₁	L ₁	F ₁				F ₁										
30		F ₃	F ₂	F ₂	F ₁	F ₁	L ₁		C ₁	C ₂	C ₁		C ₁	C ₂	L ₂		C ₄	L ₂	F ₃	F ₃	F ₂	F ₂	F ₁	F ₂									
31	F ₁	F ₂			F ₁		HC ₂₁	C ₂								L ₁	CL ₅₁		F ₁	F ₂		F ₁	F ₂	F ₂									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
CNT																																	
MED																																	
UQ																																	
LQ																																	

OCT. 1984

TYPES OF ES

IONOSPHERIC DATA

OCT. 1984

FXI (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	KOKUBUNJI TOKYO				Lat.	35 42 4 N				Long	139 29 3 E				Sweep	1 MHz to 20 MHz in 20sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S 40	S 39	S 39	S 41	S 42	S 36												X 68	X 59	A	S 51	X 44	S 45		
2	S 46	X 46	S 46	S 46	S 45	S 46												S 89	X 57	X 51	X 41	X 39	S 41		
3	S 41	S 38	X 37	X 38	X 38	X 38												X 70	S 48	X 37	X 38	X 40	S 41		
4	X 44	X 43	X 41	X 41	X 41	X 37												S 81	X 53	X 40	X 40	X 39	X 40		
5	X 41	X 43	X 42	X 41	X 41	X 37												X 66	X 45	X 43	X 44	X 49	X 45		
6	X 44	X 44	X 42	S 46	X 36	X 34												X 67	X 46	X 47	X 45	X 46	S 45		
7	X 46	S 47	X 48	X 50	X 41	X 44												X 68	X 67	X 61	X 62	X 58	X 47		
8	X 43	S 42	S 46	X 49	X 41	X 39												X 72	X 59	X 49	S 50	X 46	X 48		
9	X 47	X 41	X 40	X 40	X 42	X 37												X 53	X 43	X 48	X 47	X 46	S 45		
10	S 46	S 43	X 44	S 45	X 43	X 36												X 60	X 51	X 43	X 36	X 41	X 40		
11	X 46	S 46	X 51	X 55	X 46	X 37												X 70	S 70	X 65	S 59	X 50	S 48	S 48	
12	S 50	S 50	S 48	S 50	X 46	S 39												X 74	X 57	S 55	X 55	X 54	X 49	S 55	
13	S 50	S 48	S 50	S 51	X 40	U 41												X 69	X 55	X 57	A	X 57	X 48	S 45	
14	X 40	X 40	X 41	X 41	X 40	X 39												X 70	X 53	X 39	X 39	X 40	X 41	X 40	
15	S 40	S 38	X 36	S 39	S 37	X 36												X 70	X 61	X 47	X 39	X 38	X 39	X 38	
16	S 39	S 39	X 39	S 40	X 36	S 31												X 66	X 63	X 55	X 55	U 52	X 53	S	
17	S 54	S 53	S 53	X 49	X 50	X 40												X 76	X 58	X 40	X 35	X 39	X 40	X 40	
18	S 40	X 44	S 39	S 40	X 36	S 34												X 64	X 49	X 50	X 45	X 43	X 43	X 45	
19	X 43	X 49	X 48	S 36	X 35	X 33												X 67	X 70	X 83	X 56	X 53	X 42	S 44	
20	X 41	X 39	X 39	X 38	X 27	X 28	X 43											X 69	X 51	X 47	X 41	X 42	X 40	X 39	
21	S 46	X 39	X 45	S 31	A	X 32	X 50											X 66	X 56	S 50	S 51	X 45	X 46	X 41	
22	X 40	X 45	X 35	A	A	X 28	X 51											X 62	A	X 49	X 48	S 46	S 46	X 47	
23	A	X 47	X 47	X 42	X 40	X 36	X 51											X 69	X 50	X 50	X 43	X 42	S 39	X 38	
24	X 38	S 39	X 40	X 42	X 40	X 27	X 48											X 64	X 50	X 47	X 46	X 47	X 45	X 45	
25	S 44	X 45	X 46	X 45	X 40	X 32	X 51											X 78	X 70	X 40	X 38	X 38	X 38	X 38	
26	U 39	S 40	X 39	S 37	S 34	S 33	X 48											S 90	X 69	X 50	X 50	X 46	X 37	X 38	
27	X 39	X 39	X 39	X 40	X 41	X 33	X 47											X 56	X 39	X 39	X 41	X 41	X 43	X 41	
28	X 42	X 42	X 40	X 40	X 36	X 34	X 49											X 61	X 39	X 41	X 40	X 41	X 41	X 41	
29	X 41	X 42	S 40	X 41	X 37	X 32	X 47											X 56	X 48	X 42	X 46	X 43	X 35	X 37	
30	X 38	S 38	X 39	X 42	S 31	S 24	X 43											X 64	X 45	X 37	X 38	X 39	X 36	X 38	
31	X 39	S 39	X 39	X 41	X 39	X 33	X 44											X 61	X 56	X 38	X 41	X 41	X 40	X 43	
CNT	30	31	31	30	29	31	12											21	30	31	29	31	31	30	
MED	X 42	X 42	X 41	X 41	X 40	X 36	X 48											X 67	X 59	X 49	X 45	X 43	X 42	X 41	
UQ	X 46	X 46	X 46	X 46	X 41	X 38	X 50											X 70	X 69	X 55	X 50	X 48	X 46	X 45	
LQ	X 40	X 39	X 39	X 40	X 36	X 32	X 46											X 64	X 51	X 42	X 40	X 40	X 40	X 40	

OCT. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		ROKUBUNJI TOKYO							Lat. 35 42.4 N		Long. 139 29.3 E		Sweep 1 MHz to 20 MHz in 20sec in automatic operation															
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1		S ₃₄	S ₃₃	S ₃₃	S ₃₅	S ₃₆	F ₃₀	47	54	S ₆₂	63	71	73	73	72	66	72	S ₆₂	S ₇₂	S ₆₂	S ₅₃	A	J	S ₄₅	S ₃₈	S ₃₉		
2		40	40	40	S ₄₀	S ₃₉	S ₄₀	59	64	57	63	76	92	74	71	64	71	S ₈₃	91	S ₈₃	51	45	35	33	S ₃₅			
3		S ₃₅	32	31	32	32	32	56	54	61	64	R ₇₅	79	81	S ₉₅	S ₉₄	88	86	J	S ₈₀	64	S ₄₂	31	32	34	S ₃₅		
4		38	37	35	35	35	31	50	65	S ₇₂	J	S ₇₆	74	69	71	84	80	75	S ₈₁	S ₉₄	S ₇₅	47	S ₃₄	34	33	S ₃₄		
5		35	37	36	35	35	31	54	60	J	S ₈₀	80	79	80	74	75	67	70	S ₇₇	S ₇₉	60	39	37	38	F	39		
6		38	38	36	40	30	28	53	S ₇₅	66	64	87	S ₇₈	72	75	76	79	84	73	61	40	41	39	40	S ₃₉			
7		40	S ₄₁	42	44	35	38	S ₆₄	J	S ₇₄	63	H	87	93	82	95	105	95	S ₈₁	65	62	61	55	S ₅₆	52	41		
8		37	S ₃₆	S ₄₀	S ₄₃	35	33	59	S ₆₃	68	72	90	93	100	84	S ₈₀	S ₉₃	74	S ₇₂	66	53	43	S ₄₄	40	S ₄₂			
9		41	35	34	34	36	31	50	64	84	64	72	99	91	90	93	93	J	S ₇₇	57	47	37	S ₄₂	S ₄₁	S ₄₀	S ₃₉		
10		S ₄₀	37	38	S ₃₉	37	30	52	63	J	S ₈₁	67	65	82	101	75	79	84	80	68	54	45	37	30	F	F		
11		F	S ₄₀	45	49	S ₄₀	31	48	69	84	79	79	89	86	81	91	74	S ₇₂	64	S ₆₄	59	S ₅₃	44	S ₄₂	S ₄₂			
12		F	S ₄₄	S ₄₂	F	S ₄₀	S ₃₃	51	68	62	S ₇₂	78	83	97	85	73	S ₇₃	70	68	51	S ₄₉	49	48	S ₄₃	F			
13		S ₄₄	S ₄₂	F	F	F	U	S ₃₅	54	56	64	65	71	79	99	101	85	69	65	S ₆₃	49	51	A	S ₅₁	S ₄₂	S ₃₉		
14		34	S ₃₄	S ₃₅	S ₃₅	34	33	54	57	64	S ₆₄	72	J	S ₈₀	79	76	79	S ₇₆	J	S ₈₀	64	47	33	33	S ₃₄	S ₃₅	34	
15		S ₃₄	S ₃₂	30	S ₃₃	S ₃₁	30	45	S ₆₆	60	65	74	95	82	71	73	81	62	S ₆₄	S ₅₅	41	33	32	S ₃₃	S ₃₂	F		
16		U	S ₃₃	S ₃₃	S ₃₃	S ₃₄	S ₃₀	S ₂₅	S ₄₃	55	66	82	S ₇₅	86	75	82	95	S ₇₅	67	60	57	S ₄₉	S ₄₉	U	S ₄₆	47	S	
17		F	F	F	F	F	F	S ₃₄	47	S ₆₉	S ₇₂	74	70	90	120	A	A	69	S ₇₁	S ₇₀	52	34	29	S ₃₃	S ₃₄	F		
18		S ₃₄	F	S ₃₃	S ₃₄	F	S ₃₀	S ₂₈	S ₄₄	58	64	83	77	101	85	80	S ₈₀	66	S ₆₂	58	43	44	39	37	37	39		
19		37	S ₄₃	S ₄₂	30	29	27	50	84	S ₇₅	82	S ₉₅	89	71	90	98	S ₇₄	S ₆₃	61	64	S ₇₇	50	S ₄₇	36	S ₃₈			
20		35	33	33	32	21	22	37	S ₆₀	80	S ₇₃	88	S ₁₁₀	S ₁₁₀	S ₉₅	S ₈₂	83	85	S ₆₃	S ₄₅	S ₄₁	35	36	34	33			
21		J	S ₄₀	33	S ₃₉	S ₂₅	A	26	44	65	S ₇₈	J	S ₇₅	74	75	74	83	H	73	67	64	60	50	S ₄₄	S ₄₅	39	40	35
22		34	39	29	A	A	22	45	64	67	65	78	92	70	73	S ₈₁	69	61	56	A	S ₄₃	S ₄₂	S ₄₀	S ₄₀	41			
23		A	41	S ₄₁	36	34	30	45	S ₆₃	63	S ₇₅	S ₉₅	120	109	74	S ₇₄	S ₇₅	67	S ₆₃	44	44	37	36	S ₃₃	S ₃₂			
24		32	S ₃₃	34	36	34	21	42	58	64	83	S ₉₇	108	104	89	81	73	62	58	44	41	40	41	39	39			
25		S ₃₈	39	40	39	34	26	45	69	90	S ₉₃	90	79	R	75	71	78	73	66	S ₇₂	64	S ₃₄	32	32	32	S ₃₂		
26		U	S ₃₃	F	S ₃₃	S ₃₁	S ₂₈	S ₂₇	42	74	S ₉₆	82	83	94	90	84	69	67	81	S ₈₄	S ₆₃	S ₄₄	44	40	31	32		
27		33	33	33	34	35	27	S ₄₁	66	65	69	70	81	85	I	C	83	73	67	65	50	33	33	35	35	37	35	
28		36	36	34	34	30	28	43	65	S ₇₃	S ₇₅	90	71	76	81	75	S ₇₄	56	55	33	35	34	35	35	35			
29		35	36	S ₃₄	35	31	26	41	S ₆₅	62	67	S ₇₆	75	68	88	S ₉₃	67	61	50	S ₄₂	36	40	37	29	31			
30		32	S ₃₂	33	36	S ₂₅	S ₁₈	37	S ₆₅	64	S ₆₅	91	87	S ₇₇	S ₇₉	S ₆₈	64	64	58	S ₃₉	31	32	S ₃₃	30	32			
31		33	S ₃₃	33	35	33	27	S ₃₈	57	S ₆₃	H	55	70	73	61	74	70	66	69	55	50	32	35	35	34	S ₃₇		
CNT		27	28	29	27	27	31	31	31	31	31	31	31	31	30	30	31	31	31	31	30	31	29	31	29	27		
MED		35	36	34	35	34	30	47	64	66	72	77	86	81	82	79	73	69	64	53	43	39	37	36	35			
UQ		38	40	40	38	35	32	52	67	76	78	88	93	94	88	85	78	80	S ₇₂	63	49	44	42	40	S ₃₉			
LQ		34	33	33	34	30	26	43	59	63	65	73	79	74	75	73	69	64	58	45	36	34	34	33	34			

The Radio Research Laboratories, Japan

OCT. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF1 (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1** MHz to **20** MHz in **20** sec in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	440	450	L	470	450	U	L	440	L	L	L				
2									L	U	L	470	460	L	440	L	L	L						
3									350	440	450	470	500	460	420	U	L	420	L					
4									L	L	U	L	460	480	L	L	L							
5									L	430	440	L	430	430	L	L	L							
6								L	L	L	L	440	L	490	L	L	L							
7										430	L	L	L	L	L									
8									L	A	460	460	460	U	L	420	L	L	L					
9									L	L	500	460	L	L	L	L								
10									L	L	A	U	L	A	L	U	L	L						
11									L	L	440	440	L	U	L	440	L	L						
12									L	L	L	U	L	500	410	L	A	A						
13									L	L	450	450	470	L	L	L								
14									L	A	A	440	L	A	L									
15									L	L	U	L	450	L	L	L	A	A						
16									L	A	L	U	L	430	450	L	410	L						
17									L	L	A	U	L	A	A	A	L	L						
18									360	420	440	450	430	L	L	L								
19									A	A	A	A	L	L	L	L	A							
20									L	L	450	450	L	450	L	L	L	A						
21									L	L	L	U	L	430	490	L	L	L	A					
22									L	A	L	L	L	L	L									
23									L	L	L	440	L	440	L	L								
24									U	L	440	460	L	U	L	410	L	L	A					
25									A	A	L	440	A	A	L	L	A							
26									L	L	U	L	L	L	U	L	400	L						
27									L	L	L	420	L	C	L	L								
28									L	U	L	440	420	U	L	440	L	L						
29									L	L	L	440	L	U	L	430	L	L						
30									L	U	L	L	L	L	L	L								
31									L	U	L	L	L	L	L	L								
											U	L	L	L	L	L								
											390	L	L	410	L	L								
CNT									2	8	18	20	13	14	3	1								
MED									355	430	450	450	450	440	420	U	L	420						
UQ									440	460	460	470	450	430										
LQ									U	L	415	440	440	440	420	415								

OCT. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOE (0.01 MHz)

135° E Mean Time (G.M.T. + 9h)

Station	R0KUBUNJI TOKYO																							
Lat.	35 42.4 N																							
Long	139 29.3 E																							
Sweep	1																							
MHz to	20																							
MHz in	20																							
sec in	automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	A	A	A	A	A	R	320	300	280	240							
2							B	A	H	280	305	325	330	330	320	300		A	A	A				
3	S	S					A	A	A	A	H	A		H	340	340	310	275	240		S			
4							S	240	A	A	A	A	A		330		A	A	A		150			
5							B	A	A	A	A	A	330	335	320	300	270	230			S			
6						155	H	240	280	300	320	330	330	325	300	270	240				A			
7							S	250	H	H	H	H	R	H	300	270	230				S		S	S
8	S	S	B	B	S	S	S	H	240	275	A	A	A		330	325	300	260	230		H	B		
9							B	A	A	A	A	A		330	325	300	260	230			S			
10							S	240	H	280	305	310		A	A	A	290	265	240		H	S		
11							S	240	275	300	315	325		A	A		290	270	230					
12							S	220	270	295		A	A		325	310	300	260	210					
13							S	220	265	290		A	A		A	A	290	270			A			
14							S	220	A	295		A	310		A	A	A	A	A					
15							S	220	A	A	A	A	R		A	A	A	A	A					
16							S	230	270		A	A	A	R	R	H	280	260	210					
17							B	205	260	280	305	310		A	A	A	A	A						
18							S	A	A	A	A	R	A		320	305	290	260	210					
19							S	A	A	A	A	A	A		A	A	A	A	A					
20						S		A	A	A	A	A	A	R	I	R	295	A	A	A				
21								200	A	285	300	305		A	295	A	A	A						
22								210	A	A	A	A		310	300	285	260				A			
23								210	A	265	300	315	305	300	280			A	A					
24								200	A	A	A	A	305	305	305	290	250	190			H			
25								A	A	A	A	A	A	A	A	A	A	A						
26								A	A	A	A	A	310	310	300		A	255	200					
27								A	A	295		A	A	A	C		280	250			A			
28								230	265	285	300	305	310	300		H	285	260	215					
29								210	270		A	A	A	A	R		A	A	A					
30								H	215	260	295		A	A	A		A	255	190					
31								H	220	A	A	R	A		R		275	255			A			
ES	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	20	13	14	10	12	15	19	20	20	16	1						
MED						155	220	270	295	312	312	325	310	290	260	230	150							
UQ							240	280	300	325	330	330	322	300	270	235								
LQ							210	265	285	300	308	310	300	285	258	210								

OCT. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		KOKUBUNJI TOKYO		Lat.	35 42.4 N		Long	139 29.3 E		Sweep	1 MHz to 20 MHz		in 20 sec in		automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A	29	22	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
2	J A	22	22	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
3	E S	14	E S	15	18	19	21	J A	18	17	25	29	32	37	J A	35	36	38	41	J A	47	33	J A	32	23
4	J A	19	J A	18	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
5	J A	21	J A	18	24	20	19	18	29	33	32	38	28	G	G	G	G	G	G	G	G	G	G	G	
6	E S	15	E S	14	E S	E S	E S	E S	E S	14	18	G	G	G	G	G	G	G	G	G	G	G	G	G	
7	E S	15	E S	15	E S	E S	E S	E S	E S	14	18	21	28	G	G	G	G	G	G	G	G	G	G	G	
8	E S	15	E S	13	E B	21	22	J A	19	18	27	35	36	J A	49	34	18	19	G	G	G	G	G	G	
9	J A	33	25	20	22	18	19	16	29	36	J A	41	J A	40	J A	35	33	27	G	G	G	G	G	G	
10	J A	24	J A	22	17	19	E S	14	21	24	33	35	J A	44	J A	51	J A	52	J A	51	53	23	15	28	
11	J A	24	J A	19	23	18	24	E S	14	24	26	29	32	35	36	J A	45	J A	34	25	36	37	J A	28	
12	J A	24	E S	14	E S	14	17	E S	14	E S	15	19	28	J A	44	37	39	41	J A	74	40	J A	74	80	
13	J A	20	22	J A	J A	J A	E S	E S	E S	G	30	32	37	41	J A	53	37	G	35	26	J A	18	33		
14	J A	23	21	22	20	20	21	20	26	33	35	J A	48	J A	55	38	45	54	36	J A	42	68	J A	33	
15	J A	23	22	E S	E S	14	18	E S	E S	14	15	24	33	34	36	31	G	J A	41	J A	38	44	79	43	
16	J A	20	21	22	19	E S	14	19	20	26	36	J A	48	38	34	G	G	G	G	G	J A	22	24		
17	J A	21	J A	J A	27	21	J A	E S	14	25	31	35	36	J A	53	J A	47	J A	54	106	100	49	J A	50	
18	J A	21	J A	J A	20	19	23	18	25	J A	54	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
19	J A	20	J A	28	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
20	J A	29	J A	18	22	J A	J A	E S	15	21	25	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
21	J A	28	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
22	J A	19	23	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
23	J A	51	J A	36	23	24	19	E S	15	20	25	27	29	J A	35	28	25	25	20	25	J A	29	28		
24	J A	34	19	24	17	22	20	24	26	29	36	32	33	G	21	G	G	G	G	G	J A	38	E S		
25	J A	18	18	18	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
26	J A	26	24	23	24	18	E S	14	19	30	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
27	E S	16	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
28	E S	16	E S	15	E S	E S	E S	E S	E S	J A	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
29	J A	29	23	19	19	19	J A	20	22	25	19	G	31	35	J A	47	33	J A	J A	J A	J A	J A	J A	J A	
30	J A	17	18	21	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	
31	J A	29	J A	26	23	21	J A	20	19	E S	15	G	29	29	G	32	29	29	31	27	21	J A	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		31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31
MED		21	21	22	21	21	19	20	26	31	33	36	35	33	29	31	33	29	J A	28	J A	28	24	J A	24
UQ		J A	27	24	24	J A	J A	20	24	30	36	J A	39	40	J A	43	37	J A	42	40	J A	40	37	J A	36
LQ		18	18	18	19	18	E S	15	18	25	29	30	32	32	G	G	G	G	G	G	J A	21	20	20	20

OCT. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station: **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep 1 MHz to 20 MHz in 20sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																			
1	23	E	18	32	15	E	24	30	30	32	33	34	G	31	G	24	G	30	28	45	37	29	A	A	68	E	25	E															
2	E	15	19	16	19	29	25	25	G	23	G	26	G	27	G	22	G	26	33	32	24	17	15	E	E	S	15	E	S	15	E	E											
3	E	S	14	E	S	15	E	E	E	E	16	24	28	32	35	34	35	36	37	40	28	30	20	E	E	S	16	E	E	E	E												
4	E	16	19	16	E	20	20	26	30	32	34	34	40	G	30	G	34	32	27	29	36	19	16	16	E	19																	
5	E	E	E	E	E	E	17	28	32	31	33	28	G	23	G	26	G	21	G	25	22	E	S	15	E	E	E	S	15	E	E	S	15										
6	E	S	15	E	S	14	E	S	15	E	S	14	E	S	14	18	G	G	25	G	17	34	G	G	G	29	26	20	18	E	E	E	E	S	15	E							
7	E	S	15	E	S	15	E	S	14	E	S	13	E	S	14	E	18	26	G	25	G	21	G	21	G	22	G	G	G	G	18	E	S	15	E	S	15	E	S	14			
8	E	S	15	E	S	15	E	S	13	G	G	G	17	26	34	33	47	34	G	18	19	G	33	27	25	29	E	E	16	19	26												
9	23	15	E	E	E	E	15	25	32	33	34	33	30	G	27	G	G	24	20	16	16	E	E	E	15	E																	
10	18	E	E	E	E	S	14	E	20	30	31	32	50	40	46	40	23	15	G	26	21	16	21	E	E	S	15	22	27														
11	E	18	E	E	18	E	14	17	25	29	31	35	36	40	33	G	22	31	31	20	15	17	25	14	E	S	14	E	S	16													
12	18	E	S	14	E	S	14	E	S	15	18	27	34	32	39	36	48	34	36	43	42	31	26	36	E	E	E	E	S	16													
13	E	E	E	E	E	E	S	15	E	S	15	G	28	32	35	38	40	33	G	G	25	16	17	21	A	A	85	20	22	E													
14	E	E	E	E	E	E	18	26	31	35	45	53	34	36	50	33	35	E	19	22	17	25	21	17																			
15	E	E	E	S	14	E	S	14	E	S	15	24	31	32	34	30	G	38	35	39	41	30	16	16	E	E	16	E	E														
16	E	E	E	E	E	S	14	E	17	25	34	45	36	33	G	G	21	G	G	G	G	E	E	19	25	E	E	S	15	E													
17	E	E	E	E	E	E	S	14	25	25	31	35	44	39	47	A	A	A	106	A	100	27	24	27	37	20	17	18	E	E													
18	E	21	E	E	E	E	18	31	30	31	30	38	G	23	G	23	30	29	23	E	E	E	E	E	S	15	E	E															
19	E	E	24	14	19	E	19	31	44	43	50	46	44	32	31	28	50	23	E	E	E	16	E	30	16																		
20	20	E	E	15	15	E	S	15	17	23	24	36	34	38	G	29	G	28	38	28	34	21	27	21	18	E	17	22															
21	17	15	21	22	A	A	51	E	23	24	28	25	G	27	G	27	31	27	29	26	43	48	32	20	18	E	E	E															
22	E	E	16	A	A	A	52	39	E	17	23	27	46	35	39	26	28	25	24	22	38	A	A	67	22	21	21	34	37														
23	A	A	18	15	E	E	S	15	E	23	27	29	28	26	G	25	G	23	G	19	25	23	19	19	23	E	20	E	23														
24	23	E	E	E	E	E	23	25	29	34	31	27	G	24	G	G	20	21	35	25	25	15	15	E	E	S	15	E	20	E	E												
25	E	E	E	E	E	E	23	24	44	46	35	45	49	32	35	31	25	19	38	E	E	E	E	E																			
26	E	E	14	E	E	S	14	E	26	30	29	31	24	G	24	G	22	32	17	G	21	18	20	E	E	E	19	20															
27	E	S	16	20	19	E	E	E	16	25	28	26	G	33	34	32	C	G	21	G	19	21	16	21	E	E	E	E	E														
28	E	S	16	E	S	15	E	S	14	E	S	14	E	S	15	E	G	G	17	G	18	21	20	G	G	20	G	21	G	17	30	23	E	E	S	15	E	S	16	E	S	16	E
29	E	E	E	E	E	E	E	E	24	G	16	31	34	43	32	26	31	25	25	20	22	20	E	E	E	S	16	E	E	S	16	E											
30	E	E	E	E	E	E	20	28	29	31	34	35	32	32	30	27	27	16	E	E	20	19	E	E																			
31	E	E	E	E	E	E	E	S	15	G	27	29	G	32	G	29	G	29	30	G	21	E	E	E	S	15	E	E	S	16	E												
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	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	E	E	E	E	E	E	17	25	29	32	34	34	31	28	29	28	25	20	18	E	E	E	E	S	15	E	E	E	E	S	14	E	E	E	E	E	E	E	E	E			
UQ	16	15	15	14	E	S	14	20	26	31	34	35	38	39	33	34	32	28	25	26	20	18	16	18	16	E	E	E	E	E													
LQ	E	E	E	E	E	E	15	24	27	29	30	29	G	24	G	23	18	G	22	23	16	15	E	E	E	E	E	E	E														

OCT. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9h)

