ISSN 0021−0382

F−632

IONOSPHERIC DATA IN JAPAN

FOR AUGUST 2001

VOL. 53 NO. 8

CONTENTS

Preface
Introduction 1
A. Ionosphere
A1. Automatic Scaling
Hourly Values at Wakkanai (*foF2*, *fEs* and *fmin*) 4
Hourly Values at Kokubunji (*foF2*, *fEs* and *fmin*) 7
Hourly Values at Yamagawa (*foF2*, *fEs* and *fmin*) 10
Hourly Values at Okinawa (*foF2*, *fEs* and *fmin*) 11
Summary Plots at Wakkanai 14
Summary Plots at Kokubunji 22
Summary Plots at Yamagawa 30
Summary Plots at Okinawa 31
Monthly Medians *h'F* and *h'Es* 39
Monthly Medians Plot of *foF2* 40
A2. Manual Scaling
Hourly Values at Kokubunji 41
f-plot at kokubunji 55
B. Solar Radio Emission
B1. Daily Data at Hiraiso 64
B2. Outstanding Occurrences at Hiraiso 65
B3. Summary Plots of $F_{10.7}$ at Hiraiso 66

《 Real time Ionograms on the Web ..... *http://wdc-c2.crl.go.jp/index_eng.html* 》

COMMUNICATIONS RESEARCH LABORATORY
INDEPENDENT ADMINISTRATIVE INSTITUTION
TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I) , solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, Independent Administrative Institution in 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°40.5'N	128°09.2'E	16.5°N	161.7°	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

Ionospheric 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. 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*).

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 Hand-book 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 spred ***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 transmission 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 by, 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.

X 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 part *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 normal *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 Measurement, 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

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 F10.7 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 OF foF2 AT Wakkanai

AUG. 2001

LAT. 45°23.5'N LON. 141°41.2'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	67	68	67	68	71	83	75	61	70				A	A	63			68	70		95			
2	72		58	60	51	58	81	A	62		74		64	67	67	68					61			
3	A				62	63	69		78	72	71	A			70	58	61	79		A	A		96	84
4	69	71	67	67	70	68	A	93		71	78			76		78	78	82			82	A		72
5	68	71	70	69	61	A	A	A		A	72	68		72	80	73	69	80		84	93	94	84	68
6	55			59	40		59	A	A	60	A	A	A	A	63	58	63						72	
7		60	57	44	52	60	63	A			A	A	A	A		A	A	92	92		70			
8		58	61	60	60	65	73	68	81	79	72	A		A		A	A			94	81	81	70	75
9	61	60	60	60	63	75	70	71	68	68	82	69	76	70	65	62	62	82	72	84	93	97	75	
10	63	56	58	60	64	69	74	66	A	68			A			62	58		109	68	73	68	80	64
11	59	62	68	60	53	58	69	95	83	81	82	78	80	86	80	82	74	68	70	85	94	94	94	95
12	72	73	69	67	63	68	73	78	80	70	74	71	80	73	A	75	72	84	79		94	95	95	
13	69	75	68	58	62	74	70	93	80	69	A	73	82	81	80	83	83	82	73	92	83	93	93	
14	69	69	73	64	70	71	70	68			A	66		A	A	76	73	80	65	64	70	64		75
15		70	62	57	47	60	69	70	57	A		62		A	60	68	A		76		65			A
16	62	61	61	54	54	69		95	A	A	73	69		68	67	61		68	64		68		62	45
17	61	59	60	60		57	62		A			A	73		97	67			82		74	67		
18		54	51		A	A	A	A	A	A	A	A	A				58	58		55	63	81		
19	63	60	58	60	58	68	94	89		95	80	A	80	80	80		A	68		82	95			
20	68	62	69	58	58	63	86			80	70		76	76	74		72	83	82	83	93		70	46
21	69	58	60	58	59	75		83		69	71	76	81	82	73	80	82	77	74	93	71		74	95
22	67	68	60	61	53	57	75	83	82	81	81	73	81	79	80	81		81	93	82	83	60	66	60
23	68	69	74	61	74	62	A		A	82	81	82	84	81	82	81		109		A	95	95	92	74
24	69	70	70	68	60	60	69		80	82	80		85	84	82	82	81	82	72	A	82		99	95
25	67	67	70	67	69		94	95	82	82	82	82	83	82	82	82	83	A	86	87			93	95
26	74	69	68		56		70	78		65		64	83	78	82	84	78	81			82		70	70
27	63	70	66	70	62	62	75	68		92	77	70	83	78	81	82	78	86	87		70	49		54
28	69	70	68	68	60	60	80	80	77	82	87		81	84	76	81	78	78	83		80	74		64
29	70	64	62	60	52	59	72	82	80	77	87	77	81	84	79	82	78	88	81	87	80	93		
30	67	69	67	59	58	68	94	62	80	84	81	78	82	84	84	79	80	81	82	80	95	83		57
31	52		58	60	61	66	79		78	78	81	81	82	82	80	82	83	83	84	83	94	90		49
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	29	28	29	26	25	20	16	22	21	17	19	21	24	25	21	24	21	16	28	17	17	19
MED	68	68	66	60	60	64	73	79	80	78	80	73	81	80	80	79	78	81	81	84	82	83	80	70
U Q	69	70	68	67	63	69	79	91	80	82	81	78	83	83	81	82	80	83	85	87	93	94	93	84
L Q	63	60	60	59	53	60	69	68	73	69	72	68	80	74	68	67	66	77	72	81	70	67	70	57

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT Wakkanai

AUG. 2001

LAT. 45°23.5'N LON. 141°41.2'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	33	43	40	43	34	37	50	54	143	79	72	94	148	116	65	106	78	57	93		74		72	50
2			39	34	G	50	58	71	63	98	67	78	G	G	G	49		133	152	58	73	111	96	86
3	121	91	62		32	G	49	86	48	63	68	83		98	69	47	48	60	97	144	68		70	G
4	34			67	66	46	94	60	84	65	145	143	78	70	71	59	50	48	58		61	101		36
5	25	40	52	29	40	73		100			G	60	57	59	G	G	G	57		53	63	46	37	32
6	39	32	35	40	34	37	60	87	86	71	91	90	79	62	68	46	43	48	68		94	60	59	67
7	86	50	38	30	29	43	60	86	66	G	66	69	47	81	64	90	79	94	157		72	73	84	61
8	77	48	55	34	G	G	62	63	83		G	86	73	122	65	72	79	62	73	72	61	46	G	G
9	49	33	G	G	G	G		46	60	50	G	G	46	46	46	42	42	49		113	61	44	39	
10	44	60	44	42	27	G	63	64	79	52	61	46	71	74	62	43	51		88	61	43	50	40	36
11			37	41	26	G	48	52	64	61	65	61	58	G	G	G	G	40	38	50	50	60	26	G
12	G	G	G	29	G	36	40	G	52	55	44	52	51	G	95	49	G	46	70	116	61	76		
13	50	41	29	30	G	44		49	61	72	109	G	G	G	45	60	49	46	44	68	59	32	58	47
14	39	32	50	34	G	35	33	49	59	57	98	101	76	104	79	56	49	68	37	33	67	60	61	
15	73	31	24	34	35	37	44	51	45	62	58	47	G	76	G	G	121	92	74	124	73	79	46	
16	54	28	31	33	29	G	42	66	92	110	97	G	G	50	54	53	79	40			109	60	59	
17	60	G	31	G		36	52	75	106	71	156	74	51	74	48	72	71		47		76	53	75	80
18		104	89	40	84	66	72	88	99		64	63	64	47	G	G	41	52	58	93	60	59		
19	51	32	G	27	39	57	60	77	78	77	72	99	54	G	G	76	83	87		42	116		85	71
20	30	28	G	G		51	59	60	72	50	47	74	G	G	G	122	74	48	76	95	78	32	32	34
21	39	G	29	G	G	33	43	59	73	54	G	G	G	G	48	G	G	G	G	45	28	51	G	44
22	33	29	34	30	G	G	G	59	G	63	G	49	G	G	G	G	59	38	71	45	37	42	31	
23	46	29	29	38	44	37	84	79	90	71	G	63	78	G	G	G	78	92		66	44	26	G	34
24	43	33	28	37	26	G	G	G	61	64	60	97		G	45	G	58	45		94	42		44	30
25	60	G	G	G	G	G	G	48	47	46	47	G	G	G	G	G	64	102	68	77	63		66	G
26	G	G	43	63	46	64	37	64	110	75	87	47	58	68	G	42	39	40			49	50		
27	24	26	G	G	G	G	G	47	68	61	52	G	44	46	G	G	40	66	60		49	G	G	G
28	G	27	40	43	G	G	45	60	70	62	46	72	80	G	G	60	42	G	60	86	66	58	52	50
29	34	25	G	26	G	36	60	44	42	G	52	54	G	G	G	G	G	37		30	28	G	48	
30	G	G	G	G	G	G	48	44	62	51	G	46	73	56	51	59	G	G	70	68	G	48		G
31	G		G	30	32	G	41	43	46	G	G	G	G	G	G	G	G	G	88	G	G	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	28	27	30	30	29	31	28	31	30	28	31	31	29	31	31	31	30	29	23	23	31	26	26	22
MED	39	31	31	32	26	36	48	60	67	62	60	61	51	46	45	46	49	48	70	68	61	50	47	35
U Q	52	41	40	40	34	44	60	75	84	71	72	83	73	74	64	60	74	67	88	94	73	60	66	50
L Q	27	25	G	26	G	G	40	48	59	51	G	46	G	G	G	G	39	40	58	45	44	42	31	G

HOURLY VALUES OF fmin AT Wakkanai

AUG. 2001

LAT. 45°23.5'N LON. 141°41.2'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	16	15	17	16	15	16	20	20	21	24	21	22	20	20	20	16	15		16		16	15
2	15		17	15	18	17	15	15	18	20	22	22	23	22	21	20	18	15	15	15	17	16	16	16
3	17	15	15		17	22	18	18	16	18	22	32	22	26	22	20	20	18	18	14	17		17	15
4	16	16	14	15	15	18	18	17	20	21	23	21	20	23	23	20	16	16	16		15	15		17
5	18	15	15	15	16	20	16	20		22	22		24	23	24	21	20	18		14	17	17	16	16
6	15	20	16	15	17	18	16	18	20	20	20	33	24	29	24	21	20	18	15		20	15	15	15
7	15	14	16	16	17	17	16	20	20	23	32	22		24	22	22	18	17	15		16	17	15	15
8	16	18	15	17	18	24	18	17	20	21	23	22	30	22	23	17	16	16	15	15	15	18	20	21
9	20	18	17	17	20	21	15	17	17	21	34	34	33	38	21	21	21	20	16	14	16	16	15	
10	15	16	17	16	18	18	15	16	20	21	22		33	23	22	20	18	20	18	14	15	16	16	15
11	16	16	16	15	15	17	17	18	20	21		22	21	27	23	21	18	16	15	15	17	15	20	18
12	17	15	17	18	17	17	16	16	21	21	22	21	22	23	20	22	18	15	15	14	17	15	15	
13	17	16	16	18	18	16	16	16	18	21	24	33	24	23	27	21	20	17	15	14	20	18	16	15
14	17	16	17	16	20	17	15	20	21	23	27	23	26	22	24	22	16	16	15	15	16	18	16	17
15	15	17	20	17	17	20	16	17	18	23	22	23	22	24	24	21	20	16	16	14	15	16	15	16
16	16	16	17	17	20	22	16	17	18	20	21	22	28	27	22	20	20	16	15		15	15	15	18
17	16	20	18	16		16	15	16	18	21	21	22	21	22	21	20	18		17		15	18	15	16
18		15	16	14	18	17	16	16	20	21	22	24		30	22	17	20	16	17	15	15	16	17	
19	15	16	16	15	15	17	18	17	21	21	22	23	22	23	22	22	18	17	15	15	17		16	15
20	16	16	17	16	18	16	17	21	20	21	23	26	26	26	23	21	17	15	15	14	15	15	15	15
21	15	17	18	18	18	18	17	17	20	24	21	29	24	23	20	18	17	16	22	16	16	17	18	20
22	16	18	16	16	20	23	16	30	20	23	28	24	26	21	21	20	15	15	14	15	15	16	17	16
23	17	20	16	16	18	16	16	20	21	22	34	35	32	24	22	20	20	17		14	15	17	17	16
24	16	15	18	16	21	23	18	18	20	21	24	22	24	26	21	20	20	18	15	16	17		15	15
25	15	20	20	20	18	22	17	18		36	36	26	17	23	24	22	16	16	15	15	15		17	18
26	16		15	15	15	18	15	18	21	22	20	21	24	26	20	20	20	15			16	15	20	15
27	16	18	18	20	17	20	16	16	20	22	28	29	27	33	20	21	21	16	16		17	16	22	16
28	20	22	17	15	20	21	15	17	21	24	36	27	28	24	26	22	21	20	15	15	15	16	15	16
29	17	16	18	20	15	15	16	17	17	20	20	23	21	20	20	18	17	17	16	15	18	17	15	
30	21	16	20	20	18	20	16	16	20	21	29	28	22	20	20	21	18	27	15	15	17	16		15
31	15		18	16	16	20	16	16	18	21	22	23	27	24	21	21	18	17	15	16	16	17	17	17
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	28	31	30	30	31	31	31	29	31	30	29	29	31	31	31	31	30	28	23	31	26	29	27
MED	16	16	17	16	18	18	16	17	20	21	22	23	24	23	22	21	18	16	15	15	16	16	16	16
U Q	17	18	18	17	18	21	17	18	20	22	28	28	27	26	23	21	20	18	16	15	17	17	17	17
L Q	15	15	16	15	17	17	15	16	18	21	22	22	22	22	21	20	17	16	15	14	15	15	15	15

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF foF2 AT Kokubunji

AUG. 2001

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			71	68	67	64	72		A		87	81	84	87		81		78	82	93	81	95	83	92
2		69	59	61		68		95	A			66			78	82	76	94	82	95	83	94		
3	59		69	59	64	69	95	94	73				80		82	81	81	76	94	81	82	82	92	
4	61	59		A	59		A	A		82	A	82		81	91	93	92		93	93		83	93	95
5	71	76	82	93		81	77		A			A	A		86	92	93	82	81	94	92		95	73
6	69		94	92		95	A		94	67	A			A			A	81	82	74	81			
7	94	92	94		63		66	81		A	A	A				81	71	68	73	70		62	94	95
8	71	72	68	64	61	69	94	102	116	82	68				81	74	84	83	86	93	83	79		
9	70	61	56	61	54	69		61	93	82		81	84	85	81	82	78	80	82	89	94	94	94	94
10	62	61		67	72		94	87	83	83	74	76			74	69		71	82		74	59	58	
11	68	58	59	59	51	55		94		83	A	84		95	96		88	86	82	82	75	94	91	82
12		57			67	67	81	82	75	76	81	81	92	95	92	85	95	94	93	93	95	81		
13	80		69	59	61		95	81	82			86	90	99				93	93	87	90	94	84	
14	99	94	94	70	68	57	66			A		82	87	82	A	90	87	83	81	84	94	93	95	
15		68	68	57	59	57	94	68					80		82	82	77	81	94					
16	66	68	68	57	59	58	93	94	94	83	87	83	A	85	82	83	83	86	94	91	68		95	67
17		59	57	59	55	55	95	94		69	69		77	84	83	83	91	94	93			74	92	59
18	62	56	59	46				A	A	A	A	A	A	A			59		A	67	61		59	63
19	63	63	61	62	59	68	95	97		A		A	96	102	95	86	82	83	84	92	93	74	A	
20	95	68	61	51	54	61	94	95	81	83	85		A	88	87	81	91	94	92	108	93	94	95	94
21	94	81		68	68	74	94	119		64	A		81	85	96	101	92		84	84	93	75	94	94
22	92	69	68	62	68	69	95		89	82		A	A	91	92	95	101	96	90	90	93	81	99	94
23	95	71	68	64	61	57	95	93	115	112	100		100	103	102	96	81	82	91	93		94	93	94
24	94	94	74	62	57	67	81			92	101	110	113	102	97	97	93	91	84	91	94		94	92
25	78	71		92	63	81	94		115	100	106	86	86	86	95	104	94	97	101	98	93	86	81	68
26		82	80	73	51			116	116	84	81	92	95	103	98	90	82	93		94	87			69
27	63	69	63	59	59	69	93	96		115	104	97	92	98	92	93	101	103		86	A		A	99
28		73	69	61	59		77	114	113	94	84	90	100	105	101	93	91	97		95	80	69	66	
29	70	68	67	59	61	69	99	95	82	83	97	97	98	93	101	97	93	88		94	94	95	80	69
30	94	95	94	67	63	61	93	94	96	90	85	92		103		101	97	98	98	97	85	95	70	69
31	69	70	57	59	68	74	92	81	90	92	101	104		116	112	112	102	98	97	97	84	95	94	92
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	27	26	28	27	24	24	22	17	21	16	18	17	22	24	27	27	28	26	28	25	23	23	20
MED	70	69	68	62	61	68	94	94	93	83	86	85	90	94	92	90	91	87	88	92	87	86	93	92
U Q	94	76	74	67	67	69	95	96	114	92	100	92	97	102	96	96	93	94	93	94	93	94	94	94
L Q	64	61	61	59	59	59	81	82	82	82	81	81	82	85	82	82	81	81	82	85	81	75	81	69

HOURLY VALUES OF fEs AT Kokubunji

AUG. 2001

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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			63	34	42	40	57	64	156	113	84	58	69	90	69	46	90	48	78	29	36	29	50	55
2	69	55	29	29		27	46	80	104	92	70	47	46		G	57	89	55	64	65	108	98		107
3	74	63	54	31	59	72	47	48	54	70	90	72	64	142	55	G	G	G	54	119	133	73	97	
4	59	50	73	111	81	163		154	97	65	125	58	69	G	G	70	G	G	47	69	60	60	72	39
5	50	61	52	34	G		48	90	132	81	62	136	137		G	G	G	G	61	64	53		93	62
6	72	61	53	56	86	91	117	64	58	62	71	133	60	107			158	51	55	53	57	37	31	61
7	72	72	52	106	39		52		43	112	104	60	59			G	G	50	60	72	63	53	34	91
8	85	43	58	46	26	27	34	G	92	59	58	56			G	G	G	G	32	36	34	66		
9	29	29	33	47	24	26	G	46	G	G	53	G	G	G	G	51	54	45	50	38	55	54	61	66
10	53	58	25	32	40	G	41	47	69	61	49	58	129	48	G	55		62	58		71		85	
11	55	55	57		30	27	41	57	71	68	107	56	73	84	72		82	74	70	58	G	38	84	100
12	73	120	74	90	49	33		G	53	62	73	62	66	57	53	G	44	44	58	49	54	121	33	
13	63		33	33	29		40	44	59	68	83	82	67	62	100			65	65	87	56	56	63	97
14	32	61	59		G	29	49	55	60	66	71	49	G	67	93	59	52	36	33	34	33	26	30	70
15		26	G	G	G	G	36	57	62			55	G	G	G	G	G	58	36	29	35	59	63	
16	34	60	61	34	G	47	42	55	52	73	63	103	132	67	58	75	56	69	75	47	24		81	57
17	70	49		47	57	31	37	44	96	59	65		75	54	48	59	61	64	136	104	70	61	29	73
18	42	32		26		28	34	60	58	55	61	68	57	64		G	53	60	65	44	39	33	49	30
19	G	G	G	22	G	30	55	62	120	118	82	99	79	47	49	G	39	G	60	63	40	60	91	
20	42	31	33	36	31	39	57	98	99	76	55	98	150	G	G	68	55	37	29		38	39	40	55
21	34	36	33	G	G	31	33	50	G	50	86	G	52	G	G	43	69	142	107	104	57	98	64	52
22	41	30	34	34	28	27	37	G	47	56	92	122	109	69	64	57	46	43	41	72	42	54	32	31
23	28		37	49	31	G	38	40	47	G	G		90	G	G	G	G	46	34	53		47	62	G
24	30	36	36	33	G	24	G	G	G	G	59	G	G	G	54	G	41	54	G	22	24		51	28
25	58	46	30	29	29	33	35	G	G	G	G	54	53	56	47	72	62	69	57	43	26	23		59
26		39	39	35	40	32	33	55	87	56	53	62	46	G	46	G	G	34	43	51	62			63
27	60	30	34	29	G	G	37	57	60	G	G	G	60	G	57	G	57	57	48	43	128		107	136
28	91	60	56	38	35			52	59	70	G	53	56	G	G	G	G	39		G	34	37	44	27
29	36	24	G	G	G	29	31	G	55	46	G	G	G	G	G	G	G	38		27	29	40	33	37
30	G	29	30	G	G	G	G	G	G	G	53	61		54		G	G	38	57	69	71	39	31	G
31	G	G	G	G	26	32	40	40	G	47	G	G		G	G	G	G	40	33	29	25	38		39
	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	29	29	27	28	30	31	30	30	29	28	27	27	28	29	31	29	29	30	25	26	25
MED	52	44	36	34	29	29	39	51	59	62	62	58	62	48	46	G	44	46	57	51	48	53	56	57
U Q	69	60	56	46	40	33	47	60	92	70	83	77	77	67	57	57	59	60	64	69	62	60	81	71
L Q	33	30	30	27	G	26	34	40	47	47	53	48	49	G	G	G	G	37	38	35	34	37	33	34

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT Kokubunji

AUG. 2001

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			14	14	14	14	13	17	17	21		44	42	43	39	24	18	14	14	13	13	13	13	14
2	14	14	13	13		14	14	14	14	17		30	23		25	20	17	13	13	20	13	13		13
3	13	14	13	14	14	13	14	15	22	20	15		39	21		46	18	17	14	13	14	13	14	
4	14	13	14	14	14	14	13	15	18	21	23	23	25	34	22	18	17	13	15	13	15	13	14	13
5	13	14	13	14	14	14	14	17	21	21		22	42		56	20	17	18	14	14	14	14	13	14
6	14	14	13	13	14	13	13	18	22		34	36	41	38			13	14	15	14	14	13	14	13
7	14	13	14	13	14		14	14	17	18	29	39	44			21	18	14	14	13	13	14	13	14
8	14	13	14	14	13	14	13	17	18	22		37			50	28	18	17	14	14	13	14		
9	14	14	13	14	14	14	13	14	20	21	42		63	63	49	50	22	17	13	13	13	14	13	13
10	13	14	14	13	14	17	14	17	20	24	36	39	42	40				15	13		13	14	13	
11	14	14	13	13	13	14	14	18	22	21		39	37	38	36	26	24	15	17	13	13	14	13	13
12	14	13	14	13	13	17	15	18	22	22	39	40	42	39	36	31	20	15	14	14	14	14	14	
13	13		14	14	13		14	14	18		35	37	35	35	29			14	14	13	13	13	13	14
14	13	14	13	13	14	14	13	14	23	23		42			40	22	17	14	13	13	13	13	14	14
15		14	14	15	18	14	14	15	22	33	36	36		63	23	23	18	15	14	13	13	13	13	
16	13	14	14	14	14	14	14	17	17	20	24	39	36	34	33	22	18	13	14	13	14	14	14	13
17	13	14	14	14	13	13	15	17	18	23	26	37	37	39	22	22	18	14	13	14	13	13	13	13
18	14	13	14	15		18	15	14	17	23	28	40	40	39		23	17	15	14	14	13	13	13	14
19	14	14	14	14	14	14	15	17	22	22	30	17	39			25	21	14	14	14	14	14	13	14
20	13	14	14	13	14	13	14	15	21	24		41	39			33	20	17	13	14	14	13	13	14
21	14	13	13	14	14	14	14	13	22	26	26		30	28	26	22	17	17	14	14	14	13	13	13
22	14	14	14	14	14	13	14		21	24	29	38	34	31	40	20	15	13	13	14	13	13	13	13
23	14	14	13	13	13	15	14	15	23		50		35		55	24	21	17	14	13		14	14	14
24	14	14	13	14	17	15	14	13	20	25	39	49	52	61	40	21	20	17	22	14	13		13	13
25	13	14	13	14	13	14	15	15		50	66	39	37	38	40	37	17	15	15	13	13	14	14	13
26		14	13	13	13	13	14	14	15	35	33	28	33	28	24	18	15	13	14	13	13			13
27	14	13	14	14	13	13	14	18	18	29		59	40	64		22	34	13	14	15	13		14	14
28	14	14	14	13	14		14	15	18	25		29		62	55	22	18	14		14	13	13	14	13
29	13	13	14	13	13	14	14	14	18	20	22			60	62		13	18		17	13	14	14	14
30	14	13	13	13	14	14	14	15	18	22		40		34		21	17	14	13	14	13	13	13	14
31	14	14	14	14	14	15	14	14	17	24	21	29		63		17	14	14	13	13	13	14	13	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	31	31	29	28	31	30	30	28	21	26	24	23	21	27	29	31	29	30	30	28	28	26
MED	14	14	14	14	14	14	14	15	19	22	30	38	39	39	39	22	18	14	14	14	13	13	13	14
U Q	14	14	14	14	14	14	14	17	22	24	37	40	42	61	49	26	20	17	14	14	14	14	14	14
L Q	13	13	13	13	13	13	14	14	18	21	25	30	35	34	25	21	17	14	13	13	13	13	13	13

HOURLY VALUES

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

HOURLY VALUES OF foF2 AT Okinawa

AUG. 2001

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	69		93	69	50	57		59	58	A	77	92		114	120	114	126	94		124	93	88	85	94
2		94	116	78	71	72	68	71		76	74	76	86	92	98	108	111	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	71	75	97	102	101	115		84	91	105	93	94	78	
4		80	78	82	61	67	57	71	95	81	80	92		123	134	137	143	151	150		150	120	112	117
5	116	93	104		71		70	97			A		94	117	122	115	122	116	110	125		86	83	80
6	87	80			82	90	60	78	81	76	73		91	115	102	112	114	106	127	108	93	94	75	68
7	68	76	71	77	93	94	78	93	94		77	81	92	102	92	91	112	106	124	90		81		
8		80	92	94	70	60	60	96	76	73	74		95	114	122	121	124	125	128	133	92	81	94	94
9	94	92	93	102	81	82	83	85	90	82	80		95	114	122	114	104	106	121	106	94	80	82	78
10	78	94	94	94	89	78	93	93	94	93		81	96	112	104	122	115	114	112	90	94	76	92	82
11		84	96		70	58	62	72		77		A	91	114		120	140	137	127	133	92	81	94	92
12	93		93	76	74	67		66		94	81	83	94	103	116	121	116	111	106	103		95	91	83
13		73		58	60		57	65	76	86	92	114		116	109	118	131	131	128	122		94	94	91
14	87	94	77	94	66	69	56	78		74		114	118	92	92	102	110	123	130	147	122	132	149	80
15	116		80	78	80	73	68	70	80	91	92	101	104	95	91	92	96	111	110	123	91	84	94	82
16	93	74	78	72	63	58	57	89		80		91	95	106	116	118	125		156	146	123	93	94	81
17		81	82	74	70	70	71	86	69	71	75	84	92	98	115	114	114	114	111	93	117	153	81	
18	82	80			62	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	113	121	118	128	149	150	159	140	140				
21	114	116	115	93	82	93	92	88	94	83	81	92	111	125	157	153	163	177	166	167	133	117	151	122
22		97	115		86	86	94	96	94	86	91		113	122	142	143	134	150	145	158	105	115	93	83
23	94	94	95	95		56	67	97	95	82	116	95	94	116	114	122	112	121	125	124	99	76	94	82
24	80	94	94	74	59	50	57	94	78		97	94	112	116	127	133	154	152	132	156	122	114	93	102
25	95	72	92	71	70	67	57	94	94	92	82	82	100		117	122	123	141	156		112	84	92	83
26	81	94	80	68	58	60	58	89	76	73	86	92	110	116	121	121	126	128	134	107	96	90	80	83
27	74	81	87	71		82	92	94	96	91	92	114	116	116	121	127	128	131	138	130	92	93	84	92
28	71	93	81	92	70		57	91	114	86	78	95		136	133	143	152	153	145	128	112		124	116
29		92	116	79	95	79	69	90	93	88	110	121	118	142	138	136	150	152	149		114	99	83	98
30	114	94	94	95	54		61	92	93	94	94	122	116	124	123	150	157	160			75	96	92	93
31	94	93	72	70	81	60		93	99	93	90	115	144	172	158		170	151	155	109		115	93	92
	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	25	25	23	26	23	24	27	21	23	23	23	25	28	28	28	28	27	26	24	22	26	26	24
MED	90	92	93	78	70	69	64	89	93	83	81	92	97	116	120	121	126	128	129	124	98	94	92	87
U Q	94	94	95	94	81	82	74	94	94	91	92	114	114	120	127	134	146	151	145	136	117	114	94	94
L Q	79	80	80	71	62	60	57	72	77	76	77	83	94	104	106	114	114	111	121	106	93	84	83	82

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fEs AT Okinawa

AUG. 2001

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	G	26	G	G	G	G	60		83	51	51		G	G	G	44	41		49	40	57	G	25
2	G	G	G	G	33	35	G	35	47	55	55	65	47	80	99	50	G	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	47	65	G	G	G	G		50	44	47	55	72	81	82
4		99		62	37	30	68	54	53	66	96	67	G	56	G	G	52	63	79		39	33	28	80
5	69			30	39	36	68	88	101	96	176	92	G	G	62	49	G	G		34		34	55	
6		60			34	78	77	41	86	56	63	98	G	G	G	G	G	69	62	59	35	29	36	29
7	G	81		78	99	39	G	39		67	82	49	G	49	62	G	G	G	39	40		27	40	92
8	70	29	24	37	32	25	G	40	49	43	G	G	G	53	G	G	G	57	43	43	41	66	24	27
9	25	61	56	33	52	36	40	46	56	62	73	87	87	G	68	G	G	55	54	50	45	44	G	70
10	36		42	34	39	40	G	41	86	50	77	68	60	75	74	76	66	61	96	41	45	G	G	G
11	76	40	60	60	G	G	G	47	57	72	86	178	85	89	124	70	52	47	72	41	39	45	G	G
12	G	G	61	39	40	49	94	36	45	46	60	G	G	G	G	G	42	G	92	48	36	G	G	25
13	35	G	97	91	33		G		58	68	82	96	93	98	55	47	46	63	86		60		39	26
14	G	G	G	G	G	G	57	36	67	G	G	G	G	G	G	G	57	41	G	52	29	27	24	G
15	25		G	G	24	22	G	G	G	G	G	G	G	G	54	66	84	66	40	34	24	41	G	34
16	25	32	27	G	G	G	G	34	43	78	117	57	G	G	G	G	64		58	44	24	31	31	26
17	27	G	44	43	69	44	36	39	60	57	50	G	57	68	G	G	48	61	42	34	24	G	G	G
18	G	24			48	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	65	83	G	G	60	59	61	37	27	30		59	36
21	G	G	41	71	70	40	36	49	66	67	70	78	G	56	79	58	76	76	62	43	G	44	25	41
22		57	43		34	22	28	38	55	47	78	67	G	G	58	47	54	51	46	59	52	30	32	57
23	49	34	39	G	60	27	28	53	45	G	47	166	G	G	G	G	G	G	G	G	G	29	23	G
24	59	50		25	29	38	30	G	G	G	G	G	G	G	G	G	G	G	41	36	27		G	G
25	G	G	G	G	G	G	38	37	42	G	G	G	60		G	57	G	G	36		37	G	G	G
26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	55	46	46	48	48	50	56	60	60
27	44	40	33	G		28	23	36	44	G	82	76	62	G	G	G	G	38	50	54	88	G	36	69
28	24	G	G	33	G	36	G	56	75	74	G	79		G	56		G	G	33		G		G	G
29	G	G	G	G	G	G	24	G	G	G	G	G	G	G	G	G	G	G	49		41	24	G	G
30	G	G	G	G	G	G	G	G	46	42	G	G	G	G	G	G	70	G	46		68	42	26	G
31	G	G	G	G	G	G		33	G	G	57	67	56	G	G		G	G	40			42	27	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	25	25	22	25	27	26	26	26	25	27	28	29	27	28	29	27	28	27	26	21	25	24	28	27
MED	24	G	26	25	33	28	24	38	49	50	56	65	G	G	G	G	43	46	46	43	39	32	24	26
U Q	40	45	43	41	40	38	38	47	63	67	80	78	60	54	60	55	55	61	62	49	47	44	36	57
L Q	G	G	G	G	G	G	G	34	42	G	G	G	G	G	G	G	G	G	40	35	25	25	G	G

