

IONOSPHERIC DATA IN JAPAN

FOR AUGUST 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
 $f_o F2$ } Ordinary wave critical frequency
 $f_o F1$ } for the $F2$, $F1$, E and E_s including particle
 $f_o E$ } E layers respectively
 $f_o E_s$ }

$f_b E_s$ } Blanketing frequency of the E_s
 layer, e.g. the lowest ordinary wave
 frequency visible through E_s

f_{min} } Lowest frequency which shows ver-
 tical ionospheric reflections

$M(3000)F2$ } Maximum usable frequency factor
 $M(3000)F1$ } for a path of 3000 km for transmission
 by $F2$ and $F1$ layers respectively

$h'F2$ } Minimum virtual height on the ordi-
 $h'F$ } nary wave for the $F2$, whole F , E and E_s
 $h'E$ } layers respectively
 $h'E_s$ }

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.

The types are:

f 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-blanking 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 *foEs>foE* (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 Hiraíso. 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 sence 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 Hiraíso. 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
Station Call	WWV	WWVH	
Location	Fort Collins, Colorado	Kauai, Hawaii	Hiraíso, Ibaraki
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 crochet 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. + 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		X 50	X 46	X 48	X 42																	X 60	X 61	X 59	X 51		
2		X 50	X 50	X 52	X 55																	X 58	X 58	X 56	X 50		
3		X 45	X 45	X 47	X 45																	X 64	X 62	X 61	X 59		
4		X 54	X 51	X 45	X 33																	X 60	X 61	X 63	X 58		
5		X 52	X 51	X 40	X 45																	X 70	X 65	X 65	X 57		
6		X 58	X 57	X 55	X 54																	X 69	X 68	X 67	X 66		
7		X 62	X 57	X 54	X 47																	X 70	X 66	X 60	X 56		
8		X 54	X 48	X 50	X 51																	X 78	X 80	X 70	X 65		
9		X 67	X 60	X 58	X 57																	X 83	X 82	X 74	X 71		
10		X 67	X 60	X 57	X 57	X 51																X 68	X 66	A	A		
11		X 57	A	X 52	X 51	X 45															X 81	X 84	X 78	X 71	X 64		
12		X 54	X 51	X 52	X 49	X 48															X 76	X 79	X 81	X 68	X 62		
13		X 54	X 53	X 50	X 50	X 50															X 82	X 79	X 79	X 71	X 66		
14		X 61	X 59	X 54	X 51	X 50															X 78	X 82	X 77	X 71	X 66		
15		X 60	X 53	X 54	X 57	X 51															X 64	X 70	X 68	X 61	X 67		
16		X 58	X 57	X 51	X 48	X 47															X 70	X 67	X 67	X 64	X 62		
17		X 56	A	X 45	X 45	X 46															X 63	X 69	X 69	X 60	X 59		
18		X 56	X 50	X 42	X 42	X 48															X 85	X 75	X 65	X 57	X 52		
19		X 52	X 55	X 54	X 51	X 47															X 81	X 82	X 75	X 62	X 59		
20		X 48	X 44	X 47	X 42	X 42															X 80	X 60	X 59	X 58	A		
21		X 51	X 48	X 50	X 48	X 45															X 70	A	X 62	X 58	X 57		
22		X 56	C	X 52	X 52	X 51															X 73	X 73	X 70	X 57	X 55		
23		X 52	X 51	X 49	X 52	X 45															X 74	X 77	X 70	X 52	X 50		
24		X 49	X 48	X 49	X 47	X 50															X 69	X 65	X 60	X 50	X 42		
25		X 41	X 37	X 40	X 41	X 34															A	X 63	X 62	X 49	X 42		
26		X 39	A	X 42	X 42	X 45															X 66	X 65	X 65	X 60	X 46		
27		X 45	X 41	X 40	X 39	X 42															X 67	X 70	X 63	X 57	X 53		
28		X 48	X 46	X 33	X 31	X 34															X 60	X 66	X 68	X 43	X 39		
29		X 39	X 42	X 46	X 40	C															X 55	X 58	X 54	X 50	X 44		
30		X 42	X 43	X 47	X 41	X 37															X 70	X 71	X 68	X 62	X 57		
31		X 50	X 41	X 38	X 38	X 36															X 60	X 60	X 59	X 53	X 49		
		00	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	27	31	31	21															20	30	31	30	29		
MED		X 52	X 50	X 49	X 47	X 46															X 70	X 70	X 66	X 60	X 57		
UQ		X 56	X 54	X 52	X 51	X 50															X 79	X 77	X 70	X 65	X 62		
LQ		X 48	X 46	X 45	X 42	X 42															X 65	X 64	X 62	X 57	X 50		

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FXI (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1984

FOF2 (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	43	39	41	35	38	45	56	67	56	58	53	50	A	A	55	52	61	71	66	55	53	54	52	44
2	43	43	45	48	45	49	48	A	A	46	A	R	A	A	A	45	46	49	43	45	51	51	F	43
3	38	38	40	38	34	40	43	51	53	52	R	52	53	52	52	55	60	59 ^H	A	A	57	55	54	52
4	47	44	38	26	28	40	45	A	R	A	A	53	A	A	48	49	48	45 ^H	50	A	53	54	56	51
5	45	44	33	38	36	40	50	51	52	50	53	54	54	53	47	53	50	51	56	57	63	58	58	50
6	51	50	48	47	44	42	47	58	57	55	49	54	52	52	57	58	57	57	59	61	62	61	60	59
7	55	50	47	40	43	47	63	73	62	63	54	56	57	56	60	60	61	61	60	71	63	59	53	49
8	47	41	43	44	42	43	56	65	64	59	55	52	56	55	55	58	53	58	68	69	71	73	63	58
9	60 ^S	53	F	50	49	52	62	72	A	A	62	63	57 ^H	60	64	62	61	62	63	73	76	75	67	64
10	60	53	50	50	44	40	A	A	59	58	64	53	A	52	50	52	56	56	57	61	61	59	A	A
11	50	A	45	44	38	41	52	60	61	60	58	60	58	A	A	60	56	54	A	74	77	71	64	57
12	47	44	45	42	41	49	64	71	57	60	64	58	60	65	58	63	55	55	61	69	72	74	61	55
13	47	46	43	43	43	48	58	62	77	69	61	57	63	63	59	57	60	55	64	75	72	72	64	59
14	54	52	47	44	43	50	59	70	69	64	57	57	59	63	62	62	57	57	57	71	75	70	64	59
15	53	46	47	50	44	45	43	A	52	50	A	52	53	54	59	63	60	62	57	57	63	F	F	60
16	51	50	44	41	40	42	43 ^H	50	52	55	58	62	62	58	54	59	63	60	60	63	60	60	57	55
17	49	A	38	38	39	A	A	A	A	47	51	R	49	51	52	52	58	51	A	56	62	62	53	52
18	49	43	35	35	41	46	44	49	56	52	A	53	51	51	53	52	56	62	60	78	68	58	50	45
19	45	48	47	44	40	41	44 ^H	58	69	69	68 ^H	63	53	54 ^H	53	55	50	59	68	74	75	68	55	52
20	41	37	40	35	35	41	50	55	53	55	52	48	56	C	49	58	60	56	66	73	53	52	51	A
21	44	41	43	41	38	39	50	50	51	A	54	55	54	61	60	51	52	49	51	63	A	55	51	50
22	49	C	45	45	44	43	C	53	59	A	A	A	A	A	A	A	49	C	A	66	66	63	50	48
23	45	44	42 ^S	45	38	45	54	50	57	54	52	55	50	52	54	60	54	53	56	67	70	63	45	43
24	42	41	42	40	F	A	A	45	50	50	R	51	46	48	44	50	54	53	54	62	58	53	43	35
25	34	30	33	34 ^H	27	30	35	40	A	45	43	E G 42	A	44	43	46	A	A	46	A	56	55	42	35
26	32	A	35	F	F	A	A	A	45	49	50	48	50	50	51	50	50	50	50	59	58	58	53	39
27	F	F	34	33	35	38	54	52	56	54	52	57	60	53	55	57	57	55	51	60	63	56	50	46
28	41	39	26	24	27	27	40	41	43	A	R	R	46	45	43	44	45	43	43	53	59	61	36	32
29	32	35	F	F	C	C	C	C	C	46	45	R	R	45	49	A	A	A	44	48	51	47	43	37
30	35	36	40	34	30	33	42	46	44	54	55	52	52	56	53	54	53	56	55	63	64	61	55	50
31	43	34	31	31	29	31	39	44	45	46	47	47	47	50	50	50	51	48	45	53	53	52	46	42
CNT	30	27	29	29	28	27	25	24	25	26	23	26	24	25	28	29	29	28	27	28	30	30	28	29
MED	46	43	42	41	40	42	50	52	56	54	54	54	54	53	53	55	56	56	57	63	62	59	53	50
UQ	50	47	45	44	43	46	56	64	59	59	58	57	58	56	58	59	60	59	60	71	70	63	59	55
LQ	42	38	38	35	35	40	43	50	52	50	52	52	50	51	50	51	51	51	50	57	57	55	50	43

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

AUG. 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 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							370	A	A	A	460	A	A	A	430	410	410	H	A					
2						A	350	A	A	400	A	430	A	A	A	400	390	A						
3							A	400	420	430	460	A	450	460	440	420	H	400	380	L	A			
4					320	A	A	410	A	A	A	A	A	A	430	420	H	400		310				
5						A	400	A	420	A	450	450	440	450	L	H	400	380	320	L				
6							360	400	410	430	450	450	450	460	430	430	400	390						
7							370	A	430	440	A	A	A	450	A	A	410	380	A					
8							410	A	450	440	L	440	440	440	440	440	430	390	310	L				
9						A	A	A	A	A	A	460		460	A	A	A	A						
10							A	A	A	420	440	A	A	460	450	L	A	A	370					
11					L	A	A	430	440	450	450	A	A	A	A	A	410	380	L	A				
12							370	400	430	450	460	450	440	460	440	L	L	400	370	L				
13							400	420	440	A	A	450	450	460	420	400		A						
14							390	380	A	430	450	450	450	450	440	410	410							
15							380	A	A	420	A	440	450	A	420	420	400	360						
16							380	410	430	440	440	440	430	430	420	400	350							
17					A	A	A	A	L	A	430	A	A	410	410	A	A							
18							400	410	420	A	430	440	A	430	410	400	360							
19							400	420	430	440	440	440	420	L	A	A	L	380	360					
20							380	A	A	A	430	H	430	A	C	L	400	400	350					
21							A	A	A	A	430	450	C	420	410	400	L							
22						C	400	A	A	A	A	A	A	A	A	A	A	A	C					
23							380	400	410	450	430	440	420	420	A	A	A							
24					A	A	380	390	410	410	410	420	410	400	400	A	A							
25							320	350	A	A	L	420	A	400	400	390	A	A						
26						A	A	A	410	420	430	430	430	420	420	L	400	A						
27						330	A	A	430	A	450	440	L	450	430	420	390							
28						320	350	390	A	400	410	H	410	410	400	390	L	A	L					
29						C	C	C	400	420	420	420	410	420	A	A	A							
30							L	370	400	H	420	440	440	440	440	420	410	400	L					
31							340	360	400	420	H	410	440	430	420	420	L	F	L	380				
	00	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	11	18	15	23	18	23	20	21	25	23	22	13	3					
MED						320	360	390	410	420	440	440	440	440	430	410	400	370	310	L				
UQ						370	400	420	430	450	450	450	450	450	440	420	400	380	315	L				
LQ						335	380	400	415	420	430	435	420	420	410	400	360	310	L					

AUG. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

AUG. 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 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	190	230	265	295	A	320	325	320	330 ^H	315	300	290	245	190					E
2					A	155	210	255	285	A	A	A	330	330	320	300	280	235	190					E
3					A	180	230	265	295	315	325	330	325	A	320	310	290	245	210					S
4					S	180	230	265	300	310	315	320	A	A	325	305	295	245	185					S
5					E	180	240	275	300	305	315	320	A	330	330	305	A	245	A					S
6					S	A	A	265	300	315	320	325	A	335	330	315	290	250	195					S
7					S	S	235	275	A	A	320	330	330	A	A	A	A	A	A					S
8					S	S	220	260	285	A	A	A	340	335	325	305	290	245	A					S
9					S	S	230	245	280	A	310	A	A	A	330	310	295	230	A					E
10						160	215	260	A	A	A	A	A	A	A	A	295	265	A					S
11					S	225	275	300	310	A	A	A	A	A	A	A	290	245	180					
12					S	210	235	290	A	A	A	A	335	330	320	305	285	235	180					
13						150	225	A	300	305	320	A	A	A	A	305	295	235	185					
14						150	220	270	300	310	A	330	A	320	A	305	285	240	A					
15						145	210	255	285	300	A	A	A	A	A	A	A	A	165					
16					S	210	250	270	A	A	350	A	A	A	315	295	A	A	A					
17					A	210	240	260	A	A	A	A	A	A	310	295	275	225	S					
18					S	210	255	290	305	305	310	A	A	A	325	300	285	220	155					
19					S	215	255	300	315	315	320	320	320	300	285	A	A	A						
20					S	215	255	285	295	A	A	A	A	C	310	300	A	230	125					
21						150	210	250	290	305	315	315	320	C	305	A	A	A	S					
22					A	C	260	290	300	310	320	320	305	295	280	250	C	S						
23					A	210	250	290	300	310	320	320	315	300	295	270	215	A						
24					S	190	240	270	290	300	320	315	305	305	A	A	A	A						
25					S	205	235	260	290	300	310	A	315	310	300	265	210	140						
26					S	200	245	270	295	300	A	325	320	305	295	275	210	S						
27					A	210	225	290	300	305	A	A	325	320	A	A	A	S						
28					S	205	245	270	290	295	220 ^H	320	315	310	300	270	210	S						
29					C	C	C	C	A	315	320	325	315	305	295	260	205	S						
30					S	200	240	270	290	300	A	325	A	A	A	A	215	S						
31					S	205	240	270	295	305	310	320	A	A	A	270	215	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	10	28	29	28	21	21	18	16	16	23	22	21	23	12	3				
MED					E	158	210	255	290	300	310	320	322	320	315	300	285	235	182					E
UQ						180	225	265	298	310	315	325	328	330	322	305	290	245	190					E
LQ						150	210	245	270	295	305	315	320	315	305	295	270	215	160					E

AUG. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

AUG. 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	E S 16	23	21	27	26	25	31	42	J A 70	J A 60	49	J A 48	J A 81	J A 69	G	J A 43	J A 43	J A 194	J A 133	J A 83	J A 85	J A 56	34	41	
2		27	34	36	31	28	42	J A 45	J A 62	J A 74	42	J A 61	38	J A 69	J A 73	J A 96	J A 83	J A 53	J A 73	29	34	41	32	J A 48	J A 53
3	E S 16	34	29	E S 16	27	30	44	J A 43	36	J A 43	48	J A 56	J A 73	J A 42	43	G	50	J A 71	J A 85	J A 86	J A 107	34	E S 16	23	
4	31	34	22	30	E S 16	42	J A 56	J A 63	J A 56	J A 73	J A 87	J A 63	J A 97	J A 123	39	J A 51	J A 66	J A 54	J A 64	J A 83	J A 73	J A 67	39	29	
5	E S 15	34	32	27	27	27	38	J A 38	49	J A 43	J A 51	J A 53	44	G	G	G	37	J A 35	32	J A 49	34	J A 50	32	34	
6	32	27	25	22	E S 16	34	35	35	35	G	J A 58	J A 55	41	G	G	G	39	32	28	36	J A 63	39	40	38	
7	34	31	33	25	E S 16	20	31	J A 51	J A 49	46	J A 64	J A 53	J A 49	J A 60	J A 60	J A 55	J A 54	43	42	J A 77	J A 60	41	21	E S 16	
8	E S 16	E S 14	31	28	35	34	J A 60	J A 60	J A 109	J A 70	41	38	G	G	G	J A 43	G	J A 63	49	33	35	E S 16	J A 63	J A 131	
9	J A 69	J A 83	J A 43	39	35	J A 46	J A 60	J A 64	J A 86	J A 150	J A 63	42	50	J A 56	J A 49	J A 51	J A 63	J A 64	J A 66	J A 76	J A 56	30	J A 83	47	
10	31	20	E S 13	26	40	39	J A 50	J A 66	J A 58	J A 46	42	J A 54	J A 56	49	43	J A 46	J A 54	50	J A 48	J A 50	48	J A 64	J A 86	J A 73	
11	J A 64	J A 71	J A 60	44	35	33	J A 50	J A 61	J A 50	J A 61	J A 48	J A 66	J A 67	J A 96	J A 83	J A 57	40	36	J A 83	J A 64	J A 58	21	31	30	
12	23	22	21	E S 12	31	42	28	J A 32	35	40	J A 64	43	G	G	G	G	G	30	36	38	24	22	32	38	
13	24	26	28	25	E S 12	27	35	J A 50	36	J A 52	J A 108	J A 88	J A 52	J A 50	J A 49	G	40	J A 53	J A 50	J A 56	50	J A 52	31	26	
14	27	22	E S 13	23	25	22	34	34	J A 50	40	38	J A 53	J A 56	31	41	40	36	42	42	J A 52	J A 64	32	J A 49	27	
15	J A 50	J A 50	J A 45	26	24	35	42	50	J A 45	J A 61	J A 76	J A 48	J A 58	J A 51	J A 54	48	41	40	34	29	J A 50	J A 121	J A 50	41	
16	31	34	27	25	25	39	43	J A 43	47	J A 53	J A 50	G	44	43	G	G	J A 44	43	44	J A 48	35	31	35	40	
17	39	J A 56	J A 58	42	35	J A 50	J A 53	J A 56	J A 66	37	J A 45	J A 82	J A 64	J A 65	G	J A 56	J A 100	J A 78	J A 70	J A 70	J A 46	E S 16	31	J A 52	
18	35	49	42	31	35	38	50	35	48	57	65	38	41	54	G	G	G	28	38	28	35	28	E S 13	E S 16	
19	E S 16	E S 13	E S 16	E	E S 12	20	28	34	35	38	38	40	40	40	J A 44	J A 50	J A 56	J A 45	33	43	J A 46	J A 49	J A 64	36	
20	31	35	36	E	E S 15	25	31	33	J A 50	J A 48	J A 50	42	50	C	40	G	35	31	33	37	30	J A 52	42	57	
21	39	39	30	42	33	26	27	43	53	J A 80	51	51	44	C	36	41	41	41	38	J A 83	J A 88	J A 95	J A 63	38	
22	E C 20	C	J A 34	25	27	21	C	40	J A 51	61	J A 69	J A 67	J A 65	J A 65	J A 79	J A 66	49	C	J A 64	40	40	43	52	39	
23	28	E S 13	28	37	24	28	28	G	39	40	G	G	45	G	G	J A 44	J A 45	35	32	39	36	30	J A 53	43	
24	31	34	27	28	36	51	J A 63	35	G	G	G	G	G	G	27	37	42	41	45	50	39	J A 56	44	36	34
25	25	27	42	31	39	21	32	42	J A 63	48	J A 39	43	49	G	G	36	J A 72	J A 74	49	63	50	35	50	26	
26	49	J A 51	J A 48	38	34	J A 70	J A 56	53	48	J A 55	42	37	G	G	G	G	39	42	31	J A 49	E S 16	20	31	31	
27	22	24	E	25	34	36	41	52	57	J A 56	52	44	52	38	G	50	J A 49	32	41	52	40	27	39	30	
28	38	E S 13	E S 13	22	26	21	29	34	G	47	44	G	G	G	42	50	J A 54	J A 53	52	J A 65	J A 63	27	E S 16	30	
29	E S 16	22	22	22	27	C	C	C	C	43	G	G	G	G	40	J A 62	69	J A 87	43	35	23	27	25	22	
30	20	23	23	E S 13	28	41	27	41	33	36	50	38	G	36	41	43	42	33	27	37	J A 73	51	35	41	
31	31	22	21	23	28	26	39	33	G	37	37	G	G	38	40	38	G	G	21	41	40	34	41	39	
CNT	31	30	31	31	31	30	29	30	30	31	31	31	31	29	31	31	31	30	31	31	31	31	31	31	
MED	31	29	28	26	27	34	39	42	49	47	50	43	49	40	40	43	43	43	42	49	48	34	39	38	
UQ	34	35	36	31	34	41	J A 50	J A 53	J A 57	J A 58	J A 62	J A 54	J A 57	J A 56	44	J A 50	J A 54	J A 63	J A 51	J A 64	J A 62	J A 50	J A 50	41	
LQ	21	22	22	22	24	25	31	35	36	40	42	38	E G 40	G	G	G	39	35	33	38	36	28	31	30	

AUG. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

AUG. 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 S 16	E	E	E	16	G	G	40	55	47	42	47	A A 81	A A 69	G	39	G	42	60	50	E	42	25	E	
2	E	E	23	E	18	29	34	A A 62	A A 74	34	A A 61	35	A A 69	A A 73	A A 96	39	G	47	28	18	E	E	E	E	
3	E S 16	E	E	E S 16	15	29	38	34	36	38	41	50	42	42	G	G	G	30	A A 85	A A 86	E	E	E S 16	E	
4	E	E	E	E	E S 16	30	40	A A 63	G	A A 73	A A 87	50	A A 97	A A 123	39	G	G	35	G	A A 83	E	E	E	E	
5	E S 15	E	E	E	E	G	35	38	42	40	46	41	37	G	G	G	30	G	23	25	E	26	E	E	
6	E	E	E	E	E S 16	21	G	G	G	G	40	38	35	G	G	G	G	G	26	20	41	29	22	20	
7	E	E	E	E	E S 16	19	30	47	41	35	51	48	45	41	56	48	38	31	37	22	34	23	E	E S 16	
8	E S 16	E S 14	E	E	16	28	46	G	54	36	40	37	G	G	G	40	G	G	26	23	E	E S 16	27	26	
9	31	21	32	25	16	40	54	52	A A 86	A A 150	47	42	41	42	47	48	50	48	50	27	38	E	35	25	
10	E	E	E S 13	E	E	30	A A 50	A A 66	42	37	37	46	A A 56	42	41	46	46	32	35	30	40	50	A A 86	A A 73	
11	23	A A 71	31	30	20	24	40	59	39	41	38	36	46	A A 96	A A 83	53	G	35	A A 83	55	34	E	E	20	
12	E	E	E	E S 12	E	38	G	31	G	33	38	36	G	G	G	G	G	29	29	E	E	E	20	20	
13	E	E	E	E	E S 12	G	G	30	36	43	50	55	44	37	36	G	33	44	41	30	29	25	E	E	
14	E	E	E S 13	E	E	G	30	G	42	G	36	G	37	31	34	40	G	31	30	50	50	E	31	E	
15	31	34	E	E	E	25	35	A A 50	42	40	A A 76	41	41	50	39	33	30	25	27	E	20	42	23	21	
16	E	E	E	E	E	32	34	37	39	35	40	G	37	37	G	G	32	32	35	40	27	23	25	31	
17	24	A A 56	30	30	27	A A 50	A A 53	A A 56	A A 66	36	43	40	44	46	G	G	40	35	A A 70	E	25	E S 16	E	E	
18	20	E	33	E	21	26	38	G	40	41	A A 65	38	41	46	G	G	G	G	G	20	E	E	E S 13	E S 16	
19	E S 16	E S 13	E S 16	E	E S 12	G	G	33	G	G	38	40	37	G	44	42	30	30	25	E	29	30	24	21	
20	E	E	E	E	E S 15	19	30	33	44	43	50	40	45	C	29	G	30	31	19	30	20	39	29	A A 57	
21	21	29	E	28	30	G	G	38	46	A A 80	47	G	40	C	G	31	32	G	G	21	A A 88	27	28	28	
22	E C 20	C	E	E	E	G	C	35	41	A A 61	A A 69	A A 67	A A 65	A A 65	A A 79	A A 66	40	C	A A 64	29	22	36	30	20	
23	E	E S 13	E	E	E	16	G	G	31	36	G	G	42	G	G	41	43	34	22	30	25	E	41	32	
24	21	27	20	E	E	A A 51	A A 63	G	G	G	G	G	G	G	27	G	33	39	37	40	24	43	33	25	23
25	E	E	24	E	E	20	29	32	A A 63	40	G	G	A A 49	G	G	36	A A 72	A A 74	38	A A 63	26	E	28	E	
26	22	A A 51	E	26	E	A A 70	A A 56	A A 53	40	G	G	35	G	G	G	G	38	33	22	30	E S 16	E	E	E	
27	E	E	E	E	E	29	31	43	48	40	44	36	33	37	G	37	29	26	35	39	24	E	21	E	
28	20	E S 13	E S 13	E	E	20	27	33	G	A A 47	G	G	G	G	G	37	43	32	41	20	30	E	E S 16	E	
29	E S 16	E	E	E	E	C	C	C	C	31	G	G	G	G	39	A A 62	A A 69	A A 87	37	22	E	E	E	E	
30	E	E	E	E S 13	E	23	G	33	G	35	36	34	G	34	34	33	30	20	21	24	E	E	E	E	
31	20	E	E	E	E	18	27	32	G	G	G	G	G	34	33	32	G	G	21	32	20	E	30	22	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	30	31	31	31	30	29	30	30	31	31	31	31	29	31	31	31	30	31	31	31	31	31	31	
MED	E S 16	E	E	E	E	24	31	34	40	37	40	37	41	37	G	33	30	32	30	27	24	E	22	16	
UQ	20	14	E E 14	E E 12	16	30	40	50	46	42	48	42	45	46	39	40	40	35	40	36	32	28	28	22	
LQ	E	E	E	E	E	16	G	31	G	34	36	G	E G 33	G	G	G	G	25	22	20	E	E	E	E	

AUG. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

AUG. 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 S 14	E S 16	E S 16	E	12	10	10	18	17	25	23	20	18	19	19	17	12	10	E	E S 16	E	E S 11	E S 16
2	E S 16	E S 16	E	E S 13	E	10	11	16	18	19	19	23	25	22	20	21	17	12	16	E	E	E	E	E
3	E S 16	E	E	E S 16	E	13	11	17	19	19	19	25	23	20	20	20	12	11	13	E S 13	E S 16	E S 16	E S 16	E
4	E S 16	E	E S 16	E	E S 16	E S 16	13	18	17	19	22	19	22	20	20	19	18	12	11	E S 11	E S 16	E S 16	E S 16	E
5	E S 15	E	E	E	E	12	11	13	17	20	20	20	24	22	20	18	18	11	10	E S 16	E S 16	E S 16	E	E
6	E S 13	E	E S 15	E S 16	E S 16	E S 17	11	16	19	19	22	20	20	19	19	19	16	11	16	E S 16	E S 16	E S 15	E S 13	E S 13
7	E S 16	E S 11	E S 13	E	E S 16	E S 16	15	17	16	19	19	21	21	19	19	24	20	11	10	E S 13	E S 15	E S 16	E S 11	E S 16
8	E S 16	E S 14	E S 16	E	E S 12	E S 16	10	16	19	20	20	23	19	20	19	19	18	13	16	E S 11	E S 15	E S 16	E S 16	E S 12
9	E S 15	E S 11	E S 13	E S 11	E S 12	E S 16	12	16	15	20	19	18	19	20	20	18	18	14	10	E	E	E	E S 16	E S 11
10	E S 11	E S 13	E S 13	E	E	10	10	13	17	23	21	19	25	22	22	19	17	16	15	E S 16	E S 14	E S 16	E	E S 13
11	E S 15	E	E S 11	E S 11	E S 16	E S 16	12	16	18	19	20	20	19	18	19	19	11	10	10	E S 13	E S 16	E S 14	E S 12	E S 16
12	E S 11	E S 12	E S 16	E S 12	E S 16	E S 15	10	17	17	18	20	20	22	22	20	17	17	12	13	E	E S 16	E S 13	E S 16	E S 12
13	E S 11	E	E	E	E S 12	10	12	11	18	19	19	20	20	20	20	12	17	10	10	E S 17	E S 16	E	E S 16	E S 16
14	E	E S 13	E S 13	E S 16	E S 16	10	10	16	17	20	19	19	20	20	19	17	16	10	10	E S 11	E S 12	E S 16	E S 13	E S 13
15	E S 16	E S 16	E S 13	E	E S 13	10	10	10	18	18	19	19	19	20	19	16	12	10	10	E	E S 16	E S 11	E	E S 16
16	E S 17	E	E S 12	E S 16	E S 13	E S 14	12	15	16	19	19	21	19	23	20	15	15	11	10	E S 12	E	E	E S 16	E S 16
17	E S 16	E S 14	E S 16	E	E S 11	10	16	17	15	17	19	19	20	18	19	17	10	10	E S 16	E S 16	E S 15	E S 16	E S 12	E S 15
18	E S 16	E S 16	E S 11	E	E S 13	E S 16	11	10	17	20	20	19	20	19	18	17	16	10	10	E S 13	E S 16	E S 12	E S 13	E S 16
19	E S 16	E S 13	E S 16	E	E S 12	E S 13	11	16	19	19	21	22	20	20	19	16	17	12	10	E S 16	E	E S 16	E S 13	E S 17
20	E S 17	E	E	E	E S 15	E S 16	11	16	18	18	20	20	19	C	17	18	24	10	E	E	E S 16	E S 13	E	E S 17
21	E S 15	E S 12	E S 12	E	E	10	15	10	10	17	18	19	24	18	18	11	17	10	E S 17	E S 16	E	E	E	E
22	E C 20	C	E	E	E	E	C	10	11	16	19	20	19	18	16	16	18	C	E S 16	E S 13	E S 16	E S 17	E S 16	E S 16
23	E C 21	E S 13	E S 12	E S 13	E S 16	E	10	13	20	19	19	19	19	18	18	15	13	11	E S 11	E	E	E S 13	E S 16	E S 16
24	E	E S 13	E S 13	E	E S 16	E S 12	10	10	11	20	17	18	19	18	13	13	10	10	E	E S 13	E S 17	E S 16	E	E S 11
25	E	E	E S 13	E	E	E S 12	11	13	18	17	19	20	21	21	16	16	11	10	10	E	E S 12	E S 16	E S 16	E S 16
26	E S 13	E S 16	E S 11	E S 13	E S 12	E S 16	10	10	10	20	19	20	20	19	19	18	16	12	E S 16	E	E S 16	E S 16	E S 16	E S 13
27	E S 16	E S 13	E	E S 13	E	16	13	13	18	19	23	20	23	22	17	17	14	10	E S 16	E S 16	E	E S 16	E	E S 16
28	E	E S 13	E S 13	E	E	E S 12	10	10	18	20	20	20	20	20	21	17	11	10	E S 16	E	E	E	E S 16	E
29	E S 16	E S 13	E S 16	E	E	C	C	C	C	18	21	20	20	19	20	17	16	11	E S 16	E S 16	E	E S 13	E S 16	E S 17
30	E S 16	E	E	E S 13	E S 13	E S 12	12	13	16	18	19	20	19	22	19	18	13	11	E S 11	E	E S 16	E S 16	E S 13	E S 13
31	E S 13	E S 13	E	E	E S 16	E S 13	16	17	17	18	18	20	19	18	23	18	12	15	E S 16	E S 11	E S 16	E S 15	E S 16	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	30	31	31	31	30	29	30	30	31	31	31	31	30	31	31	31	30	31	31	31	31	31	31
MED	E S 16	E S 13	E S 13	E	E S 12	E S 12	11	14	17	19	19	20	20	20	19	17	16	11	10	E S 12	E S 16	E S 15	E S 13	E S 13
UQ	E S 16	E S 13	E S 14	E S 13	E S 16	E S 16	12	16	18	20	20	20	22	21	20	19	17	12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 13	E	E	E	E	10	10	10	16	18	19	19	19	18	18	16	12	10	10	E	E	E S 12	E S 11	E S 11

AUG. 1984

FMIN (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

AUG. 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	300	285	295	335	290	300	295	320	A	315	225	A	A	A	270	250	260	280	320	305	285	275	290	270																														
2	280	275	265	280	275	285	265	A	A	245	A	R	A	A	A	255	280	A	285	290	280	280	F	280																														
3	300	270	275	290	295	300	295	295	320	330	R	A		280	290	305	315	H	A	A	285	270	275	290																														
4	315	305	315	290	255	295	300	A	R	A	A	A	A	A	275	290	290	H	325	A	280	275	285	275																														
5	285	320	270	295	285	270	300	280	290	260	320	315	310	315	280	305	330	310	320	315	315	300	305	285																														
6	275	280	290	300	305	305	295	315	335	350	305	310	290	270	315	330	330	315	320	310	290	300	305	305																														
7	310	285	275	280	280	295	310	300	340	305	A	285	270	300	A	295	310	320	315	320	305	305	300	290																														
8	295	285	285	285	305	295	310	340	330	295	345	245	305	295	280	315	285	310	305	290	285	300	310	290																														
9	S	285	F	285	305	305	315	320	A	A	305	310	H	300	305	310	305	305	310	300	285	290	305	285	300																													
10	300	265	265	280	290	280	A	A	320	280	330	305	A	270	280	305	310	320	315	310	290	310	A	A																														
11	275	A	275	275	295	285	325	A	325	325	305	320	315	A	A	320	320	315	A	285	300	300	300	300																														
12	290	290	290	280	280	315	330	355	335	320	310	330	300	305	290	310	325	310	300	280	280	310	310	310																														
13	275	280	280	285	280	295	310	310	325	320	320	A	315	315	310	305	320	310	310	305	295	300	300	310																														
14	295	305	295	295	305	320	310	335	345	340	330	335	320	315	310	320	325	325	315	295	290	300	310	305																														
15	315	265	275	280	270	345	280	A	340	340	A	270	280	A	290	305	315	315	320	300	300	F	F	305																														
16	280	285	300	285	290	290	H	320	325	315	325	320	315	325	305	305	315	320	325	310	295	300	300	300																														
17	285	A	A	290	285	A	A	A	A	305	320	R	270	275	305	290	325	320	A	305	295	320	280	290																														
18	280	285	A	310	295	310	A	300	320	310	A	335	305	280	315	305	320	310	310	320	315	310	300	300																														
19	290	275	295	320	320	325	H	325	305	320	H	335	355	H	295	320	340	320	310	310	310	315	295	325	315																													
20	285	290	300	285	290	310	320	325	330	320	A	295	305	C	265	320	320	310	320	330	300	285	295	A																														
21	275	290	280	280	A	330	325	320	330	A	325	320	275	320	315	320	325	295	305	310	A	310	315	280																														
22	305	C	310	310	295	325	C	335	340	A	A	A	A	A	A	A	310	C	A	305	320	315	320	290																														
23	290	280	S	295	315	320	355	350	335	345	305	345	270	290	325	335	350	340	305	300	315	335	A	S																														
24	285	285	285	280	F	A	A	285	300	320	R	295	265	310	250	280	315	315	305	310	320	305	300	285																														
25	295	275	270	H	260	265	235	285	A	285	340	G	A	245	255	280	A	A	315	A	310	325	285	330																														
26	285	A	280	F	F	A	A	A	290	310	320	275	285	295	315	290	315	320	305	310	295	315	335	290																														
27	F	F	295	270	305	285	295	340	310	340	345	340	315	330	320	325	315	335	345	315	300	305	320	295	305																													
28	275	295	300	285	295	265	280	270	235	A	R	R	270	270	250	280	A	300	A	275	305	325	335	295																														
29	290	270	F	F	C	C	C	C	C	280	290	R	R	260	300	A	A	A	315	290	280	295	295	290																														
30	280	290	295	325	275	310	290	320	250	325	335	325	305	325	330	335	320	325	325	300	295	300	295	285																														
31	300	300	265	275	275	260	235	300	295	315	280	295	295	295	305	305	325	310	310	300	290	305	305	290																														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																														
CNT	30	27	27	29	27	27	24	23	24	26	21	22	23	24	27	29	28	27	26	28	30	30	27	29																														
MED	290	285	285	285	290	300	305	320	325	318	320	312	300	295	305	305	320	310	315	305	295	302	300	290																														
UQ	300	290	295	295	295	312	318	325	335	325	330	325	312	315	315	320	325	320	320	310	305	310	310	305																														
LQ	280	278	275	280	280	288	285	300	302	305	305	295	278	278	280	290	310	310	305	292	290	300	295	290																														

AUG. 1984 M(3000)F2 (0.01)

IONOSPHERIC DATA

AUG. 1984

M(3000)F1 (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							355	A	A	A	A	A	A	A	390	A	H	A						
2						A	A	A	A	385	A	390	A	A	A	A	360	A						
3							A	350	355	395		A	A	A	365	H	375	350	L	A				
4						A	A	A	400	A	A	A	A	A	A	H	370	355		350	L			
5							A	A	A	A	A	A	375	370	360	L	H	375	330	310	L			
6							340	360	390	375	A	410	400	360	370	370	350	335						
7							330	A	A	395	A	A	A	A	A	A	A	340	A					
8								350	A	410	A	L	410	390	385	A	350	335	A					
9						A	A	A	A	A	A	A		A	A	A	A	A						
10							A	A	A	380	385	A	A	A	A	A	A	A						
11						L	A	A	A	A	400	410	A	A	A	A	355	A	A					
12							335	355	375	400	370	390	395	H	365	L	335	355	L	335				
13							355		A	A	A	A	A	A	355	355	355	335	A					
14							320	370	A	395	390	390	390	365	375	A	355							
15							A	A	A	A	A	A	A	A	A	345	325	325						
16								A	A	395	A	405	375	380	370	350	355	A						
17						A	A	A	A	L	365	A	A	A	365	360	A	A						
18							350		A	A	A	375	A	A	355	360	320	345						
19							330	360	395	380	A	410	L	430	A	A	375	A						
20							A	A	A	A	A	A	A	C	350	355	320	A						
21								A	A	A	A	395	355	C	360	365	365							
22							C	A	A	A	A	A	A	A	A	A	A	C						
23							375	375	410	395	395		A	380	345	A	A	A						
24						A	A	345	360	365	390	395	380	370	370	325	A	A						
25							A	A	A	A	L	400	385	A	370	355	A	A	A					
26							A	A	A	395	H	390	395	370	360	355	L	340	A	A				
27							A	A	A	A	A	385	365	L	360	345	A	360						
28							340	A	365	A	370	H	370	365	365	360	A	A	L					
29							C	C	C	390	380	380	380	365	A	A	A	A						
30								A	375	H	370	365	380	385	345	A	360	L	330					
31							345	A	345	H	355	395	370	395	400	360	L	340						
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							7	10	10	17	13	17	15	17	20	16	20	8	2					
MED							340	352	370	395	390	390	380	365	360	358	352	335	L	330				
UQ							342	360	375	395	395	395	395	380	370	365	358	342						
LQ							332	350	360	375	380	380	372	360	355	348	338	332						

AUG. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

AUG. 1984

H^oF₂ (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							345	280	A	345	640	400	A	A	425	460	400	330						
2					340	405	A	A	A	530	A	R	A	A	A	515	405	A						
3						A	370	350	325	R	A	A	355	430	405	360	305	280	A					
4					355	375	A	R	A	A	A	A	A	A	445	380	355		285					
5						305	375	385	490	350	345	360	345	420	355	345	330	295						
6						350	330	290	290	380	355	355	450	330	305	305	305							
7						300	280	250	305	A	415	370	390	A	335	305	290	285						
8							255	A	355	300	590	370	380	405	325	375	340	275						
9					310	A	260	A	A	350	305		350	305	330	330	A	300						
10						A	A	355	395	295	365	A	450	425	370	325	305							
11					345 ^L	315	A	290	295	325	305	345	A	A	A	305	305	A						
12						280	235	265	345	330	285	355	315	335	305	290	290							
13							305	265	270	300	A	325	290	360	340	295	325 ^A							
14						295	245	250	285	305	300	335	315	345	300	300								
15						440	A	300	280	A	450	400	A	355	310	300	275							
16							305	320	340	310	310	320	325	355	345	295	280							
17					A	A	A	A	350	330	R	445	430	350	375	300	275							
18							325	290	345	A	300	365	415	335	350	325	295							
19							300	295	275	280	275	285	315	345	295	300	305							
20							300	285	320	A	400	355	C	400	325	300	295							
21								A	325	A	315	350	410	325	300	315	290							
22							C	310	270	A	A	A	A	A	A	A	330	C						
23								255	270	300	380	295	450	400	315	290	275	275						
24					A	A	385	330	340	R	355	460	350	550	395	325	290							
25						545	405	A	400	305	G	A	550	540	400	A	A							
26						A	A	405	350	335	445	400	385	345	355	305	295							
27						275	A	295	295	305	350	295	345	330	310	295								
28						395	445	395	A	R	R	455	460	545	395	A	A	L	340					
29						C	C	C	425	415	R	R	510	375	A	A	A							
30							295	550	325	305	345	365	325	315	295	295								
31						550	355	395	355	400	395	400	380	355	345	300								
	00	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	14	21	23	26	21	23	23	24	27	28	28	21	4					
MED						342	348	305	295	340	325	350	365	380	355	342	305	295	285					
UQ						350	405	355	352	355	350	400	400	430	412	372	328	305	290					
LQ						325	300	280	278	295	305	305	350	325	335	310	298	290	280					

AUG. 1984

H^oF₂ (KM)