Station	ROKUBUNJI TOKYO				Lat.	35 42.4 N				Long	139 29.3 E				Sweep 1 MHz to 20 MHz in 20sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E 15	E 15	E 13	E 15	E 13	E 14	E 14	E 15	E 15	E 15	E 16	E 16	E 19	E 15	E 15	E 15	E 14	E 13	E 15	E 15	E 13	E 15	E 14	E 14
2	E 15	E 13	E 13	E 14	E 13	E 14	E 13	E 14	E 14	E 15	E 15	E 16	E 15	E 16	E 15	E 14	E 13	E 15	E 13	E 15	E 15	E 15	E 15	E 14
3	E 14	E 15	E 14	E 14	E 13	E 15	E 13	E 14	E 14	E 15	E 16	E 17	E 19	E 16	E 14	E 14	E 14	E 15	E 13	E 15	E 16	E 16	E 15	E 14
4	E 15	E 13	E 13	E 13	E 14	E 15	E 16	E 14	E 14	E 16	E 15	E 16	E 16	E 15	E 14	E 14	E 14	E 14	E 14	E 13	E 14	E 14	E 16	E 15
5	E 15	E 15	E 14	E 13	E 15	E 15	E 13	E 13	E 14	E 15	E 15	E 17	E 16	E 16	E 15	E 14	E 14	E 14	E 15	E 15	E 15	E 15	E 15	E 15
6	E 15	E 14	E 15	E 15	E 14	E 14	E 14	E 14	E 14	E 14	E 15	E 15	E 19	E 14	E 13	E 15	E 13	E 15	E 14	E 15	E 15	E 15	E 15	E 16
7	E 15	E 15	E 14	E 13	E 14	E 15	E 15	E 15	E 14	E 16	E 15	E 16	E 15	E 16	E 15	E 15	E 14	E 15	E 15	E 15	E 13	E 14	E 15	E 14
8	E 15	E 15	E 13	E 13	E 14	E 15	E 14	E 13	E 14	E 14	E 19	E 19	E 15	E 16	E 18	E 14	E 14	E 13	E 14	E 15	E 15	E 13	E 14	E 14
9	E 14	E 13	E 14	E 15	E 14	E 14	E 13	E 14	E 14	E 14	E 15	E 15	E 15	E 14	E 15	E 14	E 14	E 15	E 14	E 15	E 15	E 15	E 14	E 15
10	E 15	E 14	E 15	E 15	E 14	E 14	E 15	E 15	E 14	E 14	E 14	E 15	E 15	E 16	E 14	E 13	E 14	E 14	E 15	E 14	E 15	E 15	E 15	E 14
11	E 15	E 14	E 15	E 14	E 15	E 14	E 15	E 13	E 14	E 15	E 16	E 14	E 15	E 14	E 14	E 14	E 14	E 13	E 13	E 15	E 15	E 13	E 14	E 16
12	E 15	E 14	E 14	E 13	E 14	E 15	E 15	E 15	E 14	E 15	E 16	E 19	E 16	E 16	E 14	E 15	E 14	E 13	E 14	E 14	E 15	E 14	E 15	E 16
13	E 15	E 15	E 14	E 14	E 15	E 15	E 15	E 14	E 14	E 15	E 15	E 16	E 17	E 20	E 15	E 16	E 14	E 13	E 13	E 15	E 14	E 15	E 14	E 16
14	E 16	E 13	E 15	E 13	E 15	E 16	E 14	E 14	E 14	E 15	E 19	E 15	E 14	E 15	E 15	E 15	E 14	E 15	E 15	E 15	E 15	E 14	E 15	E 13
15	E 15	E 14	E 14	E 14	E 15	E 14	E 15	E 14	E 14	E 14	E 15	E 19	E 18	E 17	E 15	E 14	E 14	E 14	E 14	E 15	E 15	E 13	E 15	E 15
16	E 14	E 14	E 15	E 13	E 14	E 14	E 15	E 13	E 14	E 15	E 15	E 17	E 20	E 15	E 15	E 14	E 15	E 15	E 14	E 15	E 14	E 15	E 15	E 14
17	E 15	E 14	E 14	E 15	E 13	E 14	E 13	E 14	E 15	E 14	E 15	E 14	E 20	E 14	E 17	E 14	E 14	E 14	E 14	E 14	E 14	E 14	E 15	E 15
18	E 15	E 14	E 14	E 13	E 13	E 15	E 15	E 13	E 14	E 14	E 14	E 14	E 14	E 15	E 14	E 14	E 13	E 15	E 15	E 14	E 15	E 15	E 15	E 15
19	E 15	E 14	E 14	E 13	E 13	E 14	E 14	E 14	E 13	E 14	E 14	E 14	E 16	E 14	E 15	E 14	E 14	E 15	E 15	E 15	E 15	E 15	E 15	E 14
20	E 15	E 15	E 14	E 13	E 14	E 15	E 14	E 15	E 15	E 15	E 15	E 16	E 14	E 14	E 14	E 14	E 15	E 14	E 14	E 15	E 15	E 15	E 15	E 15
21	E 14	E 13	E 13	E 14	E 15	E 15	E 14	E 14	E 14	E 16	E 19	E 17	E 17	E 16	E 15	E 14	E 14	E 14	E 15	E 15	E 15	E 15	E 15	E 15
22	E 15	E 15	E 13	E 14	E 13	E 15	E 13	E 15	E 15	E 15	E 15	E 15	E 15	E 15	E 14	E 14	E 14	E 14	E 15	E 15	E 14	E 15	E 15	E 15
23	E 13	E 13	E 13	E 14	E 13	E 15	E 15	E 15	E 15	E 15	E 15	E 16	E 16	E 14	E 14	E 16	E 15	E 15	E 15	E 15	E 15	E 16	E 15	E 13
24	E 15	E 16	E 15	E 15	E 15	E 16	E 15	E 16	E 15	E 14	E 14	E 14	E 15	E 15	E 16	E 15	E 15	E 15	E 15	E 15	E 15	E 14	E 16	E 15
25	E 15	E 15	E 14	E 15	E 15	E 15	E 13	E 15	E 14	E 16	E 15	E 19	E 18	E 15	E 14	E 14	E 14	E 14	E 15	E 16	E 15	E 15	E 16	E 15
26	E 15	E 15	E 13	E 15	E 14	E 14	E 16	E 15	E 15	E 15	E 15	E 14	E 15	E 15	E 14	E 14	E 15	E 15	E 16	E 16	E 15	E 15	E 16	E 15
27	E 16	E 13	E 13	E 15	E 15	E 15	E 14	E 14	E 14	E 15	E 15	E 16	E 16	C	E 15	E 13	E 15	E 15	E 15	E 16	E 15	E 16	E 16	E 16
28	E 16	E 15	E 14	E 14	E 14	E 15	E 15	E 15	E 14	E 16	E 14	E 15	E 14	E 16	E 15	E 14	E 15	E 16	E 15	E 16	E 16	E 16	E 16	E 14
29	E 15	E 14	E 14	E 13	E 14	E 15	E 15	E 15	E 14	E 15	E 15	E 15	E 15	E 17	E 14	E 14	E 14	E 14	E 15	E 15	E 15	E 14	E 16	E 15
30	E 15	E 14	E 13	E 14	E 15	E 15	E 15	E 15	E 14	E 15	E 16	E 16	E 16	E 15	E 15	E 14	E 14	E 14	E 14	E 14	E 14	E 15	E 16	E 16
31	E 15	E 15	E 15	E 14	E 15	E 15	E 15	E 14	E 15	E 15	E 16	E 16	E 15	E 15	E 15	E 14	E 14	E 16	E 15	E 15	E 15	E 16	E 16	E 15
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31
MED	E 15	E 14	E 14	E 14	E 14	E 15	E 15	E 14	E 14	E 15	E 15	E 16	E 16	E 15	E 15	E 14	E 14	E 15	E 15	E 15	E 15	E 15	E 15	E 15
UQ	E 15	E 15	E 14	E 15	E 15	E 15	E 15	E 15	E 14	E 15	E 16	E 16	E 17	E 16	E 15	E 14	E 14	E 15	E 15	E 15	E 15	E 15	E 16	E 15
LQ	E 15	E 14	E 13	E 13	E 14	E 14	E 14	E 14	E 14	E 14	E 15	E 15	E 15	E 15	E 14	E 14	E 14	E 14	E 14	E 15	E 15	E 14	E 15	E 14

OCT. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station		ROKUBUNJI TOKYO											Lat. 35 42.4 N		Long. 139 29.3 E		Sweep 1	MHz to 20 MHz in 20sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1		S	S	S	S	S	F			S							S	S	S	S	A	J	S	S	S			
2		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
3		S	S	S	S	S	S	S	S	S	S	R					S	J	S	S	S	S	S	S	S			
4		S	S	S	S	S	S	S	S	S	J	S					S	S	S	S	S	S	S	S	S			
5		S	S	S	S	S	S	S	S	J	S	S					S	S	S	S	S	S	F	S	S			
6		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
7		S	S	S	S	S	J	S	S	H							S	S	S	S	S	S	S	S	S			
8		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
9		S	S	S	S	S	S	S	S	J	S	S					S	S	S	S	S	S	S	S	S			
10		S	S	S	S	S	S	S	J	S	S	S					S	S	S	S	S	S	F	F	S			
11		F	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
12		F	S	S	F	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	F			
13		S	S	F	F	F	U	S	S	S	S	S					S	S	S	S	A	S	S	S	S			
14		S	S	S	S	S	S	S	S	J	S	S					S	J	S	S	S	S	S	S	S			
15		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	F			
16		U	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	U	S	S	S			
17		F	F	F	F	F	F	S	S	S	S	S		A	A		S	S	S	S	S	S	S	F	S			
18		S	F	S	S	F	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
19		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
20		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
21		J	S	S	S	A	S	S	S	J	S	S			H		S	S	S	S	S	S	S	S	S			
22		S	S	S	A	A	S	S	S	S	S	S					S	S	A	S	S	S	S	S	S			
23		A	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
24		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
25		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
26		U	S	F	S	S	S	S	U	S	S	S					S	S	S	S	S	S	S	S	S			
27		S	S	S	S	S	S	S	S	S	S	S		I	C		S	S	S	S	S	S	S	S	S			
28		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
29		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
30		S	S	S	S	S	S	S	S	S	S	S					S	S	S	S	S	S	S	S	S			
31		S	S	S	S	S	S	S	S	H							S	S	S	S	S	S	S	S	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		27	28	29	27	27	31	31	31	31	31	31	31	31	30	30	31	31	31	30	31	29	31	29	27			
MED		305	300	310	320	320	310	340	350	340	340	325	330	325	325	335	340	340	340	340	315	310	310	300	300			
UQ		310	310	320	330	335	320	350	355	350	345	338	340	340	335	340	345	345	345	340	330	320	312	310	305			
LQ		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		

OCT. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station		ROKUBUNJI TOKYO							Lat.	35 42.4 N			Long	139 29.3 E			Sweep	1 MHz to 20 MHz in 20sec in automatic operation										
Hour Day		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1										L	355	L 360	L 355	L 375	U L 355	L	L	L										
2										L	U L 370	U L 350	L 345	L	L 360	L	L	L										
3										380	L 365	L 370	L 375	L 350	U L 360	L 365	A	L										
4										L	L	U L 360	L	L 370	L 350	L	L	L										
5										L	L 370	L 375	L	L 370	L 355	L	L	L										
6								L	L	L	L	L	L 380	L	L 360	L	L	L										
7												L 385	L	L	L	L	L											
8											L	A	L 355	L 360	U L 380	L	L	L										
9										L	L	L 365	L 360	L	L	L	L											
10										L	L	A	U L 350	A	L	U L 360	L											
11										L	L	L 405	L 400	L	U L 395	L	L											
12										L	L	L	U L 380	A	L 380	L	A	A										
13										L	L	L 375	L 360	L 350	L	L	L											
14											L	A	A	L 370	L	A	L											
15										L	L	U L 350	L 365	L	L	L	A	A										
16										L	A	L	U L 400	U L 375	L	L 350	L											
17										L	L	A	U L 350	A	A	A	L	L										
18										L	U L 400	L 385	L 395	L 365	L 380	L	L	L										
19										A	A	A	A	L	L	L	L	A										
20										L	L	L 375	L 380	L	L 355	L	L	A										
21										L	L	L	U L 375	L 345	L	L	L	A										
22										L	A	L	L	L	L	L	L											
23											L	L	L 365	L	U L 370	L	L											
24											U L 350	U L 350	L	U L 370	L	L	A											
25										A	A	L 375	A	A	L	L	A											
26										L	L	U L 390	L	L	U L 380	L												
27											L	L	L 390	L	C	L	L											
28										L	U L 375	U L 375	U L 390	U L 360	L	L												
29										L	L	L	A	L	U L 360	L	L											
30										L	U L 375	L 370	L	L	L	L												
31												U L 390	L	L	L 360	L	L											
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT										2	8	18	19	12	14	3												
MED										L 390	U L 370	L 375	L 365	L 370	L 360	L 360												
UQ										U L 375	L 385	L 380	L 372	U L 380	L 362													
LQ										L 360	U L 360	L 358	L 355	L 355	L 355													

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	Sweep 1 MHz to 20 MHz in 20sec in automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									245	260	260	290	280	275	265	245	255							
2									240	265	290	255	250	275	275	275	260							
3									235	255	265	280	295	280	260	260	240							
4									240	230	260	255	265	285	260	260	250							
5									240	235	245	255	245	270	260	265	250							
6						220		220	220	250	270	245	260	285	265	265	245							
7										255	245	285	300	255	230									
8									265	250	260	265	240	270	255	235								
9									230	230	305	265	250	265	260	240								
10									220	230	265	280	250	235	285	250								
11									230	230	255	265	280	265	250	245								
12									230	255	265	245	270	250	250	250	A	235						
13									230	230	270	270	260	250	235	240								
14									235	275	250	260	250	250	240									
15									230	235	305	260	240	250	270	240	220							
16									260	250	L	255	260	255	255	250	245							
17									250	235	255	305	240	A	A	245	240							
18									245	250	270	240	235	275	245	235								
19									240	270	290	225	305	285	245	235	E	A	270					
20									245	255	275	245	255	270	250	255	225							
21									245	250	240	245	300	250	245	230	240							
22									240	250	285	245	250	280	240	245								
23									265	275	260	230	255	250	245									
24									260	280	235	255	240	240	240									
25									235	230	245	245	255	265	255	225								
26									220	240	245	255	260	250	255									
27									230	255	250	255	I	C	260	245	235							
28									220	250	235	230	250	260	255									
29									225	L	240	250	245	270	265	250	220							
30									230	240	255	225	230	250	250	240								
31									245	230	230	260	240	235										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	24	29	31	31	31	30	30	29	13							
MED								220	235	250	260	250	255	262	250	245	240							
UQ								242	255	275	260	268	275	260	250	250								
LQ								230	235	252	245	250	250	245	235	235								

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H^oF₂ (KM)

IONOSPHERIC DATA

OCT. 1984

H^oF (KM)

135 E Mean Time (G.M.T. + 9 h)

Station		RUKUBUNJI TOKYO		Lat.	35 42.4 N		Long	139 29.3 E		Sweep 1 MHz to 20 MHz in 20sec in automatic operation																					
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1		E A 335	300	285	A	230	230	220	220	210	190	195	H	185	H	190	220	235	230	H	235	E A 250	E A 240	245	A	225	E A 285	275			
2		280	265	290	290	285	A	210	215	H	205	195	195	185	H	210	220	220	E A 250	250	H	240	215	215	230	235	285	285			
3		255	280	320	280	265	260	215	210	H	190	205	225	215	H	220	230	E A 250	A	230	A	235	205	205	310	305	315	300			
4		275	260	280	285	235	250	A	215	H	225	225	195	210	215	175	H	230	250	240	240	215	205	270	255	300	320				
5		290	265	280	290	250	255	215	230	H	220	205	190	180	H	190	180	H	220	230	H	240	235	210	215	260	300	290	260		
6		285	270	270	235	215	H	235	235	225	210	195	H	195	185	195	H	180	H	240	235	245	225	205	225	245	260	265	275		
7		295	275	245	215	265	260	225	220	H	215	210	H	195	200	215	H	190	235	H	210	230	225	240	245	215	255	220	230		
8		300	315	270	220	235	260	215	230	H	235	210	A	205	H	220	215	205	H	255	230	220	235	205	260	260	275	E A 310			
9		260	255	285	275	225	240	220	225	E A	235	215	205	180	190	H	210	230	230	H	220	H	205	225	235	255	280	275	280		
10		295	275	280	250	245	230	215	220	H	225	220	A	E A 230	A	A	H	H	215	240	H	245	215	220	235	210	265	360	A		
11		285	280	245	215	220	210	225	225	H	215	205	210	210	E A	255	210	H	250	235	235	230	220	230	255	230	235	275			
12		290	275	245	260	220	270	225	220	H	205	215	235	210	A	225	A	A	A	A	E A	230	225	A	E A	270	250	245	245		
13		240	270	270	250	245	255	230	230	H	210	215	205	230	A	195	H	225	220	225	220	235	275	A	245	255	225				
14		290	275	275	240	235	250	215	215	H	230	215	A	A	A	220	230	A	A	A	230	210	225	E A	270	285	E A	295	255		
15		275	250	265	255	235	245	235	220	H	225	205	205	185	H	225	225	E A	250	A	A	A	225	215	210	235	265	265	290		
16		275	295	280	255	210	240	215	225	A	235	A	215	195	H	180	H	205	210	H	230	220	H	215	220	260	255	270	230	260	
17		260	265	220	230	235	270	245	225	230	E A	240	A	220	A	A	A	A	225	235	225	E A	235	245	265	290	290	305			
18		275	305	235	230	210	255	230	230	H	205	210	205	220	H	190	200	215	220	225	215	210	250	230	270	310	300				
19		325	265	225	300	E A	350	285	245	235	A	A	A	A	E A	275	235	H	245	230	A	260	245	235	255	235	A	270			
20		245	340	280	265	250	E S	370	220	240	235	E A	230	210	225	H	205	H	A	220	A	210	240	255	280	270	E A	E A	360		
21		255	280	250	A	A	E S	320	230	240	215	190	H	190	H	185	185	H	220	215	A	E A	250	E A	250	E A	285	230	255	260	285
22		280	230	235	A	A	270	235	220	220	A	220	A	185	H	190	205	230	H	225	235	A	265	290	265	A	A				
23		A	260	240	240	250	270	235	225	H	200	195	H	195	H	190	210	250	220	220	H	220	215	220	250	245	255	265	335		
24		325	280	255	235	190	E S	330	240	225	225	H	205	190	H	185	190	H	185	220	A	220	210	210	250	260	300	240	285		
25		275	285	280	240	205	325	250	225	A	A	E A	225	A	A	200	255	A	E A	220	225	E A	225	205	280	270	270	260			
26		250	285	255	235	245	285	230	245	225	215	210	180	H	210	H	210	235	H	220	H	240	230	210	235	240	225	255	300		
27		255	285	300	260	210	230	215	200	H	210	205	210	180	175	H	I C	230	230	225	220	200	215	290	280	270	275	285			
28		290	265	240	235	240	275	220	220	220	210	220	205	195	H	180	220	230	H	225	H	215	230	245	255	250	265	280			
29		275	250	245	225	220	275	225	215	210	205	210	A	210	H	190	245	225	215	210	230	280	240	220	255	305					
30		290	270	265	215	215	E S	320	235	225	220	H	200	220	H	175	220	215	225	225	210	190	225	260	275	250	285				
31		250	280	270	230	215	215	210	210	H	200	185	180	180	H	190	190	H	225	220	220	205	195	245	245	240	265	245			
		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	31	31	28	29	30	31	31	29	27	26	26	26	29	27	25	26	31	30	31	29	31	29	29						
MED		27.6	27.5	27.0	24.0	23.5	25.6	22.5	22.5	21.5	20.5	20.5	19.5	H	19.4	20.5	22.2	22.8	22.8	22.0	21.8	24.0	25.5	26.0	26.5	28.2					
UQ		29.0	28.2	28.0	26.2	24.5	27.2	23.5	22.8	22.5	21.4	21.2	21.2	H	21.2	22.0	23.5	23.0	23.5	23.0	23.0	25.4	27.0	27.0	28.8	29.5					
LQ		26.0	26.5	24.5	23.0	21.5	24.0	21.5	22.0	21.0	20.2	19.5	18.5	H	19.0	19.0	22.0	22.0	22.0	21.2	21.0	22.5	24.0	24.8	25.5	26.0					

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H^oF (KM)

IONOSPHERIC DATA

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H^oE (KM)

135 E Mean Time (G.M.T. + 9 h)

Station **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	A	110	A	A	A	A	110	105	110	115	120						
2							B	A	A	A	A	A	A	A	A	105	A	A						
3	S	S					A	110	110	105	115	A	105	105	105	105	110	S						
4							S	A	A	A	A	A	A	E A	A	A	A	E S						
5							B	A	A	A	A	A	A	E A	A	A	105	115	S					
6							S	110	105	105	A	105	110	110	A	115	A	E A	A					
7							S	115	110	115	110	115	110	105	105	105	110	S				S	S	S
8	S	S	B	B	S	S	S	110	115	120	110	120	110	115	110	110	110	B						
9							B	115	A	A	A	A	130	110	A	105	115	E A	S					
10							S	A	A	A	A	A	A	A	A	A	A	S						
11							S	110	110	115	110	115	A	A	A	110	110	120						
12							S	115	110	110	105	110	110	105	115	110	115							
13							S	110	110	110	105	105	A	A	110	110	110							
14							S	110	A	E A	A	E A	A	A	A	120	110	A						
15							S	110	105	105	115	A	A	A	A	A	A							
16							S	110	110	105	105	105	105	115	A	110	110	120						
17							B	120	110	105	110	110	110	110	A	A	A							
18							S	A	A	A	A	A	A	115	115	110	115	E A						
19							S	110	105	105	A	A	A	A	A	A	A							
20					S			120	105	110	105	105	A	A	A	A	A							
21								110	A	E A	120	E A	125	E A	125	A	E A	A						
22								120	110	105	A	A	E A	E A	E A	E A	E A	A						
23								150	110	105	E A	130	E A	115	E A	115	110	A						
24								110	A	A	A	A	120	120	110	115	110	120						
25								A	A	A	A	A	A	A	A	A	A							
26								A	A	A	A	E A	120	E A	120	120	A	E A						
27								115	115	E A	130	A	A	A	C	115	115	A						
28								120	115	115	115	110	110	110	115	120	A							
29								115	A	110	105	A	A	E A	A	A	A							
30								115	105	105	105	105	105	A	A	E A	130	110						
31								115	105	110	105	110	A	A	E A	130	E A	115	125					
	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	23	25	19	19	17	20	21	22	17	2						
MED								115	110	110	108	110	110	112	110	110	112	122						
UQ								115	110	112	112	116	112	120	115	115	118							
LQ								110	105	105	105	110	110	110	110	110	110							

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H^oE (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

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H°ES (KM)

135 E Mean Time (G.M.T. + 9 h)

Station		KOKUBUNJI TOKYO																						
Lat. 35 42.4 N · Long 139 29.3 E		Sweep 1 MHz to 20 MHz in 20sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	100	125	120	115	125	150	145	120	135	105	105	105	105	G	150	125	115	110	105	110	110	105	105
2	105	105	105	100	100	100	100	100	105	105	105	105	105	105	125	115	110	115	110	105	S	S	105	100
3	S	S	105	100	100	125	110	115	110	E G 165	130	105	135	145	130	120	115	110	105	105	S	105	105	110
4	95	100	100	100	100	100	140	140	110	110	110	100	100	100	100	100	140	120	110	110	105	105	100	100
5	100	100	100	115	100	95	120	115	110	115	100	100	100	100	100	G	140	115	S	105	100	S	105	S
6	S	S	S	S	S	S	150	G	G	100	100	125	G	100	E G 170	150	135	95	95	100	95	95	S	95
7	S	S	S	B	S	110	145	135	110	105	105	105	100	G	G	G	G	125	S	S	110	S	S	S
8	S	S	B	130	110	110	145	150	125	120	110	120	100	110	G	140	125	110	110	110	105	100	100	100
9	100	100	100	100	100	100	130	140	110	105	105	105	100	100	G	105	105	130	100	95	110	115	110	105
10	105	105	100	105	S	100	150	135	125	130	115	110	105	105	100	105	150	120	120	100	100	S	110	110
11	110	105	95	100	105	S	140	145	150	E G 175	140	140	95	95	95	135	125	115	110	105	105	110	S	S
12	105	S	S	120	S	S	145	150	130	135	150	135	125	125	125	115	115	105	105	100	100	100	100	S
13	105	105	120	115	110	S	S	G	E G 165	135	115	105	105	105	G	130	120	120	110	105	105	105	100	105
14	100	100	100	100	100	105	145	140	130	125	115	110	105	100	105	110	110	110	105	100	100	100	100	100
15	100	100	S	S	120	S	S	120	115	110	110	105	105	100	105	100	100	160	125	110	105	105	100	105
16	100	95	95	95	S	100	160	E G 170	115	115	115	115	G	110	G	G	G	100	115	110	105	105	S	100
17	100	100	100	115	115	S	130	125	125	125	125	120	115	110	105	105	120	100	100	100	100	100	105	105
18	105	110	105	105	120	100	110	105	105	100	100	100	100	100	155	135	120	110	95	95	95	S	105	100
19	105	100	100	100	100	115	125	120	115	110	105	105	100	100	100	100	100	100	120	115	110	110	105	105
20	100	100	100	100	100	S	135	135	100	110	110	105	105	100	100	100	110	105	105	105	105	105	100	100
21	100	100	100	110	110	100	145	160	140	110	110	105	100	100	100	100	95	95	95	95	95	95	95	105
22	105	105	100	100	100	100	100	130	120	105	105	100	100	95	95	95	95	95	95	95	95	105	105	105
23	105	100	100	100	100	S	100	150	120	110	105	100	100	100	100	110	105	105	100	100	105	100	100	100
24	100	105	100	100	100	100	145	150	150	105	105	105	100	100	105	130	120	110	S	S	100	100	105	105
25	100	100	125	100	120	115	110	110	105	105	105	100	100	105	105	105	110	120	115	110	110	115	105	105
26	110	100	100	100	105	S	115	110	105	105	100	100	100	100	100	100	150	95	100	95	95	100	105	100
27	S	100	95	100	100	105	140	120	110	100	100	100	100	C	100	100	100	95	95	95	95	95	95	95
28	S	S	S	S	S	S	105	G	105	105	100	100	100	100	100	150	170	95	S	S	S	105	S	100
29	100	100	100	100	105	115	105	150	100	115	110	105	105	105	100	100	115	100	100	100	100	110	S	100
30	100	130	105	100	95	100	110	120	115	130	110	110	110	105	110	145	120	115	115	105	100	100	100	100
31	100	100	100	100	100	100	S	G	120	115	G	110	110	110	145	130	130	95	105	S	100	100	S	125
CNT	25	25	25	27	25	21	28	27	30	31	30	31	29	29	25	28	29	31	27	27	28	26	24	27
MED	100	100	100	100	100	100	132	135	115	110	108	105	100	100	100	110	120	110	105	105	100	105	105	100
UQ	105	105	105	108	110	110	145	146	125	122	115	110	105	105	108	132	125	115	110	105	105	105	105	105
LQ	100	100	100	100	100	100	110	120	110	105	105	100	100	100	100	100	110	100	100	100	100	100	100	100

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H°ES (KM)

IONOSPHERIC DATA

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TYPES OF ES

135 E Mean Time (G.M.T. + 9 h)

Station **OKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1** MHz to **20** MHz in **20** sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	FF 42	F 2	FF 63	FF 71	FF 31	FF 11	HL 43	HL 32	C 1	HL 12	L 2	L 2	L 1	L 1		H 1	H 2	C 5	F 5	F 3	F 6	F 2	F 6	F 4
2	F 2	F 4	F 6	F 7	F 3	F 6	L 5	L 4	L 2	L 2	L 1	L 1	L 1	L 1	CL 21	C 2	L 3	L 2	F 1	F 1			F 2	F 2
3	K 1	K 1	F 1	F 2	F 2	FF 11	L 1	C 2	C 2	HC 11	HL 11	L 1	H 1	H 2	H 2	C 2	C 3	L 6	F 6	F 1		F 2	F 2	F 1
4	F 1	F 3	F 4	F 3	F 2	F 4	H 3	HL 22	L 2	L 2	L 2	L 2	L 3	L 2	L 2	L 2	HL 22	C 5	F 5	F 2	F 3	F 3	F 2	F 2
5	F 1	F 1	F 1	FF 11	F 1	F 1	C 3	CL 21	CL 32	CL 11	L 1	L 2	L 1	L 1	L 1		H 2	C 4		F 1	F 1		F 2	
6							H 4			L 1	L 1	CL 11		L 1	HL 12	HL 12	HL 23	L 4	F 2	F 1	F 1	F 1		F 1
7						F 1	HL 31	HL 22	L 2	L 1	L 1	L 1	L 1					C 3			F 1	K 1	K 1	K 1
8	K 1	K 1	K 1	CK 31	CK 11	LK 11	H 2	H 2	HL 22	CL 21	C 2	CL 11	L 1	L 1		H 2	H 3	C 5	F 3	F 1	F 2	F 2	F 4	F 5
9	F 3	F 2	F 1	F 1	F 1	F 1	H 1	HC 12	L 2	L 3	L 2	L 1	L 1	L 1		L 2	LH 31	H 1	F 2	F 2	FF 21	F 2	F 3	FF 32
10	FF 31	FF 22	F 1	FF 11		FF 11	H 2	HL 32	HL 31	HL 11	CL 22	CL 22	LL 22	LL 21	LL 11	L 1	H 3	C 3	FF 31	F 3	F 1		F 3	F 6
11	F 2	FF 21	F 2	F 1	F 2	F 1	C 4	HL 21	HL 12	HL 11	HL 21	HL 11	L 3	L 4	L 1	HL 21	CL 41	FF 51	F 7	F 3	F 4	F 1		
12	F 2			F 2			HL 21	H 2	H 2	H 2	HC 21	HC 21	HL 31	H 2	CL 21	C 3	C 5	F 4	F 5	F 3	F 2	F 1	F 2	
13	F 2	F 2	FF 11	F 3	F 2				H 3	H 2	C 2	C 2	L 2	L 1		H 1	C 3	FF 11	F 3	FF 31	F 4	F 2	F 4	F 1
14	F 2	F 2	F 2	F 2	F 2	F 1	H 3	HH 22	HL 23	CL 22	CL 22	CL 21	LL 21	L 2	LL 42	CL 31	L 3	F 1	F 3	F 4	F 2	F 4	F 4	F 3
15	F 2	F 2			F 1			C 3	C 2	C 2	CL 21	LL 11	L 2	L 2	L 3	L 2	L 4	FF 11	FF 31	F 1	F 2	F 3	F 2	F 1
16	F 2	F 2	F 2	F 1		F 2	H 2	H 2	C 3	C 3	C 2	C 1		L 1				F 1	FF 12	FF 22	F 3	F 2		F 2
17	F 2	F 2	F 3	FF 21	FF 11		C 4	C 3	C 2	C 2	CL 21	CL 21	C 2	CL 31	L 3	LH 31	CL 13	F 3	F 4	F 6	F 3	F 4	F 2	F 2
18	F 2	FF 52	F 1	F 1	FF 11	F 1	L 3	L 4	L 2	L 2	L 2	L 2	L 1	L 1	HL 11	HL 11	CL 32	FF 21	F 2	F 2	F 1		F 1	F 1
19	F 1	F 2	F 3	F 2	F 4	F 1	C 5	C 3	C 3	C 2	L 3	L 3	L 3	L 2	L 3	L 3	L 3	F 2	FF 11	FF 11	F 2	F 2	F 5	F 3
20	F 5	F 2	F 2	F 2	F 3	K 1	F 3	HC 42	LC 13	C 3	CL 21	C 2	LL 21	LL 31	L 4	L 3	CL 31	F 3	F 5	F 3	F 3	F 5	F 4	F 5
21	F 3	F 2	F 5	FF 33	FF 41	F 1	FF 31	H 2	HL 12	L 1	L 1	L 1	L 2	L 2	L 2	L 2	L 4	F 4	F 4	F 4	F 2	F 2	F 1	F 1
22	F 1	FF 21	F 3	F 5	F 5	F 2	F 5	C 2	C 2	C 3	L 2	L 2	L 2	L 2	L 3	LH 31	L 3	F 4	F 5	F 2	F 2	FF 31	F 6	F 5
23	FF 24	F 3	F 2	F 1	F 1		F 1	H 2	C 2	C 1	L 1	L 1	L 1	L 1	L 1	L 1	L 3	F 1	F 3	F 4	F 2	F 5	F 2	F 5
24	F 5	F 1	F 1	F 2	F 1	F 1	F 5	H 2	HL 22	CL 31	L 2	L 1	L 2	L 1	L 1	HL 31	C 3	F 7			F 2	F 4	F 1	F 2
25	F 2	F 2	FF 21	FF 22	FF 11	F 2	F 6	L 3	L 3	L 3	L 2	L 2	L 3	L 3	L 3	L 3	L 5	F 3	F 4	F 1	F 2	F 1	F 2	F 2
26	FF 22	F 2	F 3	F 2	F 2		F 1	L 3	L 2	L 2	L 2	L 1	L 2	L 1	L 2	L 1	HL 11	F 2	FF 32	F 2	F 1	F 1	FF 12	FF 21
27		F 3	F 4	F 1	F 1	F 1	FF 21	C 3	CL 32	L 2	L 2	L 3	L 2		L 1	L 2	L 2	F 4	F 5	F 2	F 1	F 2	F 2	F 1
28							FF 11		L 1	L 1	L 1	L 1	L 1	L 1	L 1	HL 21	HL 22	F 2				F 1		F 2
29	F 2	F 2	F 2	F 1	F 1	FF 11	FF 11	H 2	L 1	C 2	C 2	L 2	L 2	L 1	L 3	LH 21	CL 32	F 2	F 3	F 2	F 1	F 1		F 1
30	F 1	F 1	F 1	F 3	F 3	F 2	F 1	H 3	C 2	C 2	C 2	C 2	C 1	L 2	L 1	HL 12	C 4	F 4	FF 11	F 2	F 4	F 2	F 2	F 2
31	F 2	F 2	F 2	F 2	F 2	F 1			C 2	C 2		LL 11	LL 11	LL 11	HL 11	HL 11	C 3	F 2	F 1		F 3	F 3		FF 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																								
MED																								
UQ																								
LQ																								