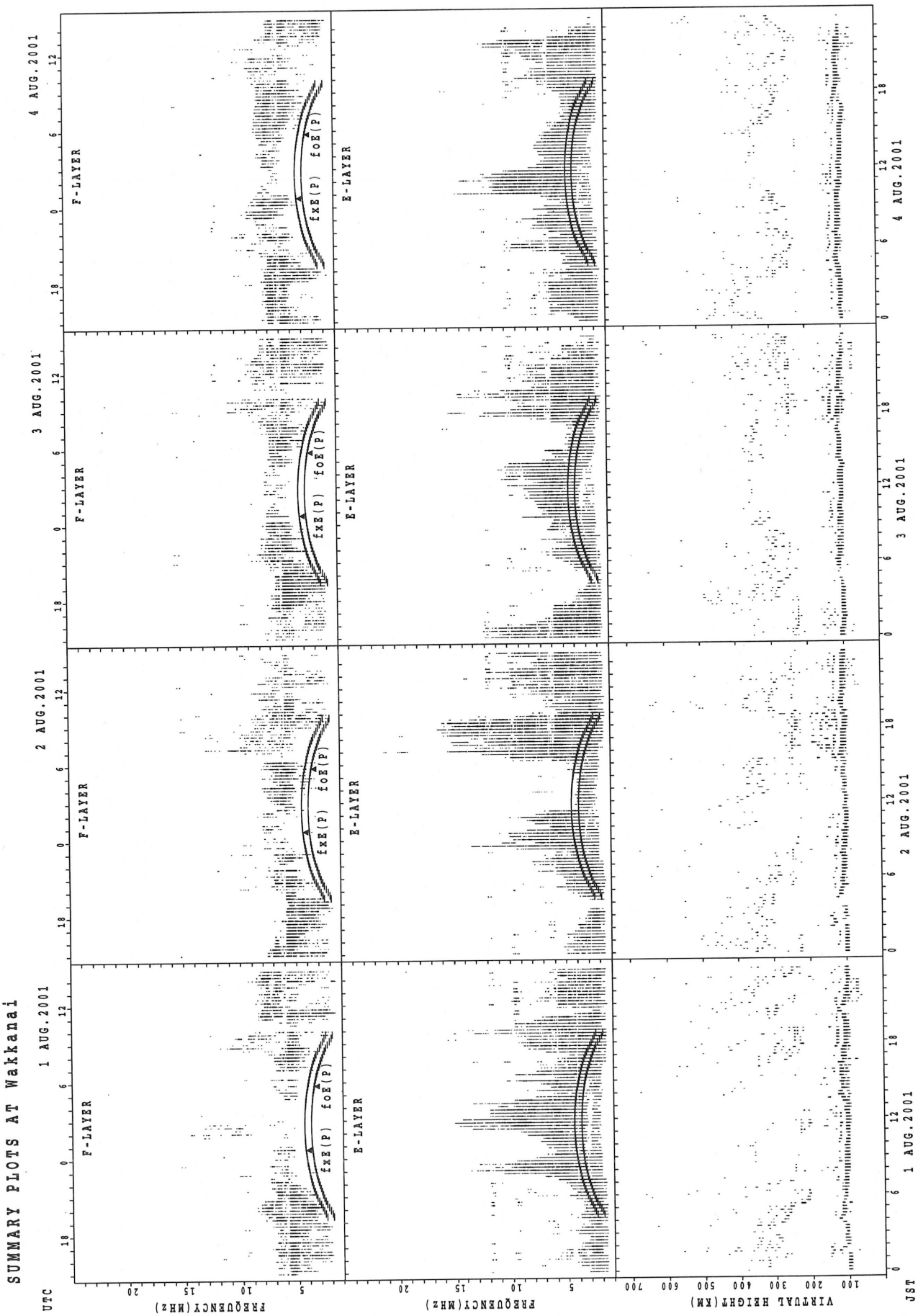
COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF fmin AT Okinawa

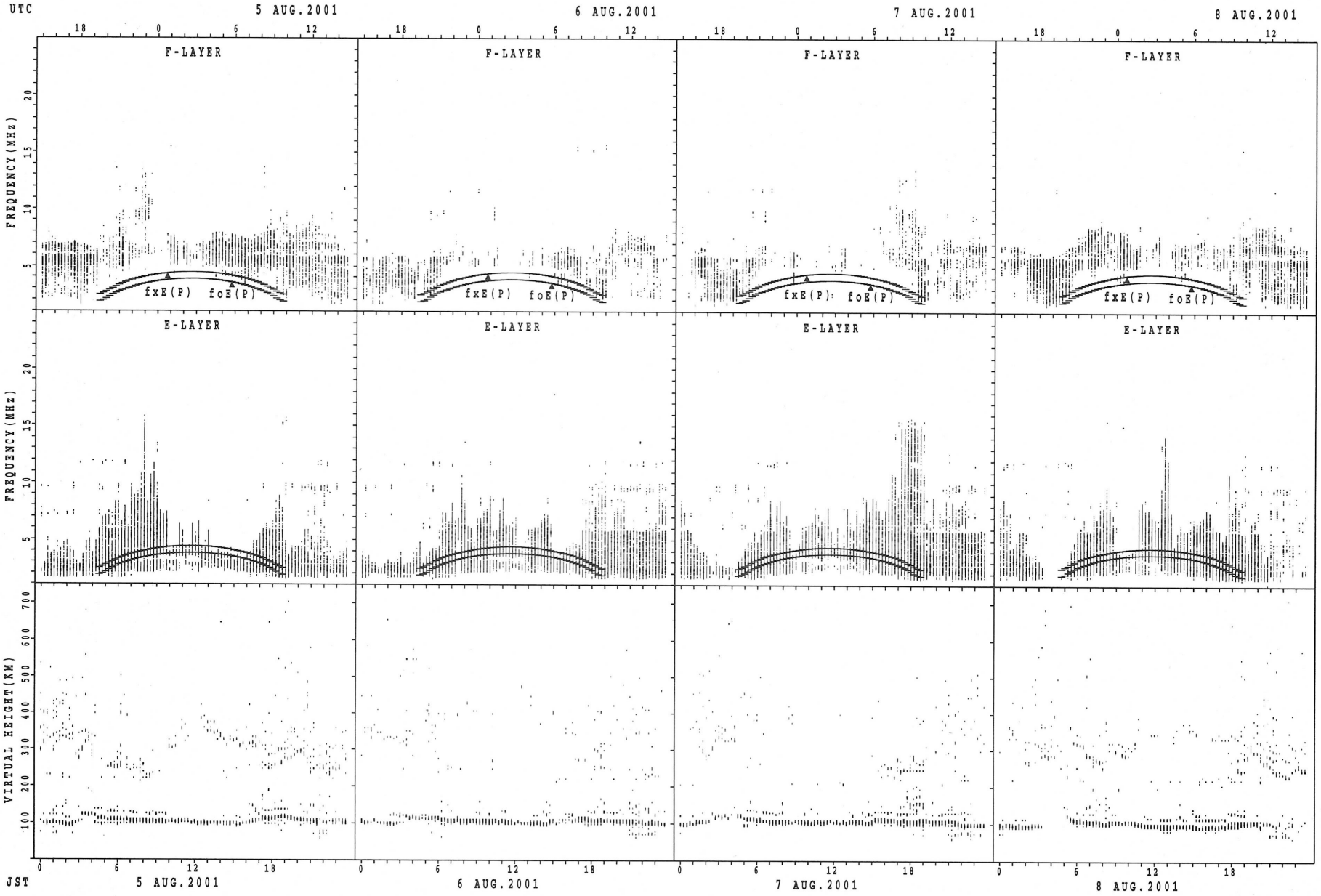
AUG. 2001

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

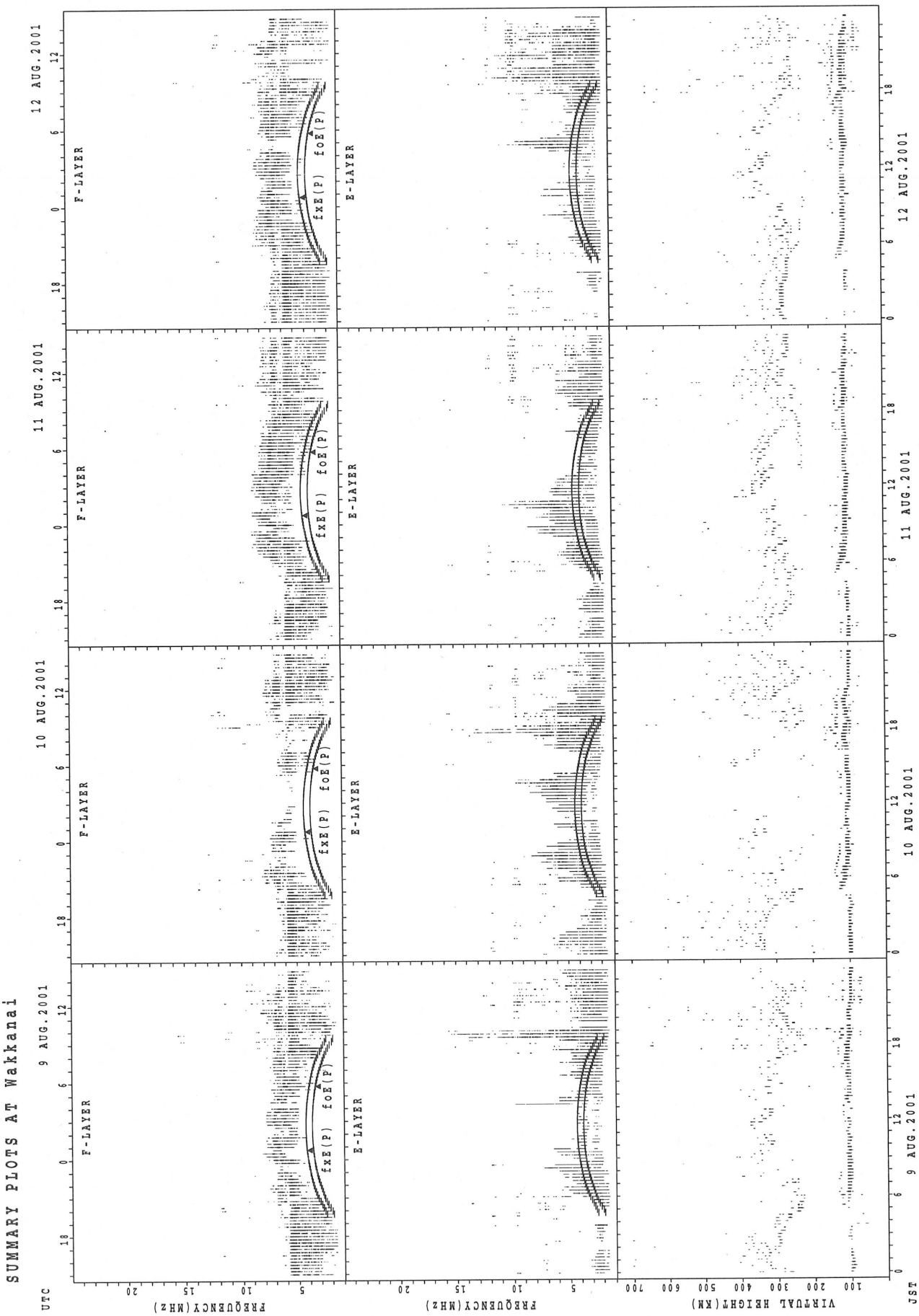
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	15	15	15	15	18	16	17	24	30	33		57	55	48	28	21		14	14	14	15	14
2	15	15	14	15	14	16	17	14	16	24	26	30	30	32	30	30	28	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	28	30	30		50	29		18	14	14	15	14	14	14
4		15	14	14	14	14	14	15	15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


SUMMARY PLOTS AT Wakkanai
UTC
JST
1 AUG.2001
2 AUG.2001
3 AUG.2001
4 AUG.2001
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

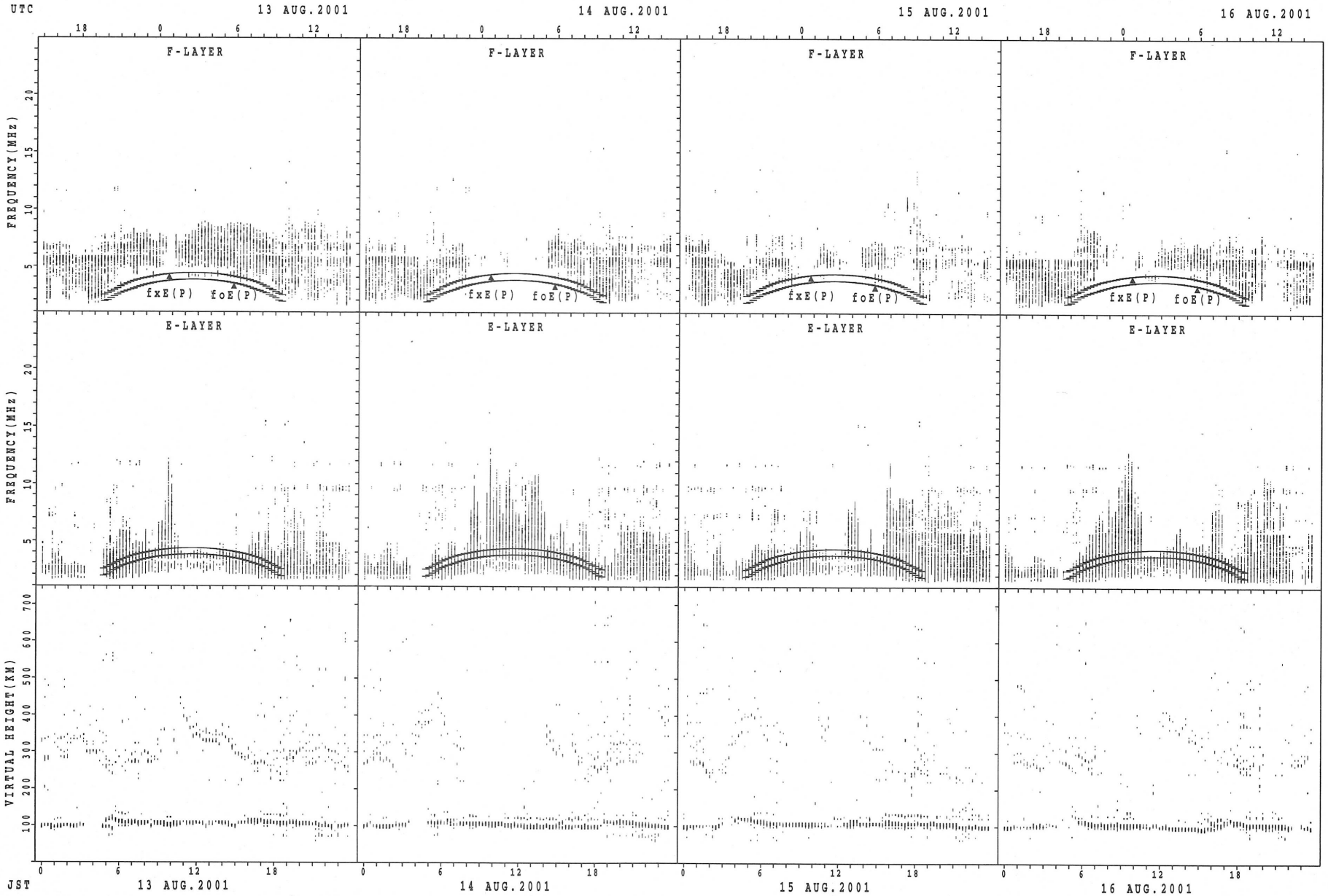
SUMMARY PLOTS AT Wakkanai



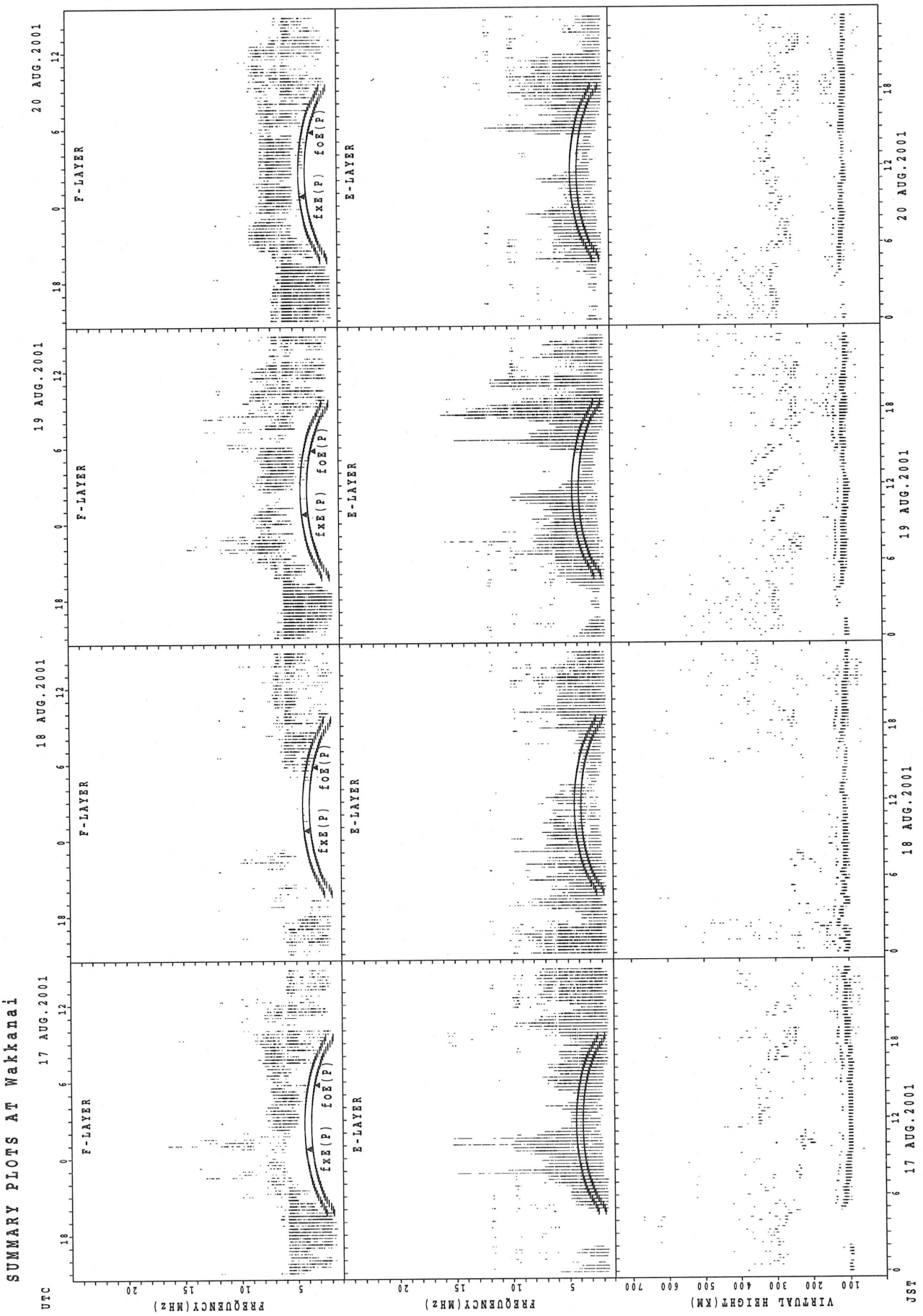
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
9 AUG.2001
10 AUG.2001
11 AUG.2001
12 AUG.2001
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

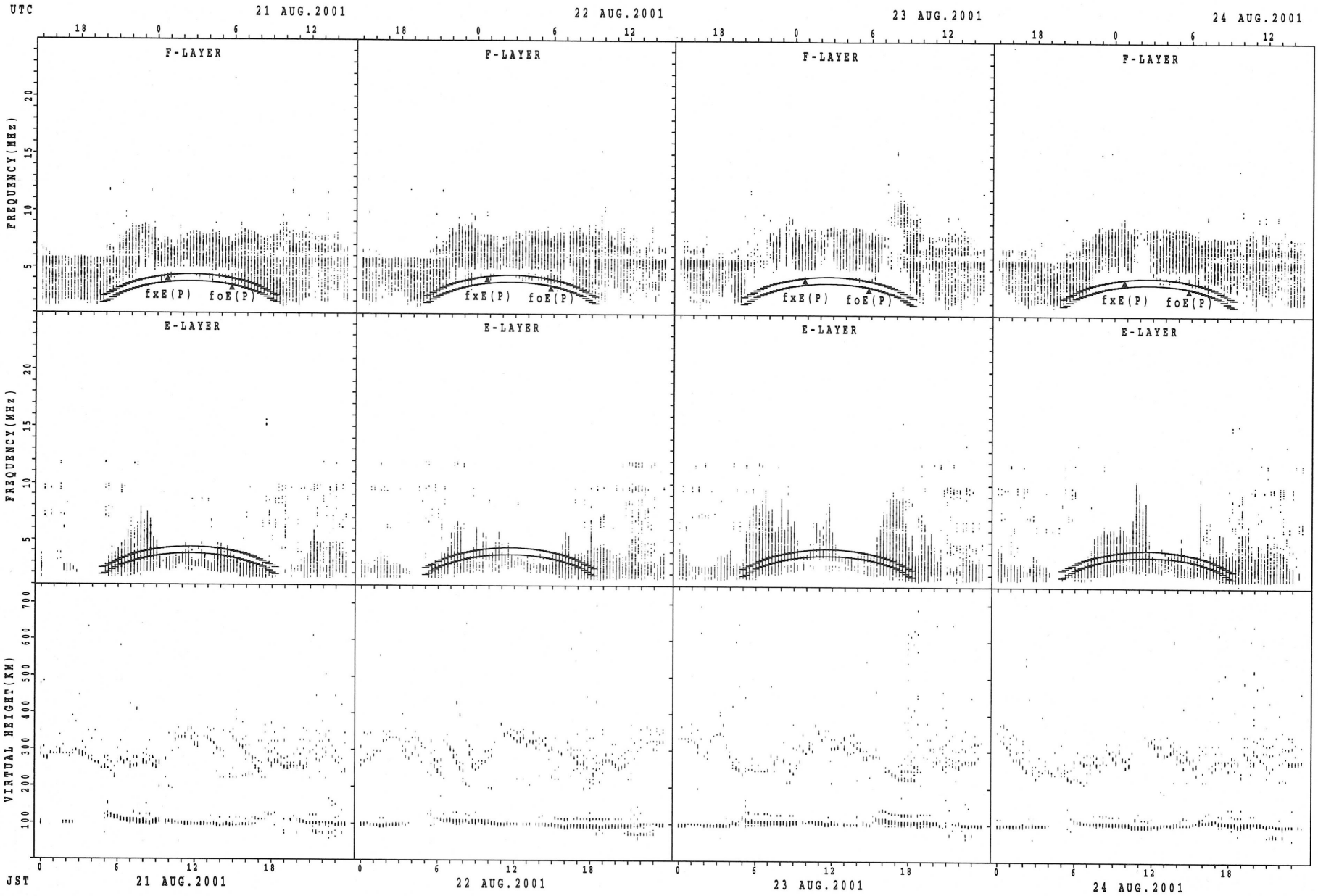
SUMMARY PLOTS AT Wakkanai



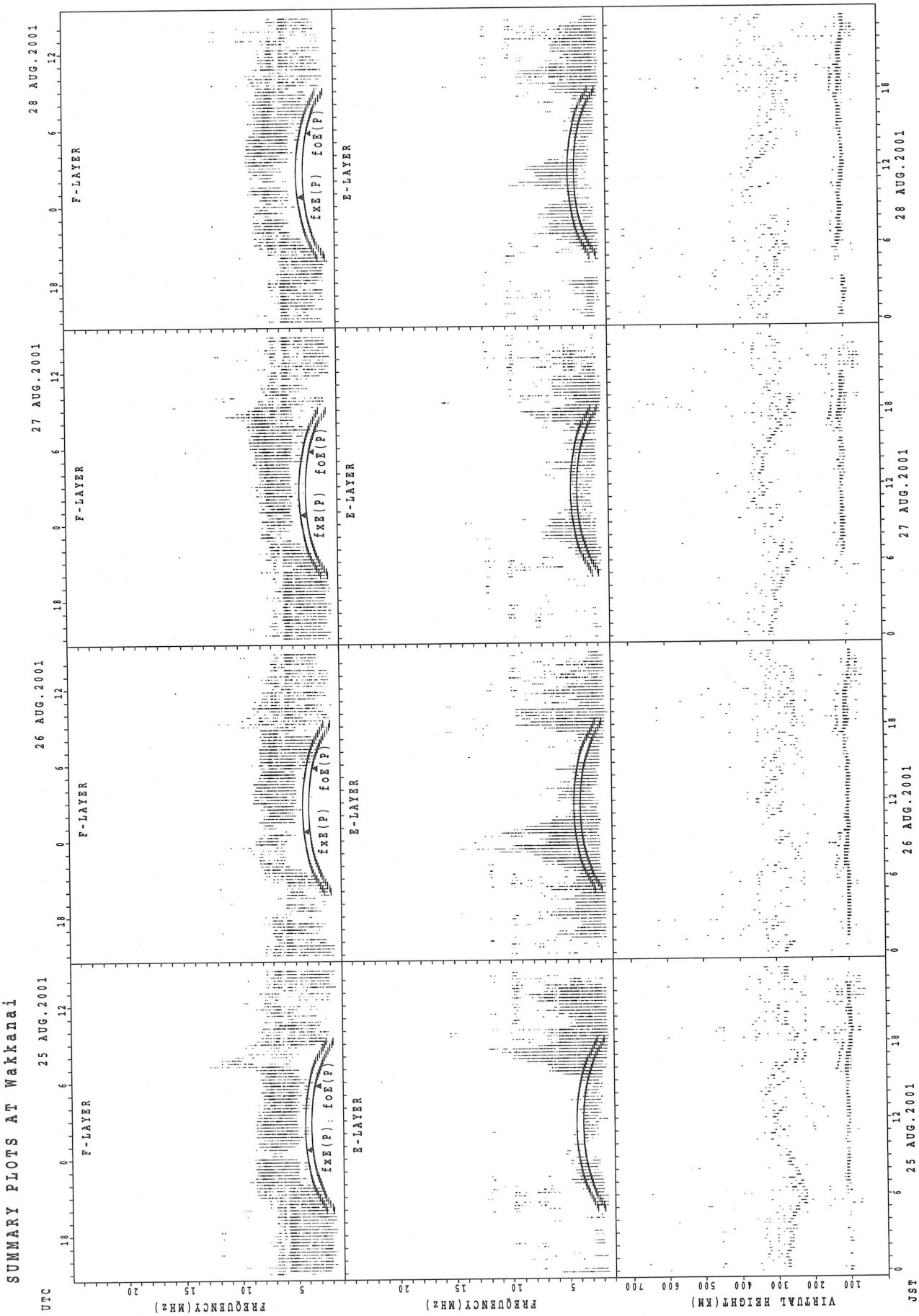
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
17 AUG.2001
18 AUG.2001
19 AUG.2001
20 AUG.2001
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

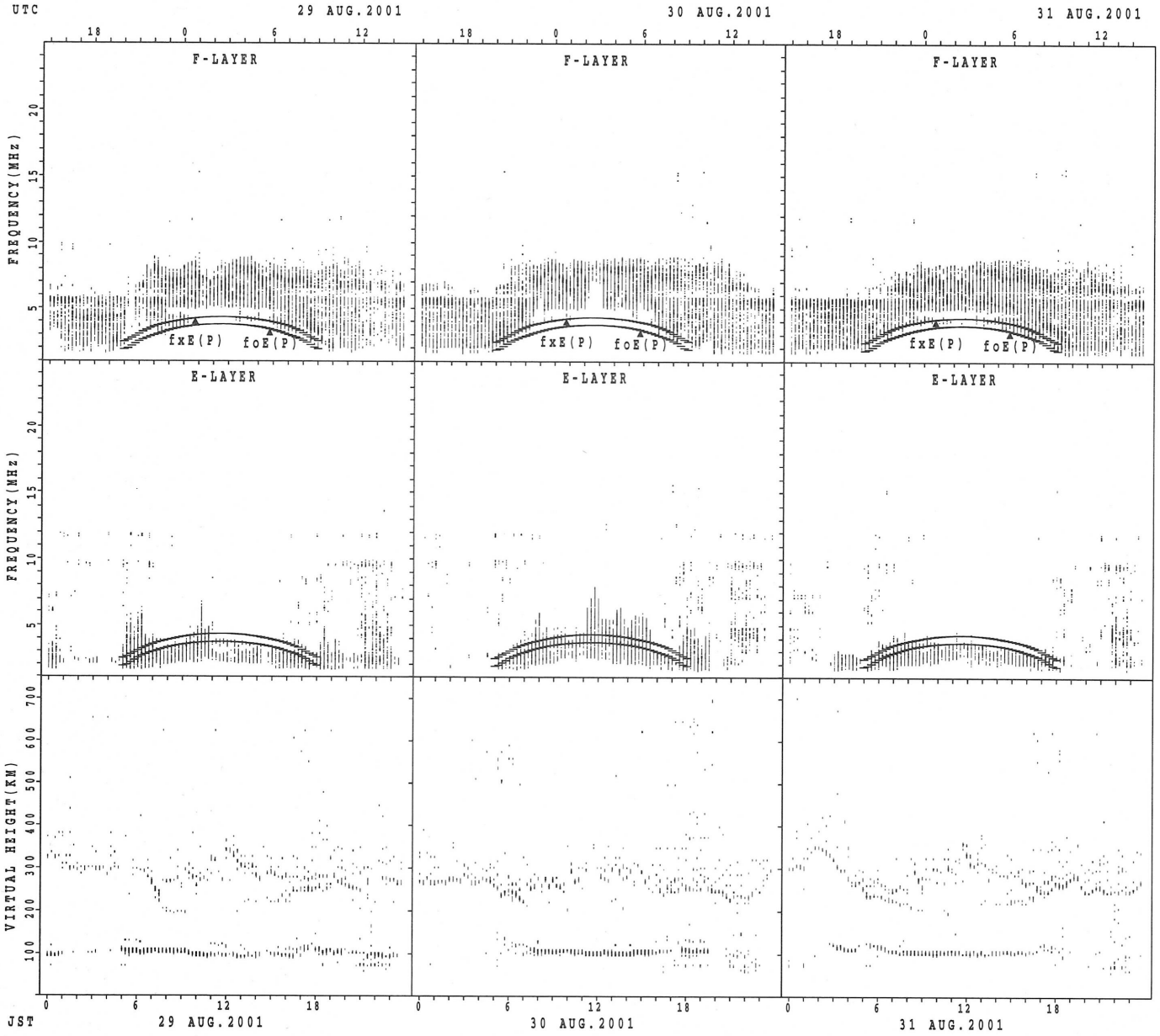
SUMMARY PLOTS AT Wakkanai



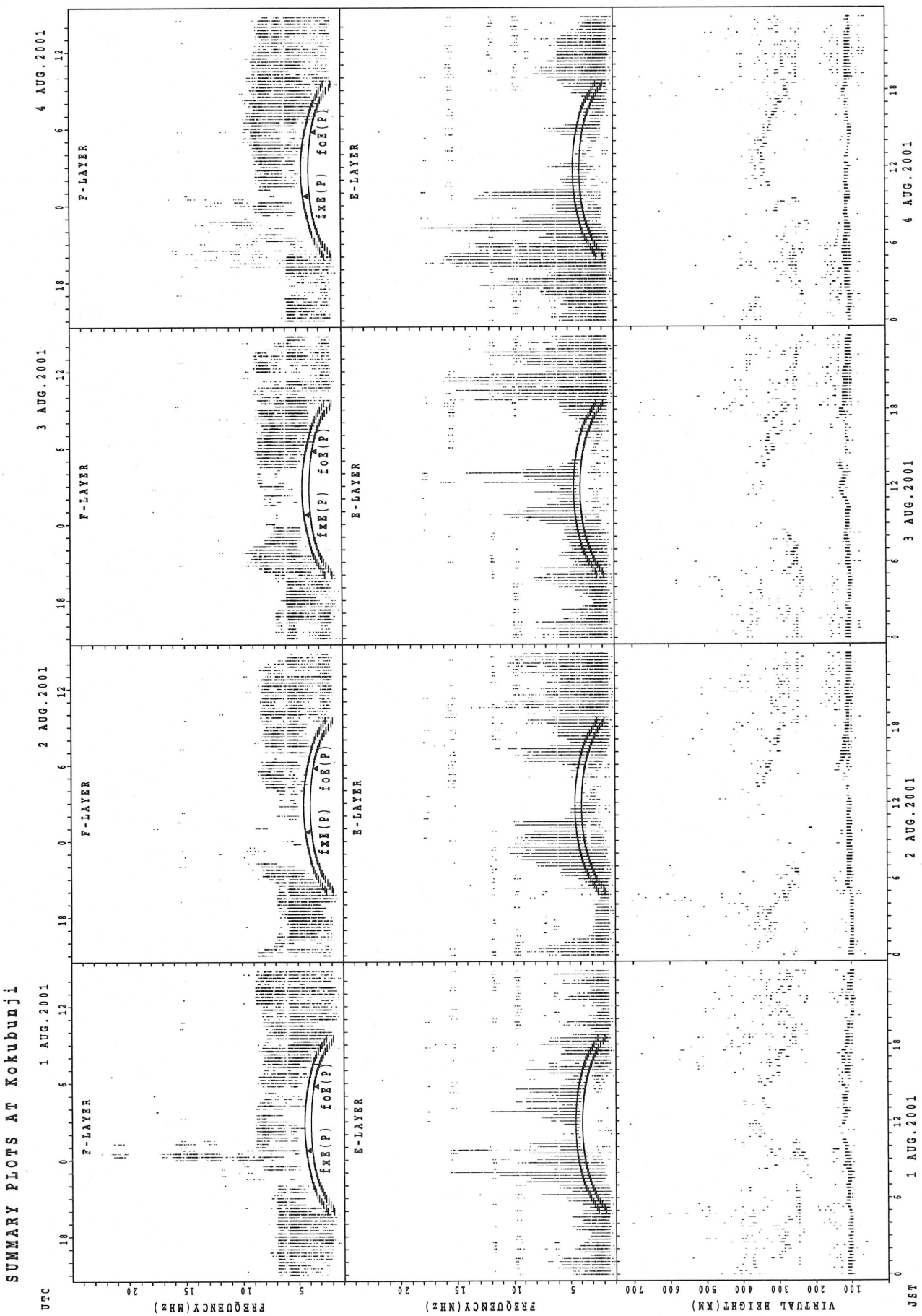
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
25 AUG.2001
26 AUG.2001
27 AUG.2001
28 AUG.2001
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

