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IONOSPHERIC DATA IN JAPAN

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INTRODUCTION

This Series contains data on ionosphere (I) , solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, 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)
Kokubunji	35°42.4′N	139°29.3′E	25.5°N	205.8°	Vertical Sounding (I)
Yamagawa	31°12.1′N	130°37.1′E	20.4°N	198.3°	Vertical Sounding (I)
Okinawa	26°16.9′N	127°48.4′E	15.3°N	196.0°	Vertical Sounding (I)
Hiraiso	36°22.0′N	140°37.5′E	26.3°N	206.8°	Solar Radio Emission (S)
Inubo	35°42.2′N	140°51.5′E	25.6°N	207.0°	Radio Receiving (P)

A. IONOSPHERE

Ionospheic observations are carried out at the above four stations in Japan by means of vertical sounding using ionosondes.The ionosonde produces ionograms,which are recorded digitally on computer storage medium as well as graphically on 35 mm photographic film. The digitally-recorded ionograms are collected from each station by the central computer and reduced to numerical values and Summary Plots by the automatic processing system. The ionograms obtained at Kokubunji are manually scaled as well by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five factors of ionospheric characteristics are published for the present. The reliability of these factors has been ascertained by comparison of the automatically-scaled parameters with the manually-scaled values of large amounts of test ionograms.

The published data consist of tabulations of hourly values of three factors (*foF2, fEs, fmin*) and monthly medians of two factors (*h′Es, h′F*) , daily Summary Plots and monthly medians plot of *foF2*.

a. Characteristics of Ionosphere

foF2	Ordinary wave critical frequency for the *F2* layer
fEs	Highest frequency of the *Es* layer whether it may be ordinary or extraordinary
fmin	Lowest frequency which shows vertical ionospheric reflections
h′Es *h′F*	Minimum virtual height on the ordinary wave for the *Es* and *F* layers, respectively

b. Descriptive Letters

The following descriptive letters are used in the tables.

A Impossible measurement because of the presence of a lower thin layer,for example *Es* (for *foF2*).

B Impossible measurement because of absorption in the vicinity of *fmin*.

C Impossible measurement because of any failure in observation.

G Impossible automatic scaling because of too small ionization density of the layer (for *fEs*).

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of trouble in the automatic data processing system, but existence of film record.

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

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

Median (MED) is defined as the middle value when the numerical values 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.

If CNT is less than 10, there are blank spaces left.

d. Reliability of Automatic Scaling

The results of the comparison between automatically-scaled values and manually-scaled ones showed that hourly values of *foF2* , *fEs* and *fmin* were scaled within a difference of 1 MHz from about 90 , 90 and 99% , respectively of the test ionograms.

e. Summary Plot

Daily Summary Plots which are made from quarter-hourly digital ionograms are published to present general ionosphere conditions. The upper and middle parts of a Summary Plot show the diurnal variation of the frequency range of the echoes reflected from the *F* and *E* regions, respectively. The two solid arcing lines indicate the predicted values of *fxE* and *foE* calculated by the method described in the CCIR report 340. The lower part shows the diurnal variation of the virtual height where the echo traces become horizontal.

A2. Manual Scaling

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 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

fxI	Top frequency of spread *F* trace
foF2 *foF1* *foE* *foEs*	Ordinary wave critical frequency for the *F2,F1, E* and *Es* including particle *E* layers, respectively
fbEs	Blanketing frequency of the *Es* layer, e.g. the lowest ordinary wave frequency visible through *Es*
fmin	Lowest frequency which shows vertical ionospheric reflections
M(3000)F2 *M(3000)F1*	Maximum usable frequency factor for a path of 3000 km for transmisson by *F2* and *F1* layers, respectively
h′F2 *h′F* *h′E* *h′Es*	Minimum virtual height on the ordinary wave for the *F2*, whole *F, E* and *Es* layers,respectively
Types of *Es*	See below b.(iii)

b. Symbols

(i) Descriptive Letters

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

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

B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.

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 perturbations of the observed parameter; or spur type spread *F* present.

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

A Less than. Used only when *fbEs* is deduced from *foEs* 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 *Es*

When more than one type of *Es* trace are present on the ionogram, the type for the trace used to determine *foEs* must be written first. The number of multiple trace is indicated after the type letter.

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.

l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the particle *E* layer minimum virtual height.

c An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)

h An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normnal *E* trace. (Usually a daytime type.)

q An *Es* trace which is diffuse and non-blanketing over a wide frequency range.

r An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.

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

d A weak diffuse trace at heights below 95 km associated with high absorption and large *fmin*.

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

k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

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

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

Median (MED) is the middle value when the numerical values 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 at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of three parabolic antennas, one with 10-meter diameter for 200 MHz measurements, one with 6-meter diameter for 500 MHz measurements and one with 2-meter diameter for 2800 MHz measurements, each being equipped with a pair of crossed doublet antennas as a primary radiator, and three appropriate receivers. Each pair of the crossed doublet antennas is used as a polarimeter. Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated for 500 MHz measurements. The intensities are expressed by the flux density in 10^{-22} Wm^{-2} Hz^{-1} unit.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} $Wm^{-2}Hz^{-1}$ unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the " Descriptive Text of Solar Geophysical Data, NOAA " as defined by H. Tanaka in the " Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2 " in January 1975:

SGD Code	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$^+$

The 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.

One of the following symbols may be attached after numerical values, if necessary.

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

B3. Summary Plots of $F_{10.7}$ at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

The following symbols are used in the $F_{10.7}$ index:

*	Measurement made not at 3h U.T..
B	Measurement affected by bursts.

C. RADIO PROPAGATION

C1. Phase Variation in OMEGA Radio Waves at Inubo

The phase values of eight OMEGA radio signals as received at Inubo are depicted for an interval of one month, along with the phase deviation defined as a deviation from a value averaged over the six quietest day within the month. Particulars of the received signals are given in the table below.

In each of the four panels of the figure, the phase (ϕ) is shown in the lower part and the phase deviation ($\Delta\phi$) is shown in the upper part. The phase data are sampled every 30 min, so the curves of the phase and phase deviation are composed of 48 data points per day. The phase delay is measured as a positive value.

The polar cap phase anomaly (PCPA) caused by the solar protons are well detected on the Norway signal. The start, end and maximum times of the PCPA are listed in the table next to the figure, where the times are expressed as day / hour & minute in U.T.. The maximum phase deviation in the list is defined as a phase advance (negative values in the figure) in degrees.

C2. Sudden Phase Anomaly (SPA) at Inubo

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 -, an indistinguishable record is spaced out, and a multi-peak event is marked by *. The most remarkable or distinct phase advance is underlined and listed in the column of *Time*.

In table (b) SPA, *date* indicates the day to which the *start-time* of the 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 Coordinates)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Norway	66°25′N	013°08′E	/N	13.6	10	7820
Liberia	06°18′N	010°40′W	/L	13.6	10	14480
Hawaii	21°24′N	157°50′W	/H	13.6	10	6100
North Dakota	46°22′N	098°20′W	/ND	13.6	10	9140
La Reunion	20°58′S	055°17′E	/LR	13.6	10	10970
Argentina	43°03′S	065°11′W	/AR	13.6	10	17640
Australia	38°29′S	146°56′E	/AU	13.6	10	8270
Japan	34°37′N	129°27′E	/J	13.6	10	1040
North West Cape	21°49′S	114°10′E	NWC	22.3	1000	6990

HOURLY VALUES

IONOSPHERIC DATA of Wakkanai is not available due to the ionosonde trouble.

HOURLY VALUES OF foF2 AT Kokubunji

AUG. 2000

LAT. 35°42.4′N LON. 139°29.3′E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		94	94	A	74	73		93	82	86	95	82	82		85	91	96	93	93	94	94	89	82	82
2	83	83	70	67	69	93	93	97	96	87	A	82	A			74	81	77	92	82	57	62	64	A
3	A	61	58	53	51	A	68	A	A	A	A	76	A	A		82	86	A	83	95	A	68		73
4	69	68	62	A	57	69	94	110	103	90	A	A	86	85	90	90	81	78	72	A	94	A	A	91
5	67	68	67	68	67	72	95	94	92	83	77	A	75	79	A	81	81	A	93		A	74	A	79
6	68	67	56	68	67		83	92	78	A	A			A	A	68	66	66	67	69	A	57	60	60
7	60	57	A	52	60	62	82	83	91	82	80	A	87	A	84	90		85	95	81	58	82	81	74
8	76	95	94	68	57	63	94	94	73	A	79	80		A	82	85	86	96	84	96	66	94	68	68
9	68	70		64	67	63	93	82	84	82	A	82	81	86	92	92	85	86	84	A	A	94	92	91
10	71	95	72	67	64	67	92	100	116	A	A		94	88	90	92	90	92	100	104	94	A	81	
11	95	84	86	52	48	51		94	A	A	A		A			A	A	A	61	53	N	57	47	57
12	55	53	44	52	60	63	63		A	59	A	A			A		77	66	58	54	61	58	70	69
13		68	70	71	75	82	82		A	A	A		A	A	A	A	A	57	58	60	A	62	57	69
14		50	56	51	51	A	95	94	78	81		81	85	82	85	92	87	86	94	87	82	74	71	80
15	95	67		67	62	60		A	84	A		95	107	99	98	100	97	101	103	94	93	78	71	93
16		69	73	72	67	94	115	108	115	80	88	103	107	110	111	111	102	104	106	A	94	92	94	83
17	94	94	95	92	66	94	104	111	100	91	108	107	101	101	103	102	104	94	86	92	93	83	A	68
18	A	68	61	68	63	69	106	116	114	90	91	102	108	108	109	105	98	98	100	98	A	75	95	95
19		94	74	66	70	66	93	104	101	105	114	100	105	112	118	118	110	98	100	93	84	93		
20	74	68	70	67	58		A	114	98	A	103	103	121	128	136	129	122	108		102	102		82	93
21	92	94	94	67	60	69	96	116	116	94	88	91	94	101	108	108	107	107	103	88	83	83	94	80
22	81	93	94	83	94	94	97	108	102	120	117	122	111	102	104	106	102	103	95	93	83	84	82	84
23	83	68	80		62	69	93	93	82	90	94	92	97	101	106	102	97	97		96	93	94		93
24	82	95	94	68	67	67		93	101	107	116	118	121		108	106	116	110	107	99	93	64	69	
25	70		69	68	63	64		116	116	96	87	87	96	101	103	107	107	111	103	92	81	81	85	93
26	93		72	68		67	94	104	94	98	102	103	111	108	110	105	96	98	94	87	81	95	70	69
27	A	68	67	70	51	50	67	74	85	96	96	98	107	107	103	97	88	88	92	92	95	76	76	73
28	72	64	67	57	59	67	80	93	97	92	90	95	101	100	101	102	98	110	116	108	93	95	92	
29	94	84	94	69	57	51	72	93	84	83	90	99	108	102	94	103	98	96	111	83	60	68	A	68
30	68	69	61	53	47	62	57	A	A	A	A	A	84	85	86	80	76	81	83		74	76	73	77
31	79	70	68	55	47	60	64	94	82	88	93	100	94	91	94	91	82	91	93	94	80	80	95	78
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	29	28	28	30	27	25	26	26	22	19	22	24	21	24	28	28	28	29	26	24	28	24	26
MED	76	69	70	67	62	67	93	94	95	90	93	96	99	101	102	98	96	95	93	92	84	79	78	78
U Q	92	93	90	68	67	72	95	108	102	96	103	103	107	107	108	105	102	102	101	96	93	90	88	91
L Q	68	67	64	56	57	62	76	93	84	83	88	82	86	87	90	90	83	85	83	83	77	68	69	69

HOURLY VALUES OF fEs AT Kokubunji

AUG. 2000

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	54	61	62	81	72	117	57	121	60	86	58		36	G	36	G	58	65	58	85	54	38	40	59
2	37	30	29	G	G	33	30	72	54	83	98	68	56	G		33	68	34	50	68	108	63	60	118
3	71	53	59	52	38	49	33	71	124	88	85	80	104	92		56	134	172	71	100	66	40		34
4		51		70	34	34	41	54	65	72	56	56	49	59	G	38	33	33	47	83	60	72	59	28
5	32	34	G	G	G	33	48	39	47	58	46	49	71	48	74		33	100	58		60	52	79	35
6	58	54	52	43	30		62	59		64	48			44	46	58	66		40	42	54	46	48	43
7	48	55	32	30	29		33	39	60	51	77	104	72	72	62	61		36	42	G	45	51	58	50
8	50	33	29	G	32	44	33	57	37	48	40	G	G	56	33	45	46	42	34	38	G	G	G	G
9	G	G		26	G	G		33	55	45	63	G	48	86	61	32	33	61	61	90	72	32	86	67
10	53	35	38	32	G	30	36	60	103	91	150	57	G	62	66	82	69	52	41	39	33	57	64	62
11	40		40	33	25	G	38	47	47	54	48		48			29	36	48	35	37	G	G	27	G
12	25	24	G	G	48	32		40	62	61	47	42			75		32	33	G	G	G	29	39	30
13		33	33	28	26	28	45	75	107	54	45		50	58	60	43	34	34	30	61	59	54	37	34
14		G	G	40	47		56	54	52	G		G	G	G	G	37	32	37		33	30	34	28	G
15	33	42	45	46	32	33	104	115	62	75	G	59	58	59	48	62	42	41	38	32	24	G	G	G
16	32	G	G	40	44	34	39	47	50	46	56	G	G	42	G	52		54	65	94	37	39	G	31
17	34	26	24	24	G	G	31	34	44	52		40	G	G	46	48		29	32	28	41	29	124	62
18	69	46	32	35	28	G	28	32	49	70	56	66	56	67		60	45	43		74	73	39	52	G
19	G	G	G	G	G	11		49	67	56	56	52	57	45	53	47	32	54	88	49	28	G	G	
20	31	39	56	50	33	33	91	80	79	88	148	78	50	101	39	122	66		48	129	54	44	G	G
21	25	26	24	G	G	G		30	48	52	42	52	G	G	G	52	53	58	30	G	29	34	25	45
22	44	36	28	29	G	24	35	34	48	41	40	55	G	39	47	44	34	32	34	27	36	G		G
23	G	G	G	G	G	G	28	34	48	51	G	G	49	60		43	30	41	47	35	34	31	43	57
24	34	40	29	38	G	22	31	40	47	48	46	46	41	41	38	47	60	47	62	58	G	25	G	45
25	40		39	73	48	50		38	37	45	42	54	33	33	28	30	35	35	28	29		33	33	32
26	33		G	G	G	25	30	39	35	39	36	33	G	G	36	35	32	31	32	34	33	52	G	34
27	46	32	33	26	34	26	30	40	37	40	G	G	32	G	24	42	36	33	24	26	29	55	G	34
28	49	38	32	27	28	G	30	39	37	46	57	54	58	34	48	44	52	52	61	86	76	71	70	39
29	32	32	25	36	30	25	29	34	59	60	44	53	59	60	51	41	41	41	39		57	82	85	98
30	62	38	26	G	G	G	25	57	65	77	56	85	42	42	60		50	48	37	156	59	75	57	62
31	42	44	27	G	26	27	25	31	29	G	39	58	41	G	34	40	40	35	34	33	40		24	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	29	31	31	28	26	31	30	31	29	27	29	29	26	28	28	29	29	29	30	30	29	30
MED	38	34	29	29	28	26	33	40	51	54	48	53	48	44	46	44	40	41	40	39	40	39	39	34
U Q	49	43	38	40	34	33	45	59	62	72	57	59	56	60	60	54	55	53	58	84	59	54	59	57
L Q	32	26	12	G	G	G	30	34	47	46	41	33	G	G	33	37	33	34	33	30	29	29	G	G

HOURLY VALUES OF fmin AT Kokubunji

AUG. 2000

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14	15	15	15	15	17	23	23	32	30			20		17	17	14	15	15	14	14	14
2	14	15	15	14	14	15	15	14	16	20	30	28				23	17	15	16	15	15	14	14	15
3	15	15	14	15	14	14	14	16	21	24	38	40	44	44		24	17	16	15	14	14	15		15
4	14	14	15	15	15	15	14	16	17	22		43	40	38		30	15	15	15	15	14	14	15	15
5	14	15	15	14	15	14	15	16	17	20			42			20	21	20	15		14	15	14	14
6	14	15	15	15	14		15	15	20		40			33	38	24	17	15	14	15	15	15	14	14
7	15	14	14	14	15	15	16	18	14	27	24	38	42	38	39	20		16	15	15	14	15	15	14
8	14	15	14	14	15	15	15	16	20	24	32		66	40	23		18	15	14	15	14	15	15	15
9	14	15		15	15	17	15	17	24	23			40	35	40	23	22	15	15	16	15	14	14	15
10	14	14	14	15	15	17	15	15	15	14	34	35		33	28	21	16	14	15	15	14	15	15	14
11	15	15	15	15	14	17	15	15	20	18						18	18	15	14	14	15	15	14	15
12	14	15	15	14	14	15	14	15	16	20	33	18			43		17	15	15	16	22	15	15	14
13		14	14	15	14	15	17	15	21	22	33		40	40	40	34	20	14	15	15	14	15	15	15
14		15	14	15	14	15	18	18	16				64	64			18	15	15	14	15	15	14	18
15	15	15	15	14	14	15	17	15	26	21		38	36	30	28	21	18	14	14	15	14	17	15	15
16	15	15	18	15	15	14	15	15	18		41		63		60	24	18	15	15	14	15	14	14	15
17	15	21	15	15	15	16	15	17	18	32		64	63	63	23	15	21	16	15	15	14	15	15	15
18	14	15	15	15	14	17	15	15	21	21	36	38	38	34	32	32	20	15	15	15	14	14	14	14
19	17	14	15	14	16	16	14	15	16	22		34	34	35	26	23	17	15	15	14	15	14	16	
20	14	15	15	14	14	15	15	14	17	20	34	29	30	21	20	17	16	14	15	15	15	15	16	14
21	15	14	14	14	14	14	15	17	15	18	20				62	24	18	15	15	15	14	15	15	14
22	15	15	15	15	14	15	14	14	18	22		34		28	26	18	15	14	17	15	16	16	16	15
23	15	14	14	15	14	15	16	15	16	20			60	40		28	16	15	15	15	14	14	14	14
24	14	14	14	15	15	14	15	15	18	32	21	29	28	29	30	18	20	15	14	15	15	15	16	16
25	14		15	15	15	15		14	16	22	20	18	18	18	16	17	16	15	16	15	14	14	14	15
26	15		15	16	15	16	14	14	18	18	22	26		53	26	21	15	15	14	14	15	15	17	14
27	15	14	14	14	14	15	14	14	20	22		51	23			23	14	15	15	14	14	15	15	14
28	14	15	14	14	14	15	14	14	17	23	34	21	22	21	24	22	17	15	14	15	15	15	14	14
29	15	14	15	15	14	15	15	15	17	21	36	38	24	14	34	17	20	15	15	15	14	15	14	14
30	15	15	15	15	15	16	16	14	33	40	39	39	34	34	35	23	17	16	15	15	15	14	14	14
31	15	15	15	14	15	15	17	15	21		50	32	29		26	18	17	14	15	15	14	14	18	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	29	29	30	31	31	30	30	31	31	27	20	21	22	22	23	27	30	31	31	30	31	31	30	30
MED	15	15	15	15	14	15	15	15	18	22	34	34	39	34	28	22	17	15	15	15	14	15	15	14
U Q	15	15	15	15	15	16	15	16	21	23	37	38	44	40	39	24	18	15	15	15	15	15	15	15
L Q	14	14	14	14	14	15	14	14	16	20	27	28	29	29	24	18	16	15	14	15	14	14	14	14

HOURLY VALUES

IONOSPHERIC DATA of Yamagawa is not available due to the ionosonde trouble.

HOURLY VALUES OF foF2 AT Okinawa

AUG. 2000

LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	94	94	80	92		81	94	99	93	82	94	92	93	95	103	124	118	122	127	127	105	94	86	93
2	98	95	84	95		78		96	96	104	115	99	95	96	104	111	116	121	110	92	81	80	76	A
3	72	74		67	A	55	68		63	A	A	A	98	103	117	116	124	125	124	93	A	67	70	70
4	71	68	68	63	60	62	92	82	93	76	A	A	A	117	132	150	134	121	110	86	82	94	78	99
5	94	84	96	82	82	96	85	113	91	77	80	A	92	100	97	94	103	105	109	119	94	96	92	93
6	82	94	95	95	80	95	93	94	A	92	A	80	103		111	110	111	105	125	86	93	N	95	72
7	74	N	94	76	95	68	76	94	96	82	76	81	90	92	116	126	123	130			125	112	80	104
8	87	115	96	80	75	68	71	87	92	90	90	87	92	92	95	115	116	123	118	107	100	89	71	68
9	72	95	92	73		58	56	83	91	92	80	82	84	96	106	110	116	120	124	140	A	91	94	92
10	86	97	122	115	119	112		88	120	106	88	92	90	106	118	113	120	106	106	110	84	A	81	85
11	92	112	92	94	A	55	60	87	94	92	115	86	84	80		76	A	A	72	66	67	57	A	A
12	57	60	61	50		48	58	62	93	93	91	92	93	118	112	116	143	102	94	83	82	83	83	66
13		61	59	59	A	A	38	A	68	A			A	A	A	A	67	70	69	83	92	71	82	74
14	73	71	66		51	60	58	73	76	92	89	108	129	141	156	159	146	143	128	131	116	125	121	141
15	127		137	134	114	69	78	91	96	82	92	105	116	112	A	114	127	128			123	114		97
16	87	81	86	93	82	72	80	101	81	87	90	99	114	123	137	151	148	146	158	166	129	122	148	138
17	125	133	114	118	122	122	94	84	93	92	99	110	114	119	134	174	157	146	140	144	131	122	94	91
18	92	94	93	87	94	92	96	N	92	91	92	122	151	148	151	164	166	171	169	140	125		116	116
19		89	93		81	94	83	88	93	83	92	106	116	143	140	159	164	159	173		153	126	112	117
20	116	115	94	94	93	95	76	94	104	92	95	116	136	166	167	160	165	161	164		120	138	153	
21	83		117	89	95	96	93	122	114	93	92	92	113	124	150	126	121	132	144	123	114	95	87	86
22	82	87	94	80	81	78	95	102	110	94	98	110	126	128	132	150	144	138	143	147	121	126	89	163
23	154		154	122	94	77	77		105		92		120	132	102	112	121	131	136	129	114		94	100
24	95	93	95	81	68	64	58	94	96	117	102	108	132	144	134	143	134	124	132	154	139		140	61
25	137	149		117	93	62	69	96	95	91	92	101	112	121	122	115	122	124	124	111	92	93	83	91
26	93	114	133	117	74	68	95		109	91	100	112	112	121	134	132	121	125		160	A	82	82	93
27	81	81	95	68	59	A	44	76	104	91	92	103	120	124	122	121	115	127	127	131				
28															133	132	138	145	148		117	125	112	116
29	117	94	94	93	99	40	62	94	95	77		118	131	159	157	161	166	168		135	A	121	120	92
30	70	97	91	72	57	59	44	94	94	92	95	133	147	164	178	180	173	177	171		116		111	115
31	116			94	71	53	60	76		94	105	118	133	161	176	172	164	171	172		123	117	109	130
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	25	27	28	23	28	28	25	28	27	25	25	28	28	28	30	30	30	27	24	26	24	28	27
MED	90	94	94	90	82	68	76	94	94	92	92	103	114	121	132	126	126	128	127	125	115	96	93	93
U Q	107	104	96	95	95	93	92	96	100	93	98	111	127	142	145	159	148	146	148	140	123	122	112	116
L Q	77	81	86	74	71	59	59	83	92	83	90	92	93	101	111	114	118	121	110	92	92	86	82	85

HOURLY VALUES OF fEs AT Okinawa

AUG. 2000

LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	37	43	43	41	60	50	42	37	39	38	39	G	38	43	42	G	44	38	38	39	24	G	39
2	37	39	38	G	G	G	G	31	44	44	38	40	43	39	51	G	31	31	29	44	24	39	46	68
3	60	68		45	64	51	32	32	69	138	88	88	G	66	61	G	90	64	68	39	58	31	29	G
4	29	32	G	G	G	G	G	34	43	66	115	110	149	108	91	88	98	79	48	32	28	G	G	G
5	33	26	G	G	G	G	G	33	37	50	36	79	G	G	G	59	63	63	50	42	G		28	26
6	25	36	34	39	G	42	G	38	82	74	96	68	71	135	G	46	46	46	42	28	G	G	G	38
7	36	G	G	G	26	G	G	37	37	53	48	36	G	69	49	64	41	74		40	G	33	34	36
8	75	42	40	43	33	G	41	32	39		52	44	G	G	G	37	42	49	44	46	28	42	32	32
9	32	G	G	G	G	G	G	40	34	83	56	60	88	66	G	65	45	66	115	94	94	72	42	48
10	80	37	G	G	G	29		52	40	44	45	60	61	41	59	36	41	48	48	50	78	81	62	38
11	59	42	47	44	65	32	26	38	38	62	59	70	67	58	G	68	51	96	62	35	33	G	40	25
12	G	G	G	G		G	G	32	38	38	38	G	40	G	72	G	36	39	32	G	G	G	40	95
13	43		53	58	78	78	35	117	38	51			36	56	51	38	33	32	37	G	G	26	G	27
14	26	28	G	G	G	G	33	48	52	67	67	G	G	44	46	42	47	36		39	G	G	34	25
15	G		25	29	64	38	40	25	36	39	42	38	65	92	126	84	67	39		68	G	G		G
16	G	G	G	G	G	24	34	37	40	44	G	48	G	G	G	G	39	39	34	35	24	G	G	G
17	32	G	G	G	G	G	G	36	36	38	45	38	38	G	G	34	37	32	25		G	60	G	71
18	42	44	G	38	G	40	57	34	42	46	49	38	G	G	G	G	36	32	36	G	G	G	74	38
19	61	38	G		G	G	G	31	48	40	61	60	66	G	G	G	36	32	26	36	36		41	
20	G	G	G	29	33	34	26	36		38	41	39	G	G	G	G	69	78	68	71	28	26	G	
21	G		G	G	G	G	G	28	34	38	G	G	G	57	69	58	69	86	48	42	G	G	28	G
22	G	G	G	26	29	G	46	27	52	48	50	40	38	G	38	34	38	52	46		G	G	G	G
23	G		G	G	G	G	25	35	44		42	49	G	G	47	36	41	33	46	35	G	G	G	G
24	44	28	34	27		G	G	34		49	79	49	57	47	44	43	58	59	68	80	G	G	G	27
25	G	G		G	G	G	32	34	36	50	52	47	G	G	G	49	71	79	60	46	38	40	G	G
26	52	G	G	G	G	G	25		43	45	66	G	41	38	56	37	52	60	88	43	95	78	G	32
27	G	G	24	35	48	32	28	29	28	38	34	G	G	G	G	55	45	61	46	42				
28																38	69	41	47	116	72	26	24	G
29	34		40	29	G	31	G	38	43	66		63		78	93	49	52	47		89		67	40	G
30	27	34	31	G	G	G	G	36	51	60	110	64	65	66	38	60	52	50	32		46	39	38	40
31	48	26		G	G	G	G	25		41	G	G	G	49	G	46	35	29	39	48	36	G	G	G
	00	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	25	27	29	28	30	29	29	27	28	28	29	29	30	30	31	31	31	27	28	29	28	29	28
MED	32	28	G	G	G	G	25	34	40	47	48	44	36	40	40	42	45	48	46	42	24	25	28	26
U Q	44	37	34	36	33	32	33	38	44	61	63	61	63	66	56	58	63	64	60	49	38	39	40	38
L Q	G	G	G	G	G	G	G	31	37	39	38	37	G	G	G	34	37	36	36	35	G	G	G	G