IONOSPHERIC DATA

AUG. 1984

H^oF (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	245	295	275	230	280	245	230	A	A	A	A	A	A	A	225	A	H	A	A	A	290	A	255	305																												
2	295	305	345	280	315	A	A	A	A	205	A	225	A	A	A	A	220	A	295	290	280	255	300	305																												
3	285	305	290	280	285	A	A	A	245	240	210	A	A	A	215	205	215	245	A	A	280	270	260	265																												
4	245	255	245	285	310	A	A	A	205	A	A	A	A	A	A	205	210	A	255	A	275	270	275	275																												
5	275	245	250	275	300	245	A	A	A	A	A	A	215	H	195	230	200	235	220	225	275	250	275	250	255																											
6	290	290	275	255	235	245	225	210	210	H	200	A	195	H	190	225	205	210	210	H	225	250	255	A	260	305	275	255																								
7	250	280	255	295	265	240	245	A	A	200	A	A	A	A	A	A	A	A	240	A	255	260	255	255	255																											
8	250	255	285	250	250	A	A	220	A	200	A	195	190	210	205	A	230	250	A	255	275	245	250	295																												
9	300	285	A	305	255	A	A	A	A	A	A	A	A	A	A	A	A	A	A	275	285	255	300	255																												
10	280	255	295	270	295	A	A	A	A	A	230	205	A	A	A	A	A	A	A	300	250	300	A	A	A																											
11	295	A	A	A	300	275	A	A	A	A	205	195	A	A	A	A	225	A	A	A	265	245	240	250																												
12	245	275	260	270	290	A	250	235	210	200	225	190	205	H	200	210	225	205	245	285	280	255	240	250	250																											
13	270	260	295	290	280	250	225	225	A	A	A	A	A	A	A	235	230	215	245	A	290	275	255	250	245	245																										
14	285	255	255	255	250	245	225	240	A	205	225	195	195	240	200	A	230	255	285	A	A	235	255	255																												
15	275	A	260	295	300	245	A	A	A	A	A	A	A	A	A	A	220	245	245	255	255	275	A	295	255																											
16	265	255	245	260	280	A	A	A	A	205	A	H	205	200	205	210	220	240	A	255	285	275	255	275	300																											
17	275	A	A	A	350	A	A	A	A	245	A	A	A	A	A	245	225	A	A	A	280	295	230	250	270																											
18	275	300	A	285	290	255	A	220	A	A	A	A	225	A	A	225	210	230	240	H	230	245	225	230	245	255																										
19	275	280	255	225	220	240	245	245	A	215	210	220	A	205	195	A	A	215	A	255	250	250	245	260	250																											
20	295	320	255	255	280	255	H	275	A	A	A	A	A	A	C	240	H	205	245	A	255	245	240	A	300	A																										
21	295	A	280	A	A	245	H	205	A	A	A	A	200	A	C	230	215	250	250	260	250	A	260	265	290																											
22	265	C	270	240	245	260	C	A	A	A	A	A	A	A	A	A	A	A	C	A	255	250	255	260	280																											
23	260	275	275	255	215	245	H	225	220	205	230	205	195	A	210	205	A	A	A	255	260	250	210	A	A																											
24	295	320	295	305	275	A	A	215	205	225	225	210	205	205	245	255	A	A	A	A	250	A	295	250	320																											
25	295	290	355	255	345	275	A	A	A	A	A	210	205	A	255	245	A	A	A	A	A	275	240	A	235																											
26	A	A	A	A	290	A	A	A	A	205	200	195	225	225	210	225	A	A	A	260	275	255	250	240	250																											
27	260	280	300	250	340	A	A	A	A	A	A	A	200	225	220	225	A	240	H	240	A	300	255	245	255	255																										
28	285	255	230	340	290	305	A	280	A	205	A	215	205	245	240	240	A	A	A	A	300	300	240	200	290																											
29	295	325	295	340	295	C	C	C	C	195	200	225	215	225	A	A	A	A	A	A	275	275	255	245	300																											
30	310	270	255	230	300	305	240	A	215	210	225	205	200	200	230	240	A	240	H	235	250	290	270	265	250	260																										
31	245	245	295	305	305	280	A	250	A	225	220	205	230	210	205	225	240	235	H	240	255	300	290	255	A	260																										
	00	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	26	27	28	30	18	13	10	10	17	13	18	15	17	21	16	20	13	19	25	28	27	28	28																												
MED	275	280	275	272	290	248	240	222	210	205	210	202	205	210	225	218	230	240	255	275	272	255	255	258																												
UQ	295	300	295	295	300	275	250	240	215	220	225	210	220	225	230	225	240	245	272	280	280	258	275	290																												
LQ	262	255	255	255	265	245	225	220	205	200	205	195	200	205	210	208	215	H	240	255	255	255	242	250	255																											

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H^oF (KM)

IONOSPHERIC DATA

AUG. 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					A	130	105	105	105	105	120	115	105	105	105	105	105	110	115						
2					A	125	110	105	105	105	105		A	115	115	105	105	105	110	130					
3					A	125	110	105	105	110	110	120	115	110	110	105	105	110	125						
4					S	130	110	105	105	105	105	105	110	105	105	105	110	110	125						
5					E	120	110	105	105	105	105	105		A	110	110	105		A	105		A			
6					S	A	A	105	105	105	110	110		A	105	105	105	105	105	125					
7					S	S	110	105		A	A	105	105	105	105	110		A	A	A					
8					S	S	110	105	105	110		A	A	105	105	105	105	105	110		A				
9					S	S	105	105	105	105	105	100	100	105	105	105	110	115		A					
10						125	105	105	105		A	105	110		A	110	110		A	105	120	125			
11						S	105	110	105	105	105		A	A	A	105	105	105	105	115					
12						S	110	105	105	105		A	A	105	120	105	105	110	110	120					
13						125	110		A	105	105	105	105	105	110		A	105	110	110	115				
14						110	110	110	105	105	105	105		A	A	A	105	120	105		A				
15						130	110	105	105	105		A	105		A	A	A	A	A		A				
16						S	115	105	105	105	105	105	105	105	A	105	105		A	A	A				
17						A	120	105	105	105	105	105		A	A	105	105	105	110						
18						S	120	105	105	105	105	110	110	110	110	105	105	110	125						
19						S	125	115	105	105	105	105	105	105	105	105	105		A	A	A				
20						S	125	110	105	105	105		A	A	C	A	105		A	110	120				
21						145	120	105	105	105	105	110	115	110	105		A	A	A	S					
22						A	C	105	105	105	105	105	105	105	105	105	105	115		C	S				
23						A	110	110	110	105	110	105	105	110	110	105	105	120		A					
24						S	110	105	105	115	110	105	110	125	120		A	A	A	A					
25						S	125	110	105	105	105	105	110	120	110	110	105	105	120						
26						S	120	110	105	110	110	110	110	110	110	110	110	115		S					
27						A	125	115	110	105	110	110		A	115	110	110		A	A	S				
28						S	115	110	110	110	110	115	110	110	110	110	110	115		S					
29						C	C	C	C	110	105	105	105	110	105	110	110	115		S					
30						S	125	110	105	110	110	110	110	115	110	110	110		A	S					
31						S	130	115	110	110	110	110	110	110	110	110		A	105	120					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						10	28	29	29	29	28	26	22	25	27	26	22	22	13						
MED						125	110	105	105	105	105	105	108	110	105	105	105	110	120						
UQ						130	120	110	105	110	110	110	110	110	110	110	110	115	125						
LQ						125	110	105	105	105	105	105	105	105	105	105	105	110	115						

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H°E (KM)

IONOSPHERIC DATA

AUG. 1984

H[°]E^S (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	105	105	105	110	130	120	105	105	105	110	110	110	110	G	135	145	110	105	120	110	105	105	105																					
2	125	135	135	120	125	115	110	105	105	110	105	105	125	125	115	125	130	115	125	125	110	110	105	105																					
3	S	105	105	S	110	130	120	125	125	125	110	110	115	125	G	130	125	120	115	120	110	S	105																						
4	105	105	110	105	S	130	120	115	120	110	105	105	105	105	130	125	130	130	120	110	110	105	105	105																					
5	S	105	100	105	130	140	125	115	110	110	105	105	105	G	G	G	105	125	105	110	120	110	110	105																					
6	110	100	100	100	S	140	105	135	130	G	105	130	110	G	G	G	130	130	120	110	105	105	105	105																					
7	105	100	100	105	S	135	125	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	S																					
8	S	S	105	105	105	120	110	110	105	105	185	105	G	G	G	105	G	125	110	105	105	S	105	105																					
9	105	105	105	105	125	115	110	110	105	105	110	155	120	110	120	110	110	105	105	105	105	105	110	105	105																				
10	105	105	S	105	110	120	110	105	105	105	105	105	105	105	105	105	130	120	115	110	110	105	105	105																					
11	105	105	105	105	100	125	115	110	105	105	105	105	105	105	105	105	115	125	110	105	105	105	105	100																					
12	100	100	100	S	105	110	110	105	120	105	105	105	G	105	G	G	G	125	110	105	120	110	105	105																					
13	105	105	105	105	S	125	115	105	110	105	105	105	105	105	105	G	130	130	115	105	105	105	105	105																					
14	105	105	S	130	125	140	115	125	115	110	110	105	105	105	105	130	120	120	105	105	105	110	105	105																					
15	100	100	100	105	105	125	115	120	115	110	105	105	105	100	100	105	105	105	125	120	105	105	105	105																					
16	105	105	105	105	130	125	120	110	105	105	105	G	105	105	G	G	100	100	100	100	100	100	105	105																					
17	100	100	100	95	100	120	115	105	105	105	105	105	100	105	G	110	115	110	110	105	110	S	145	105																					
18	125	105	105	105	105	120	115	120	110	110	105	110	105	105	G	G	G	120	125	120	110	110	S	S																					
19	S	S	S	E	S	135	130	125	125	125	120	120	125	115	110	105	105	105	105	105	110	105	105	105																					
20	110	105	125	E	S	140	130	125	105	105	105	105	105	C	105	G	105	125	110	105	105	110	105	105																					
21	105	105	105	105	100	125	125	120	115	110	110	115	115	C	105	105	100	120	125	115	110	115	110	105																					
22	C	C	105	105	105	120	C	115	115	115	110	105	105	105	105	105	110	C	110	105	105	105	105	100																					
23	105	S	135	130	135	110	125	G	120	130	G	G	110	G	G	125	115	110	105	105	105	105	105	105																					
24	100	100	100	100	125	115	110	125	G	G	G	G	G	105	140	100	100	125	110	105	105	105	105	105																					
25	110	140	125	125	125	125	110	110	110	110	110	110	110	G	G	145	120	110	115	120	110	110	105	105																					
26	140	135	105	105	105	125	125	115	120	110	105	110	G	G	G	G	130	125	125	115	S	110	105	100																					
27	110	105	E	105	100	125	125	120	115	110	110	110	105	110	G	105	105	105	115	110	105	110	105	110																					
28	105	S	S	135	130	130	120	115	G	105	110	G	G	G	130	125	125	120	110	105	105	105	S	100																					
29	S	145	140	135	125	C	C	C	C	110	G	G	G	G	135	125	120	115	110	105	115	110	105	105																					
30	105	105	105	S	130	125	125	110	110	110	105	115	G	115	110	105	105	105	105	120	110	105	110	105																					
31	105	105	140	130	125	125	120	115	G	110	110	G	G	110	105	105	G	G	125	115	120	105	105	100																					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																					
CNT	24	26	26	26	25	30	29	29	27	29	28	25	23	21	19	22	27	29	31	31	30	29	28	29																					
MED	105	105	105	105	110	125	120	115	110	110	105	105	105	105	105	105	115	120	110	105	108	105	105	105																					
UQ	110	105	110	120	125	130	125	120	118	110	110	110	110	110	122	125	130	125	120	115	110	110	105	105																					
LQ	105	105	100	105	105	120	115	110	105	105	105	105	105	105	105	105	105	110	105	105	105	105	105	105																					

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H[°]E^S (KM)

IONOSPHERIC DATA

AUG. 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 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		F2	F2	F1	L2	C2	C3	C3	C4	C3	C3	C2	C2	C5		C2	H1	C3	C4	C5	F3	F6	F6	F4
2	F2	F2	F5	F2	C3	C5	C4	C5	C3	C1	C3	L1	C4	C3	C3	C2	C2	C3	C2	C2	F3	F3	F2	F2
3		F5	F2		L1	C4	C3	C2	C2	C2	C2	C2	C2	C2	C1		C2	C2	C5	C4	F2	F2		F2
4	F2	F2	F2	F2		C5	C5	C4	C2	C3	C3	C3	C4	C3	C2	C2	C1	C3	C3	L5	F3	F2	F2	F4
5		F2	F2	F2	CL11	C1	C3	C5	C3	C2	C2	C2	L2				L2	C2	L3	C3	F2	F4	F2	F3
6	F2	F2	F2	F1		C1	CL12	C1	C2		C2	C1	L2				C1	C2	C4	C2	FF32	F5	F3	F2
7	F2	F3	F2	F2		C1	C3	C3	L3	L2	C3	C3	C2	C2	C4	C3	L3	L3	L4	L3	F3	F3	F2	
8			F2	F1	L2	C5	C3	C3	C2	C1	HL11	L1				C2		C2	L3	L3	F4		F4	F3
9	F4	F3	F5	F3	CL21	C6	C5	C3	C3	C5	C3	HC11	C1	C2	C3	C3	C3	C5	L5	L3	F3	F2	F4	F3
10	F4	F1		FF11	F2	C5	C6	C5	C3	L2	C2	C2	L3	C2	C3	L3	C2	C3	C5	C6	F6	F6	F6	F5
11	F5	F6	F4	F3	F3	C3	C4	C3	C3	C3	C3	L2	L2	L4	C5	C4	C1	C5	C6	F4	F5	F1	F3	F3
12	F2	F2	F2		F1	C4	C3	C3	C1	C2	L3	L3		L2				C3	C5	F3	F1	F1	F3	F4
13	F2	F2	F2	F4		C2	C1	L2	C2	C3	C3	C3	C2	C2	L2		C1	C6	C6	F4	F4	F3	F3	F1
14	F2	F2		F1	F1	C1	C4	C4	C4	C3	C2	C2	L2	L2	L2	C3	CL32	C3	L5	F3	F5	FF21	F3	F2
15	F5	F5	F2	F2	F1	C3	C4	C5	C4	C2	L2	C3	L3	L4	L2	L2	L2	L2	C4	F2	F2	F4	F4	F7
16	F2	F2	F2	F2	F2	C6	C5	C3	C4	C2	C2		C2	L2			L3	L3	L4	F5	F4	F4	FF32	F4
17	F4	F5	F5	F4	F3	CL52	C6	C5	C4	C2	C2	C2	L3	L2		C2	C2	C3	C6	F4	F6		F1	F2
18	F4	F3	F6	F2	F3	C5	C5	C2	C2	C3	C4	C2	C4	C3				C3	C2	F3	F2	F1		
19						C3	CL21	CL32	C2	C2	C2	C2	C2	C2	C3	C3	L2	L3	L5	F2	F3	F3	F3	F3
20	FF21	F3	FF11		C1	C3	C3		C4	C3	C3	L2	L3		L2		L2	C4	C3	F5	F4	F6	F7	F7
21	F4	F7	F2	F7	F5	C1	C1	C4	C3	C4	C2	C1	C2		C2	L2	L4	CL23	CL22	F3	F6	F2	F3	F4
22			F3	F2	F2	CL31		C2	C2	C2	C4	C4	C4	C3	C4	C6	C4		C4	F7	F3	F7	F2	F7
23	F2		F2	F2	FF11	L1	C1		C1	C2			C2			C2	C5	C3	L4	F4	F7	F1	F7	F7
24	F5	F5	F4	F3	FF22	C7	C4	C2						L1	CL22	L3	L4	CL33	CL63	F5	F6	F5	F6	F4
25	F2	F2	F2	F2	F5	C2	C4	C3	C4	C3	C2	C2	C3			H2	C5	C7	C6	F6	F5	F3	F4	F2
26	FF32	F6	F2	F3	F4	C6	C6	C6	C3	C2	C2	C2					C3	C4	C4	F6		F1	F2	F2
27	F1	F2		F1	F2	C5	C4	C4	C3	C2	C3	C2	L2	C2		C3	L2	L2	C5	F4	F3	F2	F3	F2
28	F2			F2	F2	C4	C3	C5		C3	C2				C1	C3	C3	C4	C6	F6	F3	F2		F3
29		F1	F2	F2	F2					C1					C2	C4	C4	C5	C4	F3	F1	F2	F2	F2
30	F2	F2	F2		F2	C4	C4	C3	C4	C3	C3	C1		C2	C2	C3	C3	L3	L2	FF22	F2	F2	F2	F3
31	F3	F1	F1	F2	FF22	C2	C3	C3		C2	C2			C2	C2	L3			C4	FF41	F5	F2	F6	F4
	00	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																								

AUG. 1984

TYPES OF ES

IONOSPHERIC DATA

AUG. 1984

FXI (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	63	A	52	46	48	48														X 71	X 55	X 56	X 59	X 50	
2	X 51	X 50	X 50	54	60															X 57	X 56	X 56	X 54	52	
3	53	52	50	50	44			67												X 71	69	68	63	63	
4	52	55	49	40	41															X 57	62	63	65	63	
5	63	58	53	53	50	50														X 69	66	65	65	61	
6	57	62	60	62	54	46														X 66	X 70	X 67	70	X 64	
7	61	55	53	53	51		86													X 72	X 67	66	X 65	X 59	
8	59	56	53	51	48	49														X 85	83	X 78	X 66	72	
9	66	65	65	61	58	58														X 83	X 82	X 78	76	X 75	
10	X 62	X 62	X 62	X 61	X 55															X 65	X 60	70	A	67	
11	A	A	59	61	53	50														X 80	82	82	78	70	
12	X 56	55	53	54	52	55														X 87	X 81	X 78	X 70	X 64	
13	X 56	X 56	X 53	X 52	X 54															X 86	X 81	75	70	70	
14	65	X 58	59	X 53	X 49															X 75	X 82	89	A	58	
15	X 56	X 54	57	52	53															X 64	X 64	X 62	70	70	
16	63	61	51	53	50															X 64	X 63	X 62	X 62	X 57	
17	59	55	51	51	50	50														X 66	64	68	66	62	
18	56	52	49	X 43	46															X 88	X 74	X 55	X 53	53	
19	54	52	X 51	X 49	X 40															X 89	X 84	X 64	61	62	
20	X 58	X 50	X 47	49	48															X 79	X 54	X 50	54	54	
21	53	53	54	54	48	50														X 69	X 60	X 59	63	62	
22	62	62	52	52	52	52														X 74	X 73	X 57	X 57	X 52	
23	X 52	X 49	53	54	57	53														X 80	X 77	X 65	X 55	X 46	
24	X 46	49	X 43	52	44															X 71	X 68	58	57	A	
25	X 42	X 41	X 41	45	A															A	X 61	A	47	A	
26	A	47	52	53	55	50														X 70	65	A	63	A	
27	52	49	47	45	47	47														X 65	70	69	62	52	
28	47	X 46	X 41	X 33	X 32															A		72	63	58	40
29	40	44	53	49	50															X 56	X 56	54	52	47	
30	X 41	X 41	43	42	X 36															A		68	67	63	58
31	54	X 40	X 37	40	40	40														X 62	X 62	59	57	X 51	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	29	31	31	30	14		1	1											28	31	29	29	28	
MED	56	53	52	52	50	50		86	67											X 71	X 68	65	63	60	
UQ	61	56	53	54	53	52														X 80	X 76	69	66	64	
LQ	52	49	49	48	46	48														X 65	X 62	X 59	57	52	

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FXI (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984

FOF2 (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	F	A	F	F	F	F	40	52	69	71	A	59	50	52	51	53	63	62	66	70	65	49	50	53	44			
2	45	44	44	F	F	F	A	A	A	A	51	51	A	E	G	E	G	E	G	46	A	A	45	51	50	50	48	F
3	F	F	F	F	F	F	36	39	47	57	59	62	52	A	A	A	62	62	60	64	58	65	F	F	F	F	F	
4	F	F	F	F	F	F	32	35	52	A	A	A	52	61	52	56	53	50	48	52	53	51	F	F	F	F	F	
5	F	F	F	F	F	F	F	F	56	54	58	A	A	65	57	57	54	56	54	56	56	63	F	F	F	F	F	
6	F	F	F	F	F	F	A	60	57	60	54	53	53	59	62	64	58	A	A	60	64	61	60	F	58	58	F	
7	F	F	F	F	F	F	45	57	F	69	66	54	54	68	64	62	67	64	71	70	66	61	F	59	53	53	F	
8	F	F	F	F	F	F	41	56	R	66	54	A	54	57	62	60	64	57	64	72	79	F	72	60	F	F	F	
9	F	F	F	F	F	F	50	59	73	60	52	58	66	66	64	66	62	63	66	67	77	76	72	66	69	69	F	
10	56	56	56	55	49	42	49	52	53	57	A	A	56	54	53	57	62	58	59	59	54	F	A	F	F	F	F	
11	A	A	F	F	F	F	42	50	63	68	61	65	56	62	65	68	68	64	56	A	74	F	F	F	F	F	F	
12	50	47	F	F	F	F	46	60	66	63	60	59	71	58	69	62	67	58	57	65	81	75	72	64	58	58	F	
13	50	50	47	46	48	49	60	67	78	75	58	65	63	67	66	58	65	60	A	80	75	66	F	F	F	F	F	
14	56	52	F	47	43	46	62	71	76	66	58	58	65	60	64	67	62	59	62	69	76	F	A	F	F	F	F	
15	50	48	50	44	46	45	48	A	60	57	A	A	64	62	64	76	67	A	55	58	58	56	F	F	F	F	F	
16	F	F	F	F	F	F	39	48	49	55	54	58	60	65	A	57	64	71	65	62	58	57	56	56	51	51	F	
17	F	F	F	F	F	F	A	A	A	A	58	50	56	57	64	A	A	57	51	60	F	F	F	F	F	F	F	
18	F	F	F	37	F	41	42	57	61	53	53	56	A	A	58	53	55	64	74	82	68	49	47	F	F	F	F	
19	46	45	45	43	34	37	47	57	79	79	61	66	57	50	A	59	A	61	A	83	78	58	54	F	F	F	F	
20	52	44	41	F	40	40	46	62	64	57	A	53	53	57	56	60	63	60	67	73	48	44	46	F	F	F	F	
21	F	F	F	F	F	F	42	45	57	56	60	54	56	63	66	66	61	54	57	61	63	54	53	F	F	F	F	
22	F	F	F	F	F	F	50	62	56	55	H	54	58	56	50	50	51	54	56	68	67	51	51	46	46	46	F	
23	46	43	43	F	F	F	45	49	A	62	56	53	54	54	54	57	61	61	58	67	74	71	59	49	40	40	F	
24	40	40	37	F	F	F	35	35	A	49	52	A	57	54	54	49	45	54	62	58	57	65	62	F	F	F	F	
25	36	35	35	36	A	A	38	44	46	44	A	A	A	45	50	49	A	A	A	A	55	A	F	36	A	A	F	
26	A	F	F	F	F	F	A	52	52	A	52	53	56	58	54	54	56	54	54	64	58	A	F	A	A	A	F	
27	F	F	F	F	F	F	39	50	62	61	61	54	62	60	56	58	64	71	57	51	59	F	F	F	F	F	F	
28	F	40	35	27	26	21	40	46	A	E	G	E	G	E	G	41	57	46	46	A	46	A	A	A	F	F	F	F
29	F	36	F	F	F	F	33	43	47	A	46	46	E	G	44	46	51	53	50	50	50	50	50	50	50	50	50	F
30	35	35	36	34	30	32	49	52	55	59	66	59	V	60	59	64	58	57	60	62	A	F	F	F	F	F	F	
31	F	34	31	F	F	F	39	A	A	54	49	51	54	50	54	54	54	54	51	45	56	56	F	F	50	45	45	
CNT	15	15	15	10	15	23	26	23	25	25	25	26	28	28	30	29	27	26	25	28	24	15	17	13	13	13	13	
MED	46	44	42	44	39	41	49	57	60	57	54	55	57	57	58	60	60	58	59	65	60	56	53	51	51	51	51	F
UQ	51	48	44	46	44	45	56	62	66	61	58	61	62	62	64	64	63	64	67	74	70	64	59	58	58	58	F	
LQ	42	38	36	36	34	38	46	52	56	54	52	53	54	51	53	54	54	56	54	59	54	50	48	44	44	44	44	F

AUG. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

AUG. 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							A	A	430	A	A	450	470	450	430	420	400	L	L					
2							A	A	A	A	430	A	440	430	420	A	A	A	L					
3							L	A	430	430	450	A	A	A	450	420	A	A	A					
4							A	A	A	A	A	A	A	440	430	430	400	380	L					
5									A	A	A	A	A	A	A	450	430	410	390	L				
6							A	A	A	A	450	450	A	A	450	420	420	A	A					
7						L	L	A	430	A	470	470	A	A	A	A	430	380	A					
8							L	A	440	440	A	460	470	A	440	440	L	380	L					
9							A	380	430	490	460	460	460	450	460	430	430	400	A					
10							A	A	430	430	A	A	A	A	450	440	440	410	L	L				
11							A	400	A	450	470	L	450	460	450	L	410	L	A					
12							L	L	L	440	L	460	460	460	470	430	L	L	A					
13							L	L	420	440	L	470	L	470	440	L	430	L	A					
14							L	400	A	A	450	L	460	470	A	A	420	L	A					
15							L	A	A	430	A	A	A	A	A	420	A	A						
16							A	L	A	A	A	A	A	A	440	420	A	360						
17							A	A	A	A	A	L	A	430	A	A	A	L	L					
18							A	A	A	A	A	A	A	A	430	L	410	370	A					
19								L	410	430	450	440	L	A	A	A	A	A	A					
20							L	370	A	430	A	450	440	420	430	A	400	L						
21								L	A	A	440	440	A	A	430	420	L	L	A					
22								A	410	A	450	450	A	A	430	A	L	A	A					
23								A	410	420	430	430	430	430	A	A	390	L						
24							A	380	400	A	A	430	430	430	420	400	380	L	A					
25								A	A	410	A	A	A	420	410	390	A	A	A					
26							A	380	A	A	460	430	430	A	440	420	400	L						
27							A	A	A	A	L	440	A	440	440	420	400	A						
28								A	A	420	410	410	420	430	420	A	A	A	A					
29								A	420	420	440	420	420	420	420	420	380	L	L	A				
30							L	A	A	430	440	440	450	440	440	420	L	A						
31							L	A	A	420	L	440	440	440	440	420	L	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	8	11	16	15	19	15	19	25	19	17	8						
MED							320	380	430	430	450	440	440	440	440	420	410	380						
UQ							370	400	430	440	455	455	460	450	440	430	420	390						
LQ							320	375	410	420	435	440	430	430	430	420	400	375						

AUG. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

AUG. 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	A	340	345	A	A	A	A					
2					S	A	A	A	A	A	A	A	350	345	330	A	285	A	A					
3					S	A	A	A	A	A	A	A	A	A	A	320	A	A	A					
4					S	A	A	A	A	A	A	A	A	A	345	A	295	A	A					
5					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
6					A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
7					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
8					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
9					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
10					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
11					S	A	A	A	A	A	A	A	A	A	A	A	290	255	A					
12					S	A	A	A	A	A	A	A	A	355	340	315	290	A	A					
13					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
14					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
15					A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
16					S	A	A	A	A	A	A	A	A	A	A	305	A	A	A					
17					S	A	A	A	A	A	A	A	A	345	A	305	A	A	S					
18					S	A	A	A	A	A	A	A	A	A	A	305	A	A	A					
19					S	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
20					S	A	A	A	A	A	A	A	A	A	325	305	275	A	A					
21					S	A	250	A	A	A	A	A	A	A	A	A	A	A	A					
22					S	A	A	A	A	A	A	A	A	A	A	305	270	A	A					
23					S	A	A	A	A	A	A	360	365	350	315	290	A	A	S					
24					S	A	A	A	A	A	A	A	A	A	A	A	A	A	S					
25					S	A	A	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	275	220	S					
27					S	A	A	A	A	A	A	A	A	A	A	A	A	A	S					
28					S	A	A	A	A	A	A	A	A	345	A	A	A	A	S					
29					S	A	A	A	A	A	A	A	A	355	A	300	260	A	S					
30					S	A	A	A	A	A	A	A	A	A	A	A	A	A	S					
31					S	A	A	A	A	330	340	350	350	320	A	A	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								1			1	2	3	8	7	10	8	2						
MED							250				330	350	350	348	330	305	280	238						
UQ													358	352	342	315	290							
LQ													350	345	322	305	272							

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FOE (0.01 MHZ)

IONOSPHERIC DATA

AUG. 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	39	AA76	29	20	23	19	41	42	34	AA94	46	38	38	38	G	35	33	28	27	25	29	22	23	25	
2	29	E	31	29	33	AA88	AA74	AA84	AA84	45	38	AA90	39	39	38	42	AA62	AA112	28	29	19	20	E	20	
3	19	28	25	24	21	19	29	42	36	36	38	AA106	AA86	AA117	37	36	49	47	33	E	41	30	37	E	
4	E	E	E	ES15	ES16	21	38	AA52	AA77	AA66	44	46	47	38	G	34	G	29	23	E	E	E	E	19	
5	28	E	E	E	E	19	24	32	43	AA106	AA109	58	50	50	40	38	34	36	25	43	33	26	E	E	
6	38	23	32	24	21	31	AA52	52	48	48	43	44	48	55	42	37	34	AA108	AA54	E	E	E	E	E	
7	18	18	20	22	E	18	28	41	36	47	44	42	46	46	47	43	40	30	32	18	E	E	20	20	
8	E	19	20	E	E	29	28	57	37	37	AA122	40	37	53	37	38	34	31	24	50	E	20	30	35	
9	19	E	22	28	21	21	36	30	38	35	39	38	38	37	37	36	32	30	50	39	18	E	E	E	
10	E	19	E	E	E	18	43	41	34	35	AA116	AA72	47	36	40	G	32	34	21	36	26	20	AA86	30	
11	AA66	AA107	E	E	E	19	36	33	51	40	43	38	38	36	43	36	G	29	AA64	28	25	30	22	21	
12	22	30	E	E	E	G	28	37	39	42	35	39	38	G	G	28	34	G	28	35	20	E	20	19	E
13	E	ES15	ES15	E	E	ES16	24	28	31	33	36	40	37	37	42	34	32	32	AA76	32	30	E	E	E	
14	ES16	ES16	E	23	E	20	25	37	44	46	40	38	37	37	48	43	32	35	52	53	29	42	AA122	30	
15	43	18	23	29	ES16	G	24	AA52	47	40	AA88	AA88	47	47	51	35	45	AA77	28	20	25	19	35	23	
16	25	E	22	E	E	G	37	32	47	46	44	48	50	AA65	37	35	48	32	20	18	20	20	ES16	E	
17	E	18	E	E	E	18	AA66	AA59	AA66	AA87	51	36	50	37	44	AA91	AA98	32	22	20	40	E	E	E	
18	20	E	ES15	20	E	G	35	45	41	43	43	45	AA110	AA55	35	28	32	27	30	25	23	ES15	E	E	
19	E	22	E	E	ES16	ES16	25	30	38	36	38	37	37	46	AA66	56	AA61	45	AA80	37	E	24	20	E	
20	E	18	E	E	E	26	25	35	46	36	AA67	40	37	38	G	41	35	32	19	E	ES16	E	E	E	
21	20	28	23	E	28	G	33	30	42	50	38	37	50	60	37	33	32	30	42	28	20	18	18	E	
22	E	E	E	22	E	ES15	26	40	40	43	39	43	46	53	37	43	G	36	35	25	25	30	29	25	
23	22	18	26	E	E	19	30	AA76	37	36	36	G	G	37	46	43	30	28	18	19	41	32	22	21	
24	25	E	E	20	ES15	ES16	AA46	29	37	AA78	44	36	37	37	37	38	35	29	38	49	42	E	33	AA70	
25	E	E	E	E	AA54	AA47	25	37	40	38	AA58	AA45	AA86	36	36	35	AA69	AA84	AA56	AA65	37	AA108	E	AA97	
26	AA76	E	E	26	E	23	AA83	34	49	AA74	37	37	41	46	42	34	31	29	21	31	E	AA108	E	AA86	
27	23	23	23	21	E	G	44	53	41	44	37	37	55	41	35	33	31	35	28	33	24	29	E	E	
28	E	E	22	E	E	ES16	27	40	AA46	34	36	37	36	G	36	AA68	41	AA131	AA120	AA87	46	26	34	E	
29	E	E	E	E	22	21	28	30	AA70	40	35	36	36	G	35	26	21	24	42	42	22	E	E	E	
30	E	ES16	E	ES16	ES16	ES16	30	40	41	37	38	37	38	37	35	32	30	34	44	AA68	30	19	E	E	
31	E	E	22	E	E	G	30	AA52	AA58	36	G	G	G	G	G	33	28	42	18	32	20	29	E	21	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	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	19	16	15	E	E	18	30	40	41	42	40	39	39	38	37	36	32	32	32	29	24	20	18	E	
UQ	25	20	22	22	18	21	40	52	48	48	45	45	49	48	42	42	40	39	47	40	30	29	26	24	
LQ	E	E	E	E	E	16	26	32	38	36	38	37	37	37	35	34	30	29	24	20	17	E	E	E	

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FBES (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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 16	E 15	E 15	E 15	E 15	16	17	18	18	19	18	19	19	20	19	18	17	E 16	E 16	E 16	E 16	E 15	E 16						
2	E 16	E 15	E 16	E 15	E 16	E 15	16	18	17	18	18	20	20	19	18	19	18	17	E 16	E 16	E 16	E 16	E 16	E 16						
3	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	18	17	19	18	19	18	18	17	16	E 16	E 15	E 16	E 15	E 15	E 16						
4	E 16	E 15	E 15	E 15	E 16	E 16	16	17	17	17	18	19	19	21	18	18	16	17	E 16	E 16	E 15	E 15	E 15	E 15						
5	E 16	E 15	E 15	E 16	E 15	E 16	16	16	17	17	18	18	18	19	18	17	17	17	E 15	E 16	E 16	E 15	E 15	E 15						
6	E 15	E 15	E 15	E 16	E 15	16	16	17	16	17	18	22	19	18	19	16	17	16	E 16	E 16	E 15	E 16	E 16	E 15						
7	E 16	E 16	E 15	E 15	E 15	E 16	16	17	18	18	17	18	18	18	17	18	17	16	E 15	E 16	E 16	E 15	E 15	E 16						
8	E 15	E 16	E 15	E 15	E 15	E 16	16	17	17	15	17	18	20	17	19	17	17	17	E 16	E 16	E 16	E 15	E 15	E 15						
9	E 15	E 15	E 15	E 16	E 15	E 16	16	16	17	16	18	17	18	17	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15						
10	E 15	E 15	E 15	E 16	E 15	E 16	16	16	17	17	18	18	18	18	18	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16						
11	E 16	E 15	E 15	E 15	E 15	E 15	16	17	17	18	17	19	20	18	19	17	17	16	E 16	E 16	E 15	E 15	E 16	E 16						
12	E 16	E 15	E 16	E 15	E 15	E 16	16	17	17	17	17	16	18	18	17	17	16	16	E 15	E 16	E 16	E 15	E 16	E 16						
13	E 15	E 15	E 15	E 15	E 15	E 16	16	17	16	17	18	18	18	17	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15						
14	E 16	E 16	E 15	E 15	E 15	E 16	16	16	17	17	18	17	18	17	17	17	17	16	E 16	E 16	E 15	E 15	E 16	E 16						
15	E 15	E 16	E 16	E 15	E 16	E 16	16	17	16	17	18	18	18	17	17	17	17	16	E 16	E 16	E 16	E 15	E 16	E 15						
16	E 15	E 15	E 15	E 15	E 15	E 16	16	16	16	17	18	18	18	17	18	17	17	16	E 16	E 16	E 16	E 16	E 16	E 15						
17	E 16	E 16	E 15	E 15	E 15	E 16	16	16	17	17	18	18	20	18	17	17	17	16	E 16	E 15	E 15	E 15	E 16	E 16						
18	E 16	E 15	E 15	E 15	E 15	E 16	16	16	16	17	18	17	18	17	17	17	16	16	E 16	E 16	E 15	E 15	E 16	E 15						
19	E 15	E 15	E 15	E 15	E 16	E 16	16	15	18	19	17	21	18	18	18	17	17	16	E 16	E 15	E 15	E 16	E 15	E 16						
20	E 15	E 15	E 15	E 15	E 15	E 16	16	17	16	18	18	18	18	18	18	17	17	17	E 16	E 16	E 16	E 16	E 16	E 15						
21	E 15	E 16	E 15	E 15	E 15	E 16	16	16	16	17	17	18	18	17	17	16	17	16	E 16	E 16	E 16	E 15	E 15	E 15						
22	E 15	E 16	E 15	E 15	E 15	E 15	E 16	16	16	16	18	17	17	17	17	16	17	16	E 16	E 15	E 16	E 16	E 16	E 15						
23	E 16	E 15	E 15	E 15	E 15	E 16	16	17	18	17	18	19	18	17	17	16	17	16	E 16	E 16	E 16	E 16	E 15	E 16						
24	E 15	E 15	E 16	E 15	E 15	E 16	16	17	17	17	18	17	19	17	19	17	16	16	E 16	E 16	E 16	E 15	E 15	E 16						
25	E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	17	18	18	18	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15						
26	E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	18	20	20	17	17	18	17	16	E 16	E 15	E 15	E 16	E 15	E 15						
27	E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	16	18	17	22	22	22	18	17	17	16	E 16	E 15	E 16	E 15	E 15	E 15						
28	E 15	E 15	E 16	E 16	E 15	E 16	17	17	16	18	17	18	18	18	16	16	16	16	E 16	E 15	E 15	E 16	E 15	E 15						
29	E 15	E 16	E 15	E 15	E 15	E 16	17	16	17	18	19	18	17	17	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15						
30	E 16	E 16	E 15	E 16	E 16	E 16	16	16	16	18	17	18	17	17	17	17	17	17	E 16	E 15	E 16	E 15	E 16	E 15						
31	E 16	E 15	E 15	E 15	E 15	E 16	E 16	17	17	18	18	17	17	17	17	17	16	16	E 16	E 16	E 15	E 16	E 16	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	31	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 16	16	17	17	17	18	18	18	18	17	17	17	16	E 16	E 16	E 16	E 15	E 15	E 15						
UQ	E 16	E 16	E 15	E 15	E 15	E 16	16	17	17	18	18	19	19	18	18	17	17	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 16	16	16	16	17	17	18	18	18	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15						

AUG. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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	F	A	315	F	305	F	300	290	340	350	A	305	270	265	260	250	285	275	285	320	330	280	270	300	270
2	290	275	285	F	300	F	A	A	A	A	275	285	A	G	G	G	260	A	A	295	295	295	300	280	F
3	F	F	F	F	F	F	305	295	300	300	325	345	A	A	A	315	315	310	310	330	310	295	F	F	F
4	F	F	F	F	F	F	310	315	340	A	A	A	275	325	270	320	320	315	285	325	315	305	285	F	F
5	F	F	F	F	F	F	310	290	325	A	A	340	305	315	315	305	335	320	320	315	F	F	F	F	
6	F	F	F	F	F	F	A	335	370	345	335	310	290	325	310	325	315	A	A	305	295	295	290	320	
7	F	F	F	F	F	F	300	310	F	330	355	310	275	315	315	305	315	310	325	330	310	325	F	310	300
8	F	F	F	F	F	F	300	310	R	360	370	A	305	295	300	300	310	300	300	305	310	F	300	315	F
9	F	F	F	F	F	F	300	320	345	335	325	305	320	320	320	305	320	300	305	300	300	300	300	285	320
10	305	285	280	290	305	310	305	300	280	280	A	A	320	285	280	315	325	325	325	325	275	F	A	F	
11	A	A	F	F	F	F	300	320	330	330	340	320	305	295	305	315	315	335	320	A	305	F	F	F	F
12	300	295	F	F	F	F	325	335	360	345	355	270	330	295	320	305	320	325	300	295	310	310	310	295	305
13	285	295	280	295	295	285	320	310	325	345	330	320	295	315	325	310	315	315	A	315	320	305	F	F	300
14	F	300	F	300	300	305	330	345	360	350	335	300	315	300	305	320	335	305	300	290	305	F	A	F	
15	290	275	300	295	285	315	345	A	325	340	A	A	310	295	285	325	320	A	300	310	300	310	F	F	
16	F	F	290	F	315	290	305	315	315	300	320	310	325	A	305	310	325	335	330	320	295	280	310	295	
17	F	F	F	F	F	F	A	A	A	A	335	300	310	305	325	A	A	330	315	315	F	F	F	F	
18	F	F	F	315	F	325	295	315	360	355	320	340	A	A	325	300	305	305	325	330	365	285	295	F	
19	295	290	305	325	325	325	300	285	330	360	320	335	330	345	A	A	A	300	A	315	335	325	275	F	F
20	305	285	310	F	305	330	305	320	340	325	A	300	285	315	285	315	325	325	315	330	350	290	290	F	295
21	F	F	F	F	300	320	310	335	330	345	365	305	310	320	335	335	320	330	345	330	320	315	F	F	
22	F	F	F	F	F	F	315	355	345	360	290	315	340	A	340	320	315	310	310	315	335	300	300	290	
23	310	295	300	F	F	F	340	350	A	390	320	310	320	335	295	310	325	315	325	310	310	325	335	340	310
24	300	290	305	F	310	305	A	305	350	A	320	310	305	310	240	290	325	235	310	305	335	F	305	A	
25	310	295	290	325	A	A	300	295	305	320	A	A	A	255	300	285	A	A	A	A	305	A	320	F	A
26	A	F	F	F	F	F	A	325	325	A	290	295	320	330	320	310	320	320	295	310	300	F	A	F	A
27	F	F	F	F	F	F	325	320	355	345	335	320	310	330	315	310	315	355	335	335	300	F	F	F	F
28	290	305	360	260	275	300	260	330	A	G	G	G	305	270	295	A	290	A	A	A	F	F	F	F	
29	F	F	F	F	F	F	270	290	325	A	320	265	G	240	285	335	290	320	315	325	285	300	F	F	285
30	265	285	300	325	350	305	325	310	325	330	340	340	320	320	330	340	335	330	330	A	F	F	F	F	
31	F	325	310	F	F	F	305	A	A	320	295	295	335	295	310	330	335	350	310	290	320	F	310	325	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	15	15	15	10	15	23	26	23	25	25	25	26	28	27	30	28	27	26	25	28	24	15	17	13	
MED	300	290	300	298	305	305	310	325	330	335	320	310	310	310	310	315	320	320	315	310	305	300	300	300	
UQ	305	295	308	325	310	322	320	338	350	350	330	320	320	320	320	320	325	325	325	315	325	310	310	310	
LQ	290	285	290	290	298	300	300	308	325	320	290	300	295	295	300	308	310	305	305	305	295	292	290	295	

AUG. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

AUG. 1984

M(3000)F1 (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							A	A	395	A	A	400	R	370	365	360	360	350	345	L				
2							A	A	A	A	395	A	385	390	380	A	A	A	L					
3							L	A	365	420	410	A	A	A	385	380	A	A	A					
4							A	A	A	A	A	A	A	380	415	375	375	365	L					
5									350	355	A	A	A	A	A	355	395	365	A	L				
6							A	A	A	A	A	A	A	A	375	405	355	A	A					
7						L	L	A	385	A	A	365	A	A	A	A	A	370	A					
8							L	A	385	390	A	380	380	A	390	380	L	385	L					
9							A	395	410	380	415	405	405	395	380	395	350	345	A					
10							A	A	390	375	A	A	A	390	370	350	365	L	L					
11							A	355	A	375	380	L	400	365	A	L	360	L	A					
12							L	L	L	A	L	365	395	370	360	360	L	L	A					
13							L	L	380	395	L	395	L	360	A	L	365	L	A					
14							L	A	A	A	400	L	395	380	A	A	355	L	A					
15							L	A	A	390	A	A	A	A	A	375	A	A						
16							A	L	A	A	A	A	A	A	370	365	A	390						
17							A	A	A	A	A	L	A	395	A	A	A	L	L					
18							A	A	A	A	A	A	A	A	370	L	365	355	A					
19							345	L	A	395	420	395	L	A	A	A	A	A	A					
20							L	A	A	410	A	345	395	420	370	A	355	L						
21							L	A	A	385	405	A	A	375	375	L	L	A						
22							A	A	A	390	A	A	A	375	A	L	A	A						
23							A	A	440	425	400	415	395	A	A	360	L							
24							A	375	A	A	A	365	375	390	365	A	A	L	A					
25							365	A	A	A	A	A	A	375	365	375	A	A	A					
26							A	390	A	A	365	415	390	A	A	360	345	L						
27							A	A	A	A	L	385	A	380	365	355	365	A						
28							345	A	A	385	400	395	390	370	365	A	A	A	A					
29							350	375	A	A	400	395	420	390	380	375	380	L	L	A				
30							L	A	A	400	395	405	400	380	355	370	L	A						
31							L	A	A	385	L	410	405	380	380	370	L	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	6	7	13	13	17	15	19	22	18	15	7						
MED							350	375	385	390	400	395	395	380	370	375	360	365						
UQ							350	390	392	400	410	405	402	390	380	380	365	378						
LQ							345	355	382	385	390	380	388	372	365	360	355	350						

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M(3000)F1 (0.01)