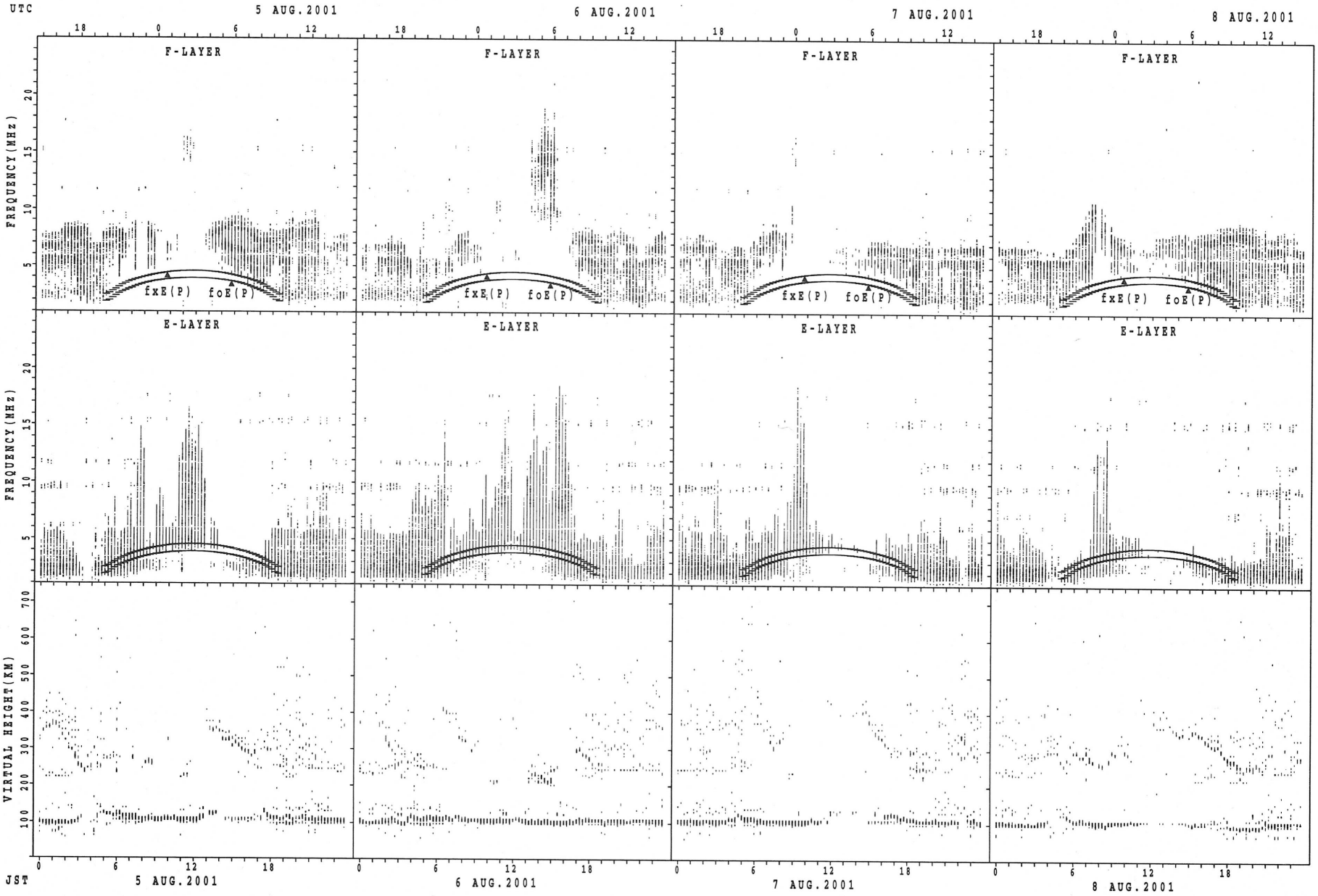
SUMMARY PLOTS AT Wakkanai



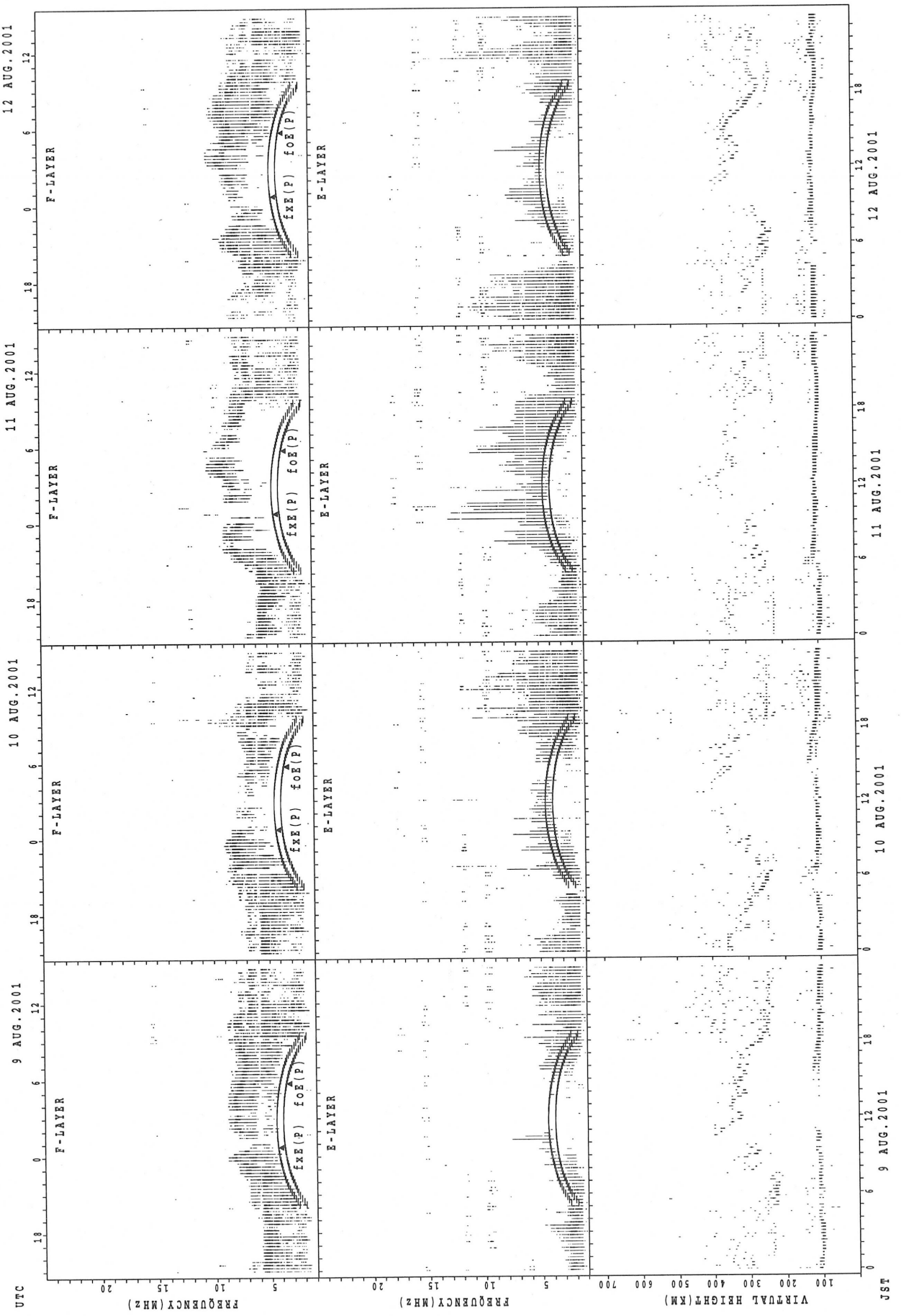
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
1 AUG.2001
2 AUG.2001
3 AUG.2001
4 AUG.2001
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

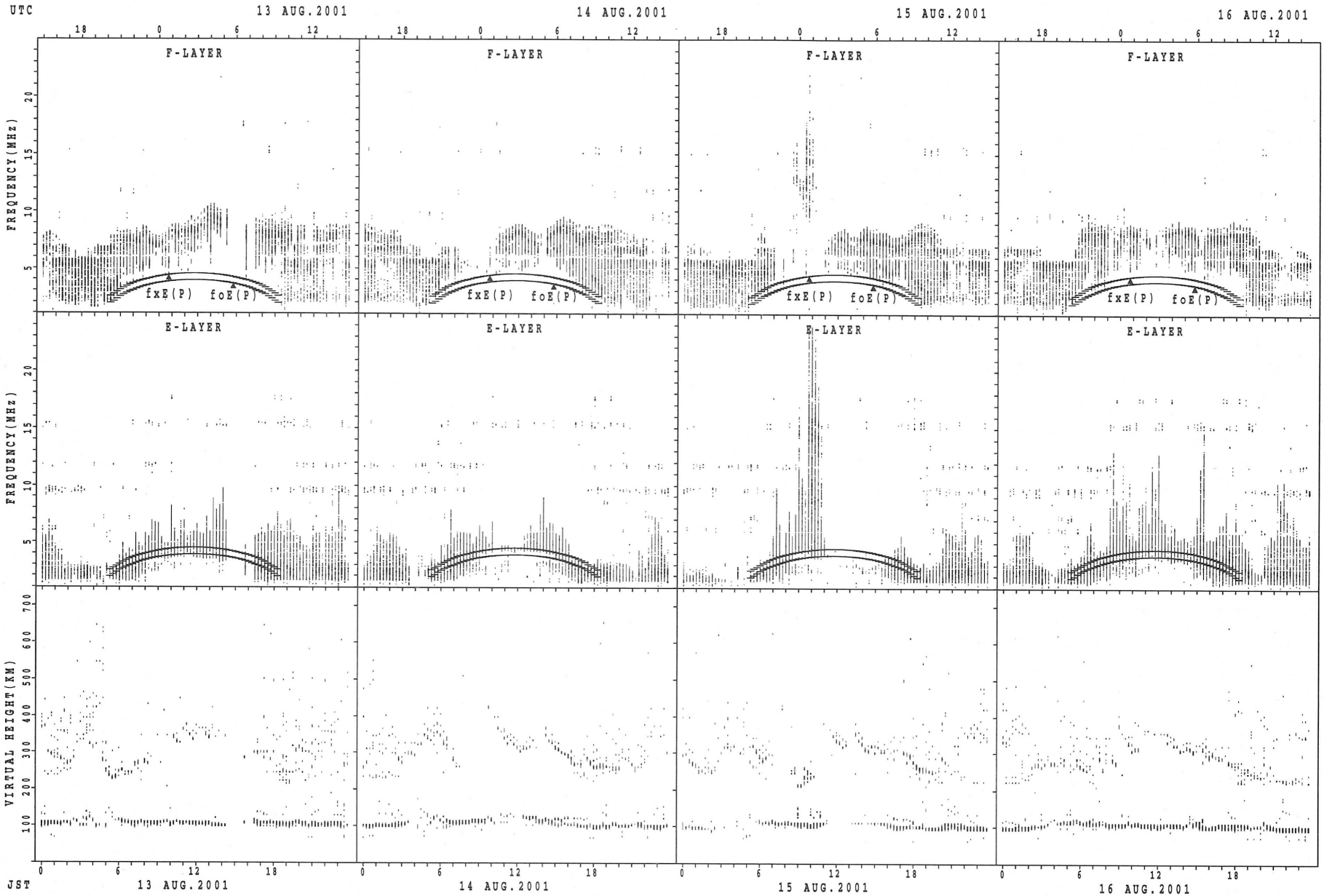
SUMMARY PLOTS AT Kokubunji



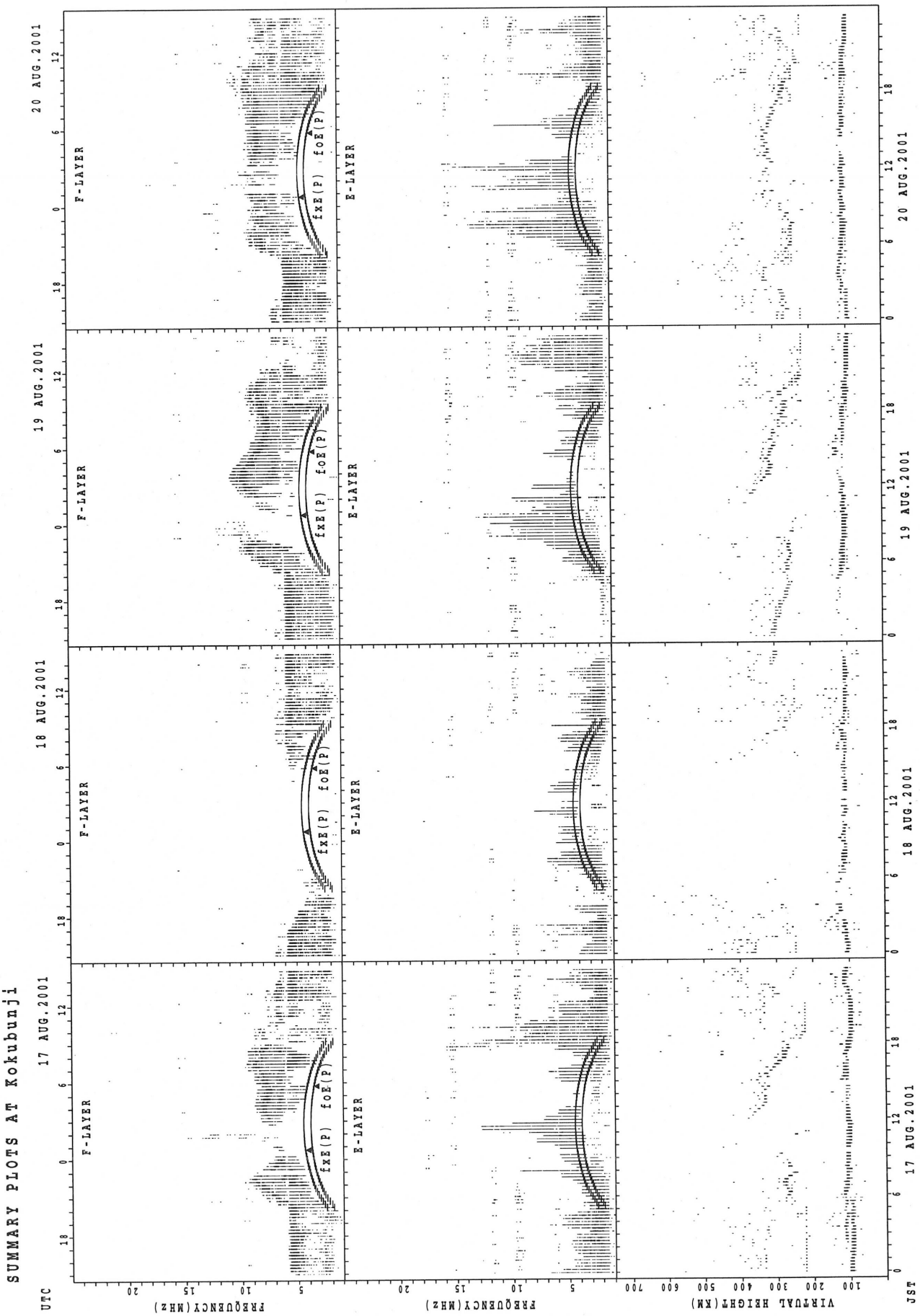
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
9 AUG.2001
10 AUG.2001
11 AUG.2001
12 AUG.2001
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

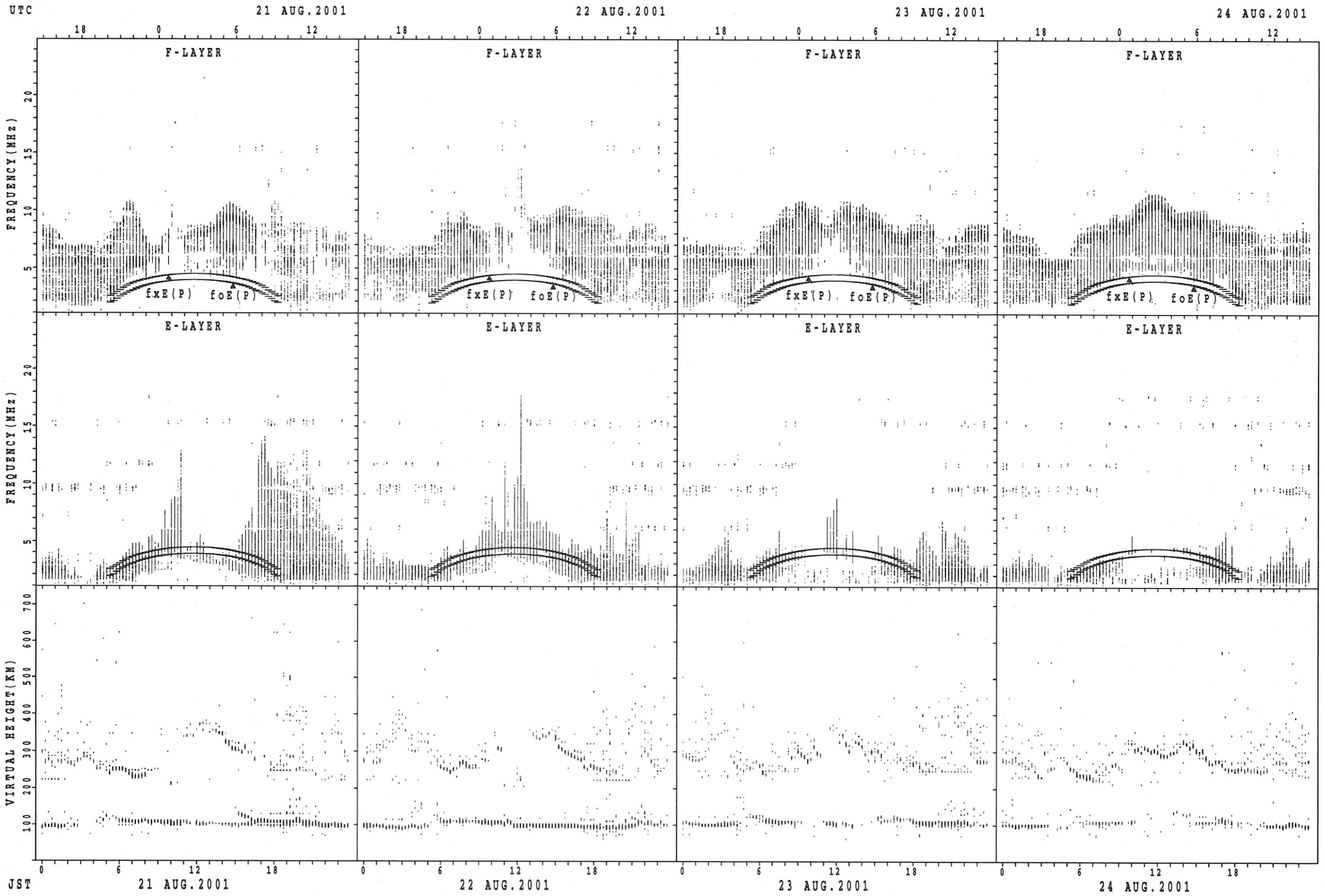
SUMMARY PLOTS AT Kokubunji



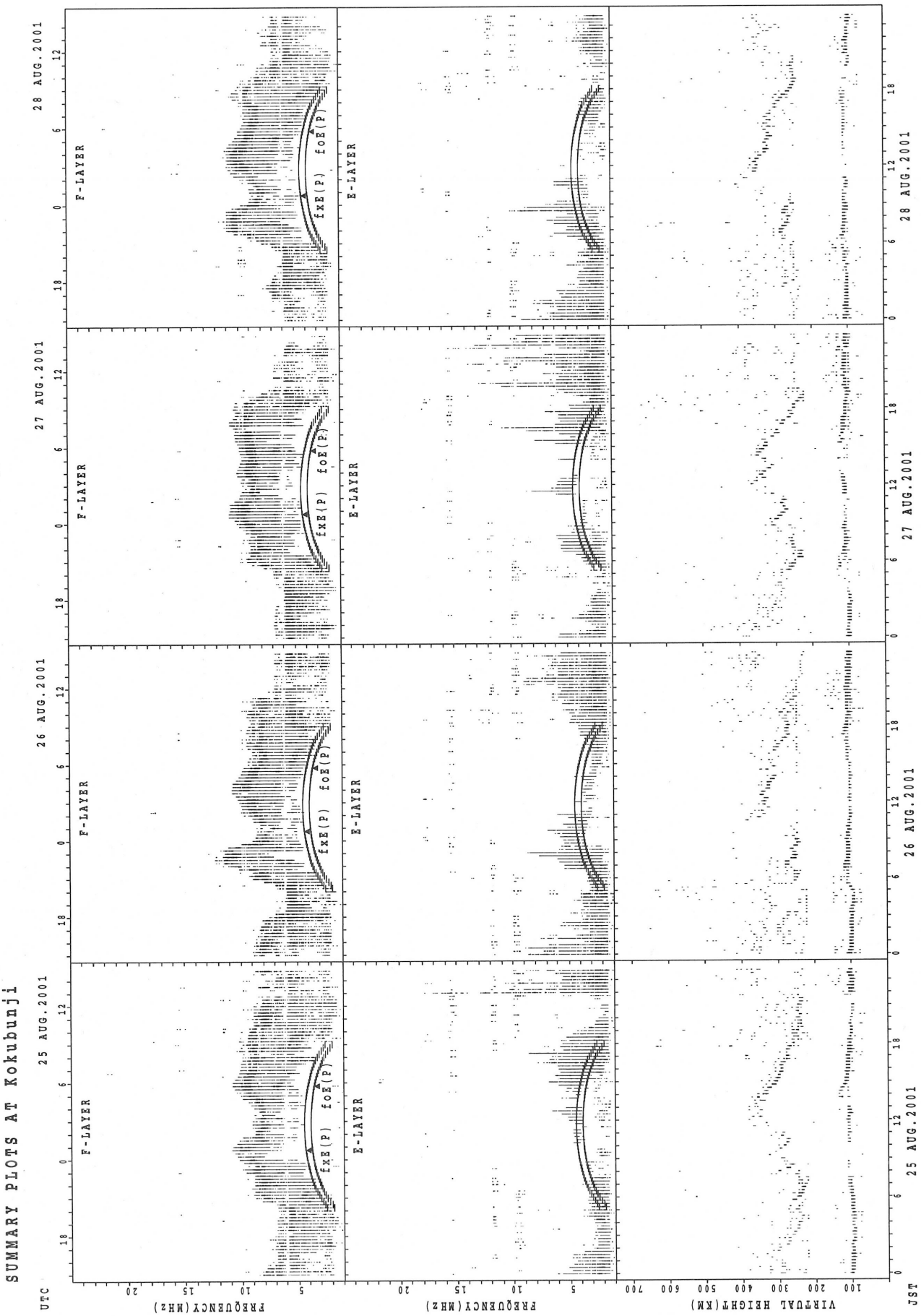
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
UTC
JST
17 AUG.2001
18 AUG.2001
19 AUG.2001
20 AUG.2001
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

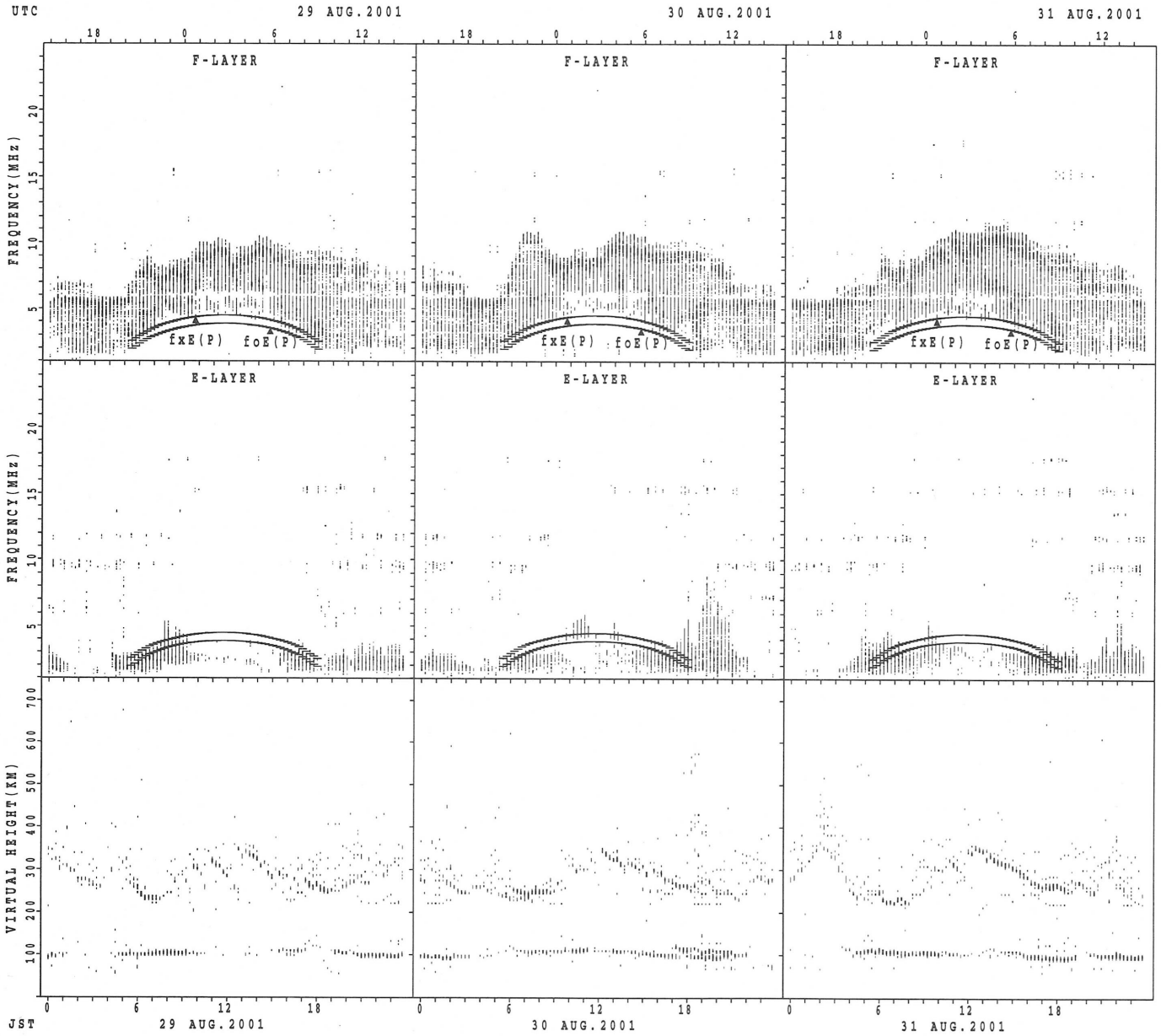
SUMMARY PLOTS AT Kokubunji



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


SUMMARY PLOTS AT Kokubunji
UTC
JST
25 AUG.2001
26 AUG.2001
27 AUG.2001
28 AUG.2001
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

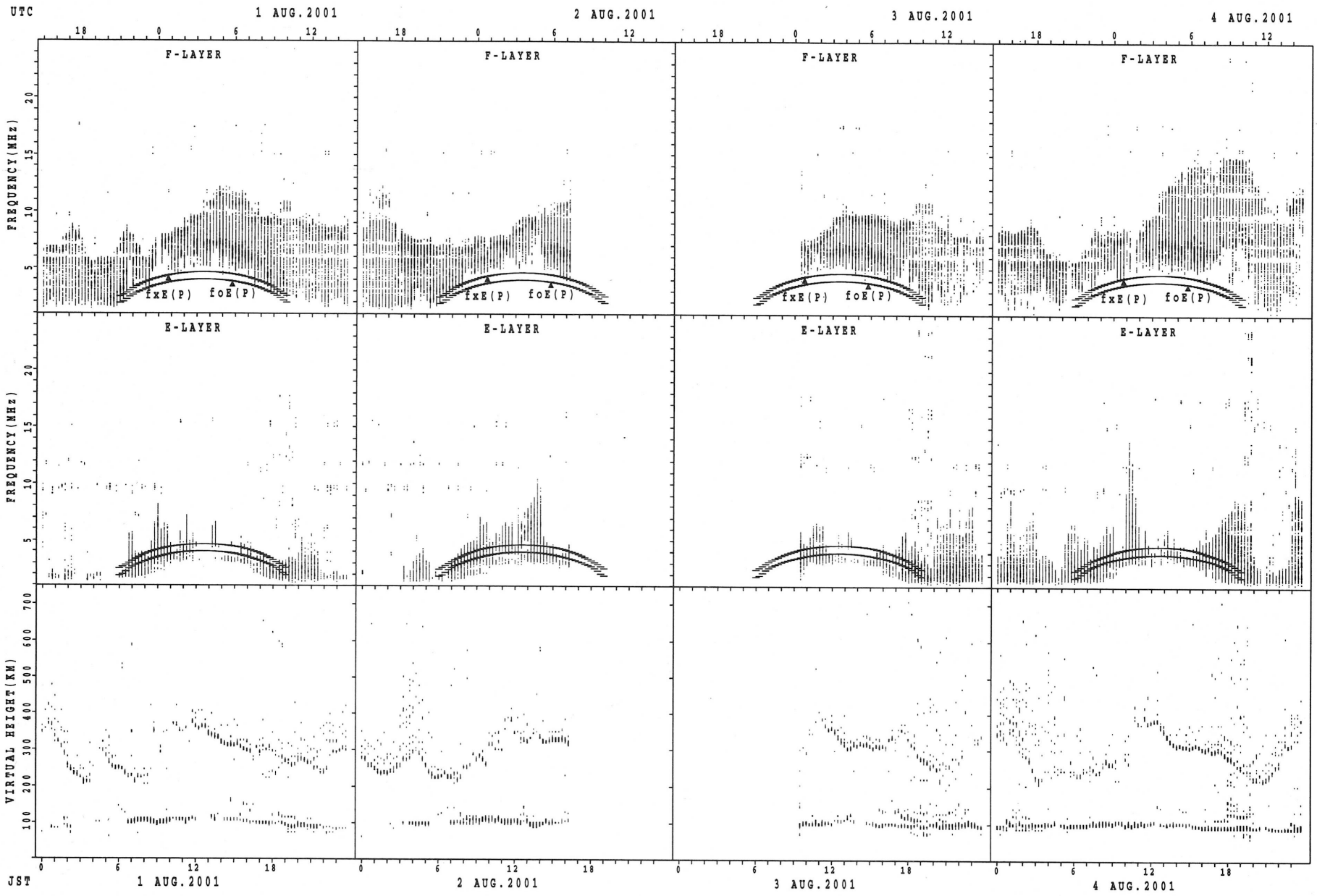


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

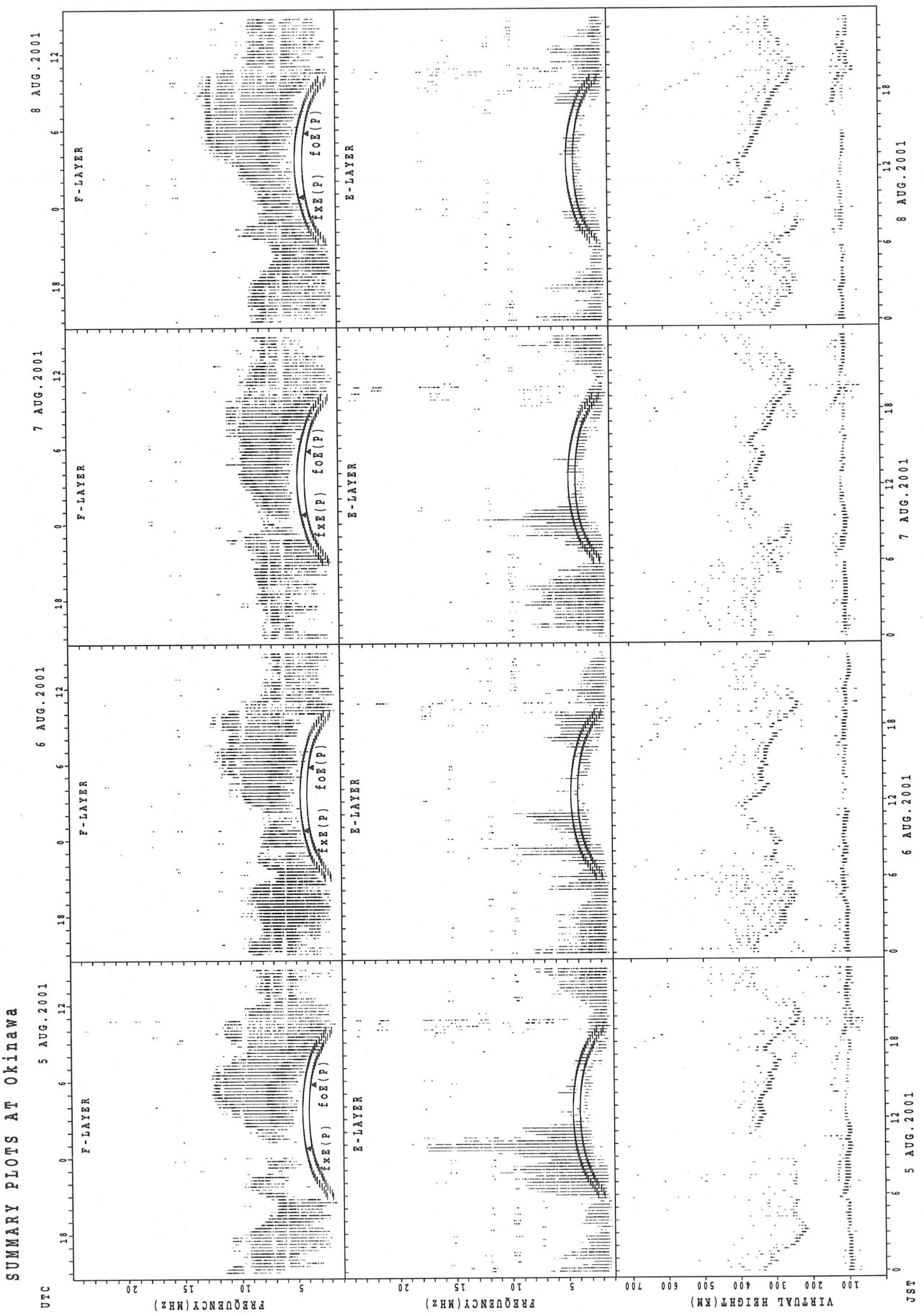
SUMMARY PLOTS

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

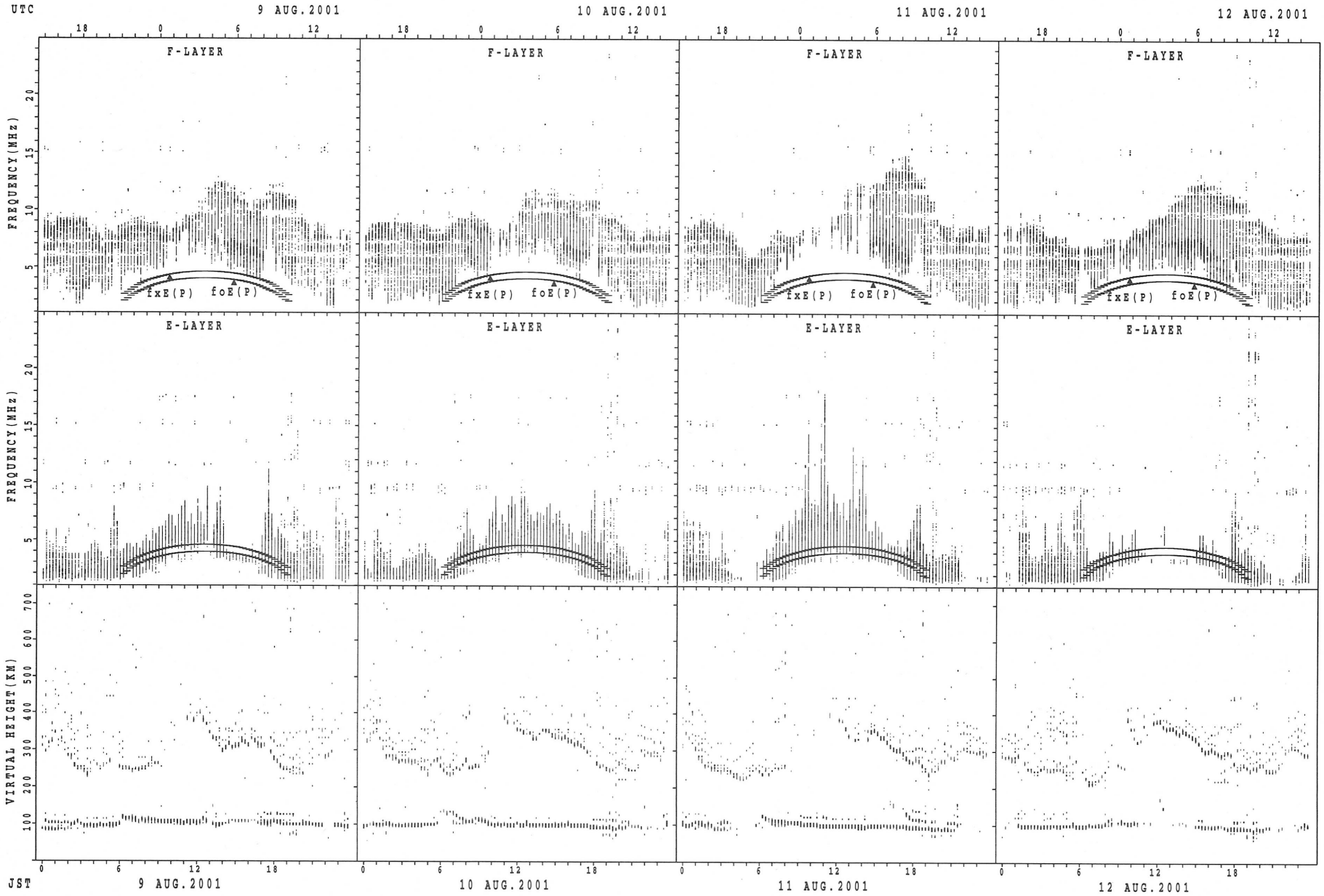
SUMMARY PLOTS AT Okinawa



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

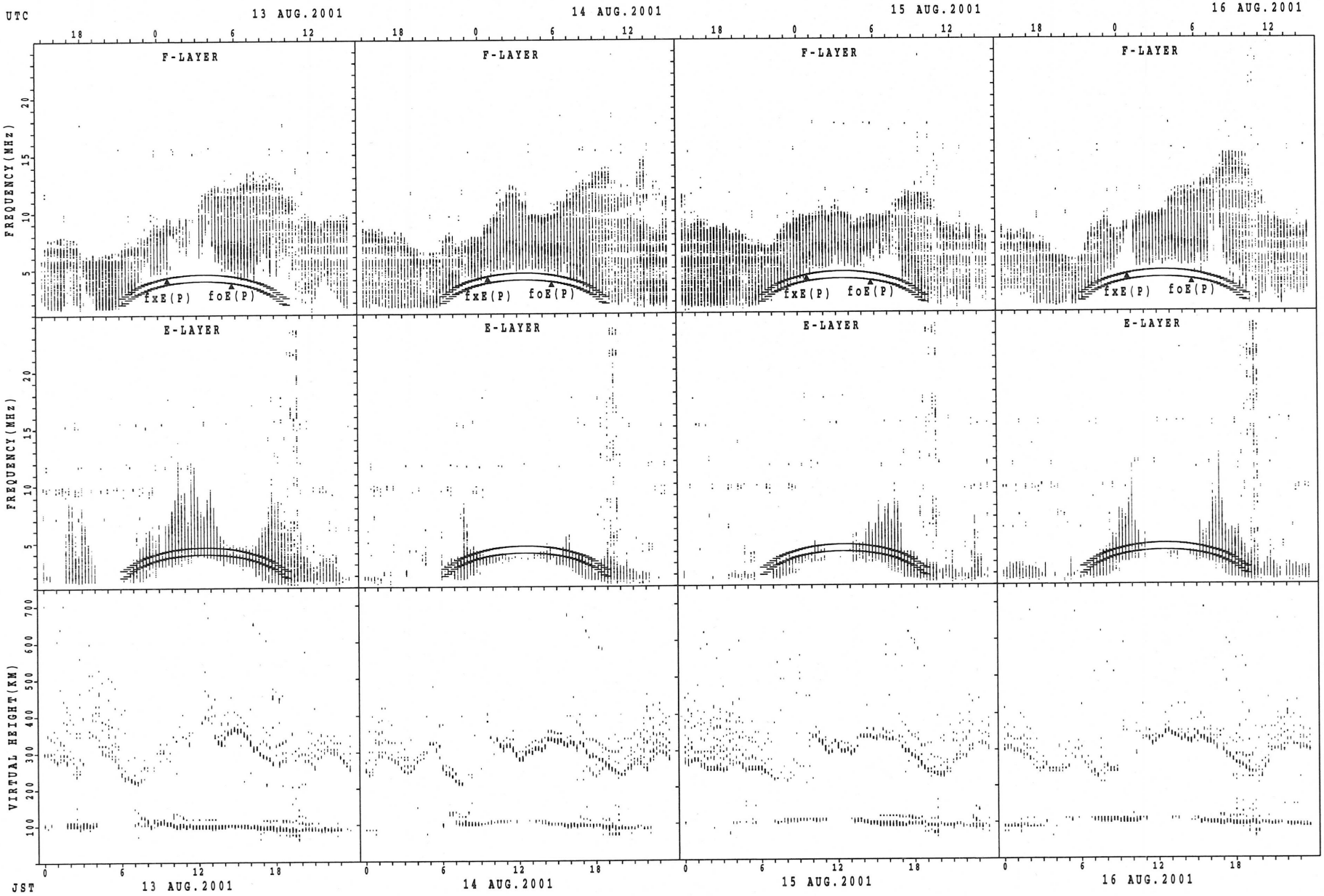

SUMMARY PLOTS AT Okinawa
UTC
JST
5 AUG.2001
6 AUG.2001
7 AUG.2001
8 AUG.2001
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

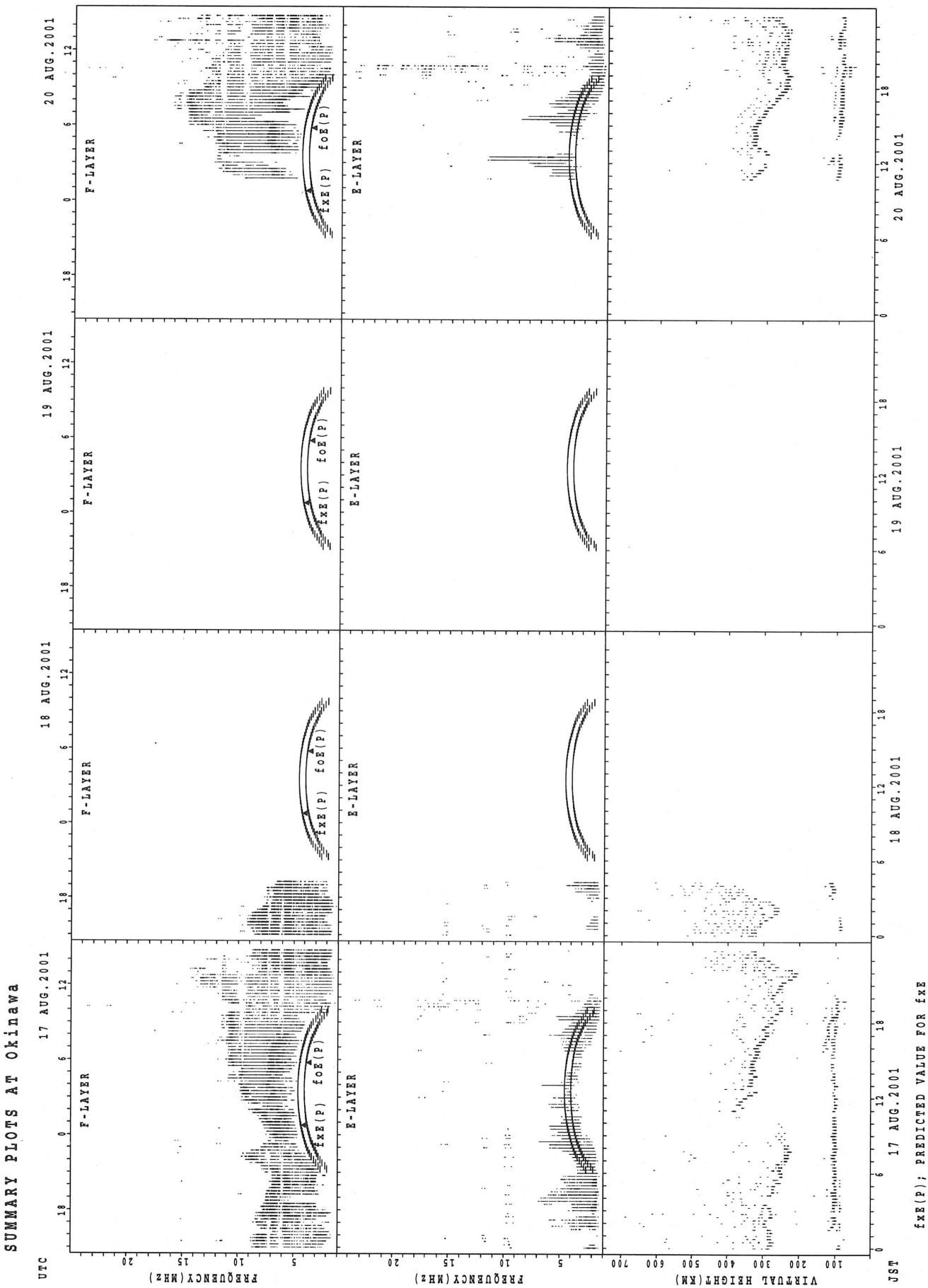


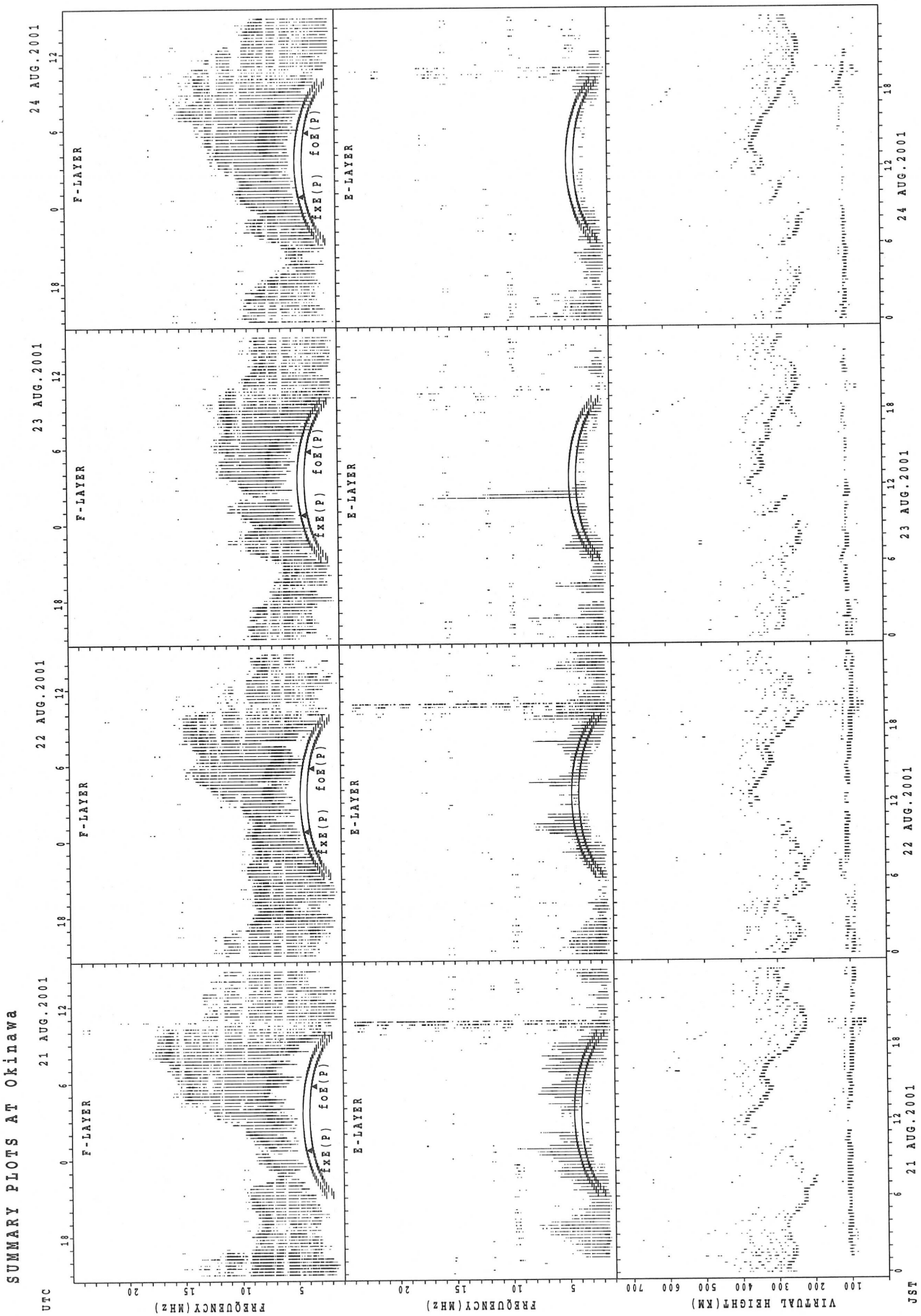
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

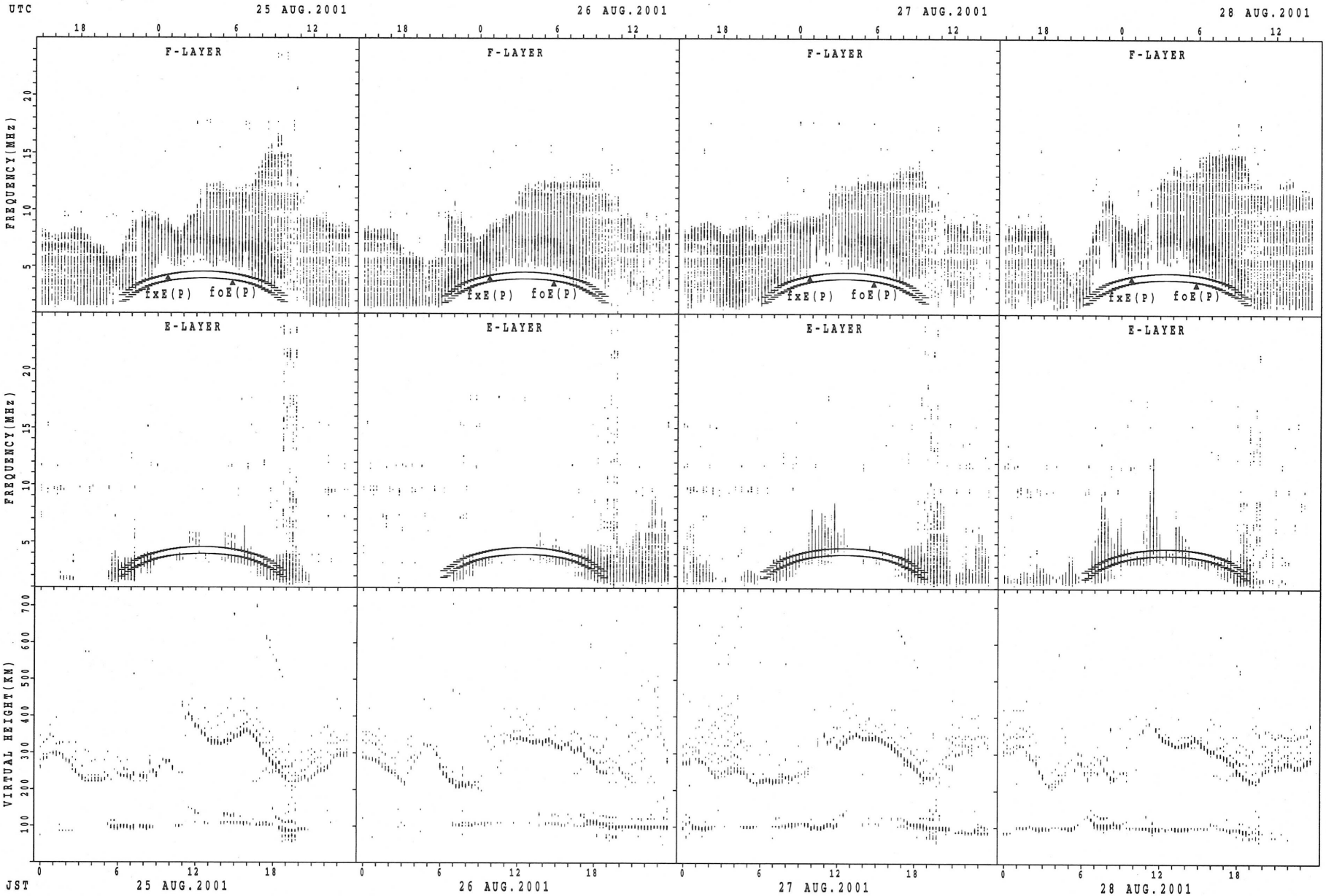


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Okinawa
UTC
JST
17 AUG.2001
18 AUG.2001
19 AUG.2001
20 AUG.2001
F-LAYER
E-LAYER
fxE(P) foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

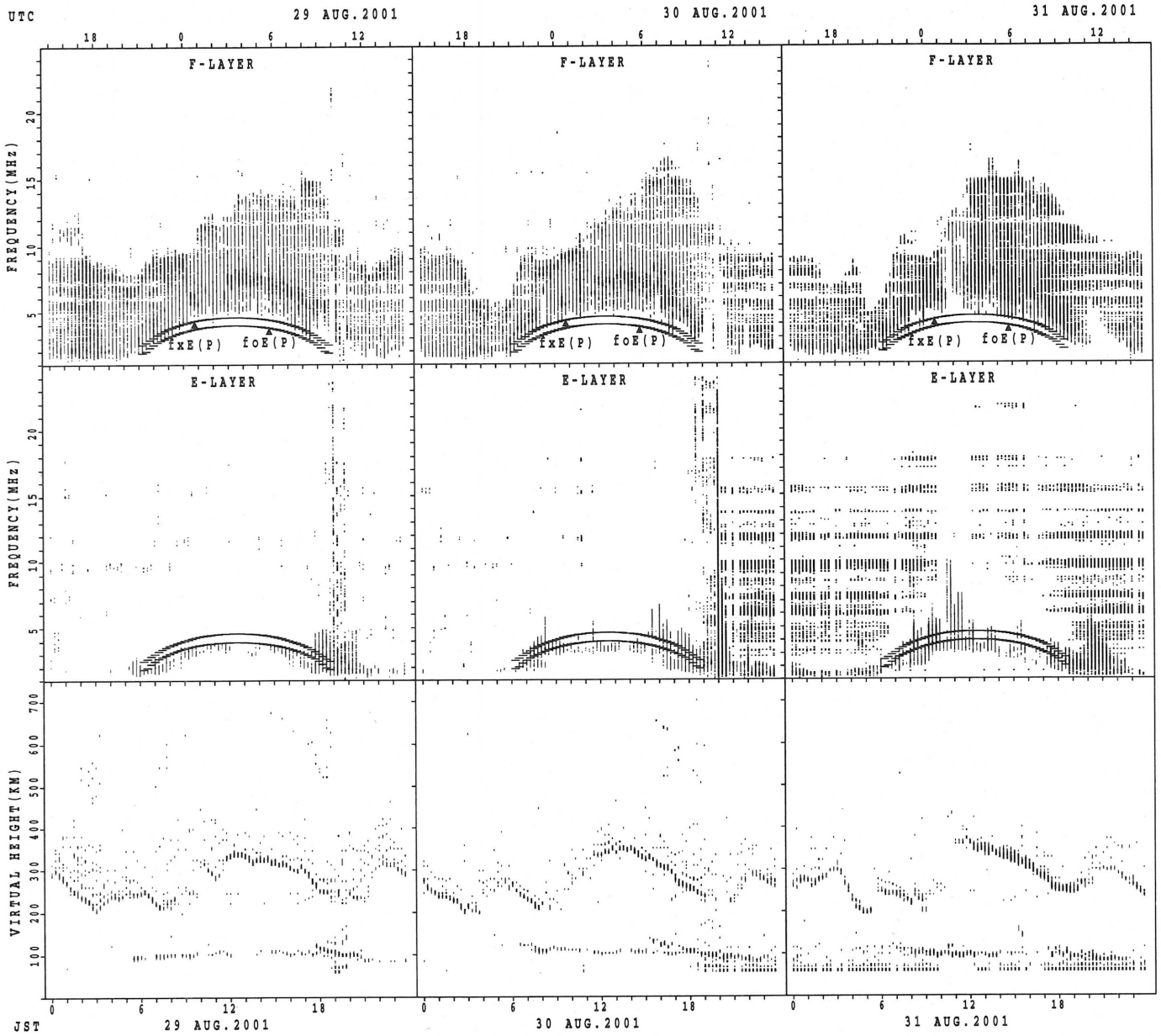

SUMMARY PLOTS AT Okinawa
21 AUG.2001
22 AUG.2001
23 AUG.2001
24 AUG.2001
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
UTC
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

MONTHLY MEDIANS OF h'F AND h'Es

AUG.2001 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h'F STATION Wakkanai LAT. 45°23.5'N LON. 141°41.2'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	6	8	4	2	4	5	18	20	6							2	14	20	21	15	22	15	12	13
MED	361	399	390	382	365	290	295	282	274							310	301	275	256	298	312	322	328	318
U Q	370	423	426	414	398	351	318	296	282							328	314	302	311	322	326	368	376	350
L Q	344	353	366	350	327	276	272	265	264							292	290	255	235	252	296	298	310	309

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	23	21	21	23	16	18	24	29	29	25	23	24	19	17	16	19	23	25	22	22	28	23	21	15
MED	101	103	103	105	107	113	113	111	107	107	105	105	103	105	106	107	113	115	111	111	111	107	101	103
U Q	105	105	105	109	118	117	115	115	111	110	109	111	107	115	110	111	115	119	111	117	113	111	107	105
L Q	99	99	98	101	103	111	109	107	106	105	103	103	103	103	98	101	107	111	103	107	107	97	94	99

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	12	13	16	9	3	9	26	22	22							2	26	26	27	27	22	18	14	15
MED	357	378	354	362	370	314	275	260	281							309	305	299	290	290	309	332	338	346
U Q	375	419	370	410	374	378	298	280	300							312	318	312	304	324	330	378	384	388
L Q	331	329	336	333	338	298	258	248	262							306	294	282	278	270	288	310	328	322

h'Es

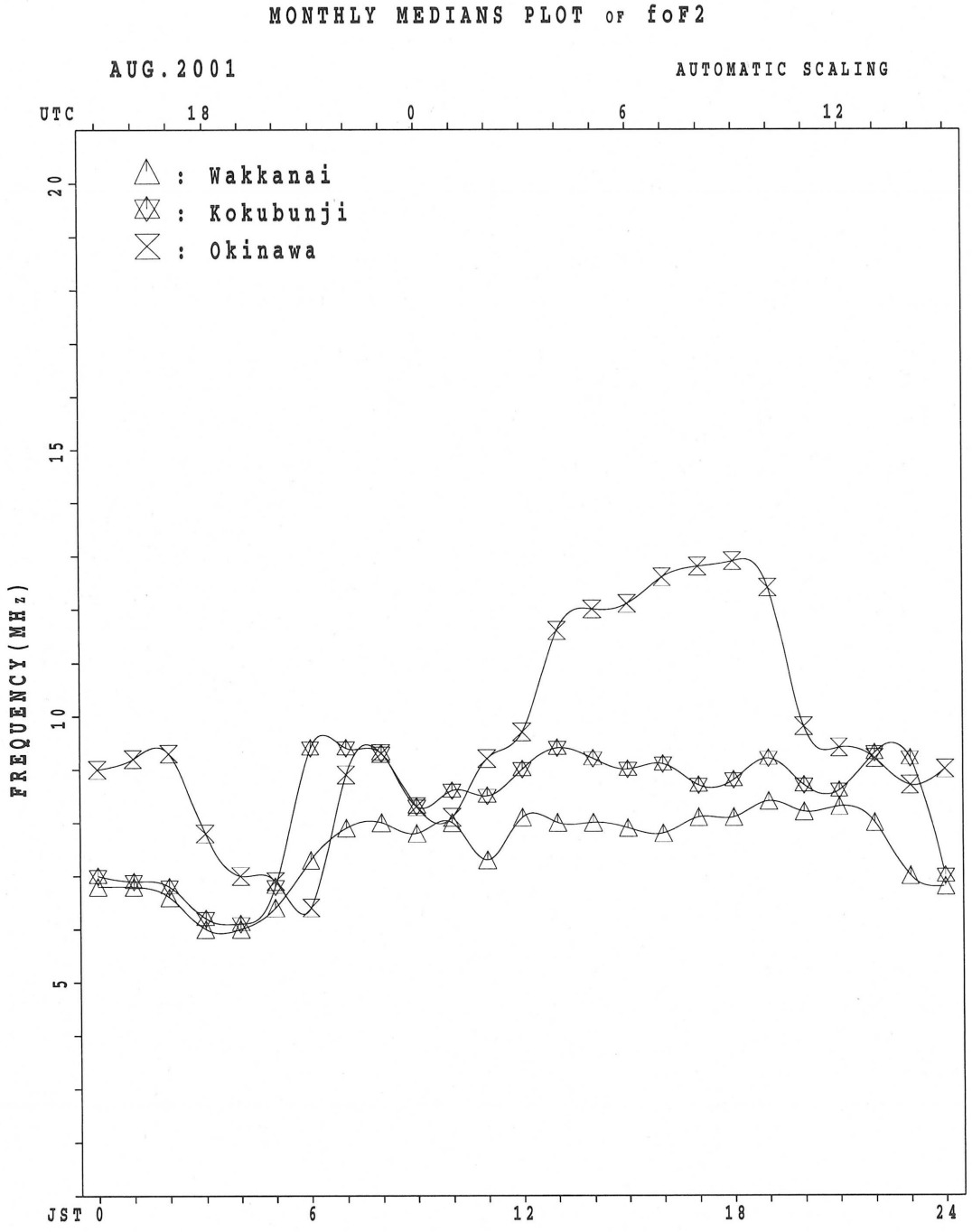
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	25	24	19	22	25	23	25	24	24	23	23	15	14	12	17	26	28	28	29	25	26	23
MED	105	103	103	104	111	110	115	113	109	110	110	111	107	111	116	120	113	115	111	108	107	107	107	107
U Q	107	105	105	110	117	119	119	117	112	112	111	111	113	117	133	131	120	119	115	111	111	112	111	115
L Q	97	99	98	102	101	101	112	111	107	106	107	107	105	105	105	113	107	111	105	101	103	101	105	101

