F-728

IONOSPHERIC DATA IN JAPAN

FOR AUGUST 2009

VOL. 61 NO. 8

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≪Real Time Ionograms on the Web ・・・・・・・・・・・・・http://wdc.nict.go.jp/index_eng.html≫

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

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 , Japan.

Stations	Geographic(WGS84)		Geomagnetic (IGRF-10(2005))		Technical Method
	Latitude	Longitude	Latitude	Longitude	
✳Wakkanai/Sarobetsu	45˚10'N	141˚45'E	36.4˚N	208.9˚	Vertical Sounding (I)
Kokubunji	35˚43'N	139˚29'E	26.8˚N	208.2˚	Vertical Sounding (I)
Yamagawa	31˚12'N	130˚37'E	21.7˚N	200.5˚	Vertical Sounding (I)
Okinawa	26˚41'N	128˚09'E	17.0˚N	198.6˚	Vertical Sounding (I)
Hiraiso	36˚22'N	140˚37'E	27.6˚N	209.1˚	Solar Radio Emission (S)

✳We moved the observation facilities at Wakkanai to Sarobetsu on February 2009. The new observatory is located at approximately 26km south from the old observatory. The observation at Sarobetsu commenced on March 6, 2009.

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 a 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 by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of problems occurring in the auto matic data processing system, but existence of film record.

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

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

Median (**MED**) is defined as the middle value when the numerical values are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Hand-book of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.
B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.
C Measurement influenced by, or impossible because of, any non-ionospheric reason.
D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.
E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.
F Measurement influenced by, or impossible because of, the presence of spread echoes.
G Measurement influenced by, or impossible because the ionization density of the layer is too small to enable it to be made accurately.
H Measurement influenced by, or impossible because of, the presence of a stratification.
K Presence of particle *E* layer.
L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.
M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.
N Conditions are such that the measurement cannot be interpreted.
O Measurement refers to the ordinary component.
P Man-made perturbations of the observed parameter; or spur type spread *F* present.
Q Range spread present.
R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.
S Measurement influenced by, or impossible because of, interference or atmospherics.
T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
V Forked trace which may influence the measurement.
W Measurement influenced or impossible because the echo lies outside the height range recorded.
X Measurement refers to the extraordinary component.
Y Lacuna phenomena, severe layer tilt.
Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

(iii) Description of Types of *Es*

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

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.
l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the 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 as-sociated with high absorption and large *fmin.*
n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.
k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

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

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

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

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

B. SOLAR RADIO EMISSION

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

B1. Outstanding Occurrences at Hiraiso

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

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

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

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

B2. Summary Plots of F10.7 at Hiraiso

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

AUG. 2009

LAT. 45°10.0′N LON. 141°45.0′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	A	A	29	32	42	A	A	A	A	A	A	A	A	A	A	A	A	A	A	54	62	50	30
2	29	A	37	30	A		A	A	A	A	A	A	A	A	A	A	A	43	47	40	54	60	A	A
3	A	A	A		35		A	A	A	A	A	A	A	A		A	A	A	53	63	62	63	41	46
4	43	45	35	43	48	42	57	A	A	52	A	A	A	A	A	A	A	39	A	58	62	61	54	A
5	A	A	A		28	38	A	A	A	A	A	A	A	A	A	A	A	A		62	60	54	58	29
6	40		34	44	50	45		53	A	A	A	A	A	A	A	A	A	A	A	60	64		A	32
7		32	30	38	A		A	A	A	A	A	A	A	A	A			A	A		57		A	44
8		40	30	32	A	35	A	56	56	A	A	A	A	A	A	A	54	A	44		51	49	31	A
9	A	A	A			29		A	A	A	A	A	A	A		A	A	A	A	A	A	61	45	38
10	A	34	34		38	A	A	A	A	A	A	A	A		A			A	A		47	47	36	42
11	A		29		31	31	A	A	A	A	A	A	A	A	A	A	A	A	A	48	A	54	47	32
12	34	30	32	31	34	31	A	A	A	A	A					46	47		50	A	54	55	46	A
13	A		A	32	42	43	44	A	A		A	57	A	A	A	A	A	A	A	45	33	47		34
14	32	A	34	34	32	35	A	A	A	A	A	A	A	A	A		43	A	A	A	54	58	A	A
15	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	56	A	54	62	51	31
16	A	A	A		34	38	38	A	A	A	A	A	A	A		A	A	A	A	52	54	52	A	A
17	A	A		30	32	35		56	A	A	A	A	A	A	A	34	45	42	44	53	56	50	53	35
18		32	A		30	37	45	A	A	39		A	A			47	47	47	A	53	A	52	A	44
19	A	39	A	42	43	44	48	54	47				A		49			48	55	60		51	54	52
20	A	A	31	A	31		A	A	A	A	A	A		A	A	48		46	35	51	54	47	43	32
21	A	34		32	26	35	44	A	A	58	53	A		A	A		47	45	47	46	26	46	32	
22	A	A	A			30	A	42	46			A		A	A	A	A	28	A	A	52		54	51
23	A	31	32	28	34	36	A	A	53	55	52		A	A			A	A	A		52	55	48	34
24	38	34	40	44	43	38	45	A	A	A	54			A	A		51	A	A	54	51	49	A	42
25	32	32	34	35	32	39	A	39	A	A	A	A	A	A	A	A	A	A	A	48	47	46	A	A
26	A	A	A	25		28	A	A	A	A		A	A	A		47	47	45	46	58	52	51		34
27	32	34	34	36	28	A	56	A		51	A				A		A	44	A	54	52	47	48	42
28	28	34	37	32	32	26	39	48		A	A					47	50	50	50	57	53	54	54	34
29	A	40		36	44	42	46	A	47	A	49	A			50	51	46	43	A	41	34	32	37	35
30		40	32	32	32	35	45	48	46	52	52					51	47		A	54	A	54	A	32
31	32	32	31	31	34	36	41	51	46	A	A	A	A	A	56	54	A	A	51	52	50	48	33	32
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	16	17	21	24	24	12	9	7	6	5	1			3	9	11	12	12	21	26	28	20	23
MED	32	34	34	32	33	36	45	51	47	52	52	57			50	47	47	44	48	53	54	52	48	34
U Q	38	39	34	37	40	40	47	55	53	55	53	28			56	51	50	46	52	58	54	56	53	42
L Q	32	32	31	30	31	33	42	45	46	51	50	28			49	46	46	42	45	48	51	47	39	32

HOURLY VALUES OF fEs AT Wakkanai

AUG. 2009

LAT. 45°10.0′N LON. 141°45.0′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	48	48	37	31	26	31	43	50	58	81	87	63	56	76	52	117	69	72	93	64	59	36	39	34
2	34	38	28	34	43	32	50	86	105	110	66	61	102	76	58	53	51	37	35	48	40	27	70	111
3	59	69	58	35	26	57	60	104	57	76	72		56	59	G	65	80	67	46	37	36	38	34	28
4	29	G	G	G	G	30	46	59	62	44	44	46	40	58	68	68	103	57	61		50	44	50	63
5	51	92	58	38	28	30	50	64	91	72	97	72	81	67	52	62	84	180		104	92	60	32	41
6	34	36	37	39	33	38	50	54	52	87	80	62	46	75	88	98	66	66	65	35	53		64	32
7	41	29	24	32	44	43	54	60	64	58	63	55	74	47	40	G	44	62	41	56	G	39	51	40
8	39	25	30	31	40	27	46	50	54	98	68	71	74	66	65	62	39	66	31	41	72	49	58	72
9	51	44	68	58	59	33	37	60	63	76	71	53	51	67	G	82	147			117	103	57	36	38
10	48	38	33	40	29	45	64	59	96	61	63	62	44	G	38	G	56	68	68	38	28	32	G	28
11	58	39	34	37	34	38	58	64	72	58	88	62	69	96	66	61	69	98	93		66	44	39	G
12	33	26	G	G	26	40	51	58	50	56	51	G	G	G	G	G	40	45	43	60	44	30	38	54
13	50	48	58	34	G	29	38	71	80	61	62	47	40	54	51	71	57				33	52	54	58
14	37	51	33	39	28	26	45		53	60	64	54	59	65	57	41	37	46	53	79	60	71	69	72
15	94	70	64	49	82	49	72	81	77	63	96	67	62	102	86	63	60	50	60	72	37	57	45	70
16	51	58	68	40	38	27	38	44	72	73	124	122	92	86	38	44	53	82	71	32	69	40	52	65
17	40	54	39	32	G	G	45	38	58	58	62	97	109	90	54	G	G	39	G	G	G	29	28	37
18	39	38	48	53	25	32	39	52	50	G	G	49	50	46	G	39	36	38	72	52	60	34	59	40
19	40	28	38	28	26	33	42	40	40	40	43	G	40	G	G	G	G	38	37	35	38	36	33	33
20	51	53	28	43	31	34	52	51	62	50	39	48	G	50	64	41	G	31	35	26	27	38	40	37
21	40	26	32	G	G	30	39	60	56	51	44	40	G	38	38	G	G	31	27	25	34	38	36	36
22	40	65	60	40	33	26	46	38	44	48	38	46	G	46	70	71	64	39	70	70	53	59	68	44
23	46	33	23	G	28	29	41	43	50	41	40	G	68	38	G	36	72	58	48	34	36	31	33	26
24	26	25	24	G	G	31	37	50	53	46	41	G	G	65	73		49	66	58	38	33	40	53	69
25	38	34	41	37	34	34	50	43	59	80	83	70	52		50	110	93	52	56		42	24	60	71
26	55	46	39	40	40	40	52	56	67	94		60	75	52	44	37	35	34	38	27	36	43	59	28
27	23	G	25	23	34	44	80	61	46	47	38	G	40	G	44	38	43	34	43	36	35	34	38	28
28	G	G	G	G	28	36	43	40	48	58	52	41	40	39	G	G	G	G	26	26	24	40	32	48
29	48	32	38	30	G	G	33	43	46	55	40	45	G	G	G	40	38	43	50	40	32	30	28	25
30	36	33	G	G	G	G		G	G	G	G	39	G	39	G	G	40	38	72		72	50	70	40
31	34	G	G	G	G	26	33	38	35	59	73	68	56	40	G	43	58	71	38	27	27	28	35	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	30	30	31	31	30	30	31	30	31	30	31	29	28	26	31	30	31	31
MED	40	38	34	34	28	32	46	53	57	58	62	54	51	53	44	42	51	50	49	38	38	38	40	40
U Q	51	51	48	40	34	38	52	60	67	76	73	63	69	67	64	65	69	66	66	60	60	49	59	63
L Q	34	26	24	G	G	27	39	43	50	48	41	41	40	39	G	G	37	38	37	32	33	32	34	31

HOURLY VALUES OF fmin AT Wakkanai

AUG. 2009

LAT. 45°10.0′N LON. 141°45.0′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	14	14	15	14	14	14	14	14	14	15	14	14	16	14	15	15	14	14	14	14	14	14	14	15
2	14	14	15	14	14	14	14	14	14	15	14	14	20	15	15	14	14	14	14	14	14	14	14	14
3	14	14	14	14	14	14	14	14	14	15	14	15	14	15	14	14	14	14	14	14	14	14	14	14
4	14	15	14	14	14	14	14	14	14	14	15	15	14	15	14	14	14	14	14	14	14	14	14	14
5	14	14	14	14	14	14	14	14	14	14	16	16	15	15	14	14	15	14	14	14	14	14	14	14
6	14	14	15	14	14	14	14	14	14	14	14	16	17	15	14	14	16	14	14	14	14		14	14
7	14	15	14	14	14	14	14	14	14	14	14	15	17	14	14	14	14	14	14	14	14	14	14	14
8	14	14	14	14	14	18	14	14	14	15	15	16	15	15	15	15	14	14	14	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	15	17	14	16	18	17	14	14	14	14	14	14	14	14	14
10	14	14	14	15	14	14	14	14	14	15	14	16	20	15	14	14	14	14	14	14	14	14	15	15
11	14	14	14	14	14	14	14	14	16	14	15	15	16	14	15	14	14	14	14	14	14	14	15	14
12	15	14	14	14	14	14	14	14	14	14	15	16	18	20	20	15	14	14	14	14	14	14	14	14
13	14	14	14	14	15	14	14	14	14	14	14	27	14	15	14	14	14	14	14	14	14	15	14	15
14	14	14	14	14	14	16	14	14	14	14	14	17	15	15	18	14	14	14	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	15	14	15	17	15	14	15	14	14	14	14	14	15	14	14	14
16	14	14	14	14	14	16	14	14	14	15	17	15	17	16	14	14	14	14	14	14	14	14	15	15
17	14	14	14	14	14	16	14	14	14	15	15	18	18	16	16	14	14	14	16	14	15	14	14	14
18	14	14	14	14	15	14	14	14	14	15	14	15	21	15	15	14	14	14	14	14	14	14	14	14
19	14	15	14	14	14	14	14	14	14	14	14	15	17	14	14	14	14	14	14	14	14	14	15	14
20	14	14	14	14	14	14	14	14	14	14	14	17	17	14	14	14	14	14	14	15	16	14	14	14
21	14	14	14	14	14	14	14	14	14	14	14	14	16	14	14	14	14	14	14	14	14	14	14	14
22	14	14	14	14	14	15	14	14	14	16	16	15	15	15	15	14	14	14	14	14	14	14	14	14
23	14	14	21	14	14	14	14	14	14	14	16	18	15	15	14	14	14	14	14	14	14	15	15	14
24	15	15	15	14	14	14	14	14	14	14	16	15	17	15	14		14	14	14	14	14	14	14	14
25	14	14	14	14	14	14	14	14	15	15	15	15	15	15	14	15	14	14	14	14	14	14	14	14
26	14	14	14	14	14	14	14	14	14	14		14	17	15	14	14	14	14	14	15	14	14	14	14
27	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	14	14	14	15
28	14	14	15	14	15	14	14	14	14	14	15	15	15	14	14	15	14	14	15	18	14	15	14	14
29	14	15	14	14	15	14	14	14	14	14	14	14	17	14	17	15	14	14	14	14	14	14	15	15
30	14	14	14	14	14	14	14	14	14	14	14	14	16	14	14	14	14	14	14	14	15	14	14	14
31	14	14	14	15	14	15	14	14	14	15	15	15	15	17	14	14	14	14	14	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	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	30	31	31	31	31	31	30	31	31
MED	14	14	14	14	14	14	14	14	14	14	14	15	16	15	14	14	14	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	14	15	15	16	17	15	15	14	14	14	14	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

AUG. 2009

LAT. 35°43.0′N LON. 139°29.0′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	30	33	54	55	52	48		A	A	A	A	A	55	44	49	A	44	45	45	A
2		A	A	A	26	30		A	A	A	A	A	A	A	A	53	A	52	49	52	54	45	43	A
3	A	A	A	A	A	35	A	51	A	A	A	A	A	A	A	56		A	53	A	55	54	54	42
4	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	56	54	A	55	A	A	39	A
5		34	A	30	28	A	A	A	A	48	A	A	A	A	A	A		A	A	A	A	52	A	A
6	A	A	A	A	26		A		80	C	A	A	A			52	A	A		73	74	44	A	A
7	A			31	27	34	39	45	53	A	A	A	A		149	A	A	A	A	52	57	52	A	44
8	44	A	A	A	27	28	35		A	A	46		A	56		56	55	53	54	57	51	46	42	32
9	A	A		A	23	30	A	A	A			A		38	A	A	A	A	A	71	45	A	A	42
10	42	A	30	30	30	37	A	A	A	A	A	A	A	A	A	56	A	A	A	A	47	41	36	A
11	A		A	35	A		A	A	A	A	A	A	A	A	A	A	55	53	42	45	45	A	A	A
12	A	A	A	A	A	30	A	A	A	A	A	A	A	A	A	A	53	A	59	55	55	54	A	A
13		A	A	34	28	34	43	56	A		61	67	A				53	39	46	55	54	A	A	A
14	A	A	A	A	A	A	46	A	A	A		A	A	A	60	56	42	A	A	57	54			A
15	A	A	A	A	A	24	A	A	A	A	A	A	A	A	A	A	A	A	A	A	55		A	26
16	A	A	A	A	A	A	44	56	58	A	55	48			52			A	A		55	54		A
17		27	28		28		43	46	52	47	A	A	A	A	A	A	A	A	A	55	54	49	A	
18				26		28	38	56	42	A	A		A		A	45	A	45	44	54	52	38		A
19	A	30	30	28	26	31		42		A	A		48	A	A	A	A	A	A	A	A	54	46	A
20	A	A	A		A	A		A	A	A	A	A	A	A	A	A	A	A	A	54	55	54	A	A
21	A	A	27	19	28	A	43	A	A	55	A			A		55	52	46	47	55	54	52	44	A
22	A		A	27		32	43	46	55	51				A	A	A	A	59	48	58	45			A
23	A	A	A	A			A	A	A	A	48					A	47	A	54	54	54	51	44	A
24		32	34	34	27	A	43	47	A	A	A	A	A	A	A	A	A	A	47	A	A	54	50	A
25	A		A	20	27	28		A	A	A	A	A	A	A	48	52	A	51	44		51	52	41	A
26	27	27	27	26	28	30	A	A	A	A	A	A	A	A	A	A	A	48	A	53	52	44	A	A
27	A		A		A		43	45	51	62	A	48	48				A	A	A	55	55	A	45	A
28	A	A	31	31	30	28	42	68	45	A	A	A	A	A	A	A	A	60	62	62	55	43		34
29	42	28		23	31		39	44	57	55		48	A	A		56	52	49	A	A	54	46		
30	34	36	34		28		42	44	68	56	A	A	A	A	A	59	66	55		51	54	66	A	A
31		24	28	27	28	36	A	47	55	46	A	A			56	68	66	59	A		54	45	42	37
	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	8	9	16	19	17	15	15	12	9	4	4	2	2	5	12	12	15	14	20	27	23	13	7
MED	42	29	30	29	28	30	43	47	54	51	52	48	48	47	56	56	54	52	48	55	54	51	44	37
U Q	43	33	32	31	28	34	43	56	57	55	58	57	48	56	104	56	55	55	54	57	55	54	45	42
L Q	30	27	27	26	27	28	39	45	51	47	47	48	48	38	50	52	52	46	46	53	51	45	41	32

HOURLY VALUES OF fEs AT Kokubunji

AUG. 2009

LAT. 35°43.0′N LON. 139°29.0′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	56	56	58	G	31	27	50	59	46	40	43	50	89	66	54	60	35	53	37	54	72	51	40	65
2	47	50	81	71	51	28	64	116	106	67	65	117	127	87	62	50	62	44	G	G	24	29	47	58
3	87	61	47	43	50	37	59	42	60	84	71	64	81	81	80	44	51	52	51	78	36	56	58	50
4	79		72	61	50	49	39	64	80	117	51	51	80	52	75	51	58	49	82	45	71	92	70	52
5	37	29	40	27	G	41	49	53	58	53	106	104	87	78	67	76	51	124	123	82	110	60	80	52
6	50	45	49	99	G	33	54	63	61	C	60	55	46			45	62	108	68	57	47	31	50	57
7	40	36	28	27	28	G	36	50	51	62	77	55	68	G	45	60	78	71	48	40	54	53	60	40
8	69	71	72	49	G	G	30	49	94	82	G		43	50	92	45	52	40	38	32	30	23	G	30
9	49	61	31	34	46	30	40	69	84	114	108	90		45	56	45	61	72	79	71	60	60	52	39
10	39	50	33	G	29	33	104	128	83	59	55	102	61	72	61	G	61	90	70	52	33	32	33	60
11	67	39	41	29	59	30	40	49	79	124	152	136	84	150		57	G	43	37	71	60	45	60	51
12	56	57	35	49	40	49	65	69	66	55	64	107	122	92	69	79	43	135	106	37	46	49	72	51
13	50	59	49	50	G	G	34	49	48	44	43	47	63				G	63	33	58	28	70	71	49
14	50	66	49	46	52	37	33	55	71	72	75	59	111	83	50	61	39	71	81	29		48	35	40
15	86	66	42	80	51	28	44	59	78	124	104	80	100	78	106	62	82	70	97	124	111	50	52	59
16	72	50	35	50	50	33	31	45	41	41	G	G		41	G	42	40	58	65	49	41	40	34	49
17	36	G	G	34	29		28	G	41	47	111	96	52	48	58	68	72	38	43	43	42	26	49	
18	G	26	23	26	28	G	32	44	46	53	40		40		68	40	75	80	51	61	38	35	39	45
19	36	26	G	23	29	33	31	33	82	59	50		G	96	72	52	69	62	122	127	113	57	36	78
20	57	42	39	36	104	36	36	54	71	61	54	55	72	78	72	46	106	85	61	79	58	59	73	57
21	43	34	G	31	G	53	35	67	70	53	70			43	41	G	G	37	45	26	35	33	38	50
22	49	33	32	34	34	G	33	47	40	47				65	54	56	66	60	62	58	50		50	69
23	50	59	48	58	27	33	61	96	71	64	44					38	50	59	33	43	40	59	40	46
24	31	G	29	24	24	41	33	G	52	48	104	72	66	63	79	95	79	60	72	71	126	79	34	52
25	55	34	52	47	G	G	36	73	70	61	93	68	86	54	50	G	70	G	50	57	59	34	G	59
26	G	22	G	G	G	27	46	48	64	80	68	49	114	50	54	78	80	37	64	53	34	G	51	59
27	79	37	39	49	38	37	34	35	58	60	77	40	40	41	G		49	68	52	69	57	60	35	49
28	35	35	25	G	G	G	33	41	G	45	51	46	66	50	65	104	150	58	27	33	57	G	59	79
29	35	22	35	G	G		33	45	48	G	G	G	60	68	54	G	43	41	83	58	60	35	45	40
30	34	29	29	27	26	40	27	49	38	42	72	50	52	53	43	52	35	31	52	24	31	G	33	31
31	G	29	G	G	G	27	42	36	48	50	80	50	G	G	52	42	70	52	91	46	35	29	24	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	29	31	31	31	30	30	25	26	27	27	29	31	31	31	31	30	30	31	30
MED	49	38	35	34	29	33	36	49	61	59	66	55	67	63	58	51	61	59	61	54	48	46	47	51
U Q	57	57	49	49	50	37	49	64	78	72	80	93	87	78	72	61	72	71	81	71	60	59	59	59
L Q	36	29	28	24	G	14	33	44	48	47	50	49	52	48	50	42	43	43	43	40	35	31	35	45

HOURLY VALUES OF fmin AT Kokubunji

AUG. 2009

LAT. 35°43.0′N LON. 139°29.0′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	13	13	13	13	13	14	14	17	31	33	33	30	28	33	18	14	17	13	14	13	13	13
2	13	13	13	13	13	13	13	13	13	30	33	33	30	31	29	26	15	13	23	13	14	13	13	13
3	13	13	13	14	13	14	13	13	15	22	28	33	31	28	26	17	14	14	13	15	14	13	14	13
4	13	13	13	14	13	14	13	13	14	14	24	29	29	36	34	31	15	13	13	13	14	13	14	14
5	13	13	13	14	13	13	13	17	14	31	31	25	35	35	31	30	14	14	13	15	14	13	13	13
6	14	13	13	13	14	13	13	13	18	C	28	29	28			24	13	13	13	13	14	13	13	13
7	13	13	13	14	13	14	13	14	14	14	30	31	28	28	26	21	14	13	13	13	13	13	13	13
8	13	13	13	13	14	14	13	14	14	28	42		34	34	31	31	29	14	13	13	13	15	13	14
9	13	14	13	13	13	13	13	13	17	26	22	30		36	34	30	15	13	13	14	13	13	13	14
10	13	13	13	13	13	13	14	17	20	20	33	30	34	29	31	14	17	14	13	13	14	13	13	14
11	15	13	13	14	13	13	13	13	13	24	17	30	33	36	20	30	42	15	13	14	13	13	13	13
12	13	13	13	13	13	13	14	13	13	30	29	25	31	28	23	17	17	13	13	14	14	14	13	13
13	13	13	13	14	13	14	13	13	15	20	29	43	37				14	13	13	13	13	13	13	13
14	13	13	14	13	13	13	13	13	14	29	33	30	29	28	25	15	14	15	14	13	13	14	14	14
15	13	14	13	13	13	13	17	13	14	30	21	29	29	29	26	15	18	14	14	13	13	13	13	14
16	13	15	14	13	13	13	13	13	13	21	43	43		34	43	18	13	13	14	17	13	13	13	13
17	13	13	13	13	14		14	13	15	24	22	28	24	23	21	20	14	13	14	13	13	14	14	
18	14	13	13	13	13	18	13	13	14	29	18		14		14	26	13	13	13	14	13	13	13	13
19	13	14	13	13	13	13	13	13	14	14	30		28	14	22	14	15	13	13	14	13	13	13	13
20	13	13	13	13	13	13	13	13	13	15	28	31	29	24	17	17	13	13	13	13	13	13	13	14
21	13	13	14	13	13	13	13	14	14	29	28			24	17	42	14	13	13	15	14	14	14	14
22	14	13	13	13	13	22	13	13	23	29				34	31	30	14	13	13	20	14		13	14
23	13	13	13	13	13	14	13	13	18	23	29					30	17	13	13	13	13	13	13	13
24	13	14	13	13	13	13	13	13	20	21	23	36	34	33	33	15	23	13	13	13	13	13	14	14
25	13	14	14	13	13	18	13	13	14	29	29	30	30	33	30	42	14	13	13	13	13	14	14	14
26	13	14	14	13	14	13	14	13	20	30	29	30	28	26	24	20	14	13	13	13	13	13	13	13
27	13	13	14	13	13	13	13	14	13	13	29	18	21	34	20		13	14	13	13	13	13	13	13
28	13	13	13	14	14	14	15	13	15	18	20	30	31	28	24	17	13	13	13	14	13	14	14	14
29	13	13	14	13	14		17	13	14	17	17	44	21	31	31	39	14	14	13	14	14	13	13	13
30	13	14	13	14	14	13	13	15	13	15	21	23	25	18	17	13	14	13	14	13	13	14	14	14
31	15	14	14	14	13	13	13	15	15	17	26	28	37	28	21	15	13	13	13	13	13	13	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	31	31	31	31	31	29	31	31	31	30	30	25	26	27	28	29	31	31	31	31	31	30	31	30
MED	13	13	13	13	13	13	13	13	14	22	28	30	30	29	26	21	14	13	13	13	13	13	13	13
U Q	13	14	14	14	13	14	13	14	15	29	30	33	33	34	31	30	17	14	13	14	14	14	14	14
L Q	13	13	13	13	13	13	13	13	14	17	22	28	28	28	21	16	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

AUG. 2009

LAT. 31°12.0′N LON. 130°37.0′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	36	A		A	28	25	38	A	A	55	A	A	A	56	60	62	54	57	52	50			36	
2		26	23	A	A	A		A	A	A	A	A	A	A	A	A	A	A	60	71		52	42	37
3	28	A	30	26	29	26	40	A	A	A	A	A	A	A	53		55	A	50	52	54	A	42	A
4	A	A	28	A		25	A	A	A	A	A	57		A	A	54	56	A	A	68	63	64	32	A
5	A	A	A	A	28	28	37	38	44	A	A	A	A	A	A		A	A	54	A	A	A	A	A
6	A	A	A	A	A	28	A		57	48	A	A	A	A	A	60	70	68	66	A	72			
7	A			30	A	A	23	47	50	64	A	A	A			57	57	51	51	60	53	54	38	36
8		A	34	A	28			52	A	46	A	A	A		A	55	62	66	62	62	59	46	35	43
9	36	A		A	29	28	32	44	54	52	A	A		A	A	A	A	68	72	70	52	48	46	44
10		37	37	36	A	A	A	A	60	A	A	A	A	A	65	67	66	A	61	54	A		36	
11	28	26	29	28				40	54	A	52	A				57	68	68	55	62	44	34	32	A
12	A	A	A	A	A		30		54	A	A		A	A	A	A	A	56	A	A	A	48	A	A
13	A	A		A	A	A	36		51	A	65	A	A	A		56	57	57	55	55	54	53	A	A
14	A	A	A	A		A	34		A	A	A	A	A	A	A	A	A	80	A	A		A	A	A
15	A	A	A	A	A	A	28		A	A	A	A	A	A	A	A	A	A	A	55	65	A	30	A
16	28		A	A	A	A	A		A	A	48	58	A			A		51	45	49	54	44	29	28
17	28	26	28	A	26	26	32	52	52	A	A	A	A	A	A	A	A	45	48	52	77	A		
18	A		30	29	28		34	47	52	46	A	A	A	A	A	A	A	A	A	A	53	54		A
19	A	20	A	A	A	A	34	46	47	A	A	A	A	A	A	A	A	A	A	A	A	A	48	A
20	42	A	26	32	34	A	A	A	A	A	A	A	A	A	A	A	A	A	54	A	A	44	A	A
21			28	26				56	A	A	A	54	A	A	60	A	55	55	56	67	68	50	32	
22	A			A	A	A		48	47	51	A	A	A	A	A	A	54	58	60	55		74		A
23	30	A	A	26	A	A	A	A	A	A	A	A	A			53		50	43	60	52	44	A	A
24	32	34	A		A	A		A	A	A	53	A		A	A	A	54	A		A	60	54	A	A
25	A	28	28	26				A	45	48	A	A	A		A	60	70	A	50	54	40	42	A	A
26	26	A		A	A		A	44	63	46	A	A		A	A	56	51		54	54	54	A	A	
27	A	A		A	A	A	35	48	48	45	A	A	A	A	A	A	52	57	42	47	50	47		A
28	A	A	A	A	A	A	41	41	47	A	51	A	A	A	A	A	A	64	72	50	54	45	42	42
29	41	A			A	28	35	46	A	54	A	A	A	A	60	55	63	71	76	76	54	A	A	A
30	36			A	29	28	34	40	68	49			A				60	71	73	71	63	65	A	A
31	A		A			30	34	44		52	A	A		A	58	70	70	72	A	82	65	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	12	7	11	9	9	10	17	16	17	13	5	3		1	6	13	18	19	23	23	22	19	14	6
MED	31	26	28	28	28	28	34	46	52	49	52	57		56	60	57	57	58	55	55	54	48	36	40
U Q	36	34	30	31	29	28	36	48	55	53	59	58		28	60	61	66	68	62	68	63	54	42	43
L Q	28	26	28	26	28	26	32	42	47	46	49	54		28	58	55	54	55	50	52	53	44	32	36

HOURLY VALUES OF fEs AT Yamagawa

AUG. 2009

LAT. 31°12.0′N LON. 130°37.0′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	33	51	33	72	36	34	32	59	58	60	60	62	65	G	G	42	37	G	G	27	27	32	36	34
2	33	45	48	49	48	51	40	49	103	62	117	55	52	50	93	112	77	92	45	40	33	33	33	33
3	34	48	52	52	G	G	32	60	83	51	67	77	74	58	43	48	46	49	44	46	49	72	43	85
4		58	54	48	36	32	55	82	74	92	64	41	G	41	57	G	50	81	84	70	58	29	32	43
5	84	52	57	40	25	G	33	52	71	46	56	52	67	87	57	48	62	82	49	90		72	60	49
6	51	43	91	64	70	61	78	117	48	37	48	115	46	54	51	47	44	42	34	80	46	45	33	31
7	57	33	34	25	56	47	32	39	46	48	40	51	52	G	44	47	47	40	34	29	29	36	44	53
8	58	50	32	41	31	36	28	42	93	52	46	47	43	42	60	46	50	58	49	45	36	41	24	23
9	32	38	42	39	26	27	28	41	47	53	51	50	40	67	57	71	60	43	40	32	25	23	40	44
10	48	58	28	70	42	61	50	60	67	81	83	117	52	69	60	46	50	70	38	40	51	34	24	49
11	34	28	G	G	G	G	30	48	36	50	G	45	G	G	G	G	G	G	44	29	32	28	40	44
12	41	38	60	50	34	30	32	39	52	55	78	149	172	106	103	70	56	G	50	116	84	60	54	45
13	40	53	71	59	48	46	30	40	61	100	42	42	49	48	G	46	G	43	33	43	27	24	58	50
14	57	34	34	28	28	64	47	49	57	107	92	75	82	77	84	54	143	72	116		51	40	79	59
15	54	61	41	40	32	34	48	53	62	80	82	64	52	58	49	44	58	93	59	43	52	44	28	50
16	26	58	50	51	32	53	72	58	45	63	46	44	48	G		56		44	36	44	33	41	39	22
17	27	G	32	48	G	26	26	34	38	54	45	46	51	67	63	60	60	40	44	29	31	59	31	27
18	48	34	28	G	G	G	G	36	35	40	50	49	63	45	58	59	61	63	93	60	56	39	36	50
19	72	29	47	33	58	60	40	46	44	99	87	77	64	62	72	124	79	87	79	96	80	82	43	50
20	44	57	32	28	30	37	39	106	115	78	77	94	79	67	82	68	65	124	69	116	85	84	46	33
21	32	26	G	23	G	33	G	37	74	69	77	G	44	55	54	58	37	48	29	31	G	23	46	40
22	40	36	32	48	44	43	40	49	43	49	54	54	64	56	74	60	51	52	39	28	33	33	40	70
23	37	45	35	G	94	80	59	60	62	61	62	81	76	G	G	G	46	49	52	33	32	34	48	82
24		24	49	39	41	48		52	65	60	50	44	G	64	61	88	51	78	41	69	43	34	78	58
25	37	27	31	50	36	42	37	59	56	40	62	87	90	48	58	47	52	63	42	40	36	G	45	43
26	25	40	33	38	34		36	34	39	49	101	49	G	65	51	39	42	61	40	25	34	59	91	33
27	32	48	40	40	36	33	33	34	G	42	50	71	62	55	44	48	44	41	32	32	39	47	54	67
28	44	39	56	34	36	33	32	40	47	50	77	84	40	51	62	62	60	52	40	73	50	59	40	47
29		61	44	32	44	G	30	43	60	51	61	73	48	58	G	48	54	58	51	59	89	68	70	54
30	40	37	34	37	32	28	25	34	37	45	N		41	G	G	G	G	43	36	34	33	30	32	36
31	43	28	33	G	G	G	27	34	48	58	62	70	49	61	40	48	54	43	72	73	59	48	49	43
	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	31	31	31	31	30	30	31	31	31	30	30	31	31	30	31	30	31	31	30	30	31	31	31
MED	40	40	35	40	34	34	32	48	56	54	62	58	52	55	57	48	51	52	44	43	38	40	43	45
U Q	49	52	50	50	44	48	40	59	67	69	77	77	65	65	62	60	60	72	52	70	52	59	54	53
L Q	33	33	32	28	26	27	30	39	44	49	50	47	43	42	43	46	44	43	36	32	32	32	33	34

HOURLY VALUES OF fmin AT Yamagawa

AUG. 2009

LAT. 31°12.0′N LON. 130°37.0′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	14	14	14	14	14	14	14	14	14	14	18	20	22	22	20	18	16	14	14	14	14	14	14	14
2	14	15	14	14	14	14	14	14	15	18	22	20	21	18	20	18	16	14	14	14	14	14	14	14
3	14	14	15	15	14	14	14	14	14	14	20	21	23	18	18	17	14	14	14	15	14	14	14	15
4	14	15	14	14	14	15	14	14	14	16	20	21	22	33	36	15	16	15	14	14	14	14	14	14
5	14	14	14	17	15	15	14	14	14	14	30	20	36	35	24	21	18	14	14	14	14	14	14	14
6	15	14	14	14	17	15	14	14	15	14	18	21	26	20	22	18	17	14	14	14	14	15	15	15
7	14	15	14	15	15	14	14	14	14	17	18	20	23	26	21	16	17	14	14	14	14	14	14	15
8	14	14	14	14	14	14	14	14	14	16	18	18	27	20	33	17	16	14	14	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	14	18	23	21	24	20	17	15	14	14	14	15	14	14	14
10	14	14	15	14	14	14	14	14	14	16	23	21	22	22	21	22	16	14	14	15	14	14	15	14
11	14	15	15	14	17	18	14	14	14	15	20	20	20	23	24	18	16	14	14	14	14	15	14	14
12	14	14	15	14	14	15	14	14	14	17	17	18	18	24	18	18	17	14	14	14	14	14	14	14
13	14	14	15	14	14	14	14	14	14	14	16	18	22	22	24	22	16	14	14	14	14	14	14	14
14	14	14	14	16	14	14	14	14	14	17	18	18	27	21	18	18	21	15	14	14	16	14	14	14
15	15	15	15	15	15	14	14	14	14	14	22	18	20	18	17	17	16	14	14	15	14	14	15	14
16	14	15	14	14	14	14	14	14	16	14	17	18	20	21		14		14	15	14	15	15	15	14
17	15	14	15	14	14	14	16	14	15	17	16	21	22	20	20	16	15	14	14	14	14	15	14	14
18	14	14	15	14	15	17	17	15	14	14	22	20	20	17	14	15	14	14	15	14	14	14	15	14
19	14	14	14	14	14	14	14	14	14	16	14	15	20	22	17	16	15	14	14	14	14	14	14	14
20	14	14	14	14	14	14	15	14	14	16	17	18	18	26	20	17	15	14	14	15	14	14	15	14
21	15	15	15	14	15	14	14	14	14	18	15	23	21	20	18	18	16	14	14	15	15	14	15	14
22	14	14	14	14	14	14	14	15	15	17	20	20	20	21	18	16	15	14	14	15	14	15	14	14
23	15	14	15	17	16	15	14	15	14	15	17	18	20	24	18	18	17	14	14	15	14	15	15	14
24	15	14	14	14	14	16		14	14	14	14	17	20	20	18	17	14	14	14	15	15	14	14	15
25	14	15	14	14	15	15	14	14	14	17	22	22	20	21	18	14	16	14	14	14	15	15	15	14
26	15	15	14	15	14		14	15	15	18	17	32	23	21	17	17	16	14	14	16	14	14	14	14
27	15	14	14	15	14	14	14	14	14	14	17	17	21	17	20	17	14	14	14	15	14	14	14	14
28	14	14	14	14	14	14	15	16	14	15	17	24	26	18	18	15	14	14	14	15	14	14	14	14
29	14	15	15	14	14	14	14	14	14	14	17	18	23	17	18	14	14	14	14	14	15	15	14	14
30	14	14	14	14	14	14	15	14	14	15	17	18	17	18	17	15	15	14	14	14	14	14	15	16
31	14	14	14	15	15	15	14	16	16	15	16	18	21	26	20	17	14	14	14	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	31	31	31	31	31	30	30	31	31	31	31	31	31	31	30	31	30	31	31	31	31	31	31	31
MED	14	14	14	14	14	14	14	14	14	15	18	20	21	21	19	17	16	14	14	14	14	14	14	14
U Q	15	15	15	15	15	15	14	14	14	17	20	21	23	24	21	18	16	14	14	15	14	15	15	14
L Q	14	14	14	14	14	14	14	14	14	14	17	18	20	18	18	16	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

AUG. 2009

LAT. 26°41.0′N LON. 128°09.0′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	A	A		31	44	53	56	A	A	A	A	75	67	67	A	62	60	54	42	35	A
2		A	A					49	A	A	A	A	A	61	A	A	66	A	80	86	64	53	50	
3	34		A		A		30	51	55	A	A	A	A	A	A	56	61	56	A	A	54	44		A
4	A	A	A	A	A	A	A	A	A	61	A	57			58	60	A		A	74	75	A	A	
5		32	28				32	A		56	55		A	A	A	A	A	A	72	76	77	62	A	A
6	A	A	A	A	A	A	32	A	A	A				A	A		70	68	68	80	66	54	36	31
7						A	31	60	58	54						59	A	67	70	66	66	A		28
8			A	A			A	57	48	A	A					54	62	72	80	82	54	A	A	29
9		A	A			A	A	51	52	A		A	A	A	A		71	78	88	77	67	47	40	A
10	A	A	31	29		A	A	A	A	A	A	A	A		73	80	85	77	86	73	47			
11	36	30		28				58	48			53	A		A	66	77	77	81	67	47	A		A
12	A		A		A		A	44	53	A	A	A	A	A	A	65	67	64	71	72	77	64	A	
13	28	28		26	A	A	A	53	A	A	A	A	A	A	56	59	62	63	66	75	66	A	A	
14	A	A				A		41	42	49	A	A	A	61	A	64	A	81	72	A	A			A
15	A	A	A			A		47	A	56	A	A	A	A	A	A	A	A	A	74	A	A		
16	28		A			A	A	A	50	59	64	A	A	A			56	53	54	66	50	41		29
17	A			A		A	27	70	59	45	A		A		A	A	A	57	62	78	77			A
18	A	A	A	A			30	44	47		A	A	A		A	A		59	56	A	83	A	A	A
19	A			A	A	A		58	A	46	A	A	A	A	A	A	A	A	A	A	86	63		
20	37	30	30	A	A		A	64	42	A	A	A	A		A	A	A	A	73	81	63	37	A	A
21	A					A	A	48	A	48	54	68	77	91	89	90	86	77	80	81	87	42	A	
22	A	A				A		40		A		A	A	A	74	67	62	65	76	76	117	30	A	A
23	A	A	A	A		A	29	44	A	A	A	A	77	83	72	66	60	54	63	76	80		A	A
24	A	A	A		A	A	A	41	56	A	A	A	A		65	65	A	A	A		77	66	A	A
25		A	A	A	A	A	A	A	46	53	A	39	A	65	75	86	95	76	71	80	77	52		
26			A					47		46		A		57	64	68	58	A	A	71	A		A	A
27	A					A		45	50	50		56				58	58	A	50	54	54			A
28	A	A		26			32	59	47	A	A	A	A	A	A	A	68	76	80	52	54		51	45
29	A	A	A	A			29	59	58	A	49	A	A	62	74	81	82	88	101	105	81	52	44	A
30	A	A			A			54	68	45	49					54	60	77	90	89	81	66		A
31		A	A			A		42	58	59	50					71	80	86	89		A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	5	4	3	4			10	25	19	15	6	5	2	7	11	20	21	21	25	25	27	16	6	5
MED	34	30	30	27			30	49	52	53	52	56	77	62	73	66	67	72	72	76	67	52	42	29
U Q	36	31	31	28			32	58	58	56	55	62	77	83	75	69	78	77	80	80	80	62	50	38
L Q	28	29	28	26			29	44	47	46	49	46	77	61	64	59	60	61	64	69	54	42	36	28