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT Okinawa

AUG. 2000

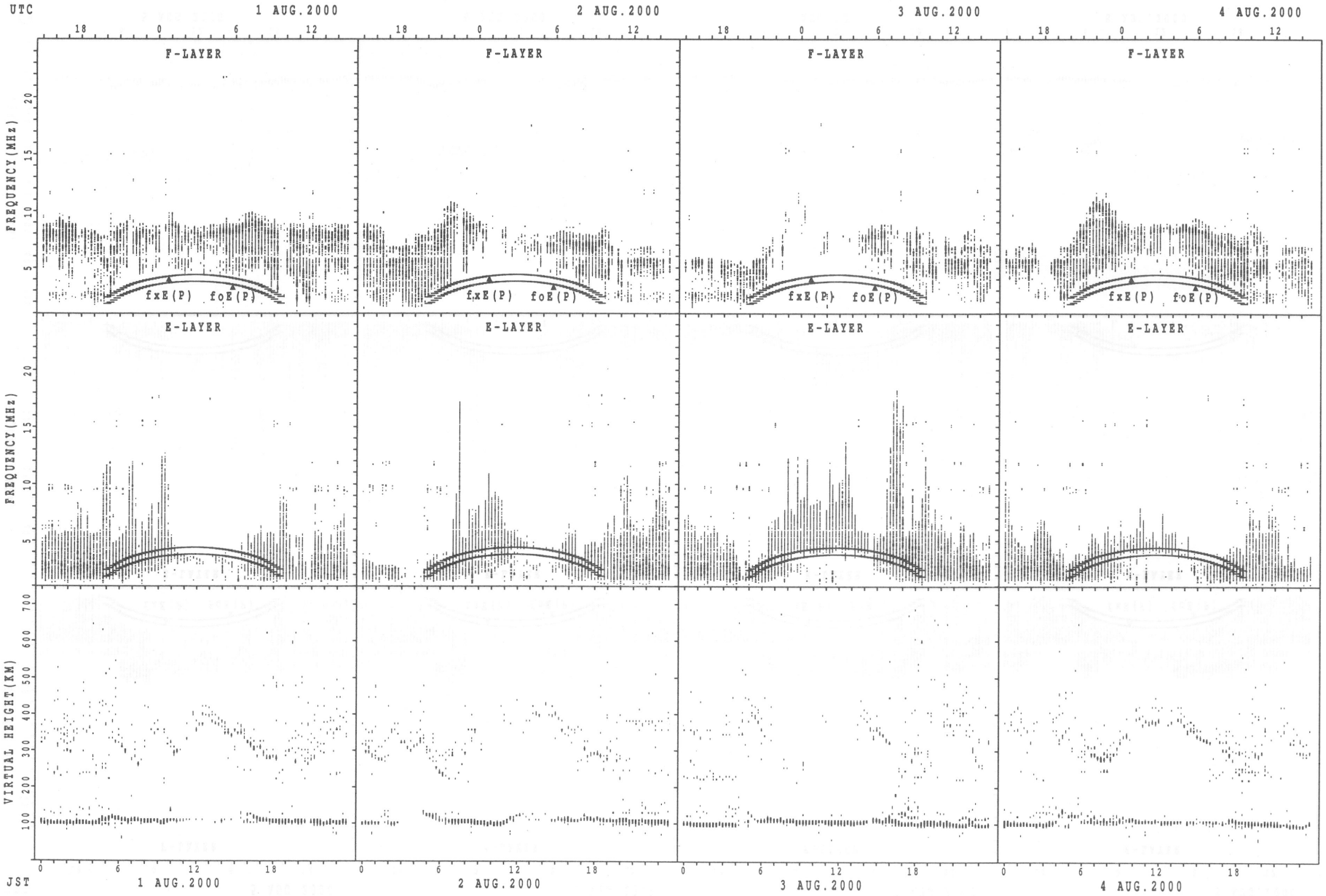
LAT. 26°16.9'N LON. 127°48.4'E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	15	14	15	14	14	14	15	17	26	28	30	53	60	28	29		18	15	14	15	16	20	14
2	15	14	15	15	15	15	17	15	15	18	28	29	33	32		57	54	30	17	15	16	14	15	16
3	15	14		15	15	14	15	16	16	22	38	43	54	47	49	60	32	20	16	15	15	15	15	14
4	14	14	17	14	15	15	27	15	17	26	29	42	44	46	38	32	27	24	15	14	15	14	15	15
5	14	15	15	15	14	16	16	15	16		26	42	58	62	55	39	28	16	15	14	15	15	15	14
6	16	14	14	14	16	15	23	17	18	27	30	46	43	42	58	58	26	23	16	14	15	15	14	14
7	14	14	16	16	15	15	18	15	17	20	36			47	40	39	30	27		15	16	14	14	14
8	15	15	14	14	14	15	14	15	18	26	30		62	60	68	29	28	17	15	14	14	15	14	14
9	14	16	17	14	15	15	27	16	22	24	38	42	48	45	56	44	29	26	15	14	14	14	14	14
10	15	15	16	18	17	15		18	21	26	33	32	48	34	32	29		17	17	15	15	14	14	14
11	14	15	14	14	14	15	17	17	29	29	29	45	49	48		33	30	18	15	14	14	14	14	18
12	15	28	15	14		15	18	18	16	27		55	33	50	45		53	16	14	22	15	15	14	14
13	14	15	14	14	14	14	16	15	18	27			71	35	30	32		17	15	18	17	14	14	14
14	16	14	15	16	15	15	15	15	28	46	30	58	60	35	39	53	29	22	17	14	18	15	14	14
15	15		16	14	14	14	14	16	21	27	29		38	35	30	28	21	16		15	15	15		15
16	15	14	15	15	15	15	14	17	26	29	30	40	62	69	62	59	32	26	16	14	15	15	15	16
17	14	15	15	15	15	14	18	15	17	23	27	29	28	59	63	28	29	34	16	14	15	14	17	15
18	16	15	28	18	22	14	14	15	18	21	28	30	56	58	58	50	28	21	16	17	15	16	14	15
19	15	15	16		15	14	16	15	18	24	28	30	53	59	54	58	28	18	16	14	15	15	15	14
20	15	15	21	14	14	14	15	15	17	23	26		63	59	55	48	36	24	16	14	15	14	16	
21	15		14	15	15	15	17	18	15	26		59	63		42	38	28	20	15	14	15	15	14	16
22	26	17	16	16	14	15	15	16	16	27	28	29		60	32		18	16	15	15	27	16	22	15
23	14		14	15	14	15	16	15	16		28	29	53	53	39	29	23	20	17	14	15	15	16	15
24	14	14	15	14	15	15	16	16	16	33	27	28	35	54	54	33	28	16	15	14	17	24	15	15
25	15	14		14	14	15	15	14	14	16	33	39	54	54	52	28	20	17	15	14	14	15	15	15
26	14	15	15	14	14	15	15		15	30	26	49	30	30		52	17	17	15	14	15	14	15	15
27	15	14	15	14	15	15	16	14	15	26	27		53	52	51		22	16	14	14				
28															32	29	18	16	14	14	15	15	15	14
29	15	15	14	14	21	14	15	15	18	27	32	40	40	41	36	41	27	16		14	15	14	14	15
30	14	14	15	15	15	15	17	17	27	35	35	42	43	52	53	30	23	18	15		15	14	14	15
31	14	16		15	15	14	17	14		34	54	56	56	55	56	34	28	16	14	14	15	15	14	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	30	27	27	29	29	30	29	29	29	28	27	24	28	29	28	28	28	31	28	30	30	30	29	29
MED	15	15	15	15	15	15	16	15	17	26	29	41	53	52	50	36	28	18	15	14	15	15	15	15
U Q	15	15	16	15	15	15	17	16	19	28	33	45	57	59	55	51	29	23	16	15	15	15	15	15
L Q	14	14	14	14	14	14	15	15	16	23	28	30	41	41	37	29	23	16	15	14	15	14	14	14

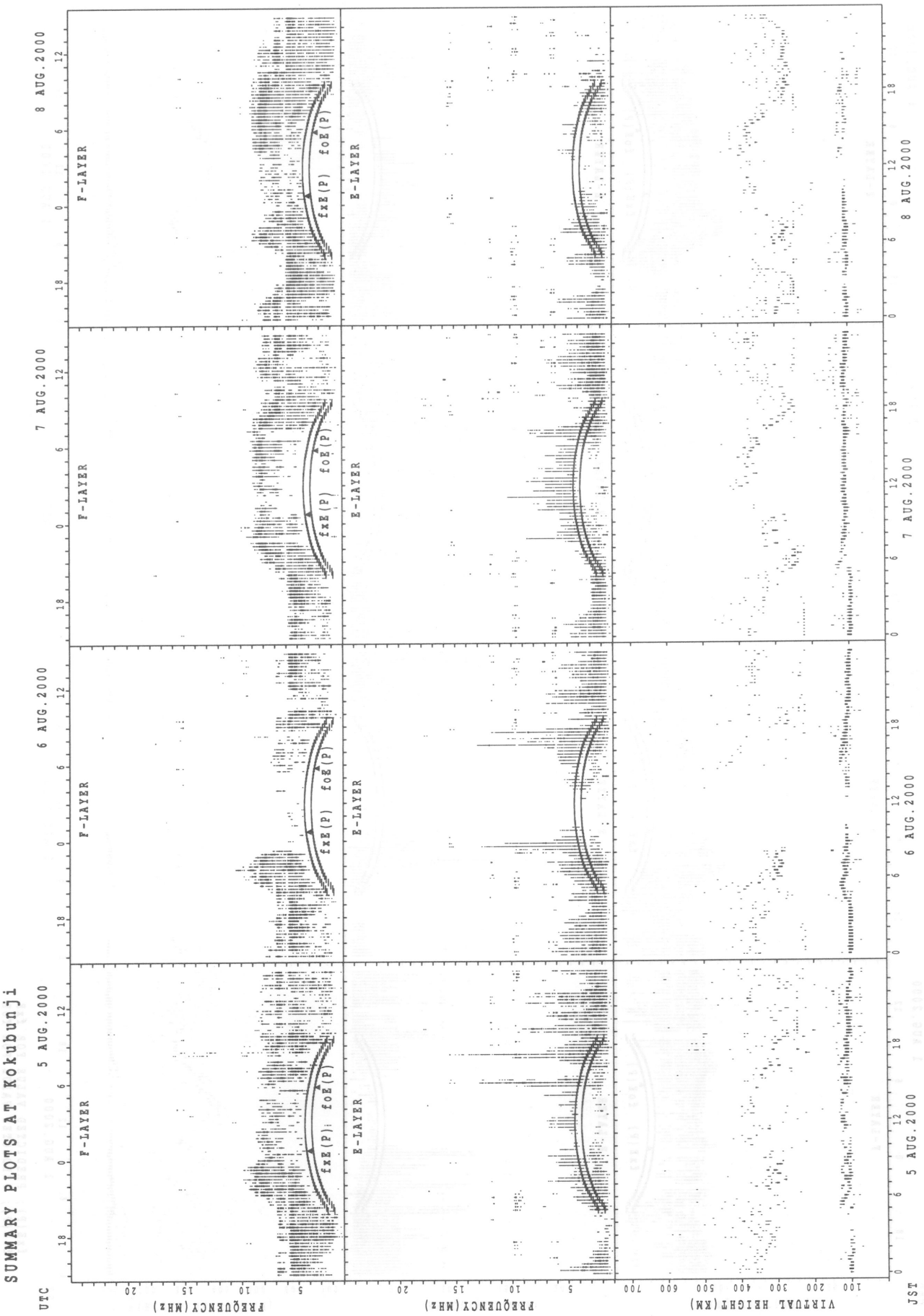
SUMMARY PLOTS

IONOSPHERIC DATA of Wakkanai is not available due to the ionosonde trouble.

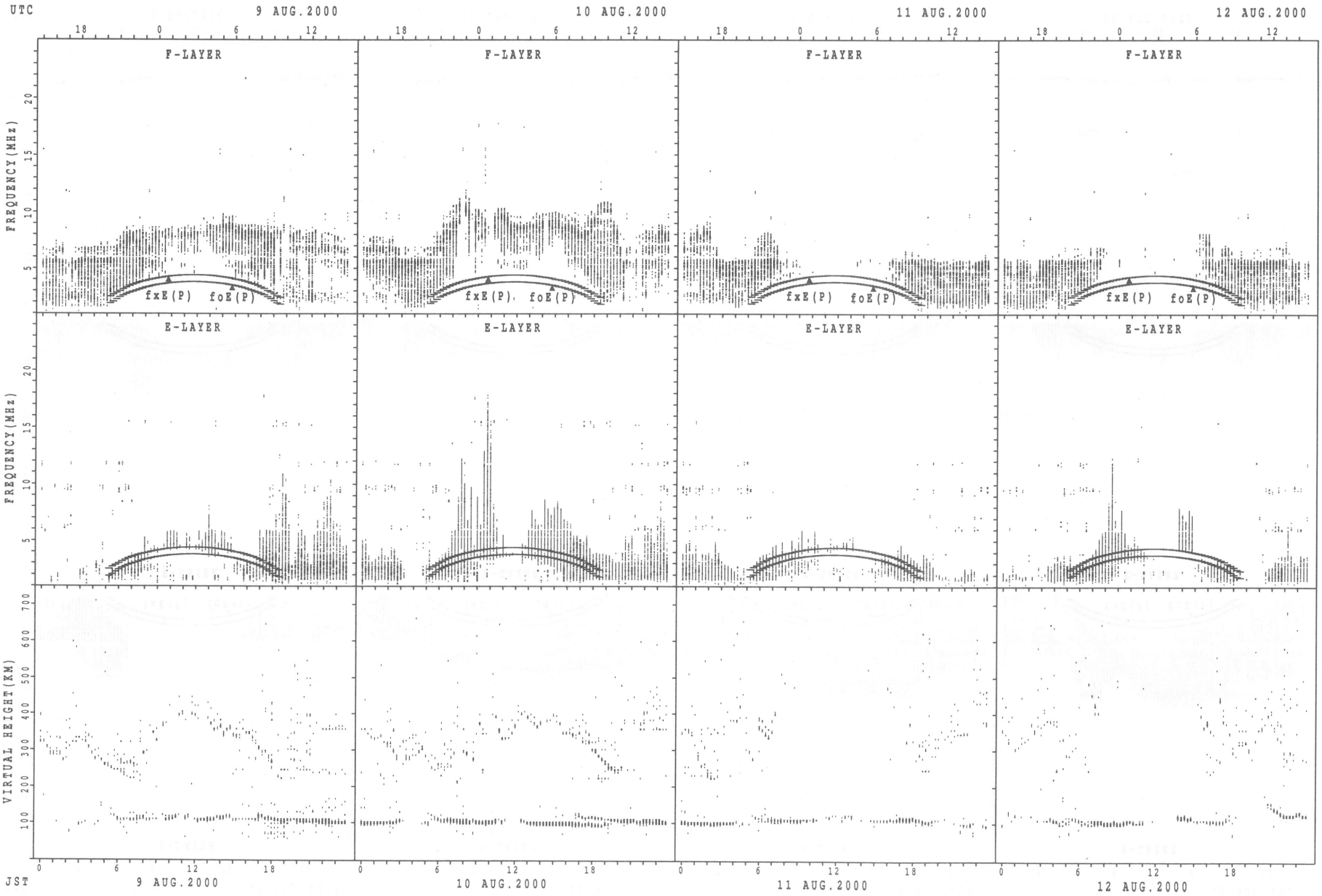
SUMMARY PLOTS AT Kokubunji



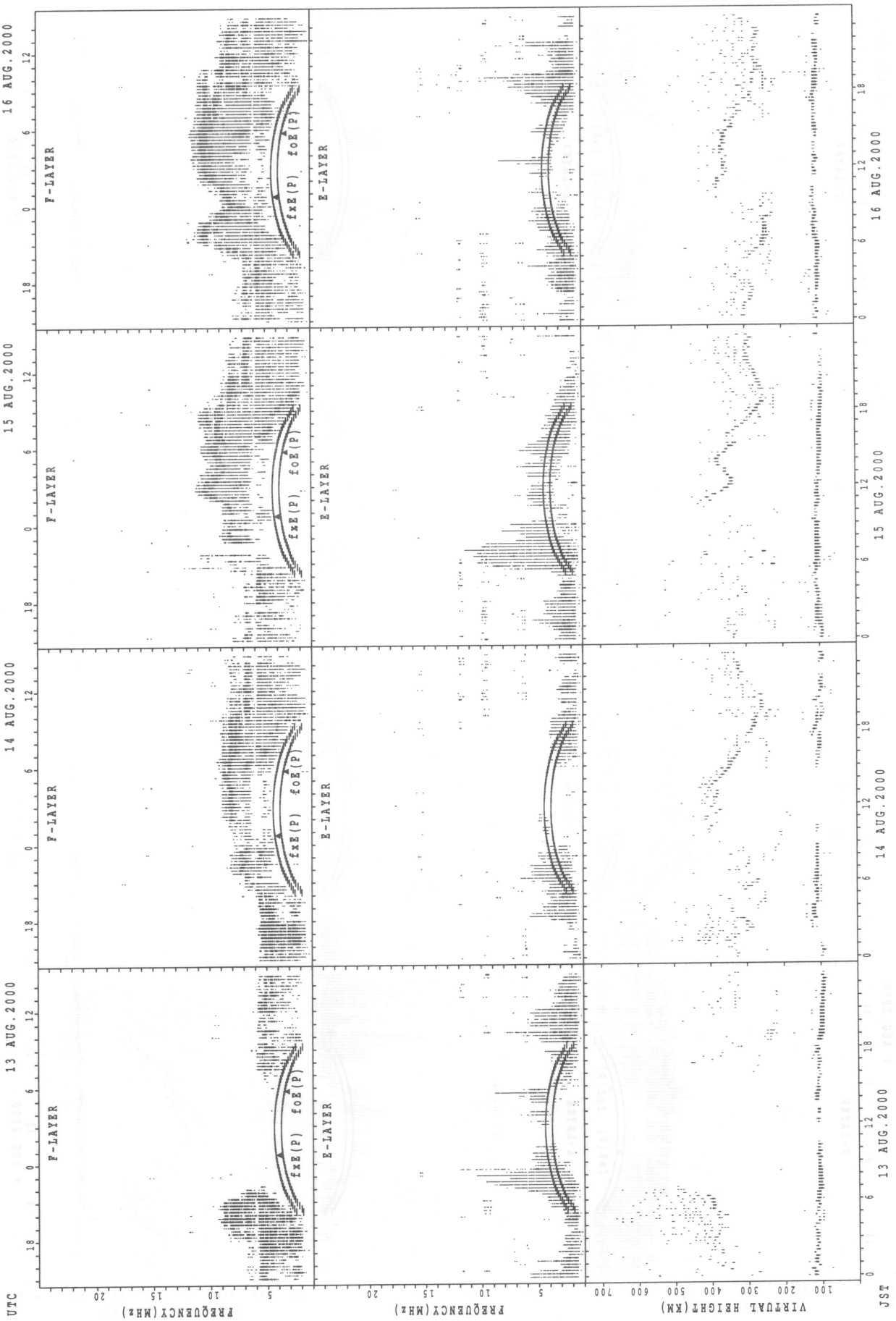
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
5 AUG.2000
6 AUG.2000
7 AUG.2000
8 AUG.2000
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

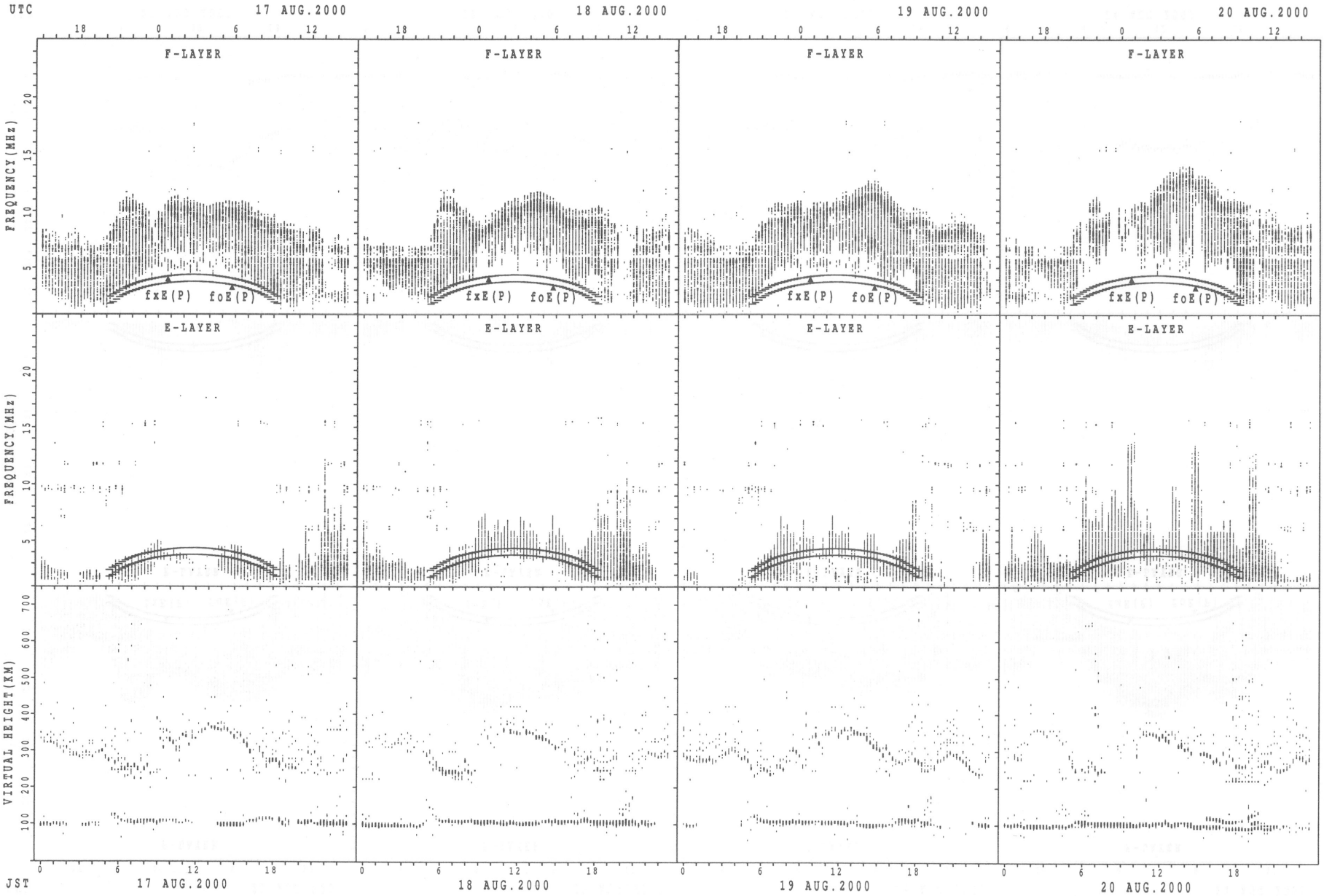
SUMMARY PLOTS AT Kokubunji



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

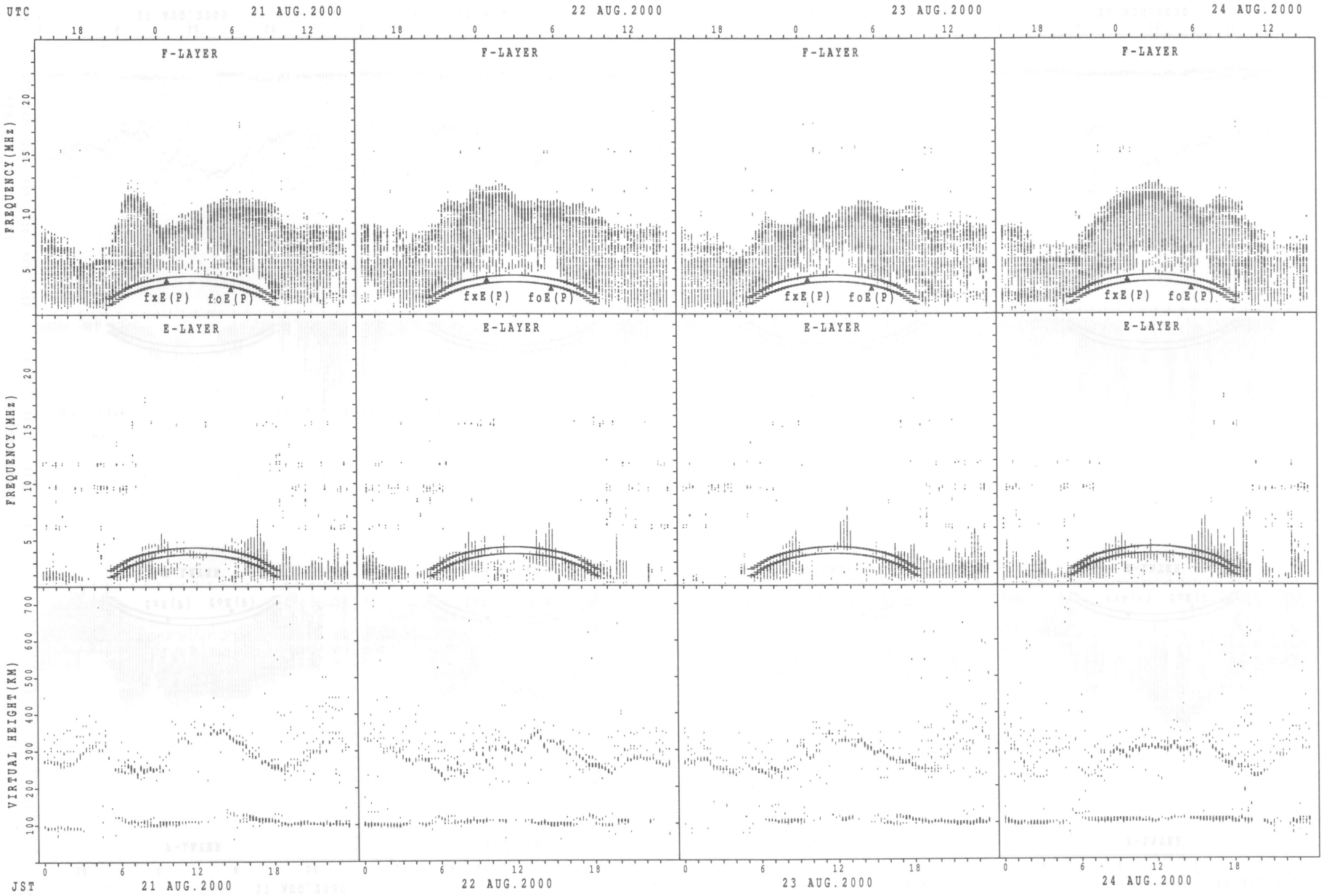

SUMMARY PLOTS AT Kokubunji
UTC
JST
13 AUG.2000
14 AUG.2000
15 AUG.2000
16 AUG.2000
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



