

IONOSPHERIC DATA IN JAPAN

FOR OCTOBER 1982

VOL. 34 NO. 10

CONTENTS

	Page
Introduction	1
A. Ionosphere	
Hourly Values at Wakkanai	5
Hourly Values at Akita	19
Hourly Values at Kokubunji	33
Hourly Values at Yamagawa	47
Hourly Values at Okinawa	61
<i>f</i> -plot at the above Stations	78
B. Solar Radio Emission	
Daily Data at Hiraiso	141
Outstanding Occurrences at Hiraiso	143
C. Radio Propagation	
H. F. Field Strength at Hiraiso	144
Radio Propagation Quality Figures at Hiraiso	146
Sudden Ionospheric Disturbances	
SWF at Hiraiso	146
SPA at Inubo	147

RADIO RESEARCH LABORATORIES
 MINISTRY OF POSTS AND TELECOMMUNICATIONS
 TOKYO, JAPAN

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
$f_o E_s$	Blanketing frequency of the E_s layer, e.g. the lowest ordinary wave frequency visible through E_s
$f_b E_s$	
f_{min}	Lowest frequency which shows vertical ionospheric reflections
$M(3000)F_2$	Maximum usable frequency factor for a path of 3000 km for transmission by F_2 and F_1 layers respectively
$M(3000)F_1$	
$h'F_2$	Minimum virtual height on the ordinary wave for the F_2 , whole F , E and E_s layers respectively
$h'F$	
$h'E$	
$h'E_s$	

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

b. Symbols

(i) Descriptive Letters

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

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

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

(ii) Qualifying Letters

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

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

(iii) Description of Types of E_s

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

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

diffuse traces present above it.

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

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

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

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

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

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

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

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

B. SOLAR RADIO EMISSION

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

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

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

a. Daily Data

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

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

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

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

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

b. Outstanding Occurrences

- The phenomena are picked up on the following criteria:
1. distinct from the prevailing kind of activity,
 2. correlated with other known solar phenomena,
 3. remarkable change-over from one situation to another.

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

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

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

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

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

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

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

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

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

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

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

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

b. Radio Propagation Quality Figures

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

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

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

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

C	artificial accident,
S	propagation accident,
U	inaccurate.

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

N	normal,
U	unstable,
W	disturbed

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

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

c. Sudden Ionospheric Disturbances

(i) SWF

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

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

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

Types of fade-out are as follows:

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

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

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

(ii) SPA

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

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

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

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

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

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

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

IONOSPHERIC DATA

OCT. 1982

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 20 MHz in 20 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 70	X 70	X 63	X 59	X 60	X 61												X 93	X 86	X 86	X 80	X 75	X 72	
2	X 66	X 67	X 66	X 61	X 57	X 57												X 88	X 77	X 70	X 69	X 67	X 65	
3	X 57	X 55	X 57	X 53	X 47	X 47												X 88	X 79	X 76	X 66	X 60	X 57	
4	X 56	X 56	X 58	X 56	X 56	X 57												X 107	X 88	X 71	X 66	X 66	X 68	
5	X 70	X 70	X 64	X 63	X 58	X 51												X 97	X 86	X 78	X 72	X 70	X 67	
6	X 65	X 63	X 60	X 57	X 56	X 58												X 107	X 98	X 83	X 78	X 74	X 74	
7	X 71	X 67	X 65	X 67	X 60	X 56												c	c	c	c	c	c	
8	c	c	c	c	c	c												X 77	X 65	X 63	X 57	X 50	X 50	
9	X 43	X 44	X 44	X 44	X 46	X 48												X 90	X 77	X 77	X 71	X 66	X 61	
10	X 59	X 57	X 56	X 58	X 50	X 51												X 96	X 87	X 84	X 77	X 71	X 72	
11	X 72	X 71	X 71	X 75	X 70	X 70												X 103	X 91	X 71	X 62	X 59	X 58	
12	X 60	X 60	X 59	X 58	X 56	X 52												X 97	X 87	X 78	X 72	X 71	X 71	
13	X 70	X 65	X 67	X 65	X 67	X 66												X 92	X 80	X 72	X 68	X 68	X 65	
14	X 62	X 59	X 58	X 54	X 55	X 51												X 92	X 81	X 65	X 72	X 69	X 67	
15	X 56	X 61	X 57	X 57	X 56	X 54												X 81	X 73	X 66	X 63	X 61	X 63	
16	X 59	X 57	X 52	X 58	X 60	X 53												X 95	X 78	X 70	X 70	X 62	X 62	
17	X 60	X 54	X 51	X 49	X 60	X 63												X 72	X 67	X 68	X 66	X 65	X 64	
18	X 63	X 64	X 63	X 63	X 60	X 60												X 90	X 84	X 70	X 61	X 60	X 63	
19	X 63	X 58	X 57	X 57	X 58	X 57												X 91	X 82	X 74	X 64	X 62	X 55	
20	X 58	X 56	X 56	X 56	X 54	X 53												X 77	X 73	X 70	X 61	X 60	X 60	
21	X 61	X 62	X 62	X 61	X 54	X 56												X 82	X 73	X 64	X 62	X 59	X 59	
22	X 58	X 57	X 58	X 60	X 58	X 56												X 99	X 75	X 70	X 60	X 57	X 58	X 59
23	X 60	X 58	X 57	X 55	X 51	X 55												X 101	X 87	X 77	X 63	X 66	X 65	X 61
24	X 63	X 57	X 57	X 60	X 56	X 62												X 100	X 91	X 72	X 67	X 65	X 62	X 60
25	X 61	X 60	X 59	X 60	X 59	X 60												X 123	X 110	X 85	X 75	X 65	X 63	X 62
26	X 64	X 60	X 61	X 58	X 60	X 59	X 69											X 122	X 103	X 80	X 65	X 66	X 62	X 62
27	X 66	X 65	X 63	X 63	X 57	X 56	X 70											X 115	X 101	X 91	X 78	X 75	X 73	X 73
28	X 68	X 70	X 70	X 72	X 67	X 61	X 68											X 110	X 92	X 84	X 74	X 64	X 63	X 60
29	X 65	X 63	X 63	X 60	X 57	X 52	X 65											X 120	X 108	X 91	X 75	X 67	X 65	X 68
30	X 68	X 67	X 60	X 60	X 57	X 59	X 59											X 94	X 85	X 71	X 62	X 57	X 57	X 57
31	X 55	X 50	X 45	X 44	X 41	X 40	X 48											X 91	X 78	X 62	X 50	X 48	X 50	X 48
	00	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	6											10	30	30	30	30	30	30
MED	X 62	X 60	X 59	X 58	X 57	X 56	X 66											X 106	X 92	X 80	X 70	X 66	X 63	X 62
UQ	X 66	X 65	X 63	X 61	X 60	X 60	X 69											X 120	X 97	X 86	X 76	X 71	X 68	X 67
LQ	X 59	X 57	X 57	X 56	X 55	X 52	X 59											X 99	X 85	X 73	X 65	X 62	X 60	X 59

OCT. 1982

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	63	63	56	52	53	54	75	82	100	111	104	106	107	101	108	109	101	96	86	79	79	73	68	65																									
2	60	60	59	54	50	50	64	83	95	86	^H 89	91	89	88	90	87	83	90	81	70	63	62	60	58																									
3	50	48	50	46	40	40	50	63	70	79	84	89	96	97	95	94	95	96	81	72	69	59	53	50																									
4	50	50	51	50	49	50	75	95	115	120	131	125	116	^H 113	119	118	112	111	100	81	64	59	60	61																									
5	63	63	57	56	51	44	57	79	95	123	118	110	119	113	114	113	111	101	90	79	71	65	63	60																									
6	58	56	53	50	49	51	84	108	118	117	123	120	122	125	122	116	113	115	100	91	76	71	67	67																									
7	64	60	58	60	53	49	66	103	115	135	126	123	116	115	125	126	123	C	C	C	C	C	C	C																									
8	C	C	C	C	C	C	C	C	C	60	68	71	75	77	81	79	91	77	70	58	56	50	43	43																									
9	36	37	37	37	39	41	79	77	103	113	103	110	^H 118	120	118	113	104	100	83	70	70	64	59	54																									
10	52	50	50	51	43	44	66	87	101	118	114	116	121	118	113	116	113	103	89	80	77	70	64	65																									
11	65	64	64	^F 64	63	63	83	101	103	113	125	119	127	114	113	112	114	103	96	84	64	55	52	51																									
12	53	53	52	51	50	45	65	92	113	122	125	118	126	122	113	117	114	104	90	80	71	65	64	64																									
13	63	58	60	58	60	59	72	92	114	124	119	123	121	121	114	119	124	105	85	73	65	61	61	58																									
14	55	52	51	47	48	44	67	91	113	119	122	134	125	123	125	118	110	102	85	74	58	65	62	60																									
15	50	54	50	50	49	47	72	93	102	104	98	113	109	107	104	102	101	96	74	66	59	56	54	^F 56																									
16	^F 50	50	45	^F 50	^F 50	46	60	97	100	115	113	118	123	121	113	114	110	95	88	71	^F 59	^F 58	^F 55	^F 55																									
17	^F 50	47	44	42	53	56	64	88	95	120	137	139	139	125	125	130	121	93	65	60	61	59	58	57																									
18	56	57	56	^F 53	^F 53	^F 53	^S 66	96	101	133	131	130	128	132	120	118	123	100	83	77	63	54	53	^F 53																									
19	^F 50	51	50	50	51	50	67	100	125	145	136	139	127	114	105	105	94	88	84	75	67	57	55	48																									
20	51	50	50	49	47	46	55	95	102	115	125	109	111	107	114	113	109	93	70	66	63	54	53	53																									
21	54	55	55	54	48	49	65	92	118	120	125	126	122	107	100	100	94	90	75	66	57	55	52	52																									
22	51	50	51	53	51	49	68	94	^H 124	139	137	133	127	122	113	113	114	92	68	63	53	50	51	52																									
23	53	51	50	48	44	48	68	93	104	123	124	120	118	113	111	113	108	94	80	70	57	^F 59	58	54																									
24	56	50	51	53	49	56	74	106	123	127	135	135	130	118	119	120	113	93	84	65	60	58	55	53																									
25	54	53	52	53	52	53	76	104	118	130	137	144	136	130	131	126	123	116	103	79	68	58	56	55																									
26	57	53	54	51	53	52	62	87	111	131	144	141	135	131	139	117	112	115	96	73	^F 58	59	55	55																									
27	59	58	56	56	50	49	63	101	124	134	139	141	131	128	130	133	122	108	94	84	71	68	66	66																									
28	61	63	63	65	60	54	61	95	122	137	132	138	134	128	123	125	118	103	85	78	67	57	56	53																									
29	58	57	56	53	50	45	59	100	120	119	128	135	133	125	129	121	117	113	101	84	68	61	58	61																									
30	61	60	53	53	50	52	52	73	103	121	132	137	128	128	120	115	103	87	79	64	55	50	50	^S 50																									
31	48	44	39	38	35	33	41	66	89	104	123	124	119	115	112	105	94	85	71	56	43	41	43	41																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																									
CNT	29	30	30	29	28	29	30	30	30	31	31	31	31	31	31	31	31	30	30	30	30	30	30	29																									
MED	55	53	52	52	50	49	66	93	108	120	125	123	122	118	114	115	112	98	84	73	64	59	56	55																									
UQ	60	58	56	54	52	52	72	100	118	128	132	135	128	125	122	118	116	104	90	79	69	64	61	60																									
LQ	51	50	50	50	48	45	61	87	101	114	116	114	117	113	112	110	102	93	79	66	58	55	53	52																									

OCT. 1982

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	WAKKANAI																							
Lat.	45° 23.5' N												Long. 141° 41.2' E											
Sweep 1	MHz to 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																								
2									L 500			L 530												
3								L 470																
4																								
5																								
6																								
7																								
8									L 470	L 470	L 500	L 450		A										
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
CNT									2	1	1	2	1											
MED									L 485	L 470	L 470	L 515	L 450											
UQ																								
LQ																								

OCT. 1982

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	280	A	A	A	A	370	A	A	A	A	A						
2							185	270	305	A	350	350	365	A	A	300	255	A						
3							A	A	A	A	A	360	350	360	A	300	A	A						
4							200	260	305	330	350	350	345	335	320	300	240	S						
5							195	265	305	320	330	340	A	A	A	A	A	A						
6							A	255	300	315	320	355	350	345	315	295	240	A						
7							S	250	290	329	355	A	A	325	315	295	225	C						
8							C	C	C	305	315	A	A	A	A	A	225	E						
9							S	235	300	A	A	330	330	325	305	290	220	S						
10							S	240	290	310	320	335	330	320	300	270	215	A						
11							S	250	295	305	320	330	A	A	A	A	210	A						
12							A	250	295	305	310	315	A	A	A	A	A	A						
13							S	240	295	310	A	330	325	310	A	A	A	A						
14							S	225	295	A	320	A	330	315	300	280	200	E						
15							150	220	A	305	325	330	320	305	A	A	A	A						
16							S	230	280	300	315	320	305	A	A	A	A	A						
17							E	230	290	310	315	A	A	310	295	A	225	E						
18							S	240	280	305	310	320	330	310	A	A	A	S						
19							E	210	270	A	A	A	320	315	300	260	200	E						
20							S	215	285	300	300	320	A	A	A	A	A	E						
21							S	230	A	A	A	325	A	A	A	270	A	E						
22							S	A	A	A	325	A	330	325	300	265	A							
23							S	225	290	315	325	330	325	310	300	265	190							
24							S	225	265	A	325	335	335	320	A	A	A							
25							S	235	260	A	A	A	A	340	320	A	A							
26							230	300	320	A	A	A	340	A	A	A								
27							215	285	315	A	350	345	320 ^H	310	285	205								
28							215	280	315	345	A	340	325	305	260	A								
29							205	275	310	325	340	340	325	A	265	A								
30							210	275	A	325	330	330	325	300	265	185								
31							205	255	A	A	330	330	320	300	245	A								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							6	28	25	19	21	21	21	22	15	17	14	6						
MED							168	230	290	310	325	330	330	322	300	270	218	E						
UQ							195	250	295	315	325	340	345	325	312	295	225	E						
LQ							E	218	280	305	315	330	330	315	300	265	200	E						

OCT. 1982

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	50	53	28	37	34	40	29	G	40	45	40	43	G	46	49	40	40	54	60	E	33	E S 17	E S 16	23																				
2	E	E	21	E	E	E	G	G	G	40	G	G	G	41	39	G	G	38	33	25	50	29	35	26																				
3	29	E	E	E	E	E S 15	31	33	38	52	43	G	40	40	45	72	30	35	E S 15	E S 15	E S 15	E	E	29																				
4	E S 15	E	E	E	E	41	G	G	G	G	G	45	G	G	G	G	30	E S 18	32	E S 15	E S 15	E S 15	E S 17	E																				
5	E S 15	E	E	E	34	E S 17	E S 17	G	G	43	39	40	37	35	46	40	30	28	E S 16	E S 15	40	35	34	E S 15																				
6	31	E	30	30	30	30	30	32	G	38	G	G	G	G	G	41	G	31	36	30	E S 15	E S 15	E S 16	E S 16																				
7	E S 15	E	E	E	30	38	21	G	56	G	G	68	57	30	29	33	G	C	C	C	C	C	C	C																				
8	C	C	C	C	C	C	C	C	C	36	G	40	61	75	73	41	38	41	35	32	36	32	31	25																				
9	33	30	28	E	E	E	21	G	G	40	41	G	G	G	G	G	G	20	E	E S 15	E	E	E S 15																					
10	E	E	E	E	E	27	21	G	G	38	G	G	64	41	53	22	G	21	25	21	40	40	41	E																				
11	E	E	23	E	25	24	21	G	G	77	41	62	43	50	56	60	27	30	40	58	60	36	32	29																				
12	E S 15	29	38	36	31	42	56	G	G	G	50	42	45	56	40	37	35	31	30	32	46	42	E S 16	E S 15																				
13	E S 16	E	E	E	E	E	E S 15	G	G	39	42	G	G	G	34	34	30	26	28	E	37	50	E	28																				
14	31	E	E	E	E	E	22	G	56	59	G	41	G	42	80	G	64	83	40	50	80	40	J A 110	40																				
15	30	E	E	23	E	E S 17	23	30	40	52	51	61	41	38	43	41	37	40	44	73	60	E	30	39																				
16	36	32	60	32	50	60	E S 18	G	37	50	40	38	35	41	51	51	32	50	90	63	56	32	40	28																				
17	E	25	32	30	30	26	35	20	G	39	40	40	50	G	G	31	G	19	25	E S 15	23	E	E S 15	E S 15	46																			
18	39	24	50	40	E	30	21	31	37	36	G	G	G	34	34	52	34	E S 14	17	E S 16	E S 15	30	27	60																				
19	50	42	32	35	30	E S 15	33	38	70	46	48	63	G	G	G	G	G	33	36	90	60	48	80	60																				
20	30	40	28	E	E	E	20	35	41	36	53	G	36	50	63	59	61	43	41	35	26	E S 16	44	35																				
21	35	34	26	24	E	E	20	G	59	39	41	G	41	43	34	30	35	31	31	E S 14	E S 15	26	38	33																				
22	26	E	E	E	E S 15	24	E S 17	33	30	38	G	61	31	G	G	G	30	30	E S 16	E S 15	E S 15	E	E	E S 15																				
23	22	27	E S 15	E S 14	E	E	E S 17	G	G	G	G	G	G	G	20	36	23	23	56	E S 14	E S 16	32	E S 16	E S 16	33																			
24	25	E S 12	23	E S 14	E	28	E S 17	G	35	38	G	G	G	G	38	58	26	68	57	36	34	28	30	E S 16																				
25	E S 16	E S 12	27	26	E	26	E S 16	31	43	43	90	55	43	G	G	26	22	48	42	48	36	32	29	E S 16	32	57																		
26	59	59	32	36	30	31	23	32	57	J A 123	91	75	44	G	42	41	32	26	29	E S 16	E S 16	E	E S 16	32																				
27	69	56	45	25	28	24	E S 16	G	35	43	41	61	G	G	G	G	G	E S 13	E S 16	E S 16	E S 16	60	36	40																				
28	26	26	26	E	E	26	E S 16	30	J A 60	38	43	50	G	36	26	G	32	34	27	27	26	32	E S 16	E S 13																				
29	E S 16	30	29	E S 12	28	31	E S 16	G	G	40	G	G	G	G	31	39	G	36	34	E S 15	E S 12	E S 15	E S 16	30	25																			
30	E S 11	23	E	25	E S 16	E	48	33	G	45	G	G	G	G	G	G	G	E S 13	24	26	24	31	36	49																				
31	35	E S 11	E S 11	32	30	27	E S 16	G	G	50	38	G	G	G	G	G	41	30	26	26	30	E S 16	E S 15	E S 16																				
CNT	30	30	30	30	30	30	30	30	30	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30																				
MED	26	18	24	14	E E 15	25	20	G	32	40	40	40	G	G	36	33	30	31	30	26	30	27	28	28																				
UQ	35	30	30	30	30	30	23	31	41	46	42	52	42	41	46	41	36	41	36	35	40	35	35	39																				
LQ	E S 15	E	E	E	E	E	E S 16	G	G	38	G	G	G	G	G	G	G	20	26	16	E S 15	E S 15	E S 15	E S 16																				

OCT. 1982

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	40	E	E	E	35	21	G	32	38	37	37	32	37	40	31	31	21	27	E	E	E S 17	E S 16	E	
2	E	E	E	E	E	E	G	G	G	34	G	G	G	36	33	G	G	25	24	E	40	E	E	E	
3	E	E	E	E	E	E S 15	21	26	31	40	36	G	31	32	39	G	28	G	E S 15	E S 15	E S 15	E	E	E	
4	E S 15	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	19	E S 18	E	E S 15	E S 15	E S 15	E S 17	E	
5	E S 15	E	E	E	E	E S 17	E S 17	G	G	G	G	G	37	35	33	31	25	18	E S 16	E S 15	30	E	E	E S 15	
6	E	E	E	E	E	E	20	G	G	G	G	G	G	G	G	G	G	18	E	E	E S 15	E S 15	E S 16	E S 16	
7	E S 15	E	E	E	E	23	G	G	G	G	G	46	44	29	28	27	G	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	G	G	36	39	50	40	32	G	G	E	E S 15	E	E	E	E	
9	E	E	E	E	E	E	G	G	G	32	35	G	G	G	G	G	G	G	E	E S 15	E	E	E	E S 15	
10	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	43	21	G	15	E	E	E	E	E	
11	E	E	E	E	E	E	G	G	G	G	G	G	37	41	47	40	G	15	37	43	40	E	E	E	
12	E S 15	E	E	E	E	30	35	G	G	G	40	40	34	35	31	28	22	17	E	E	25	30	E S 16	E S 15	
13	E S 16	E	E	E	E	E S 15	G	G	G	34	G	G	G	31	28	23	16	E	E	E	E	E	E	E	
14	E	E	E	E	E	E	G	G	40	31	G	33	G	G	60	G	31	77	39	40	44	23	47	30	
15	E	E	E	E	E	E S 17	G	G	32	40	G	G	40	G	33	33	23	27	40	31	E	E	E	E	
16	E	E	33	E	E	E S 18	G	G	G	G	G	G	32	41	26	21	34	50	38	30	20	E	E	E	
17	E	E	E	E	E	E	28	G	G	G	G	38	40	G	G	26	G	18	E	E S 15	E	E S 15	E S 15	E	
18	E	E	E	E	E	E	G	G	G	G	G	G	G	28	30	30	21	E S 14	E	E S 16	E S 15	E	E	E	
19	33	26	26	28	E	E S 15	18	27	43	32	33	36	G	G	G	G	G	25	32	46	39	30	49	40	
20	E	E	E	E	E	E	G	G	G	G	37	G	33	34	39	36	40	31	30	E	E	E S 16	E	E	
21	E	E	E	E	E	E	G	G	50	32	33	G	30	32	31	30	21	15	E	E S 14	E S 15	E	E	E	
22	E	E	E	E	E S 15	E S 17	24	30	31	G	40	30	G	G	G	G	21	E	E S 16	E S 15	E S 15	E	E	E S 15	
23	E	E	E S 15	E S 14	E	E S 17	G	G	G	G	G	G	G	20	22	18	16	E	E S 14	E S 16	E	E S 16	E S 16	E	
24	E	E S 12	E	E S 14	E	E S 17	G	31	32	G	G	G	G	G	30	29	23	35	32	E	20	E	20	E S 16	
25	E S 16	E S 12	E	E	E	E S 16	G	31	33	39	35	35	25	G	22	37	31	32	25	23	20	E S 16	E	E	
26	20	29	E	E	E	E	G	40	G	45	61	36	G	36	31	21	E	E	E S 16	E S 16	E	E S 16	E	E	
27	35	36	E	E	E	E S 16	G	G	G	33	G	G	G	G	G	G	G	E S 13	E S 16	E S 16	E S 16	E	E	23	
28	E	E	E	E	E	E S 16	G	G	G	G	37	G	30	G	26	G	21	24	E	E	E	E	E S 16	E S 13	
29	E S 16	E	E	E S 12	E	E S 16	G	G	G	G	G	G	G	31	30	G	21	25	E S 15	E S 12	E S 15	E S 16	E	E	
30	E S 11	E	E	E	E S 16	E	31	21	G	37	G	G	G	G	G	G	G	E S 13	E	E	E	E	E	31	
31	20	E S 11	E S 11	E	E	E S 16	G	G	35	33	G	G	G	G	G	G	17	20	E	E	E	E	E S 16	E S 15	E S 16
	00	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	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	
MED	E	E	E	E	E	E	G	G	G	G	G	G	G	G	25	30	26	21	18	E	E	E	E	E	
UQ	E S 15	E	E	E	E	E S 18	G	31	32	34	36	34	32	38	30	23	25	30	E S 16	20	E S 16	E S 16	E S 15		
LQ	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E	

OCT. 1982

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

F-MIN (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 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	E	E	E	E	E	E _S ¹²	18	19	19	20	20	20	20	17	10	E	E	E	E	E _S ¹⁶	E _S ¹⁷	E _S ¹⁶	E	
2	E	E	E	E	E	E	E _S ¹⁴	10	17	19	20	19	18	18	18	18	10	E	E	E	E _S ¹⁵	E	E _S ¹⁵	E	
3	E	E	E	E	E	E _S ¹⁵	E	12	17	18	20	20	20	18	15	16	10	E	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	E	E	E	
4	E _S ¹⁵	E	E	E	E	E _S ¹⁵	E _S ¹⁷	11	18	19	19	18	19	19	17	12	10	E _S ¹⁸	E	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	E _S ¹⁷	E	
5	E _S ¹⁵	E	E	E	E	E _S ¹⁷	E _S ¹⁷	17	18	20	20	20	20	17	12	10	10	10	E _S ¹⁶	E _S ¹⁵	E	E	E _S ¹⁴	E _S ¹⁵	
6	E	E	E	E	E	E	E _S ¹⁵	17	18	19	20	20	19	19	19	18	15	15	E	E	E _S ¹⁵	E _S ¹⁵	E _S ¹⁶	E _S ¹⁶	
7	E _S ¹⁵	E	E	E	E	E	E _S ¹⁵	10	19	18	19	19	22	19	17	11	15	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	17	19	19	19	20	17	12	12	E	E _S ¹⁵	E	E	E	E	E	
9	E	E	E	E	E	E	E _S ¹⁶	11	17	17	19	20	20	11	12	11	10	E _S ¹⁴	E	E _S ¹⁵	E	E	E	E _S ¹⁵	
10	E	E	E	E	E	E	E _S ¹⁵	16	17	18	19	19	18	19	17	17	10	E	E	E	E	E	E	E	
11	E	E	E	E	E	E	E _S ¹⁵	17	17	17	19	20	18	19	18	12	12	E	E	E	E	E	E	E	
12	E _S ¹⁵	E	E	E	E	E	E _S ¹⁵	16	16	17	18	19	18	16	10	15	11	10	E _S ¹⁵	E _S ¹⁵	E	E _S ¹⁵	E _S ¹⁶	E _S ¹⁵	
13	E _S ¹⁶	E	E	E	E	E	E _S ¹⁵	16	17	19	19	19	19	18	18	15	11	E	E	E	E _S ¹⁵	E _S ¹⁵	E	E	
14	E	E	E	E	E	E	E _S ¹²	14	16	17	19	19	18	19	17	17	15	E	E	E _S ¹⁵	E _S ¹⁶	E	E	E	
15	E	E	E	E	E	E _S ¹⁷	E	12	17	17	19	19	18	18	17	16	12	E	E _S ¹⁵	E	E	E	E	E	
16	E	E	E	E	E	E	E _S ¹⁸	11	11	11	17	17	18	19	11	10	10	10	E	E	E	E	E	E	
17	E	E	E	E	E	E	E	10	17	16	17	17	18	16	11	10	10	E	E _S ¹⁵	E	E	E _S ¹⁵	E _S ¹⁵	E	
18	E	E	E	E	E	E	E _S ¹⁵	15	10	16	10	10	18	11	10	10	10	E _S ¹⁴	E	E _S ¹⁶	E _S ¹⁵	E	E	E	
19	E	E	E	E	E	E _S ¹⁵	E	12	17	17	18	16	19	11	11	10	10	E	E	E	E	E	E	E	
20	E	E	E	E	E	E	E _S ¹⁵	14	17	19	18	17	17	10	10	10	10	E	E	E	E	E _S ¹⁶	E _S ¹⁵	E	
21	E	E	E	E	E	E	E _S ¹²	16	17	17	18	17	17	10	10	10	10	E	E	E _S ¹⁶	E _S ¹⁴	E _S ¹⁵	E	E	E
22	E	E	E	E	E _S ¹⁵	E	E _S ¹⁷	12	18	17	18	17	20	17	11	10	10	E _S ¹⁵	E _S ¹⁶	E _S ¹⁵	E _S ¹⁵	E	E	E _S ¹⁵	
23	E	E	E _S ¹⁵	E _S ¹⁴	E	E	E _S ¹⁷	12	11	17	19	17	18	16	10	12	10	E _S ¹¹	E _S ¹⁴	E _S ¹⁶	E _S ¹⁶	E _S ¹⁶	E _S ¹⁶	E _S ¹¹	
24	E _S ¹⁶	E _S ¹²	E _S ¹⁶	E _S ¹⁴	E	E _S ¹⁶	E _S ¹⁷	13	16	16	17	18	17	19	17	13	13	E _S ¹²	E	E _S ¹³	E _S ¹¹	E	E _S ¹¹	E _S ¹⁶	
25	E _S ¹⁶	E _S ¹²	E	E	E	E	E _S ¹⁶	16	11	16	18	18	18	21	17	13	E _S ¹¹	E	E _S ¹⁵	E _S ¹³	E _S ¹¹	E _S ¹⁶	E _S ¹²	E _S ¹⁵	
26	E	E	E	E	E	E	E	14	20	18	20	20	19	18	18	16	13	E _S ¹⁵	E _S ¹¹	E _S ¹⁶	E _S ¹⁶	E	E _S ¹⁶	E _S ¹⁵	
27	E _S ¹¹	E	E _S ¹²	E	E	E	E _S ¹⁶	16	12	16	17	17	18	18	19	16	13	E _S ¹³	E _S ¹⁶	E _S ¹⁶	E _S ¹⁶	E _S ¹⁴	E _S ¹²	E	
28	E _S ¹⁶	E	E _S ¹¹	E	E	E	E _S ¹⁶	14	15	16	17	18	19	18	12	16	E _S ¹¹	E	E _S ¹⁵	E _S ¹²	E _S ¹⁵	E _S ¹⁶	E _S ¹⁶	E _S ¹³	
29	E _S ¹⁶	E	E _S ¹¹	E _S ¹²	E	E	E _S ¹⁶	E _S ¹⁴	16	17	18	19	21	18	19	14	E _S ¹¹	E	E _S ¹⁵	E _S ¹²	E _S ¹⁵	E _S ¹⁶	E _S ¹⁵	E	
30	E _S ¹¹	E _S ¹²	E	E	E _S ¹⁶	E	E _S ¹²	15	16	16	17	18	18	19	18	16	E _S ¹²	E _S ¹³	E	E _S ¹³	E _S ¹³	E	E	E _S ¹²	
31	E	E _S ¹¹	E _S ¹¹	E	E	E _S ¹⁶	E _S ¹⁶	E _S ¹²	16	17	19	18	19	17	17	12	10	E _S ¹⁴	E	E	E	E _S ¹⁶	E _S ¹⁵	E _S ¹⁶	
	00	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	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	
MED	E	E	E	E	E	E	E _S ¹⁵	14	17	17	19	19	18	18	17	12	10	E	E	E _S ¹²	E _S ¹⁴	E	E _S ¹²	E	
UQ	E _S ¹⁵	E	E	E	E	E	E _S ¹⁶	16	17	18	19	19	19	19	18	16	12	E _S ¹³	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	E _S ¹⁵	
LQ	E	E	E	E	E	E	E _S ¹²	12	16	16	18	17	18	16	11	10	10	E	E	E	E	E	E	E	

OCT. 1982

F-MIN (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	260	270	255	240	245	260	305	330	310	320	305	300	300	295	285	295	295	305	290	280	280	275	275	275	
2	250	260	260	260	230	240	290	285	315	290	260 ^H	270	270	285	295	305	290	290	300	285	265	265	265	275	
3	255	255	260	290	250	290	280	290	285	280	295	305	300	300	305	310	315	310	295	290	290	295	265	260	
4	245	255	265	260	265	280	305	315	305	300	300	295	295	275 ^H	285	290	295	295	300	295	295	250	245	260	
5	260	285	255	265	265	255	255	305	295	310	315	300	295	290	290	295	305	315	290	290	280	290	285	270	
6	275	265	275	260	245	260	310	325	320	305	295	290	270	290	280	285	290	305	300	295	285	275	270	270	
7	265	250	240	270	265	245	290	310	305	320	310	290	290	280	280	295	295		c	c	c	c	c	c	
8	c	c	c	c	c	c	c	c	c		265	290	290	305	305	310	305	320	310	300	295	300	300	275	280
9	275	250	250	245	255	270	335	310	310	320	310	290	300 ^H	290	300	310	305	315	305	285	300	305	300	275	
10	270	275	270	280	275	275	325	330	325	320	315	300	310	305	300	310	320	310	295	285	285	280	280	270	
11	275	260	265	270 ^F	270	280	310	300	320	300	305	295	300	305	300	300	315	310	305	315	305	300	270	250	
12	255	270	285	280	280	285	305	325	315	310	310	305	300	300	300	305	315	310	310	300	300	285	290	285	
13	285	275	265	255	280	305	325	325	335	315	310	310	295	315	300	300	310	320	305	300	275	265	265	260	
14	255	250	250	250	245	265	305	315	320	295	310	300	320	290	290	35	320	315	295	295	255	290	280	290	
15	250	260	250	250	250	265	310	320	335	305	315	320	320	310	315	320	315	330	300	305	285	285	270	250 ^F	
16	F	270	275	F	F	265	300	340	310	320	315	305	300	305	310	305	320	315	300	305	290 ^F	285 ^F	260 ^F	265 ^F	
17	240 ^F	255	270	255	235	295	305	325	305	315	295	310	310	290	295	300	320	315	300	265	285	285	275	265	
18	265	280	285	275 ^F	F	F	305 ^S	335	295	315	320	290	295	295	300	300	315	315	300	310	300	280	285	F	
19	260 ^F	255	250	255	275	280	290	320	310	320	315	315	315	315	325	315	295	300	310	305	300	300	295	265	
20	255	260	255	265	280	275	320	335	325	315	310	310	305	305	305	300	310	310	285	295	295	295	275	265	
21	265	270	280	315	265	275	305	315	335	320	305	310	305	315	310	320	315	310	305	305	305	290	275	280	
22	275	280	265	275	275	270	325	315	315 ^H	320	320	295	305	300	300	310	290	305	295	305	285	270	275	280	
23	280	280	290	270	275	280	325	345	335	325	305	315	305	315	295	305	310	280	305	305	300	290 ^F	275	270	
24	270	280	275	255	265	270	315	330	315	315	295	295	300	300	305	310	320	310	320	310	285	295	290	275	
25	280	275	270	265	270	265	325	330	320	305	300	305	300	295	300	300	305	300	310	295	295	275	260	255	
26	245	235	240	245	245	250	305	300	310	300	300	285	285	285	300	300	290	295	320	300	260 ^F	270	245	245	
27	255	275	260	260	240	255	310	315	320	315	305	310	295	295	295	295	305	295	305	290	295	270	275	280	
28	270	260	270	275	300	275	320	325	315	305	305	295	295	295	295	295	295	305	305	300	300	290	265	245	
29	265	280	295	285	290	290	305	320	320	305	305	290	295	280	295	295	290	285	290	290	280	255	240	255	
30	245	240	235	245	250	250	270	290	300	300	305	295	300	305	310	315	310	305	290	295	275	250	250	250 ^S	
31	230	240	230	225	230	225	255	290	300	290	295	295	295	315	315	320	320	300	305	315	290	280	270	270	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	30	30	29	28	29	30	30	30	31	31	31	31	31	31	31	31	30	30	30	30	30	30	29	
MED	260	262	265	260	265	270	305	320	315	310	305	300	300	300	300	300	310	310	300	295	290	285	275	270	
UQ	270	275	275	275	275	280	320	330	320	320	310	308	305	305	305	310	315	315	305	305	300	290	280	275	
LQ	255	255	250	255	245	260	300	310	305	300	300	292	295	290	295	295	295	300	295	290	280	270	265	260	

OCT. 1982

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1982

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 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																									
2									L 340			L 365													
3								L 350																	
4																									
5																									
6																									
7																									
8									L 330	L 330	L 360	L 375			A										
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
CNT									2	1	1	2	1												
MED									L 345	L 330	L 330	L 362	L 375												
UQ																									
LQ																									

OCT. 1982

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1982

H^oF2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45 23.5 N, Long 141 41.2 E Sweep 1 MHz to 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																								
2									275		300													
3								350	350															
4																								
5																								
6																								
7																								
8									405	345	320	290	285											
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
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								1	2	1	1	2	1	1										
MED								350	312	405	345	310	290	285										
UQ																								
LQ																								

OCT. 1982

H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1982

H° F (KM)

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

Station		WAKKANAI										Lat. 45 23.5 N		Longt 141 41.2 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	325	A	300	355	340	A	230	225	230	235	210	200 ^H	225	230 ^H	240	240	240	235	255	270	250	260	270	270	
2	300	300	275	270	360	350	275	250	245	230 ^H	205 ^H	225	235	225	225	245	240	235	240	235	A	275	295	270	
3	280	270	275	255	300	315	275	255	250	260	230	210 ^H	215	220	235	235	250	235	225	245	245	250	270	305	
4	315	315	285	260	250	270	235	225	225	225	220	220	220	215 ^H	225	245	240	235	225	210	230	255	340	315	
5	300	275	270	295	275	325	275	235	225	225	225	215	215	230	245	230	240	225	225	225	A	265	265	270	
6	300	270	280	285	350	320	240	220	225	225	215	230	205 ^H	220 ^H	235	240	240	240	245	230	220	260	285	280	
7	300	310	305	290	230	350	255	250	230	225	220	A	245 ^A	240	250	245	240	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	225	225	225	220	A	250	245	250	240 ^A	250	250	275	260	270	270
9	310	360	350	345	310	295	230	220	220	245	220	200	205 ^H	235	215	235	225	220	220	235	250	245	250	260	
10	275	290	275	270	200	265	225	210	220	220	210	230	215	230	235 ^A	235	230	220	230	220	250	270	270	285	
11	280	300	275	270	290	275	230	220	220	220	225	215	215	240	A	245	225	225	250 ^A	A	A	250	270	320	
12	325	300	325	275	245	295 ^A	250 ^A	225	220	225	220	225	215	220	225	230	225	215	225	235	250	300 ^A	260	260	
13	270	265	280	295	270	245	230	230	235	220	205	205 ^H	220	230	225	225	230	205	215	230	250	315	300	290	
14	315	310	300	330	335	325	245	250	225	205	205 ^H	205 ^H	205 ^H	220 ^H	A	225	215	A	250 ^A	A	A	285	A	295 ^A	
15	305	320	280	320	330	305	245	235	230	220	215	205	230	225	230	230	230	220	A	265	250	270	280	300	
16	320	275	350 ^A	290	325	305	250	220	225	225	215	205	215	225	A	230	220	230	A	250 ^A	275	285	295	275	
17	305	300	325	350	310	250	225	220	225	225	210	240	240 ^A	215	230	230	215	205	225	275	275	280	280	275	
18	295	270	290	260	225	300	230	220	220	225	215	210	220	240	220	230	230	205	220	215	225	265	285	310	
19	375 ^A	350	350	350	250	260	245	235	235 ^A	210	220	225	210	220	230	225	210	220	250 ^A	A	A	280	A	A	
20	300	300	300	300	255	295	220	225	220	220	230	220	205	210	250 ^A	235	230 ^A	255	250	250	250	245	300	280	
21	305	270	270	230	250	275	240	220	A	215	210	215	220	225	225	225	220	215	220	235	240	255	270	290	
22	275	275	280	250	265	275	240	215	225	215 ^H	220	230 ^A	220	220	225	235	220	205	215	240	240	260	285	275	
23	275	270	255	260	265	265	225	215	215	225	225	225	220	230	225	235	225	215	215	230	230	255	275	275	
24	275	305	330	290	260	285	225	225	225	220	220	230	225	220	205 ^H	240	225	245	245	225	255	270	265	260	
25	300	275	280	310	275	295	230	225	225	225	225	225	235	230	230	245	240	235	230	225	245	250	275	305	
26	355	405 ^A	350	300	325	325	260	255	245	230	240	245 ^A	235	230	245	230	240	245	205	220	245	280	300	335	
27	A	A	290	300	285	300	245	225	225	225	230	225	215	205 ^H	235	240	225	215	220	235	230	260	275	295	
28	280	305	300	260	240	225	230	225	230	225	220	230	225	230	235	240	225	225	230	235	235	250	300	305	
29	305	260	250	245	250	250	250	235	225	220	225	225	235	225	235	235	240	235	225	235	235	240 ^H	315	305	
30	330	345	275	325	330	275	A	250	235	240	205 ^H	225	225	235	240	235	220	220	240	235	255	295	310	A	
31	350	300	350	390	405	400	310	255	240	245	235	230	215	235	240	230	230	205	205	225	245	280	295	305	
	00	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	30	30	30	29	29	30	29	31	31	30	31	30	28	31	31	29	28	27	26	30	28	28	
MED	300	300	288	290	275	295	240	225	225	225	220	225	220	225	232	235	230	225	225	235	248	262	280	288	
UQ	315	310	325	320	325	315	250	235	230	225	225	230	225	230	240	240	240	235	245	242	250	280	298	305	
LQ	280	272	275	260	250	270	230	220	225	220	212	210	215	220	225	230	225	215	220	225	235	255	270	272	

OCT. 1982

H° F (KM)

IONOSPHERIC DATA

OCT. 1982

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 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	115	110	A	A	A	125	A	A	A	A	A						
2							135	110	110	A	110	110	110	110	A	110	115	A						
3							A	A	A	A	A	110	A	A	A	105	A	A						
4							150	115	110	110	110	105	105	110	120	115	115	S						
5							S 140	120	110	110	110	110	A	110	A	A	A	A						
6							A	115	105	A	105	105	105	105	105	110	120	A						
7							S	120	110	110	105	A	A	A	115	120	120	C						
8							C	C	C	105	110	105	A	A	A	A	115	E						
9							S	115	110	A	A	110	110	105	105	105	110	S						
10							S	120	110	110	105	110	110	125	100	120	125	A						
11							S	120	115	110	110	115	A	A	A	A	120	A						
12							A	110	105	110	110	110	A	A	A	A	A	A						
13							S	120	110	110	A	110	110	110	A	A	A	A						
14							S	120	110	A	110	A	105	110	110	115	120	E						
15							130	120	105	105	110	110	110	110	A	A	A	A						
16							S	110	110	110	110	110	105	A	A	A	A	A						
17							E	115	110	110	110	110	A	105	105	A	A	E						
18							S	120	110	110	105	105	110	120	A	A	A	S						
19							E	120	110	110	A	A	110	105	105	105	110	E						
20							S	120	115	110	105	105	A	A	A	A	A	E						
21							S	120	110	110	A	110	A	A	A	115	A	E						
22							S	A	A	110	105	A	120	105	105	105	A							
23							S	120	110	110	110	105	105	110	110	120	125							
24							S	125	120	110	105	105	105	115	A	A	105							
25							S	125	110	A	A	A	A	125	120	A	A							
26							125	125	115	115	120	120	105	A	A	A								
27							125	110	105	A	105	105	110	125	120	125								
28							120	110	110	105	A	105	A	125	105	A								
29							120	110	110	110	110	110	A	A	105	A								
30							A	115	A	105	105	105	110	115	125	130								
31							120	115	A	A	105	105	105	110	120	A								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	27	28	22	22	24	21	20	15	17	15							
MED							138	120	110	110	110	110	110	110	110	115	120							
UQ							145	120	110	110	110	110	110	110	118	120	125							
LQ							132	115	110	110	105	105	105	105	105	105	115							

OCT. 1982

H°E (KM)

IONOSPHERIC DATA

OCT. 1982

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 20 MHz in 20sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																																
1	105	100	110	110	110	110	115	G	115	105	105	105	105	100	100	100	95	95	95	E	100	S	S	105																																
2	E	E	100	E	E	E	G	G	G	110	G	G	G	110	105	G	G	115	100	100	105	110	105	105																																
3	105	E	E	E	E	S	105	105	115	105	100	G	100	100	100	125	100	120	S	S	S	E	E	100																																
4	S	E	E	E	E	100	G	G	G	G	G	125	G	100	100	100	110	S	100	S	S	S	S	E																																
5	S	E	E	E	100	S	S	G	G	115	115	110	110	110	105	100	100	100	S	S	110	110	110	S																																
6	105	E	105	100	100	105	105	100	G	120	G	G	G	G	G	120	G	105	105	105	S	S	S	S																																
7	S	E	E	E	120	115	150	G	120	G	G	105	105	105	105	100	G	C	C	C	C	C	C	C																																
8	C	C	C	C	C	C	C	C	C	120	G	110	105	105	105	105	120	115	110	110	110	105	105	105																																
9	105	100	100	E	E	E	135	G	G	110	110	G	G	G	G	G	G	130	E	S	E	E	E	S																																
10	E	E	E	E	E	105	145	G	G	125	G	G	120	125	120	100	100	100	105	105	110	105	E	E																																
11	E	E	110	E	115	120	120	G	G	115	115	120	105	105	105	105	125	105	110	105	110	110	105	105																																
12	S	105	105	105	105	100	105	G	G	G	120	115	105	110	105	110	105	105	105	105	105	100	S	S																																
13	S	E	E	E	E	E	S	G	G	115	110	G	G	G	105	105	105	100	105	E	120	105	E	115																																
14	105	E	E	E	E	E	135	G	115	110	G	110	G	115	115	G	120	115	110	110	110	110	105	105																																
15	105	E	E	120	E	S	130	120	115	115	115	110	110	110	105	105	115	115	110	110	115	E	105	110																																
16	110	105	105	105	105	105	S	G	115	120	115	115	110	105	100	100	100	115	115	110	110	90	105	105																																
17	E	105	105	105	100	100	100	100	G	120	110	110	105	G	G	100	100	100	S	100	E	S	S	110																																
18	125	100	105	105	E	120	160	140	125	120	G	G	G	100	100	100	100	S	115	S	S	110	110	110																																
19	105	105	110	105	105	S	120	120	115	115	110	105	G	G	G	G	G	100	110	110	105	105	105	105																																
20	105	105	105	E	E	E	140	125	115	115	105	G	105	100	100	100	100	100	100	105	105	S	105	110																																
21	105	100	105	100	E	E	135	G	110	115	100	G	100	95	100	100	100	100	110	S	S	105	100	100																																
22	105	E	E	E	S	115	S	115	110	115	G	100	100	G	100	G	100	100	S	S	S	E	E	S																																
23	100	100	S	S	E	E	S	G	G	G	G	G	G	105	100	100	100	110	S	S	105	S	S	105																																
24	105	S	100	S	E	105	S	G	120	115	G	G	G	G	110	105	125	105	105	105	100	105	100	S																																
25	S	S	100	100	E	110	S	135	115	105	105	105	100	105	105	100	100	100	95	100	100	S	115	105																																
26	100	105	105	105	100	100	105	125	120	115	110	110	105	G	105	115	110	105	105	S	S	E	S	110																																
27	105	105	105	105	105	105	S	G	125	115	105	120	G	G	G	G	G	S	S	S	S	105	105	100																																
28	105	105	105	E	E	125	S	130	125	105	125	105	G	100	100	G	105	100	100	100	100	110	S	S																																
29	S	105	105	S	100	130	S	G	G	125	G	G	G	105	105	G	105	105	S	S	S	S	105	105																																
30	S	105	E	125	S	E	115	115	G	110	G	G	G	G	G	G	G	S	105	105	110	105	105	105																																
31	105	S	S	120	130	125	S	G	G	105	105	G	G	G	G	G	105	105	105	100	100	100	S	S	S																															
CNT	18	15	18	14	13	18	17	12	16	27	18	17	16	20	24	22	24	26	22	17	19	16	16	20																																
MED	105	105	105	105	105	108	120	120	115	115	110	110	105	105	105	100	102	105	105	105	105	105	105	105																																
UQ	105	105	105	110	110	120	135	128	120	118	115	115	108	110	105	105	110	115	110	110	110	110	105	110																																
LQ	105	100	105	105	100	105	105	110	115	110	105	105	102	100	100	100	100	100	100	100	102	105	105	105																																

OCT. 1982

H°ES (KM)

IONOSPHERIC DATA

OCT. 1982

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 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	F2	F5	F1	F3	F2	F4	L1		C2	L2	L1	L2	L1	L3	L3	L2	L1	L1	F1		F1			F1	
2			F1							L1				C1	L1			CL11	F2	F1	F4	F2	F3	F1	
3	F2						L2	L3	CL11	L3	L2		L1	LH11	L3	C1	L1	CL21						F2	
4					F1						C1			L1	L1	L1	L1		F1						
5					F2				C2	C2	CL21	L2	C2	L3	L2	L2	L1				F3	F2	F2		
6	F1		F2	F2	F3	F2	L1	L1		CL11						C1		L2	F2	F2					
7					F1	F4	C1		C2			L3	L2	L1	L1	L3									
8									C2		C2	L2	L2	L3	L3	L3	C1	C4	F3	F2	F3	F2	F2	F2	
9	F3	F2	F2				C1			L2	L2							C1							
10					F1	C1			C1				CL12	CL22	C2	L1	L1	L1	F2	F1	F2	F3			
11			F1		F1	F1	C1		C2	C2	C1	L2	L3	L4	L3	C1	L1	F4	F4	F4	F4	F3	F2	F2	
12		F2	F3	F2	F2	F5	L3				C2	C2	L2	L2	L2	L2	L1	F1	F2	F3	F6				
13									C2	L1					L1	L2	L2	L2	F1		F1	F2		F2	
14	F1						C1		C2	L1		L1		C1	C4		C3	C3	F3	F4	F4	F3	F4	F4	
15	F2			F1			C2	C2	C2	C2	C2	C1	C2	C2	L2	L3	L1	L2	F3	F3	F2	F2	F2	F2	
16	F2	F2	F4	F1	F3	F2			C2	C2	C2	C2	C2	L3	L3	L3	L2	CL22	F2	FF22	FF22	F3	F2	F2	
17		F1	F2	F2	F1	F2	L4	L1		C1	C2	C3	L3			L2	L1	L1		F1				F2	
18	F1	F1	F2	F3		F1	C1	H1	C2	C2				L2	L2	L3	L1		F1			F1	F2	F2	
19	F5	F3	F3	F5	F1		C2	C2	C2	C2	L2	L3						L2	F3	F3	F3	F5	F4	F3	
20	F2	F2	F2				C1	C2	C2	C1	C3		L1	L2	L3	L4	L3	L3	F3	F1	F1		F3	F2	
21	F2	F2	F2	F2			C1		C3	C2	L3		L3	L3	L2	L2	L1	L1	F1			F2	F3	F1	
22	F1				F1			L1	L2	C2		L3	L1		L2		L2	F1							
23	F1	F1												L1	L1	L1	L1	F1			F1			F2	
24	F1		F1		F1				C3	C2					L2	L2	C1	F3	F2	F2	F3	F2	F2		
25			F1	F2		F2		C2	C2	L2	L3	L2	L3	L1	L2	L3	L3	F5	F4	F3	F3		F1	F3	
26	F4	F4	F3	F1	F2	F2	F1	C3	C3	C1	C2	C3	C2		L3	L2	L2	F2	F1					F2	
27	F6	F6	F3	F2	F1	F1			C1	C2	L2	C1										F3	F2	F4	
28	F1	F1	F2		F1			C1	C1	L2	C1	L2		L2	L2		L2	F3	F2	F2	F2	F1			
29		F2	F1		F2	FF11			C1				L2	L2			L3	F4					F2	F1	
30		F1		F1			F5	L3		L3									F2	F2	F2	F3	F2	F5	
31	F5			FF21	FF21	F1			L2	L2						L1	L2	F1	F2	F2	F2				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

OCT. 1982

TYPES OF ES

IONOSPHERIC DATA

OCT. 1982

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 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	X 76	X 74	X 68	X 64	X 66	X 69												X 91	X 84	X 88	X 82	X 75	X 73	
2	X 68	X 68	X 63	X 63	X 59	X 56												X 96	X 82	X 70	X 72	X 72	X 72	
3	X 63	X 62	X 62	X 58	X 50	X 50												X 96	X 79	X 78	X 69	X 63	X 61	
4	X 60	X 60	X 62	X 60	X 56	X 58												108	X 95	X 76	X 71	X 69	X 73	
5	X 75	X 69	X 67	X 67	X 63	X 58												X 96	X 87	X 77	X 73	X 71	X 70	
6	X 68	X 67	X 62	X 59	X 56	X 57												107	X 96	X 86	X 78	X 77	X 81	
7	X 74	X 66	X 66	X 69	X 65	X 55												X 99	X 87	X 77	X 78	X 76	X 76	
8	X 74	X 52	X 49	X 51	X 50	X 51												X 84	X 66	X 62	X 62	X 56	X 50	
9	X 43	X 42	X 42	X 41	X 42	X 45												X 96	X 78	X 77	X 77	X 68	X 63	
10	X 59	X 58	X 56	X 55	X 52	X 50												X 90	X 84	X 82	X 77	X 73	X 72	
11	X 73	X 71	X 72	X 70	X 68	X 68												107	X 97	X 81	X 64	X 61	X 58	
12	X 59	X 62	X 59	X 60	X 58	X 55												X 98	X 85	X 77	X 68	X 73	X 72	
13	X 71	X 68	X 63	X 63	X 64	X 64												X 92	X 83	X 75	X 69	X 73	X 71	
14	X 67	X 65	X 64	X 59	X 56	X 58												X 98	X 89	X 70	X 75	X 69	X 71	
15	X 50	X 60	X 61	X 57	X 58	X 58												X 90	X 70	X 64	X 65	X 65	X 62	
16	X 59	X 59	X 59	X 57	X 53	X 52												113	X 91	X 81	X 65	X 63	X 63	X 63
17	X 58	X 60	X 59	X 57	X 57	X 58												102	X 71	X 66	X 69	X 67	X 66	X 67
18	X 64	X 65	X 61	X 62	X 51	X 48												118	X 92	X 78	X 72	X 61	X 61	X 61
19	X 60	X 57	X 57	X 58	X 56	X 58												X 98	X 90	X 84	X 77	X 66	X 63	X 55
20	X 56	X 54	X 54	X 55	X 56	X 53												101	X 78	X 73	X 68	X 62	X 59	X 58
21	X 58	X 60	X 57	X 59	X 51	X 50												X 94	X 84	X 72	X 67	X 66	X 62	X 57
22	X 60	X 60	X 59	X 58	X 56	X 56												102	X 77	X 64	X 62	X 57	X 57	X 58
23	X 58	X 57	X 57	X 48	X 48	X 49												101	X 88	X 74	X 64	X 62	X 59	X 59
24	X 60	X 58	X 57	X 59	X 58	X 56												103	X 86	X 76	X 68	X 65	X 63	X 60
25	X 61	X 61	X 59	X 59	X 58	X 58												127	X 108	X 85	X 74	X 66	X 63	X 63
26	X 61	X 58	X 58	X 58	X 57	X 58												123	X 119	X 83	X 66	X 64	X 64	X 62
27	X 63	X 67	X 64	X 63	X 62	X 63												117	X 103	X 87	X 83	X 75	X 72	X 71
28	X 69	X 68	X 68	X 71	X 68	X 59												113	X 97	X 86	X 78	X 67	X 63	X 63
29	X 63	X 65	X 65	X 60	X 53	X 48												121	X 104	X 88	X 82	X 69	X 68	X 68
30	X 68	X 68	X 66	X 61	X 63	X 64												X 98	X 82	X 77	X 66	X 62	X 58	X 59
31	X 55	X 55	X 52	X 50	X 48	X 47												X 98	X 84	X 72	X 51	X 49	X 51	X 51
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31												16	31	31	31	31	31	31
MED	X 61	X 61	X 61	X 59	X 56	X 56												102	X 92	X 83	X 74	X 67	X 64	X 63
UQ	X 68	X 67	X 64	X 62	X 60	X 58												118	X 98	X 86	X 78	X 72	X 72	X 71
LQ	X 59	X 58	X 57	X 57	X 52	X 50												100	X 87	X 75	X 66	X 64	X 62	X 59

OCT. 1982

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	70	68	62	58	60	63	83	99	103	118	125	107	105	108	115	115	112	101	85	78	82	76	69	67
2	62	62	57	57	53	50	70	100	125	118	115	124	123	110	103	103	99	105	90	76	64	66	66	66
3	57	56	56	52	43	44	67	90	106	115	127	110	107	106	103	102	103	102	90	73	72	63	57	55
4	53	53	56	53	50	52	78	102	121	128	136	128	122	122	122	126	120	117	102	89	70	64	63	67
5	69	63	61	61	57	52	70	108	122	133	122	119	122	123	120	120	116	107	90	81	71	67	64	63
6	62	61	56	53	50	51	87	112	106	116	115	121	128	129	126	125	120	122	101	90	80	72	71	75
7	68	60	60	62	59	49	72	114	142	140	122	124	127	127	128	132	129	113	93	81	71	72	70	71
8	68	45	43	45	43	45	52	60	66	72	87	107	98	98	98	93	101	95	78	60	56	56	50	43
9	37	36	36	35	36	39	70	87	98	113	120	125	123	126	123	121	113	106	90	72	71	71	62	57
10	53	52	50	49	46	43	67	89	106	107	119	113	122	119	116	117	111	100	83	78	76	71	67	66
11	67	65	66	64	62	62	86	97	117	118	127	127	130	126	122	124	118	113	101	91	75	58	55	52
12	53	56	53	54	52	49	64	89	119	125	126	127	127	127	122	121	123	113	92	79	71	62	67	66
13	65	62	57	57	58	58	78	101	108	127	126	125	127	127	124	122	125	111	86	77	69	63	67	65
14	61	59	58	52	50	51	75	96	123	131	131	143	142	133	133	132	121	111	92	83	64	69	63	64
15	44	53	55	51	52	52	75	113	130	125	120	113	116	112	110	113	114	107	84	64	58	59	59	56
16	53	53	53	51	47	46	63	102	119	116	117	121	132	137	127	122	124	107	85	75	59	57	57	57
17	52	54	53	51	51	52	67	84	105	124	133	143	137	132	133	135	127	95	64	60	63	61	60	61
18	58	59	55	56	45	42	64	93	112	132	140	127	131	133	129	123	124	112	86	72	66	55	55	54
19	^F 52	51	51	52	50	52	71	111	136	137	139	141	132	122	116	111	102	92	84	78	71	60	57	49
20	50	48	48	49	50	47	69	88	107	116	129	131	115	109	114	118	115	95	72	67	62	56	53	52
21	52	54	51	53	44	44	65	101	116	125	120	121	119	116	109	104	93	88	78	66	60	60	56	51
22	54	54	53	52	50	50	68	94	129	133	135	137	134	125	117	109	110	96	71	58	56	51	51	52
23	52	51	51	42	42	43	67	98	109	113	117	121	117	112	112	113	105	95	82	68	58	56	53	53
24	54	52	51	53	52	50	76	101	120	132	135	137	137	122	117	122	117	97	80	70	62	59	57	54
25	55	55	53	53	52	52	75	99	124	126	129	133	139	131	125	131	124	121	102	79	68	60	57	57
26	55	52	52	52	51	52	75	94	136	143	162	146	143	142	144	130	117	117	113	77	60	58	58	56
27	57	61	58	57	56	57	68	111	127	137	139	139	138	130	130	134	127	111	97	81	77	69	66	65
28	63	62	62	65	62	53	71	101	118	128	135	138	135	128	127	121	119	107	91	80	72	61	57	57
29	57	59	59	54	47	42	61	97	126	117	123	127	135	135	127	122	113	115	98	82	76	63	62	62
30	62	62	60	55	57	58	60	94	131	142	145	151	142	131	133	122	109	92	76	71	60	56	52	53
31	49	49	45	44	42	41	47	87	113	125	147	150	133	126	128	116	102	92	78	66	45	43	45	45
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	55	55	55	53	50	50	70	98	119	125	127	127	128	126	122	121	116	107	86	77	68	61	58	57
UQ	62	61	58	56	54	52	75	102	126	132	135	138	135	130	128	124	122	112	92	80	72	66	65	65
LQ	52	52	51	51	46	44	66	92	108	116	120	121	122	118	116	114	110	96	81	69	60	58	56	53

OCT. 1982

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

F0F1 (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 20 MHz in 20 sec in automatic operation																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1										L	L	L	L	L	L										
2									L	L	L	L	L	L	L										
3									L	L	L	L	L	L	L										
4										L	L	L	L	L	L	L									
5									L	L	L	L	L	L	L										
6										L	L	L	L	L	L										
7											L	L	L	L	L										
8								L	L	L	L	L	L	L	L										
9										L	L	L	L	L											
10											L	L	L	L											
11										L	L	L	L	L	L	L									
12												L	L	L	L										
13										L	L	L	L		L										
14											L	L	L	L	L										
15													L	L											
16										L	L	L	L	L											
17											L	L	L	L											
18												L	L	L											
19								L	L	A	L														
20										L	L	L	L	L	L										
21										L	L	L	L	L											
22										L	L	L	L	L											
23												L	L												
24											L	L			L	L									
25											L		L			L									
26											L	L	L	L											
27												L	L	L											
28											L	L	L	L	L										
29											L	L	L	L	L										
30										L	L	L	L	L											
31											L		L												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

OCT. 1982

F0F1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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							200	260	315	350	375	A	380	370	360	325	265							A
2							200	280	320	345	360	380	380	380	355	320	280	205						
3							195	265	320	350	370	A	380	370	355	315	270							A
4							190	280	320	345	A	A	A	A	350	315	260							S
5							A	A	A	A	A	380	A	380	355	315	260							S
6							190	A	305	A	A	380	A	A	A	A	A							S
7							A	255	305	A	370	A	R	380	370	345	305	260						S
8							A	265	300	A	375	A	A	A	A	310	255							A
9							A	A	A	A	A	A	370	365	335	A	260							A
10							A	A	300	335	360	A	370	355	325	300	250							S
11							A	250	A	A	A	375	385	A	A	300	A	A						A
12							A	A	A	A	A	A	A	A	A	A	A							S
13							A	235	285	A	A	365	A	A	330	280								S
14							S	A	A	A	A	A	A	A	335	300	235							S
15							S	235	295	A	A	A	A	A	A	A	A							S
16							S	A	275	315	A	A	A	A	A	270	240							
17							S	245	305	A	A	A	A	325	310	290	230							
18							175	255	300	A	A	A	370	A	320	295	220							
19							S	A	A	A	A	A	A	345	325	295	A							
20							S	225	275	A	A	A	A	A	A	295	245							
21							S	A	305	A	345	360	A	355	A	A	A							
22							S	A	A	335	A	360	375	370	330	280	225							
23							175	A	A	330	350	365	370	350	320	285	235							
24							S	260	A	A	360	365	370	360	320	280	A							
25							S	A	A	A	A	370	385	370	355	305	A							
26							S	A	A	A	A	A	A	A	A	295	240							
27							S	230	280	A	A	365	380	370	345	305	230							
28							S	220	270	315	335	370	375	355	335	A	230							
29							S	220	275	315	A	A	380	A	350	300	210							
30							S	A	A	300	325	340	350	A	330	295	225							
31							S	A	A	A	A	355	R	365	355	325	280	195						
CNT							7	16	18	11	11	14	17	17	22	25	22	1						
MED							190	252	300	335	360	365	375	365	335	300	240	205						
UQ							198	262	305	345	370	375	380	370	350	305	260							
LQ							182	232	280	315	348	360	370	355	325	290	230							

OCT. 1982

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	26	J A	20	J A	30	J A	44	J A	22	E S	15	G	G	G	37	G	42	G	G	G	G	G	29	27	E S	16	J A	25	E S	16	J A	25	J A	24	E S	15									
2	E S	16	E S	15	E S	14	J A	24	E S	16	E S	15	G	G	J A	184	G	G	G	G	G	G	G	G	G	G	E S	15	J A	24	J A	27	J A	84	J A	39	J A	24								
3	J A	20	J A	20	E S	13	E S	15	J A	17	J A	17	G	G	G	40	G	40	G	G	G	J A	54	J A	37	27	E S	15	E S	15	E S	15	E S	15	E S	15	E S	15								
4	J A	21	J A	21	J A	17	E S	13	J A	24	J A	24	G	J A	39	G	G	39	J A	39	J A	42	J A	38	40	35	30	23	J A	19	J A	18	E S	16	E S	16	E S	15	E S	15						
5	E S	15	E S	15	E S	15	E S	15	E S	15	E S	15	20	30	35	37	38	G	J A	44	G	G	G	G	G	G	E S	15	J A	26	J A	26	E S	15	E S	15	E S	15	J A	29						
6	J A	25	J A	29	J A	28	J A	26	J A	31	J A	20	G	J A	36	34	J A	50	40	G	40	40	J A	37	38	30	E S	19	J A	32	J A	38	J A	26	J A	27	J A	24	J A	19						
7	E S	16	E S	15	E S	15	J A	20	E S	14	E S	15	22	31	G	J A	50	G	J A	39	G	G	G	G	G	28	J A	30	J A	27	J A	29	J A	25	J A	64	J A	31	J A	54						
8	J A	20	J A	20	E S	16	E S	14	E S	15	E S	15	23	G	34	41	G	J A	46	J A	50	J A	52	35	G	G	24	J A	24	J A	29	J A	39	J A	26	J A	24	J A	30							
9	J A	20	J A	30	J A	29	J A	24	J A	24	J A	19	22	J A	36	J A	44	J A	46	J A	44	J A	51	G	G	G	37	G	J A	36	J A	30	J A	41	J A	34	J A	39	J A	19	J A	21				
10	E S	15	E S	15	E S	15	E S	14	E S	15	E S	15	25	32	G	G	G	J A	38	G	G	G	G	G	35	32	32	J A	41	J A	29	J A	46	J A	84	J A	44	J A	24	J A	26					
11	J A	26	J A	20	E S	13	E S	13	E S	12	J A	30	25	J A	38	34	J A	50	J A	42	G	G	40	J A	35	G	J A	40	J A	31	J A	24	J A	30	J A	30	J A	29	J A	24	J A	24				
12	J A	20	J A	20	E S	16	J A	19	E S	16	J A	21	J A	24	J A	41	J A	54	J A	44	J A	44	J A	47	J A	78	J A	46	J A	54	J A	38	J A	35	J A	29	J A	42	J A	32	J A	30	E S	15	E S	16
13	J A	43	J A	42	J A	27	J A	24	J A	20	J A	20	G	37	J A	35	37	G	41	J A	54	G	G	G	28	J A	45	J A	41	J A	30	J A	25	J A	24	J A	24	J A	47	J A	44					
14	J A	53	J A	39	J A	27	J A	30	J A	72	E S	15	25	33	J A	48	J A	67	J A	54	41	J A	45	J A	50	G	G	G	22	J A	41	J A	38	J A	80	J A	42	E S	15	E S	15					
15	E S	15	J A	24	J A	44	J A	20	E S	15	E S	15	E S	17	30	J A	45	J A	61	J A	54	J A	70	J A	41	J A	38	J A	48	J A	46	J A	43	22	J A	26	J A	36	E S	15	E S	15	J A	24	J A	20
16	J A	19	E S	15	E S	13	E S	15	E S	15	E S	16	G	36	J A	35	J A	51	J A	37	J A	41	J A	47	40	G	G	J A	44	E S	16	E S	16	E S	16	E S	16	E S	16	J A	20	E S	16			
17	J A	41	J A	48	J A	26	J A	25	J A	52	J A	27	E S	16	G	G	J A	35	38	J A	44	42	G	G	G	G	G	J A	23	E S	15	E S	15	E S	15	E S	15	E S	15	J A	19	J A	25			
18	J A	17	E S	15	E S	14	J A	41	E S	12	E S	15	G	G	G	38	41	38	G	J A	49	J A	50	G	G	G	E S	16	E S	15	E S	15	J A	24	J A	22	J A	24	J A	24	J A	24				
19	J A	24	J A	18	E S	15	E S	14	J A	20	E S	15	19	30	J A	43	36	J A	56	J A	39	J A	44	G	G	G	J A	36	J A	39	J A	21	J A	44	E S	16	E S	15	J A	24	J A	20				
20	J A	52	J A	37	E S	16	J A	21	J A	26	E S	16	E S	17	29	J A	44	J A	41	J A	72	J A	50	J A	60	J A	63	J A	47	G	E S	16	E S	15	J A	20	E S	15	E S	16	E S	16	J A	25		
21	J A	26	J A	16	J A	36	J A	44	J A	20	J A	20	J A	24	28	G	J A	40	G	J A	50	J A	46	22	J A	36	J A	46	J A	36	J A	54	E S	15	J A	30	J A	20	J A	24	J A	25	J A	24		
22	J A	21	E S	15	E S	15	J A	20	J A	25	E S	15	26	J A	27	J A	36	G	J A	40	G	G	G	G	G	G	G	J A	25	J A	20	E S	15	E S	15	E S	15	E S	15	E S	15	E S	15			
23	E S	15	E S	15	E S	15	E S	15	J A	26	E S	13	G	30	35	J A	46	G	G	G	G	G	G	G	G	G	J A	45	E S	15	J A	21	E S	15	E S	15	E S	15	E S	15	J A	24	E S	15		
24	E S	15	J A	32	J A	24	E S	15	J A	24	E S	15	E S	16	G	J A	52	J A	41	G	G	G	G	G	G	G	25	J A	19	J A	31	J A	26	E S	15	J A	20	J A	24	J A	24	J A	25			
25	J A	19	E S	15	J A	20	E S	12	E S	15	E S	15	E S	17	30	36	J A	45	J A	42	G	G	G	G	G	G	J A	31	J A	30	J A	33	J A	27	E S	15	E S	16	E S	16	J A	26				
26	E S	16	E S	16	J A	24	E S	16	E S	16	E S	16	J A	23	35	J A	46	J A	53	J A	61	J A	54	J A	42	J A	46	37	G	E S	16	J A	24	E S	16	J A	28	J A	20	E S	16	E S	16			
27	E S	16	J A	24	E S	16	E S	13	E S	13	J A	23	J A	29	G	G	35	40	G	G	G	G	G	G	38	J A	41	G	J A	20	J A	23	E S	16	E S	16	E S	16	E S	16	J A	21	J A	24		
28	E S	16	E S	15	J A	20	E S	16	E S	16	E S	16	E S	16	G	G	G	G	G	G	G	G	G	G	G	32	G	J A	22	J A	22	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	
29	E S	16	E S	16	E S	16	E S	15	E S	14	E S	16	E S	16	27	G	36	J A	51	J A	38	J A	46	J A	37	G	G	G	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	J A	24		
30	E S	16	E S	16	E S	14	J A	21	E S	16	E S	16	J A	80	J A	30	J A	44	G	G	G	G	G	J A	50	J A	71	G	E S	16	J A	26	J A	21	J A	25	E S	16	J A	25	J A	21	J A	21		
31	E S	15	J A	30	J A	26	J A	27	J A	32	E S	15	E S	16	J A	38	J A	50	J A	34	J A	41	G	G	G	G	G	25	20	E S	15	E S	15	J A	19	E S	15	E S	15	E S	15	E S	15			
CNT		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31		
MED	J A	19	J A	20	E S	16	E S	16	J A	17	E S	15	17	29	35	J A	38	40	38	G	G	G	G	G	25	23	J A	22	J A	25	J A	19	E S	16	J A	24	J A	21	J A	21	J A	21				
UQ	J A	24	J A	26	J A	26	J A	24	J A	24	J A	18	23	32	J A	44	J A	46	J A	44	J A	43	J A	43	J A	46	38	34	32	J A	30	J A	28	J A	30	J A	26	J A	26	J A	24	J A	25			
LQ	E S	16	E S	15	E S	15	E S	14	E S	15	E S	15	E S	16	G	G	35	G	G	G	G	G	G	G	G	G	G	19	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16	E S	16		

OCT. 1982

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	E	25	25	15	E S 15	G	G	G	37	G	39	G	G	G	G	22	23	E S 16	E	E S 16	E	E	E S 15
2	E S 16	E S 15	E S 14	E	E S 16	E S 15	G	G	23	G	G	G	G	G	G	G	G	G	E S 15	E	25	E	29	20
3	E	E	E S 13	E S 15	E	E	G	G	G	38	G	39	G	G	G	23	23	25	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15
4	E	19	15	E S 13	16	E	G	G	G	G	38	39	40	38	32	28	29	21	E	E	E S 16	E S 16	E S 15	E S 15
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	20	29	35	37	38	G	40	G	G	G	G	20	E S 15	22	20	E S 15	19	19
6	20	20	23	18	29	19	G	29	34	38	40	G	40	40	37	33	30	E S 19	32	28	22	19	20	E
7	E S 16	E S 15	E S 15	E	E S 14	E S 15	22	31	G	49	G	39	G	G	G	G	28	24	E	22	20	20	23	20
8	E	E	E S 16	E S 14	E S 15	E S 15	21	G	32	36	G	38	39	40	35	G	G	22	E	27	32	22	19	E
9	E	22	26	21	18	E	20	28	34	34	37	37	G	G	G	33	G	32	27	34	20	20	E	E
10	E S 15	E S 15	E S 15	E S 14	E S 15	E S 15	24	28	G	G	G	37	G	G	35	24	28	17	27	37	43	25	E	20
11	E	E	E S 13	E S 13	E S 12	E	20	28	33	40	36	G	G	36	33	G	32	22	17	23	22	21	20	20
12	E	E	17	E S 16	E	E S 16	20	24	30	35	41	42	43	45	35	32	27	19	19	19	25	20	E S 15	E S 16
13	29	33	23	E	18	E	18	G	34	35	36	G	36	38	G	G	26	30	28	20	19	18	17	30
14	28	26	18	25	E	E S 15	24	31	33	60	37	37	39	44	G	G	G	19	37	35	30	30	E S 15	E S 15
15	E S 15	20	18	E	E S 15	E S 15	E S 17	28	40	52	46	42	37	37	35	34	40	20	E	24	E S 15	E S 15	22	E
16	E	E S 15	E S 15	E S 13	E S 15	E S 15	E S 16	G	33	33	40	37	38	38	35	G	G	18	E S 16	E S 16	E S 16	E S 16	E	E S 16
17	38	41	21	19	27	20	E S 16	G	G	35	37	40	37	G	G	G	G	E	E S 15	E S 15	E S 15	E S 15	E	E
18	E	E S 15	E S 14	E	E S 12	E S 15	G	G	G	35	37	37	G	40	34	G	G	E S 16	E S 15	E S 15	20	E	E	E
19	20	E	E S 15	E S 14	E	E S 15	18	27	34	35	51	36	37	G	G	G	32	38	20	40	E S 16	E S 15	22	E
20	28	20	E S 16	E	E	E S 16	E S 17	28	38	37	40	42	39	35	33	G	G	E S 16	E S 15	E	E S 15	E S 16	E S 16	19
21	E	E	E	28	E	E	18	27	G	35	G	37	37	21	34	30	26	30	E S 15	E	E	E	E	E
22	E	E S 15	E S 15	E	E	E S 15	18	26	35	G	37	G	G	G	G	G	G	E	E	E S 15	E S 15	E S 15	E S 15	E S 15
23	E S 15	E S 15	E S 15	E S 15	E	E S 13	G	27	35	36	G	G	G	G	G	G	G	E S 15	E	E S 15	E S 15	E S 15	E	E S 15
24	E S 15	E	E	E S 15	E	E S 15	E S 16	G	34	35	G	G	G	G	G	G	25	E	E	E	E S 15	E	E	E
25	E	E S 15	E	E S 12	E S 15	E S 15	E S 17	28	35	33	36	G	G	G	G	G	28	18	E	E	E S 15	E S 16	E S 16	E
26	E S 16	E S 16	E	E S 16	E S 16	E S 16	18	27	38	47	42	47	40	43	37	G	G	E S 16	E	E S 16	E	E	E S 16	E S 16
27	E S 16	E	E S 16	E S 13	E S 13	E	G	G	G	35	36	G	G	G	36	31	G	E	E	E S 16	E S 16	E S 16	E	E
28	E S 16	E S 15	E	E S 16	E S 16	E S 16	E S 16	G	G	G	G	G	G	G	G	30	G	E	E	E S 16	E S 16	E S 16	E S 16	E S 16
29	E S 16	E S 14	E S 16	E S 15	E S 14	E S 16	E S 16	25	G	34	36	36	38	37	G	G	G	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E
30	E S 16	E S 16	E S 14	E	E S 16	E S 16	G	27	30	G	G	G	G	36	36	G	G	E S 16	E	E	E	E S 16	E	E
31	E S 15	25	E	23	E	E S 15	E S 16	27	30	34	36	G	G	G	G	G	24	19	E S 15	E S 15	E	E S 15	E S 15	E S 15
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E S 15	E S 15	E S 15	E S 14	E S 15	E S 15	17	27	32	35	36	37	G	G	G	G	G	19	E S 15	16	16	E S 16	E S 15	E S 15
UQ	E S 16	20	16	E S 16	E S 16	E S 16	19	28	34	37	38	39	38	38	35	26	28	22	16	22	20	18	18	E S 16
LQ	E	E	E S 14	E S 12	E	E S 14	G	G	G	34	G	G	G	G	G	G	G	E	E	E S 15	E S 15	E S 15	E	E

OCT. 1982

FBES (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1982

F-MIN (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 20 MHz in 20 sec in automatic operation									
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		E 15	E 15	E 15	E 14	E 12	E 15	E 18	19	18	19	20	20	20	19	18	16	E 18	E 16	E 15	E 16	E 16	E 16	E 15	
2		E 16	E 15	E 14	E 14	E 16	E 15	E 16	17	17	18	20	20	20	19	19	19	16	E 16	E 15	E 16	E 16	E 16	E 16	E 16
3		E 15	E 15	E 13	E 15	E 15	E 15	E 15	15	16	20	20	19	20	18	19	16	17	E 16	E 15	E 15	E 15	E 15	E 15	E 15
4		E 15	E 15	E 12	E 13	E 14	E 15	E 16	16	18	19	16	19	19	20	20	17	16	E 17	E 16	E 16	E 16	E 16	E 15	E 15
5		E 15	E 15	E 15	E 15	E 15	E 15	E 16	17	18	19	20	19	19	19	16	16	16	E 17	E 15	E 15	E 15	E 15	E 16	E 16
6		E 15	E 16	E 15	E 15	E 15	E 16	E 16	17	16	18	20	20	20	19	18	17	16	E 19	E 13	E 16	E 16	E 16	E 16	E 16
7		E 16	E 15	E 15	E 15	E 14	E 15	E 16	17	16	19	19	19	25	21	17	19	16	E 15	E 15	E 15	E 16	E 15	E 15	E 15
8		E 15	E 15	E 16	E 14	E 15	E 15	E 16	16	16	16	20	20	19	19	17	16	16	E 16	E 16	E 15	E 16	E 15	E 16	E 16
9		E 16	E 15	E 12	E 15	E 15	E 15	E 16	17	17	16	16	20	20	19	20	16	15	15	E 16	E 16	E 15	E 16	E 15	E 15
10		E 15	E 15	E 15	E 14	E 15	E 15	E 16	18	18	18	18	20	19	17	19	16	16	E 16	E 16	E 16	E 16	E 15	E 16	E 16
11		E 15	E 16	E 13	E 13	E 12	E 15	16	16	17	18	18	22	19	18	18	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16
12		E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	16	16	19	19	18	18	17	16	E 16	E 16	E 16	E 16	E 16	E 15	E 16
13		E 16	E 13	E 16	E 15	E 12	E 15	E 15	17	16	16	18	18	19	18	17	17	16	E 16	E 16	E 16	E 16	E 16	E 16	E 15
14		E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	16	18	18	19	19	19	17	17	16	E 15	E 15	E 16	E 15	E 16	E 15	E 15
15		E 15	E 12	E 13	E 15	E 15	E 15	E 17	15	16	17	16	19	18	18	16	18	19	E 15	E 16	E 16	E 15	E 15	E 15	E 16
16		E 16	E 15	E 15	E 13	E 15	E 15	E 16	16	16	16	16	16	17	16	18	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
17		E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	18	18	17	17	15	17	16	E 16	E 15	E 15	E 15	E 15	E 15	E 16
18		E 15	E 15	E 14	E 12	E 12	E 15	E 15	16	16	16	16	17	18	18	17	16	15	E 16	E 15	E 15	E 15	E 14	E 15	E 15
19		E 15	E 15	E 15	E 14	E 15	E 15	E 16	15	16	18	18	17	19	18	16	16	15	E 14	E 16	E 16	E 16	E 15	E 16	E 16
20		E 16	E 15	E 16	E 16	E 16	E 16	E 17	16	16	16	15	18	15	17	16	16	16	E 16	E 15	E 16	E 15	E 16	E 16	E 12
21		E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	16	16	19	17	17	17	15	15	15	E 15	E 15	E 15	E 15	E 15	E 15	E 15
22		E 16	E 15	E 15	E 15	E 15	E 15	E 16	16	17	16	16	18	20	17	17	16	16	E 15	E 15	E 15	E 15	E 15	E 15	E 15
23		E 15	E 15	E 15	E 15	E 15	E 13	E 15	17	16	17	19	19	17	16	20	17	16	E 15	E 15	E 15	E 15	E 15	E 15	E 15
24		E 15	E 12	E 15	E 15	E 15	E 15	E 16	16	16	18	20	18	18	19	17	16	16	E 15	E 15	E 16	E 15	E 15	E 15	E 15
25		E 15	E 15	E 12	E 12	E 15	E 15	E 17	16	16	15	16	16	18	20	19	16	16	E 16	E 16	E 16	E 15	E 16	E 16	E 16
26		E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	19	19	18	20	21	25	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
27		E 16	E 15	E 16	E 13	E 13	E 16	E 16	16	15	16	16	16	18	16	22	12	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
28		E 16	E 15	E 16	E 16	E 16	E 16	E 16	16	15	16	16	20	18	18	19	17	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
29		E 16	E 14	E 16	E 15	E 14	E 16	E 16	16	16	16	17	18	18	19	16	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
30		E 16	E 16	E 14	E 16	E 16	E 16	E 16	16	16	17	16	18	18	19	16	16	16	E 16	E 15	E 15	E 15	E 16	E 16	E 16
31		E 15	E 15	E 15	E 14	E 15	E 15	E 16	16	16	17	19	19	18	17	17	16	16	E 16	E 15	E 15	E 15	E 15	E 15	E 15
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED		E 15	E 15	E 15	E 15	E 15	E 15	E 16	16	16	17	18	19	19	18	17	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
UQ		E 16	E 15	E 16	E 15	E 15	E 16	E 16	17	17	18	19	20	20	19	19	17	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
LQ		E 15	E 15	E 14	E 14	E 14	E 15	E 16	16	16	16	16	18	18	17	16	16	16	E 15	E 15	E 15	E 15	E 15	E 15	E 15

OCT. 1982

F-MIN (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	270	275	275	240	250	255	320	345	330	315	310	290	285	285	295	295	305	310	295	270	280	275	285	260
2	260	260	265	265	250	235	315	300	310	305	270	290	295	300	290	295	305	305	300	295	265	265	265	290
3	270	255	265	280	270	250	300	285	300	305	315	310	300	305	300	305	315	315	310	290	300	280	265	260
4	260	255	265	280	270	280	320	325	315	305	310	295	285	285	285	290	300	305	305	305	285	270	250	260
5	275	270	260	285	275	250	295	325	320	325	310	300	295	295	290	295	305	310	290	300	285	290	280	280
6	280	265	265	275	245	255	335	330	340	320	290	285	280	285	285	290	295	310	300	290	290	270	260	270
7	280	255	245	265	295	250	290	320	330	315	305	290	295	295	285	275	300	305	290	295	280	270	275	290
8	300	315	250	250	250	260	280	315	305	295	285	315	315	295	310	290	315	330	335	305	275	305	290	290
9	270	250	250	245	260	285	325	345	325	305	315	305	300	300	300	310	320	315	310	310	285	320	295	295
10	285	285	285	280	305	300	340	335	350	320	325	295	305	300	300	325	315	320	315	295	290	295	285	265
11	265	270	270	275	275	280	330	325	290	305	305	295	300	295	305	310	310	315	305	310	310	310	280	265
12	265	280	265	275	290	300	325	320	320	320	310	305	305	303	305	305	315	325	305	305	295	280	285	285
13	290	295	275	270	285	305	335	350	325	315	315	305	305	295	300	305	315	325	315	300	290	270	275	275
14	245	255	270	260	260	270	305	330	320	305	310	305	315	295	300	305	300	305	300	305	275	275	280	295
15	325	250	260	255	260	270	310	335	340	330	335	310	315	320	300	320	325	325	320	295	275	280	290	285
16	275	285	285	285	270	270	315	330	335	330	315	300	305	300	305	310	320	325	315	320	295	285	295	290
17	275	265	265	255	260	290	330	330	315	310	305	310	290	300	295	305	315	325	305	280	280	285	265	285
18	275	300	280	305	295	270	320	325	330	315	320	305	305	295	305	300	305	320	310	290	305	275	275	260
19	^F 255	265	260	270	270	280	315	335	340	320	315	320	320	305	315	325	330	315	305	310	320	310	295	270
20	265	270	270	275	280	265	335	315	320	320	305	310	315	295	300	305	320	305	310	300	295	300	285	275
21	275	285	295	300	285	270	310	335	340	335	330	310	310	310	310	330	315	315	305	320	295	310	305	290
22	280	280	285	290	280	280	320	320	335	330	320	310	310	305	305	305	315	315	325	295	305	280	275	290
23	290	285	315	315	280	285	340	355	345	330	325	310	310	300	310	305	330	305	325	315	300	275	285	285
24	270	265	260	270	260	260	320	340	325	320	305	295	300	300	300	305	325	320	300	305	290	295	285	285
25	270	275	275	265	270	270	325	340	335	315	305	295	290	300	290	300	310	305	295	315	295	280	275	270
26	250	240	240	250	245	245	305	295	305	295	305	300	295	285	295	285	290	290	320	295	285	280	260	250
27	260	280	275	275	265	270	300	325	330	320	315	300	305	295	295	300	305	295	300	275	290	285	280	275
28	280	260	275	285	310	270	320	335	315	310	295	305	300	300	300	295	310	300	305	300	305	295	270	265
29	265	295	305	300	295	290	310	330	335	315	310	300	290	295	290	300	295	305	290	290	290	240	250	260
30	250	240	270	245	245	275	275	300	305	315	305	300	300	290	300	315	315	305	290	305	285	265	255	265
31	255	250	250	240	240	240	270	310	300	310	305	305	310	305	310	320	325	305	305	335	290	285	280	275
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	270	270	270	275	270	270	320	330	325	315	310	305	300	300	300	305	315	310	305	300	290	280	280	275
UQ	280	282	275	282	282	280	325	335	335	320	315	310	310	300	305	310	318	320	312	308	295	295	285	288
LQ	262	255	260	258	260	258	305	320	315	308	305	295	295	295	295	295	305	305	300	295	285	275	268	265

OCT. 1982

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1982

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 20 MHz in 20 sec in automatic operation

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

OCT. 1982

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1982

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 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										270	240	240	245	250	290									
2									260	250	250	250	275	280	250									
3									250	245	240	230	250	240	250									
4										240	250	240	265	275	285	275								
5									230	240	235	250	245	245	250									
6										240	235	260	300	300	260									
7											235	255	285	300	270									
8								290	300	300	310	270	255	240	240									
9										240	240	270	250	275										
10											250	240	280	240										
11										230	230	230	245	235	250	250								
12												240	255	255	240									
13										220	225	235	240		245									
14											255	250	250	255	270									
15													255	255										
16										225	225	230	240	255										
17											240	260	230	260										
18												245	260	285										
19								250	235	230	240													
20										240	240	240	235	240	250									
21										240	240	260	250	270										
22										260	245	255	255	240										
23												255	260											
24											240	255			250	270								
25											230		250			255								
26											245	245	250	245										
27												230	245	245										
28											240	255	260	260	250									
29											230	230	250	250	250									
30											230	235	240	245	245									
31												245		230										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	5	16	26	28	29	25	16	4								
MED								290	250	240	240	245	250	255	250	262								
UQ									260	248	245	255	260	270	265	272								
LQ									250	232	235	240	245	245	250	252								

OCT. 1982

H° F2 (KM)

IONOSPHERIC DATA

OCT. 1982

H^oF (KM)

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

Station AKITA Lat. 39 43.5 N Long 140 08.0 E Sweep 1 MHz to 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	295	290	A	A	315	300	240	230	230	205	225	210	205	240	235	250	245	235	230	270	270	260	245	275
2	280	295	245	270	335	385	245	235	240	240	225	230	205	220	230	230	250	255	215	230	A	285	A	265
3	250	285	270	240	270	E S 330	250	240	230	230	215	225	215	220	235	240	250	240	230	225	240	235	245	280
4	300	A	280	250	245	270	240	230	235	210	220	225	200	225	240	240	240	245	225	220	220	270	320	310
5	280	260	270	260	240	E S 300	260	240	220	225	220	200	235	230	220	245	240	225	220	240	240	250	260	275
6	280	260	A	270	A	330	240	220	220	220	210	240	235	230	240	245	245	235	240	225	255	290	280	
7	270	270	300	280	225	E S 275	255	245	240	235	230	230	225	235	240	245	245	230	220	245	260	290	A	270
8	220	215	320	330	330	345	300	255	265	230	240	220	220	220	210	240	245	230	220	A	A	260	240	245
9	270	A	A	A	A	330	275	240	230	230	225	220	200	200	225	245	240	240	230	230	A	250	240	250
10	255	270	255	255	235	245	220	220	225	220	205	200	230	230	235	240	230	230	230	A	A	320	260	300
11	290	285	290	275	260	280	225	215	225	A	220	225	220	220	230	225	225	235	230	230	230	235	265	315
12	325	290	290	260	250	250	220	225	225	225	235	225	A	A	225	240	240	225	220	245	A	280	290	260
13	A	A	A	285	290	240	225	220	225	210	200	205	220	230	225	240	230	230	230	250	250	275	305	A
14	A	A	295	A	300	315	240	235	230	230	200	235	235	230	230	240	225	225	A	250	A	A	235	245
15	225	A	290	E S 305	E S 320	290	230	240	240	225	225	220	200	220	220	240	240	215	220	240	240	260	A	255
16	275	265	255	250	230	300	250	230	225	220	210	205	200	235	225	235	235	210	215	220	240	260	260	270
17	A	A	325	300	A	260	230	220	230	230	230	220	210	225	235	235	220	205	215	250	270	270	285	285
18	260	260	250	240	210	E S 290	240	230	235	230	230	210	210	230	240	230	240	210	225	200	230	225	280	280
19	A	310	325	280	280	275	250	240	225	220	A	200	230	230	240	240	235	A	240	A	225	240	255	240
20	A	300	290	275	275	310	220	215	220	A	230	A	220	220	225	245	230	205	215	245	255	230	260	295
21	270	250	245	A	240	275	245	235	235	220	225	200	210	225	240	240	230	A	230	215	245	245	240	245
22	280	260	245	255	245	E S 295	225	215	245	220	220	210	240	225	225	235	240	210	210	225	240	255	280	270
23	265	260	240	225	270	280	230	225	225	220	220	205	235	230	220	240	235	220	220	210	220	255	260	255
24	270	285	300	270	270	280	240	220	230	230	210	200	H 220	225	220	230	240	215	220	230	240	250	250	260
25	280	280	270	290	280	300	225	220	230	225	210	235	225	240	240	240	240	245	225	205	230	240	275	280
26	335	335	300	310	E S 330	320	245	230	235	235	230	A	235	240	240	220	250	235	220	250	215	275	290	E S 315
27	300	280	240	270	270	290	230	220	225	220	225	215	220	225	240	235	225	210	225	230	220	240	250	265
28	275	295	280	260	235	230	240	225	225	225	210	230	220	225	220	230	235	225	225	235	225	240	280	300
29	300	250	245	245	230	E S 260	255	230	230	220	220	210	225	230	230	245	240	230	225	225	245	225	E S 325	295
30	340	350	270	E S 350	310	285	240	240	245	225	220	210	230	225	245	230	225	210	240	225	245	270	285	E S 305
31	290	A	325	A	E S 390	E S 390	290	250	235	230	220	235	210	220	240	230	220	220	220	210	220	275	E S 300	E S 290
CNT	26	24	27	26	29	31	31	31	31	29	30	29	30	30	31	31	31	29	30	27	26	30	28	30
MED	280	280	280	268	265	282	240	230	230	225	220	210	220	225	230	240	240	225	225	230	240	255	261	272
UQ	295	292	298	282	U 295	302	248	238	235	230	225	225	230	230	240	240	240	235	230	245	245	270	285	288
LQ	270	260	252	255	240	270	230	220	225	220	215	205	210	225	225	232	230	215	220	222	225	240	250	260

OCT. 1982

H^oF (KM)

IONOSPHERIC DATA

OCT. 1982

H°E (KM)

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

Station **AKITA** Lat. 39° 43.5' N Long 140° 08.0' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

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

OCT. 1982

H°E (KM)

IONOSPHERIC DATA

OCT. 1982

H^oES (KM)

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

Station	AKITA																							
Lat.	39 43.5 N · Long 140 08.0 E																							
Sweep 1	MHz to 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	105	100	105	100	105	S	G	G	G	135	G	110	G	G	G	G	100	125	S	95	S	100	105	S
2	S	S	S	100	S	S	G	G	105	G	G	G	G	G	G	G	G	G	S	100	95	110	105	105
3	100	105	S	S	100	100	G	G	G	135	G	120	G	G	G	100	100	120	S	S	S	S	S	S
4	100	100	100	S	100	95	G	105	G	G	115	105	100	100	100	100	145	135	95	100	S	S	S	S
5	S	S	S	S	S	S	140	135	130	125	115	G	110	G	G	G	G	140	S	110	110	S	105	105
6	100	100	100	100	100	105	G	100	135	110	120	G	120	120	120	115	110	S	105	105	105	105	100	105
7	S	S	S	105	S	S	140	130	G	110	G	105	G	G	G	G	140	110	110	110	110	110	110	110
8	100	105	S	S	S	S	120	G	145	120	G	110	105	110	115	G	G	120	110	110	105	105	105	100
9	100	100	100	100	100	105	135	120	110	110	110	110	G	G	G	110	G	105	105	100	100	100	100	100
10	S	S	S	S	S	S	135	135	G	G	G	105	G	G	135	100	140	100	110	105	105	105	105	100
11	100	105	S	S	S	110	120	115	115	110	115	G	G	115	110	G	115	110	100	100	100	100	100	95
12	105	100	100	S	105	S	105	100	105	100	95	115	115	110	120	115	110	100	95	95	95	100	S	S
13	95	95	95	95	100	95	100	G	125	120	110	G	115	120	G	G	125	100	100	100	100	100	100	105
14	105	100	100	100	105	S	145	135	120	110	105	110	105	100	G	G	G	120	105	105	105	105	S	S
15	S	105	100	105	S	S	S	135	120	110	110	110	115	115	110	120	125	120	110	110	S	S	105	105
16	105	S	S	S	S	S	S	G	120	120	110	110	110	110	110	G	G	105	S	S	S	S	105	S
17	105	100	105	100	100	100	S	G	G	120	115	110	105	G	G	G	G	100	S	S	S	S	105	100
18	105	S	S	100	S	S	G	G	G	125	110	110	G	100	110	G	G	S	S	S	105	105	105	100
19	105	105	S	S	105	S	125	120	110	115	110	105	100	G	G	G	130	120	120	110	S	S	105	100
20	105	100	S	100	100	S	S	135	115	115	110	110	100	100	95	G	G	S	S	S	115	S	S	100
21	100	100	100	100	100	100	110	135	G	105	G	110	100	100	100	100	100	110	S	100	105	100	100	100
22	105	S	S	110	115	S	120	115	115	G	110	G	G	G	G	G	G	100	100	S	S	S	S	S
23	S	S	S	S	105	S	G	135	120	110	G	G	G	G	G	G	100	S	110	S	S	S	100	S
24	S	125	100	S	100	S	S	G	100	110	G	G	G	G	G	G	135	120	110	105	S	105	105	100
25	100	S	100	S	S	S	S	150	120	110	110	G	G	G	G	G	115	110	115	110	S	S	S	100
26	S	S	105	S	S	S	110	140	120	115	110	110	105	110	115	G	G	S	115	S	120	105	S	S
27	S	110	S	S	S	110	115	G	G	120	115	G	G	G	120	140	G	95	100	S	S	S	105	115
28	S	S	100	S	S	S	S	G	G	G	G	G	G	G	G	G	125	G	100	100	S	S	S	S
29	S	S	S	S	S	S	S	150	G	125	120	115	110	120	G	G	G	S	S	S	S	S	S	125
30	S	S	S	100	S	S	100	110	110	G	G	G	G	110	110	G	G	S	110	110	110	S	105	100
31	S	110	115	120	120	S	S	120	110	110	120	G	G	G	G	G	150	120	S	S	100	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	18	18	15	15	16	9	15	20	20	25	20	18	15	15	14	10	16	23	20	20	16	15	20	20
MED	102	100	100	100	100	100	120	132	118	115	110	110	105	110	110	112	120	110	108	105	105	105	105	100
UQ	105	105	102	102	105	105	135	135	120	120	115	110	112	115	120	120	138	120	110	110	108	105	105	105
LQ	100	100	100	100	100	100	110	115	110	110	110	110	102	100	110	100	105	100	100	100	100	100	100	100

OCT. 1982

H^oES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

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 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	F1	F1	F4	F2	F1					H1		C1					L1	C2		F1		F1	F3		
2				F1					L1											F1	F2	F2	F4	F2	
3	F1	F1			F1	F1				H1		C1				L1	LH11	CL32							
4	F1	F3	F2		F2	F2		L1			C1	L2	L2	L2	L2	L3	HL11	H2	F3	F1					
5							H1	H1	C1	C1	C1		C1					H2		F3	F3		F2	F3	
6	F4	F2	F4	F3	F6	F2		L2	H1	C1	C1		C1	C1	C1	C2	C4		F5	F5	F4	F3	F2	F2	
7				F1			H2	C1		C2		C2					H2	C2	F1	F3	F2	F4	F6	F3	
8	F3	F1					C2		H1	C1		C1	C2	C2	C2			C2	F1	F4	F6	F3	F3	F2	
9	F2	F3	F5	F4	F3	F2	H2	C2	C2	C1	C1	C1				C1		L5	F2	F3	F3	F3	F1	F1	
10							HL21	H1				L1			H1	L1	HL21	LH12	F4	F6	F7	F5	F3	F3	
11	F3	F1			F1	C1	C1	C2	C3	C1			C1	C1			C3	C3	F2	F2	F3	F4	F2	F3	
12	F1	F1	F1		F1	C1	L2	L1	L2	L3	C2		C2	C2	C1	C2	C1	L1	F1	F1	F2	F2			
13	F4	F5	F4	F2	F1	F1	L1		C1	C1	C1		C1	C1			C2	L3	F3	F2	F1	F1	F2	F5	
14	F5	F5	F2	F2	F1		H2	H2	C1	C3	L1	C1	L2	L3				C1	F5	F4	F2	F3			
15		F3	F2	F2				H2	C3	C4	C3	C2	C2	C1	C2	C2	C6	C2	F1	F3			F3	F2	
16	F2								C2	C1	C2	C1	C2	C2	C2				F1				F2		
17	F3	F5	F5	F4	F4	F3				C1	C2	C2	L2						F1			F2	F2		
18	F1			F1					C1	C1	C2			L3	C1						F4	F4	F2	F3	
19	F4	F2			F2		C2	C2	C2	C1	C3	C2	L2				C2	F5	F3	F3			F4	F2	
20	F5	F2		F1	F2			H1	C3	C3	C3	C3	L3	L2	L1					F1				F4	
21	F2	F2	F2	F4	F2	F1	C1	H2		L1		C1	L1	L1	L2	L2	L2	F2		F1	F1	F1	F2	F1	
22	F1			F1	F1		C1	C2	C1		C1								F1	F1					
23					F1			H2	C2	C1								L1		F1			F1		
24		FF11	F1		F1				LC12	C2								H1	F1	F1	F2		F1	F1	
25	F2		F1					H1	C2	C1	C2							C2	F2	F1	F1			F1	
26			F1				C1	H1	C1	C2	C3	C2	L2	C2	C2				F1		F1	F1			
27		F1				F1	C1			C1	C1				C1	HL11			F1	F1			F1	F1	
28			F1															C1		F1	F1				
29								H1		C1	C1	C1	C1	C1										F1	
30				F1			L1	C2	C2						C1	C1				F3	F1	F2		F2	
31		F5	F2	F6	F1			C2	C2	C1	C1							H1	F1			F1			
	00	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																									

OCT. 1982

TYPES OF ES

IONOSPHERIC DATA

OCT. 1982

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 **20** sec in **automatic** operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S 80	X 76	X 69	X 64	X 66	S 69													X 91	S 81	X 90	S 86	S 77	X 72
2	S 72	X 68	X 66	X 62	X 59	X 53													S 106	S 81	X 72	X 71	S 74	U S 73
3	X 67	X 62	X 66	X 62	X 49	X 49													S 99	S 85	S 79	X 71	X 66	X 64
4	X 63	X 61	X 62	X 60	X 56	X 58													X 110	X 95	S 80	X 75	S 74	S 78
5	S 80	X 72	X 71	X 69	X 64	X 60													S 101	X 89	S 80	X 75	X 72	X 74
6	S 76	X 69	X 61	X 59	X 55	X 56													S 109	X 97	S 92	S 84	S 81	S 87
7	S 76	X 68	X 66	X 68	X 65	X 56													S 100	X 86	X 83	S 75	S 79	S 82
8	S 75	X 63	X 52	X 54	X 54	X 54													X 89	X 70	X 63	X 68	X 64	X 52
9	X 45	X 42	X 42	X 41	X 43	X 47													S 107	X 91	X 83	S 81	X 74	S 73
10	X 65	X 61	X 59	X 55	X 56	X 51													X 91	X 86	X 81	S 80	S 73	S 69
11	X 71	X 71	X 70	X 70	X 67	X 67													S 109	S 100	X 91	X 70	X 67	X 63
12	S 63	X 67	X 62	X 63	X 59	X 57													S 100	S 86	X 83	S 75	S 75	X 75
13	X 74	X 69	X 65	X 65	X 62	X 63													X 96	X 86	X 81	S 74	S 76	S 76
14	S 70	X 68	X 69	X 62	X 61	X 61													X 130	X 109	S 96	S 75	S 78	X 75
15	X 66	X 58	X 63	X 57	X 57	X 57	S 81												S 126	X 95	X 67	X 65	S 68	S 68
16	X 59	X 58	X 57	X 55	X 50	X 49	X 71												X 122	X 90	X 77	X 68	X 66	X 67
17	X 62	X 59	X 55	X 56	X 56	X 58	S 81												X 108	X 77	X 71	X 72	X 73	X 68
18	X 68	X 66	X 61	X 63	X 48	X 45	S 72												S 132	S 98	X 85	S 77	S 64	X 60
19	X 55	X 55	X 55	X 55	X 53	X 56	S 80												S 102	S 88	X 89	S 82	S 71	X 61
20	X 57	X 56	X 55	X 56	X 52	X 51	S 84												X 108	X 86	X 73	X 69	X 67	X 60
21	X 57	X 59	X 56	X 55	X 48	X 49	S 73												X 89	X 81	X 75	X 67	S 68	S 65
22	X 58	X 58	X 56	X 58	X 51	X 51	S 74												X 117	X 84	X 73	X 67	S 65	X 61
23	X 63	X 60	X 59	X 47	X 43	X 45	X 71												S 101	X 86	X 81	X 67	X 60	X 57
24	X 57	X 57	X 54	X 57	X 54	X 54	S 75												X 115	X 86	X 82	S 75	X 68	X 64
25	X 59	X 59	X 59	X 56	X 56	X 56	S 82												S 122	X 108	X 97	X 79	X 71	X 67
26	X 61	X 60	X 58	X 60	X 59	X 60	X 84												X 129	X 124	X 88	X 71	X 67	X 66
27	X 64	X 67	X 69	X 62	X 60	X 63	X 87												X 121	X 101	X 89	X 91	X 81	X 73
28	S 70	S 67	X 66	X 71	X 63	X 56	S 75												X 114	X 104	X 91	X 86	X 75	X 66
29	X 67	S 69	X 64	X 58	X 46	X 44	X 66												X 124	X 108	X 96	X 91	X 77	X 75
30	X 72	S 73	X 71	X 64	X 66	X 65	X 71												S 105	X 87	X 85	X 76	X 70	X 65
31	X 57	X 56	X 52	X 50	X 50	X 49	X 60												S 102	X 96	X 78	X 55	X 51	X 53
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	17												18	31	31	31	31	31
MED	X 65	X 62	X 61	X 59	X 56	X 56	S 75												X 116	X 98	X 86	X 79	S 71	X 67
UQ	72	68	66	63	60	59	81												X 124	X 106	X 90	83	S 75	S 74
LQ	X 59	X 58	X 56	X 56	X 50	X 50	X 71												X 105	X 88	X 80	X 70	X 68	X 64

OCT. 1982

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

FOF2 (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station **OKUBUNJI TOKYO** Lat. **35 42.4 N** Long **139 29.3 E** Sweep **1** MHz to **20** MHz in **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	74 ^S	70	63	58	60 ^S	63	84	104 ^S	113	122	140	118	110	115	123	120	114	108	85	75 ^S	84	80 ^S	71	66
2	66	62	60	56	53	47	79 ^S	110	124	126	136	136	134	123	116	113	111	109	100 ^S	75 ^S	66	65	68 ^S	67 ^U
3	61	56	60	56	43	43	74 ^S	107	130	130	136	133	122	118	109	106	105	108	93	79 ^S	73 ^S	65	60	58
4	57	55	56	54	50	52	84	105 ^S	123	130	134	128	132	130	130	128	129	118	104	89	74 ^S	69	68	72 ^S
5	74 ^S	66	65	63	58	54	74 ^S	120 ^S	135	123	123	128	130	130	125	122	119	115	95 ^S	83	74 ^S	69	66	68
6	70 ^S	63	55	53	49	50	96 ^U	113 ^S	116	111	110	122	134	134	132	129	125	124 ^S	103 ^S	91 ^S	86	78 ^S	75 ^S	81 ^U
7	70 ^S	62	60	62	59	50	71 ^S	118	142	123	123	127	133	134	135	134	128	115	94 ^S	80 ^S	77 ^S	69	73	76 ^S
8	69	56	46	48	48	48	64 ^S	84 ^S	103 ^S	107	114	124	121	122	114	105	109	105	83	64	57	62 ^S	58	46
9	39	36	36	35	37	41	68	94 ^S	101 ^S	119	132	132	134	128	135	127	123 ^S	113 ^S	101 ^S	85	77 ^S	75 ^U	68	67 ^S
10	59	55	53	49	50	45	72 ^S	98 ^S	109 ^S	104	111	114	120	125	123	119	115	99 ^U	85	80 ^S	75 ^S	74 ^S	67 ^S	63 ^S
11	65	65	64	64 ^S	61	61	83	98 ^S	114	115	133	129	135	130	130	126	124	120	103	94	85	64	61 ^S	57
12	57	61	56	57	53	51	74 ^U	94 ^S	116	121	122	133	128	125	129	128	123 ^S	115	94 ^S	80 ^S	77 ^S	69	69	69
13	68 ^S	63	59	59	56	57	78 ^S	98 ^S	105 ^S	121 ^S	132	126	124	128	135	127	125	114	90	80	75 ^S	68 ^S	70	70
14	64	62 ^S	63 ^S	56 ^S	55	55	79 ^S	105	129	135	139	144	151	140	140 ^S	142	126	124	103 ^S	90	69	72 ^S	74	69
15	60	52	57	51	51	51	75 ^S	115	136	133	131	123	121	114	120	121	125	120	89	61	59	62 ^S	62 ^S	55
16	53	52	51	49	44	43	65	105	127	123	120	132	140	139	140	133	129	116	84	71 ^S	62	60	61	60
17	56	53 ^S	49	50	50	52	75 ^U	92 ^S	105 ^S	126	128	142	141	137	143	141	130	102	71	65	66	67 ^S	62	63 ^S
18	62	60	55	57	42	39	66 ^S	97 ^S	118	125	134	135	128	130	140	129	128	126 ^S	92	79 ^S	71	58	54	53
19	49	49	49	49	47	50	74 ^S	116	129	135	139	134	136	132	136	110	105 ^S	96 ^S	82 ^S	83	76 ^S	65	55	52
20	51	50	49	50	46	45	78 ^U	86	112	113	125	134	124	116	114	121	116	102 ^S	80 ^S	67	63 ^S	61	54	52
21	51	53	50	49	42	43	67 ^S	103	127	118	119	118	115	115	123	103	89	83	75	69	61	62 ^S	59	50
22	52 ^S	52	50	52	45	45	68 ^S	100 ^S	116 ^S	129	135	135	144 ^J	140	134	122	117	111	78 ^S	67 ^S	61	59	55	57
23	57	54	53	41	37	39	65	96 ^S	111	106	109	118	126	124	114	111	110	95 ^S	80	75 ^S	61	54	51	51
24	51	51	48	51	48	48	69 ^S	98 ^S	115	128	136	136	139	134	123	121	125	109	80 ^S	76 ^S	69	62	58	56
25	53	53	53	50	50	50	76 ^S	108	125	127	131	133	135	135	127	125	122 ^S	116	102 ^S	91	73	65	61 ^S	61 ^S
26	55	54	52	54	53	54	78	104 ^S	138	155	163 ^R	154 ^S	143	146	145	134	116	123	118	82 ^S	65	61	60	55
27	58	61	63	56	54	57	81	111	127	132	143	138	136	134	130	130	128	115	95 ^S	83 ^S	85	75 ^S	67	65
28	64 ^S	61 ^S	60	65	57	50	69 ^S	104 ^S	122	127	133	137	135	131	127	124	122	108 ^S	98 ^S	85	80 ^S	69	60	63 ^S
29	61	63 ^S	58	52	40	38	60	103 ^S	121	127	127	128	140	144	130	125	116	118	102 ^S	90	85 ^S	71	69	69
30	66	67	65	58	60	59	65 ^S	103 ^S	134	150	148	146	150	140	140	133	118	99 ^S	81	79 ^S	70	64 ^S	59	55
31	51	50	46	44	44	43	54	102 ^S	130	139	155 ^S	162 ^R	148 ^R	134	130	128	114	96	90	72	49	45	47	48
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	59	56	55	53	50	50	74 ^S	103 ^S	122	126	132	133	134	130	130	125	122	113	92	80	73	65	61	61
UQ	66	62	60	57	54	53	78 ^S	108	129	130	136	136	140	134	135	129	125	117	100 ^S	84	77 ^S	69	68	68 ^S
LQ	53	52	50	50	44	44	68 ^S	98 ^S	114	120	123	126	125	124	123	120	114	104	82	74 ^S	64	62	58	55

OCT. 1982

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

FOF1 (0.01 MHz)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											L	L	L	580	L	L								
2											L	L	L	L										
3									L	L		L	L	L										
4										L	L	L	L	L	L									
5										L	L	L	L	L	L									
6												L	L	L	L	L								
7										L	L	L		L	L									
8									L	A	L	L	L	L	L									
9										L	L	L	L	L	L									
10										L	L		L	L	L									
11									L	L	L	L	L	L	L									
12										L	L	L	L	L	A	L								
13										L	L		420	L	L	L								
14										L	A	L	A			L								
15										A	A	L	L	L	L									
16										L	L	L	L	L	L									
17										L	L	L	L	L	L									
18											A	L	L	L	L									
19									L	L	A	A	A	L	L									
20										L	L	L	L	L	L	L								
21										L	L	L	420		L									
22									L		L	L		L	L									
23											L	L	L	L	L	L								
24										L	L	L	L	L										
25											L		L											
26										L		L	L											
27													L											
28											L	L	L											
29												L	L											
30									L	L	L	L			L									
31										L	L		A	L	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT													2	1										
MED													420	580										
UQ																								
LQ																								

OCT. 1982

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

FOE (0.01 MHZ)

135° E Mean Time (G.M.T. + 9 h)

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							175	H 280	H 330	H 355	375	395	395	390	H 370	335	280	A							
2							175	H 275	A	355	I R 380	R 390	385	385	360	320	280	170							
3							A	A	H 320	355	H 375	375	380	380	360	330	275	A							
4							205	280	330	355	380	I R 390	R 395	R 380	365	325	H 270	A							
5							170	H 280	320	350	A	A	A	390	365	330	275	190							
6							H 190	H 260	A	345	355	A	A	A	A	A	A	A							
7							175	260	A	A	R	R	R	R 365	345	310	260	155							
8							A	A	A	345	A	A	A	360	345	A	A	A							
9							A	A	A	A	A	A	A	A	355	A	A	A							
10							S	H 265	H 315	H 345	355	I R 365	365	I R 350	R 335	305	255	A							
11							S	A	A	A	A	A	A	A	A	A	A	A							
12							S	H 260	H 300	325	A	R 365	R 370	R 360	340	A	A	A							
13							S	A	305	330	360	R 370	R 370	I R 355	330	300	245	A							
14							S	H 250	A	A	A	A	A	350	325	H 300	255								
15							250	300	330	A	A	A	A	A	A	315	245								
16							H 250	290	A	A	A	A	A	A	335	305	230								
17							250	300	A	345	360	360	350	A	290	H 250									
18							240	300	335	A	A	A	350	335	300	240									
19							250	290	A	A	A	A	350	340	305	H 235									
20							H 240	H 285	A	A	A	360	360	A	305	240									
21							A	A	340	360	370	370	350	345	H 310	H 250									
22							A	A	A	A	370	385	375	340	295	H 230									
23							240	295	340	360	365	370	360	R 330	H 300	240									
24							A	A	A	R 360	380	380	365	340	A	230									
25							240	295	A	A	A	A	370	350	305	A									
26							260	A	A	A	A	A	A	A	H 310	240									
27							H 250	H 300	H 340	H 360	370	370	360	340	310	A									
28							H 250	300	335	360	370	370	370	340	295	A									
29							H 240	H 310	340	A	A	370	365	345	305	235									
30							235	300	335	360	365	370	360	H 340	H 300	230									
31							H 245	300	H 330	A	A	A	A	A	A	A									
CNT							6	23	20	19	14	15	17	24	24	24	22	3							
MED							175	H 250	300	340	360	370	370	360	340	305	245	170							
UQ							190	H 260	312	348	375	378	380	372	352	312	260	180							
LQ							175	242	298	335	360	365	370	352	338	300	235	162							

OCT. 1982

FOE (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

FOES (0.1 MHz)

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

Station: TOKUBUNJI 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	21	22	J A 18	J A 20	J A 16	22	24	30	36	45	50	G 25	G 24	G 31	G 20	G 17	31	28	J A 26	E S 16	22	E S 15	E S 16	E S 15	
2	E S 15	E B 13	E S 14	E B 13	E S 14	E S 15	G	G	33	G 28	G 33	G 30	G 30	G 26	G 24	G 23	G	22	E S 15	E S 15	E S 15	E S 15	60	J A 18	
3	J A 23	J A 25	22	E S 15	22	21	J A 24	J A 29	41	54	J A 76	27	G 22	G 25	J A 24	G	32	J A 33	J A 29	J A 30	J A 34	22	E S 15	18	
4	21	E S 14	19	20	J A 18	19	24	G	35	38	G 27	G 38	G 31	G 30	G 28	G 22	31	25	J A 20	23	19	E S 15	20	E S 15	
5	E S 15	23	E B 13	E B 13	E S 15	E S 15	J A 25	G	36	37	42	40	48	G 23	G 18	G 19	G 17	21	J A 27	J A 22	J A 19	20	20	E S 15	
6	E S 15	E B 13	J A 20	19	E S 15	E S 15	G	31	J A 47	42	J A 49	46	44	41	42	35	J A 34	J A 42	J A 51	J A 41	J A 50	J A 34	J A 26	22	
7	23	22	23	22	E B 12	E S 14	20	28	33	38	G 34	G 31	G 30	G 25	G 25	G 19	30	24	J A 18	27	J A 44	J A 22	J A 31	J A 57	
8	J A 20	J A 36	23	J A 25	J A 25	J S 15	25	37	J A 54	48	43	43	41	40	38	36	58	J A 29	J A 21	J A 20	31	J A 24	24	21	
9	24	21	22	18	E S 15	E S 16	20	J A 48	J A 41	38	J A 42	50	J A 43	38	G 30	J A 39	J A 42	J A 36	36	J A 25	38	61	39	J A 38	
10	23	J A 23	J A 21	24	22	E S 15	20	G	34	31	G	34	39	G 25	G 28	G 24	27	19	J A 22	J A 27	57	J A 79	58	42	
11	E S 16	J A 18	J A 22	J A 19	19	22	19	29	J A 38	36	37	39	44	J A 44	54	J A 46	J A 37	J A 87	J A 112	59	J A 53	J A 48	J A 47	J A 35	
12	J A 28	25	19	18	20	J A 19	23	28	36	36	38	G 26	G 24	G 30	J A 43	J A 50	J A 51	J A 78	42	J A 19	J A 25	J A 22	J A 28	J A 25	
13	J A 23	J A 18	22	J A 16	22	J A 19	J A 18	28	G 21	G 32	G 33	G 30	G 36	G 35	G 30	G 25	26	21	J A 29	30	23	E S 16	E S 16	18	
14	19	J A 17	17	J A 20	23	21	20	29	35	40	J A 61	J A 75	J A 52	37	G 27	G	G	19	E S 16	21	J A 29	39	36	J A 24	
15	E S 15	E S 14	22	J A 18	J A 24	E S 14	E S 16	27	J A 45	90	J A 84	J A 53	54	J A 65	40	G	30	J A 29	J A 54	36	J A 29	J A 38	J A 21	J A 20	
16	J A 26	23	20	E B 13	E B 13	E S 15	21	G	31	36	36	J A 42	36	39	38	G 22	G	20	20	E S 15	E S 16	E S 15	19	20	
17	E S 15	17	J A 53	J A 18	J A 19	21	24	G	33	35	G 25	G 22	G 22	G 30	39	G 24	G	21	E S 15	E S 16	E S 15	E S 16	J A 26	J A 21	
18	J A 20	22	20	J A 23	E B 13	E S 15	E S 15	G	G 21	J A 50	43	J A 85	G 18	G 21	G	G	E S 16	E S 15	E S 15	J A 20	J A 21	J A 24	25		
19	J A 18	J A 20	21	23	25	E S 14	18	29	33	35	J A 48	J A 51	J A 54	G 25	G 24	33	35	22	J A 32	J A 33	22	20	20	21	
20	18	21	J A 24	J A 23	J A 18	J A 20	19	27	31	J A 52	J A 45	40	G 26	G 23	J A 37	36	45	25	J A 42	20	J A 18	J A 18	J A 18	21	
21	19	19	20	18	22	J A 25	24	28	J A 36	G 25	G 31	G 24	G 29	G 24	G 20	34	33	J A 33	19	J A 27	J A 35	J A 30	J A 25	J A 18	
22	J A 25	20	E B 13	E S 14	E B 13	E S 15	24	J A 30	J A 34	34	J A 37	G 30	G 31	G 27	G 20	G 17	G 20	22	18	20	E S 16	E S 15	J A 18	17	
23	E B 13	E S 15	E S 15	E B 13	E B 13	E S 14	21	28	J A 51	G 30	G 31	G 23	G 21	G 21	G	32	29	21	18	20	J A 25	J A 24	21	J A 18	
24	J A 17	19	J A 18	E S 15	J A 19	22	23	27	33	J A 35	G	G	G	G	G	J A 35	27	J A 25	J A 25	J A 19	J A 27	J A 31	J A 23	23	
25	22	25	23	E S 15	E B 13	E S 15	E S 16	29	36	J A 62	43	44	39	29	J A 36	36	31	22	J A 29	J A 30	J A 21	22	E S 15	E S 16	
26	E S 15	E S 14	E B 13	E B 13	23	E S 14	J A 26	G 25	38	J A 51	42	J A 51	J A 60	38	J A 37	G	G	21	22	J A 20	E S 15	20	23	22	
27	E S 15	20	E B 13	E B 13	E B 13	E S 14	J A 24	G 23	32	G 30	G 21	39	39	39	G	G 18	26	21	E S 15	E S 15	24	20	E S 15	E S 15	
28	E S 14	E S 15	19	E B 14	E B 13	E S 14	E S 14	G	G	G	G	G	G	44	44	33	29	J A 19	22	E S 16	E S 15	21	21	23	
29	J A 19	21	E B 13	E B 13	E B 13	E S 14	E S 14	G	G	39	39	39	40	G	40	G	35	E S 14	E S 15	J A 28	J A 19	22	21	E S 15	
30	E S 15	E B 13	E B 13	E S 15	E S 14	E S 14	18	29	36	35	G 31	40	49	G 28	G	36	G	21	E S 15	J A 28	E S 15	E S 15	E S 15	E S 14	
31	J A 21	21	20	22	24	E S 16	19	29	36	38	56	56	91	46	41	39	J A 29	J A 30	J A 32	E S 15	24	E S 16	21	J A 22	
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	19	20	20	18	18	E S 15	20	28	35	36	38	39	39	G 30	G 28	G 24	29	22	J A 22	21	23	21	21	21	
UQ	22	22	22	20	22	20	24	29	37	41	46	44	46	38	38	36	36	J A 29	J A 30	J A 28	J A 30	J A 27	J A 26	23	
LQ	E S 15	16	16	E B 14	E B 13	E S 14	18	G	33	33	G 31	G 28	G 28	G 25	G 20	G 18	G 18	21	18	18	18	E S 16	18	18	

OCT. 1982

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

FBES (0.1 MHz)

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

Station **RKUBUNJI 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	E	E	E	15	E	24	30	35	44	49	25	G	23	G	31	G	20	G	16	30	24	24	E S	16	E	E S	15	E S	16	E S	15
2	E S	E B	E S	E B	E S	E S	G	G	33	G	27	G	30	G	26	G	24	G	23	G	22	E S	15	E S	15	E S	15	E S	15	E	E	
3	18	20	14	E S	E	E	21	28	39	40	60	G	26	G	22	G	24	G	23	G	32	33	25	23	30	E	E S	15	E	E		
4	E	E S	E	E	E	E	23	G	G	37	G	38	G	31	G	30	G	27	G	22	30	24	17	E	E	E S	15	E	E S	15	E	
5	E S	E	E B	E B	E S	E S	G	G	36	G	40	40	47	22	G	17	G	19	G	17	G	G	26	19	E	E	E	E S	15	E		
6	E S	E B	E	E	E S	E S	G	29	36	40	42	43	40	40	41	34	31	40	48	27	21	23	E	E	E	E	E	E	E	E	E	
7	E	E	14	E	E B	E S	20	G	33	36	G	34	G	31	G	29	G	25	G	25	G	19	30	23	E	19	32	E	23	44		
8	17	24	E	16	E	S	23	33	35	46	40	42	39	39	37	31	40	18	17	16	18	17	16	18	17	E	E	E	E	E		
9	E	E	E	E	E S	E S	18	39	32	37	39	39	40	38	G	30	32	37	19	24	17	27	45	28	33	E	E	E	E	E		
10	16	18	E	E	E S	E S	18	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
11	E S	16	16	18	E	E	E	18	27	37	35	37	39	42	42	47	44	24	44	26	40	34	39	37	34	E	E	E	E	E	E	
12	26	22	17	E	E	E	G	G	35	35	37	G	26	G	24	G	30	42	33	25	39	18	18	E	17	18	22	E	E	E	E	
13	18	E	E	15	E	E	18	27	G	21	G	32	G	33	G	29	G	35	G	30	G	24	26	21	25	17	E	E S	16	E S	16	17
14	17	15	16	E	E	E	20	28	32	34	49	42	43	36	G	27	G	G	G	18	E S	16	20	22	22	25	E	E	E	E	E	
15	E S	E S	14	14	15	E	E S	E S	16	G	40	83	65	44	46	41	36	G	29	29	39	26	E	25	E	E	E	E	E	E	E	
16	18	E	E	E B	E B	E S	20	G	G	35	35	41	36	39	36	22	G	G	19	E	E S	15	E S	16	E S	15	E	E	E	E	E	
17	E S	E	23	15	15	E	21	G	G	34	G	24	G	22	G	28	34	18	G	G	E	E S	15	E S	16	E S	15	E S	16	E	17	
18	E	E	E	E	E B	E S	E S	G	G	G	21	50	41	48	18	G	21	G	G	E S	16	E S	15	E S	15	16	18	21	16	E	E	
19	E	17	E	E	E	E S	18	27	33	35	48	50	50	24	G	24	32	31	21	31	23	E	E	E	E	E	E	E	E	E	E	
20	E	E	22	20	E	17	E	27	31	34	40	40	25	G	22	35	33	40	19	41	18	E	16	E	E	E	E	E	E	E	E	
21	E	E	E	E	E	15	19	28	35	24	G	27	G	24	G	27	G	19	G	30	19	17	E	24	E	E	E	E	E	E	E	
22	E	E	E B	E B	E B	E S	E	25	32	34	36	G	30	G	31	G	27	G	20	G	16	G	19	E	E	E	E S	16	E S	15	E	E
23	E B	E S	E S	E S	E B	E B	E S	21	27	32	G	30	G	30	G	23	G	21	G	31	28	17	E	E	17	E	E	E	E	E	E	
24	15	E	E	E S	E	E	E	27	31	34	G	G	G	G	G	G	32	26	23	25	E	20	20	E	E	E	E	E	E	E	E	
25	E	E	E	E S	E B	E S	E S	28	34	43	39	40	38	G	29	32	G	31	19	E	E	E	E	E	E	E S	15	E S	16	E	E	
26	E S	E S	E B	E B	E S	E	E	G	G	37	48	40	43	42	37	34	G	G	16	E	E	E S	15	E	E	E	E	E	E	E	E	
27	E S	E	E B	E B	E B	E S	E	G	G	G	24	G	21	37	38	39	G	18	26	E	E S	15	E S	15	E	E	E S	15	E S	15	E	
28	E S	E S	E	E B	E B	E S	E S	G	G	G	G	G	G	42	42	32	26	18	E	E S	16	E S	15	E	E	E	E	E	E	E	E	
29	E	E	E B	E B	E B	E S	E S	G	G	35	37	38	40	G	38	G	34	E S	14	E S	15	E	E	E	E	E	E	E	E	E	E	
30	E S	E B	E B	E S	E S	E S	17	28	36	G	G	30	39	44	28	G	36	G	21	E S	15	16	E S	15	E S	15	E S	15	E S	14	E	E
31	16	E	E	E	E	E S	18	29	34	36	46	43	68	37	35	33	25	25	29	E S	15	17	E S	16	E	E	E	E	E	E	E	
CNT	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E	E	E	E S	E S	E S	18	27	33	35	37	38	38	G	29	G	28	G	22	26	19	17	16	E	E S	E S	E	E	E	E	E	E
UQ	16	15	14	E	E S	E S	20	28	35	37	41	41	42	38	36	32	30	24	25	19	20	18	16	16	E	E	E	E	E	E	E	E
LQ	E	E	E	E	E	E	G	E G	21	G	G	G	G	G	G	G	G	E G	G	18	18	E	E S	E S	E	E	E	E	E	E	E	E

OCT. 1982

FBES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

F-MIN (0.1 MHz)

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

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

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

OCT. 1982

F-MIN (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

M(3000)F2 (0.01)

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

Station TOKUBUNJI 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	260 ^S	270	265	250	260 ^S	260	285	310 ^S	305	285	295	280	280	270	280	280	275	300	275	265 ^S	265	280 ^S	270	265
2	270	265	275	275	245	225	295 ^S	305	295	295	295	280	280	285	285	285	300	300	310 ^S	280 ^S	270	260	265 ^S	275 ^{U S}
3	280	255	270	290	275	235 ^S	300 ^S	300	310	300	290	290	290	290	290	285	300	305	280	280 ^S	280 ^S	285	270	265
4	255	260	275	285	275	285	300	290 ^S	295	305	300	275	280	280	275	275	300	290	285	290	285 ^S	255	250	260 ^S
5	270 ^S	260	270	280	275	260	290 ^S	300 ^S	330	290	300	295	290	280	290	285	290	300	295 ^S	300	280 ^S	275	270	275
6	285 ^S	290	275	275	245	260	330 ^{U S}	310 ^S	325	305	285	275	275	275	270	280	290	300 ^S	290 ^S	275 ^S	275	265 ^S	270 ^S	270 ^{U S}
7	280 ^S	260	245	260	275	260	290 ^S	315	320	300	300	280	280	280	280	290	295	300	295 ^S	270 ^S	280 ^S	260	260	285 ^S
8	280	290	260	245	250	250	300 ^S	275 ^S	295 ^S	280	300	300	295	295	305	300	300	310	290	290	280	290 ^S	295	290
9	280	250	250	245	260	290	315	315 ^S	310 ^S	300	300	295	295	280	290	290	300 ^S	300	310 ^S	300	280 ^S	280 ^{U S}	290	290 ^S
10	295	305	275 ^S	260	300	305 ^S	310 ^S	325 ^S	320 ^S	310	295	300	285	295	300	295	305	295 ^{U S}	285	285 ^S	280 ^S	265 ^S	280 ^S	260 ^S
11	260	275	275	280 ^S	280	285	300	320 ^S	305	305	300	290	285	290	295	290	305	300	300	300	295	285	285 ^S	265
12	265	275	280	290	300	290	315 ^{U S}	310 ^S	310	310	300	290	290	285	290	295	290 ^S	310	300 ^S	275 ^S	285 ^S	280	275	285
13	290 ^S	290	290	290	285 ^S	315	310 ^S	315 ^S	310 ^S	300 ^S	310	290	285	290	295	290	300	305	290	280	280 ^S	275 ^S	275	275
14	270	275 ^S	280 ^S	270 ^S	275	265	300 ^S	305	300	305	295	290	285	285	290 ^S	285	300	315	310 ^S	290	285	265 ^S	285	280
15	295	255	280	265	255	260	295 ^S	310	320	325	310	300	300	290	300	300	320	325	310	300	285	275 ^S	280 ^S	280
16	285	285	280	310	270	265	300	320	330	320	300	295	290	285	290	300	305	315	300	280 ^S	260	275	295	285
17	285	290 ^S	255	275	270	300	295 ^{U S}	330	320 ^S	310	295	295	295	280	285	300	315	320	305	285	290	290 ^S	270	290 ^S
18	295	295	310	315	275	280	305 ^S	315 ^S	325	300	310	300	290	285	295	290	290	310 ^S	300	300 ^S	290	300	275	270
19	250	255	250	270	255	270	310 ^S	310	320	315	305	300	295	290	300	300	310 ^S	315 ^S	300 ^S	305	320 ^S	305	305	300
20	275	270	280	285	270	270	305 ^{U S}	320	325	310	305	300	300	290	290	290	310	300 ^S	300 ^S	285	290 ^S	305	305	275
21	270	270	290	315	275	260 ^S	315 ^S	315	330	315	310	300	290	280	315	310	315	310	300	300	290	290 ^S	310	310
22	280 ^S	280	295	320	275	275	300 ^S	330 ^S	305 ^S	315 ^S	285	290	280 ^{J R}	290	300	290	290	310	295 ^S	290 ^S	285	285	280	285
23	280	290	325	325	275	270	310	320 ^S	320	310	295	290	290	300	290	290	305	300 ^S	290	300 ^S	300	290	270	275
24	275	275	265	275	255	270	300 ^S	315 ^S	310	305	305	290	290	290	290	290	310	300	275 ^S	290 ^S	285	295	295	285
25	285	275	280	275	265	265	300 ^S	330	325	310	290	290	275	270	280	285	295 ^S	300	290 ^S	305	275	285	285 ^S	275 ^S
26	265	265	280	265	270	250	285	290 ^S	300	295	280 ^R	280 ^S	280	285	285	295	285	290	280	295 ^S	290	290	260	245
27	265	275	280	295	255	270	305	310	320	310	290	290	280	290	290	290	295	295	280 ^S	270 ^S	280 ^S	280 ^S	270	270
28	280 ^S	275 ^S	280	290	275	270	300 ^S	330 ^S	325	290	290	295	285	290	275	285	290	290 ^S	295 ^S	290	285 ^S	285	275	275 ^S
29	270	285 ^S	295	300	310	265	300	310 ^S	310	305	290	285	285	280	285	280	280	290	290 ^S	285	280 ^S	275	255	255
30	255	260	260 ^S	235	250	270	280 ^S	290 ^S	305	300	290	285	290	275	290	295	300	290 ^S	280	280 ^S	275	275 ^S	270	250
31	265	275	260	240	235	230 ^S	265	300 ^S	310	300	300 ^S	280 ^R	285 ^R	290	295	300	310	270	310	300	320	285	285	280
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	275	275	275	275	270	270	300 ^S	310 ^S	310	305	300	290	285	285	290	290	300	300	295	290	285	280	275	275
UQ	282	285	280	290	275	278	308 ^S	320 ^S	322	310	300	295	290	290	295	295	305	310	300 ^S	300	290	290	285	285
LQ	265	262	265	265	255	260	295 ^S	305 ^S	305	300	290	285	280	280	285	285	290	298	288	280 ^S	280	275 ^S	270	268

OCT. 1982

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1982

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											L	L	L	L	L	L								
2											L	L	L	L										
3									L	L		L	L	L										
4										L	L	L	L	L	L									
5										L	L	L	L	L	L									
6												L	L	L	L	L								
7										L	L	L		L	L									
8									L	A	L	L	L	L	L	L								
9										L	L	L	L	L	L	L								
10										L	L		L	L	L									
11									L	L	L	L	L	L	L									
12										L	L	L	L	L	A	L								
13										L	L		405	L	L	L								
14										L	A	L	A			L								
15										A	A	L	L	L	L									
16										L	L	L	L	L	L									
17										L	L	L	L	L	L									
18											A	L	L	L	L									
19									L	L	A	A	A	L	L									
20										L	L	L	L	L	L	L								
21										L	L	L	420		L									
22									L		L	L		L	L									
23											L	L	L	L	L	L								
24										L	L	L	L	L										
25											L		L											
26										L		L	L											
27													L											
28											L	L	L											
29												L	L											
30									L	L	L	L			L									
31										L	L		A	L	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT													2	1										
MED													412	345										
UQ																								
LQ																								

OCT. 1982

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1982

H^oF2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station: TOKUBUNJI 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											260	240	305 ^L	315	285	280								
2											275	295	310	235										
3									250	250		245	260	280										
4										255	260	230	305	300	310									
5										230	235	300	295	265	280 ^L									
6												250	290	300	300	250								
7											220	240	330 ^L		265 ^L	280								
8									260	250	240	255	260	250	255									
9										255	260	250	280	245	290									
10										235	245		270	250	275									
11									245	260	265	240	260	270	280									
12										230	225	280	250	290	250	260								
13										270	245		240	245	260	240								
14										240	240	285	250			250								
15										255	250	235	295 ^L	235	275									
16										230	225	240	260	285	260									
17										250	245	275	270	290	280									
18											245	255	270	245	265									
19									230	250	240	240	250	300	265									
20										235	270	250	260	245	275 ^L	265								
21										240	240	255	240		270									
22									245		290	250		255	255									
23											230	250	285	275	235	270								
24										250	250	235	275	260										
25											240		240											
26										250		305 ^L	300											
27													230											
28											245	295	245											
29												240	285											
30										240	245	235	255			285								
31										240	265		255	245	270									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									6	21	26	26	28	23	22	7								
MED									245	250	245	250	265	265	275	260								
UQ									250	250	260	280	288	288	280	268								
LQ									240	235	240	240	250	245	260	250								

OCT. 1982

H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1982

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		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	300	280	270	340	330	315	230	220	225	215	250	220	210	225	230	235	240	235	240	260	275	255	240	275	
2	280	285	255	235	340	400	225	225	230	230	220	220	H 230	H 225	240	H 235	240	255	220	225	265	290	270	275	
3	255	320	275	240	265	350	260	225	235	220	250	H 220	225	225	235	240	250	245	240	240	270	240	260	275	
4	295	305	285	245	260	270	235	230	235	H 225	220	195	220	230	240	245	250	250	235	215	220	300	320	315	
5	285	260	270	255	240	290	260	240	235	215	220	H 195	245	235	H 225	245	250	235	245	235	250	245	265	270	
6	265	240	255	260	335	335	245	220	235	235	225	230	H 230	H 230	245	240	255	250	255	255	245	260	305	275	
7	250	265	320	285	225	285	250	250	230	225	210	H 240	H 230	H 230	235	245	245	235	220	265	E A 300	260	295	300	
8	230	240	310	345	345	315	275	260	235	A	220	225	H 220	H 215	H 230	245	250	230	215	225	260	270	230	230	
9	270	335	370	350	325	285	225	225	230	215	H 220	215	H 215	220	240	235	245	235	230	225	265	E A 285	270	275	
10	260	265	265	270	240	235	225	225	230	220	205	230	220	230	230	240	245	225	235	255	E A 300	A	E A 325	E A 365	
11	290	285	295	280	255	275	230	220	235	225	210	230	235	240	E A 260	250	240	260	245	260	245	E A 295	E A 325	E A 350	
12	345	305	275	250	240	235	230	220	220	215	210	205	H 230	235	A	240	250	235	225	245	225	250	290	275	
13	265	250	290	270	270	H 215	225	220	225	H 200	H 205	215	205	230	230	230	240	235	220	255	255	275	295	295	
14	280	305	300	285	300	325	255	230	235	220	A	H 230	A	220	225	240	230	235	230	240	245	305	260	270	
15	230	310	295	305	320	315	H 235	235	240	A	A	225	235	220	230	245	245	230	A 240	240	260	290	270	250	
16	270	255	255	240	235	300	240	235	235	220	210	205	195	H 205	240	240	245	225	210	235	250	270	260	270	
17	260	270	350	295	305	265	230	225	230	225	215	225	H 195	230	235	240	230	215	215	270	255	255	290	295	
18	260	265	240	240	215	265	240	230	230	230	A	225	E A 240	225	225	225	H 245	225	205	225	240	235	295	285	
19	330	330	330	275	275	290	255	230	225	220	A	A	A	H 225	235	235	240	230	A 245	260	225	240	250	265	
20	290	285	E A 325	270	265	315	225	210	225	225	H 200	225	H 220	225	H 225	225	230	220	A 250	250	255	240	255	285	
21	275	260	235	235	245	295	245	240	245	220	215	205	200	230	H 210	235	230	220	A 230	230	260	255	255	250	
22	285	280	250	250	240	310	250	235	225	240	H 225	H 210	235	225	235	235	235	220	220	230	240	265	275	270	
23	260	265	250	215	275	295	230	230	225	230	220	205	H 230	235	225	235	240	225	215	225	225	255	265	270	
24	290	275	295	280	295	315	225	225	230	225	220	220	220	225	H 235	240	250	225	225	240	250	260	260	275	
25	275	275	275	285	295	305	240	225	235	235	215	230	230	235	235	245	245	240	220	225	240	240	270	280	
26	325	305	330	320	305	325	255	235	240	240	225	H 225	230	240	235	235	245	240	225	205	220	260	285	300	
27	290	265	260	240	275	300	230	225	225	225	225	225	205	230	240	240	240	225	225	235	245	250	230	270	
28	265	280	285	250	215	255	255	230	230	225	235	H 225	220	240	245	245	240	230	225	235	230	225	275	300	
29	290	250	230	235	230	285	260	240	235	225	225	220	235	245	235	195	240	240	230	245	245	235	310	290	
30	335	330	280	325	305	260	245	235	230	225	220	H 225	235	235	240	240	235	225	250	240	255	250	245	300	
31	300	275	325	330	395	405	295	255	H 240	220	E A 250	240	A	230	230	235	230	225	240	220	A 225	285	305	280	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	31	31	31	31	31	31	31	31	31	29	27	30	28	31	30	31	31	31	31	31	31	30	31	31	
MED	280	275	278	270	275	295	240	230	230	225	220	225	225	230	235	240	240	230	230	240	248	256	270	275	
UQ	290	305	302	290	305	315	255	235	235	225	225	225	231	235	240	242	245	238	240	252	258	272	292	292	
LQ	262	265	258	242	240	272	230	225	228	220	212	215	218	225	230	235	240	225	220	225	240	245	260	270	

OCT. 1982

H° F (KM)

IONOSPHERIC DATA

OCT. 1982

H°E (KM)

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

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

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							S	110	110	A	A	A	A	A	A	A	A	A						
2							E S	110	105	A	E A	E A	E A	E A	E A	A	A	110	S					
3							A	A	A	115	105	100	110	A	E A	A	110	120						
4							S	110	110	E A	E A	E A	E A	E A	E A	A	E A	A						
5							E S	110	105	105	105	E A	A	A	A	A	A	E S						
6							E S	110	A	E A	E A	A	E A	E A	105	105	105	120						
7							E S	A	105	105	E A	E A	E A	A	E A	E A	115	S						
8							E S	115	105	105	105	105	110	110	110	110	115	A						
9							E S	110	110	105	105	110	A	A	E A	A	A	A						
10							S	115	110	E A	110	E A	E A	E A	E A	E A	E A	A						
11							S	115	110	115	110	115	105	A	A	A	A	A						
12							S	A	A	E A	E A	E A	E A	E A	E A	A	A	A						
13							S	115	115	A	E A	E A	E A	E A	E A	E A	E A	A						
14							S	110	105	A	A	A	A	E A	E A	110	115							
15								115	110	A	A	A	A	A	E A	115	115							
16								115	110	105	110	A	A	A	E A	110	115							
17								115	105	105	110	A	A	E A	A	E A	115							
18								110	105	110	110	115	A	115	115	115	115							
19								115	105	105	105	A	A	E A	E A	110	115							
20								110	105	105	E A	A	E A	A	A	110	115							
21								A	110	E A	E A	E A	E A	E A	110	115	115							
22								A	A	A	A	A	A	A	A	105	E A							
23								115	110	E A	E A	E A	A	A	105	110	115							
24								120	110	A	105	110	110	110	110	A	115							
25								110	105	105	110	110	115	E A	A	E A	115							
26								A	A	E A	E A	110	105	105	110	110	120							
27								E A	A	A	A	A	A	105	115	110	120							
28								110	105	105	105	105	115	120	110	120	125							
29								115	110	105	105	105	105	105	105	110	115							
30								110	110	E A	E A	A	E A	E A	110	110	120							
31								110	110	E A	A	A	A	A	A	A	A							
CNT							6	28	28	27	28	26	24	26	26	27	27	3						
MED							E S	114	110	A	108	A	A	A	A	110	115	120						
UQ							E S	115	110	E A	E A	E A	E A	E A	E A	A	118	122						
LQ							E S	110	105	105	105	110	A	A	A	110	115	120						

OCT. 1982

H°E (KM)

IONOSPHERIC DATA

OCT. 1982

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	100	115	105	105	110	155	155	140	120	115	105	105	100	100	100	E G 170	135	125	S	95	S	S	S
2	S	B	S	B	S	S	G	G	125	105	105	105	105	105	105	105	G	130	S	S	S	S	115	105
3	105	105	100	S	100	100	100	100	130	125	120	105	100	100	100	G	140	120	115	110	105	105	S	100
4	100	S	95	95	95	95	145	G	135	120	105	105	105	100	100	100	145	125	95	95	95	S	100	S
5	S	100	B	B	S	S	105	G	125	125	120	120	115	105	100	100	95	95	115	105	105	110	105	S
6	S	B	95	105	S	S	G	125	100	120	120	115	120	120	150	150	115	110	105	105	100	105	105	105
7	100	100	100	105	B	S	140	140	120	120	110	110	105	105	105	100	125	115	115	110	110	110	110	110
8	105	105	100	100	105	S	125	120	120	115	120	115	120	125	125	120	110	110	110	110	105	105	105	105
9	105	100	100	105	S	S	130	115	115	115	115	115	110	110	110	105	100	110	105	105	100	100	100	95
10	95	95	100	100	95	S	145	G	145	105	G	105	150	105	100	100	150	100	110	105	100	100	100	100
11	S	100	100	100	105	100	140	115	110	115	115	120	115	105	105	105	110	110	105	105	100	100	95	95
12	100	100	100	100	100	100	100	150	125	120	125	100	95	100	120	115	105	105	105	95	100	100	100	95
13	95	100	100	100	100	100	100	115	105	105	105	105	100	100	100	100	135	100	100	105	105	S	S	100
14	100	100	100	100	100	100	145	135	115	105	105	105	115	140	100	G	G	120	S	110	105	105	105	105
15	S	S	100	105	105	S	S	150	120	115	115	115	105	105	125	G	145	120	110	105	110	105	105	100
16	100	100	100	B	B	S	155	G	130	115	110	110	105	105	125	110	G	120	120	S	S	S	110	105
17	S	110	100	100	100	100	100	G	125	115	100	100	100	100	100	100	G	100	S	S	S	S	100	100
18	105	100	100	100	B	S	S	G	G	105	115	110	100	105	100	G	G	S	S	S	105	100	100	100
19	100	100	100	100	105	S	130	120	120	115	110	105	105	100	110	155	125	120	115	115	120	110	105	105
20	105	105	100	100	100	100	100	135	125	120	110	100	100	100	95	135	120	120	115	110	105	100	100	100
21	105	105	100	100	100	105	100	140	110	100	100	100	100	100	100	150	145	125	110	115	105	100	100	100
22	95	95	B	S	B	S	125	110	105	110	105	105	105	105	105	95	95	100	95	95	S	S	100	105
23	B	S	S	B	B	S	140	140	125	105	110	105	105	105	G	135	120	115	100	95	100	100	100	100
24	105	100	105	S	100	100	100	120	125	110	G	G	G	G	G	105	120	110	110	110	100	100	100	100
25	100	100	100	S	B	S	S	150	125	115	115	120	125	100	100	120	115	110	110	105	105	100	S	S
26	S	S	B	B	110	S	105	105	120	115	120	115	110	120	115	G	G	115	115	110	S	110	105	100
27	S	100	B	B	B	S	105	100	150	100	100	135	125	130	G	95	130	95	S	S	100	110	S	S
28	S	S	95	B	B	S	S	G	G	G	G	G	G	125	120	120	115	95	95	S	S	110	105	105
29	95	95	B	B	B	S	S	G	G	125	125	125	125	G	160	G	145	S	S	100	100	95	100	S
30	S	B	B	S	S	S	135	125	125	135	100	120	115	105	G	E G 170	G	130	S	115	S	S	S	S
31	100	100	130	130	120	S	170	145	130	130	105	100	100	100	100	100	100	100	110	S	110	S	100	100
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	23	23	18	17	11	24	22	28	30	28	29	29	29	27	25	24	29	24	23	24	22	25	24
MED	100	100	100	100	100	100	128	125	125	115	110	105	105	105	105	105	120	110	110	105	105	102	100	100
UQ	105	100	100	105	105	100	142	140	128	120	118	115	115	105	118	120	140	120	115	110	105	110	105	105
LQ	100	100	100	100	100	100	100	115	118	105	105	105	100	100	100	100	110	100	105	105	100	100	100	100

OCT. 1982

H°ES (KM)

IONOSPHERIC DATA

OCT. 1982

TYPES OF ES

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	F1	F1	F1	F1	F2	F2	H3	H1	H1	CL11	CL21	L1	L1	L1	L1	L1	HL11	HLC23	FF22		F1				
2									C1	L1	L1	L1	L1	L1	L1	L1		C2					F2	FF11	
3	F3	F5	F2		F2	F2	L3	L3	HL11	C1	C2	L1	L1	L1	L1		H2	C4	FF32	F5	F5	F2		F1	
4	F2		F1	F2	F1	F1	H2		H2	CL11	L1	L2	L1	L1	L2	L2	HL12	CL34	F2	F2	F1		F1		
5		F1					LH13		C2	C1	C1	CL11	CL11	L1	L1	L1	L1	LC11	FF41	F6	F2	F1	F2		
6			F2	F1				C2	L3	CL12	CL11	CL11	CL11	CL11	HC11	HC11	C3	C5	F6	F4	F4	F5	F2	F2	
7	F2	F2	F2	F1			H2	HL11	C1	C1	L1	L1	L1	L1	L1	L1	C3	C4	F1	F7	F6	F2	F4	F4	
8	F3	F5	F2	F6	F2	F1	C4	C3	C2	C2	C1	C2	C1	C1	C1	C2	C3	L2	F3	F3	F3	F5	F2	F2	
9	F2	F2	F1	F1			C2	C3	C3	C2	C2	C1	L2	L2	L2	L2	L5	L3	F5	F4	F5	F5	F5	F4	
10	F1	F2	F1	F1	F1		H3		H1	L1		L1	HL11	L1	L1	L1	HL22	L2	F4	F6	F4	F3	F5	F4	
11		F2	F4	F2	F1	F2	HL22	C2	C2	C2	C1	C1	C1	L2	L4	L3	LL21	LL43	FF23	F3	FF33	F3	F3	F2	
12	FF22	F1	F1	F1	F1	F2	LH12	HL22	CL32	CL11	CL11	L1	L1	L1	CL11	CL21	LL22	LL31	FF22	F2	FF12	FF12	F2	F2	
13	F3	F1	F1	F1	F1	F1	L1	CL21	L1	L1	L1	L1	L2	L1	L2	L2	HLL11	L2	FF31	F1	FF11			F1	
14	F3	F2	F1	F2	F1	F1	H2	H2	C2	L2	L3	L2	CL22	HL11	L2			F1		F3	F5	F5	F3	FF22	
15			F1	F1	F1			H1	C3	CL41	CL41	CL21	L2	LL21	CL11		H2	F3	F4	F5	F2	F5	F2	FF41	
16	F5	F3	F1				F3		H2	C2	C2	L2	L2	L1	CL21	L2		F3	F1				F1	FF21	
17		F1	F6	F2	F2	F2	F1		C1	C2	L1	L1	L1	L2	L3	L1		F1				F2	F4		
18	F2	F2	F1	F1						L1	CL31	CL21	L2	L1	L1						F4	F7	F7	F5	
19	F4	F5	F1	F1	F2		F2	C3	C2	C2	C2	L3	L3	L1	L1	H2	C3	F3	F5	F5	F1	F1	F2	F2	
20	F1	F1	F7	F4	F1	F4	F1	H2	C1	C1	CL21	L2	L1	L1	L3	H2	C4	F5	FF62	F5	F2	F4	F2	F2	
21	F2	F2	F2	F1	F1	F2	F2	HCL22	CL22	L2	L1	L1	L1	L1	L1	H1	H2	F2	F3	F1	F4	F3	F3	F2	
22	F2	F1					F1	L3	L2	L1	L1	L1	L1	L1	L1	L1	L2	F1	F1	F1			F1	F1	
23							FF41	H2	C2	L2	L2	L1	L1	L1		H1	CL41	F2	F1	F2	F4	F2	F1	F2	
24	F2	F1	F1		F1	F1	F1	CL21	C2	L1						L2	C3	F3	F5	F1	F5	F3	F2	F2	
25	F2	F1	F1				H2	H3	C2	CL11	CL11	CL11	L1	L2	CL12	C2	C2	F4	F3	F1	F1	F1			
26				F1			F1	L3	CL11	CL21	CL11	C2	C2	C1	C2			FF11	FF11	F1		F1	F2	F2	
27		F1					F1	L2	HL22	L2	L1	HL11	CL11	C1		L1	C2	F1			F1	F1			
28			F1											C2	CL21	C2	CL21	FF21	F1			F1	F2	F2	
29	F2	F1							C1	C1	C1	C1		H1		H4				F3	F1	F1	F1		
30							F5	H2	C3	CL11	L1	CL11	CL21	L1		H2		FF21		FF11					
31	F2	F1	F1	F1	F2		FF41	H2	H2	HL11	L3	L2	L2	L2	L2	L2	L3	F5	F3		F2		F1	F2	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT																									
MED																									
UQ																									
LQ																									

OCT. 1982

TYPES OF ES

IONOSPHERIC DATA

OCT. 1982

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 20 MHz in 20 sec in automatic operation								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	X 84	X 82	X 81	X 64	X 65	X 63	X 66													X 104	S 100	S 105	X 98	X 92		
2	X 87	X 80	X 73	X 67	X 52	X 49	X 62														X 101	X 82	X 83	X 87	X 85	
3	X 87	X 73	X 78	X 75	X 50	X 47	X 56														X 112	X 99	X 98	X 91	X 89	
4	X 86	X 81	X 77	X 78	X 61	X 56	X 64														X 124	X 104	X 100	X 130	X 97	
5	X 96	X 91	X 90	X 78	X 61	X 54	X 62														S 105	X 91	X 83	X 80	S 81	
6	X 87	X 82	X 67	X 61	X 55	X 52	X 68														c	c	c	c	c	
7	c	c	c	c	c	c	c														X 106	X 97	X 86	X 88	X 90	
8	X 75	X 69	X 52	X 53	X 53	X 51	X 60														X 104	X 90	X 81	X 88	X 76	
9	X 49	X 44	X 41	X 43	X 43	X 44	X 54														X 128	X 99	X 90	X 89	X 78	
10	X 77	X 70	X 62	X 59	X 57	X 50	X 54														X 96	X 88	X 84	X 80	X 66	
11	X 71	X 71	X 67	X 69	X 66	X 61	X 69														X 126	X 116	X 109	X 105	X 96	X 90
12	X 84	X 84	X 80	X 79	X 65	X 57	X 56														X 114	X 95	X 96	X 91	X 86	X 84
13	X 80	X 65	X 64	X 66	X 64	X 57	X 50														X 124	X 107	X 103	X 101	X 90	X 81
14	X 78	X 71	X 70	X 64	X 64	X 64	X 71														X 133	X 116	X 96	X 86	X 93	X 86
15	X 89	X 65	X 69	X 66	X 57	X 61	X 65														X 125	X 88	X 89	X 81	X 79	X 71
16	X 65	X 59	X 55	X 57	X 45	X 44	X 48														X 117	X 95	X 86	X 81	X 74	X 72
17	X 68	X 59	X 54	X 56	X 52	X 53	X 60														X 121	X 111	X 95	X 83	X 74	X 71
18	X 74	X 65	X 58	X 58	X 50	X 42	X 48														X 129	X 115	X 96	X 81	X 66	X 66
19	X 64	X 59	X 57	X 59	X 52	X 51	X 59														X 134	X 125	X 116	X 94	X 71	X 69
20	X 65	X 58	X 54	X 57	X 48	X 48	X 54														X 122	X 93	X 79	X 84	X 70	X 58
21	X 59	X 57	X 54	X 55	X 45	X 45	X 51														S 99	S 87	X 84	X 78	X 71	X 61
22	X 55	X 51	X 54	X 56	X 48	X 47	X 54														X 135	S 120	S 119	S 112	S 91	X 74
23	S 70	X 60	X 60	X 60	X 41	X 43	X 50														X 111	X 96	X 86	X 82	X 72	S 61
24	X 60	X 58	X 55	X 53	X 47	X 49	X 53														X 132	X 116	S 116	S 99	X 98	S
25	99	S 64	X 61	X 61	X 57	X 57	X 64														X 130	S 122	X 117	S 118	S 99	X 91
26	X 82	S 75	X 71	X 67	X 66	X 65	X 74														X 147	X 116	X 94	X 90	X 71	X 67
27	X 69	X 71	X 72	S 62	X 53	X 56	X 67														X 123	X 112	X 110	X 102	S 93	X 80
28	X 77	S 75	X 70	X 77	X 59	X 49	X 54														X 127	X 117	X 121	S	X 116	S 99
29	X 95	X 97	X 92	X 75	X 44	X 33	X 40														X 128	S 118	S 122	S 117	S 102	X 93
30	X 91	X 93	X 85	S 73	X 79	X 71	X 70														S 118	X 110	X 110	X 91	X 73	X 64
31	X 64	X 69	X 57	X 56	X 55	X 56	X 60														X 111	X 91	X 91	S 83	X 69	X 70
	00	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													21	30	30	29	30	29	
MED	X 77	X 70	X 66	X 62	X 54	X 52	X 60														X 125	X 110	X 96	X 90	X 88	X 78
UQ	X 87	X 80	X 73	X 69	X 61	X 57	X 65														X 130	X 116	X 110	X 100	X 93	X 89
LQ	X 65	X 59	X 55	X 57	X 48	X 47	X 54														X 118	X 96	X 90	X 83	X 73	X 69

OCT. 1982

FXI (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

FOF2 (0.1 MHz)

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

Station	YAMAGAWA																									
	Lat. 31 12.1 N Long. 130 37.1 E												Sweep 1 MHz to 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	78	76	75	58	59	57	60	96	117	113	143	133	125	135	143	135	129	123	111	98	94	99	92	86		
2	81	74	67	61	46	43	56	91	107	131	157	149	138	137	136	136	127	125	121	95	76	77	81	79		
3	81	67	72	69	44	41	50	91	120	129	143	143	143	145	144	133	125	122	120	106	93	92	85	83		
4	80	75	71	72	55	50	58	95	125	131	128	133	146	144	144	139	135	129	127	118	98	94	F	91		
5	90	85	84	72	55	48	56	99	125	121	122	133	144	143	135	129	128	127	120	S	99	85	77	74	75	
6	81	76	61	55	49	46	62	102	109	108	113	132	c	c	c	c	c	c	c	c	c	c	c	c		
7	c	c	c	c	c	c	c	c	c	c	112	120	143	148	154	148	144	131	127	120	100	91	80	82	84	
8	69	63	46	47	47	45	54	98	132	131	128	130	140	151	148	137	127	122	116	98	84	75	82	70		
9	43	38	35	37	37	38	48	85	103	119	137	144	136	137	143	147	143	129	127	122	93	84	83	72		
10	71	64	56	53	51	44	48	94	110	108	113	118	127	129	129	123	119	108	108	90	82	78	74	60		
11	65	65	61	63	60	55	63	91	110	113	128	134	135	142	143	138	136	133	120	110	103	99	90	84		
12	78	78	74	73	59	51	50	88	114	129	111	126	136	136	139	139	126	120	108	89	90	85	80	78		
13	74	59	58	60	58	51	44	80	106	128	130	128	142	146	152	143	130	118	118	101	97	95	84	75		
14	72	65	64	58	58	58	65	101	120	134	140	148	163	153	148	146	143	133	127	110	90	80	87	80		
15	83	59	63	60	51	55	59	97	126	138	136	148	142	127	143	140	138	135	119	82	83	75	73	65		
16	59	53	49	51	39	38	42	93	114	118	123	142	156	163	166	163	146	128	111	89	80	75	68	66		
17	62	53	48	50	46	47	54	81	101	123	138	143	151	157	169	165	143	124	115	105	89	77	68	65		
18	68	59	52	52	44	36	42	86	106	112	138	139	137	148	163	156	149	143	123	109	90	75	60	60		
19	58	53	51	53	46	45	53	94	122	130	146	143	155	174	183	176	157	139	128	119	110	88	65	63		
20	59	52	48	51	42	42	48	86	104	108	119	131	138	134	133	132	128	124	116	87	73	78	64	52		
21	53	51	48	49	39	39	45	95	115	121	134	J S	125	124	139	141	129	111	100	93	81	78	72	65	55	
22	49	45	48	50	S	42	41	48	86	104	121	132	139	147	158	161	159	145	138	129	J S	J S	J S	S	68	
23	S	54	54	54	35	37	44	87	102	117	132	129	130	144	139	125	117	114	105	90	80	S	S	S	55	
24	54	52	49	47	41	43	47	85	109	127	144	141	136	149	148	138	136	139	126	J S	J S	S	H	S		
25	F	58	55	55	51	51	58	S	103	S	118	126	138	138	143	147	142	137	140	134	124	116	111	S	S	85
26	76	69	65	61	60	59	68	95	139	157	173	158	146	155	157	141	117	139	141	110	S	88	84	65	S	61
27	63	65	66	56	47	50	61	91	107	132	142	143	139	143	142	135	137	135	117	106	104	96	S	87	74	
28	71	69	64	71	53	43	48	94	113	123	J C	137	141	138	142	133	135	128	125	121	111	115	I S	120	110	93
29	89	91	86	S	69	38	27	34	81	113	124	131	139	139	148	151	145	140	136	122	112	116	111	S	96	87
30	85	87	79	67	S	73	65	64	90	126	154	148	145	150	146	148	148	138	122	112	J S	J S	S	85	67	58
31	58	63	S	51	50	49	50	54	95	129	144	165	169	154	143	144	144	135	128	105	85	85	S	77	63	64
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	29	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	29	29		
MED	71	64	60	56	48	46	54	92	114	124	136	139	141	144	144	139	135	128	120	104	90	84	81	72		
UQ	80	74	67	63	55	51	59	95	122	131	142	143	147	151	151	146	140	135	124	110	104	95	87	83		
LQ	59	53	49	51	42	41	48	86	107	118	128	132	136	139	141	135	127	122	112	90	84	77	67	63		

OCT. 1982

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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	20	MHz	in	20	sec	in	automatic	operation	
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	L	L	L	L	L	L							
2								L	L	L	L	L	L	L	L	L	L	L						
3								L	L	L	L	L	L	L	L	L	L	L	A					
4								L	L	L	L	L	L	L	L	L	L	L	L					
5								L	L	L	L	L	L	L	L	L	L	L	L					
6								L	L	L	L	L	C	C	C	C	C	C						
7								C	C	L	L	L	L	L	L	L	L	L						
8										L	L	L	L	L	L	L	L	L						
9										L	L	L	L	L	L	L	L	L						
10										L	L	L	L	L	L	L	L	L						
11										L	L	L	L	L	L	L	L	L						
12										L	L	L	L	L	L	L	L	L						
13										L	L	L	L	L	L	L	L	L						
14										L	L	L	L	L	L	L	L	L						
15										L	L	L	L	L	L	L	L	L						
16										L	L	L	L	L	L	L	L	L						
17										L	L	L	L	L	L	L	L	L						
18										L	L	L	L	L	L	L	L	L						
19										L	L	L	L	L	L	L	L	L						
20										L	L	L	L	L	L	L	L	L						
21										L	L	L	L	L	L	L	L	L						
22										L	L	L	L	L	L	L	L	L						
23										L	L	L	L	L	L	L	L	L						
24										L	L	L	L	L	L	L	L	L						
25										L	L	L	L	L	L	L	L	L						
26										L	L	L	L	L	L	L	L	L						
27										L	L	L	L	L	L	L	L	L						
28										L	L	L	L	L	L	L	L	L						
29										L	L	L	L	L	L	L	L	L						
30										L	L	L	L	L	L	L	L	L						
31										L	L	L	L	L	L	L	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT												2												
MED												525												
UQ																								
LQ																								

OCT. 1982

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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								250	A	A	370	A	A	UR 400	385	360	320	260	S					
2								230	290	330	360	380	UR 395	400	375	355	320	250	S					
3								240	310	350	375	A	A	UR 390	370	350	310	250	S					
4								240	310	350		A	A	390	400	390	370	320	250	S				
5								240	300	350		A	385	400	400	380	360	320	240	S				
6								220	300	350	370		A	C	C	C	C	C	C	C				
7								C	C	340	365		A	395	390	375	350	300	240	S				
8								A	A	A	A	A		385	380	365	330	300	A	S				
9								200	270		A	A	A	A	A	A	A	A	A	S				
10								205	280	335		A	380	385	360		A	A	A	S				
11								210	A	A	A		380	A	A		370	335	295	A				
12								220	300	330	365		A	385	370	350	325	285	A					
13								200	A	A	A	A	A	A	A		335	A	A					
14								210	295		A	A	A	A	A		350	A	290	A				
15								225	A	A	A	A	A	A		375	360	335	285	A				
16								190	280		A	350	370	380	360	355	330	285	205					
17								240	280	310		A	A	380	365	355		A	A	215				
18								230	295	320	355		A	385	370	355	335	290	205					
19								200	280	325		A	A	A	A	A	A	290	215					
20								210	285		A	A	A	380	360	350	325	280	225					
21								210	A	A		355	380	A	A		355	335	280	A				
22								A	300	330	365	380	380	390	365	345	280	225						
23								220	300	330	355	375	385	375	365	330	285	A						
24								220	A	A	A	A		R 380	A	A	A	A	A					
25								230	295		A	360	A	R 390	385		A	A	A	A				
26								220	305	340		A	A	A	A	A	A	A	S					
27								225	290	345	360	H	A	A		370	370		A	A	A			
28								S	250	330	H 355	H 365	390	R 395	395	365	340	290	A					
29								190	260	330	355	380	H 385	H 370	360	330	H 280	170						
30								S	A	A		H 365	H 380	A	380	350		A	A	S				
31								200	290	325		A	370	375	375	360	330	270	200					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								26	22	18	16	12	18	22	23	20	21	15						
MED								220	292	330	360	380	385	378	365	335	290	225						
UQ								230	300	345	365	380	390	390	370	350	300	245						
LQ								205	280	330	355	372	380	370	355	330	285	210						

OCT. 1982

FOE (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

FOES (0.1 MHz)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA																							Lat.	31	12.1	N	Long	30	37.1	E	Sweep	1	MHz to 20 MHz in 20 sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																																
1	J A 20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	J A 70	40	42	45	50	G	45	43	52	J A 50	J A 40	J A 30	J A 30	E S 16	E S 16	E S 16																																
2	J A 25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	38	G	G	G	G	G	G	G	32	32	J A 20	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	20	30	37	42	43	46	44	G	50	43	J A 68	J A 75	J A 72	J A 30	J A 40	J A 40	J A 22	J A 23																																
4	J A 25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	30	J A 44	43	J A 47	43	G	G	G	G	31	34	J A 25	25	E S 16	E S 16	J A 22	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	G	35	40	42	42	G	G	G	G	J A 63	35	J A 25	J A 25	J A 65	J A 21	J A 24	J A 24																																
6	E S 16	E S 16	E S 16	E S 16	J A 33	E S 16	E S 16	30	38	J A 48	50	50	C	C	C	C	C	C	C	C	C	C	C	C																																
7	C	C	C	C	C	C	C	C	C	39	43	40	G	43	G	G	34	J A 40	J A 40	J A 25	J A 30	J A 22	J A 30	J A 37																																
8	J A 21	J A 24	J A 24	J A 30	J A 33	J A 52	J A 23	J A 53	J A 84	J A 64	J A 45	J A 45	J A 48	J A 86	G	G	J A 40	J A 44	J A 30	J A 42	J A 26	J A 33	J A 22	E S 16																																
9	J A 21	22	23	20	22	18	E S 16	J A 29	J A 44	J A 42	J A 41	J A 43	J A 50	J A 45	J A 41	J A 54	J A 35	J A 45	J A 40	J A 33	23	22	J A 44	J A 51																																
10	J A 34	J A 21	22	E S 16	18	E S 16	E S 16	25	J A 39	40	J A 44	G	G	38	37	J A 34	J A 54	26	E S 16	J A 33	J A 35	J A 22	J A 39	J A 35																																
11	J A 31	J A 24	J A 25	J A 20	E S 16	21	E S 16	25	J A 30	J A 40	J A 51	G	J A 43	J A 38	J A 29	J A 30	34	J A 30	J A 52	J A 32	23	J A 23	E S 16	J A 34																																
12	J A 30	J A 30	J A 26	J A 20	E S 16	E S 16	E S 16	25	J A 35	36	39	J A 41	G	G	G	G	39	J A 37	22	22	J A 25	E S 16	E S 16	J A 25																																
13	J A 24	22	J A 21	E S 16	E S 16	E S 16	E S 16	23	J A 53	J A 36	J A 37	J A 50	41	J A 62	J A 45	G	J A 33	J A 29	J A 34	24	J A 24	E S 16	E S 16	E S 16																																
14	E S 16	E S 16	E S 16	J A 30	E S 16	E S 16	E S 16	26	32	36	J A 37	J A 68	J A 66	J A 74	J A 31	J A 34	31	J A 28	E S 16	J A 24	E S 16	J A 21	22	J A 32																																
15	J A 26	22	J A 22	21	E S 16	E S 16	E S 16	G	J A 33	J A 42	J A 60	J A 42	J A 63	43	40	G	J A 40	28	E S 16	E S 16	J A 32	J A 30	J A 53	J A 34																																
16	J A 33	J A 26	E S 16	E S 16	E S 16	E S 16	E S 16	24	31	J A 32	26	26	J A 26	22	G	G	32	29	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16																																
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	36	J A 50	39	G	J A 28	J A 24	J A 38	J A 29	G	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16																																
18	E S 16	21	22	21	E S 16	E S 16	E S 16	G	G	G	40	40	G	G	G	G	G	G	E S 16	E S 16	E S 16	J A 28	J A 32	J A 26																																
19	E S 16	E S 16	E S 16	18	E S 16	E S 16	E S 16	24	35	J A 43	J A 51	J A 49	J A 47	J A 51	J A 54	36	34	J A 38	J A 34	J A 46	J A 30	J A 29	23	E S 16																																
20	E S 16	E S 16	E S 16	E S 16	24	19	22	24	32	40	J A 45	J A 38	G	G	G	42	35	G	E S 16	24	J A 20	J A 38	22	J A 24																																
21	E S 16	E S 16	E S 16	J A 23	E S 15	E S 15	E S 16	G	32	J A 36	J A 46	J A 61	J A 54	40	32	G	28	G	25	31	J A 29	J A 32	J A 29	J A 33	23	E S 16																														
22	E S 16	E S 16	E S 16	E S 16	E S 16	24	E S 16	22	J A 36	G	G	G	G	G	25	31	G	28	27	J A 26	E S 16	21	23	18	E S 16																															
23	E S 16	E S 16	E S 16	E S 15	E S 16	E S 15	E S 16	24	30	J A 37	J A 42	G	41	40	42	40	J A 52	J A 30	J A 17	J A 18	E S 16	23	J A 19	J A 24																																
24	J A 26	E S 16	22	E S 15	E S 16	E S 16	E S 16	G	J A 33	J A 36	38	39	G	J A 48	J A 54	J A 44	30	J A 31	J A 35	J A 26	J A 24	J A 24	J A 29	J A 24																																
25	J A 26	23	J A 17	J A 18	E S 15	E S 15	E S 16	G	27	34	G	J A 44	G	J A 34	41	J A 53	40	J A 39	J A 30	J A 33	J A 29	J A 24	J A 20	J A 44	J A 29																															
26	J A 20	E S 16	E S 16	E S 16	J A 22	E S 16	E S 16	G	G	37	40	39	43	J A 52	J A 49	39	J A 44	J A 36	J A 24	E S 16	E S 16	E S 16	E S 16	J A 24																																
27	J A 19	22	23	J A 18	21	E S 16	J A 20	G	30	G	37	41	39	40	40	37	J A 42	J A 54	J A 41	J A 26	J A 30	J A 33	E S 16	E S 16																																
28	22	23	17	E S 15	E S 16	E S 16	E S 16	E S 16	G	G	G	G	G	G	J A 47	G	G	25	E S 16	E S 16	E S 16	E S 16	23	J A 22																																
29	J A 25	J A 20	J A 20	J A 24	J A 24	J A 20	E S 16	G	30	34	J A 50	33	G	G	29	27	25	G	J A 19	21	E S 16	E S 16	E S 16	E S 16																																
30	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	26	37	39	G	G	41	G	38	34	28	23	J A 21	23	23	J A 33	23	22																																
31	E S 16	J A 24	22	E S 16	E S 16	E S 16	E S 16	G	34	J A 49	J A 43	G	44	J A 32	26	21	J A 44	G	E S 16	23	J A 21	E S 16	J A 27	22																																
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																																
CNT	30	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30																																
MED	J A 20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	22	33	38	42	40	36	35	G	29	G	34	J A 30	J A 25	J A 24	J A 23	J A 22	22	J A 22																															
UQ	J A 25	22	22	J A 20	18	E S 16	E S 16	25	J A 37	41	J A 46	J A 44	44	J A 43	J A 45	39	J A 42	J A 37	J A 34	J A 30	J A 30	J A 29	J A 27	J A 26																																
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	36	37	E G	G	G	G	G	29	26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16																																

OCT. 1982

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982
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 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	E S	E S	E S	E S	E S	E S	G	33	36	39	42	41	G	41	41	41	30	35	25	18	E S	E S	E S	
2	18	E S	E S	E S	E S	E S	E S	G	G	35	G	G	G	G	G	G	G	28	25	E	E S	E S	E S	E S	
3	E S	E S	E S	E S	E S	E S	E	G	33	37	39	43	41	G	43	38	50	73	70	25	20	E	18	E	
4	E	E S	E S	E S	E S	E S	E S	27	34	39	42	41	G	G	G	G	G	29	22	19	E S	E S	E	E S	
5	E S	E S	E S	E S	E S	E S	E S	G	32	38	39	40	G	G	G	G	G	50	30	21	21	25	20	E	20
6	E S	E S	E S	E S	E	E S	E S	25	32	42	41	44	C	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	39	42	40	G	42	G	G	34	40	40	22	20	21	E	35	
8	E	23	17	E	E	20	E	48	67	62	41	41	46	44	G	G	35	35	25	24	22	30	E	E S	
9	E	E	E	E	E	E	E S	24	41	34	38	42	42	42	41	43	34	42	40	29	E	E	19	E	
10	25	18	E	E S	E	E S	E S	24	36	37	42	G	G	38	36	34	37	24	E S	20	24	20	35	33	
11	25	21	20	17	E S	E	E S	22	30	36	37	G	42	38	25	G	29	31	24	24	27	E	18	E S	
12	21	21	20	E	E S	E S	E S	24	G	35	38	40	G	G	G	G	33	33	E	E	E	E S	E S	20	
13	E	E	18	E S	E S	E S	E S	23	43	34	37	40	38	41	38	G	31	25	23	E	21	E S	E S	E S	
14	E S	E S	E S	E	E S	E S	E S	24	G	36	37	42	38	42	G	30	34	30	23	E S	E S	19	E	25	
15	E	E	E	E	E S	E S	E S	G	30	40	58	42	50	41	40	G	31	25	E S	E S	E	26	21	21	
16	20	E	E S	E S	E S	E S	E S	24	30	32	25	G	25	G	G	G	30	26	E S	E S	E S	E S	E S	E S	
17	E S	E S	E S	E S	E S	E S	E S	G	G	34	38	37	G	G	G	36	29	G	E S	E S	E S	E S	E S	E S	
18	E S	E	E	E	E S	E S	E S	G	G	G	36	38	G	G	G	G	G	G	E S	E S	E S	22	21	E	
19	E S	E S	E S	E	E S	E S	E S	24	34	42	42	43	44	50	50	35	31	36	30	44	20	19	E	E S	
20	E S	E S	E S	E S	E	E	E	24	31	40	43	37	G	G	G	41	32	G	E S	18	18	28	E	20	
21	E S	E S	E S	E	E S	E S	E S	G	31	34	35	G	39	37	G	30	G	28	G	24	E	E	E	18	E S
22	E S	E S	E S	E S	E S	E S	E S	20	G	G	G	G	G	G	G	G	26	G	18	E S	E	E	E	E S	
23	E S	E S	E S	E S	E S	E S	E S	G	G	G	32	G	G	40	42	39	50	27	E	E	E S	E	E	E	
24	E	E S	E	E S	E S	E S	E S	G	30	35	34	38	G	39	38	36	30	30	26	20	20	E	21	20	
25	17	E	E	E	E S	E S	E S	G	G	24	G	39	G	41	46	36	35	25	21	24	E	E	20	18	
26	E	E S	E S	E S	E	E S	E S	G	G	37	39	39	41	40	46	38	36	33	19	E S	E S	E S	E S	23	
27	E	E	E	E	E	E S	E	G	G	G	G	41	39	40	G	36	37	27	24	E	20	20	E S	E S	
28	E	E	E	E S	E S	E S	E S	G	G	G	G	G	G	G	44	G	G	22	E S	E S	E S	E S	E	20	
29	17	E	18	E	20	E	E S	G	G	32	25	32	G	G	G	G	G	G	E	E S	E S	E S	E S	E S	
30	E S	E S	E S	E S	E S	E S	E S	25	35	39	G	G	G	G	G	33	28	20	E	E	E	24	E	E	
31	E S	E	E	E S	E S	E S	E S	G	31	G	37	G	42	31	G	20	G	25	G	E S	E	20	E S	18	E
CNT	30	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30	
MED	16	E S	E S	E S	E S	E S	E S	E G	30	35	37	39	G	29	34	G	G	31	26	18	16	16	16	16	
UQ	E S	E S	E S	E S	E S	E S	E S	24	33	38	40	41	41	41	41	36	35	30	25	22	20	20	18	20	
LQ	E	E	E	E	E S	E S	E S	G	G	32	28	G	G	G	G	G	26	22	E S	E	E	E S	E S	E S	

IONOSPHERIC DATA

OCT. 1982

F-MIN (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 20 MHz in 20sec in automatic operation													
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S	E S	E S	E S	E S	E S	E S	E S	16	18	20	22	23	22	21	21	16	E S	E S	E S	E S	E S	E S	E S
2	E S	E S	E S	E S	E S	E S	E S	E S	16	19	20	22	23	23	25	19	15	15	E S	E S	E S	E S	E S	E S
3	E S	E S	E S	E S	E S	E S	E S	16	16	20	19	20	20	20	22	16	15	15	E S	E S	E S	E S	E S	E S
4	E S	E S	E S	E S	E S	E S	E S	E S	16	16	20	21	22	20	19	16	16	E S	E S	E S	E S	E S	E S	E S
5	E S	E S	E S	E S	E S	E S	E S	16	16	19	20	21	25	22	22	20	16	16	E S	E S	E S	E S	E S	E S
6	E S	E S	E S	E S	E S	E S	E S	16	15	20	20	20	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	19	22	23	27	22	20	20	20	16	E S	E S	E S	E S	E S	E S
8	E S	E S	E S	E S	E S	E S	E S	E S	16	19	22	22	22	22	22	18	18	E S	E S	E S	E S	E S	E S	E S
9	E S	E S	E S	E S	E S	E S	E S	E S	16	17	22	21	25	24	22	21	19	E S	E S	E S	E S	E S	E S	E S
10	E S	E S	E S	E S	E S	E S	E S	E S	16	16	19	22	22	21	20	20	20	16	E S	E S	E S	E S	E S	E S
11	E S	E S	E S	E S	E S	E S	E S	E S	16	16	20	20	22	23	19	20	16	16	E S	E S	E S	E S	E S	E S
12	E S	E S	E S	E S	E S	E S	E S	E S	16	20	16	22	23	25	19	20	20	16	E S	E S	E S	E S	E S	E S
13	E S	E S	E S	E S	E S	E S	E S	E S	16	17	22	19	20	20	18	22	18	16	E S	E S	E S	E S	E S	E S
14	E S	E S	E S	E S	E S	E S	E S	E S	16	18	22	22	21	21	21	17	18	16	E S	E S	E S	E S	E S	E S
15	E S	E S	E S	E S	E S	E S	E S	E S	16	16	16	20	16	16	16	21	16	16	E S	E S	E S	E S	E S	E S
16	E S	E S	E S	E S	E S	E S	E S	E S	16	16	18	20	18	16	20	19	16	E S	E S	E S	E S	E S	E S	E S
17	E S	E S	E S	E S	E S	E S	E S	E S	16	16	16	21	20	20	16	16	16	16	E S	E S	E S	E S	E S	E S
18	E S	E S	E S	E S	E S	E S	E S	E S	16	16	17	20	19	22	20	20	17	16	E S	E S	E S	E S	E S	E S
19	E S	E S	E S	E S	E S	E S	E S	E S	18	18	18	18	22	21	22	21	20	16	E S	E S	E S	E S	E S	E S
20	E S	E S	E S	E S	E S	E S	E S	E S	16	16	19	19	18	22	20	17	17	16	E S	E S	E S	E S	E S	E S
21	E S	E S	E S	E S	E S	E S	E S	E S	E S	17	19	18	18	18	20	20	17	E S	E S	E S	E S	E S	E S	E S
22	E S	E S	E S	E S	E S	E S	E S	E S	17	16	19	20	22	20	18	16	16	16	E S	E S	E S	E S	E S	E S
23	E S	E S	E S	E S	E S	E S	E S	E S	16	16	17	21	20	20	20	16	17	E S	E S	E S	E S	E S	E S	E S
24	E S	E S	E S	E S	E S	E S	E S	E S	E S	16	20	20	23	20	21	19	17	16	E S	E S	E S	E S	E S	E S
25	E S	E S	E S	E S	E S	E S	E S	E S	18	18	20	21	21	31	18	18	17	16	E S	E S	E S	E S	E S	E S
26	E S	E S	E S	E S	E S	E S	E S	E S	20	21	23	20	21	22	20	21	18	E S	E S	E S	E S	E S	E S	E S
27	E S	E S	E S	E S	E S	E S	E S	E S	E S	18	18	21	23	20	22	21	17	E S	E S	E S	E S	E S	E S	E S
28	E S	E S	E S	E S	E S	E S	E S	E S	16	19	20	20	20	24	20	20	19	E S	E S	E S	E S	E S	E S	E S
29	E S	E S	E S	E S	E S	E S	E S	E S	E S	18	19	20	21	20	20	16	16	E S	E S	E S	E S	E S	E S	E S
30	E S	E S	E S	E S	E S	E S	E S	E S	17	20	20	21	23	22	16	19	16	E S	E S	E S	E S	E S	E S	E S
31	E S	E S	E S	E S	E S	E S	E S	E S	16	18	20	20	20	20	18	16	18	E S	E S	E S	E S	E S	E S	E S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	30	30
MED	E S	E S	E S	E S	E S	E S	E S	E S	16	18	20	21	22	20	20	17	16	E S	E S	E S	E S	E S	E S	E S
UQ	E S	E S	E S	E S	E S	E S	E S	E S	16	19	20	21	23	22	21	20	18	16	E S	E S	E S	E S	E S	E S
LQ	E S	E S	E S	E S	E S	E S	E S	E S	16	16	18	20	20	20	19	17	16	E S	E S	E S	E S	E S	E S	E S

OCT. 1982

F-MIN (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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 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	275	290	280	260	255	230	260	330	310	295	305	295	280	270	285	290	295	300	305	285	270	290	295	275
2	265	270	285	320	260	230	275	330	300	290	320	300	280	260	270	280	285	290	295	305	265	265	285	270
3	285	300	290	325	305	245	260	320	310	305	305	295	295	290	285	285	290	305	305	305	290	280	280	275
4	260	265	265	305	290	290	285	315	320	315	295	285	290	275	285	285	285	295	305	305	275	245	F	260
5	265	280	285	320	270	270	265	345	325	315	305	285	290	285	280	280	285	300	315	315 ^S	280	270	270	270
6	290	300	295	280	265	250	290	345	385	315	285	285	c	c	c	c	c	c	c	c	c	c	c	c
7	c	c	c	c	c	c	c	c	c	320	285	295	285	290	285	290	290	290	300	300	285	275	275	295
8	310	280	270	255	265	265	285	325	330	310	310	290	290	295	300	305	305	315	325	315	265	280	315	315
9	300	275	255	270	270	290	290	330	325	315	315	310	295	290	295	290	305	300	310	295	290	250	285	310
10	310	330	285	300	305	330	310	345	340	330	320	290	295	285	290	290	295	300	305	300	300	295	295	265
11	285	285	280	295	290	290	300	340	320	320	310	300	295	295	295	290	300	310	305	310	290	290	290	280
12	280	295	295	315	295	335	300	330	335	335	315	295	295	290	295	300	295	305	295	290	285	290	295	300
13	330	315	275	300	290	335	295	325	320	320	305	290	295	285	295	305	305	305	315	305	300	290	280	280
14	290	270	280	285	260	265	275	320	315	315	305	295	300	295	290	285	300	300	310	310	295	270	285	295
15	320	260	285	310	255	270	290	325	330	320	310	310	310	285	305	305	320	325	335	305	300	295	300	315
16	305	320	295	335	305	290	285	345	340	320	315	290	305	290	290	305	310	320	305	295	275	275	280	295
17	305	300	290	290	280	285	305	340	325	315	315	305	300	290	290	295	300	310	300	285	295	300	285	290
18	310	320	305	325	340	305	295	345	340	310	310	310	285	280	295	295	300	305	305	310	310	285	285	285
19	285	265	275	290	270	300	290	320	330	325	320	310	295	290	300	305	300	300	310	315	320	310	300	295
20	290	290	280	305	310	260	300	350	340	330	310	305	305	290	295	285	290	305	315	300	280	300	305	290
21	290	295	300	305	370	335	300	335	330	320	315	J ^S 295	290	285	295	300	305	315	300	350	280	300	315	270
22	285	290	300	310	320 ^S	255	290	350	335	315	285	295	285	285	285	300	290	285	310	J ^S 265	J ^S 300	J ^S 285	J ^S 280	295
23	290 ^S	285	295	325	300	285	305	345	335	325	325	305	285	290	285	295	295	305	300	310	295	275 ^S	270 ^S	280
24	285	300	275	285	255	280	285	325	320	305	310	295	285	290	290	305	285	300	300	J ^S 270	J ^S 270	S ^S 285	H ^S 255	S
25	F	285	280	270	265	265	285	340 ^S	330 ^S	310	295	305	285	285	280	275	285	275	300	280	280	265 ^S	270 ^S	265
26	255	255	225	255	260	255	270	305	310	305	310	295	285	275	280	280	300	285	295	305	285 ^S	280	275	260 ^S
27	260	285	310	305	275	250	305	350	325	325	305	295	285	280	290	290	290	315	290	275	290	290	305 ^S	255
28	280	280	275	300	310	280	290	335	330	295	J ^S 330	300	295	290	280	290	285	290	290	290	270	I ^S 270	270	270
29	270	280	310	290 ^S	340	275	280	320	330	315	300	300	295	280	290	280	285	285	285	275	275	290	260 ^S	245
30	245	245	255	245	260 ^S	270	255	300	300	320	305	280	285	285	295	290	295	300	295	J ^S 280	J ^S 300	280	285	250
31	265	270	265 ^S	250	235	230	250	285	310	300	305	305	290	280	290	290	295	310	305	295	280	245 ^S	255	295
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	30	30	30	30	30	30	29	29
MED	285	285	282	300	278	272	290	330	328	315	310	295	290	285	290	290	295	300	305	300	285	282	285	280
UQ	300	300	295	310	305	290	300	345	335	320	315	305	295	290	295	300	300	310	310	310	295	290	295	295
LQ	270	270	275	280	260	255	275	320	320	310	305	292	285	280	285	285	290	295	300	285	275	270	275	270

OCT. 1982

M(3000)F2 (0.01)

IONOSPHERIC DATA

OCT. 1982

M(3000)F1 (0.01)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA																							
Lat.	31 12.1 N							Long.	30 37.1 E							Sweep 1 MHz to 20 MHz in 20 sec in automatic operation								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	L	L	L	L	L	L	L	L	L						
2								L	L	L	L	L	L	L	L	L	L	L						
3								L	L	L	L	L	L	L	L	L	L	L	A					
4								L	L	L	L	L	L	L	L	L	L	L						
5									L	L	L	L	L	L	L	L	L	L						
6								L	L	L	L	L	C	C	C	C	C	C						
7								C	C	L	L	L	L	L	L	L	L							
8											L	L	L	L	L	L								
9										L	L	385	L	L	L	L								
10										L	L	360	L	L	L	L	L							
11											L	L	L	L	L	L	L							
12										L	L	L	L	L	L	L								
13										L	L	L	L	L	L	L	L							
14										L	L	L	L	L	L	L								
15										L	L	L	L	L	L	L								
16										L	L	L	L	L	L	L								
17										L	L	L	L	L	L	L								
18										L	L	L	L	L	L	L	L							
19										L	L	L	L	L	L	L								
20										L	L	L	L	L	L	L	L							
21											L	L	L	L	L	L								
22											L	L	L	L	L	L								
23										L	L	L	L	L	L	L	L							
24										L	L	L	L	L	L	L								
25										L	L	L	L	L	L	L	L							
26											L	L	L	L	L	L								
27										L	L	L	L	L	L	L	L							
28											L	L	L	L	L	L								
29											L	L	L	L	L	L	L							
30											L	L	L	L	L	L								
31										L	L	L	L	L	L	L	L							
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT												2												
MED												L												
UQ												372												
LQ																								

OCT. 1982

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1982

H^oF2 (KM)

135° E Mean Time (G.M.T. + 9 h)

Station **YAMAGAWA** Lat. 31° 12' N Long. 130° 37' 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								250	250	280	280	280	330	340	320	290	290	260						
2								260	260	280	280	280	290	310	310	280	280	280						
3								260	260	270	260	280	280	290	290	290	290	A						
4								260	260	260	260	310	300	310	310	290	280	280						
5								250	250	280	310	290	290	290	290	280	280	260						
6								230	240	250	260	310	c	c	c	c	c	c						
7								c	c	260	300	305	320	305	300	290	280							
8										245	260	290	290	290	290	270								
9										270	265	265	280	300	300	290								
10										255	250	290	280	300	295	290	280							
11										275	305	280	300	290	280	260								
12										250	240	300	280	300	280	275								
13										240	290	275	280	290	280	265	265							
14										260	280	295	280	280	295	280								
15										255	260	255	280	290	290	270								
16										255	260	305	280	290	290	270								
17										275	270	275	265	305	290	255								
18										240	265	250	310	320	290	270	255							
19										245	255	245	285	290	280	270								
20										250	250	270	270	280	295	290	270							
21												225	295	270	270	250								
22												295	240	295	285	270	255							
23												250	275	260	285	280	285	250	270					
24												255	255	265	305	300	255	275						
25												260	245	295	285	295	275	290	285					
26												250	235	285	300	255	260							
27												250	255	245	245	295	275	290	280					
28												275	245	275	295	285	290							
29												265	285	245	300	285	285	275						
30												245	275	295	260	285	255							
31												265	270	250	245	300	300	250	265					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								5	6	23	30	31	30	30	30	30	16	4						
MED								260	255	255	262	275	282	295	290	278	280	270						
UQ								260	260	262	275	295	295	300	295	290	280	280						
LQ								250	250	250	255	252	280	290	280	265	268	260						

OCT. 1982

H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1982

H^oF (KM)

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

Station	YAMAGAWA																								
	Lat. 31 12.1 N												Long. 30 37.1 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	290	280	260	260	E S 340	E S 340	300	220	230	230	220	200	220	240	240	260	A 250	A 240	250	250	280	260	250	270	
2	280	280	260	230	300	E S 430	280	230	230	230	220	210	230	230	230	240	250	250	215	230	300	280	280		
3	260	250	260	220	240	E S 350	310	240	230	230	230	220	210	230	230	230	A	A	A	240	240	240	260	270	
4	280	280	280	240	220	260	280	240	240	230	220	210	210	210	230	240	240	240	250	240	220	260	310	300	
5	280	260	260	240	220	250	310	240	230	220	220	220	220	240	220	220	H	A	250	250	230	A 250	260	290	310
6	275	250	230	240	290	E S 360	280	220	230	A 240	220	220	C	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	225	H 220	H 215	230	230	240	245	245	250	250	240	250	255	300	295
8	230	240	E A 290	350	350	320	290	250	240	250	215	210	240	240	230	240	250	240	240	225	250	300	250	225	
9	240	E S 300	E S 390	E S 350	E S 330	295	275	225	240	230	230	215	220	H 220	230	250	250	240	245	240	220	250	275	275	
10	280	250	255	255	245	250	250	240	240	230	230	200	H 210	H 190	230	240	245	240	240	240	260	250	275	A	
11	300	290	300	280	260	270	250	H 200	230	240	220	H 195	H 220	H 220	230	240	250	250	240	220	230	240	290		
12	285	280	265	250	255	230	235	240	240	230	220	215	H 190	H 240	240	240	240	240	230	240	250	245	270	260	
13	245	240	300	275	250	210	240	H 205	230	220	H 220	H 210	H 195	230	225	240	240	245	235	240	255	245	270	280	
14	270	300	300	265	325	305	300	245	240	230	240	230	H 220	H 220	240	225	245	245	240	230	240	275	250	285	
15	250	225	290	265	265	315	280	230	240	240	240	225	245	H 220	H 205	240	245	240	225	215	250	275	275	250	
16	255	250	250	250	220	E S 280	E S 295	240	230	230	220	H 210	H 215	H 205	H 230	H 220	H 240	225	230	205	250	250	280	270	
17	265	250	330	295	250	280	240	225	230	230	H 220	H 210	H 190	H 190	H 200	H 240	240	230	220	240	245	240	275	290	
18	255	235	245	240	215	255	300	240	230	230	H 215	H 230	H 220	H 230	240	220	235	240	215	230	225	240	E A 290	300	
19	290	325	300	275	225	275	270	245	240	235	225	225	230	250	250	245	240	240	240	240	230	225	250	270	
20	260	265	290	280	245	E S 350	280	225	230	235	240	H 205	H 190	H 190	H 205	245	245	240	220	210	255	270	225	280	
21	275	250	250	270	225	310	285	245	225	H 225	H 215	230	H 200	H 195	H 230	245	240	240	225	220	255	250	235	250	
22	255	275	275	255	235	320	285	230	235	230	H 225	H 225	H 215	H 215	H 215	245	245	235	225	225	245	230	235	255	
23	260	255	270	235	225	295	260	220	225	H 220	H 225	H 215	H 200	H 215	H 235	245	E A 255	245	220	230	220	225	250	280	
24	285	265	295	275	260	305	250	225	230	225	H 225	H 215	H 215	H 200	240	225	H 245	245	235	225	240	245	260	255	
25	245	260	295	280	275	300	280	235	225	H 210	H 230	H 215	H 215	H 245	H 250	240	245	245	230	235	235	230	240	275	
26	290	300	295	315	285	295	305	240	H 245	245	240	H 215	H 225	H 225	H 245	235	250	255	240	205	230	250	230	310	
27	295	250	245	245	250	305	255	220	225	H 225	H 215	H 225	H 205	H 220	H 240	H 235	245	250	225	240	250	250	235	250	
28	270	270	275	245	220	275	280	245	H 235	230	225	240	225	H 220	H 240	H 195	H 240	H 245	H 245	H 245	240	240	240	285	
29	275	250	220	220	220	E S 320	310	245	235	235	230	H 225	H 225	H 215	H 195	H 235	H 195	H 245	H 225	250	265	245	250	285	
30	320	300	280	275	295	250	250	250	H 245	H 245	235	H 225	H 220	H 230	H 230	225	240	230	235	245	235	245	245	S 300	
31	295	260	265	310	350	395	350	250	235	240	235	H 230	H 235	H 235	H 220	225	H 245	245	210	225	225	210	280	260	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	30	30	30	30	30	30	30	30	31	31	31	30	30	30	30	28	29	29	30	30	30	30	29	
MED	275	260	272	260	249	285	280	240	230	230	225	215	H 218	220	230	240	244	240	235	238	242	248	252	280	
UQ	285	280	295	278	282	312	300	245	240	235	230	225	225	230	240	245	245	245	245	240	250	260	275	290	
LQ	255	250	260	240	225	265	255	225	230	228	220	H 210	H 210	H 215	220	225	240	240	225	225	230	240	240	260	

OCT. 1982

H^oF (KM)

IONOSPHERIC DATA

OCT. 1982

H°E (KM)

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

Station YAMAGAWA Lat. 31 12.1 N Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								E S 125	A	A	110	110	110	110	110	110	110	110						S	
2								110	110	110	110	110	110	110	110	110	110	110							S
3								110	E A 120	110	110	110	110	110	110	110	E A 125	110							S
4								E S 120	110	110	110	110	110	110	110	110	E A 120	110							S
5								110	110	110	110	110	110	110	110	110	110	115							S
6								110	110	110	110	110	C	C	C	C	C	C							C
7								C	C	115	115	115	115	110	110	110	115	125							S
8								125	115	115	110	110	110	115	115	115	115	115	125						S
9								125	115	110	110	110	A	A	A	115	115	120							S
10								E S 130	115	110	110	110	110	110	110	110	A	A							S
11								120	110	110	110	110	A	A	A	A	A	A							A
12								125	115	115	A	A	110	110	115	115	120								A
13								125	115	110	110	A	A	A	A	115	A	A							A
14								E S 130	115	110	110	A	A	A	A	A	120	A							A
15								120	115	110	110	A	A	115	115	120	115	120							
16								125	110	110	110	115	120	115	115	115	115	120							
17								125	115	110	110	110	110	115	115	115	115	115	125						
18								125	115	110	110	110	110	115	120	115	120	125							
19								125	115	110	110	110	110	120	120	120	120	125							
20								E S 130	110	110	110	110	110	120	120	115	120	125							
21								125	115	110	105	105	A	A	E A 120	110	E A 120	E A 125							
22								A	110	110	105	105	115	115	E A 125	115	E A 120	A							
23								E S 125	115	110	110	105	105	105	110	115	115								A
24								E S 125	A	105	110	115	115	115	115	115	115	E S 125							
25								E S 135	E S 125	110	105	110	E A 125	E B 125	E A 135	115	115	A							
26								E S 130	E B 125	115	110	110	110	115	115	115	E B 120	S							
27								E S 140	110	H 110	110	110	115	110	E B 120	110	115	A							
28								S	110	110	110	115	115	115	115	115	120	E S 125							
29								E S 125	115	115	115	115	110	H 115	115	115	115	E S 145							
30								S	120	115	115	115	115	115	115	115	115	S							
31								E S 145	120	115	110	110	E A 125	E A 125	105	110	E A 135	E S 125							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								27	28	30	30	27	24	25	26	28	27	19							
MED								118	115	110	110	110	110	115	114	115	115	120							
UQ								126	115	110	110	110	115	115	118	115	118	125							
LQ								116	110	110	110	110	110	110	110	110	115	114							

OCT. 1982

H°E (KM)

IONOSPHERIC DATA

OCT. 1982

H°ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station	YAMAGAWA																							Lat. 31° 12' N	Long. 130° 37' E	Sweep 1	MHz to 20 MHz in 20 sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23																									
1	110	S	S	S	S	S	S	G	110	110	130	120	120	G	140	140	135	135	120	110	110	S	S	S																									
2	100	S	S	S	S	S	S	G	G	120	G	G	G	G	G	G	G	130	115	110	S	S	S	S																									
3	S	S	S	S	S	S	110	130	130	130	130	120	120	G	140	140	130	120	115	110	110	110	110	110																									
4	110	S	S	S	S	S	S	130	125	125	120	120	G	G	G	G	110	120	120	110	S	S	110	S																									
5	S	S	S	S	S	S	S	G	130	130	120	130	G	G	G	G	130	130	120	110	110	110	110	110																									
6	S	S	S	S	110	S	S	130	130	130	120	120	C	C	C	C	C	C	C	C	C	C	C	C																									
7	C	C	C	C	C	C	C	C	C	130	130	130	G	140	G	G	150	125	115	115	110	110	110	110																									
8	110	110	110	110	110	105	110	120	120	120	125	125	125	125	G	G	125	120	110	110	110	105	110	S																									
9	110	110	105	105	105	105	S	125	115	115	115	120	105	110	110	110	115	110	105	105	105	100	100	100																									
10	100	100	100	S	100	S	S	145	130	125	120	G	G	140	110	110	110	140	S	105	105	100	100	100																									
11	100	100	105	105	S	105	S	130	120	110	120	G	105	105	100	100	140	100	100	100	100	105	S	100																									
12	100	105	105	105	S	S	S	150	125	125	125	110	G	G	G	G	140	130	105	100	100	S	S	100																									
13	100	100	100	S	S	S	S	140	125	120	120	105	105	100	100	G	100	100	100	110	100	S	S	S																									
14	S	S	S	100	S	S	S	145	140	120	115	105	105	105	100	100	140	105	S	105	S	105	105	100																									
15	105	100	105	105	S	S	S	G	120	115	110	120	120	130	130	G	140	125	S	S	105	105	105	105																									
16	100	105	S	S	S	S	S	150	140	120	105	100	100	100	G	G	150	130	S	S	S	S	S	S																									
17	S	S	S	S	S	S	S	G	G	145	125	120	G	100	100	120	115	G	S	S	S	S	S	S																									
18	S	110	105	105	S	S	S	G	G	G	130	125	G	G	G	G	G	G	S	S	S	105	105	105																									
19	S	S	S	105	S	S	S	135	130	120	115	120	115	120	120	120	145	125	120	110	110	105	110	S																									
20	S	S	S	S	100	105	105	155	140	125	120	120	G	G	G	145	150	G	S	125	115	105	105	105																									
21	S	S	S	100	S	S	S	G	120	120	120	125	100	100	105	105	105	125	120	105	105	105	105	S																									
22	S	S	S	S	S	100	S	110	125	G	G	G	G	105	105	G	110	140	125	S	110	115	110	S																									
23	S	S	S	S	S	S	S	150	145	110	105	G	145	145	135	135	115	115	115	110	S	105	100	105																									
24	105	S	110	S	S	S	S	G	110	110	115	115	G	110	115	115	115	120	115	110	105	105	100	100																									
25	100	100	100	100	S	S	S	G	110	110	G	125	100	130	120	120	115	110	110	110	105	105	105	105																									
26	105	S	S	S	105	S	S	G	G	140	125	120	120	120	120	115	110	110	110	S	S	S	S	100																									
27	105	105	100	100	100	S	110	G	150	G	145	125	125	130	135	125	115	110	105	105	100	100	S	S																									
28	100	100	100	S	S	S	S	S	G	G	G	G	G	G	G	140	G	G	120	S	S	S	S	100	105																								
29	100	100	100	100	100	100	S	G	135	120	105	105	G	105	105	105	G	100	100	S	S	S	S	S																									
30	S	S	S	S	S	S	S	125	125	125	G	G	125	G	130	125	125	135	120	110	110	100	100	100																									
31	S	105	100	S	S	S	S	G	140	125	125	G	125	100	100	100	100	G	S	120	105	S	105	110																									
CNT	17	14	14	12	8	6	4	16	25	27	26	23	17	20	21	18	26	26	21	22	20	19	20	18																									
MED	100	102	102	105	102	105	110	132	125	120	120	120	120	110	115	118	120	120	115	110	105	105	105	105																									
UQ	105	105	105	105	108	105	110	148	135	125	125	125	125	130	130	125	140	130	120	110	110	105	110	105																									
LQ	100	100	100	100	100	100	108	128	120	118	115	118	105	102	105	105	110	110	105	105	105	105	100	100																									

OCT. 1982

H°ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

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 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	F1							L2	L2	H1	C1	C1		H1	H1	H2	H3	C5	F5	F3					
2	F1									C1								H2	C3	F1					
3						F1	H2	HL2	H2	H1	C1	C2		H1	H2	HL42	C4	C5	F5	F5	F3	F3	F1		
4	F2						H1	H2	H2	C2	C1						L2	H2	C2	F1			F1		
5								H2	H2	C1	H1						H3	H2	C2	F4	F4	F6	F3	F5	
6				F1			H2	H2	H2	C2	C2														
7									C2	C1	C1			H1			H1	C6	C6	F3	F4	F5	F5	F7	
8	F3	F4	F3	F3	F3	F3	F3	C5	C4	C4	C1	C1	C2	C1			C3	C4	L4	F3	F5	F6	F1		
9	F3	F2	F2	F2	F2	F2		C3	C4	C1	C2	C2	L1	L2	L2	C3	C3	C4	L7	F7	F3	F1	F2	F3	
10	F3	F3	F2		F1			H2	H2	CL21	C2			H1	C2	C2	L3	HL12		F4	F6	F4	F5	F6	
11	F6	F5	F7	F2		F2		C1	C1	C3	C1		L2	L1	L1	L2	HL21	L2	F7	F4	F1	F2		F5	
12	F3	F3	F3	F1			H2	C1	C1	CL11	L2						H3	HL42	F1	F1	F2			F2	
13	F1	F1	F2				H3	C3	C2	C1	L2		L2	L2	L2		L3	L3	F3	F2	F4				
14				F2			H2	H2	C2	C2	L2		L2	L2	L2	L3	H1	L1		F1		F3	F1	F7	
15	F2	F2	F1	F1				C2	C3	C5	CL22	CL32	CL11	C2			H2	C2			F3	F5	F3	F2	
16	F3	F2					H2	H1	C2	L2	L2		L2	L1			H2	H3							
17								H1	C3	C1			L2	L2		CL22	C2								
18		F1	F2	F2						H1	C1											F4	F5	F2	
19				F1				H3	H3	C2	C2	C2	C2	C3	C3	C2	H2	C6	F6	F5	F4	F3	F2		
20				F3	F1	F2	H2	H2	C3	C2	C1					H3	H2			F3	F2	F6	F2	F5	
21				F2				C2	C2	C1	C1		L2	L2	L2	L2	L2	CL21	F1	F1	F2	F2	F1		
22					F1			L3	C1								LL31	HCL12	FF61		F1	F1	F1		
23							H2	H1	L1	C3			H1	H1	H1	HL21	C6	CL51	FF11	F2	F1	F1	F1	F2	
24	F2		F1					L2	C2	C1	C2			C2	C2	C2	C1	C3	F7	F5	F5	F2	F3	F3	
25	F2	F1	F1	F1				L2	L1		CL12		L2	H1	CL22	C2	C3	L4	F3	F5	F2	F1	F3	F2	
26	F1			F1					H1	C1	C1	C2	C1	C1	C3	C2	C3	L3	F2					F6	
27	F2	F2	F2	F1	F1		F1		H1		H1	C1	C1	H1	H1	C1	C4	L4	F3	F1	F6	F2			
28	F2	F2	F1												H2			C2					F1	F4	
29	F4	F1	F2	F1	F2	F2		H2	CL21	L1	L2		L2	L2	L2		L1	F1							
30							C5	C3	C2				C1		HL11	C1	C2	HC11	F2	F1	F1	F4	F2	F2	
31		F2	F1					H2	C1	C1			CL21	L2	L1	L1	L2			F1	F4		F4	F1	
	00	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																									

OCT. 1982

TYPES OF ES

IONOSPHERIC DATA

OCT. 1982

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 25 sec in automatic operation										
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23											
1	X 153	S 132	X 109	X 72	X 58	X 56	X 57													C	C	C	C	C											
2	C	C	C	C	C	C	C													X 119	X 100	X 97	S 106	X 107											
3	X 116	X 106	X 97	X 70	X 48	X 43	X 47													X 144	X 149	X 144	U 136	S 135											
4	U 140	S 121	X 106	S 98	X 73	X 57	X 55													X 170	195	200	210	200											
5	190	S 152	X 150	S 117	X 76	X 57	X 56													C	X 119	X 104	X 96	X 99											
6	X 106	S 97	X 83	X 74	X 64	X 48	X 58													X 180	200	195	X 150	X 124											
7	S 137	X 119	X 90	X 76	X 58	X 46	X 49													S 133	X 136	X 107	X 100	S 102											
8	X 91	X 88	X 70	S 55	X 52	S 52	X 56													X 190	U 193	U 180	U 180	S 152											
9	S 96	X 71	X 50	X 49	X 49	X 46	X 50													X 177	X 176	X 166	X 158	X 146											
10	X 126	X 101	X 94	X 89	X 59	X 45	X 46													X 115	X 111	X 106	X 96	S 95											
11	X 92	X 90	X 71	X 67	X 62	X 56	X 60													X 163	X 168	S 154	X 149	U 136											
12	U 121	S 118	X 116	120	X 63	X 63	S 53													S 121	X 125	S 141	X 119	X 106											
13	S 97	X 71	X 67	X 71	X 63	X 48	H 39													X 145	X 151	S 151	S 138	X 119											
14	X 113	X 93	X 79	X 72	X 60	X 62	X 65													X 148	S 136	X 116	X 119	U 101											
15	X 107	X 92	X 71	X 70	H 54	X 58	X 62													X 134	X 120	X 129	X 106	X 91											
16	X 75	X 60	X 55	X 58	X 37	X 38	X 42													O 148	S 140	140	140	120											
17	X 96	X 84	X 70	X 64	X 59	X 54	X 50													X 183	X 182	X 165	S 160	S 146											
18	S 124	S 100	X 91	X 73	X 42	X 37	X 41													X 190	X 185	X 166	S 154	S 137											
19	X 126	X 97	X 90	X 84	X 76	X 61	U 58													X 173	X 177	X 167	X 149	X 124											
20	X 112	X 91	X 83	X 84	X 55	X 48	X 57													X 173	X 170	S 156	S 152	S 136											
21	X 90	X 80	X 80	X 59	X 47	X 38	X 47													S 130	X 125	X 114	X 105	X 95											
22	X 70	X 57	X 57	X 56	H 41	X 39	X 46													X 169	X 170	X 182	S 182	X 167											
23	S 100	X 96	H 81	X 84	X 50	X 38	X 40													X 150	S 133	X 144	U 151	U 144											
24	S 108	H 91	X 72	X 69	X 54	X 50	X 53													X 183	X 182	X 192	S	S											
25	U 131	S 100	S 98	X 91	X 91	S 66	X 66													X 161	X 166	X 177	X 181	U 180											
26	S 116	X 112	U 100	X 89	X 84	X 76	X 74													X 161	X 150	X 147	U 136	S 121											
27	X 90	S 98	X 89	X 71	X 48	X 48	X 59													X 146	X 153	U 179	U 191	S 157											
28	S 120	X 115	U 100	X 105	X 68	X 46	X 52													S 156	S 173	S	S	S 187											
29	S 156	170	S 156	X 121	X 59	X 44	X 42													S 157	S 166	X 176	S 174	U 138											
30	X 107	X 112	X 92	X 84	X 77	X 74	X 79													X 157	X 170	X 182	S 154	X 111											
31	X 84	X 90	X 70	X 55	X 54	X 54	X 61													X 154	X 156	U 186	S 203	S 174											
CNT	30	29	30	30	30	30	30													17	29	29	28	29											
MED	X 110	X 97	X 86	X 72	X 58	X 49	X 54													X 157	X 163	X 165	S 152	S 137											
UQ	S 126	X 112	X 98	X 89	X 64	X 57	X 59													X 173	X 173	X 179	S 177	S 157											
LQ	X 96	X 90	X 71	X 67	X 50	X 45	X 47													X 150	X 140	X 136	X 126	X 119											

OCT. 1982

FXI (0.1 MHz)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

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 25sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	147	U S 126	U S 103	66	52	50	51	93	106	114	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	C	148	141	153	153	152	137	132	127	113	94	91	J S 100	J S 101
3	110	100	91	64	42	37	41	92	117	131	142	149	157	165	169	161	148	144	139	138	143	138	130	129	
4	S 134	U S 115	U S 100	92	67	51	49	94	R 119	C	C	C	C	C	C	C	C	U R 154	U R 156	S 164	F	F	F	F	
5	U S 153	146	144	111	70	51	50	93	112	C	C	C	C	C	C	C	C	C	C	C	113	S 98	S 90	93	
6	J S 100	91	77	68	58	42	52	U S 97	103	111	C	C	C	C	C	C	C	C	C	C	174	F	F	S 144	118
7	131	113	84	70	52	40	43	100	131	107	C	C	C	C	C	C	C	C	C	138	127	130	J S 101	94	S 96
8	85	82	U S 64	49	46	46	50	89	129	143	133	C	156	177	C	C	C	C	R U S 155	J S 184	J S 187	U S 174	U S 174	146	
9	90	U S 65	44	43	43	40	44	83	108	122	C	155	R 154	165	C	C	C	C	C	166	171	170	S 160	152	140
10	120	95	88	83	53	39	40	85	107	108	122	129	C	143	146	C	130	132	125	109	105	S 100	90	S 89	
11	86	S 84	65	61	56	50	54	88	96	C	C	C	135	R 156	165	159	158	R 154	150	S 157	162	S 148	S 143	S 130	
12	S 115	112	110	95	57	57	47	83	116	128	113	126	138	145	152	148	141	130	120	115	119	135	113	100	
13	91	65	61	65	57	42	H 33	75	112	129	130	132	151	166	170	160	144	136	138	139	S 145	S 145	132	113	
14	107	87	73	66	54	56	59	102	121	128	143	148	168	169	169	163	161	151	146	142	130	110	113	95	
15	101	86	65	64	H 48	52	56	97	122	128	145	152	148	147	157	160	150	144	128	114	123	S 100	85	83	
16	69	54	49	52	31	32	36	85	111	111	128	154	167	U R 184	J R 202	R 202	178	155	S 142	F	F	F	F	J S 101	
17	90	78	64	58	53	48	44	81	109	122	151	152	164	194	207	201	184	176	177	176	159	S 154	S 140	S 124	
18	S 118	S 94	85	67	36	31	35	82	109	108	140	148	143	174	198	202	201	191	184	179	160	148	131	118	
19	U S 120	91	84	78	70	55	J S 52	89	127	144	151	150	177	U R 201	203	202	198	174	167	171	161	143	118	112	
20	106	S 85	77	78	49	42	51	98	107	108	125	146	154	164	167	160	164	164	167	164	U S 150	S 146	130	S 112	
21	84	74	74	53	41	32	41	84	112	118	137	135	136	158	167	166	154	127	124	119	108	S 99	89	72	
22	S 64	51	51	50	H 35	33	40	86	104	116	139	149	169	188	197	194	179	167	163	164	176	176	161	U S 121	
23	94	90	S 75	78	44	32	34	80	106	113	129	144	148	160	165	160	146	139	144	127	U S 138	U S 145	U S 138	U S 117	
24	U S 102	U S 85	66	S 63	48	44	47	86	109	130	142	143	145	168	179	175	R 176	179	177	176	S 186	S	S	S	
25	J S 125	S	J S 92	85	F	60	60	113	123	126	147	143	143	160	159	156	R 156	158	S 155	160	171	S 175	J S 174	U S 140	
26	110	U S 106	S 94	U S 83	78	70	68	100	137	158	173	160	146	162	164	149	138	157	U S 155	144	141	S 130	S 115	S 85	
27	S 84	92	83	65	42	42	53	86	108	121	133	141	143	148	150	148	146	142	140	147	U S 173	U S 185	S 151	U S 134	
28	114	109	94	S 99	62	40	46	91	117	128	144	155	149	153	152	147	144	146	150	167	S	S	S 181	170	
29	150	F	U S 150	115	53	S 38	36	80	119	130	143	148	151	159	168	171	167	163	151	S 160	170	168	132	104	
30	U S 101	S 106	86	78	71	68	73	95	127	154	153	151	159	168	165	166	157	145	151	164	S 176	U S 148	U S 105	U S 84	
31	78	84	64	49	48	48	55	89	126	151	169	173	155	161	168	170	165	156	148	150	U S 180	J S 197	168	165	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	30	28	30	30	29	30	30	30	30	27	23	24	25	26	24	23	24	25	28	28	26	25	27	28	
MED	104	90	80	66	52	43	48	89	112	126	142	148	151	163	167	161	156	154	150	158	154	S 145	S 131	S 112	
UQ	120	106	92	83	57	51	53	95	122	130	146	152	157	169	174	173	172	163	160	169	171	S 160	S 148	S 130	
LQ	90	83	65	61	44	39	41	84	108	114	132	143	143	156	158	158	145	142	138	132	130	S 110	S 109	96	

OCT. 1982

FOF2 (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982

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

OCT. 1982

FOF1 (0.01 MHz)

IONOSPHERIC DATA

OCT. 1982

FOE (0.01 MHZ)

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

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

Hour Day	00	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	300	345		C	C	C	C	C	C	C	C						
2								C	C	C		C	H	395	400	395	385	370	335	270				A	
3								245	305	345	375		A	405	405	395	370	340			A		A		
4								A	A	C	C	C	C	C	C	C	C		265				A		
5								225	270		C	C	C	C	C	C	C	C	C	C					
6								H	235	295	335		C	C	C	C	C	C	C	C					
7								H	220	295	335		C	C	C	C	C	C	C	C				A	
8								A	A	A		C		U	R		C	C	C	C			A		
9								A	A	A	C	A	A	A	A	C	C	C	C	C			A		
10								220	285		A	360	370		C	380	A	C	A	A	A				
11								215	275		C	C	C	A	A	A	A	A	A	A			S		
12								230	280		A	A	380	380		A	A	A	A	240			S		
13								A	265	290		A	A	A		385	380	355		A	A	A			
14								H	205	A	A	340	360	375	R	380	365	R	330	300	240		A		
15								200	280	H	325	R	350	370	375	375		A	A	A	A				
16								H	210	280	305		A	A	A	375	360	340	300	240					
17								200	270	320		A	A	370	380	365	330		A	235					
18								200	270	310	340	355	380		A	360	340	300	235						
19								200	H	275	A	A	A	A	A	A	A		300	235					
20								210	290	H	325	H	345	360	380	375	365	340	300	240					
21								180	285		A	A	A	395	390		A	H	350	H	300	H	245		
22								210	A	280		A	A	A	A	395	380		A	A	A				
23								220	285	315	360	380	390	395	385		A	A	A	A					
24								200	A	A	A	380		A	A	A	A	A	A	A					
25								215	290	335	365	390	U	A	400	385		A	A	A					
26								200	300	345	375	395		A	U	A	390		A	A	A				
27								180	290	335	360	380	390	395	385	360			A	A					
28								210	290	330	360	375	385	385	380	350	310			A					
29								175	265	330	360	375	385	385	370	350	295	230							
30								175	285	320		A	A	390	390		A	345	305	230					
31								H	220	285	320	345	370	380		A	365	345	305	230					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								25	25	18	14	15	17	19	15	14	12	13							
MED								210	285	328	360	375	385	390	380	348	300	240							
UQ								220	290	335	360	380	390	395	385	355	308	240							
LQ								200	275	320	345	370	380	380	365	340	300	235							

OCT. 1982

FOE (0.01 MHZ)

IONOSPHERIC DATA

OCT. 1982

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 25sec in automatic operation																	
Hour	Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23								
1		E 16	E 16	E 16	E 16	E 16	E 16	E 16	J A 28	34	J A 42	C	C	C	C	C	C	C	C	C	C	C	C	C									
2		C	C	C	C	C	C	C	C	C	C	C	G 30	G 29	G 27	G 38	40	J A 40	J A 46	J A 27	J A 14	J A 24	J A 20	J A 19									
3		E 16	E 16	E 16	E 16	E 16	E 16	E 16	28	J A 36	42	J A 48	J A 78	43	33	46	J A 48	J A 76	J A 111	J A 87	J A 65	J A 51	J A 41	J A 46	J A 30								
4		J A 26	E 16	E 16	E 16	E 16	E 16	E 16	28	39	C	C	C	C	C	C	C	C	40	J A 54	J A 64	J A 39	J A 29	J A 24	E 16								
5		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	33	C	C	C	C	C	C	C	C	C	C	C	J A 43	J A 45	J A 34	J A 29								
6		J A 20	J A 20	J A 21	E 16	E 16	E 16	E 16	J A 27	36	J A 53	C	C	C	C	C	C	C	C	C	J A 51	J A 31	J A 33	J A 36	J A 30								
7		22	22	20	J A 17	J A 24	E 16	E 16	26	34	38	C	C	C	C	C	C	C	C	J A 22	19	J A 25	J A 18	J A 30									
8		J A 30	J A 30	J A 29	J A 27	J A 32	J A 25	J A 24	30	J A 64	J A 84	J A 82	C	53	54	C	C	C	C	J A 49	J A 77	E 16	J A 30	J A 24	J A 24								
9		J 15	E 16	E 16	E 16	J 13	E 16	E 16	22	31	J A 40	C	40	J A 52	J A 54	C	C	C	C	J A 38	J A 30	J A 23	J A 23	E 16	E 16								
10		E 16	E 16	J A 20	E 16	E 16	E 16	E 16	G	G	J A 54	J A 53	44	C	G	J A 59	C	J A 64	J A 48	J A 30	J A 24	J A 24	J A 26	J A 27	J A 18								
11		E 16	J A 33	J 13	J A 24	E 16	E 16	E 16	G	G	C	C	C	J A 50	J A 42	40	J A 66	J A 44	J A 46	J A 40	J A 34	J A 21	J A 33	J A 25	J A 20								
12		J A 24	J A 24	E 16	J A 26	J A 18	E 16	J A 20	G	G	J A 40	J A 54	J A 55	G	J A 40	J A 39	J A 42	36	32	J A 60	J A 21	J 16	E 16	E 16	E 16								
13		E 16	E 16	J A 21	J A 23	J A 24	E 16	E 16	28	32	43	40	J A 42	J A 50	G	37	52	J A 58	J A 47	J A 38	J A 26	J A 24	J A 30	J A 20	J 12								
14		J 15	E 16	E 16	E 16	E 15	E 15	E 16	G	J A 28	J A 33	36	38	G	G	G	G	36	33	J A 24	E 16	J 16	J A 17	J A 21	J A 17								
15		J A 22	J A 34	J A 24	J A 20	J A 18	20	E 16	G	G	35	G	25	G	23	J A 39	37	J A 44	34	J A 50	J A 33	J A 41	J A 32	J A 24	J A 32	E 16							
16		J A 30	J A 25	J A 27	E 16	J 14	E 16	E 16	G	J A 36	40	38	37	37	J A 47	J 35	40	47	J A 41	J A 37	J A 21	J A 26	E 16	E 16	E 16	E 16							
17		E 16	E 16	E 16	E 16	E 14	E 16	E 16	G	G	34	42	42	J G 27	J G 33	J G 25	G	J A 36	G	J A 20	E 16	E 16	E 16	E 16	E 16	E 16							
18		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	G	35	37	42	G	38	G	G	G	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16							
19		J A 24	J A 21	J A 17	J A 20	E 16	E 16	E 16	G	G	40	42	38	42	J A 38	J A 36	36	35	34	J A 24	21	J A 26	J A 41	J A 27	J A 17								
20		E 16	E 16	E 16	E 16	E 15	E 15	E 16	26	32	J A 50	J A 49	J A 48	43	G	G	22	G	G	E 16	E 16	J A 22	J A 33	J A 25	J A 30								
21		J A 24	J A 25	J A 17	E 16	E 15	18	18	33	33	J A 44	J A 40	J A 43	43	G	J A 41	G	G	J A 42	J A 40	E 16	J A 24	J A 22	E 16	E 15								
22		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	32	36	42	38	J A 42	G	G	37	33	J A 25	J A 21	E 16	E 16	J A 20	J A 24	J A 20								
23		J A 26	J A 20	E 16	E 16	E 16	E 16	E 16	G	G	34	G	G	53	J A 70	J A 100	J A 82	40	J A 69	J A 36	28	J A 51	J A 24	E 16	E 16								
24		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	34	34	39	G	44	47	44	44	37	31	J A 30	J 16	J A 17	J 12	J A 20	J A 20								
25		E 16	E 16	J 14	J 16	E 16	E 16	E 16	G	G	G	G	G	41	43	42	43	42	J A 36	J A 50	J A 50	J A 21	E 16	E 16	E 16	E 16							
26		J A 17	J A 24	J A 20	E 16	E 16	E 16	E 16	G	34	40	G	G	44	47	J A 49	J A 40	38	J A 30	J A 29	E 16	E 16	E 16	E 16	E 16	E 16							
27		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	G	G	G	G	43	G	43	41	38	27	J A 32	J A 51	J A 27	E 16	E 16	J 13								
28		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	G	G	40	40	G	G	G	G	G	J A 33	J A 26	J A 29	E 16	E 16	E 16	J A 18								
29		J A 20	J A 24	E 16	E 16	E 16	E 16	E 16	G	G	38	G	J A 50	47	28	G	24	G	18	18	J A 20	J 14	E 16	J A 27	J A 16								
30		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	33	J A 41	43	39	G	G	41	G	18	18	E 16	E 16	E 16	E 16	E 16	E 16	E 16							
31		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	J A 32	42	47	46	47	41	51	37	31	34	J A 35	J A 29	E 16	E 16	E 16	E 16	E 16							
CNT		30	30	30	30	30	30	30	30	30	27	23	24	25	26	24	23	24	25	28	29	30	30	30	30								
MED		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	32	40	40	40	43	36	38	38	36	J A 34	J A 32	J A 24	J A 22	J A 22	J A 20	J 16								
UQ		J A 22	J A 24	J A 20	J 16	E 16	E 16	E 16	26	34	J A 42	45	44	47	J A 43	44	44	41	J A 42	J A 40	J A 34	J A 26	J A 30	J A 27	J A 20								
LQ		E 16	E 16	E 16	E 16	E 16	E 16	E 16	G	G	34	E 16	28	G	G	G	G	E 16	E 16	J A 23	E 16	E 16	E 16	E 16	E 16	E 16							

OCT. 1982

FOES (0.1 MHz)

IONOSPHERIC DATA

OCT. 1982
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 25sec in automatic operation													
Hour Day	00	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	27	33	38	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	G 30	G 29	G 29	G 27	38	39	37	33	23	E	20	E	E
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	26	33	38	47	43	42	33	45	G	75	106	77	37	29	23	43	23
4	E	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	25	34	C	C	C	C	C	C	C	C	40	40	29	33	26	24	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	G	31	C	C	C	C	C	C	C	C	C	C	C	29	33	30	24
6	E	E	E	E S 16	E S 16	E S 16	E S 16	25	35	36	C	C	C	C	C	C	C	C	C	29	25	29	17	25
7	E	E	E	E	E S 16	E S 16	E S 16	25	33	37	C	C	C	C	C	C	C	C	22	E	22	E	E	22
8	24	25	24	23	27	19	E	24	60	67	71	C	53	53	C	C	C	C	45	40	E S 16	20	17	23
9	S	E S 16	E S 16	E S 16	S	E S 16	E S 16	22	30	34	C	39	43	47	C	C	C	C	36	29	E	E	E S 16	E S 16
10	E S 16	E S 16	E	E S 16	E S 16	E S 16	E S 16	G	G	38	41	41	C	G	41	C	41	29	22	21	E	25	24	18
11	E S 16	26	S	E	E S 16	E S 16	E S 16	G	G	C	C	C	41	39	38	40	32	45	39	27	E	33	21	E
12	E	E	E S 16	E	E	E S 16	E	G	G	33	38	21	G	40	37	35	36	29	42	21	S	E S 16	E S 16	E S 16
13	E S 16	E S 16	21	E	E	E S 16	E S 16	24	31	40	39	38	43	G	G 29	51	58	46	24	20	24	20	18	S
14	S	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	G	28	33	36	38	G	G	G	G	34	31	23	E S 16	S	E	18	E
15	20	30	21	E	E	E	E S 16	G	G	34	G	G 25	G 23	35	36	40	33	34	24	34	30	E	20	E S 16
16	19	21	19	E S 16	S	E S 16	E S 16	G	G	40	38	37	37	36	G 35	40	43	39	37	18	26	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 14	E S 16	E S 16	G	G	33	40	42	G 27	G 33	G 25	G	30	G	E	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	G	G	35	37	39	G	38	G	G	G	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
19	19	E	E	E	E S 16	E S 16	E S 16	G	G	40	39	37	39	38	36	36	35	33	22	E	20	32	23	E
20	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	23	31	G	48	47	42	G	G	G 22	G	G	E S 16	E S 16	E	26	21	27
21	21	E	E	E S 16	E S 15	E	E	23	32	36	36	39	G	G	40	G	G	40	40	E S 16	E	19	E S 16	E S 15
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	31	35	38	38	40	G	G	36	33	23	21	E S 16	E S 16	19	E	E
23	22	E	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	34	G	G	48	69	85	68	40	59	36	28	46	21	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	G	34	34	37	G	43	44	43	40	36	31	29	S	E	S	E	18
25	E S 16	E S 16	S	S	E S 16	E S 16	E S 16	G	G	G	G	G	41	42	42	42	41	34	38	27	18	E S 16	E S 16	E S 16
26	E	E	E	E S 16	E S 16	E S 16	E S 16	G	33	39	G	G	44	45	42	39	37	26	20	E S 16	E S 16	E S 16	E S 16	E S 16
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	G	G	43	G	42	41	37	27	32	26	26	E S 16	E S 16	S
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	G	39	40	G	G	G	G	G	30	20	E	E S 16	E S 16	E S 16	E
29	E	20	E S 16	E S 16	E S 16	E S 16	E S 16	G	G	38	G	46	45	G 28	G 29	G 24	G 18	G 18	E	S	E S 16	21	20	E S 16
30	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	32	39	42	39	G	G	41	G	18	18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
31	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	40	46	41	45	41	50	36	31	34	20	27	E S 16	E S 16	E S 16	E S 16
CNT	28	30	28	29	28	30	30	30	30	27	23	24	25	26	24	23	24	25	28	27	28	29	30	28
MED	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	G	30	36	38	38	41	34	36	36	34	31	24	21	16	19	16	16
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	23	33	38	40	40	43	41	42	40	40	39	38	28	26	23	20	18
LQ	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	G	G	34	E G 36	G 23	G 23	G	G	G	G	24	26	20	E S 16	E S 16	E S 16	E S 16

IONOSPHERIC DATA

OCT. 1982

F-MIN (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 25 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 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	20	21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	23	25	25	24	27	23	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
3	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	19	25	24	24	27	24	24	22	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
4	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	C	C	C	C	C	C	C	C	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
5	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	C	C	C	C	C	C	C	C	C	C	C	E 16	E 16	E 16	E 16	E 16
6	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	19	C	C	C	C	C	C	C	C	C	E 16	E 16	E 15	E 16	E 16	E 16
7	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	17	20	C	C	C	C	C	C	C	C	E 16	E 16	E 16	E 16	E 16	E 16	E 16
8	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	22	26	C	24	30	C	C	C	C	E 16	E 16	E 16	E 16	E 16	E 16	E 16
9	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	17	C	25	26	26	C	C	C	C	E 16	E 16	E 16	E 16	E 16	E 16	E 16
10	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	19	18	25	C	26	22	C	17	16	14	E 16	E 16	E 16	E 16	E 16	E 16
11	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	C	C	C	25	23	23	17	16	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
12	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	15	15	16	26	24	18	21	22	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
13	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	18	20	22	24	28	18	26	24	14	E 16	E 16	E 16	E 16	E 16	E 16	E 16
14	E 16	E 16	E 16	E 16	E 15	E 15	E 16	E 16	16	17	18	26	22	23	23	25	23	17	E 16	E 16	E 16	E 16	E 15	E 15	E 15
15	E 15	E 16	E 15	E 16	E 16	E 16	E 16	E 16	15	16	18	16	20	19	16	16	14	E 15	E 15	E 16	E 16	E 16	E 16	E 16	E 16
16	E 16	E 16	E 16	E 16	E 15	E 16	E 16	E 15	15	16	18	23	22	17	17	15	17	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
17	E 16	E 16	E 16	E 16	E 14	E 16	E 16	E 16	16	16	17	26	17	21	17	20	17	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
18	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	17	16	17	25	28	29	23	21	20	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
19	E 16	E 15	E 16	E 16	E 16	E 16	E 16	E 16	16	16	17	19	21	21	22	24	21	E 16	E 15	E 16	E 16	E 16	E 16	E 16	E 16
20	E 16	E 16	E 16	E 16	E 15	E 15	E 16	E 16	16	16	21	20	26	27	24	16	16	E 16	E 16	E 16	E 16	E 16	E 15	E 15	E 15
21	E 15	E 16	E 16	E 16	E 15	E 15	E 16	E 15	15	16	23	23	25	26	26	24	19	E 16	E 15	E 16	E 15	E 15	E 16	E 15	E 15
22	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	20	19	22	26	31	26	25	21	20	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
23	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	20	21	22	24	22	24	21	20	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
24	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 18	16	18	19	23	26	28	23	24	20	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
25	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	22	24	23	27	34	27	23	20	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
26	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	24	24	23	24	26	27	22	24	21	E 20	E 16	E 16	E 16	E 16	E 16	E 16	E 16
27	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	20	22	26	28	27	29	28	26	23	20	E 16	E 16	E 16	E 16	E 16	E 16	E 16
28	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	15	16	21	25	26	26	24	23	20	20	E 16	E 16	E 16	E 16	E 16	E 16	E 16
29	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	20	23	25	27	26	24	20	16	14	E 16	E 16	E 16	E 16	E 16	E 16	E 16
30	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	22	23	24	27	25	25	21	14	15	E 16	E 16	E 16	E 16	E 16	E 16	E 16
31	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	21	23	22	22	23	22	20	16	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
	00	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	27	23	24	25	26	24	23	24	25	28	29	30	30	30	30	30
MED	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	19	21	24	25	26	23	21	20	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
UQ	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	20	23	25	26	27	24	24	22	16	E 16	E 16	E 16	E 16	E 16	E 16	E 16
LQ	E 16	E 16	E 16	E 16	E 16	E 16	E 16	E 16	16	16	18	22	24	23	22	20	16	14	E 16	E 16	E 16	E 16	E 16	E 16	E 16

OCT. 1982

F-MIN (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1982
M(3000)F2 (0.01)
135° E Mean Time (G.M.T. + 9 h)

Station	OKINAWA																							Lat. 26 16.9 N	Long. 127 48.4 E	Sweep 1	MHz to 25	MHz in 25sec in	automatic operation
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	285	U S 295	U S 330	315	260	240	255	325	315	295	C	C	C	C	C	C	C	C	C	C	C	C	C						
2	C	C	C	C	C	C	C	C	C	C	C	285	270	270	275	280	280	285	290	295	265	265	J S 285	J S 295					
3	300	310	310	320	285	245	250	310	325	295	290	285	275	280	280	275	280	290	300	285	275	265	270	280					
4	280	S 285	U S 280	305	305	305	285	320	R 340	C	C	C	C	C	C	C	C	U R 280	U R 290	S 290	F	F	F	F					
5	U S 295	310	300	300	285	255	280	320	335	C	C	C	C	C	C	C	C	C	C	C	290	265	S 265	280					
6	J S 310	320	300	300	310	260	280	U S 335	325	295	C	C	C	C	C	C	C	C	C	290	F	F	S 270	290					
7	305	310	275	290	290	300	280	320	350	310	C	C	C	C	C	C	C	C	C	285	275	J S 285	270	S 290					
8	275	310	U S 300	275	260	260	260	290	340	320	305	C	295	280	C	C	C	C	R 300	U S 295	J S 295	J S 275	U S 295	S 290					
9	320	U S 245	250	255	280	265	285	325	325	310	C	300	R 290	275	C	C	C	C	C	305	305	295	275	S 295	300				
10	295	325	285	320	330	310	300	335	340	325	305	310	C	285	320	C	290	305	305	295	290	S 300	285	S 270					
11	280	275	S 285	305	285	300	280	280	335	C	C	C	280	R 270	285	270	270	R 290	300	295	S 280	285	285	280					
12	S 285	305	300	335	300	320	275	325	305	335	355	285	290	290	295	295	320	300	300	285	295	290	310	320					
13	320	310	285	310	280	355	H 275	295	320	325	285	290	265	290	295	295	290	300	305	290	285	S 290	290	285					
14	320	300	270	295	250	270	265	320	320	295	295	275	280	280	270	275	280	285	295	280	280	275	300	290					
15	305	315	285	310	H 240	260	275	320	320	295	295	295	285	280	280	295	300	300	310	290	300	S 305	280	290					
16	305	300	305	325	325	250	265	320	340	295	280	290	280	U R 270	J R 275	R 255	300	310	S 295	F	F	F	F	J S 310					
17	290	295	265	265	285	270	305	320	320	300	310	295	275	270	275	275	275	285	290	290	290	S 290	S 280	S 270					
18	S 305	S 285	S 305	315	355	325	255	295	310	285	300	310	265	265	275	275	280	260	290	295	295	330	320	S 320					
19	U S 280	260	255	290	270	290	J S 300	315	320	320	305	280	270	U R 275	265	270	280	295	285	300	300	300	295	290					
20	305	290	S 260	290	285	275	275	335	340	310	295	295	280	275	280	275	280	290	295	285	U S 280	S 265	S 300	S 280					
21	265	270	285	310	315	250	290	340	325	320	315	305	280	270	285	285	290	300	290	300	285	S 290	315	300					
22	S 280	285	295	320	H 270	275	275	280	335	305	295	295	270	275	270	280	280	280	280	285	285	285	300	U S 290					
23	300	290	S 275	320	340	315	265	325	350	320	300	300	285	280	290	280	295	290	305	285	U S 270	U S 285	U S 275	U S 280					
24	U S 255	U S 275	275	S 300	270	285	285	325	315	310	310	295	275	275	280	285	R 280	285	295	285	280	S	S	S					
25	J S 305	S	J S 250	290	F	285	265	310	310	300	310	290	270	275	275	275	R 275	290	S 285	280	280	S 285	J S 275	U S 275					
26	280	U S 270	S 260	U S 240	255	270	265	295	305	300	305	295	280	275	275	280	270	280	U S 290	280	S 250	S 275	S 280	S 250					
27	S 255	310	315	330	310	260	300	325	325	305	300	300	285	280	285	285	290	280	285	285	U S 260	U S 285	S 290	U S 270					
28	270	305	275	S 315	345	265	295	315	325	305	300	295	290	280	285	280	280	290	285	270	S	S	S 290	295					
29	300	F	U S 315	355	310	S 265	265	315	320	310	305	300	290	275	275	270	275	275	280	270	S 270	285	290	255					
30	U S 250	S 275	265	250	260	265	275	295	305	305	305	290	275	285	275	285	285	290	285	275	S 280	U S 295	S 280	U S 240					
31	255	275	285	245	250	230	255	280	295	305	305	270	265	350	280	290	290	295	330	280	U S 290	J S 305	290	295					
CNT	30	28	30	30	29	30	30	30	30	30	27	23	24	25	26	24	23	24	25	28	28	26	25	27	28				
MED	292	295	285	305	285	270	275	320	325	305	305	295	280	275	280	280	280	290	292	285	285	S 285	290	S 290					
UQ	305	310	300	320	310	300	285	325	335	315	305	300	285	280	285	285	290	295	300	295	290	S 290	295	295					
LQ	280	275	270	290	270	260	265	295	315	298	295	288	270	275	275	275	280	285	285	280	280	S 275	S 280	S 278					

IONOSPHERIC DATA

OCT. 1982

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

OCT. 1982

M(3000)F1 (0.01)

IONOSPHERIC DATA

OCT. 1982

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 25 sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										260	c	c	c	c	c	c	c	c	c					
2								c	c	c	c	250	330	345	330	300	290 ^L							
3											260	290	340	315	300	300	275 ^{E A}	320						
4										c	c	c	c	c	c	c	c							
5										c	c	c	c	c	c	c	c	c	c					
6											c	c	c	c	c	c	c	c	c					
7											c	c	c	c	c	c	c	c						
8												c	335	325	c	c	c	c						
9										c	290	310	330	c	c	c	c							
10											255	c	290	275	c	280								
11										c	c	c	310	335	295	300								
12												280	290	310	300	275								
13											250	270	335	285	285									
14											255	320	275	305	315	300	270							
15											285	250	260	300	300	270								
16											330	270	310	330	310	275								
17											255	275	340	325	270	250								
18										280	270	265	340	360	325	290	275							
19										250	260	315	325	320	300	300								
20											265	315	315	300	300	290								
21											255	260	315	320	275	270								
22											280	300	320	315	320	290								
23											280	280	300	325	305	285								
24											255	280	310	340	305	285	285							
25											265	300	345	330	305	300	295							
26											255	255	320	330	275	305	295	300						
27												280	305	300	295	290	280							
28											285	300	310	300	300	290								
29											280	280	310	300	295	280								
30												310	290	295	280	270								
31											275	260	300	325	305	295	270							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										3	15	23	25	26	24	22	14	2						
MED										260	260	280	310	320	300	292	280	305						
UQ										270	278	288	330	330	305	300	290							
LQ										255	255	262	300	310	295	280	275							

OCT. 1982

H^oF2 (KM)

IONOSPHERIC DATA

OCT. 1982

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 25sec in automatic operation																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	260	245	220	225	275	335	340	240	225	H 220	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	C	C	C	C	C	C	C	215	H 200	H 210	H 210	235	235	240	A 250	240	230	300	290	265
3	260	240	255	195	230	320	355	240	240	H 225	A 230	H 210	215	H 195	H 240	230	A	A	E 275	A 260	250	240	265	255	
4	250	245	240	230	215	230	280	250	240	C	C	C	C	C	C	C	C	A 250	260	255	255	250	280	270	
5	250	250	235	210	205	235	300	240	225	C	C	C	C	C	C	C	C	C	C	C	235	270	290	300	
6	275	240	215	220	235	300	285	225	220	235	C	C	C	C	C	C	C	C	C	C	280	250	235	275	300
7	250	240	250	230	200	255	350	255	230	220	C	C	C	C	C	C	C	C	C	240	245	245	225	280	285
8	250	245	265	330	A 335	310	290	250	245	A 260	A 250	C	A 260	E 260	C	C	C	C	C	250	255	225	250	245	225
9	215	240	350	335	300	285	270	235	240	230	C	H 225	H 220	A 245	C	C	C	C	C	240	245	230	230	245	250
10	240	230	245	235	215	230	250	240	230	225	220	230	C	H 195	E 250	C	A 250	250	240	235	245	250	250	250	250
11	270	270	270	255	250	250	255	225	220	H 220	C	C	C	H 195	H 205	230	A 230	H 230	260	250	245	230	245	245	245
12	265	260	235	220	210	245	250	235	235	230	215	200	200	210	220	230	235	H 235	235	240	240	250	245	235	240
13	240	220	280	275	230	180	S 250	230	220	H 240	220	200	240	220	230	265	250	245	245	245	240	245	250	255	255
14	250	260	260	235	315	290	315	250	240	230	220	220	215	200	H 220	H 225	245	245	250	235	220	260	250	250	250
15	260	245	A 255	255	H 295	320	285	245	230	H 220	H 225	215	200	H 210	H 190	245	240	240	230	A 255	250	230	240	240	240
16	230	240	255	235	205	280	300	240	230	A 225	H 215	210	195	H 230	H 215	250	245	225	225	225	240	240	260	250	250
17	245	230	265	290	240	235	235	235	230	H 230	230	230	225	205	200	210	220	H 240	235	235	230	225	235	235	255
18	240	215	225	230	200	245	320	245	235	220	215	H 215	H 220	H 210	H 215	235	230	235	225	220	215	220	230	260	260
19	270	275	295	240	225	225	255	245	240	H 235	A 235	215	200	200	210	200	240	H 240	230	240	235	215	235	235	240
20	235	235	260	250	215	300	300	225	225	H 235	E 240	E 240	210	195	H 205	H 215	H 220	H 240	230	205	215	A 240	230	245	245
21	255	240	240	H 230	225	295	285	240	230	H 225	215	215	H 215	H 210	200	240	240	225	240	230	240	230	230	220	220
22	245	255	250	255	220	295	285	245	240	230	215	H 230	225	215	220	220	H 240	235	235	250	275	240	220	240	240
23	250	245	245	230	220	245	280	240	235	H 230	220	220	A 250	A	A	A	A 250	E 270	A 240	225	A 255	235	235	245	245
24	250	240	265	260	250	250	280	245	230	H 235	230	220	H 210	H 210	E 245	A 245	230	250	240	250	255	220	215	230	230
25	230	225	255	260	240	245	280	245	225	H 215	H 235	225	H 200	230	235	240	240	250	250	250	255	240	220	245	245
26	260	275	250	255	280	270	290	250	245	H 245	230	215	230	235	235	240	240	260	250	230	215	240	230	270	270
27	285	240	225	225	230	305	255	230	235	H 230	H 225	220	225	H 225	240	245	245	250	250	260	255	230	225	225	225
28	245	250	240	230	200	270	290	250	235	225	235	220	240	H 210	H 230	H 230	H 240	250	250	255	270	220	215	250	250
29	240	235	215	200	220	250	305	260	245	230	H 225	A 235	225	H 225	225	H 230	H 240	H 245	H 230	280	270	260	230	275	275
30	300	280	250	245	265	295	255	250	245	H 240	H 240	H 225	H 225	H 225	240	235	H 230	H 240	250	260	230	225	235	240	240
31	280	260	225	275	335	375	350	250	230	240	240	235	225	225	250	H 220	H 210	250	220	225	230	225	220	240	240
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	23
CNT	30	30	30	30	30	30	30	30	30	27	23	24	25	25	23	22	23	24	28	29	30	30	30	30	30
MED	250	242	250	235	230	270	285	242	232	230	225	H 220	H 215	H 210	222	235	240	244	240	245	240	240	235	250	250
UQ	260	255	260	255	265	300	300	250	240	235	231	225	225	225	235	245	242	250	250	255	255	245	250	260	260
LQ	240	240	235	230	215	245	255	235	230	225	218	H 215	H 200	H 210	H 212	230	232	235	235	230	230	230	230	240	240

OCT. 1982

H*F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

OCT. 1982

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 25 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S 120	110	110	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	A 110	A 110	A 110	A 110	110	110	110	S					
3								120	H 105	E A 120	E A 125	A 110	H 105	A 115	105	110	110	110	A					
4								115	A 115	C	C	C	C	C	C	C	C	E A 130	A					
5								E S 125	H 110	C	C	C	C	C	C	C	C	C	C					
6								E S 120	105	100	C	C	C	C	C	C	C	C	C					
7								E S 125	110	110	C	C	C	C	C	C	C	C	C	A				
8								S 130	115	115	115	C	110	115	C	C	C	C	S					
9								S 130	115	115	C	110	110	110	C	C	C	C	A					
10								S 130	115	115	110	110	C	H 110	110	C	115	A	A					
11								H 120	H 110	C	C	C	115	110	110	A	A	A	S					
12								E S 135	H 115	A	A	120	120	H 120	A	A	A	A	E A 125	S				
13								125	115	110	110	110	A	H 110	120	120	125	120	S					
14								E S 130	A	A	105	105	110	105	110	115	115	120	S					
15								E S 130	110	105	110	H 110	A 110	E A 135	A	A	A	A						
16								E S 125	110	105	H 105	105	A	A	A	115	115	115						
17								120	110	105	H 105	110	A 110	E A 125	A 115	115	110	115						
18								125	H 115	110	110	110	H 120	115	H 115	115	120	120						
19								E S 125	110	105	105	110	115	110	115	115	115	120						
20								E S 135	110	105	110	H 110	E B 120	B 115	B 115	A 115	B 115	E S 120						
21								E S 125	110	H 105	110	115	H 115	115	115	H 110	H 105	120	S					
22								S 125	115	115	110	115	B 120	115	115	115	115	115						
23								S 130	115	110	H 110	110	E A 120	E A 125	115	115	115	115						
24								E S 140	115	110	110	115	115	115	115	115	115	115						
25								E S 135	115	H 110	H 110	H 110	115	B 120	115	115	115	A						
26								E S 140	125	H 115	110	110	115	115	115	115	115	125	S					
27								S 135	120	H 115	115	115	115	115	115	115	115	115						
28								E S 135	H 110	H 110	H 110	H 110	110	110	110	115	115	125	B					
29								S 130	110	H 110	H 110	E A 120	A 120	A 120	A 120	A 115	A 125	E A 125						
30								E S 130	115	110	110	115	115	115	110	110	A 120	A 125						
31								S 135	120	115	115	110	110	A	115	115	120	E A 130						
CNT								30	29	25	22	24	23	23	21	20	21	21						
MED								S 122	115	110	110	110	115	115	115	115	115	118						
UQ								E S 135	115	115	110	114	116	115	115	115	115	122	A					
LQ								S 120	110	105	H 110	110	110	110	110	115	115	115						

OCT. 1982

H^oE (KM)

IONOSPHERIC DATA

OCT. 1982

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 25 sec in automatic operation																						
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	S	S	S	S	135	125	120	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	100	100	100	100	E G 185	125	115	110	105	100	100	95	95
3	S	S	S	S	S	S	S	140	130	115	115	115	150	105	155	145	125	110	110	105	100	100	100	100
4	105	S	S	S	S	S	S	130	120	C	C	C	C	C	C	C	C	125	115	110	100	100	95	S
5	S	S	S	S	S	S	S	G	145	C	C	C	C	C	C	C	C	C	C	C	105	100	95	95
6	100	95	100	S	S	S	S	140	120	115	C	C	C	C	C	C	C	C	C	105	105	100	100	100
7	105	105	100	95	95	S	S	140	140	140	C	C	C	C	C	C	C	C	100	100	105	105	105	100
8	100	100	100	100	100	100	100	125	120	115	115	C	120	120	C	C	C	C	110	110	S	100	100	100
9	S	S	S	S	S	S	S	125	115	115	C	115	115	115	C	C	C	C	110	105	100	100	S	S
10	S	S	105	S	S	S	S	G	G	115	115	120	C	G	110	C	110	110	110	110	105	100	100	100
11	S	100	S	100	S	S	S	G	G	C	C	C	110	110	105	110	115	115	110	110	110	100	100	100
12	100	100	S	100	100	S	100	G	G	120	100	100	G	115	110	105	145	130	100	95	S	S	S	S
13	S	S	95	95	95	S	S	125	120	110	115	110	100	G	100	120	120	115	100	100	105	100	100	S
14	S	S	S	S	S	S	S	G	110	105	135	140	G	G	G	G	135	120	115	S	S	100	100	100
15	95	95	95	95	100	100	S	G	G	150	G	105	100	100	100	95	150	95	115	105	105	105	105	S
16	105	100	100	S	S	S	S	G	110	115	115	110	100	95	100	170	130	115	110	110	100	S	S	S
17	S	S	S	S	S	S	S	G	G	150	115	110	100	100	100	G	115	G	100	S	S	S	S	S
18	S	S	S	S	S	S	S	G	G	130	125	140	G	120	G	G	G	G	S	S	S	S	S	S
19	105	100	100	100	S	S	S	G	G	110	110	120	120	120	120	120	150	125	120	115	105	100	100	100
20	S	S	S	S	S	S	S	140	140	115	115	115	130	G	G	100	G	G	S	S	105	100	100	100
21	95	100	100	S	S	110	100	140	125	120	120	120	135	G	110	G	G	135	115	S	100	95	S	S
22	S	S	S	S	S	S	S	G	115	115	115	115	115	G	G	115	115	115	105	S	S	100	100	100
23	100	100	S	S	S	S	S	G	G	125	G	G	130	120	115	115	115	115	110	110	110	100	S	S
24	S	S	S	S	S	S	S	G	120	120	110	G	125	115	115	115	115	115	110	S	110	S	100	100
25	S	S	S	S	S	S	S	G	G	G	G	G	125	135	125	120	110	110	110	110	105	S	S	S
26	100	100	100	S	S	S	S	G	145	130	G	G	120	115	115	115	115	115	100	S	S	S	S	S
27	S	S	S	S	S	S	S	G	G	G	G	G	135	G	135	115	115	115	110	105	100	S	S	S
28	S	S	S	S	S	S	S	G	G	G	130	135	G	G	G	G	G	115	115	110	S	S	S	100
29	100	100	S	S	S	S	S	G	G	145	G	135	130	105	100	100	100	100	100	S	S	105	100	S
30	S	S	S	S	S	S	S	G	125	120	120	125	G	G	115	G	100	100	S	S	S	S	S	S
31	S	S	S	S	S	S	S	G	100	130	125	115	125	140	120	125	150	120	115	110	S	S	S	S
CNT	12	12	10	7	5	3	3	10	18	24	17	19	20	17	19	17	20	22	25	19	19	19	17	14
MED	100	100	100	100	100	100	100	138	120	120	115	115	120	115	110	115	115	115	110	110	105	100	100	100
UQ	105	100	100	100	100	105	100	140	130	130	120	122	130	120	118	120	132	120	115	110	105	100	100	100
LQ	100	100	100	95	95	100	100	125	115	115	115	110	105	105	100	110	115	110	105	105	100	100	100	100

OCT. 1982

H°ES (KM)

IONOSPHERIC DATA

OCT. 1982

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 25 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							C1	C2	H2																
2											L1	L1	L1	L1	H1	H2	C5	CL61	FF41	F3	F1	F1	F1	F1	
3							C1	C3	CL22	CL22	CL12	H1	L1	H1	H1	H3	C6	L6	F5	F6	F3	F5	F2		
4	F1						C1	CL21									CL42	CL33	FF34	F3	F2	F3			
5								H1												F3	F2	F3	F3		
6	F1	F1	F1				H1	H2	C1										F3	F3	F7	F2	F5		
7	F1	F1	F1	F1	F1		H2	H1	H1									L2	F1	F3	F1	F2	F1		
8	F3	F2	F2	F1	F2	F2	F1	C2	C3	C4	C4		H2	H2				L5	F4		F2	F1	F2		
9	F1				F1			C1	C2	C1		C1	C2	C2				L7	F7	F3	F1				
10			F1							C2	C2	C2			C3		C3	L2	L3	F3	F2	F4	F6	F2	
11		F4	F1	F2									C1	C1	C2	L3	CL22	CL42	CL61	FF43	FF11	F5	F3	F2	
12	F1	F2		F1	F1	F1			CL11	L1	L1		L1	L1	L1	HL32	HL21	L5	F7	F1					
13			F4	F2	F1			C1	C3	C3	C1	C2	L2	L1	H2		C5	CL41	CL21	FF31	F7	F5	F4	F1	
14	F1								L1	LS1	H1	H1					H1	H3	C2		F1	F1	F2	F1	
15	F4	F8	F4	F2	F1	F1				H1		L1	L1	L2	L2	L5	HL13	L4	FF16	FF61	F5	F2	F2		
16	F2	F3	F5		F1				C1	C3	C2	C1	L2	L2	L1	HL21	H3	H3	F3	F2	F2				
17										H1	C2	C2	L1	L2	L1		C1		F1						
18										H1	H1	H1			C1										
19	F1	F1	F1	F1						C3	C2	C1	C1	C1	C1	C1	H2	H3	F3	F1	F3	F6	F4	F2	
20								H2	H2	C1	C3	C2	C1			L1					F1	F3	F3	F4	
21	F4	F2	F1		F1	F1	H2	H2	C2	C1	C1	C1			C3			H6	F7		F2	F2			
22									C2	C2	C2	C1	C1			C1	C2	C1	F3			F2	F1	F1	
23	F2	F1								C1			HL21	HL31	C5	C4	C3	C6	F4	F4	F5	F5			
24									C3	C2	C1		C1	C2	C2	C2	C3	C2	F4	F1	F1	F1	F1	F2	
25			F1	F1									C1	H1	C1	C2	C3	CL42	F6	F4	F2				
26	F1	F1	F1						H1	H2			C1	C2	C2	C3	C2	C2	F1						
27													H1		H1	C2	C2	C2	F5	F4	F5			F1	
28										H1	H1							C2	F4	F3				F2	
29	F2	F2								H2		HL21	HL11	L1	L1	L1	L1	L2	F1	F1		F3	F3		
30									H2	C2	C2	C1			C2		L1	L1							
31									L1	H2	H3	C1	H2	HL12	HL21	HL11	HL11	CL31	FF11	F3					
CNT																									
MED																									
UQ																									
LQ																									

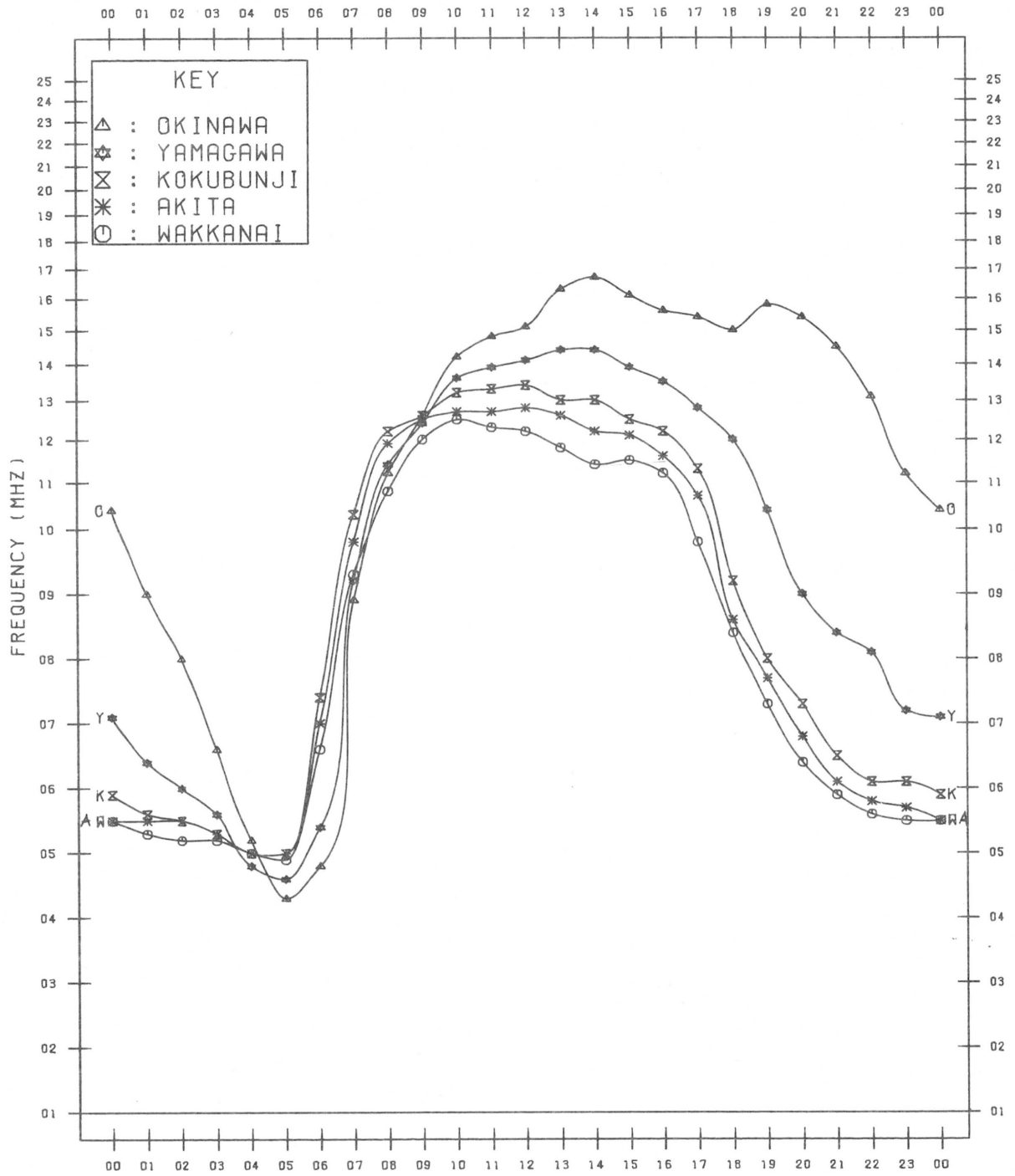
OCT. 1982

TYPES OF ES

MONTHLY MEDIAN VALUES OF FOF2

135 °E MEAN TIME

OCT. 1982



f-PLOTS OF IONOSPHERIC DATA

KEY OF F-PLOT	
I	SPREAD
◇	FOF2, FOF1, F0E
×	FXF2
*	DOUBTFUL FOF2, FOF1, F0E
⊗	FBES
L	ESTIMATED FOF1
*.Y	FMIN
^	GREATER THAN
∨	LESS THAN

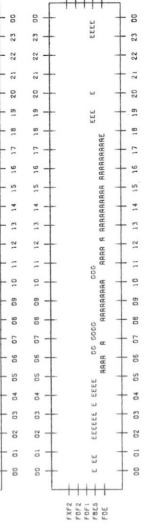
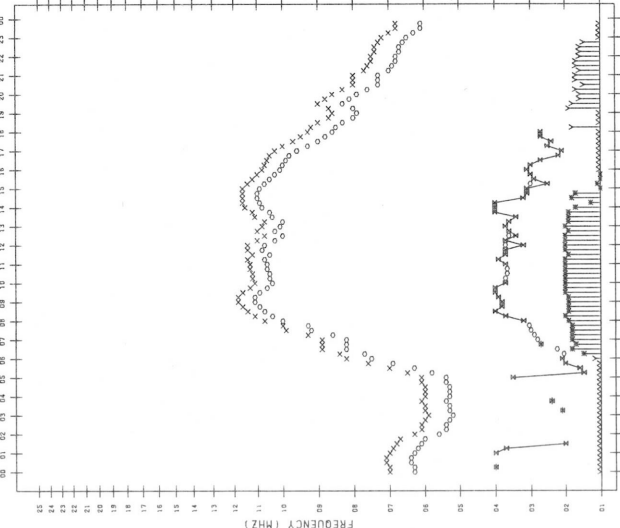
F- PLOT DATA

STATION : MARKKINAI

SCALER : T.ODA

DATE : 1982/10/ 1

135°E MEAN TIME



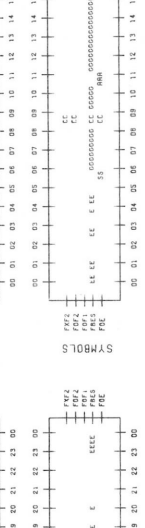
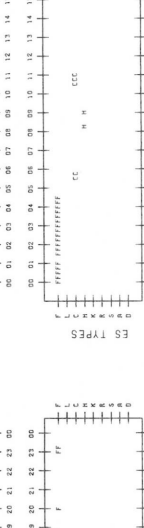
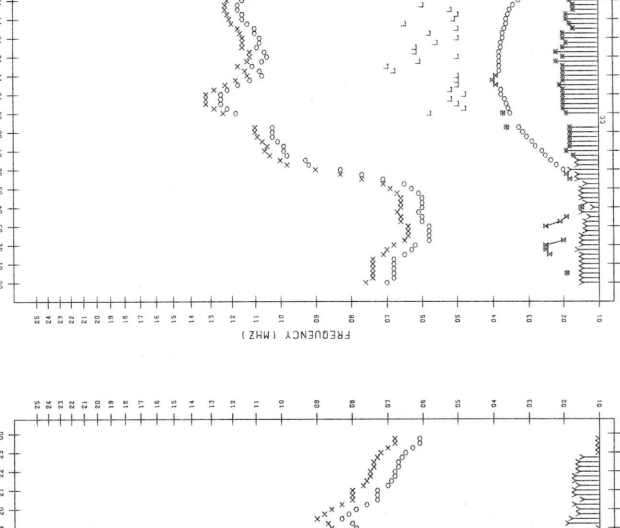
F- PLOT DATA

STATION : AKITA

SCALER : T.ECHIZENYA

DATE : 1982/10/ 1

135°E MEAN TIME



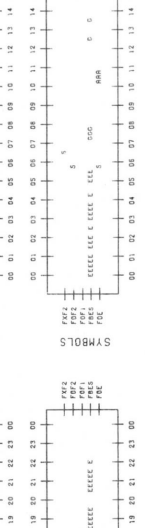
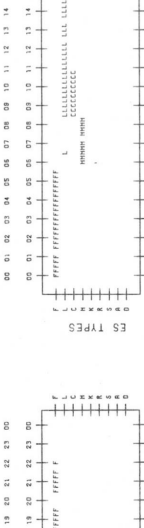
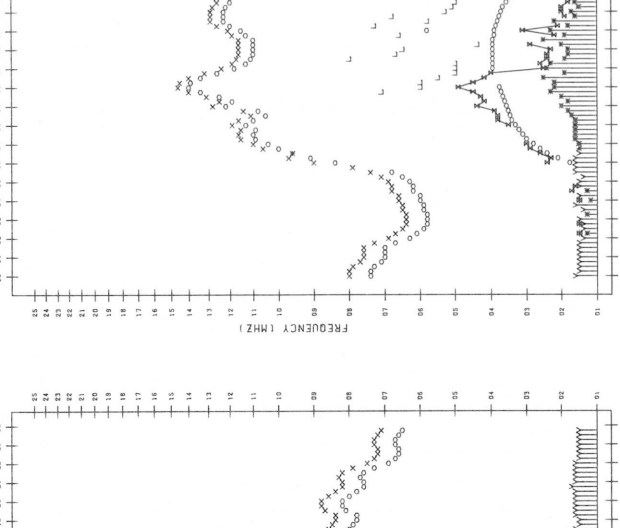
F- PLOT DATA

STATION : KOKUBUNJI TOKYO

SCALER : S.HIIDOME

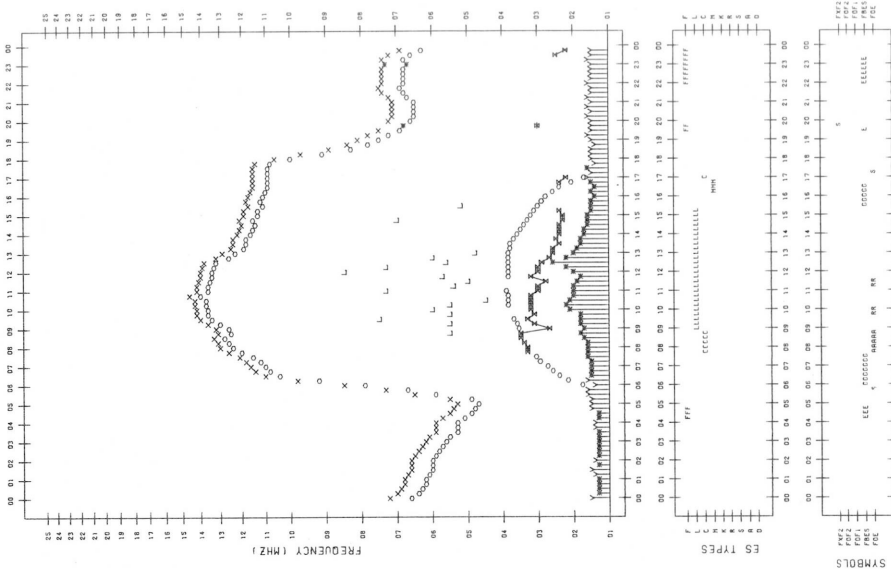
DATE : 1982/10/ 1

135°E MEAN TIME



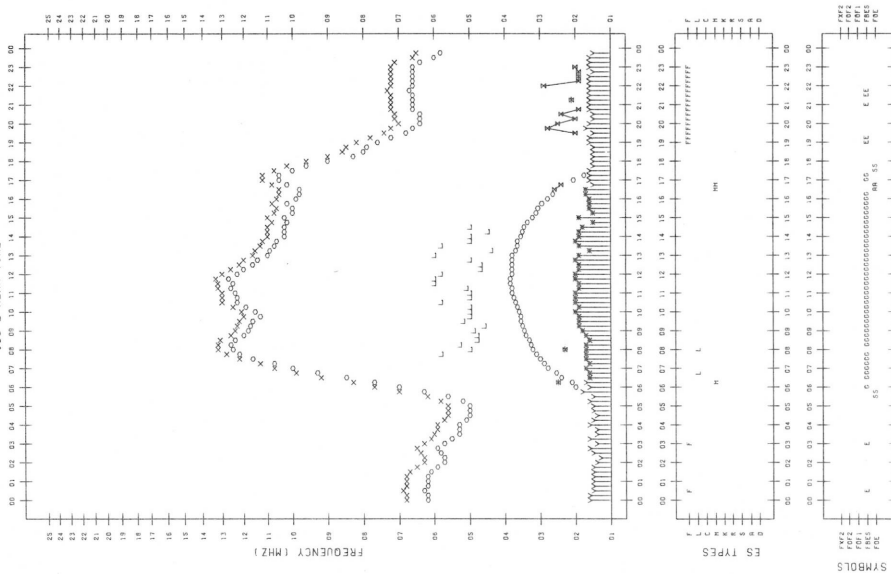
F- PLOT DATA

STATION : KOKUBUNJI TOKYO SCALER : S-HIUDONE
DATE : 1982/10/ 2
135°E MEAN TIME



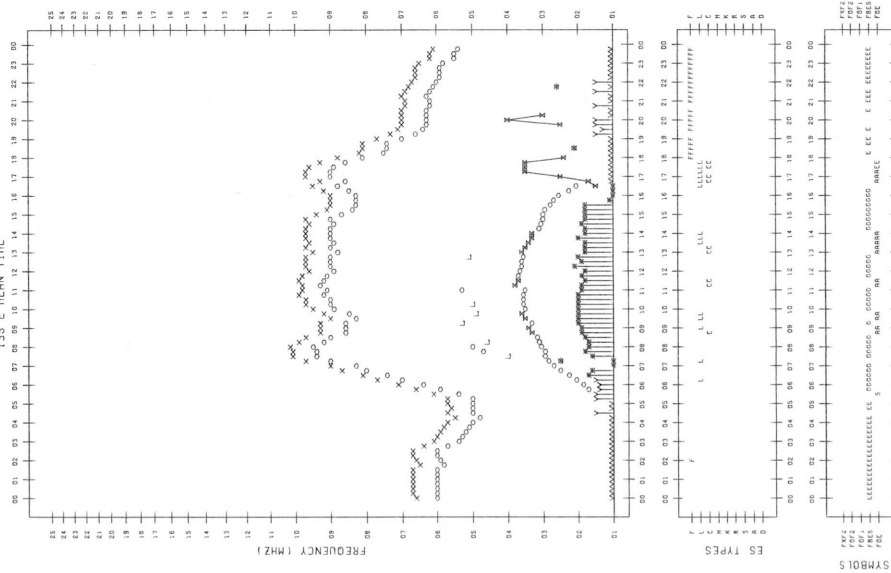
F- PLOT DATA

STATION : AKITA SCALER : Y-ECHIZENYA
DATE : 1982/10/ 2
135°E MEAN TIME



F- PLOT DATA

STATION : WAKKANAI SCALER : T-ODA
DATE : 1982/10/ 2
135°E MEAN TIME

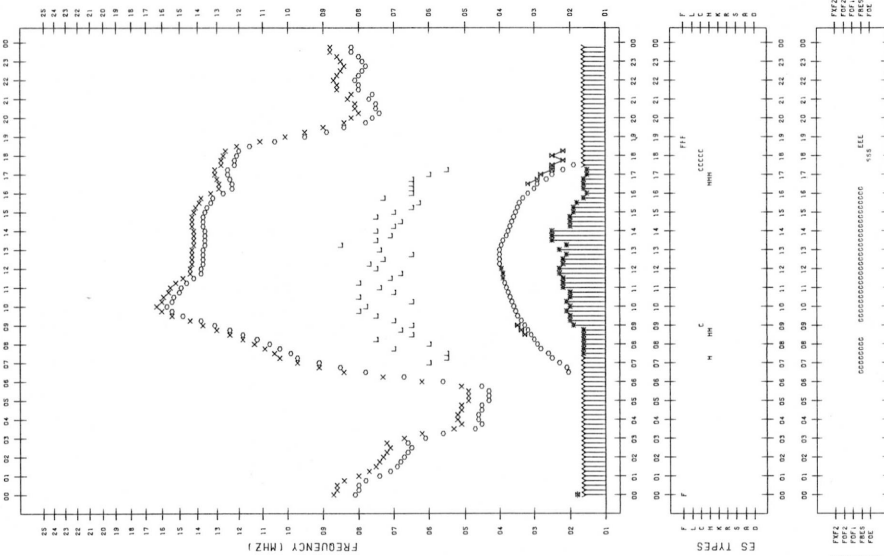


F-plot DATA

STATION : YAMAGAMA SCALER : S.KRISHIKIRYO

DATE : 1982/10/ 2

135°E MEAN TIME

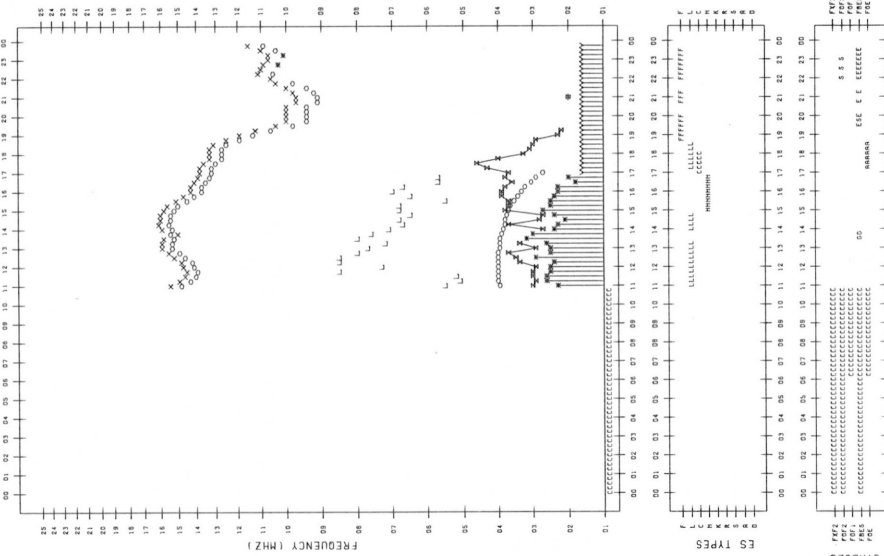


F-plot DATA

STATION : OKINAWA SCALER : H.MENO

DATE : 1982/10/ 2

135°E MEAN TIME



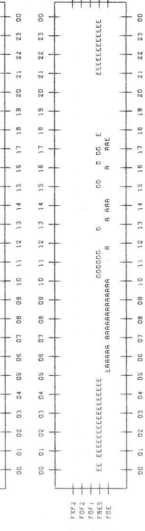
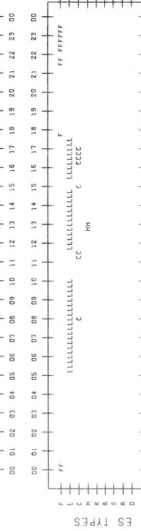
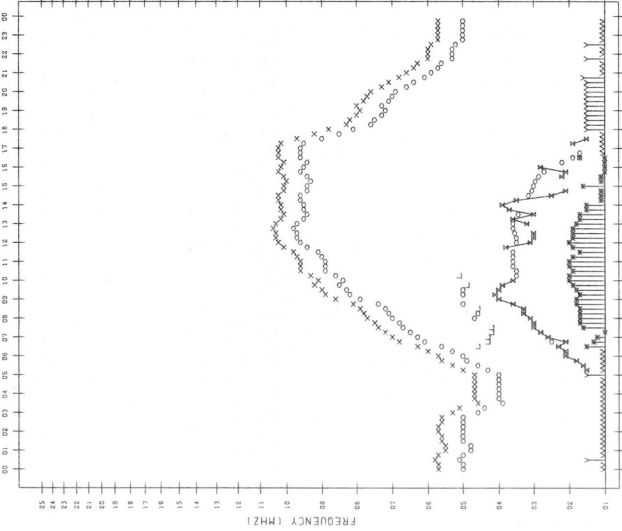
F-PLOT DATA

STATION : MARKKANI

SCALER : T.00A

DATE : 1982/10/ 3

135°E MEAN TIME



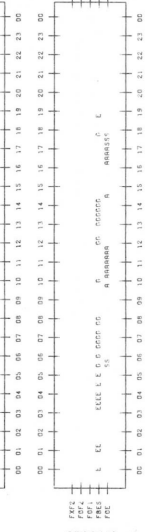
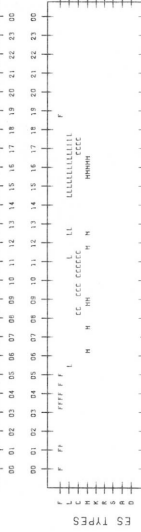
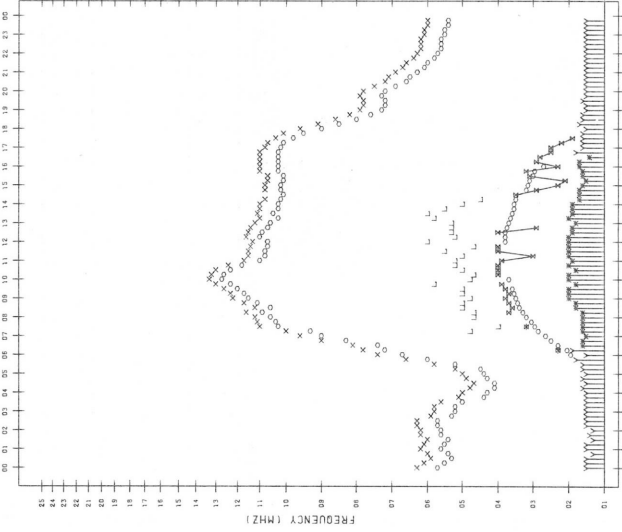
F-PLOT DATA

STATION : AKITA

SCALER : Y.ECHIZENNA

DATE : 1982/10/ 3

135°E MEAN TIME



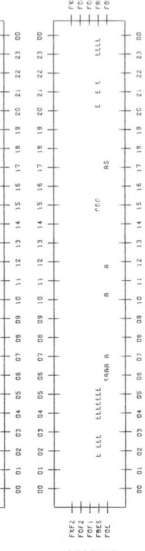
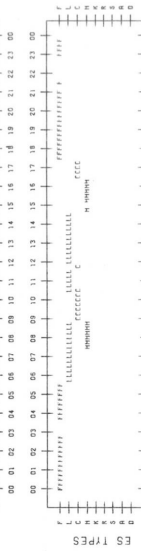
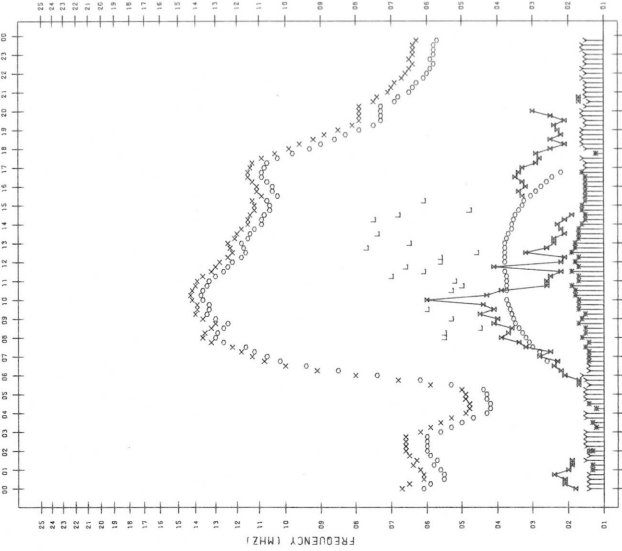
F-PLOT DATA

STATION : KOKUBUNJI TOKYO

SCALER : S.HIDOME

DATE : 1982/10/ 3

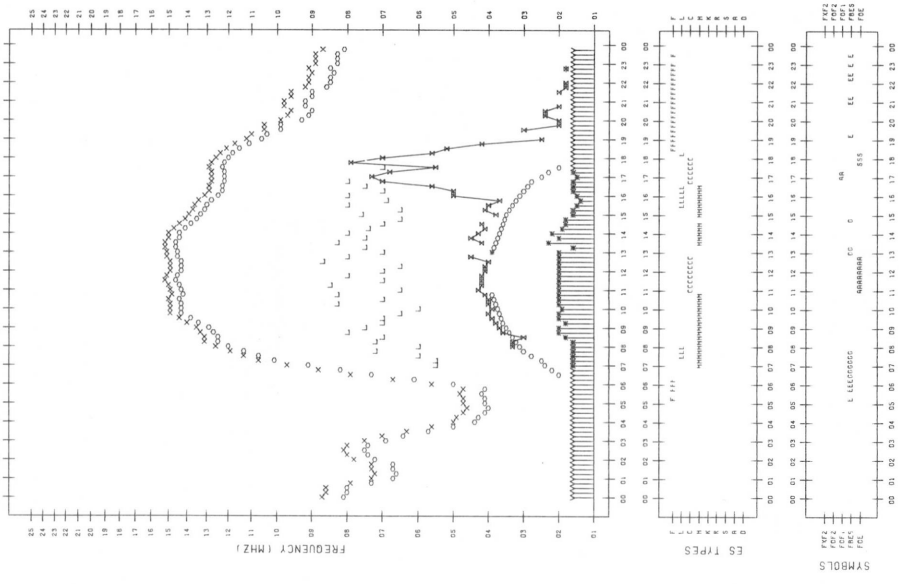
135°E MEAN TIME



F- PLOT DATA

STATION : YAMAGAWA SCALER : S-KANISHIKIYO DATE : 1982/10/3

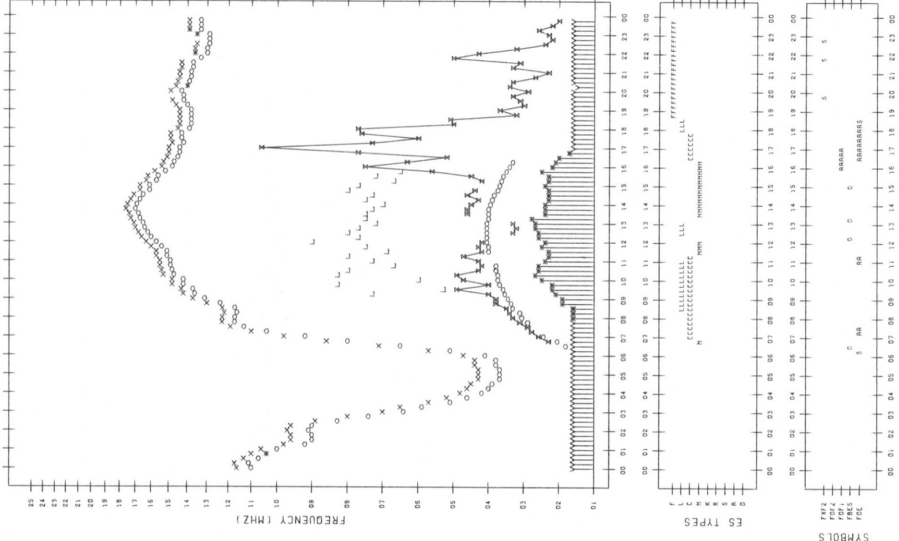
135°E MEAN TIME



F- PLOT DATA

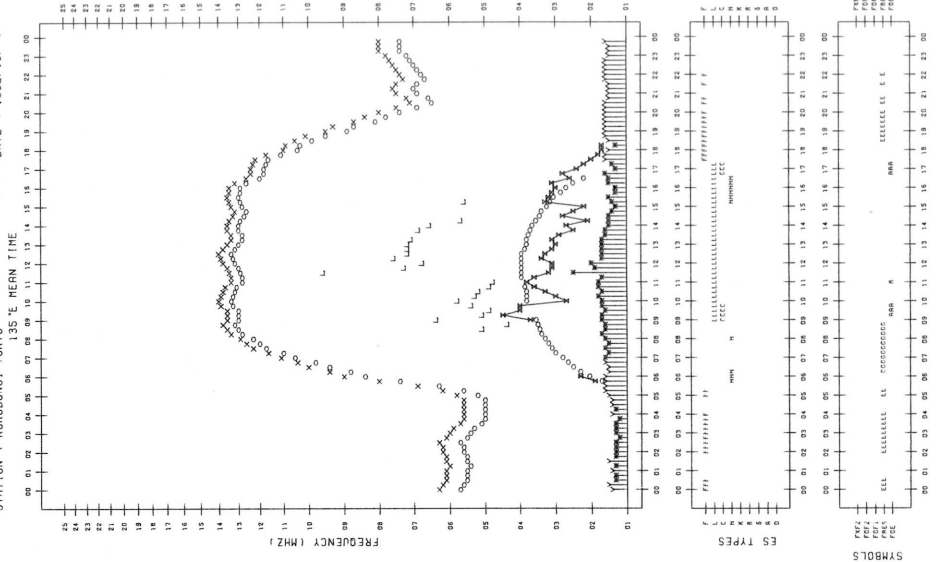
STATION : OKINAWA SCALER : H-MRENO DATE : 1982/10/3

135°E MEAN TIME



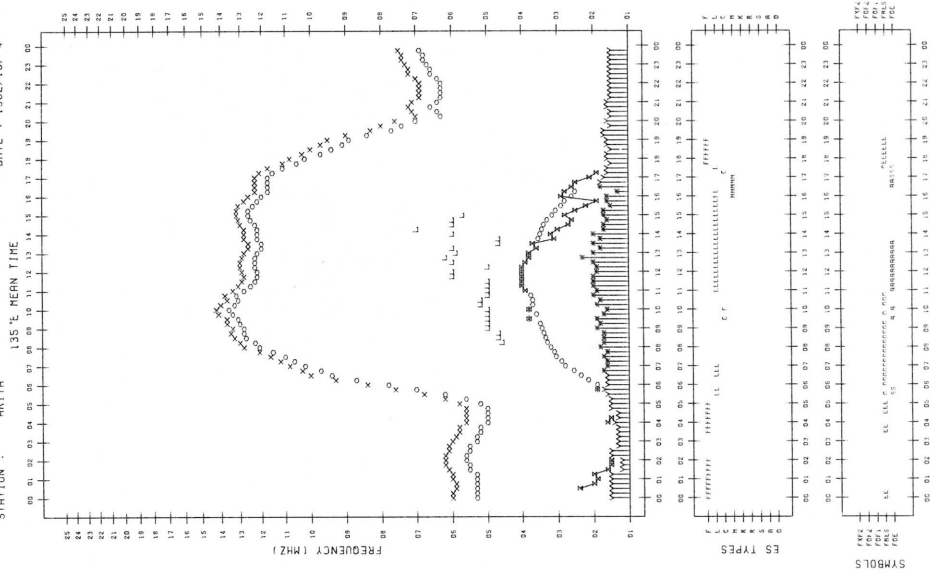
F- PLOT DATA

STATION : KOKUBUNJI TOKYO SCALER : S-HI1000E DATE : 1982/10/ 4



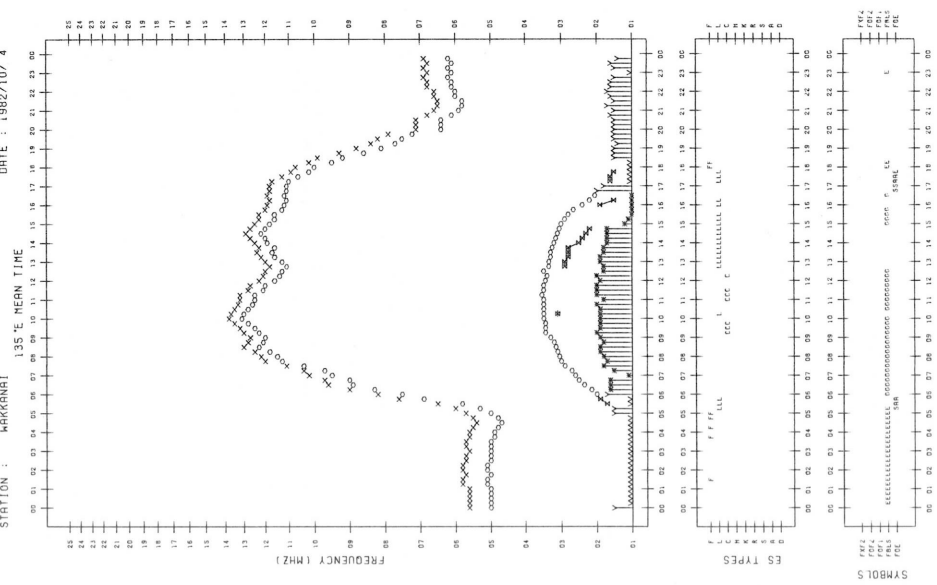
F- PLOT DATA

STATION : AKITA SCALER : Y-ECHIZENYA DATE : 1982/10/ 4



F- PLOT DATA

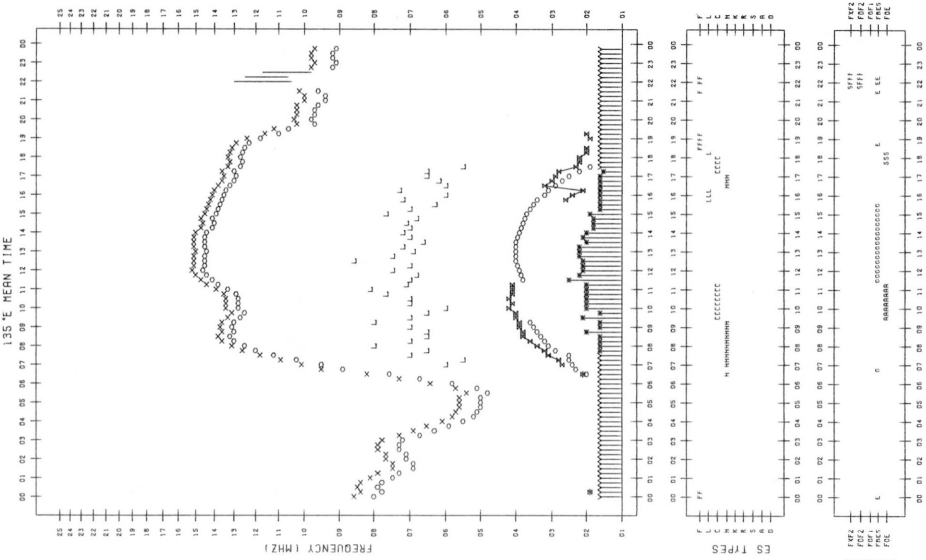
STATION : WAKKANAI SCALER : T-ODA DATE : 1982/10/ 4



F-PLOT DATA

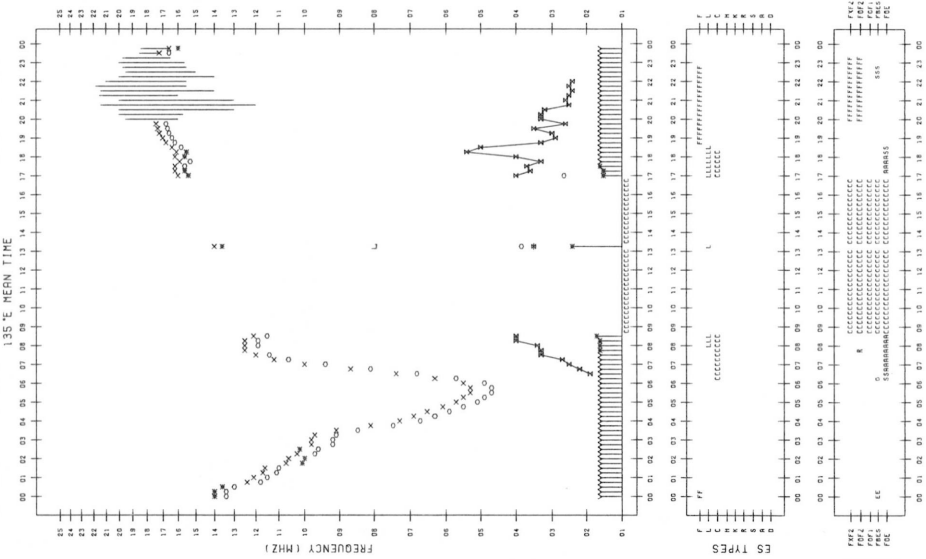
STATION : YAMAGAWA SCALER : S.KAMISHIKIRYO DATE : 1982/10/ 4

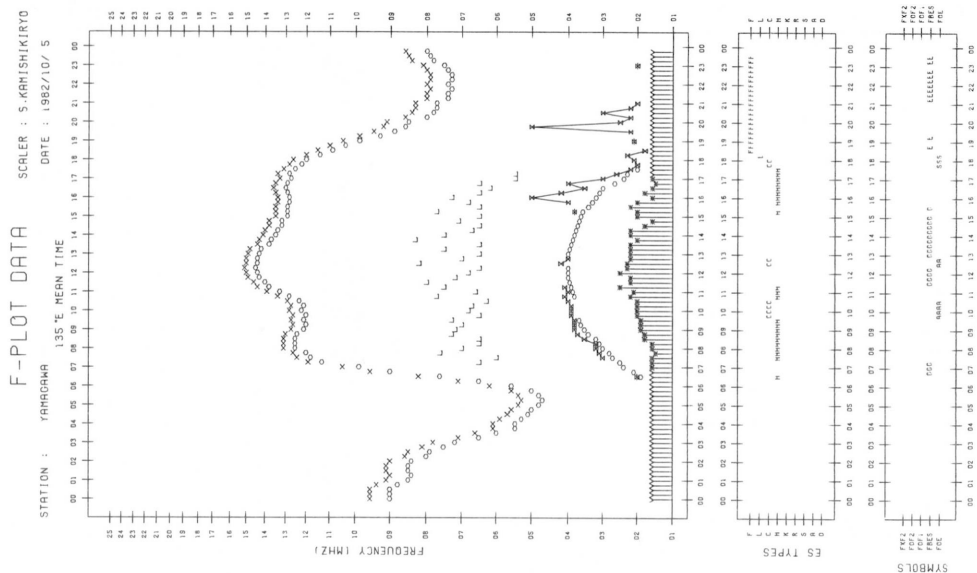
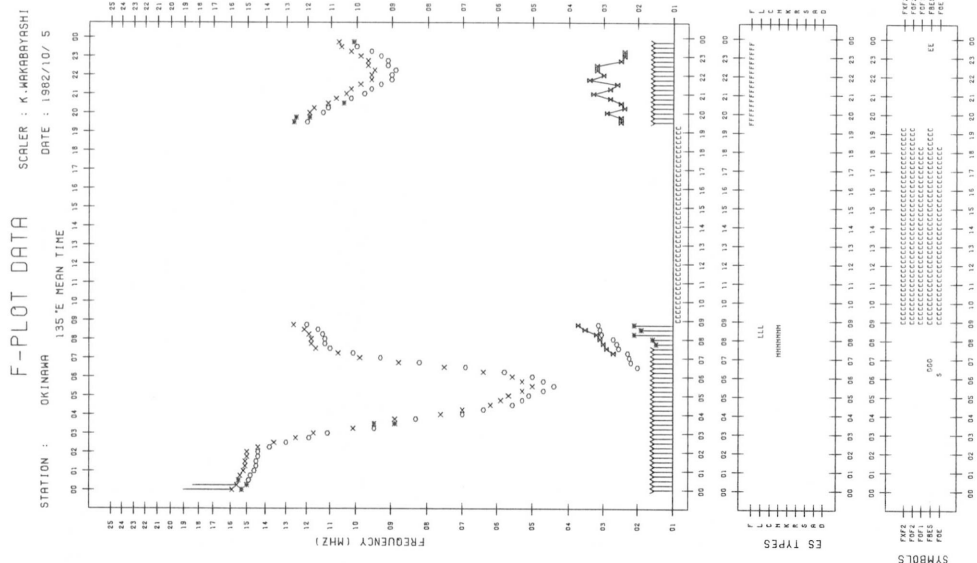
STATION : OKINAWA SCALER : A.OTSUKA DATE : 1982/10/ 4



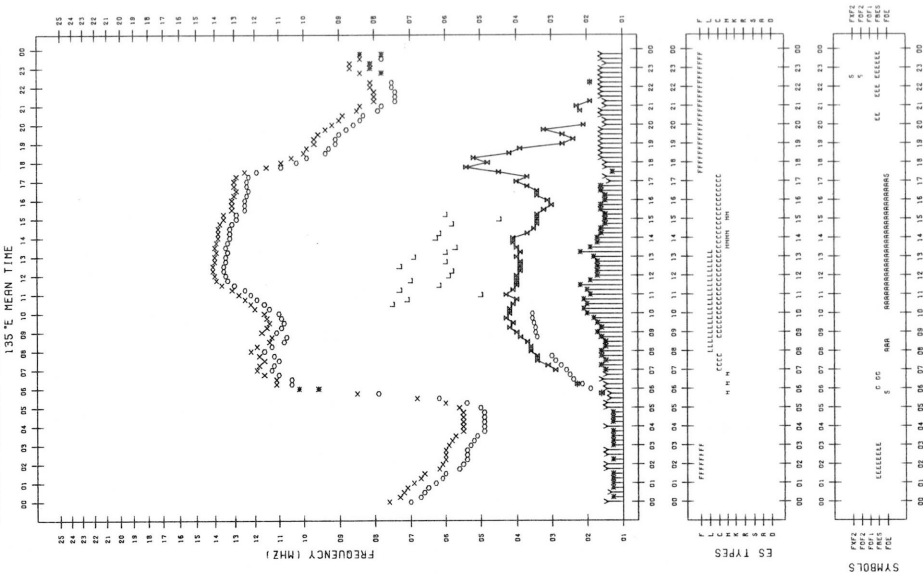
F-PLOT DATA

STATION : OKINAWA SCALER : A.OTSUKA DATE : 1982/10/ 4

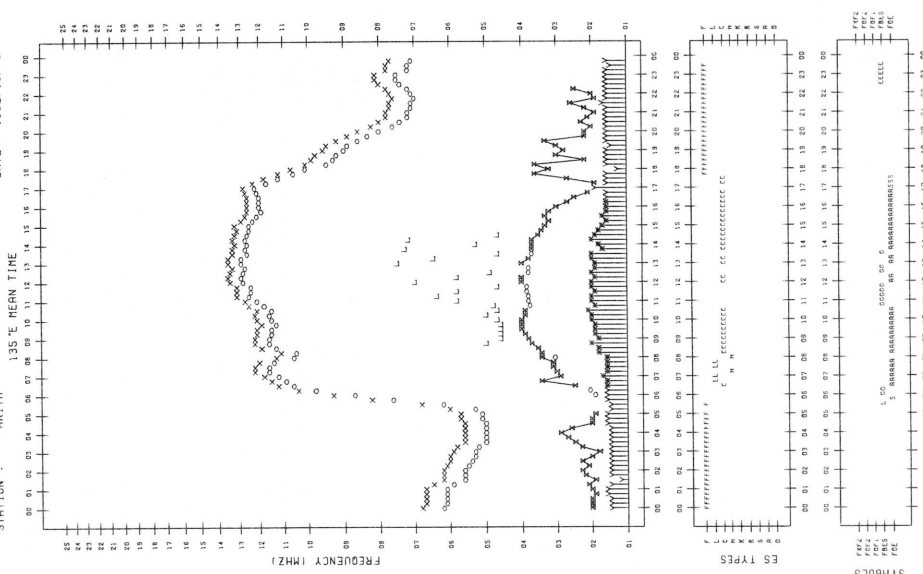




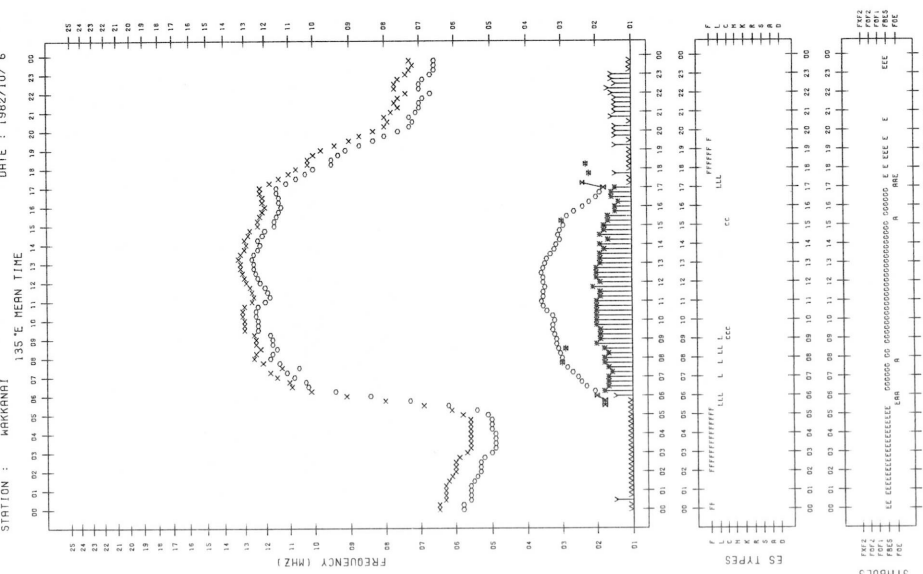
F-PLOT DATA
 STATION : KOKUBUNJI TOKYO
 SCALER : S-HIIDOME
 DATE : 1982/10/ 6
 135°E MEAN TIME



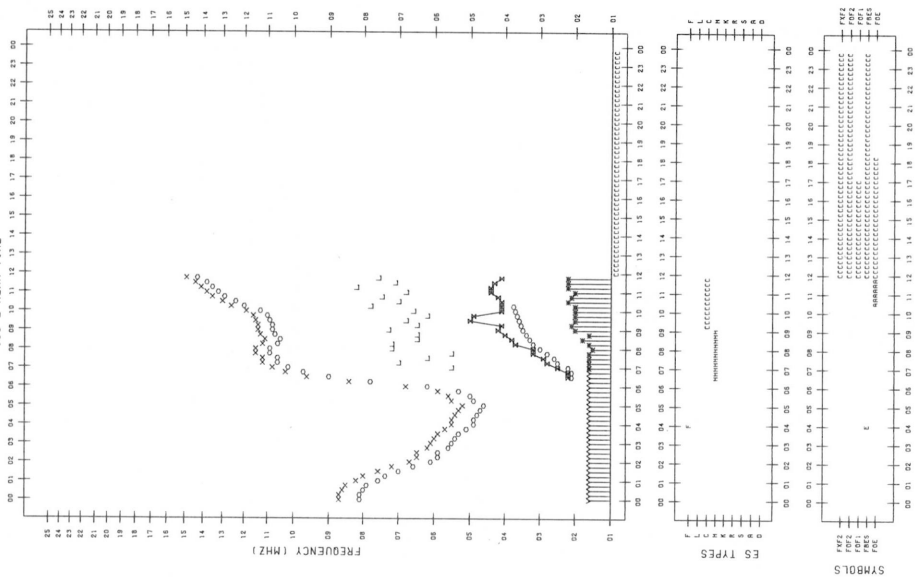
F-PLOT DATA
 STATION : AKITA
 SCALER : Y-ECHIZENYA
 DATE : 1982/10/ 6
 135°E MEAN TIME



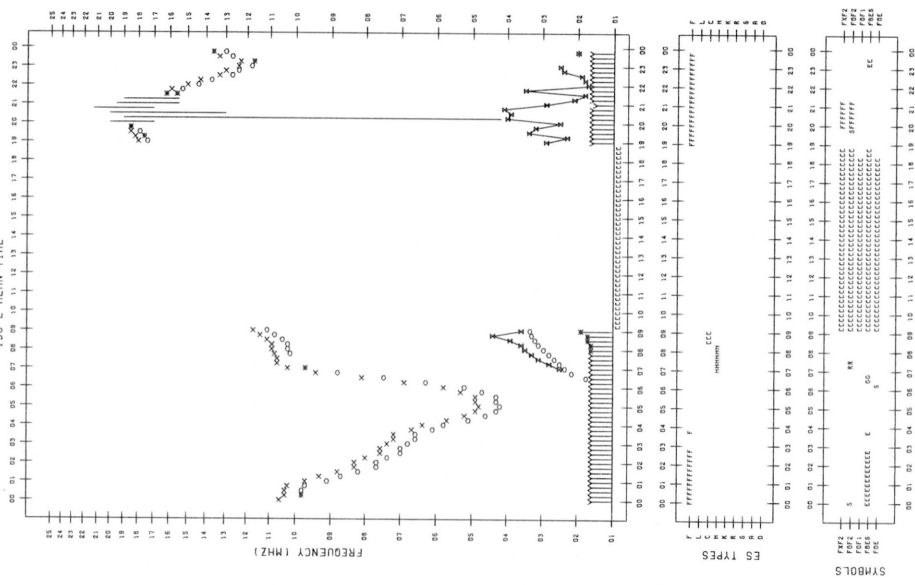
F-PLOT DATA
 STATION : MAKURANGI
 SCALER : T-ODA
 DATE : 1982/10/ 6
 135°E MEAN TIME



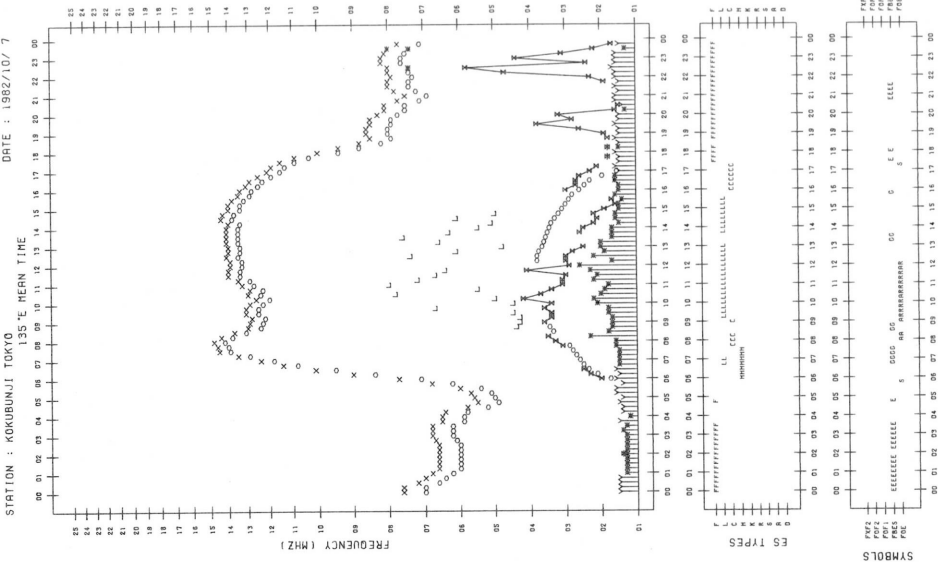
F-PLOT DATA
 STATION : YAMAGAWA SCALER : S-KAMISHIKIRYO
 DATE : 1982/10/ 6
 135°E MEAN TIME



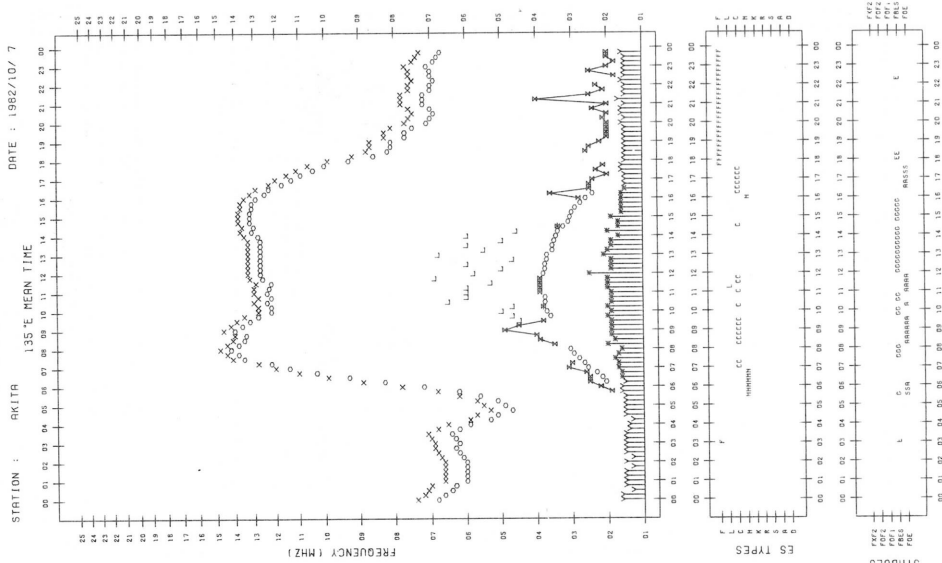
F-PLOT DATA
 STATION : OKINAWA SCALER : H-HRENO
 DATE : 1982/10/ 6
 135°E MEAN TIME



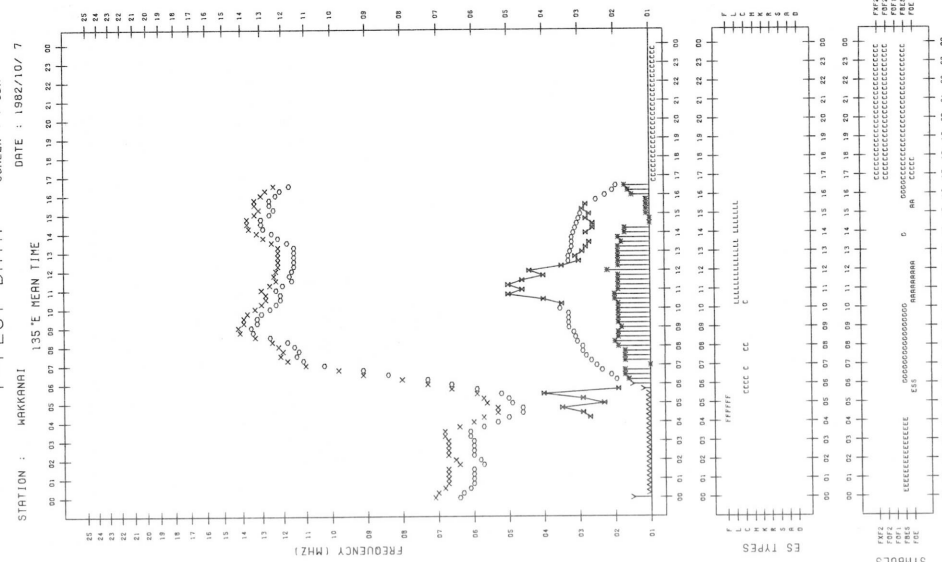
F-PLOT DATA
 STATION : KOKUBUNJI TOKYO
 SCALER : S-HI100HE
 DATE : 1982/10/ 7
 135 °E MEAN TIME



F-PLOT DATA
 STATION : AKITA
 SCALER : Y-ECHIZENYA
 DATE : 1982/10/ 7
 135 °E MEAN TIME



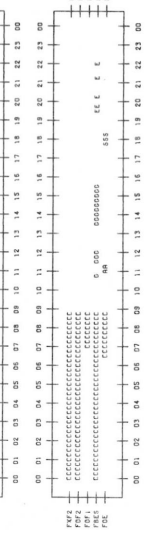
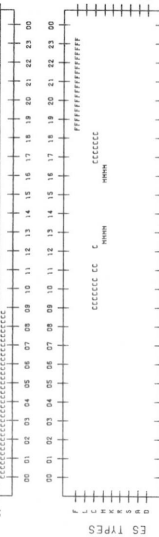
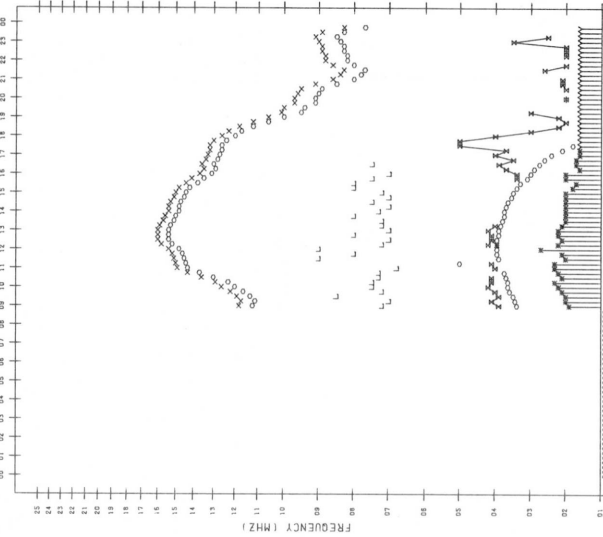
F-PLOT DATA
 STATION : WAKKANAI
 SCALER : T-00R
 DATE : 1982/10/ 7
 135 °E MEAN TIME



F-PLOT DATA

STATION : YAHAGHARA SCALER : I-NISHIMUTA DATE : 1982/10/7

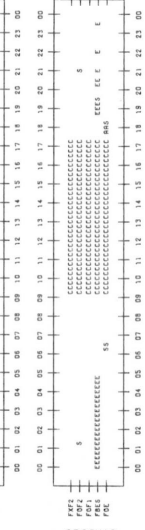
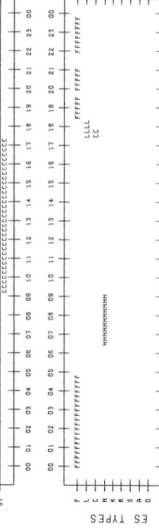
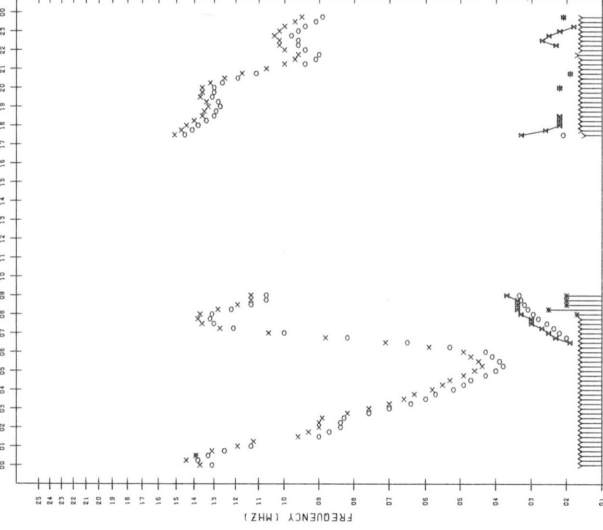
135°E MEAN TIME



F-PLOT DATA

STATION : OKINAWA SCALER : H-MRENO DATE : 1982/10/7

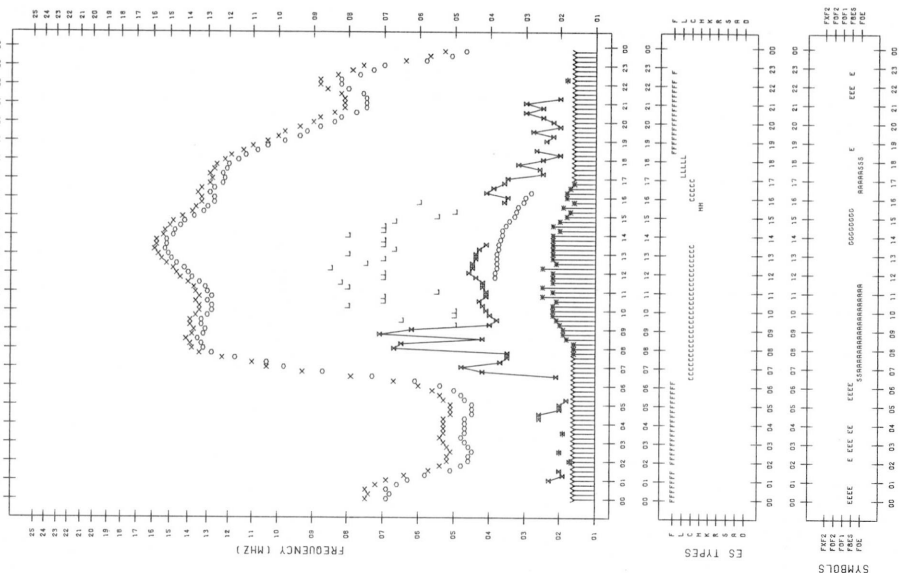
135°E MEAN TIME



F-PLOT DATA

STATION : YAHADARA SCALER : I-NISHIMUTA DATE : 1982/10/ 8

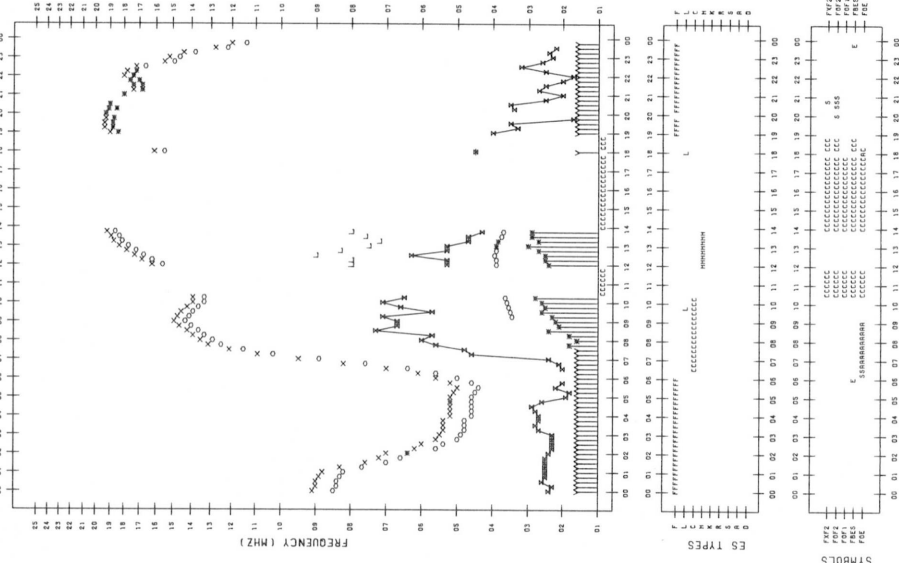
135°E MEAN TIME



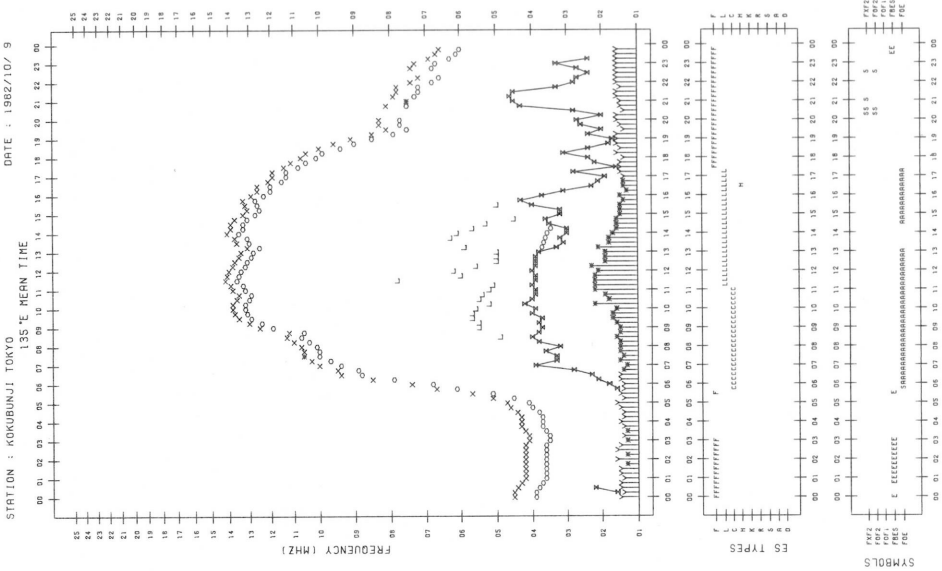
F-PLOT DATA

STATION : OKINAWA SCALER : R-OTSUKA DATE : 1982/10/ 6

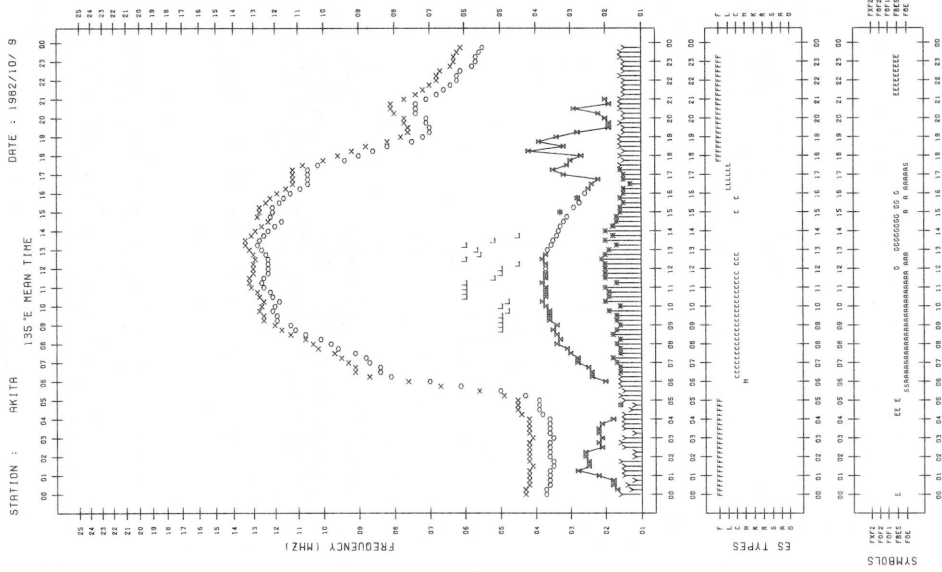
135°E MEAN TIME



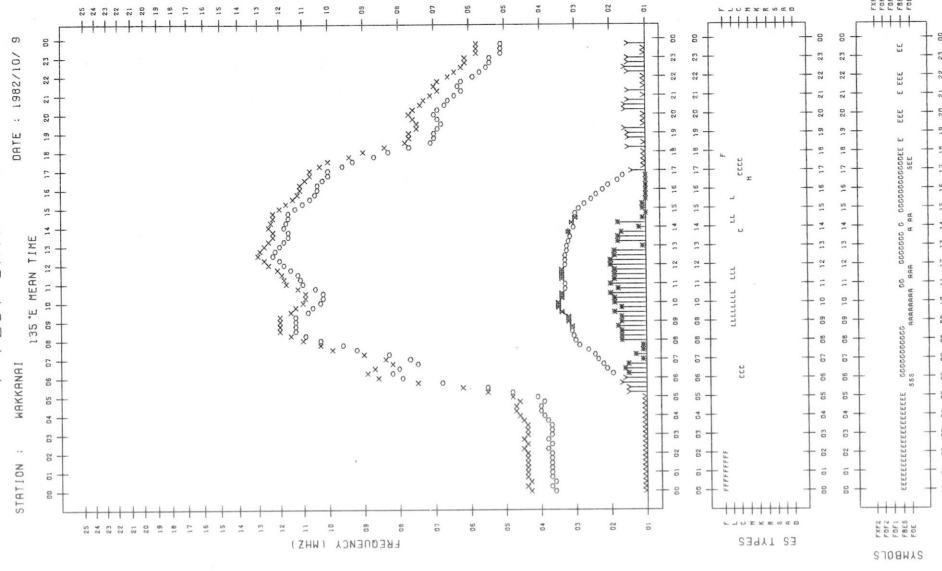
F-PLOT DATA
 STATION : KOKUBUNJI TOKYO
 SCALER : S-HIDONE
 DATE : 1982/10/ 9
 135 °E MEAN TIME



F-PLOT DATA
 STATION : AKITA
 SCALER : Y-ECHIZENYA
 DATE : 1982/10/ 9
 135 °E MEAN TIME



F-PLOT DATA
 STATION : WAKKANAI
 SCALER : T-ODR
 DATE : 1982/10/ 9
 135 °E MEAN TIME



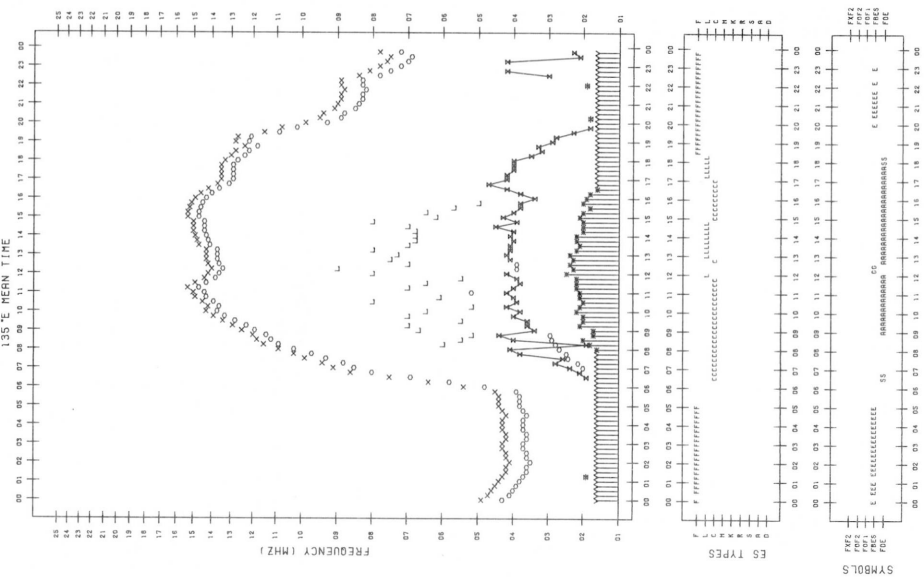
F-PLOT DATA

STATION : YAMAGAWA SCALER : I-NISHIMURA

DATE : 1982/10/9

STATION : OKINAWA SCALER : R-OTSUKA

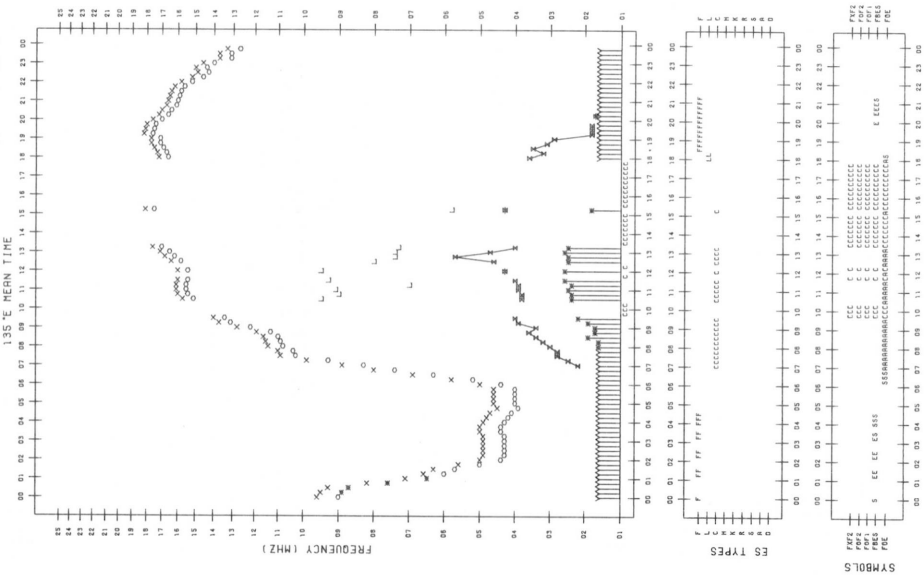
DATE : 1982/10/9



F-PLOT DATA

STATION : OKINAWA SCALER : R-OTSUKA

DATE : 1982/10/9



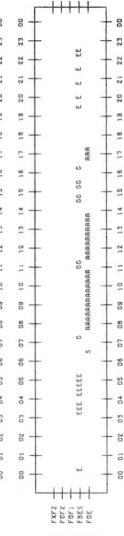
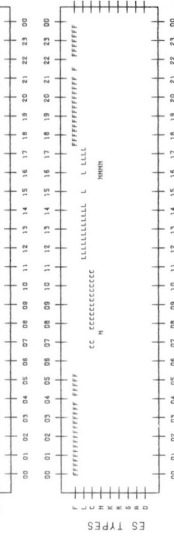
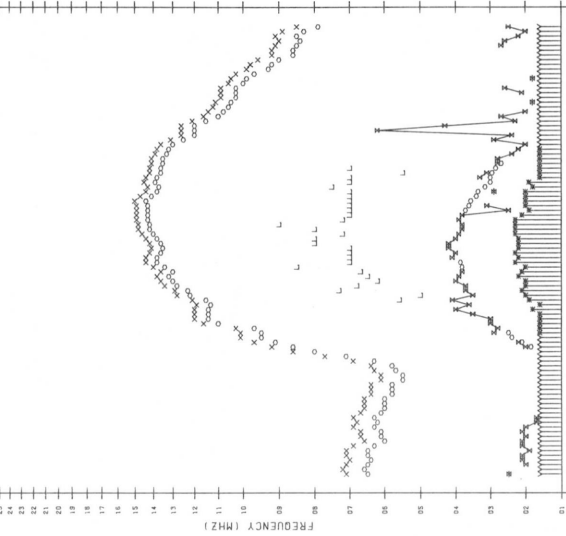
F-PLOT DATA

STATION : YAMAGAWA

SCALER : I.NISHINURA

DATE : 1982/10/11

135°E MEAN TIME



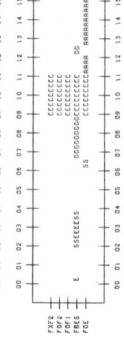
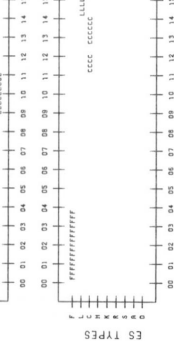
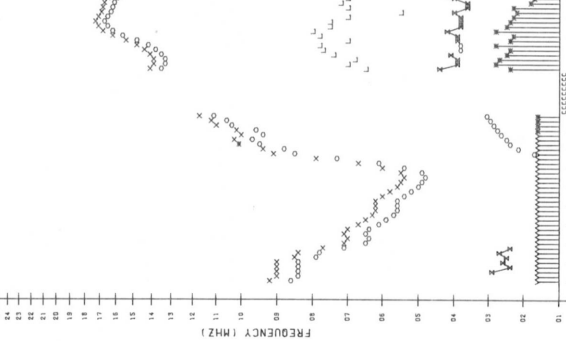
F-PLOT DATA

STATION : OKINAWA

SCALER : R.OTSUKA

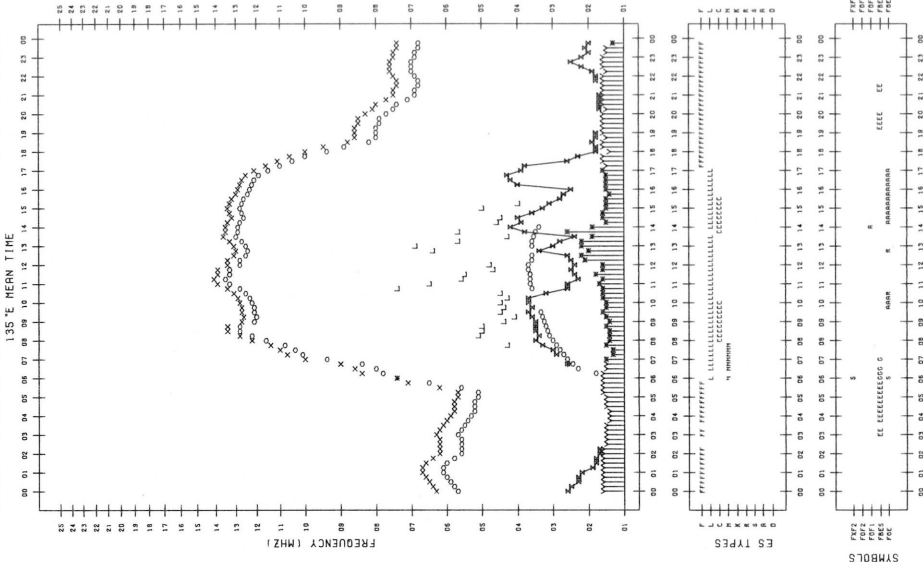
DATE : 1982/10/11

135°E MEAN TIME



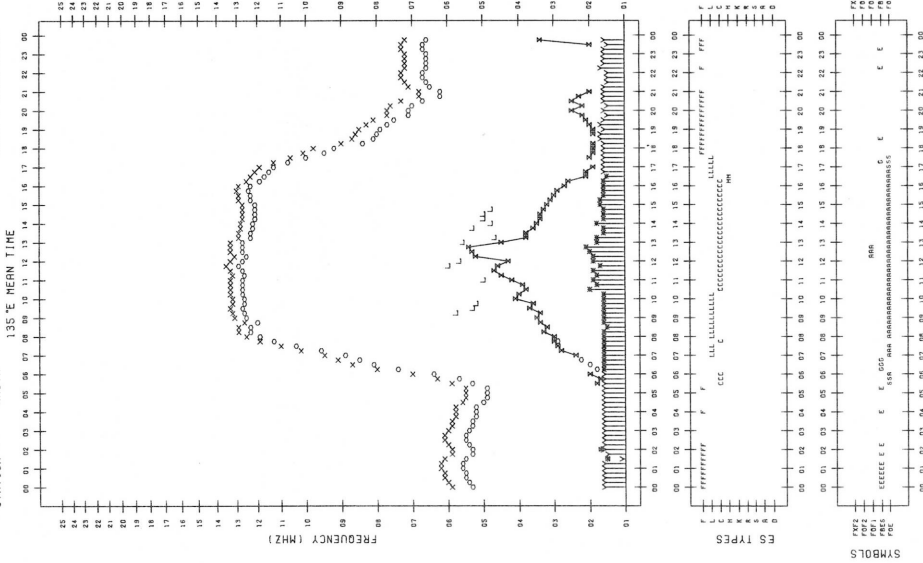
F-Plot DATA

STATION : KOKUBUNJ TOKYO SCALER : S-HIJDONE DATE : 1982/10/12



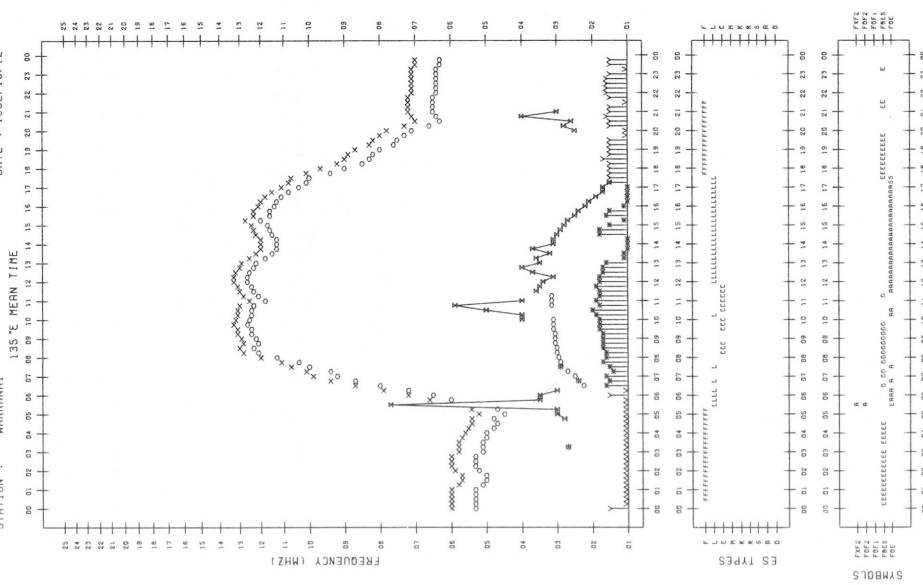
F-Plot DATA

STATION : AKITA SCALER : T-MORI DATE : 1982/10/12



F-Plot DATA

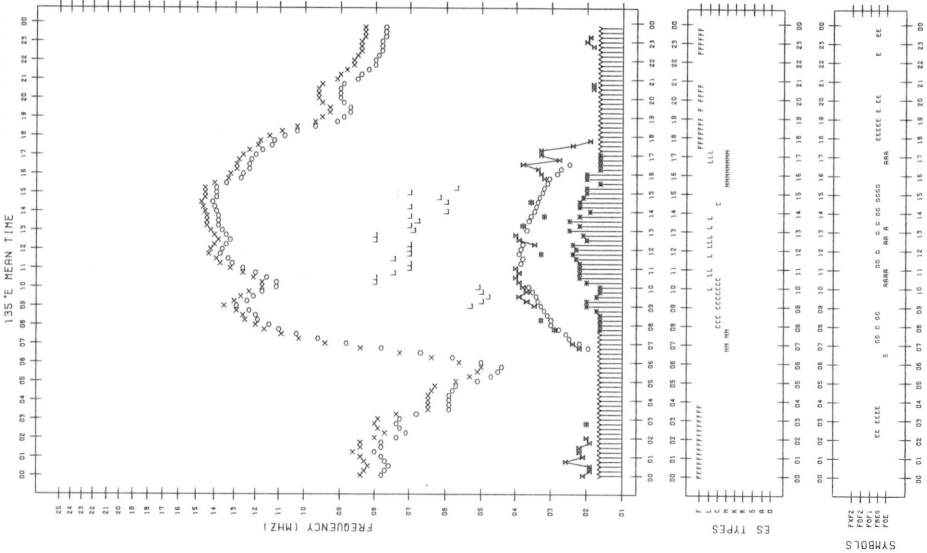
STATION : MAKINAI SCALER : T-ODA DATE : 1982/10/12



F-PLOT DATA

STATION : YAHAGARA SCALER : I. NISHIMURA

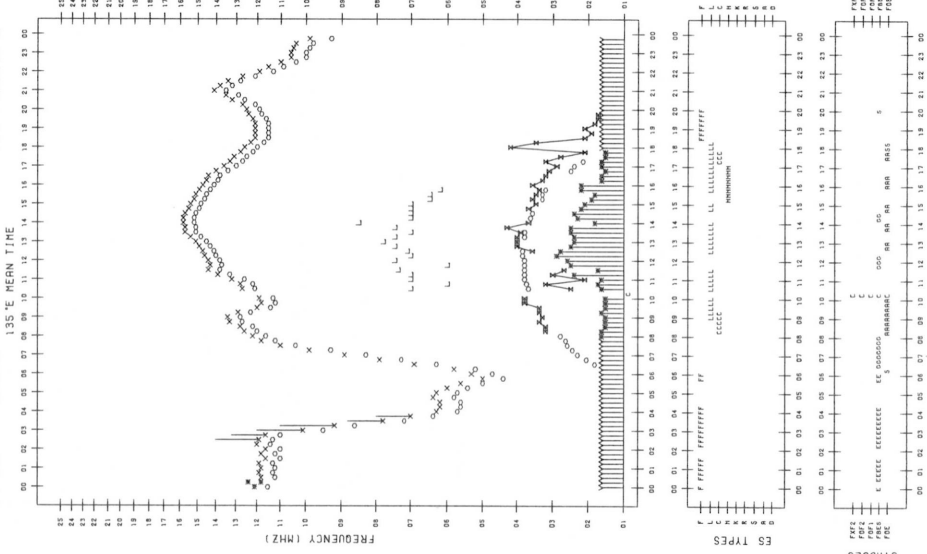
DATE : 1982/10/12



F-PLOT DATA

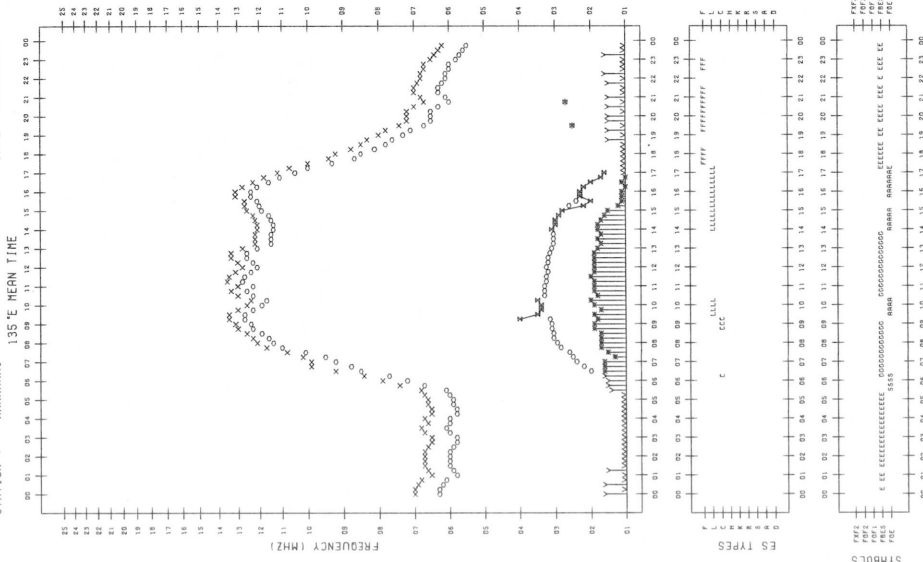
STATION : OKINAKA SCALER : K. HAKKAIYASHI

DATE : 1982/10/12



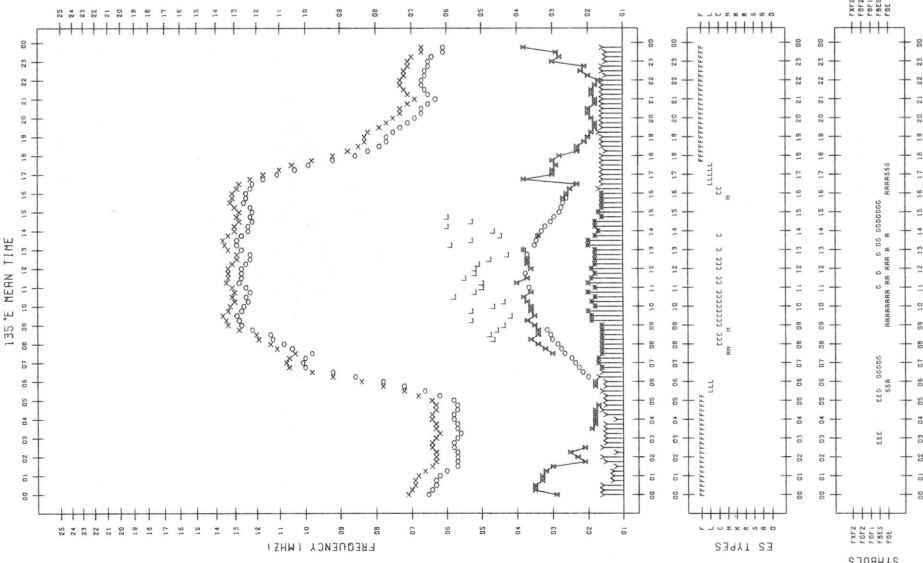
F- PLOT DATA

STATION : MARIKINRI SCALER : T.ODA DATE : 1982/10/13



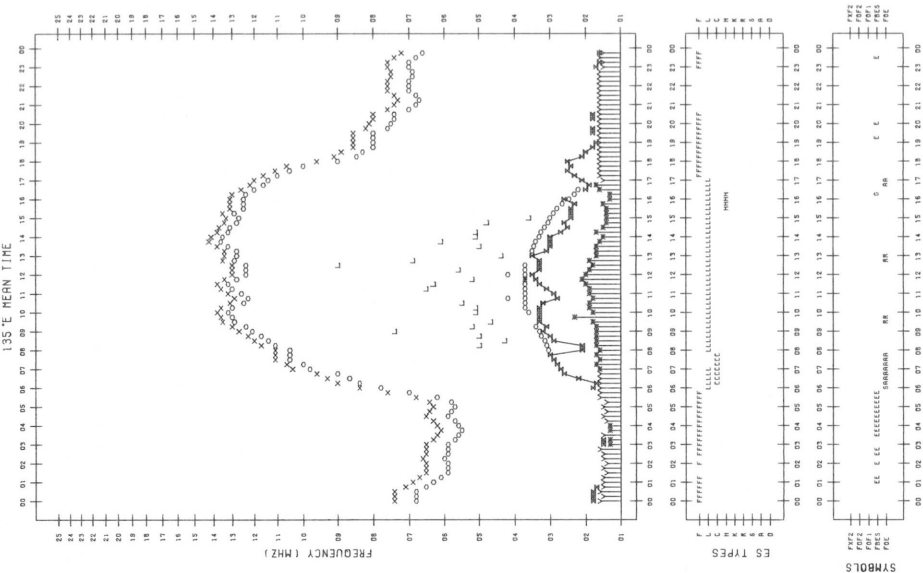
F- PLOT DATA

STATION : KIKITA SCALER : T.MORI DATE : 1982/10/13

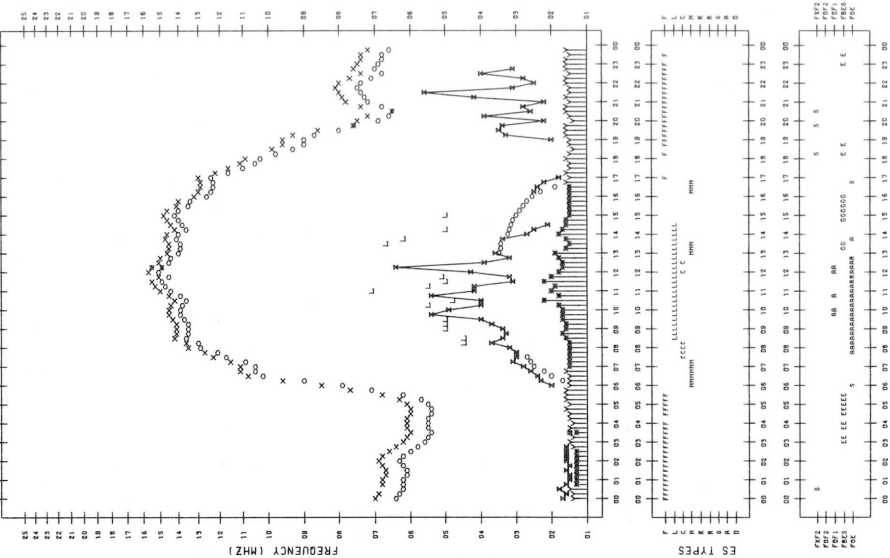


F- PLOT DATA

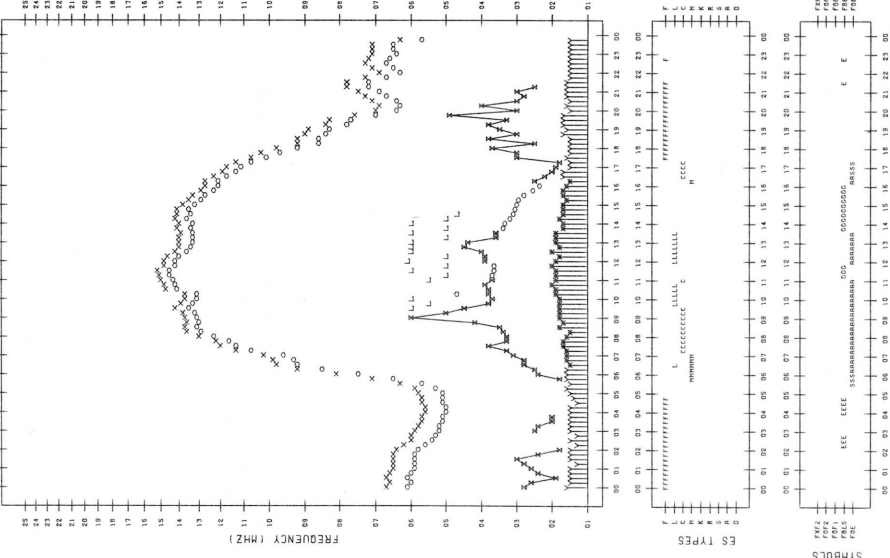
STATION : KOKUBUNJI TOKYO SCALER : S.HIIDNE DATE : 1982/10/13



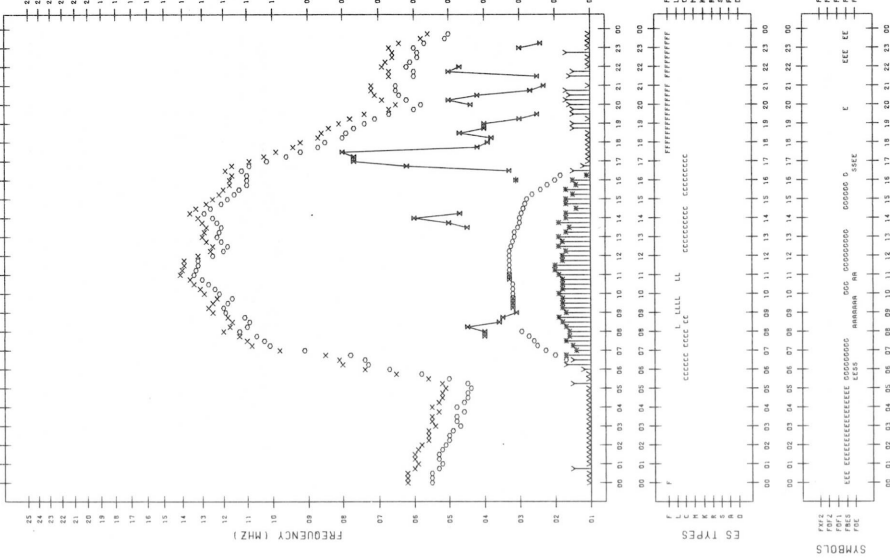
F-PLOT DATA
 STATION : KOKUBUNJ TOKYO
 SCALER : S-HI1DDHE
 DATE : 1982/10/14
 135°E MEAN TIME

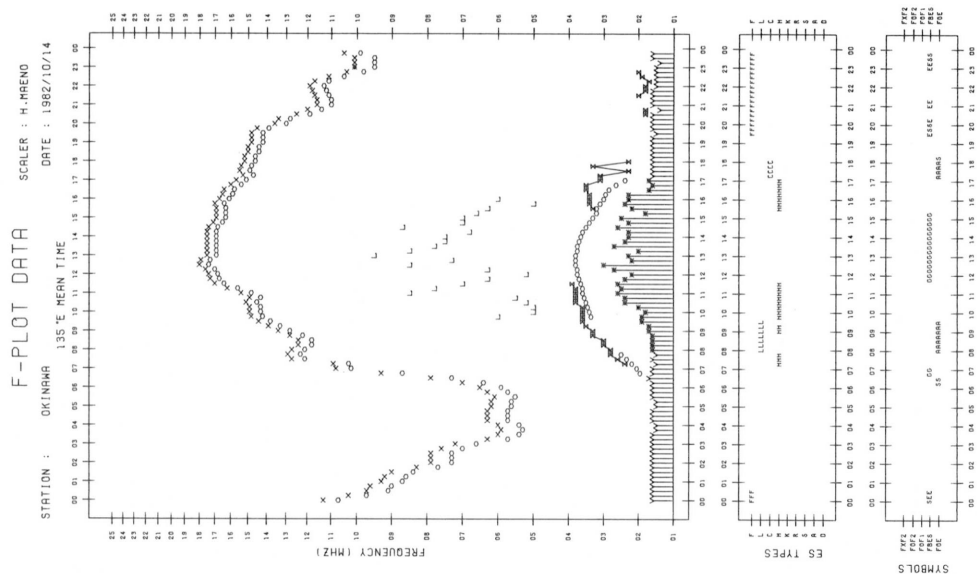
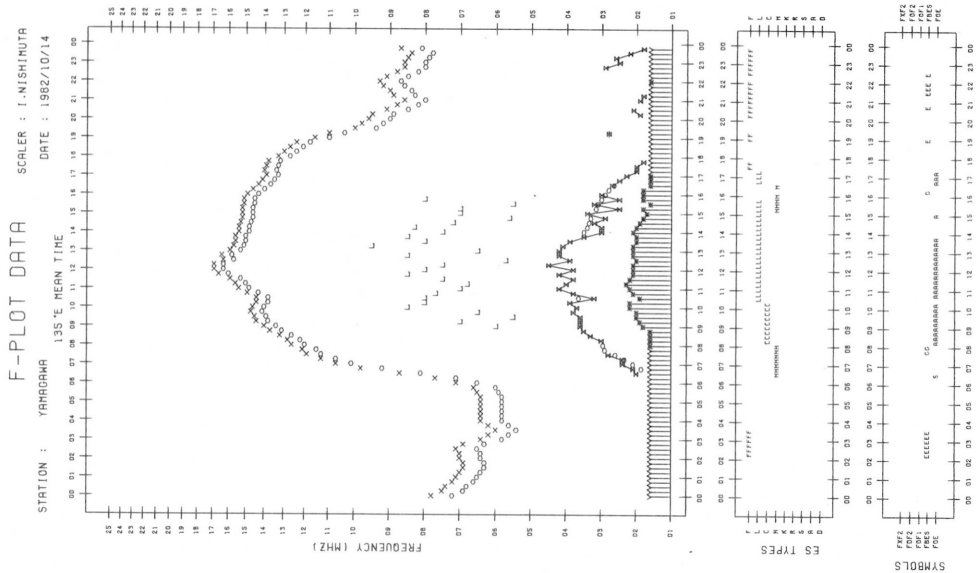


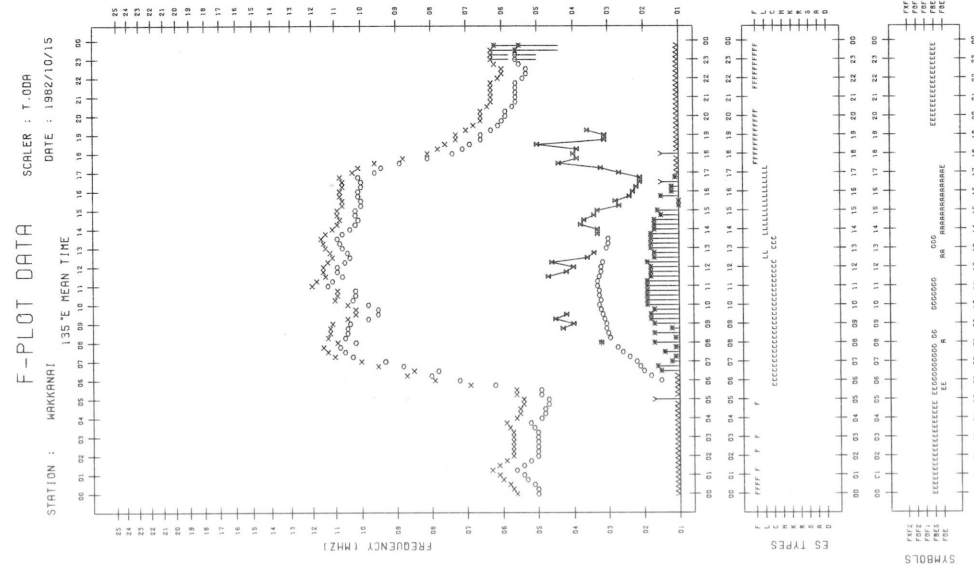
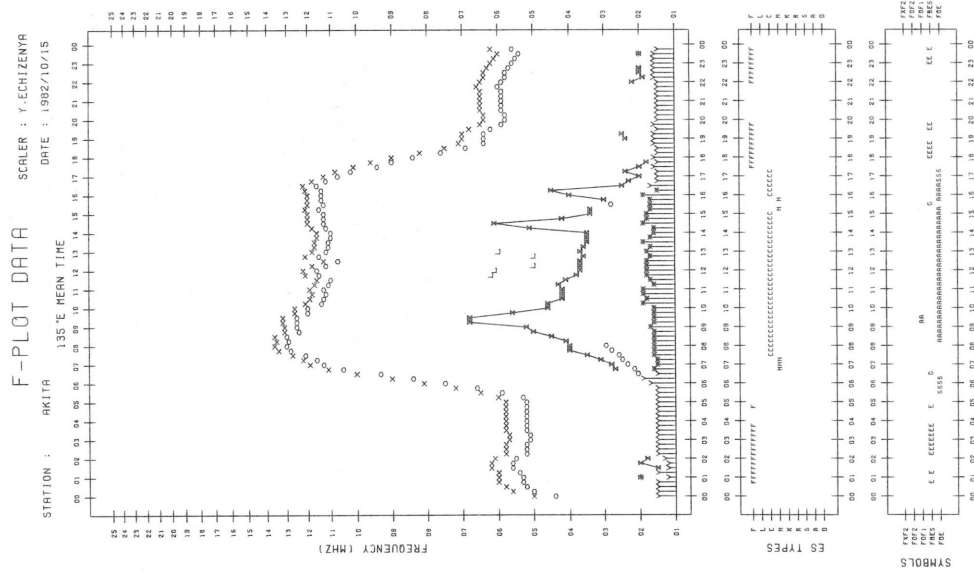
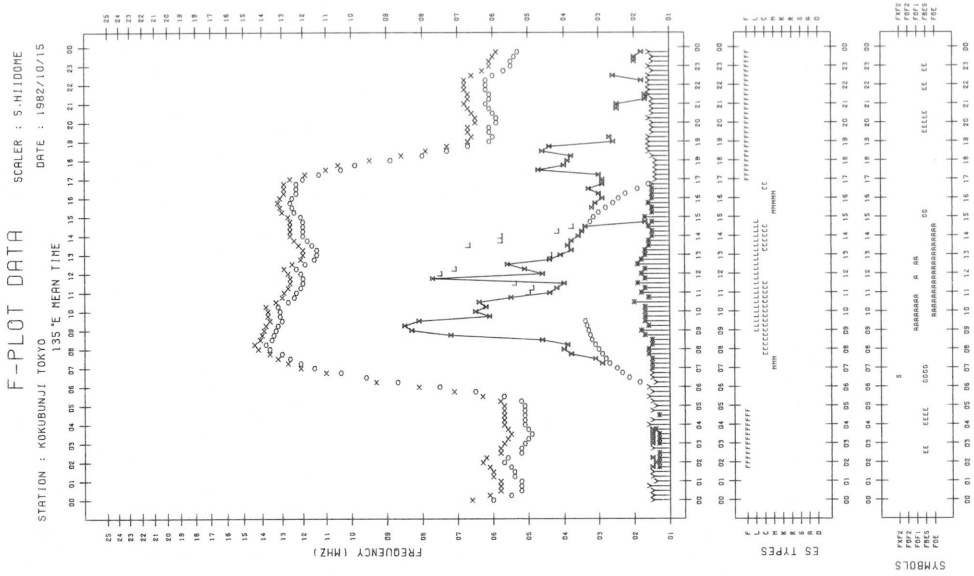
F-PLOT DATA
 STATION : AKITA
 SCALER : Y-ECHIZENYA
 DATE : 1982/10/14
 135°E MEAN TIME



F-PLOT DATA
 STATION : MAKIYAMA
 SCALER : T-00A
 DATE : 1982/10/14
 135°E MEAN TIME



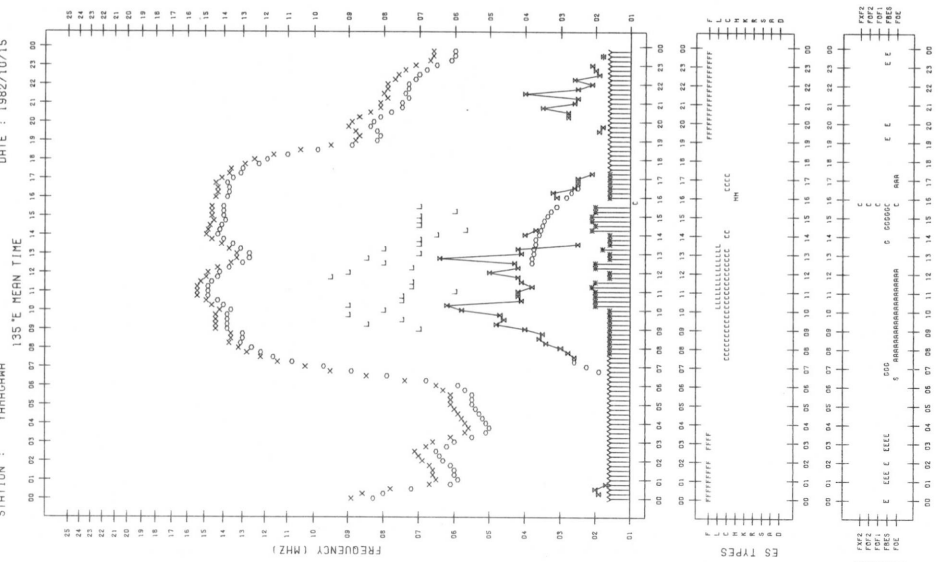




F- PLOT DATA

STATION : YAMAGAWA SCALER : I. NISHIMURA

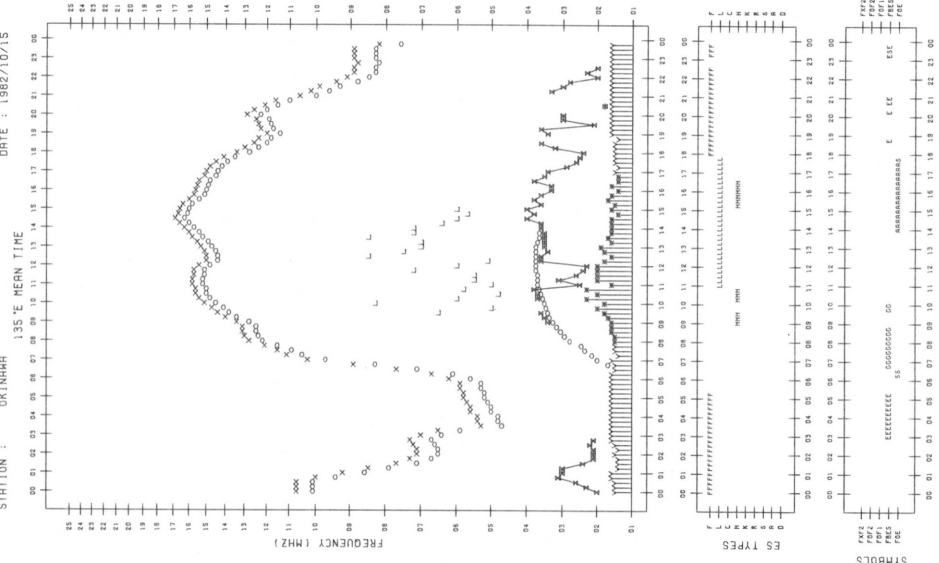
DATE : 1982/10/15



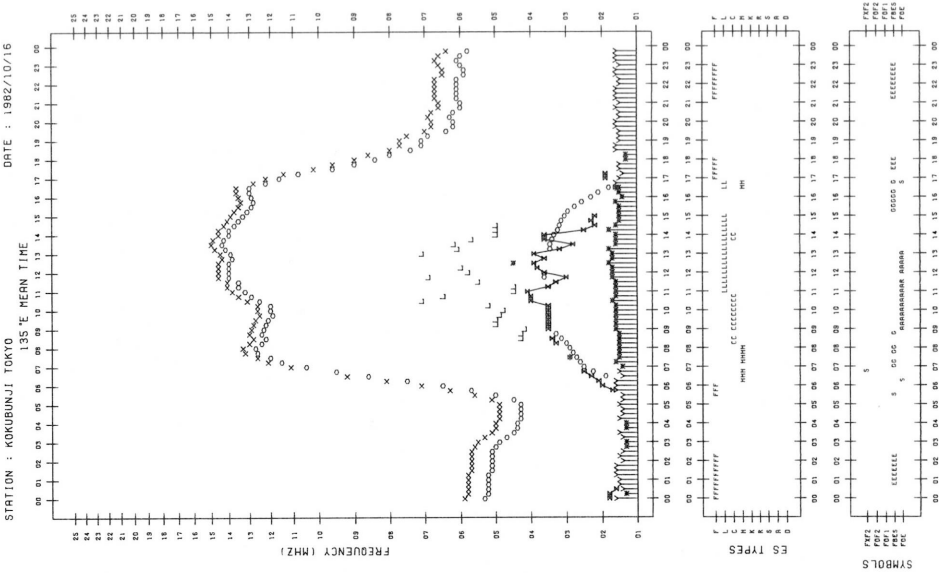
F- PLOT DATA

STATION : OKINAWA SCALER : H. MENDO

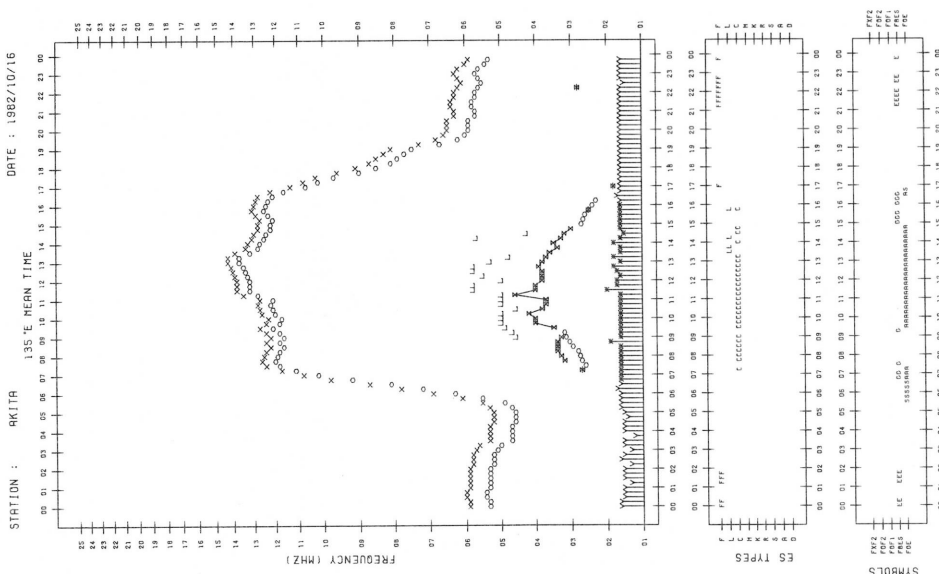
DATE : 1982/10/15



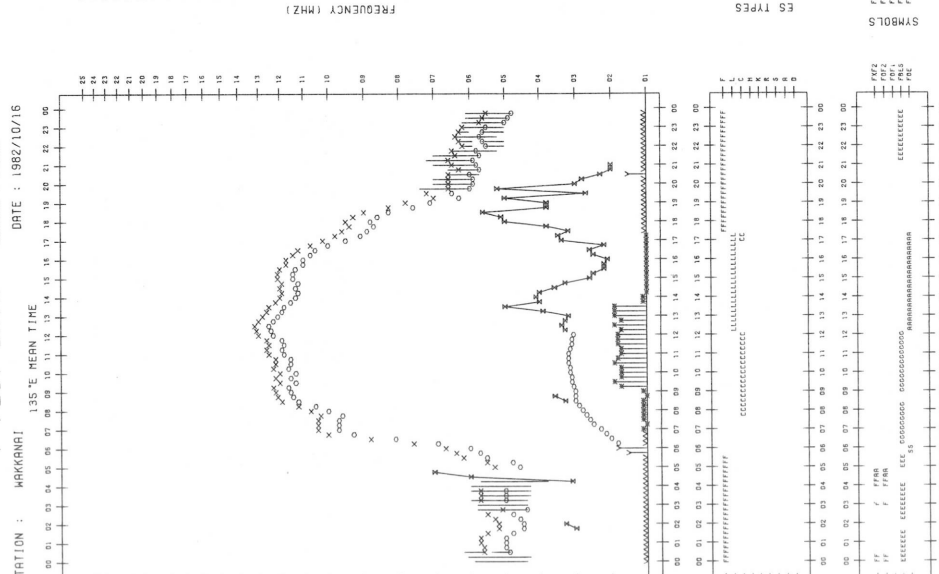
F-PLOT DATA
STATION : KOKUBUNJI TOKYO
SCALER : S.HIIDOME
DATE : 1982/10/16
135°E MEAN TIME



F-PLOT DATA
STATION : AKITA
SCALER : T.NORI
DATE : 1982/10/16
135°E MEAN TIME



F-PLOT DATA
STATION : MARUKINGI
SCALER : T.ODA
DATE : 1982/10/16
135°E MEAN TIME



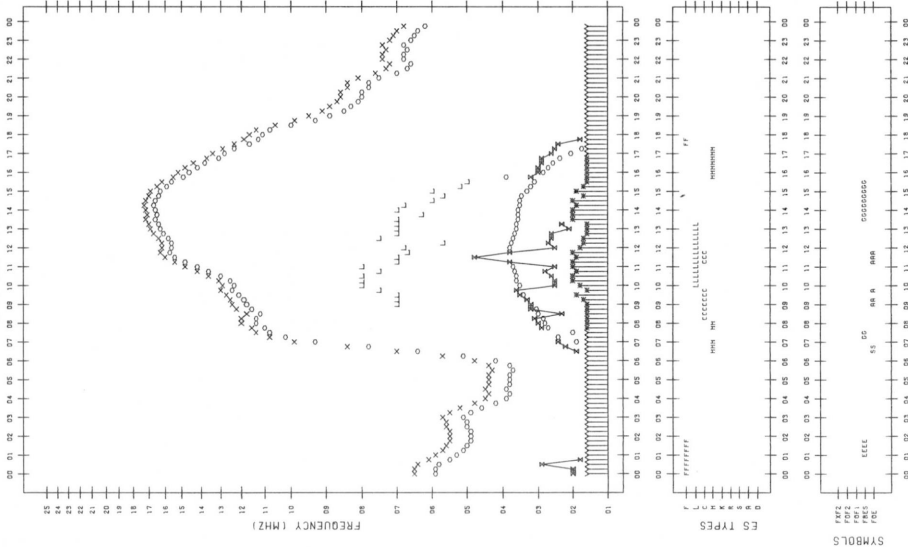
F-PLOT DATA

STATION : YAMAGAMA

SCALER : I.NISHINUTA

DATE : 1992/10/16

135°E MEAN TIME



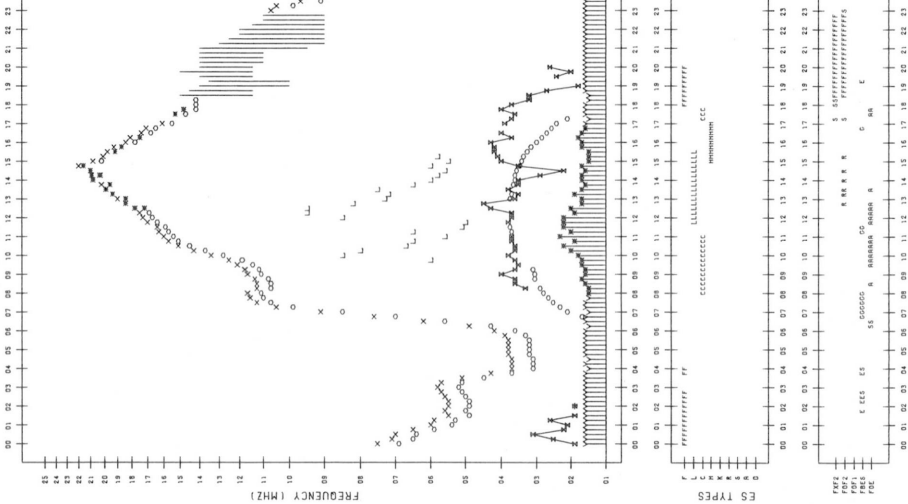
F-PLOT DATA

STATION : OKINAWA

SCALER : H.MENO

DATE : 1992/10/15

135°E MEAN TIME

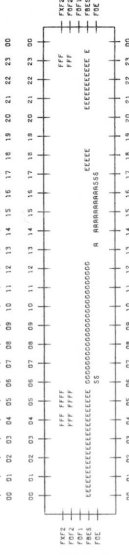
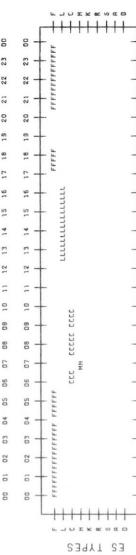
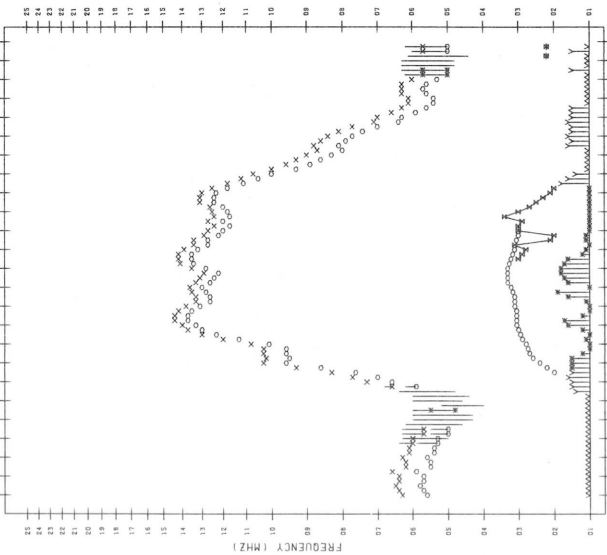


F-PLOT DATA

STATION : MARKKANI SCALER : T.00R

DATE : 1982/10/18

135°E MEAN TIME

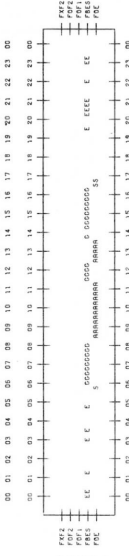
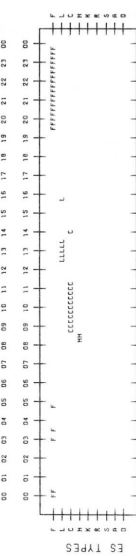
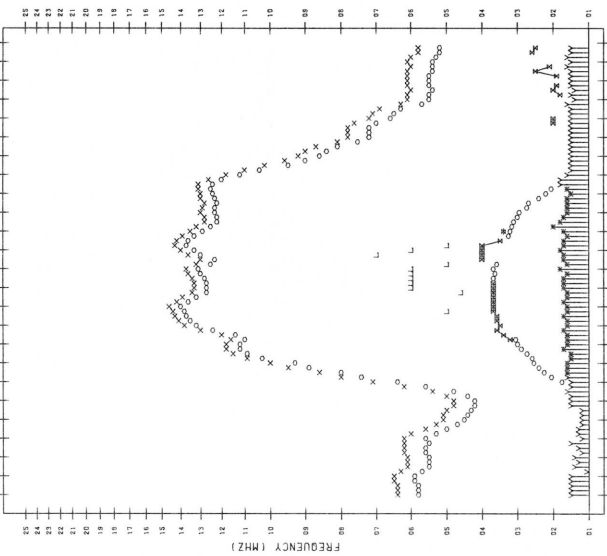


F-PLOT DATA

STATION : AKITA SCALER : Y.ECHIZENYA

DATE : 1982/10/18

135°E MEAN TIME

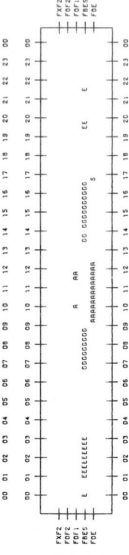
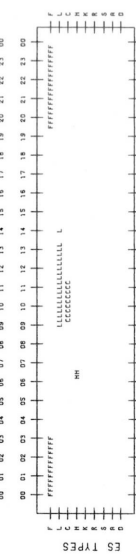
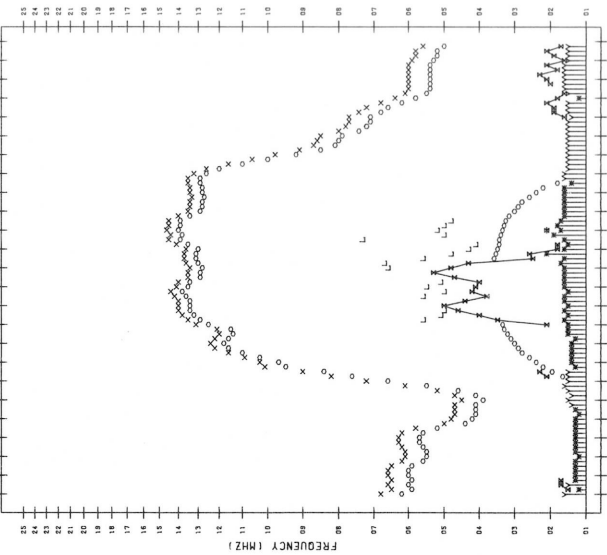


F-PLOT DATA

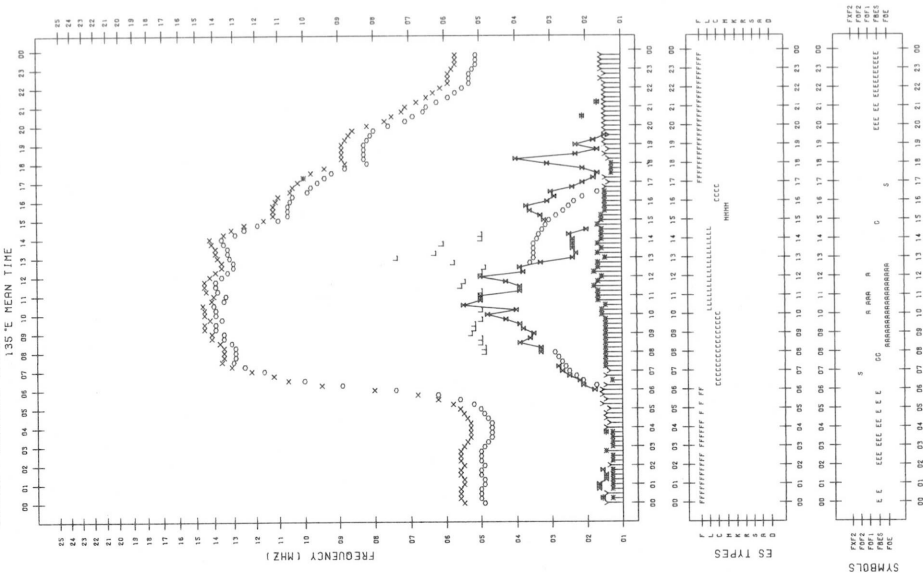
STATION : KOKUBUNJI TOKYO SCALER : S.HIIDONE

DATE : 1982/10/18

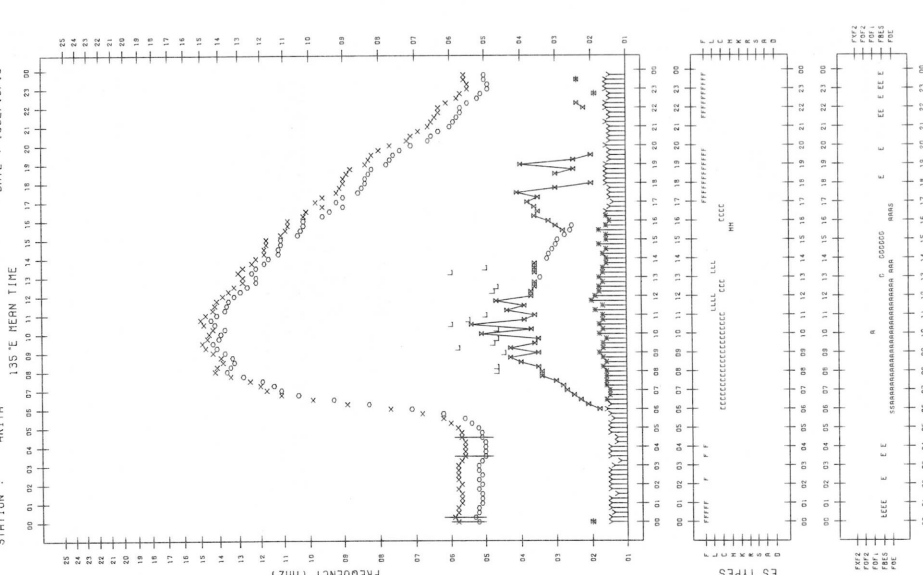
135°E MEAN TIME



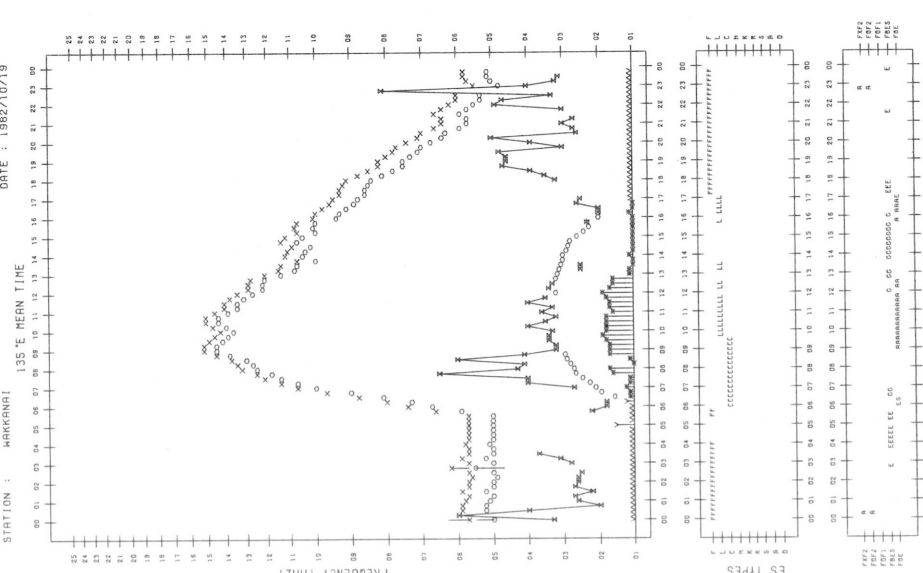
F-PLOT DATA
 STATION : KOKUBUNJI TOKYO
 SCALER : S.HIIDOME
 DATE : 1982/10/19
 135°E MEAN TIME



F-PLOT DATA
 STATION : AKITTA
 SCALER : Y.ECHIZENYA
 DATE : 1982/10/19
 135°E MEAN TIME

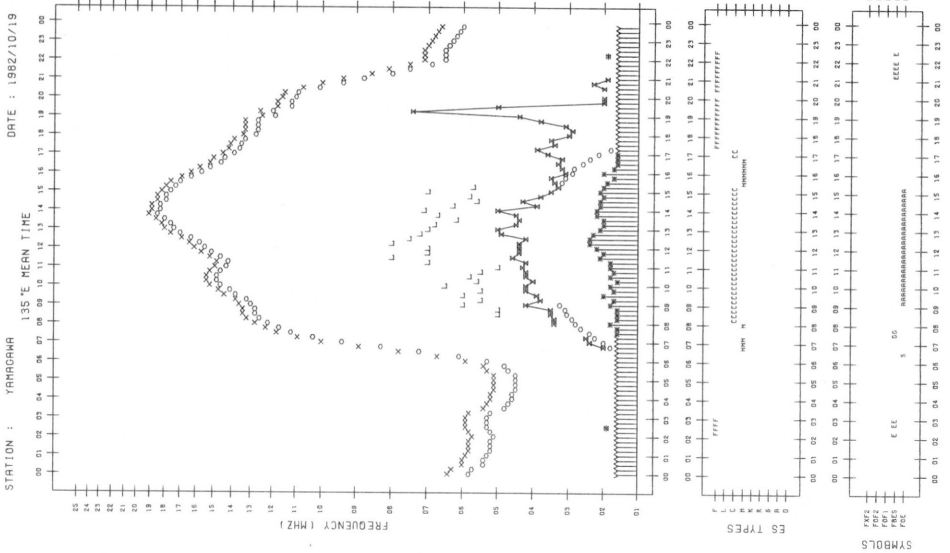


F-PLOT DATA
 STATION : WAKKANAI
 SCALER : T.ODA
 DATE : 1982/10/19
 135°E MEAN TIME



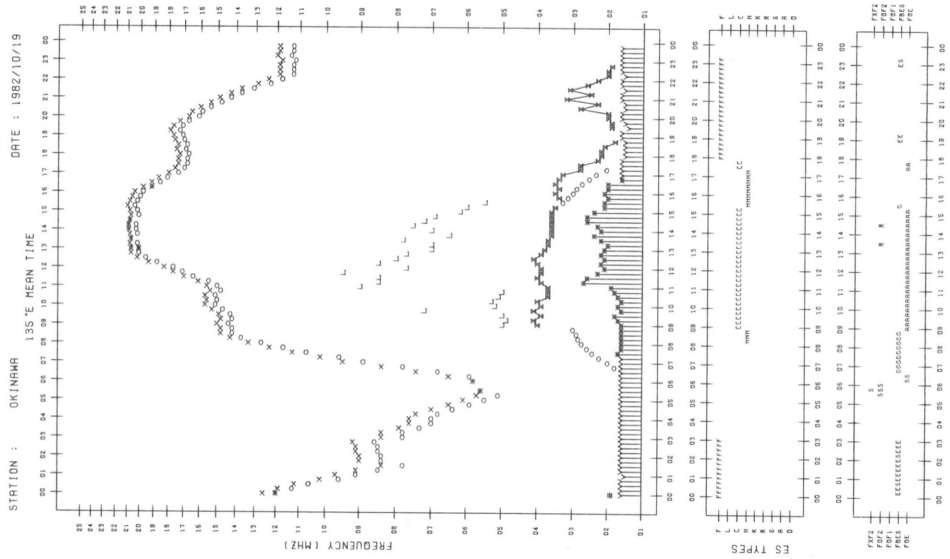
F-PLOT DATA

STATION : YAHORARA SCALER : I-NISHIMURA DATE : 1982/10/19

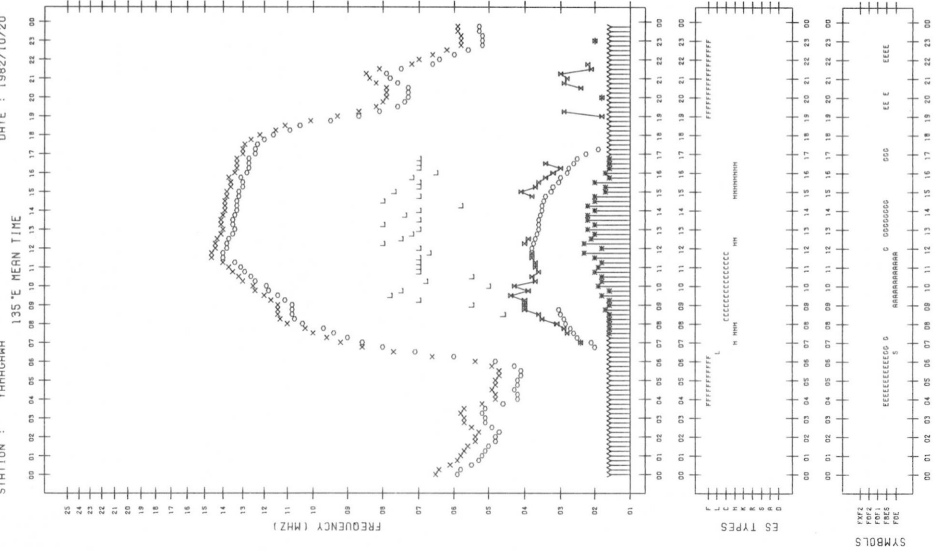


F-PLOT DATA

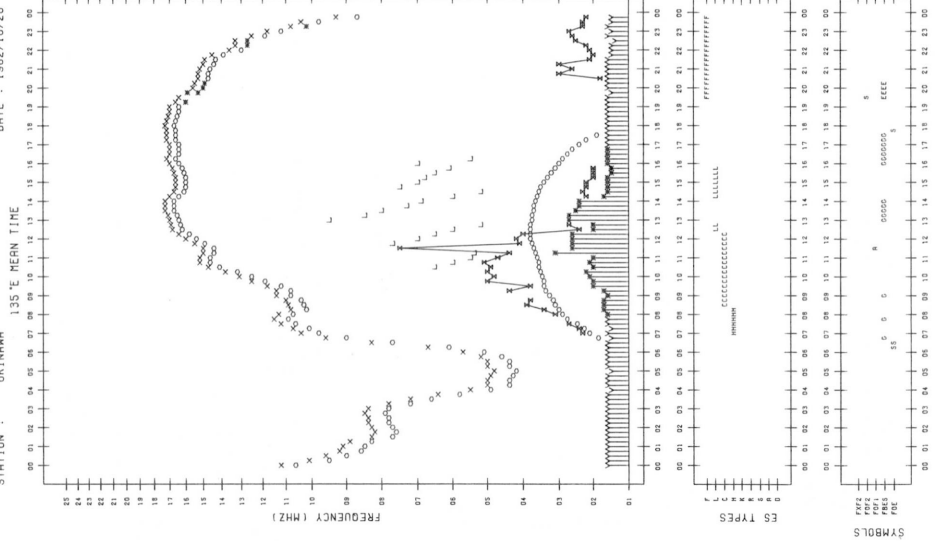
STATION : OKINAWA SCALER : H-ARENO DATE : 1982/10/19



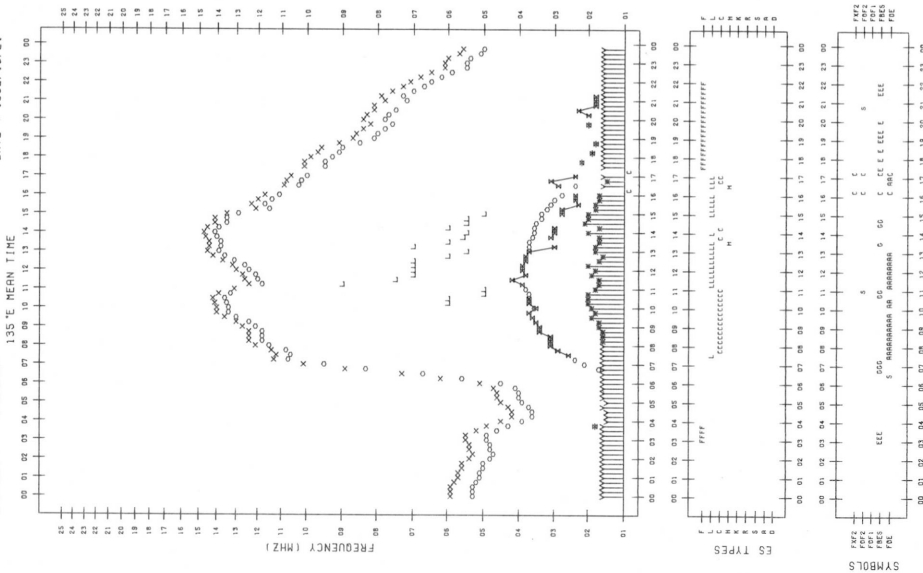
F-plot DATA
STATION : YAHORAMA SCALER : I. NISHIMUTA
DATE : 1982/10/20



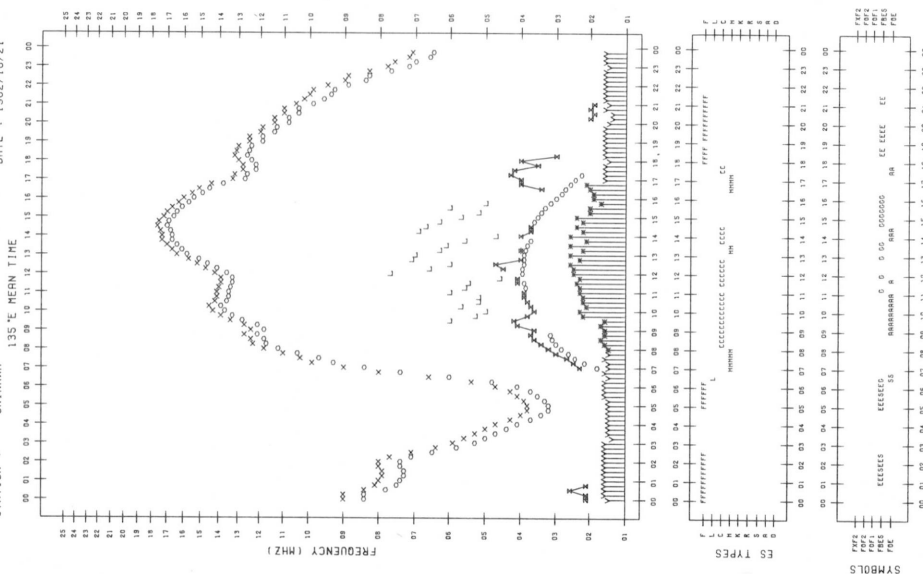
F-plot DATA
STATION : OKINAWA SCALER : H. MENDO
DATE : 1982/10/20



F-PLOT DATA
 STATION : YAHAGAWA
 SCALER : H-MITSUOCHI
 DATE : 1982/10/21
 135°E MEAN TIME

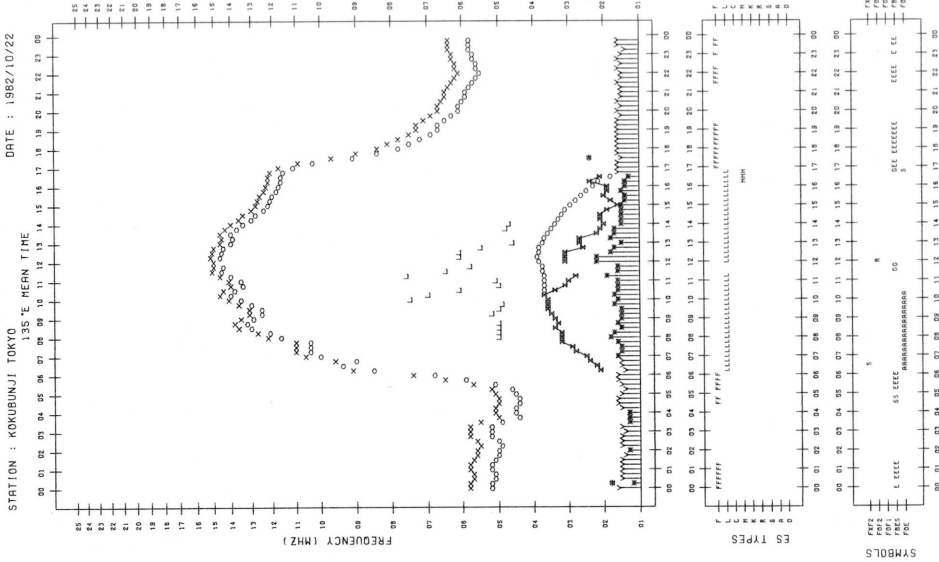


F-PLOT DATA
 STATION : OKINAWA
 SCALER : H-MRENO
 DATE : 1982/10/21
 135°E MEAN TIME



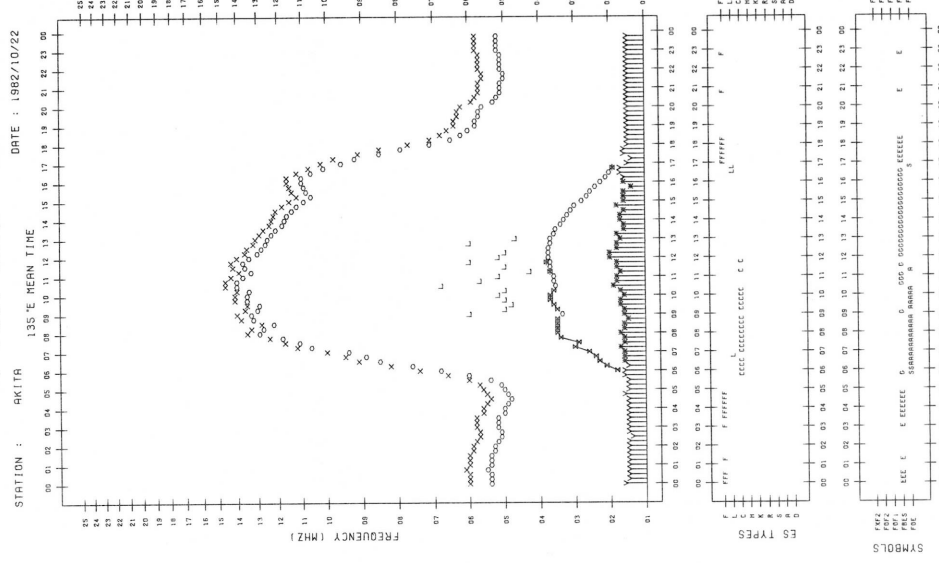
F- PLOT DATA

STATION : KOKUBUNJI TOKYO SCALER : S-HIIOHNE DATE : 1982/10/22



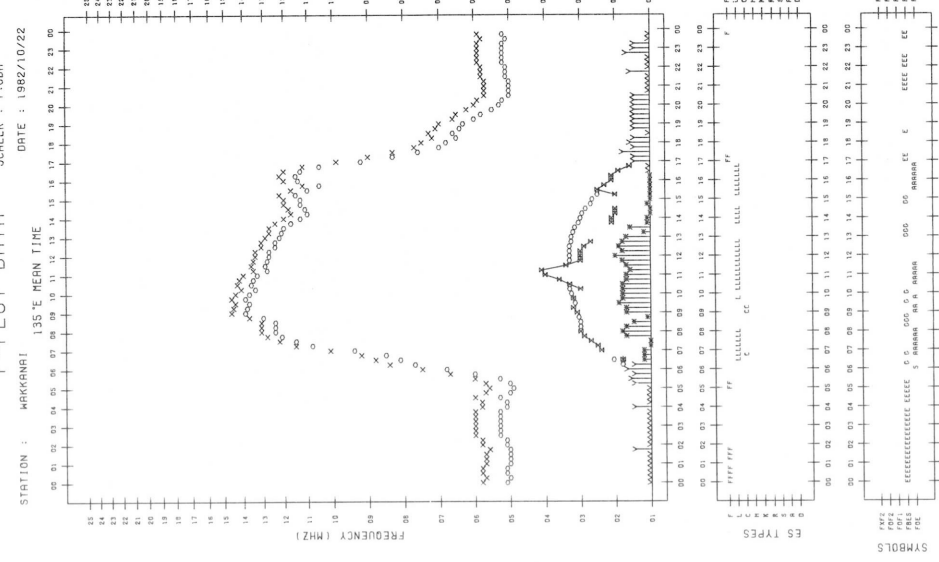
F- PLOT DATA

STATION : AKITA SCALER : Y-ECHIZENYA DATE : 1982/10/22



F- PLOT DATA

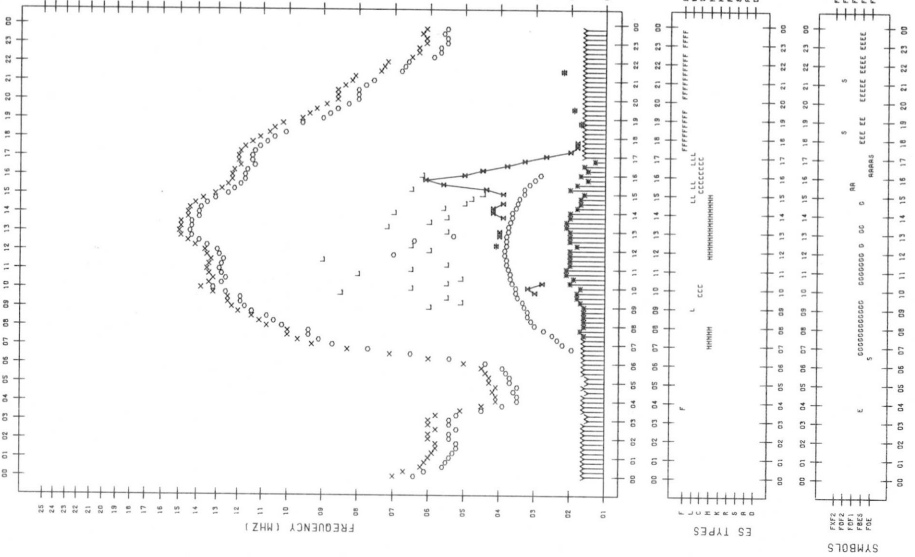
STATION : KAKIKENRI SCALER : T-ODA DATE : 1982/10/22



F-PLOT DATA

STATION : YAPORAMA SCALER : H-MISTUODHE
DATE : 1982/10/23

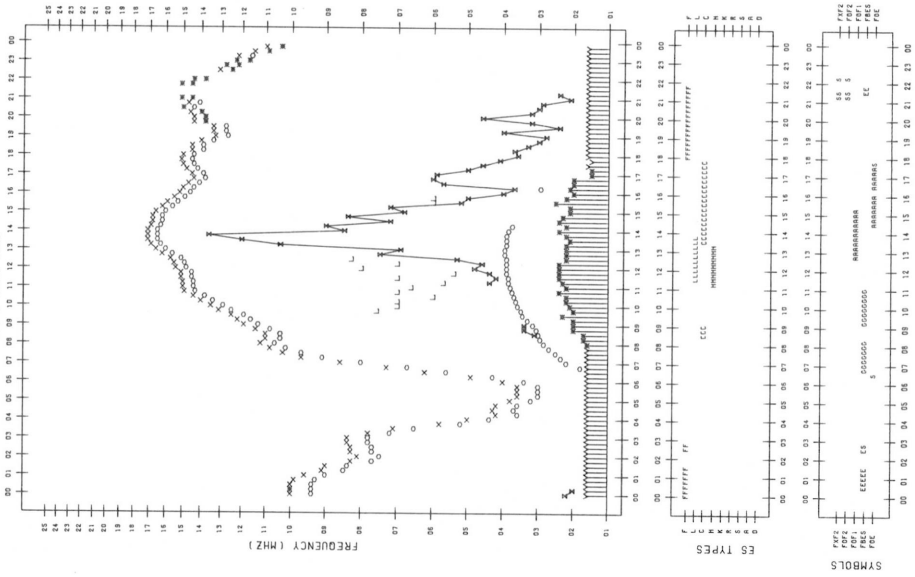
135°E MEAN TIME



F-PLOT DATA

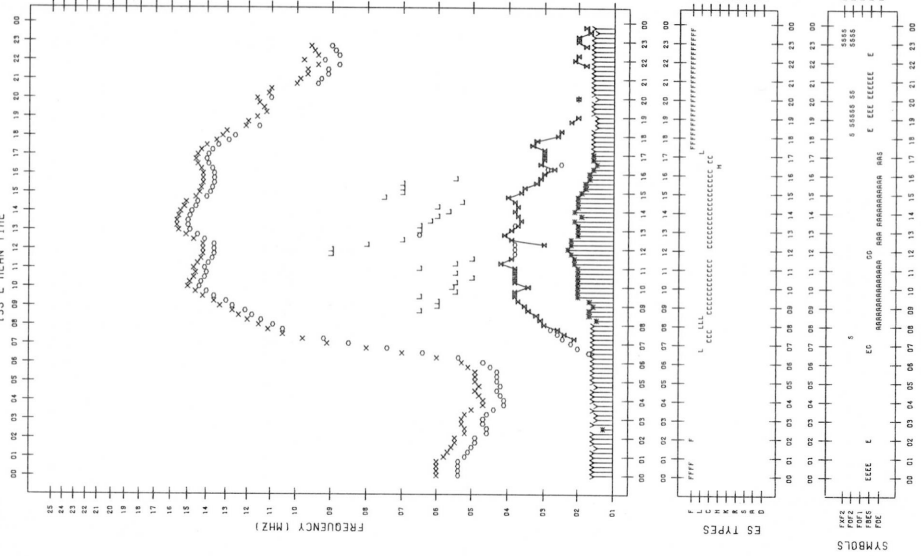
STATION : OKINAWA SCALER : R-QTSUKA
DATE : 1982/10/23

135°E MEAN TIME



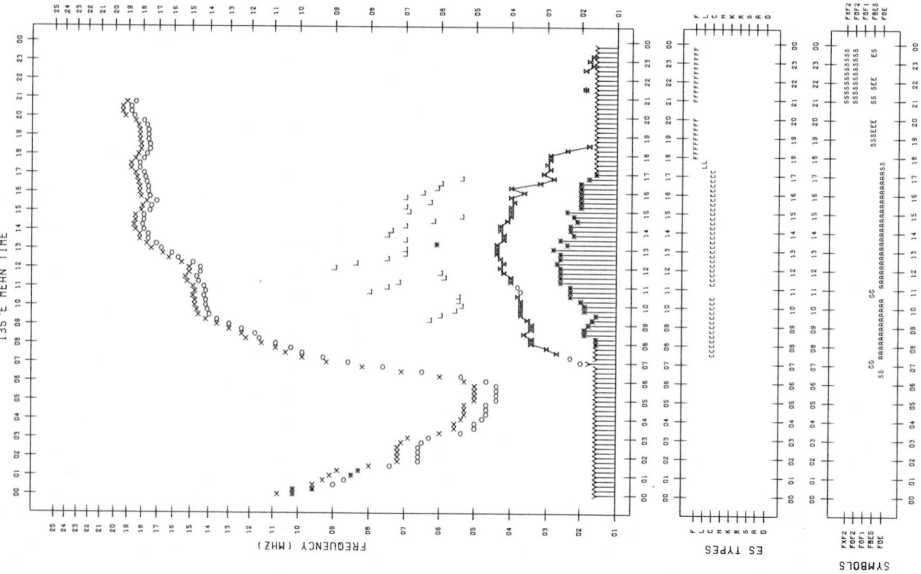
F-PLOT DATA

STATION : YAMAGAWA SCALER : H-MISTUDJIDE DATE : 1982/10/24

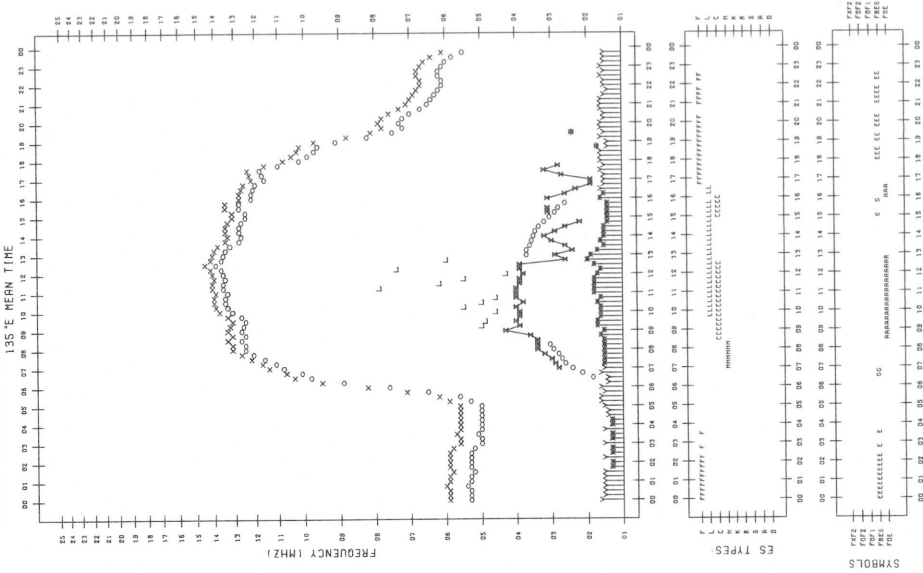


F-PLOT DATA

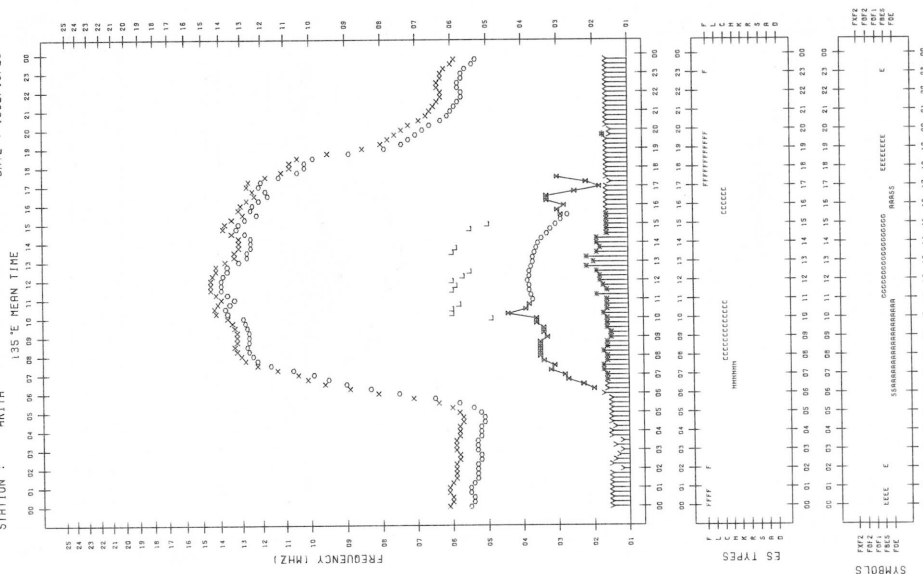
STATION : OKINAWA SCALER : R-OTSUKA DATE : 1982/10/24



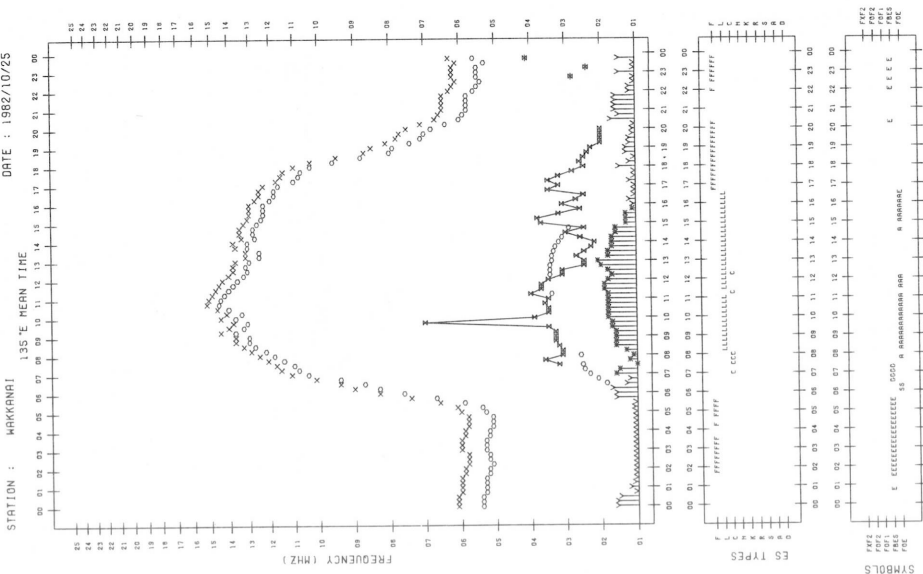
F-PLOT DATA
STATION : KOKUBUNJI TOKYO
SCALER : S.HIIDOME
DATE : 1982/10/25
135°E MEAN TIME



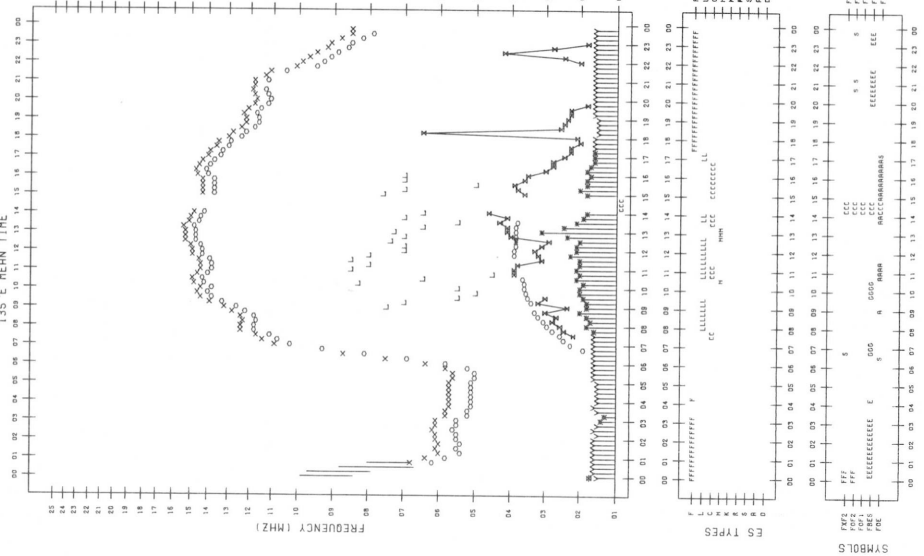
F-PLOT DATA
STATION : 6K1TA
SCALER : T.MORI
DATE : 1982/10/25
135°E MEAN TIME



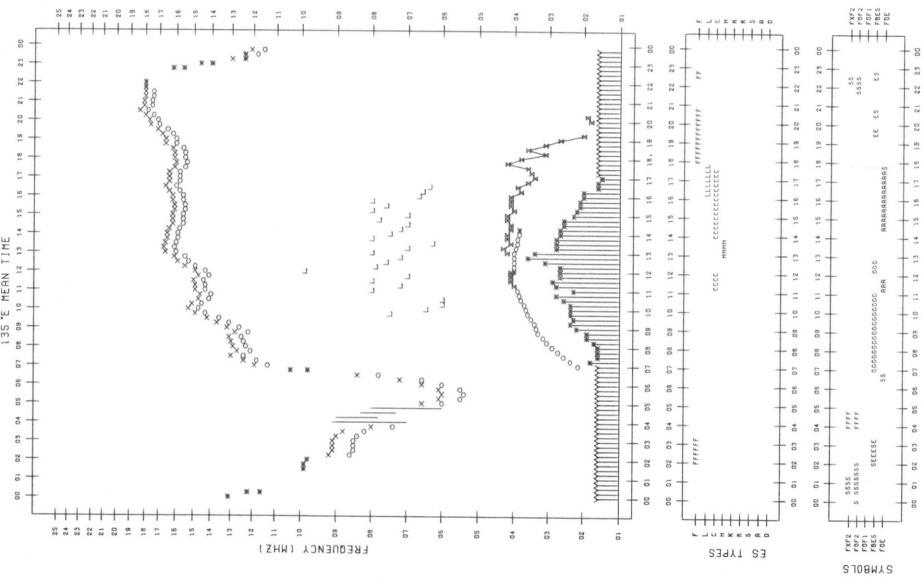
F-PLOT DATA
STATION : WAKKANAI
SCALER : S.OKAMOTO
DATE : 1982/10/25
135°E MEAN TIME



F- PLOT DATA
STATION : YAHADAMA SCALER : H.MISTUDDE
DATE : 1982/10/25
135°E MEAN TIME

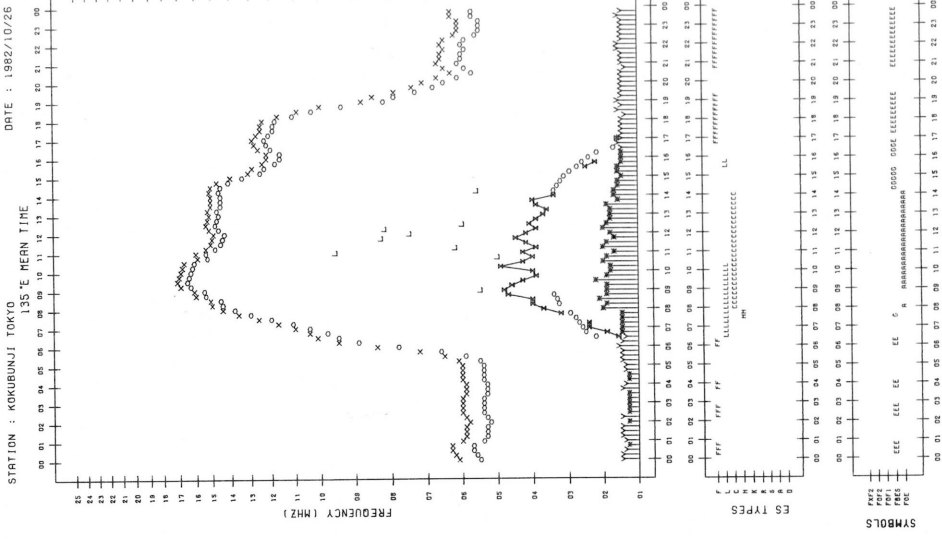


F- PLOT DATA
STATION : OKINAWA SCALER : R.OTSUKA
DATE : 1982/10/25
135°E MEAN TIME



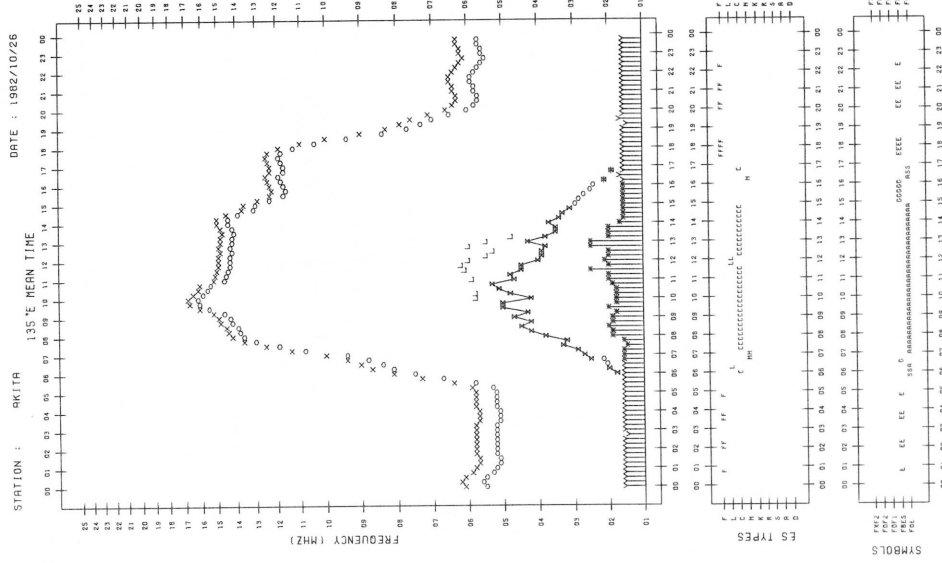
STATION : KOKUBUNJI TOKYO SCALER : S-HIIDOME
 DATE : 1982/10/26

F-PLOT DATA



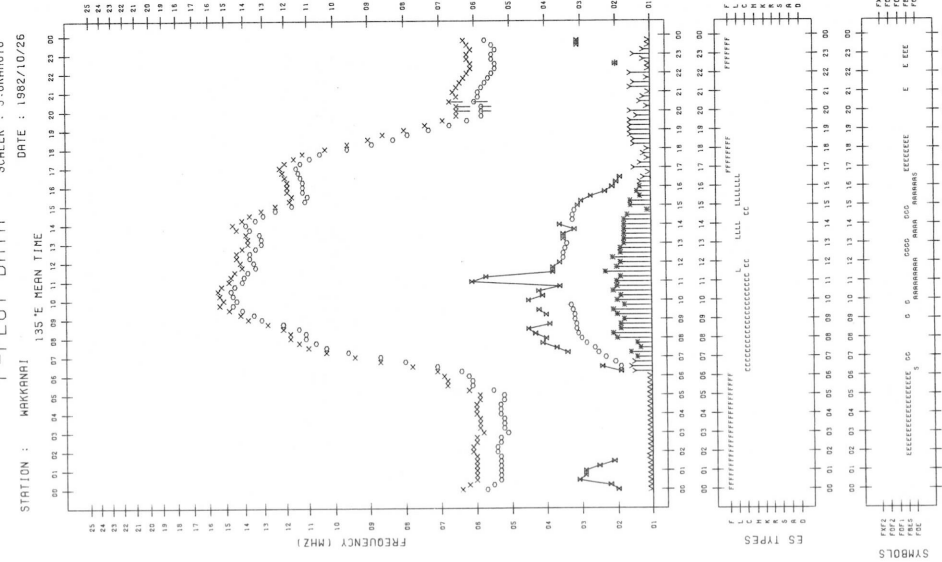
STATION : AKITA SCALER : T-MORI
 DATE : 1982/10/26

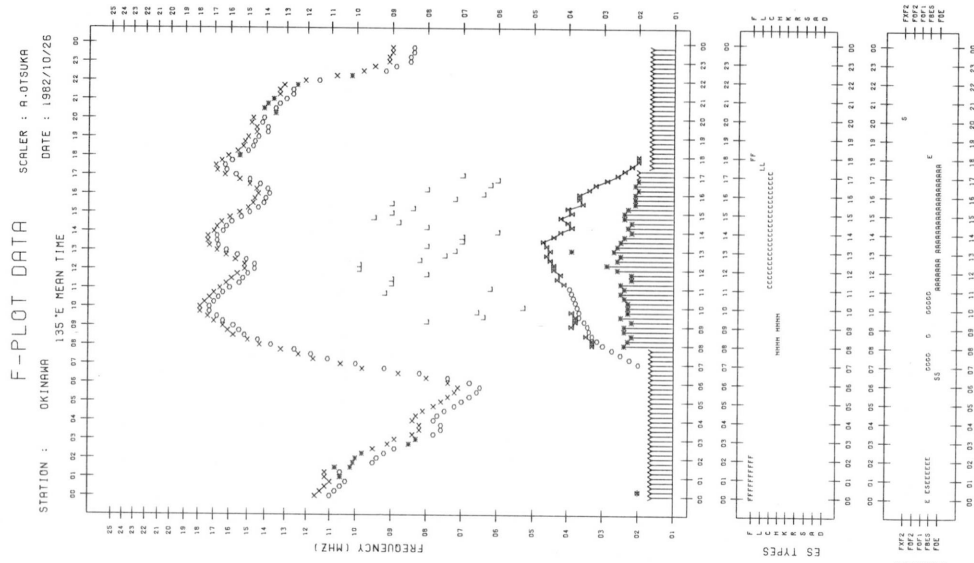
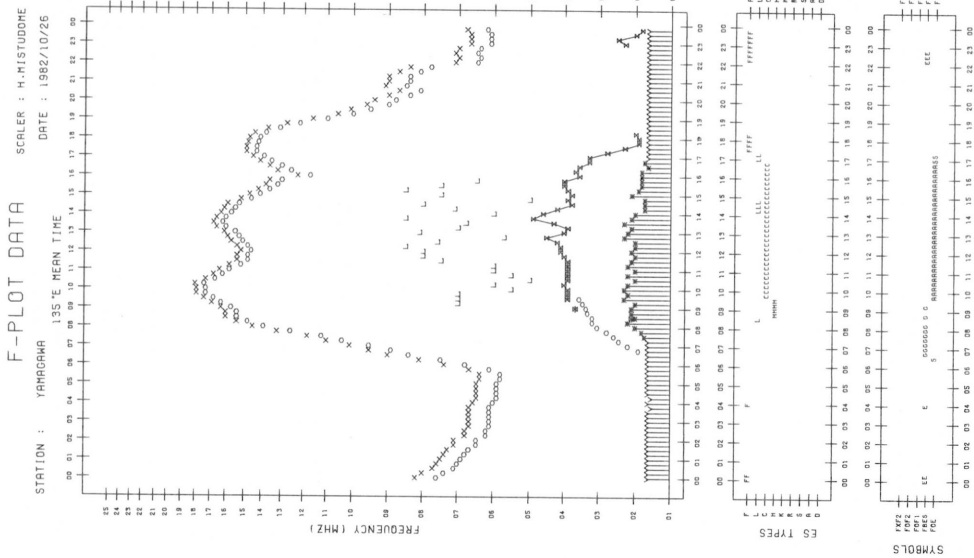
F-PLOT DATA



STATION : MAKKANRI SCALER : S-OKAMOTO
 DATE : 1982/10/26

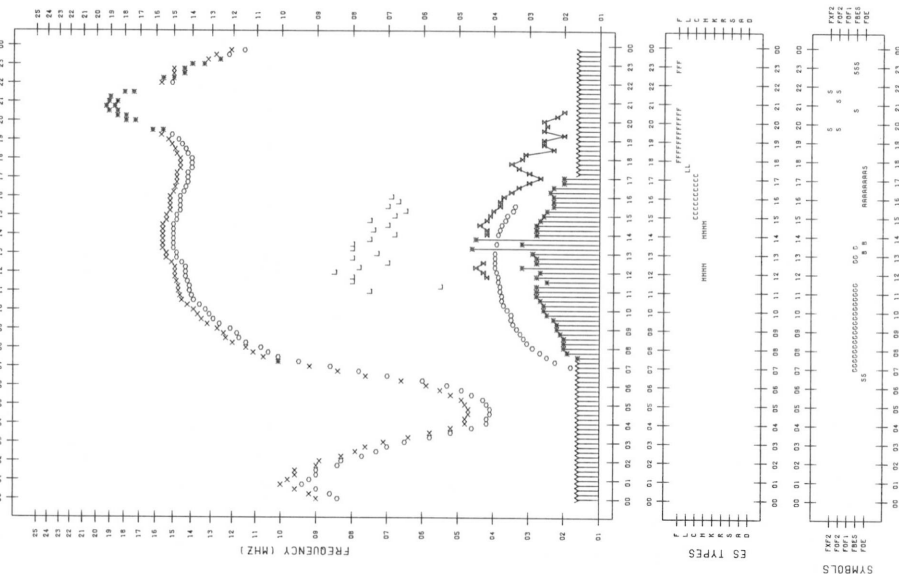
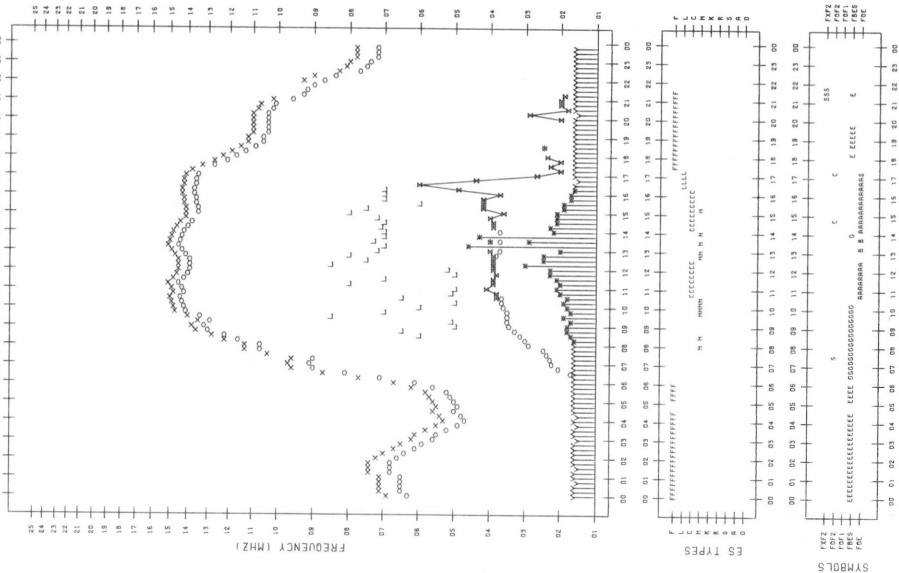
F-PLOT DATA





STATION : YAMAGUCHI SCALER : H-MISTUJUNE DATE : 1982/10/27

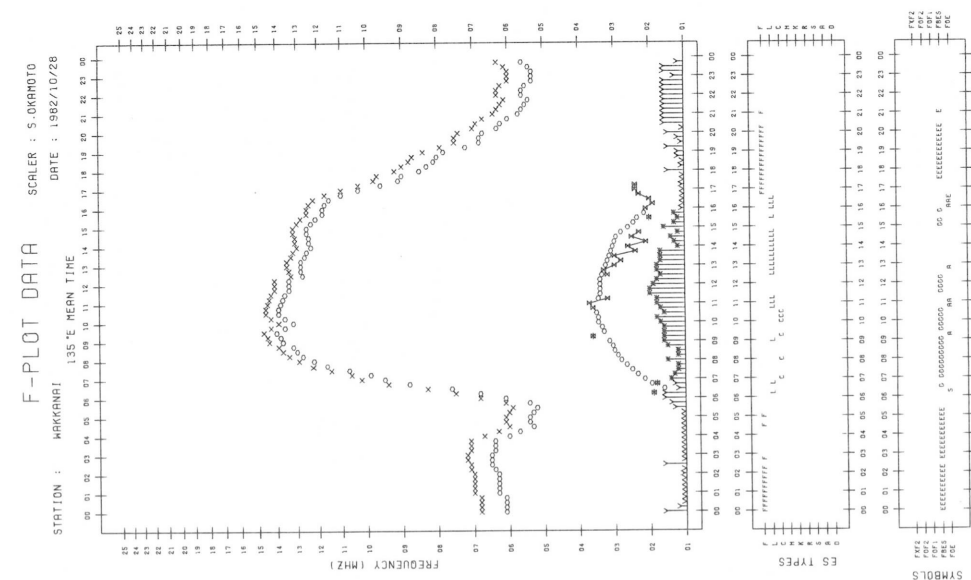
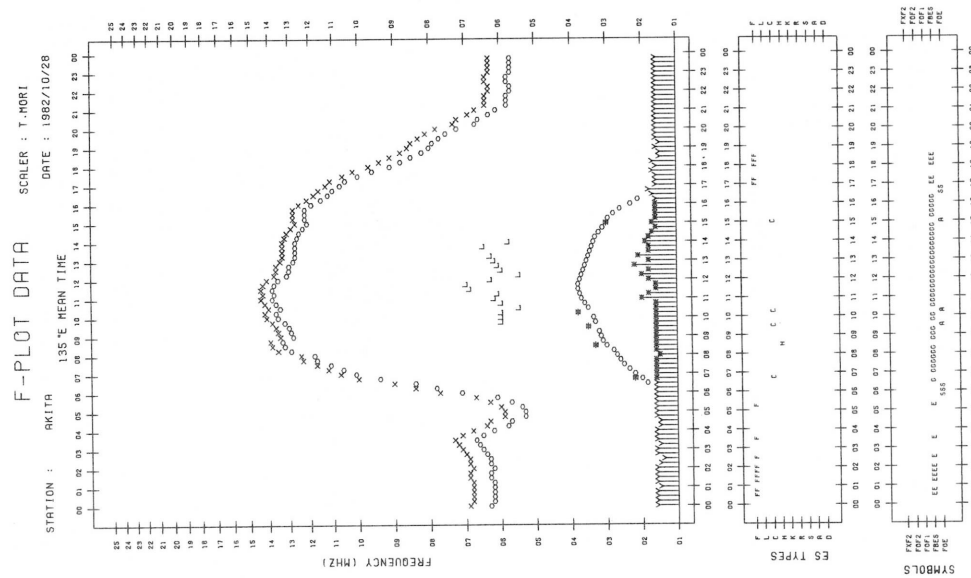
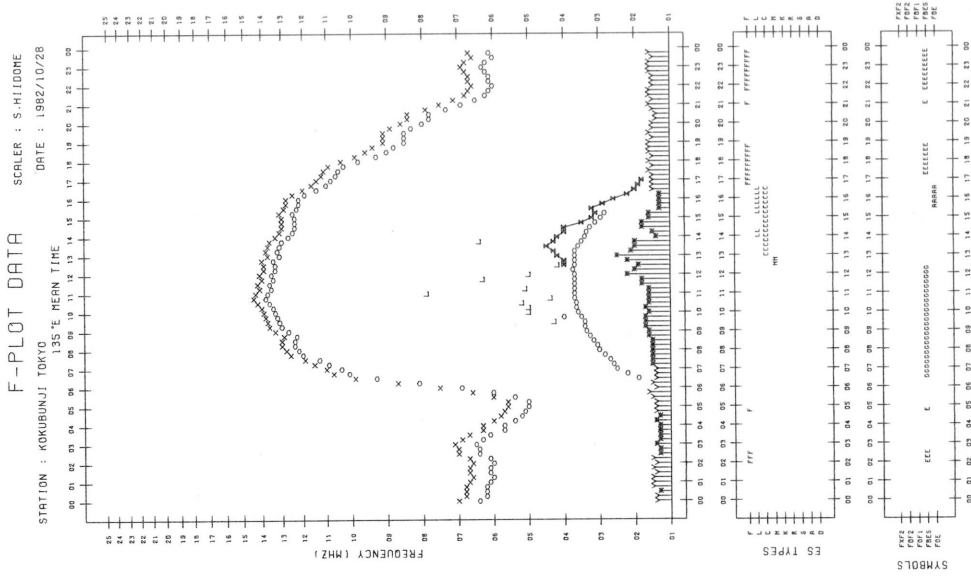
STATION : OKINAWA SCALER : A-OTSUWA DATE : 1982/10/27



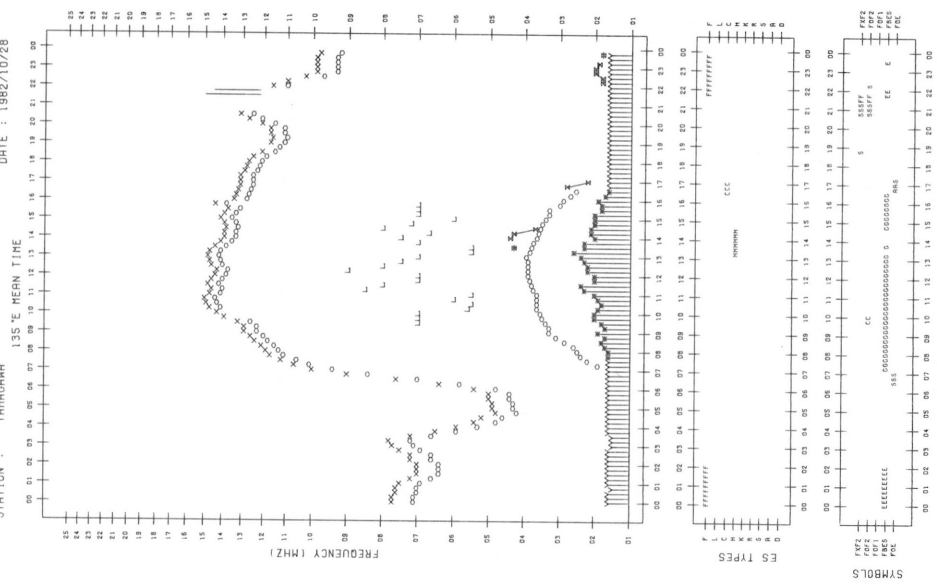
STATION : KOKUBUNJI TOKYO
 SCALER : S-HIIDONE
 DATE : 1982/10/28
 135°E MEAN TIME

STATION : AKITA
 SCALER : T-MORI
 DATE : 1982/10/28
 135°E MEAN TIME

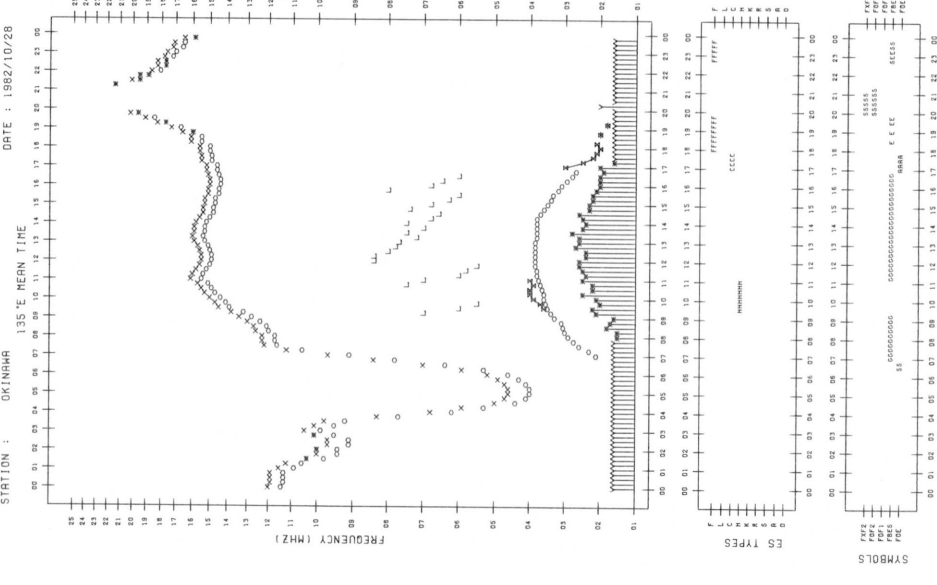
STATION : MIYAKAWA
 SCALER : S-OKAMOTO
 DATE : 1982/10/28
 135°E MEAN TIME



STATION : YAHARAHA SCALER : H-HISTUODHE DATE : 1982/10/28



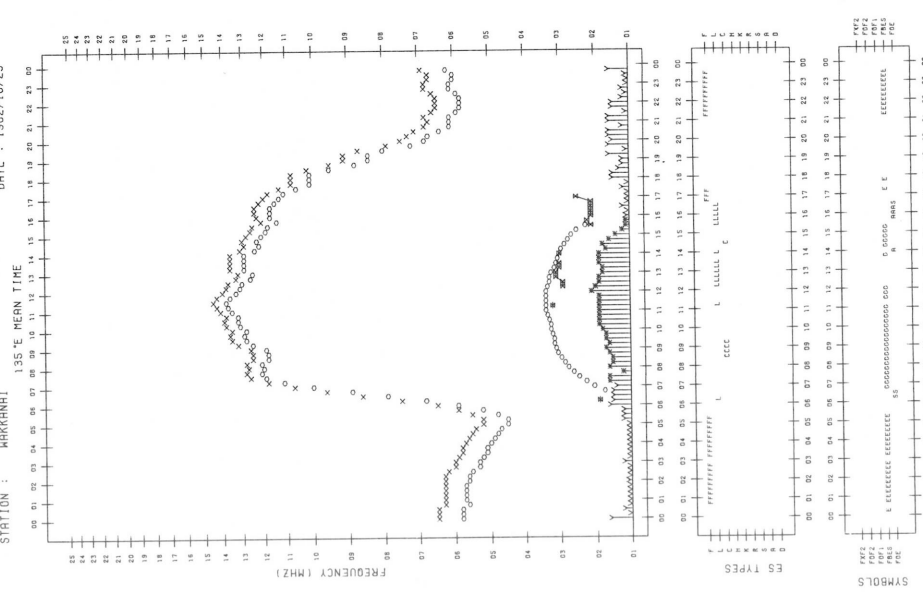
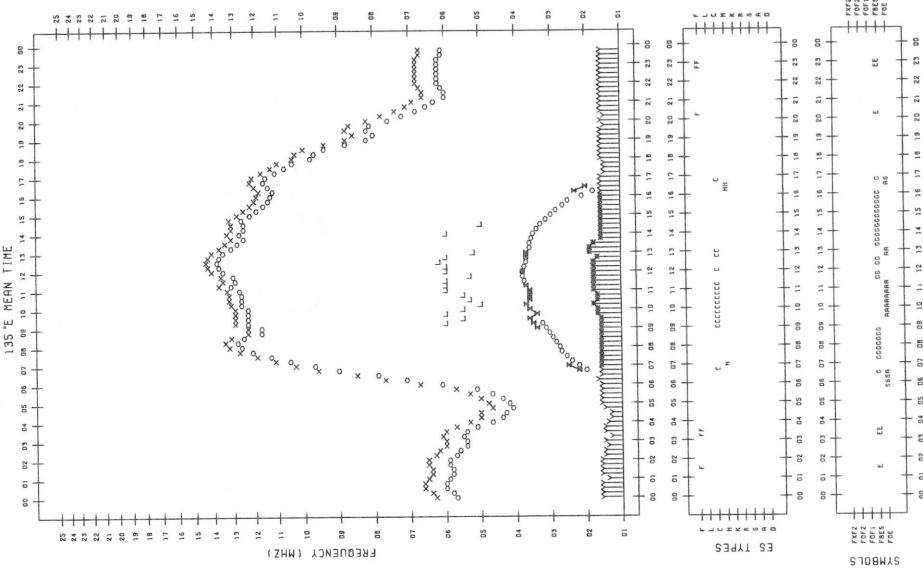
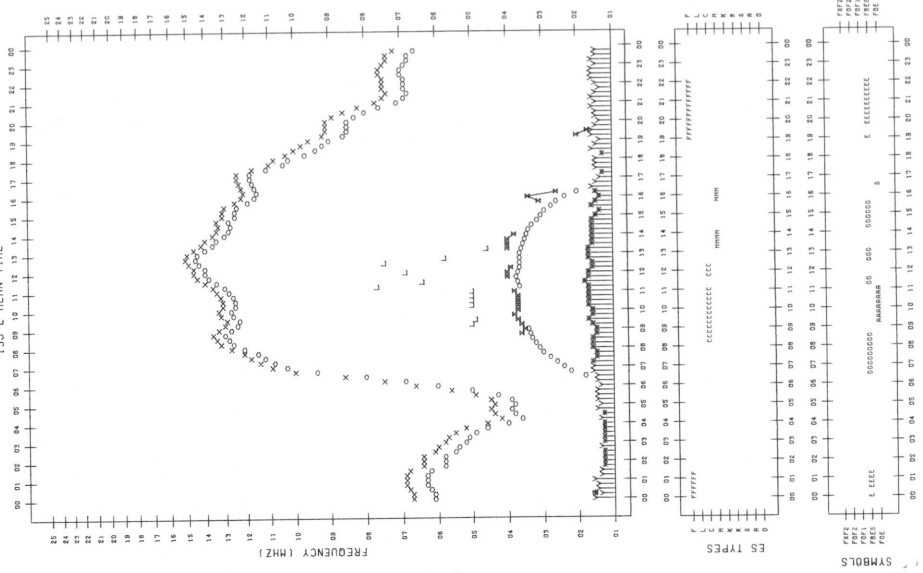
STATION : OKINAWA SCALER : A-OTSUKA DATE : 1982/10/28



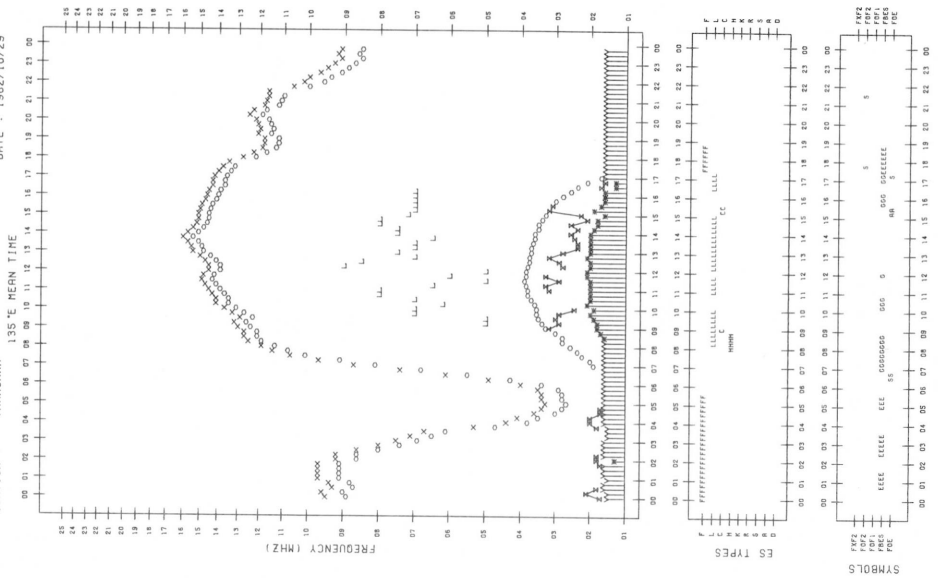
STATION : KOKUBUNJI TOKYO
 SCALER : S-HIDDOHE
 DATE : 1982/10/29
 135°E MEAN TIME

STATION : AKITA
 SCALER : T-MORI
 DATE : 1982/10/29
 135°E MEAN TIME

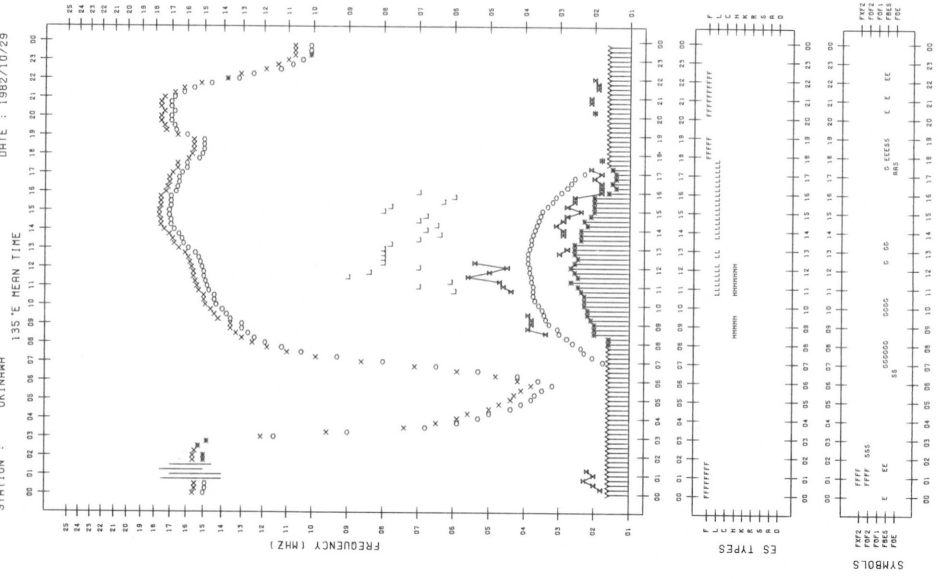
STATION : WAKKANAI
 SCALER : S-OKRPHOTO
 DATE : 1982/10/29
 135°E MEAN TIME



F-PLOT DATA
STATION : YAHADARA SCALER : H-MISTUDRE
DATE : 1982/10/29

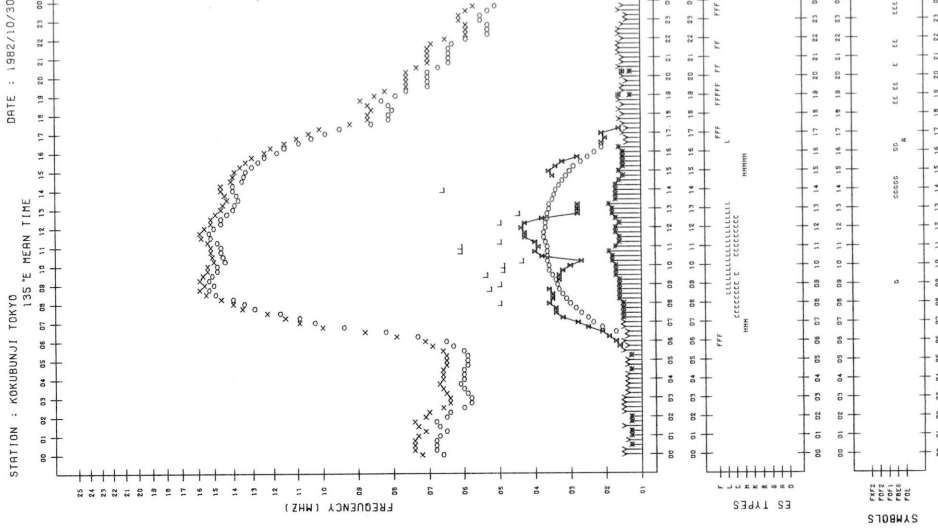


F-PLOT DATA
STATION : OKINAKA SCALER : R-OTSUKA
DATE : 1982/10/29



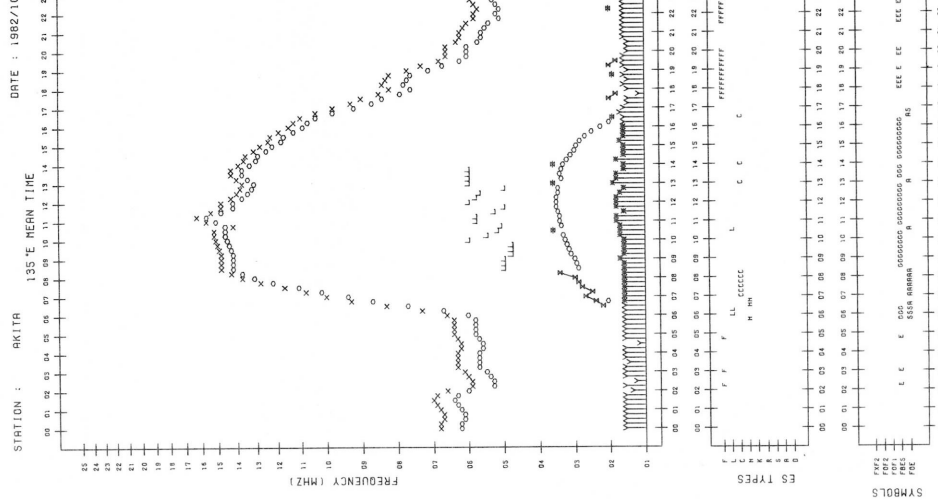
F-LOT DATA

STATION : KOKUBUNJI TOKYO SCALER : S-HIDOME DATE : 1982/10/30



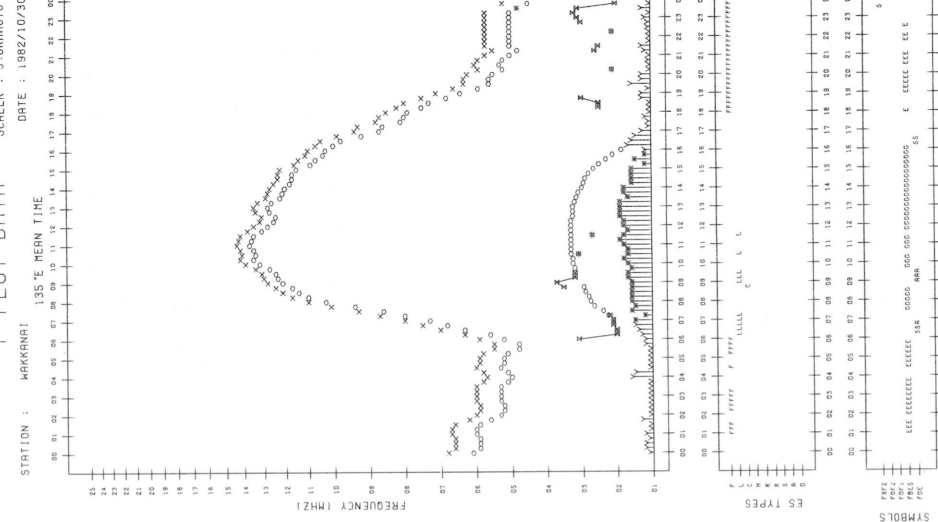
F-LOT DATA

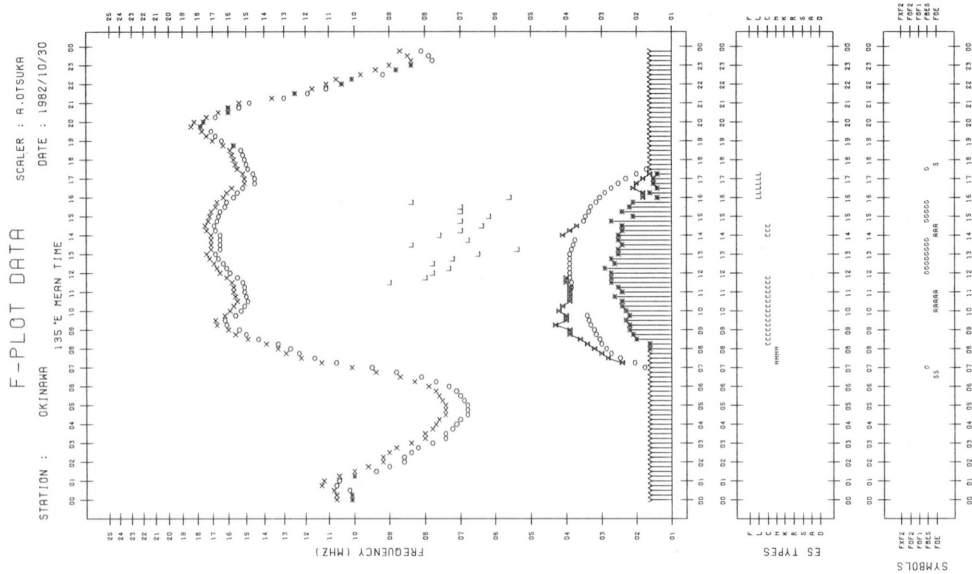
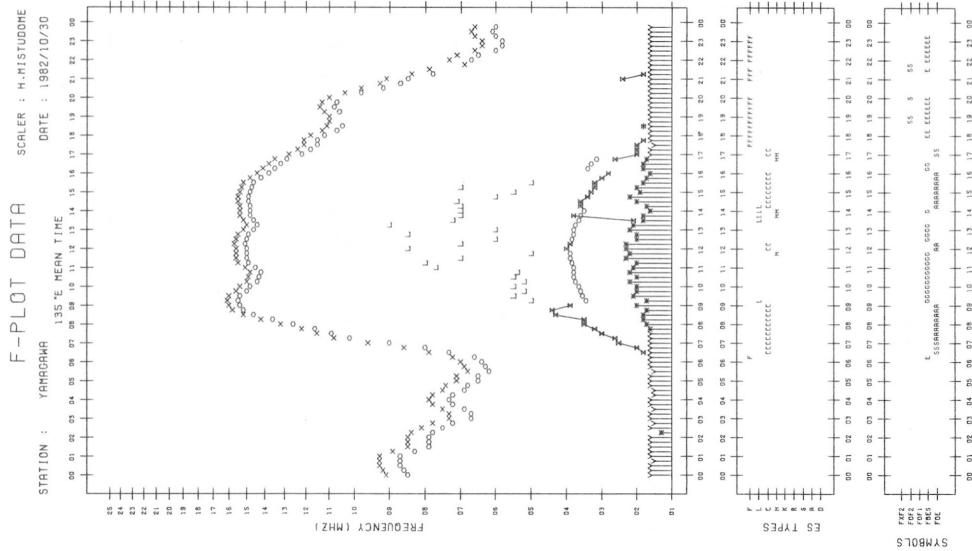
STATION : AKITA SCALER : T-MORI DATE : 1982/10/30

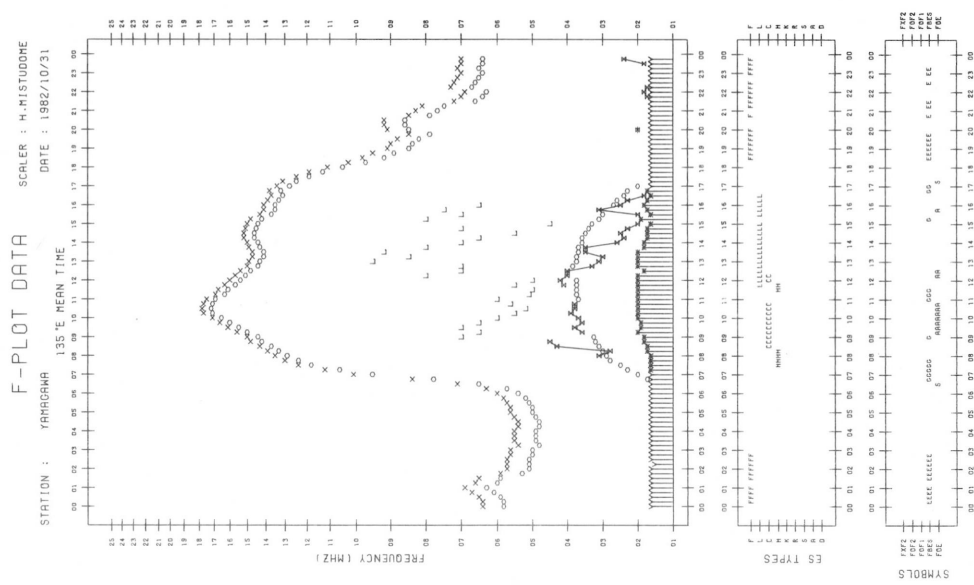
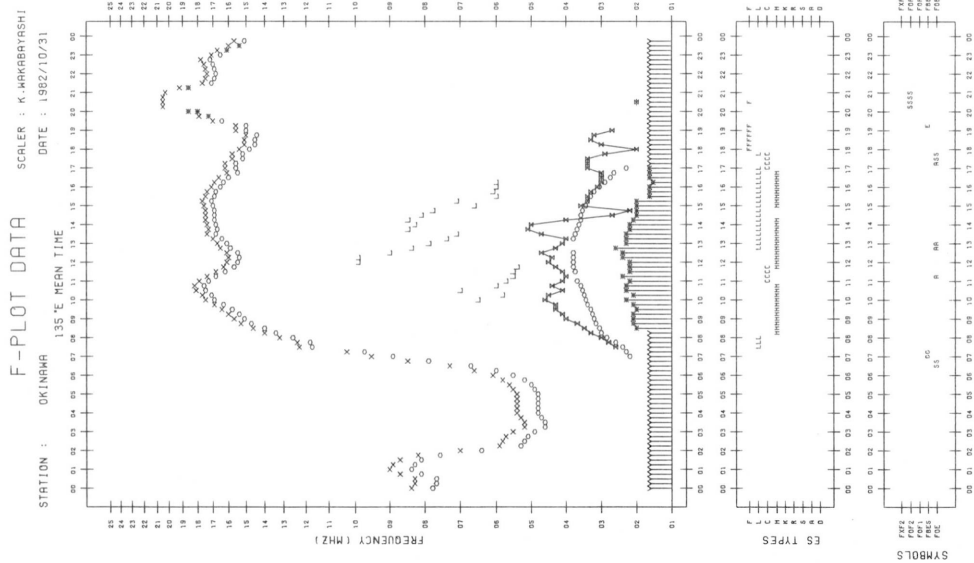


F-LOT DATA

STATION : WAKKANAI SCALER : S-OKAMOTO DATE : 1982/10/30







SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

October 1982

Single-frequency total flux observations at 200 MHz										
Flux density: $10^{-22} W_m^{-2} Hz^{-1}$						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	10	10	q	10	10	2	2	*	1	1
2	10	10	10	10	10	1	1	1	2	1
3	10	10	10	11	10	2	2	3	1	2
4	11	11	11	q	11	1	1	*	*	1
5	q	q	q	9	q	*	*	*	*	*
6	10	10	10	10	10	0	0	1	0	0
7	10	10	10	10	10	0	0	0	0	0
8	10	10	10	-	10	0	0	0	-	0
9	(10)	10	q	10	10	(0)	*	*	1	*
10	10	10	10	10	10	1	1	1	0	1
11	10	11	11	10	10	0	1	0	0	0
12	10	10	10	10	10	0	0	0	0	0
13	10	11	12	10	11	0	0	0	0	0
14	10	10	10	9	10	0	0	0	0	0
15	9	9	9	9	9	0	0	0	1	0
16	9	9	q	11	9	1	0	*	*	1
17	9	9	9	12	9	*	1	*	1	*
18	10	9	9	8	10	0	0	0	0	0
19	9	8	(9)	8	8	0	*	(0)	1	0
20	9	8	(9)	9	8	1	0	(0)	*	0
21	9	9	(9)	9	9	*	0	(0)	*	*
22	9	9	(9)	9	9	*	*	(0)	0	*
23	9	9	(9)	9	9	0	0	(0)	2	0
24	9	9	(9)	10	9	3	2	(2)	1	2
25	10	10	(10)	11	10	1	2	(2)	1	1
26	11	10	(10)	10	10	1	1	(0)	1	1
27	10	10	(10)	9	10	1	1	(1)	0	1
28	10	10	(9)	10	9	0	0	(0)	1	0
29	10	10	(10)	10	10	1	0	(0)	0	1
30	9	10	(9)	9	10	0	1	(1)	0	1
31	9	9	(9)	10	9	0	0	(0)	2	0

Note No observations during the following periods:

8th 0722 - 0812

8th 2037 - 9th 0125

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

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

October 1982

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	55	55	54	56	54
2	55	56	54	57	55
3	56	54	52	51	55
4	50	50	50	48	50
5	47	47	47	44	47
6	44	44	44	42	44
7	42	43	43	41	43
8	41	42	(42)	-	41
9	43	44	44	44	44
10	44	44	44	42	44
11	42	42	42	42	42
12	42	43	44	42	43
13	42	43	43	42	42
14	42	42	42	42	42
15	42	43	42	41	42
16	41	42	42	40	41
17	41	43	42	42	42
18	42	42	42	40	42
19	40	40	(40)	-	40
20	40	40	(39)	42	40
21	41	41	(41)	41	42
22	42	42	(43)	44	42
23	43	44	(44)	49	44
24	49	48	(48)	48	48
25	48	51	(52)	48	49
26	50	52	(50)	50	50
27	50	50	(51)	48	50
28	49	49	(48)	54	49
29	56	55	(53)	49	55
30	51	51	(48)	46	50
31	46	48	(47)	(44)	47

Note No observations during the following periods:

8th 0733 - 0815 19th 2050 - 2350
8th 2040 - 9th 0125 31st 2105 - 2327

SOLAR RADIO EMISSION

HIRAIISO (HIRA)

36.37N 140.62E

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

October 1982

Outstanding Occurrences								
(single-frequency observations)								
Normal observing period: 2050 - 0800 (sunrise to sunset)								
OCT 1982	FREQ STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY		POLARIZATION POSITION REMARKS
						PEAK	MEAN	
1	200 HIRA	41 F	0216	0258.8	72	1100	-	ML
	200	44 NS	2030E	0343	706D	10	5	0
	500	42 SER	2157.6	2159.1	2.5	1000	-	0
2	500	42 SER	0000.3	0000.3	13.5	250	-	0
	500	46 C	0151	0151.3	2	330	35	0
	500	8 S	0424.9	0425.0	0.6	130	-	0
3	200	42 SER	0557	0607.5	25	285	-	WL
	200	44 NS	2033E	0114	706D	25	10	WR
	500	8 S	0215.4	0215.4	0.5	100	-	0
6	200	43 NS	2325	0222	310D	15	5	WL
	200	46 C	0513.5	0514.4	1.2	33	12	0
9	200	44 NS	2039E	2300	677D	25	10	MR
	100	44 NS	2039E	2347	677D	280	120	SR
10	500	45 C	0132.0	0133.4	4	15	5	0
	200	46 C	0352.3	0352.8	2.6	310	28	0
	500	45 C	0352.7	0355.6	4.3	110	15	ML
13	200	41 F	0522	0532	17	61	-	0
18	500	45 C	0626.0	0627.4	2.0	400	40	0
20	500	22 GRF	0000E	0027.6	146D	20	8	MR
21	200	46 C	0334.3	0334.8	1.1	65	21	0
	500	45 C	0504.6	0505.9	2.0	19	8	SL
	500	7 C	0529.3	0530.0	1.2	20	6	WL
22	100	46 C	0307.0	0321.4	41	29	8	0
	100	41 F	0309.9	0312.0	5.6	390	-	WL
23	200	46 C	0042.1	0043.0	2.7	54	20	WL
	200	44 NS	2051E	0212	654D	20	10	ML
24	500	45 C	0423.8	0424.4	2.0	250	30	WR
	500	8 S	0519.6	0520.0	0.4	30	-	0
	500	8 S	0521.0	0521.0	0.3	70	-	0
	500	8 S	2122.2	2122.2	0.6	270	-	WL
	500	8 S	2123.6	2123.6	0.3	230	-	WL
25	500	7 C	0025.7	0026.3	0.8	20	8	0
	500	45 C	0321.4	0329.3	16	60	20	SL
	200	46 C	0325.6	0332.8	12.7	34	11	WR
	200	43 NS	0341	0455	246D	10	3	0
	100	43 NS	2227	0016	150	50	20	0
	500	48 C	2301.7	2308.6	38	3400	150	SL
	200	27 RF	2313	2333	41	19	8	WL
	200	46 C	2356	0016.2	78	230	26	WR
26	500	46 C	0008.6	0040.3	35	54	20	WR
				0014.3		40		WR
				0022.3		25		WL
27	200	44 NS	2054E	0219	650D	5	2	WL
	500	45 C	0424.7	0435.0	28	250	100	WR
	200	46 C	0428.0	0440.7	31	450	76	WR
28	100	46 C	0430.3	0434.3	19	2800	240	WL
	500	20 GRF	2155	2232.0	86	15	10	MR
	200	46 C	2217.3	2217.6	3.0	92	35	0
29	100	42 SER	0112.5	0120.0	8.6	2900	-	WL
	500	7 C	0119.7	0120.0	2.0	1000	400	ML
30	100	46 C	0104.0	0104.7	1.0	890	240	WL
31	200	44 NS	2058E	2214	180D	55	15	0
	100	46 C	2140.0	2142.0	4.7	540	50	0

RADIO PROPAGATION

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

OCT 1982 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAIKO

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

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO		Time in U.T.														
Oct. 1982	Whole Day Figure	W W V				W W V H				Conditions			Principal Geomagnetic Storms			
		00 06	12 18	18 24	24	00 06	12 18	18 24	24	00 06	12 18	18 24	Start	End	Range	
1	4-	2U	S	5U	3U	3	4	SU	3	N	N	N	N			
2	3+	2U	4U	3U	2U	4	4	SU	3	N	N	N	N			
3	4-	2U	S	3U	4U	4	4	SU	4	N	N	N	N			
4	4o	4	SU	4U	3	3	4	SU	3	N	N	N	N			
5	4o	3	S	5	4	4	4	SU	4	N	N	N	N			
6	4o	4	SU	4U	3U	4	4	SU	4	N	N	N	N			
7	4o	4	4U	4U	4	4	4	SU	4	N	N	N	N			
8	4-	4	S	3U	4	4	4	S	4	N	N	N	N			
9	4o	4	S	4U	4	4	4	SU	4	N	N	N	N			
10	4+	4	S	5	4	4	4	SU	4	N	N	N	N			
11	4o	4	S	4U	4	4	4	4U	4	N	N	N	N			
12	4+	4	S	5	4U	4	4	SU	4	N	N	N	N			
13	3+	4	S	2U	4	4	3	S	4	N	N	N	N			
14	4-	3	4U	3U	4	4	3	SU	4	N	N	N	N			
15	3+	4	S	2U	4	4	3	S	4	N	N	N	N			
16	4-	4	S	4U	4	4	3	S	4	N	N	N	N			
17	4o	4	4U	5	4	4	3	S	4	N	N	N	N			
18	3+	4	S	2U	4	4	3	3U	4	N	N	N	N			
19	4-	4	S	3U	4	4	4	S	4	N	N	N	N			
20	4o	4	4U	4	4	5	3	S	4	N	N	N	N			
21	4o	4	S	5	4	4	3	S	4	N	N	N	N			
22	4o	4	4U	5	4	4	4	S	4	N	N	N	N			
23	4o	4	S	4U	4	4	4	S	4	N	N	N	N			
24	4o	4	4U	4U	4	4	4	3U	4	N	N	N	N			
25	4o	4	4U	4U	4	4	5	4U	4	N	N	N	N			
26	4o	4	SU	3U	4	4	4	4U	4	N	N	N	N	0029	20.0	64
27	4+	4	S	5	4	4	4	SU	4	N	N	N	N			
28	4+	4	S	5	5	4	4	SU	4	N	N	N	N	18.8	---	160
29	4+	4	4U	4	5	4	5	SU	4	N	N	N	N	---	---	
30	4o	4	C	C	C	4	C	C	C	N	N	N	N	---	---	
31	3o	4	S	2U	3U	4	3	S	3	U	N	N	N	---	08.0	
														1338	---	125

RADIO PROPAGATION

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO		Time in U.T.									
Oct. 1982	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Correspondence		
	CO	HA	1)	2)					Solar Flare	Solar Noise	Geomag. Crochet
6	15	25	10		2303	18	S	2	x	x	
7	5	15	15		0252	18	S	1	x	x	
22	10	8			0300	35	SL	1-			
23		7			0011	13	S	1-	x		
25		15	17		0323	37	G	1	x	x	
25	23D	25D	21	C	2257	30	SL	2-	x	x	
26		6	10		0026	14	SL	1-	x	x	
27	5	5	8		0304	12	SL	1-	x	x	
27	15	13	41	20D	0406	22	S	3+	x	x	
27	7	5	17		0433	31	SL	1+	x	x	
29		8			0123	23	SL	1-	x	x	

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

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SPA)

I N U B O

Oct.	S P A							
1982	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω /LR	NWC	Ω /H	NLK	Start	End	Maximum
1			<u>13</u>	11	—	0033	0112	0042
1			6		—	0112	0142	0118
1		12			—	0820	0844	0823
2				4	—	0001	0034	0010
2			<u>12</u>	6	—	0047	0123	0102
2			<u>7</u>	2	—	0149	0220	0200
2				3	—	2331	0011	2343
3		<u>6</u>	6	3	—	0247	0319	0253
3	6	4	<u>5</u>		—	0402	0437	0408
3				9	—	2011	2030	2018
4		9	<u>4</u>		—	0139	0203	0144
4		6	<u>10</u>	4	—	0210	0255	0219
4		9	<u>8</u>		—	0400	0443	0408
4		6			—	0539	0611	0550
4				12	—	2146	2238	2152
4				5	—	2241	2316	2245
4		11	6	<u>5</u>	—	2333	0010	2340
5		10	—	<u>5</u>	—	0158	0244	0213
5		8	—	<u>8</u>	—	0244	0320	0256
5		9	—		—	0322	0348	0329
5		10	—		—	0404	0504	0412
5		14	—		—	0611	0657	0618
5				13	—	2144	2234	2148
6				4	—	0017	0042	0020
6		23	<u>13</u>	7	—	0120	0220	0130
6		4	<u>5</u>		—	0313	0345	0320
6		7	<u>6</u>		—	0350	0430	0357
6		12	<u>10</u>		—	0458	0542	0508
6		23	<u>17</u>		—	0544	0702	0551
6	7	<u>8</u>			—	0707	0728	0713
6	26	<u>21</u>	4		—	0741	0910	0753
6	18	36	84	<u>92</u>	—	2258	0102	2310
7	17		10	<u>6</u>	—	0113	0144	0120
7			4	<u>3</u>	—	0148	0200	0153
7		7	10	<u>6</u>	—	0200	0240	0208
7	18	<u>102</u>	79	43	—	0251	0354D	0257
7		<u>27</u>	—	15	—	0354E	0455	0404
7	13	<u>9</u>	—		—	0517	0550	0524
7	41	<u>10</u>	—		—	0658	0737	0702
8			5		—	0303	0327	0311
11			—	11	—	2238	2330	2244
12				3	—	2250	2306	2252
12				3	—	2348	0004	2356
13				4	—	0004	0026	0008
14		21	31	<u>17</u>	—	0151	0307	0157

I N U B O

Oct.	S P A							
1982	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω /LR	NWC	Ω /H	NLK	Start	End	Maximum
15		<u>15</u>	12		—	0546	0633	0553
15	36	<u>13</u>			—	1148	1238	1154
15				20	—	2035	2147	2048
16		13			—	0834	0917	0838
16		27			—	0944	1040	0952
19		<u>42</u>	26		—	0516	0744	0537
19	—	15			—	1136	1214	1143
21	9		<u>22</u>	15	—	0034	0120	0038
21		5	<u>7</u>	3	—	0132	0152	0137
21			4		—	0210	0250	0220
21		24	<u>13</u>		—	0504	0618	0518
21	21	<u>25</u>	7		—	0651	0728	0656
21		<u>51</u>	24		—	0729	0856	0747
21		12			—	1058	1132D	1105
21		13			—	1132E	1236	1146
21	18	25	30	<u>49</u>	—	2251	0104	2302
22		<u>78</u>	68	44	—	0242	0523	0319
22	17	<u>23</u>	12		—	0705	0810	0713
22			<u>20</u>	18	—	2358	0119	0021
23	10	31	<u>36</u>	18	—	0221	0341	0231
23	13	21	<u>14</u>	14	—	0344	0434	0356
23		14	<u>9</u>		—	0438	0540	0445
24			7	<u>6</u>	—	0018	0111	0025
24		15	<u>18</u>	9	—	0200	0248	0210
24		14	<u>14</u>		—	0409	0513	0413
24		<u>55</u>	35	13	—	0533	0645	0540
24		<u>27</u>	12		—	0700	0810	0709
24		36			—	0819	0918	0830
25			—	9	—	0027	0125	0031
25	37	<u>104</u>	—	53	—	0322	0640	0350
25		13	—		—	0706	0753	0716
25	21	35	85	<u>96</u>	—	2250	0024D	2306
26	29	30	55	<u>53</u>	—	0024E	0341	0032
26				5	—	2202	2232	2208
26				5	—	2306	2354	2318
27			<u>13</u>	9	—	0052	0200	0056
27		5	<u>8</u>	4	—	0233	0302	0244
27	17	50	<u>46</u>	26	—	0303	0400	0308
27	60	—	<u>128*</u>	83	—	0400	0700	0412
27				4	—	2230	2311	2235
28			<u>11</u>	10	—	0016	0117	0033
28		<u>13</u>	22	14	—	0353	0458	0408
29		27	—	<u>13</u>	—	0121	0226	0132
29	29	<u>10</u>	—		—	0520	0653	0532
29			—	13	—	2217	2355	2234
30	47		—		—	1323	1432	1337
31			—	6	—	2211	2242	2215

IONOSPHERIC DATA IN JAPAN FOR OCTOBER 1982

F-406 Vol.34 No.10 (Not for Sale)

電離層月報 (1982年10月)

第34卷 第10号 (非売品)

1983年1月25日 印刷

1983年1月30日 発行

編集兼 郵 政 省 電 波 研 究 所

発行所 〒184 東京都小金井市貫井北町4丁目2-1

☎ (0423) (21) 1 2 1 1 (代)

印刷所 有 限 会 社 研 文 社

〒160 東京都新宿区四谷3-6 結城ビル5 F

☎ (03) (357) 8 3 5 9・8 3 7 4

Queries about "Ionospheric Data in Japan" should be forwarded to:
The Radio Research Laboratories, Ministry of Posts and Telecommunications,
2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184 JAPAN.