HOURLY VALUES OF fEs AT Okinawa

AUG. 2009

LAT. 26°41.0′N LON. 128°09.0′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	34	36	47	70	40	29	G	G	38	49	72	73	84	72	52	48	41	63	52	39	21	27	G	39
2	34	32	36	G		28		37	59	66	72	151	82	G	55	68	60	92	50	52	51	29	27	32
3	29	32	49	34	36		G	50	50	84	81	54	75	72	70	54	52	52	54	60	39	38		48
4	44	81	36	59	52	46	44	66	162	56	72	G	G	G	G	G	86	72	114	34	59	87	108	48
5	40	28	G		G		29	52	41	44	48	51	63	68	66	68	86	72	36	52	39	41	57	34
6	36	59	40	34	40	72	G	105	86	82	39	G	G	62	51	53	52	51	48	43	G	G	58	G
7					32	52	G	45	G	88		G		G	44	40	72	35	37	41	46	86	36	28
8	33	30	66	51	27	26	36	49	50	74	67	G				G	48	49	42	35	36	37	35	G
9		39	44	35	28	29	33	35	41	51		48	46	52	51	61	55	42	38	31	26	34	35	49
10	39	37	27	G	25	40	60	52	93	125	110	152	137	70	50	60	50	52	56	43	30	28	33	
11	28	G		25	27		29	31	37	38	47	G	50	G	48	42	40	39	44	40	33	36	G	30
12	34	27	34		39		40	44	58	74	58	56	50	72	70	39	48	42	45	79	82	54	39	34
13	G	G	35	36	48	66	49	53	68	89	86	135	46	55	G	52	43	G	30	30	32	40	35	
14	34	28				34	G	36	50	46	50	115	70	58	67	59	90	55	63	69	84	54	49	39
15	86	49	40			27	G	46	68	49	66	53	74	50	62	48	82	61	68	90	81	41		
16	G	30	36			35	40	48	38	49	58	74	58	55		G	G	G	33	39	43	36	36	G
17	26	G	26	32		30	31	35	52	60	82		54		56	70	60	59	62	48		43		50
18	69	34	40	32			G	34	42	38	48	60	51		77	80	48	48	34	61	52	58	48	82
19	48			47	35	34	37	36	51	88	59	135	80	102	94	69	61	68	137	94	83	59	48	34
20	32	26	G	35	30		67	46	73	93	109	151	115	130	83	70	74	90	82	87	50	33	36	34
21	29			G		33	30	48	110	38	G	49	52	G	G	G	46	60	69	61	42	27	36	
22	36	50	30	27		33	30	48		50	G	58	58	71	69	58	46	69	47	50	50	27	38	29
23	42	48	32	31		52	34	104	105	82	84	103	77	59	76	G	48	51	50	73	59	28	34	34
24	48	35	36	31	54	34	35	36	48	67	62	52	75	G	50	56	73		92	60	35	36	50	67
25		49	58	48	58	32	39	58	47	60	72	48	78	62	53	G	41	35	G	26	G	46		
26			36				G	36	G	39		56		G	53	40	43	77	128	40	87	56	60	25
27	28	44	G	G	30	28	28	43	50	38	48	G	G		51	51	50	56	44	43	40	41		50
28	37	40	29	29	26		G	35	42	53	52	74	50	51	81	110	64	67	71	65	70	59	40	49
29	84	36	29	31		29	24	45	50	63	50	68	57	G	54	40	65	61	58	81	60	50	72	50
30	59	39	39		49	28	29	72	49	G	39				G	46	G	40	40	26	24			25
31		30	26			29	G	33	46	G	G			41		60	G	39	54	31	44	85	40	39
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	26	22	19	23	30	31	30	31	28	28	26	26	28	31	31	30	31	31	30	30	25	26
MED	35	35	36	32	35	33	30	45	50	56	58	56	58	55	54	52	50	54	50	48	44	40	38	34
U Q	44	44	40	36	48	40	37	52	68	82	72	88	77	70	69	61	65	67	68	65	59	54	49	49
L Q	29	28	29	27	27	29	G	36	42	44	48	48	50	G	50	40	43	42	40	39	33	33	35	29

HOURLY VALUES OF fmin AT Okinawa

AUG. 2009

LAT. 26°41.0′N LON. 128°09.0′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
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2	15	14	15	21		14		14	15	21	27	28	26	30	29	27	24	17	14	14	15	14	14	16
3	14	15	15	15	15		14	14	18	21	24	28	33	29	24	23	18	15	14	14	14	15		15
4	15	15	15	14	14	14	14	14	14	22	22	51	29	45	44	43	29	18	14	14	14	14	15	14
5	15	17	21		17		14	14	14	16	22	37	38	36	35	34	20	24	17	14	14	14	15	15
6	14	18	20	18	15	16	21	14	17	20	23	29	29	29	32	28	24	15	14	14	15	14	17	20
7					15	14	16	14	14	20		23		28	28	45	20	14	14	14	14	15	14	14
8	14	15	14	15	16	14	15	14	16	21	23	24				44	29	14	14	14	15	15	14	22
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11	16	20		14	15		14	14	20	22	23	27	24	23	27	44	20	16	14	14	15	15	18	14
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13	14	15	14	17	14	14	14	14	16	23	22	27	26	41	44	26	17	14	14	14	14	14	15	
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15	14	14	14			15	17	14	14	22	28	24	24	28	29	33	22	22	14	15	15	15		
16	21	14	16			15	14	14	14	18	26	23	23	22		44	29	14	15	14	14	14	17	17
17	15	20	14	15		15	15	14	16	16	29		36		29	22	16	16	14	14	15	14		17
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21	16			18		15	15	14	17	24	28	30	27	48	24	21	17	14	15	15	15	15	15	
22	18	17	17	15		14	14	14		16	24	38	36	38	36	32	29	15	14	15	15	17	14	16
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26			15				15	20	34	33		36		45	35	22	29	16	14	15	21	15	15	15
27	14	16	14	18	21	14	14	14	15	16	35	45	20		37	33	15	14	14	14	15	14		14
28	15	14	16	16	14		15	14	16	29	30	34	34	30	28	23	21	14	14	14	14	16	14	15
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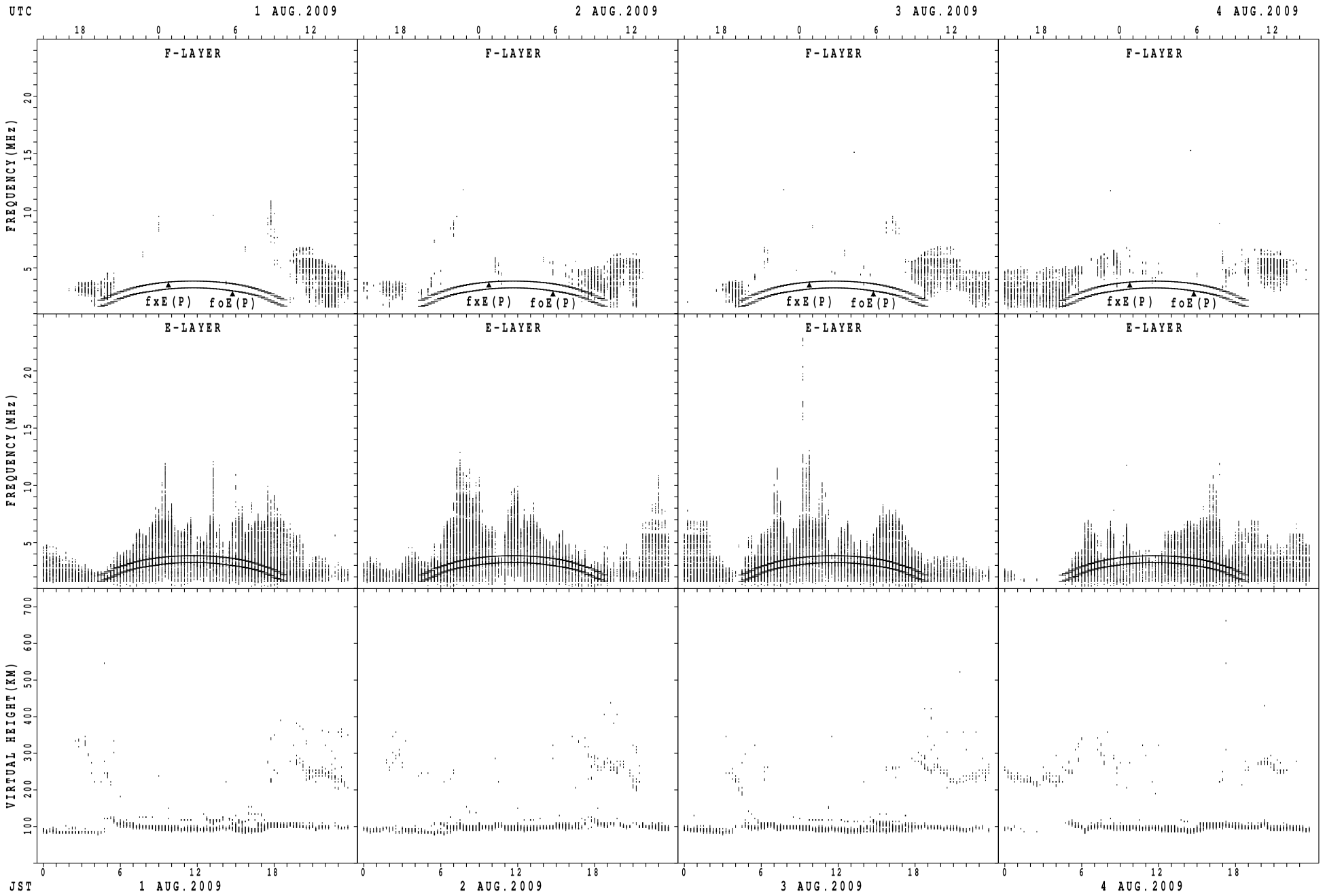
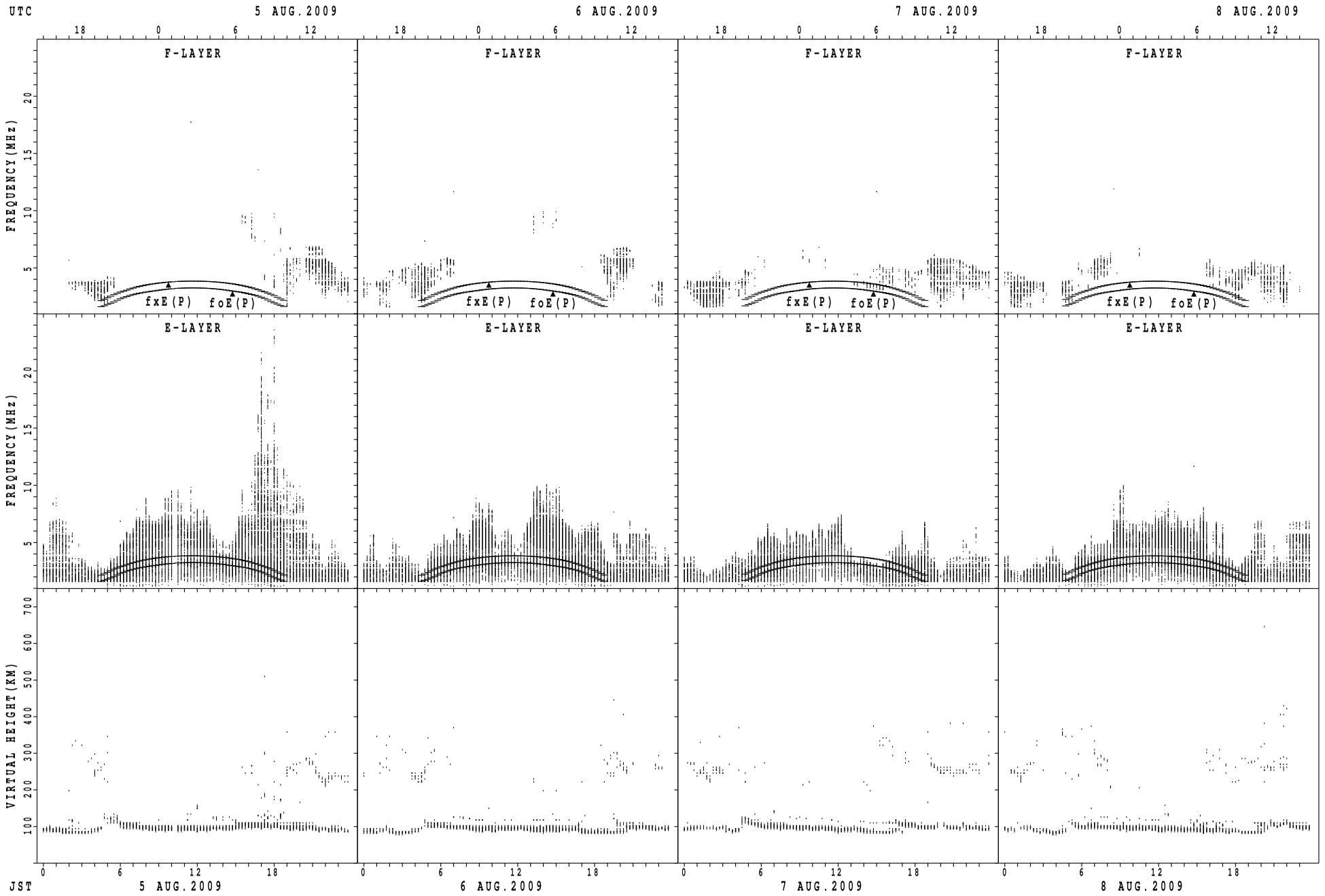
31		15	14			14	17	26	14	38	43			45		33	28	15	17	14	16	15	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	27	26	23	19	23	30	31	30	31	28	28	26	26	28	31	31	31	31	31	31	31	25	26
MED	15	15	15	15	15	15	14	14	15	21	26	29	29	30	30	32	24	16	14	14	15	14	15	15
U Q	15	16	15	17	16	15	15	14	16	23	28	34	36	41	35	34	29	18	14	14	15	15	15	16
L Q	14	15	14	15	14	14	14	14	14	18	23	27	27	29	27	23	18	14	14	14	14	14	14	14

SUMMARY PLOTS AT Wakkanai



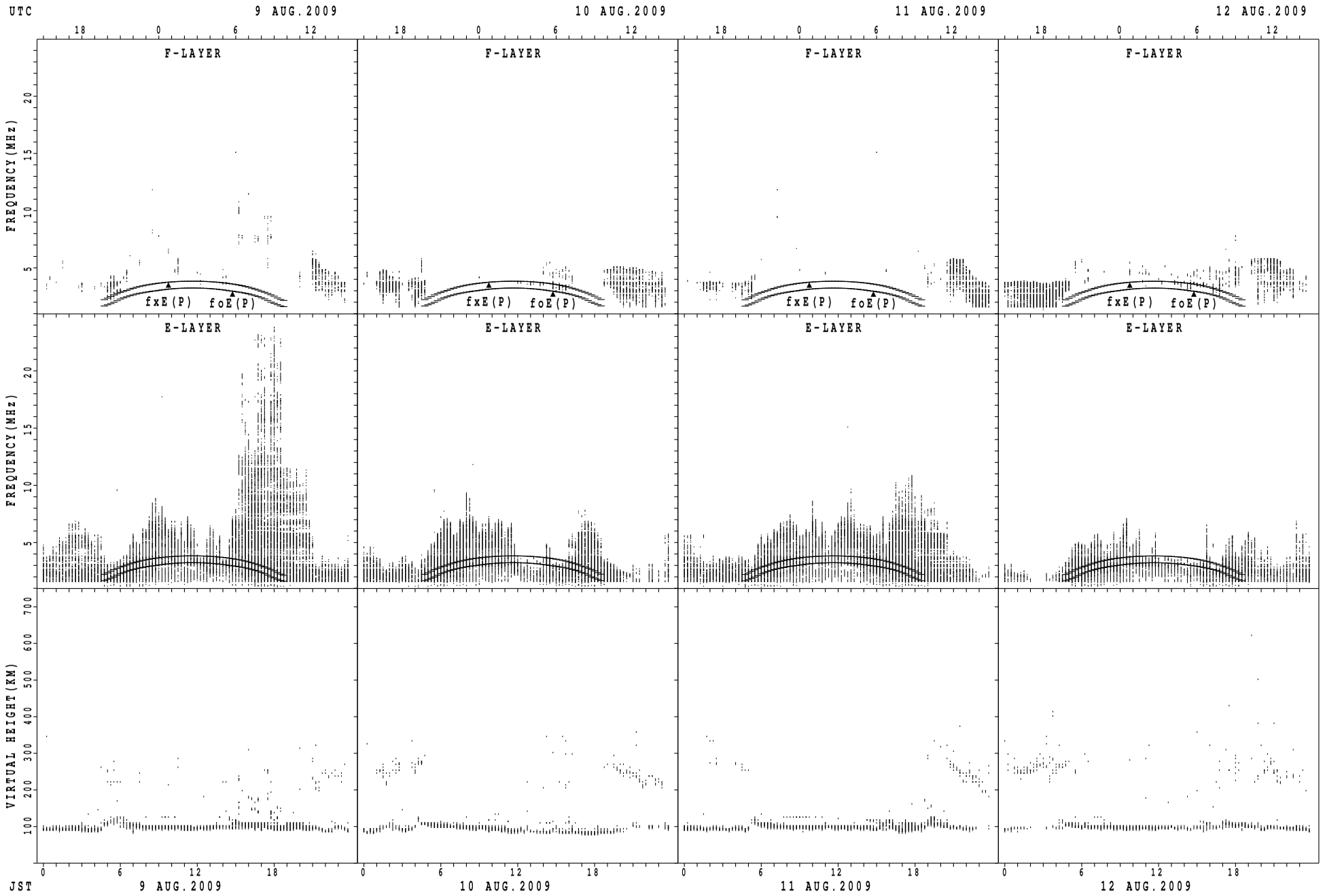
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



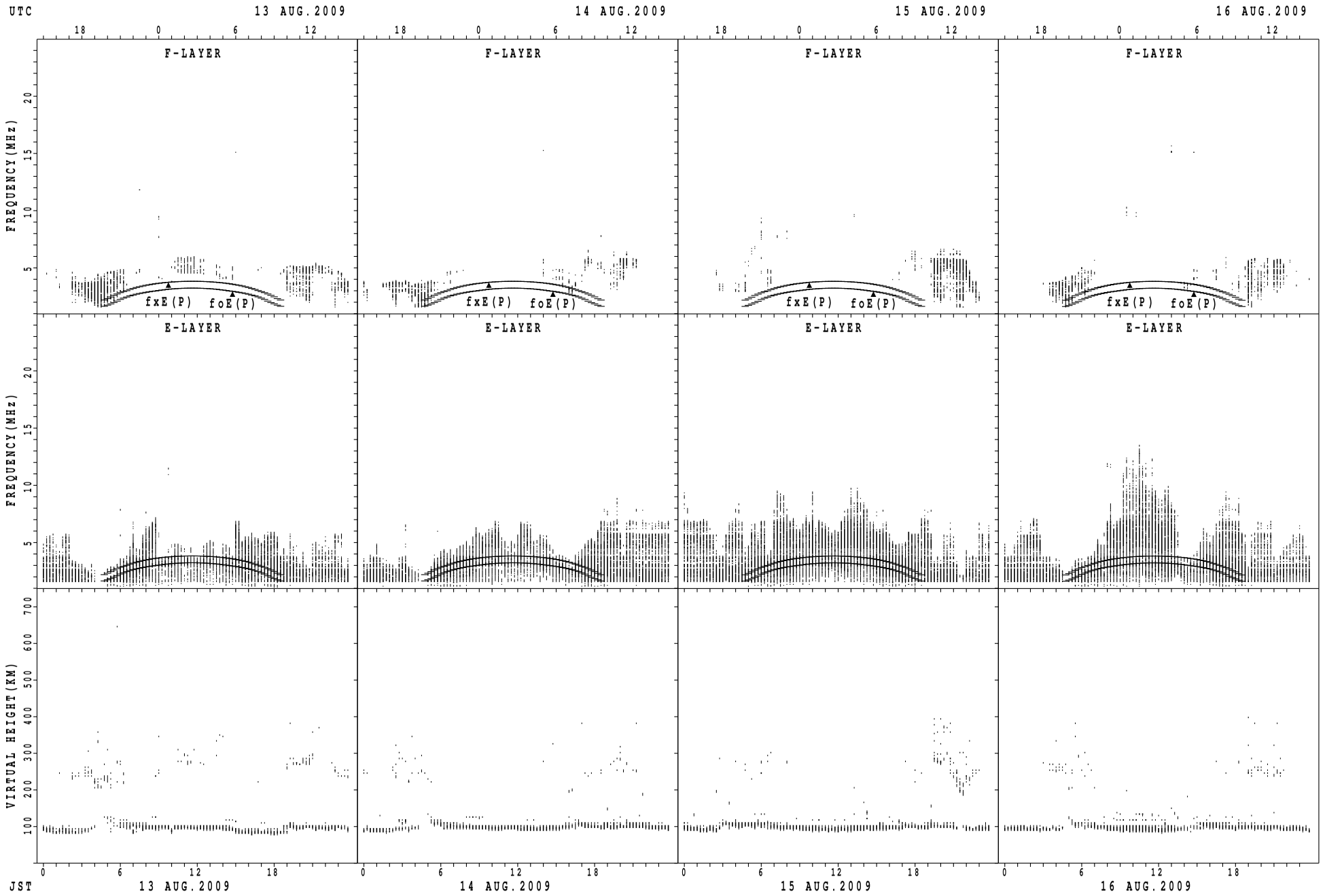
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



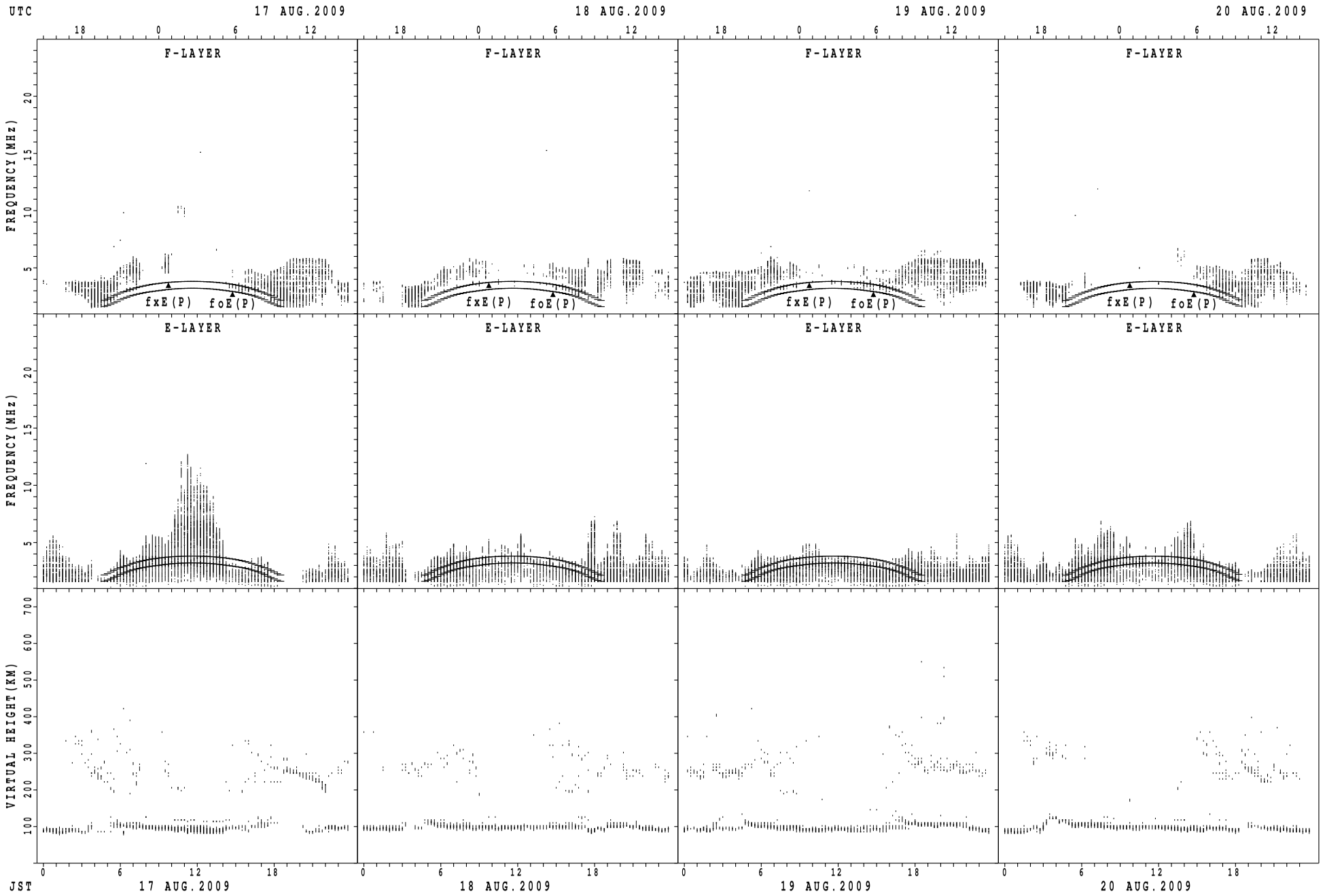
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



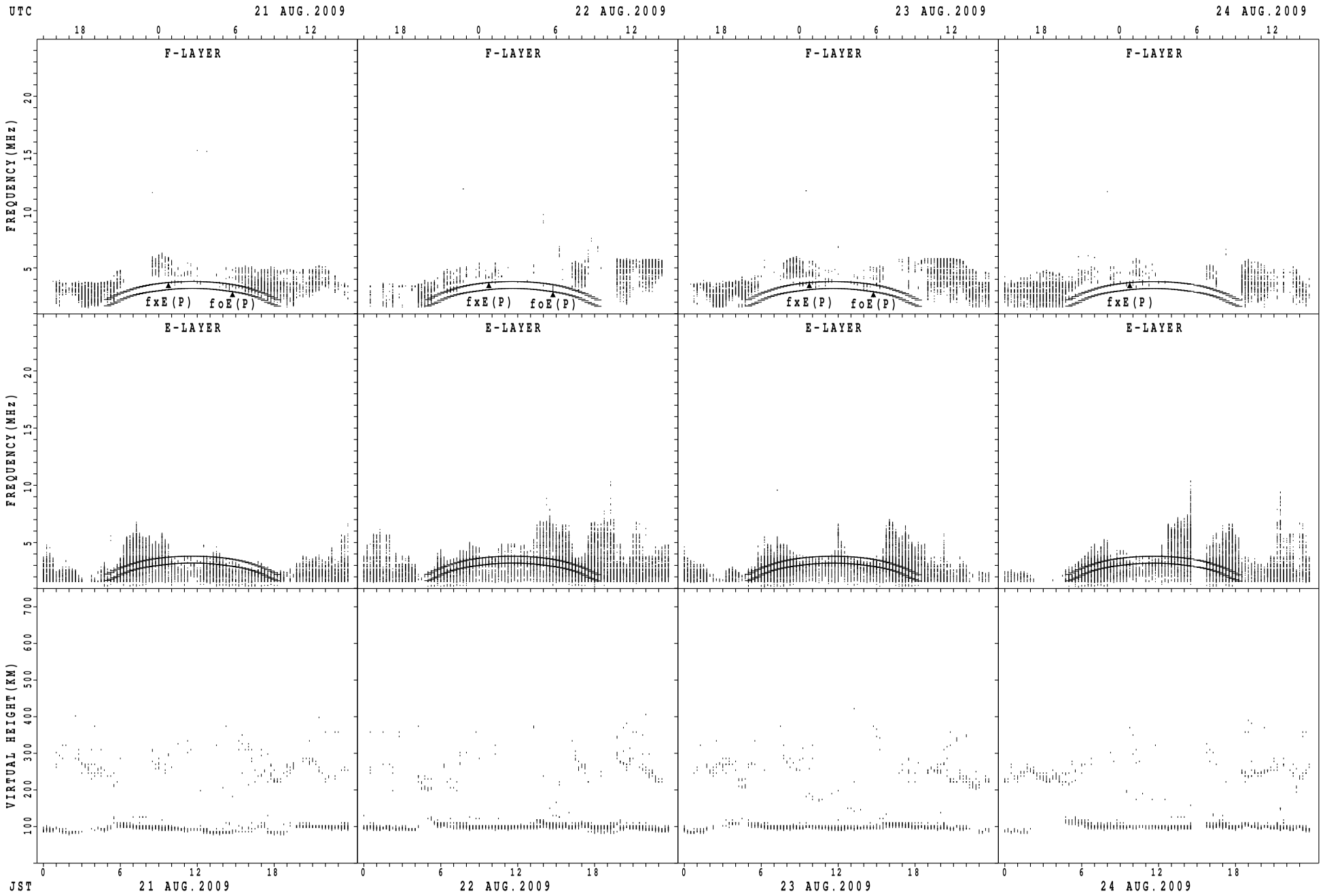
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



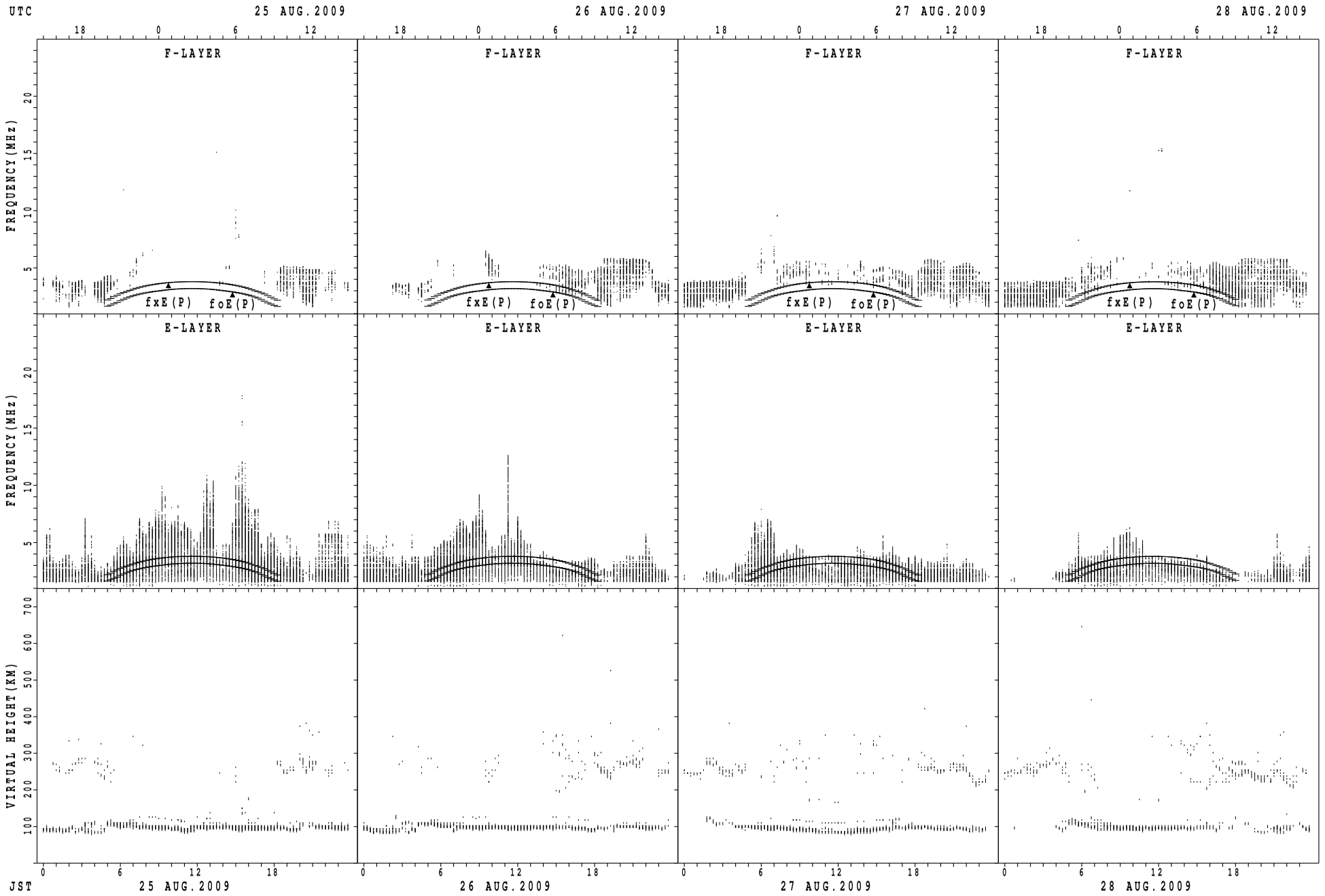
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



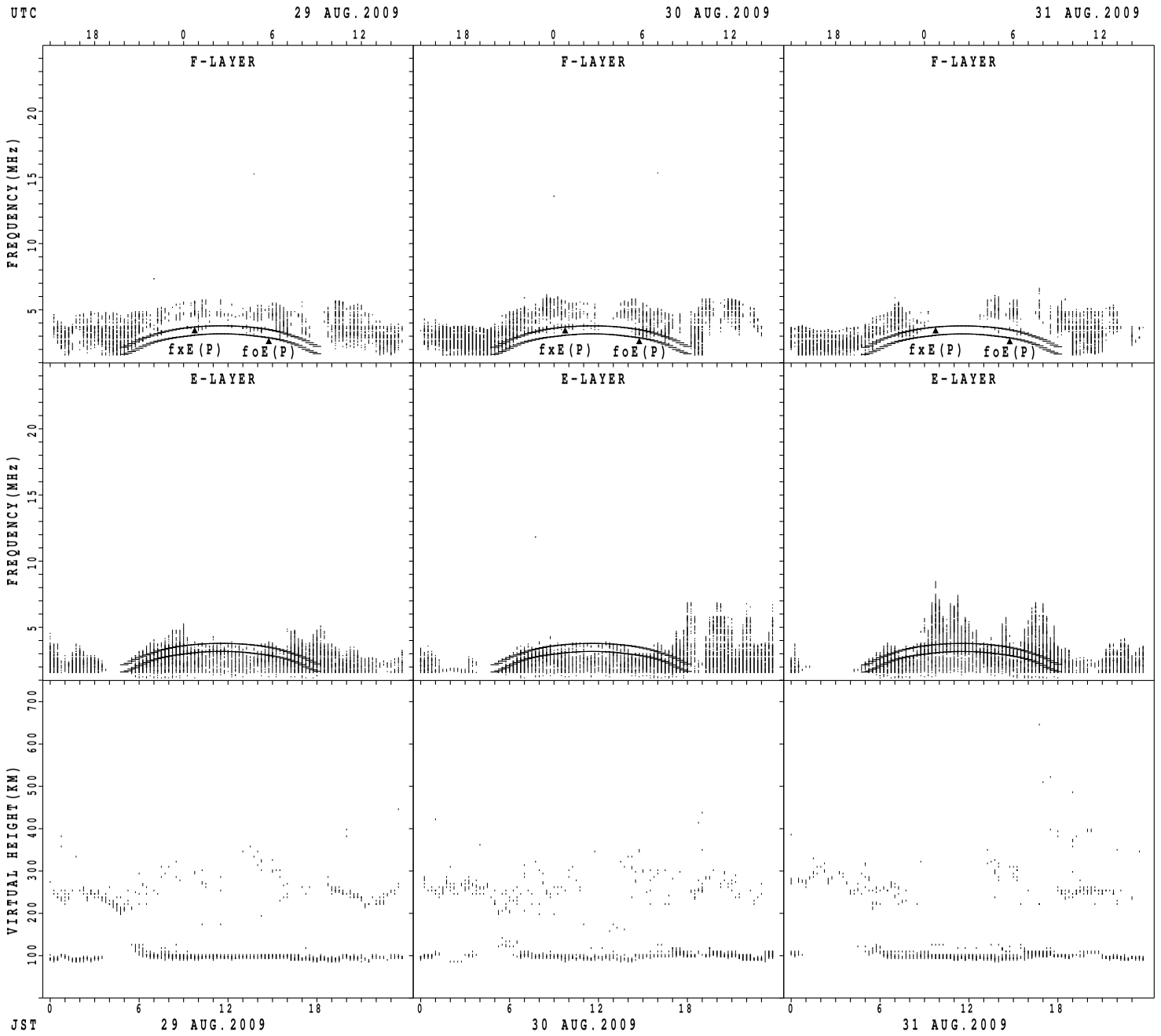
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



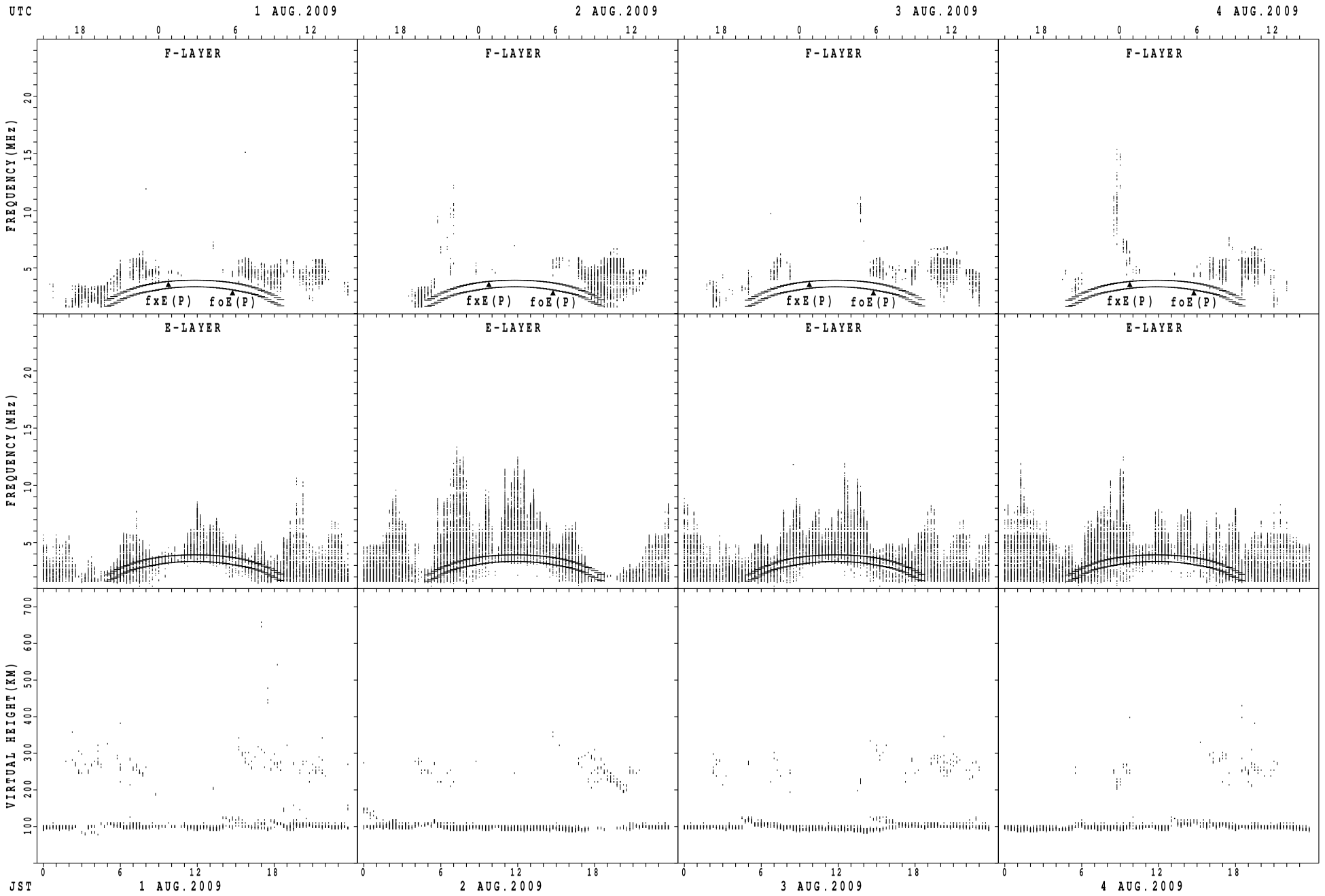
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



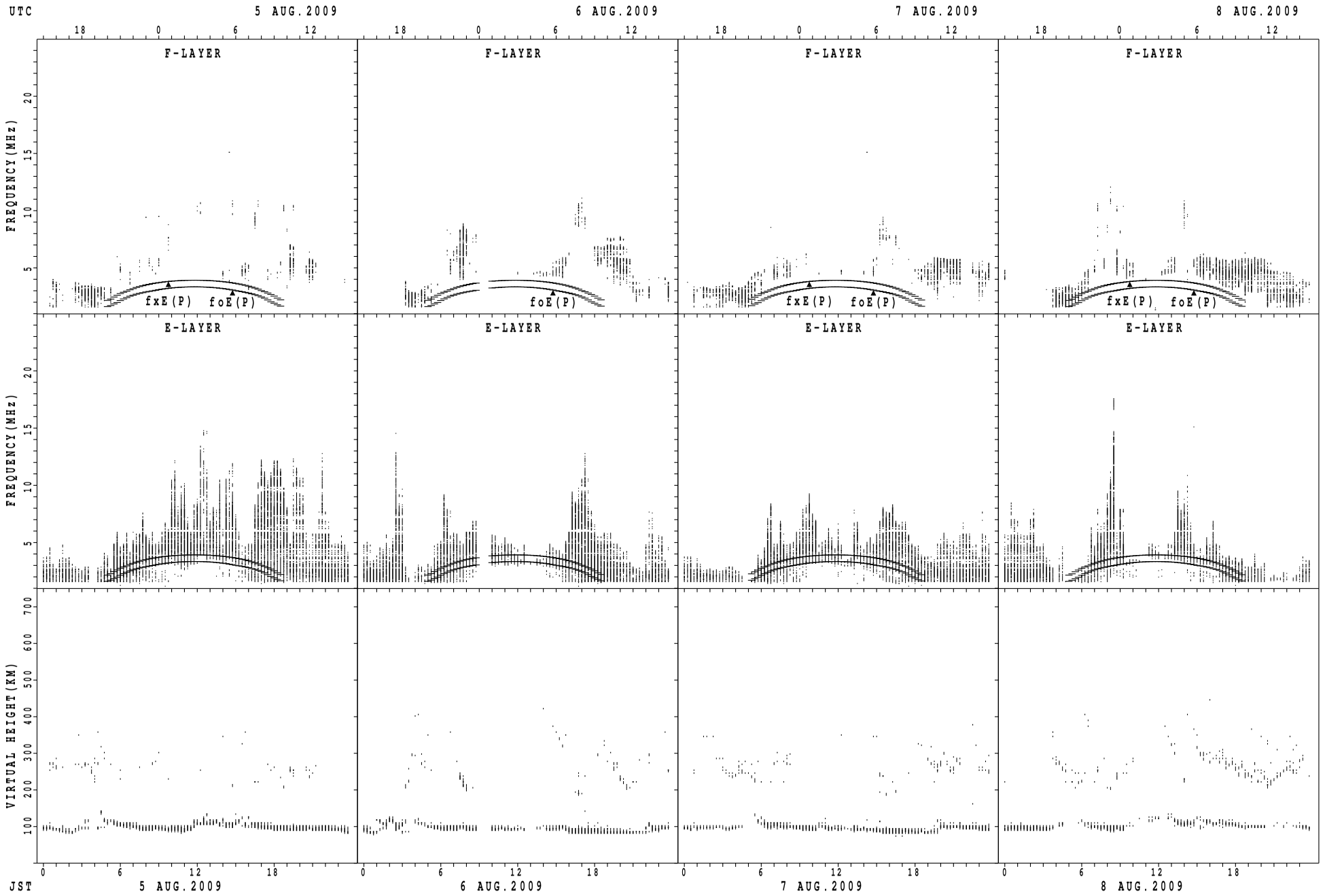
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