IONOSPHERIC DATA

AUG. 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							370	275	270	A	345	480	475	495	485	365	400	340	260					
2							A	A	A	430	400	A	G	G	G	510	A	A	315					
3							355	345	335	300	295	A	A	A	335	305	330	310	275					
4							295	A	A	A	420	310	455	340	350	330	400	300	300					
5							310	370	315	A	A	A	360	340	345	350	305	300	290					
6							A	A	240	290	300	350	400	A	340	300	310	A	A					
7					310	285	255	270	260	370	455	315	310	350	310	300	280	270						
8						305	255	250	255	A	370	385	A	370	310	310	315	290						
9						260	255	245	350	370	325	320	310	330	300	340	300	A						
10						A	320	400	390	A	A	335	400	435	345	295	275	270						
11						290	280	280	270	300	310	350	310	310	305	275	290	A						
12						260	245	280	280	340	290	375	300	345	290	290	340	300						
13						245	285	265	255	305	310	345	300	295	320	305	280	A						
14						265	255	245	245	300	345	330	365	320	300	280	310	A						
15						295	A	315	325	A	A	320	350	360	290	290	A							
16						330	295	320	350	340	345	310	A	355	320	290	255							
17						A	A	A	A	310	350	L	355	350	310	A	A	280	275					
18						A	310	255	260	310	320	A	A	325	350	350	300	260						
19						355	355	265	245	330	295	305	290	A	A	A	320	A						
20						345	290	280	280	A	355	405	345	345	310	290	290							
21						280	300	275	250	370	320	A	290	290	300	280	250							
22						255	270	275	345	360	305	A	300	345	300	290	270							
23						A	230	310	325	345	310	360	350	290	300	300								
24						A	330	270	A	330	355	350	360	600	370	290	285	A						
25						380	380	360	345	A	A	A	555	370	400	A	A	A						
26						A	270	A	A	400	395	350	310	320	350	300	285							
27						A	260	270	295	315	310	A	310	345	300	255	250							
28						545	320	A	G	G	G	350	500	400	A	400	A	A						
29						390	325	A	360	500	G	620	410	310	390	310	290	A						
30						300	A	295	300	280	295	320	310	290	295	285	280							
31						355	A	A	320	375	380	330	385	355	305	280	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	20	23	24	25	25	25	27	24	30	28	27	25	13						
MED					310	308	285	270	295	330	350	350	348	345	310	300	290	275						
UQ					355	322	308	345	370	370	380	392	360	350	310	300	290							
LQ					288	258	260	270	305	310	320	310	320	300	290	280	270							

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H^oF2 (KM)

IONOSPHERIC DATA

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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	260	A	250	A	A	195	A	A	200	215	220	225	220	A	230	A	260	A	320	275	A																								
2	A	275	A	A	A	A	A	A	A	A	210	A	230	230	225	A	A	A	A	A	265	290	285	295																								
3	A	A	A	A	A	260	245	A	230	200	200	A	A	A	230	230	A	A	A	235	A	A	A	250																								
4	240	250	230	H	255	280	245	A	A	A	A	A	A	A	235	200	200	205	230	250	250	260	290	245	300																							
5	A	250	250	260	280	250	240	230	A	A	A	A	A	A	A	A	230	220	A	A	A	A	270	255	270																							
6	A	A	A	245	260	A	A	A	A	A	A	A	A	A	A	210	230	A	A	245	250	270	290	240																								
7	275	250	275	275	255	270	225	A	210	A	A	A	A	A	A	A	A	200	A	225	225	285	255	260																								
8	270	280	240	270	245	A	230	A	200	200	A	210	200	A	220	210	230	230	255	A	260	245	240	A																								
9	250	250	A	A	280	250	A	200	230	200	195	200	200	220	225	205	220	240	A	A	255	250	280	240																								
10	270	285	280	260	250	255	A	A	200	200	A	A	A	200	A	235	245	A	225	A	A	325	A	A																								
11	A	A	270	265	290	250	A	225	A	220	220	210	195	210	A	220	220	230	A	245	290	280	270	230																								
12	270	A	290	260	275	255	220	A	A	A	190	A	200	200	210	225	220	220	A	250	240	240	250	240																								
13	250	270	270	285	270	250	225	220	205	195	190	215	210	205	A	205	225	A	A	250	240	245	270	250																								
14	260	250	250	270	260	245	235	A	A	A	210	190	210	190	A	A	220	A	A	A	260	A	A	245																								
15	A	300	290	A	280	H	260	250	A	A	A	A	A	A	A	210	A	A	250	250	260	255	A	290																								
16	270	230	275	290	245	260	A	225	A	A	A	A	A	A	230	220	A	A	245	225	270	280	260	255																								
17	250	275	280	260	285	245	A	A	A	A	A	200	A	205	A	A	A	A	A	240	A	250	250	270																								
18	240	260	270	285	255	240	A	A	A	A	A	A	A	A	220	220	240	220	A	240	210	270	260	270																								
19	270	290	245	225	240	250	255	225	A	200	195	190	200	H	A	A	A	A	A	245	210	230	280	270																								
20	250	280	255	250	275	A	250	225	A	A	215	A	A	205	200	245	A	A	A	255	220	200	270	280	270																							
21	280	A	A	275	225	A	245	A	230	A	A	220	200	A	A	205	230	225	220	A	240	240	245	280	250																							
22	285	270	235	A	240	245	240	A	A	A	200	A	A	A	220	A	220	A	A	250	225	A	A	A																								
23	260	280	A	245	250	240	230	A	A	200	195	215	200	210	A	A	220	220	240	240	A	230	225	A																								
24	A	290	280	290	280	260	A	225	A	A	A	230	230	220	230	A	A	A	A	A	260	A	A	A																								
25	270	275	280	260	A	A	240	A	A	A	A	A	A	A	230	230	A	A	A	A	A	A	A	235	A																							
26	A	E S	E S	A	240	A	A	230	A	A	210	200	A	A	A	220	230	245	265	270	250	A	250	A																								
27	A	A	A	A	280	245	A	A	A	A	220	220	A	A	215	230	230	A	230	A	A	245	260	250																								
28	250	260	220	E S	E S	310	320	260	A	A	205	200	200	H	H	240	230	A	A	A	A	A	A	270																								
29	E S	E S	260	E S	A	A	A	220	A	A	210	200	200	230	210	200	220	225	A	A	260	270	260	280																								
30	E S	290	270	255	235	300	A	A	A	205	200	190	200	215	220	220	225	A	A	A	A	260	250	280																								
31	225	245	A	E S	E S	E S	A	A	A	205	195	195	200	220	195	220	220	A	250	A	250	A	245	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	22	24	23	24	25	25	14	10	7	12	17	17	16	18	19	20	19	12	10	18	20	25	24	23																								
MED	265	272	270	260	265	250	238	225	205	200	200	200	200	218	220	220	220	228	250	245	250	260	260	260																								
UQ	272	281	280	278	280	260	245	230	220	205	210	210	210	230	230	228	230	230	255	250	260	280	278	270																								
LQ	250	250	250	255	250	245	225	220	200	200	195	200	200	205	212	210	220	220	240	240	232	245	250	250																								

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H^oF (KM)

IONOSPHERIC DATA

AUG. 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	A	A	A	105	105	105	105	110	105	110	110	110		S					
2						S				110	110	105	105	105	105	110	110	110	105	110	110				
3						S				110	105	105	105	105	105	105	105	105	105	110		A			
4						S				105	105	105	105	105	105	105	105	105	105	110		S			
5						S				110	105	105	105	A	105	105	105	105	105	110	105				
6						A	A	A	A	105		A	A	A	A	105	100	100	105		S				
7						S				105	105	105	105	105	105	105		A	A	A	A	A			
8						S				105	105	105	105	105	105	105	105	105	100	105	110				
9						S				105	105	105	105	A	100	100	A	100	105	105	110				
10						S				110		A	A	A	A	A	105	A	A	100	105	110	110		
11						S				110	105	A	A	A	A	A	A	A	A	100	105				
12						S				110	105	A	A	A	A	A	100	110	100	100		A	A		
13						S				110	105	A	105	105	105	105	105	A	A	A	A	110			
14						S				110	105	105	105	105	105	105	105	105	A	A	A	A			
15						S				115	105	100	105	105	105		A	A	A	A	A	A			
16						S				110	105	105	A	A	A	A	A	105	105	110		S			
17						S				110	110	105	105	A	105	105	105	105	105	105	110				
18						S				110	110	105	105	105	105	105	105	105		A	A	A			
19						S				115	A	A	A	105	105	105	105	105	105	110	110				
20						S				115	110	105	105	105	A	105	105	105	105	105	110				
21						S				A	110	105	105	105	105	105	105	105	105	105	100				
22						S				S	110	105	105	105	A	105	105	100	105	110	110				
23						S				A	A	A	A	105	105	105	105	105	105	105	110				
24						S				110	110	105	105	A	105	A	105	A	A	105	110				
25						S				S	105	105	105	105	105	105	105	105	105	105	110				
26						S				S	110	105	105	105	105	105	105	105	105	110	110				
27						S				S	110	110	110	110	110	105	105	105	105	110		A			
28						S				S	110	105	105	105	105	105	105	105	105	110	110				
29						S				S	110	105	105	A	A	A	105	100	A	110		A			
30						S				S	110	110	110	105	105	105	105	105	110	105		A			
31						S				S	110	105	105	105	100	105	100	100	100		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	26	23	25	21	23	24	24	23	23	25	22	2						
MED							110	108	105	105	105	105	105	105	105	105	105	105	110	108					
UQ							110	110	105	105	105	105	105	105	105	105	110	110							
LQ							110	105	105	105	105	105	105	105	105	105	105	110							

AUG. 1984

H°E (KM)

IONOSPHERIC DATA

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H[°]ES (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	105	100	100	100	100	105	105	110	100	105	110	110	115	150	G	125	125	125	115	110	115	110	105	105																								
2	105	115	120	125	115	110	110	110	110	110	110	110	140	130	130	115	115	115	110	110	110	110	110	110																								
3	110	105	105	105	105	140	120	120	120	120	120	105	110	110	110	115	110	120	120	115	110	110	105	105																								
4	100	100	100	S	S	130	125	120	110	110	110	110	110	120	G	120	G	125	120	110	110	110	105	100																								
5	100	100	100	100	110	105	110	110	110	105	105	105	105	105	105	105	110	120	110	100	100	100	105	105																								
6	105	105	100	100	100	100	100	100	100	110	105	105	100	105	110	135	120	115	110	110	100	100	100	105																								
7	100	100	100	100	110	115	110	110	105	105	105	105	105	105	100	100	100	100	100	100	100	115	100	100																								
8	100	100	100	105	115	100	110	110	110	105	105	105	105	105	115	110	115	120	110	110	105	105	105	105																								
9	100	100	100	100	100	105	115	120	110	110	120	115	110	115	120	115	120	120	110	105	105	105	105	105																								
10	100	100	105	105	105	110	110	105	105	105	100	100	105	100	100	G	125	110	115	105	105	110	110	105																								
11	100	100	100	100	100	100	110	110	105	105	100	105	100	100	100	100	G	140	110	105	105	110	100	100																								
12	95	130	125	95	110	120	110	105	100	105	105	100	100	G	100	140	G	100	95	95	105	100	100	100																								
13	105	S	S	100	100	S	115	110	105	110	110	105	110	100	105	110	100	110	110	110	110	105	110	105																								
14	S	S	100	100	100	105	120	110	115	115	110	115	110	110	100	100	130	110	110	110	120	105	110	105																								
15	105	100	105	100	S	125	125	110	110	110	110	105	100	100	100	100	100	110	110	100	100	100	110	105																								
16	100	100	100	100	100	125	115	110	110	105	100	100	100	110	140	120	110	110	110	100	95	95	S	100																								
17	120	100	100	110	110	125	110	110	105	105	100	110	105	140	120	110	110	110	110	110	110	105	105	105																								
18	100	100	S	120	130	120	110	110	110	110	110	105	105	105	105	100	100	120	110	105	110	S	110	110																								
19	110	105	105	105	S	S	130	120	100	120	110	120	110	120	110	110	120	120	110	110	105	105	100	100																								
20	105	100	100	105	120	115	125	110	110	110	105	105	105	105	G	125	125	120	120	115	S	105	100	105																								
21	105	105	100	105	100	100	120	120	110	110	110	110	105	105	105	105	135	110	110	105	110	105	110	105																								
22	110	110	105	100	105	S	120	115	120	110	120	115	110	105	110	120	G	130	115	110	100	100	100	100																								
23	100	100	105	100	105	105	105	100	100	100	115	G	G	145	125	115	115	110	110	110	105	100	105	100																								
24	100	100	95	95	S	S	115	110	110	105	100	110	105	120	140	130	120	120	110	110	110	110	105	105																								
25	105	105	105	130	115	120	120	115	110	110	110	110	105	115	110	120	110	110	105	105	105	110	105	100																								
26	100	100	100	100	100	125	115	115	110	110	110	110	105	105	105	105	130	120	115	110	110	110	110	105																								
27	110	100	100	95	100	125	115	110	110	110	110	110	105	105	110	110	140	120	115	110	115	110	110	105																								
28	105	100	100	100	110	S	120	110	110	110	110	105	105	G	120	115	115	115	110	105	105	105	100	100																								
29	100	100	100	105	120	115	110	110	105	105	105	105	100	G	110	100	100	95	110	110	105	105	105	105																								
30	110	S	105	S	S	S	115	110	110	110	110	110	105	110	110	110	105	105	100	100	100	110	110	105																								
31	100	110	125	135	105	120	120	110	110	120	G	G	G	G	G	130	95	105	130	105	105	110	105	105																								
	00	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	28	29	29	26	25	31	31	31	31	30	29	29	27	27	30	27	31	31	31	30	30	30	31																								
MED	102	100	100	100	105	115	115	110	110	110	110	105	105	105	110	112	115	115	110	110	105	105	105	105																								
UQ	105	105	105	105	110	125	120	112	110	110	110	110	110	118	118	120	122	120	115	110	110	110	110	105																								
LQ	100	100	100	100	100	105	110	110	105	105	105	105	105	105	105	105	108	110	110	105	105	105	100	100																								

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H[°]ES (KM)

IONOSPHERIC DATA

AUG. 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 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	F7	F3	F4	F5	F5	L2	L5	CL52	LC12	C3	C3	C1	C1	H1		C1	C1	C4	C3	F3	F4	F4	F2	F5
2	F4	F1	F6	F6	F5	C6	C5	C4	C5	C3	C2	C2	H1	C1	C1	C3	C2	C3	C2	F2	F2	F3	F2	F6
3	F2	F3	F4	F3	F2	H1	C3	C4	C2	C1	C1	C3	C3	C3	C1	C1	C2	C2	CL42	F1	F5	F4	F3	F2
4	F2	F2	F1			C2	C3	C4	C3	C3	C3	C2	C1	C1		C1		C2	C2	F2	F2	F3	F2	F2
5	F3	F2	F2	F2	F1	L2	C1	C3	C2	C2	L3	C4	C3	C2	C2	C2	C2	C2	C3	F3	F4	F2	F2	F2
6	F5	F3	F4	F2	F2	L4	L4	L3	L3	C2	L2	L2	L3	L2	C2	H1	C1	C4	C5	F1	F3	F2	F2	F2
7	F2	F3	F2	F2	F1	C2	C3	C3	C2	C2	C3	C2	C2	C2	L3	L3	L3	L4	L5	F2	F1	F2	F3	F3
8	F2	F2	F3	F2	F2	L3	C2	C4	C2	C2	C3	C2	C2	C3	C1	C2	C1	C2	C2	F4	F3	F3	F6	F2
9	F2	F3	F2	F2	F7	L3	C3	C2	C1	C1	CL11	C1	C1	CL11	C1	C1	C1	C2	C3	F4	F3	F2	F4	F2
10	F2	F2	F2	F1	F2	C1	C3	L3	L2	L2	L3	L3	C2	L1	L3		C2	C2	C1	F5	F4	F2	F3	F3
11	F3	F6	F2	F2	F2	L1	C3	C2	L3	L2	L3	L1	L1	L2	L2	L2		H2	C4	F2	F5	F3	F2	F6
12	F3	FF24	FF13	F2	F2	CL11	C3	C3	L3	L2	L1	L2	L1		L2	H1		L2	L6	F3	F2	F2	F2	F1
13	F1			F1	F2		C2	C2	L1	C1	C1	C2	C1	L1	L2	CL12	L2	C2	C7	F2	F2	F2	F2	F2
14			F2	F3	F2	L2	C3	C3	C4	C2	C2	C1	C1	C2	L2	L3	CL13	CL32	C5	F3	FF12	F3	F3	F4
15	F7	F4	F2	F3		C1	C2	C3	C3	C2	C3	C4	L2	L2	L3	L3	L2	CL22	CL21	F2	F6	F2	F3	F3
16	F4	F2	F3	F2	F2	C1	C3	C2	C3	L2	L2	L2	L3	CL42	HL12	C1	C4	C4	C2	F3	F3	F4		F2
17	F1	F3	F2	F3	F2	C1	C3	C4	C3	C3	L3	C1	C3	H1	C2	C3	C3	C3	C3	F2	F5	F2	F2	F2
18	F2	F2		FF32	FF12	C1	C4	C3	C2	C2	C2	C3	C5	C4	C1	L2	L4	CL22	C5	F4	F2		F3	F2
19	F3	F6	F2	F2			C2	CL13	L2	CL11	C1	C1	C1	C2	C4	C2	C2	C3	C5	F5	F1	F3	F2	F2
20	F2	F3	F2	F2	F1	C3	C2	C2	C3	C2	C3	L2	C2	C2		C2	C2	C3	C2	F1		F2	F3	F1
21	F6	F4	F4	F4	F4	L2	CL52	C2	C2	C3	C2	C1	C2	C4	C2	C1	H2	C1	C3	F2	F2	F2	F3	F2
22	F2	F2	F2	F3	F2		C2	C2	C2	C2	C2	CL22	C2	C4	C1	C3		C3	C6	F4	F3	F3	F3	F2
23	F3	F2	F5	F1	F2	L3	L2	L4	L3	L1	C1			H1	C2	C2	C2	C4	C1	F2	F3	F3	F3	F4
24	F4	F4	F2	F3			C3	C2	C3	C4	L2	C2	L2	C1	HL22	CL22	C2	C3	C4	F4	F7	F2	F3	F4
25	F2	F2	F1	F1	F4	C4	C4	C3	C2	C2	C2	C2	C2	C1	C1	C2	C3	C4	L5	F7	F4	F4	F3	F4
26	F3	F2	F3	F4	F2	C3	C5	C3	C2	C4	C2	C1	C2	C2	C3	C2	C1	C4	C2	F6	F2	F3	F2	F3
27	F2	F3	F3	F2	F1	CL11	C4	C3	C2	C2	C1	C2	C4	C2	C1	C1	H1	CL32	C7	F7	F4	F3	F2	F2
28	F2	F5	F3	F3	F1		C3	C4	C2	C2	C1	C1	C1		C1	C6	C3	C4	C7	F6	F3	F4	F3	F2
29	F2	F2	F2	F2	F5	C5	C4	C3	C4	C3	L2	L1	L2		C1	L2	L2	L2	C4	F4	F4	F2	F2	F2
30	F1		F1				C5	C3	C2	C2	C2	C1	C2	C1	C2	C2	C3	L4	L4	F3	F3	F2	F2	F2
31	F2	FF22	F6	F2	F1	C2	C3	C2	C5	C1						C1	LC11	L4	C1	F3	F4	F3	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																								

AUG. 1984

TYPES OF ES

IONOSPHERIC DATA

AUG. 1984

FXI (0.1 MHZ)

135° E Mean Time (G.M.T. + 9h)

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	S	A	A	S	S	50														C	C	X	X	X
2	X	X	X	X	S															X	A	S	S	S
3	49	A	S	S	S														S	X	S	S	S	
4	S	S	U	X	S														S	X	S	S	S	
5	U	U	U	S	A	43													X	X	X	S	S	
6	S	S	S	S	55	48													S	69	67	67	66	
7	S	59	60	60	S	48													S	79	65	64	64	U
8	S	X	S	S	X	45													X	91	78	75	72	S
9	U	S	A	U	S	S													X	95	82	78	77	S
10	X	S	X	X	X	60													X	61	59	58	57	S
11	S	S	S	S	46	S													S	78	68	70	S	U
12	S	S	A	A	A	54													S	101	87	74	70	X
13	X	X	X	X	X	X													X	90	79	65	S	S
14	63	S	S	S	S	S													S	79	84	90	69	A
15	A	S	S	S	50	45	46												X	70	68	A	65	A
16	66	61	S	X	S	X													X	64	64	59	59	57
17	X	X	X	X	X	X													X	69	57	S	S	S
18	A	51	S	X	S	39	42												X	91	S	A	A	S
19	S	S	S	S	S	S													S	97	81	64	59	S
20	S	S	S	X	46	45													X	76	61	47	48	S
21	X	S	S	S	45	50													X	63	59	S	S	S
22	S	S	I	S	45	43													X	74	69	X	51	51
23	S	S	S	X	S	S													S	91	S	X	S	S
24	X	49	46	40	S	40													S	74	X	S	48	A
25	A	X	S	X	40	36													S	70	S	X	X	S
26	S	S	S	S	43	44													X	70	74	58	55	S
27	S	S	S	46	S	S													X	64	X	S	S	U
28	X	S	S	A	S	S													S	62	S	A	A	S
29	S	40	45	39	S	42													X	60	X	A	S	S
30	S	S	U	S	X	S													S		A	A	S	60
31	S	S	S	S	35	36													S	59	X	X	S	X
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	25	24	24	28	21														28	27	21	20	20
MED	S	S	S	48	45	45													X	73	65	X	S	S
UQ	S	56	56	X	48	46													S	84	S	S	66	64
LQ	S	S	S	44	40	40													X	64	X	X	S	S

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FXI (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1984

FOF2 (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	S	A	A	S	I S 44	F	53	68	71	57	64	51	57	56	56	A	70	C	C	C	C	50	54	S 45
2	45	44	S 44	S 44	S 45	S 44	A	A	52	60	52	R 55	R 47	A	E G 44	50	49	A	A	52	A	I S 49	S 48	S 43
3	F	A	S 42	I S 40	I S 37	S 39	49	57	64	A	60	56	61	70	71	67	65	68	63	68	63	I S 60	S 57	S 56
4	S 48	J S 43	U S 40	37	S 35	S 39	44	49	A	A	56	A	58	65	55	51	53	55	55	57	58	S 56	I S 56	I S 54
5	U S 52	U S 49	S 53	A	F	S 39	56	61	55	62	65	64	69	A	61	62	61	A	61	66	S 63	55	54	I S 53
6	S	S	S	F	F	S 38	50	61	60	59	55	A	A	A	67	63	65	60	56	I S 62	S 63	S 61	S 61	J S 60
7	S 56	F	F	F	S 42	S 42	S 55	75	S 64	58	54	A	A	71	65	73	A	J S 82	J S 74	S 73	59	58	S 58	S 58
8	S 50	48	I S 46	S 41	39	38	60	S 83	S 65	54	54	55	64	69	69	70	69	67	76	85	S 72	S 69	S 66	S 58
9	U S 56	A	U S 55	S 50	47	46	S 64	74	J S 63	57	57	65	75	74	69	64	66	I C 73	78	89	J S 76	S 72	71	S 65
10	60	60	56	57	54	46	50	S 48	53	60	A	65	58	55	58	64	65	66	61	55	53	52	S 51	I S 50
11	S 52	S 50	S 47	I S 44	F	I S 44	A	S 60	68	65	64	64	67	68	S 75	79	68	S 61	59	72	S 62	F	S	U S 61
12	S 53	S 50	A	A	A	S 48	61	63	68	61	60	70	63	70	68	66	65	62	74	S 95	S 81	68	64	63
13	55	53	52	47	48	47	59	S 78	S 74	71	64	70	63	75	75	69	68	70	77	S 84	S 73	S 59	I S 60	U S 58
14	F	J S 55	S 53	47	45	45	60	69	74	66	55	66	70	66	A	70	74	A	68	S 73	S 78	S 84	J S 63	A
15	A	S	S	F	S 39	S 40	49	52	60	57	54	57	65	66	S 71	A	72	A	56	64	S 60	A	S 59	A
16	F	F	S 45	44	S 43	40	S 51	S 59	A	A	A	69	A	71	70	74	71	81	A	58	58	J S 53	S 53	J S 51
17	48	45	44	43	39	40	61	S 63	S 71	A	65	65	62	65	S 75	65	65	61	59	63	51	S	S	S 58
18	A	F	S 41	36	S 33	F 36	H 44	66	64	60	A	A	59	56	58	59	58	67	85	85	S 55	A	A	S 43
19	I S 42	S 44	F	S 40	S 30	32	45	62	80	79	56	J R 66	65	S 57	57	59	60	69	S 82	91	J S 75	58	J S 53	S
20	S 55	S	S 45	S 45	F	39	H 45	64	70	72	69	53	51	65	66	66	64	68	S 69	70	55	S 41	J S 42	S 43
21	S 41	S 41	I S 43	S 40	F	S 44	S 47	65	64	J S 63	56	63	71	A	A	69	69	73	S 65	57	S 53	S	S	S
22	S 50	F	I S 44	F	F	S 37	52	53	S 64	58	57	60	62	57	56	54	55	I S 57	S 62	68	S 63	47	45	S 45
23	S 45	S 43	S 40	38	S 40	S 40	52	S 63	55	51	50	54	55	56	62	63	66	73	I S 76	S 85	A	50	45	I S 44
24	44	F	F	F	S 31	F	H 44	58	54	S 53	A	57	56	52	50	59	64	S 65	64	S 68	59	S 50	J S 42	A
25	A	36	S 34	35	F 34	S 30	S 41	45	48	E G 42	R 48	A	A	A	53	55	56	51	55	S 64	S 59	S 55	S 48	S 37
26	S 29	S 31	F	F 33	F	F	53	68	55	A	A	53	A	60	A	56	59	61	A	64	S 68	F	S 49	S
27	I S 38	S 35	I S 35	F	S 37	S 40	47	64	A	63	59	63	64	65	61	74	J S 77	60	S 54	58	59	I S 54	I S 52	U S 40
28	37	S 39	S 40	A	S 30	S 24	S 40	53	A	E G 42	E G 43	E G 43	57	52	A	A	A	53	54	S 56	S 58	A	A	S 40
29	S 36	S 34	F	F	S 37	S 36	S 43	57	A	R 49	49	49	50	58	56	55	57	55	55	54	54	A	S	S
30	S 37	S 39	U S 38	S 41	S 30	S 31	43	64	64	S 67	62	65	63	61	65	63	63	64	A	A	A	A	S	F
31	S 52	S 33	S 32	F 30	F	S 30	J S 43	49	60	S 59	55	56	65	55	56	60	A	52	46	S 53	55	50	S	S 53
CNT	23	20	22	20	22	28	29	30	26	26	26	26	26	26	27	28	28	26	26	29	27	22	23	23
MED	S 48	S 44	S 44	41	S 39	S 40	50	62	64	60	56	62	62	65	62	64	65	64	62	66	S 59	S 55	S 54	S 53
UQ	S 52	50	S 47	44	S 44	S 44	55	66	68	63	62	65	65	69	69	69	68	69	S 74	73	S 66	S 60	S 60	S 58
LQ	S 42	S 38	S 40	38	S 34	S 36	44	57	55	57	54	55	57	56	56	59	60	60	56	58	56	S 50	S 48	S 44

AUG. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984
FOF1 (0.01 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							A	410	430	440	450	450	460	450	450	R	A	420	C	C				
2							A	A	A	420	A	A	450	A	440	420	A	A	A					
3							L	A	430	A	A	450	460	A	A	A	A	A	A					
4							A	400	A	A	450	A	460	460	460	H	460	420	400	L	L			
5							L	A	460	A	450	H	440	A	A	470	420	410	A	A				
6							L	390	A	A	A	A	A	A	A	460	A	A	L					
7							A	420	440	460	L	A	A	A	450	A	A	A	A					
8						L	A	A	A	490	L	480	470	460	450	440	430	410	L	L				
9							L	400	L	450	L	470	480	460	460	A	A	C	L					
10							350	440	A	440	A	A	460	460	440	440	420	U	L	380	L			
11							A	H	390	430	A	460	470	470	460	H	460	430	410	U	L	L		
12							A	U	L	390	420	460	470	480	H	550	460	470	H	430	420	L	390	L
13							L	410	430	430	470	470	430	A	470	430	430	H	L	A				
14							U	L	400	A	450	L	470	480	450	480	A	A	A	A	A			
15							L	A	430	430	450	L	460	450	450	A	A	A	A	L				
16							A	A	A	A	A	A	A	A	A	450	420	H	A	A	A			
17							L	L	410	A	440	440	460	H	A	420	A	400	L	L				
18							A	A	A	A	A	A	A	450	440	430	A	A	A					
19								390	410	440	460	A	A	460	430	430	H	A	A	A				
20								400	L	A	A	A	440	A	440	H	440	A	400	L	A			
21							L	380	410	430	A	A	460	A	A	420	400	L	L					
22							L	A	A	A	A	A	A	A	A	430	A	U	L	410	A	A		
23								A	A	A	L	440	H	470	R	440	A	A	A	U	L	350	L	
24								380	420	420	A	A	430	430	A	A	A	A	A					
25							L	360	A	420	A	A	A	A	A	A	390	L	A					
26							U	L	340	A	A	A	A	U	L	450	A	590	A	H	410	A	360	A
27								A	A	A	A	460	A	450	440	410	400	L	A	A				
28								310	A	A	420	430	430	430	440	A	A	A	360	A				
29								A	A	A	A	440	450	440	440	440	H	430	A	A				
30								U	L	400	A	A	L	450	460	450	460	L	450	A	A	A	A	
31								A	A	A	450	460	440	H	460	L	440	A	A	A				
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						3	16	12	15	14	19	20	20	21	16	14	8							
MED						340	400	430	440	450	460	460	460	450	430	410	385							
UQ						345	405	430	450	460	470	465	460	460	435	420	405							
LQ						325	390	415	425	450	445	445	445	440	420	L	L							

IONOSPHERIC DATA

AUG. 1984

FOE (0.01 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						A	A	A	A	A	A	350	350	345	345	315	290	C	C					
2	S					B	A	A	A	A	A	350	350	350	340	320	290	250	A					
3						S	235	A	A	A	A	350	355	350	340	320	300	260	H	200				
4						S	220	H	270	300	325	340	340	355	A	350	H	330	300	260	A			
5						S	215	A	A	A	A	335	340	A	A	A	A	A	A	A	A			
6						S	240	A	A	A	A	A	A	A	A	A	325	290	250	A				
7						S	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
8						S	A	A	A	A	A	A	A	A	A	A	A	A	250	A				
9						B	A	A	A	A	325	340	R	A	A	A	345	A	300	C	A			
10						S	200	A	A	A	A	A	A	A	350	340	320	290	250	A	190			
11						A	A	A	A	A	A	A	A	A	A	A	A	300	260	A				
12						A	A	A	A	A	A	360	360	A	345	325	290	A	A					
13						220	255	A	A	A	A	A	A	A	A	A	A	295	255	A				
14						215	265	300	330	350	A	A	A	A	A	A	A	A	A	A				
15						190	260	285	320	A	A	A	A	A	A	A	A	A	A	A				
16						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
17						A	A	A	A	325	340	350	345	335	315	280	A	A						
18						H	210	H	255	280	310	320	A	A	A	A	A	A	A	A				
19						A	A	300	330	A	A	A	A	340	325	305	280	240	A					
20						205	260	290	A	A	A	A	A	A	335	310	280	235	A					
21						210	260	295	310	335	A	A	A	A	305	275	240	A						
22						A	260	295	315	330	340	A	A	A	305	280	A	A						
23						A	A	A	A	A	340	A	A	340	325	295	275	A	A					
24						A	A	A	A	A	A	A	A	A	A	300	A	220	A					
25						195	250	A	300	310	A	A	A	A	330	300	A	A	A					
26						A	A	A	A	A	A	A	A	A	A	305	H	270	H	230	A			
27						A	A	A	A	A	A	A	A	A	A	320	280	A	A					
28						200	A	A	A	A	A	A	A	A	330	315	280	225	A					
29						A	A	A	A	A	A	350	A	350	340	310	A	230	S					
30						180	A	A	A	A	A	A	A	A	A	A	A	A	A					
31						190	255	A	A	A	A	A	A	R	350	340	320	280	A	A				
CNT							15	10	8	9	10	9	6	9	15	20	20	15	2					
MED							210	260	295	320	335	350	352	350	340	315	285	250	195					
UQ							218	260	300	325	340	350	355	350	342	320	292	252						
LQ							198	255	288	310	325	340	350	345	332	305	280	232						

AUG. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

AUG. 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 107	J A 82	J A 58	J A 70	J A 37	J A 30	J A 53	J A 67	J A 45	37	35	40	44	36	J A 44	74	J A 44	C	C	C	C	J A 23	22	19	
2	18	J A 29	J A 79	36	J A 53	J A 29	J A 52	59	58	J A 84	44	46	43	J A 68	J A 63	J A 52	J A 61	J A 172	J A 86	J A 133	J A 88	J A 89	J A 79	J A 44	
3	J A 86	J A 79	52	J A 45	J A 29	J A 43	J A 36	J A 53	J A 74	D 200	J A 81	42	44	J A 53	J A 54	45	71	J A 79	J A 63	56	J A 86	J A 122	J A 64	J A 81	
4	J A 54	J A 32	J A 26	J A 25	J A 19	18	J A 45	J A 47	J A 77	J A 86	48	J A 81	43	J A 51	G	41	35	J A 42	J A 35	J A 23	J A 29	J A 81	J A 30	J A 56	
5	J A 86	J A 63	J A 65	J A 80	J A 53	J A 27	30	55	56	J A 80	J A 48	38	J A 153	J A 158	J A 54	J A 47	J A 55	J A 64	J A 39	J A 28	18	20	J A 80	J A 54	
6	J A 53	J A 42	J A 63	J A 36	J A 53	J A 25	J A 41	J A 42	60	J A 64	J A 70	J A 84	65	72	J A 54	50	J A 69	60	28	J A 104	J A 86	J A 81	J A 31	J A 24	
7	J A 30	J A 52	J A 31	J A 27	J A 24	J A 22	J A 43	J A 43	J A 56	J A 54	35	J A 93	J A 99	J A 102	60	J A 52	J A 80	J A 67	J A 84	J A 54	J A 30	20	J A 21	J A 80	
8	J A 27	58	J A 35	J A 30	J A 27	J A 29	J A 47	J A 69	J A 86	J A 68	J A 54	41	J A 45	38	J A 38	J A 38	J A 83	51	J A 35	J A 53	J A 107	J A 63	J A 42	J A 57	
9	J A 34	J A 73	J A 21	J A 27	21	J A 22	J A 33	J A 33	33	39	41	41	49	J A 51	J A 61	J A 54	J A 52	C	51	60	J A 42	J A 30	J A 35	J A 34	
10	J A 34	J A 44	J A 29	J A 41	J A 26	J A 20	23	33	107	J A 67	J A 111	J A 88	J A 36	37	36	24	32	27	J A 32	J A 18	J A 51	J A 26	J A 44	J A 68	
11	J A 61	J A 35	J A 69	J A 44	J A 29	J A 34	J A 61	J A 49	J A 92	J A 53	J A 51	J A 46	J A 44	39	J A 53	J A 43	34	G	J A 46	J A 33	J A 40	J A 43	J A 82	J A 20	
12	J A 24	J A 44	J A 67	J A 65	70	J A 51	J A 50	J A 50	J A 44	J A 36	J A 82	33	G	J A 61	J A 40	27	J A 33	31	J A 29	J A 29	J A 29	J A 27	J A 28	J A 20	
13	27	18	J A 21	20	J A 18	22	J A 30	29	34	J A 49	J A 47	J A 49	J A 66	J A 82	49	35	36	J A 54	J A 102	J A 114	J A 54	J A 30	J A 32	J A 29	
14	J A 26	J A 33	J A 20	23	J A 22	19	J A 30	32	J A 51	J A 43	42	J A 51	42	J A 79	J A 82	81	J A 84	J A 184	J A 84	J A 86	J A 78	61	J A 54	J A 77	
15	J A 85	J A 61	J A 31	J A 25	E S 14	J A 19	26	J A 64	J A 55	J A 52	J A 61	J A 78	J A 48	J A 50	J A 92	J A 102	J A 79	J A 86	33	J A 143	J A 119	J A 91	J A 93	J A 99	
16	J A 57	J A 35	J A 29	J A 31	J A 24	J A 107	52	J A 51	78	J A 112	J A 111	J A 122	J A 88	J A 72	J A 45	J A 46	70	J A 65	J A 111	J A 65	J A 53	J A 34	J A 54	J A 26	
17	J A 37	J A 30	J A 29	J A 42	J A 29	J A 24	J A 29	J A 64	J A 50	J A 64	38	44	37	44	40	J A 59	J A 38	33	J A 30	J A 38	J A 142	J A 110	J A 33	J A 41	
18	J A 66	J A 20	21	J A 19	J A 18	J A 25	J A 23	J A 44	J A 62	J A 50	J A 57	57	J A 57	J A 48	J A 39	J A 54	J A 50	49	J A 45	J A 25	J A 51	J A 64	J A 53	J A 50	
19	J A 33	J A 54	J A 29	J A 30	J A 22	J A 17	25	33	40	42	41	J A 53	J A 62	43	36	41	J A 47	J A 48	J A 64	60	J A 33	J A 41	31	J A 87	
20	J A 33	J A 52	J A 22	23	J A 20	J A 29	27	36	J A 52	J A 48	J A 64	38	J A 45	38	39	J A 60	J A 42	31	72	J A 52	24	E S 16	J A 24	J A 24	
21	E S 15	E S 15	J A 34	J A 38	J A 29	J A 25	J A 21	33	J A 43	J A 47	J A 52	J A 47	J A 58	97	J A 88	37	32	29	J A 30	J A 30	J A 30	J A 53	J A 33	J A 79	
22	J A 57	J A 50	J A 33	J A 21	J A 24	17	28	J A 48	43	J A 46	J A 50	J A 47	J A 52	J A 47	J A 54	J A 51	35	J A 59	J A 48	J A 52	J A 89	21	37	42	
23	J A 31	J A 30	J A 26	J A 24	J A 31	J A 37	J A 33	J A 51	J A 58	J A 49	41	42	42	J A 54	47	J A 66	J A 41	J A 38	32	J A 70	J A 81	J A 66	J A 53	J A 44	
24	J A 34	J A 31	J A 28	J A 26	J A 22	J A 23	J A 24	27	37	J A 41	J A 143	J A 51	J A 43	J A 41	43	J A 49	J A 53	J A 51	J A 52	J A 61	J A 85	J A 60	J A 85	J A 74	
25	J A 75	J A 34	J A 29	J A 26	J A 29	J A 50	32	30	J A 42	J A 49	J A 47	91	J A 44	J A 86	50	J A 47	J A 37	J A 34	J A 68	J A 65	J A 64	J A 64	J A 35	J A 54	
26	J A 34	J A 29	J A 29	J A 26	J A 28	J A 26	J A 35	J A 63	J A 99	J A 72	J A 79	57	J A 66	80	J A 64	33	45	35	J A 91	J A 112	J A 142	J A 82	58	J A 84	
27	J A 86	J A 29	J A 31	J A 30	19	J A 22	24	J A 73	J A 69	J A 63	J A 63	45	J A 65	J A 50	J A 67	G	35	J A 64	J A 68	J A 52	J A 54	J A 26	J A 39	J A 51	
28	J A 31	J A 33	J A 22	J A 49	J A 23	J A 25	31	40	52	39	J A 46	J A 44	J A 50	J A 44	J A 60	J A 58	J A 74	J A 59	J A 48	J A 46	J A 59	J A 125	J A 54	J A 33	
29	J A 21	J A 19	J A 21	19	15	J A 28	J A 45	J A 73	J A 83	J A 67	J A 49	33	G	38	G	G	33	53	J A 42	J A 53	J A 30	J A 64	J A 64	J A 54	J A 25
30	24	J A 24	25	20	E S 16	23	22	35	59	J A 53	J A 44	J A 43	J A 42	J A 44	J A 45	J A 50	J A 46	J A 51	J A 64	J A 65	J A 79	J A 79	J A 65	J A 51	
31	J A 47	J A 52	J A 30	J A 49	J A 48	J A 40	28	J A 52	J A 50	J A 53	40	39	36	G	G	49	J A 72	55	25	J A 29	J A 29	J A 21	J A 30	J A 88	
	00	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	29	30	30	30	31	31	31	
MED	J A 34	J A 35	J A 29	J A 30	J A 24	J A 25	J A 31	J A 48	J A 56	J A 53	J A 49	46	J A 45	J A 50	J A 49	J A 49	J A 47	J A 51	J A 50	J A 54	J A 56	J A 60	J A 42	J A 51	
UQ	J A 59	J A 52	J A 34	J A 42	J A 29	J A 30	J A 44	J A 57	J A 72	J A 67	J A 64	J A 57	J A 62	J A 72	J A 60	J A 54	J A 70	J A 64	J A 68	J A 65	J A 86	J A 80	J A 56	J A 76	
LQ	J A 28	J A 30	J A 26	J A 24	J A 20	J A 22	26	34	J A 44	J A 46	43	42	43	40	39	40	36	J A 35	J A 33	J A 30	J A 33	J A 27	J A 32	J A 31	

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FOES (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984

FBES (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	28	A A 82	A A 58	40	20	19	44	34	34	35	34	40	43	36	36	A A 74	32	C	C	C	C	19	E	E
2	G	21	16	25	32	17	A A 52	A A 59	40	34	44	43	40	A A 68	40	40	48	A A 72	A A 86	17	A A 88	50	E	E
3	E	A A 79	29	26	20	31	29	44	40	D A 200	55	40	41	45	53	44	51	61	51	19	16	26	26	47
4	33	19	E	16	E	17	34	35	A A 77	A A 86	43	A A 81	42	43	G	40	33	27	23	16	E	E	19	47
5	17	28	15	A A 80	24	20	28	41	37	49	39	37	66	A A 158	43	38	39	A A 64	34	16	E	E	20	27
6	25	20	40	25	19	15	22	33	51	56	48	A A 84	A A 65	A A 72	51	45	43	40	26	30	18	E	19	E
7	16	26	20	20	E	17	40	40	40	41	35	A A 93	A A 99	53	40	49	A A 80	47	50	43	19	18	18	19
8	15	18	35	22	22	23	45	45	44	40	39	40	40	36	36	33	35	33	24	25	37	38	34	38
9	21	A A 73	E	E	E	16	23	30	33	39	40	40	40	39	40	46	42	C	30	19	18	18	24	E
10	31	21	28	37	25	18	22	31	45	39	A A 111	45	36	37	36	G 24	32	26	17	E	39	20	28	27
11	28	19	24	22	E	22	A A 61	33	39	47	40	43	43	39	45	36	G	G	30	31	37	24	50	E
12	E	E	A A 67	A A 65	A A 70	26	49	35	40	36	39	G 32	31	38	G 26	31	30	26	20	E	20	E	16	E
13	E	E	15	E	E	E	18	29	34	35	36	41	40	50	38	34	G	30	42	49	E	18	20	E
14	E	20	17	E	14	E	19	31	44	42	40	47	40	42	A A 82	46	44	A A 184	31	46	27	20	23	A A 77
15	A A 85	46	21	E	E S 14	E	21	40	42	37	42	39	38	43	60	A A 102	51	A A 86	23	40	33	A A 91	45	A A 99
16	43	23	20	22	E	16	36	50	A A 78	A A 112	A A 111	47	A A 88	45	37	40	62	56	A A 111	46	22	25	28	20
17	29	28	26	32	20	16	24	47	40	A A 64	36	39	37	44	40	49	36	32	29	36	25	39	28	E
18	A A 66	E	E	E	E	17	23	43	60	46	A A 57	A A 57	53	44	36	34	42	43	43	16	44	A A 64	A A 53	21
19	26	E	20	16	15	E	25	33	40	41	39	46	48	40	35	40	40	45	51	52	32	29	17	32
20	E	E	E	E	E	24	25	35	43	46	54	36	45	38	36	56	34	28	63	48	19	E S 16	E	16
21	E S 15	E S 15	20	27	E	19	17	31	40	42	48	46	40	A A 97	A A 88	34	31	27	29	21	25	19	E	27
22	E	E	16	E	E	17	25	40	41	45	46	45	50	45	39	44	30	48	38	37	42	E	19	E
23	19	E	19	E	17	36	28	42	41	43	36	40	41	39	45	46	40	31	16	62	A A 81	27	33	35
24	27	24	17	17	16	16	23	27	35	38	A A 143	46	35	40	43	47	43	48	52	57	46	26	29	A A 74
25	A A 75	27	25	18	22	23	27	28	40	34	46	A A 91	A A 44	A A 86	49	43	34	24	32	26	20	31	18	28
26	22	20	22	15	14	16	30	55	48	A A 72	A A 79	44	A A 66	58	A A 64	33	42	31	A A 91	30	30	20	45	18
27	21	E	19	20	E	E	23	54	A A 69	45	47	44	46	35	40	G	31	46	42	24	23	E	16	15
28	25	16	19	A A 49	E	15	30	40	A A 52	38	40	37	38	37	A A 60	A A 58	A A 74	28	43	41	52	A A 125	A A 54	E
29	E	E	15	E	15	23	33	55	A A 83	44	40	G 33	36	G 30	G 27	G 33	49	41	30	E	17	A A 64	25	15
30	E	16	E	E	E S 16	E	22	34	50	52	39	39	40	44	43	48	44	49	A A 64	A A 65	A A 79	A A 79	22	16
31	31	20	27	20	20	22	26	47	43	51	40	37	36	G 28	G 29	45	A A 72	35	24	23	E	E	30	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	30	30	30	31	31	31
MED	21	20	20	20	14	17	26	40	41	43	40	43	41	43	40	43	40	40	33	30	25	20	23	19
UQ	28	25	26	26	20	22	34	44	49	50	48	46	47	48	47	46	46	48	51	46	39	34	30	32
LQ		E	16	E	E	16	23	33	40	38	39	39	39	38	36	34	32	28	26	19	18	17	18	E

AUG. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984

FMIN (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	13	E S 14	E S 14	E S 14	E S 14	E S 14	13	14	15	16	16	19	16	19	20	20	15	C	C	C	C	13	E S 15	E S 15
2	E S 15	13	13	E S 15	E S 14	13	13	14	15	15	16	20	20	20	20	15	17	15	14	13	E S 16	E S 15	E S 16	E S 16
3	E S 16	E S 15	E S 14	13	13	E S 15	14	14	15	15	17	18	19	20	16	16	15	15	16	E S 14	E S 15	E S 14	E S 15	E S 14
4	E S 15	E S 14	E S 15	13	E S 14	E S 15	13	14	14	15	19	16	22	19	15	15	15	13	14	E S 14	E S 14	E S 15	E S 15	E S 15
5	E S 15	13	13	13	E S 15	E S 14	14	15	14	14	15	19	19	20	16	15	15	14	14	E S 14	E S 15	E S 15	E S 15	E S 14
6	E S 15	13	13	E S 14	13	E S 14	14	15	15	15	19	19	20	19	15	17	14	14	13	13	E S 15	E S 15	E S 15	E S 16
7	E S 15	E S 14	E S 15	E S 15	E S 15	E S 14	13	14	14	16	17	19	19	20	19	15	14	13	15	E S 15	E S 15	E S 15	E S 15	E S 15
8	E S 14	E S 14	E S 15	E S 15	E S 15	E S 14	14	14	14	15	21	20	20	17	23	15	14	14	13	E S 14	E S 15	E S 14	E S 16	E S 16
9	13	E S 14	E S 15	13	E S 15	13	15	16	15	15	16	19	17	19	16	16	15	C	14	E S 14	E S 15	E S 15	E S 15	E S 15
10	E S 15	E S 14	13	E S 14	13	E S 14	14	14	15	16	20	19	20	16	19	19	14	15	13	E S 15	E S 14	E S 15	E S 15	E S 15
11	E S 15	13	E S 15	E S 14	E S 15	13	13	14	14	17	15	16	17	19	15	15	15	14	13	E S 15	E S 16	E S 15	E S 15	E S 15
12	E S 15	E S 14	E S 14	13	E S 15	E S 15	13	13	14	15	15	15	15	15	15	15	13	13	14	E S 15	E S 14	E S 15	E S 14	E S 15
13	E S 16	E S 14	13	E S 15	E S 14	E S 15	14	14	14	16	15	17	20	20	16	15	16	14	13	E S 15	E S 16	E S 15	E S 15	E S 15
14	E S 15	E S 14	E S 14	E S 15	13	E S 15	13	14	14	16	15	17	16	20	20	16	14	13	14	13	E S 15	E S 15	E S 15	E S 15
15	E S 15	E S 15	E S 14	E S 15	E S 14	E S 16	E S 15	13	15	18	20	16	19	17	15	14	15	13	14	E S 14	E S 15	E S 15	E S 16	E S 15
16	E S 15	13	13	13	E S 15	E S 14	15	14	14	15	16	19	20	19	15	14	14	14	13	E S 15	E S 15	E S 16	E S 15	E S 15
17	E S 15	E S 14	13	E S 15	E S 14	E S 14	14	13	15	15	18	19	18	16	16	15	15	15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 14
18	E S 14	E S 14	13	E S 15	E S 15	13	14	14	15	15	16	19	19	16	15	16	14	13	14	E S 14	E S 15	E S 14	E S 14	E S 15
19	E S 14	E S 15	13	E S 14	13	E S 15	14	14	19	20	15	16	16	21	19	14	14	13	13	E S 15	E S 15	E S 15	E S 15	E S 15
20	E S 16	E S 14	13	13	13	E S 14	E S 14	14	14	15	15	17	20	16	16	14	15	13	13	E S 14	E S 15	E S 16	E S 15	E S 14
21	E S 15	E S 15	E S 15	E S 14	E S 14	E S 14	13	15	15	14	15	15	16	16	15	14	13	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
22	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	14	14	14	19	20	15	16	15	14	14	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
23	E S 14	E S 14	13	E S 15	E S 15	13	14	15	14	15	15	19	16	19	15	14	15	13	13	E S 15	E S 15	13	E S 16	E S 15
24	E S 15	E S 14	E S 15	E S 15	E S 15	E S 15	16	14	15	14	14	15	15	14	15	15	14	14	14	E S 14	E S 15	E S 15	E S 15	E S 15
25	13	13	13	E S 14	E S 15	E S 14	E S 15	13	14	15	15	19	16	17	19	14	14	14	13	13	E S 15	E S 14	E S 15	E S 14
26	E S 15	13	13	E S 14	13	13	13	13	14	15	15	17	19	19	16	15	14	14	13	13	E S 15	E S 15	E S 15	E S 15
27	E S 15	E S 15	E S 14	E S 14	E S 16	E S 15	15	13	14	15	18	19	22	19	20	15	14	13	13	E S 15	E S 14	E S 15	E S 15	E S 14
28	E S 14	E S 14	13	13	13	13	13	13	14	15	17	21	19	20	19	14	14	13	13	13	E S 14	E S 14	E S 15	E S 15
29	E S 15	E S 14	13	13	13	E S 14	13	14	15	19	16	22	21	16	14	14	15	15	E S 15	E S 16	E S 15	E S 16	13	
30	E S 16	13	E S 15	E S 15	E S 16	E S 16	13	15	14	15	17	15	15	15	19	16	14	15	14	E S 14	E S 15	E S 14	13	E S 14
31	E S 15	13	13	E S 14	E S 14	13	E S 14	13	15	15	16	17	15	17	15	14	14	13	14	E S 15	E S 15	E S 15	E S 15	E S 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	31	31	31	31	31	31	31	31	29	30	30	30	31	31	31
MED	E S 15	E S 14	13	E S 14	E S 14	E S 14	14	14	14	15	16	19	19	19	16	15	14	14	14	E S 14	E S 15	E S 15	E S 15	E S 15
UQ	E S 15	E S 14	E S 15	E S 15	E S 15	E S 15	14	14	15	16	18	19	20	20	19	16	15	14	14	E S 15	E S 15	E S 15	E S 15	E S 15
LQ	E S 14	13	13	13	13	14	13	14	14	15	15	16	16	16	15	14	14	13	13	E S 14	E S 15	E S 14	E S 15	E S 14

AUG. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984

M(3000)F2 (0.01)

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	A	A	S	I S 300	F	310	320	325	310	310	310	290	285	270	A	280	C	C	C	C	280	305	290			
2	295	280	295	305	295	S	A	A	285	300	280	310	R	R	A	G	290	A	A	A	310	A	I S 290	S 310	290		
3	F	A	S	I S 290	I S 290	S	300	300	340	A	310	320	305	310	320	305	310	320	315	300	290	S	I S 300	S 290	S 310		
4	310	J S 300	U S 320	310	300	S	300	320	325	A	A	300	A	280	340	330	275	305	325	325	310	300	290	I 290	I S 280		
5	U S 290	U S 290	S 335	A	F	S	305	305	310	295	340	300	310	A	A	310	320	315	A	320	315	325	S	320	S	I S 310	
6	S	S	S	F	F	S	300	325	345	320	A	320	A	A	A	305	310	325	325	325	315	I S 305	S 295	S 305	J S 315		
7	S	F	F	F	325	S	290	S 310	355	S 330	270	A	A	310	315	305	A	J S 310	J S 305	S 310	305	305	280	S	S 300		
8	S	290	I S 290	S 300	295	300	310	340	340	305	290	275	295	305	310	300	315	300	300	310	315	280	310	S	S 300		
9	U S 310	A	U S 290	S 300	325	315	S 330	325	J S 330	310	290	300	300	310	305	305	290	I C 300	285	310	J S 305	295	305	295	S		
10	290	290	305	310	310	310	320	270	285	295	A	315	300	295	290	300	320	320	315	320	295	310	280	I S 280	S		
11	280	290	280	I 290	F	I S 300	A	335	345	320	310	320	310	285	290	300	320	315	305	305	305	S	F	S	U S 300		
12	S	S	A	A	A	S	310	335	340	330	325	300	305	290	300	300	300	310	295	285	S	300	320	280	280	290	
13	290	285	280	280	285	285	285	320	S	330	330	320	310	270	310	280	310	305	300	S	300	300	310	280	S	I S 280	U S 290
14	F	J S 290	S 300	300	295	300	320	330	330	340	310	310	305	320	A	300	310	A	310	280	300	320	J S 320	A	A		
15	A	S	S	F	290	S	300	320	330	340	330	330	275	285	300	280	A	315	A	305	300	285	A	280	A		
16	F	F	295	295	280	280	310	320	A	A	A	305	A	305	300	300	300	320	A	305	290	J S 275	290	J S 290	S		
17	290	300	290	305	300	295	S 330	280	S 350	A	315	330	300	300	320	R	315	330	320	315	310	305	S	S	305		
18	A	F	S	305	295	310	S	290	290	335	A	350	A	315	310	310	315	310	300	310	330	320	A	A	S	290	
19	I S 295	S 305	F	320	300	S	290	310	315	325	340	325	J R 310	340	310	R	305	335	320	305	305	S 320	J S 315	305	J S 285	S	
20	290	S	300	S 305	F	295	300	H 320	315	335	330	300	275	320	320	315	315	315	310	S	320	330	285	J S 300	S 300		
21	295	S	S	I S 300	F	S	310	S 310	325	340	J S 320	315	305	310	A	A	315	330	335	320	320	300	S	S	S	S	
22	295	S	F	I S 305	F	F	315	335	325	330	S 335	325	310	325	320	330	325	310	I S 325	S 325	S 320	340	S 305	305	S 295	S	
23	S	S	S	315	310	S	325	335	325	345	320	300	295	310	305	320	330	320	S	I S 320	S 315	A	320	295	I S 290	S	
24	290	F	F	F	290	S	290	H 340	330	S 305	A	300	320	305	290	300	305	320	S	300	310	315	290	J S 300	A	A	
25	A	305	285	S 335	295	F	290	S 310	285	320	G	A	A	A	A	300	310	315	300	315	305	290	S 305	295	S 320	S	
26	S	S	S	F	F	F	315	340	335	A	A	300	A	A	A	315	320	320	A	305	325	F	A	A	S	S	
27	I S 295	S 300	I S 290	F	300	S	310	300	355	A	335	305	310	310	310	310	315	J S 325	S 330	315	S 305	315	I S 305	I S 300	U S 290		
28	310	290	310	A	290	S	240	300	320	A	G	G	G	305	295	A	A	A	315	315	290	S 320	A	A	S	280	
29	290	S	F	F	F	280	S	295	275	A	A	R	310	270	300	290	305	315	310	335	330	330	305	305	A	S	S
30	275	S	290	U S 285	315	S	305	290	295	335	330	S 320	325	320	325	310	325	310	320	320	A	A	A	A	S	F	
31	S	285	S 300	S 270	F	290	S	J S 320	A	320	315	315	320	330	315	315	325	A	335	320	300	310	300	S	S	330	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	23	20	22	19	22	28	29	28	25	25	25	26	25	25	27	28	27	26	26	29	27	22	22	23			
MED	295	290	298	305	298	S 300	310	325	330	320	310	310	305	310	310	310	315	320	315	310	305	S 298	S 298	S 295			
UQ	300	298	305	310	305	S 308	320	335	340	335	320	310	310	310	318	315	320	325	320	315	318	S 305	305	S 302			
LQ	290	285	290	295	290	S 290	300	318	320	310	300	300	290	300	295	300	310	305	305	305	300	S 285	S 285	S 290			

AUG. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

AUG. 1984

M(3000)F1 (0.01)

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							A	365	380	380	370	360	355	350	350	R	A	345	C	C				
2							A	A	A	355	A	A	375	A	345	350	A	A	A					
3							L	A	350	A	A	375	360	A	A	A	A	A	A					
4							A	350	A	A	380	A	360	370	360	H	340	340	345	L	L			
5							L	A	345	A	390	390	A	A	A	A	380	A	A	A				
6							L	385	A	A	A	A	A	A	A	A	A	A	A	L				
7							A	A	375	350	L	A	A	A	365	A	A	A	A					
8					L	A	A	A	A	L	L	360	355	360	370	360	350	340	L	L				
9							L	L	355	L	360	L	360	355	350	345	A	A	C	L				
10							345	340	A	340	A	A	365	350	360	350	340	U	L	340	L			
11							A	A	355	A	380	380	370	390	A	370	340	U	L	355	L			
12							A	A	A	370	375	370	H	310	370	340	H	355	340	L	335	L		
13							L	345	340	400	390	375	400	A	350	360	340	H	L	A				
14							U	L	360	A	360	375	A	400	375	A	A	A	A	A				
15							L	A	A	400	A	380	375	A	A	A	A	A	A	L				
16							A	A	A	A	A	A	A	A	A	340	A	A	A	A				
17							L	L	A	A	380	370	360	H	A	355	A	A	L					
18							A	A	A	A	A	A	A	A	340	340	A	A	A					
19							L	350	380	A	390	A	A	365	370	A	A	A	A					
20							L	340	A	A	A	390	A	360	350	H	A	L	355	L	A			
21							L	360	A	A	A	A	370	A	A	350	340	L						
22							L	A	A	A	A	A	A	A	375	A	U	L	345	A	A			
23							A	A	A	L	365	A	350	R	A	A	A	A	L					
24							L	340	350	350	A	A	355	360	A	A	A	A						
25							L	340	A	365	A	A	A	A	A	A	335	L	A					
26							U	L	340	A	A	A	A	A	A	A	H	A	L	A				
27							A	A	A	A	A	A	A	350	345	355	345	L	A	A				
28							A	A	A	370	380	375	345	345	A	A	A	340	A					
29							A	A	A	A	370	370	380	375	360	345	H	A	A					
30							U	L	350	A	A	L	370	370	A	A	A	A	A					
31							A	A	A	360	360	390	360	375	L	A	A	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	13	8	13	13	16	19	16	18	13	12	7						
MED							342	350	352	360	380	370	365	360	352	350	340	340	L					
UQ							360	378	370	380	378	375	370	365	360	345	345	L						
LQ							L	340	348	355	370	362	355	350	345	345	340	340						

AUG. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

AUG. 1984

H^oF2 (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							E A 320	280	245	335	310	350	385	415	500	A	385	C	C					
2							A	A	420	360	465	365	445	A	G	385	A	A	A					
3							L 330	320	265	A	E A 330	315	350	320	295	320	315	A	E A 305					
4							270	280	A	A	380	A	430	290	320	490	370	330	265					
5							275	310	405	295	335	325	A	A	330	305	300	A	270					
6							260	260	A	A	340	A	A	A	330	305	295	285	255					
7							E A 345	275	220	250	450	A	A	305	310	310	A	265	E A 260					
8							E A 305	290	240	245	345	365	460	370	320	315	325	285	310	280				
9							270	240	250	315	L 330	360	330	315	295	330	330	I C 300	300					
10							295	490	420	355	A	305	360	400	385	340	305	265	250					
11							A	265	255	285	335	305	330	355	325	285	275	290	290					
12							245	245	265	305	345	315	400	320	320	310	315	320	300					
13							260	245	255	310	295	270	H 315	325	300	305	285	275						
14							240	250	255	320	320	305	305	A	310	295	A	280						
15							270	290	270	300	290	415	345	315	E A 345	A	275	A	265					
16							320	E A 290	A	A	A	295	A	315	315	305	E A 335	255	A					
17							250	365	225	A	330	290	345	335	285	295	280	270						
18							260	A	250	A	A	345	A	335	335	325	325	315	260					
19							285	275	250	285	295	290	315	345	305	305	300	E A 290	A					
20							285	285	280	265	360	520	320	300	E A 330	290	275	A						
21							300	260	255	290	320	330	300	A	A	285	275	260						
22							250	275	250	270	305	320	305	325	305	335	310	E A 295	255					
23							250	230	275	365	340	355	370	310	290	280	260	255						
24							265	300	365	A	380	295	345	420	345	305	270							
25							285	395	325	G	A	A	A	A	390	A	335	300	310	275				
26							295	250	285	A	A	370	A	A	A	330	295	275	A					
27							A 250	A	265	330	330	305	305	325	285	250	245	E A 280						
28							350	300	A	G	G	G	330	385	A	A	A	325	E A 300					
29							375	A	A	E A 340	520	405	440	350	345	350	295	280						
30							270	300	260	295	300	300	320	300	305	280	280	A						
31							A	315	E A 320	330	310	280	355	330	300	A	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						1	19	28	24	25	25	26	25	25	27	28	27	25	20					
MED						305	280	270	265	290	330	328	345	320	325	310	298	280	268					
UQ						309	290	300	340	365	365	370	350	345	332	310	300	284						
LQ						268	255	248	265	310	305	305	315	310	302	282	265	260						

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H^oF2 (KM)

IONOSPHERIC DATA

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H^oF (KM)

135° E Mean Time (G.M.T. + 9h)

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	E A 280	A	A	E A 345	E A 295	H 255	A	225	200	185	185	235	E A 245	220	220	A	235	C	C	C	C	E A 335	285	220		
2	280	305	280	A	A	270	A	A	A	205	A	A	H 230	A	A	A	A	A	A	255	A	A	275	285		
3	305	A	E A 345	E A 350	E A 315	E A 325	E A 260	A	E A 245	A	A	215	E A 260	A	A	A	A	A	A	245	240	285	E A 300	E A 320		
4	E A 310	250	265	270	280	255	H 250	A	A	A	E A 275	A	E A 265	E A 270	200	E A 250	185	235	245	250	260	265	295	A		
5	265	A	245	A	E A 345	260	E A 250	A	E A 250	A	195	195	H 195	A	A	A	230	A	A	A	250	225	250	325	295	
6	300	E A 320	E A 335	280	260	250	235	215	A	A	A	A	A	A	A	A	A	A	A	A	275	255	280	295	260	
7	235	E A 295	295	280	270	255	H 255	A	A	220	215	185	H 185	A	A	A	235	A	A	A	A	E A 250	230	280	295	260
8	290	270	E A 295	E A 285	295	E A 285	A	A	A	195	190	195	H 205	210	200	205	E A 240	E A 255	250	230	255	E A 330	250	E A 325		
9	285	A	260	265	265	255	215	220	185	H 195	H 200	H 200	H 205	220	225	A	A	C	E A 270	240	245	275	265	260		
10	E A 315	285	E A 320	E A 310	250	265	H 205	220	A	E A 265	A	A	205	195	H 195	H 220	225	H 235	230	230	A	265	E A 360	E A 355		
11	E A 325	270	E A 310	255	250	250	A	A	A	A	215	205	E A 250	200	A	235	215	220	E A 275	250	E A 270	295	E A 350	245		
12	245	275	A	A	A	260	A	A	A	210	210	185	235	H 205	200	220	220	225	255	245	230	255	270	255		
13	255	285	265	285	275	255	220	230	220	175	200	210	175	H 215	215	225	H 245	E A 245	A	E A 245	215	275	295	245		
14	250	270	255	255	260	255	230	H 215	A	E A 250	200	A	205	E A 245	A	A	A	A	A	A	270	210	255	A		
15	A	A	305	305	285	275	240	A	A	A	210	A	200	215	A	A	A	A	E A 250	E A 280	E A 295	A	A	A		
16	A	260	250	305	275	285	A	A	A	A	A	A	A	A	E A 250	A	A	A	A	E A 290	270	285	E A 295	265		
17	E A 300	E A 320	E A 295	E A 300	E A 290	255	235	A	A	A	185	205	205	H 205	A	E A 250	A	A	E A 240	255	E A 260	E A 255	A	E A 360	255	
18	A	255	270	275	250	280	235	A	A	A	A	A	A	A	225	225	H 225	A	A	A	225	A	A	305		
19	E A 315	280	255	225	265	275	235	220	E A 250	A	195	A	A	220	205	A	A	A	A	A	240	230	255	260	E A 310	
20	275	275	260	255	280	E A 300	215	E A 250	A	A	A	180	H 180	A	215	H 230	A	E A 250	E A 250	A	E A 250	230	280	H 285	270	
21	265	270	265	250	285	255	210	225	A	A	A	A	230	A	A	215	215	255	235	220	255	315	260	A		
22	280	265	255	255	265	255	230	A	A	A	A	A	A	A	E A 265	A	220	A	A	265	E A 265	235	270	265		
23	275	275	275	275	260	A	H 235	A	A	A	180	195	H 195	A	E A 255	A	A	A	A	235	E A 290	A	230	E A 335	E A 345	
24	E A 320	E A 325	280	325	325	250	235	220	235	225	A	A	180	H 245	A	A	A	A	A	A	E A 275	E A 270	E A 270	A		
25	A	E A 355	E A 350	250	345	E A 375	E A 265	250	A	195	A	A	A	A	A	A	E A 250	235	A	E A 275	260	E A 290	230	E A 275		
26	E A 335	E A 330	E A 315	275	270	305	E A 270	A	A	A	A	A	A	A	A	A	220	A	E A 260	A	265	240	260	A	275	
27	300	280	305	315	270	235	225	A	A	A	A	A	A	195	H 260	E A 215	225	A	A	255	250	280	260	235		
28	E A 320	280	240	A	305	H 360	A	A	A	225	220	200	E A 250	225	A	A	A	E A 255	A	A	E A 275	A	A	A	260	
29	305	310	285	305	300	E A 345	A	A	A	A	215	215	205	210	225	220	A	A	A	255	255	255	A	295	280	
30	320	295	275	235	265	295	240	E A 250	A	A	200	220	220	A	A	A	A	A	A	A	A	A	A	E A 315	260	
31	275	E A 260	E A 345	E A 365	A	E A 305	E A 255	A	A	A	A	225	205	180	210	200	A	A	A	260	280	245	255	E A 340	E A 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	27	26	29	27	28	30	21	13	8	13	17	16	19	16	17	12	12	12	12	26	25	24	27	26		
MED	278	275	268	268	272	258	230	222	U A 210	202	200	202	210	213	U 212	220	222	231	246	245	248	268	U 278	262		
UQ	E A 312	292	E A 305	292	288	282	238	250	E A 248	A 218	212	212	U 228	228	A 230	225	232	E A 255	256	260	260	282	E A 308	U 280		
LQ	272	270	260	255	265	255	225	220	210	195	190	195	205	208	200	215	218	232	238	238	235	255	264	255		

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H^oF (KM)

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IONOSPHERIC DATA

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H^oE (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						A	A	A	A	105	105	105	105	105	105	105	105	C	C						
2	S					B	110	105	105	105	A	105	105	105	105	105	105	105	120						
3						S	110	105	A	105	105	105	105	105	105	105	105	E A	120	125					
4						S	120	105	105	105	105	100	120	A	105	100	115	E A	120	115	130				
5						S	105	105	A	A	115	105	105	105	105	A	A	A	A						
6						S	A	A	A	A	A	A	A	A	A	120	115	A	115	A					
7						S	A	A	105	A	A	A	A	A	A	A	A	A	A	A					
8						S	A	A	105	105	105	A	A	A	A	A	A	105	105	A					
9						B	A	A	A	E A	130	E A	120	A	A	A	115	105	C	120					
10						S	105	A	A	A	A	A	A	E A	120	115	A	110	A	110	A				
11							105	A	A	A	A	A	A	A	A	A	A	115	105	A					
12							A	A	A	A	A	A	125	115	A	115	A	120	A	A	A				
13							A	A	A	A	A	A	A	A	A	A	110	105	110	115					
14							120	E A	125	E A	120	115	100	100	A	105	A	A	A	A					
15							115	115	A	100	105	105	A	A	A	A	A	A	A	A					
16							115	105	105	A	A	A	A	A	A	A	A	115	110	A					
17							115	105	110	A	115	115	115	115	A	115	110	110	105	110	A				
18							120	105	120	A	120	105	105	A	A	A	A	A	A	A					
19							115	A	115	A	110	115	A	A	120	105	105	105	110	130					
20							110	105	100	105	105	A	A	A	A	105	105	A	110	110	A				
21							E A	120	110	110	A	105	E A	125	110	105	105	115	110	110	110	A			
22							115	120	A	110	A	115	110	A	115	120	A	E A	120	E A	115	A	A		
23							A	A	A	A	A	E A	125	105	105	110	100	105	105	110	A				
24							A	105	A	A	A	A	A	A	A	A	E A	125	A	E A	125	120			
25							120	120	A	105	100	100	105	105	105	105	105	110	A	A					
26							115	110	100	100	105	A	A	A	A	A	105	105	110	125					
27							125	105	100	105	105	105	A	A	A	A	105	105	105	120					
28							120	105	105	A	A	A	A	A	A	120	105	105	110	A					
29							110	105	A	A	A	E A	120	A	115	115	115	105	110	S					
30							120	A	105	110	A	115	A	A	110	105	A	A	A	A					
31							120	105	105	105	100	100	A	A	115	E A	130	110	110	110	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							23	22	20	19	19	17	11	15	18	21	24	20	9						
MED							115	105	105	105	105	105	105	105	105	105	105	105	110	120					
UQ							120	112	A	110	A	111	A	110	A	112	115	A	114	A	115	110	111	110	125
LQ							110	105	102	105	105	105	105	105	105	105	105	105	110	120					

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H^oE (KM)

IONOSPHERIC DATA

AUG. 1984

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	100	100	95	105	105	105	105	110	110	E G 165	130	160	130	120	125	C	C	C	C	105	105	100	
2	135	115	100	100	110	110	110	110	110	110	130	125	135	125	120	125	115	115	110	110	110	110	110	110	
3	110	105	105	105	105	105	125	115	110	105	105	120	120	115	115	110	125	115	120	115	110	110	110	100	
4	100	100	100	100	100	135	125	125	115	115	115	110	120	115	G	130	140	115	115	110	110	110	105	105	
5	105	100	100	100	100	120	110	105	100	100	115	115	105	105	105	105	105	100	105	105	95	100	110	110	
6	105	100	105	105	105	95	100	100	100	110	100	100	105	105	120	125	120	115	115	110	105	110	100	110	
7	100	100	105	100	115	105	110	110	105	105	105	100	100	100	100	105	100	95	95	95	95	95	95	100	
8	100	100	95	95	95	100	100	110	105	105	110	105	105	105	105	105	110	120	115	110	105	105	105	100	
9	100	100	125	105	115	105	100	100	125	125	120	120	115	115	110	110	115	C	110	105	105	105	105	100	
10	100	100	100	100	100	100	115	110	105	100	100	100	100	135	135	100	135	115	105	110	105	105	105	105	
11	100	100	95	100	100	110	105	105	105	100	100	100	100	150	100	100	120	G	115	100	100	110	110	120	
12	150	130	100	100	100	100	110	100	100	100	100	100	100	100	100	95	150	95	95	115	105	105	105	105	
13	105	100	100	100	100	100	110	120	115	110	110	105	100	100	100	150	125	115	110	110	105	105	105	100	
14	100	105	110	100	100	110	100	120	110	110	115	110	110	105	100	110	110	110	110	105	105	105	105	105	
15	105	100	100	100	S	120	120	110	115	120	105	100	100	100	100	100	115	110	110	105	100	100	100	100	
16	100	100	95	120	100	115	115	110	105	105	100	100	100	100	100	125	105	105	100	100	100	100	100	95	
17	105	100	100	100	105	110	115	105	105	105	115	120	145	125	120	115	110	110	105	105	105	105	110	100	
18	100	100	125	125	95	120	115	110	105	110	110	105	100	100	100	100	100	100	95	115	105	110	110	105	
19	105	105	100	100	100	100	125	115	115	115	125	110	115	120	125	130	125	115	115	110	105	100	105	105	
20	100	105	105	130	100	115	115	115	110	110	105	105	100	150	140	120	120	115	105	105	105	S	100	100	
21	S	S	100	100	100	100	100	125	115	115	115	110	110	105	105	115	130	130	120	100	100	110	110	105	
22	105	105	100	100	105	125	120	115	110	115	115	115	110	105	125	125	130	115	120	110	110	105	100	110	
23	100	100	100	100	100	100	100	100	100	105	125	110	110	125	120	115	115	110	105	105	105	100	100	100	
24	100	95	95	95	95	95	120	110	105	100	100	100	100	100	125	115	110	110	110	105	110	105	105	105	
25	105	100	100	105	120	115	120	115	115	120	110	110	110	115	115	125	115	110	105	100	100	100	105	105	
26	100	100	100	100	115	120	115	110	110	105	105	100	105	100	100	160	120	120	115	115	110	110	105	105	
27	105	105	105	100	95	125	115	110	110	105	105	105	100	105	100	G	125	115	110	110	105	115	110	100	
28	100	100	100	100	100	100	120	110	105	105	100	100	105	105	115	115	110	110	105	105	105	100	105	100	
29	100	100	100	120	115	110	110	105	100	100	100	100	100	100	100	125	110	120	115	110	110	110	105	100	
30	100	100	100	100	S	130	125	115	110	110	110	105	110	105	105	105	105	105	105	100	100	110	110	105	
31	105	105	130	125	105	120	120	110	110	110	115	115	100	100	95	125	115	105	105	105	110	105	110	105	
	00	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	31	29	31	31	31	31	31	31	31	31	31	31	30	30	31	28	30	30	30	30	31	31
MED	100	100	100	100	100	110	115	110	110	110	110	105	105	105	105	115	115	112	110	105	105	105	105	105	
UQ	105	105	105	105	105	120	120	115	110	110	115	111	110	118	120	125	125	115	115	110	110	110	110	105	
LQ	100	100	100	100	100	100	108	105	105	105	102	100	100	100	100	105	110	108	105	105	100	100	105	100	

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H°ES (KM)

IONOSPHERIC DATA

AUG. 1984

TYPES OF ES

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

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	FF71	F5	F5	F5	F2	LL42	L4	L3	L2	C2	C1	H1	H1	H1	H1	C2	C1					F3	F1	F1
2	CK11	F6	F4	F4	F7	C3	C5	C6	C3	C2	HL21	H1	H1	H2	H1	H2	C3	C3	C3	F2	F2	F6	F5	F3
3	F3	F7	F6	F7	F4	L4	H3	C3	L2	C3	C3	C1	C1	C2	C2	C2	H3	CLL31	C3	FF42	FF32	FF31	F3	F5
4	F5	F4	F2	F4	F2	HL31	CL42	C3	C4	C2	C2	C4	CL11	C2		HL21	HL22	CL32	CL22	FF21	F2	FF22	F5	F4
5	FF24	F4	F2	F5	F4	C3	C3	C4	L2	L2	CL11	C1	C3	C3	C3	L3	L3	L5	L5	FF31	F2	F1	FF31	F4
6	F5	F5	F5	FF23	FF13	L2	LH32	L4	L3	CL33	L2	L3	L3	LL31	CL12	HL21	HL32	CL32	CL33	FF34	FF24	FF33	FF44	FF11
7	FF21	FF31	FF14	FF31	FF12	L3	CL54	CL31	C2	L2	L1	L3	L2	L2	L2	LL32	L3	L4	L4	F5	F2	F6	F3	F2
8	F2	FF22	F6	F3	F3	L5	L5	CL33	C3	C2	C1	L1	L2	L2	L2	L2	C3	C4	CL42	F6	F3	F5	F7	F5
9	F7	F6	FF11	F2	FF11	L4	L3	L3	CL22	CL11	CL11	CL11	CL12	CL11	CL21	C3	C2		C3	F3	F3	F4	F5	F3
10	F5	F4	F5	F7	F7	L6	C2	CL33	L2	L3	L3	L2	L2	HL11	HL11	L2	HL12	C2	L2	F1	F5	F6	F7	F6
11	F5	F7	F4	F4	F2	F4	C5	L3	L2	L3	L2	L2	L2	HL12	L2	L3	CL12		CL26	F5	F5	FF22	FF43	FF11
12	FF12	FF22	FF31	F4	F6	F7	CL64	L4	L3	L3	L2	L1	L2	L2	L2	L3	HL23	L5	L4	FF32	FF52	FF31	F2	F2
13	F2	F1	F2	F1	F1	F1	L2	CL33	CL22	CL22	LL22	LL11	L2	L3	L3	HLL11	H2	C4	C5	F7	F2	F4	F3	F3
14	F2	FF22	FF32	F2	F2	F1	LH32	CL31	CL32	CL22	C1	C2	CL21	C2	L3	CL24	CL23	CL45	CL25	FF35	FF24	FF43	F4	F5
15	F7	F6	F5	F2	F1	F1	C4	CL52	C4	C1	C2	L2	L2	L3	L3	L3	CL23	CL54	CL53	FF43	FF34	FF33	FF32	FF33
16	F4	F5	F4	FF32	F2	FF21	C5	C4	C3	L3	L3	L3	L3	L3	L3	HL32	CL42	C5	L4	F6	F3	FF25	FF23	F2
17	FF33	F7	F8	F5	F4	F3	C3	C4	CL31	CL31	CL11	CL11	HL11	HL11	CL11	CL31	C3	C5	L5	F7	FF41	FF52	F7	F7
18	F5	F2	FF22	FF22	F2	FF23	CL22	C3	CL42	CL31	C3	C3	L3	L2	L3	L2	L4	L6	L5	FF11	FF62	FF61	FF41	F5
19	FF61	F5	F6	F4	F2	F2	CL42	CL32	CL21	CL21	CL11	CL12	CL22	CL11	C1	H2	H2	C4	C5	F7	F7	F6	F6	F3
20	F3	FF22	F2	FF11	F1	F6	C3	C3	C4	C3	C4	L2	L2	HL11	H1	CL21	HL31	C5	L4	F5	F3		F3	F5
21			F5	F8	F4	F4	L3	H2	CL22	C2	CL21	CL21	C1	C3	CL41	CL22	HL21	H3	CL53	FF42	F7	FF22	F2	FF41
22	F2	F2	F3	F1	F2	F5	C5	CL32	CL21	CL22	CL22	CL22	CL32	CL22	HL13	HL23	HL23	CL45	CL43	FF32	FF51	F2	F5	FF23
23	F5	F5	F5	F2	F4	F6	L7	L5	L4	L3	CL22	CL11	CL11	HL21	H2	C4	C3	C4	L4	F6	F5	F4	F3	F5
24	F3	F5	F4	F2	F4	F3	CL12	C2	CL42	L3	L3	L3	L2	L2	HL32	CL33	CL43	CL63	C5	F5	FF43	FF41	F4	F4
25	F6	F6	F8	F4	F6	F6	C6	CL32	C3	C2	C3	C4	C2	C2	C2	HC23	C3	L3	L4	L5	F4	F4	F4	F5
26	F6	F5	F5	F2	FF22	F4	C5	C3	C3	C4	C3	L2	L2	L4	L3	H1	C3	C4	C6	F6	FF23	FF52	FF31	FF31
27	F3	FF21	FF32	FF22	F2	FF11	C4	C3	C4	C3	C3	C2	L2	L1	L2		H2	C3	C5	F5	F4	F2	F4	F3
28	F7	F4	F6	F5	F4	F3	C4	C3	C3	L2	L2	L1	L1	L2	CL31	C3	C3	C3	L4	F8	F7	F6	FF14	F3
29	F3	F2	F2	F1	F2	F5	C5	C5	L3	L2	L2	L2	L1	L2	L2	CL21	C3	C5	C5	FF21	F4	F4	F5	F2
30	F4	F2	F2	F1	F1	FF21	CL31	CL31	C3	CL32	CL12	CL22	CL21	CL21	C2	L3	L4	L4	L4	F5	F4	FF25	FF13	F6
31	FF42	FF32	FF54	FF32	F4	FF41	C4	C2	C2	C3	C1	C1	L1	L1	L2	HL22	C3	C4	L3	F4	F3	F2	F5	F4
	00	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																								

AUG. 1984

TYPES OF ES

IONOSPHERIC DATA

AUG. 1984

FXI (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	61	56	X	49	50	X	51	X	48												X	57	X	59	X
2	X	50	X	49	X	46	45	X	36												X	56	A	A	X
3	50	X	50	X	46	X	45	X	41	X	41										X	84	X	69	66
4	S	S	56	X	52	50	46	X	41												X	67	X	62	57
5	S	62	S	56	S	48	S	38	X	37											X	65	X	66	X
6	S	58	X	56	X	53	X	51	X	46	X	43									X	71	X	66	X
7	X	62	X	56	X	55	X	53	X	45	X	44									X	73	X	69	X
8	64	S	58	X	56	X	42	X	42	X	40										X	87	X	77	X
9	X	68	X	70	X	65	X	60	X	57	X	54									X	76	X	73	X
10	70	S	69	S	65	X	66	X	77	X	46										X	65	X	61	X
11	X	59	X	56	S	53	X	50	X	45	X	45									X	67	X	68	X
12	65	X	64	X	60	S	55	U	54												X	90	X	69	X
13	S	65	X	60	X	60	S	51	X	49	X	48									S	76	U	S	60
14	60	62	60	60	U	50	X	46													S	86	S	81	S
15	S	56	U	54	S	57	58	S	54	U	52										X	67	X	67	X
16	X	54	S	55	U	55	54	U	49	S	50										X	79	X	68	X
17	U	54	X	54	X	56	U	53	X	40	X	39									X	67	X	64	X
18	57	59	58	50	X	45	X	39													X	92	X	74	X
19	69	68	61	52	X	42	X	36													X	99	X	69	X
20	X	52	A	X	45	X	46	X	41	X	40										X	83	X	77	X
21	X	45	X	43	X	42	X	42	X	41	X	43									X	62	X	54	X
22	58	57	S	52	X	45	S	41	X	40											A	A	X	57	X
23	X	50	X	46	X	40	X	39	X	40	X	38									S	101	S	78	A
24	S	42	45	44	41	40	40														X	75	X	71	X
25	A	41	U	S	39	X	39	X	44	A											X	83	S	A	61
26	44	A	36	36	S	37	35														A	S	74	U	
27	A	U	S	53	52	48	X	40	X	38											X	73	X	67	66
28	U	S	52	U	S	54	U	S	34	S	44	U	S	39							X	68	S	53	X
29	S	44	S	U	S	47	45	41	45												X	68	X	62	A
30	42	40	42	40	X	35	X	29													X	63	X	60	X
31	S	49	48	A	A	U	S	38	O	S	36										S	64	X	67	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	27	28	30	30	31	30															14	29	26	27	28
MED	56	56	53	49	X	44	X	40													X	74	X	68	X
UQ	62	60	57	53	X	48	X	46													X	83	X	76	X
LQ	50	50	46	X	42	40	X	38													X	67	X	65	X