OCT. 1984

TYPES OF ES

IONOSPHERIC DATA

OCT. 1984

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station		YAMAGAWA							Lat. 31° 12' 1" N			Long 130° 37' 1" E			Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		X 43	U 42	S 43	X 45	S 41	X 32	X 40													X 77	S 41	X 41	X 38	X 41	
2		S 43	X 43	S 42	X 41	X 43	X 45	X 51													X 72	X 45	X 40	X 38	X 39	
3		X 40	X 40	X 39	X 37	X 39	X 37	X 41													X 47	X 43	X 41	X 40	X 42	
4		X 43	X 48	S 42	X 42	X 37	X 29	X 39													X 58	X 36	X 36	A	A	
5		X 41	X 44	X 43	X 41	X 40	X 36	S 42													X 51	X 38	X 41	S 41	X 42	
6		X 43	X 45	X 42	X 38	X 32	X 33	X 40													X 53	X 40	X 44	S 43	U 43	
7		X 44	X 45	X 48	X 43	X 33	X 35	X 46													X 76	S 70	S 54	S 53	S 51	
8		S 49	S 52	S 55	S 49	X 34	X 34	X 39													X 74	X 50	X 51	X 49	S 51	
9		S 51	X 37	X 36	S 39	X 41	X 38	X 42													X 57	X 40	S 47	X 42	X 42	
10		X 41	X 42	X 42	X 41	X 39	X 33	X 44													C	C	C	C	C	
11		C	C	C	C	C	C	C													X 82	X 76	X 45	X 40	X 43	X 42
12		X 44	X 46	X 48	X 48	X 41	X 32	X 41													X 70	S 52	O 49	C	C	X 43
13		U 44	S 44	C	C	C	C	C													X 74	X 63	X 56	S 60	S 48	U 42
14		S 38	X 39	X 39	X 40	S 38	X 35	S 39													X 66	S 51	X 39	A 42	U 39	
15		X 36	X 39	X 38	X 36	S 34	X 33	X 36													X 67	X 57	S 42	X 40	X 39	
16		X 37	X 38	X 38	X 42	X 39	X 30	S 32													X 67	S 60	X 53	X 48	X 40	
17		X 38	X 40	X 41	X 39	X 35	S 32	X 37													X 82	X 39	A	S 36	X 37	S 37
18		S 38	S 38	X 39	U 42	S 40	U 35	X 32													X 57	X 48	X 46	X 34	X 38	X 39
19		X 39	X 42	X 42	X 31	X 33	X 36	X 40													X 83	X 86	X 54	X 55	X 42	X 41
20		X 45	X 35	X 40	X 35	X 30	X 29	X 33													X 55	X 43	X 46	X 48	X 42	X 42
21		X 49	X 42	X 42	X 46	X 31	A	A													X 65	X 55	S 51	X 45	X 43	X 42
22		X 41	X 45	X 39	X 36	A	X 29	A													X 54	X 41	X 42	S 63	S 42	S 41
23		X 40	X 46	A	X 36	A	X 28	X 34													C	C	C	C	C	C
24		C	C	C	C	C	C	C													C	C	C	C	C	C
25		C	C	C	C	C	C	C													X 76	X 41	X 37	A	S 50	S 53
26		X 43	X 38	X 37	X 36	X 35	X 34	X 37													X 92	X 59	X 47	X 46	X 43	X 40
27		X 42	X 40	X 39	X 40	X 43	X 35	S 33													X 54	S 40	S 40	O 40	X 43	S 43
28		S 42	X 44	S 40	X 37	X 34	X 33	X 35													X 48	S 44	X 42	X 43	X 43	S 41
29		X 39	X 40	X 40	S 33	X 36	X 29	S 33													X 53	X 47	X 40	X 44	X 41	X 38
30		S 41	S 39	S 40	S 41	X 31	X 25	X 28													X 68	A	U 33	S 34	U 38	S 39
31		X 39	X 41	X 42	S 35	X 41	X 34	X 28													X 53	X 51	X 41	X 42	X 43	S 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		28	27	26	27	25	26	25													19	27	27	25	26	27
MED		X 42	X 42	X 40	X 40	X 37	X 33	X 39													X 67	X 53	X 42	X 43	X 42	X 41
UQ		X 44	X 44	X 42	X 42	X 40	X 35	X 41													X 75	X 62	X 48	X 47	X 43	X 42
LQ		X 39	X 39	X 39	X 36	X 34	X 30	X 33													X 54	X 47	X 40	X 40	X 40	X 39

OCT. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.				Long				Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
1	37	S	36	37	39	35	26	34	58	59	67	62	77	85	83	82	77	75	78	81	71	35	35	32	F			
2	S	37	37	36	35	37	F	F	42	55	57	65	85	92	79	81	75	80	99	106	82	66	39	34	32	33		
3	34	34	33	31	33	31	35	53	56	62	65	70	86	94	104	111	102	83	82	41	37	S	S	S	36			
4	37	42	S	36	31	23	33	64	77	78	65	67	82	84	91	94	94	88	77	52	30	S	A	A				
5	35	38	37	F	F	30	S	65	84	90	80	81	H	U	R	90	80	89	81	69	45	32	35	35	36			
6	37	39	36	32	26	27	34	56	71	74	64	80	84	76	79	92	82	74	76	47	34	S	S	U	S			
7	38	39	42	S	27	29	40	70	63	56	85	103	79	89	120	102	76	67	68	70	S	S	S	45				
8	S	46	S	S	28	28	U	S	55	68	88	80	82	97	101	97	98	83	82	76	68	44	45	43	45			
9	S	31	S	S	35	32	36	59	64	73	70	83	105	107	108	108	86	68	68	S	34	J	S	S	S			
10	35	36	36	35	33	27	38	57	70	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			
11	C	C	C	C	C	C	C	C	C	91	66	87	81	93	89	80	71	75	76	70	39	34	37	36				
12	38	S	42	42	35	26	35	59	67	71	85	84	89	100	90	90	80	I	C	S	S	S	C	C	37			
13	U	S	C	C	C	C	C	C	C	62	72	89	118	109	103	104	H	74	68	57	U	S	S	S	S			
14	S	S	U	S	S	29	U	S	57	U	S	62	67	67	82	98	102	112	117	U	R	U	R	U	S			
15	30	33	F	30	28	27	30	62	63	60	73	80	114	R	U	H	U	R	83	61	S	51	36	S	34	33		
16	31	32	32	36	33	24	26	51	57	84	71	72	89	107	104	90	85	71	61	54	47	42	46	S	34			
17	S	J	S	S	29	26	31	66	73	71	85	89	110	104	R	92	79	76	81	76	33	A	30	31	S			
18	32	J	S	S	34	29	26	51	60	64	91	96	88	81	H	98	79	67	63	51	42	40	28	S	33			
19	33	36	36	25	27	30	34	66	76	78	103	107	72	97	124	91	63	65	77	80	48	49	S	35				
20	39	29	34	29	24	23	27	55	70	83	102	109	100	103	101	116	105	74	49	37	40	42	36	36				
21	43	36	36	40	25	A	A	58	76	88	88	71	83	J	R	92	86	71	62	59	49	45	S	S	S			
22	35	39	33	30	A	23	A	57	66	82	73	89	84	78	99	75	64	64	48	35	36	37	S	S	35			
23	34	40	A	30	A	22	28	59	62	78	87	111	128	92	87	90	C	C	C	C	C	C	C	C	C			
24	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			
25	C	C	C	C	C	C	C	C	C	96	96	82	95	102	99	H	79	72	70	35	31	A	S	S	47			
26	S	32	31	30	29	28	31	64	87	97	82	90	102	117	116	R	R	U	R	R	H	41	40	37	34			
27	36	S	33	S	37	29	27	51	61	67	83	81	95	101	109	76	67	59	48	34	S	S	S	37	37			
28	S	38	S	31	28	27	29	58	73	H	68	90	89	R	92	86	90	79	68	60	43	38	36	37	S	S		
29	33	34	34	27	30	23	27	60	83	61	75	78	77	87	103	89	64	50	47	41	34	S	38	35	32			
30	S	S	S	S	25	19	22	53	66	73	70	98	93	87	91	78	66	S	71	62	A	27	28	U	S	F		
31	F	F	F	S	U	F	S	55	64	H	62	81	67	76	80	85	66	63	47	45	35	36	37	28				
CNT	28	27	26	27	25	26	25	27	27	29	29	29	29	29	29	28	28	28	28	27	27	25	26	25				
MED	36	36	34	33	31	27	33	58	66	73	80	83	89	97	98	90	80	72	68	47	36	37	36	36				
UQ	38	38	36	36	33	29	35	61	73	83	85	90	100	102	104	96	87	80	76	56	42	S	41	37	36			
LQ	33	33	33	30	28	24	27	55	62	65	70	80	83	86	90	80	68	63	55	41	34	34	34	33				

OCT. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station		YAMAGAWA							Lat.		31 12 1 N		Long		130 37 1 E		Sweep 1		MHz to 25		MHz in 24		sec in automatic operation		
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	430	430	A	U	L	L	L	A						
2									L	L	L	430	460	U	L	470	480	U	L	430	U	L	L		
3										L	L	U	L	470	480	L	U	L	L						
4										L	L	L	U	L	460	460	440	U	L	L	A	A			
5										L	U	L	U	L	430	450	A	460	L	U	L	L	L		
6										L	L	L	430	440	U	L	480	U	L	460	L	L	L		
7										L	L	L	L	460	440	U	L	460	U	L	L	L			
8										L	L	L	U	L	460	450	430	L	U	L	L	L			
9										L	L	U	L	450	460	U	L	460	U	L	L	L	L		
10										L	C	C	C	C	C	C	C	C	C	C	C	C	C		
11									C	C	L	L	L	L	L	L	L	L	L	L	L	L	L		
12										L	L	L	L	L	L	L	L	L	L	L	L	L	L		
13									C	C	L	L	U	L	390	460	450	L	L	L	L	L	L		
14										L	L	U	L	460	L	L	A	430	L	L	L	L	L		
15										L	L	L	U	L	450	460	L	L	L	L	L	L	L		
16										L	L	L	U	L	410	A	L	L	430	L	L	L	L		
17										L	L	L	L	A	L	U	L	440	U	L	A	A			
18										L	L	L	420	U	L	L	460	L	430	L	L	L			
19										L	A	A	A	A	A	L	A	A	A	A	A	A			
20										L	L	L	L	L	450	440	L	L	L	L	L	L	L		
21										L	L	L	L	L	L	L	L	L	L	L	L	L	A		
22										L	L	L	L	L	L	L	L	L	L	L	L	L	L		
23										L	L	L	L	L	L	L	L	L	L	L	C	C	C		
24									C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
25									C	C	L	L	L	L	L	L	L	L	L	L	L	L	L		
26										L	L	L	L	L	L	L	L	L	L	L	L	L	L		
27										L	L	L	U	L	440	420	L	L	430	L	L	L	L		
28										L	L	U	L	440	440	420	430	430	L	L	L	L			
29										L	L	L	L	440	450	450	410	L	L	L	L	L			
30										L	L	L	U	L	440	440	L	L	L	L	L	L			
31										L	L	L	L	L	L	L	L	L	L	L	L	L	L		
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	11	18	15	15	13	5	1							
MED											L	420	430	U	L	450	450	450	L	440	U	L	400		
UQ												U	L	445	U	L	460	U	L	470	U	L	430		
LQ												L	430	U	L	440	L	430	L	430	U	L	410		

OCT. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9h)

Station	YAMAGAWA				Lat. 31 12.1 N				Long 130 37.1 E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							190	A	A	A	A	A	A	325	305	280	210		S					
2							A	A	A	315	325	335	330	315	295	260	180		S					
3							220	260	300	310	315	A	A	A	290	A	180		S					
4							210	240	270	290	A	A	A	325	300	260	210		S					
5							S	A	A	A	A	A	A	A	A	A	A							
6							210	240	280	315	330	330	325	310	290	250	210		S					
7							200	250	290	310	325	330	325	305	275	250	A	S						
8							180	250	290	310	A	A	A	310	290	250	195		S					
9							185	A	A	A	A	A	A	A	A	A	A	S						
10							200	255	C	C	C	C	C	C	C	C	C							
11							C	C	290	310	330	325	320	305	290	260	195							
12							190	255	A	305	315	R	320	315	305	295	A	C						
13							C	C	H	A	310	A	A	A	A	260	190							
14							190	H	280	290	305	315	310	A	295	280	250		S					
15							200	250	280	A	A	A	310	A	290	260	180							
16							170	H	250	280	A	315	A	A	A	A	A	S						
17							S	230	280	300	305	305	310	A	A	A	A							
18							S	A	A	A	A	A	A	A	290	250		S						
19							190	R	240	280	A	A	A	A	A	A	A							
20							175	A	A	A	A	A	A	A	A	A	A	S						
21							170	230	A	A	300	A	300	295	A	A	A	S						
22							A	A	260	285	A	A	A	A	A	A	170							
23							185	250	A	A	A	A	300	A	275	C	C							
24							C	C	C	C	C	C	C	C	C	C	C							
25							C	C	A	A	A	A	A	A	A	A	A	S						
26							195	260	290	A	A	A	310	A	280	255		S						
27							190	240	A	305	310	315	315	300	275	245	170							
28							A	A	H	280	305	310	R	315	305	295	270	230		S				
29							195	245	270	290	H	310	H	U	R	A	280	A	S					
30							S	R	250	280	305	310	305	305	H	295	280	240	A					
31							170	240	280	H	295	H	310	R	320	310	A	260	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								20	19	18	16	16	12	15	13	19	15	11						
MED								190	250	280	305	312	320	310	305	290	250	190						
UQ								200	252	290	310	320	328	318	310	290	260	202						
LQ								182	240	280	298	310	312	308	295	278	250	180						

OCT. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

OCT. 1984

FOES (0.1 MHZ)

135 E Mean Time (G.M.T. + 9h)

Station	YAMAGAWA				Lat.	31 12-1 N				Long	130 37-1 E				Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation					
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J A 22	J A 26	J A 30	J A 23	J A 20	22	20	26	31	J A 37	36	37	J A 50	J A 35	36	39	J A 46	J A 50	J A 88	J A 84	J A 41	J A 31	J A 84	J A 64	
2	E S 16	E S 16	E S 16	J A 18	J A 19	J A 21	J A 26	J A 26	J A 47	J A 40	G	34	36	34	34	34	34	27	J A 24	J A 30	J A 29	J A 21	J A 19	J A 21	
3	J A 32	J A 21	J A 21	19	18	18	E S 16	24	G	34	35	36	44	J A 37	J A 44	J A 40	J A 48	J A 48	J A 44	J A 33	23	E S 16	E S 16	E S 16	
4	23	22	J A 31	J A 24	22	20	21	27	34	35	40	36	J A 37	J A 40	G	20	J A 46	J A 43	J A 45	J A 41	J A 39	J A 64	J A 77	J A 80	
5	18	J A 20	J A 20	J A 18	E S 16	E S 16	18	27	30	J A 35	J A 50	J A 48	J A 40	J A 39	J A 32	34	35	26	J A 26	J A 22	J A 41	J A 29	J A 21	J A 20	
6	23	22	23	E S 16	E S 16	E S 16	E S 16	24	33	G	G	G	35	23	G	39	35	J A 54	J A 33	J A 28	J A 23	22	E S 16	19	
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	24	32	32	G	G	G	G	G	G	G	22	J A 19	E S 16	E S 16	E S 16	21	E S 16	
8	E S 16	E S 16	E S 16	20	19	20	E S 16	24	32	37	42	38	36	37	33	32	28	21	20	E S 16	E S 16	J A 24	J A 29	J A 17	
9	J A 32	J A 24	J A 18	J A 20	22	21	J A 22	23	28	J A 44	37	34	J A 37	J A 35	J A 40	J A 35	J A 28	J A 30	J A 26	J A 27	J A 23	J A 20	22	J A 23	
10	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	23	29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	G	G	35	39	34	G	32	J G 22	25	J A 25	E S 16	E S 16	J A 19	J A 27	J A 18	
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	24	28	J A 61	J A 71	J A 54	36	38	47	J A 44	26	C	J A 29	J A 53	J A 64	C	C	J A 27	
13	21	C	C	C	C	C	C	C	C	33	34	33	J A 36	35	34	30	G	G	18	E S 16	E S 16	23	21	21	
14	23	J A 18	J A 20	21	21	E S 16	E S 16	G	G	33	36	J A 52	J A 45	J A 67	35	36	J A 35	J A 39	J A 22	E S 16	E S 16	65	J A 33	J A 24	
15	21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	31	38	J A 68	J A 64	G	32	35	31	24	E S 16	J A 41	J A 62	J A 29	J A 24	18	
16	J A 18	J A 24	J A 25	E S 16	E S 16	E S 16	E S 16	25	G	37	32	G	J A 64	J A 78	33	33	25	J A 22	J A 36	J A 35	J A 35	J A 29	J A 21	23	
17	20	22	18	24	21	E S 16	E S 16	25	33	39	J A 46	46	J A 66	J A 52	J A 50	J A 51	J A 65	J A 78	J A 22	J A 24	J A 51	J A 33	J A 24	27	
18	J A 25	J A 23	E S 16	23	21	E S 16	E S 16	E S 16	J A 32	J A 31	36	J A 45	J A 42	J A 41	34	38	34	32	23	22	J A 24	J A 27	E S 16	J A 36	
19	23	J A 26	E S 16	E S 16	E S 16	E S 16	E S 16	30	36	J A 84	J A 54	60	J A 63	J A 80	J A 46	J A 52	J A 42	35	J A 21	J A 35	J A 38	J A 36	J A 39	E S 16	
20	E S 16	22	E S 16	22	J A 24	21	E S 16	G	J A 29	J A 64	J A 37	J A 33	J A 38	J A 41	J A 43	J A 51	30	22	J A 54	J A 65	J A 37	J A 26	J A 30	J A 26	
21	J A 28	J A 24	J A 25	J A 23	J A 27	J A 21	J A 33	29	33	28	J A 37	J A 43	32	26	28	J A 34	J A 36	J A 60	J A 41	J A 24	J A 20	J A 24	J A 22	J A 21	
22	J S 16	J A 22	J A 17	J A 18	J A 24	J A 24	J A 44	J A 30	J A 43	29	35	J A 38	J A 47	33	J A 47	J A 31	J A 36	J A 47	J A 46	J A 33	J A 33	60	45	51	
23	J A 40	J A 65	J A 65	J A 43	J A 52	J A 28	J A 29	21	28	33	31	J A 35	J A 37	G	J A 34	J G 24	C	C	C	C	C	C	C	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
25	C	C	C	C	C	C	C	C	C	J A 44	J A 52	J A 66	J A 37	39	38	J A 39	J A 43	20	J A 29	J A 28	J A 32	J A 77	J A 52	J A 31	
26	J A 21	J A 20	23	E S 16	E S 16	E S 16	E S 16	G	G	G	J A 33	J A 37	J A 42	24	J A 34	G	J A 30	J A 24	J A 24	24	22	E S 16	J A 21	J A 33	
27	J A 21	J A 24	E S 16	E S 16	J A 23	E S 16	E S 16	20	28	31	21	34	25	G	33	33	30	G	G	16	21	22	19	18	E S 16
28	E S 16	E S 16	21	E S 16	E S 16	E S 16	E S 16	23	30	22	G	G	J G 30	33	33	G	29	22	22	24	J A 18	22	22	E S 16	
29	E S 16	E S 16	E S 16	E S 16	J A 17	J A 18	18	26	J A 33	J A 37	31	G	G	G	34	43	J A 38	J A 33	20	J A 34	J A 30	J A 33	J A 35	J A 24	
30	J A 21	J A 20	22	J A 18	18	21	E S 16	24	39	38	40	J A 46	J A 60	J A 43	35	32	32	20	J A 22	J A 65	J A 40	J A 34	J A 36	J A 43	
31	J A 17	J A 18	J A 20	E S 16	18	18	19	G	38	G	G	G	G	33	34	31	29	22	22	18	21	E S 16	E S 16	E S 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	28	27	27	27	27	27	27	27	27	29	29	29	29	29	29	29	28	27	28	28	28	27	27	28	
MED	21	J A 21	18	18	18	E S 16	E S 16	24	31	34	36	36	J A 37	35	34	34	33	J A 26	J A 24	J A 28	26	26	J A 22	J A 22	
UQ	J A 23	J A 24	J A 22	J A 22	22	21	20	26	33	J A 38	40	J A 46	J A 45	J A 40	38	39	J A 37	J A 41	J A 34	J A 34	J A 38	33	34	J A 29	
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20	28	31	31	33	36	33	33	31	28	22	22	22	20	20	21	18	

OCT. 1984

FOES (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31 12·1 N				Long 130 37·1 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	20	25	26	18	E	E	E	25	31	35	36	37	49	35	35	34	39	50	63	35	23	E	E	21	
2	E S	E S	E S	E	E	20	24	23	27	31	G	G	36	34	27	34	33	27	18	21	19	E	E	E	
3	23	E	E	E	E	E S	16	23	G	34	35	36	43	34	41	36	35	30	19	30	E	E S	E S	E S	
4	E	E	20	E	E	E	E	G	33	34	38	35	36	34	G	G	20	41	37	45	40	20	E A	A A	80
5	E	E	17	E	E S	E S	E	27	28	33	41	46	38	34	32	33	30	24	25	19	18	E	E	E	
6	E	E	E	E S	E S	E S	E S	23	28	G	G	G	35	23	G	G	39	33	24	30	E	E	E S	E	
7	E S	E S	E S	E S	E S	E S	E S	24	29	31	G	G	G	G	G	G	22	17	E S	E S	E S	E S	E S	E S	
8	E S	E S	E S	E	E	E S	16	23	31	35	42	37	36	37	33	32	28	21	E	E S	E S	E	20	E	
9	23	17	E	19	E	E	E	22	28	40	33	34	34	33	34	30	27	23	19	20	E	18	E	18	
10	E S	E S	E S	E S	E S	E S	E S	22	29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	G	G	35	36	33	G	G	19	25	18	E S	E S	E	E	E	
12	E S	E S	E S	E S	E S	E S	E S	21	G	G	35	40	36	36	42	G	25	C	20	38	35	C	C	18	
13	E	C	C	C	C	C	C	C	C	32	G	G	35	34	32	29	G	G	G	E S	E S	E	E	E	
14	E	E	E	E	E	E S	E S	G	G	31	G	44	42	58	33	33	33	34	E	E S	E S	A A	65	19	22
15	E	E S	E S	E S	E S	E S	E S	G	G	30	37	37	40	G	31	34	G	23	E S	16	34	18	E	20	E
16	E	19	20	E S	E S	E S	E S	24	G	35	31	G	50	40	33	30	24	17	E	19	20	E	E	E	
17	E	E	E	17	E	E S	E S	24	30	39	38	44	51	34	36	37	48	29	20	21	A A	51	25	22	26
18	21	E	E S	E	E	E S	E S	E S	26	30	32	34	35	36	33	37	33	29	E	E	21	23	E S	16	20
19	E	18	E S	E S	E S	E S	E S	29	35	36	52	50	45	53	36	44	36	29	19	28	25	20	30	E S	16
20	E S	E S	E S	E	21	E S	E S	G	25	33	37	32	33	32	32	36	25	20	19	26	20	18	18	E	
21	20	23	E	23	18	A A	A A	29	32	28	35	G	32	26	G	29	33	40	35	22	19	17	18	E	
22	S	17	E	E	A A	24	17	A A	29	27	29	32	37	43	32	33	29	25	33	40	29	30	33	30	20
23	22	E	A A	65	18	A A	52	17	25	G	G	28	30	32	33	28	30	23	C	C	C	C	C	C	C
24	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
25	C	C	C	C	C	C	C	C	C	30	30	31	33	38	36	37	34	20	25	23	23	A A	77	29	23
26	E	E	E	E S	E S	E S	E S	G	G	G	31	34	33	22	30	G	24	20	20	E	E	E S	E	20	
27	19	19	E S	E S	E	E S	E S	G	G	30	21	G	G	G	G	G	G	16	E	E	E	E	E S	E S	E S
28	E S	E S	E	E S	E S	E S	E S	22	27	22	19	23	29	32	31	G	29	22	18	17	E	E	E S	E S	16
29	E S	E S	E S	E S	E	E	E	G	27	G	G	G	G	G	G	32	G	27	G	18	E	18	18	26	E
30	E	E	E	E	E	E S	16	21	31	34	32	35	39	35	34	G	30	19	18	65	20	E	E	E	
31	E	E	17	E S	E	E	E	G	G	G	G	G	G	G	G	32	28	24	20	E	E	18	E S	E S	E 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	27	27	27	27	27	27	27	27	27	29	29	29	29	29	29	29	28	27	28	28	28	27	27	28	
MED	16	16	16	16	16	E S	E S	22	27	31	32	34	36	34	32	30	28	23	18	20	18	16	16	16	
UQ	18	16	16	16	16	16	16	24	30	34	36	37	40	35	34	34	33	29	22	28	20	18	20	20	
LQ	E	E	E	E	E	E	E S	G	G	G	G	G	33	26	30	G	24	20	E	G	16	16	E	E	E