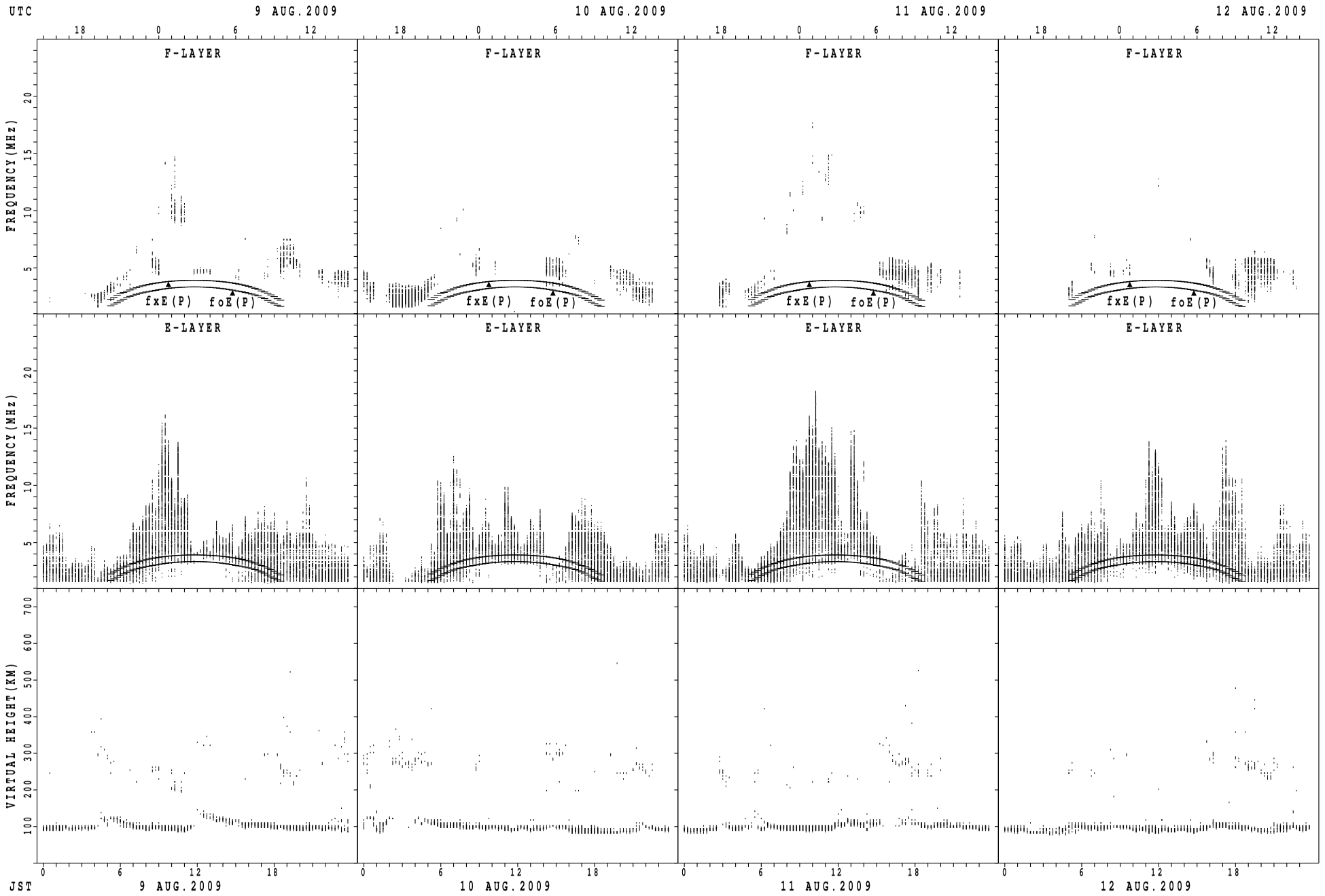
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



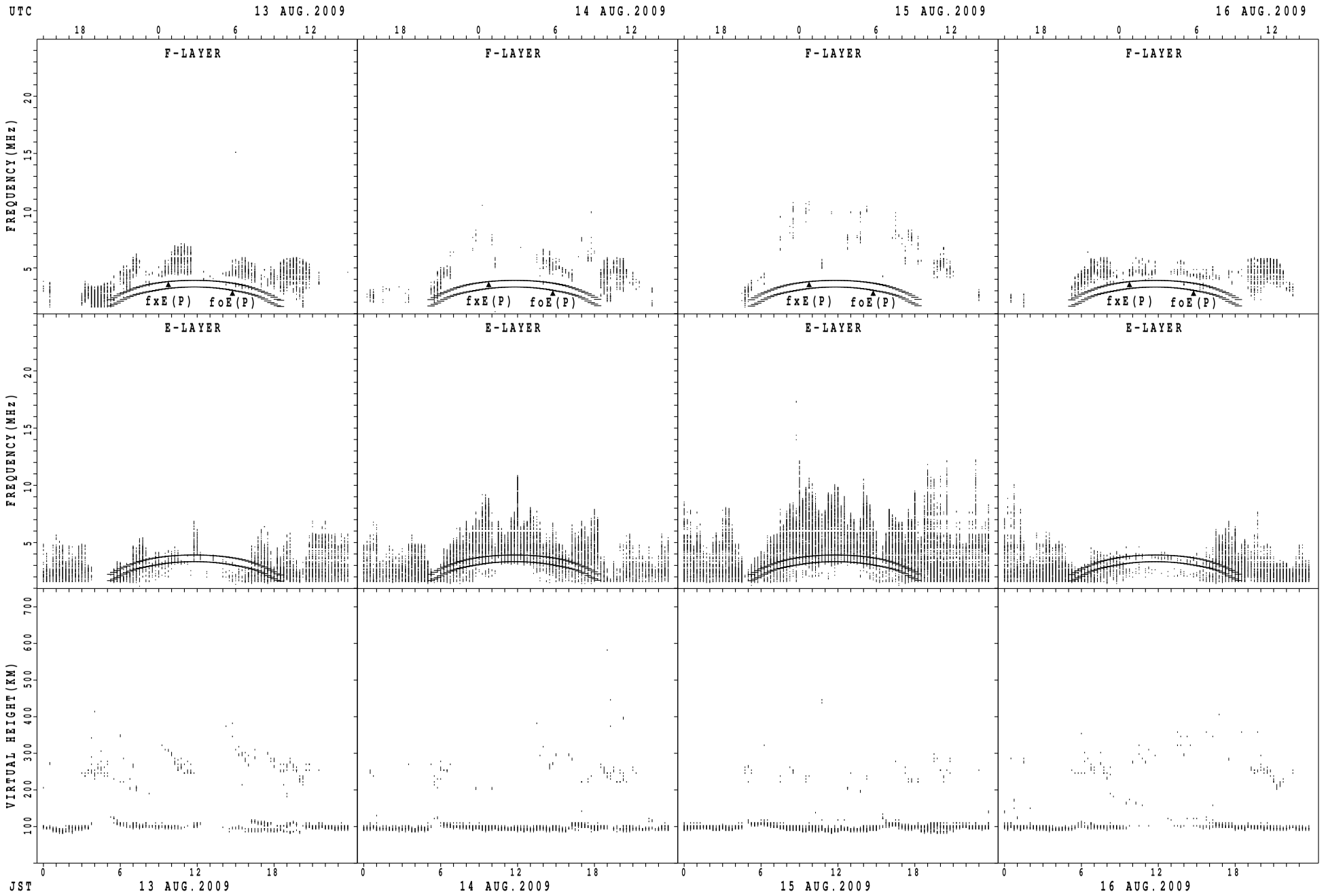
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



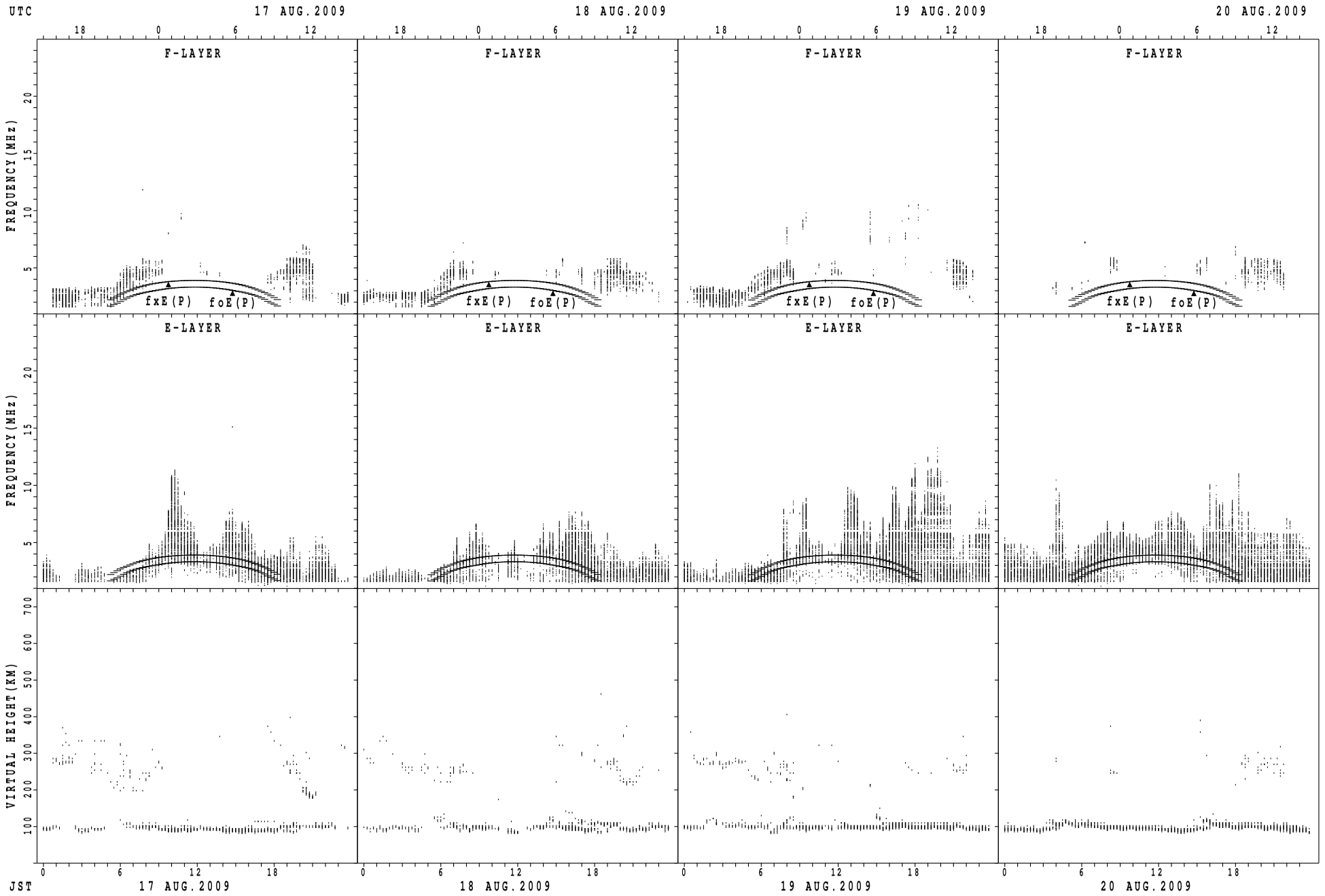
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



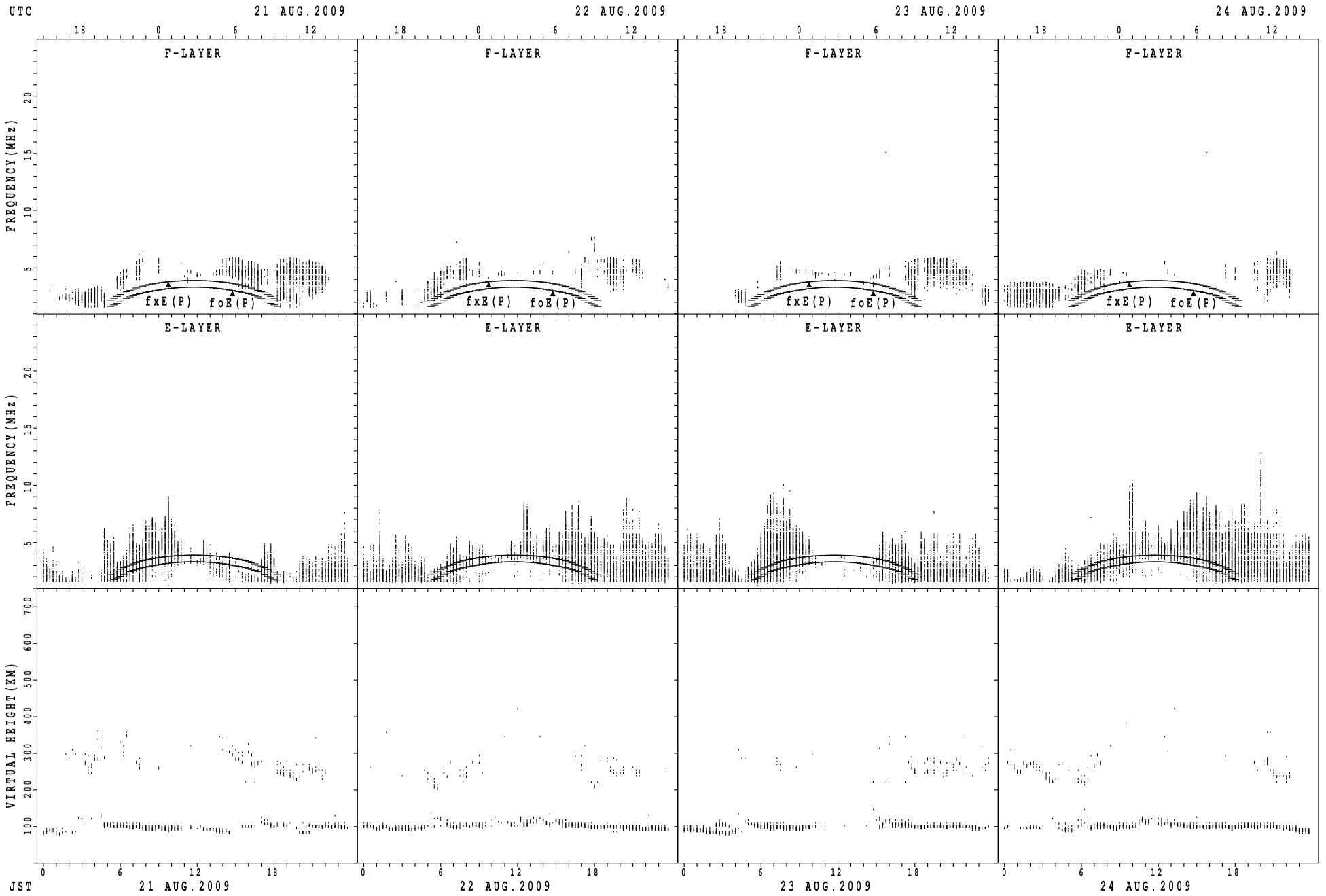
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



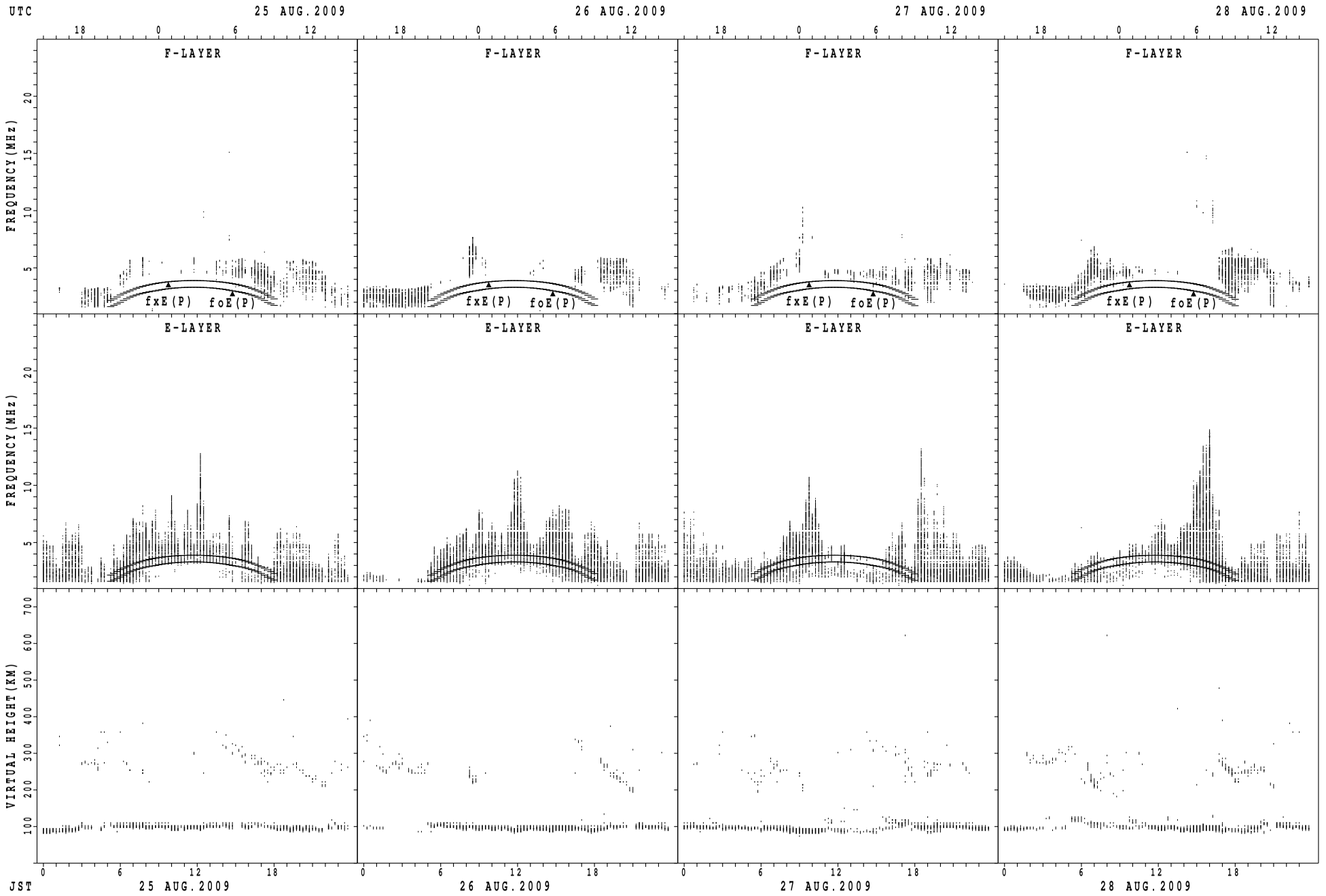
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



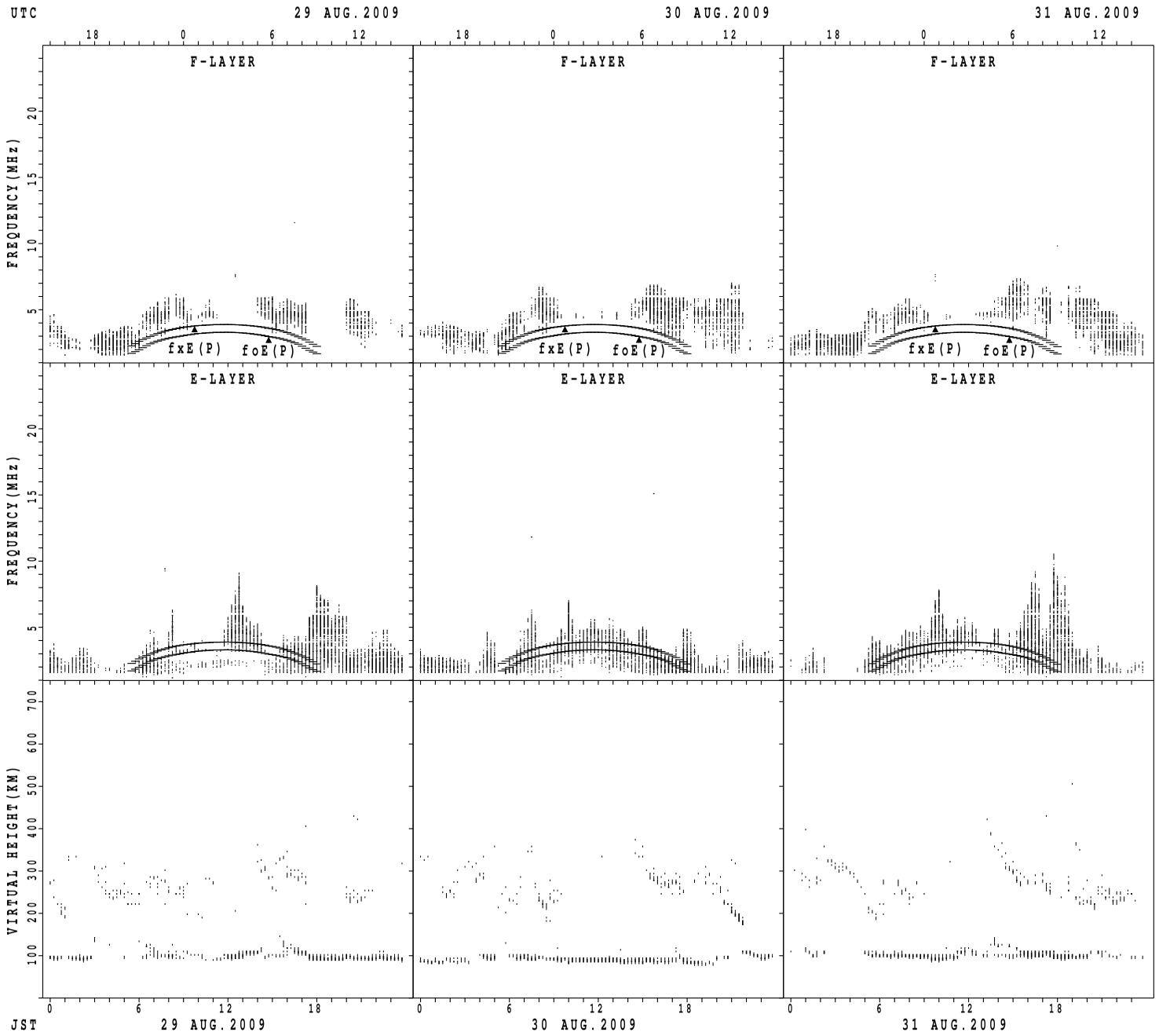
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



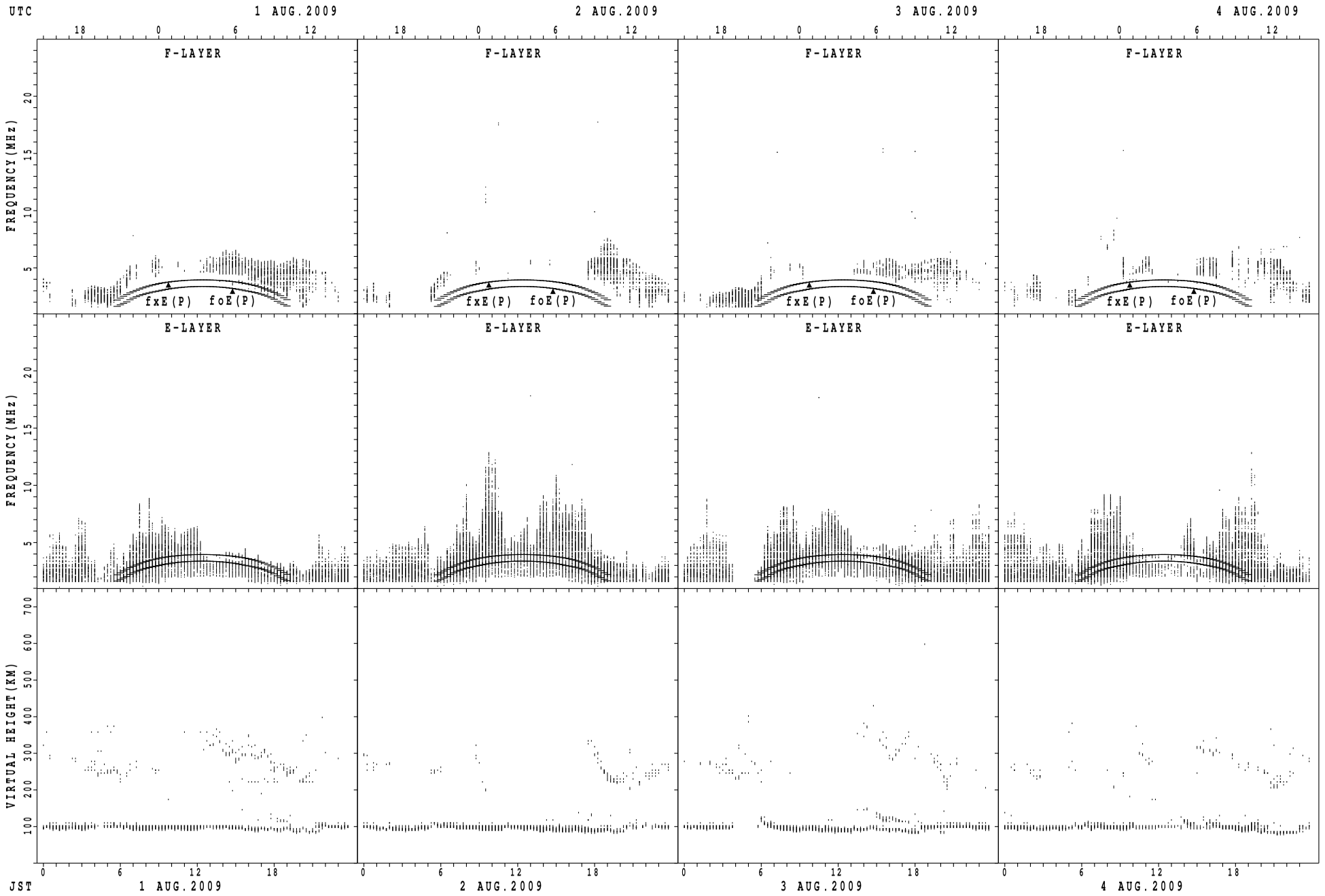
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



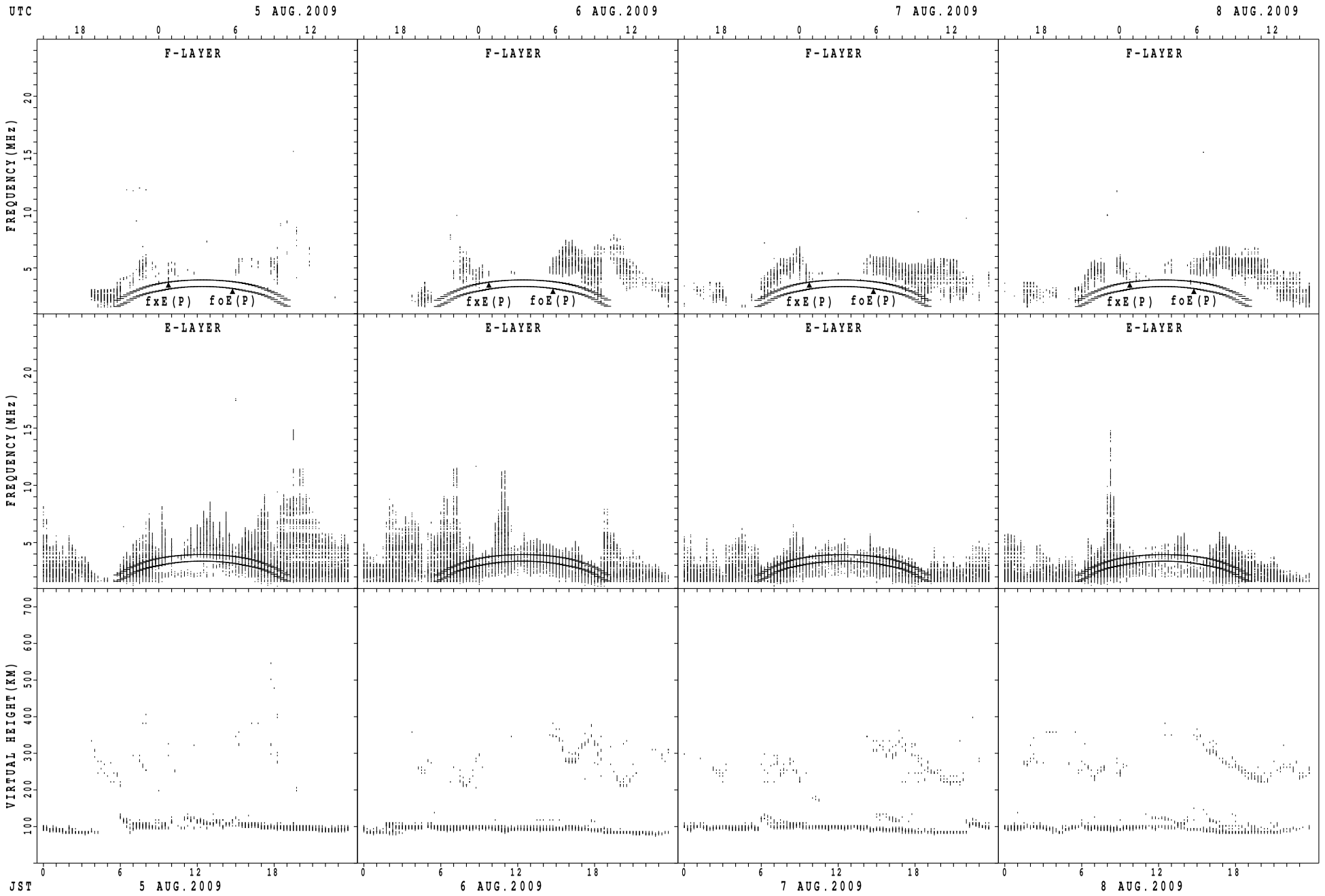
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



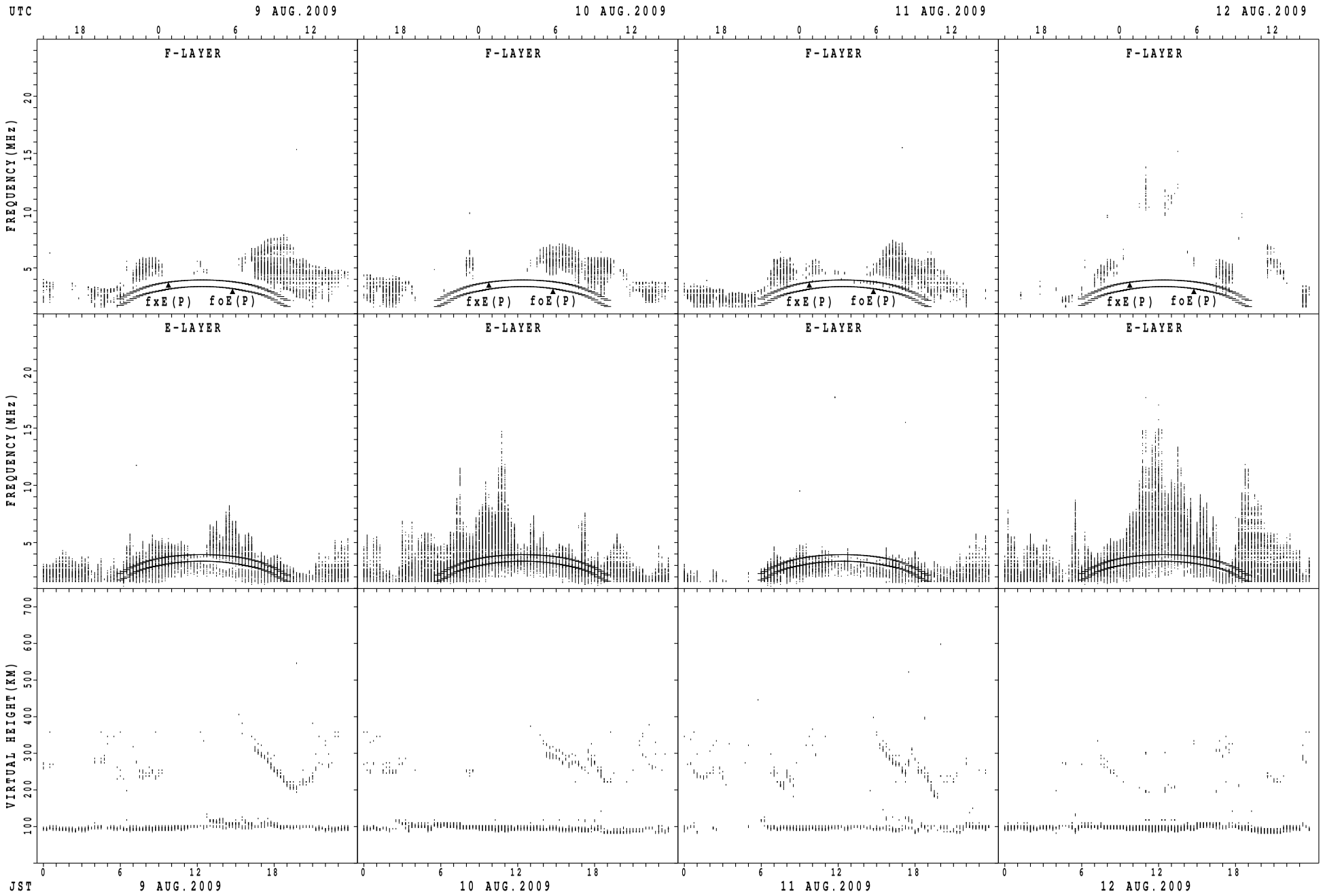
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



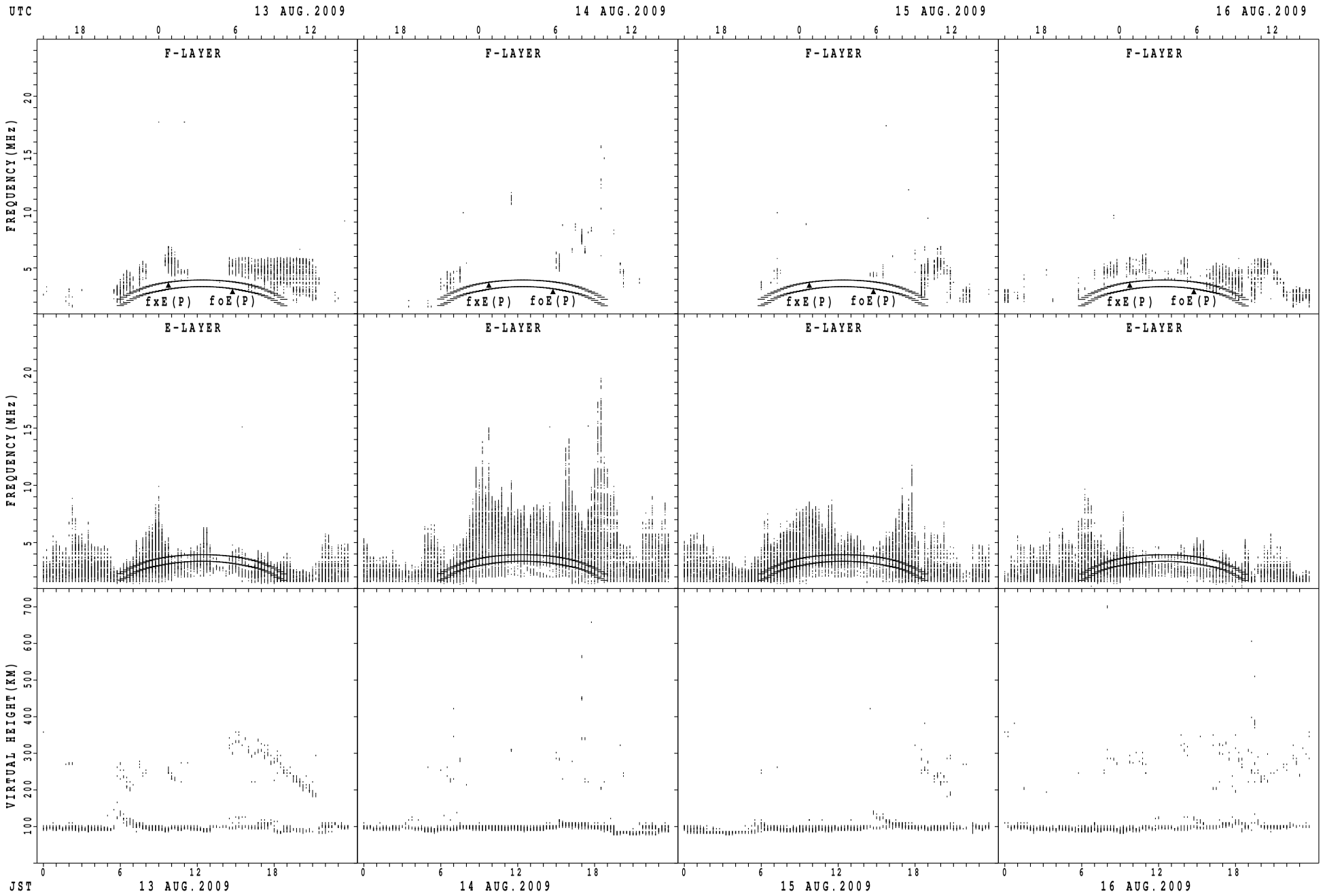
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



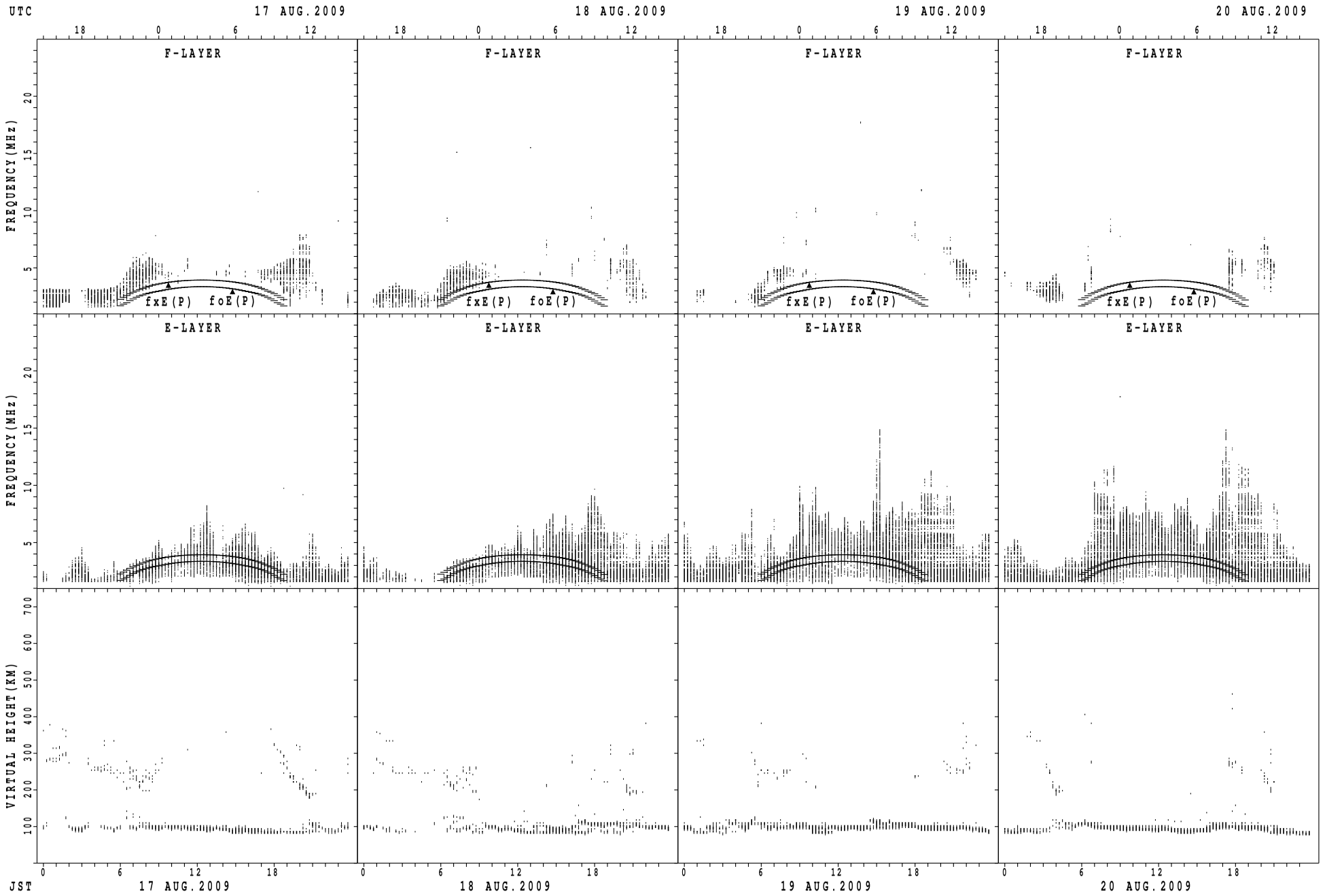
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



