

IONOSPHERIC DATA IN JAPAN

FOR JULY 1984

VOL. 36 NO. 7

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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 vertical 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 ordinary wave for the $F2$, whole F , E and E_s layers respectively
 $h'F$ }
 $h'E$ }
 $h'E_s$ }

Types of E_s See below A. b. (iii)

b. Symbols

(i) Descriptive Letters

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

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

B Measurement influenced by, or impossible because of, absorption in the vicinity of f_{min} .

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.

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

G Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.

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

K Presence of particle E layer.

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

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbation of parameters-Presence of polar spure traces.

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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.

1 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 minute U. T. and the unit of flux density is $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ for both components of polarization.

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

a. Daily Data

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

Variability. The three-hourly and daily mean values are given at 200 MHz only. Variability is expressed in the following four grades.

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

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

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

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

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

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

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

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

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

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

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

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

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

Field strength observation of 15 MHz standard waves transmitted from WWV and WWVH stations which are located respectively at Fort Collins, Colorado and Kauai, Hawaii, is carried out at 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
	WWV Fort Collins, Colorado	WWVH Kauai, Hawaii	
Station Call	WWV	WWVH	Hiraíso, Ibaraki
Location	Fort Collins, Colorado	Kauai, Hawaii	36°22'N
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	propagation 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	66	63	65	58																	X	X	72	X
2	X	X	X	X																	A	X	X	X
3	65	58	60	59	58																X	X	72	71
4	66	63	65	59																	A	X	X	X
5	X	X	X	X	51																X	X	64	X
6	X	X	X	X																	X	X	X	X
7	X	X	X	X																	X	X	X	X
8	X	X	X	X																	X	X	X	X
9	X	X	X	X																	X	X	X	X
10	X	X	X	X																	X	X	X	X
11	X	X	X	X																	X	X	X	X
12	X	X	X	X																	X	X	X	X
13	X	X	X	X																	X	X	X	X
14	X	X	X	X																	X	X	X	X
15	X	X	X	X																	X	X	X	X
16	X	X	X	X																	X	X	X	X
17	X	X	X	X																	X	X	X	X
18	X	X	X	X																	X	X	X	X
19	X	X	X	X																	X	X	X	X
20	X	X	X	X																	X	X	X	X
21	X	X	X	X																	X	X	X	X
22	X	X	X	X																	X	X	X	X
23	X	A	A																		X	X	X	X
24	A																				X	X	X	X
25	X	X	X	X																	X	X	X	X
26	X	X	X	X																	X	X	X	X
27	X	X	X	X																	X	X	X	X
28	X	X	X	X																	X	X	X	X
29	X	A	A	A																	X	X	X	X
30	X	X	X	X																	X	X	X	X
31	X	X	X	X																	X	X	X	X
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	29	30	3																29	29	30	30
MED	X	X	X	X																	X	X	X	X
UQ	X	X	X	X																	X	X	X	X
LQ	X	X	X	X																	X	X	X	X

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FXI (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

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

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

FOF1 (0.01 MHz)

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

Station	WAKKANAI																							
Lat.	45 23.5 N							Long 141 41.2 E							Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						360	390	430	440	A	450	A	A	A	A	440	430	390	A					
2							A	400	A	440	450	A	450	460	450	440	A	A	A					
3						L	340	390	A	A	A	A	460	460	450	A	A	A	A	360				
4						330	A	A	440	A	460	460	460	470	450	430	420	A	A					
5						A	390	A	A	450	440	A	A	450	A	420	410	410	360					
6							390	A	A	A	A	A	A	A	450	460	L	440	410	L				
7						350	A	A	A	A	450	A	A	450	450	440	410	400	360					
8						320	A	A	A	A	450	450	450	460	440	440	430	400	L	340				
9						330	390	A	A	450	450	460	450	A	L	460	440	430	400	350				
10							A	410	440	A	A	A	A	A	A	A	A	A	350					
11							370	420	440	450	450	A	460	460	450	450	L	430	400	360				
12						A	A	410	430	440	460	A	480	A	A	A	420	A	350					
13							A	A	420	A	440	A	450	450	440	420	410	390	L	340				
14							A	A	430	430	450	450	H	450	470	A	A	L	430	430				
15						320	360	400	A	430	A	450	A	L	450	430	430	420	400	360				
16						310	L	380	410	420	A	A	A	A	A	H	440	420	L	L				
17						H	320	360	410	430	430	450	A	A	A	420	410	400	390	A				
18						310	A	A	A	A	A	A	440	A	A	A	A	H	420	390	L	350		
19						L	310	350	A	A	440	A	A	A	440	A	410	420	A					
20							L	390	A	A	A	A	A	A	A	A	440	410	390	A				
21						320	L	370	A	A	A	A	430	440	430	420	420	410	A	A				
22								410	A	A	440	A	A	A	430	A	A	A	A					
23						A	A	A	A	A	A	A	450	A	A	A	A	A	A					
24							380	A	A	A	L	450	H	450	450	H	A	410	L	L				
25						320	A	A	A	440	A	A	450	450	450	440	A	A	A					
26						300	L	380	390	A	430	A	440	440	A	A	410	400	380	A				
27						A	A	A	A	A	A	A	450	440	450	440	420	A	380	340				
28							A	A	400	420	A	A	A	A	A	410	390	A	A					
29						A	A	A	A	A	A	A	A	A	A	410	410	400	A					
30							A	A	400	420	430	430	430	430	H	C	C	L	360	L				
31						310	370	A	A	A	A	A	A	A	A	410	A	A	A	A				
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						16	15	10	11	13	14	11	17	16	17	21	23	18	15					
MED						320	380	410	430	440	450	450	450	450	440	430	420	395	350					
UQ						330	390	410	440	440	450	455	450	460	450	440	425	400	360					
LQ						310	370	400	420	430	440	445	440	450	430	420	410	390	340					

JUL. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUL. 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	205	250	295	310	330	335	340	A	A	340	320	300	265	210	S				
2					S	200	235	280	305	325	330	335	360		340		310	280	210	S				
3					A	220	260	290	305	320	330		A	360	350	345	335	305	280	220	S			
4					S	215	260	295	310	325	330		A	350	350		A	A	280	225	A			
5					A	210	255	295	305	320		A	345	350	335	320		A	300	260	220	A		
6					A	A	H		315	330	335		A	A	A	340	320	295	270	230	150			
7					A	210	255	290	310	320	325	335		A	325	330	315	300	270	220	150			
8					S	200	250	290	310	320	330	340		A	345	340	320	305	275	A	S			
9					140	210	250	295	310	320	330		A	355	350		A	A	305	A	A	A		
10					A	200	250	290	305	315		A	325		A	A		340	310	275	215	S		
11					A	205	260	295	310	325	330	335	335		A	A	325	300	265	210	A			
12					A	200	255	290		325		A	340		A	A	A	A	A	215	S			
13					A	200	255	290	305	315	320		A	A	A	A	325	295	260	200	S			
14					S	195	245	290	300		A	A	A		A	A	315	290	255	215	S			
15					S	205	250	295	305	315	320	335		A	345	330	315	295	265	190	A			
16					A	200	235	275	305	315	325	330	330		A	A	A	A	280	200	S			
17					S	190	230	275	300	330	350		A	A	A	A		310	290	250	205	S		
18					S	195	230	260	295	310	315	320		A	325	315		A	285	250	205	145		
19					A	205	245	280	300	310	315		A	A	A	A	A	A	250	A	A			
20					A	190	245	280	300	310	320		A	A	A	A		330	290	245	200	S		
21					S	180	235	275	295	310	315		A	340		A	A	A	A	A	A	A		
22					A	A	230	275	295	305	310	320		A	A		330		295	255	195	S		
23					A	A	240	270	295	305	315		A	A	A	A	A	A	A	210	S			
24					S	A	250	280	305	315		A	335	330	330	320	305	275	235	195	S			
25					A	195	240	280		310	330	335		A	A		330	310	295	265	200	S		
26					A	200	250		A	295	310	320		A	345		A	330	305	290	250	200	S	
27					S	185	235	275	300	305	315	325		A	A		320	300	285	235	175	S		
28					A	205	230	260	290	300	310		A	A	340	320	310	285	245	A	S			
29					A	185	225	265	295	305	310	315	320		A	A		305	295	245	180	E		
30					A	A	225	270	295	305	320	330	335	325		C	C	A	245	205	S			
31					A	180	230	270	300	310	315		A	A	330	325	305	290	240	200	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	26	31	30	29	30	26	17	12	12	16	19	24	27	26	4				
MED					140	200	245	280	305	315	320	335	342	338	330	315	295	260	205	148				
UQ					205	252	290	305	320	330	335	352	348	340	322	300	270	215	150					
LQ					195	235	275	295	310	315	325	332	328	320	308	290	248	200	145	E	E			

JUL. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

JUL. 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	24	sec in	automatic operation			
	Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																				
1		21	20	E S 15	20	24	G	33	J A 45	J A 49	J A 93	J A 130	J A 93	J A 96	J A 71	J A 59	38	G	J A 39	J A 53	J A 83	J A 98	J A 50	J A 75	J A 48																				
2		J A 50	J A 49	35	26	E S 16	28	45	J A 50	J A 66	J A 119	J A 84	83	G	J A 46		45	J A 71	J A 83	J A 87	J A 83	J A 150	J A 50	47	27																				
3		21	22	31	32	31	29	J A 39	J A 60	J A 47	J A 74	J A 67	J A 43	G	G	45	J A 65	J A 136	J A 231	J A 50	J A 45	40	J A 60	44	20																				
4		E S 11	E S 16	E	33	28	40	J A 50	J A 42	J A 60	J A 48	J A 45	41	G	39	43	50	J A 55	J A 57	J A 55	J A 82	J A 53	32	29																					
5		25	28	J A 50	J A 48	43	47	J A 38	J A 69	J A 85	J A 50	J A 93	J A 110	J A 88	J A 68	J A 65	J A 50	44	43	43	J A 50	J A 49	J A 50	43	J A 68																				
6		J A 49	49	50	37	33	A 47	G	J A 60	J A 151	J A 133	J A 126	J A 119	J A 88	J A 84	42	J A 64	49	J A 39	35	J A 50	35	33	J A 45	39																				
7		35	39	26	32	24	G	39	64	81	136	70	55	J A 96	J A 45	31	38	J A 45	40	44	45	39	43	30	23																				
8		32	42	35	41	E S 17	29	J A 50	J A 55	J A 76	J A 83	J A 73	40	J A 48	32	G	G	J A 42	41	J A 61	J A 70	31	J A 60	J A 65	J A 101																				
9		J A 50	J A 61	J A 67	49	J A 49	33	49	J A 50	J A 64	45	J A 44	J A 57	G	J A 50	40	43	J A 93	J A 90	J A 102	48	28	J A 86	J A 67	J A 49																				
10		44	42	40	39	39	31	J A 49	J A 48	J A 74	J A 85	J A 138	J A 94	J A 78	J A 71	J A 86	J A 49	J A 86	J A 60	J A 81	J A 49	43	36	34	J A 49																				
11		J A 58	24	44	48	38	30	34	J A 40	J A 46	J A 45	J A 53	J A 53	G	45	J A 50	G	G	38	39	J A 53	J A 70	46	31	J A 63																				
12		48	46	22	28	28	48	J A 63	J A 63	J A 76	G	41	J A 93	J A 59	J A 54	J A 56	J A 83	J A 53	J A 88	45	48	40	J A 70	40	J A 51																				
13		J A 72	43	J A 45	35	28	J A 45	J A 74	J A 57	49	J A 55	50	J A 53	J A 63	J A 48	48	41	G	G	32	J A 45	34	39	32	28																				
14		E S 16	E S 16	E S 16	23	30	J A 49	J A 53	J A 55	J A 53	43	J A 64	J A 44	J A 48	J A 46	J A 56	J A 117	J A 53	46	41	J A 49	39	E S 16	22	E S 16																				
15		23	31	22	23	33	42	34	37	J A 56	J A 43	J A 49	G	50	J A 116	28	G	G	J A 83	J A 48	32	25	28	23																					
16		43	31	38	28	24	G	33	G	J A 45	J A 87	J A 56	J A 62	J A 63	J A 56	J A 96	41	37	33	G	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	E S 16	G	34	G	36	G	J A 83	J A 92	J A 59	J A 58	37	G	J A 55	47	J A 53	31	43	35	E S 16	J A 50																				
18		35	21	28	27	23	40	J A 53	J A 46	J A 65	J A 45	J A 47	J A 52	38	J A 61	J A 65	J A 60	G	32	27	J A 45	39	J A 55	48	41																				
19		J A 70	J A 49	E S 16	35	37	G	31	J A 50	J A 74	J A 41	J A 48	J A 65	J A 48	J A 49	J A 57	J A 44	40	J A 72	J A 83	J A 126	35	J A 53	J A 82	J A 49																				
20		47	35	39	31	28	27	G	J A 79	J A 49	J A 72	J A 55	J A 66	J A 73	J A 61	J A 58	40	48	J A 44	J A 48	50	J A 60	J A 78	J A 65	J A 62																				
21		J A 60	J A 50	28	32	21	25	33	J A 49	50	J A 48	J A 53	48	G	45	40	43	46	J A 53	J A 61	29	J A 50	35	42	26																				
22		32	41	39	29	35	30	16	36	51	65	50	65	J A 75	51	38	98	J A 73	J A 144	95	85	52	43	83	34																				
23		J A 33	J A 67	J A 66	47	J A 52	J A 51	J A 60	J A 66	J A 88	J A 86	J A 98	J A 76	J A 77	J A 104	J A 98	57	J A 129	J A 136	J A 123	J A 83	J A 50	J A 48	42	J A 85																				
24		J A 55	J A 61	36	43	32	37	34	J A 70	J A 70	J A 119	J A 74	J A 56	J A 47	J A 45		83	J A 83	J A 73	48	43	41	J A 82	J A 57	J A 280																				
25		J A 59	50	J A 63	50	35	27	60	J A 72	J A 83	J A 53	J A 61	J A 49	J A 49	J A 43	J A 41	38	J A 61	J A 53	J A 72	J A 75	J A 63	J A 43	27	J A 50																				
26		J A 56	31	21	27	32	27	G	43	J A 49	G	J A 64	J A 45	J A 50	J A 58	J A 83	J A 89	J A 76	35	J A 119	J A 83	22	31	22	E																				
27		E S 15	35	26	25	J A 50	43	50	J A 60	J A 83	J A 72	J A 49	G	45	42	G	44	J A 52	J A 50	J A 67	35	J A 62	35	27	36																				
28		27	35	50	28	44	J A 59	42	107	J A 86	36	J A 58	J A 87	J A 75	J A 61	J A 89	J A 48	J A 66	J A 159	J A 123	J A 136	J A 97	J A 86	64	J A 49																				
29		J A 46	J A 86	J A 63	J A 72	J A 63	J A 62	J A 78	J A 50	J A 66	J A 54	J A 55	J A 83	J A 66	J A 52	43	J A 44	44	50	J A 64	34	J A 59	J A 50	50	43																				
30		23	30	24	36	30	26	49	J A 55	J A 35	J A 93	G	G	G	G	C	C	J A 44	J A 65	J A 56	J A 64	65	50	38	24																				
31		28	31	35	31	J A 70	30	35	J A 56	J A 56	J A 63	J A 81	J A 73	J A 64	J A 71	G	J A 65	J A 63	J A 96	J A 127	J A 133	J A 65	J A 48	46	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	30	30	31	31	31	31	31	31	31	31																				
MED		35	35	35	32	32	30	39	J A 55	J A 64	J A 60	J A 58	J A 57	J A 50	J A 51	44	44	J A 50	J A 50	J A 57	J A 50	43	J A 48	42	43																				
UQ		J A 50	49	44	40	38	44	50	62	76	86	78	83	J A 74	J A 61	J A 59	J A 64	J A 68	J A 78	J A 83	J A 79	J A 62	J A 54	J A 54	J A 50																				
LQ		24	29	23	27	26	27	34	J A 47	J A 49	J A 45	J A 50	J A 46	43	45	37	40	43	40	44	45	37	36	30	26																				

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FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 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 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	E	E	E S 15	E	17	G	G	G	43	A A 93	39	A A 93	50	48	46	G	G	36	45	A A 83	22	41	31	E		
2	20	21	E	E	E S 16	28	43	38	A A 66	G	39	46	G	36	G	35	A A 71	55	59	A A 83	A A 150	48	E	E		
3	E	E	E	E	20	16	37	50	44	46	A A 67	42	G	G	45	A A 65	A A 136	A A 231	34	45	21	29	E	E		
4	E	E	E S 11	E S 16	E	S	28	39	47	40	60	41	G	G	41	G	34	37	40	54	38	51	A A 82	35	E	E
5	E	E	29	25	23	46	37	A A 69	A A 85	39	41	A A 110	A A 88	40	45	34	G	38	32	41	23	36	22	20		
6	20	32	38	20	20	21	G	55	A A 151	A A 133	51	A A 119	A A 88	55	42	G	41	37	33	40	22	20	40	25		
7	23	30	E	E	17	G	37	53	A A 81	A A 136	38	A A 55	A A 96	43	31	G	38	G	33	28	E	33	E	E		
8	23	24	20	38	E S 17	28	50	42	A A 76	47	G	G	39	G	G	40	32	28	21	E	E	53	49			
9	E	20	21	30	31	30	37	42	52	G	40	40	G	48	37	34	G	34	27	40	E	43	46	43		
10	20	30	30	30	22	23	40	40	38	A A 85	A A 138	A A 94	A A 78	A A 71	A A 86	45	A A 86	A A 60	32	44	41	27	24	24		
11	46	E	27	30	28	28	G	37	41	44	43	49	G	38	41	G	G	36	30	51	46	30	E	50		
12	E	20	E	E	17	41	58	38	30	G	39	A A 93	38	54	53	A A 83	33	A A 88	32	39	31	E	34	30		
13	46	29	21	E	16	41	A A 74	48	40	48	40	46	43	39	40	G	G	G	G	25	E	21	20	E		
14	E S 16	E S 16	E S 16	E	24	43	53	47	41	36	40	38	36	40	48	54	35	G	34	49	32	16	E S 16	E S 16		
15	E	23	E	E	25	30	37	G	A A 56	42	47	G	46	G	G	G	G	G	32	38	E	E	E	E		
16	30	E	E	E	17	G	G	G	G	A A 87	55	A A 62	A A 63	56	A A 96	33	30	G	G	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	E S 16	G	G	G	34	G	G	A A 92	A A 59	45	36	G	G	35	46	20	20	24	E S 16	44		
18	25	E	E	E	18	30	A A 53	A A 46	A A 65	43	45	A A 52	37	A A 61	A A 65	45	G	G	G	21	34	55	30	27		
19	46	41	E S 16	E	22	G	30	42	A A 74	41	43	50	47	36	45	31	33	41	27	22	20	32	50	23		
20	31	25	30	20	16	16	G	A A 79	46	55	46	A A 66	47	A A 61	A A 58	38	38	35	42	40	46	56	50	20		
21	41	34	E	E	17	G	30	A A 49	41	43	A A 53	41	G	41	35	37	39	A A 53	37	20	44	E	E	E		
22	21	34	26	E	23	23	16	35	51	65	41	65	75	45	G	53	A A 73	A A 144	A A 95	A A 85	36	29	E	E		
23	E	A A 67	A A 66	42	32	32	47	A A 56	A A 88	A A 86	A A 98	A A 76	42	A A 104	A A 98	47	A A 129	A A 136	41	47	46	25	33	49		
24	A A 55	E	30	23	20	28	34	A A 70	58	46	40	G	G	39	G	43	35	G	30	36	33	82	42	A A 280		
25	46	30	25	E	22	G	A A 60	48	41	G	A A 61	46	38	42	38	G	47	47	50	26	21	24	E	E		
26	29	E	E	E	16	G	G	35	41	G	44	40	42	45	A A 83	34	35	32	A A 119	19	E	E	E	E		
27	E S 15	E	E	E	G	33	40	55	A A 83	55	46	G	41	35	G	G	46	G	31	30	38	30	E	20		
28	E	E	E	E	20	A A 59	34	A A 107	G	G	58	A A 87	A A 75	61	89	G	G	A A 159	A A 123	31	50	A A 86	A A 64	21		
29	E	A A 86	A A 63	A A 72	20	A A 62	A A 78	A A 50	A A 66	A A 54	A A 55	A A 83	A A 66	52	36	40	G	41	31	22	23	26	E	E		
30	E	E	E	E	21	18	20	A A 49	A A 55	G	39	G	G	G	G	C	C	31	G	30	21	43	31	22	E	
31	E	E	E	E	19	29	G	46	46	A A 63	A A 81	A A 73	A A 64	A A 71	G	46	47	A A 96	A A 127	56	26	47	29	50		
CNT	31	31	31	31	30	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31		
MED	20	20	16	E	20	28	37	47	46	46	43	50	42	43	40	34	35	36	33	38	26	29	20	20		
UQ	30	30	26	22	22	31	48	54	A A 66	A A 62	54	80	64	54	53	45	44	54	44	46	42	38	34	28		
LQ	E	E	E	E	17	E G 16	E G 16	38	40	38	40	40	36	37	G	G	G	G	30	22	20	20	E	E		

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FBES (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

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

JUL. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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	F	F	F	F	325	300	325	295	315	A	315	A	305	305	310	315	305	320	300	A	290	275	F	305		
2	300	300	310	280	F	H	290	315	A	285	310	310	R	255	265	310	A	A	A	A	A	280	295	290		
3	F	F	F	F	F	270	285	A	305	305	A	300	275	285	270	A	A	A	305	305	285	285	F	F		
4	F	F	F	F	270	290	300	290	245	A	285	270	290	285	270	310	300	A	305	305	A	280	295	295		
5	295	270	275	275	F	270	310	270	A	A	R	A	A	305	300	265	290	280	290	300	300	290	280	270		
6	275	280	275	285	280	300	315	A	A	A	310	A	A	300	305	300	290	310	305	315	295	300	280	285		
7	295	325	295	285	280	270	285	A	A	A	235	A	A	260	260	255	305	290	300	290	290	290	300	285		
8	295	275	275	275	280	290	A	270	A	310	305	260	235	250	275	295	300	305	310	310	300	290	275	F		
9	300	280	300	305	280	270	280	285	H	275	285	235	305	295	255	265	295	300	305	300	290	300	290	280		
10	270	290	285	275	275	265	300	325	340	A	A	A	A	A	A	305	A	A	305	295	290	300	295	295		
11	280	290	295	275	300	H	260	285	285	325	270	280	A	275	290	320	305	305	305	315	300	300	300	305	290	
12	285	275	270	265	280	265	295	300	320	300	335	A	285	A	A	A	315	A	295	310	285	305	295	290		
13	295	305	275	290	305	330	A	295	315	290	265	280	R	250	255	255	275	265	310	265	275	285	250	255		
14	250	260	280	280	275	A	A	A	290	305	290	290	280	305	295	315	300	290	290	285	290	275	290	275		
15	290	285	285	275	300	265	310	305	A	255	275	300	305	255	285	310	270	295	290	290	305	275	285	300		
16	305	275	280	285	290	315	305	365	270	A	A	A	A	295	A	285	315	310	305	280	285	285	285	295		
17	290	295	280	300	285	275	305	325	325	255	260	A	A	260	280	305	260	290	275	315	300	295	275	270		
18	295	285	290	300	255	265	A	A	A	270	295	A	270	A	A	310	280	310	300	310	295	295	275	285		
19	A	290	285	310	305	280	235	270	A	R	270	A	275	300	290	290	310	310	325	305	310	295	280	290		
20	280	290	290	290	295	295	290	A	265	305	H	310	A	310	A	A	280	305	315	310	315	S	310	295	305	285
21	280	270	270	285	300	315	290	A	295	305	A	285	R	285	270	285	285	A	290	315	300	300	285	295		
22	280	280	285	320	315	320	290	320	335	A	320	A	A	300	320	A	A	A	A	A	295	295	300	300		
23	295	A	A	F	285	295	A	A	A	A	A	A	305	A	A	300	A	A	325	320	295	300	290	F		
24	A	F	F	285	300	380	335	A	290	325	300	300	285	300	265	295	315	320	300	305	300	A	300	A		
25	280	300	290	270	285	290	A	320	330	320	A	325	285	290	300	300	315	315	305	310	285	275	295	305		
26	315	305	305	300	275	295	300	275	H	315	295	340	240	285	240	A	315	285	275	A	300	305	305	290	285	
27	295	280	280	290	290	320	315	A	A	310	325	310	320	305	315	310	300	315	285	305	300	315	320	285		
28	270	280	295	275	275	A	275	A	305	300	A	A	A	A	A	R	285	A	A	305	315	A	A	280		
29	285	A	A	A	305	A	A	A	A	A	A	A	A	A	A	260	295	305	A	295	290	295	315	315	295	
30	280	285	280	285	285	280	A	A	310	330	R	R	245	275	C	C	300	300	270	285	285	295	310	310		
31	295	285	295	295	275	280	285	295	245	A	A	A	A	A	335	295	280	A	A	295	295	295	295	A		
CNT	27	26	26	27	29	28	23	17	20	20	20	13	18	23	22	26	26	20	26	28	29	29	28	26		
MED	290	285	285	285	285	290	290	295	308	300	298	290	285	290	282	300	300	305	302	305	295	295	292	290		
UQ	295	290	295	292	300	312	305	320	322	308	312	300	305	300	305	310	305	312	305	310	300	300	300	295		
LQ	280	275	280	275	275	270	285	285	282	280	278	270	275	260	265	285	285	290	290	292	290	285	282	285		

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M(3000)F2 (0.01)

IONOSPHERIC DATA

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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						335	360	360	A	A	395	A	A	A	A	345	355	A	A					
2							A	A	A		385	400	A	395	385	360	340	A	A	A				
3						L 340	A	A	A	A	A	A	A	370	385	A	A	A	A	A				
4						335	A	A	A	A	A	400	A	380	375	360		A	A	A				
5						A	A	A	A	400		A	A	375	A	380	370	A	A					
6						335	A	A	A	A	A	A	A	A	A	365		A	A	A				
7						315	A	A	A	A		375	A	A	A	H 375	365	A	345	A				
8						A	A	A	A	A	405	395	400	370	390	380	A	325	A					
9						A	A	A	A		375	420	380	405	A	L 370	345	335	325	330				
10						A	A		370	A	A	A	A	A	A	A	A	A	A					
11						345	350		A	A	A	A	385	370	A	355	L 350	A	335					
12						A	A	A	355	385	385	A	375	A	A	A	370	A	A					
13						A	A	A	A	A	385	A	A	375	350	340	345	335	315	L				
14						A	A	A	A	400	395	400	H 405	355	A	A	L 330	325						
15						A	A	360	A	A	A	H 390	A	L 380	375	355	355	325	A					
16						350	L 340	365	360	A	A	A	A	A	A	H 350	355	L 325	L 340					
17						H 330	335	355	370	380	380	A	A	A	355	365	360	A	A					
18						A	A	A	A	A	A	A	410	A	A	A	H 340	335	L 335					
19						L 330	340	A	A	A	A	A	A	385	A	380	H 350	A						
20						L 340	A	A	A	A	A	A	A	A	A	345	A	A	A					
21						335	L 340	A	A	A	A	A	390	A	380	355	A	A	A					
22						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
23						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
24						A	A	A	A	A	L	395	H 375	360	H 360	A	340	L 325	A					
25						320	A	A	A	385	A	A	375	A	360	335	A	A	A					
26						340	L 320	A	A	390	A	410	A	A	A	365	A	335	A					
27						A	A	A	A	A	A	385	A	365	370	355	A	335	A					
28						A	A	A	370	400	A	A	A	A	A	370	335	A	A					
29						A	A	A	A	A	A	A	A	A	A	390	A	355	A					
30						325	A	A	375	A	395	395	395	H 395	C	C	L 350	340	L					
31						A	325	A	A	A	A	A	A	A	370	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						11	10	6	6	9	10	9	12	13	15	20	16	12	5					
MED						335	340	358	370	385	395	395	392	375	370	355	350	330	335	L				
UQ						338	340	360	370	400	400	400	402	385	375	365	355	335	335	L				
LQ						328	335	350	360	385	385	390	375	370	360	345	340	325	330	L				

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M(3000)F1 (0.01)

IONOSPHERIC DATA

JUL. 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						325	295	360	290	A	345	A	375	375	355	350	355	300	A						
2						370	320		A	400	330	355	R	525	450	345	A	A	A						
3						370	345	A	355	355	A	395	425	410	455	A	A	A	335						
4						345	325	390	525	A	400	470	405	410	455	345	365	A	305						
5						A	430	A	A	375	R	A	A	380	390	455	390	390	345						
6						305	A	A	A	350	A	A	A	375	330	365	355	325	300						
7						390	375	A	A	A	620	A	A	500	465	475	355	355	340						
8						325	A	405	A	325	355	490	605	600	405	375	350	340	295						
9						360	345	375	A	425	410	550	370	515	505	445	370	340	295						
10						295	285	275	A	A	A	A	A	A	A	355	A	A	295						
11						365	335	300	455	430	A	430	375	340	355	365	330	300							
12						A	A	300	300	365	305	420	A	A	A	A	330	A	310						
13						A	395	325	405	455	430	R	505	460	450	350	350	255							
14						A	A	370	290	380	355	355	320	360	330	A	325	350							
15						405	340	350	A	505	435	375	390	500	400	345	445	350	350						
16						295	300	275	435	A	A	A	A	395	A	385	325	315	275						
17						400	345	255	340	535	490	A	A	485	405	355	450	350	355						
18						455	A	A	A	450	390	A	455	A	A	345	405	320	315						
19						375	570	405	A	R	430	A	445	375	370	320	305	300							
20						340	A	455	405	305	A	350	A	A	A	405	310	300	305						
21						305	320	A	375	370	A	390	R	405	440	405	400	A	330						
22							325	305	A	345	A	A	400	330	A	A	A	A							
23						345	A	A	A	A	A	A	375	A	A	375	A	A	290						
24							305	A	255	305	350	395	395	345	405	340	280	285	305						
25						350	A	A	300	285	305	A	325	400	400	375	330	300	300						
26						330	345	390	H	325	370	305	575	415	555	A	330	355	380						
27						295	A	A	A	A	295	325	305	355	335	345	330	310	305						
28						A	400	A	360	355	A	A	A	A	A	R	375	A	A						
29						A	A	A	A	A	A	A	A	A	A	500	400	370	A						
30						350	A	A	345	300	R	R	505	440	C	C	365	365	360						
31						350	355	355	290	A	A	A	A	A	295	380	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						18	20	17	19	19	20	13	18	23	22	26	25	20	21						
MED						350	345	350	325	370	368	395	402	405	402	355	355	335	305						
UQ						375	368	390	365	415	430	470	430	500	455	400	370	350	335						
LQ						325	312	300	295	340	338	355	375	375	355	345	330	305	295						

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H^oF₂ (KM)

IONOSPHERIC DATA

JUL. 1984

H*F (KM)

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

Station Hour Day	WAKKANAI				Lat. 45 23 5 N				Long 141 41 2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	290	285	250	245	H 240	250	215	220	A	A	205	A	A	A	230	225	A	A	A	275	A	260	245		
2	270	275	255	280	290	H 250	A	A	A	205	200	A	205	200	225	235	A	A	A	A	A	250	255		
3	255	255	275	290	255	245	A	A	A	A	A	A	210	220	A	A	A	A	A	275	275	275	260		
4	285	280	280	290	H 275	255	A	A	A	A	A	200	A	H 200	225	225	A	A	A	A	300	250	250		
5	270	295	335	275	325	A	A	A	A	205	A	A	A	245	A	220	225	A	A	A	275	305	295	300	
6	300	A 295	A	290	265	220	225	A	A	A	A	A	A	A	200	A	A	A	A	260	260	290	305		
7	290	230	250	290	280	250	A	A	A	A	220	A	A	A	H 200	225	A	240	A	280	275	290	250	255	
8	290	305	295	A	275	A	A	A	A	A	200	210	205	230	210	225	A	245	A	265	260	270	A	A	
9	250	305	275	290	A	A	A	A	A	205	190	225	195	A	215	205	205	255	250	A	240	A	A	A	
10	245	300	295	300	290	250	A	A	A	235	A	A	A	A	A	A	A	A	A	A	260	290	275		
11	A	285	255	A	295	H 250	245	A	A	A	A	A	210	245	A	225	230	A	A	A	275	250	A		
12	275	305	305	300	H 305	A	A	A	220	205	205	A	210	A	A	A	255	A	A	275	255	250	300	300	
13	A	295	280	280	255	H	A	A	A	A	A	230	A	A	245	250	270	225	225	230	295	275	270	330	330
14	340	305	295	260	A	A	A	A	A	205	235	205	195	H 240	A	A	250	235	280	A	255	260	250	255	
15	275	290	295	295	270	A	A	225	A	A	A	H 205	A	H 205	205	215	225	245	A	A	245	275	270	255	
16	270	275	305	290	300	255	245	215	240	A	A	A	A	A	215	225	230	245	255	250	265	275	255		
17	270	265	250	250	295	H 230	245	230	225	205	205	A	A	A	275	215	240	A	A	245	255	270	295	A	
18	300	290	275	245	325	A	A	A	A	A	A	A	205	A	A	A	H 230	250	240	280	300	A	305	300	
19	A	A	250	240	280	245	255	A	A	A	A	A	A	205	A	205	225	A	H 255	255	245	305	A	280	
20	305	260	A	275	255	H 220	210	A	A	A	A	A	A	A	A	250	A	A	A	A	255	A	A	275	
21	A	A	280	250	285	250	250	A	A	A	A	A	200	A	245	270	A	A	A	255	A	250	280	250	
22	295	A	295	250	255	225	210	A	A	A	A	A	A	A	240	A	A	A	A	A	300	295	255	250	
23	270	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	265	A	A	
24	A	300	320	275	260	205	A	A	A	A	205	205	205	H 245	H 200	A	250	210	A	255	285	A	A	A	
25	A	275	295	295	290	255	A	A	A	215	A	A	205	A	230	250	A	A	A	260	265	295	240	255	
26	255	255	245	240	300	240	245	A	A	H 200	A	A	225	A	A	245	A	A	A	260	230	235	250	255	
27	275	260	280	255	280	A	A	A	A	A	200	A	215	215	225	A	245	A	245	255	240	230	255		
28	280	300	290	295	305	A	A	A	215	200	H	A	A	A	A	230	240	A	A	275	A	A	A	300	
29	290	A	A	A	305	A	A	A	A	A	A	A	A	A	225	A	230	A	A	295	275	255	255	250	
30	285	295	290	295	305	255	A	A	200	A	200	200	200	200	H 225	C	C	225	205	A	295	A	300	265	235
31	265	295	255	255	300	A	245	A	A	A	A	A	A	A	225	A	A	A	A	A	255	A	280	A	
CNT	25	26	27	27	30	18	11	4	6	9	11	9	12	13	15	20	16	12	8	19	22	23	23	24	
MED	275	290	260	280	290	250	245	222	222	205	205	205	205	220	225	225	228	242	250	260	260	270	265	255	
UQ	290	300	295	290	300	250	245	228	235	205	212	210	208	245	235	240	240	248	268	280	275	292	285	290	
LQ	270	275	255	252	270	230	220	218	215	205	200	200	200	205	212	215	225	228	242	255	260	250	252		

JUL. 1984

H*F (KM)

IONOSPHERIC DATA

JUL. 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 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	120	105	105	105	105	105	105	105	110	105	105	105	110	110		S			
2					S	130	105	105	105	105	105	105	110		A		A	105	110	115		S		
3					A	A	105	105	105	105	105	110	105	105	105	110	105	105	115		S			
4					S	120	110	105	105	105	110	110		B	110	A	A	A	110	120		A		
5					A	120	110	105	105	105	105	110	110	105	110		A	110	110	110		A		
6					A	A	105	105	105	105	105	105	110	105	105	110	105	110	125	130				
7					A	115	110	105	105	105	105	105	105	120		A	110	110	110	110	130			
8					S	125	110	105	105	110	105	105		A	A	105	105	105	105	A	S			
9						125	125	110	110	105	105	105	120	105	115	110		A	105	110	A	A		
10					A	115	115	110	105	105	105	110	105	110		A	105	105	110	110		S		
11					A	115	110	110	105	105	105	105	105	105	110	105	105	105	105		A			
12					A	105	110	105	105	110		A	110	105		A	A	A	A	A	A	S		
13					A	125	110	105	105	105	105	105	105	110	105	105	105	110	115		S			
14					S	130	115	105	105	110	105	105	105	110	110	105	105	110	110		S			
15					S	125	110	105	105	105	105	105	110	105	120	105	105	105	110		A			
16					A	125	105	105	105	105	105	105	105	105	110		A	A	105	110		S		
17					S	120	110	105	105	105	110		A	A	A	110	110	105	105	120		S		
18					S	130	105	105	105	110	105	120		B	105	115	110	105	110	110	130			
19					A	130	110	105	105	110	110	105	110		A	A	A	A	105	A	A			
20					A	135	110	105	105	105	105	105	105		A	A	110	105	105	115		S		
21					S	125	110	105	105	105	105		A	105	A	A	A	A	A	A	A			
22					A	A	115	105	105	105	105	105	105		A	105		A	105	105	110		S	
23					A	A	105	110	105	105	105	105	110		A	A	A	A	A	125		S		
24					S	A	110	105	110	105	105	110	105	105	105	105	105	115	125		S			
25					A	125	115	110	105	105	105	105	105		A	105	120	120	110	115		S		
26					A	110	105		A	105	105	105		A	105	105	105	110	105	120		S		
27					S	125	115	105	105	105	105	105	105	105	105	105	105	105	120		S			
28					A	125	110	105	105	110	110	105	110	105	110	110	110	110	A		S			
29					A	130	115	110	105	105	110	110	105	110		A	105	105	115	110		E		
30					A	A	110	110	105	110	110	105	105	105		C	C	A	105	120		S		
31					A	120	110	105	105	105	105	110	105	105	105	110	105	120	120		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	25	31	30	31	31	30	28	28	21	21	20	24	28	25	3				
MED					125	125	110	105	105	105	105	105	105	105	105	105	105	105	110	115	130			
UQ					125	110	105	105	105	105	110	108	110	110	110	108	110	120	130					
LQ					120	108	105	105	105	105	105	105	105	105	105	105	105	105	110	130				

JUL. 1984

H°E (KM)

IONOSPHERIC DATA

JUL. 1984

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

JUL. 1984

H*ES (KM)

IONOSPHERIC DATA

JUL. 1984 TYPES OF ES

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

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

JUL. 1984 TYPES OF ES

IONOSPHERIC DATA

JUL. 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	.64	.63	.62	.58	.52																X 71	X 72	.75	.73		
2	.69	.63	.63	.58	.58																A	.73	.77	.73		
3	.73	.68	.67	.68	.68																	.73	.75	.75	.67	
4	.59	.58	.60	.60	.54																	X 75	.69	.70	.72	
5	.68	.66	.62	.62	.59		.53															X 63	.65	.66	.69	
6	.62	.60	.60	.60	.59	.68																X 70	X 67	.72	.69	
7	.67	.71	.69	.60	.60																	X 71	.76	.71	.65	
8	.63	.62	.59	.62	.59	.60	.60															X 72	X 71	.67	.69	
9	.68	.64	.64	.61	.54	.53																X 74	X 65	X 60	X 57	
10	X 56	X 56	X 55	X 52	X 52																	X 74	X 68	X 68	.70	
11	.65	.60	.59	.55	.51																	X 71	X 68	X 68	X 59	
12	.58	.62	.60	.60	.56																	X 72	X 60	X 60	X 60	
13	X 59	.62	.62	.62	.59																	X 82	X 82	.78	.75	
14	.75	.69	.79	.69	X 59		.86															X 87	X 80	X 76	X 70	
15	.70	X 70	X 64	.63	X 53																	X 82	X 71	.73	X 70	
16	X 70	X 60	X 60	.62	X 60																	X 79	X 78	X 71	X 72	
17	X 71	X 67	X 64	.65	X 59																	X 63	X 62	X 58	X 60	
18	X 60	X 60	X 51	X 49	X 43																	X 66	.70	.72	.71	
19	.73	.58	.63	.60	.44																	.75	.70	.66	.62	
20	A	.59	.58	.58	.52																	X 74	A	A	.60	
21	.62	.62	.63	.53	.54	.56																X 63	A	A	.60	
22	X 48	X 48	X 49	.52	A																	S 67	.73	A	A	
23	A	.62		.53	.53	.53	.64	.82	.88													X 64	A	.68	.69	
24	.60	.68	.62	.60	.49																	X 73	X 63	X 63	X 60	
25	.62	.63	.61	.60	.52	.47																X 67	.78	.81	.79	
26	.67	.63	.57	.50	.53	.52																X 77	X 67	.62	.62	.60
27	.60	.62	.64	.63	.63	.61																.93	X 89	.78	X 61	X 51
28	.53	.52	.53	.54	.53																	X 69	X 65	.70	A	A
29	A	A	.50	.47	.47	.43																X 59	.68	X 70	.59	.52
30	X 46	.46	.49	.45	.40																	X 64	X 69	.74	.62	.63
31	.59	.53	.51	.48	.46																	X 71	.77	.73	.83	.71
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	.28	.30	.30	.31	.30	.9	.3	.2	.1												.6	.30	.28	.27	.29	
MED	.62	.62	.60	.60	.54	.53	.60	.84	.88												X 70	X 72	.70	.68	.69	
UQ	.68	.64	.63	.62	.59	.60	.62													X 77	X 75	.74	.74	.71		
LQ	.59	.59	.57	.53	.52	.52	.56													X 64	X 67	X 68	.62	.60		

JUL. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

JUL. 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	F	F	F	F	52	62	62	67	64	A	63	65	66	61	61	56	64	68	65	66	F	F				
2	F	F	F	F	F	46	A	61	60	71	60	60	55	56	62	71	62	61	66	71	A	F	F				
3	F	F	F	F	F	47	53	66	66	A	C	C	61	A	56	61	A	61	65	63	F	F	F				
4	F	F	F	F	F	46	50	51	A	58	56	A	A	A	57	56	58	60	59	A	72	69	F	F			
5	F	F	F	F	F	A	F	44	51	A	A	A	A	53	60	54	54	54	56	60	60	57	F	F			
6	F	F	F	F	F	F	U	R	60	66	60	64	A	64	68	66	75	75	67	66	68	67	69	U	R		
7	F	F	F	F	F	50	52	57	58	A	50	W	53	A	53	A	50	54	56	58	63	65	F	F	F		
8	F	F	F	F	F	F	F	51	64	64	A	A	A	60	60	A	63	66	62	A	A	66	65	F	F		
9	F	F	F	F	F	F	46	56	A	61	62	53	56	66	66	59	60	71	79	72	67	68	59	54	51		
10	50	50	49	46	46	50	72	H	62	59	53	56	53	58	60	54	61	64	65	70	68	68	62	62	F		
11	F	F	F	F	F	51	53	80	58	A	52	52	58	69	73	61	60	62	65	67	65	62	62	53			
12	F	F	F	F	F	50	65	80	66	59	56	54	60	56	61	69	66	61	71	76	66	54	54	54			
13	53	F	F	F	F	50	57	A	A	A	A	A	55	53	54	61	65	77	80	90	66	76	76	F	F		
14	F	F	F	F	F	J	R	62	81	F	87	94	H	73	74	79	93	72	68	63	72	81	86	80	74	70	64
15	F	F	F	F	F	R	47	45	51	56	49	51	A	A	53	54	54	58	50	55	59	69	76	65	F	R	
16	64	54	54	52	54	53	47	55	56	56	61	A	A	A	70	67	72	66	70	72	73	72	65	66			
17	65	61	58	57	53	52	65	68	51	56	51	51	A	58	60	63	54	66	67	75	57	56	52	54			
18	54	54	45	43	37	39	50	51	51	A	48	50	48	54	54	66	62	62	61	61	60	F	F	F			
19	F	F	F	F	F	36	38	41	51	60	50	50	A	61	66	73	81	A	71	68	73	F	F	57	F		
20	A	F	F	F	F	45	48	54	56	52	65	66	60	62	57	59	64	69	73	69	80	68	A	A	F		
21	F	F	F	F	F	F	48	51	A	54	A	A	A	A	53	55	53	54	A	66	57	A	A	F			
22	42	42	43	F	A	43	44	58	60	A	A	56	A	A	67	54	58	65	A	59	S	F	A	A			
23	A	F	A	F	F	F	F	F	F	A	A	A	A	A	A	A	61	66	62	64	58	A	F	F			
24	F	F	F	F	F	44	47	62	77	51	59	55	61	72	68	74	87	72	69	82	67	57	57	54			
25	F	F	F	F	F	F	39	51	64	64	58	50	57	58	59	62	68	72	67	64	73	70	F	F	F		
26	F	F	F	F	F	F	54	A	A	57	58	E	G	44	53	50	54	61	A	60	64	71	61	F	F	F	
27	F	F	F	F	F	F	53	60	A	A	A	66	65	A	A	66	64	64	66	74	84	83	68	55	45		
28	F	F	F	F	F	36	39	51	56	48	47	46	A	54	54	58	53	54	A	63	59	F	A	A			
29	A	A	F	F	F	F	A	A	A	A	46	A	A	E	G	44	49	49	50	49	48	47	53	F	64	F	F
30	40	F	F	F	F	38	49	50	56	A	51	A	E	G	44	49	51	50	49	49	47	58	62	F	F	F	
31	F	F	F	F	F	F	36	39	A	61	70	66	62	56	51	57	62	A	A	A	A	64	F	F	F	F	
00	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	8	10	7	13	26	26	23	23	20	19	20	22	25	28	29	27	30	25	30	26	17	13	11			
MED	53	54	52	46	46	48	52	60	60	56	56	56	58	57	60	61	62	62	66	68	66	64	57	54			
UQ	60	60	58	54	50	52	60	63	65	63	62	60	61	66	66	67	66	67	70	73	69	67	62	64			
LQ	50	46	49	44	F	44	39	48	53	56	51	51	52	53	54	54	58	54	56	62	63	61	59	54	52		

JUL. 1984

FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1984

FOF1 (0.01 MHZ)

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

Station		AKITA		Lat. 39 43.5 N		Long 140 08.0 E		Sweep 1		MHz to 25 MHz		in 24sec		in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								L	L	A				H			A	430	L	L						
2							320	A	420	420	430	450	460	470	450	450		A	A	A	A					
3								L	A	400	A	A	C	C	470	A	470	A	A	A	A					
4							L	A	A	A	A	A	A	A	470	470	440	R	A	L	A					
5								A	A	A	A	A	A	A	450	A	A	440	430	400	L					
6								L	L	460	A	A	A	480	500	490	A	A	L	L	A					
7								L	A	A	A	430	440	450	A	A	A	430	420	410	A					
8								L	370	420	440	A	A	A	460	460	A	440	430	A	A					
9							L	A	A	A	A	A	H	460	470	A	A	A	H	420	390	L				
10								360										440	420	390	L					
11								370	L	450	440	480	490	470	470	480	440	430	410	L	L					
12								L	A	A	430	A	450	480	A	A	460	450	410	L	L					
13								320	380	420	A	450	470	A	470	460	440	440	420	L	L					
14									A	A	A	A	A	450	450	460	440	A	410	390	340					
15								L	L		440	460	L	A	480	480	480	L	L	L	A					
16								310	380	410	420	A	A	A	480	470	450	460	430	A	A					
17									L	440	450	450	450	A	A	A	460	440	430	400	L					
18								L	370	390	L	A	440	440	A	430	430	430	A	380	A					
19								300	A	380	420	A	430	A	450	430	A	430	410	380	L					
20								340	A	410	A	A	A	A	A	A	440	A	A	A	L					
21								L	400	L	A	440	460	L	450	A	460	A	A	390	L					
22								360	390	A	A	A	A	A	A	A	430	A	420	A	A					
23									410	430	A	A	A	A	A	A	430	A	420	A	A					
24								330	370	A	A	A	A	A	A	A	A	A	410	L	A					
25								L	L	A	440	440	430	470	470	A	A	410	L	L						
26									L	360	400	420	430	L	450	450	440	430	A	420	A	L				
27								360	A	A	A	A	A	440	440	440	A	430	A	A	L					
28								A	A	A	A	A	450	A	A	A	440	430	A	A	L					
29								330	A	A	430	430	L	A	A	A	420	400	360	A						
30								A	A	A	A	A	A	440	A	430	A	400	380	A						
31								350	370	A	A	430	A	440	430	430	A	410	L	L						
								A	A	410	A	A	A	460	440	A	A	A	A	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT						7	12	14	12	11	14	13	19	17	20	15	22	11	1							
MED						320	365	405	425	440	445	460	460	460	445	440	420	390	340							
UQ						345	370	420	440	450	450	470	470	470	460	440	430	400								
LQ						315	355	390	420	430	440	450	450	440	430	430	410	380								

JUL. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUL. 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 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	365	350	335	A	270	A	S				
2						A	A	A	A	A	A	A	A	A	A	A	305	265	A	S				
3						A	A	A	A	A	C	C	A	A	360	340	305	265	A	S				
4						A	A	A	A	A	A	A	B	A	A	A	A	A	A	S				
5						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
6						A	255	A	A	A	A	A	A	A	350	330	305	285	A	S				
7						200	A	A	A	A	A	A	A	A	A	A	305	260	215	S				
8						A	A	A	A	A	A	A	A	A	A	A	305	A	A	S				
9						A	250	A	A	A	A	A	365	A	A	A	A	A	A	S				
10						A	A	A	A	A	335	355	R	370	365	355	330	A	A	A	S			
11						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
12						A	A	A	A	A	A	A	A	A	A	A	305	A	A	S				
13						A	A	A	A	A	A	A	A	A	A	A	305	265	210	S				
14						A	A	A	A	A	A	A	A	A	A	320	290	270	A	S				
15						200	A	A	A	A	A	A	A	A	A	330	305	A	A	S				
16						A	235	A	A	A	A	A	A	A	A	A	A	A	A	S				
17						A	A	A	A	A	A	A	A	355	345	325	A	255	A	S				
18						A	A	A	A	A	A	A	A	A	A	A	290	A	A	S				
19						S	225	A	A	310	A	A	A	A	A	A	A	A	S	S				
20						S	A	A	300	315	A	A	355	355	A	A	A	A	A	S				
21						A	235	A	A	A	A	A	A	A	A	315	A	A	A	S				
22						A	240	A	305	A	A	A	A	A	A	A	A	A	A	S				
23						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
24						A	240	A	A	A	A	A	A	360	A	A	290	A	A	S				
25						A	A	A	A	A	A	A	A	A	345	A	A	A	A	S				
26						A	A	A	A	A	A	A	A	A	335	305	285	A	A					
27						A	A	A	A	A	A	A	A	A	A	330	290	240	A					
28						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
29						S	A	A	A	A	A	A	A	A	A	A	A	A	A					
30						175	230	A	A	A	A	A	A	A	A	320	285	A	A					
31						S	A	A	A	A	A	A	A	360	A	315	290	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	8		2	2	1	1	4	6	7	12	15	9	2					
MED						200	238		302	312	335	355	R	368	360	350	328	305	265	212				
UQ						200	245							370	365	352	330	305	270					
LQ						188	232							360	355	345	318	290	260					

JUL. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1984

FOES (0.1 MHZ)

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

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

JUL. 1984

FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1984

FBES (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 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	20	E	E	E S 15	E	25	36	37	45	38	A A 76	37	G	42	39	48	34	29	30	32	32	20	29	27			
2	34	E	23	E	E	23	A A 50	34	37	37	37	38	39	38	37	48	51	49	51	50	A A 110	27	E	E			
3	19	E	E	25	E	21	43	33	54	A A 65	C	C	42	A A 162	38	46	A A 66	55	46	51	52	46	27	43			
4	E	26	17	E	E	39	39	A A 62	50	38	A A 96	A A 89	A A 106	39	39	38	54	37	A A 88	49	45	29	29	28			
5	40	E	25	31	E	A A 52	40	42	A A 53	A A 50	A A 143	A A 103	40	47	46	36	34	30	27	21	21	27	20	E			
6	38	30	20	29	21	19	28	31	46	A A 64	54	40	39	40	50	46	36	36	40	19	41	20	19	E			
7	E	E	E S 15	E	E S 15	24	43	41	A A 74	37	40	42	A A 54	46	A A 71	37	G	33	36	30	32	19	E	33			
8	E	E	26	E	28	21	27	39	42	A A 84	A A 76	A A 120	44	38	A A 110	37	33	50	A A 66	A A 128	31	20	33	20			
9	21	23	19	25	22	21	42	A A 110	50	48	39	42	47	55	47	36	33	30	25	E S 16	E S 15	E S 15	E S 15	E S 15			
10	E S 15	E S 15	E S 15	E S 15	E S 15	20	27	31	32	38	40	40	39	39	38	G	40	35	30	23	E	25	20	19			
11	20	E	E	E	19	28	42	59	40	A A 112	42	38	49	62	39	37	30	30	30	30	E S 16	35	40	43			
12	E	30	E	19	22	26	33	33	46	37	40	48	40	37	36	34	34	30	24	28	34	E	E	E			
13	E	E	29	22	23	25	A A 74	A A 110	A A 96	A A 100	A A 88	38	40	40	38	44	G	G	G	17	18	19	20	43			
14	50	29	24	E	E S 16	40	30	40	38	36	34	63	42	39	38	G	G	30	50	30	39	E	40	23			
15	E	E S 16	E	18	19	G	28	33	40	49	A A 52	A A 64	39	38	40	G	32	40	35	50	E	19	E	18			
16	E	E S 15	29	E	E	18	G	34	38	37	40	A A 60	A A 66	A A 71	43	35	40	30	24	E S 16	E S 15	E	E	E S 15			
17	E	E	E	E	E	21	32	33	37	44	38	40	A A 66	39	37	G	43	32	59	21	E	20	E	E			
18	E	E	E	E S 15	E	19	40	32	38	A A 75	37	45	39	38	45	35	G	27	26	24	19	30	49	19			
19	22	18	20	E	E S 15	E S 16	28	40	40	43	49	A A 63	49	50	40	46	A A 118	62	24	29	30	25	30	30			
20	A A 109	35	E	20	21	25	G	31	35	45	39	39	41	50	39	47	45	30	28	20	65	A A 87	A A 77	30			
21	26	19	25	22	E	20	G	32	A A 75	43	A A 64	A A 95	A A 91	A A 88	37	44	37	43	A A 83	46	34	A A 84	A A 85	30			
22	28	29	20	29	A A 45	20	G	32	37	A A 81	A A 88	45	A A 69	A A 116	40	46	35	46	A A 100	53	40	38	A A 81	A A 82			
23	A A 101	38	A A 62	E	16	21	26	42	66	A A 159	A A 226	A A 179	D A 250	A A 165	A A 126	A A 81	40	29	58	25	29	A A 106	19	E			
24	E	E	21	33	25	21	29	38	48	36	40	37	45	39	46	52	33	30	28	20	25	E	E	25			
25	E	E	E	E	E	23	28	29	34	37	38	36	37	36	36	47	35	40	31	18	E	E	29	E			
26	E	E	E	E	E	18	30	A A 77	A A 84	48	49	37	36	40	43	37	A A 76	48	27	E	E	E	E	19	E		
27	30	22	E	20	E	38	39	A A 85	A A 108	A A 84	37	48	A A 102	A A 88	37	G	43	45	30	38	E	E	E	E			
28	18	E	E	E	E	21	27	43	47	34	37	38	A A 81	52	47	35	31	28	A A 85	33	42	29	A A 102	A A 76			
29	A A 94	A A 65	22	25	E	20	A A 65	A A 50	A A 65	43	A A 77	A A 78	41	46	37	47	31	28	37	21	34	21	20	E			
30	20	E	E	E	E S 15	G	G	34	42	A A 91	37	47	37	37	37	45	38	30	29	E	20	29	25	23			
31	26	25	E	30	22	22	A A 55	42	36	62	50	46	38	39	52	A A 66	A A 120	A A 87	A A 138	34	E	43	50	41			
CNT	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31		
MED	20	E	E	15	15	E	E	15	21	30	38	45	45	41	45	42	40	39	38	35	32	31	28	29	21	22	20
UQ	29	26	22	24	21	25	41	42	54	A A 70	A A 76	A A 63	A	60	54	46	46	43	44	54	36	36	30	36	30		
LQ	E	E	E	E	E	20	27	33	38	38	38	38	39	39	38	35	32	30	28	20	E	E	17	17	E		

JUL. 1984

FBES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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 15	E 15	E 15	E 15	E 15	E 16	16	16	17	18	18	20	20	19	19	18	19	17	16	E 16	E 15	E 15	E 16	E 15
2	E 15	E 15	E 15	E 16	E 15	E 16	16	17	17	18	18	20	19	19	18	18	17	16	15	E 16	E 16	E 16	E 16	E 15
3	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	16	C	C	19	20	19	18	17	17	16	E 15	E 15	E 15	E 15	E 15
4	E 16	E 15	E 15	E 15	E 15	E 16	16	18	18	19	19	22	35	20	20	20	18	17	16	E 16	E 16	E 16	E 16	E 16
5	E 16	E 15	E 15	E 15	E 15	E 16	16	17	17	16	19	19	20	20	20	20	17	16	16	E 16	E 16	E 15	E 16	E 15
6	E 16	E 15	E 15	E 15	E 15	E 16	16	18	18	18	19	20	20	20	20	19	19	18	18	E 16	E 16	E 15	E 16	E 16
7	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	18	19	19	20	17	18	17	17	16	E 16	E 15	E 15	E 15	E 15
8	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	19	18	19	19	24	18	18	18	17	16	E 16	E 15	E 15	E 15	E 16
9	E 15	E 15	E 15	E 15	E 15	E 16	16	17	16	18	18	20	22	20	18	18	17	16	16	E 16	E 15	E 15	E 15	E 15
10	E 15	E 15	E 15	E 15	E 15	E 15	16	17	17	19	18	19	20	19	18	20	19	17	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	16	18	20	19	20	20	18	19	17	18	16	17	E 16	E 16	E 16	E 16	E 17
12	E 15	E 15	E 15	E 15	E 15	E 16	17	17	18	17	18	18	20	21	18	18	18	17	13	E 16	E 15	E 15	E 15	E 15
13	E 15	E 15	E 15	E 15	E 15	E 16	16	17	16	17	17	20	18	20	17	17	17	17	16	E 15	E 15	E 15	E 15	E 15
14	E 16	E 15	E 15	E 15	E 16	E 16	16	18	19	19	20	21	20	20	20	20	18	18	16	E 16	E 15	E 16	E 15	E 15
15	E 16	E 16	E 15	E 15	E 15	E 16	16	16	18	19	19	20	19	20	19	20	17	17	E 16	E 16	E 16	E 16	E 15	
16	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	18	19	18	19	19	18	17	16	17	15	E 16	E 15	E 15	E 15	E 15
17	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	22	20	19	19	18	18	17	17	16	E 16	E 15	E 15	E 15	E 15
18	E 15	E 15	E 15	E 15	E 16	E 16	16	18	19	18	18	18	19	19	18	18	17	17	16	E 16	E 16	E 15	E 16	E 16
19	E 16	E 15	E 15	E 15	E 15	E 16	16	16	17	19	20	19	20	19	20	19	18	17	E 16	E 16	E 16	E 16	E 15	
20	E 16	E 16	E 15	E 16	E 15	E 15	16	16	18	18	19	20	20	20	20	19	19	17	16	E 16	E 16	E 16	E 16	E 16
21	E 16	E 15	E 15	E 15	E 15	E 16	16	16	17	19	18	17	19	19	18	17	17	16	E 16	E 16	E 15	E 15	E 16	E 15
22	E 16	E 16	E 15	E 15	E 15	E 15	15	16	16	17	17	18	19	20	20	17	16	16	16	E 16	E 15	E 15	E 16	E 15
23	E 15	E 16	E 15	E 15	E 14	E 16	16	16	17	20	18	18	18	20	19	19	18	17	16	E 14	E 16	E 15	E 15	E 15
24	E 15	E 15	E 15	E 15	E 15	E 16	16	16	16	16	17	18	18	20	18	16	17	17	17	E 16	E 15	E 15	E 15	E 15
25	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	18	18	18	18	19	19	18	18	17	E 16	E 16	E 16	E 15	E 15	E 15
26	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	16	17	17	18	18	18	18	17	17	E 16	E 16	E 16	E 15	E 15	E 15
27	E 15	E 15	E 15	E 15	E 15	E 16	16	17	17	17	18	17	18	18	18	18	17	16	16	E 15	E 15	E 15	E 15	E 15
28	E 16	E 15	E 15	E 15	E 15	E 16	16	16	16	18	18	20	23	18	18	17	18	16	16	E 16	E 16	E 15	E 16	E 16
29	E 16	E 15	E 15	E 15	E 15	E 16	16	16	17	17	18	18	19	20	20	17	17	17	16	E 16	E 15	E 15	E 15	E 15
30	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	17	18	19	19	20	19	18	17	16	16	E 15	E 16	E 15	E 15	E 15
31	E 15	E 15	E 16	E 15	E 16	E 16	16	17	17	17	18	19	18	19	17	17	17	17	14	E 15	E 15	E 15	E 16	E 15
CNT	31	31	31	31	31	31	31	31	31	31	30	30	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	18	18	19	19	19	18	18	17	17	16	E 16	E 15	E 15	E 15	E 15
UQ	E 16	E 15	E 15	E 15	E 15	E 16	16	17	18	18	19	20	20	20	20	18	18	17	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	17	17	18	18	19	19	18	17	17	16	16	E 16	E 15	E 15	E 15	E 15

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FMIN (0.1 MHz)

IONOSPHERIC DATA

JUL. 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 24 sec in automatic operation																						
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	F	F	F	F	F	325	320	320	300	330	A	305	300	315	305	295	315	300	315	310	290	275	F	F	310					
2	F	F	F	F	F	310	A	310	295	305	285	305	305	260	290	315	320	305	320	310	A	F	F	F						
3	F	F	F	F	F	295	265	310	315	A	C	C	315	A	265	300	A	315	320	315	F	F	F	F						
4	F	F	F	F	F	295	320	315	A	310	285	A	A	A	280	285	295	305	290	A	320	310	F	F	F					
5	F	F	F	F	F	A	265	285	A	A	A	A	250	295	270	275	275	285	295	310	275	F	F	F						
6	F	F	F	F	F	300	350	315	310	A	305	310	285	300	305	300	300	310	315	330	U R	295	285	F	F					
7	F	F	F	F	F	290	295	300	295	A	265	W	285	A	265	A	265	275	290	300	300	290	F	315	F					
8	F	F	F	F	F	F	F	260	315	320	A	A	A	295	305	A	290	315	315	A	A	285	290	F	F					
9	F	F	F	F	F	F	265	280	A	295	310	245	260	305	315	305	275	305	315	315	320	310	300	280	280					
10	285	285	290	290	310	280	325	300	H	310	315	275	290	285	290	235	305	295	305	320	315	310	295	300	F					
11	F	F	F	F	F	295	280	330	345	A	270	265	265	305	330	305	315	320	325	320	310	305	305	290						
12	F	F	F	F	F	275	300	325	320	320	285	275	300	275	290	315	305	300	310	325	320	285	270	285						
13	290	F	F	F	F	305	350	A	A	A	A	A	285	265	255	270	265	280	285	300	275	280	280	F	F					
14	F	F	F	F	F	285	R	335	F	285	310	305	285	285	320	310	310	295	290	295	300	300	285	290	295					
15	F	F	F	F	F	290	295	300	305	295	R	305	295	310	335	A	A	A	270	285	295	300	290	290	290	315	290	F	R	295
16	305	285	295	280	300	325	280	305	300	305	325	A	A	A	300	300	310	320	320	305	295	290	285	285						
17	295	290	295	275	290	300	325	330	350	305	280	270	A	300	290	310	265	285	290	335	280	270	275	270						
18	275	295	285	295	275	280	315	290	330	A	250	295	245	300	260	305	310	310	325	320	300	F	F	F						
19	F	F	F	F	F	305	300	270	315	335	320	A	A	300	305	300	300	A	320	295	330	F	F	F	F					
20	A	F	F	F	F	305	320	335	340	300	305	335	285	320	300	315	310	305	310	305	310	A	A	A	F					
21	F	F	F	F	F	F	300	325	A	310	A	A	A	A	300	310	290	315	A	310	310	A	A	F	F					
22	300	295	320	F	A	350	320	345	345	A	A	310	A	A	330	315	305	325	A	310	285	S	F	A	A					
23	A	F	A	F	F	F	F	F	F	A	A	A	A	A	A	A	305	330	A	315	305	A	F	F						
24	F	F	F	F	F	325	300	330	360	350	340	290	280	295	305	280	310	305	305	315	330	300	300	290						
25	F	F	F	F	F	290	295	320	330	375	270	295	305	290	300	305	315	315	305	300	300	F	F	F						
26	F	F	F	F	F	F	280	A	A	310	335	G	285	270	275	295	A	300	305	320	320	285	290	F	F	F				
27	F	F	F	F	F	315	320	A	A	A	320	320	A	A	305	300	300	305	295	305	325	330	310	305						
28	F	F	F	F	F	320	255	275	325	285	245	325	A	A	310	325	325	290	A	300	305	F	A	A						
29	A	A	F	F	F	300	F	A	A	A	280	A	A	G	290	265	285	310	310	320	290	F	330	F	F	290				
30	280	300	F	F	F	295	305	285	320	A	300	A	G	270	300	295	320	320	280	310	290	F	F	F						
31	F	F	F	F	F	285	A	290	355	345	320	320	290	310	325	A	A	A	A	295	F	F	F	F						
	00	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	8	10	7	13	25	26	23	23	19	19	20	22	24	28	29	27	30	24	30	25	17	13	11						
MED	F	F	F	F	F	300	300	315	320	310	285	290	285	295	300	300	305	308	305	310	300	290	300	290						
UQ	300	295	300	300	305	320	320	325	335	320	320	308	300	305	305	310	312	315	320	320	310	300	300	295						
LQ	F	F	F	F	F	290	295	280	298	305	305	270	280	265	278	280	295	295	290	295	300	290	285	285	285					

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M(3000)F2 (0.01)

IONOSPHERIC DATA

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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							L	L	A	380	A	375	360	H	380	370	A	365	L	L				
2						365	A	360	405	405	405	410	405	395	375	A	A	A	A					
3						L	A	365	A	A	C	C	370	A	355	A	A	A	A					
4						A	A	A	A	400	A	A	A	380	365	385	R	A	L	A				
5						A	A	A	A	A	A	A	390	A	A	385	345	335	L					
6						L	L	345	A	A	A	390	380	365	A	A	L	L	A					
7						L	A	A	A	415	385	400	A	A	A	390	375	335	A					
8						L	350	A	A	A	A	A	A	405	A	365	365	A	A					
9						L	A	A	A	A	A	H	395	A	A	A	390	H	380	L				
10								L	385	375	410	375	375	380	385	375	395	A	355	L				
11						L	A	A	395	A	420	415	A	A	355	355	375	L	L					
12						330	A	355	A	375	L	390	A	315	390	385	365	375	L	L				
13							A	A	A	A	A	420	395	380	380	A	365	365	360					
14							L	L	385	390	L	A	375	360	355	L	L	L	A					
15						320	340	370	A	A	A	A	375	380	A	345	360	A	A					
16							L	350	350	375	390	A	A	A	A	385	A	365	L					
17						L	A	385	L	A	385	380	A	400	390	360	A	360	A					
18						315	A	395	360	A	420	A	375	395	A	370	360	355	L					
19							395	A	A	A	A	A	A	A	A	A	A	A	L					
20							L	370	L	A	410	360	A	A	370	A	A	360	L					
21							360	380	A	A	A	A	A	A	410	A	355	A	A					
22								365	360	A	A	A	A	A	375	A	355	A	A					
23						335	365	A	A	A	A	A	A	A	A	A	A	L	A					
24							L	L	A	410	450	440	A	355	A	A	360	L	L					
25							L	360	375	375	395	L	420	390	385	385	A	370	A	L				
26							355	A	A	A	A	400	400	365	A	385	A	A	L					
27							A	A	A	A	400	A	A	A	385	370	A	A	L					
28							365	A	A	400	385	L	A	A	A	385	375	395	A					
29							A	A	A	A	A	A	385	A	380	A	375	370	A					
30							360	400	A	A	370	A	415	400	400	A	A	L	L					
31							A	A	405	A	A	A	385	400	A	A	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						6	10	13	9	11	14	12	16	17	17	15	18	11	1					
MED						330	360	370	375	400	392	400	382	385	375	385	362	360	360					
UQ						335	365	380	395	408	410	418	392	395	385	385	375	368						
LQ						320	355	360	360	385	385	378	375	380	370	365	355	355						

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

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

Station **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						290	270	345	290	A	350	345	345	350	340	320	380	280						
2					320	A	325	370	305	400	355	370	450	385	310	305	A	A						
3					305	410	310	305	A	C	C	345	A	450	360	A	A	280						
4					310	315	A	330	390	A	A	A	425	395	400	A	355	A						
5					A	440	390	A	A	A	A	505	380	420	410	405	360	310						
6					320	265	325	300	A	A	335	365	335	315	325	340	310	285						
7					315	350	355	A	460	W	430	A	460	A	460	400	350	320						
8					305	470	300	300	A	A	A	370	360	A	370	310	310	A						
9					405	355	A	370	340	550	470	360	310	350	410	325	290	270						
10					270	300	350	350	435	410	410	380	650	360	350	315	280							
11					300	400	280	265	A	485	515	455	A	300	325	315	300	290						
12					355	300	260	290	300	375	445	370	440	395	310	300	310	295						
13					A	A	A	A	A	A	405	450	500	400	400	350	300	280						
14					255	345	L	285	285	315	A	345	290	310	295	375	310	315						
15					350	365	340	325	A	A	A	465	400	400	370	400	355	335						
16					350	350	370	360	310	A	A	A	340	340	300	290	270							
17					290	280	280	275	320	445	475	A	380	365	320	435	350	A						
18					390	330	350	330	A	570	390	575	395	455	330	305	305	290						
19					460	385	295	335	A	A	370	330	330	310	A	A	280							
20					280	275	L	330	335	290	365	320	A	370	335	335	300	290						
21					340	300	A	355	A	A	A	A	360	340	370	315	A							
22						290	290	A	A	340	A	A	300	345	350	285	A							
23					340	310	285	A	A	A	A	A	A	A	345	280	A							
24					360	300	240	280	305	400	405	325	320	350	260	280	280							
25					380	350	285	295	260	L	450	380	370	380	340	335	300	270	275					
26					340	A	A	335	290	G	395	470	410	355	A	335	280							
27					280	A	A	A	290	305	A	A	335	310	325	320	300							
28					560	400	305	410	540	L	340	A	A	355	320	305	340	A						
29					A	A	A	440	A	A	G	410	460	405	350	330	305							
30					310	400	325	A	360	A	G	460	370	370	325	320	350							
31					A	340	250	A	310	325	370	355	300	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					14	26	25	23	18	18	19	22	22	28	29	26	27	22						
MED					320	340	310	305	335	388	390	370	380	362	340	330	310	288						
UQ					355	365	350	330	360	485	438	455	440	400	370	350	338	305						
LQ					305	290	285	290	300	310	345	365	345	332	325	305	300	280						

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H^oF₂ (KM)

IONOSPHERIC DATA

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H'F (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	305	285	255	210	290	240	A	A	A	210	A	240	230	A	220	A	225	210	A	A	A	A	A	A
2	A	240	A	290	310	255	A	220	220	200	205	200	195	210	230	A	A	A	A	A	A	A	305	280
3	250	265	235	A	260	230	A	235	A	A	C	C	A	A	230	A	A	A	A	A	A	A	A	A
4	275	A	295	285	275	A	A	A	A	200	A	A	A	215	230	225	A	A	A	A	A	A	A	A
5	A	280	A	A	300	A	A	A	A	A	A	A	225	A	A	200	220	225	A	255	255	A	280	280
6	A	A	A	275	A	300	250	230	205	A	A	A	205	215	200	A	A	A	A	250	A	280	295	300
7	270	270	235	270	270	255	A	A	A	200	220	210	A	A	A	220	220	240	A	270	A	270	230	A
8	280	280	A	280	A	250	230	A	A	A	A	A	A	205	A	230	225	A	A	A	A	255	A	280
9	A	285	A	260	A	240	225	A	A	A	A	215	A	A	A	200	200	240	230	250	240	230	265	280
10	285	275	265	260	265	230	225	200	200	210	230	205	200	210	200	200	A	A	A	250	240	270	275	300
11	315	300	270	290	295	A	A	A	A	A	200	195	A	A	245	230	220	245	A	A	240	A	A	A
12	290	A	320	290	A	A	A	220	A	220	220	A	200	200	220	240	230	230	235	240	240	230	290	280
13	270	280	A	280	275	235	A	A	A	A	A	200	220	230	230	A	230	240	240	265	270	255	290	A
14	A	A	A	210	250	A	A	250	230	200	195	A	A	200	225	225	215	A	A	A	250	265	265	A
15	300	270	285	280	280	260	255	240	A	A	A	A	210	200	A	230	230	A	A	A	250	250	285	280
16	240	275	A	290	260	245	230	205	230	210	210	A	A	A	A	220	A	220	250	255	255	270	260	270
17	280	260	275	270	280	250	A	220	210	A	205	240	A	200	225	220	A	245	A	230	240	290	300	295
18	300	255	255	260	320	270	A	220	A	A	200	A	235	235	A	220	210	230	240	250	A	A	A	290
19	285	315	275	225	275	250	230	A	A	A	A	A	A	A	A	A	A	A	A	A	240	245	A	A
20	A	A	275	265	280	260	225	210	195	A	210	230	A	A	215	A	A	220	A	250	A	A	A	A
21	A	285	245	275	250	250	225	225	A	A	A	A	A	A	200	A	A	A	A	A	A	A	A	A
22	A	A	270	A	A	235	210	240	A	A	A	A	A	A	A	A	220	A	A	A	A	A	A	A
23	A	A	A	275	295	245	220	A	A	A	A	A	A	A	A	A	A	240	A	230	270	A	275	250
24	325	280	280	A	A	250	245	A	A	200	190	200	A	A	A	A	220	235	A	250	220	270	250	A
25	270	290	280	265	250	260	245	230	220	205	195	200	205	200	230	A	230	A	A	265	240	255	A	230
26	245	260	230	250	245	220	230	A	A	A	A	200	205	A	A	205	A	A	A	245	220	230	270	260
27	A	280	275	280	275	A	A	A	A	A	205	A	A	A	205	225	A	A	A	250	220	220	240	240
28	280	300	280	280	260	250	245	A	A	200	230	210	A	A	A	205	200	200	A	270	A	A	A	A
29	A	A	A	A	240	250	A	A	A	A	A	A	A	A	220	A	220	240	A	280	A	250	265	275
30	295	290	260	240	300	250	240	230	A	A	220	A	200	200	200	A	A	225	A	260	245	250	280	245
31	A	A	280	A	A	245	A	A	210	A	A	A	225	205	A	A	A	A	A	A	260	A	A	A
CNT	20	22	24	23	26	25	15	15	8	11	16	13	13	14	16	16	17	16	6	22	18	18	18	20
MED	282	280	275	275	275	250	230	220	215	200	208	205	210	202	222	220	220	232	240	250	242	255	275	280
UQ	300	285	280	280	295	250	242	232	225	210	220	210	225	210	230	228	225	240	240	260	260	270	290	285
LQ	270	270	258	260	260	240	225	215	205	200	200	200	200	200	210	205	220	222	235	245	240	250	250	255

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H'F (KM)

IONOSPHERIC DATA

JUL. 1984

H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station		AKITA				Lat.	39 43.5 N				Long	140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S		110	105	105	105	105	105	105	105	105	105	110	110		S				
2						S		110	105	105	105	105	105	A	A	A	A	105	110	110		S			
3						S		110	105	105	105	C	C	105	A	105	105	110	110	115		S			
4						S		110	110	110	105	105	105	B	A	A	A	110	110	115		S			
5						S		110	105	105	105	105	105	105	105	110	105	105	105	110		S			
6						S		110	110	105	105	105	105	110	110	105	105	110	110	110		S			
7						S		105	105	105	105	105	105	105	105	105	105	105	105	110		S			
8						A		110	105	105	105	105	105	105	105	A	A	105	105	110		S			
9						A		110	105	105	105	105	105	110	105	105	105	105	110	105		S			
10						S		110	105	105	105	105	105	105	105	105	105	110	115	110		S			
11						S		110	110	105	105	105	105	105	A	A	A	A	A	A		S			
12						S		110	110	105	105	105	105	105	105	A	A	105	105	A		S			
13						S		110	105	105	105	105	105	105	105	105	105	105	110	110		S			
14						S		110	110	110	105	A	110	105	105	105	105	105	110	115		S			
15						S		110	110	105	105	105	105	105	A	A	105	110	110		S	S			
16						S		110	105	105	105	105	105	105	105	105	A	A	A	A		S			
17						S		110	110	105	105	105	105	105	105	105	105	105	105	110		S			
18						S		110	105	105	105	105	105	105	105	105	105	105	A	A		S			
19						S		110	110	110	110	105	105	105	A	A	A	105	110		S	S			
20						S		110	110	110	105	105	105	110	110	105	105	105	110	110		S			
21						S		110	105	105	105	A	A	A	A	105	105	105	105		S	S			
22						A		110	105	105	105	105	105	105	A	A	A	A	A	A		S			
23						A	A	105	105	105	A	A	A	A	A	A	A	105	105		S	S			
24						A		110	105	105	105	105	105	105	105	105	105	105	110		S	S			
25						S		110	A	105	105	105	105	105	105	105	105	105	110		S	S			
26						A		105	105	105	100	100	100	A	100	100	105	110	110		S				
27						S		110	110	110	105	105	105	105	105	105	105	105	110		S				
28						S		110	105	105	105	105	105	110	105	105	105	105	105	A		S			
29						S		110	110	105	105	105	105	105	105	105	105	105	105	110		S			
30						S		110	110	105	105	105	105	105	110	105	110	110	105	105		S			
31						S		110	105	105	105	105	105	105	105	105	105	105	110	115		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								30	30	31	31	27	28	26	22	22	22	27	27	18					
MED								110	105	105	105	105	105	105	105	105	105	105	110	110					
UQ								110	110	105	105	105	105	105	105	105	105	108	110	110					
LQ								110	105	105	105	105	105	105	105	105	105	105	105	110					

JUL. 1984

H°E (KM)

IONOSPHERIC DATA

JUL. 1984

H^oES (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	105	105	S	105	130	110	120	115	120	110	125	G	120	125	115	120	120	115	110	110	110	110	105																								
2	105	100	100	100	100	135	115	110	110	110	115	105	105	100	105	100	120	115	110	110	110	105	105	105																								
3	105	100	100	100	105	140	120	130	110	110	C	C	125	100	155	140	125	120	115	110	110	110	105	105																								
4	110	105	100	105	110	125	120	110	110	115	105	105	105	105	105	130	120	125	115	110	110	120	110	110																								
5	105	105	100	100	100	130	130	120	110	130	110	110	120	110	110	110	110	110	110	110	105	105	105	105																								
6	105	105	100	100	105	105	155	120	120	115	115	115	130	125	115	120	130	125	110	115	110	110	110	105																								
7	100	100	S	105	S	140	120	120	110	120	110	120	110	110	110	130	G	130	120	110	110	110	105	100																								
8	100	100	100	100	100	100	120	120	110	110	105	105	105	105	100	105	130	115	110	110	110	105	105	105																								
9	105	100	100	100	100	105	120	110	110	110	110	120	115	110	110	120	120	110	105	S	S	S	S	S																								
10	S	S	S	S	S	120	115	110	110	110	115	145	145	140	135	G	120	130	115	105	100	105	120	105																								
11	105	105	100	100	125	125	120	110	110	110	110	105	105	100	105	100	100	100	105	105	S	110	105	100																								
12	100	100	100	105	110	125	120	110	110	110	110	105	120	120	105	105	145	120	100	110	110	100	105	105																								
13	100	100	100	100	100	120	110	110	110	110	105	110	110	105	110	110	G	G	G	120	120	110	105	100																								
14	100	100	100	100	S	125	125	115	115	110	105	110	110	110	125	G	G	130	120	115	110	115	100	100																								
15	100	S	100	100	100	100	115	125	120	115	110	110	120	105	100	G	145	120	110	110	110	110	110	110																								
16	105	S	100	100	105	130	G	135	125	120	120	110	110	105	105	105	105	105	105	S	S	115	100	S																								
17	105	110	105	105	110	120	110	110	110	110	120	125	120	125	155	G	120	125	110	110	110	110	110	105																								
18	105	100	100	S	105	135	115	110	110	110	125	110	150	120	105	110	G	105	105	120	110	115	110	100																								
19	100	100	100	100	S	S	135	125	115	110	110	110	105	100	105	105	110	110	110	105	100	100	100	100																								
20	105	100	100	100	100	95	100	125	120	115	110	120	135	125	125	120	115	115	115	110	115	110	110	110																								
21	100	100	95	95	95	130	G	120	105	105	105	100	100	100	125	125	125	110	110	110	110	110	105	100																								
22	100	100	100	95	100	100	G	130	125	110	110	110	110	100	105	100	100	110	110	110	105	110	105	100																								
23	100	100	100	100	100	100	110	120	110	105	100	100	100	100	100	100	105	120	110	110	110	110	110	105																								
24	110	105	105	100	105	105	145	120	115	120	115	120	115	140	120	110	130	110	110	110	105	105	105	100																								
25	100	105	95	110	105	115	110	105	120	110	105	110	110	110	140	120	130	115	110	110	110	105	105	100																								
26	100	100	110	100	105	105	110	110	110	105	105	110	100	140	120	120	110	110	110	110	120	120	105	110																								
27	100	100	100	100	140	115	120	110	110	110	110	105	105	105	110	G	120	110	110	110	105	105	105	105																								
28	100	100	100	100	100	120	110	110	110	110	115	110	110	110	110	120	110	110	100	100	100	100	105	110																								
29	100	100	100	100	110	115	110	110	110	110	105	110	105	110	105	105	110	120	110	105	100	100	100	100																								
30	105	100	105	100	S	G	G	120	110	110	110	110	110	130	120	130	120	120	110	100	110	105	105	105																								
31	105	105	100	100	95	110	110	110	110	105	110	110	105	140	120	130	120	115	115	115	110	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	30	28	29	28	26	29	27	31	31	31	30	30	30	31	31	26	27	30	30	29	28	30	30	29																								
MED	102	100	100	100	105	120	115	115	110	110	110	110	110	110	110	112	120	115	110	110	110	110	105	105																								
UQ	105	105	100	100	105	130	120	120	115	115	115	115	120	122	122	120	125	120	115	110	110	110	110	105																								
LQ	100	100	100	100	100	105	110	110	110	110	105	105	105	105	105	105	110	110	110	110	105	105	105	100																								

JUL. 1984

H^oES (KM)

IONOSPHERIC DATA

JUL. 1984

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA																							
Lat.	39° 43.5' N																							
Long.	140° 08.0' E																							
Sweep	1 MHz to 25 MHz in 24 sec in automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F4	F1	F1		F2	C2	C2	C2	C2	C1	C2	C1		C1	C1	C2	C1	C2	C3	C6	F5	F3	F3	F3
2	F6	F2	F3	F2	F2	H2	C3	C3	C1	C1	C1	C1	L2	L1	L2	L3	C3	C3	C3	C3	F7	F3	F2	F2
3	F3	F2	F1	F3	F2	H1	C3	C2	C2				C1	L4	H1	H2	C2	C3	C4	C1	F6	F4	F3	F3
4	F2	F3	F2	F2	F2	C5	C3	C4	C3	C1	C4	C3	L3	L2	L2	CL12	C2	C2	C4	C4	F7	F6	F7	F6
5	F7	F3	F3	F5	F2	C3	C2	C3	C2	C2	C2	C2	C1	C1	C2	C1	C2	C2	C3	C3	F3	F3	F3	F2
6	F4	F6	F6	F4	F2	LC11	H1	C1	C2	C2	C2	C2	C1	C1	C2	C2	C1	C3	C3	C2	F6	F6	F2	F2
7	F3	F2		F1		H3	C5	C2	C3	C1	C2	C1	C2	C2	C3	C1		C2	C4	C5	F6	F2	F2	F4
8	F2	F2	F4	F2	F3	L2	C2	C2	C3	C3	C2	C3	C2	C1	L5	L2	C2	C4	C3	C4	F5	F3	F2	F4
9	F3	F3	F3	F4	F2	L1	C4	C5	C3	C2	C1	C1	C2	C2	C2	C1	C1	C3	C3					
10						C2	C2	C2	C2	CH11	CH11	H1	H1	H1	H1		C2	C2	C3	CL22	F3	F4	FF32	F2
11	F2	F2	F2	F1	F2	C4	C4	C5	C2	C3	C2	C1	C2	L3	L2	L2	L2	LH31	L3	C3		F7	F5	F5
12	F2	F4	F2	F2	F2	C3	C3	C2	C2	C2	C2	C2	C1	C1	L2	L1	H1	C1	L2	C3	F4	F2	F4	F2
13	F3	F3	F3	F5	F3	C5	C3	C6	C4	C3	C3	C1	C2	C2	C2	C2				C2	F2	F3	F4	F5
14	F6	F5	F2	F1		C4	C3	C2	C2	C1	L1	C3	C2	C2	C1			C2	CL31	C3	F5	F3	F6	F3
15	F3		F2	F2	F2	L1	C1	C2	C2	C2	C2	C2	C1	L1	L2		H1	C4	C4	C4	F2	F3	F2	F2
16	F2		F4	F3	F2	C1		H1	C1	C2	C2	C3	C3	C3	C2	L2	L3	L3	L2			F2	F1	
17	F4	F1	F2	F2	F2	C2	C2	C2	C2	C2	C1	C1	C2	C1	H1		C2	C2	C3	C3	F2	F2	F2	F2
18	F2	F2	F2		F1	H1	C2	C2	C2	C3	C1	C2	H1	C1	C2	C1		L2	L5	C5	F3	F7	F6	F4
19	F3	F3	F3	F1			H3	C4	C2	C2	C2	C4	C3	L3	L2	L2	C2	C3	C2	L2	F3	F2	F4	F3
20	F7	F4	F2	F2	F4	L3	LC12	CL21	C2	C2	C2	C1	H1	C2	C1	C2	C3	C1	C2	C3	F7	F6	F5	F6
21	F4	F2	F3	F2	F2	C1		C1	C5	C3	L3	L3	L4	L4	C1	C1	C3	C3	C5	C6	F7	F3	F5	F5
22	F3	F4	F3	F6	F4	L1		C2	C1	C3	C4	C2	C3	L3	L2	L2	L2	CL22	CL32	C4	F3	F3	F3	F3
23	F4	F3	F4	F2	F2	L2	CL11	C2	C3	C4	L4	L3	L4	L4	L3	L4	L2	C2	C5	C4	FF42	F4	F2	F2
24	F3	F2	F2	F3	F7	L3	H2	C2	C3	C1	C1	C1	C1	H1	C2	C2	C1	C2	C3	C2	F2	F3	F2	F3
25	F3	F2	F2	F1	F1	CL21	C2	L2	C1	C1	C2	C1	C1	C1	H1	C2	C2	C3	C5	C3	F2	F2	F6	F2
26	F2	F1	F1	F1	F2	L2	C2	C4	C3	C2	C2	C1	L1	H1	C2	C2	C3	C3	C3	F2	F1	F1	F5	F2
27	F4	F3	F2	F1	F1	C4	C3	C3	C3	C3	C1	C2	C4	C4	C2		C4	C2	C3	F3	F1	F1	F2	F2
28	F2	F1	F1	F1	F1	C2	C3	C3	C3	C1	C1	C1	C3	C2	C2	C1	C2	C2	L3	F4	F4	F7	F3	F4
29	F2	F4	F3	F4	F2	C2	C4	C3	C3	C2	C3	C3	C2	C1	C1	C3	C2	C2	C3	F2	F3	F2	F3	F2
30	F3	F2	F2	F2				C2	C2	C3	C2	C2	C1	C1	C1	C2	C1	C2	C4	F2	F2	F3	F3	F4
31	F4	F5	F2	F6	F2	CL31	C4	C3	C2	C4	C3	C2	C1	H1	C3	C2	C4	C4	C5	F4	F3	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																								

JUL. 1984

TYPES OF ES

IONOSPHERIC DATA

JUL. 1984

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

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

JUL. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

FOF2 (0.1 MHz)

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

Station		ROKUBUNJI TOKYO		Lat.	35 42' 4" N		Long	139 29' 3" E		Sweep 1 MHz to 20 MHz in 20sec in automatic operation																					
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1	S	S	F	F	F	50	68	70	A	65	62	70	R	A	A	A	S	63	67	70	S	S	65	S	S						
2	F	S	F	F	F	49	49	A	65	72	58	59	59	59	69	76	J	S	74	66	68	66	S	S	F	S					
3	F	F	S	F	S	46	44	52	J	S	A	H	A	57	62	58	67	73	R	69	73	68	A	S	I	S	I	S	64	62	
4	S	F	F	F	F	51	58	A	R	R	A	R	A	R	63	59	63	A	A	J	S	67	79	59	51	A	F				
5	F	A	F	F	F	F	A	A	49	A	A	A	A	A	61	57	55	57	60	64	61	58	59	57	S	S					
6	S	S	S	F	S	S	S	58	64	67	65	72	73	81	82	77	80	76	73	S	S	64	S	F	F						
7	S	F	F	J	S	S	S	58	56	57	55	55	A	R	53	53	55	54	53	53	54	60	63	69	S	S	J	S			
8	S	S	S	S	S	51	53	58	69	64	58	57	60	67	A	A	68	J	S	S	75	65	72	66	69	S	S	S			
9	S	F	F	F	S	S	S	44	43	51	63	69	A	A	73	79	S	S	94	93	80	70	68	60	57	56					
10	S	S	S	S	S	49	47	49	S	S	66	64	63	R	S	58	56	60	66	R	63	65	71	74	J	S	S	S			
11	S	S	F	S	S	45	48	59	S	S	75	A	R	A	A	60	75	85	76	69	69	72	71	64	S	S	I	S			
12	S	S	F	F	S	50	51	67	85	65	59	57	58	64	60	64	76	74	J	S	79	87	J	S	77	61	56	54	54		
13	J	S	S	S	S	50	55	61	55	53	S	55	54	A	A	63	70	74	83	85	90	74	S	75	74	71	S	68			
14	S	S	S	S	S	65	70	98	89	102	S	77	S	74	81	90	103	82	73	69	J	S	77	84	88	85	S	J	S	74	
15	69	69	62	S	S	53	52	54	64	61	A	51	55	S	62	61	65	58	57	65	71	72	I	S	72	62	63				
16	S	60	56	55	52	50	48	60	69	A	R	A	R	A	R	A	R	A	88	79	74	74	71	68	68						
17	S	F	I	S	S	F	61	66	59	56	A	53	61	60	67	72	76	70	J	S	78	82	83	53	55	A	U	S	52		
18	S	F	S	S	S	40	41	55	55	51	E	G	45	49	54	A	58	61	73	J	S	79	74	66	61	60	60	S	S		
19	S	F	S	F	S	S	S	35	42	43	55	65	54	53	56	R	A	A	A	84	84	84	86	80	64	59	61	58			
20	S	S	S	F	S	45	48	63	S	52	55	65	70	64	61	62	65	69	75	84	85	89	J	S	78	49	A	S			
21	S	S	S	F	F	S	39	49	51	54	61	52	55	51	59	63	S	63	S	60	S	58	73	65	59	F	I	S	50		
22	I	S	S	S	S	S	S	39	40	45	55	61	S	J	R	R	A	71	68	60	65	I	S	J	S	I	S	U	S	S	F
23	S	S	F	A	F	45	57	A	S	78	57	A	A	61	65	65	64	66	70	67	64	57	55	53	S	S	S				
24	S	S	F	F	S	S	S	38	41	54	71	64	54	53	56	63	77	80	80	89	89	86	84	65	60	60	55				
25	48	48	46	S	F	S	39	53	64	64	62	54	58	63	67	74	75	75	70	66	75	76	70	67	J	S	S	67	67		
26	S	65	58	S	S	J	S	39	42	53	47	65	72	58	E	G	50	56	59	64	70	J	S	S	72	59	58	53	51		
27	50	50	48	S	S	S	S	49	50	59	61	62	66	69	65	A	66	79	75	68	J	S	S	S	S	A	S	A			
28	S	S	S	S	S	42	34	40	52	55	S	A	A	50	51	59	65	60	55	55	59	69	S	68	53	A	F				
29	S	F	S	S	S	S	S	38	36	35	33	36	A	A	A	A	A	55	56	55	53	48	57	63	61	50	46				
30	F	I	S	S	F	J	S	43	43	37	31	37	50	56	59	A	51	A	53	55	55	57	51	53	59	71	55	45	S		
31	F	S	S	I	S	S	S	36	36	34	34	48	61	64	65	67	59	R	58	64	69	62	56	59	56	62	I	S	I	S	S
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
CNT	20	17	21	18	23	29	29	27	26	22	25	23	23	26	29	29	28	30	31	30	31	29	21	20							
MED	S	S	S	S	S	S	54	60	64	60	57	58	61	63	67	69	70	72	68	71	S	S	S	S	S	S	S	S	S	S	
UQ	62	56	56	53	50	51	61	64	65	65	59	60	64	67	73	76	75	79	80	77	S	S	S	S	S	S	S	S	S	S	
LQ	S	S	S	S	S	S	50	55	55	55	53	55	59	59	61	63	60	60	64	66	63	56	54	54							

JUL. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

FOF1 (0.01 MHz)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						L	L	A	A	A	A	460	A	A	A	A	A	L	A					
2							A	A	440	A	460	470	470	470	A	A	A	A	A					
3							370	A	A	U L 510	A	A	460	470	460	460	A	400	A					
4							A	A	A	A	A	A	A	470	460	460	A	A	A					
5						L	A	A	A	A	A	A	A	A	470	A	A	400	340	L				
6							L	L	420	440	470	490	490	480	480	450	470	460	L	A				
7							A	A	A	A	A	460	450	470	450	450	420	400	350	L				
8							390	410	440	440	450	A	A	A	A	450	430	410	L					
9							A	L	A	A	A	A	A	A	470	460	420	400	L	L				
10							L	L	420	440	490	460	480	480	470	480	H	450	440	400	340	L		
11						L	380	400	A	A	A	A	480	450	A	A	A	400	A					
12						300	360	L	400	A	470	490	470	470	460	460	440	420	390	L				
13							L	L	410	L	A	R	450	A	A	460	440	430	440	400	L	L		
14							A	A	440	470	A	480	500	470	460	L	470	430	H	L	L			
15							360	400	420	A	470	H	480	A	470	460	450	430	410	L	A			
16							370	430	430	A	L	460	A	A	A	A	A	A	A	L				
17							A	L	L	A	450	460	460	450	440	440	420	A	330	L				
18						L	300	360	380	410	450	A	A	A	A	A	440	A	A	A				
19							370	400	A	450	480	510	R	A	A	A	A	A	A	330	L			
20							L	L	480	440	A	A	460	A	A	440	410	430	380	L	L			
21							U L	380	390	410	A	H	460	460	A	A	H	440	420	L	L			
22							U L	380	A	440	A	A	A	A	450	440	A	A	A	A				
23						L	380	A	A	A	A	A	A	A	450	440	A	420	A	L				
24							L	360	390	A	L	L	460	470	A	440	450	A	A	A				
25							280	U L	350	390	L	430	440	450	440	450	440	440	A	A	L	A		
26						L	L	A	440	440	440	450	440	440	A	430	R	A	370	L				
27							L	A	390	L	L	440	460	460	A	460	A	430	430	390	330	L		
28							340	A	A	A	A	A	460	460	460	A	420	A	380	L				
29							A	A	A	A	A	A	A	A	A	440	A	A	380					
30							U L	370	390	420	A	430	A	A	A	440	420	A	L	L				
31							360	390	430	L	A	A	470	470	460	450	440	430	A	L	L			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	16	18	16	12	16	18	14	20	20	20	15	16	8					
MED						300	370	400	435	450	460	465	465	460	450	440	430	400	335	L				
UQ						300	380	420	440	470	465	480	480	470	460	455	430	400	340	L				
LQ						290	360	390	420	440	450	460	460	450	440	430	420	385	330	L				

JUL. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUL. 1984

FOE (0.01 MHz)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	290	325	345	355	360	370	365	360	340	310	270	220					B
2						160	240	280		A	A	A	A	A	A	A	305	270	210					S
3						185	H 250	275	305		A	A	A	375	370	360	345	310	270	205				S
4						180	245	285	320		A	A	A	B	A	A	A	315	280	215				S
5						A	240	A	315	345	355	360	360		A	A	A	A	A	A				B
6						A	250	295	325	350	365	370	375	365	355	335	H 310	270		A				B
7						180	A	280	310	335	345	355	355	360	350	335		A	270	200				B
8						A	A	300	A	A	A	A	A	A	A	A		305	265	200				S
9						A	240	280	310		A	350	360	360	360	350		A	A	A				S
10						A	240	A	A	A		360	370	370	360	355		A	A					S
11						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
12						160	A	270	305		A	A	R 370	365	360		A	A	A	260	205			
13						160	240	280		A	A	A	A	A	365	A	A	310	A	210				
14						150	230	270	295		A	340		360	A	350	320	300		A	A			
15						S	A	A	A	A		335		A	A	A	A	A		270	205			
16						S	220	275	305	330	345		A	A	A	A	A	A	A	A				
17						A	A	A	A	A	A		365	370	350	340	325	295	H 255		A			
18						S	230		A	A	A	A	A	A	A	A	A	A	A	A				
19						S	235	275	300		A	340		A	A	A	A	A		300	250			
20						A	215	270		A	A	A	A	H 355	355	350	325	300		A	A			
21						S	220	260		A	A	A	360	355	350	340		A	300		A	A		
22						S	A	270	305	335	340		A	A	A	A	330	290	250		A			
23						S	A	A	A	A	A	A	A	A	A	A	A	A	A		195			
24						S	A	285	305	330	335	340	350	350	340	315	295	260		A				
25						S	A	A	A	A	A	A	A	A	A	A	335	300	265	200				
26						B	220	270		A	A	A	A	350	350	330	310	290	250		A			
27						A	A	270		A	330		A	A	A	A	330	290	250		A			
28						S	A	A	A	A	A	A	A		370	350	310	290		A	A			
29						S	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
30						S	H 230	265	300		A	A	A	A	A	350	325	285		A	A			
31						S	A	A	A	A	A		350	355	350	345	330	290	250	175				
	00	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	16	20	14	8	12	11	15	15	15	16	20	18	14					
MED						160	238	275	305	335	345	360	360	360	350	330	300	262	205					
UQ						180	240	282	315	345	355	368	370	365	352	335	308	270	210					
LQ						160	225	270	305	330	340	358	355	350	342	322	290	250	200					

JUL. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

JUL. 1984

FOES (0.1 MHZ)

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

Station		ROKUBUNJI TOKYO		Lat.	35 42.4 N		Long.	139 29.3 E		Sweep	1 MHz to 20 MHz		in 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	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
2	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
3	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
4	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
5	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
6	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
7	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
8	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
9	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
10	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S	E S
11	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
12	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
13	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
14	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
15	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
16	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
17	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
18	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
19	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
20	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
21	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
22	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
23	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
24	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
25	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
26	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
27	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
28	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
29	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
30	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
31	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
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	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
UQ	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
LQ	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A

JUL. 1984

FOES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1984

FBES (0.1 MHz)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23													
1	E	24	15	E	17	30	26	44	A A	90	61	58	42	52	A A	83	48	A A	A A	32	45	24	42	32	E	22											
2		41	28	29	23	21	23	45	A A	100	39	47	39	40	39	39	46	46	60	55	47	54	15	49	E	28											
3		45	19	34	26	30		G	28	51	A A	157	45	A A	145	53	G	31	39	G	37	48	35	44	A A	82	20	43	45	35							
4		33	E	30	29	20	30	39	45	A A	129	55	49	A A	76	53	39	41	40	A A	A A	110	64	37	47	35	31	A A	68	30							
5		22	A A	69	27	16	18	24	A A	62	A A	65	46	A A	65	A A	72	A A	63	A A	89	52	41	45	44	30	24	19	19	15	20	20					
6		50	21	E	25	E	19	G	24	G	G		39	41	40	47	42	44	40	41	35	55	25	18	22	20	29										
7		32	25	24	20	20	20	42	47	44	A A	92	46	38	38	39	36	37	31	G		33	51	E	E	18	E										
8		21	26	29	24	E	19	28	G		34	36	39	51	49	A A	79	A A	67	40	G		38	32	40	26	E	E	25	36							
9		41	41	19	19	14	18	41	40	66	A A	110	46	48	51	A A	143	38	34	32	29	G		17	18	E	E	E	15	E	15						
10	E	S	E	S	E	E	E																														
11		26	21	18	E	18	22	35	35	A A	149	50	A A	116	A A	105	43	42	59	44	44	34	40	44	47	37	41	47									
12		41	42	16	18	E	19	34	31	44	35	40	40	39	37	36	33	30	29	26	18	E	E	E	E	28											
13	E	19	E	20	15	19	G	34	35	47	39	A A	173	A A	141	38	40	41	G		27	22	15	E	E	E	17	20									
14		32	21	E	E	E	31	40	61	41	42	51	41	43	37		G		34	G		30	24	21	E	E	E	E									
15	E	E	E	15	E	E	20	24	32	33	A A	172	35	37	53	39	39	G	30	31	32	41	40	20	19	23	E										
16	E	19	15	E	14	G	26	35	38	A A	58	40	A A	63	61	63	A A	83	46	A A	132	55	21	E	E	E	E	16									
17	E	23	31	27	16	16	44	31	39	A A	152	40	39	39	39	G	30	34	34	39	32	27	19	21	A A	91	30										
18	29	E	28	26	E	18	26	28	31	40	45	46	113	48	49	35	52	46	40	22	26	22	44	26													
19	E	21	31	30	E	21	25	37	46	36	38	47	A A	99	A A	83	62	A A	136	46	39	29	16	E	37	E	E										
20	E	21	16	E	E	17	23	29	32	42	46	37	44	45	38	36	G	30	31	32	41	40	20	19	23	E											
21	24	26	25	18	E	20	24	30	32	48	41	G	39	50	49	39	31	31	27	20	43	26	E	32													
22	30	25	21	23	21	33	28	43	36	46	54	47	A A	73	40	40	47	50	46	34	47	26	23	39	20												
23	45	40	43	A A	54	25	25	32	A A	106	46	46	A A	90	A A	86	45	38	38	49	33	48	28	31	53	29	E	E									
24	36	27	E	22	16	16	24	31	49	36	39	41	46	39	44	45	60	44	46	26	34	36	E	E													
25	E	16	E	16	E	17	25	33	34	39	39	38	38	39	38	47	45	31	37	17	28	18	E	22													
26	39	20	E	E	E	21	26	46	32	34	36	42	42	38	50	39	44	31	22	24	E	S	14	E	E	E											
27	16	15	17	17	E	18	40	32	32	41	41	39	A A	86	39	52	35	40	33	31	40	50	A A	114	43	A A	79										
28	22	19	E	E	E	16	27	44	50	A A	111	200	44	42	G	44	41	44	28	19	24	E	26	A A	50	20											
29	29	E	E	29	19	27	A A	A A	A A	A A	A A	A A	A A	A A	A A	A A	A A	37	46	47	24	21	23	30	24	26	24										
30	16	16	16	19	E	E	S	15	31	30	32	A A	96	40	92	A A	59	45	38	37	47	37	28	16	21	16	33										
31	24	30	24	25	E	16	22	34	40	52	46	G	G				40	39	40	38	50	27	33	51	46	20	27										
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	24	21	17	19	E	19	28	35	39	47	41	42	46	39	40	40	44	33	29	24	20	22	18	23													
UQ	34	26	28	25	18	22	40	46	48	A A	66	52	55	60	49	48	46	48	42	38	40	34	33	40	30												
LQ	E	E	18	E	E	E	17	24	31	32	40	39	40	39	39	38	36	32	30	24	20	E	E	E	E	E	14	15	E	16							

JUL. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

JUL. 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	E 15	S 13	E 13	S 15	E 13	S 15	E 14	S 15	E 15	S 16	E 15	S 21	E 19	S 21	E 20	S 16	E 16	S 14	E 13	S 13	E 15	S 16	E 16	S 16
2	E 15	S 14	E 15	S 15	E 13	S 14	E 15	S 15	E 15	S 19	E 20	S 22	E 22	S 20	E 20	S 21	E 15	S 15	E 14	S 15	E 14	S 15	E 15	S 15
3	E 14	S 13	E 13	S 13	E 13	S 15	E 14	S 14	E 14	S 16	E 19	S 19	E 19	S 19	E 20	S 19	E 14	S 14	E 14	S 14	E 14	S 14	E 13	S 15
4	E 15	S 15	E 13	S 14	E 13	S 14	E 14	S 14	E 15	S 20	E 20	S 20	E 41	S 22	E 20	S 20	E 15	S 15	E 14	S 14	E 15	S 14	E 16	S 15
5	E 15	S 13	E 13	S 13	E 14	S 14	E 15	S 14	E 14	S 16	E 20	S 20	E 21	S 21	E 22	S 21	E 16	S 14	E 14	S 13	E 15	S 13	E 15	S 15
6	E 15	S 15	E 15	S 14	E 14	S 13	E 14	S 14	E 15	S 16	E 20	S 20	E 20	S 19	E 20	S 16	E 16	S 14	E 14	S 13	E 14	S 15	E 15	S 14
7	E 15	S 13	E 14	S 14	E 13	S 14	E 13	S 13	E 14	S 18	E 16	S 17	E 19	S 20	E 19	S 15	E 14	S 14	E 14	S 13	E 15	S 16	E 15	S 14
8	E 16	S 13	E 13	S 15	E 14	S 14	E 13	S 14	E 16	S 15	E 19	S 19	E 19	S 20	E 19	S 19	E 15	S 13	E 13	S 15	E 14	S 15	E 15	S 15
9	E 15	S 14	E 13	S 13	E 13	S 14	E 14	S 14	E 15	S 15	E 19	S 20	E 21	S 20	E 19	S 16	E 15	S 14	E 14	S 14	E 14	S 14	E 15	S 15
10	E 15	S 15	E 13	S 14	E 14	S 13	E 14	S 14	E 15	S 16	E 19	S 21	E 16	S 20	E 20	S 17	E 14	S 14	E 14	S 15	E 15	S 13	E 16	S 15
11	E 15	S 14	E 14	S 14	E 15	S 14	E 13	S 14	E 15	S 15	E 15	S 16	E 16	S 17	E 20	S 16	E 14	S 13	E 13	S 15	E 15	S 15	E 15	S 15
12	E 15	S 15	E 15	S 15	E 15	S 14	E 14	S 14	E 14	S 16	E 20	S 19	E 19	S 21	E 20	S 15	E 15	S 14	E 15	S 16	E 15	S 15	E 15	S 15
13	E 15	S 15	E 15	S 13	E 14	S 13	E 14	S 15	E 14	S 15	E 16	S 16	E 16	S 19	E 19	S 17	E 15	S 15	E 13	S 13	E 15	S 16	E 14	S 14
14	E 15	S 13	E 14	S 15	E 13	S 13	E 13	S 13	E 14	S 15	E 16	S 19	E 19	S 20	E 15	S 20	E 14	S 14	E 15	S 13	E 15	S 15	E 14	S 16
15	E 15	S 15	E 13	S 14	E 14	S 15	E 13	S 14	E 14	S 16	E 18	S 16	E 19	S 17	E 20	S 15	E 15	S 15	E 14	S 13	E 13	S 14	E 15	S 15
16	E 15	S 13	E 13	S 14	E 13	S 15	E 13	S 14	E 15	S 16	E 20	S 17	E 18	S 20	E 19	S 15	E 14	S 14	E 14	S 15	E 14	S 15	E 15	S 13
17	E 16	S 13	E 15	S 13	E 13	S 14	E 13	S 15	E 14	S 16	E 23	S 21	E 19	S 20	E 17	S 16	E 15	S 14	E 14	S 13	E 15	S 13	E 15	S 14
18	E 15	S 15	E 15	S 13	E 14	S 14	E 14	S 14	E 16	S 16	E 19	S 20	E 20	S 19	E 16	S 16	E 14	S 14	E 14	S 13	E 15	S 15	E 16	S 15
19	E 16	S 15	E 13	S 15	E 14	S 15	E 13	S 14	E 15	S 16	E 19	S 17	E 19	S 20	E 20	S 16	E 15	S 14	E 15	S 13	E 15	S 14	E 16	S 15
20	E 16	S 15	E 13	S 14	E 14	S 14	E 14	S 14	E 15	S 16	E 16	S 20	E 19	S 20	E 17	S 18	E 14	S 14	E 14	S 13	E 15	S 14	E 15	S 15
21	E 15	S 14	E 15	S 15	E 15	S 15	E 14	S 13	E 15	S 16	E 20	S 20	E 20	S 20	E 20	S 17	E 15	S 14	E 13	S 15	E 16	S 15	E 16	S 16
22	E 14	S 15	E 14	S 15	E 14	S 15	E 15	S 13	E 14	S 16	E 17	S 20	E 15	S 19	E 19	S 15	E 15	S 15	E 14	S 13	E 14	S 15	E 14	S 14
23	E 14	S 13	E 14	S 13	E 13	S 14	E 15	S 16	E 16	S 16	E 19	S 22	E 20	S 19	E 19	S 16	E 15	S 14	E 13	S 13	E 15	S 16	E 15	S 16
24	E 14	S 15	E 15	S 15	E 14	S 14	E 13	S 14	E 14	S 15	E 16	S 18	E 19	S 18	E 17	S 15	E 15	S 14	E 14	S 14	E 14	S 13	E 15	S 15
25	E 15	S 14	E 16	S 15	E 15	S 14	E 15	S 15	E 15	S 15	E 15	S 19	E 19	S 20	E 19	S 16	E 14	S 13	E 15	S 13	E 15	S 15	E 15	S 15
26	E 15	S 15	E 15	S 15	E 15	S 13	E 14	S 14	E 15	S 14	E 15	S 16	E 15	S 15	E 15	S 14	E 15	S 14	E 13	S 14	E 14	S 15	E 15	S 14
27	E 14	S 13	E 13	S 14	E 13	S 14	E 14	S 14	E 14	S 16	E 15	S 19	E 15	S 19	E 19	S 16	E 15	S 15	E 14	S 15	E 14	S 14	E 16	S 15
28	E 15	S 13	E 15	S 15	E 15	S 14	E 14	S 15	E 14	S 16	E 16	S 21	E 20	S 22	E 20	S 16	E 15	S 15	E 14	S 14	E 15	S 16	E 15	S 15
29	E 14	S 13	E 13	S 14	E 14	S 14	E 14	S 14	E 14	S 16	E 19	S 17	E 19	S 20	E 20	S 15	E 15	S 13	E 13	S 13	E 15	S 14	E 15	S 15
30	E 14	S 13	E 13	S 13	E 15	S 15	E 15	S 14	E 15	S 16	E 17	S 20	E 19	S 20	E 17	S 16	E 15	S 14	E 13	S 15	E 14	S 14	E 14	S 15
31	E 15	S 15	E 13	S 15	E 15	S 15	E 13	S 14	E 14	S 15	E 15	S 17	E 19	S 20	E 15	S 16	E 15	S 14	E 15	S 13	E 14	S 15	E 15	S 14
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	S 14	E 14	S 14	E 14	S 14	E 14	S 14	E 14	S 15	E 16	S 19	E 19	S 19	E 20	S 16	E 15	S 14	E 14	S 13	E 15	S 15	E 15	S 15
UQ	E 15	S 15	E 15	S 15	E 14	S 15	E 14	S 14	E 15	S 16	E 20	S 20	E 20	S 20	E 20	S 17	E 15	S 14	E 14	S 14	E 15	S 15	E 15	S 15
LQ	E 15	S 13	E 13	S 14	E 13	S 14	E 13	S 14	E 14	S 16	E 16	S 17	E 19	S 19	E 19	S 15	E 14	S 14	E 13	S 13	E 14	S 14	E 15	S 14

JUL. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

M(3000)F2 (0.01)

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	S 295	S 295	F	F	F	315	310	315	A	A	A	290	R 285	A	290	A	A	S 310	S 320	S 320	S 290	S 290	S 285	S 285	
2	F 290	S 300	F 295	F	F	295	280	A	310	335	300	295	285	280	295	305	R 315	J 310	S 315	S 310	S 290	S 285	F	S	
3	F	F	S 300	F	S 300	S 305	285	J 285	A	H 300	A	A	S 305	275	295	305	R 305	S 315	S 315	A	S 295	I 285	S 280	S 270	
4	S	F	F	F	F	F	S 330	S 305	A	R 310	R 290	A	R 295	300	300	295	A	A	J 300	S 315	S 320	S 280	A	F	
5	F	A	F	F	F	F	A	A	A	A	A	A	A	300	280	285	295	300	310	315	290	290	S 290	S 285	
6	S 290	S 290	S 300	F	S 295	S 315	S 325	S 325	310	305	295	290	295	305	310	300	305	310	S 320	S 315	S 305	S 295	F	F	
7	S	F	F	J 295	S 295	S 320	S 320	270	270	A	R 280	270	295	275	285	280	280	290	S 295	S 305	S 295	S 300	S 265	J 275	
8	S 270	S 290	S 310	S 315	S 280	S 290	S 285	S 320	S 330	S 305	295	280	300	A	A	285	J 320	S 300	S 320	S 315	305	S	S	S	
9	S	F	F	F	S 305	S 290	S 280	300	A	A	290	275	290	A	285	S 280	S 305	S 325	S 320	S 310	305	290	285	285	
10	280	290	S 305	S 300	S 305	S 300	S 325	S 310	315	R 310	290	280	285	295	300	300	R 300	310	J 315	S 315	S 295	S 300	295	S 295	
11	S 300	S 295	F	S 295	S 290	S 300	S 290	S 320	A	R 310	A	A	280	290	305	305	305	315	S 320	S 320	S 315	S 305	S 295	S 290	
12	S 310	S	F	F	S 275	S 285	S 305	S 330	325	290	285	285	300	300	280	300	S 305	J 305	S 315	J 320	S 310	290	285	285	
13	J 285	S 305	S 300	S 300	S 305	S 325	S 330	S 320	315	R 285	285	A	A	270	270	270	270	300	310	S 290	S 295	S 295	S 280	S 255	
14	S 285	S 275	S 305	S 300	S 295	S 300	S 320	S 315	S 305	S 335	S 300	S 290	295	310	305	305	305	J 305	S 295	S 310	300	S 295	J 280	J 290	
15	280	320	S 310	S 290	S 295	S 310	S 295	S 310	S 330	A	265	285	285	300	295	300	305	295	300	295	S 300	I 300	S 290	S 280	
16	S 305	S 310	S 295	S 310	S 305	S 310	S 305	S 310	S 330	A	R 315	A	A	295	A	S 305	A	325	S 310	S 315	S 310	S 295	S 300	S 300	
17	S 305	F	I 300	S 305	F	315	335	320	310	A	290	305	295	295	290	290	270	J 290	S 295	S 310	285	295	A	U 280	
18	S 280	F	S 295	S 290	S 290	S 285	S 320	S 325	310	G	270	290	A	295	285	295	J 300	S 315	S 315	S 320	290	285	S	S	
19	S	F	S 305	F	S 300	S 305	S 280	S 310	S 320	S 340	275	245	R 245	A	A	290	A	290	S 295	J 305	S 310	S 300	S 310	S 320	
20	S 300	S 305	S 300	F	S 315	S 315	S 335	S 275	295	310	325	310	320	310	305	295	290	310	S 305	S 320	S 330	S 320	A	S	
21	S	S	S	F	F	S 345	S 320	S 345	S 350	S 315	S 305	300	R 300	S 305	S 305	S 315	S 315	S 310	S 295	S 300	S 310	S 305	F	I 305	
22	I 300	S 295	S 305	S 320	S 320	S 325	S 310	S 315	S 305	J 305	R 305	A	320	A	300	310	305	310	I 310	S 315	J 310	I 310	S 305	S 305	
23	S	S	F	A	F	S 290	S 315	A	S 325	S 315	A	A	300	315	310	315	315	325	S 330	S 315	A	S 310	S 300	S	
24	S	S	F	F	S 280	S 315	S 330	S 340	S 330	S 335	S 340	265	290	300	300	295	310	320	S 325	S 320	S 305	S 305	S 305	300	
25	295	290	S 305	S 300	F	S 280	S 325	S 325	S 335	S 335	S 305	290	305	305	300	305	S 330	S 325	S 305	S 305	S 310	S 305	S 305	J 285	
26	S 315	S 310	S 330	S 310	S 305	J 300	S 300	S 325	270	315	330	320	G	275	285	R 295	S 305	S 310	J 315	S 315	S 325	S 310	S 305	S 310	
27	S 305	S 300	S 310	S 300	S 300	S 295	S 330	S 315	S 320	S 310	S 310	320	A	290	305	310	315	J 300	S 310	S 310	S 310	S 330	A	S 270	
28	S 305	S 300	S 300	S 295	S 330	S 300	S 275	S 315	S 305	A	A	270	R 270	290	315	310	310	300	295	S 310	S 325	S 335	A	F	
29	S 285	F	S 290	S 295	S 300	S 315	A	A	A	A	A	A	A	A	A	300	315	315	330	H 300	S 305	S 300	S 320	S 300	
30	F	I 300	S 305	S 305	S 285	J 300	S 305	S 315	S 320	A	275	A	A	295	310	305	315	305	310	300	S 320	S 325	S 310	S	
31	F	S	S 290	S 290	S 285	S 305	S 305	S 310	S 310	S 325	S 320	295	R 295	S 305	S 310	S 330	S 315	S 325	S 310	S 295	S 305	S 310	S 310	S 330	
CNT	20	17	21	18	23	29	29	27	24	21	23	22	22	26	29	29	28	30	31	30	30	29	21	20	
MED	S 295	S 300	S 300	S 300	S 300	S 305	S 315	S 315	S 315	S 310	S 295	S 290	S 295	S 298	S 300	S 305	S 305	S 310	S 310	S 310	S 310	S 305	S 300	S 295	S 288
UQ	S 305	S 305	S 305	S 305	S 305	S 315	S 325	S 320	S 328	S 330	S 308	S 295	S 300	S 305	S 305	S 305	S 315	S 315	S 315	S 315	S 310	S 305	S 305	S 300	
LQ	S 285	S 290	S 300	S 295	S 290	S 295	S 295	S 310	S 310	S 305	S 285	S 275	S 285	S 290	S 290	S 295	S 300	S 300	S 302	S 305	S 295	S 290	S 285	S 282	

JUL. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 1984

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

Station		ROKUBUNJI TOKYO		Lat.	35 42.4 N		Long	139 29.3 E		Sweep 1 MHz to 20 MHz in 20sec in automatic operation															
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							L	L	A	A	A	A	360	A	A	A	A	A	L	A					
2								A	A		350	360	360	360	345	A	A	A	A	A					
3								340	A	A	U L	A	A	370	350	360	340	A	340	A					
4								A	A	A	A	A	A	A	360	340	340	A	A	A					
5							L	A	A	A	A	A	A	A	A	350	A	A	340	335					
6								L	L		350	370	350	345	360	A	350	380	360	340	L	A			
7								A	A	A	A	A		385	380	345	370	355	350	330				A	
8								340	355	375	380	380	A	A	A	A	340	340	A	L					
9								A	L	A	A	A	A	A	A	340	345	360	345	L	L				
10								L	L		350	370	370	355	340	350	360	345	H	350	345	330	340	L	
11							L	350	355	A	A	A	A	355	370	A	A	A	335	A					
12								325	A		A													L	
13								L	L	L	A	R	A	A	360	355	A	350	340	L	L				
14								A	A	A		A			360	345	340	340	H	L	L				
15								335	345	350	A	340	370	A	345	350	345	340	330	L	A				
16								330	340	350	A	L	A	A	A	A	A	A	A	A	L				
17								A	L	L	A		370	370	350	360	365	345	340	A	A				
18								315	345	355	355	360	A	A	A	A	A	355	A	A	A				
19								360	A	A	360	355	A	A	A	A	A	A	A	A	A				
20								L	L		345	360	A	A	345	A	A	A	A	L	L				
21								U L	340	360	355	A	H	360	370	370	A	A	H	365	345	L	L		
22								U L	A	A	A	A	A		340	360	A	A	A	A	A				
23								L	340	A	A	A	A	A	350	360	A	340	A	L	A	L			
24								L	345	360	A	L	L	A	360	A	A	A	A	A	A				
25								U L	320	350	350	370	370	380	375	380	380	370	A	A	L	A			
26								L	L	A	375	370	380	370	A	370	A	R	A	345	L				
27								L	A	L	L	350	360	370	375	360	350	A	340	A	A				
28								340	A	A	A	A	A	A	360	360	A	A	A	350	L				
29								A	A	A	A	A	A	A	A	365	A	A	340						
30								U L	335	350	345	A	370	A	A	A	360	360	A	L	L				
31								340	350	355	L	A	A	380	320	H	350	360	A	L	A	L			
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	15	17	15	12	16	16	12	20	19	17	13	15	4					
MED							320	340	350	355	360	365	370	358	360	360	350	345	340	335	L				
UQ							322	348	355	370	370	370	372	370	360	365	360	345	342	338	L				
LQ							318	340	350	350	355	352	355	350	348	350	345	340	332	335	L				

JUL. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

JUL. 1984 H^oF2 (KM)

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

Station		ROKUBUNJI TOKYO		Lat.	35 42.4 N		Long	139 29.3 E		Sweep 1 MHz to 20 MHz in 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						305	285	240		A	A	A	360	340	310		A	305	290						
2							A	A	300	270	360	380	400	430	350	305	305	E A	325	275					
3						370	E A	370	A	345	A	A	350	450	365	320	320	285	275						
4						E A	260	360	A	E A	365	400	A	390	355	370	375		A	A	310				
5						395	A	A	E A	275	A	A	A	A	380	460	425	390	340	290					
6						250	280	315	310	330	325	350	335	300	340	310	285	E A	300						
7						310	A	420	A	485	500	375	460	420	445	420	350	310							
8						370	280	260	345	385	E A	425	360	A	A	355	295	315	280						
9						445	300	A	A	395	E A	465	375	A	360	365	305	260	250						
10						260	285	315	330	400	455	410	360	375	350	330	300	260							
11						300	365	255	A	370	A	A	420	340	310	290	310	290	265						
12						345	295	250	295	375	440	405	365	355	405	315	310	290	265						
13						250	270	330	420	415	A	A	410	390	375	355	285	275							
14						275	270	290	240	335	340	335	280	280	330	330	310	285							
15						350	290	270	A	510	425	405	380	395	340	325	360	305							
16						355	305	250	A	285	A	A	E A	400	A	320	A	E A	270	265					
17						240	290	310	A	410	340	375	365	350	325	365	320	285							
18						355	290	290	345	G	505	410	A	400	390	350	305	285	270						
19						445	335	290	265	485	610	A	A	E A	350	A	300	290	275						
20						240	420	L	390	335	275	320	305	355	335	310	340	270	280						
21						330	285	305	340	390	390	495	R	365	325	310	310	330	325						
22						315	320	305	345	A	340	A	320	310	360	340	305	260							
23						325	295	A	270	330	A	A	360	325	330	E A	315	300	260	250					
24						280	255	260	270	290	505	385	320	320	320	285	260	260							
25						405	300	275	275	270	330	390	350	330	320	320	260	270	290						
26						280	260	455	300	270	290	G	520	370	370	345	315	295	275						
27						275	240	250	275	310	310	300	A	380	310	280	325	300	270						
28						505	330	E A	365	A	A	505	495	380	300	330	345	340	315						
29						A	A	A	A	A	A	A	A	A	380	335	325	290							
30						325	295	300	A	415	A	A	A	400	355	360	E A	320	325	300					
31						350	285	305	320	295	350	375	345	285	300	315	E A	295	275						
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						9	28	26	25	21	23	22	22	26	29	29	28	30	30						
MED						325	298	286	300	330	390	392	375	364	350	330	316	292	275						
UQ						355	352	312	312	345	415	465	405	400	375	355	335	318	290						
LQ						300	260	270	275	270	320	340	350	340	310	315	305	285	265						

JUL. 1984 H^oF2 (KM)

IONOSPHERIC DATA

JUL. 1984
H*F (KM)
135 E Mean Time (G.M.T. + 9h)

Station **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1** MHz to **20** MHz in **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	295	305	290	230	280	A	235	A	A	A	A	E A 250	A	A	A	A	A	E A 250	A	250	E A 330	E A 315	285	270		
2	E A 325	265	E A 305	295	E A 320	H 245	A	A	E A 250	A	205	215	205	215	A	A	A	A	A	E A 305	260	E A 355	315	290		
3	E A 315	245	E A 300	E A 335	E A 320	240	235	A	A	A	A	A	200	230	H 195	235	A	E A 275	A	A	270	E A 350	E A 350	E A 345		
4	E A 350	340	E A 350	E A 335	280	260	A	A	A	A	A	A	A	B	200	E A 275	E A 275	A	A	A	E A 265	235	E A 360	A E A 355		
5	295	A	315	300	325	E A 290	A	A	A	A	A	A	A	A	E A 255	A	A	245	245	245	260	275	290	300		
6	A	285	255	280	290	245	220	220	205	210	230	205	A	H 230	E A 250	225	A	E A 255	A	260	250	300	305	E A 320		
7	E A 330	300	280	290	275	230	A	A	A	A	A	200	205	215	H 215	215	220	235	A	E A 305	250	250	300	280		
8	280	E A 305	E A 305	E A 300	295	H 250	235	210	H 205	190	195	A	A	A	A	E A 250	215	A	A	280	280	235	E A 310	E A 345		
9	E A 355	E A 330	275	250	255	255	A	A	A	A	A	A	A	A	225	230	210	225	H 235	250	230	255	275	285		
10	285	280	265	265	270	H 245	215	195	H 190	H 160	215	225	225	225	210	225	H 200	H 245	230	240	245	250	260	E A 300		
11	305	330	300	270	280	260	E A 265	240	A	A	A	A	220	200	A	A	A	E A 250	A	E A 250	285	E A 300	E A 350	E A 355		
12	E A 330	A	320	310	310	270	A	220	A	H 195	230	200	200	215	H 205	H 195	225	235	H 235	E A 250	230	225	255	290	E A 320	
13	280	275	265	260	255	235	230	215	200	A	225	A	A	A	215	230	A	A	H 200	220	250	245	280	225	300	E A 365
14	E A 315	E A 340	245	260	245	300	A	A	A	230	A	225	A	A	210	200	220	H 210	230	H 255	245	235	235	285	245	
15	285	260	260	285	290	H 275	H 205	E A 255	H 175	A	205	H 195	A	E A 250	E A 230	220	H 210	E A 250	A	E A 290	260	250	290	290		
16	265	265	280	270	270	230	220	E A 245	A	A	H 200	A	A	A	A	A	A	A	A	245	245	260	265	260	275	
17	250	300	E A 325	300	275	H 230	A	210	E A 250	A	205	205	225	220	H 190	225	255	A	A	E A 240	E A 245	290	A	A		
18	E A 355	245	E A 315	E A 315	305	260	240	205	H 195	H 240	A	A	A	A	A	A	235	A	A	A	230	285	290	E A 340	305	
19	245	E A 350	E A 310	240	255	265	230	A	A	215	195	A	A	A	A	A	A	A	A	A	235	215	E A 315	275	240	
20	285	E A 305	290	250	250	H 230	210	H 190	H 185	A	A	H 220	A	A	195	220	A	225	E A 245	230	225	225	A	E A 350		
21	E A 330	E A 325	260	310	300	250	215	H 210	H 200	A	E A 270	200	200	A	A	215	205	H 255	E A 270	260	E A 270	260	280	E A 330		
22	E A 335	E A 310	260	250	240	E A 270	H 195	A	230	A	A	A	A	A	E A 250	A	A	A	A	E A 280	255	245	E A 360	260		
23	E A 315	E A 315	E A 305	A	295	E A 295	E A 250	A	A	A	A	A	A	225	220	A	230	A	E A 250	250	A	E A 300	250	280		
24	A	E A 325	240	255	255	230	H 230	220	A	195	205	E A 260	A	220	A	A	A	A	A	A	245	245	E A 310	270	270	
25	260	300	260	265	260	250	H 190	215	220	E A 245	200	190	200	205	225	A	A	E A 250	A	255	260	270	255	280		
26	275	260	225	255	250	250	235	A	H 185	225	195	255	E A 250	205	A	E A 250	A	E A 245	235	240	225	250	255	265		
27	285	255	265	265	260	250	A	235	215	E A 265	E A 245	H 200	A	A	230	A	220	A	E A 250	A	E A 255	245	A	A	A	
28	285	300	300	255	235	245	E A 255	A	A	A	A	A	E A 245	H 200	A	A	A	A	A	215	250	235	235	240	A E A 345	
29	A	305	285	A	255	A	A	A	A	A	A	A	A	A	210	A	A	215	235	265	260	240	E A 280	E A 300		
30	270	300	260	250	305	265	E A 275	230	H 225	A	E A 240	A	A	A	230	215	A	A	E A 270	260	240	A	225	255	A	
31	280	A	E A 350	E A 330	300	240	225	E A 250	E A 255	A	A	H 185	H 180	245	235	A	E A 270	A	E A 250	275	300	A	260	E A 255		
	00	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	31	29	31	29	21	17	16	11	16	16	12	19	19	17	12	19	15	30	30	29	26	28		
MED	U 276	U 281	272	265	272	248	225	215	202	205	204	202	202	215	U 212	222	211	U 230	242	245	248	250	275	U 268		
UQ	E A 328	E A 320	E A 305	290	295	262	232	228	219	228	220	218	218	225	E A 232	230	225	E A 250	E A 250	258	265	E A 300	298	E A 338		
LQ	280	270	260	255	255	240	215	210	H 192	195	200	200	200	208	208	220	208	226	238	240	235	245	260	272		

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H*F (KM)
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IONOSPHERIC DATA

JUL. 1984

H⁺E (KM)

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

Station **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep 1 MHz to 20 MHz in 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	105	100	105	105	100	105	105	105	105	105	110	115					B
2						E S 130	105	105	105	105		A	A	A	A	A		105	105	115				S
3						130	105	105	105	100		A	A	A	E A 125	105	105	105	110	110				S
4						E S 120	105	105	105	105		A	A	B	A	A	A		105	110	115			S
5						A		A										A						B
6						A	A	115	105	105	105	100	105	105	105	105	105	105	105	110				B
7						120		A	A	100	105	100	105	105	105	105	105	105	105	110				B
8						A	110	105	105	105	105		A	A	105	A	A		105	120	105			S
9						A	110	105	105	105	105	105	105	105	105	105		A	A	A	120			S
10						120	110	105		A	A	A	A	A	A	A	A	A	A	A	A			S
11						115	105	105	105	105	100	105		A	A	A	A	A	A	A				
12						130	105	105	105	105	105	105	105	105	105		A	A	E A 125	115				
13						125	105	105	100	100	100	100	105	105		A	A		105	105	120			
14						130	110	105	105	105	105		A	105	100	105	105		A	115	115			
15						S	105		A	A	A			A	A	A	A	A		110	110			
16						S	105	105	100	105	105	105	105	105	105		A	A	A	A				
17						110	105	105	100	100	105	105	105	115	115	105	105	105	105	115				
18						S	110	105	105	105	105	105	105	105	105	105		A	A	A				
19						S	110	105	100	105	105		A	A	A	A	A		105	105	120			
20						A	110	105	105	105	105	105	105	105	105	105	105		A	A				
21						S	105	105		A	A	A	105	105	105	105	105	105	110	A				
22						S	A	A	A	110	105	105	105	100	100	105	105	E A 120	105	115				
23						S	A	A	115	110	105	105	105		A	A	A	A	A	A	120			
24						S	A		105	105	100	100	105	100	110	110	110		105	110	115			
25						S	110		A	A	110	105		A	A	A	A		105	105	105	110		
26						B	110	105	105		A	A	A	100	100	100	100	105	110	115				
27						125	105	100	105	105	100	105	105		A	105	105	105	105	115				
28						S	110	105	105	105		A	A	A	105	105	105	105		A	A			
29						S	A	A	A		105	105	105	105	105	105	105		A	A				
30						S	110	105	105	105	105	105	105	105	105	105	105		A	A				
31						S	A	A		105	105	105	105	105	105	105	105	E A 130	115					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						11	26	25	27	27	24	21	22	23	21	22	22	22	24					
MED						122	110	105	105	105	105	105	105	105	105	105	105	105	108	115				
UQ						130	110	105	105	105	105	105	105	105	105	105	105	110	118					
LQ						120	105	105	105	105	100	105	105	105	105	105	105	105	110					

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H⁺E (KM)

IONOSPHERIC DATA

JUL. 1984

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station		ROKUBUNJI TOKYO												Lat. 35 42.4 N Long 139 29.3 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	110	105	100	105	100	100	140	120	110	115	115	135	120	115	110	110	110	115	115	110	110	105	105	105
2	105	100	100	95	100	130	115	110	105	105	105	105	100	105	100	125	115	115	110	110	105	105	110	100
3	100	100	95	100	100	140	130	115	110	105	100	100	100	140	G	175	125	120	110	110	110	105	105	105
4	105	100	100	100	100	120	120	110	105	105	110	100	115	100	100	125	115	115	115	110	110	115	110	105
5	100	100	100	100	100	135	125	125	125	125	120	115	110	110	110	110	110	110	110	105	105	105	105	100
6	100	100	100	100	100	105	105	145	130	120	125	125	120	125	120	125	125	120	110	110	110	105	105	105
7	105	100	100	100	100	150	125	120	115	110	115	115	120	120	125	115	110	G	115	110	110	105	110	105
8	100	100	95	95	100	115	110	120	115	115	110	120	105	105	105	100	145	115	110	110	105	105	100	100
9	100	100	100	100	105	160	125	115	110	110	115	120	110	110	120	115	105	105	105	100	105	100	S	S
10	S	S			100	115	G	110	105	105	100	150	145	100	100	120	105	115	125	100	115	100	110	100
11	95	95	95	95	110	115	110	110	105	105	105	105	100	100	100	100	100	100	110	110	110	105	105	100
12	100	100	115	110	100	140	120	115	110	115	110	140	125	140	105	105	105	125	115	120	110	115	105	105
13	100	100	100	100	105	130	135	120	115	105	110	105	110	110	115	100	G	115	125	115	100	115	110	100
14	100	100	105	155	125	120	115	110	110	110	110	120	135	120	135	125	G	110	110	110	105	105	110	110
15	100	120	110	110	115	125	125	105	100	100	125	105	100	100	100	100	100	115	110	110	110	105	105	100
16	100	95	95	100	100	105	140	125	115	115	115	110	110	105	105	100	100	100	100	100	100	100	115	110
17	110	110	110	110	105	115	110	110	110	105	110	135	125	125	105	E G 165	120	115	110	110	115	115	105	105
18	105	100	100	100	145	130	120	110	110	115	110	110	110	110	125	110	105	100	100	110	115	110	110	105
19	100	95	95	110	95	130	130	120	115	115	120	105	100	100	100	115	115	110	110	105	100	100	100	100
20	100	100	95	100	95	95	125	125	115	110	105	115	125	125	125	125	115	110	115	105	105	100	105	100
21	100	100	95	95	95	125	125	110	100	105	105	130	125	120	115	120	120	110	110	110	105	105	105	100
22	100	100	100	95	95	105	115	120	120	115	110	110	105	110	110	115	115	115	110	110	105	105	105	105
23	100	100	100	95	95	95	110	110	105	105	105	105	105	105	105	100	125	115	110	110	110	110	110	105
24	105	105	105	105	105	105	105	140	110	115	110	115	110	135	125	120	115	115	110	105	100	100	105	105
25	120	100	95	95	95	115	110	110	110	110	105	105	105	105	105	120	120	115	110	110	105	100	100	100
26	100	100	115	110	100	110	115	120	110	100	150	100	170	130	115	115	115	115	115	110	110	S	110	120
27	110	100	110	110	110	115	115	110	115	110	105	110	105	105	105	125	125	115	110	105	105	110	105	95
28	95	95	95	95	100	110	110	110	110	105	100	105	E G 175	G	120	110	110	100	95	95	95	95	95	95
29	110	105	105	100	105	110	110	105	105	105	105	105	105	105	115	105	100	105	110	110	115	100	100	100
30	100	105	95	95	100	S	125	125	120	105	110	105	105	105	140	125	120	115	110	115	110	100	100	105
31	100	105	105	105	120	110	105	105	110	105	105	G	G	145	140	130	120	115	115	110	110	110	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	31	30	30	31	31	31	31	30	30	30	30	31	29	30	31	31	30	31	30	30
MED	100	100	100	100	100	115	118	115	110	110	110	110	110	110	110	115	115	115	110	110	105	105	105	105
UQ	105	100	105	108	105	130	125	120	115	115	115	120	122	125	120	125	120	115	115	110	110	110	110	105
LQ	100	100	95	95	100	110	110	110	108	105	105	105	105	105	105	108	105	110	110	105	105	100	105	100

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H°ES (KM)

IONOSPHERIC DATA

JUL. 1984

TYPES OF ES

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	FF 21	F 6	F 3	F 2	F 6	L 4	HL 22	C 3	C 3	C 3	C 3	C 2	C 2	C 3	C 2	C 3	C 4	C 3	C 4	C 5	F 6	F 4	F 5	F 5
2	F 5	F 5	F 4	F 2	F 2	HL 31	C 4	C 4	C 2	C 2	L 2	L 1	L 2	L 1	L 2	HL 31	C 3	C 4	C 4	L 3	F 4	F 5	F 2	F 8
3	F 6	F 5	F 5	F 5	F 7	H 2	H 3	C 3	C 3	C 2	L 3	L 3	L 1	HL 11		H 1	H 2	C 3	C 4	C 4	F 5	F 4	F 7	F 4
4	F 4	F 3	F 4	F 8	F 3	C 3	C 3	C 3	C 3	C 3	CL 22	L 3	C 1	L 2	L 2	CL 12	C 3	C 4	C 7	C 5	F 3	F 7	F 6	F 7
5	F 4	F 4	F 3	F 2	F 3	HL 32	H 5	HL 42	H 2	H 2	C 2	C 2	C 3	C 2	C 1	C 2	CL 22	C 2	C 3	C 4	F 4	F 2	F 4	F 3
6	F 4	F 3	F 2	F 4	F 2	L 2	L 1	H 1	H 2	C 2	C 1	C 1	C 2	C 1	C 1	C 1	H 2	C 3	C 4	C 3	F 6	F 3	F 5	F 5
7	F 4	F 7	F 4	F 3	F 3	H 2	HL 53	CL 32	C 2	C 3	C 1	C 1	C 1	C 1	C 1	C 2	C 2		C 4	C 7	F 2	F 1	F 7	F 3
8	F 5	F 5	F 5	F 5	FF 11	L 2	C 2	C 2	C 1	C 1	C 1	CL 22	L 2	C 3	C 4	L 2	H 1	CL 42	C 4	C 6	F 6	F 2	F 4	F 4
9	F 3	F 3	F 3	F 4	F 2	HL 12	C 3	C 3	C 4	C 3	C 2	C 1	C 3	C 2	C 1	C 1	L 2	L 3	L 2	L 3	F 2	F 2		
10			F 1	F 1	F 1	C 3		C 2	L 2	L 2	L 2	HL 11	HL 11	L 1	L 2	CL 22	L 2	CL 22	CL 42	L 3	FF 41	F 5	F 3	F 5
11	F 5	F 4	F 3	F 2	FF 41	C 4	C 4	C 3	C 3	C 3	C 3	C 3	L 2	L 2	L 4	L 3	L 4	L 3	CL 22	FF 55	FF 72	F 7	F 7	F 5
12	F 5	FF 24	FF 12	FF 31	F 1	H 2	C 4	C 3	C 2	C 2	C 1	H 1	H 1	H 1	L 2	L 2	L 2	CL 22	C 2	FF 31	FF 31	FF 21	F 2	F 5
13	F 2	F 2	F 1	F 6	F 2	C 3	H 2	C 3	C 2	C 2	C 2	C 3	C 3	C 2	CL 12	L 3	C 2	CL 22	F 2	FF 11	F 1	F 5	F 7	
14	F 7	F 5	FF 23	F 1	F 1	C 5	C 4	C 4	C 3	C 2	C 2	CL 11	H 2	C 1	H 2	H 1		CL 22	C 3	F 4	F 3	F 2	F 2	F 2
15	F 2	FF 22	FF 22	F 2	F 2	C 2	C 3	L 3	L 2	L 3	C 1	C 1	L 3	L 2	L 2	L 2	L 2	C 3	C 4	F 6	F 7	F 5	F 4	F 2
16	F 3	F 3	F 2	F 2	F 2	L 1	H 2	C 4	C 2	C 2	C 2	C 3	C 3	C 3	C 3	L 3	L 5	L 3	L 2	F 2	F 2	F 1	FF 12	F 4
17	FF 31	FF 42	F 2	FF 61	F 7	C 1	C 4	C 4	C 3	C 3	C 1	H 1	H 1	HL 11	L 1	H 1	H 2	C 3	C 5	F 5	F 3	F 3	F 4	F 3
18	F 5	F 2	F 3	F 4	F 1	H 3	C 2	C 2	C 1	C 2	C 2	C 2	C 2	C 2	HC 22	C 2	L 5	L 4	L 4	FF 13	FF 24	F 4	F 6	F 4
19	F 3	F 6	F 5	FF 23	F 2	H 3	H 3	C 4	C 2	C 2	C 1	L 2	L 3	L 3	L 3	CL 33	C 3	C 3	C 4	F 3	F 2	F 4	F 2	F 2
20	F 2	F 3	F 2	F 1	F 2	L 2	C 2	C 2	C 1	C 2	C 3	C 1	H 2	H 2	H 1	H 2	C 2	L 2	CL 32	F 4	F 4	F 6	F 4	F 4
21	F 5	F 4	F 3	F 2	F 3	H 2	H 3	C 3	L 2	L 3	L 2	H 1	H 1	C 2	C 2	C 1	C 1	C 2	L 3	F 3	F 5	F 5	F 3	F 6
22	F 8	F 6	F 3	F 4	F 4	LL 32	CL 31	CL 42	CL 21	C 2	C 3	C 2	C 3	C 1	C 2	C 2	CL 3	C 3	C 6	F 7	F 3	F 3	F 6	F 4
23	F 5	F 4	F 5	F 4	F 4	L 3	CL 21	C 3	C 3	C 2	C 2	L 3	L 2	L 2	L 2	L 4	HL 22	CL 43	CL 43	FF 52	FF 72	FF 31	FF 32	FF 21
24	F 6	F 5	F 3	F 4	F 3	L 3	L 3	H 2	C 3	C 2	C 2	C 2	C 2	HL 11	HL 21	CL 21	C 3	C 2	C 3	F 3	F 6	F 4	F 3	F 2
25	FF 11	F 1	F 1	F 1	F 2	C 2	C 3	CL 31	CL 21	C 3	LL 11	LL 21	LL 21	L 2	L 2	C 3	C 2	C 3	C 5	F 5	F 7	F 5	F 4	F 5
26	F 5	F 6	FF 33	FF 32	F 2	C 4	C 2	C 3	C 3	LH 21	HL 11	L 2	HH 11	H 1	C 3	C 2	C 2	C 3	C 4	F 5		F 2	F 1	F 2
27	FF 22	F 2	F 4	F 5	F 3	C 2	C 4	C 3	C 2	C 2	C 2	C 2	C 3	L 2	L 3	C 2	H 3	C 4	C 4	F 4	F 5	FF 34	F 4	F 4
28	F 3	F 4	F 3	F 1	F 1	CL 21	C 3	C 3	C 2	C 4	L 3	L 2	HL 11		C 2	C 2	C 3	L 2	LC 21	F 6	F 2	F 5	F 5	F 4
29	FF 32	F 2	FF 31	F 7	F 2	L 6	L 4	L 2	L 4	C 4	C 3	C 3	C 3	C 2	C 2	C 2	C 3	L 5	CL 21	FF 33	FF 25	F 5	F 4	F 4
30	F 3	F 2	F 2	F 3	F 1	H 1	H 5	H 2	C 2	C 3	C 2	C 3	C 2	C 2	H 1	H 2	H 3	CL 43	CL 42	FF 52	FF 32	F 4	F 3	FF 35
31	FF 42	FF 32	F 3	F 3	F 2	L 3	L 3	L 3	C 3	C 3	C 2		H 1	H 1	H 2	H 3	CL 42	C 5	F 4	F 6	F 3	F 3	F 6	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

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JUL. 1984

TYPES OF ES

IONOSPHERIC DATA

JUL. 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		64	70	60	S 50	47	52														X 71	S 70	S 73	74										
2		76	65	60	59	57	55														A	71	S	68										
3		71	71	61	62	58	58														X 67	S 64	S 62	75										
4		69	64	67	65	62	60														U S 66	U S 62	S 66	U S 65										
5		66	71	62	60	60	60														X 64	X 65	X 64	U S 62										
6		S 61	U S 61	S 56	S 53	55	54														X 86	X 83	X 81	X 79										
7		X 79	X 76	80	82	X 67	X 53														X 73	S 62	X 60	61										
8		70	69	X 61	62	X 60	X 62														X 84	X 79	X 75	S 72										
9		75	73	X 74	S 68	X 56	X 49														X 69	S 63	X 62	X 59										
10		X 57	X 64	X 61	X 57	X 54	X 53														X 67	X 66	X 68	X 70										
11		X 68	X 62	S 62	S 63	X 59	X 56														X 64	X 55	X 55	S 54										
12		X 56	58	61	55	55	57														X 64	X 66	X 64	X 63										
13		X 64	X 65	S 62	X 59	F 54	X 55														X 86	X 90	X 88	S 75										
14		X 80	X 71	X 82	S 85	X 79	S														S	X 78	X 76	80										
15		81	88	85	75	70	68														X 82	X 78	S 65	S										
16		X 73	71	66	64	69	62														X 80	X 84	X 81	X 67										
17		X 62	X 60	X 57	S 57	S 63	61														X 70	X 68	X 70	S										
18		S 63	S 72	S 59	S	58	X 52														X 72	X 68	X 68	S										
19		X 68	A	A	S	S	X 35														X 83	X 66	X 64	68										
20		S 65	63	S 65	S 64	S 60	59														S 94	S	A	A										
21		U S 44	U S 46	52	X 45	46	X 43														X 86	U S 57	U S 48	49										
22		50	52	S	50	50	43														X 78	68	63	66										
23		65	60	59	58	55	51														X 71	X 68	S 63	S 54										
24		S 56	U S 56	S 57	S 59	U S 45	48														S 86	S 71	68	67										
25		S 64	65	60	56	58	56														X 80	X 79	75	83										
26		84	81	X 75	60	U S 51	S 44														X 85	X 70	64	65										
27		U S 57	62	S 60	60	47	41														U S 97	U S 69	69	69										
28		70	64	0 S 63	X 59	X 57	S 47														X 80	X 53	X 41	42										
29		X 39	X 40	X 39	X 39	X 38	X 38														X 69	X 60	X 51	X 50										
30		56	60	57	49	X 44	X 43														X 77	X 67	X 52	46										
31		X 46	X 45	X 43	X 43	X 41	X 37														S 72	X 73	X 66	X 59										
CNT		31	30	29	29	30	30														29	30	29	27										
MED		64	64	61	59	56	53														X 77	X 68	X 65	66										
UQ		70	71	63	63	60	58														X 84	X 73	X 70	71										
LQ		57	60	59	55	50	X 44														X 69	X 64	62	59										

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FXI (0.1 MHz)

IONOSPHERIC DATA

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FOF2 (0.1 MHZ)

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

Station YAMAGAWA Lat. 31 12.1 N Long 130 37.1 E Sweep 1 MHz to 25 MHz in 24sec in automatic operation

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

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FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1984

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station		YAMAGAWA							Lat. 31 12' 1" N			Long 130 37' 1" E			Sweep 1 MHz to 25 MHz in 24 sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	450	470	A	A	A	450	A	A	A	L				
2								320	400			A	A	A	A	A	460	450	H	A	U L	A	A		
3								A	U L	430	460	H	490	470	490	470	460	460	440	U L	A				
4								A	A	A	A	A	A	A	A	470	470	450	430	380	U L				
5								320	400	400	A	A	A	A	A	A	450	430	420	U L	L				
6								L	U L	450	460	U L	490	480	470	500	480	470	480	430	A				
7								L	L	420	440	440	A	A	460	460	A	420	410	380	L				
8								L	A	420	A	A	480	490	480	470	460	460	430	L	L				
9								350	L	A	U L	460	490	A	A	A	A	420	420	A					
10								L	L	450	470	480	480	490	470	460	470	430	420	L	A				
11								L	L	L	470	470	480	A	A	A	A	460	A	L					
12								L	L	L	430	460	470	480	490	490	480	470	450	420	L				
13								L	A	520	480	490	490	L	A	460	A	450	410	L	L				
14								L	L	A	L	A	480	490	490	500	470	470	430	L	L				
15								L	350	440	L	470	A	A	A	470	A	450	A	350	L				
16								L	U L	400	420	U L	470	L	L	A	A	A	A	L					
17								L	420	460	L	470	470	A	470	450	430	410	L	A					
18								L	490	A	460	A	470	A	450	A	450	410	L	240					
19								A	370	A	430	L	L	460	470	A	A	440	A	A					
20								L	420	440	450	460	450	460	460	450	450	410	U L	360					
21								A	A	A	450	450	470	460	460	460	450	440	420	L	A				
22								L	410	450	440	A	A	A	A	A	A	420	A						
23								L	A	310	450	U L	450	A	A	A	430	440	A	U L	480				
24								L	L	A	A	A	A	A	460	460	460	A	A	A					
25								L	370	U L	U L	A	A	H	460	470	460	430	U L	A	A				
26								A	400	430	450	460	460	450	A	450	A	A	L	L					
27								L	380	L	A	L	U L	490	A	A	A	H	A	L					
28								L	L	390	410	430	A	A	450	440	440	A	U L	430	400	L	L		
29								L	L	400	L	A	A	A	460	A	A	A	L	L	L				
30								L	L	420	420	A	L	L	450	450	450	420	A	L	380				
31								A	L	410	420	A	L	L	460	450	450	440	430	420	L				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							3	10	20	20	16	16	17	17	19	20	23	21	7	1					
MED							320	395	420	450	465	475	470	460	460	450	440	420	U L	380	240				
UQ							335	400	430	460	480	480	490	470	470	465	450	420	U L	385					
LQ							320	370	410	435	450	465	460	460	460	450	430	410	370	L					

JUL. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUL. 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								A	A	A	A	A	360	370	360	355	340	320	285	240				S	
2								A				A	A	A	A	A		320	285		A			S	
3								A	260	300	A	A	A	A	A	R	350	340	H	320	295	250		S	
4									200	260	300	325	A	A	B		A	A		320	285	235		S	
5									170	270	300	340	345	365	380	370	350	A	A	A	A	A			
6								A	A	A	A		355	A	A	R	360	350	H	340	320	295	245	170	
7									180	R	260	305	335	350	365	375	360	350	320	A	A		240	S	
8									185	240	A		325	350	365		A	A	A	A	A	A	240	S	
9									195	A	A		330	350	365	385	370	355	335	A	A	A		S	
10									A	A	A	A		R	350	375	380	370	355	350	315	A	225	S	
11									170	235	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
12									180	R	260	320	A		335		A	A	A	A		340	285	230	S
13									175	245	295	320	350	360	380		A	340	A	A		285	230	S	
14									A	240	280	A	A	A		A	A	A	A	A	A		240	S	
15									A	250	A	A	A		355		A	A	A	A	A	A		230	S
16									S	230	290	310	330	355	360	355	340	A	A	A	A	A	A		
17									A	240	A	A		345	A	A	A	A		350	A	A	230	S	
18									180	R	250	A		310	315	350	360	340	A	A	A	A	A	A	
19									A	240	280	305	330	340	350		A	A	A	A	A	A	A	S	
20									A	240	280	305	325	350	360		A	350	325	300	A	A	A		
21									170	230	275	300	A	A	A	A	345	330	310	285	A	A			
22									A	230	A	A	A		340	350	350	330	A	A	A	A	A		
23									A	235	A		310	325	340	355	350	R	A	A	A	A	A		
24									A	245	A	A		355	A	H	345	R	345	R	330	315	275	A	S
25									A	A	A	A	A	A	A		A	A	355	335	315	280	225	A	
26									A	A	A	A	A	A		350	345	340	320	305	A	A	A		
27									A	A	H	A	A	A	A	A	A	A		305	280	A	A	A	
28										175	250	A	A	A	A	A	A		335	305	A	A	A	S	
29										200	A	A	A	A	A	A	A	A	A	A	A	A	A	S	
30									S	240	A	A		330	A	A	A	A	A	A	A	A	A	S	
31									A	A	A	A	A	A		A	370	345	330	305	280	230		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								12	22	13	13	16	14	14	14	17	16	13	11	14	1				
MED								180	242	295	320	345	358	360	358	350	332	315	285	232	170				
UQ								190	260	300	325	350	365	380	370	350	340	320	285	240					
LQ								172	240	280	310	330	350	350	350	340	322	305	282	230					

JUL. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1984

FOES (0.1 MHZ)

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

Station	YAMAGAWA				Lat.	31 12 1 N				Long	130 37 1 E				Sweep	1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J A 25	J A 33	J A 21	J A 30	J A 53	J A 38	J A 41	J A 34	45	41	J A 50	45	J A 60	J A 94	J A 62	J A 50	J A 85	J A 84	J A 41	J A 29	J A 24	J A 51	J A 52	J A 76	
2	J A 77	J A 65	J A 42	J A 37	J A 26	24	25	47	J A 110	J A 145	191	113	J A 95	J A 84	J A 49	44	J A 78	J A 54	170	160	189	84	85	J A 74	
3	J A 53	72	32	J A 20	J A 30	E S 16	J A 47	J A 50	J A 71	J A 45	J A 63	J A 70	J A 42	J A 37	40	41	39	39	51	J A 36	J A 26	J A 29	61	J A 60	
4	58	J A 36	J A 26	J A 19	J A 17	E S 16	J A 50	J A 65	J A 136	189	83	J A 104	J A 71	87	J A 127	J A 59	41	J A 43	J A 50	J A 45	J A 27	J A 51	J A 24	J A 51	
5	J A 50	J A 50	32	J A 54	J A 34	E S 16	J A 36	J A 42	56	66	64	J A 90	J A 91	J A 71	J A 91	J A 86	38	J A 43	37	J A 26	J A 19	J A 33	J A 18	J A 27	
6	J A 36	J A 53	J A 76	J A 32	J A 26	29	J A 30	J A 44	J A 36	39	39	45	J A 48	J A 48	45	38	G	J A 41	J A 53	J A 33	J A 30	J A 44	22	30	
7	J A 38	19	J A 48	J A 28	J A 27	E S 16	27	52	J A 73	J A 107	J A 47	90	J A 67	J A 53	J A 54	J A 60	J A 43	J A 35	G	J A 34	24	22	J A 26	J A 32	
8	33	J A 42	J A 20	J A 21	E S 16	E S 16	22	J A 64	J A 34	J A 50	J A 59	46	J A 59	J A 53	J A 39	J A 42	J A 67	J A 40	G	20	E S 16	E S 16	E S 16	E S 16	
9	E S 16	J A 33	23	J A 25	E S 16	E S 16	24	33	J A 51	J A 55	J A 75	J A 132	J A 72	J A 69	J A 67	J A 87	J A 63	J A 72	J A 65	J A 36	23	23	E S 16	E S 16	
10	E S 16	E S 16	E S 16	23	20	23	J A 65	J A 33	32	35	G	40	40	G	G	G	J A 54	35	29	J A 41	J A 33	23	J A 27	E S 16	
11	E S 16	22	E S 16	22	22	E S 16	24	J A 47	J A 55	J A 38	43	38	106	J A 84	J A 77	J A 54	J A 51	J A 54	J A 36	J A 26	J A 32	J A 37	18	22	
12	J A 30	J A 26	J A 32	J A 27	22	E S 16	23	31	J A 40	J A 47	J A 44	113	J A 50	J A 75	J A 54	40	35	35	J A 37	J A 46	J A 26	J A 41	E S 16	22	
13	J A 26	J A 33	J A 26	J A 25	E S 16	E S 16	J A 33	J A 49	J A 52	60	41	J A 54	43	J A 71	J A 82	J A 81	J A 35	G	30	24	E S 16	E S 16	E S 16	E S 16	
14	J A 22	22	19	22	J A 38	J A 36	21	28	50	35	J A 59	J A 36	J A 50	J A 54	36	41	36	J A 64	G	J A 29	J A 27	J A 38	20	J A 51	
15	E S 16	J A 32	20	20	22	J A 18	20	G	39	J A 62	J A 43	J A 53	J A 51	104	J A 57	J A 54	J A 45	J A 45	26	20	20	J A 41	J A 44	J A 69	
16	J A 26	20	19	E S 16	E S 16	E S 16	20	32	39	40	J A 50	J A 49	J A 82	J A 85	J A 112	J A 88	J A 102	J A 74	J A 52	J A 29	J A 50	J A 21	20	E S 16	
17	21	E S 16	J A 27	E S 16	J A 54	J A 52	28	35	38	38	39	J A 77	J A 49	J A 87	J A 44	G	J A 33	32	27	25	J A 19	J A 27	22	22	
18	J A 41	J A 84	J A 41	J A 24	J A 27	J A 32	29	31	J A 59	J A 71	J A 100	63	45	144	J A 92	J A 111	J A 44	J A 40	28	23	J A 21	J A 18	J A 33	J A 39	
19	J A 59	J A 84	J A 84	J A 84	J A 64	J A 33	J A 103	36	J A 56	37	39	40	43	46	J A 85	J A 54	39	J A 72	J A 43	J A 51	J A 61	J A 80	J A 74	J A 61	
20	J A 33	J A 26	J A 25	J A 25	J A 17	23	J A 21	J A 39	36	38	J A 51	46	39	45	41	J A 55	34	34	32	J A 37	J A 33	J A 39	J A 40	J A 53	
21	J A 30	J A 40	J A 53	J A 27	21	J A 19	J A 38	J A 43	J A 54	J A 90	J A 158	J A 66	43	J A 74	J A 202	J A 63	J A 51	J A 50	61	73	J A 132	J A 77	43	46	
22	J A 44	J A 41	J A 43	J A 42	J A 32	J A 39	J A 39	38	J A 40	J A 62	J A 123	J A 88	J A 88	J A 104	J A 84	J A 142	J A 63	J A 63	J A 59	J A 66	J A 37	J A 54	J A 77	J A 65	
23	J A 64	J A 52	J A 37	J A 26	J A 53	J A 64	J A 33	59	J A 43	J A 45	44	J A 89	J A 197	J A 78	J A 91	38	43	J A 42	J A 44	60	J A 63	J A 52	J A 23	J A 26	
24	21	J A 51	J A 64	J A 39	J A 64	J A 29	24	32	60	J A 65	J A 70	75	J A 73	J A 51	38	40	J A 54	J A 90	J A 84	J A 43	J A 108	J A 41	J A 26	J A 64	
25	J A 43	J A 51	J A 42	J A 43	J A 50	J A 24	25	J A 29	J A 39	J A 42	J A 85	96	43	43	152	42	J A 78	J A 57	J A 52	J A 41	J A 111	J A 73	J A 33	J A 33	
26	J A 27	J A 26	21	J A 19	J A 22	J A 39	28	J A 64	J A 41	J A 47	44	43	J A 53	J A 51	J A 60	J A 48	J A 84	J A 139	J A 163	J A 87	60	J A 20	J A 40	J A 75	
27	J A 46	J A 37	J A 44	J A 21	20	J A 21	J A 44	J A 43	J A 65	J A 80	J A 120	J A 81	81	J A 65	J A 54	J A 51	50	J A 33	J A 50	J A 46	J A 25	J A 77	32	J A 36	
28	J A 36	J A 25	22	23	E S 16	E S 16	G	G	J A 33	J A 51	47	J A 66	J A 48	J A 53	J A 50	61	J A 48	J A 36	J A 33	J A 27	J A 28	22	E S 16	J A 33	
29	J A 33	J A 37	J A 46	J A 30	J A 21	J A 27	23	J A 30	J A 43	J A 53	54	67	J A 93	J A 78	J A 83	J A 64	J A 64	J A 30	26	J A 21	J A 32	J A 64	16	23	
30	J A 33	J A 37	24	J A 21	21	21	23	J A 36	J A 41	J A 43	64	64	J A 85	J A 46	J A 81	54	J A 55	J A 47	35	29	22	J A 23	21	E S 16	
31	E S 16	E S 16	J A 22	J A 24	J A 25	J A 26	J A 53	J A 29	J A 44	J A 53	J A 56	J A 42	J A 44	40	45	J A 60	J A 45	39	G	E S 16	23	J A 28	J A 53	J A 30	
	00	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 33	J A 36	J A 27	J A 25	J A 22	23	28	J A 36	J A 44	J A 50	J A 54	J A 66	J A 53	J A 69	J A 60	J A 54	J A 48	J A 43	J A 37	J A 34	J A 27	J A 38	J A 26	J A 33	
UQ	J A 44	J A 50	J A 42	J A 30	J A 31	J A 30	J A 38	J A 47	J A 56	J A 64	72	88	J A 82	J A 84	J A 84	62	63	60	J A 52	J A 46	J A 44	J A 51	J A 62	J A 56	
LQ	J A 24	J A 26	22	J A 21	20	E S 16	23	32	J A 39	40	44	46	J A 44	J A 50	45	42	39	J A 36	28	J A 26	J A 23	J A 23	19	22	

JUL. 1984

FOES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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	E S	E S	E S	E S	E S	E S	E S	E S	16	20	17	22	20	21	24	20	16	16	17	E S	E S	E S	E S	
2	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	15	17	19	20	24	22	21	22	16	16	13	E S	E S	E S	E S
3	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	15	18	19	22	22	20	20	19	16	12	E S	E S	E S	E S	
4	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	15	17	20	24	40	26	22	20	21	15	16	E S	E S	E S	E S
5	E S	E S	E S	12	E S	E S	E S	16	16	18	21	22	22	22	20	21	19	17	14	14	E S	12	E S	E S	
6	E S	E S	E S	12	E S	E S	E S	16	15	17	20	21	22	21	21	19	19	16	15	E S	13	E S	E S	E S	
7	E S	E S	E S	E S	E S	E S	E S	E S	E S	17	20	20	22	22	20	18	18	18	16	E S	E S	E S	E S	E S	
8	E S	E S	E S	E S	E S	E S	E S	E S	E S	18	18	18	22	25	23	23	22	17	16	E S	E S	E S	E S	E S	
9	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	17	20	22	22	22	22	19	19	16	E S	E S	E S	E S	E S	
10	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	20	20	25	21	20	21	20	18	16	E S	E S	E S	E S	E S	
11	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	18	17	22	23	25	23	19	19	16	E S	E S	E S	E S	E S	
12	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	18	22	21	23	22	20	16	17	12	E S	E S	E S	E S	
13	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	17	18	23	22	20	21	20	16	16	E S	E S	E S	E S	E S	
14	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	16	22	20	20	19	20	16	16	E S	E S	E S	E S	E S	
15	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	17	17	19	20	19	21	25	17	16	E S	E S	E S	E S	
16	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	15	17	18	21	20	21	20	20	18	16	14	E S	E S	E S	
17	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	16	22	25	20	22	23	21	22	17	16	E S	E S	E S	
18	E S	E S	E S	12	E S	E S	E S	12	16	17	20	22	22	23	22	21	16	18	16	12	E S	E S	E S	E S	
19	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	17	20	21	20	24	22	20	20	16	15	E S	E S	E S	
20	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	18	21	20	22	20	22	21	16	16	12	E S	E S	E S	
21	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	17	15	18	20	23	21	20	20	16	14	12	12	E S	E S	
22	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	19	20	22	21	20	20	18	16	16	E S	12	E S	E S	E S	
23	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	19	20	20	25	22	21	17	16	17	14	E S	E S	E S	E S	
24	E S	E S	E S	E S	E S	E S	E S	E S	E S	13	16	16	16	17	16	18	17	21	23	24	22	19	16	12	
25	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	17	19	21	22	26	20	17	16	16	E S	E S	E S	E S	
26	E S	E S	E S	E S	E S	E S	E S	E S	E S	15	16	16	17	17	20	16	17	15	15	16	14	E S	E S	E S	
27	E S	E S	E S	E S	E S	E S	E S	E S	E S	17	18	21	18	20	17	20	18	16	16	16	12	E S	E S	E S	
28	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	21	20	21	21	20	19	18	16	E S	E S	E S	E S	E S	
29	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	19	21	22	23	23	20	21	16	E S	E S	E S	E S	E S	
30	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	18	18	20	20	22	23	20	18	16	E S	E S	E S	E S	E S	
31	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	18	20	20	23	23	20	18	16	16	E S	E S	E S	E S	E S	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	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	E S	E S	E S	E S	E S	E S	E S	E S	16	17	20	21	22	22	21	20	17	16	16	E S	E S	E S	E S	
UQ	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	18	20	22	22	23	22	20	19	16	16	E S	E S	E S	E S	
LQ	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	16	18	20	20	20	20	19	16	16	13	E S	E S	E S	E S	

JUL. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21		22	23																						
1	U F	F	U F	S	U F	F	340	360	355	H	290	305	280	A	280	290	280	A	315	315	300	U S	U F	F																								
2	F	F	F	F	280	F	325	315	315	H	A	A	A	260	270	265	305	320	315	A	A	A	U F	S	U F																							
3	F	F	U F	U F	F	U F	295	310	S	305	340	270	285	H	260	235	290	285	305	290	315	275	295	S	260	275	F																					
4	U F	U F	F	F	F	F	310	320	A	A	A	A	A	A	A	285	275	295	290	295	320	H	285	275	265	U	290																					
5	F	F	F	F	U F	F	310	U W	300	A	A	A	A	A	U R	280	270	290	295	305	S	305	285	280	285	S	275																					
6	S	U S	300	S	F	F	350	325	300	315	U H	290	285	300	285	280	270	270	285	295	310	275	270	280	U	S	285																					
7	280	285	F	300	325	295	350	310	310	295	260	A	A	260	245	270	265	285	315	305	305	285	285	285	285	285	F																					
8	F	F	300	315	295	320	355	A	325	295	290	285	285	285	275	275	295	305	305	295	305	285	275	285	285	285	285																					
9	F	F	300	300	320	300	290	300	345	255	285	255	A	270	280	280	290	310	325	360	330	300	290	285	275	275	275																					
10	255	260	300	305	300	310	345	365	310	290	295	305	275	300	300	265	285	295	330	290	310	285	290	295	295	295	S																					
11	290	275	285	290	300	300	305	345	335	310	310	275	A	A	300	305	310	325	335	340	325	305	275	280	280	280	S																					
12	280	F	F	F	F	F	340	335	360	290	300	320	280	280	280	290	290	315	335	335	285	290	285	280	280	280	280																					
13	285	295	310	290	F	345	365	345	310	290	320	275	275	260	265	265	270	315	285	330	280	285	280	255	255	255	255																					
14	J S	270	280	J S	285	I S	340	J R	325	305	280	295	295	305	275	275	270	280	290	295	I S	320	275	265	265	265	F																					
15	F	F	F	F	F	F	285	340	350	325	290	280	280	275	U R	280	290	285	295	300	J S	285	295	305	260	280	I S																					
16	J S	270	F	F	F	F	320	290	315	345	310	270	305	A	295	270	280	280	305	330	300	275	280	315	285	285	S																					
17	275	275	265	275	S	F	340	285	340	355	335	290	280	285	270	285	285	275	305	315	275	275	265	I	S	265	I S																					
18	280	J S	335	290	I S	290	F	295	365	315	G	305	R	295	A	270	280	265	A	300	315	305	285	270	280	305	S	270																				
19	J S	A	A	S	S	275	310	S	315	340	400	275	305	270	270	285	275	280	285	305	310	300	275	275	S	275	F																					
20	S	270	280	S	S	295	285	335	320	H	300	320	335	310	300	315	275	270	275	305	335	325	345	S	S	A	A																					
21	U S	275	330	F	280	U F	310	320	315	355	325	325	285	315	300	305	305	295	290	275	315	335	U S	U S	295	295	F																					
22	F	F	S	U F	U S	S	S	300	350	330	320	305	U R	A	A	300	275	280	295	295	300	310	295	270	290	290	U F																					
23	U F	F	F	F	U F	U F	U S	335	335	360	350	285	H	280	U R	A	A	305	305	310	280	325	305	300	300	280	S																					
24	S	U S	U S	U S	F	U S	U F	U S	H	320	310	A	A	A	275	305	280	290	310	340	300	S	280	290	275	290	U F																					
25	S	U F	U F	U F	U F	F	F	F	U S	360	345	310	320	300	300	310	300	290	295	305	285	310	U S	U S	U F	260	F																					
26	U F	U F	310	U F	U S	U S	H	315	330	370	U H	R	275	295	285	270	310	325	325	300	315	310	U F	275	275	275	F																					
27	U S	U F	S	F	U F	U S	S	350	350	A	315	285	A	275	290	295	305	295	310	315	340	U S	315	F	U S	285	285																					
28	F	F	270	300	325	365	340	300	295	325	275	A	280	310	325	310	300	300	300	330	330	320	285	280	280	280	F																					
29	270	295	305	305	330	375	330	355	350	345	300	A	A	305	310	320	330	310	330	335	325	335	310	295	295	295	295																					
30	300	F	305	300	300	295	320	315	320	340	325	280	320	305	300	295	315	325	290	315	315	320	305	310	310	310	S																					
31	300	305	295	310	300	305	A	335	335	350	340	305	275	320	305	310	330	310	310	310	285	315	335	300	300	300	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	23	23	23																					
CNT	23	19	22	22	26	26	30	30	30	27	28	22	22	25	30	30	31	30	30	30	30	30	30	28	22	22	22																					
MED	280	295	298	292	300	310	332	322	328	315	298	292	280	285	282	285	295	305	305	310	300	288	280	282	282	282	282																					
UQ	290	305	305	305	305	325	340	345	350	340	320	305	300	305	300	295	305	315	330	325	315	305	292	290	290	290	S																					
LQ	272	275	285	285	F	295	310	315	310	305	282	285	275	275	275	275	280	290	295	300	285	280	272	280	280	280	S																					

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M(3000)F2 (0.01)

IONOSPHERIC DATA

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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 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	L	L	L	435	415	A	A	A	A	A	A	A	L				
2							360	A	A	A	A	A	A	A	380	320	H	A	A	A				
3							A	A	350	370	H	375	405	365	380	390	370	340	U	L	A			
4								A	A	A	A	A	A	A			370	335	A	U	L			
5							L	345	335	A	A	A	A	A	A	A	360	345	U	L			L	
6								L	U	L	365	370	U	L	345	395	405	360	375	370	345	A	A	
7								L	345	A	375	410	A	A	400	400	A	380	340	475	L			
8							L	A	L	390	A	A	L	355	365	375	395	380	L	L	L	L	L	
9							L	L	A	A	L	365	A	A	A	A	390	370	L	L	A			
10							L	L	L	375	U	L	375	L	375	380	L	370	355	L	L	A		
11							L	L	L	L	370	380	385	A	A	A	A	L	A	L				
12							L	L	L	420	390	380	365	385	365	385	360	355	355	A				
13								L	A	A	L	385	365	365	A	A	A	L	365	L	L			
14							L	L	A	L	A	375	355	345	340	340	320	315	L	L				
15							L	370	365	L	375	A	A	A	360	A	365	A	370	L				
16							L	U	L	350	355	U	L	L	A	A	A	A	A	L				
17								L	355	380	L	380	380	A	380	355	350	340	L	A				
18								L	350	A	345	A	A	A	A	A	335	340	L	A				
19							A	A	A	440	L	L	370	A	A	A	340	A	A					
20								L	380	410	400	A	410	390	390	375	355	365	U	L				
21							A	A	A	365	375	380	400	390	370	355	A	440	L	A				
22								L	390	A	A	A	A	A	A	A	A	355	A					
23							L	A	370	A	A	A	A	A	A	395	A	A	A					
24							L	L	A	A	A	A	A	360	370	345	A	A	A					
25							L	380	U	L	U	L	A	A	H	400	360	385	395	U	L	A	A	
26								A	400	H	U	L	400	A	A	A	A	A	A	L	L			
27							L	A	L	A	L	U	L	A	A	A	H	A	360	L				
28							L	L	360	365	A	A	A	A	385	A	A	A	L	L	L			
29							L	L	385	A	A	A	A	L	400	A	A	A	L	L	L			
30								L	L	L	A	L	410	A	390	A	A	A	A	L	L			
31							A	L	L	365	390	L	400	L	435	420	A	A	L	L				
CNT							3	6	18	15	14	15	13	15	15	14	19	18	6					
MED							L	345	355	368	380	378	380	380	380	365	350	355	362					
UQ							352	370	385	390	L	400	400	390	390	380	362	365	L	390				
LQ							L	338	L	345	365	370	375	370	365	362	370	355	342	340	U	L		

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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								255	240	L 275	295	360	390	325	A	335	310	E A 350	A	265	260				
2								270	295	260	A	A	A	430	365	350	300	305	290	A	A				
3								A	305	325	280	375	L 350	495	435	350	335	305	310	290					
4								295	A	A	330	A	A	A	A	375	370	305	305	275					
5								305	695	380	A	A	A	A	A	420	425	355	340	310	255				
6								225	295	310	325	360	325	365	350	350	355	305	300						
7								350	375	400	530	A	A	570	560	470	430	350	300						
8								240	A	270	390	420	380	375	350	350	340	325	295	290	270				
9								350	270	270	450	530	A	400	370	360	A	300	270	260					
10								250	240	350	375	390	375	430	350	340	395	345	305	260	A				
11								320	250	260	380	390	430	A	A	330	300	300	280	270					
12								255	280	255	400	390	330	420	425	400	350	330	295	250					
13								250	275	415	330	395	400	A	375	A	385	280	320						
14								260	260	275	250	375	330	310	290	350	310	330	305	280	270				
15								280	250	270	310	520	415	400	340	340	330	310	320	280	275				
16								L 300	310	275	310	410	L 330	A	330	360	A	A	280	250					
17								365	270	280	305	375	360	350	365	330	260	340	265	240					
18								240	G	380	370	A	430	375	380	A	300	275	250	260					
19								A	300	275	265	L 500	360	425	365	330	340	310	325	270					
20								L 260	300	320	300	375	335	340	390	390	340	310	260						
21								E A 295	305	275	305	310	440	345	355	330	335	335	310	310	280				
22								L 320	260	300	335	E A 380	A	A	340	360	A E A 345	300	315						
23								275	280	240	270	L 355	410	345	A	A	295	310	300	295					
24								275	230	A	A	A	A	A	370	300	330	325	275	255					
25								245	245	260	L 290	350	A	335	330	340	320	310	L 295	A 295					
26								310	250	240	L 265	335	430	350	360	375	300	280	260	260					
27								255	250	260	A	325	L 400	500	385	320	310	300	295	280					
28								325	400	390	345	470	A	445	340	295	A	330	360	330	270				
29								280	270	280	A	420	A	A	395	370	A	A	320	300	270				
30								290	305	280	340	470	345	375	380	375	340	295	310						
31								A 310	290	270	A	370	455	330	335	340	295	320	275						
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								18	30	29	25	27	21	23	24	30	25	29	30	30	11				
MED								274	280	275	310	370	375	400	360	350	340	318	302	280	270				
UQ								300	310	300	380	415	400	430	375	375	370	338	320	300	270				
LQ								255	250	260	280	330	360	345	340	335	320	305	290	260	260				

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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	320	285	245	225	E A 325	275	A	225	245	H 200	200	E A 245	A	A	A	A	A	A	A	E A 250	245	E A 345	E A 365	E A 360			
2	300	250	E A 300	A 345	A 300	290	260	A	A	A	A	A	A	E A 250	E A 250	A	A	A	A	A	A	A	A	300			
3	E A 350	260	255	280	305	265	A	A	E A 270	H 200	210	200	235	H 195	215	E A 255	E A 250	E A 255	A	250	245	E A 295	A	E A 375			
4	350	285	305	300	305	285	E A 295	A	A	A	A	A	A	A	A	A	E A 250	A	E A 255	245	210	E A 275	315	275			
5	E A 350	275	255	280	305	300	E A 225	E A 250	A	A	A	A	A	A	A	A	225	225	245	250	250	300	A	275	305		
6	275	295	250	270	285	265	225	220	200	200	H 205	205	220	A	205	E A 245	205	H 225	A	A	260	260	E A 275	295	275		
7	E S 295	290	E A 310	240	245	E S 230	250	E A 255	A	240	220	A	A	220	H 205	A	A	A	A	220	230	240	270	250	225	E S 310	E A 350
8	E A 330	E A 310	270	E S 280	275	275	240	A	200	A	A	E A 250	H 200	H 215	215	220	220	230	240	250	250	270	270	290			
9	285	270	250	225	250	E S 300	255	240	A	A	205	A	A	A	A	A	E A 250	235	A	240	225	E S 275	E S 295	E S 315			
10	E S 340	E S 300	270	E S 275	270	270	240	220	200	H 185	H 180	H 200	215	205	200	205	225	230	230	A	240	E 270	E S 295	280			
11	275	E S 315	E S 300	280	275	280	250	225	200	H 205	H 210	200	A	A	A	A	A	A	225	240	E A 240	E A 245	310	E S 325			
12	E A 315	305	E A 320	E A 320	E S 325	300	235	220	230	H 200	230	230	210	210	195	235	225	245	A	235	E A 250	E A 290	E S 280	E S 300			
13	E A 325	290	270	275	250	240	240	235	A	A	H 200	240	215	A	E A 265	A	230	H 210	250	240	270	260	290	E S 280			
14	330	290	290	265	290	250	250	250	A	210	A	210	E A 255	230	A	220	240	225	220	240	265	240	250	290	340		
15	310	290	240	280	255	280	260	240	255	A	220	A	A	A	A	240	A	A	A	220	260	240	250	320	350		
16	270	265	300	280	270	240	250	235	E A 250	230	A	A	A	A	A	A	A	A	A	A	240	290	270	240	265		
17	E S 265	300	320	300	255	210	220	A	A	250	240	230	210	200	A	220	210	235	235	235	A	220	280	290	310		
18	300	250	260	290	305	270	225	220	260	A	A	H 210	A	A	A	A	A	230	240	230	240	260	270	265	320		
19	350	A	A	240	315	E A 310	A	A	A	225	220	210	250	A	A	A	A	A	A	250	260	310	320	305			
20	A 310	305	300	290	260	260	225	220	240	190	210	A	210	240	220	250	210	240	260	250	220	250	A	A			
21	E A 345	E A 325	250	E S 295	295	260	A	A	A	195	E A 240	220	205	205	E A 250	E A 245	A	E A 260	E A 250	A	A	250	230	300	E A 350		
22	A 350	305	A	E A 345	250	260	230	215	A	A	A	A	A	A	A	A	A	E A 250	A	275	255	285	350	275			
23	260	E A 265	250	E A 300	305	255	250	A	205	A	A	A	A	A	A	225	A	A	A	E A 275	E A 275	280	240	270			
24	275	E A 305	255	255	E A 300	260	245	245	A	A	A	A	A	A	220	E A 250	A	A	A	E A 260	E A 275	E A 275	270	275			
25	E A 295	305	325	E A 350	310	260	205	205	200	200	A	A	200	E A 245	E A 255	205	235	A	A	260	260	275	325	320			
26	275	265	250	225	245	200	H 230	A	H 210	H 205	220	200	E A 275	A	A	A	A	A	E A 255	A	250	230	E A 275	E A 350			
27	A	300	260	H 255	245	220	225	A	A	A	A	230	A	A	A	E A 250	A	H 220	E A 260	250	215	215	300	310			
28	E A 300	E A 310	E S 315	270	250	200	255	235	220	A	A	A	E A 255	H 200	A	A	A	A	240	230	225	225	235	E S 300	E S 340		
29	A	E S 305	E S 300	270	270	240	245	230	225	A	A	A	A	200	A	A	A	235	230	250	270	230	E S 255	E S 300			
30	E A 300	E A 330	270	240	E S 300	290	250	250	205	220	A	H 200	E A 250	E A 240	A	A	A	A	A	270	220	230	260	290			
31	280	280	E S 300	E A 295	E A 310	E A 320	A	230	E A 240	H 200	A	H 190	200	200	A	A	235	205	240	250	250	250	250	E S 270			
CNT	29	30	29	31	31	31	26	20	20	17	16	16	16	14	16	14	19	18	18	26	30	30	28	30			
MED	288	282	262	268	278	262	241	230	215	200	210	206	208	206	215	U 222	228	232	235	250	248	U 250	U 277	U 286			
UQ	A 315	E E U 305	E U 285	288	302	278	250	240	242	220	220	222	U A 232	222	E A 248	E A 250	A	240	238	245	260	258	E A 280	302	E E 340		
LQ	278	275	255	254	255	245	225	220	202	H 200	205	200	202	200	215	210	225	225	230	240	232	238	266	275			

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H*F (KM)

IONOSPHERIC DATA

JUL. 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								A	A	110	105	105	105	105	105	110	110	105	110	105	H			S		
2								A		110	105	105	105	A	110	A	110	110	105	110	110				S	
3								E S		130	110	105	105	105	A	A	105	105	105	H	H				S	
4								E S		120	105	105	105	105	110	B	E B	A	A	105	110	110				S
5								115	110	105	105	105	110	110	115	105	110	110	A	A	A				A	
6								A	A	A	A		105	105	110	105	105	105	H	H	110	E S			125	
7								S		130	115	110	110	115	115	115	115	115	115	115	115	115			S	
8								120	115	115	115	110	110	120	115	115	115		A	A		115			S	
9								E S	A	140		115	115	115	115	115	115	110		A	A				S	
10								A	A	A		110	110	115	115	115	110	110		A	A				S	
11								120	115	A		110	110	110	110	115	115	110		A	A	A	A		A	
12								E S		135	115	110	110	110	115	110	110		A		A				S	
13								125	115	110	110	110	110	115	115	115	115		A		110	110			S	
14								120	115	110		A	A	A		110	110	110	110		A	A			S	
15								A		110	A	A	A		110	110	110	110	110		A	A	A		S	
16								S		110	110	110	110	110	110	110	110		A	A	A	A	A		A	
17								A		110	110	110	110	110		A	A	A		A	A	A	A		S	
18								S		110	110	110	110	110	110	110	110	110		A	A	A	A		A	
19								S		110	110	110	110	110	110	110	110	110	110	110		A			S	
20								A		110	110	110	110	110	110	110	110	110		A	A	A	A		A	
21								S		110	105	105	105		A	A	A	105	105	105	105	105	105		A	
22								A		110	105	105	105	110	105	105	105		A	A	A	A	A		A	
23								A		110	110	110	110	110	110	110	105		A	A	A	A			A	
24								A		115		110	105	105	110	110	110	110	110	105	110				S	
25								A	A	A	A	A	A		115	115	110	110	110	110	110				A	
26								A	A	A	A	A		105	105	105	105	105	H		105	105	E S		A	
27								A	A			110	110	110	105	105	105	105	105	105	105	105			A	
28								120	115	115	110	115	110	115	A	110	115	110		A	A			S		
29								120	A		115	115	115	115	115	115	115	115	115		A	A		S		
30								S		120	115	120	115	110	115	120	120	120	120		A	A		S		
31								A	A		110	A	110	115	115	115	115	115	115	115	120				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								12	22	23	25	27	26	27	27	28	28	21	15	15					1	
MED								120	110	110	110	110	110	110	110	110	110	110	110	110	110	110	E S		125	
UQ								S		125	115	110	110	110	110	115	115	115	115	110	110	111				
LQ								120	110	108	105	105	110	110	110	108	110	105	105	110						

JUL. 1984 H'E (KM)

IONOSPHERIC DATA

JUL. 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	110	105	105	105	100	105	105	105	130	105	105	135	125	110	115	125	110	110	120	115	125	105	105	105																												
2	105	100	100	95	95	95	125	120	105	105	105	105	105	105	110	140	120	120	110	110	105	105	105	105																												
3	105	105	100	105	105	S	125	120	120	115	105	125	105	110	175	145	135	125	115	110	110	105	110	105																												
4	105	100	100	95	100	S	125	115	110	105	105	105	110	105	125	105	135	120	115	115	115	110	100	105																												
5	105	105	105	100	105	S	140	130	125	120	120	115	110	115	110	110	110	105	105	105	110	110	110	110																												
6	110	105	105	105	110	105	105	105	105	105	145	135	125	125	135	150	G	120	115	110	110	110	105	105																												
7	105	105	100	105	105	S	140	130	125	120	125	120	120	120	125	115	115	110	G	100	100	100	100	100																												
8	115	110	105	115	S	S	170	110	125	115	110	120	120	115	120	115	105	105	G	120	S	S	S	S																												
9	S	105	105	105	S	S	150	140	125	120	125	120	120	115	115	110	105	100	100	100	100	100	S	S																												
10	S	S	S	120	120	115	110	110	110	120	G	155	150	G	G	G	120	140	125	115	115	100	100	S																												
11	S	115	S	100	115	S	120	120	105	120	115	120	105	105	105	105	100	100	105	100	100	100	105	120																												
12	115	115	120	115	120	S	140	140	120	120	115	105	105	105	100	175	150	140	120	115	115	115	S	100																												
13	105	105	105	105	S	S	130	125	120	125	130	130	125	115	115	110	105	G	130	120	S	S	S	S																												
14	110	110	110	140	125	115	125	130	110	110	110	110	110	110	110	105	110	110	G	110	110	110	110	110																												
15	S	110	100	115	110	115	115	G	100	110	105	115	110	110	110	110	105	105	130	110	110	110	110	105																												
16	110	110	110	S	S	S	140	140	125	125	115	115	110	110	110	110	105	105	100	100	100	100	100	S																												
17	100	S	110	S	110	110	140	135	135	110	150	120	115	110	110	G	110	140	120	120	120	110	110	110																												
18	110	125	110	110	110	110	140	130	120	115	115	125	140	110	110	110	110	110	110	110	120	110	110	110																												
19	110	110	110	110	110	140	130	125	115	120	125	120	120	115	110	120	110	110	110	110	110	110	110	110																												
20	100	100	100	100	100	100	100	110	115	115	110	115	150	135	115	110	110	110	110	120	115	115	110	110																												
21	100	125	125	130	120	115	130	120	120	145	115	115	145	130	115	125	120	120	110	105	110	105	105	105																												
22	100	110	95	95	95	105	110	110	110	120	105	110	110	110	105	105	120	145	120	115	110	110	110	105																												
23	105	95	115	95	115	105	110	110	130	105	110	115	120	120	120	145	125	120	100	110	110	110	105	125																												
24	100	105	105	105	105	105	115	145	120	120	120	120	120	120	180	140	125	115	110	110	100	95	100	105																												
25	105	105	100	95	95	95	100	105	105	105	100	105	110	135	115	135	120	115	115	105	105	105	100	105																												
26	100	100	100	100	110	110	110	105	105	105	140	145	125	135	120	125	110	105	105	105	100	120	105	100																												
27	100	100	100	95	95	105	105	115	110	105	105	105	105	105	105	105	105	110	110	105	105	115	100	100																												
28	100	100	100	100	S	S	G	G	120	115	115	110	115	110	115	105	105	105	100	100	100	100	S	115																												
29	120	110	105	105	110	120	125	110	120	115	115	110	105	110	105	105	105	105	100	100	120	115	S	100																												
30	100	100	100	100	100	100	130	125	120	120	115	115	110	115	115	110	110	105	125	115	105	100	100	S																												
31	S	S	115	115	115	110	105	110	115	110	110	115	115	150	145	130	130	130	G	S	125	120	120	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	26	28	29	29	26	20	30	29	31	31	30	31	31	30	30	29	30	30	27	30	29	29	25	25																												
MED	105	105	105	105	110	108	125	120	120	115	115	115	115	112	115	110	110	110	110	110	110	110	105	105																												
UQ	110	110	110	110	115	115	140	130	122	120	120	120	122	120	120	130	120	120	120	115	115	110	110	110																												
LQ	100	100	100	100	100	105	110	110	110	108	105	110	110	110	110	110	105	105	105	105	105	100	100	105																												

JUL. 1984

H°ES (KM)

IONOSPHERIC DATA

JUL. 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 24 sec in automatic operation											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F5	F7	F3	F2	F3	F7	L4	L5	HC43	CC31	CH21	H2	C3	C4	C4	C2	C4	C3	C5	C5	FF11	F5	F7	F4
2	F7	F5	F5	F4	F5	FF21	CL22	C4	C5	C6	C5	L3	C3	L2	C2	HC22	C4	C4	C6	LL71	F4	F5	F6	F3
3	F7	F3	F6	F2	FF12		C6	C6	C3	C2	C2	CL12	L2	C1	H1	H1	HL11	CL41	CL71	CL63	FF51	F7	F5	F7
4	F7	F4	F2	F3	F1		C6	C6	C7	C5	C4	C4	C3	C5	CL12	L4	H2	C3	C4	C7	F6	FF32	F4	FF28
5	F6	F6	F2	FF22	FF52		H4	C3	C4	C3	C3	C3	C4	C3	C3	C3	C2	L3	L4	L3	F2	F6	FF22	FF21
6	F2	F4	F4	F6	F7	F3	L4	LH32	LH21	L2	H1	H1	C2	C1	H2	H1		C2	C6	C6	F7	F6	F5	F5
7	F2	F2	F3	F2	F7		H4	C4	C4	C3	C2	C3	C4	C2	C2	C2	C2	C2		L5	F2	F3	F3	F7
8	F6	F2	F3	F2			H2	C5	C2	C4	C2	C2	C1	C2	C1	C1	L2	L2		C3				
9		F2	F2	F5			H2	HL35	CL33	C3	C2	C4	C3	C4	C4	C4	C4	L3	L4	L4	F2	F2		
10				F2	F2		L3	L3	L2	C1		H1	H1				C2	HL22	C3	CL25	F3	F2	F2	
11		F2		F2	F1		C4	C3	L3	C2	C2	C1	C4	C5	C3	C3	L4	L5	L3	L5	F7	F3	F2	F2
12	F3	F6	F7	F5	F2		H2	H2	C1	C2	C2	C5	C1	C3	L2	H1	HL13	H3	CL53	CL41	F6	F6		F2
13	F4	F2	F2	F4			C4	C2	C3	C3	C2	C1	C1	C3	C2	C3	L2		H3	C5				
14	F8	F2	F1	F1	F7	F6	C1	C2	C3	L1	L2	L1	C2	C3	C1	C2	L3	CL12		C5	F6	F3	F1	F4
15		FF32	F2	F1	F2	F2	L2		L4	L3	L2	C3	C2	C3	C2	C4	C4	L4	HL22	L2	F1	F3	F4	F4
16	F2	F2	F1				H2	H2	C2	C1	C3	C3	C4	C4	C5	L5	L6	L5	L6	L5	F5	F2	F2	
17	F1		FF71		F4	F3	HL33	H4	C3	C2	H1	C1	L2	L3	L2		L1	HL12	CL21	C4	F1	F6	F2	F1
18	F2	FF12	F2	F2	F8	F1	H4	C1	C3	C3	C2	C2	H1	C2	C2	C8	L3	L3	L3	L2	F1	F3	F3	F3
19	F3	F7	F4	FF31	FF23	FF22	CL61	C6	C4	C2	C2	C1	C1	C1	C3	C2	C3	CL23	L6	L6	F6	F4	F4	F2
20	F2	F4	F2	F3	F2	F2	L2	L1	C2	C2	C3	C2	H1	C1	C2	C3	C2	L3	CL33	CL44	F6	FF74	F7	F5
21	F8	FF17	FF12	FFF22	FF12	F2	C5	C5	C4	HC11	CC21	CL12	HL22	CL21	C3	C2	C2	C3	C3	L3	F7	F5	F5	F4
22	F3	FF15	F5	F5	F6	F2	L4	C3	C2	CC42	C3	C4	C5	C4	C4	L4	CL42	HL24	CL44	CL74	F6	F4	FF23	F3
23	F3	F4	FF12	F3	FF21	F2	L4	C6	HC11	C3	C2	CH21	C3	C5	CL41	HC12	CL23	CL44	LC33	LL62	FF51	F6	F2	FF21
24	F2	F4	FF32	F2	F4	F2	LH11	HL32	CL42	C4	C6	C5	C4	C2	H1	H2	C4	C5	C5	L6	F4	F3	F2	FF22
25	F3	F3	F2	F5	F6	F2	L1	L4	L3	L3	L4	L4	C2	HC21	C2	H1	C3	C6	C6	L6	F3	F4	F3	F5
26	F4	F4	F4	F2	FF22	FF32	LL22	L8	L2	LH21	HL12	HC11	C2	H2	C2	C2	C4	C6	C4	L3	F4	F1	F3	F4
27	F7	F4	F3	F2	F1	F2	L3	L4	C4	C4	C4	C2	C4	C3	C4	C3	C3	C3	L4	L6	F2	FF23	F6	F4
28	F7	F4	F2	F2					C1	C3	C2	C3	C2	L2	C2	C3	C3	L4	L3	L3	F4	F2		F3
29	F7	F2	F4	F2	F1	F1	C2	L3	C3	C3	C3	C4	C7	C2	C3	C3	C4	L3	L4	L4	F7	F3		F1
30	F4	F6	F2	F2	F2	F2	C4	C4	C2	C2	C3	C1	C2	C2	C3	C3	C4	L4	CL53	CL43	F3	F3	F1	
31			F2	F6	F7	F6	L5	L4	C3	L2	C3	C2	C2	H1	H2	H3	H2	C1			F2	F2	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																								

JUL. 1984

TYPES OF ES

IONOSPHERIC DATA

JUL. 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	70	70	65	52	X	U	S														X	X	S	68
2	66	64	59	58	60	53															X	X		67
3	71	64	70	70	60	57															X	U	R	X
4	R	X	X	U	R	X	X														X	U	R	X
5	60	58	54	55	54	53															68	63	64	65
6	66	70	66	58	X	58	X														X	X	X	X
7	O	R	59	60	X	58	X														X	X	X	71
8	X	X	X	X	X	X	X														X	U	S	X
9	X	60	60	60	70	63															66	64	63	60
10	U	R	U	R	X	X	R														X	X	X	X
11	X	X	X	X	X	X	X														R	X	X	X
12	U	S	U	R	X	X	S														78	X	U	S
13	X	55	X	66	69	66	58														S	66	A	X
14	X	62	X	66	62	X	55														X	95	X	65
15	U	S	90	90	85	95	Y	60													X	X	75	X
16	X	76	80	82	X	65	X	S													94	84	75	78
17	S	74	X	70	69	X	66	X													84	76	74	70
18	X	63	X	57	54	X	53	X													93	U	R	63
19	X	67	X	48	48	X	49	X													X	66	U	R
20	S	64	X	Y	O	S	S	38													A	X	X	X
21	X	74	X	X	X	U	R	X													X	66	64	69
22	U	R	X	X	X	X	X	X													X	57	X	X
23	X	45	X	48	47	X	45	X													83	57	48	44
24	X	42	X	48	52	X	40	X													X	47	X	47
25	65	59	55	50	47	46															X	X	X	X
26	X	56	59	65	50	A	45	65													X	X	X	X
27	X	56	55	60	50	45	55														88	73	68	71
28	70	70	70	72	X	57	X														R	X	X	70
29	70	70	72	70	68	57															X	75	70	70
30	75	X	X	X	X	X	X														X	60	X	X
31	X	37	X	39	44	R	36														X	X	X	X
CNT	X	53	53	49	49	46	41														77	60	56	51
MED	X	52	S	53	X	X	X														X	X	X	R
UQ	X	52	51	53	54	X	46														77	61	56	
LQ	X	56	X	54	X	X	45														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	31	31	30	31	28	29	2														30	31	30	30
MED	64	63	62	58	58	53	62														X	X	X	X
UQ	70	70	70	69	67	57															88	76	70	69
LQ	X	56	X	54	X	X	45														70	X	56	58

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FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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	F	F	F	F	S 41	39	50	56	53	55	57	68	72	70	73	J A 77	89	92	88	78	70	S 61	58	F
2	F	F 58	F 53	F 49	F	47	64	74	H 67	77	59	57	76	97	97	93	95	103	87	76	73	66	F	F
3	F	F	F	F	F	F	50	64	69	59	59	53	57	68	75	84	84	88	91	71	61	56	53	52
4	54	R 52	48	49	48	47	53	60	63	75	74	J R 68	C	74	77	84	95	110	U R 101	89	62	57	58	60
5	F	F	60	52	52	49	46	49	48	A	A	A	A	A	61	72	76	76	80	75	62	56	56	55
6	54	F	54	52	50	47	50	54	56	A	71	A	71	73	74	79	86	96	102	94	82	77	71	F
7	S 72	70	U S 73	U S 74	52	50	54	54	R 51	56	50	A	A	U R 51	A	55	59	68	74	A	S 60	58	57	54
8	U S 50	F	F	F	F	F	U R 56	58	54	A	60	68	77	91	97	U R 100	99	104	107	93	77	77	81	84
9	90	U R 94	82	79	59	R	55	72	54	53	58	62	70	82	94	103	112	115	108	R 91	64	58	57	U R 52
10	52	55	56	51	46	49	58	53	53	59	59	63	71	80	76	73	83	102	J R 100	77	55	54	57	58
11	57	50	U R 46	50	50	47	47	50	51	62	R 61	56	71	80	92	103	111	114	92	84	72	42	45	47
12	49	49	S 60	63	60	52	57	63	54	57	64	72	66	74	74	78	91	117	94	63	J S 63	60	A	U S 59
13	56	58	60	56	52	49	53	58	53	63	66	67	80	94	100	97	R 102	U R 115	112	102	81	89	90	71
14	S 81	F	F	F	F	Y	F	69	A	Y	U S 72	85	109	95	93	102	104	104	104	Y	88	78	F	72
15	S 70	F	83	59	S 64	67	70	72	69	58	A	63	74	94	103	106	116	U R 100	U R 103	90	78	70	68	64
16	68	72	64	F	64	60	59	58	70	60	56	A	64	81	A	92	A	120	105	88	87	90	74	57
17	57	56	51	48	50	47	A	56	65	72	54	59	76	75	85	101	104	90	106	89	75	60	66	63
18	61	67	42	J R 42	42	43	53	A	49	58	A	55	65	69	74	86	112	102	89	87	93	80	59	60
19	58	S 58	Y	59	S	F	48	64	72	A	A	55	62	73	94	100	103	103	108	110	A	U S 60	S 58	U S 63
20	68	R 76	R 75	U R 73	U R 74	R 72	I R 67	58	63	58	57	60	60	65	64	78	92	102	109	110	77	51	42	38
21	39	42	42	41	39	39	44	65	59	60	54	55	70	73	67	67	74	83	84	86	84	41	40	F
22	J R 36	42	F	46	44	34	35	51	59	59	54	58	70	76	77	82	83	88	A	86	82	R 60	F	F
23	F	F	F	F	F	F	50	59	62	54	57	62	68	81	83	73	A	72	94	A	70	65	55	53
24	50	F	F	F	A	F	F	54	52	53	55	63	A	79	95	91	106	131	95	90	90	72	50	50
25	50	F	F	F	F	F	J R 48	51	49	58	63	60	68	78	77	76	A	95	94	84	82	67	62	F
26	F	F	F	U R 66	51	33	35	65	75	59	52	53	59	69	72	84	I R 106	94	78	89	90	69	64	F
27	F	F	F	F	F	F	54	66	52	57	52	A	A	A	82	94	95	92	Y	104	81	54	50	52
28	F	57	56	58	63	51	36	48	64	53	63	57	63	77	75	73	77	66	73	93	69	38	35	34
29	31	34	33	38	I R 36	30	36	58	52	52	51	58	60	60	68	83	90	90	89	80	71	54	50	45
30	47	47	43	43	40	35	40	64	55	55	52	59	64	68	67	70	A	86	100	92	71	55	50	R
31	46	45	U S 47	48	50	S 40	I R 41	54	79	61	52	49	53	66	69	80	83	77	76	R 63	63	70	55	U S 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	23	19	20	22	22	22	28	30	30	26	27	26	26	29	29	31	27	31	29	28	30	31	27	23
MED	54	56	55	52	50	47	50	58	56	58	57	60	69	75	77	84	95	96	94	88	74	60	57	55
UQ	64	62	62	59	59	50	56	64	65	60	62	63	72	81	93	96	104	104	104	92	82	70	63	62
LQ	50	48	46	48	44	39	45	54	52	55	54	56	63	69	73	76	84	88	88	79	64	56	50	52

JUL. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUL. 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	480	480	470	470	A	A	A	A	L																																			
2								L	L	L	460	A	500	480	A	A	A	A	A	A																																		
3								U	L	U	L	U	L	480	470	490	480	470	470	470	430	L																																
4									L	A	U	L	A	C	L	490	480	470	470	L	A	L	A																															
5								L	L	A	A	A	A	A	A	460	450	420	L																																			
6									L	A	A	A	A	480	480	480	460	450	L	L	L																																	
7								L	A	450	440	A	A	A	A	440	430	420	380	L	A																																	
8									L	A	480	A	A	480	460	A	460	U	L	440	L																																	
9									L	L	A	A	A	A	A	480	460	440	L	L	L																																	
10									L	L	U	L	470	490	480	480	480	460	A	U	L	400																																
11									U	L	470	L	490	460	A	A	A	450	U	L	430	L																																
12								U	L	400	L	L	470	480	480	A	480	460	440	420	U	L																																
13									A	L	480	L	A	A	A	A	440	A	390	L																																		
14									A	L	U	L	540	A	A	L	U	L	490	460	L	L	L																															
15									L	L	A	L	500	480	470	A	470	L	L	L																																		
16									L	L	L	L	A	A	480	A	A	A	A	A	A																																	
17									L	L	L	L	U	L	500	A	470	470	460	450	L	L	L																															
18									A	A	L	A	L	A	A	L	480	A	440	A	L																																	
19									A	A	A	A	A	A	460	480	A	450	U	L	420	L																																
20									L	L	L	L	480	460	460	470	A	450	440	410	L	L																																
21									L	A	A	L	L	470	460	A	450	A	410	L	L																																	
22									L	A	L	A	A	A	460	A	A	A	420	A	A																																	
23									L	L	450	A	A	A	A	A	A	A	A	A	A																																	
24									L	L	L	A	A	L	460	470	440	420	L	L	L																																	
25									L	L	L	L	450	460	480	A	A	A	A	L	A																																	
26									L	L	L	L	L	A	450	A	A	A	A	A	A																																	
27									L	L	L	A	A	A	440	450	440	420	L	A																																		
28									L	L	L	L	400	490	440	450	450	450	A	A	430	L	L																															
29									L	L	L	L	460	470	A	A	A	440	A	L																																		
30									L	L	A	L	460	450	A	A	A	450	A	L	L																																	
31									L	L	U	L	400	430	440	460	450	440	450	430	430	410	U	L																														
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																														
CNT								3	3	8	14	13	12	16	15	16	22	16	5																																			
MED								U	L	U	L	465	475	480	470	475	470	460	450	420	380																																	
UQ								U	L	L	L	400	415	475	480	490	480	480	475	460	430	390																																
LQ								L	L	400	400	450	450	460	460	460	450	440	420	370																																		

JUL. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUL. 1984

FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station **OKINAWA** Lat. **26 16.9 N** Long **127 48.4 E** Sweep **1** MHz to **25** MHz in **24** sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							185	A	A	A	A	A	A	A	R	360	345	325	290	240	A			
2							S	A	A	A	A	A	A	A	A	A	A	A	290	A	A			
3							S	245	A	A	A	A	A	A	A	345	320	290	250	A				
4							170	245	A	315	340	350	C	A	A	A	330	295	240	S				
5							S	A	A	340	A	A	A	A	A	A	A	A	A	A	A			
6							S	A	A	A	A	A	A	A	A	345	320	290	245	A				
7							S	240	A	330	A	365	A	370	A	A	A	A	A	250	A			
8							S	S	A	A	A	A	A	A	A	A	A	A	A	A	190			
9							S	240	290	325	A	A	380	375	A	A	A	A	A	A	A			
10							B	A	A	A	A	A	A	A	A	A	330	280	230	S				
11							S	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
12							S	245	A	A	A	A	A	A	A	A	A	A	A	245	A			
13							S	245	295	330	350	A	365	365	355	A	A	A	A	S				
14							S	A	A	A	A	A	A	A	A	A	A	A	A	R	250	A		
15							S	205	A	310	A	A	370	360	A	A	A	295	A	A				
16							S	240	280	310	340	A	A	A	A	A	A	A	A	A	A			
17							S	A	A	A	350	A	A	A	A	A	A	A	A	A	A			
18							S	230	290	310	330	350	365	360	350	A	A	A	A	S				
19							S	225	A	A	A	350	R	R	R	A	A	A	A	A	A			
20							S	A	A	A	A	A	A	365	350	A	A	A	A	A	A			
21							S	A	A	A	A	A	355	A	350	330	310	280	A	A				
22							S	A	A	A	A	A	360	350	340	A	A	A	A	A	A			
23							S	210	A	300	A	355	365	S	A	350	A	A	A	S				
24							S	A	A	A	A	355	360	360	350	340	320	280	230	S				
25							S	A	A	A	A	A	A	365	355	A	A	A	245	S				
26							S	A	A	A	A	340	A	A	A	335	310	285	A	A				
27							S	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
28							S	A	A	A	A	A	A	A	R	340	325	A	A	A	S			
29							S	210	A	A	A	A	360	355	340	320	A	A	A	S				
30							S	R	A	A	A	A	360	355	340	A	A	A	A	S				
31							S	230	A	A	A	A	A	A	A	A	A	290	230	170				
	00	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	4	9	5	7	11	12	12	9	8	11	11	2				
MED							178	240	290	315	340	350	360	362	350	340	320	290	245	180				
UQ							245	292	330	350	355	365	365	355	345	328	290	248						
LQ							225	285	310	340	350	360	358	340	330	315	282	235						

JUL. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1984

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

JUL. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

JUL. 1984

FBES (0.1 MHz)

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

Station		OKINAWA							Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 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	30	30	26	22	20	17		32	36	36	42	38	43	40	61	51	55	52	38	37	34	46	20	E									
2	26	40	41	40	27	E	28	38	31	39	51	48	55	44	51	76	52	55	49	52	30	29	27	30									
3		E		45	24	20	20	18	29	38	35	38	46	41	45	45	43	35	36	62	24	19		E E S									
4	E S	E	E S	E S	E S	E S	G		29	34	52	45	59	C	46	40	41	42	44	30	43	40	36	19	21								
5	E	E	E	E	E	E	E S	22	E S	16	28	34	A A	70	A A	134	A A	67	A A	52	A A	59	59	40	38	35	28	34	25	21	E	E	
6	E	E	E	E	E S	E S	19	28	U Y	A A	36	81	52	A A	104	60	42	40	G	G	33	34	28	19	E S	16	31	E					
7	20	E	E	E S	E S	E S	22	29	43	36	43	A A	70	A A	84	49	A A	89	36	33	36	26	A A	74	26	18	E S	16	E S	16			
8	20	E	E	E	E S	E S	E S	27	33	A A	88	38	52	51	40	37	55	35	30	25	G	17	18	E S	16	E	E S	16	E	16			
9	18	E S	E S	E S	E S	E S	19	24	G	34	36	48	51	51	60	67	41	37	32	30	29	29	29	E	E	E							
10	E S	E S	E S	E S	18	18	19	25	24	32	35	37	38	38	40	42	37	41	43	G	28	33	E	E S	16	E							
11	E	E	E	E	E	E	17	26	31	33	38	39	42	60	73	50	40	36	32	21	E	21	E S	16	E S	16							
12	19	E	E	E	E S	E S	20	29	34	37	46	40	43	50	37	40	37	35	39	41	30	49	A A	95	20								
13	42	17	E	27	28	23	20	31	39	42	41	38	57	50	69	64	40	51	24	19	19	20	E S	16	E S	16							
14	E S	E S	E	E	E	50	29	48	A A	143	44	45	54	55	46	35	34	33	31	26	20	26	E S	16	E	24							
15	45	39	30	40	22	20	19	27	32	45	A A	94	45	43	43	40	53	35	G	29	35	35	29	19	E	E							
16	E S	E	E	18	E S	E S	E S	G	G	36	44	A A	84	62	46	A A	119	63	A A	120	47	55	19	E	20	E	E S	16					
17	E S	E S	E S	E	E	E	A A	51	25	34	33	40	43	48	42	38	35	34	32	26	26	E S	16	E	20	27							
18	E	27	E	E	19	29	25	A A	58	35	42	A A	72	43	47	52	39	66	41	47	33	26	22	E	E	E S	16						
19	E S	E	20	E	21	E	27	U A	41	48	A A	82	A A	90	50	51	43	46	69	37	32	30	26	A A	89	45	18	E					
20	18	E	E	25	18	E S	E S	25	30	37	38	38	38	45	48	41	37	37	30	25	20	25	30	E									
21	E	E	E	E	22	E	22	27	U Y	42	49	38	40	39	40	46	41	53	37	32	25	E	E	20	E								
22	30	E	20	20	23	23	27	37	37	57	40	48	56	60	44	59	57	34	A A	123	53	29	29	21	29								
23	24	E	E	E	26	E	21	32	33	35	47	48	65	61	61	61	A A	90	52	52	A A	109	41	22	19	20							
24	E	E	E S	E	A A	85	E	32	25	32	36	40	48	A A	74	47	37	G	G	29	27	E S	16	E	19	E							
25	E	E	E	E	E	30	20	25	27	39	39	43	43	52	51	49	A A	109	38	40	62	22	E	E	20								
26	20	U Y	E	20	17	17	17	30	37	37	40	42	46	42	58	66	49	55	52	52	E	20	E	E									
27	E	E	E	E S	E S	E S	E S	32	30	32	42	A A	119	A A	77	A A	87	37	40	38	29	70	49	30	25	E							
28	E	E S	E S	E	E	E S	19	23	29	32	32	44	42	40	63	46	30	32	25	27	30	E	E S	16	E S	16							
29	E	E	E	E	26	23	E	26	30	32	35	38	40	49	58	74	38	42	28	28	30	E S	16	E	E S	16							
30	E	E	E S	E	E S	E S	E S	25	29	46	42	38	50	52	52	41	A A	95	33	32	31	E	U Y	17	17	E							
31	19	20	E	E	E	E	24	25	36	41	35	40	38	41	38	37	33	G	G	G	E S	16	E S	16	E S	16	E						
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	16	E	E	E	16	16	20	28	34	37	42	45	49	46	46	45	38	35	32	28	25	19	16	16									
UQ	20	E	E	16	20	22	20	24	32	36	46	46	52	56	52	60	60	50	44	38	46	30	24	20	20								
LQ	E	E	E	E	E	E	E	16	25	31	36	38	40	42	42	40	40	35	32	26	25	17	E	E	E	E							

JUL. 1984

FBES (0.1 MHz)

IONOSPHERIC DATA

JUL. 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 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	E S	E S	E S	E S	E S	E S	E S	15	15	16	27	27	28	27	26	25	24	20	15	E S	E S	E S	E S	E S
2	E S	E S	E S	E S	E S	E S	E S	16	16	18	18	23	23	27	24	23	21	17	15	E S	E S	E S	E S	E S
3	E S	E S	E S	E S	E S	E S	E S	16	16	16	23	24	28	28	28	25	24	16	14	E S	E S	E S	E S	E S
4	E S	E S	E S	E S	E S	E S	E S	16	16	20	26	28		28	28	28	22	21	15	E S	E S	E S	E S	E S
5	E S	E S	E S	E S	E S	E S	E S	15	16	23	27	28	29	26	28	23	22	20	14	E S	E S	E S	E S	E S
6	E S	E S	E S	E S	E S	E S	E S	16	15	17	19	24	24	27	23	25	20	17	14	E S	E S	E S	E S	E S
7	E S	E S	E S	E S	E S	E S	E S	15	16	19	19	23	22	23	26	22	19	17	16	E S	E S	E S	E S	E S
8	E S	E S	E S	E S	E S	E S	E S	16	16	18	22	23	28	26	22	23	20	20	15	15	E S	E S	E S	E S
9	E S	E S	E S	E S	E S	E S	E S	15	16	20	20	26	28	28	30	22	18	15	13	E S	E S	E S	E S	E S
10	E S	E S	E S	E S	E S	E S	E S	14	16	18	19	23	28	23	22	20	21	16	16	E S	E S	E S	E S	E S
11	E S	E S	E S	E S	E S	E S	E S	15	15	18	19	23	23	21	24	21	18	16	15	15	E S	E S	E S	E S
12	E S	E S	E S	E S	E S	E S	E S	16	16	17	19	21	23	21	23	20	18	16	15	15	E S	E S	E S	E S
13	E S	E S	E S	E S	E S	E S	E S	15	14	16	23	19	23	25	23	19	17	18	14	E S	E S	E S	E S	E S
14	E S	E S	E S	E S	E S	E S	E S	16	16	16	21	22	25	24	24	23	19	15	15	14	E S	E S	E S	E S
15	E S	E S	E S	E S	E S	E S	E S	15	15	17	19	22	29	26	29	29	23	16	15	15	E S	E S	E S	E S
16	E S	E S	E S	E S	E S	E S	E S	15	16	16	22	24	23	24	24	24	18	15	14	E S	E S	E S	E S	E S
17	E S	E S	E S	E S	E S	E S	E S	15	16	17	26	25	24	27	27	24	22	16	16	E S	E S	E S	E S	E S
18	E S	E S	E S	E S	E S	E S	E S	14	17	18	24	23	25	26	25	21	18	17	14	E S	E S	E S	E S	E S
19	E S	E S	E S	E S	E S	E S	E S	16	15	17	20	23	24	27	24	23	19	18	16	15	E S	E S	E S	E S
20	E S	E S	E S	E S	E S	E S	E S	15	15	16	18	20	24	24	21	23	25	16	16	E S	E S	E S	E S	E S
21	E S	E S	E S	E S	E S	E S	E S	16	16	17	17	23	25	25	25	22	20	17	15	E S	E S	E S	E S	E S
22	E S	E S	E S	E S	E S	E S	E S	16	16	16	22	22	21	22	19	21	18	16	15	E S	E S	E S	E S	E S
23	E S	E S	E S	E S	E S	E S	E S	14	15	17	21	22	25	24	24	23	17	16	14	E S	E S	E S	E S	E S
24	E S	E S	E S	E S	E S	E S	E S	16	17	19	21	22	23	28	22	22	23	18	15	E S	E S	E S	E S	E S
25	E S	E S	E S	E S	E S	E S	E S	15	14	16	22	24	23	24	23	21	18	18	15	E S	E S	E S	E S	E S
26	E S	E S	E S	E S	E S	E S	E S	15	15	18	19	26	23	23	20	16	16	13	E S	E S	E S	E S	E S	
27	E S	E S	E S	E S	E S	E S	E S	15	17	20	19	22	22	23	22	19	18	15	14	14	E S	E S	E S	E S
28	E S	E S	E S	E S	E S	E S	E S	16	16	18	18	18	27	28	24	23	23	21	14	E S	E S	E S	E S	E S
29	E S	E S	E S	E S	E S	E S	E S	16	18	19	22	22	23	24	22	23	22	18	14	E S	E S	E S	E S	E S
30	E S	E S	E S	E S	E S	E S	E S	14	15	17	24	23	28	21	23	20	20	18	14	E S	E S	E S	E S	E S
31	E S	E S	E S	E S	E S	E S	E S	15	17	18	17	23	20	23	22	22	20	16	15	E S	E S	E S	E S	E S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31
MED	E S	E S	E S	E S	E S	E S	E S	15	16	17	21	23	24	25	24	23	20	17	15	E S	E S	E S	E S	E S
UQ	E S	E S	E S	E S	E S	E S	E S	16	16	18	22	24	28	27	26	23	22	18	15	E S	E S	E S	E S	E S
LQ	E S	E S	E S	E S	E S	E S	E S	15	15	16	19	22	23	23	22	21	18	16	14	E S	E S	E S	E S	E S

JUL. 1984

FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUL. 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	F	F	F	F	S 315	320	330	365	320	325	280	300	305	285	285	J A 260	285	305	305	305	300	S 280	275	F
2	F	F	F	F	F	295	345	325	335	H 305	270	230	265	300	300	290	295	310	305	300	300	305	F	F
3	F	F	F	F	F		330	330	345	330	330	265	265	285	285	285	290	300	320	340	295	275	285	270
4	275	R 280	270	265	270	285	320	350	325	305	315	A	C	285	260	265	280	320	U R 305	355	300	270	275	275
5	F	F	325	305	305	295	315	325	310	A	A	A	A	A	280	290	290	300	295	320	305	285	285	270
6	270	F	305	300	310	320	350	340	305	A	310	A	290	300	270	260	260	285	305	320	305	290	290	F
7	S 275	U S 270	U S 310	U S 325	300	310	335	335	R 285	305	260	A	A	A	A	265	270	295	310	A	S 310	285	270	260
8	U S 270	F	F	F	F	F	U R 360	355	315	A	265	270	265	275	280	U R 275	280	295	310	325	285	270	270	275
9	275	U R 305	280	315	305	R	320	375	350	275	285	275	265	260	280	285	300	315	315	R 315	290	275	280	U R 270
10	270	280	305	305	305	315	355	340	350	305	280	275	290	295	275	265	285	320	J R 335	345	290	270	265	275
11	290	280	U R 315	280	300	295	295	320	315	320	280	260	280	260	270	290	305	310	325	345	335	275	275	275
12	275	285	S 285	275	275	290	315	315	325	270	295	300	305	285	285	280	285	330	355	315	J S 310	285	A	U S 270
13	285	275	285	285	305	345	340	364	360	295	200	260	250	265	270	275	U R 270	285	295	320	285	275	305	240
14	S 245	F	F	F	F	Y	F	325	A	Y	U S 265	265	300	295	270	280	300	295	300	Y	305	280	F	270
15	S 270	F	330	280	S 275	315	365	335	345	320	A	270	250	285	290	285	310	U R 300	U R 310	310	300	270	280	265
16	270	290	280	F	295	315	345	310	340	325	285	A	A	275	A	270	A	320	315	295	285	310	305	280
17	280	285	285	290	310	380	A	310	315	360	295	270	300	295	275	295	305	270	325	320	320	265	270	260
18	305	330	260	J R 310	310	325	360	A	335	295	A	290	290	290	285	280	310	330	305	295	335	310	290	310
19	275	S 265	Y	S	S	F	R 365	345	320	A	A	290	260	260	285	285	290	295	310	335	A	U S 285	S	U S 285
20	270	R 275	R 295	U R 285	U R 305	R 310	R 335	360	350	320	290	315	310	300	280	260	290	305	315	355	350	305	295	275
21	280	320	295	290	305	295	330	345	340	340	295	270	300	310	305	290	295	295	310	320	345	315	285	F
22	J R 345	310	F	325	340	350	355	345	345	A	325	275	300	290	270	280	270	285	A	320	330	R 300	F	F
23	F	F	F	F	F	F	380	355	355	350	290	300	295	310	325	330	A	290	325	A	315	330	310	300
24	280	F	F	F	A	F	F	390	355	340	310	315	A	265	305	275	285	345	325	300	320	325	310	280
25	280	F	F	F	F	F	J R 370	365	320	335	300	295	320	310	290	A	315	330	320	330	315	305	F	
26	F	F	F	U R 340	335	395	I R 305	345	360	355	335	290	290	295	270	275	R	335	290	305	335	305	295	F
27	F	F	F	F	F	F	370	380	385	325	325	A	A	A	280	315	310	300	Y	330	345	305	280	290
28	F	290	275	310	350	350	305	290	335	255	335	280	285	310	315	285	300	285	310	355	360	300	285	295
29	290	295	330	315	I R 340	365	335	355	345	315	295	295	300	300	265	300	310	310	325	350	325	315	300	290
30	275	295	300	300	325	315	325	360	345	320	290	305	310	325	285	290	A	300	330	335	325	310	310	R
31	295	290	U S 295	290	310	300	S I R 300	295	340	360	325	235	255	295	275	300	335	290	315	300	R 285	315	290	U S 285
CNT	23	19	20	21	22	22	28	30	30	25	27	25	25	28	29	31	26	31	29	28	30	31	27	23
MED	275	290	295	300	305	315	335	345	340	320	295	275	290	292	280	285	290	300	310	320	310	290	285	275
UQ	282	300	312	310	315	345	358	360	350	330	320	300	300	300	285	290	305	315	325	338	330	310	298	285
LQ	270	280	282	285	300	295	320	325	320	305	280	270	265	280	270	275	285	295	305	308	300	275	275	270

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M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 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	365	395	A	370	A	A	A	A	A					
2								L	L	L	380	A	A	A	A	A	A	A	A	A				
3								U L	A	U L	385	345	385	355	A	A	350	350	L	L				
4								L	A	A	A	A	C	A	395	370	L	A	L	A				
5								L	L	A	A	A	A	A	A	400	375	380	L	L				
6								L	A	A	A	A	A	395	385	375	U L	345	L	L				
7								L	A	355	A	A	A	A	A	385	370	345	340	A				
8								L	A	375	A	A	A	375	415	A	L	U L	L	L				
9								L	L	A	A	A	A	A	A	355	370	350	L	L				
10								L	L	U L	380	365	375	385	385	395	385	370	A	U L				
11								U L	L	A	385	415	A	A	A	A	A	U L	L	L				
12								U L	L	A	375	375	A	385	370	375	355	U L	L	L				
13								A	L	395	L	A	A	A	A	365	A	345	L	L				
14								A	A	U L	335	A	A	L	U L	350	355	L	L	L	L			
15								L	L	A	L	360	395	L	395	A	350	L	L	L				
16								L	L	L	L	A	A	395	A	A	A	A	A					
17								L	L	L	L	U L	A	405	395	370	L	L	L	L				
18								A	A	L	A	L	A	A	L	A	385	A	L	A	L			
19								A	A	A	A	A	A	A	A	A	355	U L	L	L				
20								L	L	L	400	415	A	A	375	365	355	L	L	L				
21								L	A	A	L	L	395	400	L	A	375	A	355	L				
22								L	A	L	A	A	A	A	A	A	A	L	A	A				
23								L	L	375	A	A	A	A	A	A	A	A	A	A				
24								L	L	L	A	A	L	390	360	L	L	L	L	L				
25								L	L	L	L	400	390	375	A	A	A	A	L	A				
26								L	L	L	L	L	A	390	A	A	A	A	A	A				
27								L	L	L	A	A	A	410	365	L	L	L	A					
28								L	L	L	375	355	385	400	400	410	A	A	370	L	L			
29								L	L	L	L	390	380	A	A	A	365	A	L					
30								L	L	A	L	370	420	A	A	A	375	A	L	L				
31								L	L	U L	375	A	410	415	A	410	375	385	360	365	350	U L	L	L
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	2	7	11	12	10	13	12	15	21	16	5					
MED								U L	L	L	375	385	390	385	395	392	375	365	352	345				
UQ								L	L	L	360	378	390	400	400	400	395	380	370	360	350			
LQ								U L	L	L	350	355	368	375	375	375	385	368	355	345	340			

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M(3000)F1 (0.01)

IONOSPHERIC DATA

JUL. 1984

H*F2 (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								245	L	290	400	345	335	355	360	390	320	300	280					
2								275	255	315	E A	400	600	415	315	310	E A	345	325	290	290	A	285	
3								300	260	315	310	490	490	380	350	335	325	315	280					
4								320	320	305	A	A	C	360	400	380	360	285	265	225				
5								340	U L	A	A	A	A	A	A	350	350	325	310					
6								U L	A	A	A	A	A	A	A	375	330	275						
7								L	400	360	500	A	A	580	A	475	425	355	295	A				
8								L	315	A	435	400	395	360	340	360	340	310	275					
9								U L	415	400	420	430	400	360	330	310	280	255						
10								U L	250	350	410	420	360	345	360	400	365	280	255					
11									320	370	500	370	A	A	370	340	290	280	255					
12								L	285	L	350	360	315	325	365	350	350	345	270					
13								250	355	370	405	415	395	375	395	390	300	300						
14								A	290	400	350	300	330	380	340	320	305	295	260					
15								270	250	A	400	440	340	320	340	290	290	280						
16								L	265	280	U L	400	A	A	375	A	365	A	275	275				
17								L	300	L	260	375	450	325	330	380	315	300	330	250				
18								A	E A	L	375	A	400	380	365	390	380	300	280	300				
19								300	A	A	E A	400	450	390	340	340	335	320	265					
20								270	315	400	325	360	360	360	400	345	300	275						
21								260	255	290	L	L	350	330	330	360	330	310	280					
22								265	A	330	425	350	350	360	340	375	A	325	A	270				
23								250	250	275	405	380	A	325	305	310	A	350	280					
24								270	250	380	340	A	400	305	380	345	260	250						
25								220	235	325	300	370	350	305	325	350	A	310	390					
26								265	240	250	L	L	410	360	A	A	390	290	260	A	300	A	300	
27								225	235	295	A	A	A	365	305	300	305	300						
28								285	525	310	440	400	315	A	340	315	295	315						
29								265	240	L	L	375	380	360	410	A	305	290	280					
30								250	245	320	415	365	350	320	355	345	A	320	270					
31								L	325	330	250	255	320	590	490	360	360	325	300	300	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	17	29	25	25	23	24	29	27	31	27	31	29	5				
MED							L	325	265	265	315	375	400	375	360	360	350	325	300	280	A	270		
UQ								285	290	350	400	432	415	375	378	380	348	318	295	A	285			
LQ								250	250	290	330	363	350	330	340	340	302	282	270	260				

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H*F2 (KM)

IONOSPHERIC DATA

JUL. 1984

H*F (KM)

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

Station		OKINAWA										Lat. 26 16.9 N		Long. 127 48.4 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1		A 350	310	250	250	275	260	250	A	225	210	220	185	A	240	A	A	A	A	A	A	A	A	325	310			
2		305	A 290	A 270	A	A 350	250	250	A	220	215	A	A	A	A	A	A	A	A	A	A	A	270	280	280	A 350		
3		E A 350	250	A	295	A 295	285	255	230	A	205	190	A	240	A	A	A	A	A	A	A	260	260	300	310			
4		310	300	310	325	320	290	255	H 225	H 220	A	A	A	C	A	200	240	A	A	230	A	300	A 315	A 315	325			
5		300	260	260	260	280	310	250	250	220	A	A	A	A	A	A	225	225	245	245	265	265	300	300	320			
6		330	300	260	280	265	255	230	230	A 230	A	A	A	A	220	215	230	215	220	E A 265	A 260	250	260	285	310			
7		310	295	260	235	230	255	240	230	A	230	A	A	A	A	215	220	A	240	A	255	275	300	340				
8		345	310	290	295	280	250	215	H 220	H 210	A	205	A	A	210	200	A	215	220	225	245	H 265	270	300	300			
9		290	250	250	240	230	300	A 260	H 225	H 210	H 205	A	A	A	A	A	E A 250	220	215	230	A 240	255	280	300	330			
10		330	310	260	260	275	260	235	210	210	200	200	215	220	215	A 215	H 200	E A 250	A	225	235	E A 285	310	325	300			
11		300	320	320	290	275	270	245	220	210	205	200	210	205	A	A	A	A	A	A	230	A	235	215	A 310	335	335	
12		U A 325	305	290	290	300	295	245	H 220	210	235	A	210	220	A	195	220	A 235	A 240	245	250	A 275	A	A	350			
13		A	290	275	280	275	230	245	225	A	A	210	180	A	A	A	A	A	A	240	245	270	300	245	400			
14		350	325	295	265	260	A 240	A	E A 260	A	A	A	A	A	A	240	205	220	235	220	250	230	250	290	U A 325			
15		A 350	335	250	E A 355	U A 320	240	225	220	A 235	255	A	A	245	230	200	A	220	225	A	255	275	245	290	330			
16		300	270	290	305	260	230	250	235	220	205	A	A	A	E A 250	A	A	A	A	A	240	265	255	230	275			
17		300	280	305	305	250	210	A	225	A 240	200	230	A	A	215	200	205	225	A 235	230	245	230	285	315	A 350			
18		295	250	E S 250	300	285	280	225	A	A	E A 275	A	E A 250	A	A	200	A	A	A	A	275	245	235	240	320			
19		310	320	240	260	280	315	245	250	A	A	A	A	A	A	A	A	230	240	A	240	A	A	330	290			
20		300	300	275	290	270	240	H 225	H 225	200	215	H 200	190	190	A	A	E A 240	E A 230	A	E A 250	230	210	270	A 310	330			
21		310	260	270	300	310	290	250	225	A	A	200	220	H 180	H 200	A	E A 250	A	E A 255	E A 250	255	205	210	305	330			
22		A 340	290	295	260	250	235	E A 250	A 260	E A 250	A	H 200	A	A	A	A	A	A	A	240	A	A	240	260	295	A 315		
23		275	280	285	300	300	255	240	245	210	200	A	A	A	A	A	A	A	A	A	A	280	250	225	295			
24		310	310	230	250	A	260	250	215	180	A	200	A	A	A	215	200	220	215	210	230	230	225	260	305			
25		300	300	290	300	295	245	210	205	H 195	A	210	250	A	E A 275	A	A	A	A	A	A	275	245	220	290	345		
26		310	295	265	240	210	205	H 230	235	A	215	230	230	A	E A 250	A	A	A	A	A	A	225	225	275	280			
27		300	290	265	255	245	250	235	E A 225	H 200	H 190	E A 250	A	A	A	195	E A 240	230	210	A	240	215	245	280	325			
28		325	305	305	275	225	210	250	230	215	205	210	E A 250	E A 250	200	A	A	210	250	225	235	205	E S 255	315	345			
29		E S 350	310	300	265	260	250	A 250	240	215	205	200	210	210	A	A	A	A	A	A	240	250	250	230	280	300		
30		325	310	285	295	275	295	E S 250	230	220	A	A	200	A	A	A	E A 250	A	E A 250	A	245	220	250	265	275			
31		300	315	290	280	260	280	A	230	A 230	A	195	200	A	225	215	200	230	215	225	H 240	270	240	240	290			
CNT		30	31	30	30	30	31	28	28	23	18	17	14	10	11	12	15	17	18	18	24	30	28	30	31			
MED		310	300	275	280	275	255	245	226	215	205	200	208	214	218	200	U 212	222	232	232	245	251	258	291	320			
UQ		328	310	290	298	295	282	250	234	221	215	210	222	U A 232	A 228	215	E A 240	A 230	A 240	242	252	268	280	310	332			
LQ		300	285	260	260	260	240	232	221	210	205	200	200	205	212	200	205	220	220	225	240	230	240	275	300			

JUL. 1984

H*F (KM)

IONOSPHERIC DATA

JUL. 1984

H^oE (KM)

135° E Mean Time (G.M.T. + 9 h)

Station		OKINAWA				Lat.	26 16.9 N				Long.	127 48.4 E				Sweep	1 MHz to 25 MHz in 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		110	115	115	115	120				
2								S		110	115	110	110	110	110	110	110		A	110	110				
3								S		110	110	110	110		A	A	A		A	E	A				S
4								E S		130	115	110	110	110	110		C	115	110		A	E	A	A	S
5								S		A		A	115	110	110	110	110	110		A	A				
6								S		A		105	110	110	110	110	110	110		E	A	A		S	
7								S		115	110	110	110	110	110	110	110	110			110	110			
8								S		110	110	110	110	110	110		A	A	A	A	A	A	A	A	
9								S		115	110	110	110	115	110	110	115	110			A	A			A
10								B		A		110	110	110	110	110	110	110		110	110	110			S
11								A		110	105	110	105	110	110	110	110	110		105	110			A	A
12								S		110	105	105	105	105	110	110	110	110		110	105			A	A
13								S		110	110	110	110	110	110	110	110	110			A	A			S
14								S		110	110	105	110	110	110	110	110	110		105			A	A	A
15								A		E	A	A	A	110	A	115	115	B		120	B	110	A	A	A
16								S		110	110	110	110	110	110	110	110	110		105	105			A	A
17								S		110	110	110	115	110	110	110	110	110		110	110			A	S
18								S		110	110	110	110	110	110	110	110	110			A	A	A		S
19								S		115	110	110	110	115	115	110	115	110		110	110	110			A
20								S		110	110	110	110	110	110	115	110	110		115	110			A	S
21								S		110	110	110	110	110	110	110	115	110		110	110	110			S
22								S		110	110	110	110	110	110	110	110	110		110	110			A	A
23								S		110	A		A	110	110	110	110	110			A	A	A		S
24								S		A	A	A	A	A	110	110	110	110		110	110	110			S
25								S		A	A	A	A	A	A	110	110		A	A	A			110	S
26								S		110	105		A	110	110	110	110		A	110	110	110			A
27								S		A	A		110	110	110	110	110	110		110			A	A	A
28								S		A	A	A	A	A	A	A	110	110			A	A	A		S
29								S		100		A	A	A	A	110	110	110	110			A	A	A	S
30								S		110		A	A	A	A	110	110	110		A	A	A	A		S
31								A		A		110	110	105	110	110	110	115	110		A	E	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	23	22	23	24	24	26	27	27	27	22	18	13						
MED							E S	130	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	
UQ								110	110	110	110	110	110	110	110	110	110	110	110	110	112	115			
LQ								110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110

JUL. 1984

H^oE (KM)

IONOSPHERIC DATA

JUL. 1984

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station Hour Day	OKINAWA				Lat. 26 16.9 N				Long. 127 48.4 E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1	100	100	95	90	90	90	105	100	160	150	105	140	140	125	125	120	115	120	115	110	110	105	100
2	100	105	105	100	100	110	125	115	115	110	110	105	105	110	105	120	115	115	110	110	110	105	105
3	105	105	105	100	105	105	130	130	115	110	110	100	100	155	150	135	125	125	115	110	110	110	105
4	s	100	s	s	100	s	G	120	115	110	110	110	c	110	110	150	130	120	135	120	110	115	100
5	100	100	110	105	110	105	s	150	145	130	115	115	125	115	110	110	110	100	100	100	100	105	115
6	110	110	110	110	s	s	105	150	105	120	125	120	125	145	145	G	G	130	125	115	115	s	110
7	110	120	95	s	95	s	140	130	120	120	120	115	110	110	105	115	110	105	115	115	115	115	s
8	95	95	115	110	110	s	s	140	115	115	120	110	105	E G	185	105	100	100	105	100	100	100	95
9	100	s	s	s	s	135	130	E G	150	130	135	115	115	110	110	110	110	110	100	100	100	95	95
10	s	s	s	110	110	110	105	105	110	110	110	110	110	110	110	110	120	110	G	130	120	100	s
11	100	115	115	110	110	115	110	175	110	115	110	105	110	100	100	100	100	100	100	100	100	100	s
12	115	115	110	110	105	s	135	130	120	115	105	105	105	100	105	100	140	135	115	110	105	105	105
13	110	100	105	105	105	105	130	125	115	115	125	125	120	110	100	100	100	100	140	125	100	s	s
14	s	s	105	115	120	115	120	105	105	100	105	100	100	105	105	110	100	120	120	100	95	s	105
15	100	100	105	100	105	105	105	155	150	130	120	125	120	125	105	105	110	105	100	100	100	100	100
16	s	100	100	100	s	s	s	G	G	135	125	110	110	110	105	100	100	100	100	100	100	100	100
17	s	s	s	110	110	110	110	110	125	120	165	110	110	110	110	110	110	105	125	115	s	110	105
18	110	100	105	110	110	105	110	125	130	130	125	140	125	110	110	105	105	100	100	100	100	100	s
19	s	110	110	110	110	110	125	120	115	110	110	115	110	135	125	115	140	140	105	105	100	100	100
20	100	100	100	95	95	s	s	115	110	115	115	115	120	145	130	110	110	110	125	115	115	115	110
21	110	100	110	110	110	110	125	125	125	125	115	130	135	110	125	125	115	115	115	110	110	110	115
22	110	105	95	105	100	100	110	110	110	110	110	125	120	120	130	120	120	105	100	100	100	100	110
23	110	110	110	105	110	115	115	110	105	110	170	145	135	130	120	120	115	115	115	115	115	115	110
24	100	100	s	105	105	105	105	105	110	150	145	120	120	125	165	G	G	110	125	110	s	100	100
25	120	115	110	110	110	105	110	105	105	195	155	110	145	135	130	110	110	115	110	105	100	100	100
26	100	100	100	100	100	95	115	105	100	105	125	135	120	130	120	115	115	115	110	105	100	110	105
27	100	100	100	s	s	s	s	105	105	110	110	105	105	105	110	110	110	110	100	100	100	100	100
28	100	s	s	95	95	s	100	110	110	110	110	110	110	110	105	105	110	105	110	100	100	100	s
29	110	110	110	110	105	105	110	150	105	115	110	110	110	110	105	105	105	105	100	100	100	100	s
30	100	100	s	95	s	s	s	120	110	110	110	110	110	105	105	110	100	105	105	100	100	100	110
31	105	105	110	110	110	110	105	105	105	105	110	105	110	165	165	105	115	110	105	G	s	s	s
CNT	25	26	24	27	26	21	24	30	30	31	31	31	30	31	31	29	29	31	30	30	28	26	25
MED	100	100	105	105	105	105	110	119	110	115	115	110	110	110	110	110	110	110	110	105	100	100	105
UQ	110	110	110	110	110	110	125	130	120	128	125	120	125	131	125	115	115	115	115	115	110	110	110
LQ	100	100	100	100	100	105	105	105	105	110	110	108	110	110	105	105	105	105	100	100	100	100	100

JUL. 1984

H°ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 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 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	F4	F5	F4	F8	F5	F3	L2	C4	C3	HL21	HL22	L2	HL11	HL21	H3	H3	C6	C4	CL41	LL32	F6	F4	F4	F4
2	F4	FF32	F4	F4	FF32	F2	C3	C4	C1	C2	C4	C3	C4	C2	C2	HC61	HL61	C4	C4	L4	FF33	F4	F3	F4
3	F7	F3	F3	F2	F3	F5	H2	H2	C3	C1	C2	L2	L2	HL12	HL11	H2	H2	CL21	CL51	CL61	F3	FF23	F2	
4		F2	F1	F1	F2			C2	C2	C3	C2	C5		C2	C2	HL11	HL21	HL41	HCL11	CL23	FF74	FF16	F6	F5
5	F3	F2	F2	FF11	F1	F5		HL21	HL21	H5	C6	C3	C2	C2	C4	C2	C2	L2	L4	L5	F4	F3	F3	F2
6	F2	F2	F2	F4		F1	L3	HL22	C3	HC42	HC32	HC51	HC31	HC11	HC11			HL11	HL31	C3	F5		F4	F3
7	F5	FF11	F2		F1		H3	H2	C4	C1	C2	C3	C3	C2	C4	C1	C1	C4	LH21	LL73	FF33	FF32		
8	F3	F3	FF22	F2	F4			H2	CH12	C4	C1	C4	C3	HL11	L1	L4	L2	L1	L1	L1	F6	F1	F3	
9	F3	F1			F6	H2	H2	H1	H1	C5	C3	C3	C3	C3	C4	C2	C2	L3	L4	L5	F6	F2	F1	F3
10	F1			F5	F4	F5	L4	L3	C3	C2	C2	C2	C1	C1	C2	C2	C2	C4		H6	FF52	F3		F2
11	F2	FF21	F3	F2	F2	F2	L5	HC11	C1	C1	C2	C1	C2	C4	C6	C4	C3	C3	L5	L4	F1	F4	F1	F1
12	F5	F2	F4	F2	F5		H2	H2	CH11	CH11	C4	C2	C2	C3	C2	C3	HC22	HC32	CL62	CL72	F4	F5	F5	F4
13	F5	F3	F3	F4	F6	F5	L3	H3	H2	C3	C2	HC21	H2	C3	C4	C5	C5	L5	L3	H1	F1	F4		
14			F3	F2	F2	F3	H3	C6	C4	C4	C3	C3	C5	C2	C1	C1	C2	HL32	HL11	L3	F5	F1	F2	F4
15	F6	FF54	FF33	F5	F5	F4	L3	HL11	HL11	HL21	HC43	HL21	H1	H1	C1	C5	C1	L1	L6	L7	F4	F6	F2	F2
16		F2	F2	F3		F1	H1			H2	H2	C3	C3	C2	C6	C4	C6	C5	L7	L2	F3	F4	F5	
17				F2	F2	F1	L5	C2	C2	C1	H1	C2	C2	C2	C1	C1	C2	C3	CL22	C4	F1	F2	F3	F4
18	F4	F4	FF32	FF32	F3	F7	L3	H3	H2	H2	H3	H1	H2	C3	C4	C4	L3	L4	L6	L7	F7	F3	F2	F1
19		F2	F4	F3	F2	F2	C5	C6	C5	C5	C7	C3	C3	H1	H2	C3	HC12	HC22	C3	L3	F5	F4	F5	F2
20	F3	F2	F2	F4	F3	F1	L1	C2	C2	C3	C2	C1	C1	H2	HC22	C2	C3	C4	HCL22	C4	FF32	F3	FF32	F2
21	F2	F2	FF32	FF22	FF42	F2	H2	HC21	C3	C3	C1	HC11	H1	C2	H1	H2	C3	C3	C5	C4	F1	F1	F3	F2
22	F7	F4	F4	FF31	F4	F5	CL32	C6	C3	C4	C3	HC21	H3	H2	HC22	HC43	HC42	C3	L6	L4	F5	F4	F4	F7
23	F5	F3	F5	F4	F4	F1	L3	C4	L2	C2	HL11	H2	H2	H3	HC21	C4	CL42	CL34	CL64	LL64	FF45	FF35	FF23	F4
24	F2	F2	F1	F4	F7	F3	L7	L2	L2	HL11	HL21	H2	H3	H2	H1			C1	H2	L1	F1	F3	F4	F4
25	F3	F4	F3	F1	F3	F5	L3	L2	L2	HL12	HL12	LH21	HL11	H2	H2	L2	L6	L4	C5	L4	F6	F3	F4	F3
26	F3	F8	F4	F3	F3	F3	C2	C5	C4	L2	HC31	H2	HC31	HC21	HL41	C4	C3	C3	C4	L5	F3	F3	F2	F2
27	F2	F2	F2			C1	L3	L2	L2	C2	C3	C5	C4	C4	C2	C3	C3	L2	L6	L6	F5	F4	F2	F5
28	F5		F1	F2	F3	F1	L3	L2	L2	L2	L1	L3	L2	L2	C4	C3	L1	L2	L1	L3	F4	F3	F1	F1
29	F3	F2	F3	F4	F4	F5	L1	HC12	LH21	L1	L1	L1	C1	C2	C4	C4	L2	L4	L3	L2	F4	F1	F5	F1
30	F1	F2	F2	F2	F1			H1	L2	L3	L3	L2	C2	C3	C4	L3	L6	L5	L4	L5	F2	F3	FF31	F2
31	F2	F2	F1	F2	F1	F2	L5	L3	C4	C4	C2	C3	C2	HC11	HC11	C2	LH11	L1	L1					F2
	00	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																								

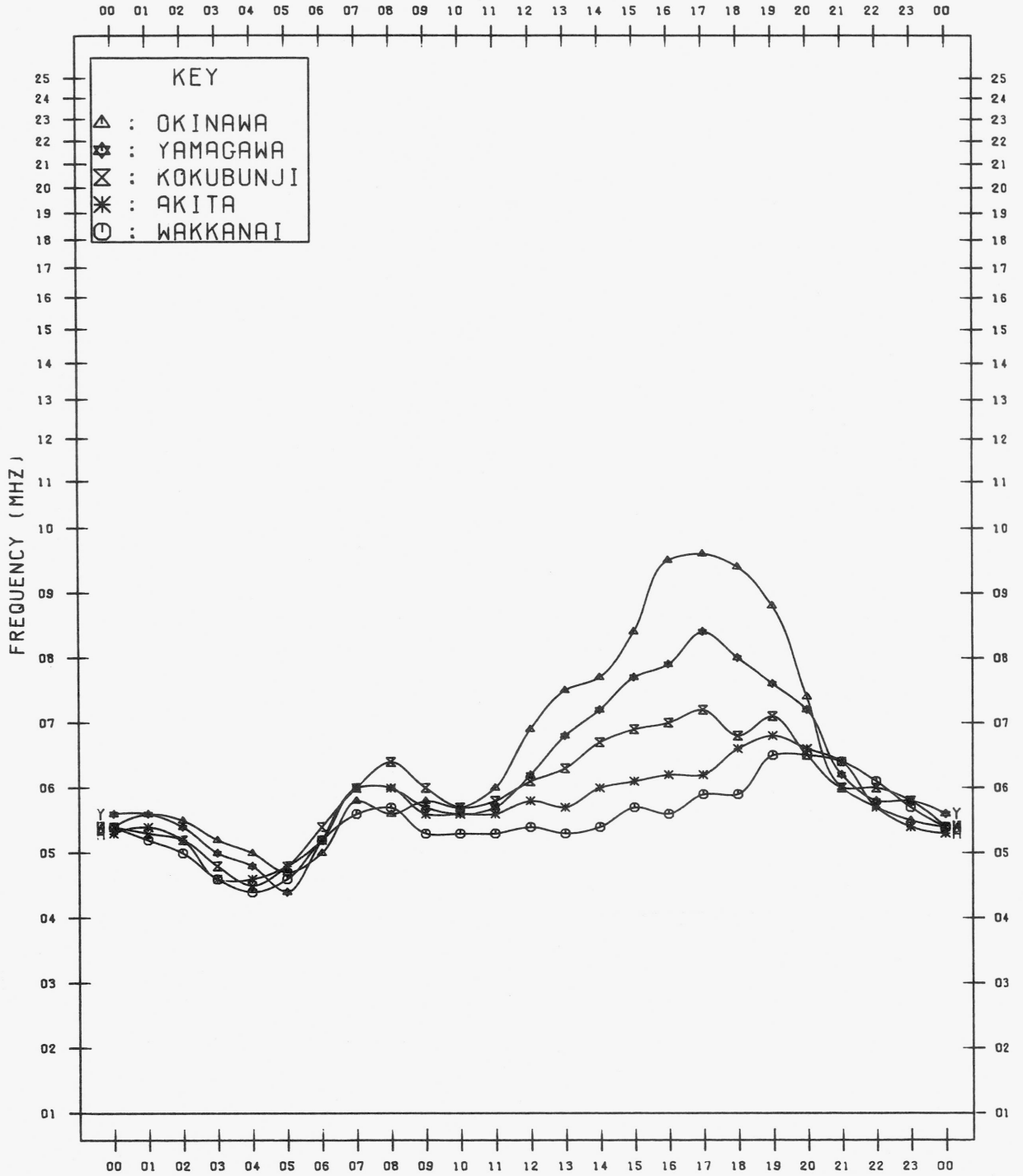
JUL. 1984

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

135°E MEAN TIME

JUL. 1984



f-PLOTS OF IONOSPHERIC DATA

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

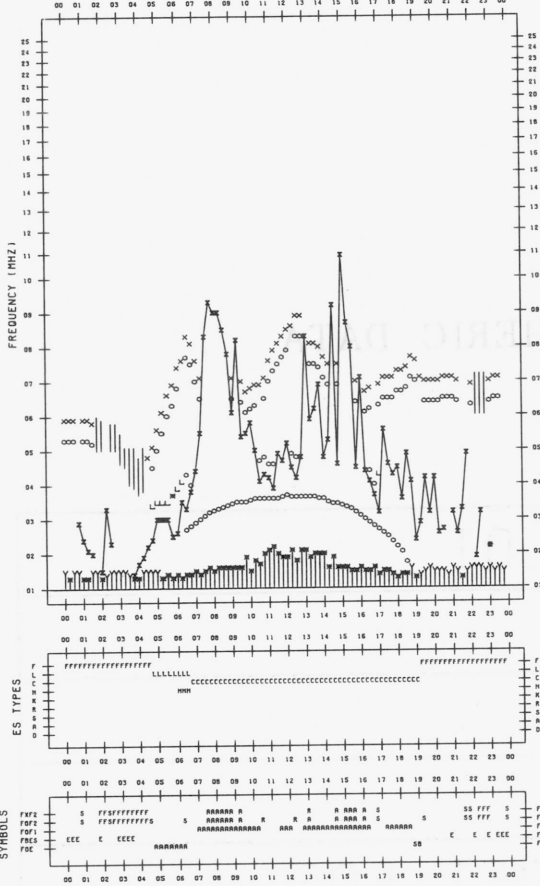
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984 / 7 / 1

135°E MEAN TIME



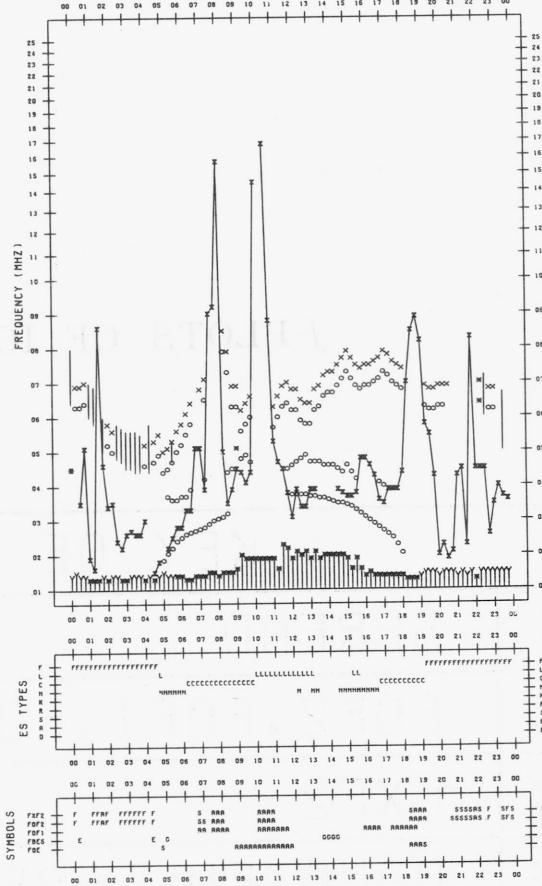
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984 / 7 / 3

135°E MEAN TIME



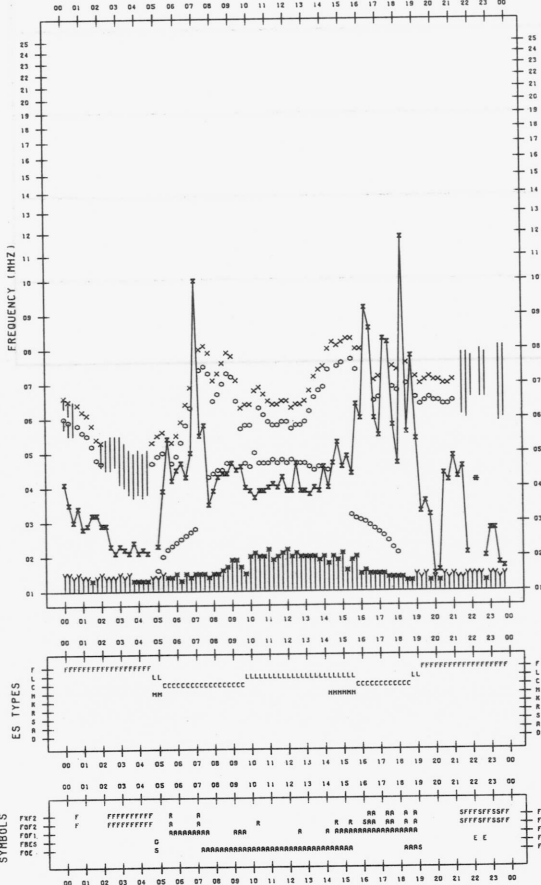
F-PLOT DATA

SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984 / 7 / 2

135°E MEAN TIME



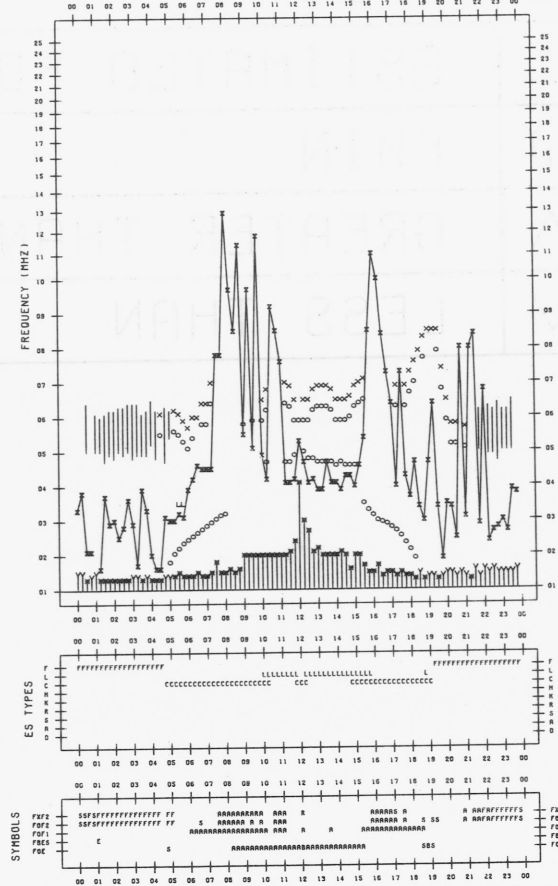
F-PLOT DATA

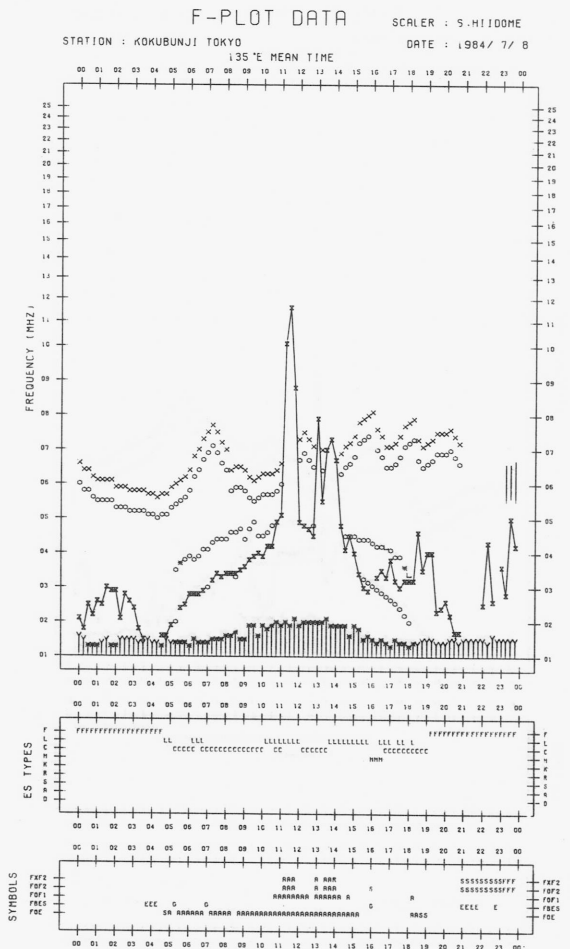
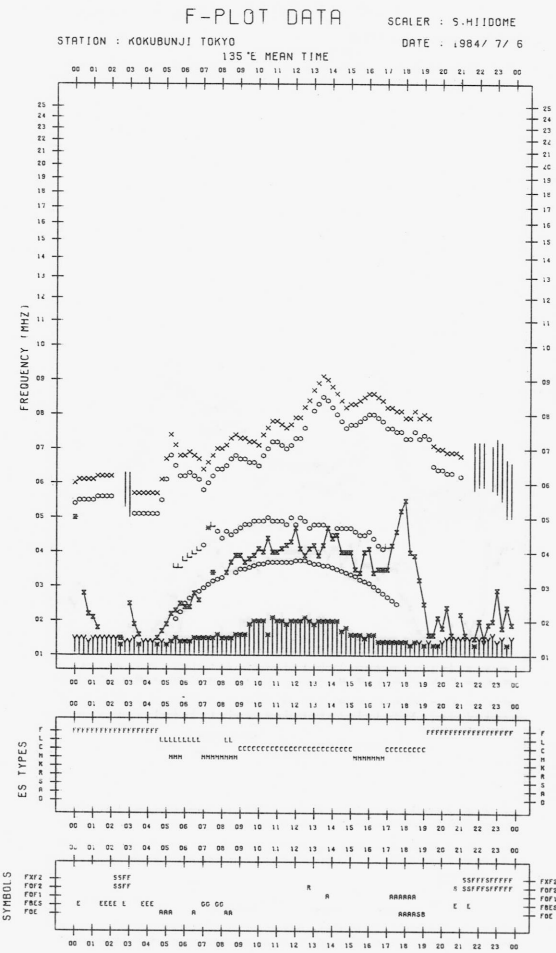
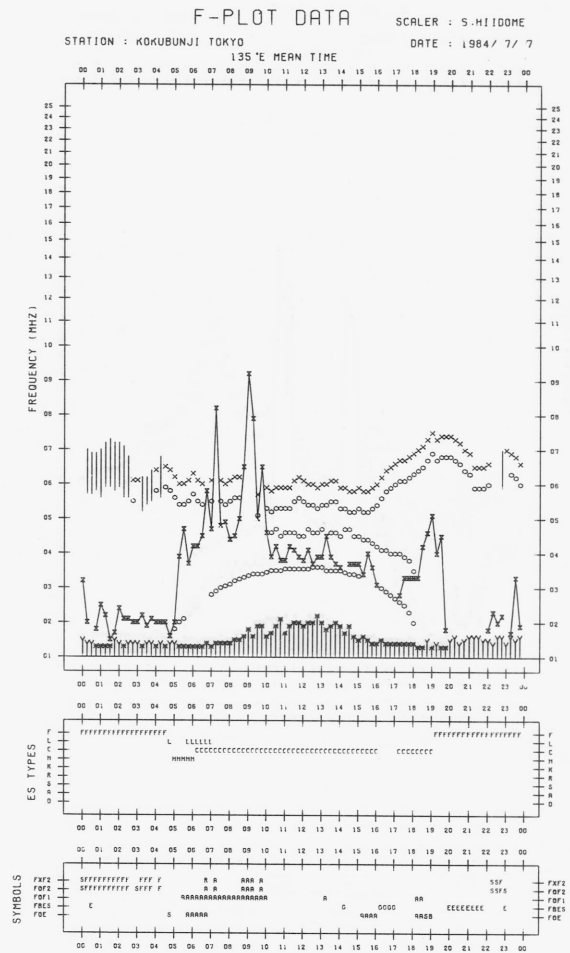
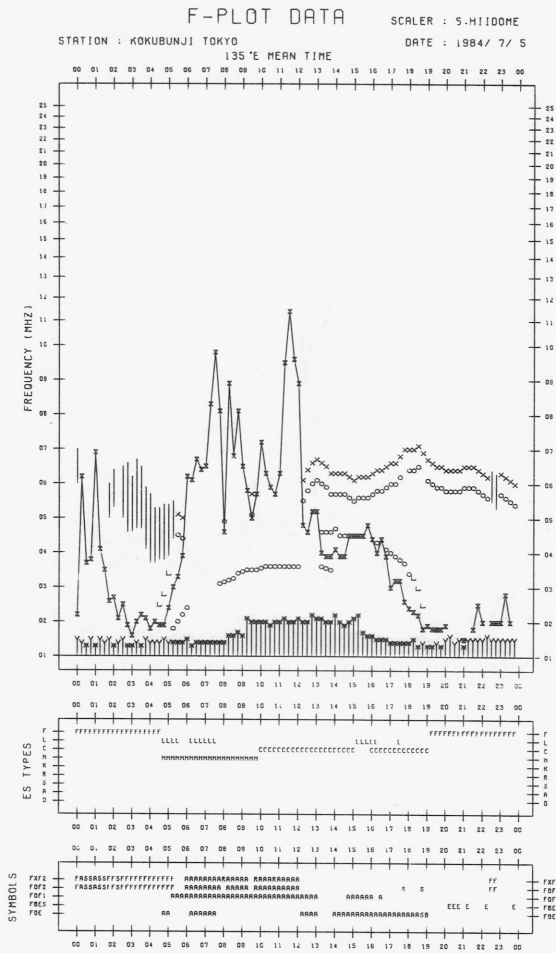
SCALER : S-HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984 / 7 / 4

135°E MEAN TIME



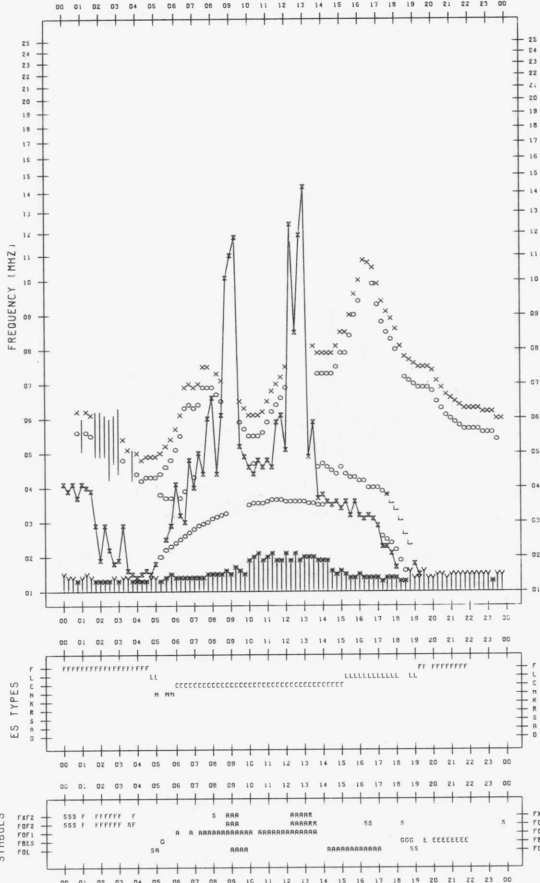


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/ 9

135°E MEAN TIME

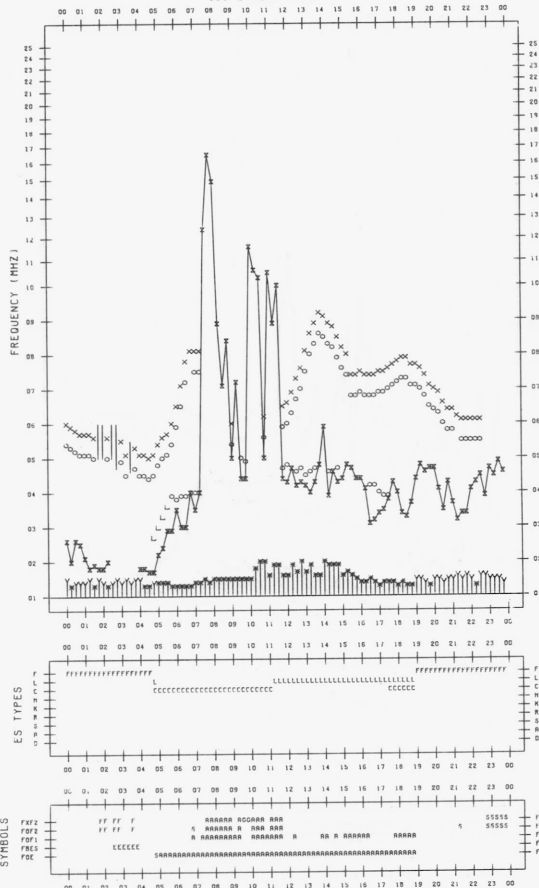


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/11

135°E MEAN TIME

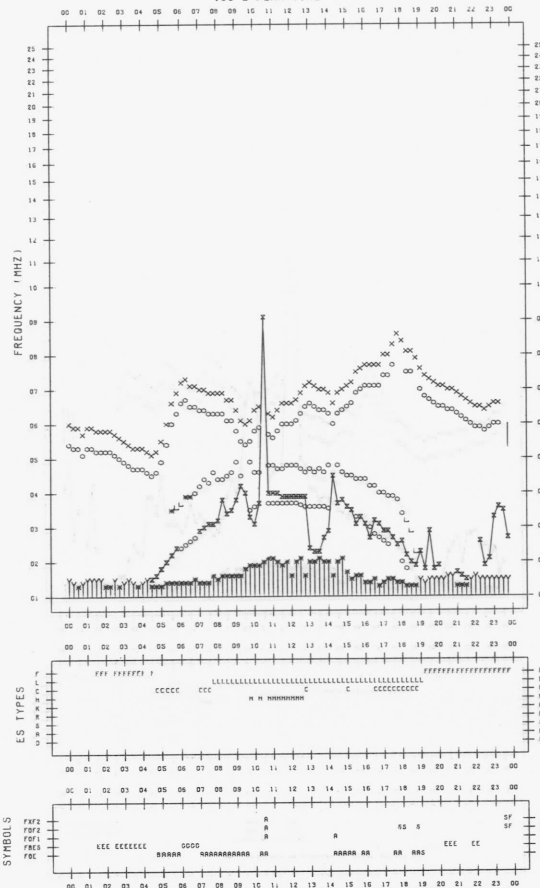


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/10

135°E MEAN TIME

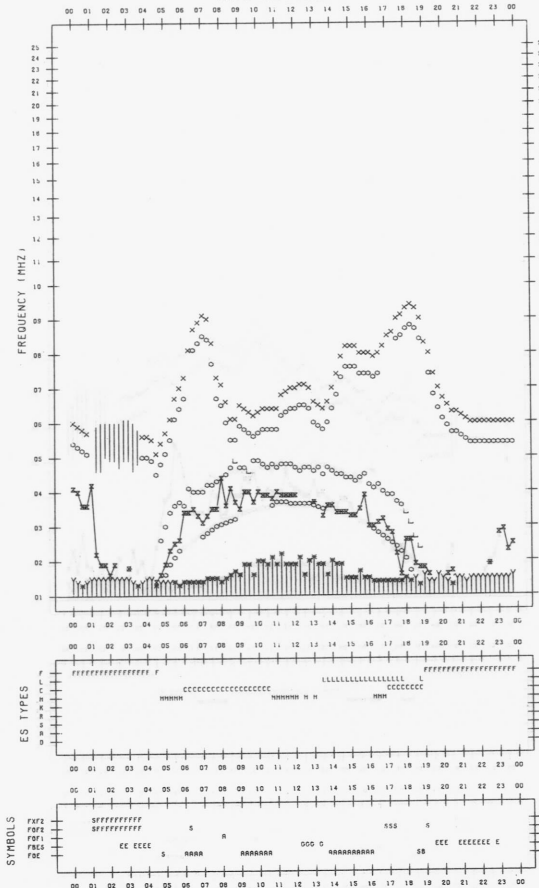


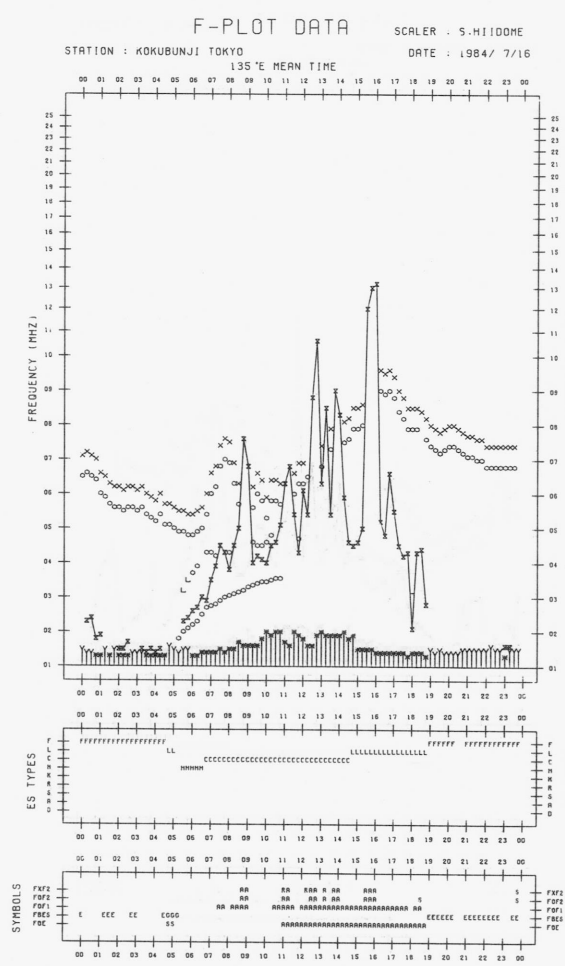
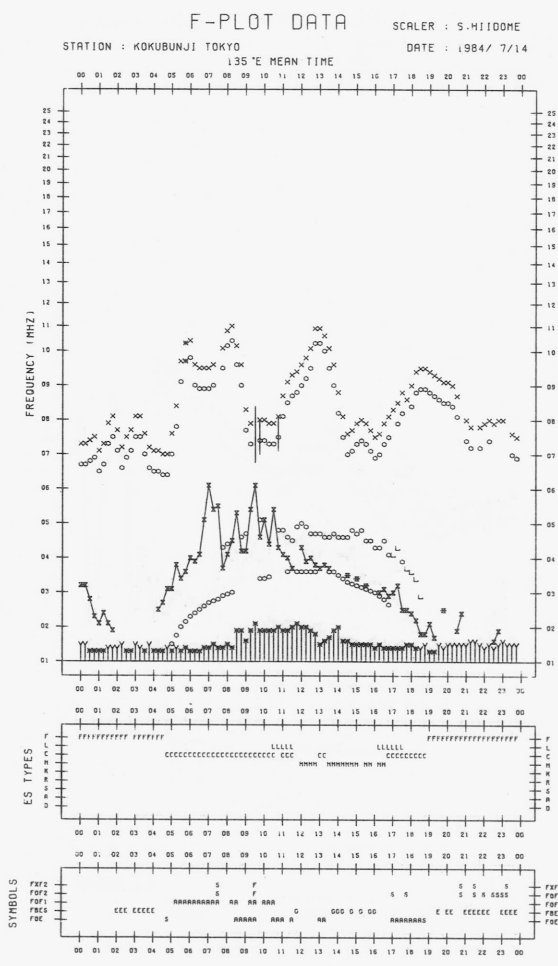
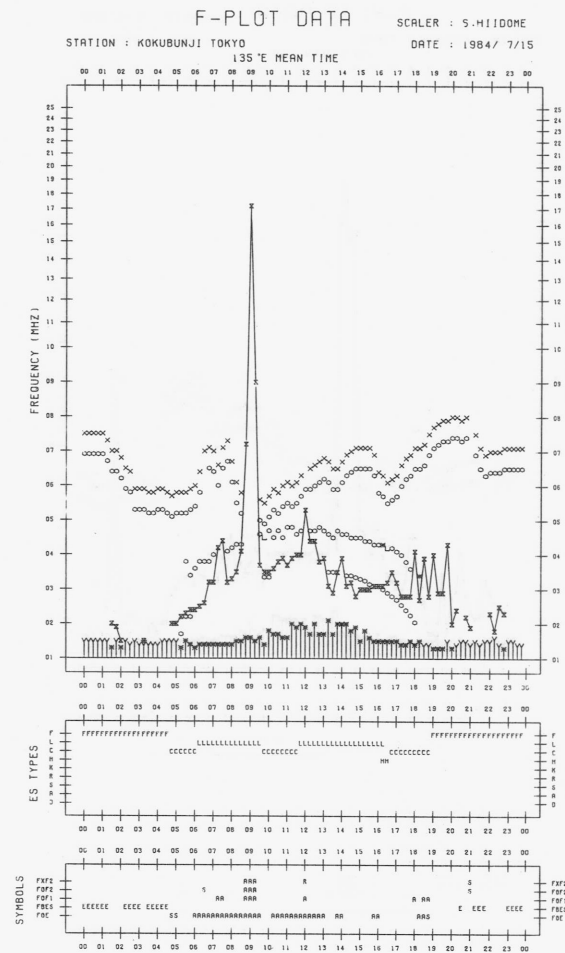
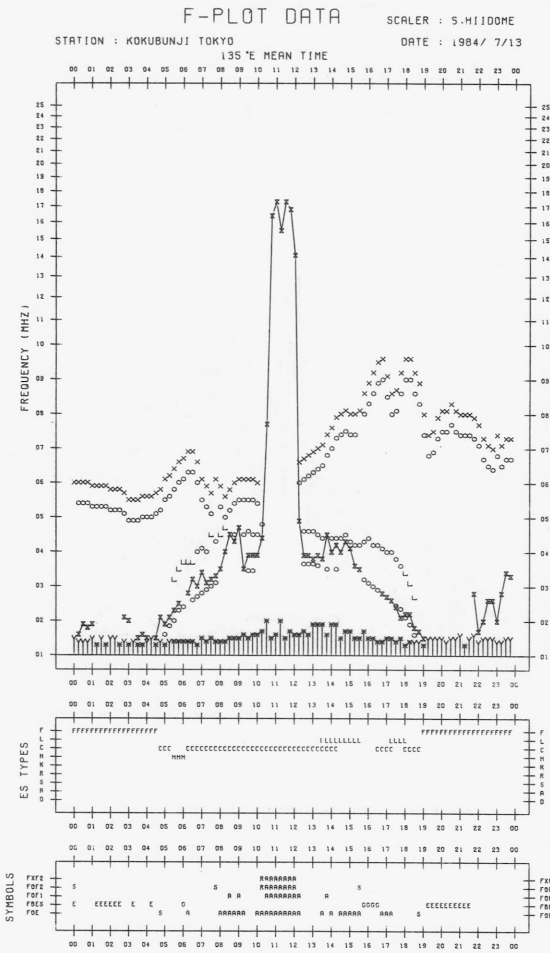
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/12

135°E MEAN TIME

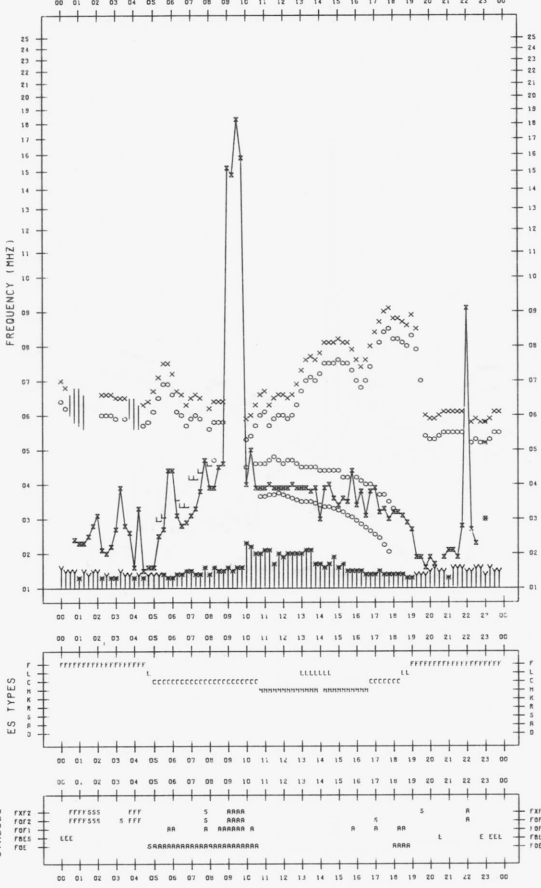




F-PLOT DATA

SCALER : S.HIIDOME

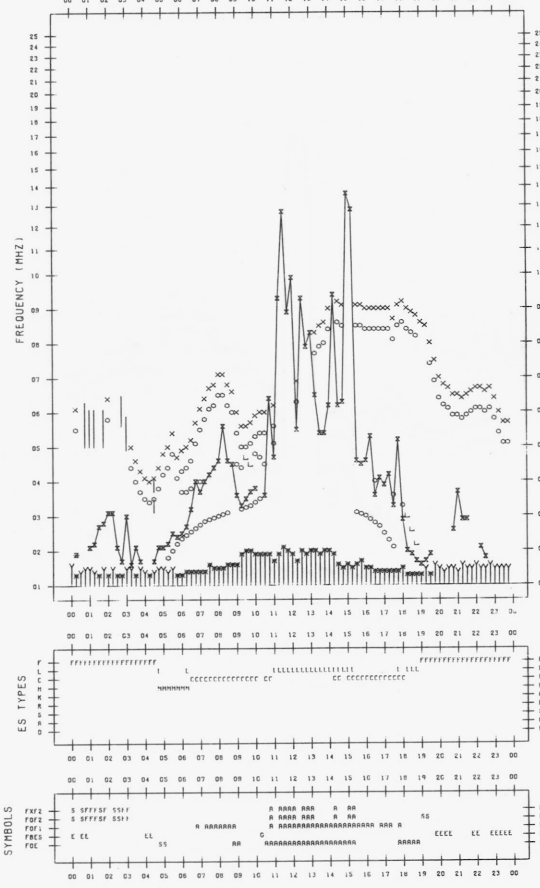
STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/17
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

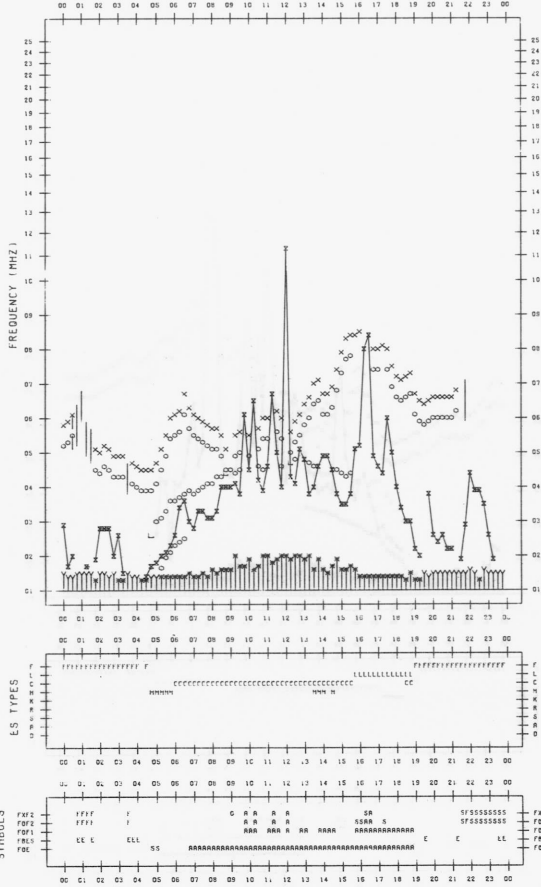
STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/19
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

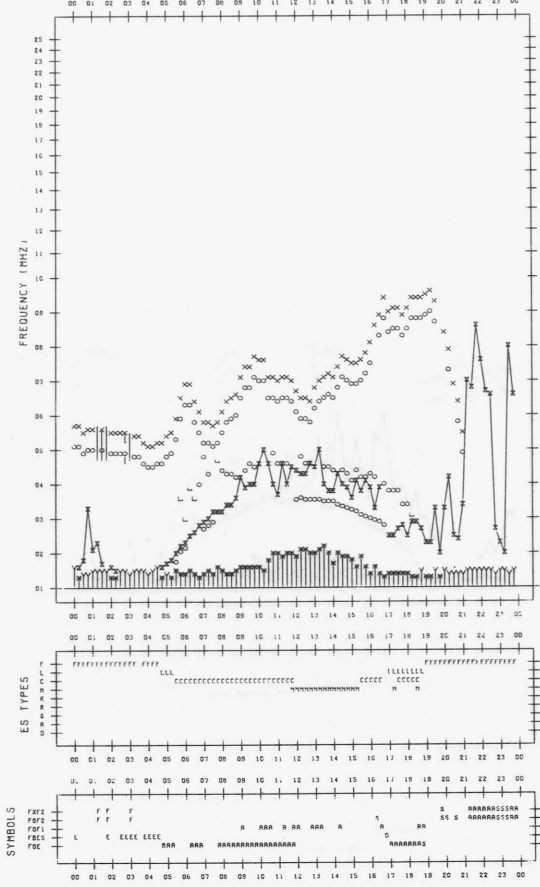
STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/18
135°E MEAN TIME

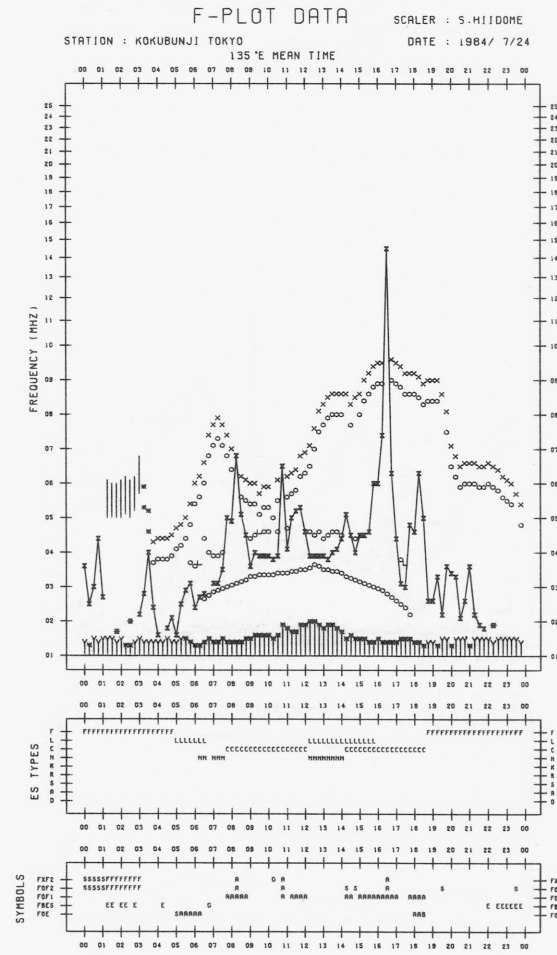
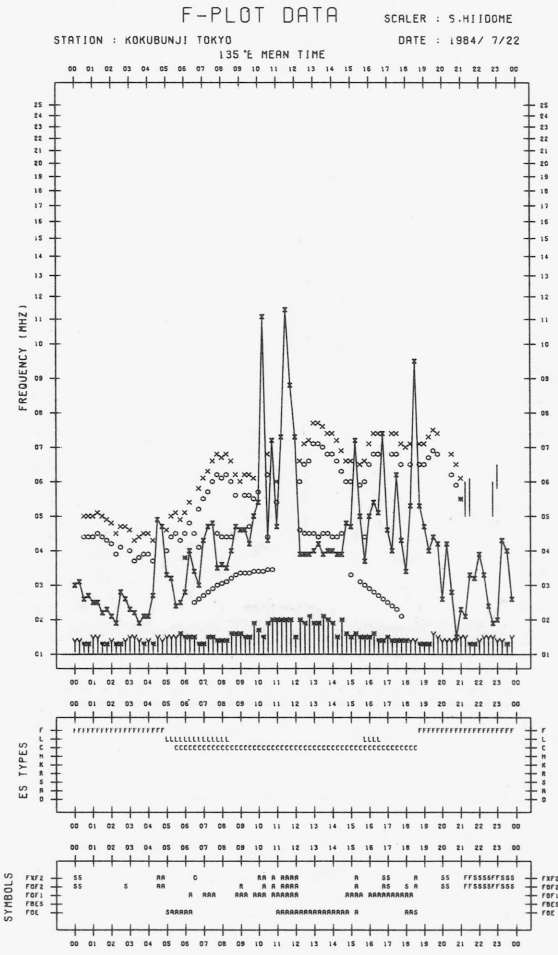
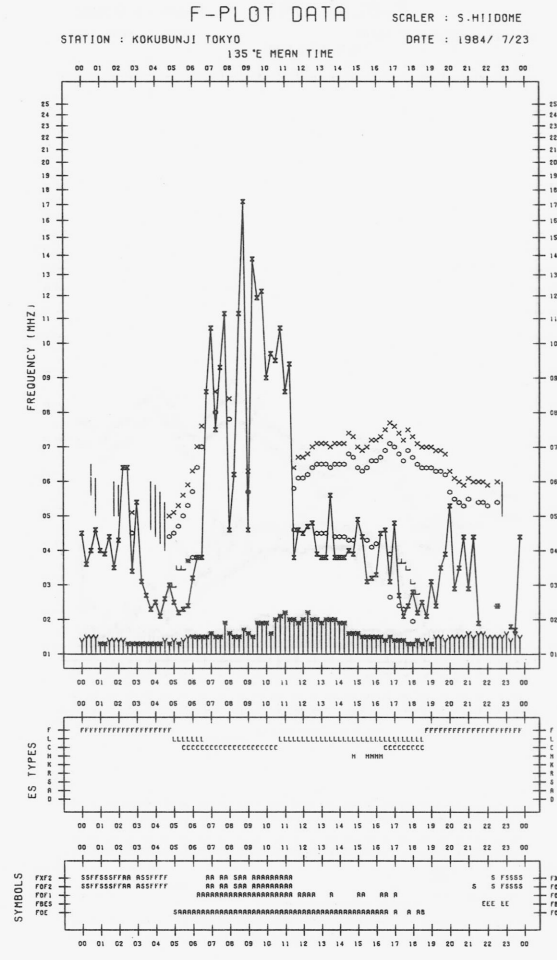
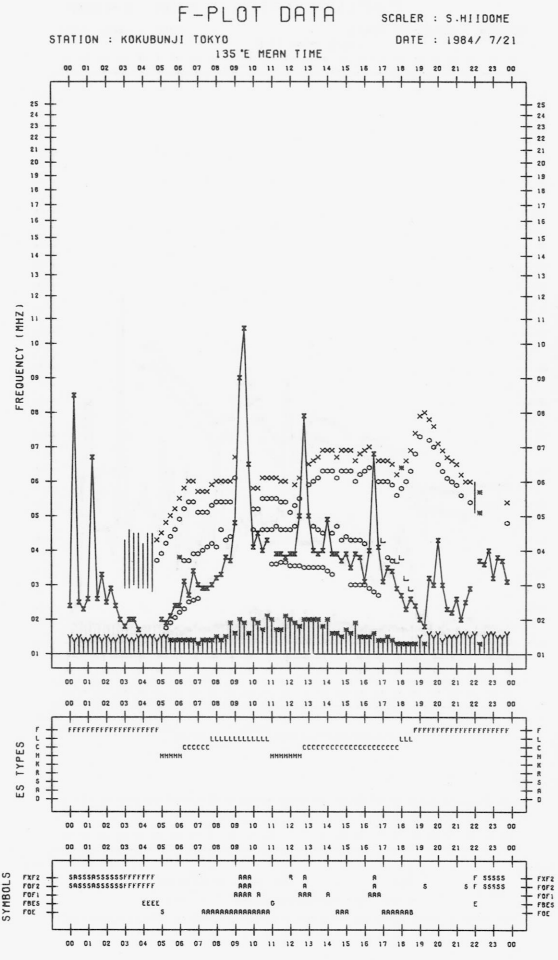


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1984/ 7/20
135°E MEAN TIME

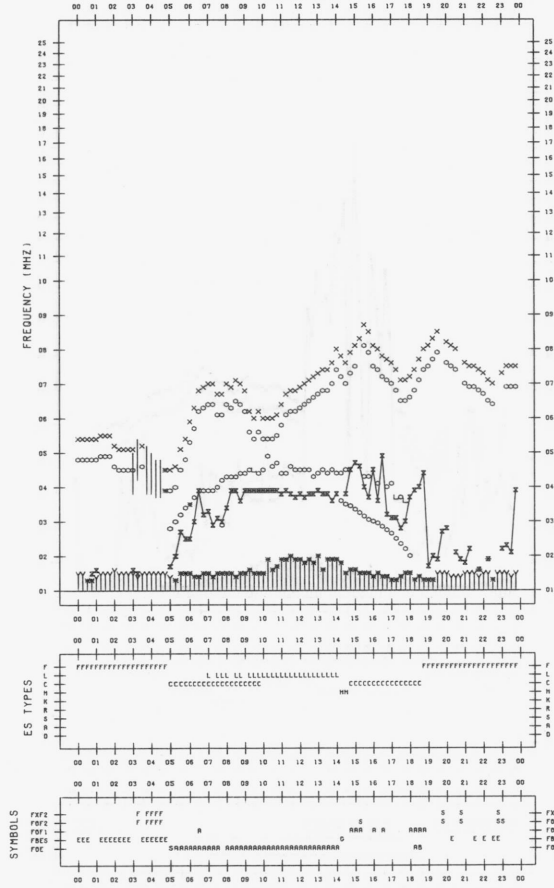




F-PLOT DATA

SCALER : S.HIIDOME

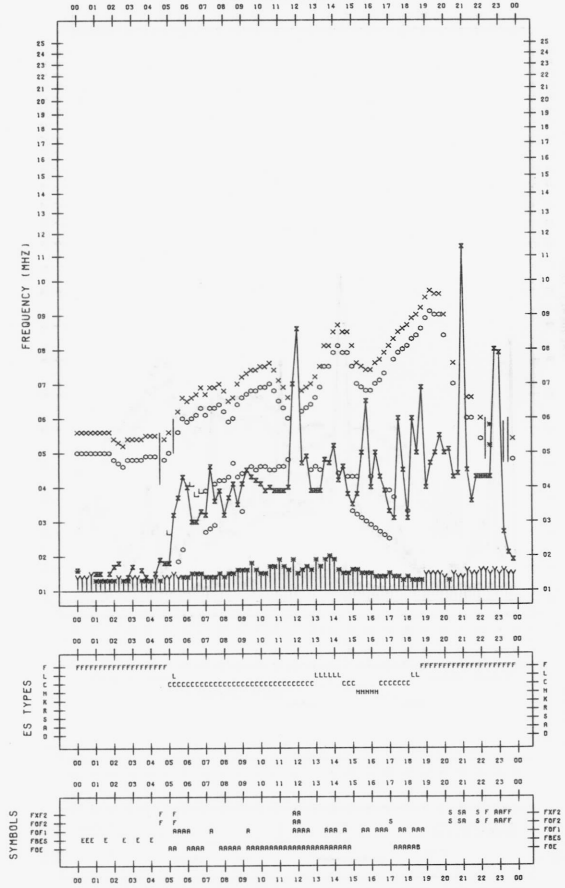
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/25



F-PLOT DATA

SCALER : S.HIIDOME

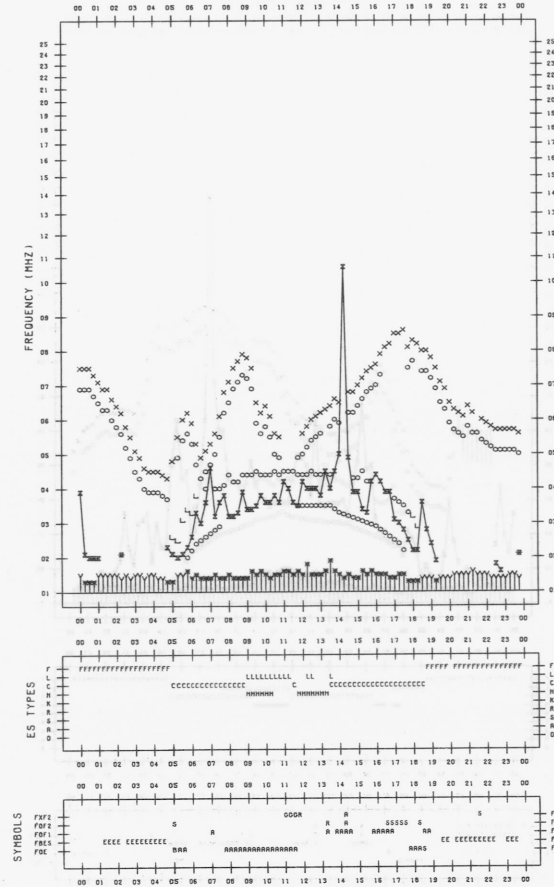
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/27



F-PLOT DATA

SCALER : S.HIIDOME

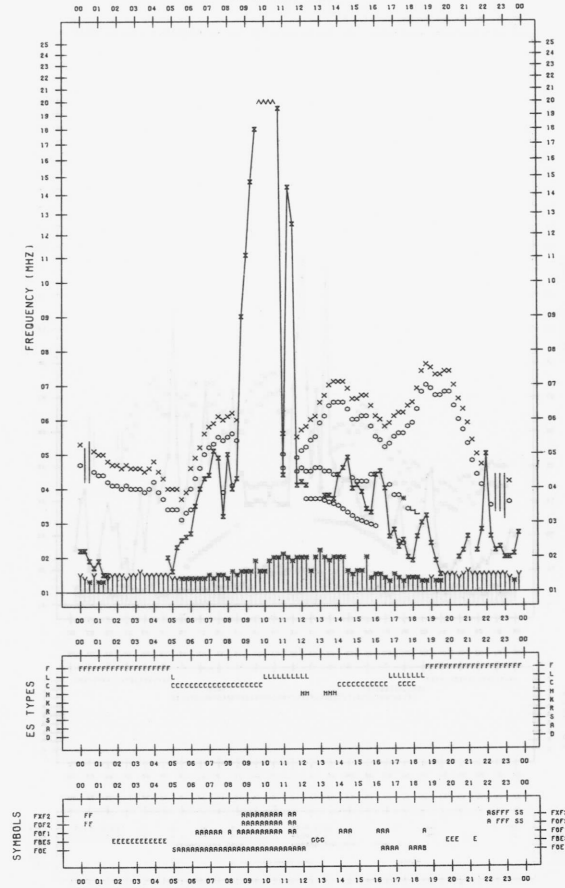
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/26



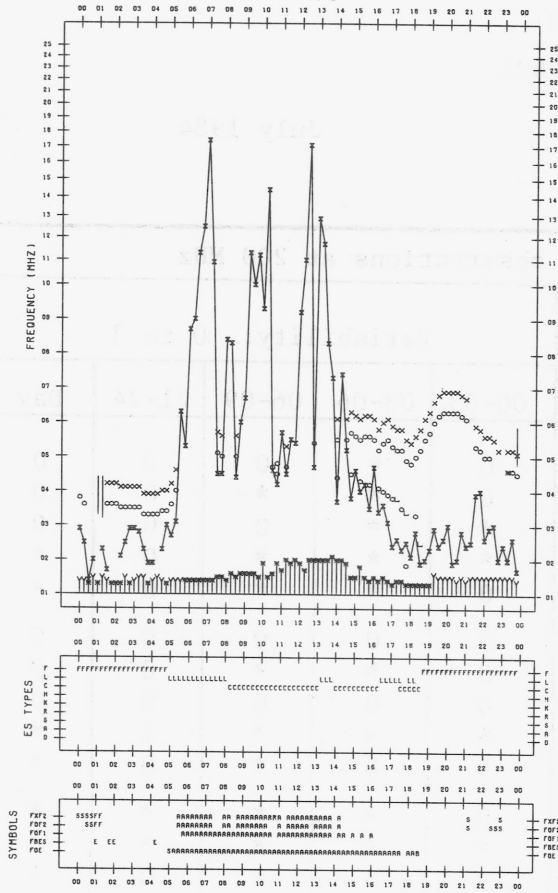
F-PLOT DATA

SCALER : S.HIIDOME

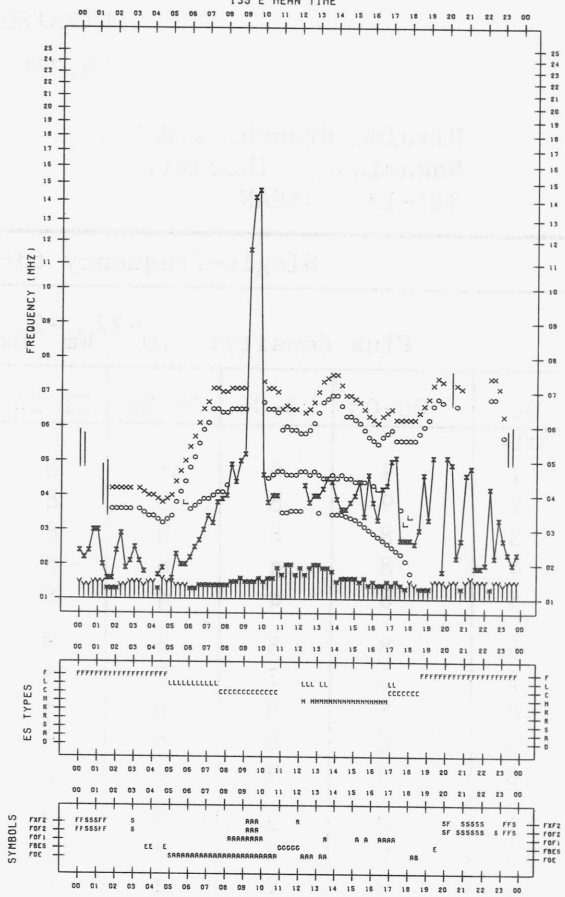
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/28



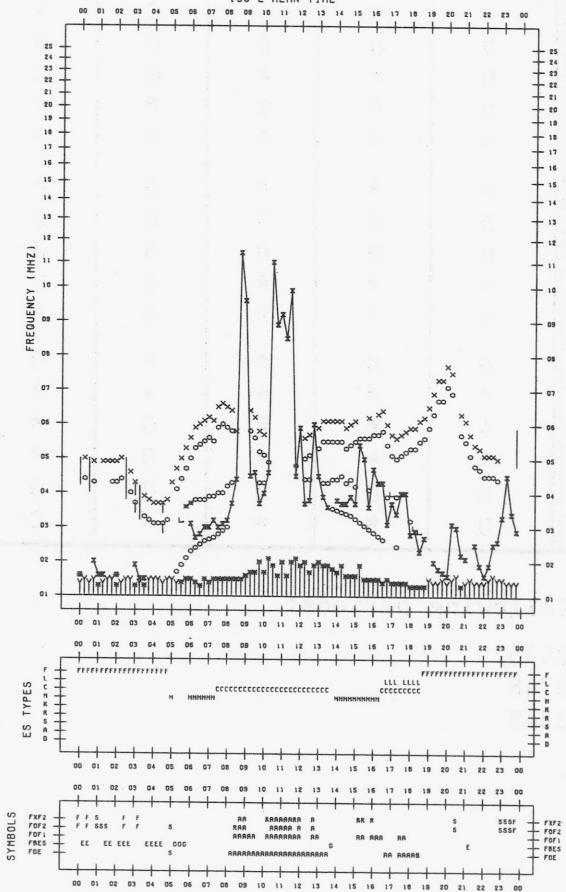
F-PLOT DATA SCALER : S.HIIDOME
 STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/29



F-PLOT DATA SCALER : S.HIIDOME
 STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/31



F-PLOT DATA SCALER : S.HIIDOME
 STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1984/ 7/30



SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

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

Note No observations during the following periods:

11th 0126 - 0455

16th 0650 - 0748

31st 1943 - 2349

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

July 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	31	31	30	31	31
2	32	32	32	32	32
3	32	32	32	32	32
4	32	33	33	32	32
5	32	32	32	32	32
6	32	32	32	31	32
7	31	31	31	31	31
8	31	31	31	31	31
9	32	32	32	34	32
10	34	34	34	33	34
11	33	34	31	31	32
12	31	31	31	31	31
13	30	31	31	(31)	31
14	30	30	30	30	30
15	30	30	30	30	30
16	30	30	30	31	30
17	31	31	30	30	31
18	30	30	29	30	30
19	30	30	30	30	30
20	30	30	29	30	30
21	30	31	31	30	30
22	30	30	29	30	30
23	30	30	30	30	30
24	30	29	29	(29)	30
25	29	29	29	29	29
26	29	29	28	29	29
27	29	29	28	29	29
28	29	29	29	29	29
29	29	29	29	30	29
30	29	29	29	30	29
31	29	29	29	30	29

Note No observations during the following periods:

9th	0507 - 0525	16th	0650 - 0745
13th	2215 - 2340	24th	1945 - 2330
16th	0120 - 0140		

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

July 1984

Outstanding Occurrences										
(single-frequency observations)										
Normal observing period: 1940 - 0955 (sunrise to sunset)										
JUL 1984	FREQ	STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS	
							PEAK	MEAN		
4	500	HIRA	46 C	0241.4	0244.6	11	128	40	WR	
					0248.4		123		MR	
	200	46 C	0242.7	0249.0	10.7	48	16	-		
7	100	46 C	46 C	2351.3	2353.3	2.1	600	175	WL	
	100	46 C	46 C	2141.7	2142.7	2.0	3000	240	WR	
	200	8 S	8 S	2142.6	2142.7	0.4	230	-	WR	
	200	46 C	46 C	2156.5	2156.6	2.1	280	35	WR	
8	100	46 C	46 C	2156.5	2156.7	2.0	1400	700	WL	
	100	46 C	46 C	0537.3	0537.3	0.7	1500	85	0	
	500	8 S	8 S	0537.3	0537.4	0.4	24	-	WR	
	200	45 C	45 C	0537.3	0537.4	0.7	475	96	WR	
	100	42 SER	42 SER	0658.9	0701.0	5.5	3600	-	WL	
	200	42 SER	42 SER	0659.4	0700.5	5.6	320	-	MR	
	500	6 S	6 S	0700.1	0701.1	2.0	11	5	WR	
9	200	43 NS	43 NS	2256	2357	78	10	6	WR	
	500	42 SER	42 SER	2320.4	2333.6	49	135	-	SR	
13	100	46 C	46 C	2149.0	2153.3	10.4	380	60	MR	
	200	46 C	46 C	2149.3	2155.7	11.0	130	24	WR	
14	200	46 C	46 C	0101.0	0103.1	4.0	29	8	WR	
				0532.6	0532.6	2.6	6	3	WR	
	100	46 C	46 C	0629.8	0631.9	7.3	250	95	WR	
	200	46 C	46 C	0630.0	0635.3	7.6	210	37	WR	
	200	46 C	46 C	0914.8	0916.3	7.7	230	42	WR	
	17	500	45 C	45 C	0056.6	0059.1	13	110	20	WR
		200	41 F	41 F	0056.8	0100	13	110	-	0
100		46 C	46 C	0057.0	0104.0	12.0	120	34	0	
29	500	45 C	45 C	0111.4	0115.6	5.0	8	2	WR	
	100	46 C	46 C	0120.0	0120.8	1.7	240	27	WR	
	200	8 S	8 S	0120.7	0120.8	0.5	95	-	0	
	200	46 C	46 C	0133.0	0139.3	13	11	3	WR	
	500	8 S	8 S	0631.6	0631.7	0.7	15	-	0	
	500	8 S	8 S	0634.0	0634.3	0.6	7	-	0	

Note: No observations during the following periods:
 1940 - 0955
 1942 - 1943
 1944 - 1945
 1946 - 1947
 1948 - 1949

RADIO PRAPAGATION

RADIO PROPAGATION QUALITY FIGURES

No reliable data are available because of receiver trouble
 during July 1 through July 31

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO

Time in U.T.

Jul. 1984	S W F								Correspondence		
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
CO	HA	1)	2)								
4			27	21	0243	57	G	2	x	x	
17	x		<u>18</u>	15	0058	34	SL	1+	x	x	

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

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Jul. 1984	S P A					Time (U.T.)		
	Phase Advance (degrees)							
Date	GBR	Ω /LR	NWC	Ω /H	Ω /ND	Start	End	Maximum
4	47	—	<u>88</u>	53	46	0242	0439	0300
10		8				0640	0716	0650
17		30	<u>55</u>	33	31	0057	0235	0112

IONOSPHERIC DATA IN JAPAN FOR JULY 1984

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☎ (0423) (21) 1 2 1 1 (代)

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2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184 JAPAN.