

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 2008

VOL.60 NO.1

CONTENTS

Preface	
Introduction	1
A. Ionosphere	
A1. Automatic Scaling	
Hourly Values at Wakkanai (f_oF2 , fEs and $fmin$)	4
Hourly Values at Kokubunji (f_oF2 , fEs and $fmin$)	7
Hourly Values at Yamagawa (f_oF2 , fEs and $fmin$)	10
Hourly Values at Okinawa (f_oF2 , fEs and $fmin$)	13
Summary Plots at Wakkanai	16
Summary Plots at Kokubunji	24
Summary Plots at Yamagawa	32
Summary Plots at Okinawa	40
Monthly Medians $h'F$ and $h'Es$	48
Monthly Medians Plot of f_oF2	50
A2. Manual Scaling	
Hourly Values at Kokubunji	51
f -plot at Kokubunji	65
B. Solar Radio Emission	
B1. Outstanding Occurrences at Hiraiso	74
B2. Summary Plots of $F_{10.7}$ at Hiraiso	75
《Real Time Ionograms on the Web	http://wdc.nict.go.jp/index_eng.html 》

INTRODUCTION

This Series contains data on ionosphere (I) and solar radio emission (S) obtained at the following stations under the

National Institute of Information and Communications Technology, Independent Administrative Institution in Japan.

Station	Geographic		Geomagnetic (IGRF2000)		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.6'N	141°41.1'E	36.4°N	208.6°	Vertical Sounding (I)
Kokubunji	35°42.4'N	139°29.3'E	26.6°N	207.9°	Vertical Sounding (I)
Yamagawa	31°12.1'N	130°37.1'E	21.4°N	199.8°	Vertical Sounding (I)
Okinawa	26°40.5'N	128°09.2'E	16.8°N	198.4°	Vertical Sounding (I)
Hiraiso	36°22.0'N	140°37.5'E	27.4°N	209.2°	Solar Radio Emission (S)

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 (f_oF2 , fEs , $fmin$) and monthly medians of two factors ($h'Es$, $h'F$), daily Summary Plots and monthly medians plot of f_oF2 .

a. Characteristics of Ionosphere

f_oF2	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 f_oF2).
- 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 f_oF2 , 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 f_xE and f_oE 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

fxl	Top frequency of spread F trace
f_oF2 f_oF1 f_oE f_oEs	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 replace 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 atmospheric.
- T** Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
- V** Forked trace which may influence the measurement.
- W** Measurement influenced or impossible because the echo lies outside the height range recorded.
- X** Measurement refers to the extraordinary component.
- Y** Lacuna phenomena, severe layer tilt.
- Z** Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets, 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 (CNT) 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 $10^{-22} \text{ Wm}^{-2} \text{ Hz}^{-1}$ 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

SGD Code	Letter Symbol	Morphological Classification
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 F_{10.7} at Hiraiso

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

JAN. 2008

LAT. 45°23.5'N LON. 141°41.2'E SWEEP 1.0MHZ TO 30.0MHZ 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	31	26	28	29	25	26	28	32	42	45	64	56	60	55	46	45	38		29	30	22		28	30	
2	32	34	32	34	26	39	26	35	38	45	39	56	58	53	52	48	55		28	26	20	28	28	30	
3	32	32	34	32	29			30	40	43	46	59	52	49		34	40	32	23	26			34	37	
4	34	34	34	34	34		26		41	46	52	64	46	63	46	62	35	34	30	28	30	25	30	32	
5	30	34	34	34	31	30		32	46	44	59	59	58	33	46	53	40				30		34	34	
6		32	35	32	37			31	46	70	58	65	54	57	64	51	46	26	34		32	30		34	
7	34	37	40	34	34	34	31	30	41	35	68	69	64	57	66	52	40	A		36	34	34	34	34	
8	34	34	34	34	32	32	31	34	44	54	59	56	50	54	57	52	22	23	24	22	32	29	30		
9			32	30	28	29	26	34	47	44	49	64	75	57	55	53	36			18				30	
10	31	32	31	28	31	29		30	42	35	58	54	58	54	54	46	36	25	20	30	32		30	34	
11	34	34	34	34	34	32		31	44	56	53	58	62	56	54	55				29	28	22	32	34	
12	34	34	28	24	23	28		31	41	46	55	58	52	54	54	60	37		31	35	34	36	34	37	
13	49	31	29	34	32	30	A	37	A	52	62	70	67	61	60		40	32	34	36	28	26	25	34	
14	34	34	34	34	35	39	32	45	59	60	45	50	75	72	61	51	41	35	38	46	44	40	39	42	
15	37	44	38	38	44	39	32	40	45	68	76	65	57	61	58	57	46	37	34	44	34	34	34	40	
16	42	34	37	41	26	29	28	36	40	38	64	59	55	55	58	39	24		32		28	26	39	23	
17	28	28	28	28	34	28	25	36	49	56	61	62	69	54	60	54	45	18	A				A	26	
18	23	30		26	30				54	51		62	58	54	48	42	37	32	34	17		31	A	34	
19	34	34	34	34	39	34		35	45	56	45	61	40	60	56	60	44	38	A		36	36	31	32	34
20	26	34	34	37	34	29	28	34	44	46		41	58	60	51	56	A	A		34	26		28	31	32
21	25	32	32	29	26	28	28	35	39		36	46	60	28	55	52	A		34	41	38	34	40	36	38
22	39	45	40	34	34	32		25		47			60	54		49	40	34	34	36		29	34	34	
23	34	26	31	32	34	34	34	37	45	47	47	57	52	35	41	49	47	36	40	37	31	34	39	37	
24	47	47	44	47	47	52	34	38	44	46	57	36	48	52	48	39	A	A					A	26	
25	30	30	20	26	29		A	37	47	40	48	51	48	47	39	39	A	36	A	A	A		34		
26	34	32	30	29	29	28	28	37	42	46	55	56		54	53	40	44	A	A	A	A	28	30	32	
27	34	34	32	31	32			34	48	46	58	57	58	42	57	48		35	A	A		30	A	30	
28	34	32	30	29	39	24		38	41	49	47		56	55	54		A	A		32	26	30	34	40	
29	38	34	34	31	32	34	34	38	49	70	44	56	35	54	56	64		A	A	38		32		31	
30	34		32	32	34	30				45	55	63	54	50		58	44		A		37	A	A	32	
31	A	24				A		26	37		46	55	51	48	51	A	47	43			28	26		24	28
	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	29	30	30	24	17	28	27	30	28	29	30	31	27	29	23	16	19	22	20	21	22	28	
MED	34	34	34	32	32	30	28	35	44	46	55	58	58	54	54	51	40	34	34	30	32	30	32	34	
UQ	34	34	34	34	34	34	32	37	47	54	59	62	60	57	58	55	44	35	34	36	34	34	34	35	
LQ	31	31	30	29	29	28	26	31	41	45	47	55	52	51	48	45	37	29	29	26	28	28	30	30	

HOURLY VALUES OF fEs

AT Wakkanai

JAN. 2008

LAT. 45° 23.5' N LON. 141° 41.2' E SWEEP 1.0MHz TO 30.0MHz 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	G	G	G	G	G	G	G				G	G	G	G	G			G	G		G	G	
2		G		G			G	G	G		35		36		G	G	G	G			24	G		30	G	G
3		G	G	G	G	G			G		29	33	34	30						28		G				G
4		G	G		26	29	33	31		G				22	29						G					G
5		G	G		28	G	G		G					G												G
6		26	G	G	G	G		G	G						G	G	G	G								G
7		G	G	G	G	G	G	G	G		32	30	32	28	29											G
8		27	28			G	G	G	G		39	36	28	96	50											G
9		34	29	G	G	G		G	G		28	29	46	29	46											G
10		G	G	G	G	G	G		G																	G
11		26	G	G	G	G	G		20	34	40		32		G	G	G	G								G
12		30	G		G	G	G	G	G																	G
13		26	28	G	G	G		29	35	39	58															G
14		28		G	G	G	G		G																	G
15		G							28	48	41		28	34												G
16		34	29	30	27	G	G		28																	G
17		G	G	G	G	G	G		24																	G
18		G	G		G	G	G																			G
19		G	G	G	G	G	G		32	39																G
20		G	G	G		G	G	G	G																	G
21		33	G	G	G	G	G	G	G																	G
22		28	G	G		G			22	35	30	32	34	36	30	30	49									G
23		G	G	G	G		G	G																		G
24		G	G	G	G	G		G	G																	G
25		G	G	G	G		23																			G
26		G	G		G	G	G	G																		G
27		G	G	G	G	G																				G
28		24	G	G	G		G																			G
29		33	30		G	G		32																		G
30		50	40	30	32		26		27																	G
31		39	29	34	33	33	34		32																	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		31	31	30	31	31	28	23	29	27	28	28	31	29	30	30	29	31	26	29	28	29	29	31	31	
MED		G	G	G	G	G	G	G	G	29	34	33	33	34	30	30	G	G	28	G	27	24	28	26	27	
U Q		28	28	26	23	G	26	G	27	39	38	42	41	43	39	37	38	44	36	31	31	33	33	34	29	
L Q		G	G	G	G	G	G	G	G	G	29	29	29	29	G	G	G	G	G	G	G	G	G	G	G	

HOURLY VALUES OF fmin AT Wakkanai

JAN. 2008

LAT. 45°23.5'N LON. 141°41.2'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

H D	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	15	15	15	15	17	15	14	18	15	18	27	24	23	22	16		15	16	15	16	16	16
2	15	15	16	16	14	15	14	15	14	15	14	16	20	27	21	18	20	18	22	18	15	18	17	16
3	18	17	15	15	15			15	20	17	16	16	20	15	14	15	14	16	21	15	14	15	16	16
4	18	16	18	15	16	15	15		20	17	17	15	17	28	23	22	20	21	17	18	15	20	17	15
5	16	18	16	16	15	18		16	22	20	27	18	17	21	15	17	20				15	17	17	16
6	17	20	20	17	15		17	15	20	16	15	16	18	18	15	20	18	16	20		16	15	16	18
7	15	15	15	18	20	15	15	20	15	15	14	18	16	17	15	21	14	15	15	18	17	16	16	15
8	15	17	17	14	14	17	14	15	14	22	15	17	16	18	16	21	18	15	18	20	14	17	17	16
9	15	15	18	16	16	14	16	16	20	20	20	17	28	24	16	20	20	24	18	17	15	15	16	17
10	17	15	16	15	15	17		16	16	21	23	21	23	21	26	21	18	20	18	17	17		15	16
11	16	16	14	14	14	16		16	18	21	16	18	18	17	21	21	20		21	20	18	17	17	16
12	18	16	18	15	14	15	15	18	21	21	22	28	18	27	24	21	18		15	18	14	15	14	17
13	18	17	16	14	14	15	15	15	17	24	30	34	29	38	24	18	20	14	18	18	18	14	16	15
14	15	16	16	15	15	16	14	16	20	20	16	21	21	32	21	23	18	20	20	17	18	15	17	16
15	17	15	16	14	15	15	17	15	14	14	18	16	16	16	23	14	18	14	18	15	16	16	16	16
16	15	15	15	16	15	15	15	18	15	18	18	18	15	14	14	15	17		16	14	14	17	15	15
17	17	15	15	16	17	18	15	15	21	16	15	15	18	15	17	22	20	18	15	14			16	15
18	18	17		15	15	16			22	17	17	21	15	21	18	23	18	18	15	17	15	16	15	16
19	15	17	16	14	16	16		15	17	26	21	20	20	20	20	14	20	17	15	15	14	17	18	15
20	15	16	16	15	17	16	15	16	18	21	26	22	22	23	22	20	18	15	15	18	18	15	15	15
21	18	17	15	15	15	15	15	15	20		22	22	32	21	27	18	20	20	20	15	18	17	20	18
22	16	15	16	16	15	14		18	20	21	26	26	23	21	20	20	22	20	16	16		18	15	14
23	15	15	15	15	14	14	15	14	21	21	22	20	20	20	22	20	18	15	16	15	20	18	15	15
24	15	15	16	14	15	15	14	15	21	20	15	14	14	15	16	18	17	16	16		14	17	16	17
25	15	17	17	15	15		15	17	18	15	14	18	17	18	21	18	14	14	15	15	14	17	16	16
26	15	17	17	16	15	16	15	18	23	14	16	20	15	18	17	15	15	15	15	14	15	15	18	16
27	15	15	16	17	16	17	16	15	21	15	15	17	14	18	20	22	20	14	17	14	15	16	15	16
28	16	15	15	15	15	15		16	14	14	14	15	16	15	14	16	16	16	15	15	14	15	16	15
29	15	18	17	15	15	14	15	16	14	15	15	14	14	14	16	15	15	14	15	14	15	16	15	15
30	15	15	15	15	15	14	17	15	18	14	15	15	14	14	16	14	15	15	17	15	14	17	15	15
31	15	15	18	14	16	17	15	15		17	17	17	15	14	14	15	14	15		18	15	16	17	18
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	28	23	29	30	30	31	31	31	31	31	31	31	26	29	28	29	29	31	31
MED	15	16	16	15	15	15	15	15	19	18	16	18	18	18	20	20	18	16	16	16	15	16	16	16
U Q	17	17	17	16	16	16	16	16	21	21	22	21	21	23	22	21	20	18	18	18	17	17	17	16
L Q	15	15	15	15	15	15	15	15	15	15	15	16	15	15	16	15	16	15	15	15	14	15	15	15

HOURLY VALUES OF fof2

AT Kokubunji

JAN. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHz TO 30.0MHz 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									41		46	51	63	65	52	51	52	45			21	30	30	A	A
2		A	A	A	A	26			39	48	A	51	A	A	64	52	52	54		32					
3		27		26					36	42	47	52	63	63	59	51	49	48	27			A	A		28
4		31	30	30	30	30	27		36	44	48	51	53	51	55	54	48	46		36	32				28
5		27		28	27	30			38	47	47	48	63	54	45	55	49	47	A				27	32	30
6		30	32	30	44					56	49	72	81	66	55	49	59	54	38						26
7		28			32		28	42	49	52	63	114	105	62		56	52	25		32	37				
8		27	27	30	34				38	54	60	61	65	74	A	60	62	57	35		32				
9			A	A	30				41	48	58	63	75	77	64	57	59		32	A		34	28	A	
10				30	32	32				47	54	66		58	50	57	48	30		32					
11		A		28	30	30			42	48	50	53	65	69	74	67	53	38	34				28	30	
12				31					37	45	47	52	54	61	52	53	51	45	27		28	32		30	
13			27	42	28		30		42	46	65	72	72	59	53	51	46	42		28				26	
14			25	30	30				26	A	A	65	69	75	65	58	54	44			32	36	30	32	21
15		30	30	A	A	28	26	26	39	47	47	59	82	64	52	61	63	49	36			A	26		26
16		28	30	44				A	36	47	51	57	C	C	C	C	C	C	C	C	30				
17				27	26			26	42	54	C	C	C	C	C	C	C		A	A		36	24		
18			A		21	27			38	53	54	64	64	65	65	56	48	51	34	34	39		A	A	A
19		A	A	A		39	32	A		38	43	48	63	66	A	58	A	59	55	A	A	36	A	A	25
20				26	34				39	46	A		59	49	59	55	52	66	39	A	36		A	26	26
21		27	26	30	30	30		A	38	43	45	46	56	56	52	51	48	50	40		34	34		31	31
22		30	30	30	37	38	30	28	41	43	44		59	47	49	54	51	42	38	30	36	32	30	27	21
23		27	28	28		24		27	39	46	41	48	52	52	54	52	40	45	47	27	30	A		27	27
24		30	27	32	45	53	24	23	36	44	45	47	C	59	47	54	A	47	39	30	30				
25			27	30	30	25			41	51	49	49	54	48		54	49	51	A	A	A	A	A		
26			30		A	A	A	A	A		49	49	A	55	52	58	41	54	49	36	A		A	A	A
27		28	30	32	32				38	45	48	51	59	62	53	52	52	44	A	A	A		A		23
28			30	30	24				35	49	58	58	58	45	53	48	55	37	A	A	A	A	A	A	A
29		A		30	30			25	42	49	45	54	52	71	66	52	A	A		39	23		A	27	A
30		A	A			27	26		26	42	51	47	53	55	65		40	47	51	42	30	41	30	24	A
31		A	A		25	27	A	A		41	45	51	C	47	58	64	A		41	30		27	A		27
		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	16	23	22	13	4	9	27	28	27	26	27	26	26	26	26	28	20	8	20	9	8	9	13
MEB		28	30	30	30	30	26	26	39	47	48	54	63	62	58	53	52	48	36	30	32	32	28	30	26
UQ		30	30	30	34	32	28	28	41	49	51	63	66	69	64	55	56	51	39	33	36	35	30	31	28
LQ		27	27	28	27	26	25	25	37	44	46	51	55	52	52	51	49	45	31	28	30	29	26	26	24

HOURLY VALUES OF fEs

AT Kokubunji

JAN. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHZ TO 30.0MHZ 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	G	G		G		G		43	61	G	36	29	28	G	G	30		G	29	G	37	37
2	34	51	35	34	G	G	G	25	36	83	58	60	61	G	28	34	G	34	24	G				G
3	G		G	G	G			G	42	39	43	50	51	47	35			G	G	G	G	G	28	G
4	30	24	23	G	G	G		G	39	35	43	57	46	47	47	34		G	G	G	G	G		G
5	G	G	G	G	G	G		G	30	31	34	G	52	35	30	G	35	32				G	27	G
6	G	G	G	24	23				30	40	30	G	G	G	G	G	G	29			G	G		G
7	28			23			G	G	27	29	37	35	34	33			G	G		G	G			28
8	G	G	26	G	G			G	26	34	40	35	33	66	33	34	32	24		G	G			G
9	G	34	30	24	G		G	G	41	34	G	34	G	G	G	27	G	31	39	28	23	24		
10	G		G	G	11			G	29	31	33	G	G	G	G	G	G	G		G	29	G	29	
11	33	28	G	G	24		G	G		27	29	30	G	G		28	G	G	G	G	G	G	G	
12			G					G	28	32	G	33	48	36	35	35		G	G		G	G	24	27
13		G	G	G		G	G	33	47	50	49	53	60	35	G	G	24	29	27		G	G	G	G
14	G		G	G	G	G	G	G	47	70	30	G	40	G	G	G	G			G	G	G		26
15	G	G	34	34	G	G	G	25	G	29	82	62	C	C	C	C	38	26	G	G	G	30	30	G
16	G	29	25	27			25	G	29	34	36	C	C	C	C	C	C	C	C	C	G	G		G
17	G	G	26	G	G		G	G	G	C	C	C	C	C	C	C	46	104	60	G	G	G	29	G
18	29	43	39	27		G		G	G	42	58	64	45	52	34		23	G	27	39	37	47	71	65
19	83	53	33	32	29	26	27	30	28	35	48	41	57	45	50	34	G	60	83	54	37	34	31	G
20	G	G	26	25	24		G	G	33	51	43	34	35	51	41	42	76	G	35	43	34	31	24	G
21	G	G	G	G	23	36	30	27		31	34	G	43	34	39	52	40	35	29	28	38	G	G	G
22	G	G	24	23	26	27	25	G	40	30	34	34	94	G	G	G	G	G	G	G	G	G	G	G
23	G	G	G		G	G	G	26			33	G	35	38	51	39	33	46	G	G	39	29	G	27
24	29	G	G	G	34	G	G	34	34	40	45	C	35	45	42	57	35	35		G	G	G	G	
25	29	G	G	G	G	G		G	28	40	45	36	45	37	44		52	46	50	65	52	49	33	34
26		32		60	52	59	31	33	37	41	48	49	50	64	34	43	36	27	49	39	82	85	55	50
27	G	G	G	G		G	G	27	35	44	48	53	91	49	45	43	51	43	53	33	30	37	24	24
28	29	G	G	28	G		G	G	35	39	45	49	47	43	40	31	39	59	61	54	56	44	34	49
29	40	27	23	G	G	40	28	G		37	46	47	49	48	55	57	92	50	25	G	34	28	34	50
30	48	41	33	28	27	25		31	34	31	42	49	59		45	44	55	32	33	29	29	29	50	35
31	50	36	28	30	55	29	29	26	G	39	C	54	59	59	81	33	50	37	32	27	25	43	G	33
	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	29	29	24	19	21	30	25	29	29	28	29	28	28	26	28	29	22	27	28	27	23	24
MED	G	G	23	G	G	G	G	G	33	35	43	36	45	36	34	34	29	30	28	G	27	24	27	G
U Q	29	32	27	27	25	27	26	26	38	41	48	51	54	47	44	42	43	40	49	33	35	34	34	34
L Q	G	G	G	G	G	G	G	G	27	31	34	30	34	G	14	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

JAN. 2008

LAT. 35°42.4'N LON. 139°29.3'E SWEEP 1.0MHZ TO 30.0MHZ 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	13	13	14	14		17		13		14	14	18	18	15	17	14	15	13		13	13	14	13	13	
2	13	13	13	13	14	14	15	15	13	13	15	15	13	15	13	13	13	13	14	21				13	
3	14		14	14	13			13	13	20	13	14	14	13	13	14	13	13	15		43	13		14	
4	13	13	13	13	14	14		14	13	13	14	14	13	13	13	13	13	17	14	13	14	20		13	
5	13	13	14	13	13	13		14	13	13	18	18	13	14	13	13	13	13				14	14	14	
6	14	13	13	13	13				13	13	13	14	14	14	14	13	17	13			14	14		15	
7	14			13			14	14	15	13	14	15	15	14		14	22	14		13	15			13	
8	14	14	13	13	13			14	13	13	13	14	17	14	13	13	14	15		15	17			13	
9	13	13	13	13	14		17	14	23	14	15	17	20	17	13	14	15	13	14	13	13	14			
10	22		13	13	17			14	14	14	13	18	20	20	17	17	20	17		14	14	14	13		
11	14	14	13	14	13		13	17	14	14	13	18	17	37	20	15	20	14	18		17	15	14		
12			15					14	13	13	13	13	13	13	13	13	33	18		14	14	17	14		
13		13	14	13		13	14	13	15	14	17	18	17	21	18	29	14	14	13	13	14	13	13		
14	13	13	13	13	14	14	14	17	13	14	21	20	18	39	35	34	40			20	14	13	13	13	
15	13	14	13	13	13	13	14	14	21	15	17	14	40	38	37	13	15	14	17	20	13	13	14	13	
16	13	13	13	13			14	14	18	13	14	C	C	C	C	C	C	C		14	14				
17	13	13	13	13	13		14	13	14	C	C	C	C	C	C	C		13	13	13	13	13	15	14	13
18	14	13	13	13		14		13	14	13	13	14	17	13	13	14	15	13	13	13	13	13	13	13	13
19	13	13	14	13	13	14	14	13	13	13	13	14	15	18	23	15	14	14	13	13	13	14	14	13	13
20	13	13	13	13	13		13	15	14	14	14	21	18	18	15	13	13	14	13	13	14	13	14	13	13
21	13	13	13	13	13	13	14	14	18	24	26	36	36	26	17	14	13	13	13	13	14	13	14	13	13
22	13	13	13	13	13	13	13	15	23	29	35	39	40	38	33	15	22	14	13	13	14	13	13	13	13
23	13	13	13		13	13	13	13	13	14	13	17	17	13	13	13	13	14	13	13	13	13	13	13	14
24	13	13	13	13	13	14	13	13	13	13	13	C		13	13	13	13	14	13	14	14	13	14	13	
25	13	13	13	14	13	13		13	13	13	13	13	13	13	14	13	13	13	13	15	13	13	13	13	13
26		13		13	13	13	13	13	13	13	13	17	13	13	13	13	13	13	13	14	13	13	14	14	14
27	14	14	13	13		14	14	13	14	13	13	13	13	13	13	13	13	17	13	14	14	14	14	13	13
28	13	13	13	13	13		14	15	13	13	13	13	13	13	13	13	14	13	13	13	13	13	13	13	13
29	13	13	13	15	14	13	13	18	13	13	13	13	13	13	13	13	13	14	14	14	14	13	14	13	13
30	13	13	13	13	14	13	13	13	13	13	13	13	13		13	13	13	13	13	14	15	14	13	13	13
31	13	13	13	13	13	14	14	17	13	13	C		13	13	14	13	13	13	13	13	13	14	13	15	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	27	29	29	24	19	21	30	30	30	29	28	29	28	28	29	30	29	22	27	29	27	23	24	
MED	13	13	13	13	13	13	14	14	13	13	13	14	15	14	13	13	14	13	13	13	14	14	13	13	
U Q	14	13	13	13	14	14	14	15	14	14	15	18	18	19	17	14	15	14	14	14	14	14	14	13	
L Q	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	

HOURLY VALUES OF foF2 AT Yamagawa

JAN. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz 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				26	A			29	46	48	48	66	60	64	56	52	58	45	A	A	34	36	28		
2			28	26	29					A	A	58	63	59	70	81	98	84	51	A	A	32		30	
3		34	34	32	26			29	46	47	51	66	57	61	48	53	56	47			29	26	28	26	
4	28	29	29	25	32	34		28	44	47	51	55		64	A	56	56	42	35						
5	28	29	28	28	32				45	50	45	68	63	55	47	52	51	46	37		28		25	29	
6		29	30	40	28		A	29	52		62	78	88	71	61	62	66	66	34	A		29		31	
7	28	28	26	34		A	A	59	48	55	65	76	104	68	62	60	56	51	29		35		A		
8	26	26	28	29	30					52	59	64	67	59	37	60	59	50	34		A			26	
9	26					A	A	30	54	55	55	81	90	69	57	62	58	45	35		A				
10			24	29	34			28	46	60	50	70	68	67	56	56	52	46	31		A	28	A	A	
11		26	26	29	25			32	52	49	51	67	77	90	92	92	70	53	41		A			34	
12	26	29	A	29	29	26		28	43	45	48	66	70	59	51	52	55	52		A	A	A	34	32	28
13	26	26	30	28	29	25	26	28	46	50	68	76	81	92	67	A	59	56		A	31				
14	28	28	31	36	A				43	51	61	71	76	84	58	54	52	42			32	36	A	28	34
15	32	31	28	29	32			28	48	50	54	77	77	65	58	65	56	42	28	29	28		26		
16	25	28	30			A			48	56	57	44	74	A	55	57	50	46	41	28	30	28			
17			26	28	29			28	48	48	60	64	72	75	76	62	60	54	45	31	28				
18	A	A	A		28	30	29	25		53	49	57	A	73	78	65	50	55	38		A	A	A	A	A
19		A	A		A	A														A	A	A	A	A	A
20	26	A		40	A	A	A	26	50	46		78			45	47	58	42		A			A	A	
21	A	A	26	A	A	A	A	29	50	48	51	62	54	58	59	61	A	58	31	32	40				
22	28	28		29	34			24	47	50	46	51	64	68	53	48		50		A	A	A	A		
23		26		26	29			25	44	43	45	47		52	53	54	46	51	36	34	32				
24	26	26	28	28		25		28	45	44	42	51	56	57	58	54	56	48	40	29	29				
25		28	30	34	30			26	40	42		59	59	52	58	52	55	48	41	34	40	38			
26			29	29		26	A	A	46	47	47	53	49	A	65	56		46			32	A	32	32	
27		26	30	23	30	A	A	A	59	47	45	48	60	62	55	45	53	50	31		A	C	C	C	
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C		52	51	54	49	63		A	A	A	A	A	A	A	A	A	
30	A	26			A			30	47	44	45	57	67	66	54		A	51	51	42	26	34	30	A	
31	A	A			28			A	50	51	47	55	67	62	71			52	60	44	30	34		26	
	28			26	29	A	A		50	48		A	61	67	75	77		A	76	54		A	A	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	14	18	19	24	19	6	2	19	27	28	26	28	27	27	28	26	25	29	20	11	17	8	8	9	
MED	27	28	28	29	29	26	26	28	47	48	51	64	67	64	58	56	56	50	36	31	32	31	28	29	
U Q	28	29	30	30	32	29	26	29	50	51	57	70	76	69	65	62	58	53	41	32	34	35	32	31	
L Q	26	26	26	27	29	25	25	28	45	47	47	54	60	59	53	52	52	45	32	29	28	28	27	26	

HOURLY VALUES OF fEs AT Yamagawa

JAN. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

H D	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	32			G	28	35	40	60	79	38	N	29		G	40	29	G	G	G		
2	G	G	G	G	G			G		83	82	63	89	48	47	64	57	28	35	43	50	G		G	
3		G	G	G	G	G	G	G	28	33	54	50	48	50	37	32	26	29	32	28	G	G	G	G	
4	G	G	G	G	28	G		G		32	37	66		50	69	36	G	G	G		G		G	G	
5	G	G	G	G	G	11	G	G	44	33	39	40	44	G	42	33	37	G		11	G		G	G	
6	29	G	G	G	31		28	24	29		39	61	55	49	34	35		G	G		29		G	G	G
7	G	G	G	G	30	35	26	G	G	30	G	45	51	82	40	43	G		28	28	24	26		44	G
8	G	28	34	26	32			24	G	31	45	33	46	44	43	G	26	31	27	29	34		G	G	
9	G	G		G	28	28	30	G	22	35	40	42	40	38	35	34	G		40	31	32	42			
10		G	G	G	G			G		33	40	38	39	34	45	34	G		29	24	32	34	35	48	27
11	28	27	G	24	G	23	24	G	G	34	40	60	47	51	45	34	35	44	43	32			G		
12	G	G		35	39	39	G	G		32	50	36	36	44	44	G	36	26	42	41	40	33	36	G	
13	G	24	29	G	G	G	G	G	27	33	44	46	61	49	76	75	34	G	60	G	36				
14	G	G	G		38	32	25	G	25	34	40	42	39	42		51	66	G	24	G	G	35	G	32	
15	G	G	G	G	G			G	G	G	47	55	55	62	44	38	32	G	G	G	G	G	24	G	
16	G	G	G		32		29	G	23	36		42	45	60	52	38	37	28	38	G	G	G	G		
17	G	G		27	28	26	G	G	G		N	41	66	56	48	40	39	37	G	G		41	40	39	G
18	56	46	54	40	27	G		23	G	34	55	74	62	44	41		28	46	60	40	40		32	49	
19	G	48	49	46	57	38		G	32	51	64	56	71	56	49	38	44	45	59	52	G	52	59	94	57
20	59	29	29	51	38	36	32	G	35		47	65	51	35	51	58	58	65	32	G	G	41	32	32	
21	G	G		G	G	G		G	G	28	32	43	33	43	44	40	61	49	42	51	40	37	34		
22	G	G		32	27	40	33		24	41	39	31	35	G	39	31	G	G	G	26	G	G	G	G	
23	G	G	G	G	G	G	G	G	G		43	45		49	44	40	48	G	21	G	G				
24		G	G	G	G			G	40	37	44	42	47	46	40	35	33	G	34	G	G	G		G	
25	G	G	G	G	G	25	46	33	33	35	40	35	46	79	47	47	48	40	30	G	G	55	G	28	
26	34	26	G	G	23	36	33	33	30	G	42	42	35	43	37	41	33	27	33	28	G	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C		33	41	44	47	56	96	76	96	138	68	123	103	92	82	48
29	42	26	34	51	50	34	30	G	37	48	66	48	34	42	42	42	36	G	G	G	G	30	34	G	
30	30	58	56	G	G			G	35	38	46	41	52	49	80		82	60	38	30	30	32	45	52	26
31	G			28	24	34	39	33	43	36		58	53	54	51	36	84	39	26	36	46	44	40	40	
	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	27	25	29	28	21	16	29	25	26	27	30	29	30	27	29	28	30	30	29	28	20	23	21	
MED	G	G	G	G	25	25	25	G	28	34	41	45	47	48	44	38	36	28	30	28	14	34	32	G	
U Q	28	26	33	30	32	34	31	12	36	36	47	58	55	56	49	45	52	40	40	34	40	42	40	32	
L Q	G	G	G	G	G	G	G	G	G	32	40	42	39	42	40	34	27	G	24	G	G	G	G	G	

HOURLY VALUES OF fmin AT Yamagawa

JAN. 2008

LAT. 31°12.1'N LON. 130°37.1'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

$\begin{matrix} H \\ D \end{matrix}$	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1				15	14			14	14	14	15	16	17	16	16	14	17	20	14	15	15	15	15		
2	14	17	17	15	15			16		14	14	15	16	18	18	14	14	14	15	14	16	16		15	
3		16	17	17	15	17	15	17	14	14	14	16	17	15	15	14	14	14	15	15	15	14	18	14	
4	17	15	15	14	14	15		15	17	14	14	16		16	14	14	14	18	15	17	15		15	14	
5	15	14	14	14	15	14	15	15	18	17	15	17	20	18	16	14	14	18	15		18		15	17	
6	15	14	15	14	15		14	15	14		14	14	14	14	15	14	14	18	15	14		16	18	15	
7	15	15	17	14	14	14	14	15	16	15	14	14	15	14	14	14	14	14	14	15	14		17		
8	18	15	14	14	14			15	20	14	15	14	15	14	17	14	26	15	17	14	14		15	14	
9	14	14		14	14	14	14	14	21	14	14	14	15	15	16	14	14	14	14	15	14				
10		17	18	14	14			15	17	14	14	14	16	14	14	14	18	14	15	15	15	14	14	15	
11	14	15	14	14	15	14	15	15	15	15	15	16	17	15	15	16	14	14	14	14			14		
12	15	15	14	14	14	14		17	21	14	14	14	16	15	14	14	16	14	14	14	14	14	14	15	
13	17	14	14	14	14	15	16	15	16	14	15	15	17	17	16	14	15	14	14	16	14				
14	15	16	14	14	14	15		15	18	14	14	16	16	20	18	18	15	21	17	15	15	14	16	14	
15	14	14	14	14	15			18	20	14	16	15	22	16	18	15	16	18	15	15	18	17	15	17	
16	15	14	14	15		14		18	21	14	14	15	14	14	14	14	14	15	14	16	18	14	20		
17	15	16	14	14	15		15	14	17	14	15	16	15	14	17	17	15	17	15	16	16	15	15	14	
18	14	14	14	14	15	14	15	17	20	18	17	18	17	17	18	20	28	16	14	14	14	14	14	16	
19	14	14	14	14	15	15		14	17	14	17	16	20	20	16	17	16	15	15	14	14	15	14	15	
20	14	14	14	14	14	14	15	15	17	17	17	16	18	18	20	17	16	17	14	18	16	14	15	14	
21	15	14		15	15	14		17	22	27	18	18	21	20	21	20	17	15	14	14	15	14	15		
22	15	17	15	14	15	14		14	17	16	14	17	34	38	20	20	17	18	16	15	15	15		14	
23	15	15	14	14	14	14	16	20	20	15	16	18	18	17	20	16	14	14	15	17	15				
24		15	14	14	14	14		17	15	14	14	17	18	15	14	14	14	17	15	17	15	15		15	
25	14	15	15	15	17	14	14	14	14	14	15	18	17	15	18	14	14	14	15	20	15	14	14	14	
26	14	14	14	14	15	14	14	14	14	15	14	15	18	17	16	14	15	16	15	14	20	C	C	C	
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
28	C	C	C	C	C	C	C	C	C		14	14	14	17	17	15	16	14	14	15	15	15	14	14	14
29	14	15	15	14	14	15	15	14	14	14	15	17	17	17	15	17	14	15	15	16	14	14	14	15	
30	15	14	14	14	14		15	15	14	14	15	16	17	17	16	17	14	14	15	14	15	14	14	14	
31	17			15	14	14	15	15	14	16		15	18	16	17	16	15	14	15	14	14	14	14	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	25	27	25	29	28	21	16	29	28	29	29	30	29	30	30	30	30	30	30	29	28	21	23	21	
MED	15	15	14	14	14	14	15	15	17	14	15	16	17	16	16	14	14	15	15	15	15	14	15	14	
U Q	15	15	15	14	15	15	15	17	20	15	15	17	18	17	18	17	16	17	15	16	15	15	15	15	
L Q	14	14	14	14	14	14	14	14	14	14	14	15	16	15	15	14	14	14	14	14	14	14	14	14	