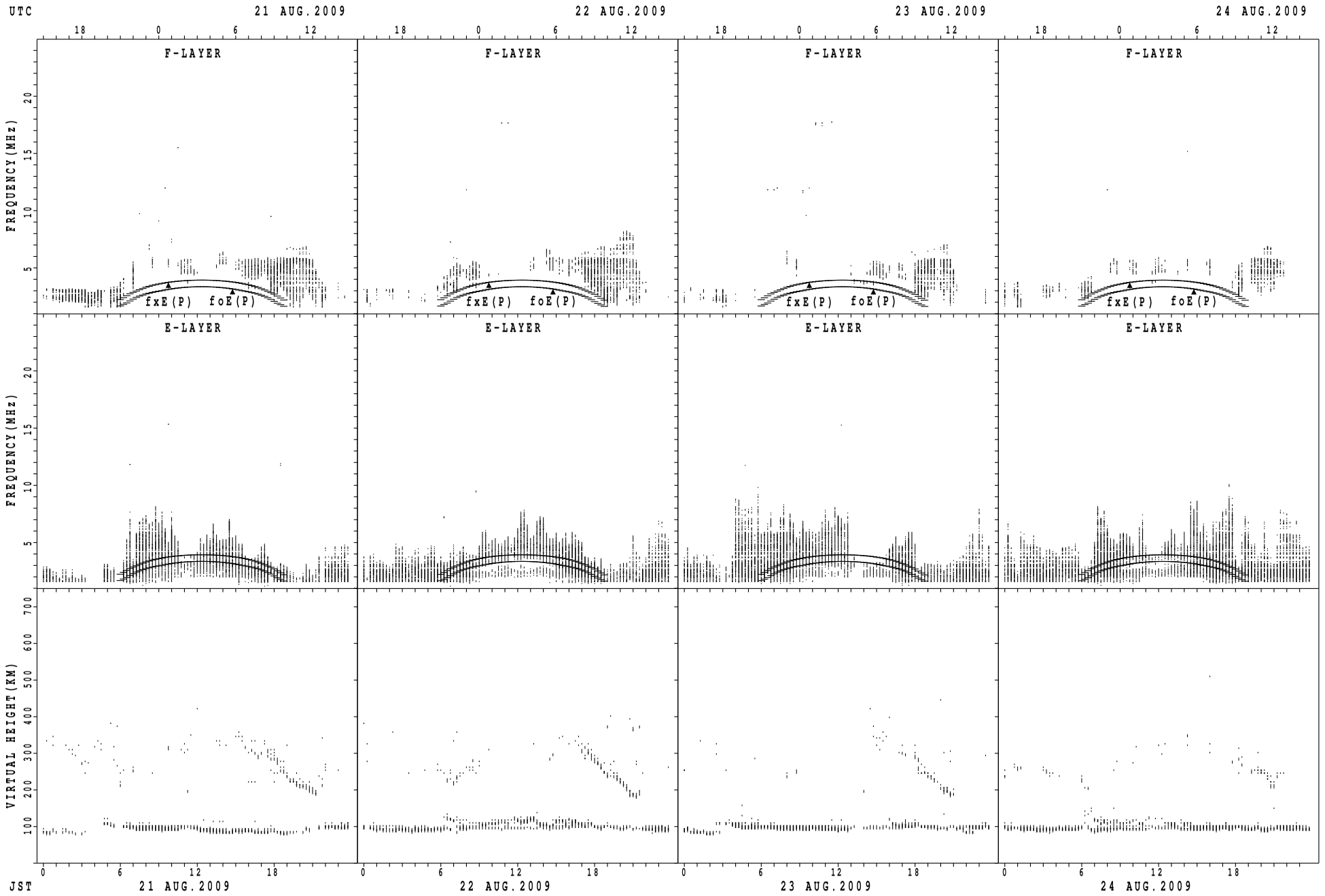
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



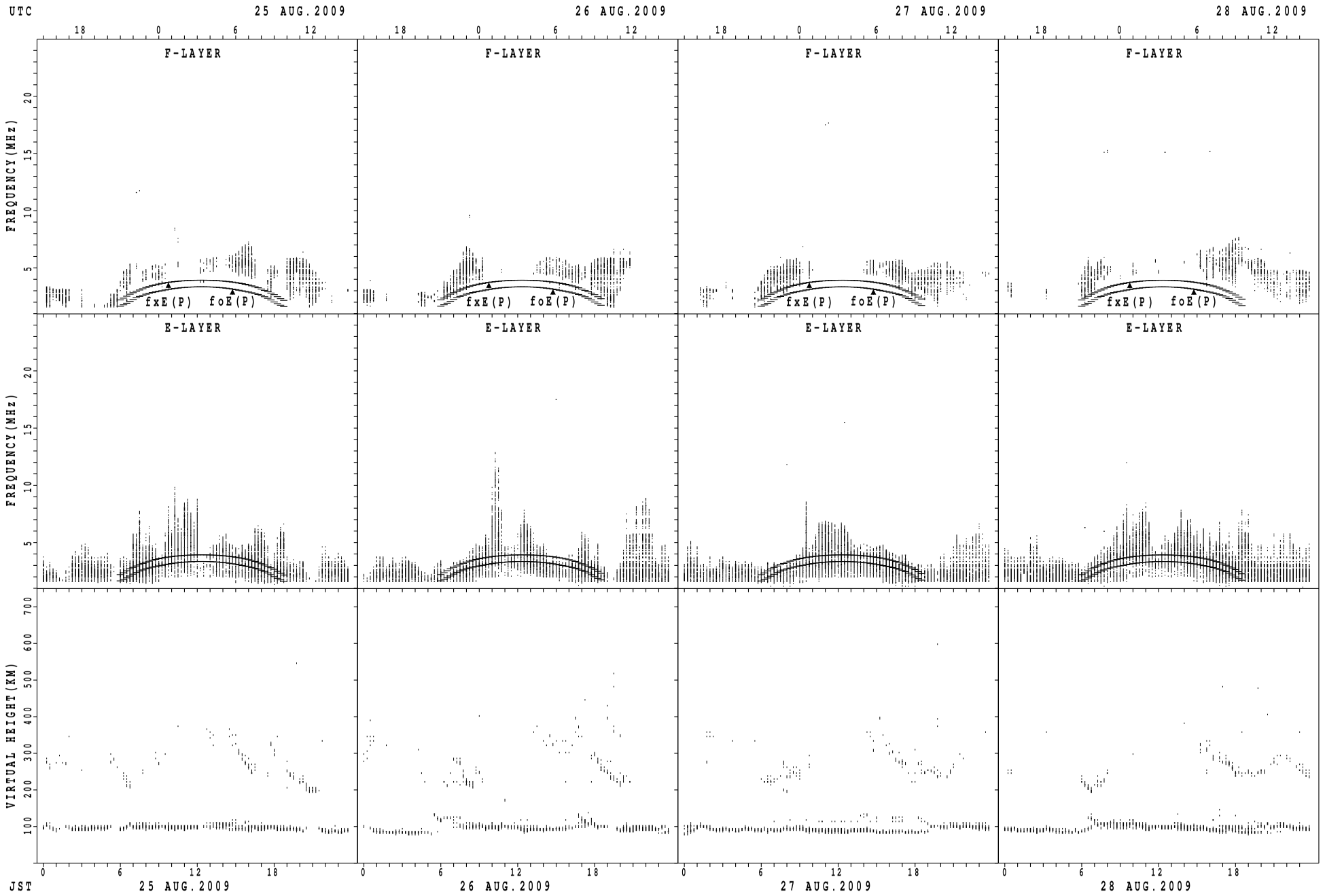
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



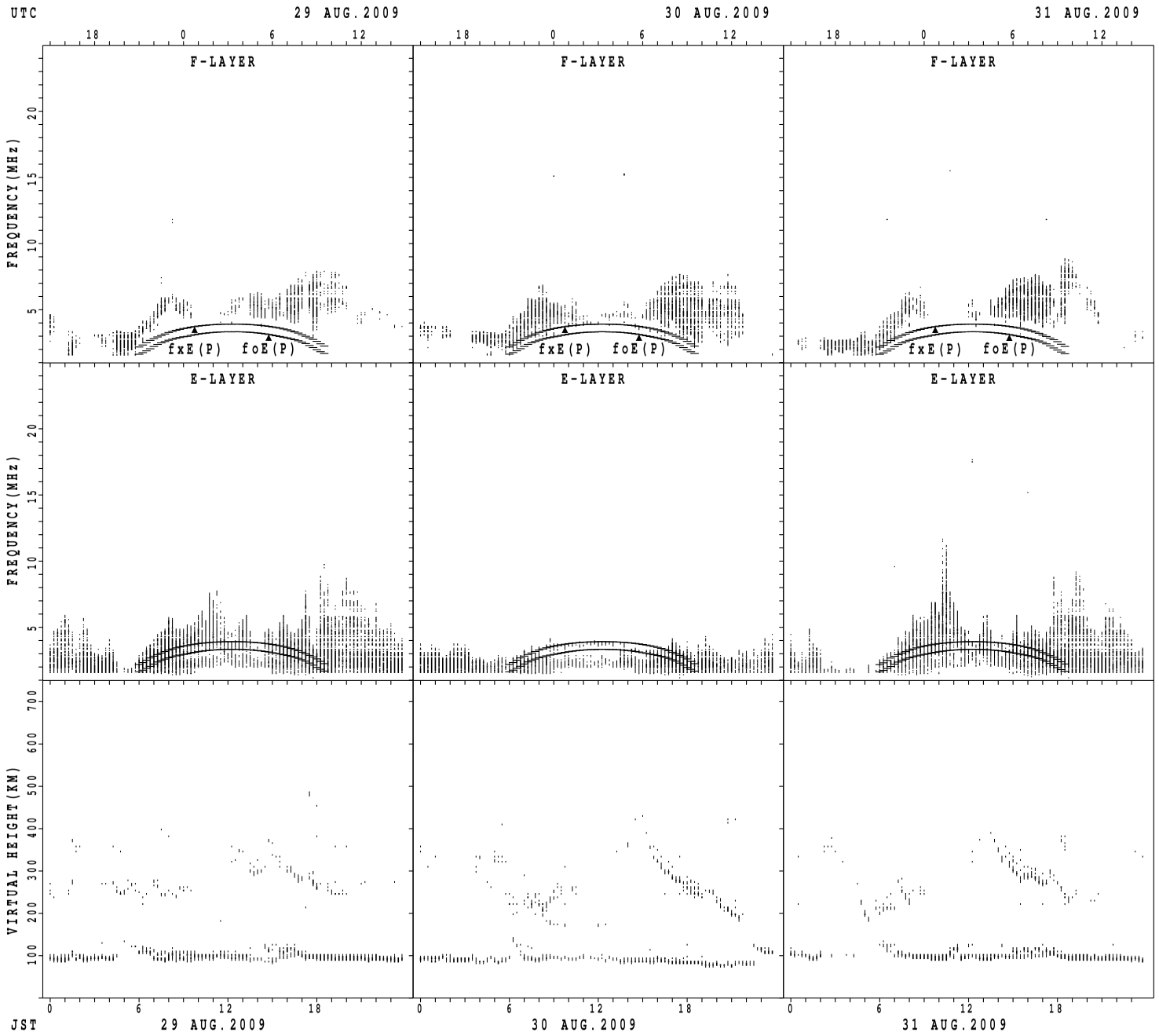
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



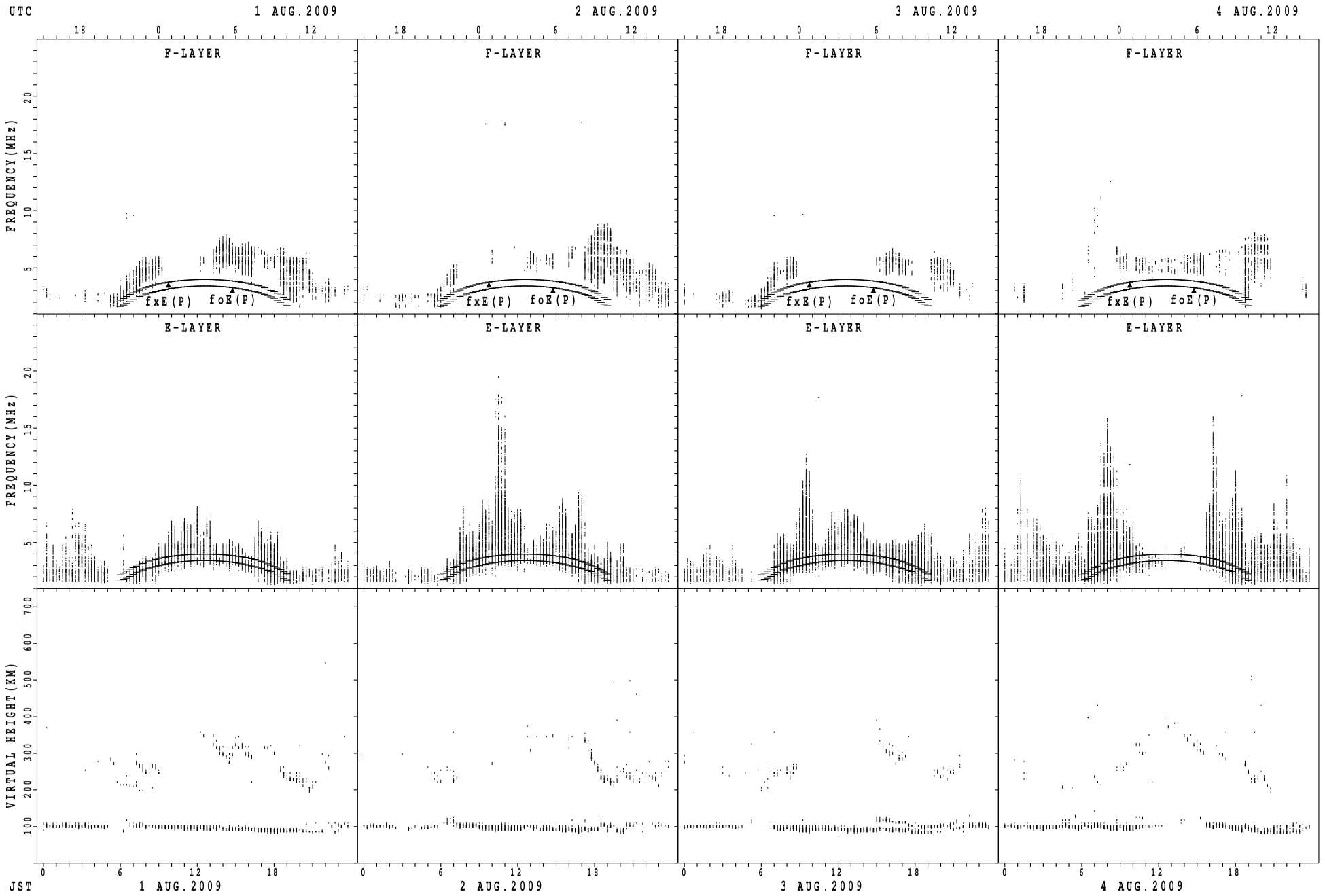
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



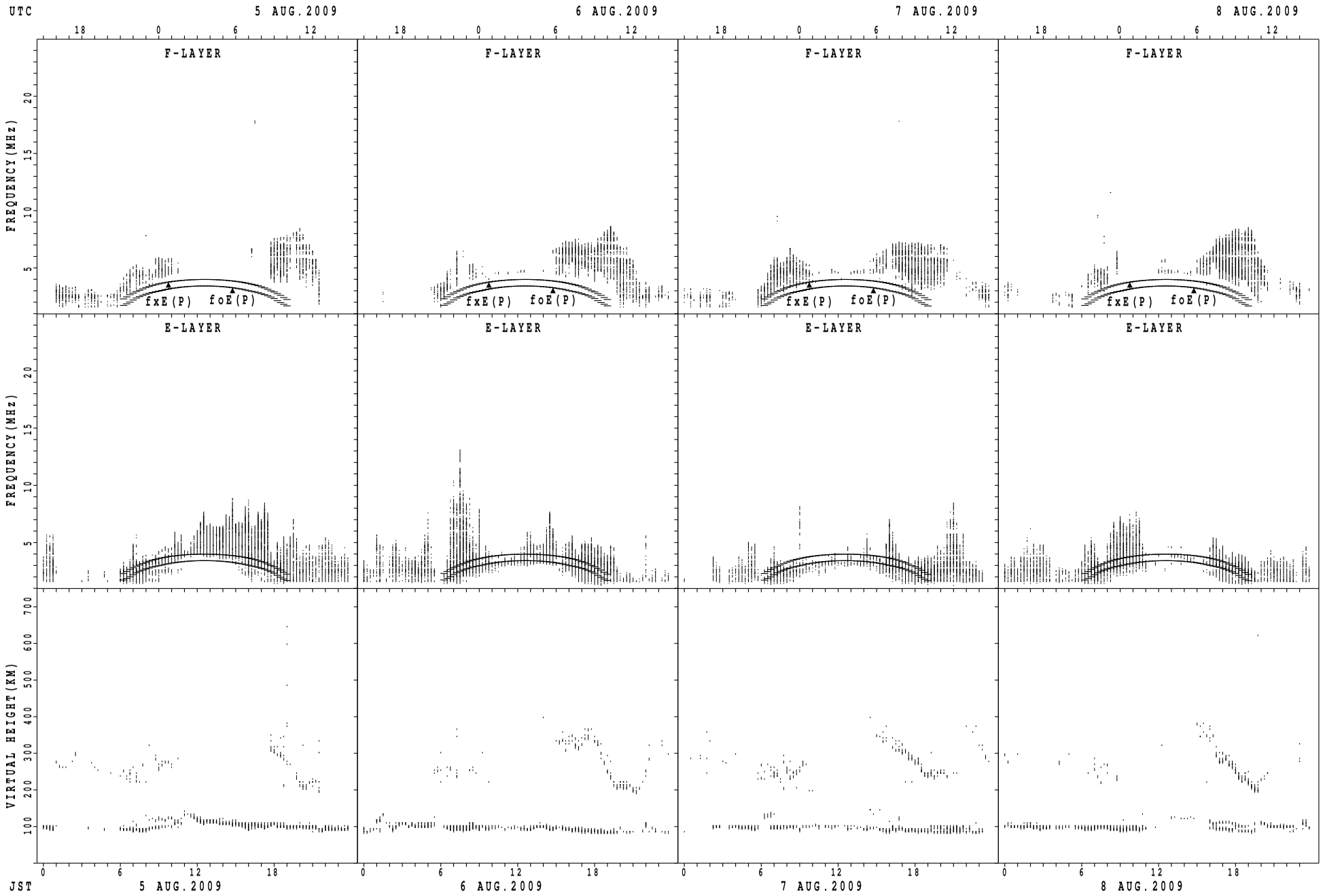
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



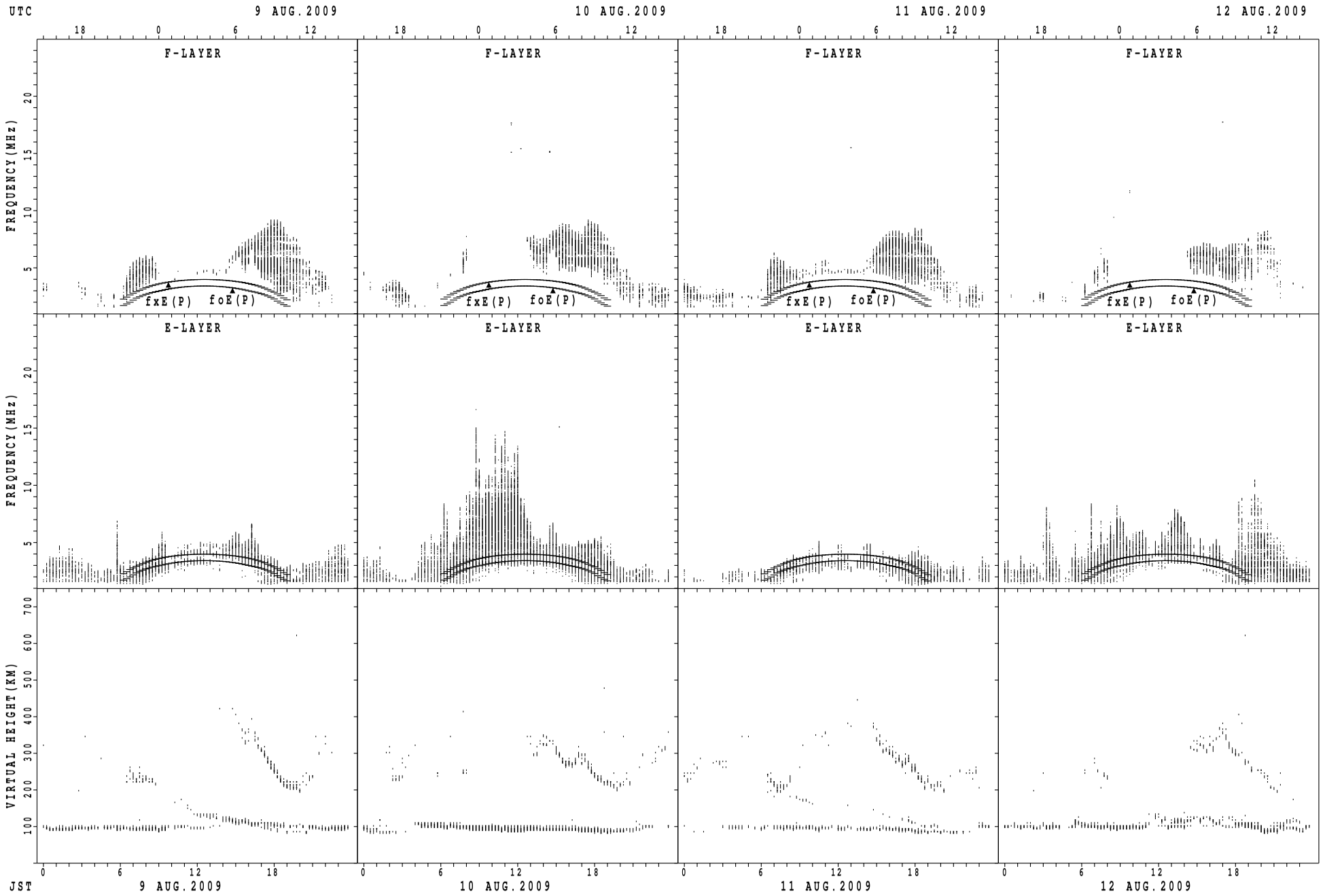
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



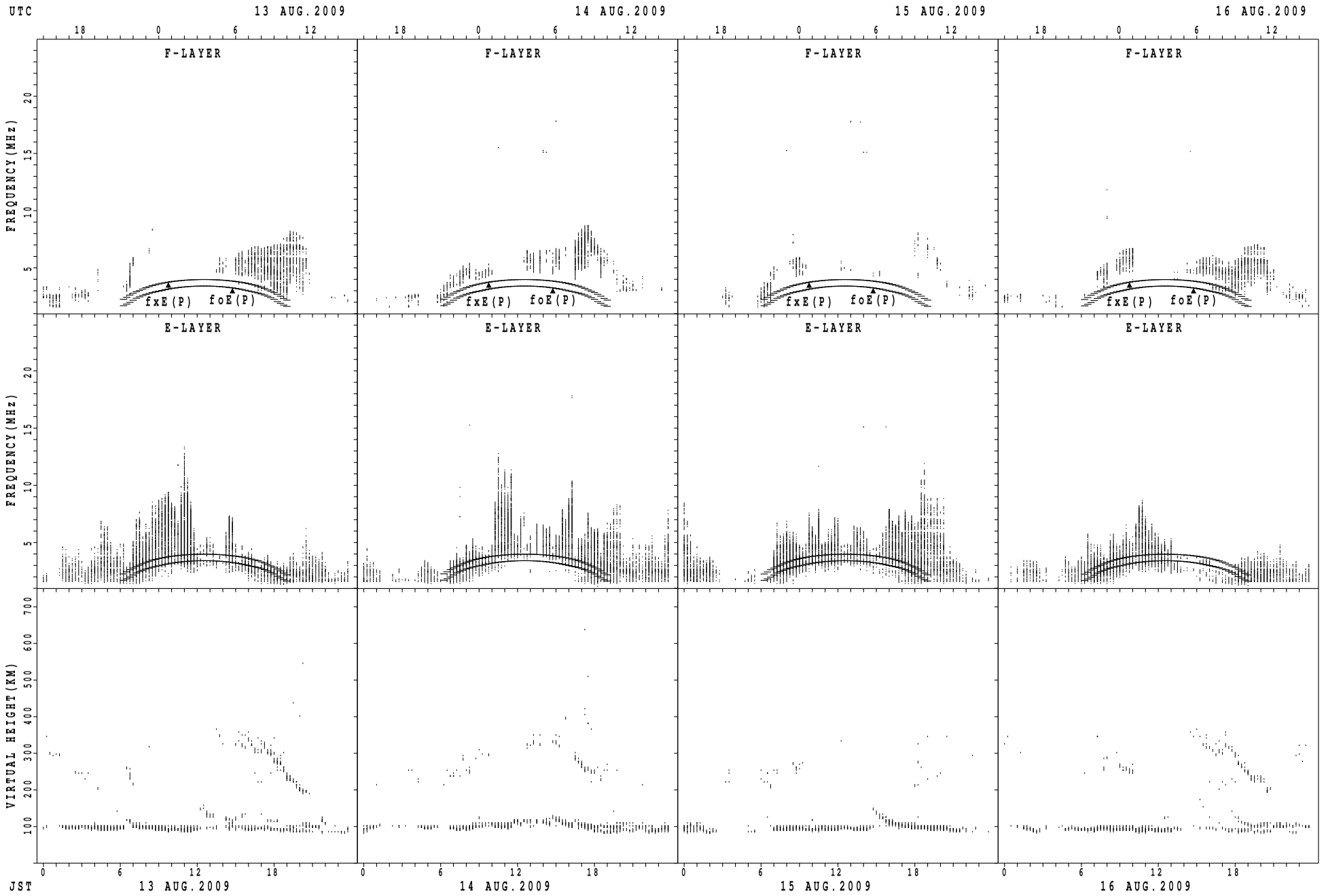
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



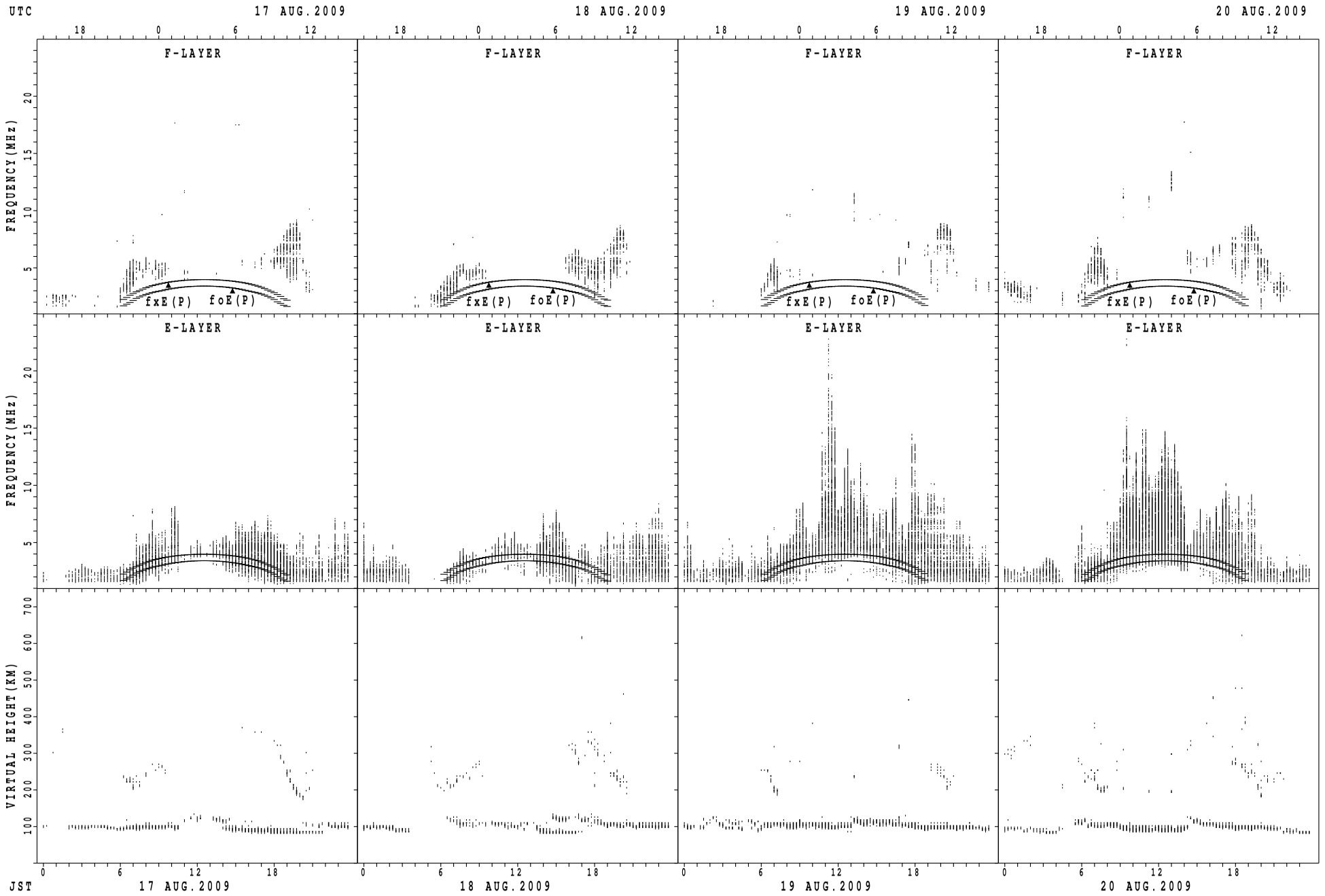
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



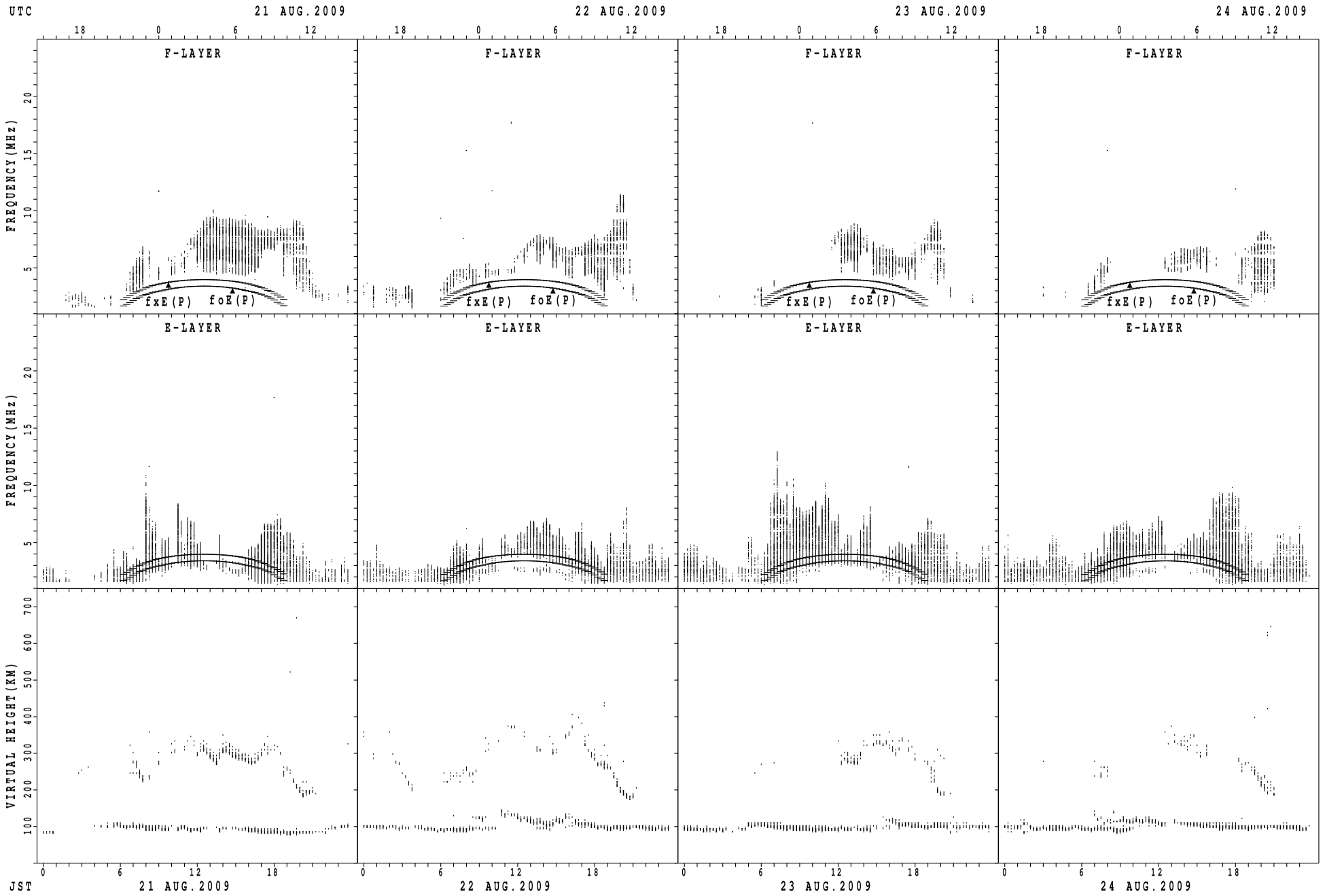
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



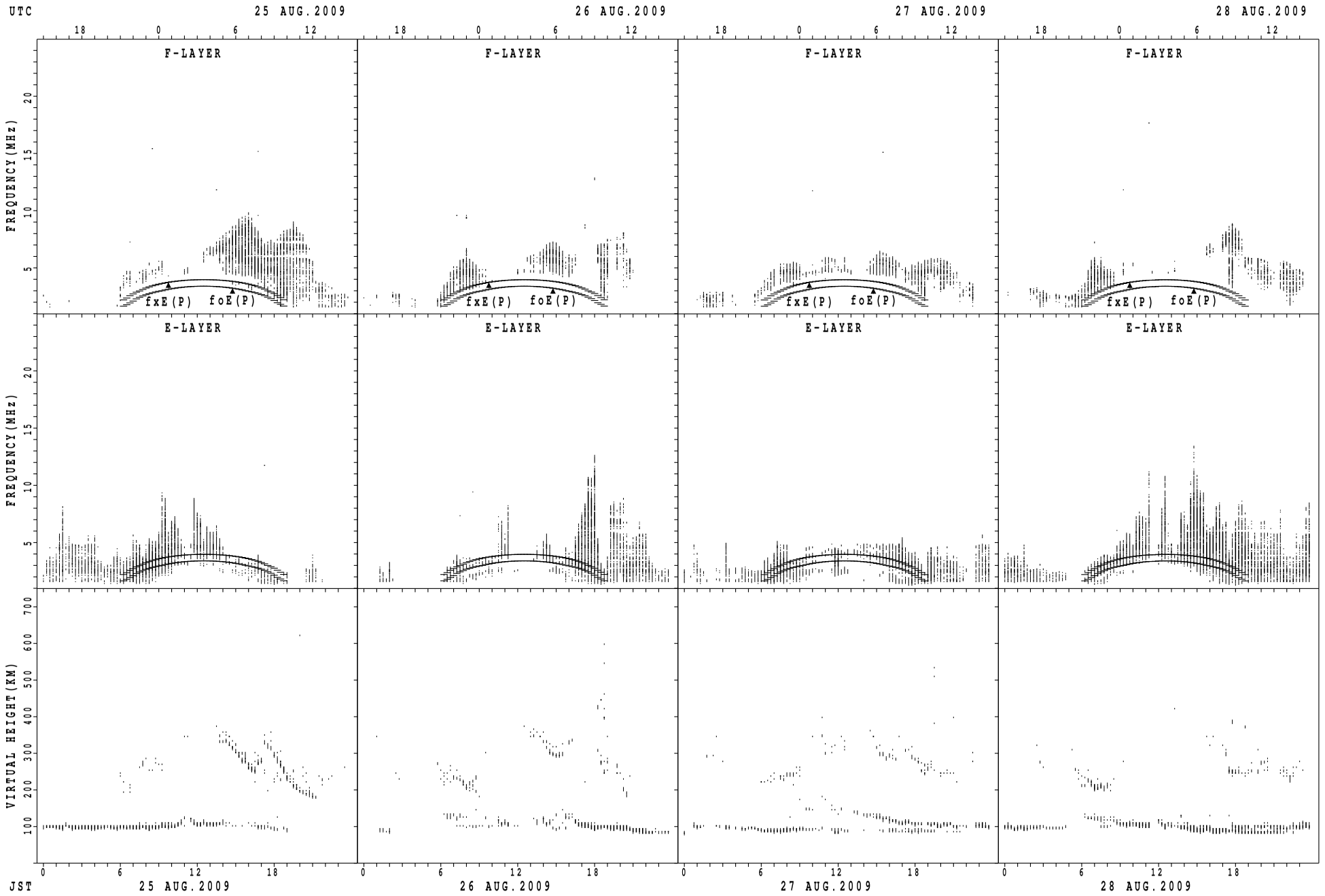
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



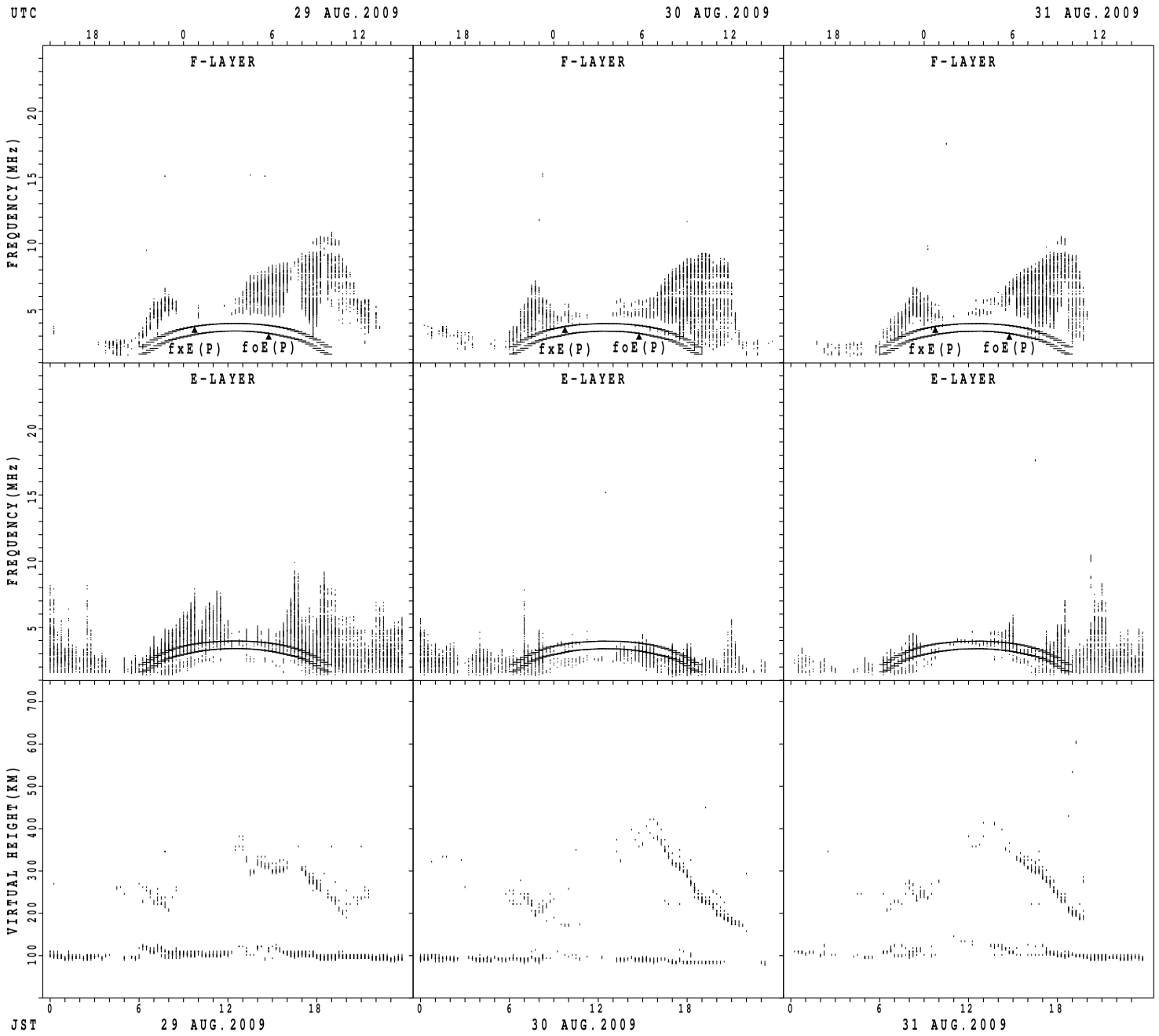
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h′F AND h′Es

AUG.2009 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

h′F STATION Wakkanai LAT. 45°10.0′N LON. 141°45.0′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										1	1		2	1		
MED								266										232	222		348	280		
U Q								133										116	111		398	140		
L Q								133										116	111		298	140		

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	30	27	26	23	23	28	30	29	30	29	28	25	24	25	21	22	26	28	27	25	29	30	30	30
MED	95	95	95	95	95	110	106	103	103	99	97	97	97	97	95	102	106	107	103	103	105	102	99	97
U Q	97	97	97	101	103	116	111	105	103	103	101	101	101	103	104	111	113	111	105	106	108	107	103	101
L Q	91	89	91	89	91	107	103	103	99	97	95	95	95	95	90	97	103	103	91	99	97	97	95	95

h′F STATION Kokubunji LAT. 35°43.0′N LON. 139°29.0′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	1									1	1	2	2	1	1		
MED							228	232									304	294	210	268	254	224		
U Q							114	116									152	147	212	288	127	112		
L Q							114	116									152	147	208	248	127	112		

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	28	28	26	25	21	22	31	29	30	29	27	23	24	25	25	25	28	30	30	30	30	27	29	29
MED	97	97	97	97	97	110	107	103	99	99	97	97	95	99	97	107	105	105	100	102	103	103	103	97
U Q	104	100	99	107	102	113	115	105	103	101	99	105	100	114	111	117	114	111	103	105	105	107	103	102
L Q	95	95	95	97	95	97	103	102	95	95	95	95	93	94	95	96	97	101	95	95	97	95	97	97

h′F STATION Yamagawa LAT. 31°12.0′N LON. 130°37.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									6								1	6	4	4	6	3		
MED									238								306	297	281	240	241	218		
U Q									260								153	316	288	266	250	234		
L Q									224								153	290	266	216	226	192		

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	28	30	29	27	25	24	28	31	30	31	29	29	27	25	24	27	27	28	30	30	29	30	31	31
MED	97	97	97	95	95	96	103	103	101	97	97	97	97	97	102	107	111	103	101	97	95	96	97	99
U Q	103	101	101	99	100	100	115	107	105	111	104	106	113	106	108	113	115	110	103	101	101	103	103	103
L Q	95	91	93	91	89	94	98	99	97	95	95	97	95	94	96	95	95	96	95	93	90	91	95	93

