

IONOSPHERIC DATA IN JAPAN

FOR APRIL 1985

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

(ii) Qualifying Letters

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

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I	Missing value has been replaced by an interpolated value.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

(iii) Description of Types of E_s

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

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

diffuse traces present above it.

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

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

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

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

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

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

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

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

B. SOLAR RADIO EMISSION

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

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

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

a. Daily Data

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

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

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

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

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

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

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

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

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

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

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

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

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

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

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

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

Characteristics	Transmitter		Receiver
	WWV	WWVH	
Station Call	WWV	WWVH	
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 atmospherics.

b. Radio Propagation Quality Figures

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

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

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

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

C	artificial accident,
S	propagational accident,
U	inaccurate.

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

N	normal,
U	unstable,
W	disturbed

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

Data on a *geomagnetic storm* correlated with a radio propagation disturbance are tabulated from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in unit of hour and minute (or tenth of hour), and *range* in gamma. When they are uncertain quantitatively, /s are replaced with them. Continuation of a geomagnetic storm is denoted by ---.

c. Sudden Ionospheric Disturbances

(i) SWF

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

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

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

Types of fade-out are as follows:

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

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

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

(ii) SPA

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

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

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

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

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

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

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

IONOSPHERIC DATA

APR. 1985

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 24 sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 50	X 50	X 50	X 48	X 47	X 46														X 60	X 62	X 59	X 52	X 51
2	X 49	X 49	X 47	X 43	X 43	X 50														X 66	X 58	X 48	X 44	X 42
3	X 42	X 43	X 43	X 41	X 42	X 45														X 65	X 57	X 49	A	X 48
4	X 47	X 46	X 46	X 43	X 42	X 48														X 68	X 60	X 54	X 51	X 52
5	X 51	X 51	X 48	X 46	X 47	X 46														X 65	X 54	X 50	X 47	X 47
6	X 49	X 47	X 46	X 46	X 40	X 42														X 62	X 58	X 55	X 47	X 47
7	X 46	X 46	X 43	X 43	X 41	X 43														X 71	X 66	X 46	X 46	X 46
8	X 49	X 48	X 50	X 50	X 48	X 46														X 63	X 53	X 50	X 50	X 51
9	X 50	X 48	X 45	X 43	X 42	X 43														X 78	X 76	X 63	X 60	X 58
10	X 53	X 52	X 48	X 44	X 34	X 34														X 71	X 63	X 66	X 51	X 42
11	X 39	X 39	X 40	X 39	X 39															X 62	X 62	X 57	X 50	X 48
12	X 49	X 47	X 44	X 42	X 40															X 68	X 56	X 52	X 49	X 47
13	X 46	X 44	X 43	X 39	X 38															X 68	X 67	X 60	X 53	X 55
14	X 49	X 46	X 42	X 42	X 42															X 71	X 68	X 62	X 52	X 50
15	X 50	X 50	X 51	X 49	X 44															X 67	X 64	X 60	X 51	X 47
16	X 48	X 48	X 45	X 44	X 42															X 67	X 62	X 59	X 56	X 53
17	X 52	X 50	X 48	X 46	X 42															X 64	X 63	X 62	X 54	X 48
18	X 45	X 44	X 42	X 44	X 37															X 73	X 71	X 63	X 56	X 52
19	X 47	X 47	X 42	X 42	X 39															X 84	X 80	X 70	X 67	X 59
20	X 54	X 53	X 50	X 46	X 41															X 64	X 67	X 66	X 60	X 56
21	X 57	X 55	X 57	X 51	X 43															X 74	X 57	X 59	X 48	A
22	A	A	A	A	A															X 70	X 67	X 58	X 48	X 47
23	X 45	X 42	X 42	X 43	X 40															X 59	X 57	X 58	X 48	X 38
24	X 37	X 36	X 37	X 36	X 36															X 70	X 72	X 59	X 48	X 47
25	X 47	X 43	X 43	X 42	X 43															X 67	X 68	X 58	X 56	X 50
26	X 50	X 47	X 43	X 45	X 37															X 70	X 61	X 59	X 54	X 51
27	X 47	X 45	X 44	X 42	X 38															X 50	X 47	X 46	X 44	X 42
28	X 42	X 40	X 41	X 38	X 37															X 70	X 67	X 66	X 51	X 38
29	36	33	30	32	33															X 56	X 46	X 49	A	X 38
30	X 36	X 35	38	X 35	X 35															X 65	X 60	X 58	X 53	X 45
31																								
CNT	29	29	29	29	29	10														30	30	30	28	29
MED	X 48	X 47	X 44	X 43	X 41	X 46														X 67	X 62	X 58	X 51	X 48
UQ	X 50	X 49	X 48	X 46	X 42	X 46														X 70	X 67	X 62	X 54	X 51
LQ	X 45	X 43	X 42	X 42	X 38	X 43														X 64	X 57	X 52	X 48	X 46

APR. 1985

FXI (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

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 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	43	43	43	41	40	39	51	53	56	69	69	71	61	65	65	63	63	55	54	53	55	52	45	44	
2	42	42	40	36	36	43	37	45	60	67	63	73	68	66	63	64	68	58	56	59	51	41	37	35	
3	35	36	36	34	35	38	44	47	51	H 61	64	63	V 59	60	59	68	59	57	62	58	50	42	A 41		
4	40	39	39	36	35	41	48	48	53	55	60	56	62	62	63	62	60	62	62	61	53	47	44	45	
5	44	44	41	39	40	39	44	50	54	61	64	67	57	58	65	62	63	58	59	58	47	43	40	40	
6	42	40	39	39	33	35	43	47	52	58	60	58	59	60	60	56	55	54	56	55	51	48	40	40	
7	39	39	36	36	34	36	43	46	52	60	62	57	60	58	54	60	58	60	63	64	59	39	39	39	
8	42	41	43	43	41	39	46	56	56	53	62	55	60	63	62	60	55	53	56	56	46	43	43	44	
9	43	41	38	36	35	36	51	53	52	68	68	70	69	58	64	54	60	65	70	71	69	56	53	51	
10	46	45	41	37	27	27	38	41	46	52	60	60	60	57	55	54	51	56	62	64	56	59	44	35	
11	32	32	33	32	32	38	51	50	54	64	63	67	68	67	60	59	64	67	58	55	55	50	43	41	
12	42	40	37	35	33	36	45	46	48	51	54	54	57	64	59	57	60	60	66	61	49	45	42	40	
13	39	37	36	32	31	38	45	49	51	55	63	65	65	61	58	55	54	52	52	61	60	53	46	48	
14	42	39	35	35	35	40	48	50	52	60	60	61	53	56	57	63	60	57	62	64	61	55	45	43	
15	43	43	44	42	37	41	50	54	56	54	57	57	54	57	59	62	59	52	56	60	57	53	44	40	
16	41	41	38	37	35	40	48	49	52	59	56	58	58	57	54	60	63	57	55	60	55	52	49	46	
17	45	43	41	39	35	43	45	48	52	58	57	53	59	54	55	54	59	57	50	57	56	55	47	41	
18	38	37	35	37	30	40	40	46	54	62	61	57	58	58	57	52	58	59	61	66	64	56	49	45	
19	40	40	35	35	32	38	48	51	53	54	54	61	58	58	55	55	54	61	73	77	73	63	60	52	
20	47	46	43	39	34	39	39	43	43	A 50	54	53	61	65	62	64	58	51	57	60	59	53	49		
21	50	48	50	44	36	40	43	45	44	43	43	41	50	52	61	60	73	75	67	67	50	52	41	A	
22	A	A	A	A	A	33	A	A	A	A	A	51	55	57	53	53	54	51	53	63	60	51	41	40	
23	38	35	35	F	F	36	39	45	45	48	50	49	50	56	55	51	A	52	A	52	50	51	41	31	
24	30	29	30	29	29	35	44	H 50	52	50	R	54	56	59	64	69	60	50	58	63	65	52	41	40	
25	40	36	36	35	36	41	48	55	53	57	53	50	54	51	50	54	58	58	49	60	61	51	49	43	
26	43	40	36	38	30	36	42	47	52	A	61	57	57	58	64	67	62	67	70	63	54	52	47	44	
27	40	38	37	35	31	30	33	37	A	A	A	R	45	A	R	46	47	50	48	43	40	39	37	35	
28	35	33	34	31	30	38	41	A	42	A	A	A	51	57	59	54	47	48	56	63	60	59	44	31	
29	F	F	F	F 25	F 23	30	35	R	R	A	A	A	A	48	52	56	61	53	48	49	39	42	A	31	
30	29	28	F 30	28	28	36	46	46	50	A	51	50	49	49	51	A	50	51	53	58	53	51	46	38	
31																									
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	28	28	28	28	28	30	29	27	27	23	25	27	29	29	29	29	29	30	29	30	30	30	28	29	
MED	42	40	37	36	34	38	44	48	52	58	60	57	58	58	59	59	59	57	56	60	55	52	44	41	
UQ	43	42	41	39	36	40	48	50	54	61	63	62	60	61	63	62	62	60	62	63	60	55	47	44	
LQ	38	36	35	34	30	36	41	46	50	54	54	54	54	57	55	54	55	52	53	57	50	45	41	39	

The Radio Research Laboratories, Japan

APR. 1985

FOF2 (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat. 45° 23.5' N				Long. 141° 41.2' E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									400	410	430	430	430	420	410	400	L							
2									400	410	460	420	420	430	400	400	L							
3									400	400	A	H 430	L 430	410	L 410	400								
4									400	410	420	430	430	430	420	400	350							
5									400	410	430	H 430	430	440	H 420	400	L							
6									400	H 410	H 410	420	440	420	H 420	L 400	L							
7									410	410	420	430	430	430	410	H 410	L							
8										L 410	H 420	420	430	430	A	400	A							
9									L	410	430	430	420	430	410	L 390	L							
10							330	390	400	410	H 420	420	420	410	390									
11									390	420	430	430	440	420	410	L 400	L							
12							370	390	410	420	420	440	420	410	L 400	A								
13									L	420	410	410	430	430	420	390								
14									400	420	420	430	420	420	L 410	400	L 390							
15									400	420	420	430	440	430	420	410	390							
16									400	410	420	430	430	430	420	400	380							
17									400	410	420	430	430	420	410	400	380							
18								L	400	420	420	430	430	430	410	410	390							
19								L	400	410	430	430	430	430	420	410	390							
20							360	400	A	420	430	420	430	410	400	390	L							
21									370	370	400	390	410	410	410	400	380	340						
22								A	A	A	A	430	430	430	420	410	390							
23							380	400	420	430	420	420	430	A	400	A	L							
24									400	420	430	430	440	420	430	410	L							
25									390	410	420	430	450	430	430	440	410	390						
26								380	400	A	430	430	430	A	430	400	380	L						
27					260	310	350	A	A	A	410	410	A	400	380	380	340							
28							A	380	A	A	A	A	410	410	400	390	360							
29						330	360	360	A	A	A	A	410	400	400	380	L							
30						A	A	410	A	410	430	430	420	410	A	390	L							
31									355	400	410	420	420	420	410	400	380	340						
	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	2	8	25	23	25	28	28	28	28	29	16	3						
MED					260	320	365	400	410	420	430	430	430	410	400	390	340							
UQ							380	400	420	430	430	430	430	420	400	390	350							
LQ									355	400	410	420	420	420	410	400	380	340						

APR. 1985

FOF1 (0.01 MHz)

IONOSPHERIC DATA

APR. 1985

FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							180	230	275	295	300	305	305	310	300	290	250	205						S
2							175	235	275	300	305	310	310	310	300	290	240	200						A
3							180	225	270	295	300	305	305		A	300	290		A	A				S
4							190	235	270	295	300	300		A	A	305		A		A				E
5							175	225	270	300	305	310		A	A	A	285	245	200					E
6							185	230	275	290	300	315	320	305	295	275	245	200						S
7							200	240	275	290	300	310	315	310	300	275	250	200						S
8							185	235	285	290	300		A	A	A	A		A	A					S
9							185	245	285	290	310	315	310	310	300	285	255	210						S
10							175	235	280	290	305	305	300		A	A	290	255	205					S
11						S	200	245	280	295	305	310		A	310	300	290	245	200					A
12						S	195	240	285	295	305	310	315	310	300	305	270	210						A
13						S	205	260	290	300	310	315	315		A	310	290	255	205					S
14						S	185	250	285	300	305	310	315	315	305	290	250	210						S
15						S	205	260	290	295	305	305	310	310	305	290	260	210	150					
16						S	200	260	280	300	310	310	310	310		A	290	250	210	150				
17						145	210	250	280		A	320	320	320	310	305	290	250	205	145				
18						S	220	255	290	300	310	310	315	315	305	290	250	210						S
19						S	215	255	290	300	315	315	315	315	300	285	255	210	150					
20						140	200	235	270	295	300	310	310	310	310	290	255	215						A
21						S	205	235	275	295	300	305	310	305	300	275	250	210	160					
22						A	205	250	280	300	300	305	310	315	305	290	255	210	180					
23						175	215	250	280	290	300	305	305	305	305	280	260	215	150					
24						165	210	255	285	300	320	320	315	315	305	300	280	215						A
25						S	220	255	290	300	310	310	320	310	300	290	265	220	160					
26						S	225	270	295	305	310	310	315		A	305	295	260	220					S
27						S	210	255	290	300	310	315	310	305	300	290		A	220	170				
28						S	220	255	290	300	310	310	310	305	300	290		A	215	170				
29						145	200	250	290	300	305	310	305	300	300	290	255	220	180					
30						S	215	255	290	300	310	315	315	310		A	A	260		A	A			
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						S	30	30	30	29	30	29	26	23	25	28	26	26	13					
MED						145	200	250	282	300	305	310	310	310	300	290	255	210	150					
UQ						165	210	255	290	300	310	315	315	310	305	290	260	215	170					
LQ						145	185	235	275	295	300	305	310	308	300	285	250	205	150					

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APR. 1985

FOE (0.01 MHZ)

IONOSPHERIC DATA

APR. 1985

FOES (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																							Lat. 45° 23' 5" N	Long. 141° 41' 2" E	Sweep 1	MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																									
1	E S 16	E S 13	E S 13	E 21	E S 15	G	G	G	G	G	G	G	G	G	G	G	G	E S 15	25	23	E S 16	E S 15	23																										
2	27	22	26	E S 15	E S 15	E	G	20	G	34	40	42	35	G	G	G	G	G	21	21	E S 15	E S 12	E S 15	27																									
3	27	25	31	33	26	E S 15	G	G	G	40	44	36	34	37	G	J A 40	30	22	30	E S 15	34	J A 47	40																										
4	E S 16	E S 12	E S 12	E S 15	E S 11	E S 16	G	G	33	39	37	35	33	35	38	35	35	35	44	35	25	E S 16	28	E S 16																									
5	26	30	26	E S 13	20	20	G	29	G	G	G	35	34	42	40	G	G	G	22	28	22	E S 16	22	E S 16																									
6	E S 16	E S 13	E S 16	E S 16	E S 16	E S 15	G	30	33	34	34	G	G	G	G	G	G	26	25	37	E S 16	E S 16	E S 16																										
7	E S 16	E S 13	E S 16	E	E S 12	E S 16	G	G	G	36	G	G	G	G	G	G	G	27	22	29	E S 16	E S 16	E S 16	E S 16																									
8	E S 16	E S 16	E S 13	E S 16	J A 32	25	24	G	G	G	35	38	J A 38	J A 43	J A 52	J A 49	J A 50	36	E S 16	32	30	39	24	E S 16																									
9	E S 16	E S 13	E S 16	E S 16	E S 15	E S 16	24	G	G	G	23	24	39	G	G	G	G	G	30	E S 16	E S 16	E S 16	E S 16	E S 16																									
10	E S 16	E S 11	E S 16	E S 16	E S 16	E S 16	G	G	G	38	G	G	J A 38	J A 50	36	37	G	28	34	31	34	39	E S 16	E S 12																									
11	E S 16	E S 16	E S 16	E	E S 16	E S 16	G	G	G	36	39	37	35	G	23	24	G	20	20	26	E S 16	E S 16	E S 13	E S 16																									
12	E S 16	E S 12	E S 16	E S 16	E S 16	E S 16	26	33	G	J A 45	J A 58	40	40	G	27	35	G	J A 43	J A 44	33	32	24	E S 16	E S 16	E S 16																								
13	E S 16	E S 14	E S 14	E S 17	E S 16	E S 16	G	G	G	35	G	G	G	35	G	35	G	G	20	23	E S 16	E S 16	E S 16	E S 16																									
14	E S 16	E S 16	E S 13	E S 15	E S 16	E S 16	25	G	G	G	G	G	G	G	G	G	G	G	19	23	E S 16	30	23	E S 16																									
15	E S 16	E S 13	E S 16	E S 13	24	E S 16	G	G	38	40	40	35	37	G	G	G	30	28	G	E S 15	E S 17	30	E S 17	E S 16																									
16	E S 16	E S 16	30	23	22	21	G	G	G	G	G	G	G	G	40	G	G	21	G	G	27	E S 15	E S 15	E S 16	E S 16																								
17	E S 16	E	E	E S 15	E	G	G	G	G	36	G	G	G	G	G	G	G	G	G	E S 15	E S 15	27	23	E S 15																									
18	E S 15	E S 15	E S 15	E S 14	E S 15	E S 15	G	G	G	G	G	G	G	G	G	G	G	G	E S 15	E S 14	E S 16	E S 15	E S 16	E S 16																									
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	G	G	G	G	G	G	G	G	G	G	G	15	E S 16	E S 15	E S 16	E S 16																									
20	20	E S 11	E S 15	20	E S 15	G	G	G	34	J A 58	37	G	G	38	36	33	33	G	22	35	36	35	39	31																									
21	29	E S 13	E	E S 15	E	24	31	44	50	40	40	G	36	40	G	G	G	G	G	E S 15	E S 16	38	32	48																									
22	38	33	J A 55	J A 55	J A 63	J A 83	50	J A 50	J A 53	57	J A 63	J A 63	J A 55	G	G	G	G	29	23	35	22	31	30	39																									
23	24	22	E S 15	E	E	G	G	38	35	37	37	35	33	G	47	43	61	33	60	38	23	32	30	E S 12																									
24	E S 15	23	27	E S 12	24	G	G	31	G	40	G	G	G	G	29	G	G	33	J A 43	38	33	E S 16	E S 16	E S 15	E																								
25	E S 15	20	22	E	E S 16	G	27	30	G	36	38	36	G	G	G	G	32	41	27	E S 16	27	30	22	32																									
26	22	E	E S 16	E S 16	E S 15	E S 16	G	G	G	J A 60	36	35	G	J A 54	G	G	G	39	25	31	E S 16	25	33	E S 15																									
27	24	20	22	17	E S 12	19	27	33	62	63	60	40	40	53	G	G	34	G	G	23	33	33	E S 16	J A 60																									
28	J A 52	27	25	E S 15	25	19	24	48	36	51	74	71	43	45	35	36	29	J A 63	G	E	E	E S 13	E S 16	21																									
29	E	E	E S 15	E	E S 11	20	G	G	G	J A 66	102	49	72	41	40	G	G	30	40	37	J A 66	35	45	E S 15																									
30	40	23	28	29	E S 15	25	50	47	G	56	G	G	G	G	40	J A 98	G	31	30	23	28	E S 14	E S 15	E S 16																									
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	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	E S 15	E S 16	E S 15	E S 16	16	G	G	G	36	36	30	33	E 25	G	G	G	26	22	26	E S 16	E S 16	E S 16	E S 16																									
UQ	24	22	25	E S 16	21	19	24	31	33	45	40	37	38	40	36	33	33	33	30	32	25	32	28	23																									
LQ	E S 16	E S 13	E S 15	E S 13	E S 12	E S 15	G	G	G	G	G	G	G	G	G	G	G	G	E S 15	16	E S 16	E S 16	E S 16	E S 16																									

APR. 1985

FOES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985 FBES (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station **WAKKANAI** Lat. 45° 23' 5" N Long. 141° 41' 2" E Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E S 16	E S 13	E S 13	E	E	E S 15	G	G	G	G	G	G	G	G	G	G	G	G	E S 15	E	E	E S 16	E S 15	E	
2	E	E	E	E S 15	E S 15	E	G	G 20	G	G	G	G	G	G	G	G	G	G	16	E	E S 15	E S 12	E S 15	E	
3	19	E	25	20	E	E S 15	G	G	G	36	42	G	G	33	G	G	34	23	20	E	E S 15	27	A 47	23	
4	E S 16	E S 12	E S 12	E S 15	E S 11	E S 16	G	G	G	38	G	G	33	35	G	30	23	26	40	26	E	E S 16	E	E S 16	
5	E	E	E	E S 13	E	E	G	28	G	G	G	G	32	32	33	G	G	G	G	E	E	E S 16	E	E S 16	
6	E S 16	E S 13	E S 16	E S 16	E S 16	E S 15	G	28	G	G	G	G	G	G	G	G	G	G	24	31	E	E S 16	E S 16	E S 16	
7	E S 16	E S 13	E S 16	E	E S 12	E S 16	G	G	G	G	G	G	G	25	23	G	G	26	21	E	E S 16	E S 16	E S 16	E S 16	
8	E S 16	E S 16	E S 13	E S 16	20	20	G	G	G	G	G	36	37	41	46	39	42	25	E S 16	E	E	20	E	E S 16	
9	E S 16	E S 13	E S 16	E S 16	E S 15	E S 16	G	G	G	G	23	24	G	G	G	G	G	G	18	E S 16	E S 16	E S 16	E S 16	E S 16	
10	E S 16	E S 11	E S 16	E S 16	E S 16	E S 16	G	G	G	37	G	G	37	38	34	G	G	28	26	21	23	20	E S 16	E S 12	
11	E S 16	E S 16	E S 16	E	E S 16	E S 16	G	G	G	G	39	G	33	G	23	24	G	20	18	19	E S 16	E S 16	E S 12	E S 13	E S 16
12	E S 16	E S 12	E S 16	E S 16	E S 16	E S 16	G	G	G	G	37	G	30	27	29	G	41	40	26	22	E	E S 16	E S 16	E S 16	
13	E S 16	E S 14	E S 14	E S 17	E S 16	E S 16	G	G	G	G	G	G	31	G	G	G	G	G	19	E	E S 16	E S 16	E S 16	E S 16	
14	E S 16	E S 16	E S 13	E S 15	E S 16	E S 16	G	G	G	G	G	G	G	G	G	G	G	G	18	E	E S 16	E	E	E S 16	
15	E S 16	E S 13	E S 16	E S 13	E	E S 15	G	G	38	G	38	G	G	G	G	G	G	G	G	E S 15	E S 17	E	E S 17	E S 16	
16	E S 16	E S 16	E	E	E	16	G	G	G	G	G	G	G	G	31	G	G	21	G	G	E	E S 15	E S 15	E S 16	E S 16
17	E S 16	E	E	E S 15	E	G	G	G	G	31	G	G	G	G	G	G	G	G	G	E S 15	E S 15	E	E	E S 15	
18	E S 15	E S 15	E S 15	E S 14	E	E S 15	G	G	G	G	G	G	G	G	G	G	G	G	E S 15	E S 14	E S 16	E S 15	E S 16	E S 16	
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	G	G	G	G	G	G	G	G	G	G	G	E	E S 16	E S 15	E S 16	E S 16	
20	E	E S 11	E S 15	E	E S 15	G	G	G	G	A A 58	G	G	G	37	G	G	G	G	G	17	29	23	20	21	E
21	E	E S 13	E	E S 15	E	G	28	40	31	32	38	G	G	37	G	G	G	G	G	E S 15	E S 16	E	20	A A 48	
22	A A 38	A A 33	A A 55	A A 55	A A 63	18	A A 50	A A 50	A A 53	A A 57	A A 63	G	39	G	G	G	G	29	G	22	E	E	E	E	
23	E	E	E S 15	E	E	G	G	37	G	G	35	G	G	43	35	A A 61	30	A A 60	29	E	23	28	E S 12		
24	E S 15	E	E	E S 12	E	G	G	G	G	G	G	G	G	29	G	G	G	40	32	25	E S 16	E S 16	E S 15	E	
25	E S 15	E	E	E	E S 16	G	G	G	G	G	G	G	G	G	G	G	G	33	25	E S 16	E	E	E	E	
26	E	E	E S 16	E S 16	E S 15	E S 16	G	G	G	A A 60	G	G	G	45	G	G	G	G	G	E	E S 16	E	E	E S 15	
27	E	E	E	E	E S 12	G	G	31	A A 62	A A 63	A A 60	G	G	A A 53	G	G	27	G	G	E	25	E	E S 16	E	
28	E	E	E	E S 15	E	G	G	A A 48	35	A A 51	A A 74	A A 71	43	38	G	33	26	27	G	E	E	E S 13	E S 16	E	
29	E	E	E S 15	E	E S 11	G	G	G	G	A A 66	A A 102	A A 49	A A 72	37	36	G	G	G	30	30	E	E	A A 45	E S 15	
30	E	E	E	E	E S 15	G	40	38	G	A A 56	G	G	G	G	32	A A 98	G	25	28	E	E	E S 14	E S 15	E S 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	30
MED	E S 16	E S 12	E S 14	E S 15	E S 14	E S 15	G	G	G	G	G	G	G	E G 25	G	G	G	G	18	E 14	E S 15	E S 15	E S 16	E S 16	
UQ	E S 16	E S 14	E S 16	E S 16	E S 16	E S 16	G	28	G	38	38	G	32	37	29	G	G	21	26	25	22	E S 16	E S 16	E S 16	E S 16
LQ	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E

APR. 1985 FBES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FMIN (0.1 MHZ)

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

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

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FMIN (0.1 MHZ)

IONOSPHERIC DATA

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M(3000)F2 (0.01)

135° E Mean Time (G.M.T. + 9h)

Station Hour Day	WAKKANAI				Lat. 45° 23' 5" N				Long 141° 41' 2" E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	295	285	290	290	290	285	335	350	340	345	335	340	325	330	340	335	335	345	335	305	310	305	295	280	
2	285	275	280	305	305	370	325	335	325	345	305	340	310	320	315	330	340	345	330	320	315	310	295	300	
3	285	305	305	305	320	305	340	310	335	325 ^H	330	330	310 ^V	330	315	340	340	335	330	325	325	285	A	295	
4	285	290	305	305	315	290	310	305	320	340	335	325	320	335	330	320	335	335	320	320	335	305	295	305	
5	285	295	295	300	320	310	335	335	350	330	325	345	345	325	325	340	335	335	340	330	315	300	300	300	
6	290	300	300	305	305	320	340	325	345	335	340	340	330	335	335	340	345	350	340	330	315	310	300	300	
7	300	305	305	310	340	335	330	355	330	335	340	330	330	330	350	345	325	335	315	315	340	300	300	285	
8	285	285	300	300	290	335	370	370	355	325	340	330	330	315	335	340	345	345	340	340	310	295	295	295	
9	295	290	295	305	320	325	255	360	310	325	325	310	335	330	335	335	330	325	310	305	305	305	300	295	
10	280	290	275	300	335	340	320	335	300	305	320	320	330	335	340	350	325	335	320	325	300	325	325	310	
11	295	295	305	290	305	320	370	360	335	335	335	330	325	330	320	310	325	330	340	325	325	320	300	285	
12	290	295	320	290	295	320	315	325	335	335	350	350	315	330	335	325	335	335	330	335	315	310	305	300	
13	290	290	300	310	320	335	335	345	335	335	335	340	325	325	330	350	350	345	325	315	320	325	295	310	
14	315	300	315	315	300	325	355	355	345	330	335	325	320	325	315	315	320	335	320	310	320	330	310	290	
15	295	300	305	295	330	320	345	360	340	325	320	335	315	310	325	320	340	345	335	320	330	320	320	300	
16	295	280	295	310	300	325	360	345	340	340	340	325	335	335	330	325	330	340	335	320	325	305	290	300	
17	300	300	305	295	315	325	355	335	350	340	345	310	330	315	330	335	335	340	320	320	320	325	315	300	
18	295	295	310	320	340	350	325	325	335	330	345	335	325	325	340	315	325	340	320	320	330	320	305	310	
19	300	290	300	315	310	320	355	350	365	370	335	330	325	330	330	325	335	310	300	310	315	305	310	300	
20	285	295	285	305	295	310	325	325	290	A	320	315	310	310	330	315	325	325	305	280	285	300	300	270	
21	280	275	295	320	315	315	350	310	300	260	260	285	260	275	305	285	295	295	285	295	245	280	270	A	
22	A	A	A	A	A	335	A	A	A	A	A	285	325	335	345	340	335	235	315	305	305	300	290	290	
23	290	285	285	F	F	360	305	335	290	290	285	285	320	310	345	325	A	340	A	295	300	315	330	320	
24	295	275	265	290	310	315	320	320 ^H	330	335	R	315	315	305	305	330	335	300	310	305	305	325	290	285	
25	305	295	300	305	310	315	335	340	320	325	350	275	335	320	280	315	325	335	300	315	315	315	295	290	
26	285	285	305	320	290	305	310	325	335	A	325	335	310	315	310	330	315	320	330	310	290	290	290	310	
27	285	295	300	285	290	255	265	245	A	A	A	R	280	A	R	280	280	315	310	300	300	295	285	285	
28	285	295	295	290	300	315	335	A	240	A	A	A	275	315	315	335	295	290	305	295	265	290	270	290	
29	F	F	F	F	F	280	265	285	R	R	A	A	A	A	255	290	305	315	340	310	325	295	285	A	290
30	275	285	F	300	310	305	320	320	315	340	A	335	290	285	285	320	A	295	335	320	310	300	295	280	265
31																									
CNT	28	28	28	28	28	30	29	27	27	23	25	27	29	29	29	29	29	30	29	30	30	30	28	29	
MED	290	292	300	305	308	320	335	335	335	335	335	330	325	325	330	330	330	335	320	315	315	305	298	295	
UQ	295	295	305	310	320	335	345	350	340	338	340	335	330	330	335	340	335	340	330	325	320	320	305	300	
LQ	285	285	295	295	298	310	320	325	320	325	325	312	310	315	315	315	325	325	310	305	300	295	290	290	

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M(3000)F2 (0.01)

IONOSPHERIC DATA

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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 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									275	250	260	255	270	275	275	265	260								
2									265	265	315	260	290	275	265	280	250								
3									295	275	290	285	300 ^L	295	300	260									
4									300	280	285	395	305	285	285	260	255								
5									285	285	300	250	280	305	285	275	260								
6									295	290	275	280	295	275	280	260	250								
7									300	280	275	290	295	295	275	275	275								
8										285	270	280	300	295	275	255	255								
9									345 ^L	265	300	295	255	295	275	290	280								
10								275	355	350	325	290	290	290	290	280									
11									285	280	285	290	280	280	300	295	275								
12								305	305	305	290	290	345	290	295	295	255								
13									280	295	270	275	295	290	295	275									
14									280	285	280	300	330	315	320	295	280								
15									290	310	300	280	305	350	295	280	255								
16									295	260	285	300	280	300	320	295	265								
17									295	290	285	350	300	325	300	300	275								
18								310	300	275	255	305	305	300	285	315	290								
19								260	250	255	310	285	305	300	305	310	300								
20								310	400	A	330	330	350	325	275	300	275	260							
21									350	500	520	415	475	420	340	375	300	280							
22								A	A	A	A	390	340	305	295	295	290								
23								280	395	380	395	400	370	350	290	305	A	270							
24									295	320	R	350	350	330	325	265	255								
25									275	325	315	270	450	325	325	420	340	300							
26									355	305	A	290	305	355	340	315	275	285	260						
27								470	500	560	A	A	A	R	420	A	R	405	385	300					
28									A	580	A	A	A	440	325	320	295	350	350						
29								420	R	R	A	A	A	A	480	365	345	285	270						
30									300	325	300	A	340	375	410	400	345	A	335	285					
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	3	10	26	23	25	27	29	29	29	29	26	8							
MED						470	420	308	298	285	290	295	305	300	295	295	275	275							
UQ						460	325	325	308	310	350	350	325	320	300	290	292								
LQ						360	275	285	275	275	282	295	290	285	275	255	265								

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H'F2 (KM)

IONOSPHERIC DATA

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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	250	260	260	255	255	280	240	235	220	210	210	200	200	200	220	215	200	235	235	250	255	245	250	300																									
2	300	285	305	290	255	200	205	235 ^H	225	235	200	210	200	200	210	235	220	225	225	225	235	215	275	290																									
3	300	285	300 ^A	280	245	250	225	225	220	A	A	200 ^H	230	210	210	210	A	240	225	230	220	290 ^A	A	300																									
4	265	270	255	250	230	270	235	225	210	A	230	200	205	225 ^A	205	230	235	250	A	250	225	245	265	255																									
5	290	275	275	250	240	230	240	245	225	225	200	195 ^H	200	195	210 ^H	230	240	240	230	225	230	250	275	275																									
6	270	255	255	245	255	240	235	235	225	205	200 ^H	200	225	200	205 ^H	240	230	245	245	245 ^A	240	245	245	270																									
7	290	255	255	255	225	235	240	225	210	225	200	200	195	205	225	230	245	245	240	230	220	225	255	290																									
8	290	280	255	250	295	A	240	230 ^H	250	205	200	210	A	A	A	A	A	245	230	235	245	285	270	270																									
9	270	260	275	255	240	235	235	235	205	200	215	205 ^H	200	195 ^H	195	200	240	250	250	245	245	245	275	275																									
10	300	285	300	255	220 ^H	255	245	200	245	A	235	190 ^H	245	A	255	255	235	255	255	245	280	255	220	255																									
11	295	295	285	265	280	245	235	225	215	220	A	195	205	225	200 ^H	225	205 ^H	245	235	235	245	245	240	295																									
12	275	250	255	275	295	250	245	245	240	230	225 ^A	200	190	195 ^H	245	235	A	250	245	225	220	245	245	265																									
13	285	285	265	250	245	225	225	205 ^H	230	225	215	200	200	195 ^H	205	225	240	245	245	245	240	240	255	245																									
14	245	250	250	275	275	245	245	240	210	210	205	200	205	195	225	205	240	235	255	245	230	230	245	280																									
15	255	270	250	230	230	235	245	250	A	230	230 ^A	215	225	200	200	245	240	235	245	225	240	250	230	250																									
16	260	270	275	250	250	240	235	230	225	215	200	195	200	220	210	230	250	225 ^H	235	230	230	250	260	265																									
17	270	260	250	250	260	230	230	225 ^H	230	210	210	200	210	200	200	200	240	240 ^H	230	245	250	235	225	250																									
18	250	280	275	250	215	215	220	235	220	210	200 ^H	200	200	210	210	210	230	245 ^H	245	230	230	225	240	245																									
19	255	270	275	250	255	240	240	225	225	210	205	200	200	210	210	230	220	240	250	240	240	240	245	260																									
20	265	265	265	250	275	250	235	220	205	A	210	245	245	A	265	250	260	230	245	315 ^A	290	280	250	310																									
21	280	290	255	250	220	240	240	A	250	250 ^A	A	205	260	A	250	225	245	240	260 ^H	235	250	275	300	A																									
22	A	A	A	A	A	270	A	A	A	A	A	220	250 ^A	215	250	225	245	250	250	260	250	260	275	295																									
23	285	300	295	275	210	225	210	A	215	220	240	200	200	205	A	250	A	250	A	275	255	255	A	255																									
24	290	300	315	290	275	255	245	240 ^H	220	205	205	215	200 ^H	200	235	240	240	A	265 ^A	265	240	215	255	275																									
25	250	275	280	270	255	240	240	250	225	210	230	205	200	230	215	205	250	A	265	250	245	250	255	270																									
26	295	260	270	245	265	265	240	230	240	A	225	205	200	A	210	210	210	250	245	230	250	255	255	255																									
27	285	280	275	280	290	275	250	A	A	A	A	220	210	A	245	215	215	250	255	250	255 ^A	290	290	325																									
28	300	315	280	300	280	250	250	A	A	A	A	A	A	A	235	250	215	225	250	275	305	250	280	300																									
29	315	320	335	280	320	300	240	220	240	A	A	A	A	A	A	240	235	225	245	265 ^A	250 ^A	260	275	A	290																								
30	305	300	275	270	290	235	A	A	205	A	200	200	200	200	210	A	220	245	260	245	250	265	300	335																									
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	29	29	29	29	29	29	28	24	26	20	23	28	27	22	28	28	26	28	28	30	30	30	27	29																									
MED	285	275	275	255	255	240	240	230	225	212	210	200	200	200	210	230	238	245	245	245	245	250	255	275																									
UQ	295	285	280	275	275	255	242	238	230	225	225	208	218	210	238	238	240	250	255	250	250	260	275	295																									
LQ	265	260	255	250	240	235	235	225	215	210	200	200	200	200	208	212	220	238	235	230	230	240	245	255																									

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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	WAKKANAI				Lat. 45° 23.5' N				Long. 141° 41.2' E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation												
	Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							130	105	105	110	110	110	105	110	105	110	110	115							S
2							120	125 ^A	105	105	110	110	110	110	110	110	110	115							A
3							120	105	105	110	110	110	110	110	110	115		A	A						S
4							125	110	110	110	110	110	110		A	105		A	A	A					E
5							125	110	110	105	105	105	105		A	A		110	115	120					E
6							130	115	110	110	110	110	110	110	110	110	110	110	115						S
7							130	110	110	110	105	105	105	115	110	110	110	110	120						S
8							130	110	110	105	110	105	105	110	115	105		A	A						S
9							120	110	105	105	110	120	110	110	110	110	110	120	125						S
10							125	110	105	105	105	110	110	105		A		110	115	125					S
11						S	120	110	110	110	110	105	105	105	110	110	110		A	A					A
12						S	125	115	110	110	110	110		A	125 ^A	A	105	110	130						A
13						S	120	110	110	110	105	115	110	105	110	110	110	110	120						S
14						S	130	110	105	110	110	105	105	105	105	110	115	120							S
15						S	125	110	110	110	110	105	105	105	105	110	110	105	130						
16						S	115	110	105	105	105	105	110	110		A	105	115	115	130					
17							125	120	110	110	110	110	110	110	105	110	110	110	110	130					
18						S	110	105	105	110	105	105	105	110	110	105	110	110							S
19						S	115	110	105	105	110	110	105	105	105	110	105	110	125						
20							130	110	110	105	105	105	105	105	105	110	110	105	110						A
21						S	115	105	105	105	105	105	105	110	110	110	110	110	130						
22						A	115	115	110	105	105	105	105	115	110	110	110	110	115	130					
23						S	160	120	110	110	105	105	105	110	110	110	110	110	115	125					S
24						S	145	115	110	110	105	110	110	110	120 ^A	125	105	115	110						A
25						S	115	110	110	105	105	110	110	110	110	110	110	110							S
26						S	110	110	110	105	105	105	110		A	105	110	110	110						S
27						S	120	110	110	110	110	105	105	110	110	110		A	115						S
28						S	120	115	110	110	110	110	105	110	105	110		A	110	140					
29							125	115	115	110	110	110	110	105	110	115	110	110	115	125					
30						S	115	110	105	105	105	110	105	105		A	A	105		A	A				
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						5	30	30	30	30	30	30	29	27	25	28	25	25	9						
MED						130	120	110	110	108	110	110	105	110	110	110	110	115	130						
UQ						S	145	125	110	110	110	110	110	110	110	110	110	120	130						
LQ							125	115	110	105	105	105	105	105	105	110	110	110	125						

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APR. 1985

H^oE (KM)

IONOSPHERIC DATA

APR. 1985

H^oES (KM)

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

Station	WAKKANAI																							Lat. 45 23 S 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	S	S	E	100	S	G	G	G	G	G	G	G	G	G	G	G	S	100	100	S	S	105																										
2	110	105	105	S	S	E	G	105	G	135	120	115	115	G	G	G	G	G	100	100	S	S	S	120																									
3	110	105	105	105	110	S	G	G	G	115	110	115	110	110	G	G	100	100	115	115	S	110	110	105																									
4	S	S	S	S	S	S	G	G	115	110	110	110	110	105	105	100	105	100	100	100	100	S	105	S																									
5	105	105	105	S	110	110	G	145	G	G	G	120	105	105	105	G	G	G	105	120	105	S	100	S																									
6	S	S	S	S	S	S	G	140	125	115	110	G	G	G	G	G	G	130	125	115	E	S	S	S																									
7	S	S	S	E	S	S	G	G	G	120	G	G	G	105	105	G	G	130	120	115	S	S	S	S																									
8	S	S	S	S	105	105	145	G	G	G	110	110	105	110	110	110	105	110	S	125	125	110	110	S																									
9	S	S	S	S	S	S	145	G	G	G	105	105	130	G	G	G	G	G	105	S	S	S	S	S																									
10	S	S	S	S	S	S	G	G	G	125	G	G	110	105	100	150	G	140	130	125	125	110	S	S																									
11	S	S	S	E	S	S	G	G	G	110	115	105	105	G	105	100	100	100	100	S	S	S	S	S																									
12	S	S	S	S	S	S	145	130	G	120	115	110	105	105	105	G	130	125	125	115	115	S	S	S																									
13	S	S	S	S	S	S	G	G	G	125	G	G	G	120	G	135	G	G	135	125	S	S	S	S																									
14	S	S	S	S	S	S	150	G	G	G	G	G	G	G	G	G	G	G	130	125	S	110	120	S																									
15	S	S	S	S	110	S	G	G	125	110	110	110	110	G	G	G	150	130	G	S	S	120	S	S																									
16	S	S	105	105	105	105	G	G	G	G	G	G	G	G	105	G	105	G	G	100	S	S	S	S																									
17	S	E	E	S	E	G	G	G	G	115	G	G	G	G	G	G	G	G	G	S	S	110	105	S																									
18	S	S	S	S	E	S	G	G	G	G	G	G	G	G	G	G	G	G	S	S	S	S	S	S																									
19	S	S	S	S	S	S	G	G	G	G	G	G	G	G	G	G	G	G	G	120	S	S	S	S																									
20	100	S	S	100	S	G	G	G	115	105	105	G	G	175	155	145	130	G	100	120	115	120	115	105																									
21	105	S	E	S	E	140	125	120	120	125	120	G	105	130	G	G	G	G	G	S	S	110	115	110																									
22	120	120	115	110	110	110	130	125	120	115	110	110	110	G	G	G	G	135	130	115	120	110	105	105																									
23	105	110	S	E	E	G	G	120	115	115	110	110	115	G	135	145	125	120	115	110	115	110	110	S																									
24	S	105	105	S	100	G	G	125	G	125	G	G	G	100	G	G	135	115	110	110	S	S	S	E																									
25	S	100	100	E	S	G	150	150	G	125	115	115	G	G	G	G	135	125	120	S	120	130	110	110																									
26	110	E	S	S	S	S	G	G	G	120	120	110	G	110	G	G	G	120	125	115	S	115	110	S																									
27	145	125	105	125	S	150	130	125	115	115	115	115	115	115	G	G	110	G	G	120	120	120	S	115																									
28	110	105	105	S	105	165	150	125	130	125	110	110	120	115	115	115	105	110	G	E	E	S	S	115																									
29	E	E	S	E	S	130	G	G	G	110	110	110	110	110	115	G	G	130	120	115	115	110	110	S																									
30	105	125	110	105	S	150	130	130	G	115	G	G	G	G	100	110	G	100	125	100	115	S	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	11	10	10	6	9	9	10	12	9	22	18	16	16	15	13	9	13	17	20	22	13	14	13	9																									
MED	110	105	105	105	105	130	145	125	120	115	110	110	110	110	105	115	110	120	120	115	115	110	110	110																									
UQ	110	120	105	110	110	150	150	135	125	125	115	115	115	115	115	145	130	130	125	120	120	120	110	115																									
LQ	105	105	105	105	105	110	130	122	115	115	110	110	105	105	105	110	105	110	105	110	115	110	105	105																									

APR. 1985

H^oES (KM)

IONOSPHERIC DATA

APR. 1985 TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																								Lat. 45° 23' 5" N	Long. 141° 41' 2" E	Sweep 1	MHz to 25	MHz in 24	sec in automatic operation
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1					F ₁															F ₂	F ₂			F ₂						
2	F ₂	F ₂	F ₂					L ₁		C ₁	C ₁	C ₁	C ₁						L ₁	F ₁				F ₁						
3	F ₂	F ₂	F ₄	F ₂	F ₂					C ₂	C ₄	C ₁	C ₁	C ₂			L ₄	L ₂	C ₁	F ₁		F ₄	F ₆	F ₄						
4									C ₂	C ₄	C ₃	C ₃	C ₃	L ₄	C ₁	L ₄	L ₃	L ₄	L ₅	F ₃	F ₂			F ₃						
5	F ₂	F ₂	F ₂		F ₂	F ₁		H ₂				C ₁	C ₂	L ₃	L ₃				L ₁	FF ₂₂	F ₂			F ₁						
6								C ₃	C ₂	C ₂	C ₂							C ₃	C ₃	F ₇										
7									C ₂					L ₂	L ₂			C ₃	C ₃	F ₁										
8					F ₃	F ₄	H ₁				C ₂	C ₂	C ₃	C ₃	C ₃	C ₃	L ₆	L ₂		F ₄	FF ₁₂	F ₃	F ₂							
9							H ₃				L ₂	L ₂	C ₁						L ₁											
10										C ₃			C ₃	C ₂	L ₂	H ₂		C ₃	C ₅	F ₃	F ₂	F ₄								
11										C ₃	C ₃	C ₂	C ₃		L ₂	L ₃	L ₂	L ₁	L ₃											
12							C ₃	C ₂		C ₃	C ₂	C ₂	L ₂	L ₂	L ₂		CL ₅₂	CL ₆₃	CL ₅₂	F ₅	FF ₁₁									
13										C ₂				C ₁		C ₁				C ₂	F ₁									
14							C ₂													C ₁	F ₁		FF ₁₁	F ₂						
15					F ₁				C ₃	C ₁	C ₂	C ₂	C ₁				H ₁	C ₁				F ₁		F ₁						
16			F ₂	F ₁	F ₁	L ₁									L ₂		L ₂			F ₁										
17										C ₁													F ₁	F ₁						
18																														
19																					F ₁									
20	F ₁			F ₁					C ₁	C ₂	C ₂			H ₁	H ₁	H ₁	C ₁		L ₂	FF ₂₂	FF ₂₁	F ₂	F ₃	F ₂						
21	F ₂					C ₁	C ₂	C ₂	C ₂	C ₂	C ₂		C ₁	C ₂								F ₂	F ₂	F ₆						
22	F ₄	F ₆	F ₅	F ₆	F ₃	L ₂	C ₄	C ₃	C ₃	C ₃	C ₄	C ₁	C ₂				C ₂	C ₁	F ₄	F ₁	F ₃	F ₂	F ₃							
23	F ₂	F ₁						C ₂	C ₂	C ₂	C ₂	C ₂	C ₁		C ₂	HL ₂₁	C ₃	C ₂	C ₄	F ₃	F ₁	F ₄	F ₃							
24		F ₂	F ₂		F ₂			C ₁		C ₁				L ₁			C ₁	C ₄	L ₄	FF ₃₁										
25		F ₁	F ₂				H ₁	H ₁		C ₁	C ₁	C ₁					C ₁	C ₂	C ₂		F ₁	F ₁	F ₁	F ₂						
26	F ₁								C ₂	C ₁	C ₁			CL ₂₃				C ₂	C ₂	F ₁		F ₂	F ₂							
27	F ₁	F ₁	F ₂	F ₁		C ₁	C ₂	C ₂	C ₄	C ₃	C ₂	C ₁	C ₁	C ₂			L ₁			F ₁	F ₃	F ₂		F ₂						
28	F ₂	F ₂	F ₂		F ₂	H ₁	H ₁	C ₂	C ₁	C ₂	C ₃	C ₃	C ₂	C ₂	C ₂	C ₂	L ₁	C ₂						F ₁						
29						C ₁				C ₃	C ₄	C ₂	C ₃	C ₂	C ₃			C ₂	C ₃	F ₄	F ₂	F ₂	F ₃							
30	F ₂	F ₁	F ₁	F ₂		C ₁	C ₃	C ₂		C ₂					L ₂	CL ₄₁		L ₂	CL ₂₁	F ₁	F ₂									
31																														

APR. 1985 TYPES OF ES

IONOSPHERIC DATA

APR. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	Time (00 to 23)																								
	00	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 48	X 47	X 45	X 44	X 42	X 40														X 68	X 58	X 54	X 52	X 50	
2	X 50	X 49	X 46	X 43	X 46	X 49														X 58	X 50	X 47	X 44	X 44	
3	X 43	X 43	X 42	X 43	X 38	X 38														X 74	X 52	X 38	X 42	X 44	
4	X 44	X 42	X 42	X 43	X 40	X 39														X 66	X 61	X 46	X 45	X 48	
5	X 46	X 46	X 44	X 43	X 40	X 40														X 69	X 47	X 40	X 41	X 41	
6	X 42	X 42	X 39	X 38	X 35	X 39														X 72	X 57	X 46	X 46	S 45	
7	X 45	X 44	X 43	X 41	X 39	X 38														X 77	X 64	X 43	X 38	X 40	
8	X 40	X 40	48	50	43	48														X 59	51	44	46	51	
9	50	53	50	47	41	42														X 80	X 68	X 60	X 59	X 56	
10	X 55	X 55	X 49	X 48	X 58	X 36														X 77	X 61	X 52	53	49	
11	44	44	43	X 39	40															X 71	X 59	X 51	X 43	X 40	
12	X 41	47	X 42	X 39	X 39															X 67	X 53	50	47	47	
13	48	41	40	39	32															X 72	X 65	X 56	X 50	X 49	
14	X 48	X 42	X 41	X 40	X 39	43														X 75	X 71	X 47	48	50	
15	47	51	50	43	40	49														X 71	X 67	X 53	X 46	X 46	
16	47	X 43	X 41	X 39	X 39															X 64	X 59	X 52	X 50	51	
17	X 50	X 48	X 44	X 40	X 39															X 66	X 63	X 63	X 53	X 46	
18	X 46	X 43	X 42	X 41	X 36															X 82	X 74	X 59	X 56	X 51	
19	X 48	X 46	X 43	X 41	X 41															X 95	X 78	X 65	X 62	X 57	
20	X 57	X 54	X 54	X 42	X 42															X 63	X 68	X 66	X 58	X 56	
21	X 56	X 54	X 58	X 49	X 40															X 87	X 72	X 63	64	57	
22	A	A	X 39	X 39	33															X 71	X 68	X 62	X 48	53	
23	49	48	49	47	X 35															X 62	X 61	X 52	X 45	X 39	
24	X 37	X 37	X 36	X 37	37															X 83	X 75	S 51	X 47	S 48	
25	X 48	X 45	X 43	X 41	X 41															X 70	X 68	X 61	X 50	51	
26	51	53	50	49	X 41															X 73	X 58	X 58	X 56	X 50	
27	X 45	X 44	X 45	X 42	X 42															X 51	X 52	X 39	A	S	
28	42	39	40	39	38															X 71	X 68	X 68	X 63	X 57	
29	X 53	X 49	X 39	X 44	X 41															X 62	X 45	52	A	49	
30	43	39	39	38	39															X 67	X 59	X 52	52	50	
31																									
CNT	29	29	30	30	30	12															30	30	30	28	29
MED	X 47	X 45	X 43	X 42	X 40	X 40															X 71	X 61	X 52	X 49	X 49
UQ	X 50	X 49	X 48	X 44	X 41	46															X 75	X 68	X 60	X 54	51
LQ	X 44	X 42	X 41	X 39	X 38	X 38															X 66	X 57	X 47	X 46	X 46

APR. 1985

FXI (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station	AKITA				Lat. 39° 43' 5" N				Long. 140° 08' 0" E				Sweep 1 MHz to 25 MHz in 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	42	41	39	38	36	34	55	63	61	64	72	75	66	63	64	65	62	63	65	62	52	48	46	44	
2	44	43	40	37	40	43	42	47	62	71	79	83	68	68	70	65	72	76	59	52	44	41	38	38	
3	37	37	36	37	32	32	54	53	65	63	63	75	77	69	66	68	67	63	72	68	46	32	36	38	
4	38	36	36	37	34	33	51	59	63	62	64	68	66	71	69	72	60	64	65	60	55	40	39	42	
5	40	40	38	37	34	34	51	51	60	73	77	66	67	60	62	66	61	64	71	63	41	34	35	35	
6	36	36	33	32	29	33	50	53	62	68	64	62	67	76	63	66	61	57	68	66	51	40	40	S 39	
7	39	38	37	35	33	32	42	51	49	61	71	71	68	66	70	64	64	63	71	71	58	37	32	34	
8	34	34	F 35	F	F	F 39	47	51	55	A	60	62	61	62	66	60	66	61	58	53	F	F 36	F	F	
9	F	F	F	F	F	F 32	50	56	60	63	71	69	72	63	61	63	62	71	77	74	62	54	53	50	
10	49	49	43	42	52	30	44	46	54	64	76	75	80	63	62	64	56	56	65	71	55	46	F	F	
11	F	F	F 35	33	F 32	37	52	52	56	59	78	72	81	77	73	64	69	75	66	65	53	45	37	34	
12	35	F	36	33	33	33	54	64	H 62	72	66	62	61	68	U 65	69	71	70	U 65	61	47	F	F	F	
13	F	F 32	F	F 32	F 24	32	46	50	58	58	61	67	64	67	71	56	52	56	58	66	59	50	44	43	
14	42	36	35	34	33	F 35	H 49	54	53	63	58	66	62	56	61	66	67	68	65	69	65	41	F 39	F 40	
15	F	F	F	F	F	F	54	57	64	61	57	A	62	66	65	65	68	61	59	65	61	47	40	40	
16	F	37	35	33	33	38	50	56	53	59	59	56	58	66	66	67	68	65	65	58	53	46	44	F 43	
17	44	42	38	34	33	40	53	52	57	64	65	62	65	62	60	64	66	66	64	60	57	57	47	40	
18	40	37	36	35	30	36	44	47	66	69	65	61	64	66	66	56	61	68	68	76	68	53	50	45	
19	42	40	37	35	35	39	51	52	56	54	57	57	58	62	62	56	57	63	80	89	72	59	56	51	
20	51	48	48	36	36	44	43	46	A	50	62	55	57	62	75	65	66	65	67	57	62	60	52	50	
21	50	48	52	43	34	43	49	47	47	43	47	50	51	56	67	65	78	81	82	81	66	57	F	F 50	
22	A	A	33	33	F 24	33	36	41	52	64	61	61	63	56	57	57	57	56	58	65	62	56	42	F	
23	F	F	F	F	29	34	40	47	46	47	53	A	53	59	67	63	55	57	52	56	55	46	39	33	
24	31	31	30	31	F	35	50	57	54	56	56	S 56	62	61	70	76	66	54	65	77	69	S 45	41	S 42	
25	42	39	37	35	35	44	60	H 56	58	63	57	55	63	62	58	H 59	59	65	60	64	62	55	44	F	
26	F 42	F 39	F 39	F	35	39	50	54	59	59	62	66	65	65	66	79	74	72	75	67	52	52	50	44	
27	39	38	39	36	36	34	33	39	A	A	C	A	A	46	44	48	55	56	60	45	46	33	A	I 34	
28	F	F 32	F 32	F 32	F 30	37	39	41	E 38	G	45	47	50	52	66	69	60	53	49	59	65	62	62	57	51
29	47	43	33	38	35	36	36	E 34	G 37	A	49	52	A	71	H 73	65	76	65	58	56	39	F	A	F	
30	F 34	F 31	F	F	F	33	44	48	49	A	A	51	52	54	53	55	54	57	60	61	53	46	F 44	F 41	
31																									
CNT	22	23	25	24	25	29	30	30	28	26	28	27	28	30	30	30	30	30	30	30	29	28	24	24	
MED	41	38	36	35	33	35	50	52	56	62	62	62	64	63	66	64	63	64	65	65	55	46	43	42	
UQ	44	42	39	37	35	39	51	56	62	64	68	68	67	67	69	66	68	68	68	69	62	54	48	44	
LQ	37	36	35	33	32	33	43	47	52	58	57	56	60	61	62	60	57	57	59	60	52	40	39	38	

APR. 1985

FOF2 (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985

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 24 sec in automatic operation														
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	420	430	430	440	440	430	420	L							
2									L	430	430	430	430	450	420	420	L							
3								L	420	L	L	440	L	440	430	A	L	A						
4								L	L	440	440	440	440	430	430	410	L							
5								L	430	430	440	440	420	430	L	L								
6								L	400	420	430	500	430	430	420	400	L							
7								L	420	420	440	430	440	430	410	L								
8								L	L	A	440	460	440	430	420	L	410							
9								L	430	440	430	410	430	L	420	L	L							
10								L	420	420	420	A	A	420	420	L	L	A						
11								L	L	430	430	430	440	440	430	410	L							
12								L	410	420	430	L	460	430	420	L	L	L						
13								L	430	430	430	440	440	430	410	L	L							
14								L	410	430	430	440	440	430	430	410	380	L						
15								L	390	420	A	A	A	440	430	410	L	L						
16								L	410	420	430	430	430	430	420	410	380	L						
17								L	410	430	430	440	440	440	440	420	380	L	L					
18								L	410	420	430	440	440	440	430	420	390	L						
19								L	400	430	430	440	440	430	420	420	L	L						
20								L	A	420	430	L	430	430	430	410	L	L						
21								L	420	A	A	420	430	420	A	420	380	L						
22								L	L	A	A	440	430	440	440	L	L	A						
23								L	A	430	420	A	440	430	430	410	L	L						
24								L	410	L	430	A	440	440	420	420	400	L	A					
25								L	420	440	L	L	440	440	440	L	L	L						
26								L	380	420	430	450	A	440	440	440	420	L	L					
27								L	350	A	A	C	A	A	420	400	410	370	L					
28								L	380	390	410	420	420	A	A	A	A	A						
29								L	340	370	A	420	420	A	A	430	410	A	A					
30								L	380	410	A	A	430	440	430	420	390	L						
31								L	380	410	A	A	430	440	430	420	390	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	17	22	23	21	25	28	27	22	9							
MED								365	410	430	430	440	440	430	430	410	380							
UQ								380	420	430	430	440	440	440	430	420	390							
LQ								345	400	420	430	430	430	430	420	410	380							

APR. 1985

FOF1 (0.01 MHz)

IONOSPHERIC DATA

APR. 1985

FOE (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station **AKITA** Lat. **39° 43' 5" N** Long. **140° 08' 0" E** Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	230	275	300	A	330	335	A	310	285	245	205	S					
2								200	225	275	305	325	A	335	320	310	290	250	210	S				
3								205	230	275	A	A	325	A	325	310	285	A	A	S				
4							A	235	A	A	A	A	A	A	305	A	250	215	S					
5							S	225	265	A	A	A	325	325	305	285	255	205	S					
6							S	235	270	300	315	325	325	320	310	280	255	210	S					
7								180	230	280	300	A	A	A	320	310	290	255	210	S				
8								185	A	A	A	A	A	A	A	A	A	A	S					
9								180	240	290	A	A	325	325	325	315	290	255	220	S				
10								A	A	A	A	A	A	A	330	330	300	260	210	S				
11							S	190	240	265	A	A	A	A	A	305	280	255	225	S				
12							S	A	A	A	A	A	A	A	A	285	A	A	S					
13							S	210	255	A	300	310	A	330	320	315	300	A	A	S				
14							S	195	255	285	305	310	320	330	320	305	290	260	215	S				
15							S	190	250	290	305	A	A	A	A	A	A	235	210	S				
16							S	195	250	280	300	A	335	A	320	310	290	255	215	S				
17							S	185	250	285	290	A	A	330	330	320	290	260	220	S				
18							S	210	240	290	A	A	325	330	325	315	295	260	220	S				
19							S	200	245	280	310	320	330	340	330	320	A	265	210	S				
20							S	200	240	A	A	A	A	A	315	305	290	255	210	S				
21							S	200	245	290	A	A	310	315	310	300	280	260	210	S				
22							S	180	245	A	A	A	A	UR	330	R	320	310	295	260	215	S		
23							S	195	240	A	A	A	A	330	320	310	295	260	220	S				
24							S	215	255	295	A	A	B	A	A	330	305	275	235	S				
25							S	210	255	A	A	A	335	340	A	325	300	265	240	S				
26							S	220	255	295	310	330	335	A	A	315	305	270	230	S				
27							S	200	255	295	A	C	A	A	A	A	A	A	A	S				
28							S	205	260	290	305	320	330	335	330	305	A	A	A	S				
29							S	205	255	A	305	315	325	A	A	A	295	A	A	S				
30							S	205	260	A	A	A	A	335	A	A	A	270	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							24	27	19	13	8	13	16	18	24	23	23	22						
MED							200	245	285	305	318	325	330	320	310	290	260	215						
UQ							205	255	290	305	322	330	335	325	315	295	260	220						
LQ							190	238	275	300	312	325	328	320	305	285	255	210						

The Radio Research Laboratories, Japan

APR. 1985

FOE (0.01 MHz)

IONOSPHERIC DATA

APR. 1985

FOES (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station		AKITA										Lat. 39° 43' 5" N		Long. 140° 08' 0" E		Sweep 1 MHz to 25 MHz in 24 sec in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1		E 15	E 15	E 15	E 15	E 15	E 15	E 16	30	G	G	J A 36	G	G	37	G	32	G	E 16	J A 37	E 16	E 15	E 15	E 15				
2		E 16	J A 29	J A 24	J A 19	E 15	E 15	G	G	G	G	G	40	42	G	G	G	G	30	J A 29	J A 21	J A 20	E 15	E 15	E 15			
3		E 15	J A 18	J A 21	J A 23	E 15	E 16	G	G	G	36	35	G	35	G	J A 42	J A 37	J A 49	J A 51	J A 51	J A 40	J A 34	J A 34	J A 33				
4		J A 52	J A 34	E 16	E 15	E 15	E 16	25	G	J A 41	J A 41	35	J A 36	J A 37	J A 38	G	30	G	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	24	29	32	36	36	36	G	G	J A 50	32	32	28	E 17	J A 24	J A 18	E 16	E 16	E 15			
6		E 15	E 15	E 15	J A 18	E 15	E 15	22	32	30	35	G	G	G	G	G	G	32	26	J A 31	J A 26	J A 33	J A 29	E 16	E 15			
7		E 15	E 15	E 15	E 15	E 15	E 15	G	30	32	35	J A 36	J A 44	J A 34	G	G	32	31	J A 37	J A 25	J A 50	J A 23	E 15	E 15	E 15			
8		E 15	J A 24	J A 20	J A 22	J A 21	J A 18	G	J A 26	35	J A 65	J A 41	J A 45	40	J A 49	J A 45	J A 50	J A 54	J A 36	J A 32	J A 38	J A 32	E 16	J A 25	J A 20			
9		E 16	E 15	J A 21	J A 24	J A 21	E 15	29	32	G	J A 50	J A 41	G	38	G	G	G	G	25	21	E 16	J A 20	J A 19	E 16	E 16			
10		E 16	E 15	E 15	E 15	E 15	E 16	J A 32	J A 32	J A 41	J A 44	J A 44	J A 64	J A 58	G	G	35	32	J A 42	J A 35	J A 30	J A 31	J A 47	J A 40	J A 21			
11		J A 20	J A 19	E 15	E 16	E 15	E 16	27	J A 36	J A 40	J A 42	J A 54	J A 46	J A 41	J A 36	G	G	G	27	20	J A 20	E 16	J A 21	J A 21	J A 19			
12		E 16	E 15	E 15	E 15	E 15	E 15	25	J A 34	J A 38	J A 44	J A 46	J A 50	33	32	J A 44	32	31	28	J A 19	J A 24	J A 37	J A 39	E 16	E 16			
13		E 16	E 15	E 15	E 15	E 15	E 16	34	38	35	36	33	34	G	G	G	G	30	24	21	E 16	E 16	E 15	E 15	E 15			
14		E 16	E 15	E 15	E 15	E 15	E 15	G	29	35	35	34	G	G	G	G	G	G	24	J A 20	E 15	E 15	E 15	E 15	J A 18			
15		E 16	E 15	E 15	E 15	E 15	E 16	26	27	32	36	J A 51	J A 61	J A 58	J A 70	J A 36	J A 31	32	31	E 16	J A 24	E 16	E 16	E 16	E 15			
16		E 15	E 15	E 15	E 15	E 15	E 16	27	31	34	37	35	G	37	G	G	G	G	G	E 16	E 16	E 15	E 16	E 15	E 15			
17		E 15	E 15	E 15	E 15	E 15	E 16	G	G	31	34	35	J A 36	G	G	G	G	G	G	E 17	E 16	E 16	E 15	E 15	J A 20			
18		E 16	E 15	E 15	E 15	E 15	E 16	26	G	36	36	J A 41	G	G	G	G	G	G	G	E 17	E 16	E 15	E 16	E 15	E 15			
19		E 15	E 15	E 15	E 15	E 15	E 16	G	G	J A 41	G	G	G	G	G	34	31	G	27	J A 26	E 16	E 16	E 15	E 15	E 16			
20		E 15	E 15	E 15	E 15	E 15	E 15	G	G	J A 51	35	J A 36	J A 41	J A 38	G	37	32	35	27	J A 25	J A 24	J A 24	J A 27	E 15	E 15			
21		E 15	E 15	E 15	E 15	E 15	20	31	J A 36	G	J A 39	J A 66	G	37	39	J A 44	G	G	G	E 16	E 16	E 16	J A 44	J A 31	J A 40			
22		J A 50	J A 42	J A 21	E 15	E 15	20	G	27	37	J A 54	J A 74	J A 66	G	G	G	G	G	J A 35	J A 41	J A 27	J A 27	J A 26	E 16	E 16			
23		J A 21	E 16	J A 21	J A 21	J A 21	E 16	G	31	J A 46	35	37	J A 74	G	G	36	35	38	31	J A 36	J A 83	J A 76	J A 50	J A 29	J A 24			
24		J A 20	J A 31	J A 20	J A 18	J A 18	J A 21	G	30	38	36	J A 54	J A 47	J A 62	J A 41	G	35	34	J A 42	J A 29	J A 25	J A 36	J A 65	E 15	E 16			
25		E 16	E 15	E 15	E 15	E 15	J A 24	J A 50	30	J A 40	J A 35	37	G	G	J A 36	G	40	37	32	J A 40	J A 23	J A 30	J A 33	E 15	J A 24			
26		E 16	J A 19	E 16	J A 18	E 15	E 16	26	G	G	36	J A 46	J A 49	44	J A 42	38	G	G	29	18	J A 23	J A 87	J A 44	J A 24	E 15			
27		E 16	E 15	E 15	J A 21	J A 21	E 16	27	34	J A 33	J A 52	C	J A 85	J A 62	J A 46	J A 46	J A 37	J A 36	J A 25	J A 21	J A 24	E 16	J A 29	J A 43	J A 30			
28		J A 24	J A 22	J A 36	J A 31	J A 20	20	26	G	38	37	36	G	40	J A 50	J A 61	J A 72	J A 70	J A 46	E 17	E 16	E 15	E 15	E 15	E 16			
29		J A 25	E 16	E 15	E 15	E 15	E 16	G	27	35	J A 50	G	J A 44	J A 57	J A 76	J A 107	J A 92	J A 47	J A 54	J A 77	J A 71	J A 87	J A 104	J A 86	J A 50			
30		E 16	E 15	E 15	J A 50	J A 40	E 17	G	G	35	J A 95	J A 86	J A 80	G	J A 75	38	37	35	J A 36	J A 21	E 16	J A 32	J A 18	E 15	E 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	30	30	30	30	30	30	30	30	30	30	30	30	30			
MED		E 16	E 15	E 15	E 15	E 15	E 16	23	29	35	36	J A 36	J A 38	36	G	G	32	31	28	J A 21	J A 24	J A 20	J A 18	E 16	E 16			
UQ		E 16	J A 19	J A 20	J A 19	E 15	E 16	27	32	J A 38	J A 44	J A 46	J A 49	J A 41	J A 41	J A 38	35	35	J A 36	J A 31	J A 27	J A 32	J A 34	J A 24	J A 20			
LQ		E 15	E 15	E 15	E 15	E 15	E 15	G	G	31	35	35	G	G	G	G	G	G	24	E 17	E 16	E 16	E 15	E 15	E 15			

APR. 1985

FOES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FBES (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station		AKITA							Lat.	39° 43' 5" N		Long.	140° 08' 0" E		Sweep 1 MHz to 25 MHz in 24 sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	28	G	G	35	G	G	35	G	32	G	G	E S 16	35	E S 15	E S 15	E S 15	
2	E S 16	E	20	E	E S 15	E S 15	G	G	G	G	G	40	40	G	G	G	G	25	20	19	E	E S 15	E S 15	E S 15	
3	E S 15	E	18	E	E S 15	E S 16	G	G	G	G	34	34	G	G	G	40	36	49	48	25	20	E	28	25	
4	28	E	E S 16	E S 15	E S 15	E S 16	23	G	37	37	35	34	35	35	G	30	G	20	G	E S 16	E S 15	E S 15	E S 15	E S 15	
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	22	28	31	33	34	35	G	G	G	32	30	25	E S 17	22	E	E S 16	E S 16	E S 15	
6	E S 15	E S 15	E S 15	E	E S 15	E S 15	22	30	30	32	G	G	G	G	G	G	29	25	31	22	30	E	E S 16	E S 15	
7	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	G	28	31	35	35	38	34	G	G	32	27	28	24	29	E	E S 15	E S 15	E S 15	
8	E S 15	E	E	E	E	E	G	26	33	A A 65	40	44	38	41	38	38	38	32	28	32	E	E S 16	E	E	
9	E S 16	E S 15	E	E	E	E S 15	27	29	G	33	34	G	36	G	G	G	G	25	20	E S 16	19	E	E S 16	E S 16	
10	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	23	30	30	36	37	52	43	G	G	34	29	42	35	30	26	32	30	E	
11	E	E	E S 15	E S 16	E S 15	E S 16	21	29	37	36	35	36	35	34	G	G	G	19	G	E	E S 16	E	E	E	
12	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	24	32	35	41	41	40	33	32	34	20	29	25	18	20	32	18	E S 16	E S 16	
13	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	33	38	34	35	33	34	G	G	G	G	28	24	20	E S 16	E S 16	E S 15	E S 15	E S 15	
14	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	G	29	33	34	34	G	G	G	G	G	G	G	G	E S 15	E S 15	E S 15	E S 15	E	
15	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	26	27	32	34	46	A A 61	49	36	34	31	32	28	E S 16	E	E S 16	E S 16	E S 16	E S 15	
16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	26	30	34	35	35	G	35	G	G	G	G	G	E S 16	E S 16	E S 15	E S 16	E S 15	E S 15	
17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	31	34	35	36	G	G	G	G	G	G	E S 17	E S 16	E S 16	E S 15	E S 15	E	
18	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	26	G	32	34	34	G	G	G	G	G	G	G	E S 17	E S 16	E S 15	E S 16	E S 15	E S 15	
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	G	G	33	G	G	G	G	G	G	34	31	G	24	22	E S 16	E S 16	E S 15	E S 15	E S 16
20	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	G	G	A A 51	34	35	37	35	G	35	32	35	24	18	E	21	21	E S 15	E S 15	
21	E S 15	E S 15	E S 15	E S 15	E S 15	19	29	31	G	39	43	G	35	39	43	G	G	G	E S 16	E S 16	E S 16	36	25	33	
22	A A 50	A A 42	18	E S 15	E S 15	G	G	26	36	42	48	37	G	G	G	G	G	34	40	27	24	20	E S 16	E S 16	
23	E	E S 16	E	E	E	E S 16	G	28	43	35	36	A A 74	G	G	36	35	37	28	32	E	36	35	28	E	
24	E	E	E	E	E	19	G	30	34	35	34	46	42	35	G	34	31	40	22	20	30	32	E S 15	E S 16	
25	E S 16	E S 15	E S 15	E S 15	E S 15	G	G	30	33	34	35	G	G	36	G	35	33	30	34	20	18	E	E S 15	E	
26	E S 16	E	E S 16	E	E S 15	E S 16	26	G	G	35	38	46	41	36	36	G	G	27	18	E	E	42	E	E S 15	
27	E S 16	E S 15	E S 15	E	E	E S 16	24	32	A A 33	A A 52	C	A A 85	A A 62	36	35	36	27	23	18	19	E S 16	25	A A 43	30	
28	E	E	23	E	E	18	25	G	37	35	36	G	40	47	55	55	44	45	E S 17	E S 16	E S 15	E S 15	E S 15	E S 16	
29	22	E S 16	E S 15	E S 15	E S 15	E S 16	G	G	34	A A 50	G	40	A A 57	47	35	36	46	51	51	44	E	E	A A 86	E	
30	E S 16	E S 15	E S 15	E	E	E S 17	G	G	32	A A 95	A A 86	40	G	41	36	33	30	27	G	E S 16	29	E	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	29	30	30	30	30	30	30	30	30	30	30	30	30	30	
MED	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	18	28	33	35	35	36	35	G	G	31	28	25	18	16	16	E S 15	E S 15	E S 15	
UQ	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	25	30	34	37	37	40	40	36	35	34	32	30	28	22	21	20	E S 16	E S 16	
LQ	E S 15	E	E S 15	E	E S 15	E S 15	G	G	30	34	34	G	G	G	G	G	G	19	E S 16	E S 16	E S 15	E S 15	E S 15	E	

APR. 1985

FBES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FMIN (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 24 sec in automatic operation													
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	17	17	17	16	17	16	E S 16	E S 16	E S 15	E S 16	E S 15	E S 15	E S 15
2	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	20	18	17	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15
3	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	16	17	17	18	18	17	17	17	17	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
4	E S 16	E S 15	E S 16	E S 15	E S 15	E S 16	E S 16	17	17	17	17	17	17	17	16	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	16	17	17	17	17	16	17	E S 16	E S 17	E S 16	E S 16	E S 16	E S 16	E S 15
6	E S 15	E S 15	E S 15	E S 16	E S 15	E S 15	E S 17	17	17	17	17	18	17	17	18	17	17	E S 17	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16
7	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	17	17	18	18	18	17	17	E S 17	E S 16	E S 15	E S 17	E S 15	E S 15	E S 15
8	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	17	16	17	17	18	17	17	17	17	16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15
9	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	17	17	17	19	17	17	E S 17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
10	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	16	16	17	17	18	17	17	17	16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
11	E S 16	E S 15	E S 15	E S 16	E S 15	E S 16	E S 16	16	16	17	18	18	18	18	19	18	17	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
12	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	17	17	16	17	18	17	18	18	16	16	16	E S 15	E S 16	E S 15	E S 16	E S 16	E S 16
13	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	16	17	17	21	20	19	18	17	16	E S 16	E S 17	E S 16	E S 16	E S 15	E S 15	E S 15
14	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	17	18	17	18	17	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15
15	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	17	17	17	18	17	18	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15
16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	17	17	20	19	18	17	16	E S 16	E S 16	E S 15	E S 16	E S 15	E S 15
17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	16	16	18	18	17	17	18	17	17	16	E S 17	E S 16	E S 16	E S 15	E S 15	E S 15
18	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	17	17	17	18	18	17	18	17	16	E S 17	E S 16	E S 15	E S 16	E S 15	E S 15
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	17	17	18	18	18	17	17	17	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16
20	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	17	17	17	17	17	17	17	17	16	13	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15
21	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	17	17	18	18	17	17	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15
22	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	18	18	18	18	18	20	16	17	16	16	E S 17	E S 15	E S 16	E S 15	E S 16
23	E S 15	E S 16	E S 15	E S 15	E S 15	E S 16	16	16	16	18	18	18	17	17	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16
24	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 17	16	18	18	18	35	20	20	26	18	16	E S 17	E S 16	E S 16	E S 15	E S 16	E S 15	E S 16
25	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	17	17	17	18	18	18	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15
26	E S 16	E S 15	E S 16	E S 15	E S 15	E S 16	16	16	18	18	18	16	18	18	17	17	17	16	E S 16	E S 15	E S 16	E S 16	E S 15	E S 15
27	E S 16	E S 15	E S 15	E S 16	E S 15	E S 16	E S 16	17	17	19	C	17	17	18	18	17	16	16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16
28	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	19	17	24	20	19	18	17	16	E S 16	E S 17	E S 16	E S 15	E S 15	E S 15	E S 16
29	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	18	20	19	18	18	17	17	16	E S 17	E S 16	E S 16	E S 15	E S 16	E S 15
30	E S 16	E S 15	E S 15	E S 15	E S 15	E S 17	16	16	16	17	18	20	21	18	18	17	17	16	E S 17	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	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	17	17	17	17	18	18	18	17	17	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
UQ	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	18	18	18	18	17	17	16	E S 17	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	17	17	17	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15

The Radio Research Laboratories, Japan

APR. 1985

FMIN (0.1 MHZ)

IONOSPHERIC DATA

APR. 1985

M(3000)F2 (0.01)

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

Station	AKITA																									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	315	310	310	320	315	295	345	365	355	340	335	345	330	330	330	340	345	335	330	330	315	305	295	280		
2	290	300	300	280	300	350	355	370	335	325	330	330	320	325	340	325	345	355	360	325	320	310	305	295		
3	310	315	310	350	340	335	360	340	345	350	305	305	315	325	325	345	345	335	335	350	355	300	295	305		
4	315	325	325	350	310	305	350	355	340	330	325	340	325	325	325	350	335	330	325	350	350	310	305	295		
5	300	310	320	325	330	330	355	355	345	340	345	355	355	315	320	335	325	340	340	365	355	295	290	300		
6	310	335	325	345	330	320	350	340	355	350	355	320	340	340	330	340	340	350	345	350	350	300	305	310 ^S		
7	300	310	325	335	340	335	370	350	330	345	350	335	350	335	340	335	330	340	325	340	360	345	305	295		
8	295	305	315	F	F	F	340	385	370	365	A	335	340	320	385	335	340	345	355	350	345	F	F	F		
9	F	F	F	F	F	F	340	350	340	360	315	315	315	325	335	325	325	320	315	320	330	310	295	285	280	
10	285	295	280	310	360	335	365	375	325	315	315	325	325	345	340	345	320	310	325	345	330	315	F	F		
11	F	F	F	315	305	330	335	365	345	360	320	335	315	315	325	330	325	325	340	345	335	345	335	305	310	
12	300	F	325	325	310	310	350	355	340 ^H	355	365	335	305	325	325	330	335	355	350 ^{U R}	345	320	F	F	F		
13	F	F	F	F	F	F	340	310	345	260	345	350	315	335	310	330	340	340	320	340	330	320	335	325	295	295
14	330	320	325	300	320	335	360 ^H	355	340	345	325	320	340	320	320	320	330	335	310	330	340	340	305	305 ^F	305 ^F	
15	F	F	F	F	F	F	350	350	345	330	320	A	320	330	315	325	340	345	335	325	345	325	315	305		
16	F	325	315	320	320	335	360	370	355	355	340	325	310	320	315	330	340	335	345	340	330	305	295	300 ^F		
17	295	310	325	315	325	345	360	350	350	340	330	320	325	325	325	325	325	335	335	320	325	330	335	305		
18	305	315	330	340	305	345	335	355	345	345	350	325	320	325	330	320	320	330	325	325	340	320	310	315		
19	305	320	310	320	340	360	365	365	355	345	345	350	325	330	355	325	315	290	310	335	335	320	305	295		
20	295	295	310	400	325	325	340	310	A	310	340	305	320	300	320	320	320	325	330	280	305	295	280	280		
21	285	285	310	345	330	330	360	275	255	245	240	280	270	280	300	285	295	280	280	300	310	280	F	305 ^F		
22	A	A	305	305	320 ^F	325	335	320	290	330	300	325	340	325	330	335	340	335	330	315	315	325	310	F		
23	F	F	F	F	335	340	330	340	A	255	315	A	310	320	330	340	325	345	325	310	340	315	310	290		
24	305	300	305	320	F	335	350	355	345	340	325	320 ^S	315	310	310	325	330	305	305	330	345	310 ^S	295	300 ^S		
25	310	300	315	305	310	325	355	350 ^H	330	335	350	290	315	330	325	330 ^H	320	340	330	315	320	325	290	F		
26	F	F	F	F	315	325	355	345	340	340	315	325	315	320	310	315	335	325	335	335	315	295	300	300		
27	305	305	305	315	300	315	350	270	A	A	C	A	A	265	260	285	315	315	340	325	330	310	A	295 ^{I S}		
28	F	F	F	F	310	310	355	360	345	G	280	255	275	250	305	315	320	330	A	305	280	285	290	285	280	
29	275	275	280	340	315	290	325	G	G	A	315	325	A	295	310 ^H	305	330	340	335	335	310	F	A	F		
30	F	F	F	F	F	320	330	310	310	A	A	310	315	315	300	330	320	335	335	330	325	295	285	285		
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	22	23	25	24	25	29	30	30	27	26	28	27	28	30	30	30	30	29	30	30	29	28	24	24		
MED	300	310	315	320	320	335	352	350	345	340	328	325	320	325	325	328	330	335	330	330	330	310	302	298		
UQ	310	315	325	340	330	340	360	355	352	345	342	335	325	330	330	340	340	340	340	340	340	345	325	305	305	
LQ	290	300	305	310	310	320	345	340	330	320	315	315	315	315	315	320	320	325	325	320	315	298	292	292		

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M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1985

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 24 sec in automatic operation											
Hour Day		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	390	390	400	385	370	365	365	L							
2										L	370	370	370	390	355	360	360	L							
3									L	360	L	L	380	L	375	365	A	L	A						
4									L	L	385	400	390	375	370	360	365	L							
5									L	L	370	390	385	405	420	360	L	L							
6									L	370	380	395	355	390	365	380	380	L							
7									L	L	365	400	385	370	370	365	370	L							
8									L	L	A	380	A	380	A	390	L	A							
9									L	L	385	375	400	415	395	L	355	L	L						
10									L	L	355	370	400	A	A	375	370	L	L	A					
11									L	L	L	370	385	400	385	370	350	365	L						
12									L	L	365	A	A	L	370	375	360	L	L	L					
13									L	L	L	370	395	415	385	375	350	370	L	L					
14									L	L	370	390	395	365	365	390	370	360	360	L					
15									L	L	390	380	A	A	A	360	375	370	L	L					
16									L	L	380	380	385	385	395	370	365	355	370	L					
17									L	L	365	360	390	380	380	375	375	375	375	L					
18									L	L	370	400	390	385	395	370	365	365	365	L					
19									L	L	380	395	410	410	410	405	365	360	L	L					
20									L	L	A	390	375	L	365	395	355	345	L	L					
21									L	L	330	A	A	345	345	A	A	345	355	L					
22									L	L	L	A	A	370	395	375	360	L	L	A					
23									L	L	A	395	405	A	360	390	370	365	L	L					
24									L	L	380	L	420	A	A	405	355	355	365	L	A				
25									L	L	365	390	L	L	405	380	355	L	L	L					
26									L	L	380	350	370	375	A	A	375	365	375	L	L				
27									L	L	A	A	C	A	A	385	380	355	370	L					
28									L	L	A	405	395	375	A	A	A	A	A	A					
29									L	L	400	385	A	365	A	A	A	360	370	A	A				
30									L	L	395	410	A	A	395	390	A	375	360	370	L				
31									L	L															
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	16	21	22	19	22	25	27	22	8							
MED									395	370	380	390	385	385	375	365	365	368							
UQ									398	380	390	400	398	395	390	370	370	370							
LQ									388	362	370	380	372	370	370	360	355	362							

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M(3000)F1 (0.01)

IONOSPHERIC DATA

APR. 1985

H*F2 (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										240	265	275	255	255	295	295	270	255								
2										270	290	270	270	275	280	270	275	260								
3										255	255	255	270	300	280	275	290	265	250	A						
4										250	270	295	295	275	300	290	280	255	250							
5										260	270	250	245	265	300	300	270	255								
6										255	255	250	320	265	270	270	265	255								
7										235	270	255	270	250	285	280	270	270								
8										230	250	A	295	270	320	285	280	270	260							
9										250	300	285	310	270	280	290	290	290	280							
10										230	305	310	300	270	280	260	270	270	280	A						
11										250	250	315	260	280	295	285	270	290	280							
12										250	270	250	245	285	315	300	295	275	260	245						
13										275	265	295	290	310	295	270	270	310	265							
14										250	280	265	295	300	280	320	305	300	280	250						
15										245	250	270	285	A	310	290	310	280	270	250						
16										250	270	260	275	300	345	295	300	280	260	250						
17										250	280	270	280	305	295	290	310	295	270	250						
18										260	275	260	295	305	300	290	300	300	260							
19										240	255	270	290	290	330	300	270	310	305	320						
20										345	A	325	280	360	310	355	290	300	285	260						
21										400	505	590	595	410	440	400	330	350	320	305						
22										320 ^L	350	300	320	310	295	305	320	295	275	255						
23										285	A	535	345	A	350	335	290	270	280	255						
24										240	260	295	330	330	310	345	310	265	285	A						
25										250	295	280	270	320	330	305	320	300	295	260						
26										280	280	290	320	300	305	300	320	285	260	280						
27										490	A	A	C	A	A	480	510	430	315	295						
28										280	G	450	505	440	490	335	305	A	295	A						
29										G	G	A	350	330	A	305	290	305	260	A						
30										345	350	A	A	375	350	350	375	355	305	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									22	27	26	28	27	28	30	30	29	30	17							
MED									250	270	278	285	300	305	300	292	280	278	260							
UQ									320	288	300	310	320	325	320	310	300	295	280							
LQ									250	255	265	270	278	280	285	280	270	260	250							

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H*F2 (KM)

IONOSPHERIC DATA

APR. 1985

H*F (KM)

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

Station	AKITA							Lat. 39 43.5 N	Long. 140 08.0 E	Sweep 1 MHz to 25 MHz in 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	260	265	275	255	250	295	235	230	220	205	210	200	200	220	200	220	195	240	240	240 ^A	240	245	270	295	
2	275	285	280 ^A	280	260	220	210	220	205	205	200		205	200	220	230	240	210	225	230	255	280	290		
3	285	275	280	230	235	255	230	220	210	225	195	200		225	210		220	210	220	210	230	250	280	290	
4	A	260	250	230	245	280	240	230	A	210	205	195	210	205	220	230	220	225	235	205	210	255	280	285	
5	285	270	250	250	240	245	225	230	240	230	210	210	200	200	220		235	240	235	205	200	290	280	275	
6	270	240	245	230	245	245	225	230	230	210	195	195	200	235	210	220	240	240	230	215	A	250	270	270	
7	280	270	265	245	220	240	210	240	205	205	200	215	215	200	200	225	210	250 ^A	240	230	200	220	290	295	
8	285	285	270	260	255	240	205	205	220	A	A	A	220	A	220	A	A	245	230	225	240	235	300	280	
9	245	255	280	255	230	230	240	240	235	205	215	200	200	210	200	195 ^H	240	240	240	230	240	235	290	280	
10	290	275	315	260	200	235	220	A	240	225	220		A	A	215	230	245	235	A	260	230	225	A	260	
11	270	280	270	265	270	240	210	A	A	220	195	200	200	200	220	230	220	245	225	230	210	210	270	280	
12	290	275	245	270	285	285	240	A	A	A	A	A	200	195	245	235	225	230	230	225	A	285	280	290	
13	295	300	280	245	220	250	225	220	240	220	210	195	200 ^H	200	230	230	215	240	245	235	210	225	270	255	
14	230	260	245	265	270	250	230	230	220	205	210	220	240	210	210	200	240	230	250	225	220	205	275	275	
15	280	270	245	220	220	250	230	215	230	220	A	A	A	210	230	235	A	A	245	240	215	215	235	255	
16	270	270	270	255	245	240	235	230	220	220	220	200	200	200	210	230	230	230	240	220	220	245	285	285	
17	270	255	235	250	265	240	225	225	220	210	210	200	205	205	200	195	240	240	245	225	235	235	210	250	
18	270	275	255	230	245	235	220	230	215	205	200	195	205	205	220	220	220	240	245	230	210	220	240	240	
19	265	260	265	265	245	225	230	210	220	210	195	195	200	200	230	235	225	245	270	230	220	240	250	270	
20	275	280	250	240	245	250	240	230	A	205	210	230	200	200		A	A	A	240	245	290	275	270	240	295
21	290	290	250	210	240	240	240	A	250	A	A	250	240	A	A	210	230	225	260	245	240	A	270	A	
22	A	A	295 ^A	275	290	290	260	245	A	A	A	230	230	235	205	200	230	A	A	250 ^A	255	240	220	280	
23	280	285	290	255	235	240	225	220	A	195	195	A	205	210	220		A	A	A	A	255	A	A	275	
24	290	295	295	260	230 ^{E S}	245	255	240	210	230	200	A	A	205	240	235	225	A	270	240	230	A	270	280	
25	260	275	270	255	270	245	245	235	220	220	195 ^H	205	195	230	225	240	220	A	240	250	255	220	250	310	
26	300	245	255	250	245	245	245	225	230	220	235	A	A	210	215	215 ^H	210	225	245	220	220	A	270	225	
27	270	275	280	280	280	275	260	A	A	A	C	A	A	230	220	A	230	235	245	240	230	A	A	A	
28	295 ^{E S}	310 ^{E S}	A	275	270	230	240	240	A	220	220	210 ^H	A	A	A	A	A	A	255	290	250	255	260	280	
29	A	260	315 ^{E S}	270	255	260	245	220	A	A	215	A	A	A	220	A	A	A	A	A	255	255	A	270	
30	285 ^{E S}	275	300 ^{E S}	230	310 ^{E S}	230	240	205	195	A	A	230 ^A	225	A	220	215	225	220	240	230	245 ^A	270	310	325	
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	29	30	30	30	30	25	21	23	23	20	21	25	27	22	23	21	26	29	27	24	25	27	
MED	278	275	263	255	245	245	232	230	220	210	210	200	200	205	220	222	225	240	242	230	230	241	270	280	
UQ	286	280	280	265	268	250	240	230	230	220	212	218	215	215	222	235	232	240	245	240	240	255	280	288	
LQ	270	260	250	240	240	240	225	220	215	205	198	198	200	200	210	215	220	230	235	225	212	222	250	270	

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H*F (KM)

IONOSPHERIC DATA

APR. 1985

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

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H°E (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985

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 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	S	S	S	S	S	S	140	G	G	110	G	G	110	G	120	G	G	S	110	S	S	S	S																									
2	S	105	105	105	S	S	G	G	G	G	G	120	115	G	G	G	G	135	135	120	120	S	S	S																									
3	S	110	105	105	S	S	G	G	G	115	120	G	120	G	G	120	120	115	110	100	100	120	105	105																									
4	105	105	S	S	S	S	140	G	110	115	115	110	105	105	G	105	100	G	S	S	S	S	S	S																									
5	S	S	S	S	S	S	145	145	145	115	120	110	G	G	135	155	130	120	S	110	110	S	S	S																									
6	S	S	S	105	S	S	145	125	145	120	G	G	G	G	G	G	135	125	120	110	110	115	S	S																									
7	S	S	S	S	S	S	G	130	120	120	120	110	110	G	G	150	130	130	115	110	105	S	S	S																									
8	S	110	110	105	110	115	G	115	120	105	110	105	110	110	110	120	120	115	110	110	120	S	110	110																									
9	S	S	110	105	105	S	145	140	G	115	110	G	130	G	G	G	G	140	130	S	110	110	S	S																									
10	S	S	S	S	S	S	120	125	120	110	110	105	105	G	G	150	155	130	120	110	110	110	110	105																									
11	105	105	S	S	S	S	150	120	120	110	110	110	110	110	G	G	G	95	130	120	S	110	100	100																									
12	S	S	S	S	S	S	125	120	125	120	115	110	125	115	105	150	125	125	100	100	110	110	S	S																									
13	S	S	S	S	S	S	150	155	125	120	120	110	G	G	G	G	115	120	120	S	S	S	S	S																									
14	S	S	S	S	S	S	G	145	125	120	130	G	G	G	G	G	G	100	100	S	S	S	S	105																									
15	S	S	S	S	S	S	145	140	135	120	110	110	110	110	110	115	145	120	S	120	S	S	S	S																									
16	S	S	S	S	S	S	140	130	125	120	115	G	110	G	G	G	G	G	S	S	S	S	S	S																									
17	S	S	S	S	S	S	G	G	130	115	115	110	G	G	G	G	G	G	S	S	S	S	S	105																									
18	S	S	S	S	S	S	140	G	125	120	105	G	G	G	G	G	G	G	S	S	S	S	S	S																									
19	S	S	S	S	S	S	G	G	130	G	G	G	G	G	G	120	110	G	120	115	S	S	S	S																									
20	S	S	S	S	S	S	G	G	110	110	100	100	105	G	155	155	135	150	100	95	100	110	S	S																									
21	S	S	S	S	S	145	135	135	G	110	110	G	135	130	120	G	G	G	S	S	S	105	110	120																									
22	115	110	115	S	S	150	G	145	125	120	115	115	G	G	G	G	G	130	120	120	120	110	S	S																									
23	105	S	105	105	105	S	G	120	115	115	110	105	G	G	135	125	120	120	115	115	110	110	110	105																									
24	110	100	105	105	100	105	G	140	120	120	115	110	110	110	G	150	140	115	110	110	110	110	S	S																									
25	S	S	S	S	S	120	100	145	115	120	115	G	G	110	G	140	135	135	120	120	110	110	S	110																									
26	S	100	S	100	S	S	145	G	G	135	120	120	120	120	120	G	G	120	120	110	110	110	110	S																									
27	S	S	S	110	105	S	140	130	120	115	C	110	110	115	110	110	110	105	105	100	S	115	110	110																									
28	100	110	105	105	105	140	145	G	130	125	120	G	125	110	110	110	110	110	S	S	S	S	S	S																									
29	110	S	S	S	S	S	G	145	120	110	G	110	110	110	110	130	110	120	105	110	110	110	110	110																									
30	S	S	S	110	105	S	G	G	120	110	105	105	G	115	110	120	120	105	105	S	110	110	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	7	9	8	11	7	6	16	20	24	27	25	19	18	14	13	18	18	24	21	19	17	16	9	11																									
MED	105	105	105	105	105	130	142	138	122	115	115	110	110	110	110	122	122	120	115	110	110	110	110	105																									
UQ	110	110	110	105	105	145	145	145	128	120	120	110	120	115	120	150	135	130	120	118	110	110	110	110																									
LQ	105	105	105	105	105	115	138	125	120	112	110	108	110	110	110	115	115	115	105	110	110	110	110	105																									

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H[°]ES (KM)

IONOSPHERIC DATA

APR. 1985

TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39° 43' 5" N				Long. 140° 08' 0" E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							H2				C1			C1		C2				F6					
2		F2	F2	F1								C2	C2					H2	H3	F3	F1				
3		F2	F2	F2						C1	C1		C1		C2	C2	C3	C2	F4	F2	F2	F4	F4		
4	F3	F2					H2		C4	C2	C1	C1	L2	L2		L3	L2								
5							H1	H1	H1	C1	C1	C1			H1	H1	C2	C2		F3	F1				
6				F2			H2	C2	H1	C1							H2	C2	C3	F3	F2	F2			
7								C2	C2	C2	C1	C2	C1			H1	C2	C3	C3	F5	F1				
8		F2	F2	F4	F2	F1		C1	C2	C3	C3	C2	C2	C2	C2	C2	C3	C5	C6	F3	F1		F2	F2	
9			F1	F4	F1		H2	H2		C1	C2		CL12				H2	C2		F2	F1				
10							C3	C3	C1	C2	C2	C3	L3			H1	H2	C5	C6	F6	F4	F7	F4	F2	
11	F2	F1					H2	C2	C2	C1	C1	C1	C1	C1				L2	C1	F1		F1	F1	F1	
12							C3	C2	C2	C2	C2	C2	C1	C1	L1	HL11	CH11	C2	LC11	F3	FF41	FF21			
13							H1	H1	C2	C1	C1	C1					C2	C1	C4						
14								H1	C2	C1	C1							L1	L1					F1	
15							H2	H1	H1	C1	C2	C5	C4	C1	C1	C1	H2	C3		F1					
16							H2	C2	C2	C2	C2		C1												
17									C1	C2	C2	C1												F1	
18							H2		C1	C1	C1														
19									C1						C1	C2		C2	C6						
20									C3	C2	L2	L2	L1		H1	HL12	HL22	HL22	L2	F2	F2	F4			
21							H2	H4	H2		C2	C2	H1	C1	C2							F7	F6	F6	
22	F7	F5	F4				H1	H1	C2	C2	C4	C2						C2	C4	F5	F3	F2			
23	F2	F2	F2	F2	F2			C2	C3	C1	C1	C3			H1	C2	C2	C3	C4	F2	F3	F5	F7	F5	
24	F2	F3	F2	F1	F2	L2		H2	C2	C1	C1	C1	C2	C1		H1	H2	C4	C5	F4	F3	F2			
25							C1	L1	H2	C1	C1	C1		C1		H1	H2	H2	C3	F2	F4	F1		F2	
26		F2		F2			H2		H1	C1	C2	C2	C1	C1				C2	C1	F1	F2	F7	F3		
27				F1	F1		H1	C2	C3	C2		C4	C2	C1	C2	C2	C1	L1	L2	F3		FF32	FF23	F6	
28	F1	F2	F4	F2	F2	H1	H2		C1	C1	C1		C1	C2	C2	C3	C3	C4							
29	F7							H1	C2	C2		C2	C2	C2	C2	C2	C2	CL32	L3	F4	F3	F2	F5	F2	
30				F2	F3				C1	C4	C4	L3		C2	C1	C1	C1	L2	L1		F3	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

APR. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station		Rokubunji Tokyo								Lat. 35° 42' 4" N		Long. 139° 29' 3" E		Sweep 1 MHz to 20 MHz in 20 sec in automatic operation											
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X	X	X	X	X	X	S													S	X	X	X	S	
	49	48	45	45	41	40															50	48	48	47	
2	X	S	X	S	X	X														X	S	S	X	X	
	50	49	47	44	43	49														51	46	43	42	42	
3	X	X	X	S	X	X														S	X	X	S	X	
	43	42	41	43	36	35															45	36	38	38	
4	S	S	S	X	X	X														S	X	X	X	X	
	41	41	39	40	35	36														81	59	40	42	42	
5	X	X	S	X	X	X														X	S	X	X	X	
	43	41	42	40	36	39														76	47	35	36	38	
6	X	X	X	X	X	X														X	X	X	X	X	
	40	40	39	37	34	35														81	53	39	42	42	
7	X	X	X	X	X	X														S	X	X	X	X	
	41	41	40	40	37	36														81	63	42	37	38	
8	S	X	X	X	X	X														X	X	A	S	S	
	38	38	39	38	36	40														61	42			41	
9	S	U	S	S	X	S														X	X	X	X	X	
	41	40	37	37	36	34														86	64	61	55	55	
10	X	X	X	X	X	S														S	X	X	X	S	
	55	52	49	50	56	31														82	73	44	43	41	
11		S	S	S	S	X														X	X	X	X	X	
	43	39	38	38	38	41														81	53	41	41	40	
12	X	X	X	X	X	X														X	X	X	S	S	
	40	39	39	37	37	38														65	54	41	40	39	
13	S	X	S	X	X	X														X	X	S	X	X	
	38	37	38	39	30	33														76	70	54	50	48	
14	X	X	X	X	X	X														X	X	X	X	S	
	44	41	41	39	38	40														81	68	40	41	41	
15	S	S	S	S	S	S														X	X	X	X	X	
	41	40	40	36	32	41														77	66	48	42	43	
16	S	S	S	X	X	X														X	X	S	S	S	
	42	41	40	38	38	41														67	57	50	49	46	
17		S	X	X	X	X														X	X	X	X	S	
	48	49	42	38	39	45														70	68	59	54		
18	S	S	S	X	X	S														X	S	X	S	S	
	47	46	45	40	37	40														90	74	56	52	51	
19	X	X	X	X	X	S														S	S	S	S	S	
	50	48	44	40	41	46														97	78	60	58	56	
20	S	X	X	X	X	X														S	S	S	X	S	
	56	54	53	50	41	50														70	67	66	67	64	
21	X	X	X	S	X	X														X	X	S	S	X	
	63	62	64	48	39	49														86	75	66		60	
22	X	A	S	S	X	X														X	S	S	X	S	
	56		53	45	35	32														70	65	61	54	50	
23	S	S	S	S	X	S														S	S	S	S	S	
	50	46	45	41	40	41														70	68	49	44	43	
24	S	S	S	X	S	S														S	S	X	X	S	
	40	39	39	36	37	43														99	75	48	47	46	
25	X	S	S	X	X															X	S	X	S	S	
	46	45	45	41	41															69	66	60	50	49	
26	S	X	S	S	X															S	X	X	X	S	
		50	49	40	41															74	58	54	54	53	
27	S	X	X	X	X															X	X	X	X	X	
	46	44	42	41	41															62	51	37	39	38	
28	S	S	S	S	S															S	S	X	X	X	
	39	42	38	41	38																77	66	64	63	
29	X	X	X	X	X															X	A	X	S	A	
	64	60	51	55	49															65		41	40		
30	S	S	S	X	X															X	X	S			
	41	40	39	37	33															71	65		51	45	
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	24														27	29	28	28	28
MED		X	X	X	X	X	X													X	X	X	X	X	
		43	42	42	40	38	40													76	65	48	46	44	
UQ		X	X	X	X	X	X													X	S	X	X	S	
		50	48	45	43	41	42													81	68	60	53	50	
LQ		S	S	S	X	X	X													X	X	X	X	X	
		41	40	39	38	36	36													70	53	41	41	41	

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FXI (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station **ROKUBUNJI TOKYO** Lat. 35° 42' 4" N Long 139° 29' 3" E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	43	42	39	S ₃₉	35	S ₃₄	54	S ₆₅	60	67	68	74	71	73	67	65	64	71	S ₇₄ I ₇₅	44	S ₄₂	42	S ₄₁	
2	44	S ₄₃	S ₄₁	S ₃₈	37	43	45	54	60	71	77	90	S ₇₇	S ₇₅	S ₇₄	69	S ₇₉	S ₇₉	68	45	S ₄₀	S ₃₇	36	36
3	37	36	35	S ₃₇	30	29	54	S ₆₀	66	66	61	79	87	85	73	71	S ₇₀	S ₇₀	S ₈₀ I ₇₈	39	30	S ₃₂	S ₃₂	
4	S ₃₅	S ₃₅	S ₃₃	S ₃₄	29	30	54	S ₆₃	S ₆₅	64	69	71	73	S ₇₅	85	S ₇₉	66	66	70	S ₇₅	53	34	36	S ₃₆
5	37	35	36	34	30	33	S ₄₂	60	58	82	91	71	65	61	63	74	69	71	J ₇₈	S ₇₀	S ₄₁	29	30	32
6	S ₃₄	34	33	31	28	29	54	S ₆₁	71	S ₇₄	67	74	79	82	78	66	69	69	S ₇₂	S ₇₅	47	33	I ₃₆	36
7	35	35	34	34	31	30	44	54	52	57	79	83	85	83	87	84	66	65	S ₇₃	S ₇₅	57	36	31	32
8	S ₃₂	32	33	32	30	S ₃₄	48	H ₅₅	58	56	58	68	S ₇₉	74	73	70	69	S ₇₀	64	55	36	A	I ₃₂	S ₃₅
9	S ₃₅	U ₃₄	F	S ₃₁	30	S ₂₈	44	61	65	S ₆₃	74	63	79	77	68	66	68	S ₇₄	84	S ₈₀	58	55	49	49
10	49	46	43	44	50	S ₂₅	S ₅₀	S ₅₅	65	66	S ₈₀	89	85	S ₇₈	70	65	S ₆₃	59	57	S ₇₆	67	38	37	S ₃₅
11	F	S ₃₃	S ₃₂	S ₃₂	S ₃₂	S ₃₅	S ₅₆	54	A	62	78	82	88	S ₉₉	S ₇₉	S ₇₉	S ₇₈	81	S ₈₀	S ₇₅	47	35	35	34
12	34	S ₃₃	S ₃₃	31	31	32	59	S ₆₆	J ₇₅	69	66	73	80	69	74	83	83	S ₇₆	68	59	48	35	S ₃₄	S ₃₃
13	S ₃₂	31	S ₃₂	33	24	27	47	55	58	S ₇₃	63	71	75	79	79	65	59	62	67	70	S ₆₄	S ₄₈	S ₄₄	S ₄₂
14	38	35	35	33	32	34	51	57	S ₆₃	60	58	71	S ₇₄	60	62	69	S ₇₅	S ₈₂	71	S ₇₅	62	34	35	S ₃₅
15	S ₃₅	S ₃₄	F	S ₃₀	S ₂₆	S ₃₅	58	58	59	63	58	63	69	S ₇₅	73	71	S ₇₁	69	67	71	60	S ₄₂	36	37
16	S ₃₆	S ₃₅	S ₃₄	32	S ₃₂	S ₃₅	54	57	56	57	62	60	63	73	81	81	S ₇₇	S ₇₂	69	61	51	S ₄₄	S ₄₃	S ₄₀
17	F	S ₄₃	S ₃₆	32	S ₃₃	S ₃₉	52	56	66	65	71	69	73	72	S ₇₃	75	S ₇₂	S ₇₀	71	64	S ₆₂	S ₅₃	S ₄₈	I ₄₂
18	S ₄₁	S ₄₀	S ₃₉	34	31	S ₃₄	S ₄₈	54	S ₇₁	68	63	67	73	75	80	64	65	S ₇₃	S ₇₇	S ₈₄	S ₆₈	50	S ₄₆	S ₄₅
19	44	S ₄₂	S ₃₈	34	35	S ₄₀	S ₅₀	57	54	59	61	58	62	65	68	59	59	67	85	S ₉₁	S ₇₂	S ₅₄	52	50
20	S ₅₀	S ₄₈	49	44	35	44	50	50	56	S ₅₆	65	59	63	64	S ₈₀	67	68	S ₇₂	S ₈₀	S ₆₄	S ₆₁	S ₆₀	S ₆₁	58
21	57	56	58	S ₄₂	33	43	52	45	56	50	55	64	57	64	73	71	81	S ₈₃	90	S ₈₀	69	S ₆₀	A	S ₅₄
22	50	A	S ₄₇	S ₃₉	29	26	45	48	53	65	78	J ₇₈	65	65	61	63	65	61	65	64	59	S ₅₅	S ₄₈	S ₄₄
23	S ₄₄	S ₄₀	S ₃₉	S ₃₅	34	S ₃₅	42	46	46	A	A	62	68	67	83	80	63	63	55	S ₆₄	S ₆₂	S ₄₃	J ₃₈	S ₃₇
24	S ₃₄	S ₃₃	S ₃₃	30	S ₃₁	S ₃₇	49	56	55	59	64	65	67	71	S ₇₅	79	72	65	S ₇₉	S ₉₃	69	S ₄₂	S ₄₁	S ₄₀
25	40	S ₃₉	S ₃₉	S ₃₅	35	43	56	60	60	64	S ₆₁	S ₆₁	69	S ₇₅	70	70	67	70	S ₇₀	63	S ₆₀	54	S ₄₄	S ₄₃
26	I ₄₃	S ₄₄	S ₄₃	S ₃₄	35	S ₃₉	58	58	60	S ₆₂	64	67	S ₇₆	74	69	86	84	73	81	S ₆₈	52	48	S ₄₈	S ₄₇
27	S ₄₀	38	36	35	35	36	S ₄₂	43	R ₄₁	A	45	A	A	S ₅₁	50	58	66	67	69	56	S ₄₅	31	S ₃₃	32
28	S ₃₃	F	S ₃₂	S ₃₅	S ₃₂	S ₃₈	42	E ₄₂	43	48	53	55	62	77	80	75	64	54	65	S	S ₇₁	60	58	57
29	58	54	S ₄₅	49	43	47	43	42	44	48	56	59	69	84	89	70	80	S ₈₁	S ₆₉	59	A	35	S ₃₄	A
30	S ₃₅	S ₃₄	S ₃₃	31	27	35	45	50	49	54	55	58	58	62	59	65	60	63	65	65	59	A	F	F ₄₀
31																								
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	28	28	28	30	30	30	30	30	29	28	29	29	29	30	30	30	30	30	30	29	29	28	28	29
MED	S ₃₈	S ₃₆	S ₃₆	34	32	35	50	56	58	63	64	68	73	74	73	70	68	70	70	S ₇₀	59	42	S ₃₈	S ₄₀
UQ	44	S ₄₂	S ₄₀	S ₃₇	35	S ₃₉	54	60	65	66	71	74	79	77	80	79	75	S ₇₃	S ₇₉	S ₇₅	S ₆₂	S ₅₄	S ₄₇	S ₄₄
LQ	S ₃₅	S ₃₄	33	32	30	30	45	50	54	57	58	62	65	65	63	65	65	65	67	64	47	35	34	35

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APR. 1985

FOF2 (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FOF1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station **ROKUBUNJI TOKYO** Lat. **35 42' 4" N** Long **139 29' 3" E** Sweep **1** MHz to **20** MHz in **20** sec in automatic operation

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

APR. 1985

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

APR. 1985

F0E (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station ROKUBUNJI TOKYO Lat. 35° 42' 4" N Long. 139° 29' 3" E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S						S																	S	S
2							S																		S
3							S																		S
4																									S
5			S	S	S																				S
6																									S
7																									S
8																									S
9																									S
10	S		S	S	S																				S
11																									S
12																									S
13																									S
14																									S
15																									S
16																									S
17			S		S																				S
18																									S
19																									S
20	S																								S
21			S	S																					S
22																									S
23																									S
24																									S
25																									S
26																									S
27																									S
28																									S
29			S																						S
30																									S
31																									S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT							25	26	22	19	9	9	17	20	19	24	25	23							
MED							180	250	285	305	325	330	340	335	320	298	260	220							
UQ							195	255	290	315	330	340	345	340	320	300	270	235							
LQ							175	250	280	305	320	330	335	330	315	290	260	210							

APR. 1985

F0E (0.01 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985 FBES (0.1 MHz)

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

Station		Rokubunji										Tokyo										Lat. 35° 42' 4" N		Long. 139° 29' 3" E		Sweep 1		MHz to 20		MHz in 20		sec in		automatic operation	
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23										
1		E S 15	E E S 15	E E S 15	E E B 13	E S 15	E S 15	26	31	33	34	35	G	38	34	34	G	28	20	20	24	20	E S 16	G											
2		E	E	E	26	E	E	24	G	G 25	33	34	38	42	45	42	G	27	26	26	22	26	16	E S 15	E S 15										
3		E	E	E	19	E	E	E S 14	26	32	36	34	34	36	44	44	44	34	36	G E S 15	E	E	E	E											
4		E	16	19	23	15	15	21	32	39	40	36	46	40	35	G 27	G 21	32	32	27	19	E E S 14	G E S 16												
5		E S 15	E S 15	E S 16	E S 15	G E S 14	24	30	31	34	33	34	G	G	G	G 25	28	24	20	E	E	18	E	E											
6		E	E	E	E	E	E	G	26	30	34	41	37	34	G 29	34	30	27	25	30	18	E	E	17	E										
7		E	E	E	E S 15	E	E	24	27	38	40	38	35	34	35	G 29	35	32	35	34	30	19	G	E E S 15											
8		E	E	E	18	19	E S 15	G	26	34	34	35	37	44	42	35	34	29	25	28	30	27	A A 52	E	19										
9		30	E	E	E	E	E	23	30	31	33	33	35	G 26	G 31	G 22	G 20	G 16	24	23	E	15	E	28	E										
10		G	E	G	G	E S 14	E	23	35	40	41	51	34	34	G 28	G 27	G 18	G 24	G	40	44	33	E	25	21										
11		E	E	E	25	19	E	G	51	A A 62	45	43	37	G 30	34	37	G 25	G 20	22	21	E	18	E	G E S 15											
12		E S 15	E B 13	E B 13	E B 13	E E S 15	22	31	33	34	39	34	34	34	G 27	G 22	G 29	24	18	E	E	E	26	E											
13		E	E	E S 14	E S 15	E S 15	24	30	31	34	34	34	34	34	G 18	G 33	G 17	G 30	27	16	E	E	E	E	E										
14		E S 15	E	E	E S 15	E B 13	E S 15	25	30	32	G	G 26	G 28	G 28	G 22	G 21	G	G	24	E	E	E	E S 15	E S 15											
15		E S 15	E S 14	E S 15	E S 14	E S 14	E	24	27	32	G	G	G	G 29	35	G 23	31	G	G	16	18	18	E S 14	E S 14	E S 15										
16		E S 15	E S 15	E S 15	E B 13	E E S 15	24	30	35	36	34	35	34	34	32	31	30	24	18	E	E	E S 15	E S 16	E											
17		E S 15	E S 15	E S 15	E S 15	G E S 15	G	28	32	35	35	36	37	34	33	28	34	24	G	E	E S 16	E S 16	E S 15	E S 16											
18		E S 15	E S 15	E S 15	E S 15	E S 15	25	28	33	34	G 33	G 31	G 28	G 26	G 23	G	28	25	G	E	E	E	E	E S 15											
19		E S 15	E S 15	E S 15	E S 15	E S 15	25	29	31	G	34	35	37	G	37	34	30	26	28	21	20	E	E S 16	E											
20		E S 16	E	E	E E S 14	E S 15	G	G	30	32	34	34	40	G 30	G 31	33	33	31	30	30	29	24	37	44											
21		20	E	E S 15	E S 14	E S 15	E S 15	21	30	30	36	35	40	36	44	37	G	G	G	E S 14	E S 16	G	54	A A 61	40										
22		41	A A 59	34	E	E S 15	16	23	26	36	51	44	36	40	37	35	G 20	G	27	23	29	20	E	E	19										
23		E	E	30	E	E E S 14	G	28	34	A A 67	A A 62	35	35	35	35	41	33	31	35	25	50	37	24	18	20										
24		E	20	15	E	E	21	24	30	35	34	44	U Y 38	37	G	E B 37	G	31	27	23	25	E	28	30	E S 16										
25		E S 14	E	E S 15	E S 14	E S 15	E S 16	G	30	32	35	35	46	37	45	37	33	31	27	29	27	40	24	17	E										
26		20	E	E S 15	E	E E S 16	24	29	34	34	37	37	36	37	34	G	G	G	35	29	34	18	E	E											
27		E	E S 15	E	E	15	18	25	34	39	A A 51	44	A A 54	A A 76	43	35	32	27	20	22	29	25	19	18	21										
28		E	15	E	E	15	E S 15	26	30	34	39	46	40	G	41	49	61	44	25	25	20	E S 15	G	G	E										
29		E	24	E S 15	E B 13	E B 13	E S 15	G 16	27	32	43	35	39	40	44	45	44	34	44	53	44	A A 83	21	25	A A 97										
30		E	E	E S 15	15	E	16	G 18	G	32	G	39	35	40	38	36	36	42	27	25	20	33	A A 48	E S 15	E S 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 E 14	E E 15	E E 14	E E 13	E S 15	23	29	32	34	35	35	36	35	34	29	29	25	23	20	18	E E 15	E E 15												
UQ		E S 15	E S 15	E S 15	E S 15	E S 15	24	30	35	40	41	38	40	41	37	34	32	27	28	29	27	21	18	19											
LQ		E	E	E	E	E	E	E G 14	26	31	33	34	34	G 30	G 29	G 27	G 18	G 20	24	18	E	E	E	E	E										

The Radio Research Laboratories, Japan

APR. 1985 FBES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FMIN (0.1 MHZ)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 15	E S 14	E S 15	E S 14	13	E S 15	E S 15	13	13	14	15	16	16	16	16	15	14	14	E S 14	13	E S 15	E S 15	E S 16	E S 15
2	E S 16	E S 15	E S 15	E S 15	E S 14	E S 15	E S 15	14	14	14	17	16	16	19	15	14	15	14	E S 14	E S 15	E S 15	E S 14	E S 15	E S 15
3	E S 15	13	E S 15	E S 15	E S 15	E S 15	E S 14	14	14	16	15	16	15	15	16	15	14	15	E S 15	E S 15	E S 14	E S 14	E S 15	E S 15
4	E S 15	E S 14	E S 15	E S 14	E S 14	E S 14	E S 15	14	14	15	16	16	17	16	14	14	15	15	E S 16	E S 15	E S 16	E S 14	E S 16	E S 16
5	E S 15	E S 15	E S 16	E S 15	E S 15	E S 14	E S 16	13	14	15	16	16	16	15	17	14	14	14	13	E S 15	E S 15	E S 15	E S 16	E S 16
6	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	14	14	15	15	17	16	15	15	14	13	E S 14	E S 14	E S 15	E S 15	E S 16	E S 15
7	E S 15	E S 15	E S 15	E S 15	E S 14	E S 16	E S 14	13	14	14	15	16	15	16	15	17	14	13	13	E S 14	E S 14	E S 15	E S 16	E S 15
8	E S 15	E S 15	E S 15	13	13	E S 15	13	14	14	16	15	16	16	16	16	14	14	13	13	E S 14	E S 16	E S 15	E S 16	E S 15
9	E S 16	E S 14	E S 15	E S 15	E S 15	E S 14	E S 14	13	14	14	15	15	15	19	16	14	14	13	E S 15	E S 15	E S 14	E S 16	E S 15	E S 15
10	E S 16	E S 15	E S 15	E S 15	E S 14	E S 14	E S 15	15	14	15	15	15	15	15	16	16	14	14	E S 16	E S 16	E S 15	E S 15	E S 16	E S 15
11	E S 16	E S 16	E S 16	E S 14	E S 14	E S 14	E S 15	14	14	15	14	16	20	19	14	14	15	13	E S 14	E S 15	E S 15	E S 16	E S 15	E S 15
12	E S 15	13	13	13	13	E S 15	13	14	15	15	15	16	19	16	15	15	14	13	E S 14	E S 16	E S 15	E S 14	E S 16	E S 15
13	E S 15	E S 15	E S 14	E S 15	E S 15	E S 15	E S 14	15	15	15	15	15	16	15	15	14	13	13	E S 15	E S 15	E S 15	E S 15	E S 14	E S 14
14	E S 15	E S 14	E S 14	E S 15	13	E S 15	E S 14	14	14	15	16	19	20	19	15	15	15	15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15
15	E S 15	E S 14	E S 15	E S 14	E S 14	E S 15	13	14	14	15	16	17	17	15	15	14	15	14	E S 14	13	E S 15	E S 14	E S 14	E S 15
16	E S 15	E S 15	E S 15	13	13	E S 15	E S 15	13	14	16	15	15	15	15	16	14	13	14	E S 14	E S 15	E S 15	E S 15	E S 16	E S 16
17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	14	15	16	16	19	16	14	16	14	14	E S 16	E S 15	E S 16	E S 16	E S 15	E S 16
18	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	13	13	16	16	16	19	19	19	17	15	14	14	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	13	13	14	17	16	18	19	15	15	16	14	13	E S 14	E S 15	E S 15	E S 15	E S 16	E S 16
20	E S 16	E S 15	E S 14	E S 14	E S 14	E S 15	E S 14	13	14	15	15	15	19	16	15	16	15	13	E S 15	E S 16	E S 15	E S 14	E S 16	E S 15
21	E S 15	E S 15	E S 15	E S 14	E S 15	E S 15	E S 14	14	15	15	16	19	20	19	16	15	15	14	E S 14	E S 16	E S 16	E S 16	E S 15	E S 15
22	E S 15	13	13	E S 15	E S 15	E S 15	13	14	15	15	16	19	20	21	19	15	16	14	E S 15	E S 14	E S 15	E S 15	E S 15	E S 16
23	E S 15	E S 14	E S 15	E S 14	E S 15	E S 14	E S 14	14	15	19	19	19	20	20	19	16	15	15	14	E S 16	E S 16	E S 16	E S 16	E S 15
24	E S 16	E S 15	13	E S 14	E S 15	E S 14	E S 14	15	15	17	21	33	24	22	37	19	15	14	E S 15	E S 16	E S 16	E S 15	E S 16	E S 16
25	E S 14	E S 15	E S 15	E S 14	E S 15	E S 16	E S 14	15	14	17	17	20	20	16	20	15	16	15	14	E S 15	E S 14	E S 16	E S 16	E S 16
26	E S 15	E S 16	E S 15	E S 15	E S 15	E S 16	15	14	19	19	19	20	24	19	20	20	15	14	E S 14	E S 15	E S 14	E S 15	E S 16	E S 16
27	E S 16	E S 15	E S 15	E S 14	13	E S 15	14	15	18	18	20	18	16	20	17	16	15	15	13	E S 15	E S 15	E S 15	E S 15	E S 16
28	E S 15	13	E S 15	E S 15	E S 14	E S 15	15	14	15	20	20	19	20	23	20	17	15	14	13	E S 16	E S 15	E S 16	E S 15	E S 16
29	E S 16	13	E S 15	13	13	E S 15	15	15	15	16	20	20	22	20	22	19	15	15	E S 15	E S 16	E S 15	E S 16	E S 16	E S 16
30	E S 14	E S 15	E S 15	13	13	E S 14	14	15	15	15	19	17	20	20	18	15	16	15	E S 15	E S 16	E S 15	E S 16	E S 15	E S 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 S 15	E S 15	E S 15	E S 14	E S 14	E S 15	E S 14	14	14	15	16	16	19	16	16	15	15	14	E S 14	E S 15	E S 15	E S 15	E S 16	E S 15
UQ	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	14	15	16	17	19	20	19	18	16	15	15	E S 15	E S 16	E S 15	E S 16	E S 16	E S 16
LQ	E S 15	E S 14	E S 15	E S 14	13	E S 14	E S 14	13	14	15	15	16	16	16	15	14	14	13	E S 14	E S 15	E S 15	E S 15	E S 15	E S 15

APR. 1985

FMIN (0.1 MHZ)

IONOSPHERIC DATA

APR. 1985

M(3000)F2 (0.01)

135° E Mean Time (G.M.T. + 9 h)

Station	Rokubunji Tokyo																							
Hour	Lat. 35° 42' 4" N							Long. 139° 29' 3" E							Sweep 1 MHz to 20 MHz in 20 sec in automatic operation									
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	305	300	295	S	S	S	S	S	340	340	340	320	340	320	330	330	330	330	330	320	I	S	S	S
2	305	S	S	S	295	330	345	350	330	320	310	330	315	315	S	330	S	S	340	340	330	315	S	S
3	295	295	300	S	310	305	340	S	340	345	310	310	310	330	325	335	S	S	S	S	I	S	S	S
4	S	S	S	S	300	305	330	S	S	S	330	325	325	S	S	S	340	330	335	S	S	340	290	S
5	305	310	335	325	315	320	S	S	310	330	340	335	330	320	310	330	335	J	S	S	350	360	290	S
6	S	310	310	320	315	320	350	S	340	S	335	305	320	315	320	325	330	340	345	S	340	360	285	S
7	305	315	315	320	325	340	350	355	345	320	340	330	330	330	325	340	340	330	S	S	345	325	300	S
8	S	300	300	330	315	S	360	H	360	340	325	315	S	S	330	340	340	345	S	340	345	325	A	S
9	S	S	F	S	300	320	S	340	340	340	S	335	310	315	330	330	335	330	S	S	330	320	310	S
10	290	295	285	300	350	S	S	S	325	310	S	320	320	S	310	330	S	S	S	330	320	S	345	S
11	F	S	S	S	S	S	S	S	A	305	310	315	320	315	S	S	S	S	S	S	S	345	290	S
12	300	S	300	300	300	310	S	S	J	S	S	335	330	315	330	320	320	340	S	S	340	330	340	S
13	S	300	S	340	320	335	350	350	340	S	340	325	320	325	325	340	340	340	S	S	330	330	340	S
14	325	330	330	310	310	330	350	370	S	340	290	310	S	340	325	300	300	S	S	S	S	325	325	S
15	S	S	F	S	S	S	S	330	365	340	340	310	300	325	S	330	325	330	340	335	325	340	S	S
16	S	S	S	S	S	S	360	370	360	330	320	315	300	305	305	315	S	S	S	S	325	325	320	S
17	F	S	S	300	S	S	S	330	335	320	325	305	310	310	S	325	S	S	S	320	325	300	S	S
18	S	S	S	315	300	S	S	330	S	335	330	320	310	315	315	315	320	S	S	S	S	330	315	S
19	310	S	S	295	320	S	S	350	330	330	325	320	305	315	315	310	305	295	310	S	S	320	S	S
20	S	S	S	310	325	305	320	350	310	330	S	315	315	320	295	S	310	315	S	S	295	290	S	S
21	295	295	320	S	320	330	345	335	295	290	285	295	285	290	290	290	280	S	S	S	305	290	295	S
22	300	A	S	S	285	300	330	320	285	310	300	J	S	320	320	330	335	320	330	320	325	315	S	S
23	S	S	S	S	310	S	S	330	325	A	A	310	310	290	315	320	330	335	320	S	S	310	S	S
24	S	S	S	300	S	S	S	335	320	325	330	320	310	305	S	320	310	300	S	S	S	325	325	S
25	290	S	S	S	305	320	330	335	330	325	S	S	320	295	S	320	310	320	310	S	S	330	305	S
26	I	S	S	S	300	S	340	335	335	S	330	310	310	S	300	310	320	310	S	S	325	310	290	S
27	S	295	295	295	295	300	S	295	A	A	A	A	A	A	R	300	280	295	315	310	310	320	S	S
28	S	F	S	S	S	S	340	G	275	290	300	280	270	285	305	320	320	300	295	S	S	300	S	S
29	285	290	S	285	305	305	280	315	275	280	315	310	310	310	320	310	310	S	S	S	330	A	295	S
30	S	S	S	320	300	310	320	305	310	310	310	310	310	340	315	310	315	305	320	310	320	A	F	F
31																								
CNT	28	28	28	30	30	30	30	30	28	28	28	29	29	30	30	30	30	30	30	30	29	29	28	28
MED	S	S	S	300	308	320	340	338	330	325	320	315	315	315	315	320	325	325	325	325	S	325	295	S
UQ	305	310	310	320	315	330	350	350	340	335	330	320	320	325	325	330	330	335	330	330	330	340	S	S
LQ	S	S	S	300	300	310	330	330	322	315	310	310	310	310	310	310	310	315	310	320	S	S	290	S

APR. 1985

M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1985

M(3000)F1 (0.01)

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

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

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

APR. 1985

M(3000)F1 (0.01)

IONOSPHERIC DATA

APR. 1985

H*F2 (KM)

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

Station **ROKUBUNJI TOKYO** Lat. **35 42' 4" N** Long. **139 29' 3" E** Sweep 1 MHz to 20 MHz in 20sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									245	260	285	250	280	265	275	265	265	265						
2									L 265	280	280	265	285	290	275	265	265	230						
3									250	240	290	305	275	265	270	270	255	255						
4							240		250	260	280	305	295	280	270	255	260	255						
5									L 280	240	275	300	300	320	275	270	250							
6									260	250	260	285	280	290	260	265	265	255						
7									265	300	255	260	270	270	275	250	265	260						
8									235	L 265	325	315	275	275	290	280	265	255						
9								255	255	275	270	285	295	260	275	280	285	275						
10									295	315	305	275	270	280	290	275	235	270						
11								E A 280	A	300	290	280	295	275	280	290	275	255						
12									250	255	255	265	305	270	305	300	280	255	245					
13									280	250	290	305	295	290	275	270	280	260						
14									245	265	280	L 310	270	285	330	315	275	245						
15									235	260	275	310	340	320	290	280	285	280	255					
16									255	260	265	280	285	355	320	290	270	255	250					
17									260	285	280	300	290	300	295	275	255	265						
18									255	255	255	285	295	305	305	270	285	290	275	260				
19									225	265	260	280	310	315	295	285	310	310	320					
20									305	260	295	300	305	305	365	265	300	270	280					
21									350	415	400	340	400	370	330	340	330	340						
22									290	370	325	305	275	295	290	280	285	265	270					
23									295	L 320	A	A	335	315	320	275	250	255	250					
24									255		300	280	305	320	300	300	285	265	275	270				
25									240	270	265	320	310	330	300	305	275	270	260					
26									250	255	275	105	315	295	285	330	275	260	270					
27								295	400	A	A	A	A	A	390	430	350	290	280					
28								G	515	405	385	415	430	330	290	E A 300	270	310	300					
29					295	345	355	450	450	335	310	330	300	270	285	280	250	A E A 255						
30						305	320	330	350	335	330	335	310	315	305	280	275	250						
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	3	19	26	28	27	29	29	30	30	30	30	30	5					
MED					295	305	255	262	278	285	305	295	292	282	279	268	260	260						
UQ						325	300	295	300	308	310	320	305	300	288	280	275	270						
LQ						300	248	255	260	280	285	280	280	275	270	260	255	255						

The Radio Research Laboratories, Japan

APR. 1985

H*F2 (KM)

IONOSPHERIC DATA

APR. 1985

H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S						S	E A	E A	105	105	A	105	105	105	105	110	115	S				S	S
2							S	105	E A	E A	105	105	105	110	105	105	105	110	S					
3							S	105	105	105	105	105	110	A	A	A	110	105	115	S				
4							E S	A	A	A	A	A	A	A	A	A	115	115	110	115	S			S
5			S	S	S		E S	A	A	A	A	A	105	100	105	120	A	A	115	B				
6							E S	110	105	105	105	A	A	A	A	A	A	A	115	S				
7							E S	105	A	105	105	105	A	A	E A	120	110	110	115	B		S		
8							120	110	105	A	105	110	105	105	110	105	110	120	B					
9							A	A	A	A	A	A	E A	A	A	A	A	A	S					
10	S		S	S	S		S	110	105	105	A	A	A	E A	E A	115	E A	A	S					
11							E S	110	105	105	105	A	E A	A	A	E A	E A	A	S				S	
12							115	110	110	105	105	105	A	A	E A	A	115	115	115	S				
13							E S	110	105	115	A	A	120	A	A	110	110	A	E A	S				
14							E S	105	105	115	A	A	120	115	110	105	110	110	S					
15							115	110	105	105	105	105	E A	E A	115	A	110	110	S					
16							E S	105	105	105	105	A	A	A	A	115	110	115	S					
17			S		S		E S	105	105	105	105	110	A	A	A	E A	A	A	S					
18							115	110	105	105	A	E A	130	A	A	110	110	A	A	S				
19							115	105	105	105	105	A	A	105	105	115	A	A	S					
20	S						115	105	105	A	A	A	A	E A	A	E A	E A	A	S					
21			S	S			110	105	105	105	105	105	105	105	105	105	105	120	S		S			
22							110	105	105	105	A	105	105	105	105	110	110	110	S					
23							110	105	105	105	A	A	A	105	110	105	110	115	120					
24							110	110	105	105	A	B	110	110	B	110	110	115	S					
25						S	110	A	E A	105	105	A	A	A	E A	E A	105	105	B					
26						S	110	105	105	105	105	105	105	105	105	110	110	110	S					
27						S	E A	E A	105	105	105	105	105	105	105	A	A	E A	A					
28						S	110	110	110	105	105	105	110	110	110	110	110	115	A		S	S	S	
29			S			S	E A	A	105	105	105	A	125	105	110	A	110	E A	A					
30						S	A	A	A	105	105	A	E A	A	A	A	110	115	A				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							25	26	27	26	22	15	19	21	23	26	27	26	1					
MED							115	108	105	105	105	105	108	108	108	110	110	115	120					
UQ							E S	110	106	105	105	109	115	110	A	112	A	A	115					
LQ							110	105	105	105	105	105	105	105	105	110	110	115						

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H°E (KM)

IONOSPHERIC DATA

APR. 1985

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station **ROKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep 1 MHz to 20 MHz in 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	110	S	105	B	S	S	155	145	130	115	105	G	125	140	125	G	135	125	110	105	105	S	145
2	130	95	95	105	110	120	155	G	105	160	140	120	120	120	115	G	E G 175	135	125	120	115	115	S	S
3	100	105	105	105	105	105	S	150	130	120	125	130	130	140	135	125	125	115	115	S	110	110	110	110
4	110	105	105	105	105	105	150	105	120	115	115	105	105	100	100	105	135	120	115	115	115	S	120	S
5	S	S	S	S	110	S	150	140	140	135	125	105	G	G	G	105	125	125	115	110	110	110	100	105
6	105	110	110	110	105	110	G	130	125	115	110	105	105	105	105	105	115	125	115	110	110	110	105	110
7	110	105	105	S	105	110	150	135	125	115	110	110	105	105	105	130	130	125	115	120	110	105	105	S
8	110	105	105	105	105	S	G	110	110	105	115	115	110	115	135	125	130	120	115	115	110	110	110	110
9	105	105	105	110	105	110	165	140	130	125	105	125	100	100	100	100	100	140	115	115	110	110	110	105
10	105	125	105	110	S	130	125	120	115	115	105	105	105	105	105	105	110	145	120	110	110	105	105	115
11	110	110	125	105	105	105	G	120	110	110	110	105	105	105	105	105	95	95	95	95	115	115	110	S
12	S	B	B	B	105	S	140	135	120	120	110	110	105	105	105	100	150	135	120	100	120	115	115	110
13	105	105	S	S	S	S	145	145	140	125	130	125	125	100	135	100	140	125	120	100	105	105	105	100
14	S	100	95	S	B	S	135	130	125	130	105	110	105	100	100	G	G	140	95	95	95	100	S	S
15	S	S	S	S	S	130	145	150	125	G	G	G	105	155	100	160	G	G	125	120	115	S	S	S
16	S	S	S	B	95	S	130	125	125	110	110	105	105	100	100	E G 175	135	155	125	95	100	S	S	100
17	S	S	S	S	95	S	G	140	130	120	115	110	105	115	105	100	100	110	100	100	S	S	S	S
18	S	S	S	S	S	S	130	135	120	115	105	105	105	105	100	G	150	135	100	100	95	95	95	S
19	S	S	S	S	S	S	140	135	135	G	110	105	105	G	110	110	110	125	115	110	100	100	S	105
20	S	135	130	125	S	S	G	G	130	120	100	125	100	105	105	145	130	135	100	115	110	115	110	110
21	110	110	S	S	S	S	150	130	150	140	145	130	135	125	130	G	G	G	S	S	110	110	110	115
22	115	110	105	95	S	155	140	140	130	125	125	140	140	145	150	105	G	130	120	115	115	120	105	105
23	110	110	110	105	105	S	G	120	115	105	105	105	105	155	130	130	130	120	110	110	110	115	110	105
24	105	105	105	100	105	105	145	130	120	110	105	110	125	150	a	G	145	120	110	110	100	110	110	S
25	S	105	S	S	S	S	G	135	125	115	110	105	105	100	135	130	125	120	120	115	115	110	105	105
26	105	100	S	100	100	S	130	125	125	120	140	125	130	130	120	G	G	G	110	110	105	105	105	110
27	110	S	100	100	100	100	140	125	120	115	110	110	110	110	115	105	105	105	100	100	100	95	110	110
28	115	110	115	105	105	S	130	145	130	125	120	120	G	115	110	105	110	110	110	115	S	130	120	120
29	115	110	S	B	B	S	105	145	130	115	120	120	155	150	110	130	130	125	115	110	110	110	110	115
30	110	100	S	105	105	105	105	135	120	G	165	100	150	150	110	130	115	120	120	115	110	110	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	19	22	16	17	18	13	21	28	30	27	29	29	27	28	28	24	24	27	29	28	28	26	22	20
MED	110	105	105	105	105	110	140	135	125	120	110	110	105	112	110	106	126	125	115	110	110	110	110	110
UQ	110	110	110	105	105	120	150	140	130	125	125	120	125	135	130	130	134	135	120	115	112	115	110	112
LQ	105	105	105	105	105	105	130	125	120	115	110	105	105	105	105	105	110	120	110	100	105	105	105	105

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H°ES (KM)

IONOSPHERIC DATA

APR. 1985

TYPES OF ES

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	K1	F1		F1				HL22	HL22	C2	C1	L1		H2	H1	H2		H4	H2	F7	F4	F5	K1	HK21	
2	FF22	F2	F2	F6	F3	F1	H4		L2	HL11	H2	C2	C2	C2			H2	H4	H6	F7	F5	F5			
3	F1	F1	F3	F4	F3	F3		H1	H2	C2	C2	C1	CL11	HL21	HL21	C3	C3	C4	C2	F1	F1	F4	F2	FF21	
4	F2	F2	F3	F6	F3	F2	H2	L3	LL42	CL23	CL22	L3	L2	L2	L2	L1	H2	C5	C7	FF81	F1		LK21		
5			K1	K1	LK11		H5	HL22	HL22	HL22	HL12	L1				L1	CL22	C2	C3	FF21	FF42	F6	F1	F2	
6	F2	F3	F2	F1	F3	F1		H2	C1	C2	C3	L2	L2	L1	L2	L1	CL11	CL32	C6	F4	F1	F4	F4	F2	
7	F2	F2	F1		F2	F1	H3	H2	CL32	C3	C2	C2	L1	L2	L2	H2	H4	C4	C5	FF13	F6	LK11	F2		
8	F2	F2	F2	F7	F7			C5	C3	L3	C2	C1	C2	C2	H2	H2	H2	C4	C7	F7	F5	F6	F3	F3	
9	F4	F4	F2	F2	F2	F1	HL21	HL23	HL23	CL22	L2	CL12	L2	L2	L1	L1	L2	HL21	C4	F1	F4	F2	F3	F1	
10	LK21	FF22	LK11	LK11	K1	F2	C3	C4	C3	C2	L3	L2	L2	L1	L1	L1	LL11	HL21	C5	F7	FF52	FF21	FF42	FF23	
11	FF11	FF23	FF31	FFF61	FF44	FF31		C4	C4	C2	C2	L2	L1	LL21	LL21	LL21	L2	L2	L4	FF12	F5	FF21	LK11		
12					F1	F1	H3	H3	C3	C2	C2	C1	L1	L1	L1	L2	HL11	H3	C4	FF11	FF11	FF21	FF31	FF31	
13	FF21	FF11					H2	H2	H2	CL21	CL11	CL11	CL11	L1	CL11	L1	HL21	HL21	CL21	F2	FF11	FF31	F2	F2	
14		F2	F1				H5	H3	C2	CL12	L1	LL11	LL11	L1	L1			HL21	LC22	F3	F1	F1			
15						FF11	H2	H1	H2				LL11	HL11	L1	HL11			C2	F7	F2				
16					F1		H4	H4	H2	C2	C2	LL21	LL12	L1	L2	HL13	HL11	HL21	C2	F2	F1			F1	
17			K1		LK11			H2	H2	C1	C2	CL21	LL21	CL11	LL21	L2	L3	CLL21	L1	F2					
18					F1	H4	H2	H2	C2	C2	L1	L1	L1	L1	L1		HL11	HL21	L1	F2	F1	F4	F1		
19						H4	H2	H2		C1	L2	L2	L1		C2	CL22	LL23	CLL23	CL43	FF13	F4	F3		F1	
20	K1	F1	F1	F1					H1	CL11	L2	CL12	L2	L2	L2	HL12	HL22	CL53	L5	FF72	FF64	FF72	F7	F6	
21	F3	F2	K1	K1			H2	H2	H1	H1	H1	H1	H1	H2	H2					F1	LK21	F6	F5	F6	
22	F7	F5	F6	F1		F1	H2	H1	H2	H4	HL21	H1	H1	H1	H1	L1		H2	CL41	F6	F2	F1	F3	F5	
23	F1	F2	F6	F3	F2			C2	C2	C3	L3	L2	L1	H1	HL11	H1	H1	C4	C3	F4	F3	F3	F4	F3	
24	F2	F5	F2	F2	F2	F3	H2	H2	C2	C1	L2	C1	C1	H1			H1	C3	C3	FF51	F2	FF61	F5		
25		F1						HL23	CL22	C1	C1	L2	L2	L2	HL11	CL21	H2	C2	HC63	F6	F4	F5	F4	F4	
26	F4	F2		F2	F2		H3	H2	C1	C2	H1	H1	H1	H1	C1				L6	F6	F7	F4	F2	F1	
27	FF23		F2	F2	F2	L4	HL21	HL32	C2	C3	C2	C2	C3	C2	C2	L6	L2	L3	L4	F5	F5	F4	FF23	FF52	
28	FF21	F2	F2	F2	F4		H2	H2	H2	H1	CL21	C1		C2	C2	C3	C3	C3	L4	F2	K1	CK11	CK11	F2	
29	F2	F5	K1				L1	HL12	H1	C2	C1	CL11	HL11	HC11	C2	HL21	C2	CL23	CL42	F4	FF43	FF22	FF41	F5	
30	FF41	F1		F3	F2	L2	L2	HL22	CL22		HL12	L2	HL11	HLL11	LL21	HL21	C2	C2	C3	F7	F5	F4	K1	K1	
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

APR. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9h)

Station	YAMAGAWA					Lat. 31 12' 1 N	Long. 130 37' 1 E	Sweep 1 MHz to 25 MHz in 2.4 sec in automatic operation																
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 49	X 46	X 44	X 43	X 40	X 36														X 91	U 46	S 38	X 40	X 39
2	X 38	X 38	X 39	X 38	X 36	X 37														Y 63	S 51	X 41	U 43	U 35
3	U 35	X 42	X 42	X 42	X 33	X 30														X 84	X 58	U 41	X 40	S 41
4	S 43	S 41	S 40	U 41	X 32	X 31														X 74	X 63	X 41	S 42	O 41
5	X 44	S 42	X 42	X 39	X 36	S 38														X 80	X 60	X 41	X 40	X 41
6	X 42	X 42	X 41	X 38	X 33	X 30														X 92	X 56	X 32	X 34	X 37
7	X 37	X 37	X 36	X 36	X 34	X 30														X 91	X 76	X 40	X 35	X 35
8	X 36	X 36	X 37	X 38	X 36	X 37														X 70	C	C	C	C
9	C	C	C	C	C	C														X 94	X 85	X 61	X 48	S 49
10	X 50	X 48	X 45	X 48	X 56	X 27														X 97	X 85	X 35	X 41	X 37
11	X 35	X 36	X 34	X 33	X 36	X 32														100	X 70	X 40	X 40	X 39
12	X 38	X 38	X 37	X 34	X 35	X 35														X 82	X 60	X 43	X 43	X 44
13	X 46	X 46	X 49	X 41	X 35	X 32														X 89	X 84	X 53	X 47	X 44
14	X 44	X 41	X 40	X 39	X 36	X 36														X 80	X 69	X 44	X 38	X 40
15	X 40	X 39	X 43	X 42	S	X 36														X 82	S 76	S 48	X 37	A
16	X 38	X 37	X 36	X 37	X 36	X 34														X 71	X 63	X 49	X 47	X 46
17	X 47	S 45	X 43	X 43	X 39	X 36														X 81	X 77	X 56	S 52	S 52
18	S	S 48	X 44	X 42	X 39	X 35														X 95	X 84	X 64	S	S
19	X 56	S 52	X 47	X 44	X 43	X 38														A	S 87	A	X 54	X 51
20	S	X 50	S 52	X 54	X 37	O 32														X 75	X 65	X 62	O 63	S 61
21	S 60	X 60	X 60	X 60	X 39	X 27														X 88	X 81	X 64	X 66	X 56
22	X 55	X 54	X 56	X 52	X 39	X 34														X 73	X 65	X 54	S 50	52
23	55	52	46	43	42	30														X 78	X 72	X 45	S 43	46
24	43	43	40	40	37	36														124	X 91	X 54	X 50	X 48
25	X 47	X 47	X 45	X 43	X 41	X 41														X 77	X 72	X 64	X 56	X 52
26	X 52	51	57	49	41	40														X 89	X 69	X 55	X 54	X 54
27	S 32	X 42	44	45	49	44															X 52	X 46	X 39	39
28	S 37	X 37	X 36	X 39	42	34															112	X 74	X 70	X 66
29	X 65	X 67	S 64	60	X 53	S 48															X 64	X 47	X 48	X 47
30	46	52	44	47	S 36	S 34															X 63	U 49	50	50
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	29	29	28	29														25	29	28	28	27
MED	X 44	X 43	X 43	X 42	X 37	X 35														X 82	X 69	X 48	X 45	X 46
UQ	X 50	X 50	X 46	X 45	X 41	X 37														X 91	X 81	X 56	X 51	X 52
LQ	X 38	X 39	X 40	X 39	X 36	X 32														X 77	X 63	X 41	X 40	X 40

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FXI (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12' N				Long. 130° 37' 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	43	40	38	37	34	30	35	53	62	61	70	I C 77	80	81	71	S I C 73	64	66	83	85	U S 40	32	F 31	33	
2	32	32	33	32	30	31	37	53	59	70	68	79	88	92	96	89	83	88	68	57	S 45	35	U S 37	J S 29	
3	J S 29	36	U S 36	36	27	24	35	52	64	61	60	80	95	94	98	84	U H 72	73	78	78	52	35	U S 34	35	
4	S 37	S 35	S 34	35	26	25	S 33	62	60	66	71	70	82	92	93	78	74	71	69	68	57	35	S 36	S 35	
5	38	S 36	36	33	30	S 32	S 41	55	69	75	I C 85	94	86	78	86	94	91	93	86	74	54	35	34	35	
6	36	36	35	32	27	24	39	58	70	73	77	80	96	112	104	86	82	79	80	86	50	26	28	31	
7	31	31	30	30	28	24	37	49	54	70	81	80	98	116	128	120	86	74	77	85	70	34	29	29	
8	30	30	31	32	30	31	43	50	50	56	67	77	87	88	86	90	91	82	71	64	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	C	61	66	84	82	70	67	74	74	82	88	79	55	42	U S 43
10	44	42	39	42	50	21	33	55	69	69	71	90	97	99	93	87	75	59	70	91	79	29	35	31	
11	29	30	28	27	30	26	42	50	53	65	76	84	97	92	104	100	90	90	100	94	64	34	34	33	
12	32	32	31	28	29	29	47	58	61	61	65	67	76	79	90	101	94	81	87	76	54	37	37	38	
13	40	40	F	35	29	26	39	52	59	67	67	69	83	99	104	96	85	78	74	83	78	47	41	38	
14	38	35	34	33	30	30	44	53	56	70	60	78	81	62	63	79	95	90	84	74	63	38	32	34	
15	S 34	33	37	35	S	F 25	44	53	63	55	H 53	65	85	77	77	83	80	70	70	76	70	42	31	A	
16	33	S 31	S 30	F 27	F 27	F 25	43	57	60	55	61	65	73	80	86	93	96	83	70	66	57	43	S 41	41	
17	S 41	S 39	37	37	33	30	40	62	61	58	67	74	79	84	94	102	90	76	80	S 75	70	50	S 46	46	
18	I S 45	S 42	38	36	S 33	29	43	63	68	71	55	H 75	87	94	U H 104	U R 108	99	92	90	89	78	57	I S 44	I S 47	
19	S 50	J S 46	S 41	38	38	32	44	52	57	67	67	66	J R 80	88	80	J R 74	79	81	U S 93	A	S 81	A	48	S 46	
20	I S 46	44	S 46	48	S 31	26	S 44	50	59	59	66	72	71	73	79	67	64	70	90	69	59	56	57	55	
21	S 54	54	54	54	33	21	41	46	60	64	70	94	74	86	95	98	89	94	103	82	S 75	58	60	J S 50	
22	49	48	50	46	33	28	43	55	56	68	98	93	94	94	R 63	69	80	70	66	67	59	48	S 44	F	
23	F	F	S 40	37	S 36	24	41	50	54	56	68	84	86	88	94	90	71	59	61	72	66	39	S 37	F	
24	F 34	37	34	34	31	30	44	51	54	66	83	88	95	106	H 97	95	104	89	99	118	85	48	44	42	
25	41	41	39	37	35	35	54	60	58	66	58	65	81	93	94	84	87	78	77	71	66	58	50	46	
26	46	F	F	F	35	34	53	58	60	64	61	66	80	97	94	103	108	95	89	83	63	49	48	48	
27	26	36	F	F	F	F 34	54	48	61	H 57	56	54	59	U R 61	63	67	89	74	67	67	46	40	33	F 30	
28	S 31	31	30	33	F 32	28	40	47	53	59	67	66	77	91	95	93	95	R 87	89	104	H 106	68	64	60	
29	59	61	S 58	F 51	47	42	40	45	49	48	50	60	74	91	86	78	77	87	75	66	58	S 41	42	41	
30	F	F	F	F	J S 30	S 28	45	61	53	57	56	64	68	74	J R 72	74	77	66	68	S 74	57	U S 43	U F 44	F	
31																									
CNT	27	26	25	26	27	29	29	29	29	29	30	30	30	30	30	30	30	30	30	29	29	28	29	25	
MED	38	36	36	35	31	28	42	53	59	64	67	74	82	90	93	88	86	78	79	76	63	42	41	38	
UQ	44	42	39	37	34	31	44	58	61	68	71	80	88	94	96	96	91	88	89	85	75	50	44	46	
LQ	32	32	33	32	30	25	39	50	54	58	60	66	77	80	79	78	77	71	70	69	57	35	34	33	

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

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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 24 sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1									L	L	L	I C	450	450	450	C	L	L	L										
2										L	U L	450	450	U L	450	430	L	L											
3									L	L	U L	430	460	460	450	A	A	A	A	A									
4									L	U L	420	430	U L	450	490	450	430	A	A	A									
5									L	U L	430	C	440	440	L	450	L	U L	410	L									
6									L	L	440	450	450	450	440	430	L	L											
7									400	L	420	450	430	450	430	450	L	L											
8										U L	440	440	450	450	A	A	L	A	A										
9						C	C	C	C	U L	430	460	440	450	L	450	U L	450	L	L	L								
10									L	L	430	440	450	460	420	430	L	L	L										
11									L	U L	410	430	A	A	U L	460	440	430	L	L									
12									L	L	430	440	450	L	450	420	L	L											
13									L	L	440	440	460	460	440	430	410	A	A										
14									L	420	U L	430	440	440	450	450	430	410	360	L									
15									L	420	U L	450	450	450	450	440	410	380	L	L									
16									L	420	430	450	470	460	440	440	A	A	A										
17								L	L	U L	430	440	460	470	450	440	430	400	L	L									
18								L	L	420	U L	440	450	470	450	450	440	400	L	L									
19									L	430	450	470	460	450	H	440	440	A	A	A									
20								L	400	L	A	L	450	440	450	450	430	L	L	L									
21										L	480	480	470	470	470	440	L	L											
22									A	450	450	U L	460	460	460	450	450	L	L										
23								L	U L	400	450	440	450	460	450	A	A	A	L										
24									L	A	A	A	A	460	A	A	A	A	A										
25								L	L	U L	420	430	U L	470	A	460	440	450	L	L	A								
26									L	L	A	U L	440	460	450	450	420	A	A	L									
27								400	L	A	A	430	440	450	L	450	A	A	A	A									
28									L	440	450	A	450	450	440	U L	430	A	L	L									
29								L	H	390	420	430	430	450	440	440	440	U L	440	U L	370								
30								L	H	390	L	440	H	470	460	H	450	430	410	U L	380	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									6	16	25	27	27	27	26	23	8	4											
MED									400	420	440	450	450	450	450	430	410	375											
UQ									400	U L	435	450	460	460	460	450	440	410	380										
LQ									H	390	420	430	440	450	450	440	430	405	365										

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FOF1 (0.01 MHZ)

IONOSPHERIC DATA

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FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9h)

Station	YAMAGAWA				Lat. 31 12' 1" N				Long 130 37' 1" E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	175	250	285	305	I C	310	R	H	H	I C	H	H					
2							S	200	260	295	310	A	330	A	A	R	320	270	240	A				
3							S	170	250	285	305	R	330	U R	R	R	R	280	245	A				
4							S	A	255	295	300	A	A	A	A	305	A	240	A					
5							S	205	R	280	310	I C	R	U R	R	R	R	H	H	A				
6							S	220	265	305	A	A	320	325	320	320	300	280	245	170				
7							S	200	A	A	A	A	A	A	320	310	280	245	190					
8							S	210	270	300	315	R	330	340	340	330	315	295	250	185				
9							C	C	C	C	305	320	325	A	310	300	290	245	170					
10							S	205	280	305	320	A	330	A	A	A	A	240	185					
11							S	205	A	A	A	A	A	A	R	315	300	280	240	190				
12							S	240	270	305	320	325	A	R	330	315	300	280	240	185				
13							S	225	260	300	310	325	330	330	325	300	280	245	180					
14							S	205	260	300	315	A	330	330	320	310	280	240	180					
15							S	210	275	295	305	320	R	R	310	310	290	250	190					
16							S	210	265	305	320	R	A	A	A	A	A	290	260	A				
17							S	210	285	290	310	A	R	310	340	R	A	295	255	200				
18							S	240	270	A	A	A	R	R	345	340	335	310	290	H	A			
19							S	210	260	305	A	A	A	A	A	A	320	300	H	250	190			
20							S	210	250	H	300	A	A	A	A	A	A	A	H	250	H	200		
21							S	200	280	300	325	R	U R	R	R	R	305	290	255	190				
22							S	205	270	300	325	R	U R	U R	U R	330	320	300	295	250	135			
23							S	230	280	A	A	A	A	340	340	325	320	295	260	200				
24							S	225	280	A	330	B	340	340	B	325	300	255	190					
25							S	225	285	315	330	A	A	340	335	320	295	260	205					
26							S	240	295	330	A	U R	340	350	340	335	320	295	255	200				
27							S	240	280	315	325	335	350	335	320	A	A	A	A	S				
28							A	A	A	A	A	335	350	A	320	305	285	A	A	S				
29							S	225	275	300	320	H	R	R	R	R	A	295	250	A	S			
30							S	220	275	315	A	A	A	330	330	310	A	A	A	S				
31																								
CNT								27	26	23	20	15	21	18	21	24	25	27	20					
MED								210	270	300	318	330	335	332	320	310	290	250	190					
UQ								225	280	305	322	332	340	340	330	320	295	255	195					
LQ								205	260	298	308	322	330	R	330	320	302	280	245	185				

APR. 1985

FOE (0.01 MHZ)

IONOSPHERIC DATA

APR. 1985

FOES (0.1 MHz)

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

Station	YAMAGAWA																							Lat.	31 12' 1 N			Long	130 37' 1 E			Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																		
1	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	32	33	C	37	38	35	C	31	G	G	J A 24	J A 36	17	E S 16	E S 16																		
2	19	19	19	22	18	J A 25	J A 18	24	33	32	J A 35	J A 39	J A 46	J A 40	36	21	G	G	27	23	21	E S 16	E S 16	J A 23																		
3	22	E S 16	E S 16	17	20	J A 19	J A 20	23	29	J A 50	J A 37	37	37	37	45	46	J A 43	J A 41	J A 49	J A 24	22	18	J A 29	J A 29																		
4	J A 30	J A 30	J A 43	J A 45	E S 16	E S 16	E S 16	24	J A 32	J A 39	36	38	J A 49	J A 41	J A 39	J A 58	J A 48	J A 58	J A 51	J A 54	J A 40	20	E S 16	E S 16																		
5	E S 16	E S 16	20	17	17	22	E S 16	26	G	37	C	G	G	G	G	36	33	31	27	J A 25	J A 18	18	20	E S 16																		
6	J A 30	J A 23	J A 21	E S 16	E S 16	E S 16	J A 17	25	G	G	J A 32	G	G	G	37	34	31	G	21	E S 16	E S 16	E S 16	E S 16	E S 16																		
7	J A 17	J A 20	J A 17	E S 16	E S 16	E S 16	E S 16	J A 25	J A 33	J A 38	J A 53	J A 46	J A 48	35	36	G	G	33	J A 33	J A 28	J A 41	J A 41	J A 36	J A 20																		
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	25	31	34	34	J A 44	44	44	J A 44	38	J A 48	J A 48	J A 47	J A 44	C	C	C	C																		
9	C	C	C	C	C	C	C	C	C	C	37	35	G	44	G	G	35	33	25	J A 24	J A 25	J A 30	E S 16	E S 16																		
10	E S 16	E S 16	J A 23	J A 26	J A 25	E S 16	J A 25	24	G	G	G	J A 37	39	J A 41	J A 74	J A 50	J A 37	J A 35	25	J A 24	J A 25	J A 17	J A 29	E S 16																		
11	J A 24	J A 40	J A 30	J A 24	J A 25	J A 34	J A 34	28	J A 37	J A 42	J A 64	J A 70	J A 69	J A 44	27	G	G	G	22	E S 16	J A 24	J A 27	E S 16	J A 20																		
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	33	37	G	G	37	40	30	G	G	G	18	J A 17	E S 16	E S 16	E S 16	J A 26																		
13	J A 25	J A 24	J A 21	J A 26	E S 16	J A 17	E S 16	27	33	39	36	40	44	39	40	37	35	38	J A 36	J A 28	J A 27	J A 34	E S 16	E S 16																		
14	J A 17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	34	37	36	J A 33	39	39	G	G	G	27	J A 22	E S 16	E S 16	E S 16	E S 16	E S 16																		
15	E S 16	E S 16	J A 18	J A 17	E S 16	E S 16	E S 16	G	29	G	33	G	40	29	37	G	G	G	19	28	J A 20	J A 22	E S 16	24	J A 36																	
16	J A 24	E S 16	E S 16	E S 16	E S 16	E S 16	18	26	34	36	G	34	34	J A 43	36	37	54	J A 43	30	J A 24	E S 16	E S 16	E S 16	E S 16																		
17	E S 16	E S 16	E S 16	J A 17	E S 16	E S 16	E S 16	25	30	35	35	36	30	30	G	J A 39	G	J A 20	J A 24	18	J A 23	E S 16	E S 16	E S 16	E S 16																	
18	E S 16	E S 16	E S 16	17	E S 16	E S 16	21	27	29	J A 32	37	J A 39	G	37	G	G	21	32	30	29	J A 32	E S 16	E S 16	E S 16	E S 16																	
19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	25	30	J A 42	J A 36	J A 41	J A 39	J A 39	J A 73	43	46	J A 66	J A 84	J A 124	J A 86	73	33	J A 26																		
20	J A 24	E S 16	E S 16	E S 16	E S 16	E S 16	J A 32	29	35	J A 58	J A 48	36	J A 47	38	J A 49	J A 41	31	G	G	J A 18	J A 23	E S 16	E S 16	E S 16																		
21	E S 16	J A 33	35	35	E S 16	J A 25	19	26	34	36	40	42	45	54	40	G	G	G	G	E S 16	E S 16	J A 20	J A 25	J A 26																		
22	J A 39	J A 36	J A 43	J A 54	J A 24	E S 16	25	J A 46	J A 47	J A 43	41	40	G	G	G	G	G	31	32	J A 27	J A 25	E S 16	J A 53	E S 16																		
23	E S 16	J A 21	J A 41	J A 44	J A 24	25	20	32	35	42	41	40	39	40	J A 58	50	44	37	J A 35	J A 31	J A 32	J A 52	J A 40	J A 29																		
24	J A 36	J A 24	J A 25	J A 28	J A 24	J A 51	J A 24	30	37	J A 56	J A 53	J A 68	J A 52	43	J A 49	J A 66	J A 52	J A 60	J A 51	J A 50	J A 21	E S 16	J A 40	J A 21																		
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	28	G	G	G	37	J A 55	42	42	41	32	35	J A 51	J A 84	J A 44	J A 28	23	J A 17																		
26	J A 26	E S 16	E S 16	J A 23	J A 52	J A 23	19	33	J A 35	J A 48	J A 48	42	38	40	43	J A 45	J A 54	J A 42	J A 27	J A 24	J A 22	J A 22	J A 42	J A 21																		
27	J A 36	J A 41	J A 46	J A 61	J A 21	E S 16	E S 16	29	37	J A 45	J A 50	J A 49	40	J A 54	J A 45	J A 46	J A 59	J A 64	J A 50	J A 25	J A 26	J A 24	J A 61	J A 64																		
28	J A 49	J A 51	J A 50	J A 25	J A 26	E S 16	J A 29	26	36	34	41	J A 46	44	J A 75	J A 65	J A 47	J A 54	J A 54	J A 37	J A 36	J A 21	J A 21	E S 16	J A 38																		
29	J A 32	45	36	J A 29	J A 24	J A 18	24	18	G	G	32	G	G	37	25	35	35	33	27	J A 33	J A 25	J A 21	23	E S 16	J A 38																	
30	J A 38	J A 40	J A 60	J A 87	21	38	24	31	J A 33	36	J A 47	41	40	40	41	J A 42	39	32	29	E S 16	J A 28	J A 65	J A 23	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	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	29	30	30	30	30	29	29	29	29																		
MED	J A 19	E S 16	19	17	E S 16	E S 16	18	26	33	37	36	39	39	40	38	37	33	32	29	J A 24	J A 22	18	E S 16	J A 20																		
UQ	J A 30	J A 30	J A 35	J A 28	J A 24	J A 22	24	28	35	J A 42	J A 41	J A 42	45	43	J A 45	J A 45	J A 46	J A 42	J A 37	J A 31	J A 27	J A 27	J A 29	J A 26																		
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	24	29	32	33	35	37	37	G 30	G 21	G 20	G 20	G 22	J A 20	18	E S 16	E S 16	E S 16																		

APR. 1985

FOES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

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 **24** sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	29	32	33	C	36	37	G	C	G	G	G	22	21	E	E S 16	E S 16	
2	E	E	E	E	E	E	E	G	24	33	G	33	36	40	38	36	21	G	17	G	25	20	E	E S 16	E S 16
3	E	E S 16	E S 16	E	E	E	E	G	29	27	35	36	36	37	44	46	43	39	47	22	E	E	18	22	
4	E	20	E	E	E S 16	E S 16	E S 16	24	29	33	34	36	46	40	38	56	46	55	51	52	E	E	E S 16	E S 16	
5	E S 16	E S 16	E	E	E	E	E S 16	25	G	G	C	G	G	G	G	36	32	30	27	21	17	18	E	E S 16	
6	E	E	E	E S 16	E S 16	E S 16	G	24	G	G	32	G	G	G	36	34	30	G	21	E S 16	E S 16	E S 16	E S 16	E S 16	
7	E	E	E	E S 16	E S 16	E S 16	E S 16	23	30	34	35	37	35	34	36	G	G	32	30	28	28	25	E	20	
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	25	30	34	34	41	40	43	42	37	42	40	46	44	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	36	34	G	37	G	G	34	28	23	E	18	30	E S 16	E S 16	
10	E S 16	E S 16	E	20	20	E S 16	G	23	G	G	G	33	38	38	39	36	29	30	22	E	23	E	E	E S 16	
11	E	22	23	E	E	E	32	24	28	35	38	48	50	41	G 27	G 28	G 20	G	17	E S 16	21	E	E S 16	E	
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	31	34	G	G	35	40	30	G	23	G	18	G	E	E S 16	E S 16	E S 16	
13	E	E	E	20	E S 16	E	E S 16	26	32	34	35	39	43	39	38	35	34	35	35	25	25	E	E S 16	E S 16	
14	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	33	34	35	32	39	39	G	G	G	26	22	E S 16	E S 16	E S 16	E S 16	E S 16	
15	E S 16	E S 16	E	E	E S 16	E S 16	E S 16	G	29	G	G	G 27	40	U 29	G	G 21	G 18	G 18	27	19	17	E S 16	18	A 36	
16	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	31	35	G	34	34	41	35	34	54	41	29	21	E S 16	E S 16	E S 16	E S 16	
17	E S 16	E S 16	E S 16	E	E S 16	E S 16	E S 16	G	30	33	35	34	G 30	G 30	G	31	G 20	G 21	G 17	G 17	E S 16	E S 16	E S 16	E S 16	
18	E S 16	E S 16	E S 16	E	E S 16	E S 16	20	G	29	32	36	36	G	37	G	G 21	32	29	28	30	E S 16	E S 16	E S 16	E S 16	
19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	34	36	36	35	37	40	43	66	84	A 124	55	A 73	17	22	
20	E	E S 16	E S 16	E S 16	E S 16	E S 16	17	27	G	43	44	36	41	36	38	37	29	G 20	G	17	20	E S 16	E S 16	E S 16	
21	E S 16	E	28	30	E S 16	E	18	26	32	35	37	42	44	46	39	G	G	G	G	E S 16	E S 16	19	24	25	
22	37	33	34	33	E S 16	24	45	45	40	40	39	G	G	G	G	G	30	30	20	24	E S 16	E	E S 16		
23	E S 16	E	E	20	E	E	20	30	33	40	40	39	37	39	56	49	43	36	34	30	30	31	19	22	
24	E	E	E	E	E	20	21	28	34	43	48	45	50	42	47	65	50	57	51	48	19	E S 16	E	E	
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	27	G	G	G	34	53	42	40	G	G	34	45	50	27	18	E	E	
26	19	E S 16	E S 16	E	E	E	19	32	33	40	42	G	38	37	40	40	52	40	25	23	22	20	39	18	
27	17	E	E	E	E S 16	E S 16	28	34	44	48	39	39	43	44	45	47	53	39	23	17	21	E	E		
28	E	E	E	E	E S 16	E S 16	25	25	34	34	36	45	42	39	40	37	52	39	29	36	19	19	E S 16	25	
29	30	38	33	E	20	E	24	G 18	G	G	G	G	37	G 25	G	34	32	G	30	20	19	E	E S 16	E	
30	E	32	E	E	E	E	G	30	32	36	41	40	37	39	40	35	38	30	26	E S 16	26	E	E	E	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	29	30	30	30	30	29	29	29	29	
MED	16	E S 16	16	16	E S 16	E S 16	16	24	30	34	35	36	38	38	36	34	32	30	28	21	19	16	E S 16	16	
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	19	27	33	35	38	39	41	40	40	37	43	39	35	30	23	19	E S 16	19	
LQ	E	E	E	E	E	E	E S 16	G	28	G	33	33	35	35	G	G 21	G 18	G 18	G	22	16	16	E	E	E S 16

APR. 1985

FBES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985

FMIN (0.1 MHZ)

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

Station	YAMAGAWA										Lat.	31 12' 1 N		Long	130 37' 1 E		Sweep	1 MHz to 25 MHz		in 24 sec in automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	C	20	18	17	C	16	15	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	20	17	17	18	17	16	14	16	E S 16	E S 16	E S 16	E S 16	E S 16
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	16	17	17	17	18	17	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
4	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	22	20	19	16	16	12	E S 15	E S 16	E S 16	E S 15	E S 16	E S 16
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	C	19	20	20	20	17	17	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	20	18	20	18	18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	20	18	19	20	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	20	17	18	20	21	18	16	E S 16	E S 16	E S 16	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	18	18	20	17	18	17	16	13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
10	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	18	16	20	20	17	17	16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	16	18	18	18	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	20	20	18	23	19	18	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	20	20	21	20	18	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	20	19	20	20	17	16	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	20	20	23	20	17	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	16	17	18	21	16	16	14	15	16	E S 16	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	18	20	19	19	26	16	16	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	16	16	20	20	19	18	16	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
19	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	16	16	16	19	20	21	20	20	17	18	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	16	16	18	19	17	17	18	15	15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	18	20	21	18	18	18	17	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	19	20	23	22	20	18	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
23	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	19	20	20	21	20	19	20	18	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	17	20	35	20	27	35	23	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
25	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	16	16	17	19	19	21	22	20	22	19	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	18	17	18	21	24	23	19	19	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	18	20	21	21	21	18	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20	18	20	22	24	24	21	18	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
29	E S 16	E S 15	E S 16	14	E S 15	E S 16	E S 15	E S 15	16	17	18	19	21	19	24	17	16	15	E S 16	15	E S 16	E S 16	E S 16	E S 16
30	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	16	15	17	19	20	20	24	21	20	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	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	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	29	30	30	30	30	29	29	29	29
MED	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	19	20	20	20	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	19	20	21	22	20	18	17	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	19	18	18	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16

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FMIN (0.1 MHZ)

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IONOSPHERIC DATA

APR. 1985

M(3000)F2 (0.01)

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

Station **YAMAGAWA** Lat. **31 12' 1 N** Long **130 37' 1 E** Sweep 1 MHz to 25 MHz in 24sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	300	300	290	325	340	335	300	360	355	335	320	I C 320	320	325	300	S I C 315	320	320	335	370	U S 360	280	275	F 285	
2	295	280	320	310	300	305	335	350	315	340	325	305	320	305	335	325	325	340	350	335	335	285	U S 285	J S 360	
3	J S 360	305	U S 320	335	335	310	330	365	360	345	285	295	305	315	320	325	U H 320	335	340	340	355	285	U S 295	285	
4	295	S 340	S 310	S 300	305	280	320	S 370	360	350	330	305	305	315	335	320	325	340	340	345	360	315	275	S 285	
5	300	S 305	S 320	305	300	S 330	S 340	355	340	315	I C 310	310	315	300	300	310	320	320	345	335	370	305	270	280	
6	285	300	300	295	300	295	310	330	350	340	335	300	310	325	330	325	330	340	345	370	380	290	285	290	
7	305	290	335	350	340	355	350	375	350	335	345	305	310	310	330	330	320	325	325	340	355	350	295	275	
8	300	300	305	330	335	340	370	380	320	310	330	305	310	310	315	320	340	355	350	360	c	c	c	c	
9	c	c	c	c	c	c	c	c	c	c	c	335	295	320	340	335	315	315	315	335	330	360	320	285	U S 325
10	285	285	270	285	350	355	320	345	345	345	295	305	320	325	320	340	345	320	330	345	380	260	270	320	
11	325	285	305	295	335	325	355	370	340	340	330	310	320	305	310	315	310	320	345	355	365	310	310	305	
12	280	310	305	285	295	310	360	380	370	345	345	330	315	290	305	320	340	335	335	355	350	295	295	290	
13	300	310	F	330	310	325	360	365	365	360	350	320	300	320	325	315	330	335	325	325	360	340	315	315	
14	315	300	310	305	315	315	375	375	355	340	290	305	340	305	275	290	325	345	345	335	365	315	310	310	
15	S 300	305	325	345	S	F 330	360	365	375	360	H 320	300	315	315	310	325	340	345	335	345	355	350	310	A	
16	305	S 300	S 305	F 370	F 335	F 345	360	375	390	340	325	305	285	290	310	325	340	350	350	340	350	300	S 300	S 290	
17	S 305	S 335	305	325	325	320	320	360	370	325	315	300	295	300	315	330	335	330	340	S 335	345	320	S 300	S 305	
18	S	310	330	325	S 350	310	340	365	350	380	345	H 295	300	U H 300	U R 305	315	325	330	325	350	330	I S 295	I S 290		
19	S 300	J S 310	S 300	S 310	340	350	370	355	365	350	345	305	J R 280	320	310	J R 300	290	300	U S 315	A	S 355	A	275	S 280	
20	I S 300	300	S 305	370	S 330	345	S 355	340	340	345	305	320	305	310	320	330	300	310	335	330	290	270	285	275	
21	290	S 290	310	350	350	340	340	345	320	310	285	305	300	280	285	310	270	275	330	285	S 280	325	S 305	J S 285	
22	295	280	290	305	320	305	325	335	310	265	325	320	320	335	R 365	325	335	340	340	335	340	300	295	S F	
23	F	F	S 310	325	S 345	335	355	350	335	305	300	295	310	300	320	350	345	345	325	340	350	320	S 295	F	
24	F 325	295	295	310	320	335	365	370	340	320	315	320	305	295	H 310	300	315	315	315	270	365	300	285	310	
25	305	305	305	310	300	315	360	375	335	350	325	300	295	305	330	305	335	340	350	325	320	310	300	280	
26	280	F	F	F	315	340	350	370	360	345	320	295	285	310	305	320	330	320	325	345	315	285	290	320	
27	325	265	F	F	F	F 265	350	345	345	335	H 310	325	320	U R 285	295	290	325	335	330	350	305	325	305	S F	
28	S 290	290	300	305	F 330	340	360	340	320	320	315	285	265	290	320	315	325	R 285	270	300	H 300	270	280	275	
29	280	285	S 300	S 305	F 320	335	300	335	335	290	280	290	295	315	310	300	290	335	335	335	335	S 290	S 285	305	
30	F	F	F	F	J S 350	S 285	S 335	360	330	325	310	305	300	295	J R 310	305	335	325	325	S 335	U S 290	U S 280	U F	F	
31																									
CNT	26	26	25	26	27	29	29	29	29	29	30	30	30	30	30	30	30	30	30	29	29	28	29	25	
MED	300	300	305	310	330	330	350	360	345	340	320	305	308	308	312	318	325	332	335	335	350	302	295	290	
UQ	305	305	310	330	340	340	360	370	360	345	330	310	320	315	325	325	335	340	345	345	360	320	300	310	
LQ	290	290	300	305	312	310	330	345	335	320	310	300	295	300	305	305	315	320	325	330	335	288	285	285	

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M(3000)F2 (0.01)

IONOSPHERIC DATA

APR. 1985

M(3000)F1 (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									L	L	L 365	I C 370	375	375	375	C	L	L	L					
2										L	U L 355	L 365	355	U L 360	L 355	370	L	L						
3									L	L	U L 395	L 370	360	365	A	A	A	A	A					
4									L	U L 380	L 360	U L 355	A	375	360	A	A	A						
5									L	U L 370	C	380	400	L	345	L	U L 350	L						
6									L	L	L 375	L 375	L 365	L 365	L 365	L 370	L	L						
7									385	380	L 375	L 395	L 390	405	L 355	L 365	L	L						
8									U L 385	L 375	L 365	L 365	A	A	L 350	A	A							
9							C	C	C	C	U L 385	L 370	L 375	L 365	L 365	U L 390	L	L	L					
10									L	L	L 395	L 395	L 375	L 370	A	L 370	L	L	L					
11									L	U L 400	L 385	A	A	U L 370	L 375	L 370	L	L						
12									L	L	L 395	L 385	L 375	A	L 375	L 380	L	L						
13									L	L	L 375	L 395	A	L 370	A	L 370	L 365	A	A					
14									L	L	U L 380	L 395	L 395	L 385	L 375	L 360	L 365	L 375	L					
15									L	385	U L 380	L 395	L 375	L 390	L 375	L 350	L 365	L 365	L					
16									L	L	400	400	400	370	A	L 365	L 350	A	A	A				
17								L	L	U L 370	L 385	L 370	L 370	L 395	L 380	L 355	L 370	L	L					
18								L	L	380	U L 395	L 400	L 380	L 390	L 385	L 345	L 375	L	L					
19									L	370	L 375	L 370	L 390	H 425	A	A	A	A	A					
20								L	L	370	A	A	L 360	L 385	L 375	L 355	A	L	L	L				
21									L	L	330	A	A	A	L 340	L 345	L	L						
22									A	A	A	U L 370	L 360	L 360	L 375	L 365	L	L						
23								L	U L 375	L 355	L 375	L 365	L 370	L 375	A	A	A	L						
24									L	A	A	A	A	L 370	A	A	A	A	A					
25								L	L	U L 390	L 405	U L 380	A	A	L 365	L 365	L	L	A					
26									L	L	A	U L 385	L 370	L 375	L 365	A	A	A	L					
27									375	A	A	L 385	L 385	A	A	A	A	A	A					
28									L	L	365	L 355	A	L 365	L 375	L 365	U L 370	A	L	L				
29								L	H 345	L 370	L 370	L 405	L 355	L 375	L 365	L 350	U L 330	U L 380						
30								L	H 410	L	L 365	H 340	L 380	H 390	L 355	L 370	L 365	U L 355	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									6	15	24	26	24	23	22	20	8	4						
MED									375	380	375	378	375	375	365	365	365	370						
UQ									385	385	395	395	382	382	375	370	368	378						
LQ									370	370	368	370	365	370	355	350	358	360						

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12' 1" N				Long 130° 37' 1" E				Sweep 1 MHz to 25 MHz in 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									240	275	290	I C 280	280	275	300	I C 295	280	280	250						
2										260	285	310		280	295	260	260	260	255						
3									240	250	L 275	320	285	285	275	260	260	255	A 250						
4									235	260	280	300	300	275	260	E A 280	260	265							
5									260	275	I C 260	245	270	L 320	335	265	275	250							
6									250	265	270	290	250	280	250	270	275	250							
7									250	280	265	275	295	300	260	250	250	265							
8										320	300	280	300	280	290	280	270	250							
9							C	C	C	C	275	345	300	265	280	325	295	290	255						
10									255	270	305	305	295	290	280	275	270	270	275						
11									275	300	290	310	300	295	295	285	285	275							
12									250	255	290	280	295	325	305	280	250	265							
13									250	255	260	300	300	295	270	280	270	270	260						
14									245	270	290	300	270	310	390	340	280	250	250						
15									250	250	300	345	290	290	305	285	265	250	250						
16									230	275	300	325	335	340	300	285	260	240	235						
17								240	245	295	305	305	330	325	300	265	250	260	245						
18								240	255	240	275	315	320	305	295	270	280	260	250						
19									245	260	265	320	325	285	290	310	305	E A 340	A						
20								240	285	280	315	295	315	310	295	290	L 305	295	250						
21										300	350	300	315	345	335	295	340	320							
22									E A 320	395	280	280	290	270	290	295	270	255							
23								260	290	370	330	315	295	305	280	250	260	250							
24									250	320	300	290	300	295	290	320	270	290	285						
25								240	270	260	270	340	340	300	280	290	265	260	250						
26									250	275	275	320	335	300	295	290	265	260	255						
27									285	280	345	330	325	355	350	350	275	275	260						
28									310	320	305	355	380	320	290	295	265	300	330						
29								255	300	395	435	370	330	295	290	295	320	245							
30									250	260	285	295	330	330	305	295	300	270	265	260					
31									240	245	260	275	290	290	285	280	270	260	250	250					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								7	26	29	30	30	30	30	30	30	30	30	17						
MED								240	250	275	290	308	300	298	290	285	270	261	250						
UQ								252	272	300	305	325	325	310	300	295	280	275	260						
LQ								240	245	260	275	290	290	285	280	270	260	250	250						

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H^oF₂ (KM)

IONOSPHERIC DATA

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H*F (KM)

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

Station	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	260	E S 270	E S 290	255	220	E S 250	E S 250	220	230	210	205	I C 205	200	205	210	C	225	200	H 250	210	205	E S 285	E S 350	E S 315	
2	E S 305	E S 315	E S 275	E S 270	260	250	235	225	E A 240	215	200	H 205	E A 250	E A 250	H 205	210	H 200	230	225	220	205	E S 290	E S 305	E S 310	
3	E S 310	E S 285	E S 250	245	215	E S 275	E S 245	220	225	205	195	195	205	225	A	A	A	A	A	A	225	200	E S 260	E S 330	E A 350
4	E S 275	260	260	E S 280	205	E S 300	E S 250	225	230	225	195	H 220	A	215	E A 245	A	A	A	E A 250	E A 255	220	E S 250	E S 325	E S 320	
5	E S 285	260	250	250	E S 295	245	245	225	235	225	I C 210	200	195	H 175	H 225	255	220	245	230	220	200	E A 255	E S 300	E S 310	
6	E S 310	E S 275	260	240	245	250	240	225	230	220	200	195	180	H 180	245	220	225	240	240	215	195	E S 300	E S 330	E S 320	
7	E S 310	E S 300	E S 290	245	245	240	225	215	215	200	H 225	190	H 180	H 180	E S 250	180	230	E A 245	245	240	220	220	E S 320	E S 340	
8	E S 305	E S 300	E S 290	E S 270	235	245	210	200	210	195	H 190	E A 275	250	A	A	E A 255	A	A	250	245	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	230	195	H 190	230	200	H 190	245	245	A	245	220	E A 250	E S 300	E S 290	
10	E S 300	E S 310	E S 350	E A 300	225	230	245	245	230	220	200	H 195	245	245	A	240	230	240	245	210	200	E S 330	E S 305	E S 275	
11	E S 280	E A 240	E A 310	E S 300	E S 270	250	250	230	225	205	H 255	A	A	E A 250	H 180	230	220	220	245	220	205	E S 250	E S 280	E S 300	
12	E S 300	E S 280	E S 300	E S 305	E S 315	E S 280	230	230	230	225	200	H 195	H 180	A	195	H 180	220	230	240	230	205	E S 270	E S 295	E S 320	
13	E S 280	E S 275	E S 285	250	250	245	225	230	240	240	200	200	A	240	E A 245	230	230	A	A	240	220	220	E S 250	E S 275	
14	E S 280	E S 300	E S 290	E S 280	E S 290	E S 280	225	225	E A 240	225	200	180	H 225	240	215	200	H 220	225	E A 240	230	210	230	E S 290	E S 300	
15	295	E S 295	260	225	285	225	225	230	235	215	H 210	190	A	190	215	210	H 230	215	A	230	205	200	E A 280	A	
16	285	E S 300	275	E S 250	E S 250	E S 250	225	235	220	210	200	195	H 190	A	210	A	A	A	A	225	210	E S 235	295	300	
17	285	250	E S 245	250	250	E S 250	240	235	225	210	200	200	H 195	185	195	240	220	205	240	225	230	220	E S 250	275	
18	E S 260	250	255	240	235	E S 270	235	235	220	205	200	185	195	200	195	240	235	245	A	245	205	210	260	300	
19	270	260	285	260	220	210	210	215	215	H 200	205	205	195	180	A	A	A	A	A	A	235	A	E A 300	E A 340	
20	295	225	260	205	E S 245	225	225	A	215	A	A	215	A	220	E A 250	A	230	245	245	240	275	E S 300	E S 275	300	
21	300	290	E A 290	A 235	230	E S 250	230	235	255	250	250	A	A	A	A	205	235	235	245	250	255	255	250	E A 305	
22	E A 310	E A 350	E A 340	E A 270	250	A 305	245	E A 280	A	E A 300	A	220	195	H 180	H 230	215	H 180	H 240	245	240	230	240	E S 320	E S 305	
23	E S 300	E S 280	E S 280	E A 290	220	250	230	235	220	E A 270	E A 250	220	200	235	A	A	A	A	260	245	240	E A 290	E S 300	E A 300	
24	E S 290	E S 295	E S 320	E S 290	E S 265	E A 270	225	225	A	A	A	A	A	255	A	A	A	A	A	240	200	240	E S 280	E S 275	
25	E S 295	E S 290	E S 275	E S 275	E S 295	E S 275	240	240	220	210	200	H 180	A	E A 270	E A 250	225	225	E A 250	A	E A 280	250	240	245	E S 300	
26	E A 320	E S 270	245	250	E S 265	E S 250	240	230	230	E A 260	A	200	H 230	220	E S 250	E A 270	A	A	A	225	230	250	A 340	250	
27	E A 270	E S 350	E S 320	E S 290	E S 280	E S 270	210	240	250	A	A	A	E A 240	220	A	A	A	A	A	225	E A 240	E A 250	E S 295	E S 330	
28	E S 340	E S 325	E S 305	E S 290	E S 270	E S 330	225	225	E A 250	210	220	A	E A 270	E A 250	E A 250	E A 240	A	A	E A 280	E A 270	240	200	E S 290	E A 350	
29	E A 320	A 300	300	265	250	245	E A 275	235	225	H 215	200	H 190	245	200	H 220	245	225	225	245	240	230	E S 250	E S 275	E S 270	
30	E S 305	E A 350	E S 305	E S 305	245	E S 300	245	E A 245	210	H 205	H 265	E A 230	220	205	H 280	215	E S 255	225	E A 250	235	210	E S 250	E S 300	E S 350	
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	29	29	29	29	29	29	29	28	27	26	25	26	22	25	22	21	20	19	19	29	29	28	29	28	
MED	E S 295	E S 290	E S 285	E E 265	U 235	E S 250	230	229	228	212	200	198	198	210	U 208	220	225	232	245	232	215	E S 250	E S 295	E S 302	
UQ	E S 305	E S 300	E S 300	E S 290	E S 270	E S 275	242	235	232	222	212	210	225	232	E A 250	235	230	242	248	242	230	E S 265	E S 305	E S 320	
LQ	E S 280	E S 270	255	250	230	235	225	225	220	205	200	195	195	190	205	210	220	225	240	225	205	224	E S 280	E S 295	

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H*F (KM)

IONOSPHERIC DATA

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H°E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station		YAMAGAWA					Lat. 31° 12' N	Long. 130° 37' 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	E S	120	110	110	110	I C	105	110	110	110	I C	105	110	110	E S	125		
2							S		105	110	105	110	110	105	105	105	H	110	110	115	E S	125			
3							S		115	H	105	105	110	105	105	110	110	115	110	120	A				
4							S	A	110	110	105	105	110	105		A	E A	115	A	A	A				
5							S		115	105	105	I C	105	105	110	105	105	110	H	110	115	E S	115		
6							S		120	115	115	110	110	110	110	110	110	110	115	E S	130				
7							S		120	115	110	110	115	115	115	120	H	110	115	120	E S	130			
8							S		120	115	115	115	115	110	115	115	115	115	115	120	E S	125			
9							C	C	C	C		115	115	110	A	110	110	115	110	S					
10							S		120	120	115	110	110	110	110		A	A	110	E S	130				
11							S		115	115	110	110	A	A	A	A	A		120	120	A				
12							S		120	115	115	115	115	110	115	A	110	A	120	125	S				
13							S		120	115	115	115	115	115	120	120	115	120	120	S					
14							S	E S	125	110	110	A	A	115	115	115	A	115	120	125	S				
15							S		115	110	110	A	A	A	A	A	A	110	120	S					
16							S		110	105	105	105	105	105	A	R	330	A	A	115	A				
17							S		115	110	105	110	105	A	A	B	A	110	A	A					
18							S		110	105	105	105	105	H	105	H	110	110	110	110	115				
19							S		110	105	105	105	105	A	105	A	105	110	110	125					
20							S		110	105	105	105	H	105	A	A	A	A	A	A	S				
21							S		110	105	105	105	105	105	105	105	105	105	105	125					
22							S		115	115	115	115	115	115	115	110	110	110	120	125	S				
23							S		120	110	115	115	115	115	115	110	110	115	120	E S	125				
24							S		115	115	115	120	B	115	120	B	120	115	115	E S	125				
25							S		115	110	110	115	110	110	115	115	115	115	120	E S	125				
26							S		120	115	115	110	115	120	120	115	120	120	120	125	S				
27							S		120	115	115	115	115	115	115	115	115	115	120	120	S				
28								120	120	120	115	115	115	120	120	120	115	120	120	120	S				
29							S	E A	120	115	115	110	H	110	110	115	A	E A	125	125	A	S			
30							S		115	H	110	110	110	A	A	E A	125	110	110	110	E S	120	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	28	29	29	28	26	24	23	22	22	25	27	20							
MED						120	115	110	110	110	110	110	115	111	110	112	120	E S	125						
UQ						120	115	115	115	115	115	115	115	115	115	115	120	S							
LQ						115	110	105	108	105	110	108	110	110	110	110	112	E S	122						

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H°E (KM)

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station Hour Day	YAMAGAWA				Lat. 31° 12' N				Long 130° 37' E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S	S	S	S	S	S	S	G	145	130	125	C	125	135	175	C	175	G	G	110	110	110	S	S	
2	140	125	110	105	105	105	105	150	130	185	120	115	115	115	180	105	105	G	120	115	115	S	S	110	
3	100	S	S	110	105	105	105	150	145	105	130	135	135	175	145	135	130	120	110	110	115	115	105	115	
4	105	105	110	105	S	S	S	145	145	120	110	105	105	105	100	130	125	120	110	110	110	100	S	S	
5	S	S	105	105	105	105	S	145	G	110	C	G	G	G	G	145	145	125	125	115	110	110	110	S	
6	110	110	110	S	S	S	145	150	G	G	120	G	G	G	165	160	150	G	130	S	S	S	S	S	
7	110	110	110	S	S	S	S	125	125	120	110	110	115	125	125	G	G	140	120	120	120	115	110	110	
8	S	S	S	S	S	S	S	170	165	140	150	125	150	145	130	155	130	125	120	120	C	C	C	C	
9	C	C	C	C	C	C	C	C	C	C	C	120	130	G	150	G	G	160	130	125	120	120	115	S	S
10	S	S	105	110	110	S	140	145	G	G	G	120	170	110	105	100	100	130	130	125	115	110	105	S	
11	110	110	105	105	110	120	115	150	125	110	110	100	100	100	100	100	G	140	S	120	120	S	105		
12	S	S	S	S	S	S	S	G	130	125	G	G	110	175	105	G	100	100	G	100	S	S	S	120	
13	120	110	105	100	S	110	S	140	130	125	125	120	120	120	120	125	145	130	120	120	110	110	S	S	
14	100	S	S	S	S	S	S	G	140	130	130	105	155	160	G	100	G	150	130	S	S	S	S	S	
15	S	S	105	105	S	S	S	G	150	G	175	110	155	105	160	100	100	100	120	110	110	S	105	105	
16	105	S	S	S	S	S	140	140	120	120	G	105	105	100	150	140	130	130	130	100	S	S	S	S	
17	S	S	S	105	S	S	S	H	145	130	125	120	110	110	105	G	105	100	100	100	100	S	S	S	S
18	S	S	S	110	S	S	140	140	135	120	105	100	G	155	G	105	155	135	115	110	S	S	S	S	
19	S	S	S	S	S	S	S	150	150	130	120	115	110	110	105	150	140	120	115	105	100	100	100	100	
20	100	S	S	S	S	S	130	140	125	110	105	105	100	100	100	100	100	100	G	100	115	S	S	S	
21	S	105	105	105	S	105	150	145	140	145	140	140	125	115	125	G	G	G	G	S	S	105	105	105	
22	110	110	110	110	110	S	140	130	130	130	140	145	G	G	G	G	G	155	130	120	120	S	120	S	
23	S	110	105	105	110	110	150	125	125	120	120	125	140	145	125	125	130	125	120	120	115	115	115	115	
24	110	110	110	105	105	110	150	140	130	120	120	120	120	130	140	130	125	120	115	110	110	S	110	110	
25	S	S	S	S	S	S	S	150	G	G	G	115	105	140	140	145	165	150	125	130	120	115	115	115	
26	110	S	S	105	105	105	140	130	125	125	120	125	125	130	125	120	120	120	120	120	115	110	110	115	
27	110	140	105	105	120	S	S	125	125	120	115	125	125	120	120	115	110	105	110	120	120	120	120	120	
28	115	115	115	115	115	S	110	145	120	120	120	120	120	120	120	120	110	110	110	110	100	125	S	125	
29	110	110	105	100	105	105	105	110	G	145	G	G	170	105	180	145	145	135	115	100	95	100	S	115	
30	115	115	105	105	105	105	150	140	130	155	110	110	145	145	130	130	120	120	115	S	110	115	115	115	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	17	14	17	19	13	11	16	25	24	25	24	25	25	27	24	24	26	25	26	25	22	18	14	16	
MED	110	110	105	105	105	105	140	145	130	125	120	115	120	120	125	125	128	125	120	110	115	112	110	115	
UQ	110	115	110	108	110	110	148	150	142	130	128	125	140	145	148	142	145	130	125	120	120	115	115	115	
LQ	105	110	105	105	105	105	112	140	125	120	112	110	110	108	112	105	105	120	115	110	110	110	105	108	

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H°ES (KM)

IONOSPHERIC DATA

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TYPES OF ES

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA							Lat. 31° 12' N	Long. 130° 37' 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									H2	H2	C1		C1	H1	H1		H1			F6	F5	F1		
2	F1	F1	F1	F2	F2	F2	L1	H3	H2	H1	C1	C1	C3	C2	HC11	L1	L1		C4	F6	F1			F2
3	F2			F1	F1	F2	L3	H3	H2	LH12	HL21	HL21	H1	HL11	HL21	HL31	H3	C6	L7	F3	F1	F2	F3	F5
4	F3	F5	F3	F3				HL33	H2	CL21	CL21	L2	C3	C2	L2	CL42	CL43	CL64	CL54	FF72	FF12	F1		
5			F1	F2	F2	F1		H2		C1					H2	H2	C3	C5	F7	F7	F7	F2		
6	F2	F3	F3				H3	H3				C2			H1	H1	H1		H2					
7	F2	F2	F2					C2	C3	C2	C3	C3	C1	C1	C1			H3	C6	F6	F5	F2	F2	F5
8							H2	H1	H2	H1	C2	H2	H2	H3	H2	H5	C4	C5	F6					
9										C2	C1			HL12			H2	H4	C4	F5	F3	F6		
10			F3	F3	F3		H1	H3			C1	H1	C3	C3	L3	L2	H3	H4	F1	F3	F2	F3		
11	F2	F4	F6	F2	F2	F2	C6	H2	C2	C2	C4	L3	L4	L4	L2	L3	L2		HL32		F3	F3		F2
12									C3	C2			C2	H1	L2		L2	L2		F2				F4
13	F2	F2	F2	F3		F2		H3	H3	C3	C1	C2	C2	C1	C2	C2	H2	H4	C5	FF72	F4	F3		
14	F2								H2	H2	HL22	L2	H2	H1		L2		H3	H3					
15			F2	F2					H1		HL12	L1	HL11	L1	HL22	L1	L1	L1	CL51	F4	F3		F5	F4
16	F2						H2	H2	C2	C2		C1	L2	L3	HL11	HL12	HL32	CL51	CL22	F4				
17				F2				H2	H2	C2	C1	C2	L1	L1		LL11	L2	L4	L4	F4				
18			F1				H4	H3	H1	C1	C2	C2		H1		L1	H2	H2	C5	F6				
19								H3	H1	C1	C1	C1	L1	C1	L2	H2	H5	C6	C7	F6	F5	F7	F2	F5
20	F4						C1	H3	H2	C3	CC31	C2	L3	L2	L3	L4	LH31	L2		F3	FF41			
21		F2	F7	F7		F5	H1	H2	H2	H2	H2	H2	C2	C3	C2							F4	F5	F7
22	F7	F6	F7	F5	F8		H4	H6	H6	H2	H2	H2							H3	H5	F4	F4		F2
23		F2	F7	F6	F2	F2	H4	C4	C2	C3	C2	C1	H1	H1	C3	C3	C3	C3	C6	F6	F5	F4	F3	F7
24	F2	F2	F2	F4	F3	F4	H4	H4	H3	C3	C3	C2	C3	C2	H2	H3	C2	C4	C6	F7	F3		F3	F3
25								H3				C1	C3	H1	H2	H2	H2	H2	C6	FF27	F4	F3	F3	F2
26	F3			F2	F3	F4	H3	H3	C2	C3	C2	C1	C1	C1	C2	C3	C3	C4	C5	F7	F5	F6	F7	F6
27	F7	F1	F3	F3	F1			C4	C2	C4	C3	C2	C2	C3	C3	C4	C4	C4	C6	C4	FF42	F7	F2	F3
28	F3	F2	F4	F3	F2		C4	HC12	C2	C2	C1	C3	C2	C2	C3	C2	C4	C5	C5	C5	F3	F5		F6
29	F5	F7	F7	F7	F7	F2	L4	L1		H1			H1	L1	H1	HL11	HL21	HL21	CL71	L5	F6	F2		F2
30	F2	F7	F3	F2	F2	F2	HL32	H3	H3	HC21	CC23	C3	HL11	HL12	HL21	C1	C3	C2	C4		FF71	F2	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																								

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TYPES OF ES

IONOSPHERIC DATA

APR. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA							Lat. 26 16.9 N	Long 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S 48	X 48	U 46	X 48	X 45	X 33	X 31													X 82	S 46	X 37	X 37	U 38	
2	X 40	X 37	X 45	S 43	X 31	S 28	S 33													S 93	S 61	S 46	S 43	S 42	
3	X 40	X 39	X 43	S 48	S 26	X 25	S 29													X 81	X 75	S 59	S 50	S 49	
4	S 52	X 56	X 51	X 46	X 30	A	X 30													X 70	S 52	S 44	A	X 41	
5	X 46	X 47	X 44	X 38	X 37	X 37	X 38													X 97	X 89	X 57	X 43	X 43	
6	S 44	S 45	X 47	X 45	X 34	X 26	X 35													S 102	H 56	X 39	X 36	X 36	
7	S 36	X 36	X 35	X 38	X 33	X 27	S 35													S 118	X 81	S 54	X 48	U 47	
8	X 49	U 50	S 47	X 48	S 41	S 33	S 37													X 99	X 67	U 48	X 46	X 46	
9	S 43	S 42	X 41	X 40	X 30	A	A													U 122	S 84	S 50	U 46	U 47	
10	S 46	S 43	S 41	X 42	X 61	S 37	S 32													S 113	X 74	X 34	X 36	A	
11	S 35	S 33	S 33	X 33	X 31	X 27	X 36													S 140	S 62	X 47	X 46	X 45	
12	S 44	S 41	X 41	X 38	X 35	X 36	X 47													X 98	X 54	S 51	S 53	X 54	
13	X 52	X 46	X 39	X 35	X 33	S 30	X 37													S 118	S 109	X 60	X 48	S 51	
14	S 53	X 48	U 46	X 49	X 44	X 42	X 47													X 76	X 72	S 55	X 50	X 51	
15	X 50	S 47	S 58	X 56	X 41	X 43														X 92	X 76	X 47	X 43	S	
16	S 38	S 37	S 36	S 41	S 36	S 33														X 88	X 73	X 54	X 53	S 49	
17	S 48	S 47	X 51	X 53	S 39	X 31														S 103	X 85	X 61	X 56	X 73	
18	S 56	X 47	X 45	S 45	X 34	X 29														S 126	X 96	X 77	X 61	X 57	
19	X 57	X 55	X 51	X 50	X 48	X 34														S 136	X 72	X 58	S 55	S 57	
20	X 50	S 51	S 57	X 57	S 28	X 25														X 57	X 59	X 60	X 59		
21	X 56	X 56	S 56	X 64	X 33	X 24														X 92	X 90	X 64	X 53	S	
22	S	S 54	X 47	X 53	S 46	X 36														X 67	X 53	X 55	X 56	X	
23	42	S 56	X 50	S 47	X 41	A														X 61	X 41	X 42	A		
24	A	X 40	X 42	S 38	A	X 33														X 96	X 76	X 71	X 59		
25	S 51	S 48	S 51	X 50	X 41	X 40														S 66	U 60	S 59	S 56		
26	S 55	S 54	X 50	A	A	X 43														S 117	X 90	X 82	X 69		
27	X 65	X 52	S 52	S 50	S 51	S 55	S 52													A	A	X 42	X 40	X	
28	X 39	X 38	X 37	X 41	X 33	S 30														S 152	U 115	S 103	S 83	S	
29	X 80	X 83	X 84	X 57	X 59	X 53														H 89	Y	S	X 66		
30	S 41	S 50	X 49	S 48	X 46	S 40														X 78	X 65	S 43	U 46		
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	30	30	29	28	27	14													19	29	28	27	27	
MED	S 48	X 47	X 46	X 47	X 36	X 33	S 36													S 99	X 74	X 54	X 50	X 51	
UQ	X 52	X 52	X 51	X 50	X 44	X 38	X 38													S 118	X 89	X 60	X 58	X 57	
LQ	S 42	S 41	X 41	X 41	X 33	X 28	S 32													X 90	X 62	X 47	X 43	X 46	

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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)

Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

Station	OKINAWA				Lat. 26 16' 9" N	Long. 127 48' 4" E	Sweep 1 MHz to 25 MHz in 24 sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	J S 42	42	U S 40	42	39	27	S 25	51	60	71	70	88	98	94	95	89	84	H 84	91	77	S 40	31	S 31	S 32					
2	S 34	31	S 39	S 37	25	S 22	J S 27	55	55	71	65	80	100	112	J R 120	118	107	U R 98	89	87	55	S 40	37	S 36					
3	34	33	37	S 42	S 20	19	S 23	55	61	R 61	66	85	R 105	R 113	R 118	115	R 107	95	80	75	69	U S 53	J S 44	S 43					
4	S 46	50	S 45	S 40	24	A	24	55	61	67	73	83	94	110	98	88	90	88	84	64	46	38	A	35					
5	40	S 41	38	32	31	31	32	56	66	85	95	104	100	109	R 115	126	124	130	J R 117	91	S 81	S 51	37	37					
6	38	39	41	39	28	20	29	58	70	80	84	106	141	150	J R 153	132	127	134	126	96	48	33	30	30					
7	U S 30	30	29	32	S 27	21	29	51	56	74	83	89	R 123	148	R 167	R 148	R 130	R 113	R 117	S 112	75	48	J S 42	U S 41					
8	U S 43	U S 44	41	U S 42	35	J S 27	31	46	50	58	71	93	103	118	U R 112	R 120	124	117	97	93	61	U S 42	J S 40	40					
9	S 37	S 36	S 35	34	24	A	A	52	70	60	63	64	87	104	87	84	91	85	96	116	J S 78	44	S 40	S 41					
10	J S 40	37	35	36	55	S 31	S 26	59	76	82	77	J R 91	J R 106	118	121	J R 120	96	84	90	U S 106	68	S 27	30	A					
11	S 29	S 27	S 27	27	25	21	30	52	58	66	80	90	100	115	139	134	124	135	143	134	56	41	40	39					
12	38	S 35	35	32	29	30	41	53	54	63	73	76	75	89	112	118	104	R 101	R 111	92	48	45	47	48					
13	46	S 40	33	29	S 27	24	31	52	66	65	69	75	90	112	J R 118	124	125	111	110	S 112	J S 103	54	S 42	J S 45					
14	47	42	U S 40	43	S 38	36	J S 41	52	68	65	67	84	88	84	87	98	116	116	R 92	70	66	49	44	45					
15	44	S 41	52	50	35	37	S 38	53	60	58	57	72	93	97	91	97	96	90	84	86	70	41	37	S					
16	S 32	S 31	30	35	S 30	27	38	55	53	60	62	74	90	103	111	114	113	98	84	82	67	48	47	S 43					
17	S 42	U S 41	S 45	47	33	25	35	65	61	58	62	82	92	100	113	127	R 116	102	J R 99	S 97	79	55	50	F					
18	U S 50	41	39	U S 39	28	23	35	61	72	65	74	98	125	134	143	R 152	140	130	135	U S 120	90	71	55	S 51					
19	51	49	S 45	J S 44	S 42	28	34	48	62	70	R 71	83	103	115	R 119	R 122	120	105	115	130	66	52	S 49	S 51					
20	S 44	S 45	F	51	S 22	19	36	54	59	62	70	83	87	94	86	84	78	88	104	75	S 51	53	54	S 53					
21	50	50	S 50	58	27	18	35	48	59	70	76	108	86	95	110	114	104	114	124	94	86	84	58	S 47					
22	A	S 49	J S 41	S 47	40	30	39	53	58	74	98	104	114	124	119	109	97	82	75	74	S 61	47	49	S 50					
23	F	S 50	44	U S 41	35	A	36	49	60	69	81	97	106	118	125	118	98	86	86	R 88	55	35	36	A					
24	A	J S 34	36	32	A	27	42	50	55	67	92	108	135	R 152	R 148	U R 149	U R 154	U R 153	J R 158	R 176	90	70	65	J S 53					
25	S 45	S 42	J S 45	44	35	34	53	57	60	63	63	66	84	105	111	108	103	90	91	76	60	S 54	S 53	S 50					
26	S 49	S 48	44	A	A	37	S 47	56	57	67	68	71	91	120	144	R 148	J R 159	144	134	134	111	84	76	S 63					
27	59	46	F	F	F	F	F	54	65	68	H 57	68	74	83	88	92	104	100	83	80	A	A	36	34					
28	33	32	31	35	27	24	40	47	54	62	74	72	88	103	106	R 101	R 122	R 125	U R 129	R 168	146	U S 109	97	S 77					
29	J S 74	S 76	78	51	53	47	44	56	57	J R 51	51	60	80	93	102	100	106	124	103	90	S 83	Y	S	S 60					
30	J S 35	S 44	43	S 42	40	S 34	41	56	62	59	64	64	80	86	91	97	90	80	83	83	72	59	S	U S 40					
31																													
CNT	27	30	28	28	27	26	28	30	30	30	30	30	30	30	30	30	30	30	30	30	29	28	27	26					
MED	S 42	S 41	40	40	30	27	35	54	60	66	70	83	94	110	112	116	107	102	98	92	68	48	44	S 44					
UQ	S 46	S 46	44	44	36	31	40	56	65	70	77	93	105	118	R 121	R 126	124	124	117	112	81	54	52	S 51					
LQ	S 36	S 35	35	34	27	22	30	51	57	61	64	72	87	95	98	98	97	88	86	80	56	41	37	S 39					

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

APR. 1985

F0F1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA							Lat.	26 16.9 N				Long	127 48.4 E				Sweep	1 MHz to 25 MHz		in 24 sec in automatic operation			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	460	470	440	L	L	A	A					
2									L	L	L	L	460	470	440	L	L	L	L					
3									L	L	L	L	L	460	450	430	L	L	L					
4									L	L	L	L	470	500	A	L	L	A	A					
5									L	L	L	L	440	440	460	470	440	430	L	A				
6									L	L	L	L	440	460	450	L	450	440	430	L				
7									L	L	L	L	430	430	L	460	430	430	L	L	L			
8									L	L	L	L	440	450	440	440	450	450	420	A	A			
9									L	L	L	L	420	440	450	450	450	440	460	430	L	A		
10								L	L	L	L	L	420	480	450	L	460	430	420	A	A			
11									L	L	L	L	420	440	A	A	A	A	430	L	L			
12									L	L	L	L	430	450	L	460	450	440	L	L	L			
13									L	L	L	L	420	450	460	460	450	440	420	L	L			
14									L	L	L	L	450	A	460	470	430	420	L	A				
15									L	L	L	L	470	460	450	A	430	420	L	L				
16									L	L	L	L	460	450	470	A	A	430	420	L	A			
17								L	L	L	L	L	450	460	460	430	430	420	L	L				
18									L	L	L	L	460	450	L	440	440	430	420	L	L			
19									L	L	L	L	470	470	460	470	460	430	420	L	L			
20									L	L	L	L	440	A	460	430	L	430	A	L	L			
21									L	L	L	L	450	480	A	470	460	460	L	L				
22									L	L	L	L	450	480	480	450	460	460	420	L				
23								L	L	L	L	L	450	460	470	480	470	460	450	L	L			
24								A	A	L	L	L	460	L	490	L	L	480	L	330	L	A		
25									L	L	L	L	L	470	460	460	440	430	L					
26									L	A	A	A	A	A	A	A	450	440	L					
27									L	L	L	L	420	440	480	450	A	440	420	L	A			
28								L	L	L	L	L	450	460	470	L	470	430	L	450	L	A		
29								L	L	L	L	L	430	430	430	450	450	440	430	L	L			
30									L	L	L	L	400	420	460	440	450	460	440	L	L	L		
31									L	L	L	L	420	430	450	455	450	440	430	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									1	4	21	24	23	21	21	29	20	2						
MED									L	L	L	L	400	420	440	450	460	460	450	440	420	390		
UQ									L	L	L	L	435	460	465	475	460	460	450	L	L			
LQ									L	L	L	L	420	430	450	455	450	440	430	L				

APR. 1985

F0F1 (0.01 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985

FOE (0.01 MHz)

135° E Mean Time (G.M.T. + 9h)

Station Hour Day	OKINAWA				Lat. 26° 16' 9" N				Long. 127° 48' 4" E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							210	260	290	315	330	340	340	335	330	295	255	195						
2							200	260	R 290	A	A	R 350	R 330	R 315	R 305	290	R 250	200						
3							200	250	290	320	R 350	R 360	R 360	R 340	315	290	250	R 200						
4							205	A	A	320	330	A	345	335	320	300	260	A						
5							200	A	A	A	A	345	R 350	R 340	310	290	255	200						
6							200	A	A	A	A	A	340	335	R 310	290	250	195						
7							R 200	A	A	A	A	A	A	A	A	R 300	260	200						
8							190	A	A	A	A	R 360	R 355	R 340	320	300	260	200						
9							A	265	A	A	A	A	345	R 340	320	305	265	200						
10							200	A	A	A	A	A	340	325	A	300	A	A						
11							200	A	A	A	A	A	A	A	A	A	A	A						
12							200	250	300	320	R 350	A	R 350	R 330	310	A	A	A						
13							200	260	300	A	A	A	A	A	R 325	R 300	260	R 200						
14							200	250	290	320	330	340	345	335	320	295	255	A						
15						S	A	255	R 300	R 310	325	330	340	330	320	295	260	200						
16						S	200	260	A	A	A	A	A	A	A	A	A	A						
17						S	200	R 260	A	A	350	350	340	330	R 320	300	A	A						
18						S	R 200	A	A	A	A	350	350	A	320	300	250	200						
19						S	200	A	A	A	A	R 350	A	R 335	A	R 300	260	200						
20						S	200	A	A	A	A	A	A	A	A	A	A	A	S					
21						S	200	A	A	A	A	340	330	R 320	A	A	255	210	S					
22						S	210	A	A	A	A	A	345	R 340	320	295	260	200	S					
23						S	A	A	A	A	A	R 360	R 360	340	320	300	260	205	S					
24						S	210	260	A	A	A	A	R 360	B	R 330	300	260	200	A					
25						S	230	A	A	A	A	345	R 350	345	320	300	265	210	S					
26						S	A	A	A	A	A	345	A	335	A	295	A	A	S					
27						S	A	A	A	A	A	A	A	345	320	A	265	205	S					
28						S	A	A	A	A	A	A	A	A	A	A	A	A						
29						S	A	R 270	R 310	R 320	R 340	R 350	355	340	320	295	265	A	S					
30						S	A	A	310	320	340	350	345	340	320	300	270	210	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							22	12	9	8	9	16	21	22	21	23	22	19						
MED							200	260	300	320	340	350	345	335	320	300	260	200						
UQ							200	260	300	320	R 350	R 350	R 350	340	320	300	260	202						
LQ							200	252	290	318	330	342	340	330	320	295	255	200						

The Radio Research Laboratories, Japan

APR. 1985

FOE (0.01 MHz)

IONOSPHERIC DATA

APR. 1985

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 S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	33	34	38	40	G	G	38	39	J A 44	72	J A 65	J A 41	J A 32	J A 34	E S 16									
2		E S 16	20	19	E S 16	E S 16	19	19	G	30	35	38	J A 42	41	40	44	37	G	G	19	27	J A 21	J A 30	E S 16	J A 35	E S 16								
3		E S 16	E S 16	E S 16	E S 16	21	22	19	23	30	33	33	42	45	41	38	36	32	29	25	23	21	21	E S 16	J A 32									
4		E S 16	J A 26	23	E S 16	J A 19	J A 28	22	G	J A 33	J A 36	36	39	40	48	J A 47	35	40	J A 40	J A 41	J A 26	22	J A 30	40	E S 16									
5		E S 16	21	E S 16	E S 16	24	24	J A 20	26	J A 34	J A 36	J A 54	J A 36	G	G	G	39	40	J A 34	J A 29	J A 20	22	22	E S 16	E S 16									
6		E S 16	E S 16	J A 18	E S 16	E S 16	E S 16	E S 16	30	J A 32	J A 32	40	40	40	G	G	G	G	27	25	20	20	E S 16	E S 16	E S 16									
7		E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	J A 33	J A 35	J A 35	J A 36	J A 36	J A 36	J A 35	J A 33	G	29	27	J A 25	J A 21	22	J A 25	J A 34									
8		J A 25	22	E S 16	E S 16	E S 16	E S 16	E S 16	G	J A 32	J A 37	J A 35	J A 35	G	G	42	39	38	J A 40	J A 35	J A 37	J A 42	J A 29	22	20									
9		23	E S 16	E S 16	J A 35	24	J A 53	J A 41	J A 26	J A 31	J A 38	J A 43	40	40	G	G	G	G	G	40	J A 40	J A 34	J A 24	E S 16	J A 26									
10		22	E S 16	E S 16	22	23	19	J A 33	J A 25	J A 34	J A 36	J A 35	J A 36	J A 36	40	40	35	G	J A 54	J A 33	J A 52	22	J A 24	J A 25	J A 34									
11		J A 29	22	J A 18	J A 18	J A 19	21	J A 24	G	J A 33	J A 32	39	J A 61	J A 111	J A 108	J A 45	J A 54	J A 34	30	J A 24	J A 22	22	E S 16	E S 16	E S 16									
12		E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	G	G	38	40	39	28	32	31	J A 22	J A 21	19	E S 16	E S 16	20									
13		22	22	23	21	E S 16	E S 16	19	25	J A 36	37	37	36	39	32	42	36	G	32	J A 34	J A 26	J A 30	J A 27	J A 23	J A 34									
14		J A 21	J A 20	J A 20	E S 16	20	21	22	G	33	J A 35	J A 36	39	J A 45	38	38	36	34	32	J A 33	J A 24	22	J A 21	23	E S 16									
15		21	E S 16	22	E S 16	E S 16	E S 16	19	27	28	36	34	41	42	41	J A 48	J A 36	34	G	25	J A 19	E S 16	E S 16	E S 16	J A 28									
16		E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	30	J A 35	J A 41	40	40	J A 48	J A 48	37	J A 37	J A 36	J A 33	J A 42	J A 58	J A 40	J A 26	E S 16									
17		E S 16	E S 16	E S 16	20	21	20	22	26	30	J A 40	J A 41	G	G	G	G	38	G	J A 22	J A 25	J A 26	20	E S 16	E S 16	22									
18		E S 16	E S 16	E S 16	E S 16	J A 21	22	18	G	J A 34	J A 35	J A 34	J A 37	42	38	38	G	G	G	25	J A 22	E S 16	E S 16	E S 16	E S 16									
19		19	22	E S 16	E S 16	21	E S 16	E S 16	26	J A 33	J A 41	J A 40	J A 57	42	J A 51	J A 43	J A 50	35	33	28	J A 34	J A 23	22	J A 21	21									
20		E S 16	E S 16	E S 16	E S 16	E S 16	J A 21	E S 16	J A 36	J A 38	J A 38	J A 44	J A 56	J A 39	40	J A 44	J A 42	J A 48	J A 41	J A 33	J A 21	21	J A 22	20	E S 16									
21		18	E S 16	20	E S 16	20	24	E S 16	30	J A 34	J A 40	J A 54	J A 54	44	49	G	J A 41	J A 31	G	G	E S 16	20	22	J A 20	J A 24									
22		J A 51	J A 32	J A 33	J A 84	J A 52	J A 26	22	30	J A 36	38	38	J A 50	J A 41	G	40	39	37	37	J A 42	J A 41	J A 44	J A 22	J A 26	J A 22									
23		22	E S 16	E S 16	E S 16	J A 25	J A 46	J A 29	J A 26	J A 32	36	38	39	G	41	45	42	34	35	32	19	23	22	23	J A 51									
24		J A 50	J A 34	J A 30	J A 43	J A 62	J A 53	20	32	40	J A 52	J A 40	J A 42	J A 36	41	E B 40	G	G	37	J A 32	50	J A 50	J A 30	J A 24	J A 30									
25		22	20	E S 16	E S 16	E S 16	E S 16	E S 16	G	J A 31	J A 33	J A 36	J A 37	G	45	42	38	G	G	J A 19	J A 25	J A 72	J A 54	J A 30										
26		23	22	J A 34	J A 62	J A 60	J A 24	J A 24	J A 27	37	50	J A 55	J A 54	J A 61	J A 98	J A 58	J A 42	J A 45	J A 40	J A 33	J A 21	J A 19	23	22	J A 26									
27		J A 33	J A 36	J A 53	J A 29	22	J A 33	J A 25	27	32	J A 34	J A 54	J A 38	J A 38	43	47	37	38	33	J A 41	63	84	J A 54	22	J A 26									
28		J A 35	J A 40	J A 30	J A 26	J A 25	E S 16	J A 24	J A 29	J A 33	J A 32	J A 37	J A 36	J A 38	J A 36	J A 46	J A 54	J A 38	J A 54	J A 40	J A 41	J A 40	J A 32	J A 24	J A 25									
29		48	J A 32	E S 16	J A 23	J A 35	J A 25	J A 25	J A 24	G	G	G	G	G	40	G	35	35	37	J A 24	J A 26	22	E S 16	E S 16	E S 16									
30		E S 16	E S 16	J A 35	J A 81	J A 28	J A 40	J A 24	J A 25	33	37	40	G	44	43	J A 44	39	42	J A 42	J A 32	J A 22	J A 20	23	E S 16	E S 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		20	18	E S 16	E S 16	20	21	20	25	J A 33	J A 36	J A 38	J A 39	40	40	41	37	34	33	J A 32	J A 24	22	22	22	22									
UQ		23	22	J A 23	J A 23	J A 24	J A 25	J A 24	27	J A 34	J A 38	J A 41	J A 42	42	43	J A 45	39	38	J A 40	J A 34	J A 40	J A 34	J A 29	J A 25	J A 28									
LQ		E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	J A 33	35	J A 36	36	32	E G 35	35	G	29	25	J A 21	20	E S 16	E S 16	E S 16									

APR. 1985

FOES (0.1 MHz)

IONOSPHERIC DATA

APR. 1985
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	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	32	34	38	39	G	G	38	38	43	69	64	28	E	E	E S 16	
2	E S 16	E	E	E S 16	E S 16	E	E	G	28	34	36	38	40	40	40	37	G	G	18	26	20	29	E S 16	35	E S 16
3	E S 16	E S 16	E S 16	E S 16	E	E	E	18	30	33	33	41	44	41	38	36	32	29	23	20	E	E	E S 16	22	
4	E S 16	24	19	E S 16	E A A 28	E	G	29	34	36	37	38	47	44	34	38	39	39	E	E	29	A A 40	E S 16		
5	E S 16	E	E S 16	E S 16	E	E	E	25	28	33	34	35	G	G	G	38	34	33	29	E	E	E	E S 16	E S 16	
6	E S 16	E S 16	E	E S 16	E S 16	E S 16	E S 16	23	28	31	34	34	35	G	G	G	G	27	20	E	E	E S 16	E S 16	E S 16	
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	32	35	34	36	36	35	33	G	28	26	23	19	E	19	30	
8	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	29	37	35	35	G	G	41	39	35	40	35	25	24	23	E	E	
9	E	E S 16	E S 16	E	E A A 53	A A 41	24	30	37	39	35	40	G	G	G	G	G	33	28	28	20	E S 16	E		
10	E	E S 16	E S 16	E	E	E	E	22	28	30	34	35	35	40	38	33	G	43	30	52	E	21	U Y 25	A A 34	
11	26	E	E	E	E	E	E	G	28	30	28	52	47	90	45	45	32	26	23	19	E	E S 16	E S 16	E S 16	
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	G	G	37	40	38	G	29	27	21	18	E	E S 16	E S 16	E	
13	E	E	E	E	E S 16	E S 16	E	24	35	36	35	36	37	32	40	36	G	32	32	22	25	20	28	25	
14	20	E	E	E S 16	E	E	E	G	31	34	36	37	45	U Y 38	38	35	33	31	30	22	E	21	E	E S 16	
15	E	E S 16	E	E S 16	E S 16	E S 16	17	23	28	G	G	G	U Y 42	41	46	36	32	G	24	E	E S 16	E S 16	E S 16	28	
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	30	32	33	34	35	45	44	37	36	31	30	41	33	22	E	E S 16	
17	E S 16	E S 16	E S 16	E	E	E	G	25	30	31	33	G	G	G	G	38	G	22	33	24	22	E	E S 16	E S 16	E
18	E S 16	E S 16	E S 16	E S 16	E	E	G	G	29	32	34	37	42	38	38	G	G	G	25	19	E S 16	E S 16	E S 16	E S 16	
19	E	E	E S 16	E S 16	E	E S 16	E S 16	26	30	32	35	43	42	43	43	40	35	33	28	34	19	18	21	E	
20	E S 16	E S 16	E S 16	E S 16	E S 16	E	E S 16	29	32	37	42	45	38	38	43	40	48	36	27	19	19	20	E	E S 16	
21	E	E S 16	E	E S 16	E	E	E S 16	27	33	32	38	39	43	48	G	32	30	G	G	E S 16	E	E	E	E	
22	A A 51	32	E	20	23	E	18	29	32	35	35	37	35	G	39	38	36	32	41	32	44	20	E	E	
23	E	E S 16	E S 16	E S 16	24	A A 46	21	26	32	34	34	36	G	40	40	40	34	33	30	G	E	E	E	A A 51	
24	A A 50	E	E	E	A A 62	18	G	32	40	35	37	42	36	41	E B 40	G	G	36	30	42	45	20	24	20	
25	E	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	33	35	36	G	44	41	37	G	G	24	17	24	35	33	E	
26	E	E	E	A A 62	A A 60	21	17	27	33	49	45	49	53	53	53	39	41	37	30	18	19	E	E	22	
27	20	20	19	E	E	E	25	27	29	33	34	35	37	42	47	37	33	29	40	60	A A 84	A A 54	E	19	
28	E	23	E	21	17	E S 16	19	27	30	32	37	36	38	36	46	42	35	35	35	38	40	28	24	25	
29	46	E	E S 16	E	31	E	19	23	G	G	G	G	G	39	G	34	33	35	22	20	E	E S 16	E S 16	E S 16	
30	E S 16	E S 16	19	E	20	23	17	25	30	37	39	G	43	42	43	38	40	37	30	20	E	E	E S 16	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	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	E S 16	E S 16	16	16	16	23	30	33	35	36	38	40	40	37	32	32	30	20	18	16	16	16	
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	26	31	35	36	38	42	42	43	38	35	36	32	32	28	21	21	22	
LQ	E	E	E	E	E	E	E	G	28	32	34	34	35	32	E G 35	33	G	27	24	18	E	E	E	E	

IONOSPHERIC DATA

APR. 1985

FMIN (0.1 MHz)

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

Station	OKINAWA																							Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																								
1	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	20	22	23	28	23	27	22	17	16	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	17	15	18	25	27	17	16	15	15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16																								
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	16	17	21	17	23	26	22	18	15	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
4	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	16	16	19	23	24	22	19	21	17	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	14	18	21	23	23	23	24	19	19	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	17	19	22	27	22	27	19	17	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	18	18	22	22	23	18	15	15	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	16	23	24	21	21	18	18	15	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
9	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	15	16	19	23	22	22	19	20	18	16	E S 16	E S 16	E S 16	E S 16	E S 16																								
10	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	18	23	24	24	22	22	18	19	14	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	14	19	27	26	21	19	18	18	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	16	26	25	24	18	16	15	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	18	20	23	21	22	18	18	15	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	17	19	25	23	20	19	15	15	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	16	17	19	19	19	18	19	14	17	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	18	16	19	22	22	19	18	16	14	13	E S 16	E S 16	E S 16	E S 16	E S 16																								
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	19	18	19	16	24	24	23	14	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	14	15	15	20	15	20	18	15	15	16	E S 16	E S 16	E S 16	E S 16	E S 16																								
19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	17	19	23	18	18	16	16	15	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	15	17	22	27	27	22	22	19	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	17	15	18	20	22	23	20	20	19	17	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	16	20	23	23	28	23	18	17	14	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
23	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	15	21	28	30	22	27	25	16	15	16	E S 16	E S 16	E S 16	E S 16	E S 16																								
24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	22	22	30	27	30	40	27	18	15	14	15	E S 16	E S 16	E S 16	E S 16																								
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	16	17	18	23	24	24	25	23	19	16	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	19	21	23	24	28	26	20	21	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 16																								
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	20	21	23	23	26	21	23	19	16	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	17	22	22	23	22	21	20	17	15	14	15	E S 16	E S 16	E S 16	E S 16																								
29	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	17	20	23	23	28	22	22	20	19	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
30	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	26	21	23	25	24	27	20	20	16	15	E S 16	E S 16	E S 16	E S 16	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	30	30	30	30	30	30	30	30	30	30																								
MED	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	17	19	23	23	22	22	19	17	15	14	E S 16	E S 16	E S 16	E S 16	E S 16																								
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	21	23	25	24	24	22	19	16	15	E S 16	E S 16	E S 16	E S 16	E S 16																								
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	17	19	23	21	19	18	16	14	14	E S 16	E S 16	E S 16	E S 16	E S 16																								

APR. 1985

FMIN (0.1 MHz)

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IONOSPHERIC DATA

APR. 1985

M(3000)F2 (0.01)

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

Station	OKINAWA																							Lat.	26 16 9 N		Long	127 48 4 E		Sweep	1 MHz to 25 MHz		in 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	J S	310	U S	335	360	350	320	360	365	360	315	310	325	310	315	320	325	H	360	375	S	290	290	S																				
2	295	290	330	360	300	295	J S	340	360	340	335	305	280	300	310	J R	340	R	330	335	S	325	275	S																				
3	280	305	335	355	S	S	325	365	360	R	345	270	280	305	305	R	315	R	330	315	345	335	300	320																				
4	305	340	335	360	335	A	335	370	350	345	315	300	295	325	335	320	335	350	380	350	345	290	A	285																				
5	285	315	340	345	320	340	345	355	310	335	320	325	300	300	305	R	335	325	355	J R	365	360	345	S																				
6	290	305	330	345	355	350	325	370	355	360	310	310	310	315	J R	315	325	335	335	355	375	375	335	285																				
7	U S	300	300	310	345	350	335	310	360	355	345	325	295	290	305	305	R	310	R	315	R	305	350	360																				
8	U S	290	U S	290	U S	345	330	J S	350	340	365	350	325	290	305	310	U R	330	R	310	330	340	345	355																				
9	325	335	315	365	335	A	A	355	380	365	340	280	300	355	335	295	320	325	335	355	J S	360	295	S																				
10	J S	310	285	285	320	375	S S	325	355	370	330	300	J R	J R	310	330	J R	350	335	320	335	U S	375	295																				
11	325	335	335	335	360	335	335	365	355	350	335	305	300	310	315	320	315	335	350	365	365	315	300	295																				
12	290	300	285	295	295	300	330	370	350	340	340	320	285	295	320	325	R	320	R	325	R	350	360	310																				
13	295	300	305	325	335	335	340	360	350	330	335	300	295	305	J R	315	315	305	335	325	S	J S	360	325																				
14	295	310	U S	310	360	330	J S	355	365	375	345	290	310	330	290	285	305	345	345	370	R	350	350	315																				
15	295	305	325	360	370	380	370	380	365	345	300	275	320	335	320	320	355	345	350	355	370	315	325	S																				
16	310	320	315	315	365	335	355	390	350	350	320	285	300	310	325	335	345	345	350	355	345	320	295	315																				
17	310	U S	310	350	365	320	330	355	350	320	275	290	300	300	310	330	R	320	320	J R	325	340	360	325																				
18	U S	360	315	320	U S	350	325	325	340	365	375	345	285	295	295	300	295	R	315	320	330	310	U S	340																				
19	305	305	310	J S	320	345	365	350	365	360	340	325	295	305	315	300	R	275	305	320	360	355	340	290																				
20	305	300	F	390	365	S	345	370	355	340	305	325	310	330	315	325	325	325	355	375	295	S	285	285																				
21	290	300	320	370	370	S	340	355	340	315	280	320	320	290	300	305	290	300	335	295	295	320	325	S																				
22	A	S	J S	S	350	315	335	330	310	270	305	315	315	340	335	330	350	340	340	345	S	345	295	295																				
23	F	320	320	U S	315	330	A	350	345	335	310	285	300	300	315	320	340	345	325	335	R	350	360	295																				
24	A	J S	335	310	A	315	355	360	335	300	295	295	295	300	R	305	U R	300	305	320	J R	310	345	320																				
25	310	310	J S	320	340	315	325	360	385	350	340	295	265	285	325	335	335	340	345	360	360	340	275	S																				
26	325	310	340	A	A	350	360	365	350	350	340	295	285	315	325	R	J R	325	335	325	335	335	295	S																				
27	320	280	F	F	F	F	F	335	370	350	315	315	295	300	320	315	335	360	335	355	A	A	335	280																				
28	265	295	305	340	315	290	325	360	325	305	310	265	270	300	320	R	R	R	U R	280	R	335	U S																					
29	J S	315	355	315	340	340	295	320	325	J R	295	295	285	295	305	305	315	300	340	330	325	335	Y	S																				
30	J S	355	295	300	320	325	325	340	355	370	345	330	295	305	325	320	330	345	335	325	345	345	320	S																				
31																								U S																				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																				
CNT	27	30	28	28	26	23	28	30	30	30	30	30	30	30	30	30	30	30	30	30	29	28	27	26																				
MED	305	305	318	342	338	335	340	360	350	340	308	295	300	310	315	320	325	335	335	350	345	300	295	298																				
UQ	315	315	332	358	360	350	350	365	365	345	325	310	305	315	325	330	335	345	355	355	360	320	305	300																				
LQ	290	295	305	320	325	322	328	355	340	325	295	285	295	300	305	R	310	315	325	325	340	335	292	285																				

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M(3000)F2 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1985

M(3000)F1 (0.01)

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

Station		OKINAWA							Lat. 26 16.9 N		Long 127 48.4 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1									L	L	L 370	L 390	L 370	L 380	L 385	L 355	L 380	A	A						
2									L	L	L 370	L 360	L 375	L	L 365	L	L	L							
3									L	L	L	L	L 370	L 355	L 370	L	L	L							
4									L	L	L	L 385	L 380	A	L	L 375	L	A	A						
5									L	L	L 385	L 410	L 400	L 390	L 395	L 365	L 370	L	A						
6									L	L	L 410	L 390	L 400	L	L 375	L 385	L 370	L							
7									L	L	L 420	L 420	L	L 380	L 420	L 405	L	L	L						
8									L	L	L 410	L 375	L 410	L 410	L 355	L 355	L 355	A	A						
9									L	L	L 405	L 385	L 400	L 375	L 400	L 410	L 370	L 350	L	A					
10								L	L	L	L 415	L 375	L 420	L	L 360	L 370	L 380	A	A						
11									L	L	L 380	L 385	A	A	A	A	A	L 360	L	L					
12									L	L	L 420	L 400	L	L 370	L 375	L 385	L	L	L						
13									L	L	L 415	L 410	L 415	L 415	L 375	L 365	L 355	L	L						
14									L	L	L	L 420	A	L 370	L 350	L 370	L 355	L	A						
15									L	L	L	L 360	L 335	L 355	A	L 395	L 355	L	L						
16									L	L	L 390	L 400	L 380	A	A	L 385	L 380	L	A						
17								L	L	L	L	L	L 400	L 390	L 390	L 395	L 370	L 390	L	L					
18									L	L	L 400	L 375	L	L 430	L 385	L 395	L 355	L	L						
19									L	L	L 380	A	L 345	A	L 370	L 385	A	L	L						
20									L	L	L 365	A	L 370	L 430	L	L 395	A	L	L						
21									L	L	L 365	L 355	A	L 360	L 345	L 345	L	L							
22									L	L	L 375	L 365	L 375	L 400	L 370	L 370	L 380	L							
23								L	L	L 375	L 390	L 360	L 375	L 360	A	L 390	L	L	L						
24								A	A	L 390	L	L 365	L	L	L 355	L	L	L	L	A					
25									L	L	L	L	L 385	L 325	L 345	L 385	L 370	L							
26									L	A	A	A	A	A	A	L 355	L 365	L							
27									L	L	L 440	L 410	L 375	L 390	A	L 375	L 355	L	A						
28								L	L	L 355	L 370	L 360	L	A	A	L	L	L	L	A					
29								L	L	L	L 370	L 395	L 395	L 365	L 365	L 375	L 350	L	L						
30									L 400	L 390	L 390	L 430	L 400	L 370	L 395	L 365	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									1	4	21	23	23	20	19	28	19								
MED									L 400	L 385	L 390	L 390	L 375	L 380	L 375	L 370	L 360								
UQ									L 398	L 410	L 405	L 398	L 400	L 390	L 385	L 375									
LQ									L 378	L 380	L 372	L 368	L 370	L 360	L 365	L 355									

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M(3000)F1 (0.01)

IONOSPHERIC DATA

APR. 1985 H*F2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station **OKINAWA** Lat. 26° 16' 9" N Long. 127° 48' 4" E Sweep 1 MHz to 25 MHz in 24sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									250	260	300	305	280	290	290	290	275	255	250					
2									240	260	290	330	310	290	275	250	250	240	240					
3									230	250	280 ^L	350	300	290	280	260	250	240	240					
4									235	260	295	310	350	270	270	295	270	250	220					
5									250 ^L	275	290	275	295	305	310	290	260	250	225					
6									260	250	270	325	300	290	275	255	270	250						
7									240	260	280	280	240	305	270	260	270	250	250					
8									230	290	330	310	290	300	290	290	260	250	235					
9									240	230	290	350	310	255	270	320	295	270	265					
10								260	250	275	260	375	330	300	275	255	265	300	255					
11									250 ^L	280	295	305	325	350	295	260	290	260	240					
12									240	265	275	280	340	350	290	260	265	250	245					
13									250	250	290	305	340	310	290	270	260	250	255					
14									250	255	360 ^L	300	280	340	360	320	270	250	225					
15									245	290 ^L	325 ^L	370	300	290	300	300	255	255	250					
16									230 ^L	280	310	350	350	310	300	275	250	250	245					
17								240	240	270 ^L	300	320	330	335	310	270	240	260	250					
18									240	250	340	340	335	320	310	275	260	260	250					
19									250	265	295	320	300	280	300	300	290	275	260					
20									265	290	330	295	320	300	300	295	295	295	250					
21										285 ^L	345	295	310	345	325	305	325	310	255					
22									300 ^L	370 ^L	300	310	300	265	260	265	255	255						
23								230	260	310	335	330	320	290	270	255	240	265	250					
24								220	240	300	320	315	315	290	290	300	270	260	260	220				
25									250	290	350	350 ^L	375	300	290	265	255	250						
26									240	270	285	345	380	310	275	290	255	250						
27									250	260	260	305	350	315	300	305	270	245	250					
28								240	300	330	290	380	375	315	280	310	275	290	310	260				
29								265	275	375	400	400	350	315	305	295	295	250	245					
30									240	260	300	335	320	295	310	275	255	270	265					
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	29	30	30	30	30	30	30	30	30	30	26	2				
MED								240	250	270	298	320	320	300	290	282	265	252	250	240				
UQ								260	250	290	330	350	340	315	300	300	275	265	255					
LQ								230	240	260	290	305	300	290	275	260	255	250	240					

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H[•]F (KM)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	275	290	290	250	210	215	285 ^S	220	235	225	210	205	235	210	250	245	A	A	A	250	240	340	345	310
2	310	315 ^S	250	210	260 ^{E S}	S	250	230	230	230	220	210	230 ^A	250 ^A	A	230 ^A	210	220	230 ^A	220	220	260 ^S	A	310 ^S
3	320 ^S	310 ^S	250	220	S	S	S	220	220	210	200	240 ^A	A	250 ^A	240 ^A	240 ^A	230 ^A	240 ^A	230 ^A	225	215	215	290 ^S	320 ^{E A}
4	295	260	250	210	250 ^S	A	300 ^S	225	205	225	230	200	195 ^H	A	A	230	260 ^A	A	A	215	220	300 ^A	A	325
5	300	250	235	250	265	250	260	230	230	230	210	195	195	190	175	250 ^A	255	250 ^A	A	210	210	200	295	310
6	300	290	250	215	220	250 ^S	250	220	210	210	200	190	190	170 ^H	215	230	210	225	220	200	190	210	340	315
7	310	300	280	230	210	250 ^S	230	220	210	210	210	190	200	190	200	240 ^A	220	220	240 ^A	220	210	200	300 ^E	A
8	320 ^S	290	280	225	230	225	210	210	210	200	200	240 ^A	200 ^H	190 ^H	A	250 ^A	245 ^A	A	A	215	210	240 ^A	270 ^S	300 ^{E S}
9	300	270	255	210	240	A	A	240	230	215	220	190	250 ^A	200 ^H	210	210	220	210	A	220	215	250 ^A	290	300
10	290	310	350	300	215	210	285	245	225	220	205	200	180	270	250	225	210	A	A	240 ^A	195	S	S	A
11	S	305	300	265	225	270 ^S	260	235	220	205	210	A	A	A	A	A	215	215	240 ^A	210	200	240	265	290
12	290	290	290	270	310 ^{E S}	290 ^S	240	210	215	210	190	190 ^H	190	250 ^A	240 ^A	190 ^H	210	210	230	205	205	270	280	280
13	280	270	270	240	240	240 ^S	235	230	240 ^A	210	200	190 ^H	190 ^H	A	260 ^{E A}	245 ^A	230 ^A	235 ^A	250 ^A	225	210	205	A	300 ^A
14	280	285	280	225	250	245	225	210	220	210	200	175	A	250 ^Y	245 ^A	215	240	245	A	220	215	230	250	300
15	300	300	250	205	225	205	215	215	200 ^H	205	185	190	A	A	A	220	220	220	240	230	200	210	265	A
16	300	290	290	260	230	250	230	210	205	200	200	190	180	A	A	225	220	240	A	240	230	265	295	300
17	290	260	260	205	210	S	250 ^S	220	220	210	200	190	190 ^H	190 ^H	210	210	215	230 ^A	230 ^A	230	210	210	290 ^S	260
18	250	260	260	210	240 ^S	270 ^{E S}	235	230	230 ^A	210	190	190 ^H	A	200	240 ^A	210	200	210	235 ^A	220	200	210	240	290 ^S
19	270	275	260	230	210	200	210	215	210	200 ^H	190 ^H	A	A	A	A	250 ^A	A	260 ^{E A}	240 ^A	210	205	250	320 ^{E A}	300 ^S
20	300	290	250	200	210	S	245	220	230	215	A	A	215	205 ^H	A	A	A	A	250 ^A	215	290	325	300	315
21	305	295	265	205	200	S	240	215	250	220	250	250	A	A	210	210	215	240	250	250	260	240	210	305
22	A	350 ^A	300	255	255	275	250	240	225	245	215	210	205 ^H	205 ^H	250	225	245	245	250	240	255	250	300	300
23	290	240	250	240	230 ^A	A	240	210	215	190 ^H	190 ^H	190 ^H	190 ^H	240 ^A	260 ^A	240 ^A	230 ^A	240 ^A	240 ^A	215	200	260 ^S	260 ^S	A
24	A	280	240	260 ^S	A	260 ^A	220	A	A	200	190 ^H	A	190 ^H	A	B	210	210	260 ^{E A}	255 ^A	A	230 ^A	250	250	300 ^A
25	275	295	260	245	270	270	245	220	220	200	200	180	180	A	A	235	220	220	240	215	250	A	300	300
26	275	260	250	A	A	250	215	215	235	A	A	A	A	A	A	250 ^A	A	A	250	215	210	210	245	270
27	260	310	345	270	290	280	240	230	215	210	200	200 ^H	195	A	A	225	250 ^A	245	A	255 ^A	A	A	245	350
28	330	340 ^{E A}	290	260	260 ^A	S	210	230	210	210	190 ^H	200	200 ^H	220	A	A	250 ^A	250 ^A	A	A	235	230	290	330 ^{E A}
29	340	260	230	250	260	245	265	245	210	205	205	220	230	250	245	220	245	A	240	250	210	210	250	250
30	250	290	290	260	260	275	250	230	215	225	210	190	A	A	A	A	A	A	A	240	210	215	300	350
31																								
CNT	27	30	30	29	27	21	28	29	29	29	28	25	21	18	16	26	25	22	19	28	29	27	26	26
MED	295	290	260	240	235	250	240	220	220	210	200	190	195	208	240	228	220	233	240 ^A	220	210	240	282	300
UQ	302	300	290	260	256	270	250	230	230	220	210	205	205	250	249	240 ^A	245 ^A	242 ^A	248 ^A	240	230	255	298	312
LQ	278	270	250	210	218	240	228	215	210	205	195	190	190	190 ^H	210	215	215	220	232 ^A	215	205	210	250	300

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H[•]F (KM)

IONOSPHERIC DATA

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H'E (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	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
1								E B 140	110	110	110	110	110	110	110	110	110	110	110	120 ^B				
2								E S 130	115	110	110	110	110	110	110	110	100	115	E S 125					
3								120	105	105	105	105	110	110	110	110	110	110	110	110				
4								E B 140	110	110	110	110	110	110	110	110	110	120 ^A	A					
5								120 ^B	110	110	110	110	110	110	110	110	110	110	110	115 ^B				
6								110	110	110	110	110	110	110	105	105	105	105	110	110				
7								110	110	110	110	110		A	A	A	A	110	105	110				
8								110	A	A	A	A		110	110	110	110	110	110	105				
9								A	A	110	110	110	110	110	110	110	110	110	110	115 ^B				
10								130 ^A	110	110	110	110	110	110	110	110	105		A	A				
11								110	110	110	110		A	A	A	A	A	A	A	A				
12								110	110	110	110	110	110	110	110	115		A	A	A				
13								110	110	110	110	110	110	110	110	110	110	110	110	110				
14								110	105	105	110	110	110	110	110	110	110	110	110	A				
15								S A	105	105	105	105	105	105	105	105	110	110	125 ^A					
16								S	110	110	110	110	110		A	A	A	A	A	A				
17								S	110	110	110	110	110	110	110	110	110		A	A				
18								S	110	110	110		A	A		A	105	105	105	110				
19								S	110	110	110	110	110	110	110	110	110	110	110	110				
20								S	110	110	110	110	110	110	110	110		A	A	A	A	S		
21								S	115 ^B	110	110	110	110	110	110	110	110	110	110	115 ^B	S			
22								S	110	110	110	110	110	110	110	110	110	110	110	115 ^B	S			
23								S	A	A		110	110	110	110	110	110	110	115	115	S			
24								S	110	110	110		A	A	A		B	110	110	110	110	A		
25								S	110	110	110	110	110	110	110	110	110	110	110	115 ^B	S			
26								S	A	110	110	110	110	110	110	110	110	110	110	110	S			
27								S	110	110	110	110	110	110	110	110	110	110	110	115 ^B	S			
28								S	A	A	A	A	A	A	A		110	110	110	110	A	A		
29								S	A	110	110	110	110	110	110	110	110	110	110	110	S			
30								S	A	A		110	110	110	110	105	105	110	110	110	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								23	25	28	26	25	26	26	25	26	26	24	21					
MED								110	110	110	110	110	110	110	110	110	110	110	110	110				
UQ								114	110	110	110	110	110	110	110	110	110	110	110	115 ^B				
LQ								110	110	110	110	110	110	110	110	110	110	110	110	110				

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA																							Lat. 26 16.9 N	Long 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																								
1	S	S	S	S	S	S	S	G	G	145	145	140	150	G	G	165	145	125	115	110	110	110	110	S																								
2	S	100	100	S	S	110	110	G	140	130	120	120	140	120	120	E G 150	G	100	125	110	110	S	110	S																								
3	S	S	S	S	100	100	100	100	E G 140	E G 140	E G 150	E G 160	E G 150	E G 160	E G 160	E G 155	E G 150	140	115	110	110	110	S	110																								
4	S	105	105	S	105	105	105	G	110	110	140	135	115	140	140	150	145	120	110	110	100	110	110	S																								
5	S	105	S	S	105	105	105	115	110	110	110	110	G	G	G	150	130	125	115	110	110	110	S	S																								
6	S	S	110	S	S	S	S	150	115	110	110	110	110	G	G	G	G	130	120	100	100	S	S	S																								
7	S	S	S	S	S	S	S	G	115	120	120	120	110	110	110	110	G	150	120	110	110	110	110	110																								
8	110	110	S	S	S	S	S	G	110	110	110	110	G	G	150	140	135	130	115	110	110	110	110	100																								
9	105	S	S	110	105	105	105	100	150	110	110	105	105	G	G	G	G	G	115	110	110	110	S	110																								
10	105	S	S	105	105	105	105	105	110	110	110	110	110	155	150	110	G	100	100	100	100	110	110	110																								
11	105	110	105	105	105	110	110	G	110	110	110	100	105	100	100	100	100	100	100	100	100	S	S	S																								
12	S	S	S	S	S	S	S	G	G	G	G	G	115	165	160	100	100	100	100	100	100	S	S	100																								
13	100	100	100	100	S	S	110	115	115	115	115	115	120	120	120	E G 165	G	150	115	110	110	105	105	105																								
14	105	105	105	S	110	105	105	G	140	130	125	125	150	160	160	160	150	125	110	110	110	105	105	S																								
15	105	S	100	S	S	S	105	105	145	110	105	160	150	150	140	150	145	G	115	100	S	S	S	105																								
16	S	S	S	S	S	S	G	G	130	115	115	110	110	100	100	145	100	100	100	110	110	110	110	S																								
17	S	S	S	110	110	110	110	140	135	115	115	G	G	G	G	160	100	100	100	100	100	S	S	110																								
18	S	S	S	S	110	110	110	G	120	120	110	110	150	160	100	G	G	G	120	110	S	S	S	S																								
19	120	115	S	S	110	S	S	140	120	120	120	125	125	120	120	115	140	135	125	110	110	110	100	100																								
20	S	S	S	S	S	100	S	130	120	115	110	125	110	110	105	100	100	100	100	100	100	105	110	S																								
21	110	S	110	S	110	110	S	140	110	115	115	120	130	125	G	115	110	G	G	S	115	110	110	110																								
22	110	110	110	110	110	110	150	140	110	110	110	115	115	G	170	150	150	145	130	110	110	110	100	100																								
23	110	S	S	S	110	110	110	110	110	115	115	115	G	150	135	135	130	120	120	100	110	110	110	110																								
24	110	110	110	110	110	110	110	125	120	120	110	110	110	E G 160	B	G	G	120	115	110	110	110	110	110																								
25	100	100	S	S	S	S	S	G	110	110	110	110	G	150	145	150	G	G	140	125	110	110	110	110																								
26	110	110	110	105	105	105	105	105	110	110	110	110	115	110	110	110	110	110	110	110	110	105	105	105																								
27	110	110	105	105	105	105	105	110	110	110	120	110	110	110	150	150	120	150	115	110	110	110	110	110																								
28	110	110	110	100	100	S	105	110	110	110	110	110	110	110	115	115	115	115	105	100	100	100	100	100																								
29	115	110	S	110	105	105	105	105	G	G	G	G	G	160	G	150	140	115	115	110	100	S	S	S																								
30	S	S	110	110	105	105	105	110	100	125	125	G	160	150	140	135	120	115	110	110	110	110	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	17	15	14	12	19	19	20	19	27	28	28	26	24	23	22	26	21	25	29	29	28	22	19	18																								
MED	110	110	108	108	105	105	105	110	112	114	111	111	115	U 130	133	142	125	120	115	110	110	110	110	110																								
UQ	110	110	110	110	110	110	110	135	122	120	120	122	140	154	150	150	142	130	120	110	110	110	110	110																								
LQ	105	105	105	105	105	105	105	105	110	110	110	110	110	110	110	115	110	100	110	100	100	110	105	100																								

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H°ES (KM)

IONOSPHERIC DATA

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TYPES OF ES

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

Station 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									H1	H1	H1	H1				H1	H1	H3	C6	F2	F3	F2	F2		
2		F1	F1			F1	F1		HL11	H1	C1	C1	H1	C1	C2	H1		L1	C1	F3	F6		F5		
3					F1	F2	F2	L1	H1	H2	H2	H1	H1	H1	H1	H1	H1	H1	C2	F2	F1	F1		F4	
4		F5	F2		F5	F5	F2		L2	L1	H1	H1	CH11	H1	H1	H1	H2	CL32	CL53	FF13	F3	F4	F2		
5		F1			F3	F3	F4	C4	C1	C2	C2	C1				H2	H1	H2	C2	F3	F1	F1			
6			F1					HC21	C1	C2	C1	C2	C1					HL12	CL11	F1	F1				
7									C1	C2	C1	C1	L1	L1	L1	L1		H1	C2	F6	F7	F3	F7	F4	
8	F4	F1							L2	L1	L1	L1			H1	H1	H2	H4	C5	F7	F4	F4	F2	F1	
9	FF11			F1	F3	F6	F4	L3	HL12	C3	C2	C1	C1						C7	FF71	FF31	F3		F2	
10	F3			F2	F1	F1	F3	LH11	C2	C2	C2	C1	C1	H1	H1	C1		L6	L5	F5	F1	F3	F2	F5	
11	F5	F1	F2	F2	F2	F2	F4		C2	C2	C2	L2	L2	L5	L4	L5	L3	L3	L3	F7	F2				
12													C1	H1	H1	L1	L1	L2	L1	F2	F1			F1	
13	F1	F3	F2	F1			F1	C1	C1	C2	C1	C1	C1	C1	C2	H1		H3	C3	F6	F5	F3	F7	F4	
14	F2	F2	F3		F2	F2	F2		H3	H1	H1	H1	HHL21	HL11	HL11	HL11	HL21	HL32	CL24	FF31	FF11	F5	F3		
15	F2		F2				L1	L1	H1	C1	C1	H1	H1	H1	H3	H1	HL21		CL11	F2				F3	
16									H2	C1	C2	C1	C2	L4	L4	HL13	L5	L5	L5	FF56	F3	F3	F3		
17				F1	F1	F1	L3	H2	H2	C1	C1					H1	L1	L2	L3	F5	F1			F1	
18					F3	F4	L1		C1	C1	L2	L2	H1	HL11	L2				C3	F4					
19	F1	F1			F1				H2	C1	C2	C1	C1	C1	C2	C1	H1	H2	C2	F6	F4	F2	F3	F1	
20						FF11			H3	C2	C2	C2	C2	C1	C1	C2	L4	L5	L5	L6	L4	F2	F5	F1	
21	F2		F2		F1	F2			H3	C1	C1	C1	C1	H2	H2		C1	C1				F1	F2	F3	F4
22	F6	F6	F2	F3	F4	F4	HL11	H3	C2	CH12	CH11	C1	C1		H1	H2	H2	H2	H4	C7	F5	F7	F3	F4	
23	F2				F3	F4	L4	L2	L2	C1	C1	C1		H1	H1	H1	H1	CL11	C2	L1	F2	F1	F3	F6	
24	F5	F4	F2	F3	F4	F2	L1	C1	C1	C1	L1	L1	L1	H1				C3	C4	L6	F7	F3	F5	F3	
25	F2	F3							C2	C2	C2	C1		H2	H1	H1				H1	H1	F4	F5	F2	
26	F2	F2	F4	F5	F7	F7	L3	L3	C1	C4	C2	C2	C3	C3	C4	C2	C3	C4	C4	C3	F2	F1	FF11	F4	
27	F3	F3	F4	F3	F2	F4	L4	C2	C1	C1	C1	C1	C1	C1	H2	H1	CH11	H1	C5	CL72	FF72	FF53	FF21	F3	
28	F2	F4	F2	F4	F1		L3	L2	L2	L2	L2	L1	L1	L1	C2	C2	C2	C5	L3	L7	F5	F7	F6	F3	
29	F7	F4		F2	F4	F3	L3	L2						H1		H1	H1	C3	C1	C3	F2				
30			F3	F2	F3	F6	L3	L3	LH21	H1	H1		HC11	H1	H2	H1	C2	C3	C3	C4	F4	F3			
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																									

The Radio Research Laboratories, Japan

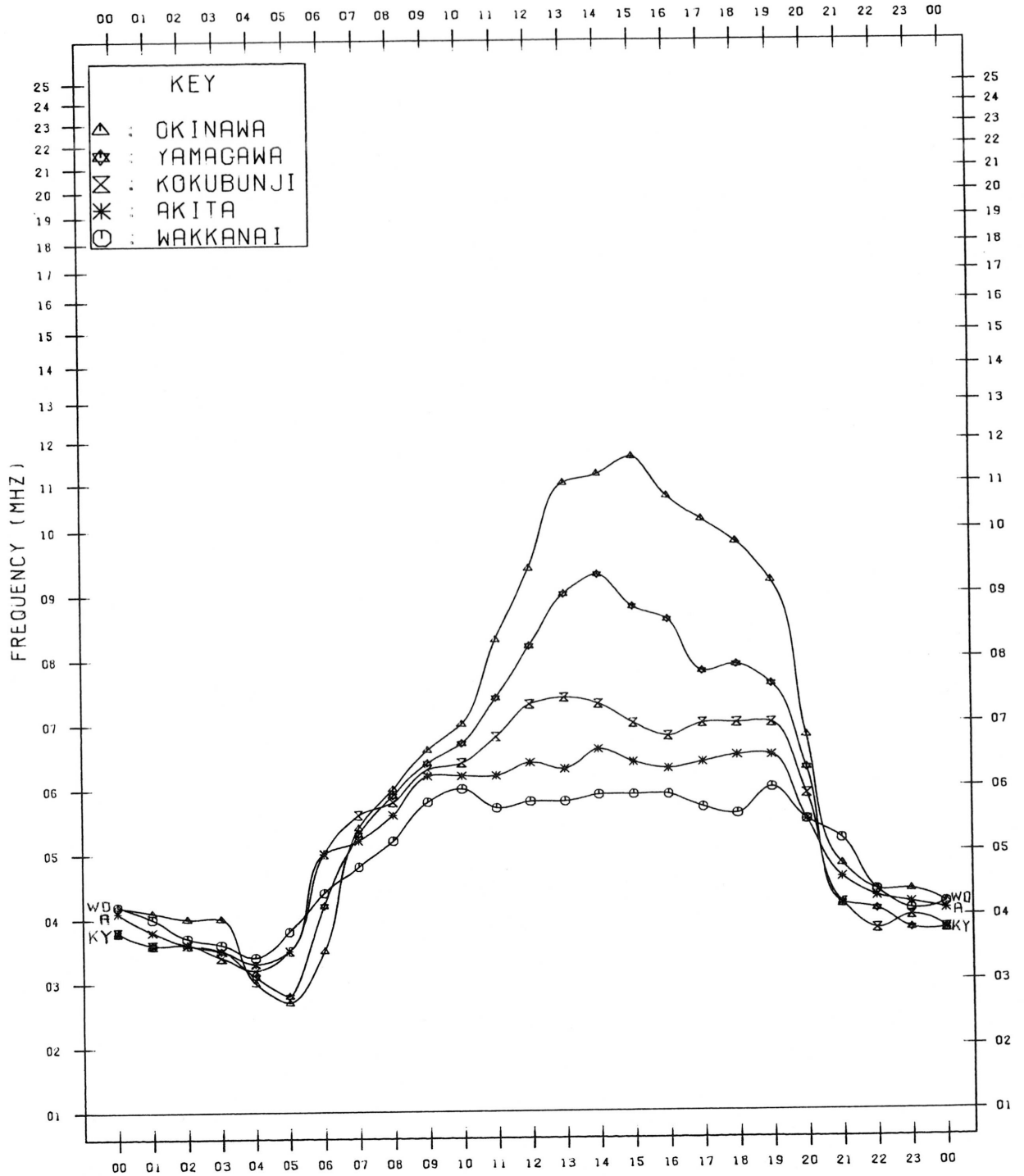
APR. 1985

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

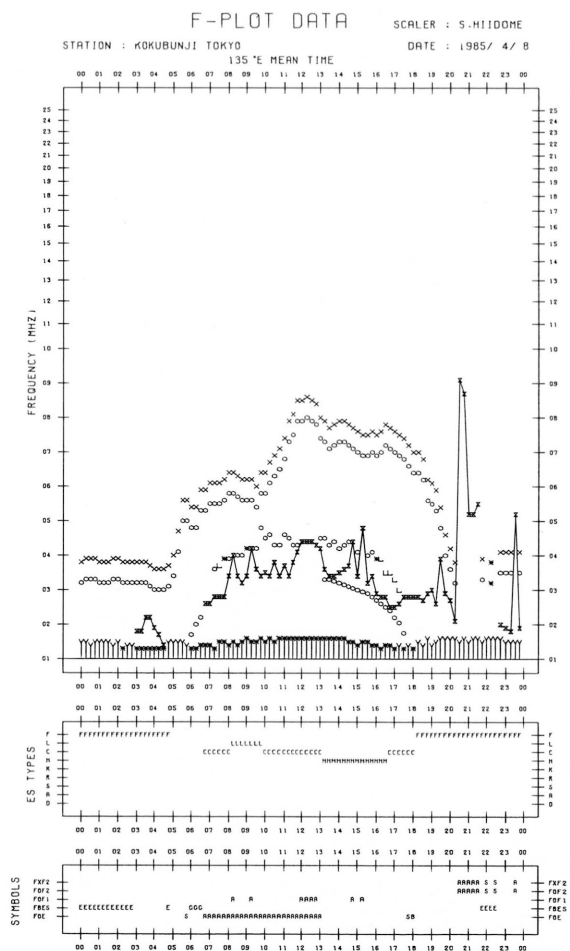
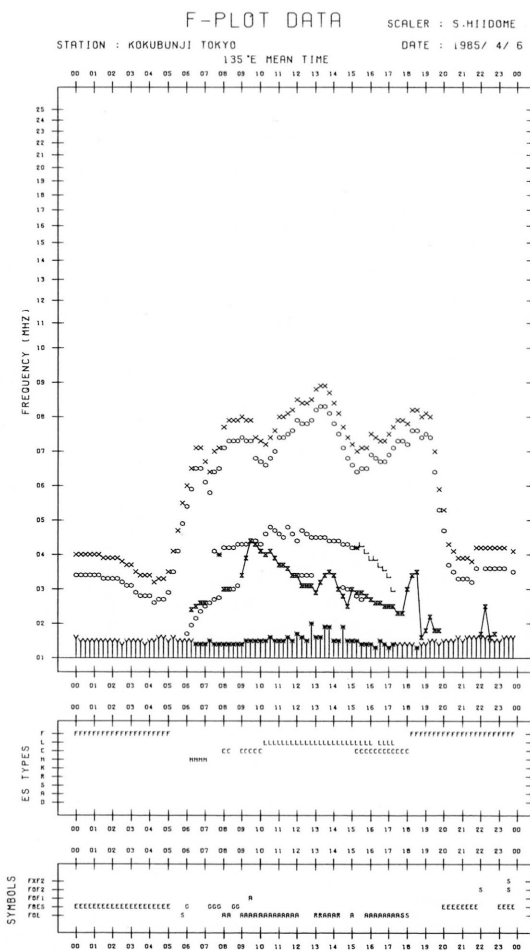
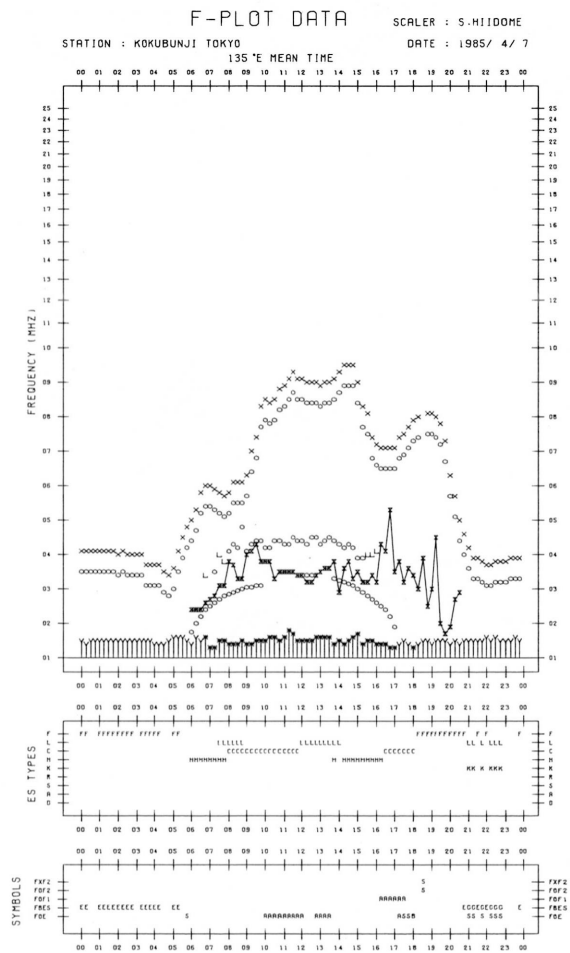
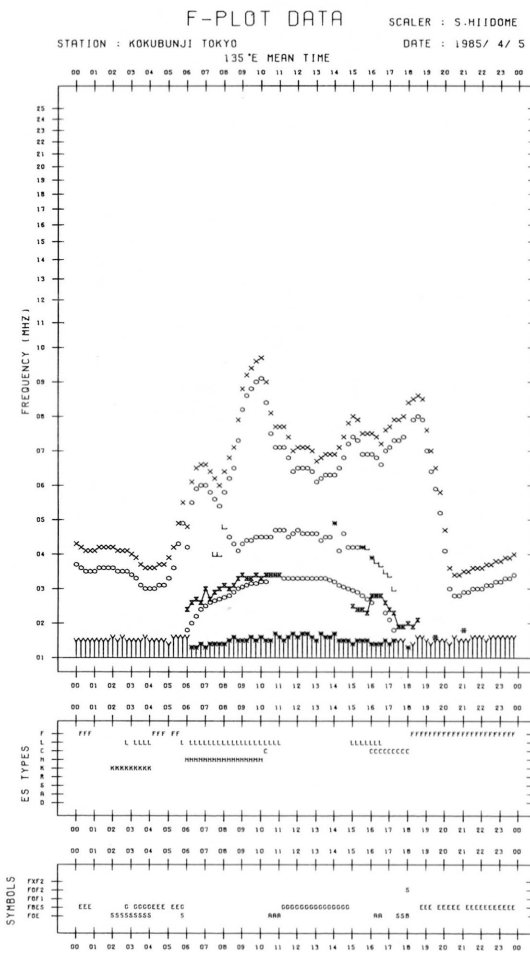
135°E MEAN TIME

APR. 1985



f-PLOTS OF IONOSPHERIC DATA

KEY OF F-PLOT	
I	SPREAD
◇	F0F2, F0F1, F0E
×	FXF2
*	DOUBTFUL F0F2, F0F1, F0E
⊗	FBES
L	ESTIMATED F0F1
*Y	FMIN
^	GREATER THAN
∨	LESS THAN



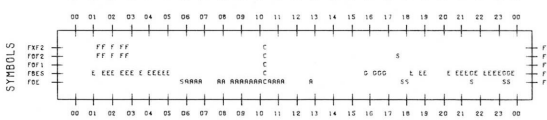
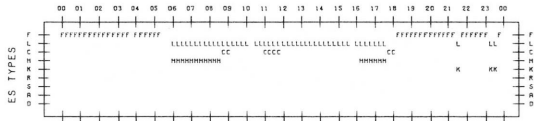
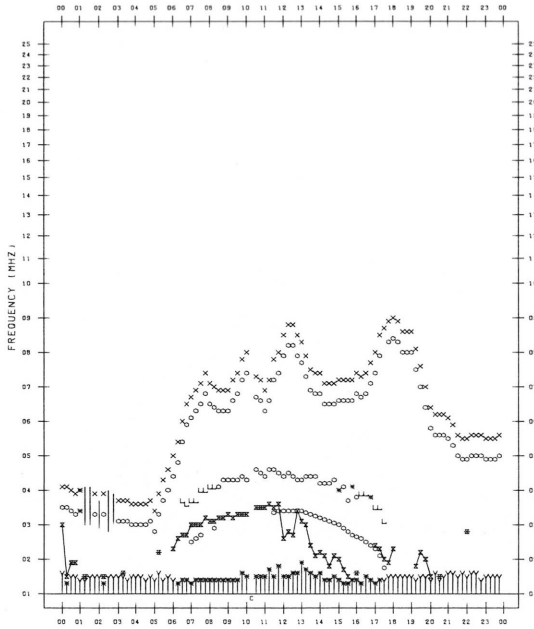
F-PLOT DATA

SCALER : 5-HI100ME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 4/ 9

135°E MEAN TIME



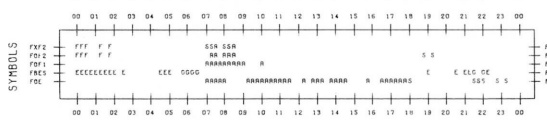
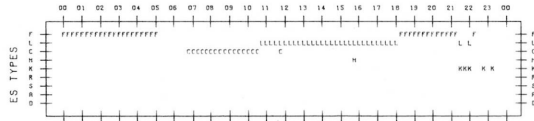
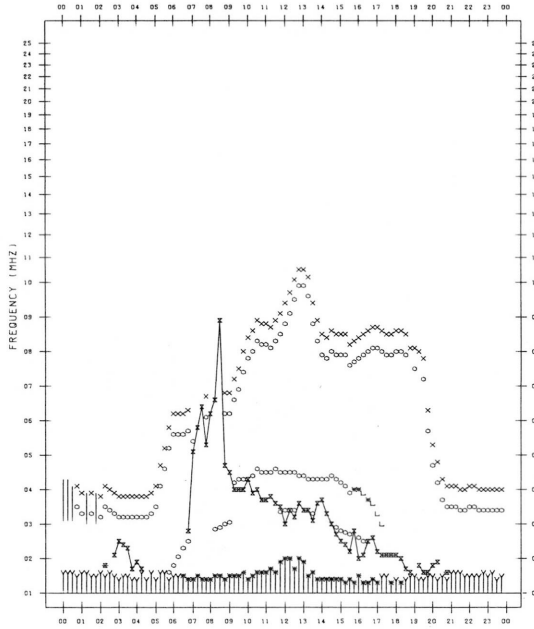
F-PLOT DATA

SCALER : 5-HI100ME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 4/ 11

135°E MEAN TIME



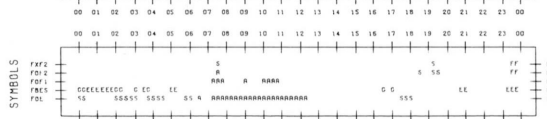
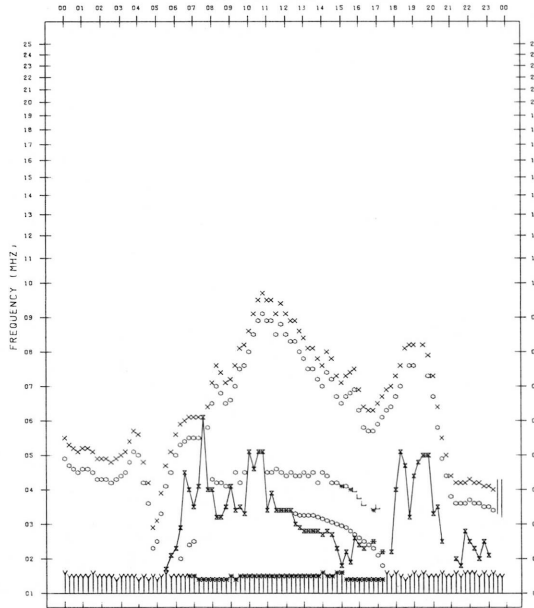
F-PLOT DATA

SCALER : 5-HI100ME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 4/ 10

135°E MEAN TIME



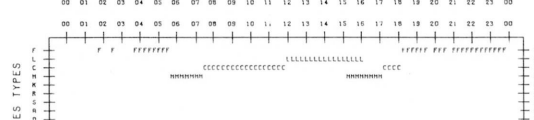
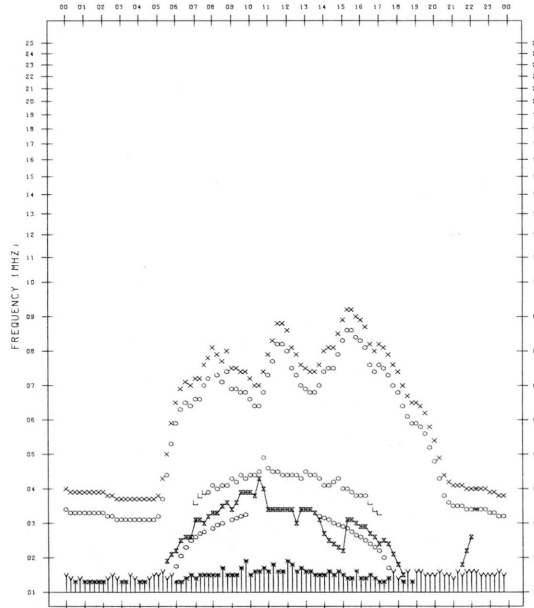
F-PLOT DATA

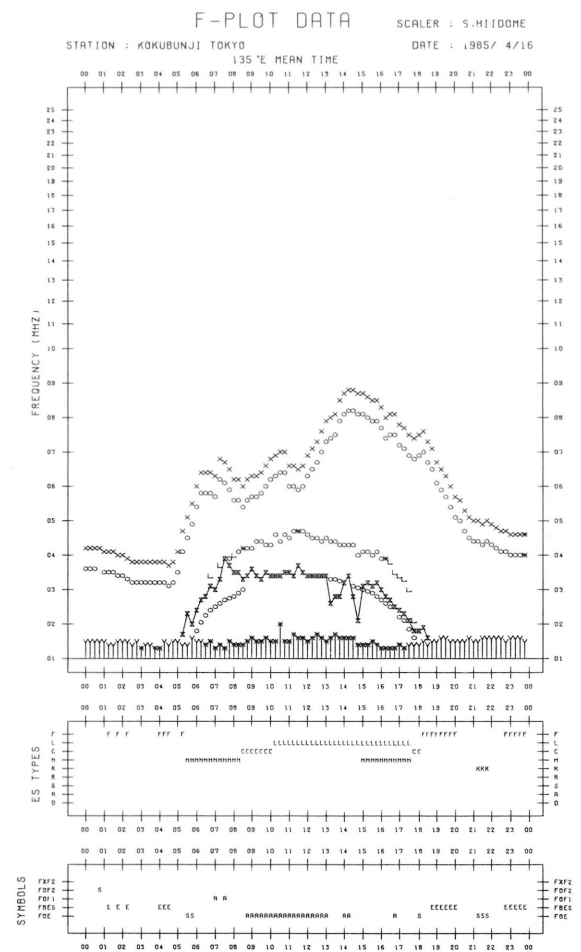
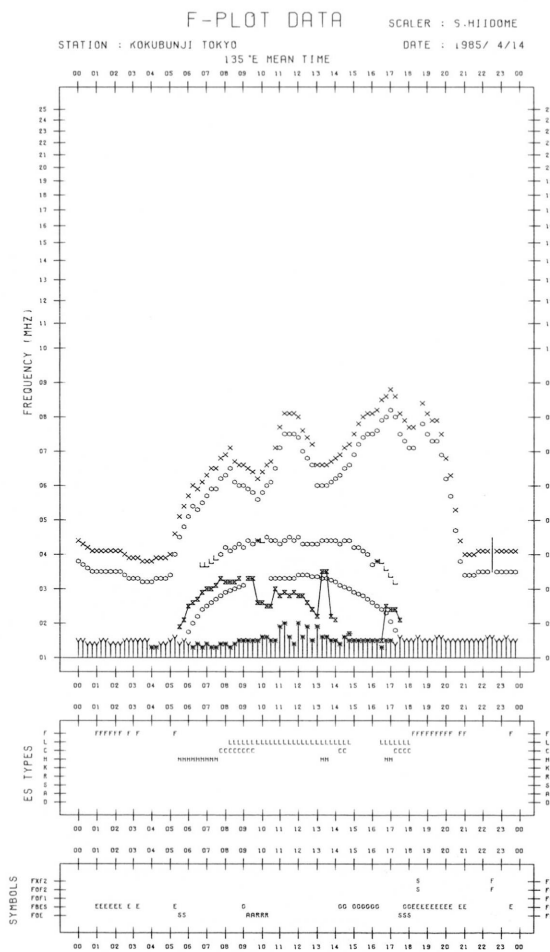
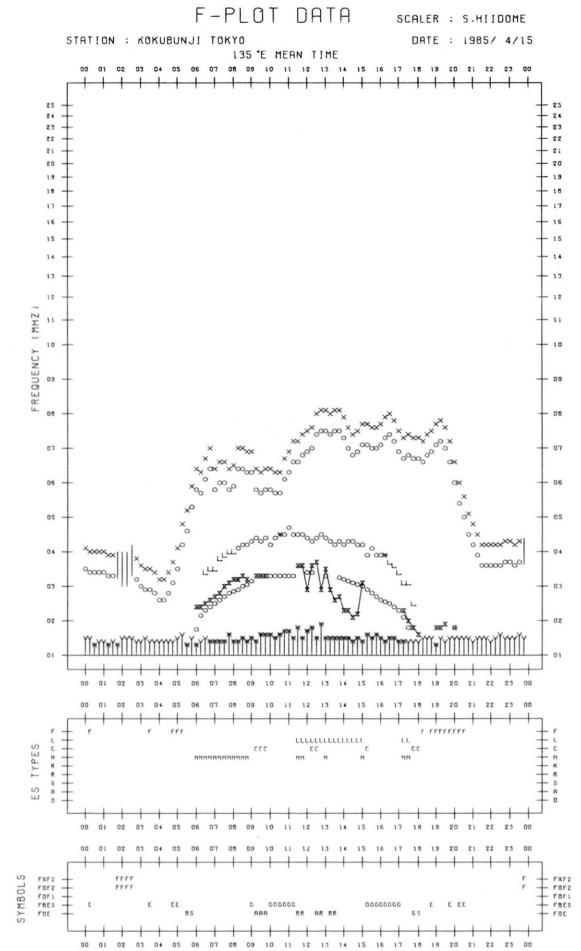
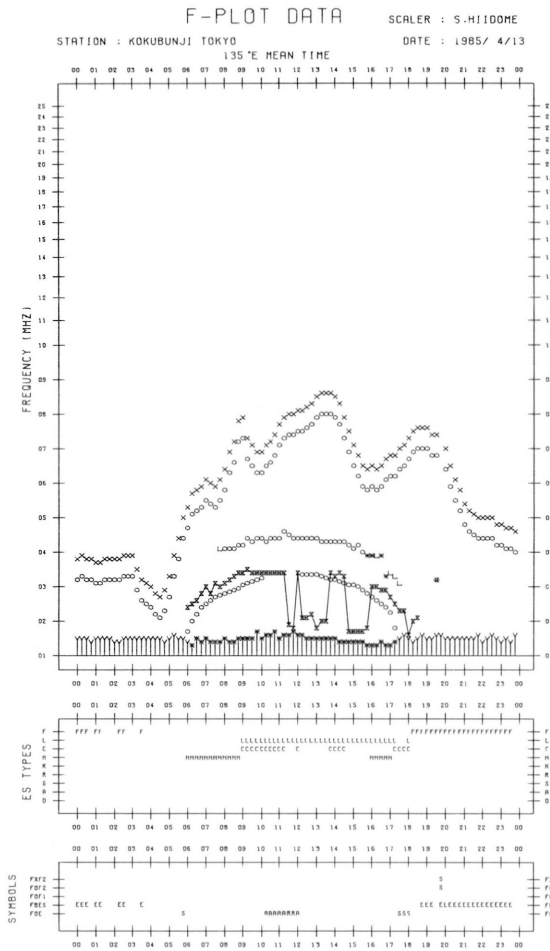
SCALER : 5-HI100ME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 4/ 12

135°E MEAN TIME



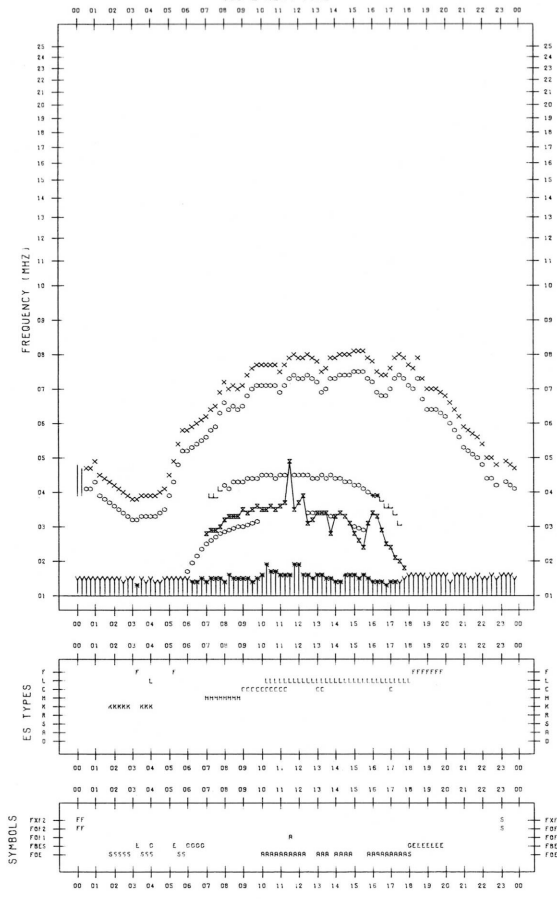


F-PLOT DATA

SCALER : 5.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/17

135°E MEAN TIME

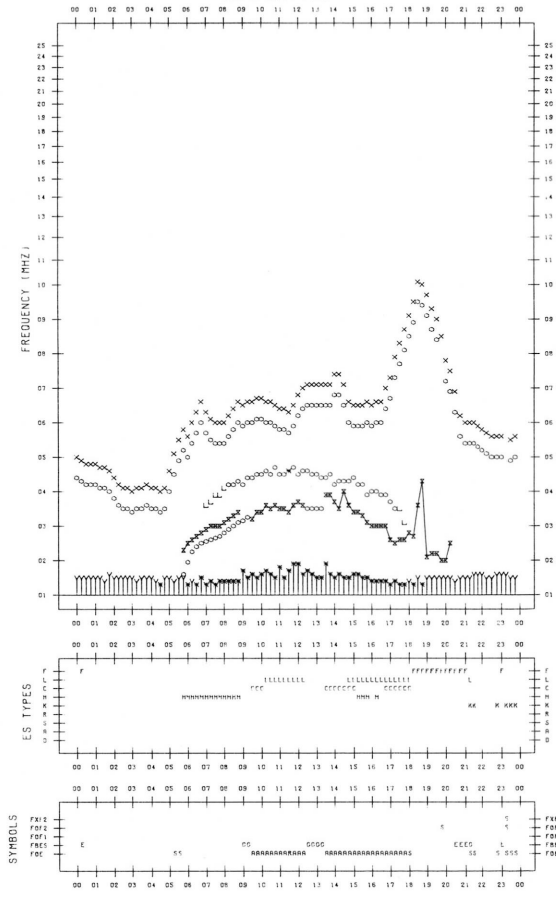


F-PLOT DATA

SCALER : 5.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/19

135°E MEAN TIME

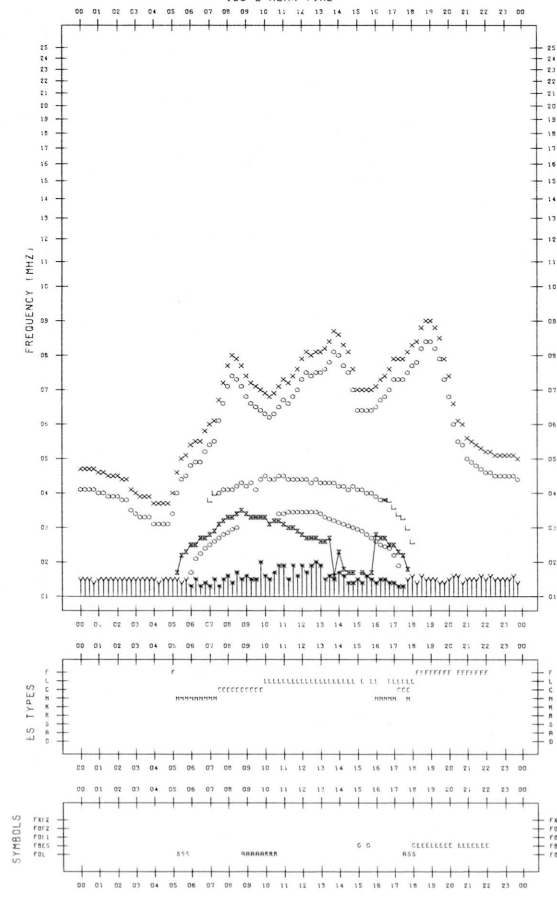


F-PLOT DATA

SCALER : 5.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/18

135°E MEAN TIME

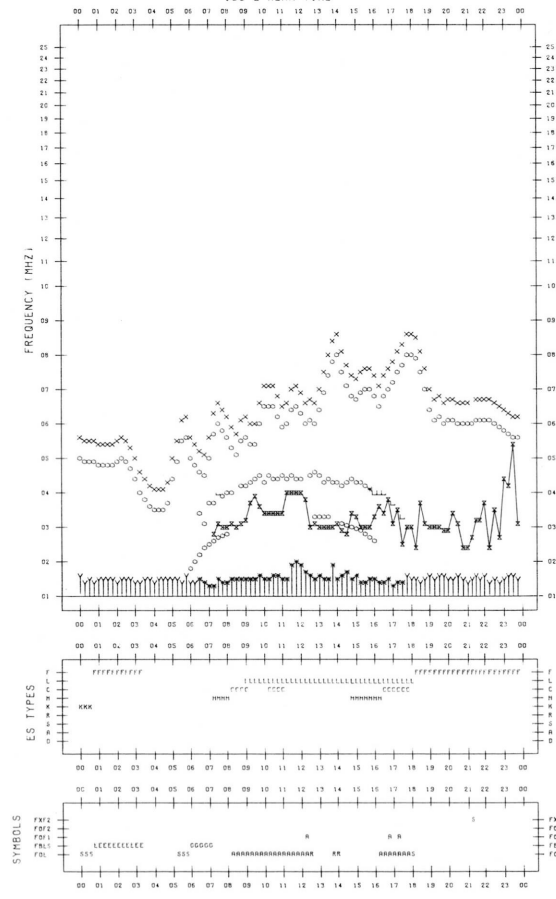


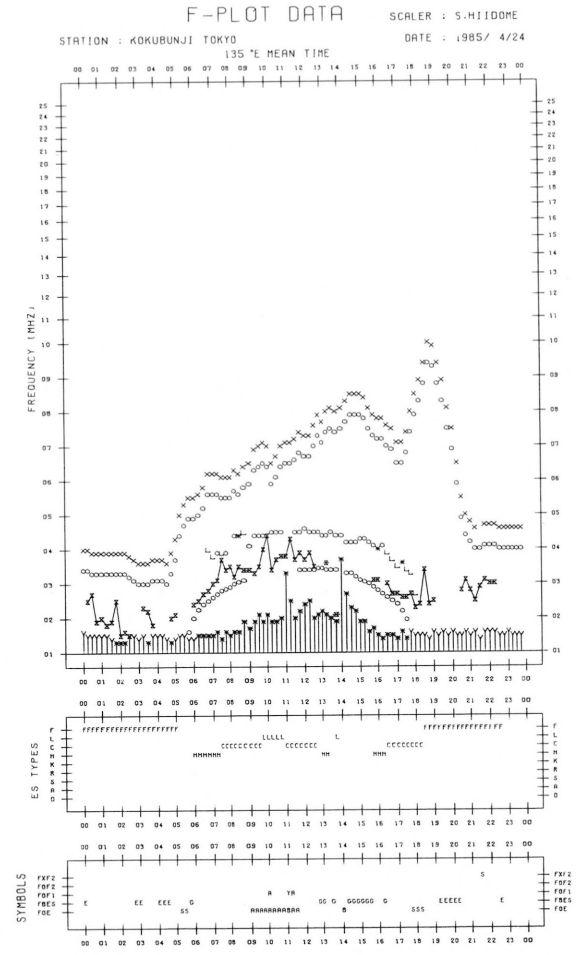
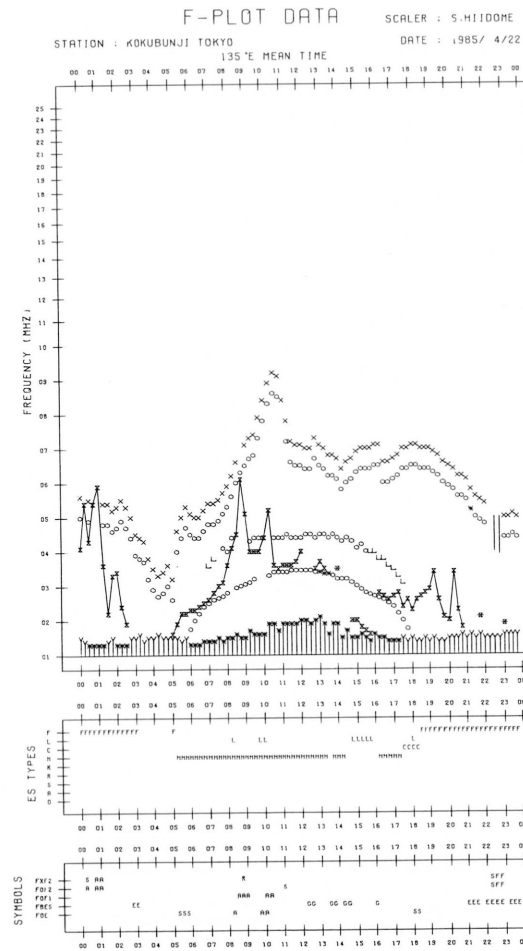
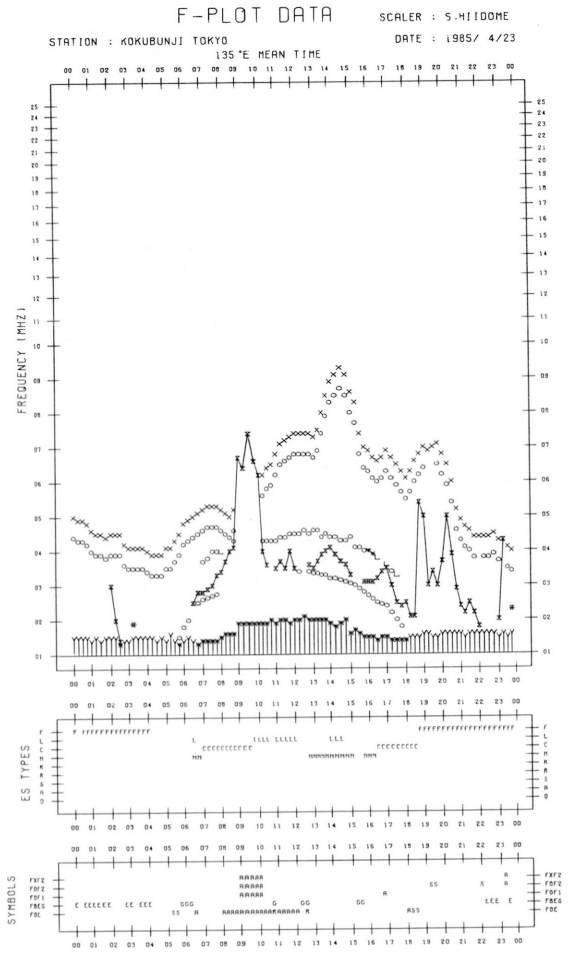
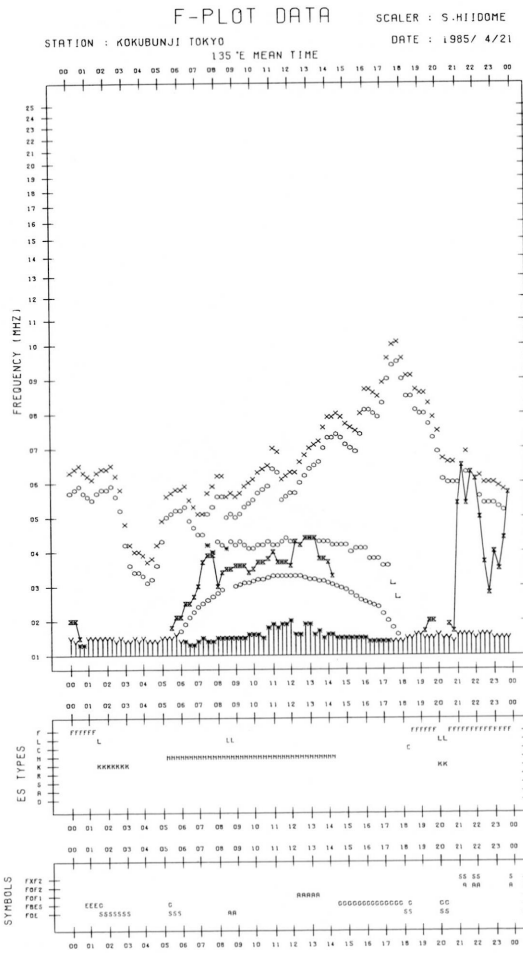
F-PLOT DATA

SCALER : 5.HI100ME

STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/20

135°E MEAN TIME

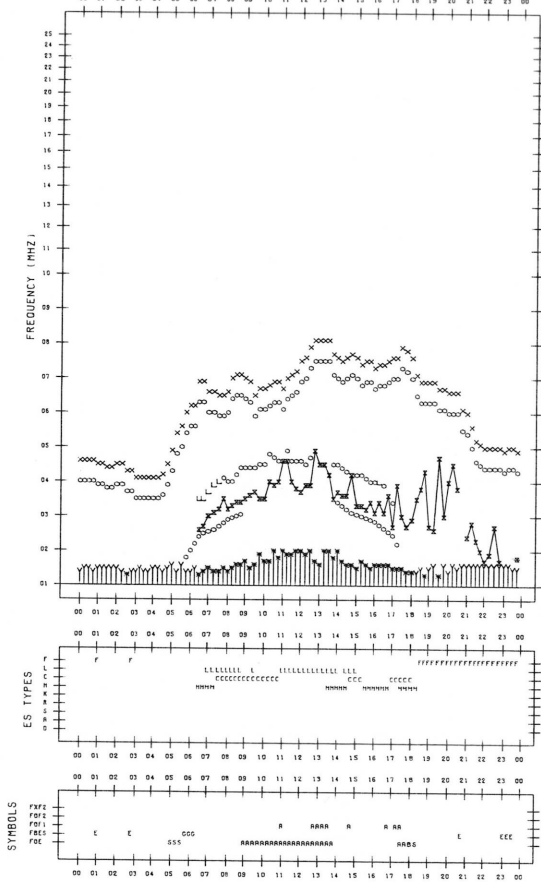




F-PLOT DATA

SCALER : S.HIIDOME

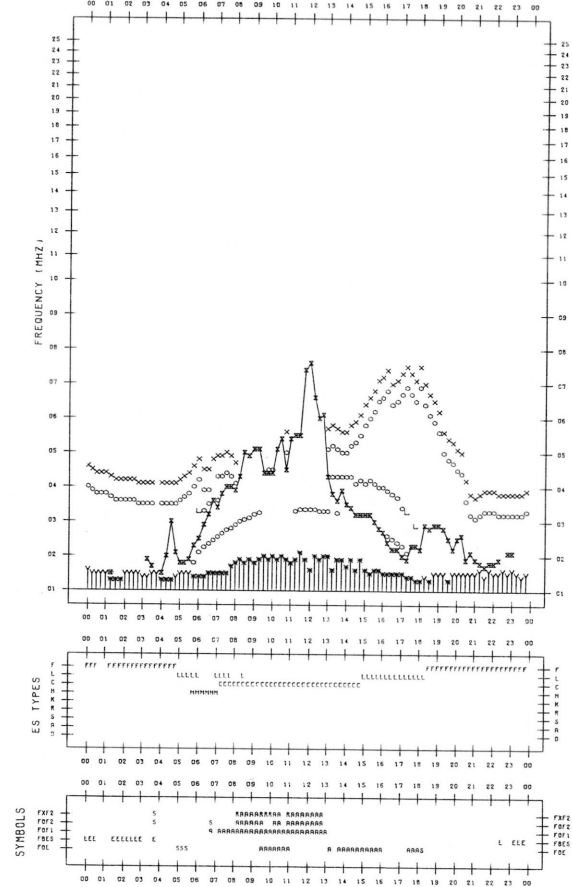
STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/25
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

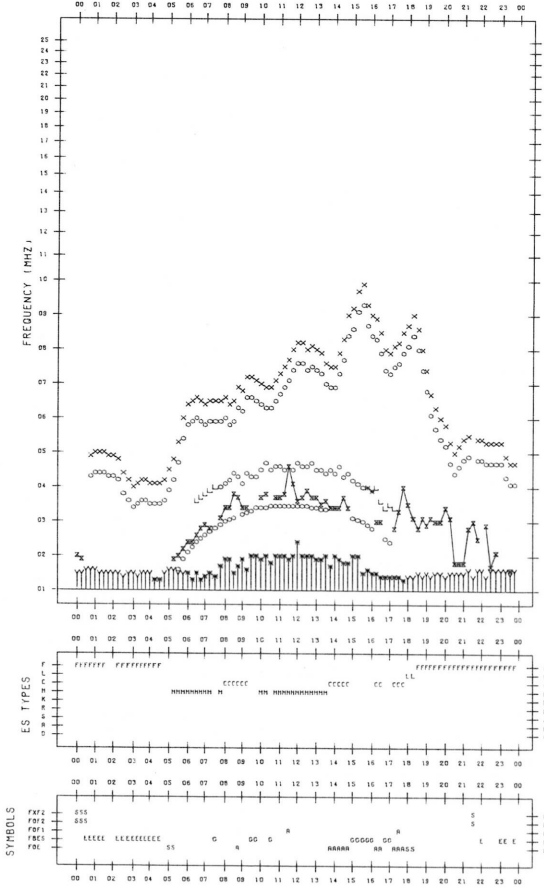
STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/27
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

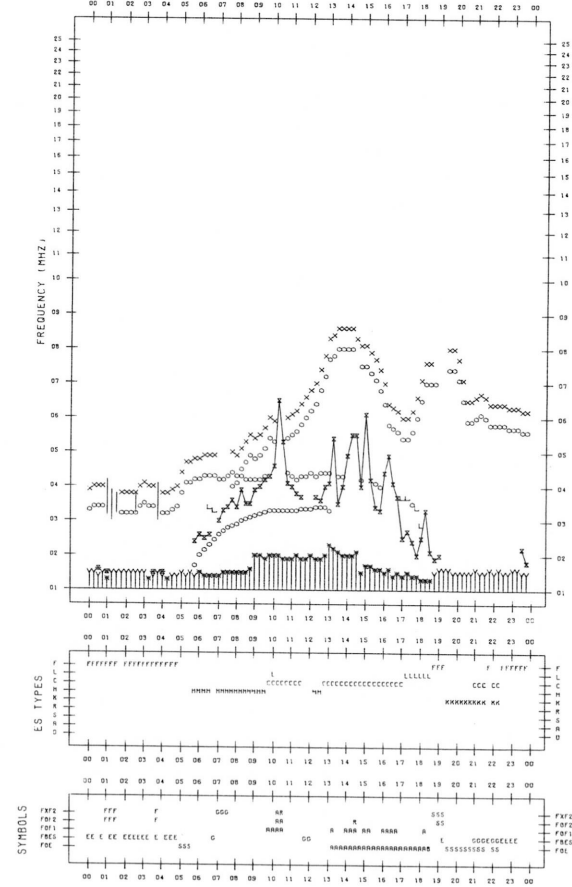
STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/26
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO DATE : 1985/ 4/28
135°E MEAN TIME



SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

April 1985

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

Note No observations during the following periods:

1st	0500 - 0800	9th	2013 - 2324
1st	2023 - 2309	10th	2012 - 2357
2nd	2022 - 2300	11th	2011 - 2346
5th	2020 - 2220	12th	2010 - 2345
7th	0420 - 0902	13th	2010 - 14th 0022
7th	2015 - 2332	14th	2008 - 2340

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

April 1985

Single-frequency total flux observations at 500 MHz					
Flux density: $10^{-22} \text{Wm}^{-2} \text{Hz}^{-1}$					
UT	00-03	03-06	06-09	21-24	Day
Date					
1	24	25	25	25	25
2	25	25	25	25	25
3	25	24	24	24	25
4	24	24	24	24	24
5	25	25	25	25	25
6	25	25	25	25	25
7	25	(25)	-	-	25
8	24	24	25	25	24
9	25	25	25	24	25
10	25	25	25	24	25
11	25	25	25	24	25
12	24	24	24	24	24
13	24	24	24	24	24
14	24	24	24	24	24
15	24	24	24	(24)	24
16	24	24	24	24	24
17	25	25	(25)	25	24
18	25	25	25	26	25
19	26	26	26	25	26
20	25	25	25	25	25
21	25	25	25	26	25
22	26	26	26	28	26
23	29	29	28	35	28
24	35	35	36	31	35
25	31	32	33	31	32
26	33	33	33	28	32
27	27	27	26	27	27
28	27	26	26	26	27
29	25	25	25	25	25
30	25	25	25	24	25

Note No observations during the following periods:

7th	0423 - 0855	17th	0036 - 0206
7th	2030 - 2336	17th	0607 - 0702
15th	2010 - 2327		

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

April 1985

<u>Outstanding Occurrences</u>									
(single-frequency observations)									
Normal observing period: 2010 - 0915 (sunrise to sunset)									
APR 1985	FREQ	STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
							PEAK	MEAN	
3	500	HIRA	8 S	0708.4	0708.4	0.2	22	-	0
4	500		41 F	0040.6	0042.0	4.0	7	-	0
	500		42 SER	0143.4	0152.9	19	5	-	0
	500		45 C	0206.5	0209.4	6.0	3	1	WR
21	500		42 SER	0734.6	0734.6	2.4	4	-	0
	200		44 NS	1957E	0618	800D	10	6	0
22	200		44 NS	1953E	0103	800D	10	5	0
	500		8 S	2206.8	2206.8	0.6	6	-	WL
23	100		8 S	0327.3	0327.4	0.6	1700	-	0
	500		8 S	0610.4	0610.4	0.3	6	-	0
	100		44 NS	1952E	2030	200D	1180	330	WL
	200		44 NS	1952E	2045	800D	140	20	ML
	500		45 C	2024.6	2026.4	11	100	40	WR
	500		45 C	2344.5	2345.6	3.0	25	13	WR
24	500		27 RF	0038.3	0046.5	21	6	2	ML
	200		42 SER	0049.2	0049.5	36	610	-	0
	500		8 S	0110.4	0110.6	0.4	25	-	WR
	500		45 C	0201.5	0203.1	2.4	7	3	WR
	500		45 C	0718.3	0720.6	9	42	7	ML
	200		44 NS	1952E	2100	800D	40	17	ML
	100		44 NS	1952E	2115U	800D	180	20	ML
	500		24 R	1953E	2111.1	370D	100	20	MR
	200		46 C	2357.3	2357.6	1.0	32	12	ML
25	200		42 SER	0221.0	0227.0	6.0	720	-	ML
	200		44 NS	1951E	0413	810D	140	65	ML
	100		44 NS	1951E	0700U	810D	700	230	WL
	500		6 S	2241.7	2241.7	1.0	8	3	WL
26	500		24 R	0154	0356	435D	30	10	ML
	200		44 NS	1949E	2047	810D	270	45	SL
	100		44 NS	1949E	2053	810D	2500U	570U	WL
27	200		44 NS	1949E	-	100D	-	2	0
	500		42 SER	2023.0	2050.0	35	230	-	MR
28	500		8 S	2343.1	2343.2	0.5	6	-	0

RADIO PROPAGATION

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

APR 1985 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAIKO

UT DAY	00H 15M	01H 15M	02H 15M	03H 15M	04H 15M	05H 15M	06H 15M	07H 15M	08H 15M	09H 15M	10H 15M	11H 15M	12H 15M	13H 15M	14H 15M	15H 15M	16H 15M	17H 15M	18H 15M	19H 15M	20H 15M	21H 15M	22H 15M	23H 15M	
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
5	C	C	C	ES -6	ES -9	ES -4	ES -3	ES 2	ES -3	ES -4	ES -9	ES -2	ES -2	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	-4	1	7	5
6	4	2	ES -5	ES -4	ES -6	ES -4	ES -6	ES -1	ES -5	ES -7	ES -8	ES -10	ES -15	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	ES -6	ES -15	1	10	9	13
7	8	6	ES -5	ES -4	ES -8	ES -4	ES -1	ES -5	-1	ES -5	ES -4	ES -8	ES -2	ES -22	ES -22	ES -22	ES -22	ES -22	ES -16	ES -16	7	16	6	4	
8	5	3	3	ES -9	ES -7	-2	ES -2	ES -2	ES -7	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	-2	6	9
9	8	9	ES -12	ES -2	ES -7	ES -7	ES -5	ES -1	ES 7	ES -3	ES -7	ES -5	ES -5	ES -10	ES -17	ES -15	ES -19	ES -16	ES -16	ES -12	ES -17	-10	-8	ES -7	
10	ES -11	ES -1	ES -6	ES -7	ES -11	ES -6	ES -2	ES -9	ES -7	ES -7	ES -6	ES -6	ES -1	ES -10	ES -10	ES -25	ES -25	ES -25	ES -25	ES -11	ES -11	-5	ES -2	9	
11	10	0	ES -5	ES -5	ES -6	ES -1	ES -11	5	ES 2	ES -2	ES -8	ES -11	ES -8	ES -20	ES -20	ES -20	ES -20	ES -20	ES -20	ES -20	ES -20	-5	10	8	
12	5	9	ES -10	ES -10	ES -12	ES -1	ES 1	ES 1	ES 4	ES -12	ES -13	ES -10	ES -2	ES -2	ES 0	ES 0	ES 1	ES 1	ES -2	ES -2	8	15	9	4	
13	2	ES -1	ES -5	ES -3	ES -4	ES 5	ES -4	ES -3	ES -9	ES -7	ES -4	ES -4	ES -3	ES -20	ES -20	3	-4	ES -20	ES -20	ES -20	16	8	9	11	
14	6	9	ES 1	ES -5	ES -4	ES -4	ES 1	ES 3	ES -1	ES -10	ES -8	ES -10	ES -4	ES -20	ES -20	ES -24	ES -12	-3	ES -24	ES -12	-4	-6	-2	1	
15	1	ES -7	ES -10	ES -10	ES -4	ES -7	ES -5	ES -4	ES -4	ES -11	ES -10	ES -10	ES -5	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	-5	-4	0	7	
16	-4	ES -4	ES -10	ES -10	ES -7	ES -4	ES -2	ES 4	ES 2	ES 0	ES -4	ES -7	ES -10	ES -10	ES 0	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	-10	-5	ES -10	
17	-5	ES -11	ES -11	ES -5	ES -6	ES -6	ES -6	ES -1	ES -1	ES -3	ES -6	-3	1	ES -5	ES 3	ES -5	ES -5	ES -20	ES -20	ES -20	1	-6	ES -3	1	
18	-7	2	ES -19	ES -10	ES -19	ES -15	ES -19	ES 3	ES 0	ES 3	ES -10	ES 0	ES -4	ES -10	ES -5	ES -19	ES -19	ES -19	ES -19	ES -19	-6	9	7	1	
19	5	-4	ES -18	ES -11	ES -10	ES -18	ES -18	0	ES -5	1	ES -5	ES 5	ES -4	ES -4	ES -7	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	-1	-10	-10	
20	ES -11	ES -8	ES -2	ES -5	ES -2	ES 7	ES -12	ES 10	ES -6	ES -11	ES -11	ES -11	ES -6	ES -14	ES 1	ES -20	-7	3	ES -11	ES -11	-11	-9	ES -5	ES -11	
21	ES -11	ES -7	ES -10	ES -2	ES -5	ES -10	ES -1	2	ES -4	ES -6	ES -7	ES 3	ES 1	ES -7	ES -6	ES 0	ES -15	ES -15	ES -19	ES -19	ES -19	ES -5	ES -10	ES -7	
22	ES -4	ES -2	ES -4	ES 0	ES -4	ES -6	ES -5	ES -5	ES -5	ES -2	ES -7	ES -7	ES 1	ES -19	ES -5	ES -24	ES -24	ES -24	ES -24	ES -24	ES -19	ES -15	ES -10	ES -13	
23	ES -14	ES -13	0	ES -2	ES -11	ES -3	ES -2	6	ES 0	ES 0	ES 1	ES 9	ES 6	ES 4	ES -4	ES -1	ES -1	ES -16	ES -2	ES -16	ES -7	ES -3	ES -16	ES -16	
24	ES -1	ES -6	ES -6	ES 3	ES 9	ES 4	ES -1	ES -2	ES -3	ES -3	ES -6	ES -6	ES 8	ES -19	ES -6	ES -19	ES -19	ES -19	ES -19	ES -19	-5	-4	ES -2	ES -2	
25	ES 1	ES -5	7	ES -14	ES -10	ES -10	ES -6	ES -5	ES -5	ES -3	ES -5	ES 6	ES 8	ES 0	ES 2	ES -19	ES 7	ES -19	ES -19	ES -19	ES -13	-8	ES 0	ES -7	
26	ES -6	ES 9	ES 2	ES 7	ES 0	1	ES 1	ES 11	ES 15	ES 14	ES -6	ES -2	ES 6	ES -10	ES 8	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -7	ES -10	
27	ES -19	ES -19	ES -10	ES -19	-5	ES -7	ES -19	ES -6	ES -6	ES -6	ES -19	ES -19	ES -19	ES -19	ES -1	ES -19	ES -19	ES -19	ES -19	ES -19	-7	ES -19	ES -10	ES -19	
28	ES -18	ES -4	ES -1	ES -4	ES 0	ES -4	ES -2	ES 1	ES -2	ES -1	ES -1	ES -1	ES -1	ES -4	ES 2	ES 0	ES 0	ES 0	ES 0	ES 0	ES 0	-2	ES -10	ES -19	
29	ES -1	ES 9	ES 9	ES 6	ES 6	ES 12	ES 12	ES -1	ES 2	ES -10	ES -2	ES -2	ES -1	ES -10	ES -4	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	ES -10	
30	ES -10	ES -6	ES 2	ES -7	ES -6	ES -6	ES -5	ES -4	ES -4	-2	ES -7	ES -2	ES 0	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -19	ES -1	ES -10	
CNT	25	25	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
MED	ES -1	ES -2	ES -5	ES -5	ES -6	ES -4	ES -4	ES -1	ES -3	ES -4	ES -6	ES -5	ES -2	ES -10	ES -6	ES -19	ES -17	ES -19	ES -19	ES -16	ES -10	ES -5	ES -2	ES -4	
UD	8	9	ES 3	ES 3	ES 0	ES 5	ES 1	ES 6	ES 4	ES 1	ES -2	ES 5	ES 6	ES -2	ES 2	ES 0	ES 0	ES 0	ES 0	ES -2	ES -5	7	10	9	9
LD	ES -14	ES -11	ES -12	ES -11	ES -11	ES -10	ES -18	ES -5	ES -7	ES -11	ES -11	ES -11	ES -10	ES -20	ES -20	ES -24	ES -22	ES -22	ES -24	ES -20	ES -19	ES -19	ES -10	ES -16	

RADIO PROPAGATION

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

APR 1985 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAI SO

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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	11	11	18	23	ES -1	4	ES 5	ES -4	ES -1	ES -9	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	-7	8	5	12	14
6	10	7	12	18	22	14	29	ES -4	ES 5	ES -1	ES -2	ES -15	ES -15	ES -19	ES -19	ES -19	ES -19	ES -19	ES -6	12	12	8	8	11
7	13	12	13	21	21	21	14	-1	ES 1	ES -7	ES -4	ES -8	ES -16	ES -22	ES -22	ES -22	ES -22	3	9	17	16	14	9	13
8	7	12	14	20	21	22	21	ES 0	ES -6	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	ES -5	9	ES -5	ES -5	6	12	13
9	20	21	20	25	27	20	11	24	21	5	ES -4	ES -4	ES -5	ES -16	ES -15	ES -16	ES -16	ES -16	1	8	18	10	9	10
10	15	20	22	20	26	28	26	23	6	ES -11	-3	ES -9	0	-11	ES -25	ES -25	ES -25	0	-1	25	22	13	10	14
11	13	18	17	20	25	29	20	24	ES 6	ES -8	ES -8	ES -6	ES -20	ES -20	ES -20	ES -20	ES -20	ES -20	5	20	14	9	5	
12	16	18	25	26	26	29	28	ES 9	ES 3	-2	ES -11	ES -1	ES -2	ES 0	ES 0	ES 0	ES 1	ES 1	ES -2	ES -3	1	9	21	9
13	13	14	18	21	24	32	36	6	ES -3	ES -9	ES -3	ES -9	ES -15	ES -20	-7	ES -24	ES -20	ES -20	ES -20	-4	9	16	17	17
14	16	18	21	24	25	27	29	29	3	9	29	ES -10	ES -20	ES -20	ES -12	ES -24	0	-6	ES -24	1	6	12	12	13
15	11	12	16	19	24	26	23	4	4	2	5	ES -5	ES -15	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	13	9	9	10	11
16	16	12	16	22	24	27	29	23	14	5	9	ES -7	-7	ES -10	ES -15	ES -19	ES -19	-5	ES -19	8	16	6	8	11
17	15	14	13	21	22	21	26	20	13	13	12	13	0	ES -5	ES -6	ES -2	ES -20	ES -20	ES -20	4	10	11	6	20
18	17	12	17	21	26	31	26	21	10	13	6	1	9	-5	ES 0	ES -19	ES -19	ES -19	ES -19	17	16	13	11	5
19	11	11	15	11	22	26	26	24	35	28	33	32	21	21	3	ES -19	ES -19	0	21	6	4	16	11	11
20	10	15	14	16	23	25	22	18	ES -6	ES -11	ES -11	ES -11	ES -8	ES -20	ES -20	ES -20	ES -19	12	ES -11	ES -11	17	10	9	7
21	10	13	12	17	21	21	22	29	28	12	6	14	29	12	20	11	ES -15	ES -10	ES -19	ES -19	10	14	9	10
22	11	12	12	19	18	9	21	10	-2	ES 1	-4	ES -10	ES -15	ES -19	ES -24	ES -24	6	6	ES -24	3	11	3	7	11
23	6	9	19	20	29	27	34	17	3	2	12	ES 2	ES 3	ES -1	ES -1	ES -1	ES -4	ES -1	ES -16	18	18	14	11	12
24	9	10	13	15	21	23	26	26	12	15	16	ES -6	ES -7	ES -19	ES -19	ES -19	ES -19	ES -19	ES -19	15	11	0	0	3
25	5	11	13	19	26	23	26	26	17	1	-3	ES 5	ES 3	ES -1	ES -6	ES -19	ES 7	ES -19	ES -19	17	11	15	7	11
26	9	12	13	17	25	25	29	22	17	15	10	11	-1	-5	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	-1	8	0	ES -6
27	-4	6	C	15	21	23	17	27	13	-7	ES -19	ES -19	ES -19	ES -19	ES -4	ES -19	ES -19	ES -19	ES -19	15	-1	1	0	-2
28	10	11	16	17	24	27	13	ES 1	ES -2	ES -1	ES -1	ES -1	ES -1	ES -4	ES 0	ES 0	ES 0	ES 0	ES 0	ES 0	8	9	6	1
29	ES -2	7	ES 16	13	16	22	26	23	8	8	10	8	6	2	ES -19	ES -19	ES -19	ES -19	ES -19	0	12	4	5	11
30	9	9	13	16	18	23	22	11	ES -5	0	-2	-2	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	ES -10	-7	6	-1	-4
CNT	25	25	25	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
MED	11	12	US 15	19	24	24	26	20	US 6	US 1	US -2	ES -5	ES -6	ES -10	ES -11	ES -19	ES -19	ES -18	6	10	9	9	11	
UD	16	18	21	24	26	29	29	27	21	15	16	13	9	2	ES 0	ES 0	ES 1	3	9	17	18	15	12	14
LD	5	7	ES 12	13	18	20	13	ES 0	ES -5	ES -9	ES -11	ES -11	ES -19	ES -20	ES -22	ES -24	ES -20	ES -20	ES -20	ES -10	-1	3	0	-2

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO		Time in U.T.														
Apr. 1985	Whole Day Figure	W W V				W W V H				Conditions			Principal Geomagnetic Storms			
		00 06	06 12	12 18	18 24	00 06	06 12	12 18	18 24	00 06	16 12	12 18	18 24	Start	End	Range
1	C	C	C	C	C	C	C	C	C	N	N	N	N			
2	C	C	C	C	C	C	C	C	C	N	N	N	N			
3	C	C	C	C	C	C	C	C	C	U	U	U	U			
4	C	C	C	C	C	C	C	C	C	U	U	U	U			
5	3+	S	S	S	5	3	2U	S	4	N	N	N	N			
6	3+	4U	S	S	5	4	4U	S	4	N	N	N	N			
7	4+	5U	S	S	5	4	3U	5U	4	N	N	N	N			
8	4o	4U	S	S	5	4	3U	S	4	N	N	N	N			
9	4o	5U	S	S	3U	4	4	S	4	N	N	N	N			
10	4+	S	S	S	4U	4	4	5U	4	N	N	N	N			
11	4o	4U	S	S	5	4	3U	S	4	N	N	N	N			
12	4+	5U	S	S	5	4	4U	S	4	N	N	N	N			
13	4+	S	S	5U	5	4	4U	S	4	N	N	N	N			
14	4+	5U	S	S	4	4	5	4U	4	N	N	N	N			
15	4o	S	S	S	4	4	4	S	4	N	N	N	N			
16	4-	S	S	S	3U	4	4	S	4	N	N	N	N			
17	4+	S	4U	S	4U	4	5	S	4	N	N	N	N			
18	4o	3U	S	S	5	4	5	4U	4	N	N	N	N			
19	4+	S	S	S	3U	4	5	5U	4	N	N	N	N			
20	4-	S	S	5U	3U	4	3U	S	4	N	N	N	N	0310	---	227
21	4+	S	S	S	4U	4	5	5U	3	U	U	U	U	---	24.0	
22	3+	S	S	S	3U	3	3	4U	4	U	N	N	N			
23	4-	3U	S	S	4U	4	4	S	4	N	N	N	N			
24	4o	S	S	S	4U	4	5	S	3	N	N	N	N			
25	4o	S	S	S	4U	4	4	S	4	N	N	N	N			
26	4-	3U	S	S	3U	4	5	4U	3	N	N	N	N	02.0	---	158
27	3+	3U	S	S	3U	3	4	S	3	N	N	N	N	---	---	
28	3+	S	S	S	3U	4	3U	S	3	N	N	N	N	---	24.0	
29	4o	S	S	S	3U	3	5	5U	4	U	U	U	U			
30	3+	S	S	S	3U	4	4	S	3	U	N	N	N	0923	---	176

RADIO PROPAGATION

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO		Time in U.T.									
Apr. 1985	S W F				Correspondence						
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
CO	HA	1)	2)								
2 2	7	<u>11</u>			0 3 5 0	2 6	SL	1-	X	X	
2 4	1 6	<u>2 2</u>			0 1 4 8	3 6	SL	2-	X	X	
2 4		1 1			0 3 3 7	5 8	G	1-	X	X	
2 4		1 7			0 4 5 0	5 8	SL	1 +	X	X	

NOTES CO: Colorado (WV) HA: Hawaii (WVH) 1): Australia 2): New Zealand

RADIO PROPAGATION
Sudden Ionospheric Disturbance

I N U B O

Apr. 1985	S P A					Time (U.T.)		
	Phase Advance (degrees)							
Date	GBR	Ω /LR	NWC	Ω /H	Ω /ND	Start	End	Maximum
22		5	—	<u>4</u>		0231	0302	0235
22	10	<u>30</u>	—	11	12	0352	0449	0358
22		<u>10</u>	—			0544	0623	0551
22		<u>15</u>				0904	0933	0910
22				7		2130	2204	2136
23		—	<u>10</u>	—	23	0251	0317	0253
23		<u>16</u>	14	13		0512	0610	0521
23		<u>10</u>		<u>21</u>	20	2108	2203	2114
24	42	94	<u>100</u>	68	62	0148	0335	0156
24		41	<u>31</u>	13		0344	0444	0400
24	33	<u>127</u>	79	41	24	0447E	0706	0506
24	127	<u>307</u>	104			0912	1220	0933
25		<u>14</u>	<u>17</u>	9		0228	0322	0240
25	14	9	<u>7</u>			0636	0713	0642
25		<u>67</u>	31			0726	0914	0741
25				9		2040	2128	2051
25	26		22	<u>30</u>		2229	2356	2245
26		18	<u>18</u>	14	13	0022	0055	0026
26		12	<u>14</u>	6		0326	0411	0328
26	10		<u>17</u>	<u>23</u>		2252	0035	2308
28	7			<u>9</u>	10	2211	2253	2216
30		10	—	<u>12</u>		2343	0026	2347

IONOSPHERIC DATA IN JAPAN FOR APRIL 1985

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