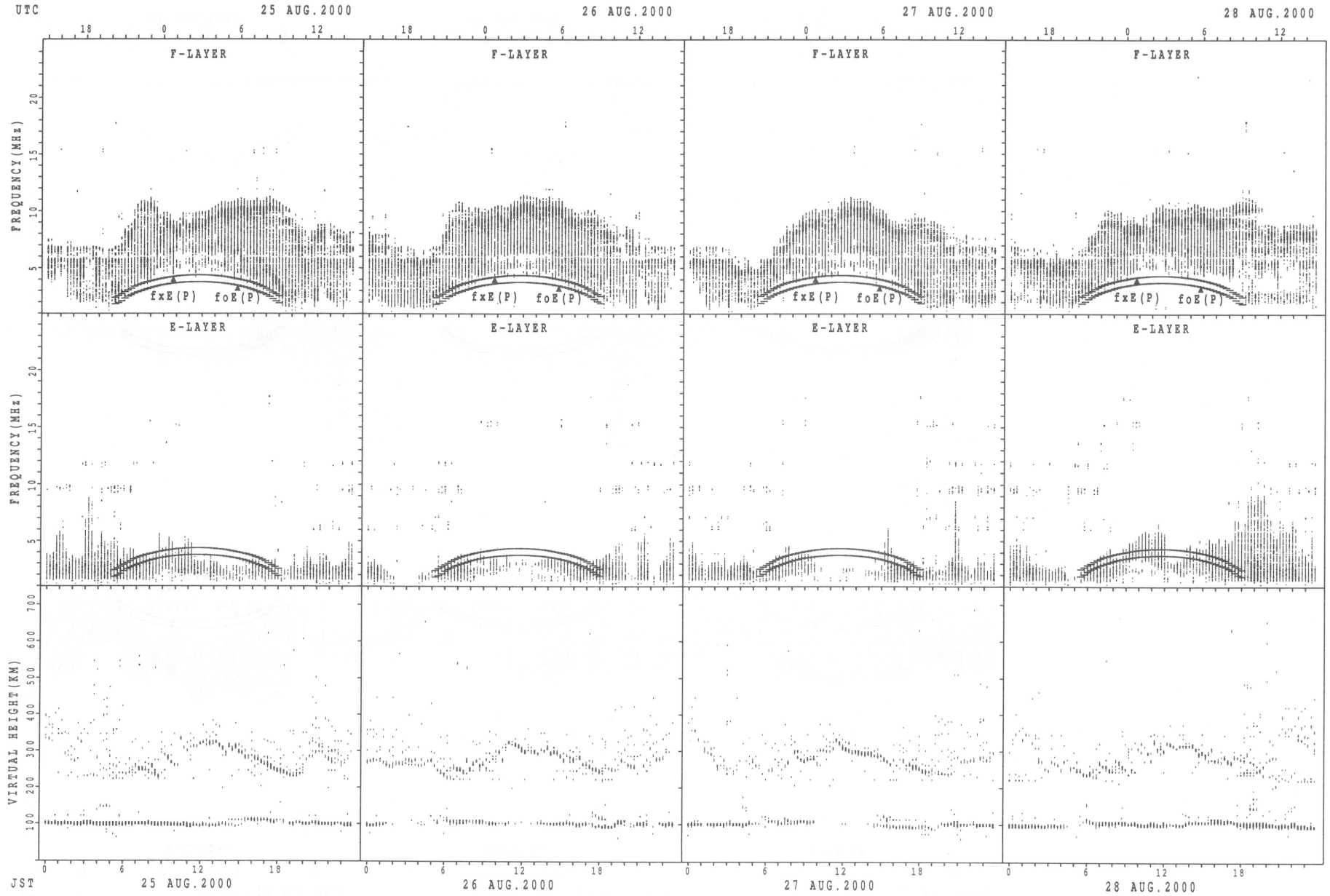
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



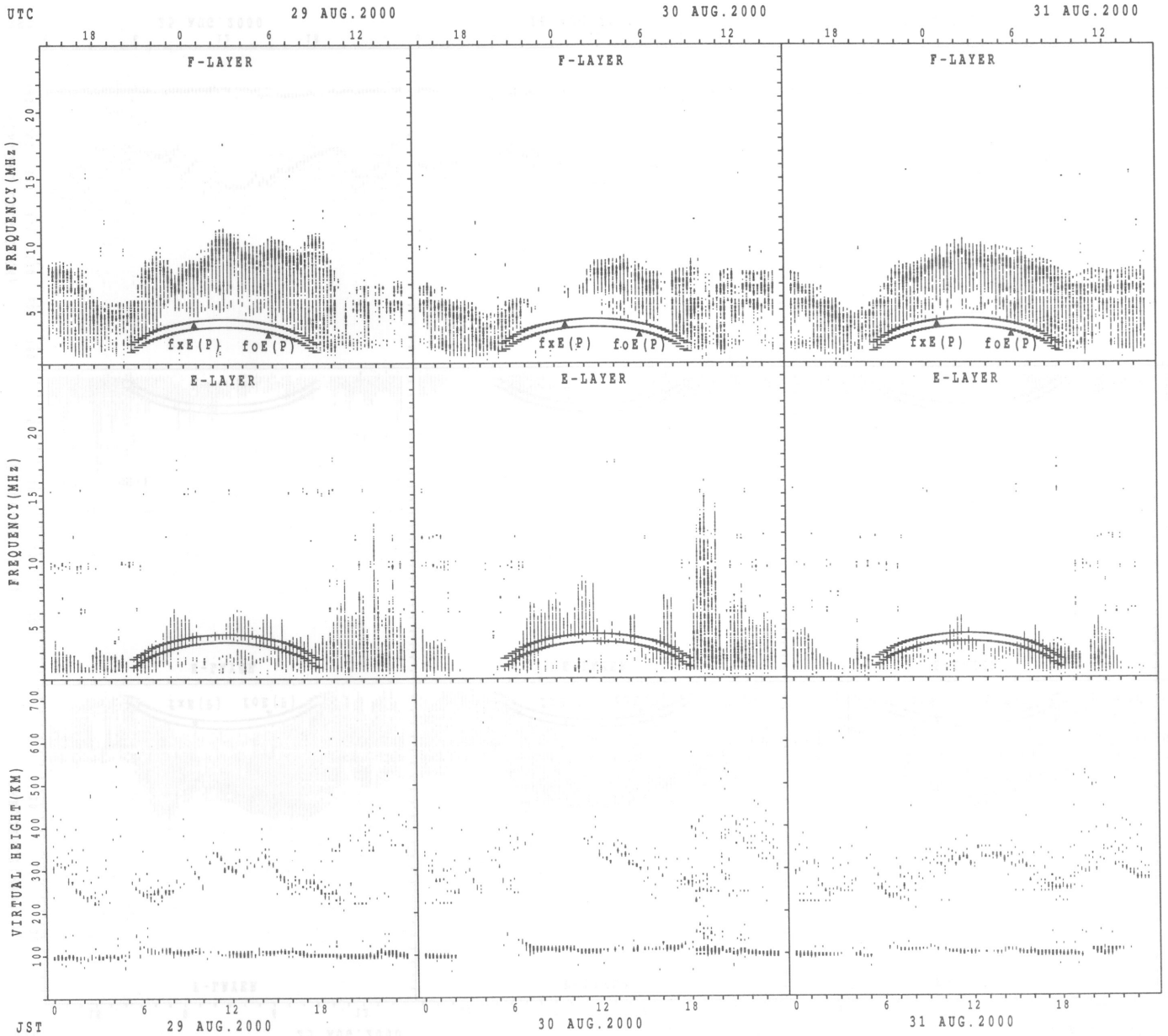
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

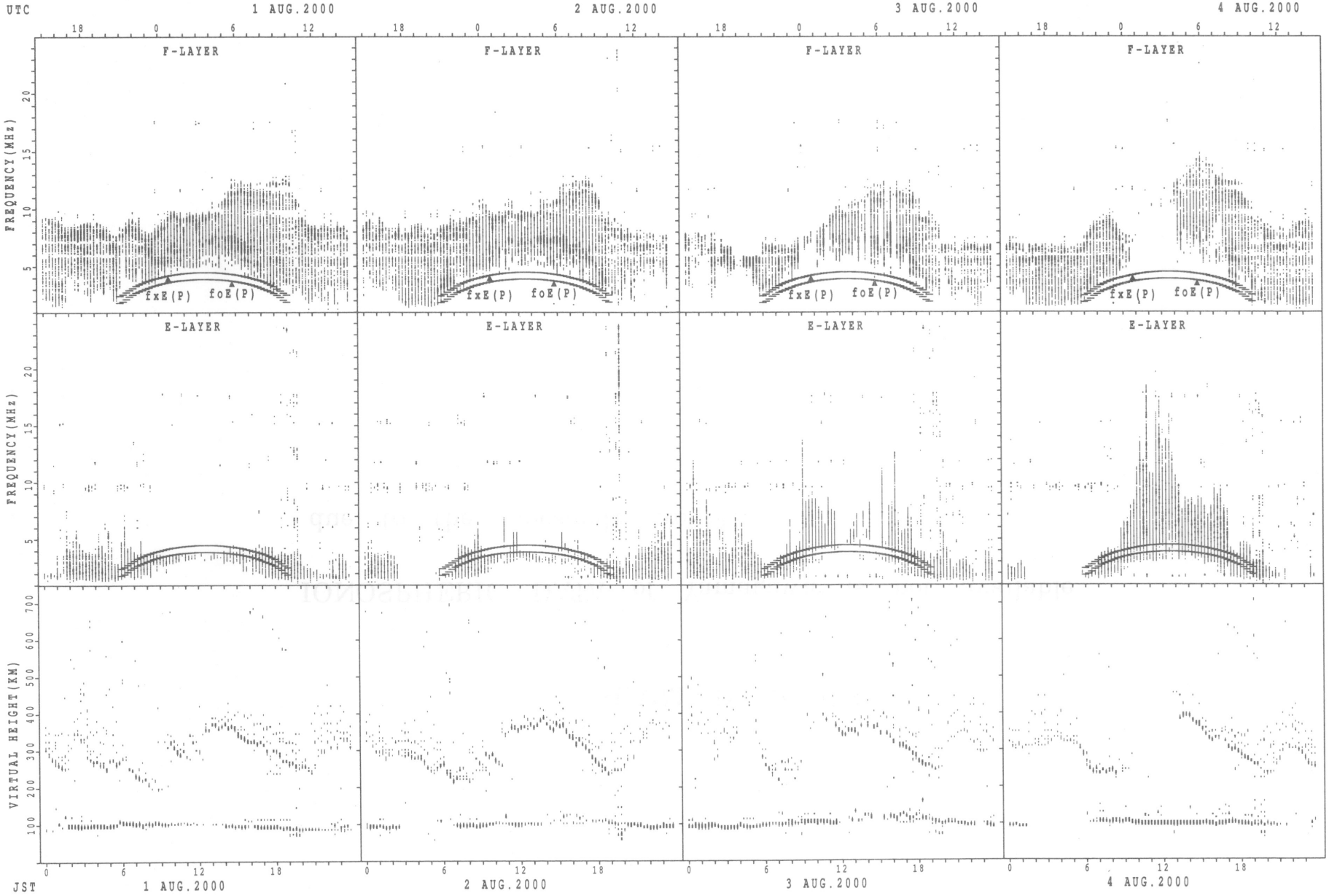


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS

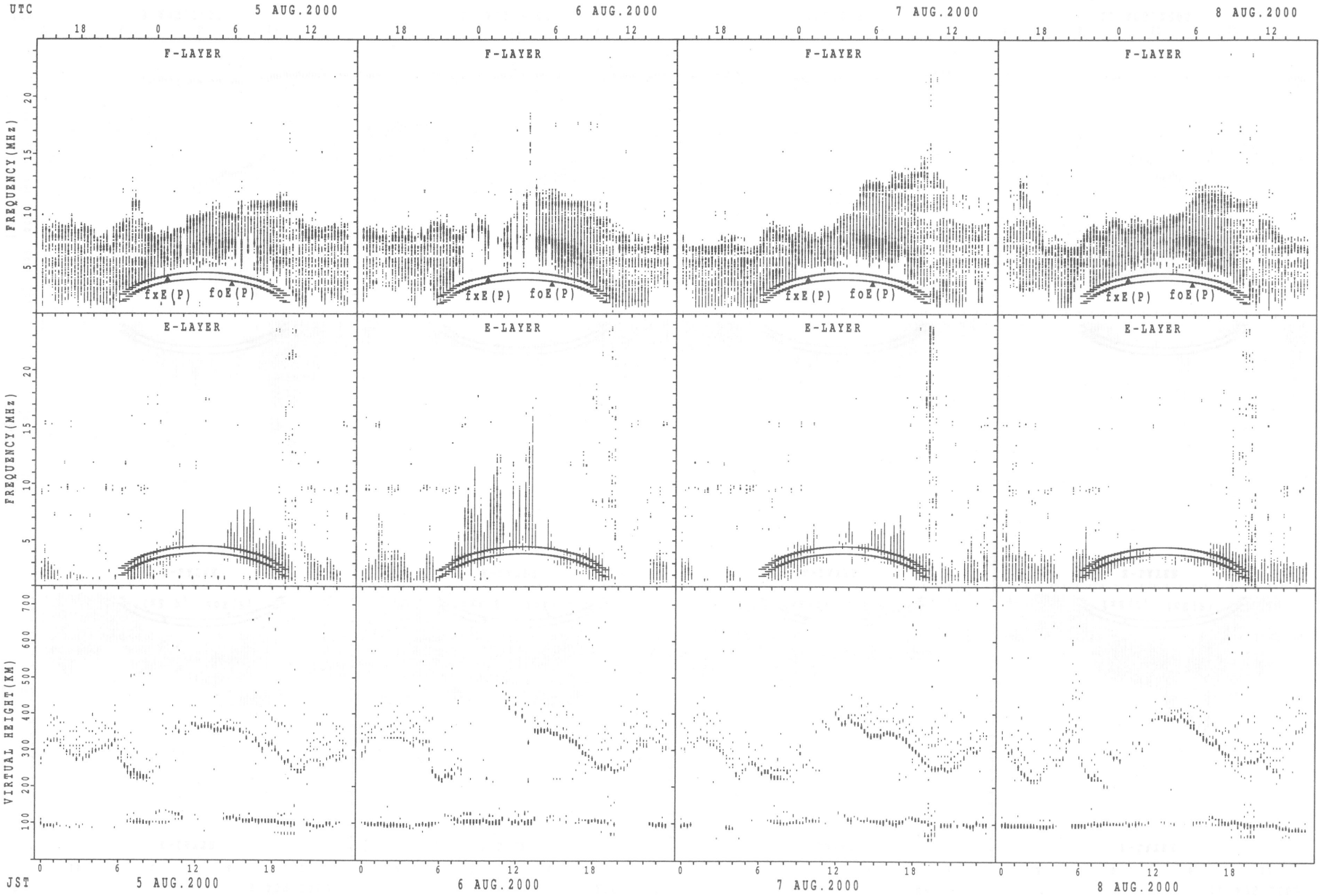
IONOSPHERIC DATA of Yamagawa is not available due to the ionosonde trouble.

SUMMARY PLOTS AT Okinawa



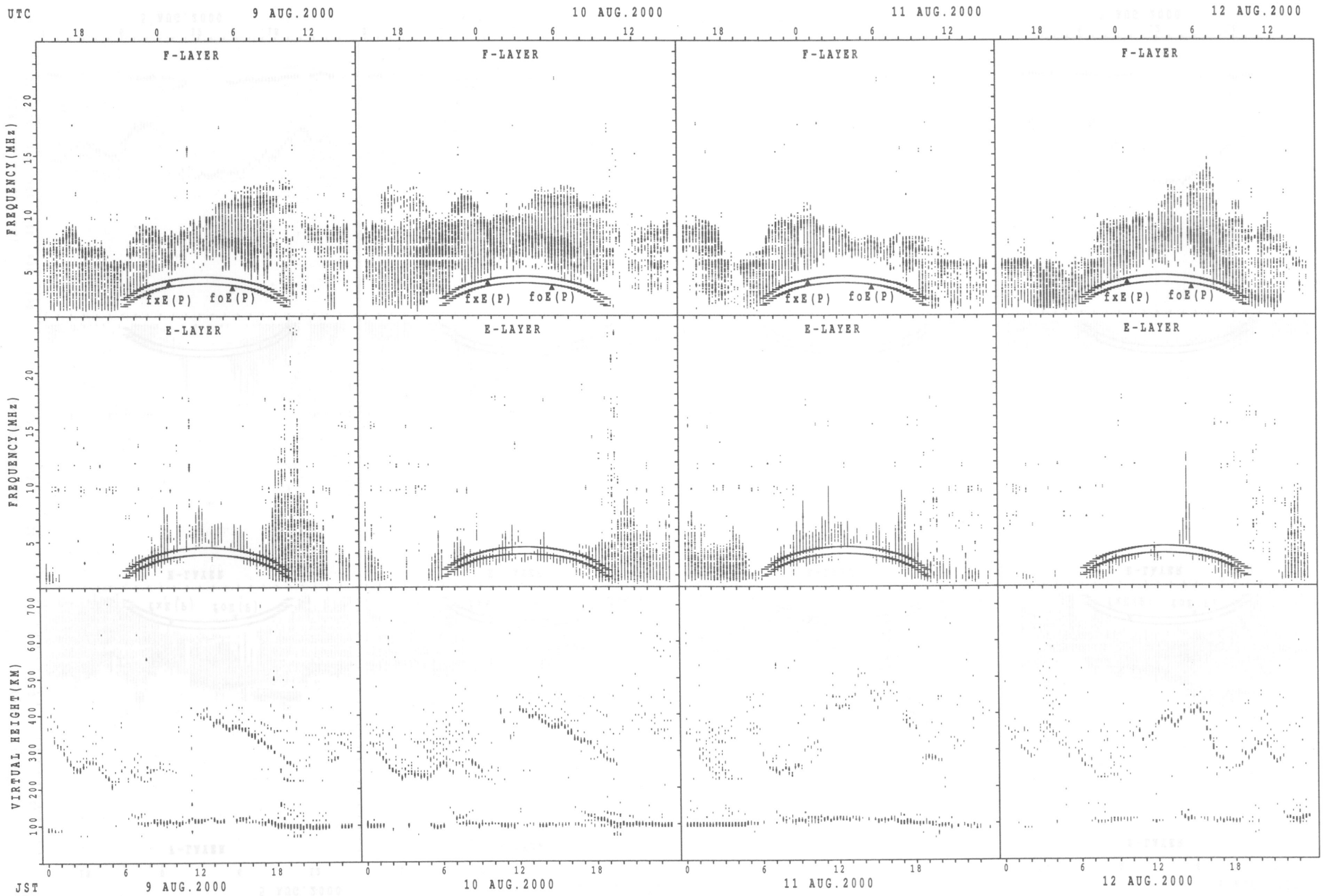
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



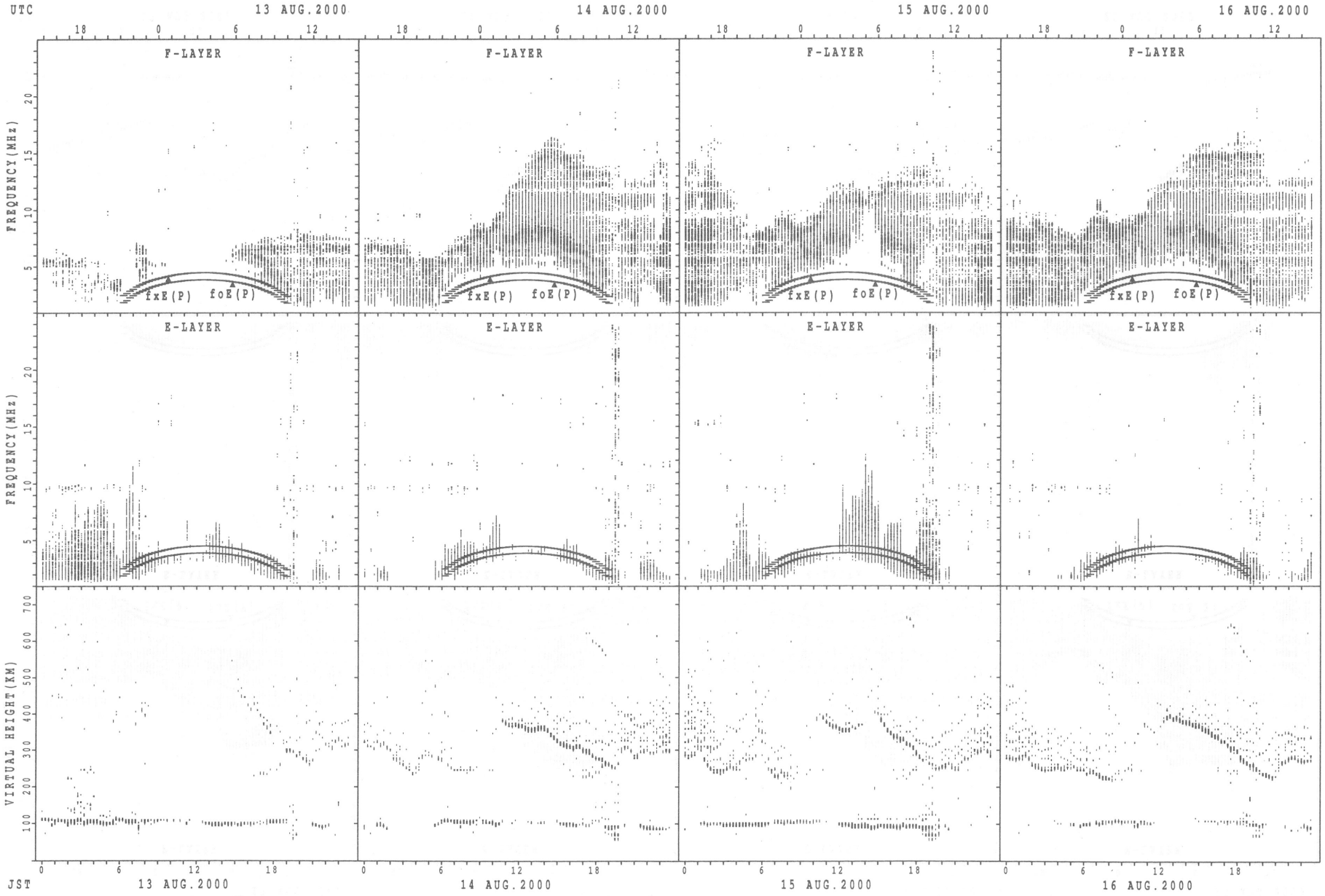
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