MONTHLY MEDIANS OF h′F AND h′Es

AUG.2009 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

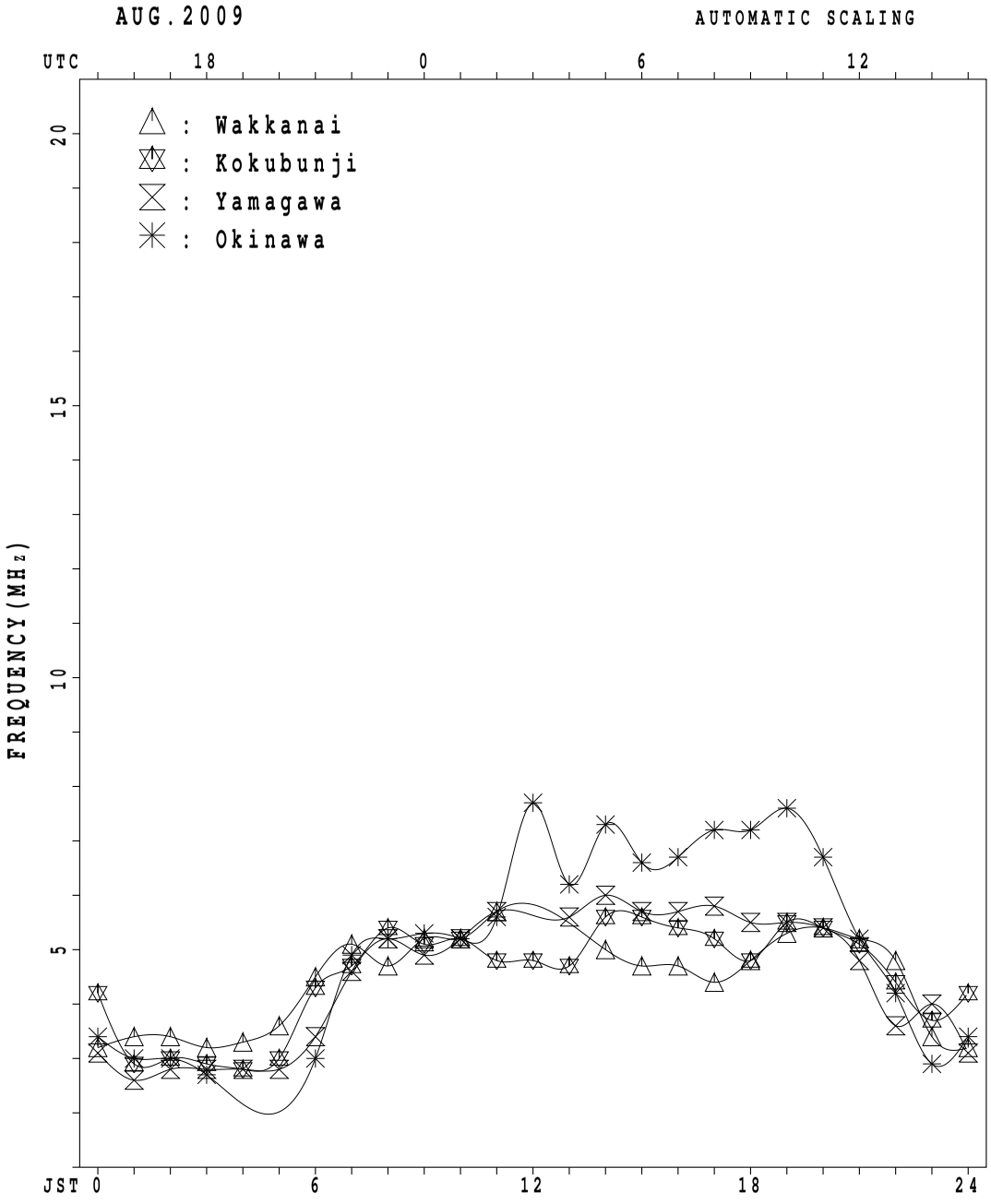
h′F STATION Okinawa LAT. 26°41.0′N LON. 128°09.0′E

	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								4	6									8	18	20	15	3		
MED								222	229									286	285	245	224	206		
U Q								237	266									308	308	264	240	230		
L Q								218	216									274	252	232	200	192		

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	24	24	23	18	18	23	20	30	28	29	25	22	23	18	24	25	28	28	30	31	28	29	23	23
MED	103	103	99	101	102	99	97	103	101	103	103	103	101	104	106	111	106	103	99	95	98	101	99	99
U Q	105	105	103	103	103	103	105	107	107	112	112	111	119	115	114	122	115	109	105	103	103	103	105	105
L Q	95	97	95	97	97	97	95	97	97	96	97	97	95	95	95	97	95	94	95	89	91	95	95	95

MONTHLY MEDIANS PLOT OF foF2



IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	A 41	39	41	40	37															X 59	59	58	58	A
2	X 35	A	A	X 32																X 64	X 67	X 50	X 50	A
3	A	A	X 41	X 36	X 35															A	X 70	69	66	51
4	A	A	A	A	A															X 71	X 71	X 49	48	A
5	48	43	45	42	37															A	A	X 63	A	55
6	A	X 36	X 35	X 40	34					C										X 78	X 78	X 50	X 42	X 41
7	X 42	X 34	X 34	X 37	X 33															X 59	X 64	66	66	60
8	X 50	X 35	A	A	36															X 62	X 64	X 53	X 48	X 42
9	A	43	35	A	X 28															X 77	X 57	A	52	52
10	51	44	41	42	38															X 52	X 55	X 46	X 43	A
11	A	X 40	X 40	X 40	A	X 34														X 60	X 51	50	A	A
12	A	A	A	A		X 36														X 62	X 66	X 61	57	50
13	38	42	X 42	42	37															X 59	X 66	X 52	A	A
14	X 34	X 34	X 36	X 38	A	X 37														X 63	X 63	X 49	X 38	A
15	A		A	A	X 34															X 60	X 66	51	A	X 33
16	X 35	X 33	X 38	A	A	43														X 59	X 60	X 64	X 42	X 34
17	X 34	X 33	X 33	X 31	X 33															X 62	X 68	X 58	A	X 27
18	X 32	X 33	34	X 31	X 30	X 33														X 60	X 63	X 52	X 49	X 42
19	X 35	X 35	X 35	X 33	X 32															X 68	A	X 59	58	A
20	A	A	43	41	45															X 65	X 59	65	A	A
21	50	37	37	36	X 34															X 64	X 59	X 57	X 54	X 30
22	X 32	X 34	X 32	X 35	X 31															X 64	X 59	X 64	51	44
23	A	A	A	X 34	X 33															X 65	X 62	X 56	X 36	A
24	X 38	X 39	41	X 40	39															O X 66	X 60	66	X 54	A
25	A	X 34	X 34	X 32	X 32															X 60	X 57	X 58	X 46	X 36
26	X 33	X 34	X 34	X 32	X 34															X 65	X 65	X 52	A	52
27	43	X 37	X 35	X 35	X 36															X 60	66	57	56	X 48
28	X 38	X 37	X 38	X 38	X 37	X 35														X 68	X 68	X 54	54	49
29	50	36	X 30	37	X 37															X 63	X 63	X 54	X 45	47
30	43	X 41	X 40	X 36	X 34															X 64	X 64	X 76	O X 40	X 29
31	X 32	X 35	X 36	X 34	X 34															X 70	X 62	58	X 48	X 42
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	25	25	24	26	6														29	29	30	24	20
MED	X 38	X 36	X 36	X 36	X 34	X 36														X 63	X 63	X 57	X 50	X 43
U Q	46	40	41	40	37	37														X 66	X 66	63	55	50
L Q	X 34	X 34	X 34	X 34	X 33	X 34														X 60	X 59	X 52	X 44	X 35

AUG. 2009 fxI (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	A	F	F	F	F	33	50	55	50	49	50	A	A	A	52	A	55	50	49	53	F	F	F	A
2	F	29	A	A	26	30	A	56	A	A	54	A	A	A	52	54	55	52	49	58	61	44	43	A
3	A	A	34	30	28	33	A	50	58	A	A	A	A	A	A	55	48	47	53	A	63	F	F	F
4	A	A	A	A	A	A	40	A	A	A	55	52	A	A	A	50	55	54	A	64	64	43	F	A
5	F	F	F	F	F	A	A	A	A	54	A	A	A	A	50	A	50	A	A	A	A	57	A	F
6	A	30	28	34	F	30	A	58	A	C	50	A	48	46	48	52	61	A	64	72	72	44	36	35
7	36	28	28	31	27	32	39	49	52	A	A	A	48	44	51	56	A	A	45	52	58	F	F	F
8	44	28	A	A	F	29	38	49	A	A	50	44	48	56	A	56	58	53	52	56	57	47	41	36
9	A	F	F	A	22	29	39	A	A	57	A	A	50	51	51	46	A	A	A	70	50	A	F	F
10	F	F	F	F	F	36	A	A	A	55	52	A	A	A	A	55	A	A	48	46	48	40	36	A
11	A	33	34	33	A	28	34	45	A	A	A	A	A	A	A	51	55	53	47	54	45	F	A	A
12	A	A	A	A	A	30	A	A	50	46	48	51	A	A	51	A	53	A	49	56	60	54	F	F
13	F	F	36	F	F	32	42	56	R	47	60	68	A	45	48	53	53	45	48	54	59	45	A	A
14	28	28	30	32	A	31	45	50	A	52	52	A	A	A	60	56	49	A	A	57	56	43	32	A
15	A	A	A	A	28	32	36	A	A	A	A	60	A	A	A	A	A	A	A	54	60	F	A	28
16	29	27	32	A	A	F	42	53	57	46	57	55	R 51	46	52	46	45	A	A	53	54	58	36	28
17	28	27	27	25	27	27	42	44	54	52	A	A	51	47	A	46	42	40	40	56	62	52	A	21
18	26	27	F	25	24	27	39	51	48	A	50	44	A	47	A	50	51	48	46	54	57	45	43	36
19	29	29	29	27	25	30	41	46	55	48	48	R 49	51	A	A	A	A	51	A	62	A	53	F	A
20	A	A	F	F	F	27	34	A	A	A	A	A	A	A	A	50	A	A	52	59	53	F	A	A
21	F	F	F	F	28	A	41	A	A	54	53	49	46	47	54	55	52	46	49	58	53	51	48	24
22	26	28	26	29	25	34	42	46	53	50	47	50	48	49	50	50	50	55	A	58	53	58	F	F
23	A	A	A	28	26	26	A	A	A	54	50	46	R 49	47	46	47	48	47	54	59	55	50	F	A
24	32	33	F	34	F	29	44	47	52	45	A	A	A	A	A	A	52	A	46	60	53	F	48	A
25	A	27	27	26	26	28	38	A	A	48	A	52	A	48	53	53	A	51	45	53	51	52	40	30
26	27	28	28	26	28	30	40	A	A	A	49	A	A	49	52	50	46	47	50	59	58	46	A	F
27	F	31	29	29	29	34	42	50	54	60	A	49	51	50	50	47	A	A	A	54	F	F	F	42
28	32	31	32	32	30	29	42	66	50	48	48	48	A	50	A	A	A	59	61	62	62	48	F	F
29	F	F	24	F	31	34	40	48	55	54	48	55	A	53	55	56	54	50	A	57	57	48	39	F
30	F	35	34	31	28	27	42	45	63	56	46	46	50	A	47	58	64	55	54	58	58	70	34	22
31	26	29	30	28	28	35	42	46	55	52	A	48	43	50	56	68	66	62	A	64	56	F	42	36
	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	18	17	17	18	27	24	20	15	20	19	17	13	17	19	24	22	19	20	29	27	21	13	11
MED	28	28	29	29	28	30	41	50	54	52	50	49	49	48	51	52	52	51	49	57	57	48	40	30
U Q	32	31	33	32	28	33	42	54	55	54	53	54	51	50	53	56	55	54	52	60	60	54	43	36
L Q	26	28	28	26	26	28	39	46	50	48	48	47	48	46	50	50	49	47	46	54	53	44	36	24

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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							A	376	412	424	UL424	A	A	A	A	A	A	UL372	A					
2							A	A	A	A	A	A	A	A	A	A	A	A	L					
3							A	384		A	A	A	A	A	A	A	A	A	A					
4						A	352	A	A	A	UL444	432	A	A	A	A	376	364	A					
5						A	A	A	A	A	A	A	A	A	A	A	396	A	A					
6							A	A	A	C	A	A	A	UL408	UL420	A	A	A	A					
7								A	UL400	A	A	A	UL428	UL420	UL432	A	A	A	A					
8								A	A	A	432	UL436	A	A	A	UL416	A	UL356	A					
9							A	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	408	A	A	A					
11								A	A	A	A	A	A	A	A	A	392	L						
12					A		A	A	A	A	A	A	A	A	A	A	A	A	A					
13							UL372	A	UL424	UL404	428	A	A	UL428	UL416	412	384	A	L					
14							L	A	A	A	A	A	A	A	UL416	A	UL400	A	A					
15		A					A	A	A	A	A	A	A	A	A	A	A	A	A					
16							340	A	408	UL416	432	424	436	A	416	UL400	396	A	A					
17							UL356	UL396	404	424	A	A	A	A	A	A	392	UL372	A					
18							UL332	A	A	A	UL416	A	A	UL420	A	UL404	A	A	A					
19								UL368	A	A	A	UL420	UL420	A	A	A	A	A	A					
20								A	A	A	A	A	A	A	A	A	A	A	A					
21						A	UL340	A	A	A	A	UL440	UL428	A	A	400	396	A	A					
22							L	A	400	UL424	UL420	424	A	A	A	A	A	A	A					
23						A	A	A	A	A	A	UL432	R444	416	UL392	A	396	A	A					
24								UL368	456	416	A	A	A	A	A	A	A	A	A					
25							328	A	A	A	A	A	A	A	416	UL404	A	344						
26							A	A	A	A	A	A	A	UL428	A	A	A	348	A					
27								L	A	A	A	444	424	428	416	UL408	A	A	A					
28							L	UL372	UL416	UL424	A	A	A	A	A	A	A	L						
29								L	400	416	432	432	A	A	A	408	A	A	A					
30								A	392	412	A	UL428	UL444	A	UL420	A	380	L	A					
31									A	412	A	UL424	UL408	UL416	A	412	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							7	6	10	10	8	11	8	8	9	10	10	6						
MED							UL340	UL374	406	416	430	UL432	UL428	UL420	UL416	408	394	360						
U Q							UL356	384	UL416	UL424	432	436	440	UL428	UL420	412	396	UL372						
L Q							332	UL368	400	412	UL422	424	UL422	UL416	416	UL404	384	348						

AUG. 2009 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	A 180					
3						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
4						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
6						B	A	A	A	C	A	A	A	A	332	A	A	A	A					
7						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						B	A	A	A	A	A	U R 332	A	A	A	A	A	A	B					
9						B	U A 208	A	A	A	A	A	348	A	A	A	A	A	B					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
11							A	A	A	A	A	A	A	A	A	A	280	A	A					
12					A		A	A	A	A	A	A	A	A	A	A	A	A	B					
13						B	A	A	A	A	A	A	A	R	A	R	A	A	B					
14							A	A	A	A	A	A	A	A	A	A	A	A	A					
15		A				B	A	A	A	A	A	A	A	A	A	A	A	A	A					
16						B	A	A	A	A	A	R	A	A	A	A	A	A	A					
17						B	184	A	A	A	A	A 244	A	A	A	A	A	A	B					
18							A	A	A	A	A	A	A	332	A	A	A	A	B					
19						B	A	R	A	A	A	A	A	A	A	A	A	A	B					
20						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
21						B	A	A	A	A	A	A	A	A	324	300	A	A	B					
22						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
23						B	A	A	A	A	A	R	U R 384	R	R	U A 300	A	A	B					
24						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
25						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
26						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
27						B	A	A	A	A	A	A	A	324	A	R	A	A	A					
28							A	A	A	A	A	A	A	A	A	A	A	A	B					
29						B	A	A	A	A	A	R	A	A	A	304	A	A	A					
30						B	188	A	A	A	A	A	A	A	A	A	A	A	A					
31						B	B	A	A	A	A	A	A	A	A	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3					2	2	2	2	3	1		1					
MED							188					288	366	328	328	300	280		180					
U Q							U A 208									304								
L Q							184									300								

AUG. 2009 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	J A 61	J A 56	J A 53	J A 22	J A 29	J A 22	J A 47	J A 55	J A 40	J A 39	39	J A 46	J A 86	J A 61	J A 56	J A 58	40	J A 48	J A 32	J A 50	J A 70	J A 60	J A 53	J A 67
2	J A 43	J A 46	J A 81	J A 73	J A 45	J A 22	J A 61	J A 122	J A 108	J A 64	J A 60	J A 118	J A 124	J A 82	J A 58	J A 44	J A 58	J A 44	21	22	J A 20	J A 25	J A 43	J A 59
3	J A 98	J A 70	J A 44	J A 44	J A 45	J A 36	J A 52	J A 37	J A 57	J A 82	J A 66	J A 59	J A 74	J A 81	J A 76	42	43	J A 48	J A 46	J A 73	J A 36	J A 53	J A 60	J A 45
4	J A 86	J A 108	J A 81	J A 72	56	50	37	63	J A 78	J A 116	J A 59	46	J A 77	J A 51	J A 80	J A 46	J A 54	J A 53	J A 76	J A 42	J A 66	J A 98	J A 67	J A 58
5	J A 37	J A 24	J A 48	J A 23	20	J A 36	J A 44	J A 48	J A 52	J A 50	J A 100	J A 100	J A 90	J A 80	J A 78	J A 71	J A 56	J A 118	J A 117	J A 77	J A 111	J A 54	J A 98	J A 58
6	J A 55	J A 44	J A 43	J A 113	J A 29	J A 32	J A 50	J A 58	J A 60	C	J A 56	J A 52	46	36	38	39	J A 58	J A 118	J A 68	J A 57	J A 44	J A 27	J A 59	J A 56
7	J A 46	J A 36	J A 23	J A 24	J A 23	E B 15	30	J A 46	J A 47	J A 70	J A 72	J A 56	J A 62	39	J A 42	J A 54	J A 71	J A 66	J A 44	36	J A 53	J A 47	J A 62	J A 55
8	J A 75	J A 74	J A 73	J A 48	23	E B 14	25	J A 44	J A 92	J A 77	38	40	44	43	J A 88	39	J A 50	J A 38	J A 39	J A 26	J A 28	22	J A 25	J A 28
9	J A 44	J A 60	J A 35	J A 32	J A 43	J A 26	J A 37	J A 63	J A 78	J A 111	J A 102	J A 84	44	44	J A 52	40	J A 62	J A 70	J A 76	J A 66	J A 70	J A 64	J A 56	J A 36
10	J A 54	J A 47	J A 42	J A 37	J A 28	J A 29	J A 101	J A 126	J A 80	J A 58	J A 56	J A 96	J A 58	J A 66	J A 62	32	J A 54	J A 89	J A 75	J A 50	J A 29	J A 28	J A 30	J A 56
11	J A 69	J A 35	J A 39	J A 24	J A 66	J A 31	J A 36	J A 45	J A 74	J A 120	J A 152	J A 130	J A 99	J A 148	J A 68	J A 51	34	J A 37	J A 32	J A 70	J A 56	J A 44	J A 70	J A 52
12	J A 58	J A 54	J A 35	J A 45	J A 44	J A 45	J A 60	J A 88	J A 65	J A 51	J A 64	J A 107	J A 117	J A 87	J A 64	J A 79	44	J A 140	J A 106	J A 42	J A 42	J A 46	J A 68	J A 54
13	J A 46	J A 58	J A 48	J A 47	J A 23	22	30	J A 44	J A 50	J A 40	J A 40	J A 44	J A 60	G 26	38	G 23	35	J A 58	J A 28	J A 54	J A 23	J A 74	J A 66	J A 50
14	J A 47	J A 77	J A 45	J A 47	J A 55	J A 38	26	J A 51	J A 70	J A 72	J A 75	J A 52	J A 105	J A 77	J A 46	J A 60	J A 40	J A 66	J A 74	J A 24	J A 25	J A 46	J A 30	J A 45
15	J A 88	J A 80	J A 44	J A 78	J A 58	J A 23	J A 38	J A 54	J A 73	J A 123	J A 97	J A 74	J A 94	J A 71	J A 102	J A 56	J A 77	J A 65	J A 92	J A 125	J A 108	J A 53	J A 54	J A 74
16	J A 73	J A 58	J A 43	J A 58	J A 47	J A 30	26	J A 40	35	J A 41	36	G 27	41	43	38	38	36	J A 53	J A 60	J A 49	J A 49	J A 44	J A 32	J A 46
17	J A 32	J A 22	E B 15	J A 30	J A 24	J A 18	23	30	J A 37	J A 43	J A 108	98	J A 53	J A 42	J A 56	J A 67	J A 66	34	J A 39	J A 37	J A 36	J A 22	J A 56	22
18	20	J A 22	22	J A 22	J A 29	20	28	J A 40	J A 42	J A 52	39	42	J A 42	38	J A 62	40	J A 73	J A 76	J A 47	J A 56	J A 40	J A 30	J A 36	J A 45
19	J A 33	J A 20	J A 34	23	J A 24	J A 31	28	J G 27	J A 81	J A 54	J A 44	39	41	J A 92	J A 67	J A 48	J A 63	J A 62	J A 116	J A 131	J A 130	J A 54	J A 34	J A 76
20	J A 61	J A 41	J A 46	J A 34	J A 107	J A 32	J A 30	J A 49	J A 66	J A 55	J A 50	50	J A 66	J A 72	J A 67	J A 42	J A 104	J A 81	J A 61	J A 74	J A 57	J A 78	J A 76	J A 61
21	J A 47	J A 44	J A 21	J A 28	20	J A 52	J A 29	J A 61	J A 64	J A 47	J A 95	41	41	43	40	34	32	32	J A 40	21	J A 31	J A 27	J A 45	J A 56
22	J A 53	J A 47	J A 26	J A 33	J A 39	22	J A 27	J A 42	35	J A 41	38	38	45	J A 61	J A 50	J A 51	J A 62	J A 60	J A 58	J A 53	J A 57	J A 85	J A 50	J A 68
23	J A 48	J A 67	J A 46	J A 55	J A 25	J A 30	J A 58	J A 93	J A 72	J A 60	J A 39	G 33	G	G	G 30	39	J A 44	J A 53	J A 28	J A 45	J A 44	J A 75	J A 37	J A 44
24	J A 24	20	J A 23	J A 24	J A 22	J A 38	27	31	J A 48	J A 45	J A 100	J A 66	J A 60	J A 59	J A 74	J A 90	J A 73	J A 60	J A 68	J A 66	J A 128	J A 82	J A 38	J A 53
25	J A 56	J A 42	J A 53	J A 44	22	19	J A 30	J A 67	J A 63	J A 60	J A 87	J A 62	J A 80	J A 49	J A 52	34	J A 65	26	J A 31	73	J A 64	J A 30	J A 23	J A 61
26	20	21	E B 15	E B 14	20	J A 22	J A 40	J A 42	J A 59	J A 75	J A 64	J A 45	J A 108	J A 46	J A 52	J A 78	J A 74	J A 34	J A 64	J A 48	J A 31	J A 24	J A 44	J A 78
27	J A 88	J A 42	J A 35	J A 48	J A 41	J A 33	J A 28	35	J A 54	J A 58	J A 72	41	35	41	39	G 27	J A 46	J A 64	J A 48	J A 72	J A 60	J A 64	J A 31	J A 48
28	J A 37	J A 31	J A 20	23	20	21	25	J A 37	33	J A 39	J A 46	J A 43	J A 61	46	J A 61	J A 97	J A 144	J A 56	J A 23	J A 36	J A 54	E B 15	J A 62	J A 80
29	J A 30	20	J A 41	J A 22	21	J A 19	26	J A 42	J A 42	36	37	G 34	J A 57	J A 62	J A 48	35	37	J A 35	J A 78	J A 65	J A 62	J A 30	J A 44	J A 45
30	J A 31	J A 28	J A 23	J A 22	J A 23	J A 33	22	J A 46	J A 44	35	J A 66	J A 44	J A 48	J A 53	J A 39	J A 49	35	J A 28	J A 48	26	J A 28	J A 22	J A 42	J A 28
31	J A 25	J A 28	20	E B 14	E B 16	J A 21	J A 37	36	J A 43	J A 49	J A 74	J A 48	J A 46	38	J A 46	38	J A 64	J A 45	J A 92	J A 57	J A 32	J A 30	J A 20	J A 18
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 47	J A 44	J A 41	J A 33	J A 28	J A 29	J A 30	J A 46	J A 59	J A 54	J A 64	J A 48	J A 60	J A 51	J A 56	J A 44	J A 56	J A 56	J A 58	J A 53	J A 49	J A 46	J A 45	J A 54
U Q	J A 61	J A 58	J A 46	J A 48	J A 45	J A 33	J A 44	J A 61	J A 73	J A 72	J A 87	J A 74	J A 86	J A 72	J A 67	J A 58	J A 66	J A 66	J A 76	J A 70	J A 64	J A 64	J A 62	J A 61
L Q	J A 33	J A 28	23	23	22	21	27	40	J A 43	J A 43	40	41	44	42	42	38	40	J A 38	J A 39	J A 37	J A 31	J A 27	J A 34	J A 45

AUG. 2009 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	A A 61	E B 15	E B 15	E B 16	17	18	30	28	34	32	38	A A 46	A A 86	A A 61	44	A A 58	38	30	27	45	21	20	16	A A 67
2	17	23	A A 81	A A 73	16	16	A A 61	45	A A 108	A A 64	42	A A 118	A A 124	A A 82	46	40	48	33	20	E B 15	16	18	34	A A 59
3	A A 98	A A 70	19	E B 15	16	24	A A 52	30	44	A A 82	A A 66	A A 59	A A 74	A A 81	A A 76	40	40	38	38	A A 73	18	28	32	E B 15
4	A A 86	A A 108	A A 81	A A 72	A A 56	A A 50	28	A A 63	A A 78	A A 116	38	37	A A 77	A A 51	A A 80	41	32	29	A A 76	37	47	E B 14	20	A A 58
5	24	E B 15	22	16	E B 15	A A 36	A A 44	A A 48	A A 52	43	A A 100	A A 100	A A 90	A A 80	42	A A 71	34	A A 118	A A 117	A A 77	A A 111	32	A A 98	34
6	A A 55	21	20	18	E B 15	20	A A 50	50	A A 60	C	44	A A 52	43	34	36	38	54	A A 118	32	32	31	19	E B 16	25
7	18	16	E B 15	16	18	E B 15	26	38	35	A A 70	A A 72	A A 56	39	37	38	49	A A 71	A A 66	38	32	38	35	22	17
8	30	21	A A 73	A A 48	16	E B 14	22	38	A A 92	A A 77	37	36	42	43	A A 88	36	38	28	30	19	21	E B 15	E B 15	E B 15
9	A A 44	20	16	A A 32	E B 15	20	33	A A 63	A A 78	44	A A 102	A A 84	43	44	47	40	A A 62	A A 70	A A 76	37	35	A A 64	31	18
10	E B 16	E B 15	E B 14	E B 15	16	16	A A 101	A A 126	A A 80	46	43	A A 96	A A 58	A A 66	A A 62	31	A A 54	A A 89	36	33	22	18	17	A A 56
11	A A 69	20	18	16	A A 66	16	27	37	A A 74	A A 120	A A 152	A A 130	A A 99	A A 148	A A 68	45	31	29	20	34	27	33	A A 70	A A 52
12	A A 58	A A 54	A A 35	A A 45	A A 44	E B 15	A A 60	A A 88	43	40	41	43	A A 117	A A 87	43	A A 79	41	A A 140	24	19	30	20	31	20
13	17	24	23	E B 15	E B 15	E B 16	27	40	36	34	36	42	A A 60	G 26	36	G 22	31	30	23	23	18	19	A A 66	A A 50
14	16	17	17	19	A A 55	20	24	46	A A 70	45	44	A A 52	A A 105	A A 77	34	40	32	A A 66	A A 74	20	19	33	18	A A 45
15	A A 88	A A 80	A A 44	A A 78	19	17	31	A A 54	A A 73	A A 123	A A 97	54	A A 94	A A 71	A A 102	A A 56	A A 77	A A 65	A A 92	35	26	22	A A 54	16
16	17	17	17	A A 58	A A 47	19	22	35	32	34	35	G 27	39	39	35	34	31	A A 53	A A 60	26	16	20	23	19
17	20	16	E B 15	18	18	E B 16	22	28	33	36	A A 108	A A 98	42	40	A A 56	40	35	31	31	29	28	E B 15	A A 56	E B 16
18	E B 15	16	E B 14	16	17	16	25	37	37	A A 52	36	38	A A 42	37	A A 62	35	46	34	31	25	17	22	26	E B 14
19	20	15	E B 15	E B 16	E B 15	18	26	G 23	39	44	39	37	38	A A 92	A A 67	A A 48	A A 63	41	A A 116	50	A A 130	20	22	A A 76
20	A A 61	A A 41	22	E B 15	24	21	24	A A 49	A A 66	A A 55	A A 50	A A 50	A A 66	A A 72	A A 67	38	A A 104	A A 81	39	40	21	28	A A 76	A A 61
21	28	17	E B 14	E B 15	E B 15	A A 52	26	A A 61	A A 64	45	42	36	38	42	39	33	30	30	38	17	E B 16	22	E B 15	E B 14
22	E B 15	16	17	16	18	E B 16	22	37	33	36	37	37	44	42	46	44	39	32	A A 58	31	20	25	31	20
23	A A 48	A A 67	A A 46	20	18	21	A A 58	A A 93	A A 72	45	37	G 33	G	G	G 28	37	34	37	24	23	23	30	23	A A 44
24	18	E B 15	E B 15	E B 16	E B 15	20	23	30	33	36	A A 100	A A 66	A A 60	A A 59	A A 74	A A 90	46	A A 60	38	47	31	19	22	A A 53
25	A A 56	20	19	E B 15	E B 15	E B 15	26	A A 67	A A 63	41	A A 87	47	A A 80	44	37	31	A A 65	24	18	23	20	18	E B 15	18
26	E B 15	E B 15	E B 15	E B 14	E B 15	18	32	A A 42	A A 59	A A 75	44	A A 45	A A 108	38	44	44	40	27	42	29	22	E B 15	A A 44	20
27	E B 15	19	21	17	24	21	24	29	44	46	A A 72	39	34	39	37	G 25	A A 46	A A 64	A A 48	17	21	31	18	29
28	24	22	E B 15	16	E B 15	E B 16	23	31	30	33	39	38	A A 61	43	A A 61	A A 97	A A 144	26	20	24	39	E B 15	E B 15	19
29	21	E B 15	E B 15	E B 15	E B 15	E B 15	23	30	34	32	35	G 33	A A 57	50	44	33	33	30	A A 78	45	E B 15	19	19	29
30	23	21	17	E B 14	E B 15	E B 15	21	31	31	34	44	38	38	A A 53	36	42	32	22	34	20	21	E B 15	20	18
31	16	E B 15	E B 15	E B 14	E B 16	E B 15	34	29	40	34	A A 74	36	38	37	44	35	44	40	A A 92	36	22	17	E B 15	E B 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	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	23	19	17	16	16	17	26	38	44	44	44	45	A A 58	44	44	40	40	37	38	31	22	20	22	20
U Q	A A 56	A A 23	A A 22	A A 20	A A 19	20	A A 34	A A 54	A A 72	A A 64	A A 74	A A 59	A A 86	A A 72	A A 67	A A 48	A A 54	A A 66	A A 74	37	31	28	A A 34	A A 52
L Q	E B 17	E B 15	E B 15	E B 15	E B 15	E B 16	23	30	34	36	38	37	39	39	37	35	33	30	27	23	19	E B 18	E B 17	E B 17

AUG. 2009 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	15	15	15	16	15	14	14	14	15	13	17	20	22	18	17	22	13	13	15	15	14	14	15	15
2	15	15	15	15	14	13	14	14	13	16	14	20	18	18	18	15	14	13	14	15	15	14	15	14
3	15	15	15	15	15	14	14	15	14	13	17	18	18	16	15	12	13	15	14	13	14	14	16	15
4	14	15	15	14	14	14	14	12	13	15	15	14	17	17	18	16	14	13	12	14	15	14	16	15
5	15	15	15	14	15	14	15	14	15	12	13	15	20	24	17	15	15	15	14	15	15	14	14	15
6	15	15	16	15	15	14	14	12	12	C	15	17	18	20	18	19	14	15	14	14	14	14	16	15
7	15	15	15	14	14	15	15	15	12	14	16	16	16	12	15	14	14	12	14	14	15	16	15	16
8	15	15	15	15	14	14	14	12	14	20	14	25	17	18	15	17	15	15	12	14	15	15	15	15
9	16	15	15	15	15	15	14	14	14	16	14	30	20	20	19	14	14	14	14	14	15	16	15	16
10	16	15	14	15	13	13	14	13	14	12	16	16	21	17	17	12	14	15	14	14	14	14	14	14
11	14	13	14	13	15	14	13	13	14	16	18	16	17	16	12	17	12	13	15	13	15	14	14	14
12	16	15	14	14	14	15	13	13	13	18	16	19	22	18	13	14	16	14	14	12	14	14	14	15
13	15	16	16	15	15	16	14	13	12	13	16	17	25	17	16	15	14	13	13	12	15	15	15	15
14	15	15	15	14	15	15	13	13	14	14	15	16	20	21	15	13	14	13	14	14	13	14	15	15
15	16	15	13	15	16	14	14	13	14	16	16	17	19	16	16	14	14	14	15	14	15	15	15	15
16	15	15	14	15	15	14	14	13	12	16	16	16	18	24	18	14	12	12	14	14	16	14	15	14
17	15	16	15	15	16	16	14	14	15	19	18	17	17	17	18	13	11	14	13	14	15	15	15	16
18	15	15	14	14	15	15	13	14	13	14	13	13	12	16	15	12	12	14	15	14	16	14	14	14
19	15	15	15	16	15	15	14	14	14	14	13	14	18	15	15	13	12	14	15	16	16	15	15	15
20	15	14	15	15	14	14	14	12	15	13	16	16	14	15	17	12	13	14	15	15	15	14	14	15
21	15	14	14	15	15	14	15	14	12	16	18	19	20	16	15	13	13	13	14	14	16	15	15	14
22	15	15	15	16	14	16	14	14	14	14	16	15	17	19	18	19	15	13	14	15	14	16	14	14
23	15	15	15	15	15	15	14	16	14	13	14	18	28	18	18	16	14	14	12	15	15	14	14	13
24	14	15	15	16	15	14	14	13	12	14	17	17	21	20	17	14	13	12	13	15	15	16	14	15
25	15	15	14	15	15	15	14	14	15	16	17	23	20	18	17	15	15	13	15	14	16	15	14	14
26	15	15	15	14	15	14	16	12	13	18	16	17	20	17	16	15	14	14	14	15	15	14	15	15
27	15	15	15	15	14	14	14	13	12	14	18	17	19	12	14	14	14	12	15	15	14	15	14	16
28	15	15	15	15	14	16	14	14	12	13	15	13	17	12	16	13	15	14	14	15	15	15	15	16
29	15	15	15	15	15	15	13	14	12	12	16	16	17	18	15	12	15	14	14	13	15	14	15	15
30	15	14	14	14	15	15	14	13	13	13	12	16	18	15	15	14	13	13	14	15	15	15	14	15
31	14	15	15	14	16	15	15	14	13	13	15	18	15	16	17	14	13	13	14	14	14	15	16	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	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	14	14	14	13	14	16	17	18	17	16	14	14	14	14	14	15	14	15	15
U Q	15	15	15	15	15	15	14	14	14	16	17	18	20	18	18	15	14	14	15	15	15	15	15	15
L Q	15	15	14	14	14	14	14	13	12	13	14	16	17	16	15	13	13	13	14	14	14	14	14	14

AUG. 2009 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	A	F	F	F	F	324	358	363	382	365	306	A	A	A	341	A	342	325	333	340	F	F	F	A
2	F	357	A	A	313	364	A	393	A	A	359	A	A	A	319	326	319	347	326	334	372	333	334	A
3	A	A	325	308	340	344	A	342	368	A	A	A	A	A	A	327	320	321	322	A	317	F	F	F
4	A	A	A	A	A	A	303	A	A	A	356	337	A	A	A	323	333	325	A	332	363	333	F	A
5	F	F	F	F	F	A	A	A	A	345	A	A	A	A	320	A	305	A	A	A	A	341	A	F
6	A	321	325	382	F	339	A	328	A	C	349	A	310	287	287	301	321	A	305	319	348	352	299	306
7	340	310	311	340	355	341	376	362	362	A	A	A	276	243	312	326	A	A	334	314	326	F	F	F
8	393	328	A	A	F	343	359	325	A	A	367	335	293	324	A	323	340	338	347	338	352	336	318	328
9	A	F	F	A	322	355	331	A	A	363	A	A	342	338	300	309	A	A	A	361	362	A	F	F
10	F	F	F	F	F	346	A	A	A	349	338	A	A	A	A	339	A	A	352	329	346	326	328	A
11	A	323	307	350	A	356	378	345	A	A	A	A	A	A	A	305	330	347	345	351	362	F	A	A
12	A	A	A	A	A	361	A	A	314	300	340	331	A	A	316	A	346	A	329	310	341	333	F	F
13	F	F	323	F	F	338	322	358	R	310	338	367	A	288	297	336	353	322	335	330	328	335	A	A
14	333	348	316	328	A	343	368	389	A	351	325	A	A	A	324	341	338	A	A	339	352	359	310	A
15	A	A	A	A	364	345	313	A	A	A	A	370	A	A	A	A	A	A	A	315	346	F	A	343
16	365	326	317	A	A	F	315	365	368	287	347	359	R 313	303	350	321	312	A	A	325	334	369	360	342
17	335	317	335	320	335	330	341	338	391	354	A	A	319	306	A	326	282	317	325	329	351	391	A	320
18	305	310	F	333	362	345	331	372	389	A	357	379	A	300	A	317	337	340	327	322	344	364	337	349
19	320	315	328	335	334	365	344	362	359	359	334	R 256	366	A	A	A	A	324	A	343	A	324	F	A
20	A	A	F	F	F	347	369	A	A	A	A	A	A	A	A	306	A	A	327	330	335	F	A	A
21	F	F	F	F	323	A	318	A	A	365	353	327	298	296	326	342	336	354	327	326	329	325	347	309
22	324	328	317	339	337	360	343	350	377	356	311	321	294	309	322	330	313	331	A	328	340	331	F	F
23	A	A	A	345	326	332	A	A	A	366	352	315	R 324	323	297	314	323	325	336	340	325	335	F	A
24	323	340	F	342	F	366	380	370	364	326	A	A	A	A	A	A	346	A	347	302	303	F	383	A
25	A	330	320	304	309	327	323	A	A	337	A	307	A	306	326	318	A	343	336	320	320	341	360	368
26	329	334	337	318	339	334	355	A	A	A	385	A	A	312	336	324	318	328	312	328	365	363	A	F
27	F	319	311	320	315	352	349	352	378	384	A	327	353	340	321	328	A	A	A	331	F	F	F	366
28	331	317	312	306	309	317	353	391	364	306	342	337	A	302	A	A	A	337	358	330	348	327	F	F
29	F	F	308	F	331	342	342	347	373	387	315	349	A	337	332	354	337	338	A	326	344	333	341	F
30	F	328	341	330	328	316	374	359	385	390	380	334	315	A	291	314	333	336	338	305	317	367	375	309
31	315	330	321	305	317	365	397	366	382	381	A	312	301	307	308	323	331	333	A	340	346	F	315	326
	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	18	17	17	18	27	24	20	15	20	19	17	13	17	19	24	22	19	20	29	27	21	13	11
MED	330	327	320	330	330	344	346	360	373	355	347	334	313	306	320	324	332	333	334	329	344	335	337	328
U Q	338	330	326	341	339	356	368	368	382	366	357	354	333	324	326	329	338	340	342	338	352	361	360	349
L Q	322	317	312	313	317	334	327	346	364	332	334	318	296	298	300	316	319	325	326	321	328	332	316	309

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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							A	382	420	418	UL456	A	A	A	A	A	A	UL389	A					
2							A	A	A	A	A	A	A	A	A	A	A	A	L					
3							A	396		A	A	A	A	A	A	A	A	A	A					
4						A	365	A	A	A	UL417	426	A	A	A	A	420	382	A					
5						A	A	A	A	A	A	A	A	A	A	A	384	A	A					
6							A	A	A	C	A	A	A	UL452	UL382	A	A	A	A					
7								A	UL417	A	A	A	UL384	UL414	UL359	A	A	A	A					
8								A	A	A	406	UL423	A	A	A	UL397	A	UL370	A					
9							A	A	A	A	A	A	A	A	A	A	A	A	A					
10							A	A	A	A	A	A	A	A	A	385	A	A	A					
11								A	A	A	A	A	A	A	A	A	382	L						
12					A		A	A	A	A	A	A	A	A	A	A	A	A	A					
13							UL350	A	UL416	UL439	429	A	A	UL436	UL407	366	384	A	L					
14							L	A	A	A	A	A	A	A	UL380	A	UL366	A	A					
15		A					A	A	A	A	A	A	A	A	A	A	A	A	A					
16							378	A	403	UL448	438	429	424	A	397	UL390	380	A	A					
17							UL363	UL395	426	427	A	A	A	A	A	A	366	UL359	A					
18							UL378	A	A	A	UL411	A	A	UL400	A	UL400	A	A	A					
19								UL420	A	A	A	UL433	UL414	A	A	A	A	A	A					
20								A	A	A	A	A	A	A	A	A	A	A	A					
21						A	UL358	A	A	A	A	UL437	UL435	A	A	367	372	A	A					
22							L	A	407	UL415	UL447	414	A	A	A	A	A	A	A					
23						A	A	A	A	A	A	UL410	R405	431	UL426	A	362	A	A					
24								UL383	358	421	A	A	A	A	A	A	A	A	A					
25							376	A	A	A	A	A	A	A	412	UL393	A	382						
26							A	A	A	A	A	A	A	UL402	A	A	A	365	A					
27								L	A	A	A	444	433	394	400	UL388	A	A	A					
28							L	UL390	UL383	UL411	A	A	A	A	A	A	A	L						
29								L	386	415	438	416	A	A	A	373	A	A	A					
30								A	394	440	A	UL419	UL416	A	UL423	A	369	L	A					
31									A	411	A	UL410	UL453	UL384	A	379	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							7	6	10	10	8	11	8	8	9	10	10	6						
MED							UL365	UL392	405	420	434	UL423	UL420	UL408	UL400	386	376	376						
U Q							378	396	417	UL439	UL442	UL433	UL434	UL434	UL418	UL393	384	382						
L Q							UL358	383	386	415	UL414	UL414	UL410	UL397	UL381	373	366	365						