HOURLY VALUES OF f_oF₂ AT Okinawa

JAN. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz to 30.0MHz 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						A	30			44	68	54	65		69	85	90	74	62	42	A			26		
2						29					48		59	A	77	133	124	118	104	86	62			37	A	
3				31	30		28			44	68	55	64	60	67	58	61	53	50	42		A			A	
4				26			26			45	48	52	50	69	64	A	62	60	54	A	43	34				
5				28	28						59	54	66	67	72		64	56	48	42	29			34		
6				30	48					56	67	65	76	96	100	98	101	106	121	71	34			34	29	28
7	A				29					48	59	77	90	87	102	100	88	66	76		A			30		
8		A		A	A	A	A			52	60	64	72	68	77	63	57	50	64	51						
9										50	68	72	97	102	85	80	70	70	63	42	A	A				
10					30					47	52	46	57	84	76	76	66	64	A	A	A				30	
11		A	A	A		29	A			52	52	58	84	107	125	112	111	108	85	42	A			37	26	
12				29	29	34	A			41		48	62	86	88	82	52	68	53	A	A			31	30	
13				A	A					47	60	74	87	102	134	97	93	81	61	66	46	A		38		
14	A	A	A			43	A			40	52	65	67	90	98	67	56	52	48	36	28			34	A	A
15	A			A						52	57	49	78	89	90	86	84	78	65	47	29					
16		28				A	A	A		46	40	67	66		58	A	57	63	51	45	32				A	
17							29			48	68	63	65	84	80	100	86	75	65	75	37			A	A	A
18	A			A		34	A			55	60	54	55		77	74	92	A	61	A	42	A				
19		A		A	A	A	A			54	60	65	84	76	58	A		58	77	A	A	A		42	A	A
20	A	A	A		34	A	A	A		47	53	56	A	64	64	62	82	70	92	84	43	44	34		A	
21		30	30	32	29					46	54	52	53	67	78	56	53	52	64	A			34			
22	A					28				44	49	48	50	58	61	56	56	58	51	60	34			28		
23						28				44	50	50		57	71	66	72	72	66	A				30		
24				28	28					44	42		57	68	61	59	58	66	52	52	43	30	40			
25										47	44	54	51	53	53	57	56	54	47						A	
26	28			26		26				49	56	45		66	82	65	76	64	57	A	A	A			31	
27	29	25		A						44	51	60	70	68	73	74	A	51	55	48	32	A				
28				A						47		52	58	57	65	72	54	A	51	46	34	28	31	29		
29									28	48	46	46	A	81	71	A	57	56	52	A	34	A	A	A		
30		A	A	A		29				50	54	53	52	62	A	84	77	45	68	45	32	32	A			
31					29	30	36			48	48	56	55	A	86	126	134	96	100	97	44	A	A	A	34	
		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	4	8	11	11	5		1	29	29	29	27	26	30	26	29	29	30	20	18	6	16	5	2	
MED		28	28	28	30	29	29		28	47	54	54	65	68	76	75	70	64	62	48	34	33	34	29	31	
U Q		29	29	30	34	30	33		14	50	60	64	76	87	86	97	89	74	68	68	43	34	37	30	34	
L Q		28	26	27	29	28	27		14	44	48	51	55	64	65	63	57	55	52	42	32	30	30	27	28	

HOURLY VALUES OF fEs AT Okinawa

JAN. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz to 30.0MHz 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	38	G	28	G	G			46	47	53	50	46	37	35	43	34	29	G	G	G	G	
2					G			G			38	51	71	91	62	36		34	49	48	28	28	G	41	G	
3		G	G	G	G	G	G	G		40	38	42	69	76	61	39	G		27	37	G		29		49	
4		G	G		G	G		G	G		31	35	42	47	52	66	60	29	59	50	30	G				
5		G	G	G	G	G					33	30	40	38	39	42	35	36	24	21	G		G			
6			G		35					24	29	38	47	60	46	54	43	36	30	20	G		G	G	23	
7	28		G	G	G			G		37	29	34	43	49	54	48	51	66	50	48	30		34			
8		57	39	47	33	35	28	G	G	G	N		36	43	43	40	G	30	30	30	29	G				
9	G	G		G	G			G		34	37	36	50	44	46	49	38	31	G	11	36	36	G	G		
10				G						G	30	39	38	39	36	38	31	41	53	51	61	G	G	G		
11	G		32	30	35	29	27			G	G		38	39	39	49	54	59	70	52	27	36		G	G	
12			G	G	30	30		G	G			38	36	39	39		G	40	40	56	71		G	G	G	
13	32	G		37	33	G				28	36	39	54	52	46	46	46	38	51	43	G	36	38	28		
14	36	34	36	27	G	28				30	38	42	40	46	56	37	G	38	29	G	G		G	94	59	
15	50	32	36		24			G			28	38	72	71	49	44	39		G	27	G			29		
16		G		29	28	39	33	28		G	29	42	36	65	43	68	40	42		G	G			36		
17				G	G	G		G	G			36	30	44	55	50	52	35	28	G	G		34	44	48	
18	50	G		29	35	36	31		G	G	G		38	78	118	72	53	N	77	68	51	40	49			
19		34	39	50	50	42	28			28	32	34	76	59	58	58	46	48	44	58	84	50	36	49	88	
20	68	43	70	46	48	50	50	27	27	35	51	73	95	49	50	49	40	84	84	G	G	33	44			
21		G	G		29	G		G			27	35	G	36	G	34	50	38	62	59	30	37				
22	34				G		28	28	27	30	30	34	34	42	36	32	38	28	30	G	G		G	G		
23		G	G	G	G				G		30	42	48	47	38	50	56	38	32	64	32	G	G		G	
24			G	G	G				G		30	34	34	36	36	40	36	34	28	G	G	G	G		G	
25	G	G		G	G					29	29	34	G	G	G		35	87	39	27	29	29		25	35	27
26	26		24		G					28	G	N	G		43	50	47	55	36	37	42	29	28	G	G	
27	G	G						G		28	38	35	49	37	37	73	70	60	34	33	28	28	29			
28		G			G					28		32	35	38	45	47	34	77	62	48	G	G	G	G	G	
29		G	G	G					G		32	40	45	62	51	80	102	50	39	34	54	G	49	50	28	G
30	G		43	38	36	G			G		30	53	46	G	60	90	52	52	40	36	30	G	G	45		G
31					G	30	26				32	36	46	78	58	48	44	48	30	25	29	46	108	92	34	
	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	20	22	25	27	15	7	19	24	27	29	31	31	31	30	29	30	30	31	30	20	23	18	15		
MED	28	G	26	G	G	28	28	G	28	30	38	42	47	49	48	44	38	36	33	28	28	G	28	G		
U Q	43	33	36	35	30	33	28	G	30	37	42	54	60	56	53	52	42	51	51	30	36	34	44	48		
L Q	G	G	G	G	G	G	28	G	G	29	34	35	39	39	40	35	35	30	20	G	G	G	G	G		

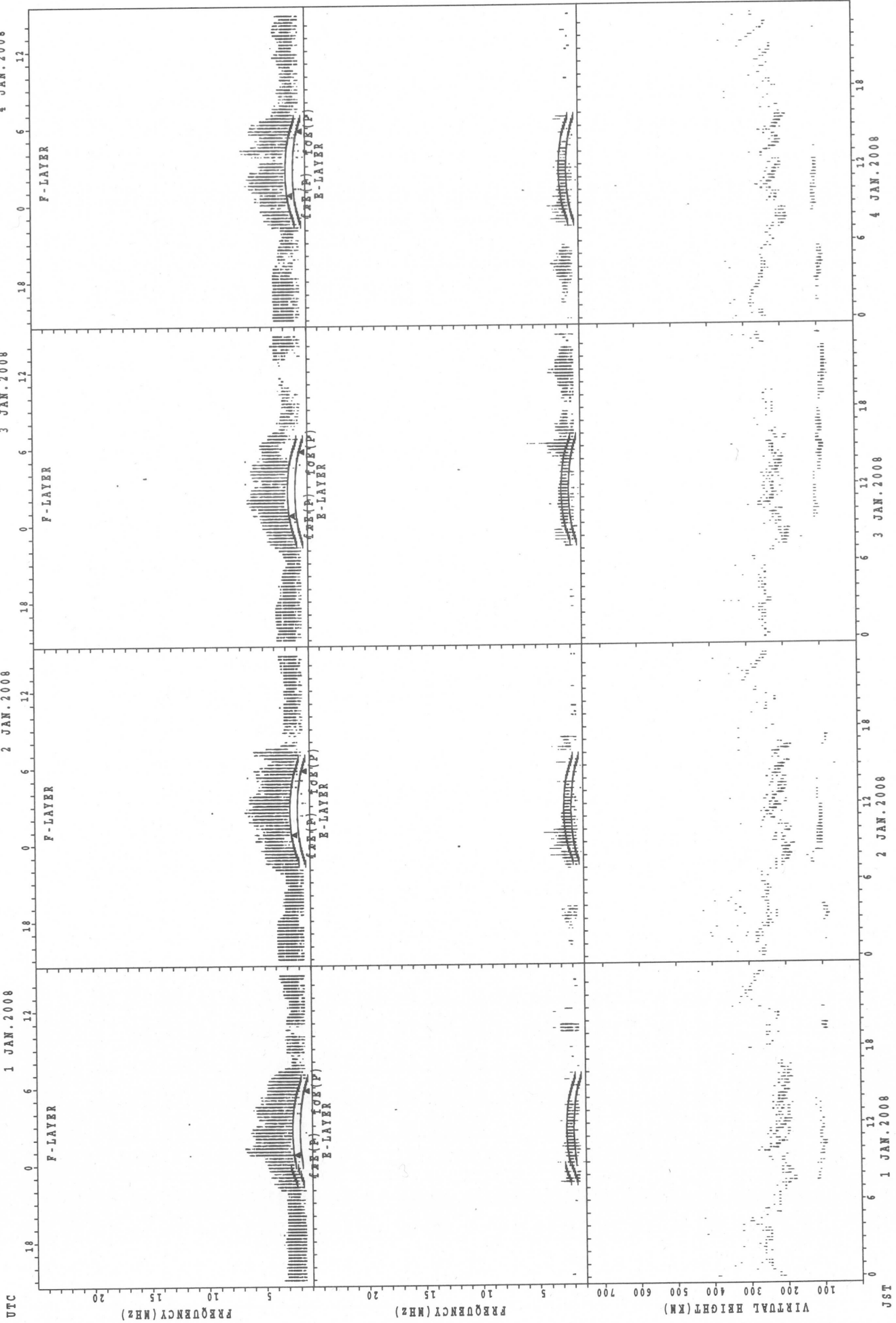
HOURLY VALUES OF fmin AT Okinawa

JAN. 2008

LAT. 26°40.5'N LON. 128°09.2'E SWEEP 1.0MHz TO 30.0MHz 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	15	15	15	14	14	15	21	17	17	21	15	14	14	14	15	15	17	22	15	
2					15			15		14	15	17	17	21	18	14	15	14	14	14	15	28	14	15	
3		20	16	16	15	17	20	15	22	14	14	18	18	18	22	14	14	14	16		14			15	
4		15	14		17	15		15	22	14	18	17	15	17	18	16	28	14	14	14	15				
5		16	15	15	14	16				14	15	16	17	18	23	14	14	16	14	14		17			
6			15	14					22	14	14	18	16	17	17	15	15	14	23	15		16	15	15	
7	16		17	14	18			18	16	15	14	24	15	15	18	14	15	14	15	14		15			
8		24	17	15	14	14	14	16	23	28	18	18	21	20	21	29	18	17	14	15	18				
9	20	15		15	14			18	18	15	14	14	18	21	23	17	16	22	15	15	14				
10				21					23	15	20	21	15	21	20	16	14	14	14	15	21	15	14		
11	15	14	15	14	14	15			15	14	14	16	18	20	17	16	14	14	16	22		14	16		
12			21	15	16	15		17	18		14	14	23	21	39	18	14	14	14	17		15	15	16	
13	16	20	15	15	17				15	14	15	18	21	22	15	15	14	14	15	18	16	15	15		
14	16	14	14	15	15	14			21	14	14	20	17	20	18	14	15	14	17	18		14	15	15	
15	14	14	15		14			17	17	18	39	17	18	18	16	20	14	21	14	15			15		
16		15	14	14	14	14	15		22	14	14	15	21	16	17	14	14	14	15	15			14		
17				16	14	15		15	23	14	14	17	17	17	20	17	20	15	15	17		14	15	14	
18	15	18	14	14	14	15		16	21	26	28	22	22	20	21	18	16	17	14	14	14				
19		14	15	15	14	15	15		15	15	15	16	23	17	22	24	16	14	14	15	14	14	14	15	
20	15	14	15	14	14	14	15	14	14	17	17	16	21	21	17	21	20	15	15	18	15	15	14		
21		15	17	15	21			17	23	27	17	18	21	44	21	18	14	15	14	16	15				
22	16				15	14	14	14	14	24	38	39	26	28	30	22	21	14	15	20		16			
23		14	16	15	15			15	15	15	16	20	21	23	21	15	14	15	14	14	15	17			
24			14	15	15			16	15	14	14	20	42	15	20	17	14	14	15	15	18	16		21	
25	17	16		15	15				14	15	15	20	32	42	20	17	28	14	14	14		15	17	15	
26	14		14		14				14	16	15	18	22	21	22	17	14	14	14	14	15	15	15	18	
27	15	15	14					16	23	14	17	17	21	21	18	15	14	14	14	15	17	16			
28		17		15	15				14		15	16	15	20	20	17	16	14	14	16	16	14	14	14	
29		15	15	15				15	14	14	14	22	21	21	18	14	14	14	14	17	15	15	14	16	
30	14	14	15	14	16			15	14	14	18	18	20	21	27	17	16	14	14	14	20	15		15	
31				20	15	15			14	14	14	21	28	23	20	27	17	14	20	15	14	15	15	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	13	20	22	25	27	15	7	19	29	29	31	31	31	31	31	31	31	31	31	30	20	23	18	15	
MED	15	15	15	15	15	15	15	15	16	14	15	18	21	20	20	17	15	14	14	15	15	15	15	15	
U Q	16	16	16	15	15	15	15	17	22	15	17	20	22	21	22	18	16	15	15	17	16	16	15	16	
L Q	14	14	14	14	14	14	14	15	14	14	14	16	17	17	18	15	14	14	14	14	14	14	15	14	15

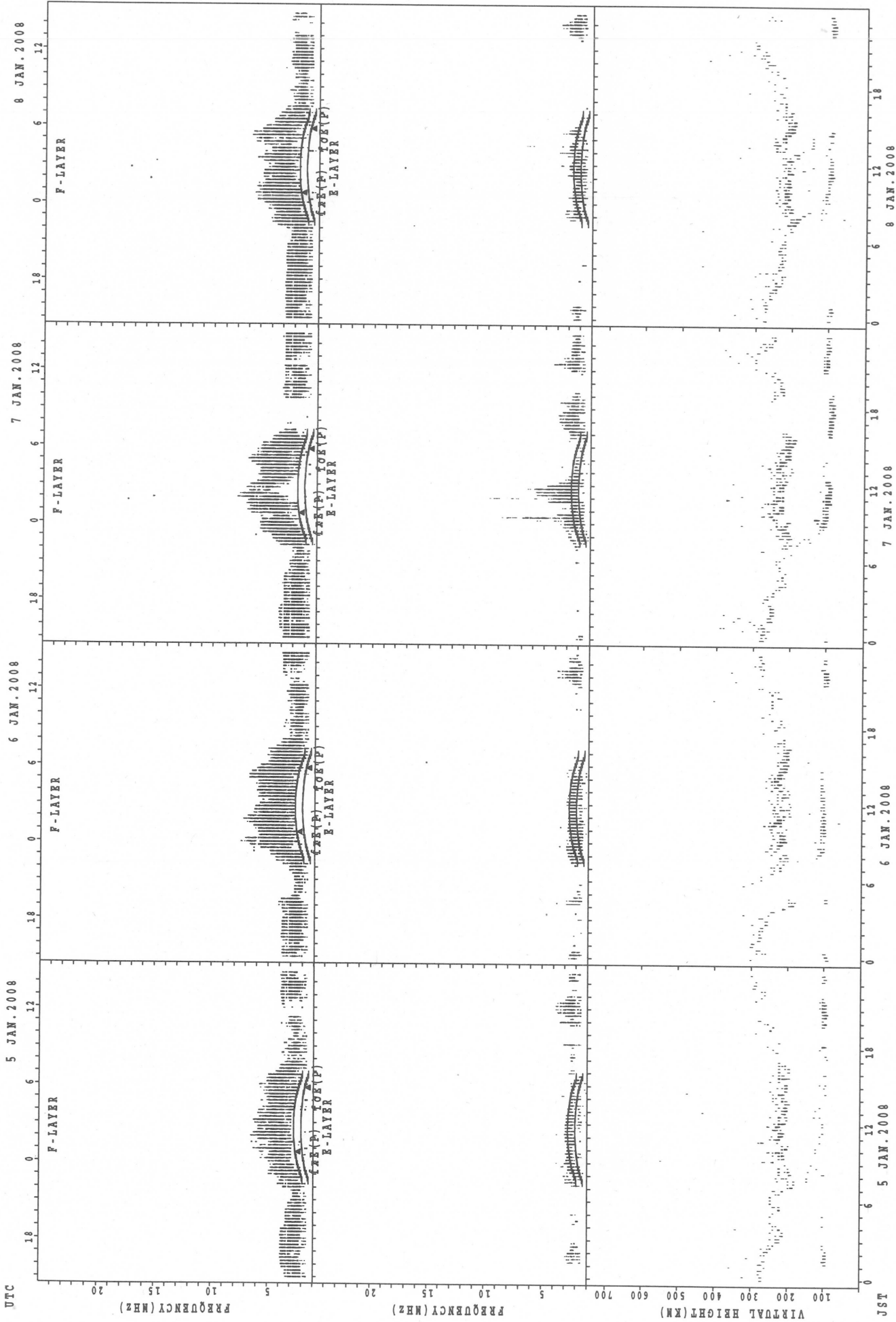
SUMMARY PLOTS AT Wakkanai



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

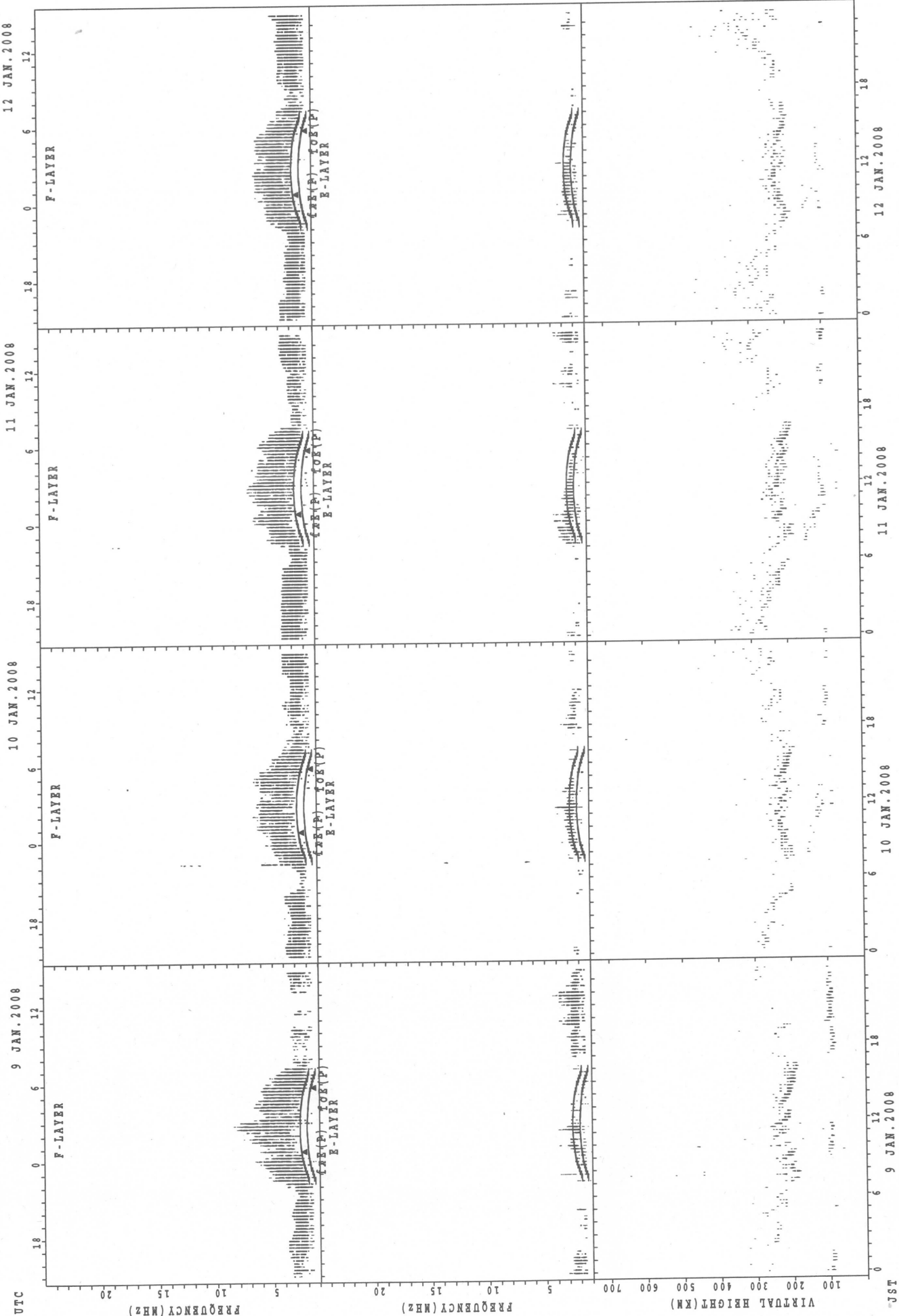
JST

SUMMARY PLOTS AT Wakkanai



f2e(p); PREDICTED VALUE FOR f2e
 f2e(o); PREDICTED VALUE FOR f2e

SUMMARY PLOTS AT Wakkanai



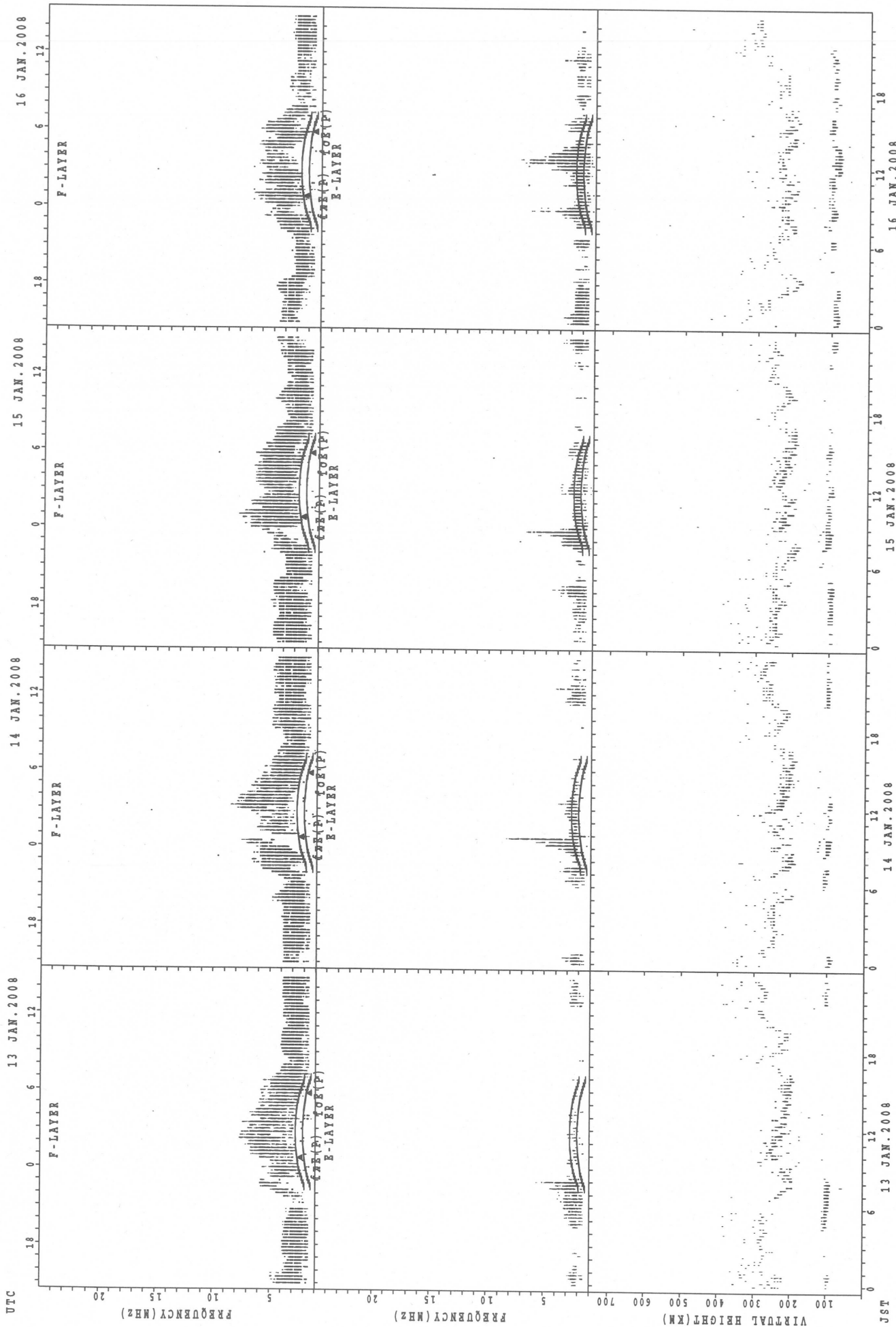
UTC
 9 JAN. 2008
 10 JAN. 2008
 11 JAN. 2008
 12 JAN. 2008

Virtual Height (KM)
 Frequency (MHz)
 Frequency (MHz)