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	22	22	21	15	12	10	25	22	18							28	27	26	24	26	23	21	21
MED	336	318	288	280	308	307	275	242	244	267							314	298	275	264	276	300	332	342
U Q	366	336	324	316	402	326	310	270	260	300							325	310	286	288	284	320	353	357
L Q	313	294	278	260	296	293	272	233	236	256							304	290	260	252	256	280	307	310

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	13	12	13	13	17	17	14	21	20	18	19	19	10	9	11	11	15	17	24	20	22	19	17	16
MED	101	104	103	99	103	103	105	111	111	107	105	105	103	103	103	103	99	101	107	95	97	97	93	94
U Q	108	107	108	106	105	105	115	118	115	113	107	107	107	108	105	131	109	117	117	104	103	105	104	107
L Q	91	92	93	97	99	99	103	103	107	105	101	103	99	98	101	101	97	95	100	93	93	91	90	91


MONTHLY MEDIANS PLOT OF foF2
AUG. 2001
AUTOMATIC SCALING
UTC
18
0
6
12
△ : Wakkanai
⊠ : Kokubunji
⊠ : Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	70	79	X 76	X 74	74															X 84	O X 90	X 87	O X 96	X 93
2	X 90	X 75	X 71	X 66	X 73															X 85	X 88	X 83	X 79	X 80
3	X 67	X 74	X 74	X 64	X 64															X 90	O X 90	89	X 96	X 74
4	X 65	X 65	O X 72	R 68	O X 66															X 98	X 95	X 88	X 82	X 88
5	X 77	X 81	O X 90	X 90	X 73															X 90	X 95	X 97	X 86	X 78
6	X 75	X 72	X 73	X 72	X 64															X 80	X 86	X 80	R 69	X 79
7	X 80	X 83	O X 81	X 68	X 69															X 76	X 63	X 74	X 79	O X 80
8	X 76	X 72	X 73	X 70	X 65															X 94	O X 89	X 85	X 87	X 82
9	X 76	X 68	X 64	X 65	X 64															X 90	X 92	X 80	X 83	X 82
10	X 75	X 76	X 76	X 73	X 77															X 86	X 77	X 68	X 72	O X 75
11	X 70	X 65	O X 70	X 63	X 60															X 85	X 82	X 82	X 84	X 82
12	X 81	X 82	X 81	X 71	72															X 89	X 85	X 86	X 84	X 82
13	X 80	X 80	X 71	64	71															X 94	O X 95	X 93	X 92	O X 94
14	X 93	X 86	X 86	X 78	X 74															X 91	X 84	X 84	X 81	X 75
15	O X 74	O X 76	X 69	X 61	X 62															X 96	X 82	X 74	X 68	X 69
16	X 72	X 74	X 74	X 66	X 64															X 90	X 75	X 72	A	X 71
17	X 68	X 66	X 63	X 60	X 61															X 92	O X 79	X 81	X 80	O X 66
18	X 69	X 63	X 57	X 51	X 43															X 68	X 67	X 66	X 68	X 70
19	X 69	X 68	X 68	X 67	X 65															X 97	X 97	X 78	A	A
20	X 76	X 70	X 65	X 59	X 60															X 109	X 94	X 86	X 88	X 86
21	X 89	X 84	O X 78	X 73	X 75															O X 95	X 94	X 87	X 85	X 83
22	X 84	X 77	X 73	X 68	X 72															X 98	X 85	X 85	X 93	X 84
23	X 79	X 76	X 74	X 72	X 72															X 96	O X 83	X 78	89	X 92
24	X 87	X 84	X 79	X 68	X 62															X 90	X 85	X 84	O X 89	X 87
25	X 83	X 75	X 75	X 76	X 72															X 103	X 96	X 92	X 84	X 82
26	90	X 87	X 85	X 78	X 64															X 98	O X 94	X 75	X 71	X 74
27	X 69	X 70	X 69	X 64	X 65															X 90	A	X 71	A	X 67
28	O X 71	O X 71	X 72	X 72	X 64															X 88	X 82	X 76	X 81	X 80
29	X 76	X 75	X 74	X 70	X 66															X 96	X 90	X 91	X 86	X 84
30	X 85	X 82	X 82	X 70	X 68															X 101	X 95	X 82	X 74	X 75
31	X 71	X 69	X 66	X 68	X 72															X 96	O X 91	O X 86	X 90	X 82
	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	30	31	28	30
MED	X 76	X 75	X 73	X 68	X 66															X 91	X 88	X 83	X 84	X 81
U Q	X 83	X 81	X 78	X 72	X 72															X 96	X 94	X 87	X 88	X 84
L Q	X 70	X 70	X 69	X 64	X 64															X 88	X 82	X 76	X 79	X 75

AUG. 2001 fxI (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	F	F	70	68	F	R 62	70	R 66	A	88	87	86	87	86	R 79	80	78	77	77	78	84	81	U R 90	87
2	R 84	69	65	60	67	S 62	70	79	A	U R 74	A	R 65	71	72	78	80	75	77	77	79	82	77	R 73	R 74
3	R 63	R 68	68	58	59	R 67	88	90	72	74	R 75	75	78	81	80	81	80	78	83	R 84	U R 84	F	U R 90	68
4	58	58	R 66	R	60	61	A	A	78	87	A	80	82	86	R 92	92	92	89	89	91	89	82	R 76	82
5	71	R 75	R 84	S 84	67	R 77	76	82	A	79	R 71	A	A	80	87	91	88	77	81	84	R 89	91	R 80	72
6	R 69	R 66	69	66	57	A	A	68	76	67	A	64	67	A	A	A	A	78	80	74	80	74	R	V 72
7	R 74	R 77	R 75	S 62	R 62	F	70	80	76	A	A	A	68	69	66	71	71	67	67	70	U R 57	R 68	73	U R 74
8	S 70	66	67	64	59	61	77	100	102	80	R 75	R 69	R 74	R 76	80	76	80	82	86	88	83	79	R 81	76
9	R 69	62	58	59	58	60	67	66	75	R 88	73	81	85	84	85	81	77	78	83	84	86	74	R 77	76
10	R 69	R 70	70	67	71	74	81	84	87	84	U R 76	R 75	70	74	73	69	68	71	75	80	71	S 62	U R 66	U R 69
11	64	59	U R 64	F 54	R 54	F 52	76	86	89	82	A	84	86	98	98	94	88	85	80	79	R 76	76	78	R 76
12	R 74	R 76	R 75	R 66	F	67	86	82	75	R 76	80	88	94	98	93	90	93	94	88	83	79	U R 80	U R 78	R 76
13	74	S 74	R 65	F	F	R 71	80	78	84	74	84	86	92	102	98	C	C	90	90	88	89	87	R 86	R 88
14	87	80	80	R 72	68	60	67	69	S 61	A	R 71	82	86	78	A	89	89	81	82	85	R 79	78	R 75	R 69
15	U R 68	70	R 63	55	56	55	78	63	R 63	A	A	72	80	74	82	80	76	76	86	90	R 76	68	U S 62	U S 63
16	R 66	68	68	R 60	58	56	83	89	89	85	87	83	A	90	88	82	82	84	88	84	R 69	66	A	R 65
17	R 62	59	57	54	55	57	R 77	88	84	70	73	77	79	85	82	83	91	91	88	86	R 73	R 75	R 74	R 60
18	R 63	R 57	S 51	45	R 37	38	39	A	A	A	A	A	A	A	57	R 59	R 62	65	A	R 62	61	R 60	64	64
19	64	62	62	61	59	60	80	96	92	A	77	A	98	103	94	86	80	80	84	91	91	R 72	A	A
20	70	R 64	59	53	54	58	84	90	85	82	90	90	A	89	86	88	88	90	94	103	88	80	82	80
21	83	78	U R 72	67	69	73	91	102	73	70	A	81	83	88	98	100	92	84	85	R 89	88	80	79	R 77
22	R 78	71	67	62	U R 65	63	84	88	91	81	R 85	A	A	91	90	97	100	95	94	92	79	79	87	78
23	73	70	68	66	66	60	79	86	100	108	99	R 92	99	103	102	95	85	82	86	90	R 77	72	F	86
24	81	78	73	R 62	56	61	80	87	87	92	100	109	113	102	97	96	93	89	83	84	78	78	83	U R 81
25	77	69	69	70	66	64	84	90	92	99	104	94	88	88	97	103	98	95	99	97	90	86	R 78	R 76
26	F	81	79	R 72	R 58	F	F	106	R 115	90	79	92	98	103	98	90	88	90	92	92	88	69	R 65	R 68
27	R 63	64	63	R 58	58	65	89	87	87	98	104	96	92	98	93	95	100	103	100	84	A	R 65	A	R 61
28	R 65	U R 65	R 66	R 66	R 58	54	76	106	108	93	84	94	104	108	100	92	90	96	98	82	78	70	75	R 74
29	U R 70	69	68	64	60	61	81	81	81	83	96	98	96	93	100	96	91	88	92	90	84	85	80	R 78
30	79	76	76	R 64	61	60	83	103	100	89	90	91	94	102	102	101	96	96	96	94	R 89	76	68	69
31	65	63	60	62	66	R 64	84	81	85	92	100	107	104	110	111	107	100	96	95	90	85	U R 80	84	R 76
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	31	29	28	28	28	29	27	26	23	26	26	29	29	29	29	31	30	31	30	30	26	30
MED	R 70	69	68	62	59	61	80	86	85	84	84	85	86	89	92	90	88	84	86	85	82	76	R 78	R 75
U Q	76	75	72	66	66	64	84	90	92	90	96	92	96	102	98	96	92	91	92	90	88	80	82	78
L Q	64	64	63	58	58	59	76	80	76	76	R 75	77	79	80	81	80	79	78	82	82	R 77	70	73	69

AUG. 2001 foF2 (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	A	A	A	A	504	A	A	540	U L 548	A	L						
2							L	A	A	A	A	L 528	U L 508	504	L 528	U L 488	L	L	A					
3							L	L	L	A	A	A	A	A	U L 504	488	L 464	L						
4						A	A	A	A	A	A	L 552	A	L 548	L 556	L 516	U L 488	L						
5							A	A	A	A	A	A	A	U L 548	520	L	L 472							
6						A	A	A	468	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	480	A	A	A	A	520	L 528	496	U L 480	A	A					
8							L	L	A	L 536	A	U L 612	U L 556	U L 512	U L 528	U L 540	L 496	L	L					
9									L	L 512	U L 616	560	532	556	U L 536	L 524	A	L						
10								L	A	A	536	528	A	524	528	524	A	A	A					
11							L	A	A	A	A	U L 552	L 548	A	A	A	A	A	A					
12								L	L	A	A	A	A	L	548	L 548	L 512	L						
13									A	A	A	L	A	A	A	C	C	A						
14						L	A	L	U L 508	A	A	L 536	L 540	A	A	A	A	L						
15							L 388	U L 456	A	A	A	A	536	U L 544	L 528	L	L	A	L					
16							L	L	L	L 620	L 540	A	A	A	A	A	A	A	A					
17							L	L	A	A	A	A	A	520	U L 540	A	A	A						
18						248	U L 332	A	A	A	A	A	A	A	U L 492	U L 488	A	A	A					
19							A	A	A	A	A	A	A	L 556	U L 552	L	L	L						
20								A	L	A	L 556	A	A	L 536	L 544	A	L	L						
21								A	L	L	A	L	U L 568	L 560	L 548	L 520	A	A	A					
22							L	A	L	A	A	A	A	A	A	L 528	L	L						
23							L	L	L	L	L 536	R	A	U L 512	L 528	A	L	A						
24									L	L	L	L	L 552	L	L	L	L	A						
25								L	L	B	B	L	U L 612	L	U L 564	A	A	L						
26								A	A	L	U L 544	A	L 576	L 576	L	L	L	L						
27								A	A	L	L	L	L	B	L	L 536	A	A						
28							L	L	A	L	L 592	L 576	L 576	U L 548	L	L	L	L						
29								L	L	L	L 572	L 596	U L 516	L	L 556	L	L							
30									L	L	L	L	L	U L 604	U L 548	L	L	L						
31									L	L	U L 600	L 576	L	U L 580	L 576	L 552	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	2	1	3	3	9	11	12	17	21	14	6							
MED						248	L U 360	L 456	480	L 536	L 556	L 552	L 550	L 548	L 540	L 524	L 484							
U Q									U L 508	L 620	U L 596	L 576	L 572	L 558	L 550	L 540	L 496							
L Q									468	L 512	L 538	528	534	520	L 528	496	L 472							

AUG. 2001 foF1 (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	236	284	A	A	A	R	R	A	B	R	R	272	204					
2						192	A	A	A	A	A	A	A	R	R	U R 356	316	268	U A 192					
3						B	A	A	A	364	A	A	B	R	R	R	U R 332	284	188					
4						B	A	280	A	A	A	A	A	R	U R 380	A	U R 328	276	U A 208					
5						B	240	304	A	A	A	A	A	R	R	R	U R 328	284	U R 196					
6						B	232	304	U R 356	A	A	A	A	A	A	A	A	A	U A 204					
7						B	244	A	336	A	A	A	A	R	U R 384	R	U R 328	284	204					
8						B	U A 232	304	A	A	A	A	R	R	U R 380	R	U R 332	U R 292	U A 196					
9						U R 168	244	308	R	U R 376	B	R	R	R	B	R	R	284	A					
10						B	248	304	A	A	A	A	A	A	A	R	332	280	A					
11						B	256	316	348	372	A	A	A	A	A	A	A	A	A					
12						B	248	300	A	A	A	A	A	B	A	A	A	A	A					
13						B	240	292	A	A	A	A	A	A	A	C	C	A	U A 184					
14						B	232	A	A	U A 368	R	R	R	R	R	R	324	268	A					
15						B	236	292	A	A	A	A	B	R	R	U R 352	U R 332	A	U A 192					
16						B	220	300	344	A	A	A	A	A	A	U A 364	A	A	A					
17						B	U A 236	292	A	A	A	A	A	A	U R 384	U R 352	U R 312	268	B					
18						B	236	U A 288	A	A	A	R	R	B	A	344	R	U R 256	B					
19						B	A	300	A	A	A	U A 388	U R 404	B	U R 392	360	324	U R 268	B					
20						B	A	A	A	A	A	A	A	R	A	U A 348	A	A	U A 188					
21						B	U A 232	A	U A 328	A	A	A	A	R	R	U R 356	A	268	B					
22						B	U A 216	U R 288	A	A	A	A	A	A	A	A	A	A	B					
23						B	224	A	A	A	B	R	A	A	B	R	U R 328	268	160					
24						B	244	304	R	U R 364	B	B	B	B	B	U R 368	U R 324	276	B					
25						B	A	U R 300	R	B	B	A	A	A	R	U R 360	324	A	B					
26						B	280	A	A	A	A	A	A	R	A	U R 360	R	U A 280	B					
27						B	228	288	A	A	R	R	A	B	R	R	U R 340	268	B					
28						B	220	292	336	A	R	A	R	R	R	R	U A 320	256	B					
29						B	U R 224	A	A	A	R	R	R	B	U R 388	R	A	260	172					
30						B	U R 236	288	U R 348	R	A	B	R	A	R	U R 364	U R 308	256	B					
31						B	208	U A 260	R	A	A	R	R	R	R	U R 360	R	U R 260	B					
	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	25	22	7	5		1	1		6	13	17	22	13					
MED						180	236	296	344	U 368		U A 388	U R 404		U R 384	U R 360	U R 328	268	U A 192					
U Q							244	304	U R 348	374					U R 388	U R 362	U R 332	280	204					
L Q							226	288	336	364					U R 380	U 352	U 322	268	186					

AUG. 2001 foE (0.01MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	J A 43	J A 66	J A 42	J A 28	J A 36	J A 36	J A 51	J A 58	J A 147	J A 107	J A 78	J A 54	J A 62	J A 88	J A 63	47	J A 83	J A 43	J A 72	J A 24	J A 32	J A 22	J A 45	J A 50
2	J A 70	J A 48	J A 24	J A 22	J A 25	J A 22	J A 42	J A 74	J A 97	J A 86	J A 63	J A 46	J A 45	G 35	44	52	J A 100	J A 50	J A 57	J A 75	J A 106	J A 80	J A 83	J A 102
3	J A 63	J A 56	J A 34	J A 25	J A 53	J A 65	J A 42	J A 42	J A 47	J A 65	J A 85	J A 68	J A 58	J A 135	J A 49	G 30	G 29	32	J A 48	J A 102	J A 130	J A 66	J A 97	J A 54
4	J A 52	J A 44	J A 65	J A 100	J A 82	J A 157	J A 128	J A 142	J A 95	J A 58	J A 119	J A 53	J A 65	G 36	G 29	J A 64	37	30	J A 41	J A 62	J A 53	J A 53	J A 65	J A 35
5	J A 47	J A 55	J A 46	J A 25	E B 15	J A 50	J A 42	J A 86	J A 126	J A 75	J A 55	J A 130	J A 136	G 37	44	G 30	G 29	G	J A 55	J A 61	J A 40	J A 54	J A 86	J A 49
6	J A 65	J A 54	J A 47	J A 51	J A 78	J A 84	J A 102	J A 57	J A 52	J A 57	J A 65	J A 128	J A 54	J A 101	J A 111	J A 92	J A 155	J A 45	J A 50	50	J A 50	J A 31	J A 24	J A 56
7	J A 74	J A 65	J A 46	J A 99	J A 32	J A 36	J A 47	J A 56	J A 44	J A 110	J A 98	J A 60	53	G 32	46	G 32	38	J A 43	J A 53	J A 66	J A 50	J A 48	J A 30	J A 84
8	J A 78	J A 36	J A 52	J A 38	J A 19	J A 21	J A 31	35	J A 73	J A 53	J A 52	J A 53	G 38	G 34	G 33	G 36	36	G 22	J A 28	J A 30	J A 32	J A 55	J A 102	J A 33
9	J A 23	J A 28	31	J A 40	J A 19	26	28	40	39	J A 50	53	46	G	G	E B 40	43	48	38	J A 45	J A 33	J A 48	J A 49	J A 54	J A 53
10	J A 48	J A 52	J A 20	J A 28	J A 34	20	34	J A 42	67	J A 55	J A 48	J A 53	J A 127	48	43	48	48	J A 55	J A 52	J A 74	J A 64	J A 98	J A 81	J A 66
11	J A 49	J A 54	J A 52	J A 29	J A 23	19	J A 36	J A 51	J A 64	J A 62	J A 103	50	J A 69	J A 76	J A 68	J A 86	J A 76	J A 67	J A 63	J A 52	J A 28	J A 32	J A 80	J A 95
12	J A 69	J A 116	J A 65	J A 84	J A 43	20	28	38	46	56	J A 68	J A 57	66	J A 50	48	J A 42	J A 38	J A 40	J A 53	J A 43	J A 38	J A 110	32	J A 50
13	J A 53	J A 40	J A 26	J A 27	J A 24	J A 25	32	38	J A 54	J A 62	J A 76	J A 82	66	J A 58	J A 94	C	C	J A 60	J A 60	J A 64	J A 50	J A 53	J A 53	J A 89
14	J A 26	J A 54	J A 53	J A 39	E B 14	J A 24	J A 44	J A 49	J A 53	J A 61	J A 66	49	46	61	J A 86	J A 54	J A 45	31	J A 27	J A 29	J A 28	J A 21	J A 25	J A 64
15	J A 28	J A 20	23	18	E B 15	E B 15	31	J A 54	J A 56	J A D 112	A 250	50	E B 45	G 33	G 33	40	38	J A 55	J A 29	J A 18	J A 30	J A 52	J A 54	J A 52
16	J A 29	J A 54	J A 55	J A 27	22	J A 30	J A 36	J A 48	J A 47	J A 66	J A 53	J A 100	J A 125	J A 63	J A 52	J A 69	J A 50	J A 62	J A 69	J A 41	J A 18	J A 64	J A 76	J A 51
17	J A 63	J A 41	J A 44	J A 44	J A 52	J A 26	J A 32	J A 40	J A 90	J A 52	J A 58	J A 80	J A 68	J A 48	48	J A 52	J A 56	J A 40	J A 130	J A 98	J A 63	J A 53	J A 22	J A 67
18	J A 34	J A 28	J A 35	25	J A 21	J A 20	29	J A 54	J A 53	J A 51	J A 63	J A 62	51	J A 59	43	39	J A 48	J A 53	J A 60	J A 40	J A 32	J A 27	J A 44	J A 25
19	22	18	20	22	19	J A 24	J A 48	J A 56	J A 106	J A 114	J A 76	J A 94	J A 73	46	48	43	39	G 25	J A 54	J A 58	J A 33	J A 53	J A 84	J A 80
20	J A 30	J A 27	J A 28	J A 32	J A 25	J A 32	J A 50	J A 84	J A 90	J A 70	J A 49	J A 93	J A 143	G 37	44	J A 61	J A 48	30	23	J A 46	J A 33	J A 31	J A 33	J A 49
21	J A 29	J A 31	24	E B 15	22	J A 25	27	J A 44	38	43	J A 80	38	J A 50	G 37	G 37	43	68	J A 142	J A 105	J A 97	J A 51	J A 85	J A 51	J A 45
22	J A 33	J A 24	J A 29	J A 28	J A 22	J A 24	30	34	40	J A 50	J A 85	J A 117	J A 102	J A 62	63	J A 51	J A 40	J A 38	J A 36	J A 65	J A 36	J A 48	J A 28	J A 23
23	J A 22	J A 27	J A 31	J A 43	J A 25	J A 22	31	38	41	J A E 43	B 45	46	J A 84	J A 47	E B 41	41	G	39	J A 27	J A 47	J A 25	J A 42	50	20
24	J A 24	J A 32	J A 30	J A 28	19	J A 20	28	34	G 32	42	J A 52	E B 46	E B 43	46	48	43	41	J A 50	25	21	24	J A 29	J A 44	J A 22
25	J A 53	J A 39	J A 23	J A 24	J A 24	J A 26	J A 29	34	G 33	E B 50	E B 56	48	J A 49	J A 52	47	J A 65	J A 55	J A 65	J A 51	J A 38	J A 20	22	J A 124	J A 55
26	J A 81	J A 30	J A 32	J A 24	J A 33	J A 27	33	J A 50	J A 84	J A 50	J A 47	61	J A 46	G 38	46	G 30	G 31	31	J A 37	J A 45	J A 49	J A 52	J A 76	J A 59
27	J A 54	J A 18	J A 27	J A 25	E B 12	E B 16	30	J A 51	J A 54	J A 42	G 39	G 38	J A 53	E B 63	J A 52	G 25	J A 51	J A 52	J A 42	42	J A 123	J A 49	J A 101	J A 128
28	J A 85	J A 53	J A 51	J A 32	J A 30	J A 27	28	J A 46	J A 53	J A 64	G 38	J A 54	J A 50	J A 37	G 32	G 30	38	32	21	22	J A 22	27	J A 34	26
29	J A 30	J A E 19	B 15	E B 14	E B 15	J A 24	J A 26	33	J A 49	J A 46	G 33	G 37	G 27	E B 45	G 26	G 32	33	31	21	J A 22	J A 23	J A 32	J A 27	J A 31
30	J A 18	J A 23	J A 26	21	20	16	29	33	G 30	G J A 31	J A 46	J A 55	46	J A 48	G 33	G 31	G 28	31	J A 52	J A 62	J A 63	J A 32	J A E 24	B 16
31	E B 14	E B 13	E B 15	E B 14	J A 19	J A 25	J A 33	J A 36	G 30	J A 46	38	G 37	G 33	G 37	G 28	G 32	G 22	J A 33	J A 27	J A 23	J A 22	J A 32	J A 52	J A 32
	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	30	30	31	31	31	31	31	31	31
MED	J A 47	J A 39	J A 31	J A 28	J A 23	J A 25	J A 32	J A 46	J A 53	J A 56	J A 58	J A 54	J A 53	46	46	43	40	J A 40	50	J A 46	J A 36	J A 49	J A 52	J A 51
U Q	J A 63	J A 54	J A 47	J A 39	J A 33	J A 30	J A 42	J A 56	J A 84	J A 66	J A 78	J A 80	J A 69	J A 61	J A 52	J A 52	J A 51	J A 53	J A 57	J A 64	J A 51	J A 54	J A 81	J A 66
L Q	J A 28	J A 27	24	24	E B 19	20	29	38	41	50	48	46	46	G 37	G 37	G 32	G 36	31	28	J A 30	J A 28	J A 31	J A 32	J A 32

AUG. 2001 foEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG.2001 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	22	23	17	20	20	26	46	46	A A 147	69	53	45	50	52	48	41	63	35	28	20	E B 14	E B 13	20	18
2	25	33	20	18	17	20	31	54	A A 97	50	A A 63	42	44	U Y 35	44	44	37	41	44	32	20	18	E B 15	45
3	36	44	18	E B 15	30	35	28	36	44	62	49	68	57	64	44	U Y 30	G 29	29	42	45	E B 16	50	20	31
4	24	23	44	38	26	45	A A 128	A A 142	75	56	A A 119	46	52	G U 36	Y 29	44	35	30	38	47	44	22	32	26
5	23	37	36	18	E B 15	17	39	73	A A 126	67	52	A A 130	A A 136	U Y 37	44	G 30	G 29	G	50	24	18	48	40	45
6	41	50	32	23	53	A A 84	A A 102	44	44	53	A A 65	51	52	A A 101	A A 111	A A 92	A A 155	40	42	46	39	20	17	24
7	28	E B 16	16	41	19	23	41	46	41	A A 110	A A 98	A A 60	52	G 32	44	G 32	36	42	44	60	24	20	17	16
8	24	28	24	24	E B 15	18	27	34	69	42	50	48	G 38	G 34	G U 33	Y 36	36	G 22	26	20	21	22	41	16
9	17	18	28	22	E B 15	18	26	38	38	41	52	44	G	G	E B 40	42	47	36	40	22	34	E B 16	45	45
10	29	28	E B 15	22	18	18	33	35	52	53	46	47	67	46	43	46	47	37	43	46	30	50	60	49
11	29	35	43	21	18	17	31	48	61	60	A A 103	50	48	60	66	66	70	62	62	41	24	22	40	41
12	64	44	45	22	20	16	26	35	40	54	64	54	64	48	46	38	36	34	45	37	32	18	28	19
13	41	25	17	16	E B 13	E B 16	28	36	51	61	74	52	63	53	92	C	C	56	56	57	43	19	30	42
14	20	33	38	24	E B 14	17	40	40	47	A A 61	66	48	46	58	A A 86	51	42	29	22	E B 15	18	18	E B 16	47
15	17	E B 16	E B 15	16	E B 15	E B 15	28	37	54	A A 112	A A 250	U Y 50	E B 45	G 33	U Y 33	38	37	44	25	18	22	40	18	24
16	22	27	21	E B 15	E B 15	24	32	34	46	48	46	56	A A 125	56	49	64	47	53	50	36	E B 15	21	A A 76	40
17	47	34	30	23	19	E B 16	24	32	77	51	56	76	65	48	47	50	54	40	58	74	51	39	18	23
18	20	18	17	21	E B 14	E B 15	26	A A 54	A A 53	A A 51	A A 63	A A 62	A A 51	A A 59	42	38	39	50	A A 60	22	18	25	E B 13	14
19	E B 16	E B 14	E B 16	E B 14	E B 16	19	44	53	82	A A 114	63	A A 94	70	46	47	41	37	G 25	27	40	17	32	A A 84	A A 80
20	23	18	18	18	18	18	39	52	41	50	44	74	A A 143	G 37	42	58	40	28	22	22	24	20	25	35
21	24	20	E B 15	E B 15	E B 16	18	25	42	34	42	A A 80	38	44	G 35	G 35	42	64	68	66	52	16	42	40	33
22	29	21	25	25	18	16	27	U Y 34	U Y 40	47	75	A A 117	A A 102	61	60	48	40	36	25	27	25	25	18	16
23	E B 14	17	28	22	18	16	29	33	41	41	E B 45	U Y 46	82	42	E B 41	U Y 41	G	U Y 39	21	33	18	23	40	16
24	E B 15	25	23	21	17	17	26	32	G 32	41	50	E B 46	E B 43	46	48	41	40	40	22	E B 16	E B 15	17	18	E B 15
25	40	32	20	20	E B 16	21	29	32	U Y 33	E B 50	E B 56	48	47	49	46	56	52	34	46	36	17	E B 16	18	22
26	46	19	22	19	30	18	31	44	73	46	43	U Y 61	44	U Y 38	43	G 30	G 31	29	32	44	41	30	30	18
27	32	E B 15	18	19	E B 12	E B 16	28	48	52	40	G 39	U Y 38	51	E B 63	47	G 25	49	48	40	40	A A 123	19	A A E B 101	16
28	36	32	44	26	24	E B 15	27	44	48	48	U Y 38	47	47	35	G 31	G 30	36	30	20	E B 16	18	E B 15	28	18
29	23	16	E B 15	E B 14	E B 15	17	G 20	31	40	42	U Y 33	G 37	G 27	E B 45	G U 26	Y 32	33	30	20	16	18	26	22	28
30	E B 15	19	17	18	E B 15	16	26	32	G 30	G 30	45	52	46	47	G 33	G 31	G 27	31	42	41	29	E B 16	E B E B 14	16
31	E B 14	E B 13	E B 15	E B 14	E B 14	20	27	32	G 30	38	U Y 38	G 37	G 33	G 34	G 28	G 30	G 22	28	22	E B 16	E B 16	22	19	21
	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	30	30	31	31	31	31	31	31	31
MED	24	23	20	20	17	18	28	38	47	50	52	50	51	46	44	41	38	36	40	36	21	22	25	24
U Q	36	33	30	23	19	20	39	48	69	61	A A 66	61	65	56	48	48	47	42	46	45	32	30	40	41
L Q	E B 20	E B 18	E B 17	E B 16	E B 15	E B 16	26	34	40	42	45	46	44	G 36	G 35	G 32	G 35	29	25	20	E B 17	E B 18	18	16