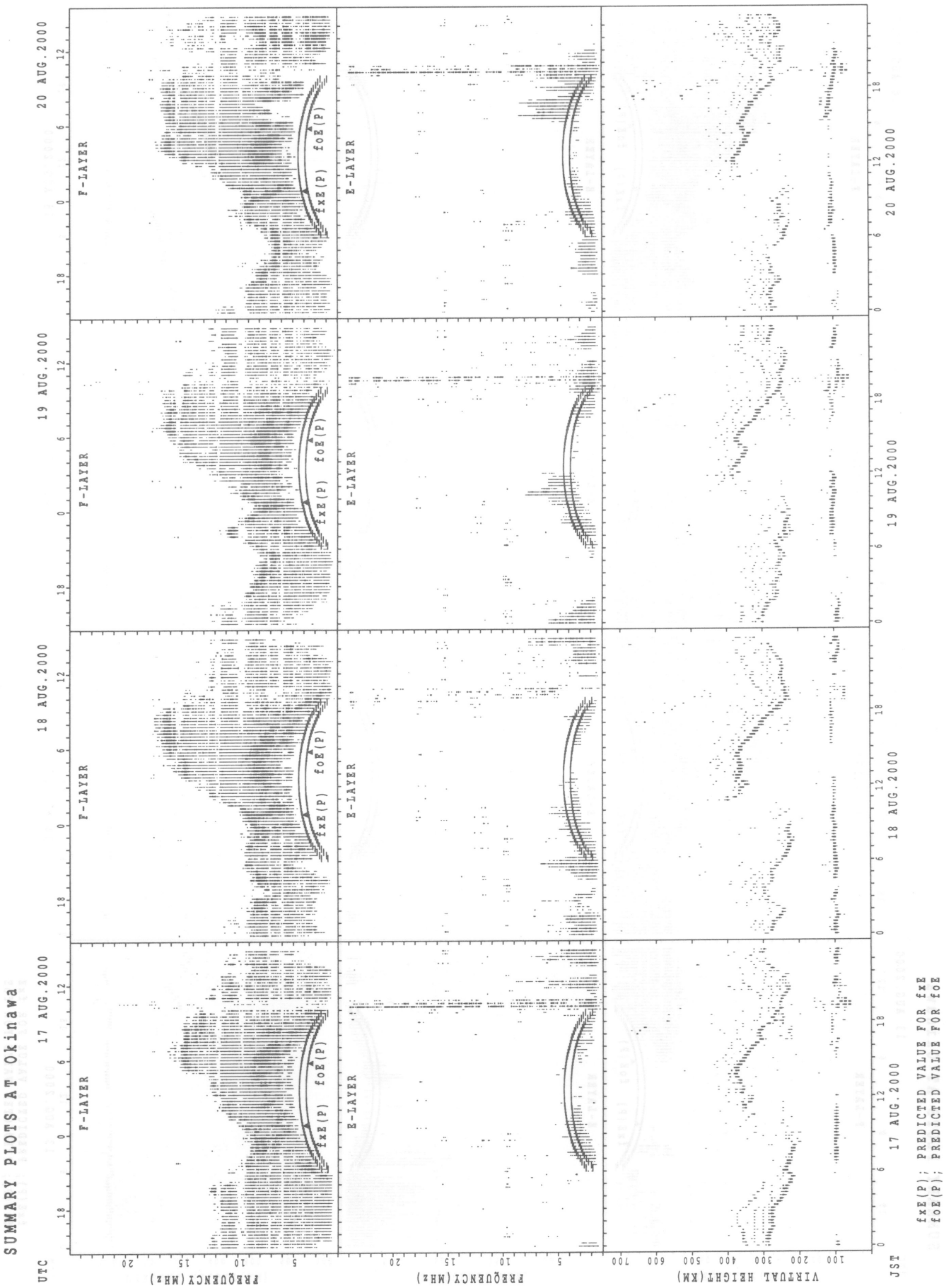


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

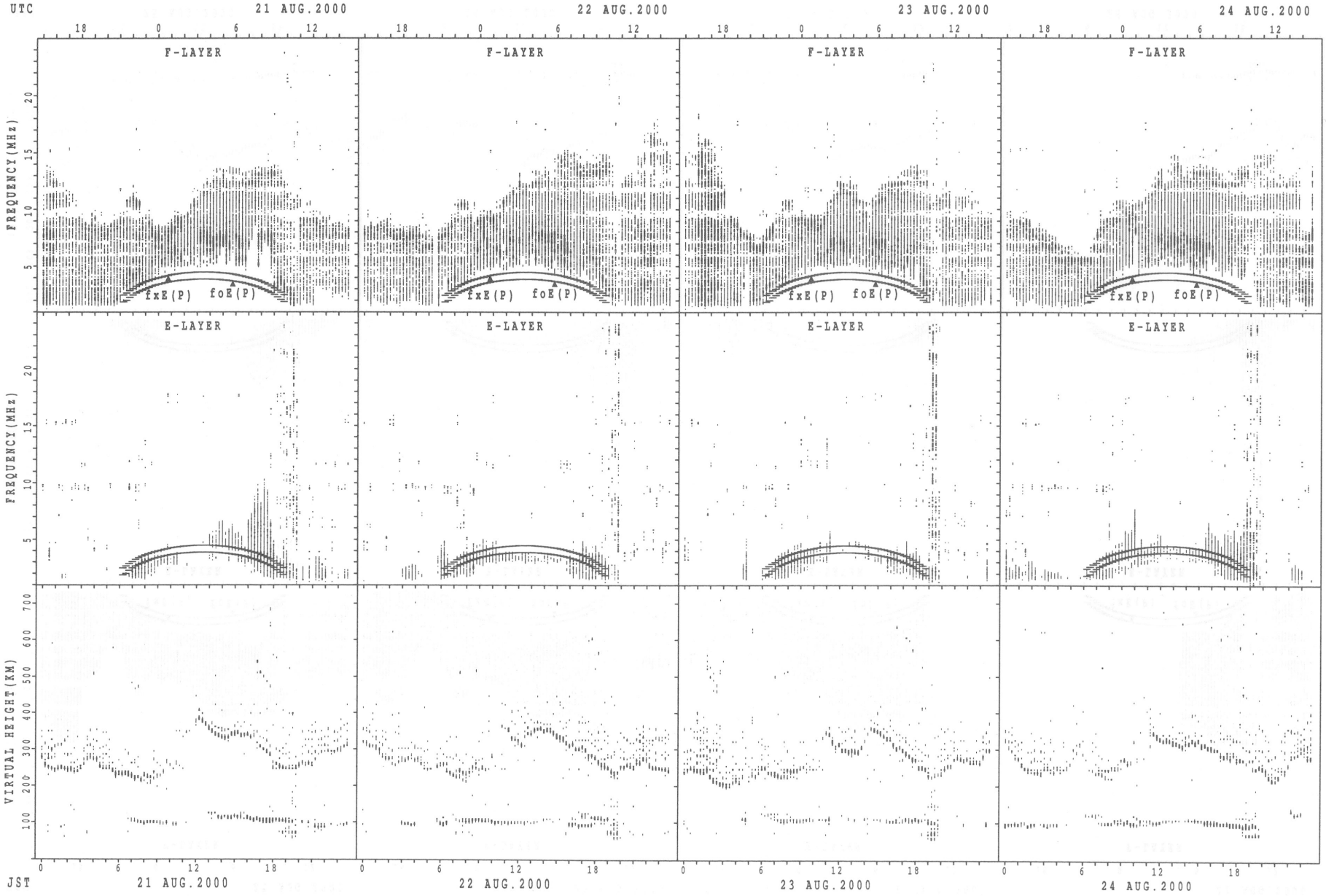
SUMMARY PLOTS AT Okinawa



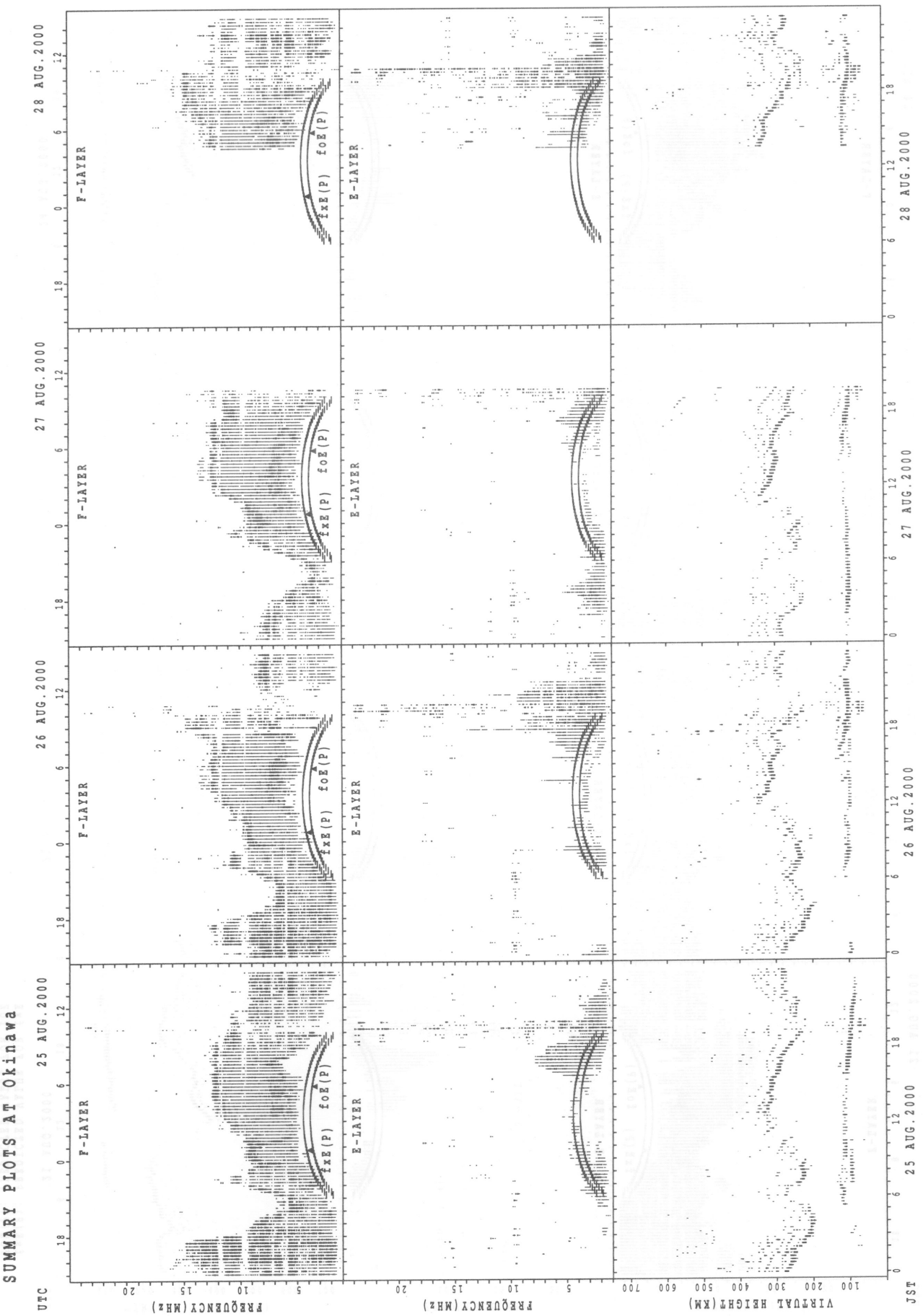
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
JST
17 AUG.2000
18 AUG.2000
19 AUG.2000
20 AUG.2000
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

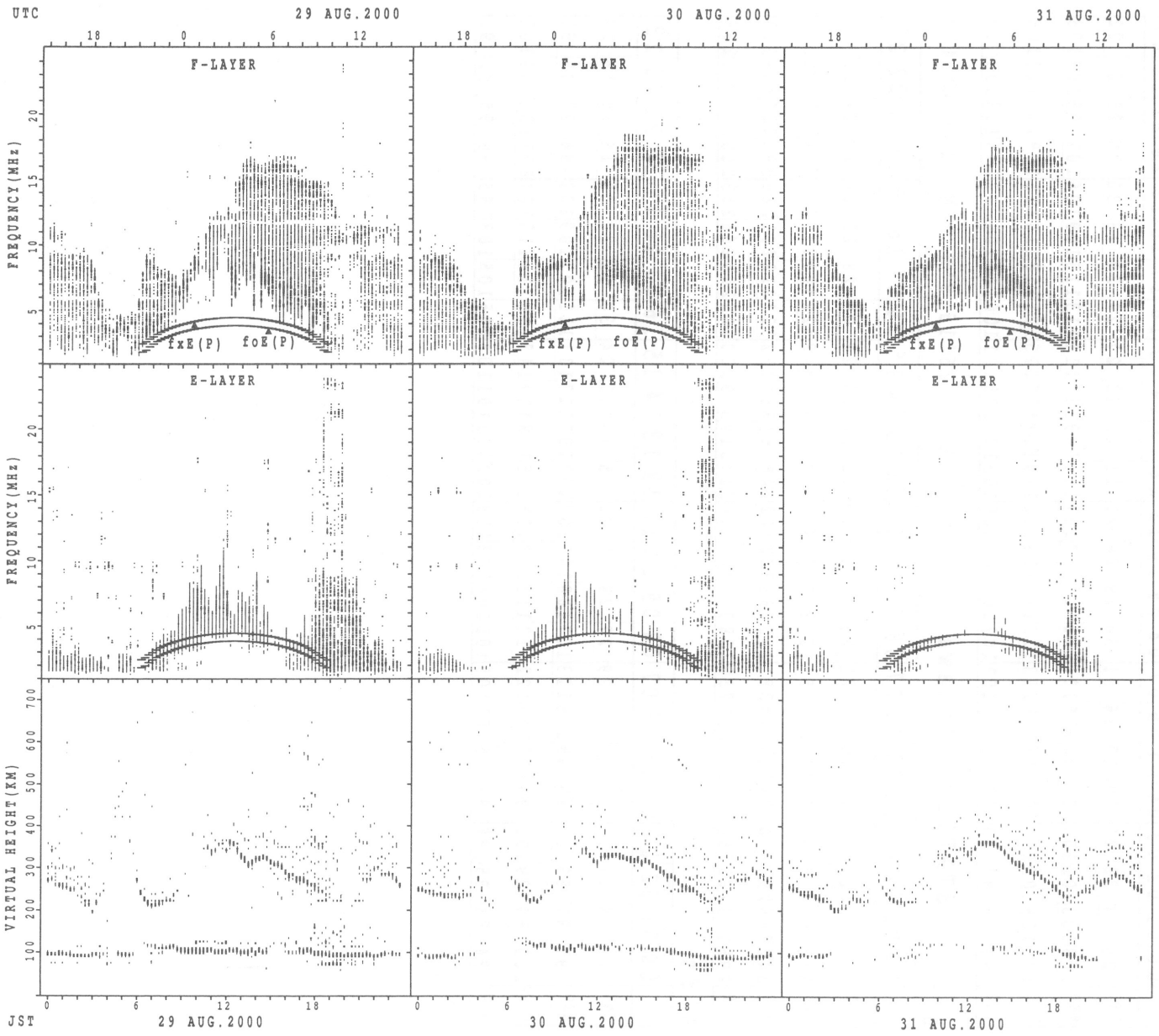
SUMMARY PLOTS AT Okinawa



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
JST
25 AUG.2000
26 AUG.2000
27 AUG.2000
28 AUG.2000
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

MONTHLY MEDIANS OF h'F AND h'Es

AUG. 2000 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION Kokubunji LAT. 35°42.4'N LON. 139°29.3'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	12	13	5	3	6	20	26	23	18	15	16	17	16	14	22	25	24	25	21	16	18	16	15
MED	346	349	346	356	370	339	281	271	274	308	310	334	328	331	311	316	316	299	288	288	322	356	353	358
U Q	373	382	380	388	386	362	292	292	314	326	340	348	344	351	320	338	327	307	298	304	335	372	377	378
L Q	319	319	300	318	366	322	261	254	256	272	286	311	304	312	310	302	289	281	272	269	306	342	338	326

h'Es

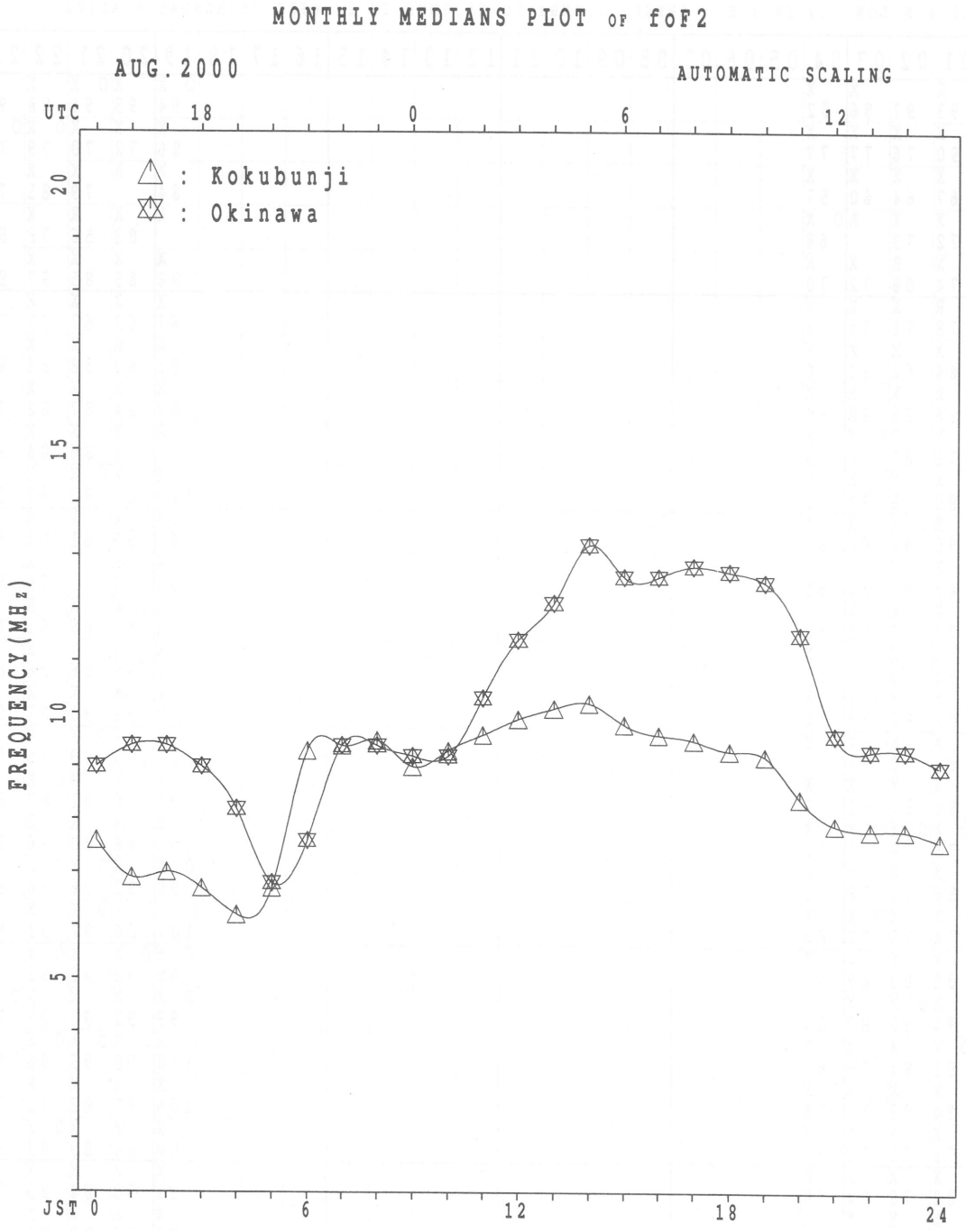
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	23	22	21	19	19	26	31	30	29	26	21	21	21	22	27	28	29	28	26	26	25	21	22
MED	103	103	102	101	103	105	115	111	111	111	113	107	111	109	110	111	113	115	109	106	107	105	107	103
U Q	105	105	105	105	107	113	119	113	113	113	115	111	115	113	113	115	121	118	113	111	109	111	112	105
L Q	99	99	97	99	99	103	113	107	107	105	107	105	105	103	105	101	106	108	104	97	105	103	103	99

h'F STATION Okinawa LAT. 26°16.9'N LON. 127°48.4'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	20	20	22	17	10	14	25	26	20	20	19	16	16	16	22	29	28	25	28	21	24	21	20
MED	312	304	272	299	306	304	289	256	250	268	285	346	339	336	333	342	328	307	278	270	272	297	320	316
U Q	342	345	298	348	324	324	314	291	260	281	332	362	348	361	351	352	337	312	291	280	296	329	339	328
L Q	296	279	262	256	278	296	250	239	238	259	269	326	319	319	319	320	305	285	266	253	265	285	301	296

h'Es

	00	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	15	11	13	10	12	15	29	27	28	25	23	15	18	17	24	30	31	27	25	16	15	16	17
MED	97	97	99	97	99	98	105	113	107	108	105	107	107	107	113	111	111	107	109	103	96	97	95	97
U Q	103	99	99	100	99	102	113	122	113	113	112	115	115	119	117	113	115	113	113	107	103	105	103	103
L Q	94	93	95	95	97	95	101	105	105	106	103	103	103	103	101	104	105	105	103	95	90	95	91	92


MONTHLY MEDIANS PLOT OF foF2
AUG. 2000
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Kokubunji
✡ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	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 94	R 93	97	X 86	X 82															O X 94	X 93	O X 94	X 88	X 91
2	X 91	X 90	X 76	X 77	X 77															X 86	X 72	X 70	O X 79	O X 74
3	X 72	X 67	X 64	X 60	X 57															X 84	A	X 79	X 85	X 79
4	X 72	X 72	X 73	A	O X 68															A	X 83	R 56	X 78	X 80
5	X 72	X 74	R 68	X 72	X 70															X 88	X 85	X 85	X 87	X 85
6	X 81	R 78	X 71	X 74	X 71															X 67	X 63	X 67	X 71	X 70
7	X 68	X 64	X 62	X 64	X 66															X 81	R 69	X 88	X 86	X 81
8	X 82	X 86	X 76	X 68	X 64															X 88	X 84	X 87	X 82	X 76
9	X 76	X 76	R 67	O X 74	X 73															A	X 86	X 86	X 84	X 81
10	X 81	X 80	X 78	X 72	X 70															X 112	X 86	O X 82	X 87	X 91
11	X 87	X O 90	X 95	X 60	X 59															X 63	X 59	X 61	X 61	60
12	X 65	X 63	X 57	X 61	X 65															X 66	X 72		X 76	X 59
13	X 71	R 71	R 78	X 85	92															X 63	O X 64	X 69	R 61	X 62
14	X 60	X 59	X 59	59	X 57															X 91	X 88	X 86	X 86	X 86
15	X 83	X 82	X 80	O X 74	X 71															X 100	X 92	X 90	X 88	X 86
16	R 54	X 82	X 80	X 76	X 74															X 112	X 103	O X 99	X 95	X 91
17	X 87	X 84	X 84	X 81	X 78															X 96	X 86	X 91	O X 82	X 82
18	X 80	O X 75	O X 74	O X 74	X 71															X 104	X 96	R 80	X 86	X 90
19	R 84	X 86	X 81	O X 78	X 75															O X 98	X 92	O X 96	O X 96	X 85
20	X 80	X 74	X 75	O X 72	X 69															X 107	X 106	O X 97	X 91	X 91
21	X 89	X 85	X 80	X 69	X 69															O X 98	O X 92	X 92	O X 91	X 90
22	X 90	X O 91	O X 90	X 89	X 83															O X 99	X 91	X 92	X 95	O X 94
23	X 88	O X 83	X 84	X 79	X 67															X 100	X 90	O X 95	O X 96	X 95
24	X 92	X 94	X 88	X 77	O X 76															X 106	X 87	X 82	R 73	X 78
25	X 76	X 75	X 75	X 72	X 69															X 100	X 86	X 89	O X 92	X 86
26	X 84	X 82	X 78	X 74	R 58															X 91	X 90	X 84	X 80	X 75
27	X 72	X 71	X 74	X 72	X 57															X 93	X 86	X 82	X 81	X 78
28	X 77	X 70	X 69	X 65	X 64															X 112	O X 96	X 90	X 91	X 93
29	X 94	X 90	X 87	X 80	X 60															X 92	X 74	R 71	X 75	O X 76
30	X 77	O X 74	X 66	X 62	X 53															X 84	X 81	X 80	88	84
31	X 82	X 74	X 72	X 61	X 54															X 78	X 84	X 82	X 84	X 86
	00	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	30	31															29	30	30	31	31
MED	X 81	X 78	X 76	X 73	X 69															X 93	X 86	X 86	X 86	X 84
U Q	X 87	X 86	X 81	X 77	X 74															X 100	X 92	O X 91	X 91	X 90
L Q	X 72	X 72	X 69	X 65	X 60															X 84	X 81	X 80	X 79	X 76

AUG. 2000 fxI (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	88	R	F	80	R 76	74	R 87	92	83	87	94	84	83	84	88	91	95	R 93	90	88	88	88	82	85
2	85	84	70	71	71	80	R 92	103	R 94	93	A	85	R	79	R 72	77	78	77	75	80	R 66	R 64	R 73	U R 68
3	R 66	61	58	54	51	50	64	R 73	A	A	A	78	A	A	80	R 82	84	R	82	78	A	R 71	79	72
4	66	66	67	A	R 62	67	90	109	104	88	82	R	90	89	91	90	R 79	R 78	72	A	J R 77	R	R 72	R 74
5	R 67	68	R	66	64	69	78	R 93	91	82	81	85	78	82	A	80	81	A	76	82	R 79	79	J R 81	79
6	J R 75	R	V 65	R 68	65	R 69	R 89	94	76	U R 63	R 64	U R 65	R 64	64	R	68	66	65	66	61	57	R 61	65	J R 64
7	62	58	56	58	60	61	80	83	91	86	84	87	88	87	86	90	89	85	77	R 75	R	82	80	U R 76
8	R 76	R 80	70	62	58	R 59	79	80	72	74	77	79	80	82	83	85	86	86	83	82	R 78	81	R 76	R 70
9	70	70	R	68	67	R 68	77	83	80	81	82	85	R 88	R 92	95	92	85	86	82	A	80	80	78	R 76
10	75	R 74	72	R 66	64	64	81	100	109	U R 98	R 98	101	94	95	95	96	94	90	100	106	U R 80	R 76	81	85
11	81	84	R 89	54	53	56	R 76	72	63	R 62	R	R	R	R	R	R 59	R 62	60	60	57	53	55	55	F 50
12	58	57	R 52	55	58	61	61	68	64	64	R	R 65	R	R	A	71	77	66	60	60	R 66	R	R 70	53
13	65	R	R	R 79	F	F	F	F	A	R 55	A	R	R	A	A	R	56	R 57	56	57	58	R 63	R	56
14	54	53	J R 53	F 48	51	R 53	69	78	78	76	80	84	86	86	91	90	86	84	85	85	82	80	80	80
15	77	R 76	R 74	68	65	R 60	A	A	85	82	84	96	108	103	98	103	100	103	102	94	86	84	82	80
16	R	R 76	R 74	70	68	R 74	100	107	96	85	92	103	109	110	111	111	106	106	106	106	R 96	93	89	85
17	81	J R 78	J R 78	75	72	78	103	112	R 100	96	108	107	103	102	103	105	104	93	93	90	80	84	76	76
18	R 74	69	68	68	65	R 68	104	107	99	89	95	103	108	112	112	105	98	97	99	R 98	U R 90	R	80	84
19	R	80	R 75	72	69	70	91	102	101	104	103	104	108	113	120	120	108	98	R 100	92	R 86	90	90	79
20	74	R 69	69	R 66	R 63	72	R	109	98	98	102	110	121	R 132	138	130	120	108	104	101	100	R 91	85	85
21	83	78	R 74	R 63	63	R 65	94	118	111	96	90	96	98	104	108	108	108	106	102	92	86	R 86	85	84
22	R 84	85	84	84	R 77	81	R 97	109	104	121	117	121	111	104	106	105	101	102	100	93	85	86	88	88
23	82	R 77	J R 78	R 73	61	64	82	91	84	91	92	92	96	100	106	101	96	95	100	94	84	R 89	90	88
24	86	87	82	71	70	R 66	74	90	100	110	114	118	120	115	109	105	101	109	106	R 100	81	J R 76	R	R 72
25	70	R 68	69	R 66	R 63	R 63	R 78	101	111	96	R 88	R 93	96	100	103	107	106	107	103	93	R 80	83	R 86	80
26	78	76	R 72	68	R	64	84	103	98	97	101	104	110	108	108	104	96	96	93	85	84	78	74	R 69
27	66	66	R 68	R 66	52	50	60	73	84	95	96	98	107	107	103	96	88	90	93	87	80	R 76	R 75	R 72
28	71	64	63	59	58	J R 62	R 74	92	96	90	91	96	100	99	101	100	R 98	102	107	106	R 90	R 84	R 85	87
29	88	84	81	U R 74	54	54	69	90	83	83	90	102	108	101	96	102	97	95	105	86	R 68	R	R 70	R 70
30	71	68	60	56	47	47	54	R 60	65	A	70	R	86	R 86	88	79	76	76	80	R 78	R 75	R 74	F	F
31	R 76	68	R 66	55	48	48	63	82	82	89	94	99	95	94	94	91	87	84	79	74	78	77	R 78	R 80
	00	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	27	30	29	30	28	29	29	29	26	27	26	27	26	30	31	29	31	29	29	27	28	30
MED	75	72	70	67	63	64	80	92	91	89	92	96	97	100	100	96	94	93	93	87	80	80	80	78
U Q	82	79	R 75	71	68	69	90	105	100	96	98	103	108	107	108	105	101	102	102	94	86	86	85	84
L Q	66	67	65	59	56	59	72	81	81	82	82	85	88	86	91	85	81	81	77	78	R 76	R 76	R 74	R 70

AUG. 2000 foF2 (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	L	A	L	A	L	UL572	UL588	UL576	UL556	L	A	A						
2								A	L	A	A	A	A	UL576	UL552	UL552	A	L	A					
3							404	A	A	A	A	A	A	A	UL564	UL536	A	L	A					
4						L	L	L	A	L	UL568	UL584	UL568	560	UL548	UL548	L	L	A					
5						L	L	L	UL504	540	UL544	UL572	UL580	UL552	A	A	L	A	A					
6						L	A	L	L	A	UL532	UL532	UL548	532	UL532	A	UL512	L						
7							L	L	A	L	A	A	A	A	UL576	L	UL528	L	L					
8						L	L	L	UL512	552	UL536	UL632	UL560	UL560	L	556	L	L	L					
9							L	L	L	UL564	A	UL608	UL596	A	UL576	532	UL540	A						
10							L	L	A	A	A	544	UL624	UL608	A	A	L	L	L					
11						UL356	UL444	460	488	496	UL520	R	UL516	UL536	UL520	UL524	488	UL504	L					
12							U420	UL480	A	A	UL516	UL556	R	UL548	A	UL516	UL532	468	L					
13							A	A	A	UL484	A	R	R	A	A	R	U476	UL452	L					
14						A	A	L	L	UL608	UL612	UL604	UL596	UL584	UL576	UL572	UL532	L	A					
15						L	A	A	L	A	UL632	UL624	UL592	L	UL588	A	L	L						
16								L	L	L	UL668	UL636	UL592	L	UL612	UL572	L	A	A					
17							L	L	L	UL640	UL616	L	L	UL632	L584	UL544	L	L						
18							L	L	L	A	UL568	L	L	A	L	A	L							
19							L	L	A	L	L	L	L	L	UL580	L	L	L	L					
20							A	A	A	A	L	A	UL592	A	L	A	A	A	A					
21						L	L	L	L	L	L	L	UL592	UL572	UL588	L	L	A						
22								L	L	L	L	L	UL588	UL636	UL548	L	L	L						
23								L	L	UL600	UL524	L	L	L	UL572	L	L	L						
24							L	L	L	UL536	UL548	L	UL564	UL512	L	L	A	L	A					
25								L	L	L	L	L	L	L	R	UL512	L	L						
26								L	L	L	L	L	UL552	L	L	L	L	L						
27							L	L	L	UL504	L	UL548	L	UL536	L	L	L	L						
28								L	L	L	L	524	UL556	L	L	L	L	A						
29						L		L	A	L	L	L	L	L	L	L	L	L						
30							UL388	A	A	A	UL532	A	A	UL560	L	L	L	L						
31								L	L	L	L	UL580	L	L	UL540	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	4	2	3	10	14	14	17	16	17	11	7	3						
MED						UL356	UL412	470	UL504	UL546	UL546	UL576	UL588	UL560	UL572	UL544	UL528	UL468						
U Q							UL432		UL512	UL600	UL612	UL608	UL592	UL580	UL582	UL556	UL532	UL504						
L Q							396		488	UL504	UL532	548	UL558	UL542	UL548	UL524	488	UL452						