$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

JST

SUMMARY PLOTS AT Wakkanai



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

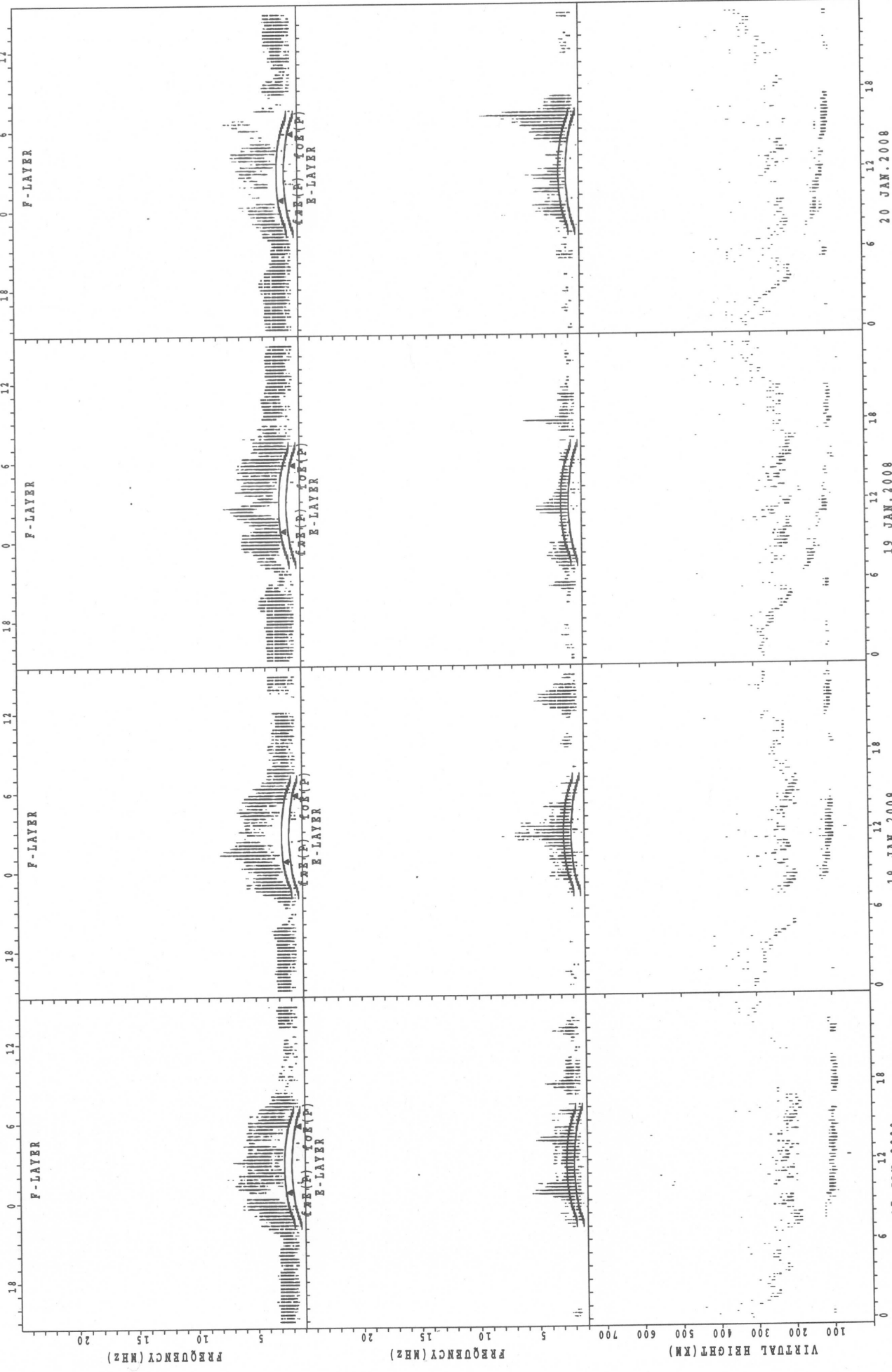
SUMMARY PLOTS AT Wakkanai

UTC 17 JAN. 2008

18 JAN. 2008

19 JAN. 2008

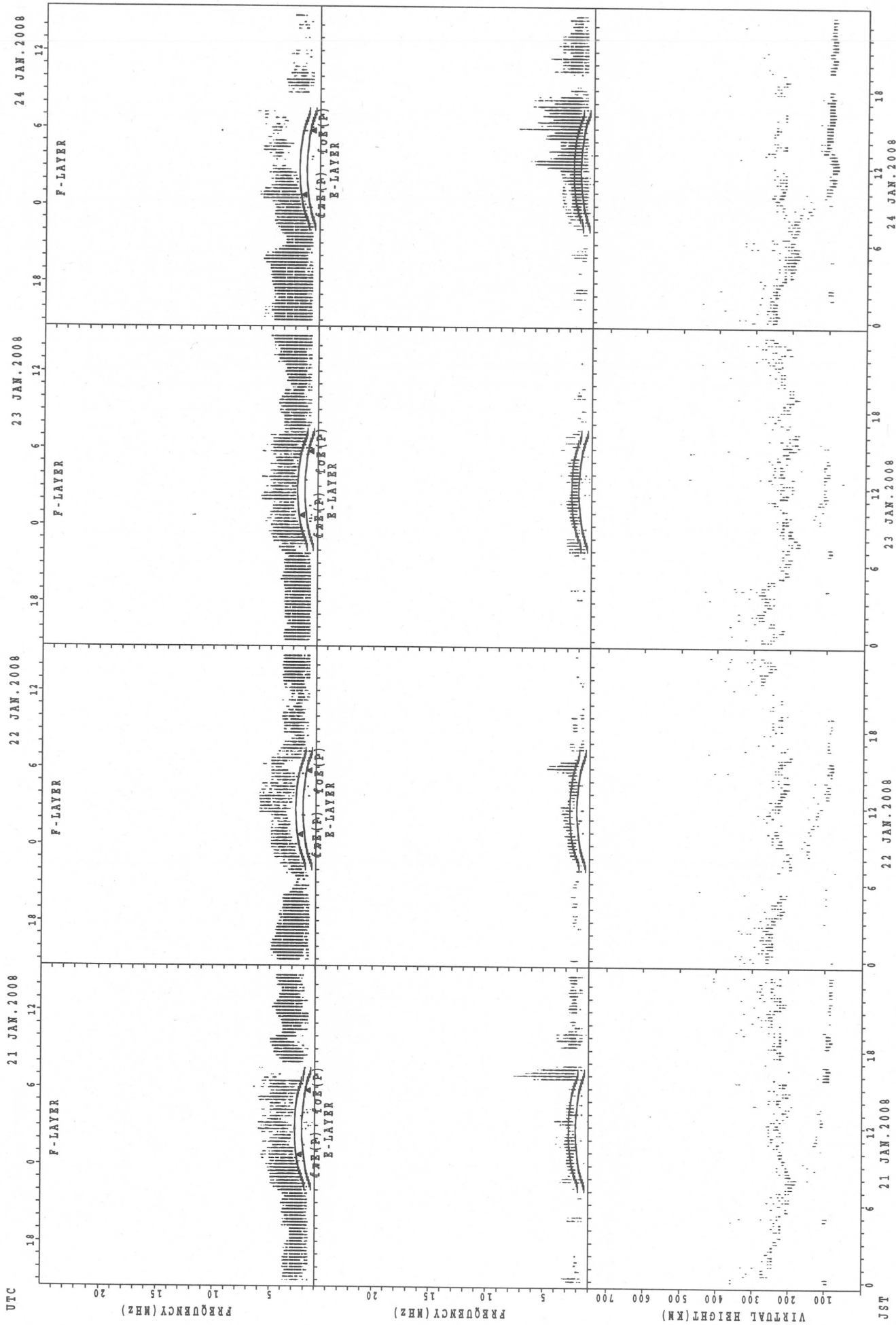
20 JAN. 2008



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

JST

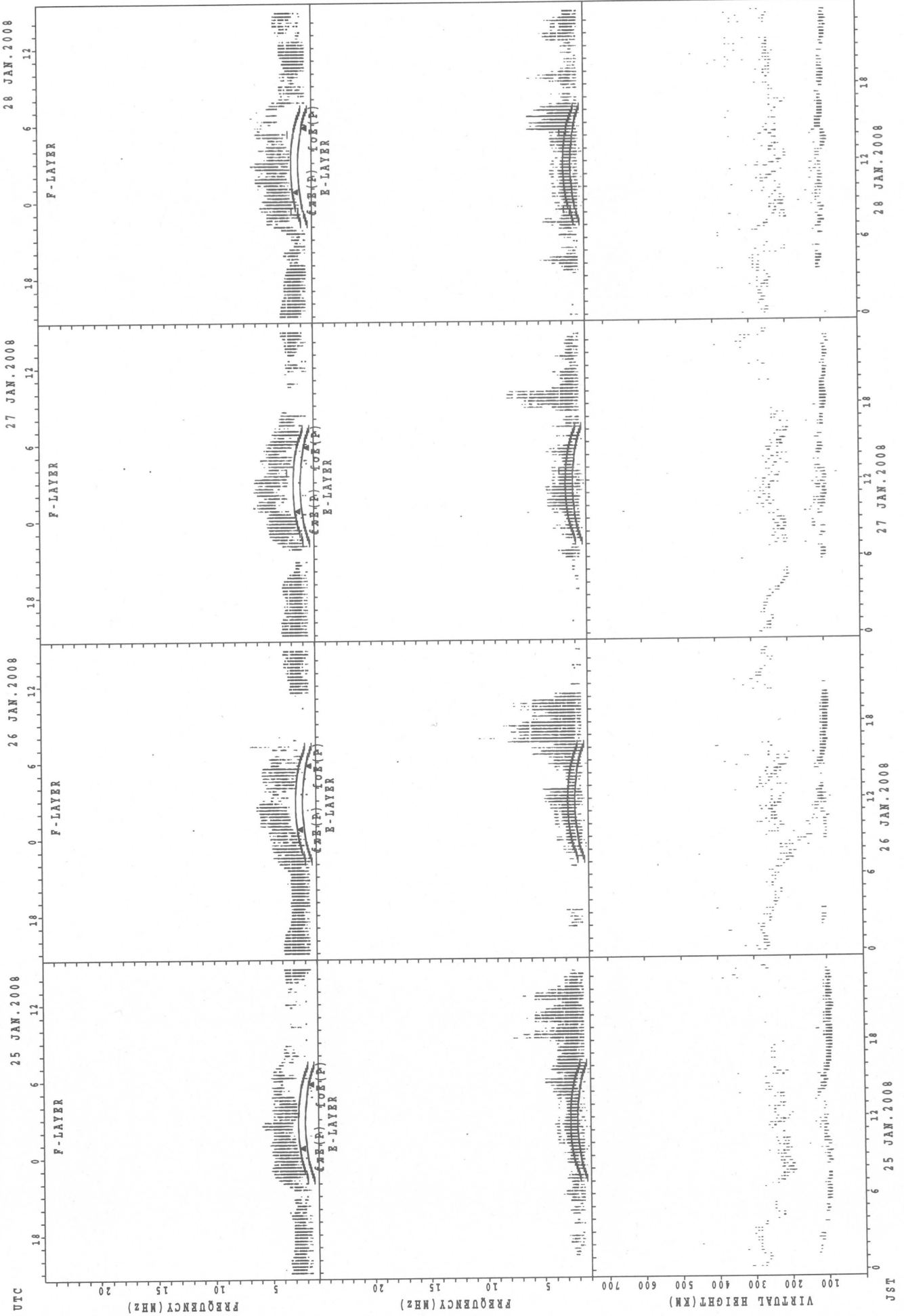
SUMMARY PLOTS AT Wakkanai



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

JST

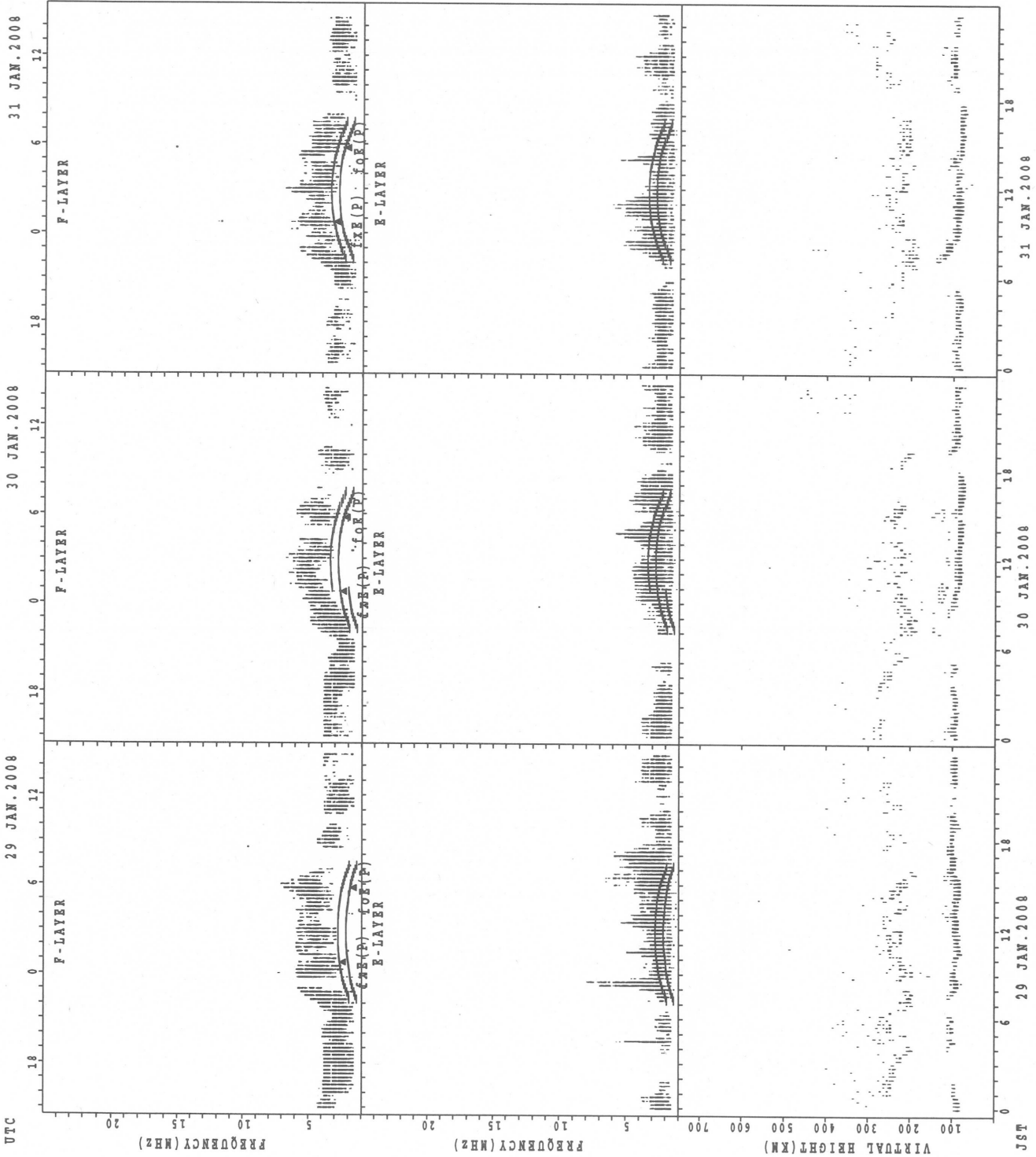
SUMMARY PLOTS AT Wakkanai



f_xE(P); PREDICTED VALUE FOR f_xE
 f_oE(P); PREDICTED VALUE FOR f_oE

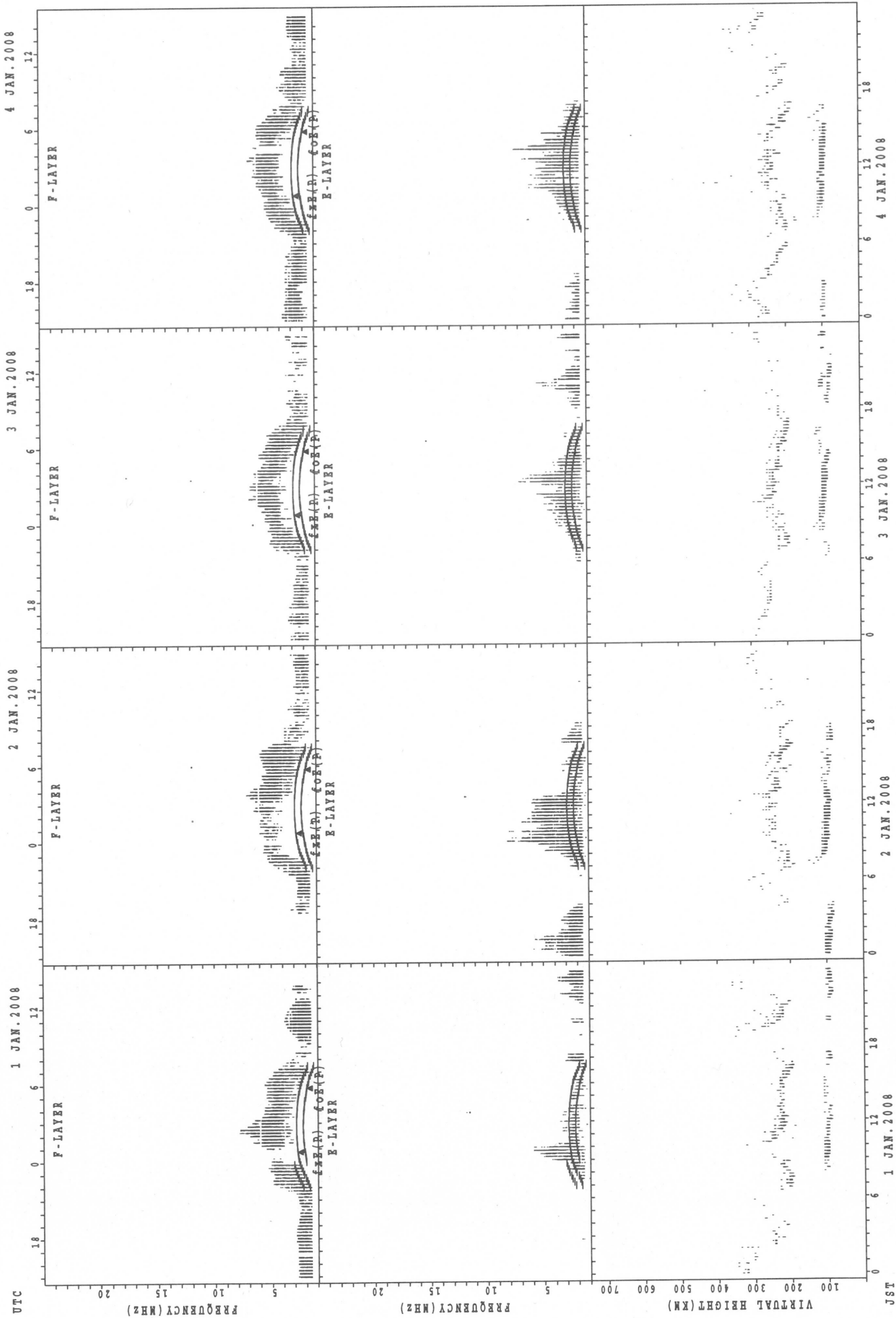
JST

SUMMARY PLOTS AT Wakkanai



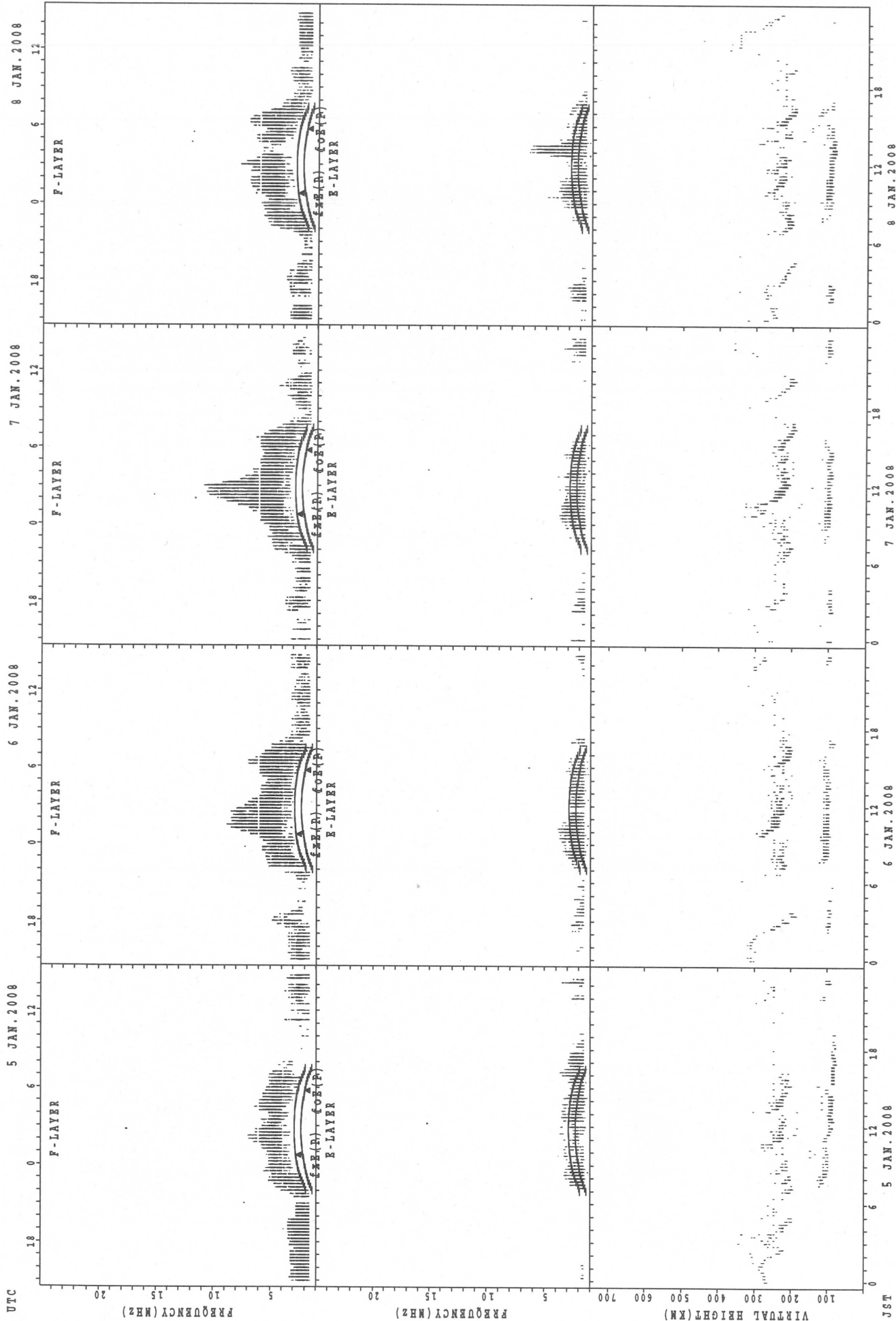
fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



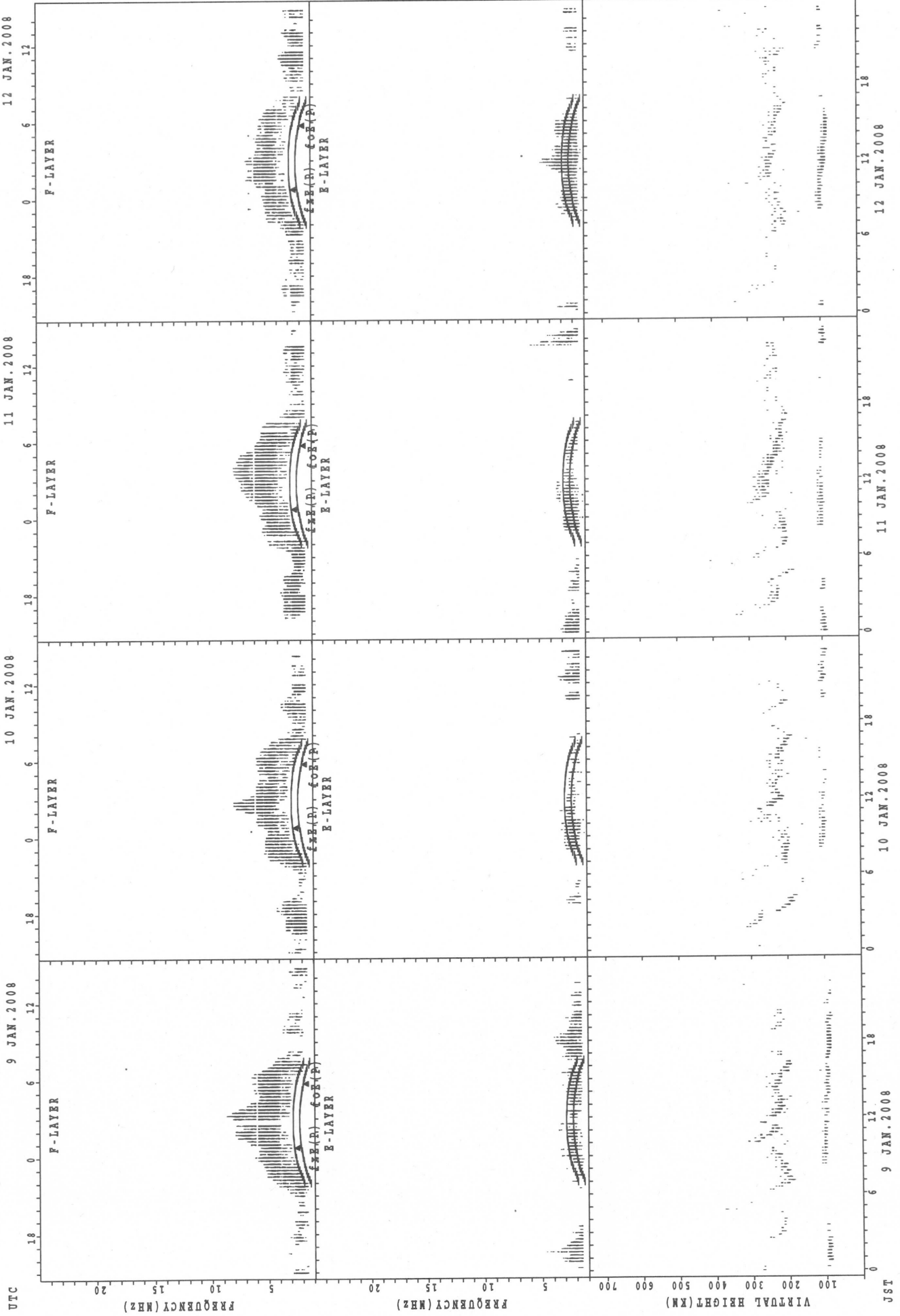
fxe(p); PREDICTED VALUE FOR fxe
foe(p); PREDICTED VALUE FOR foe

SUMMARY PLOTS AT Kokubunji



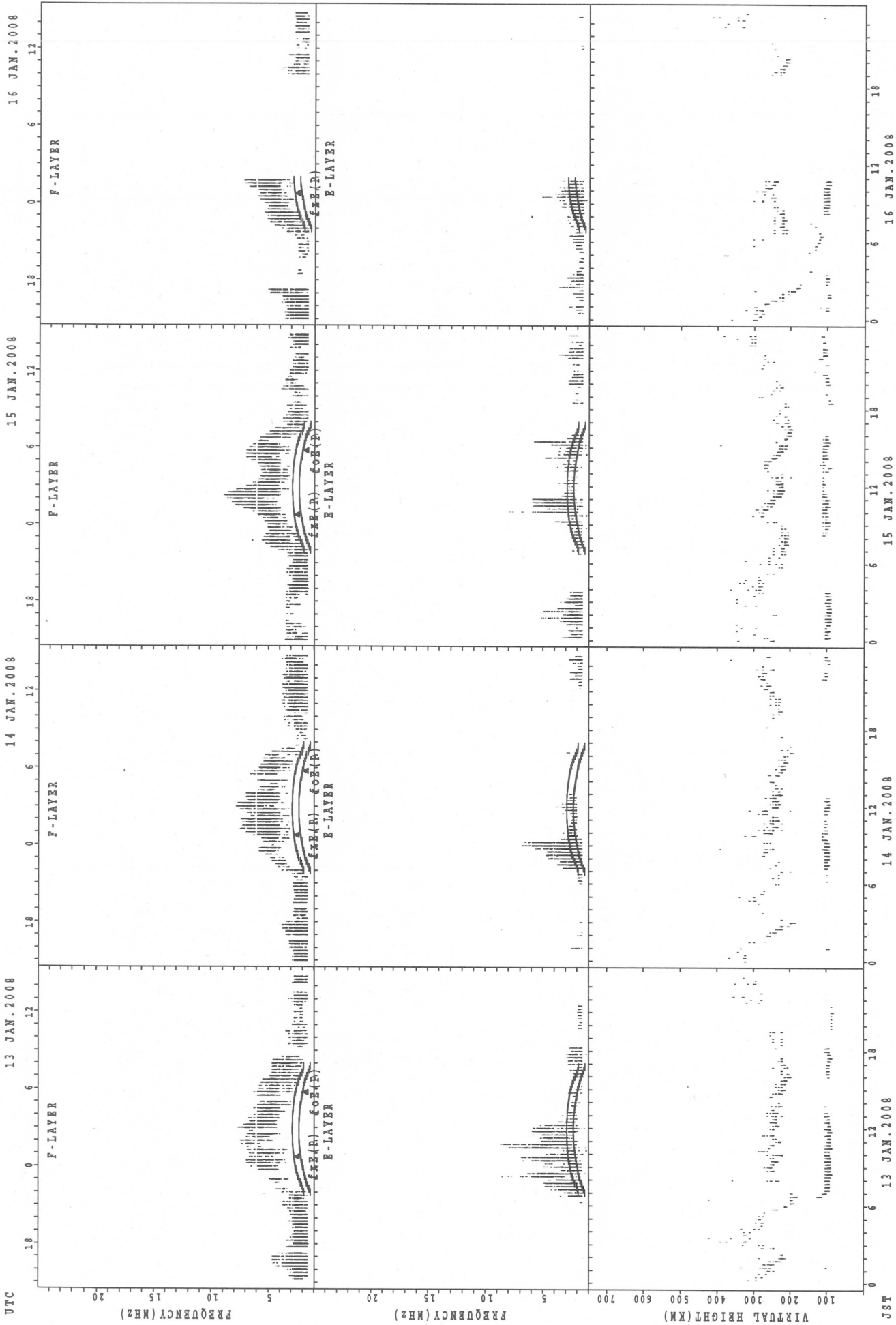
f_{xe}(P); PREDICTED VALUE FOR f_{xe}
 f_{ofe}(P); PREDICTED VALUE FOR f_{ofe}

SUMMARY PLOTS AT Kokubunji



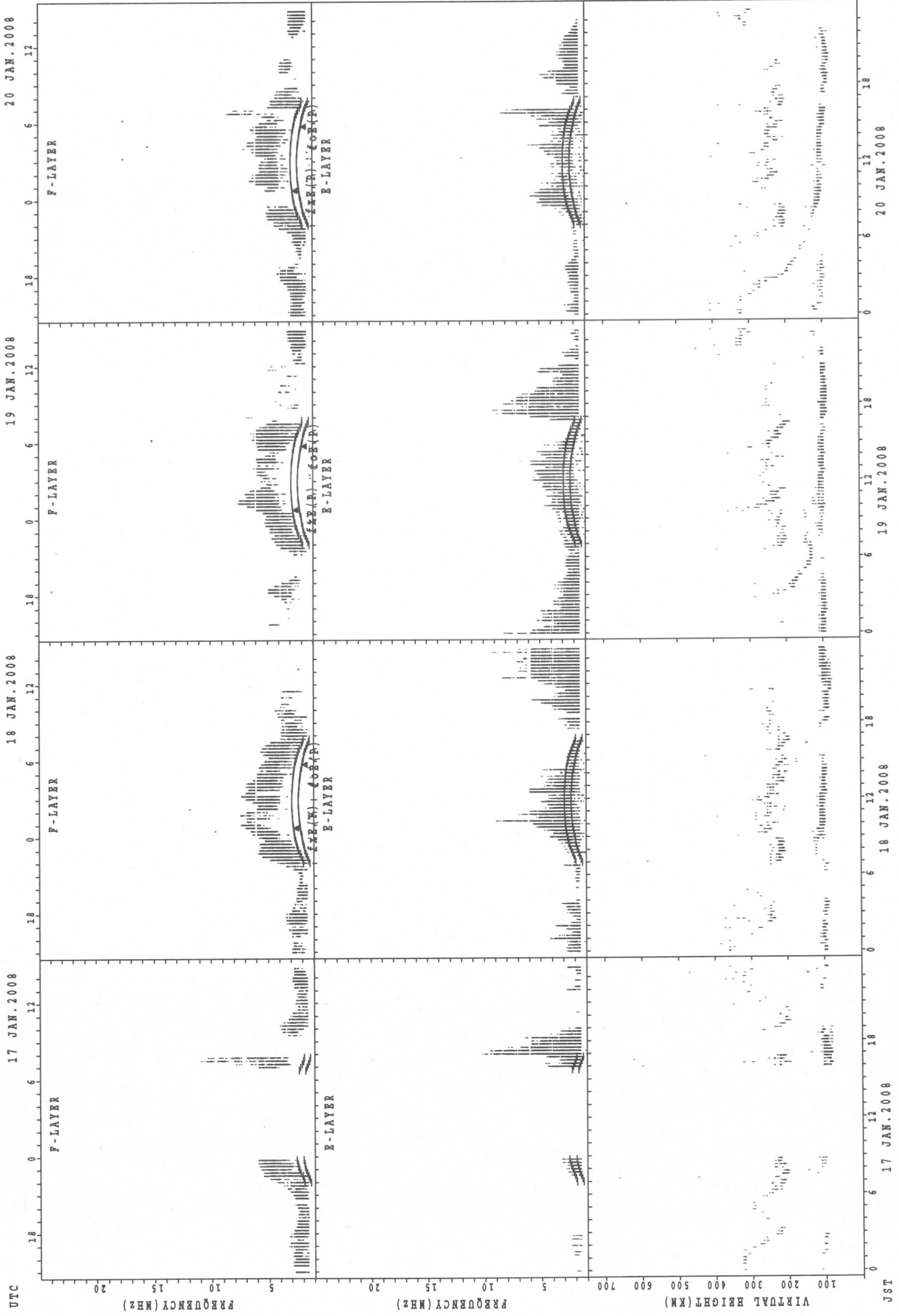
fxe(P); PREDICTED VALUE FOR fxe
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



f_xE(P); PREDICTED VALUE FOR f_xE
 f_oE(P); PREDICTED VALUE FOR f_oE

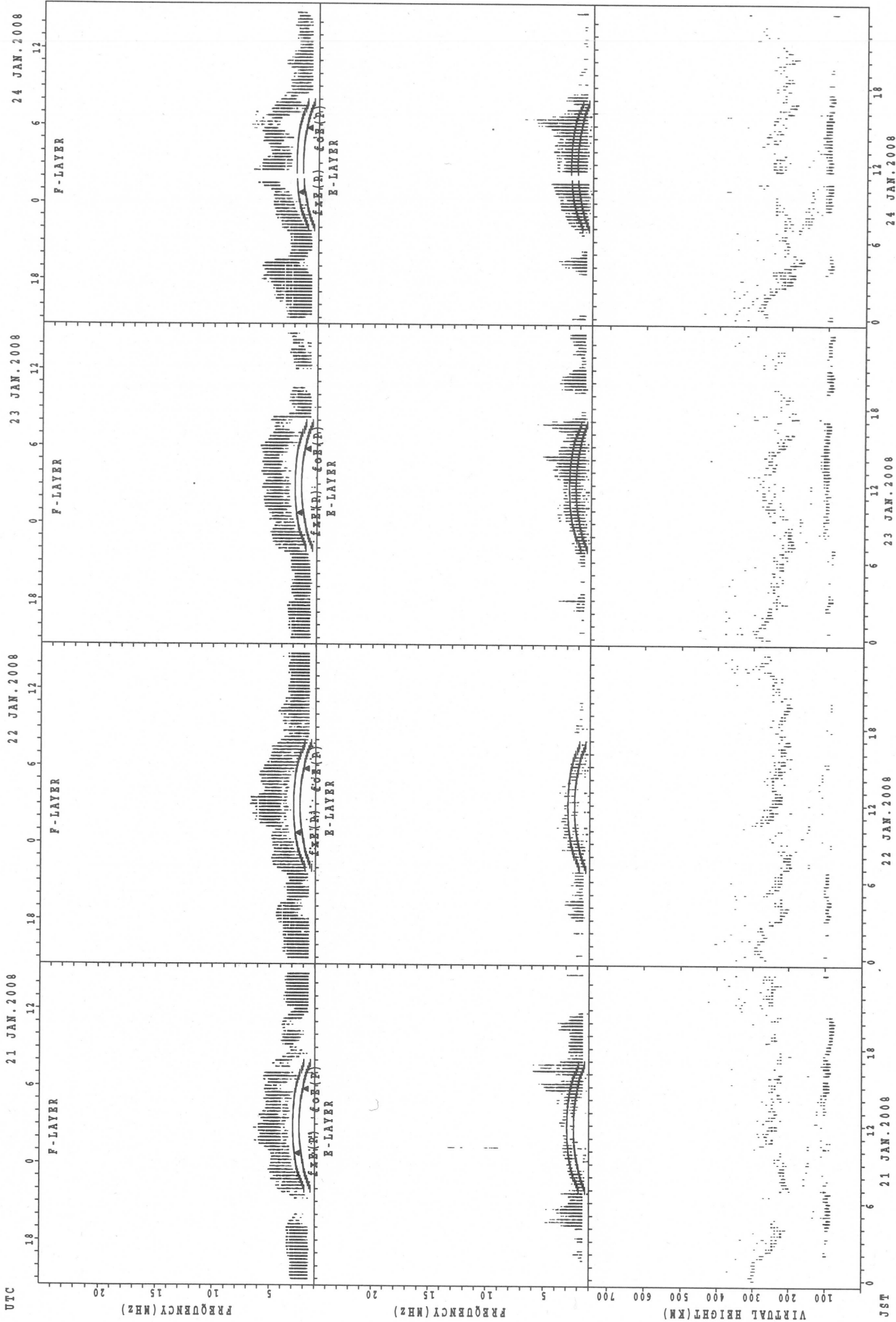
SUMMARY PLOTS AT Kokubunji



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

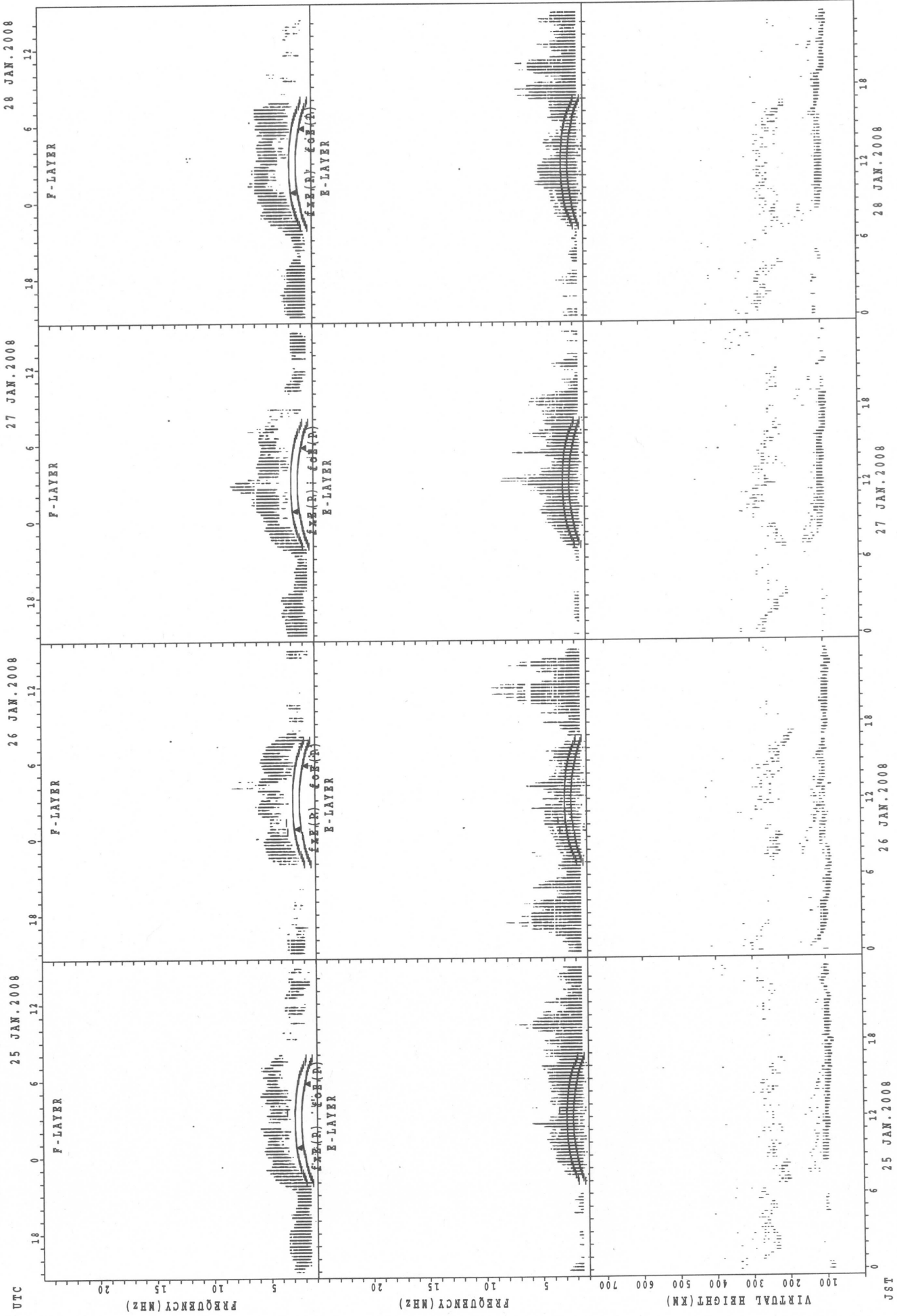
JST

SUMMARY PLOTS AT Kokubunji



fxe(p); PREDICTED VALUE FOR fxe
foe(p); PREDICTED VALUE FOR foe

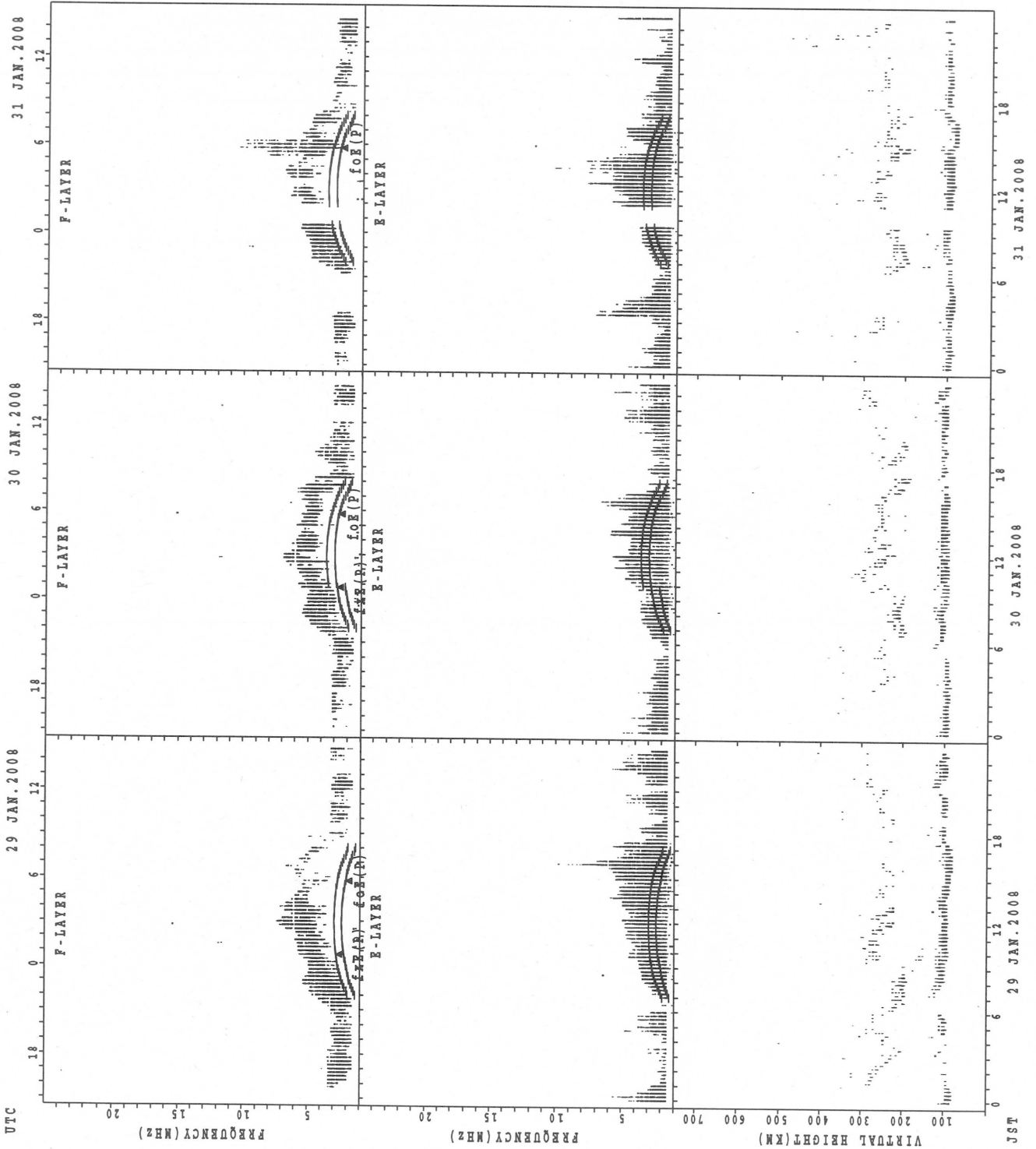
SUMMARY PLOTS AT Kokubunji



f_xE(P); PREDICTED VALUE FOR f_xE
 f_oE(P); PREDICTED VALUE FOR f_oE

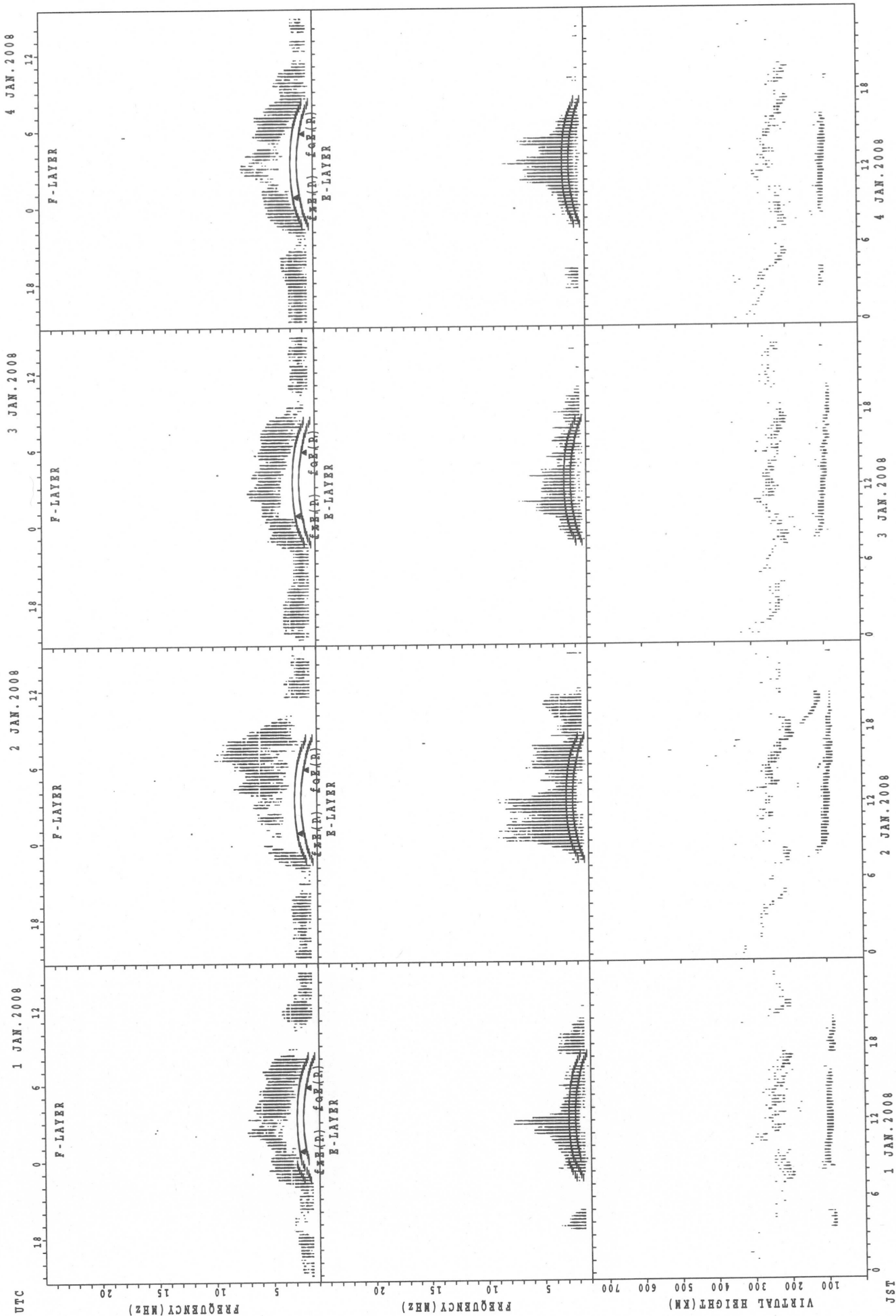
JST

SUMMARY PLOTS AT Kokubunji



$f_xE(P)$; PREDICTED VALUE FOR f_xE
 $f_oE(P)$; PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



UTC

FREQUENCY (MHz)

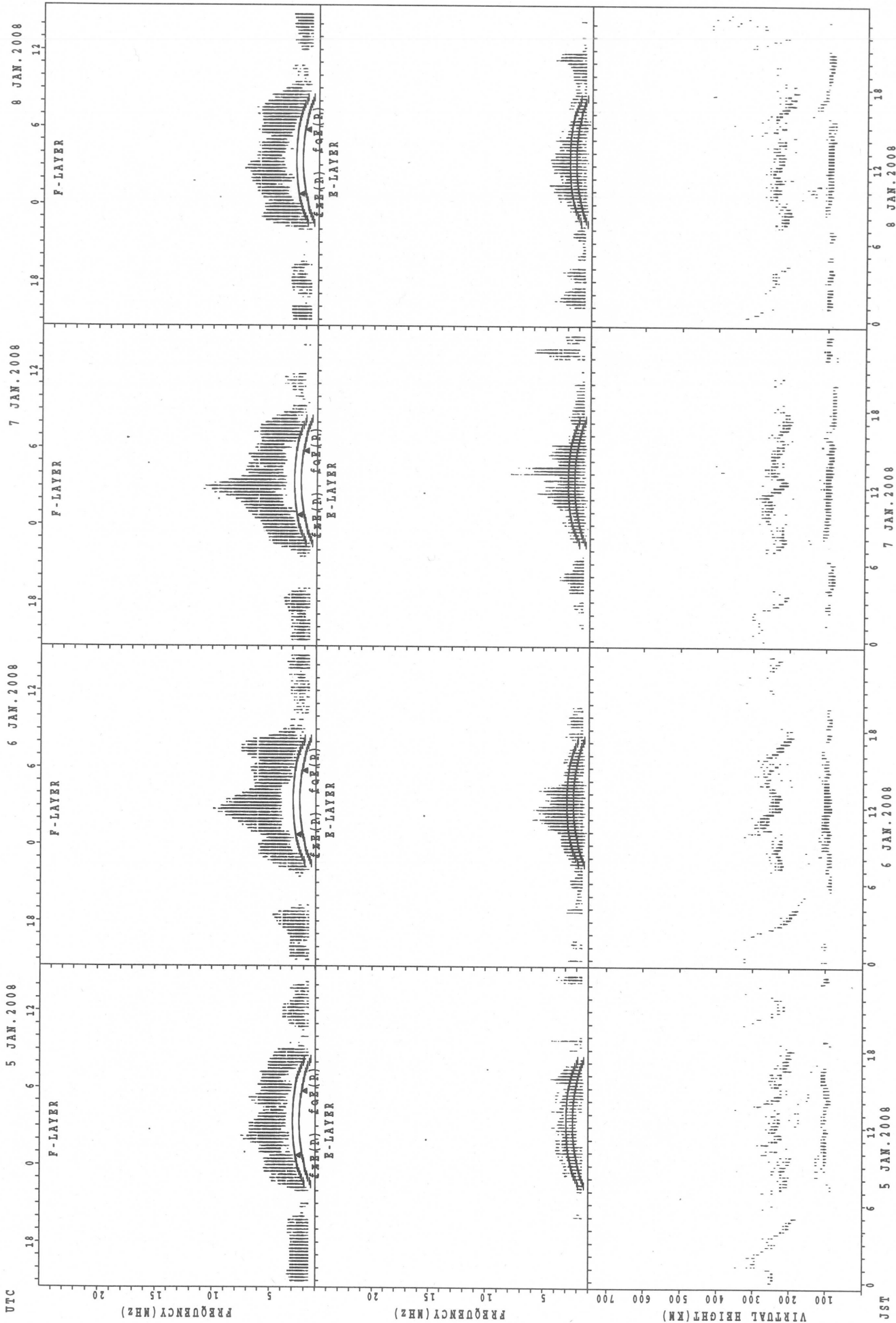
FREQUENCY (MHz)

VIRTUAL HEIGHT (KM)

JST

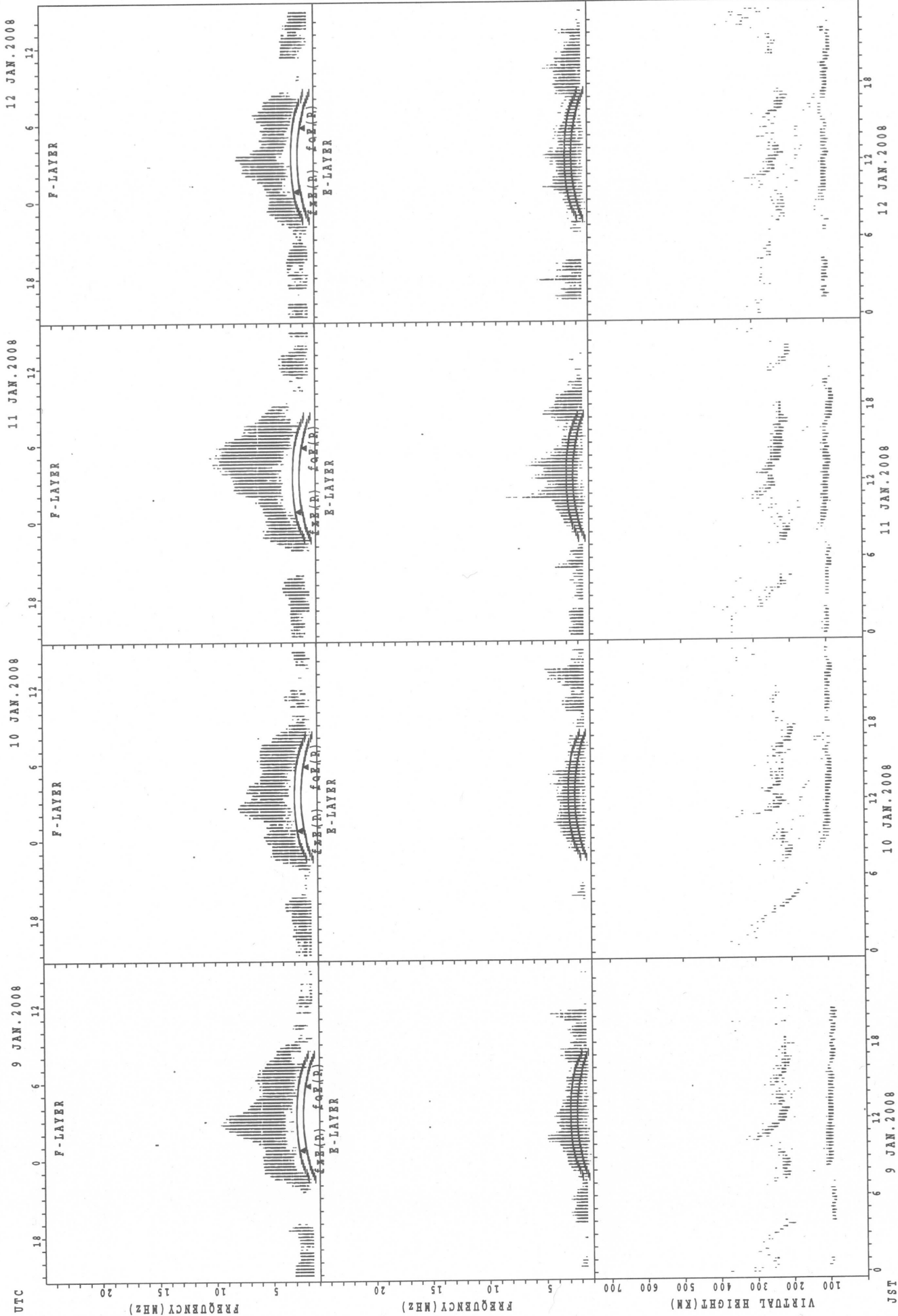
$f_{x E}(P)$; PREDICTED VALUE FOR $f_{x E}$
 $f_{o E}(P)$; PREDICTED VALUE FOR $f_{o E}$

SUMMARY PLOTS AT Yamagawa



f_{xe}(P); PREDICTED VALUE FOR f_{xe}
 f_{oe}(P); PREDICTED VALUE FOR f_{oe}

SUMMARY PLOTS AT Yamagawa



fx(F); PREDICTED VALUE FOR fx(F)
fo(F); PREDICTED VALUE FOR fo(F)

SUMMARY PLOTS AT Yamagawa

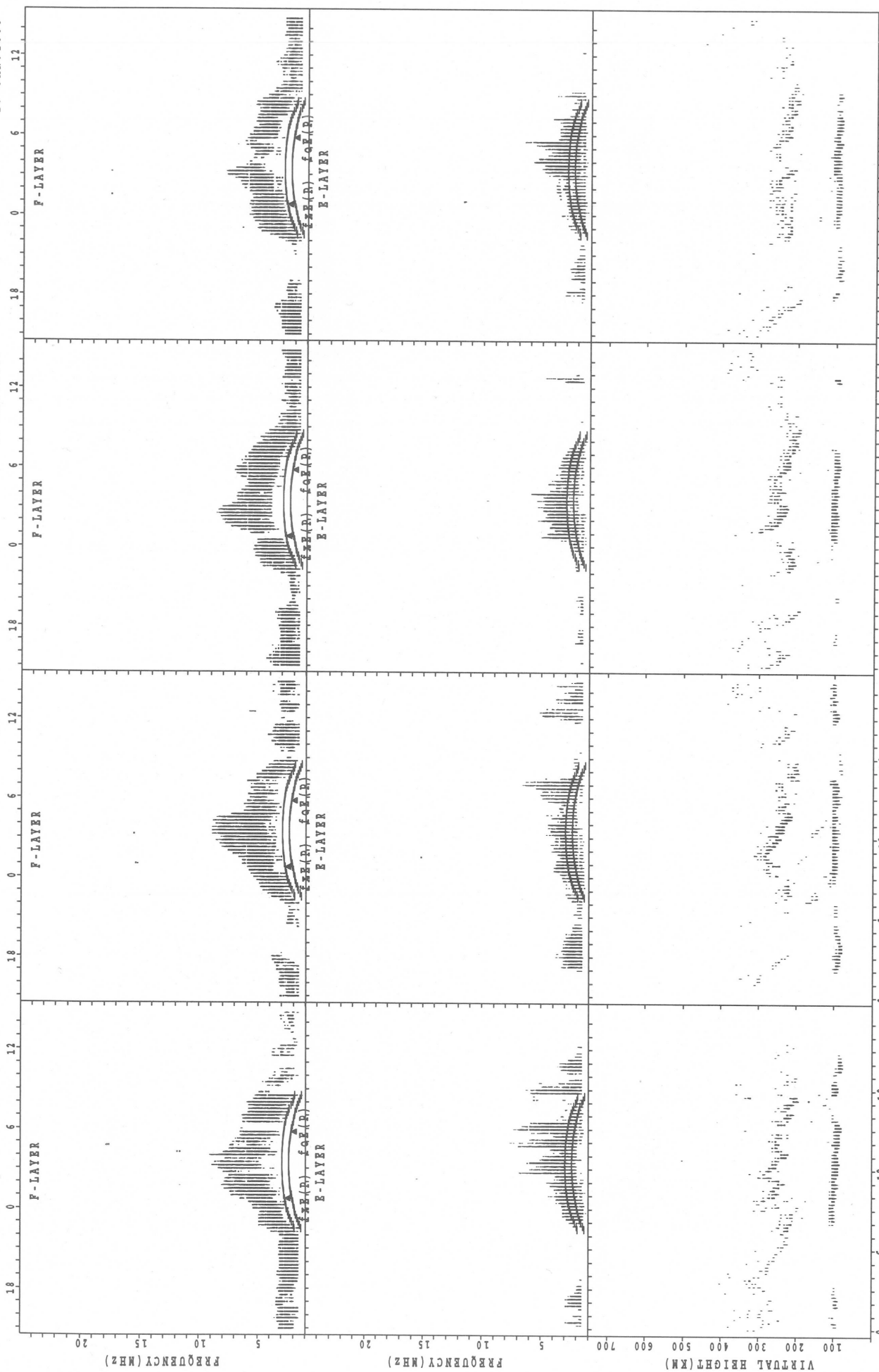
13 JAN. 2008

14 JAN. 2008

15 JAN. 2008

16 JAN. 2008

UTC



JST

foF2(P); PREDICTED VALUE FOR foF2
foE(P); PREDICTED VALUE FOR foE

13 JAN. 2008

14 JAN. 2008

15 JAN. 2008

16 JAN. 2008

UTC

SUMMARY PLOTS AT Yamagawa

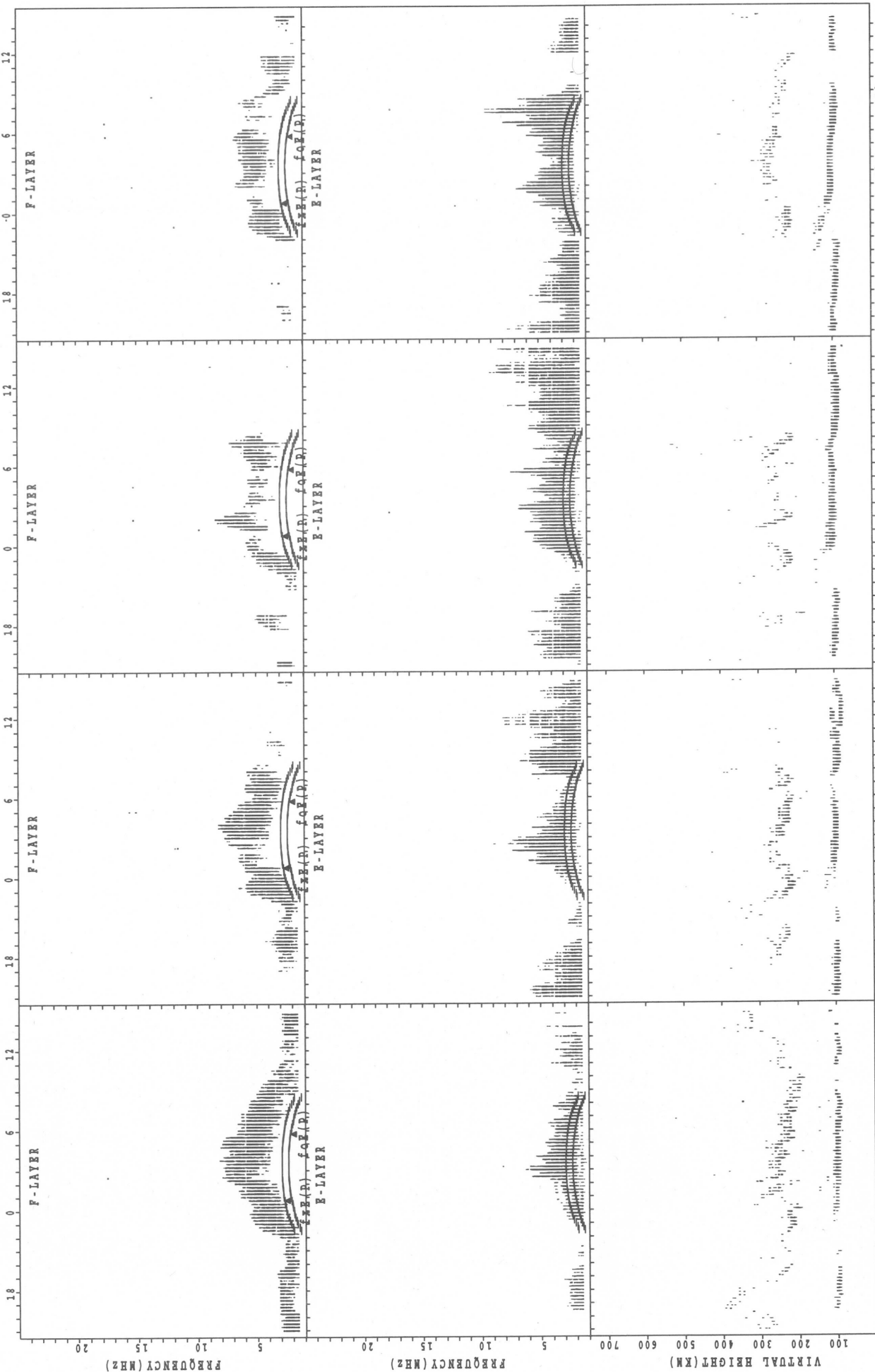
17 JAN. 2008

18 JAN. 2008

19 JAN. 2008

20 JAN. 2008

UTC



JST

17 JAN. 2008

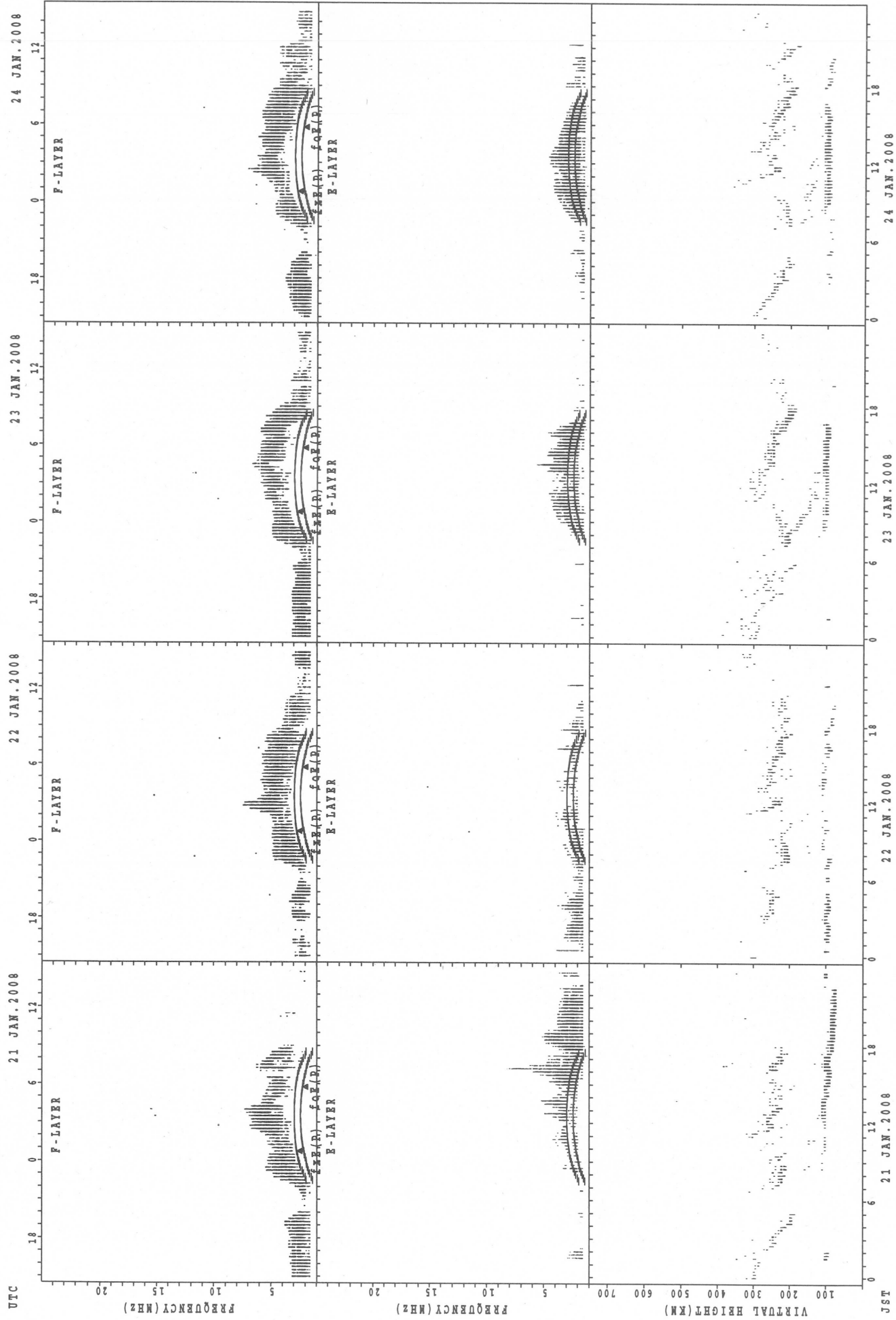
18 JAN. 2008

19 JAN. 2008

20 JAN. 2008

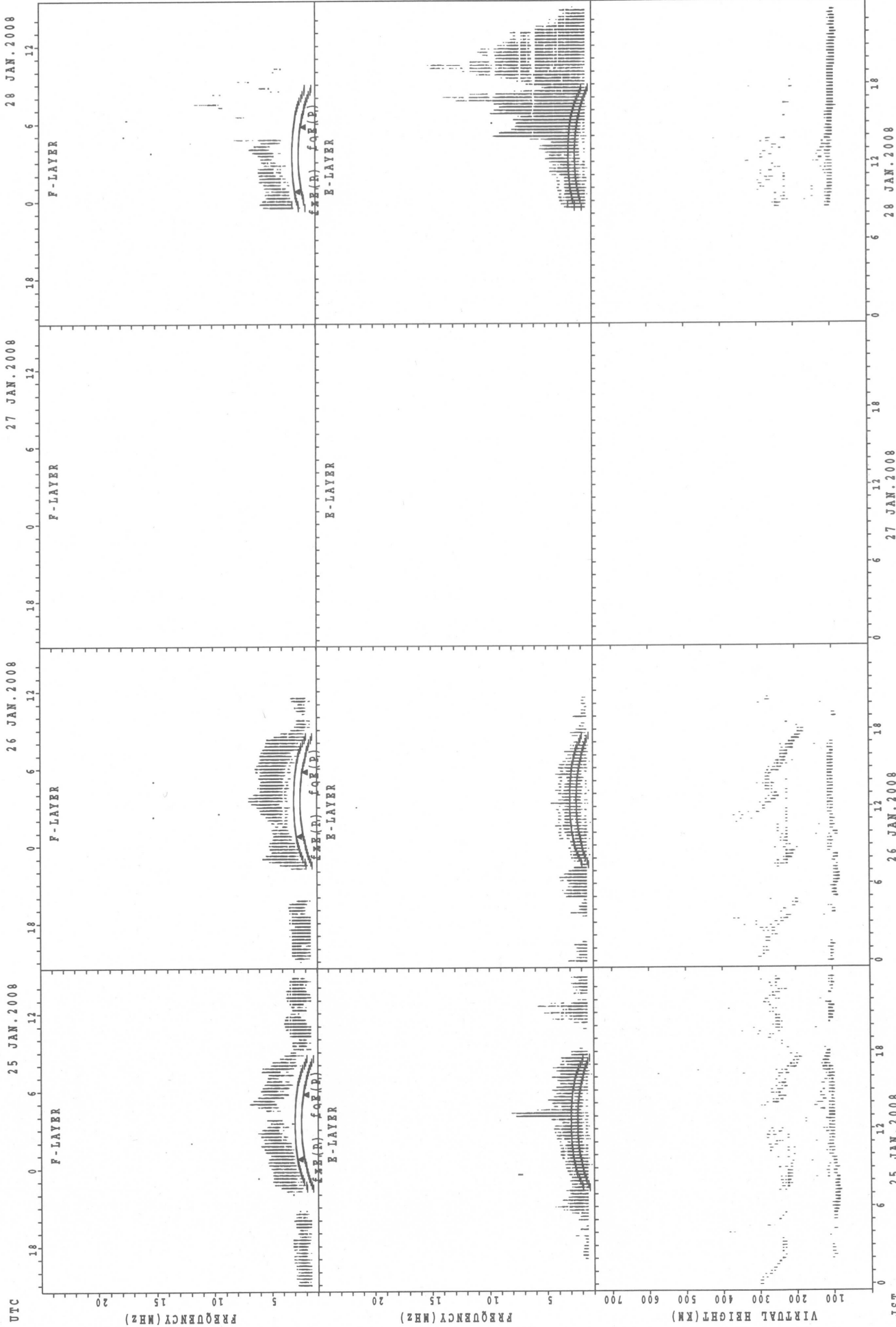
f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Yamagawa



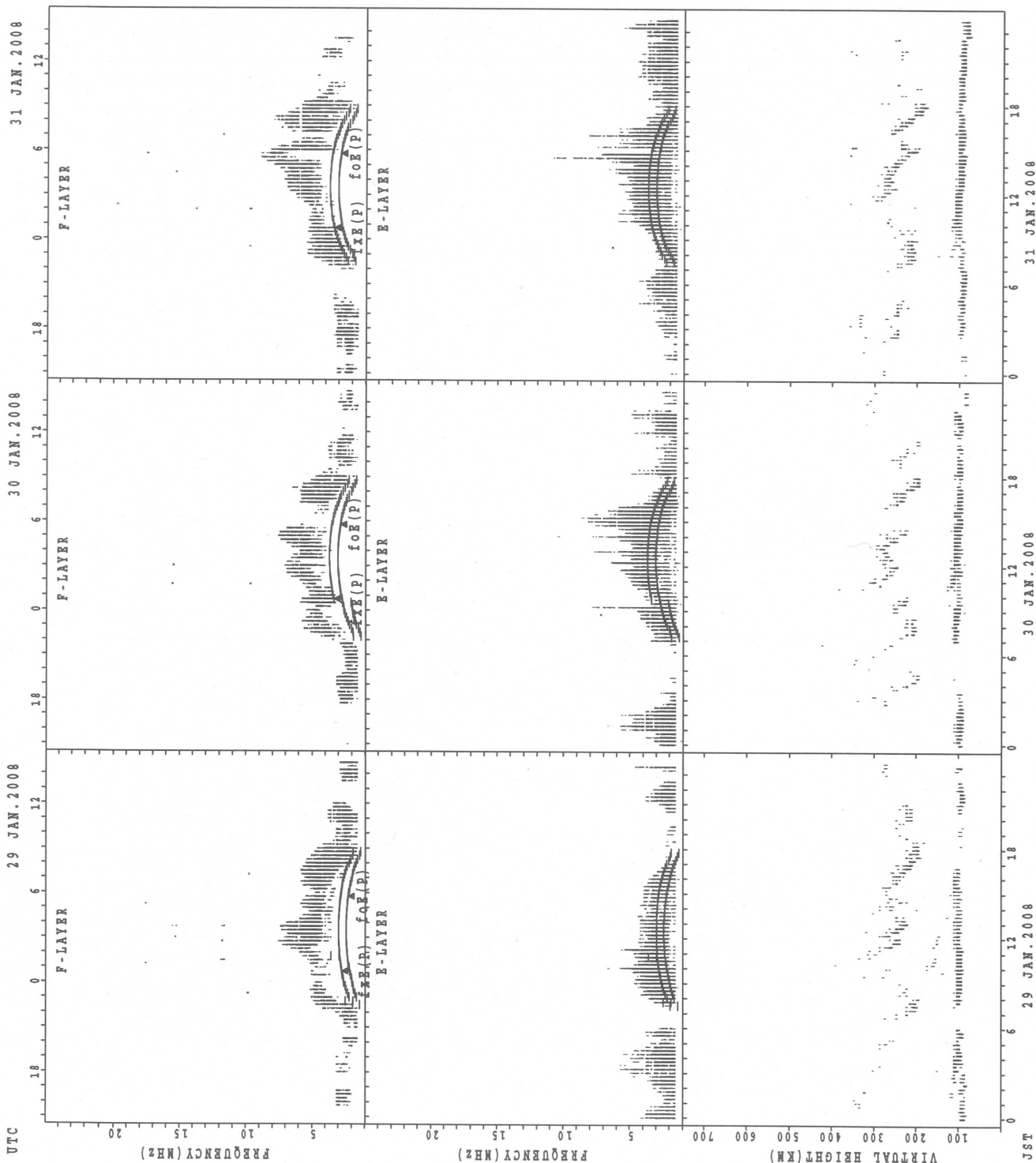
fxe(P); PREDICTED VALUE FOR fxe
foe(P); PREDICTED VALUE FOR foe

SUMMARY PLOTS AT Yamagawa



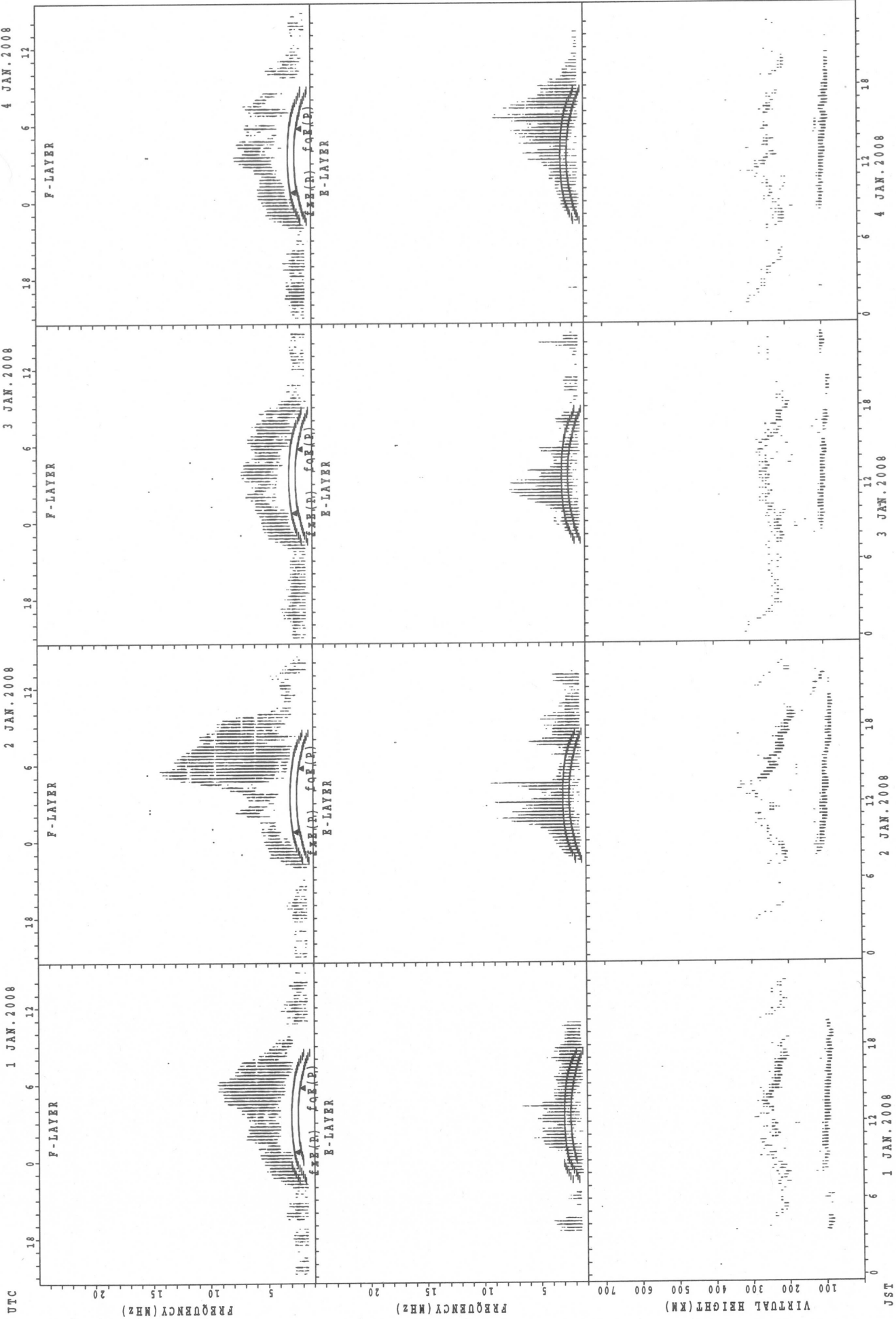
f_{x E}(P); PREDICTED VALUE FOR f_{x E}
 f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Yamagawa



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

SUMMARY PLOTS AT Okinawa



fxe(p); PREDICTED VALUE FOR fxe
foe(p); PREDICTED VALUE FOR foe

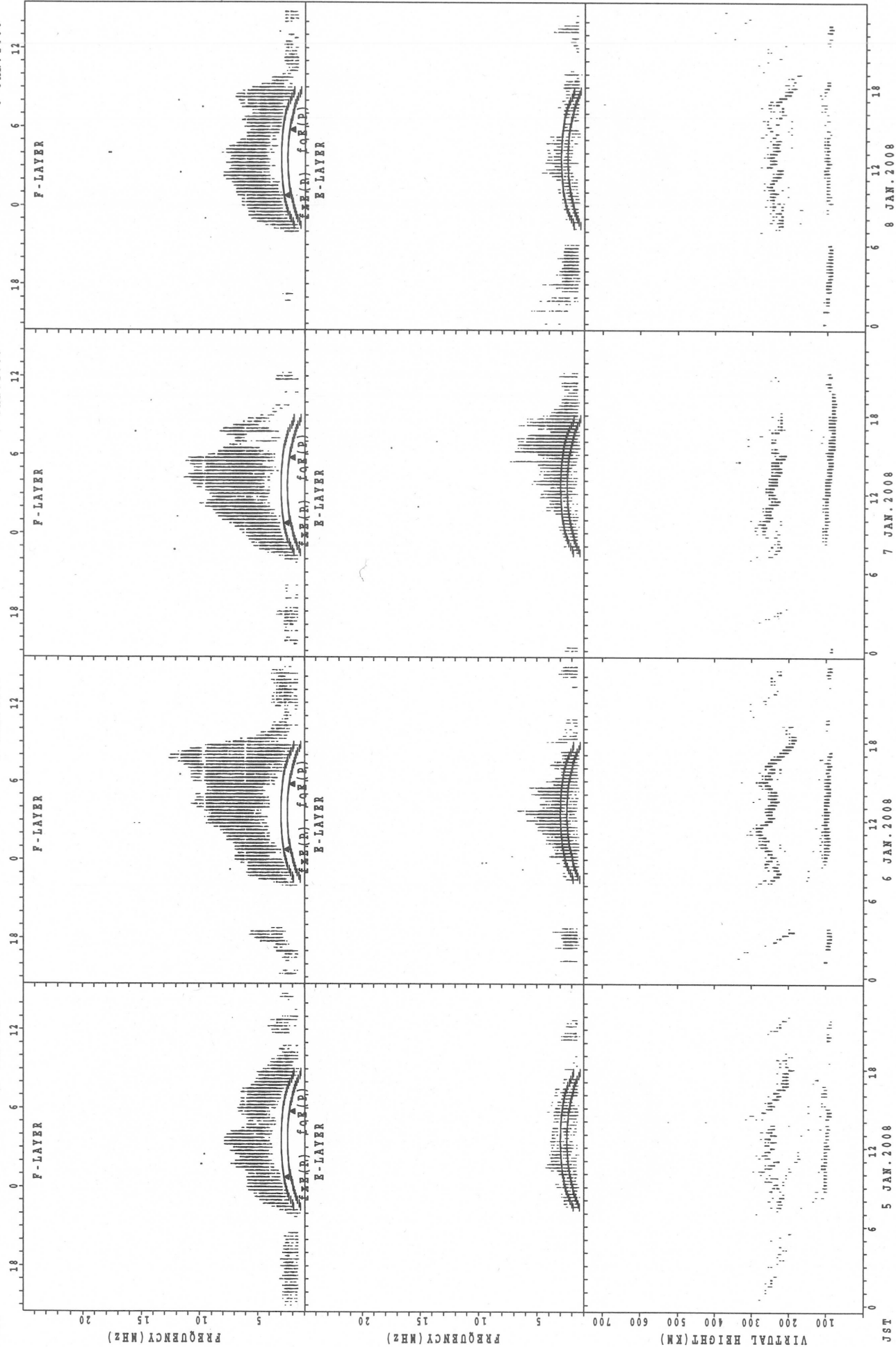
SUMMARY PLOTS AT Okinawa

UTC 5 JAN. 2008

6 JAN. 2008

7 JAN. 2008

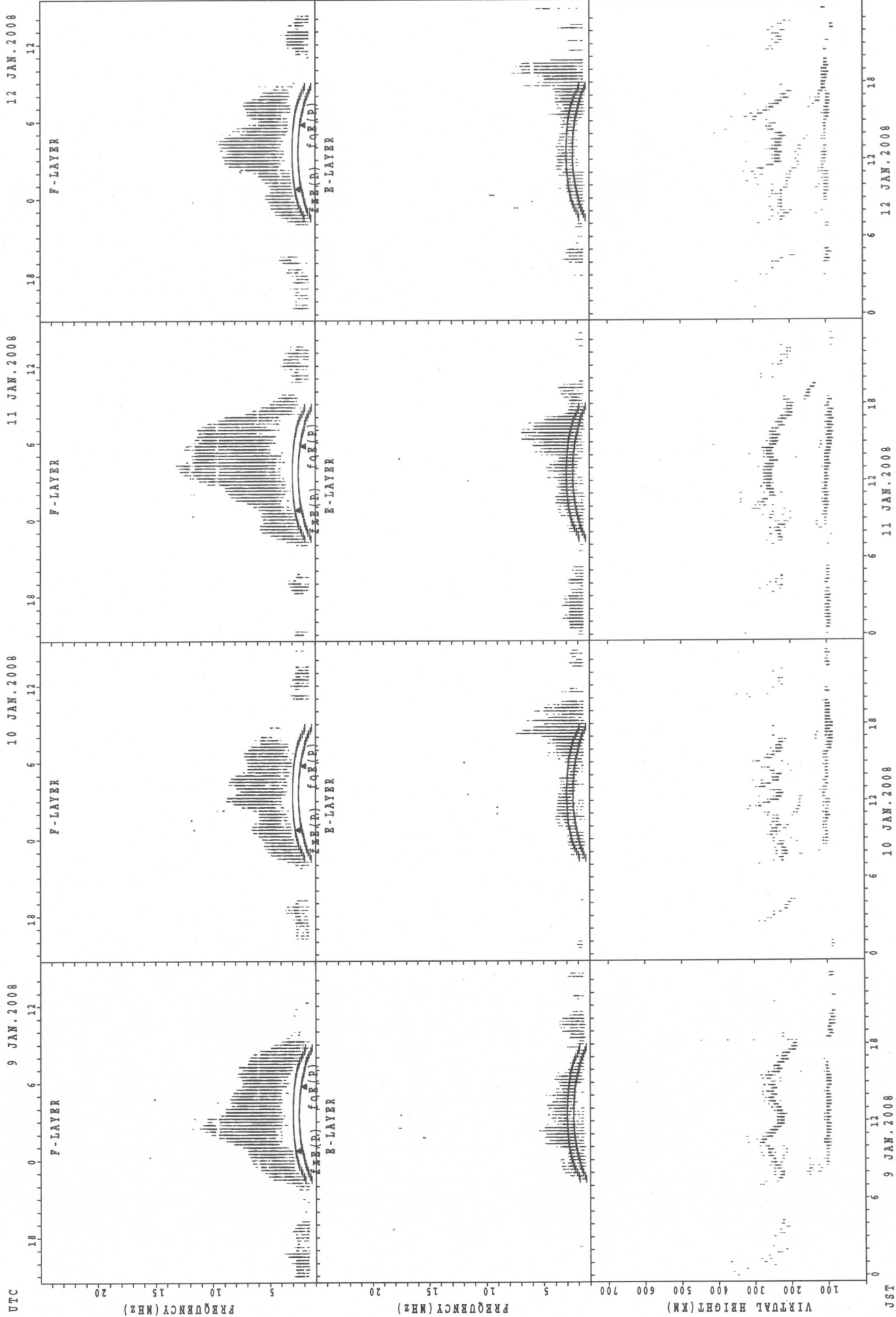
8 JAN. 2008



fxe(P); PREDICTED VALUE FOR fxe
fofe(P); PREDICTED VALUE FOR fofe

JST

SUMMARY PLOTS AT Okinawa



fxe(P); PREDICTED VALUE FOR fxe
foe(P); PREDICTED VALUE FOR foe

JST

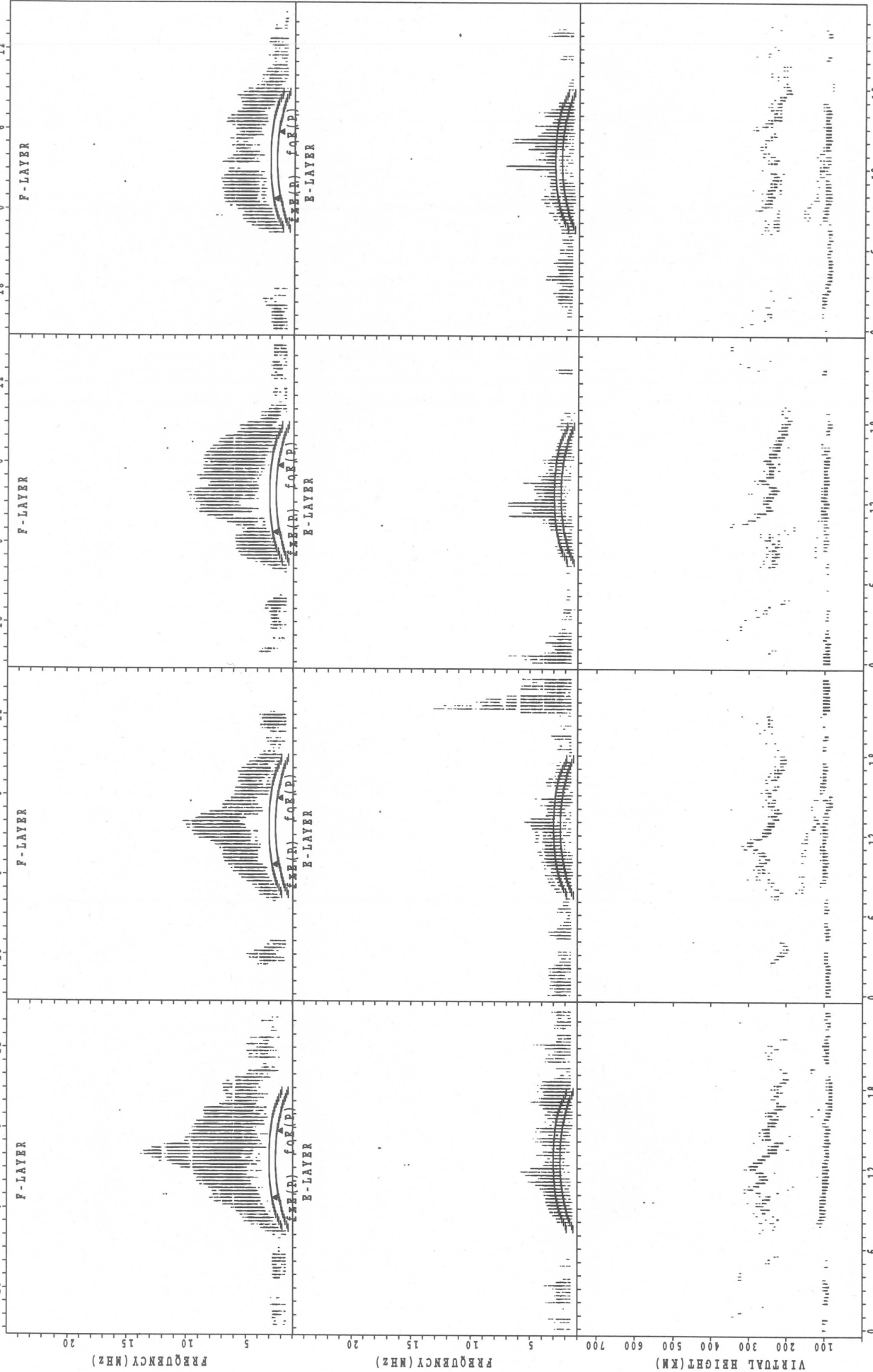
SUMMARY PLOTS AT Okinawa

UTC 13 JAN. 2008

14 JAN. 2008

15 JAN. 2008

16 JAN. 2008



JST 13 JAN. 2008

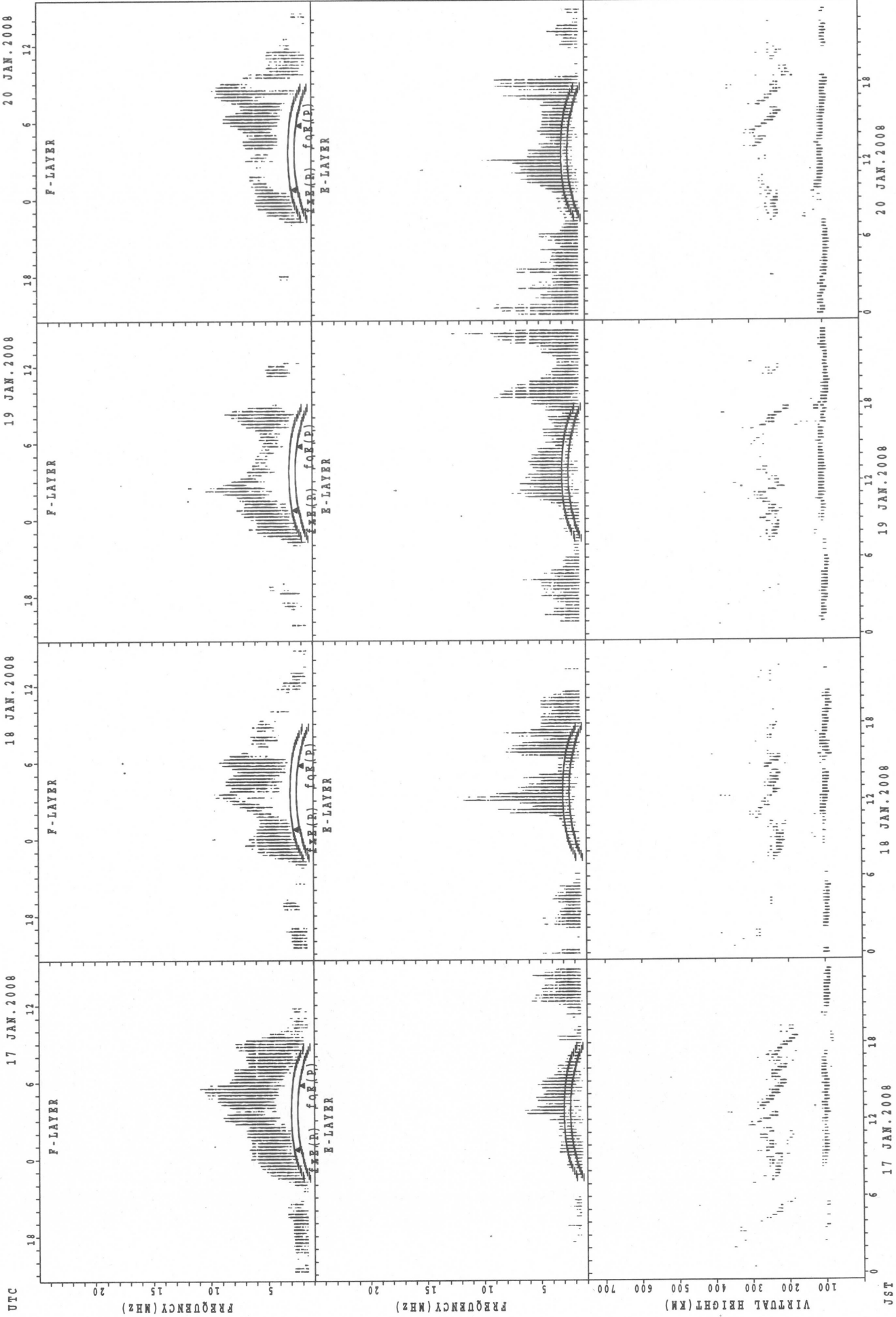
14 JAN. 2008

15 JAN. 2008

16 JAN. 2008

f_{x E}(P); PREDICTED VALUE FOR f_{x E}
f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Okinawa



f_{x E}(P); PREDICTED VALUE FOR f_{x E}
f_{o E}(P); PREDICTED VALUE FOR f_{o E}

SUMMARY PLOTS AT Okinawa

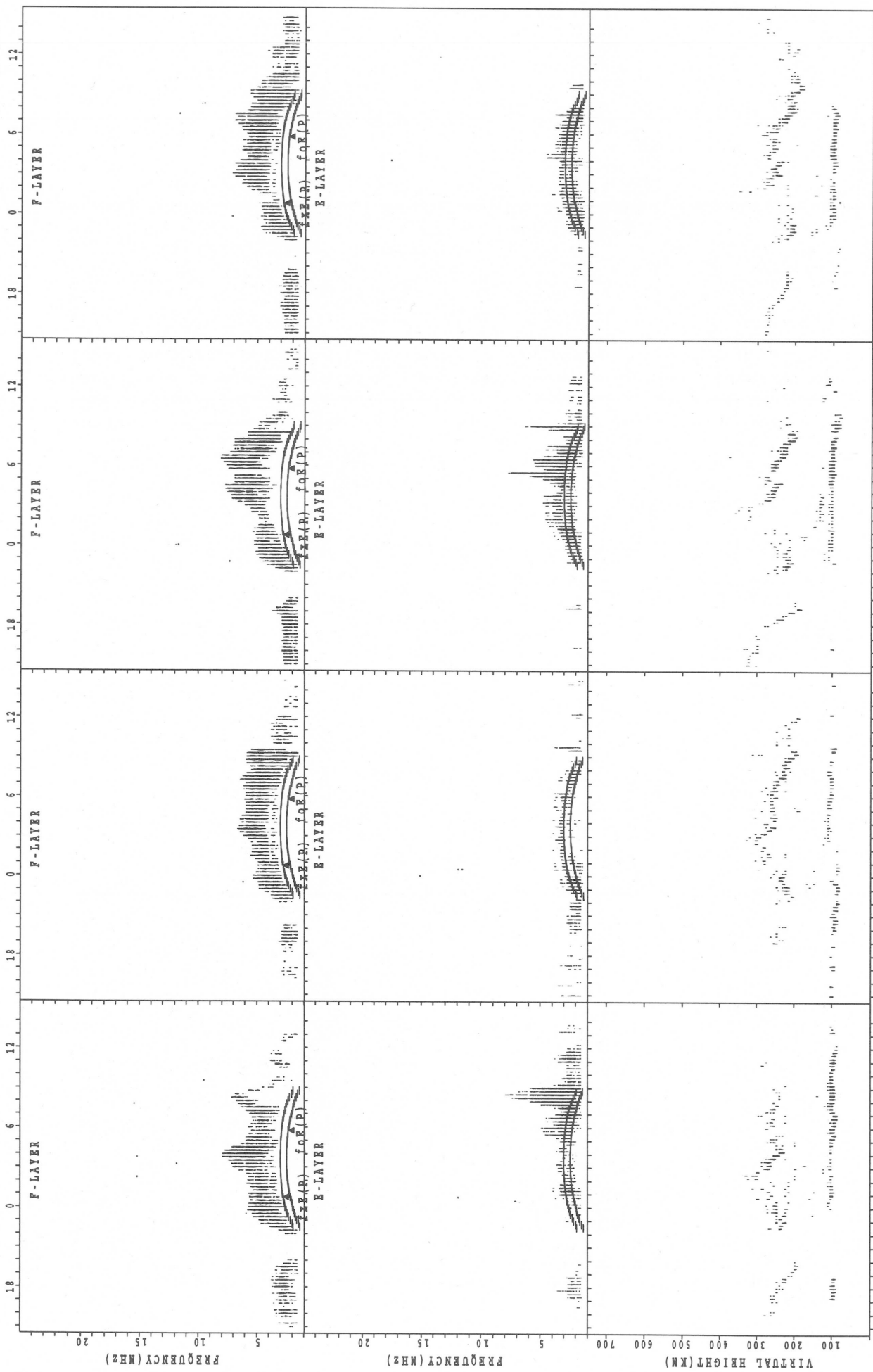
21 JAN. 2008

22 JAN. 2008

23 JAN. 2008

24 JAN. 2008

UTC



JST

f_xE(P); PREDICTED VALUE FOR f_xE
f_oE(P); PREDICTED VALUE FOR f_oE

21 JAN. 2008

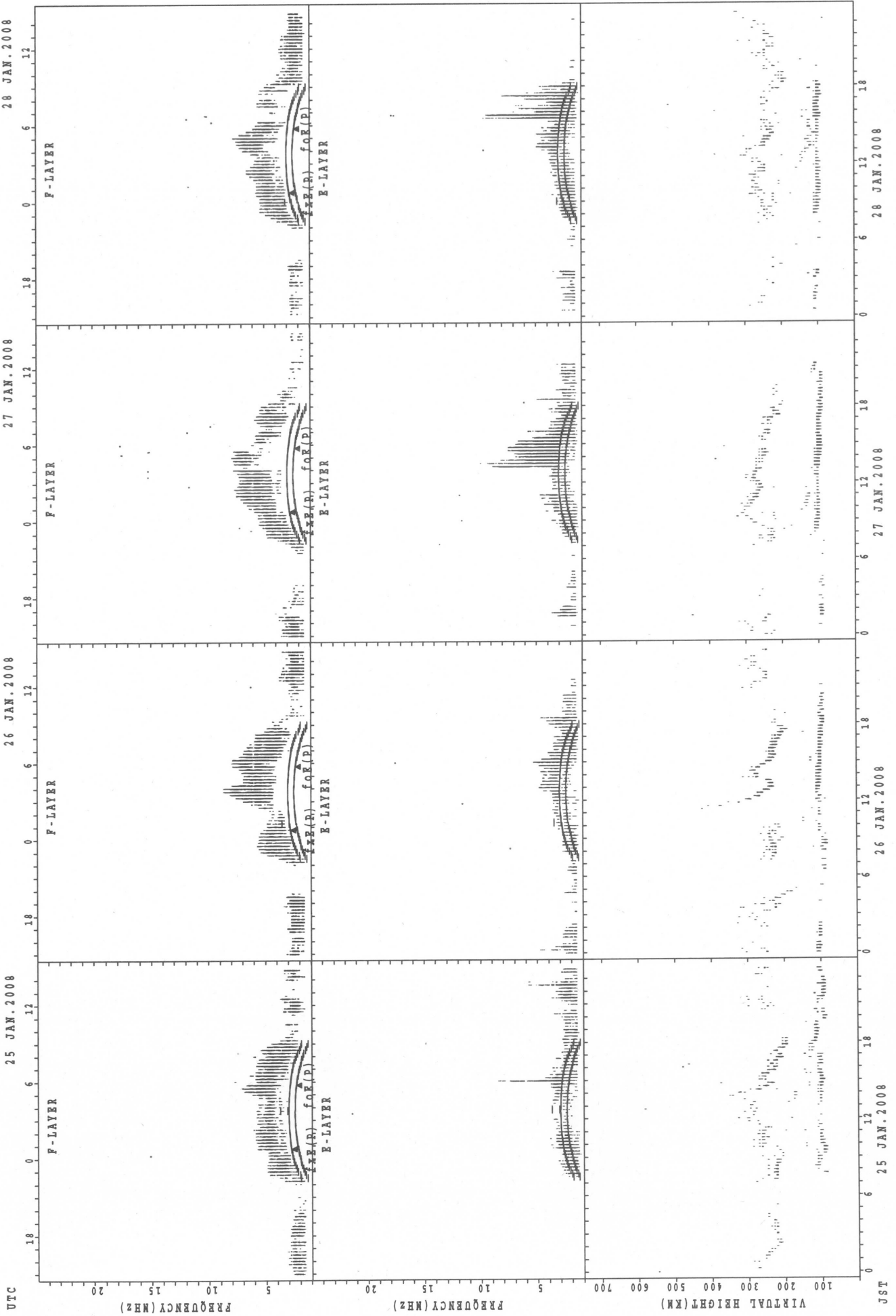
22 JAN. 2008

23 JAN. 2008

24 JAN. 2008

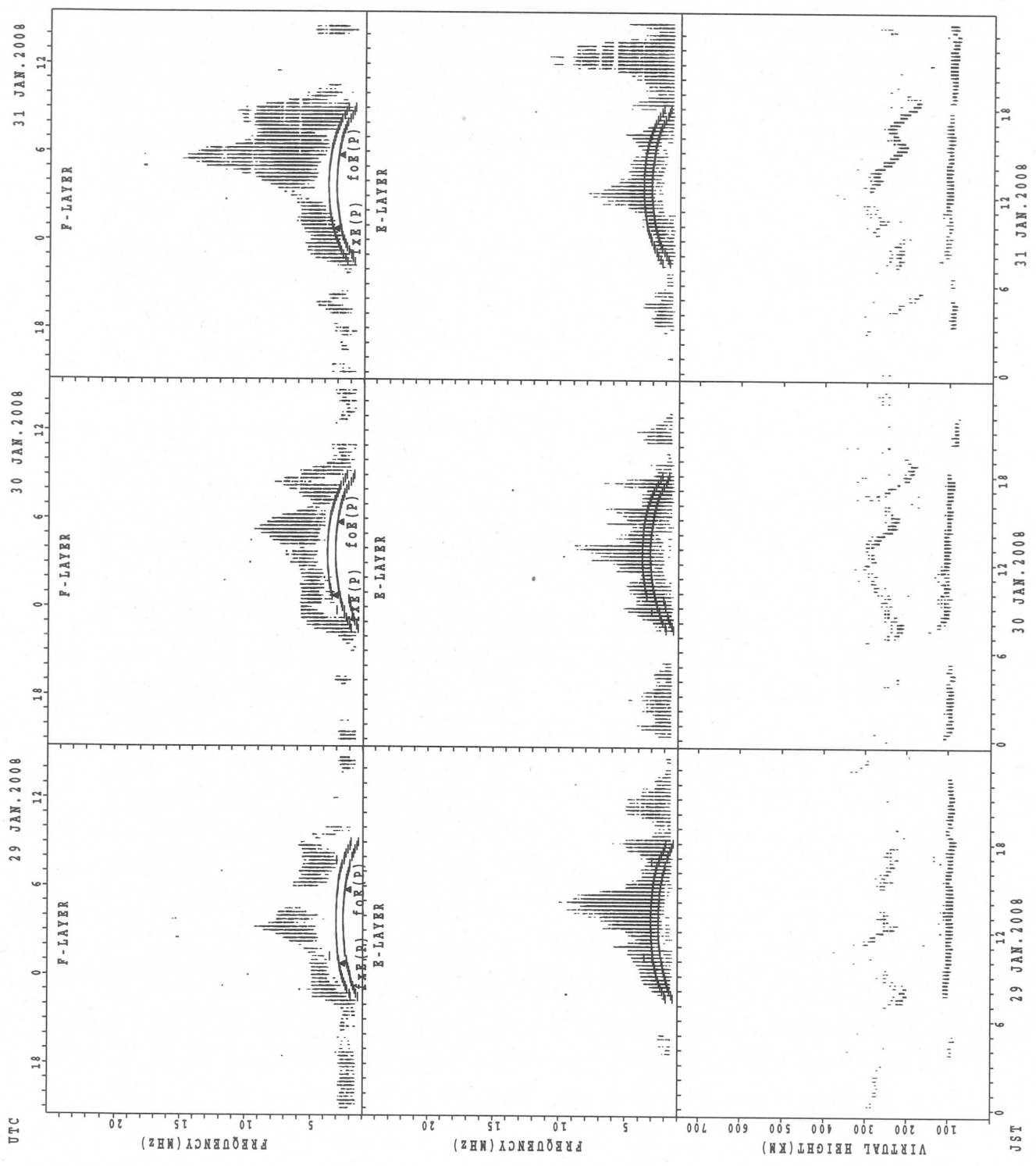
JST

SUMMARY PLOTS AT Okinawa



foF(P); PREDICTED VALUE FOR f_oF
foE(P); PREDICTED VALUE FOR f_oE

SUMMARY PLOTS AT Okinawa



UTC
 29 JAN. 2008
 30 JAN. 2008
 31 JAN. 2008

F-LAYER
 F-LAYER
 F-LAYER

$f_xE(p)$ $f_oE(p)$ $f_oE(p)$
 $f_oE(p)$ $f_xE(p)$ $f_oE(p)$
 E-LAYER
 E-LAYER
 E-LAYER

VIRTUAL HEIGHT (KM)
 FREQUENCY (MHZ)
 FREQUENCY (MHZ)
 FREQUENCY (MHZ)

JST
 29 JAN. 2008
 30 JAN. 2008
 31 JAN. 2008

$f_xE(p)$; PREDICTED VALUE FOR f_xE
 $f_oE(p)$; PREDICTED VALUE FOR f_oE

MONTHLY MEDIANS OF h'F AND h'Es
 JAN. 2008 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									1	4	9	18	12	4	7	1								
MED									220	243	246	245	234	248	232	238								
U Q									110	258	256	254	245	257	252	119								
L Q									110	225	236	238	230	232	228	119								

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	14	9	8	9	7	11	5	12	19	26	26	27	24	19	18	13	13	16	14	16	15	20	16	18
MED	95	97	96	95	97	99	101	112	135	116	126	111	109	113	105	101	97	98	98	95	95	99	96	97
U Q	99	98	98	97	105	105	102	138	161	145	149	125	122	125	113	105	103	103	101	99	101	105	103	101
L Q	89	95	91	91	91	97	98	98	113	105	107	101	98	101	101	90	94	92	95	91	95	95	91	91

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											7	7		8	3	4	2							
MED											270	248		245	272	234	217							
U Q											304	260		252	282	256	226							
L Q											240	240		241	242	219	208							

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	12	12	15	14	10	7	7	11	21	29	27	22	24	20	21	17	17	19	15	11	16	14	16	11
MED	97	98	97	98	96	95	95	137	123	113	109	104	106	104	107	103	103	97	97	95	97	102	103	103
U Q	101	102	103	101	101	101	129	147	159	144	125	111	123	112	113	107	110	103	105	103	101	111	109	113
L Q	95	95	95	97	95	91	93	107	109	103	105	101	98	99	101	96	96	95	91	93	93	97	97	95

h'F STATION Yamagawa LAT. 31°12.1'N LON. 130°37.1'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											5	7			5	8	4	3						
MED											262	248			256	242	246	218						
U Q											288	262			271	255	264	230						
L Q											258	240			242	227	225	206						

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	7	9	10	12	16	13	10	7	17	24	26	30	27	29	27	26	23	19	24	18	14	12	13	9
MED	103	103	99	98	97	95	94	95	137	113	107	106	103	103	101	101	105	97	95	92	96	97	95	97
U Q	105	105	101	102	97	97	95	99	161	122	141	119	115	116	107	105	119	103	98	95	99	101	104	105
L Q	101	99	97	95	94	91	91	91	103	105	103	103	99	99	97	95	97	95	91	89	89	95	90	89

MONTHLY MEDIANS OF h'F AND h'Es
 JAN. 2008 135E MEAN TIME (UTC+9H) AUTOMATIC SCALING

h'F STATION Okinawa LAT. 26°40.5'N LON. 128°09.2'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										8	11					16	14	12	5					
MED										261	256					238	238	233	208					
U Q										269	282					249	246	246	214					
L Q										252	248					228	230	223	202					

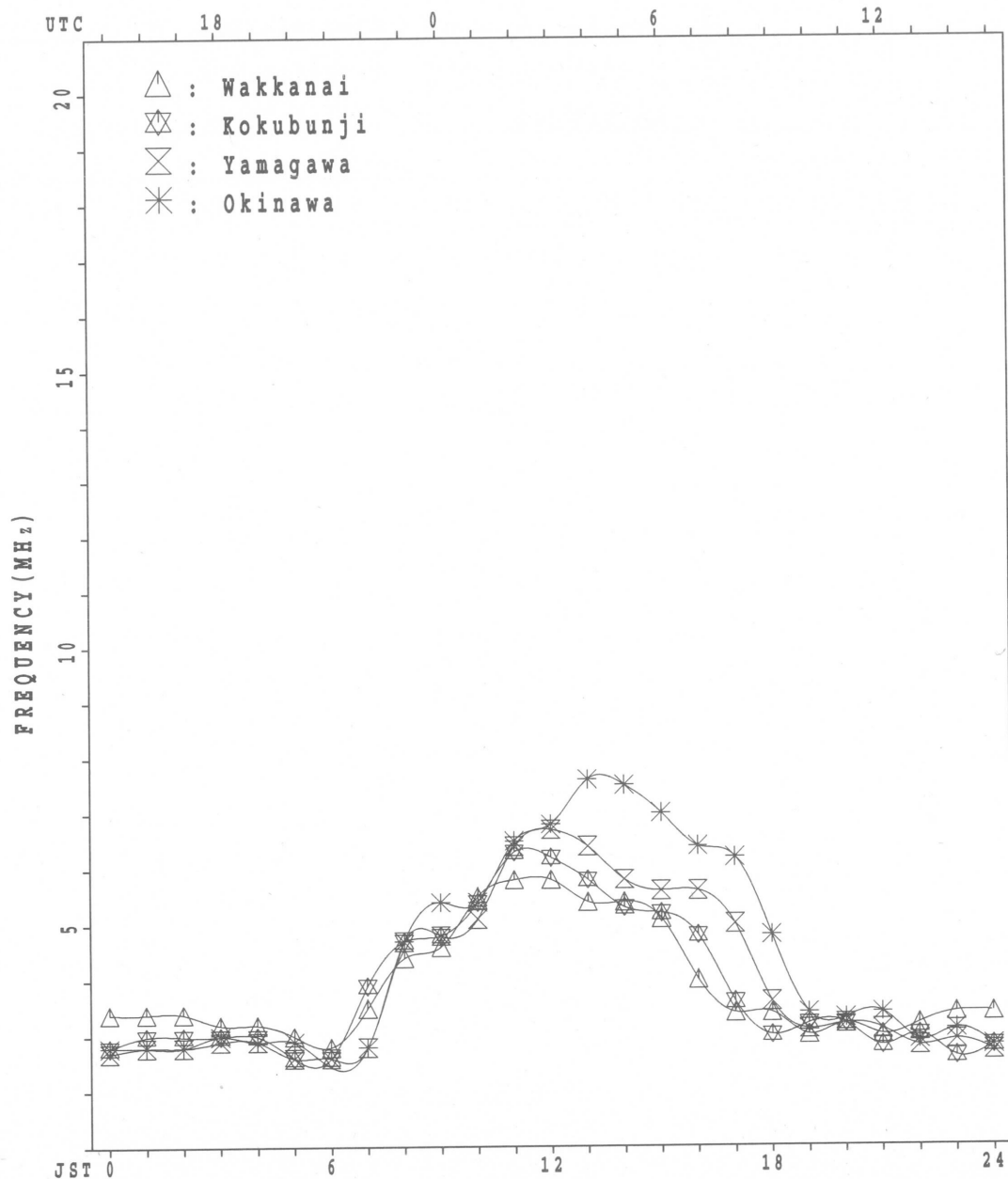
h'Es

	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	8	7	12	12	10	10	6	2	15	23	28	27	30	29	30	25	30	28	23	17	11	10	11	7
MED	102	97	97	97	95	95	95	92	131	113	107	105	106	105	103	101	101	100	95	95	95	95	97	97
U Q	105	105	103	97	97	95	95	95	157	159	130	113	115	111	105	103	105	105	103	105	95	99	103	101
L Q	94	95	96	95	93	93	95	89	107	107	103	103	103	100	97	96	95	95	93	89	89	95	95	95

MONTHLY MEDIANS PLOT OF foF2

JAN. 2008

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 f_{XI} (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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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	30	30	X	X	X	X	X												X	X		X	X	X
2	35	A	40	A	35	28	27												X	X	X	X	X	X
3	X	X	X	X	X	X	X												X	X	C	X	X	X
4	32	34	34	33	31	28	28												X	X		X	X	X
5	X	X	X	X	X	X	X												X	X	X	C	X	X
6	34	32	33	34	37	29	29											42	37	34		38	38	37
7	X	X	X	X	X	X	X	C										X	X	X	X	X	X	X
8	36	38	38	49	28	26	28											44	32	32	34	32	33	35
9	X	C	X	X	X	X	X											X	X	X	X	C	C	X
10	35		36	39	33	32	34											38	31	39	43			32
11	X	X	X	X	X	X	X											X	X	X	X	X	X	X
12	34	34	35	38	35	26	24											42	32	39	27	28	29	31
13	X	A	A	X	X	X	X											X	A	X	X	X	X	C
14	30		35	28	28	31												38		41	35	24	29	
15	X	X	X	X	X	X	X											X	X	X	X	X	X	X
16	34	34	34	40	37	28	24											36	31	39	33	29	30	32
17	X	40	38	41	35	29	29												X	X	X	X	X	X
18	C	X	X	X	X	X	X											X	X	X	X	X	X	X
19	34	47	48	39	32	31	38											37	32	35	41	32	36	35
20	X	X	X	X	X	X	X											48	36	33	33	29	36	C
21	32	32	36	35	29	30	30											C	X	X	X	X	X	40
22	X	X	X	X	X	X	X											X	X	X	X	X	X	40
23	40	36	39	36	37	33	33											42	38	35	39	33	32	32
24	37	37	46	24	23	24	25					C	C	C	C	C	C	C	C	C	X	X	C	X
25	X	X	X	X	X	X	X												38	40	28	X	X	29
26	29	30	32	33	26	26	31			C	C	C	C	C	C				X	X	X	X	X	X
27	X	X	X	X	X	X	X												35	41	33	30	29	29
28	30	28	33	33	26	25	22												X	X	X	A	X	A
29	X	A	X	X	X	A	X											A	38	42	A	A	X	36
30	34		33	44	38	27													X	X	X	X	X	33
31	34	30	31	39	26	25	30											46	34	41	38	27	31	31
32	X	X	X	X	X	X	X											X	X	X	X	X	X	X
33	32	32	33	36	35	28	26											45	36	42	45	34	38	39
34	38	42	42	46	43	38	35											X	X	X	X	X	X	37
35	34	38	38	33	37	29	32											X	X	X	A	X	X	X
36	36	42	50	61	62	37	36											51	34	36	30	32	32	32
37	X	X	X	X	X	X	X											X	X	X	X	X	X	X
38	31	32	35	37	35	28	25											44	37		38	39	36	36
39	34	37	A	X	X	A	A											X	A	X	A	A	X	X
40	X	X	X	X	X	X	X											43		36			33	32
41	34	36	37	38	28	27	25											X	A	X	X	X	X	34
42	33	34	36	31	30	23	25											43	A	A	A	X	X	X
43	X	X	X	X	X	X	X											X	X	X	X	X	X	X
44	35	35	34	35	30	29	30											48	34	35	35	33	32	A
45	X	X	X	X	X	X	X											X	X	X	X	X	X	X
46	32	32	32	32	31	28	30											48	36	46	36	30	28	32
47	X	X	X	X	X	A	X											X	X	X	X	A	X	X
48	31	32	31	32	33		25											48	35	32	31		28	29
CNT	30	27	29	30	31	28	30											21	26	29	25	26	29	27
MED	X	X	X	X	X	X	X											X	X	X	X	X	X	X
U Q	35	37	38	39	36	30	31											43	35	37	38	32	32	32
L Q	X	X	X	X	X	X	X											X	X	X	X	X	X	X
	32	32	33	33	28	26	25											42	32	34	33	29	29	31

JAN. 2008 f_{XI} (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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	22	23	22	20	21	40	43	45	51	66	63	52	50	51	43	29	21	25	F	29	23	24	
2	F	A	34	A	28	22	20	36	47	A	50	54	59	62	52	52	55	34	34	26	23	26	23	25	
3	26	28	28	27	25	22	22	39	41	45	50	63	62	59	48	48	48	32	27	30	C	31	28	28	
4	31	31	29	29	30	29	21	35	43	47	50	50	57	54	52	57	44	26	36	31	24	25	26	28	
5	28	26	27	28	F	23	F	38	46	46	49	64	54	48	55	50	46	36	31	28	C	32	32	31	
6	30	32	32	43	21	20	22	C	49	49	72	80	67	55	50	59	53	38	26	26	27	26	28	29	
7	29	C	30	33	27	26	28	42	49	53	61	94	104	61	58	56	52	32	25	32	36	C	C	26	
8	28	28	29	32	29	20	18	40	53	56	59	64	73	54	60	62	56	36	26	33	21	22	23	25	
9	24	A	A	29	22	22	25	40	50	57	64	74	84	66	55	58	45	32	A	35	29	18	23	C	
10	28	28	28	34	31	22	18	37	47	46	53	67	68	58	51	57	48	30	25	33	27	23	24	26	
11	28	F	F	F	29	F	F	42	48	50	52	65	70	75	68	54	49	34	25	26	32	30	29	28	
12	C	28	30	27	24	23	25	37	44	47	52	60	62	52	52	50	44	30	26	29	F	26	F	F	
13	F	F	F	F	26	24	32	33	50	62	64	72	72	58	54	54	45	42	30	27	27	23	F	C	
14	26	26	30	29	23	F	24	33	45	50	66	70	74	65	58	54	49	C	28	34	36	32	F	F	
15	F	30	33	30	F	F	27	36	49	47	60	82	64	52	61	62	49	36	32	29	33	27	26	26	
16	F	F	40	18	17	18	18	35	46	49	56	C	C	C	C	C	C	C	C	C	32	34	22	23	
17	23	24	26	27	20	20	25	40	52	C	C	C	C	C	C	C	49	A	29	35	27	24	23	23	
18	24	22	27	27	20	18	16	37	53	52	68	62	65	64	54	47	50	34	34	38	35	A	29	A	
19	28	A	27	38	32	A	21	36	42	48	62	65	50	58	47	58	57	A	32	36	A	A	22	F	
20	F	F	25	33	20	19	F	38	45	A	48	58	50	59	54	52	A	40	28	35	32	21	25	25	
21	26	26	27	F	29	22	20	37	43	44	46	56	56	50	50	47	48	39	30	F	F	F	F	F	
22	F	F	F	F	36	F	29	38	42	42	41	58	63	50	54	51	44	36	32	37	31	29	28	F	
23	F	F	F	F	F	F	23	26	38	45	42	48	51	51	54	51	56	42	45	28	30	A	23	26	26
24	F	F	F	F	F	F	F	35	42	44	48	C	55	46	51	49	46	38	32	29	33	24	25	25	
25	25	26	29	F	F	22	19	38	50	48	49	52	47	46	53	49	50	38	31	A	31	32	30	F	
26	F	F	A	24	24	A	A	36	48	48	44	56	52	58	45	52	47	37	A	30	A	A	26	26	
27	28	30	31	32	22	21	18	35	44	49	55	58	72	52	52	51	49	37	A	31	25	23	24	F	
28	F	28	F	25	24	17	19	35	49	53	57	57	48	52	49	53	56	36	A	A	A	27	29	29	
29	29	29	28	29	24	22	24	40	48	44	52	53	70	65	51	44	55	42	28	28	28	27	26	A	
30	26	26	26	26	25	22	23	40	50	47	52	55	64	56	54	47	48	42	30	40	30	23	22	25	
31	25	26	25	26	27	A	19	39	45	50	C	51	58	62	51	43	48	41	29	26	25	A	22	23	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	19	18	23	23	26	23	26	30	31	28	29	28	29	29	29	29	29	27	26	28	22	25	25	20	
MED	28	28	28	29	24	22	22	38	47	48	52	61	63	56	52	52	48	36	29	30	30	26	26	26	
U Q	28	29	30	32	29	23	25	40	49	50	60	66	70	62	54	56	51	39	32	34	33	29	28	28	
L Q	25	26	27	26	22	20	19	36	44	46	49	56	54	52	50	49	46	32	26	28	27	23	23	25	

JAN. 2008 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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											404	400	L	L	L	L								
2											AE AU	LE	A	L	L	L								
3												L	LU	L										
4											LU	L	LU	L										
5										E A			L	L	L									
6											U L	L	L	L										
7											U L	U L			L	L	L							
8											L	L	LU	LE	A									
9											U L	L	L	L	L									
10											LU	L	L	L										
11											L	L	L	L	L	L								
12											U L	404	LU	LE	A									
13										E A	LE	AU	L	L	LE	A								
14											U L	LE	A		L									
15											400		376											
16											LU	L	C	C	C	C	C	C	C					
17											C	C	C	C	C	C				A				
18										U L		LU	L	L	L	L								
19											420	LU	LE	AE	AE	A								
20											A	L	LE	A	LE	A	A							
21												L	L	L	LE	A								
22											272	E AE	AU	LU	LU	L	L							
23												396	412	400										
24											LU	L	LU	LE	A	L								
25											U L	C	U	L	LE	AE	A							
26											408	404												
27											LE	AU	LE	AU	LE	AE	A							
28											404		416											
29											E AE	AE	AE	AE	A	L								
30											LU	LU	LE	A	L	LE	A							
31											408	424												
											LU	LE	A	L	LU	L								
											404				408									
											U	LE	AE	AU	LE	AE	A							
											412		416											
											L	L	E AE	AU	L	E A								
												412		392										
												C	E AE	AE	AE	A	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	1	12	13	5	8	3									
MED									272	420	406	404	408	400	392									
U Q											U	LU	LU	LU	LU	LU								
L Q											410	416	410	408	408									
											U	L	U	LU	L									
											404	402	402	398	376									

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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	220	A	A	U R	A	R	R	U R	A	B						
2								B	A	A	A	A	A	U R	R	U R	A	B						
3								B	200	A	A	A	A	A	U R	R	R	B						
4								B	216	A	A	A	A	A	A	A	232	188	B					
5								B	224	256		A	U A	R	R	R	A							
6									228	A	A	312	R	U R	R	R	U R							
7								B	204	A	A	A	U R	R	R	U R	B							
8								B	A	A	A	A	R	A	U R	276	144	B						
9								B	224	A	U R	A	R	U R	U R	U R	U R							
10								B	220	260	288	296	U R	R	R	280	R	U R						
11								B	U R	R	R	R	300	R	U R	R	R	U R	B					
12								B	216	264		R	R	A	R	A	A	A						
13								B	A	A	A	A	A	A	R		U A							
14								B	A	A	A	R	A	R	R	R	228							
15								B	216	A	A	A	A	A	A	A	A							
16								B	220	A	A	C	C	C	C	C	C	C						
17								B	224	C	C	C	C	C	C	C	C	A	A					
18								B	220	A	A	A	A	A	A	A	R	184	B					
19								B	236	248	A	A	A	A	A	A	A	196						
20								B	A	A	A	A	A	A	A	A	A	A						
21								B	R				A	A	A	A	A							
22								B	264	292	308		A	A	A	A	A							
23								B	220	256	280	300			A	A	A	A						
24								B	U R	U R					A	A	A	A						
25								B	212	256	276	304	304	A	A	A	A	A						
26								B	204	252	284		C		A	A	A	A						
27								B	232	A	A	A		R	A	A	A							
28								B	244	276	288		A	A	A	A	A	A						
29								B	248	256		A	A	A	A	U R	A							
30								B	236		312		A	A	A	A	A	A						
31								B	A	A	A	A	A	A	A	A	A	A						
								B	224	C	A	A	A	A	A	R	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	24	11	8	6	6	3	7	8	9							
MED								168	220	256	288	306	306	U R	U R	U R	U R	U R						
U Q									226	264	294	312	320	308	280	244	198							
L Q									216	256	282	300	304	U R	U R	U R	U R							

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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 B E B	15 15	20 20	E B E B	14 15	15 15	E B E B	E B E B	G	J A	J A	G	J A	G	G	G	22	J A E B	E B E B	J A E B	E B E B	J A E B	J A E B	J A E B
2	J A J A	J A J A	J A J A	J A J A	J A E B	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
3	E B J A	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	23	33	38	45	45	44	33	20	G	G	17	22	J A	C	J A J A	J A J A
4	J A J A	J A J A	J A J A	J A J A	E B E B	E B E B	E B E B	E B E B	26	32	37	51	42	42	40	26	G	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B
5	E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	26	31	35	36	32	34	23	20	J A J A	J A J A	E B	C	E B J A	J A	J A	J A
6	J A J A	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A	C	G	J A	J A	G	G	G	G	G	G	J A E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B
7	J A	C	J A	J A	E B E B	E B E B	E B E B	E B E B	24	31	33	36	24	26	23	G	G	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B
8	20	20	J A	25	22	21	E B	E B	26	31	38	34	27	61	22	28	26	J A E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B
9	E B J A	J A J A	J A J A	J A J A	E B E B	E B E B	E B E B	E B E B	26	30	26	33	27	22	25	29	23	27	39	24	21	24	20	C
10	E B J A	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	G	31	34	32	G	G	G	G	G	E B E B	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A
11	J A J A	J A J A	J A J A	J A J A	E B E B	E B E B	E B E B	E B E B	G	30	28	29	34	26	23	21	G	E B E B	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A
12	C	J A	J A	J A	J A	E B E B	E B E B	E B E B	24	29	25	25	42	26	34	37	23	22	15	21	15	23	22	15
13	E B J A	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
14	E B J A	J A J A	E B E B	E B E B	E B E B	E B E B	E B E B	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
15	J A	J A	J A	J A	E B E B	E B E B	E B E B	J A J A	G	30	79	58	34	33	33	33	27	15	19	20	28	26	34	20
16	E B J A	J A J A	J A J A	J A J A	E B J A	J A J A	J A J A	J A J A	25	30	34	C	C	C	C	C	C	C	C	C	C	C	C	C
17	20	18	20	19	20	15	15	14	G	C	C	C	C	C	C	C	C	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
18	J A J A	J A J A	J A J A	J A J A	E B	E B	E B	E B	G	35	52	60	38	48	33	22	23	15	23	36	36	48	80	70
19	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	27	30	J A	42	36	52	40	46	30	24	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
20	21	21	J A	J A	J A	J A	J A	J A	27	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
21	E B E B	E B J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	G	30	34	33	36	34	32	46	37	34	25	24	45	20	15	16
22	E B E B	E B J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	25	31	34	35	34	32	33	28	22	15	24	16	20	15	15	15
23	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	E B E B	J A	G	G	36	36	36	37	46	33	28	42	15	20	37	26	20	22
24	J A E B	E B E B	E B E B	E B E B	J A	E B	E B	E B	28	33	38	C	36	39	35	50	35	32	15	18	15	15	18	20
25	J A	26	18	19	20	E B	15	21	19	15	28	34	38	36	38	28	38	40	46	44	47	60	51	49
26	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	30	34	42	43	44	60	35	32	32	20	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A
27	20	E B	15	20	20	E B E B	E B E B	E B E B	29	36	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
28	J A J A	J A E B	J A J A	J A J A	J A	J A	J A	J A	29	32	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
29	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	G	32	39	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
30	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	28	31	36	42	54	41	40	38	50	26	27	24	24	29	56	35
31	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	J A J A	26	32	C	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	31	31	31	31	30	31	30	29	28	29	29	29	29	30	29	30	31	29	30	29	29
MED	20	J A	J A	J A	J A	E B	E B	E B	26	32	J A	38	36	36	36	33	28	25	J A	J A	J A	J A	J A	J A
U Q	J A	J A	J A	J A	J A	J A	J A	J A	28	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A	J A
L Q	E B	E B	E B	E B	E B	E B	E B	E B	G	30	34	33	34	26	23	G	G	E B	E B	E B	E B	E B	E B	E B

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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 B	E B	E B	E B	E B	E B	E B	E B	G		33	35	25	31	24	19		17	20	E B	E B	E B	E B	E B	
2		A A	A A		E B	E B	E B			A A	78	35	39	40	23	20	20	20	22	17	14	14	16	15	
3	E B	E B	E B	E B	E B	E B	E B	E B			21	32	32	32	32	21	19		E B		C		19	16	
4		E B	E B	E B	E B	E B	E B	E B			25	28	33	33	34	33	26		E B	E B	E B	E B	E B	E B	
5	E B	E B	E B	E B	E B	E B	E B	E B			25	30	34	34	32	26	22	20	23	26	20	E B	C	E B	
6	E B	E B	E B	E B	E B	E B	E B	E B	C	G		28	31	23	22	23	19	G		18	E B	E B	E B	E B	
7	E B		C	E B	E B	E B	E B	E B			24	28	30	30	24	24	21		E B	E B	E B	E B	E B	E B	
8	E B	E B	E B	E B	E B	E B	E B	E B			22	28	31	30	26	46	21	27	24	18	E B	E B	E B	E B	
9	E B	A A	A A	A	E B	E B	E B	E B			24	28	26	30	25	20	24	20	16	18	39	17	E B	E B	
10	E B	E B	E B	E B	E B	E B	E B	E B	G		19	30	32	32	26	23	32		E B	E B	E B	E B	E B	E B	
11		16	19	E B	E B	E B	E B	E B			28	25	24	34	25	22	20		E B	E B	E B	E B	E B	E B	
12		C	E B	E B	E B	E B	E B	E B			23	28	24	24	34	22	31	34	20	20	15	15	15	14	
13	E B	E B	E B	E B	E B	E B	E B	E B			33	39	34	44	31	32	21	27	22	17	17	E B	E B	E B	
14	E B		E B	E B	E B	E B	E B	E B			36	36	31	24	35	27				C	E B	E B	E B	E B	
15	E B	E B			E B	E B	E B	E B	G			27	34	44	32	32	30	30	24	E B	E B		15	17	
16	E B	E B	E B	E B	E B	E B	E B	E B			24	28	30		C	C	C	C	C	C	C	E B	E B	E B	
17	E B	E B	E B	E B	E B	E B	E B	E B	G	C	C	C	C	C	C	C	C	C	37	108	19	16	E B	E B	
18	E B			E B	E B	E B	E B	E B			34	40	32	34	32	30	20	22	E B	E B		23	A A	A A	
19	20	A A	53	18	16	16	A A	21	16	17	24	28	32	34	43	38	39	28	22	A A	54	17	29	36	
20	E B	E B	E B	E B	E B	E B	E B	E B			26	A A	45	34	32	33	39	32	32	A A	74	17	18	17	
21	E B	E B	E B	E B	E B	E B	E B	E B	G		30	33	32	35	32	29	30	22	16	20	18	18	14	15	
22	E B	E B	E B	E B	E B	E B	E B	E B			24	30	33	34	32	31	31	26	22	E B	E B	E B	E B	E B	
23	E B	E B	E B	E B	E B	E B	E B	E B	G	G		34	33	34	33	36	24	23	19	E B	E B	E B	E B	E B	
24	16	E B	E B	E B	E B	E B	E B	E B			27	31	36		C		33	36	32	42	23	19	15	15	
25	16	E B	E B	E B	E B	E B	E B	E B			26	31	36	33	36	25	33	36	30	28	25	60	15	17	
26	16	19	A A	89	17	16	A A	60	29	19	28	32	40	40	40	53	32	28	28	16	A A	44	17		
27	E B	E B	E B	E B	E B	E B	E B	E B			26	34	34	34	39	32	32	33	40	31	A A	63	16	15	
28	E B	E B	E B	E B	E B	E B	E B	E B			26	30	36	40	36	35	33	20	30	31	A A	71	48	56	
29	20	17	E B	E B	E B	E B	E B	E B	G		27	36	36	39	35	42	40	42	26	E B	E B	E B	E B	E B	
30	E B		18	16	E B	E B	E B	E B			26	29	33	36	47	36	31	31	35	21	18	19	16	17	
31	16	17	E B	16	20	A A	29	16	18	25	30		C	40	40	40	41	18	G	35	17	15	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	30	30	31	31	31	31	31	30	31	30	29	28	29	29	29	29	29	30	29	30	31	29	30	29	29
MED	E B	E B	E B	E B	E B	E B	E B	E B			24	30	33	33	34	32	31	26	22	18	16	E B	E B	E B	E B
U Q	16	17	16	16	16	16	16	17	26	32	35	36	38	36	32	30	30	30	24	19	17	19	17	16	16
L Q	E B	E B	E B	E B	E B	E B	E B	E B	G		28	31	30	32	24	22	20		E B	E B	E B	E B	E B	E B	E B

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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	14	15	15	15	15	14	15	15	15	15	15	15	15	14	15	15	14	15	14	15
2	15	14	14	14	15	15	14	15	13	14	16	14	14	15	14	14	13	14	14	14	14	16	15	15
3	15	15	15	15	14	15	16	16	12	14	15	14	14	14	16	15	14	14	16	16	C	14	15	15
4	16	15	15	15	15	14	15	15	13	14	14	12	16	14	14	13	13	14	15	16	15	15	14	15
5	15	15	15	14	16	15	15	16	14	14	14	14	14	14	14	14	12	15	14	15	C	16	15	16
6	15	15	15	15	15	15	15	C	13	12	14	15	14	14	13	15	14	15	15	15	15	15	14	15
7	15	C	14	15	15	14	15	15	14	15	14	12	14	15	14	12	15	15	15	16	14	C	C	16
8	15	16	16	14	15	15	15	15	14	14	14	15	13	14	12	14	16	14	16	15	15	14	15	15
9	15	14	15	15	14	15	15	15	14	13	16	16	17	16	14	15	13	14	14	14	15	15	15	C
10	16	15	15	16	15	17	15	16	14	14	14	14	14	17	14	14	13	15	14	13	15	14	16	15
11	15	16	15	15	16	15	15	14	14	14	16	14	15	16	15	14	15	14	15	15	16	15	15	16
12	C	16	15	16	15	14	15	15	13	12	14	15	14	12	13	15	14	15	15	15	15	15	14	15
13	15	15	16	14	14	14	15	16	15	15	14	16	15	20	15	16	14	14	15	15	15	15	16	C
14	15	14	14	15	15	15	16	16	15	13	19	14	17	18	22	18	18	C	15	16	16	15	15	16
15	15	15	15	14	15	15	15	15	14	14	16	14	16	19	15	14	14	15	15	14	14	15	14	14
16	15	15	15	15	14	15	15	14	14	13	15	C	C	C	C	C	C	C	C	16	14	14	C	15
17	16	15	15	15	15	15	15	14	15	C	C	C	C	C	C	C	13	13	15	15	15	14	14	16
18	16	14	16	14	16	14	15	13	14	14	15	15	14	14	14	16	14	15	14	14	15	14	14	15
19	15	14	15	15	16	14	14	15	15	12	15	16	15	18	16	16	14	14	14	16	14	15	15	15
20	16	16	16	15	15	16	15	14	15	13	16	17	16	15	15	13	15	14	14	16	15	16	15	16
21	16	16	16	16	16	15	16	14	13	14	17	15	19	16	15	14	12	13	14	15	14	14	15	16
22	15	15	14	15	15	15	15	16	13	13	20	18	17	17	18	16	12	15	15	16	16	15	15	15
23	15	14	15	15	15	14	15	15	14	14	14	14	15	14	14	14	15	13	15	15	14	15	15	16
24	15	15	15	15	16	15	16	14	13	13	13	C	13	16	14	14	14	15	15	15	15	15	16	15
25	16	15	15	15	15	15	15	15	14	14	14	12	14	16	14	14	14	15	14	15	15	15	15	15
26	15	15	15	16	16	14	14	15	13	14	14	14	14	13	13	14	14	14	16	16	14	16	15	15
27	15	15	16	15	15	15	15	14	14	14	14	14	12	16	14	14	14	16	15	16	15	15	15	15
28	15	15	15	15	15	15	14	14	14	14	15	14	14	14	15	14	15	14	15	14	15	14	15	15
29	16	15	15	15	15	16	16	13	15	12	13	14	15	14	14	14	13	15	16	15	15	15	15	16
30	16	15	15	15	14	15	16	15	14	13	15	14	13	17	12	15	14	15	14	14	15	15	14	15
31	15	15	15	15	15	14	15	13	14	14	C	14	16	15	14	13	14	16	15	15	15	15	15	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	30	30	31	31	31	31	31	30	31	30	29	28	29	29	29	29	30	29	30	31	29	30	29	29
MED	15	15	15	15	15	15	15	15	14	14	15	14	14	15	14	14	14	14	15	15	15	15	15	15
U Q	16	15	15	15	15	15	15	15	14	14	16	15	16	16	15	15	15	15	15	16	15	15	15	16
L Q	15	15	15	15	15	14	15	14	13	13	14	14	14	14	14	14	13	14	14	15	14	14	14	15

JAN. 2008 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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	300	331	336	338	344	377	384	371	330	349	382	377	365	373	409	370	331	311	F	356	334	329		
2	F	A	331	A	388	327	339	388	400	A	376	325	341	384	362	364	393	363	391	317	392	343	318	309		
3	317	337	331	344	335	329	333	386	393	370	375	374	380	386	372	385	391	357	320	335	C	356	340	330		
4	328	321	304	329	353	370	373	377	397	396	374	346	368	381	373	387	404	389	355	362	381	317	314	306		
5	325	307	333	312	F	382	F	370	400	400	353	384	379	354	387	360	380	360	353	345	C	339	339	343		
6	296	307	303	375	422	344	319	C	360	358	337	360	380	360	335	342	367	367	371	352	347	354	314	300		
7	322	C	322	335	333	340	350	373	382	330	330	347	375	373	380	354	389	374	292	333	388	C	C	307		
8	323	327	336	357	378	305	302	363	394	392	348	378	390	387	373	349	396	360	356	350	359	296	293	316		
9	322	A	A	382	389	304	325	377	364	380	333	365	358	375	348	365	398	361	A	360	373	391	317	C		
10	309	345	311	376	407	431	345	371	397	397	341	337	389	381	384	374	388	362	322	357	360	348	322	307		
11	301	F	F	F	358	F	F	385	394	350	340	351	345	360	369	376	364	387	349	351	343	345	357	327		
12	C	311	332	352	329	335	364	372	396	376	338	349	379	379	369	371	390	387	338	349	F	322	F	F		
13	F	F	F	F	299	330	372	353	374	360	375	381	359	366	360	368	389	378	350	350	342	312	F	C		
14	287	294	333	404	322	F	362	390	348	368	356	369	368	387	353	386	396	C	309	332	341	312	F	F		
15	F	F	302	375	318	F	F	335	372	393	347	336	364	389	363	351	387	384	366	367	336	370	335	336	297	
16	F	F	374	295	324	312	352	368	367	353	341	C	C	C	C	C	C	C	C	C	345	360	382	C	296	
17	296	297	319	364	352	330	355	365	372	C	C	C	C	C	C	C	383	A	345	365	376	330	304	303		
18	290	301	338	334	343	345	331	371	378	318	380	395	356	382	409	393	388	339	336	346	359	A	332	A		
19	321	A	309	359	435	A	324	386	385	381	361	395	385	377	407	361	397	A	341	376	A	A	309	F		
20	F	F	330	374	422	300	F	390	403	A	327	382	392	368	359	399	A	345	294	379	375	288	320	307		
21	297	307	322	F	366	377	341	381	384	383	342	369	375	384	366	396	388	368	311	F	F	F	F	F		
22	F	F	F	F	380	F	338	392	418	386	385	359	371	390	360	383	364	384	325	347	363	354	331	F		
23	F	F	F	F	F	F	F	332	375	397	389	388	359	373	357	362	363	400	406	391	346	380	A	324	350	309
24	F	F	F	F	F	F	F	374	382	358	300	C	373	378	368	370	395	370	348	328	A	387	361	330	322	
25	312	328	340	F	F	365	348	383	390	363	381	371	365	318	350	356	399	386	336	A	357	335	342	F		
26	F	F	A	324	401	A	A	352	378	399	375	365	366	363	374	369	397	399	A	333	A	A	318	358		
27	325	329	362	387	336	334	361	393	352	335	344	318	378	354	366	380	399	397	A	364	354	345	331	F		
28	F	312	F	334	372	283	363	354	369	361	371	371	384	371	340	385	381	401	A	A	A	303	317	306		
29	310	314	329	352	351	346	400	386	405	369	361	343	377	384	392	407	384	379	359	373	362	349	318	A		
30	315	314	318	336	394	328	335	388	394	380	386	349	374	375	376	357	374	379	329	384	391	329	316	326		
31	320	304	302	347	374	A	353	378	394	373	C	377	368	374	388	414	376	394	365	339	333	A	327	339		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	19	18	23	23	26	23	26	30	31	28	29	28	29	29	29	29	29	27	26	28	22	25	25	20		
MED	315	312	330	347	362	334	346	377	389	370	353	365	375	375	368	374	389	374	343	350	361	339	322	309		
U Q	322	327	336	374	389	346	362	386	396	384	375	376	381	383	378	387	397	387	355	363	376	354	335	328		
L Q	297	304	311	331	336	327	335	371	374	358	338	349	366	363	360	362	382	362	325	336	354	320	316	306		

JAN. 2008 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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											391	404	L	L	L	L								
2											A E	A U	L E	A	L	L	L							
3												L	L	U	L									
4											L	L	L	L	L									
5										E A			L	L	L									
6											U	L	L	L	L									
7											U	L	L		L	L	L							
8										L	L	L	L	E	A		420							
9											U	L	L	L	L	L								
10											L	L	L	L										
11											L	L	L	L	L	L								
12											U	L	L	L	L	E	A							
13										E A	L E	A U	L	L	L E	A								
14											U	L	L E	A		L								
15											L E	A	L	L	L									
16											L	L	C	C	C	C	C	C	C					
17											C	C	C	C	C	C			A					
18										U	L	L	L	L	L	L								
19											L	L	L E	A E	A E	A								
20										A		L	L E	A	L E	A	A							
21									473			L	L	L	L E	A								
22										E A	E A	U L	U L	U L	L	L								
23											L	L	L	L	L E	A	L							
24											U	L	C	L	L E	A E	A							
25											L E	A U	L E	A U	L E	A E	A							
26											E A	E A	E A	E A	E A	L								
27											L	L	L	L	L E	A								
28											L	L	L	L	L	L								
29											U	L	L	L	L E	A E	A							
30											L	L	L	L	L	L	E A							
31											C	E	A E	A E	A E	A	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	1	12	13	5	8	3									
MED									473	380	386	400	392	400	389									
U Q											U	L	U	L	U	L								
L Q											390	409	398	411	420									
											U	L	U	L	U	L								
											366	382	368	383	380									

JAN. 2008 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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												316	248	228	234	244	234								
2											A	220	306	262	230	246	238								
3												246	232	236											
4												248	256	236	226										
5											220			220	236	238									
6												272	244	232	244										
7												284	244		234	232	238								
8											228	260	232	230	224	252	258								
9												286	244	242	226	240									
10												276	276	230	238										
11												296	258	264	246	234	226								
12												300	242	240	236	224									
13												256	230	232	250	240	232	220							
14												258	238	238	230	252									
15												278	248	232	252	264									
16											274	278	C	C	C	C	C	C	C	C					
17											C	C	C	C	C	C	C		A						
18											338		224	256	238	210	208								
19												264	234	232	240	220									
20											A			228	234	240	254	216	A						
21										218			252	244	242	248	218								
22											206	220	254	244	230	248	238								
23											204	280	256	266	266	250	230								
24												368	C	240		248	252	212	E A						
25											262	244	256	242	342	252	254								
26											E A	276	268	252	E A	278	238	256							
27											286	282	312	230	274	250	236								
28											258	256	244	260	250	272									
29											262	270	234	234	232	236									
30											246	248	274	232	236	250		220							
31											C	240	248	244	242	222									
		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	11	24	27	28	28	25	17	2						
MED										218	256	271	248	239	238	246	235	216							
U Q											274	283	258	249	245	251	245								
L Q											220	252	240	232	234	233	221								

JAN. 2008 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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	282	290	268	228	212	262	252	200	200	222	222	194	208	188	198	194	202	206	232	E	284	228	212	E	300	338			
2	E	326		A	E	208	E	E	190	210		A		A	218		200	194	194	210	206	198	266	202	232	E	250	E	280	
3	E	266	236	E	E	242	E	B	208	194	210	206	202	194	H	192	194	208	206	196	214	224		C	218	218	E	268		
4	E	260	244	E	E	228	214	194	198	208	206	200	206	218	196	222	178	194	168	226	214	198		E	E	E	E	272		
5	E	264	276	E	E	222	206	E			A	212	230	190	H	184	190	208	206	226	E	236	216		C	222	238	240		
6	E	280	282	E	E	202	190	E	E		C	232	222	210	224	214	202	206	220	216	204	204	214	E	E	E	E	284		
7	E	254		C	E	238	226	224	228	212	226	192	202	186	220	200	196	178	206	196	E	284	232	202		C	E	310		
8	E	266	238	E	E	224	202	324	328	222	180	200	204	210	202		174	210	206	204	216	216	188	E	E	E	E	270		
9	E	258		A		206	202	296	270	196	212	228	206	204	206	208	184	220	202	206		A	222	208	E	E	E	278		
10	E	274	262	E	E	226	188	182	276	204	190	196	220	194	208	200	210	216	204	186	E	260	228	200	238	250	E	294		
11	E	312	276	238	216	210	194	250	202	206	206	206	192	234	E	206	208	202	208	194	214	234	228	220	222	E	282			
12		C	282	E	E	208	244	248	224	198	188	216	204	202	188	184		222	208	204	230	212	212	E	E	E	E	318		
13	206	238	212	264	E	284	270	206	190	232		A	A	A	194	206	196		204	202	206	216	218	E	E	E	E	C		
14	E	302	308	E	E	188	240	280	212	200	248	230	228	212		190	202	216	204		C	E	258	236	226	240	252	E	252	
15	234	294	218	E	E	270	266	268	212	214	194	212	240		E	196	198	214	202	208	212	250	212	E	E	E	E	290		
16	E	288	272	202	304	264	340	250	220	218	216	212		C	C	C	C	C	C	C	C	C		224	208	204		E	326	
17	E	312	318	E	E	212	256	282	240	216	198			C	C	C	C	C		A	224	220	202	E	E	E	E	320		
18	E	308	344	E	E	230	238	278	312	220	192	214	218	200	206	202	184	172	212	206	224	228	222		E	E	E	A		
19	E	302		A	E	214	178		A	294	212	206	216	238	218		A	A	A	230	212		A	224	240		E	300	E	312
20	E	304	316	E	E	218	180	172	264	204	204		216		212		220		A	A	208	212	218	208	E	E	E	E	298	
21	E	288	290	E	E	236	212	208	274	202	164	202	214	218		206	192		210	208	276	220	226	E	E	E	E	216		
22	E	256	270	E	E	222	200	240	210	204	202			A	E	E	A										E	270		
23	E	252	266	E	E	212	230	216	208	198	188	172	212	212	212	224		214	202	212	200	198		A	248	224	E	258		
24	E	286	274	E	E	206	196	194	186	206	214	222	264		220	216	208		198	206	206	204	206	E	E	E	E	242		
25	E	286	258	E	E	222	228	266	218	252	198	214	212		206		226		210	208	302		214	242	214	260	E	260		
26	E	252	256		A	270	220		A	A		214	226	216		A	A	A	A	220	210	188		E	E	A	A	E	310	
27	E	256	248	214	202	218	250	262	202	218	250	220	204		202	194		210	236		A	212	206	226	E	E	E	E	278	
28	E	276	248	244	232	208	204	248	202	224	218	224		224	210	202	222	218	204		A	A		A	E	E	E	E	326	
29	E	292	274	E	E	222	228	220	228	202	196	192	204		A	A	A		224	210	216	208	218	220	260		E	260	A	
30	E	270	312	E	E	212	260	224	198	212	206	208	206		A	A	202	198		A	E	206	198	E	E	E	E	E	266	
31	E	274	284	E	E	218		A	E	A		C	A		A	A		182	218	206	210	252	210		E	E	E	E	274	
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
CNT		30	27	29	30	31	28	30	30	31	25	24	21	19	23	22	22	27	27	26	29	25	26	29	27					
NEB	E	275	274	260	220	213	249	E	249	203	205	213	212	206	208	202	198	209	208	206	216	218	208	U	223	E	E	E	B	
UQ	E	292	290	273	246	240	269	262	212	218	220	221	218	218	208	208	220	210	208	E	236	235	220	E	E	E	E	E	B	
LQ	E	258	256	246	212	202	211	224	198	194	204	206	201	202	192	194	194	204	198	212	214	202	220	220	236	E	E	E	B	