AUG.2001 fbEs (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	12	15	16	14	15	16	15	16	15	20	23	24	21	34	39	25	16	15	13	12	14	13	15	15
2	16	13	15	12	15	16	14	17	14	18	20	23	22	26	25	16	15	14	14	15	13	15	15	12
3	16	14	16	15	16	13	16	18	19	19	18	20	40	20	27	22	17	17	15	13	16	16	16	14
4	16	15	15	16	14	16	15	15	17	22	16	21	26	24	24	20	19	16	13	16	20	16	15	16
5	14	16	12	15	15	16	15	17	20	19	24	25	39	28	22	20	19	18	14	15	14	15	12	13
6	15	16	14	16	14	15	14	19	24	22	24	27	22	28	23	17	16	16	16	15	16	15	16	15
7	14	16	15	14	16	14	16	16	19	14	22	27	22	21	28	18	18	14	14	13	15	15	15	12
8	15	14	16	15	15	14	14	18	19	20	27	34	23	29	25	25	17	15	13	15	15	16	12	13
9	15	15	15	16	15	13	14	15	17	19	40	32	29	34	40	21	22	16	15	16	16	16	16	14
10	12	16	15	14	14	15	16	18	17	16	26	38	39	39	21	21	20	16	15	15	15	15	16	16
11	15	15	16	11	16	14	15	17	24	22	21	25	23	24	27	26	18	16	14	16	15	15	15	16
12	16	14	16	12	15	14	13	17	22	21	34	34	40	40	36	20	18	15	12	15	14	16	16	14
13	15	15	11	14	15	16	15	15	18	21	24	35	22	24	22	C	C	14	15	16	16	15	15	16
14	15	15	15	15	14	14	13	15	17	24	26	28	29	26	22	21	18	15	16	15	14	14	16	16
15	16	16	15	14	15	15	15	14	22	28	22	36	45	32	23	21	17	14	16	15	14	16	16	15
16	15	16	15	15	15	16	16	17	17	19	13	30	36	32	33	22	19	15	15	15	15	14	15	14
17	12	16	16	15	16	16	14	15	18	24	23	36	26	26	20	20	17	15	14	15	15	16	16	15
18	14	12	13	16	14	15	14	16	17	22	26	30	30	40	25	21	17	16	16	16	16	13	13	12
19	16	14	16	14	16	13	15	18	21	23	24	25	34	40	22	24	18	16	16	16	14	16	15	12
20	14	16	16	13	15	16	16	18	21	18	22	25	28	25	25	23	22	14	12	15	14	14	15	15
21	15	15	15	15	16	15	14	14	22	21	23	32	28	29	28	22	17	14	15	15	13	15	14	16
22	16	15	14	16	15	14	14	18	14	22	24	35	28	33	27	21	14	14	12	15	15	15	14	12
23	14	15	15	15	15	13	16	15	21	29	45	40	35	34	41	18	18	19	14	15	16	12	16	13
24	15	14	16	15	14	16	14	16	20	23	40	46	43	42	40	21	20	18	15	16	15	15	16	15
25	16	16	16	15	16	16	16	14	30	50	56	36	31	37	24	24	19	19	16	16	15	16	13	13
26	14	16	16	15	15	16	16	16	16	35	25	25	28	28	26	20	16	16	16	14	15	15	16	16
27	14	15	13	15	12	16	14	20	20	21	33	34	38	63	22	18	28	15	15	16	14	16	14	16
28	15	16	14	15	16	16	14	16	19	21	25	28	27	29	21	21	19	17	14	16	14	15	16	16
29	15	14	15	14	15	13	15	16	20	18	24	24	22	45	18	26	15	14	15	15	15	16	16	15
30	15	16	16	14	15	11	16	16	20	21	26	41	29	23	21	19	16	14	12	16	15	15	14	16
31	14	13	15	14	14	14	14	14	15	18	18	25	21	29	20	16	15	15	15	16	16	16	16	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	30	30	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	15	16	19	21	24	30	28	29	25	21	18	15	15	15	15	15	15	15
U Q	16	16	16	15	16	16	16	18	21	23	26	35	36	37	28	22	19	16	15	16	16	16	16	16
L Q	14	14	15	14	14	14	14	15	17	19	22	25	23	26	22	20	16	14	14	15	14	15	14	13

AUG. 2001 fmin (0.1MHz) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG.2001 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	F	F	289	286	F	R 282	314	R 361	A	288	288	279	273	291	R 276	288	292	302	301	288	271	281	R 272	288
2	R 297	289	274	268	266	S 302	309	329	A	U 315	R	A	R 306	R 284	289	296	302	296	292	292	275	285	285	R 281	R 298
3	R 269	R 285	283	R 264	279	R 290	334	336	317	308	300	R	292	297	302	295	299	303	287	289	R 268	R 267	F	R 298	269
4	266	265	R 264	R	302	337	A	A	R 298	310	A	287	283	278	R 280	297	292	297	296	293	293	288	R 266	276
5	267	R 264	R 279	S 298	296	R 296	331	314	A	318	R 303	A	A	278	287	300	302	289	291	276	R 280	R 282	R 301	268
6	R 260	R 252	273	288	297	A	A	282	300	318	A	293	297	A	A	A	A	300	310	270	278	284	R	V 259
7	R 265	R 267	R 281	R 250	R 255	F	265	279	294	A	A	A	267	285	275	286	298	298	289	284	R 249	R 260	272	R 260
8	S 275	264	286	287	279	287	289	298	328	306	R 319	R 257	R 281	R 282	287	281	287	286	293	293	293	287	R 258	280
9	R 275	270	273	277	281	322	339	320	318	R 323	270	279	298	290	299	298	303	293	304	292	300	275	R 267	R 264
10	R 279	R 255	271	268	284	296	313	306	301	295	U R 298	R 282	R 262	279	285	280	284	290	298	286	301	R 269	R 266	R 267
11	285	266	R 286	F 289	R 290	F 321	322	314	307	301	A	286	265	284	288	289	294	300	293	289	R 274	271	274	R 272
12	R 312	R 283	R 292	R 286	F	R 301	322	331	315	R 294	287	282	278	284	283	277	296	302	307	291	278	R 264	R 279	R 272
13	265	S 278	R 289	F	F	R 301	322	325	330	306	286	275	269	276	272	C	C	296	291	275	278	283	R 269	R 270
14	292	281	284	R 282	270	273	277	321	S 278	A	R 273	298	308	305	A	303	313	304	295	294	R 280	278	R 280	R 268
15	R 276	299	R 296	263	265	276	306	296	R 263	A	A	284	300	305	304	304	307	289	298	313	R 303	273	S 280	S 277
16	S 266	261	289	R 289	281	286	316	302	296	271	310	289	A	288	303	302	307	303	319	307	R 283	275	A	R 277
17	R 277	282	R 271	276	270	272	R 312	315	332	310	281	A 264	279	293	294	287	302	303	307	305	R 270	R 275	R 264	R 249
18	R 254	R 262	S 307	261	R 237	227	224	A	A	A	A	A	A	A	256	R 264	R 287	294	A	R 292	275	R 252	254	259
19	268	274	271	283	296	292	305	323	335	A	273	A	283	290	298	302	309	305	290	295	317	R 268	A	A
20	285	R 294	292	270	267	297	329	331	323	319	317	303	A	303	294	298	301	301	296	305	316	280	283	271
21	284	289	U R 293	277	296	305	323	356	356	299	A	288	280	281	280	294	303	299	297	R 292	281	279	285	R 275
22	R 291	289	286	266	R 283	268	318	321	333	318	R 284	A	A	285	284	287	302	311	301	311	278	R 259	274	284
23	275	280	275	266	291	291	314	282	297	292	285	R 280	285	291	291	293	302	303	291	299	R 295	263	F	281
24	289	286	292	R 279	284	304	334	322	310	304	289	288	300	294	285	303	305	313	303	293	291	281	277	R 284
25	296	295	288	289	307	303	324	327	314	301	310	302	280	278	286	293	293	303	303	302	293	292	R 289	R 258
26	F	288	285	R 300	R 271	F	F	301	R 315	322	296	281	281	285	294	286	291	298	298	293	311	295	R 253	R 259
27	R 259	282	280	R 277	274	291	338	319	302	296	305	296	284	291	283	289	293	303	308	315	A	R 270	A	R 273
28	R 269	R 269	R 282	R 305	R 290	273	290	310	314	321	279	267	271	286	293	291	290	298	313	292	284	259	265	R 272
29	U R 273	261	280	285	272	275	328	343	319	302	307	299	302	287	299	300	309	294	306	297	275	287	265	R 270
30	275	284	289	R 296	295	281	312	335	338	318	297	300	281	288	292	297	295	300	306	292	R 307	296	267	283
31	280	269	249	259	302	R 325	336	331	301	295	290	289	274	278	280	288	300	303	305	294	279	R 271	286	R 294
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	31	29	28	28	28	29	27	26	23	26	26	29	29	29	29	31	30	31	30	30	26	30
MED	275	279	284	279	282	292	317	321	314	306	290	288	281	287	287	293	300	300	298	293	282	276	R 273	R 272
U Q	285	286	289	288	296	302	328	331	328	318	305	296	297	291	294	300	303	303	306	299	295	284	R 281	280
L Q	266	265	274	267	270	278	308	304	300	296	284	280	274	282	282	287	292	294	293	288	278	R 269	R 266	R 267

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	A	A	A	A	386	A	A	329	U L 312	A	L						
2							L	A	A	A	A	L 355	U L 381	385	L 327	U L 353	L	L	A					
3							L	L	L	A	A	A	A	A	U L 367	365	R 383	L						
4						A	A	A	A	A	A	L 359	A	L 362	L 345	L 353	U L 349	L						
5							A	A	A	A	A	A	A	U L 363	362	L	L 354							
6						A	A	A	332	A	A	A	A	A	A	A	A	A	A					
7						A	A	A	363	A	A	A	A	358	L 338	354	U L 333	A	A					
8							L	L	A	L 370	A	U L 320	U L 359	R 358	U L 355	U L 336	L 349	L	L					
9									L	L 367	U L 330	350	390	360	U L 352	L 348	A	L						
10								L	A	A	371	382	A	365	341	349	A	A	A					
11							L	A	A	A	A	R 334	L 347	A	A	A	A	A	A					
12								L	L	A	A	A	A	L	349	L 328	L 327	L						
13									A	A	A	L	A	A	A	C	C	A						
14						L	A	L	U L 305	A	A	L 347	L 355	A	A	A	A	L						
15							L 336	U L 346	A	A	A	A	359	U L 348	L 350	L	L	A	L					
16							L	L	L	L 326	L 347	A	A	A	A	A	A	A	A					
17							L	L	A	A	A	A	A	371	U L 333	A	A	A						
18						260	U L 327	A	A	A	A	A	A	A	327	R U L 349	A	A	A					
19							A	A	A	A	A	A	A	L 327	U L 343	L	L	L						
20								A	L	A	L 357	A	A	L 368	L 350	A	L	L						
21								A	L	L	A	L	U L 345	L 345	L 338	L 342	A	A	A					
22							L	A	L	A	A	A	A	A	A	L 330	L	L						
23							L	L	L	L	L 371	R	A	U L 368	L 369	A	L	A						
24									L	L	L	L	L 363	L	L	L	L	A						
25								L	L	B	B	L	U L 339	L	U L 323	A	A	L						
26								A	A	L	U L 376	A	L 344	L 341	L	L	L	L						
27								A	A	L	L	L	L	B	L	L 337	A	A						
28							L	L	A	L	L 343	L 350	L 335	U L 341	L	L	L	L						
29								L	L	L	L 351	L 347	U L 383	L	L 353	L	L							
30									L	L	L	L	L	U L 330	U L 364	L	L	L						
31									L	L	U L 330	L 342	L	U L 340	L 319	L 323	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	2	1	3	3	9	11	12	17	21	14	6							
MED						260	L U 332	L U 346	332	L 367	L 351	L 350	L 357	L 358	L 345	L 345	L 349							
U Q									363	L 370	L 371	359	L 372	366	L 354	353	354							
L Q									U L 305	L 326	U L 336	L 342	L 344	U L 341	L 331	L 330	L 333							

AUG. 2001 M(3000)F1 (0.01) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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							250	232	A	352	348	348	370	330	380	354	340	282						
2							300	274	A	306	A	344	328	380	340	326	302	306	284					
3							250	254	270	E A 328	336	E A 384	344	328	324	314	302	334						
4						264	A	A	E A 406	284	A	360	356	348	348	320	310	294						
5							260	E A 328	A	E A 312	326	A	A	382	350	312	298							
6						A	A	370	328	E A 316	A	382	382	A	A	A	A	300	278					
7						360	376	344	328	A	A	A	424	388	404	380	338	304	314					
8							304	302	268	302	302	498	400	364	356	350	348	316	288					
9									294	288	396	380	326	352	320	328	310	306						
10								280	310	298	338	386	E A 468	388	366	396	380	304	306					
11							282	274	296	292	A	338	372	346	328	328	330	E A 310	E A 322					
12								244	284	344	E A 354	348	360	316	342	350	320	292						
13									274	E A 312	E A 384	364	E A 348	344	E A 454	C	C	296						
14						348	348	282	426	A	E A 458	340	318	318	A	314	290	282						
15							294	304	E A 432	A	A	380	338	328	328	310	298	304	284					
16							270	268	308	382	312	314	A	340	312	310	294	292	266					
17							278	284	E A 288	E A 284	390	A	E A 380	342	346	356	312	284						
18						538	636	A	A	A	A	A	A	A	490	466	370	334	A					
19							262	262	E A 310	A	E A 390	A	340	316	318	302	306	294						
20								252	270	272	302	E A 330	A	316	326	310	302	288						
21								232	240	262	A	316	358	354	348	308	298	E A 320	E A 318					
22							268	254	266	278	E A 386	A	A	340	342	338	296	280						
23							268	282	272	304	286	272	E A 358	302	318	284	316	284						
24									264	276	330	320	304	300	334	306	276	264						
25								250	304	296	288	294	356	360	334	310	296	278						
26								276	258	250	316	338	336	326	310	312	318	292						
27								238	250	294	272	280	366	330	330	330	298	280						
28							298	286	266	250	336	382	352	328	322	318	320	298						
29								238	284	292	304	322	288	346	326	290	290							
30									250	268	298	304	334	328	318	314	306	280						
31									298	306	308	316	352	346	320	310	290							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	16	24	27	26	23	25	26	29	29	29	29	28	9					
MED						354	280	272	277	290	U 317	339	350	340	332	314	306	293	286					
U Q						449	302	285	310	E A 312	E A 384	380	370	353	349	344	320	305	E A 316					
L Q						306	265	251	266	278	302	316	336	327	321	310	297	283	281					

AUG. 2001 h'F2 (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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 342	E A 316	270	282	280	E A 228	A	A	A	A	A	222	A	A	E A 316	E A 258	A	E A 246	E A 254	260	258	280	E A 290	278
2	E A 280	E A 300	E A 304	E A 296	296	266	E A 240	A	A	A	A	212	218	210	E A 284	E A 274	E A 246	A	A	E A 288	E A 282	268	278	E A 278
3	E A 328	E A 340	274	E B 304	E A 326	E A 274	E A 240	E A 236	E A 256	A	A	A	A	A	E A 246	E A 242	212	238	E A 274	E A 306	E B 288	E A 354	244	E A 242
4	E A 324	E A 334	E A 378	E A 296	E A 256	A	A	A	A	A	A	230	A	200	222	E A 252	E A 250	E A 234	E A 274	E A 282	E A 284	260	E A 312	294
5	E A 300	E A 364	E A 318	254	240	250	A	A	A	A	A	A	A	200	238	E A 256	226	E A 244	E A 296	E A 268	266	E A 306	260	E A 332
6	E A 362	E A 424	E A 320	256	E A 398	A	A	A	E A 276	A	A	A	A	A	A	A	A	A	A	E A 306	E A 314	E A 284	278	E A 360
7	E A 340	304	292	E A 402	E A 334	A	A	A	244	A	A	A	A	246	262	242	234	A	A	E A 364	E A 340	E A 306	E A 296	E A 308
8	E A 314	E A 318	E A 286	284	290	268	246	232	A	208	A	E A 250	226	226	234	236	222	238	260	254	254	E A 266	E A 350	252
9	282	300	E A 328	E A 292	264	234	230	E A 236	228	218	E A 284	234	220	218	E B 216	228	A	E A 252	E A 268	252	E A 260	250	E A 348	E A 338
10	E A 310	E A 346	292	E A 310	294	262	250	224	A	A	216	228	A	234	240	E A 284	A	A	A	E A 286	242	E A 392	E A 400	E A 354
11	E A 308	E A 354	E A 318	E A 288	E A 268	262	E A 244	A	A	A	A	E A 298	E A 268	A	A	A	A	A	A	284	E A 278	E A 304	E A 316	E A 340
12	E A 330	E A 320	E A 304	244	E A 270	242	234	E A 226	210	A	A	A	A	E A 302	E A 252	216	E A 240	236	262	E A 274	E A 286	E A 286	E A 296	E A 284
13	E A 368	E A 288	270	E A 322	E B 306	252	240	E A 234	A	A	A	E A 312	A	A	A	C	C	A	E A 292	E A 342	E A 316	266	E A 302	E A 348
14	E A 266	E A 308	E A 304	278	292	E A 304	A	E A 268	E A 378	A	A	E A 284	E A 236	A	A	A	A	236	E A 260	262	256	266	278	E A 368
15	E A 284	264	254	290	308	282	244	E A 248	A	A	A	A	228	228	224	224	228	A	E A 262	250	246	E A 326	E A 310	E A 334
16	E A 320	E A 304	E A 274	268	264	E A 296	E A 254	E A 226	E A 276	E A 258	E A 252	A	A	A	A	A	A	A	A	256	228	E A 262	A	E A 346
17	E A 368	E A 338	E A 316	E A 318	E A 306	E A 286	238	220	A	A	A	A	A	E A 252	E A 254	A	A	A	E A 272	E A 330	E A 312	E A 328	E A 304	E A 352
18	E A 368	E A 324	252	E A 352	E B 436	E B 374	E A 284	A	A	A	A	A	A	A	E A 290	238	A	A	A	E A 282	E A 282	E A 344	E A 330	E A 296
19	298	296	286	272	252	E A 276	A	A	A	A	A	A	A	E A 262	E A 270	E A 242	E A 236	238	E A 266	E A 284	236	E A 294	A	A
20	270	264	272	E A 316	E A 318	E A 278	246	A	220	A	216	A	A	216	232	A	E A 250	246	260	256	226	238	E A 276	E A 306
21	E A 288	256	264	272	264	248	240	A	206	200	A	204	210	222	224	E A 258	A	A	A	E A 292	248	E A 276	E A 296	E A 330
22	E A 272	E A 272	E A 300	E A 350	E A 288	284	E A 242	A	E A 232	A	A	A	A	A	A	E A 318	E A 262	A	258	242	236	E A 336	E A 288	242
23	288	276	E A 298	308	268	258	E A 250	230	E A 236	206	212	R	A	210	212	A	226	A	268	266	236	E A 298	E A 370	272
24	270	280	252	224	252	272	236	224	216	210	E A 272	236	220	E A 242	E A 270	E A 236	E A 252	A	254	246	242	E A 272	272	270
25	E A 288	E A 286	E A 288	262	244	250	244	228	234	B	B	E A 252	220	E A 280	E A 270	A	A	E A 254	258	254	242	242	254	E A 324
26	E A 340	258	E A 282	254	E A 308	E A 298	250	A	A	E A 224	216	A	E A 240	222	238	240	234	248	268	292	254	240	E A 328	E A 310
27	E A 356	292	290	278	282	282	246	A	A	222	218	E A 246	E A 278	B	E A 258	E A 260	A	A	248	234	A	E A 310	A	E B 312
28	E A 358	E A 344	E A 324	246	E A 286	E B 294	246	E A 276	A	E A 230	210	250	E A 256	U R 260	244	232	238	E A 254	254	244	252	258	E A 334	E A 294
29	E A 330	E A 298	272	262	280	E A 308	244	222	224	206	198	220	218	230	220	224	232	248	266	248	262	282	E A 290	E A 288
30	276	E A 282	264	244	264	256	232	232	214	220	224	E A 272	236	246	232	U R 256	228	E A 240	E A 262	E A 276	248	238	246	278
31	274	302	354	324	250	228	E A 248	222	212	202	204	240	234	212	230	230	240	256	268	252	258	E A 290	266	240
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	28	24	17	16	12	12	17	15	21	25	22	18	16	23	31	30	31	28	30
MED	E A 310	E A 302	E A 290	U 265	U 269	U 258	242	226	220	210	214	U 226	223	222	230	234	230	242	260	U 256	U 246	E A 282	E A 296	E A 307
U Q	E A 340	E A 334	E A 316	E A 310	E A 306	E A 285	E A 247	E A 236	E A 250	E A 223	E A 238	E A 262	E A 240	E A 249	E A 266	E A 258	E A 246	E A 250	E A 268	E A 288	E A 282	E A 306	E A 322	E A 338
L Q	282	282	272	262	264	251	240	224	215	206	211	225	220	214	227	232	228	238	258	252	242	262	277	278

AUG. 2001 h'F (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	120	A	A	120	124	118	120	B	120	122	126	120					
2						122	A	A	A	A	A	A	A	126	118	126	122	122	120					
3						B	A	A	A	124	A	A	B	120	128	124	130	126	122					
4						B	A	124	A	120	A	A	A	126	120	A	124	124	122					
5						B	126	122	120	116	A	A	A	120	122	124	124	126	118					
6						B	124	124	126	122	A	A	A	A	A	A	A	A	122					
7						B	122	A	122	A	A	A	126	118	124	124	120	122	122					
8						B	116	120	A	A	A	A	118	120	120	A	118	122	122					
9						128	122	126	122	120	B	116	120	120	B	120	116	122	A					
10						B	118	124	122	A	A	A	A	A	A	124	120	122	120					
11						B	124	120	122	124	A	A	A	A	A	A	A	A	A					
12						B	118	116	122	124	A	A	A	B	A	A	A	A	A					
13						B	120	114	A	A	A	A	A	A	A	C	C	A	114					
14						B	124	A	A	126	124	124	124	124	124	126	120	122	A					
15						B	118	124	A	A	A	A	B	122	A	124	120	A	116					
16						B	118	122	122	A	A	A	A	A	A	A	A	A	A					
17						B	120	116	A	A	A	A	A	A	124	124	122	122	B					
18						B	120	124	124	124	122	120	118	B	122	122	124	124	B					
19						B	120	124	A	A	A	122	124	B	126	126	122	124	B					
20						B	A	A	A	A	A	A	A	124	122	120	A	A	124					
21						B	118	A	124	A	A	A	A	118	E A 130	122	A	124	B					
22						B	120	120	A	122	A	A	A	A	A	A	A	A	B					
23						B	118	128	A	A	B	120	A	A	B	122	120	120	114					
24						B	124	124	124	126	B	B	B	B	B	124	126	124	B					
25						B	A	120	122	B	B	A	A	A	118	120	118	A	B					
26						B	120	122	A	A	A	A	A	120	A	122	124	124	B					
27						B	118	124	A	A	120	122	A	B	124	124	122	124	B					
28						B	118	122	122	A	120	A	120	A	122	120	120	120	B					
29						B	126	A	A	A	120	118	118	B	118	124	120	124	124					
30						B	126	116	120	122	A	B	118	A	118	122	120	118	B					
31						B	120	118	120	A	A	A	122	126	124	124	122	120	B					
	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	26	24	15	12	6	8	11	14	18	23	23	22	14					
MED						125	120	122	122	123	120	121	120	120	122	124	122	123	121					
U Q							124	124	124	124	122	123	124	124	124	124	124	124	122					
L Q							118	120	122	121	120	119	118	120	120	122	120	122	118					

AUG. 2001 h'E (KM) COMMUNICATIONS RESEARCH LABORATORY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 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	110	108	106	108	106	106	112	114	104	108	118	130	126	120	122	128	116	128	118	116	120	98	124	120
2	102	98	100	100	100	126	110	106	102	104	108	110	108	110	148	136	122	120	112	112	110	110	108	104
3	106	108	106	106	104	104	106	108	110	112	108	114	122	116	130	112	110	162	126	114	112	114	110	108
4	104	100	102	106	108	108	112	112	106	112	104	110	102	104	102	100	134	140	118	108	110	106	108	106
5	102	100	102	108	B	126	120	114	110	110	106	108	108	108	140	108	108	G	116	114	118	110	110	110
6	108	104	124	122	118	112	112	112	112	110	106	106	110	106	106	104	102	120	114	110	110	108	110	110
7	106	114	110	108	116	120	118	110	118	106	106	108	130	110	138	110	146	124	116	114	112	110	110	110
8	106	108	106	104	114	134	120	122	104	108	110	110	110	106	108	108	120	110	122	98	98	114	110	114
9	110	108	106	104	108	138	140	130	128	124	114	118	G	G	B	134	124	118	108	112	110	112	112	106
10	104	106	96	106	110	126	134	128	108	106	110	108	104	112	110	130	126	124	114	110	106	108	108	108
11	100	96	96	96	96	128	132	116	110	112	106	110	110	108	108	104	104	102	100	100	102	102	108	108
12	108	108	106	106	110	140	140	132	122	116	112	112	112	114	110	110	110	132	116	102	102	114	110	106
13	108	108	108	106	116	102	122	116	110	106	106	106	106	106	102	C	C	116	110	110	116	106	106	108
14	108	104	104	106	B	130	120	116	110	120	122	132	130	122	116	118	122	124	100	102	106	106	102	102
15	98	98	96	96	B	B	126	120	110	106	104	110	B	114	110	128	134	102	116	100	100	108	104	112
16	100	114	102	106	122	120	116	124	118	110	110	106	104	108	108	122	102	116	116	106	106	104	100	102
17	100	100	110	116	118	116	122	120	106	106	106	106	108	110	148	122	118	118	108	100	102	100	110	116
18	108	112	114	132	130	132	126	114	118	126	112	114	116	110	118	118	128	122	118	110	110	108	110	110
19	116	104	126	118	126	118	114	112	108	108	106	110	116	124	146	138	128	110	114	108	104	102	104	100
20	98	114	114	114	118	116	110	108	112	106	110	108	106	110	118	110	108	108	124	110	108	108	100	102
21	98	102	102	B	116	126	120	108	118	110	104	108	108	106	106	142	120	112	108	108	114	106	102	104
22	100	100	98	94	96	124	118	124	112	114	106	104	100	104	100	102	102	100	98	116	98	120	140	106
23	110	106	104	104	110	116	122	120	106	108	B	112	104	108	B	134	G	118	116	108	112	110	110	110
24	106	102	102	104	96	100	160	118	110	128	114	B	B	142	134	134	128	122	114	116	110	104	106	108
25	102	102	98	96	96	102	102	132	110	B	B	108	112	110	132	120	114	110	106	104	102	98	104	102
26	106	102	100	100	94	96	132	120	106	110	104	102	104	104	102	104	108	140	114	108	110	110	106	104
27	102	104	100	100	B	B	124	114	110	110	110	110	110	B	126	104	120	116	112	108	110	116	110	106
28	108	106	104	106	106	108	130	116	112	106	110	108	108	108	108	108	124	118	116	110	100	104	106	102
29	98	100	B	B	B	104	104	104	106	104	104	106	108	B	100	112	116	140	138	102	108	102	102	102
30	102	98	96	100	100	126	142	128	110	110	112	110	122	110	110	106	104	130	116	110	110	108	106	B
31	B	B	B	B	116	116	118	112	106	110	106	104	106	114	104	106	100	98	100	98	112	102	104	100
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	28	26	29	31	31	31	30	29	30	28	28	29	30	29	30	31	31	31	31	31	30
MED	105	104	104	106	110	118	120	116	110	110	108	109	108	110	110	112	118	118	114	108	110	108	108	106
U Q	108	108	107	108	116	126	130	122	112	112	111	110	114	114	131	128	125	124	116	112	112	110	110	110
L Q	100	100	100	100	100	107	112	112	106	106	106	106	106	107	106	106	108	110	108	102	102	104	104	102

IONOSPHERIC DATA STATION Kokubunji

AUG. 2001 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

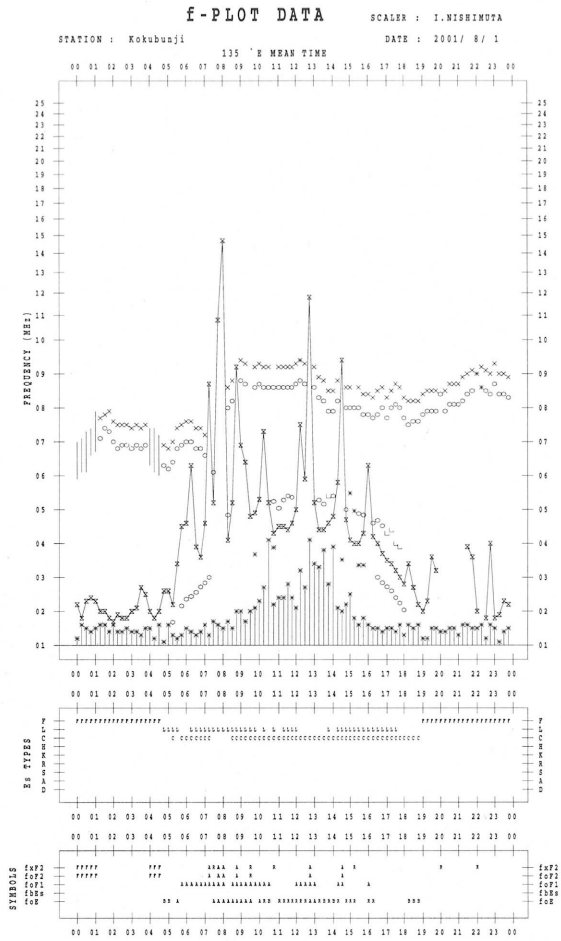
LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHz TO 25.0MHz IN 24.0SEC IN MANUAL SCALING