OCT. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

Station		YAMAGAWA							Lat.	31 12.1 N			Long	130 37.1 E			Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation			
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		E 16	E 16	E 16	E 13	E 16	E 16	E 16	E 16	16	16	16	17	18	20	21	16	16	16	16	E 16	E 16	E 16	E 16	E 16
2		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	15	19	17	20	18	16	18	16	16	E 16	E 16	E 16	E 16	E 16
3		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	18	18	20	19	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16
4		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	17	20	20	21	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16
5		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	18	17	20	20	17	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16
6		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	16	17	20	16	19	18	16	16	E 16	E 16	E 16	E 16	E 16
7		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	15	16	17	18	21	20	18	16	16	E 16	E 16	E 16	E 16	E 16
8		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	19	22	19	18	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16
9		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	17	19	16	18	18	16	15	E 16	E 16	E 16	E 16	E 16	E 16
10		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11		C	C	C	C	C	C	C	C	C	16	16	17	17	17	17	16	15	E 15	E 16	E 16	E 16	E 16	E 16	E 16
12		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	14	16	17	20	17	16	16	16	C	E 16	E 16	E 16	C	C
13		E 16	C	C	C	C	C	C	C	C	14	17	19	17	20	16	16	14	16	E 16	E 16	E 16	E 16	E 16	E 16
14		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 15	16	17	16	18	18	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
15		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	18	19	19	17	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16
16		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	20	19	17	17	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16
17		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	19	17	17	19	19	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16
18		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	16	16	18	16	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16
19		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	17	17	16	18	17	13	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
20		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	17	18	17	18	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
21		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	17	20	19	18	16	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16
22		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	15	16	16	16	16	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
23		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	17	16	16	16	15	C	C	C	C	C	C	C	C
24		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25		C	C	C	C	C	C	C	C	C	16	17	17	16	19	20	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
26		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	15	17	17	17	16	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
27		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	14	14	16	17	16	14	14	16	12	E 16	E 16	E 16	E 16	E 16	E 16
28		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	15	16	16	16	16	16	16	19	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
29		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	15	14	16	20	17	19	17	17	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
30		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	17	15	17	16	18	16	16	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
31		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	20	19	18	15	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 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		28	27	27	27	27	27	27	27	27	29	29	29	29	29	29	29	28	27	28	28	28	27	27	28
MED		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	17	18	18	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
UQ		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	17	19	20	19	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
LQ		E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	15	16	17	17	16	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16

OCT. 1984

FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31 12 1 N				Long 130 37 1 E				Sweep 1	MHz to 25 MHz in 24sec in				automatic operation							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	285	290 ^S	295	410	330	305	325	380	345	365	320	305	315	315	315	325	320	335	335	340	340	300	265	F	
2	270 ^S	295	290	285	325	325 ^F	335 ^F	355	360	325	330	355	330	320	305	310	330	350	365	285	335	295	280	285	
3	295	295	305	305	335	290	330	385	375	355	360	305	310	305	300	315	285	330	355	340	285	270 ^S	265 ^S	275	
4	295	310	320 ^S	320	355	325	305	350	365	370	345	305	325	315	325	325	335	350	350	335	315	265 ^S	A	A	
5	330	340	350	345 ^F	320 ^F	350	345 ^S	400	355	350	350	300	315 ^H	280 ^{U R}	300	310	315	345	345	355	280	270	285	275	
6	285	305	335	310	305	295	325	365	350	350	345	320	310	310	305	320	330	330	350	340	265	275 ^S	295 ^S	285 ^{U S}	
7	275	280	310	325 ^S	260	295	310 ^S	355	350	305	295	315	310	265	310	325	335	320	310	290	335 ^S	290 ^S	285 ^S	275	
8	265 ^S	280	305 ^S	350 ^S	305	320	320 ^{U S}	335	325	340	325	310	320	315	310	325	345	310	320	340	285	290	300	300	
9	320 ^S	320	285 ^S	285 ^S	330	330	335	365	335	370	330	325	340	325	335	345	355	365	360	360 ^S	280	315 ^{J S}	305	320 ^S	
10	315	305	305	315	350	350	355	370	370	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	360	335	345	320	320	335	355	360	355	355	355	370	295	310	305	
12	300	325 ^S	345	335	370	325	285	380	375	350	345	345	320	335	325	335	360	I C	380	315 ^S	280 ^S	C	C	295	
13	U S	C	C	C	C	C	C	C	C	355	310	305	335	330	325	340	340	350	345	335	300	315 ^S	310 ^S	305 ^S	
14	280 ^S	305 ^S	305 ^{U S}	325 ^S	345 ^S	345 ^{U S}	320 ^{U S}	375 ^{U S}	370 ^{U S}	360	330	315	325	320	320	330 ^{U R}	350 ^{U R}	370	360	355 ^S	305 ^S	A	305 ^{U S}	320 ^{U S}	
15	300	380	310 ^F	335	320	315	335	370	365	325	340	320	340	320 ^R	300 ^{U H}	325 ^{U R}	355	360	350 ^S	370	320	320 ^S	310	320	
16	305	310	310	335	380	375	305	360	335	350	345	300	325	325	340	340	335	360	345	325	295	295	335 ^S	295	
17	295 ^S	J S	325	330	335 ^S	325	290	305	365	355	350	345	315	330	325 ^R	325	350	340	365	370	365	A	300	305	305 ^S
18	295	J S	310	305	J S	340	310	325	360	365	280	345	345	350	315 ^H	340	355	360	365	345	310	335	285	280 ^S	285
19	305	320	360	300	295	300	310	340	360	315	300	355	285	285	340	370	355	325	325	330	335	305	345 ^S	285	
20	345	295	295	360	335	305	370	345	340	330	350	335	325	340	320	345	410	305	345	295	300	310	305	275	
21	325	345	320	350	360	A	A	360	340	340	355	325	305	J R	285	335	360	360	345	340	345	335	320 ^S	310 ^S	320 ^S
22	300	335	365	350	A	345	A	370	350	355	340	335	345	300	350	365	345	360	355	330	290	285 ^S	275 ^S	300 ^S	
23	295	360	A	335	A	320	305	355	355	335	315	325	345	330	345	355	C	C	C	C	C	C	C	C	
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
25	C	C	C	C	C	C	C	C	C	365	355	335	315	325	340	335 ^H	365	360	370	400	595	A	295 ^S	275 ^S	
26	325 ^S	310	320	335	325	305	320	350	350	350	345	340	310	335	330 ^R	R	315 ^{U R}	350 ^R	360	340 ^H	315	310	335	310	
27	290	310 ^S	305	310 ^S	335 ^S	345	350	420 ^S	370	345	350	335	335	315	355	360	375	370	345	325 ^S	280 ^S	295 ^S	295	310 ^S	
28	290 ^S	300	350 ^S	320	320	295	325	355	365	325 ^H	355	360	340 ^R	335	345	365	365	360	325	330	305	295	335 ^S	315 ^S	
29	320	295	340	350	335	280	295	360	380	375	345	335	330	310	345	360	375	370	340	340	295	315 ^S	315	295	
30	315 ^S	320 ^S	310 ^S	370 ^S	340	315	295	360	340	355	320	345	350	335	345	345	350	350	385	A	295	305	290 ^{U S}	F	
31	315 ^F	320 ^F	305 ^F	325 ^S	345 ^{U F}	375	340	370 ^S	370	375	330 ^H	345	345	340	325	345	370	355	340	355	315	320	335	305	
CNT	28	27	26	27	25	26	25	27	27	29	29	29	29	29	29	28	28	28	28	27	27	25	26	25	
MED	298	310	310	335	335	318	325	360	355	350	345	325	325	320	325	342	350	350	348	340	305	295	305	300	
UQ	315	322	335	348	345	345	335	370	368	360	345	345	340	330	340	355	360	360	360	355	335	310	310	310 ^S	
LQ	290	298	305	312	320	300	305	355	348	335	330	315	315	310	315	325	335	340	340	328	288	290	285	285 ^S	

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M(3000)F2 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31 12.1 N				Long	130 37.1 E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	395	U L 395	A	U L 365	L	L	L	A						
2								L	L	L	360	370	U L 370	345	385	370	U L 360	L						
3									L	L	U L 395	L	A	U L 365	L	U L 370	L							
4									L	L	L	U L 390	360	U L 385	U L 370	L	A	A						
5									L	U L 370	U L 365	A	360	L	U L 350	L	L	L						
6									L	L	395	U L 375	355	U L 350	335	L	L	L						
7									L	L	L	370	385	360	350	L	L							
8									L	L	L	U L 370	375	385	L	U L 355	L	L						
9									L	L	U L 400	380	U L 390	U L 370	L	L	L	L						
10									L	C	C	C	C	C	C	C	C	C						
11								C	C	L	365	L	390	L	405	L	L	L						
12									L	L	L	L	L	L	L	L	L	L						
13								C	C	L	425	U L 370	365	L	L	L	L	L						
14									L	L	U L 370	A	L	A	370	L	L							
15									L	L	L	U L 365	370	L	L	L	L							
16									L	L	L	U L 390	A	L	395	L	L							
17									L	L	L	L	A	L	U L 375	A	A	A						
18									L	L	405	U L 365	L	380	370	L	L							
19									L	A	A	A	A	A	L	A	A							
20									L	L	L	L	L	375	375	L	L							
21									L	L	360	L	L	405	L	L	A							
22									A	L	L	365	L	L	L	L								
23									L	L	L	L	L	L	L	385	C	C						
24								C	C	C	C	C	C	C	C	C	C	C						
25								C	C	L	L	L	L	385	L	L	L							
26									L	L	L	L	L	L	L	L	L							
27									L	L	L	U L 385	405	L	385	L	L							
28									L	L	U L 385	385	405	370	385	L	L							
29									L	L	L	385	U L 365	375	400	L	L							
30									L	L	L	U L 375	A	L	L	L	L							
31									L	L	L	L	L	385	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	11	18	13	15	13	4	1						
MED											368	395	U L 375	370	375	L 375	370	U L 360						
UQ											398	385	U L 385	385	385	L 385	378							
LQ											368	U L 370	365	365	L 370	U L 362								

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12' 1" N				Long 130° 37' 1" E				Sweep 1		MHz to 25		MHz in 24sec in		automatic operation					
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									230	240	240	280	255	275	270	270	265	250						
2								215	220	290	260	245	275	280	290	280	265	240						
3									235	240	240	275	280	290	280	260	245							
4									230	240	235	265	275	275	290	260	250	235						
5									240	240	240	260	260	270	290	275	265	240						
6									240	250	235	270	280	280	290	275	240	235						
7									220	240	280	250	270	310	270	240	240							
8									235	255	250	275	270	255	270	260	240	240						
9									220	240	270	270	275	265	260	255	230	230						
10									230	c	c	c	c	c	c	c	c	c						
11							c	c	245	270	270	250	285	255	250	240								
12									225	245	250	255	270	260	280	245	240							
13							c	c	215	250	285	260	245	255	250	235	230							
14									225	255	270	290	260	260	255	245	215							
15									230	230	260	285	275	245	255	260	240							
16									240	245	255	335	295	250	250	245	245							
17									240	245	260	280	260	245	255	245	250	235						
18									240	275	255	245	245	265	255	245	240							
19									295	275	230	265	330	250	230	240								
20									285	270	255	235	290	280	260	240								
21									240	245	240	275	290	250	245	240								
22									240	240	255	270	245	275	245	245								
23									235	270	275	270	250	240	270	250	c	c						
24							c	c	c	c	c	c	c	c	c	c	c	c						
25							c	c	235	240	250	255	260	250	245									
26									240	255	240	250	270	250	250	245	250							
27									215	240	250	245	255	285	245	235	225							
28									240	255	245	240	250	255	260	235	240							
29									220	225	260	260	260	295	250	225	220							
30									240	235	285	260	245	260	245	235	240							
31									210	230	230	245	240	260	280	240	230							
	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	24	29	29	29	29	29	29	29	26	9						
MED								215	232	240	255	260	260	265	255	245	240	235						
UQ									240	255	270	275	275	285	280	260	245	240						
LQ									222	240	240	250	250	255	250	245	240	235						

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H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1984

H^oF (KM)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31 12 1 N				Long	130 37 1 E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	310	310	300	250	220	E S 250	235	225	210	215	210	200	A	220	225	240	A	A	260	230	215	260	315	320			
2	300	270	270	275	240	240	240	210	210	200	200	215	200	190	220	235	240	240	210	205	220	240	275	310			
3	330	280	275	280	240	255	230	220	220	225	210	210	A	210	270	255	240	230	210	240	240	300	320	300			
4	275	250	260	250	200	E S 300	240	240	230	220	220	190	200	190	H 260	A	A	A	230	230	240	E A 340	A	A			
5	280	270	260	240	E S 270	250	240	235	230	215	220	A	A	220	200	A	240	240	250	240	215	210	275	300	300	290	
6	290	265	230	235	E S 250	255	235	210	210	210	180	180	220	180	210	280	A	240	240	220	200	E S 280	275	275	290		
7	300	270	240	220	E S 280	E S 265	240	215	220	220	220	200	180	190	H 200	225	230	235	240	255	210	260	270	290			
8	290	270	240	190	260	240	215	210	230	230	250	210	210	200	200	230	230	230	235	215	215	275	250	275			
9	240	230	320	310	240	235	225	210	210	250	A	210	205	200	215	A	240	210	230	240	A	215	215	E S 265	275	270	300
10	280	280	290	255	225	230	230	205	230	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
11	C	C	C	C	C	C	C	C	C	C	C	C	220	220	210	220	190	180	240	230	240	230	215	200	E S 290	E S 290	E S 300
12	280	260	240	250	205	225	225	210	190	H 200	225	A	220	225	A	220	H 240	H 230	210	A	A	C	C	285			
13	280	C	C	C	C	C	C	C	C	C	210	195	205	195	220	220	210	230	230	225	220	255	245	230	245		
14	E S 300	290	275	240	225	235	220	215	220	210	205	H 205	A	E A 260	A	205	250	A	225	210	205	235	A	285	290		
15	E S 280	250	270	235	240	250	240	225	210	H 205	E A 245	205	E A 250	180	H 210	H 240	H 215	220	230	240	A	250	250	260	270		
16	295	315	290	245	210	210	E S 270	225	225	235	215	205	A	A	230	220	230	220	230	240	280	260	235	E S 255			
17	E S 270	280	235	230	240	S	275	240	230	A	A	A	A	210	A	A	A	A	220	230	A	A	315	A			
18	A	280	250	260	225	240	240	220	225	225	205	200	195	225	220	A	A	230	200	240	240	A	320	335			
19	300	290	205	H 315	E S 295	E S 295	290	270	240	240	A	A	A	A	A	A	A	250	250	240	240	295	A	E S 310			
20	245	E S 370	E S 300	215	E A 300	E S 360	220	240	240	235	225	220	H 220	190	H 230	A	230	220	220	E A 270	315	280	E A 280	330			
21	275	245	270	230	E A 270	A	A	235	240	200	225	210	H 195	190	240	230	A	A	A	240	245	230	245	250	E A 280	270	
22	260	250	230	240	A	E S 270	A	240	240	200	225	220	A	205	230	230	240	230	E A 260	E A 275	E A 340	A	A	E A 295			
23	E A 340	230	A	240	A	E A 320	E A 350	230	235	225	225	220	220	225	220	220	C	C	C	C	C	C	C	C	C		
24	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	
25	C	C	C	C	C	C	C	C	C	C	230	225	200	195	E A 240	A	A	240	225	225	205	A	A	E A 320	270		
26	270	250	255	250	245	E S 280	265	240	230	220	205	210	200	190	205	215	230	230	210	200	E S 250	250	235	E A 300			
27	295	275	E S 275	265	225	220	225	205	210	220	H 200	H 205	200	205	230	220	225	205	205	225	E S 310	300	285	275			
28	285	270	205	245	240	E S 295	235	205	225	225	210	205	205	190	205	235	240	220	200	230	255	270	245	250			
29	275	255	220	215	225	E S 275	E S 280	230	225	205	205	210	205	210	230	225	225	205	225	225	E A 270	265	E A 275	275			
30	270	E S 250	275	205	210	E S 300	310	225	A	235	220	220	A	E A 225	E A 240	230	A	240	230	200	A	310	E S 290	300	305		
31	280	275	275	255	245	H 220	E S 245	200	195	195	H 170	210	185	205	220	240	230	225	205	205	250	250	225	E S 250			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	28	27	26	27	25	25	25	27	27	27	28	24	22	26	26	24	21	25	28	26	25	22	24	26			
MED	280	270	262	242	232	U 235	238	225	225	220	215	208	201	202	220	230	230	220	225	245	266	266	282				
UQ	298	280	275	254	245	E S 280	252	235	230	225	225	210	220	215	230	240	240	240	230	235	262	282	296	300			
LQ	274	250	240	232	225	235	230	210	210	208	205	202	195	190	205	220	230	225	210	210	238	250	252	270			

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H^oF (KM)

IONOSPHERIC DATA

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H°E (KM)

135 E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31 12.1 N			Long	130 37.1 E			Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								E A 120	110	110	110	110	110	A	110	110	115	115						S
2								A	A	A		105	110	110	110	110	115	110	110					S
3								120	115	110	110	110	110	110	110	110	110	E S 120						S
4								120	110	110	110	110	110	A	110	115	115	115						S
5								S	110	A	A	A	A	A	A	A	A	A	A	A				
6								E S 130	115	110	110	110	110	120	120	115	110	110						S
7								120	110	110	110	110	110	110	110	110	110		A					S
8								E S 130	120	110	110	110	110	110	110	110	115	115	120					S
9								E S 125	110	110	110	110	110	A	A	A	A	A	A					S
10								E S 130	110	C	C	C	C	C	C	C	C	C	C	C				
11								C	C		110	110	H	H	105	115	115	115		A	A			
12								130	115	110	110	110	110	110	105	110			A	C				
13								C	C		110	E A 125	115	105	110	110		A	110	120				
14								E S 120	115	110	110	105	110	A	H	105	A	115						S
15								120	110	110	110	110	A	110	110	110	115	E S 120						
16								S	115	110	110	110	110	110		A	A	A	A	S				
17								S	115	110	110	110	110	110	110		A	A	A					
18								S	A	A	A	A	A	A	A		115	A	S					
19														A	A	A	A	A	A					
20								E S 130	115	110		A	A	A	110	A	A	A	A	S				
21								E S 140	120	115		A	115	A	A	A	A	A	A	S				
22								A	A		110	110	H	105	A	A	A	A	A	S				
23								E S 140	115	A	110		A	A	A	A	A	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	A	A	A	A		115	120	120	120						S
26								E S 130	120	105		H	A	A	A		115	115		A	S			
27								E S 140	110	110	105	105	E A	E A	E A	E A	120	115	E B 120		A			
28								S	105	110	105	E A 115	E A 125	120	115	115	115							S
29								E S 130	120	110	105	110	110	110	110	110			A	S				
30								S	110	A	110	110	105	H	105	110	H	115		A				
31								S	110	115	110	105	110	H	105	110	115	115		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								18	24	23	23	23	19	19	19	18	15	8						
MED								E S 130	112	110	110	110	110	110	110	115	115	115						
UQ								E S 130	115	110	110	110	110	114	111	115	115	120						
LQ								120	110	110	110	110	110	110	110	110	110	110	112					

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H°E (KM)

IONOSPHERIC DATA

OCT. 1984

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station Hour Day	YAMAGAWA				Lat. 31 12.1 N				Long 130 37.1 E				Sweep 1 MHz to 25 MHz in 2.4 sec in automatic operation										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	105	100	100	105	105	110	110	150	110	110	110	110	110	170	135	130	120	115	115	110	110	110	110
2	S	S	S		110	110	110	110	105	105		150	140	150	140	130	115	110	110	110	110	110	110
3	105	105	105	105	110	110	S	170	G	135	120	115	110	125	115	115	125	115	110	110	110	S	S
4	120	110	100	110	110	110	110	135	110	110	110	110	105		G	110	135	135	120	115	110	110	110
5	130	110	100	100		S	S	140	115	110	105	100	100	100	100	170	140	140	120	100	105	110	110
6	110	105	100		S	S	S	S	140	130		G	G	G	E G 170	G	140	135	125	115	115	110	110
7	S	S	S	S	S	S	S	S	150	140	140		G	100		G	G	G	G	150	100	S	S
8	S	S	S				S		135	130	130	120	115	115	115	115	160	175	140	125	S	S	110
9	100	100	100	100	110	105	105	130	120	115	115	115	110	110	110	110	100	105	110	110	105	105	105
10	S	S	S	S	S	S	S	S	140	140		C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	G	G	145	130	140	G	160	100	125	120	S	S	115
12	S	S	S	S	S	S	S	S	140	135	110	120	120	130	120	120	130	110	C	110	105	100	C
13	100	C	C	C	C	C	C	C	C	C	C	140	145	140	120	115	120	110	G	G	105	S	105
14	105	105	100	100	100	S	S	G	G	120	115	110	110	105	120	115	110	105	105	S	S	105	100
15	100	S	S	S	S	S	S	G	G	120	110	110	105	G	115	115	125	170	S	110	105	105	100
16	100	100	100	S	S	S	S	150	G	115	110	G	110	105	105	110	110	100	110	105	105	105	100
17	100	100	100	100	100	S	S	130	125	120	115	115	110	120	120	110	105	105	105	100	100	100	100
18	100	100	S	105	105	S	S	S	100	100	125	105	100	100	150	135	125	115	100	115	105	105	S
19	105	105	S	S	S	S	S	S	125	120	115	110	110	100	100	100	100	100	100	110	110	110	105
20	S	105	S	105	100	105	S	G	120	115	105	105	100	130	100	100	100	110	110	100	105	105	105
21	105	105	100	105	110	105	145	140	140	120	105	135	110	105	100	100	100	100	95	95	100	95	110
22	S	105	100	100	100	100	100	100	100	165	120	110	105	105	105	100	140	120	115	110	110	110	110
23	105	105	100	100	100	100	100	140	120	120	125	105	100	100	100	100	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	110	110	110	105	115	115	110	110	120	125	115	100	120
26	105	100	100	S	S	S	S	G	G	G	100	100	100	100	110	G	125	100	100	100	100	S	100
27	100	100	S	S	105	S	S	105	105	125	105	175	105	170	150	150	G	100	100	100	105	95	S
28	S	S	105	S	S	S	S	125	125	105	105	105	100	125	130	G	150	145	125	105	105	105	105
29	S	S	S	S	105	100	105	135	125	130	140		G	G	G	160	140	120	120	105	105	105	100
30	105	105	105	105	100	105	S	135	130	130	135	125	110	120	125	150	115	110	105	105	105	105	105
31	105	105	105	S	100	105	105	G	130	G	G	G	G	E G 165	G	125	125	110	105	110	105	105	S
CNT	19	19	16	15	17	13	10	21	22	25	24	25	26	26	25	26	25	26	27	23	23	23	22
MED	105	105	100	105	105	105	108	135	122	120	112	110	110	111	115	115	115	115	110	105	105	105	105
UQ	105	105	102	105	110	110	110	140	130	130	120	120	110	122	125	140	130	125	115	110	110	110	110
LQ	100	100	100	100	100	105	105	125	110	110	108	105	100	105	105	110	110	105	105	102	105	105	100

OCT. 1984

H°ES (KM)

IONOSPHERIC DATA

OCT. 1984

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station		YAMAGAWA							Lat. 31 12.1 N		Long. 130 37.1 E		Sweep 1		MHz to 25		MHz in 24sec in		automatic operation							
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		F2	F7	F7	F4	F2	F2	F2	CL21	C3	C3	C3	C2	C3	L2	H1	H2	C5	C5	L7	F5	F3	F3	F2	F7	
2					F2	F2	F6	F8	L6	L2	L2	H1	H1	H1	HL11	H1	C4	C4	C4	F3	F2	F2	F2	F3		
3		F4	F6	F3	F1	F1	F2		H3		C1	C2	C2	C2	C1	C3	C3	C3	C7	L5	F5	F3				
4		F1	F1	F3	F1	F1	F1	F1	C5	C5	C2	C3	C3	C2	L2		L1	HL21	HL51	L7	F7	F4	F3	F3	F4	
5		F1	F2	F2	F2			F1	C4	C2	L2	L4	L4	L2	L2	L2	HL12	CL12	CL32	CL73	F2	F3	F2	F1	F1	
6		F1	F1	F1					C2	C2				H1	L1		H2	H3	C7	L4	F1	F2	F1		F1	
7									C3	H3	H2		L1							HL12	L1				F1	
8					F1	F1	F1		C3	H2	C2	C3	C2	C1	C2	C1	H2	H1	H1	C1		F1	FF32	F2		
9		F3	F2	F2	F4	F1	F2	F1	C3	C2	C4	C2	C1	C2	L2	L2	L2	L3	L2	L5	F3	F1	F2	F1	F2	
10									H2	H2																
11												H1	H1	H1	H1		H1	L2	C2	FF52			F1	F2	F2	
12								H2	H1	LC11	C2	C2	C2	C1	C1	C2	C1	L3		F2	F5	F4			F2	
13		F2							H2	HL11	H1			C2	C2	C2	L2			L3			F2	F1	F1	
14		F2	F2	F3	F2	F1				C2	C1	C4		C3	L5	C2	CL22	C3	L4	F1			F3	F3	F6	
15		F1								C1	C3	C2		L3		C2	C2	C1	H3		F4	F2	F2	F3	F1	
16		F1	F3	F2				H2		C3	C1			C4	C4	L2	L2	L2	L1	F3	F3	F3	F2	F2	F1	
17		F1	F1	F1	F2	F1		C4	C3	C5	C2	C3		C4	C1	C2	L3	L5	L3	F3	F8	F5	F3	F4	F8	
18		F7	F2		F1	F1				L3	L3	CL12	L2	L2	L3	HL12	HL22	CL34	C5	F1	FF12	F4	F6		F3	
19		F2	F4					C5	C3	C3	C4	C6		L4	L3	L3	L4	L4	L4	F1	F4	F5	F5	F5		
20			F3		F2	F8	F1			C3	C3	L1	L2	L2	C1	L3	L2	L1	L3	F2	F3	F2	F2	F2	F2	
21		F4	F7	F3	F4	F6	F6	F6	H3	H4	C2	L3	C1	L2	L1	L2	L3	L4	L8	F6	F3	F3	F2	F2	F2	
22		F1	F3	F3	F3	F5	F4	F4	L7	L3	H1	C2	C2	L3	L2	L2	L2	HL43	C7	F7	F6	F6	F5	F4	F5	
23		F6	F2	F6	F3	F4	F4	F6	H1	C1	C1	C1	L2	L1	L2	L3	L2									
24																										
25											L3	L2	L1	L2	C2	C2	C4	C4	C2	F4	F4	F5	FF43	F3	F5	
26		F2	F2	F2							L3	L3	L2	L2	L1	L2		CL12	L4	F5	F4	F2		F1	F3	
27		F3	F5			F2			L1	L1	CL11	L2	H1	L1	HL12	HL12	HL11		L1	F2	F3	F1	F3			
28				F2					C3	CH23	L2	L1	L2	L2	HL13	HL11		H2	H2	FF41	F2	F1	F2	F1		
29					F2	F2	F1	H1	C2	C2	H1					HC11	H1	CL42	C3	F4	F2	F4	F4	F7	F2	
30		F2	F2	F2	F1	F1	F1	H2	HL31	HL32	H2	C2		C2	C3	C2	H2	C3	L1	F3	F5	F2	F2	F2	F3	
31		F2	F2	F3		F1	F2	F1		C2					H1	C1	C2	C3	L3	F1	F1	F3				
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																										
MED																										
UQ																										
LQ																										