AUG. 2000 foF1 (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	248	304	340	A	A	R	R	R	R	R	U R 344	288	B					
2						B	240	296	R	A	A	A	R	R	R	R	328	288	208					
3						176	272	304	332	R	R	R	A	B	A	356	A	A	A					
4						B	264	312	344	R	R	B	R	R	R	R	324	U R 288	196					
5						136	252	300	R	U R 352	R	R	R	B	R	U R 360	R	288	176					
6						B	U A 236	280	U R 328	R	R	R	R	R	R	R	332	284	B					
7						B	U A 248	316	U R 348	A	A	R	R	R	R	364	A	A	A					
8						B	U R 232	A	A	A	R	B	R	R	R	R	348	288	A					
9						B	268	320	360	384	R	B	R	A	B	R	R	308	A					
10						B	232	296	A	A	A	A	R	A	A	A	A	A	A					
11						B	240	304	R	U R 360	R	B	R	R	R	R	360	292	196					
12						B	A	A	A	A	A	A	R	R	R	R	340	296	R			K 208		
13						B	228	A	A	A	A	R	R	R	R	A	U R 332	284	B					
14						B	252	300	R	R	R	R	B	B	B	A	U R 320	A	196					
15						B	232	296	U R 332	R	R	A	A	A	A	A	A	A	A					
16						B	A	296	A	R	R	B	A	R	R	A	344	284	A					
17						B	236	292	R	A	R	A	R	R	A	A	U R 324	280	172					
18						B	R	312	U R 344	360	R	R	A	A	380	A	A	272	180					
19						B	A	300	A	A	R	A	A	A	A	A	332	264	176					
20						B	A	288	324	A	A	A	A	A	A	A	328	276	A					
21						B	252	300	340	R	R	R	R	R	U R 400	U R 368	336	284	B					
22						B	A	296	340	R	R	R	R	R	A	A	U R 316	268	172					
23						B	236	296	R	340	R	R	R	R	R	U R 352	U R 324	260	B					
24						B	256	A	R	R	A	A	A	A	R	A	A	A	A					
25						B	A	A	A	A	A	A	R	R	R	R	U R 336	A	196					
26						B	U R 216	A	292	R	R	R	R	R	R	R	U R 312	260	A					
27						B	A	264	328	A	U R 376	B	R	R	R	R	312	256	B					
28						B	A	A	A	A	A	A	A	U R 392	A	R	R	280	B					
29						B	240	288	324	R	R	A	R	R	R	A	A	A	B					
30						B	228	284	U R 320	R	B	R	R	R	U R 340	R	324	244	B					
31						B	224	284	320	R	R	A	A	R	R	A	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	22	24	16	5	1			1	3	5	20	22	10			1		
MED						156	240	296	332	360	U R 376			U R 392	U R 380	U R 360	330	284	188			K 208		
U Q							252	304	342	372					U R 400	366	338	288	196					
L Q							232	290	324	346					U R 340	354	324	268	176					

AUG. 2000 foE (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	JA 49	JA 54	JA 54	JA 75	JA 54	JA 110	JA 50	JA 112	JA 53	JA 82	JA 52	G	G	G	G	G	51	JA 59	JA 52	JA 92	JA 50	JA 28	JA 33	JA 53
2	JAJA 30	JA 22	JA 23	20	EB 15	25	30	JA 65	JAJA 47	JA 78	JAJA 95	JA 66	57	G	G	42	JA 63	37	JA 44	JA 63	JAJA 102	JA 54	JA 53	JA 106
3	JAJA 64	JA 46	JA 52	JA 46	JA 32	JA 37	JA 34	69	JA 118	JA 82	JA 82	JA 76	JA 98	JA 85	JA 53	JA 52	JA 128	JA 165	JA 73	JA 94	JA 60	JA 39	JA 46	JA 30
4	JAJA 127	JA 44	JA 42	JA 70	JA 27	JA 27	34	JA 48	JA 61	JA 65	48	JA 52	47	JA 53	41	G	35	33	JA 40	JA 76	JA 53	JA 64	JA 52	23
5	JAJA 31	JA 26	JA 20	AEB 16	EB 16	20	JA 40	39	40	JA 54	46	48	JA 64	48	74	JA 178	G	JA 95	JA 48	JA 86	JA 54	JA 51	JA 80	JA 31
6	JAJA 52	JA 48	JA 44	JA 36	JA 26	JA 34	JA 42	JA 52	JAJA 51	JA 58	50	41	G	46	44	JA 52	JA 54	JA 75	JA 47	JA 37	JA 48	32	42	38
7	JAJA 42	JA 48	JA 27	JA 24	JA 23	JA 23	30	38	56	JA 50	JA 70	JA 97	71	72	JA 55	JA 54	JA 84	JA 30	JA 36	JA 25	JA 41	47	53	47
8	JAJA 42	JA 26	JA 22	20	JA 25	JA 37	28	JA 52	41	JA 46	GEB 45		G	49	44	44	39	36	27	JA 32	JA 20	21	EBEB 13	14
9	EBEB 14	BEB 14	BEB 15	BJA 19	EBJA 15	19	G	G	JA 50	44	JAEB 57	50	47	JA 81	JA 56	G	G	JA 54	JA 56	JA 86	JA 68	27	81	JA 61
10	JAJA 46	JA 28	JA 31	JA 26	AEBJA 15	24	30	JA 55	JAJA 96	JA 85	JA 144	JA 51	G	JA 55	65	JA 76	JA 62	JA 48	JA 35	JA 34	JA 27	50	52	52
11	JAJA 34	JA 42	JA 33	JA 27	JA AEB 19	17	31	39	40	JA 51	JA 47	45	47	JA 52	G	42	39	JA 43	JA 29	JA 30	21	EB 14	26	EB 16
12	JAJA 19	22	20	22	JA 42	JA 26	JA 27	34	JAJA 56	63	46	42	G	GJA 70		G	G	G	GEB 17	BEB 21	KJA 28	34	24	
13	JAJA 54	JA 28	JA 27	JA 22	JA 21	22	JAJA 39	JA 74	JA 100	55	51	G	JA 48	58	59	JA 44	G	36	JA 24	JA 49	JA 53	47	32	28
14	22	20	EBJA 15	33	JA 40	JA 38	JA 41	JA 48	JA 46	43	46	44	EBEBEB 49	47	44	37	G 29	34	JA 33	JA 27	JA 23	JA 28	JA 21	22
15	JAJA 27	36	45	JA 40	JA 25	JA 29	JA 98	JA 108	60	JA 68	G	JA 62	JA 51	JA 53	47	JA 55	42	JA 35	JA 32	JA 26	JA 18	AEB 18	20	EB 14
16	JAJA 26	JA 22	JA 19	JA 38	JA 40	JA 28	JA 35	JA 41	JA 43	JA 44	AEB 50	45	46	G	GJA 45		G	JA 48	JA 60	JA 89	JA 30	JA 41	AEB 15	JA 26
17	JA 31	25	JAJA 18	18	20	EB 15	30	34	45	JA 46	G	45	G	G	46	47	G	G	JA 27	JA 24	JA 33	JA 25	JA 117	58
18	JAJA 63	JA 43	JA 26	JA 29	JA 21	JA 23	29	34	42	69	JAJA 49	JA 61	JA 49	66	GJA 56		JA 39	38	JA 50	JA 69	JA 76	JA 38	47	EB 14
19	JA 22	22	EBE 14	BE 12	BE 15	BJA 18	JA 29	JA 42	JA 62	JA 49	JA 49	46	JA 51	45	JA 48	JA 41	36	JA 47	JA 82	JA 42	JA 21	AEB 16	BEB 16	JA 28
20	JAJA 24	JA 33	JA 51	JA 44	JA 28	JA 26	JA 85	JA 74	JA 81	JA 82	JA 144	JA 76	51	JA 94	40	JA 119	JA 59	JA 66	JA 44	JA 124	JA 47	JA 37	JA 19	21
21	JAJA 19	JA 19	JA 19	20	EBEB 13	14	G	32	42	JA 47	42	JA 46	41	JA 48	44	44	JA 46	JA 54	JA 24	JA 40	JA 23	28	23	JA 38
22	JAJA 40	JA 27	JA 20	JA 23	AEB 12	JA 18	JA 28	34	41	41	40	JA 49	G	GJA 44	43	G 27	33	24	JA 20	JA AEB 34	BEB 16	JA 17	22	
23	EBEB 12	BEB 14	BEB 15	BEB 15	BEB 16	B 16	28	33	41	JA 49	45	40	JA 48	JA 53	G	42	G 24	34	JA 41	JA 30	JA 27	JA 24	JA 37	JA 53
24	JAJA 29	JA 35	JA 24	JA 32	20	JA 24	G	32	JA 41	JA 42	JA 40	45	44	47	GJA 42		JA 53	JA 41	JA 54	JA 52	18	JA 19	21	JA 38
25	JAJA 38	JA 55	JA 32	JA 66	JA 47	JA 47	JA 38	JA 32	JA 36	45	42	JA 48	G 32	40	G 25	G 20	G	29	27	JA 23	JA 26	JA 27	JA 26	JA 27
26	JAJA 26	JA 23	19	EB 18	22	JA 18	JAJA 25	JA 34	35	39	G 35	G 34	G	G	G	G 32	34	32	JA 29	JA 31	JA 29	JA 46	21	JA 31
27	JAJA 40	JA 25	JA 31	JA 22	JA 28	JA 20	24	32	43	40	GEB 42		G	G	G	42	36	30	JA 22	22	JAJA 24	52	21	JA 28
28	JAJA 50	JA 32	JA 26	JA 22	JA 22	20	30	JA 32	36	45	JAJA 51	JA 49	JA 52	G 34	48	44	JA 46	JA 45	JA 54	JA 82	JA 68	JA 65	JA 65	JA 32
29	JAJA 25	JA 27	JA 19	JA 30	JA 23	JA 20	30	34	JA 52	54	43	JA 47	JA 52	JA 55	JA 44	40	37	JA 35	JA 32	JA 48	JA 53	82	82	82
30	JAJA 43	JA 32	JA 19	AEB 15	EB 14	20	29	JA 50	JAJA 59	JA 72	JA 50	JA 79	G	41	JA 55	G	JA 44	JA 49	JA 33	JA 146	JA 53	JA 64	JA 51	JA 53
31	JAJA 40	JA 37	JA 20	20	JA 32	JA 22	25	33	37	37	45	JA 51	46	G 34	G 36	42	39	JA 29	JA 28	JA 27	JA 38	JA 44	22	18
	00	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	JAJA 34	JA 28	JA 23	JA 23	JA 22	JA 23	30	JA 39	JAJA 46	JA 50	47	46	46	47	44	42	39	JA 37	JA 35	JA 40	JA 34	JA 37	JA 33	JA 30
U Q	JAJA 46	JA 42	JA 32	JA 36	JA 28	JA 28	JA 38	JA 52	JA 59	JA 68	JA 51	JA 52	JA 51	JA 55	JA 53	JA 52	JA 51	JA 49	JA 50	JA 82	JA 53	JA 50	JA 52	JA 52
L Q	JA 25	22	19	EB 20	EB 16	19	28	33	41	44	G 42	44	G	G	G	G 37	G	33	27	J 27	JA 23	25	21	22

AUG. 2000 foEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	36	40	42	63	44	44	39	62	50	55	49	G	G	G	G	G	50	58	39	44	30	26	21	47
2	23	18	E B 14	E B 15	E B 15	23	27	62	44	75	A A 95	63	U Y 57	G	G	U Y 42	47	34	41	38	16	34	21	19
3	45	34	32	28	20	19	30	65	A A 118	A A 82	A A 82	64	A A 98	A A 85	50	45	50	40	42	42	A A 60	30	26	20
4	22	26	23	A A 70	21	24	32	43	54	52	48	51	46	50	41	G	34	32	37	A A 76	44	36	27	16
5	16	19	E B 14	E B 16	E B 16	18	39	38	38	46	U Y 46	U Y 48	44	47	A A 74	64	G	A A 95	44	40	37	16	21	27
6	16	23	28	31	18	24	40	33	42	52	46	U Y 41	G	45	U Y 44	51	39	37	23	18	26	18	18	24
7	34	40	21	19	E B 15	18	27	36	U Y 56	43	62	83	66	68	53	52	46	30	25	18	23	20	22	21
8	30	24	16	E B 14	18	23	26	35	40	42	G	E B 45	G	48	U Y 44	43	38	33	26	E B 14	E B 15	E B 14	E B 13	E B 14
9	E B 14	E B 14	E B 15	16	E B 15	17	G	G	49	43	56	E B 50	46	63	54	G	G	53	32	A A 86	24	19	40	35
10	28	25	E B 15	16	E B 15	17	28	34	76	71	80	49	G	53	63	70	44	44	33	26	21	24	16	24
11	21	23	17	23	E B 16	E B 17	29	38	U Y 40	43	44	U Y 45	46	43	G	41	37	41	29	24	E B 15	E B 14	17	E B 16
12	E B 13	15	E B 15	15	20	21	26	U Y 33	51	52	45	U Y 42	G	G	A A 70	G	G	G	G	E B 17	E B 21	K 20	22	18
13	45	20	20	19	16	21	38	48	A A 100	41	A A 51	G	46	A A 58	A A 59	41	G	34	23	19	44	23	22	24
14	E B 15	E B 16	E B 15	16	32	32	38	46	42	U Y 43	46	U Y 44	E B 49	E B 47	E B 44	U Y 37	G 29	34	32	24	16	20	19	19
15	24	20	42	36	17	25	A A 98	A A 108	56	66	G	53	49	49	42	51	41	33	28	18	E B 14	E B 18	16	E B 14
16	16	E B 16	E B 15	22	22	25	28	34	39	43	48	E B 45	U Y 46	G	G	44	G	44	57	49	27	16	E B 15	25
17	18	20	E B 15	E B 14	16	E B 15	27	32	42	42	G	U Y 45	G	G	U Y 46	42	G	G	24	E B 16	22	18	53	29
18	30	20	20	20	18	16	27	33	41	65	46	58	47	63	G	54	37	35	44	66	66	16	21	E B 14
19	17	E B 12	E B 14	E B 12	E B 15	16	26	39	54	47	46	46	50	U Y 45	46	37	35	42	27	19	16	E B 16	E B 16	E B 15
20	E B 14	16	28	36	21	18	52	54	67	66	53	62	50	79	U Y 40	76	56	64	37	34	23	20	16	E B 15
21	E B 14	15	16	16	E B 13	E B 14	G	U Y 32	40	45	U Y 42	46	U Y 41	43	44	43	44	41	23	34	19	23	E B 14	20
22	26	21	E B 14	16	E B 12	E B 12	26	U Y 33	40	U Y 41	U Y 40	46	G	G	42	38	G 26	30	24	17	18	E B 16	E B 17	E B 14
23	E B 12	E B 14	E B 15	E B 15	E B 16	E B 16	26	32	40	40	42	40	46	51	G	41	G 24	33	35	20	21	16	21	28
24	16	32	18	26	E B 15	16	G	32	40	41	40	45	44	43	G	35	53	32	47	30	16	14	E B 16	28
25	29	38	27	22	18	31	21	31	34	44	42	44	U Y 32	U Y 40	G 25	G 20	G	29	G 19	17	19	16	21	16
26	17	16	14	E B 18	16	16	24	29	35	U Y 38	U Y 35	U Y 34	G	G	G	G 32	G 23	29	21	22	20	42	E B 13	17
27	32	20	21	E B 15	21	E B 16	24	28	40	39	G	E B 42	G	G	G	42	35	29	18	17	16	22	E B 14	17
28	23	22	17	16	E B 14	E B 16	24	31	35	40	48	38	42	G 30	47	43	41	40	47	47	47	43	51	26
29	18	18	16	23	20	E B 14	25	30	49	52	U Y 43	46	52	54	42	40	36	33	29	44	34	44	20	33
30	32	28	E B 16	E B 15	E B 14	16	24	43	56	A A 72	48	60	G	U Y 41	42	G	36	31	18	20	20	25	43	31
31	32	35	16	E B 12	16	20	24	32	35	U Y 37	U Y 45	48	U Y 46	U Y 34	G 36	37	35	27	23	19	26	30	19	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	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	22	20	16	16	16	18	27	34	42	44	46	46	45	44	42	41	36	34	29	24	21	20	20	20
U Q	30	26	21	23	20	23	32	43	54	55	49	51	49	53	47	45	44	41	39	42	30	26	22	27
L Q	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	24	32	40	41	42	42	G	G	G	G 35	G	30	23	18	16	16	E B 16	E B 16

AUG. 2000 fbEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	16	16	16	15	16	16	18	17	18	29	30	27	35	21	20	15	15	13	14	14	14	14	14
2	16	16	14	15	15	15	14	14	16	18	22	29	28	25	28	20	16	14	14	15	14	13	15	14
3	13	15	13	14	15	12	14	16	18	20	28	29	37	42	35	22	16	14	16	14	14	15	15	12
4	14	12	16	15	15	14	14	16	16	18	20	42	35	25	30	27	19	16	16	16	15	16	12	13
5	14	15	14	16	16	12	16	16	14	18	20	21	23	41	24	18	19	20	14	16	16	15	15	15
6	14	15	15	15	12	14	16	16	20	20	26	22	22	30	22	21	15	15	16	15	12	15	14	15
7	14	15	16	12	15	15	16	18	23	21	17	26	33	23	26	21	16	14	16	16	12	15	15	14
8	14	15	12	14	14	13	13	13	14	14	26	45	27	30	22	24	18	15	16	14	15	14	13	14
9	14	14	15	14	15	14	16	18	21	22	23	50	30	34	42	21	28	15	16	13	16	17	15	15
10	12	16	15	15	15	14	16	15	23	20	28	35	23	22	24	19	15	14	12	15	13	16	14	14
11	15	12	14	14	16	17	14	15	17	19	22	40	24	29	27	20	15	16	15	16	15	14	15	16
12	13	14	15	15	15	15	15	17	14	18	21	22	30	30	31	21	16	15	18	17	21	16	16	14
13	14	14	14	16	14	12	16	15	19	21	21	29	35	34	26	21	18	14	16	16	16	12	14	16
14	15	16	15	12	15	16	18	18	18	13	23	28	49	47	44	22	20	14	16	16	14	15	15	14
15	16	15	16	16	16	14	20	14	26	19	21	35	32	27	26	18	16	14	13	13	14	18	14	14
16	15	16	15	14	16	13	15	13	18	22	26	45	27	36	28	23	18	16	15	16	15	13	15	14
17	16	15	15	14	14	15	15	14	17	30	20	30	24	22	22	16	17	16	15	16	15	12	14	16
18	13	15	14	14	15	14	14	16	21	18	23	26	24	34	28	28	18	14	15	14	14	13	12	14
19	15	12	14	12	15	14	15	14	16	20	24	34	33	25	26	23	17	16	15	16	14	16	16	15
20	14	12	15	14	15	12	16	15	16	20	22	29	22	20	20	18	16	16	16	15	14	16	13	15
21	14	14	12	14	13	14	16	14	14	16	20	18	18	25	32	22	18	16	14	16	13	16	14	15
22	15	16	14	14	12	12	14	14	17	22	24	25	30	18	22	20	16	15	14	15	15	16	17	14
23	12	14	15	15	16	16	16	16	16	17	21	29	26	28	21	20	15	13	16	16	16	14	16	14
24	12	13	15	15	15	16	15	14	14	21	21	20	22	25	26	17	21	14	16	16	13	12	16	13
25	14	16	15	14	14	16	15	14	14	21	21	20	18	18	15	16	15	16	16	15	13	14	16	13
26	15	15	14	18	14	13	16	14	14	14	19	25	24	22	18	20	14	15	14	15	14	15	13	14
27	16	14	15	15	14	16	14	14	20	21	24	42	21	26	18	17	13	14	14	15	12	14	14	14
28	12	15	14	14	14	16	14	14	15	15	21	18	21	20	21	18	15	16	14	14	14	16	16	15
29	15	14	14	14	15	14	16	14	18	18	24	31	22	19	21	19	20	15	13	16	15	15	15	15
30	15	14	16	15	14	16	16	14	22	30	41	36	35	25	27	24	17	14	15	14	14	15	16	15
31	15	15	15	12	15	16	16	16	21	23	25	22	29	25	23	18	18	16	13	15	16	13	14	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	14	15	15	14	15	14	16	15	17	20	22	29	27	25	26	20	16	15	15	15	14	15	15	14
U Q	15	15	15	15	15	16	16	16	20	21	25	35	32	34	28	22	18	16	16	16	15	16	16	15
L Q	14	14	14	14	14	13	14	14	15	18	21	22	22	22	21	18	15	14	14	14	14	14	14	14

AUG. 2000 fmin (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	271	R	F	R 274	R 275	262	R 272	300	303	281	309	284	286	272	282	277	281	R 296	286	277	270	273	262	259
2	264	278	266	258	255	265	R 270	302	R 294	294	A	283	R	270	R 271	267	285	276	287	299	R 282	R 266	R 246	R 257
3	R 271	276	275	266	256	258	274	R 295	A	A	A	280	A	A	270	R 281	286	R	299	287	A	R 258	257	274
4	266	267	273	A	R 254	261	257	285	299	288	269	R	267	265	271	280	R 293	R 292	283	A	R 273	R	R 265	R 277
5	R 250	256	R	258	257	254	252	R 295	302	303	274	292	269	282	A	283	296	A	288	281	R 266	273	J R 265	271
6	R 241	R	V 266	R 264	259	R 252	R 277	304	323	R 245	R 255	R 260	R 242	261	R	269	272	282	296	299	258	R 262	258	R 261
7	260	251	255	261	277	285	315	296	302	297	293	R 274	281	276	275	282	283	293	292	R 277	R	259	272	R 257
8	R 264	R 281	291	278	267	R 265	306	313	303	281	289	290	283	271	270	277	286	295	301	287	R 273	271	R 274	R 266
9	256	270	R	248	270	R 282	298	311	319	289	275	263	R 267	R 270	275	279	277	296	282	A	271	265	267	R 264
10	261	R 269	275	R 280	270	272	288	274	288	R 247	R 267	282	273	266	265	264	274	269	278	296	R 297	R 254	243	249
11	250	273	R 318	250	236	236	R 268	274	249	R 252	R	R	R 223	R	R	R 244	R 251	256	281	271	247	242	244	F
12	249	267	R 256	240	260	265	252	251	234	249	R	R 262	R	R	A	242	284	256	263	250	R 243	R	R 276	234
13	245	R	R	R 228	F	F	F	F	A	R 225	A	R	R	A	A	R	R 255	R 277	290	275	248	R 258	R	255
14	257	246	R 271	F	262	R 287	316	303	287	282	266	267	271	270	274	285	291	294	295	288	271	262	256	256
15	254	R 267	R 279	267	254	R 267	A	A	282	288	266	262	280	273	267	276	270	281	290	287	276	268	264	263
16	R	R 265	R 271	278	267	R 279	R 309	318	319	300	261	269	263	264	267	273	273	277	278	290	R 290	276	275	263
17	257	R 247	R 278	278	269	269	302	304	R 305	270	284	278	272	267	269	275	285	290	296	288	272	278	267	264
18	R 263	270	266	268	266	R 276	321	332	320	291	274	266	266	271	279	282	281	290	290	R 296	R 299	R	267	267
19	R	276	R 278	271	270	280	300	310	288	303	264	267	263	263	267	284	287	285	R 291	296	R 271	273	294	264
20	276	R 286	277	R 273	R 271	293	R	326	290	290	286	273	267	R 276	282	285	289	285	287	283	288	R 289	278	278
21	283	289	R 294	R 271	264	R 274	297	330	318	304	277	273	275	267	266	276	280	284	295	293	268	R 266	264	262
22	R 265	260	267	276	R 270	280	R 284	303	275	280	285	288	287	280	289	284	295	300	305	306	276	276	279	288
23	285	R 282	R	R 301	295	293	324	339	316	292	298	288	286	295	292	300	300	301	312	305	275	R 267	278	263
24	265	283	297	271	271	R 267	262	281	287	292	289	287	293	288	291	295	285	302	306	R 309	R 296	R	R	R 263
25	267	R 266	289	R 287	R 274	R 279	R 293	322	314	303	R 291	R 295	289	285	288	296	296	308	312	307	R 285	272	R 282	292
26	290	286	R 289	285	R	288	301	318	309	309	292	285	294	294	295	309	305	308	307	302	284	291	266	R 279
27	268	271	R 288	R 319	284	302	305	310	296	306	299	290	294	298	306	307	307	305	315	303	296	R 280	R 280	R 281
28	281	270	283	274	282	R 321	R 314	316	319	302	296	280	293	286	284	296	R 295	299	297	310	R 293	R 271	R 265	264
29	271	283	295	R 283	244	254	295	330	326	292	292	276	295	287	278	299	305	299	316	316	R 275	R	R 259	R 265
30	272	291	291	279	267	272	281	R 287	275	A	279	R	281	R 286	301	308	304	299	303	R 276	R 273	R 257	F	F
31	R 285	280	R 297	295	288	276	322	315	297	288	289	290	282	285	293	297	301	312	308	274	261	267	R 272	R 282
	00	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	26	29	29	30	28	29	29	29	26	27	27	27	26	30	31	29	31	29	29	26	28	29
MED	265	270	278	273	267	273	296	304	302	290	284	280	280	273	276	282	286	293	295	290	273	268	266	264
U Q	272	282	291	R 280	272	282	308	318	317	301	292	288	287	286	289	296	296	300	305	302	R 286	273	276	276
L Q	256	266	271	262	258	265	273	295	288	280	269	267	267	267	270	276	280	282	287	279	269	R 262	260	260

AUG. 2000 M(3000)F2 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	L	A	L	A	L	U L 358	U L 347	R 354	U L 336	L	A	A						
2								A	L	A	A	A	A	R 346	335	U L 331	A	L	A					
3							324	A	A	A	A	A	A	A	U L 338	U L 344	A	L	A					
4						L	L	L	A	L	U L 346	R 319	U L 359	330	U L 340	U L 328	L	L	A					
5						L	L	L	U L 360	L 360	U L 365	R 330	U L 342	U L 360	A	A	L	A	A					
6						L	A	L	L	A	R 366	U L 375	R 367	339	U L 341	A	U L 323	L						
7							L	L	A	L	A	A	A	A	R 322	L	R 324	L	L					
8						L	L	L	U L 358	354	U L 393	U L 328	U L 376	U L 376	L	347	L	L	L					
9							L	L	L	U L 357	A	U L 342	U L 348	A	U L 328	355	U L 337	A						
10							L	L	A	A	A	379	U L 325	R 341	A	A	L	L	L					
11						U L 293	U L 309	338	350	370	U L 366	R	R 367	U L 352	U L 357	U L 332	325	U L 298	L					
12							U L 316	U L 318	A	A	U L 366	U L 355	R	U L 352	A	U L 335	U L 325	313	L					
13							A	A	A	U L 365	A	R	R	A	A	R	U L 333	U L 319	L					
14						A	A	L	L	U L 340	U L 328	U L 372	U L 349	U L 338	U L 335	U L 318	U L 339	L	A					
15						L	A	A	L	A	U L 327	U L 319	U L 342	L	U L 336	A	L	L						
16								L	L	L	U L 322	U L 330	U L 351	L	U L 329	U L 325	L	A	A					
17							L	L	L	U L 346	U L 345	L	L	U L 327	L 329	U L 353	L	L						
18							L	L	L	A	U L 364	L	L	A	L	A	L							
19							L	L	A	L	L	L	L	L	U L 333	L	L	L	L					
20							A	A	A	A	L	A	U L 340	A	L	A	A	A	A					
21						L	L	L	L	L	L	L	U L 337	U L 337	U L 325	L	L	A						
22								L	L	L	L	L	U L 347	U L 319	U L 346	L	L	L						
23								L	L	U L 337	U L 385	L	L	L	U L 327	L	L	L						
24							L	L	L	U L 346	U L 350	L	U L 352	U L 389	L	L	A	L	A					
25								L	L	L	L	L	L	L	R	U L 352	L	L						
26								L	L	L	L	L	U L 360	L	L	L	L	L						
27							L	L	L	U L 368	L	U L 364	L	U L 358	L	L	L	L						
28								L	L	L	L	360	U L 351	L	L	L	L	A						
29						L		L	A	L	L	L	L	L	L	L	L	L						
30							U L 328	A	A	A	U L 332	A	A	U L 348	L	L	L	L						
31								L	L	L	L	U L 346	L	L	U L 342	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	4	2	3	10	14	14	17	16	17	11	7	3						
MED						U L 293	U L 320	328	U L 358	U L 356	U L 357	U L 350	U L 349	U L 347	U L 335	U L 335	U L 325	U L 313						
U Q							326		U L 360	U L 365	U L 366	U L 364	U L 360	U L 356	U L 340	U L 352	U L 337	U L 319						
L Q							U L 312		350	U L 346	U L 332	330	U L 342	U L 338	U L 328	U L 328	324	U L 298						

AUG. 2000 M(3000)F1 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						E A 368	346	280	312	360	312	308	362	398	370	360	326	312						
2								290	300	E A 334	A		E A 416	388	420	404	344	340	294					
3							364	E A 360	A	A	A	E A 386	A	A	392	362	322	300	296					
4						326	312	296	292	330	338	386	388	382	374	344	330	312	292					
5						326	344	302	308	322	372	352	394	368	A	364	338	A	308					
6						390	296	288	288	516	U R 482	482	536	476	R	428	392	364						
7							280	330	320	278	340	E A 470	378	376	376	348	U R 342	310	288					
8						356	284	270	324	392	356	370	362	386	376	376	332	306	278					
9							290	272	292	334	E A 328	404	400	388	368	344	354	308						
10							272	296	300	E A 304	E A 366	334	370	392	376	380	352	356	306					
11						456	366	356	488	492	R	R	U R 552	U R 386	542	542	472	450	314					
12							400	458	548	476	R	482	R	R	A	508	376	440	344					
13							400	488	A	R 622	A	R	R	A	A	R	504	408	326					
14						E A 336	274	312	336	374	408	412	392	384	376	346	324	304	282					
15						368	A	A	352	E A 318	412	408	340	360	380	342	352	306						
16								246	244	262	396	372	360	364	360	336	320	284	298					
17							286	262	258	392	332	346	340	376	358	340	322	312						
18							264	244	278	E A 308	326	362	354	354	338	312	316							
19							280	290	272	294	348	358	346	370	350	312	298	310	288					
20							E A 386	258	320	286	310	348	340	332	314	310	292	300	266					
21						338	298	252	270	268	328	344	350	354	360	326	308	272						
22								288	342	280	306	314	304	338	314	320	298	284						
23								248	266	322	286	334	330	316	314	294	282	266						
24							368	318	278	298	298	306	306	308	298	292	320	280	270					
25								266	266	310	262	306	322	324	288	298	292	270						
26								260	252	270	284	326	306	300	314	288	280	274						
27							300	280	304	278	284	310	312	304	298	296	284	270						
28								274	258	264	314	286	304	318	324	300	282	278						
29						394		256	250	328	268	340	306	322	322	302	280	282						
30							362	364	E A 402	A	392	358	322	344	314	306	300	282						
31								290	270	312	308	324	304	328	322	318	302							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						10	21	30	29	29	26	29	28	28	27	30	31	28	15					
MED						354	299	286	292	315	328	349	346	362	358	338	322	305	294					
U Q						390	365	312	322	367	366	386	383	385	376	362	344	312	308					
L Q						336	282	262	268	283	306	325	317	326	314	306	298	281	282					

AUG. 2000 h'F2 (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E A 314	E A 334	302	E A 368	E A 328	A	E A 314	A	E A 254	A	E A 272	218	214	234	232	E B 254	A	A	E A 284	286	E A 292	276	290	E A 358
2	E A 308	E A 284	272	E A 320	E B 308	E A 288	240	A	E A 246	A	A	A	A	238	238	244	A	248	A	278	260	E A 350	E A 332	E A 322
3	E A 354	E A 316	E A 334	E A 344	E A 350	254	E A 274	A	A	A	A	A	A	A	E A 298	E A 256	A	A	A	E A 290	A	E A 332	E A 342	262
4	E A 314	E A 346	E A 296	A	E A 334	E A 288	E A 250	A	A	A	244	E A 306	214	E A 304	230	230	222	244	A	A	E A 294	E A 328	E A 340	E A 288
5	E A 320	E A 324	E A 304	314	328	E A 286	E A 286	232	212	228	244	R	218	E A 276	A	A	E A 266	A	A	284	E A 316	272	E A 300	E A 286
6	340	324	E A 354	E A 318	E A 314	E A 296	A	232	E A 276	A	232	208	206	E A 250	E A 268	A	240	E A 264	H 248	254	E A 342	E A 342	E A 322	E A 332
7	E A 350	E A 422	E A 348	E A 332	282	276	240	222	A	214	A	A	A	A	E A 330	A	E A 294	230	252	268	E A 322	E A 322	E A 302	E A 334
8	E A 328	276	246	250	E A 316	E A 296	E A 250	244	228	218	204	204	200	224	272	234	E A 252	246	E A 264	264	268	270	256	286
9	318	282	282	320	286	262	242	220	A	200	A	252	208	A	E A 344	234	234	A	266	A	286	286	E A 330	320
10	E A 330	E A 324	298	264	284	282	236	228	A	A	A	E A 246	238	E A 280	A	A	E A 278	E A 312	A	264	234	E A 322	E A 340	E A 346
11	E A 324	E A 298	230	E A 268	E A 386	308	266	E A 274	E A 268	234	234	R	254	232	260	E A 300	246	E A 324	E A 284	E A 306	296	324	346	376
12	354	304	332	346	E A 346	290	E A 278	244	A	A	228	236	208	246	A	264	246	272	292	320	356	370	E A 298	E A 352
13	E A 416	E A 346	E A 346	Q 388	Q 368	Q 378	A	A	A	E A 274	A	232	E A 256	A	A	E A 258	248	E A 256	E A 280	E A 310	E A 416	E A 340	E A 308	E A 328
14	312	338	298	E A 314	E A 384	A	A	E A 282	218	232	H 198	H 188	250	230	230	236	238	256	A	264	262	294	314	326
15	E A 332	320	E A 328	E A 334	E A 306	E A 318	A	A	E A 260	A	214	E A 284	E A 252	E A 256	222	A	E A 240	234	268	254	266	278	288	294
16	292	300	268	288	304	288	246	234	228	226	224	204	234	244	252	E A 250	230	A	A	290	264	268	270	E A 298
17	E A 314	E A 316	296	278	284	280	244	232	A	208	204	230	232	218	E A 256	214	E A 268	236	272	258	262	266	E A 340	E A 334
18	E A 328	E A 298	294	E A 296	E A 298	288	246	228	226	A	216	E A 332	254	A	236	A	E A 246	E A 256	E A 268	E A 308	E A 304	242	E A 282	284
19	282	272	268	286	300	272	246	226	A	E A 262	232	238	E A 264	246	236	204	236	266	E A 266	248	278	290	266	230
20	266	282	312	E A 340	E A 324	288	A	A	A	A	E A 282	A	E A 258	A	A	A	A	A	A	E A 278	262	256	258	284
21	270	268	264	E A 288	308	284	246	E A 244	226	E A 246	216	230	E A 230	228	E A 244	E A 258	E A 274	A	258	260	E A 264	E A 300	E A 298	E A 320
22	E A 312	E A 316	294	286	264	276	238	230	E A 234	E A 234	E A 252	212	230	202	218	210	228	242	258	244	254	274	276	268
23	262	264	262	244	234	258	240	236	226	202	194	212	242	E A 306	214	234	228	E A 246	258	236	266	E A 306	288	E A 332
24	288	E A 294	246	E A 298	E A 290	296	240	236	226	214	202	238	220	216	214	224	A	E A 262	A	248	228	E A 260	E A 278	E A 324
25	E A 320	E A 326	274	274	266	E A 282	228	226	218	222	206	220	U R 250	232	R	224	238	E A 242	244	230	242	E A 294	E A 282	E A 264
26	266	E A 272	E A 256	266	262	276	236	232	222	228	222	H 206	222	210	230	218	226	244	246	250	E A 270	E A 286	238	E A 278
27	E A 332	E A 318	E A 278	240	E A 274	274	220	234	226	204	208	206	228	238	U R 256	E A 240	226	230	256	248	242	E A 268	274	E A 280
28	E A 284	E A 324	E A 286	E A 250	248	262	238	226	220	218	234	208	202	E B 252	E A 270	E A 250	A	A	E A 270	270	E A 272	E A 314	E A 362	E A 322
29	E A 292	276	240	224	E A 368	E A 304	246	224	A	E A 296	A	234	A	E A 280	E A 236	E A 246	240	E A 258	252	E A 246	E A 272	E A 384	E A 310	334
30	E A 316	270	244	288	230	310	244	A	A	A	E A 302	A	A	E A 228	E A 240	234	252	E A 252	264	262	E A 290	E A 346	E A 332	E A 318
31	E A 292	E A 310	244	240	E A 272	E A 288	240	228	212	228	E A 260	E A 238	E A 236	U R 252	226	232	E A 244	254	258	282	E A 310	E A 324	E A 304	278
	00	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	30	31	29	26	23	19	20	24	24	26	25	25	24	25	23	22	29	30	31	31	31
MED	E A 314	E A 310	U 275	U 269	E 304	285	242	230	222	220	218	220	225	231	232	226	234	247	259	259	U 260	E A 294	E A 300	E A 320
U Q	E A 330	E A 324	E A 304	E A 320	E A 328	296	E A 250	236	E A 246	E A 234	E A 244	E A 238	E A 250	E A 254	E A 264	E A 252	E A 252	E A 262	E A 270	285	E A 296	E A 328	E A 332	E A 332
L Q	292	282	262	266	274	276	240	226	220	214	207	208	214	228	230	227	232	242	256	249	262	272	278	284

AUG. 2000 h'F (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	116	112	110	112	A	112	110	114	110	114	110	116	B					
2						B	114	106	110	A	A	A	112	114	118	114	116	114	114					
3						A	114	110	112	112	116	108	A	B	A	114	A	A	A					
4						B	112	112	108	112	112	B	122	106	116	116	112	108	116					
5						134	116	114	108	112	108	112	114	B	116	108	114	118	116					
6						B	118	110	112	110	112	112	114	108	112	114	114	114	B					
7						B	122	114	116	114	A	116	120	112	116	114	A	A	A					
8						B	130	A	A	A	110	B	114	118	112	112	116	114	122					
9						B	114	112	116	116	110	B	108	A	B	114	118	110	124					
10						B	112	110	112	A	A	A	112	A	A	A	A	A	A					
11						B	112	112	110	110	114	B	114	116	114	112	110	114	120					
12						B	112	110	A	A	A	A	114	114	122	114	110	110	120			K 154		
13						B	120	A	A	A	A	116	118	114	112	112	116	110	B					
14						B	120	112	112	110	114	108	B	B	B	114	112	A	122					
15						B	118	114	116	114	114	A	A	A	A	A	A	A	A					
16						B	A	112	112	112	114	B	A	110	112	A	108	112	116					
17						B	118	110	112	A	114	A	112	112	A	A	116	114	122					
18						B	114	112	110	110	110	108	A	A	110	A	A	114	120					
19						B	118	110	112	112	112	A	A	A	A	A	120	112	124					
20						B	A	108	112	A	A	A	A	A	A	A	A	120	A					
21						B	120	114	112	106	110	110	110	112	122	120	120	116	B					
22						B	120	118	112	112	112	112	116	112	A	A	120	116	102					
23						B	116	110	108	112	110	112	118	120	114	118	114	114	B					
24						B	118	110	112	112	A	A	A	A	116	A	A	A	A					
25						B	A	A	A	A	A	A	A	A	116	112	118	116	108					
26						B	A	112	110	110	A	A	112	112	108	A	122	122	A					
27						B	118	114	116	112	114	B	110	120	108	116	116	118	B					
28						B	116	110	A	A	A	A	A	118	A	114	112	114	B					
29						B	126	112	110	A	116	114	A	A	108	112	116	A	B					
30						B	124	110	110	118	B	116	116	116	116	118	116	120	B					
31						B	118	114	114	120	118	A	A	A	A	A	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	27	28	26	21	19	13	19	18	20	20	23	23	14			1		
MED						134	118	112	112	112	112	112	114	114	114	114	116	114	120			K 154		
U Q							120	113	112	113	114	115	116	116	116	115	118	116	122					
L Q							114	110	110	110	110	109	112	112	111	112	112	112	116					

AUG. 2000 h'E (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	108	104	106	104	102	112	114	110	108	108	140	G	G	G	G	G	120	116	108	106	106	108	104	106
2	104	106	102	110	B	124	122	110	112	104	102	104	120	G	G	126	114	130	114	112	110	108	110	108
3	102	100	100	100	100	108	120	116	112	108	112	112	106	104	108	118	122	136	122	104	106	102	120	116
4	100	104	104	102	112	126	128	126	114	116	116	112	114	110	116	G	120	136	112	108	106	106	104	100
5	104	108	98	B	B	132	120	126	126	116	126	122	122	128	118	114	G	114	112	106	108	128	110	102
6	102	100	100	100	106	120	118	122	116	110	114	118	G	112	116	126	122	118	110	106	106	104	106	106
7	98	100	98	94	96	98	118	124	114	116	106	110	112	108	112	114	104	112	106	104	114	114	110	108
8	106	104	110	108	106	106	144	104	128	110	G	B	G	120	132	130	130	126	120	110	114	114	B	B
9	B	B	B	98	B	128	G	G	120	118	114	B	114	108	114	G	G	120	116	110	108	106	106	104
10	102	104	102	108	B	106	114	116	104	102	104	102	G	102	100	100	102	98	116	112	110	108	110	104
11	104	104	102	102	102	B	120	112	116	114	118	118	120	122	G	120	136	118	116	108	114	B	98	B
12	100	122	120	120	112	120	126	112	104	106	112	108	G	G	120	G	G	G	G	B	B	K 158	130	130
13	122	122	116	116	118	110	112	108	106	112	110	G	114	110	116	120	G	126	114	100	108	100	98	94
14	98	96	B	116	118	112	114	112	114	112	112	114	B	B	B	112	106	126	114	108	120	98	100	102
15	98	108	110	106	110	116	106	106	108	106	G	106	106	104	104	100	102	100	98	94	96	B	98	B
16	108	114	122	102	104	104	104	116	118	118	114	B	110	G	G	108	G	118	110	108	106	106	B	102
17	98	102	100	100	104	B	122	116	118	104	G	106	G	G	134	100	G	G	118	112	108	108	106	104
18	102	98	100	98	100	118	122	118	118	106	108	106	104	104	G	110	108	118	110	110	112	112	106	B
19	104	104	B	B	B	122	124	114	112	112	112	106	108	108	102	100	150	120	116	108	100	B	B	106
20	104	106	100	100	102	102	106	110	110	106	106	108	112	102	108	100	122	116	116	128	110	102	104	94
21	96	96	94	94	B	B	G	134	122	114	114	114	116	118	148	134	128	120	118	106	108	106	108	106
22	106	102	100	100	B	102	120	120	118	116	114	108	G	G	106	100	100	130	116	98	110	B	B	114
23	B	B	B	B	B	B	148	144	120	118	118	116	118	116	G	124	102	120	110	106	106	104	102	108
24	118	100	100	100	104	164	G	116	110	112	108	106	106	110	G	108	106	106	102	104	104	100	100	106
25	106	102	102	102	102	102	102	114	102	100	98	96	96	146	100	96	G	116	112	104	102	106	104	100
26	102	102	102	B	104	120	108	116	116	116	104	106	G	G	G	G 104	104	128	120	94	110	102	104	104
27	102	104	104	108	102	106	120	118	122	114	G	B	G	G	G	128	124	120	102	92	108	108	106	102
28	100	98	100	104	102	130	122	110	106	106	102	106	106	104	128	128	122	118	106	106	106	102	104	102
29	100	100	96	98	104	106	126	124	112	112	116	110	112	112	114	118	118	104	104	102	102	118	110	104
30	102	100	98	B	B	148	152	118	116	112	116	110	G	118	114	G	126	116	126	108	112	106	106	100
31	100	98	98	96	98	96	140	124	124	118	116	104	106	102	108	104	106	102	98	102	114	102	112	94
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	27	26	22	27	28	30	31	31	27	25	20	22	21	26	24	29	30	30	30	27	27	27
MED	102	102	100	102	104	112	120	116	114	112	112	108	112	110	114	113	119	118	113	106	108	106	106	104
U Q	105	105	104	108	106	124	125	122	118	116	116	113	115	118	119	124	123	126	116	108	110	108	110	106
L Q	100	100	100	100	102	106	114	112	110	106	106	106	106	104	107	100	105	115	108	104	106	102	104	102

IONOSPHERIC DATA STATION Kokubunji

AUG. 2000 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

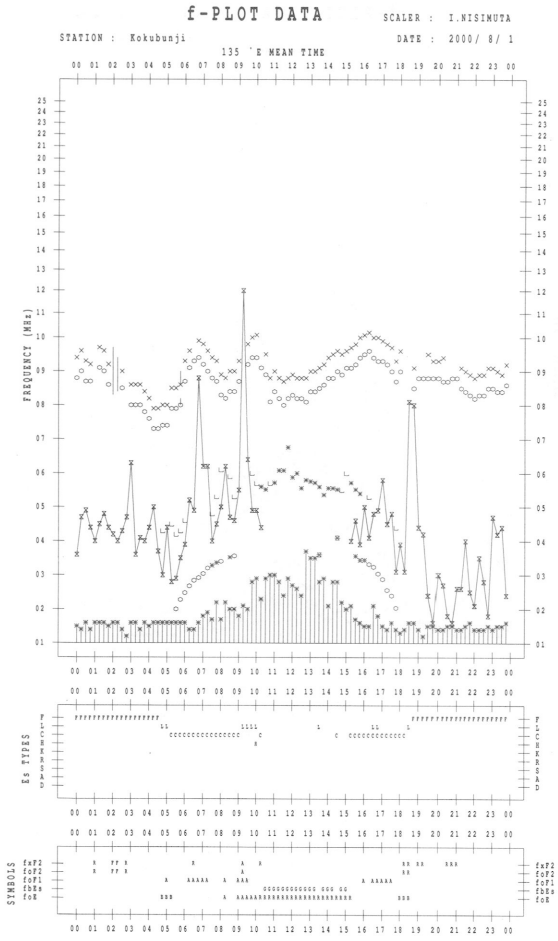
LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

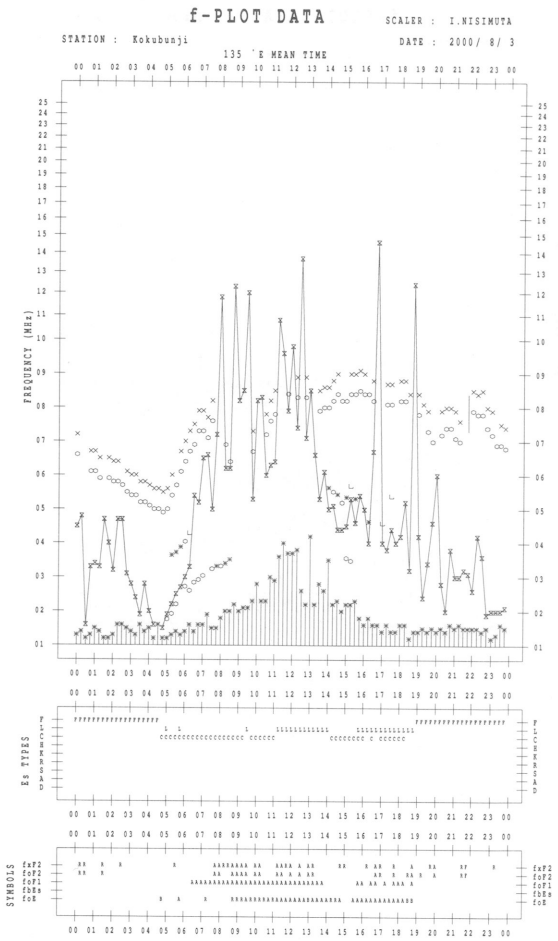
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F4	F5	F3	F4	F4	L3	C2	C3	C2	C2	HL11						C1	C3	C2	F3	F3	F3	F3	F3
2	F3	F2	F1	F1		C2	C1	C2	C2	L2	L2	L1	C1			C1	C2	C1	C3	F4	F3	F3	F2	F2
3	F4	F4	F5	F4	F3	LC11	C2	C2	C3	C3	C2	C2	L2	L2	L2	C2	CL22	CL12	CL22	F3	F3	F3	FF13	FF22
4	F2	FF41	F3	F3	F1	CL21	C2	C2	C1	C2	C1	C1	C1	C1	C1		C1	C1	C4	F4	F3	F3	F3	F2
5	F2	F2	F1			CL21	C3	C1	C1	C2	C1	C1	C1	C1	C2	C2		C2	C3	F3	F6	FF12	F2	F6
6	F3	F3	F3	F2	F2	C4	C3	C1	C2	C2	C1	C1		C1	C1	C2	C2	C2	C2	F3	F4	F2	F3	F3
7	F5	F4	F2	F3	F1	LC11	C2	C2	C2	C1	L2	C2	C2	C2	C1	C2	L2	L2	LC21	F2	F3	F2	F3	F2
8	F3	F4	F2	F1	F2	L2	CL21	L1	CL11	L1				C1	C1	C1	C1	C1	C2	F2	F1	F1		
9				F2		C1			C1	C1	C2		C1	L1	C1			C2	C4	F4	F3	F4	F3	F3
10	F2	F2	F2	F2		C2	C2	C1	C2	L2	L2	L1		L2	L2	L2	L2	LC21	CL23	FF33	F2	F2	F2	F3
11	F3	F3	F3	F4	F2		C3	C2	C1	C1	C1	C1	C1	C1		C1	H1	C2	C2	F5	F1		F2	
12	F2	F1	F1	F1	F4	C2	C1	C1	L2	L2	L1	L1			L1							K2	F2	F2
13	F5	F4	F5	F3	F1	C2	C3	L3	L2	L1	L1		C1	C1	C1	C1		C1	C2	F2	FF23	F3	F3	F3
14	F1	F1		F2	F6	C3	C3	C2	C1	C1	C1	C1				C1	L1	CL12	CL51	F6	FF11	F2	F1	F1
15	F2	FF12	F4	F5	F3	C5	C2	C3	C2	C2		L1	L1	L1	L1	L2	L2	L3	L5	F4	F2		F1	
16	F1	F1	F1	F2	F3	L5	L2	C2	C1	C1	C1		L1			L1		C2	C4	F4	F4	F2		F2
17	F1	F1	F1	F1	F1		C2	C1	C1	L1		L1			CL11	L1			C2	FF31	F3	F2	F4	F4
18	F3	F2	F2	F2	F2	C1	C1	C1	C2	C2	C1	C2	L2	L2		L2	L1	C2	C4	F6	FF31	F3	F2	
19	F1	F1				C1	C2	C1	C2	C1	C1	L1	L2	L1	L2	L1	HL11	C2	C3	F4	F2			F1
20	F2	F2	F3	F3	F2	L2	CL43	C3	C2	L2	L2	LH11	L1	L2	L1	L2	CL22	CL41	CL43	FF24	FF22	F2	F1	F2
21	F2	F2	F2	F2				C1	C1	C1	C1	C1	C1	C1	H1	H1	C1	C3	C3	F6	F3	F3	F2	F2
22	F3	F2	F2	F2		L1	C1	CL11	C1	C1	C1	C1			L1	L2	L2	C1	C2	F1	F2			F1
23							H1	H1	C2	C2	C1	C1	C1	C2		CL11	L2	CL21	C5	F6	F3	F2	F3	F3
24	FF21	F4	F3	F4	F2	H1		C1	C2	C1	L1	L1	L1	L1		L1	L3	L2	L3	F4	F1	F1	F1	F2
25	F2	F3	F3	F3	F4	L5	L3	CL12	L1	L2	L1	L2	L1	HL11	L1	L1		C1	C2	F3	F3	F2	F4	F1
26	F3	F2	F1		F1	H2	CL21	C1	C1	C1	L1	L1				L2	L1	CL12	CL23	F2	F2	F2	F2	F2
27	F3	F2	F2	F1	F4	L2	C2	CL12	CL21	C1						CL11	CL12	CL12	LC12	F2	F2	F3	F2	F2
28	F3	F5	F2	F2	F2	C1	C2	C2	L1	L1	L1	L1	L1	L1	CL11	C1	C2	C3	C5	F5	F3	F5	F4	F4
29	F3	F2	F2	F2	F3	L1	CL11	C1	C2	CL21	C1	C1	CL21	CL11	CL11	C1	C1	L3	L5	F6	F4	FF14	F2	F3
30	F4	F4	F2			H1	H1	C2	C3	C2	C1	C2		C1	C1		C1	C3	C2	F4	F2	F4	F3	F3
31	F4	F4	F3	F1	F2	L1	H1	C2	C1	C1	C1	L2	L1	L1	L1	L1	L2	L2	L2	F2	F2	F2	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																								
U Q																								
L Q																								

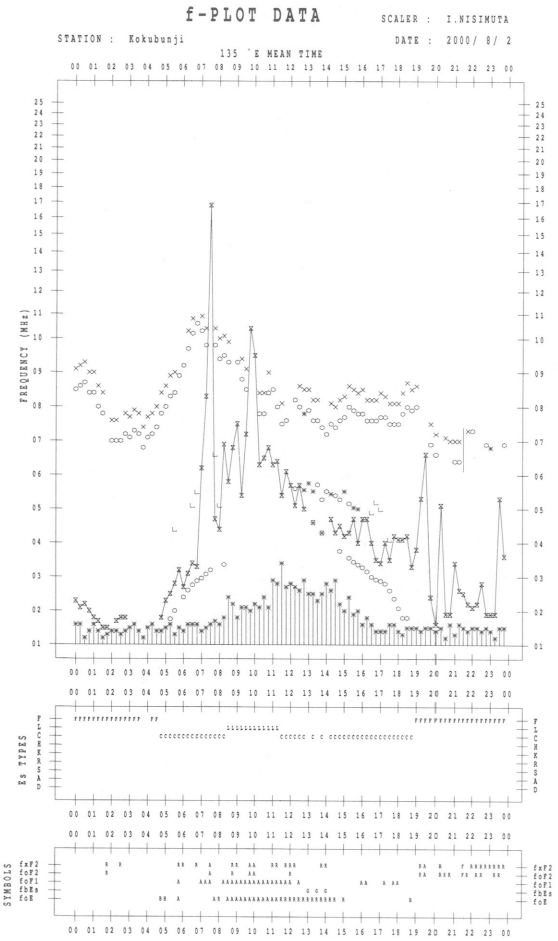
AUG. 2000 TYPES OF Es COMMUNICATIONS RESEARCH LABORATORY, JAPAN

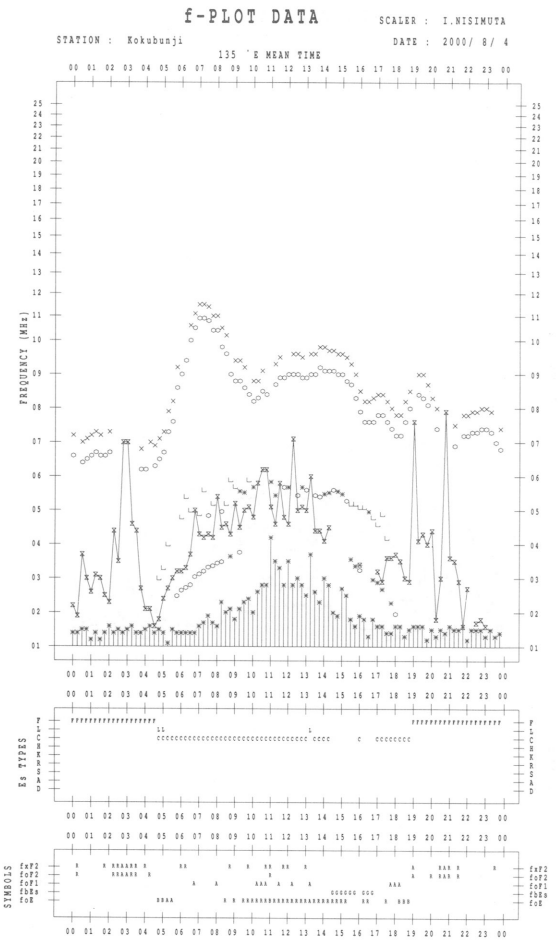
f-PLOTS OF IONOSPHERIC DATA

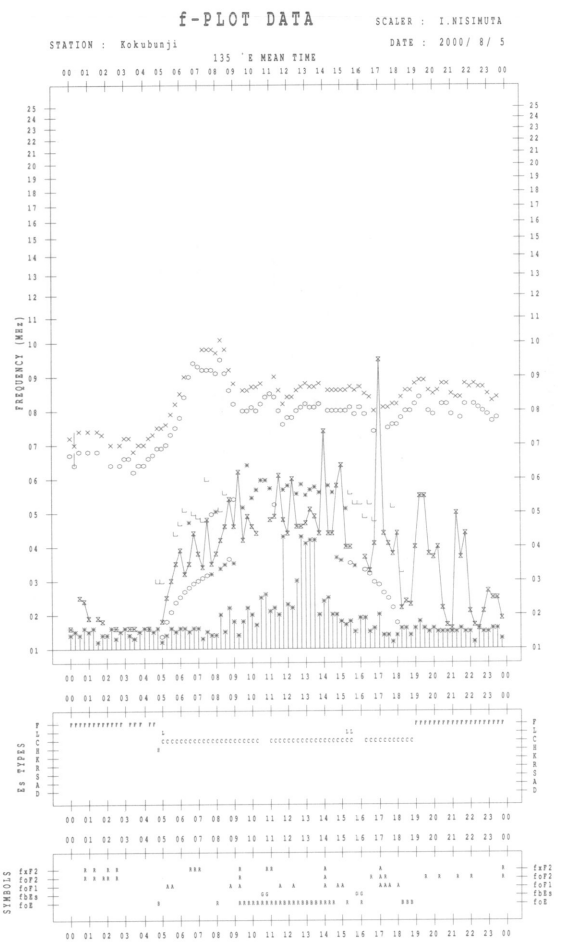
KEY OF f-PLOT	
	SPREAD
	foF2, foF1, foE
	fxF2
	DOUBTFUL foF2, foF1, foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

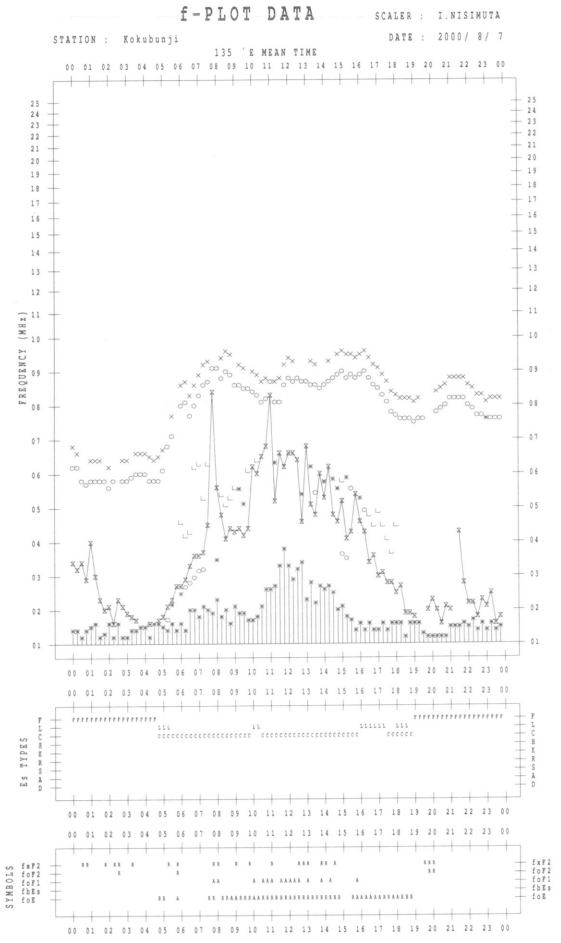

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

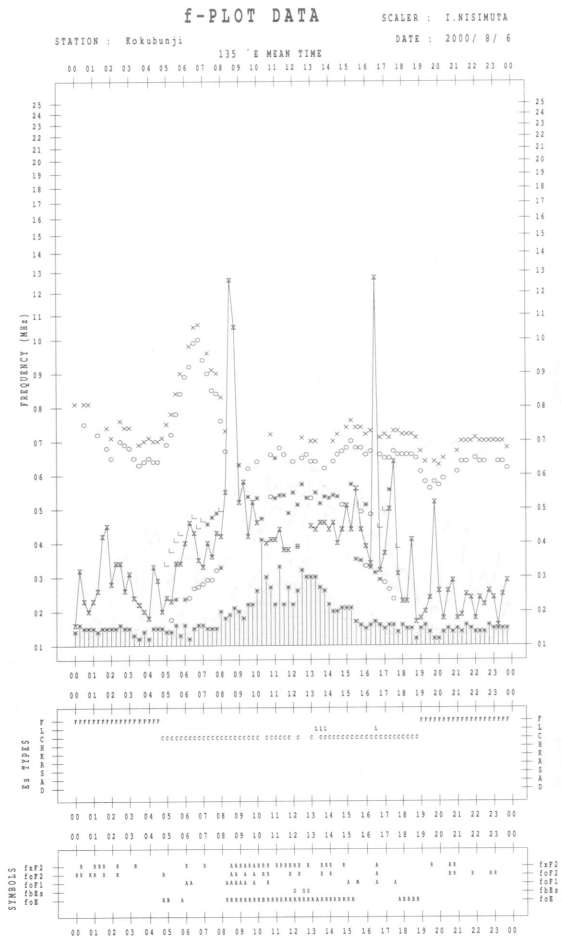

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

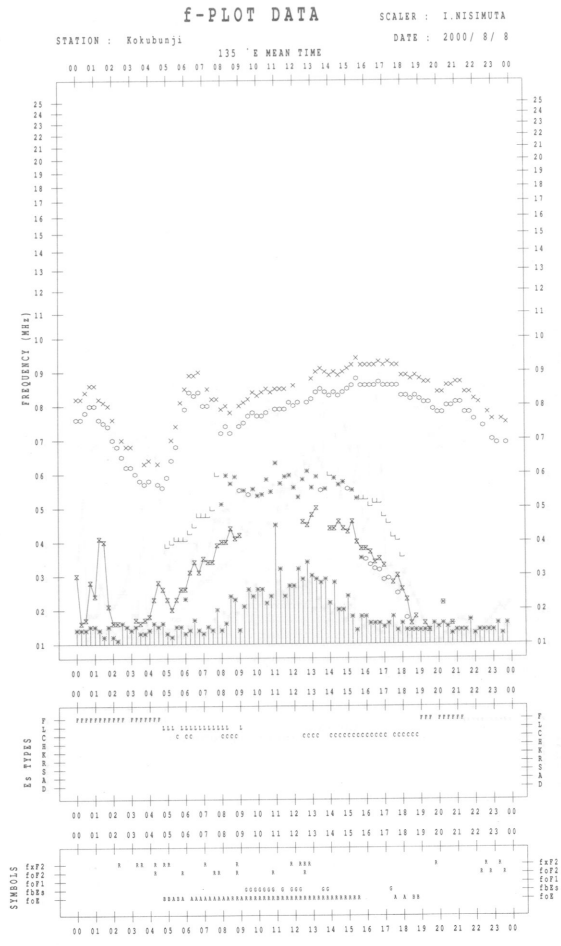

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

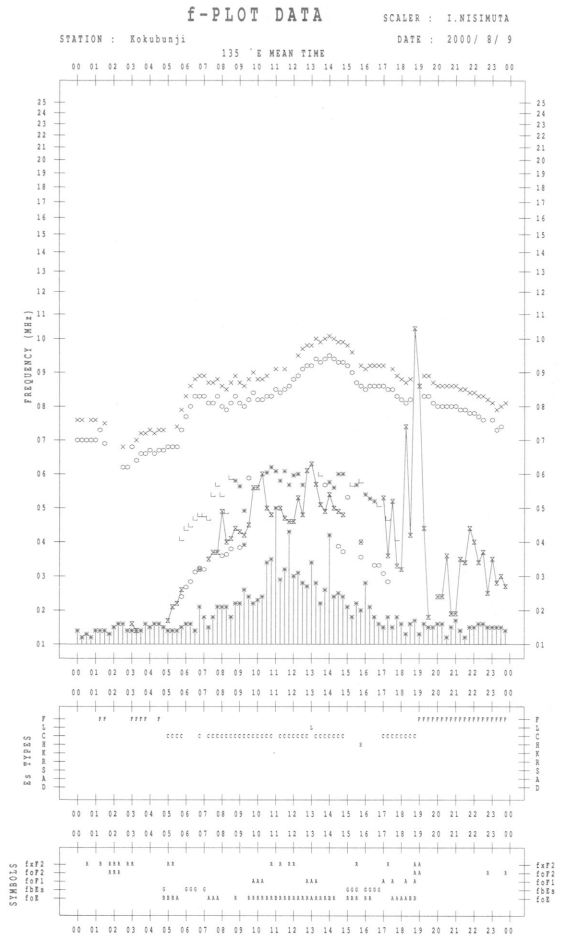

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

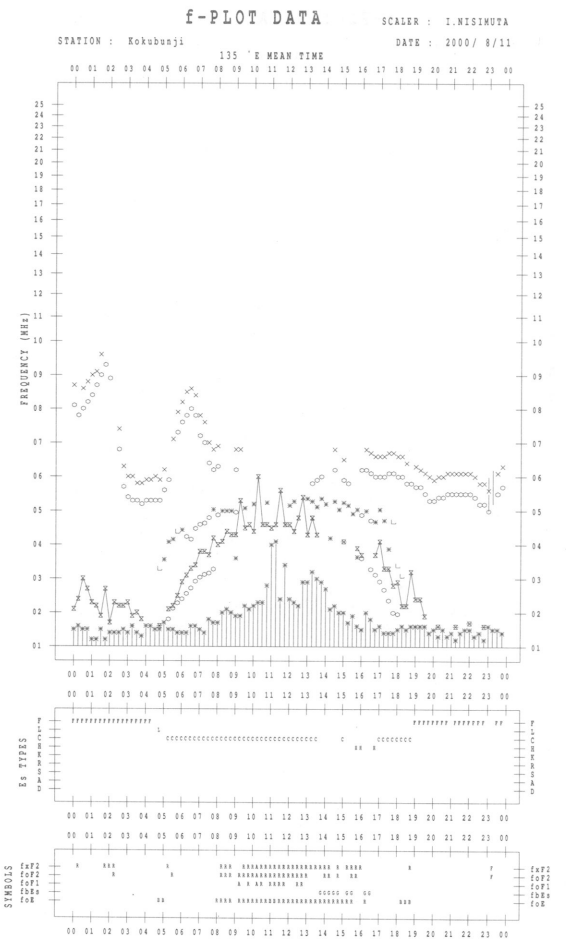

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

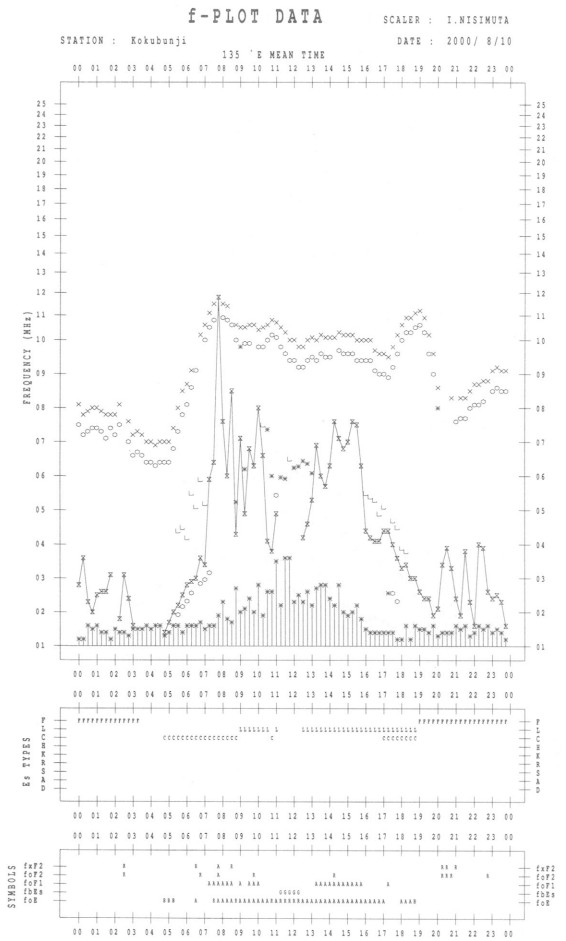

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

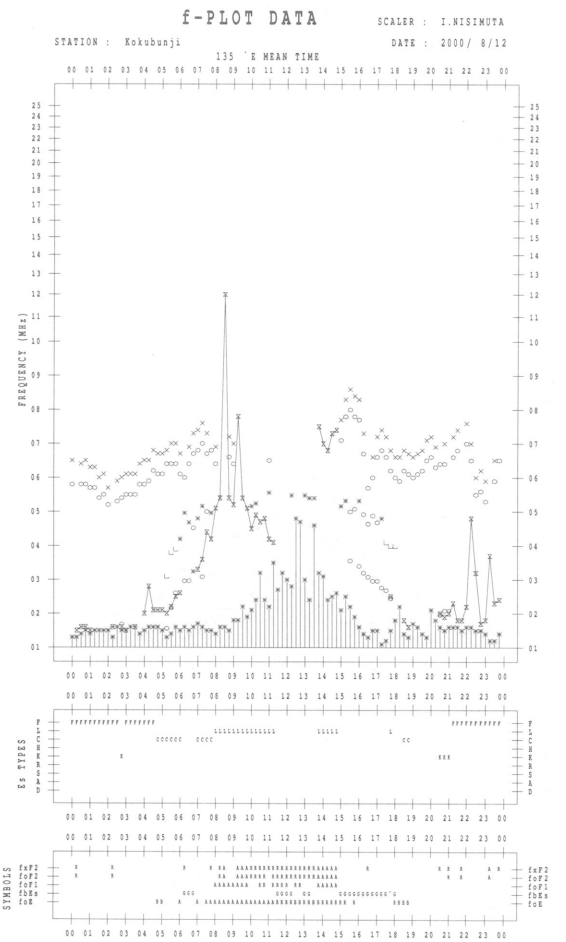

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

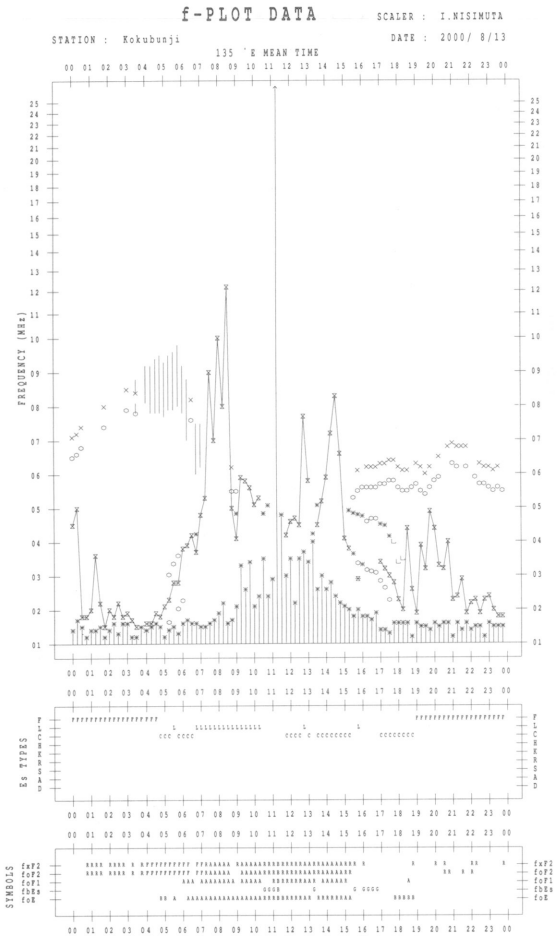

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

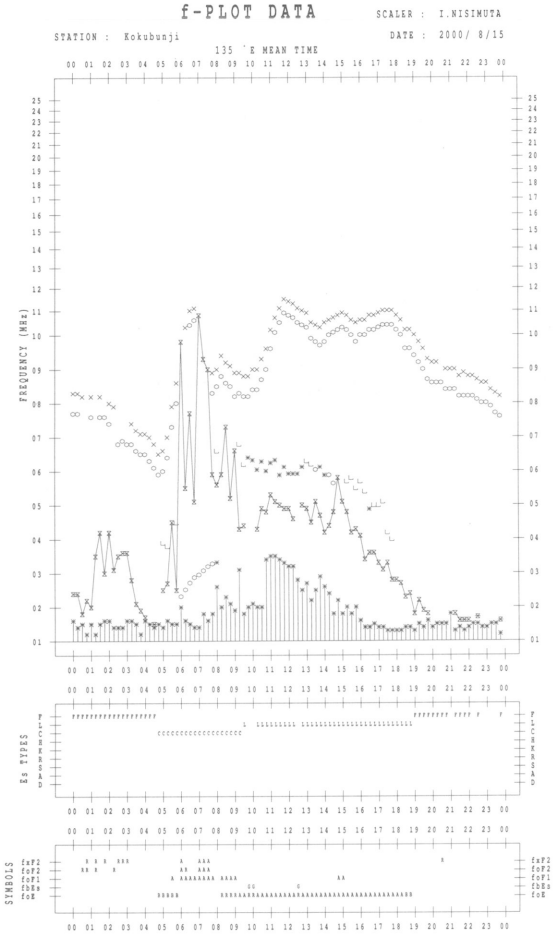

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

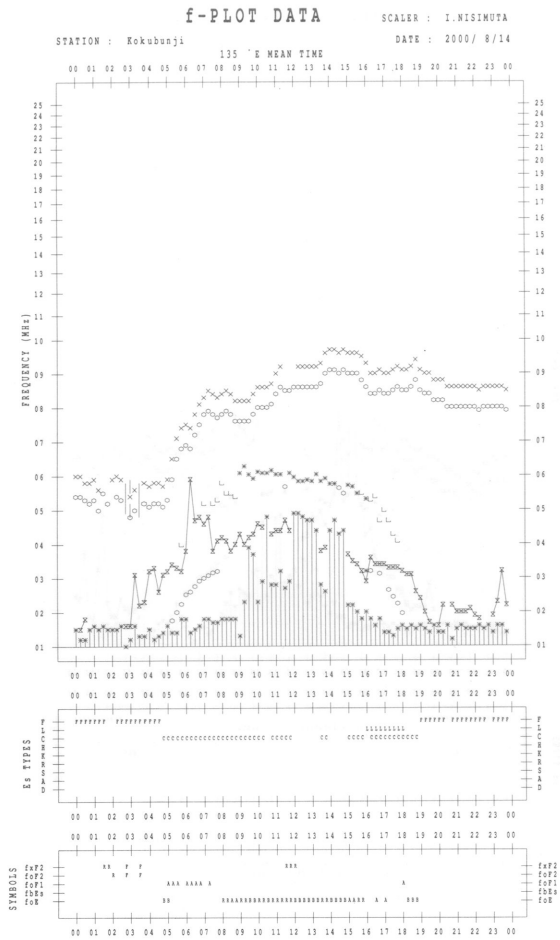

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

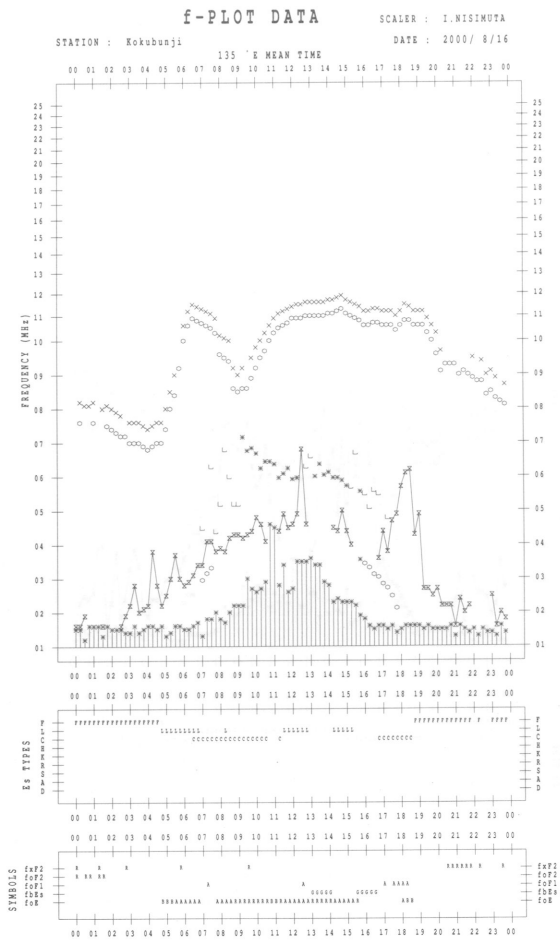

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

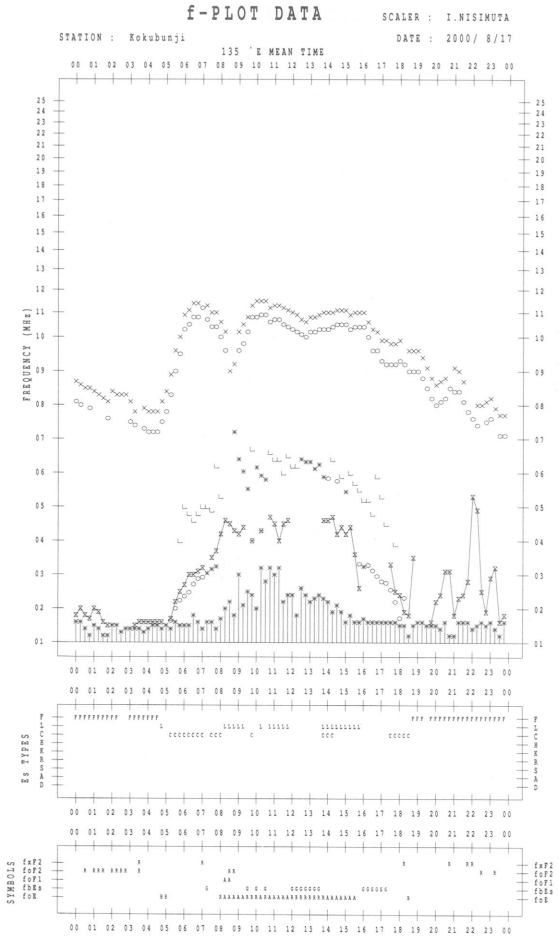

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

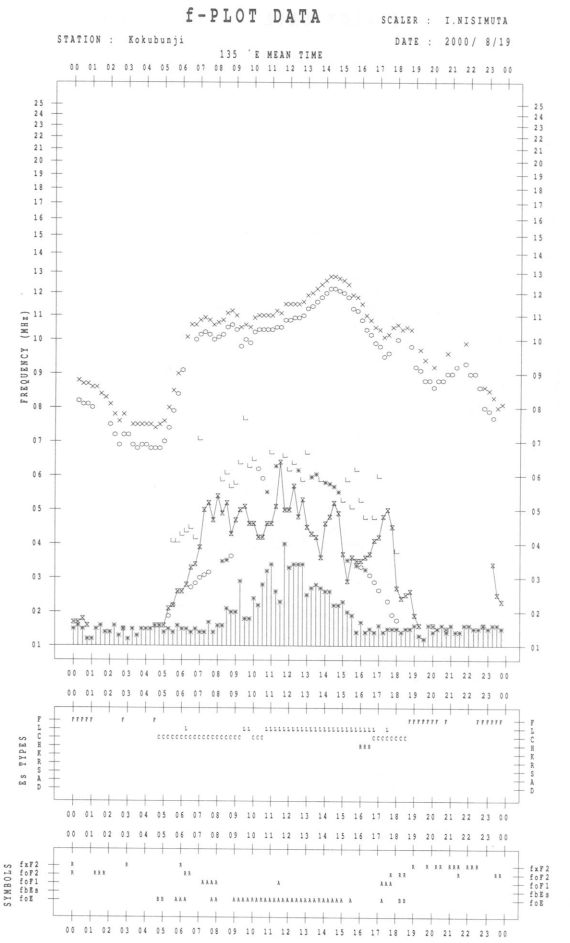

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

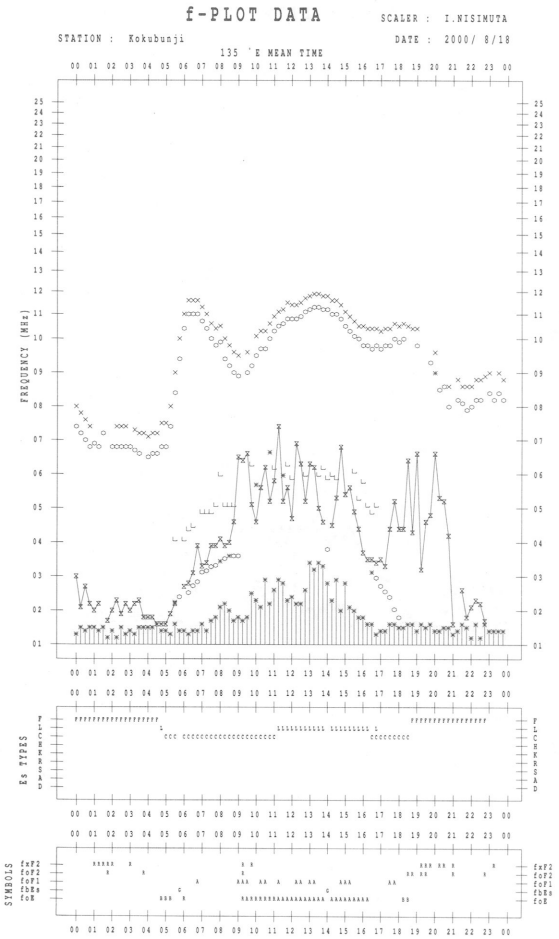

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

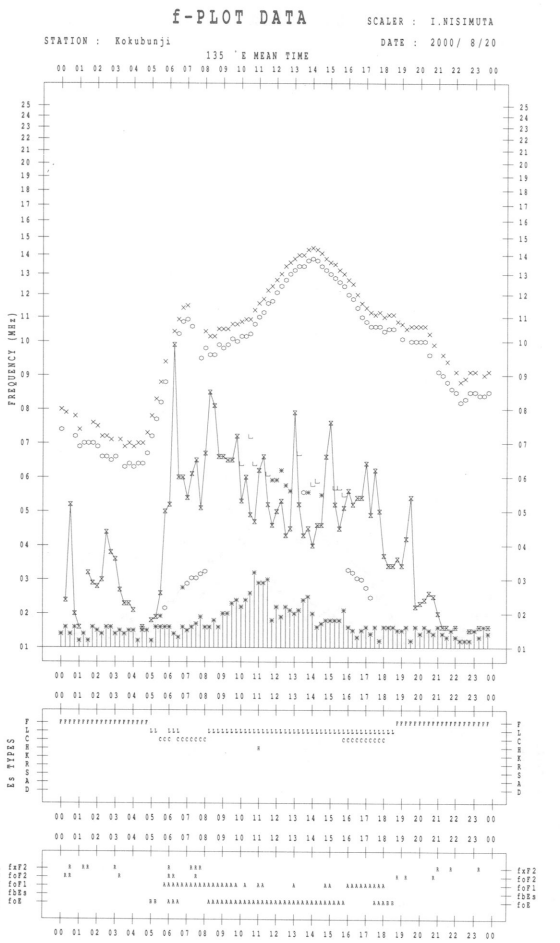

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

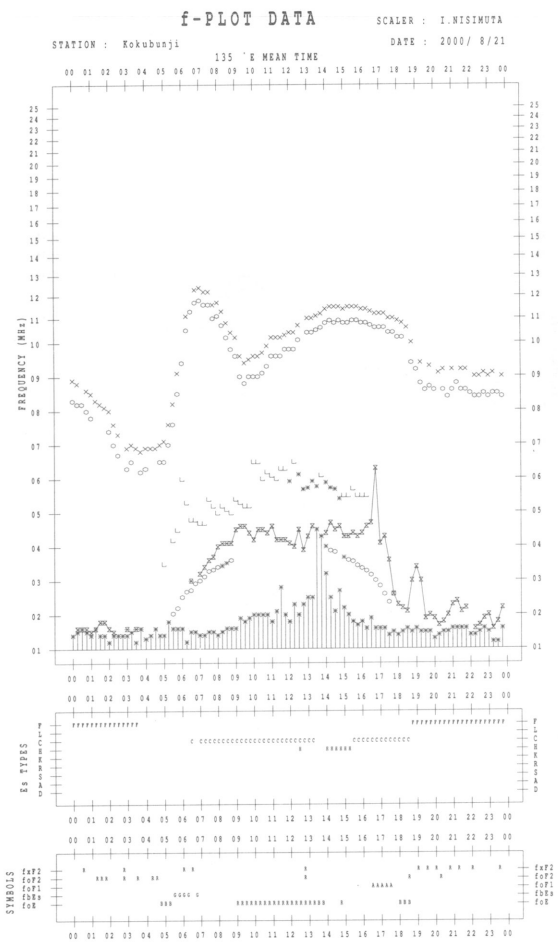

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

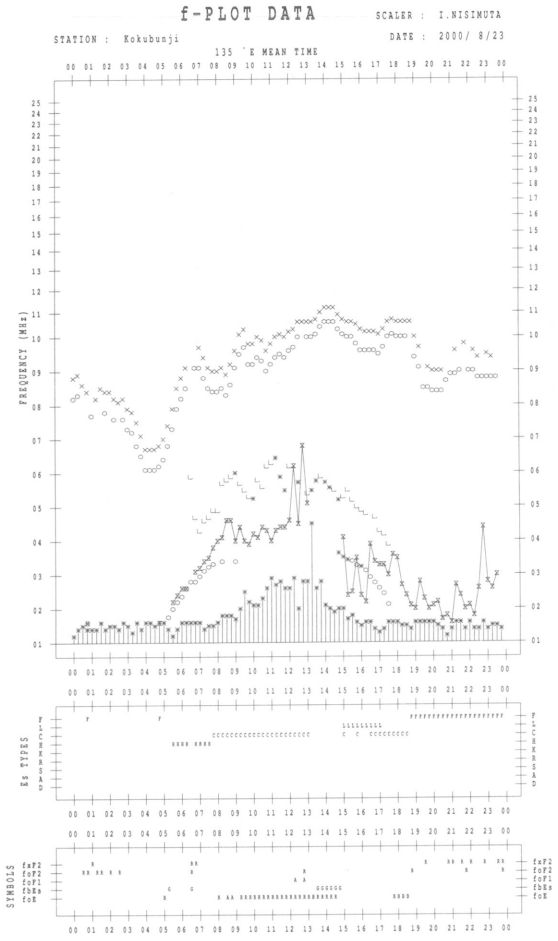

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/17
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