JAN. 2008 h'F (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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	A	A	120	A	110	118	114	A	B						
2								B	A	A	A	A	A	120	110	114	A	B						
3								B	120	122	A	A	A	A	116	116	120	B						
4								B	116	A	A	A	A	A	A	116	116	B						
5								B	122	118	118	122	112	116	112	116	A							
6									118	118	A	118	114	118	118	114	112	B						
7								B	114	120	A	A	126	116	116	114								
8								B	118	118	A	A	120	A	110	112	B							
9								B	116	112	114	A	118	114	114	114	116							
10								B	120	122	116	118	118	114	114	120	120							
11								B	122	118	118	120	118	118	116	116	114	B						
12								B	118	118	120	116	A	114	A	A	A							
13								B	A	A	A	A	A	A	116	114	110							
14								B	A	A	122	114	A	118	114	114	118							
15								B	114	114	A	A	A	A	A	A	A							
16								B	114	A	A	C	C	C	C	C	C	C						
17								B	116	C	C	C	C	C	C	C	A	A						
18								B	122	120	A	A	A	A	A	120	118	B						
19								B	126	124	122	116	A	A	A	122	112							
20								B	122	118	114	116	112	A	A	A	A							
21								B	114	116	118	114	118	118	116	A	A							
22								B	118	116	120	120	118	118	124	116	116							
23								B	118	116	114	116	116	118	A	A	A							
24								B	118	124	118	C	122	120	120	A	A							
25								B	122	122	120	126	122	124	120	114	A							
26								B	126	126	126	114	114	114	118	120	A							
27									120	114	120	120	116	A	A	A	A							
28								B	116	112	124	A	A	116	116	120	116							
29								B	116	A	122	A	A	116	A	A	A							
30								B	A	118	114	A	114	114	118	A	A							
31								B	118	118	C	A	A	A	A	112	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	27	23	18	15	15	19	19	20	12							
MED								120	118	118	119	116	118	116	116	115	116							
U Q									122	122	122	120	120	118	118	118	118							
L Q									116	116	116	116	114	114	114	114	113							

JAN. 2008 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC IN MANUAL SCALING

H D	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	B	92	90	B	B	B	B	G	104	102	106	102	98	98	G	96	94	B	B	98	B	92	96
2	100	100	90	90	90	B	B	134	106	104	104	100	98	100	100	94	94	94	92	88	B	88	B	B
3	B	90	B	B	96	B	96	92	134	116	104	106	104	104	98	102	G	96	94	88	C	86	86	110
4	104	98	98	96	B	B	B	B	154	104	104	104	102	102	98	144	G	B	B	B	B	B	B	B
5	B	100	B	B	B	B	B	B	150	148	132	128	126	96	92	102	90	88	88	B	C	B	112	100
6	104	100	B	100	100	92	92	C	G	122	102	106	104	104	102	G	G	B	B	B	B	B	B	B
7	100	C	94	92	100	B	B	B	154	120	106	104	102	98	104	G	B	B	B	B	B	C	C	102
8	100	104	102	100	100	B	96	B	118	122	106	102	100	96	96	146	124	112	B	B	B	B	B	B
9	B	92	92	96	96	B	B	B	166	118	106	102	98	102	98	98	100	94	92	92	92	92	92	C
10	90	B	114	B	B	B	B	B	102	148	150	142	106	96	142	G	G	B	B	B	104	106	102	102
11	96	96	102	104	98	98	B	B	G	148	104	106	156	104	102	102	G	B	B	B	104	108	B	96
12	C	100	100	100	100	B	B	B	160	154	106	100	96	100	92	88	90	100	B	B	104	104	B	B
13	104	B	102	B	B	B	B	106	100	96	100	98	96	96	100	162	120	98	94	B	94	88	B	C
14	B	102	96	B	B	B	100	100	102	102	134	102	100	100	G	G	G	C	B	B	B	B	104	94
15	102	102	98	96	100	B	B	140	G	116	104	106	108	108	106	104	102	B	100	96	100	126	116	110
16	B	118	96	102	142	B	132	130	128	104	106	C	C	C	C	C	C	C	C	C	B	B	C	B
17	110	110	104	104	102	B	B	B	G	C	C	C	C	C	C	C	102	96	100	110	B	B	108	112
18	104	102	102	100	98	B	96	98	G	112	106	106	106	102	102	102	152	B	98	96	96	94	100	104
19	106	100	104	104	104	146	136	136	142	134	120	116	106	106	100	130	138	102	100	100	98	102	106	142
20	116	118	102	102	106	102	138	128	126	114	114	120	116	104	104	102	100	104	96	94	90	98	96	B
21	B	B	102	98	96	92	98	104	G	150	140	138	124	120	114	100	98	94	92	90	88	88	B	B
22	B	B	98	102	98	98	100	96	154	162	154	136	134	116	132	134	132	B	B	B	88	B	B	B
23	B	B	B	B	B	B	B	B	G	G	146	132	138	128	108	102	104	104	B	110	96	96	98	96
24	94	B	B	B	100	94	166	150	142	138	C	144	126	118	104	108	98	B	100	B	B	94	94	
25	92	92	110	110	B	108	100	B	150	124	122	130	162	102	124	120	98	100	98	98	102	98	104	106
26	104	122	106	102	98	94	92	92	156	140	126	122	124	112	122	130	100	102	100	98	96	96	98	94
27	96	B	98	98	B	B	146	138	132	122	120	116	106	102	106	104	102	98	96	106	130	110	102	100
28	116	116	116	110	110	104	158	150	G	144	116	106	106	122	120	106	120	108	106	98	94	126	94	92
29	92	92	100	94	98	108	112	132	G	106	144	108	104	122	106	98	90	94	104	104	100	110	110	106
30	104	100	102	98	94	96	124	110	106	120	128	104	114	112	114	104	102	104	108	108	108	108	104	114
31	104	98	98	100	96	96	96	152	140	136	C	100	102	100	96	100	92	102	104	100	98	104	106	106
	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	25	25	22	13	18	19	22	29	29	28	29	29	28	24	23	22	19	20	19	20	21	20
MED	104	100	100	100	99	98	100	128	141	122	114	106	106	102	103	103	102	98	98	99	98	100	102	102
U Q	104	104	102	102	100	108	124	138	154	143	133	121	124	112	114	125	120	102	100	105	102	107	106	108
L Q	96	98	97	96	96	94	96	98	118	109	104	103	102	100	98	101	96	94	94	95	94	93	95	96

JAN. 2008 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2008 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 30.0MHz IN 15.0SEC 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			F1	F1							L2	L2	L2	L2	L1	L2		L1	L2			F2		F4	F2	
2	F2	F3	F2	F3	F2				H2	L3	L3	L2	L2	L2	L2	L2	L2	L2	L3	F2	F1		F1			
3		F1			F1		F1	L2		HL22	CL22	L2	L2	L2	L2	L2	L1		L1	F2	F4		F5	F3	FF21	
4	F3	F3	F2	F1						H1	L2	L2	L2	L2	L2	L3	HL12									
5		F1								H2	HL22	CL11	CL11	CL12	L2	L2	L2	L3	F3	F2				F1	F2	
6	F1	F1		F2	F3	F1	F2			C2	L1	L2	L1	L2	L1				F1							
7	F2		F1	F2	F2					H1	CL21	L1	L2	L1	L2	L2									F2	
8	F2	F1	F2	F1	F1		F1			C2	CL11	L2	L2	L2	L3	L2	HL11	C3	F2							
9		F7	F5	F2	F1					H2	C1	L2	L2	L2	L2	L2	L2	L2	F4	F3		F2	F2	F2		
10	F1		F1							L2	HL12	HL12	HL12	L2	L2	HL12						F2	F1	F2	F1	
11	F3	F2	F1	F1	F2	F1					HL12	L1	L1	HL11	L2	L1	L2				F1	F2			F2	
12		F1	F1	F1	F1					HL11	HL12	L2	L2	L2	L1	L2	L2	L2	F2		F1		F1	F1		
13	F1		F1					L1	L2	L2	L2	L3	L2	L1	L2	L1	HL11	CL11	F2	F2		F2	F2			
14		F2	F2				F1	L1	L2	L2	CL11	L2	L2	L2	L2									F2	F1	
15	F1	F2	F4	F4	F2			H1		CL11	L2	L2	L1	L1	L1	L2	L2		F1	F1		F4	F1	F2	F2	
16		F2	F2	F2	FF21		F4	C2	C2	L2	L2												F1			
17	F2	F1	F2	F1	F1													LL32	L3	F3	FF22			F3	F2	
18	F2	F6	F5	F2	F2		F2	L2		CL21	L3	L2	L2	L2	L2	L1	H1		F2	F3	F4	F3	F3	F3	F3	
19	F4	F5	F6	F3	F3	F4	FF31	C2	HL21	CL11	CL11	CL11	L2	L2	L3	L1	HL11	F4	F4	F5	F5	F4	F2	F2		
20	F2	F1	F2	F2	F2	F1	F1	C2	C2	C2	CL22	CL22	CL22	CL22	CL22	CL22	CL22	CL22	L3	F3	F2	F3	F3	F2		
21			F2	F2	F1	F3	F2	L2		H1	H1	HL11	HL11	HL11	HL11	HL11	HL11	LL31	F2	F2	F2	F2	F1			
22			F2	F1	F2	F1	F3	L1	HL11	HL11	HL11	HL11	HL11	HL11	HL11	HL11	HL11	C1		F1		F1				
23				F2			F2	L2			HL22	HL22	HL22	HL22	HL22	HL22	HL22	L3	F2		F1	F4	F1	F1	F2	
24	F3				F1	F1		H2		H3	H2	HL21		HL21	CL21	CL21	CL21	L4	L4	F2	F2			F1	F1	
25	F2	F1	F1	F1		F3	F2			H3	CL22	CL22	CL22	HL22	L2	CL22	CL22	L3	F3	F4	F5	F3	F3	F2	F2	
26	F3	F6	F6	F5	F5	F6	F5	L5	HL33	HL23	CL32	CL22	CL22	CL22	CL22	CL22	CL22	L3	F2	F4	F4	F5	F4	F3	F4	
27	F2		F1	F3			F1	H2	H3	CL22	CL32	CL22	L2	L2	L2	L3	L4	L4	F4	F6	F4	F4	FF22	F1	F1	
28	FF11	F1		F1	F1	F2	F2	H2	H2	H2	C3	L3	L3	CL22	CL22	CL22	CL22	L2	F3	F4	F5	F5	FF25	F5	F5	
29	F4	F3	F1	F2	F3	F2	F2	H2		L3	HL22	L2	L2	L2	L2	L3	L4	L4	F3	F3	F2	F4	F3	F4	F4	
30	F3	F5	F4	F3	F7	F4	F2	L4	L3	CL22	CL11	L2	L2	L2	L2	L2	L2	L3	F2	F5	F3	F2	F3	F4	F2	
31	F3	F4	F2	F4	F5	F4	F3	HL22	HL22	CL22		L3	L3	L3	L2	L2	L4	L4	F2	F2	F2	F2	F4	F2	F3	
		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																										

f - PLOTS OF IONOSPHERIC DATA

KEY OF f - PLOT	
	SPREAD
◇	f _o F ₂ , f _o F ₁ , f _o E
×	f _x F ₂
*	DOUBTFUL f _o F ₂ , f _o F ₁ , f _o E
⊗	f _b E _s
└	ESTIMATED f _o F ₁
†, ‡	f _{min}
^	GREATER THAN
∨	LESS THAN

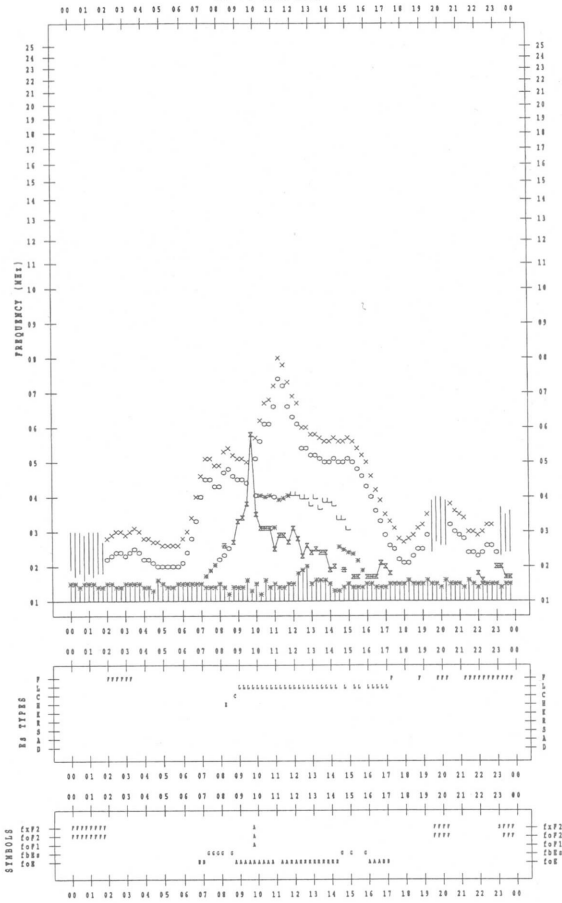
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 1

135 °E MEAN TIME



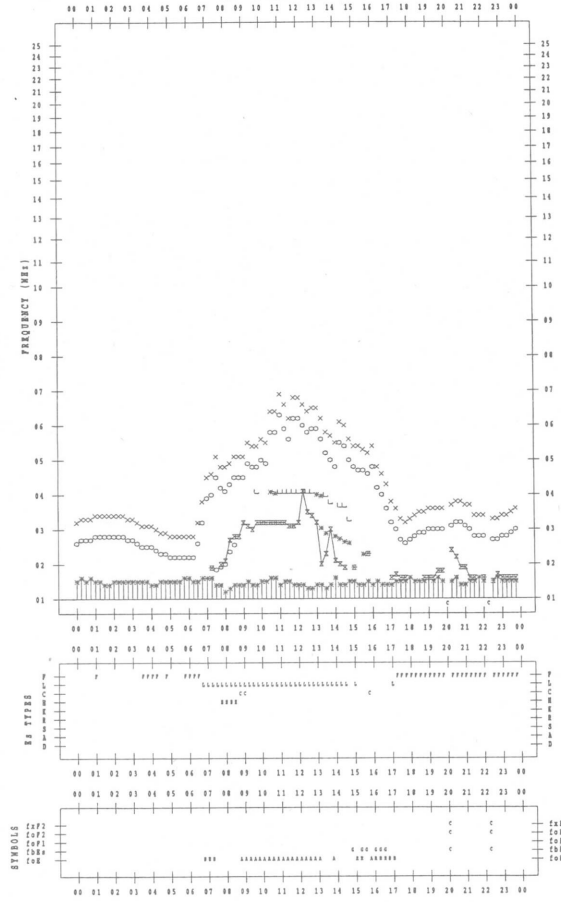
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 3

135 °E MEAN TIME



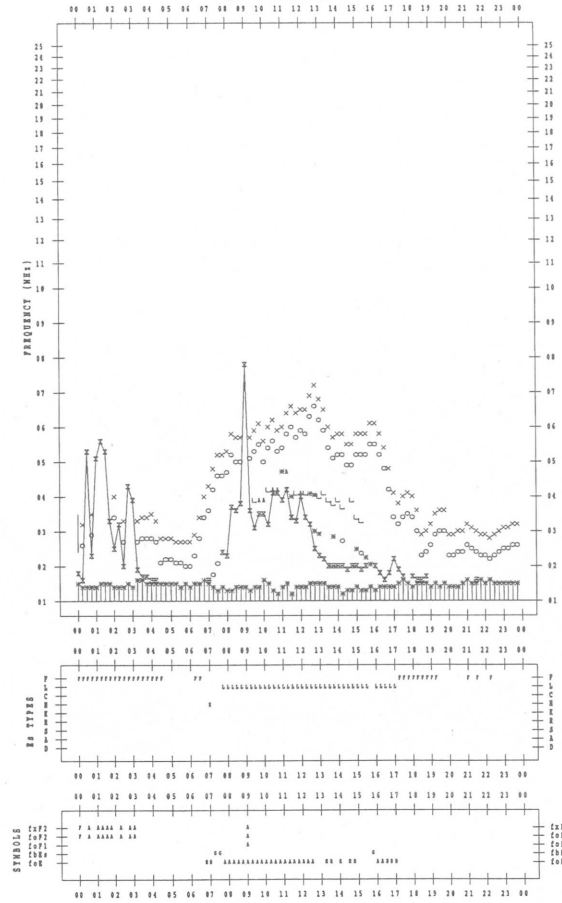
f- PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 2

135 °E MEAN TIME



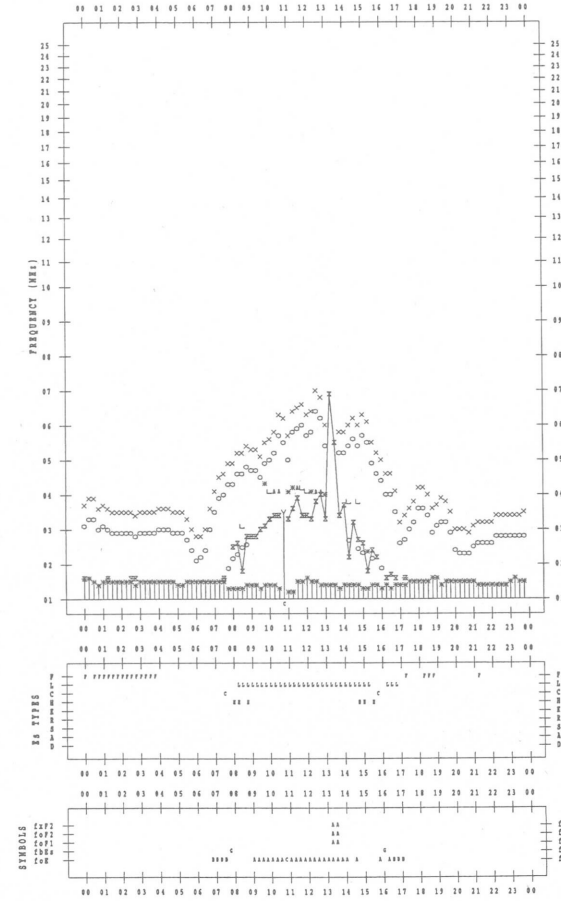
f- PLOT DATA

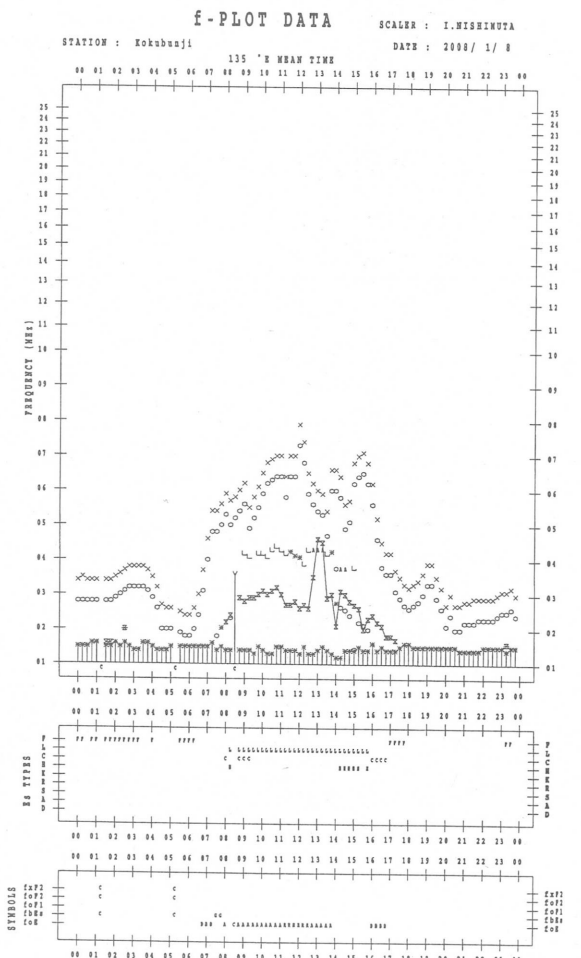
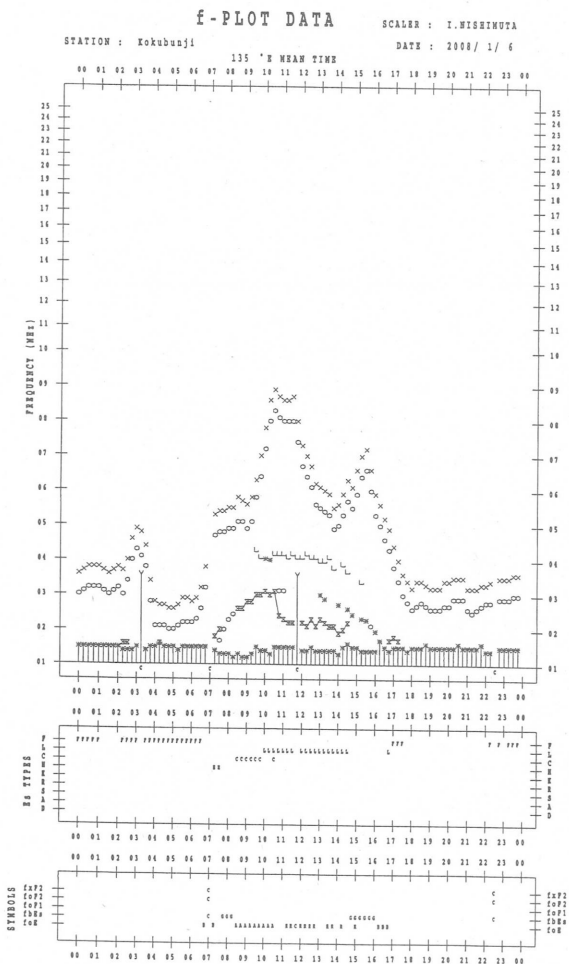
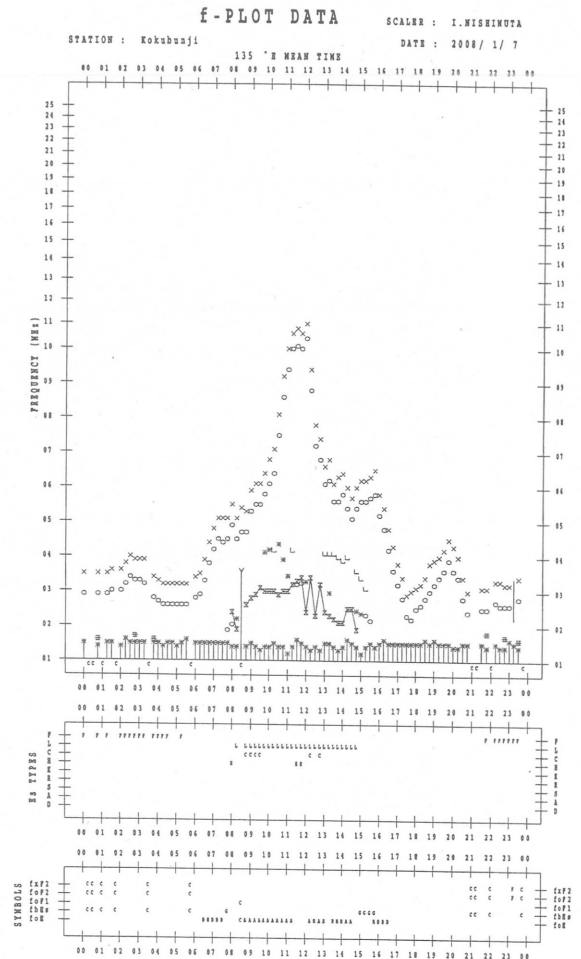
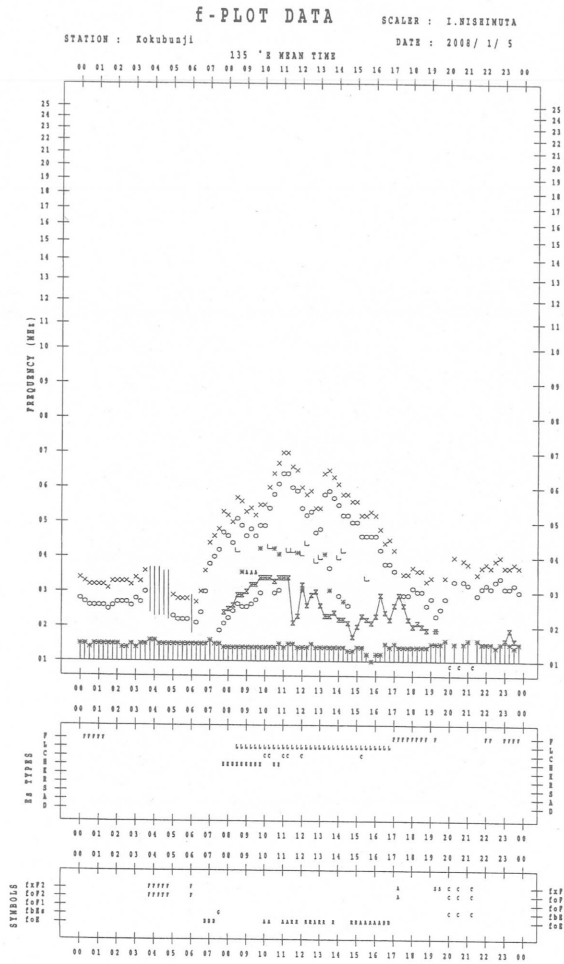
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 4

135 °E MEAN TIME





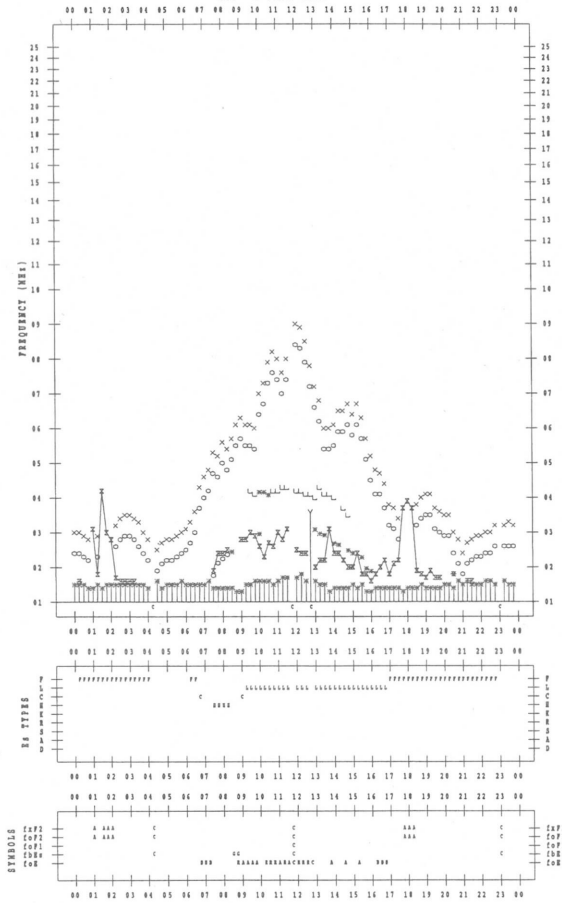
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 9

135 °N MEAN TIME



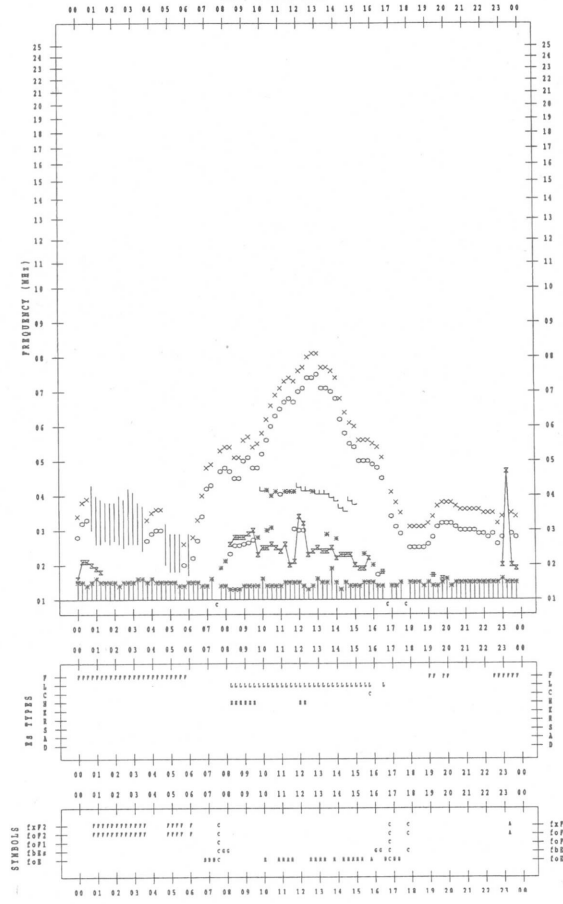
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 11

135 °N MEAN TIME



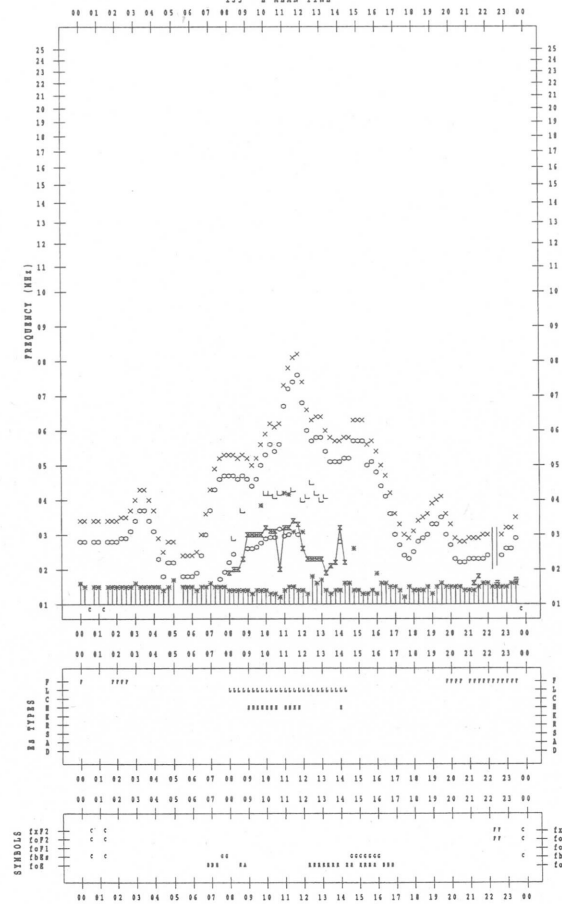
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 10

135 °N MEAN TIME



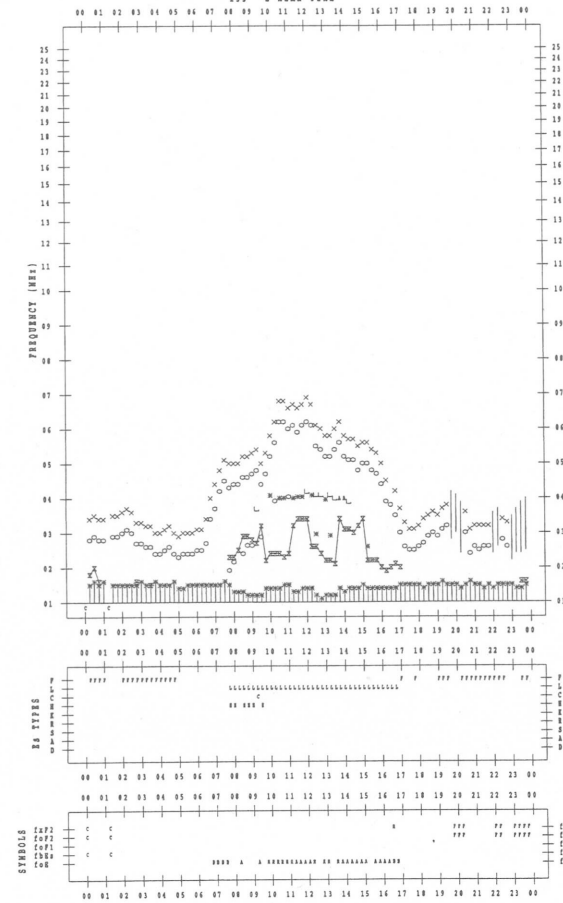
f-PLOT DATA

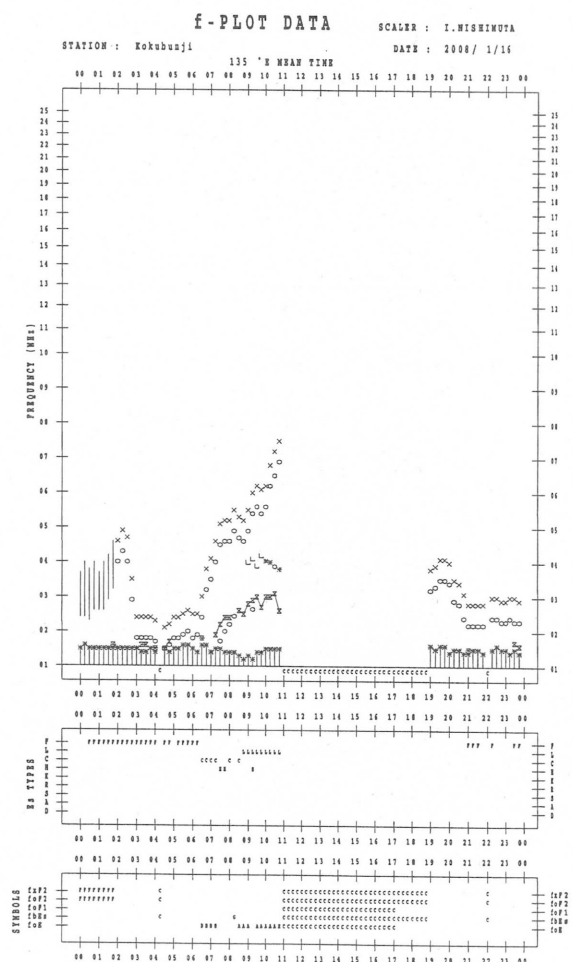
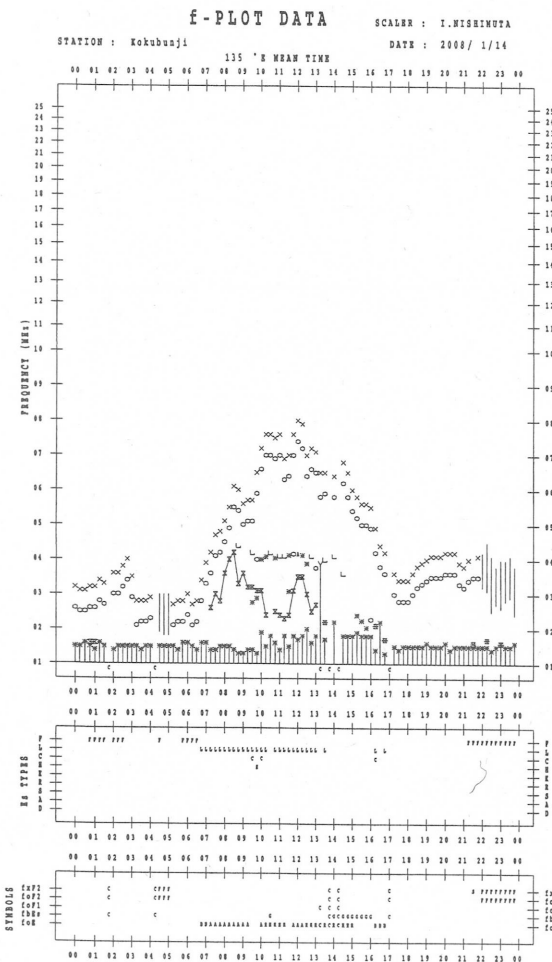
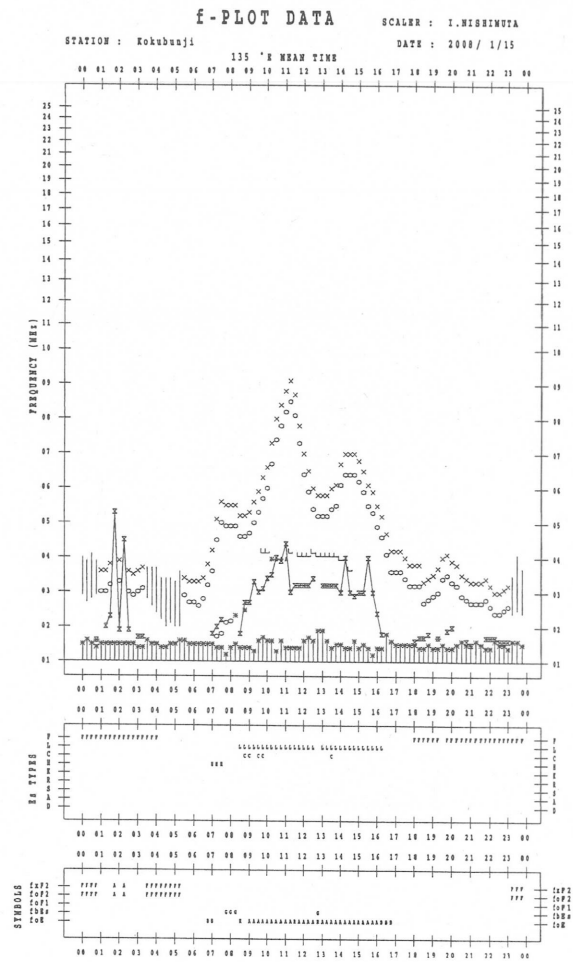
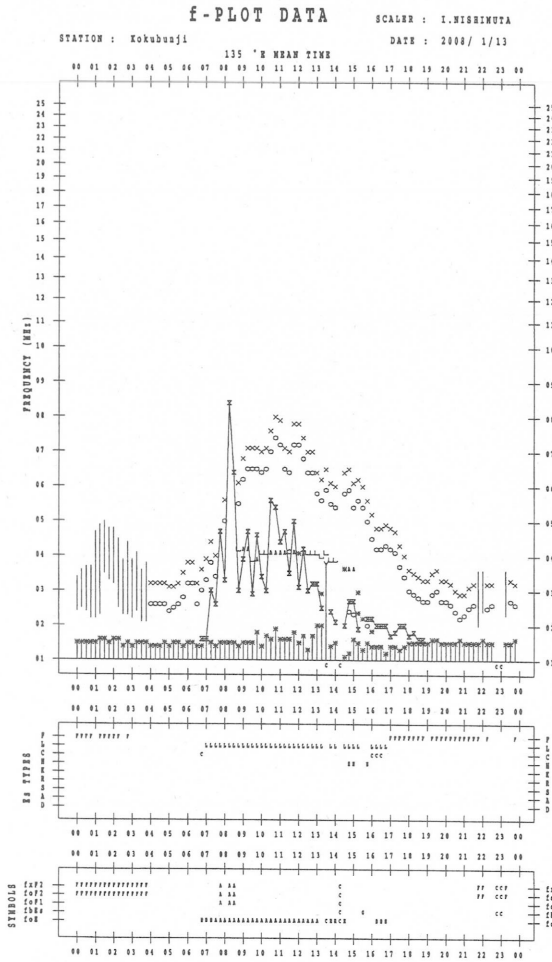
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 12

135 °N MEAN TIME





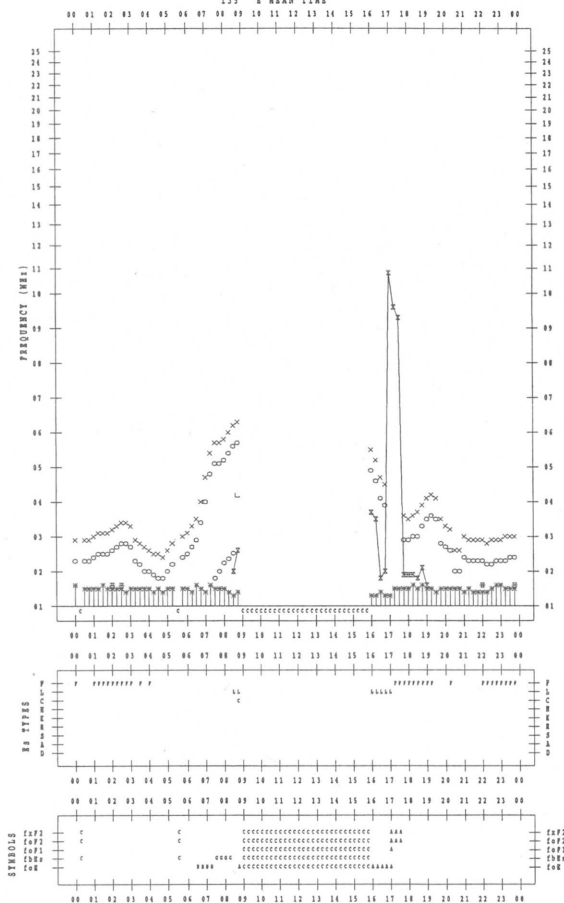
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 17

135 'E MEAN TIME



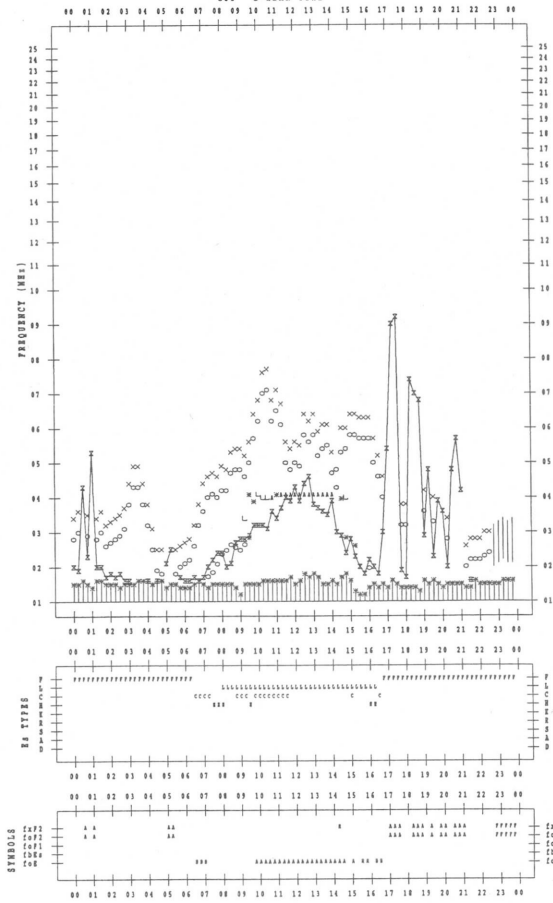
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 19

135 'E MEAN TIME



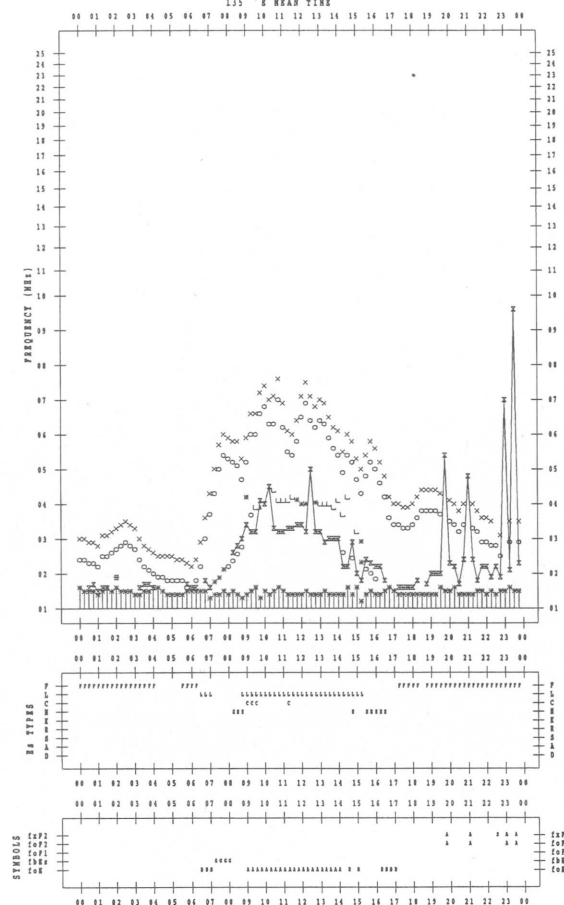
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 18

135 'E MEAN TIME



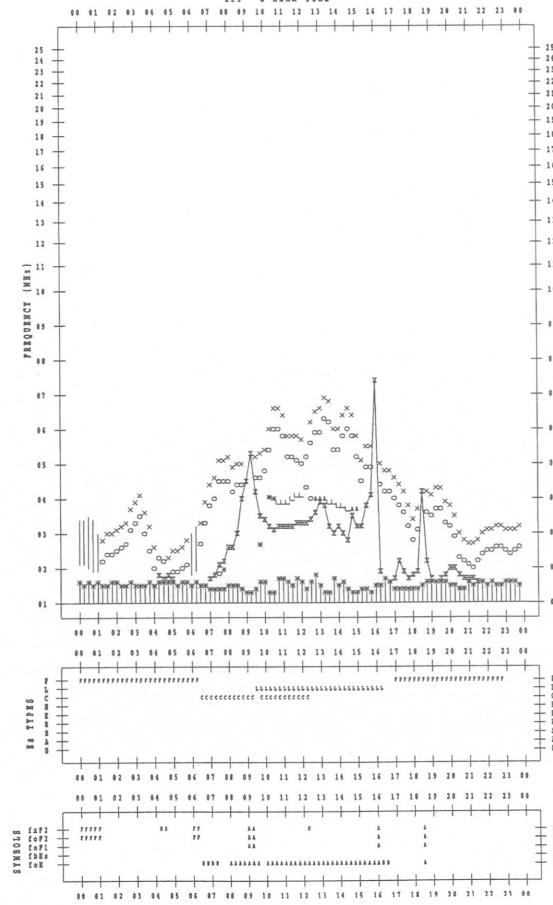
f-PLOT DATA

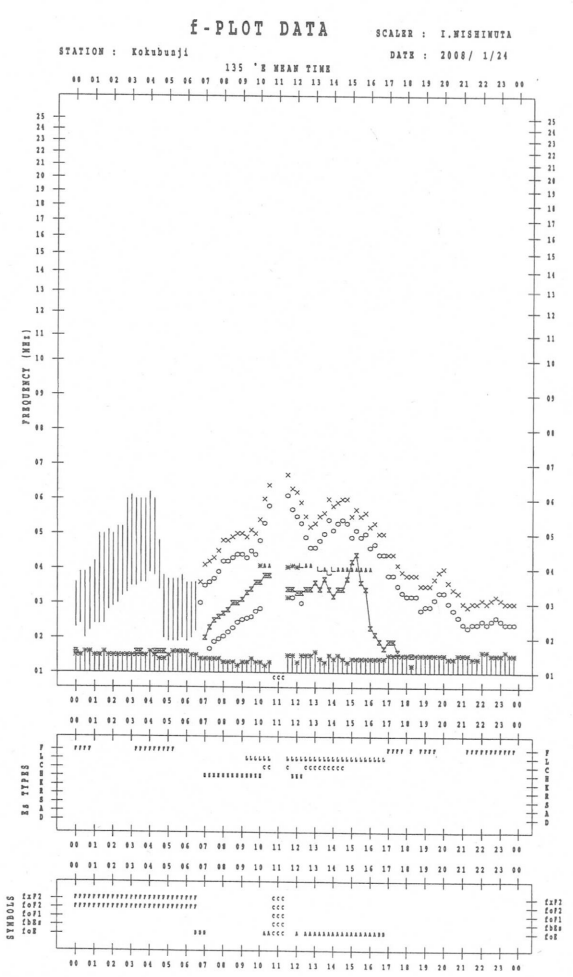
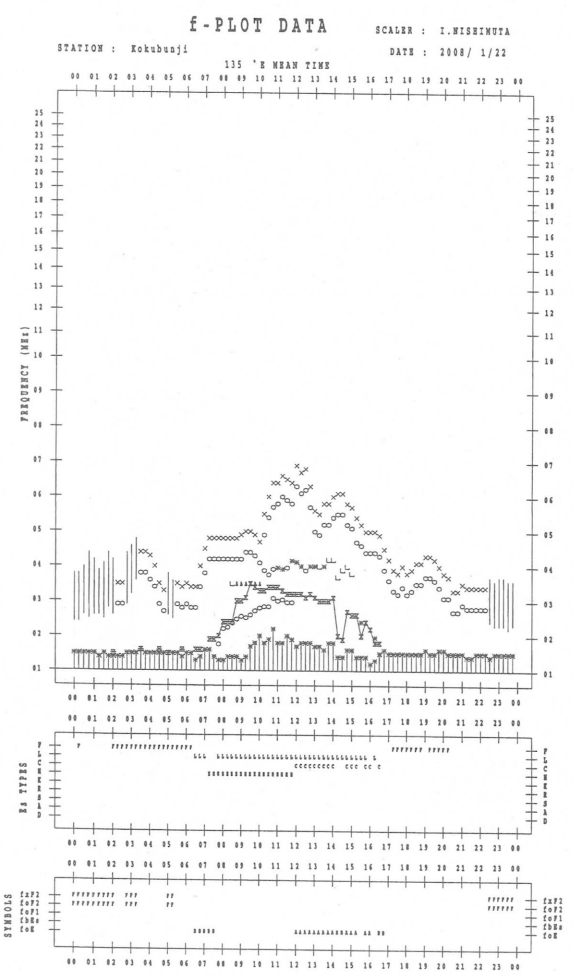
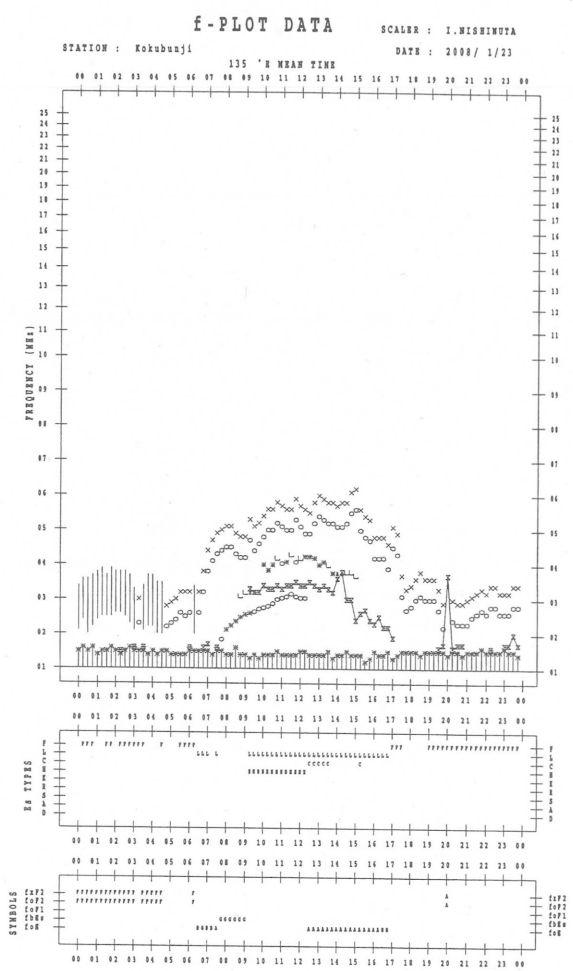
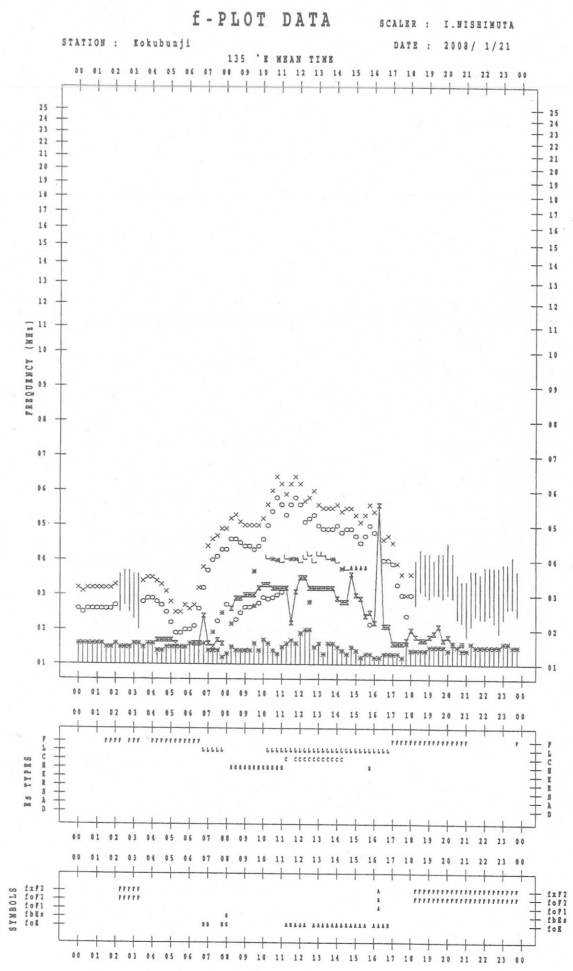
SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1 / 20

135 'E MEAN TIME





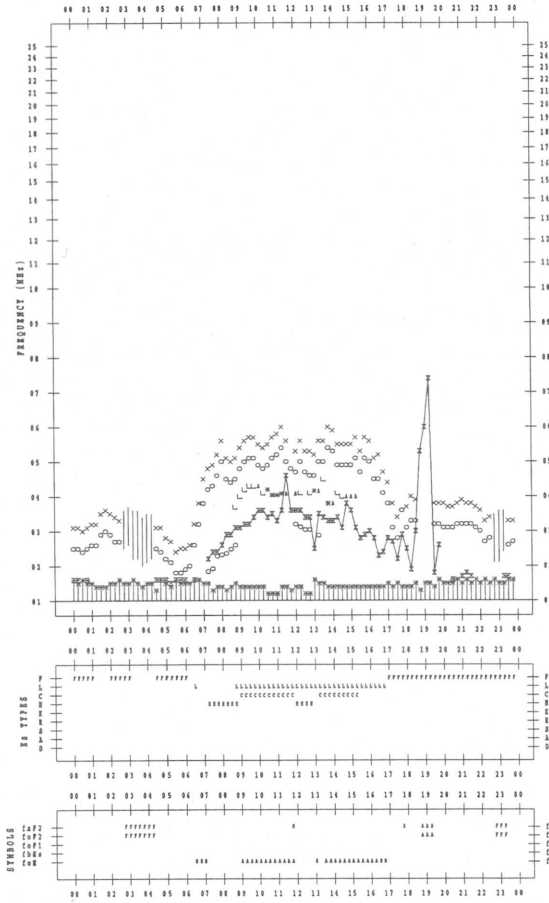
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1/25

135 'E MEAN TIME



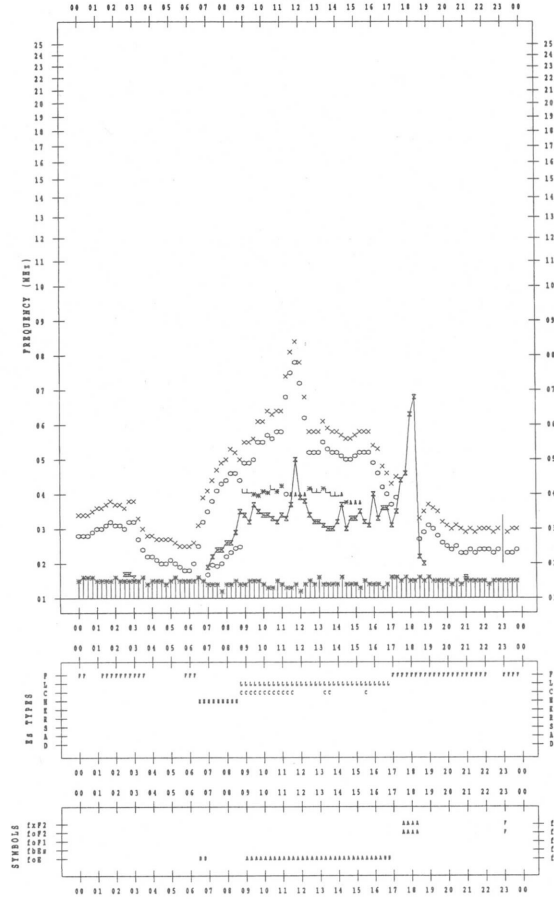
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1/27

135 'E MEAN TIME



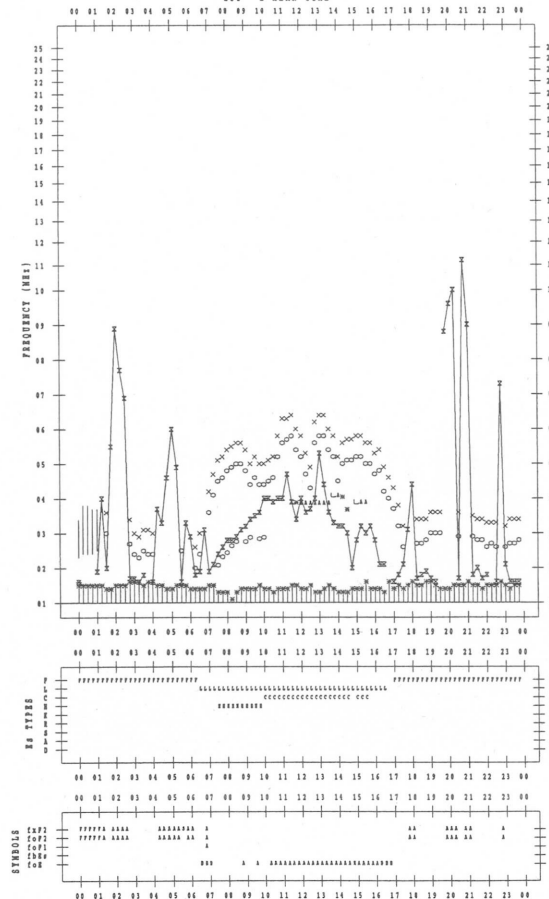
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1/26

135 'E MEAN TIME



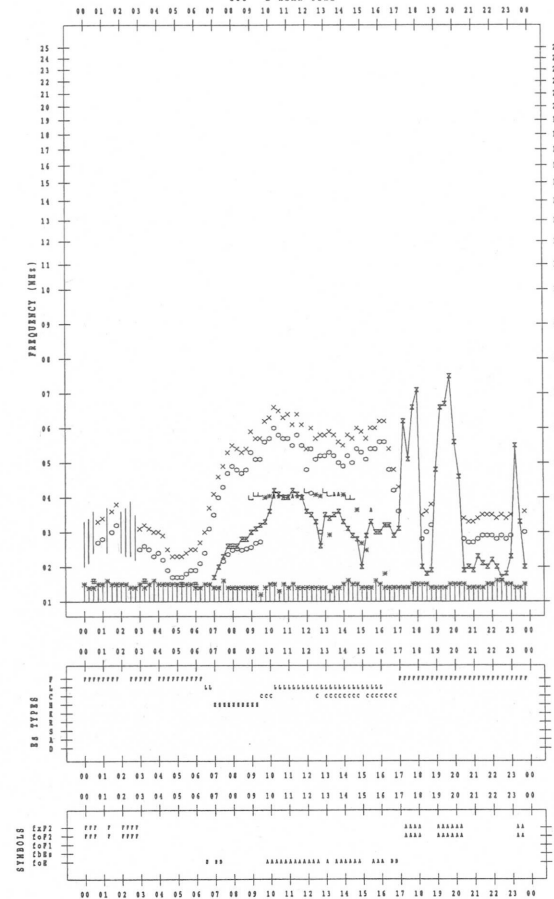
f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008 / 1/28

135 'E MEAN TIME

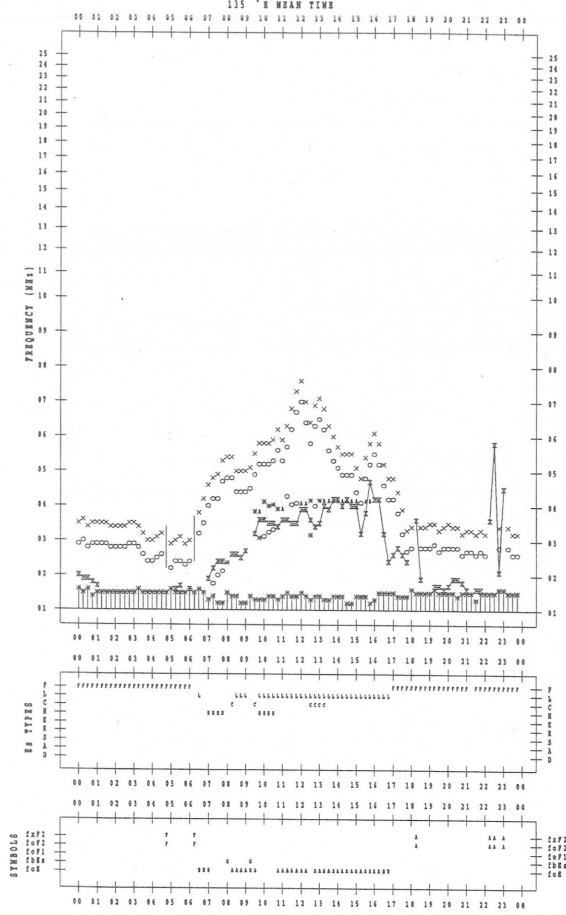


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008/1/29

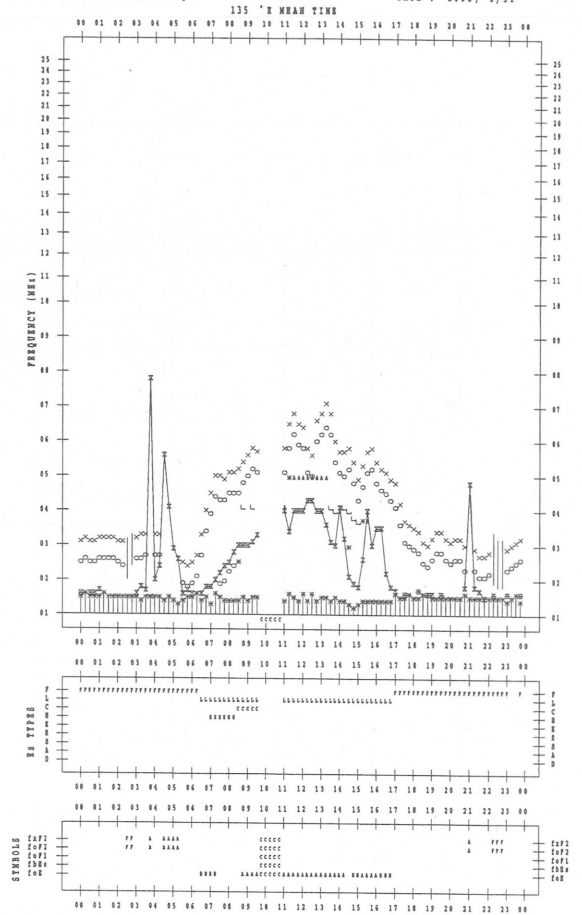


f-PLOT DATA

SCALER : I.WISHIMUTA

STATION : Kokubunji

DATE : 2008/1/31

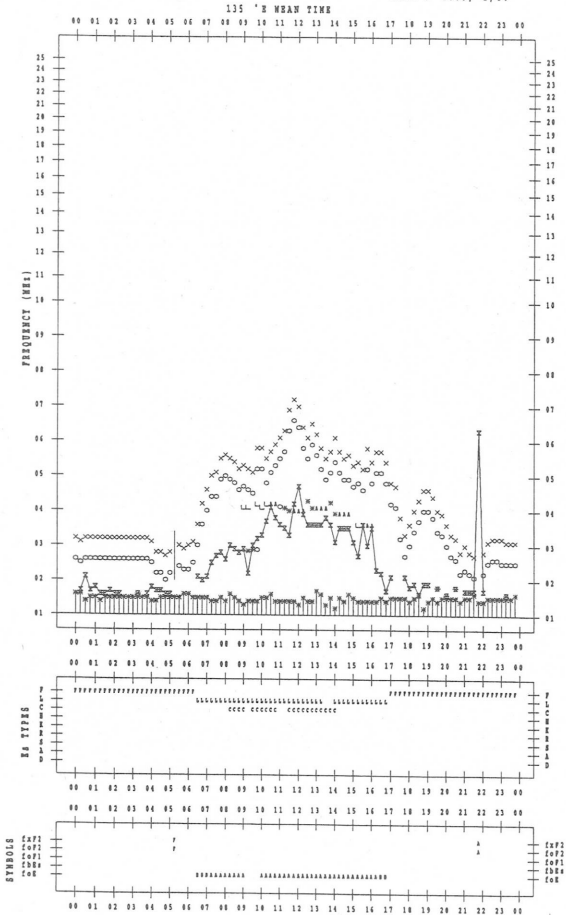


f-PLOT DATA

SCALER : I.WISHIMUTA

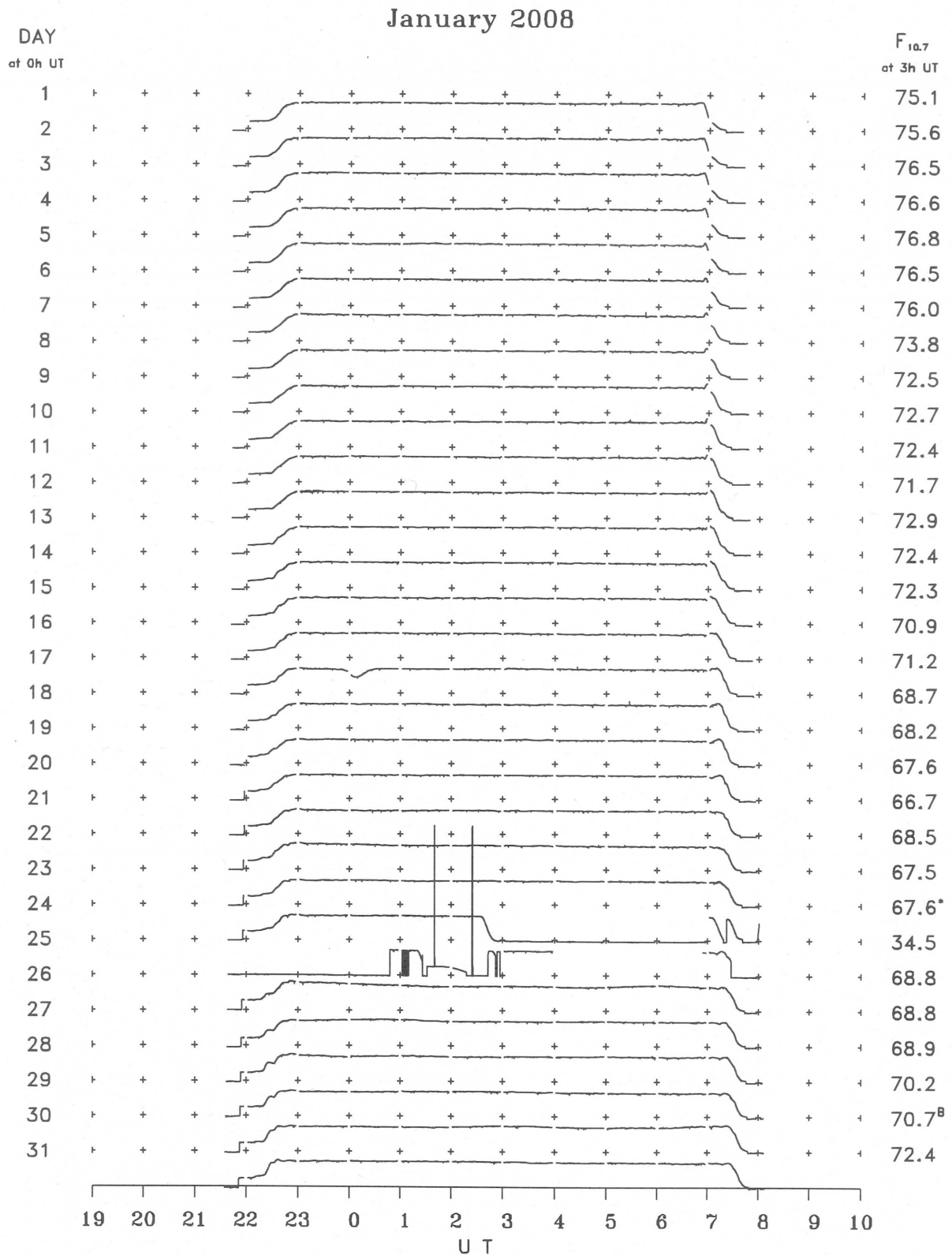
STATION : Kokubunji

DATE : 2008/1/30



B. Solar Radio Emission

B2. Summary Plots of $F_{10.7}$ at Hiraiso



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range $\geq 6^\circ$.

IONOSPHERIC DATA IN JAPAN FOR JANUARY 2008
F-709 Vol.60 No.1 (Not for Sale)

電離層月報 (2008年1月)
第60卷 第1号 (非売品)
2008年4月23日印刷
2008年4月30日発行

編集兼 独立行政法人 情報通信研究機構

発行所 〒184-8795 東京都小金井市貫井北町4丁目2-1

☎(042)(327)7540(直通)

Queries about "Ionospheric Data in Japan" should be forwarded to:
National Institute of Information and Communications Technology
2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184-8795 JAPAN