OCT. 1984

TYPES OF ES

IONOSPHERIC DATA

OCT. 1984

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat. 26 16.9 N	Long 127 48.4 E	Sweep 1	MHz to 25 MHz in 24sec in		automatic operation															
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	U S 48	S	X 44	X 49	X 39	X 31	X 35													X 79	S 65	A	O S 41	U S 37	
2		X 43	X 45	X 40	X 40	X 42	X 38	X 33												X 69	X 67	X 52	X 49	X 46	
3	X 44	X 44	X 41	X 40	X 46	X 29	X 36													X 66	X 60	X 58	X 48	X 46	
4	X 52	X 59	X 54	X 45	X 28	X 23	X 33													X 71	X 52	X 38	X 38	X 39	
5	A	X 41	X 48	S	X 29	X 32	X 33													X 66	X 56	X 42	X 44	X 44	
6	X 48	S 54	X 51	X 37	X 30	X 29	X 30													X 68	X 45	X 43	X 44	X 45	
7	X 42	X 46	S 53	X 47	X 31	X 35	X 38													X 79	X 79	X 61	X 43	X 43	
8	X 41	X 43	X 60	X 25	X 27	X 30	X 29													X 87	S 61	X 45	X 47	U S 43	
9	X 49	X 30	X 30	X 34	X 36	X 36	X 36													X 102	X 49	X 48	X 49	X 48	
10	X 46	X 44	X 41	S 38	X 43	O S 31	X 30													X 39	X 35	X 36	X 37	X 38	
11	X 37	S 43	X 47	X 38	X 29	S 26	U S 33													X 40	X 39	X 37	X 36	X 37	
12	X 41	X 41	X 44	X 38	X 34	X 29	H 31													X 52	X 46	X 47	A	X 38	
13	X 38	S 37	X 37	X 43	X 42	X 26	X 33													X 93	X 73	X 62	X 63	X 53	
14	X 41	X 37	X 40	X 37	X 33	X 31	X 29													X 86	S 62	X 57	X 56	A	
15	X 44	X 41	X 44	X 33	X 29	X 30	X 29													X 90	X 75	X 68	X 65	X 58	X 48
16	X 48	X 49	X 50	X 57	X 38	X 27	X 26													X 110	X 86	X 78	S	X 60	X 44
17	X 40	X 41	X 46	X 41	X 29	X 29	X 33													X 91	X 61	S	X 44	X 41	X 39
18	X 38	X 38	X 40	X 40	X 35	X 33	X 28													X 69	X 53	X 58	X 49	X 38	X 38
19	X 43	X 40	X 47	X 27	X 28	X 30	X 33													X 82	X 87	X 66	X 58	X 69	X 36
20	S 40	X 37	X 36	X 31	X 27	X 28	X 36													X 76	X 48	O S 45	X 47	X 48	X 45
21	X 46	X 44	X 39	S 51	X 25	X 25	X 27													X 66	S 63	X 56	X 49	S 47	X 49
22	S 48	S 41	X 34	X 32	X 28	X 26	X 26													X 62	A	A	X 42	X 45	X 40
23	U S 39	X 49	X 36	A	A	A	S 29													X 75	X 66	X 58	X 46	X 41	X 40
24	X 41	X 47	U S 45	X 46	S 26	X 27	X 27													X 63	X 45	A	X 41	A	X 45
25	X 42	X 43	S 46	X 49	S	S	S													X 83	X 73	X 48	X 48	U S 51	X 63
26	X 73	X 65	X 52	X 42	X 39	X 30	X 29													X 132	X 110	X 67	X 66	X 67	X 63
27	X 58	X 47	X 48	X 49	S 56	X 33	X 28													X 58	X 49	X 40	X 43	X 44	X 43
28	X 41	X 41	X 46	X 31	X 29	X 29	X 30													X 74	X 48	X 52	X 47	S 49	X 39
29	X 39	X 38	X 37	X 32	X 29	X 25	X 27													X 53	X 48	X 46	X 46	X 44	X 39
30	X 38	X 37	X 40	X 40	X 25	X 23	X 25													X 63	A	A	A	A	X 37
31	X 38	X 35	X 37	X 35	X 39	X 27	X 25													X 67	X 63	S 61	X 50	X 45	X 42
	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	31	29	29	29	30													17	29	27	28	28	30
MED	X 42	X 42	X 44	X 40	X 30	X 29	X 30													X 74	X 66	X 58	X 47	X 46	X 43
UQ	X 48	X 46	X 48	X 45	X 39	X 31	X 33													X 83	X 79	X 66	X 54	X 50	X 46
LQ	X 40	X 38	X 40	X 34	X 28	X 27	X 28													X 63	X 52	X 47	X 43	X 42	X 39

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FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF2 (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat. 26 16 9 N				Long 127 48 4 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S 42	S	38	S 43	33	25	29	53	R 72	65	69	77	97	99	99	93	U R 97	R 99	91	73	S 59	A	35	31
2	F	39	34	34	36	32	27	58	59	71	84	83	86	87	93	96	J S 120	141	91	J S 63	S 61	46	S 43	40
3	J S 38	38	35	34	40	23	30	55	61	70	J S 72	72	94	115	131	143	134	106	90	60	54	J S 52	42	40
4	46	53	48	39	J S 22	17	27	63	72	76	76	69	84	98	94	115	127	94	73	65	46	32	32	33
5	A	S 35	42	S	23	26	27	64	J S 98	90	99	96	131	143	133	133	132	117	82	60	50	36	38	38
6	42	48	45	31	24	23	24	54	68	83	74	90	110	110	112	107	105	95	A	S 62	39	37	38	39
7	36	40	S 47	41	25	29	32	59	59	60	92	105	83	86	127	120	88	79	73	73	73	55	37	37
8	35	37	54	19	21	24	H 23	44	66	83	93	75	99	97	111	104	101	R 91	84	81	S 55	39	41	U S 37
9	43	24	24	28	30	30	30	53	67	74	83	93	117	131	151	143	137	133	129	U S 96	43	42	43	42
10	S 40	38	35	S 32	S 37	U S 25	24	58	63	64	73	85	100	119	125	104	101	90	85	34	29	30	30	31
11	31	S 37	41	S 32	23	S 20	S 27	56	71	79	93	87	98	94	105	R 97	91	85	85	S 64	33	31	32	34
12	35	35	38	32	28	H 23	25	55	64	67	92	95	102	106	130	140	120	R 103	92	46	40	41	A	32
13	32	31	31	S 37	36	20	27	54	61	64	77	100	R 118	128	133	135	141	142	R 120	87	U S 67	56	57	47
14	35	31	34	31	27	25	23	52	63	71	81	82	115	137	167	168	R 162	119	90	80	56	51	50	A
15	38	S 35	38	27	23	24	23	49	69	67	84	102	131	R 162	J R 164	J R 158	157	124	84	69	62	59	J S 52	42
16	42	43	44	51	32	21	20	46	61	77	90	74	90	126	133	147	R 144	Y 104	J S 104	S 80	S 72	S	54	38
17	34	35	40	35	23	23	27	59	74	68	90	97	100	114	S 130	126	123	J S 107	85	55	S	38	35	33
18	32	32	S 34	34	29	27	22	47	58	73	98	102	98	116	134	129	104	83	63	47	52	S 43	32	32
19	U S 37	34	U S 41	21	22	24	27	61	82	74	120	107	71	103	147	112	73	70	76	81	60	S 52	63	S 30
20	S 34	31	S 30	25	21	S 22	30	54	63	89	109	131	104	102	125	145	126	90	70	S 42	U S 39	41	42	39
21	40	38	33	S 45	19	19	21	62	73	90	90	103	89	102	122	113	77	76	60	57	S 50	S 43	S 41	S 43
22	S 42	S 35	28	26	22	20	20	52	75	93	76	89	97	103	114	87	78	76	56	A	A	36	39	34
23	U S 33	U S 43	U S 30	A	A	A	23	54	69	79	90	R 117	129	133	133	133	112	84	69	60	52	40	35	S 34
24	35	U S 41	U S 39	40	S 20	21	21	55	66	75	101	112	105	129	119	126	U R 105	68	57	39	A	35	A	39
25	36	37	J S 40	43	S	S	S	53	84	97	103	108	125	145	147	135	122	J R 95	77	67	42	42	U S 45	F
26	67	59	46	U S 36	33	24	23	54	89	J S 100	99	106	118	148	J S 160	170	J S 155	J R 154	126	J S 104	61	60	61	57
27	52	41	S 42	S 43	50	27	22	47	62	R 73	88	101	92	113	145	105	75	62	52	43	34	37	38	37
28	35	35	40	25	23	23	24	48	70	R 88	R 114	125	118	R 120	125	90	82	75	68	42	46	41	43	33
29	33	32	31	26	23	19	21	54	75	J R 80	69	87	96	114	124	124	85	64	47	42	40	40	38	33
30	32	31	S 34	34	19	S 17	19	48	64	80	87	91	108	108	121	117	107	90	57	A	A	A	A	31
31	F	U S 29	31	J S 29	33	21	19	45	53	62	70	80	84	85	93	107	93	68	61	57	55	S 44	39	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	28	30	31	29	29	29	30	31	31	31	31	31	31	31	31	31	31	30	30	29	27	28	28	29
MED	36	36	38	34	24	23	24	54	67	75	90	95	100	114	127	124	107	90	80	62	52	41	40	37
UQ	42	40	42	39	33	25	27	57	72	83	96	104	116	128	134	138	130	107	90	73	60	48	44	39
LQ	34	32	34	28	22	21	22	50	62	69	76	84	93	102	116	106	92	76	63	47	41	37	36	33

OCT. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA							Lat.	26 16.9 N				Long.	127 48.4 E				Sweep 1	MHz to 25		MHz in 24		sec in automatic operation	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
2										L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
3										L	L	L	L	L	L	L	A	A						
4										A	L	L	A	L	L	A	A	A						
5								L	L	L	L	L	L	L	A	430	A	A						
6									L	L	L	L	L	A	A	L	A							
7										L	L	L	L	500	470	L	L	L						
8									L	L	L	U	L	U	L	L	L	L	L					
9									L	L	L	L	L	L	L	L	L	L						
10									L	400	U	L	430	480	500	450	450	410	L					
11										440	460	440	460	460	490	L	L							
12										L	U	L	L	L	L	L	L							
13										L	L	L	L	L	L	L	L							
14										L	L	L	U	L	L	L	L							
15									L	L	L	L	460	L	L	L	L							
16										L	L	L	L	L	L	L	L							
17										L	L	L	L	L	A	L	L							
18										L	L	L	L	L	L	L	L							
19										L	A	L	A	U	L	L	A	L						
20										L	450	440	440	L	440	L	A							
21									A	L	L	L	460	460	470	440	L	L						
22									L	L	L	L	L	L	L	L	L							
23										L	L	L	U	L	L	L	A	L						
24									L	L	L	L	480	450	L	L	L	L						
25									L	L	L	L	L	L	480	430	L	L						
26									L	L	L	L	L	L	L	L	L							
27									L	L	L	L	450	L	480	450	L	L						
28									L	L	L	L	460	430	L	L	440	L	L					
29									L	L	L	L	L	L	460	440	L	L						
30									L	L	L	L	U	L	A	L	L							
31									L	L	L	L	L	L	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	6	12	9	9	9	2							
MED											420	455	460	460	480	440	420							
UQ											460	480	460	490	450									
LQ											U	L	L	L	L	L								

OCT. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOE (0.01 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1	MHz to	25	MHz in	24	sec in	automatic operation			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								A	A	A	A	A	A	345	330	A	A	A	A						
2								A	A	A	A	330	340	335	320	305	275	220	S						
3								200	270	295	320	330	335	335	330	310	A	A	S						
4								180	A	A	A	A	335	330	330	305	280	225	S						
5								S	260	A	A	330	R	R	A	310	280	230	S						
6								180	R	A		R	350	A	330	310	280	220	S						
7								170	A	A		335	340	340	330	315	290	260	230	S					
8			S					190	245	285	310	325	335	A	330	320	300	A	R	B					
9								180	250		A	A	A	A	A	A	A	A	A	S					
10								200	250	300	310	315	Y	335	A	305	A	A	S						
11								205	225	295	305	320	340	335	310	300	290	205	S						
12								S	H	R	A	325	R	325	315	295	A	U	R	S					
13								A	A	A	A	A	A	A	A	A	A	A	A	A					
14								185	A	A	A	A	335	330	315	295	A	215	B						
15								S	A	A	A	A	A	A	A	A	A	A							
16						S		170	240	280	305	A	A	A	A	A	265	220							
17								A	250	280	305	320	A	A	A	A	A	A							
18								180	245		A	A	320	A	A	A	A	A	A						
19								215	250	270	300	A	290	305	300	300	A	A							
20								S	240		A	A	A	A	A	A	A	A							
21								185	215	275	A	A	A	A	305	A	A	A					S		
22			S					S	240	A	300	A	320	315	A	285	A	A							
23								A	A	A	A	A	315	325	A	A	A	A	A						
24								S	225	A	310	A	A	A	A	A	A	A							
25								S	230	270		A	A	A	A	A	A	A							
26								S	260	300	310	A	A	A	310	295	265	A							
27								S	235	A	300	320	A	A	A	295	A	210							
28								S	230	290	310	320	A	325	A	290	A	200							
29								S	A	A	A	325	330	325	315	285	265	200							
30								A	A	A	A	A	R	325	A	A	A	A	S						
31								A	245	R	A	A	325	A	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								13	21	13	14	15	14	15	14	17	9	14							
MED								185	245	285	310	325	335	330	315	300	275	220							
UQ								200	250	295	310	330	340	335	330	305	280	230							
LQ								180	235	280	305	320	325	325	310	295	265	205							

OCT. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1984

FOES (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station		OKINAWA							Lat.	26 16.9 N			Long	127 48.4 E			Sweep	1 MHz to 25 MHz in 24sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	J A	J A	J A	J A				J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
2		E S	E S	E S	E S	E S	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	E S				
3	J A	J A	J A	J A	J A	J A	J A	J A		G	J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
4	E S	E S	E S	E S	J A	J A	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
5	J A	J A	J A	J A	J A	E S	E S	J A	J A		J A	J A		G	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
6	J A			E S	E S	E S	E S				G	G		45	87	45	56	69	95	88	J A	J A	J A	J A				
7		E S	E S	E S	E S	E S	E S			J A	J A		G	G	G	G	G	G	G	J A	E S	E S	E S	E S				
8	E S	E S	E S	E S	E S	E S	E S					J A		44	38	35	33	31		G	E B	J A	J A	E S				
9	E S	J A	J A	E S	E S	J A	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	E S				
10		J A	J A	J A	J A	J A	J A	E S			J A	J A		G	G	E G	J A	J A	J A	J A	J A	J A	J A	E S				
11		E S		68	26	22	25	19		G				28	34	36	35	36	40	J G	29	33		J A				
12		23	20	19	E S	E S	E S	E S	J A		J A	J A		40	36	43	39		G	J A	33	E S	J A	J A				
13		J A	J A	E S	E S	E S	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
14	E S	E S		J A	21	E S	E S	E S	23	31	32	J A		32	31	G	30	J G	28	31		G	E B	E S				
15	J A	J A	20	20	E S	E S	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	E S	E S	27	J A	J A				
16	J A	J A	E S	J A	J A	J A	E S	E S		G	J A	J A		J A	J A	J A	J A	J A	J A	E S	E S	E S	E S	J A				
17	J A	J A	J A	E S	E S	E S	E S	J A	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	E S				
18	E S	E S	E S	E S	E S	E S	E S	J A		J A	J A		J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	E S				
19	E S	E S	22	E S	E S	E S	E S	J A	23	32	40	J A	J A	84	44	47	J A	J A	J A	J A	J A	J A	J A	J A				
20	E S	E S	E S	21	E S	E S	E S	E S		G	33	32	J A	41	56	45	J A	J A	J A	20	J A	49	J A	22				
21		21	22	21	20	E S	22	E S	22	J A	43	40	J A	45	34	J A	J A	G	33	J A	26	28	E S	20				
22		22	22	18	23	20	20	23	21	G	J A	19	35	33	33	34	35	35	J A	J A	J A	J A	J A	J A				
23	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
24	E S	22	J A	22	E S	E S	20	22	28	28		G		37	34	29	J A	J A	J A	J A	J A	J A	J A	J A				
25		J A	22	22	J A	J A	J A	J A	22	28	32	J A	J A	J A	J A	38	33	29	J A	J A	J A	J A	J A	J A				
26	J A	J A	J A	J A	J A	E S	E S	E S		G	G	G	J A	J A	J A	G	G	G	J A	J A	J A	J A	J A	J A				
27	J A	J A	21	E S	E S	E S	E S	E S		30	32		G	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A				
28		20	21	E S	E S	E S	E S	20	33	32		G	G	J A	G	J A	J A	J A	J A	J A	J A	J A	J A	J A				
29	E S	E S	E S	E S	E S	E S	E S	J A	J A	J A	J A		G	G	G	36	33	34	24	J A	J A	J A	J A	J A				
30		22	22	19	E S	E S	E S	E S	23	33	38	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	E S				
31	J A	26	22	21	E S	J A	25	21	22	20	30	G	J A	35	36	41	J A	J A	J A	J A	J A	J A	J A	J 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		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		21	22	20	E S	E S	E S	E S	22	30	35	36	37	37	38	37	34	J A	J A	J A	J A	J A	J A	J A				
UQ	J A	J A	25	22	J A	J A	22	20	J A	23	32	38	40	40	41	42	42	J A	J A	J A	J A	J A	J A	J A				
LQ	E S	E S	E S	E S	E S	E S	E S	22	28	32	33	34	34	32	35	32	J A	J A	J A	J A	J A	J A	J A	E S				

OCT. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FBES (0.1 MHz)

135 E Mean Time (G.M.T. + 9 h)

Station		OKINAWA							Lat.	26 16.9 N			Long	127 48.4 E			Sweep	1 MHz to 25 MHz in 24 sec in		automatic operation													
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1	U Y	32	22	30	22	19	E	E	21	28	U Y	30	33	35	U Y	33	33	40	39	43	56	U A	33	25	17	A A	40	30	U Y	22			
2	E S	16	E S	16	E S	16	E S	16	E	27	33	33	33	36	37	38	38	34	30	29	20	22	E	E	E S	16	E S	16	E S	16			
3	E	E	E	E	E	E	E	E	22	22	G	34	38	38	38	38	43	33	42	54	27	22	25	E	E	E	E	E	22	E			
4	E S	16	E S	16	E S	16	E	E	E S	16	25	24	U Y	38	39	42	65	45	41	48	43	37	E S	16	E	30	18	E	E	E			
5	A A	51	E	18	23	E	E S	16	E S	16	23	31	42	33	G	G	G	29	48	41	43	45	35	32	E	19	E	E	E				
6	E	E	E	E S	16	E S	16	E S	16	22	30	30	G	G	41	65	45	42	69	80	88	30	E	E S	16	E	E	E	E				
7	E	E S	16	E S	16	E S	16	E S	16	E	22	34	30	G	G	G	G	G	G	G	G	E S	16	E S	16	E S	16	E S	16	E S	16		
8	E S	16	E S	16	E S	16	G	E S	16	22	28	37	39	37	43	38	35	33	30	G	E B	17	U A	26	38	E	E S	16	E S	16			
9	E S	16	20	E	E S	16	E S	16	E S	16	21	28	32	32	36	37	34	38	31	29	24	U Y	35	22	25	25	E	E S	16	E S	16		
10	E	25	23	24	E	17	E S	16	G	G	26	34	39	U Y	29	25	G	20	32	24	25	20	E	20	E	E S	16	E	E S	16			
11	E	E S	16	25	20	18	E	E	G	28	33	35	35	36	38	21	33	G	33	19	E	E	E	E	E	E	E	E	E	E			
12	E	E	E	E S	16	E S	16	E S	16	21	29	31	34	37	36	42	38	G	30	G	E S	16	17	23	25	A A	77	E	E	E			
13	E	19	E	E S	16	E S	16	E S	16	19	25	30	32	33	35	36	36	30	27	22	32	27	21	32	24	31	E	E	E	E			
14	E S	16	E S	16	E	E	E S	16	E S	16	G	28	30	33	35	32	G	31	G	30	28	28	G	E B	17	E S	16	E	19	A A	51		
15	20	22	E	E	E S	16	E S	16	E S	16	17	28	32	38	36	35	37	34	32	28	22	E S	16	E S	16	22	30	U Y	41	E	E		
16	19	E	E S	16	E	21	E	E S	16	22	G	31	37	34	35	38	32	30	G	G	E S	16	E S	16	E S	16	50	27	E	E S	16		
17	30	E	E	E S	16	E S	16	E S	16	20	29	34	34	40	42	40	51	37	31	24	E	21	29	29	E	E S	16	E	E S	16			
18	E S	16	E S	16	E S	16	E S	16	E S	16	21	27	34	33	34	36	37	33	31	37	28	32	22	E	24	22	E S	16	E	E S	16		
19	E S	16	E S	16	E	E S	16	E S	16	E S	16	G	28	40	59	44	67	40	40	40	29	29	24	40	32	18	28	E	E	E	E		
20	E S	16	E S	16	E S	16	E	E S	16	E S	16	E S	17	G	31	30	31	35	44	37	31	38	21	E	E	30	E	E	E	E			
21	E	E	E	E	E S	16	E S	16	22	43	35	39	33	32	35	25	29	31	26	25	E S	16	E	G	30	20	E	E	E	E			
22	18	E	G	E	E	E	E	E	20	18	G	31	33	33	34	35	33	41	37	U A	30	40	A A	53	A A	52	31	30	29	E	E S	16	
23	25	22	21	A A	27	A A	28	A A	54	20	20	23	30	34	36	36	31	31	41	30	27	17	E S	16	E S	16	E S	16	E	E	E		
24	E S	16	E	30	E	E S	16	E S	16	E	19	25	28	G	33	32	29	32	35	28	25	25	21	A A	42	28	A A	44	E	E	E		
25	E	E	E	27	U Y	30	U Y	27	U Y	24	20	28	30	38	42	40	35	32	31	29	28	20	18	30	29	25	29	E	E	E	E		
26	28	19	24	27	20	E S	16	E S	16	E S	16	G	G	G	36	34	U Y	30	G	G	G	24	27	20	E S	16	E S	16	E S	16	E S	16	
27	23	18	E	E S	16	E S	16	E S	16	E S	16	27	30	G	G	38	37	35	30	U Y	27	19	E S	16	E	E S	16	E	E	E S	16		
28	E	E	E S	16	E S	16	E S	16	E S	16	18	29	30	G	G	32	G	32	32	30	27	25	25	E	E	E S	16	E S	16	E	E S	16	
29	E S	16	E S	16	E S	16	E S	16	E S	16	20	27	39	33	G	G	G	35	32	32	24	E	19	24	26	E	E S	16	E	E S	16		
30	E	E	E	E S	16	E S	16	E S	16	22	28	33	41	43	35	45	40	32	28	22	26	A A	80	A A	64	A A	63	A A	63	A A	63	E S	16
31	19	E	E	E S	16	19	E	E	20	27	G	35	36	38	41	38	40	33	26	U A	22	E	30	E	E S	16	E S	16	E	E S	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	31	31	31	31	31	31	31	31	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	16	16	16	16	E S	16	E S	16	E S	16	20	28	31	33	35	35	37	35	32	30	25	22	20	21	18	16	16	E	E	E	E		
UQ	20	17	E S	16	E S	16	E S	16	E S	16	22	28	34	38	37	38	39	39	38	35	29	27	25	30	27	29	18	E	E	E	E		
LQ	E	E	E	E	E S	16	E S	16	18	24	30	32	33	32	31	32	30	28	22	E	E	16	E	E	E	E	E	E	E	E	E	E	

The Radio Research Laboratories, Japan

OCT. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1984

FMIN (0.1 MHZ)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat. 26 16.9 N	Long 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	18	21	23	23	23	17	15	15	15	E S 16	E S 16	E S 16	E S 16	E S 16
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	15	17	18	20	21	20	18	17	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	19	18	18	21	25	23	20	20	17	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
4	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	16	17	22	22	19	27	20	17	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	14	24	22	25	23	19	18	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	20	27	25	21	15	18	15	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	18	22	25	18	22	20	15	13	16	E S 16	E S 16	E S 16	E S 16	E S 16
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	21	22	24	28	23	22	18	16	17	E S 16	E S 16	E S 16	E S 16	E S 16
9	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	23	22	23	28	26	23	19	16	14	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
10	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	16	20	26	19	19	16	17	14	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	16	17	16	16	16	17	15	16	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	17	20	21	23	20	18	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	16	20	20	23	25	18	20	16	15	15	E S 16	E S 16	E S 16	E S 16	E S 16
14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	15	20	22	22	21	18	16	16	15	17	E S 16	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	18	21	24	23	20	20	16	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	22	23	18	17	14	18	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	17	18	23	24	24	21	18	18	14	16	E S 16	E S 16	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	16	16	21	24	17	15	15	14	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	15	15	18	19	19	24	20	14	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	19	17	20	19	20	17	15	14	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	14	18	21	20	19	16	15	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
22	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	15	17	17	19	15	15	18	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
23	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	17	18	18	17	16	14	14	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	18	18	16	15	16	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	15	15	15	16	18	16	15	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	19	18	15	16	21	20	15	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	19	19	17	15	15	16	16	15	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	17	17	16	15	17	15	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
29	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	19	20	18	17	16	16	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
30	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	17	16	22	18	16	18	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
31	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	18	17	22	19	22	19	20	17	15	16	16	E S 16	E S 16	E S 16	E S 16	E S 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	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	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	20	22	19	19	17	17	15	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	22	24	23	20	20	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	15	16	18	18	17	16	16	15	15	16	E S 16	E S 16	E S 16	E S 16	E S 16

OCT. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1984

M(3000)F2 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	S	S	S	S	S	S	S	S	R	S	S	S	S	S	S	S	U	R	R	S	S	A	S	S			
2	F	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	J	S	S	J	S	S	S	S			
3	J	S	S	S	S	S	S	S	S	S	J	S	S	S	S	S	S	S	S	S	S	J	S	S			
4	S	S	S	S	J	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
5	A	S	S	S	S	S	S	S	J	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
6	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	A	S	S	S	S	S			
7	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
8	S	S	S	S	S	S	H	S	S	S	S	S	S	S	S	S	S	R	S	S	S	S	S	U	S		
9	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	U	S	S	S	S	S		
10	S	S	S	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
11	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
12	S	S	S	S	S	S	H	S	S	S	S	S	S	S	S	S	S	R	S	S	S	S	S	A	S		
13	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
14	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	R	S	S	S	S	S	S	A		
15	S	S	S	S	S	S	S	S	S	S	S	S	S	R	J	R	J	R	S	S	S	S	S	J	S	S	
16	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	R	Y	J	S	S	S	S	S	S	
17	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	J	S	S	S	S	S	S	S	
18	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
19	U	S	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
20	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
21	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
22	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
23	U	S	U	S	A	A	A	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
24	S	S	U	S	S	S	S	S	S	S	S	S	S	S	S	S	S	U	R	S	S	S	S	A	A	S	
25	S	S	J	S	S	S	S	S	S	S	S	S	S	S	S	S	S	J	R	S	S	S	S	S	U	S	F
26	S	S	U	S	S	S	S	S	J	S	S	S	S	S	S	S	S	J	S	J	R	S	S	S	S	S	S
27	S	S	S	S	S	S	S	S	R	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
28	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
29	S	S	S	S	S	S	S	S	J	R	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
30	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
31	F	U	S	J	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
00																											
CNT	28	30	31	29	29	28	28	31	31	31	31	31	31	31	31	31	31	30	30	29	27	28	28	29			
MED	308	320	335	350	335	335	315	355	355	345	335	320	315	315	320	330	335	342	352	340	310	295	312	300			
UQ	315	340	355	355	365	342	330	370	365	350	342	335	325	325	330	335	350	360	365	355	325	310	320	315			
LQ	298	305	320	325	300	305	305	345	345	330	322	310	300	302	312	320	325	340	335	320	295	285	290	280			

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M(3000)F2 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

M(3000)F1 (0.01)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA							Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation		
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L	L	L 385	L	L 365	L	L	L	L	A						
2									L	L	L	L	L	L	L	L	L	L							
3										L	L	L	L	L	L	A	A								
4										A	L	L	A	L	L	A	A	A							
5								L	L	L	L	L	L	L	A	350	A	A							
6									L	L	L	L 270	L	A	A	L	A								
7										L	L 335	L 375	L	L 340	L 340	L	L	L							
8									L	L	L	L 355	L	L	L	L	L	L							
9									L	L	L	L	L	L	L	L	L								
10									L	L 425	L 280	L 350	Y	L 360	L 360	L 400	L								
11										L 355	L 370	L 400	L 370	L 390	L 340	L	L								
12										L	L 365	L	L	L	L	L	L								
13										L	L	L	L	L	L	L	L								
14										L	L	L	L 370	L	L	L	L								
15									L	L	L	L 370	L	L	L	L	L								
16										L	L	L	L	L	L	L	L								
17										L	L	L	L	L	L	A	L	L							
18										L	L	L	L	L	L	L	L								
19										L	A	L	A	L 325	L	A	L								
20										L	L 360	L 370	L 395	L	L 360	L	A								
21									A	L	L	L 370	L 390	L 360	L 360	L	L								
22									L	L	L	L	L	L	L	L	L								
23										L	L	L	L 375	L	L	A	L								
24									L	L	L	L 345	L 375	L	L	L	L								
25									L	L	L	L	L	L 365	L 385	L	L								
26									L	L	L	L	L	L	L	L	L								
27									L	L	L	L 375	L	L 355	L 365	L	L								
28									L	L	L 370	L 300	L	L	L 365	L	L								
29									L	L	L	L	L	L 370	L 375	L	L								
30									L	L	L	L 375	L	A	L	L									
31									L	L	L	L	L	L	L	L	L								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT										2	6	12	7	9	9	2									
MED										L 390	L 362	L 370	L 375	L 360	L 360	L 375									
UQ										L 370	L 375	L 382	L 365	L 365											
LQ										L 335	L 348	L 372	L 355	L 360											

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M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1984

H^oF2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz		in 24sec in		automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										230	265	295	290	280	270	280	265	255						
2										225	250	265	270	285	275	290	285	270	230					
3										230	255	275	310	295	290	255	240							
4										240	250	280	310	280	300	290	245	225						
5										250	245	240	245	290	300	270	275	275	250	240				
6										250	240	260	310	270	290	290	280	250						
7										220	300	240	290	400	270	250	240	250						
8										L 260	260	245	335	275	305	285	250	255	250					
9										240	250	280	295	275	275	265	250	250						
10										225	240	265	300	305	300	260	250	260						
11										250	255	275	285	265	290	255	255							
12										250	280	260	270	295	275	250	235							
13										L 240	310	290	285	270	260	255	260							
14										250	265	285	300	280	260	240	230							
15										245	240	290	255	295	280	265	255	240						
16										260	245	280	310	280	250	255	245							
17										240	290	260	290	290	255	250	245							
18										260	255	240	255	260	260	250	230							
19										L 305	370	225	A	330	250	235	240							
20										255	285	260	235	280	300	255	235							
21										250	245	250	260	265	300	260	240	235						
22										255	235	250	275	260	275	265	250	255						
23										275	300	290	240	270	260	245	230							
24										250	260	280	275	260	260	250	250	225						
25										250	250	250	270	260	250	255	240	235						
26										245	255	260	L 255	H 250	290	275	260	240						
27										220	250	270	250	250	300	250	220	230						
28										260	250	260	250	240	250	250	240	230						
29										240	L 255	270	275	275	260	240	220							
30										250	255	260	255	260	250	250								
31										L 245	240	265	240	285	275	260	235							
	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	14	31	31	31	30	31	31	31	30	6						
MED								250	248	250	260	270	275	280	265	250	240	245						
UQ								250	252	280	288	290	292	275	255	250	250							
LQ								240	240	252	260	255	270	258	248	235	230							

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H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1984

H*F (KM)

135 E Mean Time (G.M.T. + 9 h)

Station Hour Day	OKINAWA				Lat. 26 16 9 N				Long 127 48 4 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1	A	A	A	A	225	250	245	215	225	205	200	200	200	190	A	A	A	A	225	220	205	A	E	A	A					
2	330	270	270	270	230	210	E S	215	A	220	210	210	200	220	225	225	235	A	200	210	210	240	250	285						
3	300	265	265	270	210	E S	A	210	225	220	220	210	210	200	A	A	A	225	215	205	265	225	310	315						
4	275	240	210	220	200	S	E S	225	225	A	A	A	A	A	A	A	A	210	210	215	275	305	305							
5	A	290	250	225	S	260	255	245	240	230	210	200	200	H	205	A	A	A	A	210	245	215	310	310	310					
6	280	230	220	230	240	A	A	220	220	220	200	230	260	A	A	A	A	260	A	210	240	280	280	280						
7	300	270	230	200	270	S	250	230	210	220	210	H	210	210	200	200	H	210	230	230	230	250	240	220	200	E S	S	S		
8	280	280	215	345	335	265	230	210	230	240	A	A	220	A	H	205	200	245	A	225	230	225	220	300	255	290				
9	255	E S	275	E S	270	250	235	210	215	210	205	205	210	210	E A	240	200	240	240	215	200	290	310	260	270					
10	280	E A	E A	E A	225	200	E S	215	215	200	200	210	Y	H	195	250	210	245	235	210	200	E S	E A	E S	E S	E S	329			
11	330	280	250	E A	E A	E S	E S	225	230	220	225	225	205	200	200	E A	240	235	240	230	200	210	E S	310	295					
12	285	265	230	225	220	235	275	S	215	220	220	210	205	210	A	A	230	A	240	H	210	200	275	290	A	250				
13	285	290	295	230	200	S	265	215	210	200	195	200	H	195	H	H	210	235	215	H	230	225	210	215	220	U A	310	245	305	A
14	295	285	240	235	220	220	255	220	220	210	200	200	190	200	210	215	A	215	210	205	195	265	245	A						
15	290	260	225	215	S	260	S	220	220	220	210	A	210	200	225	A	210	215	210	210	205	210	225	255	250	A	275			
16	300	270	250	220	220	E S	S	210	240	220	225	210	200	200	185	240	H	225	220	210	210	240	240	A	265					
17	A	250	240	205	S	275	S	275	240	240	225	205	E A	E A	260	A	A	225	225	210	205	A	300	A	255	265				
18	275	255	240	220	210	230	S	210	215	210	210	200	H	200	200	210	225	A	225	210	225	245	250	345	A	340				
19	365	275	225	250	325	320	280	250	230	A	A	A	A	E A	275	A	A	235	245	275	230	250	295	210	E S	330				
20	275	E S	E S	195	E S	E S	245	215	230	220	210	205	H	E A	E A	230	245	A	225	H	205	220	E S	300	275	300				
21	290	220	275	200	E S	E S	E S	240	A	230	E A	H	195	H	H	180	240	215	230	220	235	210	255	E A	325	255				
22	250	245	230	245	E B	E S	E S	245	230	225	220	215	215	215	210	A	A	230	230	A	A	A	A	A	A	A	A	A		
23	A	255	210	A	A	A	U A	225	240	225	210	225	215	220	215	A	A	220	215	210	215	240	270	315						
24	290	240	240	210	S	260	S	240	230	200	220	210	200	240	210	240	220	220	210	220	A	A	A	260						
25	290	310	260	235	A	A	A	240	240	230	210	260	A	240	200	200	200	235	220	200	210	A	A	290	300					
26	260	235	235	250	225	S	E S	230	225	200	195	220	205	200	230	210	240	240	205	200	200	245	250	220						
27	280	270	260	240	210	220	250	210	210	210	210	210	220	210	250	220	220	210	210	200	E S	290	290	260	260					
28	280	260	220	230	260	S	E S	250	210	220	220	H	H	200	190	H	210	230	220	200	260	210	260	240	230					
29	260	260	215	225	215	S	S	230	220	A	220	190	215	210	220	245	A	210	210	240	250	280	250	250						
30	255	265	235	210	S	S	320	225	225	225	A	A	200	A	A	225	230	H	220	205	A	A	A	A	230					
31	U A	310	270	260	225	225	210	S	295	205	210	190	H	215	220	A	A	A	A	215	210	205	220	A	245	220	240			
CNT	28	31	31	30	24	24	26	31	29	28	26	28	26	26	21	21	17	27	30	29	26	27	27	29						
MED	285	265	240	228	222	U	238	255	220	225	220	210	210	201	202	210	225	230	225	210	210	219	272	262	280					
UQ	300	275	261	240	U	250	S	S	230	230	225	218	219	212	215	228	240	235	232	215	225	245	299	298	302					
LQ	275	252	228	220	215	226	250	210	220	210	200	200	200	200	200	215	225	220	210	205	210	248	250	260						

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H*F (KM)

IONOSPHERIC DATA

OCT. 1984

H^oE (KM)

135 E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	H	A	A		110	110	115	A	A					
2							A	A	A	A	A		110	110	110	110	110	110	S					
3							120	110	110	110	110		110	110	110	110	110	110	S					
4							120	110	110	110	A		110	110	110	110	110	110	S					
5							S	110	A	A	A		110	110	A	A	120	110	110	S				
6							E S	130	110	110	110	110		110	110	110	110	110	110	S				
7							110	110	110	110	110		110	110	110	110	110	110	S					
8			S				130	115	110	115	115		B	120	115	115	115	120	B	B				
9							S	110	110	110	110		110	110	110	110	A	A	S					
10							E S	E A	E A	E A	E A		A E A	E A	E A	E A	A	A	S					
11							E G	E A	E A	E A	E A		E A	E A	E A	E A	115	115	S					
12							S	110	105	105	105		110	110	110	110	115	120	B	S				
13							A	A	110	110	110			A	110	A	A	A	S					
14							B	120	110	105	115	110		A	E A	E A	A	110	115	B				
15							S	110	110	110	110		110	110	110	110	110	110						
16						S	E S	140	110	110	110	110		110	110	A	A	110	E B	130				
17							A	110	110	110	110		110	110	110	110	110	A						
18							E B	140	110	110	110	110		A	A	A	A	A	A					
19							130	110	105	105	105		A	E A	E B	E B	A	A						
20							S	110	105	105	A		A	A	A	A	A	A						
21							S	110	105	A	A		A	E A	A	A	A	A				S		
22			S				S E A	125	A E A	E A	E A		A	A	A	120	115	120	B					
23							A	A	A	105	A	E A		A	A	A	A	A						
24							S	110	110	110	110		110	105	105	110	A	A						
25							S	110	110	110	105		105	105	105	105	100	A						
26							S	110	110	110	A		A	A	110	110	115	A						
27							S	110	110	110	110		A	A	A	E A	A	E A	130					
28							S	110	110	110	105		A	115	A	115	A	110						
29							S	110	110	110	110		110	110	A	110	110	110						
30							S	110	110	105	105		115	110	110	110	115	120						
31							S	115	115	115	115		110	115	115	115	115	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								11	27	27	27	23	22	22	21	24	20	17						
MED							U	120	110	110	110	110	110	110	110	110	110	110						
UQ							E E	130	110	110	110	110	110	112	112	112	115	118						
LQ								118	110	110	110	108	110	110	110	110	110	110						

OCT. 1984

H^oE (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1984

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	90	95	100	100	105	105	100	105	105	115	105	125	100	100	165	120	120	110	110	105	105	105	95	90
2	95	S	S	S	S	S		110	100	100	100	135	140	180	170	150	135	110	110	105	110	105	S	S
3	100	105	100	105	100	100	100	160	G	125	115	115	120	125	150	135	110	110	110	110	100	100	100	100
4	S	S	S	S	105	105	S	125	110	110	110	100	115	125	155	140	135	120	S	110	110	110	100	105
5	110	110	100	95	95	S	S	145	150	105	110	100	G	100	150	150	130	125	110	110	110	110	110	105
6	100	100	100	S	S	S	S	130	130	125	G	G	140	130	140	135	120	115	110	110	110	S	100	100
7	110	S	S	S	S	S		130	130	120	115	G	G	G	G	G	G	G	110	S	S	S	S	S
8	S	S	S	S	S		100	150	150	135	125	120	115	120	120	130	120	G	B	115	110	105	S	S
9	S	100	100	S	S	100	S	130	120	110	115	110	110	110	110	110	105	105	100	100	100	100	100	S
10	100	100	100	100	100	100	S	145	125	105	130	125	100	105	E G 170	100	100	95	100	105	100	105	110	S
11	105	S	105	100	100	105	105	G	150	140	130	140	E A 135	130	100	E G 180	G	115	115	110	100	100	100	100
12	105	105	105	S	S	S	S	140	175	120	120	125	130	115	115	G	125	G	S	105	100	100	100	100
13	100	100	100	S	S	S	S	115	110	115	115	130	115	110	115	110	110	110	100	100	100	100	100	100
14	S	S	100	100	100	S	S	130	110	115	120	115	105	110	110	105	120	G	B	S	S	100	100	100
15	100	100	100	100	S	S	S	115	110	115	110	110	110	110	110	110	110	115	S	S	100	150	100	100
16	100	100	S	100	100	100	S	160	G	115	110	110	110	110	100	105	G	G	S	S	S	S	100	100
17	95	95	100	S	S	S	S	100	125	120	115	110	110	110	110	110	110	110	105	100	100	100	100	S
18	S	S	S	S	S	S	S	150	145	110	110	110	105	100	100	100	95	95	95	95	95	100	110	S
19	S	S	100	S	S	S	S	135	120	110	110	105	105	110	115	115	95	95	95	110	105	105	105	100
20	S	S	S	100	S	S	S	S	G	105	110	105	100	100	100	100	100	100	105	105	105	105	105	100
21	105	100	105	100	S	115	S	150	120	120	100	115	100	100	100	100	100	95	95	S	105	105	105	100
22	100	100	105	100	100	100	130	145	100	100	140	E G 170	175	165	155	125	120	115	110	105	105	105	105	105
23	105	100	100	100	100	100	105	130	105	105	120	125	130	100	95	95	90	90	90	S	S	S	S	100
24	S	100	100	100	S	S	140	135	130	120	G	110	110	110	110	110	110	110	110	110	100	100	100	100
25	100	100	100	100	90	90	90	130	E G 150	130	115	110	110	110	110	110	110	100	100	100	100	100	100	100
26	100	100	100	100	100	S	S	S	G	G	G	100	100	100	100	G	G	100	100	95	S	S	S	S
27	100	100	100	S	S	S	S	S	135	115	G	G	100	100	100	E G 150	100	100	S	140	S	110	110	S
28	110	110	S	S	S	S	S	125	115	120	G	G	100	100	100	E G 160	100	130	110	110	110	110	S	S
29	S	S	S	S	S	S	S	125	125	110	110	G	G	G	150	150	135	140	110	105	100	100	100	S
30	95	100	100	S	S	S	S	130	125	120	120	120	120	115	120	120	120	145	105	105	100	105	105	S
31	105	105	100	S	95	100	100	120	125	G	120	E G 195	140	120	120	110	115	110	105	105	105	105	S	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	22	21	22	15	13	13	10	27	27	29	25	26	28	29	30	28	27	26	24	25	25	26	24	18
MED	100	100	100	100	100	100	105	130	122	115	115	112	110	110	114	111	110	110	105	105	100	105	100	100
UQ	105	100	100	100	100	105	130	145	131	120	120	125	122	120	145	133	120	115	110	110	105	105	105	100
LQ	100	100	100	100	100	100	100	125	110	110	110	110	102	100	100	108	100	100	100	105	100	100	100	100

OCT. 1984

H°ES (KM)

IONOSPHERIC DATA

OCT. 1984

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA																								Lat.	26 16.9 N		Long	127 48.4 E		Sweep	1 MHz to 25 MHz		in 24sec		in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																					
1	F5	F4	F5	F5	F3	F2	F4	LH21	CL22	CL11	CL21	C1	L2	L2	H1	CH12	C4	L5	L5	F5	F4	F3	F3	F3																					
2	F3	F1	F1	F1	F1	F1	L4	L4	L3	L2	HL11	H1	H1	H1	H2	H1	C2	L2	F3	F1	F1																								
3	F2	F2	F2	F2	F3	F3	F7	H2	H2	C1	C2	C1	C1	C1	H2	H2	C4	C7	L2	F2	F2	F2	F2																						
4	F1				F1	F3		H2	C2	C3	C4	L4	CL31	H2	H2	H4	H3	C4	L1	FF11	F5	F3	F2	F2																					
5	F3	FF12	F2	F3	F2	F1	H1	H2	L2	L1	L1		L1	HL11	HL11	H3	C6	L7	F3	F2	F2	F2	F2																						
6	F2	F1	F1				C2	C1	C1				H1	C3	H2	H3	C4	C5	L5	F2	F2		F2	F2																					
7	F1					F1	C2	C3	C1										L1																										
8				K1		F2	F1	H1	H1	H4	H3	C2	C2	C1	C1	H1	C2			F6	F4	F2	F1																						
9		F2	F1	F1		F2	F1	H2	H1	C1	C1	C2	C1	C2	C2	C2	L2	L2	L3	F2	F5	F4	F1																						
10	F1	F2	F4	F2	F1	F1	H1	CL11	L1	CL11	CL11	L1	L1	HL22	L1	L3	LH21	L3	FF21	F1	FF21	F1	F1																						
11	F1		F4	F5	F2	F1	F1	HL11	HL11	HL11	HL11	HL11	HL11	HL11	L2	HL11		C5	C1	F1	F1	F1	F2	F1																					
12	F2	F3	F2	F1			H1	H1	C2	C1	C1	C1	C2	C2			C1			F3	F6	F4	F3	F2																					
13	F2	F7	F5				L1	L1	C1	C2	C1	C2	L2	C2	L2	L2	L1	L2	L3	F6	F5	F4	F5	F5																					
14	F1		F2	F2	F1		C1	C1	C1	C1	C1	C1	L1	L1	L1	L1	C1				F1	F1	F3	F4																					
15	F5	F4	F2	F2			C1	C3	C2	C2	C2	C2	C1	C2	C2	C2	C1	C1			FF31	FF23	F3	F2																					
16	F2	F1		F2	F3	F1		H1	C1	C2	C1	C1	C2	L1	L1								F7	F5																					
17	F7	F5	F1				LH32	H2	C2	C1	C2	C2	C3	C3	C2	C1	L2	F2	F5	F4	F4	F1																							
18							H1	H1	C3	C2	C1	L2	L2	L2	L2	L2	L2	L2	F3	F4	F1	F4	F3																						
19			F3	F1	F1	F1	F1	H1	C4	C6	C7	C4	CL11	CL21	C2	C2	L2	L4	F3	FF32	F5	F3	F2	F4																					
20				F1					C1	C1	L1	L3	L3	L3	L3	L2	L1	F1	FF21	F3	F2	F1	F2																						
21	F1	F2	F2	F1		F2	F1	H2	C4	C3	L3	CL22	LH21	L2	L1	LH21	L3	L3	F3		F1	LK11	F3	F5																					
22	F3	F3	LK11	F4	F2	F1	F1	HL21	L1	LH31	HL11	HHL12	HL11	HL11	HL21	HL31	C3	C4	F5	F3	F5	F5	F3	F6																					
23	F7	F6	F4	F6	F4	F7	F4	HL11	LH21	L2	C2	CL21	HL11	L1	L2	L6	L3	L3	F2	F1				F4																					
24		F2	F5	F2			F1	C1	C1	C1		C1	C1	C3	C1	C2	L1	L1	F4	F3	F4	F5	F4	F1																					
25	F2	F1	F1	F4	F4	F3	F3	C1	H1	H1	C3	C4	C2	C1	C1	C1	C1	L3	F3	F3	F4	F2	F2	F2																					
26	F3	F3	F3	F2	F1	F1		H1				L2	L1	L1	L1			L1	F3	F2																									
27	F3	F2	F1					H1	C1				L2	L2	L1	HL11	L1	L1		F1		F1	F1																						
28	F1	F1					C2	C2	C1				L2	L1	L1	HL11	L1	H1	F2	F4	F1	F1																							
29						F1	H3	C2	C3	C2					HL12	H1	H2	H1	F2	F3	F7	F4	F1																						
30	F3	F2	F2				C4	C2	HC31	C2	C3	C1	C3	C3	C2	C1	C1	HC11	F3	F5	F3	F5	F6																						
31	F4	F2	F2		F4	F2	F2	C2	C3		C1	HC11	H2	C3	C2	C3	C2	L3	F7	F1	F7	F2	F1																						
ES	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																					
CNT																																													
MED																																													
UQ																																													
LQ																																													

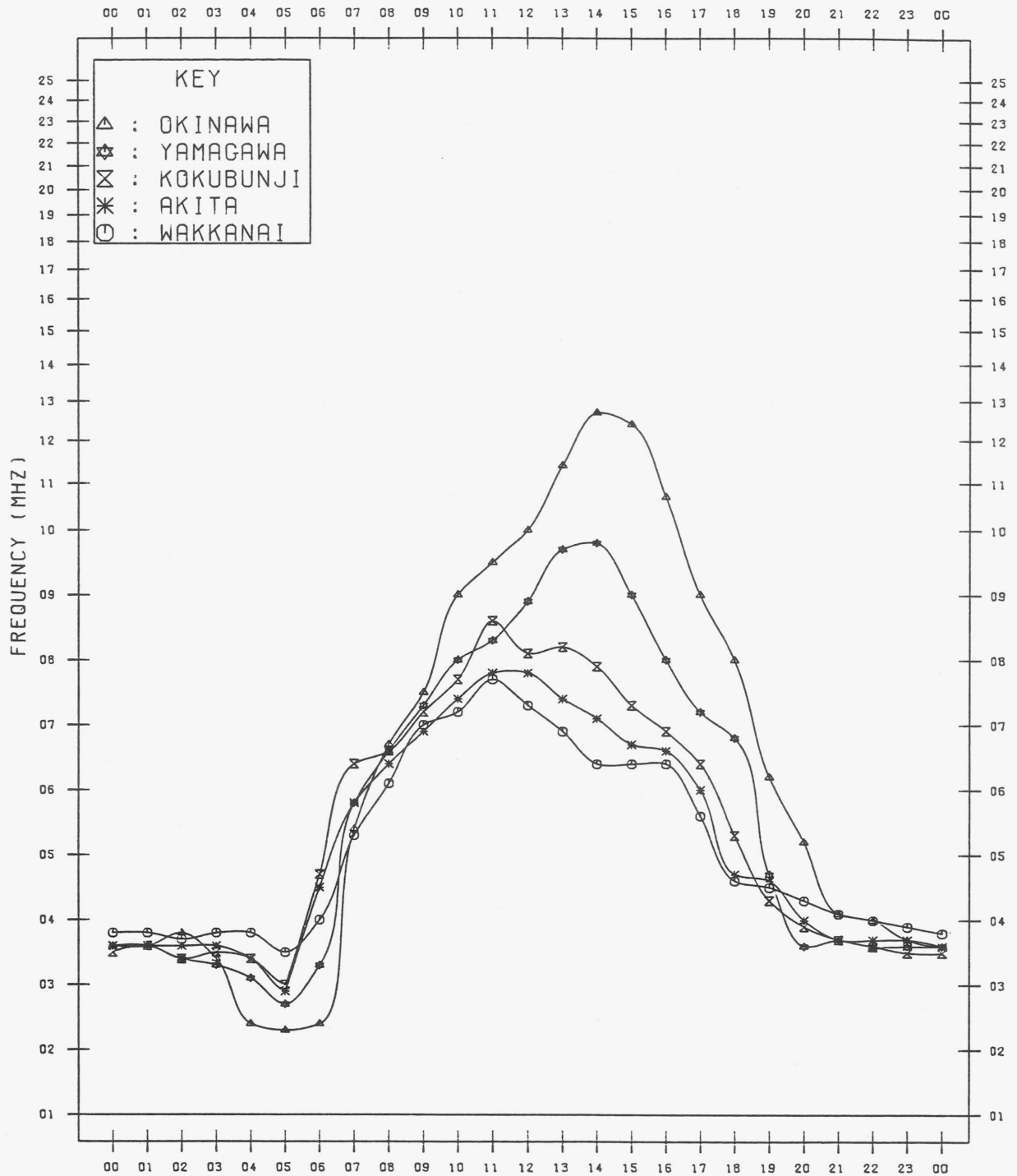
OCT. 1984

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

135°E MEAN TIME

OCT. 1984



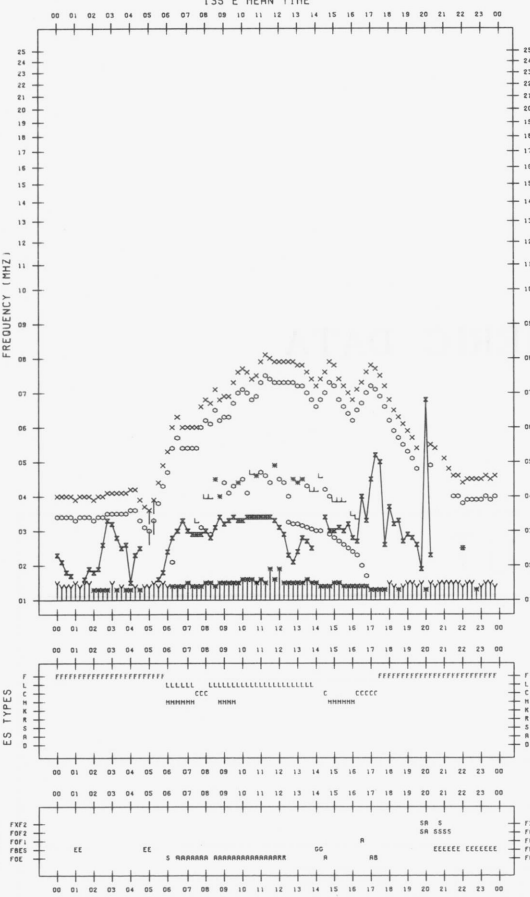
f-PLOTS OF IONOSPHERIC DATA

KEY OF F-PLOT	
I	SPREAD
○	F ₀ F ₂ , F ₀ F ₁ , F ₀ E
×	F _X F ₂
*	DOUBTFUL F ₀ F ₂ , F ₀ F ₁ , F ₀ E
⊗	FBES
L	ESTIMATED F ₀ F ₁
*.Y	F _{MIN}
^	GREATER THAN
v	LESS THAN

F-PLOT DATA

SCALER : S-HIIDOME

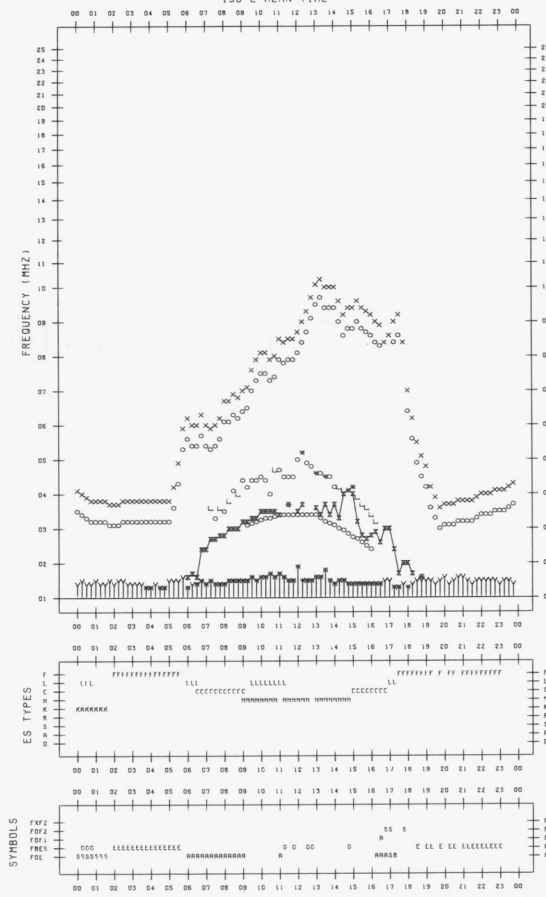
STATION : KOKUBUNJI TOKYO DATE : 1984/10/ 1



F-PLOT DATA

SCALER : S-HIIDOME

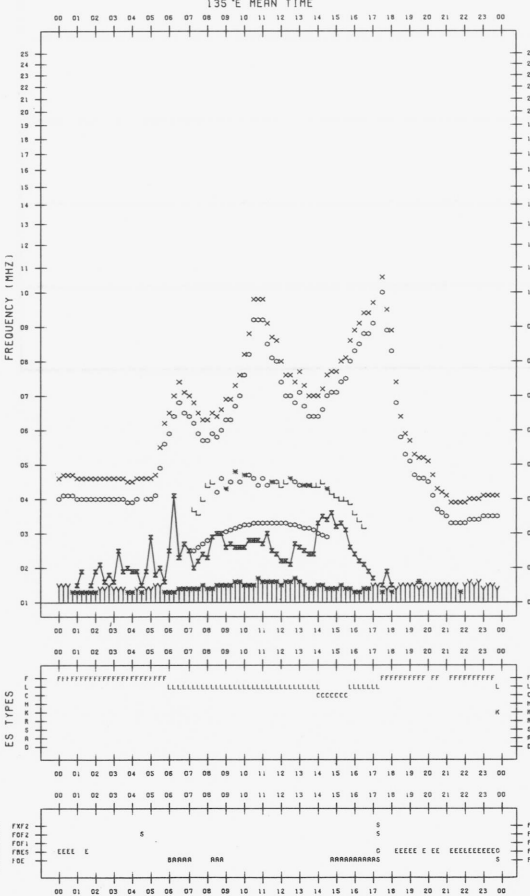
STATION : KOKUBUNJI TOKYO DATE : 1984/10/ 3



F-PLOT DATA

SCALER : S-HIIDOME

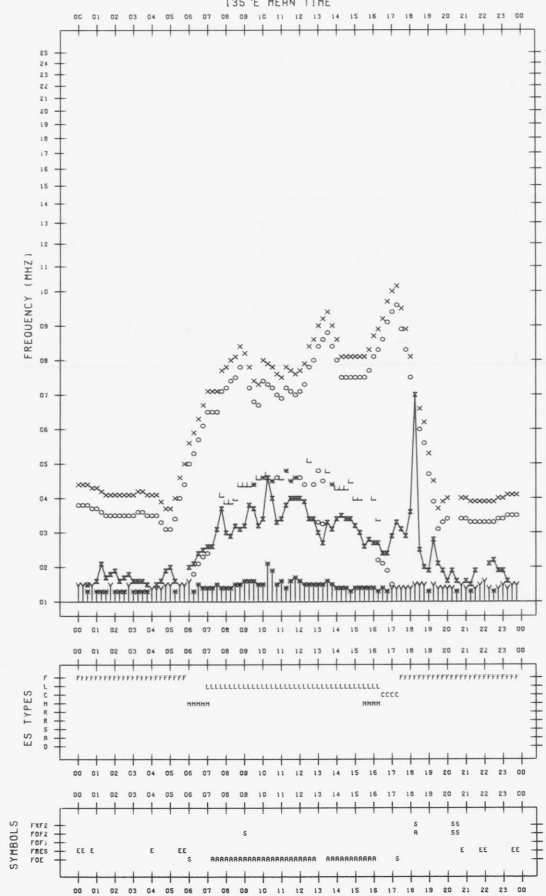
STATION : KOKUBUNJI TOKYO DATE : 1984/10/ 2