AUG. 2009 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 h′F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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							256	262	236	292	374	A	A	A	302	A	274	306	264					
2							A	234	A	A	260	A	A	A	E A 348	312	E A 322	264	290					
3							A	284		A	A	A	A	A	A	306	E A 350	310	E A 274					
4						A	378	A	A	A	256	298	A	A	A	340	296	292	A					
5						A	A	A	A	E A 304	A	A	A	A	342	A	352	A	A					
6							A	E A 302	A	C	294	A	E A 368	424	414	356	E A 330	A	288					
7								268	272	A	A	A	444	558	342	E A 318	A	A	E A 302					
8								310	A	A	274	322	E A 406	316	A	316	274	288	258					
9							E A 296	A	A	256	A	A	326	318	E A 382	E A 366	A	A	A					
10							A	A	A	272	296	A	A	A	A	304	A	A	E A 250					
11								284	A	A	A	A	A	A	A	E A 358	304	272						
12					A		A	A	360	388	314	322	A	A	E A 334	A	276	A	262					
13							342	250	R	352	296	248	A	424	408	306	266	282	274					
14							264	E A 248	A	E A 286	320	A	A	A	312	284	290	A	A					
15		A					E A 320	A	A	A	A	E A 260	A	A	A	A	A	A	A					
16							328	252	228	372	282	276	356	E A 328	286	350	374	A	A					
17							308	304	236	272	A	A	336	E A 376	A	E A 330	416	364	330					
18							294	244	238	A	304	E A 276	A	386	A	340	E A 312	288	E A 274					
19								272	232	E A 292	E A 322	E A 366	274	A	A	A	A	E A 296	A					
20								A	A	A	A	A	A	A	A	364	A	A	E A 282					
21						A	334	A	A	258	278	322	400	404	312	296	306	260	E A 282					
22							282	E A 252	236	278	372	340	E A 412	364	E A 348	E A 330	334	262	A					
23						E A 312	A	A	A	258	288	342	358	358	402	352	326	E A 308	252					
24								268	288	344	A	A	A	A	A	A	E A 300	A	E A 256					
25							338	A	A	330	A	E A 360	A	E A 376	322	318	A	272						
26							E A 276	A	A	A	260	A	A	362	312	E A 316	E A 342	310	E A 320					
27								268	246	244	A	324	300	310	332	328	A	A	A					
28							274	216	270	318	E A 280	266	A	E A 362	A	A	A	270						
29								274	252	240	356	268	A	E A 338	320	268	290	284	A					
30								238	234	230	E A 272	E A 350	364	A	406	324	278	270	252					
31									238	242	A	360	400	354	344	302	268	268	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	14	19	14	20	19	17	13	17	19	24	22	19	17					
MED						E A 312	298	265	238	274	291	U 299	U 350	360	332	318	U 294	278	266					
U Q							334	284	270	324	320	E A 346	403	395	382	345	334	306	289					
L Q							276	248	236	257	274	272	331	333	312	306	278	270	257					

AUG. 2009 h′F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 h′F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	A	E B 284	E B 272	E B 244	E A 250	E A 244	A	206	200	182	178	A	A	A	A	A	A	206	A	E A 282	212	E A 236	218	A
2	E A 248	E A 292	A	A	E A 276	218	A	A	A	A	A	A	A	A	A	A	A	A	212	224	206	E A 230	E A 266	A
3	A	A	E A 260	E B 278	E A 230	E A 264	A	206	E A 236	A	A	A	A	A	A	A	A	A	A	A	248	E A 260	230	E B 240
4	A	A	A	A	A	A	238	A	A	A	192	192	A	A	A	A	190	220	A	E A 242	228	E B 250	E A 238	A
5	E A 286	E B 252	E A 274	E A 252	218	A	A	A	A	A	A	A	A	A	A	A	222	A	A	A	A	222	A	E A 270
6	A	E A 282	E A 302	220	E B 276	E A 250	A	A	A	C	A	A	A	178	E A 234	A	A	A	A	E A 254	228	200	E B 270	E A 318
7	224	E A 256	E B 274	E A 250	224	234	216	A	202	A	A	A	E A 244	212	E A 250	A	A	A	A	E A 280	E A 266	E A 258	E A 256	228
8	210	E A 306	A	A	E B 266	206	220	A	A	A	212	200	A	A	A	212	A	224	A	218	226	214	E B 252	E B 238
9	A	E A 312	E A 304	A	E B 288	E A 242	A	A	A	A	A	A	A	A	A	A	A	A	A	220	210	A	E A 260	E B 262
10	212	E B 244	E B 272	E B 258	E A 260	232	A	A	A	A	A	A	A	A	A	188	A	A	A	E A 276	222	E A 236	228	A
11	A	E A 260	E A 300	E A 230	A	220	E A 250	A	A	A	A	A	A	A	A	A	208	E A 236	208	224	222	E A 310	A	A
12	A	A	A	A	A	210	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 254	E A 234	218	E A 254	E A 272
13	E A 284	E A 286	E A 286	222	218	228	226	A	206	174	188	A	A	188	208	206	216	A	220	E A 230	212	228	A	A
14	E A 252	E A 256	E A 288	E A 266	A	E A 244	218	A	A	A	A	A	A	A	218	A	228	A	A	228	206	E A 244	E A 264	A
15	A	A	A	A	220	222	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 294	226	E A 278	A	214
16	E A 232	E A 300	E A 244	A	A	E A 272	216	A	198	180	178	170	200	A	196	208	216	A	A	E A 264	E A 230	216	212	E A 240
17	E A 262	E A 258	E B 274	E A 280	E A 248	E A 240	198	204	190	186	A	A	A	A	A	A	E A 236	238	A	E A 260	228	188	A	E B 276
18	E B 272	E A 262	E B 280	E A 252	E A 242	230	214	A	A	A	200	A	A	222	A	210	A	A	A	E A 266	218	202	228	216
19	E A 290	E B 266	E B 260	E B 262	E B 256	226	198	202	A	A	A	200	210	A	A	A	A	A	A	E A 268	A	E A 242	E A 236	A
20	A	A	E A 304	E B 282	E A 258	E A 260	206	A	A	A	A	A	A	A	A	A	A	A	A	E A 260	216	220	A	A
21	E A 300	E A 294	E B 254	E B 262	E B 270	A	224	A	A	A	A	212	204	A	A	226	214	A	A	234	228	E A 248	214	E B 246
22	E B 276	E A 254	E A 314	E A 230	E A 256	210	212	A	202	200	184	212	A	A	A	A	A	A	A	E A 252	214	E A 232	E A 230	E A 244
23	A	A	A	E A 276	E A 284	A	A	A	A	A	A	188	204	194	202	A	E A 256	A	A	E A 242	222	E A 238	232	A
24	E A 254	E B 244	E B 256	E B 236	214	230	214	216	216	198	A	A	A	A	A	A	A	A	A	E A 302	E A 274	224	210	A
25	A	E A 282	E A 288	E B 258	E B 252	E B 244	228	A	A	A	A	A	A	A	216	182	A	208	212	E A 250	E A 240	208	202	212
26	E B 252	E B 240	E B 234	E B 252	E B 230	E A 264	A	A	A	A	A	A	A	216	A	A	A	210	A	E A 250	214	192	A	E A 314
27	E B 296	E A 240	E A 288	E A 274	E A 302	E A 236	204	210	A	A	A	186	186	E A 236	220	206	A	A	A	E A 236	238	E A 290	236	E A 226
28	E A 270	E A 292	E B 268	E A 264	E B 260	E B 280	222	206	198	184	A	A	A	A	A	A	A	218	218	E A 238	E A 236	206	E B 276	E A 288
29	E A 264	196	E B 286	E B 280	E B 240	E B 236	210	212	214	198	196	194	A	A	A	216	A	A	A	E A 282	202	214	222	E A 306
30	E A 268	E A 268	E A 242	E B 252	E B 268	E B 264	200	A	194	180	A	202	192	A	200	A	224	212	A	E A 258	E A 244	202	184	E A 322
31	E A 282	E B 260	E B 268	E B 300	E B 282	216	190	214	A	202	A	198	198	E A 234	A	224	A	A	A	E A 234	212	228	214	E B 236
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	25	25	24	26	27	20	9	11	10	8	11	8	8	9	10	10	9	5	29	29	30	24	20
MED	E A 266	E A 262	E A 274	E 258	E 256	E 236	214	206	201	185	190	198	200	U 202	209	209	217	215	212	E A 252	220	U 209	U 218	E 245
U Q	E A 283	E A 289	E A 288	E A E B 275	E B 270	E B E A 250	223	213	214	198	198	202	207	E A 228	E A 227	216	E A 228	230	219	E A 267	E A 235	E A 244	E A 255	E A 282
L Q	250	E B 253	E B 260	E 247	230	222	205	205	198	180	181	188	195	191	201	206	214	209	210	234	213	214	216	232

AUG. 2009 h′F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 h′E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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						B	A	A	A	A	A	A	A	A	A	116	114	114	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	112					
3						B	A	A	A	A	A	A	A	A	A	116	114	110	A					
4						B	A	A	A	A	116	A	A	118	A	118	120	A	A					
5						B	A	A	A	A	A	A	112	116	A	A	120	A	B					
6						B	A	A	A	C	A	A	A	A	116	A	A	A	A					
7						B	116	A	A	A	A	A	A	A	A	A	A	A	A					
8						B	118	A	A	A	A	114	116	116	A	118	114	A	B					
9						B	114	A	A	A	A	A	112	116	116	114	A	A	B					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
11							124	A	A	A	A	A	A	A	A	A	118	118	A					
12					A		A	A	A	A	A	A	A	A	A	A	A	A	B					
13						B	110	A	A	A	A	A	A	120	120	114	112	114	B					
14							110	A	A	A	A	A	A	A	A	A	114	A	A					
15		A				B	A	A	A	A	A	A	A	A	A	A	114	A	A					
16						B	A	A	A	A	A	114	114	122	116	112	112	A	A					
17						B	108	A	A	A	A	A	A	A	A	A	A	116	B					
18							120	A	A	A	A	A	A	116	A	114	118	118	B					
19						B	A	110	118	A	A	A	A	A	A	114	A	A	B					
20						B	A	A	A	A	A	A	A	A	A	A	116	A	A					
21						B	A	A	A	A	A	A	A	A	114	114	114	114	B					
22						B	122	A	A	A	120	118	122	124	120	120	A	A	B					
23						B	A	A	A	A	A	118	124	116	114	114	114	A	B					
24						B	116	118	A	A	A	118	112	A	A	A	A	A	A					
25						B	A	A	A	A	A	A	A	A	A	A	A	114	B					
26						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
27						B	A	A	A	A	A	114	A	110	110	108	112	A	A					
28							124	110	A	A	114	A	A	116	A	A	A	A	B					
29						B	120	118	A	110	A	118	A	A	A	122	118	A	A					
30						B	124	A	A	A	A	A	A	A	A	A	A	A	A					
31						B	B	A	A	A	A	A	120	A	114	114	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							13	4	1	1	3	7	8	11	9	15	16	8	1					
MED							118	114	118	110	116	118	115	116	116	114	114	114	112					
U Q							123	118			120	118	121	120	118	118	118	117						
L Q							112	110			114	114	112	116	114	114	114	114						

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'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	98	96	98	90	96	106	106	102	104	102	102	100	100	100	100	118	118	114	118	106	108	108	106	100
2	150	134	102	102	104	106	102	98	96	100	102	98	98	98	96	100	98	94	126	98	96	106	104	104
3	104	98	102	102	98	118	106	106	98	96	96	100	100	100	96	124	116	114	104	102	106	106	104	102
4	102	94	94	94	96	98	104	100	102	102	116	104	102	118	108	114	116	106	98	98	98	104	104	98
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6	94	114	116	108	112	104	102	100	100	C	98	98	96	98	150	100	98	92	92	90	90	88	88	98
7	98	98	100	104	98	B	116	104	106	102	100	102	102	98	96	92	92	88	88	90	106	102	100	100
8	100	102	100	96	104	B	118	102	98	100	104	132	118	116	108	120	120	108	106	102	100	102	108	100
9	98	100	100	98	98	116	116	104	98	100	100	98	144	124	116	124	104	106	100	96	96	98	98	98
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31	108	116	110	B	B	106	104	102	102	100	98	100	118	102	126	116	104	104	102	100	100	110	94	100
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CNT	31	31	29	29	30	29	31	31	31	30	31	31	30	30	31	31	31	31	31	31	31	30	31	31
MED	100	98	98	98	98	104	106	102	100	100	100	100	100	101	104	106	112	106	100	100	98	100	100	100
U Q	102	102	102	103	104	115	118	106	104	102	102	100	106	114	118	120	116	114	104	102	104	104	104	102
L Q	96	94	94	94	96	97	104	100	98	100	96	96	96	98	96	94	98	102	98	96	94	96	98	98

AUG. 2009 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

AUG. 2009 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0′N LON.139°29.0′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	F4	F4	F3	F2	F2	L3	L4	L2	L2	L2	L2	L2	L3	L3	LC21	CL22	CL22	CL32	CL22	F5	F3	F4	F3	F5
2	FF24	FF23	F3	F4	F2	L3	L4	L3	L3	L2	L2	L3	L3	L3	L3	L2	L3	L4	C2	F2	F3	F4	F6	F6
3	F5	F5	F4	F6	F3	C5	L3	L2	L3	L3	L3	L3	L3	L3	L3	CL22	CL22	CL32	L4	F5	F5	F4	F4	F4
4	F6	F5	F4	F5	F5	L4	L2	L4	L4	L3	L2	L2	L2	CL22	L3	C2	CL22	L2	L4	F4	F5	F3	F4	F6
5	F6	F3	F3	F3	F1	C4	L3	L3	L3	L3	L3	L3	CL22	CL22	L2	L2	CL22	L3	L4	F5	F5	F6	F4	F4
6	F3	FF22	F4	FF32	F2	L2	L4	L3	L3		L2	L2	L2	L2	HL12	L2	L4	L4	L2	F4	F4	F4	F3	F5
7	F5	F3	F2	F2	F3		C3	L4	L2	L3	L3	L2	L2	L2	L3	L3	L4	L4	L5	F6	F5	F6	F5	F4
8	F3	F3	F5	F4	F3		C2	L3	L3	L3	L2	CL11	CL11	CL11	L3	CL22	CL32	L2	L3	F3	F5	F5	F2	F3
9	F5	F6	F4	F4	F3	C3	C2	L5	L4	L3	L3	L3	H1	C2	C2	CL11	L3	L3	L5	F5	F3	L4	F3	F3
10	F4	F2	F2	F2	F2	C2	L5	L3	L3	L3	L3	L3	L3	L2	L3	L2	L3	L4	L3	F3	F3	F3	F2	F5
11	F3	F3	F3	F2	F3	L2	CL32	L3	L4	L3	L3	L3	L3	L3	L3	L3	HL22	CL22	L2	F4	F3	F5	F5	F4
12	F5	F3	F3	F3	F3	L2	L4	L3	L2	L2	L3	L2	L3	L3	L2	L3	L2	L3	L3	F3	F3	F3	F3	F3
13	F3	F3	F3	F2	F1	C1	C3	L2	L2	L2	L2	L2	L3	L2	CL12	L2	CL12	CL22	CL22	FF33	F3	F3	F7	F6
14	F6	F4	F6	F4	F4	L3	C2	L3	L3	L3	L2	L3	L3	L3	L2	L2	CL22	L4	L3	F2	F2	F3	F2	F3
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23	F4	F4	F4	FF34	F2	C5	L4	L4	L3	L3	L2	L2			L2	CL12	C2	L3	L4	F4	F3	F4	F4	F6
24	F3	F2	F2	F3	F2	L3	CL22	CL22	L2	L2	L3	CL22	CL22	L2	L2	L3	L3	L5	L3	F5	F3	F3	F3	F4
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29	F4	F2	F3	F2	F1	L2	C2	CL22	L2	CL12	L2	L2	L2	L3	L2	HL12	CL12	L2	L5	F4	F3	F6	F3	F5
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	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
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

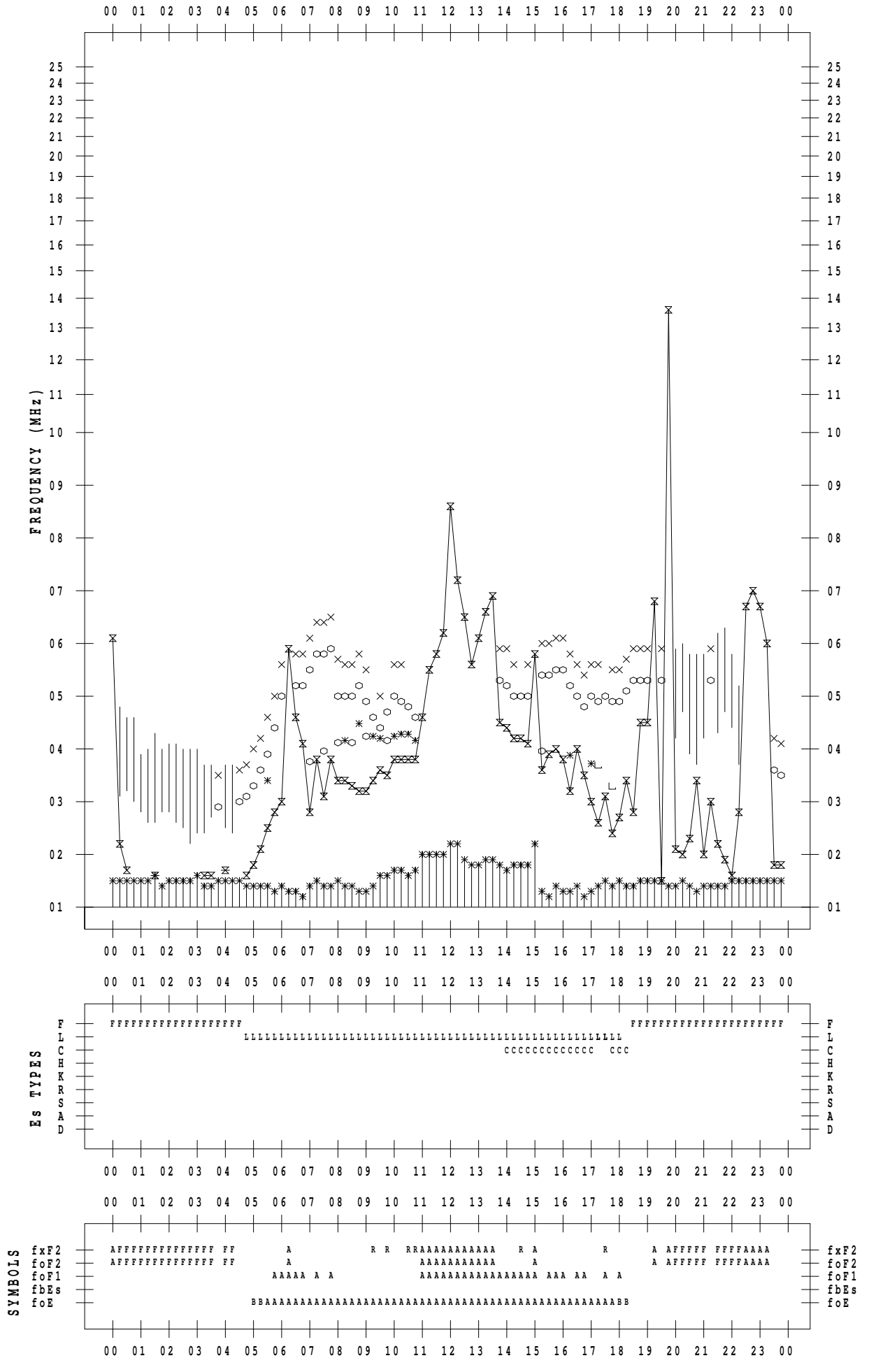
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 1

135 °E MEAN TIME



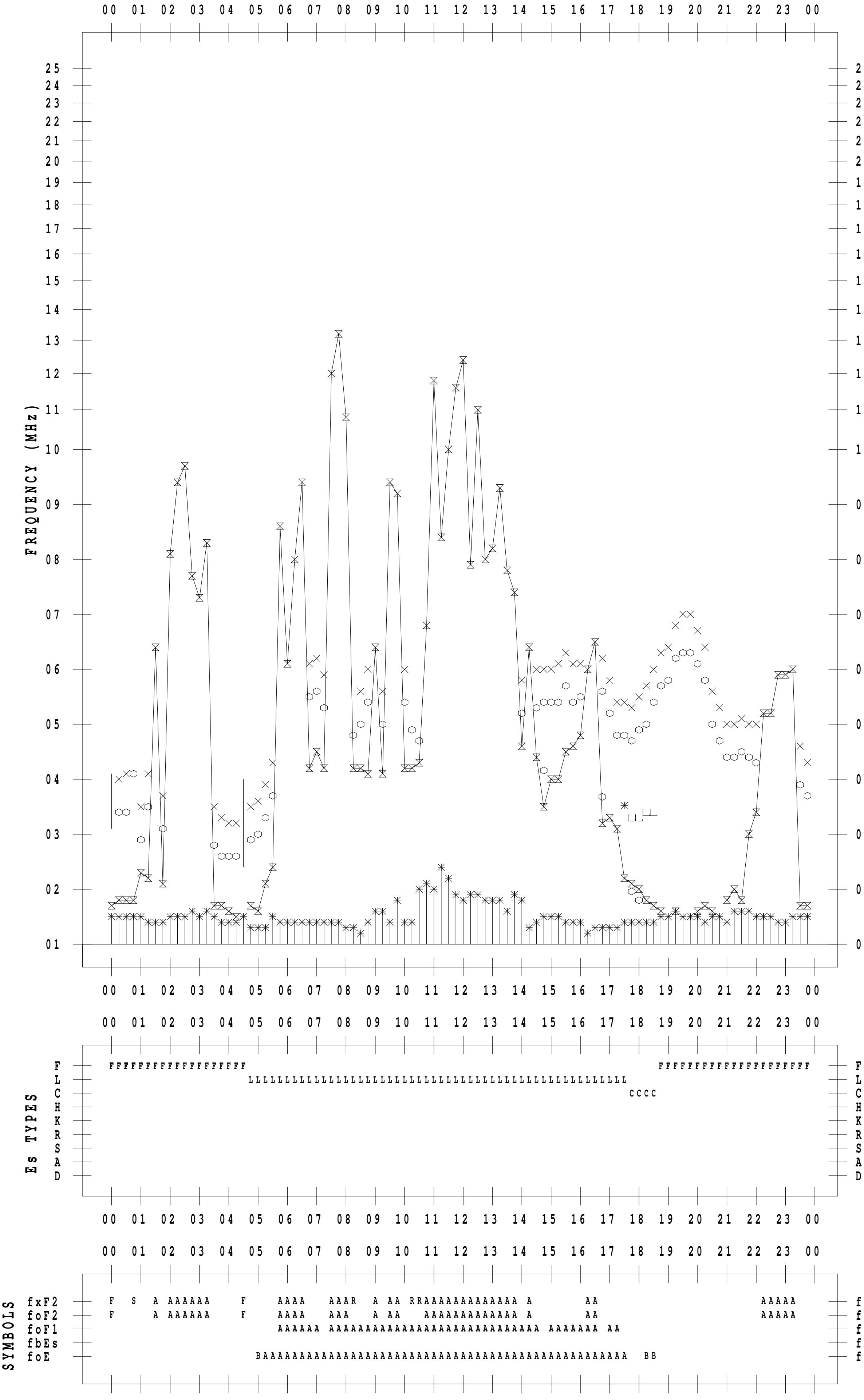
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 2

135 °E MEAN TIME



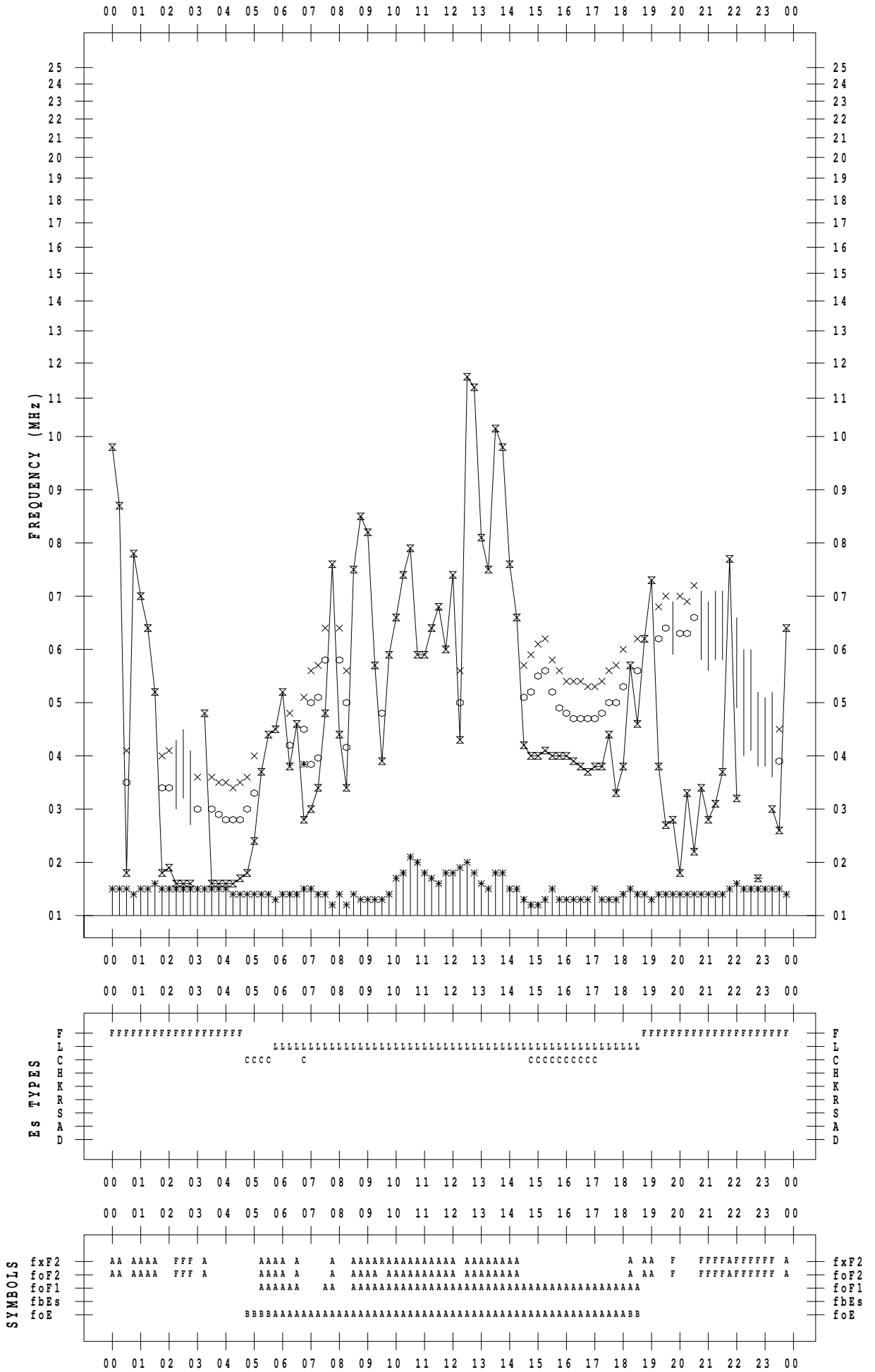
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 3

135 °E MEAN TIME



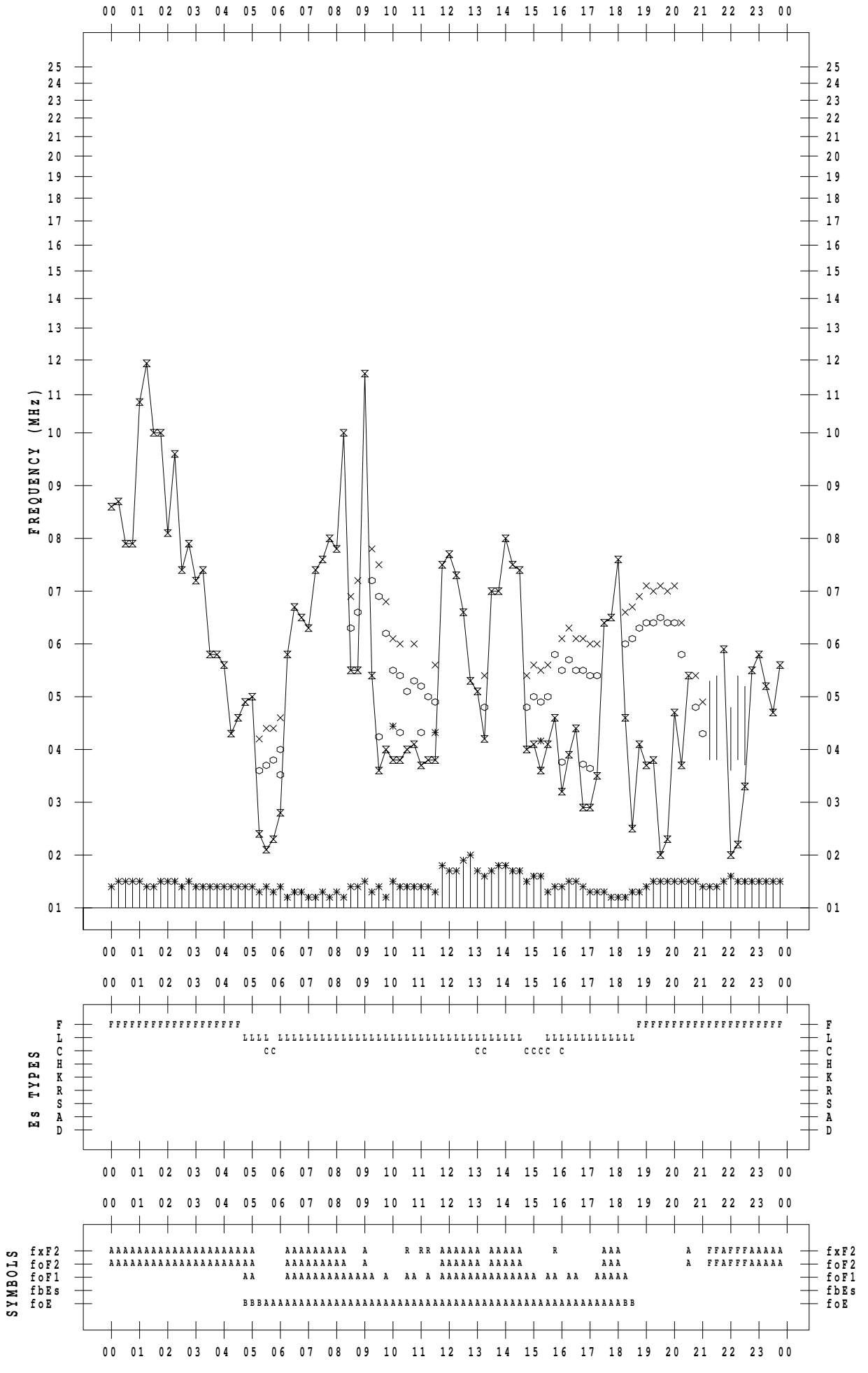
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 4

135 °E MEAN TIME



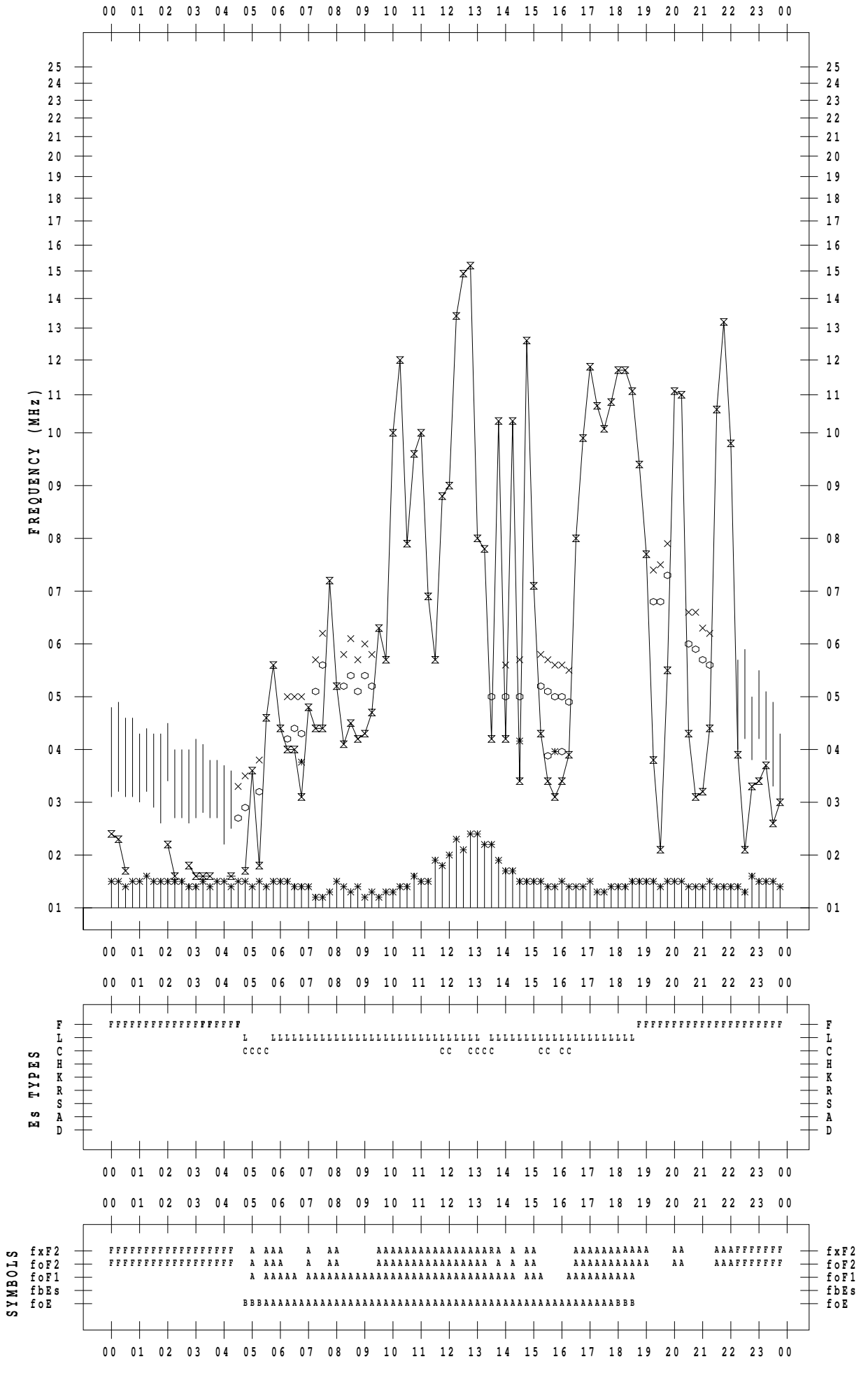
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 5

135 °E MEAN TIME



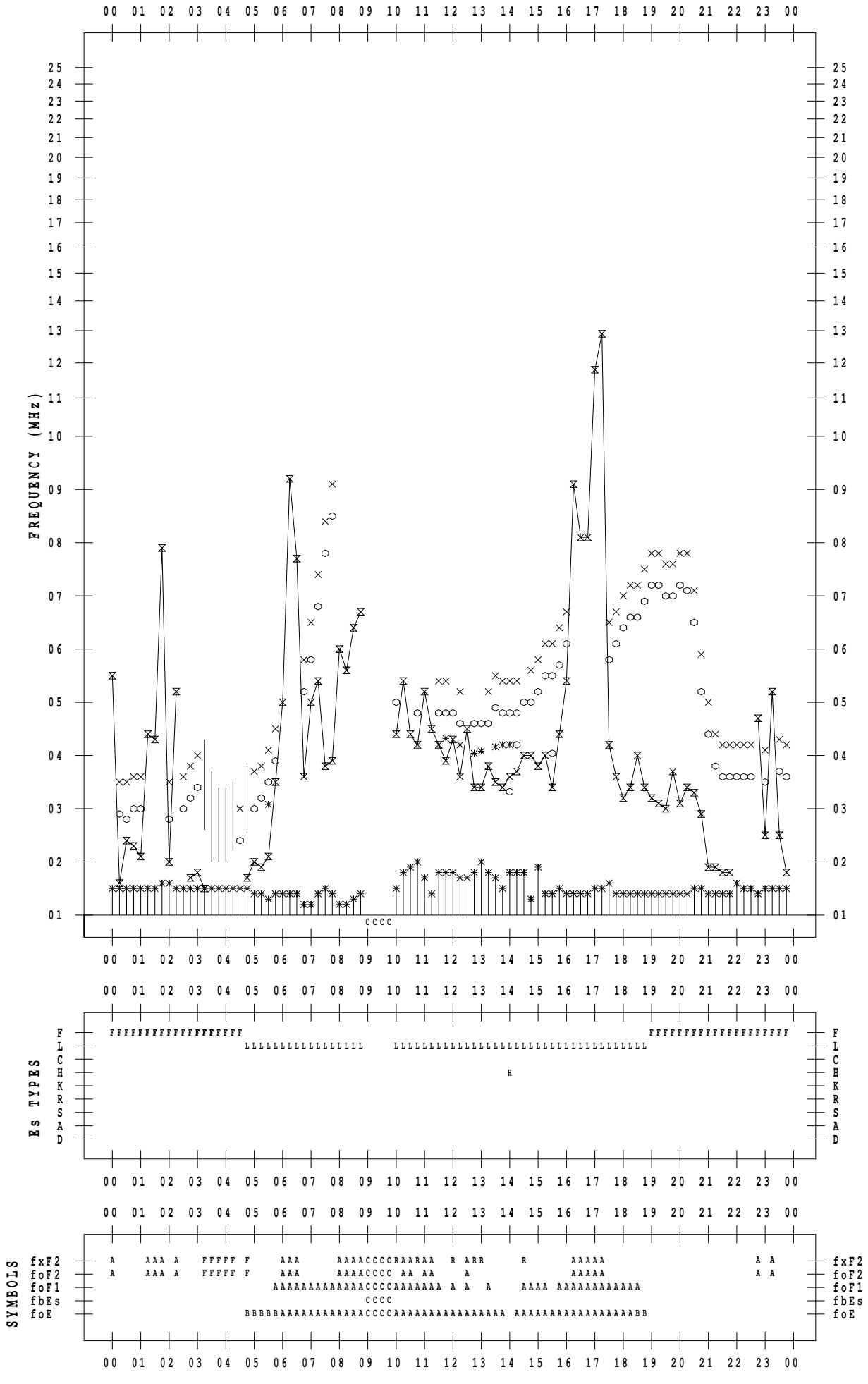
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 6

135 °E MEAN TIME



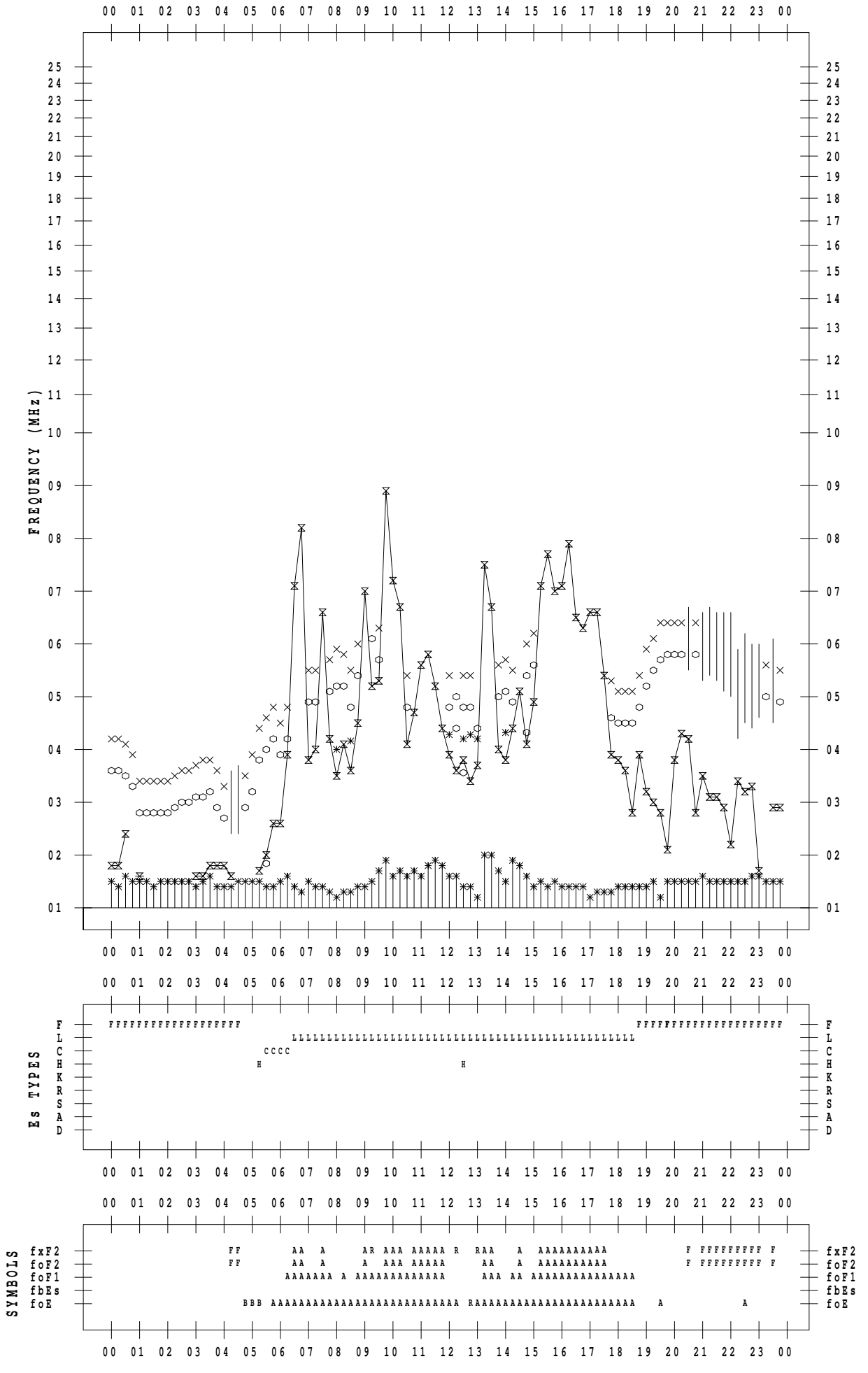
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 7

135 °E MEAN TIME



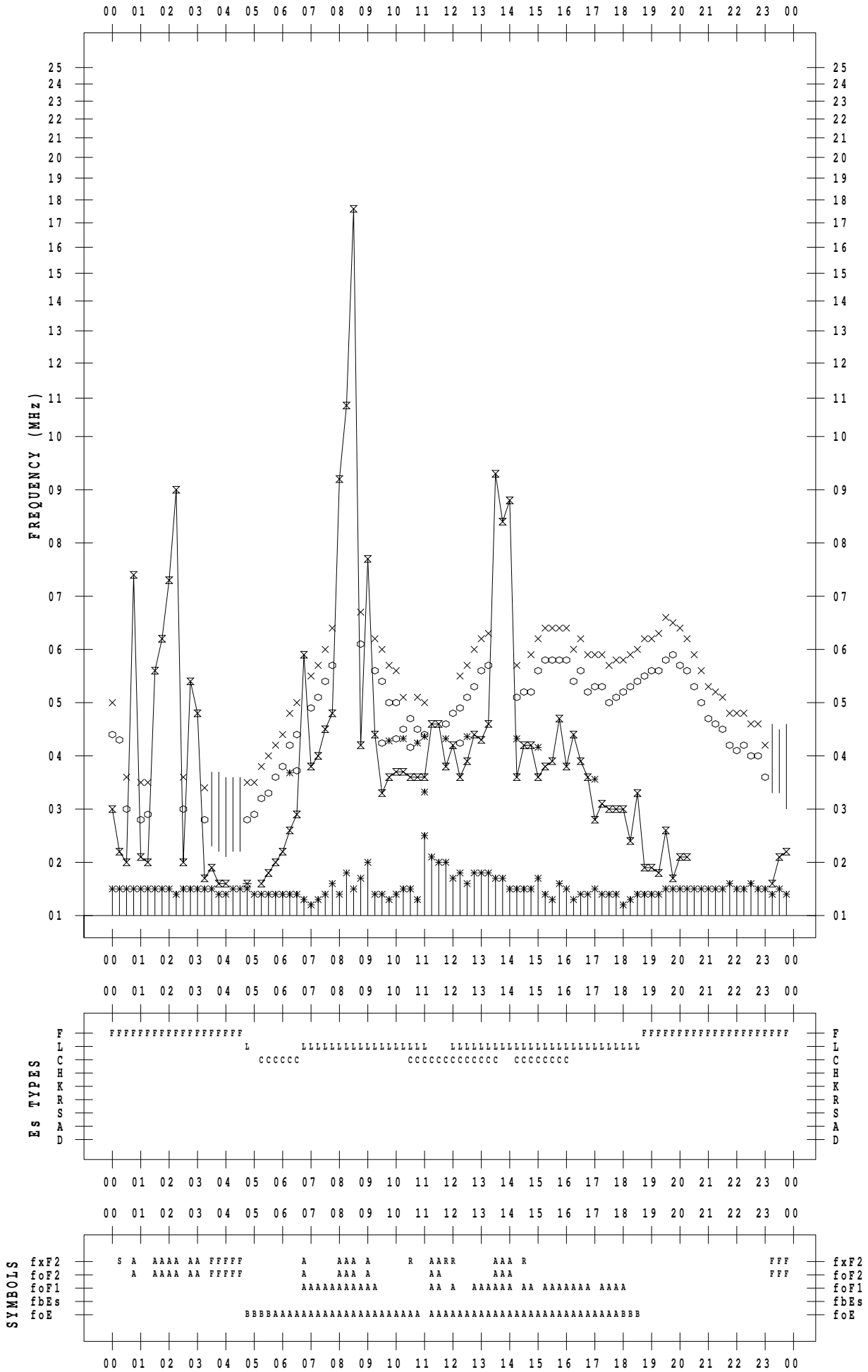
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 8

135 °E MEAN TIME

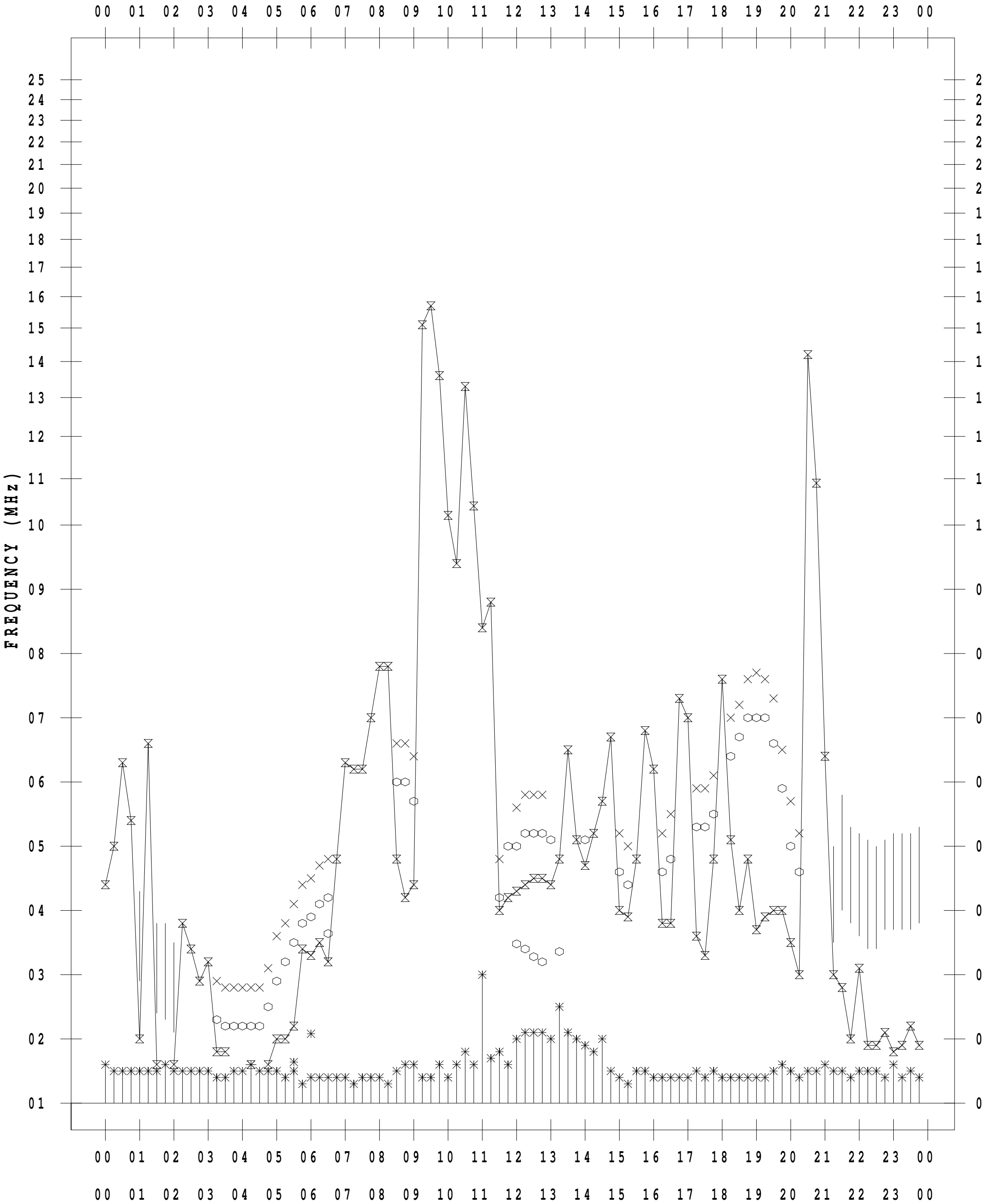


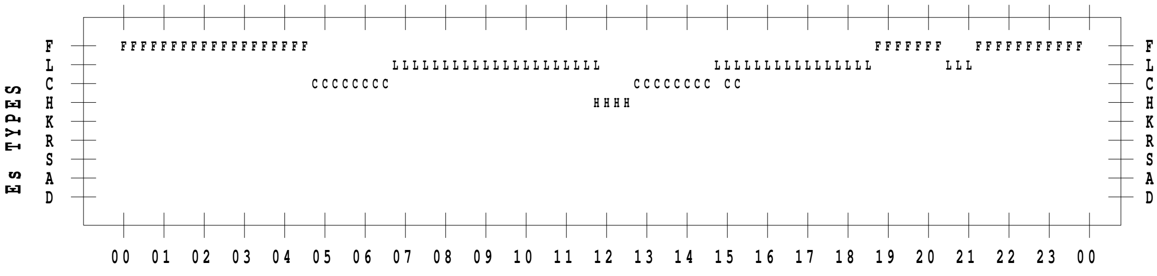
f-PLOT DATA

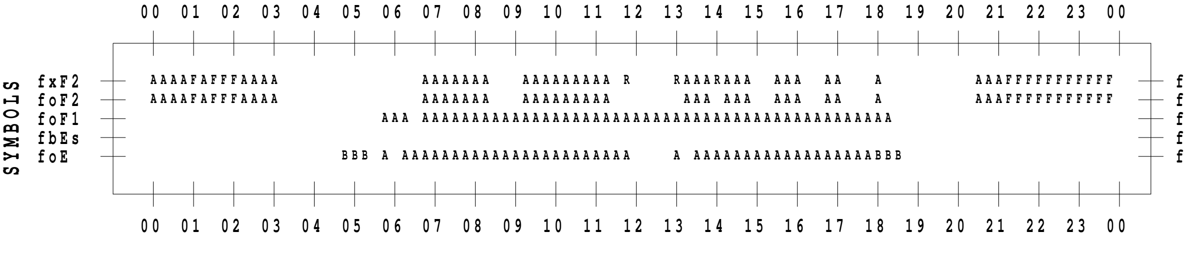
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/ 9







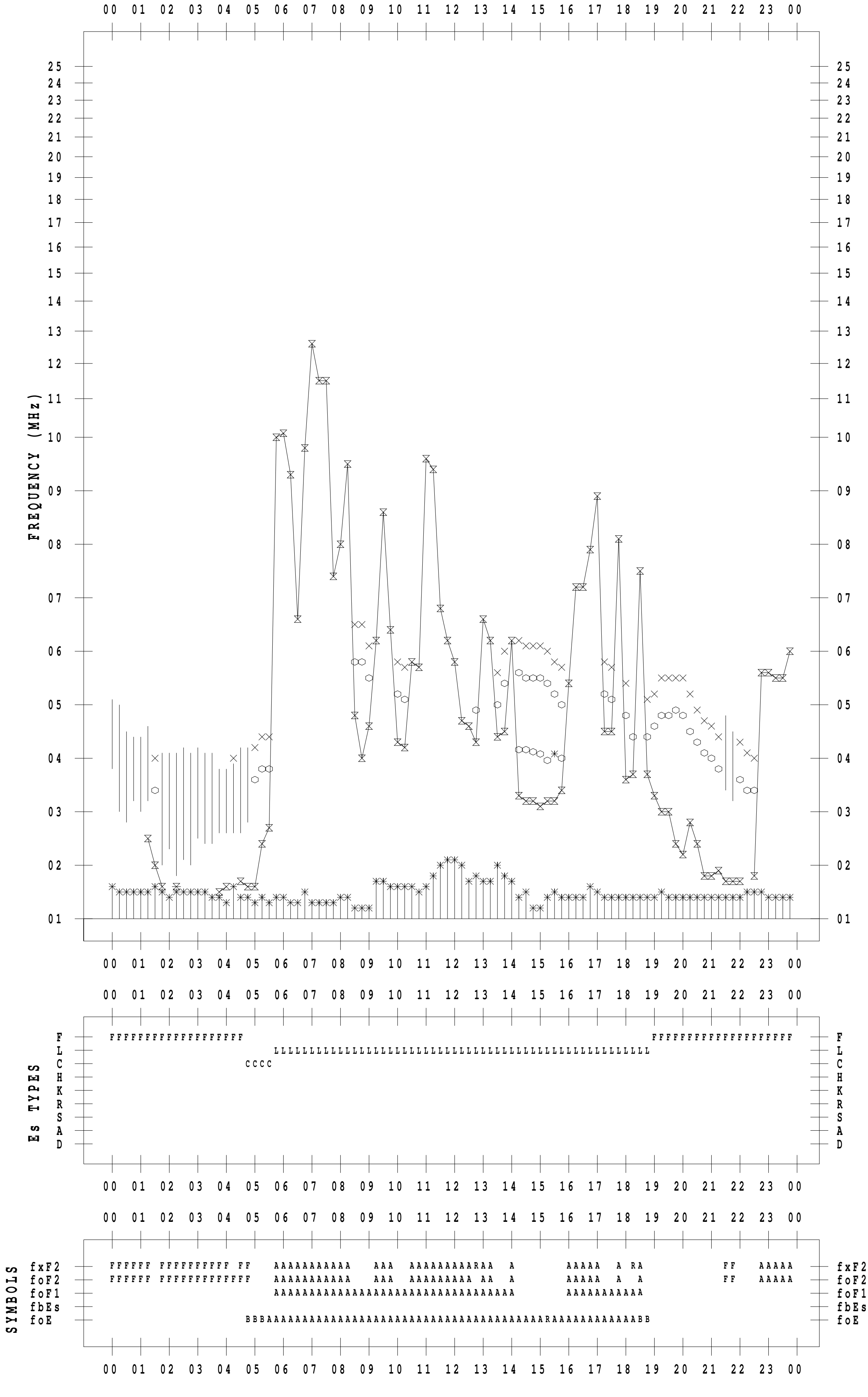
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/10

135 °E MEAN TIME



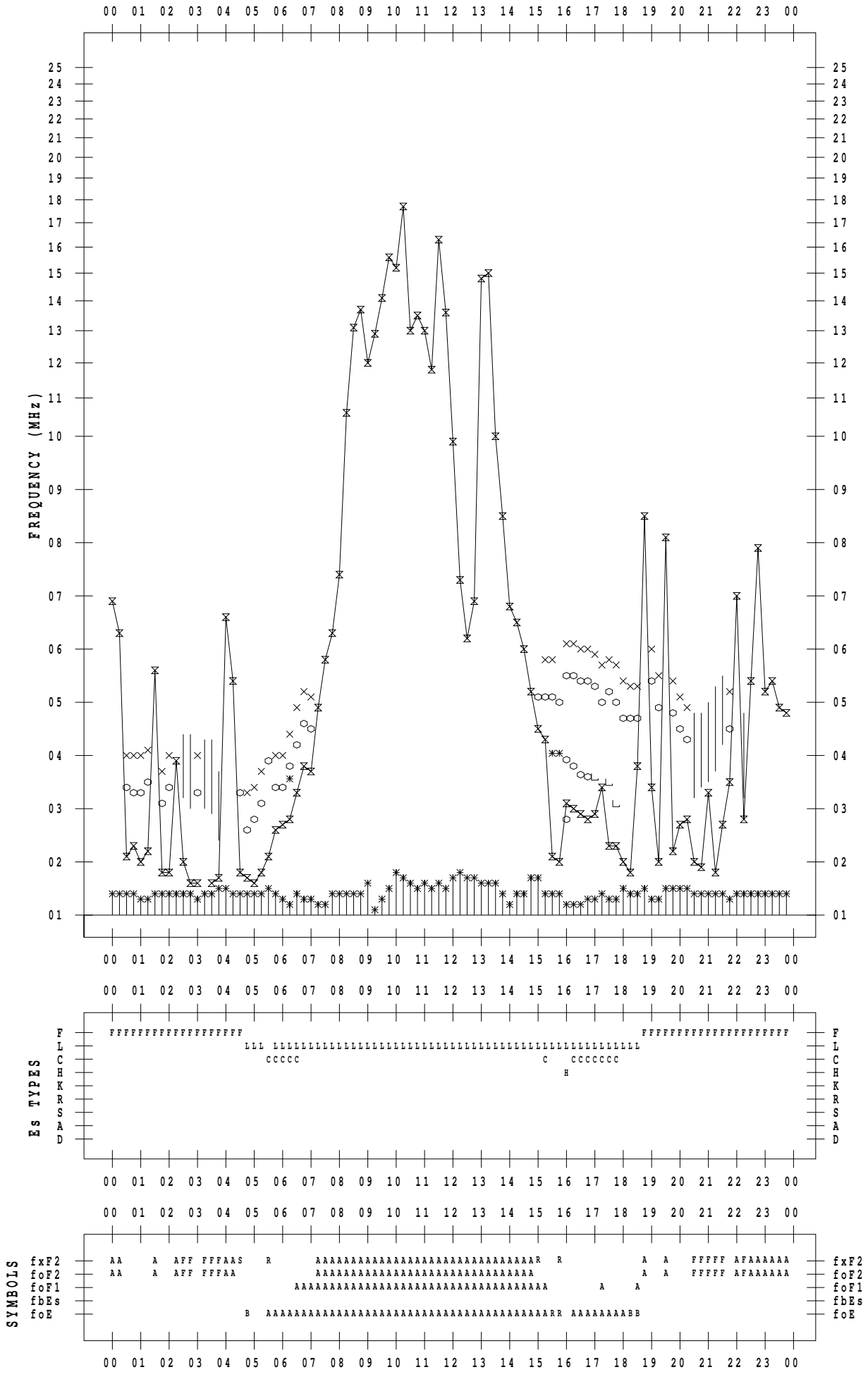
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/11

135 °E MEAN TIME



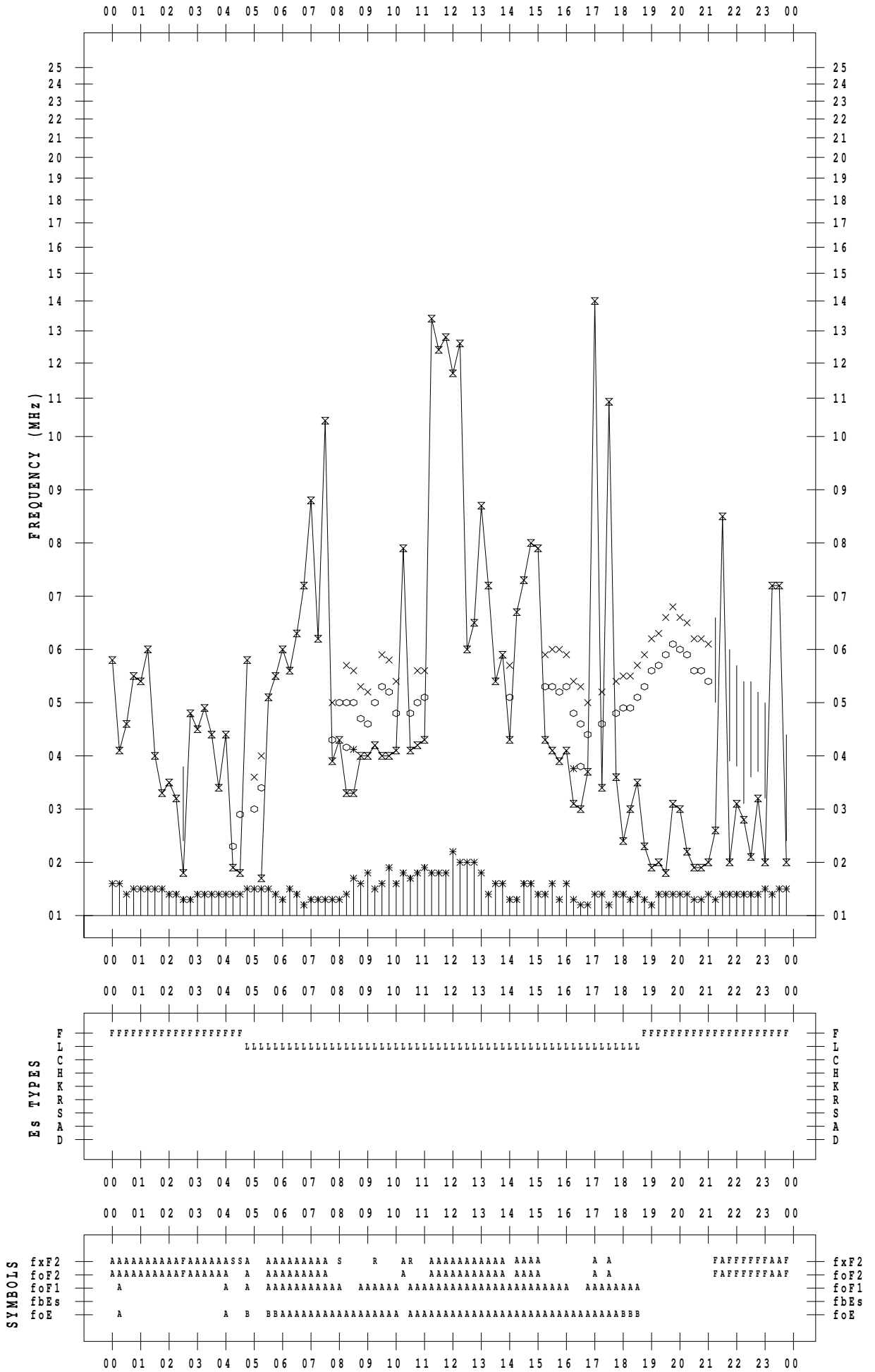
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/12

135 °E MEAN TIME



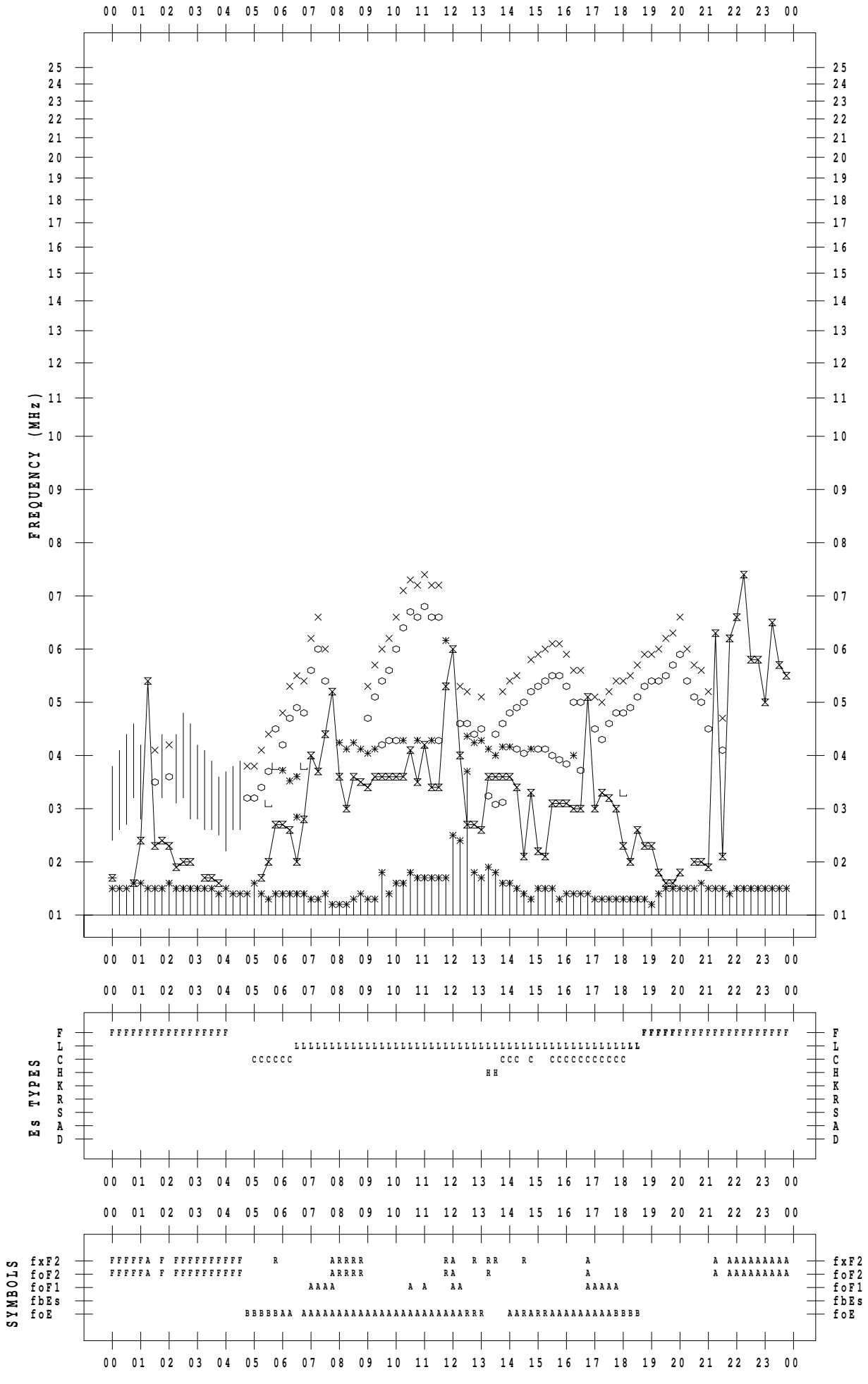
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/13

135 °E MEAN TIME



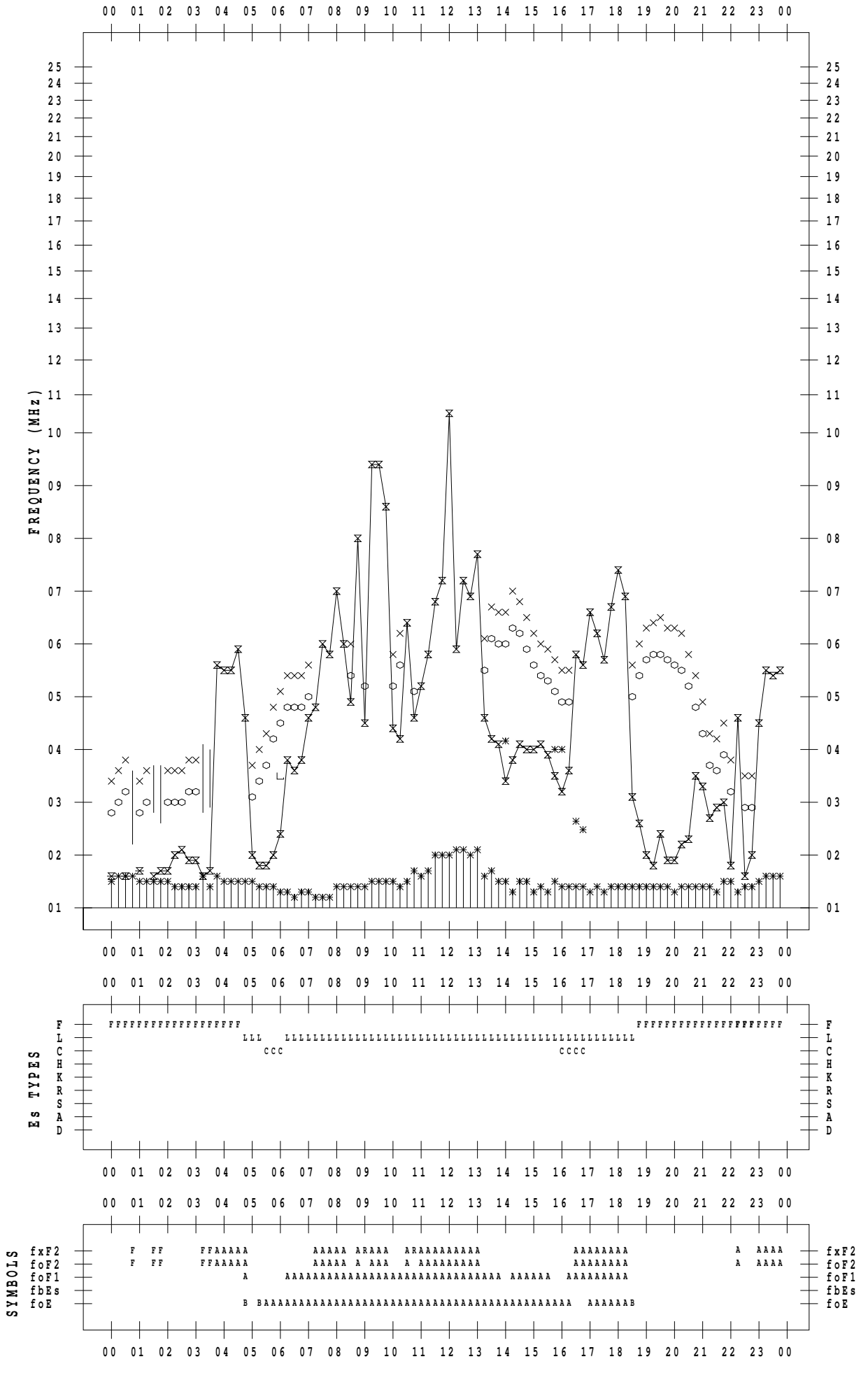
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/14

135 °E MEAN TIME

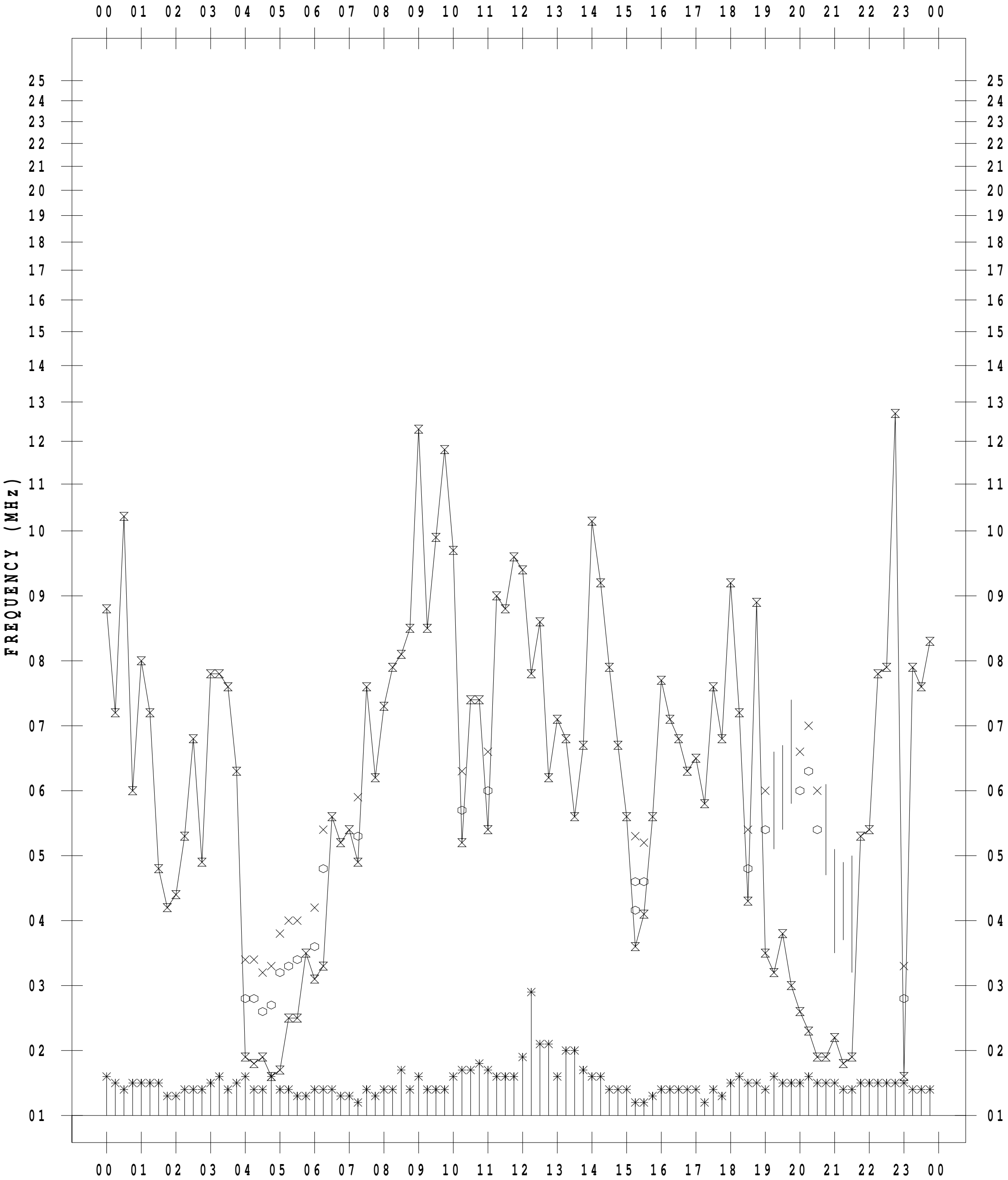


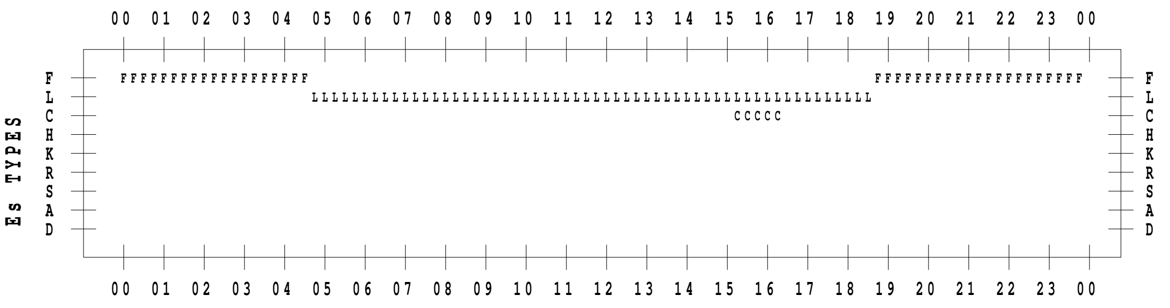
f-PLOT DATA

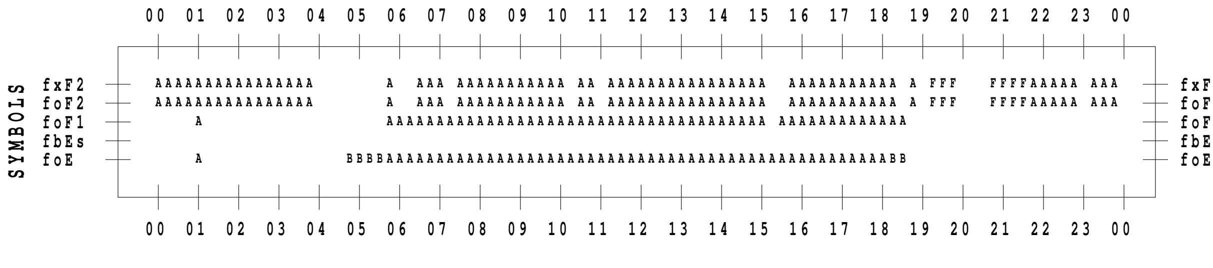
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 8/15

135 °E MEAN TIME







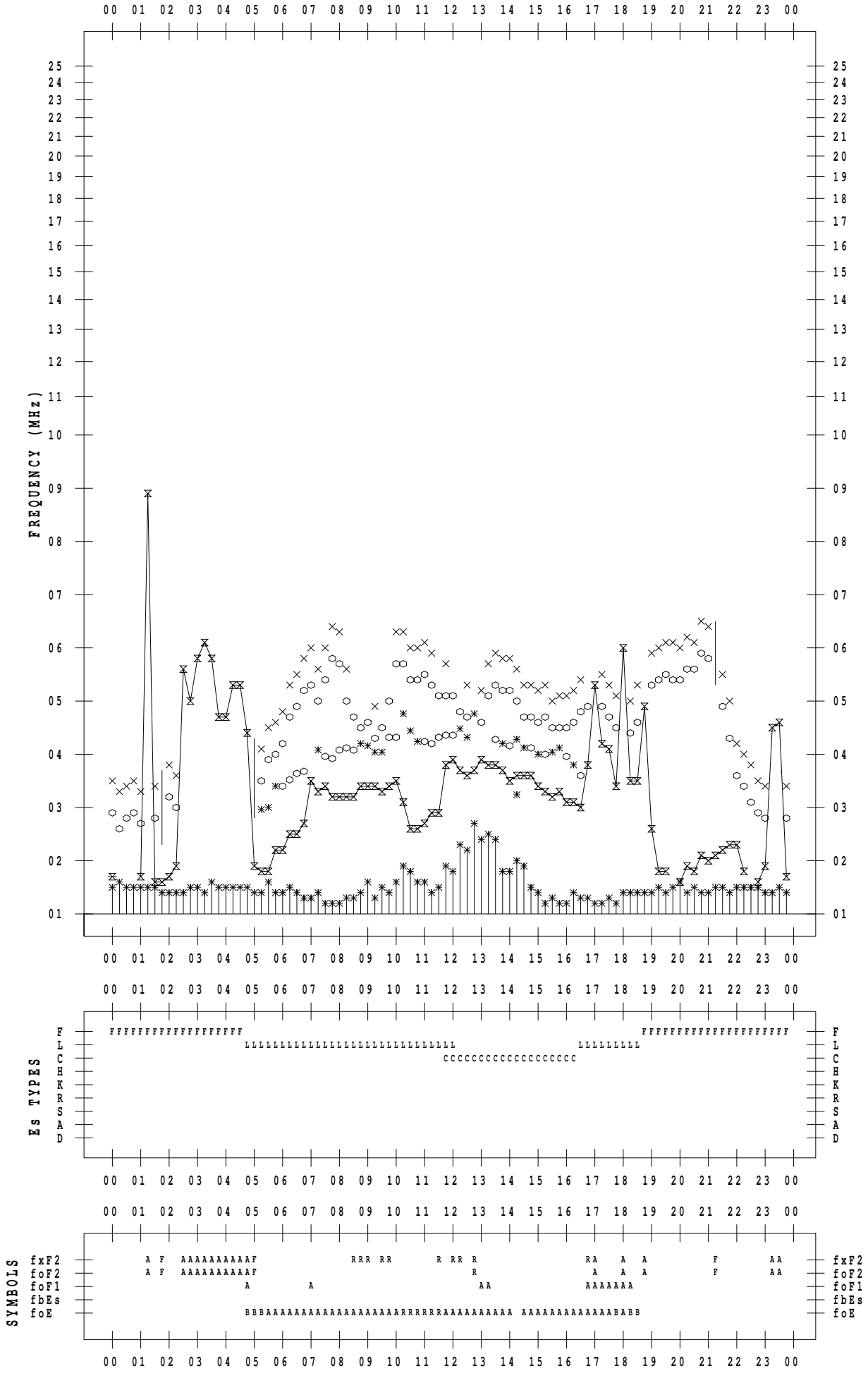
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/16

135 °E MEAN TIME



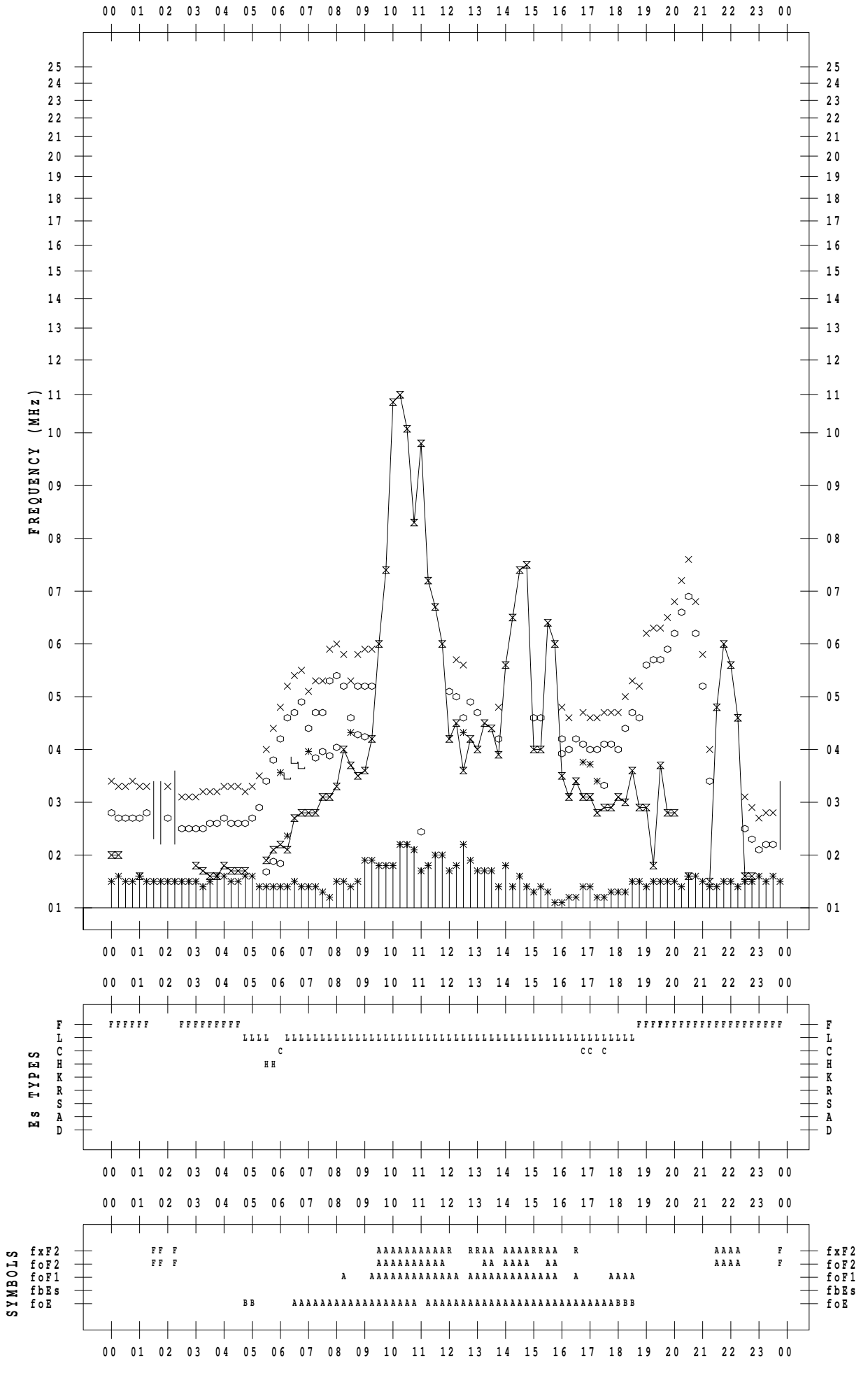
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/17