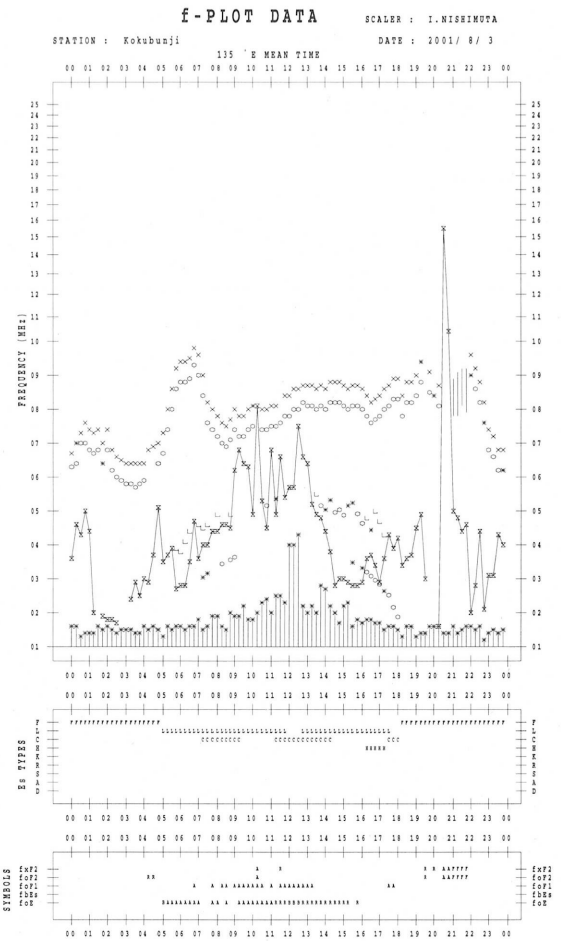
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 2	F 2	F 3	F 2	F 3	L 2	C 3	CL 21	L 2	LC 21	C 2	C 1	CL 11	C 2	C 1	CL 11	CL 21	CL 21	C 3	F 3	F 2	F 2	FF 12	FF 12
2	F 3	F 4	F 4	F 2	F 2	C 1	L 2	L 3	L 3	L 2	L 2	L 1	L 1	L 1	H 1	HL 11	CL 21	CL 21	CL 31	F 3	F 3	F 2	F 3	F 3
3	F 2	F 4	F 2	F 2	F 4	L 4	L 2	L 2	CL 21	CL 21	L 2	L 1	C 2	CL 21	CL 11	L 1	L 1	HL 11	C 3	F 3	F 2	F 5	F 3	F 5
4	F 3	F 4	F 4	F 4	F 4	L 4	L 4	CL 42	L 3	CL 21	L 2	L 1	L 1	L 1	L 1	L 1	CL 21	HL 11	CL 31	F 5	F 4	F 3	F 3	F 2
5	F 3	F 5	F 3	F 2		C 2	CL 21	CL 31	C 2	CL 21	L 2	L 2	L 2	L 1	HL 11	L 1	L 1		C 3	F 5	FF 32	F 3	F 3	F 5
6	F 5	F 5	FF 22	FF 14	F 5	L 4	CL 41	CL 21	CL 21	CL 21	L 2	L 2	L 2	L 2	L 3	L 2	L 2	CL 22	C 3	F 5	F 4	F 5	F 2	F 5
7	F 2	F 3	F 3	F 4	F 2	C 3	CL 41	L 3	CL 11	L 2	L 2	L 1	CL 11	L 1	HL 11	L 1	HL 11	CL 21	CL 31	F 5	F 3	F 3	F 2	F 2
8	F 2	F 3	F 2	F 3	F 2	C 1	C 2	CL 11	L 2	L 1	L 1	L 1	L 1	L 1	L 1	L 1	CL 11	L 1	CL 21	F 3	F 2	F 2	F 5	F 2
9	F 2	F 2	F 4	F 3	F 1	CL 21	HL 11	HL 11	CL 11	CL 11	C 1	C 1				CL 11	C 1	CL 11	L 4	F 3	F 3	F 2	F 6	F 4
10	F 4	F 3	F 2	F 4	F 2	C 1	C 4	CL 11	CL 31	L 2	L 1	L 1	L 1	L 1	L 1	HL 11	CL 11	CL 21	C 4	F 3	F 3	F 3	F 6	F 5
11	F 3	F 5	F 7	F 2	F 3	CL 21	CL 21	C 2	CL 21	CL 21	L 2	L 2	L 1	L 2	L 2	L 2	L 2	L 3	L 4	F 5	F 4	F 4	F 4	F 3
12	F 4	F 4	F 5	F 3	F 3	HL 11	H 2	H 1	CL 11	CL 21	L 2	L 2	L 2	L 1	L 1	L 1	L 1	CL 12	CL 33	F 6	F 6	FF 22	F 2	F 2
13	F 4	F 6	F 3	F 1	F 1	L 1	C 1	C 2	L 2	L 2	L 2	L 1	L 2	L 2	L 2			CL 32	C 4	F 5	F 6	F 3	F 4	F 3
14	F 3	F 3	F 3	F 4		H 3	CL 21	CL 31	L 2	CL 21	CL 11	CL 11	CL 11	CL 11	CL 21	CL 21	CL 11	CL 11	L 2	F 2	F 3	F 3	F 2	F 3
15	F 2	F 1	F 2	F 1			C 2	CL 21	L 2	L 2	L 3	L 1		L 1	L 1	CL 11	HL 11	L 2	C 2	F 2	F 3	F 3	F 2	FF 14
16	F 5	FF 23	F 4	F 2	F 1	C 3	C 2	CL 21	CL 21	L 1	L 1	L 2	L 2	L 2	L 2	CL 21	L 2	CL 33	CL 43	F 4	F 1	F 4	F 4	F 5
17	F 4	F 6	FF 24	FF 14	FF 23	CL 22	C 2	C 1	L 2	L 2	L 2	L 2	L 2	L 1	HL 11	CL 11	CL 21	CL 31	L 4	F 4	F 4	F 5	F 3	F 3
18	F 3	F 3	F 3	F 2	F 1	C 2	C 2	C 2	CL 21	CL 11	CL 21	CL 21	C 1	C 1	CL 11	CL 11	CL 11	CL 21	C 3	F 6	F 3	F 3	F 3	F 2
19	F 2	F 1	F 2	F 1	F 1	C 3	CL 21	CL 31	L 2	L 2	L 2	LC 21	CL 11	C 1	HL 11	CL 11	CL 11	L 1	C 3	FF 33	F 3	F 4	F 4	F 5
20	F 4	FF 22	FF 32	F 4	F 3	C 2	L 2	L 3	L 2	L 1	L 1	L 2	L 2	L 1	CL 11	C 2	L 1	L 2	CL 11	F 4	F 3	F 3	F 4	F 4
21	F 4	F 3	F 1		F 1	C 3	C 2	L 2	CL 11	L 1	L 2	L 1	L 1	L 1	L 1	HL 11	CL 22	CL 31	L 3	F 5	F 2	F 3	F 3	F 3
22	F 3	F 3	F 3	F 5	F 2	CL 11	CL 21	C 1	L 1	CL 21	L 3	L 2	L 3	L 2	L 2	L 2	LC 22	L 3	L 3	FF 23	F 5	FF 12	FF 11	F 2
23	F 1	F 2	F 4	F 2	F 2	C 1	C 3	C 1	L 1	L 1		L 1	L 2	L 1		CL 11		C 2	C 2	F 4	F 3	F 2	F 4	F 2
24	F 1	F 3	F 4	F 4	F 1	L 1	HL 11	CL 11	L 1	CL 11	C 1			H 1	H 1	CL 11	CL 11	CL 21	C 3	F 1	F 1	F 2	F 2	F 3
25	F 5	F 4	F 2	F 3	F 2	L 2	L 2	CL 11	L 1			L 1	L 1	L 1	CL 11	C 2	C 2	L 2	L 3	F 5	F 2	F 2	F 3	F 2
26	F 4	F 2	F 2	F 5	F 4	L 2	C 2	CL 21	L 2	L 2	L 1	L 2	L 1	L 1	L 1	L 1	L 1	HL 11	C 3	F 4	F 5	F 2	F 3	F 2
27	F 3	F 1	F 2	F 1			C 2	CL 21	L 2	L 1	L 1	L 1	L 1		CL 11	L 1	C 1	CL 21	C 3	F 4	F 4	F 4	F 4	F 3
28	F 3	F 4	F 5	F 5	F 6	L 2	HL 21	CL 21	CL 21	L 1	L 1	L 1	L 1	L 1	L 1	L 1	CL 11	C 2	C 2	F 1	F 2	F 2	F 3	F 2
29	F 2	F 2				L 2	L 3	L 2	L 2	L 1	L 1	L 1	L 1		L 1	L 1	C 1	HL 11	H 1	F 2	F 2	F 5	F 3	F 4
30	F 2	F 2	F 2	F 2	F 1	C 1	H 1	C 1	L 1	L 1	L 1	L 1	CL 11	L 1	L 1	L 1	L 1	CL 22	C 3	FF 34	FF 12	F 2	F 2	
31					F 2	C 3	C 3	CL 21	L 1	L 1	L 2	L 1	L 1	L 1	L 1	L 1	L 1	LC 21	L 3	F 2	F 1	F 3	F 4	F 3
	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																								

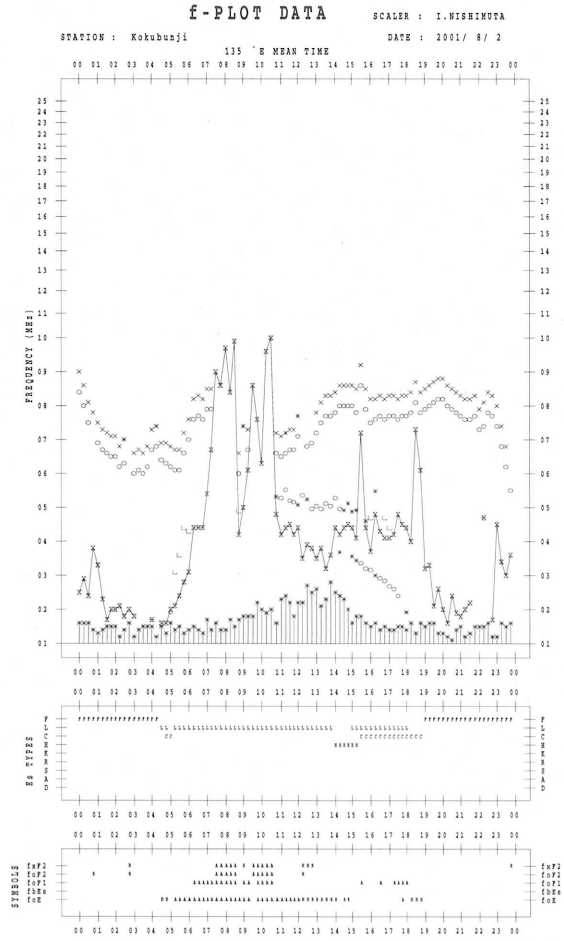
AUG. 2001 TYPES OF Es COMMUNICATIONS RESEARCH LABORATORY, JAPAN

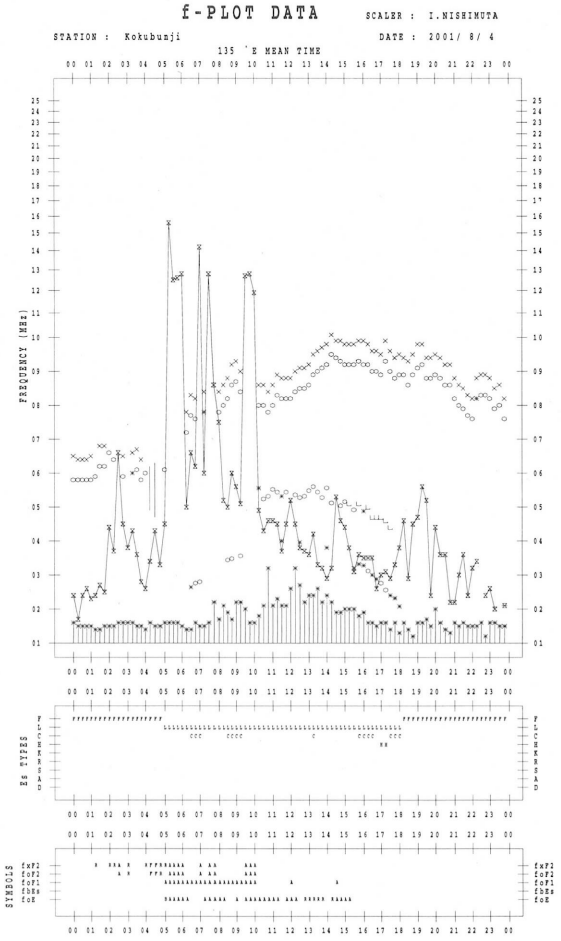
f-PLOTS OF IONOSPHERIC DATA

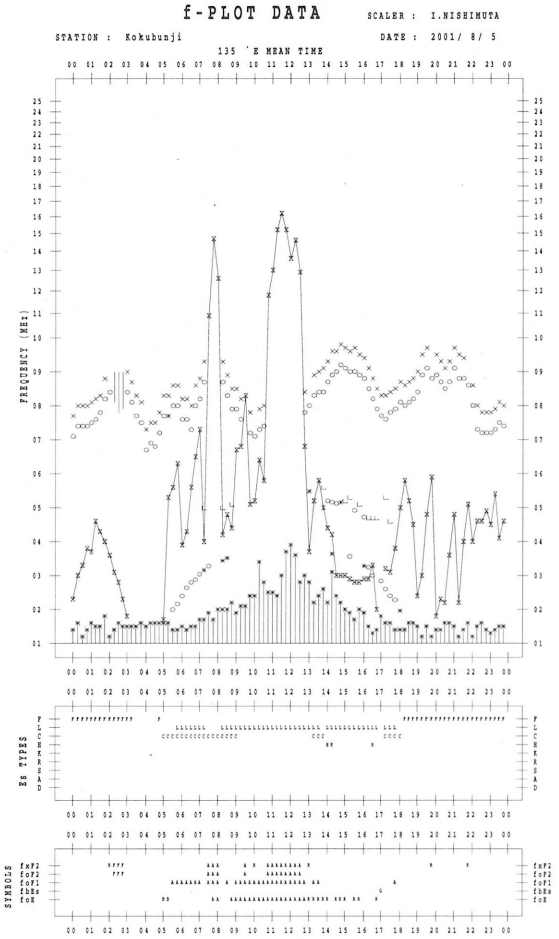
KEY OF f-PLOT	
	SPREAD
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

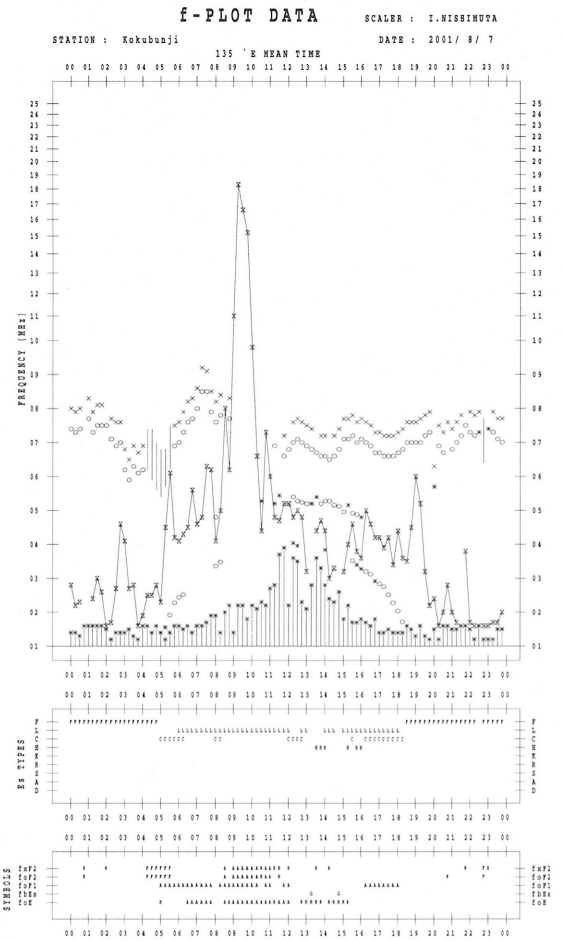

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 1
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

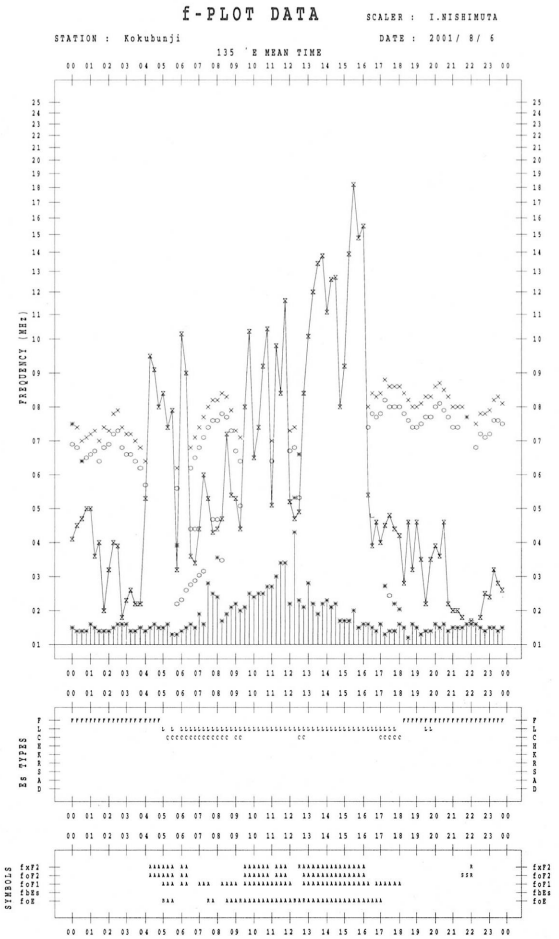

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 3
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

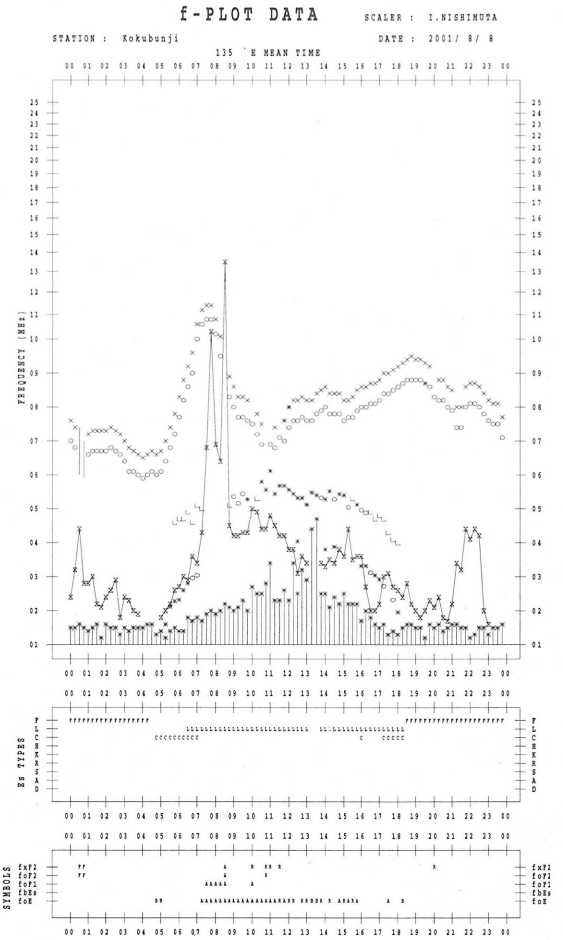

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 2
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

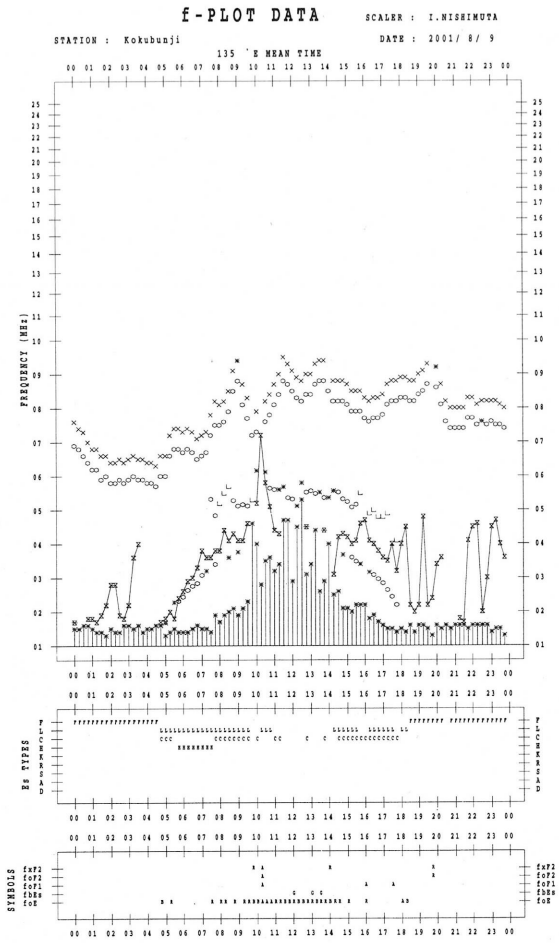

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 4
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

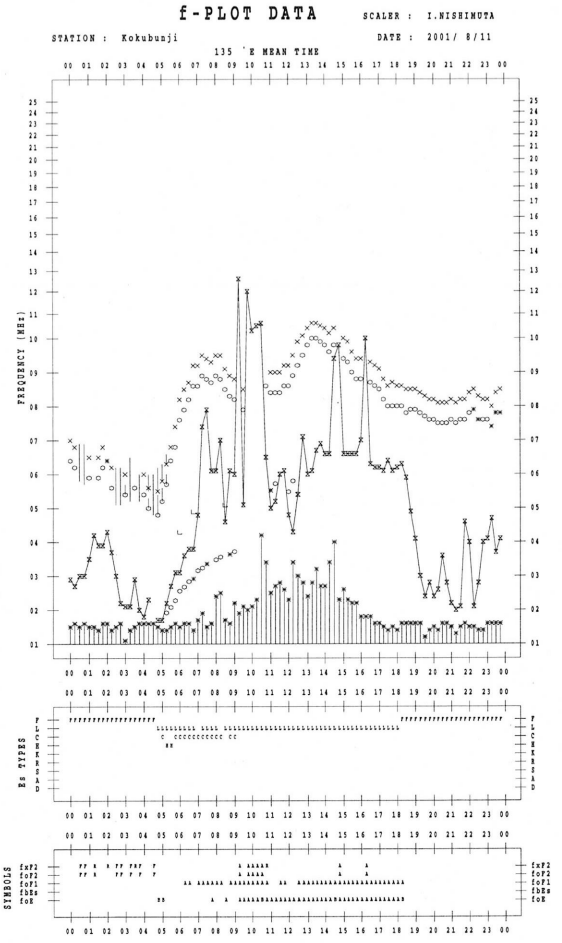

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 5
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

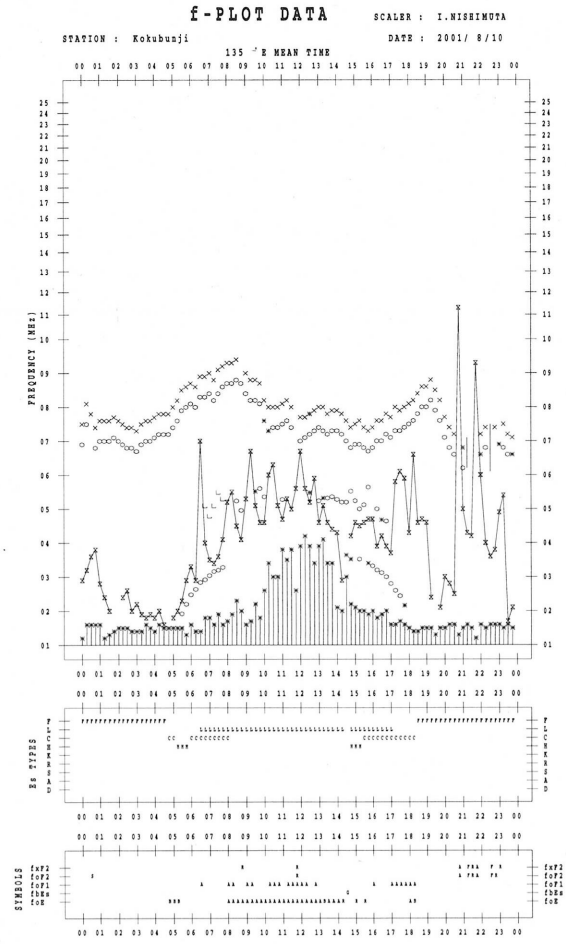

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 7
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

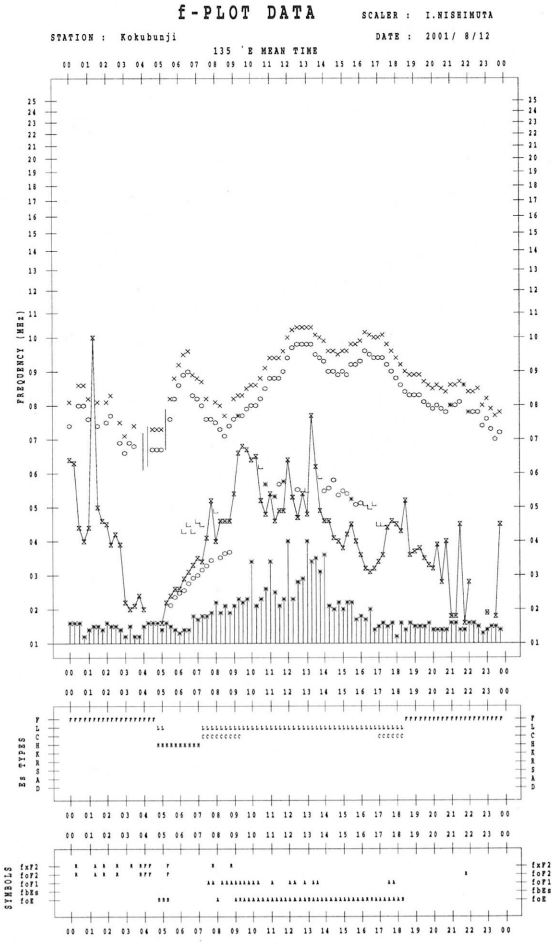

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 6
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

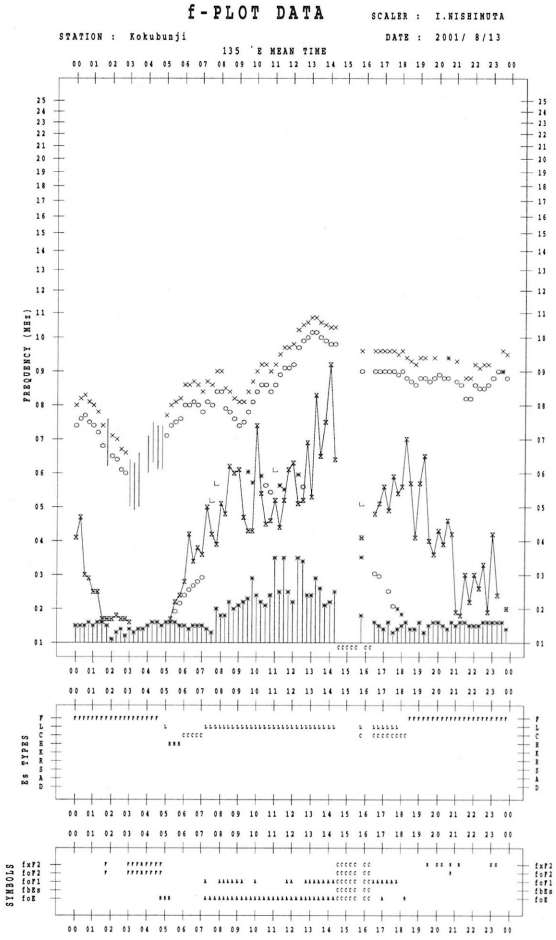

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 8
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

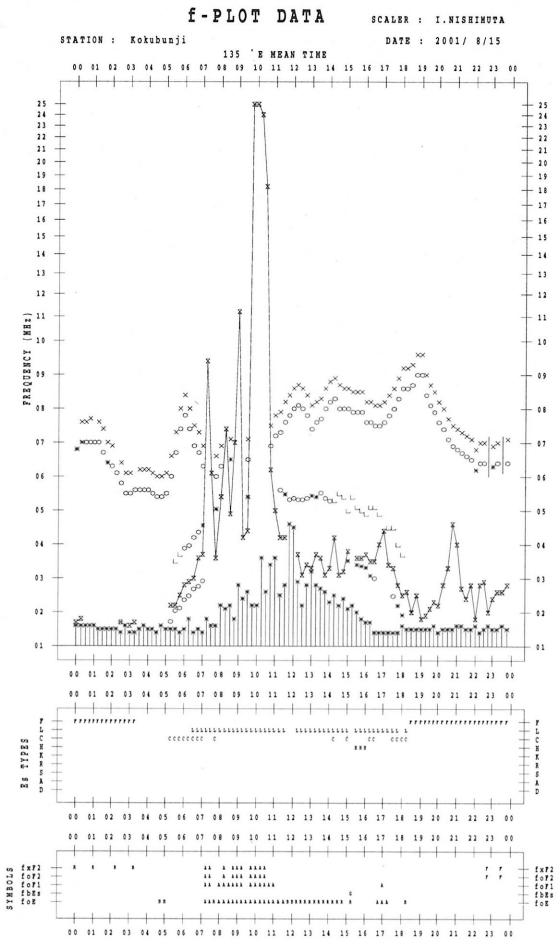

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/ 9
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

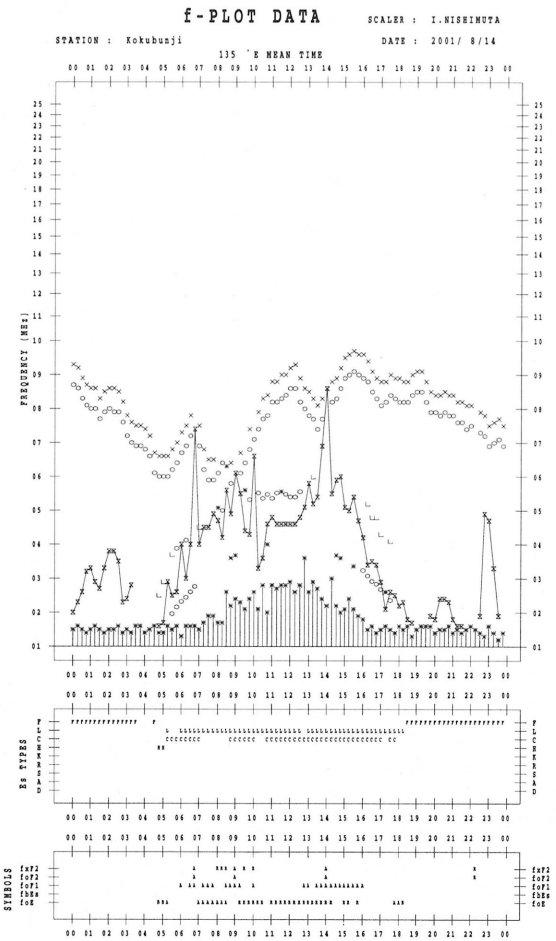

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/11
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

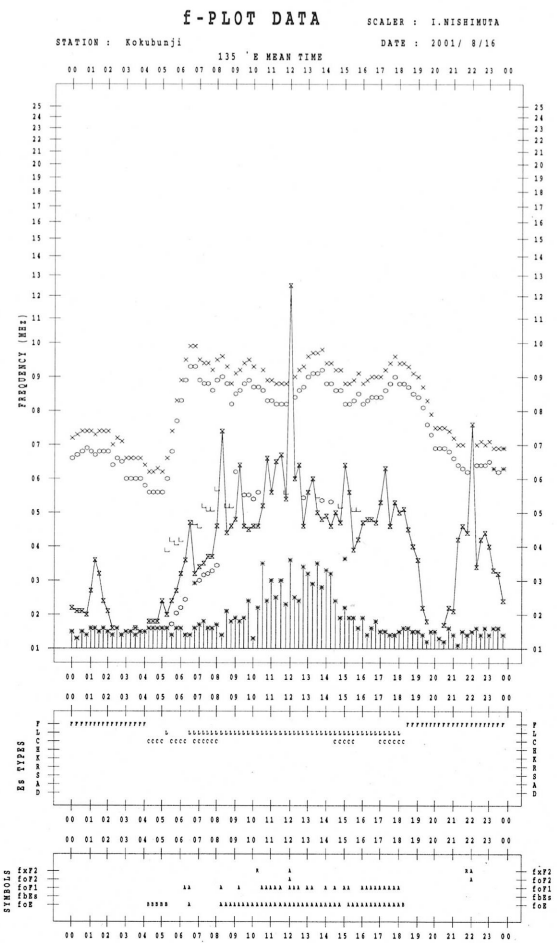

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/10
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

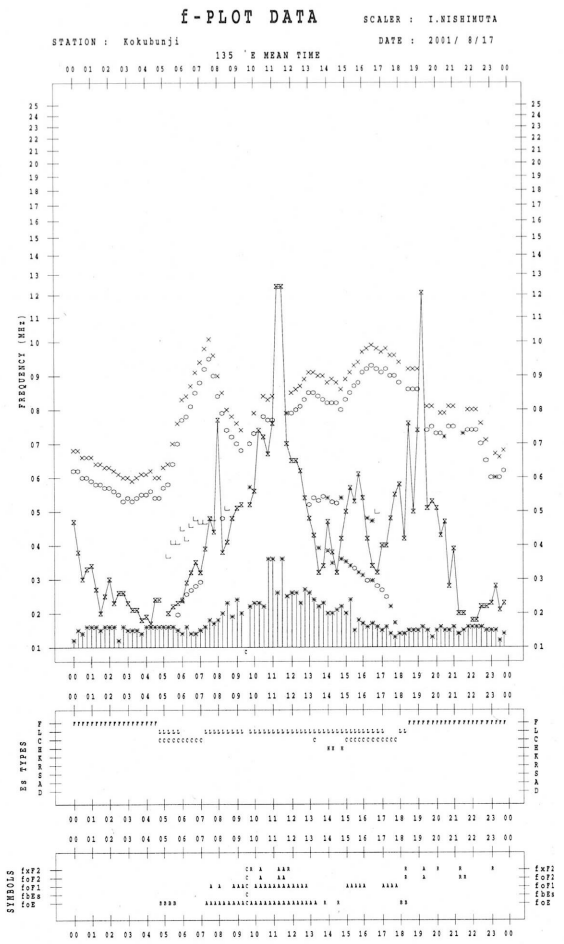

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/12
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

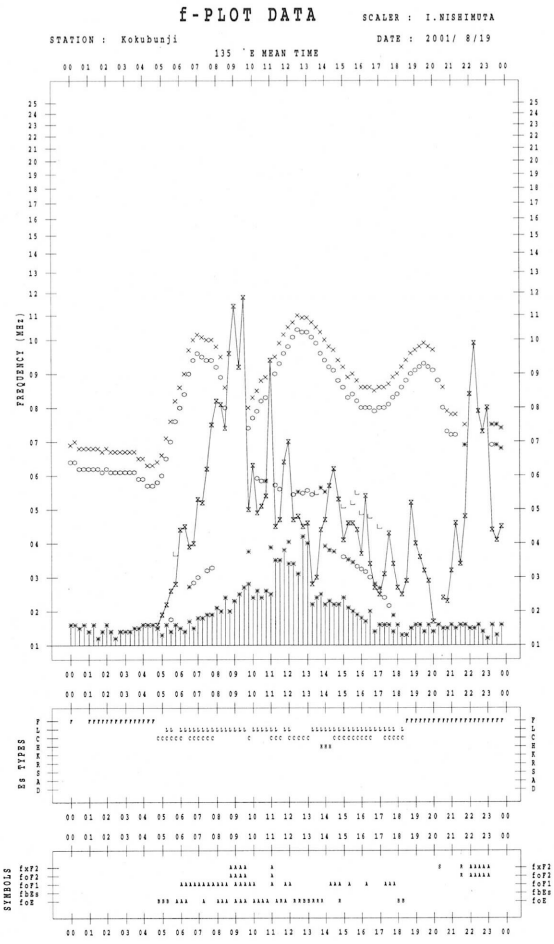

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/13
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