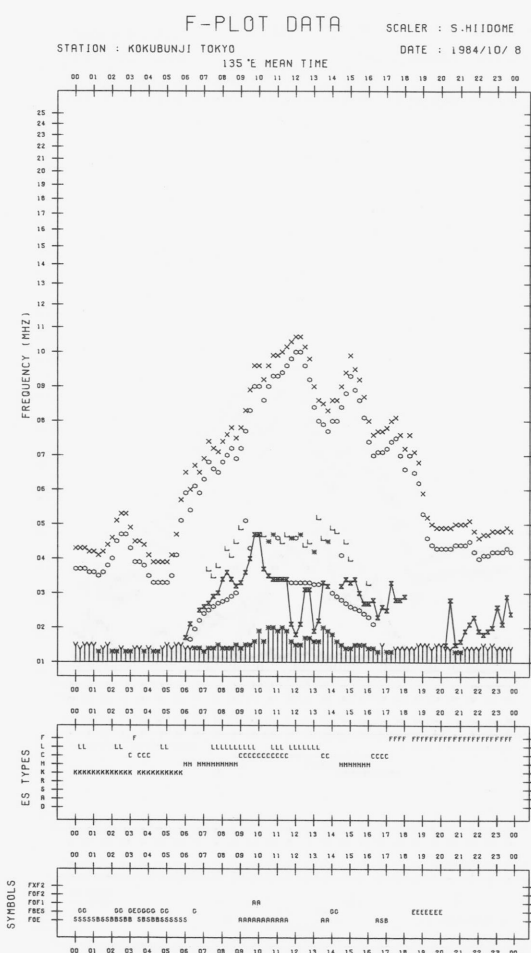
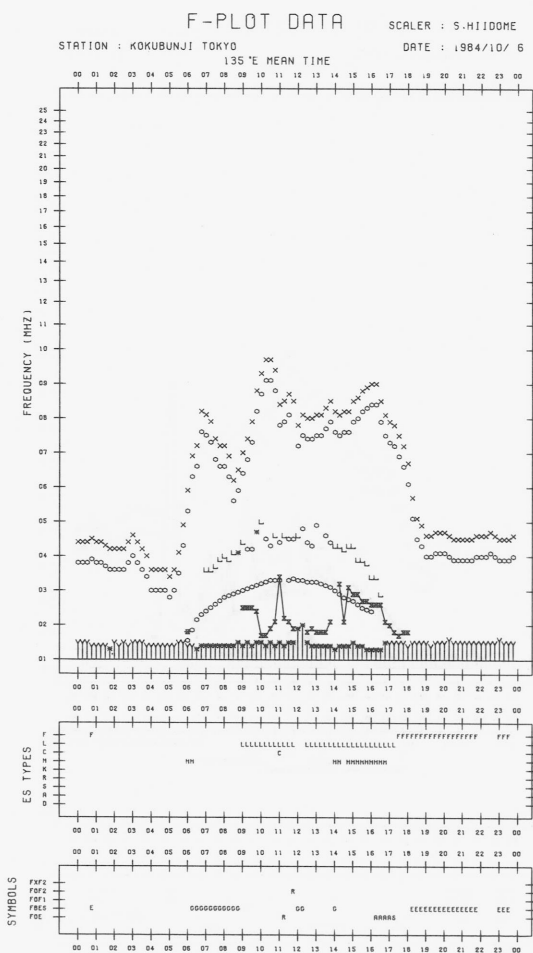
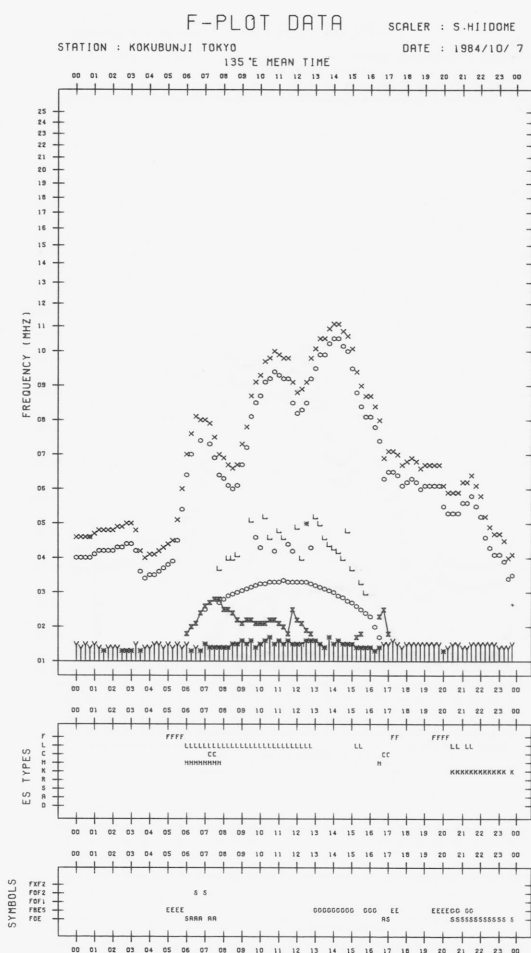
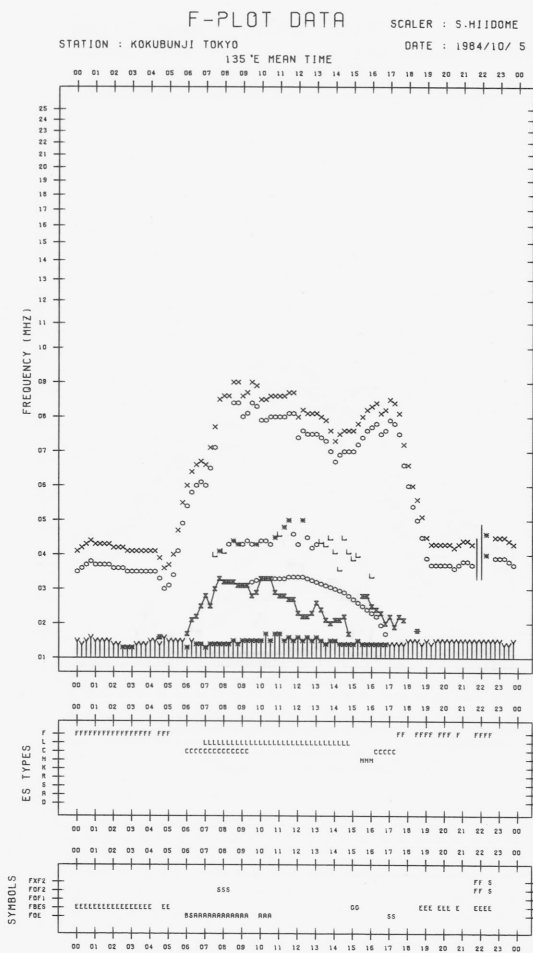


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/ 4



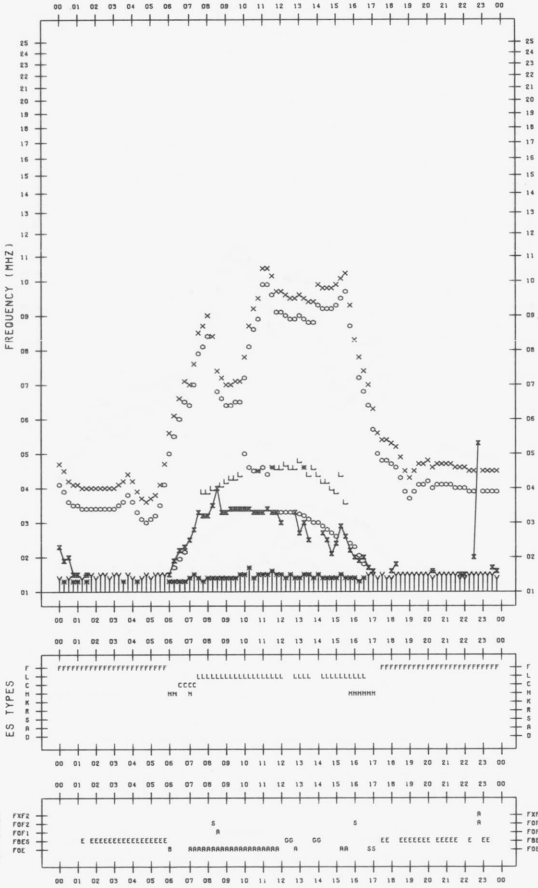


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/9

135°E MEAN TIME

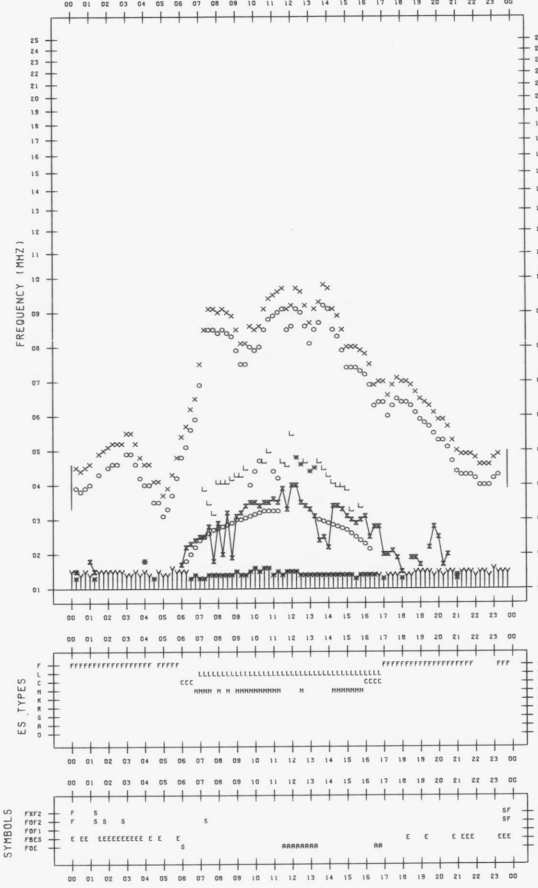


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/11

135°E MEAN TIME

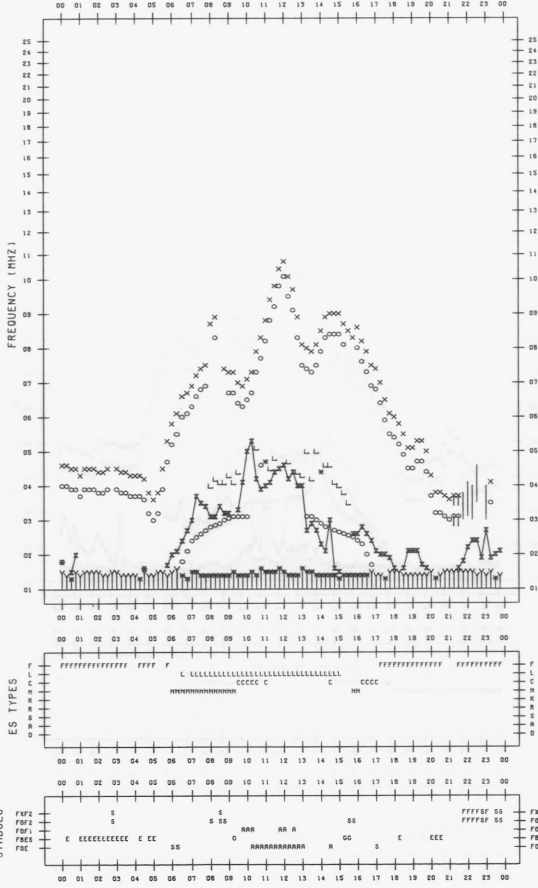


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/10

135°E MEAN TIME

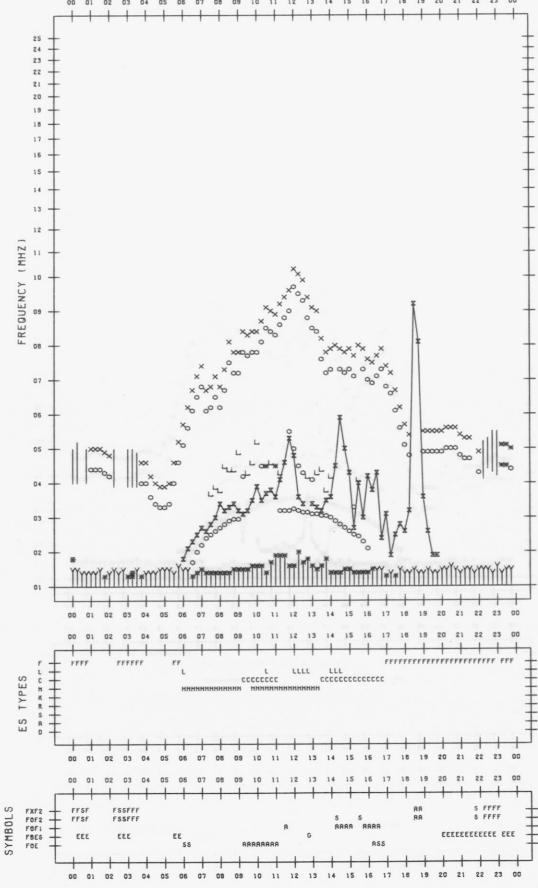


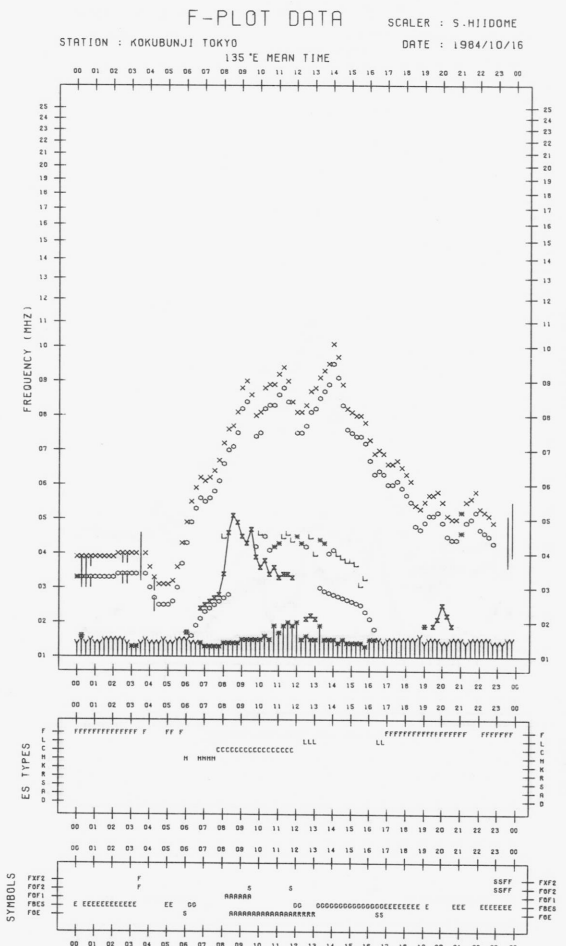
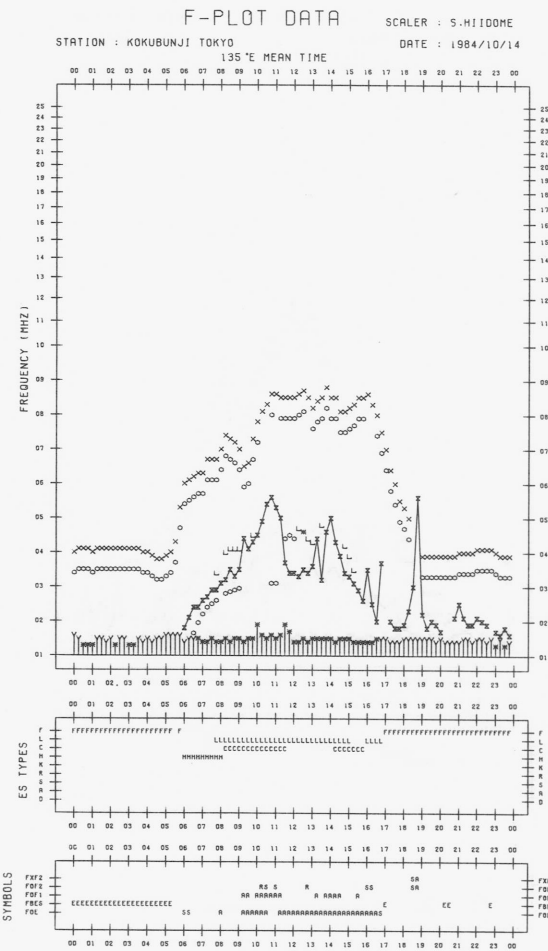
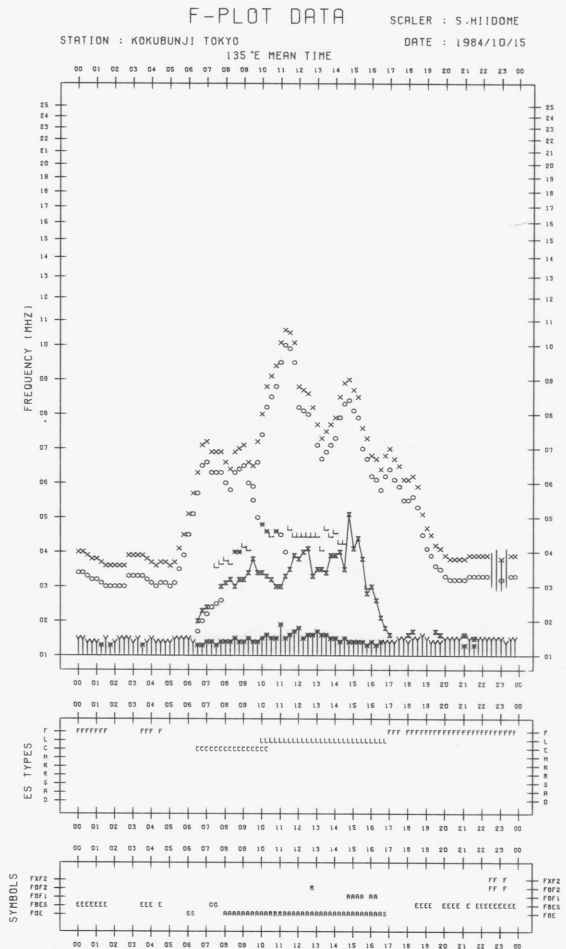
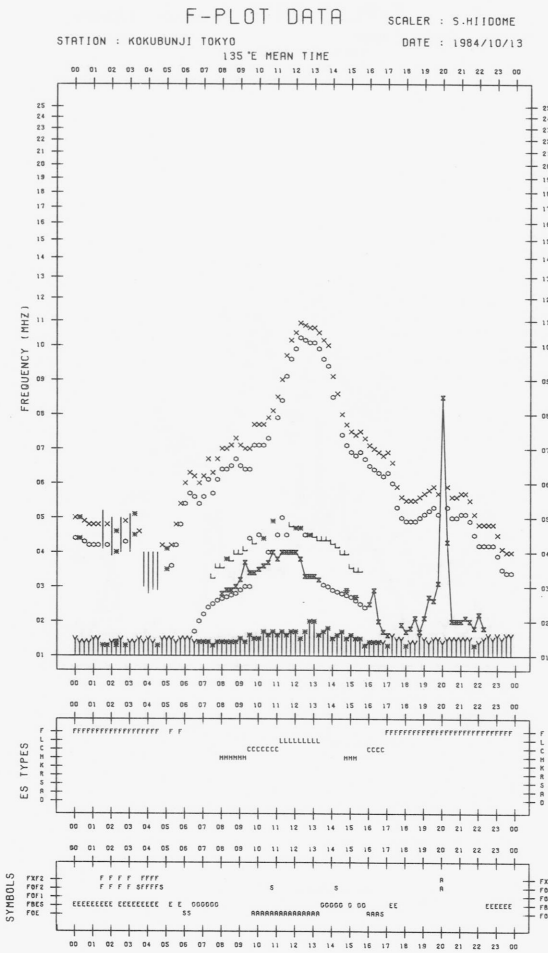
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/12

135°E MEAN TIME

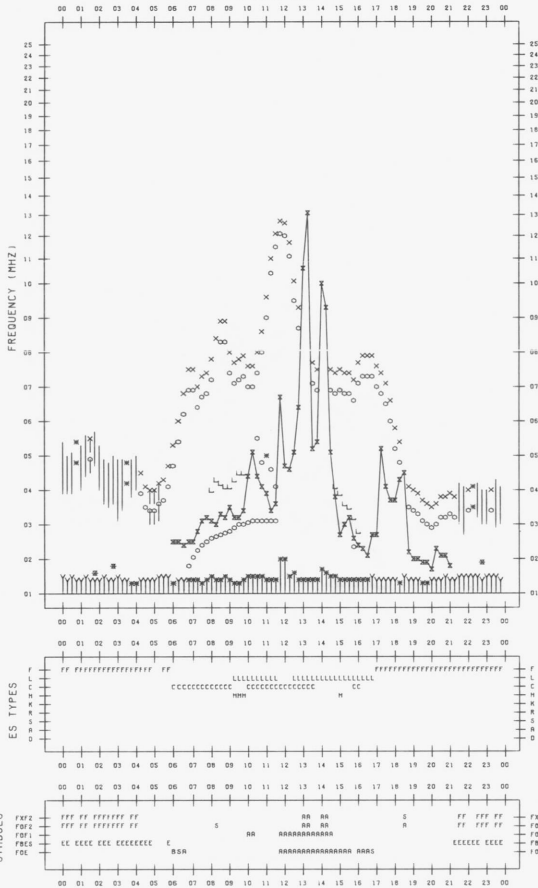




F-PLOT DATA

SCALER : S-HIIDOME

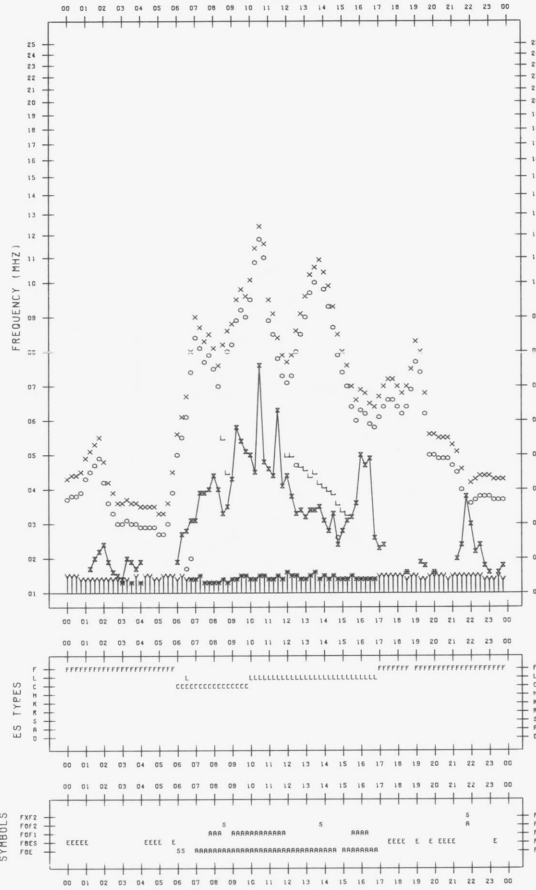
STATION : KOKUBUNJI TOKYO DATE : 1984/10/17
135°E MEAN TIME



F-PLOT DATA

SCALER : S-HIIDOME

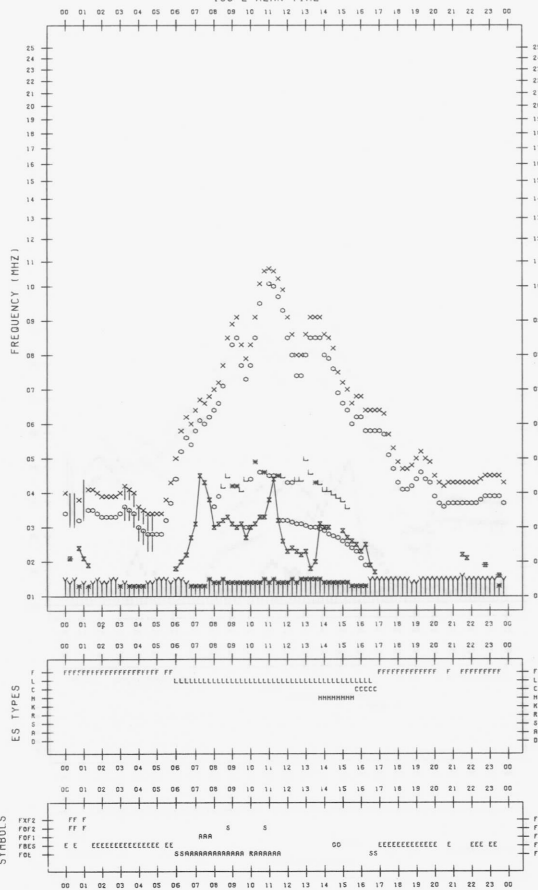
STATION : KOKUBUNJI TOKYO DATE : 1984/10/19
135°E MEAN TIME



F-PLOT DATA

SCALER : S-HIIDOME

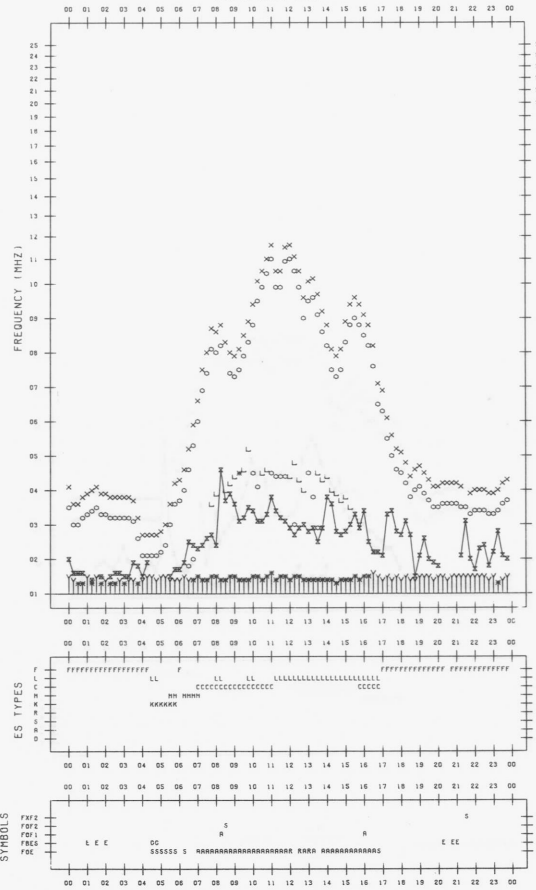
STATION : KOKUBUNJI TOKYO DATE : 1984/10/18
135°E MEAN TIME

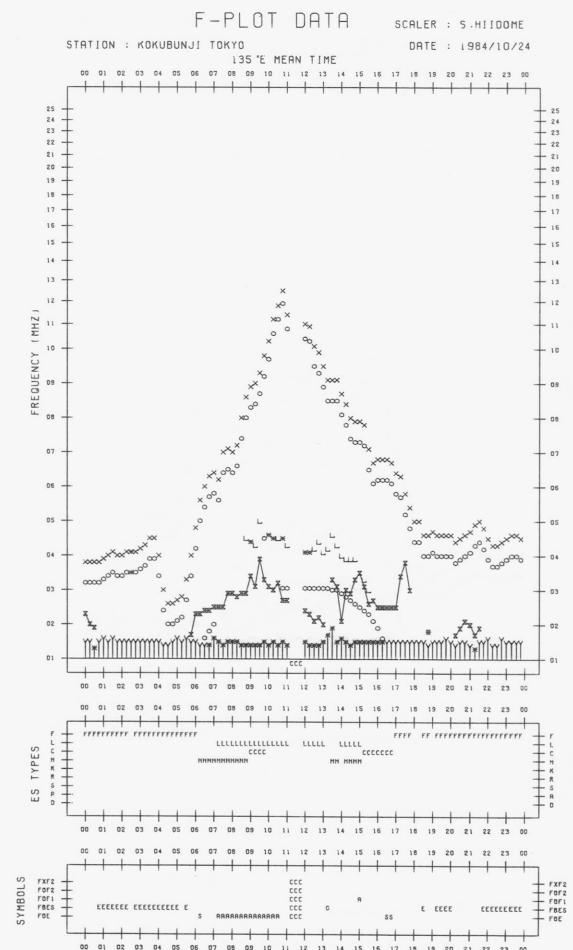
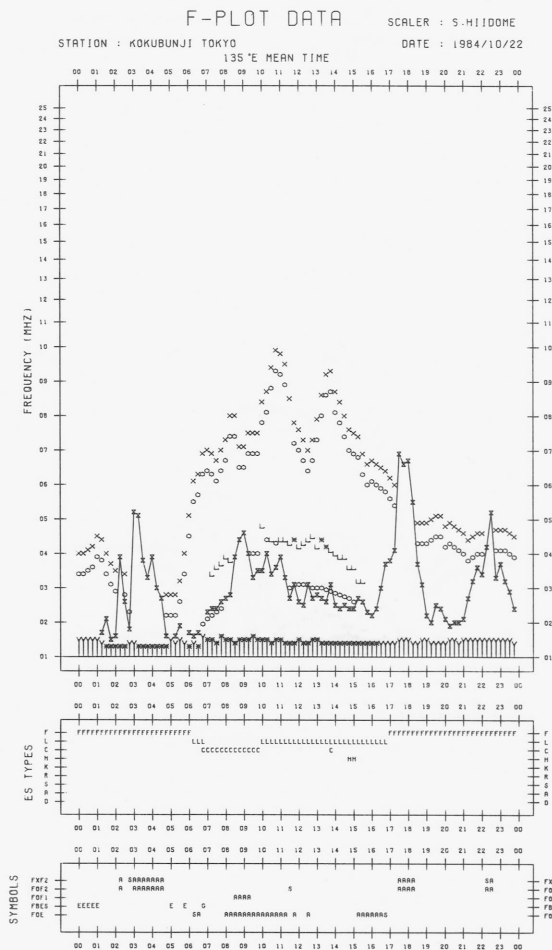
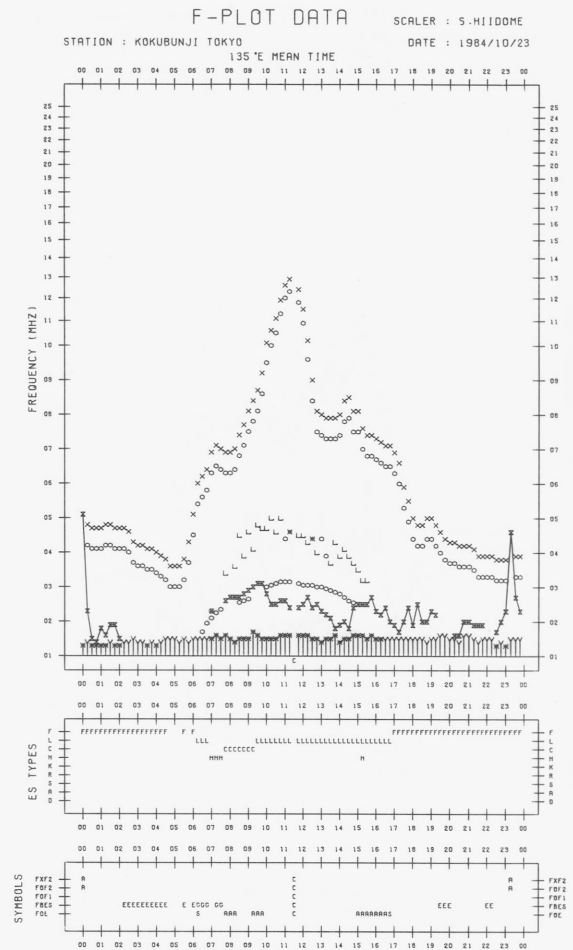
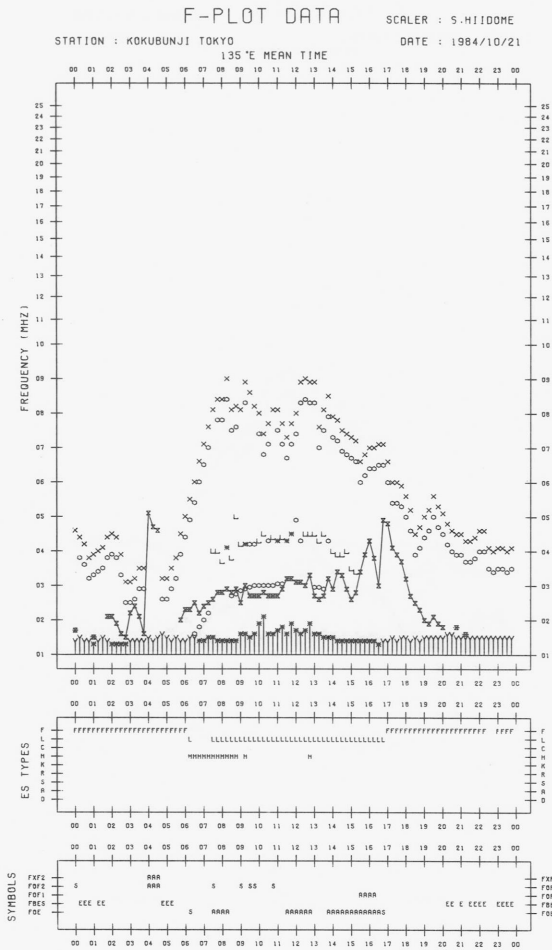


F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/20
135°E MEAN TIME



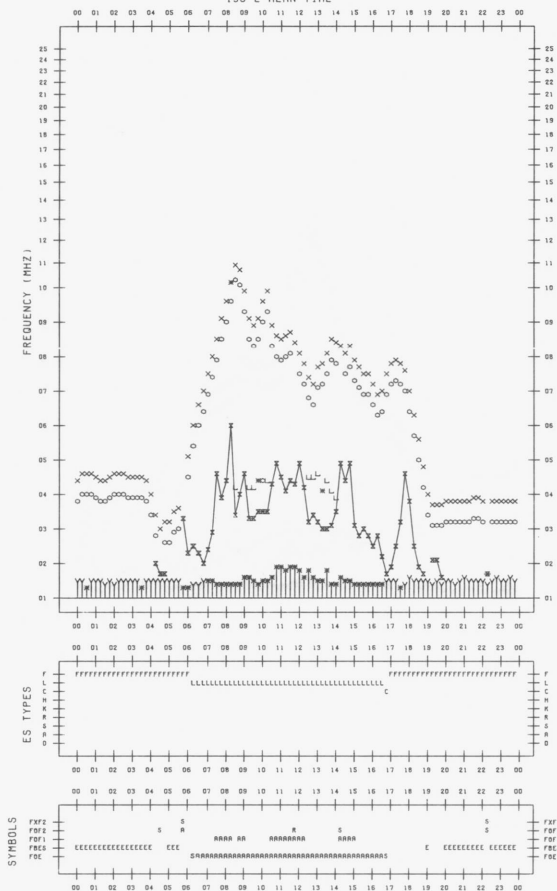


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/25

135°E MEAN TIME

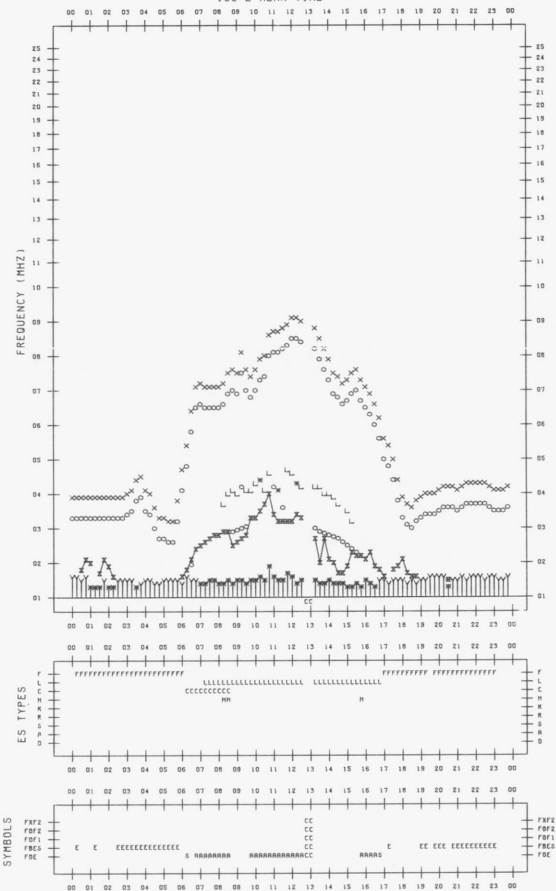


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/27

135°E MEAN TIME

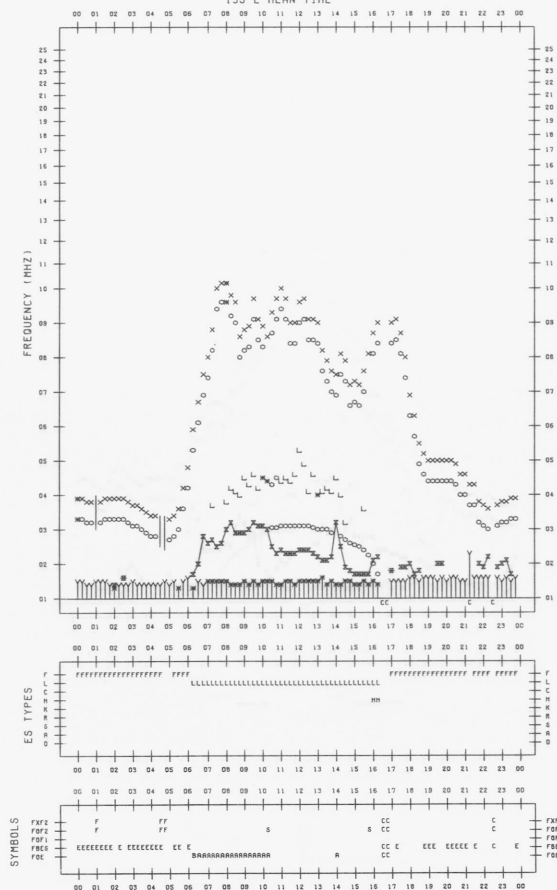


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/26

135°E MEAN TIME

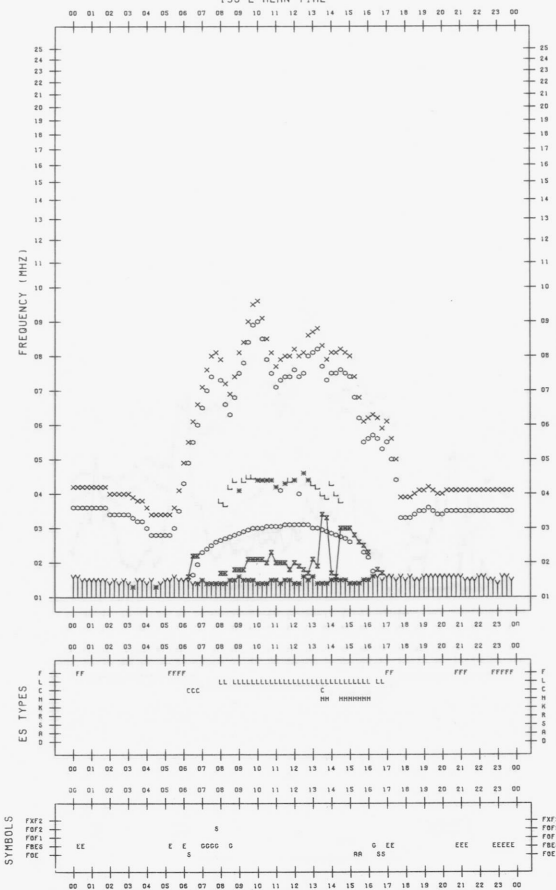


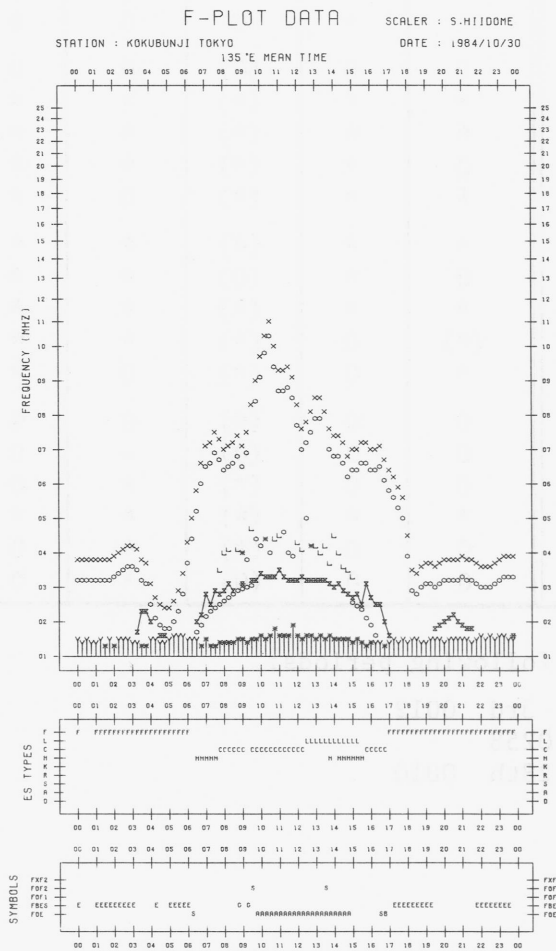
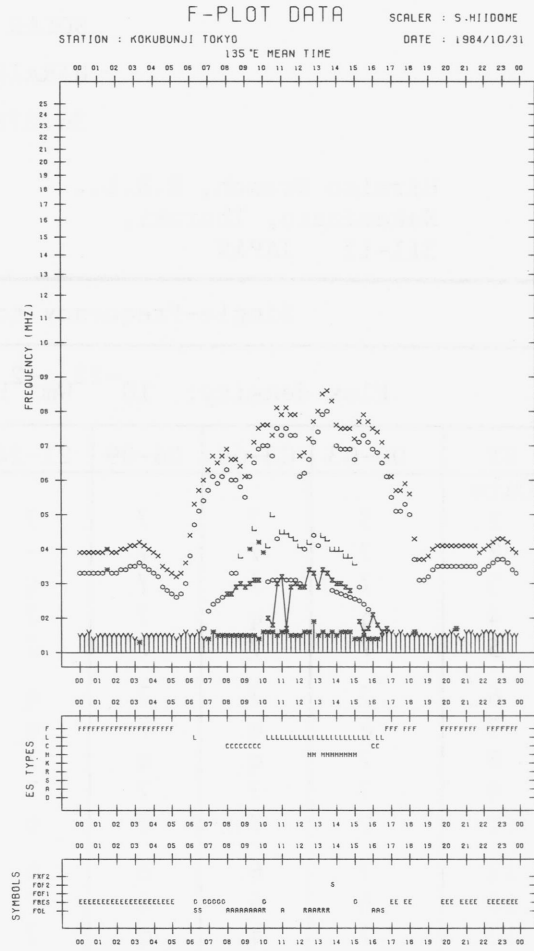
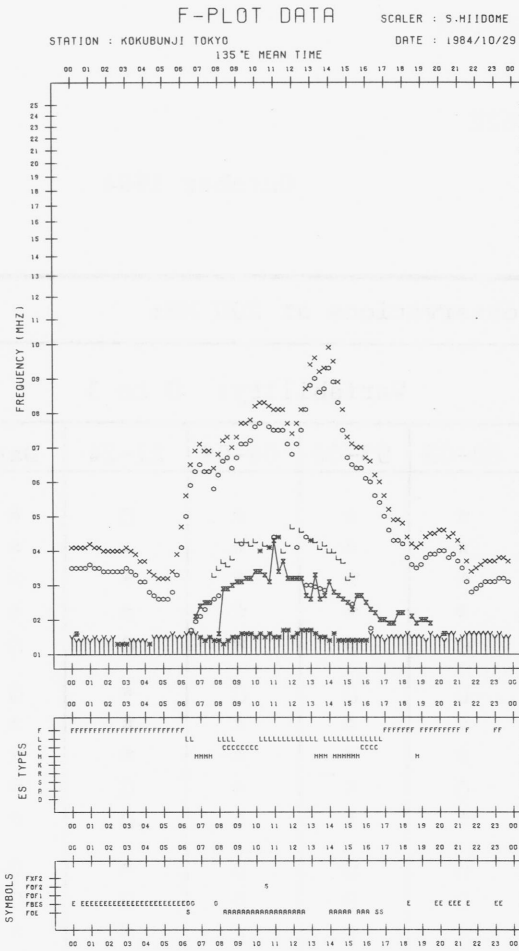
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/10/28

135°E MEAN TIME





SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

October 1984

Single-frequency total flux observations at 200 MHz										
Flux density: $10^{-22} \text{Wm}^{-2} \text{Hz}^{-1}$						Variability: 0 to 3				
UT	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
Date										
1	7	7	7	7	7	*	*	*	0	*
2	7	7	7	-	7	*	*	*	-	*
3	7	7	7	q	7	*	*	*	*	*
4	q	q	7	7	q	*	*	*	*	*
5	7	7	7	7	7	0	0	*	0	0
6	7	7	7	q	7	0	0	0	*	0
7	q	q	7	q	q	*	*	*	*	*
8	7	q	q	7	7	*	*	*	*	*
9	7	7	7	7	7	0	*	*	0	*
10	7	7	7	6	7	*	*	*	0	*
11	7	6	6	6	6	0	0	0	*	0
12	6	6	6	7	6	0	0	0	0	0
13	7	q	q	7	7	*	*	*	*	*
14	7	7	q	7	7	*	*	*	0	*
15	7	7	7	7	7	*	*	0	0	0
16	7	7	(7)	7	7	0	0	(0)	0	0
17	7	7	(q)	7	7	*	*	(*)	*	*
18	q	q	(q)	7	q	*	*	(*)	*	*
19	7	7	(q)	7	7	0	*	(*)	*	*
20	q	q	(q)	7	q	*	*	(*)	0	*
21	7	q	(7)	7	7	*	*	(*)	*	*
22	7	7	(7)	q	7	0	*	(0)	*	*
23	q	7	(7)	q	q	*	*	(*)	*	*
24	(7)	7	(7)	8	7	(*)	0	(*)	*	*
25	7	7	(8)	7	7	*	0	(*)	0	*
26	7	7	(7)	7	7	0	0	(*)	0	0
27	7	7	(7)	-	7	0	0	(0)	-	0
28	7	7	(7)	q	7	0	0	(*)	*	0
29	q	q	(7)	q	q	*	*	(*)	*	*
30	7	7	(7)	7	7	0	0	(*)	*	0
31	7	7	(7)	7	7	0	0	(0)	*	0

Note No observations during the following periods:

2nd 2032 - 3rd 0012

24th 0100 - 0258

27th 2056 - 28th 0010

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
 Nakaminato, Ibaraki,
 311-12 JAPAN

October 1984

Single-frequency total flux observations at 500 MHz					
Flux density: $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$					
UT	00-03	03-06	06-09	21-24	Day
Date					
1	28	29	29	28	28
2	29	29	29	28	29
3	28	28	28	28	28
4	28	28	29	28	28
5	29	29	29	27	29
6	28	28	28	28	28
7	28	28	28	27	28
8	28	27	27	28	27
9	28	28	28	27	28
10	27	27	27	26	27
11	27	27	26	26	27
12	26	26	26	26	26
13	27	27	26	26	27
14	27	26	26	26	26
15	26	26	(26)	26	26
16	26	26	(26)	-	26
17	26	26	(26)	26	26
18	26	26	(26)	27	26
19	28	28	(28)	27	28
20	27	28	(27)	26	27
21	27	28	(27)	28	27
22	28	28	(28)	28	28
23	28	28	(28)	27	28
24	27	27	(27)	27	27
25	26	27	(27)	26	27
26	26	27	(27)	26	26
27	27	27	(27)	26	27
28	27	27	(27)	26	27
29	26	26	(26)	26	26
30	26	26	(26)	26	26
31	26	26	(26)	26	26

Note No observations during the following periods:

15th 0600 - 0640

16th 2100 - 2335

24th 0225 - 0258

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

October 1984

Outstanding Occurrences
(single-frequency observations)

Normal observing period: 2050 - 0800 (sunrise to sunset)

OCT 1984	FREQ STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
						PEAK	MEAN	
4	500 HIRA	6 S	2231.0	2231.6	1.0	4	2	WL
19	500	8 S	0017.9	0017.9	0.5	7	-	0
21	500	42 SER	0235.8	0237.5	2.5	3	-	WL
23	500	6 S	0548.0	0548.5	1.0	5	2	WL

RADIO PROPAGATION

MEASUREMENT OF H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWV)

OCT 1984		FREQUENCY 15 MHZ					BANDWIDTH 80 HZ					RECEIVING ANTENNA ROD 4.5 M															MEASURED AT HIRAI SO		
UT DAY	00H 15M	01H 15M	02H 15M	03H 15M	04H 15M	05H 15M	06H 15M	07H 15M	08H 15M	09H 15M	10H 15M	11H 15M	12H 15M	13H 15M	14H 15M	15H 15M	16H 15M	17H 15M	18H 15M	19H 15M	20H 15M	21H 15M	22H 15M	23H 15M					
1	0	-3	ES -6	ES -4	ES -6	ES -18	ES -3	ES -5	ES -5	ES -18	ES -18	ES -5	ES -2	ES -23	ES -23	ES -23	ES -23	ES -23	-1	-3	2	6	2	1					
2	5	-2	ES -8	-3	ES -5	-14	-5	ES -3	ES 0	ES -2	-14	-23	-23	-23	-23	-23	-23	-23	-23	-23	9	-2	5	5					
3	6	0	ES -3	ES -5	ES -3	ES -2	ES -5	ES -2	ES -3	ES -9	-23	-23	-23	-23	-23	-23	-23	-23	-23	-1	7	3	3	4					
4	6	ES -3	-4	-6	ES -8	-7	ES -3	ES -6	ES -2	ES -13	-15	-15	-24	-24	-24	-24	-24	-24	-24	-4	5	4	8	2					
5	10	-2	ES -3	ES -4	-14	ES -5	ES -8	ES -2	ES -2	ES -23	-23	-23	-23	-23	-23	-23	-23	-23	-14	1	-3	7	2	-2					
6	3	ES -3	ES -9	7	-2	1	-3	ES -3	ES -8	-5	-23	-23	-23	-23	-23	-23	-23	-23	-14	-14	-14	-3	-1	2	4				
7	9	0	17	-12	-12	ES -8	-11	ES -6	ES -14	-14	-14	-14	-14	-14	-14	-23	-23	-23	-9	-23	4	12	9	5					
8	2	-3	4	ES -4	ES -9	ES -9	ES -3	ES -6	ES -4	ES -18	ES -18	ES -18	-14	-14	ES -5	ES -8	ES -8	ES -23	ES -23	ES -4	7	8	12	3					
9	2	4	-8	ES -8	ES -14	ES -9	ES -5	ES -5	ES -5	ES -19	-23	-10	ES -8	ES -8	ES -8	-10	-23	-23	1	6	7	5	-2	3					
10	2	ES 1	0	-2	ES -2	ES -8	ES -1	ES -2	ES -3	ES -14	-23	-23	-24	-24	-24	-24	-24	-24	-24	-24	-1	3	6	3					
11	5	4	-3	-3	-3	1	ES -12	ES -5	ES -5	ES -14	-14	-14	-12	-23	-23	-23	-23	-23	-23	-23	2	6	8	-1					
12	6	-1	3	-3	ES 1	ES -3	-2	1	ES -2	-15	-15	-15	ES -8	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	-2	4	4	4					
13	5	8	ES 5	ES 10	7	ES 9	ES 7	ES 12	ES 4	5	3	-2	-3	ES -8	ES -8	ES -23	ES -23	-9	-3	1	3	4	9	5					
14	2	3	-6	ES -8	ES -8	ES -8	ES -5	ES -6	ES -6	ES -23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-3	6	1	3					
15	5	ES -3	ES 0	S	-3	S	S	S	3	ES 1	ES 1	ES 3	-23	-23	-23	-23	-23	-23	-9	0	4	4	2	6	7				
16	6	5	3	ES 6	ES -1	0	ES 3	ES -3	ES -1	ES -8	ES -8	-23	-23	-23	-23	-23	-23	-3	-23	-23	-14	-12	-5	4	2				
17	9	S	S	S	S	S	S	S	C	-17	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-3	2	4	-1					
18	1	9	S	8	ES -1	S	S	S	2	ES -8	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-3	ES -14	-2	ES -2					
19	ES -14	ES -5	ES -8	ES -8	ES -6	-5	ES -3	ES -6	ES -11	ES -12	ES -3	-23	-23	-23	-23	-23	-23	-23	-23	-14	-23	-11	-23	-6	-3				
20	5	ES 1	7	ES -1	S	S	S	S	ES 0	ES -5	-23	ES 3	-23	-23	-23	-23	-23	-23	-23	-23	-23	-11	-23	-23					
21	-8	6	ES -1	ES 0	ES -2	ES -3	S	S	ES -23	ES -23	ES -5	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	-4	-1	-3				
22	-3	6	1	-12	ES -8	ES -8	ES -3	ES -2	ES -8	ES -8	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-11	5	4	4					
23	-8	S	S	S	S	S	S	S	S	S	S	ES -8	-23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	3	-1	4				
24	4	C	C	C	ES -3	ES -2	ES -2	ES 1	ES -8	-23	-23	-24	-24	-24	-24	-24	-24	-24	-6	-9	-7	4	6	-2	-3				
25	-1	0	ES -2	ES 0	ES -3	ES -4	ES 6	ES -3	-3	-12	-15	ES -24	-24	ES -12	-24	ES -24	ES -24	ES -24	ES -24	ES -24	-6	-9	-1	6	5				
26	2	5	S	S	S	S	S	S	S	ES -9	ES -3	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	7	2	1				
27	-1	6	S	S	ES -1	ES 2	ES 7	ES 14	0	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-1	3	-1				
28	-1	S	S	S	S	S	ES -2	ES 4	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -5	-8	ES -14	1	0	0					
29	-1	-2	3	-2	ES -3	-2	ES -5	ES -2	ES -3	ES -23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	2	5	5				
30	3	6	9	ES -5	ES -4	ES -5	ES 1	ES 1	ES -4	ES -17	-23	-23	-23	-23	-23	-23	-23	-23	-23	-14	ES -23	-10	6	5	5				
31	1	ES -2	-3	ES -3	ES -6	ES -5	ES -2	ES 6	ES -14	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	5	7	7				
CNT	31	27	24	24	26	24	25	24	27	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31				
MED	2	US 0	ES -2	ES -3	ES -3	ES -5	ES -3	ES -2	ES -3	ES -14	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-23	-3	3	4	3				
UD	9	6	9	ES 8	ES -1	ES 2	ES 6	ES 12	ES 2	-2	ES -3	-2	ES -8	ES -12	ES -8	ES -23	ES -23	-9	-1	1	7	7	9	5					
LD	-8	ES -3	ES -8	ES -12	ES -12	ES -14	ES -8	ES -6	ES -14	-23	-23	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-24	-11	-2	ES -3				

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO		Time in U.T.														
Oct. 1984	Whole Day Figure	W W V				W W V H				Conditions				Principal Geomagnetic Storms		
		00 06	06 12	12 18	18 24	00 06	06 12	12 18	18 24	00 06	06 12	12 18	18 24	Start	End	Range
1	4o	4U	S	S	4	4	4U	5U	4	N	N	N	N			
2	4o	4U	S	S	4	4	5U	S	3	N	N	N	N			
3	4+	4U	S	S	4	4	5U	S	4	N	N	N	N			
4	4o	4U	S	S	4	4	5U	S	3	N	N	N	N			
5	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
6	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
7	4+	4U	S	S	4	4	S	5U	4	N	N	N	N			
8	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
9	4o	4U	S	S	4	4	4U	5U	4	N	N	N	N			
10	4+	4U	S	S	4	4	5U	S	4	N	N	N	N			
11	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
12	4-	4U	S	S	4	4	3U	S	4	N	N	N	N			
13	4+	5U	S	5U	4	4	S	S	4	N	N	N	N			
14	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
15	4+	4U	S	5U	4	4	S	S	4	N	N	N	N			
16	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
17	4+	S	S	S	4	S	5U	S	4	N	N	N	N			
18	4o	5U	S	S	3U	4	S	S	4	N	N	N	N	02.1	---	125
19	3+	3U	S	S	3	4	4U	S	3	N	N	N	N	---	---	
20	3+	4U	S	S	2U	4	S	S	4	N	N	N	N	---	23.0	
21	4-	4U	S	S	3	4	5U	S	3	U	U	U	U			
22	4-	4U	S	S	4	4	3U	S	4	N	N	N	N			
23	4-	S	S	S	3	4	S	S	4	N	N	N	N			
24	4+	C	S	5U	4	4	S	S	4	N	N	N	N			
25	4o	4U	S	S	4	4	4U	S	4	N	N	N	N			
26	4+	4U	S	S	4	4	S	5U	4	N	N	N	N			
27	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
28	4o	S	S	S	4	4	S	S	4	N	N	N	N			
29	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
30	4+	5U	S	S	4	4	4U	S	4	N	N	N	N			
31	3+	4U	S	S	3U	4	S	S	3	N	N	N	N			

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO		Time in U.T.									
Oct. 1984	S W F						Correspondence				
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
CO	HA	1)	2)								
						None					

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Oct. 1984	S P A							
	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω /LR	NWC	Ω /H	Ω /ND	Start	End	Maximum
10			11			0440	0516	0444
16			—	4		0027	0103	0037

IONOSPHERIC DATA IN JAPAN FOR OCTOBER 1984

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