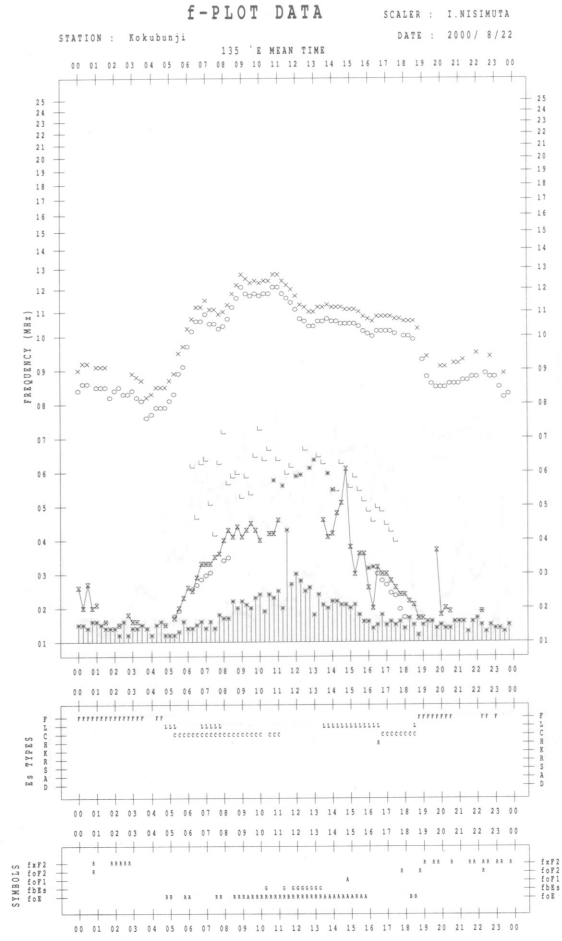

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/19
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

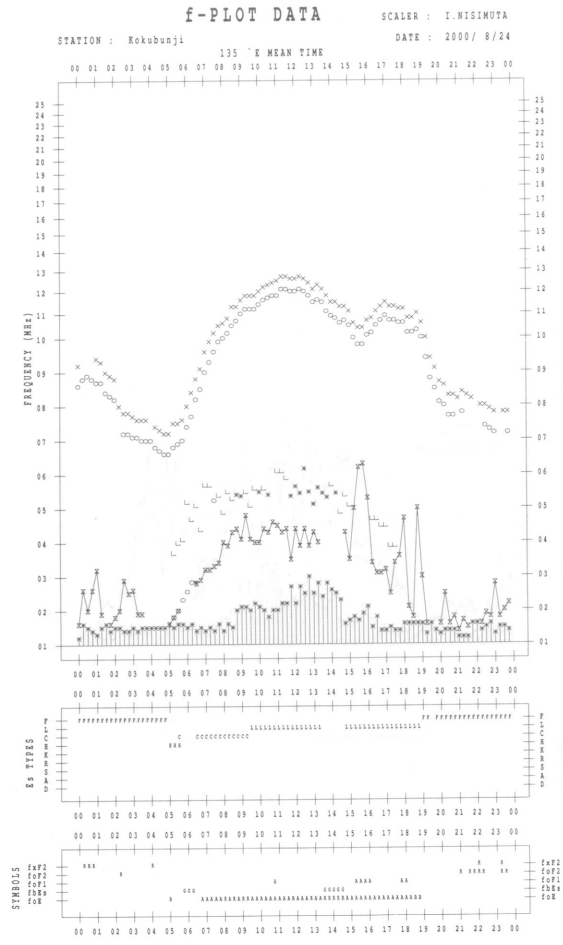

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/18
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

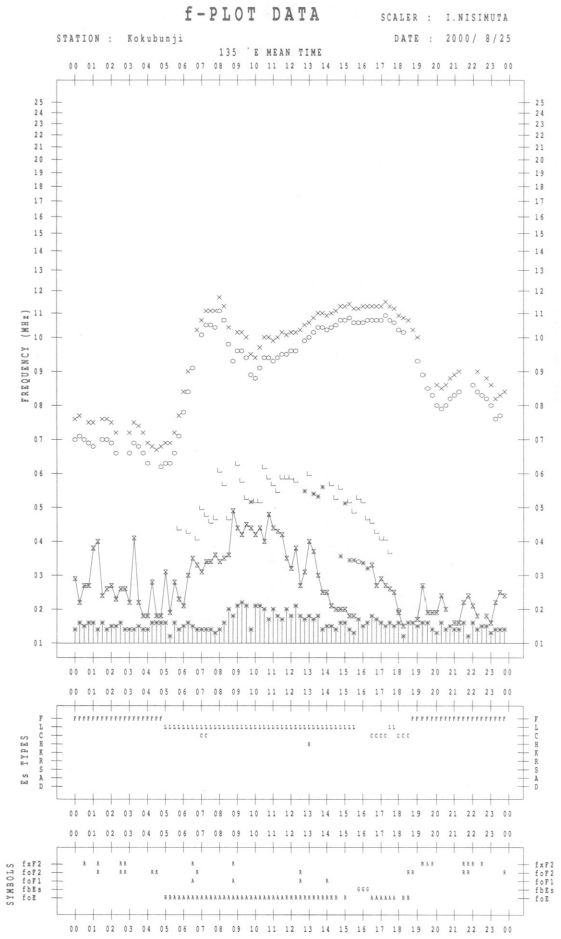

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/20
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

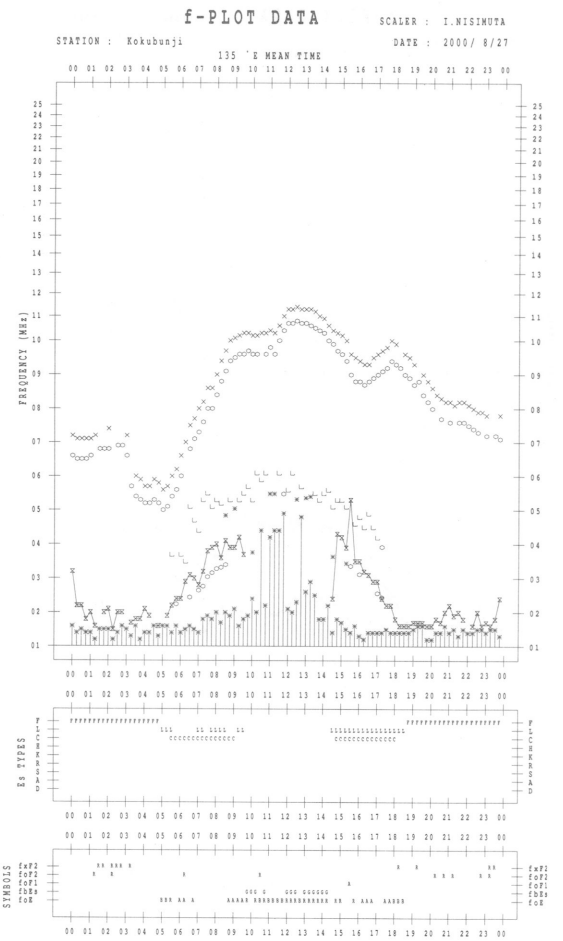

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

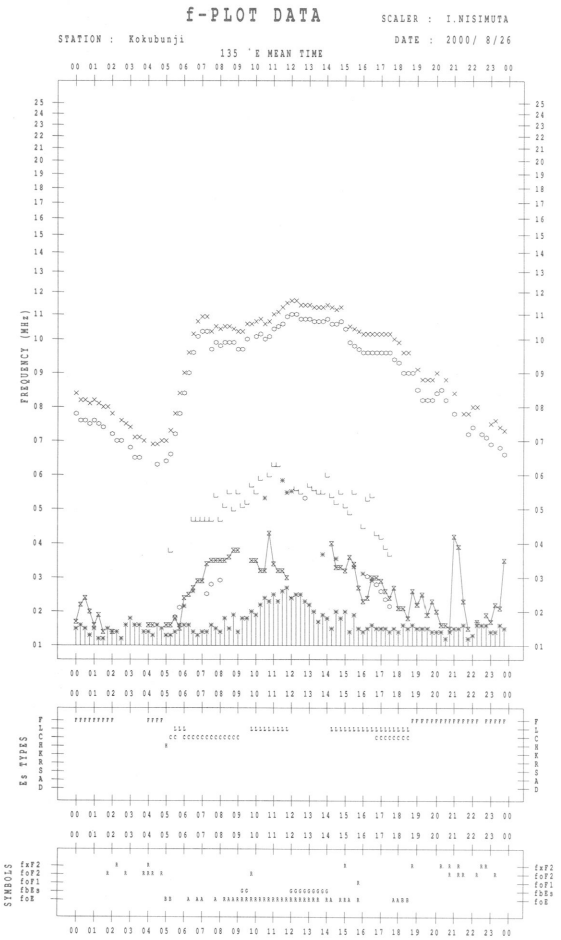

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

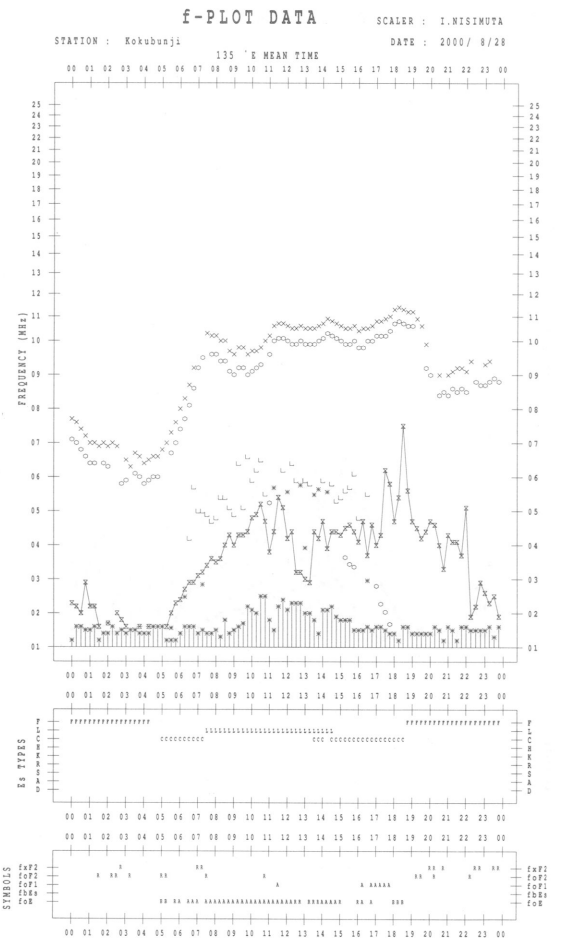

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

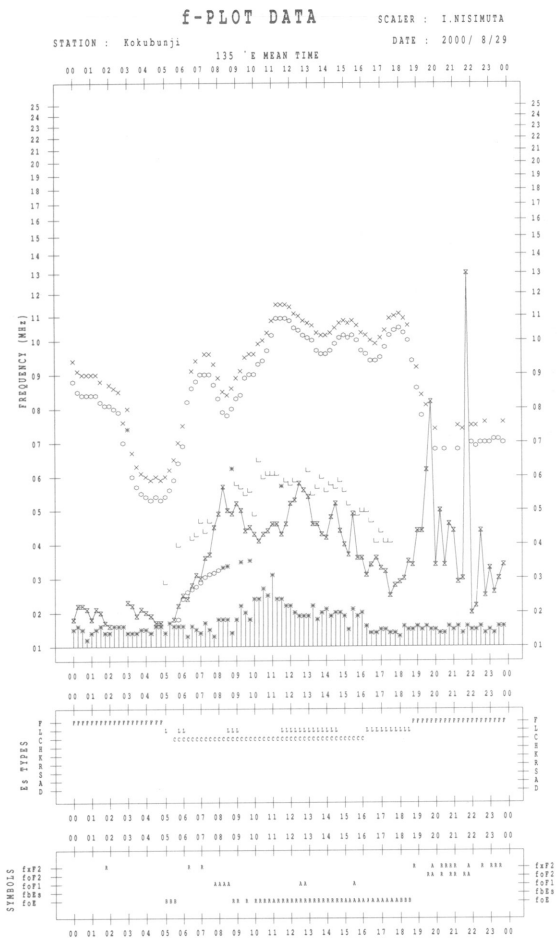

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

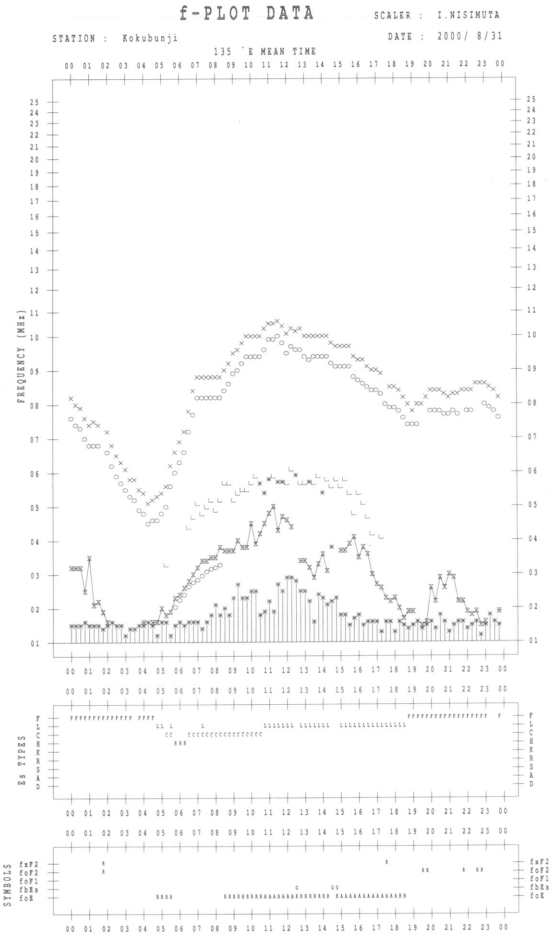

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/25
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

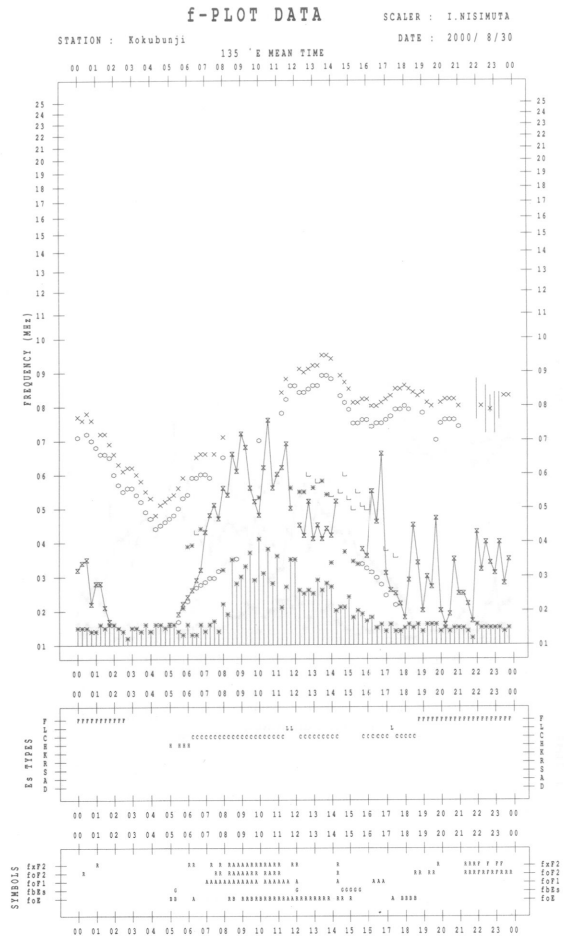

f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/27
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/26
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/28
135 'E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS


f-PLOT DATA
SCALER : I.NISIMUTA
STATION : Kokubunji
DATE : 2000/ 8/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

B. Solar Radio Emission
B1. Daily Data at Hiraiso
500 MHz

Hiraiso August 2000

Single-frequency total flux observations at 500 MHz					
Flux density: 10^{-22} W m^{-2} Hz^{-1}					
Date \ UT	00-03	03-06	06-09	21-24	Day
1	35	36	36	37	36
2	37	37	38	–	37
3	–	–	–	–	–
4	–	–	–	39	39
5	39	38	38	40	39
6	40	39	40	41	40
7	40	40	41	45	41
8	44	43	44	46	44
9	44	43	44	45	44
10	41	41	44	42	42
11	41	43	43	42	42
12	41	41	43	42	42
13	42	43	42	42	42
14	42	41	42	43	42
15	41	41	42	43	42
16	44	43	42	41	43
17	41	40	40	41	41
18	41	42	42	40	41
19	39	40	40	39	40
20	39	38	38	38	38
21	39	38	38	36	38
22	36	36	35	36	36
23	35	37	37	37	37
24	37	35	35	37	36
25	35	34	34	35	34
26	34	33	34	35	34
27	35	35	36	37	36
28	37	36	36	38	37
29	38	37	38	39	38
30	41	40	39	39	40
31	38	37	38	37	38

Note: No data is available during the following periods.
2nd 2000 – 4th 0900

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso — August 2000

Single-frequency observations

Normal observing period: 1930 - 1000 U.T. (sunrise to sunset)

AUG. 2000	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
1	200	8 S	0055.0	0056.0	2.0	30	-	WR
1	200	8 S	0108.0	0109.0	3.0	30	-	0
1	200	8 S	2015.0	2015.0	1.0	50	-	0
2	500	42 SER	0605.0	0741.0	119.0	100	-	0
2	200	8 S	0722.0	0722.0	1.0	80	-	0
6	200	8 S	0147.0	0147.0	1.0	170	-	WL
6	200	47 GB	0203.0	0210.0	9.0	540	-	WL
6	200	7 C	0305.0	0305.0	8.0	380	-	ML
6	200	8 S	0806.0	0808.0	3.0	460	-	ML
6	200	7 C	2122.0	2133.0	16.0	120	-	SL
6	200	8 S	2317.0	2318.0	2.0	80	-	0
7	200	4 S/F	0139.0	0142.0	4.0	50	-	0
7	500	8 S	0400.0	0400.0	1.0	120	-	0
7	200	8 S	0735.0	0736.0	2.0	70	-	SL
8	500	8 S	0620.0	0621.0	1.0	40	-	ML
10	500	8 S	0343.0	0344.0	1.0	90	-	0
10	200	8 S	0833.0	0833.0	1.0	70	-	0
10	200	8 S	2223.0	2223.0	1.0	40	-	WR
10	200	8 S	2313.0	2313.0	1.0	60	-	0
11	200	7 C	0631.0	0640.0	12.0	50	-	WL
12	500	7 C	0137.0	0137.0	4.0	50	-	WL
12	200	4 S/F	0137.0	0138.0	2.0	60	-	0
12	200	7 C	0201.0	0202.0	4.0	100	-	0
12	200	8 S	0313.0	0314.0	1.0	40	-	0
13	200	8 S	0009.0	0010.0	1.0	90	-	
14	500	46 C	0245.0	0248.0	9.0	50	-	WL
15	200	8 S	0011.0	0011.0	1.0	30	-	
15	200	46 C	0522.0	0525.0	5.0	40	-	
16	200	8 S	0446.0	0447.0	2.0	120	-	0
17	500	7 C	0820.0	0820.0	2.0	40	-	0
17	200	42 SER	0826.0	0827.0	12.0	30	-	
17	200	8 S	2217.0	2218.0	1.0	30	-	0
18	500	8 S	0801.0	0801.0	1.0	30	-	
18	500	8 S	2122.0	2122.0	1.0	400	-	
19	200	8 S	0845.0	0845.0	1.0	60	-	MR
22	200	8 S	0513.0	0516.0	4.0	90	-	WR
23	200	8 S	0110.0	0112.0	2.0	30	-	WR
25	200	8 S	0840.0	0840.0	1.0	330	-	WR
26	200	8 S	0004.0	0004.0	1.0	30	-	0
26	200	47 GB	0226.0	0229.0	5.0	610	-	ML
26	200	8 S	0344.0	0344.0	1.0	40	-	0
26	200	8 S	2334.0	2335.0	2.0	100	-	0
28	200	8 S	0633.0	0634.0	2.0	30	-	SR
29	200	42 SER	0739.0	0751.0	13.0	50	-	
29	500	42 SER	0748.0	0751.0	4.0	40	-	0
30	200	8 S	0042.0	0043.0	1.0	40	-	WL
30	200	8 S	0058.0	0058.0	1.0	30	-	0

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso August 2000

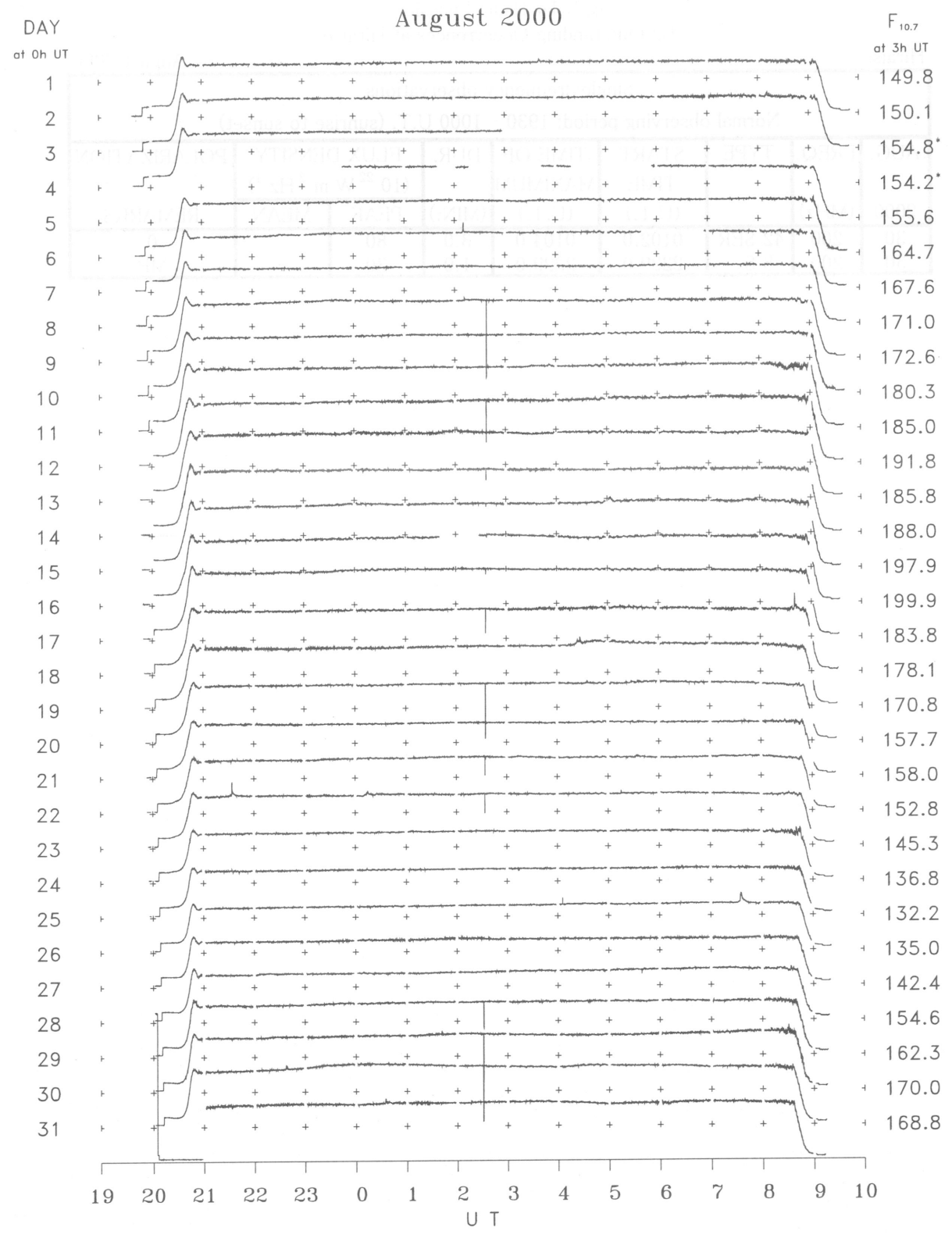
Single-frequency observations

Normal observing period: 1930 - 1000 U.T. (sunrise to sunset)

AUG. 2000	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS
30	200	42 SER	0102.0	0104.0	3.0	80	-	0
30	200	8 S	2229.0	2229.0	1.0	30	-	MR

B. Solar Radio Emission

B3. Summary Plots of $F_{10.7}$ at Hiraiso



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°.

IONOSPHERIC DATA IN JAPAN FOR AUGUST 2000
F-620 Vol.52 No.8 (Not for Sale)

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2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN