

IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 1984

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INTRODUCTION

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

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

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

A. IONOSPHERE

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

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

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

a. Characteristics of Ionosphere

$f_x I$	Top frequency of spread F trace
$f_o F_2$	Ordinary wave critical frequency
$f_o F_1$	for the F_2 , F_1 , E and E_s including particle
$f_o E$	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
$M(3000)F_2$	Maximum usable frequency factor
$M(3000)F_1$	for a path of 3000 km for transmission by F_2 and F_1 layers respectively
$h'F_2$	Minimum virtual height on the ordinary wave for the F_2 , whole F , E and E_s layers respectively
$h'F$	
$h'E$	
$h'E_s$	
Types of E_s	See below A. b. (iii)

b. Symbols

(i) Descriptive Letters

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

A	Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example E_s .
B	Measurement influenced by, or impossible because of, absorption in the vicinity of f_{min} .
C	Measurement influenced by, or impossible because of, any non-ionospheric reason.
D	Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.
E	Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.
F	Measurement influenced by, or impossible because of, the presence of spread echoes.
G	Measurement influenced or impossible because the ionization density of the layer is too small to enable it to be made accurately.
H	Measurement influenced by, or impossible because of, the presence of a stratification.
K	Presence of particle E layer.
L	Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.
M	Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.
N	Conditions are such that the measurement cannot be interpreted.
O	Measurement refers to the ordinary component.
P	Man-made perturbation of parameters-Presence of polar spure traces.

Q	Range spread present.
R	Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S	Measurement influenced by, or impossible because of, interference or 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 *fmin*.

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

k The designation k is used to show the presence of particle *E*. When $f_oE_s > f_oE$ (particle *E*) the *Es* type precedes k.

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

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

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

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

B. SOLAR RADIO EMISSION

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

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

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

a. Daily Data

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

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

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

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

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

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

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

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

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

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

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

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

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

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

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

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

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

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

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

b. Radio Propagation Quality Figures

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

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

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

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

C	artificial accident,
S	propagational accident,
U	inaccurate.

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

N	normal,
U	unstable,
W	disturbed

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

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

c. Sudden Ionospheric Disturbances

(i) SWF

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

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

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

Types of fade-out are as follows:

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

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

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

(ii) SPA

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

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

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

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

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

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

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

IONOSPHERIC DATA

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FXI (0.1 MHz)

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

Station	WAKKANAI				Lat. 45 23.5 N, Long. 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 39	X 41	X 41	X 42	X 42	X 43	X 41											X 67	X 63	X 59	X 59	X 56	X 45	X 47
2	X 42	A	X 41	X 40	X 40	A	X 42											X 45	X 46	X 45	A	A	A	X 43
3	X 41	X 40	X 41	X 40	X 40	X 42	X 39											A	X 43	X 46	X 50	X 44	X 42	X 46
4	X 41	X 44	X 44	X 45	X 42	X 38	X 38											A	X 45	X 47	X 45	X 37	X 40	X 41
5	X 39	X 40	X 43	X 45	X 44	X 42	X 43											X 53	X 45	X 38	X 46	X 45	X 45	X 50
6	X 50	X 50	X 61	X 58	X 54	X 45	X 45											X 42	X 45	X 46	X 42	X 41	X 45	X 43
7	X 43	X 42	X 42	X 43	X 40	X 46	X 40											X 53	X 40	X 40	X 39	X 42	X 43	X 47
8	X 44	X 46	X 50	X 45	X 46	X 39	X 41											X 69	X 44	X 41	X 43	X 42	X 45	X 44
9	X 45	X 46	X 43	X 44	X 47	X 42	X 38											X 45	X 45	X 42	X 40	X 38	X 37	X 40
10	X 39	X 39	X 41	X 41	X 41	X 42	X 39											X 45	X 35	X 40	X 39	X 38	X 41	X 42
11	X 42	X 42	X 44	X 41	X 32	X 35	X 45											X 55	X 38	X 35	X 40	X 40	X 43	X 42
12	X 42	X 42	X 47	X 42	X 40	X 40	X 36											X 45	X 43	X 34	X 31	X 34	X 37	X 39
13	X 37	X 38	X 38	X 37	X 40	X 33	X 35											X 39	X 39	X 40	X 47	X 43	X 43	X 48
14	X 45	X 44	X 41	X 40	X 39	X 38	X 39											A	X 35	X 40	X 50	X 51	A	X 44
15	X 48	X 54	X 51	X 43	X 43	X 42	X 43											A	A	X 37	X 39	X 37	X 36	S
16	X 39	X 39	X 28	X 32	X 31	A	X 31											X 57	X 45	X 47	X 58	X 57	X 45	X 37
17	X 38	X 50	X 51	X 51	X 45	X 43	X 43											X 52	X 42	A	A	X 35	X 40	X 42
18	X 41	X 42	X 42	X 39	X 35	X 32	A											X 41	X 35	X 39	X 38	A	X 35	X 37
19	X 32	X 35	X 35	X 36	X 40	X 40	X 37											X 32	X 34	X 39	X 38	X 36	X 40	X 41
20	X 48	X 50	X 41	X 38	X 38	X 39	X 38											X 43	X 38	X 43	X 42	X 41	X 44	X 45
21	X 44	X 47	X 44	X 48	X 44	X 42	X 38											X 46	X 39	X 39	X 40	X 39	X 43	X 46
22	X 48	X 48	X 47	X 43	X 43	X 48	X 43											X 51	X 41	X 46	X 47	X 47	X 47	X 46
23	X 48	X 48	X 46	X 43	X 41	X 39	X 39											X 37	X 32	X 40	X 43	X 33	X 40	X 41
24	X 41	X 38	X 38	X 41	X 38	X 39	X 39											X 41	X 39	X 34	X 39	X 37	X 37	X 40
25	X 42	X 42	X 40	X 41	X 41	X 42	X 32											X 46	X 37	X 39	X 39	X 38	X 37	X 40
26	X 39	X 43	X 43	X 43	X 40	X 41	X 34											X 42	X 31	X 37	X 45	X 35	X 41	X 42
27	X 44	X 50	X 48	X 47	X 44	X 43	X 38											X 39	X 38	X 40	X 39	X 32	X 34	X 38
28	X 39	X 42	X 44	X 41	X 39	X 35	X 38											X 38	X 32	X 34	X 36	X 36	X 39	X 39
29	X 39	X 39	X 39	X 39	X 38	X 35	X 34											X 37	X 33	X 36	X 39	X 37	X 36	X 36
30	A	X 36	X 39	X 38	X 38	X 38	X 35											X 84	A	X 30	X 33	X 38	X 41	X 41
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	28	29											26	28	29	28	28	28	29
MED	X 42	X 42	X 42	X 42	X 40	X 40	X 39											X 45	X 39	X 40	X 40	X 38	X 41	X 42
UQ	X 44	X 47	X 46	X 44	X 43	X 42	X 41											X 53	X 44	X 43	X 46	X 42	X 44	X 45
LQ	X 39	X 40	X 41	X 40	X 39	X 38	X 37											X 41	X 35	X 37	X 39	X 36	X 37	X 40

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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. + 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	32	34	34	35	35	36	34	51	57	66	67	H 87	74	63	57	67	63	60	56	52	52	49	38	40
2	35	A	34	33	33	A	35	63	85	75	81	73	66	68	H 62	62	56	38	39	38	A	A	A	36
3	34	33	34	33	33	35	32	49	60	71	67	69	79	71	63	65	55	A	36	39	43	37	35	39
4	34	F	F	38	35	31	31	57	77	82	75	84	73	64	64	64	51	A	38	40	38	30	33	34
5	32	33	36	38	37	35	36	52	71	72	68	79	78	62	64	67	66	46	38	31	39	38	38	43
6	43	43	54	S 51	S 47	38	38	53	68	76	71	71	73	64	63	55	53	35	38	39	35	34	38	36
7	36	35	35	36	33	39	33	55	56	67	75	74	81	68	63	59	59	46	33	33	32	35	36	40
8	37	39	43	38	39	32	34	48	62	68	72	69	82	74	58	65	58	62	37	34	36	35	38	37
9	38	39	36	37	40	35	31	46	55	H 68	79	76	76	64	62	55	53	38	38	35	33	31	30	33
10	32	32	34	34	34	35	32	56	60	63	62	70	82	71	56	54	51	38	28	33	32	31	34	35
11	35	35	37	34	25	28	38	52	63	67	68	87	64	59	68	65	55	48	31	28	33	33	36	35
12	35	35	40	35	33	33	29	53	73	83	79	73	66	56	63	60	53	38	36	27	24	27	30	32
13	30	31	31	30	33	26	28	54	64	63	63	79	68	60	58	59	46	32	32	33	40	36	36	41
14	38	37	34	33	32	31	32	53	H 68	64	73	81	63	70	71	67	60	A	28	33	43	44	A	37
15	41	F 41	44	36	36	35	36	59	69	H 67	73	73	64	68	70	74	60	A	A	30	32	30	29	I S 31
16	32	32	F 21	F 25	24	A	24	50	51	52	H 49	73	65	79	H 72	66	71	50	38	40	51	50	38	30
17	31	43	44	44	38	36	36	52	60	68	83	73	H 74	68	70	69	58	45	35	A	A	28	33	35
18	34	35	35	F	F 28	25	A	38	51	52	67	66	57	56	55	52	41	34	28	32	31	A	28	30
19	25	28	28	29	F	33	30	45	51	54	65	65	60	61	54	55	50	25	F 27	32	31	F	F	34
20	F	F	34	31	31	32	31	45	61	67	75	76	61	59	61	55	49	36	31	36	35	F	37	38
21	37	40	37	41	37	35	31	51	H 63	64	81	84	65	65	65	54	45	39	32	32	33	32	36	39
22	F	41	40	F 36	36	41	36	54	71	73	73	77	79	64	72	63	44	44	34	39	40	40	40	39
23	41	S 41	39	36	34	32	32	52	66	64	68	84	78	68	65	54	45	30	25	33	36	26	F	F 34
24	F	31	31	34	31	32	32	53	69	79	68	71	71	62	57	I C 52	39	34	32	27	32	30	30	33
25	35	S 35	33	34	34	35	25	41	56	61	67	70	63	78	66	60	50	39	30	32	32	31	30	33
26	32	36	36	36	33	34	27	44	60	68	71	70	62	60	61	60	44	35	24	30	38	28	34	35
27	37	43	41	40	37	36	31	44	56	56	63	72	64	H 69	56	H 55	44	32	31	33	32	25	27	31
28	32	35	37	34	32	28	31	47	57	69	64	65	61	60	57	52	S 41	31	25	27	29	29	32	32
29	32	32	32	32	31	28	27	46	H 53	56	60	68	63	60	60	51	39	30	26	29	32	30	29	29
30	A	29	32	31	31	31	28	44	H 60	64	74	74	66	59	60	67	66	77	A	23	26	31	34	34
31																								
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	26	27	29	29	29	28	29	30	30	30	30	30	30	30	30	30	30	26	28	29	28	26	26	30
MED	34	35	35	35	33	34	32	52	60	67	70	73	66	64	62	60	52	38	32	33	33	31	34	35
UQ	37	40	39	37	36	35	34	53	68	71	75	79	76	68	65	65	58	46	38	36	38	36	37	38
LQ	32	32	34	33	32	31	30	46	56	63	67	70	63	60	58	55	45	34	28	30	32	30	30	33

NOV. 1984

FOF2 (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

NOV. 1984

FOF1 (0.01 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										L	L													
2										410	380													
3											L	L												
4												L	L											
5										370	370	L	H											
6												L	H											
7												L	L											
8													L	L										
9												L												
10												L	L											
11											L		L											
12										400			L											
13													L	L										
14													L	A	L									
15													A	A										
16													L	L		A								
17												A	L											
18											L	L	L	L	L									
19										390	390	390	370	350										
20											A	L	L	L	L									
21											L	L												
22											360	370												
23												L	L											
24											380	L	L	L										
25																								
26											L	L												
27											420	370												
28												L	L											
29													L	L										
30													L	L										
31													L	L										
CNT											3	7	13	11	3									
MED											L	L	L	L	L									
UQ											L	L	L	L	L									
LQ											L	L	L	L	L									

NOV. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

NOV. 1984

FOE (0.01 MHz)

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

Station	WAKKANAI				Lat. 45 23.5 N	Long. 141 41.2 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	220	260	275	280		A	280	255	220							S
2								A	220		A	270		A	290		A	245	195					S
3								175	230	240	260	280		275		A		A	205					S
4								160	220	250	265		A	280		A		A	205					S
5								160	215	250	270	285		285	275	245	210							S
6								170	210	245	265	280		280		A	240	210						S
7								A	A	255	270	285		280	255	230	205							S
8								195	225	255	270	275		280	265	245	205							S
9								A	230	250	265	280		275		A	235	205						A
10								A	215		A	270	280		280	270	245	205						S
11								S	A	A	A	275		280	265		A	200						A
12								S	A	A	A	A		A	255	235		A	A					A
13								S	210		A	A	A		A	260		A	A	A				A
14								160	215	235	255		A	A	A		235		A	A				A
15								170	215	255	275	280		A	A	A	200							E
16								A	A	A	245	260		A	240		A	A	S					S
17			E					S	A	A	A	245		A	A	A	A	A						A
18								175	205	225	250	260		260		A	A	A	S					S
19								S	210	240		A	270		260	245		C	A	S				S
20								S	210	240		H	A	A		A	A	A	S					S
21								S	215	240		A	A		270		A	220	A					A
22								A	A	A	A	A		270	255	230	185							A
23								S	A	250	255	270		275	255	225	170							S
24								S	A	245	260	270		265		A	230		C	S				S
25								S	A	A	A	265		265		A	225	190						S
26								S	215	235	250	270		275	255	230	190							S
27								S	210		A	A	270		270	250		A	A	A				A
28								S	210		A	A	270		A	245		A	A	A				A
29								S	200	235	260	265		265	255	230	180							E
30								S	195	230	250	H	255		255	250	220		C	S				S
31																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT			1					8	21	19	19	22		21	17	18	17							2
MED			E					170	215	245	265	270		275	255	232	205							E
UQ								175	220	250	270	280		280	265	245	205							
LQ								160	210	238	255	265		265	250	230	190							

NOV. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

NOV. 1984

FOES (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	36	22	30	E S 16	E	E S 16	36	21	G	40	G 26	G	50	34	G	G	20	E S 16	31	E S 16	E S 16	40	32	24																												
2	31	42	40	27	35	J A 69	43	31	57	48	G	37	G	38	26	43	38	J A 64	42	34	J A 88	J A 56	J A 51	42																												
3	26	22	23	24	E	E S 11	E S 16	G	G	53	G	G	27	33	27	G	E S 17	51	39	34	33	32	26	25																												
4	25	21	E S 16	E	24	E S 16	E S 16	21	G	G	G	38	G	38	43	G	21	J A 94	J A 75	J A 49	34	24	E S 16	E S 16																												
5	E S 16	20	E S 13	E	E	E	E S 16	G	G	G	G	G	G	G	G	G	E S 16	28	E S 16	25	32	27	25	29																												
6	27	22	22	25	E S 16	E S 16	E S 16	G	G	G	31	33	G	30	G 21	G	E S 18	31	41	28	38	32	22	30																												
7	E S 16	24	E S 16	E S 15	E S 16	E S 12	E S 12	35	25	G	G	G	G	G	G	G	E S 17	43	E S 16	38	26	30	22	E S 12																												
8	E S 16	E S 12	E S 16	E S 12	E S 16	E S 16	E S 17	35	30	G	G	G	G	G	G	G	E S 17	28	E S 16	30	35	28	27	22																												
9	E S 13	E S 13	E S 12	E S 14	E	26	31	28	G	G	G	G	G	G	G	G	24	J A 56	34	28	E	E S 16	E S 16	E S 16																												
10	E S 16	22	21	21	25	21	E S 16	26	G	43	32	G	G	G	G	G	21	J A 57	30	26	31	31	24	27																												
11	26	E S 16	23	26	E S 13	E S 16	E S 16	30	31	33	37	G	30	G	33	G	37	26	26	22	23	27	31	E S 16																												
12	26	E S 14	26	26	22	E S 16	E S 16	22	42	42	37	J A 55	J A 55	33	G	26	35	34	24	E S 16	E S 16	E S 16	E S 16	E S 16																												
13	E S 16	32	35	30	31	26	E S 16	E S 17	29	27	35	43	37	G	32	44	42	35	E S 16	24	29	26	34	34																												
14	30	26	23	26	26	E S 16	E S 16	20	31	33	37	J A 73	J A 60	J A 38	G	30	28	J A 64	J A 51	28	31	J A 55	J A 53	J A 44																												
15	30	27	27	29	26	E S 16	E S 16	G	27	32	40	J A 43	J A 45	36	30	33	19	42	42	E S 17	E S 15	E S 15	E S 16	E S 16																												
16	E S 11	E S 12	26	31	28	J A 64	E S 15	20	30	41	32	G	35	G	J A 65	34	E S 16	E S 12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16																												
17	37	J A 51	K 16	21	23	39	42	50	50	J A 55	30	42	35	34	J A 48	32	20	J A 64	J A 77	J A 118	J A 50	J A 49	43	28																												
18	28	33	E S 16	28	35	31	J A 52	41	44	G	G	G	G	37	42	22	39	31	32	42	J A 51	J A 50	27	E S 16																												
19	26	20	E	E S 13	E S 13	E S 16	E S 16	19	G	G	J A 56	38	34	G	E C 28	26	29	31	E S 16	E S 16	E S 16	22	E S 16	31																												
20	22	28	28	25	22	E S 16	E S 16	22	G	G	J A 60	43	43	41	38	34	32	34	26	E S 16	23	32	26																													
21	32	25	25	21	25	22	E S 16	21	26	32	34	34	34	33	G	29	27	E S 15	26	E S 16	E S 16	E S 15	25	35																												
22	34	30	24	27	E S 13	E S 16	E S 16	26	34	40	41	36	28	G	21	18	G	22	24	28	E S 16	E S 16	E S 16	E S 16																												
23	E S 16	28	25	23	22	E S 16	E S 12	E S 17	34	32	G	G	G	G	G	G	E S 16	E	22	33	33	E S 16	E S 16	E S 16																												
24	E S 16	20	E	E S 16	E S 13	E S 16	E S 16	22	J A 50	27	31	31	G	39	18	C	27	24	34	31	28	23	22	E S 16																												
25	E S 13	E	E S 14	E S 16	24	E S 16	E S 16	E S 17	34	34	34	G	G	34	28	16	E S 17	21	22	E S 16	E S 17	27	25	22																												
26	E S 16	E S 15	E S 16	E	E	E S 13	E S 16	E S 16	G	G	34	G	G	G	G	G	26	25	23	26	E S 16	E S 13	E	23																												
27	E S 16	21	22	23	25	E S 12	E S 16	E S 16	G	36	34	G	G	J A 50	40	28	33	26	29	22	22	25	24	E S 16																												
28	27	22	E S 16	E S 12	E S 13	E S 13	E S 16	31	G	32	31	G	34	G	20	31	33	27	E S 16	25	30	J A 40	22	24	E S 16																											
29	E S 16	E S 16	30	24	E S 11	20	E S 16	E S 17	G	G	G	31	G	G	G	G	27	20	E S 15	20	E S 12	E S 15	E	E S 16																												
30	J A 34	E S 15	27	22	22	22	J A 24	E S 16	G	27	31	32	32	G	31	E C 50	J A 56	J A 64	J A 60	32	42	26	26	24																												
31																																																				
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30																												
MED	26	22	22	22	22	E S 16	E S 16	21	26	32	31	E G 31	E G 27	32	U 22	E G 16	25	31	28	26	27	26	24	22																												
UQ	30	27	26	26	25	22	E S 16	28	34	40	35	38	35	36	32	31	33	51	39	32	34	31	27	28																												
LQ	E S 16	E S 16	E S 16	E S 15	E S 13	E S 16	E S 16	17	G	G	G	G	G	G	G	G	E S 18	24	22	E S 17	E S 16	E S 16	16	E S 16																												

NOV. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FBES (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	20	E	E	E S 16	E	E S 16	E	20	G	39	G 24	G	33	G	G	G	19	E S 16	E	E S 16	E S 16	20	E	E	
2	E	A A 42	E	E	22	A A 69	28	21	49	30	G	30	G	30	23	26	21	28	21	E	A A 88	A A 56	A A 51	30	
3	E	E	E	E	E	E S 11	E S 16	G	G	30	G	G	G	25	28	27	G	E S 17	A A 51	20	E	E	26	E	E
4	E	E	E S 16	E	E	E S 16	E S 16	G	G	G	G	32	G	30	27	G	20	A A 94	E	E	24	E	E S 16	E S 16	
5	E S 16	E	E S 13	E	E	E	E S 16	G	G	G	G 21	G	G	G	G	G	E S 16	E	E S 16	E	E	E	E	E	
6	E	E	E	E	E S 16	E S 16	E S 16	G	G	G	22	33	G	29	21	G	E S 18	20	30	20	E	20	E	E	
7	E S 16	E	E S 16	E S 15	E S 16	E S 12	E S 12	20	23	G	G	G	G	G	G	G	E S 17	37	E S 16	E	E	E	E	E S 12	
8	E S 16	E S 12	E S 16	E S 12	E S 16	E S 16	E S 17	17	20	G	G	G	G	G	G	G	E S 17	E	E S 16	E	E	E	E	E	
9	E S 13	E S 13	E S 12	E S 14	E	E	E	20	G	G	G	G	G	26	G	G	16	34	E	E	E	E S 16	E S 16	E S 16	
10	E S 16	E	E	E	E	E	E S 16	19	G	36	26	G	G	G	G	G	20	34	E	E	E	E	E	E	
11	E	E S 16	E	E	E S 13	E S 16	E S 16	19	25	30	30	G	23	G	28	G	29	E	E	E	E	E	E	E S 16	
12	E	E S 14	E	E	E	E S 16	E S 16	21	31	28	30	32	36	24	G	22	29	21	E	E S 16	E S 16	E S 16	E S 16	E S 16	
13	E S 16	E	E	E	E	E	E S 16	E S 17	G	25	28	30	28	G	25	37	26	25	E S 16	E	E	E	E	20	
14	E	E	E	E	E	E S 16	E S 16	G	G	31	30	37	41	30	G	21	G	A A 64	21	20	21	33	A A 53	29	
15	E	E	E	E	E	E S 16	E S 16	G	G	G	36	41	41	29	25	G	17	A A 42	A A 42	E S 17	E S 15	E S 15	E S 16	E S 16	
16	E S 11	E S 12	E	E	E	A A 64	E S 15	16	21	27	32	G	28	G	54	23	E S 16	E S 12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	
17	E	20	K 16	20	E	20	24	41	30	40	29	33	27	26	30	20	19	40	30	A A 118	A A 50	21	22	E	
18	E	E	E S 16	E	E	22	A A 52	29	39	G	G	G	G	27	32	20	19	E	20	23	29	A A 50	E	E S 16	
19	E	E	E	E S 13	E S 13	E S 16	E S 16	G	G	G	44	24	24	23	E C 28	22	22	20	E S 16	E S 16	E S 16	E	E S 16	E	
20	E	E	E	E	E	E S 16	E S 16	18	G	G	32	60	36	36	32	28	28	E	24	E	E S 16	E	E	E	
21	22	E	E	E	E	E S 16	E S 16	20	17	G	27	27	25	29	G	23	16	E S 15	E	E S 16	E S 16	E S 15	E	20	
22	21	E	E	E	E S 13	E S 16	E S 16	18	26	30	29	30	20	G	18	G	16	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	
23	E S 16	E	E	E	E	E S 16	E S 12	E S 17	25	G	G	G	G	G	G	G	E S 16	E	E	E	E	E S 16	E S 16	E S 16	
24	E S 16	E	E	E S 16	E S 13	E S 16	E S 16	G	48	G	22	24	G	29	18	C	G	E	E	E	E	E	E	E S 16	
25	E S 13	E	E S 14	E S 16	E	E S 16	E S 16	E S 17	24	28	30	G	G	G	28	20	G	E S 17	E	E	E S 16	E S 17	E	E	
26	E S 16	E S 15	E S 16	E	E	E S 13	E S 16	E S 16	G	G	G	G	G	G	G	G	16	E	E	E	E S 16	E S 13	E	E	
27	E S 16	E	E	E	E	E S 12	E S 16	E S 16	G	27	30	G	G	29	27	21	20	E	E	E	E	E	E	E S 16	
28	E	E	E S 16	E S 12	E S 13	E S 13	E S 16	20	G	25	29	G	29	G	20	28	23	20	E S 16	E	E	E	E	E S 16	
29	E S 16	E S 16	E	E	E S 11	E S 16	E S 17	G	G	G	G	G	G	G	G	G	20	E	E S 15	E	E S 12	E S 15	E S 16	E S 16	
30	A A 34	E S 15	E	E	E	E	E S 16	G	G	G	G	G	G	G	30	E C 50	31	64	A A 60	E	20	E	E	E	
31																									
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30
MED	E S 13	E	E	E	E	E S 16	E S 16	17	G	G	25	G	G	24	20	G	18	16	16	E	E	E	E	E	16
UQ	E S 16	E S 13	E S 14	E S 12	E S 13	E S 16	E S 16	20	25	30	30	30	28	29	28	22	20	34	20	E S 16	E S 16	E S 16	16	E S 16	
LQ	E	E	E	E	E	E S 11	E S 16	G	G	G	G	G	G	G	G	G	E S 16	E	E	E	E	E	E	E	E

NOV. 1984

FBES (0.1 MHZ)

IONOSPHERIC DATA

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

NOV. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984 M(3000)F2 (0.01)

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

Station	WAKKANAI																							Lat.	45 23.5 N		Long	141 41.2 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																												
1	310	295	300	315	315	345	325	370	355	365	345	330 ^H	335	365	355	335	335	320	305	280	305	305	300	305																												
2	320	A	300	295	325	A	335	335	350	335	350	345	340	340	335	350	355	310	305	310	A	A	A	305																												
3	315	305	295	305	310	350	335	365	350	350	350	335	330	360	350	355	365	A	310	290	325	320	290	285																												
4	300	F	F	315	330	350	320	330	365	355	350	345	355	345	335	335	350	A	300	305	310	300	310	300																												
5	285	305	300	300	320	310	335	335	340	340	330	335	340	345	360	350	355	360	320	290	310	315	290	285																												
6	285	300	300	335 ^S	310 ^S	315	325	360	350	365	380	340	340	335	350	350	365	335	315	310	320	310	315	305																												
7	310	315	310	305	310	335	340	380	360	335	350	335	360	340	345	350	345	365	335	335	320	310	300	300																												
8	300	290	310	295	300	355	345	375	345	355	345	345	340	365	335	340	345	335	370	300	305	300	295	295																												
9	295	290	310	290	310	330	360	370	330	310 ^H	320	350	355	355	340	365	360	A	320	340	340	320	305	285																												
10	305	310	300	295	310	340	320	370	365	365	345	315	355	360	355	350	360	A	315	320	345	275	295	290																												
11	285	295	330	345	320	330	315	365	340	330	340	360	360	340	340	355	365	355	330	315	320	310	310	320																												
12	275	300	315	310	310	325	315	360	355	355	330	350	355	340	365	345	365	315	345	345	300	305	300	295																												
13	285	300	315	305	335	325	330	365	375	365	325	355	340	345	340	355	375	345	330	325	305	320	305	290																												
14	300	295	295	310	305	320	320	360	325 ^H	345	315	345	345	335	330	350	355	A	320	320	300	320	A	285																												
15	290	290 ^F	335	335	320	315	310	355	375	345 ^H	340	355	335	340	350	360	365	A	A	275	295	290	275	295 ^S																												
16	310	360	285	320 ^F	305	A	290	350	330	340	265	300	325	325	390 ^H	330	310	330	285	250	260	340	310	265																												
17	250	280	270	295	270	280	310	345	340	345	360	355	315 ^H	350	345	360	345	A	A	A	A	275	325	300																												
18	300	300	305	F	285 ^F	A	A	340	335	325	330	350	365	355	370	360	345	330	290	345	A	A	315	335																												
19	320	285	290	295	F	305	325	365	360	360	355	355	350	350	355	350	350	350	305 ^F	335	320	F	F	300																												
20	F	F	325	295	295	310	330	335	345	330	345	360	345	360	345	350	345	365	305	315	320	F	310	290																												
21	290	295	295	295	305	315	330	350	305 ^H	335	345	370	355	365	370	365	355	315	345	310	340	290	315	295																												
22	F	290	300	310 ^F	300	310	305	350	360	360	355	350	365	355	335	350	345	365	330	320	305	300	300	290																												
23	290	290 ^S	305	310	315	320	345	370	350	335	355	350	350	365	370	370	355	360	310	340	325	340	F	F	295																											
24	F	295	305	325	320	330	335	365	360	380	350	350	360	355	365	340 ^{I C}	320	335	345	305	335	325	295	305																												
25	310	320 ^S	305	295	315	335	360	365	360	360	360	330	345	360	335	350	340	345	335	335	335	305	315	335																												
26	310	325	305	300	305	335	370	340	375	355	330	355	355	330	345	365	350	335	335	305	340	330	300	315																												
27	300	315	300	280	310	320	365	325	360	355	335	360	365	335 ^H	365	355 ^H	320	310	315	335	335	310	300	295																												
28	295	315	300	300	300	320	320	350	350	350	360	370	360	365	350	370	315 ^S	350	310	335	310	295	310	310																												
29	310	310	310	305	300	285	335	360	340 ^H	355	350	350	345	340	350	370	335	335	315	310	310	310	325	320																												
30	A	295	280	290	320	310	330	330	315 ^H	345	330	350	350	350	320	335	320	350	A	315	275	285	270	290																												
31																																																				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																												
CNT	26	27	29	29	29	27	29	30	30	30	30	30	30	30	30	30	30	23	27	29	27	26	26	30																												
MED	300	300	300	305	310	320	330	360	350	350	345	350	350	350	350	350	350	335	315	315	320	310	302	295																												
UQ	310	310	310	310	320	335	335	365	360	360	350	355	355	360	360	360	360	352	332	335	330	320	310	305																												
LQ	290	292	300	295	305	312	320	340	340	335	330	340	340	340	340	350	340	330	308	305	305	300	295	290																												

NOV. 1984 M(3000)F2 (0.01)

IONOSPHERIC DATA

NOV. 1984

M(3000)F1 (0.01)

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

Station	WAKKANAI																							
Lat.	45 23.5 N , Long 141 41.2 E																							
Sweep	1 MHz to 25 MHz in 24sec in automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										A	L													
2											L													
3											L													
4											L													
5											L													
6											L													
7											L													
8											L													
9											L													
10											L													
11											L													
12											L													
13											L													
14											L													
15											L													
16											L													
17											L													
18											L													
19											L													
20											L													
21											L													
22											L													
23											L													
24											L													
25											L													
26											L													
27											L													
28											L													
29											L													
30											L													
31											L													
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										2	7	13	11	3										
MED										365	390	380	390	390										
UQ										395	385	402	395											
LQ										372	370	380	380											

NOV. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

NOV. 1984

H*F2 (KM)

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

Station	WAKKANAI				Lat. 45 23.5 N				Long. 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										245	240													
2											235	245	235											
3											250	245												
4										245	245	265												
5												255	240											
6										220	245	250	240											
7													240											
8													245											
9											250													
10											245	245												
11											250		225											
12													240 ^L											
13												245	240											
14												230	225	245										
15												215	230											
16												290	255		A									
17										245		235												
18										295	255	250	245	245										
19											240	245	245	245										
20											250		A	230	225									
21											245	230												
22												235												
23												245												
24											240	245	235											
25																								
26											255	215												
27												240	230											
28													225											
29												240												
30												245												
31																								
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT										4	14	22	16	5										
MED										245	245	245	238	245										
UQ										270	250	245	242	245										
LQ										245	240	235	230	240										

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H*F2 (KM)

IONOSPHERIC DATA

NOV. 1984

H*F (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	280	295	295	255	255	205	210	205	205		A	H	200	235	230	225	225	245	225	240	260	280	250	250	250	255																			
2	210	A	295	295	275		A	A	240	245	220	215	200	195	225	225	235	215	A	255	255	A	A	A	A																				
3	245	255	255	275	255	215	240	210	200	H	230	195	200	235	H	230	H	225	230	210	A	290	275	245	A	250	275	270																	
4	240	295	265	245	225	205	245	245	220	200	200	195	225	H	235	225	220	205	A	270	275	250	225	255	275																				
5	250	275	275	250	225	220	240	210	220	220	H	205	H	195	210	225	240	230	210	205	225	265	245	240	255	275																			
6	250	280	265	240	220	230	230	210	230	225	220	230	200	210	230	215	205	225	A	250	240	275	255	255																					
7	255	270	275	255	245	230	205	205	210	225	H	225	215	H	205	220	230	215	210	A	205	240	245	255	255	260																			
8	260	285	245	290	270	200	205	215	225	215	225	225	240	H	230	220	220	205	225	200	280	270	260	275	255																				
9	275	265	265	290	245	210	200	205	220	H	200	220	H	235	230	225	235	215	215	A	230	240	215	235	245	305																			
10	295	295	270	280	280	225	240	210	205	230	215	225	235	225	220	210	205	A	205	245	245	280	295	295																					
11	305	285	240	210	225	200	230	215	230	235	225	240	H	205	205	245	215	210	225	220	255	255	250	250	250																				
12	305	280	250	245	255	240	250	225	235	200	H	200	210	A	210	245	235	210	235	225	225	250	275	295	285																				
13	305	290	290	270	245	245	240	215	205	H	200	H	195	210	195	235	240	230	205	A	240	245	250	245	265	295																			
14	255	275	295	285	280	245	255	200	225	205	215	A	A	225	225	215	205	A	A	265	280	250	275	A	350																				
15	290	275	225	225	250	275	230	215	205	205	245	A	A	235	240	225	205	A	A	320	295	305	345	295																					
16	270	225	300	300	325	A	300	235	200	240	A	235	230	245	A	240	240	210	295	350	330	230	240	285																					
17	375	310	300	280	305	325	A	A	245	A	240	A	215	H	225	245	210	220	A	A	A	A	A	370	275	295																			
18	290	275	295	330	325	A	A	A	A	225	225	210	205	205	230	225	220	225	295	295	A	A	A	270	240																				
19	255	295	255	275	270	255	255	225	205	H	215	A	215	205	200	225	230	205	250	245	255	235	305	300	270																				
20	255	290	255	265	295	275	245	225	215	210	H	240	A	A	A	225	210	220	200	A	255	245	245	270	305																				
21	330	280	255	255	250	230	245	230	225	210	210	200	220	235	230	210	205	235	225	255	205	260	255	295																					
22	305	295	255	275	275	235	225	225	205	230	220	H	205	H	225	235	220	205	205	230	240	250	280	270	280																				
23	260	275	240	245	260	230	240	210	215	220	220	235	H	H	225	225	205	205	205	255	255	215	235	305	300																				
24	305	290	280	250	240	245	235	215	A	210	195	205	205	230	225	I	C	210	205	230	215	225	210	225	265	300																			
25	270	245	230	255	245	210	205	200	210	225	H	230	235	H	205	225	220	H	230	200	230	245	230	245	250	245	245																		
26	250	250	275	275	255	230	205	220	205	H	215	225	205	225	H	205	H	200	210	205	205	245	280	235	210	260	250																		
27	255	245	255	260	240	240	195	210	205	225	235	230	210	225	205	205	215	205	250	230	225	275	290	290																					
28	260	265	260	255	275	240	250	225	215	230	235	225	210	H	205	215	200	205	230	240	250	270	270	255	255																				
29	280	255	275	255	255	255	250	205	H	200	215	H	220	H	200	220	215	210	205	240	270	290	245	265	235	255																			
30	A	300	300	270	260	220	265	230	205	235	240	215	225	H	H	255	E	C	245	260	A	A	270	A	350	300	310	300																	
31																																													
CNT	29	29	30	30	30	27	27	28	28	28	28	26	26	29	29	30	30	19	25	29	27	28	28	29																					
MED	270	280	265	262	255	230	240	215	212	220	220	215	210	225	225	216	205	225	245	255	245	258	265	280																					
UQ	295	290	290	280	275	245	248	225	225	228	228	230	225	230	235	230	215	232	260	280	250	275	282	295																					
LQ	255	265	255	250	245	218	218	210	205	210	208	205	205	220	225	210	205	205	225	245	238	242	255	255																					

NOV. 1984

H*F (KM)

IONOSPHERIC DATA

NOV. 1984 H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																								Lat.	45 23.5 N.		Long.	141 41.2 E		Sweep	1 MHz to 25 MHz in 24sec in automatic operation																
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																								
1								S	125	110	125	130		A	125	125	125								S																							
2								A	125		A	110	105	105		A	A								S																							
3								135	125	120	110	110		A	A	A									S																							
4								125	120	110	105		A	105		A	A								S																							
5								130	115	115	130	110	125	125	125	125									S																							
6								125	110	110	120		A	125		A	135	125							S																							
7								A	A		110	110	110	120	125	120	140								S																							
8								A	A		110	110	120	120	125	120	130								S																							
9								A	110	105	105	105	105		A	105	125								A																							
10								A	105		A	A	105	120	120	125	125								S																							
11								S	A	A	A		105	125	110		A	125							A																							
12								S	A		A	A	A	A		A	125								A																							
13								S	125	115		A	A	A		A	A								A																							
14								S	130	120	105		A	A	A		110								A																							
15								140	120	110	110	110		A	A	A		120							E																							
16								A	A	A		115	115	110	110		A	A							S																							
17				E				S	A		120	120	115		A	A	A	A							A																							
18								120	120	110	110	105	105		A	A	A								S																							
19								S	115	110		A	A	A	A	C	A								S																							
20								S	H 125	115	105	105		A	A	A	A								S																							
21								S	140	125		A	A	A	A	105									A																							
22								A	A	A	A	A		125	125	125	125								A																							
23								S	A		110	105	115	115	120	125	130								S																							
24								S	A		120	125	130	105		A	120								C																							
25								S	A	A	A		105	105		A	A								S																							
26								S	120	110	110	120	105	120	120	145									S																							
27								S	125		A	A	110	110	110		A	A							A																							
28								S	130		A	A		A		A	A								A																							
29								S	135	120	120	125	125	125	120	140									B E																							
30								S	120	115	115	115	115	125	125										C S																							
31																																																
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																								
CNT								6	20	22	20	22	19	15	17	17																																
MED								128	122	110	110	110	115	125	125	125																																
UQ								135	125	120	120	115	122	125	125	130																																
LQ								125	118	110	108	105	105	115	120	125																																

NOV. 1984 H°E (KM)

IONOSPHERIC DATA

NOV. 1984

H^oES (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	100	105	100	S	E	S	105	135	G	130	105	G	105	105	G	G	150	S	115	S	S	105	105	140																		
2	130	120	110	120	105	105	105	120	125	110	G	120	G	100	105	120	110	105	105	105	105	105	105	100																		
3	105	105	105	105	E	S	S	G	G	120	G	G	105	105	105	G	S	105	110	105	110	105	105	105																		
4	105	105	S	E	125	S	S	175	G	G	G	105	G	105	105	G	125	105	105	105	105	125	S	S																		
5	S	105	S	E	E	E	S	G	G	G	105	G	G	G	G	G	S	125	S	110	105	105	105	100																		
6	105	105	105	105	S	S	S	G	G	G	100	175	G	100	105	G	S	125	120	110	105	105	105	105																		
7	S	105	S	S	S	S	S	115	110	G	G	G	G	G	G	G	S	110	S	105	110	105	105	S																		
8	S	S	S	S	S	S	S	105	105	G	G	G	G	G	G	G	S	120	S	110	105	105	105	105																		
9	S	S	S	S	E	140	110	110	G	G	G	G	G	105	G	G	105	110	105	105	E	S	S	S																		
10	S	105	110	125	120	105	S	105	G	105	105	G	G	G	G	G	140	110	125	110	105	105	105	105																		
11	105	S	105	100	S	S	S	100	105	105	105	G	105	G	105	G	120	105	100	100	100	110	105	S																		
12	105	S	105	105	105	S	S	155	105	105	105	105	100	105	G	105	100	100	100	S	S	S	S	S																		
13	S	130	100	105	105	105	S	S	130	105	105	105	105	G	105	100	105	100	S	145	100	105	105	105																		
14	105	105	105	105	105	S	S	155	125	120	110	110	105	105	G	100	120	110	110	110	115	110	110	105																		
15	105	105	105	105	140	S	S	G	150	135	125	115	120	100	105	110	125	110	110	S	S	S	S	S																		
16	S	S	110	110	125	110	S	115	110	110	115	G	110	G	100	105	S	S	S	S	S	S	K 150	S																		
17	130	125	125 ^K	130	125	115	110	110	110	110	110	110	105	105	105	105	100	115	110	105	105	105	105	105																		
18	105	105	S	125	130	115	110	110	105	G	G	G	G	105	105	105	105	125	105	105	105	105	105	S																		
19	105	105	E	S	S	S	S	130	G	G	105	105	100	100	C	100	100	100	S	S	S	110	S	105																		
20	105	105	105	105	105	S	S	150	G	G	105	105	105	100	100	100	100	100	100	100	S	105	105	105																		
21	105	100	100	105	100	110	S	150	110	125	105	100	105	105	G	100	105	S	120	S	S	S	105	105																		
22	105	105	105	105	S	S	S	110	105	105	105	100	105	105	105	G	105	100	100	S	S	S	S	S																		
23	S	105	100	100	105	S	S	S	110	120	G	G	G	G	G	G	S	E	105	105	105	S	S	S																		
24	S	105	E	S	S	S	S	125	105	105	105	100	G	100	105	C	105	115	140	120	105	105	100	S																		
25	S	E	S	S	120	S	S	S	105	105	110	G	G	100	100	100	S	105	105	S	S	105	110	115																		
26	S	S	S	E	E	S	S	S	G	G	130	G	G	G	G	G	105	105	105	100	S	S	E	105																		
27	S	105	105	105	105	S	S	S	G	110	125	G	G	110	110	105	105	105	125	120	130	125	105	S																		
28	100	105	S	S	S	S	S	125	G	105	105	G	100	100	100	140	105	S	145	135	115	125	115	S																		
29	S	S	110	120	S	125	S	S	G	G	G	135	G	G	G	G	170	150	S	155	S	S	E	S																		
30	120	S	120	115	115	115	150	S	G	155	155	140	140	G	155	C	110	105	105	105	105	125	105	100																		
31																																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																		
CNT	17	21	19	19	16	10	6	19	16	19	21	15	15	19	17	14	22	25	23	22	18	21	21	16																		
MED	105	105	105	105	110	112	110	120	110	110	105	105	105	105	105	105	105	105	105	105	105	105	105	105																		
UQ	105	105	110	118	125	115	110	142	118	120	110	118	105	105	105	105	120	115	118	110	110	110	105	105																		
LQ	105	105	105	105	105	105	105	110	105	105	105	105	105	100	105	100	105	105	105	105	105	105	105	105																		

NOV. 1984

H^oES (KM)

IONOSPHERIC DATA

NOV. 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	F2	F1	F2				F1	C1		C3	L1		L1	L1			C1		F2			F2	F2	F1									
2	F2	F5	F2	F2	F4	F4	F4	C2	C5	L2		C1		L2	L1	C2	L3	F2	F5	F3	F5	F4	F4	F4									
3	F2	F2	F2	F1						C1			L2	L2	L2			F6	F3	F2	F3	F3	F2	F2									
4	F2	F1			F1			H2				L2		L3	L3		C2	F5	F2	F3	F3	F1											
5		F2									L1							F2		F2	F2	F2	F2	F2									
6	F2	F1	F2	F3							L2	HL12		L2	L1			F2	F5	F2	F2	F2	F1	F2									
7		F1						L1	L2									F3		F2	F1	F2	F1										
8								L2	L2									F1		F1	F2	F2	F2	F2									
9					F1	F2		L3						L2			L1	F5	F2	F3													
10		F2	F2	F2	F2	F1		L1		L4	L3						C2	F3	F1	F1	F3	F2	F1	F2									
11	F2		F1	F2				L1	L4	L3	L2		L1		L2		CL32	F1	F2	F2	F2	FF22	F1										
12	F1		F2	F2	F1			C2	L3	C5	L3	L3	L3	L3		L2	L3	F3	F2														
13		F1	F2	F2	F2	F1			C1	C2	L2	L3	L3		L2	L5	L2	F3		FF11	F2	F1	F2	F3									
14	F2	F2	F2	F2	F1			C2	C2	C2	C3	L3	L3	L3		L1	CL11	F5	F5	F3	F3	F4	F4	F4									
15	F2	F2	F2	F2	F1				H1	C2	C2	C4	CL33	L3	LC33	L2	C1	F6	F6														
16			F2	F2	F2	F6		L1	L1	L2	C2		C2		L5	L5								K1									
17	F2	F2	K1	F2	F2	F6	F5	CL42	CL32	C4	C3	C2	L3	L2	L4	L3	L2	FF62	FF72	F6	F5	F5	F7	F2									
18	F2	F4		F2	F4	F3	F2	C3	C6					L2	L6	L2	L2	FF11	F2	F2	F3	F4	F2										
19	F2	F2						C1			L3	L2	L3	L2		L2	L2	F3				F1		F2									
20	F2	F2	F2	F2	F2			H1			C4	C4	L3	L3	L3	L3	L3	F2	F4	F2		F1	F4	F2									
21	F5	F2	F2	F2	F2	F1		C3	L1	CL31	L2	L2	L2	L2		L2	L1		FF11				F3	F2									
22	F3	F2	F1	F1				L3	L3	L3	L4	L3	L1	L2	L2		L1	F2	F2														
23		F2	F2	F2	F1				L5	C2									F2	F2	F2												
24		F2						C1	L5	L2	L3	L3		L3	L2		L1	FF11	F1	F2	F1	F1	F1	F1									
25				F1					L3	L4	CL22			L3	L3	L1		F1	F1			F2	F2	F2									
26											C2						L1	F2	F2	F2				F2									
27		F2	F1	F1	F1					L2	CL12			C4	L2	L1	L1	F1	F2	F1	F1	F2	F1	F1									
28	F2	F1						C1		L2	L2		L2	L2	L2	CL31	L2		F1	F1	F2	F1	F1	F1									
29			F2	F2		F1						C1					H1	F1		F1													
30	F5		F1	F1	F2	F1	F2			H1	H1	H2	H2		H2		L5	F5	F7	F6	F4	FF21	F3	F2									
31																																	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
CNT																																	
MED																																	
UQ																																	
LQ																																	

NOV. 1984

TYPES OF ES

IONOSPHERIC DATA

NOV. 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	X 36	X 35	X 35	X 37	X 37	X 35													X 61	X 60	X 59	X 53	X 45	X 44	
2	X 53	X 35	X 38	X 39	A	A													X 40	X 48	X 46	X 38	X 40	X 44	
3	49	42	43	X 39	X 39	X 41													X 39	48	X 47	A	X 38	43	
4	45	48	47	45	X 36	34													X 41	X 45	X 45	X 37	X 38	X 39	
5	X 39	X 38	X 39	X 39	X 42	X 36													X 41	A	X 44	X 43	X 43	X 42	
6	X 45	X 43	X 47	48	X 42	44	50												X 42	X 42	X 47	A	X 42	48	
7	44	X 40	X 40	X 41	X 41	X 40													X 43	X 40	X 38	X 36	X 41	X 44	
8	50	52	50	46	45	X 47													X 60	X 37	X 39	X 42	X 43	X 41	
9	X 41	X 41	43	42	46	38													X 44	X 48	X 42	X 35	X 32	X 35	
10	X 34	X 35	X 34	X 34	X 35	X 37													X 41	A	X 38	X 35	X 38	41	
11	40	43	47	42	X 38	X 26	X 36												X 42	X 47	X 42	X 39	42	X 44	
12	44	47	X 45	X 41	X 37	X 37	X 40												A	X 38	X 38	X 31	X 31	X 34	X 36
13	X 35	37	38	38	38	X 33	X 36												X 42	X 39	X 42	X 39	X 38	X 38	X 38
14	X 37	X 38	37	39	38	38	41												X 42	X 34	X 38	X 46	X 51	X 44	49
15	51	49	53	34	41	X 37	X 42												X 39	X 32	X 37	X 38	43	39	X 39
16	X 41	A	A	A	33	31	35												X 63	X 54	X 50	X 52	X 64	X 53	X 40
17	X 36	X 49	68	80	68	59	X 66				90								A	A	A	S	A	A	X 35
18	X 38	X 41	42	44	49	44	34												X 40	X 36	X 41	X 41	X 40	A	37
19	31	34	35	X 33	X 32	X 33	X 36												X 43	X 32	A	40	35	36	44
20	43	40	41	X 38	X 33	X 32	X 36												X 45	X 33	X 37	X 42	X 37	X 38	X 38
21	39	48	46	44	X 38	X 38	X 41												X 40	X 41	X 38	X 38	X 32	39	42
22	50	50	53	48	40	52	52	74											X 43	X 40	X 45	40	42	48	48
23	52	47	50	43	38	40	36												X 35	X 32	X 37	X 43	X 32	38	40
24	39	40	39	39	X 34	X 31	39												X 41	X 40	X 34	X 32	X 33	37	39
25	38	42	38	X 37	X 37	X 37	X 30												X 40	X 42	X 45	X 34	X 32	X 32	37
26	X 37	40	40	41	41	X 35	X 32												X 46	X 42	X 30	X 37	X 41	X 33	X 35
27	X 38	X 39	X 41	X 39	X 41	X 34	X 33												X 35	X 36	X 42	X 31	X 32	X 31	X 33
28	X 35	X 34	X 34	X 35	X 34	X 32	X 31												X 39	X 35	X 32	X 34	X 37	X 36	X 38
29	X 38	X 38	X 34	X 35	X 34	X 33	X 33												X 37	X 35	X 36	X 42	X 38	X 35	X 32
30	X 34	X 35	X 35	X 35	X 36	X 35	X 32												X 75	X 40	A	A	X 37	X 40	43
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	29	29	29	29	29	21	1				1							18	29	25	29	27	28	30
MED	X 39	40	41	39	X 38	X 37	X 36	74				90							X 42	X 40	X 41	X 40	X 37	X 38	X 40
UQ	45	47	47	43	41	X 40	X 41												X 43	X 42	X 45	X 44	X 42	X 42	44
LQ	X 37	X 38	X 38	X 37	X 36	X 33	X 33												X 39	X 36	X 37	X 38	X 35	X 36	X 37

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FXI (0.1 MHz)

IONOSPHERIC DATA

NOV. 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	30	29	29	31	31	29	36	56	H 62	59	H 72	76	82	68	59	59	67	60	55	54	53	47	39	38
2	47	29	32	33	A	A	44	62	91	89	82	R 83	77	58	76	65	61	42	34	42	40	32	F	F
3	F	F 34	F 35	33	33	35	34	54	65	66	77	74	77	73	74	61	58	37	33	F	41	A	32	F 35
4	F	F	F	F	30	F	35	54	91	74	84	77	86	H 67	72	R 61	58	46	35	39	39	31	32	33
5	33	32	33	33	36	30	39	63	61	79	72	H 73	H 74	72	68	65	60	48	35	A	38	37	37	36
6	39	37	41	F 39	36	F	41	66	61	63	72	67	76	73	67	74	56	36	36	36	41	A	36	F
7	F 35	34	34	35	35	34	37	63	65	61	81	88	74	72	62	61	54	H 42	37	34	32	30	35	38
8	F 41	F	F 41	F 35	F 35	41	29	47	65	71	77	83	82	74	67	64	58	48	54	31	33	36	37	35
9	35	35	F 34	F	F	32	32	49	58	62	75	92	73	77	65	61	50	42	38	42	36	29	26	29
10	28	29	28	28	29	31	31	56	57	62	63	68	78	72	61	56	51	38	35	A	32	29	F 30	F 32
11	F 32	F 35	F	F 34	32	20	30	48	57	70	81	78	75	61	69	70	61	36	41	36	33	F 33	F 33	38
12	F 35	F	39	35	31	31	34	58	69	80	84	77	62	64	66	60	58	A	32	32	25	25	28	30
13	29	F 29	F 31	F	F 29	27	30	60	60	60	65	75	66	65	65	61	H 54	36	33	36	33	32	32	32
14	31	32	F 30	F	F	F 30	35	47	61	66	H 66	82	71	66	74	71	67	36	28	32	40	45	S 38	F 38
15	F 40	F 38	F	F 27	F	31	36	58	59	62	69	74	68	68	68	67	68	33	26	31	32	F	F 31	33
16	35	A	A	A	F 24	F	F	76	66	79	62	104	93	99	88	75	67	57	48	44	46	58	47	34
17	30	43	F	F	F 61	F	60	84	89	73	87	F 82	72	75	82	64	59	A	A	A	S 27	A	A	29
18	32	35	F	F	F	F	F	45	54	64	85	86	66	63	61	57	52	34	30	35	35	S 34	A	F 28
19	F	F 26	F 27	27	26	27	30	56	57	56	67	72	68	66	61	54	56	37	26	A	F 31	F 28	F 30	F
20	F 35	F 33	F 32	32	27	26	30	52	67	66	76	95	70	A	58	55	59	39	27	31	36	31	32	32
21	F 31	F	F 35	F 36	32	32	35	53	67	78	84	90	68	67	64	66	54	34	35	32	32	26	F 30	F 32
22	F	F	F	F	F	F	F	F	66	65	74	87	74	75	64	71	55	37	34	39	F 31	F 33	F	F
23	F	F	F	F	F	F	F	55	67	75	70	82	84	74	64	57	49	29	26	31	37	26	F	F
24	F	F	F 31	F 32	28	25	32	56	74	70	60	63	65	65	58	53	46	35	34	28	26	27	F 27	F
25	F 31	F	F 31	31	31	31	24	47	54	66	71	81	H 83	71	66	63	50	34	36	39	28	26	26	F 29
26	31	F 31	F 32	F 32	F 32	29	26	50	58	H 64	65	R 87	66	65	74	R 65	43	40	36	24	31	35	27	29
27	32	33	35	33	35	28	27	48	53	52	68	71	68	70	61	53	H 44	29	30	36	25	26	25	27
28	29	28	28	29	28	26	25	54	59	58	H 73	66	59	57	55	H 56	H 52	H 33	29	26	28	31	30	32
29	32	32	28	29	28	27	27	50	59	55	64	65	58	62	62	53	46	31	29	30	36	32	29	26
30	28	29	29	29	30	29	26	50	63	59	73	71	73	74	H 64	68	60	69	34	A	A	31	34	F 34
31																								
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	24	21	22	21	23	22	26	29	30	30	30	30	30	29	30	30	30	28	29	24	29	26	25	24
MED	32	32	32	32	31	30	32	54	62	66	72	78	73	68	65	61	56	37	34	34	33	31	32	32
UQ	35	35	35	34	34	31	36	58	67	73	81	86	77	73	69	66	60	42	36	39	38	34	35	35
LQ	30	29	F 29	29	28	27	29	50	58	61	67	72	68	65	61	57	51	34	30	31	31	28	29	29

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

NOV. 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	L	L	L	L														
2										L	L	L	L	L	L														
3										L	L	L	L	L	L														
4									L	L	L	L	L	L	L														
5											L	L	L	L	L														
6									L	L	L	L	L	L															
7									L	L	L	L	L	L		L													
8									L	L	L	L	L	L															
9											L	L	L	L															
10										L	L	L	L	L	L														
11										L	L	L	A																
12										L	L	400	L	L	L														
13											L	L	L	L	L														
14										L	A	A	A	A	A														
15										L	400	400	L	A															
16									L		L	L	L	L	L														
17											L	L	L	L	L														
18									L	L	420	410	410	L	A														
19										A	400	L	L	L	L														
20										L	L	A	A	A	A														
21											L	L	L	L															
22											L	L	380	L	L														
23											L	L	L	L	L														
24										L	L	L	L	L	A														
25											L	410	L	L															
26											L	L	370	L	L														
27											L	L	L	L															
28											L	L	L	L															
29											L	L	360	L	A														
30											L	L	L	360															
31																													
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					
CNT											3	4	4	1															
MED											400	405	375	360															
UQ											410	410	395																
LQ											400	400	365																

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FOF1 (0.01 MHz)

IONOSPHERIC DATA

NOV. 1984

FOE (0.01 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							S	195	245	270	285	300	305	290	A	A	A	S						
2							S	190	A	A	A	A	300	285	270	A	S	S						
3							S	A	A	280	A	A	A	A	270	230	S	S						
4							S	200	240	A	285	A	305	A	A	A	S	S						
5							S	190	235	265	285	290	300	290	260	230	A	S						
6							S	195	240	270	290	300	300	A	270	A	190	S						
7							S	A	A	A	285	300	A	A	A	A	S	S						
8							S	190	A	280	290	295	295	285	260	A	S	S						
9							S	180	A	A	A	A	300	A	A	A	S	S						
10							S	200	A	260	290	295	A	285	A	A	S	S						
11								180	240	270	A	A	A	295	265	240	S							
12								180	A	260	280	A	A	280	265	A	S							
13								180	235	A	A	A	A	280	260	220	S							
14								A	A	A	A	A	A	A	A	A	S							
15								S	230	270	285	295	290	275	A	A	S							
16								185	230	A	A	A	A	A	255	215	S						S	S
17								A	A	A	A	A	A	A	A	210	S							
18								A	A	A	A	A	A	A	A	A	S							
19								S	A	A	A	280	A	A	A	A	S							
20								S	230	A	270	A	A	A	A	A	S							
21								S	230	255	A	A	A	A	A	A	S							
22								S	220	A	A	290	295	A	A	A	S							
23								S	215	A	280	285	295	280	250	205	S							
24								S	A	A	A	290	280	A	A	220	S							
25								S	240	260	A	A	A	275	250	225	S							
26								S	A	A	280	285	290	270	255	A	S							
27								S	240	A	A	A	A	A	A	225	S							
28								S	225	260	280	290	285	A	A	210	S							
29								S	215	255	280	285	290	A	A	A	S							
30								S	A	A	265	285	A	A	A	A	S							
31																								
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								12	16	13	15	15	14	12	12	11	1							
MED								190	232	265	285	290	295	282	260	220	190							
UQ								195	240	270	285	295	300	288	268	228								
LQ								180	228	260	280	285	290	278	255	212								

NOV. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

NOV. 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 20	J A 35	J A 20	E S 16	E S 15	J A 21	E S 15	G	G	G	G	G	40	35	35	J A 46	J A 22	20	J A 25	J A 26	J A 22	E S 16	J A 29	J A 23	
2	J A 20	J A 29	J A 36	J A 50	J A 126	J A 90	J A 20	G	J A 46	J A 42	J A 44	J A 40	J A 46	G	33	J A 31	J A 75	J A 74	J A 70	J A 52	J A 41	J A 27	J A 24	J A 25	
3	J A 28	J A 25	J A 24	J A 20	J A 20	E S 15	E S 15	J A 20	32	G	J A 35	J A 40	J A 41	J A 30	G	J A 24	J A 26	E S 15	J A 28	J A 51	J A 50	J A 56	J A 29	J A 30	
4	J A 32	J A 30	J A 20	E S 15	E S 15	E S 15	E S 15	G	G	J A 51	J A 36	J A 31	J A 31	J A 32	J A 46	J A 27	25	J A 26	J A 31	J A 28	J A 56	J A 34	J A 29	E S 15	
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	G	G	G	G	30	G	G	J A 30	J A 21	J A 26	J A 65	J A 29	E S 15	J A 37	J A 20	
6	E S 15	J A 22	E S 15	J A 18	J A 23	J A 18	E S 15	G	G	G	G	G	35	31	G	J A 30	25	J A 36	J A 50	J A 24	J A 29	J A 54	J A 46	J A 31	
7	E S 15	J A 31	J A 24	E S 15	E S 16	E S 15	E S 16	J A 20	J A 29	J A 29	J A 30	J A 31	J A 31	J A 44	J A 36	J A 41	J A 29	J A 32	J A 22	J A 76	J A 34	J A 40	J A 26	J A 24	
8	J A 20	J A 20	E S 15	E S 15	E S 15	E S 16	E S 16	G	J A 32	J A 35	G	24	G	G	G	28	J A 24	J A 20	J A 21	J A 24	J A 21	J A 24	J A 26	J A 24	
9	J A 24	J A 29	J A 32	J A 20	J A 23	E S 16	E S 16	G	J A 54	J A 41	121	84	J A 54	J A 50	J A 32	J A 27	J A 50	J A 26	J A 74	J A 32	J A 37	J A 25	J A 26	J A 20	
10	E S 16	E S 16	E S 16	E S 16	J A 25	J A 20	J A 20	G	J A 36	J A 27	J A 28	J A 29	33	25	J A 36	J A 37	J A 28	J A 20	J A 50	J A 50	J A 28	J A 29	J A 37	J A 24	
11	J A 24	J A 20	J A 25	J A 19	J A 22	E S 15	E S 15	G	G	G	J A 44	J A 53	J A 46	J A 33	31	34	J A 54	J A 20	J A 63	J A 24	J A 20	E S 15	E S 15	J A 29	
12	E S 15	J A 24	J A 18	J A 20	J A 21	J A 20	E S 16	G	J A 26	G	G	J A 36	32	G	G	J A 35	J A 21	J A 50	J A 20	E S 16	E S 15	E S 15	E S 15	E S 15	
13	E S 15	E S 15	J A 20	E S 15	J A 20	J A 21	E S 16	27	28	35	J A 35	J A 46	J A 32	G	J A 28	G	E S 17	E S 15	E S 15	E S 16	E S 16	E S 15	E S 15	E S 16	
14	J A 24	J A 21	J A 29	J A 20	J A 29	E S 15	E S 15	27	J A 38	J A 36	J A 61	J A 58	J A 50	J A 45	J A 54	J A 61	J A 29	E S 15	E S 15	J A 24	J A 22	J A 20	J A 41	J A 43	
15	J A 36	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	G	31	33	35	G	J A 50	33	27	E S 17	J A 19	J A 20	E S 15	E S 15	E S 15	E S 15	E S 15	
16	E S 15	J A 32	J A 28	J A 51	J A 24	E S 16	E S 15	G	26	J A 41	J A 43	32	J A 60	J A 46	G	G	E S 17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	
17	E S 16	J A 24	J A 43	E S 16	E S 15	E S 15	E S 15	J A 18	J A 29	J A 57	J A 84	J A 94	J A 36	J A 38	J A 30	25	J A 29	J A 50	J A 166	J A 110	J A 89	J A 86	J A 62	J A 52	
18	J A 50	J A 24	J A 26	E S 16	E S 15	E S 15	J A 44	J A 29	J A 29	J A 43	J A 54	J A 41	J A 36	J A 41	J A 41	J A 51	J A 54	J A 36	J A 29	J A 44	J A 35	J A 74	J A 76	J A 47	
19	J A 52	J A 21	J A 20	J A 24	J A 23	E S 15	E S 15	22	28	J A 46	J A 47	G	J A 54	J A 30	J A 28	J A 24	J A 29	J A 36	J A 25	J A 64	J A 76	J A 52	J A 44	J A 44	
20	J A 37	J A 18	J A 25	J A 26	J A 21	E S 15	E S 15	E S 16	J A 36	J A 35	G	J A 46	J A 50	J A 73	J A 50	J A 54	J A 46	J A 36	E S 16	E S 15	E S 16	E S 16	E S 15	J A 32	
21	J A 28	J A 28	J A 29	J A 24	J A 25	J A 18	E S 16	J A 24	G	J A 40	J A 36	J A 43	J A 46	J A 50	J A 50	J A 29	J A 26	E S 15	E S 15	J A 29	E S 16	J A 18	J A 18	E S 16	
22	E S 16	J A 21	J A 23	E S 15	J A 19	E S 15	E S 15	E S 17	G	J A 32	J A 34	35	J A 44	J A 51	J A 41	J A 29	J A 29	J A 28	J A 20	J A 24	E S 15	J A 25	E S 15	E S 15	
23	E S 15	E S 15	E S 15	E S 15	E S 15	J A 18	E S 15	E S 18	J A 25	J A 29	G	G	G	G	G	G	E S 17	E S 16	J A 24	J A 19	E S 16	E S 15	E S 15	E S 15	
24	E S 15	J A 19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	J A 25	J A 32	J A 38	31	J A 29	J A 46	J A 44	G	E S 17	E S 15	E S 15	E S 15	E S 15	J A 23	J A 21	J A 31	E S 15
25	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 17	G	G	J A 46	J A 54	J A 51	G	G	G	E S 17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	
26	E S 16	J A 25	E S 15	E S 15	E S 15	E S 16	E S 15	20	27	31	G	G	G	31	30	J A 26	E S 16	J A 18	J A 18	E S 16	E S 15	E S 16	E S 15	E S 15	
27	E S 15	E S 16	E S 15	E S 15	E S 16	E S 16	E S 15	E S 16	G	J A 36	J A 36	J A 38	J A 41	J A 32	J A 31	G	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	J A 19	E S 15
28	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	G	25	J A 29	J A 50	J A 26	G	J A 25	E S 16	E S 15	E S 15	E S 16	J A 20	E S 16	E S 15	
29	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	G	G	33	33	32	65	54	40	E S 17	E S 16	E S 16	E S 16	J A 21	J A 57	J A 35	J A 24	J A 28
30	J A 40	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	J A 37	J A 25	J A 64	33	64	J A 71	J A 31	31	J A 34	J A 53	J A 29	J A 31	J A 32	J A 44	J A 34	J A 32	J A 22	
31																									
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
MED	E S 16	J A 21	J A 20	E S 16	E S 16	E S 15	E S 15	E G 17	26	J A 32	J A 34	J A 35	J A 36	J A 32	J A 31	J A 28	J A 26	J A 20	J A 22	J A 24	J A 22	J A 20	J A 25	J A 21	
UQ	J A 28	J A 25	J A 25	J A 20	J A 23	J A 18	E S 16	20	J A 29	J A 41	J A 44	J A 46	J A 46	J A 46	J A 41	J A 35	J A 29	J A 32	J A 31	J A 44	J A 37	J A 34	J A 32	J A 29	
LQ	E S 15	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	G	G	G	24	31	30	G	E S 17	E S 15	E S 15	E S 16	E S 16	E S 15	E S 15	E S 15	

NOV. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

NOV. 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 24sec in automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1	E	E	E	E S 16	E S 15	E S 15	E S 15	G	G	G	G	G	34	33	30	28	20	G	20	E	E	E S 16	E	E						
2	E	E	23	18	A A 126	A A 90	G	G	32	30	31	31	27	G	29	26	53	G	22	E	27	19	E	E						
3	20	20	20	E	E S 15	E S 15	E S 15	19	29	G	31	31	31	30	G	20	G	E S 15	23	E	20	A A 56	E	E						
4	24	22	E	E S 15	E S 15	E S 15	E S 15	G	G	28	26	31	24	31	30	24	23	19	E	18	E	24	E S 15							
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	G	G	G	G	G	23	G	G	25	G	E A 65	E	E S 15	20	E						
6	E S 15	E S 15	E S 15	E	E	E S 15	E S 15	G	G	G	G	G	34	30	G	26	24	30	28	E	28	A A 54	20	20						
7	E S 15	28	E	E S 15	E S 16	E S 15	E S 16	20	24	28	26	26	30	33	30	25	22	22	19	18	19	E	E	E						
8	E	E	E S 15	E S 15	E S 15	E S 15	E S 16	G	25	25	G	G	G	G	G	28	19	G	E	E	E	E	E	E						
9	E	E	E	E	E S 16	E S 16	E S 16	G	47	31	38	36	25	34	27	26	23	G	E	30	18	E	22	E						
10	E S 16	E S 16	E S 16	E S 16	E	E	G	G	25	23	G	G	31	25	28	23	G	G	20	A A 50	20	E	E	21						
11	E	E	E	E	E S 15	E S 15	E S 15	G	G	G	31	33	40	26	30	26	18	20	30	20	E	E S 15	E S 15	E						
12	E S 15	E	E	E	21	E S 16	E S 16	G	25	G	G	31	32	G	G	34	18	A A 50	E	E S 16	E S 15	E S 15	E S 15	E S 15						
13	E S 15	E S 15	E S 15	E S 15	E	E S 16	E S 16	24	27	31	31	31	30	G	27	G	E S 17	E S 15	E S 15	E S 16	E S 16	E S 15	E S 15	E S 16						
14	E	E	E	E	E S 15	E S 15	E S 15	21	32	30	45	43	42	40	53	40	25	E S 15	E S 15	20	E	E	30	E						
15	E	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	G	31	32	30	G	44	33	27	E S 17	19	E	E S 15	E S 15	E S 15	E S 15	E S 15						
16	E S 15	A A 32	A A 28	A A 51	E S 16	E S 15	E S 15	G	25	32	33	31	31	31	G	G	E S 17	E S 15	E S 15	E S 15	E S 15	E S 15	G	G						
17	E S 16	24	E	E S 16	E S 15	E S 15	E S 15	18	29	36	36	33	35	31	27	24	22	A A 50	A A 166	A A 110	21	A A 86	A A 62	E						
18	27	22	23	E S 16	E S 15	E S 15	E	25	28	32	36	30	28	27	33	47	30	26	21	19	30	E A A 76	E							
19	E	E	E	E	20	E S 15	E S 15	20	26	40	32	G	30	28	26	24	21	22	E A A 64	E	E	21	21							
20	E	E	22	21	E S 15	E S 15	E S 16	G	28	G	42	50	A A 73	50	43	37	28	E S 16	E S 15	E S 16	E S 16	E S 15	E							
21	20	22	E	E	E	E S 16	E S 16	G	38	30	30	31	30	33	24	18	E S 15	E S 15	E	E S 16	E	E	E S 16							
22	E S 16	19	E	E S 15	E S 15	E S 15	E S 17	G	32	29	31	26	31	25	25	25	22	E	E	E S 15	E	E S 15	E S 15							
23	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 18	G	26	G	G	G	G	G	G	E S 17	E S 16	E	E	E S 16	E S 15	E S 15	E S 15							
24	E S 15	E	E S 15	E S 15	E S 15	E S 15	E S 17	23	26	28	24	25	32	32	G	E S 17	E S 15	E S 15	E S 15	E	E	E	E S 15							
25	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	G	G	31	36	31	G	G	G	E S 17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15							
26	E S 16	E	E S 15	E S 15	E S 15	E S 16	E S 15	19	25	28	G	G	G	30	22	22	E S 16	E	E	E S 16	E S 15	E S 16	E S 15							
27	E S 15	E S 16	E S 15	E S 15	E S 16	E S 16	E S 15	E S 16	G	28	32	33	31	28	26	G	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15							
28	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	21	G	26	28	25	G	G	E S 16	E S 15	E S 15	E S 16	E	E S 16	E S 15							
29	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	G	G	33	33	30	32	34	25	E S 17	E S 16	E S 16	E	E	E	E	E							
30	E	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	G	25	31	32	32	30	31	30	30	G	E	E	A A 32	A A 44	21	25	E						
31																														
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30						
MED	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	24	28	30	31	30	30	27	24	18	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15						
UQ	E S 16	19	E S 15	E S 15	E S 15	E S 15	E S 15	18	26	31	32	33	31	32	30	27	23	22	20	19	19	E S 16	20	E S 15						
LQ	E	E	E	E	E S 15	E S 15	E S 15	G	G	G	G	G	G	G	G	G	E S 17	E	E	E	E	E	E	E						

NOV. 1984

FBES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

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

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FMIN (0.1 MHz)

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IONOSPHERIC DATA

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M(3000)F2 (0.01)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	325	310	310	320	330	335	375	380	345 ^H	355	325 ^H	330	365	365	375	340	350	355	290	300	315	320	320	305
2	355	280	310	310	A	A	340	330	360	370	330	330 ^R	325	365	340	375	365	350	315	330	330	290	F	F
3	F	F	F	F	305	330	350	355	360	340	355	335	350	350	355	365	380	345	295	F	340	A	320	F
4	F	F	F	F	355	F	340	335	340	345	355	350	355	370 ^H	360	370 ^R	375	365	320	325	350	305	310	320
5	320	310	310	320	350	325	350	395	335	360	370	325 ^H	335 ^H	350	350	370	355	365	330	A	320	330	315	310
6	325	310	320	315 ^F	340	F	330 ^F	370	360	345	345	345	345	360	370	365	370	340	340	315	340	A	305	F
7	320 ^F	300	305	325	340	340	360	370	380	355	350	365	350	345	360	370	360	345 ^H	350	350	320	305	310	300
8	305 ^F	F	315 ^F	315 ^F	300 ^F	365	335	325	355	350	320	335	340	360	370	345	370	345	365	305	295	305	325	325
9	300	290	295 ^F	F	F	345	350	370	365	345	345	365	345	350	355	360	375	355	330	340	365	335	305	310
10	310	315	330	310	345	350	310	360	385	365	335	350	350	365	370	365	350	350	335	A	345	320	310 ^F	295 ^F
11	300 ^F	290 ^F	F	350 ^F	385	315	325	365	370	350	350	355	365	355	345	360	380	355	350	360	335	335 ^F	310 ^F	315 ^F
12	300 ^F	F	335	345	320	320	345	370	365	335	340	350	370	350	355	360	360	A	310	375	305	290	310	310
13	295	310 ^F	310 ^F	F	330 ^F	340	335	390	365	355	355	355	340	355	350	370	335 ^H	335	350	350	320	335	320	320
14	315	310	300 ^F	F	F	325 ^F	385	375	370	355	335 ^H	355	360	335	355	370	360	360	330	295	315	325	310 ^S	275 ^F
15	305 ^F	305 ^F	F	335 ^F	F	305	310	380	370	365	360	345	345	360	365	340	365	370	300	290	290	F	290 ^F	295
16	300	A	A	A	275 ^F	F	F	380	360	350	305	320	335	345	350	340	340	335	300	280	255	315	320	315
17	265	285	F	F	300 ^F	F	295	340	380	345	345	355 ^F	350	360	355	370	360	A	A	A	340 ^S	A	A	295
18	295	315	F	F	F	F	F	390	370	335	330	370	370	360	365	390	370	340	325	320	320	370 ^S	A	335 ^F
19	F	F	F	F	305	320	315	350	370	325	370	360	365	365	370	370	370	385	335	A	320	315 ^F	295 ^F	F
20	305 ^F	320 ^F	345 ^F	330	305	320	340	350	390	350	345	370	360	A	380	365	380	375	320	300	350	330	315	305
21	290 ^F	F	300 ^F	325 ^F	355	320	340	360	375	365	360	355	350	375	350	365	370	360	370	375	320	315 ^F	300 ^F	300 ^F
22	F	F	F	F	F	F	F	F	370	350	345	365	355	365	355	355	385	330	310	345	325 ^F	310 ^F	F	F
23	F	F	F	F	F	F	F	360	375	360	330	340	355	360	360	360	380	345	355	320	365	355	F	F
24	F	F	F	F	340	360	345 ^F	355	360	350	375	320	380	375	375	370	375	350	360	355	345	340	330	F
25	295 ^F	F	320 ^F	330	340	375	335	360	370	360	370	340	335 ^H	340	320	380	400	340	350	365	355	350	345	325 ^F
26	310	310 ^F	335 ^F	345 ^F	320 ^F	315	380	375	395	325 ^H	340	385 ^R	375	315	380	365	345	340	375	315	320	375	335	305
27	305	315	325	320	340	325	350	380	390	355	350	350	370	355	385	365	320 ^H	380	340	390	360	345	320	325
28	320	320	310	325	310	315	350	350	365	360	360 ^H	370	365	350	370	340 ^H	320 ^H	320 ^H	350	335	320	310	300	305
29	320	345	320	310	320	325	335	355	370	360	385	380	365	335	370	375	385	345	325	315	320	335	320	320
30	305	315	305	300	320	370	325	350	380	355	370	365	365	350	345 ^H	330	345	365	345	A	A	295	285	300 ^F
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	21	22	21	23	22	26	29	30	30	30	30	30	29	30	30	30	28	29	24	29	26	25	24
MED	305	310	312	325	330	325	340	360	370	352	348	352	355	355	360	365	368	350	335	328	320	322	310	308
UQ	320	315	325 ^F	335	340	345	350	375	375	360	360	365	365	365	370	370	375	362	350	352	345	335	320	320
LQ	300	305 ^F	310	315	308	320	330	350	360	345	335	340	345	350	350	360	350	340	320	310	320	310	305	300

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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	L	L	L	L									
2										L	L	L	L	L	L									
3										L	L	L	L	L	L									
4									L	L	L	L	L	L	L									
5											L	L	L	L	L									
6									L	L	L	L	L	L										
7									L	L	L	L	L	L		L								
8									L	L	L	L	L	L										
9											L	L	L	L										
10										L	L	L	L	L	L									
11										L	L	L	A											
12										L	L	395	L	L	L									
13											L	L	L	L	L									
14										L	A	A	A	A	A									
15										L		395 400	L	A										
16									L		L	L	L	L	L									
17											L	L	L	L	L									
18									L	L	360 380	390	L	A										
19										A	395	L	L	L	L									
20										L	L	A	A	A	A									
21											L	L	L	L										
22											L	L	420	L	L									
23										L	L	L	L	L										
24										L	L	L	L	L	A									
25											L	375	L	L										
26											L	L	420	L	L									
27											L	L	L	L										
28											L	L	L	L										
29											L	L	430	L	A									
30											L	L	L	410										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											3	4	4	1										
MED											395	388	420	410										
UQ											395	398	425											
LQ											378	378	405											

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M(3000)F1 (0.01)

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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										240	235	260	240	245	230									
2										230	250	240	250	225	245									
3										235	240	260	240	245	230									
4									240	230	250	235	245	235	240									
5										220	230	240	235	250										
6									230	235	260	240	245	240										
7									220	220	245	230	235	255		225								
8									250	240	260	245	250	230										
9										250	245	250	240											
10										235	245	255	245	240	240									
11										250	240	245	245											
12										240	240	230	220	250	240									
13											245	245	240	245	245									
14										240	245	230	235	240	245									
15										230	240	230	245	250										
16									225		250	265	230	245	230									
17										240	235	235	240	245										
18									230	260	265	230	235	230	225									
19										260	230	245	240	240	220									
20										240	250	240	230		A	A								
21										235	235	230	230											
22										240	245	235	230	230										
23										230	240	255	235	230										
24										225	220	235	220	230	230									
25										240	260	260	255											
26										240	225	230	240	230										
27										260	255	240	245											
28										230	230	240	230											
29										220	230	230	250	220										
30										230	235	240	235											
31																								
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									6	17	30	30	30	28	17	1								
MED									230	235	240	240	240	240	230	225								
UQ									240	240	250	245	245	245	245									
LQ									225	230	235	230	235	230	230									

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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	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	245	285	295	250	245	225	220	210	200	210	205	205	230	230	220	230	230	205	270	270	250	210	230	280					
2	220	E S 330	A	295	A	A	240	220	230	220	195	225	235	215	220	225	A	205	A	240	A	230	295	300					
3	280	A	260	245	270	240	200	205	215	200	220	210	230	195	200	200	H	210	200	A	260	240	A	250	270				
4	A	310	270	230	210	245	225	220	220	205	190	200	240	230	220	225	210	205	240	250	225	A	280	270					
5	245	275	260	260	230	240	230	210	H 195	230	220	200	H 190	220	195	220	215	205	220	A	250	240	A	265	280				
6	245	270	250	250	230	225	225	220	205	200	190	200	220	215	230	230	205	A	A	245	A	A	A	295	245				
7	270	A	280	250	230	230	205	225	205	200	210	200	205	220	220	220	210	205	220	230	240	A	240	270	280				
8	250	270	225	275	280	200	200	200	220	220	200	230	210	220	230	230	210	205	205	E S 280	E S 280	275	260	240					
9	270	300	280	295	240	215	190	220	A	240	A	A	230	A	225	220	205	205	A	230	220	230	A	E S 295					
10	290	300	290	285	250	220	205	210	215	205	220	200	220	235	220	215	205	200	245	A	220	250	E S 280	A					
11	320	290	265	220	205	E S 270	230	200	220	235	230	235	A	245	245	220	210	220	A	220	230	245	250	270					
12	280	270	250	215	A	255	230	220	235	220	200	205	220	240	235	220	210	A	235	225	250	E S 300	300	275					
13	285	280	280	245	240	240	235	205	220	220	220	200	190	225	235	225	200	210	230	230	225	235	245	250					
14	245	275	E S 320	295	275	250	205	200	210	210	A	A	A	A	A	230	210	200	220	A	260	240	A	305					
15	275	280	215	225	255	275	235	200	210	200	220	195	200	A	235	220	205	215	E S 285	300	320	290	325	305					
16	265	A	A	A	E S 350	E S 350	E S 300	200	H 200	235	230	210	220	A	220	230	220	220	240	290	355	260	210	245					
17	400	A	245	260	245	300	255	205	210	230	A	A	A	220	235	210	205	A	A	A	A	A	A	E S 320					
18	A	290	A	305	270	240	225	205	220	220	230	210	200	205	A	220	210	A	A	275	A	200	A	250					
19	E S 280	E S 300	300	280	A	260	255	240	220	A	220	200	200	220	215	210	210	220	230	A	230	245	A	A					
20	275	245	A	A	275	E S 300	235	225	225	220	200	A	A	A	A	220	220	220	245	275	230	230	270	280					
21	A	A	245	260	235	255	230	210	230	235	220	200	220	210	240	235	210	200	220	210	215	260	E S 290	E S 300					
22	E S 300	275	255	220	250	265	220	205	H 200	225	230	210	195	225	210	225	205	220	220	220	230	260	280	E S 300					
23	275	250	250	215	250	220	240	225	220	H 205	200	230	220	220	220	215	200	200	220	260	215	210	E S 280	290					
24	305	280	280	245	230	235	255	225	220	H 200	200	200	H 205	220	A	215	205	210	230	205	240	245	250	E S 290					
25	290	270	250	265	250	205	E S 280	205	205	240	230	A	200	200	H 210	210	200	235	215	215	210	225	260	250					
26	285	255	255	250	265	245	205	215	H 210	210	230	200	205	200	210	220	200	220	205	E S 285	255	215	240	E S 280					
27	280	250	230	245	235	E S 240	245	205	200	210	215	240	210	200	210	220	200	200	225	210	205	245	270	220					
28	255	280	270	245	280	245	275	235	220	220	225	210	190	195	220	220	220	225	210	250	260	255	275	260					
29	265	230	275	275	270	270	250	220	H 205	210	A	A	200	235	A	220	200	230	250	260	250	240	245	255					
30	E S 300	285	290	295	245	215	250	220	H 210	220	A	230	210	220	225	255	225	205	210	A	A	A	A	E S 300					
31																													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT	27	26	26	28	27	29	30	30	29	29	25	24	26	25	25	30	29	26	23	24	25	25	24	28					
MED	272	278	261	250	248	240	230	210	215	220	220	205	210	220	220	220	210	205	222	242	235	240	265	U 266					
UQ	285	288	280	278	269	255	245	220	220	225	225	218	220	225	230	225	210	220	239	266	250	252	279	289					
LQ	260	270	250	245	235	225	220	205	205	205	200	200	200	210	215	220	205	205	220	222	225	230	250	251					

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H*F (KM)

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IONOSPHERIC DATA

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

NOV. 1984 H°E (KM)

IONOSPHERIC DATA

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H°ES (KM)

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

Station	AKITA				Lat. 39 43.5 N				Long. 140 08.0 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	130	100	S	S	115	S	G	G	G	G	G	120	120	115	110	120	140	110	110	110	S	105	105
2	110	105	110	110	110	105	105	G	110	105	100	100	100	G	130	115	110	110	105	105	105	105	100	105
3	100	100	100	100	100	S	S	110	120	G	120	100	100	100	G	100	100	S	110	110	105	105	105	100
4	100	100	100	S	S	S	S	G	G	105	100	100	105	100	100	100	120	110	110	105	105	105	105	S
5	S	S	S	S	S	S	S	G	G	G	G	G	G	100	G	G	125	125	110	100	100	S	100	105
6	S	100	S	105	100	100	S	G	G	G	G	G	155	115	G	120	135	120	115	110	110	105	105	100
7	S	105	100	S	S	S	S	115	110	105	100	100	100	100	100	100	100	115	100	105	105	105	105	100
8	100	100	S	S	S	S	S	G	105	105	G	100	G	G	G	120	100	100	100	100	105	100	105	100
9	105	100	100	100	100	S	S	G	100	100	100	100	100	100	100	100	105	100	105	105	105	105	105	100
10	S	S	S	S	100	100	100	G	105	100	100	100	120	100	105	100	100	100	110	105	105	105	105	105
11	100	100	100	100	100	S	S	G	G	G	105	100	100	100	155	150	135	100	110	95	95	S	S	105
12	S	100	100	100	100	100	S	G	110	G	G	130	145	G	G	110	95	95	95	S	S	S	S	S
13	S	S	105	S	100	110	S	145	145	120	110	105	110	G	100	G	S	S	S	S	S	S	S	S
14	105	105	105	105	100	S	S	130	120	120	110	110	110	110	110	110	S	S	105	105	105	110	105	105
15	105	S	S	S	S	S	S	S	G	135	130	130	G	120	120	125	S	120	120	S	S	S	S	S
16	S	130	120	105	100	S	S	G	130	115	115	110	110	110	G	G	S	S	S	S	S	S	S	S
17	S	140	120	S	S	S	S	130	120	110	110	110	110	110	110	125	120	110	110	105	105	105	105	105
18	105	105	100	S	S	S	105	110	110	110	105	105	100	100	100	100	100	100	105	105	100	105	105	105
19	105	105	100	100	100	S	S	115	110	105	105	G	100	100	100	100	100	95	105	110	110	110	100	105
20	105	100	100	100	100	S	S	S	105	110	G	100	100	100	95	95	95	95	S	S	S	S	S	100
21	105	100	100	100	100	100	S	100	G	120	120	120	110	95	95	95	100	S	S	120	S	105	105	S
22	S	100	100	S	100	S	S	S	G	100	100	135	100	100	100	95	105	100	100	100	S	105	S	S
23	S	S	S	S	S	100	S	S	100	110	G	G	G	G	G	G	S	S	100	100	S	S	S	S
24	S	105	S	S	S	S	S	S	110	105	100	100	100	100	95	G	S	S	S	S	130	110	105	S
25	S	S	S	S	S	S	S	S	G	G	115	100	100	G	G	G	S	S	S	S	S	S	S	S
26	S	105	S	S	S	S	S	150	120	115	G	G	G	150	105	100	S	100	100	S	S	S	S	S
27	S	S	S	S	S	S	S	S	G	120	120	110	110	120	120	G	S	S	S	S	S	S	120	S
28	S	S	S	S	S	S	S	S	G	G	105	G	100	110	110	G	100	S	S	S	S	120	S	S
29	S	S	S	S	S	S	S	S	G	G	155	155	130	130	125	120	S	S	S	120	110	105	105	105
30	105	S	S	S	S	S	S	105	105	105	140	110	105	115	110	110	120	105	105	105	105	105	100	100
31																								
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	14	20	17	11	14	8	3	10	18	21	22	23	25	24	22	22	21	19	20	20	18	18	19	17
MED	105	102	100	100	100	100	105	115	110	110	108	105	105	100	105	105	105	100	105	105	105	105	105	105
UQ	105	105	105	105	100	108	105	130	120	115	120	110	110	115	115	120	120	112	110	110	110	105	105	105
LQ	100	100	100	100	100	100	102	110	105	105	100	100	100	100	100	100	100	100	100	102	105	105	100	100

NOV. 1984

H°ES (KM)

IONOSPHERIC DATA

NOV. 1984 TYPES OF ES

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

Station		AKITA											Lat. 39 43.5 N, Long 140 08.0 E											Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
1	F1	FF12	F2			F1							CL12	C1	C2	C2	C1	H1	F2	F2	F1		F2	F1										
2	F1	F2	F3	F3	F3	F3	L2		C2	L2	L2	L2	L1		C1	C3	C3	C1	F2	F2	F4	F2	F2	F2										
3	F3	F3	F3	F2	F2			C1	C1		C1	L2	L1	L2		L2	LH11		F3	F2	F3	F3	F2	F2										
4	F5	F3	F1							L2	L2	L2	L2	L2	L2	L2	C4	C2	F2	F3	F2	F3	F2											
5														L1			C4	C1	F1	F2	F1		F4	F1										
6		F1		F2		F2							H1	C1		C1	H2	C2	F4	F2	F4	F4	F2	F2										
7		F4	F2				C2		C2	L2	L2	L1	L2	L3	L2	L3	L2	CL12	F1	F2	F2	F2	F1	F2										
8	F1	F1							L2	L2		L2				C2	L2	L1	F1	F2	F1	F1	F1	F2										
9	F1	F2	F2	F2	F2				L2	L3	L2	L2	L2	L3	L4	L2	L3	L1	F2	F2	F3	F2	F3	F2										
10					F2	F4	L1		L2	L2	L1	L2	C1	L2	L1	L1	L1	L1	F2	F3	F2	F2	F2	F3										
11	F3	F2	F2	F1	F1						L3	L2	L3	L2	HL21	HL23	HL11	F2	FF32	F2	F1			F1										
12		F1	F1	F1	F2	F2			C2			C1	H1			CL21	L1	F4	F2															
13			F2		F2	F2		H2	H2	C1	C2	L2	C1		L1																			
14	F2	F2	F3	F2	F2			C1	C2	C2	C3	C2	C3	C2	C3	C3	C4			F3	F3	F2	F6	F2										
15	F3									H2	C2	C1		C3	C2	C1		F2	F1															
16		F6	F5	F3	F2				C2	C2	C2	C2	C2	C2									K1	K1										
17		F2	F2				C1		C2	C3	C2	C2	C3	C2	C2	CL12	CL21	F6	F3	F3	F3	F5	F4	F3										
18	F6	F5	F4			F1	C3		C5	C4	L3	L2	L2	L2	L2	L3	L2	F2	F4	F4	F7	F2	F5	F2										
19	F2	F1	F3	F2	F2		C2		C2	L3	L3		L2	L3	L3	L2	L2	F4	F2	F3	F2	F1	F3	F2										
20	F2	F2	F5	F6	F2				L1	C2		L3	L3	L4	L4	L4	L4	F5						F3										
21	F3	F5	F2	F2	F3	F2		L1		C2	C2	C1	C1	L2	L4	L2	L1			F1		F2	F1											
22		F3	F2		F1					L3	LH21	HL13	L2	L3	L2	L3	L3	F2	F1	F1		F2												
23					F1				L1	C1									F2	F1														
24		F1							C1	L1	L2	L2	L2	L2	L2	L2					F2	F1	F2											
25											C1	L2	L2																					
26		F3						H1	C2	C2				H1	L2	L3		F1	F2															
27									C1	C2	C2		C2	C1	C1								F2											
28										L1			L2	CL11	CL11		LH11					F1												
29										H1	H1		C1	C2	CL31	C2				F2	F2	F2	F2	F2										
30	F2						L1	L2	L2	H2	C1		L1	C2	C2	C4	C1	F1	F1	F3	F4	F4	F3	F2										
31																																		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
CNT																																		
MED																																		
UQ																																		
LQ																																		

NOV. 1984 TYPES OF ES

IONOSPHERIC DATA

NOV. 1984

FXI (0.1 MHZ)

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

Station **OKUBUNJI 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 38	X 37	X 35	X 36	X 38	X 36	X 45											C 59	X 61	X 61	S 61	X 57	X 46	X 41	
2	X 49	X 33	X 37	S 38	X 39	X 40	X 50											X 55	X 39	X 47	X 45	X 39	X 40	X 42	
3		S 43	S 41	S 41	S 40	S 39	S 46											X 51	X 40	X 49	X 46	S 42	S 40	S 38	
4	O 40	S 40	X 41	X 44	S 35	S 30	S 44											X 58	X 44	X 45	X 45	X 38	X 35	A	
5	X 39	X 38	X 39	X 39	X 39	X 34	X 46											X 55	A	A	X 40	X 42	X 44	X 40	
6	X 43	X 42	X 42	S 43	X 40	X 35	S 44											S 48	X 39	A	S 43	A	S 39	S 40	
7	S 39	X 40	X 39	X 41	S 40	S 32	X 45											X 51	X 41	X 39	S 36	S 39	S 39	S 42	
8	U 45	X 44	S 45	X 41	X 39	X 41	S 33											X 53	X 55	X 37	X 40	X 42	X 43	X 42	
9	X 41	X 40	U 41	S 39	U 40	S 36	S 39											X 47	X 46	X 47	A	S 36	X 31	X 32	
10	X 33	X 33	X 33	X 35	S 39	X 35	X 38											X 49	X 40	X 40	X 36	A	S 31	X 35	
11	X 35	S 36	X 39	X 42	X 34	X 29	X 38											X 46	S 49	X 47	S 33	S 36	X 37	S 41	
12	S 40	S 40	S 40	X 44	X 36	S 35	X 43											X 55	X 34	X 36	X 32	X 29	X 32	X 36	
13	X 35	X 36	S 36	X 36	X 36	X 31	X 38											X 43	X 40	X 39	X 37	X 39	X 38	X 39	
14	X 35	X 35	X 34	S	U 34	U 34	U 40											X 45	X 36	X 35	X 43	U 47	S 42	S 39	
15	S 39	S 41	X 44	S 35	X 31	S 35	X 44											X 50	X 32	X 37	X 41	X 44	X 41	X 42	
16	S 46	X 33	X 29	X 31	X 31	X 31	X 36											X 71	X 63	X 54	X 50	X 62	X 71	X 42	
17	S	S 43	X 55	S 78	U 88	S 75	X 91											X 51	X 60	A	A	A	S 38	A	
18	S 37	S 37	X 37	S 38	X 37	S 36	X 43											X 43	A	A	X 45	S 46	X 27	X 30	
19	A	X 34	X 33	X 33	S 33	X 31	X 37											X 50	X 35	X 32	S 39	X 36	U 33	X 38	
20	S 39	S 38	S 40	X 37	X 32	X 32	X 38											X 43	X 36	X 34	X 40	S 40	S	X 37	
21	X 38	S 38	X 39	X 39	X 37	S 35	S 39											X 44	X 40	X 39	X 34	X 32	S 34	S 38	
22	X 38	X 39	U 41	S 38	S 35	S 37	S 42											X 43	X 37	X 40	S 38	X 36	U 37	X 36	
23	U 36	U 39	S 39	S 45	S 33	X 31	H 31											X 43	X 35	X 32	S 37	S 34	X 36	X 36	
24	X 36	X 37	X 38	X 41	S 40	S 26	X 33											X 43	X 36	X 38	X 31	X 30	X 35	X 35	
25	S 40	X 37	X 36	X 37	S 39	X 32	X 34											X 48	X 41	X 42	X 31	X 30	X 30	X 32	
26	S 33	S 35	X 37	X 35	X 35	X 33	X 34											X 47	X 42	X 34	X 34	X 39	X 33	X 33	
27	X 36	X 38	X 41	S 39	S 33	S 29	X 33											X 51	X 38	X 41	X 27	S 26	X 29	X 31	
28	X 32	X 33	X 34	X 35	X 32	X 31	X 31											S 47	X 36	X 32	X 36	X 40	X 36	X 38	
29	X 38	X 39	X 36	X 35	X 35	X 35	X 35											X 35	X 34	S	X 41	S 38	X 31	X 31	
30	X 33	X 34	X 34	X 34	X 35	X 31	X 33											X 62	X 47	X 33	H 31	X 36	S 39	X 41	
31																									
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	28	30	30	29	30	30	30											29	28	25	28	27	29	28	
MED	X 38	X 38	X 39	X 38	X 36	X 34	X 38											X 48	X 40	X 39	X 38	X 39	X 37	X 38	
UQ	S 40	S 40	X 41	X 41	X 39	X 36	X 44											X 51	X 45	X 45	X 43	X 42	S 40	X 41	
LQ	X 36	X 35	X 36	X 35	X 34	X 31	X 34											X 44	X 36	X 35	X 34	X 36	X 33	X 35	

NOV. 1984

FXI (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

NOV. 1984

FOF2 (0.1 MHz)

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

Station **OKUBUNJI TOKYO** Lat. **35 42.4 N**, Long. **139 29.3 E** Sweep **1 MHz to 20 MHz** in **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 32	S 31	S 29	S 30	S 32	S 30	S 39	S 55	S 60	S 70	S 68	S 76	S 76	H 80	I 66	S 62	S 64	C 53	S 55	S 55	S 55	S 51	S 40	S 35
2	S 43	S 27	S 31	S 32	S 33	S 34	S 44	S 70	S 75	S 91	S 85	S 76	S 73	S 73	S 69	S 81	S 64	S 49	S 33	S 41	S 39	S 33	S 33	S 32
3	F 37	S 37	S 35	S 35	S 34	S 33	S 40	S 57	S 65	S 62	S 81	S 79	S 83	S 76	S 77	S 63	S 61	S 45	S 34	S 43	S 40	S 36	S 34	S 32
4	S 34	F 34	S 35	S 38	S 29	F 24	S 38	S 63	S 82	S 79	S 91	S 86	S 78	S 81	S 75	S 65	S 59	S 52	S 38	S 39	S 39	S 32	S 29	A
5	S 33	S 32	S 33	S 33	S 33	S 28	S 40	S 61	J 77	S 71	S 93	S 78	S 67	S 81	S 65	S 74	S 64	H 49	A	A	S 34	S 36	S 38	S 34
6	S 37	S 36	S 36	S 37	S 34	S 29	S 38	S 63	S 68	S 70	S 74	S 88	S 72	S 75	J 75	S 67	S 59	S 42	S 33	A	S 37	A	S 33	S 34
7	S 33	S 34	S 33	S 35	S 34	S 26	S 39	S 64	J 77	S 67	S 76	S 95	S 77	S 80	S 69	S 62	S 60	S 45	S 35	S 33	S 30	S 33	S 33	S 36
8	U 39	S 38	S 39	S 35	S 33	S 35	S 27	S 50	S 60	S 70	S 91	S 102	S 85	S 79	S 71	S 60	S 67	S 47	S 49	S 31	S 34	S 36	S 37	S 36
9	S 35	S 34	U 35	S 33	U 34	S 30	S 33	S 54	S 56	S 66	S 81	S 88	S 79	S 79	S 75	S 57	S 56	S 41	S 40	S 41	A	S 30	S 25	S 26
10	S 27	S 27	S 27	S 29	S 33	S 29	S 32	S 51	S 69	S 61	H 72	J 71	J 75	S 70	J 71	S 54	S 54	S 43	S 34	S 34	S 30	A	S 25	S 29
11	S 29	S 30	S 33	S 36	S 28	F 20	S 32	S 55	J 60	S 67	S 88	S 79	S 68	S 70	S 64	S 74	S 60	S 40	S 43	S 41	S 27	S 30	S 31	S 35
12	S 34	S 34	S 34	S 38	S 30	S 29	S 37	S 56	S 65	S 72	S 83	S 88	S 67	S 70	S 66	S 66	S 60	S 49	S 28	S 30	S 26	S 23	S 26	S 30
13	S 29	S 30	S 30	S 30	S 30	S 25	S 32	S 57	I 60	S 65	S 74	S 71	S 69	S 72	S 65	S 64	S 55	S 37	S 34	S 33	S 31	S 33	S 32	S 33
14	S 29	S 29	S 28	A	U 28	U 28	U 34	S 59	S 55	S 64	S 69	J 75	S 75	S 71	S 75	S 77	S 65	S 39	S 30	S 29	S 37	U 41	S 36	S 33
15	S 33	S 35	F	S 29	S 25	S 29	S 35	S 57	S 64	S 65	S 72	S 81	S 69	S 69	S 71	S 65	S 68	S 44	S 26	S 31	S 35	S 38	S 35	S 36
16	S 40	S 27	S 23	S 25	S 25	S 25	F 27	J 78	S 65	S 80	S 94	S 102	S 110	S 91	S 90	S 85	S 64	S 65	S 57	S 48	S 44	S 56	S 65	S 36
17	A	S 37	S 49	S 72	F 82	U 69	S 85	S 116	S 92	U 84	S 79	A	S 83	S 85	S 79	S 82	A	S 45	S 54	A	A	A	A	A
18	S 31	S 31	S 31	S 32	S 31	S 30	S 37	S 50	S 61	S 73	S 90	S 109	S 79	S 72	S 68	S 62	S 60	S 37	A	A	S 39	S 40	S 21	S 24
19	A	S 28	S 27	S 27	S 27	S 25	S 31	S 60	S 67	S 62	S 72	S 67	S 74	S 74	S 68	S 56	S 53	S 44	S 29	S 26	S 33	S 30	U 27	S 32
20	S 33	S 32	S 34	S 31	S 26	S 26	S 32	S 58	S 63	S 67	S 86	S 99	S 84	S 67	S 58	S 58	S 67	S 37	S 30	S 28	S 34	S 34	A	S 31
21	S 32	S 32	S 33	S 33	S 31	S 29	S 33	S 64	S 71	S 71	S 83	S 85	S 76	S 66	S 61	J 72	S 57	S 38	S 34	S 33	S 28	S 26	S 28	S 32
22	S 32	S 33	U 35	S 32	S 29	S 31	S 36	S 62	S 65	S 65	S 75	S 88	S 72	S 70	S 69	S 70	S 61	S 37	S 31	S 34	S 32	S 30	U 31	S 31
23	U 30	U 33	S 33	F	F	S 25	H 25	S 58	S 65	S 74	S 77	S 79	S 90	S 76	J 73	S 62	S 53	S 37	S 29	S 26	S 31	S 28	S 31	S 31
24	F	S 31	S 32	S 35	S 34	S 20	S 27	S 57	S 80	S 81	S 78	S 67	S 68	S 74	S 63	S 62	S 53	S 37	S 30	S 32	S 25	S 24	F	S 31
25	S 34	S 31	F	S 31	S 33	S 26	S 28	S 49	S 58	S 65	S 81	S 82	S 74	S 68	S 86	S 65	S 54	S 42	S 35	S 36	S 25	S 24	S 24	S 26
26	S 27	S 29	S 31	S 29	S 29	S 27	S 28	S 50	S 53	S 63	S 70	S 73	S 73	S 68	S 74	S 60	S 47	S 41	S 36	S 28	S 28	S 33	S 27	S 27
27	S 30	S 32	S 35	S 33	S 27	S 23	S 27	S 50	S 52	S 57	S 59	S 75	S 71	S 67	S 62	S 49	S 50	S 45	S 32	S 35	S 21	S 20	S 23	S 25
28	S 26	S 27	S 28	S 29	S 26	S 25	S 25	S 58	U 68	S 83	S 66	S 60	S 59	S 59	S 54	S 52	S 52	S 41	S 30	S 26	S 30	S 34	S 30	S 32
29	S 32	S 33	S 30	S 29	S 29	S 29	S 29	S 53	S 69	S 64	S 62	S 62	S 65	S 63	S 68	S 62	S 55	S 29	S 28	A	S 35	S 32	S 25	S 25
30	S 27	S 28	S 28	S 28	S 29	S 25	S 27	S 51	S 69	S 65	S 71	S 67	S 68	S 88	S 75	S 60	S 71	S 56	S 41	S 27	H 25	S 30	S 33	S 35
31																								
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	S 26	S 30	S 28	S 28	S 29	S 30	S 30	S 30	S 30	S 30	S 30	S 29	S 30	S 30	S 30	S 30	S 29	S 29	S 28	S 25	S 28	S 27	S 26	S 24
MED	S 32	S 32	S 33	S 32	S 30	S 28	S 32	S 57	S 65	S 67	S 78	S 79	S 74	S 72	S 69	S 62	S 60	S 42	S 34	S 33	S 32	S 33	S 31	S 32
UQ	S 34	S 34	S 35	S 35	S 33	S 30	S 38	S 62	S 69	S 72	S 85	S 88	S 79	S 79	S 75	S 70	S 64	S 45	S 39	S 39	S 37	S 36	S 34	S 35
LQ	S 29	S 29	S 30	S 29	S 28	S 25	S 28	S 53	S 60	S 65	S 72	S 73	S 69	S 69	S 65	S 60	S 54	S 38	S 30	S 29	S 28	S 30	S 26	S 28

NOV. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FOF1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9h)

Station **OKUBUNJI 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	380	370	U L 440	L	L	C	L								
2									350	L	L	U L 430	U L 410	L	L									
3									320	L	L	L	L	350	L									
4									L	L	L	L	L	440	L									
5									L	L	L	L	L	440										
6									L	L	L	U L 440	L	L	U L 380									
7									L	L	U L 450	L	L	L	L	A								
8									L	L	L	L	U L 450	U L 430	U L 400	L								
9									L	L	L	L	L	L	L	L								
10									L	L	L	U L 420	L	L	L	390	A							
11									L	L	L	L	L	L	L									
12											L	L	L	L	L	L								
13									L	L	A	L	U L 420	U L 400	L	L								
14											A	L	L	L	L	L								
15										L	L	L	L	A	L	A								
16									U L 450	A	L	L	L	L										
17									L	A	A	A	A	A	A	A								
18									A	U L 440	L	L	A	L	A	L	310							
19									A	L	L	U L 420	U L 400	U L 380	A	A								
20									U L 370	U L 410	L	L	A	L	A									
21											A	L	L	L	L									
22									U L 330	L	L	L	L	A	A	L								
23									L	L	L	L	L	L	L	L	260							
24									L	L	L	L	L	L	L	370								
25									L	L	U L 440	L	L	L	L	L								
26									L	L	L	L	L	L	L	L								
27									L		L	L	L	L	L	L								
28									L	L	L	L	L	L	L	L	350							
29									L	L	L	L	L	L	L	L	L							
30									L	L	L	L	L	L	L	L	A							
31									L	L	L	L	L	L	L	L								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	6	10	9	5	8	3	2								
MED									320	U L 390	L	U L 420	U L 420	390	L	380	285							
UQ									335	U L 440	L	U L 440	U L 420	420	L	385								
LQ									315	U L 370	L	U L 410	U L 410	365	L	365								

NOV. 1984

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

NOV. 1984

FOE (0.01 MHz)

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

Station **OKUBUNJI TOKYO** Lat. **35 42.4 N**, Long. **139 29.3 E** Sweep **1** MHz to **20** MHz in **2** 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								210	260	290	300 ^H	310	310	300	I C 280	A	200							
2								A	A	285	300	310	310	295	280	A	A							
3								205	250	280	A	305	315	300	295	A	H 200							
4								200	260	290	305	A	315	A	H 280	240	175							
5								185	H 260	280	300	310	310	300	275	A	A							
6								220	260	285	300 ^H	310	A	310	A	250	H 180							
7					S	S		190	255	285	300	305 ^R	A	300	A	A	A							
8								195	260	285	305	310	310	295	270	245	A							
9								185	250	290	305	310	A	300	A	250	160							
10								A	A	285	A	305	A	A	A	A	A							
11								H 200	255	H 280	295	305	305	A	280	A	A							
12								200	A	A	A	A	A	300	275	A	A							
13								A	H 250	275	295	A	A	A	290	A	A							
14								H 205	255	275	A	A	A	A	A	A	A							
15								190	250	280	295	300 ^H	300	H 290	270	A	165				S	S		
16								160	250	275	290	A	295	A	A	245	160		S	S	S			
17			S		S	S	S	175	A	A	A	A	A	A	A	240	S							
18								A	A	A	A	A	A	A	A	A	A							
19								A	A	A	A	A	300	A	A	A	A							
20								S	H 250	270	290	A	A	A	A	A	A							
21								170	250	270	290	A	A	A	A	A	A							S
22								A	A	270	290	300	295	290	A	A	A						S	
23								S	240	A	A	A	305	290	270	240	S							
24								A	240	265	290	300	300	290	270	A	S							
25								170	A	275	295	300	300	290	A	A	B							
26								S	245	H 270	A	300	300	290	270	A	A						S	
27								S	180	H 245	265	280	H 295	A	A	270	240	A						
28								S	240	260	300 ^H	300	300	285	265	A	S							
29								S	250	275	290	290	300	285	265	230	A		S					
30								S	A	A	280	A	300	H 295	A	A	A			S				
31																								
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							17	21	24	21	18	18	18	16	9	7								
MED							190	250	278	295	305	300	295	272	240	175								
UQ							200	255	285	300	310	310	300	280	245	190								
LQ							180	250	270	290	300	300	290	270	240	162								

NOV. 1984

FOE (0.01 MHz)

IONOSPHERIC DATA

NOV. 1984

FOES (0.1 MHZ)

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

Station: TOKUBUNJI 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	J A 22	J A 19	J A 26	J A 24	J A 23	21	19	G	G 24	G 27	G 26	34	35	J A 50	C	J A 44	26	C	24	25	J A 19	20	J A 34	J A 63
2	J A 50	J A 25	J A 20	J A 23	J A 29	J A 20	23	22	27	30	J A 34	31	G 29	G 28	33	29	J A 46	J A 30	J A 36	J A 54	J A 52	J A 30	J A 25	19
3	J A 20	J A 20	J A 22	20	E B 13	E S 15	19	21	J A 30	J A 35	J A 35	J A 35	G 28	35	J A 31	26	G	18	E S 15	J A 27	J A 67	J A 77	J A 54	22
4	J A 49	J A 26	J A 20	J A 24	J A 20	23	J A 18	23	26	G 27	G 28	33	G 24	36	G	33	22	J A 21	J A 23	21	J A 19	J A 33	J A 62	J A 44
5	J A 53	J A 21	19	19	19	E S 14	E S 15	21	G	G 25	30	34	32	32	G 22	30	25	J A 28	J A 62	J A 43	E S 16	J A 31	20	J A 18
6	J A 26	J A 26	22	20	19	18	21	22	G	G 33	32	30	35	36	31	28	25	J A 36	37	J A 46	J A 26	J A 53	J A 50	J A 36
7	J A 25	J A 35	J A 30	23	19	E S 15	17	21	27	J A 30	J A 39	J A 35	J A 48	29	G 49	J A 37	J A 31	J A 21	J A 81	23	J A 28	J A 34	J A 49	J A 23
8	J A 24	22	21	19	20	E S 14	E S 15	G	G 21	32	29	J A 44	G 26	G 21	G 24	G	23	J A 29	J A 24	J A 17	J A 32	J A 54	J A 34	J A 34
9	J A 23	22	22	J A 40	J A 23	J A 19	20	G	G	33	27	G 23	35	G 27	29	G	G	18	18	J A 30	J A 62	J A 54	J A 31	J A 20
10	19	J A 20	22	J A 25	J A 26	21	23	J A 27	28	J A 30	33	31	33	J A 39	J A 33	J A 51	J A 29	J A 20	19	J A 23	J A 28	J A 60	J A 23	22
11	J A 33	J A 24	J A 19	J A 18	20	E S 15	19	G	G 24	34	34	34	33	39	34	35	J A 30	J A 51	J A 32	J A 51	J A 62	23	21	20
12	J A 27	J A 34	J A 37	J A 19	20	19	19	18	G 26	29	31	32	31	32	34	32	J A 21	21	17	22	19	J A 22	J A 32	J A 21
13	22	21	J A 20	23	24	J A 21	J A 20	J A 22	29	34	48	45	34	31	G	30	23	J A 27	J A 18	J A 18	21	J A 41	18	21
14	21	J A 30	J A 31	J A 30	J A 24	J A 20	21	24	33	36	J A 51	36	J A 40	39	J A 41	J A 42	J A 26	J A 21	J A 18	20	24	E S 16	E S 15	19
15	J A 19	20	E S 15	E S 16	E S 15	E S 15	E S 16	G	26	33	33	18	G 36	39	36	J A 55	25	16	18	18	E S 16	E S 15	23	E S 15
16	23	19	19	20	E S 15	19	17	G	G	35	58	J A 47	35	J A 40	J A 44	G	18	E S 15	20	E S 15	17	E S 16	21	24
17	35	J A 33	18	17	E S 15	E S 15	21	G	27	J A 54	J A 68	J A 94	J A 45	J A 88	J A 77	32	J A 64	J A 46	60	J A 80	J A 89	J A 81	J A 40	J A 50
18	J A 50	J A 33	J A 38	J A 21	20	18	19	J A 26	J A 37	J A 42	33	70	J A 69	J A 84	J A 51	30	J A 49	J A 43	J A 43	J A 54	J A 26	J A 24	J A 19	J A 20
19	J A 54	J A 75	J A 30	J A 27	J A 19	21	22	22	J A 52	35	J A 48	J A 50	G 28	J A 37	J A 51	J A 43	J A 35	J A 26	18	J A 24	23	J A 30	J A 19	J A 34
20	J A 28	J A 23	J A 25	J A 19	J A 22	J A 19	21	19	G 21	G 25	G 28	31	J A 51	J A 49	J A 40	J A 29	22	17	J A 21	J A 17	J A 18	J A 45	J A 33	J A 19
21	20	J A 20	J A 34	J A 21	J A 20	19	20	J A 26	G	31	J A 63	39	J A 40	J A 37	J A 37	J A 29	J A 26	J A 27	J A 27	J A 19	23	23	20	21
22	19	23	J A 21	J A 20	23	J A 24	J A 53	J A 27	J A 32	G 25	34	40	32	J A 55	J A 53	J A 36	J A 30	J A 29	J A 22	18	E S 16	18	J A E S 16	
23	23	E S 15	23	19	18	E S 14	J A 20	J A 19	G	J A 36	J A 34	J A 32	G 28	G 28	27	23	J A 21	J A 21	J A 20	19	E S 16	20	E S 16	E S 16
24	E S 16	E S 15	E S 15	20	E S 15	19	E S 15	18	G 21	G 23	G 24	18	35	33	35	28	E S 15	E S 15	J A 27	20	18	19	21	31
25	J A 35	19	E S 15	20	18	E S 15	18	20	26	G	31	31	36	34	29	27	E B 16	19	19	E S 15	20	E S 15	E B 13	E S 15
26	18	E S 15	18	E B 13	E S 16	E S 14	E S 15	21	G	34	30	25	G 26	33	29	J A 27	J A 30	J A 26	19	20	18	E S 15	E S 16	E S 15
27	E S 15	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	22	G	31	37	36	J A 51	J A 42	G 26	19	17	J A 20	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16
28	18	19	18	E S 15	19	17	18	E S 15	G	28	G 26	G 29	J A 33	G 27	G 20	J A 30	J A 24	J A 28	J A 20	20	18	19	E S 16	J A 19
29	18	E S 15	19	E S 15	E S 15	E S 15	19	E S 15	G	33	33	32	32	34	31	26	18	19	E S 15	J A 34	19	E S 16	E S 14	J A 30
30	J A 20	J A 20	22	19	E S 15	E S 14	E S 15	E S 15	24	28	37	J A 46	33	41	J A 43	J A 44	24	J A 24	20	20	19	22	J A 20	J A 18
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30
MED	J A 23	J A 21	21	20	19	18	19	20	24	32	33	34	34	36	33	30	24	J A 21	20	20	20	23	J A 21	20
UQ	J A 33	J A 26	J A 25	J A 23	J A 22	20	21	22	27	34	J A 37	J A 40	36	40	41	J A 36	J A 30	J A 28	J A 27	J A 30	J A 28	41	J A 33	J A 30
LQ	19	19	19	19	E S 15	E S 15	17	15	G	28	30	31	31	32	29	27	21	19	18	18	18	18	18	18

NOV. 1984

FOES (0.1 MHZ)

IONOSPHERIC DATA

NOV. 1984 FBES (0.1 MHz)

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

Station **KOKUBUNJI TOKYO** Lat. **35 42.4 N**, Long **139 29.3 E** Sweep **1 MHz** to **20 MHz** in **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	16	E	E	17	E	E	E	G	G	G	G	34	33	34	C	28	25	C	E	19	16	E	24	20																		
2	20	17	E	E	16	E	E	22	26	30	26	27	G	G	33	27	25	E	17	20	24	22	E	E																		
3	16	17	14	E	E	B	E	S	E	18	24	26	31	27	G	25	33	22	26	G	E	E	S	16	20	19	21	E														
4	29	16	E	E	E	E	E	21	25	G	G	28	32	G	24	35	G	29	22	E	E	E	E	E	E	A	A	44														
5	E	E	E	E	E	E	S	E	S	21	G	G	28	33	32	32	G	19	29	22	25	A	A	A	A	E	S	16	19	E	E											
6	E	E	E	E	E	16	E	G	G	31	31	30	35	34	30	27	24	34	18	A	A	46	E	A	A	53	23	17	E	E												
7	18	19	E	E	E	S	G	20	26	25	27	27	31	G	27	34	31	27	19	E	E	E	E	E	E	E	E	E	E	E												
8	18	E	E	E	E	E	S	E	S	G	G	31	25	27	21	G	20	23	G	22	25	20	E	19	E	E	18	E	E													
9	E	E	E	23	E	E	E	G	G	32	25	G	22	35	G	27	29	G	G	E	E	24	A	A	62	19	17	E	E													
10	E	E	E	E	E	E	E	26	26	24	33	25	33	32	28	31	23	E	E	18	24	A	A	60	E	E	E	E	E													
11	E	16	E	E	E	E	S	E	G	G	24	33	34	33	33	34	33	27	25	32	22	29	19	E	E	E	E	E	E													
12	21	26	21	E	E	E	E	G	18	25	28	30	31	31	G	34	31	18	E	E	E	E	E	E	E	E	E	E	E	E												
13	E	E	E	E	E	E	E	20	28	32	46	38	33	31	G	28	20	22	E	16	E	E	E	E	E	E	E	E	E	E												
14	E	18	E	A	A	30	E	16	E	22	30	33	41	36	34	36	33	29	25	18	E	E	E	E	S	16	E	S	15	E												
15	E	E	E	S	E	S	E	S	E	S	G	19	31	33	G	17	35	39	34	52	23	15	E	E	E	S	16	E	S	15	E	S										
16	22	E	E	E	E	S	E	E	G	G	33	55	39	32	38	29	G	G	E	S	15	E	E	S	15	G	E	S	16	E	23											
17	A	A	20	16	E	E	S	E	S	G	G	26	40	53	A	A	94	44	46	48	31	A	A	64	39	25	A	A	80	A	A	89	A	A	81	28	A	A	50			
18	24	21	23	19	E	E	E	25	35	33	31	59	40	51	28	24	40	32	A	A	43	A	A	54	24	23	E	E	E	E	E	E	E	E	E							
19	A	A	E	19	18	15	E	E	20	46	27	32	35	25	G	28	38	29	25	25	E	22	E	E	E	E	E	E	E	E	E	E	E	E	E	E						
20	E	15	15	E	14	E	E	G	G	21	G	G	26	31	48	37	38	25	22	16	18	15	E	19	A	A	33	E	E	E	E	E	E	E	E							
21	E	E	E	19	E	E	E	G	G	30	61	32	34	31	27	24	23	24	19	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E						
22	E	E	16	16	E	16	27	20	24	G	23	33	37	31	45	40	26	25	24	E	E	E	S	16	G	E	E	S	16	E	S	16	E	S	16	E	S					
23	E	E	S	E	E	E	S	E	G	G	31	31	31	25	G	G	25	20	G	G	E	E	E	E	S	16	E	E	S	16	E	E	S	16	E	S	16	E	S			
24	E	S	16	E	S	15	E	S	15	E	S	15	E	S	15	18	G	21	G	22	G	18	34	32	30	27	E	S	15	E	S	15	E	E	E	E	E					
25	E	E	E	S	E	E	S	E	19	24	G	G	31	35	33	28	25	E	B	16	E	E	E	S	15	E	E	S	15	E	E	S	15	E	B	13	E	S	15			
26	E	E	S	15	E	B	15	E	S	15	E	S	15	20	G	32	30	24	G	26	32	29	23	21	17	E	E	E	E	S	15	E	S	15	E	S	15	E	S			
27	E	S	15	E	S	15	E	S	15	E	S	15	E	S	15	21	G	30	37	34	33	30	25	G	G	18	16	E	E	S	15	E	S	15	E	S	15	E	S	15	E	S
28	E	E	E	E	S	15	E	E	E	S	15	G	28	25	G	25	25	27	G	20	26	G	E	E	E	E	E	E	E	E	S	16	E	E	E	E	E	E				
29	E	E	S	15	E	E	S	15	E	S	15	E	S	15	G	30	30	30	32	32	29	25	18	E	E	S	15	A	A	34	E	E	S	16	E	S	14	E	E			
30	E	E	E	E	E	S	15	E	S	14	E	S	15	E	S	15	24	25	35	33	32	31	31	36	18	20	E	G	E	E	E	E	E	E	E	E	E	E				
31																																										
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30				
MED	E	E	E	E	E	E	E	14	E	18	24	30	31	31	32	32	29	27	22	16	E	15	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E			
UQ	18	16	15	16	E	S	15	E	S	15	E	S	15	20	26	32	34	34	34	35	33	29	25	24	18	22	19	19	16	16	E	E	E	E	E	E	E	E				
LQ	E	E	E	E	E	E	E	G	G	25	26	27	28	28	25	24	16	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E			

NOV. 1984 FBES (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FMIN (0.1 MHz)

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

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

NOV. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984 M(3000)F2 (0.01)

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

Station **MOKUBUNJI 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 310	S 300	S 305	S 310	S 350	S 340	S 350	S 370	S 355	S 355	S 340	S 340	S 330	H 320	I 320	C 340	S 340	C 300	S 305	S 315	S 320	S 310	S 290	
2	S 335	S 320	S 300	S 300	S 310	S 320	S 330	S 340	S 330	S 330	S 340	S 340	S 340	S 340	S 330	S 350	S 350	S 350	S 300	S 315	S 320	S 300	F	F
3	F 330	S 300	S 300	S 295	S 320	S 315	S 350	S 360	S 355	S 350	S 340	R 330	S 340	S 340	S 340	S 350	S 340	S 340	S 310	F 300	S 340	S 320	S 310	
4	S 300	F 280	S 310	S 350	S 325	F 295	S 340	S 350	S 330	S 330	S 325	S 340	S 330	S 345	S 340	S 360	S 340	H 340	S 320	S 320	S 330	S 320	S 295	A
5	S 315	S 310	S 315	S 315	S 350	S 315	S 345	S 355	J 360	S 330	S 330	S 345	S 330	S 345	S 360	S 335	S 360	S 340	A	A	S 305	S 315	S 320	S 300
6	S 315	S 320	S 320	S 335	S 330	S 330	S 325	S 355	S 350	S 340	S 330	S 340	S 340	S 325	J 340	S 350	S 355	S 340	S 295	A	S 315	A	S 290	S 300
7	S 320	S 310	S 310	S 320	S 340	S 310	S 345	S 350	J 355	S 350	S 330	S 335	S 340	S 335	S 350	S 340	S 350	S 345	S 320	S 355	S 320	S 290	S 315	S 310
8	U 300	S 310	S 320	S 310	S 290	S 340	S 335	S 350	S 340	S 330	S 330	S 335	S 335	S 340	S 345	S 360	S 360	S 340	S 335	S 345	S 295	S 305	S 320	S 320
9	S 310	S 295	U 305	S 290	U 320	S 345	S 340	S 355	S 345	S 340	S 340	S 340	S 335	S 360	S 350	S 345	S 350	S 330	S 330	S 345	A	S 340	S 325	S 300
10	S 300	S 300	S 295	S 305	S 340	S 340	S 335	S 350	S 360	S 345	S 335	H 340	J 340	S 340	J 340	S 360	S 360	S 350	S 330	S 340	S 330	A	S 335	S 295
11	S 275	S 295	S 310	S 350	S 355	S 290	S 340	S 350	J 340	S 330	S 340	S 350	S 335	S 340	S 345	S 350	S 355	S 350	S 335	S 345	S 305	S 300	S 295	S 315
12	S 330	S 300	S 310	S 340	S 340	S 300	S 340	S 340	S 350	S 340	S 345	S 340	S 335	S 320	S 340	S 355	S 350	S 350	S 310	S 340	S 330	S 295	S 300	S 305
13	S 310	S 300	S 305	S 330	S 335	S 340	S 340	S 345	I 340	S 335	S 350	S 335	S 330	S 335	S 350	S 335	S 355	S 340	S 340	S 340	S 330	S 325	S 310	S 310
14	S 335	S 310	S 295	A	U 310	U 310	U 330	S 360	S 355	S 330	S 360	J 310	S 340	S 335	S 335	S 350	S 345	S 340	S 345	S 295	S 300	U 310	S 305	S 290
15	S 290	S 300	F 330	S 315	S 295	S 330	F 360	S 355	S 350	S 345	S 340	S 340	S 340	S 340	S 345	S 350	S 350	S 355	S 300	S 285	S 290	S 290	S 275	S 290
16	S 300	S 340	S 310	S 290	S 295	S 310	F 300	J 360	S 355	S 320	S 325	S 320	S 320	S 345	S 330	S 340	S 330	S 320	S 320	S 300	S 270	S 290	S 335	S 300
17	A 285	S 300	S 275	S 275	F 285	U 315	S 350	S 320	S 325	S 320	A	S 335	S 325	S 345	S 350	A	S 330	S 340	A	A	A	A	S 320	A
18	S 305	S 300	S 285	S 290	S 300	S 320	S 330	S 355	S 335	S 330	S 335	S 360	S 355	S 350	S 345	S 350	S 350	S 340	A	A	S 330	S 340	S 305	S 285
19	A 315	S 305	S 305	S 300	S 315	S 320	S 350	S 365	S 345	S 340	S 340	S 345	S 350	S 360	S 370	S 355	S 350	S 330	S 320	S 320	S 330	U 315	S 310	
20	S 310	S 320	S 320	S 330	S 315	S 295	S 330	S 345	S 345	S 335	S 330	S 345	S 365	S 355	S 350	S 360	S 360	S 340	S 340	S 300	S 310	S 325	A	S 305
21	S 300	S 285	S 315	S 320	S 330	S 310	S 320	S 340	S 350	S 330	S 345	S 340	S 350	S 330	S 340	J 340	S 340	S 330	S 335	S 340	S 320	S 305	S 290	S 290
22	S 300	S 290	S 320	S 330	S 300	S 320	S 320	S 340	S 360	S 345	S 320	S 340	S 340	S 340	S 335	S 335	S 345	S 340	S 340	S 305	S 305	S 310	U 295	F
23	U 290	U 310	U 300	F	F	S 335	H 300	S 340	S 350	S 335	S 340	S 330	S 340	S 340	S 345	S 360	S 340	S 350	S 335	S 305	S 340	S 325	F	F
24	F 290	S 310	S 330	S 340	S 330	S 315	S 340	S 345	S 345	S 350	S 340	S 350	S 340	S 340	S 340	S 350	S 345	S 335	S 320	S 365	S 310	S 320	F	F
25	S 295	S 330	F 300	S 330	S 330	S 350	S 350	S 360	S 350	S 325	S 330	S 340	S 345	S 340	S 350	S 345	S 340	S 340	S 350	S 340	S 355	S 310	S 305	S 305
26	S 310	S 305	S 335	S 305	S 320	S 310	S 350	S 355	S 365	S 335	S 345	S 340	S 325	S 315	S 340	S 360	S 360	S 330	S 345	S 360	S 300	S 335	S 310	S 300
27	S 300	S 310	S 335	S 340	S 305	S 290	S 340	S 350	S 350	S 350	S 335	S 350	S 340	S 350	S 350	S 360	S 355	S 350	S 345	S 360	S 325	S 340	S 290	S 310
28	S 310	S 300	S 310	S 330	S 300	S 310	S 305	S 345	S 350	U 320	S 350	S 340	S 340	S 350	S 350	S 330	S 315	S 310	S 340	S 310	S 315	S 315	S 300	S 310
29	S 335	S 325	S 325	S 315	S 315	S 325	S 330	S 345	S 355	S 350	S 350	S 355	S 340	S 335	S 340	S 345	S 350	S 355	S 315	A	S 320	S 335	S 350	S 300
30	S 300	S 305	S 305	S 310	S 330	S 320	S 310	S 335	S 350	S 340	S 350	S 350	S 320	S 340	S 345	S 340	S 345	S 330	S 330	S 350	S 300	H 285	S 285	S 300
31																								
CNT	26	30	28	28	29	30	30	30	30	30	30	29	30	30	30	30	29	29	28	25	28	27	26	24
MED	308	305	310	315	320	315	330	350	350	335	340	340	340	340	345	350	350	340	330	340	315	315	308	300
UQ	315	315	318	330	335	330	340	S 355	S 355	S 345	S 345	S 340	S 340	S 345	S 350	S 360	S 355	S 350	S 340	S 345	S 328	S 328	S 320	S 310
LQ	S 300	S 300	S 302	S 302	S 305	S 310	S 320	S 345	S 345	S 330	S 330	S 340	S 335	S 335	S 340	S 340	S 340	S 335	S 318	S 305	S 302	S 302	S 295	S 298

NOV. 1984 M(3000)F2 (0.01)

IONOSPHERIC DATA

NOV. 1984

M(3000)F1 (0.01)

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

Station MOKUBUNJI 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
Hour Day																									
1										L	400	405	U L 370	L	L	C	L								
2										385	L	L	U L 370	U L 380	L	L									
3										395	L	L	L	L	400	L									
4										L	L	L	L	L	L	L									
5										L	L	L	L	L	L	L									
6										L	L	L	U L 370	L	L	U L 370									
7										L	L	U L 400	L	L	L	L	A								
8										L	L	L	350	U L 375	U L 380	L									
9										L	L	L	L	L	L	L	L								
10										L	L	L	U L 375	L	L	L	375	A							
11										L	L	L	L	L	L	L									
12												L	L	L	L	L									
13										L	L	A	L	U L 380	U L 370	L	L								
14												A	L	L	L	L	L								
15											L	L	L		A	L	A								
16											U L 350	A	L	L	L										
17										L	A	A	A	A	A	A									
18										A	U L 360	L	370	A	A	A	L	390							
19										A	L	L	U L 375	U L 380	U L 370	U L 385	A	A							
20											U L 370	U L 360	L	370	A	L	A								
21												A	L	L	L	L									
22											U L 450	L	L	L	A	A	L								
23											L	L	L	L	L	L	L	390							
24											L	L	L	L	L	L	L								
25											L	L	U L 370	L	L	L	L	L							
26											L	L	L	L	L	L	L								
27											L		L	L	L	L	L								
28											L	L	L	370	L	L	L	380							
29											L	L	L	L	L	L	L	L							
30											L	L	L	L	L	L	L	A							
31											380	L	L	L	L	L	L	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT										3	6	10	9	4	8	3	2								
MED										385	U L 372	L	378	U L 370	U L 378	L	375	390							
UQ										390	400	385	U L 375	U L 380	392	378									
LQ										382	U L 360	L	370	L	370	U L 372	L	370	L						

NOV. 1984

M(3000)F1 (0.01)

IONOSPHERIC DATA

NOV. 1984

H^oF₂ (KM)

135° E Mean Time (G.M.T. + 9 h)

Station **OKUBUNJI TOKYO** Lat. **35° 42.4' N**, Long. **139° 29.3' E** Sweep 1 MHz to 20 MHz in 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									225	240	240	245	250	245	I C 230	225								
2									250	230	240	225	245	245	250									
3									220	225	255	245	255	245	230									
4									250	230	250	240	285	255	250									
5									230	250	245	240	245	255										
6									230	245	250	245	255	250	250									
7									225	230	260	240	240	240	240	225								
8									240	265	255	240	240	240	235									
9									230	250	255	255	250	250	230	220								
10									225	235	240	250	250	235	230	220								
11									245	255	255	230	250	255	240									
12									265	235	240	235	240	240	225									
13									230	260	245	255	260	255	245	230								
14									225	255	255	260	250	250	230									
15									230	250	235		250	245	E A 240									
16									295	255	285		235	245										
17									235	230	260	A	235	270	255									
18									235	285	250	235	225	240	230	215								
19									230	235	250	240	250	235	230	225								
20									235	255	235	220	230	230										
21									255	240	240	235	240											
22									230	260	235	230	240	245	230									
23									240	245	255	250	240	235	220									
24									235	230	250	275	240	235										
25									230	300	255	225	250	250	245	250								
26									250	250	230	280	235	250										
27									230	245	240	235	235	215										
28									245	240	240	235	235	240										
29									220	230	225	245	255	240	245									
30									235	235	235	235	L 290	225	225	235								
31																								
CNT									17	27	29	29	29	30	27	16								
MED									230	235	250	240	245	242	240	225								
UQ									235	250	255	250	250	250	245	231								
LQ									230	230	245	235	240	235	230	220								

NOV. 1984

H^oF₂ (KM)

IONOSPHERIC DATA

NOV. 1984

H^oF (KM)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	255	280	300	290	220	235	200	210 ^H	210	190 ^H	180	210	210	230	I C 225	A 220	235	I C 280	275	280	245	215	255	325
2	275	240	330	275	280	270	245	210 ^H	195	205	210	200	185 ^H	195 ^H	245	225 ^H	220	200	235	270	255	E A 260	325	290
3	270	240	260	265	230	260	210	215	180	220	205	215 ^H	210	205	220	230 ^H	230	205	240	250	265	230	265	260
4	E A 310	330	255	215	250	E S 295	240	235	225	205	175	185 ^H	235 ^H	220	230	225	205	210	220	245	235	250	290	A
5	270	260	260	270	205	250	245	215 ^H	200 ^H	180 ^H	220	195	200	220	225 ^H	215 ^H	215	230	A	A	245	280	250	260
6	275	240	245	240	220	245	230	220	210	220	205	180 ^H	230	225	220	225 ^H	205	E A 255	290	A	250	A	E A 335	275
7	270	280	290	255	205	270	220	220	220	220	195	190 ^H	210	215	E A 230	A	215	215	220	205	240	280	255	275
8	290	255	230	255	295	215	185	220	215 ^H	230	235	220 ^H	220	220	215	220 ^H	220	210	240	210	300	275	265	240
9	275	300	275	E A 350	255	215	235	210	220	230	215	195 ^H	240 ^H	195 ^H	200 ^H	215	215	200	235	235	A	235	E A 275	305
10	300	300	325	290	240	220	215	205	230	210	235	190 ^H	210	225	210	A	210	200	235	225	E A 300	A	220	300
11	340	290	250	195	200	E S 305	225	225	220	235	235	225 ^H	195	245	215	225 ^H	215	E A 240	250	220	A 285	E A 265	290	295
12	E A 310	E A 305	280	235	225	275	230	210 ^H	200 ^H	175	205	190 ^H	180 ^H	245	235	225 ^A	210 ^H	200	230	220	265	E S 310	E S 320	300
13	260	285	280	250	235	235	230	205	235	225	A	E A 230	210	220	230	A 225	215	210	230	235	250	255	250	255
14	230	285	320	A	295	280	215	220	210	220	A	E A 230	195	A	E A 240	240	200	185	220	280	275	245	240	320
15	305	280	235	235	245	275	240	195 ^H	190 ^H	210	200	175 ^H	225 ^H	A	230	A	220	200	240	320	310	260	330	300
16	230	220	300	340	325	275	265	215	215	220	A	E A 260	220	A	230	235	215	240	235	250	345	300	235	E A 295
17	A	325	275	290	230	290	265	220	205	A	A	A	A	A	A	230	A	A	250	A	A	A	E A 350	A
18	E A 325	320	E A 335	315	270	230	215	215	A	225	190 ^H	A	A	A	210	195	230	E A 255	A	A	250	220	E S 275	E S 300
19	A	290	E A 325	E A 315	280	285	265	235 ^H	A	205	215	225	205	215	A	A	220	225	220	A	250	240	265	305
20	295	285	260	240	260	305	250	230	225 ^H	205	205	195	A	A	A	215	225	195	235	255	255	260	A	280
21	285	325	275	250	235	265	245	230 ^H	230 ^H	220 ^H	A	210	210	220	205	235 ^H	210	230	235	230	235	280	300	305
22	295	275	255	225	250	250	255	215	200 ^H	175 ^H	225	A	215	A	A	E A 225	210	220	235	235	230	250	285	300
23	285	245	260	215	270	255	E S 260	235	220	215	230	210 ^H	205 ^H	225	225	200	200	190	245	225	215	240	300	300
24	305	290	275	250	220	210	255	235	220	200 ^H	200 ^H	225	215	205	225	235	220	200	225	210	240	235	285	280
25	280	250	270	275	235	195	225	205	205 ^H	190 ^H	200 ^H	170 ^H	230	240	195 ^H	210 ^H	210 ^H	210	225	210	195	255	260	305
26	315	255	235	240	260	230	210	215	210 ^H	210 ^H	185 ^H	210	190	230	230	215 ^H	215	210	210	210	275	250	225	270
27	285	280	230	220	240	E S 255	250	205 ^H	215 ^H	220	235	205 ^H	230	210	210	190 ^H	220	195	255	215	205	210	290	280
28	275	300	275	240	295	260	285	230	210 ^H	180 ^H	220 ^H	195	185	190 ^H	210 ^H	225	210	230	230	245	255	255	265	280
29	255	260	250	280	270	265	255	230	230 ^H	220 ^H	200 ^H	175 ^H	230	190	225	200 ^H	215	195	270	A	260	220	210	295
30	300	310	300	290	250	235	235	230	210	175 ^H	E A 225	235	215 ^H	230	230	A	220	215	225	220	250	325	285	270
31																								
CNT	28	30	30	29	30	30	30	30	28	29	25	27	27	23	26	25	29	29	28	24	28	27	29	28
MED	280	281	270	252	248	254	236	218	212	210	205	200 ^H	210	220	224	225	215	208	235	232	250	252	268	290
UQ	298	300	290	282	270	272	252	230	220	220	225	216	222	228	230	225	220	222	242	250	266	266	288	300
LQ	270	255	255	240	230	232	220	210	205	200 ^H	200 ^H	190 ^H	202	208	210	215	210	200	225	218	240	238	252	274

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H^oF (KM)

IONOSPHERIC DATA

NOV. 1984

H^oE (KM)

135° E Mean Time (G.M.T. + 9h)

Station **MOKUBUNJI 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								115	E A 120	E A 125	E A 120	E A 120	A 110	A 110	I C 110	110	120								
2								A	A 125	E A 125	E A 120	E A 120	E A 120	E A 120	A 115	E A 120	110								
3								A	A 130	E A 125	E A 125	E A 120	E A 120	E A 120	E A 120	115	115								
4								120	E A 135	E A 120	E A 120	A	115	A	110	110	115								
5								120	105	E A 120	E A 120	110	110	110	A 120	A 115	A 115								
6								120	110	110	110	A	115	110	110	110	E S 120								
7				S	S			120	E A 125	E A 130	E A 120	E A 125	A 125	E A 125	A	A	A								
8								120	115	E A 120	E A 125	E A 125	110	115	E A 120	110	A								
9								E S 130	115	110	120	115	E A 120	E A 130	E A 120	115	125								
10								A	A 125	E A 125	E A 125	A	A	A	A	A	A								
11								S	E A 125	E A 125	A 115	A 115	A 110	A 110	A	A	A								
12								E S 130	A	A	A	A	A	110	110	115	120								
13								A	115	E A 125	E A 120	115	115	105	105	110	A								
14								120	110	105	110	110	110	110	A	A	A								
15								E S 130	110	105	115	110	110	115	110	110	125				S	S			
16								E S 130	105	105	105	105	105	110	A	115	E S 130			S	S	S			
17			S		S	S	S	E S 125	110	105	105	105	105	105	110	110	S								
18								A	A	A	A	A	A	A	A	A	A								
19								A	A	A	A	A	E A 120	A	A	A	A								
20								S	E A 120	E A 125	A	A	A	A	A	A	A								
21								E S 125	115	105	105	105	A	A	A	A	A						S		
22								A	E A 115	E A 115	E A 110	110	A 110	A 110	A	A	A						S		
23								S	110	105	A	A	A 120	A 120	A 120	A 110	S								
24								A	E A 120	E A 120	A 115	A 115	110	105	115	110	S								
25								E S 140	115	110	105	110	110	110	110	110	B								
26								S	105	E A 125	E A 120	A 120	A 120	A 120	A	A	A						S		
27							S	E S 140	110	110	105	105	A	A	A 125	A 120	A								
28								S	110	115	115	115	115	A 110	A 110	A	S								
29								S	120	110	105	110	115	115	115	115	120			S					
30								S	A	A	E A 125	A	A 125	105	A	110	A			S					
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								15	22	26	22	22	23	22	20	19	11								
MED								E E 125	112	112	110	112	112	110	111	110	118								
UQ								E S 130	E A 120	E A 125	E A 120	E A 120	A 120	A 115	A 120	115	121								
LQ								120	110	108	105	110	110	110	110	110	115								

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H^oE (KM)

IONOSPHERIC DATA

NOV. 1984

H^oES (KM)

135° E Mean Time (G.M.T. + 9h)

Station **OKUBUNJI 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	100	100	100	100	100	100	100	G	105	105	100	150	135	120	C	115	125	C	130	105	100	100	100	100		
2	100	100	100	100	100	110	110	110	110	140	100	100	100	100	125	120	110	110	105	105	100	100	105	105		
3	105	100	100	105	B	S	120	105	100	100	100	100	100	125	100	125	G	130	S	105	105	105	105	105		
4	100	105	100	100	100	100	105	130	110	105	105	105	105	110	G	125	120	100	110	105	110	100	100	105		
5	100	100	105	100	105	S	S	140	G	105	105	140	150	135	100	140	125	105	105	105	S	100	105	100		
6	100	100	100	100	100	100	100	100	G	130	135	110	E G	175	165	160	160	155	115	110	105	105	100	100		
7	100	100	100	100	100	S	105	150	150	105	100	100	100	100	95	95	95	95	110	115	105	105	100	100		
8	100	100	100	100	115	S	S	G	105	155	100	100	100	100	100	G	120	95	100	100	105	105	105	100		
9	100	100	105	100	100	100	100	G	G	160	105	100	170	110	120	G	G	100	120	105	105	110	100	100		
10	105	100	100	100	100	100	100	105	105	105	170	100	105	105	100	100	95	95	95	105	105	100	100	100		
11	100	100	100	100	100	S	100	G	105	E G	170	155	165	E G	175	140	125	125	135	95	95	110	105	105	105	115
12	100	100	100	100	100	100	100	115	110	110	105	105	105	160	130	115	110	110	95	155	135	105	100	100		
13	100	100	95	100	105	105	100	105	160	145	120	115	120	130	G	110	105	110	110	105	115	110	100	100		
14	100	105	100	100	100	105	100	140	120	115	110	110	110	110	105	110	105	105	105	105	105	S	S	125		
15	100	100	S	S	S	S	S	G	110	130	135	100	125	120	115	110	115	120	125	120	S	S	100	S		
16	105	135	125	120	S	105	95	G	G	115	110	110	115	110	105	G	135	S	125	S	125	S	110	140		
17	130	125	135	150	S	S	110	G	130	115	110	110	110	110	110	130	120	115	110	105	105	105	100	100		
18	100	100	100	100	100	100	120	110	105	105	100	100	100	100	100	100	100	105	100	100	100	100	105	105		
19	105	100	100	100	100	100	105	115	105	110	105	100	100	100	100	100	105	105	100	115	110	110	105	100		
20	100	100	100	100	100	100	100	105	115	105	105	100	100	105	105	105	105	105	105	105	105	105	100	100		
21	100	100	105	100	100	105	100	105	G	135	115	110	105	105	105	105	105	100	100	100	100	100	100	100		
22	100	100	100	100	100	110	105	100	100	105	150	125	E G	170	115	120	95	95	95	95	100	S	130	105	S	
23	100	S	100	100	100	S	110	100	G	110	105	105	105	105	105	105	105	100	105	105	S	100	S	S		
24	S	S	S	100	S	100	S	105	105	100	100	100	140	145	120	115	S	S	125	125	120	120	115	110		
25	110	105	S	100	105	S	105	145	120	G	125	120	135	115	110	120	B	105	100	S	125	S	B	S		
26	100	S	125	B	S	S	S	155	G	120	125	105	105	150	150	100	100	100	100	100	100	100	S	S	S	
27	S	S	S	S	S	S	S	150	G	135	120	115	105	105	105	105	105	100	S	S	S	S	S	S		
28	115	115	115	S	120	115	115	S	G	120	100	100	100	110	100	115	100	100	100	95	100	115	S	110		
29	105	S	105	S	S	S	100	S	G	125	140	125	140	130	125	115	115	100	S	110	110	S	S	105		
30	105	105	100	105	S	S	S	S	145	130	150	130	145	135	115	110	130	100	100	115	130	120	130	95		
31																										
CNT	28	25	26	25	21	17	23	20	20	29	30	30	30	30	27	27	26	27	27	27	25	23	23	24		
MED	100	100	100	100	100	100	100	110	110	115	108	105	106	110	105	110	108	100	105	105	105	105	100	100		
UQ	105	105	105	100	100	105	108	140	120	130	125	115	U	132	130	120	120	120	108	110	110	110	110	105	105	
LQ	100	100	100	100	100	100	100	105	105	105	100	100	100	105	100	105	105	100	100	105	105	100	100	100		

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H^oES (KM)

IONOSPHERIC DATA

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TYPES OF ES

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

Station **KUBUNJI 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	F3	F1	F1	F2	F1	F1	F1		L2	L1	L2	HL11	HL11	CL21		C2	C1		FF21	F5	F4	F1	F3	F3
2	F3	F3	F3	F1	FF24	F2	F1	L1	L2	HL12	L2	L2	L2	L2	HL21	CL22	CL31	F1	F3	F4	F3	F4	F3	F1
3	F2	F2	F3	F1			FF11	L4	LH22	LH31	L3	LH21	L2	CL22	L1	C2		F1		F4	F3	F2	F3	F1
4	F3	F2	F2	F1	F2	F1	F1	C3	CL21	LL21	L1	L2	L1	L3		H3	C3	FF11	FF12	F2	FF11	FF31	FF21	F5
5	F3	F2	F1	F1	F1			H2		L1	L1	HL11	HL11	HL11	L1	HCL21	HCL21	F4	F3	F3		F3	F1	F1
6	F3	F2	F2	F2	F4	F4	F4	L1		H2	H1	L1	HL11	H2	HC11	H3	H3	F7	F3	F6	F3	F3	F3	F4
7	F2	F3	F2	F3	F1	K1	LK11	H2	HL23	L3	L2	L2	L1	L3	L2	L3	L2	F2	FF21	F1	F2	F2	F2	F2
8	F2	F2	F2	F2	FF11				L1	HL22	L2	L2	L1	L1	L2		CL32	F3	F4	F1	FF21	F2	F2	F4
9	F2	F2	F2	F2	F2	F1	F1			HL21	LL11	L2	HCL11	LL21	CL21			F1	F1	F4	F4	FF21	F3	F3
10	F1	F1	F4	F2	F3	F4	F3	L4	L5	L2	HL12	L1	LL22	LL22	L2	L3	L2	F2	F1	F3	F4	F4	F2	F2
11	F3	F2	F1	F2	F1		F2		L2	HL22	HLL23	HL11	HL11	HCL22	HL22	HLL13	HL22	F5	F3	FF32	F3	F2	F2	F1
12	F5	F3	F3	F3	F2	F2	F1	L3	L3	L2	L2	L3	L2	H1	H2	C4	CL22	FF12	F1	FF11	FF21	F3	F3	F3
13	F2	F2	F2	F1	F2	F3	F3	L2	HL22	HL23	CL32	CL32	CL21	C1		C5	L2	F3	F1	F3	FF21	F2	F1	F1
14	F2	FF33	F3	F4	F2	F3	FF11	H2	C4	C3	CL31	CL22	CL21	CL31	L3	L3	L4	F4	F1	F2	F3			F1
15	F2	F2							L2	H2	HL11	L1	CL21	CL21	C3	C3	C4	F1	F1	F1	K1	K1	F3	
16	F4	F1	F2	F2		F1	F1			C2	C4	C3	C2	C3	L3		H1		F1	K1	CK11	K1	FF32	FF42
17	FF42	FF41	K2	F1	K1	K1	LK11		C3	C2	C3	C3	C3	C2	C3	C3	C5	F7	F7	F4	F4	F5	F5	F4
18	F6	F5	F4	F4	F2	F1	F1	L7	L4	L4	L4	L4	L2	L2	L2	L2	L3	F6	F6	F7	F5	F4	F2	F2
19	F4	F3	F4	F5	F2	F2	FF11	L3	L4	L2	L3	L2	L2	L2	L3	L2	CL22	F4	F1	F5	F2	F2	F2	F3
20	F2	FF22	F2	F2	F2	F2	F1	L1	L1	L2	L3	L3	L4	L3	L4	LL32	L2	FF11	F4	F2	F2	FF42	F5	F2
21	F2	F3	FF31	F4	F2	F2	F2	L1		H2	C3	C2	L2	L2	L2	L3	L4	F3	F3	F2	F3	F2	LK21	F3
22	F2	F2	F3	F3	FF11	F3	F4	L3	L3	L2	HL22	HL21	HHL22	CL32	CL13	L3	L4	F6	F2	F1		CK11	F2	
23	F2		F1	F1	F1		FF11	L1		C3	L2	L1	L1	L2	L2	L2	L1	F1	F1	F1		F1		
24				F1		F1		L2	L3	L3	L2	L1	H2	H2	CL41	C2			F2	F1	F1	F1	F1	F3
25	F2	F1		F1	F1		F1	HL21	C2		C2	C1	H1	C2	C2	C2		FF11	F1		F2			
26	F1		F1					H1		CL32	CL12	L2	L2	HL12	HL22	L4	L5	F3	F1	F1	F1	K1		
27							K1	H2		H2	C3	C3	L2	L2	L2	L2	L1	F1						
28	F2	F1	F1		F1	F1	F1			CL22	L1	L2	L1	LL21	L1	LL12	LH11	FF21	F2	F1	F1	F1		F2
29	F1		F3			F2				H2	H2	H1	HL11	HL21	CL31	C2	C2	F1	K1	F6	F1			F2
30	F2	F2	F2	F1					HL12	CL11	HL22	HL22	HL21	H2	CL22	C3	HL22	F5	F2	CK11	FF11	FF11	FF11	F2
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

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TYPES OF ES

IONOSPHERIC DATA

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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	X 37	S 35	X 34	X 34	X 36	S 38	X 30											X 62	X 63	S 63	A	X 38	X 44	
2	X 44	X 42	X 35	S 38	S 38	X 39	X 39											X 55	X 41	X 46	X 48	X 39	S 36	
3	X 39	X 42	X 39	X 37	X 40	X 37	X 37											X 48	X 45	X 44	X 45	X 43	41	
4	S 38	40	X 45	X 33	X 29	X 28	X 33											X 57	X 48	X 46	X 42	X 42	44	
5	X 46	48	X 38	X 35	X 37	X 34	X 37											X 50	X 42	X 40	X 40	X 37	X 36	
6	S 35	X 44	X 33	X 33	X 39	X 31	X 32											X 43	X 44	X 40	X 44	X 39	X 39	
7	A	X 39	X 38	X 38	X 46	X 25	X 29											X 45	X 37	X 32	X 32	42	X 35	
8	40	X 37	X 43	X 36	40	X 38	X 26											X 54	X 39	X 42	X 45	S 49	X 37	
9	X 36	X 36	X 36	40	41	X 31	X 28											X 43	X 46	X 52	X 39	X 27	X 30	
10	X 32	X 34	S 32	X 36	X 43	X 34	X 30											X 46	X 38	X 39	X 38	X 33	X 31	
11	X 32	X 33	S 37	X 30	X 28	S	X 29											X 49	X 39	A	X 30	X 34	S 35	
12	X 37	X 37	X 35	X 36	X 31	X 30	X 31											X 44	X 40	X 42	X 36	A	X 36	
13	X 36	X 36	X 37	X 37	X 37	X 36	X 32											X 46	X 36	X 37	X 40	X 40	X 34	
14	X 31	S 32	X 33	X 33	A	X 37	X 33											X 44	X 34	X 37	X 42	X 41	X 36	
15	X 37	X 42	S 33	X 33	X 33	S 33	35											X 46	X 40	X 56	X 67	U 49	S 51	
16	X 51	X 31	X 30	X 31	X 32	X 30	X 29											X 90	X 69	X 50	S 54	X 63	X 49	
17	X 42	X 40	X 44	X 38	52	80	90			115								X 61	X 59	X 37	A	X 34	A	
18	A	A	X 39	40	S 39	X 39	X 33											X 49	U 38	X 46	X 49	X 35	X 28	
19	X 33	X 31		X 30	X 34	S 32	X 31											X 50	A	X 36	X 42	X 35	X 35	
20	X 38	X 38	X 35	X 35	A	X 33	X 32											X 48	X 37	X 38	S 40	X 36	X 35	
21	X 35	X 36	X 39	X 38	X 40	X 32	X 35											X 48	X 37	X 41	X 33	X 32	X 35	
22	X 37	X 40	X 42	X 32	X 36	X 36	X 39											X 40	X 40	X 41	X 39	X 34	X 34	
23	X 37	40	42	43	33	X 26	X 27											X 40	X 31	X 36	X 32	X 32	X 31	
24	X 33	X 35	X 38	X 38	X 40	X 32	X 28											X 44	U 36	S 33	U 34	X 32	X 32	
25	X 33	X 35	X 36	X 35	X 38	U 31	X 30											X 43	X 41	X 40	X 28	S 33	U 36	
26	X 32	S 34	S 33	U 36	X 42	X 30	X 28											X 53	S 50	S 32	X 32	U 36	U 29	
27	U 37	U 32	38	40	S 35	X 23	X 28											X 57	X 38	U 42	X 36	X 33	X 33	
28	X 34	S 35	X 36	X 36	X 35	X 35	S 35											X 50	X 41	X 42	X 44	X 39	X 35	
29	X 38	U 33	X 35	X 34	X 34	X 33	X 32											X 40	X 36	S 41	X 45	X 36	X 29	
30	X 30	X 32	X 33	X 32	X 34	X 34	X 30											X 60	X 41	X 31	X 34	X 37	X 37	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	30	28	29	30				1							30	29	29	28	29	29	
MED	X 37	X 36	X 36	X 36	X 37	X 33	X 32				115							X 48	X 40	X 41	X 40	X 36	X 35	
UQ	X 38	X 40	X 39	X 38	X 40	X 36	X 35											X 54	X 44	X 44	X 44	X 40	X 37	
LQ	X 33	X 34	X 34	X 33	X 34	X 31	X 29											X 44	X 37	X 37	X 34	X 34	X 33	

NOV. 1984

FXI (0.1 MHZ)

IONOSPHERIC DATA

NOV. 1984 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	31	29	28	28	30	S 32	24	51	57	69	70	71	86	82	101	U R 89	64	73	56	57	57	A	32	38	
2	38	36	29	S 32	32	33	33	61	73	85	89	84	73	78	81	I C 84	I C 70	60	49	35	40	42	33	30	
3	33	36	33	31	34	31	31	50	69	72	85	93	99	94	84	85	59	54	42	39	38	39	37	F	
4	32	F	39	27	23	22	27	54	68	89	92	97	79	79	81	74	H 59	55	51	S 42	40	36	36	F	
5	40	F 37	32	29	31	28	31	51	72	68	74	94	83	77	77	70	67	57	44	36	34	34	31	30	
6	S 29	38	27	27	33	25	26	53	80	62	73	94	84	80	91	84	63	50	37	38	34	38	33	33	
7	A	33	32	32	40	19	23	52	71	69	72	102	H 111	R 97	90	H 83	64	51	39	31	26	26	F	29	
8	F	31	37	30	F 31	32	20	46	60	67	83	93	85	77	H 74	65	58	61	48	33	36	39	S 43	31	
9	30	30	30	S 32	F	25	22	46	57	62	70	86	94	91	94	64	H 66	50	37	S 40	46	33	21	24	
10	26	U S 28	26	30	37	28	24	50	61	62	72	H 76	H 79	72	77	70	H 58	H 55	40	32	33	32	27	25	
11	26	27	31	24	22	A	23	47	54	64	74	85	70	72	69	77	68	50	43	33	A	24	28	29	
12	31	31	29	30	25	24	25	54	57	64	81	94	69	66	74	78	73	54	38	34	36	S 30	A	30	
13	30	30	31	S 31	31	30	26	44	65	62	61	71	73	H 81	75	71	84	54	40	30	31	J S 34	34	28	
14	25	26	27	27	A	31	27	44	55	61	65	72	75	79	92	81	71	57	38	28	31	36	S 35	30	
15	S 31	36	27	27	J S 27	F	54	56	59	70	91	73	80	74	74	77	62	40	34	S 50	S 61	U S 43	U S 45	S	
16	45	25	24	25	26	24	23	53	59	69	R 114	100	R 113	77	92	92	75	76	84	63	44	S 48	57	43	
17	36	34	38	32	F	F	F	100	95	F	104	90	89	94	79	83	72	57	55	53	31	A	28	A	
18	A	A	33	F	S 33	F	27	48	73	79	92	109	91	H 78	78	67	64	60	43	U S 32	40	43	29	22	
19	27	S 25	27	24	S 28	26	25	50	70	62	63	83	79	83	H 79	62	55	54	44	A	30	36	29	29	
20	32	32	29	29	A	27	26	45	73	76	C	C	C	C	64	68	61	52	42	31	32	S 34	30	29	
21	29	30	33	32	34	26	29	51	69	68	78	87	80	80	67	82	74	54	42	31	35	27	26	29	
22	31	34	36	26	30	30	33	44	54	67	67	96	80	70	82	88	82	58	34	34	35	33	28	28	
23	31	F	F	F	F	20	21	42	62	69	69	83	83	95	85	75	60	53	34	25	30	26	26	25	
24	27	29	32	32	34	26	22	41	H 65	85	81	78	84	U R 89	U H 83	R 89	74	52	38	30	S 27	S 28	26	26	
25	27	29	30	29	32	U S 25	24	44	56	63	89	H 83	80	R 90	U H 82	84	74	59	37	35	U S 34	22	S 27	J S 30	
26	26	28	27	U S 30	36	24	22	U S 40	54	H 58	70	66	77	H 75	90	78	57	51	47	S 44	26	26	30	U S 23	
27	U S 31	U S 26	F	I S 34	S 29	17	22	42	60	57	65	79	76	77	U H 79	70	64	50	51	S 32	U H 36	30	27	27	
28	28	29	30	30	29	29	29	47	S 61	70	74	78	71	73	73	57	63	65	44	35	36	38	33	29	
29	32	H 27	29	28	28	27	26	43	65	66	65	62	H 57	H 66	H 58	78	64	I C 53	34	30	S 35	S 39	30	23	
30	24	26	27	26	28	28	24	39	59	66	68	80	73	72	71	67	84	55	54	35	25	28	31	31	
31																									
CNT	27	27	28	28	25	27	28	30	30	29	29	29	29	29	30	30	30	30	30	29	29	28	28	27	
MED	31	30	30	30	31	27	25	48	62	67	73	85	80	79	79	78	65	54	42	34	35	34	30	29	
UQ	32	34	32	32	33	30	27	52	70	69	83	94	85	83	85	84	74	59	48	38	38	38	34	30	
LQ	27	28	27	27	28	24	23	44	57	62	69	78	73	75	74	70	61	52	38	31	31	28	28	26	

NOV. 1984 FOF2 (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FOF1 (0.01 MHz)

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

Station	YAMAGAWA				Lat. 31 12.1 N.				Long 130 37.1 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	U L 430	L	L	L	L	L							
2									L	L	L	L	L	L	L	C	C							
3									L	L	L	L	L	L	L	A								
4									L	L	L	L	L	L	L	L								
5									L	L	L	L	L	L	L	L								
6									L	L	L	L	L	L	L	L	L							
7									L	L	L	L	L	L	L	L								
8									L	L	L	L	L	L	L	L								
9									L	L	L	L	L	L	L	L	L							
10									L	L	L	L	L	L	L	L	L							
11											U L 420	L	L	L	L	L	L							
12									L	L	L	L	L	L	L	L	L							
13									L	L	L	L	L	L	L	L	L							
14									L	L	L	L	L	L	L	L	L							
15									U L 350	L	U L 420	L	L	L	L	L	L							
16									L	A	A	A	L	L	L	L								
17									L	L	L	L	L	L	L	L								
18									L	L	L	L	L	L	L	L								
19									L	L	L	L	L	L	L	L								
20									L	L	C	C	C	C	L	L								
21									L	L	L	U L 420	L	L	L	L								
22									L	L	L	L	A	L	L	L								
23									L	L	L	L	L	L	L	L								
24									L	L	U L 430	L	L	L	L	L								
25									L	L	L	L	L	L	L	L								
26									L	L	L	L	U L 430	L	L	L								
27									L	U L 400	U L 430	A	U L 430	U L 400	L	L	L							
28									L	L	L	L	L	L	L	L								
29									L	L	L	L	L	L	L	L	L							
30									L	L	L	L	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	4	15	7	6	10	4	1							
MED										360	410	430	430	430	400	370	260							
UQ										425	430	435	430	420	375									
LQ										400	420	420	420	400	350									

NOV. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

NOV. 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 **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	U R	270	A	A	A	A	A	A	230	S						
2								S	A	280	300	315	A	A	300	I C	C	A						
3								180	230	A	300	310	320	310	305	280	240	S						
4								S	240	275	300	310	320	310	300	275	230	S						
5								S	235	280	300	310	A	A	A	285	245	180						
6								S	A	A	300	A	A	A	A	A	A	S						
7								S	A	A	A	310	320	305	300	A	A	S						
8								S	235	280	305	A	A	A	A	A	225	S						
9								S	240	A	A	A	A	A	A	A	A	S						
10								S	H	A	R	H	A	R	A	A	A	S						
11								S	230	270	300	A	320	A	A	A	235	S						
12								S	210	255	285	H	300	310	315	295	260	200	S					
13								S	H	260	295	H	305	300	290	A	A	S						
14								S	230	265	295	H	H	305	A	A	A	S						
15								S	H	270	300	305	H	R	300	295	260	225	S					
16								S	240	A	290	A	A	A	A	270	225	S						
17								S	225	255	295	300	305	300	290	260	225	S						
18								S	A	A	290	A	A	A	A	A	A	S						
19								S	A	A	A	A	A	A	A	A	A	S						
20								S	A	A	C	C	C	C	A	A	A	S						
21								S	205	260	280	A	A	A	A	260	225	S						
22								S	210	260	290	310	310	305	290	280	A	S						
23								S	220	260	290	A	A	A	A	A	A	S						
24								S	200	H	H	R	300	300	290	H	A	A	S					
25								S	215	270	295	305	305	305	280	A	A	S						
26								S	215	H	295	R	H	310	300	A	A	A	S					
27								S	200	255	280	300	H	A	A	A	A	S						
28								S	225	H	300	A	305	R	290	285	250	200	S					
29								S	210	250	280	305	305	300	290	A	H	C						
30								S	210	275	A	A	A	310	A	A	A	S						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	24	21	24	17	16	15	13	11	13	1						
MED								180	225	265	295	305	305	305	290	270	225	180						
UQ									232	275	300	310	315	308	300	278	230							
LQ									210	260	290	300	305	300	290	260	225							

NOV. 1984

FOE (0.01 MHZ)

IONOSPHERIC DATA

NOV. 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	ES 16	18	JA 21	JA 18	JA 17	19	JA 18	JA 34	32	JA 46	JA 50	JA 45	JA 52	JA 55	37	32	JA 50	ES 16	JA 22	18	JA 51	JA 82	50	JA 52	
2	JA 38	JA 42	18	21	21	18	ES 16	18	40	38	32	G 19	JA 49	JA 41	JA 40	C	C	JA 33	21	22	JA 34	JA 33	JA 30	JA 27	
3	22	JA 20	JA 18	21	21	ES 16	ES 16	24	26	28	G 26	G 26	G	G	36	42	30	JA 27	JA 21	JA 22	ES 16	JA 52	JA 52	JA 80	
4	JA 53	JA 30	JA 26	JA 23	JA 23	JA 23	ES 16	ES 16	G 20	G	G 21	G 23	G	G	G	G	G	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	JA 28	
5	JA 32	JA 42	JA 25	JA 23	JA 17	19	20	21	G	G	33	36	JA 36	34	JA 31	G	G	G	ES 16	ES 16	ES 16	ES 16	ES 16	JA 26	
6	JA 33	JA 27	JA 25	JA 21	JA 18	18	ES 16	19	JA 31	29	G	JA 36	34	34	JA 36	JA 33	JA 31	19	19	JA 34	JA 26	JA 21	JA 33	JA 34	
7	JA 41	JA 43	JA 21	22	21	18	20	22	JA 26	JA 29	32	G	G	G	G	JA 37	JA 26	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	JA 60	
8	JA 53	JA 29	JA 25	JA 28	JA 23	ES 16	ES 16	JA 27	31	JA 39	G	JA 43	JA 64	JA 51	JA 51	JA 37	G	22	22	JA 35	JA 21	22	ES 16	ES 16	
9	ES 16	ES 16	ES 16	JA 22	ES 16	21	21	20	28	JA 36	JA 36	JA 34	JA 38	34	32	30	24	ES 16	ES 16	ES 16	JA 21	JA 21	JA 61	JA 28	
10	ES 16	ES 16	ES 16	ES 16	ES 16	20	ES 16	ES 16	27	JA 38	33	33	JA 64	33	33	JA 32	28	20	JA 18	18	ES 16	JA 21	ES 16	22	
11	ES 16	ES 16	ES 16	ES 16	ES 16	JA 21	ES 16	ES 16	G	34	34	34	G	36	37	41	27	20	JA 24	JA 50	JA 51	JA 32	JA 26	JA 32	
12	JA 50	JA 17	JA 20	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	G	G	37	35	37	JA 40	30	ES 16	ES 16	ES 16	JA 24	JA 25	JA 49	JA 17	
13	JA 20	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	43	36	34	JA 54	JA 42	JA 43	JA 46	JA 34	JA 23	JA 17	JA 18	ES 16	ES 16	ES 16	
14	ES 16	ES 16	ES 16	ES 16	JA 38	19	JA 23	ES 16	G	30	35	43	50	47	55	44	30	JA 31	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	
15	ES 16	JA 21	JA 17	ES 16	ES 16	ES 16	ES 16	ES 16	G	30	31	33	36	35	33	31	29	JA 21	ES 16	ES 16	ES 16	ES 16	JA 17	ES 16	
16	ES 16	21	22	22	ES 16	ES 16	ES 16	ES 16	G	JA 42	JA 43	JA 51	JA 49	JA 53	JA 54	32	G	ES 16	ES 16	ES 16	ES 16	JA 23	22	22	
17	20	JA 17	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	JA 41	37	39	44	JA 45	G	28	ES 16	JA 27	JA 36	JA 51	JA 74	JA 43	JA 40	
18	JA 37	JA 46	JA 30	JA 24	JA 40	ES 16	JA 22	23	JA 25	JA 28	G	34	JA 51	JA 64	JA 41	43	JA 37	JA 30	JA 30	JA 32	JA 22	ES 16	ES 16	ES 16	
19	ES 16	ES 16	JA 26	JA 28	JA 38	JA 52	JA 36	JA 38	JA 21	30	JA 35	JA 41	JA 52	JA 41	JA 44	JA 43	JA 36	JA 37	JA 36	JA 34	JA 27	ES 16	ES 16	JA 41	
20	ES 16	ES 16	JA 42	JA 18	JA 37	JA 23	ES 16	ES 16	G	JA 29	C	C	C	C	JA 33	34	JA 36	JA 44	JA 43	JA 27	JA 26	JA 23	JA 21	ES 16	
21	ES 16	ES 16	ES 16	JA 22	JA 27	ES 16	ES 16	ES 16	G	G	30	35	JA 50	JA 37	JA 32	G	G	ES 16	ES 16	JA 18	JA 18	JA 20	JA 18	ES 16	
22	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	32	38	JA 48	JA 40	JA 52	G	JA 29	JA 26	JA 19	ES 16	ES 16	ES 16	ES 16	ES 16	
23	ES 16	ES 16	ES 16	JA 19	ES 16	ES 16	ES 16	ES 16	G	G	G	JA 37	JA 33	JA 35	JA 37	JA 29	JA 29	ES 16	JA 33	JA 21	JA 21	ES 16	ES 16	ES 16	
24	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	G	36	38	42	34	JA 38	JA 30	ES 16	17	20	JA 37	22	ES 16	ES 16	
25	18	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	30	36	38	35	39	35	32	JA 26	17	JA 18	22	21	22	ES 16	ES 16	
26	ES 16	ES 16	ES 16	ES 16	ES 16	JA 25	ES 16	18	26	32	33	36	38	31	33	33	JA 27	ES 16	21	17	19	ES 16	ES 16	ES 16	
27	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	24	28	33	37	JA 54	JA 46	35	JA 40	JA 27	JA 25	JA 26	ES 16	ES 16	ES 16	JA 20	ES 16	
28	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	32	JA 28	JA 43	G 28	G 25	G	29	JA 26	JA 22	ES 16	ES 16	ES 16	ES 16	ES 16	17	
29	ES 16	JA 21	20	JA 21	JA 21	19	19	ES 16	25	29	37	39	34	JA 54	JA 38	28	27	C	19	JA 27	ES 16	JA 22	JA 40	ES 16	
30	ES 16	ES 16	JA 25	ES 16	ES 16	ES 16	ES 16	ES 16	G	33	JA 37	JA 41	JA 40	JA 53	JA 53	JA 40	JA 42	JA 35	JA 20	ES 16	ES 16	ES 16	ES 16	ES 16	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	29	29	29	30	30	30	30	30	30	
MED	ES 16	ES 16	18	18	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	
UQ	JA 32	JA 21	JA 25	JA 22	JA 21	19	18	20	26	33	36	JA 39	JA 50	JA 47	JA 42	JA 40	JA 30	JA 27	JA 23	JA 27	JA 26	JA 23	JA 28	JA 28	
LQ	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	G	G	26	34	34	34	33	29	26	ES 16	ES 16	ES 16	ES 16	ES 16	

NOV. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FBES (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	E S 16	E	17	E	E	E	E	19	24	23	40	36	40	35	31	28	G E S 16	E	E	24	A A 82	29	33		
2	30	26	E	18	E	E E S 16	G	25	G	31	19	G	32	35	27	C	C	22	17	E	E	20	E	18	
3	E	E	E	E	E E S 16	E S 16	21	24	28	G 24	G 26	G	G	G	41	G	24	18	19	E S 16	E	19	E		
4	28	18	E	E	E E S 16	E S 16	19	G	G	21	G 22	G	G	G	G	G	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20		
5	E	24	E	E	E	E	20	G	G	32	32	31	32	30	G	G	G	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E	
6	26	19	E	E	E	E S 16	17	25	28	G	31	31	31	33	30	30	18	E	26	18	E	18	22		
7	A A 41	30	E	E	E	E	20	G	28	30	G	G	G	G	33	24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E		
8	E	18	18	19	17	E S 16	E S 16	25	29	25	G	32	37	38	35	28	G	19	E	25	E	E	E S 16	E S 16	
9	E S 16	E S 16	E S 16	E	E S 16	E	E	20	27	30	32	30	32	32	30	29	24	E S 16	E S 16	E S 16	E	E	19	E	
10	E S 16	E S 16	E S 16	E S 16	E S 16	E	E S 16	E S 16	G	27	32	G	42	G	32	28	27	19	E	E	E S 16	E	E S 16	E	
11	E S 16	E S 16	E S 16	E S 16	E S 16	A A 21	E S 16	E S 16	G	33	33	G	G	36	30	28	25	19	E	23	A A 51	E	19	20	
12	18	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	G	36	G	35	38	30	E S 16	E S 16	E S 16	E	20	A A 49	E	
13	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	31	35	G	40	34	36	44	30	21	E	E	E S 16	E	E S 16	
14	E S 16	E S 16	E S 16	E S 16	A A 38	E	20	E S 16	G	G	34	42	46	40	48	33	30	28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	
15	E S 16	17	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	G	34	34	32	30	28	G	E S 16	E S 16	E S 16	E S 16	E	E S 16	
16	E S 16	E	E	E	E S 16	E S 16	E S 16	E S 16	G	32	42	50	41	33	30	31	G	E S 16	E S 16	E S 16	E S 16	23	E	E	
17	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	37	34	34	38	37	G	27	E S 16	26	U Y 36	26	A A 74	22	A A 40	
18	A A 37	A A 46	23	23	20	E S 16	18	21	23	27	G	32	40	40	35	33	28	G	E	32	E	E S 16	E S 16	E S 16	
19	E S 16	E S 16	20	17	E	20	19	26	20	26	29	30	32	32	20	28	35	36	33	A A 34	E	E S 16	E S 16	E	
20	E S 16	E S 16	E	E	A A 37	17	E S 16	E S 16	G	21	28	C	C	C	C	30	32	30	43	32	22	19	19	22	E S 16
21	E S 16	E S 16	E S 16	E	19	E S 16	E S 16	E S 16	G	G	30	33	33	31	29	G	G	E S 16	E S 16	E	E	E	E	E S 16	
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	31	33	47	33	31	G	23	17	17	E S 16	E S 16	E S 16	E S 16	E S 16	
23	E S 16	E S 16	E S 16	E	E S 16	E S 16	E S 16	E S 16	G	G	G	32	31	31	30	26	24	E S 16	26	E	E	E S 16	E S 16	E S 16	
24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	35	37	39	32	36	26	E S 16	E	18	23	E	E S 16	E S 16	
25	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	33	37	33	38	33	31	24	G	E	E	E	17	E S 16	E S 16	
26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	29	30	35	36	31	30	26	22	E S 16	E	E	E	E S 16	E S 16	E S 16	E S 16	
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	23	28	33	36	50	33	30	34	22	17	E	E S 16	E S 16	E S 16	E	E S 16	
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	28	G 25	36	G 27	G 24	G	24	19	G	E S 16	E S 16	E S 16	E S 16	E S 16	E	
29	E S 16	19	E	E	E	E	E S 16	E S 16	G	G	36	36	G	37	G	27	G	C	E	17	E S 16	22	17	E S 16	
30	E S 16	E S 16	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	20	31	36	33	36	31	36	41	18	E	E S 16	E S 16	E S 16	E S 16	E S 16	
31																									
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	29	29	29	30	30	30	30	30	30	
MED	E S 16	E S 16	16	16	E S 16	E S 16	E S 16	E S 16	G	24	31	32	33	33	30	29	24	16	16	16	16	16	16	16	
UQ	E S 16	18	E S 16	E S 16	E S 16	E S 16	E S 16	19	23	28	33	36	37	37	33	33	28	19	17	19	E S 16	17	18	E S 16	
LQ	E S 16	E S 16	E	E	E	E	E S 16	E S 16	G	G	G	G	31	31	29	26	G	E S 16	E	E	E	E	E S 16	E	

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FBES (0.1 MHZ)

IONOSPHERIC DATA

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FMIN (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	E S	E S	E S	E S	E S	E S	E S	E S	14	15	17	18	16	16	16	15	16	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	15	16	16	16	16	16	16	I C	I C	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	16	16	16	17	17	18	17	16	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	15	16	16	16	17	20	16	16	16	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	16	16	16	17	18	17	16	16	16	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	15	16	16	18	20	17	17	16	16	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	16	16	16	17	17	17	17	16	16	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	18	16	16	16	16	16	16	16	16	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	16	16	16	17	18	21	16	16	16	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	15	15	14	16	16	19	16	16	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	16	16	16	17	18	17	16	17	16	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	16	16	16	16	18	16	16	16	16	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	16	16	16	16	16	16	16	12	16	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	16	13	17	15	16	16	16	16	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	16	16	16	16	16	15	16	16	16	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	15	16	16	16	16	16	16	16	16	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	16	16	16	16	16	16	16	16	16	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	16	16	16	16	16	16	16	16	16	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	16	16	16	16	16	16	16	16	16	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	16	15	C	C	C	C	16	16	16	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	16	15	16	16	16	17	16	16	16	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	16	16	16	16	17	18	18	16	16	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	16	16	16	16	17	17	16	16	16	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	15	16	15	16	15	16	16	12	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	16	16	16	15	18	17	16	16	16	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	14	15	16	18	17	16	15	16	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	16	16	16	16	16	16	16	16	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	16	16	20	16	17	16	16	15	15	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	16	16	16	16	16	16	16	16	C	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	16	17	16	16	16	17	16	16	16	E S	E S	E S	E S	E S	E S	E S	E S
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	29	30	30	30	30	30	30	
MED	E S	E S	E S	E S	E S	E S	E S	E S	16	16	16	16	16	16	16	16	16	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	16	16	16	17	17	17	16	16	16	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	16	16	16	16	16	16	16	16	E S	E S	E S	E S	E S	E S	E S	

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FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

NOV. 1984

M(3000)F2 (0.01)

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	310	305	305	335	S 330	335	370	370	385	370	340	335	325	345	U R 340	310	355	320	290	325	A	420	315
2	300	345	275	280	S 295	305	305	360	340	345	360	315	350	340	320	I C 350	I C 350	360	345	285	310	355	320	285
3	305	320	320	320	340	320	320	370	360	355	335	345	355	350	345	375	370	350	335	305	330	305	325	F
4	280	F	360	370	305	295	335	350	330	335	325	360	340	340	365	380	H 340	365	360	S 335	325	305	305	F
5	300	S 350	F 345	310	355	340	355	350	375	380	345	360	360	365	355	355	380	375	365	335	325	350	340	315
6	S 310	370	370	335	365	300	345	360	385	370	335	350	355	325	355	380	380	380	335	330	310	315	305	305
7	A	305	310	310	375	290	305	355	380	385	345	335	S 350	H 340	R 340	S 355	415	370	345	355	290	305	F	275
8	F	355	335	300	F 320	F 310	300	345	350	345	350	345	345	335	S 350	S 355	355	375	335	335	305	305	S 350	355
9	300	285	300	F 295	F	320	320	360	360	355	330	335	340	335	370	365	H 365	370	325	S 325	360	365	355	310
10	270	U S 285	290	300	350	355	355	360	360	355	345	S 350	H 385	H 335	345	355	S 355	S 355	335	310	305	310	335	260
11	305	275	320	395	340	A	280	380	360	350	335	350	340	345	345	365	365	350	350	350	A	290	320	295
12	320	340	310	335	340	290	320	370	405	350	340	360	355	340	330	340	365	390	340	310	335	S 315	A	300
13	315	315	320	S 320	320	335	345	350	375	360	350	360	340	H 315	335	330	380	360	360	300	305	J S 325	S 350	340
14	320	305	315	275	A	320	390	340	370	345	345	335	335	330	325	360	360	360	370	340	290	335	S 330	285
15	S 290	320	295	335	315	J S 295	F	340	355	370	330	375	335	350	335	345	355	370	360	280	S 270	S 305	U S 265	S 265
16	355	360	355	300	290	290	280	375	340	310	R 335	320	R 335	350	355	325	320	330	340	340	270	S 300	340	325
17	275	295	340	310	F	F	F	350	320	F	365	350	330	350	355	355	345	350	335	375	320	A	305	A
18	A	A	305	F	S 305	F	315	355	370	335	345	355	375	345	H 380	360	375	365	370	U S 360	310	350	360	295
19	295	S 320	295	290	S 305	305	320	360	385	385	380	365	380	365	S 350	370	365	360	350	A	300	345	310	310
20	310	375	325	345	A	295	305	355	370	340	C	C	C	C	360	300	370	365	335	355	295	S 340	335	295
21	310	300	335	330	350	290	310	350	360	365	360	355	350	360	360	370	400	370	355	320	355	315	305	295
22	290	350	360	305	335	315	385	385	370	375	345	355	335	370	335	355	380	385	365	325	315	320	305	320
23	320	F	F	F	F	350	310	345	360	360	340	330	320	335	345	365	360	375	380	320	315	325	325	320
24	295	295	310	330	350	365	320	330	H 340	365	360	360	335	U R 365	U H 260	R 335	365	365	340	315	S 315	S 305	305	305
25	315	325	315	295	330	U S 340	290	350	375	340	340	S 335	H 325	R 320	U H 360	355	350	370	350	340	U S 295	340	S 295	J S 265
26	305	320	335	U S 315	335	355	340	U S 360	370	H 320	365	335	345	320	S 335	345	360	345	340	S 365	305	305	335	U S 345
27	U S 265	U S 305	F	I S 325	S 380	350	340	355	350	375	345	350	360	345	U H 335	355	360	340	S 360	345	U H 275	315	350	295
28	305	295	300	335	310	295	310	350	S 370	350	365	350	365	350	375	350	350	370	365	315	320	340	320	310
29	310	H 315	310	305	305	315	305	350	385	350	370	355	H 360	H 365	H 320	350	380	I C 370	350	285	S 300	S 360	350	305
30	290	305	295	325	320	320	355	345	340	380	380	395	350	310	340	345	365	365	325	400	320	285	290	320
31																								
CNT	27	27	28	28	25	27	28	30	30	29	29	29	29	29	30	30	30	30	30	29	29	28	28	27
MED	305	315	315	312	335	315	320	355	365	355	345	350	345	340	345	355	365	365	348	330	310	315	325	305
UQ	312	342	335	332	350	338	342	360	375	370	360	360	355	350	355	365	375	370	360	345	320	340	345	318
LQ	292	302	302	300	310	295	305	350	350	345	340	335	335	335	335	345	355	355	335	310	300	305	305	295

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M(3000)F2 (0.01)

IONOSPHERIC DATA

NOV. 1984

M(3000)F1 (O.01)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31 12.1 N				Long.	130 37.1 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	U L 385	L	L	L	L	L							
2									L	L	L	L	L	L	L	C	C							
3									L	L	L	L	L	L	L	A								
4									L	L	L	L	L	L	L	L								
5									L	L	L	L	L	L	L	L								
6									L	L	L	L	L	L	L	L	L	L						
7									L	L	L	L	L	L	L	L								
8										L	L	L	L	L	L	L								
9										L	L	L	L	L	L	L	L	L						
10										L	L	L	L	L	L	L	L	L						
11											U L 380	L	L	L	L	L	L	L						
12											L	L	L	L	L	L	L	L	A					
13											L	L	L	L	L	L	L	L	A					
14											L	L	L	L	L	L	L	L						
15											U L 430	L	L	L	L	L	L	L						
16											L	A	A	A	L	L								
17											L	L	L	L	L	L	L							
18											L	L	L	L	L	L	L							
19											L	L	L	L	L	L	L							
20											L	L	C	C	C	C	L	L						
21											L	L	L	L	L	L	L							
22											L	L	L	L	L	L	L							
23											L	L	L	L	L	L	L							
24											L	L	L	L	L	L	L							
25											L	L	L	L	L	L	L							
26											L	L	L	L	L	L	L							
27											L	L	L	L	L	L	L							
28											L	L	L	L	L	L	L							
29											L	L	L	L	L	L	L							
30											L	L	L	L	L	L	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	4	15	7	6	10	3	1						
MED											430	U L 385	U L 370	A	U L 370	U L 385	A	460						
UQ											U L 398	L	405	L	385	L	410							
LQ											U L 382	L	372	L	375	L	380	388						

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M(3000)F1 (O.01)

IONOSPHERIC DATA

NOV. 1984

H*F2 (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									220	230	245	270	255	265	245	240	225							
2									245	245	235	220	245	255	265	I ^c 240	C							
3									240	240	250	250	250	250	250	240								
4									255	250	260	240	255	250	240	230								
5									230	240	250	250	235	240	250	230								
6									235	245	270	255	245	275	250	230	225							
7									230	230	250	270	245	250	250	240								
8									250	250	270	245	260	240	230									
9									250	270	270	265	275	240	235	225								
10									255	260	230	245	245	255	250	220								
11										265	245	265	260	250	245	225								
12									260	275	245	240	255	280	250	225								
13									240	255	250	260	250	270	265	230								
14									240	255	270	265	280	270	240	225								
15									230	265	240	250	255	270	235									
16									250	245	290	235	240	265										
17									250	240	240	250	240	250	240									
18									240	245	240	235	240	235	220									
19									240	250	245	240	240	240	230									
20									235	240	C	C	C	C	240	230								
21									230	240	245	250	245	240	250	240								
22									245	250	250	230	240	260	250									
23									230	235	270	250	280	265	250	240								
24									230	235	255	245	245	220	L 245	245								
25									275	235	240	270	255	230	235	225								
26									215	245	245	255	275	280	245	235	220							
27									230	250	260	250	260	245	230	230								
28									245	235	250	240	260	235	225									
29									230	225	240	225	235	235	255	250	225	C						
30									240	240	240	260	250	250	270	240								
31																								
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									13	29	29	29	29	29	30	29	13							
MED									230	240	250	250	245	250	250	240	225							
UQ									235	250	260	255	260	260	255	245	225							
LQ									230	240	245	240	240	240	240	230	225							

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H*F2 (KM)

IONOSPHERIC DATA

NOV. 1984

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	250	E S 260	300	295	250	215	220	H 210	215	230	A	220	A	A	H 195	H 195	H 205	225	230	275	225	A	E A 325	E A 335	
2	E A 330	245	325	310	275	260	285	230	225	225	235	210	200	A 225	H 205	I C 240	I C 225	220	205	E S 255	270	230	230	325	
3	E S 300	265	250	E S 275	250	250	230	220	225	H 200	H 180	220	H 180	H 190	H 190	A	225	225	230	E A 265	235	E S 260	275	E S 325	
4	A	E A 325	230	205	305	E S 340	255	240	230	200	H 180	H 180	220	240	235	230	H 205	H 200	220	220	250	250	260	E A 330	
5	270	275	235	E S 270	230	245	240	230	190	H 180	H 225	220	205	H 205	H 200	H 210	230	215	205	220	E S 270	240	250	E S 275	
6	E A 330	235	225	E S 275	235	E S 290	E S 270	235	235	205	H 200	H 195	200	H 200	230	230	A	205	220	E A 260	E A 275	250	E A 280	E A 320	
7	A	E A 340	E S 290	E S 290	205	E S 345	E S 280	235	230	220	H 200	H 205	225	H 200	H 190	A	225	220	205	220	E S 295	E S 300	E S 290	E S 320	
8	E S 330	265	250	E A 270	E A 275	240	E S 270	235	240	235	H 200	220	235	225	230	H 200	225	215	205	E A 260	E S 275	270	230	235	
9	E S 290	E S 320	E S 320	280	230	E S 250	E S 305	230	230	230	230	220	200	H 210	225	215	225	210	220	250	230	220	E A 280	E S 320	
10	310	290	310	275	225	225	230	H 220	230	H 190	H 225	210	205	195	H 205	210	225	215	205	220	245	240	245	E S 305	
11	E S 300	E S 320	280	200	E S 240	A	E S 285	210	235	250	240	235	235	240	230	210	220	205	220	240	A	E S 340	300	E A 330	
12	280	240	270	240	230	E S 305	E S 265	230	205	H 185	H 195	230	235	240	240	A	A	200	200	235	230	E A 250	A	270	
13	270	270	260	250	250	240	230	230	235	230	H 190	225	205	A	H 220	A	A	220	200	250	270	240	225	240	
14	E S 250	E S 290	300	315	A	255	200	H 200	H 200	230	210	A	A	A	A	A	A	210	200	E S 250	290	250	240	E S 300	
15	295	230	E S 240	260	245	E S 280	290	215	200	210	220	225	H 205	H 195	210	A	240	210	200	E S 290	280	250	275	295	
16	215	240	E S 300	E S 315	E S 330	E S 330	E S 290	220	230	E A 250	A	A	A	225	220	240	H 195	H 210	225	220	E S 295	E A 340	220	265	
17	E S 275	E S 320	240	E S 320	275	E S 320	300	240	225	235	A	240	225	A	A	H 220	H 200	H 190	250	E S 250	E A 280	A	E S 350	A	
18	A	A	E A 330	E A 320	E A 305	E S 290	E A 260	220	H 200	H 200	210	H 200	A	A	A	A	225	180	205	A	270	230	205	E S 350	
19	E S 310	E S 290	E S 340	A	E S 300	E S 350	E A 315	250	220	190	H 200	H 190	200	220	225	210	230	230	240	A	E S 295	235	E S 255	E S 290	
20	E S 270	230	E S 260	240	A	E A 320	E S 300	240	H 200	H 210	C	C	C	C	210	E A 230	230	E A 250	E A 255	A 250	E A 295	240	E A 265	E S 295	
21	E S 270	E S 295	250	240	245	E S 290	250	240	225	220	220	220	210	205	220	230	220	205	210	220	230	E S 270	E S 270	E S 320	
22	E S 300	260	225	E S 280	260	E S 300	225	200	195	H 200	H 200	230	A	205	210	240	230	220	215	245	240	E S 270	E S 270	E S 270	
23	E S 280	E S 290	250	240	200	E S 275	E S 300	250	220	H 200	H 200	220	215	200	H 190	210	210	220	200	220	E S 250	E S 275	240	E S 250	E S 295
24	E S 295	295	250	225	225	205	210	235	220	H 195	H 195	250	A	A	210	A	225	200	205	E A 245	A	205	E S 265	260	
25	E S 295	255	255	300	245	200	260	220	H 200	H 200	A	A	205	E A 240	235	240	240	205	195	230	200	E A 290	E A 245	275	
26	E S 295	275	260	270	220	220	E S 230	215	230	H 200	H 200	240	250	225	H 195	H 205	210	235	195	200	H 200	E S 270	230	240	
27	E S 280	E S 270	250	225	200	E S 300	E S 255	220	230	220	225	240	A	215	200	A	180	220	200	205	200	240	230	E S 280	
28	300	290	290	275	290	300	275	245	220	H 200	210	E A 225	180	175	H 185	H 180	230	220	220	225	200	225	250	E S 270	
29	275	235	260	E S 275	E S 285	255	E S 260	230	230	180	240	205	195	E A 230	205	180	240	I C 205	200	E A 250	E S 270	220	240	E S 245	
30	E S 300	E S 315	E S 295	E S 315	275	240	245	245	190	H 220	230	A	230	225	215	E A 240	A	220	220	205	E S 265	E S 320	E S 280	260	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	29	30	29	28	29	30	30	30	30	25	25	22	24	27	21	25	30	30	28	28	28	29	29	
MED	E S 295	U 255	U 255	U 250	239	E E 275	U 232	230	225	205	210	220	205	213	210	212	225	211	206	U 232	U 235	239	U 238	E S 295	
UQ	E S 300	E S 295	U 280	E E 295	262	E S 300	E S 285	240	230	228	225	230	225	225	225	230	230	220	220	E E 250	E E 278	E E 270	E E 275	E S 320	
LQ	E S 272	248	250	232	229	240	228	220	H 200	H 200	H 200	210	200	H 200	H 202	H 210	220	205	200	220	229	235	235	U 252	

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H*F (KM)

IONOSPHERIC DATA

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H^oE (KM)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								S	A	A	110	115	110	115	115	A	115	S							
2								S	A	110	115	115	A	A	E A 125 115	I C 115	C	A							
3								E S 140	120	115	A	A	110	120	120	120	120	S							
4								S	A	120	A	A	115	120	120	120	120	S							
5								S	120	120	115	115	120	120	120	115	120	115							
6								S	120	120	120	120	120	120	120	A	115	S							
7								S	120	115	115	115	115	115	115	120	120	S							
8								S	A	A	110	A	A	A	A	A	120	S							
9								S	120	120	105 ^H	A	120	120	120	120	120	S							
10								S	125	110	110	115	A	110	A	115	A	S							
11								S	115	110	110	110	110	110	A	A	110	S							
12								S	110	110	110	110 ^H	115	110	110	110	115	S							
13								S	110 ^H	105	A	A	110	A	105	A	A	S							
14								S	120	110	105	105	105	110	110	A	A	S							
15								S	120	110	110	100 ^H	100 ^H	105 ^H	110	110 ^H	115	S							
16								S	120	115	110	110	110	110	115	115	120	S							
17								S	120	115	110	110	110	110	110	120	120	S							
18								S	120	115	110	110	A	A	A	A	A	S							
19								S	A	115	A	A	A	A	A	A	A	S							
20								S	A	A	C	C	C	C	115	120	A	S							
21								S	120	115	110	110	A	A	A	110	115	S							
22								S	120	115	115	110	115	115	110 ^H	115	A	S							
23								S	120	120	115	A	A	A	A	A	A	S							
24								S	110	105 ^H	105 ^H	105	110	110	105 ^H	115	A	S							
25								S	120	115	110	110	110	110	110	110	110	S							
26								S	105	110	115	105 ^H	105	105	A	A	A	S							
27								S	120	110	110	110	105	105	A	A	A	S							
28								S	125	105	E A 125	A	E A 120	115	105	A	A	S							
29								S	E S 120	110	105	E A 120	E A 125	120	115	E A 120	120	C							
30								S	125	120	115	115	115	115	115	A	A	S							
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								1	24	27	25	22	21	23	20	17	16	1							
MED								E S 140	120	115	110	110	110	110	115	115	120	115							
UQ									120	115	115	115	115	118	119	120	120								
LQ									120	110	110	110	110	110	110	115	115								

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H^oE (KM)

IONOSPHERIC DATA

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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	S	105	100	100	105	105	125	120	110	105	120	120	120	115	115	115	125	S	105	125	105	100	100	100	
2	100	100	105	100	105	105	S	110	110	145	160	105	115	95	100	C	C	115	110	110	105	105	125	100	
3	105	100	100	100	105	S	S	155	130	115	105	105	G	G	130	120	120	120	115	120	S	105	105	110	
4	105	105	105	105	105	100	S	S	105	G	105	100	G	G	G	G	G	S	S	S	S	S	S	100	
5	100	100	100	100	105	105	105	145	G	G	165	130	120	120	120	G	G	G	S	S	S	S	S	100	
6	100	100	100	100	100	100	S	160	125	120	G	120	120	120	120	115	115	100	110	110	115	105	100		
7	100	105	100	100	105	100	105	140	120	125	125	G	G	G	G	120	120	S	S	S	S	S	S	105	
8	105	105	105	105	110	S	S	120	145	105	G	100	100	100	100	G	100	100	110	110	120	S	S		
9	S	S	S	120	S	105	105	160	165	120	120	105	120	125	120	120	115	S	S	S	110	105	105	105	
10	S	S	S	S	S	105	S	S	160	115	170	E G 175	125	150	115	110	150	140	95	110	S	115	S	100	
11	S	S	S	S	S	S	S	S	G	165	165	175	G	120	110	140	130	120	115	105	105	100	105	105	
12	105	105	105	S	S	S	S	S	G	G	G	G	170	150	135	115	115	S	S	S	145	125	115	110	
13	100	S	S	S	S	S	S	S	G	G	130	125	130	115	115	115	105	110	110	110	110	S	100	S	
14	S	S	S	S	100	105	100	S	G	155	130	125	115	110	110	110	110	110	S	S	S	S	S	S	
15	S	100	100	S	S	S	S	S	G	155	145	145	130	135	135	125	120	115	S	S	S	S	S	100	
16	S	105	100	100	S	S	S	S	G	125	120	115	120	115	120	160	G	S	S	S	S	120	115	115	
17	110	110	S	S	S	S	S	S	G	G	125	150	150	140	140	G	125	S	150	125	110	105	105	100	
18	100	100	100	100	125	S	160	170	120	120	G	120	105	100	110	110	105	110	110	100	105	S	S	S	
19	S	S	115	105	100	100	100	100	100	120	105	110	105	100	100	100	100	100	105	105	120	S	S	115	
20	S	S	100	110	100	100	S	S	100	120	C	C	C	C	120	120	110	105	105	105	105	105	100	100	S
21	S	S	S	120	100	S	S	S	G	G	140	120	110	110	110	G	G	S	S	105	105	100	100	S	
22	S	S	S	S	S	S	S	S	G	G	165	140	125	125	120	G	100	100	100	S	S	S	S	S	
23	S	S	S	110	S	S	S	S	G	G	G	110	110	110	110	105	105	S	100	105	100	S	S	S	
24	S	S	S	S	S	S	S	S	G	G	G	155	150	130	125	110	110	S	150	135	120	120	S	S	
25	110	S	S	S	S	S	S	S	G E G 180	150	130	120	110	115	110	110	105	105	105	100	100	S	S	S	
26	S	S	S	S	S	115	S	105	155	145	125	165	150	E G 155	110	115	105	S	145	140	130	S	S	S	
27	S	S	S	S	S	S	S	S	150	150	140	135	115	115	105	105	105	100	105	S	S	S	100	S	
28	S	S	S	S	S	S	S	S	G	145	105	100	105	105	G	100	100	105	S	S	S	S	S	110	
29	S	105	105	105	105	110	105	S	155	135	145	130	145	120	125	125	165	C	150	110	S	105	105	S	
30	S	S	120	S	S	S	S	S	G	160	125	120	120	130	120	110	105	105	105	S	S	S	S	S	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	12	14	16	16	14	14	8	11	15	21	23	27	25	26	27	24	24	17	20	18	17	16	15	15	
MED	102	105	100	102	105	105	105	140	125	125	130	120	120	116	115	115	110	110	105	110	110	105	105	105	
UQ	105	105	105	108	105	105	115	158	152	148	148	135	130	128	120	120	120	115	115	120	110	118	105	110	
LQ	100	100	100	100	100	100	102	115	110	120	120	110	115	110	110	110	105	105	102	105	105	100	100	100	

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H⁺ES (KM)

IONOSPHERIC DATA

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TYPES OF ES

135 E Mean Time (G.M.T. + 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		F1	F2	F3	F1	F1	F1	C3	LH32	LH32	C2	C3	C3	C3	C2	L2	C1		F1	F1	F5	F6	F8	F5				
2	F5	F5	F2	F4	F1	F1		L1	L2	HL11	HL11	L1	CL12	L4	LH11			L4	F3	F1	F3	F4	F1	F4				
3	F1	F2	F1	F1	F2			H3	C2	C3	L2	L2			C1	C3	C4	C6	F2	F3		F3	F2	F3				
4	F4	F2	F3	F2	F1	F3			L2		L1	L2												F5				
5	F2	F4	F2	F3	F3	F2	F2	H5			H2	C1	CH21	C2	C2									F3				
6	F3	F4	F3	F2	F2	F2		H3	C2	C3		C2	C2	C2	C2	CL22	C5	C3	F4	F4	F3	F2	F4	F4				
7	F6	F6	F2	F2	F1	F2	F2	H3	C3	C3	C2					C4	C2							F3				
8	F3	F4	F4	F3	F3			C4	HL13	LH23		L3	L2	L3	L3	L2		L3	F1	F4	F2	F1						
9				F2	F2	F2		H3	H3	C2	C2	L2	C2	C2	C2	C2	C3				F1	F2	F3	F2				
10					F1				HL13	C1	H1	HL12	CHL21	HCL12	CL13	L4	HL24	HL31	FF21	F1		F2		F2				
11					F3				H2	H1	HC11		C2	LH21	HL12		C2	C3	F3	F5	F7	F4	F3	F5				
12	F5	F3	F2										H1	H1	H2	C5	C3				F1	F2	F4	F2				
13	F2										CL13	CL32	CL12	C3	CL23	CL34	L4	L7	F4	F1	F2		F1					
14				F5	F1	F2			H1	C2	C4	C3	C3	C4	L4	L6	L4	L4										
15		F2	F1						H2	H2	H2	C1	C2	C2	C2	C3	L1							F2				
16		F2	F2	F3					C3	C4	C6	C4	C3	C3	H2							F6	F1	F3				
17	F2	F2							C3	H3	H3	H3	H3	H3		C4		F5	F5	F7	F6	F6	F6	F6				
18	F6	F5	F5	F6	F6		F5	HC32	C5	C2		C3	L3	L2	L3	L3	L4	L1	F1	F7	F2							
19			F3	F5	F3	F5	F5	L6	L4	C5	L2	L2	L2	L3	L3	L4	L6	F8	F6	F1				F2				
20			F2	F2	F7	F3			L4	CL34					C2	C2	L6	L8	F5	F7	F4	F2	F3					
21				F2	F3				H2	C2	L2	L2	L2	L2						F1	F2	F2	F2					
22									H2	H3	C3	C2	C2			L2	L4	F2										
23				F1							L2	L2	L2	L2	L2	L3		F5	F2	F2								
24										H2	HL21	HL22	C2	C3	CL52			F2	F6	F6	F1							
25	F2								H1	H2	H2	C2	C4	C2	C2	C3	L1	F1	F2	F1	F2							
26					F2		L2	H2	H2	C2	H2	HL31	H1	L3	CL13	L2		FF11	F2	F1								
27								H3	H2	H2	H3	C4	C3	L1	L4	L2	L2	F1					F1					
28									H2	L1	L4	L2	L2		L2	L3	L1							F2				
29		F4	F2	F3	F2	F2	F2		H3	H2	H3	L1	HL22	CL21	CL22	CL21	H2		F1	F4		F2	F3					
30			F2						H3	C2	C2	C3	H2	C2	L5	L4	L2	F1										
31																												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
CNT																												
MED																												
UQ																												
LQ																												

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TYPES OF ES

IONOSPHERIC DATA

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FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station	OKINAWA																							Lat.	26 16.9 N.		Long	127 48.4 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																												
1	X 41	X 41	X 35	X 33	X 34	X 32	X 28												X 86	X 79	X 89	X 54	U 54	S 48																												
2	X 41	X 38	X 34	X 35	X 36	X 36	X 36												X 68	X 53	S 49	S 59	X 45	X 36																												
3	X 38	X 44	X 48	X 43	X 39	X 37	X 41												X 62	X 53	S 53	X 45	X 43	S 39																												
4	X 38	U 45	S 45	X 36	S	X 26	X 29												X 65	X 54	X 42	X 41	X 41	X 42																												
5	X 48	X 46	X 40	X 36	X 31	X 30	X 27												X 66	X 61	X 43	X 44	X 40	X 39																												
6	X 40	X 42	X 33	X 36	X 26	X 26	X 28												X 54	X 46	X 47	X 48	X 45	X 41																												
7	X 44	X 41	X 39	X 45	X 43	S	X 23												X 62	X 45	X 46	X 45	X 39	X 41																												
8	X 38	X 39	X 36	X 34	S	X 32	X 23												X 60	X 40	X 43	X 45	X 45	X 36																												
9	X 33	X 34	X 33	X 36	X 34	X 28	X 24												X 50	X 46	X 61	X 54	X 36	X 36																												
10	X 34	X 36	X 39	X 40	X 39	X 32	X 28												X 73	X 48	X 54	X 53	X 41	X 37																												
11	X 33	X 34	X 46	X 28	X 24	X 23	X 27												X 55	X 47	X 43	X 39	X 36	S 37																												
12	X 40	X 38	X 33	X 35	X 30	X 26	X 27												X 56	X 51	U 54	S 46	X 37	X 37																												
13	S 38	X 39	S 43	X 43	X 38	X 31	X 31												X 67	H 53	X 46	X 46	X 47	S 34																												
14	X 30	X 30	X 33	X 31	X 35	X 39	X 31												X 62	X 42	X 44	X 40	X 41	X 45																												
15	X 40	X 58	X 28	X 27	X 30	X 29	X 28												X 82	Y	Y	X 106	S	80																												
16	S 73	X 30	X 29	X 31	X 33	X 32	X 36												X 127	X 96	X 68	X 60	X 70	X 48																												
17	X 49	X 48	X 58	X 39	X 39	S 42	X 46			108									X 85	X 76	A	S	S	X 38																												
18	X 36	S 31	A	A	X 39	X 35	X 35												X 63	S 44	X 45	U 51	S 45	0 29																												
19	X 29	X 30	X 30	X 30	X 29	X 28	X 28												X 63	X 41	X 43	X 48	X 36	X 34																												
20	X 36	X 34	A	Y 26	X 28	A	A												X 80	X 57	X 52	X 55	X 47	X 40																												
21	X 39	X 39	X 39	X 36	X 33	X 26	A												X 61	X 48	X 51	X 52	X 44	X 40																												
22	X 39	X 42	X 44	A	X 33	X 36	X 34												X 68	X 45	X 54	X 50	X 40	X 36																												
23	X 38	X 37	S 38	S 41	U 40	S	X 27												X 56	S 41	X 41	X 43	X 37	X 31																												
24	X 33	X 36	X 45	X 47	X 38	X 32	X 25												X 61	X 55	X 57	X 45	X 40	X 38																												
25	X 36	X 36	X 36	S 38	X 41	Y 29	X 25												U 80	S 58	X 63	S 54	X 48	X 34																												
26	H 32	X 31	X 33	X 35	X 40	S	X 25												X 66	X 49	X 43	X 34	X 33	X 33																												
27	X 30	X 31	X 34	X 38	X 38	X 24	X 25												X 78	X 65	X 61	X 54	X 47	X 48																												
28	X 42	X 44	X 47	X 46	X 42	X 37	X 38												X 82	X 59	X 63	X 54	X 46	X 41																												
29	X 39	X 40	X 41	X 38	X 37	X 33	X 32												X 65	X 50	X 50	X 52	X 43	X 36																												
30	X 30	X 30	X 32	X 33	X 32	X 29	S 26												X 78	X 54	X 40	X 36	X 39	X 40																												
31																																																				
CNT	30	30	28	28	28	26	28			1									30	29	28	30	28	30																												
MED	X 38	X 38	X 37	X 36	X 36	X 32	X 28			108									X 66	X 51	X 50	X 48	X 42	X 38																												
UQ	X 40	X 42	X 43	X 40	X 39	X 35	X 33												X 78	X 57	X 56	X 54	X 46	X 41																												
LQ	X 33	X 34	X 33	X 33	X 32	X 28	X 26												X 61	X 46	X 43	X 44	X 39	X 36																												

NOV. 1984

FXI (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FOF2 (0.1 MHz)

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

Station	OKINAWA																																					
	Lat. 26 16.9 N, Long. 127 48.4 E Sweep 1 MHz to 25 MHz in 24sec in automatic operation																																					
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23														
1	35	35	29	27	J S	U S	26	22	44	60	69	69	72	84	94	126	125	121	U R	107	S	80	73	83	48	48	42											
2	35	32	28	29	30	30	30	50	76	90	92	92	81	88	86	102	83	68	S	62	47	43	S	53	39	30												
3	32	38	42	37	S	33	31	35	42	67	83	96	110	117	117	116	107	88	63	S	56	47	47	39	37	S												
4	32	S	S	30	I	S	22	20	23	49	69	89	111	R	105	89	103	91	H	79	R	68	H	57	59	48	36	35	35	36								
5	42	40	S	J	S	25	24	21	51	71	75	82	102	J	R	100	106	84	76	77	70	60	55	37	38	34	33											
6	34	36	27	30	20	20	22	48	73	78	82	105	106	110	108	85	J	R	74	61	48	40	41	42	39	35												
7	38	35	S	J	S	I	S	17	49	81	78	89	117	I	Y	I	Y	155	156	134	111	78	56	39	40	J	S	33	35									
8	32	33	30	28	A	26	17	39	62	72	97	109	94	101	84	67	66	65	54	34	37	39	S	39	30													
9	27	28	27	30	28	22	18	45	62	72	81	92	107	U	R	118	U	R	117	106	72	66	S	44	40	55	48	30	30									
10	28	30	33	34	J	S	26	22	45	63	71	78	107	U	R	106	J	R	107	U	R	94	J	R	87	70	67	42	48	47	35	31						
11	27	28	40	22	S	18	17	21	42	53	60	72	92	89	92	89	75	75	64	49	41	37	33	30	S	31												
12	34	32	27	29	24	20	21	49	60	59	77	99	85	86	104	111	92	66	50	45	S	48	U	S	40	31	31											
13	S	32	33	S	37	37	32	25	25	48	61	R	71	62	72	83	R	105	115	112	104	83	61	H	47	40	40	41	S	28								
14	U	S	24	24	27	25	29	33	25	44	57	64	70	75	81	97	109	87	81	68	56	36	38	34	35	39												
15	S	34	52	22	21	S	24	23	22	50	58	59	68	93	89	75	88	83	87	93	76	Y	Y	U	S	100	S	F										
16	U	S	67	24	S	23	25	27	26	F	41	54	84	127	R	94	105	89	79	108	93	93	S	121	90	U	S	62	54	S	64	S	42					
17	43	S	42	52	33	S	36	J	S	40	47	F	125	R	119	99	U	H	103	103	105	90	R	87	U	R	97	79	70	A	32	I	S	27	32			
18	30	25	A	A	F	F	29	60	77	R	85	96	106	78	94	90	85	75	68	57	38	39	U	S	45	39	23											
19	23	24	24	24	23	22	22	47	J	R	74	R	81	77	82	91	106	U	R	95	72	61	63	57	35	37	42	30	28									
20	30	28	A	S	20	22	A	A	J	R	44	67	80	107	J	R	120	108	104	93	74	62	68	J	R	74	51	U	S	46	S	49	S	41	U	S	34	
21	33	33	33	30	27	20	A	45	66	76	82	82	86	89	88	87	80	67	55	42	S	45	46	38	34													
22	33	36	38	A	27	30	28	46	53	70	74	102	97	100	105	123	115	U	R	94	S	62	39	48	J	S	44	34	30									
23	32	31	J	S	S	U	S	A	21	39	58	78	J	S	84	R	98	105	125	137	102	91	H	69	50	S	35	S	35	37	31	S	25					
24	27	30	39	41	32	J	S	26	19	38	63	76	106	118	128	J	S	122	127	124	109	83	55	49	51	39	34	32										
25	30	30	30	S	32	35	23	19	41	57	79	U	R	98	93	103	U	R	142	145	127	135	108	U	S	74	S	52	57	S	48	42	28					
26	U	S	26	25	27	29	F	S	19	33	48	65	69	65	76	107	102	102	94	62	60	43	37	28	27	27												
27	24	25	28	32	32	18	19	40	52	64	69	79	91	102	R	127	145	136	U	R	118	72	59	55	48	U	S	41	S	42								
28	36	38	S	S	41	40	36	31	32	J	S	45	58	84	H	90	84	100	102	R	91	85	75	88	76	S	53	57	48	40	S	35						
29	33	34	35	32	31	27	S	26	S	41	60	68	67	69	57	67	76	79	J	R	98	R	78	59	J	S	44	S	44	46	37	30						
30	S	24	24	26	27	26	23	S	20	37	61	80	69	60	S	S	80	U	R	98	U	R	121	73	72	48	S	34	30	S	33	S	34					
31																																						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23														
CNT	30	30	28	28	27	26	27	30	29	30	30	30	30	30	30	30	30	30	30	30	30	29	28	30	29	29												
MED	32	32	31	30	28	24	22	45	61	76	82	94	92	103	103	96	87	70	60	45	44	42	35	32														
UQ	34	36	37	34	32	27	26	48	67	81	96	105	105	107	116	111	104	88	72	51	50	48	39	35														
LQ	27	28	27	27	24	20	20	41	58	69	70	82	84	94	88	83	75	66	55	40	37	38	33	30														

NOV. 1984

FOF2 (0.1 MHz)

IONOSPHERIC DATA

NOV. 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	L	L	L	L								
2										L	L	L	L	L	500	L	L	L	L					
3										L	L	L	L	L	L	A	L	L						
4										L	L	L	L	L	450	L	L							
5										L	L	L	L	L	L	L								
6										L	L	L	L	L	440	L	440	L	L					
7										L	L	L	L	L	L	L	L	L						
8										L	L	L	L	L	430	L	350	L	L					
9										L	L	L	L	L	L	L	L	L						
10										L	430	440	L	L	L	430	A							
11										L	L	L	L	L	440	L	L	L						
12										L	L	L	L	L	L	L	L	L						
13										L	L	L	L	L	450	L	430	A	A	A				
14										L	L	L	L	L	L	460	A	A	A					
15										L	L	L	L	L	L	460	L	L	L					
16										L	L	A	L	A	L	380	L	L						
17										L	L	L	L	L	L	L	L	L						
18										L	L	L	L	L	L	L	L	L	A					
19										L	L	L	L	L	L	L	L	L	L					
20										L	L	L	L	L	L	400	L	430	L	L				
21										L	L	L	L	L	L	L	L	L						
22										L	L	L	L	L	L	A	L	L	L					
23										L	L	L	L	L	L	L	L	L	L					
24										L	L	L	L	L	L	430	L	450	L	L	L	A		
25										L	L	L	L	L	L	L	L	A	L	L				
26										L	L	L	L	L	L	430	L	L	L					
27										L	L	L	L	L	L	L	L	L	L					
28										L	L	L	L	L	L	430	L	L	L	L				
29										L	L	L	L	L	L	L	L	L	L					
30										L	L	L	L	L	L	A	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											4	4	4	8	3	1								
MED											L	L	L	L	L	L	L							
UQ											430	450	445	445	460	435								
LQ											L	L	L	L	L	L								

NOV. 1984

FOF1 (0.01 MHz)

IONOSPHERIC DATA

NOV. 1984 F0E (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							S	A	A	A	A	A	A	A	A	A	A	A						
2							S	230	A	A	310	330	320	305	290	A	A							
3							170	225	270	300	320	325	320	A	A	A	A							
4							S	230	260	290	310	315	315	310	A	A	190							
5							S	240	A	A	A	A	A	A	A	A	190							
6							S	A	A	A	A	A	A	A	A	A	A	A						
7							S	A	A	A	A	A	A	A	A	A	A	A						
8							S	230	280	310	A	A	A	A	290	A	A							
9							200	250	290	A	A	A	A	A	295	250	205							
10							190	235	265	300	310	A	320	310	290	A	A							
11							A	225	280	305	R	A	A	A	A	A	A	200						
12							175	215	R	265	290	R	320	315	305	300	A	A	A					
13							S	220	260	A	A	A	315	A	305	A	A	A						
14							S	225	A	A	A	A	320	315	A	A	A	A						
15							B	U	R	A	305	315	320	320	300	275	A	190						
16							S	220	260	290	A	A	A	290	260	245	190							
17							170	210	A	A	A	310	315	290	A	A	210							
18							S	210	A	A	A	A	A	A	A	A	A							
19							S	220	A	A	A	A	A	A	A	A	A							
20							S	215	265	A	305	315	315	A	A	A	A							
21							S	240	280	305	310	A	A	A	280	250	A							
22							S	230	255	295	305	310	A	A	A	A	A							
23							S	230	270	300	A	A	A	A	A	A	A							
24							S	220	250	A	A	A	A	300	A	240	A							
25							S	220	260	300	325	A	A	A	A	A	A							
26							B	A	250	A	A	A	A	A	280	A	A							
27							S	205	255	290	310	315	A	A	A	A	240	A						
28							S	200	255	300	315	A	A	A	A	235	A							
29							S	230	270	290	310	315	320	305	290	250	170							
30							S	205	260	A	A	320	A	A	A	240	185							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	26	20	15	13	13	10	10	9	8	9							
MED							175	225	262	300	310	315	318	302	290	242	190							
UQ							190	230	270	302	315	320	320	305	290	250	200							
LQ							170	215	258	290	310	315	315	300	280	240	190							

NOV. 1984 F0E (0.01 MHz)

IONOSPHERIC DATA

NOV. 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	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	J A 30	J A 34	J A 42	41	J A 55	J A 53	J A 48	J A 38	J A 33	J A 36	J A 54	J A 40	J A 41	E 16	E 16	E 16
2	E 16	23	J A 25	J A 24	J A 24	E 16	E 16	E 16	G	32	33	38	38	35	33	32	29	28	21	E 16	J A 24	J A 25	21	J A 30
3	J A 25	22	23	22	E 16	19	E 16	G	28	35	33	G	G	38	J A 69	J A 43	J A 30	J A 31	22	E 16	22	E 16	E 16	E 16
4	E 16	J A 40	J A 37	J A 27	J A 27	J A 24	22	J A 25	G	G	32	33	35	34	G	31	28	20	E 16	E 16	E 16	E 16	E 16	
5	E 16	E 16	E 16	J A 18	E 16	20	21	E 16	29	J A 29	J A 32	J A 36	J A 36	J A 38	J A 37	J A 33	J A 29	24	J A 22	E 16	E 16	25	22	E 16
6	E 16	E 16	E 16	E 16	E 16	E 16	J A 18	J A 20	J A 28	J A 33	J A 41	J A 39	J A 35	38	J A 33	J A 35	30	J A 29	J A 24	J A 18	E 16	E 16	E 16	22
7	24	E 16	20	E 16	E 16	E 16	E 16	J A 20	J A 25	J A 33	J A 36	J A 36	J A 48	J A 37	J A 36	J A 30	J A 28	J A 23	E 16	E 16	E 16	E 16	E 16	E 16
8	J A 21	J A 31	J A 28	J A 28	31	E 16	E 16	21	J A 28	36	36	J A 36	40	38	38	G	30	J A 22	J A 33	E 16	E 16	E 16	E 16	E 16
9	E 16	E 16	E 16	E 16	E 16	J A 21	E 16	J A 21	G	G	33	J A 39	J A 50	J A 36	J A 49	G	G	E 16	J A 17	E 16	J A 17	E 16	E 16	E 16
10	E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	G	G	G	J A 35	36	40	37	J A 50	J A 42	44	53	J A 22	J A 29	23	J A 21	E 16
11	E 16	E 16	E 16	E 16	E 16	E 16	J A 25	J A 19	26	32	33	36	37	J A 39	J A 35	J A 32	J A 28	G	E 16	E 16	E 16	E 16	E 16	22
12	22	22	J A 20	J A 19	E 16	E 16	E 16	G	J A 25	36	36	36	40	39	33	J A 41	J A 33	20	J A 25	E 16	J A 22	22	E 16	J A 28
13	J A 25	20	22	20	19	21	20	22	26	35	34	38	40	J A 43	J A 45	J A 43	J A 45	J A 50	J A 40	J A 30	J A 24	22	E 16	E 16
14	E 16	E 16	E 16	E 16	E 16	E 16	E 16	J A 17	26	J A 28	J A 36	42	41	J A 44	J A 50	J A 55	J A 64	J A 30	J A 26	27	J A 21	J A 21	19	23
15	E 16	E 16	23	E 16	20	E 16	E 16	E B 17	26	31	33	37	40	38	35	37	33	20	J A 21	E 16	E 16	E 16	E 16	23
16	E 16	21	22	22	J A 20	E 16	22	E 16	G	32	45	J A 41	J A 45	36	35	G	G	G	E 16	E 16	J A 25	20	J A 24	J A 25
17	J A 30	22	22	20	18	E 16	E 16	23	25	J A 35	34	40	33	39	G	33	30	33	J A 35	J A 40	J A 70	J A 22	J A 20	E 16
18	J A 25	J A 26	J A 84	J A 60	J A 24	J A 29	J A 30	J A 37	28	J A 34	42	34	J A 45	J A 35	J A 75	J A 45	J A 54	J A 77	J A 41	J A 32	22	22	22	E 16
19	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	29	J A 40	J A 40	J A 39	J A 37	32	J A 25	J A 35	J A 30	E 15	J A 24	19	E 16	E 16	J A 20
20	23	32	34	27	J A 30	J A 43	J A 32	28	G	G	34	37	40	J A 41	J A 39	33	J A 29	J A 29	39	J A 19	27	E 16	E 16	E 16
21	E 16	E 16	E 16	E 16	E 16	E 16	J A 31	J A 21	J A 26	J A 34	G	G	J A 42	J A 50	40	G	G	J A 26	J A 21	J A 24	40	30	J A 25	E 16
22	20	22	J A 29	J A 39	24	E 16	E 16	E 16	G	31	J A 35	40	J A 50	70	J A 54	J A 41	48	27	J A 18	E 16	20	E 16	E 16	E 16
23	E 16	E 16	E 16	E 16	E 16	J A 26	E 16	18	G	30	G	J A 35	J A 34	J A 35	36	J A 33	J A 27	J A 27	J A 22	J A 34	22	E 16	E 16	E 16
24	E 16	E 16	E 16	E 16	19	E 16	E 16	E 16	G	G	J A 40	J A 43	J A 40	34	41	38	J A 44	25	22	J A 35	J A 26	J A 25	22	E 16
25	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	32	40	J A 50	J A 43	J A 45	J A 56	J A 37	J A 74	J A 46	J A 50	20	22	22	E 16	E 16
26	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E B 17	25	31	J A 33	J A 40	33	J A 42	34	34	29	J A 36	E 16	22	E 16	E 16	E 16	E 16
27	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	J A 24	28	32	35	J A 40	J A 43	J A 50	J A 37	G	J A 37	J A 32	J A 25	J A 21	E 16	E 16	J A 26
28	E 16	E 16	20	22	E 16	20	22	J A 21	24	31	G	G	J A 34	J A 43	J A 64	J A 34	J A 51	J A 74	J A 59	J A 21	20	E 16	E 16	E 16
29	E 16	E 16	E 16	E 16	J A 31	E 16	E 16	E 16	G	30	J A 33	39	G	G	36	J A 41	J A 33	28	29	33	J A 18	22	E 16	E 16
30	J A 22	20	E 16	21	18	E 16	E 16	E 16	J A 27	G	J A 36	J A 43	J A 41	J A 40	70	J A 34	30	26	J A 21	J A 17	E 16	E 16	E 16	E 16
31																								
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E 16	E 16	E 16	E 16	E 16	E 16	E 16	17	25	31	34	38	J A 40	J A 38	38	J A 34	J A 30	J A 28	J A 22	20	21	E 16	E 16	E 16
UQ	22	22	23	22	20	20	21	J A 21	26	34	J A 36	J A 40	J A 42	J A 43	50	J A 41	J A 42	J A 36	J A 35	J A 27	J A 24	22	20	22
LQ	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	28	33	35	35	36	35	32	28	23	18	E 16	E 16	E 16	E 16	E 16

NOV. 1984

FOES (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

FBES (0.1 MHZ)

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

Station	OKINAWA				Lat. 26 16.9 N.	Long 127 48.4 E	Sweep 1	MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	28	32	34	39	42	42	34	30	28	25	52	37	UA	39	ES 16	ES 16	ES 16
2	ES 16	E	20	19	E	ES 16	ES 16	ES 16	G	29	32	38	38	33	32	32	28	22	E	ES 16	E	17	E	25	
3	E	E	E	E	ES 16	E	ES 16	G	27	23	31	G	G	37	69	38	27	22	E	ES 16	E	ES 16	ES 16	ES 16	
4	ES 16	20	21	E	20	E	E	20	G	G	30	32	35	34	G	30	28	17	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	
5	ES 16	ES 16	ES 16	E	ES 16	E	E	ES 16	29	29	32	33	34	37	35	30	27	21	20	ES 16	ES 16	E	E	ES 16	
6	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	E	19	24	28	31	33	33	33	33	29	29	28	21	E	ES 16	ES 16	ES 16	E	
7	19	ES 16	E	ES 16	ES 16	ES 16	ES 16	20	23	32	35	34	34	33	32	30	28	20	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	
8	E	20	20	23	UY	ES 16	ES 16	21	28	34	33	34	33	32	31	G	26	20	E	ES 16	ES 16	ES 16	ES 16	ES 16	
9	ES 16	ES 16	ES 16	ES 16	ES 16	E	ES 16	G	G	G	32	34	34	34	32	G	G	G	ES 16	E	ES 16	E	ES 16	ES 16	
10	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	G	G	G	34	35	38	36	41	40	40	50	19	26	E	E	ES 16	
11	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	E	19	26	32	33	36	37	UA	39	34	31	27	G	ES 16	ES 16	ES 16	ES 16	E	
12	E	E	E	E	ES 16	ES 16	ES 16	G	25	35	35	35	38	39	33	38	33	19	21	ES 16	19	E	ES 16	E	
13	E	E	E	E	E	E	E	21	UY	26	34	34	38	38	41	45	42	42	35	25	25	19	E	ES 16	
14	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	25	28	35	40	40	41	44	54	50	23	20	19	18	18	E	E	
15	ES 16	ES 16	19	ES 16	E	ES 16	ES 16	EB	26	31	32	34	38	37	34	37	32	20	18	ES 16	ES 16	ES 16	ES 16	E	
16	ES 16	E	18	E	E	ES 16	E	ES 16	G	29	45	40	45	32	33	G	G	G	ES 16	ES 16	21	E	E	UY	
17	25	E	20	E	E	ES 16	ES 16	G	22	29	32	35	32	38	G	30	28	29	UA	30	40	AA	70	E	
18	18	E	AA	AA	AA	20	E	E	UY	27	28	38	34	35	32	38	35	54	50	38	26	E	E	ES 16	
19	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	27	31	35	32	35	32	18	28	20	ES 15	E	E	ES 16	ES 16	E	
20	E	E	AA	E	E	AA	AA	AA	G	G	33	37	37	37	34	32	28	24	33	E	20	ES 16	ES 16	ES 16	
21	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	AA	31	19	20	G	G	G	36	39	36	G	G	21	E	E	26	23	24	
22	E	E	AA	AA	AA	ES 16	ES 16	ES 16	G	30	34	38	50	45	40	29	30	19	E	ES 16	E	ES 16	ES 16	ES 16	
23	ES 16	ES 16	ES 16	ES 16	ES 16	AA	AA	ES 16	G	30	G	32	33	32	31	30	24	20	20	25	E	ES 16	ES 16	ES 16	
24	ES 16	ES 16	ES 16	ES 16	E	ES 16	ES 16	ES 16	G	G	31	33	35	33	40	33	42	22	20	32	19	20	E	ES 16	
25	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	G	31	35	40	41	41	46	35	35	35	30	20	UY	22	19	ES 16	
26	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	EB	25	31	32	33	31	39	34	32	28	36	ES 16	21	ES 16	ES 16	ES 16	ES 16	
27	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	24	28	32	33	36	36	41	36	G	22	UA	25	E	E	ES 16	25	
28	ES 16	ES 16	E	E	ES 16	E	E	G	24	30	G	G	33	40	39	UY	34	32	74	42	UA	21	E	ES 16	
29	ES 16	ES 16	ES 16	ES 16	20	ES 16	ES 16	ES 16	G	30	31	35	G	G	35	32	32	23	21	32	18	E	ES 16	ES 16	
30	E	E	ES 16	E	E	ES 16	ES 16	ES 16	26	G	31	33	40	36	44	30	29	25	E	E	ES 16	ES 16	ES 16	ES 16	
31																									
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
MED	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	EG	24	29	32	34	35	37	34	32	28	22	20	16	16	ES 16	ES 16	ES 16	
UQ	ES 16	ES 16	18	ES 16	ES 16	ES 16	ES 16	19	26	31	34	37	38	39	40	35	32	28	25	21	19	ES 16	ES 16	ES 16	
LQ	ES 16	E	ES 16	E	E	ES 16	E	ES 16	G	23	31	33	33	33	32	30	27	20	16	ES 16	E	E	ES 16	ES 16	

NOV. 1984

FBES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

NOV. 1984

FMIN (0.1 MHz)

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

Station	OKINAWA				Lat. 26 16.9 N	Long 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S	E S	E S	E S	E S	E S	E S	E S	16	15	18	20	20	20	16	15	16	15	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	15	16	22	23	25	20	25	22	18	16	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	16	15	16	16	18	20	16	18	16	16	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	15	15	15	17	15	15	15	17	15	15	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	16	14	17	17	22	18	16	17	16	14	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	16	15	16	16	17	18	20	15	14	16	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	15	15	16	15	20	20	22	16	17	15	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	15	14	16	16	16	16	18	17	16	16	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	16	15	15	16	15	22	22	18	17	15	15	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	15	15	16	17	17	21	28	15	15	15	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	14	15	15	15	18	17	16	15	15	15	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	15	14	15	18	18	20	17	16	16	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	15	15	15	15	15	16	15	15	15	15	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	16	14	13	15	16	14	16	15	15	16	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	17	16	15	15	16	18	17	20	21	16	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	16	15	17	15	18	16	15	15	15	16	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	15	15	15	15	15	15	15	15	16	15	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	16	16	16	20	18	17	17	15	15	16	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	16	15	15	15	15	15	15	17	15	15	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	15	15	15	15	16	15	20	16	15	16	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	14	17	16	17	18	17	16	16	14	15	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	15	14	15	16	17	19	17	15	15	16	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	16	15	14	15	15	16	15	15	15	15	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	16	16	16	17	16	16	20	16	15	15	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	16	15	15	17	18	17	19	15	16	15	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	17	15	14	15	18	21	21	22	15	14	16	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	15	15	18	16	17	16	18	15	14	13	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	14	16	23	19	21	24	18	15	15	15	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	15	15	17	16	16	18	17	18	18	16	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	15	15	15	15	16	16	17	16	15	16	E S	E S	E S	E S	E S	E S
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E S	E S	E S	E S	E S	E S	E S	E S	15	15	16	16	18	17	17	16	15	15	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	16	15	16	17	18	20	20	17	16	16	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	15	15	15	15	16	16	16	15	15	15	E S	E S	E S	E S	E S	E S

NOV. 1984

FMIN (0.1 MHz)

IONOSPHERIC DATA

NOV. 1984

M(3000)F2 (0.01)

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

Station	OKINAWA				Lat. 26 16.9 N.	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	300	330	310	295 ^S	J ^S 340	U ^S 345	365	365	365	360	345	335	335	310	335	335	330	315	325 ^S	285	355	300	335	335
2	300	310	265	275	285	300	315	340	340	335	345	320	325 ^R	320	335	335	350	340	340 ^S	340	300 ^S	340 ^S	335	300
3	295	315	335 ^S	350	305 ^S	320	370	355	335	350	300	325	325	325	335	345	350	350	350	310	340	320	335	320 ^S
4	295	350 ^S	365 ^S	365	I ^S 290	300	345	335	310	325	350 ^R	340	325	340	350	355 ^H	380 ^R	335 ^H	340	355	320	315	285	290
5	285	325	350 ^S	J ^S 365	340	375	S	360	350	305	340	335	J ^R 330	360	355	355	365	355	365	365	300	315	340	320
6	325	360	335	365	S	S	S	345	355	345	315	295	335	325	340	365	J ^R 335	360	355	325	305	320	320	315
7	340	330	305 ^S	320	J ^S 335	I ^S 340	S	335	365	345	315	315	330	I ^Y 320	I ^Y 305	335	360	380	355	360	310	J ^S 270	305	285
8	310	350	335	355	A	325	S	335	355	340	340	350	340	345	370	360	365	355	370	295	295	320	335	335
9	295	305	295	335	355	365	S	355	355	345	360	325	315	U ^R 330	U ^R 340	350	360	365	365 ^S	325	325	365	315	350
10	305	300	305	350	J ^S 365	320	355	365	340	325	355	330	U ^R 310	J ^R 290	U ^R 345	J ^R 335	340	365	310 ^S	335	350	340	320	
11	275	305	350	385	305 ^S	325	310	370	360	340	335	345	330	345	350	335	360	375	365	355	325	305	300	290 ^S
12	295	345	350	310	345	300	335	365	365	340	325	355	350	300	325	340	360	350	360	310	335 ^S	U ^S 325	290	290
13	335	305	325 ^S	335	360	320	320	355	360	350 ^R	355	335	325	315	315	335	350	360	345	320 ^H	310	310	340	355 ^S
14	U ^S 335	310	315	300	325	365	360	365	370	360	340	340	320	325	340	345	345	350	385	345	300	340	315	295
15	310 ^S	365	335	310	335 ^S	325	295	360	370	355	325	340	360	335	340	335	335	355	370	Y	Y	U ^S 320	S	F
16	U ^S 345	310	325 ^S	300	295	270	F	330	295	295	355 ^R	330	335	325	330	340	335	300	330 ^S	340	U ^S 260	260	320	285 ^S
17	290	295 ^S	345	285	285	265 ^S	J ^S 285	320	F	345	335 ^R	335	U ^H 310	340	340 ^R	345	335 ^R	U ^R 340	355	340	A	295	I ^S 290	310
18	315	300	A	A	F	F	325	350	350	340 ^R	345	365	335	350	340	350	360	360	350	355	320	U ^S 335	360	390
19	280	290	290	270	305	295	320	320	J ^R 360	360 ^R	375	340	320	330	U ^R 335	345	360 ^R	350	365	340	295	335	335	305
20	335	340	A	S	320	A	A	J ^R 365	345	335	355	J ^R 365	345	345	345	365	370	350	J ^R 365	350	U ^S 335	345 ^S	340	U ^S 325
21	305	305	335	365	350	350	A	345	365	370	365	355	360	335	365	355	375	375	380	360	310 ^S	325	315	310
22	305	335	370	A	335	350	355	370	360	340	335	350	345	330	325	345	365	U ^R 350	365 ^S	335	290 ^S	J ^S 320	310	300
23	295	290	J ^S 330	340	U ^S 410	A	335	335	345	350	J ^S 345	315	315	310	350	345	360	325	360	340 ^S	300 ^S	335	340	300 ^S
24	295	285	280	340 ^S	375	J ^S 385	315	330	340	310	345	340	330	J ^S 315	330	345	355	350	345	325	325	320	325	310
25	315	315	315	310 ^S	340	345	340	330	325	315	U ^R 345	320	300	U ^R 310	330	315	335	380	U ^S 335	345 ^S	350	310 ^S	335	320
26	U ^S 270	300	315	310	F	S	340	365	355	345	345	370	295	345	325	330	360	345	350	350	335	340	315	315
27	310	300	320	330	375	335	315	350	355	360	325	330	340	325 ^R	330	325	340	U ^R 370	345	370	310	320	U ^S 315	335 ^S
28	320	300	305 ^S	310 ^S	305	305	330	355 ^J	325	350	355 ^H	345	340	345	360	350	315	340	355 ^S	375	325	310	325	300
29	305	325	340	310	320	335	325 ^S	365 ^S	375	375	375	375	370	345	315	320 ^R	J ^R 370	U ^R 370	355	J ^S 365	330 ^S	360	350	335
30	335 ^S	310	305	335	325	345	S	335	360	370	375	365	330	355	335	325 ^U	U ^R 355	U ^R 355	360	320	340 ^S	285	320	325 ^S
31																								
CNT	30	30	28	27	26	25	21	30	29	30	30	30	30	30	30	30	30	30	30	29	28	30	29	29
MED	305	310	325	330	335	335	325	352	355	345	345	340	330	330	335	345	358	350	355	340	320	320	325	315
UQ	320	330	338	350	350	350	340	365	365	355	355	355	340	345	345	350	360	360	365	355	335	335	335	325
LQ	295	300	305	310	305	305	315	335	345	340	335	330	325	320	330	335	335	340	345	325	300	310	315	300

NOV. 1984

M(3000)F2 (0.01)

IONOSPHERIC DATA

NOV. 1984

M(3000)F1 (0.01)

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

Station	OKINAWA							Lat.	26 16.9 N				Long.	127 48.4 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1										L	L	L	L	L	L	L											
2									L	L	L	L	L	L	L	L	L	L									
3									L	L	L	L	L	L	A	L	L										
4									L	L	L	L	L	L	L	L	L										
5										L	L	L	L	L	L	L											
6									L	L	L	L	L	L	L	L	L	L									
7									L	L	L	L	L	L	L	L	L	L									
8										L	L	L	L	L	L	L	L	L									
9										L	L	L	L	L	L	L	L	L									
10										L	L	L	L	L	L	L	L	L									
11										L	L	L	L	L	L	L	L	L									
12										L	L	L	L	L	L	L	L	L									
13										L	L	L	L	L	L	L	L	L									
14										L	L	L	L	L	L	L	L	L									
15										L	L	L	L	L	L	L	L	L									
16									L	L	L	L	L	L	L	L	L	L									
17									L	L	L	L	L	L	L	L	L	L									
18									L	L	L	L	L	L	L	L	L	L									
19									L	L	L	L	L	L	L	L	L	L									
20										L	L	L	L	L	L	L	L	L									
21										L	L	L	L	L	L	L	L	L									
22										L	L	L	L	L	L	L	L	L									
23										L	L	L	L	L	L	L	L	L									
24									L	L	L	L	L	L	L	L	L	L									
25									L	L	L	L	L	L	L	L	L	L									
26										L	L	L	L	L	L	L	L	L									
27										L	L	L	L	L	L	L	L	L									
28										L	L	L	L	L	L	L	L	L									
29										L	L	L	L	L	L	L	L	L									
30										L	L	L	L	L	L	L	L	L									
31																											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT											4	4	4	7	2	1											
MED											370	365	382	370	380	430											
UQ											380	400	402	380													
LQ											370	355	362	362													

NOV. 1984

M(3000)F1 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

NOV. 1984

H^oF2 (KM)

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

Station	OKINAWA							Lat.	26 16.9 N			Long	127 48.4 E			Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1													245	245	260	245	295	270	245	235					
2													240	250	250	250	240	290	260	250	235	230			
3													240	250	250	265	250	250	A	240	230				
4													250	270	240	250	250	250	250	230	220				
5													245	270	255	255	245	255	235						
6													250	245	300	255	250	245	240	235	220				
7													240	260	290	265	250	255	230	245	220				
8													265	270	255	250	250	235	240	240					
9													250	255	280	270	265	250	240	240					
10													250	290	250	260	250	255	245						
11													L	250	270	260	265	250	245	270	250				
12													280	280	240	245	285	270	245	230					
13													250	250	280	290	265	260	240	240					
14													250	255	260	270	280	260	A	240	A				
15													240	L	275	265	235	270	250	230	250				
16													260	270	240	260	230	260	240	250	250				
17													250	240	250	260	240	250	230	240	250				
18													230	240	250	230	230	250	250	230	230				
19													220	230	220	260	240	250	240	230	220				
20													L	250	260	245	240	240	240	240	215				
21													250	250	255	255	260	240	255	225					
22													250	280	260	250	260	265	255	225					
23													250	260	280	280	280	230	230	230					
24													240	270	260	230	270	260	250	250	220				
25													240	260	250	260	290	270	250	270	240				
26													250	250	250	300	260	260	230						
27													245	275	255	260	255	255	240	215					
28													260	220	225	260	240	225	250	245					
29													235	245	235	240	270	250	255	240					
30													240	230	240	290	250	250	260						
31																									
CNT													11	30	30	30	30	30	29	30	26	1			
MED													240	250	252	255	250	258	250	240	232	230			
UQ													250	260	270	260	270	270	255	250	240				
LQ													240	245	250	250	240	250	240	235	220				

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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	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	265	245	250	315	270	230	230	220	225	230	225	A	A	A	200	220	220	220	E A 245	A 300	210	250	220	230
2	250	230	A	A 340	320	290	290	225	235	230	220	210	220	200	220	240	235	240	A 200	210	260	240	210	A
3	300	260	240	220	260	260	210	210	210	230	210	220	200	A 240	A 250	A 210	210	210	210	240	220	230	230	255
4	280	260	240	210	E A 300	S	260	240	230	210	H 190	H 200	210	200	H 190	220	A 230	220	220	200	210	240	280	290
5	275	245	250	215	S	215	S	240	235	225	210	215	210	A	200	205	240	230	205	210	255	255	250	260
6	275	225	S 250	230	S	S E S 300	245	230	210	200	195	200	190	H 210	205	210	210	205	210	250	250	255	280	
7	255	260	300	255	210	S	S	250	225	210	200	H 180	220	200	200	210	A 210	200	200	225	S 285	290	295	
8	290	250	A 260	A 240	A	250	S	240	240	250	225	H 200	205	205	210	190	240	225	205	E S 300	300	255	220	220
9	300	295	305	260	215	250	S	245	230	230	230	225	200	H 210	190	210	200	210	200	S 250	230	200	215	280
10	S 300	300	270	250	205	205	230	230	235	240	210	210	210	210	215	A	255	210	240	205	250	225	245	260
11	275	300	225	200	S	S	S 300	215	220	240	220	250	240	A	230	210	210	215	200	210	240	225	290	295
12	275	225	240	250	210	S	290	230	H 205	230	225	230	225	250	220	A	A	210	200	215	225	210	220	280
13	275	260	240	210	210	230	260	230	230	235	220	220	210	A	A	A	A	220	210	210	240	230	220	220
14	260	290	290	S 325	260	230	230	215	220	220	A	A	A	A	A	A	A	220	200	U A 215	245	245	260	265
15	280	220	220	290	265	290	325	220	220	220	225	210	230	200	235	A	240	230	200	200	225	240	200	270
16	200	240	S 330	S 315	300	E S 320	250	205	220	250	A	A 240	A	210	220	210	250	240	220	210	270	A 330	220	A
17	320	260	220	300	310	E S 360	320	250	230	A 240	230	210	220	H 230	H 200	H 220	200	240	210	A 240	A	230	A	260
18	260	300	A	A	250	S 300	270	250	230	190	H 230	H 190	200	190	240	210	A	220	220	210	S 260	220	210	210
19	E S 330	S 290	S	S 350	300	290	290	240	200	210	205	210	200	210	200	200	210	230	200	210	S 260	230	240	S 300
20	255	250	A	S	S	A	A	240	215	200	H 215	200	210	200	235	205	210	220	210	205	250	225	225	260
21	275	265	255	205	235	S 250	A	240	225	H 210	210	205	240	A	A 240	H 200	H 210	200	205	200	265	250	260	S 280
22	295	250	225	A	260	230	210	210	200	230	225	A	A	A	A	200	A	210	195	200	250	245	285	275
23	260	270	220	250	190	A	S	240	230	230	220	H 200	H 190	H 210	H 190	210	210	210	205	220	A 290	210	240	S
24	S 300	S 290	240	220	200	210	S	230	220	210	200	220	200	210	E A 270	A 260	A	210	210	250	A 240	220	220	250
25	S 265	S 260	250	250	220	220	S	230	210	230	A 250	220	270	A 260	A	210	240	210	210	200	210	A 240	220	S 260
26	S	280	285	260	255	190	S 260	H 220	210	245	215	A	200	A	245	220	220	230	210	205	210	205	270	240
27	275	290	295	245	210	S	310	225	220	210	H 210	215	240	210	A	A	H 195	210	205	U A 195	245	205	250	240
28	250	265	265	250	260	290	240	220	220	H 210	225	205	195	A	A	H 210	220	E A 260	A 210	A 200	240	210	230	260
29	255	255	240	255	A	250	260	235	220	240	200	220	205	190	225	230	A	200	200	250	A 240	220	225	250
30	S 270	S 315	290	250	S 255	S 230	S 275	240	245	240	220	205	A	245	A	200	210	225	200	200	225	S	275	260
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	26	27	24	22	21	30	30	30	28	26	25	21	22	24	22	30	30	30	29	29	29	27
MED	275	260	250	250	254	240	260	230	222	230	220	210	210	210	215	210	215	219	205	210	240	230	230	260
UQ	285	290	285	275	265	U 275	290	240	230	240	225	220	220	210	232	220	240	228	210	218	255	245	260	280
LQ	260	250	240	225	210	230	240	220	220	210	210	200	200	200	200	205	210	210	200	200	225	220	220	250

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H*F (KM)

IONOSPHERIC DATA

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H^oE (KM)

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

Station	OKINAWA							Lat. 26° 16.9' N.	Long. 127° 48.4' E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation														
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	A	110	110	110	110		A	A	A	A	A					
2								S		115	110	110	110	110	110	110	110	110	115					
3								E S 140		110	A	115	105	110	110	110	110		A	A				
4								S		110	110	110	110	110	105	110	110	110	120					
5								S		115	110	110	110	110	110	110	110	110	110					
6								S		110	110	110	110	110	110	110	105	110		A				
7								S		110	110	110	110	110	110	110	110	110	110					
8								S		110	110	110	110	110	110	110	110	110	110					
9									105	110	110	110	110	110	110	110	110	110	110					
10								S		110	110	110	110	110	110	E B 120	110		A	A				
11								A		115	105	105	105	105	105	A	A	A	B 115					
12								S		110	115	105	105	105	110	110	110	115	A	A				
13								S		110	110	110	110	110	110	110	105		A	A				
14								S		115	105	A	110	105	105	110	105		A	A				
15								B		115	A	H 105	110	110	115	115	115	115		S				
16								S		100	100	100	100	100	105	105	110	110	120					
17								E S 150		110	110	A	A	110	110	110	110	110	110					
18								S		110	A	A	110	110	A	105	105		A	A				
19								S		110	100	A	105	A	105	A	A	A	A					
20								S		115	110	110	110	110	110	110	110	110		A				
21								S		A	110	110	110	110	A	A	110	110		A				
22								S		110	110	110	110	110	110	110	110	105		A				
23								S		115	110	110	105	105	A	105	105		A	A				
24								S		110	110	110	110	A	A	110	A	E A 120		A				
25								S		110	110	120	110	105	105	105	105	105		A				
26								B	A	H 110	H 105	110	110	110	A	E A 120		A	A					
27								S		115	B 110	110	110	110	A	A	A	E A 120		A				
28								S		115	110	115	A	A	A	A	A	H 105		A				
29								S		120	110	110	110	110	110	110	110	110	130					
30								S		120	110	110	110	110	110	110	110	110	130					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	27	27	26	28	27	23	23	24	20	11						
MED								E S 140	110	110	110	110	110	110	110	110	110	110	115					
UQ								E S 145	115	110	110	110	110	110	110	110	110	120						
LQ								114	110	110	110	110	110	108	110	108	110	110						

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H^oE (KM)

IONOSPHERIC DATA

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H^oES (KM)

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

Station	OKINAWA				Lat.	26 16.9 N				Long.	127 48.4 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S	S	S	S	S	S	S	S	115	150	125	125	120	115	110	110	110	100	105	100	100	S	S	S	
2	S	100	100	100	100	S	S	S	G	115	115	115	115	120	115	150	120	115	100	S	110	110	110	100	
3	100	100	100	100	S	100	S	G	140	150	E G 160	G	G	150	115	115	110	110	110	S	110	S	S	S	
4	S	100	100	100	100	100	100	100	G	G	120	120	120	120	G	120	115	110	S	S	S	S	S	S	
5	S	S	S	110	S	100	100	S	155	120	120	115	115	110	110	110	110	100	S	S	105	100	S		
6	S	S	S	S	S	S	100	150	115	110	110	115	115	115	115	110	110	110	100	105	S	S	S	110	
7	100	S	100	S	S	S	S	150	115	110	110	115	115	115	115	110	110	110	S	S	S	S	S	S	
8	110	105	105	105	105	S	S	150	145	140	140	120	115	115	110	G	110	110	105	S	S	S	S	S	
9	S	S	S	S	S	105	S	160	G	G	120	110	115	115	110	G	G	G	S	105	S	110	S	S	
10	S	S	S	S	S	S	S	G	G	G	G	150	155	125	130	110	110	110	110	110	105	105	100	S	
11	S	S	S	S	S	S	100	100	165	180	165	160	115	110	150	150	145	G	S	S	S	S	S	100	
12	100	105	100	100	S	S	S	G	150	170	160	140	130	190	180	115	110	115	110	S	100	110	S	105	
13	110	110	100	110	110	110	100	140	140	140	125	125	125	120	115	115	110	110	110	110	100	100	S	S	
14	S	S	S	S	S	S	S	170	150	120	140	125	120	115	110	105	105	110	105	105	105	105	105	110	100
15	S	S	100	S	100	S	S	B	160	160	155	130	120	120	135	115	115	150	110	S	S	S	S	100	
16	S	130	130	100	100	S	100	S	G	130	120	110	115	115	115	G	G	G	S	S	115	120	120	110	
17	110	110	110	100	100	S	S	150	120	110	150	135	E G 160	150	G	120	130	170	110	110	110	110	100	S	
18	130	110	110	110	100	110	110	110	115	110	160	115	110	115	110	110	100	100	100	100	100	100	110	S	
19	S	S	S	S	S	S	S	S	G	110	110	110	110	110	E G 150	110	110	110	S	100	100	S	S	100	
20	100	105	100	100	105	110	105	105	G	G	115	110	110	110	110	110	110	110	110	105	100	S	S	S	
21	S	S	S	S	S	S	100	95	95	100	G	G	115	110	110	G	G	110	110	100	100	100	105	S	
22	105	100	105	100	100	S	S	S	G	170	175	150	125	110	110	110	110	100	100	S	100	S	S	S	
23	S	S	S	S	S	100	S	140	G	E G 160	G	115	115	110	110	115	110	100	100	100	100	100	S	S	S
24	S	S	S	S	110	S	S	S	G	G	115	115	110	E G 160	125	120	120	115	110	140	120	110	110	S	
25	S	S	S	S	S	S	S	S	G	160	140	120	120	115	110	115	110	100	100	100	100	100	100	S	S
26	S	S	S	S	S	S	S	B	165	140	150	115	110	105	E G 190	130	135	100	S	95	S	S	S	S	
27	S	S	S	S	S	S	S	S	140	140	160	140	130	130	110	105	105	100	100	95	100	S	S	110	
28	S	S	110	110	S	105	105	105	145	180	G	110	105	100	100	100	160	140	130	90	90	S	S	S	
29	S	S	S	S	105	S	S	S	G	160	155	130	G	G	175	105	155	150	130	110	110	110	S	S	
30	110	110	S	105	105	S	S	S	150	G	150	140	150	115	110	110	150	120	100	105	S	S	S	S	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	10	12	14	14	13	9	10	14	18	24	26	28	28	29	28	26	27	27	23	19	20	14	9	9	
MED	108	105	100	100	100	105	100	140	142	140	136	120	115	115	111	110	110	110	105	105	100	108	110	100	
UQ	110	110	110	110	105	110	105	150	150	160	155	132	121	120	U 122	115	120	115	110	108	110	110	110	110	
LQ	100	100	100	100	100	100	100	105	115	112	120	115	115	110	110	110	110	105	100	100	100	100	100	100	

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H^oES (KM)

IONOSPHERIC DATA

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TYPES OF ES

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

Station	OKINAWA							Lat. 26 16.9 N.	Long. 127 48.4 E	Sweep 1	MHz to 25 MHz					in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1									L 2	HC 22	C 1	C 1	C 3	L 2	L 2	L 1	L 2	L 3	F 5	F 5	F 4				
2		F 2	F 2	F 5	F 1					C 1	C 1	C 1	C 2	C 1	C 2	H 1	C 1	C 3	F 1		F 2	F 3	F 1	F 2	
3	F 3	F 2	F 1	F 1		F 1			C 2	HL 11	HL 11			H 2	C 4	C 3	L 2	L 1	F 1		F 1				
4		F 3	F 2	F 1	F 2	F 1	F 2	L 4			C 1	C 1	C 1	C 1		C 1	C 1	L 1							
5		F 1		F 1	F 1	F 3	F 3	H 1	HH 11	C 1	C 2	C 2	C 1	C 3	C 2	C 3	C 2	C 1	F 3		F 1	F 3	F 2	F 1	
6						F 2	H 2		C 2	C 1	C 2	C 2	C 1	C 2	C 1	C 1	CL 11	L 4	F 2	FF 21		F 1	F 1	F 2	
7	F 6	F 1	F 3			F 1	H 3		C 2	C 3	C 2	C 2	C 1	C 1	C 2	C 2	C 2	L 2		F 1		F 1	F 1	F 1	
8	F 1	F 3	F 3	F 5	F 5	F 1	F 1	H 3	H 2	H 3	H 2	C 1	C 2	C 1	C 1		C 1	L 3	FF 11	F 1					
9					F 2			H 1			CH 21	CH 11	C 1	C 1	C 2					F 2	F 1	F 1			
10		F 1										H 1	HC 12	H 2	H 1	C 4	L 5	L 3	F 7	F 3	F 6	F 2	F 3		
11					F 1	F 3	L 2		HL 11	H 2	H 2	HC 11	C 2	C 4	HL 12	HL 11	HL 22			F 1	F 1		F 1	F 2	
12	F 1	F 3	F 2	F 2	F 1				H 2	HL 22	H 2	H 1	H 2	H 1	H 1	C 4	CL 31	L 1	F 1		F 3	F 2	F 1	F 2	
13	F 2	F 2	F 2	F 1	F 1	F 1	H 2		H 1	H 2	C 1	C 2	C 1	C 2	C 2	C 3	L 4	LL 32	F 3	F 3	F 3	F 1			
14						F 1	H 1		H 2	C 1	HL 31	HC 31	HL 31	C 3	C 4	C 3	L 7	L 2	F 6	F 5	F 7	F 5	F 2	F 2	
15			F 3		F 2				H 1	HL 11	H 1	H 2	C 2	C 1	H 1	C 2	C 3	H 1	F 1					F 2	
16		F 1	F 3	F 2	F 1		F 2			C 2	C 5	C 3	C 3	C 1	C 2						F 1	F 1	F 3	F 3	
17	F 6	F 4	F 5	F 2	F 1			H 1	C 1	C 2	HL 11	HL 21	H 1	H 2		C 1	C 1	H 2	F 6	F 5	F 4	F 2	F 3		
18	F 4	F 2	F 5	F 5	F 5	F 4	F 3	L 5	C 3	L 2	HL 22	C 1	C 2	L 1	C 2	C 1	L 4	L 3	F 5	F 3	F 1	F 1	F 1		
19										C 2	L 2	C 1	L 2	C 2	HL 11	L 1	L 2	L 2		F 2	F 1			F 1	
20	F 2	F 3	F 3	F 3	F 2	F 7	F 5	L 4			C 2	CL 21	CL 21	CL 21	C 2	C 2	C 2	L 3	F 7	F 1	F 3	F 1			
21						F 3	L 2		L 2	L 1			C 1	LH 11	LH 11			L 1	F 1	F 1	F 3	F 5	F 4	F 1	
22	F 2	F 2	F 5	F 6	F 2	F 1	F 1	L 1		H 2	H 2	H 2	H 4	C 3	C 4	C 2	L 4	L 2	F 3	F 1	F 2		F 1		
23					F 2			C 1		H 1		C 1	C 1	L 2	C 2	C 1	L 2	L 4	F 2	F 4	F 1				
24					F 1						C 1	C 1	L 1	HL 11	C 2	CL 22	CL 21	CL 21	F 1	F 3	F 3	F 2	F 1		
25										H 2	HL 21	C 3	C 2	C 2	C 2	C 2	C 3	L 4	F 4	F 1	F 2	F 2			
26						F 1			HL 12	H 2	HC 11	C 1	C 2	C 3	HL 12	HL 22	HL 12	L 4	F 1	F 3	F 1	F 1			
27					F 1			H 1	H 2	H 1	H 1	H 1	H 2	HL 21	CL 31	L 4	L 2	L 6	F 6	F 5	F 3	F 1	F 1	F 5	
28		F 1	F 2	F 3		F 3	F 3	L 1	H 1	H 1		L 1	L 2	L 4	L 4	L 2	H 4	HL 52	FF 27	F 4	F 2	F 1			
29				F 1	F 4	F 1				H 1	H 1	H 2			HH 21	LH 12	HC 11	H 2	F 4	F 7	F 2	F 2		F 1	
30	F 2	F 2	F 1	F 3	F 2	F 1	F 1		H 3		HC 21	HL 11	HL 11	C 1	C 4	C 3	H 2	C 3	F 3	F 1				F 1	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

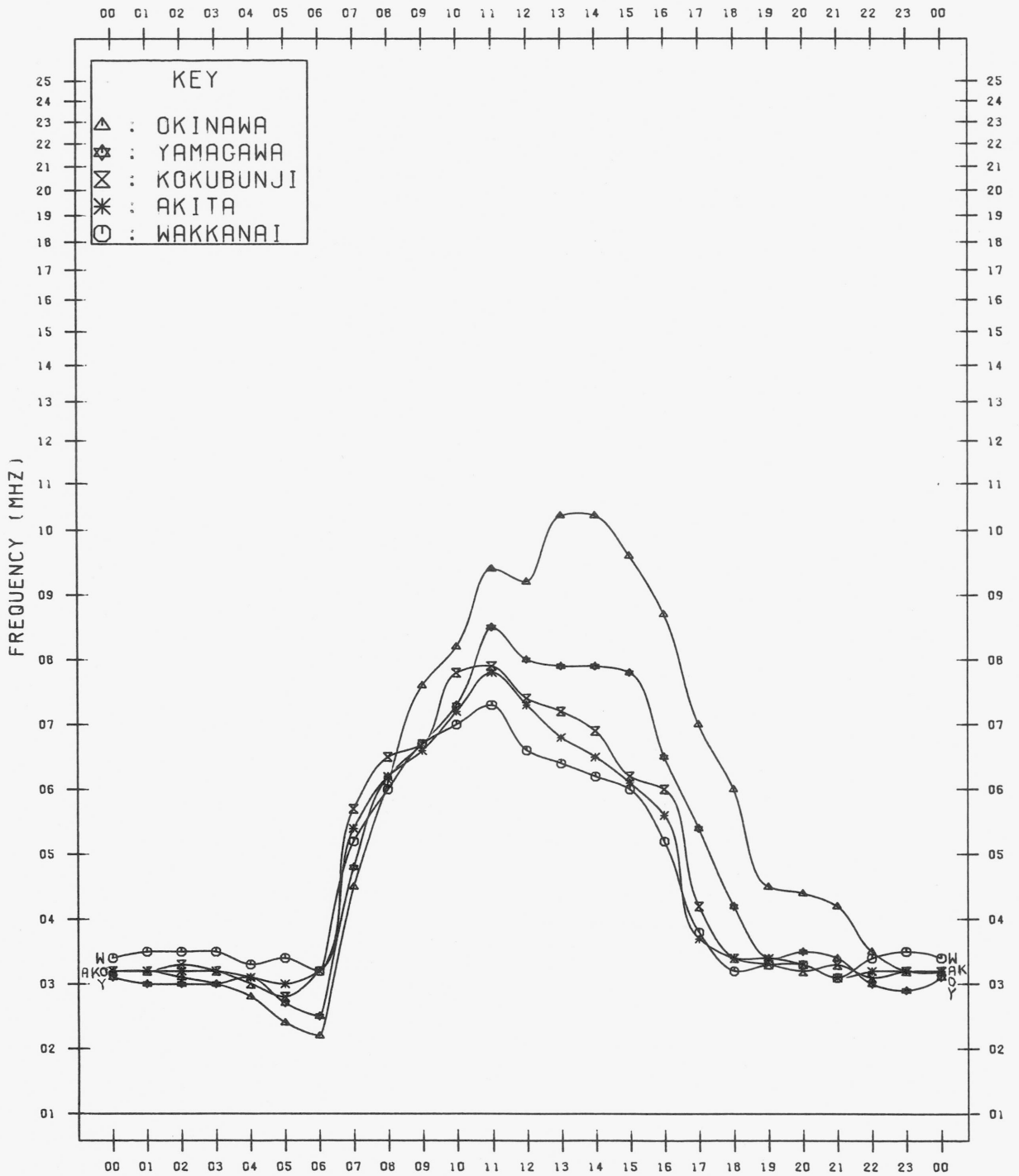
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TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

135°E MEAN TIME

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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

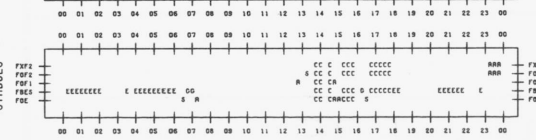
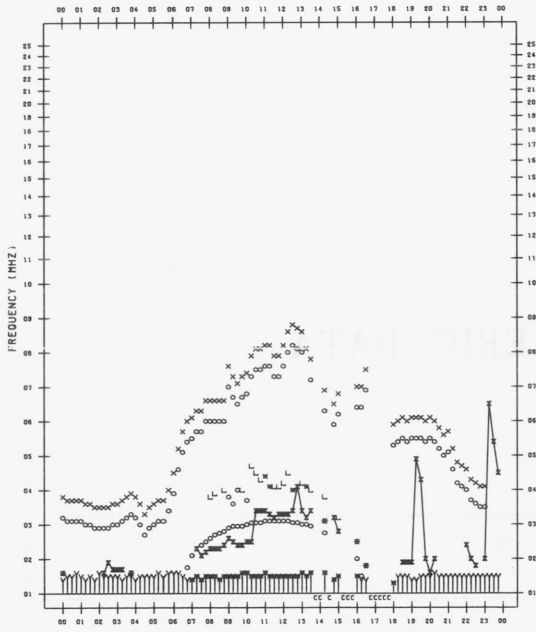
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/1

135°E MEAN TIME



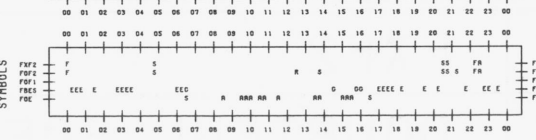
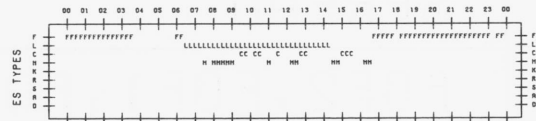
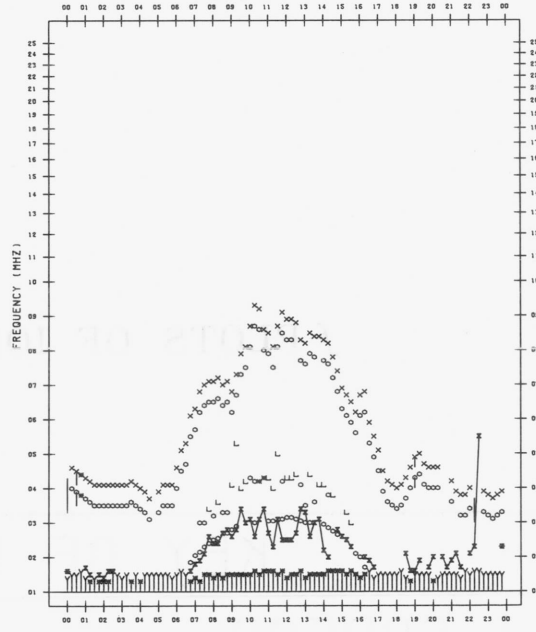
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/3

135°E MEAN TIME



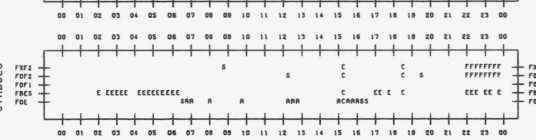
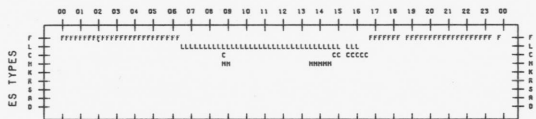
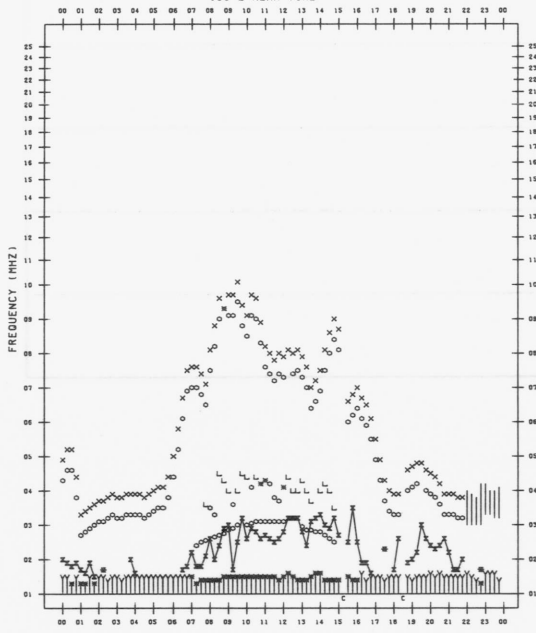
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/2

135°E MEAN TIME



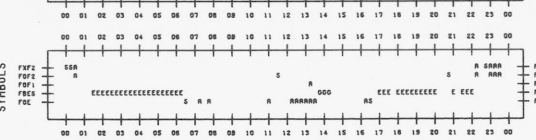
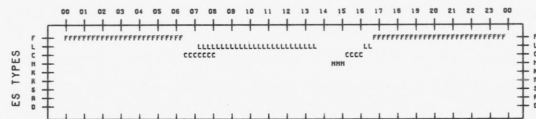
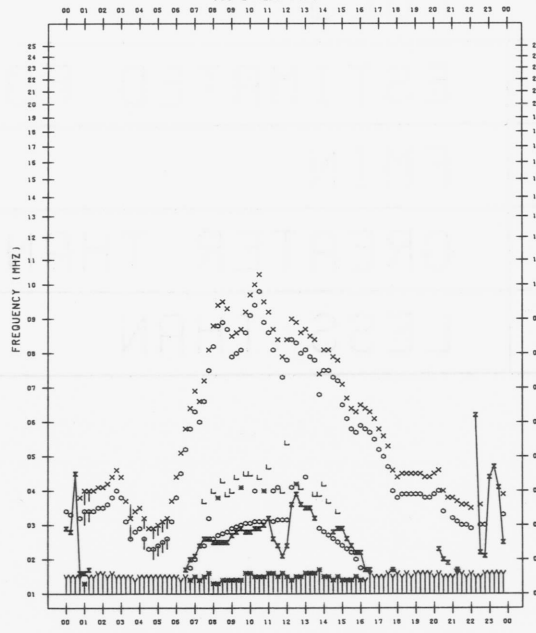
F-PLOT DATA

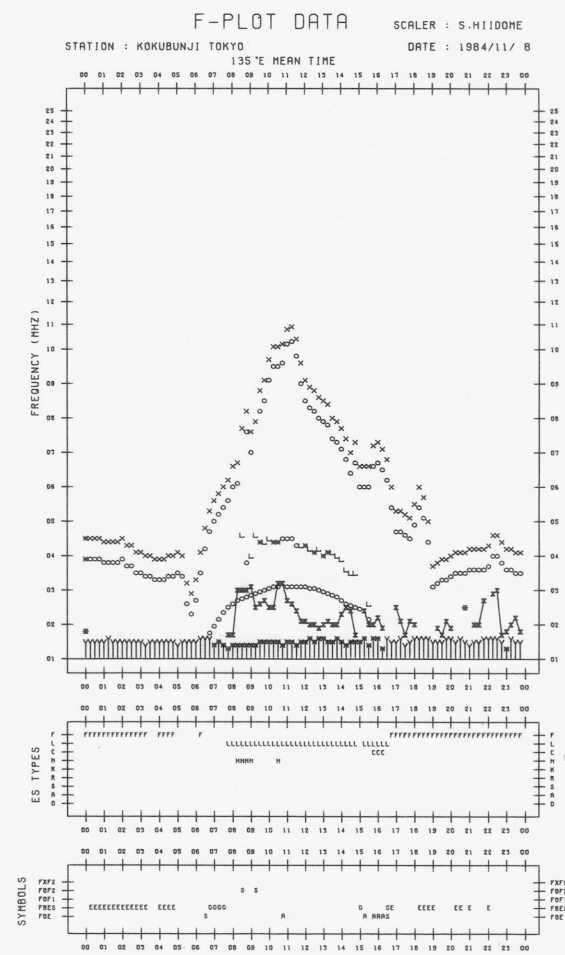
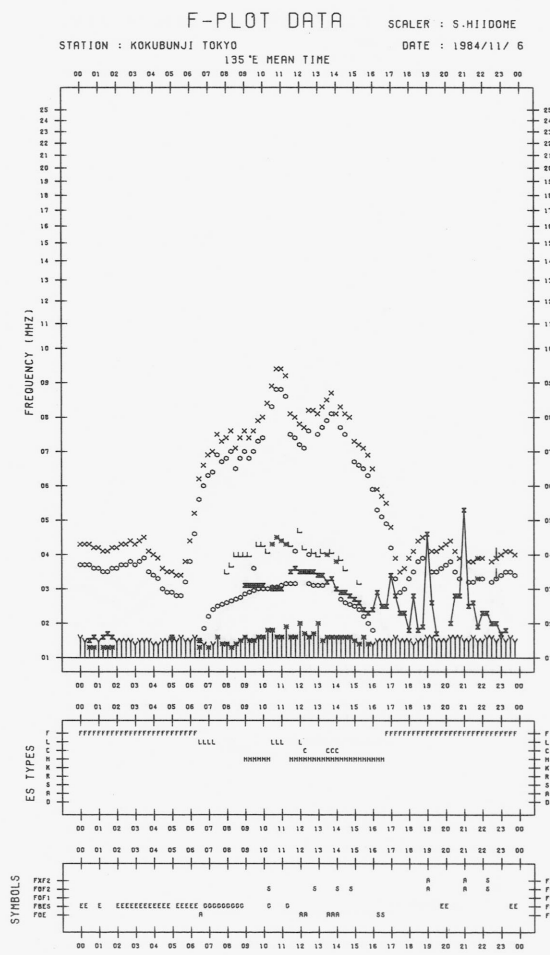
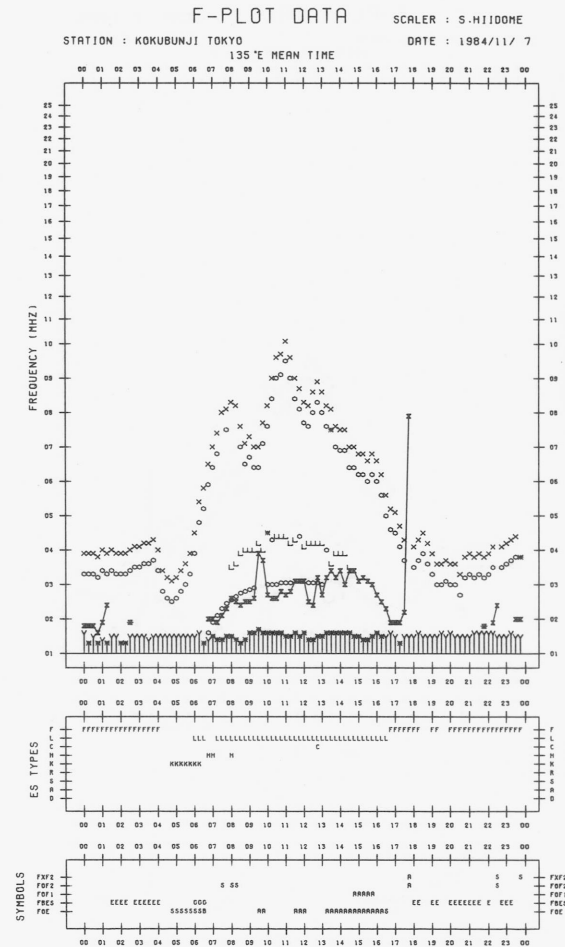
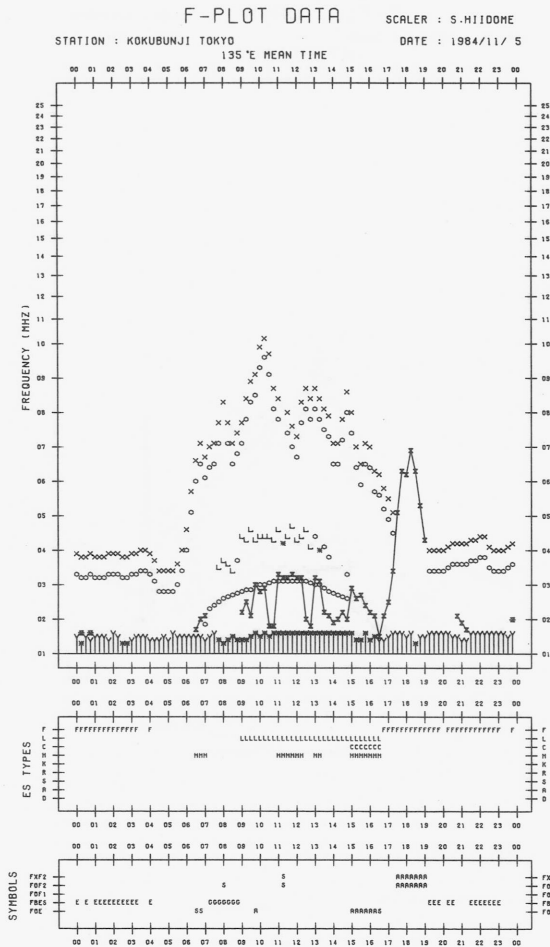
SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/4

135°E MEAN TIME





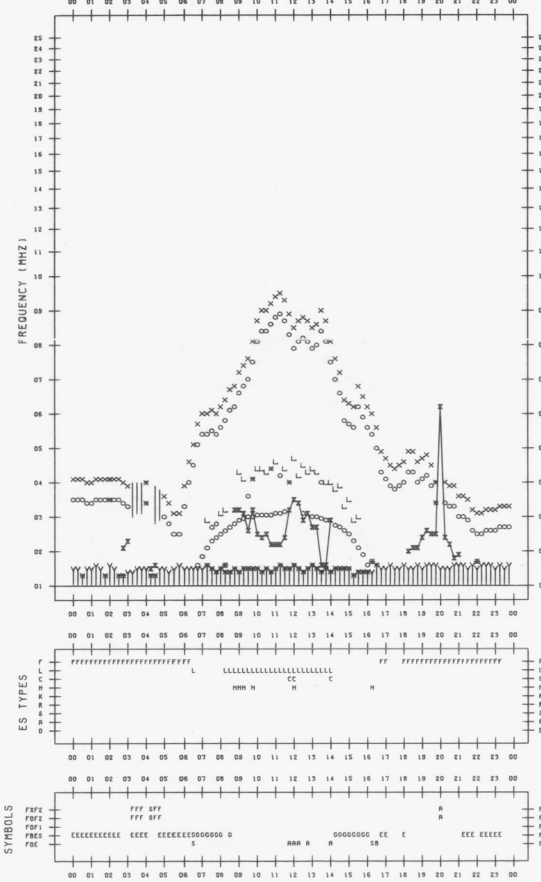
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/ 9

135°E MEAN TIME



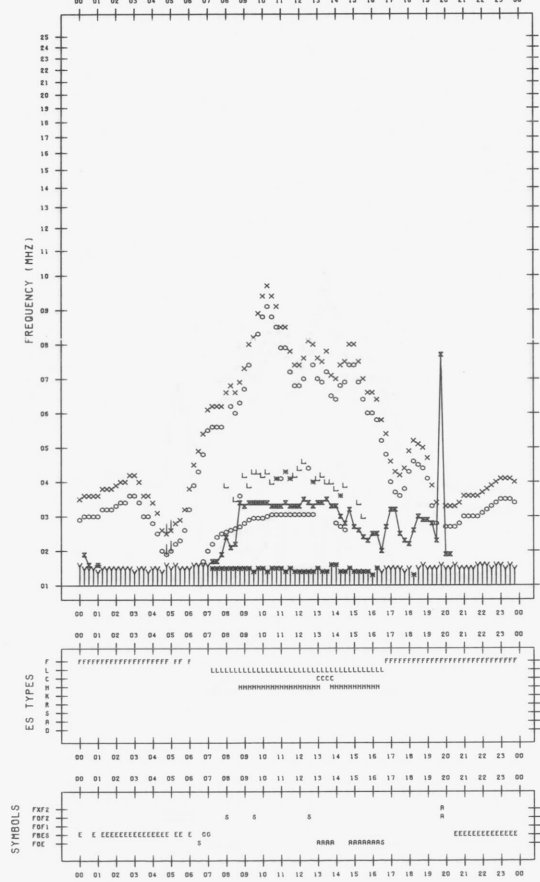
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/11

135°E MEAN TIME



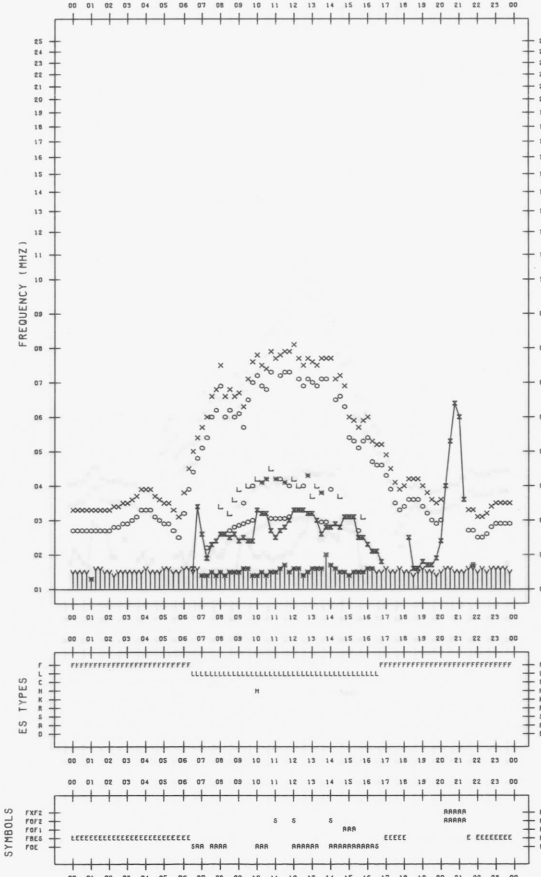
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/10

135°E MEAN TIME



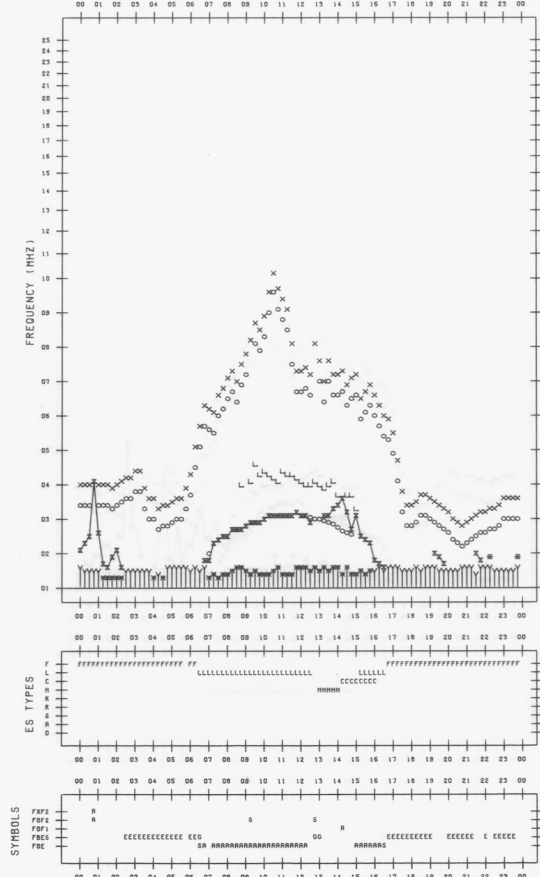
F-PLOT DATA

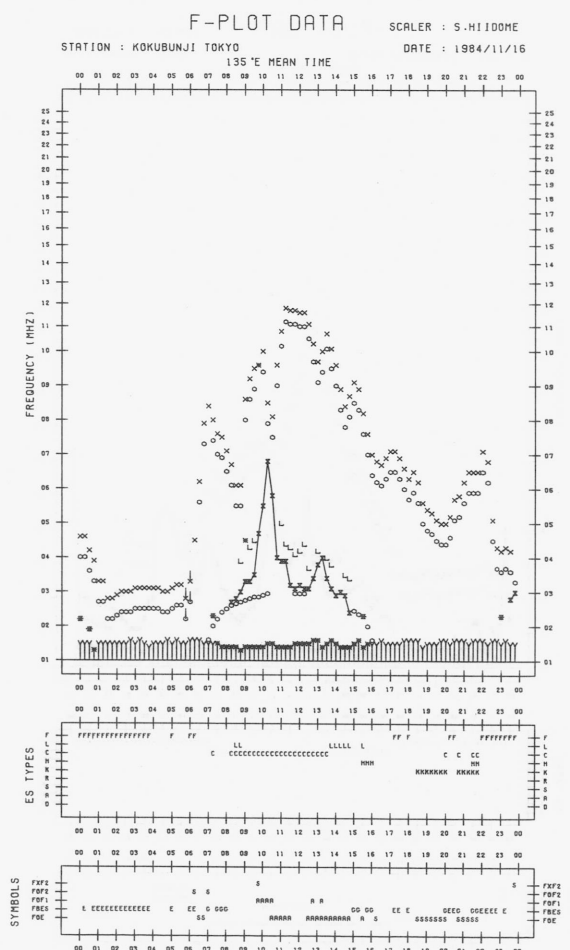
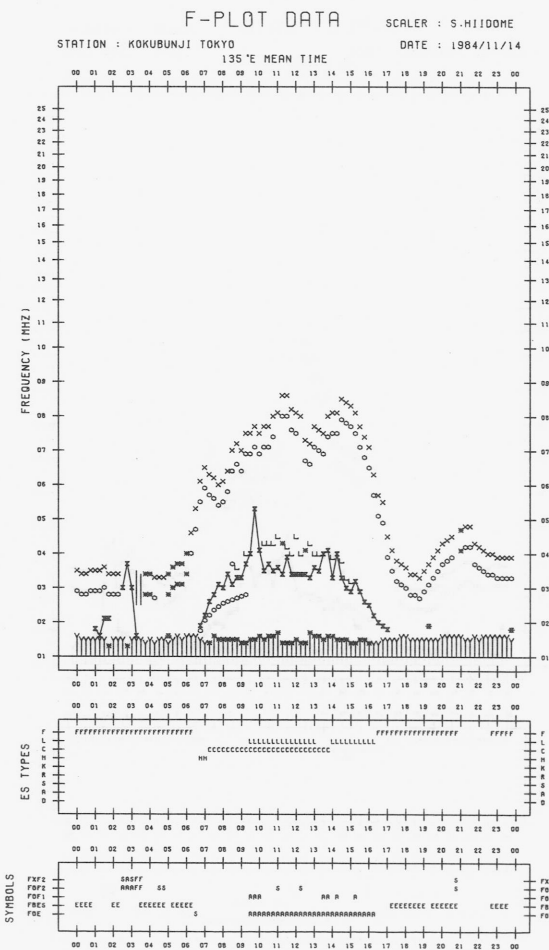
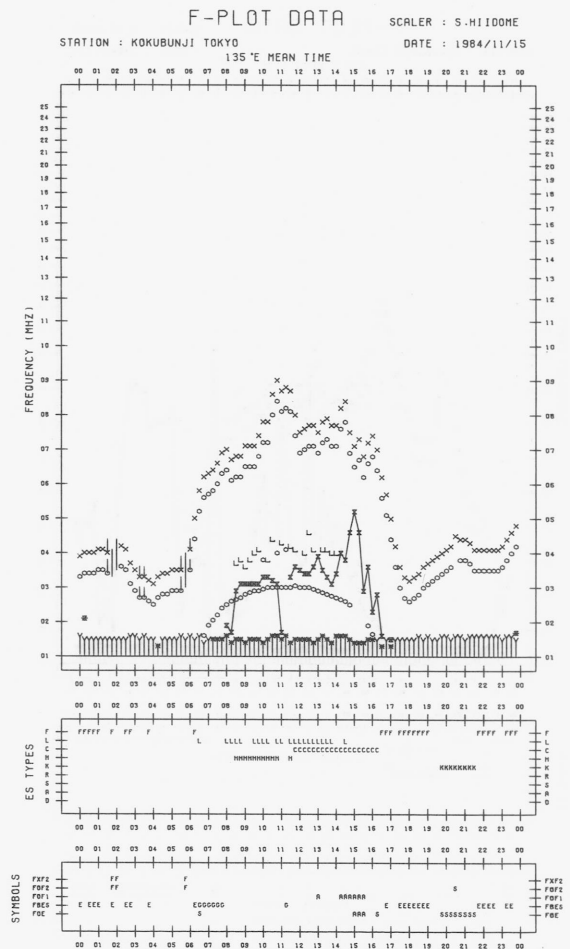
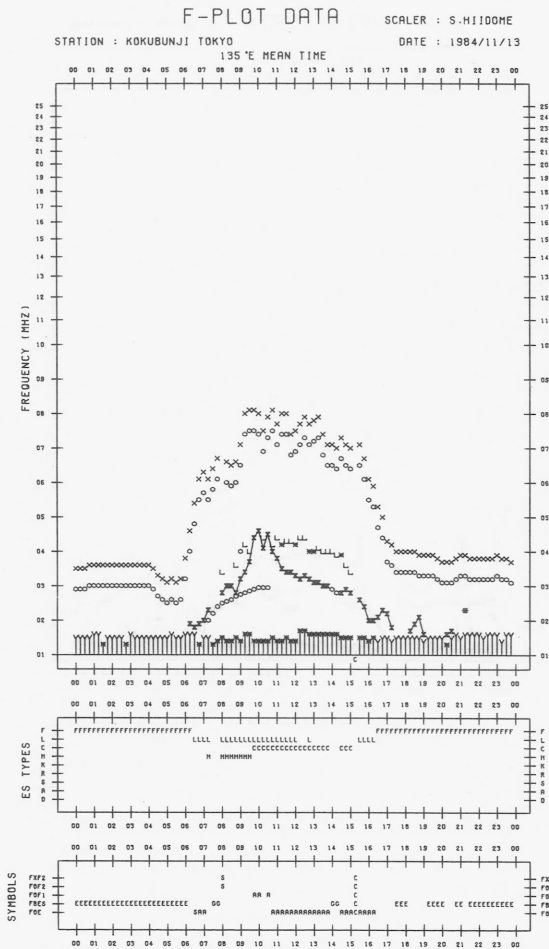
SCALER : S.HIIDOME

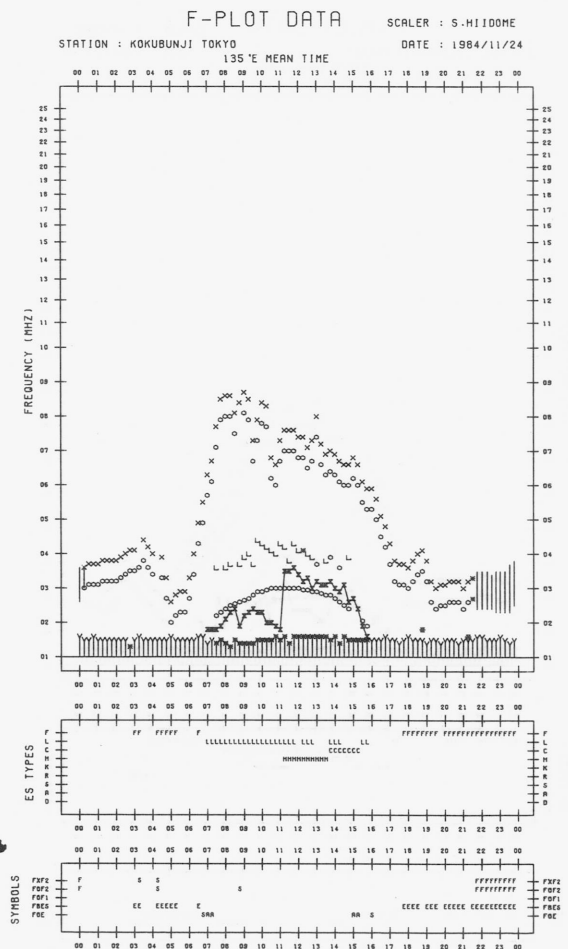
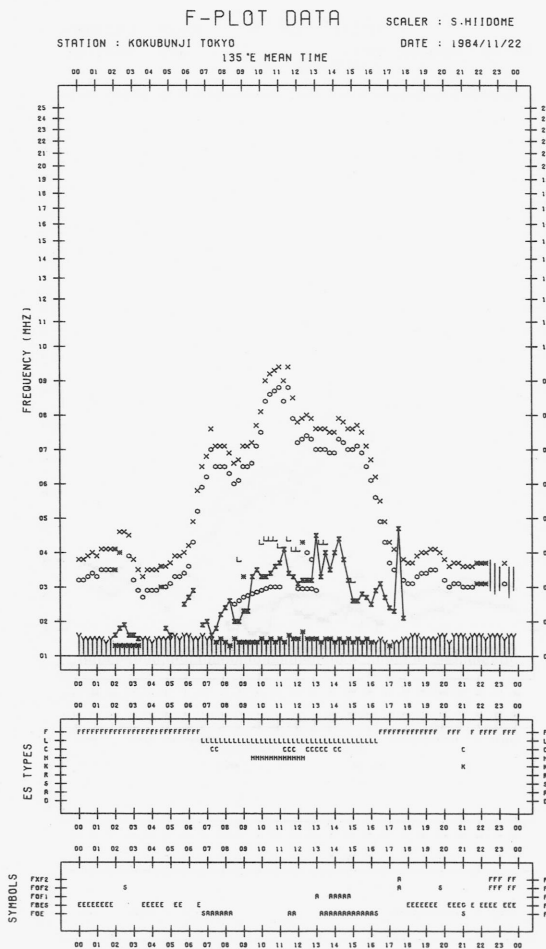
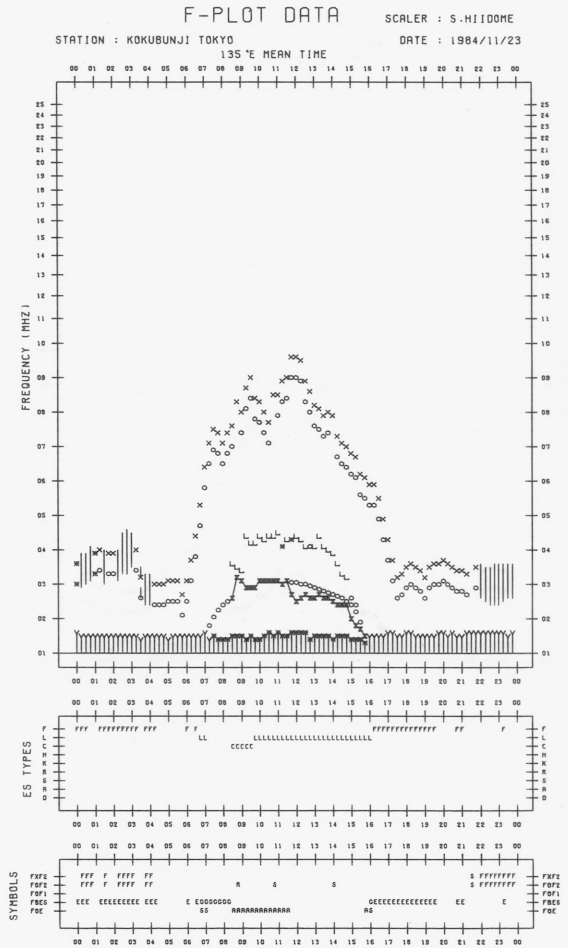
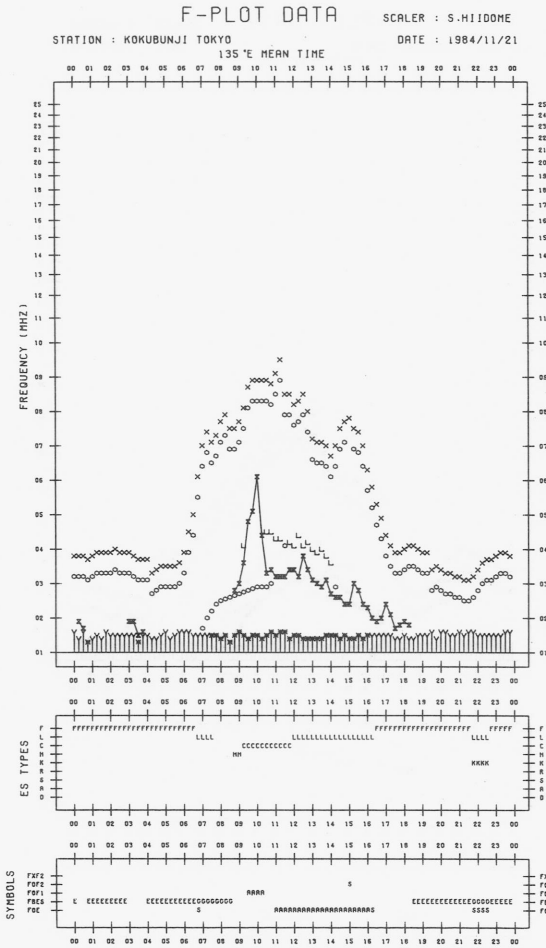
STATION : KOKUBUNJI TOKYO

DATE : 1984/11/12

135°E MEAN TIME







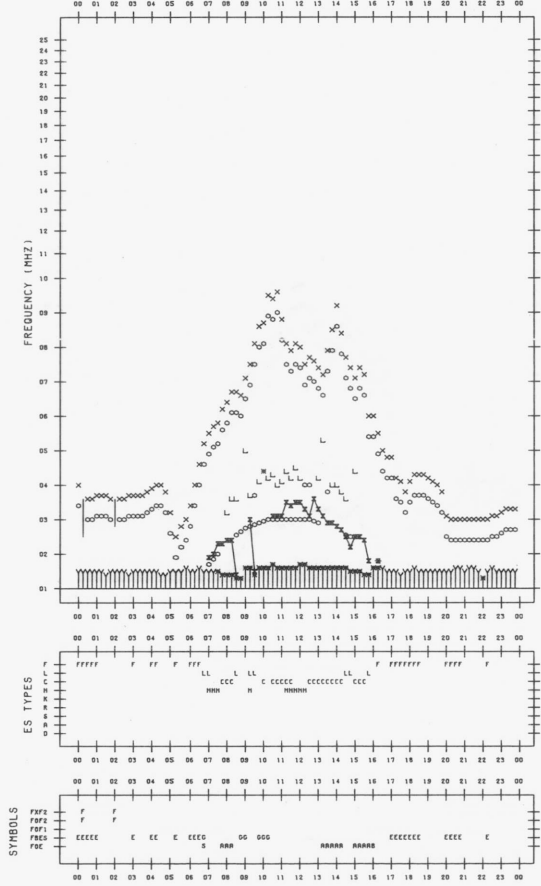
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/25

135°E MEAN TIME



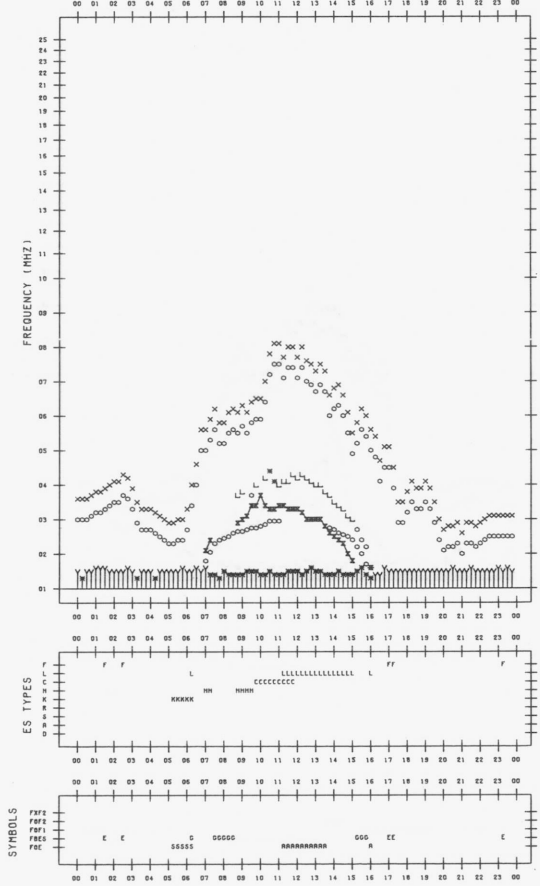
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/27

135°E MEAN TIME



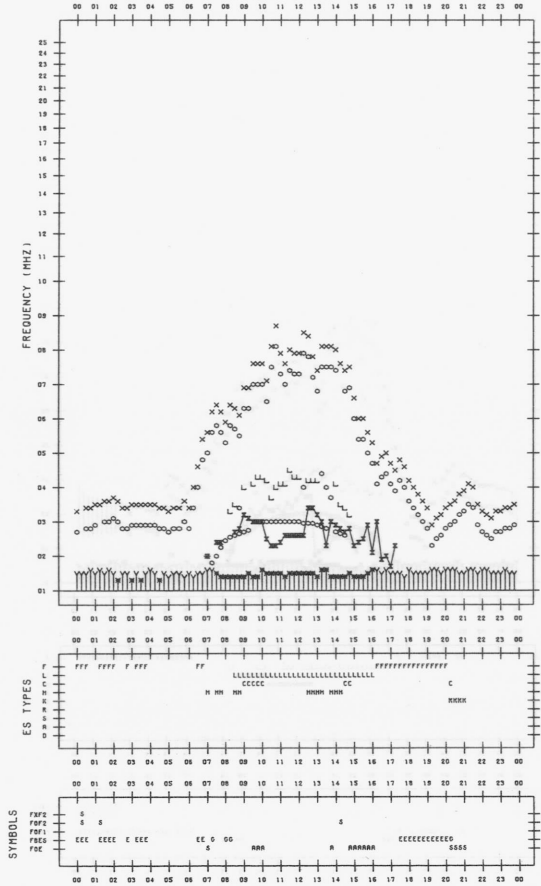
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/26

135°E MEAN TIME



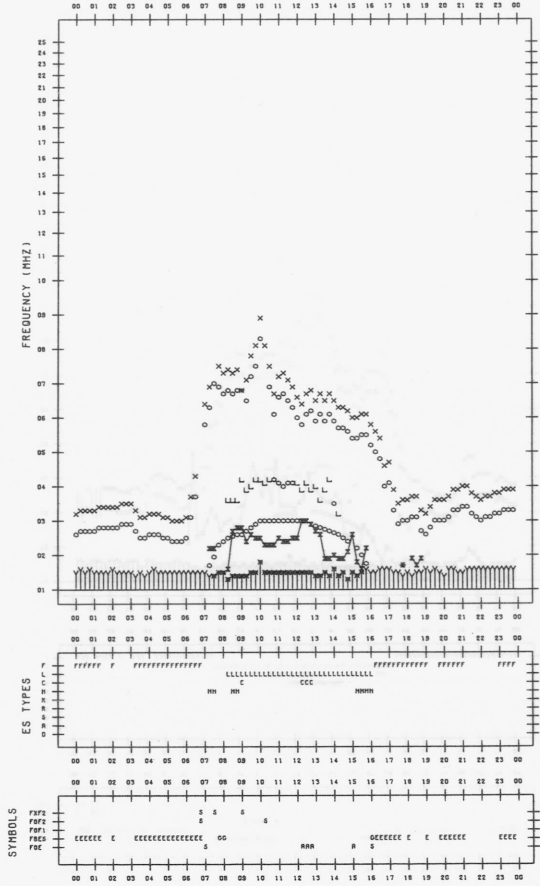
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/28

135°E MEAN TIME

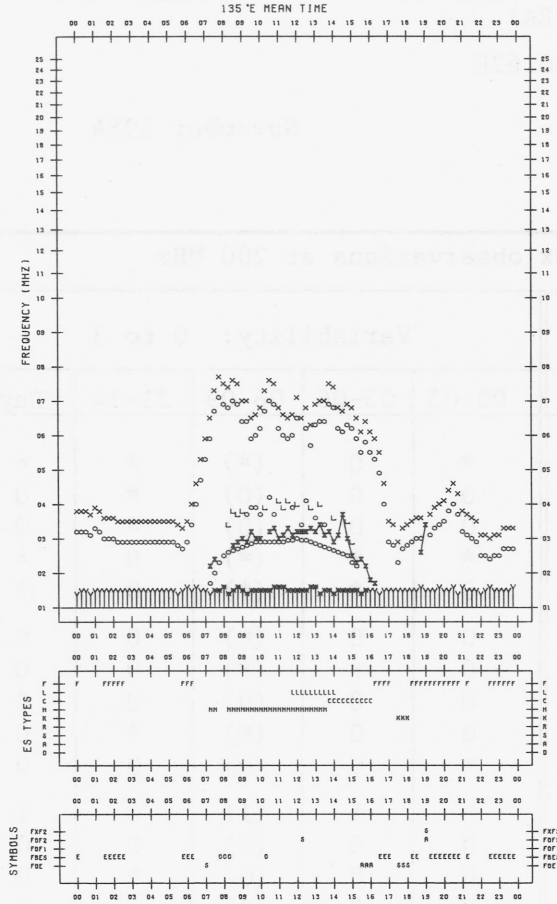


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/29

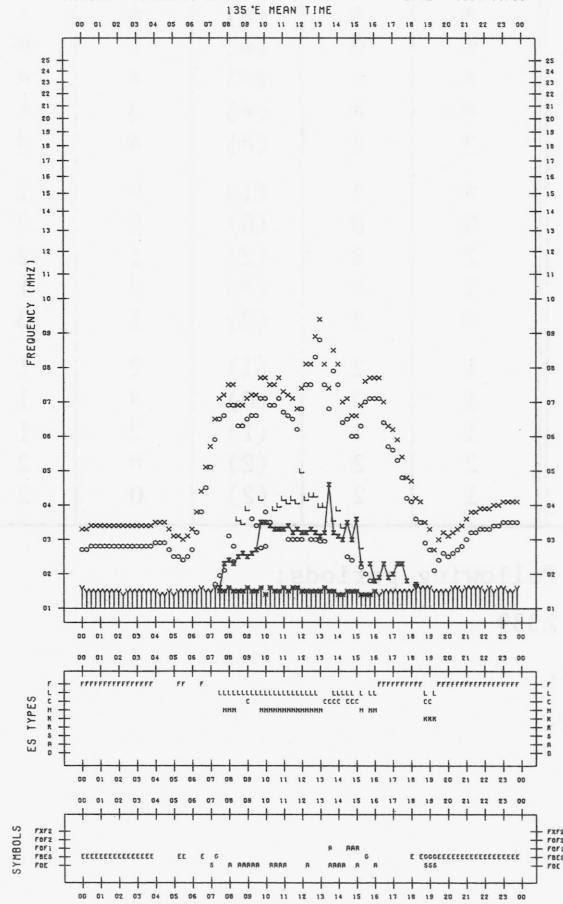


F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1984/11/30



SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

November 1984

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

Note No observations during the following periods:

14th 2114 - 2339

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

November 1984

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

Note No observations during the following periods:

1st 0000 - 0100
14th 2120 - 2345
21st 0000 - 0023

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

November 1984

Outstanding Occurrences (single-frequency observations)									
Normal observing period: 2120 - 0735 (sunrise to sunset)									
NOV 1984	FREQ	STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
							PEAK	MEAN	
1	500	HIRA	8 S	2237.0	2237.2	0.6	2	-	WL
3	100		46 C	0021.3	0026.6	8.2	98	16	-
	200		41 F	0021.4	0021.9	2.3	12	-	O
10	500		48 C	0433.9	0446.9	68	11300	1500	WL
					0435.5		7400		WL
	200		48 C	0435.0	-	92	700D	300D	-
	100		48 C	0435.3	-	99	1300D	400D	-
	200		24 R	2110E	2047	620D	9	3	WR
	100		44 NS	2109E	2246	600D	20	5	-
18	500		8 S	2329.2	2329.3	0.4	13	-	O
19	500		42 SER	0049.7	0050.0	14	5	-	O
	500		8 S	0436.0	0436.1	0.3	4	-	WR
	200		44 NS	2119E	0128	610D	18	7	WR
20	500		7 C	0051.5	0051.6	1.0	6	3	WR
	500		8 S	0538.5	0538.6	0.3	7	-	WR
	500		8 S	0550.4	0550.7	0.6	7	-	WR
21	200		41 F	0020.4	0020.7	2.3	25	-	O
	200		41 F	0224.0	0224.3	1.1	27	-	O
	200		46 C	0240.5	0241.1	1.7	35	18	O
	500		8 S	0241.4	0241.5	0.6	11	-	WR
	200		42 SER	0252.7	0253.6	7.3	540	-	O
	500		6 S	0252.7	0253.7	1.7	690	150	SR
	100		8 S	0253.6	0253.9	0.6	620	-	-
	500		6 S	0257.3	0257.5	1.0	11	6	WR
	200		42 SER	0450.6	0454.0	4.2	72	-	O
	100		42 SER	0451.0	0454.6	4.0	470	-	-
	500		6 S	0453.7	0454.2	1.0	29	10	WR
	200		8 S	0624.0	0624.0	0.7	135	-	O
	100		8 S	0624.2	0624.2	0.2	140	-	-
22	200		42 SER	0435.7	0437.1	1.7	23	-	O
	500		8 S	0436.6	0437.0	0.6	2	-	O
	200		46 C	0513.7	0517.4	5.0	130	24	O
	500		42 SER	0513.8	0514.3	4.0	7	-	O
	100		46 C	0514.0	-	3.0	1300D	430D	-
	100		41 F	0544.4	-	1.3	1300D	-	-
23	200	HIRA	44 NS	2122E	2355	600D	12	6	WR
	500		6 S	0206.2	0206.3	1.1	2	1	WL
	100		46 C	0305.2	0306.0	2.1	260	45	-
	100		43 NS	0443	0517	160D	70	15	-
	200		44 NS	2122E	0230	600D	7	3	WR
24	500		8 S	0018.8	0018.8	0.6	30	-	WR
	200		8 S	0018.8	0018.9	0.6	240	-	O
	100		8 S	0019.0	-	0.6	1800D	-	-
	200		42 SER	0128.6	0129.0	1.3	150	-	O
	200		42 SER	0503.0	0503.3	6.7	82	-	MR
	200		44 NS	2124E	2140U	600D	300U	30U	SR, SUNRISE
	100		44 NS	2124E	2152U	600D	1000U	20U	-, SUNRISE
	500		27 RF	2130E	-	65D	20U	5U	MR, SUNRISE
25	200		8 S	0049.3	0049.4	0.5	1200	-	O
	200		41 F	0056.8	0057.2	1.2	160	-	MR
	500		8 S	0317.3	0317.5	0.4	30	-	WR
	200		46 C	0317.5	0318.3	1.2	1570	540	WR
	100		46 C	0317.6	-	1.4	1300D	430D	-
	200		44 NS	2125E	0348	550D	13	5	MR
26	200		44 NS	2126E	2219	325D	10	3	MR
27	500		6 S	0218.3	0219.2	3.0	9	3	WL
	200		42 SER	0218.6	0219.3	7.7	430	-	MR
	100		46 C	0218.6	0219.3	1.0	850	370	-
	100		46 C	0257.7	0258.0	1.3	160	80	-
	200		7 C	0449.7	0450.3	18.3	152	6	MR
					0500.0		3		O
	100		46 C	0449.8	0450.9	1.5	1300D	75D	-
	500		6 S	0450.0	0450.6	1.4	20	11	WR
	200		7 C	0620.6	0621.3	16.7	83	4	O
					0630.6		4		O
	100		41 F	0620.6	0621.5	1.4	180	-	-
	500		42 SER	0620.6	0621.7	3.4	3	-	WR
28	200		44 NS	2128E	0511	600D	8	4	WR
	500		45 C	0042	0044.7	5	4	2	WR
	500		8 S	0517.3	0517.5	0.6	6	-	WR
	500		45 C	0636.9	0641.0	6.5	7	3	WR
	200		44 NS	2128E	0556	600D	15	5	WR
30	500		41 F	0012.0	0015.7	5	3	-	WR
	200		43 NS	0020	0626	420D	6	3	WR
	200		41 F	0614.2	0614.4	0.7	260	-	MR

RADIO PROPAGATION

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

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

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAIISO

Time in U.T.

Nov. 1984	Whole Day Figure	w w v				W W V H				Conditions				Principal Geomagnetic Storms		
		00	06	12	18	00	06	12	18	00	06	12	18	Start	End	Range
		06	12	18	24	06	12	18	24	06	12	16	24			
1	4+	4U	S	S	4	4	5	S	4	N	N	N	N	04.4	---	137
2	4o	S	S	S	4	4	4	S	4	N	N	N	N	---	04.0	
3	4o	4U	S	S	4	4	4	S	4	N	N	N	N			
4	4o	4U	S	S	4	4	4	S	4	N	N	N	N			
5	4o	4U	S	5U	4	4	4	S	4	N	N	N	N			
6	4o	4U	S	S	4	4	4	S	4	N	N	N	N			
7	4o	S	S	S	C	4	4	S	4U	N	N	N	N			
8	4+	S	S	S	5	4	4	5U	4	N	N	N	N			
9	4o	S	S	S	4	4	4	S	4	N	N	N	N			
10	4-	S	S	S	4	3	4	S	4	N	N	N	N			
11	4+	5U	S	S	4	4	5U	S	4	N	N	N	N			
12	4+	4U	S	S	4	4	5U	S	4	N	N	N	N			
13	4+	4U	S	S	4	4	5U	S	4	N	N	N	N			
14	4o	S	S	S	4	4	S	S	4	N	N	N	N	23.5	---	233
15	4o	4U	S	S	4	4	4U	S	4	N	N	N	N	---	---	
16	4o	4U	S	S	2U	4	5U	5U	4	N	N	N	N	---	---	
17	4o	S	S	S	3U	4	5U	S	4	N	N	N	N	---	22.0	
18	4-	4U	S	S	2U	4	5U	S	4	N	N	N	N			
19	3+	3U	S	S	2U	4	S	S	4	N	N	N	N			
20	4-	S	S	S	3U	4	S	S	4	N	N	N	N			
21	4+	S	S	5U	4	4	S	S	4	N	N	N	N			
22	4-	3U	S	S	4	4	S	S	4	N	N	N	N			
23	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
24	4-	S	S	S	3	4	S	S	4	N	N	N	N			
25	4-	S	S	S	4	4	S	S	3	N	N	N	N			
26	4+	S	S	S	5	3	S	S	4	N	N	N	N			
27	4+	4U	S	S	5	4	s	S	4	N	N	N	N			
28	4o	4U	4U	S	4	4	S	S	4	N	N	N	N			
29	4o	4U	S	S	4	4	S	S	4	N	N	N	N			
30	4o	4U	4U	S	4U	3	5U	S	4	N	N	N	N			

SUDDEN IONOSPHERIC DISTURBANCES

HIRAIISO

Time in U.T.

Nov. 1984	S W. F				Correspondence						
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet.
	CO	HA	1)	2)							
10		17D	31	30	0435	32	S	2+	x	x	
28	x		25	x	0042	58	G	2	x		

NOTES

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

IONOSPHERIC DATA IN JAPAN FOR NOVEMBER 1984

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