AUG. 1984

FXI (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1984

FOF2 (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	F	F	43	F 41	45	42	44	64	60	54	59	58	57	56	64	86	94	95	86	61	51	51	53	53										
2	44	43	43	40	39	30	33	47	60	52	56		A	A	49	51	53	51	47	50	50		A	A	44									
3	F	40	44	40	39	35	35	41	54	63	61	56	60	62	74	79	73	76	74	70	67	78	63	F	F									
4	I S	52	50	J S	46	F 41	F 36	35	48	51	R 48	55	54	50	57	A	61	53	60	58	58	58	61	56	51	F								
5	S	F	S	50	42	S	J S	31	43	54	U R	62	U R	61	60	55	58	70	74	73	62	63	74	S	59	S	60	59	S	54				
6	S	52	S	50	J S	47	45	40	37	U H	49	60	57	55	S	54	A	A	64	68	64	61	57	J S	64	65	65	60	J S	60	59			
7	56	50	49	47	39	38	S	49	59	62	52	58	62	69	74	80	85	98	95	87	S	79	67	63	J S	63	S	60						
8	F	55	52	J S	50	J S	36	33	34	50	J S	74	69	54	54	59	66	75	75	76	A	70	85	95	81	71	67	S	63					
9	S	62	S	64	59	S	54	51	48	53	52	60	60	57	63	71	R	71	67	77	H	85	86	91	87	70	67	63	S	61				
10	F	S	S	63	56	60	71	40	35	45	53	65	70	74	R	71	69	67	75	78	77	59	60	59	55	54	55							
11	53	50	47	47	39	U	S	35	46	57	U R	63	66	66	69	70	79	87	91	90	74	66	68	U S	61	62	U S	59	U S	62				
12	F	58	54	U S	49	U S	48	54	55	55	60	65	67	82	79	78	78	H	80	80	77	91	84	63	63	60								
13	S	59	54	54	45	43	42	54	U R	72	76	62	64	57	64	75	90	87	86	U H	95	89	90	S	70	U S	48	F	F					
14	F	F	U F	54	U F	50	U S	44	U F	38	44	74	64	H	62	A	70	H	78	78	75	H	86	89	82	81	85	80	U S	75	47	47		
15	S	50	U S	48	U F	47	F	48	U S	46	55	59	47	57	51	52	69	78	69	76	75	65	63	62	S	61	S	61	51	48				
16	48	49	U S	49	U F	43	U S	43	S	44	49	57	A	A	69	69	68	86	93	90	84	81	69	73	62	50	51	S	51					
17	U S	48	48	50	U S	47	34	33	S	51	U H	59	64	66	63	69	62	80	88	75	74	82	83	U S	61	58	53	54	U S	47				
18	F	F	F	45	44	39	33	39	59	66	59		A	A	63	68	65	67	68	74	86	86	68	74	86	86	68	47	46	S	F			
19	F	F	F	46	36	30	33	59	74	66	61	68	61	63	58	60	66	72	85	93	66	72	85	93	63	52	44	46						
20	46	A	39	40	35	34	48	H	54	71	73	67	H	52	A	74	89	67	71	A	70	77	71	47	47	43	43							
21	39	37	36	36	35	F	38	64	60	54	59	68	68	64	65	A	91	79	64	56	48	47	47	F										
22	F	F	S	46	39	S	34	46	50	60	63	58	68	A	53	58	65	A	A	65	A	A	51	48	F									
23	S	44	40	34	33	34	32	46	56	56	H	52	S	58	58	59	57	67	75	75	A	84	S	95	S	72	A	A	F					
24	S	36	S	35	F	34	F	30	F	F	38	58	59	59	53	57	62	60	61	62	68	76	79	69	65	60	48	F						
25	A	F	S	32	S	33	S	33	38	A	A	S	51	A	57	A	59	R	61	67	80	86	A	A	A	77	I	S	62	A	F	A		
26	F	35	A	F	S	27	S	30	F	28	F	R	26	37	74	53	A	A	A	72	70	H	69	R	62	66	67	68	A	68	U S	61	A	A
27	A	U S	47	F	F	34	32	41	S	61	60	57	62	66	U H	71	A	65	75	73	63	U H	65	67	S	61	F	A	U S	47				
28	J S	J S	J S	J S	F	U S	38	U S	33	J S	46	S	53	44	H	E G	45	A	A	U R	61	55	48	50	60	71	62	S	47	42	39	F	38	
29	38	I S	40	U S	41	F	F	32	F	I S	45	59	A	H	56	A	A	64	A	75	H	70	66	64	62	62	56	A	F	A				
30	F	33	F	F	F	32	29	23	33	65	55	59	58	62	61	63	66	73	A	62	60	57	54	S	57	U S	58	J S	55					
31	S	43	F	A	A	U S	32	30	40	60	63	72	59	58	R	64	60	63	72	71	61	56	S	58	S	61	A	50	U S	46				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
CNT	21	21	27	26	30	27	30	31	28	29	26	25	26	28	31	30	27	27	30	29	30	25	24	20										
MED	46	48	47	42	37	34	46	59	60	59	58	62	64	70	68	74	74	74	70	68	62	57	52	52										
UQ	S	52	50	50	46	43	39	49	60	64	62	63	68	70	75	78	78	84	80	84	85	70	62	59	60									
LQ	40	43	40	36	34	32	39	54	56	55	56	58	61	62	64	65	66	63	64	61	59	51	48	46										

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FOF2 (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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 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	420	440	440	470	480	450	450	440	L	A	A	L				
2								360	L	L	420	A	A	A	450	440	A	A	L	L				
3							L	L	430	450	460	460	470	470	460	460	L	L	L	L				
4							L	L	430	440		L	460	A	A	L	420	U	L	L				
5							L		430	450	450	470	480	460	470		A	A		A				
6							L	L	460	470		A	A	460	A	460	A	A	A					
7							L	L	420	420	460	470	460	470	460	450		A	A	A				
8						L	L	L	440	490		A	A	A	A	A	A	A	A	A				
9							L	L	L	U	L	480	490	A	470	L	430	450	420	360				
10							L	A		450	470	490	480	470	450	450		A	L					
11							L	L	400	A	450	470	470	460	450	460	440	420	L					
12							L	L	390	A	470	A	470	470	460	470	450	420	L					
13						L	L	U	L	420	480	450	520	470	480	460	450	L	L	A				
14							L	L	460	L	A	U	L	480	470	460	490	A	A	U	L	A		
15							L	A	420	U	L	430	450	A	460	A	A	430	A	A				
16							L	A	A	A	A	A	A	450	460	450	A	420	A					
17							L	L	L	L	U	L	460	460	450	440	440	440	390	A				
18							L	L	A	A	A	A	450	A	460	A	L	L	L					
19							L	L	A	A	460	460	450	450	440	430	390	L	L					
20							L	A	A	A	A	A	A	A	440	430	A	A	A					
21							L	L	420	430	450	450	A	A	A	A	A	L	L					
22							A	A	A	440	A	A	470	L	A	A	A	A	A	L				
23							L	L	440	430	470	460	A	430	A	A	A	A						
24							L	L	380	420	440	A	450	440	A	430	440	L	L					
25							L	A	A	A	A	A	460	460	450	A	A	A	A					
26							A	A	A	A	A	A	A	A	A	A	420	A	A					
27							L	A	A	450	460	470	A	450	440	430	390							
28						L	L	380	L	450	A	A	A	A	A	L	420	390	320					
29						A	A	A	420	A	A	A	A	450	440	A	A	A	A					
30							L	L	430	A	460	460	470	460	A	A	A	A						
31							A		420	430	L	460	A	460	460	420	430	L	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	11	17	19	17	19	21	21	17	16	14	2						
MED							360	420	430	450	470	460	460	460	440	430	405	340						
UQ								420	450	460	470	470	470	460	450	440	420							
LQ								390	420	440	460	460	450	450	440	425	390							

AUG. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

AUG. 1984

FOE (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 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	A	365	375	355	345	325	300	270	225	S				
2							A	A	A	310	350	360	365	A	340	320	305	275	210	S				
3							S	A	A	A	360	370	365	355	330	320	A	285	225	S				
4							S	230	280	310	340	350	350	345	345 ^R	335	310	290	A	S				
5							S	A	A	310	A	A	A	A	A	320	290	A	A	S				
6							S	230	A	A	A	A	A	A	A	A	310	280	210	S				
7							S	235	A	A	A	A	A	A	A	A	A	A	A	S				
8							S	A	280	320	A	345	A	A	A	A	A	A	A	S				
9							S	A	290	310	330	A	A	A	A	A	A	300	A	S				
10							S	230	280	A	A	A	360	A	A	335	310	270	210	S				
11							180	A	A	A	A	A	A	A	A	340	310	280	210	S				
12							S	A	A	A	A	A	A	A	350	325	A	A	215	S				
13							S	220	280	310	330	340	350	360	350	335	310	270	A	S				
14							S	H	H	H	280	315	340	345	A	A	A	A	A	S				
15							S	215	270	305	A	A	A	A	A	A	A	A	A	S				
16							S	A	260	295	A	A	A	A	A	A	A	A	A	S				
17							S	220	265	310 ^H	330	340	350	345	340	320	300	260	A	S				
18							S	225	A	300	A	A	A	A	A	A	A	270	A	S				
19							S	225	A	A	A	A	A	340	335	325	300	260	S					
20							S	230	260	A	A	330	340	330	325	320	295	250	180	S				
21							S	225	270	310	325	A	A	A	A	A	A	A	A	S				
22							S	220	260	305	330	340 ^H	A	A	U R	330	A	295	250	200	S			
23							S	A	A	310	335	A	A	A	330	310	295	250	S					
24							S	225	A	A	A	A	A	A	A	A	A	250	175	S				
25							A	A	270	300	A	A	A	A	A	320	280	A	S					
26							S	220	A	A	A	A	A	A	A	A	300	260 ^R	200	S				
27							S	A	265	A	A	A	A	A	A	A	300	260	180	S				
28							S	210	260	280	305	A	A	A	A	330	305	260	180	S				
29							S	200	A	R	285	A	A	A	A	A	290	A	A	A	S			
30							S	215	260	300	A	A	A	A	A	290	A	270	180	S				
31							S	215	270	300	320	330	A	A	A	310	285	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							1	19	17	19	12	11	8	7	11	18	18	20	14					
MED							180	225	270	310	330	345	355	345	340	320	300	270	205					
UQ							230	280	310	340	355	365	355	345	330	310	278	210						
LQ							218	260	300	328	340	350	342	330	320	295	260	180						

AUG. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

AUG. 1984

FOES (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	J	51	J	J	J	J	J	J	J	J	J	J	G				J	J	J	J	J	J	J	J	J	
2	J		J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
3	J	J	J	J	J		J	J	J	J	J	J	G													
4	J	J	J	J		J	J	E						J	J	J			J	J	J	J	J	J	J	
5	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
6	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
7	J	E	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
8	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
9	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
10	J						J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
11	J		J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
12	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
13	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
14	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
15	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
16	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
17	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
18	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
19	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
20	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
21	J	J	J	J	J	J	J	E	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
22	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
23	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
24	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
25	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
26	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
27	J	J	J	J	J	J	J	E	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
28	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
29	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
30	J	J	J	J	J	J	J	E	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
31	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	
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	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
UQ	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
LQ	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J

AUG. 1984

FOES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

AUG. 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	E	20	E	21	21	E	18	30	30	33	36	G	41	40	40	36	43	44	30	49	25	E	E	18	
2	E	E	18	23	E	E	22	24	30	38	50	A 44	A 48	41	40	44	43	37	34	21	29	A 110	A 88	E	
3	25	30	32	23	E	29	20	28	30	32	G	G	42	39	36	44	37	G	27	23	19	E	E	E	
4	19	E	E	E	E	E	E	S 16	G	32	37	43	42	43	A 81	55	36	33	G	G	32	28	E	E	19
5	E	20	E	23	E	E	22	29	30	32	34	36	36	43	44	53	50	35	U 50	Y	42	18	E	26	18
6	17	29	20	23	20	25	22	29	31	41	43	A 64	A 92	37	52	38	44	40	45	43	50	18	18	21	
7	17	E S 16	E	18	E	E	19	G 23	34	35	41	39	37	40	40	38	75	68	58	72	46	26	31	25	
8	19	20	20	20	18	E	19	27	34	38	38	53	49	60	50	64	A 110	45	43	25	21	22	20	25	
9	25	E	20	20	17	E	20	24	33	42	41	38	52	39	38	35	37	30	29	G	E	18	20	E	
10	18	E	E	E	E	E	19	G 22	32	60	38	37	39	42	44	39	38	49	27	E S 16	18	19	27	22	
11	E	E	E	E	E	E	G	24	34	43	39	40	41	41	35	38	G	G	G	31	39	24	29	21	
12	21	20	21	18	E	E	26	23	31	49	37	55	41	40	G 25	32	33	28	G	21	25	19	17	51	
13	E	19	20	15	E	E	17	21	G	35	38	G	G 32	40	38	35	33	40	65	43	E	28	18	20	
14	35	20	E	E	E	E	20	27	37	39	A 72	44	39	40	39	49	64	39	45	80	28	24	28	18	
15	25	24	33	30	E	E	45	28	40	34	40	40	46	36	53	46	40	40	40	38	27	23	28	21	
16	25	35	19	21	29	E	25	30	A 79	A 176	47	64	47	35	41	36	48	38	49	45	27	26	26	19	
17	25	35	E	E	E	E	E	E	24	29	34	38	38	39	38	42	36	36	36	35	38	24	25	21	E
18	E	29	E	E	25	E	20	29	36	55	A 80	A 103	36	62	40	48	39	38	30	23	E	E	E S 16	E	
19	25	E	17	18	E	E	22	25	39	56	47	25	42	31	38	36	34	34	26	E S 16	E S 16	36	E	24	
20	25	A 87	18	19	18	E	17	24	41	57	62	46	A 66	52	40	35	68	A 100	53	72	43	E	E	17	
21	E	E	E	E	E	E S 16	25	29	32	33	40	43	48	52	A 106	68	33	25	42	32	18	E	E		
22	E	18	30	E	23	25	19	35	47	45	39	56	A 103	40	54	48	A 88	A 93	24	A 122	A 108	35	E	19	
23	E	E	E	E	E S 16	E S 16	28	31	39	38	43	38	47	41	66	55	A 140	78	88	60	A 84	A 65	A 20		
24	20	18	E	E	E	E	G	25	34	35	40	39	41	42	58	38	34	29	31	26	24	33	24	32	
25	A 52	22	25	23	20	A 33	A 52	29	A 63	56	A 83	57	41	42	36	47	A 84	A 109	A 155	53	49	A 107	28	A 72	
26	20	A 37	20	21	19	21	G	39	44	A 98	A 84	A 82	54	52	61	55	38	59	61	A 125	52	52	A 84	A 65	
27	A 100	25	18	20	E S 16	E S 16	E S 16	29	45	48	43	39	40	A 73	43	34	G	36	49	54	31	28	A 77	19	
28	E	E	E	E	25	27	21	29	36	36	42	A 49	A 76	51	46	36	40	27	26	22	25	24	29	E	
29	E	A 38	25	20	E	E	35	36	A 105	30	A 80	A 122	45	A 66	40	38	58	46	31	23	17	A 54	17	A 52	
30	E	17	E	E	E	E	E S 16	33	29	36	45	42	37	36	37	69	A 92	42	35	29	25	20	19	E	
31	E	17	A 43	A 34	20	E	29	U 49	39	40	45	41	48	44	36	33	31	34	41	47	45	A 78	E	25	
	00	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	18	20	18	18	E	E	19	28	34	39	41	42	42	41	40	38	40	38	35	38	27	24	20	19	
UQ	25	27	20	21	20	E	22	29	40	48	47	54	48	50	48	48	61	46	49	51	41	34	28	24	
LQ	E	E	E	E	E	E	16	24	30	35	38	38	39	40	38	36	35	34	27	23	20	18	E	E	E

AUG. 1984

FBES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

AUG. 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 S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	19	19	20	21	20	20	17	16	E S 16	E S 15	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	E S 16	16	18	22	22	20	25	20	18	18	17	E S 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	E S 16	16	16	20	20	25	25	20	18	18	16	E S 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	16	17	17	19	20	20	20	20	16	16	15	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	14	16	17	16	23	22	21	21	17	16	18	E S 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	16	15	19	20	21	26	23	21	16	18	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	16	15	16	21	20	21	21	18	17	17	16	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	20	20	20	20	20	20	20	16	16	16	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	16	17	18	20	18	23	21	21	21	18	15	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	15	15	18	20	20	21	21	18	16	16	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	E S 16	16	18	17	21	27	20	19	20	16	16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 15	15	16	17	20	22	20	20	16	18	16	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 16	E S 16	E S 15	13	12	E S 16	E S 16	E S 15	15	16	19	19	19	21	20	20	17	16	E S 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 15	E S 16	E S 16	16	16	16	19	19	18	22	20	18	16	15	16	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	14	15	17	19	19	18	20	26	17	16	16	14	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	E S 16	15	16	16	22	20	17	19	19	15	15	13	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	E S 15	13	17	19	20	21	21	20	16	16	16	E S 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	E S 16	16	18	20	20	20	20	20	20	16	16	E S 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	E S 15	17	18	22	20	21	20	20	18	17	E S 16	E S 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	12	E S 16	E S 16	E S 16	16	17	20	19	20	20	20	20	17	16	E S 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 15	E S 16	E S 16	16	16	18	21	20	19	18	18	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	18	20	18	20	20	20	16	16	E S 16	E S 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	E S 16	16	16	19	20	20	22	21	19	16	E S 16	E S 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	E S 16	16	16	18	20	20	20	18	18	16	E S 16	E S 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	16	16	16	18	20	20	20	19	19	16	16	E S 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	16	15	16	16	21	24	23	21	20	16	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	16	16	20	20	20	20	17	18	16	16	16	13	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	16	14	17	18	20	20	21	20	18	16	12	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	16	16	16	16	18	20	18	18	20	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	16	16	16	18	18	21	21	20	19	15	16	E S 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	13	15	15	16	17	20	18	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
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	16	16	16	19	20	20	20	20	18	16	16	E S 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	20	20	21	21	20	20	17	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	E S 16	15	16	18	19	20	20	19	18	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16

AUG. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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	F	F	300	F	300	335	330	350	360	305	330	310	290	305	240	275	285	305	325	335	275	275	265	S	310				
2	285	290	290	300	305	300	335	265	300	305	330	A	A	265	295	285	315	295	310	310	300	A	A	285					
3	F	285	A	305	300	315	315	335	335	345	320	325	315	325	315	315	315	315	315	320	305	300	F	F					
4	I	S	J	S	F	315	375	305	310	300	325	270	290	A	305	275	315	320	320	300	295	285	285	F					
5	S	F	S	285	295	J	S	300	315	U	R	305	325	270	265	305	295	310	335	S	255	S	290	S					
6	290	S	J	S	310	325	U	H	325	365	370	310	295	A	A	310	315	310	320	280	J	S	J	S	305				
7	305	300	305	320	305	300	325	S	345	360	345	285	290	310	290	305	290	310	325	310	315	S	300	J	S	290			
8	F	315	J	S	305	310	340	J	S	390	390	275	295	295	300	305	295	A	285	305	325	320	300	S	270				
9	290	S	310	315	295	295	310	365	345	335	335	305	275	290	290	R	275	H	300	315	320	315	300	300	S	270			
10	F	S	285	F	300	365	360	315	310	275	325	290	315	315	305	300	325	315	330	340	335	305	280	275	300				
11	285	300	295	S	305	U	F	345	335	U	R	335	335	305	290	290	280	285	300	320	340	310	315	U	S	280			
12	F	300	305	U	S	U	S	370	365	355	290	305	290	310	295	305	290	295	H	295	300	320	340	285	300	285			
13	S	275	305	290	290	285	325	U	R	355	340	335	280	290	280	295	300	290	U	H	320	325	S	U	S	F	F		
14	F	F	U	F	U	285	U	320	360	360	340	A	305	300	H	305	275	295	H	305	315	295	310	325	U	S	285		
15	270	S	U	F	F	290	U	345	390	330	315	325	315	305	305	295	315	320	305	310	305	285	S	S	295	290			
16	260	S	S	U	U	280	295	S	350	A	A	305	310	285	285	300	305	310	320	310	310	320	280	275	S	295			
17	U	290	290	300	U	310	305	S	U	330	310	310	325	275	295	320	320	295	315	350	U	S	320	290	305	U	S	285	
18	F	F	F	335	330	320	305	320	345	380	A	A	A	315	330	315	320	315	310	325	330	330	285	280	S	F			
19	F	F	F	335	290	315	305	330	365	340	350	330	325	330	320	300	310	305	330	350	335	325	285	295					
20	305	A	305	325	300	295	355	340	H	340	350	395	325	H	A	295	320	330	A	A	315	335	350	320	300	300			
21	295	295	290	335	300	F	315	390	365	335	330	330	330	310	290	A	335	355	345	350	320	295	310	F	F				
22	F	F	305	S	315	S	325	370	370	365	355	345	340	A	290	300	325	A	A	330	A	A	305	300	F	F			
23	320	325	325	335	325	310	370	390	365	355	H	345	R	325	320	325	315	320	325	A	325	S	360	A	A	F			
24	S	300	310	F	F	F	330	380	355	340	300	315	320	315	310	305	300	310	340	320	325	335	320	F	F				
25	A	F	280	S	330	A	A	335	A	A	A	A	A	295	R	300	285	315	A	A	A	320	I	S	A	A			
26	F	A	295	S	320	F	290	R	350	330	A	A	A	305	305	305	300	R	320	320	325	A	315	U	S	A	A		
27	A	U	F	F	310	330	330	S	370	360	350	330	340	U	H	A	315	325	340	350	U	H	325	310	F	A	U	S	295
28	J	J	J	S	F	U	U	J	S	340	340	290	H	G	A	A	U	R	300	290	260	290	330	S	295	285	280	265	F
29	275	I	U	S	F	295	F	I	S	340	A	295	A	A	295	A	325	315	335	345	355	330	355	A	F	A			
30	305	F	F	F	330	345	325	305	375	325	365	325	320	305	325	320	335	A	340	340	315	295	290	U	S	300	J	S	325
31	S	F	A	A	U	295	285	325	385	340	345	330	320	R	335	325	300	335	345	345	340	325	S	S	A	310	U	S	295
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT	21	21	26	26	30	27	30	31	28	27	26	24	26	28	31	30	26	27	30	29	30	25	24	20					
MED	295	290	302	305	302	310	328	345	348	335	325	315	305	305	305	308	315	315	322	320	312	295	295	292					
UQ	305	300	305	330	310	318	345	370	362	345	330	325	315	312	315	320	320	328	330	335	325	305	300	300					
LQ	S	S	290	290	295	298	315	335	330	308	305	290	290	290	295	295	300	298	310	315	300	285	282	285					

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M(3000)F2 (0.01)

IONOSPHERIC DATA

AUG. 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	L	L	L	L	L	L	A	L	A	A	L															
2								350	360	405	A	A	A	390	395	A	A	A	L															
3							L	370	400	400	415	380	380	390	A	370	380	L																
4							L	L	395	A	L	370	A	A	L	355	U	L	L															
5							L	360	365	375	370	385	A	A	A	A	A	325	A															
6							L	L	370	370	A	A	390	A	370	A	A	A																
7							L	380	430	390	380	390	380	390	390	A	A	A																
8						L	L	L	410	410	A	A	A	A	A	A	A	A	A															
9							L	L	L	U	L	345	365	A	395	L	405	335	345	360														
10							L	A			375	395	375	375	A	365	365	A	L															
11							L	L	A	400	370	395	390	410	370	350	345	H	L															
12							L	385	A	360	A	360	360	390	350	345	335	L																
13						L	L	U	L	U	L	370	365	400	355	425	365	380	U	L	L	A												
14							L	L	L	A	A	380	390	345	A	A	A	A																
15							L	A	405	U	L	U	L	370	375	A	360	A	A	A	A	A												
16							L	A	A	A	A	A	400	325	365	A	355	A																
17							L	L	L	L	U	L	335	390	390	A	365	340	A	A														
18							L	A	A	A	A	400	A	360	A	A	A	A																
19							L	L	A	A	L	370	A	410	375	375	350	L	A	L														
20							L	A	A	A	A	A	A	A	L	395	395	A	A	A														
21							L	L	415	420	390	L	A	A	A	A	A	A	A															
22							A	A	A	410	L	A	A	395	L	A	A	A	A	L														
23							L	L	L	410	420	L	A	390	A	A	A	A	A															
24							L	L	420	380	A	A	400	385	A	405	L	385	L	L														
25							L	A	A	A	A	A	360	345	355	A	A	A	A															
26							A	A	A	A	A	A	A	A	A	A	355	A	A															
27							L	A	A	375	390	380	A	A	385	360	370																	
28						L	L	355	L	A	A	A	A	L	285	320	360																	
29						A	A	A	405	A	A	A	A	375	375	A	A	A																
30							L	L	385	A	390	400	380	390	A	A	A	A																
31							A	380	370	L	400	A	390	390	415	370	L	A																
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
CNT								1	11	17	16	15	17	20	15	16	14	9	2															
MED								350	375	395	395	380	385	390	390	372	355	345	360															
UQ								382	405	410	392	395	392	390	392	370	355																	
LQ								365	370	372	370	375	378	368	365	345	335																	

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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							280	270	255	320	320	355	380	430	505	380	320	290	265					
2							445	340	350		A	A	A	550	450	405	375	380	340					
3							300	290	295	340	355	340	300	300	320	300	290	280						
4							360	360	340	315	490	400		A	A	420	320	305	290					
5							275	290	340	280	400	435	325	315	315	315	340	290						
6							240	240	355	400		A	A	340	330	340	335	290	290					
7							260	250	285	390	370	330	350	310	340	300		A	265					
8							270	230	235	275	430	400	375	330	330	340		A	310	290				
9							220	275	295	335	400	340	325	380	350	310	310	280						
10							400		A	340	290	325	335	355	300	310	270	240						
11							255	270	280	320	335	345	335	330	305	275	260	280						
12							225	230	E A 350	335	355	310	320	300	345	310	295	300						
13							265	250	245	280	280	L 415	370	350	320	305	305	280	280					
14							235	245	260		A	320	320	300	360	300	305	285	285					
15							220	260	325	L 320	350	345	290	350	305	275	285	295						
16							255		A	A	325	E A 355	360	335	300	295	280	275	290					
17							220	255	260	320	285	385	325	280	285	320	275	250						
18							250	245		A	A	A	340		A	340	325	320	300	270				
19							290	250		A	275	300	300	320	340	360	320	300	265					
20							225	290	280		A	A	A	330	290	300		A	A	280	A			
21							230	250	330	330	295	320	325	380		A	280	250	240					
22							230	270	265	290	290		A	420		A	310		A	A	270			
23							225	270	310	280	345	340	380	325		A	300		A					
24							240	270	270	390	340	350	340		A	340	360	280	255					
25							A	265		A	A	A	A	350	335	335	280		A	A	A			
26							240	275		A	A	A	325	315		A	350	305	315		A			
27							255	260	310	335	300	320		A	335	300	275	265						
28							280	230	300	L 300		G	A	A	340	350	405	415	315	260				
29							280		A	290		A	A	360		A	300	315		A	280	260		
30							240	230	260	305	330	325	325	340		A		A	270	250				
31							260	300	265	320	300	300	340	370	300	280	260	265						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	30	28	25	24	23	26	27	27	28	25	26	27					
MED							275	245	265	292	322	342	340	335	335	318	310	288	280					
UQ							280	265	290	322	340	362	360	340	352	348	320	305	290					
LQ							268	230	248	275	310	300	325	325	312	300	300	275	262					

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H^oF₂ (KM)

IONOSPHERIC DATA

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H*F (KM)

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	270	E A 290	E S 295	E A 300	E A 290	240	240	230	225	195	195	190	H 230	A 230	E A 270	235	A	A	A	A	E A 280	E S 330	E S 300	255		
2	275	E S 300	E A 290	E S 300	275	250	270	240	240	235	A	A	A	A	230	A	A	A	A	275	E A 290	A	A	E S 320		
3	E A 340	E A 360	E A 350	E A 305	E S 295	E A 330	250	240	220	200	195	H 200	E A 230	215	215	A	E A 245	220	245	265	250	240	E S 290	275		
4	255	280	250	270	280	280	235	220	220	220	A	A	A	A	A	200	200	200	230	280	250	240	270	280		
5	280	260	235	280	290	280	265	225	A	H 225	H 210	H 180	H 200	180	A	A	A	A	A	260	230	265	280	265		
6	280	340	280	255	260	A 280	240	210	190	H 240	A	A	A	A	210	A	215	A	A	A	A	265	A	260	300	270
7	265	290	270	255	245	265	240	225	210	H 190	210	220	230	220	215	210	H	A	A	A	A	300	270	305	300	
8	270	260	235	270	310	270	230	230	210	200	210	A	A	A	A	A	A	A	A	250	230	270	260	290		
9	E A 330	265	255	275	265	240	215	215	200	A	A	250	210	A	200	220	210	E A 250	235	250	A 250	240	255	260	300	
10	300	270	290	280	210	210	220	210	H 215	A	200	190	210	230	A	A	240	250	A	225	240	240	280	350	305	
11	280	275	260	250	245	245	240	230	230	A	200	240	225	210	200	245	205	H 205	H 230	245	E A 250	275	315	315		
12	285	260	275	255	275	275	225	215	220	A	220	A	E A 245	210	200	210	205	H 215	230	H 255	210	245	260	A		
13	255	305	270	270	295	300	245	220	225	205	200	200	H 175	225	230	210	H 215	A	A	245	205	280	E A 360	305		
14	E A 275	315	250	230	245	250	245	235	230	220	A	A	220	225	185	A	A	A	A	E A 350	245	205	E A 290	295		
15	E A 345	A 340	E A 360	E A 345	270	255	260	230	A	200	E A 255	225	A	240	A	A	A	A	A	A	265	295	250	285	300	
16	330	A 350	285	275	E A 355	275	220	A	A	A	A	A	A	195	H E A 275	220	A	A	A	A	260	230	275	325	270	
17	E A 355	A 330	A 260	215	250	255	245	H 205	H 220	200	H 185	175	H 220	215	A	220	250	A	A	A	250	E A 250	E A 280	275	255	
18	270	E A 300	250	245	E A 280	E S 295	240	235	A	A	A	A	180	A	E A 260	A	A	A	A	235	210	240	E S 290	E S 295		
19	295	280	270	225	E S 270	E S 300	E A 270	240	A	A	A	205	A	205	225	H 240	240	E A 250	240	235	205	275	E S 295	310		
20	290	A	280	245	E A 290	E S 290	230	220	A	A	A	A	A	A	A	250	220	A	A	A	A	250	240	E S 310	275	
21	E S 290	285	E S 290	245	245	E S 290	240	245	220	200	195	E A 245	A	A	A	A	A	A	A	A	E A 270	A	E A 295	E S 300	E S 300	
22	E S 300	280	E A 290	265	E A 290	E A 275	240	A	A	A	240	A	A	225	A	A	A	A	A	230	A	A	E S 270	E A 300		
23	270	270	265	250	240	275	240	215	205	220	200	H	200	A	A	A	A	A	A	A	E A 300	A	A	A	E A 300	
24	E A 300	E A 315	E S 300	E S 305	250	280	240	240	230	240	A	190	H E A 250	A	A	235	250	A	H 220	A	260	240	250	265	A	
25	A	E A 275	A	E A 360	260	A	A	250	A	A	A	A	A	260	A	230	A	A	A	A	270	260	A	300	A	
26	A	A	E A 330	285	300	E A 350	260	A	A	A	A	A	A	A	A	A	A	E A 260	A	A	A	A	A	A	A	
27	A	310	280	260	250	240	235	240	A	A	A	225	220	A	A	215	225	H 260	A 280	290	A 270	270	A	290		
28	280	285	240	S	A	310	A 260	230	A 265	220	A	A	A	A	A	250	A	250	260	230	250	300	325	315		
29	305	A	315	310	290	275	A	A	A	210	A	A	A	A	225	240	A	A	A	A	245	230	A	330	A	
30	265	365	290	235	255	330	S 260	240	205	220	A	250	A 200	200	H 210	A	A	A	A	250	270	280	290	240		
31	240	290	A	A	A 360	325	285	A	A 260	A	A	A	A	A	255	210	200	210	A	A	A	300	A	265	280	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	28	28	29	29	30	30	29	26	21	18	15	16	16	17	17	18	13	9	10	25	28	24	27	26		
MED	275	285	268	260	261	265	240	230	220	210	200	205	212	215	220	220	U 225	220	235	255	245	264	278	286		
UQ	290	312	E E 290	278	282	288	255	240	230	220	212	224	A 226	A 225	228	240	245	A 250	250	268	262	278	304	300		
LQ	270	272	260	250	250	252	235	220	210	200	195	195	200	210	210	210	210	210	215	230	245	230	248	267	272	

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H*F (KM)

IONOSPHERIC DATA

AUG. 1984

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							S	115	A	A	A	115	115	115	115	115	115	115	A	S				
2							120	120	115	115	115	115	115	115	115	115	115	115	120		S			
3							S	A	A	A	115	115	115	115	115	110	A	115	120		S			
4							S	110	A	110	110	110	110	110	110	115	110	110	110		S			
5							S	A	A	105	A	A	A	110	110	110	110	110	115		S			
6							S	A	A	110	110	110	A	A	A	A	110	110	110		S			
7							S	A	A	A	A	A	A	A	A	110	110	A	A	S				
8							S	A	110	110	110	110	110	A	100	A	A	A	A	S				
9							S	A	A	A	A	A	A	A	A	A	110	110	A	S				
10							S	A	E A	120	110	110	110	115	A	A	115	120	110	110		S		
11							S	A	A	A	105	A	A	A	A	105	105	110	110		S			
12							S	A	A	105	105	110	A	A	115	A	A	A	A	S				
13							S	A	A	A	A	A	A	E A	130	E A	125	E A	125	110	115	110		S
14							S	H	110	105	105	105	105	H	105	A	105	A	105	105	A	S		
15							S	H	105	105	105	105	105	105	A	A	A	A	A	A	S			
16							S	110	105	105	105	110	A	A	A	A	A	A	A					
17							S	E A	125	A	115	E A	120	E A	120	105	105	105	110	115				
18							S	115	115	115	115	115	110	110	110	A	A	A	A					
19							S	A	A	A	A	A	115	115	115	115	115	120		S				
20							S	120	125	110	110	110	115	A	A	110	115	115	120					
21							S	A	115	A	A	110	115	110	110	110	115	A	A					
22							S	120	115	110	110	110	A	A	A	A	110	110	125					
23							S	110	A	A	115	A	A	A	A	110	115	115		S				
24							S	115	A	A	A	A	A	A	A	A	A	A	A					
25							A	115	110	110	110	110	110	110	110	110	110	110		S				
26							S	115	110	110	110	110	110	110	110	110	110	110	110					
27							S	120	110	110	A	A	A	A	A	110	110	110	120					
28							S	110	110	110	110	110	110	110	110	110	110	115	115					
29							S	115	110	110	110	A	A	110	105	105	A	A	A					
30							S	120	110	110	110	110	110	110	110	110	A	110	110					
31							S	120	110	125	120	120	115	110	100	100	110	110		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	19	17	21	22	21	18	16	19	21	22	22	15					
MED							120	115	110	110	110	110	111	110	110	110	110	110	115					
UQ							120	115	110	112	112	115	114	114	112	115	115	120						
LQ							110	110	110	110	110	110	110	110	108	110	110	110	110					

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H'E (KM)

IONOSPHERIC DATA

AUG. 1984

H°ES (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	120	110	115	110	110	110	115	110	105	110	110	G	140	140	140	125	125	120	120	115	115	115	115	105		
2	120	110	110	110	105	125	120	125	120	125	140	140	140	140	140	130	130	125	120	120	120	120	110	110		
3	110	110	105	105	110	105	105	110	110	110	G	140	135	130	125	130	145	G	140	125	120	115	115	110		
4	110	110	110	110	110	110	S	G	150	140	130	130	125	125	120	130	120	160	125	115	110	110	100	115		
5	110	110	110	110	110	105	105	100	105	140	110	120	110	120	115	115	110	115	110	110	110	110	105	100		
6	100	100	100	100	100	100	100	140	105	105	105	105	105	100	120	140	135	125	115	110	110	100	110	110		
7	100	S	110	110	110	110	110	110	100	160	110	140	110	110	110	110	110	100	100	100	100	100	100	100		
8	110	110	100	100	110	110	130	110	125	120	115	110	115	110	100	100	100	100	100	110	100	100	110	110		
9	110	110	110	110	110	110	110	105	125	120	120	120	120	140	140	140	120	120	115	110	110	110	110	110		
10	110	110	110	110	110	110	110	110	130	115	110	110	115	100	135	135	135	115	115	S	110	110	110	110		
11	100	100	105	105	105	125	115	110	105	105	105	105	150	105	105	155	125	G	G	120	115	110	120	110		
12	105	105	105	105	105	105	100	105	125	105	125	105	105	100	100	100	100	95	135	115	110	105	105	105		
13	105	105	100	105	105	105	105	105	145	145	130	145	110	160	155	130	140	120	110	105	105	105	105	105		
14	105	105	105	105	105	100	145	130	115	135	115	110	115	105	125	105	105	110	105	105	105	105	105	120		
15	105	105	105	105	105	125	115	120	120	110	110	110	105	105	100	105	100	110	100	105	100	105	105	105		
16	105	105	105	105	105	105	115	115	110	105	105	105	105	105	100	100	100	100	100	95	95	95	95	95		
17	105	105	105	105	105	105	110	145	145	125	125	140	130	140	125	120	120	110	105	105	105	105	105	105		
18	105	105	105	100	100	105	110	125	120	110	110	105	110	105	105	100	100	120	120	120	100	100	S	110		
19	110	110	105	105	105	100	100	100	100	115	110	115	125	135	130	140	140	125	115	S	S	110	105	105		
20	105	105	105	110	120	125	140	125	115	110	110	125	120	125	125	130	120	115	115	120	115	110	105	105		
21	105	105	105	105	105	105	S	165	150	135	130	120	115	110	115	110	105	100	100	115	115	115	110	110		
22	120	110	105	100	100	100	130	125	120	120	125	120	110	135	125	125	120	115	120	115	120	120	110	110		
23	110	110	110	105	S	100	S	120	150	135	170	105	145	100	120	120	120	115	110	105	105	100	100	100		
24	100	100	100	100	100	100	100	150	105	140	130	105	105	100	100	100	100	130	120	115	115	110	110	110		
25	110	110	110	100	105	105	105	125	120	115	115	110	110	110	110	110	110	110	110	110	110	105	105	105		
26	105	105	100	100	100	100	125	115	110	110	110	110	110	110	110	110	140	130	120	140	110	115	115	110		
27	110	110	110	100	S	S	S	120	110	110	110	110	105	100	100	115	G	125	115	110	110	110	115	110		
28	110	110	130	100	100	100	115	115	115	115	110	110	115	115	120	130	115	120	115	110	110	110	105	105		
29	105	105	105	100	115	125	115	110	110	110	110	130	125	110	110	110	100	100	100	110	115	110	110	110		
30	105	100	100	100	100	100	S	120	110	110	110	110	110	110	110	110	110	110	110	110	110	110	115	110		
31	110	120	100	100	140	135	120	120	120	120	115	115	115	110	115	115	115	110	110	110	105	110	110	110		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	31	30	31	31	29	30	26	30	31	31	30	30	31	31	31	31	30	29	30	29	30	31	30	31		
MED	105	108	105	105	105	105	112	118	115	115	110	110	115	110	115	115	118	115	115	110	110	110	110	110		
UQ	110	110	110	108	110	110	120	125	125	130	125	125	125	128	125	130	125	120	120	115	115	110	110	110		
LQ	105	105	105	100	105	100	105	110	110	110	110	110	110	105	108	110	105	110	105	110	105	105	105	105		

AUG. 1984

H°ES (KM)

IONOSPHERIC DATA

AUG. 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	FF 22	FF 23	FF 21	F 4	F 2	F 2	C 1	C 4	L 2	L 2	L 2		H 1	H 1	H 2	C 2	C 3	C 4	CL 41	C 4	F 3	F 2	F 2	F 2
2	F 1	F 2	F 3	F 5	F 3	F 2	C 4	C 1	C 2	C 2	H 3	H 2	H 2	HC 11	H 2	C 3	C 4	C 3	C 4	C 4	F 5	F 4	F 4	F 2
3	F 6	F 5	F 8	F 5	F 2	F 4	L 2	L 4	L 2	L 2		H 1	H 1	C 1	C 1	C 3	HL 22		H 3	C 6	F 4	F 3	F 2	F 2
4	F 2	F 7	F 2	F 2	F 2	F 2			HL 22	H 2	C 2	C 2	C 1	C 3	C 3	HL 11	C 1	H 2	C 2	C 5	F 3	F 3	F 2	FF 21
5	F 2	F 4	F 2	F 5	F 3	F 2	L 3	L 4	L 1	H 2	L 2	CL 12	L 1	C 1	C 2	C 4	C 3	C 5	C 6	L 5	F 3	F 2	F 4	F 2
6	F 2	F 4	F 2	F 3	F 5	F 7	L 3	HL 12	L 3	C 4	C 2	C 5	L 7	L 2	L 3	HL 12	H 2	C 3	C 4	LL 32	FF 41	F 2	F 2	FF 12
7	F 1		F 2	F 2	F 1	F 3	L 1	L 2	L 3	HL 11	L 2	HL 12	L 2	L 2	L 1	C 2	C 5	L 6	L 7	L 6	F 5	F 6	F 4	FF 35
8	FF 22	FF 14	F 4	F 2	F 2	F 2	C 1	CL 13	C 1	C 2	C 2	C 4	C 2	L 5	C 5	L 4	L 7	L 2	L 4	CL 26	F 2	F 2	FF 32	F 4
9	F 7	F 3	F 3	F 2	F 7	F 1	L 1	LH 43	CL 22	CL 31	CL 22	CL 11	CL 31	HL 12	HL 12	HL 11	C 2	C 1	L 4	L 4	F 2	F 3	F 3	F 2
10	F 2	F 1	F 1	F 1	F 1	F 3	L 1	L 2	CL 11	C 4	C 2	C 1	CL 12	L 2	HL 23	HL 11	HL 12	C 4	C 5		F 4	F 2	F 5	F 3
11	F 1	F 1	F 1	F 1	F 1	F 1	L 1	LH 33	L 3	L 5	C 3	LH 21	HL 12	LC 21	L 2	H 2	C 1		L 7		FF 44	FF 42	FF 13	FF 33
12	FF 22	FF 21	F 3	F 5	F 3	F 2	L 4	LH 31	CHL 22	C 5	CC 22	C 3	L 3	L 2	L 1	L 4	L 5	LH 41	HL 24	CL 33	FF 42	FF 22	FF 21	F 4
13	F 2	F 3	F 4	F 2	F 2	F 2	L 4	LH 22	HL 22	HL 22	HL 21	HL 11	L 1	HL 11	HL 11	HL 11	H 2	C 4	C 7	L 7	F 7	F 4	F 3	F 6
14	F 4	F 5	F 2	F 2	F 2	F 2	HL 32	H 2	C 4	C 2	C 5	C 2	C 2	L 2	C 1	L 4	C 4	C 5	L 4	L 6	F 7	F 8	F 7	FF 13
15	F 4	F 4	F 8	F 8	F 3	F 2	L 3	C 4	C 5	C 2	C 2	C 3	C 4	L 2	L 3	L 3	L 3	CL 25	L 6	LL 44	F 5	FF 34	FF 24	FF 72
16	FF 43	FF 55	FF 32	FF 52	FF 62	F 4	L 5	C 4	CL 71	C 7	C 4	C 7	C 3	L 2	L 3	L 3	L 4	L 8	L 5	F 8	F 8	F 8	F 8	F 4
17	FF 33	FF 52	F 3	F 1	F 3	F 1	L 1	HL 22	HL 13	CL 31	CL 21	HL 12	HL 11	H 1	C 3	C 2	C 3	C 5	C 5	FF 51	F 7	F 7	F 8	F 3
18	F 3	F 5	F 2	F 2	F 4	F 2	C 3	C 3	C 3	C 4	C 5	C 4	C 2	C 4	C 3	L 3	L 3	CL 44	CL 54	FF 52	F 2	F 2		F 4
19	F 5	F 3	F 4	F 7	F 2	F 2	L 5	LC 42	L 4	CL 32	CL 22	CL 32	C 2	H 1	C 1	H 2	H 3	C 4	C 5			F 7	F 4	F 5
20	F 6	F 5	F 3	F 3	F 3	F 2	H 4	C 3	C 2	C 4	C 4	C 2	C 2	CL 22	CL 22	C 1	C 5	C 7	C 7	F 6	F 5	F 3	F 2	F 3
21	F 2	F 2	F 2	F 4	F 2	F 2		HL 23	HL 12	HL 12	CL 11	C 2	C 3	C 4	C 5	C 7	C 6	L 4	L 2	FF 63	FF 34	F 3	F 2	F 3
22	F 1	F 5	F 3	F 2	F 6	F 4	HL 52	C 4	C 4	C 5	C 2	C 3	CL 52	HL 22	CL 32	CL 42	C 5	C 7	C 5	F 7	F 6	F 7	F 3	F 4
23	F 2	F 1	F 1	F 3		F 2		C 4	HL 23	HL 42	H 2	L 3	HL 12	L 3	CL 22	C 4	C 7	C 5	C 7	F 6	F 5	F 5	F 5	F 3
24	F 3	F 4	F 2	F 3	F 2	F 2	L 1	H 2	L 4	HL 12	HL 23	L 3	LH 11	L 2	L 5	L 3	L 5	HL 23	CL 42	F 6	F 4	F 3	F 6	F 6
25	F 6	F 3	F 3	F 3	F 8	F 7	L 6	C 3	C 7	C 4	C 3	C 5	C 2	C 2	C 2	C 3	C 5	C 7	L 6	F 8	F 5	F 6	F 6	F 8
26	F 7	F 8	F 7	F 3	F 3	F 7	C 2	C 6	C 5	C 5	C 6	C 5	C 3	C 3	C 4	C 4	H 2	H 5	C 7	FF 17	FF 34	FF 15	FF 53	F 5
27	F 5	FF 22	F 2	F 2				C 3	C 4	C 4	L 3	L 2	L 3	L 5	L 3	CL 11		H 4	C 7	F 7	F 3	F 4	F 6	F 5
28	F 2	F 2	F 1	F 2	F 5	F 5	C 2	C 3	C 3	C 3	C 2	C 3	C 4	C 2	C 2	C 1	C 3	CL 21	CL 41	LL 71	F 6	F 3	F 3	F 3
29	F 3	F 8	F 2	F 3	FF 22	FF 12	C 6	C 5	C 7	C 1	C 5	CL 13	CL 23	C 4	C 2	C 2	L 5	L 6	L 3	FF 42	F 1	F 4	F 2	F 7
30	F 2	F 3	F 2	F 2	F 2	F 1		C 3	C 2	C 3	C 4	C 3	C 2	C 1	C 2	C 6	LL 63	C 4	C 4	F 7	F 5	F 2	F 2	F 2
31	F 4	FF 12	F 4	F 8	FF 22	F 2	L 7	C 7	H 4	CL 23	CL 31	CL 22	CL 31	C 3	C 1	C 1	C 2	C 3	C 5	F 5	F 3	F 6	F 2	F 8
	00	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																								

AUG. 1984

TYPES OF ES

IONOSPHERIC DATA

AUG. 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	X 58	X 57	X 50	X 49	X 48	X 49															X 68	Y	65	72
2	X 55	50	X 48	X 47	X 46	X 36															X 60	50	X 48	A
3	A	48	A	X 41	A	A															X 89	X 79	X 69	70
4	70	60	60	60	X 47	X 41															X 66	O R 66	X 57	U R 54
5	U S 54	55	53	55	X 47	S															X 64	X 66	X 66	X 65
6	S 61	X 59	X 57	X 57	X 53	X 53															X 68	X 65	65	S 62
7	60	60	X 58	X 51	X 50	X 44															X 77	X 65	X 57	X 55
8	60	68	X 54	X 38	X 38	X 38															A	A	80	82
9	X 76	X 80	A	X 56	X 56	60															X 78	X 70	X 66	X 64
10	X 62	65	X 68	X 73	X 56	A															X 62	X 58	R	X 57
11	X 57	X 58	X 57	X 50	X 49	X 33															X 75	X 63	X 62	X 63
12	X 64	X 64	60	59	58	X 52															X 96	X 70	X 68	X 66
13	X 67	X 65	X 65	X 57	X 51	X 50															X 73	X 53	50	50
14	63	62	63	X 53	X 37	X 30															X 111	A	A	S
15	U S 54	S 49	X 50	X 55	X 53	X 56															X 80	X 86	X 73	X 47
16	X 46	X 45	X 49	X 45	40	43															X 106	X 78	X 53	X 49
17	R	X 50	X 62	X 44	X 32	A															X 79	X 70	X 70	X 58
18	X 53	55	50	X 38	X 41	42															X 136	R	X 87	X 82
19	X 75	X 79	X 77	X 58	X 51	X 37															X 93	65	X 60	X 51
20	X 51	X 51	X 46	X 42	X 39	X 39	X 45														X 93	X 73	S 61	X 57
21	X 50	X 45	X 42	X 41	X 38	X 35	X 39														X 75	X 56	A	X 51
22	S	59	S 53	X 46	X 37	X 38	X 39														U S 96	X 57	A	A
23	A	S 48	S 44	X 37	X 36	X 36	X 40														X 115	A	A	A
24	X 44	43	X 42	X 42	X 37	X 36	X 42														X 75	X 77	X 61	X 44
25	R 46	S 45	41	X 33	X 37	A	X 38														X 98	X 92	A	A
26	X 47	R	49	X 38	X 30	X 32	X 38														X 91	X 74	R	R
27	V 57	X 62	X 56	52	X 49	X 36	X 40														X 103	X 79	X 53	X 47
28	49	X 47	X 44	X 33	X 32	O R 40	X 42														X 67	X 42	X 43	X 45
29	X 43	X 44	X 40	X 42	X 41	A	A														X 96	X 56	H 44	A
30	O R 46	46	X 38	X 36	X 28	X 24	X 32														X 77	X 67	X 60	61
31	49	R 52	X 41	X 37	35	A	A														X 82	X 74	X 59	O R 52
	00	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	30	29	31	30	24	10													18	27	23	26	24
MED	X 55	55	50	X 46	X 41	X 38	X 40														X 93	X 73	X 61	X 57
UQ	X 62	X 62	X 58	X 55	X 50	X 46	X 42														X 103	X 78	X 68	X 65
LQ	X 49	48	X 44	X 40	X 37	X 36	X 38														X 79	X 64	X 56	X 50

AUG. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

AUG. 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 52	51	44	43	S 42	43	49	60	67	R 61	52	61	59	63	65	85	107	R 97	69	67	S 62	Y	F	F	
2	49	F	42	41	40	30	31	56	56	63	53	49	47	53	56	60	60	49	52	53	54	F	42	A	
3	A	F	A	35	A	A	38	58	60	59	58	63	67	80	93	95	106	104	100	91	83	73	63	F	
4	F	F	F	F	U R 41	35	37	50	67	56	58	U R 53	59	70	73	76	69	64	65	66	60	R 60	51	J R 48	
5	48	F	F	F	S 41	S	32	57	R 61	60	54	R 56	61	77	93	81	81	88	85	75	58	60	60	59	
6	55	53	S 51	S 51	47	47	45	54	52	54	55	64	68	74	70	66	60	66	A	69	S 62	59	56	56	
7	F	F	52	45	J R 44	J R 38	42	61	53	55	60	64	68	86	84	95	112	114	111	83	71	59	51	J R 49	
8	F	F	48	32	F	32	48	65	58	56	58	66	81	A	82	86	A	A	94	R	A	A	F	F	
9	70	74	A	50	50	F	46	52	60	58	62	68	74	82	80	92	100	100	108	103	R	72	64	60	58
10	56	F	62	67	50	A	31	47	59	69	72	80	83	90	87	94	96	88	76	67	56	52	R	J R 51	
11	51	52	51	44	43	27	36	54	60	66	63	73	91	109	120	126	127	R 119	89	76	69	57	56	57	
12	58	58	F	F	F	46	42	53	55	58	64	67	88	87	88	91	104	104	94	108	90	64	62	60	
13	61	59	59	51	45	44	45	80	64	J R 72	60	56	63	81	100	98	100	113	108	94	67	47	F	F	
14	F	F	F	47	S 31	S 24	36	61	R 61	60	62	68	80	88	92	102	104	A	107	105	A	A	49	S	
15	48	U S 43	S 44	49	47	50	47	R	A	A	J R 69	63	73	103	A	83	87	79	80	74	S 80	67	41	39	
16	40	39	43	J R 39	F	F	38	50	54	A	75	72	83	101	123	120	112	101	104	J R 100	72	47	43	J R 44	
17	I R 42	44	56	38	26	A	34	58	64	64	67	60	75	91	100	87	85	100	84	73	64	64	52	50	
18	47	F	44	32	35	F	42	56	64	A	52	57	68	89	100	102	106	110	120	130	R	81	76	74	
19	69	73	71	52	45	31	33	58	71	75	59	59	77	74	78	85	95	94	J R 103	87	59	54	45	42	
20	45	S 45	40	36	33	33	39	45	69	82	62	57	63	93	94	79	82	89	82	87	67	S 55	51	53	
21	44	U S 39	U S 36	35	32	29	33	60	55	56	59	68	79	85	88	100	108	93	85	69	S 50	A	U S 45	A	
22	S	F	S 47	U S 40	U S 31	32	33	58	60	60	69	58	59	R 62	68	73	70	61	U R 71	90	51	A	A	S	
23	A	J S 42	38	31	30	30	34	R 63	54	49	58	58	63	68	83	94	79	A	89	109	A	A	A	40	
24	38	35	36	36	31	30	36	57	60	50	52	60	72	85	85	70	78	96	77	70	71	55	38	A	
25	U R 40	39	F 34	28	31	A	32	48	57	57	A	A	81	92	105	103	84	87	98	92	J R 86	A	A	44	
26	41	R	F	32	24	26	32	63	54	A	60	A	A	A	A	86	87	87	89	86	69	R	48	R 48	
27	V 50	56	50	J F 46	43	31	34	60	52	56	69	91	108	113	98	85	82	88	95	97	74	47	41	R 39	
28	F 37	41	38	27	26	34	36	54	55	55	A	70	75	79	66	62	62	76	94	61	37	38	39	36	
29	38	38	35	36	35	A	A	A	69	64	E G 48	64	91	104	117	117	107	R 98	86	90	51	H 39	A	A	
30	40	F 38	32	30	22	19	27	56	60	58	59	69	H 72	77	83	93	80	66	61	71	61	54	F 53	A	
31	F 43	R 46	R 36	31	F	A	A	54	A	69	73	63	64	H 80	85	91	95	A	81	75	R 68	54	50	R 46	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	24	20	24	28	26	21	29	29	29	27	29	29	30	29	29	31	30	27	30	30	27	22	23	20	
MED	48	44	44	38	38	32	36	57	60	59	60	63	72	85	87	91	91	93	89	84	67	56	51	48	
UQ	54	54	51	46	44	38	42	60	64	64	64	68	81	91	98	96	106	100	100	94	72	64	56	56	
LQ	40	39	37	32	31	30	33	54	55	56	58	58	63	77	80	82	80	83	80	70	58	52	44	43	

AUG. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

AUG. 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 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	U L	440	480	470	L	470	450	A	A	A	A	A	A		
2								L	L	L	410	430	440	450	440	A	A	420	L	A				
3								A	L	L	A	460	470	480	L	460	440	L	L					
4								U L	L	L	450	L	460	A	470	450	430	U L	440	L				
5							L	L	L	L	460	480	460	450	A	A	A	L	L					
6								L	L	U L	460	470	470	A	470	460	L	A	A					
7								L	L	L	460	480	470	490	480	470	450	440	L	L				
8								L	L	L	L	480	480	A	480	A	A	A	A					
9								L	L	L	L	480	480	470	490	480	450	430	L					
10								L	L	L	L	470	480	480	480	470	L	L	L					
11								L	L	L	L	A	480	470	L	440	L							
12								L	L	L	A	A	L	470	L	440	L	L						
13								L	L	L	L	L	480	470	470	460	A	A	L					
14									A	A	A	A	A	490	500	A	A	A	A					
15								A	A	L	A	L	470	450	A	L	L	L	A					
16								A	A	L	460	480	470	A	L	L	L	L						
17								L	L	440	L	480	460	470	L	L	L	A						
18								L	A	L	L	470	450	450	L	A	A	A						
19								L	L	430	A	A	440	460	430	430	420	A	L					
20								L	L	L	460	430	A	430	440	L	L	A						
21								L	U L	L	440	470	U L	460	470	A	420	420	L	L				
22								L	420	A	L	L	A	450	430	420	A	A						
23								L	L	450	A	460	A	A	L	U L	430	A	L					
24								L	L	L	L	460	460	460	440	430	430	410	L					
25								L	A	A	A	A	440	A	A	A	A	400	A					
26								L	A	A	A	A	A	A	A	A	H	410	A	A				
27								L	410	A	A	A	A	480	470	460	440	410	350	L				
28								L	A	A	A	A	A	460	450	440	420	400	350	L				
29								A	A	480	480	A	A	A	460	440	A	A						
30								L	L	L	400	420	460	A	A	A	A	A	A					
31								A	A	A	A	A	500	480	A	470	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	7	13	14	21	21	19	16	16	7	2					
MED									L	L	L	400	420	460	470	470	470	455	430	410	350			
UQ									L	L	L	405	435	470	480	480	480	470	460	440	425			
LQ									L	L	L	400	415	450	460	460	450	450	435	420	405			

AUG. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

AUG. 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 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	A	A	370	370	A	310	275	235	A				
2							S	A	A	A	340	355	365	360	350	340	320	290	230	S				
3							S	A	A	A	A	A	A	A	A	A	A	285	240	S				
4							S	200	A	A	A	A	U R 340	R 350	340	340	320	285	235	S				
5							S	A	A	A	A	A	A	A	R 355	R 335	A	R 290	A	A				
6							A	A	A	A	A	A	A	A	A	A	R 315	A	A	A				
7							S	230	270	A	A	A	A	A	A	A	A	315	280	A	S			
8							S	A	A	315	A	365	A	355	A	A	A	A	A	A	S			
9							S	A	290	320	340	360	365	360	A	A	A	285	A	S				
10							S	A	A	320	335	350	360	365	355	340	325	280	235	S				
11							S	A	A	A	A	A	A	A	A	335	310	275	230	S				
12							S	230	285	A	A	A	A	A	A	A	A	280	A	S				
13							S	225	275	315	335	355	360	350	345	335	315	A	A	S				
14							S	225	A	310	A	355	A	A	A	335	320	A	A					
15							S	A	270	305	325	A	A	A	A	325	305	275	A					
16							S	205	A	A	320	335	350	A	A	A	A	A	A					
17							S	A	265	300	330	350	365	355	345	335	310	270	210					
18							S	210	265	295	310	A	350	340	335	325	A	A	A					
19							S	215	265	310	R 310	A	R 345	R 345	A	R 345	330	A	A	A				
20								200	A	A	320	A	345	A	335	325	300	275	A					
21								200	250	305	315	345	R 350	U S 345	S	S 325	300	A	A					
22								220	255	A	320	U S 340	R 350	355	345	S	A	A	A	A				
23								220	265	310	A	R 340	350	R 350	335	R 320	R 300	A	A					
24								215	260	A	320	340	A	A	A	315	300	270	A					
25								A	A	A	A	325	345	345	315	A	A	265	A					
26								A	A	A	A	A	A	A	A	A	300	270	A					
27								A	255	A	A	A	A	360	A	A	A	A	200					
28								220	260	290	305	350	A	355	350	340	315	300	A	A				
29								A	U A 250	A	A	A	A	A	A	A	A	A	A	A				
30							B	A	260	300	A	325	A	A	345	330	305	A	A					
31								210	275	305	320	325	350	340	A	A	A	A	B					
CNT								15	17	14	14	17	15	16	16	18	18	16	8					
MED								215	265	308	320	345	350	352	345	332	310	278	232					
UQ								222	270	315	335	355	360	360	350	335	315	285	235					
LQ								208	260	300	320	340	350	348	338	325	300	272	220					

AUG. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

AUG. 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 2 ⁴ 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 30	J A 24	J A 29	J A 43	J A 33	J A 28	J A 21	J A 29	J A 35	J A 43	J A 41	J A 54	J A 42	41	45	J A 53	J A 55	J A 53	J A 54	J A 64	J A 69	J A 76	J A 26	J A 77	
2			J A 36	J A 50	33	29	J A 28	J A 29	J A 41	J A 41	J A 35	J A 41	57	60	J A 74	J A 79	49	J A 41	J A 40	J A 43	40	39	J A 33	J A 36	J A 51	
3		J A 37	J A 30	J A 80	J A 84	J A 88	J A 78	J A 50	J A 62	J A 53	J A 53	J A 76	J A 54	J A 50	43	40	J A 38	35	G	26	27	23	22	J A 22	J A 51	
4		J A 50	J A 64	J A 34	J A 24	J A 23	20	J A 34	27	31	35	35	38	42	J A 50	47	G 18	G	G	27	J A 40	J A 50	J A 31	J A 34	J A 26	
5		E S 16	J A 64	J A 84	J A 38	J A 22	J A 24	J A 24	J A 59	J A 47	J A 36	39	38	J A 39	40	J A 48	J A 65	J A 75	J A 42	J A 51	J A 51	48	J A 27	E S 16	J A 26	
6		J A 31	J A 20	E S 16	E S 16	E S 16	E S 16	J A 18	J A 28	J A 34	37	J A 55	J A 61	J A 41	J A 53	43	40	J A 48	J A 59	J A 96	43	J A 84	J A 40	J A 37	J A 82	
7		J A 64	J A 31	E S 16	J A 29	J A 27	J A 27	J A 23	J A 27	J A 30	J A 89	J A 38	J A 40	54	43	43	J A 40	G	G	28	J A 87	J A 51	J A 30	23	J A 18	
8		J A 35	J A 50	J A 25	J A 29	J A 22	J A 27	J A 22	J A 34	J A 32	J A 36	J A 44	J A 54	J A 43	J A 137	J A 54	J A 60	J A 171	J A 128	J A 77	J A 128	J A 144	J A 167	J A 76	J A 75	
9		J A 42	J A 62	J A 109	J A 64	J A 40	J A 80	J A 42	J A 34	J A 34	40	41	J A 46	J A 53	J A 51	43	40	J A 34	J A 37	J A 37	J A 51	J A 41	J A 32	J A 32	J A 31	
10		J A 31	J A 33	30	J A 32	28	J A 33	30	J A 34	J A 33	39	J A 47	J A 38	G	40	J A 74	G	G	G	G	J A 33	J A 74	J A 25	32	J A 26	
11		J A 35	J A 25	J A 18	E S 16	J A 18	E S 16	J A 20	29	J A 33	J A 41	44	J A 44	J A 75	46	43	G	G	32	G	J A 78	J A 50	E S 16	J A 24	J A 26	
12		J A 36	J A 32	J A 51	J A 37	J A 52	J A 34	J A 25	28	J A 36	37	J A 48	J A 68	J A 74	50	40	34	J A 32	33	25	22	22	E S 16	E S 16	J A 31	
13		J A 30	J A 17	J A 21	J A 28	E S 16	J A 18	E S 16	J A 26	32	J A 37	J A 39	J A 38	J A 40	40	J A 41	J A 41	J A 56	J A 45	J A 32	J A 27	J A 17	J A 36	J A 50	J A 30	
14		J A 29	J A 32	J A 35	J A 50	J A 37	J A 24	J A 24	J A 42	J A 46	43	J A 84	J A 68	J A 70	J A 70	38	J A 53	J A 69	J A 120	J A 79	J A 50	J A 120	70	38	27	
15		J A 31	19	28	31	J A 34	J A 26	J A 31	J A 60	J A 127	J A 82	J A 70	J A 77	J A 53	J A 83	J A 157	60	43	47	J A 73	57	J A 32	J A 29	J A 17	22	
16		J A 29	32	J A 26	J A 36	J A 25	J A 36	E S 16	J A 30	J A 44	J A 81	J A 84	J A 77	J A 52	J A 38	70	38	40	J A 42	31	J A 30	31	23	E S 16	E S 16	
17		E S 16	J A 17	J A 27	J A 28	J A 28	J A 33	J A 33	J A 26	J A 38	37	41	39	J A 41	43	42	40	J A 40	J A 38	J A 33	J A 29	J A 27	J A 24	J A 77	J A 40	
18		J A 51	J A 34	J A 36	J A 31	J A 30	J A 29	J A 23	J A 35	J A 36	J A 72	42	J A 41	J A 40	J A 49	40	J A 44	J A 54	J A 47	J A 74	J A 48	J A 51	J A 108	J A 51	J A 31	
19		J A 25	J A 24	E S 16	E S 16	J A 30	J A 23	E S 16	26	35	J A 50	J A 48	J A 54	42	42	J A 41	41	J A 51	J A 54	J A 24	J A 27	J A 24	J A 24	J A 18	J A 20	
20		J A 33	J A 36	28	J A 24	E S 16	E S 16	E S 16	25	30	J A 34	39	J A 48	41	J A 63	37	J A 40	33	G	47	J A 47	J A 77	J A 84	J A 65	J A 32	
21		J A 28	J A 26	J A 20	28	30	20	E S 16	J A 34	J A 28	32	35	G	42	39	48	G	J A 42	34	J A 30	J A 25	J A 43	J A 64	J A 78	J A 83	
22		J A 30	J A 39	J A 49	34	E S 16	E S 16	E S 16	J A 28	35	39	J A 57	40	43	50	39	J A 70	J A 76	J A 51	J A 84	J A 89	J A 107	J A 84	J A 68	38	
23		J A 84	J A 59	J A 38	J A 26	E S 16	E S 16	J A 21	J A 26	38	42	41	J A 60	J A 74	J A 49	J A 57	G	J A 65	J A 84	J A 39	J A 50	J A 85	J A 84	J A 64	J A 40	
24		J A 32	23	J A 24	J A 29	J A 22	20	22	26	33	45	30	41	39	41	41	27	G	33	33	J A 31	J A 33	J A 38	J A 33	J A 58	82
25		83	J A 38	J A 35	J A 42	34	35	22	28	36	J A 47	J A 96	J A 112	72	99	J A 51	J A 85	J A 95	50	J A 63	J A 115	J A 64	J A 64	J A 84	56	
26		49	35	38	J A 59	310	26	21	J A 33	J A 53	J A 107	145	145	130	125	J A 144	J A 126	44	60	110	J A 50	J A 54	38	J A 25	39	
27		J A 32	23	24	26	21	19	22	28	34	40	72	95	J A 107	40	40	36	34	29	26	19	20	20	J A 78	57	
28		J A 25	J A 76	22	J A 26	34	34	J A 25	26	J A 64	J A 56	J A 74	62	48	42	41	37	35	34	28	20	27	J A 34	J A 30	J A 40	
29		39	J A 31	E S 15	22	J A 54	J A 84	J A 64	70	J A 110	J A 120	J A 127	J A 90	J A 84	64	J A 135	J A 54	48	90	78	46	J A 31	J A 83	J A 84	J A 84	
30		39	26	32	29	J A 22	24	J A 29	J A 24	30	35	42	J A 54	J A 55	J A 72	83	37	49	60	J A 74	J A 43	59	J A 30	J A 44	J A 85	
31		72	27	22	J A 39	31	J A 42	J A 34	50	88	52	50	50	44	44	J A 57	49	J A 64	J A 105	81	J A 51	19	31	39	J A 51	
		00	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		J A 32	J A 32	J A 28	J A 29	J A 28	J A 26	J A 23	J A 29	J A 35	J A 41	J A 44	J A 54	J A 48	49	43	40	J A 43	42	J A 39	J A 46	J A 48	J A 33	J A 37	J A 39	
UQ		J A 40	J A 37	J A 37	J A 38	J A 34	J A 34	J A 30	J A 34	J A 45	J A 52	J A 71	J A 65	J A 65	J A 64	J A 57	J A 53	J A 56	J A 56	J A 74	J A 51	J A 66	J A 67	J A 64	J A 56	
LQ		J A 30	J A 24	22	J A 26	J A 22	20	20	26	33	37	41	J A 40	42	42	41	36	34	33	28	J A 30	29	J A 26	J A 24	J A 26	

AUG. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

AUG. 1984

FBES (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	24	21	22	19	21	E	18	24	31	33	36	38	40	40	45	49	52	52	44	61	31	50	22	30
2	23	30	27	23	19	24	19	30	33	33	40	39	40	40	45	46	37	38	36	28	34	21	E	A A 51
3	A A 37	21	A A 80	23	A A 88	A A 78	30	51	39	40	46	42	39	40	39	37	32	G	26	19	E	E	22	46
4	20	20	E	E	E	E	20	27	31	35	35	38	41	47	40	U Y 18	G	G	25	U Y 40	E	19	29	18
5	E S 16	E	E	E	E	E	E	E	30	35	35	39	37	38	39	45	49	52	37	32	37	46	26	E S 16
6	18	E	E S 16	E S 16	E S 16	E S 16	17	U A 28	34	35	43	41	41	47	41	39	41	50	A A 96	30	19	20	20	E
7	19	21	E S 16	E	E	19	E	25	30	36	37	39	43	39	39	40	G	G	24	52	47	28	21	18
8	28	E	20	27	20	E	E	32	32	36	42	42	41	A A 137	43	49	A A 171	A A 128	75	87	A A 144	A A 167	52	26
9	40	62	A A 109	46	20	23	35	25	33	37	40	43	42	42	41	40	32	31	36	51	29	26	29	24
10	29	26	18	E	E	A A 33	E	27	33	37	36	38	G	39	39	G	G	G	G	20	27	E	29	26
11	24	E	E	E S 16	E	E S 16	E	25	31	38	41	44	52	39	39	G	G	32	G	26	46	E S 16	E	26
12	21	U Y 32	22	27	41	E	E	27	29	34	46	51	53	44	35	34	32	31	25	19	E	E S 16	E S 16	26
13	E	E	E	25	E S 16	E	E S 16	25	31	35	39	38	39	40	40	40	54	43	30	27	E	E	29	E
14	E	E	E	29	25	E	G	39	U A 45	43	45	51	49	40	38	46	59	A A 120	71	46	A A 120	A A 70	26	21
15	26	E	19	19	27	U A 22	26	25	A A 127	A A 82	38	46	40	41	A A 157	45	40	40	37	50	30	29	17	E
16	26	29	21	28	E	26	E S 16	22	41	A A 81	34	38	43	37	61	34	34	30	25	29	29	E	E S 16	E S 16
17	E S 16	E	20	E	E	A A 33	32	24	38	36	39	38	39	40	40	39	39	36	32	25	23	E	E	21
18	40	25	24	25	27	26	17	30	31	A A 72	42	41	39	40	39	39	47	45	69	48	25	52	29	22
19	19	E	E S 16	E S 16	27	21	E S 16	26	34	36	44	53	42	40	39	40	37	44	24	20	23	24	E	U A 20
20	20	19	20	E	E S 16	E S 16	E S 16	23	29	30	38	39	40	47	37	39	33	G	40	47	38	49	18	24
21	18	17	E	E	18	E	E S 16	23	23	32	35	G	41	39	48	G	36	29	30	21	28	23	U A 29	A A 83
22	25	E	E	18	E S 16	E S 16	E S 16	27	31	38	51	38	41	47	39	36	35	38	66	62	26	A A 84	A A 68	U Y 38
23	A A 84	27	19	E	E S 16	E S 16	E	25	34	35	40	48	40	48	U Y 57	G	39	A A 84	31	49	A A 85	A A 84	A A 64	34
24	25	E	21	28	E	E	16	25	24	37	39	38	38	37	37	G 27	G	29	22	26	25	30	34	A A 82
25	E	22	19	20	30	A A 35	G	25	30	45	A A 96	A A 112	60	38	51	73	55	35	52	78	45	A A 64	A A 84	37
26	32	30	31	26	18	19	18	30	42	A A 107	52	145	A A 130	A A 125	A A 144	79	38	51	51	32	50	30	22	32
27	30	23	E	18	E	E	G	27	31	39	60	78	48	40	40	33	33	29	26	19	19	19	E	26
28	E	31	E	19	21	27	19	25	52	51	A A 74	62	47	42	40	37	34	30	26	20	20	28	20	25
29	30	28	E S 15	E	20	A A 84	A A 64	A A 70	45	40	42	44	69	48	50	45	37	85	55	41	29	20	A A 84	A A 84
30	29	17	28	19	E	E	25	23	30	34	40	48	48	53	75	47	48	45	45	30	19	20	30	A A 85
31	20	E	E	25	21	A A 42	A A 34	51	A A 88	46	49	49	41	41	50	45	59	A A 105	65	41	18	25	35	20
	00	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	24	20	19	19	18	16	16	26	33	37	40	42	41	40	40	39	37	37	32	32	28	25	22	26
UQ	29	26	22	25	21	26	20	30	38	42	46	48	48	47	49	46	48	48	52	48	42	40	30	36
LQ	18	E	E	E	E	E		25	31	35	38	38	40	40	39	34	32	30	26	26	20	19	16	20

AUG. 1984

FBES (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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	16	17	23	24	23	22	19	17	16	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	16	15	18	21	23	24	27	24	22	19	16	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	15	15	18	19	18	23	28	24	27	19	18	14	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	16	17	21	22	22	22	28	18	22	17	14	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	15	16	17	21	23	19	25	23	19	18	18	14	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	16	16	17	18	22	27	24	27	25	22	15	15	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	13	16	22	25	25	28	27	27	24	22	16	14	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	15	16	24	23	25	28	25	25	22	20	15	15	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	15	16	17	18	23	27	23	26	25	20	16	14	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	14	15	18	24	24	27	23	26	26	22	16	23	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	14	18	23	23	28	26	27	24	19	19	14	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	14	19	21	22	24	26	24	24	16	15	14	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	14	18	21	22	23	21	20	16	22	16	14	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	15	15	21	26	24	23	23	21	18	15	15	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	15	16	17	22	24	23	22	23	22	19	15	E S 15	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	16	16	14	19	22	22	24	24	23	16	14	15	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	14	15	26	23	23	24	24	24	19	19	16	18	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	E S 16	18	21	20	27	24	24	28	24	19	20	14	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	25	22	24	31	26	27	25	23	17	16	16	E S 15	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	15	15	20	21	20	23	25	27	24	24	19	15	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	15	15	17	20	24	28	26	26	22	18	18	E S 16	E S 16	E S 16	E S 16	E S 16	
22		E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	17	27	28	27	27	27	24	21	15	15	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	21	19	23	28	24	27	23	18	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
24		E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	13	15	15	15	18	21	21	24	22	18	18	14	15	E S 15	E S 15	E S 15	E S 15	E S 15
25		E S 15	E S 15	E S 15	E S 15	14	13	16	13	14	18	21	25	23	29	26	21	18	18	14	E S 15	E S 15	E S 15	E S 15	E S 15
26		E S 15	E S 15	14	E S 15	E S 15	E S 15	16	16	15	18	18	20	25	22	24	21	20	15	15	E S 15	E S 15	14	E S 15	E S 15
27		E S 15	E S 15	E S 15	E S 15	E S 15	13	16	15	16	19	21	26	27	25	28	21	20	18	15	E S 15	E S 15	E S 15	E S 15	E S 15
28		E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	14	17	20	21	24	25	21	21	20	14	15	E S 15	E S 15	E S 15	E S 15	E S 15
29		E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	15	14	18	20	24	22	21	26	19	18	14	16	E S 16	E S 15	E S 15	E S 17	E S 15
30		E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	15	14	15	19	21	28	30	26	18	20	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
31		E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	16	15	18	18	22	21	20	20	18	19	16	14	E S 15	E S 15	E S 15	E S 15	E S 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	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	21	23	24	24	25	22	19	16	15	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	19	22	24	27	26	27	24	20	18	15	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	15	15	17	19	22	23	23	24	19	18	15	14	E S 16	E S 16	E S 16	E S 16	E S 16

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FMIN (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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 300	305	285	300	S 295	325	355	350	360	R 345	270	295	290	270	240	260	315	R 330	290	305	S 275	Y	F	F
2	340	F	285	305	300	300	305	305	285	315	300	305	225	285	295	300	335	295	305	320	315	F	285	A
3	A	F	A	315	A	A	330	335	315	335	310	315	300	300	310	300	295	300	300	305	315	315	310	F
4	F	F	F	F	U R 330	330	310	330	350	340	345	R	295	305	315	280	305	310	305	320	300	R 300	295	J R 300
5	280	F	F	F	S 330	S	310	325	R 325	340	295	R 275	280	290	320	310	285	300	325	320	295	285	290	290
6	290	290	S 285	S 305	340	340	375	370	345	335	300	295	295	310	300	295	300	305	A	325	S 280	290	295	295
7	F	F	325	335	J R 320	J R 330	335	350	365	310	300	295	270	300	290	295	305	315	325	345	315	315	305	J R 295
8	F	F	355	310	F	345	365	385	370	330	310	305	300	A	285	280	A	A	310	R	A	A	F	F
9	285	335	A	305	310	F	360	365	350	310	345	300	295	290	260	280	300	310	320	330	310	280	290	275
10	285	F	305	330	370	A	320	320	320	320	305	295	300	300	285	310	310	335	330	335	305	290	R	J R 275
11	295	290	335	320	370	335	360	350	335	350	300	280	285	295	285	300	305	R 310	340	310	320	280	285	280
12	295	310	F	F	F	335	355	375	365	320	295	275	295	300	285	280	305	325	320	325	365	310	275	285
13	295	290	305	305	300	295	310	375	345	J R 375	350	305	285	275	300	300	300	325	335	340	350	295	F	F
14	F	F	F	320	S 355	S 355	335	345	R 345	340	320	310	285	270	270	295	305	A	315	335	A	A	285	S
15	280	U S 265	S 260	S 305	295	340	340	R	A	A	J R 325	300	260	320	A	285	285	305	310	285	S 300	330	340	270
16	285	280	315	J R 310	F	F	355	360	315	A	320	290	275	285	260	320	305	295	305	J R 330	345	320	300	J R 305
17	I R 305	305	355	355	305	A	325	360	360	345	345	300	280	305	310	305	290	320	335	340	305	330	305	310
18	295	F	340	330	315	F	355	365	375	A	335	290	295	310	300	305	300	315	375	375	R	310	295	310
19	295	300	315	300	290	305	320	345	350	360	340	280	305	285	295	295	305	320	J R 325	355	305	315	310	285
20	300	310	S 300	320	305	335	345	375	345	365	345	290	255	305	330	290	285	325	315	325	345	S 300	295	300
21	305	U S 305	U S 320	340	330	325	320	385	380	320	320	295	290	280	285	310	335	345	340	335	320	A	U S 300	A
22	S	F	S 320	U S 325	U S 320	345	335	355	350	365	335	325	305	R 290	310	320	330	305	U R 310	345	305	A	A	S
23	A	J S 320	340	S 340	315	335	365	R 365	390	335	335	320	315	295	300	325	310	A	310	355	A	A	A	300
24	270	300	F 310	270	280	300	330	335	330	310	285	275	305	310	325	310	290	365	350	315	310	305	A	A
25	U R 270	280	F 270	265	A	A	295	350	340	290	A	A	270	290	310	315	320	320	320	330	J R 340	A	A	290
26	270	R	F	300	300	310	310	330	320	A	270	A	A	A	A	A	310	310	310	340	350	R	310	R 300
27	270	V 280	300	J F 305	330	340	350	360	350	280	270	280	300	330	350	340	310	315	365	375	380	315	310	R 270
28	310	F 305	340	330	260	320	360	H 290	A	A	A	A	270	320	310	315	280	320	350	360	300	295	310	280
29	270	275	270	310	300	A	A	A	320	380	G	265	275	280	275	280	300	R 305	310	350	320	315	A	A
30	270	F 280	A	370	360	370	A	360	360	355	275	280	H 275	270	A	305	320	340	310	350	360	345	F 305	A
31	F 280	R 350	R 360	A	F	A	A	A	A	310	340	300	275	H 300	310	310	320	A	320	350	R 360	350	305	R 310
CNT	24	20	23	27	25	21	28	28	28	26	29	27	30	29	28	30	30	27	30	30	27	22	22	20
MED	288	300	315	310	315	335	335	352	348	335	310	295	288	295	300	300	305	315	320	335	315	310	300	292
UQ	298	308	338	330	330	340	355	365	360	350	335	302	300	305	310	310	310	325	335	350	345	315	310	300
LQ	275	280	292	305	300	320	320	335	328	315	295	280	275	285	285	290	300	305	310	320	305	295	290	280

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M(3000)F2 (0.01)

IONOSPHERIC DATA

AUG. 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	U L 375	375	380	L	380	375	A	A	A	A	A	A			
2								L	L	L	400	395	420	400	420	A	A	380	L	A				
3								A	L	L	A	400	380	385	L	390	L	385	L	L				
4									U L 365	L	400	L	390	A	370	390	370	U L 350	L					
5								L	A	L	390	375	390	400	A	A	A	L	L					
6									L	L	A	360	360	A	380	370	L	A	A					
7								L	L	L	390	395	405	365	385	380	375	385	L	L				
8								L	L	L	L	375	365	A	365	A	A	A	A					
9									L	L	L	355	395	405	365	355	355	350	L					
10									L	L	L	380	375	395	395	375	380	L	L	L				
11									L	L	L	L	A	375	405	L	375	L						
12									L	L	L	A	A	L	380	L	365	L	L					
13								L	L	L	L	L	395	395	340	370	L	A	A	L				
14									A	A	A	A	A	285	260	A	A	A	A					
15									A	A	L	370	A	370	375	A	L	L	L	A				
16									A	A	L	370	375	380	A	L	L	L	L					
17									L	L	L	410	L	375	390	360	L	L	L	A				
18									L	A	L	L	L	395	400	375	L	A	A	A				
19								L	L	L	A	A	410	390	420	A	355	A	L					
20									L	L	L	400	430	A	395	365	L	L	A					
21									L	U L 375	L	350	U L 325	380	A	390	355	L	L					
22									L	L	A	L	L	A	375	370	380	A	A					
23									L	L	390	A	L	A	A	L	U L 350	A	L					
24								L	L	L	L	370	370	360	380	390	370	395	L					
25									L	A	A	A	A	390	A	A	A	A	A					
26								L	A	A	A	A	A	A	A	A	H 350	A	A					
27								L	L	390	A	A	A	370	370	360	380	375	390	L				
28								L	A	A	A	A	A	370	360	380	380	390	400	L				
29								A	A	L	360	370	A	A	A	A	360	A	A					
30								L	L	390	380	375	A	A	A	A	A	A	A					
31								A	A	A	A	A	L	370	350	A	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2	7	12	14	21	21	19	13	16	6	2					
MED									378	380	385	375	380	385	375	375	370	362	395					
UQ									390	395	400	395	395	380	390	380	390							
LQ									378	375	370	370	375	365	370	355	350							

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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 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							250	250	255	250	465	350	380	405	510	400	275	275	280	A	A			
2								325	350	300	400	400	675	455	400	360	300	375	L	310				
3								A	350	325	290	355	310	340	350	325	320	320	300	285				
4									260	280	290	L	360	350	305	340	310	325	320					
5									275	290	270	380	400	400	350	300	280	340	300	275				
6									265	275	360	345	350	310	340	340	335	325	A					
7									250	245	390	350	380	400	330	350	300	280	250					
8									225	245	265	330	360	340	A	360	350	A	A	310				
9									260	L	315	380	330	350	335	400	360	310	300	380				
10									325	310	325	350	320	325	340	310	300	250	290					
11									L	290	275	340	350	350	340	330	305	280	270					
12									250	L	315	350	370	350	330	350	355	300	290	290				
13									230	L	250	260	U	L	350	400	370	320	315	320	280	255		
14										265	315	325	340	350	370	330	295	A	290					
15									A	A	280	350	400	285	A	340	295	295	270					
16									A	A	300	320	400	350	300	290	290	295	260					
17									250	255	295	350	365	310	300	305	320	280	245					
18									220	A	L	315	400	350	300	300	300	300	290	260				
19									265	250	250	290	E	A	400	315	325	335	325	295	280	255		
20									250	250	270	385	H	370	320	270	305	330	290	265				
21									320	295	330	320	345	340	300	265	250	250						
22									255	240	275	300	350	365	330	300	290	275	A					
23									L	300	305	370	305	340	325	285	300	A	295					
24									250	H	230	305	330	380	355	320	290	380	340	280	245			
25									270	280	A	A	A	A	340	350	310	280	A	290	280	A	270	
26									235	260	A	380	A	A	A	A	280	290	270					
27									235		375	E	A	A	350	350	310	280	295	305	305	280	250	
28									280	A	A	A	A	350	305	325	325	375	300	250				
29									A	275		G	400	A	350	330	340	330	330	A	E	A	300	
30									255	250	260	350	360	325	340	A	290	275	270	300				
31									A	A	295	255	315	375	325	300	305	280	A	280				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	13	23	25	29	27	30	29	28	30	30	26	28					
MED							250	250	255	280	328	350	350	335	328	318	300	285	271					
UQ							275	272	305	355	378	375	350	345	340	320	300	291						
LQ							235	250	260	295	338	340	320	300	300	290	280	255						

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H^oF2 (KM)

IONOSPHERIC DATA

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H^oF (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	300	280	320	300	285	255	240	225	225	210	200	195	200	235 ^A	A	A	A	A	A	A	A	300	A	U A 300	280	
2	250	E A 350	325	305	300	E A 325	295	250	A	215	A	215	215	E A 215	A	A	245	A	A	285	280	E A 275	300	A		
3	A	315	A	310	A	A	E A 300	A	A	A	A	E A 245	200	200	220	205	200	220	240	265	245	240	260	375 ^A		
4	300	300	285	250	260	260	290 ^A	235	225	225	210	185	H 220	A	210	200	H 215	225	220	260 ^A	250	260	300 ^A	300		
5	295	285	300	280	225	U A 310	275	235 ^A	220	225	200	200	210	200	A	A	A	A	A	A	A	A	295	270	275	
6	290	290	280	280	240	220	220	210 ^A	200	200	H A	250	250	A	235	220	A	A	A	A	260	265	265	285	280	
7	305	280	245	245	265	250	245	225	195	210	200	205	A	200	220	E A 240	205	205	225	250	270	245	290	300		
8	345	250	235	A	300	270	240	A	205	195	A	200	E A 225	A	E A 255	A	A	A	A	A	A	A	A	E A 350	305	
9	330	300	A	A	260	260 ^A	250	215	210	E A 210	E A 215	A	225	210	210	250	200	240	A	250	245	265	290	320		
10	330	345	280	250	195	A	260	245	250	230	200	215	200	210	210	205	200	205	220	245	250	275	350	350 ^A		
11	315	270	250	250	205	E S 250	250	245	215	A	E A 250	A	A	A	210	210	200	245	225	250	240	250	250	310	330	
12	305	A	290	275	A	225	225	225	220	200	A	A	A	A	200	205	220	230	245	250	205	240	265	300		
13	290	295	250	270	295	290	250	225	205	210	205	200	190	200	E A 250	250	A	A	A	250	230	195	E S 250	A S 340		
14	280	295	250	A	255	285	255	240	240	A	A	A	A	200	215	H A	A	A	A	A	240	A	A	305	320	
15	330	320	350	280	295	240	220	200	A	A	210	A	225	240	A	A	A	A	A	A	A	E A 305	250	230	215	320
16	350	350	280	A	305	290	225	240	A	A	195	200	E A 250	205	A	210	215	205	250	240	230	240	300 ^S	285		
17	320	295	245	210	E S 290	A	A	245	A	210	215	200	225	225	245	H 220	A	250	A	A	245	255	245	250	285	
18	A	A	255	A	330	A	250	220	210	A	250	220	200	200	215	A	A	A	A	A	240	215	260	265	270	
19	275	270	240	220	E A 285	295	245	230	230	A 215	A	A	215	205	185	A	U A 250	A	230	215	235	250	255	315		
20	300	290	290	260	305	285	230	215	230	200	H 205	190	200	A	220	240	210	220	A	255	U A 240	A	290	290		
21	265	300	285	245	270	280	255	230	200	H 200	H 195	175	A	225	A	220	230	A 235	A	220	240	300	E A 320	A		
22	U A 315	295	250	235	250	230	250	225	H 220	H 230	A	210	H 210	A	225	210	225	A	A	255	205	A	A	A		
23	A	265	250	245	255	240	240	215	H 220	H 200	220	A	200	A	A	R	H 250	A	250	230	A	A	A	A		
24	E A 350	310	320	310	280	280	240	240	220	240	205	210	220	225	225	220	210	H 245	230	250	250	E A 250	A	A		
25	350	310	340	390	A	A	H 220	225	230	A	A	A	A	210	A	A	A	E A 260	A	A	240	A	A	A		
26	E A 350	340	A	A	300	305	270	230	A	A	A	A	A	A	A	A	H 250	A	A	A	230	250	275	270	E A 325	
27	350	290	250	255	230	225	255	230	205	205	A	A	A	240	230	225	220	225	240	225	210	250	260	E A 400		
28	320	320	230	280	400	290	225	210	A	A	A	A	A	255	E A 260	230	225	230	245	210	280	A	305	E A 350		
29	360	345	340	280	310	A	A	A	A	250	260	240	A	A	A	A	240	A	A	A	230	240	260	A	A	
30	A	310	E A 320	225	255	295	A	230	220	210	200	A	A	A	A	A	A	A	A	A	250	225	260	E A 350	A	
31	A	350	250	220	A	A	A	A	A	A	A	A	A	230	240	A	A	A	A	A	E A 260	230	245	295	A	A
CNT	27	29	28	25	27	24	27	27	22	21	18	18	20	21	19	17	20	14	13	28	27	23	26	23		
MED	310	295	274	270	272	270	248	230	220	210	204	201	212	210	218	220	222	225	240	244	245	250	290	298		
UQ	339	312	302	280	300	290	255	238	225	225	212	215	224	225	227	228	245	232	250	252	250	264	302	323		
LQ	298	285	250	245	255	242	235	222	205	200	200	200	200	200	210	205	210	220	230	230	230	244	265	285		

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H^oF (KM)

IONOSPHERIC DATA

AUG. 1984

H°E (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							S	A	A	110	105	110	110	110	115	110	110	E A 125	A	120	S			
2							S	A	A	110	110	110	110	110	110	110	110	110	110	110	S			
3							S	A	A	A	A	A	A	A	110	110	110	110	110	110	S			
4							S	A	A	110	110	110	110	110	B 115	A 115	B 120	B 115	110	110	S			
5							S	A	A	A	110	110	105	A	110	110	115	110	110	A				
6							S	A	110	110	110	110	110	110	A	A	115	105	115	S				
7							S	100	110	A	A	A	A	A	A	A	110	110	A	S				
8							S	A	A	110	110	110	110	110	110	110	A	A	A	S				
9							S	A	110	110	110	110	110	110	A	A	A	110	A	S				
10							S	A	A	110	110	110	110	110	110	110	110	110	110	S				
11							S	110	A	A	A	A	A	A	A	110	110	110	105	S				
12							S	110	110	110	A	A	A	A	A	A	A	110	A	S				
13							S	110	110	110	110	110	110	110	110	110	110	110	110	S				
14							S	A	A	105	105	110	110	110	110	110	H 105	105	110					
15							S	120	105	110	110	105	A	105	105	115	110	A 115	A					
16							S	110	110	110	110	110	110	A	A	A	A	A	A					
17							S	A	110	110	110	110	110	110	110	110	110	110	110					
18							S	S	110	110	110	110	110	110	110	110	110	110	A					
19							S	120	120	E A 125	A	E B 125	A	A	110	120	115	110	120					
20								120	105	115	110	A	120	A	120	120	120	120	A 115					
21								A 120	A	105	110	110	110	110	105	115	110	115	120	S				
22								115	110	A	110	110	115	115	110	110	110	110	A					
23								120	A	E A 125	A	E A 125	115	H 110	A 120	110	110	110	A					
24								115	A	A	A	A	A	A	A	A	115	100	A 115	115				
25								A	A	A	A	110	110	B 115	110	110	A	110	A					
26								A	A	A	A	A	A	A	110	110	110	110	A					
27								A	110	A	A	A	A	A	A	A	A	A	115					
28								110	110	105	105	A	A	115	110	115	110	110	A					
29								A	110	A	110	110	110	110	110	110	A	A	A					
30								B	A	110	110	110	110	B 120	B 120	115	115	110	110	A				
31								B 125	110	A 115	A 115	110	110	110	110	110	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								15	18	21	21	23	22	20	23	25	23	25	16					
MED								115	110	110	110	110	110	110	110	110	110	110	110					
UQ								120	110	110	110	110	110	110	112	115	110	110	115					
LQ								110	110	110	110	110	110	110	110	110	110	110	110					

AUG. 1984

H°E (KM)

IONOSPHERIC DATA

AUG. 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	F3	F7	F5	F5	F6	F5	L3	L3	L2	C1	C2	C1	C1	H1	H1	C2	C4	CL22	CL61	L7	F6	F4	F4	F5
2	F6	F7	F4	F7	F5	F6	LL22	L3	L3	C1	HC11	HC11	H2	H2	H3	H3	H2	H2	C4	L5	F6	F4	F4	F7
3	F4	FF27	F6	F6	F5	F4	L5	L4	L4	L3	L2	L2	LH11	LH11	CH11	HC12	C1		H1	L2	F4	F2	F6	F7
4	F4	F4	F2	F3	F2	F2	L2	HL21	HL21	HC12	HC11	HC11	H2	H2	H1	L1			H2	C5	FF31	FF43	FF33	FF22
5	F1	F2	F2	F3	F2	F3	L2	L2	L4	HL11	HC12	C2	C2	HL11	H2	C4	C3	C4	C4	L5	F6	F4		F3
6	F3	F2		F1			L2	L2	C3	HC22	CH21	CH21	C2	CH31	HL11	HL11	C3	C4	C7	L3	F3	F3	F3	F2
7	FF21	F2		F3	F7	F4	L2	HC12	CH11	LH21	L2	LH11	L2	LH11	L2	HL12			L3	L7	F7	F6	F3	F2
8	FF72	FF31	F4	F5	F5	F2	LL11	L4	L2	HC21	C2	C1	C1	C7	C2	C3	L5	L6	L6	LL54	FF43	FF45	FF35	FF43
9	FF42	F7	F7	F7	F7	F5	L3	L2	HL11	HL21	HL11	HL21	HL21	H2	L2	HL11	L1	H1	LL52	L7	FF32	F4	F5	F4
10	F4	F7	F4	F3	F5	F4	L2	L3	HL22	HL21	C1	H1		H1	LH11					L3	F4	F2	F4	F1
11	F3	F2	F3	F1	F1	F1	L1	C3	L3	L3	L2	L2	L5	L1	L1			H2		LL22	FF42	F1	F3	FF12
12	FF24	FF46	F3	F4	F5	F3	L1	HC11	C1	C2	L3	L5	L4	L2	L2	L1	LL11	H2	L2	L1	F1	F1	F1	F3
13	F3	F1	F1	F5	F1	F2	L1	HL21	HL11	HL12	HL11	HL11	H1	H1	H1	H2	C6	C4	C3	C6	F2	F3	F3	F3
14	F4	F5	F4	F7	F5	FF22	HL11	HL43	HL32	C3	C2	C3	C3	C1	C1	C2	C5	C6	C4	F5	F5	F7	F6	F3
15	F5	F2	F5	F5	F7	F6	C4	C4	C6	C5	C2	C2	L1	C2	C4	C3	C2	CL31	L6	F8	F4	F5	F2	F3
16	F7	FF53	FF71	F4	F2	F5	H1	H1	C2	C4	C1	C2	C2	L1	L6	L2	L4	LL11	L2	F7	F3	F4	F1	
17	F1	F1	F3	F1	F4	F7	L5	HL12	H3	H2	H1	H1	H1	H1	H1	H1	C2	C2	C4	FF21	F4	F2	F2	F4
18	F5	F4	F2	F3	F3	F3	L1	C2	C2	C3	C3	C2	H1	H1	H1	H2	C2	C2	L3	F7	FF42	F3	FF33	F3
19	F3	F2	F1	F1	F4	F7	L1	H2	C2	CL31	CL22	C1	HL11	HL11	H1	HC11	C2	C4	C1	F5	F5	F5	F2	F4
20	F3	F4	F5	FF11				H2	C1	C1	C1	LH11	HL11	CL23	HL11	H1	H1		CL31	F6	F4	F5	F3	F4
21	F3	F5	F2	F6	F6	F2	F1	LH11	L1	H2	H1		H1	H1	H1		H1	C1	C2	FF12	FF35	FF23	FF33	F3
22	F4	F4	F3	F2		F1	F1	H2	H2	HL11	H4	H1	H1	H3	H1	C3	C2	C2	L5	F6	F3	F3	F4	F7
23	F6	F5	F3	F2	F1		F1	H1	HL31	HL21	HL12	CL21	C2	C2	CL31		H2	C6	L7	F7	F7	F3	F3	F4
24	F3	F3	F4	F5	F2	F2	F1	H1	LH22	L3	HL21	HL11	L1	L1	L1	L1	HL11	HL11	C1	C3	F5	F3	F3	FF23
25	F3	F3	F4	F4	F6	F6	L1	CL21	L3	CL22	C6	C5	C4		C4	C5	C5	C4	L4	F5	F4	FF34	F4	F5
26	F5	F5	F6	F4	F2	F2	F2	CL11	C5	C5		C5	C5	C6	C6	C5	H2	H3	C5	F4	F5	F6	F3	F5
27	F5	F3	F2	F2	F1	F1	F1	C2	C3	C2	L4	L6	L2	HL11	HL11	LH21	HL11	LH21	H2	F2	F2	F1	F2	F4
28	FF21	F4	F1	FF22	F3	F2	F3	H1	C5	C4	C5	H4	HL21	H1	H1	H1	C1	C2	C3	F2	F3	F3	F2	F2
29	F3	F5		F2	F3	FF24	FF22	C4	C5	C3	C4	C2	C3	C2	C3	C3	C3	L5	L5	F5	F5	FF12	F3	FF12
30	F4	F3	F3	F3	F2	F2	L3	L2	H2	H2	CL21	C3	C2	C2	C5	C2	C4	C6	C5	F5	F3	F3	F4	FF24
31	FF23	F2	F2	F5	F5	F5	F2	C5	C5	CL31	CL21	C2	CL21	CL21	C3	C3	C4	C6	C6	F5	F2	F3	F3	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																								

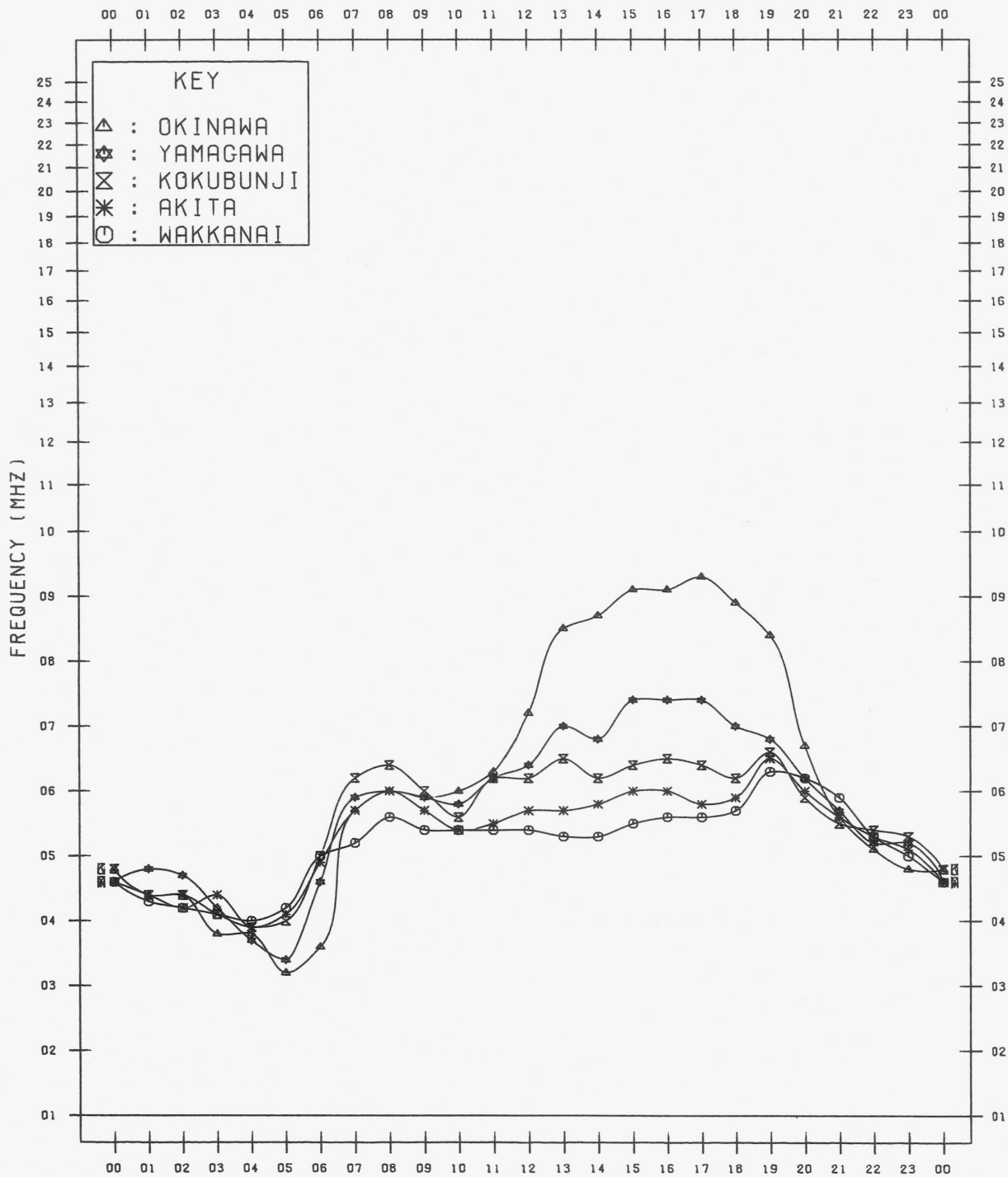
AUG. 1984

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

135 °E MEAN TIME

AUG. 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
* ₁	F _{MIN}
^	GREATER THAN
v	LESS THAN

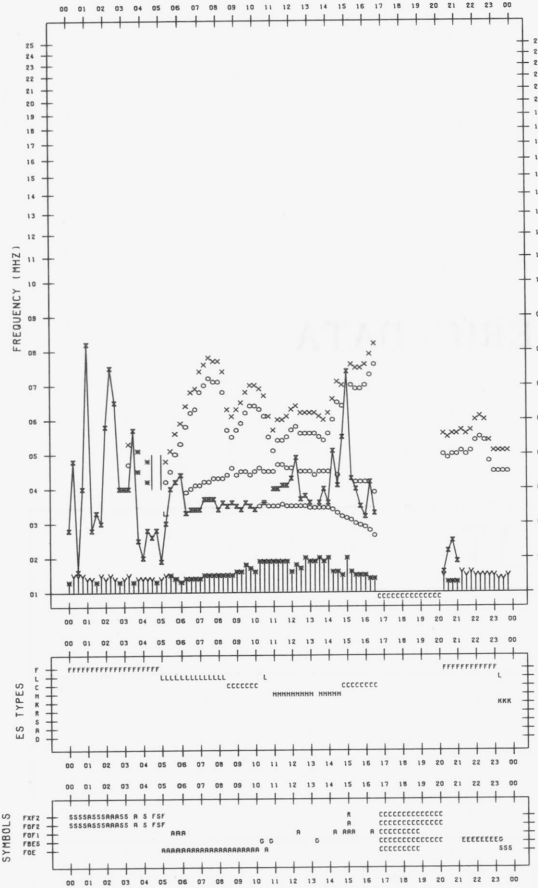
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 8/ 1

135°E MEAN TIME



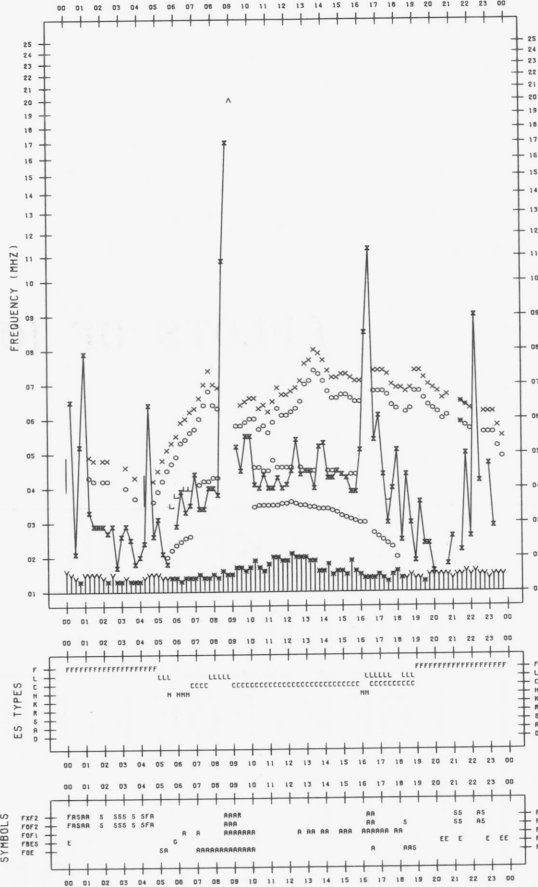
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 8/ 3

135°E MEAN TIME



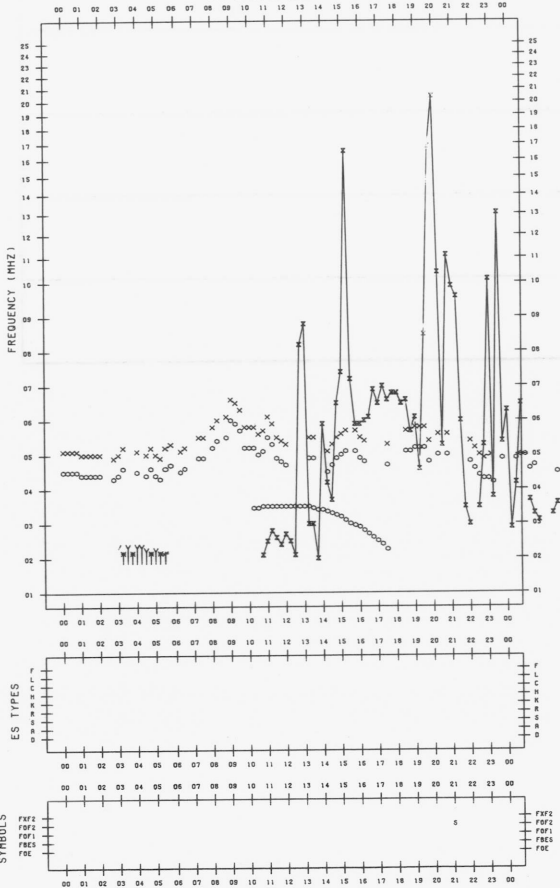
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 8/ 2

135°E MEAN TIME



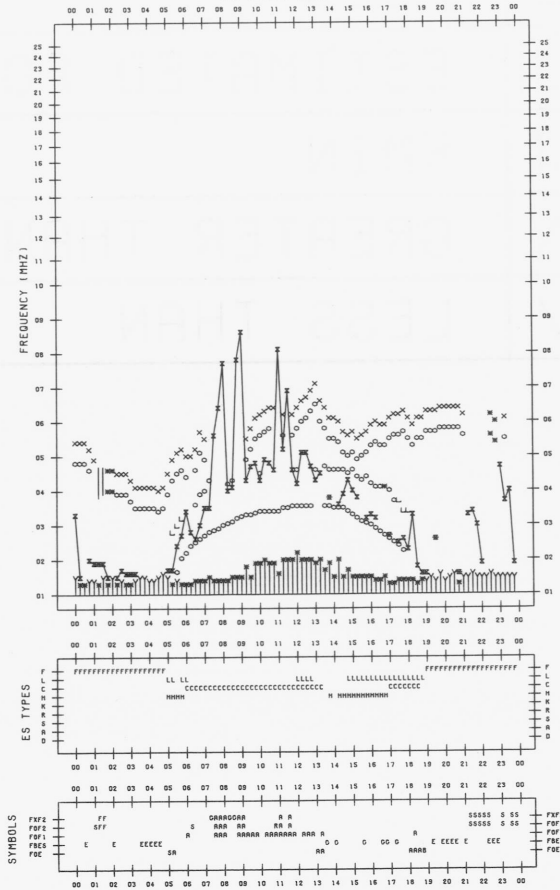
F-PLOT DATA

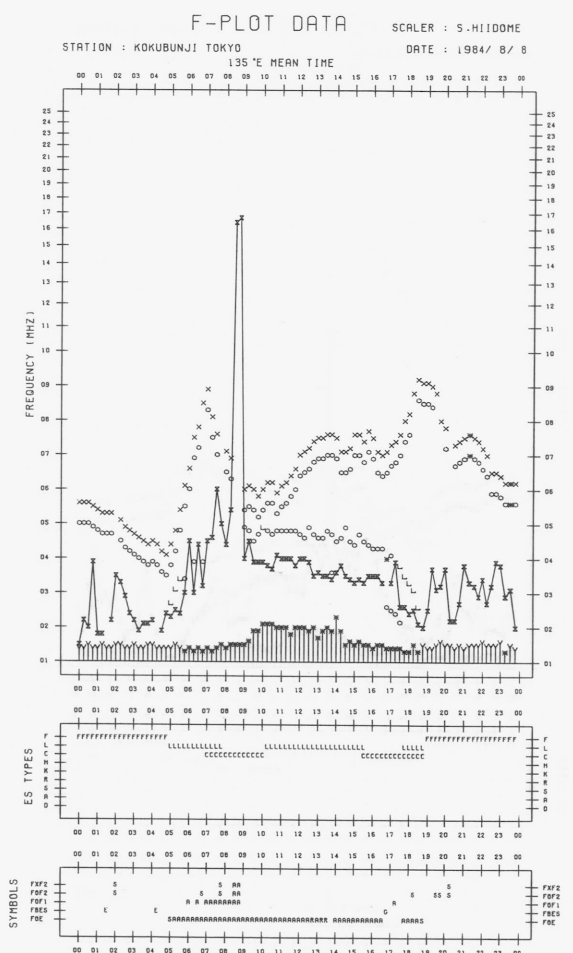
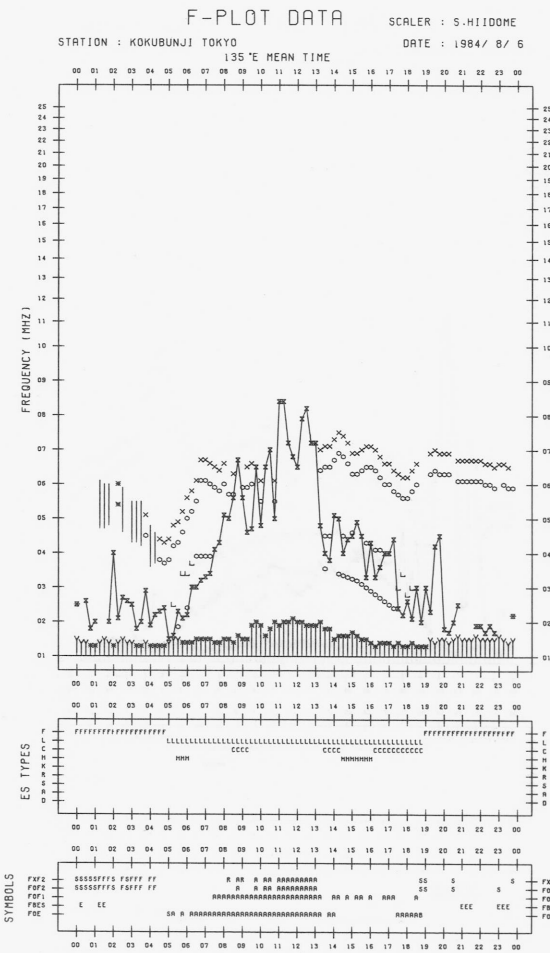
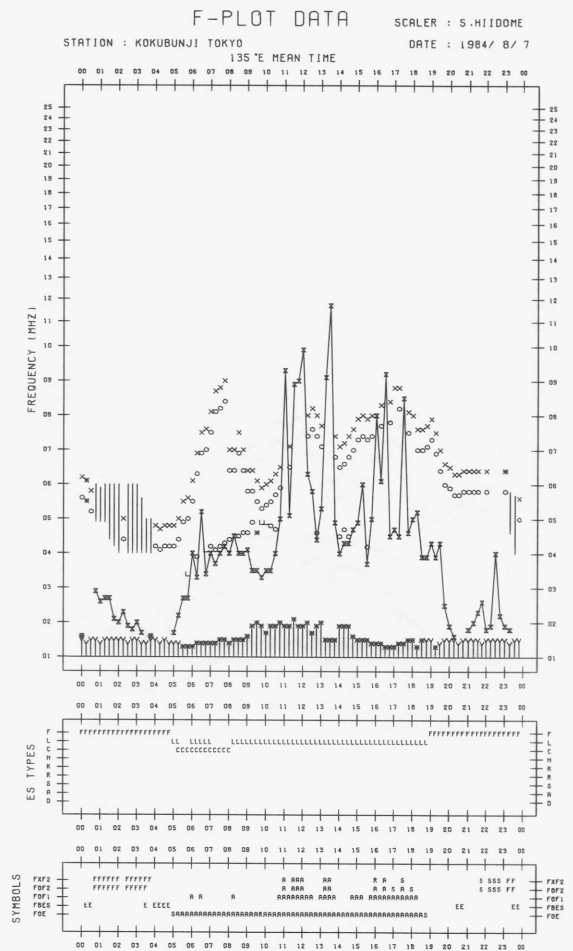
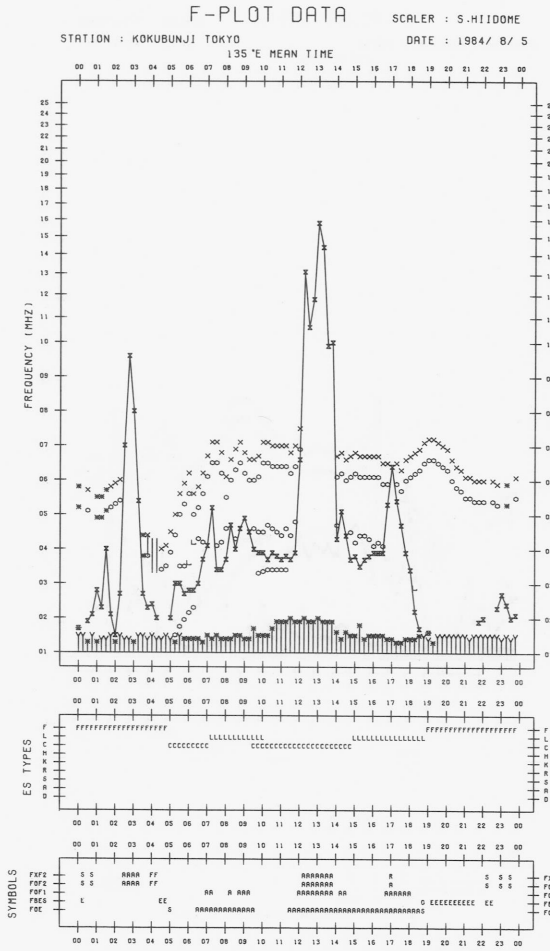
SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/ 8/ 4

135°E MEAN TIME



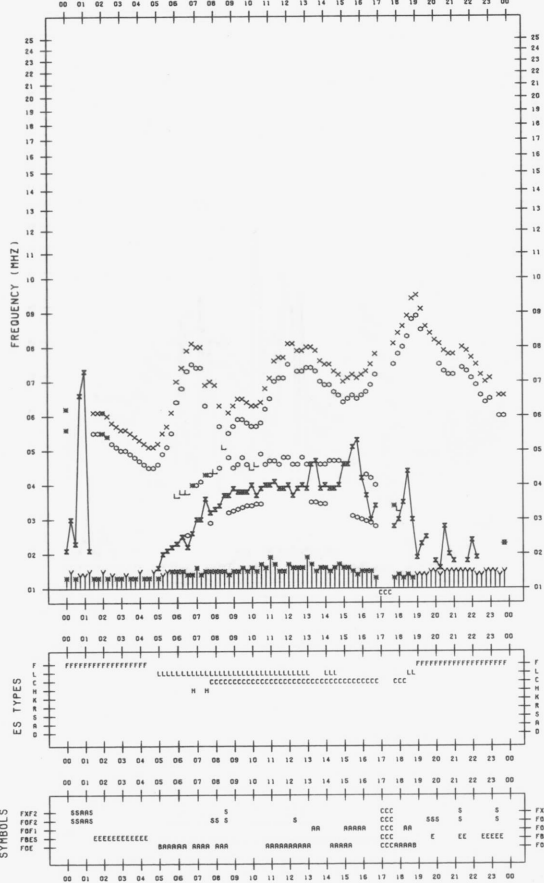


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/ 9

135°E MEAN TIME

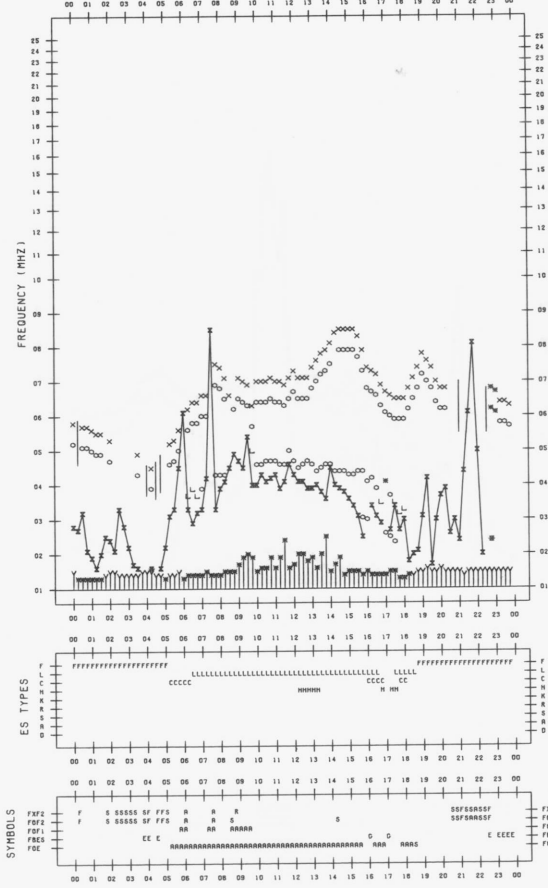


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/11

135°E MEAN TIME

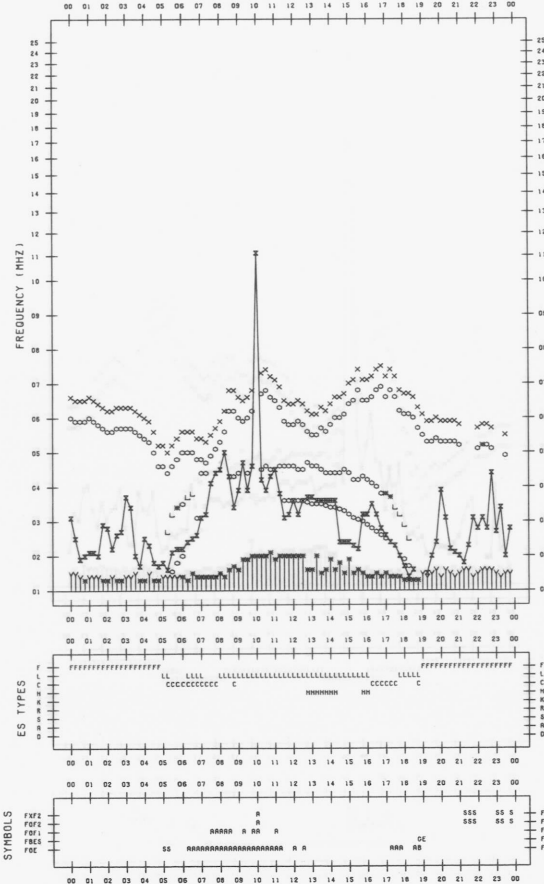


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/10

135°E MEAN TIME

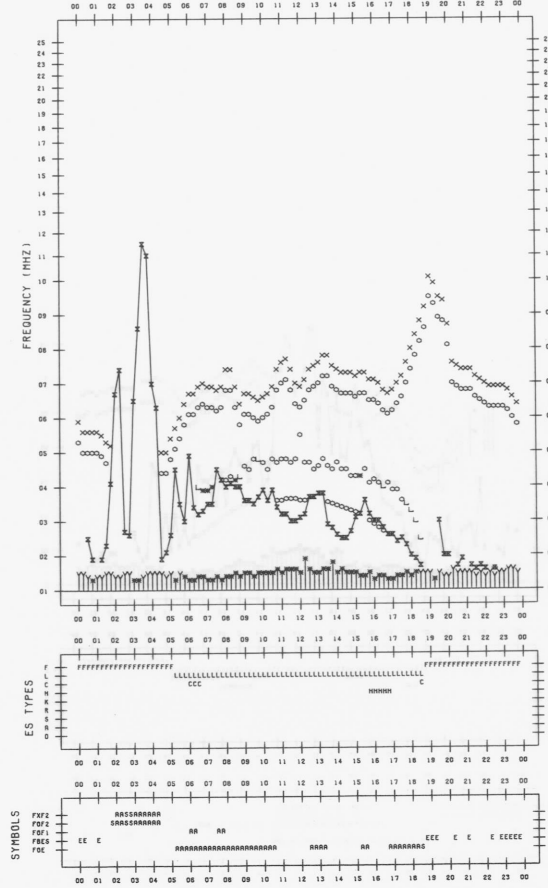


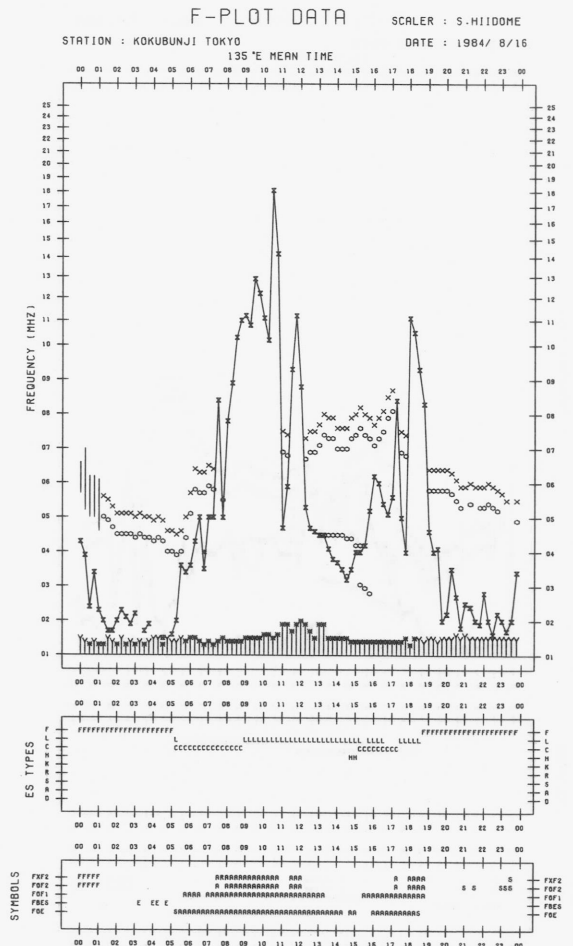
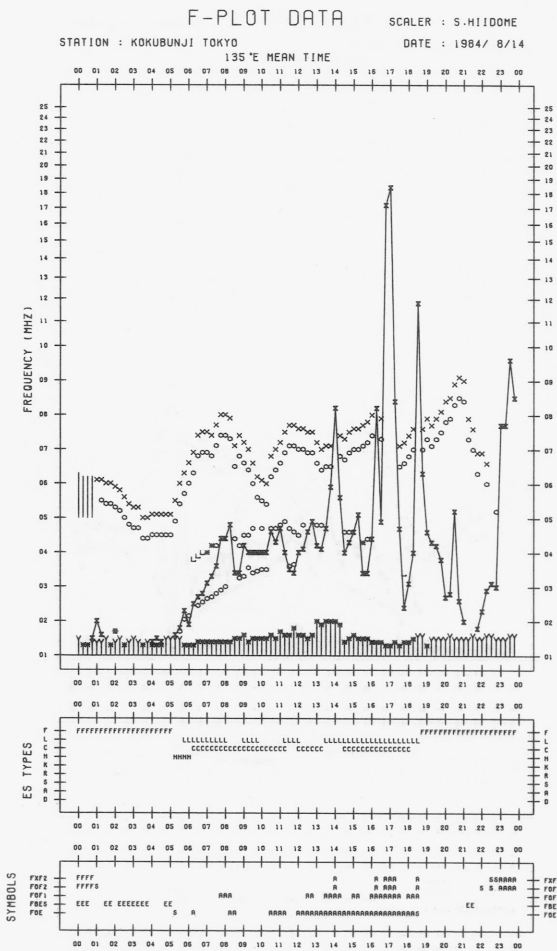
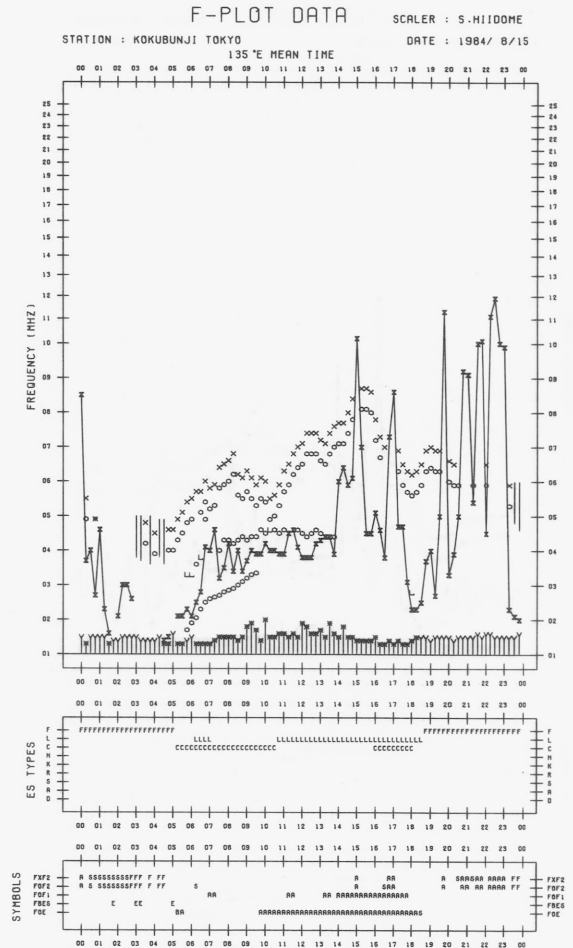
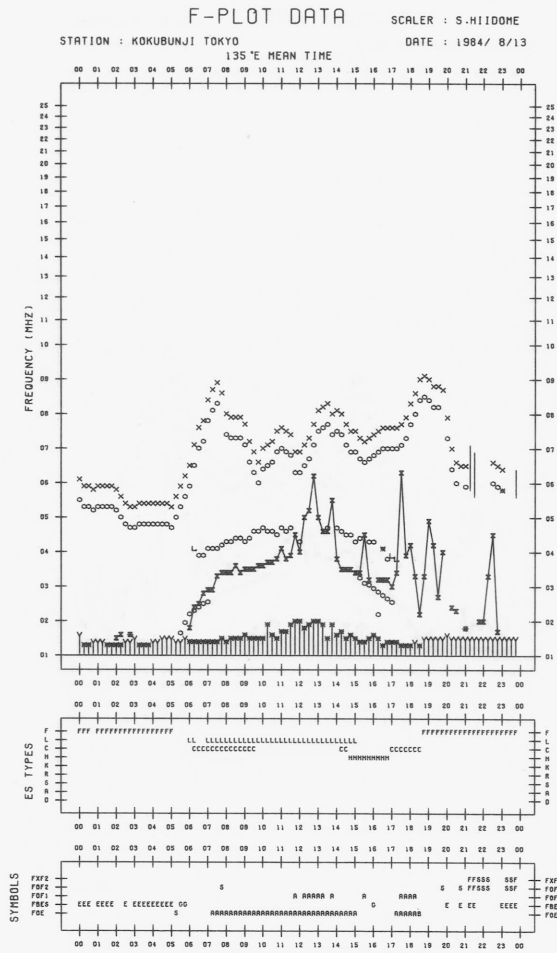
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/12

135°E MEAN TIME

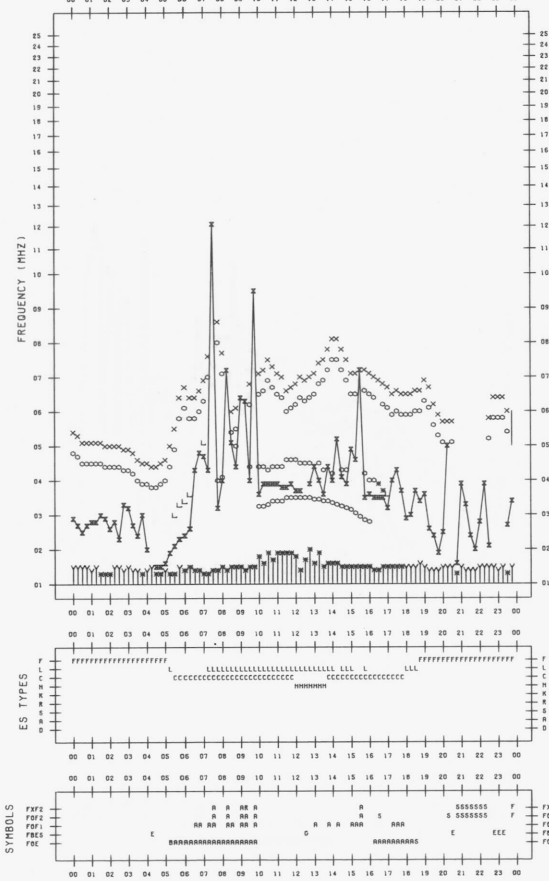




F-PLOT DATA

SCALER : S.HIIDOME

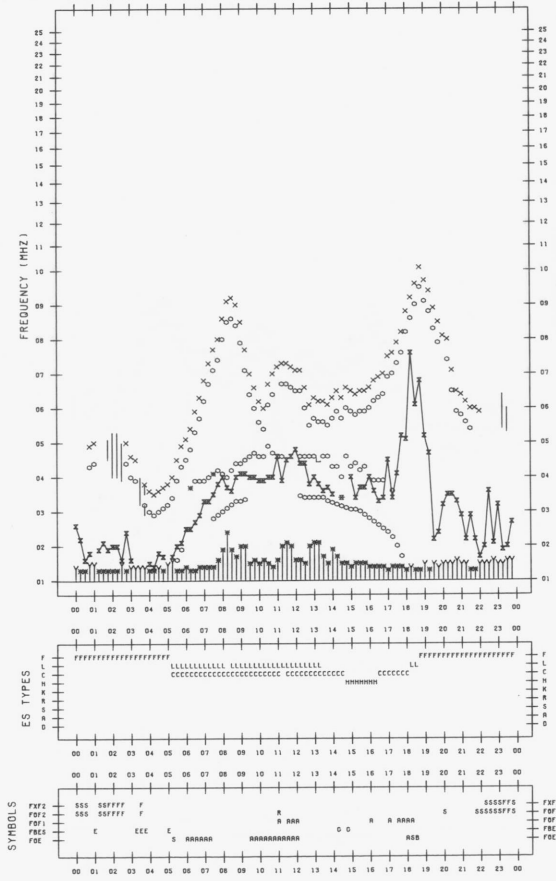
STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/17
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

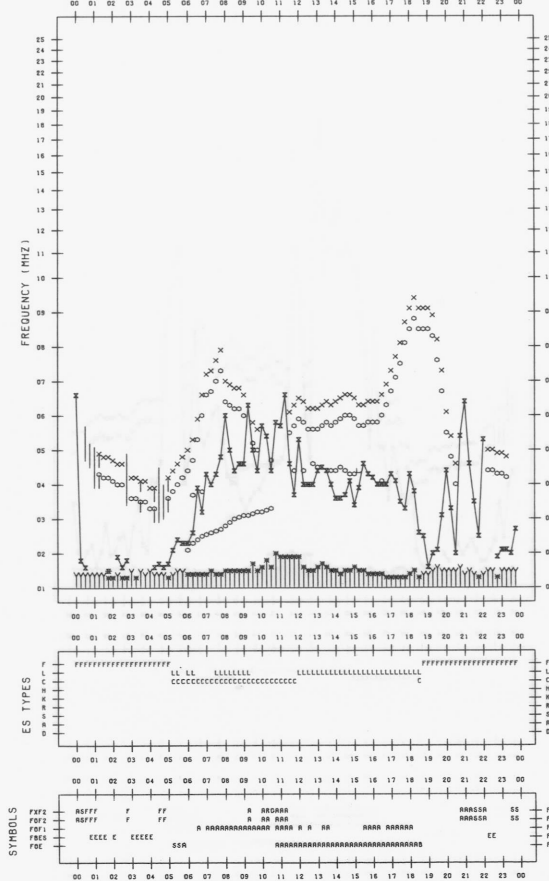
STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/19
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

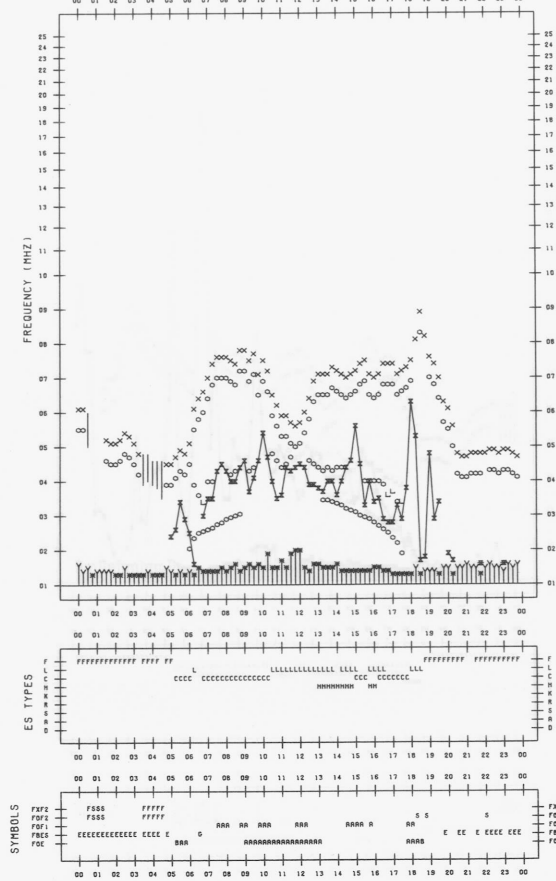
STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/18
135°E MEAN TIME

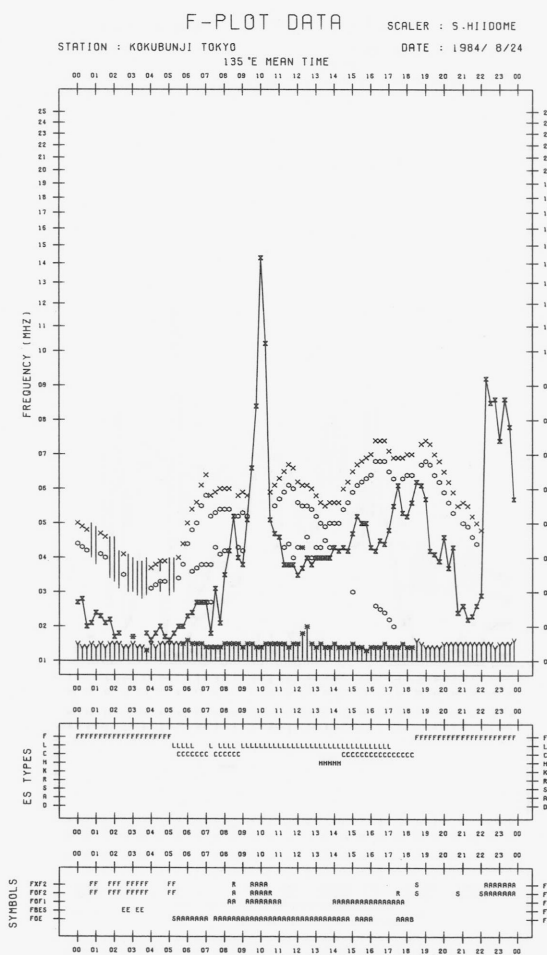
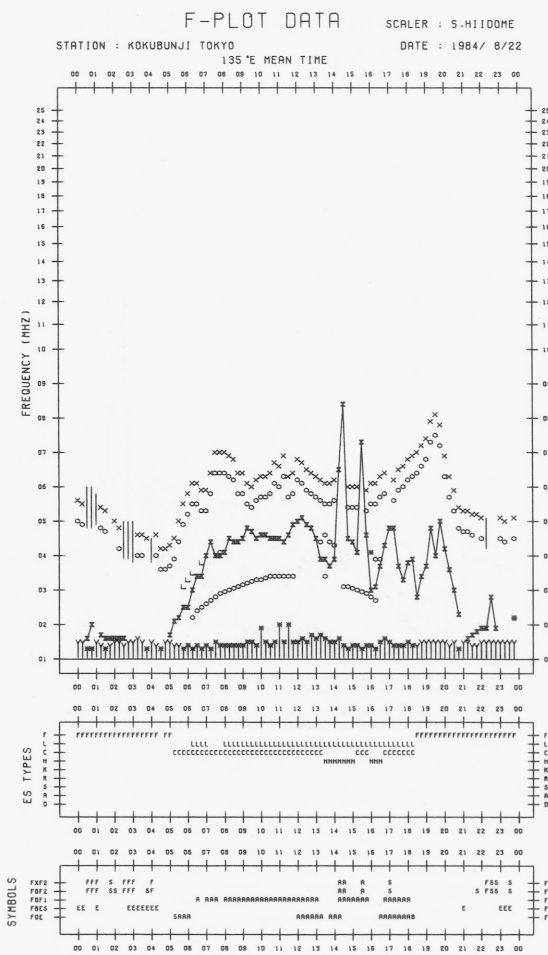
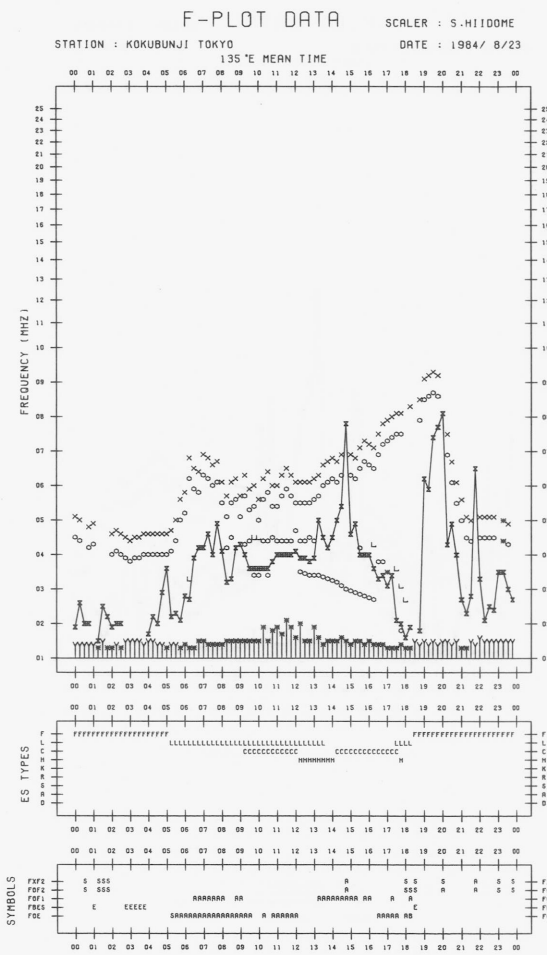
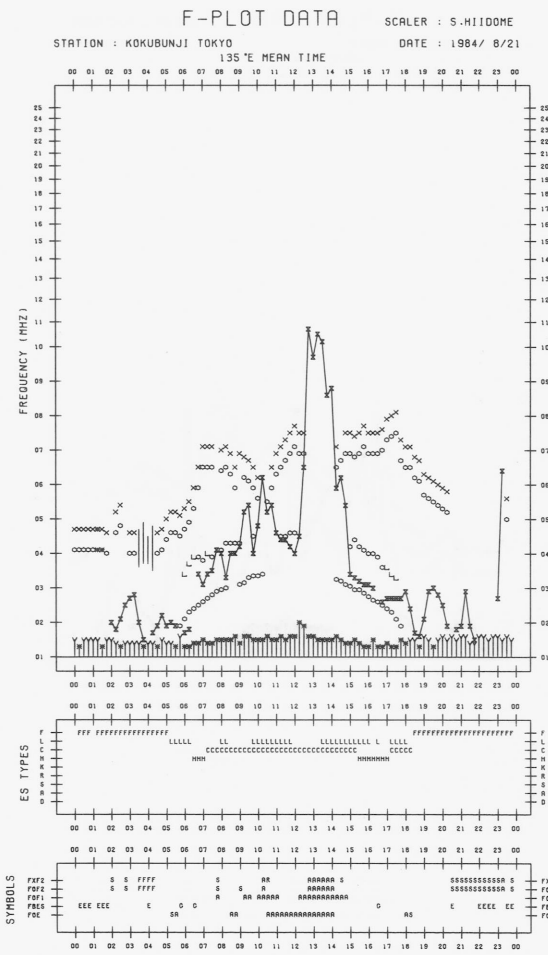


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/20
135°E MEAN TIME



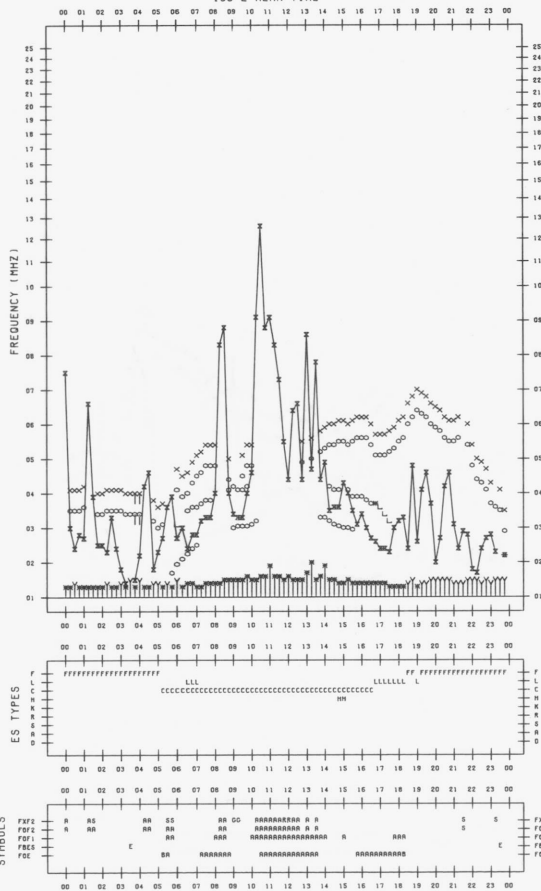


F-PLOT DATA

SCALER : S.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/25

135°E MEAN TIME

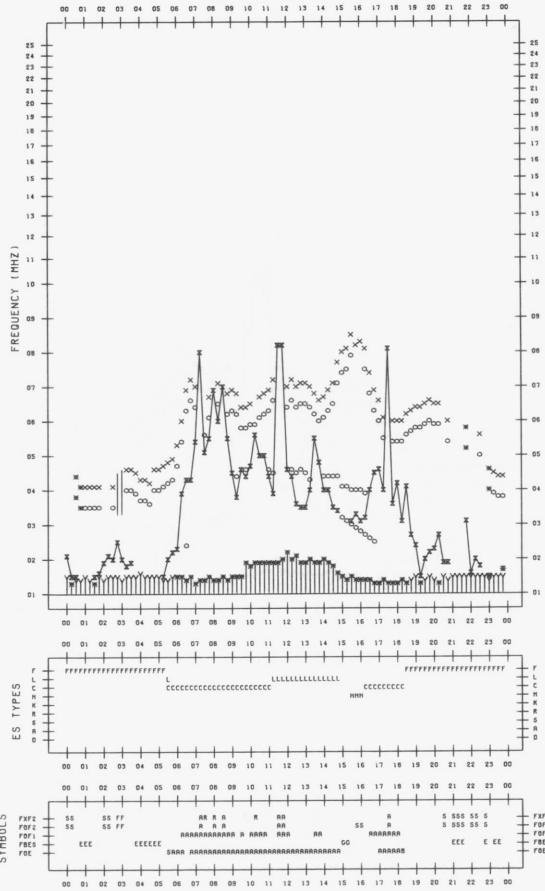


F-PLOT DATA

SCALER : S.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/27

135°E MEAN TIME

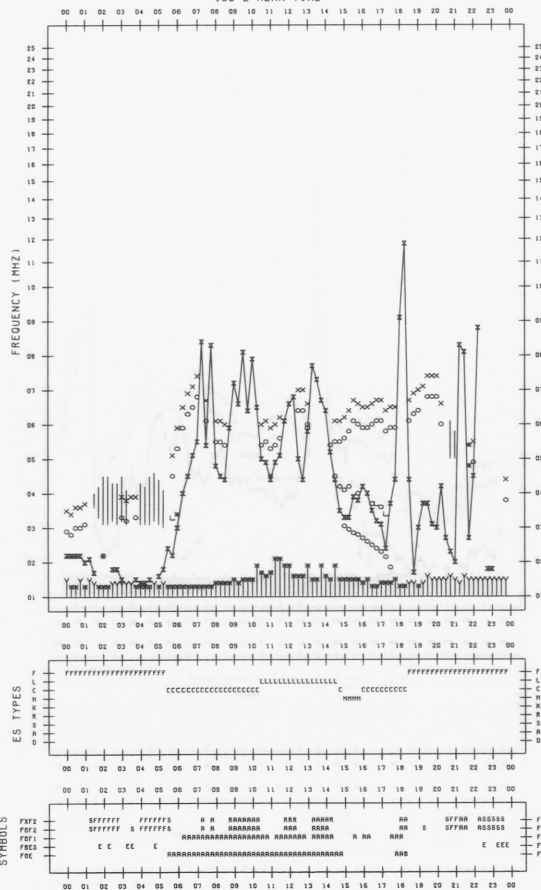


F-PLOT DATA

SCALER : S.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/26

135°E MEAN TIME

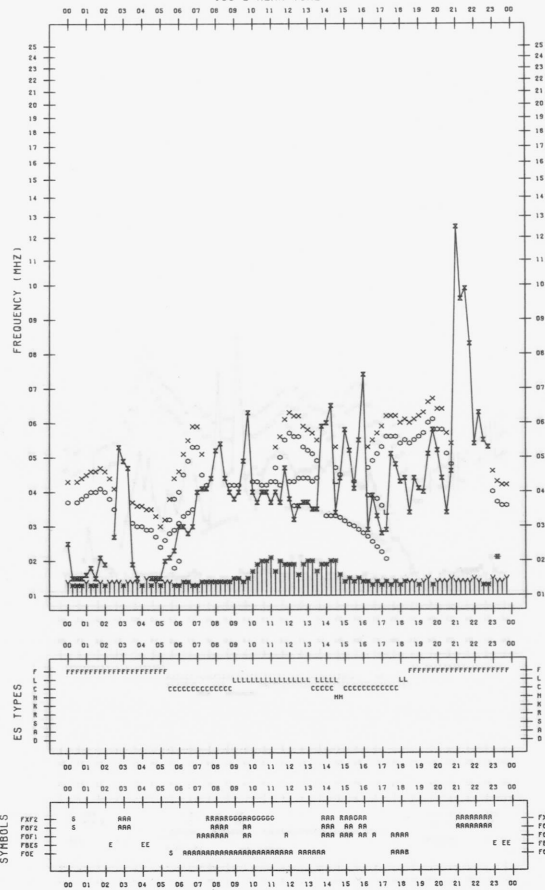


F-PLOT DATA

SCALER : S.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/28

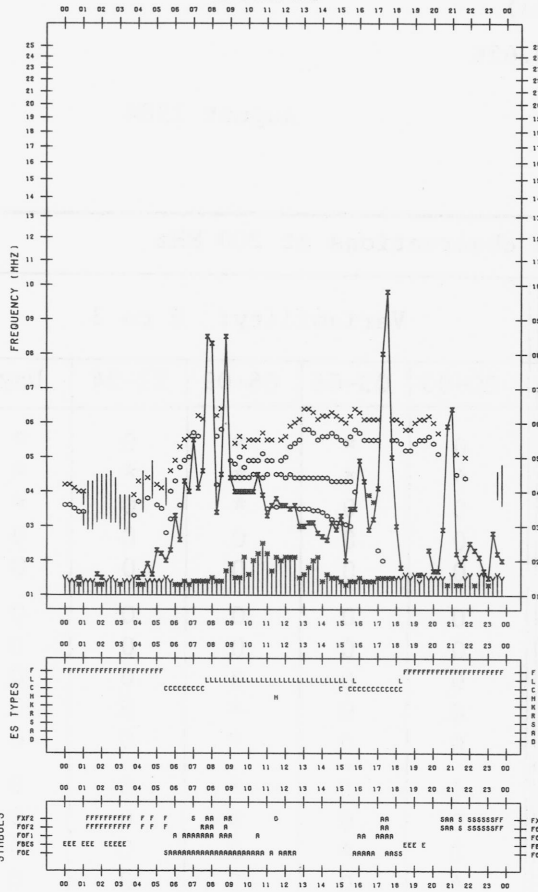
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

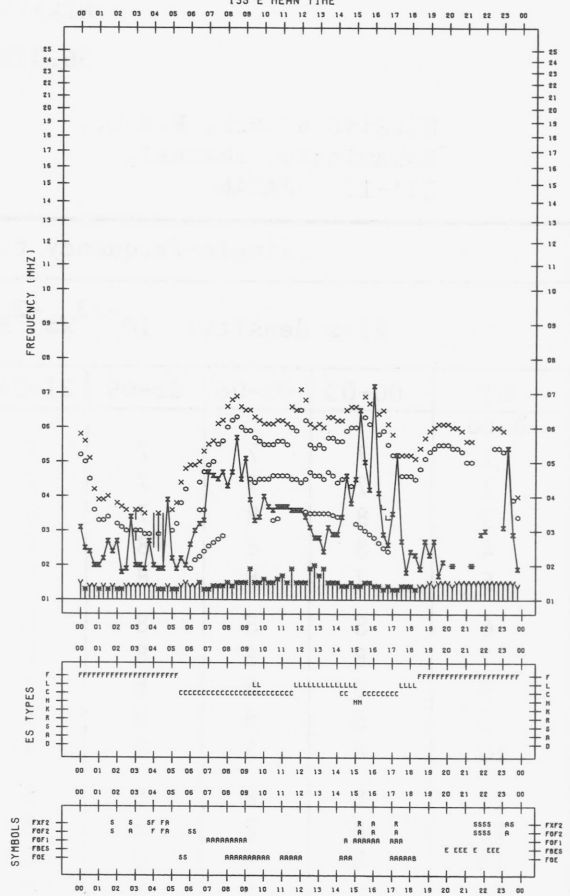
STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/29
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

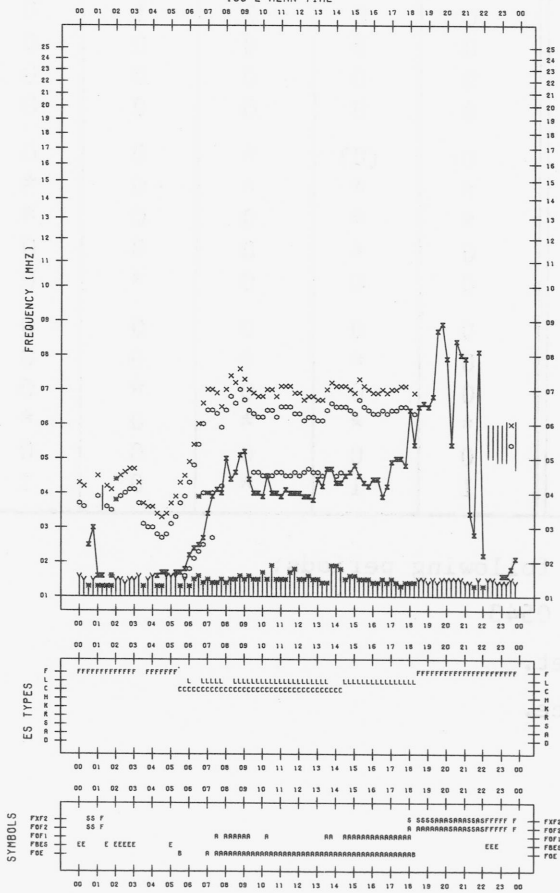
STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/31
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 8/30
135°E MEAN TIME



SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

August 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	*	*	0	*
2	7	7	7	7	7	*	*	*	*	*
3	8	8	7	8	8	0	0	*	0	*
4	8	8	8	7	8	0	0	0	0	0
5	7	8	8	8	8	0	0	0	0	0
6	8	8	8	8	8	0	0	0	0	0
7	8	8	8	8	8	0	0	0	0	0
8	8	8	8	7	8	0	0	0	0	0
9	8	8	8	8	8	0	0	*	0	0
10	8	8	8	8	8	0	0	*	0	0
11	8	8	8	8	8	0	0	*	0	0
12	8	8	8	8	8	0	0	0	0	0
13	8	8	8	8	8	0	*	0	0	0
14	8	8	8	8	8	*	0	0	0	0
15	8	8	7	7	8	0	0	0	0	0
16	7	7	7	7	7	*	0	0	0	0
17	7	8	8	8	8	0	0	0	1	0
18	8	7	7	7	8	0	0	0	0	0
19	7	7	7	7	7	0	0	0	0	0
20	7	7	7	7	7	0	0	0	0	0
21	7	(7)	q	7	7	0	(0)	*	0	0
22	(7)	q	7	7	7	*	*	*	0	*
23	7	7	7	7	7	*	*	0	0	*
24	7	7	7	7	7	0	*	0	0	0
25	7	7	7	7	7	0	0	0	*	0
26	7	7	7	7	7	0	0	0	0	0
27	7	7	7	7	7	0	*	*	0	0
28	7	8	8	(8)	8	0	0	0	*	0
29	q	q	q	8	q	*	*	*	0	*
30	8	8	8	10	8	0	0	0	0	0
31	9	8	8	8	9	1	1	*	0	1

Note No observations during the following periods:

10th 0413 - 0543

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

August 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	30	30	29	(31)	30
2	30	30	30	32	30
3	31	31	31	31	31
4	31	31	31	32	31
5	31	31	31	31	31
6	30	31	30	32	31
7	31	31	31	32	31
8	32	32	31	32	32
9	31	31	30	31	31
10	31	31	31	31	31
11	31	31	30	31	31
12	30	30	31	31	31
13	30	30	30	30	30
14	30	30	31	31	30
15	31	30	30	30	30
16	29	29	30	30	30
17	28	28	29	29	29
18	28	28	28	29	28
19	28	28	27	28	28
20	27	27	27	28	27
21	27	27	27	28	27
22	28	28	28	-	28
23	27	27	28	28	28
24	27	27	27	28	27
25	27	27	27	29	27
26	28	28	28	29	28
27	28	28	28	(28)	28
28	28	28	28	29	28
29	29	30	29	30	29
30	30	30	30	30	30
31	30	30	29	30	30

Note No observations during the following periods:

1st 2145 - 2345
22nd 2120 - 2340
27th 2010 - 2325

SOLAR RADIO EMISSION

HIRAIISO (HIRA)

36.37N 140.62E

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

August 1984

Outstanding Occurrences									
(single-frequency observations)									
Normal observing period: 2000 - 0930 (sunrise to sunset)									
AUG 1984	FREQ STATION		TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
							PEAK	MEAN	
5	500	HIRA	6 S	0034.4	0034.7	1.0	4	2	WL
17	200		43 NS	2135	2224	110	6	2	WR
21	500		8 S	2140.0	2140.3	0.8	2	-	0
26	500		42 SER	0353.0	0354.0	2.0	6	-	0
	500		8 S	0418.9	0419.6	0.9	42	-	WR
	500		8 S	0436.0	0436.3	0.4	50	-	0
	500		8 S	2246.1	2246.2	0.4	42	-	WL
	500		8 S	2307.5	2307.6	0.6	11	-	WL
28	100		8 S	0412.5	0412.5	0.8	270	-	0
	200		8 S	0412.6	0412.7	0.4	89	-	WR
30	200		42 SER	0514.3	0514.6	6.1	150	-	WR
	100		46 C	0514.4	0514.5	0.8	205	57	WR
	200		41 F	0710.3	0710.4	1.7	46	-	WR
	200		41 F	2212.6	2213.7	3.2	340	-	0
	100		41 F	2212.6	2213.9	2.7	360	-	0
	500		46 C	2213.7	2214.0	1.8	38	8	WR
31	100		42 SER	0220.0	0224.0	10.5	2000	-	0
	200		46 C	0223.0	0224.0	1.9	370	105	WR
	500		46 C	0223.5	0223.9	1.5	90	15	WR
	500		46 C	0227.1	0227.3	1.0	115	20	WR

RADIO PROPAGATION

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

AUG 1984		FREQUENCY 15 MHZ															BANDWIDTH 80 HZ					RECEIVING ANTENNA ROD 4.5 M					MEASURED AT HIRAISSO				
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	2	ES -9	ES -10	-9	ES -20	ES -9	ES -9	ES -9	ES -6	ES -12	ES -20	ES -6	ES 2	ES -5	ES -6	ES -13	ES -24	-10	ES -6	ES -12	ES -12	ES -24	ES 0	ES -9							
2		ES -12	ES -9	ES -13	ES -6	ES -13	ES -13	ES -9	ES -6	ES -3	ES -4	ES -12	ES -10	ES -4	ES -13	ES -13	ES -7	ES -4	S	S	S	0	10	ES -9	ES -16						
3		ES -14	ES -13	ES -7	ES -13	ES -9	ES -8	ES -9	ES -9	ES -7	ES -14	ES -14	ES -4	ES 4	ES -9	ES -3	ES -24	ES -13	ES -24	ES -24	ES -24	ES -24	ES -13	ES -3	ES -13						
4		ES -12	S	-4	-6	ES -5	-6	-9	ES -13	ES -6	ES -24	ES -24	ES -9	ES -6	ES -9	ES -9	ES -24	-9	ES -24	ES -15	ES -13	ES -24	ES -15	ES -2	ES -9						
5	-10	ES -10	ES -10	ES -10	ES -15	-5	-5	-7	ES -10	ES -10	ES -19	ES -18	ES -4	ES 0	ES -7	ES -9	-11	-1	8	-3	-5	0	1	-5							
6	-7	ES 7	-7	-3	5	6	-5	ES -9	ES -9	ES -14	-7	ES -9	ES 2	ES -9	ES -2	1	4	-9	1	0	4	4	4	0							
7	-3	-7	ES -11	-3	4	7	8	12	9	2	ES -16	ES -13	ES 2	-4	ES -7	-2	-18	-7	-18	-13	-5	1	ES 2	ES 5							
8	4	-3	-6	3	11	7	ES -13	ES -9	ES -9	ES -24	ES -24	ES -3	ES 1	ES -6	3	11	1	-6	-3	-5	3	2	ES 5	3							
9	3	8	ES 6	2	9	7	6	ES -7	ES -4	ES 6	ES 7	12	ES 6	S	ES 4	ES -2	7	ES -24	ES -24	-4	-15	-9	-2	2							
10	-1	-5	-6	-6	6	-5	ES -9	5	3	-3	ES -24	ES -6	ES -1	ES -9	5	-3	-3	ES -15	ES -24	ES -24	-4	-3	-2	1							
11	-1	1	-2	0	7	10	7	-4	ES -7	ES -19	ES -19	ES -15	ES -1	ES -4	ES -3	-12	-9	-2	-13	1	-3	-1	2	6							
12	8	2	1	4	5	4	ES -1	ES -18	-7	ES 2	S	S	S	ES -4	ES -4	ES -18	-10	ES -24	ES -24	ES -24	2	-4	8	-2							
13	-1	-6	ES -10	-2	6	1	4	-7	-6	ES -15	-4	ES 2	ES 0	ES 0	ES -1	ES -15	-10	0	ES -24	-2	0	-10	8	3							
14	-1	ES -6	-4	ES -7	7	4	2	4	0	0	-11	ES 2	ES 1	ES -3	ES -4	-6	-6	ES -24	ES -16	ES -24	-6	-3	0	0							
15	-6	-3	ES -12	0	ES 4	ES 14	ES -3	4	ES 9	ES -12	ES -12	ES -3	ES -1	ES -12	ES -9	ES -4	ES -24	ES -24	ES -24	ES -24	-9	ES -15	ES -4	5							
16	-4	-6	-4	ES -3	6	ES -12	ES -2	1	ES -2	ES -15	ES -3	ES -6	ES -1	ES -3	S	-2	-4	ES -24	-12	2	-9	10	6								
17	-16	-9	ES -9	ES -9	-7	ES -9	6	8	3	-1	-16	ES -11	ES -9	ES -7	ES -16	ES -16	-14	ES -24	ES -24	ES -24	-5	-9	4	0							
18	-2	-3	ES -9	ES -13	-2	-6	ES -4	-4	ES -6	ES -9	-6	ES -9	ES -12	ES -13	ES -9	ES -24	ES -24	-1	-3	-6	-6	-5	2	S							
19	S	S	S	4	S	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C						
20	-14	ES -9	ES -14	-9	-7	-4	ES -13	-7	ES -9	S	-1	ES -7	ES -2	ES -20	ES -12	ES -24	-20	-20	ES -24	-13	3	-6	S	ES -24							
21	ES -15	ES -9	ES -13	ES -6	ES 1	ES 5	-2	3	-4	-7	-6	ES -9	ES -7	ES -10	ES -4	ES -6	-3	4	0	-4	-7	-2	0	-7							
22	-7	ES -7	-9	2	ES -2	ES -5	0	5	-3	ES -16	ES -24	ES -7	ES -1	ES -24	ES -24	-15	-3	3	-6	-1	2	6	ES -2	-5							
23	ES -24	-2	-9	-9	2	2	-7	ES -11	-3	ES -15	ES -15	ES -4	ES -2	ES -9	ES -14	ES -23	ES -14	-14	ES -23	ES -23	-9	-2	-5	-6							
24	-9	-9	-8	-8	9	1	ES -8	1	ES -9	ES -14	ES -14	ES -5	ES -5	ES -14	ES -3	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23							
25	ES -15	ES -15	-11	-6	-12	ES -13	ES -9	ES -9	ES -9	ES -15	ES -24	ES -12	ES -12	ES -7	ES -13	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -15	C	C							
26	C	-12	-14	-5	-3	ES -12	ES -5	-9	ES -3	ES -23	ES -12	ES 0	ES -4	ES -10	ES -19	ES -24	ES -24	-18	ES -24	ES -24	-10	-19	-10	ES -19							
27	-6	ES -9	1	-4	-1	-1	-3	1	-6	ES -15	ES -24	ES -3	ES 0	ES -13	ES -3	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	-9	-9	ES -15							
28	ES -24	ES -20	-9	ES -24	ES -24	ES -24	-15	ES -24	ES -24	ES -24	ES -24	ES -9	ES 0	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -4	ES -4							
29	ES -11	ES -8	ES -6	ES -8	ES -6	-4	-8	ES -11	ES -8	ES -12	ES -12	ES -8	ES -3	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	2							
30	1	-2	-1	ES -9	ES -16	ES -9	ES -7	ES -7	ES -9	ES -16	ES -24	ES -10	ES -2	ES -9	ES -10	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -4	ES -24							
31	ES -24	ES -13	ES -13	-9	ES -12	ES -11	ES -9	ES -4	ES -9	ES -24	ES -24	ES -13	ES -2	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	-4	-9	-9	S							
CNT	29	29	30	31	30	30	30	30	30	29	29	29	29	29	30	29	30	29	29	29	30	30	28	27							
MED	-7	ES -7	ES -9	US -6	US -2	US -4	US -5	US -7	ES -6	ES -14	ES -15	ES -7	ES -1	ES -9	ES -7	ES -16	US -14	US -20	ES -24	ES -23	-6	-9	ES -2	US -4							
UD	3	ES 2	ES 1	3	9	ES 7	6	5	ES 3	ES 2	ES -3	ES 2	ES 2	ES 0	ES 3	-2	1	0	0	-1	3	4	8	5							
LD	ES -24	ES -13	ES -13	ES -13	ES -16	ES -13	ES -13	ES -13	ES -9	ES -24	ES -24	ES -13	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -9	ES -23							

RADIO PROPAGATION

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

AUG 1984		FREQUENCY 15 MHZ										BANDWIDTH 80 HZ										RECEIVING ANTENNA ROD 4.5 M										MEASURED AT HIRAISSO									
UT DAY	00H 45M	01H 45M	02H 45M	03H 45M	04H 45M	05H 45M	06H 45M	07H 45M	08H 45M	09H 45M	10H 45M	11H 45M	12H 45M	13H 45M	14H 45M	15H 45M	16H 45M	17H 45M	18H 45M	19H 45M	20H 45M	21H 45M	22H 45M	23H 45M																	
1	15	6	7	3	10	18	19	25	22	29	19	10	16	9	13	2	12	6	9	12	3	4	4	1																	
2	7	3	2	8	7	12	16	17	14	13	14	8	11	8	4	3	ES -2	S	S		8	12	4	4	11																
3	8	6	12	12	21	21	16	24	16	23	22	16	7	-2	-13	ES -24	ES -24	ES -24	-9	7	8	3	-4	1																	
4	-2	14	6	13	16	11	-9	16	19	19	21	18	14	-7	ES -9	ES -24	ES -24	2	-4	4	18	16	14	11																	
5	6	11	11	11	9	20	17	17	18	19	17	13	16	15	ES -4	ES -7	ES -24	5	4	12	11	13	9	5																	
6	8	6	4	14	14	24	21	21	13	18	20	15	12	16	5	ES -24	-4	3	ES -13	6	10	10	7	1																	
7	-1	-1	11	14	18	21	23	23	26	23	14	11	14	1	-11	-4	-5	8	2	7	12	11	2	1																	
8	6	2	10	12	20	21	22	22	22	19	22	13	17	14	15	-13	ES -15	-4	-3	9	6	4	7	-2																	
9	5	ES -2	11	18	14	4	15	16	14	16	17	20	19	ES 8	ES 3	ES 3	ES -15	ES -24	-6	3	6	7	4	4																	
10	1	8	9	11	21	19	19	23	23	20	13	19	11	16	2	ES 4	ES -24	6	0	4	7	8	9	8																	
11	8	9	10	15	17	23	22	17	19	21	24	22	18	20	1	ES -24	ES -15	5	-4	15	16	15	6	12																	
12	9	6	13	14	19	20	24	18	7	29	24	20	21	24	14	ES -18	ES -15	ES -24	ES -18	18	18	15	12	6																	
13	7	9	12	15	16	18	17	20	19	19	19	16	17	13	6	4	-10	-19	ES -19	12	20	14	13	12																	
14	9	9	9	13	17	20	22	21	13	17	15	4	14	4	-7	ES -15	-6	13	ES -24	10	0	4	14	12																	
15	4	5	10	15	17	22	25	16	16	15	15	14	21	14	0	ES 4	-9	-9	2	8	16	15	11	5																	
16	7	8	13	16	15	24	25	27	21	16	16	10	13	9	9	ES -12	ES -24	-20	1	14	8	18	13	8																	
17	2	9	10	13	10	9	15	6	11	11	18	17	2	ES -9	ES -24	ES -16	ES -9	2	ES -24	-16	4	7	10	7																	
18	4	2	6	11	16	15	22	22	23	9	11	ES -9	ES -13	ES -13	ES -24	ES -24	ES -24	ES -13	6	2	4	14	S	S																	
19	S	8	S	9	15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	11																	
20	6	8	6	11	17	20	25	11	8	11	ES -10	2	-3	ES -15	ES -24	-9	ES -24	-3	-1	7	2	1	7	1																	
21	7	4	11	19	18	21	16	17	15	7	7	-3	1	-9	ES -3	ES -5	ES -24	-13	1	3	4	7	6	8																	
22	6	6	10	16	16	16	18	21	12	-4	-2	-4	ES -24	ES -24	ES -24	-9	-3	-2	ES -24	6	9	4	-4	-4																	
23	-2	6	3	12	15	18	23	26	19	16	13	11	0	-3	-9	-14	ES -14	ES -23	ES -23	-3	4	4	4	-2																	
24	0	7	9	13	17	15	20	23	22	16	22	13	8	19	ES -8	ES -23	ES -23	ES -23	-11	5	1	3	-3	-3																	
25	1	-6	-4	-2	8	16	17	12	6	12	13	ES -5	ES -9	ES -6	-2	ES -24	ES -24	-15	0	9	9	C	C	C																	
26	-2	2	3	15	22	17	17	12	9	6	-1	10	ES -7	ES -10	ES -10	ES -24	ES -24	1	ES -24	12	12	10	4	5																	
27	6	9	7	15	20	16	25	25	21	17	11	10	1	-15	ES -24	ES -24	ES -24	ES -24	ES -24	-10	0	3	1	2																	
28	-3	7	9	10	7	12	14	14	16	13	13	4	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	6	7	12	7	9																	
29	5	2	6	1	10	9	16	22	ES -8	-6	0	ES -11	ES -6	ES -24	ES -24	ES -24	ES -24	-2	-9	-1	5	12	6	8																	
30	3	6	7	13	16	21	17	12	ES -4	-14	6	0	ES -3	-9	ES -15	ES -24	ES -24	ES -24	ES -24	-2	1	5	7	9																	
31	8	4	11	7	11	19	17	7	ES -4	-9	22	4	ES -6	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	6	4	9	8	S																	
CNT	30	31	30	31	31	30	30	30	30	30	30	30	30	30	30	30	30	29	29	30	30	29	28	28																	
MED	6	6	9	13	16	18	18	19	16	16	15	10	10	US 0	ES -6	ES -14	ES -24	-9	-9	6	7	8	7	6																	
UD	9	9	12	16	21	23	25	25	23	23	22	20	19	19	13	ES 4	ES -3	6	4	14	18	15	13	12																	
LD	-2	-1	3	3	8	9	15	11	ES -4	-6	-1	ES -5	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	-3	1	3	-3	-2																	

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Aug. 1984	Whole Day Figure	W W V				W W V H				Conditions				Principal Geomagnetic Storms		
		00	06	12	18	00	06	12	18	00	06	12	18	Start	End	Range
		06	12	18	24	06	12	18	24	06	12	18	24			
1	4o	4U	4U	4U	3U	4	5	5	4	N	N	N	N			
2	4o	4U	4U	S	4U	3	4	5U	4	U	U	U	U			
3	4-	3U	4U	S	3U	4	4	4	3	U	N	N	N			
4	4-	4	4U	4U	3U	3	4	4	4	N	N	N	N			
5	4+	4U	4U	5U	4	4	4	5	4	N	N	N	N			
6	4+	4	4U	5U	5	4	4	5	4	N	N	N	N			
7	4+	4	5U	5U	5U	4	4	5	4	N	N	N	N			
8	4+	4	4U	5U	5	4	4	5	4	N	N	N	N			
9	4o	5	4U	4U	4	4	4	4U	4	N	N	N	N			
10	4+	4	5U	5U	5	4	4	4	4	N	N	N	N			
11	4+	5	4U	4U	5	4	4	5	5	N	N	N	N			
12	4+	5	S	4U	5	4	5	4	4	N	N	N	N			
13	4+	4	4U	4U	5	4	4	4	5	N	N	N	N			
14	4+	5	5U	4U	4	4	4	4	4	N	N	N	N			
15	4o	4U	5U	3U	4U	4	4	5	4	N	N	N	N			
16	4+	4	4U	5U	4	4	4	5	4	N	N	N	N			
17	4o	4	5U	4U	4	4	4	3U	3	N	N	N	N			
18	4-	4	4U	4U	4U	4	3	3U	4	N	N	N	N			
19	4o	S	C	C	C	4U	C	C	4U	N	N	N	N			
20	4o	3	4U	3U	4U	4	3	3U	4	N	N	N	N			
21	4o	4U	5U	5U	4	4	3	4	4	N	N	N	N			
22	4-	4	4U	5U	4U	4	3	3U	3	N	N	N	N			
23	4-	4	4U	4U	4	4	4	3U	3	N	N	N	N			
24	4-	4	4U	3U	3U	4	4	4U	3	N	N	N	N			
25	3o	3U	4U	3U	2U	3	3	3U	4	U	U	U	U			
26	3+	3	4U	3U	3	4	3	3U	4	U	N	N	N	10.4	---	143
27	3+	4	4U	3U	3U	4	4	2U	3	N	N	N	N	---	---	
28	3o	3U	2U	3U	3U	4	3	2U	4	U	U	U	U	---	---	
29	3+	4U	4U	3U	3U	4	3	3U	4	U	U	U	U	---	15.0	
30	3+	4U	4U	3U	2U	4	3	3U	3	N	N	N	N			
31	4-	3U	4U	3U	4U	4	3	2U	4	N	N	N	N			

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO

Time in U.T.

Aug. 1984	S W F							Correspondence			
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
	CO	HA	1)	2)							
18			32	35D	2243	38	G	3-	x		
26	x		9	9	0214	15	SL	1-	x		

NOTES CO: Colorado(WWV) HA: Hawaii(WWVH) 1): Australia 2): New Zealand

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Aug. 1984	S P A							
	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω /LR	NWC	Ω /H	Ω /ND	Start	End	Maximum
2		17				0711	0804	0722
14		<u>16</u>	8			0652	0746	0705
18		<u>11</u>	10			0556	0644	0603
18		7	<u>10</u>	4	6	2208	2230	2216
18	32*	52*	88*	<u>98*</u>	102	2241	0044	2308
19		13	<u>4</u>	3		0112	0143	0120
19		22	<u>30</u>	14	10	0201	0322	0222
19		28	<u>30</u>	10	12	0340	0507	0351
19		<u>11</u>	6			0621	0716	0632
24				9		2054	2135	2108
26	10	30	<u>31</u>	18	11	0214	0305	0220
26		<u>30</u>	27			0525	0620	0539
26		<u>9</u>	7			0628	0700	0637
26		23				0844	0945	0858
29		5	6	<u>4</u>		0215	0250	0219

IONOSPHERIC DATA IN JAPAN FOR AUGUST 1984

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