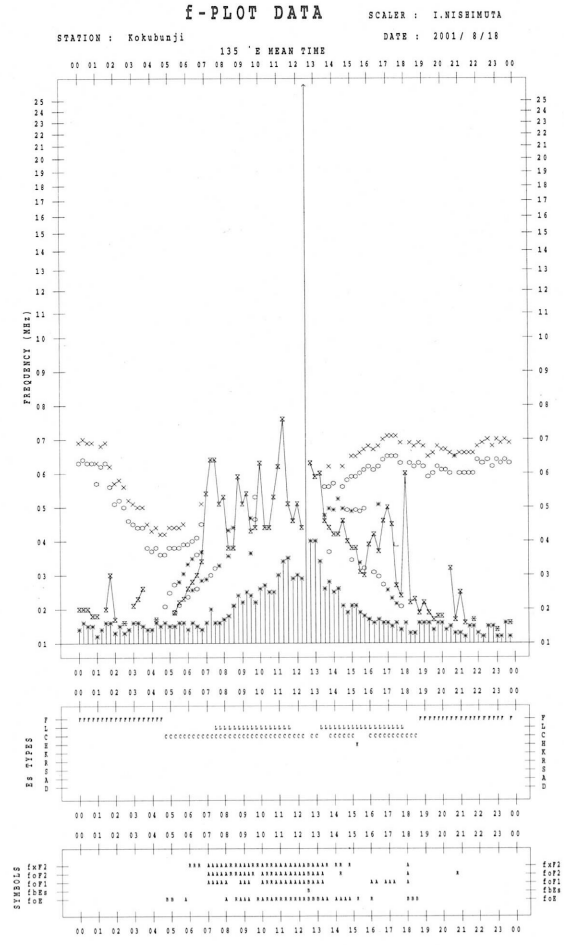

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/15
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

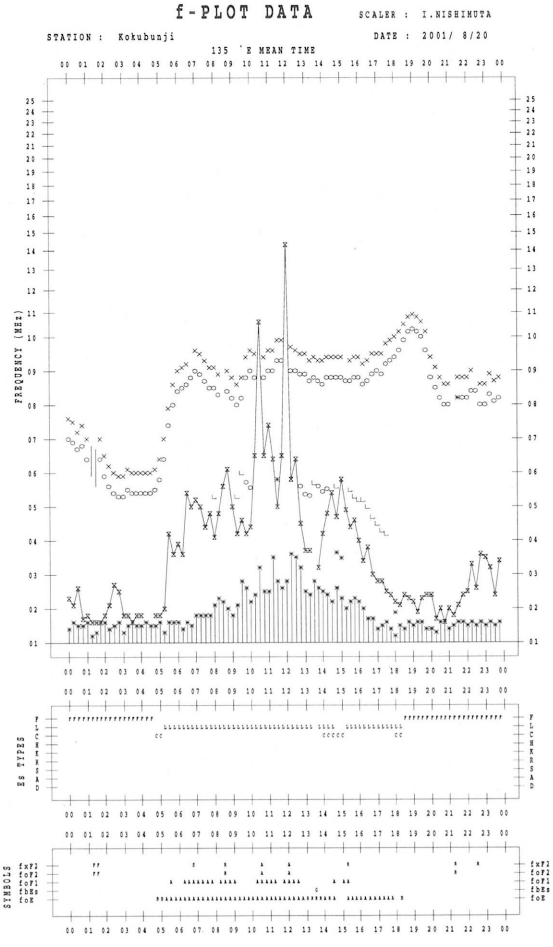

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/14
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

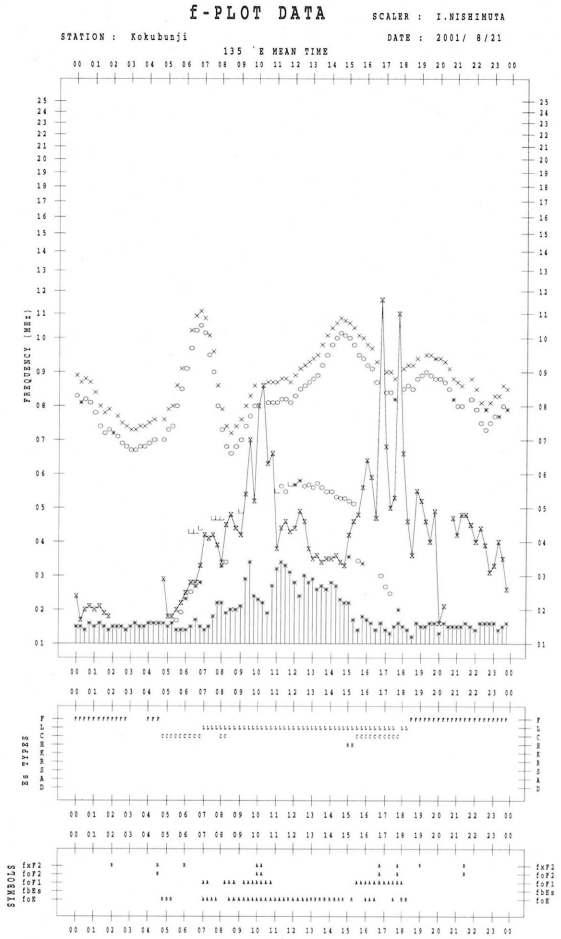

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/16
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

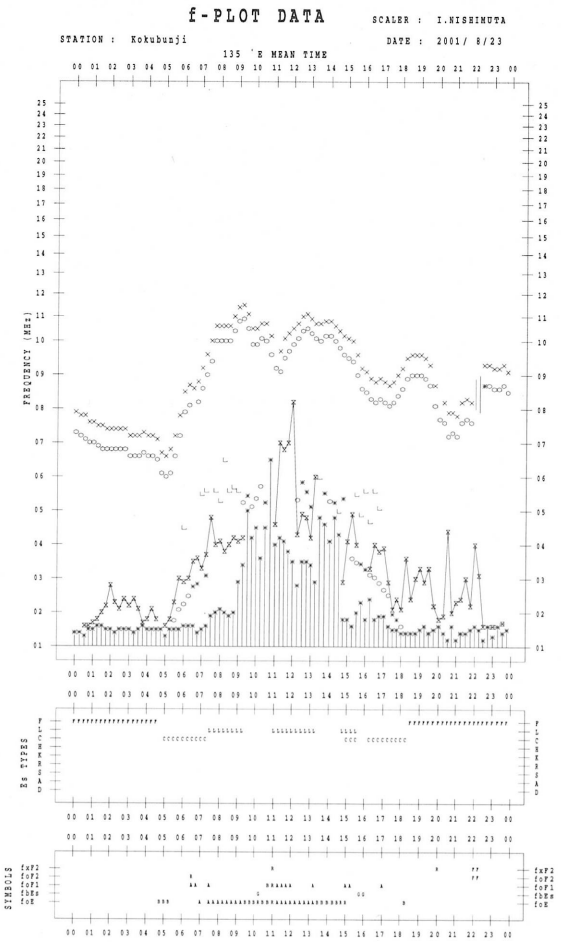

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/17
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

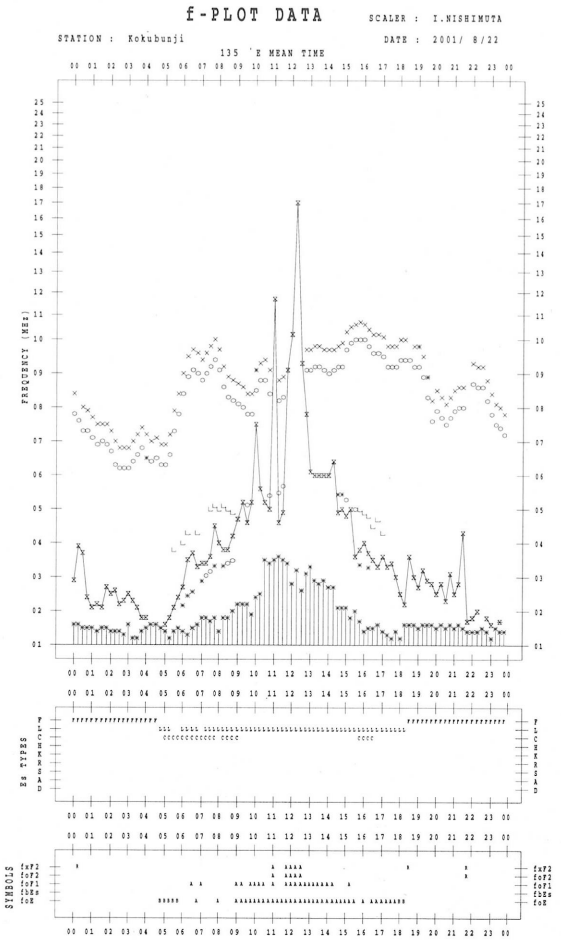

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/19
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

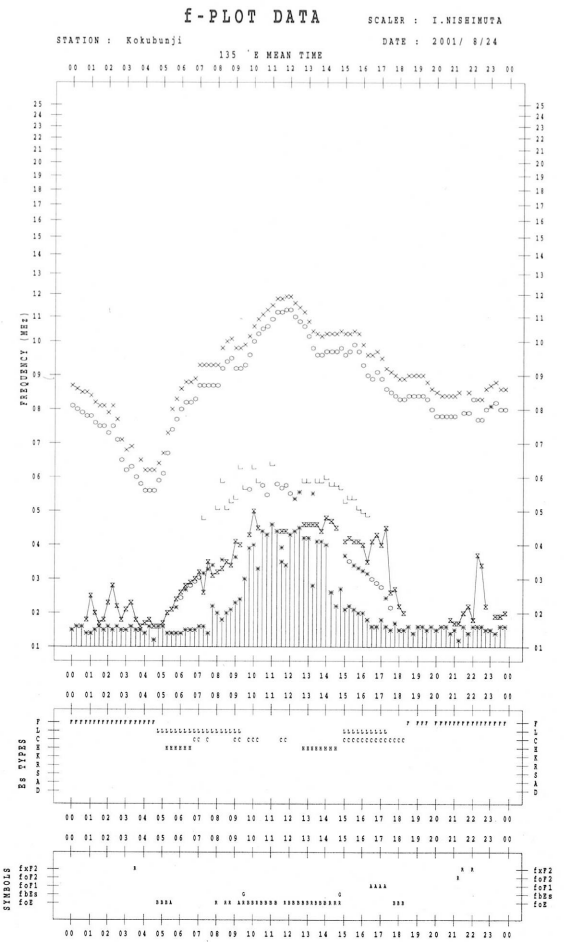

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/18
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

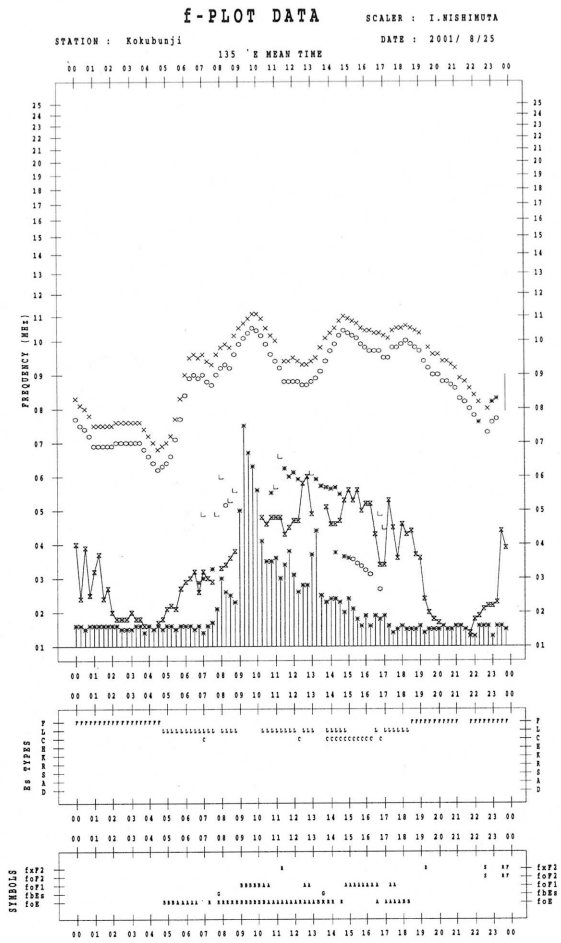

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/20
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

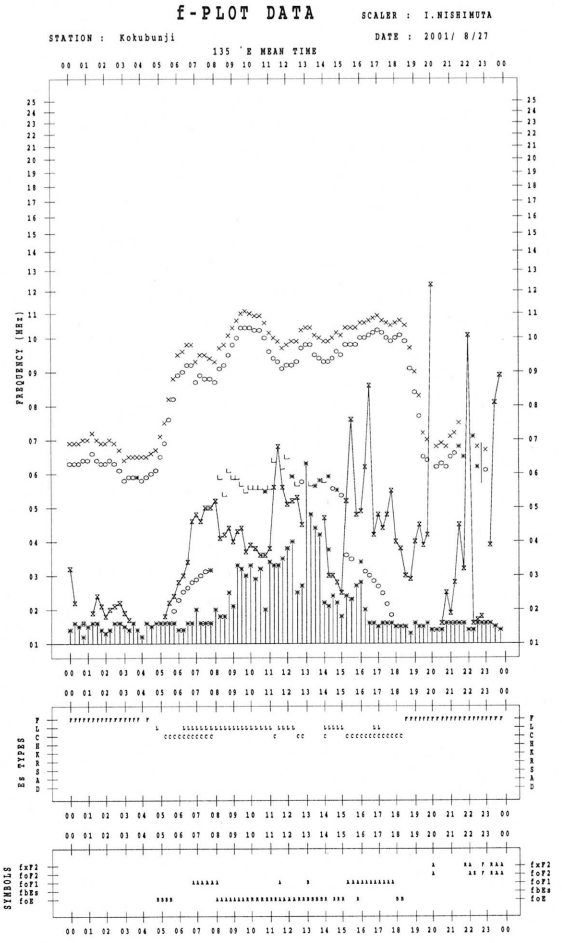

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/21
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

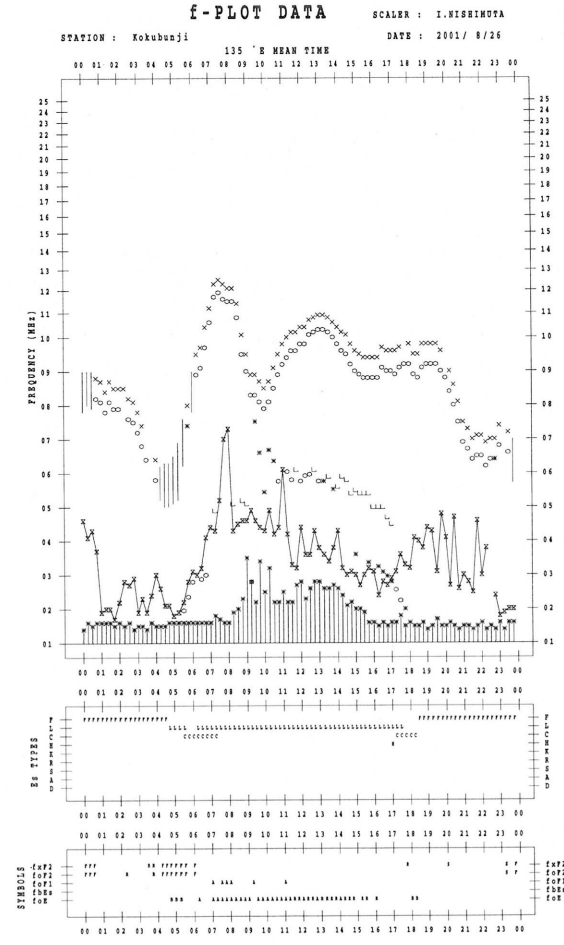

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/23
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

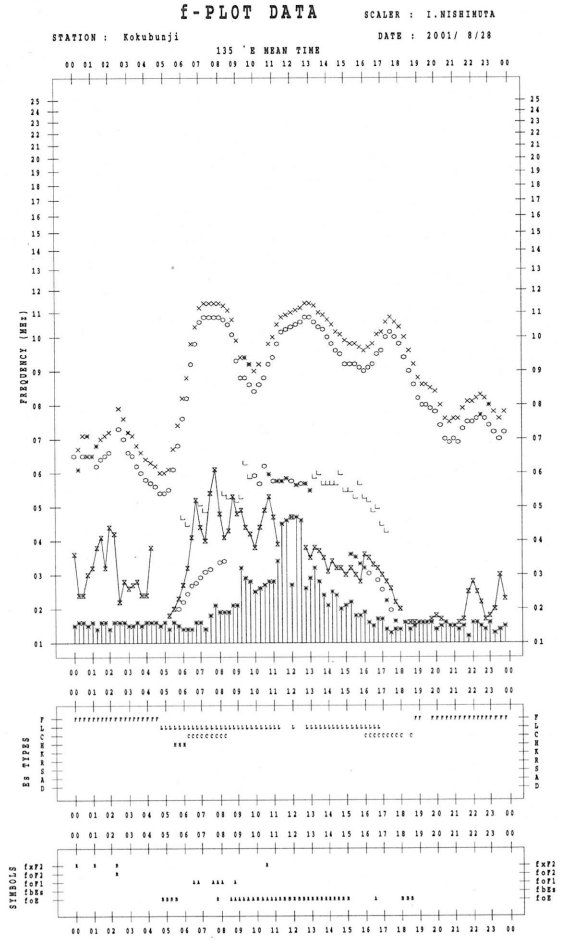

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/22
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

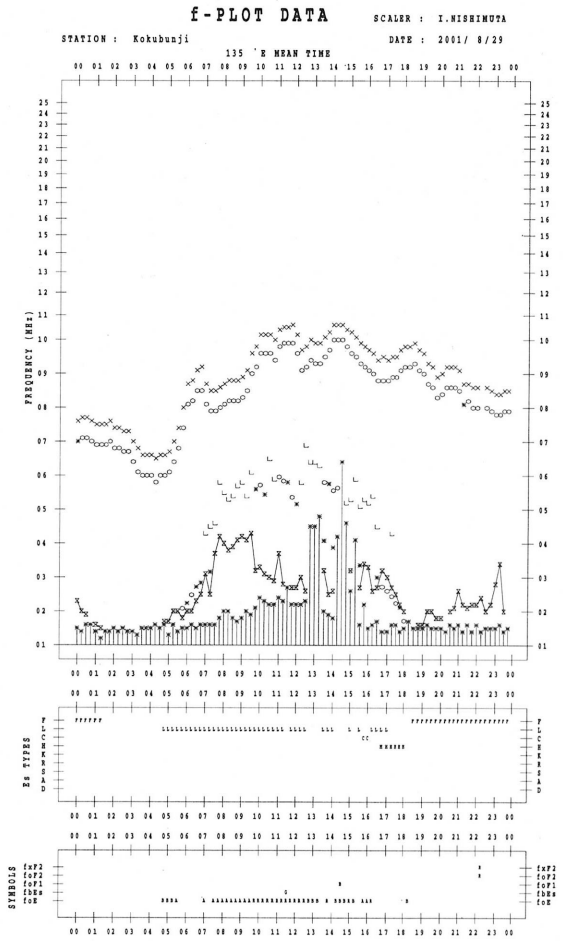

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/24
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS

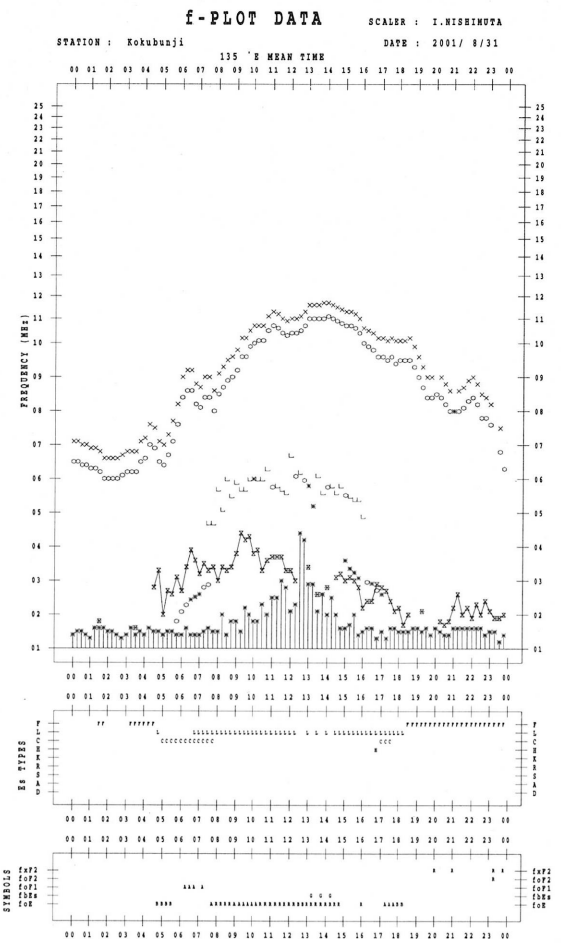

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/25
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

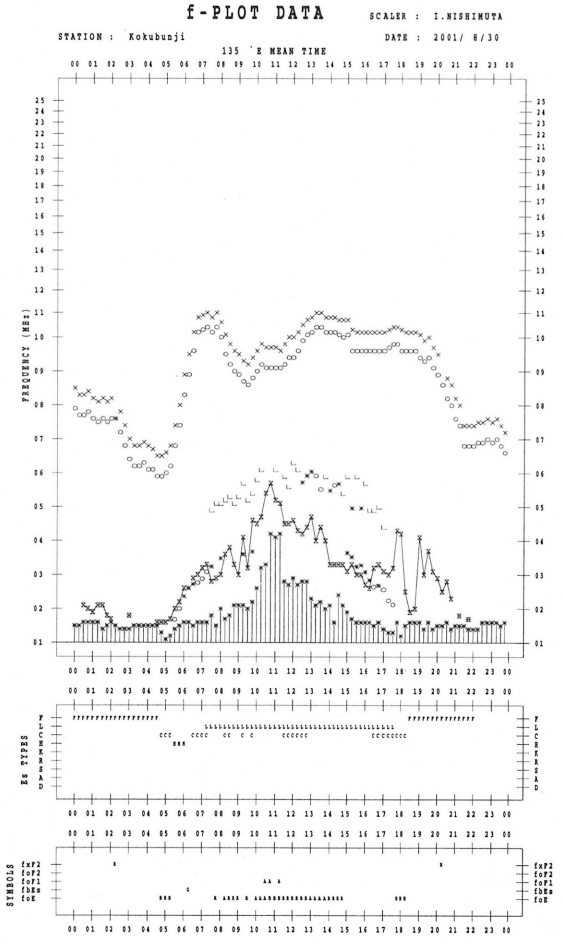

f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/27
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/26
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/28
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/29
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/31
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE


f-PLOT DATA
SCALER : I.NISHIMUTA
STATION : Kokubunji
DATE : 2001/ 8/30
135 °E MEAN TIME
FREQUENCY (MHz)
Es TYPES
SYMBOLS
fxF2
foF2
foF1
fbEs
foE

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

Hiraiso August 2001

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	34	35	34	34
2	33	33	33	33	33
3	34	33	32	32	33
4	34	33	34	36	34
5	36	35	37	40	37
6	38	36	38	39	38
7	39	38	37	36	37
8	36	36	35	36	36
9	36	34	33	36	35
10	36	36	36	32	35
11	33	39	31	36	38
12	37	37	36	39	37
13	38	37	36	39	37
14	37	39	40	37	38
15	36	36	35	35	35
16	36	35	34	36	35
17	35	34	34	32	34
18	32	32	31	35	32
19	36	35	33	35	35
20	35	33	34	32	34
21	31	32	31	-	32
22	-	-	-	-	-
23	34	32	32	35	33
24	33	33	34	33	33
25	33	31	32	37	34
26	35	34	35	37	35
27	36	36	34	37	36
28	39	35	36	35	36
29	35	34	34	34	34
30	33	33	33	31	32
31	34	36	37	44	38

Note: No data is available during the following periods.
21st 2100 - 22nd 2400

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso August 2001

Single-frequency observations

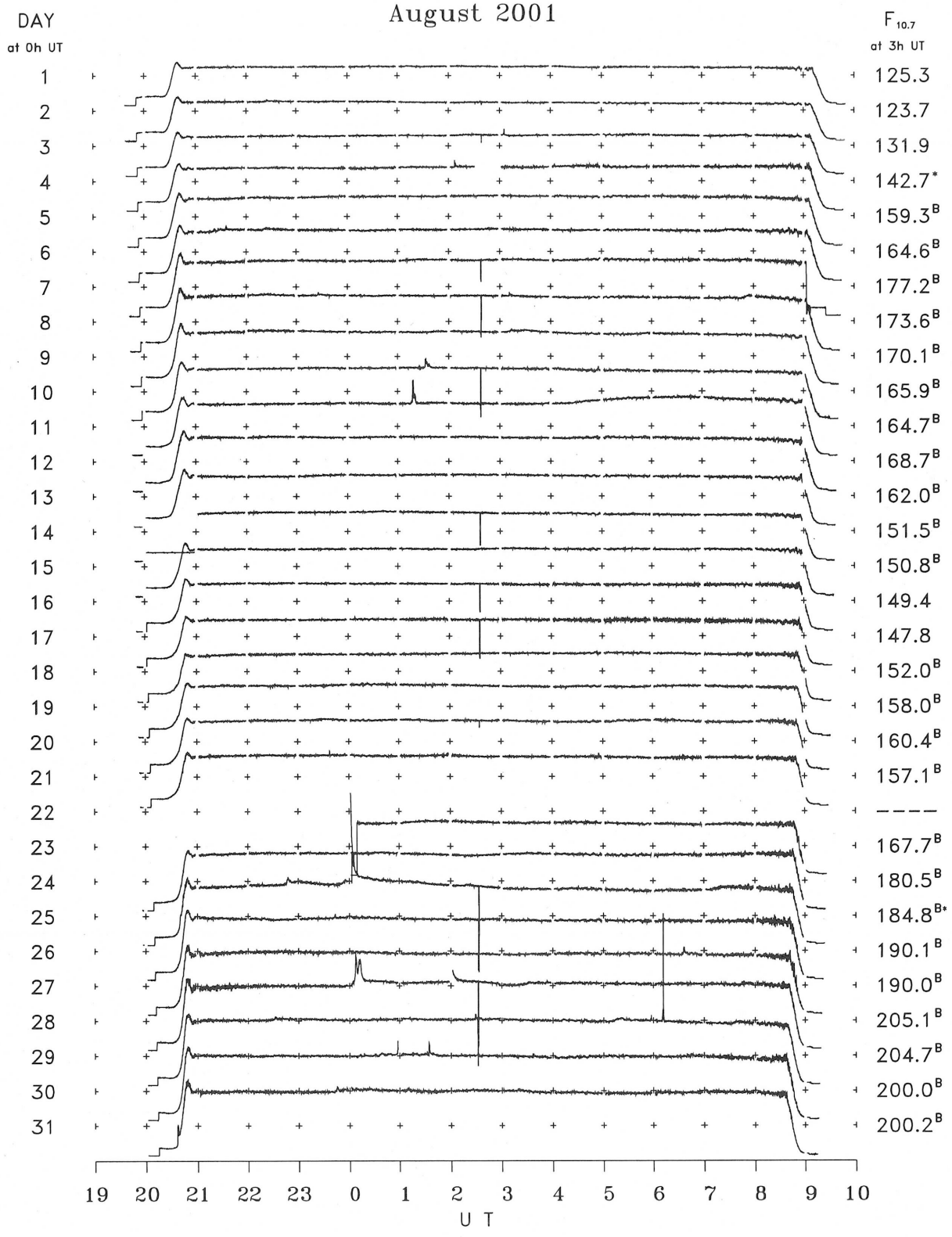
Normal observing period: 1955 - 0930 U.T. (sunrise to sunset)

AUG. 2001	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	500	8 S	0111.0	0111.0	1.0	10	-	0
2	500	8 S	2037.0	2037.0	1.0	75	-	0
2	500	8 S	2103.0	2104.0	1.0	10	-	0
2	500	42 SER	2140.0	2144.0	6.0	25	-	0
2	500	8 S	2204.0	2204.0	1.0	30	-	0
2	500	8 S	2325.0	2325.0	1.0	15	-	0
3	500	8 S	0106.0	0106.0	1.0	10	-	0
3	500	7 C	0112.0	0115.0	4.0	70	-	WL
3	500	8 S	0215.0	0215.0	1.0	20	-	0
3	500	8 S	0224.0	0224.0	1.0	10	-	0
3	2800	1 S	0304.0	0306.0	3.0	20	-	0
3	500	8 S	0304.0	0306.0	4.0	225	-	WL
3	500	8 S	0406.0	0406.0	1.0	25	-	WL
3	500	8 S	0409.0	0409.0	1.0	10	-	WL
3	500	8 S	0534.0	0534.0	1.0	15	-	0
3	500	8 S	0542.0	0542.0	1.0	15	-	0
3	500	8 S	0557.0	0557.0	2.0	30	-	0
3	500	8 S	0657.0	0657.0	1.0	130	-	0
3	500	8 S	0749.0	0749.0	2.0	135	-	0
4	500	8 S	0404.0	0404.0	1.0	15	-	0
5	500	3 S	2135.0	2135.0	2.0	10	-	0
10	2800	4 S/F	0132.0	0133.0	9.0	30	-	0
10	500	4 S/F	0132.0	0135.0	11.0	30	-	0
11	2800	4 S/F	0116.0	0117.0	5.0	70	-	0
11	500	7 C	0116.0	0119.0	5.0	40	-	0
17	500	8 S	0741.0	0741.0	1.0	10	-	0
24	500	8 S	0622.0	0622.0	1.0	20	-	0
24	2800	1 S	2246.0	2248.0	7.0	20	-	0
24	2800	4 S/F	2358.0	0002.0	14.0	280	-	0
25	500	4 S/F	0000.0	0006.0	15.0	30	-	0
25	500	8 S	0045.0	0045.0	1.0	10	-	0
25	500	8 S	0240.0	0240.0	1.0	10	-	0
25	500	8 S	0426.0	0426.0	1.0	40	-	0
25	500	8 S	0810.0	0810.0	1.0	15	-	0
28	500	7 C	0002.0	0007.0	17.0	60	-	0
28	2800	7 C	0003.0	0008.0	18.0	95	-	0
28	500	29 PBI	0201.0	0201.0	46.0	10	-	0
28	2800	3 S	0200.0	0201.0	12.0	120	-	0
29	2800	8 S	0610.0	0612.0	3.0	305	-	WL
30	2800	3 S	0057.0	0058.0	3.0	40	-	0
30	500	7 C	0132.0	0139.0	10.0	135	-	0
30	2800	3 S	0134.0	0134.0	2.0	35	-	0
30	2800	8 S	2036.0	2037.0	2.0	60	-	0
30	500	8 S	2036.0	2036.0	1.0	16	-	WL
31	500	8 S	0605.0	0605.0	1.0	10	-	0
31	500	7 C	2228.0	2241.0	28.0	350	-	ML
31	2800	47 GB	2235.0	2241.0	20.0	510	-	0

B. Solar Radio Emission

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

August 2001



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

IONOSPHERIC DATA IN JAPAN FOR AUGUST 2001
F-632 Vol.53 No.8 (Not for Sale)

電離層月報（2001年８月）
第53巻 第８号（非売品）
2002年２月８日 印刷
2002年２月15日 発行
編 集 兼 独立行政法人通信総合研究所
発 行 所 〒184-8795 東京都小金井市貫井北町４丁目２－１
☎ (042) (327) ７４７８(直通)

Queries about "Ionospheric Data in Japan" should be forwarded to :
Communications Research Laboratory, Independent Administrative Institution, 2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN