

IONOSPHERIC DATA IN JAPAN

FOR JUNE 1985

VOL. 37 NO. 6

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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.

The types are:

f	An E_s trace which shows no appreciable increase of height with frequency.
l	A flat E_s trace at or below normal E layer minimum virtual height or below the particle E layer minimum virtual height.
c	An E_s trace showing a relatively symmetrical cusp at or below $f_o E$. (Usually a daytime type.)
h	An E_s trace showing a discontinuity in height with the normal E layer trace at or above $f_o E$. The cusp is not symmetrical, the low frequency end of the E_s trace lying clearly above the high frequency end of the normal E trace. (Usually a daytime type.)
q	An E_s trace which is diffuse and non-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 Hiraíso. Observation equipments are: a 5 meter parabolic reflector with a total-power receiver for 500 MHz and a 10 meter parabolic reflector with two polarimeters for 100 and 200 MHz. Observations are feasible almost from sunrise to sunset.

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

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

a. Daily Data

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

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

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

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

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

b. Outstanding Occurrences

The phenomena are picked up on the following criteria:

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

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

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

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

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

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

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

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

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

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

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

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

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

b. Radio Propagation Quality Figures

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

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

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

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

C	artificial accident,
S	propagational accident,
U	inaccurate.

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

N	normal,
U	unstable,
W	disturbed

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

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

c. Sudden Ionospheric Disturbances

(i) SWF

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

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

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

Types of fade-out are as follows:

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

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

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

(ii) SPA

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

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

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

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

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

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

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

IONOSPHERIC DATA

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FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

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

JUN. 1985

FXI (0.1 MHz)

IONOSPHERIC DATA

JUN. 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 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	38	F 43	F	43	F	F	54	61	56	58	51	47	50	54	55	63	72	68	61	63	67	66	64	56					
2	50	42	38	F 36	F 39	50	55	55	60	55	A	A	50	A	A	A	A	A	A	55	61	62	60	49					
3	F	F	F	F	F	F	A	A	A	A	A	A	A	A	51	51	50	A	A	51	64	A	55	F					
4	43	42	40	37	37	44	54	63	62	49	49	51	53	55	50	48	49	49	48	54	62	F	F	F					
5	50	F 46	F	F	F	F 43	52	59	A	A	52	50	51	50	49	47	52	54	54	62	69	65	54	54					
6	F 51	F	F	F	F	44	50	54	54	50	50	50	49	49	50	49	50	53	52	60	72	63	A	F					
7	F	F 53	50	51	F	50	46	50	48	50	53	53	48	53	51	46	51	53	62	61	68	70	58	F					
8	F	F	F	F	F	53	55	56	A	A	50	52	W	49	52	58	A	A	75	79	80	64	59	53					
9	48	47	45	44	44	49	49	55	A	A	A	A	A	A	48	A	53	52	A	54	A	60	59	51					
10	49	47	44	44	44	A	50	A	69	A	54	47	48	51	A	61	66	65	58	60	64	63	54	58					
11	55	53	53	52	50	51	48	43	A	52	E G 42	A	C	C	A	53	A	A	A	58	64	54	51	49					
12	A	A	A	F	43	40	A	49	A	A	A	A	A	A	A	A	46	A	57	62	58	56	55	55					
13	52	46	44	43	46	48	57	59	58	A	A	51	A	A	48	A	A	53	60	A	A	F	A	F					
14	F	50	47	44	42	52	61	57	A	A	A	58	53	54	54	A	47	A	55	66	71	69	61	55					
15	52	49	50	44	43	46	56	64	61	A	A	47	49	49	49	50	A	A	A	57	65	65	F	F					
16	55	50	50	49	50	53	61	70	A	A	A	53	52	54	53	A	A	A	A	A	75	72	F	F					
17	F	A	S 54	F	F 44	50	51	56	A	61	52	52	52	51	53	56	53	A	A	60	70	70	68	64					
18	61	56	54	48	48	54	50	A	49	45	53	48	51	50	A	A	45	48	50	55	60	61	65	59					
19	53	51	47	48	46	50	48	51	50	50	59	53	48	51	53	53	52	53	54	56	60	60	54	50					
20	45	43	43	43	42	50	60	58	A	58	50	55	C	C	C	C	49	48	46	52	60	60	60	F					
21	F	F 43	F	F	F	A	A	A	A	A	A	A	A	50	49	A	A	A	A	A	53	57	57	53					
22	50	44	S 40	F	34	36	A	A	A	50	A	50	A	A	A	43	A	A	A	A	56	55	A	A					
23	F	43	44	45	37	43	A	55	46	A	A	A	52	52	48	46	50	51	54	68	61	48	41	43					
24	48	43	44	F	F	50	46	51	50	52	46	A	A	A	A	A	45	A	55	A	63	F	F	F					
25	36	36	35	F	F	A	42	A	A	A	A	47	A	A	A	50	46	47	50	A	54	55	A	A					
26	43	F 40	F	F	35	43	41	46	A	53	59	A	A	51	53	55	52	52	63	65	67	70	60	46					
27	42	35	33	33	32	40	42	45	45	47	47	R	49	A	48	53	50	47	50	57	57	52	S 45	45					
28	43	43	42	43	40	35	43	A	A	A	A	A	A	51	57	51	A	A	A	69	63	F	F	A					
29	49	48	45	A	40	A	48	48	54	A	A	A	50	49	51	49	50	54	65	64	67	68	58	39					
30	33	34	35	33	30	36	R	46	44	A	48	48	A	A	A	A	44	45	A	58	61	60	52	43					
31																													
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT	22	25	22	18	21	24	24	23	15	14	16	18	16	18	20	19	21	17	19	24	28	25	21	18					
MED	49	44	44	44	42	48	50	55	54	51	50	50	50	51	51	51	50	52	55	60	64	62	58	52					
UQ	52	49	50	48	44	50	55	58	59	55	53	53	52	53	53	54	52	53	60	64	68	66	60	55					
LQ	43	43	40	43	37	43	47	50	48	50	48	48	49	50	49	48	47	48	51	56	60	57	54	46					

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FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

F0F1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																							
Lat.	45° 23.5' N												Long 141° 41.2' E											
Sweep 1	MHz to 25 MHz in 24sec in automatic operation																							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	370	A	A		420	420	420	420	410	A	A	A			380	310		
2							A	A	A	A	A	A	410	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	410	390			A	A			
4						330	360	A	A		420	430	420	430	420	410	410	400		A	A			
5						360	A	A	A	A	A	A	430	430	420	420	410	390	370	330				
6						390		A	A		420	430	430	430	420	420	420	400	370		A			
7								440	420	420	430	430	430	420	430	410	400	370	330					
8						320	A	A	A	A	A	430	430	430	420	410	410		A	A	A			
9							A	A	A	A	A	A	A	A		410	A	A	A	A				
10						A	A	A	A	A	A	L	430	410	410	A	A		380	360		A		
11						330	360	400		A	410	420	A	C	C	A	A	A	A					
12							A	390		A	A	A	A	A	A	A	A	410		A	330			
13							A	A	A	A	A	A	A	A	A	A	A	A	380		A	A		
14						L	340	380	A	A	A	A	A	450	440	A	A	L	410		A	A		
15						L	360	A	A	A	A	A	430	430	430	420	A	A	A	A				
16					270		A	A	A	A	A	A	440		A	A	A	A	A	A	A			
17							A	A	A	A		440	440	440	430	A	410		A	A	A	A		
18						400		A	400	410	420	420		A	A	A	A	400	380	340				
19								A	A	A	A	430	430		A	420	A	400	360	340				
20						370	370		A	A	A	A	A	C	C	C	C	400	400					
21						A	A	A	A	A	A	A	A	A		410	A	A	A	A	A			
22						320		A	A	A	A	A	A	A	A	A	400		A	A	A	A		
23						310		A	A	410		A	A	420	420	410	400		A	A	A			
24							A	380	400	400	410		A	A	A	A	A	380		A	330		A	
25						A		360	A	A	A	A	A	A	A	A	390	380	360	330				A
26						320		380		A	410		A	A		410	400	400	360	330				
27						310	350		A	400	400		420	410		A	A	A	390	360	330			
28							L	A	A	A	A	A	A		410	400	400		A	A	A			
29						A	A		400	400		A	A	A	420	A	A	430	H	H	A			
30						320	350	370	410		A	410		A	A	A	A	390	360					
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	12	10	7	7	9	10	13	15	12	12	13	17	14	10					
MED					270	325	365	390	400	410	425	430	430	420	410	410	400	370	330					
UQ					350	380	400	410	420	430	430	430	430	425	420	410	400	380	330					
LQ					320	360	380	400	410	420	420	420	420	415	410	400	390	360	330					

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F0F1 (0.01 MHZ)

IONOSPHERIC DATA

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FOE (0.01 MHZ)

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

Station		WAKKANAI				Lat. 45 23.5 N				Long 141 41.2 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					A	200	230	265	290	295	A	315	315	315	305	295	275	230	195	135				
2					120	200	245	270	295	300	310	A	A	A	305	300	275	235	195	E				
3					E	200	230	275	300	310	310	310	310	A	305	300	280	A	200	130				
4					125	180	235	285	300	305	310	310	320	310	300	300	290	240	200	E				
5					S	195	235	270	300	310	315	320	315	305	A	A	A	A	200	S				
6					S	195	255	290	300	310	315	315	315	320	300	A	290	A	185	E				
7					S	205	250	290	295	300	310	325	320	310	300	A	A	255	200	125				
8					S	210	245	290	300	310	320	320	310	A	A	A	280	235	200	120				
9					A	A	245	275	300	305	315	320	320	320	315	300	280	245	200	S				
10					A	A	245	270	300	310	315	315	315	310	305	290	A	255	210	155				
11					A	195	240	280	295	305	315	320	C	C	320	305	285	250	205	130				
12					A	190	235	275	305	310	320	320	320	315	A	A	280	250	195	S				
13					140	205	250	280	305	310	320	325	320	315	305	A	A	A	225	145				
14					A	205	260	285	300	310	320	330	325	320	A	A	A	255	215	S				
15					A	205	245 ^H	280	300	305	310	315	310	320	320	305	290	255	200	S				
16					A	215	250	290	300	305	310	A	A	A	A	305	295	255	200	115				
17					A	A	255	290	295	305	320	320	A	A	A	A	A	A	220	125				
18					A	A	245	280	295	A	A	A	A	A	A	A	A	A	210	115				
19					A	A	A	285	300	310	320	320	310	315	300	295	A	A	200	E				
20					A	205	250	285	300	305	315	A	C	C	C	C	290	250	205	S				
21					E	200	240	275	300	300	310	310	A	A	A	300	285	250	200	E				
22					A	200	240	280	300	310	315	320	300	A	A	305	285	250	200	120				
23					E	190	250	275	295	305	305	305	305	A	A	A	A	235	200	E				
24					130	195	235	A	A	305	320	325	330	320	310	300	280	235	200	S				
25					A	A	250	290	300	310	320	330	330	315	310	300	285	230	200	S				
26					E	190	250	290	295	305	315	320	315	310	310	A	A	A	205	S				
27					E	200	245	280	295	305	315	320	A	310	305	295	275	230	190	120				
28					A	A	245	280	300	300	305	A	A	A	305	295	290	245	195	140				
29					A	180	225	A	A	300	300	A	A	315	310	300	290	250	195	A				
30					A	200	235	275	295	300	310	320	A	A	A	305	295	240	185	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					9	23	29	28	28	29	28	24	19	17	18	18	20	22	30	19				
MED					E	200	245	280	300	305	315	320	315	315	305	300	285	248	200	120				
UQ					125	205	250	288	300	310	320	320	320	320	310	305	290	250	205	130				
LQ					E	195	235	275	295	305	310	315	310	310	305	295	280	235	195	E				

JUN. 1985

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 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	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J A 60	40	J A 43	31	26	J A 59	34	J A 72	J A 49	34	35	G	G	40	44	41	J A 50	35	27	G	J A 42	23	E S 15	E S 16	
2	E	33	21	31	34	G	41	J A 45	J A 55	52	70	67	38	60	J A 65	68	J A 90	71	J A 57	J A 44	37	34	38	35	
3	36	J A 50	J A 53	J A 60	20	52	J A 76	J A 81	J A 119	J A 150	J A 120	J A 65	J A 80	J A 83	J A 58	J A 51	J A 57	J A 87	J A 70	J A 51	J A 68	J A 83	J A 61	28	
4	28	J A 29	24	23	G	G	G	J A 46	43	43	40	40	G	40	34	G	G	40	53	J A 51	33	38	38	27	
5	E S 14	22	21	29	24	33	54	J A 56	J A 90	62	45	40	G	44	43	43	41	32	29	32	18	32	E S 17	31	
6	23	21	E S 12	E S 15	G	G	44	J A 48	40	42	G	45	G	J A 43	44	G	J A 54	J A 56	19	38	J A 125	68	70		
7	40	40	E S 16	E S 15	33	37	37	J A 88	J A 50	35	G	45	J A 70	34	34	35	G	28	24	33	30	38	J A 50		
8	43	J A 50	36	26	E S 16	29	J A 46	J A 45	J A 61	J A 77	J A 52	G	43	44	40	40	J A 96	J A 84	J A 83	J A 82	35	J A 64	E S 16	29	
9	39	40	E	37	J A 46	56	56	J A 69	J A 117	62	J A 62	64	J A 97	J A 81	40	61	J A 58	J A 39	J A 77	J A 56	J A 64	J A 56	J A 83	26	
10	26	39	26	38	J A 49	J A 63	J A 60	J A 61	56	73	68	62	J A 45	36	J A 83	J A 73	40	35	52	48	53	42	J A 64	25	
11	30	E S 15	21	32	35	27	32	52	J A 77	J A 78	53	59	C	C	J A 94	J A 66	55	J A 67	J A 71	43	51	44	39	J A 49	
12	J A 64	J A 74	J A 66	J A 53	33	42	63	J A 135	J A 113	J A 83	J A 73	J A 96	J A 120	J A 87	J A 77	J A 88	G	J A 67	J A 72	61	J A 53	39	J A 52	35	
13	23	30	34	E S 16	20	J A 33	J A 46	56	J A 55	J A 71	J A 99	56	J A 87	J A 67	J A 85	J A 83	J A 90	J A 42	J A 65	J A 96	J A 78	J A 49	J A 83	84	
14	J A 50	35	35	34	56	30	J A 37	J A 57	J A 76	J A 67	J A 181	J A 53	J A 49	J A 45	J A 83	J A 61	J A 50	59	47	J A 60	J A 75	J A 49	J A 107	30	
15	38	E S 11	25	26	23	30	J A 53	J A 46	J A 53	71	61	41	40	G	36	50	69	73	74	57	44	40	J A 75	38	
16	36	E S 15	E	21	22	G	J A 48	60	68	J A 90	J A 74	63	69	60	61	J A 143	J A 136	J A 156	J A 173	J A 86	J A 67	J A 47	37	J A 83	
17	J A 81	71	44	41	J A 40	J A 48	68	52	71	J A 73	40	41	42	J A 51	J A 50	41	50	J A 134	J A 76	42	40	25	39	40	
18	30	J A 83	E S 12	E S 15	25	27	G	57	65	40	40	J A 98	J A 78	J A 65	65	J A 96	50	40	26	39	J A 59	32	31	27	
19	26	21	32	24	28	26	31	40	J A 50	J A 50	J A 50	41	42	47	37	J A 59	43	33	28	45	J A 60	32	J A 51	32	
20	26	28	26	26	J A 44	27	G	J A 54	J A 82	45	J A 51	J A 83	C	C	C	C	G	37	32	40	39	27	J A 43	J A 63	
21	J A 53	33	31	25	27	J A 51	J A 76	J A 71	J A 88	J A 120	J A 132	J A 111	J A 106	57	J A 52	J A 165	J A 83	J A 118	J A 136	J A 80	J A 60	33	31	40	
22	31	37	34	39	31	27	62	64	70	46	63	67	J A 69	J A 85	J A 86	40	J A 73	J A 71	J A 84	J A 61	J A 101	50	J A 86	57	
23	32	30	35	E	18	G	59	J A 50	51	71	J A 86	J A 110	36	60	42	J A 60	50	J A 54	J A 60	J A 60	40	37	39	22	
24	22	E	E	26	G	36	46	57	33	G	40	J A 93	61	J A 146	J A 83	J A 74	44	J A 83	40	J A 93	J A 67	J A 57	30	31	
25	31	30	40	30	J A 73	G	J A 181	J A 93	J A 74	J A 86	J A 86	J A 70	54	67	63	35	J A 98	62	J A 77	67	J A 70	70	J A 82		
26	41	40	26	E	20	27	G	40	J A 72	40	J A 64	68	67	58	G	J A 50	41	39	23	18	33	27	21	E S 15	
27	E S 15	E S 15	E S 12	30	26	G	40	J A 57	61	G	52	37	40	J A 71	54	J A 115	J A 50	51	J A 50	30	31	21	36	30	
28	40	34	31	23	J A 50	64	G	60	63	J A 76	60	65	J A 71	34	37	50	J A 73	J A 65	J A 79	J A 83	60	67	52	J A 64	
29	J A 62	J A 63	J A 56	J A 54	J A 53	J A 63	58	J A 61	J A 56	J A 63	J A 86	J A 73	37	J A 61	J A 83	G	J A 56	33	55	J A 60	J A 61	J A 61	J A 50	41	
30	38	42	50	33	31	28	34	40	J A 60	J A 70	40	64	J A 96	J A 140	J A 76	J A 53	36	34	J A 102	51	J A 50	42	J A 43	41	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	30	30	30	28	28	29	29	30	30	30	30	30	30	30	30	
MED	34	34	28	28	26	30	44	J A 56	J A 64	J A 65	60	64	47	59	J A 54	J A 59	50	54	J A 58	51	52	41	41	35	
UQ	41	40	36	34	35	51	58	J A 61	J A 82	J A 74	J A 74	J A 73	J A 74	J A 70	J A 77	J A 73	J A 69	J A 73	J A 76	J A 61	J A 64	J A 56	J A 64	50	
LQ	26	22	21	23	20	27	31	46	J A 55	45	42	41	40	44	40	43	40	37	40	40	38	32	36	28	

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FOES (0.1 MHz)

IONOSPHERIC DATA

JUN. 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 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	33	E	25	E	17	40	33	54	45	G	34	G	G	G	43	41	50	34	G	G	27	E	E	S	S			
2	E	E	E	E	23	G	40	40	42	47	A	A	A	A	A	A	A	A	A	A	37	25	23	E	E			
3	E	E	30	20	G	35	A	A	A	A	A	A	A	A	A	A	A	A	A	A	55	A	A	E	E			
4	E	E	E	E	G	G	G	38	40	40	38	G	G	G	G	G	G	37	46	34	20	E	E	E				
5	E	S	E	E	E	G	32	47	47	A	A	A	A	A	A	A	A	A	A	A	23	E	E	S	E			
6	E	E	E	E	E	G	G	41	47	38	41	G	40	G	40	34	G	32	50	G	28	E	A	A	27			
7	30	E	E	E	E	30	33	G	35	G	G	G	G	G	G	32	29	G	G	20	21	28	28	27				
8	E	E	E	E	E	29	43	42	A	A	A	A	G	G	36	35	33	A	A	62	38	27	26	E	S	20		
9	E	23	E	21	20	39	47	52	A	A	A	A	A	A	A	A	A	A	A	A	39	A	A	50	50	E		
10	E	E	E	20	23	A	A	A	A	A	A	A	38	G	A	A	59	32	33	35	40	27	30	E	E			
11	E	E	E	E	16	G	G	38	A	A	A	A	C	C	A	A	42	A	A	A	35	43	31	25	30			
12	A	A	A	A	35	18	32	A	A	A	A	A	A	A	A	A	A	G	A	A	29	54	38	24	21	30		
13	E	E	E	E	G	G	40	46	47	A	A	A	A	A	A	A	A	A	A	A	35	58	A	A	33	A	33	
14	E	E	E	22	31	G	35	46	A	A	A	A	46	39	40	47	A	A	A	40	55	46	35	27	E			
15	E	E	E	E	18	30	51	44	51	A	A	A	G	G	G	G	48	A	A	A	50	40	29	40	E			
16	E	E	E	E	16	G	40	47	A	A	A	A	45	46	46	A	A	A	A	A	60	36	E	41				
17	40	A	A	30	30	40	28	46	45	A	A	56	40	40	40	40	44	39	43	A	A	A	E	31	E			
18	E	E	E	E	15	22	G	A	A	A	A	38	33	35	40	44	43	A	A	A	20	37	E	E	E			
19	E	E	23	E	17	23	30	40	47	47	48	40	41	43	G	40	38	26	G	34	30	E	26	E				
20	E	E	E	E	30	G	G	52	A	A	A	41	42	50	C	C	C	C	G	G	G	31	28	E	22	45		
21	30	E	E	E	26	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	50	22	E	30				
22	E	E	20	22	16	G	A	A	A	A	A	41	A	A	A	A	G	A	A	A	A	25	37	A	A	A	57	
23	E	E	E	E	G	G	A	A	A	A	A	38	A	A	A	A	G	40	32	31	46	47	50	50	36	28	E	E
24	E	E	E	E	G	28	35	34	31	G	40	A	A	A	A	A	A	A	A	A	47	40	E	E	E			
25	E	E	E	19	19	A	A	G	A	A	A	A	A	A	A	A	G	G	G	30	A	A	49	24	A	A	A	82
26	E	E	E	E	17	G	G	36	A	A	A	A	50	A	A	A	A	A	A	A	26	E	E	E	S	15		
27	E	S	E	S	E	17	G	30	40	37	G	42	G	37	A	A	41	41	G	30	G	G	23	E	E	E		
28	30	20	E	E	16	27	G	A	A	A	A	A	A	A	A	A	A	A	A	A	40	50	28	46	A	A	64	
29	35	38	E	A	A	22	A	A	41	35	32	A	A	A	A	A	G	G	G	43	20	46	46	37	E	E		
30	25	22	25	23	17	G	G	32	A	A	A	G	39	70	G	43	A	A	A	A	36	G	A	A	A	A	82	
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	28	28	29	29	30	30	30	30	30	30	30	30	30			
MED	E	E	E	E	17	25	38	44	56	A	A	50	44	40	43	43	41	36	37	48	38	34	28	22	E	E	15	
UQ	25	15	16	20	20	32	47	54	A	A	A	A	A	A	A	A	A	A	A	A	54	47	33	37	30			
LQ	E	E	E	E	E	G	G	38	40	38	40	37	E	G	E	G	35	32	29	27	G	23	27	E	E	E		

IONOSPHERIC DATA

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FMIN (0.1 MHZ)

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

Station		WAKKANAI				Lat. 45 23.5 N		Long 141 41.2 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation																
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	E S 15	E	E	E	E	E	10	10	11	12	19	20	20	18	18	19	18	11	11	10	10	E S 13	E S 15	E S 15	E S 16	
2	E	E	E	E	E	E	10	10	17	12	20	19	20	18	20	18	19	11	10	10	E	E	E	E	E	
3	E S 13	E	E	E	E	E	10	10	10	12	18	19	18	20	19	20	18	18	10	10	10	E	E	E S 15	E	
4	E S 12	E S 13	E	E	E	E	10	11	11	19	20	19	19	21	20	17	19	17	11	10	E	E S 16	E	E S 15	E S 15	
5	E S 14	E S 12	E S 12	E	E S 15	E	10	10	12	17	20	19	19	20	19	17	18	18	12	10	E S 11	E	E	E S 17	E S 15	
6	E S 15	E S 15	E S 12	E	E S 15	E	10	10	17	17	20	19	19	20	20	20	19	17	11	10	E	E	E	E	E	
7	E	E	E S 16	E	E S 15	E	10	10	11	17	19	20	20	19	20	19	20	16	11	10	10	E	E	E S 16	E	
8	E	E	E	E	E S 16	E	10	10	18	18	20	18	20	20	23	19	18	16	12	10	10	E	E	E S 16	E S 16	
9	E	E S 11	E	E	E	E	10	11	15	17	17	18	19	21	18	22	18	17	16	13	E S 12	E	E S 15	E S 12		
10	E	E S 11	E S 11	E	E	E	10	11	19	18	18	19	19	19	21	20	19	18	13	11	E	E	E	E	E	
11	E	E S 15	E S 11	E	E	E	10	12	12	16	18	18	18	19	C	C	20	19	20	13	13	10	E S 12	E	E	E
12	E	E S 13	E S 13	E	E	E	10	11	12	12	16	19	19	20	20	25	20	18	18	17	12	E S 13	E S 16	E	E S 11	E S 12
13	E S 12	E S 13	E S 16	E S 16	E	E	11	11	11	17	17	17	18	19	29	22	19	18	17	16	11	10	E S 16	E S 16	E	E S 13
14	E S 13	E S 13	E S 11	E	E	E	10	10	11	16	18	17	20	23	22	22	20	18	17	12	10	E S 13	E S 15	E	E	E S 16
15	E S 16	E S 11	E S 16	E S 11	E	E	10	10	10	17	17	19	20	20	20	25	27	20	19	11	11	E S 11	E	E	E S 17	E
16	E	E S 15	E	E	E	E	10	11	18	20	19	20	20	25	23	20	20	20	12	10	11	E	E S 15	E	E S 16	
17	E	E	E	E	E	E	11	17	18	19	22	23	20	20	20	19	19	19	10	10	10	E	E S 12	E	E	
18	E S 15	E	E S 12	E S 15	E	E	10	11	11	19	19	19	20	19	20	20	19	19	18	16	10	10	E	E S 15	E	E S 17
19	E	E S 15	E	E	E	E	10	11	16	18	18	19	21	22	20	21	20	18	10	10	E	E	E S 16	E	E	
20	E S 15	E	E	E	E	E	10	10	11	12	20	21	19	C	C	C	C	17	10	10	E S 12	E	E S 15	E	E	
21	E	E	E	E	E	E	11	10	11	19	18	20	20	19	19	19	11	14	10	10	E	E S 17	E	E	E	
22	E S 16	E	E	E	E	E	10	12	18	18	17	20	19	20	19	19	18	12	11	10	10	E	E S 15	E S 15	E S 15	
23	E S 15	E	E	E	E	E	10	10	17	11	18	18	18	15	18	18	10	17	10	10	E	E	E	E	E S 16	
24	E S 15	E	E	E	E	E	11	12	12	19	20	20	19	20	19	17	11	11	10	10	E S 12	E	E	E S 15	E	
25	E S 13	E	E	E	E	E	11	17	19	18	19	18	19	19	19	19	19	13	10	10	E S 11	E S 16	E S 12	E S 15	E	
26	E	E S 11	E	E	E	E	12	11	11	18	18	20	20	20	19	19	19	11	10	10	E S 11	E	E	E S 16	E S 15	
27	E S 15	E S 15	E S 12	E	E	E	10	10	11	12	11	19	12	19	19	18	11	11	10	10	10	E	E S 15	E	E	
28	E	E	E	E S 15	E	E	11	11	17	18	18	20	20	19	20	19	19	11	11	10	10	E	E S 15	E S 15	E S 15	
29	E S 15	E S 15	E	E	E	E	11	12	18	18	19	19	21	20	19	19	19	18	16	10	10	E	E S 16	E	E	
30	E	E	E	E	E	E	11	10	18	19	20	19	19	21	20	20	19	18	10	10	E	E	E	E S 15	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	30	30	30	30	30	30	30	30	30	30	30	30	28	28	29	29	30	30	30	30	30	30	30	30	30	30
MED	E S 12	E E 11	E	E	E	E	10	11	16	18	19	19	20	20	20	19	19	17	11	10	E E 10	E	E	E	E	
UQ	E S 15	E S 13	E S 12	E	E E 10	E	11	11	17	18	19	20	20	20	20	20	19	18	12	10	E S 11	E S 12	E S 15	E S 15	E S 15	
LQ	E	E	E	E	E	E	10	10	11	16	18	19	19	19	19	19	18	13	10	10	E	E	E	E	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. + 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	290	F	F	300	F	F	315	345	330	350	360	280	295	295	270	285	305	300	325	300	290	295	320	305
2	320	285	305	F	F	290	280	310	325	340	350	A	A	295	A	A	A	A	A	300	310	310	315	285
3	F	F	F	F	F	F	A	A	A	A	A	A	A	A	295	290	300	A	A	295	305	A	325	F
4	320	305	300	310	295	295	315	335	340	325	295	300	300	325	340	275	305	305	290	295	305	F	F	F
5	320	F	F	F	F	F	290	325	335	A	A	315	280	295	280	285	270	315	315	310	305	310	305	315
6	F	F	F	F	F	315	295	335	350	320	290	320	285	285	290	275	300	320	A	305	305	305	A	F
7	F	F	300	315	F	340	325	285	310	280	300	310	250	300	315	260	290	285	315	295	290	320	310	F
8	F	F	F	F	F	320	335	335	A	A	285	325	W	275	270	295	A	A	290	300	310	305	305	300
9	290	295	290	295	310	320	A	A	A	A	A	A	A	A	275	A	A	325	A	330	A	285	285	315
10	290	295	295	280	305	A	A	A	320	A	A	255	230	245	A	A	290	305	295	300	295	300	275	295
11	295	285	285	305	290	295	310	250	A	330	G	A	C	C	A	305	A	A	A	310	310	300	290	280
12	A	A	A	F	300	310	A	285	A	A	A	A	A	A	A	A	260	A	320	320	310	290	295	295
13	300	300	295	285	305	300	320	315	330	A	A	A	A	A	A	A	A	300	A	A	A	F	A	F
14	F	290	295	290	290	290	325	300	A	A	A	310	290	315	310	A	295	A	300	300	310	305	310	300
15	305	300	320	315	280	295	A	310	345	A	A	270	270	265	275	A	A	A	A	300	305	295	F	F
16	300	280	300	295	320	285	310	335	A	A	A	330	290	300	300	A	A	A	A	A	295	275	F	F
17	F	A	S	F	F	320	340	315	340	A	325	290	305	305	315	300	320	310	A	A	300	290	285	310
18	310	305	335	290	295	335	300	A	325	270	330	265	295	280	A	A	280	295	280	325	300	295	300	315
19	310	315	305	305	310	325	295	335	300	300	335	340	265	305	320	310	315	320	315	320	315	315	315	320
20	310	295	290	290	285	305	335	325	A	335	360	340	C	C	C	C	295	290	305	305	310	300	310	F
21	F	F	F	F	F	A	A	A	A	A	A	A	A	290	280	A	A	A	A	A	A	305	305	365
22	310	315	S	F	325	305	A	A	A	315	A	315	A	A	A	270	A	A	A	A	320	325	A	A
23	F	325	320	295	305	315	A	325	335	A	A	A	315	335	275	280	300	300	315	325	325	305	285	300
24	310	300	305	F	F	325	290	335	295	330	280	A	A	A	A	A	290	A	320	A	315	F	F	F
25	305	305	315	F	F	A	275	A	A	A	A	275	A	A	A	320	305	295	305	A	315	300	A	A
26	300	F	F	F	330	335	305	310	A	320	330	A	A	295	305	310	305	290	305	305	300	315	325	305
27	295	315	305	305	310	300	285	275	275	275	275	R	285	A	290	315	340	315	310	325	315	305	S	290
28	270	295	285	300	325	315	325	A	A	A	A	A	A	275	300	315	A	A	A	305	305	F	F	A
29	265	290	295	A	290	A	290	295	340	A	A	A	340	285	295	285	295	295	305	295	300	325	325	300
30	305	295	300	275	305	275	R	305	260	A	290	300	A	A	A	A	280	300	A	310	320	315	290	300
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	25	22	18	21	24	21	22	15	14	15	17	17	18	19	17	20	17	17	24	27	25	21	18
MED	305	295	300	298	305	308	310	325	330	322	295	305	290	292	295	290	300	300	305	305	310	305	310	300
UQ	310	305	305	305	310	322	325	335	340	330	330	320	295	305	302	310	305	315	315	315	312	310	315	315
LQ	295	290	295	290	290	295	295	300	305	300	288	280	270	280	278	275	290	295	300	300	300	295	290	295

IONOSPHERIC DATA

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M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat.	45° 23.5' N				Long	141° 41.2' E				Sweep	1 MHz to 25 MHz in 24sec in				automatic operation				
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	380	405	405	395	365	A	A	A	A	370					
2							A	A	A	A	A	A	380	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	360	A	A					
4						335	360	A	A	A	395	390	370	380	405	365	355	A	A					
5						A	A	A	A	A	A	A	385	395	400	380	365	345	345	340				
6							320	A	A	380	A	395	A	380	A	380	350	A	A					
7								340	355	385	370	400	395	400	360	360	350	335	350					
8						A	A	A	A	A	A	A	395	420	400	390	350	A	A	A				
9							A	A	A	A	A	A	A	A	A	A	A	A	A					
10						A	A	A	A	A	A	L	A	360	A	A	335	A	A					
11						340	350	A	A	A	410	A	C	C	A	A	A	A	A					
12							A	365	A	A	A	A	A	A	A	A	335	A	A					
13							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
14						L 350	A	A	A	A	A	A	380	A	A	A	L 360	A	A					
15						L 335	A	A	A	A	A	A	395	420	395	370	A	A	A	A				
16						340	A	A	A	A	A	410	A	A	A	A	A	A	A	A				
17							A	A	A	A	385	385	A	A	A	A	A	A	A	A				
18							325	A	A	410	405	A	A	A	A	A	355	330	340					
19								A	A	A	A	A	A	A	375	A	A	360	350					
20						325	350	A	A	A	A	A	C	C	C	C	365	325						
21						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
22						320	A	A	A	A	A	A	A	A	A	370	A	A	A	A				
23						340	A	A	A	A	A	A	405	A	390	375	A	A	A					
24							A	A	405	400	A	A	A	A	A	A	370	A	A	A				
25						A	335	A	A	A	A	A	A	A	A	A	370	340	335	A	A			
26						360		A	A	380	A	A	A	A	365	375	350	335	335					
27						340	340	A	A	360	A	380	365	A	A	A	340	335	335					
28							L	A	A	A	A	A	A	365	360	355	A	A	A					
29						A	A	365	375	A	A	A	385	A	A	350	H 325	H 340	A					
30						345	A	400	A	A	390	A	A	A	A	A	A	350	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					1	10	7	4	3	7	7	10	11	9	9	11	15	10	7					
MED					340	340	340	365	375	380	395	395	395	380	375	365	350	335	340					
UQ					345	350	382	390	392	405	400	400	400	400	390	372	358	345	350					
LQ					335	330	352	365	380	388	385	380	365	365	358	340	335	338						

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M(3000)F1 (0.01)

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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 24sec in automatic operation																
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					A	330	A	300	250	290	440	400	375	400	360	295	300	250						
2						325	310	260	275		A	A	400	A	A	A	A	A	A					
3						A	A	A	A	A	A	A	A	A	380	370	325	A	A					
4						350	320	275	265	325	400	370	355	330	305	440	315	335	A					
5						400	A	275	A	A	350	405	400	415	400	460	325	315	300					
6						340	305	280	350	400	370	425	420	395	450	350	315	A						
7							385	320	415	370	360	545	385	350	500	400	355	285						
8						290	275	285	A	A	400	345	W	445	445	350	A	A	A					
9						A	A	A	A	A	A	A	A	A	435	A	A	315	A					
10						A	A	A	290	A	A	480	620	510	A	A	330	295	305					
11						305	325	530	A	345	G	A	C	C	A	355	A	A	A					
12						A	385	A	A	A	A	A	A	A	A	A	500	A	300					
13						300	300	300	A	A	A	A	A	A	A	A	A	335	A	A				
14						300	290	325	A	A	A	335	390	350	350	A	360	A	325					
15						345	A	305	275	A	A	460	455	455	345	A	A	A	A					
16						295	290	265	A	A	A	320	385	370	350	A	A	A	A	A				
17						A	295	A	A	355	360	360	365	380	320	330	A	A	300					
18						345	A	325	465	335	475	385	440	A	A	415	350	315						
19							300	A	A	290	325	470	370	345	350	315	300	295						
20						305	250	A	A	275	300	300	C	C	C	C	375	350						
21						A	A	A	A	A	A	A	A	405	400	A	A	A	A	A				
22						390	A	A	A	350	A	355	A	A	A	500	A	A	A	A				
23						310	A	300	300	A	A	A	365	315	420	420	355	350	A					
24						360	300	375	305	425	A	A	A	A	A	400	A	300	A					
25						A	465	A	A	A	A	420	A	A	A	340	355	350	300	A				
26						265	330	A	325	315	A	A	A	340	340	355	335	300						
27						320	375	410	420	400	420	R	400	A	390	345	300	305	305					
28						300	A	A	A	A	A	A	A	425	345	350	A	A	A					
29						A	A	345	300	A	A	A	330	400	370	385	350	355	290					
30						425	R	350	500	A	385	360	A	A	A	A	410	350	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					1	12	16	20	14	12	15	17	17	17	19	17	20	17	13	1				
MED					295	315	325	305	300	335	370	360	400	400	380	360	352	335	300	300				
UQ					370	348	348	325	375	400	420	455	425	400	440	388	350	305						
LQ					302	295	298	280	290	325	345	385	370	348	350	325	315	295						

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H*F2 (KM)

IONOSPHERIC DATA

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H^oF (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																								
Lat.	45° 23.5' N											Long 141° 41.2' E													
Sweep 1	MHz to 25 MHz in 24sec in automatic operation																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	290	300	250	250	A	A	A	A	205	200	200	200	250	A	A	A	A	215	260	285	255	220	250	
2	220	280	245	290	320	235	A	A	A	A	A	A	220	A	A	A	A	A	A	A	260	255	250	280	
3	275	295	A	240	230	A	A	A	A	A	A	A	A	A	A	A	250	A	A	A	A	A	220	245	
4	255	260	255	255	250	240	240	A	A	A	200	200	200	205	200	225	230	A	A	A	270	260	240	215	
5	225	255	265	255	235	A	A	A	A	A	A	A	240	205	215	200	205	240	235	245	275	240	A	225	260
6	260	250	240	210	205	225	235	A	A	235	A	200	A	250	A	205	235	A	A	260	H 250	A	225	A	255
7	A	270	275	245	200	250	245	230	240	205	205	200	205	205	200	220	240	225	255	270	270	240	260	320	
8	320	280	250	295	265	A	A	A	A	A	A	205	200	225	H 225	H 225	225	A	A	A	270	245	250	245	250
9	295	275	275	285	255	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	275	A	A	A	245
10	255	275	270	295	260	A	A	A	A	A	A	A	210	A	250	A	A	A	A	300	290	280	275	245	
11	255	250	275	250	H 250	225	245	A	A	A	200	A	C	C	A	A	A	A	A	280	280	255	300	A 310	
12	A	A	A	A	245	A	A	225	A	A	A	A	A	A	A	A	245	A	A	A	A	295	285	295	
13	255	260	250	255	280	260	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	305	A	305	
14	255	290	255	295	A	240	A	A	A	A	A	A	A	225	A	A	A	225	A	A	A	A 290	255	255	250
15	275	255	245	245	260	A 255	A	A	A	A	A	200	200	205	215	A	A	A	A	A	A	295	A	250	
16	285	250	250	250	H 260	220	A	A	A	A	A	200	A	A	A	A	A	A	A	A	A	A	280	A	
17	A	A	A	255	A	260	A	A	A	A	220	215	A	A	A	A	A	A	A	A	A	250	A	255	
18	250	270	240	250	250	220	205	A	A	205	200	A	A	A	A	A	225	215	240	270	A	285	250	240	
19	255	245	260	260	250	225	225	A	A	A	A	A	A	A	210	A	A	210	220	A	A	250	270	250	
20	250	260	265	275	A	240	215	A	A	A	A	A	C	C	C	C	205	240	H 250	A	270	260	255	A	
21	A 270	300	270	275	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	265	270	A	
22	270	270	260	270	250	250	A	A	A	A	A	A	A	A	A	250	A	A	A	A	265	A	A	A	
23	265	245	240	265	275	255	A	A	A	A	A	A	200	A	220	210	A	A	A	A	A	250	255	265	
24	250	225	235	250	250	H 250	A	A	200	210	A	A	A	A	A	A	200	A	A	A	A	A	250	235	
25	260	290	280	250	250	A	230	A	A	A	A	A	A	A	A	220	235	220	A	A	A	290	A	A	
26	255	295	255	265	240	225	200	A	A	235	A	A	A	A	250	200	240	245	225	H 240	250	245	235	250	
27	250	265	270	275	260	250	225	A	A	205	A	205	245	A	A	A	230	250	250	H 250	250	240	270	290	
28	A	275	270	250	210	250	200	A	A	A	A	A	A	200	220	240	A	A	A	A	A	290	A	A	
29	A	A	300	A	300	A	A	235	205	A	A	A	225	A	A	210	H 220	H 200	A	270	A	A	A	265	
30	315	325	A 340	A 300	260	240	A	205	A	A	210	A	A	A	A	A	A	240	A	A	250	255	255	A 280	
31																									
CNT	24	27	27	28	26	20	11	4	3	7	7	11	11	9	9	11	15	10	8	12	15	23	21	24	
MED	255	270	260	255	250	240	225	228	205	205	200	200	205	215	215	220	235	230	242	270	265	255	255	252	
UQ	272	285	272	275	260	250	238	232	222	222	208	208	222	250	220	225	240	240	250	275	275	282	270	280	
LQ	252	255	250	250	245	225	210	215	202	205	200	200	200	205	200	208	225	215	222	260	250	250	245	248	

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H^oF (KM)

IONOSPHERIC DATA

JUN. 1985
H⁺E (KM)
135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI				Lat. 45° 23.5' N				Long. 141° 41.2' E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
	Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					A	115	105	105	105	105	A	105	105	105	105	105	105	105	105	110	145				
2					125	110	105	105	105	105	105	105	105	105	A	105	105	105	105	105	E				
3					E	110	105	105	105	105	105	105	105	105	A	105	110	105	A	110	130				
4					150	120	110	105	105	105	105	105	105	110	105	105	105	110	110	110	E				
5					S	120	105	105	105	110	105	105	105	105	A	A	A	A	A	A	S				
6					S	115	110	110	105	105	105	105	105	105	105	105	A	110	110	110	E				
7					S	115	105	105	105	105	105	105	105	105	105	105	A	A	105	110	115				
8					S	120	105	110	105	110	105	105	105	105	110	105	110	110	105	110	125				
9					A	A	105	105	105	105	105	105	105	105	105	105	105	105	110	120	S				
10					A	A	105	110	105	105	105	105	105	105	105	105	105	110	105	A	A				
11					A	120	110	105	105	105	105	105	105	C	C	105	110	115	110	125	125				
12					A	125	110	110	105	105	105	105	105	105	115	110	105	110	120	120	S				
13					145	120	105	105	105	105	105	105	105	115	110	110	A	A	A	110	130				
14					A	130	105	105	105	105	110	110	105	105	105	105	105	110	105	110	S				
15					A	140	105	105	105	105	105	105	105	105	110	115	110	110	110	110	S				
16					A	105	110	110	110	105	105	A	A	A	A	110	110	110	110	110					
17					A	A	105	105	105	105	110	105	105	105	A	A	A	A	A	110	120				
18					A	A	110	105	105	A	A	A	105	105	A	A	A	A	A	105	120				
19					A	A	A	105	105	105	105	105	105	110	110	105	110	110	A	110	E				
20					A	110	105	105	105	105	105	A	C	C	C	C	C	110	105	110	S				
21					E	115	105	105	105	105	105	105	105	A	A	A	105	105	105	105	E				
22					A	115	110	110	105	105	105	105	105	105	105	A	105	105	110	110	120				
23					E	110	105	105	105	105	105	105	105	105	A	A	A	A	105	105	E				
24					120	115	110	A	A	105	110	105	105	105	110	110	105	105	105	105	S				
25					A	A	110	110	105	105	105	105	105	105	105	105	105	105	105	105	S				
26					E	120	110	105	105	105	110	105	105	105	105	105	A	A	A	110	S				
27					E	115	105	105	105	105	105	105	105	105	105	105	105	105	105	105	120				
28					A	A	115	110	105	105	105	105	105	105	105	105	105	105	105	110	115				
29					A	115	110	105	105	105	105	A	A	105	105	110	110	110	110	A					
30					A	110	110	110	105	105	105	105	105	A	A	A	110	110	105	105	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					4	23	29	29	29	29	28	26	24	20	21	21	23	23	28	12					
MED					135	115	105	105	105	105	105	105	105	105	105	105	110	105	110	120					
UQ					148	120	110	110	105	105	105	105	105	110	105	110	110	110	110	128					
LQ					122	112	105	105	105	105	105	105	105	105	105	105	105	105	105	118					

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station		WAKKANAI												Lat. 45° 23.5' N · Long 141° 41.2' E												Sweep 1 MHz to 25 MHz in 24sec in automatic operation			
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	105	105	100	100	100	120	115	105	105	105	105	G	G	140	120	120	110	110	120	G	115	120	S	S					
2	E	100	100	125	125	G	130	110	110	115	110	110	105	105	120	120	115	115	115	110	115	110	105	105					
3	100	100	100	115	130	125	115	115	110	105	105	105	105	105	115	110	110	120	120	125	115	115	115	110					
4	105	105	105	105	G	G	G	115	115	110	115	115	G	115	105	G	G	125	115	110	105	110	105	100					
5	S	105	110	100	140	125	120	120	110	110	110	105	G	105	105	105	105	105	115	115	120	110	S	105					
6	105	100	S	E	S	G	G	115	110	115	110	G	110	G	105	105	G	110	110	120	115	120	110	110					
7	105	100	S	E	S	130	120	125	110	115	120	G	110	115	110	105	105	G	125	115	115	110	105	105					
8	105	105	105	120	S	125	115	115	110	110	110	G	110	105	110	110	125	120	110	115	105	105	S	105					
9	105	105	E	105	105	105	125	120	110	105	105	105	105	105	140	135	130	125	120	120	120	115	105	105					
10	105	105	105	105	100	125	115	120	115	105	105	110	110	125	105	105	105	125	125	120	125	115	105	105					
11	105	S	130	105	125	125	125	125	110	110	125	130	C	C	125	130	120	120	110	110	110	105	105	105					
12	105	105	105	105	105	125	125	110	105	105	105	105	105	105	105	105	G	120	115	110	110	105	105	105					
13	110	110	105	S	130	135	125	120	115	105	110	110	105	110	110	105	105	105	115	115	115	115	105	105					
14	105	105	105	100	100	110	125	130	125	110	110	110	110	110	105	105	110	125	125	115	110	110	105	105					
15	105	S	105	105	105	140	130	125	120	110	115	115	110	G	150	125	125	115	110	110	105	110	105	105					
16	105	S	E	105	105	G	115	120	110	110	105	105	105	100	100	120	115	115	110	110	110	105	110	105					
17	105	100	100	100	100	130	120	115	110	105	110	105	105	100	100	105	105	115	115	120	110	105	105	105					
18	100	105	S	S	105	105	G	110	105	105	110	105	105	105	105	105	105	100	125	115	110	110	110	110					
19	110	105	100	100	100	100	105	120	115	115	110	110	110	110	105	110	110	105	120	110	110	110	110	110					
20	110	100	105	100	100	115	G	115	110	115	115	105	C	C	C	C	G	120	125	115	110	135	105	105					
21	105	100	105	100	130	120	120	115	110	105	110	105	105	105	100	115	120	115	110	105	110	110	115	105					
22	100	100	100	100	105	140	125	125	115	125	115	110	110	105	120	150	120	115	110	115	110	105	105	105					
23	125	100	110	E	150	G	115	110	110	110	105	105	105	100	100	100	120	115	110	110	110	105	100	100					
24	105	E	E	125	G	120	115	105	105	G	125	115	120	115	115	120	120	115	115	110	110	110	105	125					
25	105	105	100	100	110	105	G	120	110	125	115	115	110	110	105	115	135	110	110	115	115	110	105	105					
26	100	100	100	E	120	125	G	130	110	120	110	110	110	110	G	110	105	105	120	130	115	110	110	S					
27	S	S	S	125	125	G	120	110	110	G	110	115	140	120	125	110	125	115	105	130	110	120	105	105					
28	100	100	100	105	110	110	G	115	120	110	110	110	105	105	130	125	115	115	110	115	110	110	105	105					
29	105	100	105	100	105	110	110	105	110	105	105	105	105	120	115	G	125	115	110	105	105	100	100	100					
30	100	100	100	100	100	120	115	115	105	110	125	115	110	105	115	120	115	115	105	105	105	110	105	105					
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	25	23	24	25	24	23	30	30	28	30	26	25	26	28	27	26	29	30	29	30	30	27	28					
MED	105	100	105	105	105	122	120	115	110	110	110	110	110	105	110	110	115	115	115	115	110	110	105	105					
UQ	105	105	105	105	125	125	125	120	115	115	115	115	110	115	120	120	120	120	120	115	115	115	108	105					
LQ	105	100	100	100	100	110	115	110	110	105	105	105	105	105	105	105	105	110	110	110	110	105	105	105					

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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	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	F3	F2	F3	F2	L1	C3	C2	C3	C2	C2	L1			H2	C2	C3	C2	C2	C1		F2	F1		
2		F2	F1	F3	C4		C3	C2	C3	C2	C3	C2	C2	L2	C3	C5	C4	C3	C5	C5	F4	F2	F3	F2
3	F2	F2	F2	FF22	C2	C4	C5	C2	C6	C3	C3	C4	C2	L3	C2	C2	C2	CL42	C4	C5	F4	F6	F1	F2
4	F2	F2	F2	F2			C2	C2	C2	C2	C1	C1		C1	C1			C3	C4	C2	F3	F2	F2	F2
5		F2	F1	F2	C1	C4	C4	C3	C3	C3	C2	C2		C1	L3	L2	L3	L1	CL21	C2	F2	F3		F2
6	F2	F1					C3	C3	C2	C2				C2	C2	L1		C2	C3	C1	F2	F2	F6	F2
7	F5	F3			C2	C2	C1	C2	C1	C1			C2	C1	C2	L2	L2		C2	C2	F4	F2	F3	F3
8	F2	F3	F2	F2		C2	C3	C2	C3	C4	C2		C2	C2	CH21	C2	C5	C6	C6	C6	F6	F3		F3
9	F4	F4		F5	L4	C5	C3	C3	C4	C5	C6	C5	C4	C5	H1	C2	C4	C4	C6	C5	F6	F6	F6	F3
10	F2	F3	F2	F5	L2	CL43	C3	C5	C3	C5	C3	C2	C2	C1	C4	C4	C3	C2	CL33	CL62	F6	F7	F4	F2
11	F3		F2	F3	CL21	C4	C3	C4	C5	C3	C2	C2			C4	C3	C4	C4	C5	C5	F6	F7	F3	F7
12	F6	F3	F7	F7	L2	C4	C5	C3	C6	C5	C6	C5	C3	C3	C3	C4		C5	C4	C7	F3	F7	F5	F4
13	F2	F2	F1		C2	C4	C6	C3	C4	C4	C5	C2	C3	C4	C3	L3	L5	L4	C6	C7	F6	F7	F6	F5
14	F3	F5	F4	F5	L4	L1	C4	C3	C4	C2	C3	C3	C2	C2	C3	C3	CL12	C5	C5	C6	F7	F6	F2	F3
15	F2		F2	F2	L1	CL32	C4	C4	C3	C2	C2	C1	C1		H1	C2	C4	C4	C5	C5	F5	F5	F4	F3
16	F2			F1	L1		C4	C4	C3	C3	C3	L2	L2	L2	L2	C3	C3	C5	C6	C6	F4	F3	F3	F4
17	F5	F6	F3	F4	L3	CL11	C3	C2	C4	C3	C2	C2	C2	L3	L2	L2	L3	CL43	C6	C5	F4	F2	F3	F4
18	F4	F3			L1	L2		C2	C2	L1	L1	L2	C2	L2	L2	L3	L2	L3	C2	C3	F5	F3	F2	F2
19	F2	F1	F4	F2	L2	L2	LC11	C3	C2	C2	C2	C2	C2	C2	C2	C3	C3	L2	C2	C5	F2	F2	F4	F2
20	F1	F2	F1	F1	L3	C2		C4	C4	C2	C2	L2						C2	C2	C4	F4	F1	F2	F5
21	F3	F2	F2	F1	C1	C3	C3	C3	C2	C4	C4	C4	L3	L2	L3	C3	C3	C3	C6	C4	F4	F2	F2	F2
22	F2	F2	F3	F2	L2	C2	C3	C3	C3	C2	C3	C2	C2	C2	CL31	H2	C5	C4	C5	C4	F4	F3	F4	F3
23	F2	F2	F1		C1		C3	C3	C2	C2	C3	C3	C2	L3	L2	L2	CL23	C4	C5	C5	F4	F3	F2	F1
24	F1			F1		C2	C3	L2	L1		C2	C2	C2	C2	C3	C3	C1	C2	C3	C4	F4	F5	F2	F1
25	F2	F2	F2	F2	L2	L2		C3	C3	C2	C3	C2	C3	C3	C2	C2	CL21	C2	C3	C4	F2	F3	F2	F3
26	F2	F2	F1		C1	C2		C2	C3	C2	C2	C4	C2	C1		L2	L2	L3	C1	C1	F4	F2	F1	
27				F2	C1		C2	C3	C2		C2	C1	CL11	C3	C2	C2	C1	C3	C2	C1	F2	F2	F2	F2
28	F4	F3	F2	F1	L1	L2		C3	C3	C5	C3	C5	C5	C1	C1	C1	C5	C4	C4	C4	F6	F2	F2	F4
29	F3	F4	F2	F4	L2	C5	C3	C2	C2	C3	C4	L4	L1	C2	C2		C2	C2	C5	L2	F4	F4	F3	F2
30	F3	F4	F4	F4	L1	C2	C3	C2	C2	C3	C1	C2	CL32	L3	CL33	C3	C2	C2	C4	C4	F3	F4	F3	F4
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																								

JUN. 1985

TYPES OF ES

IONOSPHERIC DATA

JUN. 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 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	40	49	49	50	47																77	76	78	61
2	X 55	X 50	53	51	45																X 73	A	A	A
3	A	58	59	60	60																A	A	A	60
4	53	A	53	A	50	53	62														X 72	77	70	64
5	53	53	52	57	50	60															75	70	65	68
6	62	59	60	X 47	40																X 70	71	X 62	61
7	62	62	62	59	X 44																X 73	X 79	X 62	X 56
8	61	62	63	49	A																X 80	A	A	A
9	X 55	X 51	51	54	53	59															X 65	69	69	63
10	53	A	50	A	A																A	A	63	A
11	62	59	59	58	58	63															X 70	X 57	X 53	56
12	X 51	53	54	51	50																A	A	A	A
13	60	62	55	53	X 48																65	64	68	68
14	61	A	59	A	52																83	73	A	62
15	A	A	A	A	50																X 73	75	A	72
16	69	A	62	61	56																A	81	83	82
17	73	A	72	62	59																A	73	A	74
18	69	62	63	60	59	59															X 68	X 63	68	70
19	X 59	X 52	X 50	53	X 45																X 70	X 68	X 63	X 58
20	X 56	52	52	49	49																X 70	63	64	X 62
21	60	54	56	53	51															59	61	63	63	62
22	A	61	59	51	50																X 68	A	A	A
23	A	A	A	A	A	48															X 65	51	50	50
24	X 48	X 49	49	50	49																A	A	53	53
25	52	A	52	50	A																X 63	X 57	X 48	55
26	53	52	49	46	49																X 77	S 67	X 63	X 56
27	X 54	X 53	X 50	X 41	X 42																X 66	X 53	X 49	X 49
28	X 47	52	52	40	X 35																79	69	68	70
29	A	60	58	50	48																79	X 78	S 58	X 52
30	53	53	52	43	X 44																X 78	X 62	58	55
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	22	28	25	26	6	1													1	24	23	22	25
MED	55	53	54	51	50	59	62													59	X 71	69	63	61
UQ	61	60	59	57	52	60															X 77	74	68	68
LQ	53	52	52	49	45	53															X 67	63	X 58	56

IONOSPHERIC DATA

JUN. 1985

FOF2 (0.1 MHz)

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

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

JUN. 1985

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 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 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	430	430	430	A	A	A	A	A	A					
2						A	A	390	410	430	A	440	A	A	A	A	A	A	A					
3						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
4						L	370	A	A	430	430	440	430	430	420	410	380	L	L	A				
5						A	A	A	A	430	430	430	440	A	430	A	A	370	320					
6						L	360	400	A	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	A	A	A	A	430	430	A	410	410	370	L					
8						L	390	A	A	A	A	A	440	430	A	410	410	A	A					
9						A	A	A	A	A	A	A	A	430	A	A	A	A	A	A				
10						A	A	A	A	A	A	440	A	A	A	A	A	A	A	A				
11						A	A	390	400	A	A	440	430	A	A	A	A	A	A					
12							360	A	A	A	A	A	A	A	430	410	390	A	A					
13						320	370	490	A	A	A	A	A	A	A	A	A	400	L					
14							370	A	A	C	A	A	A	A	A	A	410	A	A	A				
15						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
16						L	360	A	A	A	A	A	A	430	430	A	400	A	A					
17						A	A	A	A	A	A	A	A	A	A	A	410	370	A	A				
18							360	390	A	A	A	A	430	430	410	A	400	380	320					
19							A	A	A	A	A	A	A	430	A	A	400	370	330					
20						L	360	410	A	A	430	A	A	A	A	420	400	L	A	A				
21						A	A	A	A	A	A	A	A	A	A	410	A	A	A					
22							A	A	A	A	A	A	A	A	420	410	390	A	A					
23							A	A	A	430	A	A	430	A	440	410	380	A	A	A				
24						L	320	330	380	400	A	A	A	A	430	420	A	A	A	A				
25							A	A	A	A	A	A	A	A	A	A	400	380	360	L				
26							A	360	A	A	A	C	A	A	A	A	380	370	A					
27							340	360	390	400	A	420	A	A	410	A	A	A	A					
28							350	A	400	410	420	420	430	410	410	A	380	350	310					
29							A	A	A	A	A	430	A	A	A	A	400	390	370	A				
30						L	350	370	400	A	A	A	A	A	A	420	410	380	360	330				
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						3	13	10	6	6	6	8	9	9	11	11	17	11	5					
MED						320	360	390	400	430	430	435	430	430	420	410	390	370	320					
UQ						320	370	400	400	430	430	440	430	430	430	410	400	370	330					
LQ						310	350	370	400	410	430	425	430	430	415	410	380	365	320					

JUN. 1985

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUN. 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 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	260	A	A	A	A	A	A	310	295	275	230	180	S				
2						A	A	A	A	A	A	A	A	A	A	300	275	235	A	S				
3						S	A	A	A	310	A	A	A	A	A	A	A	A	A	S				
4						A	240	A	A	A	A	A	A	A	320	305	290	240	185	S				
5						A	A	A	310	310	320	330	A	A	A	A	A	A	A	S				
6						A	240	285	A	A	A	A	A	A	A	A	A	A	A	A				
7						A	240	280	A	A	A	335	340	340	A	A	A	255	205	S				
8						A	240	A	A	A	A	A	A	A	A	305	275	255	200	S				
9						S	230	270	A	A	A	330	A	A	315	A	A	A	A	S				
10						S	230	A	A	320	A	A	A	335	305	A	A	A	A	S				
11						A	A	A	A	315	330	345	350	350	320	305	285	255	A	S				
12						A	A	A	305	A	320	335	340	A	A	330	295	240	A	S				
13						A	240	A	A	A	320	335	A	335	A	A	A	A	A	S				
14						S	A	A	A	C	330	A	A	340	330	320	295	A	A	S				
15						A	250	260	305	A	A	A	A	345	335	315	290	255	A	S				
16						A	235	275	A	A	A	A	A	U R 345	335	310	285	A	A	S				
17						A	235	275	A	A	A	A	A	A	A	A	A	A	A	S				
18						195	240	280	A	A	A	A	A	A	330	305	280	250	195	S				
19						S	235	270	300	320	A	335	345	A	A	A	A	A	A	S				
20						S	235	280	A	A	A	A	A	A	330	310	280	240	A	S				
21						S	240	A	A	325	A	A	A	A	A	305	280	255	A	S				
22						A	225	A	A	310	A	A	A	330	320	305	290	A	A	S				
23						A	220	A	A	S	A	A	A	A	A	A	A	A	A	S				
24						195	A	A	320	A	A	A	A	335	320	300	280	A	A	S				
25						180	240	A	A	A	A	340	A	A	A	300	275	245	A	S				
26						S	A	A	A	A	335	C	A	A	A	A	A	A	A	S				
27						S	230	A	300	305	325	345	A	335	305	A	275	A	A	S				
28						185	230	A	305	A	A	A	350	A	A	A	A	A	A	S				
29						A	A	A	A	A	A	A	A	345	315	A	A	A	A	S				
30						A	240	A	A	A	A	A	350	A	A	A	A	A	A	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	20	10	7	8	7	9	6	11	14	15	16	12	5					
MED						190	238	275	305	312	325	335	348	340	320	305	280	248	195					
UQ						195	240	280	308	320	330	340	350	345	330	310	290	255	200					
LQ						182	230	270	302	310	320	335	340	335	315	302	275	240	185					

IONOSPHERIC DATA

JUN. 1985
FOES (0.1 MHz)
135° E Mean Time (G.M.T. + 9 h)

Station	AKITA																								
Lat.	39 43.5 N																								
Long	140 08.0 E																								
Sweep	1 MHz to 25 MHz in 24sec in automatic operation																								
Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Day																									
1	J A 44	J A 54	J A 43	J A 44	J A 32	J A 74	J A 52	J A 64	J A 66	J A 72	J A 36	J A 36	J A 36	J A 54	J A 72	J A 80	J A 133	J A 76	J A 86	J A 38	J A 87	J A 42	J A 48	J A 31	
2	J A 18	J A 27	J A 40	J A 25	J A 34	J A 46	J A 50	J A 36	J A 32	J A 50	J A 47	J A 66	J A 54	J A 46	J A 67	J A 84	J A 95	J A 144	J A 76	J A 87	J A 84	J A 84	J A 123	J A 107	
3	J A 84	J A 84	J A 38	J A 65	J A 61	J A 51	J A 73	J A 84	J A 87	J A 111	J A 68	J A 94	J A 77	J A 93	J A 70	J A 86	J A 70	J A 54	J A 74	J A 52	J A 94	J A 85	J A 87	J A 50	
4	J A 60	J A 61	J A 20	J A 50	J A 78	24	J A 43	J A 47	J A 60	J A 47	J A 43	J A 46	41	J A 47	37	G	38	J A 44	J A 102	J A 66	J A 53	J A 54	J A 32	J A 65	
5	J A 84	J A 65	J A 40	J A 28	J A 24	J A 46	J A 78	J A 107	J A 84	J A 50	J A 54	42	40	J A 66	J A 46	J A 54	J A 84	J A 36	J A 32	J A 46	J A 52	J A 50	J A 108	J A 50	
6	E S 15	J A 18	E S 16	E S 15	E S 15	26	35	41	J A 50	J A 67	J A 123	J A 131	J A 98	J A 87	J A 110	J A 167	J A 90	J A 120	J A 88	J A 54	J A 40	J A 41	J A 50	J A 24	
7	J A 44	J A 84	J A 26	J A 23	J A 24	26	J A 46	J A 58	J A 64	J A 70	J A 65	J A 46	40	36	J A 48	J A 34	35	J A 36	31	J A 54	J A 45	J A 26	J A 25	J A 23	
8	J A 54	J A 42	J A 36	J A 50	J A 54	J A 37	J A 44	J A 59	J A 66	J A 85	J A 67	J A 79	J A 74	J A 46	J A 43	40	J A 46	J A 66	J A 80	J A 66	J A 66	J A 171	J A 84	J A 85	
9	J A 29	J A 29	J A 24	J A 50	J A 38	J A 25	J A 46	J A 65	J A 73	J A 99	J A 77	J A 65	J A 72	J A 44	J A 44	54	J A 65	J A 94	J A 77	J A 54	J A 52	J A 84	J A 86	J A 57	
10	J A 44	J A 84	J A 54	J A 86	J A 84	J A 47	J A 64	J A 114	J A 65	J A 66	J A 50	J A 67	J A 53	J A 64	J A 76	J A 64	J A 85	J A 66	J A 50	J A 110	J A 87	J A 87	J A 110	J A 118	
11	J A 64	J A 33	J A 24	J A 32	J A 44	J A 39	J A 58	J A 36	J A 47	J A 75	J A 66	J A 54	J A 44	J A 66	J A 66	J A 60	J A 65	J A 40	J A 50	J A 33	J A 24	J A 36	J A 61	J A 54	
12	J A 42	J A 48	J A 36	J A 38	J A 25	J A 26	J A 38	J A 55	J A 112	J A 100	J A 74	J A 76	J A 63	J A 74	J A 49	35	G	J A 42	J A 50	J A 167	J A 143	J A 134	J A 86	J A 102	
13	J A 60	J A 56	J A 54	J A 43	J A 44	J A 50	27	43	J A 86	J A 72	J A 116	J A 130	J A 76	J A 86	J A 95	J A 109	J A 80	J A 42	28	J A 32	J A 85	J A 54	J A 33	J A 65	
14	J A 64	J A 77	J A 84	J A 52	J A 125	J A 46	J A 50	J A 64	J A 87	J A 117	J A 85	J A 114	J A 142	J A 74	J A 94	J A 52	35	J A 87	J A 77	J A 88	J A 84	J A 87	J A 84	J A 65	
15	J A 106	J A 76	J A 83	J A 64	J A 44	J A 47	J A 57	J A 60	J A 74	J A 104	J A 94	J A 79	J A 49	45	45	J A 54	J A 56	J A 56	J A 65	J A 65	J A 107	J A 84	J A 87	J A 78	
16	J A 80	J A 84	J A 50	J A 44	J A 40	J A 29	J A 42	J A 53	J A 82	J A 132	J A 227	J A 192	J A 94	G	42	J A 67	J A 74	J A 77	J A 100	J A 60	J A 95	J A 65	J A 32	J A 64	
17	J A 65	J A 76	J A 44	J A 26	J A 28	24	J A 50	J A 51	J A 77	J A 95	J A 102	J A 113	J A 106	J A 77	J A 92	J A 96	J A 46	36	J A 127	J A 106	J A 96	J A 29	J A 103	J A 81	
18	J A 64	J A 118	J A 33	J A 40	J A 47	J A 21	32	36	J A 74	J A 84	J A 50	J A 65	J A 50	J A 36	G	40	39	35	30	20	J A 32	J A 24	J A 29	J A 24	
19	J A 24	J A 50	J A 20	J A 31	J A 24	J A 29	J A 46	J A 54	J A 47	J A 47	J A 81	J A 76	J A 46	J A 87	J A 45	J A 54	33	J A 30	J A 26	J A 19	J A 23	J A 33	J A 53	J A 26	
20	J A 29	J A 28	J A 20	J A 29	E S 15	21	G	J A 40	J A 66	J A 66	J A 41	J A 102	J A 98	J A 71	J A 50	J A 50	38	J A 32	J A 36	J A 32	J A 29	J A 37	J A 53	J A 40	
21	J A 46	J A 50	J A 28	J A 24	J A 20	J A 51	J A 54	J A 62	J A 70	J A 87	J A 66	J A 71	J A 53	J A 62	J A 94	J A 50	J A 55	J A 139	J A 145	J A 86	J A 54	J A 40	J A 65	J A 76	
22	J A 94	J A 73	J A 35	J A 32	J A 24	26	J A 62	J A 108	J A 109	J A 74	J A 74	J A 181	J A 131	J A 52	34	37	38	J A 46	J A 105	J A 50	J A 117	J A 168	J A 84	J A 106	
23	J A 76	J A 79	J A 61	J A 49	J A 46	J A 29	J A 76	J A 74	J A 84	J A 46	J A 66	J A 87	J A 38	J A 77	J A 46	J A 44	J A 40	J A 73	J A 50	J A 54	J A 53	J A 53	J A 32	J A 44	
24	J A 24	J A 34	J A 24	J A 38	J A 21	22	J A 37	J A 50	G	J A 51	J A 133	J A 54	J A 65	44	J A 50	J A 59	J A 54	J A 54	J A 54	J A 77	J A 86	J A 84	J A 50	J A 27	
25	J A 44	J A 54	J A 32	J A 44	J A 44	G	J A 59	J A 64	J A 44	J A 106	J A 105	J A 91	J A 83	J A 54	J A 87	34	37	36	J A 46	J A 53	J A 48	J A 38	J A 74	J A 40	
26	J A 50	J A 44	J A 35	J A 30	J A 26	J A 24	J A 74	J A 44	J A 65	J A 58	J A 50	C	J A 159	J A 90	J A 74	J A 85	J A 36	J A 51	J A 36	J A 21	J A 24	J A 27	J A 32	J A 20	
27	E S 16	J A 19	J A 21	E S 16	J A 28	23	J A 36	33	36	J A 46	J A 51	37	J A 52	J A 54	41	J A 88	J A 99	J A 87	J A 150	J A 31	J A 28	E S 15	J A 20		
28	J A 24	J A 24	J A 25	J A 29	J A 23	G	J A 46	J A 70	J A 44	J A 43	J A 46	J A 37	G	J A 41	J A 42	J A 49	J A 47	J A 47	J A 32	J A 29	J A 126	J A 35	J A 57	J A 61	
29	J A 85	J A 64	J A 50	J A 64	J A 50	J A 52	J A 47	J A 77	J A 134	J A 105	J A 90	J A 53	J A 56	J A 104	J A 66	J A 37	J A 31	J A 45	J A 85	J A 53	J A 61	J A 50	J A 44	J A 50	
30	J A 43	J A 29	J A 24	J A 26	J A 24	26	J A 32	J A 40	J A 40	J A 70	J A 112	J A 70	J A 71	J A 54	J A 37	J A 46	J A 36	33	30	46	J A 50	J A 33	J A 41	J A 76	
31																									
CNT	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	
MED	J A 48	J A 54	J A 35	J A 38	J A 33	J A 28	J A 46	J A 56	J A 66	J A 72	J A 68	J A 71	J A 60	J A 58	J A 50	J A 54	J A 46	J A 49	J A 60	J A 54	J A 58	J A 50	J A 55	J A 56	
UQ	J A 65	J A 76	J A 44	J A 50	J A 46	J A 46	J A 58	J A 65	J A 84	J A 99	J A 94	J A 94	J A 83	J A 77	J A 74	J A 80	J A 74	J A 76	J A 86	J A 66	J A 87	J A 84	J A 86	J A 76	
LQ	J A 29	J A 33	J A 24	J A 28	J A 24	24	J A 38	J A 43	J A 47	J A 51	J A 50	J A 54	J A 46	J A 46	J A 43	J A 40	37	J A 36	J A 36	J A 33	J A 45	J A 35	J A 33	J A 31	

IONOSPHERIC DATA

JUN. 1985

FBES (0.1 MHz)

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

Station		AKITA				Lat. 39 43.5 N		Long. 140 08.0 E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation															
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	25	23	28	28	28	A 74	A 52	57	52	43	36	36	36	48	A 72	A 80	A 133	67	A 86	19	E	E	20	E	
2	E	24	34	E	22	42	44	30	32	41	43	38	44	43	A 67	A 84	A 95	A 144	A 76	53	50	A 84	A 123	A 107	
3	A 84	37	30	E	E	29	A 73	A 84	A 87	A 111	A 68	A 94	A 77	A 93	43	45	47	48	A 74	42	A 94	A 85	A 87	40	
4	22	A 61	E	A 50	24	23	30	42	48	40	38	42	38	37	36	G	33	28	32	A 66	28	34	23	18	
5	E	28	27	E	E	41	A 78	A 107	A 84	37	39	40	38	A 66	39	43	51	26	25	35	38	27	31	E	
6	E S 15	E	E S 16	E S 15	E S 15	25	34	37	46	A 67	45	A 131	A 98	A 87	A 110	A 167	41	A 120	A 88	47	28	E	E	E	
7	25	29	E	19	E	24	41	A 58	A 64	A 70	46	44	38	36	47	34	33	G	27	44	30	24	20	E	
8	E	E	34	29	A 54	24	34	57	A 66	A 85	45	51	36	36	43	36	32	39	45	52	62	A 171	A 84	A 85	
9	19	23	E	20	24	21	39	A 65	A 73	A 99	A 77	A 65	A 72	40	44	45	A 65	A 94	53	A 54	45	25	38	28	
10	28	A 84	27	A 86	A 84	31	A 64	A 114	51	55	50	37	A 53	45	56	62	A 85	54	44	A 110	A 87	A 87	E	A 118	
11	26	E	E	20	34	34	A 58	34	33	75	66	42	40	A 66	A 66	A 60	A 65	38	50	30	18	30	32	20	
12	E	19	29	28	E	21	34	41	A 112	A 100	A 74	45	A 63	A 74	36	G	G	37	46	21	A 143	A 134	A 86	A 102	
13	33	28	34	21	27	21	27	39	A 86	A 72	A 116	A 130	A 76	A 86	44	A 109	51	28	28	29	40	40	24	24	
14	23	A 77	37	A 52	24	21	32	A 64	A 87	E 44	A 85	A 114	A 142	A 74	A 94	45	34	A 87	42	A 88	37	43	A 84	40	
15	A 106	A 76	A 83	A 64	E	A 47	53	48	47	A 104	A 94	A 79	A 49	45	44	44	A 56	42	55	39	21	34	A 87	52	
16	E	A 84	E	23	23	21	29	50	A 82	A 132	227	48	A 94	G	41	45	34	45	49	60	A 95	50	23	53	
17	34	A 76	20	E	E	24	47	40	A 77	A 95	A 102	A 113	A 106	A 77	A 92	A 96	36	35	A 127	A 106	A 96	29	A 103	E	
18	40	E	24	22	E	17	30	35	42	43	A 50	A 65	36	36	G	40	38	31	27	20	23	E	28	E	
19	E	E	E	E	E	G	A 46	A 54	46	44	A 81	A 76	44	40	43	43	32	30	25	G	19	E	21	19	
20	E	18	E	E	E S 15	20	G	30	A 66	46	37	A 102	A 98	A 71	43	33	35	27	36	30	29	E	20	30	
21	28	37	E	E	E	A 51	A 54	A 62	A 70	A 87	44	46	A 53	A 62	A 94	37	45	A 139	A 145	20	37	32	34	30	
22	A 94	30	E	E	E	24	A 62	A 108	A 109	A 74	A 74	A 181	A 131	43	34	34	34	40	A 105	42	58	A 168	A 84	A 106	
23	A 76	A 79	A 61	A 49	A 46	24	A 76	51	41	36	A 66	A 87	36	A 77	41	34	36	A 73	50	19	20	30	24	18	
24	20	20	E	E	E	21	26	33	G	43	A 133	A 54	A 65	36	34	A 59	41	39	43	58	A 86	A 84	20	E	
25	24	A 54	E	E	A 44	G	A 59	A 64	A 44	A 106	A 105	A 91	A 83	A 54	A 87	33	35	34	31	21	38	33	30	28	
26	30	30	28	26	18	19	A 74	31	42	42	43	C	A 159	A 90	45	53	34	33	32	21	21	20	21	E	
27	E S 16	E	18	E S 16	24	20	26	29	32	35	45	36	A 52	A 54	38	49	A 99	A 87	45	18	28	E S 15	19	E	
28	E	E	21	E	E	G	26	46	36	35	40	35	G	35	35	41	33	30	26	19	28	E	40	40	
29	A 85	24	E	E	18	A 52	45	A 77	A 134	A 105	40	44	45	A 104	A 66	32	30	30	37	42	22	26	25	20	
30	25	E	E	E	E	21	26	31	32	A 70	A 112	A 70	A 71	43	36	32	30	26	29	19	30	30	18	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	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	
MED	24	26	19	18	16	24	42	49	52	A 68	A 58	A 54	A 53	51	44	44	36	38	44	37	34	30	26	22	
UQ	33	A 54	29	28	24	31	A 58	A 64	A 82	A 95	A 85	A 91	A 83	A 74	A 66	59	51	67	55	53	58	50	A 84	40	
LQ	E	E	E	E	E	21	30	35	42	42	43	42	38	40	38	34	33	30	31	20	23	20	20	E	

JUN. 1985

FBES (0.1 MHz)

IONOSPHERIC DATA

JUN. 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 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 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	17	18	18	17	17	17	16	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
2	E S 16	E S 15	E S 16	E S 15	E S 15	E S 16	16	16	17	19	18	17	17	18	18	17	17	16	E S 16	E S 16	E S 16	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 14	16	16	17	18	18	18	18	20	17	18	18	16	16	E S 15	E S 16	E S 15	E S 15	E S 15
4	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	19	17	17	18	19	16	17	E S 15	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 16	16	16	17	18	18	18	18	20	17	17	17	16	15	E S 15	E S 15	E S 15	E S 15	E S 15
6	E S 15	E S 15	E S 16	E S 15	E S 15	E S 16	16	16	16	18	19	17	18	17	18	20	17	16	16	16	E S 15	E S 15	E S 15	E S 15
7	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	16	18	18	19	18	21	18	17	16	15	E S 16	E S 16	E S 15	E S 16	E S 15
8	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	18	20	18	19	21	18	17	18	17	14	E S 16	E S 16	E S 16	E S 15	E S 15
9	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	14	16	17	17	18	19	19	18	19	17	17	16	14	E S 16	E S 16	E S 15	E S 15	E S 15
10	E S 15	E S 15	E S 15	E S 15	E S 14	E S 15	16	17	17	17	21	20	18	20	19	17	17	16	16	E S 16	E S 15	E S 16	E S 16	E S 15
11	E S 16	E S 16	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	19	18	18	19	18	17	17	E S 16	E S 16	E S 15	E S 15	E S 16	E S 16
12	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	18	18	19	20	20	18	19	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15
13	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	19	18	20	18	18	18	17	16	16	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	17	17	E C 44	18	18	17	20	19	17	17	16	16	E S 16	E S 15	E S 16	E S 16	E S 15
15	E S 15	E S 15	E S 15	E S 16	E S 15	E S 16	16	16	18	18	21	19	20	18	19	19	18	17	E S 16	E S 15	E S 16	E S 15	E S 15	E S 15
16	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	16	17	18	18	20	19	18	17	16	17	E S 16	E S 16	E S 15	E S 15	E S 15	E S 16
17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	17	20	22	18	18	18	17	16	15	E S 16	E S 15	E S 15	E S 15	E S 15
18	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	17	18	19	20	23	19	20	17	17	18	14	E S 15	E S 16	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 17	16	17	17	16	18	18	19	20	18	18	17	17	17	E S 16	E S 16	E S 16	E S 16	E S 16
20	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	17	20	18	17	18	18	17	17	16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 15
21	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	18	18	18	18	17	18	17	17	18	17	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
22	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	16	17	17	17	17	17	17	18	17	16	17	17	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15
23	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	19	19	18	18	18	18	17	16	16	E S 16	E S 16	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	16	16	17	17	18	17	18	17	17	16	16	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
25	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	17	16	16	18	17	17	18	17	18	17	16	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
26	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	18	C	18	19	18	17	17	16	E S 15	E S 16	E S 15	E S 15	E S 15	E S 15
27	E S 16	E S 16	E S 15	E S 16	E S 15	E S 16	16	16	17	18	20	17	18	17	18	17	17	17	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15
28	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	16	18	17	18	18	17	17	16	16	15	E S 15	E S 16	E S 15	E S 15	E S 15
29	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	17	18	20	18	18	17	17	16	13	E S 16	E S 15	E S 15	E S 15	E S 16
30	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	18	18	19	19	18	17	17	17	16	15	E S 16	E S 15	E S 15	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	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	18	18	18	18	18	17	17	16	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	17	17	18	19	19	19	19	19	18	17	17	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
LQ	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	18	18	18	17	17	17	16	14	E S 16	E S 15	E S 15	E S 15	E S 15

JUN. 1985

FMIN (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

M(3000)F2 (0.01)

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

Station		AKITA											Lat. 39 43.5 N · Long 140 08.0 E											Sweep 1 MHz to 25 MHz in 24sec in automatic operation										
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
1		F	F	F	F	F	A	A		350	360	370	295	280	250	285	A	A	A		315	305	F	F	F	F								
2		285	295	F	F	300	F	340	315	335	350	355	325	G	290	305	A	A	A	A	A	300	315	A	A	A								
3		A	F	F	F	F	345	A	A	A	A	A	A	A	A	315	315	305	310		A	320	A	A	A	F								
4		F	A	F	A	F	F	F	340	365	345	260	285	320	345	295	310	335	320	295		A	315	F	F	F								
5		F	F	F	F	F	F	A	A	A		355	280	310	300	A	305	305	310	295	310	310	F	F	F	F								
6		F	F	F	F	F	315	315	335	330	350	A	350	A	A	A	A		A	A		315		A	A	F								
7		F	F	F	F	320	335	345		A	A	A		305	335	280	290	285	275	300	305	320	295	300	315	310	300							
8		F	F	F	F	A	320	305	360		A	A	A	310	A	340	275	260	285	290	280	280	315	320	A	A	A							
9		285	300	305	F	F	F	320	330	A	A	A	A	A	A	250	270	290		A	A	345	A	305	310	F	F							
10		F	A	F	A	A	325	A	A		330	340	280	245		A	260	255	280		A	300	285	A	A	A	F	A						
11		F	F	F	F	F	F	A		275	290	A	A	250	285	A	A	A		A		295	320	320	310	300	295	F						
12		285	F	F	F	F	F	310	340	305	265		A	A	A	300	A	A	270	275	285	295	305	320	A	A	A	A						
13		F	F	F	F	315	310	305	335	350		A	A	A	A	A	A		310		310	300	320	320	F	F	F	F						
14		F	A	F	A	F	335	355		A	A	325	A	A	A	A	A		320	285		285	A	F	F	A	F							
15		A	A	A	A	F	A	320	355	325		A	A	A	A	280	290	290		A	310	310	305	300	F	A	F							
16		F	A	F	F	F	300	340	340		A	A	A	315	A	290	285	280	305	310	300	310		A	F	F	F							
17		F	A	F	F	F	325	320	355		A	A	A	A	A	A	A	A		325	330		A	A	A	F	A	F	320					
18		F	F	F	F	F	F	335	340	315	320		A	A	250	295	300	300	300	295	315	315	310	290	310	F	F	F						
19		315	310	310	310	F	335	350		A	A	345	335		A	A	320	305	320	310	310	315	320	320	310	320	315	300						
20		300	F	F	F	F	335	365	340		A	315	335		A	A	A	290	290	315	320	305	310	315	305	F	F	320						
21		F	F	F	F	F	F	A	A	A	A	A	325	295		A	A	A	310	325		A	A	F	F	F	F	F						
22		A	F	F	F	F	335		A	A	A	A	A	A	A	310	285	255	R	315	320		A	305	350	A	A	A						
23		A	A	A	A	A	F	A		345	345	S	U	R	A	A	295	A	260	270	295		A	335	330	365	F	F	F					
24		310	325	310	F	F	310	310	305	330	S	S	315		A	A	A	280	270		A	270	295	310	330	A	A	F	F					
25		F	A	F	F	F	A		A	A	A	A	A	A	A	A	A	A		290	315	315	320	340	315	325	310	F						
26		F	F	F	F	F	345		A	295	300	340	345	C		A	A	300	295	290	305	295	325	310	320	S	315	280						
27		295	315	315	285	325	320	280	290	355	335	310	310		A	A	255	290		A	A	300	310	340	295	290	290	290						
28		290	F	F	F	325	345	340	340	325	315	315	305	290	270	290	295	295	295	320	315	320		F	F	F	F	F						
29		A	F	F	F	F	A		290		A	A	A		285	305	330		A	A	330	300	280	295	310	F	335	335	S	315				
30		F	F	F	F	315	300	270	300	330		A	A	A	A	A	280	290	300	305	300	310	315	345	335	300	F	F	F					
31																																		
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23									
CNT		9	6	6	6	10	22	18	19	15	14	14	13	12	15	21	23	23	23	23	24	20	14	10	9									
MED		295	312	310	F	312	318	332	325	340	330	335	310	300	292	285	290	290	305	305	310	315	312	312	310	300								
UQ		310	315	315	320	325	340	340	348	350	345	325	310	320	300	300	308	315	315	320	320	320	320	320	315	315								
LQ		285	300	305	300	310	320	305	315	325	315	285	280	282	278	270	282	295	295	298	308	308	300	300	295									

JUN. 1985

M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 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 24sec in automatic operation														
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	400	415	405	A	A	A	A	A	A					
2						A	A	375	390	A	A	370	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	A	A	A					
4						L	355	A	A	A	395	A	395	405	405	380	395	L	L	A				
5						A	A	A	A	395	395	410	400	A	380	A	A	380	370					
6						L	385	A	A	A	A	A	A	A	A	A	A	A	A					
7							A	A	A	A	A	A	405	390	A	380	340	385	L					
8						L	335	A	A	A	A	A	365	415	A	365	345	A	A					
9							A	A	A	A	A	A	A	370	A	A	A	A	A	A				
10							A	A	A	A	A	380	A	A	A	A	A	A	A	A				
11						A	A	405	375	A	A	A	375	A	A	A	A	A	A					
12							A	A	A	A	A	A	A	A	370	410	360	A	A					
13						355	355	A	A	A	A	A	A	A	A	A	A	335	L					
14							375	A	A	C	A	A	A	A	A	A	365	A	A	A				
15						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
16						L	395	A	A	A	A	A	A	400	A	A	350	A	A					
17							A	A	A	A	A	A	A	A	A	A	A	385	A	A				
18							385	365	A	A	A	A	440	415	430	A	A	360	355					
19							A	A	A	A	A	A	A	375	A	A	360	355	370					
20						L	365	355	A	A	395	A	A	A	A	380	350	L	A	A				
21						A	A	A	A	A	A	A	A	A	A	360	A	A	A					
22							A	A	A	A	A	A	A	A	355	385	360	A	A					
23						355	A	A	A	410	A	A	400	A	A	365	A	A	A	A				
24						L	360	390	390	395	A	A	A	A	420	405	A	A	A	A				
25							A	A	A	A	A	A	A	A	A	375	370	A	L					
26							A	375	A	A	A	C	A	A	A	A	A	365	A					
27							360	415	395	385	A	405	A	A	A	A	A	A	A					
28							375	A	360	385	400	405	400	385	400	A	385	365	365					
29						A	A	A	A	A	365	A	A	A	A	400	385	380	A					
30						L	370	395	390	A	A	A	A	A	385	370	395	385	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						3	12	8	6	4	6	6	9	9	8	11	13	10	4					
MED						355	372	382	390	390	395	405	400	400	392	380	360	372	368					
UQ						358	385	400	395	402	400	410	405	415	405	382	385	385	370					
LQ						355	358	370	375	385	395	380	395	385	375	368	350	360	360					

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M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1985

H*F2 (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	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A									A	A	A	A	A					
2						A										A	A	A	A	A					
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
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25																									
26																									
27																									
28																									
29																									
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						8	16	18	15	13	13	13	12	15	20	20	20	20	17	2					
MED						308	282	288	290	305	350	380	385	395	395	362	330	322	295	265					
UQ						332	325	350	328	330	400	445	415	442	455	390	350	345	305						
LQ						280	270	260	272	280	325	350	325	378	358	340	318	300	280						

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H*F2 (KM)

IONOSPHERIC DATA

JUN. 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 24sec		in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	A	A	255	A	A	A	A	A	200	195	195	A	A	A	A	A	A	270	280	265	250	230	
2	260	A	A	260	A	A	A	220	205	A	A	220	A	A	A	A	A	A	A	A	A	A	A	A	A	
3	A	A	A	270	220	225	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
4	310	A	230	A	A	245	A	A	A	A	A	205	A	215	200	200	220	220	230	A	A	255	A	250	230	
5	270	A	A	270	270	A	A	A	A	A	220	210	210	205	A	230	A	A	210	230	265	260	235	A	250	
6	245	245	225	195	250	245	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	240	230	230	250
7	A	A	275	210	260	250	A	A	A	A	A	A	A	200	200	A	230	220	235	A	A	A	245	220	275	
8	270	285	A	A	A	275	A	A	A	A	A	A	A	220	205	A	240	240	A	A	A	A	A	A	A	
9	280	260	255	A	A	255	A	A	A	A	A	A	A	A	230	A	A	A	A	A	A	A	A	270	A	255
10	A	A	A	A	A	A	A	A	A	A	A	A	A	215	A	A	A	A	A	A	A	A	A	A	280	A
11	A	275	260	250	A	A	A	200	225	A	A	A	A	235	A	A	A	A	A	A	A	240	240	A	A	295
12	295	300	A	A	240	240	A	A	A	A	A	A	A	A	A	220	215	220	A	A	240	A	A	A	A	
13	A	A	A	250	A	255	240	A	A	A	A	A	A	A	A	A	A	A	215	240	240	A	A	A	260	
14	A	A	A	A	A	230	A	A	A	C	A	A	A	A	A	A	A	235	A	A	A	250	A	A	A	
15	A	A	A	A	280	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	A	A	A	
16	240	A	235	A	A	240	230	A	A	A	A	A	A	A	205	A	A	240	A	A	A	A	A	A	280	A
17	A	A	260	230	230	230	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	290	A	225
18	A	260	285	260	255	240	250	A	A	A	A	A	A	190	200	195	A	A	230	A	255	250	260	270	A	230
19	240	235	250	245	250	230	A	A	A	A	A	A	A	A	A	A	A	230	225	230	200	240	225	240	A	235
20	250	245	255	280	255	225	225	225	A	A	210	A	A	A	A	A	200	A	H 200	A	A	250	255	280	A	245
21	A	A	275	255	E S 300	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	A	A	A	A	
22	A	A	270	245	270	240	A	A	A	A	A	A	A	A	A	215	210	A	A	A	A	A	A	A	A	A
23	A	A	A	A	A	235	A	A	A	200	A	A	A	200	A	A	210	A	A	A	A	215	A	A	290	
24	250	240	260	240	255	230	210	220	200	A	A	A	A	195	200	A	A	A	A	A	A	A	A	A	255	270
25	A	A	280	255	A	245	A	A	A	A	A	A	A	A	A	A	210	A	A	A	245	A	A	A	A	
26	A	A	A	A	220	220	A	230	A	A	A	C	A	A	A	A	A	A	220	A	240	240	235	245	245	
27	280	235	230	280	A	230	225	210	225	200	A	200	A	A	A	A	A	A	A	A	265	230	230	280	280	
28	280	280	250	225	255	225	240	A	A	210	230	200	205	220	200	A	210	A	220	255	245	280	A	A	A	
29	A	A	250	270	260	A	A	A	A	A	A	A	A	A	A	A	200	215	215	A	A	260	230	240	260	
30	A	275	225	260	295	245	220	220	210	A	A	A	A	A	A	200	220	210	245	A	260	230	225	260	245	
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	14	12	18	19	18	22	8	7	5	4	5	6	9	8	8	10	10	10	4	13	16	14	14	18		
MED	270	260	255	255	255	240	228	220	210	205	210	205	205	202	200	212	220	222	230	255	248	240	252	250		
UQ	280	278	270	265	265	245	240	222	225	215	210	215	215	212	218	220	235	230	235	265	258	265	280	270		
LQ	250	242	235	242	250	230	222	215	205	200	205	200	200	200	200	210	215	215	225	240	240	230	240	235		

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H^oE (KM)

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

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

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H^oE (KM)

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	AKITA				Lat. 39° 43.5' N				Long 140° 08.0' E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	100	100	100	100	115	120	110	105	105	105	105	105	125	120	115	110	110	120	130	120	110	105	105
2	100	125	100	120	115	110	110	115	120	110	110	105	105	120	115	125	120	115	110	110	110	110	110	105
3	100	100	100	100	100	100	120	115	110	110	110	105	105	105	110	105	105	100	100	125	120	115	110	110
4	110	105	110	100	105	145	125	120	110	110	110	110	110	110	120	G	130	120	115	110	110	110	110	105
5	105	100	95	100	100	125	115	115	110	120	110	110	110	105	105	100	100	100	105	115	100	110	110	125
6	S	100	S	S	S	140	120	120	110	110	110	105	110	110	110	110	110	105	105	105	105	105	105	100
7	115	110	100	100	100	140	120	115	110	110	110	110	110	110	105	110	110	100	125	110	110	110	110	105
8	110	105	105	105	105	125	120	110	110	110	110	110	110	110	110	145	125	120	110	110	110	110	105	105
9	105	105	100	100	100	105	120	110	110	105	110	105	105	110	105	105	105	115	110	110	110	120	105	105
10	105	105	100	100	100	100	120	110	110	110	110	105	105	110	105	105	100	100	110	105	100	120	115	110
11	105	105	105	105	105	110	110	110	115	120	130	145	145	130	130	125	120	120	110	110	110	110	105	105
12	105	105	100	100	105	140	120	110	110	110	110	105	105	105	105	145	G	115	110	100	100	110	110	105
13	105	100	100	100	100	100	140	115	110	110	110	110	110	105	110	105	105	105	125	110	110	110	110	110
14	110	105	105	105	105	110	105	120	115	110	110	110	110	110	110	115	125	110	105	120	110	105	110	110
15	105	105	100	100	120	130	115	110	110	105	105	105	110	170	145	135	125	120	110	110	110	100	110	105
16	105	100	100	100	100	100	125	110	110	105	105	105	105	G	140	130	120	120	110	110	110	105	105	105
17	100	100	100	100	105	140	125	120	110	110	110	105	105	105	105	105	135	100	100	115	110	110	115	
18	105	105	105	105	105	105	145	125	110	110	105	105	105	110	G	150	125	130	120	110	110	105	110	105
19	105	105	105	100	100	105	130	120	120	115	110	110	110	110	110	105	110	110	105	105	100	100	110	110
20	105	105	100	100	S	145	G	120	110	110	110	105	105	110	115	115	130	130	130	115	110	110	110	105
21	105	100	105	100	140	120	120	115	110	110	110	105	100	105	110	130	120	110	110	110	110	110	110	110
22	105	100	105	105	105	140	130	125	115	110	110	105	110	130	160	140	130	120	110	110	110	110	110	100
23	100	100	100	95	100	130	115	110	105	110	110	105	110	100	105	105	100	115	110	110	110	105	105	105
24	100	100	100	100	100	145	105	110	G	110	100	105	110	135	130	110	120	110	110	110	110	110	105	105
25	105	100	100	95	100	G	130	120	130	115	110	110	110	105	110	140	125	120	110	110	110	110	105	100
26	100	100	95	95	100	100	120	110	125	120	115	C	105	110	105	105	105	100	105	105	105	110	105	110
27	S	115	110	S	120	125	120	125	120	120	120	135	120	125	140	110	110	110	110	105	S	110	110	
28	105	100	95	100	100	G	120	110	115	115	110	110	G	110	110	105	105	105	105	100	110	105	110	105
29	100	105	105	100	100	110	110	110	105	105	105	105	120	115	110	110	120	115	110	105	100	105	100	100
30	100	100	100	120	115	125	120	115	120	110	110	120	110	110	115	110	110	115	110	110	105	105	105	105
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	29	28	28	28	29	30	29	30	30	29	29	29	29	29	29	30	30	30	30	29	30	30
MED	105	102	100	100	100	122	120	115	110	110	110	105	110	110	110	110	110	115	110	110	110	110	110	105
UQ	105	105	105	102	105	140	125	120	115	110	110	110	110	115	120	130	125	120	110	110	110	110	110	110
LQ	100	100	100	100	100	105	115	110	110	110	110	105	105	105	105	105	105	105	105	105	105	105	105	105

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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	AKITA				Lat. 39° 43.5' N · Long 140° 08.0' E				Sweep 1 MHz to 25 MHz in 24 sec in automatic operation																
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F ₃	F ₃	F ₄	F ₅	F ₂	C ₄	C ₅	C ₆	C ₃	C ₂	C ₂	L ₁	L ₁	C ₂	C ₄	C ₄	C ₃	C ₃	C ₄	C ₃	F ₂	F ₃	F ₅	F ₂	
2	F ₂	FF ₃₂	F ₃	F ₂	F ₄	C ₄	C ₄	C ₂	C ₁	C ₂	C ₂	C ₂	L ₂	C ₂	C ₂	C ₃	C ₅	C ₅	C ₅	C ₄	F ₆	F ₇	F ₇	F ₃	
3	F ₃	F ₄	F ₃	F ₂	F ₂	L ₅	C ₃	C ₄	C ₄	C ₄	C ₃	C ₄	C ₃	C ₃	C ₂	C ₂	C ₃	L ₅	L ₄	CL ₃₃	F ₆	F ₅	F ₄	F ₇	
4	F ₂	F ₄	F ₁	F ₄	F ₃	H ₂	C ₃	C ₂	C ₂	C ₂	C ₂	C ₂	C ₁	C ₁	C ₁		C ₂	C ₂	C ₃	C ₅	F ₂	F ₅	F ₂	F ₂	
5	F ₂	F ₃	F ₃	F ₂	F ₁	C ₅	C ₅	C ₄	C ₅	C ₂	C ₂	C ₂	C ₁	L ₃	C ₂	L ₃	L ₃	L ₂	LC ₂₂	CL ₆₂	F ₄	F ₃	F ₄	FF ₁₄	
6		F ₂			H ₂	C ₄	C ₂		C ₂	C ₃	C ₂	C ₃	C ₄	C ₄	C ₂	C ₃	C ₃	C ₅	L ₆	L ₇	F ₄	F ₂	F ₂	F ₃	
7	F ₄	F ₂	F ₂	F ₂	F ₃	H ₂	C ₃	C ₅	C ₂	C ₃	C ₂	C ₂	C ₁	C ₁	C ₂	C ₁	C ₂	L ₁	C ₅	C ₆	F ₃	F ₆	F ₂	F ₃	
8	F ₂	F ₂	F ₅	F ₄	F ₃	C ₅	C ₃	C ₄	C ₃	C ₃	C ₂	C ₂	C ₁	C ₁	C ₂	H ₁	C ₂	C ₃	C ₅	C ₃	F ₃	F ₂	F ₃	F ₄	
9	F ₃	F ₃	F ₃	F ₃	F ₄	L ₂	C ₃	C ₄	C ₄	C ₄	C ₃	C ₄	C ₂	C ₂	C ₂	C ₃	L ₃	CL ₄₂	CL ₄₂	CL ₃₄	FF ₃₃	FF ₁₂	F ₃	F ₂	
10	F ₄	F ₃	F ₇	F ₃	F ₃	L ₃	C ₄	C ₃	C ₃	C ₃	C ₃	C ₁	C ₂	C ₂	C ₃	C ₅	L ₅	L ₄	CL ₄₂	L ₄	L ₄	FF ₅₂	F ₆	F ₆	
11	F ₆	F ₄	F ₂	F ₆	F ₇	C ₃	C ₃	C ₃	C ₂	C ₄	C ₁	H ₁	H ₁	C ₂	C ₂	C ₃	C ₄	C ₄	C ₄	C ₅	F ₃	F ₃	F ₄	F ₃	
12	F ₂	F ₂	F ₆	F ₃	F ₂	H ₂	C ₃	C ₂	C ₄	C ₃	C ₄	C ₂	C ₃	C ₃	C ₂	H ₁		C ₂	C ₄	L ₃	F ₄	F ₆	F ₄	F ₅	
13	F ₆	F ₆	F ₃	F ₃	F ₃	L ₂	H ₂	C ₂	C ₄	C ₆	C ₃	C ₂	C ₂	C ₃	C ₂	C ₃	C ₃	C ₂	CL ₄₂	C ₃	F ₃	F ₆	F ₆	F ₄	
14	F ₄	F ₄	F ₆	F ₆	F ₄	C ₂	L ₃	C ₃	C ₄	C ₂	C ₃	C ₃	C ₂	C ₂	C ₂	C ₂	C ₁	C ₅	C ₅	C ₆	F ₃	F ₃	F ₄	F ₇	
15	F ₅	F ₆	F ₄	F ₄	F ₂	C ₃	C ₃	C ₄	C ₃	C ₂	C ₂	C ₄	C ₂	H ₁	H ₂	H ₂	C ₂	C ₃	C ₄	C ₃	F ₃	F ₄	F ₃	F ₆	
16	F ₂	F ₃	F ₂	F ₂	F ₂	L ₁	C ₂	C ₃	C ₄	C ₆	C ₄	C ₃	C ₃		H ₁	C ₂	C ₂	C ₃	C ₃	C ₇	F ₆	F ₅	F ₄	F ₆	
17	F ₅	F ₃	F ₁	F ₃	F ₃	H ₁	C ₃	C ₂	C ₆	C ₅	C ₄	C ₃	C ₄	C ₄	C ₄	C ₄	L ₄	HL ₃₂	L ₄	L ₃	FF ₃₄	F ₄	F ₇	F ₁	
18	F ₂	F ₂	F ₆	F ₇	F ₂	L ₂	H ₂	C ₂	C ₂	C ₂	C ₁	C ₃	C ₁	C ₁		H ₁	C ₁	C ₂	C ₃	C ₂	F ₃	F ₂	F ₄	F ₂	
19	F ₂	F ₃	F ₂	F ₂	F ₂	LH ₂₁	C ₃	C ₄	C ₃	C ₂	C ₃	C ₃	C ₂	C ₂	C ₂	C ₃	C ₂	C ₂	L ₂	L ₂	F ₂	F ₂	F ₂	F ₁	
20	F ₁	F ₃	F ₂	F ₂		H ₂		C ₂	C ₃	C ₃	C ₁	C ₃	C ₃	C ₂	C ₂	C ₁	C ₁	C ₂	C ₃	C ₂	F ₃	F ₂	F ₂	F ₃	
21	F ₃	F ₄	F ₂	F ₂	F ₂	C ₅	C ₃	C ₄	C ₃	C ₃	C ₂	C ₂	L ₂	C ₃	C ₃	C ₂	C ₂	C ₄	C ₄	C ₃	F ₅	F ₅	F ₄	F ₅	
22	F ₄	F ₄	F ₄	F ₄	F ₂	H ₂	C ₄	C ₆	C ₄	C ₃	C ₃	C ₃	C ₄	C ₂	H ₁	H ₁	C ₂	C ₃	C ₅	C ₇	F ₅	F ₅	F ₆	F ₄	
23	F ₄	F ₃	F ₄	F ₃	F ₃	C ₂	C ₃	C ₃	C ₂	C ₂	C ₃	C ₄	C ₁	L ₄	L ₂	L ₂	L ₃	CL ₃₃	CL ₃₃	C ₄	F ₂	F ₃	F ₅	F ₄	
24	F ₄	F ₃	F ₃	F ₃	F ₁	H ₁	L ₂	C ₂		C ₂	L ₃	L ₂	C ₂	H ₁	C ₁	C ₅	C ₂	C ₂	C ₂	C ₃	F ₇	F ₅	F ₄	F ₂	
25	F ₄	F ₃	F ₂	F ₂	F ₅		C ₄	C ₂	C ₂	C ₂	C ₃	C ₃	C ₃	C ₂	C ₃	H ₁	C ₁	C ₃	C ₅	C ₅	F ₅	F ₄	F ₄	F ₄	
26	F ₅	F ₄	F ₃	F ₃	F ₃	L ₁	C ₃	C ₁	C ₂	C ₂	C ₂		C ₂	C ₃	C ₂	C ₂	C ₃	L ₂	L ₃	L ₂	F ₂	F ₃	F ₃	F ₂	
27		F ₁	F ₃		F ₄	C ₂	C ₂	C ₁	C ₁	C ₁	C ₂	H ₁	C ₂	C ₂	H ₂	C ₃	C ₃	C ₃	C ₂	C ₂	F ₄		F ₃	F ₁	
28	F ₂	F ₂	F ₃	F ₃	F ₁		C ₂	C ₂	C ₂	C ₂	C ₂	C ₁		C ₁	C ₂	C ₃	L ₄	L ₅	L ₅	L ₂	F ₄	F ₅	F ₄	F ₄	
29	F ₄	F ₄	F ₂	F ₂	F ₃	C ₆	C ₃	C ₃	C ₃	C ₄	C ₂	C ₂	C ₂	C ₂	C ₂	C ₁	C ₂	C ₃	C ₃	L ₃	F ₃	F ₃	F ₄	F ₃	
30	F ₄	F ₂	F ₁	F ₁	F ₂	C ₂	C ₂	C ₂	C ₁	C ₂	C ₃	C ₃	C ₃	C ₂	C ₁	C ₂	C ₂	C ₁	C ₃	C ₂	F ₄	F ₄	F ₃	F ₄	
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																									

JUN. 1985

TYPES OF ES

IONOSPHERIC DATA

JUN. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station: OKUBUNJI TOKYO		Lat. 35° 42.4' N · Long. 139° 29.3' E										Sweep 1 MHz to 20 MHz in 20sec in automatic operation													
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	S	36	S 37	45	36															S 71	U 78	S 75	U 73	X 59	
2	S 60	60	S 56	54	S															X 70	S 75	U 67	S 59	S 60	
3	60	S	50	53	50															S	S 69	A	S 56	60	
4	S 56	58	51	40	42															S 67	S 76	S 80	S 54	S	
5	A	A	A	A	A															X 75	S 71	S	A	A	
6	A	S	62	S 37	S 35															A	X 76	S 71	70	64	
7	X 60	58	S 50	S 50	S 49															A	S 75	S 74	X 67	S 59	
8	S 60	60	66	50	S 41															S 96	U 73	S	S 60	U 65	
9	60	S 58	55	S 42	S 45															A	X 68	S	A	S 55	
10	S	S 45	A	S 43	S 42															X 75	S 73	X 59	A	A	
11	A	S 66	A	60	X 56															S 76	X 65	S 59	S	X 55	
12	S 51	S 51	U 50	X 49	S 48															X 81	X 59	56	61	A	
13	56	S 55	S 55	45	46															X 75	X 66	S 56	S 56	A	
14	58	56	U 50	A	U 47															S 82	U 70	61	A	S	
15	57	61	54	51	S																A	70	70	A	
16	A	62	60	58	S 56																S	A	S	70	
17	75	72	67	60	S 56																S 70	S 64	S 69	S 63	
18	A	S 59	S 57	S 56	54																X 70	X 69	X 67	65	
19	60	S 55	X 51	X 48	S 44																X 74	X 66	X 61	61	
20	61	60	58	52	50																S 78	X 60	S 56	61	
21	S 56	53	S	S	40																S 57	S 60	S 57	A	
22	A	58	55	53	S 51																S 71	A	43	S 42	
23	S 40	S	S 37	36	40																A	A	A	A	
24	A	S 45	X 44	S 43	S 41																S	A	A	S 39	
25	42	S	40	42	40																X 66	S 61	X 48	X 42	
26	A	S	S	45	S 39																O 83	S 65	X 58	X 58	
27	X 56	X 58	X 51	X 39	S 41																62	S 50	S 50	X 48	
28	S 46	X 48	S 49	X 39	X 36																S 78	X 53	X 51	X 50	
29	X 49	S 46	S 46	X 43	46	46															S	S 68	S 58	S 55	
30	S 52	S 50	49	S 46	S 42																S 81	X 63	X 56	S 56	
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	20	24	25	27	27	1														10	25	22	22	21	
MED	56	58	51	46	S 44	46														75	71	64	58	59	
UQ	60	60	56	52	S 50															S 81	S 76	S 69	67	61	
LQ	S 52	S 50	S 49	42	S 40																X 71	S 68	S 59	S 56	S 55

JUN. 1985

FXI (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

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

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

JUN. 1985

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985
FOF1 (0.01 MHz)
135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	R 440	440	A	A	A	A	A	A	A					
2						A	A	A	A	A	A	A	A	440	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	A	A	A					
4							L 370	A	A	A	440	A	A	A	440	A	A	390	320					
5							A	A	A	A	460	A	R 450	A	450	420	A	A	A					
6						A	A	A	430	420	450	A	A	A	A	A	A	A	A					
7							A	A	A	A	A	A	450	A	A	A	410	A	A					
8							A	A	A	A	A	A	A	A	A	A	400	370	350	L				
9							L	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	A	A	A	A					
11							A	A	A	A	A	A	A	A	A	A	A	A	A					
12							A	A	A	A	A	A	A	450	440	430	410	A	A					
13							370	L 400	H 440	H 450	A	A	A	A	A	A	410	380	A					
14							L	A	A	A	A	A	A	A	A	A	A	L 380	350	L				
15							A	A	A	A	A	460	A	A	A	A	A	A	A	A				
16							L	A	A	A	A	A	460	470	440	430	430	A	A	A				
17							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
18							A	390	A	A	A	A	A	A	A	430	A	A	A	A				
19							A	A	A	A	A	R 450	A	A	A	A	A	A	A	A				
20							L	L	400	A	A	430	440	430	A	A	410	400	A	A				
21							L 310	A	A	410	420	A	440	A	450	430	420	410	370	A				
22							360	A	A	A	A	A	430	430	A	430	420	380	360	A				
23							L	A	A	A	430	A	A	A	A	A	A	A	A	A				
24							L	A	A	A	A	A	440	440	430	440	A	A	360	330	L			
25							340	390	A	A	A	A	A	A	A	A	R 420	390	360	L				
26							A	A	A	A	A	A	A	430	A	420	390	A	A					
27							A	380	400	410	A	440	A	450	440	A	A	A	330	L				
28							370	380	410	A	430	A	A	A	420	A	A	A	A	L				
29							310	360	380	A	A	A	A	440	A	A	430	A	380	330	L			
30							L	A	390	400	440	440	440	R 440	430	420	410	400	360	340	L			
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						2	6	8	6	6	8	9	8	8	11	10	10	10	7					
MED						310	365	390	410	425	440	440	440	440	430	420	400	370	330	L				
UQ							370	395	430	440	455	440	450	450	440	430	410	380	345	L				
LQ							360	380	400	420	435	440	435	430	430	420	390	360	330	L				

IONOSPHERIC DATA

JUN. 1985

FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S	225	260	A	A	A	A	A	A	A	300	280	A	A					
2						S	A	A	A	A	A	A	A	A	330	310	270	240	A					
3						S	240	280	300	310	330	335	A	A	A	A	A	A	A					
4						S	240	285	300	320	A	340	A	R	340	310	290	A	A					
5						S	240	280	A	320	A	A	A	A	A	A	A	A	A					
6						A	250	290	305	325	A	A	A	A	A	A	A	A	A					
7						S	240	280	305	A	A	A	A	A	A	A	300	250	175					
8						S	250	A	A	A	A	A	A	A	A	310	285	245	H	185				
9						S	A	275	A	A	A	A	A	A	A	A	A	A	250	180				
10						S	A	280	A	A	A	A	345	330	A	A	A	250	A					
11						A	A	A	A	A	340	355	355	345	340	310	290	250	200					
12						S	250	280	A	A	A	A	A	A	340	310	A	A	A					
13						A	A	A	A	320	340	350	345	A	A	A	A	A	A					
14						A	A	275	310	335	345	350	A	350	345	320	285	A	A					
15						160	250	270	295	A	A	A	A	360	350	325	295	270	205	S				
16						170	H	240	A	A	A	A	A	350	340	320	290	H	260	A	S			
17						S	240	A	310	A	A	A	A	A	A	A	A	A	A	S				
18						A	240	280	A	A	A	A	A	A	R	345	320	280	250	190	S			
19						S	240	280	310	335	340	345	350	A	A	A	A	A	A	B				
20						S	A	275	310	A	A	A	A	340	330	320	300	250	180	S				
21						155	240	A	A	A	A	A	A	A	A	A	290	250	A	S				
22						H	H	240	280	300	320	325	340	345	340	330	315	H	285	255	A	S		
23						170	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
24						A	A	A	A	A	A	345	350	350	335	305	285	250	A	S				
25						S	A	A	A	A	340	340	340	335	A	A	A	250	185	S				
26						S	A	270	300	A	340	345	A	A	A	A	A	A	A	S				
27			S			S	230	270	300	320	335	340	350	345	340	310	A	A	A	S				
28						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
29						S	A	A	A	A	A	350	350	350	335	310	A	250	A	S				
30						S	A	A	300	A	340	350	355	355	340	A	A	A	165	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						5	16	17	13	9	10	13	10	12	14	15	14	15	9					
MED						170	240	280	300	320	340	345	350	348	340	310	288	250	185					
UQ						170	245	280	310	325	340	350	350	350	340	320	290	250	190					
LQ						160	240	275	300	320	335	340	345	340	335	310	285	250	180					

JUN. 1985

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1985

FOES (0.1 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station **00KUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1 MHz to 20 MHz** in **20sec** in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J A 44	J A 33	J A 49	33	J A 80	J A 29	J A 64	J A 87	J A 143	J A 126	J A 52	J A 40	44	J A 49	71	131	99	J A 117	J A 86	J A 52	J A 22	J A 52	J A 35	J A 35	
2	J A 51	40	J A 52	J A 89	J A 90	J A 64	J A 64	J A 80	J A 67	J A 59	75	60	J A 66	44	50	51	J A 56	61	58	J A 44	J A 49	J A 46	J A 57	J A 65	
3	J A 64	J A 53	51	40	J A 23	J A 35	J A 62	J A 75	J A 88	J A 64	J A 49	51	J A 62	J A 79	J A 89	J A 82	J A 52	J A 66	J A 73	J A 68	J A 55	J A 83	J A 53	J A 48	
4	J A 63	J A 34	J A 45	J A 52	J A 26	21	31	J A 49	58	58	J A 55	45	J A 49	46	39	J A 100	64	J A 69	J A 43	J A 87	J A 79	59	J A 54	J A 55	
5	J A 72	J A 86	J A 69	J A 65	50	J A 27	J A 85	J A 109	J A 92	J A 76	43	43	J A 44	J A 54	J A 40	36	J A 54	J A 87	J A 71	J A 50	J A 34	J A 53	J A 91	J A 85	
6	J A 56	J A 55	35	J A 24	J A 26	J A 44	J A 69	J A 45	40	36	48	57	J A 84	J A 69	J A 77	J A 108	J A 178	J A 85	J A 143	J A 87	J A 51	38	J A 34	J A 54	
7	J A 46	36	J A 21	24	E S 15	25	J A 42	60	J A 77	J A 74	J A 65	J A 51	J A 45	J A 46	61	44	G	J A 52	54	J A 76	J A 27	J A 30	J A 64	J A 30	
8	J A 32	J A 53	J A 26	J A 36	J A 44	J A 58	J A 85	J A 66	J A 79	J A 93	J A 51	117	182	J A 106	J A 51	40	J A 56	36	J A 52	J A 51	J A 81	J A 89	J A 96	J A 53	
9	J A 67	J A 83	J A 45	J A 30	J A 28	J A 35	J A 29	J A 43	73	90	J A 66	84	J A 105	J A 80	83	64	J A 80	J A 51	J A 100	J A 79	J A 54	J A 68	J A 65	J A 87	
10	J A 77	J A 63	J A 67	J A 97	J A 66	J A 32	J A 46	J A 76	J A 86	J A 67	J A 75	J A 96	50	89	J A 53	J A 110	J A 111	57	J A 87	19	J A 26	57	J A 83	J A 102	
11	J A 79	J A 62	J A 82	J A 50	J A 29	J A 28	52	J A 50	55	J A 50	53	45	J A 67	53	J A 73	J A 68	J A 58	J A 56	52	J A 34	J A 34	J A 26	53	J A 56	
12	J A 32	J A 34	J A 28	J A 32	J A 19	29	J A 51	J A 67	J A 99	J A 124	J A 142	J A 108	J A 60	J A 44	42	40	J A 54	J A 81	73	J A 54	J A 30	J A 29	J A 50	60	
13	J A 55	J A 49	J A 31	J A 26	J A 23	23	26	33	J A 40	36	58	J A 114	J A 86	J A 115	J A 79	J A 64	31	J A 34	J A 41	J A 33	J A 33	J A 57	J A 33	J A 62	
14	J A 80	J A 69	J A 88	J A 54	J A 82	J A 47	29	J A 43	J A 68	J A 83	J A 101	J A 95	J A 80	J A 71	J A 84	89	69	29	26	J A 23	J A 84	54	J A 114	J A 77	
15	J A 60	J A 29	J A 30	J A 30	J A 46	J A 61	J A 75	J A 54	J A 61	J A 73	J A 50	J A 70	51	49	J A 60	J A 89	J A 115	J A 110	J A 89	J A 65	J A 90	J A 60	J A 53	J A 114	
16	J A 112	J A 116	J A 67	J A 66	J A 45	25	J A 51	J A 51	J A 95	J A 111	J A 87	40	40	41	39	38	J A 47	J A 124	47	J A 43	J A 65	J A 79	J A 34	J A 52	
17	J A 52	J A 52	J A 38	J A 38	J A 41	J A 39	J A 51	J A 64	J A 77	J A 86	J A 84	120	J A 180	J A 137	J A 64	J A 70	J A 65	J A 57	60	50	J A 54	J A 41	J A 38	J A 56	
18	J A 86	J A 55	J A 30	J A 27	J A 30	J A 28	J A 45	36	J A 66	73	77	51	J A 88	J A 54	42	43	J A 81	51	J A 52	J A 47	J A 34	J A 28	J A 53	J A 44	
19	J A 56	J A 20	J A 19	J A 23	J A 19	27	J A 47	J A 52	J A 63	J A 60	J A 56	J A 52	75	68	82	93	84	J A 64	J A 128	J A 69	J A 56	J A 46	49	J A 48	
20	60	J A 33	J A 29	J A 32	J A 29	21	33	35	J A 56	J A 65	J A 42	J A 43	J A 50	J A 53	J A 49	G	36	J A 40	J A 41	J A 24	J A 30	J A 53	J A 46	J A 52	
21	J A 31	23	J A 31	25	E S 15	24	J A 48	J A 53	J A 44	J A 52	J A 71	38	J A 97	J A 52	37	40	J A 70	J A 85	J A 120	J A 87	40	J A 31	J A 54	J A 67	
22	J A 65	J A 86	37	J A 34	24	25	34	J A 54	80	J A 105	J A 65	45	43	48	38	G	J A 51	J A 43	J A 81	J A 47	J A 87	J A 69	J A 32	J A 30	
23	J A 56	J A 36	J A 29	J A 25	J A 32	19	J A 40	J A 92	J A 78	J A 81	J A 53	J A 53	J A 113	J A 115	J A 86	J A 90	J A 80	88	82	J A 99	J A 136	J A 85	J A 71	J A 67	
24	J A 54	J A 34	27	J A 29	J A 33	J A 24	58	91	J A 114	J A 64	87	44	J A 64	39	48	J A 58	J A 65	45	J A 47	55	J A 62	J A 82	J A 46	J A 45	
25	J A 40	J A 38	J A 52	22	19	18	28	35	J A 52	J A 80	J A 62	J A 62	J A 89	J A 93	47	J A 49	J A 43	35	J A 80	J A 52	J A 55	J A 38	J A 33	J A 45	
26	J A 54	J A 47	J A 53	J A 36	J A 23	21	J A 41	J A 52	J A 73	J A 89	J A 69	J A 59	J A 53	J A 58	J A 88	J A 55	59	J A 76	46	30	J A 29	27	J A 23	J A 28	
27	J A 20	20	20	21	J A 33	17	J A 62	J A 39	37	J A 51	J A 54	40	J A 60	36	G	50	J A 84	J A 77	J A 30	J A 20	J A 28	20	24	J A 23	
28	26	J A 31	J A 33	J A 27	24	29	34	50	J A 46	J A 64	J A 53	54	J A 52	60	J A 51	J A 63	58	J A 50	J A 30	J A 30	J A 30	J A 22	J A 24	J A 23	
29	19	E S 15	E S 15	J A 21	J A 30	J A 29	J A 52	49	J A 80	J A 79	J A 90	J A 87	G	J A 61	J A 89	J A 53	J A 81	32	J A 54	J A 51	41	J A 32	J A 53	J A 29	
30	J A 20	J A 30	J A 21	J A 24	J A 19	23	J A 69	J A 55	34	40	38	G	40	G	39	J A 41	37	30	26	J A 37	39	J A 44	J A 29	J A 21	
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	J A 56	J A 39	J A 34	J A 31	J A 29	28	J A 50	J A 52	J A 70	J A 73	J A 60	52	J A 61	J A 54	J A 52	56	J A 62	J A 57	J A 56	J A 50	J A 45	J A 49	J A 52	J A 52	
UQ	J A 65	J A 55	J A 52	J A 40	J A 44	35	J A 62	J A 67	J A 80	J A 86	J A 75	J A 84	J A 86	J A 79	J A 79	J A 89	J A 81	J A 81	J A 82	J A 68	J A 62	J A 60	J A 57	J A 65	
LQ	J A 40	J A 33	J A 28	J A 25	J A 23	23	J A 34	J A 45	J A 55	J A 59	J A 52	44	J A 49	46	42	41	J A 52	J A 43	J A 46	J A 34	J A 30	J A 31	J A 34	J A 35	

The Radio Research Laboratories, Japan

JUN. 1985

FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1985

FBES (0.1 MHz)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A A 44	28	E	E	15	24	A A 64	A A 87	A A 143	A A 126	40	40	44	44	61	A A 131	A A 99	A A 117	55	21	E	E	20	20	
2	48	37	29	E	20	A A 64	A A 64	47	A A 67	A A 59	A A 75	A A 60	47	38	43	50	47	A A 61	A A 58	44	29	40	45	45	
3	E	A A 53	23	20	E	27	A A 62	A A 75	A A 88	A A 64	47	47	A A 62	A A 79	A A 89	A A 82	40	46	55	A A 68	47	A A 83	43	29	
4	44	21	E	E	18	20	26	47	41	A A 58	40	45	45	45	37	A A 100	51	32	27	19	35	20	44	A A 55	
5	A A 72	A A 86	A A 69	A A 65	A A 50	22	A A 85	A A 109	A A 92	A A 76	40	43	40	45	35	35	49	A A 87	53	40	34	23	A A 91	A A 85	
6	A A 56	A A 55	24	21	19	34	A A 69	40	39	35	40	A A 57	A A 84	A A 69	A A 77	A A 108	A A 178	39	A A 143	A A 87	42	29	30	46	
7	29	28	19	E	E S 15	23	36	43	46	A A 74	50	45	40	46	50	43	G	42	42	A A 76	23	20	25	17	
8	E	E	E	20	26	A A 58	A A 85	49	A A 79	A A 93	44	A A 117	A A 182	44	42	40	G	34	34	31	39	46	19	33	
9	26	18	E	25	18	19	26	38	A A 73	A A 90	A A 66	A A 84	A A 105	A A 80	A A 83	A A 64	54	46	A A 100	A A 79	49	A A 68	A A 65	25	
10	E	29	A A 67	18	19	20	43	A A 76	A A 86	43	A A 75	A A 96	46	45	52	62	A A 111	48	34	19	24	44	A A 83	A A 102	
11	A A 79	50	A A 82	17	20	26	43	45	44	45	A A 53	44	A A 67	51	A A 73	A A 68	55	53	44	31	19	26	A A 53	23	
12	21	22	20	19	E	26	A A 51	44	A A 99	A A 124	A A 142	A A 108	A A 60	40	40	35	33	A A 81	62	43	20	20	30	A A 60	
13	E	19	E	20	18	23	26	30	37	36	45	A A 114	A A 86	A A 115	A A 79	56	31	26	32	32	19	18	25	A A 62	
14	33	19	21	A A 54	E	20	27	40	A A 68	A A 83	A A 101	A A 95	53	71	84	49	52	28	25	21	33	22	A A 114	16	
15	E	E	18	20	16	A A 61	A A 75	49	49	46	45	A A 70	51	48	54	A A 89	A A 115	A A 110	A A 89	60	A A 90	45	24	A A 114	
16	A A 112	21	42	31	E	20	43	42	A A 95	A A 111	47	40	39	39	38	37	46	A A 124	40	38	34	A A 79	26	43	
17	36	35	21	20	22	34	49	62	A A 77	A A 86	A A 84	A A 120	A A 180	A A 137	47	A A 70	55	54	47	38	23	32	28	49	
18	A A 86	45	E	18	20	21	41	34	A A 66	A A 73	A A 77	A A 51	44	45	39	42	A A 81	44	39	39	29	E	E	24	
19	E	E	E	E	E	23	A A 47	A A 52	55	52	A A 56	41	A A 75	52	A A 82	A A 93	A A 84	54	54	A A 69	55	40	19	46	
20	E	21	E	16	E	19	28	31	46	46	37	40	38	47	46	G	33	38	36	G	27	29	E	26	
21	22	E	24	E	E S 15	22	44	45	40	38	A A 71	37	A A 97	38	35	40	37	33	A A 120	18	21	20	37	A A 67	
22	A A 65	21	E	20	E	22	33	A A 54	59	A A 105	44	40	40	47	38	G	34	28	33	30	40	A A 69	28	21	
23	E	A A 36	25	21	16	19	37	A A 92	43	41	50	46	A A 113	A A 115	A A 86	A A 90	A A 80	A A 88	80	A A 99	A A 136	A A 85	A A 71	A A 67	
24	A A 54	29	18	23	27	18	36	A A 91	45	43	43	40	40	38	39	A A 58	40	31	28	46	A A 62	A A 82	A A 46	23	
25	E	A A 38	20	E	E	18	27	28	44	A A 80	A A 62	A A 62	A A 89	45	46	37	32	33	25	42	24	35	20	23	
26	A A 54	26	30	27	21	20	A A 41	A A 52	45	52	A A 69	A A 59	44	39	45	40	34	40	36	16	E	17	E	E	
27	17	G	E	E	25	G	A A 62	32	31	35	44	37	A A 60	36	G	50	41	A A 77	25	G	16	E	E	E	
28	E	26	27	21	E	27	29	35	37	A A 64	39	A A 54	46	A A 60	39	55	42	46	22	21	18	17	20	E	
29	E	E S 15	E S 15	E	E	22	30	37	A A 80	A A 79	A A 90	55	G	51	A A 89	36	54	31	30	28	33	28	27	20	
30	E	E	E	16	E	22	41	29	32	40	G	G	38	G	39	37	32	28	26	18	34	22	19	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	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	24	24	20	20	16	22	42	45	52	A A 62	48	49	49	46	46	50	46	45	40	35	31	28	28	28	
UQ	A A 54	36	25	21	20	26	A A 62	A A 54	A A 79	A A 83	A A 71	A A 70	A A 84	A A 60	A A 77	A A 70	55	A A 61	55	46	40	45	45	A A 55	
LQ	E	18	E	E	E	20	30	37	43	43	43	40	40	40	39	37	34	33	30	21	21	20	20	20	

JUN. 1985

FBES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1985

FMIN (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

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

JUN. 1985

FMIN (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

M(3000)F2 (0.01)

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

Station		KUBUNJI TOKYO Lat. 35 42.4 N Long 139 29.3 E Sweep 1 MHz to 20 MHz in 20sec in automatic operation																												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	A	F	S	F	F	H	A	A	A	A	A	310	295	275	270	280	A	A	A	J	S	S	U	S	U	S	U	S	S	
2	S	F	S	F	S	A	A	U	S	A	A	A	A	270	290	305	310	310	A	A	310	300	295	S	285	290	S	S		
3	F	A	F	F	F	335	A	A	A	A	A	310	285	A	A	A	A	300	305	305	A	310	A	290	F					
4	S	F	F	F	F	310	330	330	315	A	300	300	310	270	285	R	A	315	300	300	290	S	295	325	J	S	290	A		
5	A	A	A	A	A	320	A	A	A	A	A	G	300	295	285	290	300	300	A	310	310	290	S	S	A	A				
6	A	A	F	S	S	S	A	330	310	325	320	A	A	A	A	A	A	A	305	A	A	305	J	S	F	F				
7	S	F	S	S	S	290	310	330	330	320	A	295	315	295	285	295	280	290	305	300	A	290	S	290	S	310	S	280	S	
8	S	F	F	F	285	A	A	315	A	A	295	A	A	260	260	275	290	270	280	S	310	U	S	I	S	S	300	U	290	
9	F	S	F	S	S	305	315	305	320	A	A	A	A	A	A	A	A	310	310	A	A	280	A	A	J	S	310			
10	S	S	A	S	S	290	310	290	A	A	330	A	A	245	265	275	295	A	295	S	290	290	320	315	A	A				
11	A	S	A	F	300	320	A	290	310	310	A	270	A	A	A	A	300	290	300	305	310	S	S	A	S	280				
12	S	S	U	S	S	290	320	A	300	A	A	A	A	A	280	290	295	295	A	305	310	S	310	F	F	A				
13	F	S	S	F	F	290	305	330	325	310	290	A	A	A	A	J	R	300	300	300	315	310	320	S	280	S	270	A		
14	F	F	U	S	A	U	290	320	335	320	A	A	A	R	A	A	305	295	300	295	305	S	295	F	A	S				
15	F	F	F	F	I	S	A	A	310	S	R	355	320	325	A	300	285	295	A	A	A	A	300	A	F	F	A			
16	A	F	F	F	S	305	320	345	A	A	305	310	270	290	300	300	295	A	S	S	I	S	S	A	S	F				
17	F	F	F	F	290	305	330	A	A	A	A	A	A	A	A	295	A	310	315	305	300	295	S	280	J	S	300	S		
18	A	S	S	S	F	310	320	320	A	A	A	A	A	285	290	305	305	A	305	310	300	300	290	S	295	F				
19	F	S	S	S	S	300	330	A	A	320	325	A	315	A	310	A	A	A	315	305	A	305	300	295	F					
20	F	F	F	F	F	330	330	310	S	335	290	330	300	310	300	R	290	290	300	295	330	300	300	S	300	310	F			
21	S	F	S	S	F	S	300	320	310	315	A	305	A	275	295	305	310	310	A	300	290	S	S	S	S	A				
22	A	F	F	F	S	300	330	G	A	330	A	275	295	295	300	300	300	305	310	310	S	310	320	A	300	S	300	S		
23	S	A	S	F	F	290	315	A	325	325	A	270	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
24	A	S	S	S	S	300	340	A	320	325	305	310	285	310	295	A	295	305	300	S	S	A	A	A	280					
25	F	A	F	F	F	310	310	S	R	325	A	A	A	A	295	305	295	300	320	S	S	305	310	S	305	295				
26	A	S	S	F	S	320	335	A	A	320	330	A	A	270	300	280	280	S	S	S	S	S	S	S	295	285	285			
27	300	305	S	S	S	320	290	A	S	315	295	290	290	A	280	295	300	300	A	315	310	S	320	S	285	S	300	290	S	
28	S	300	315	300	300	320	300	330	S	R	A	320	A	300	A	275	285	S	S	S	S	S	S	S	300	300	290			
29	290	S	S	S	F	F	305	325	A	A	A	300	315	305	A	300	300	295	290	S	J	S	S	S	310	S	300	290	S	
30	S	S	F	S	S	S	J	S	290	330	320	290	280	R	280	300	305	300	305	300	310	320	S	S	S	S	S	S	S	
31	280	285	280	S	S	290	310	290	330	320	290	280	280	280	300	305	300	305	300	305	300	310	320	315	300	290	S	S	S	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
CNT	11	12	13	12	18	26	18	20	17	13	16	16	17	21	21	19	23	22	23	23	26	20	19	15						
MED	S	S	S	S	S	300	310	312	320	320	320	302	300	295	285	295	300	300	305	300	305	302	S	S	S	S	S	S	S	S
UQ	S	S	S	S	S	305	320	330	330	325	325	315	308	300	300	300	302	302	310	308	310	310	S	S	S	S	S	S	S	S
LQ	S	S	S	S	S	300	305	310	315	310	290	288	275	280	285	292	295	295	300	300	300	S	S	S	S	S	S	S	S	S

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M(3000)F2 (0.01)

IONOSPHERIC DATA

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M(3000)F1 (0.01)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	R 350	360	A	A	A	A	A	A	A					
2						A	A	A	A	A	A	A	A	360	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	A	A	A	A	A					
4						L 330	A	A	A	A	350	A	A	A	345	A	A	330	330					
5							A	A	A	A	340	A	R 340	A	340	335	A	A	A					
6					A	A	A		345	365	360	A	A	A	A	A	A	A	A					
7							A	A	A	A	A	A	355	A	A	A	340	A	A					
8							A	A	A	A	A	A	A	A	A	A	320	A	A					
9							L	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	A	A	A	A					
11							A	A	A	A	A	A	A	A	A	A	A	A	A					
12							A	A	A	A	A	A	A	A	340	345	340	330	A	A				
13							340	L 340	H 345	H 360	A	A	A	A	A	A	A	340	335	A				
14							L	A	A	A	A	A	A	A	A	A	A	A	L 325	L 330				
15						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
16						L	A	A	A	A	A	360	350	350	340	340	A	A	A					
17							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
18							A	340	A	A	A	A	A	A	340	A	A	A	A					
19							A	A	A	A	A	R 350	A	A	A	A	A	A	A	A				
20						L	L	340	A	A	360	360	370	A	A	360	340	A	A					
21					L 320	A	A	A	360	A	370	A	350	350	A	340	340	A	A					
22							345	A	A	A	A	360	355	A	350	340	345	350	A					
23						L	A	A	A	345	A	A	A	A	A	A	A	A	A	A				
24						L	A	A	A	A	A	350	330	350	360	A	A	330	330	L				
25							350	340	A	A	A	A	A	A	A	R 340	345	340	L					
26							A	A	A	A	A	A	A	350	A	A	320	A	A					
27							A	350	345	350	A	350	A	350	345	A	A	A	340					
28							340	340	340	A	A	A	A	A	A	A	A	A	L					
29						325	335	A	A	A	A	A	350	A	A	345	A	340	A					
30						L	A	350	335	360	360	365	R 350	340	345	340	340	350	L					
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						2	6	7	5	6	6	9	8	8	10	8	10	9	5					
MED						322	340	340	345	360	355	360	350	350	345	340	340	340	330	L				
UQ							345	345	345	360	360	360	355	350	350	342	340	340	340	L				
LQ							335	340	340	350	350	350	345	345	340	340	330	330	330	L				

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M(3000)F1 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

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H*F2 (KM)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							A	A	A	A	365	395	465	450	A	A	A	A	E A	E A					
2						A	A	255	A	A	A	A	505	360	310	295	320	A	A						
3							A	A	A	A	365	E A	A	A	A	A	330	E A	E A	E A					
4						300	265	280	A	340	360	315	455	450	A	E A	350	355	320						
5							A	A	A	A	G	365	405	430	350	320	310	A	E A	E A					
6					E A	A	250	305	275	270		A	A	A	A	A	A	295	A						
7						250	E A	330	A	375	305	360	415	365	365	345	290	290							
8							A	255	A	A	380	A	A	485	520	385	315	370	310						
9						310	275	A	A	A	A	A	A	A	A	E A	355	265	A						
10						E A	A	A	250	A	A	A	595	400	405	355	A	305	310						
11						E A	E A	335	330	A	460		A	A	A	A	E A	E A	E A						
12							A	E A	A	A	A	A	A	435	390	355	360	A	E A	E A					
13						295	255	275	340	410		A	A	A	A	A	320	305	265						
14						245	275	A	A	A	A	A	A	A	A	310	E A	345	300	310					
15						A	A	240	E A	290	310	A	385	415	E A	380	A	A	A	A	E A	E A			
16					280	245	250	A	A	370	345	450	405	375	360	335	A	285							
17						E A	A	A	A	A	A	A	A	A	345	A	E A	E A	E A	E A	285				
18						E A	295	A	A	A	A	A	440	405	365	350	A	325	E A	E A					
19						A	A	E A	265	A	415	A	A	320	A	A	A	E A	E A	E A	A				
20					240	235	325	265	A	300	380	345	E A	390	405	365	375	340	E A	E A					
21					345	315	275	320	310	A	370	A	435	355	310	340	300	A							
22						G	A	E A	A	430	375	410	375	375	355	325	305	295							
23					405	275	A	295	305	E A	480	A	A	A	A	A	A	A	A	A					
24					335	275	A	E A	310	365	345	415	400	435	A	370	320	275							
25						315	305	315	A	A	A	A	400	370	345	310	285	280							
26						A	A	295	265	A	A	A	340	335	350	315	295	280							
27						A	320	290	415	385	435	A	430	390	345	290	A	275							
28						350	255	355	A	320	A	360	A	370	340	320	285	270							
29					410	330	265	A	A	A	E A	320	370	A	335	A	320	295							
30						E A	355	285	335	405	450	440	455	370	330	330	330	300							
31						385	350	355	285	335	405	450	440	455	370	330	330	300							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						8	19	20	17	12	17	16	16	21	20	18	22	22	24	2					
MED						340	288	268	292	308	365	377	408	405	371	348	325	302	286	290					
UQ						395	326	298	315	332	385	428	445	435	398	355	340	325	302						
LQ						U	U	255	280	270	335	362	360	390	360	330	315	292	278						

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	280	275	265	E A 270	A	A	A	A	E A 240	210	A	A	A	A	A	A	A	230	255	250	255	255	
2	A	E A 325	E A 300	265	300	A	A	A	A	A	A	A	A	195	A	A	A	A	A	E A 285	260	E A 270	A	A	
3	300	A	E A 310	235	195	225	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 255	A	A	285	
4	A	270	260	270	270	240	E A 250	A	A	A	205	A	A	A	225	A	A	E A 255	E A 255	265	E A 270	210	A	A	
5	A	A	A	A	A	220	A	A	A	A	210	A	215	A	H 195	E A 250	A	A	A	E A 260	E A 265	E A 295	A	A	
6	A	A	225	E A 300	295	A	A	A	E A 280	200	210	A	A	A	A	A	A	A	A	A	E A 280	275	290	E A 355	
7	E A 315	E A 290	255	270	245	245	A	A	A	A	A	A	205	A	A	A	A	H 240	A	A	A	260	275	235	280
8	295	300	235	240	A	A	A	A	A	A	A	A	A	A	A	A	A	H 225	A	A	245	255	A	240	E A 310
9	E A 280	270	240	E A 315	265	240	255	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	250
10	255	A	A	260	285	255	A	A	A	A	A	A	A	A	A	A	A	A	A	A	265	270	E A 280	A	A
11	A	A	A	285	240	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	255	230	290	A	305
12	E A 315	E A 300	285	255	265	E A 260	A	A	A	A	A	A	A	E A 270	E A 260	E A 260	240	A	A	A	235	230	315	E A 355	A
13	305	275	245	270	265	250	H 255	H 230	A 235	H 190	A	A	A	A	A	A	220	220	A	A	245	220	285	335	A
14	E A 300	260	265	A	310	240	H 210	A	A	A	A	A	A	A	A	A	A	H 215	H 255	255	E A 305	310	A	310	
15	280	255	260	310	290	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 305	265	A	
16	A	290	E A 305	E A 325	295	255	A	A	A	A	A	210	210	H 220	H 230	E A 280	A	A	A	255	255	A	305	E A 330	
17	295	280	250	265	275	E A 265	A	A	A	A	A	A	A	A	A	A	A	A	A	A	280	E A 310	290	E A 345	
18	A	A	245	265	290	230	A	E A 250	A	A	A	A	A	A	A	A	A	A	A	A	E A 280	255	260	260	290
19	250	255	255	265	230	240	A	A	A	A	A	220	A	A	A	A	A	A	A	A	E A 305	275	265	A	
20	270	290	265	265	260	230	210	H 195	A	A	195	215	190	A	A	H 185	260	A	A	260	235	245	275	295	
21	245	250	E A 355	290	290	255	A	A	A	220	A	190	A	220	210	A	E A 280	E A 255	A	255	300	270	285	A	
22	A	265	285	290	285	240	H 250	A	A	A	A	210	E A 260	A	E A 250	H 220	235	215	A	255	245	A	E A 310	E A 310	
23	285	A	E A 330	E A 315	260	220	A	A	A	E A 275	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
24	A	E A 290	270	275	E A 295	225	A	A	A	A	A	E A 245	A	H 190	215	A	A	E A 255	A	235	A	A	A	E A 345	
25	280	A	280	240	265	250	240	240	A	A	A	A	A	A	A	E A 260	225	E A 250	E A 245	E A 270	250	260	255	E A 330	
26	A	E A 315	E A 315	265	210	195	A	A	A	A	A	A	A	205	A	A	E A 275	A	A	230	215	260	260	300	
27	290	245	220	270	245	235	A	250	H 205	220	A	220	A	225	210	A	A	A	A	235	H 250	195	265	270	295
28	290	E A 300	260	255	285	270	210	E A 250	235	A	A	A	A	A	A	A	A	A	A	255	255	220	235	275	285
29	300	290	250	265	260	265	245	A	A	A	A	A	225	A	A	E A 255	A	230	A	255	230	235	280	275	
30	285	275	255	295	270	240	A	205	H 205	210	195	190	H 210	H 210	E A 250	A	E A 240	240	240	250	235	E A 270	265	285	
31																									
CNT	19	21	27	28	28	26	9	7	5	6	6	9	7	8	9	7	10	9	6	22	26	23	20	20	
MED	285	270	255	268	266	240	U 228	U 222	U 220	210	204	210	210	212	218	E A 255	232	U 228	244	252	244	265	268	288	
UQ	296	E A 290	274	281	289	252	250	250	A 235	220	210	218	216	221	E A 250	E A 260	A 250	E A 255	255	258	262	282	286	E A 320	
LQ	280	265	250	265	260	230	210	218	H 205	200	195	210	208	200	210	U 210	225	220	238	245	230	254	260	285	

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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: **KUBUNJI TOKYO** Lat. $35^{\circ} 42.4' N$ Long. $139^{\circ} 29.3' E$ 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	105	105	A	A	A	A	A	A	105	105	110	120					
2						S	110	105	105	105	105	A	A	A	105	105	105	105	115					
3						S	110	105	105	105	105	105	105	105	105	A	A	A	A					
4						S	110	105	105	105	105	105	105	105	105	105	105	A	A					
5						S	110	105	105	105	105	105	105	A	A	A	A	A	A					
6						A	110	105	105	110	105	105	105	105	105	105	105	A	A					
7						S	110	105	105	105	105	105	100	A	A	A	105	110	115					
8						S	110	105	105	105	105	105	A	A	A	105	105	110	120					
9						S	A	105	105	105	105	105	105	105	105	A	A	E A 125	E A 120					
10						S	A	105	105	105	105	100	105	105	105	105	A	A	A					
11						A	A	A	A	A	105	105	100	100	105	105	110	110	115					
12						S	110	105	105	105	105	A	105	105	105	105	A	A	A					
13						A	A	A	105	105	105	105	105	105	105	A	A	A	A					
14						A	A	105	110	105	105	105	105	105	105	105	105	A	A					
15						E S 130	110	105	100	105	105	A	A	105	105	110	110	110	120				S	
16						125	110	105	105	A	A	A	A	105	105	105	105	110	115				S	
17						S	110	A	105	100	105	A	A	A	A	A	A	A	A				S	
18						A	105	105	105	105	105	A	A	A	105	105	115	110	115				S	
19						S	110	105	105	105	105	105	105	105	A	A	A	A	A				B	
20						S	A	105	105	105	A	A	105	105	105	105	105	105	115				S	
21						E S 125	105	105	105	105	105	105	A	A	A	A	E A 130	110	120				S	
22						S	105	105	105	105	105	105	105	105	105	105	100	105	110	115			S	
23						E S 120	110	105	105	105	100	100	A	A	A	A	A	A	A				S	
24						A	A	A	A	A	A	105	105	105	105	105	105	115	115				S	
25						S	A	A	A	A	105	105	105	105	A	A	A	A	E A 120	E A 120			S	
26						S	A	105	105	105	105	105	105	105	A	A	A	A	A				S	
27		S				S	110	105	105	105	105	105	105	105	105	105	105	105	110				S	
28						S	115	105	100	A	A	A	105	A	A	A	A	A	A				S	
29						S	110	105	105	105	A	105	105	105	105	105	105	E A 125	A				S	
30						S	110	110	105	105	110	110	105	105	105	A	A	A	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						4	21	25	27	24	24	21	21	20	19	17	17	17	17					
MED						E S 125	110	105	105	105	105	105	105	105	105	105	105	110	115					
UQ						126	110	105	105	105	105	105	105	105	105	105	105	A	120					
LQ						E S 122	110	105	105	105	105	105	105	105	105	105	105	110	115					

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H*E (KM)

IONOSPHERIC DATA

JUN. 1985

H*ES (KM)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	95	100	120	120	125	120	110	110	100	100	100	170	105	120	120	115	115	110	115	130	120	105	100
2	100	125	115	120	125	115	110	105	105	105	105	105	105	125	120	125	125	115	110	105	105	105	110	105
3	105	100	105	100	130	125	120	115	115	110	110	110	105	105	105	100	100	100	115	115	115	115	110	110
4	105	105	105	100	100	140	120	115	115	115	110	110	110	110	130	120	120	120	115	110	115	110	110	105
5	105	100	100	95	95	95	115	110	115	110	110	110	110	105	100	100	100	100	100	95	95	115	110	105
6	105	105	100	100	100	125	115	115	115	120	110	110	110	105	110	110	115	110	105	105	100	100	105	100
7	100	95	100	105	S	140	120	120	115	110	110	105	105	105	100	105	G	125	120	110	105	110	110	105
8	100	105	105	105	120	120	115	110	110	105	110	105	100	105	105	135	125	120	115	110	105	105	105	105
9	100	105	105	100	95	105	110	120	110	110	105	105	105	105	105	105	100	120	115	115	115	110	110	110
10	105	100	100	100	100	100	120	110	110	110	105	105	115	110	110	110	110	110	110	115	100	115	115	110
11	110	105	105	105	105	110	105	105	105	105	130	145	125	125	125	125	120	115	115	110	110	105	105	105
12	105	105	100	100	125	125	120	120	110	110	105	105	110	115	115	120	110	105	105	100	100	115	110	110
13	105	105	105	105	105	110	125	105	115	120	115	110	110	110	105	105	150	100	100	100	100	120	115	110
14	105	105	105	105	105	105	145	125	120	120	115	115	115	115	110	110	110	135	105	100	115	120	110	110
15	110	105	110	110	130	125	120	110	110	105	110	105	140	155	135	130	120	115	115	110	100	95	105	105
16	105	100	100	100	100	130	120	110	105	100	105	145	145	135	165	140	120	115	115	110	105	105	110	105
17	105	100	100	100	105	125	125	115	115	105	105	100	100	100	100	100	100	120	115	110	110	115	115	110
18	110	105	105	105	105	105	125	120	115	105	105	105	105	100	160	145	120	120	115	115	110	110	105	105
19	105	105	105	100	115	135	125	120	115	115	110	115	110	110	105	105	100	120	115	100	100	100	115	110
20	110	105	105	105	105	165	105	125	115	110	105	105	110	115	120	G	135	120	115	115	110	115	110	105
21	105	105	105	110	S	125	115	110	115	120	110	120	105	105	135	140	125	120	115	110	110	110	110	115
22	110	105	100	100	110	130	130	125	120	115	115	130	135	130	135	G	125	125	115	110	110	105	105	105
23	105	105	95	95	105	135	120	115	110	110	105	105	105	100	100	100	100	115	110	110	110	105	105	100
24	100	95	95	95	95	100	105	100	100	105	105	125	120	145	125	120	120	115	110	110	110	105	110	105
25	115	105	105	105	105	115	105	105	130	125	115	115	115	110	115	125	130	120	115	110	105	105	105	100
26	100	105	105	100	100	140	135	120	115	110	115	110	110	105	105	105	105	100	100	100	100	100	105	105
27	110	130	110	110	105	110	120	115	125	125	130	130	125	125	G	120	110	110	110	130	105	105	105	105
28	100	100	95	95	95	115	115	110	115	100	105	105	110	105	105	105	100	100	100	100	100	100	100	100
29	100	S	S	110	110	110	110	110	110	110	105	115	G	120	120	125	115	125	115	110	110	100	110	100
30	100	115	120	120	135	120	110	115	120	115	125	G	125	G	155	105	105	105	115	110	110	110	105	100
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	29	30	28	30	30	30	30	30	30	29	29	29	29	28	29	30	30	30	30	30	30	30
MED	105	105	105	102	105	122	120	115	115	110	110	110	110	110	115	115	115	115	115	110	108	108	110	105
UQ	105	105	105	105	118	130	120	120	115	115	115	115	120	120	125	125	120	120	115	110	110	115	110	110
LQ	100	100	100	100	100	110	110	110	110	105	105	105	105	105	105	105	105	110	110	105	100	105	105	105

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H*ES (KM)

IONOSPHERIC DATA

JUN. 1985

TYPES OF ES

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F4	F3	FF22	FF21	F2	C5	C3	C3	C3	L3	L3	L2	HL12	L2	CL31	C2	C4	C3	C4	FF52	F1	F2	F4	F5	
2	F3	FF16	FF22	FF21	FF23	CL52	C6	C4	C3	C3	C3	L3	L2	HL11	H1	H2	H3	C4	C5	F7	F6	F7	F7	F5	
3	FF22	F4	FF25	FF22	FF11	C4	C4	C4	C3	C3	C2	C2	C2	C2	C2	L3	L3	L3	CL33	FF32	FF33	FF43	F7	F7	
4	F6	F7	F2	F3	F3	H4	C3	C3	C3	C3	C2	C2	C2	C2	H1	H3	H2	HL22	CL33	F2	FF25	F2	F4	F4	
5	F5	F5	F4	F3	F3	L2	C3	C3	C3	C3	C2	C1	C1	L2	L1	L3	L3	L4	L4	F4	F3	FF22	F7	F2	
6	F4	F6	F5	F5	F2	CL62	C4	C2	C3	C1	C2	C3	C2	C2	C2	C3	C3	L3	L4	F4	F7	F7	F5	F6	
7	F7	F2	F7	F2	F1	H3	C3	C3	C2	C3	C3	C2	C2	L2	L3	L2		H6	C4	F4	F4	F6	F5	F5	
8	F2	F2	F3	F3	FF62	C3	C3	C4	C3	C2	C2	C3	L2	L2	L2	H2	H2	C4	C4	F5	F4	F4	F4	F5	
9	F6	F4	F3	F5	F4	L5	LL41	H4	C3	C3	C3	C2	C2	C3	C3	L3	L3	CL32	CL41	FF32	FF52	FF61	F7	F6	
10	F4	F5	F5	F3	F3	L3	CL52	C3	C3	C2	C2	C2	CC21	C2	C3	C3	CL32	CL31	CL42	FF41	F7	FF36	FF61	F4	
11	F5	F5	F4	F4	F7	L5	L4	L3	L3	L2	H3	H2	H2	H2	H3	H3	C3	C5	C4	F7	F7	F7	F7	F6	
12	F4	F7	F5	F3	F1	C4	C4	C3	C3	C2	C3	L2	C2	C1	C1	C2	L2	L3	L8	F4	F3	FF25	F6	F7	
13	F2	F3	F2	F5	F6	L3	CL22	L2	C2	C1	C2	C2	C2	C2	C3	L2	HL12	LH31	L4	F4	F4	FF42	F7	F4	
14	F4	F3	F4	F5	F3	L3	HL23	H2	C3	H3	C2	C2	C2	C2	C3	C2	C3	HL22	L5	F4	FF24	F6	F4	F5	
15	F5	F3	F7	F7	F2	C3	C5	C3	C2	C2	C2	L3	HL21	H2	H2	H3	C5	C4	C4	C6	F3	F2	FF13	FF31	
16	F5	F4	F3	F3	F2	CL52	C4	C4	C3	L2	L2	HL12	HL11	H1	H1	H1	C2	C4	C4	L7	FF62	FF53	F7	F7	
17	F7	F5	F5	F6	F4	H5	H4	CL42	C3	C3	C3	L3	L3	L3	L3	L4	L4	HL42	CL54	CL41	FF42	FF71	F7	F6	
18	F4	F6	F2	F6	F5	L4	H3	H3	C3	C2	C2	L2	L2	L1	H1	H1	CL52	CL41	C4	C6	F4	FF31	F4	F4	
19	F3	F2	F2	F5	F2	H3	H3	H3	C2	C3	C3	C2	C3	C2	L3	L3	L4	CL45	CL35	L7	F7	F6	FF22	FF52	
20	F3	F4	F3	F2	F2	H1	L3	H2	C2	C2	L2	L1	C2	C2	C2		H1	H4	C4	C2	F7	F6	F6	F6	
21	F5	F2	F7	F3	F1	C6	C3	C2	C2	C2	C2	C1	L2	L2	HL11	HL12	HL22	C2	C4	C3	F4	F7	F7	F7	
22	F5	F4	F2	F6	F2	H5	H4	H3	H4	C3	C2	H1	H1	H1	H2		H2	C2	C4	C4	F5	F5	F6	F5	
23	FF22	FF43	F6	F5	FF31	HL21	C4	C4	C3	C2	C3	C3	L3	L3	L3	L3	L3	CL45	CL45	CL44	FF44	F4	F4	F5	
24	F3	F4	F3	F5	F3	L2	LL31	L3	L2	L3	L2	H1	H2	H1	H1	H3	C2	CL41	C4	LL62	F7	F5	FF42	FF72	
25	FF22	F5	F5	F2	F2	L3	L4	LH22	HL32	HL21	C3	C3	C2	C2	CL22	HL22	HL32	CL32	CL41	L3	F7	F6	F6	F6	
26	F3	FF23	FF23	F4	F2	HCL22	HL32	C3	C2	C2	C2	C2	C2	C1	L2	L2	L3	L4	L5	L4	F7	F3	FF22	FF21	
27	FF42	HLK11	F1	F2	F5	L2	C4	C2	C1	H2	H2	H1	C2	C1		H2	C2	C3	C3	C1	F1	F2	F1	FF22	
28	F2	F3	F4	F4	F1	C5	C5	C3	C2	L3	L2	L2	C2	L2	L2	L3	L3	L4	L2	L3	F3	F3	F5	F1	
29	F2			FF22	F3	C5	C4	C4	C2	C3	L2	C2		H2	C3	H2	C3	HL23	CL22	CL32	F5	F4	FF12	F3	
30	F2	FF22	FF11	FF41	F1	C3	C3	C2	C2	C2	C1		H1		HC11	L2	L3	L3	C3	L5	F4	F4	F4	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																									

JUN. 1985

TYPES OF ES

IONOSPHERIC DATA

JUN. 1985

FXI (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12.1' N	Long 130° 37.1' E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	38	X 31	0 S 37	X 35															X 93	X 84	75	U S 78
2	U S 74	S	U S 72	S	63	S 57															X 79	X 70	X 65	S 57
3	X 64	X 63	X 66	X 54	X 40	A															X 59	X 57	53	A
4	A	A	A	45	A	X 39															H 84	X 79	A	A
5	A	A	A	A	35	41															X 66	S 62	64	65
6	75	67	59	A	52	X 50															A	76	70	70
7	64	62	57	56	55	X 52															X 78	X 70	X 66	X 65
8	67	66	70	A	X 30	X 34															X 82	X 62	A	79
9	68	56	53	53	46	X 55															X 73	X 77	X 65	X 60
10	U S 69	A	67	60	58	S 51	59														X 79	S 73	U S 63	65
11	65	60	U S 59	S 57	62	X 47															U S 72	U S 60	U S 59	U S 59
12	63	60	U S 61	50	49	46															S 69	X 65	S 68	S 67
13	70	62	62	55	55	U S 52															A	S 61	S	58
14	A	55	S 58	U S 45	46	45															U S 79	U S 64	U S 60	64
15	60	S	U S 55	60	51	S 46															X 71	X 67	X 66	U S 59
16	U S 59	A	U S 75	C	58	60															X 85	X 76	U S 67	S 66
17	S	S 66	61	S 56	S	X 45															X 73	75	S	75
18	X 58	S	S	S	54	51	51								70						X 69	U S 63	X 61	S
19	S	S	73	X 51	X 35	X 35															X 78	X 67	X 63	U S 63
20	61	60	S	X 46	46	49															X 84	X 70	X 52	X 55
21	U S 54	51	46	0 S 48	A	36															A	U S 60	63	X 56
22	0 S 51	64	X 50	62	X 49	S 43															X 71	X 66	S 61	X 46
23	X 43	X 42	45	X 38	X 35	X 36															S 51	52	58	A
24	A	A	A	A	A	A															X 70	X 40	X 37	U S 38
25	40	44	35	40	35	36															R 69	S 53	X 48	S 45
26	43	S	S	35	35	35															U S 75	U S 55	X 56	X 56
27	X 54	U S 59	X 45	A	U S 32	X 33															U S 59	X 56	U S 46	U S 55
28	U S 53	U S 54	56	45	43	X 39															X 69	X 57	S 47	S 45
29	S 45	S 44	46	X 41	0 S 40	S 41															X 81	62	60	X 56
30	57	55	55	S	U S 45	X 44															S 69	S 61	S	59
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	19	24	21	26	28	2								1						27	30	25	26
MED	60	60	58	50	46	44	55								70						X 73	64	61	59
UQ	66	62	64	56	54	50															X 79	X 70	65	65
LQ	54	54	48	45	35	X 36															X 69	S 60	56	56

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FXI (0.1 MHz)

IONOSPHERIC DATA

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F0F2 (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 24sec in automatic operation																												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23												
1	A	A	F	S	S		A	A	A		48	53	55	58	R	65	82	82	85	86	R	S	87	78	F	U	S	72								
2	S	S	J	S	F	J	S																													
3	58	57	60	48	34		A	50	56	A	A	A	A	A	A	60	64	73	79		A	75	53	51	F	A										
4	A	A	A	F	A			33	47	53	55	A	A	63	A	A	56	60	60	59	64	H	78	73	A	A										
5	A	A	A	A	F			35	42	53	A	A	A	54	62	76	86	90	84	86	84	67	60	S	F	F	54									
6	F	F	F	F	F			44	55	51	62	A	A	A	46	50	58	A	A	A	A	A	A	A	F	F	F									
7	F	F	F	F	F			46	49	A	A	A	A	58	69	66	77	A	A		83	85	76	72	64	60	59									
8	F	F	F	F	F			24	28	53	62	A	A	A	52	A	56	64	75	71	86	90	76	56	A	F										
9	F	F	F	F	F			36	49	53	59	70	A	A	50	49	54	60	66	66	70	63	61	67	71	59	54									
10	U	S	A	F	F	U	S	45	49	64	69	A	E	G	48	A	A	87	98	89	88	R	A	S	67	58	U	S	54							
11	F	F	J	S	J	A	F																													
12	F	F	U	S	U	F	U	41	35	41	57	68	A	A	56	57	65	70	78	85	92	90	81	63	59	U	S	61								
13	F	F	F	F	F	U	S	46	56	68	54	52	56	A	A	A	A	A	79	75	70	A	A	S	I	S	F									
14	A	F	U	S	U	S	F	35	52	51	56	61	A	A	A	68	A	84	84	A	85	85	U	S	73	U	S	55	F							
15	F	S	U	S	F	F	U	39	49	A	A	A	A	A	55	56	60	A	A	75	83	77	65	U	S	61	60	U	S	53						
16	U	S	A	U	S	I	C	F	F	U	S	52	A	A	R	54	53	55	54	57	62	69	81	84	82	79	70	U	S	J	S	60				
17	S	J	S	F	J	S	S	39	49	A	A	A	A	59	A	59	59	A	72	65	62	R	A	67	65	F	S	F								
18	J	A	S	S	S	F	F																													
19	S	S	F		45	29	30	40	49	65	58	A	A	A	60	A	H	61	C	C	C	C	80	S	72	S	61	58	57							
20	F	F	S		40	F	F																													
21	U	S	F	F	S	A	F																													
22	45	F	J	S	F	43	J	S	A	A	53	A	60	55	A	60	J	R	63	67	75	79	77	75	65	60	S	55	S	40						
23	38	J	S	F		32	29	30	46	60	54	A	51	45	58	A	A	A	A	91	97	A	J	S	45	F	F	A								
24	A	A	A	A	A	A																														
25	F	U	F	F	F	F																														
26	U	F	S	S	F	F	F	A	R	53	A	A	A	R	55	59	66	77	90	95	98	103	S	69	J	S	49	50	50							
27	48	J	S	39	A	U	S	26	27	43	51	R	47	46	44	46	U	W	51	51	62	68	77	U	H	78	U	R	58	U	S	50	J	S	49	
28	S	J	S	F	F	U	F	33	48	H	49	U	H	50	53	48	U	R	54	61	65	77	85	80	74	67	63	51	41	39						
29	S	U	S	F		35	34	35	J	S	50	57	45	48	52	A	58	62	R	71	65	U	H	69	63	67	77	75	55	F	F	S	50			
30	F	F	F	S	U	S	39	38	43	50	53	64	50	47	E	G	44	52	59	65	R	63	62	61	67	S	S	S	S	F						
31																																				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23												
CNT	13	8	11	11	12	22	26	25	19	13	16	14	18	23	26	23	25	26	27	25	27	28	20	20												
MED	48	50	53	42	33	36	48	56	54	53	52	54	56	59	62	67	73	75	77	75	67	58	55	52												
UQ	S	S	S		38	44	52	60	64	58	55	56	58	64	70	78	84	83	84	81	73	64	60	56												
LQ	45	37	49	37	29	33	43	51	52	48	50	48	52	54	59	64	69	69	64	67	63	54	48	49												

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F0F2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

FOF1 (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31° 12' 1" N	Long	130° 37' 1" E	Sweep	1	MHz to	25	MHz in	24sec in	automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	L	A	A	A	A	410	A	A	A	L	A				
2							A	A	L	A	A	A	A	A	A	420	420	390	A	A				
3							L	A	A	A	A	A	A	A	A	L	430	A	A	A	A			
4								L	A	A	A	A	A	A	A	A	A	A	A	L	L			
5							A	A	A	A	A	L	L	A	A	A	A	A	A	A				
6							L	A	A	A	A	A	L	450	450	A	A	A	A	A				
7								A	A	A	A	A	L	450	A	A	A	A	L	400	A			
8							A	A	A	A	A	A	A	450	A	A	A	A	A	A	A			
9							L	L	A	A	A	L	L	450	450	440	A	A	A					
10								A	A	A	480	A	A	A	A	A	440	A	A	A	A			
11								L	U L	U L	440	A	450	450	A	A	A	A	A					
12								390	A	A	A	450	450	A	450	430	420	400	A					
13							L	L	420	430	A	A	A	A	A	A	A	A	L	A				
14								A	A	U L	440	A	A	A	A	A	A	A	A					
15							A	A	A	A	A	A	A	A	A	A	A	A	A					
16									A	A	A	460	450	450	440	420	410	390	A					
17							A	A	A	A	A	A	A	A	A	A	410	A	A	A				
18							A	A	A	A	440	A	A	A	A	420	410	390	L	L				
19								U L	A	A	A	A	A	A	A	C	C	C	C	A				
20							U L	A	A	A	A	A	A	A	420	420	A	A	A	A				
21							L	L	A	A	A	A	A	430	420	420	A	390	350	A				
22							A	A	A	A	A	A	A	440	430	A	A	380	350	A				
23							L	L	A	A	A	420	A	A	A	A	A	A	A	A				
24							L	L	400	440	430	A	A	440	430	410	400	A	A					
25								370	380	410	410	A	A	420	410	A	A	380	340	L				
26							A	360	A	A	A	A	A	430	430	A	A	A	A					
27							U L	U L	U L	420	420	A	420	420	410	390	A	A						
28							U L	A	H	420	420	A	A	A	400	400	370	A						
29								L	430	420	A	430	430	420	420	H	410	380	U L					
30							L	460	400	410	430	430	440	420	A	420	410	490	340	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							3	7	8	9	9	7	10	13	12	13	10	11	6					
MED							U L	370	400	430	430	440	450	440	425	420	410	390	350					
UQ							U L	390	410	430	440	450	L	450	435	420	410	395	L					
LQ							U L	315	365	385	410	420	425	440	430	420	420	400	380	340				

JUN. 1985

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1985

FOE (0.01 MHZ)

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

Station	YAMAGAWA				Lat. 31 12.1 N	Long 130 37.1 E	Sweep 1	MHz to 25 MHz in 24sec in automatic operation																
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	A	A	A	R	R	A	S				
2							170	235	285	295	A	A	A	A	A	H	R	250	190	S				
3							S	245	285	A	A	R	340	340	325	305	A	A	275	A	S			
4							S	245	295	A	A	A	A	A	A	A	305	270	A	S				
5							S	R	R	A	A	A	A	A	A	A	A	A	A	S				
6							R	175	240	290	A	A	A	340	340	330	325	A	A	A	S			
7							S	250	290	R	A	A	A	A	A	A	A	280	225	S				
8							195	A	A	A	A	A	A	A	A	340	325	A	A	A	S			
9							S	A	A	A	A	A	340	330	325	320	320	A	A	A	S			
10							A	A	285	310	320	325	325	A	A	A	320	300	H	270	225	S		
11							S	A	270	A	A	A	A	350	345	320	300	265	220	S				
12							A	H	240	300	305	A	A	A	A	A	A	A	220	S				
13							H	195	245	A	A	350	350	350	340	A	300	A	A	A	S			
14							A	A	300	A	340	A	A	A	A	A	A	A	A	A	S			
15							S	A	300	A	320	A	A	A	A	350	330	305	275	220	S			
16							175	240	280	305	A	A	H	360	360	A	330	310	A	A	A			
17							200	250	295	305	335	A	A	A	A	A	A	A	A	A	S			
18							200	250	A	A	A	A	A	A	A	A	A	305	255	A	S			
19							185	255	A	A	335	A	A	335	320	C	C	C	C	S				
20							H	R	205	295	330	D	R	315	340	A	A	A	R	R	265	215	S	
21							U	R	185	250	A	U	R	300	A	A	A	A	A	A	S			
22							195	245	290	300	R	R	R	340	345	335	A	320	H	R	215	S		
23							S	250	285	305	A	A	A	335	335	315	A	A	A	A	A			
24							S	250	285	A	A	A	A	A	350	335	320	295	A	A	S			
25							R	190	250	275	A	A	A	A	350	A	A	A	A	A	A			
26							S	250	A	A	A	A	A	335	A	A	A	A	A	A	A			
27							175	A	290	310	330	A	A	A	A	A	310	295	260	A	S			
28							180	A	A	A	A	A	A	A	360	330	305	A	A	A	S			
29							A	230	A	A	A	A	A	A	A	A	330	310	A	A	S			
30							A	A	A	305	A	A	A	A	345	A	A	A	A	A	S			
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							14	20	19	11	9	6	9	13	10	15	13	12	8					
MED							188	248	290	305	332	340	340	340	330	320	300	268	220					
UQ							195	250	295	308	335	340	345	350	340	328	305	275	222					
LQ							175	240	285	302	325	340	335	335	320	320	295	258	215					

JUN. 1985

FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1985

FOES (0.1 MHZ)

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

Station	YAMAGAWA																								
Lat.	31 12.1 N												Long130 37.1 E												
Sweep 1 MHz to 25 MHz in 24sec in automatic operation																									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J A 51	J A 50	25	J A 64	J A 53	J A 63	J A 64	J A 81	J A 104	J A 84	J A 58	J A 67	J A 54	J A 86	J A 66	J A 56	J A 87	J A 163	J A 102	J A 52	J A 41	J A 51	J A 85	J A 75	
2	J A 74	J A 38	J A 64	J A 39	J A 59	J A 53	J A 48	J A 73	J A 78	J A 64	J A 120	J A 106	J A 109	J A 61	J A 57	G	31	33	44	J A 36	J A 74	J A 52	J A 30	J A 18	
3	J A 28	E S 16	E S 16	E S 16	E S 16	J A 45	J A 41	J A 57	J A 90	J A 85	J A 78	J A 87	J A 80	J A 79	J A 59	J A 40	J A 51	J A 64	J A 85	J A 62	J A 53	J A 31	J A 41	J A 73	
4	J A 55	J A 43	J A 76	J A 88	J A 64	J A 30	J A 25	J A 42	J A 56	J A 73	J A 65	J A 69	J A 70	J A 57	J A 56	J A 54	J A 54	J A 63	J A 52	J A 38	J A 52	J A 71	J A 77	J A 90	
5	J A 108	J A 140	J A 78	J A 53	J A 25	J A 64	J A 39	J A 47	J A 104	J A 111	J A 88	J A 42	38	J A 82	J A 66	J A 62	J A 71	J A 47	J A 44	J A 54	J A 44	J A 31	J A 51	J A 79	
6	J A 84	J A 77	J A 52	J A 70	J A 64	J A 50	J A 36	J A 47	J A 64	J A 147	J A 128	J A 240	J A 47	43	J A 65	J A 67	J A 121	J A 179	J A 126	J A 136	J A 129	J A 86	J A 74	J A 40	
7	J A 44	J A 36	J A 34	J A 41	J A 25	26	48	J A 74	J A 61	J A 87	J A 77	J A 58	J A 48	J A 66	J A 85	J A 143	J A 111	J A 39	J A 75	J A 64	J A 51	J A 51	J A 33	J A 61	
8	J A 51	J A 36	J A 32	J A 36	J A 20	J A 27	J A 41	J A 61	J A 101	J A 146	J A 128	J A 137	J A 50	J A 106	J A 50	J A 60	J A 69	J A 68	J A 53	J A 62	J A 137	J A 84	J A 84	J A 51	
9	J A 64	J A 73	J A 54	J A 45	J A 33	J A 34	J A 27	J A 36	J A 65	J A 88	J A 148	J A 44	G	G	40	J A 49	J A 64	J A 69	J A 54	J A 51	J A 45	J A 52	J A 52	J A 41	
10	J A 78	79	J A 83	71	J A 46	J A 60	J A 84	J A 86	J A 54	J A 87	J A 161	J A 198	J A 120	J A 159	J A 73	44	J A 90	J A 99	J A 86	J A 93	60	J A 54	83	J A 70	
11	J A 60	J A 84	J A 64	J A 66	78	60	J A 48	J A 34	J A 35	J A 40	J A 44	J A 54	39	37	46	J A 54	J A 67	J A 91	J A 64	J A 58	J A 63	J A 37	J A 52	J A 86	
12	J A 54	J A 39	J A 40	J A 50	J A 29	J A 29	J A 29	34	J A 62	J A 144	J A 96	J A 90	J A 43	J A 62	J A 49	J A 54	J A 53	J A 38	J A 53	J A 39	J A 48	J A 35	J A 52	J A 32	
13	J A 42	J A 45	39	36	21	22	30	28	J A 42	J A 38	J A 61	J A 89	J A 92	J A 103	J A 117	J A 114	J A 136	J A 82	J A 85	J A 71	96	J A 38	J A 64	J A 41	
14	J A 61	J A 50	J A 90	J A 53	J A 21	J A 25	J A 38	J A 48	J A 62	81	J A 64	J A 74	J A 101	J A 111	J A 96	J A 82	J A 76	J A 107	J A 50	J A 31	J A 102	J A 85	J A 83	J A 52	
15	59	J A 82	J A 65	J A 53	J A 53	J A 80	J A 76	137	J A 84	J A 106	J A 159	J A 61	J A 53	J A 72	J A 64	J A 74	J A 72	J A 70	J A 59	J A 83	60	59	J A 84	J A 83	
16	84	J A 77	J A 158	C	J A 23	E S 16	J A 50	J A 53	J A 85	J A 127	J A 182	J A 84	44	40	35	41	J A 48	38	60	76	J A 64	J A 52	J A 49	J A 41	
17	J A 39	J A 33	J A 51	J A 30	J A 25	J A 61	J A 41	J A 64	J A 86	J A 99	J A 79	J A 66	J A 142	J A 63	J A 56	J A 144	47	J A 69	J A 47	J A 68	J A 91	J A 78	J A 50	J A 84	
18	J A 74	J A 64	J A 39	J A 84	J A 29	17	J A 39	J A 52	J A 61	J A 72	J A 56	J A 68	J A 72	J A 54	J A 46	J A 42	J A 48	35	25	23	E S 16	J A 26	J A 30	J A 30	
19	J A 36	J A 46	J A 25	E S 16	21	J A 19	24	32	J A 54	J A 59	J A 100	J A 104	J A 111	J A 129	J A 54	C	C	C	C	J A 47	J A 45	J A 66	J A 41	J A 65	
20	J A 33	J A 29	J A 24	J A 74	J A 62	J A 23	32	J A 71	J A 90	J A 85	J A 78	J A 97	J A 103	J A 59	44	39	41	J A 55	J A 44	J A 50	J A 50	J A 70	J A 65	J A 26	
21	J A 34	J A 36	J A 52	J A 54	J A 58	J A 83	J A 27	J A 65	J A 84	J A 138	J A 85	J A 140	J A 66	J A 43	J A 52	J A 48	J A 69	J A 33	J A 35	J A 48	J A 69	J A 50	J A 76	J A 63	
22	J A 76	J A 41	J A 37	J A 41	J A 64	E S 16	J A 49	J A 137	J A 87	J A 110	J A 85	J A 56	J A 88	J A 98	40	49	51	36	J A 36	J A 65	J A 54	J A 37	J A 32	J A 62	
23	J A 34	J A 30	J A 32	J A 29	J A 30	J A 36	29	J A 32	J A 54	J A 79	J A 50	J A 84	J A 55	J A 74	J A 87	J A 146	J A 110	J A 128	J A 54	J A 90	J A 40	J A 39	J A 44	J A 73	
24	J A 65	J A 65	J A 64	J A 72	J A 87	53	J A 30	J A 41	J A 65	J A 51	62	J A 60	J A 100	39	43	38	J A 40	J A 43	J A 56	J A 46	J A 25	22	J A 26	J A 25	
25	J A 30	J A 41	J A 30	J A 18	J A 22	23	J A 26	33	J A 50	J A 55	J A 47	J A 50	J A 83	J A 79	37	J A 67	J A 52	J A 44	J A 39	J A 30	20	J A 21	J A 18	J A 17	
26	J A 35	J A 42	J A 51	J A 44	J A 41	J A 53	J A 61	J A 45	J A 80	J A 93	J A 83	J A 55	J A 54	J A 90	J A 58	J A 75	J A 110	J A 88	J A 54	J A 87	J A 144	J A 37	J A 34	J A 30	
27	17	J A 36	J A 25	J A 62	J A 69	J A 53	J A 58	60	35	37	42	J A 62	J A 90	J A 63	J A 35	37	35	J A 54	J A 123	J A 77	J A 35	J A 41	J A 24	17	
28	24	J A 21	J A 21	24	17	21	29	J A 41	J A 42	J A 50	52	J A 60	J A 75	41	54	37	J A 48	J A 40	J A 152	J A 50	J A 40	J A 30	J A 17	J A 20	
29	18	J A 40	J A 38	J A 61	J A 62	24	35	J A 51	39	J A 77	90	J A 96	J A 70	J A 60	42	G	41	J A 61	J A 86	J A 54	J A 65	J A 51	J A 33	J A 33	
30	J A 25	J A 29	J A 25	J A 29	J A 40	28	50	43	51	J A 45	J A 43	43	42	42	J A 52	J A 42	J A 46	40	J A 78	J A 51	J A 30	J A 30	J A 89	48	
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	29	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	
MED	J A 51	J A 42	J A 40	J A 50	J A 36	J A 32	J A 39	J A 50	J A 63	J A 84	J A 78	J A 68	J A 70	J A 63	J A 54	J A 54	J A 54	J A 61	J A 54	J A 54	J A 52	J A 50	J A 50	J A 50	
UQ	J A 65	J A 65	J A 64	J A 64	J A 62	J A 53	J A 49	J A 65	J A 85	J A 106	J A 100	J A 96	J A 92	J A 86	J A 65	J A 67	J A 76	J A 82	J A 85	J A 71	J A 69	J A 59	J A 76	J A 73	
LQ	J A 34	J A 36	J A 30	J A 36	J A 23	23	J A 29	J A 41	J A 54	J A 59	J A 58	J A 58	J A 48	43	44	41	J A 48	J A 40	J A 47	J A 47	J A 41	J A 35	J A 33	J A 30	

JUN. 1985

FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1985

FBES (0.1 MHz)

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

Station		YAMAGAWA				Lat.	31 12.1 N				Long	130 37.1 E				Sweep	1 MHz to 25 MHz				in 24sec in automatic operation					
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		A 51	A 50	E	E	17	E	A 64	A 81	A 104	39	45	50	46	51	38	47	69	40	25	38	23	29	53	60	
2		46	37	25	20	20	17	36	40	34	44	45	A 106	45	55	55	G	31	33	37	25	65	29	23	18	
3		E	E S 16	E S 16	E S 16	E S 16	A 45	21	52	A 90	A 85	A 78	A 87	A 80	A 79	50	36	47	56	A 85	61	20	E	E	A 73	
4		A 55	A 43	A 76	24	A 64	E	24	36	53	A 73	A 65	57	A 70	A 57	A 56	46	49	42	26	17	E	53	A 77	A 90	
5		A 108	A 140	A 78	A 53	E	19	34	45	A 104	A 111	A 88	38	37	64	54	48	67	41	42	44	29	25	20	E	
6		37	29	39	A 70	25	20	25	45	54	A 147	A 128	A 240	43	43	55	A 67	A 121	A 179	A 126	A 136	A 129	32	E	25	
7		E	29	31	20	19	18	40	A 74	A 61	A 87	A 77	53	41	49	71	A 143	A 111	36	73	61	42	43	E	40	
8		45	E	23	A 36	E	20	40	54	A 101	A 146	A 128	A 137	37	A 106	47	45	57	67	44	50	54	52	A 84	41	
9		36	26	E	35	22	E	21	28	50	A 88	A 148	38	G	G	39	47	58	67	50	42	32	18	40	40	
10		58	A 79	54	33	35	19	43	41	41	A 87	37	A 198	A 120	A 159	56	39	69	71	86	A 93	58	51	45	21	
11		27	43	45	56	25	27	35	32	33	33	42	50	38	37	45	53	63	A 91	47	57	34	30	E	E	
12		28	24	30	36	19	21	26	33	50	A 144	A 96	41	37	46	39	38	36	33	47	38	30	24	23	18	
13		E	E	E	19	E	E	G	27	35	34	49	A 89	A 92	A 103	A 117	A 114	47	63	37	A 71	A 96	33	E	20	
14		A 61	E	E	18	E	E	35	44	49	40	A 64	A 74	A 101	66	A 96	61	71	A 107	39	29	64	25	21	E	
15		18	18	42	26	28	25	45	A 137	A 84	A 106	A 159	A 61	50	52	51	A 74	A 72	67	58	75	57	55	28	29	
16		E	A 77	36	C	E	E S 16	33	49	A 85	A 127	47	41	41	G	35	37	39	36	47	51	38	33	34	23	
17		30	23	20	24	21	26	34	A 64	A 86	A 99	A 79	45	A 142	46	50	A 144	36	53	44	A 68	53	46	33	50	
18		A	29	24	19	25	E	37	40	58	60	44	A 68	A 72	52	45	40	40	34	25	22	E S 16	18	24	18	
19		25	21	E	E S 16	E	E	24	31	46	42	A 100	A 104	58	A 129	46	C	C	C	C	42	41	47	39	28	
20		17	E	19	20	17	E	23	53	A 90	A 85	A 78	A 97	A 103	47	37	G	40	46	41	46	36	56	E	E	
21		E	E	E	E	A 58	E	23	33	A 84	A 138	43	A 140	A 66	37	37	41	60	27	30	43	A 69	20	32	20	
22		E	E	17	19	E	E S 16	A 49	A 137	51	A 110	55	47	A 88	37	38	48	51	30	31	63	34	36	E	28	
23		26	19	E	E	E	17	29	30	41	A 79	50	41	55	A 74	A 87	A 146	A 110	68	51	A 90	30	21	25	A 73	
24		A 65	A 65	A 64	A 72	A 87	A 53	24	32	36	43	39	A 60	A 100	37	41	37	36	42	45	43	24	E	19	E	
25		E	20	E	E	E	E	G	G	33	39	36	A 50	A 83	36	G	43	42	33	24	17	E	18	E	E	
26		19	21	20	23	20	19	A 61	35	A 80	A 93	A 83	42	44	36	39	56	57	63	49	67	45	35	E	20	
27		E	31	25	A 62	18	E	26	20	G	36	G	41	45	36	33	36	33	53	64	36	20	E	E	E	
28		19	E	17	E	E	E	24	39	32	34	41	46	50	G	43	34	34	33	48	22	26	17	E	19	
29		E	E	E	17	29	E	27	45	33	38	38	A 96	36	35	37	G	32	35	33	23	46	29	E	E	
30		E	E	E	E	E	E	25	28	34	39	34	37	38	37	43	34	32	35	23	23	21	23	40	28	
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	29	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	
MED		26	22	20	20	18	16	28	40	50	A 82	52	55	50	46	45	45	49	42	44	44	35	29	22	20	
UQ		46	37	36	35	25	20	37	52	A 84	A 106	A 83	A 96	A 83	64	55	56	67	67	50	63	54	43	34	40	
LQ		E	E	E	16	E	E	24	32	35	39	42	42	41	37	38	37	36	35	33	29	24	20	E	E	

JUN. 1985

FBES (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 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 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	16	15	16	20	20	20	22	20	20	16	15	12	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	15	16	16	17	20	18	20	20	16	16	15	15	E S 16	E S 16	E S 16	E S 16	E S 16
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	17	20	20	18	18	16	16	13	E S 15	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 15	E S 16	E S 16	16	16	17	17	21	20	21	18	16	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	20	19	19	21	19	17	21	16	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	20	21	21	19	20	20	16	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	16	16	17	19	19	22	18	18	17	16	E S 16	E S 15	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	16	17	21	22	24	22	18	18	18	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
9	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	18	20	19	20	20	19	16	16	16	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	14	E S 16	E S 15	E S 16	E S 16	16	17	17	21	21	20	21	21	17	16	16	13	E S 15	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	16	16	17	20	19	25	21	20	17	17	17	E S 15	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	16	16	17	19	20	23	21	21	20	17	16	14	E S 16	E S 16	E S 15	E S 16	E S 16
13	E S 16	E S 15	E S 16	E S 15	E S 16	E S 15	E S 16	12	16	16	19	21	21	22	20	18	16	16	14	E S 16	E S 16	E S 16	E S 16	E S 16
14	E S 16	E S 16	E S 16	13	E S 15	E S 15	E S 16	16	16	18	19	21	23	21	23	21	16	16	16	14	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 15	E S 15	E S 16	14	E S 16	E S 16	15	16	16	19	18	23	23	25	18	17	15	13	16	E S 16	E S 16	E S 16	E S 16
16	E S 16	E S 16	E S 16	C	E S 16	E S 16	E S 16	16	16	16	19	21	22	20	21	17	16	14	12	14	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	17	17	20	19	19	18	16	14	15	E S 16	E S 16	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	16	17	21	21	21	20	19	16	16	15	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	16	15	16	19	20	E C 20	21	18	C	C	C	C	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	12	15	16	18	20	20	18	20	17	16	15	15	E S 16	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	16	20	18	20	19	17	17	15	13	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	15	18	19	20	20	20	17	19	17	16	12	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	14	16	16	16	20	21	18	20	18	15	13	16	14	E S 16	E S 16	E S 16	E S 16
24	E S 16	E S 15	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	17	19	20	20	17	19	16	13	15	E S 16	E S 15	E S 16	E S 16	E S 15
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	16	21	17	19	19	17	19	16	E S 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 15	E S 16	E S 15	E S 16	E S 16	14	15	17	17	19	20	19	16	16	16	15	15	14	E S 16	E S 16	E S 15	E S 16
27	E S 16	E S 15	E S 15	E S 15	E S 16	E S 16	E S 16	15	14	16	16	19	19	21	20	17	16	15	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	16	16	16	16	17	18	19	17	17	16	16	16	15	E S 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 15	E S 16	E S 16	E S 16	E S 16	15	16	16	16	17	17	18	17	16	15	14	E S 16	E S 15	E S 16	E S 16	E S 16
30	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	12	16	17	17	19	20	20	17	17	16	16	19	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	29	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29	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	16	16	16	18	20	20	20	20	18	16	16	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	17	19	21	21	21	20	19	17	16	16	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	16	17	19	20	19	18	17	16	15	14	E S 15	E S 16	E S 16	E S 16	E S 16

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FMIN (0.1 MHz)

IONOSPHERIC DATA

JUN. 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	A	A	F	S	S		A	A	A		290	305	310	285	R	290	285	295	300	R	S	320	310	285	F	U	S				
2	S	S	J	S	F	J	S	320	370	375	265	280	A	285	290	310	315	320	290	290	295	S	S	330	310	S	290	S	390		
3	285	300	300	310	325	A	350	340	A	A	A	A	A	A	A	310	290	310	320	A	355	320	315	F	A						
4	A	A	A	F	A	335	340	320	A	A	A	335		A	A	A	305	310	315	305	290	S	H	325	355	A	A				
5	A	A	A	A	F	355	320	340	A	A	A	270	265	265	300	310	295	310	335	335	310	S	310	F	F	295					
6	F	F	F	A	F	295	365	345	355	A	A	A	260	260	A	A	A	A	A	A	A	A	A	F	F	F					
7	F	F	F	F	F	335	355	A	A	A	A	A	305	265	A	A	A	295	305	315	305	305	310	270							
8	F	F	F	A	270	285	340	340	A	A	A	A	300	A	265	275	280	A	300	315	340	285	A	F							
9	F	F	F	F	F	320	325	320	320	340	A	A	300	245	285	290	285	310	A	310	295	300	315	305	305						
10	A	A	F	F	F	U	S	F	320	355	A	G	A	A	A	265	295	295	280	A	A	S	320	300	275	U	F	285			
11	F	F	J	S	A	F	315	295	325	305	295	285	290	275	275	290	280	285	A	H	290	320	295	U	S	U	S	U	S		
12	F	F	U	S	F	U	F	F	315	330	315	315	350	A	A	310	255	270	270	290	290	305	310	335	295	270	U	S	U	S	
13	F	F	F	F	F	U	S	340	375	350	R	305	A	A	A	A	A	295	300	315	A	A	310	I	S	F					
14	A	F	U	S	U	S	F	F	R	340	345	345	330	325	A	A	A	A	A	A	300	325	U	S	U	S	S	F			
15	F	S	U	S	F	F	S	A	A	A	A	A	A	300	295	285	A	A	295	320	A	285	U	S	300	U	S	285			
16	U	S	A	U	S	I	C	F	F	U	S	A	A	A	R	315	285	300	275	290	290	275	290	310	305	315	300	U	S	J	S
17	S	J	S	F	J	S	S	S	S	320	350	A	A	A	A	310	A	295	285	A	305	285	295	A	310	305	F	S	F		
18	J	A	S	S	S	F	F	F	340	340	350	340	A	A	H	F	305	290	290	R	300	310	300	300	290	S					
19	S	S	F	365	330	310	340	310	330	345	A	A	A	315	A	280	C	C	C	C	C	330	335	305	305	300	S				
20	F	F	S	325	F	F	325	365	A	A	A	A	A	A	305	295	270	290	285	R	S	J	S	330	345	305	300				
21	U	S	F	F	S	A	F	320	345	A	A	A	A	A	295	290	J	R	305	305	325	315	A	S	F	305					
22	300	F	J	S	F	J	S	A	A	A	A	325	305	A	310	J	R	265	285	275	305	320	315	315	295	S	315	S	300		
23	290	J	S	F	330	295	330	340	355	340	A	A	310	A	A	A	A	A	310	355	A	J	S	335	F	F	A				
24	A	A	A	A	A	A	320	355	340	350	325	A	A	R	280	305	U	R	285	280	315	340	360	295	290	U	S	310			
25	F	U	F	F	F	F	320	290	R	310	R	330	345	A	A	270	285	300	310	R	295	310	295	H	340	U	S	295	295		
26	U	F	S	S	F	F	F	A	R	A	A	A	R	245	295	265	270	295	300	315	345	340	S	J	S	290	300				
27	290	J	S	345	A	U	S	295	315	360	310	280	250	A	U	W	205	255	R	275	295	305	U	H	300	U	R	310	U	S	285
28	S	J	S	F	F	U	F	320	355	H	U	H	310	330	310	A	A	R	270	260	280	305	320	R	310	315	325	305	290	S	280
29	S	U	S	F	330	280	315	330	360	335	290	290	A	300	290	R	R	305	U	H	290	310	290	310	315	290	F	F	S	300	
30	F	F	F	S	U	S	315	325	310	310	335	330	275	G	280	295	315	R	295	305	310	315	315	S	S	S	S	F			
31																															
CNT	12	8	11	10	12	22	25	24	17	13	15	11	16	21	24	23	25	24	26	24	27	28	20	20							
MED	290	298	305	320	315	320	330	340	340	325	310	305	280	275	285	290	295	300	310	315	320	305	292	295	S						
UQ	292	J	S	S	330	322	335	345	355	350	335	328	310	300	295	292	305	305	308	315	328	330	310	305	300						
LQ	282	292	292	S	S	300	315	320	320	310	290	288	288	250	270	272	282	290	290	300	305	310	295	S	U	S	288	285			

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M(3000)F2 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

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M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat.	31 12.1 N				Long	130 37.1 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	A	395	A	A	A	L	A				
2							A	A	L	A	A	A	A	A	A	375	355	A	A	A				
3							L	A	A	A	A	A	A	A	A	L	A	A	A	A				
4							L	A	A	A	A	A	A	A	A	A	A	A	L	L				
5							A	A	A	A	A	L	L	A	A	A	A	A	A					
6							L	A	A	A	A	A	A	A	A	A	A	A	A	A				
7							A	A	A	A	A	L	A	A	A	A	A	A	A					
8							A	A	A	A	A	A	375	A	A	A	A	A	A	A				
9							L	L	A	A	A	L	L	390	L	A	A	A						
10							A	A	A	A	A	A	A	A	A	340	A	A	A	A				
11							L	L	L	L	A	A	390	375	A	A	A	A	A					
12							345	A	A	A	A	365	400	A	355	370	370	360	A					
13							L	L	390	405	A	A	A	A	A	A	A	A	L	A				
14							A	A	A	A	A	A	A	A	A	A	A	A	A					
15							A	A	A	A	A	A	A	A	A	A	A	A	A					
16							A	A	A	A	380	390	400	395	380	A	345	A						
17							A	A	A	A	A	A	A	A	A	A	365	A	A	A				
18							A	A	A	A	A	A	A	A	A	A	A	360	360	L	L			
19							U	L	A	A	A	A	A	A	A	C	C	C	C	A				
20							U	L	A	A	A	A	A	A	430	400	A	A	A	A				
21							L	A	A	A	A	A	A	400	410	A	A	355	370	A				
22							A	A	A	A	A	A	A	395	395	A	A	350	350	A				
23							L	L	A	A	A	A	A	A	A	A	A	A	A	A				
24							L	L	360	A	360	A	A	385	360	365	375	A	A					
25							365	370	A	365	A	A	405	400	A	A	340	365	L					
26							A	A	A	A	A	A	405	385	A	A	A	A						
27							U	L	375	U	L	380	380	A	405	415	365	370	A	A				
28							U	L	A	H	370	A	A	A	375	A	385	375	350	A				
29							L	A	A	A	A	405	395	380	H	380	355	A	U	L				
30							L	295	350	A	385	405	395	415	A	355	355	A	365	L				
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							3	5	8	4	5	5	9	12	12	11	8	7	6					
MED							U	L	380	355	378	382	365	395	390	398	395	370	368	350	362			
UQ							U	L	382	365	392	395	380	400	400	405	405	380	372	358	365			
LQ							U	L	358	345	355	375	365	380	390	388	382	365	355	348	350			

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M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1985

H*F2 (KM)

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

Station	YAMAGAWA				Lat. 31 12.1 N				Long 130 37.1 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	380	355	E A 355	380	405	340	335	E A 335	300	265	270				
2							A 260	225	240	A	E A 400	A	380	350	300	290	295	300	310	270				
3							250	A	A	A	A	A	A	A	345	370	325	295	A	270				
4								280	A	A	A	A	A	A	A	365	340	320	300	300				
5							A 290	280	A	A	A	440	415	A	330	295	280	290	250					
6							250	A	A	A	A	A	740	510	A	A	A	A	A	A				
7								A	A	A	A	A	330	315	A	A	A	295	A					
8							270	A	A	A	A	A	390	A	445	400	350	A	315	270				
9							275	260	275	A	A	395	565	420	370	340	A	A						
10								270	245	A	G	A	A	A	380	305	320	E A 355	E A 420	A				
11								275	325	E A 320	380	E A 380	425	415	405	400	E A 375	A	305					
12								310	265	A	A	355	460	385	370	335	330	280	270					
13							260	235	265	360	E A 335	A	A	A	A	A	320	E A 330	285	A				
14								270	300	295	A	A	A	A	A	335	350	A	290					
15							E A 335	A	A	A	A	A	375	E A 380	380	A	A	E A 370	285					
16									A	A	360	400	370	425	385	360	360	310	280					
17							E A 255	A	A	A	A	340	A	360	E A 400	A	305	E A 350	325	A				
18							E A 250	270	E A 285	E A 280	300	A	A	E A 400	380	325	325	310	285	260				
19								335	280	265	A	A	A	A	380	C	C	C	C	260				
20							L 275	E A 260	A	A	A	A	A	370	370	450	365	360	310	E A 290				
21							300	260	A	A	285	A	A	380	330	310	E A 325	295	270	E A 290				
22							A	A	A	A	A	370	A	335	395	350	335	290	275	A				
23							265	250	285	A	A	385	A	A	A	A	A	A	300	235	A			
24							L 280	250	275	275	315	A	A	R	425	355	340	335	270					
25								480	345	300	285	A	A	450	355	310	295	280	295	245				
26							A 290	A	A	A	E A 250	550	350	390	360	320	A	300	270					
27							310	245	315	400	L 575	605	670	500	375	335	300	280	295					
28							250	E A 250	305	305	350	A	A	400	400	350	295	260	285					
29									L 275	395	400	A	355	355	305	315	315	305	325					
30							L 295	325	330	275	305	450	G	405	355	300	320	310	295	270				
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	20	16	12	14	12	15	20	24	23	24	24	25	11				
MED							268	270	280	300	342	382	415	387	375	335	322	298	285	270				
UQ							285	285	310	370	400	420	558	418	390	360	339	316	302	275				
LQ							255	249	270	276	302	348	378	355	350	312	306	292	270	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	YAMAGAWA																								Lat.	31 12.1 N		Long	130 37.1 E		Sweep	1		MHz to 25 MHz		in 24sec		in		automatic		operation	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																			
1	A	A	E S 300	E A 305	E A 250	255	A	A	A	A	A	A	A	A	235	A	A	A	235	A	250	250	A E A 355	A																			
2	E A 320	A 290	A 290	255	270	285	A	A	210	A	A	A	A	A	A	205	215	A	A	A	A	265	285	285																			
3	E S 290	E S 270	E S 275	240	200	A	215	A	A	A	A	A	A	A	A	230	A	A	A	A	240	E S 280	E S 330	A																			
4	A	A	A	A 240	A	E S 270	230	A	A	A	A	A	A	A	A	A	A	A	230	250	240	250	A	A																			
5	A	A	A	A	E S 300	225	A	A	A	A	A	200	H 195	A	A	A	A	A	A	275	255	255	A 290	E S 275																			
6	250	E S 290	250	A	E A 290	E A 290	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 290	265	E 290																			
7	E S 280	E A 300	E A 290	E A 290	240	230	240	A	A	A	A	A	240	A	A	A	A	A	A	A	E A 290	275	260	E A 350																			
8	E A 360	E S 290	230	A	E S 380	E A 330	A	A	A	A	A	A	H 190	A	A	A	A	A	A	A	250	A	A	E A 300																			
9	E A 290	E A 265	E S 295	E A 310	E A 290	260	250	230	A	A	A	205	H 195	220	230	A	A	A	E A 310	E A 300	280	260	280	A E 320																			
10	A	A	E A 350	E A 325	E A 305	235	E A 305	A	A	A	200	A	A	A	A	E A 270	A	A	A	A	E A 275	E A 325	E A 350	A 320																			
11	E A 320	E A 370	E A 370	A	270	260	E A 300	E A 245	210	200	E A 260	A	220	205	A	A	A	A	A	A	270	E A 245	E 295	320	315																		
12	355	345	255	E A 325	E A 255	E A 255	245	E A 260	A	A	A	E A 240	H 180	A	E A 250	235	245	235	A	240	250	E A 310	300	300																			
13	305	285	255	250	290	260	245	A	200	195	A	A	A	A	A	A	A	A	A	250	A	A	270	320																			
14	A	295	225	E A 275	275	250	250	A	A	A	A	A	A	A	A	A	A	A	A	250	E A 300	255	255	E S 300																			
15	E S 300	E S 295	E A 350	E A 355	E A 350	E A 265	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 370	E A 360	E A 365	E A 310																			
16	E S 300	A	255	I C 260	265	270	230	E A 400	A	A	A	225	230	205	195	E A 250	A	E A 285	A	280	260	275	E A 300	E A 295																			
17	A 295	A 255	E A 235	E A 260	E A 250	E A 255	A	A	A	A	A	A	A	A	A	A	E A 250	A	A	A	E A 300	E A 290	E A 315	E A 285																			
18	A	E A 325	E A 310	A 270	E A 300	250	A	A	A	A	A	A	A	A	A	A	A	A	250	225	A	245	260	290	285																		
19	315	A 260	235	200	E S 250	E S 260	235	240	A	A	A	A	A	A	A	C	C	C	C	A	E A 250	E A 315	300	A 280																			
20	270	E A 260	250	E A 250	E A 255	280	240	A	A	A	A	A	A	A	190	H 200	A	A	A	A	255	A	250	265																			
21	300	S 285	310	285	A	U S 300	245	A	A	A	A	A	A	200	200	A	A	220	E A 250	A	A	290	E A 285	A 285																			
22	275	295	A 260	A 270	250	245	A	A	A	A	A	A	A	205	H 200	A	A	H 215	A	A	E A 250	E A 270	240	S A 300																			
23	A	280	S 295	245	E S 280	E A 280	E A 240	E A 240	A	A	A	A	A	A	A	A	A	A	A	A	250	E A 295	E A 290	A																			
24	A	A	A	A	A	A	230	A	E A 270	A	E A 255	A	A	230	E A 275	E A 250	E A 240	A	A	225	205	E S 280	E A 310	E S 295																			
25	E S 325	E A 300	E S 275	250	245	240	225	H 210	250	A	E A 240	A	A	210	205	A	A	E A 255	230	230	210	235	260	E S 290																			
26	E A 300	E A 350	E A 295	E A 350	E S 325	250	A	A	A	A	A	A	A	200	E A 240	A	A	A	A	A	E A 245	245	E A 325	E S 290	E A 290																		
27	280	250	230	A	E A 290	E A 300	E A 245	210	205	235	210	A	A	205	200	255	220	A	A	A	250	250	275	E S 295																			
28	E A 300	E S 295	245	235	240	260	250	A	200	240	A	A	A	205	A	220	E A 230	E A 255	A	H 245	E A 240	230	250	E A 320																			
29	E S 300	E S 295	E S 270	255	A	E S 285	H 250	245	210	A	A	A	205	205	230	H 190	H 220	A	235	H 260	255	E A 260	E S 280	E S 270																			
30	E S 275	260	E S 275	E S 275	E S 275	260	250	220	E A 240	A	H 195	200	205	195	A	H 195	H 190	A	225	A	245	225	A	E A 350																			
31																																											
CNT	22	24	27	24	26	28	20	10	9	4	6	5	9	12	12	11	8	7	9	14	26	28	27	26																			
MED	E 300	E 290	U 250	U A 242	E 272	251	242	U 225	208	218	U 210	202	205	205	209	U 215	U 214	U A 232	232	252	246	U A 252	U A 270	E A 295																			
UQ	E 315	E 298	E 295	E A 298	E E 290	270	249	E A 245	U 225	238	E A 255	215	220	208	234	240	E A 242	E A 255	242	268	A	E A 255	E A 300	E A 315																			
LQ	E E 280	260	245	246	245	246	231	215	205	198	200	200	H 195	202	200	202	218	228	230	245	242	252	263	E E 285																			

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H*F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

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H^oE (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12' 1" N				Long 130° 37' 1" E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						S	110	105	105	110	110	110		A	A	A	110	110	115	S				
2						S	110	110	110	110	110	110	110	110	110	110	110	H	110	105	S			
3						S	115	115	110	115	115	115	115	115	110	110	110	A	A	S				
4						S	115	110	110	110	110	115	115	115	115	110	115	115	120	S				
5						S	110	110	115	110	110	110	110	110		A	A	A	A	S				
6						E S	125	115	115	115	110	115	115	110	115	115	115	110	115	S				
7						S	115	110	110	110	110	110	110	115	110	110	115	A	120	S				
8							120	115	110	115	115	110	115	115	115	115	115	115	A	S				
9						S	115	A	115	110	115	115	115	115	110	110	A	A	A	S				
10						A	A	115	110	110	105	105	105	110	110	E A	125	H E A	120	S				
11						S	110	105	105	105	105	105	110	105	H	105	110	110	115	S				
12						S	110	110	110	105	110		A	110	110	110	105	110	120	S				
13						S	115	A	A	115	110	110	115	110	110		A	A	A	S				
14						S	105	105	105	105	110	110	110	110	110	110	E A	120	A	S				
15						S	105	105	105	105	105	110	110	110	110	110	110	110	110	S				
16							120	110	105	105	105	A	A	105	110	110	105	105	110	A				
17						S	110	110	110	110	110	110	110	110	110	110	A	A	A	S				
18						S	110	A	A	A	110	110	110	110		A	110	A	A	S				
19						S	120	115	110	110	110	110	110	110	110	C	C	C	C	S				
20							115	105	105	105	105	110	A	A	A	110	110	110	115	S				
21							115	110	105	105	105	110	105	110	A	110	A	A	A	S				
22						E S	120	110	110	110	110	110	110	110	A	110	110	110	110	S				
23						S	110	110	110	110	110	110	110	110	110	110	105	A	A	A				
24						S	110	105	105	105	105	105	105	105	105	105	105	A	105	S				
25						A	105	105	105	105	105	105	105	105	105	A	A	A	A	A				
26						S	110	105	105	105	105	105	105	105	105	105	A	A	A	A				
27						S	110	110	105	105	105	105	105	105	A	105	110	110	110	S				
28						E S	130	110	105	105	105	105	105	105	105	105	110	A	A	S				
29						S	115	110	105	105	105	105	110	110	105	105	105	105	105	S				
30						A	110	105	110	110	110	110	110	110	105	105	105	A	A	S				
31							116	110	105	105	105	105	105	105	108	110	105	105	110	110				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							8	29	27	28	29	29	27	28	25	25	22	15	15					
MED							118	110	110	110	110	110	110	110	110	110	110	110	112					
UQ							121	115	110	110	110	110	110	110	110	110	110	111	116					
LQ							116	110	105	105	105	105	105	108	110	105	105	110	110					

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H^oE (KM)

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA				Lat. 31° 12' 1" N				Long 130° 37' 1" E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	105	105	110	105	110	110	110	110	105	105	110	105	110	100	125	120	115	110	110	110	110	110	105	100
2	100	100	120	130	115	105	110	115	120	115	130	105	105	110	110	G	150	120	110	105	105	100	100	110
3	105	S	S	S	S	125	125	120	120	120	115	110	110	105	105	115	125	125	120	120	115	120	120	120
4	110	110	100	100	100	110	145	130	125	120	120	115	110	115	115	150	140	140	120	120	115	120	115	110
5	110	105	100	100	100	110	125	125	120	115	105	120	120	110	105	100	100	100	100	100	100	100	120	105
6	110	105	105	100	105	110	130	125	120	110	110	110	120	145	130	120	120	120	110	110	115	115	110	110
7	110	105	100	100	100	140	130	120	120	110	110	110	110	110	105	100	100	140	130	120	110	110	110	110
8	105	105	105	100	100	140	125	120	110	110	110	110	120	110	140	140	105	125	120	115	115	110	110	110
9	105	105	100	100	100	110	115	120	105	115	115	125	G	G	140	140	125	100	100	100	100	115	115	110
10	105	105	105	100	95	120	115	110	110	110	110	105	105	105	105	125	120	115	120	110	115	110	105	145
11	115	110	105	105	105	105	105	105	105	105	105	125	145	170	135	125	115	115	115	110	110	110	105	105
12	105	100	100	95	105	105	125	120	110	105	105	105	105	110	120	115	110	110	115	105	100	100	120	120
13	115	110	105	105	115	145	100	135	125	110	120	110	110	110	110	105	105	105	100	115	115	110	110	125
14	110	110	130	105	110	115	130	120	115	115	110	110	105	105	105	105	110	110	105	105	110	110	130	110
15	105	120	105	100	105	130	120	110	110	105	105	110	110	110	135	125	120	115	115	110	110	105	115	105
16	105	105	105	C	110	S	130	120	110	105	105	130	140	155	110	135	125	120	110	105	100	110	110	105
17	110	105	105	105	105	105	130	115	115	110	105	105	100	105	120	110	100	100	100	100	115	130	120	110
18	110	105	110	105	110	160	130	125	115	110	110	110	105	105	105	105	130	130	135	120	S	115	110	110
19	110	105	105	S	110	115	145	135	115	115	110	110	105	105	110	C	C	C	C	100	100	115	120	115
20	110	100	110	110	105	110	135	120	120	120	115	110	105	105	130	140	140	125	120	115	135	120	110	110
21	110	105	110	105	105	120	130	120	110	110	110	105	105	105	105	105	100	100	100	115	110	110	110	110
22	110	110	105	105	105	S	130	120	115	115	120	125	115	115	165	150	125	130	115	110	110	115	115	110
23	110	110	110	105	125	120	120	120	110	110	110	115	110	110	110	105	125	120	100	115	100	110	110	115
24	110	105	110	105	105	105	110	130	120	115	110	110	120	175	170	155	135	115	105	115	115	120	125	110
25	110	105	110	110	110	110	115	140	130	120	110	105	125	125	155	105	120	105	105	105	105	100	155	135
26	110	105	105	105	105	105	120	115	110	105	110	110	110	105	110	105	105	105	120	105	105	100	100	145
27	100	110	110	110	130	110	120	110	155	170	145	120	105	105	110	160	150	120	110	110	110	105	120	125
28	115	120	115	115	95	100	135	115	115	110	105	105	110	125	110	110	110	105	100	100	100	100	105	100
29	100	110	110	130	105	110	110	110	120	110	110	110	110	115	110	G	140	120	110	105	100	105	100	115
30	120	115	115	120	115	115	105	110	110	110	125	110	120	120	105	105	105	100	120	100	100	110	105	105
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	29	29	27	29	28	30	30	30	30	30	30	29	29	30	27	29	29	29	30	29	30	30	30
MED	110	105	105	105	105	110	125	120	115	110	110	110	110	110	110	115	120	115	110	110	110	110	110	110
UQ	110	110	110	108	110	120	130	125	120	115	115	115	120	115	130	138	125	120	120	115	115	115	120	115
LQ	105	105	105	100	105	108	115	115	110	110	110	105	105	105	105	105	105	105	105	105	100	105	105	110

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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 12.1 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	F5	F4	F2	F3	F3	F3	C7	C7	C7	C3	C3	C3	C3	L3	CL13	CL23	C5	C4	C3	C7	F7	F4	F4	F3
2	F4	F3	FF23	FF12	F3	F3	C7	C4	C4	C4	HC12	C4	C2	C4	C3		H1	H3	C4	C5	FF34	F6	F5	F2
3	F2				F7	C5	C6	C6	C7	C5	C6	C6	C4	C3	C2		C4	CL62	CL63	CL63	F2	F3	F5	F5
4	F5	F7	F4	F4	F6	F4	HL23	H4	C5	C5	C4	C4	C4	C3	C3	HC22	H4	HC32	C3	C3	F4	F6	F4	F7
5	F5	F4	F4	F4	F2	F2	C6	C5	C6	C6	C4	C2	C2	C4	C4	L3	L7	L4	L5	L7	F4	F7	FF27	F2
6	F5	F6	F5	F6	F4	F5	C6	C6	C4	C4	C7	C5	C2	H2	H3	C5	C5	C6	C6	C6	F6	F7	F3	F7
7	F5	F7	F7	F3	F3	F3	C6	C7	C7	C7	C5	C4	C2	C3	C7	C4	C4	HC22	H6	C7	F7	F5	F4	F5
8	F3	F2	F3	F4	F3	F3	C4	C6	C5	C7	C7	C4	C1	C3	H3	H4	C4	C7	CL74	C7	F7	F4	F6	F7
9	F7	F3	F2	F6	F3	F2	C3	C3	L3	C4	C4	C3			H2	H3	CL43	L6	L7	L7	F4	F3	F7	F7
10	F7	F7	F8	F5	F4	FF23	CL41	CL31	C4	C7	C3	C4	C5	C6	C5	C2	CL62	CL42	CL61	LL61	FF72	FF71	FF72	FF15
11	FF26	F6	F7	F7	F4	F6	L8	C4	C3	C3	C4	CCL32	HC11	H1	H2	C3	CL51	C5	C5	C7	F2	F7	F3	F3
12	F8	F8	F5	F3	FF22	F6	C5	C4	C5	C5	C3	C2	L1	C2	C2	C2	C2	C2	CL52	LL65	F4	F7	FF36	FF22
13	FF23	F2	F8	F7	F1	F1	LH14	HL21	CL32	L1	C3	C5	C6	C7	C5	C6	L3	L6	L5	LL47	FF38	FF45	FF32	FF52
14	F4	F2	FF12	F7	F2	F3	C5	C5	C4	C3	C5	C3	C7	C5	C5	C5	C6	CL72	L6	L5	FF72	F4	FF14	FF22
15	F4	FF13	F7	F5	FF43	FF28	C6	C7	C5	C7	C4	C4	C4	C3	C3	C3	C6	C7	C7	L7	F7	F7	FF14	FF25
16	FF22	F7	F5		F1		C6	C6	C7	C5	C3	CL12	HL11	H1	C1	H2	C3	C4	C6	L7	F7	FF15	F5	FF23
17	F7	F6	F2	F5	F6	F3	C6	C5	C7	C7	C4	C3	C7	C3	C2	C4	L3	L3	L8	L8	FF26	FF15	FF24	F3
18	F3	F3	F7	F4	F5	F1	C6	C6	L5	L6	L3	C5	C4	C5	C3	L3	H3	HL33	HL23	C4		FF32	F5	F4
19	F7	F4	F2		F1	F2	H2	H1	C3	C3	C5	C4	C4	C4	C2					L8	F6	FF15	FF17	FF33
20	FF22	F2	F2	F3	F4	F4	H3	C6	C5	C4	C6	C5	L3	L2	HL12	H1	H2	C3	C6	C4	FF17	F7	F3	F2
21	F2	F2	F3	F4	F7	F2	C2	C4	C5	C4	C4	C4	C3	C2	L2	C3	L6	LH42	L6	CL75	FF67	FF23	F4	F4
22	F2	F2	F2	F4	F2		C6	C4	C6	C3	C3	C2	C3	C2	HL11	H2	C3	C2	C7	C7	F7	F7	F3	F6
23	F6	F2	F4	F2	FF22	FF32	C5	C4	C6	C6	C5	C2	C2	C5	C5	C6	HC54	HL75	L7	CL66	F7	F4	FF24	F7
24	F7	F7	F7	F7	F6	F7	L3	C4	C4	C3	C3	C2	C5	H1	H1	H2	HL21	CL52	C6	LL72	FF41	F1	FF15	F2
25	F2	F4	F1	F2	F2	F2	LH11	H2	C3	C3	C3	C2	CCL53	C2	HL11	L4	CL43	L3	L2	L2	F1	F5	F2	F2
26	F6	F6	F4	F4	F2	F3	C5	C4	C5	C7	C4	C3	C4	C2	C3	C5	L5	L5	CL37	L7	F5	F6	F2	FF22
27	F2	F6	F7	F5	FF17	F4	C3	C3	H1	H2	H1	C2	C4	C3	L1	H1	H2	C4	C5	L5	F3	F1	F2	F1
28	F4	F2	FF22	FF12	F2	F2	C3	C5	C3	C3	C4	C3	C4	C1	C3	C3	C3	L6	L7	L4	F4	F3	F2	F7
29	F1	FF32	F2	FF16	F6	F5	C5	C6	C5	C3	C3	C5	C2	C1	C2		H2	C2	C4	L3	F6	FF13	F2	FF21
30	FF22	F2	F2	F2	F2	F4	L4	C4	C4	C3	C1	C2	C2	C1	C3	C3	C3	L3	LL13	L3	F5	FF22	F4	F7
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

JUN. 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	X 44	S 43	48	48	S 38	S 36															R 101	A	79	90	
2	77	77	70	74	X 67	S 56															S 79	X 66	S 63	S 67	
3	S 65	X 65	X 63	60	S 54	X 46															A	A	A	A	
4	A	U 39	S	A	S 34	A	A														X 97	S 66	X 40	S 40	
5	A	U 34	S	A	U 31	X 34	S														X 75	X 69	S 69	U 67	
6	67	77	60	A	S 33	47															X 80	X 77	S 72	68	
7	S 60	S 55	S 50	54	58	X 44															X 83	S 67	X 68	X 69	
8	S 63	S 58	61	X 40	S	S 33															X 77	X 63	A	A	
9	S 67	X 64	X 65	X 47	A	S 43															X 83	X 83	S 48	S 49	
10	S 48	A	A	A	U 44	S 48															X 83	X 70	X 69	S 65	
11	65	66	65	64	62	53	52														X 73	X 59	X 60	S 58	
12	64	67	63	50	X 45	S 44															S 79	X 73	S 73	S 68	
13	S 68	S 69	U 68	S 58	S 52	U 55															A	U 73	S	59	62
14	60	U 57	X 58	S 55	S 36	S 41															X 80	S 71	A	A	
15	S 64	65	S 60	50	57	S 49															A	A	A	A	
16	63	S	A	58	58	X 48															X 82	X 70	U 64	S 63	
17	62	65	64	63	51	U 44															A	U 72	S	65	65
18	64	61	A	S 47	59	U 43															S 78	S 63	X 60	S 65	
19	65	63	64	40	35	31															S 77	S 60	S 54	S 50	
20	59	61	61	A	39	36															U 91	A	A	A	
21	S	S	A	S	35	S 33															S 68	X 58	48	S 58	
22	S 53	A	44	44	U 42	S 39															X 82	X 75	X 77	S 60	
23	S 54	S 49	45	42	S 40	S 39															S 57	X 60	X 57	X 48	
24	56	61	59	56	S 43	S 35															U 49	S 42	A	38	
25	28	35	35	34	S	A															X 74	U 49	X 47	S 46	
26	S 43	S 47	U 48	A	A	A															X 79	S 53	U 50	S 57	
27	S 50	S 50	X 48	S 30	A	A															X 70	U 59	X 57	U 54	
28	S 56	U 52	X 56	X 48	X 46	X 38															X 73	X 58	U 42	S 41	
29	U 40	S 41	X 41	S 37	S 34	S 36															X 79	X 69	X 68	U 63	
30	S 60	S 57	U 53	S 50	U 44	U 40															U 66	S 60	S 46	44	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	26	24	25	24	25	1														26	26	24	25	
MED	S 60	60	60	48	44	S 43	52														X 79	X 66	60	S 60	
UQ	64	65	64	56	56	S 47															X 82	X 71	68	S 65	
LQ	S 54	S 49	48	40	S 37	S 36															X 73	S 59	49	S 49	

JUN. 1985

FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1985

FOF2 (0.1 MHz)

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

Station		OKINAWA							Lat.	26 16.9 N			Long 127 48.4 E			Sweep 1 MHz to 25 MHz in 24sec in automatic operation												
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1		38	J S	F	F	S				A	A	A	A	81	R	R				J R		R	A	F	F			
2			F	F	F	F	S	S			A										R	S	60	57	S			
3		59	J S	J S	F	S					A	A	A	A	A						R	A	A	A	A			
4			A U	S	A	S	A	A				A	A									S	60	34	S			
5			A U	S	A	U	S	J	S	A	A	A									R	69	63	63	U			
6			F	F	F	A	S	F														J	S	J	S	S		
7			S	S	S	F	F															J	S	J	S	S		
8			57	J S	F		A					A	A									R	61	62	63			
9			S	S	S		A																77	77	42	S		
10			S	A	A	A	U	S															64	63	59			
11			F	F	F	F	F	F														R	67	53	54	S		
12			F	F	F	F																	S	67	67	S		
13			S	S	U	S																	A	S	F	F		
14			F	S	U	S	J	S															S	65	A	A		
15			S	F	S	F	F	F															A	A	A	A		
16			F	S	A	F	F																S	64	58	S		
17			F	F	F	F	F																S	66	F	F		
18			F	F	A	U	S	F															S	57	54	F		
19			F	F	F	F	F	F															S	54	U	S	J	S
20			F	F	F	A	F	F															U	S	A	A	A	
21			S	S	A	S	F	S	J	R													S	S	F	J	S	
22				A	F	F	U	S	F														S	69	71	54		
23			S	S	F	F	S	S															U	S	54	51	J	S
24			F	F	F	F	J	S	U	S													S	36	A	F		
25			F	F	F	F	A	A															U	S	43	41	S	S
26			S	S	S	A	A	A															S	47	U	S	S	S
27			S	S			A	A	C	C	C	C	E	G									U	S	51	51	48	S
28			50	U	S																		S	52	S	36	35	
29			U	S																			S	63	U	S	57	
30			S	S	S	S	U	S															S	60	54	J	S	F
31			S	S	S	S	U	S															S	67	53	43	S	S
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT		15	15	11	10	15	20	27	27	21	19	18	17	22	23	29	28	29	28	29	28	26	26	20	18			
MED		S	S	S		S	S																S	54	S	S		
UQ		S	S	S		S	S																S	62	S	S		
LQ		S	S	S		S	S																S	43	S	S		

JUN. 1985

FOF2 (0.1 MHz)

IONOSPHERIC DATA

JUN. 1985

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station		OKINAWA							Lat. 26 16.9 N · Long. 127 48.4 E				Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
2								L	A	A	A	A	A	A	A	L	430	410	400	A	A			
3								A	A	A	A	A	A	A	A	A	A	A	A	A	A			
4							A	L	A	A	A	A	A	A	A	A	A	A	A	A	A			
5								A	A	A	430	A	A	A	A	A	410	380	L	A				
6								L	400	L	450	450	460	A	430	A	A	400	370	L				
7								A	L	A	A	A	A	A	A	A	A	390	A					
8								L	L	440	A	A	A	460	A	A	A	A	A	A				
9								L	A	440	A	460	460	450	430	A	A	410	L	A				
10								L	A	450	440	A	450	450	430	A	A	A	A					
11								L	L	L	440	460	460	460	440	440	420	400	L	A				
12								L	A	L	450	440	460	460	A	430	A	420	L	L				
13							A	A	A	440	A	480	450	440	A	450	A	A	A	A				
14								A	A	A	A	A	460	460	A	A	A	A	A	A				
15								A	A	A	A	A	460	A	A	A	A	A	A	A				
16								A	A	L	L	450	450	460	460	440	A	A	L	A				
17								L	L	430	440	A	A	A	A	420	A	A	A	A				
18								A	A	A	A	A	A	A	A	A	A	A	A	A				
19								L	L	A	A	A	A	A	430	430	A	A	A	A				
20								A	A	A	A	A	A	A	A	420	A	A	A	A				
21								A	400	410	440	430	440	C	A	420	410	390	A	A				
22								A	A	400	A	A	430	A	A	A	400	A	350					
23								A	A	410	430	440	430	430	430	420	A	380	350	L	A			
24								L	L	A	A	A	L	A	430	A	A	A	A	A				
25								L	A	410	L	430	A	A	420	420	410	A	A	A				
26								A	A	L	A	A	A	A	430	410	A	A	A	A				
27								C	C	C	C	410	430	430	A	430	A	410	380	360	L	190		
28								L	L	L	L	A	A	A	430	430	410	A	A	L				
29								L	L	L	420	A	A	430	440	430	420	410	400	360	L			
30								L	390	410	430	440	430	A	420	A	A	390	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									3	10	10	12	14	11	14	15	8	12	6	1				
MED									400	415	440	440	450	450	430	420	410	395	360	190				
UQ									400	440	450	455	460	460	430	430	410	400	370	L				
LQ									395	410	430	435	430	440	430	420	410	385	350	L				

JUN. 1985

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUN. 1985

F0E (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station		OKINAWA							Lat. 26° 16.9' N		Long. 127° 48.4' E		Sweep 1 MHz to 25 MHz in 24sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	R	R	A	A	A	R	R	340	320	300	A	R	A				
2							S	A	260	A	A	A	A	A	A	A	A	260	A	A				
3							S	A	A	A	A	A	A	A	A	A	A	A	A	A				
4							S	A	A	A	335	340	345	340	335	330	300	275	220	S				
5							S	A	A	300	A	A	A	A	335	320	A	A	A	S				
6							S	A	A	A	A	A	R	R	340	330	310	280	A	S				
7							S	230	A	A	A	A	A	A	A	A	A	A	A	S				
8							S	A	A	A	A	A	A	A	A	A	A	A	A	S				
9							S	A	A	A	A	350	360	360	345	320	305	A	A	S				
10							S	A	275	310	A	355	355	360	340	325	305	275	230	S				
11							S	A	A	A	A	A	A	A	A	A	315	280	225	S				
12							S	R	240	280	310	A	A	A	355	345	335	315	280	A	A			
13							S	A	A	A	A	A	A	A	R	350	A	315	A	A	A			
14							180	235	300	310	A	350	A	A	350	325	A	A	A	S				
15							S	250	A	A	A	A	345	350	345	325	310	280	220	S				
16							S	225	A	305	A	A	A	A	A	A	320	280	220	A				
17							175	225	R	A	A	A	A	A	A	A	A	275	225	A				
18							R	190	230	A	A	A	A	A	A	A	A	A	A	A				
19							R	195	A	A	A	A	A	A	A	A	A	A	A	A	S			
20							S	R	225	R	280	A	A	A	A	A	A	A	A	A				
21							S	A	A	A	A	A	A	C	345	A	A	A	A	A				
22							S	A	A	A	A	A	R	R	360	340	330	A	305	265	215	S		
23							S	230	A	A	325	A	360	355	345	330	305	275	A	S				
24							S	R	235	R	280	A	A	A	A	A	A	A	A	R	220	S		
25							S	A	A	A	A	A	A	A	A	A	A	A	A	A				
26							S	A	A	A	A	A	A	A	340	320	305	A	A	S				
27							C	C	C	C	320	A	340	A	A	A	A	265	225	S				
28							S	220	290	A	A	A	A	A	340	A	A	A	A	S				
29							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
30							S	A	A	A	A	A	R	A	A	A	A	A	A	S				
31													345											
	00	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	12	8	5	3	4	10	9	15	11	13	12	10					
MED							185	230	280	310	325	350	350	355	340	325	305	275	220					
UQ							R	192	235	285	310	330	352	360	360	345	330	315	280	225				
LQ							178	225	270	305	322	345	345	345	340	320	305	270	220					

JUN. 1985

F0E (0.01 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 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	J A 26	J A 36	J A 21	J A 29	J A 64	J A 77	J A 51	J A 84	J A 76	J A 169	J A 120	J A 120	50	J A 104	J A 73	J A 60	J A 86	J A 62	J A 77	J A 50	J A 42	J A 107	J A 77	J A 60			
2	J A 30	J A 21	J A 21	J A 29	J A 29	J A 21	J A 27	28	J A 53	J A 110	J A 55	J A 98	J A 68	J A 54	J A 57	J A 50	J A 34	34	J A 59	J A 54	J A 33	23	J A 27	J A 26			
3	E S 16	E S 16	J A 19	J A 20	E S 16	J A 27	J A 26	J A 53	J A 106	J A 85	J A 89	J A 140	J A 116	J A 170	144	J A 84	J A 80	J A 77	J A 74	J A 84	J A 168	J A 84	J A 65	J A 33			
4	J A 76	J A 79	J A 53	J A 27	J A 53	J A 53	J A 52	J A 34	J A 58	J A 50	J A 67	J A 90	J A 75	J A 48	J A 67	J A 77	J A 151	J A 76	J A 82	J A 108	J A 52	J A 53	J A 26	J A 65			
5	J A 85	J A 58	J A 53	J A 22	J A 25	J A 35	J A 43	J A 67	J A 87	J A 78	J A 120	J A 134	J A 144	J A 108	J A 56	J A 58	J A 34	J A 31	J A 34	J A 31	J A 33	J A 33	J A 24	J A 25			
6	J A 47	J A 87	J A 50	J A 53	J A 53	J A 44	J A 26	J A 34	J A 46	J A 65	J A 57	J A 37	G	44	J A 48	J A 54	J A 55	36	J A 41	J A 57	J A 57	J A 43	J A 64	J A 52			
7	J A 37	J A 28	J A 34	J A 24	J A 26	J A 22	J A 33	J A 54	J A 65	J A 80	J A 98	J A 77	J A 120	J A 138	J A 64	J A 87	J A 53	J A 34	J A 47	J A 33	J A 42	J A 22	J A 21	J A 18			
8	20	19	J A 30	J A 24	J A 28	J A 25	J A 27	J A 34	J A 36	J A 47	J A 108	J A 77	J A 56	J A 77	J A 65	J A 64	J A 80	J A 64	J A 76	J A 72	J A 52	J A 76	J A 84	J A 84			
9	J A 84	J A 53	J A 78	J A 59	J A 51	J A 37	J A 26	J A 29	J A 55	J A 54	J A 73	J A 44	G	41	39	J A 88	J A 53	J A 38	J A 39	J A 84	J A 50	J A 31	J A 34	J A 32			
10	J A 30	J A 38	J A 53	J A 38	J A 24	J A 24	J A 50	J A 64	J A 89	J A 54	J A 57	45	J A 53	J A 51	41	56	J A 59	J A 61	J A 55	J A 42	J A 45	J A 65	J A 55	J A 42			
11	J A 40	J A 110	J A 84	J A 83	J A 87	J A 22	J A 22	J A 52	J A 54	J A 50	J A 54	J A 60	J A 42	44	J A 35	J A 37	J A 35	J A 35	J A 33	J A 37	J A 38	J A 41	J A 30	J A 22			
12	J A 24	J A 26	J A 42	E S 16	E S 16	E S 16	21	J A 40	J A 65	J A 38	J A 53	J A 53	J A 50	42	48	J A 47	J A 69	J A 37	28	21	J A 30	J A 30	J A 37	J A 30			
13	30	J A 25	J A 24	J A 25	J A 36	J A 30	J A 37	J A 52	J A 52	J A 53	J A 54	J A 95	J A 56	J A 51	55	52	64	J A 64	J A 88	J A 90	J A 90	J A 85	J A 84	J A 34			
14	J A 41	J A 30	J A 54	J A 53	J A 24	J A 54	26	J A 83	J A 144	J A 121	J A 77	J A 126	J A 98	J A 54	J A 65	J A 51	J A 84	J A 43	J A 129	J A 104	J A 58	J A 87	J A 108	J A 144			
15	J A 84	J A 51	J A 28	J A 28	J A 63	J A 64	J A 78	J A 74	J A 170	J A 195	J A 106	J A 111	J A 110	50	J A 61	46	J A 72	J A 68	J A 77	J A 74	J A 93	J A 135	J A 88	J A 84			
16	J A 31	J A 88	J A 52	J A 62	J A 53	J A 33	J A 34	J A 44	J A 65	J A 55	39	J A 50	J A 40	J A 38	J A 36	J A 34	41	J A 107	J A 74	J A 67	J A 76	J A 30	J A 26	J A 21			
17	22	J A 25	J A 53	J A 29	J A 41	J A 29	21	J A 36	J A 53	J A 41	J A 49	J A 66	J A 85	J A 83	J A 65	42	J A 51	J A 80	J A 53	J A 51	J A 77	J A 108	J A 130	J A 84			
18	J A 51	J A 37	J A 108	E S 16	J A 54	J A 21	J A 28	J A 56	J A 77	J A 75	J A 64	J A 104	J A 124	J A 87	J A 73	45	43	J A 47	J A 44	J A 48	J A 39	J A 23	21	J A 28			
19	J A 28	J A 26	J A 33	J A 25	J A 24	20	J A 32	J A 41	J A 40	J A 50	J A 77	J A 105	J A 106	J A 75	40	J A 47	J A 105	J A 77	J A 52	J A 35	J A 37	23	J A 31	J A 31			
20	J A 30	J A 36	J A 32	J A 42	J A 33	J A 24	J A 30	J A 53	J A 76	J A 100	J A 163	J A 240	J A 130	50	J A 54	J A 43	42	42	J A 37	J A 47	J A 80	J A 84	J A 64	J A 76			
21	J A 29	J A 41	J A 32	J A 53	J A 21	J A 52	J A 110	J A 88	J A 75	J A 39	J A 39	J A 57	J A 57	C	J A 44	37	36	34	J A 50	J A 36	J A 34	J A 28	J A 24	J A 41			
22	J A 52	J A 36	J A 63	J A 26	J A 41	J A 32	J A 49	J A 82	J A 61	J A 39	J A 75	J A 54	42	J A 69	J A 47	J A 53	38	J A 54	33	J A 30	J A 25	J A 21	J A 29	J A 37			
23	J A 52	J A 28	J A 21	20	J A 28	J A 38	J A 22	J A 52	J A 155	J A 74	J A 64	J A 56	41	J A 64	J A 44	J A 84	J A 53	J A 54	J A 26	J A 77	J A 42	J A 33	J A 29	J A 30			
24	J A 34	J A 84	J A 50	J A 49	J A 28	J A 29	J A 28	J A 36	J A 38	J A 85	J A 80	J A 90	J A 50	J A 57	43	48	J A 75	J A 75	J A 60	J A 56	J A 47	J A 35	J A 50	J A 30			
25	J A 26	19	22	J A 42	J A 33	J A 60	20	J A 30	J A 50	J A 44	J A 57	43	J A 52	J A 75	40	37	J A 37	J A 44	J A 67	J A 50	J A 37	J A 39	23	J A 25			
26	J A 30	J A 28	J A 35	J A 43	J A 43	J A 64	J A 111	J A 78	J A 84	J A 137	J A 111	J A 137	J A 76	J A 147	G	J A 45	J A 42	J A 49	J A 38	J A 52	J A 42	23	J A 32	J A 25			
27	J A 29	J A 35	J A 18	J A 37	J A 31	J A 39	C	C	C	C	40	J A 37	J A 38	J A 50	J A 48	J A 74	J A 31	29	G	G	23	J A 26	J A 27	E S 16			
28	J A 26	J A 24	J A 33	J A 22	E S 16	E S 16	20	28	G	J A 48	J A 86	J A 128	J A 85	J A 51	38	J A 40	J A 49	J A 65	J A 36	J A 36	J A 38	J A 33	J A 29	J A 24			
29	23	E S 16	E S 16	E S 16	20	J A 21	J A 22	J A 29	J A 34	J A 52	J A 88	J A 110	J A 54	J A 77	J A 46	J A 39	J A 36	J A 30	29	E B 24	E S 16	23	22	23			
30	J A 20	J A 21	E S 16	23	J A 21	E S 16	J A 24	J A 53	J A 43	33	J A 53	40	J A 53	J A 111	39	J A 43	J A 40	J A 41	J A 33	J A 21	E S 16	J A 42	J A 30				
31																											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	30	30	30	30	30	30	29	29	29	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30			
MED	J A 30	J A 32	J A 34	J A 28	J A 30	J A 30	J A 28	J A 52	J A 61	J A 54	J A 70	J A 84	J A 56	J A 57	J A 48	J A 49	J A 53	J A 48	J A 48	J A 50	J A 42	J A 33	J A 32	J A 30			
UQ	J A 47	J A 51	J A 53	J A 43	J A 51	J A 44	J A 43	J A 64	J A 77	J A 85	J A 89	J A 111	J A 98	J A 83	J A 64	J A 60	J A 72	J A 65	J A 74	J A 72	J A 57	J A 76	J A 64	J A 52			
LQ	J A 26	J A 25	J A 22	J A 23	J A 24	J A 22	J A 24	J A 34	J A 50	J A 48	J A 54	J A 53	J A 50	J A 50	40	43	J A 38	J A 36	J A 36	J A 35	J A 34	J A 23	J A 26	J A 25			

JUN. 1985

FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1985

FBES (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA				Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 24sec in automatic operation																		
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	25	E	E	E	20	20	30	40	A A 76	A A 169	A A 120	A A 120	46	66	67	46	72	42	45	45	42	A A 107	33	50	
2	30	E	E	19	E	E	27	28	38	A A 110	42	53	51	48	44	40	33	29	58	52	30	E	E	E	
3	E S 16	E S 16	E	E	E S 16	26	25	36	49	A A 85	A A 89	A A 140	A A 116	A A 170	A A 144	52	56	62	58	57	A A 168	A A 84	A A 65	A A 33	
4	A A 76	E	A A 53	E	A A 53	A A 53	A A 52	34	50	46	A A 67	A A 90	A A 75	47	65	A A 77	A A 151	52	72	A A 108	48	33	E	E	
5	A A 85	E	A A 53	21	E	A A 35	35	A A 67	A A 87	A A 78	37	A A 134	A A 144	A A 108	54	50	33	30	28	29	24	26	24	E	
6	22	19	30	A A 53	E	17	23	33	39	39	36	36	G	43	39	50	48	34	26	33	49	38	50	45	
7	22	E	28	23	26	E	28	50	35	A A 80	A A 98	A A 77	A A 120	A A 138	48	70	49	31	45	24	25	E	E	E	
8	E	E	29	21	A A 28	18	23	29	31	38	A A 108	A A 77	46	42	46	43	42	45	53	53	52	29	A A 84	A A 84	
9	45	29	44	32	A A 51	23	22	28	43	34	A A 73	40	G	40	39	A A 88	50	36	32	28	U Y 50	30	29	E	
10	28	A A 38	A A 53	A A 38	22	E	37	37	39	41	40	42	46	39	37	37	45	54	48	39	45	47	54	40	
11	30	30	29	E	22	E	18	34	30	38	33	40	40	40	35	37	35	33	32	36	36	27	E	E	
12	20	E	E	E S 16	E S 16	E S 16	20	29	A A 65	35	37	40	41	41	48	40	50	33	28	21	25	27	33	30	
13	25	25	20	E	35	18	36	40	43	37	48	40	36	41	47	42	55	47	53	72	A A 90	45	25	21	
14	19	E	26	E	E	E	25	A A 83	A A 144	A A 121	A A 77	A A 126	43	40	46	44	61	43	A A 129	A A 104	41	35	A A 108	A A 144	
15	21	E	20	23	22	23	37	55	A A 170	A A 195	A A 106	51	41	48	49	44	62	64	75	73	A A 93	A A 135	A A 88	A A 84	
16	29	E	A A 52	25	41	29	34	38	57	35	39	40	40	38	36	34	41	A A 107	34	52	21	23	26	21	
17	20	20	29	23	25	21	20	30	39	39	40	50	A A 85	65	48	38	46	A A 80	52	51	A A 77	30	50	E	
18	40	E	A A 108	E S 16	30	E	25	50	A A 77	A A 75	46	A A 104	A A 124	65	65	45	42	47	42	48	39	21	E	E	
19	E	E	30	18	E	E	32	30	38	43	A A 77	A A 105	A A 106	A A 75	38	39	58	67	52	35	35	18	20	19	
20	30	20	20	A A 42	20	17	21	40	46	A A 100	A A 163	A A 240	51	50	48	40	42	39	37	U Y 47	80	A A 84	A A 64	A A 76	
21	26	E	A A 32	E	E	E	27	37	34	33	36	36	40	C	44	37	36	33	50	33	34	25	E	34	
22	40	A A 36	E	E	17	E	35	42	A A 61	30	43	50	38	47	46	44	36	49	33	28	24	21	21	31	
23	26	E	E	E	E	E	17	39	A A 155	32	38	35	40	40	38	40	43	36	24	63	26	28	E	E	
24	30	26	20	26	E	E	23	30	33	A A 85	A A 80	A A 90	35	45	40	44	62	61	60	52	41	29	A A 50	E	
25	E	E	E	19	A A 33	A A 60	19	27	47	38	36	40	A A 52	50	38	35	37	44	40	48	30	29	E	18	
26	E	E	E	A A 43	A A 43	A A 64	33	46	40	39	A A 111	A A 137	43	A A 147	G	40	40	41	38	40	40	E	31	21	
27	29	33	E	21	A A 31	A A 39	C	C	C	C	37	36	37	48	38	47	31	29	G	G	E	E	25	E S 16	
28	21	E	E	E	E S 16	E S 16	19	27	G	33	49	A A 128	50	37	36	39	47	48	30	24	34	28	20	20	
29	U Y 23	E S 16	E S 16	E S 16	E	E	22	28	32	34	44	48	38	39	37	36	31	28	25	E B 24	E S 16	E	E	E	
30	E	21	E S 16	E	E	E S 16	24	30	33	32	34	35	39	A A 111	35	42	40	28	30	20	E	E S 16	29	E	
31																									
CNT	30	30	30	30	30	30	29	29	29	29	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30
MED	25	E	20	18	20	16	25	36	43	39	45	50	43	47	44	42	44	42	41	42	38	28	26	20	
UQ	30	21	30	23	30	23	33	40	A A 61	A A 80	A A 80	A A 105	A A 52	65	48	46	55	52	53	52	49	35	50	34	
LQ	20	E	E	E	E	E	22	30	35	35	37	40	39	40	38	39	37	33	30	28	25	21	E	E	

JUN. 1985

FBES (0.1 MHz)

IONOSPHERIC DATA

JUN. 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	15	14	14	16	17	18	23	23	18	16	15	15	14	14	E S 16	E S 16	E S 16	E S 16
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	16	16	23	23	23	24	22	21	16	16	14	14	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	14	16	16	16	23	18	27	18	21	16	15	14	15	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	14	15	16	22	18	22	24	22	22	17	15	14	E S 16	E S 16	E S 16	E S 16	
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	15	18	18	20	22	20	18	16	16	14	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	16	17	16	23	20	27	19	22	20	16	14	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	14	14	16	22	23	28	23	22	23	17	16	14	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	14	16	16	28	28	28	28	28	22	15	14	E S 16	E S 16	E S 16	E S 16	
9	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	18	23	28	28	28	22	19	14	14	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	15	15	20	17	22	25	24	19	19	16	14	14	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	15	16	15	18	18	18	22	18	18	15	14	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	16	22	22	23	27	26	23	22	18	14	14	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	14	15	16	18	18	25	20	19	15	16	14	14	14	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	16	16	22	23	27	28	23	21	16	16	14	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	21	21	23	26	23	23	22	18	14	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	14	18	23	23	24	23	23	23	16	14	14	14	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	16	16	20	22	23	27	27	18	18	15	14	14	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	14	14	15	21	24	28	21	24	17	15	14	14	E A 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	14	14	15	17	16	18	19	25	18	16	16	14	14	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	15	16	15	18	18	20	18	18	16	15	14	14	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	23	23	23	24	C	27	19	23	18	14	14	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	19	21	24	27	26	28	28	18	16	14	E S 15	E S 16	E S 16	E S 16	
23	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	18	22	22	22	24	23	20	18	14	14	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	16	15	22	22	22	23	23	22	15	15	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	15	14	14	15	22	20	27	24	18	20	15	14	14	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	14	16	18	20	22	23	22	23	22	23	14	14	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	C	C	C	C	23	25	23	23	26	23	22	16	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	14	14	19	24	24	27	25	24	23	20	16	14	E S 16	E S 16	E S 16	E S 16	
29	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	21	16	16	24	21	22	21	15	15	24	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 15	E S 15	15	15	17	21	23	27	26	26	25	22	16	15	E S 15	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	29	29	29	29	30	30	30	29	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	16	20	22	23	24	23	22	18	15	14	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	15	16	17	22	23	25	27	26	23	21	16	14	E S 16	E S 16	E S 16	E S 16	
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	16	16	18	20	23	20	18	16	15	14	14	E S 16	E S 16	E S 16	E S 16

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FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1985

M(3000)F2 (0.0*)

115 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	315	J S 310	F	F	S 325	300	335	350	A	A	A	A	270	R 275	R 290	295	290	300	J R 315	335	R 325	A	F	F
2	F	F	F	F	S 350	S 310	325	390	325	A	R 275	270	280	295	260	290	305	310	320	295	S 275	290	S 300	S 285
3	S 290	J S 290	J S 315	F	S 320	375	350	350	290	A	A	A	A	A	A	300	295	335	325	R 365	A	A	A	A
4	A	U S 335	A	S 355	A	A	A	365	325	335	A	A	A	280	300	A	A	295	295	A	350	S 375	295	S 305
5	A	U S 320	A	U S 320	J S 355	A	355	A	A	A	270	A	A	A	295	300	310	320	R 330	285	305	300	S 315	U S 310
6	F	F	F	A	S 315	F	335	350	380	325	275	285	235	270	285	290	290	330	310	300	J S 305	J S 310	S 310	F
7	S 315	S 305	S 305	F	F	340	365	R 360	320	A	A	A	A	A	270	290	295	295	J R 310	R 320	310	280	S 280	S 285
8	270	J S 290	F	330	A	S 335	360	360	345	350	A	A	285	265	265	255	280	285	285	320	310	300	A	A
9	S 305	S 320	S 340	S 315	A	S 335	325	345	345	325	A	255	260	290	285	A	305	290	300	290	320	375	295	S 280
10	S 295	A	A	A	U S 340	S 370	345	350	315	350	285	235	270	245	265	260	285	285	305	305	300	280	285	S 270
11	F	F	F	F	F	F	F	335	325	310	320	275	295	275	270	275	275	295	320	R 335	330	285	285	S 290
12	F	F	F	F	320	S 330	S 305	355	A	R 320	270	280	270	265	280	285	295	U R 325	315	305	S 300	285	S 270	S 280
13	S 290	S 285	U S 320	315	305	U S 335	320	340	330	R 275	R 310	R 280	R 265	275	290	290	285	295	R 290	U R 280	A	S 285	F	F
14	F	S 315	U S 325	F	J S 350	U S 315	360	A	A	A	A	A	270	280	275	290	300	310	A	A	S 295	S 290	A	A
15	S 285	F	S 315	F	F	S 325	355	295	A	A	A	275	285	300	290	260	275	295	340	355	A	A	A	A
16	F	S	A	F	F	335	355	345	370	315	290	R 285	R 295	285	275	270	260	A	315	R 265	315	305	S 295	S 280
17	F	F	F	F	F	S 330	S 355	R 335	300	300	280	R 275	A	R 290	265	270	280	A	285	295	A	S 335	F	F
18	F	F	A	U S 365	F	S 310	S 335	325	A	A	315	A	A	275	R 270	290	295	310	310	R 305	S 325	S 315	295	F
19	F	F	F	F	F	F	325	340	340	R 320	A	A	A	A	275	285	U R 270	R 300	310	R 330	S 325	315	U S 295	J S 295
20	F	F	F	A	F	F	340	J R 325	R 335	A	A	A	R 310	300	270	R 275	285	R 290	300	R 335	U S 350	A	A	A
21	S	S	A	S	F	S 295	J R 345	R 345	315	360	R 345	285	275	C	285	R 295	290	310	325	335	S 320	S 315	F	J S 285
22	300	A	F	F	U S 335	F	R 310	280	A	R 345	R 290	270	275	295	270	270	300	315	R 345	340	315	320	315	S 305
23	S 290	S 315	F	F	S 295	S 365	365	325	A	345	340	230	275	290	S 258	255	285	330	350	355	U S 305	295	S 305	J S 335
24	F	F	F	F	J S 325	U S 310	335	365	R 360	A	A	A	260	R 290	R 275	300	R 280	285	J R 335	U S 355	U S 330	S 335	A	F
25	F	F	F	F	A	A	310	335	345	335	U R 280	U R 270	A	R 270	285	280	290	300	325	R 325	340	U S 325	S 315	S 285
26	S 295	S 315	S 355	A	A	A	335	350	345	R 335	A	A	260	A	R 270	275	295	315	320	R 330	310	275	S 295	S 295
27	S 295	S 320	S 345	S 335	A	A	C	C	C	C	G	305	265	270	270	275	295	320	R 300	295	S 330	U S 300	S 295	S 310
28	280	U S 295	330	335	350	S 345	350	375	375	325	320	A	285	275	265	280	320	330	325	300	330	S 325	S 275	S 285
29	U S 295	315	330	305	320	315	S 350	360	R 345	290	260	275	270	290	300	305	300	295	290	R 310	S 315	300	U S 305	300
30	S 305	S 305	S 310	S 320	U S 315	S 325	335	315	340	335	U R 325	G	R 265	A	300	S 305	305	315	R 310	325	300	315	J S 325	F
31																								
CNT	15	15	11	10	15	20	27	27	21	19	18	17	22	23	29	28	29	28	29	28	26	26	20	18
MED	S 295	S 315	S 325	S 325	S 325	S 330	340	345	340	325	288	275	270	280	275	285	290	305	315	320	315	302	S 295	S 288
UQ	S 302	S 318	S 335	S 335	S 345	S 338	355	358	345	340	R 320	280	285	290	285	292	300	318	325	335	330	S 320	S 308	S 305
LQ	S 290	S 300	S 315	S 315	S 318	S 312	330	335	325	318	275	270	265	272	270	272	285	295	300	298	305	290	S 290	S 285

The Radio Research Laboratories, Japan

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M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 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							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
2								L	A	A	A	A	A	A	A	L 370	380	L 350	A	A				
3								A	A	A	A	A	A	A	A	A	A	A	A	A				
4							A	L	A	A	A	A	A	A	A	A	A	A	A	A				
5								A	A	A	420	A	A	A	A	A	365	395	L	A				
6								L	425	L	400	420	415	A	420	A	A	375	380	L				
7								A	L	A	A	A	A	A	A	A	A	360	A					
8								L	L	L 365	A	A	A	360	A	A	A	A	A	A				
9								L	A	L 350	A	390	390	400	395	A	A	L 365	L	A				
10								L	A	L 355	L 375	A	365	355	325	A	A	A						
11								L	L	L	410	390	390	390	410	385	380	375	L	A				
12								L	A	L	420	430	415	370	A	395	A	355	L	L				
13							A	A	A	320	A	L 385	445	430	A	A	A	A	A	A				
14								A	A	A	A	A	370	380	A	A	A	A	A	A				
15								A	A	A	A	A	370	A	A	A	A	A	A					
16								A	A	L	L	400	400	345	390	375	A	A	L 335	A				
17								L	L	L 350	R 385	A	A	A	A	430	A	A	A	A				
18								A	A	A	A	A	A	A	A	A	A	A	A	A				
19								L	L	A	A	A	A	A	440	395	A	A	A	A				
20								A	A	A	A	A	A	A	A	A	A	A	A	A				
21								A	350	L 390	395	405	430	C	A	430	365	345	A	A				
22								A	A	375	A	A	L 395	A	A	A	375	A	370					
23								A	A	400	L 395	410	395	370	395	380	A	370	L 370	A				
24								L	L	A	A	A	L	A	395	A	A	A	A	A				
25								L	A	L 390	L 395	A	A	A	405	405	365	A	A	A				
26								A	A	L	A	A	A	A	420	390	A	A	A	A				
27								C	C	C	C	415	370	395	A	420	A	365	370	L 360	370			
28								L	L	L	L	A	A	A	395	370	365	A	A	L				
29								L	L	L	355	A	A	395	L 385	395	405	380	360	L 345	L			
30								L	370	415	420	410	420	A	430	A	A	370	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									3	10	10	12	14	11	14	13	8	12	6	1				
MED									370	370	405	398	395	380	400	390	370	368	L 365	L 370				
UQ									398	390	420	410	415	392	420	405	380	372	L 370					
LQ									360	350	L 395	388	390	368	395	375	365	358	L 345					

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M(3000)F1 (0.01)

IONOSPHERIC DATA

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H^oF₂ (KM)

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

Station	OKINAWA				Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 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							E A 250	250	A	A	A	A	365	A	A	335	A	295	265	240				
2								210	E A 280	A	410	380	365	325	320	325	315	300	275	255				
3								260	265	A	A	A	A	A	A	375	330	270	240	240	A			
4							A	255	E A 325	285	A	A	A	355	A	A	A	325	A	A				
5								A	A	A	445	A	A	A	330	310	295	265	250	260				
6								270	220	260	370	425	610	420	375	340	335	270	280					
7								E A 275	L 275	A	A	A	A	A	400	340	310	310	270					
8								250	280	280	A	A	395	460	405	420	335	315	320	280				
9								260	265	295	A	510	460	385	375	A	310	325	310	270				
10									L 275	265	420	545	385	455	375	300	325	325	280					
11								280	310	320	305	405	400	375	390	370	340	305	275	240				
12								240	A	300	430	380	440	405	370	340	320	270	270	250				
13							240	245	A	455	325	415	430	400	360	350	325	310	A	A				
14								A	A	A	A	A	400	360	360	325	315	300	A	A				
15								A	A	A	A	400	375	370	350	405	400	320	280					
16							255	A 260	270	400	L 410	365	390	365	410	400	A	280	270					
17							L 275	L 330	310	350	340	A	A	400	365	350	A	330	280					
18							A	A	A	320	A	A	A	A	315	310	280	280	A					
19							275	280	310	A	A	A	A	365	355	A	A	A	280					
20							290	270	A	A	A	340	330	A	430	400	340	305	245					
21							A 270	305	250	285	470	420	C	345	345	320	290	260	240					
22							A	A	270	375	A	380	365	370	380	325	285	250						
23							E A 295	A	270	290	650	400	370	415	410	345	265	240	260					
24							250	250	A	A	A	550	355	430	325	A	A	A	A					
25							275	265	280	450	470	A	A	355	340	330	300	265	250					
26							265	275	305	A	A	495	A	380	360	315	280	260	230					
27							C	C	C	C	G	430	460	415	370	350	315	275	270	245				
28							245	225	240	315	350	A	A	375	440	355	300	270	260					
29							255	235	L 255	400	500	415	395	350	305	320	300	300	310	265				
30							320	295	270	345	G	515	A	340	320	305	280	295	255					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	23	20	19	18	16	21	19	25	28	26	26	25	19					
MED						245	258	272	285	372	420	400	375	370	348	322	298	275	255					
UQ						252	274	284	310	430	490	460	402	390	372	335	310	280	268					
LQ						242	250	262	270	325	402	380	358	355	325	310	275	260	242					

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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	OKINAWA				Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1 MHz to 25 MHz in 24 sec in automatic operation																		
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A 280	A 260	A 260	A 255	A 250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
2	A 300	A 265	A 270	A 250	A 215	A 255	A 250	A 225	A	A	A	A	A	A	A	A 250	A 220	A 225	A	A	A 250	A 245	A 295	A 290	
3	A 280	A 275	A 250	A 240	A 225	A 200	A 220	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
4	A	A 260	A	A 255	A	A	A	A 250	A	A	A	A	A	A	A	A	A	A	A	A	A	A 230	A 210	A 270 S 275	
5	A	A 265	A	A 320	A 260	A	A 270	A	A	A	A 195	A	A	A	A	A	A H 225	A 210	A 245	A	A	A 260	A 275	A 265 255	
6	A 270	A 230	A 220	A	A 295	A 270	A 245	A 255	A E 240	A 210	A 185	A 180	A 195	A	A 220	A	A	A 240	A 220	A 290	A 305	A 270	A	A 345	
7	A 280	A 280	A 325	A 300	A 230	A 205	A 230	A	A 225	A	A	A	A	A	A	A	A	A 215	A	A 240	A 235	A 250	A 305	A 280	
8	A 315	A 310	A 250	A 260	A	A 300	A 230	A 225	A 240	A 240	A	A	A	A	A 260	A	A	A	A	A	A E 300	A 295	A	A	
9	A 325	A 285	A 260	A 280	A	A 260	A 250	A 225	A	A 240	A	A 200	A 195	A 220	A 205	A	A	A 250	A 270	A	A 275	A 210	A 310	A 290	
10	A 340	A	A	A	A 250	A 210	A 260	A 260	A 250	A	A	A	A	A 245	A 245	A 230	A	A	A	A 265	A 270	A 330	A E 370	A 350	
11	A	A	A E 300	A S 260	A 290	A 240	A 245	A	A 230	A 225	A 205	A 205	A 205	A 220	A 205	A 225	A E 245	A E 245	A	A	A 220	A E 310	A 295	A 300	
12	A 290	A S 290	A 240	A 245	A 250	A 260	A 250	A E 240	A	A 190	A 190	A H 190	A H 190	A	A	A	A	A E 240	A 220	A 240	A 250	A 270	A	A	
13	A	A 290	A 255	A 230	A	A 235	A	A	A	A 200	A	A 210	A 190	A 215	A	A	A	A	A	A	A	A E 290	A E 310	A	
14	A 300	A 260	A 250	A 265	A 270	A 295	A 205	A	A	A	A	A	A E 260	A 200	A	A	A	A	A	A	A	A 260	A 250	A	
15	A 300	A 300	A 255	A 270	A 270	A 250	A 255	A	A	A	A	A	A	A 235	A	A	A	A	A	A	A	A	A	A	
16	A 300	A 300	A	A 300	A E 300	A 250	A 225	A	A	A 210	A H 200	A 225	A 220	A 220	A 200	A 205	A	A	A	A	A 230	A 245	A 295	A 310	
17	A 275	A 310	A 300	A 250	A 245	A 250	A 230	A 210	A	A	A 230	A	A	A	A	A 220	A	A	A	A	A	A 250	A	A 280	
18	A	A 265	A	A 205	A E 280	A S 250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A 240	A 250	A S 290	
19	A 250	A S 300	A 235	A 235	A S 255	A S	A	A 250	A	A	A	A	A	A	A 200	A 240	A	A	A	A	A 240	A 220	A E 290	A E 300	
20	A E 310	A E 310	A 250	A	A 260	A 265	A 240	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
21	A 315	A 275	A	A 280	A 300	A 340	A 260	A	A 265	A 210	A 200	A 195	A 225	A C	A	A 195	A 240	A E 250	A	A	A 250	A 260	A 300	A 290	
22	A	A	A 245	A S 260	A 275	A S 280	A	A	A	A 220	A	A	A 205	A	A	A	A 250	A	A	A 240	A 230	A 250	A 250	A 260	
23	A 300	A 265	A 300	A 270	A 280	A 260	A 215	A	A	A 195	A 220	A 195	A 250	A E 260	A 200	A	A	A	A	A 210	A	A 270	A 295	A 260 270	
24	A	A E 265	A E 270	A 255	A S 260	A S 255	A S 235	A 230	A 230	A	A	A	A 190	A	A 230	A	A	A	A	A	A	A	A	A S 285	
25	A S 295	A S 280	A 250	A	A	A	A 260	A 250	A	A 230	A H 200	A 235	A	A	A 220	A 220	A E 250	A	A	A	A 230	A E 260	A S 255	A 245	
26	A 300	A 260	A 210	A	A	A	A 250	A	A E 260	A	A	A	A	A	A H 200	A	A	A	A	A	A 225	A 290	A	A 295	
27	A 315	A 305	A 230	A 260	A	A	A C	A C	A C	A C	A 200	A 225	A 200	A	A 200	A	A H 200	A 210	A 215	A 210	A 225	A 255	A 300	A 310	
28	A 310	A 310	A 250	A 260	A 225	A 225	A 215	A 220	A 225	A H 200	A	A	A	A	A 200	A 230	A 250	A	A	A 220	A 250	A 245	A 240	A 300 310	
29	A 330	A 285	A 250	A 275	A S 280	A S 265	A S 230	A 220	A 180	A 230	A	A	A 225	A 230	A 220	A 205	A 205	A 215	A 220	A E 255	A 210	A 260	A 245	A 250	
30	A 270	A 280	A 275	A 270	A S 270	A S 250	A 250	A 230	A 230	A 210	A 190	A 180	A 200	A	A 200	A	A	A	A 230	A 245	A 245	A 245	A 210	A E 260	A E 320
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	27	24	25	22	23	24	14	10	15	11	11	15	10	14	10	8	11	9	9	24	24	20	23	
MED	300	278	250	260	260	255	245	229	A 230	A 210	A 200	A 200	A 202	A 220	A 205	A 222	A 222	A 222	A 220	A 242	A 241	A 251	A 279	A 288	
UQ	312	295	265	270	278	266	250	250	A 240	A 229	A 202	A 218	A 224	A 238	A 220	A 240	A 244	A 236	A 245	A 255	A 258	A 271	A 299	A 304	
LQ	280	265	248	250	250	245	230	225	A 225	A 205	A 192	A 192	A 195	A 215	A 200	A 205	A 212	A 215	A 220	A 240	A 230	A 245	A 256	A 278	

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H*F (KM)

IONOSPHERIC DATA

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H^oE (KM)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	110	110	A	A	110	120	110	110	110	110	105	105	A				
2							S	110	110	100	105	105	105	110	110	110	105	110	A	A				
3							S	110	105	105	105	100	100	100	100	100	100	100	100	100	100			
4							S	105	105	105	110	105	105	110	110	110	110	110	110	110	S			
5							S	110	110	105	110	A	A	A	110	110	105	105	A	S				
6							S	110	105	110	105	110	110	110	110	110	110	105	110	S				
7							S	105	105	105	105	105	105	105	105	A	A	A	105	S				
8							S	110	105	105	A	A	A	A	A	A	A	A	A	S				
9							S	105	105	105	105	110	110	110	110	105	110	A	A	S				
10							S	110	110	110	110	110	110	110	110	105	105	105	110	S				
11							S	A	A	A	A	A	A	A	A	A	105	100	100	S				
12							S	110	110	110	110	110	110	110	110	110	110	110	105	A				
13							S	A	A	110	110	110	110	110	120	A	110	A	A	A				
14							B 130	110	110	110	110	110	110	110	110	110	110	A	A	S				
15							S	110	110	110	110	110	110	110	110	110	110	105	105	S				
16							S	110	110	110	A	A	A	A	A	110	110	110	110	A				
17							B 130	110	A	A	A	A	A	A	A	A	A	110	115	A				
18							B 125	110	A	A	A	A	A	A	A	A	A	A	A	A				
19							B 130	A	110	110	A	A	A	A	A	A	A	A	A	S				
20							S	110	110	110	105	105	A	A	A	A	A	A	A	A				
21							S	A	A	A	A	A	A	C	110	A	A	A	A	A				
22							S	110	A	A	A	A	110	110	110	A	A	110	110	S				
23							S	110	A	110	110	110	110	110	110	110	110	105	A	S				
24							S	110	110	105	105	105	105	105	A	A	A	A	125	S				
25							S	A	110	A	110	A	A	A	A	A	A	A	A	A				
26							S	110	110	110	A	A	110	110	110	110	110	A	A	S				
27							C	C	C	C	110	110	110	110	110	A	110	110	110	S				
28							S	110	110	110	110	A	A	110	110	110	A	A	A	S				
29							A	115	A	110	A	A	A	A	A	A	A	A	110	B				
30							S	A	A	110	110	105	120	110	A	A	A	A	A	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	23	20	22	19	17	18	19	19	15	17	15	15	1				
MED							B 130	110	110	110	110	110	110	110	110	110	110	105	110	100				
UQ							B 130	110	110	110	110	110	110	110	110	110	110	110	110					
LQ							B 128	110	105	105	105	105	105	110	110	110	105	105	105					

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H^oE (KM)

IONOSPHERIC DATA

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H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	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	120	115	110	110	120	110	110	115	115	105	105	115	120	120	120	120	120	115	115	110	110	110	100	100	
2	90	95	95	100	105	115	110	115	110	105	105	105	105	110	110	110	110	130	100	100	100	100	100	100	
3	s	s	105	105	s	115	115	115	110	110	105	100	100	100	100	100	100	100	100	100	100	100	105	110	
4	110	105	100	100	105	100	105	115	115	120	110	105	110	125	130	130	115	110	110	115	110	105	105	110	
5	105	105	105	100	100	120	110	110	110	105	105	100	105	105	110	110	115	110	100	100	100	100	95	105	
6	105	105	105	105	105	105	110	115	110	110	110	110	G	150	135	115	115	115	115	110	105	105	105	105	
7	105	100	100	100	110	110	115	110	110	105	105	105	105	105	105	105	115	105	105	105	105	100	105	110	
8	100	100	115	100	100	105	105	110	110	105	100	100	105	105	105	105	100	100	100	100	110	115	110	105	
9	105	105	105	105	105	105	105	105	105	120	125	125	G	170	155	110	115	100	100	110	110	110	110	110	
10	105	100	105	100	100	115	110	110	110	110	110	125	125	130	150	130	120	115	110	115	110	110	110	110	
11	110	110	110	110	110	100	100	100	100	100	100	100	105	140	110	150	135	130	120	115	110	110	110	110	
12	100	100	100	s	s	s	140	125	115	115	120	120	125	140	130	135	115	120	115	100	100	100	100	100	
13	110	110	110	110	105	105	105	105	110	120	120	120	120	120	140	140	130	125	100	100	100	120	120	110	
14	110	110	105	105	105	105	125	110	110	110	110	105	105	110	110	110	110	110	110	105	110	110	110	105	
15	110	110	100	100	105	105	120	110	110	110	110	110	140	150	130	125	115	115	110	110	110	110	110	110	
16	100	105	105	125	105	105	125	120	115	120	160	105	110	110	115	115	125	110	110	105	105	100	95	100	
17	100	100	105	100	105	105	140	120	110	110	105	105	100	100	125	130	130	120	115	120	115	115	110	110	
18	110	110	110	s	110	110	130	120	110	110	110	100	100	100	100	100	135	120	120	120	110	110	100	105	
19	110	110	105	105	105	105	135	135	120	120	110	110	105	105	E G 150	140	100	100	100	100	110	100	120	120	
20	100	120	115	110	110	110	120	120	120	115	115	115	115	E G 160	110	110	140	135	125	120	115	115	115	110	
21	110	110	110	110	110	110	110	110	110	110	110	120	115	C	120	130	130	140	120	95	115	95	115	110	
22	110	110	110	110	110	105	130	125	120	130	125	125	125	115	120	130	150	115	115	110	115	110	110	110	
23	110	110	110	110	110	110	105	110	105	110	110	115	155	145	150	125	120	115	125	100	100	100	115	110	
24	110	110	110	110	110	130	130	125	120	115	115	115	115	120	145	140	120	110	115	110	120	115	130	110	
25	110	100	110	110	110	110	125	110	125	110	125	140	105	105	E G 155	140	110	100	100	100	100	100	100	120	
26	110	110	110	110	105	105	115	110	110	110	105	105	110	110	G	120	120	115	110	100	100	100	100	100	
27	100	120	110	105	105	110	C	C	C	C	110	115	110	105	105	100	110	150	G	G	110	105	110	s	
28	115	110	110	110	s	s	140	140	G	110	105	105	105	110	140	110	110	100	100	100	100	100	100	100	
29	100	s	s	s	110	110	110	120	115	115	105	105	110	110	110	110	110	115	115	B	s	105	105	100	
30	120	115	s	115	110	s	110	105	110	115	120	120	120	110	115	110	105	105	100	100	100	100	s	110	110
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	28	28	27	27	27	29	29	28	29	30	30	28	29	29	30	30	30	29	28	29	29	30	29	
MED	110	110	108	105	105	110	115	115	110	110	110	110	110	110	118	118	115	115	110	105	110	105	110	110	
UQ	110	110	110	110	110	110	125	120	115	115	115	120	120	128	135	130	125	120	115	110	110	110	110	110	
LQ	100	102	105	100	105	105	110	110	110	110	105	105	105	105	110	110	110	105	100	100	100	100	100	105	

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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	F2	F2	F2	F2	FF12	F3	L4	C4	C4	L5	L6	C5	C2	C4	C3	C2	C5	C4	C7	L7	F7	F4	F5	F4	
2	F4	F2	F1	F4	F6	F3	C5	C4	C3	C5	C3	C5	C3	C3	C2	C2	C1	H1	L7	L7	F4	F2	F7	F5	
3			F3	F2		F5	C4	C6	C4	C5	C5	C5	C6	C5	C5	C5	C5	C5	C5	C5	F5	F4	F3	F7	
4	F4	F4	F6	F3	FF32	F5	C7	C4	C4	C3	C4	C7	C3	C2	H3	H5	C6	C4	C7	C7	F5	F6	F3	F3	
5	F4	F5	FF35	F3	F2	FF32	C6	C7	C7	C7	C5	L5	L6	L7	C3	C3	C1	C2	L3	L7	F3	F6	F3	FF12	
6	FF32	F2	F5	F6	F5	F5	C4	C4	C4	C3	C2	C1		H1	H2	C4	C4	C2	C2	C3	F7	F6	F4	F5	
7	F7	F4	F8	F3	FF42	FF15	CL41	C5	C3	C7	C7	C5	C7	C7	C3	CL53	CL32	L2	C7	C5	F6	F3	F2	F2	
8	F3	F1	FF23	F3	F3	F5	C3	C2	C2	C3	L7	L4	L2	L2	L2	L2	L3	L3	L4	L6	FF27	FF25	FF46	FF41	
9	F6	F6	F3	F4	F5	F4	C3	C2	C5	C1	HC41	H1		H1	H1	C5	C2	L4	L3	CL23	FF74	FF14	FF24	FF22	
10	F7	F6	F3	F4	F2	FF22	C5	C4	C4	C4	C3	H1	H2	H1	HC11	HC21	HC31	CL61	C7	CL71	F7	F3	F7	FF73	
11	F7	F4	F6	F6	F4	F3	L4	L4	L2	L3	L2	L1	L2	HL11	L1	HL11	H1	C2	C5	C7	F7	F4	F3	F2	
12	F2	F2	F4				H1	C2	C3	C2	C1	C1	C1	H1	H1	H1	C2	C1	C2	L2	F3	F4	F6	F5	
13	FF32	F6	F5	F3	F4	F6	L6	L3	L3	C2	C3	C3	C1	C1	HC21	HL21	H5	CL32	L4	L6	F5	FF16	FF15	F2	
14	F5	F3	F4	F5	F3	F3	H3	C6	C7	C5	C5	C7	C2	C1	C3	C2	C5	CL32	CL72	CL73	FF35	FF25	FF15	FF34	
15	FF33	F7	F2	F4	FF32	FF33	CL33	C7	C7	C4	C4	C4	HH11	HH11	H2	H2	C3	C7	C7	C6	F7	F5	F4	F5	
16	F3	F4	F3	FF14	F7	F7	C6	C2	C5	C2	HL11	L1	L1	L1	L1	C1	C2	C6	C5	L3	F3	F6	F2	F3	
17	F2	F3	F2	F3	FF32	F4	H1	C2	L4	L2	L2	L4	L5	L5	HL22	HL21	HL31	C3	CL51	CL53	FF55	FF23	FF23	F2	
18	F3	F2	F4		F4	F1	H1	C5	L6	L7	L2	L6	L4	L4	L4	L2	HL31	CL22	CL31	CL51	FF72	F4	F1	F2	
19	F2	F4	F5	F2	F1	F1	H3	HL21	C3	CL41	L5	L7	L5	L3	HL11	HL21	L5	L5	L5	L5	FF52	F1	FF34	FF21	
20	F5	FF22	FF11	F6	F3	F5	C2	C5	C4	C6	C6	C6	L3	HL22	L3	L2	HL22	HL23	CL22	CL21	FF55	FF52	F6	F6	
21	F5	F3	F6	F7	F2	F3	L3	L3	L2	L2	L1	CL11	CL11		C1	HL11	HL11	HL11	CL55	L5	FF22	F3	FF12	F6	
22	F4	F5	F2	F1	F3	F3	H1	C3	CL31	HL11	HL21	HL32	H1	C3	C1	HL11	HL21	C7	C4	C7	F7	F4	F4	F5	
23	F4	F2	F3	F2	F2	F4	L1	C6	L3	C1	C1	C1	HH11	HH11	H1	C3	C4	C3	CL11	L7	F5	F5	FF32	F2	
24	F5	F3	F5	F4	F2	F2	H1	C2	C2	C4	C7	C4	C1	CH11	HL11	HL21	CL51	L2	CL72	L7	FF34	F4	FF21	F2	
25	F2	F1	F1	F2	F4	F4	C2	L2	C1	L2	C2	HL12	L3	L4	HL11	HL11	L2	L3	L5	L7	F5	F4	F2	F3	
26	F3	F5	F1	F3	F3	F3	C4	C4	C3	C3	L6	L5	C4	C7		C2	C2	CL32	CL51	L3	F6	F2	F2	F5	
27	F4	F3	FF21	F7	F4	F5					CH11	C1	C1	C2	C2	L3	C2	H1			F1	F5	F4		
28	F4	F4	FF22	F2			H1	H1		C1	L3	L3	L3	C1	HC11	C2	CL42	L3	L3	L3	F3	F3	F3	F3	
29	F4				F1	F2	L2	C1	L2	C1	L3	L3	L2	L2	L2	L1	L1	L1	C1			F1	F1	F4	
30	F1	F1		F1	F2		L2	L3	L2	C1	C1	C1	C2	C6	L1	L3	L3	L2	L3	L3	F2		F3	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																									

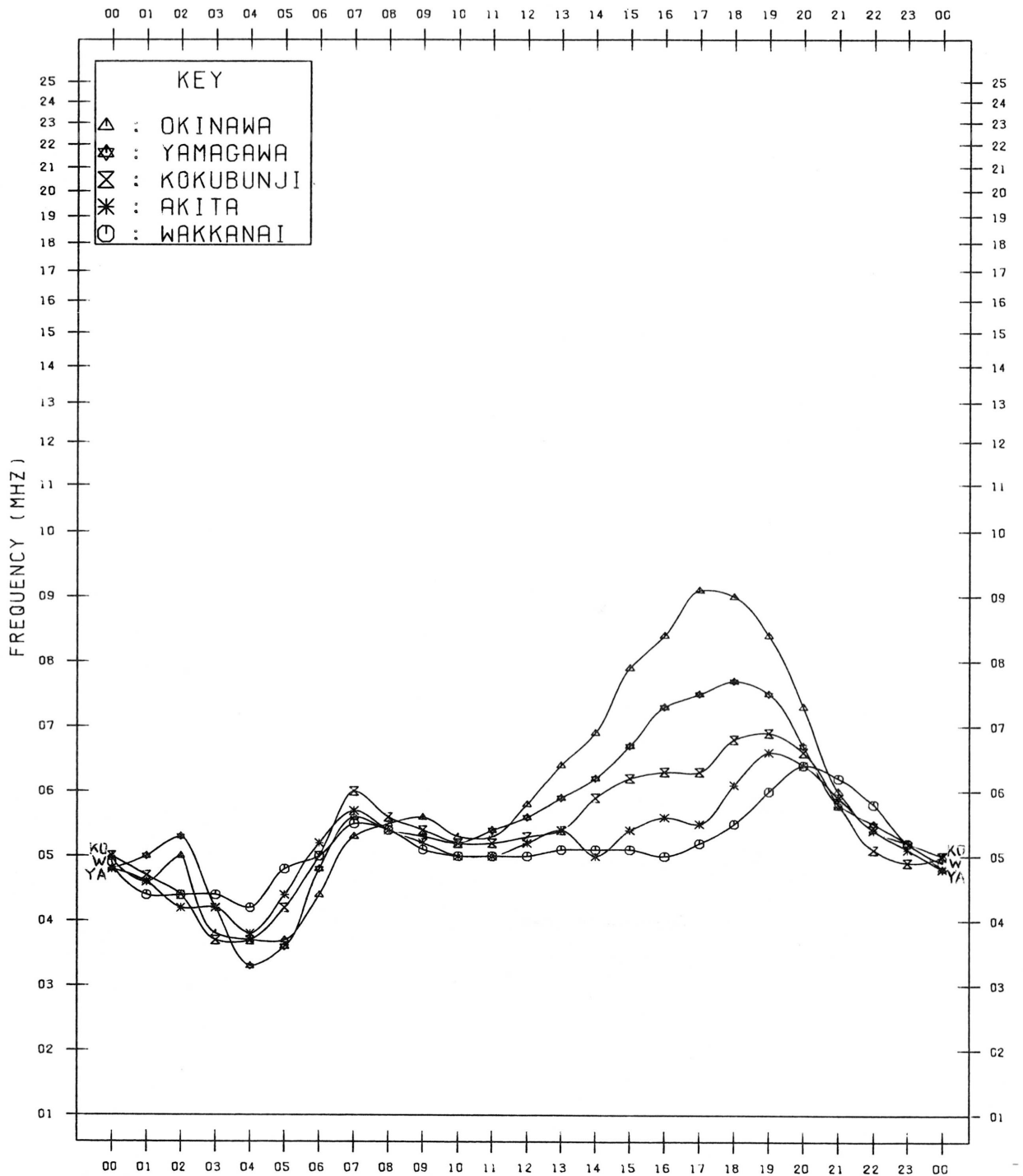
JUN. 1985

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

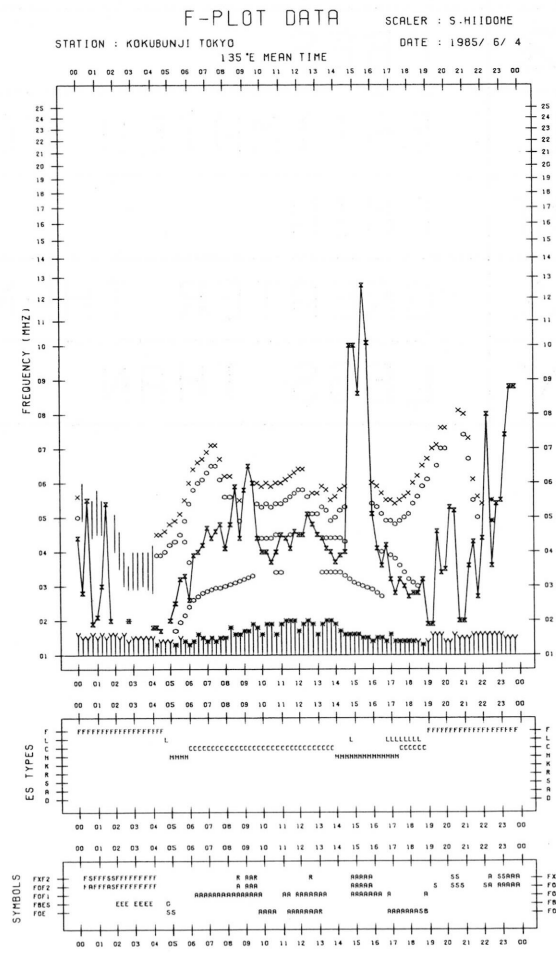
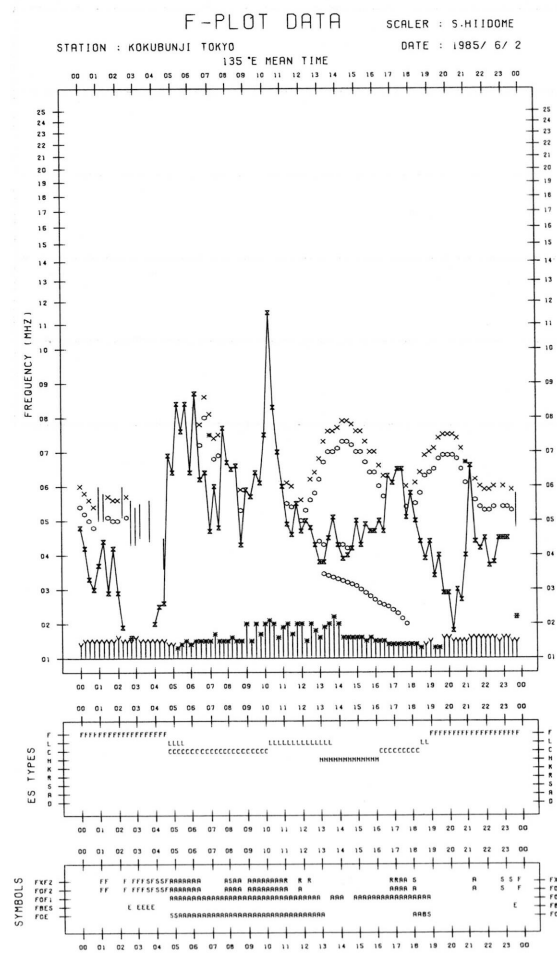
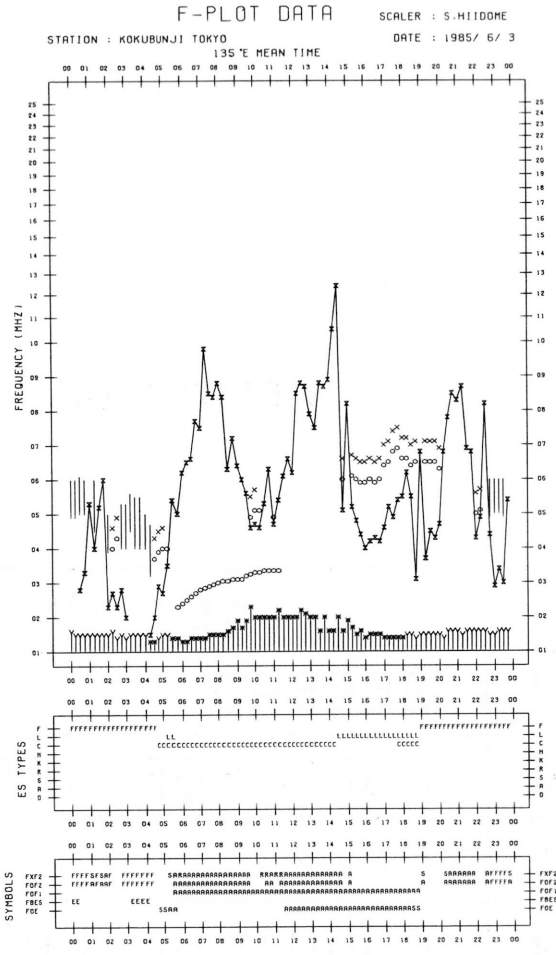
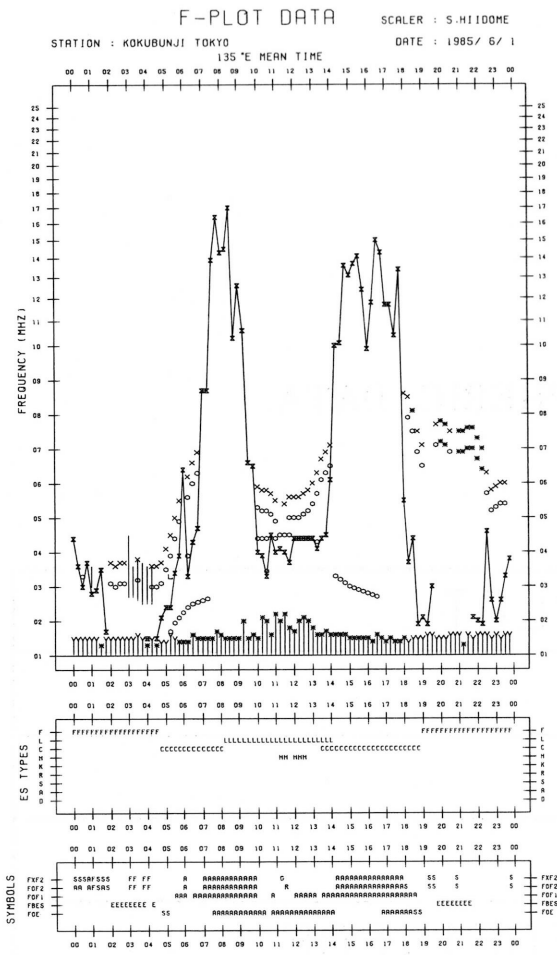
135 °E MEAN TIME

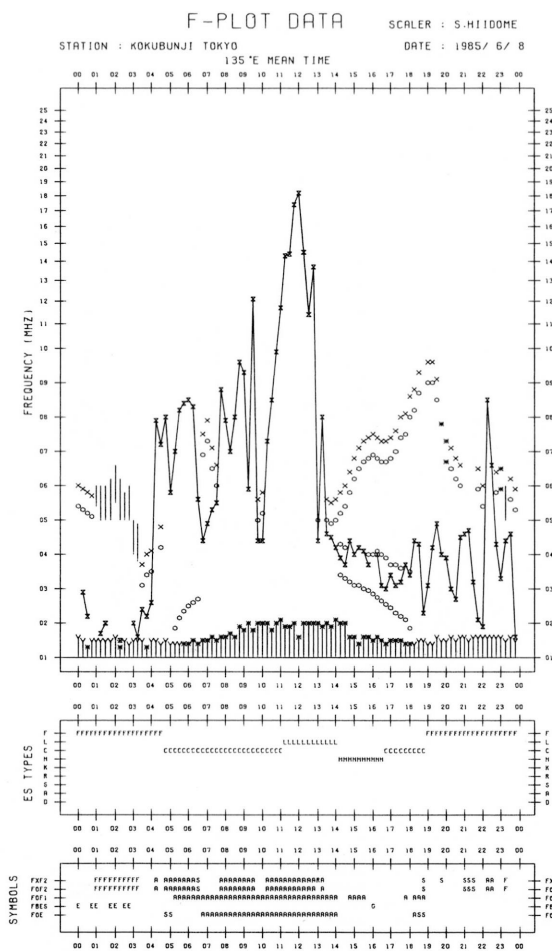
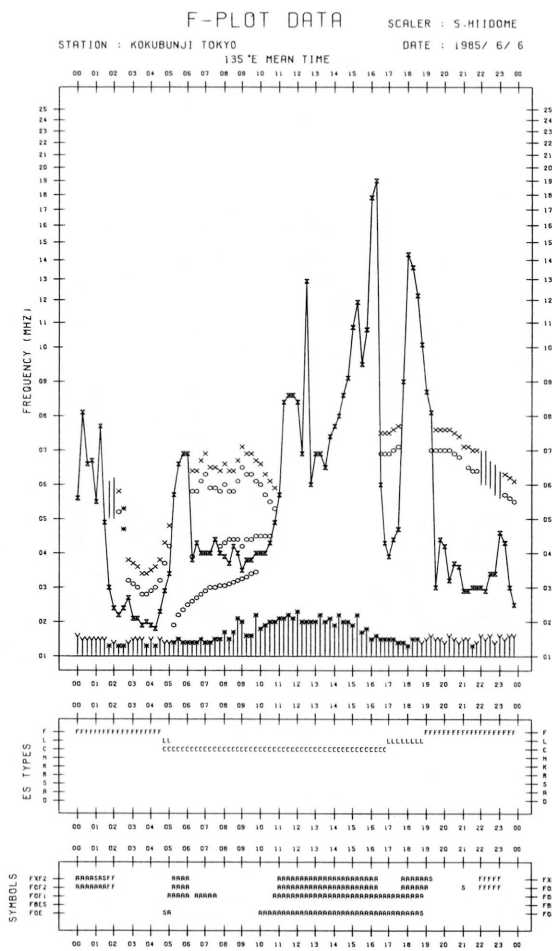
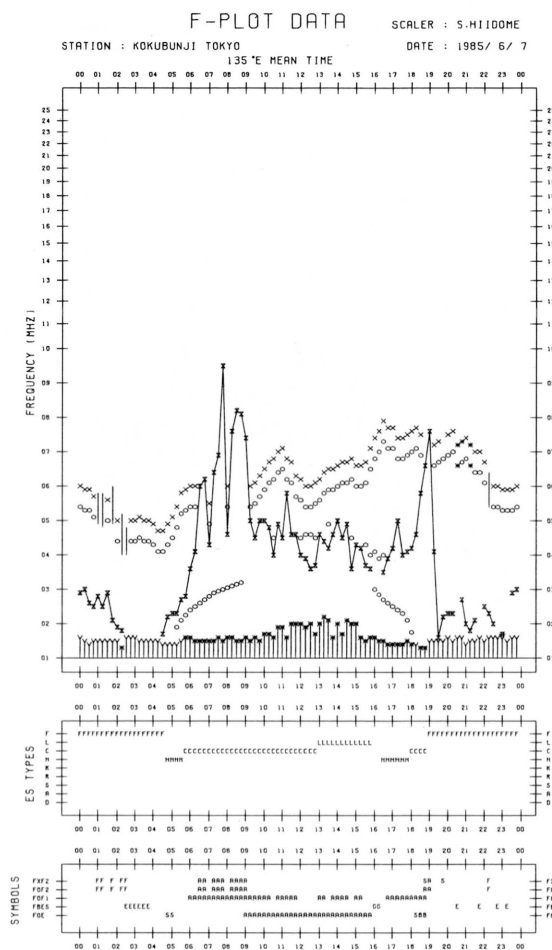
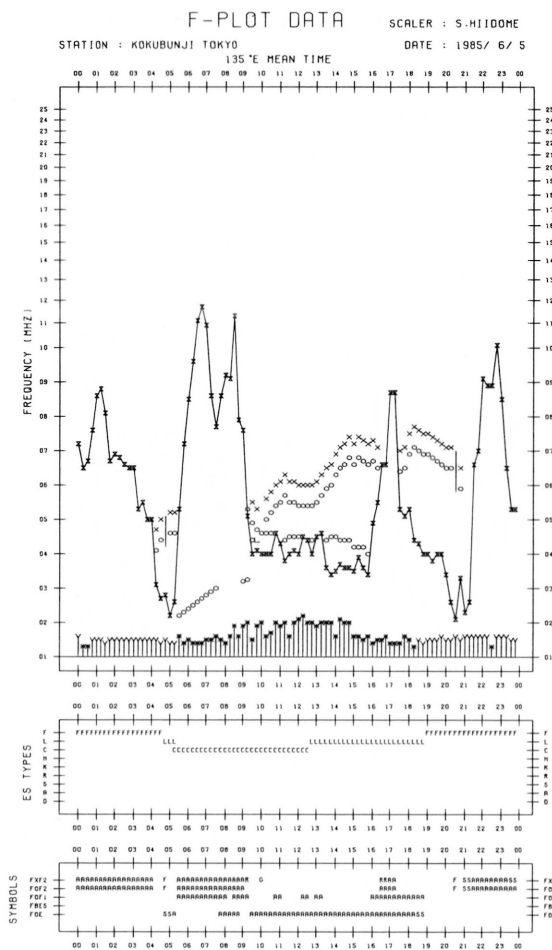
JUN. 1985



f-PLOTS OF IONOSPHERIC DATA

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

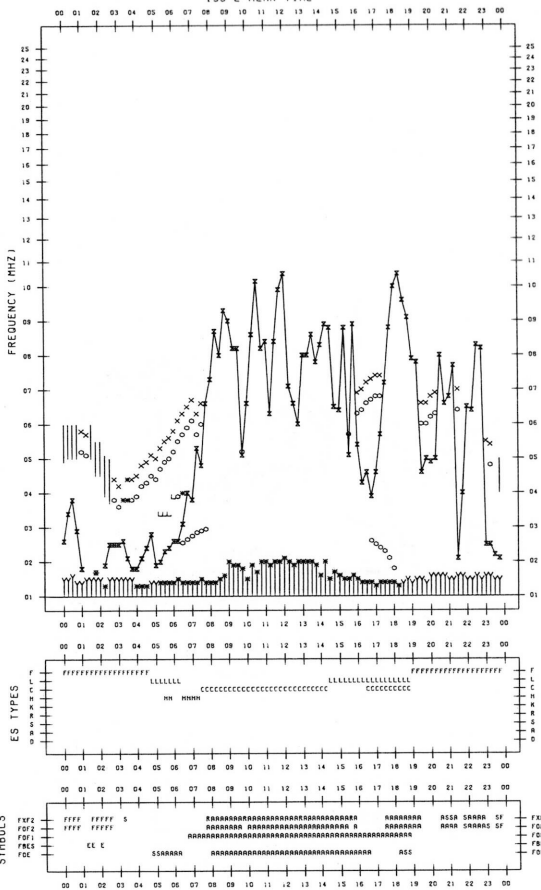




F-PLOT DATA

SCALER : S.HI100ME

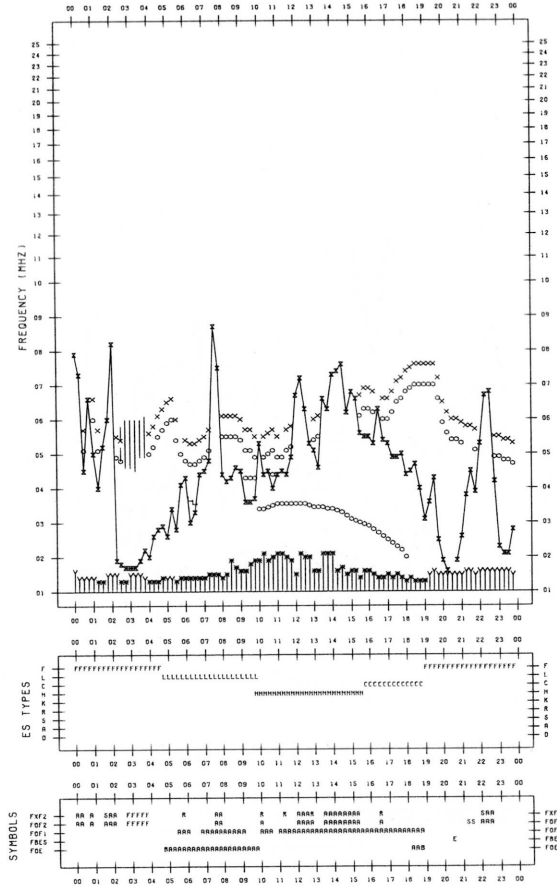
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1985/ 6/ 9



F-PLOT DATA

SCALER : S.HI100ME

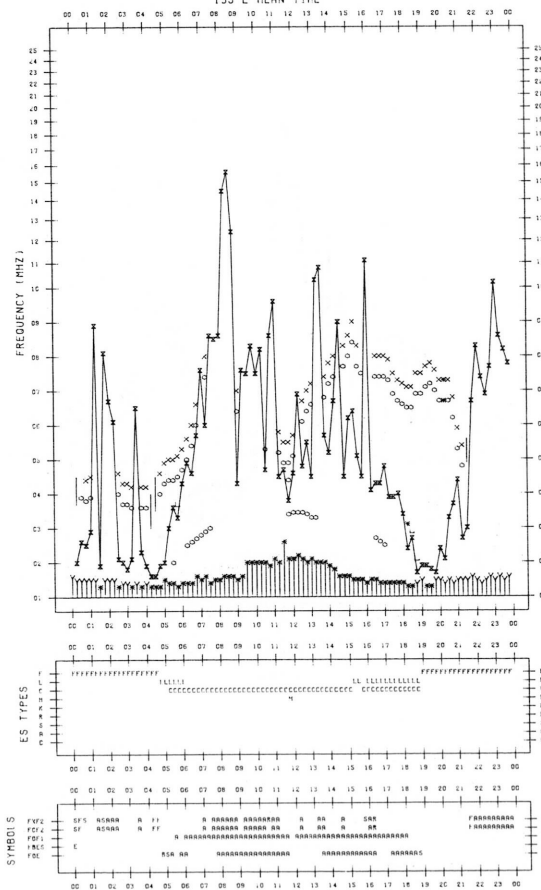
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1985/ 6/11



F-PLOT DATA

SCALER : S.HI100ME

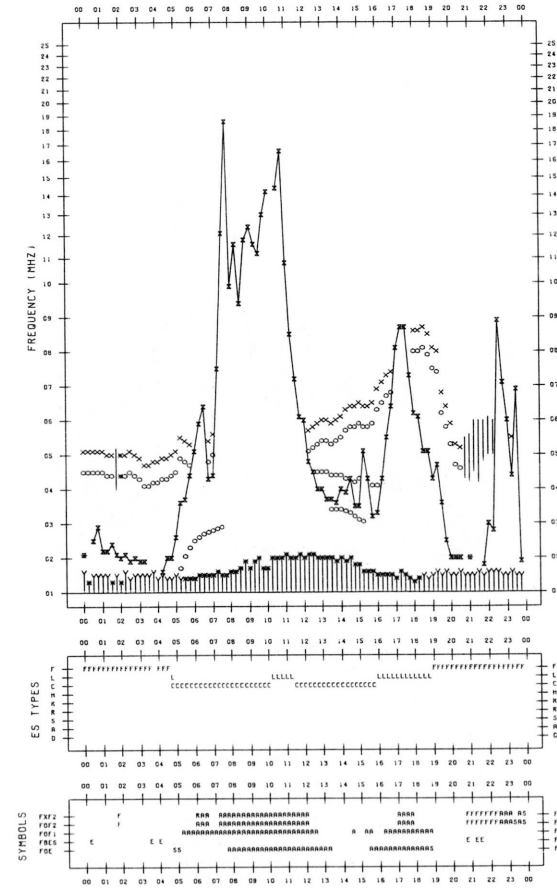
STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1985/ 6/10

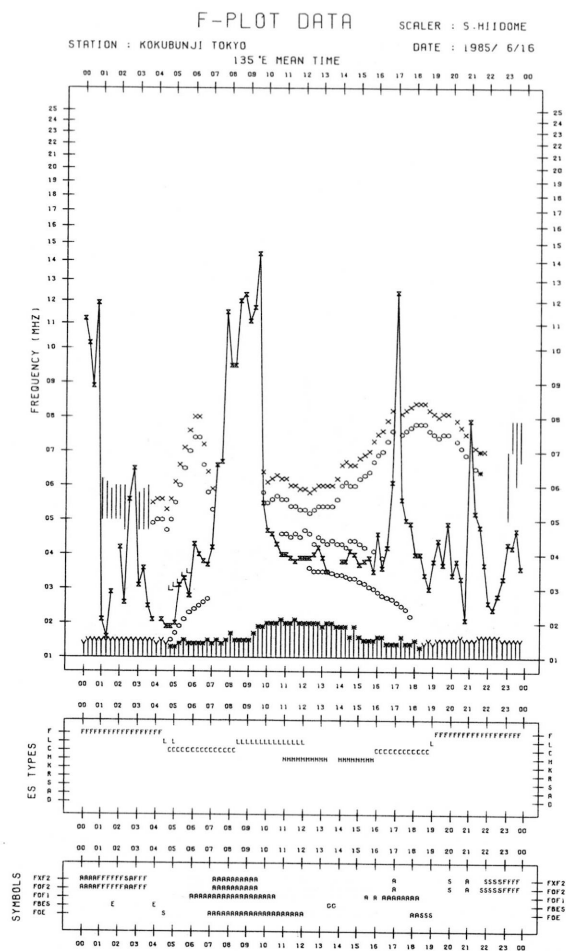
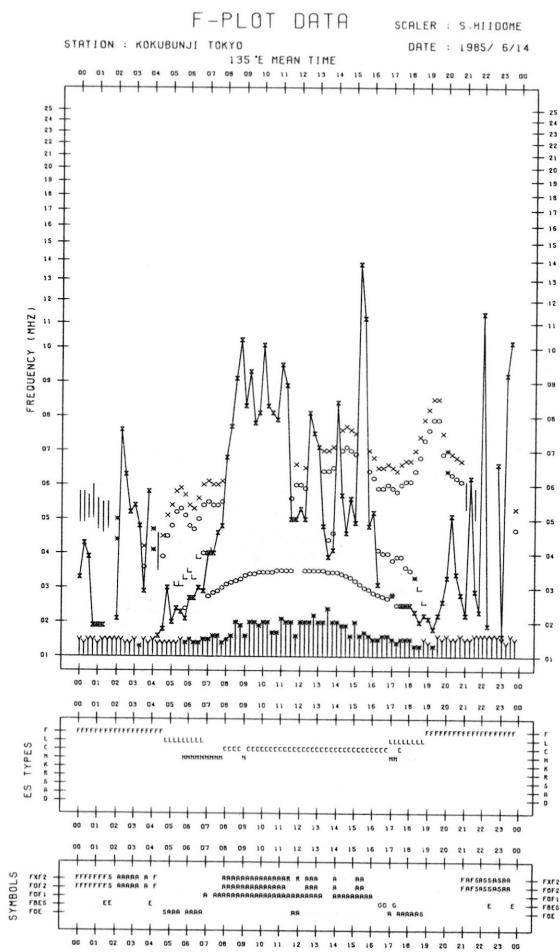
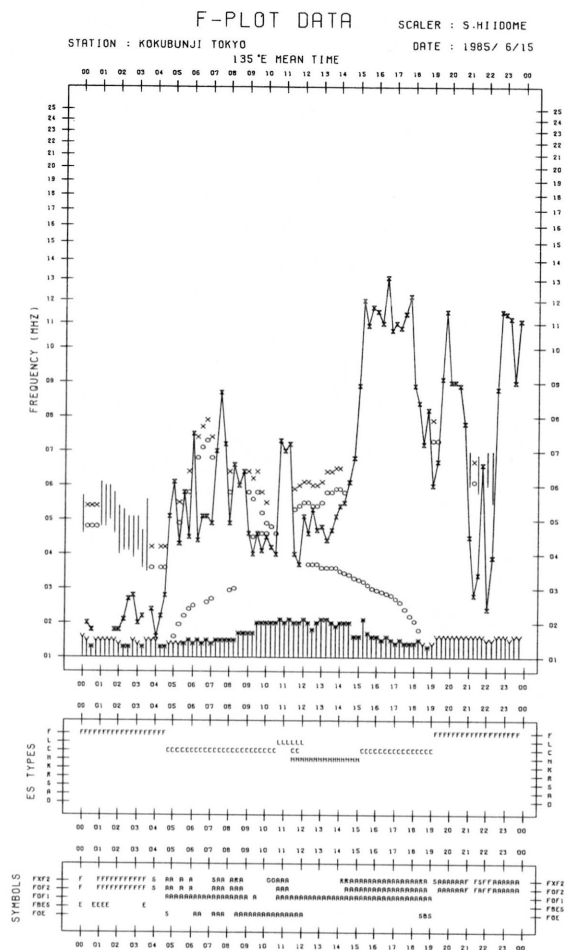
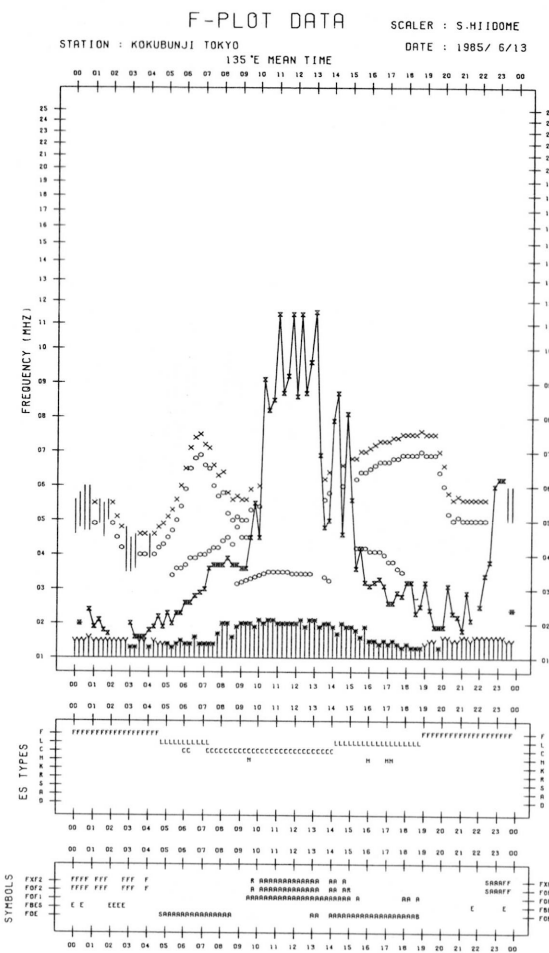


F-PLOT DATA

SCALER : S.HI100ME

STATION : KOKUBUNJI TOKYO 135°E MEAN TIME DATE : 1985/ 6/12





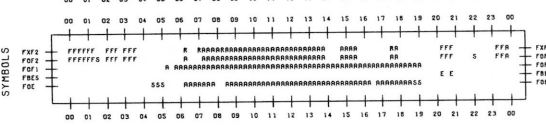
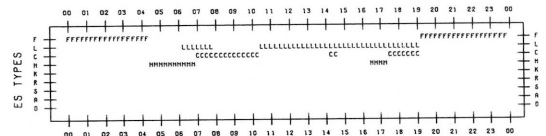
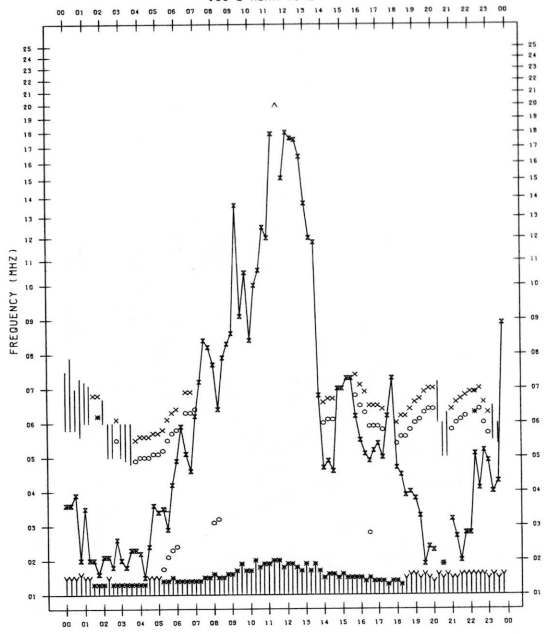
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/17

135°E MEAN TIME



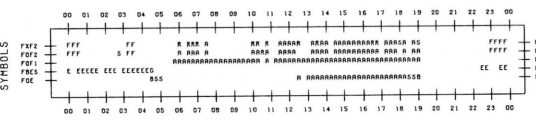
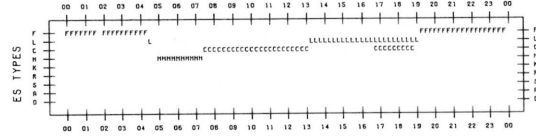
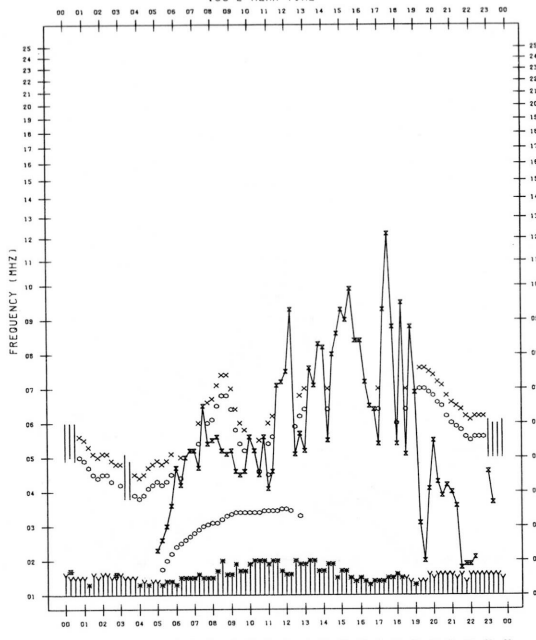
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/19

135°E MEAN TIME



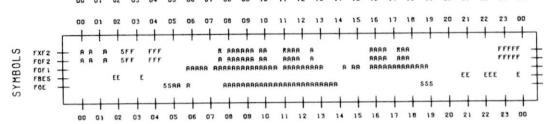
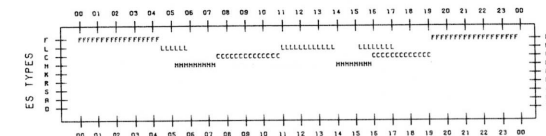
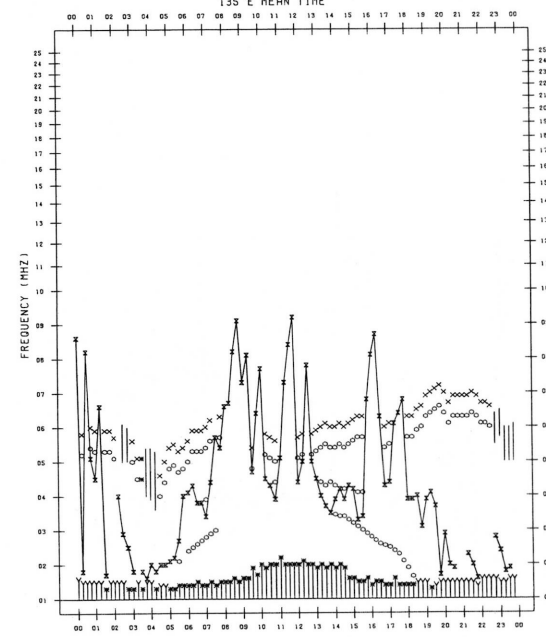
F-PLOT DATA

SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/18

135°E MEAN TIME



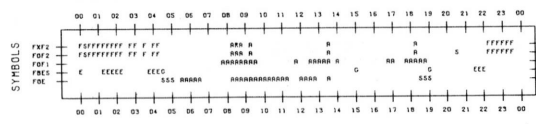
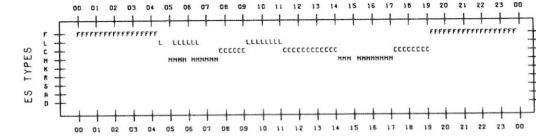
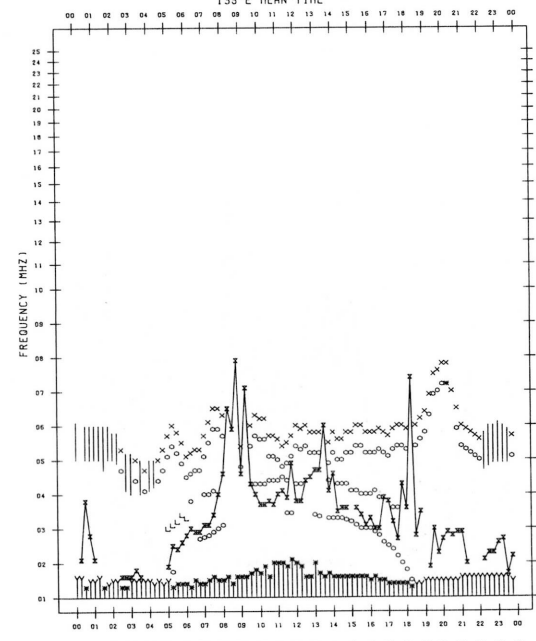
F-PLOT DATA

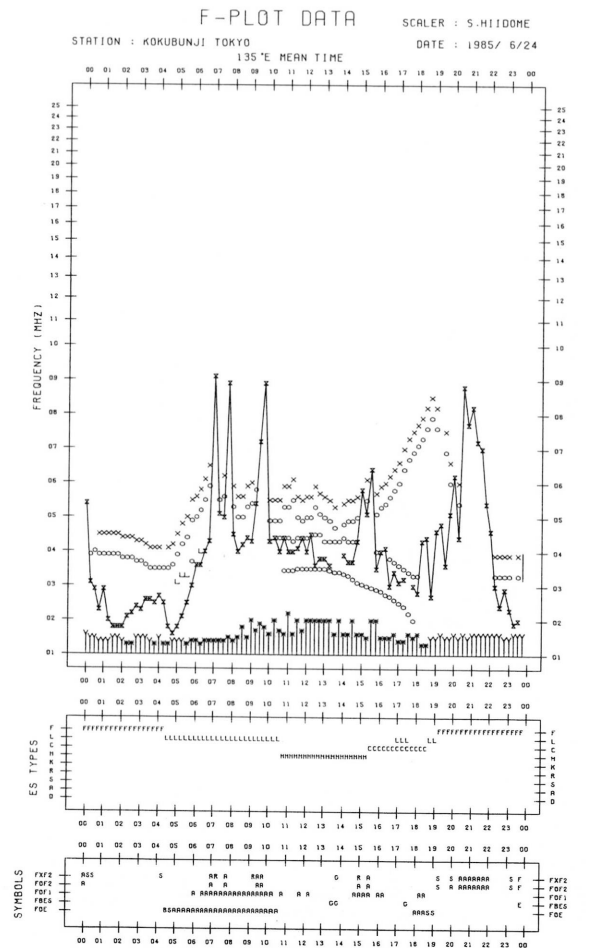
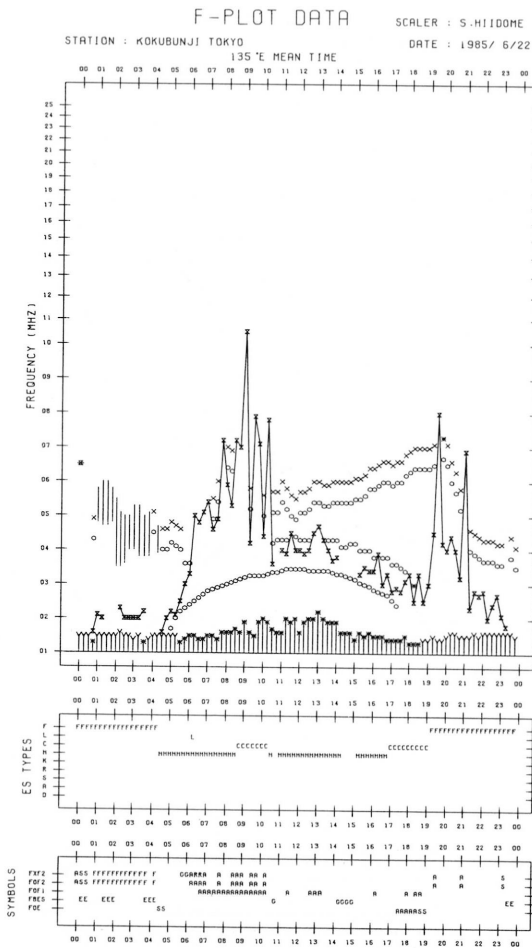
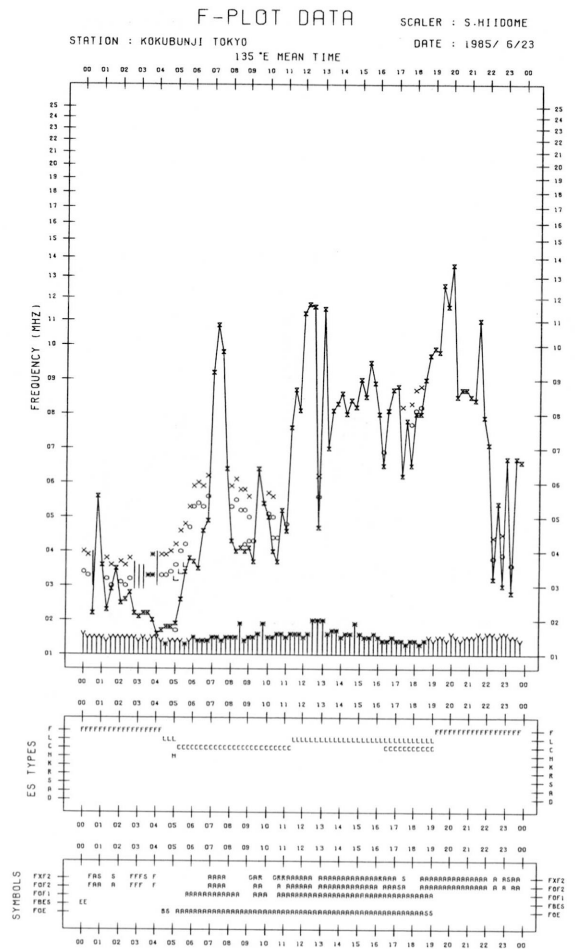
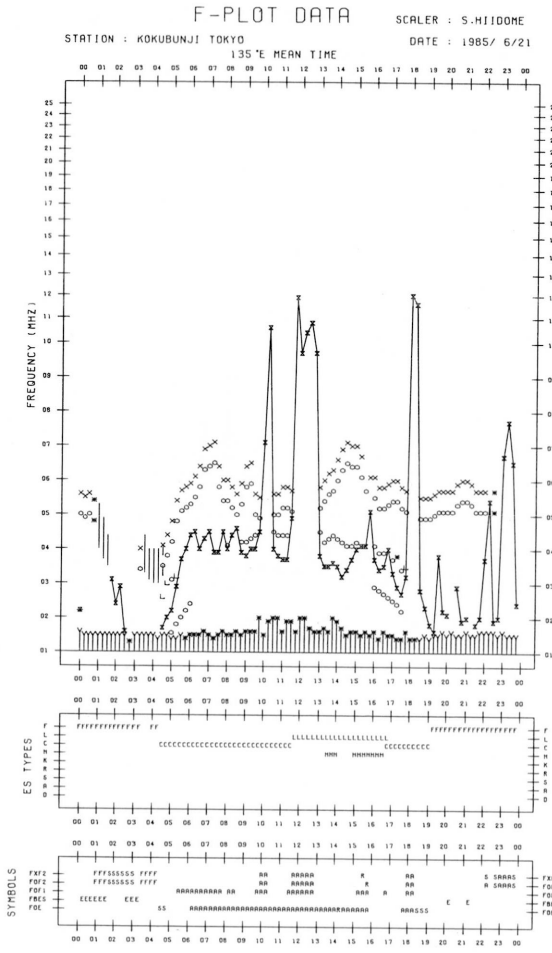
SCALER : S.HIIDOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/20

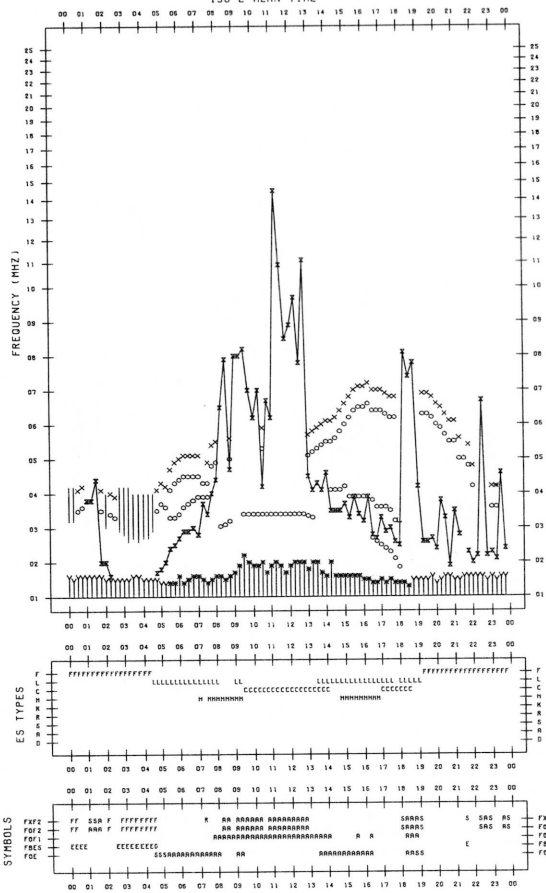
135°E MEAN TIME





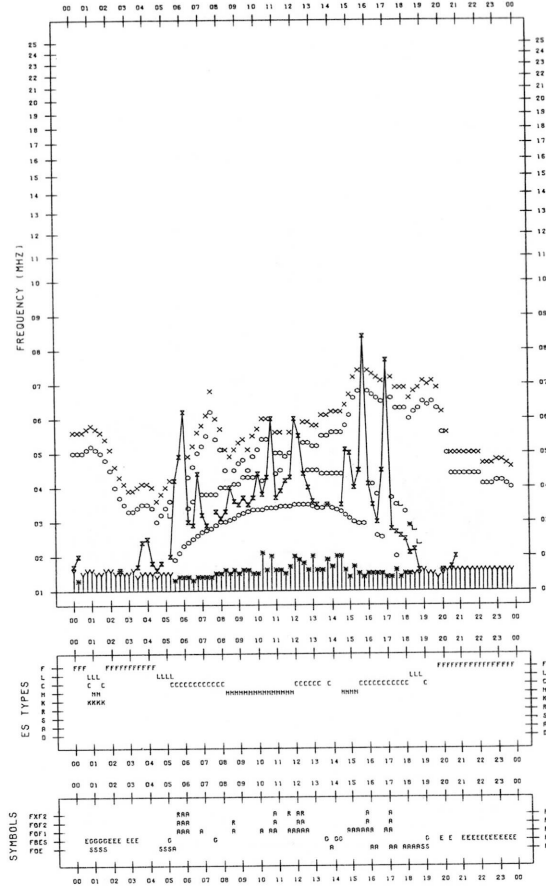
F-PLOT DATA

SCALER : S.HI100ME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 6/25
135°E MEAN TIME



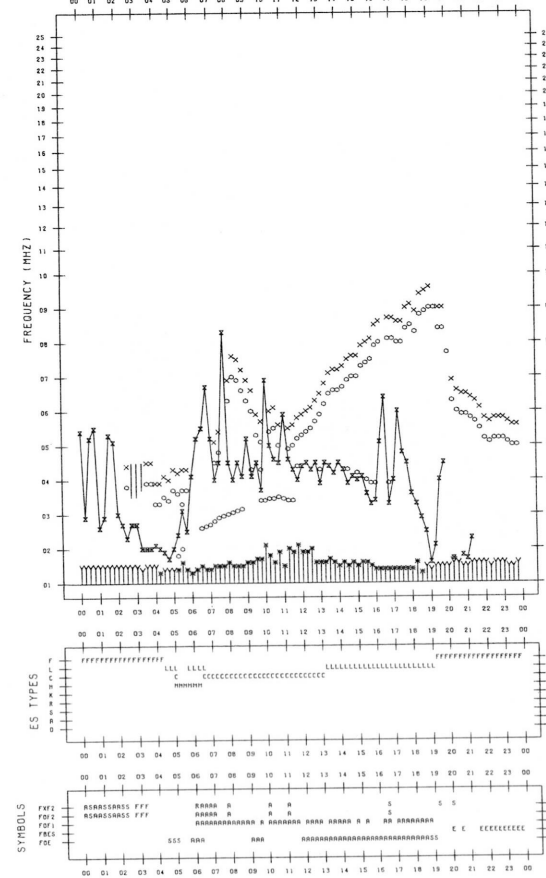
F-PLOT DATA

SCALER : S.HI100ME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 6/27
135°E MEAN TIME



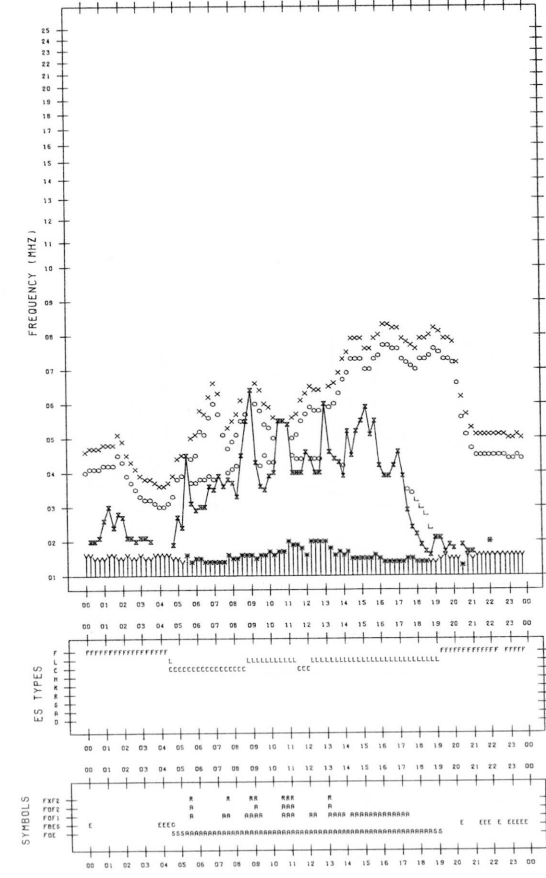
F-PLOT DATA

SCALER : S.HI100ME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 6/26
135°E MEAN TIME



F-PLOT DATA

SCALER : S.HI100ME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 6/28
135°E MEAN TIME

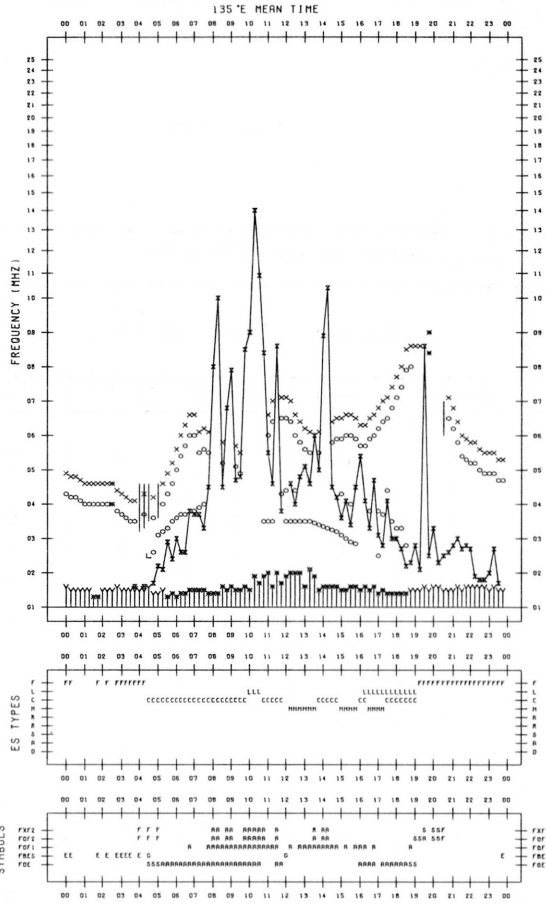


F-PLOT DATA

SCALER : S-HI1DOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/29

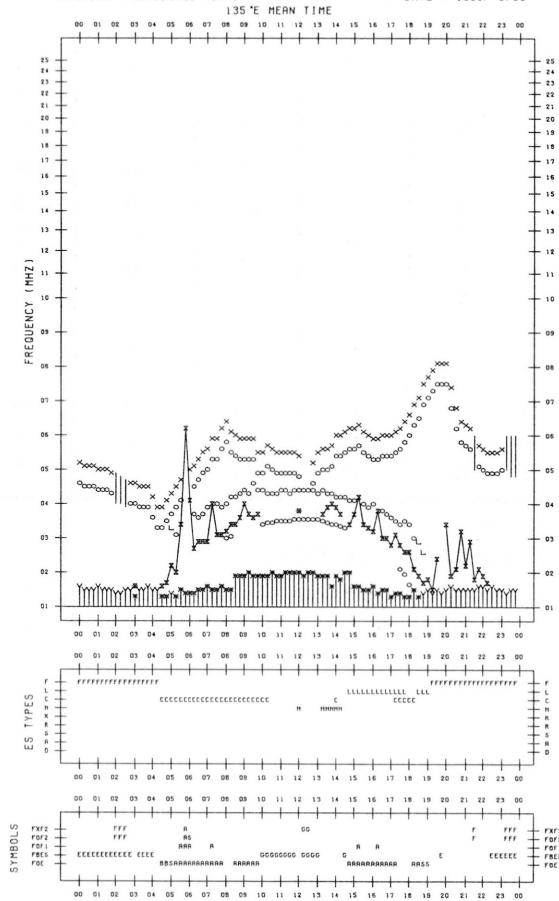


F-PLOT DATA

SCALER : S-HI1DOME

STATION : KOKUBUNJI TOKYO

DATE : 1985/ 6/30



SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

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

Note No observations during the following periods:

9th 1930 - 2338
22nd 0800 - 0955

27th 1930 - 2340
30th 2040 - 2350

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

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

Note No observations during the following periods:

27th 1950 - 2340

30th 2042 - 2345

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

June 1985

Outstanding Occurrences									
(single-frequency observations)									
Normal observing period: 1925 - 0955 (sunrise to sunset)									
JUN 1985	FREQ STATION		TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
							PEAK	MEAN	
8	200	HIRA	42 SER	0020.7	0024.8	12.3	23	-	0
10	200		46 C	2328.4	2328.7	1.2	110	34	0
	100		8 S	2328.7	2328.8	0.4	360	-	ML
11	200		46 C	2212.0	2212.7	2.3	32	16	0
	100		46 C	2212.2	2212.7	1.7	250	90	-
12	200		42 SER	1959.7	2003.0	3.4	45	-	0
	100		46 C	2002.3	2002.7	1.1	37	12	WL
13	200		43 NS	2111	2224	189	5	3	WL
	500		8 S	0321.3	0321.4	0.7	17	7	0
13	500		8 S	0323.1	0323.6	0.6	12	5	0
	500		8 S	0452.6	0452.9	0.7	3	1	0
13	200		43 NS	0630	0708	130	6	3	WL
	200		8 S	2230.1	2230.4	0.7	36	-	0
16	100		42 SER	2028.0	2028.3	3.4	145	-	-
	200		42 SER	2028.1	2030.3	6.3	140	-	0
16	500		41 F	2028.3	2030.3	9.5	21	-	0
	500		42 SER	0011.3	0013.2	7.0	6	-	0
17	200		8 S	0017.1	0017.3	0.5	94	-	0
	200		8 S	2110.9	2111.1	0.4	17	10	WR

RADIO PROPAGATION

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

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

MEASURED AT HIRAI SO

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

RADIO PROPAGATION

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

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

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO		Time in U.T.														
Jun. 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	06 12	12 18	18 24	Start	End	Range
1	4-	4U	4U	3U	3U	4	4	4	4	N	N	N	N			
2	4o	4U	S	4U	4U	4	4	3	4	N	U	U	U			
3	4-	4U	5U	4U	4U	3	3	3	4	U	N	N	N			
4	4o	4U	4U	4U	4U	4	4	4	4	N	N	N	N			
5	4o	3U	S	4U	4U	4	4	4	4	N	N	N	N			
6	4o	4U	4U	4U	4U	4	4	4	3	N	N	N	N			
7	4-	4U	S	4U	4U	3	4	4	3	N	N	N	N			
8	4-	3U	S	3U	3U	4	4	5	3	U	U	U	U			
9	3o	3U	S	4U	4U	3	3	2U	3	U	U	U	U	1715	---	101
10	4o	4U	S	4U	3U	4	4	5	4	U	U	U	U	---	16.0	
11	3+	S	S	2U	3U	4	4	3	4	N	N	N	N			
12	4o	4U	S	4U	4U	4	4	4	4	N	N	N	N			
13	4+	4U	4U	5U	5U	4	4	4	4	N	N	N	N			
14	4+	3U	5U	5U	5U	4	4	4	5	N	N	N	N			
15	5-	4U	S	5U	5U	4	4	5	5	N	N	N	N			
16	4+	4U	5U	5U	4U	4	4	5	4	N	N	N	N			
17	4+	5U	S	5U	5U	4	4	4	4	N	N	N	N			
18	4o	4U	4U	4U	4U	4	4	4	4	N	N	N	N			
19	5-	S	S	5U	5U	4	4	5	5	N	N	N	N			
20	4+	5U	4U	5U	5U	4	4	4	4	N	N	N	N			
21	4o	4U	S	4U	3U	4	4	4	4	N	N	N	N			
22	4o	5U	S	4U	4U	4	4	4	4	N	N	N	N			
23	4o	4U	S	4U	4U	4	4	4	4	N	N	N	N			
24	4o	4U	4U	4U	4U	4	4	3	4	N	N	N	N			
25	4o	4U	S	3U	4U	4	4	4	5	N	N	N	N			
26	4o	4U	S	4U	5U	5	4	3U	4	N	N	N	N			
27	3o	4U	S	2U	3U	4	3	2U	4	N	N	N	N			
28	3+	3U	S	3U	4U	4	3	3	4	N	N	N	N			
29	3+	4U	S	2U	3U	3	4	4	4	N	U	U	U			
30	3+	4U	4U	2U	3U	4	3	2U	4	U	N	N	N			

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO		Time in U.T.									
Jun. 1985	S W F				Correspondence						
	Drop-out Intensities(dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
CO	HA	1)	2)								
5	13	9			2338	22	SL	1-	x	x	

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

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Jun. 1985	S			P		A		
	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω /LR	NWC	Ω /H	Ω /ND	Start	End	Maximum
5		<u>14</u>	6			0737	0827	0742
5		17	28	<u>24</u>	19	2337	0045	2344
8			—	4		0022	0110	0033
17				<u>10</u>	14	0015	0123	0022
29				<u>13</u>	14	2322	0049	2338

IONOSPHERIC DATA IN JAPAN FOR JUNE 1985

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