135 °E MEAN TIME



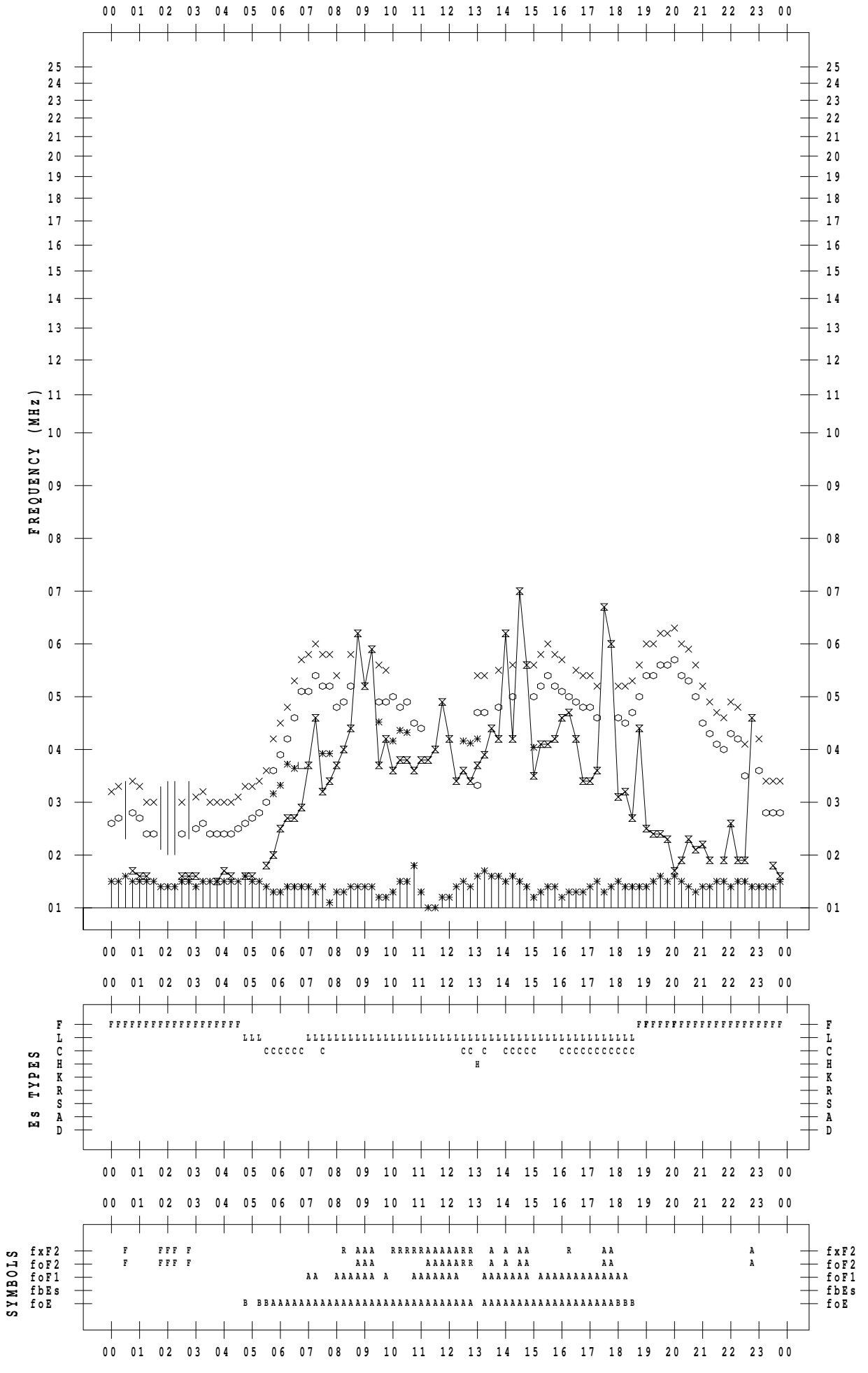
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/18

135 °E MEAN TIME

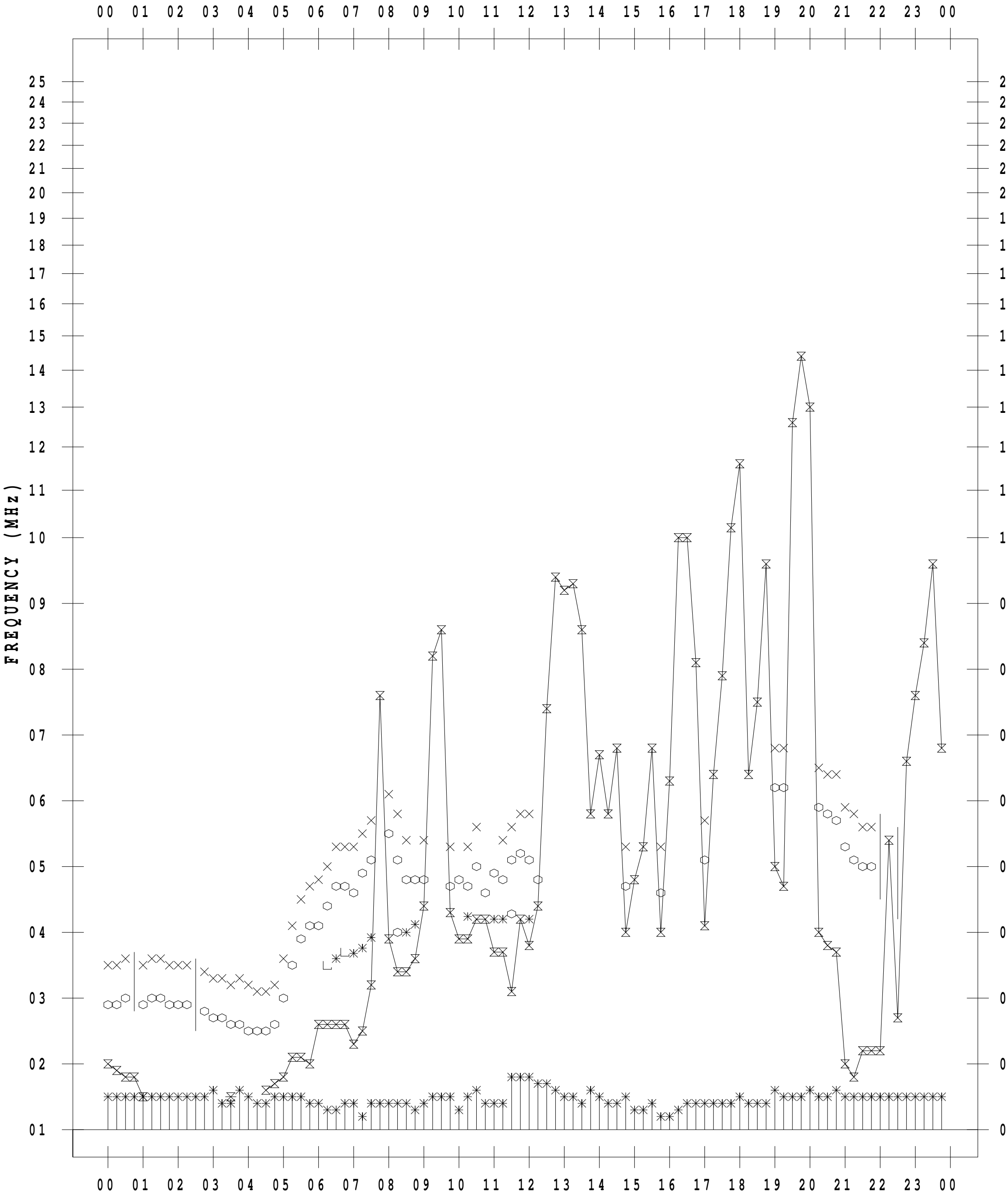


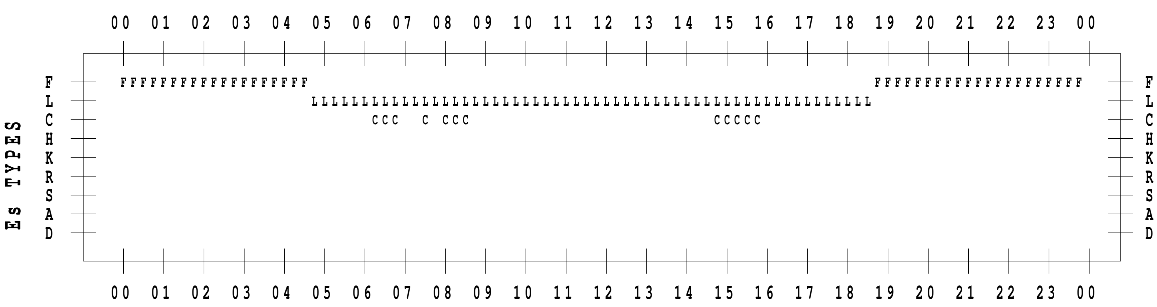
f-PLOT DATA

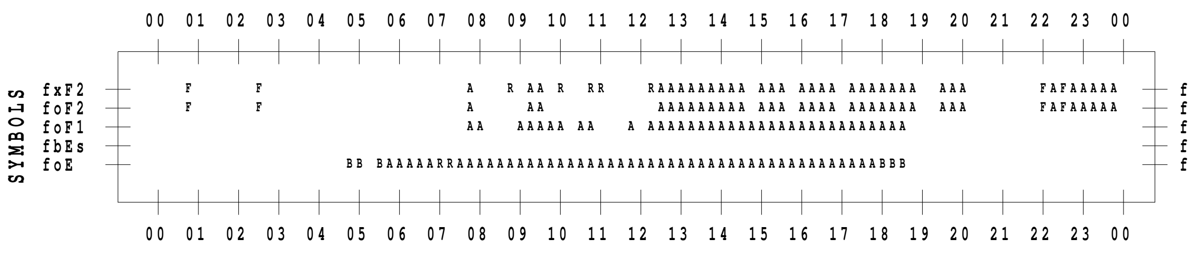
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 8/19

135 °E MEAN TIME







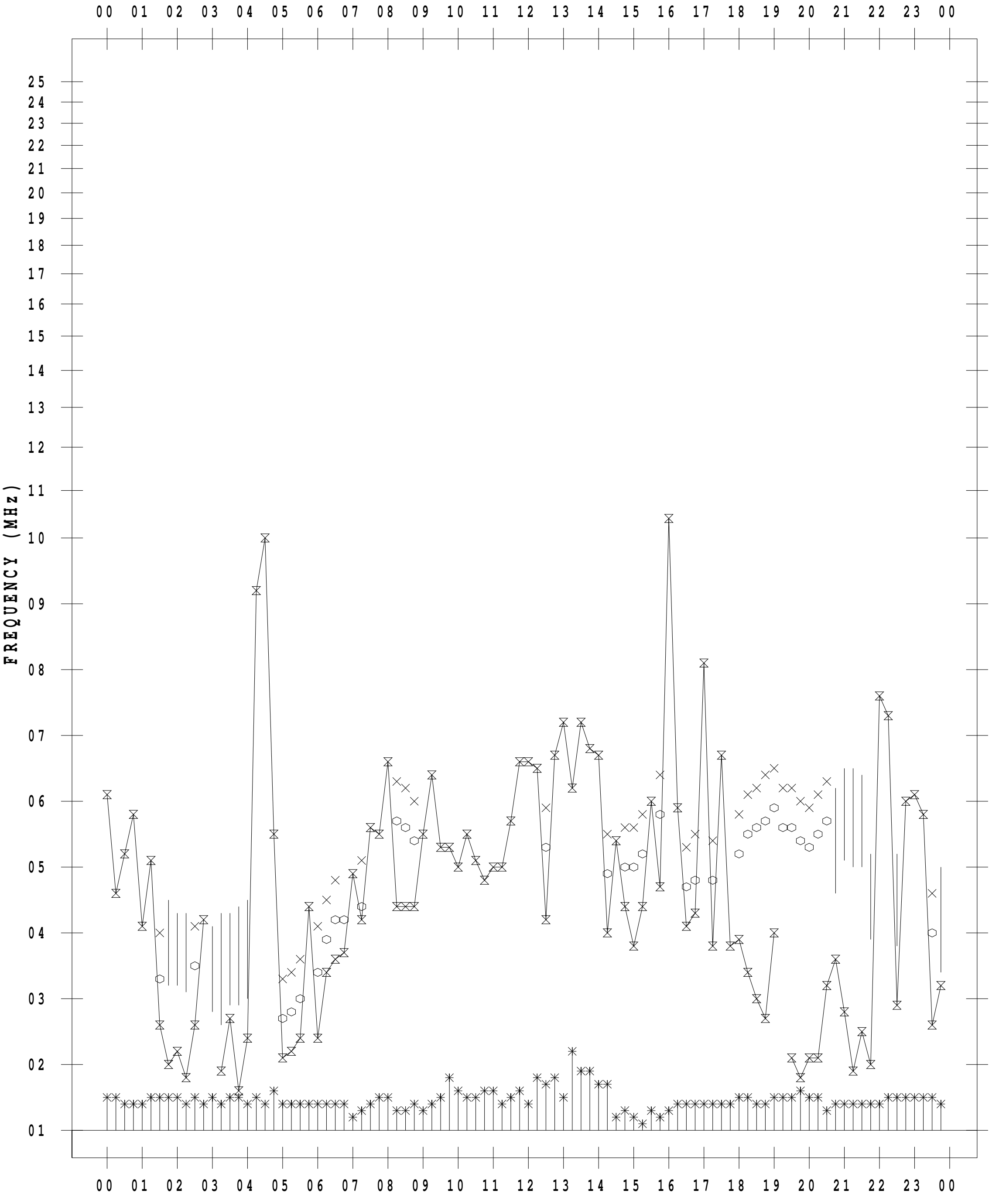
f-PLOT DATA

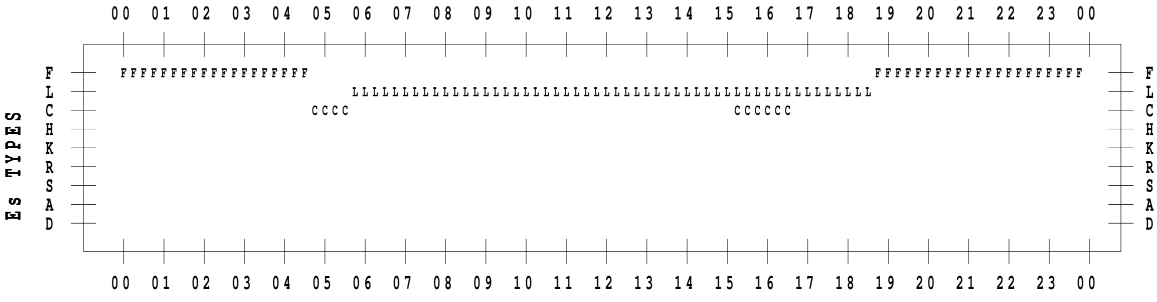
SCALER : I.NISHIMUTA

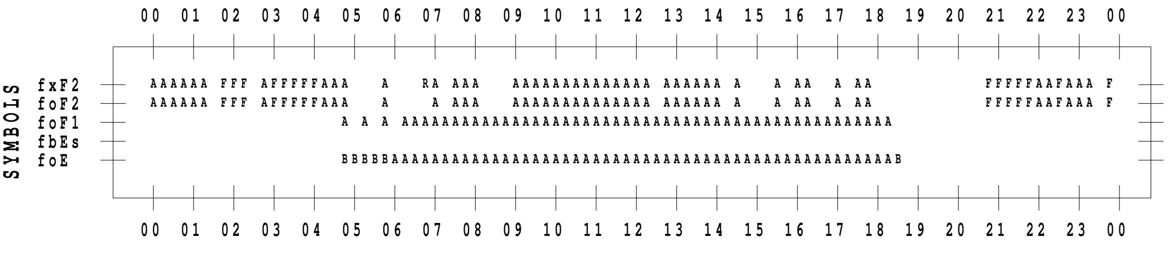
STATION : Kokubunji

DATE : 2009/ 8/20

135 °E MEAN TIME







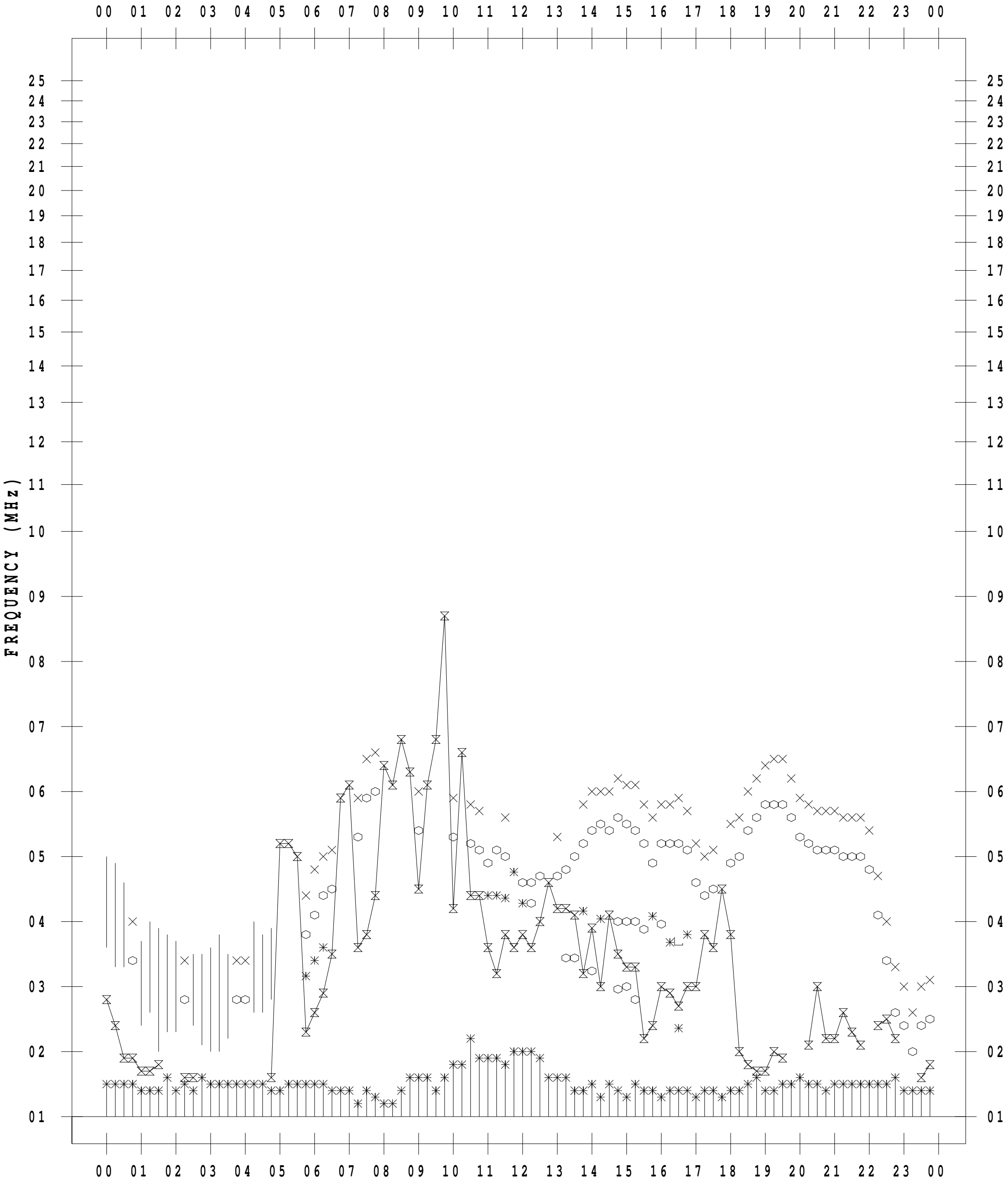
f-PLOT DATA

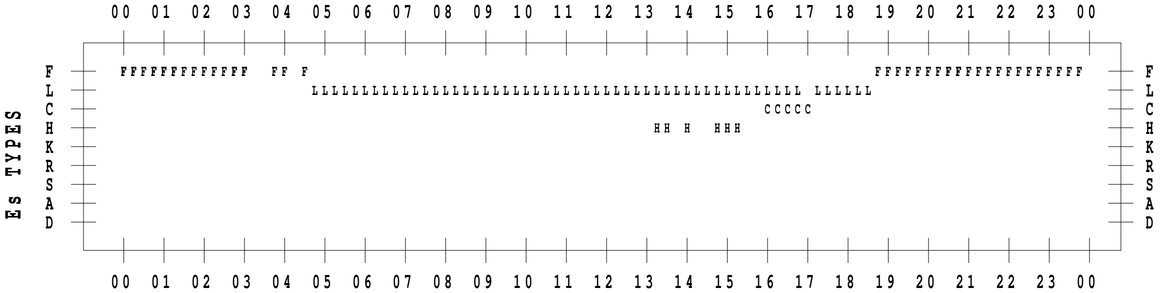
SCALER : I.NISHIMUTA

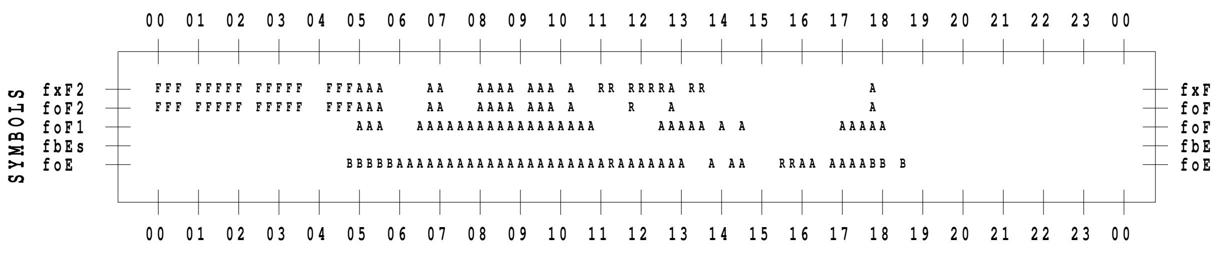
STATION : Kokubunji

DATE : 2009/ 8/21

135 °E MEAN TIME







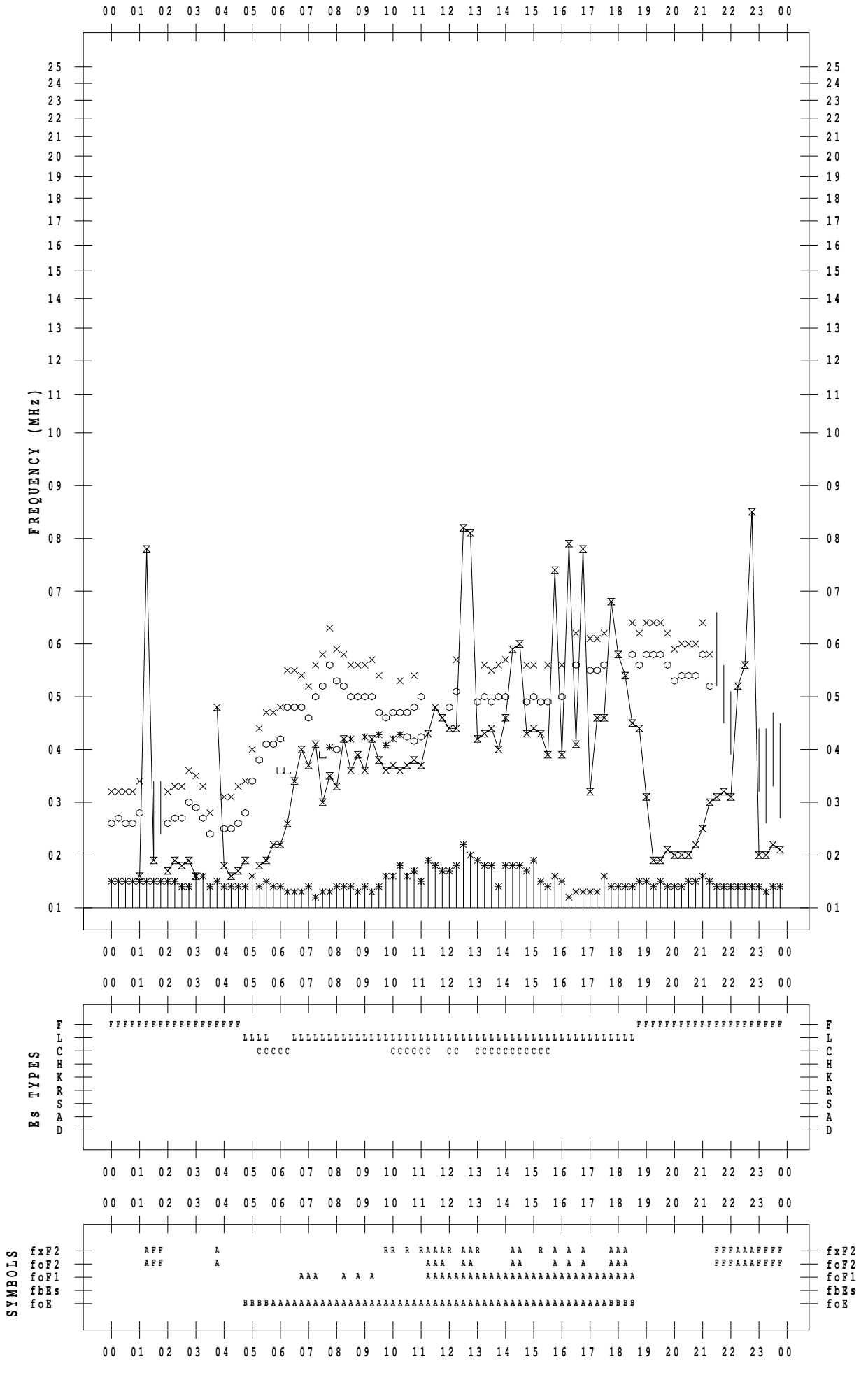
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/22

135 °E MEAN TIME



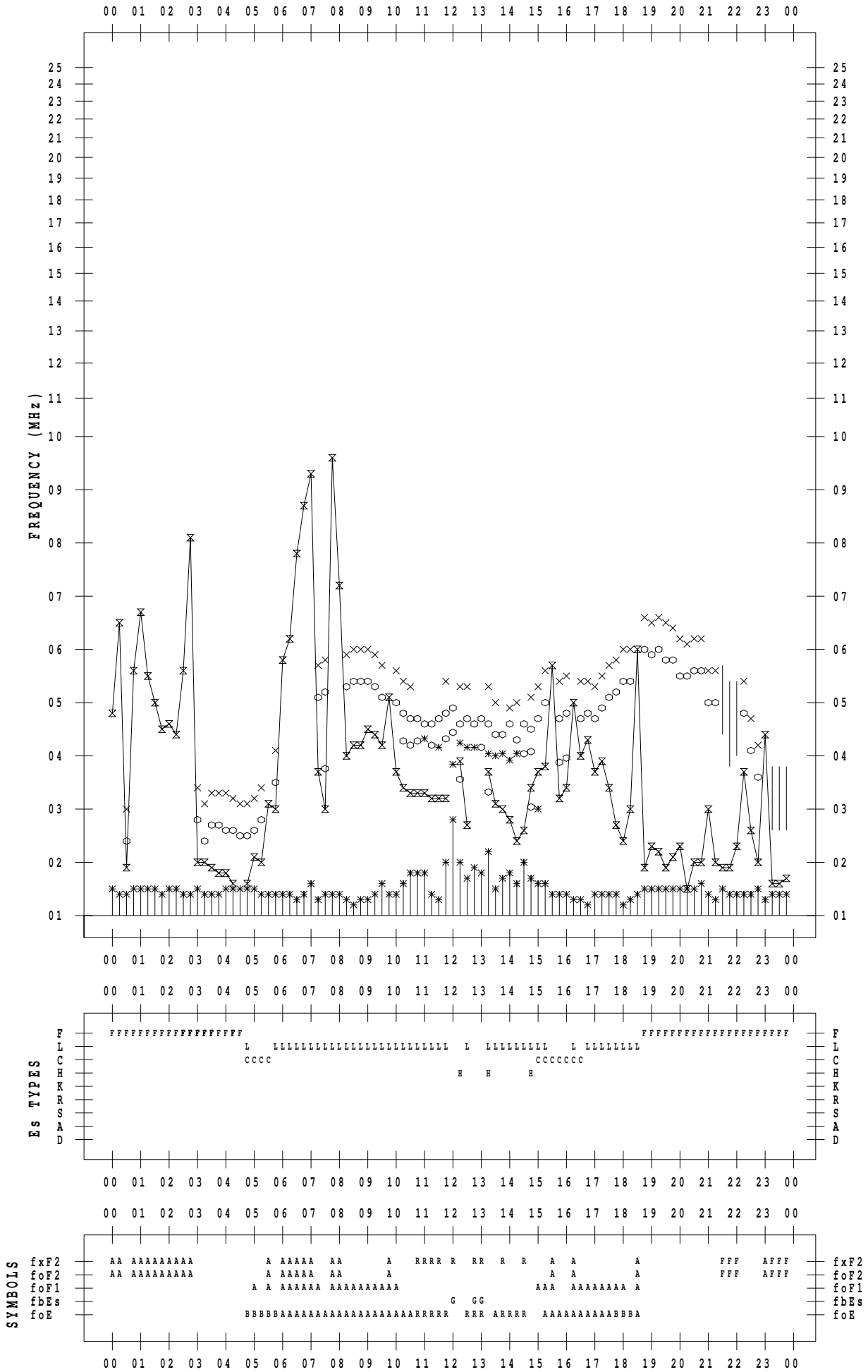
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/23

135 °E MEAN TIME

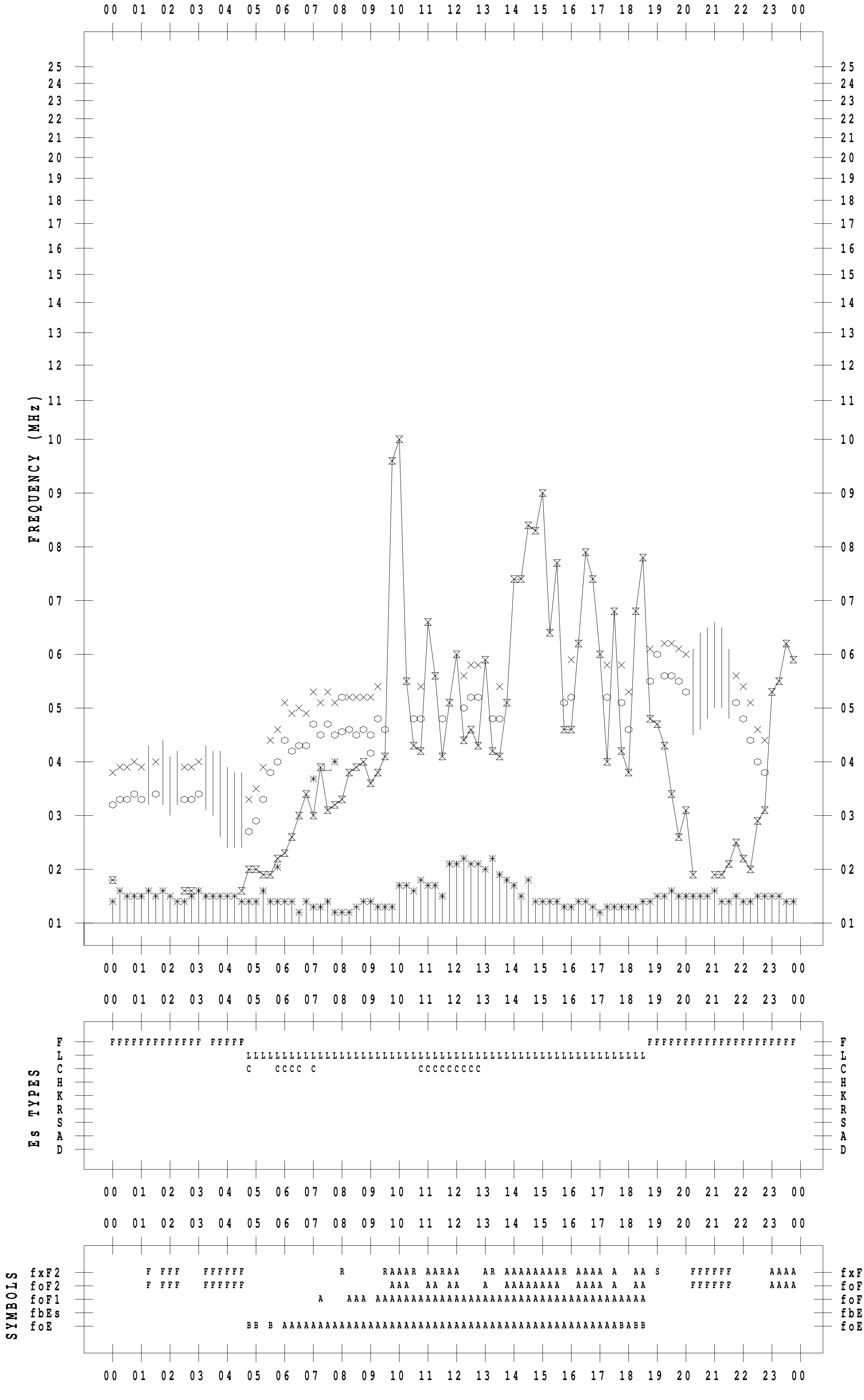


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 8/24

135 °E MEAN TIME

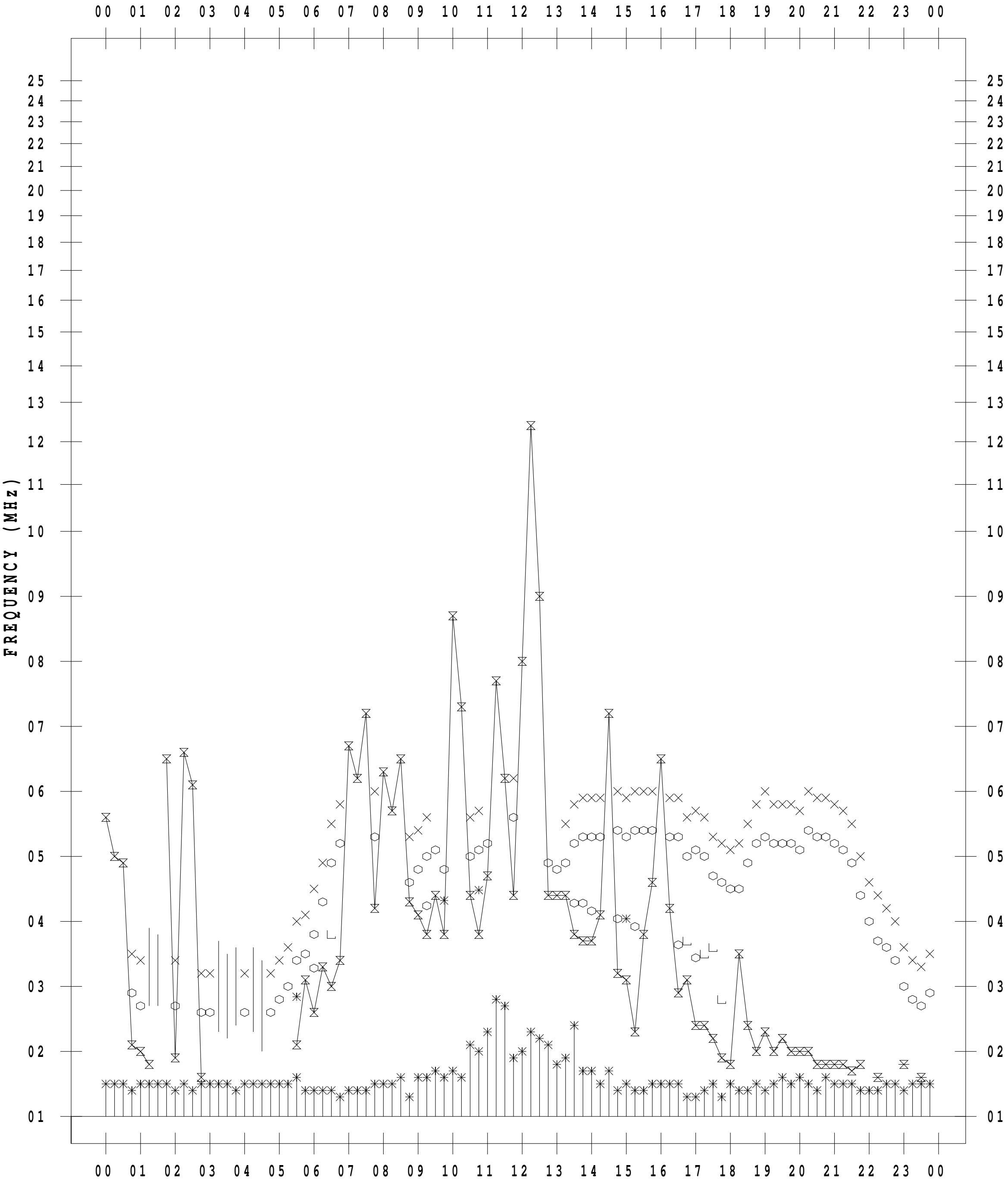


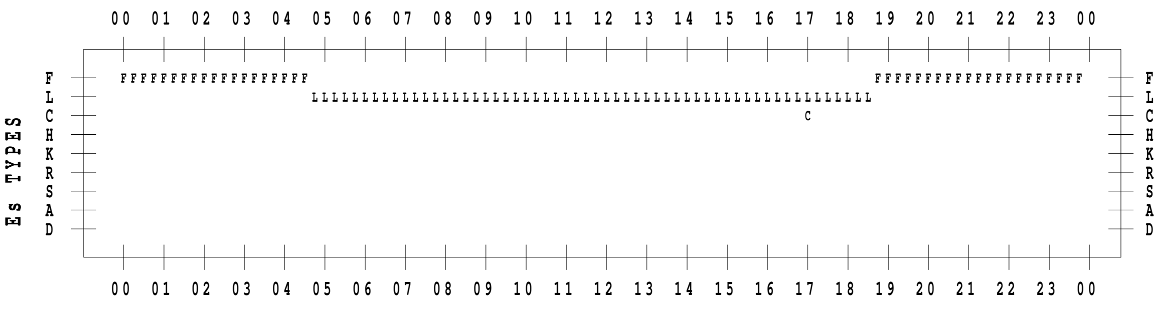
f-PLOT DATA

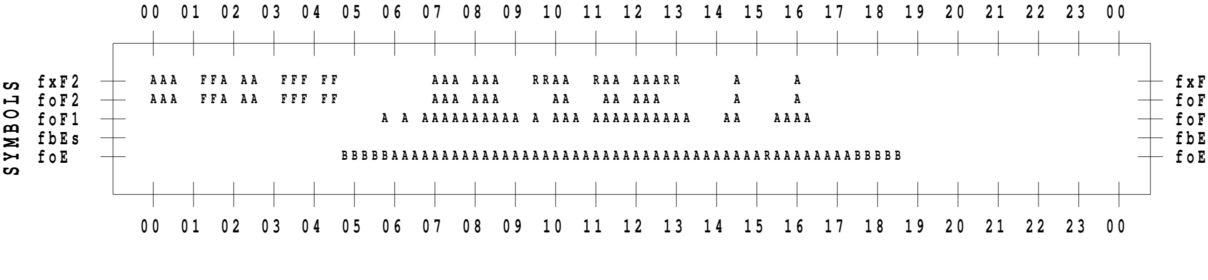
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 8/25

135 °E MEAN TIME







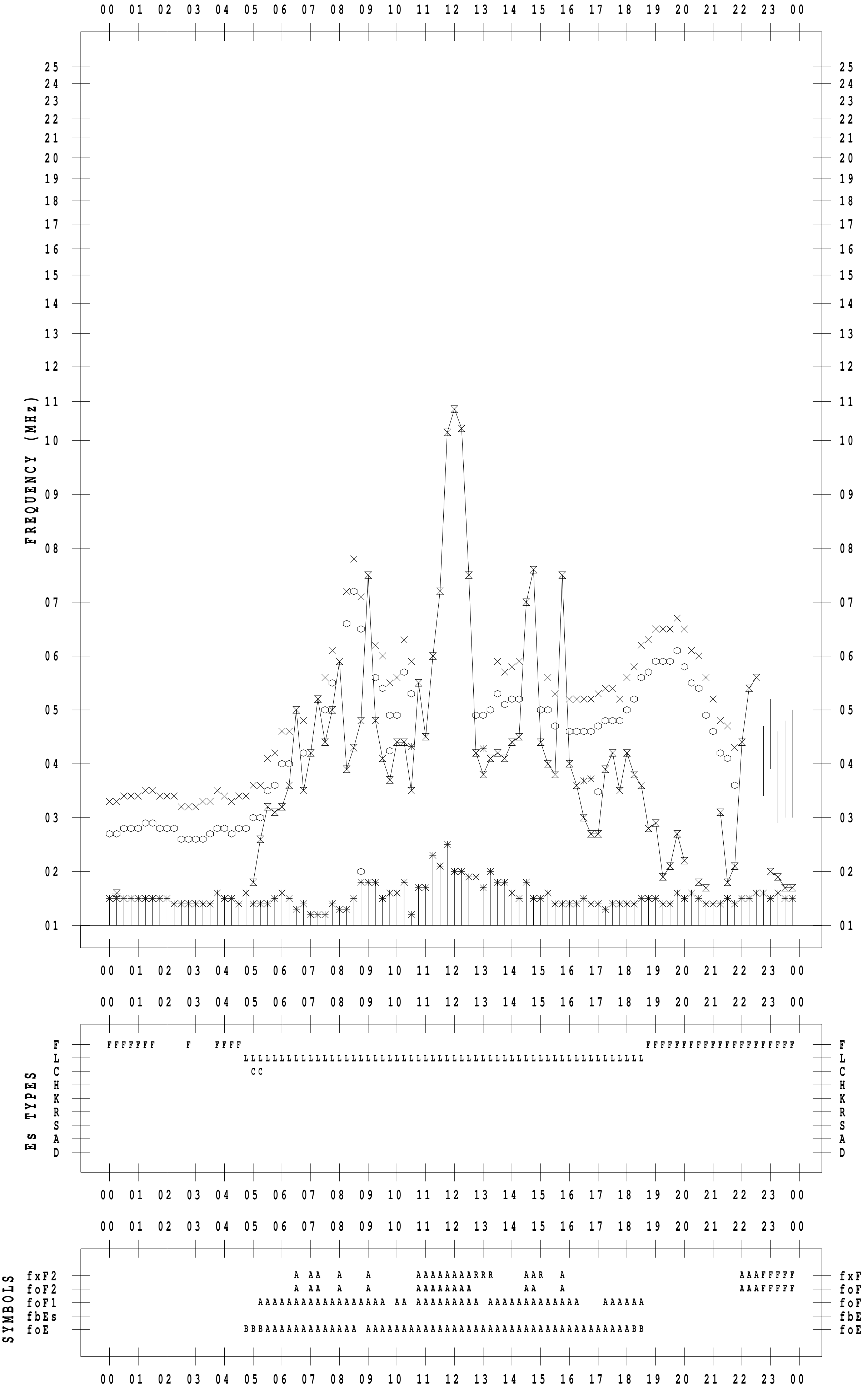
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/26

135 °E MEAN TIME



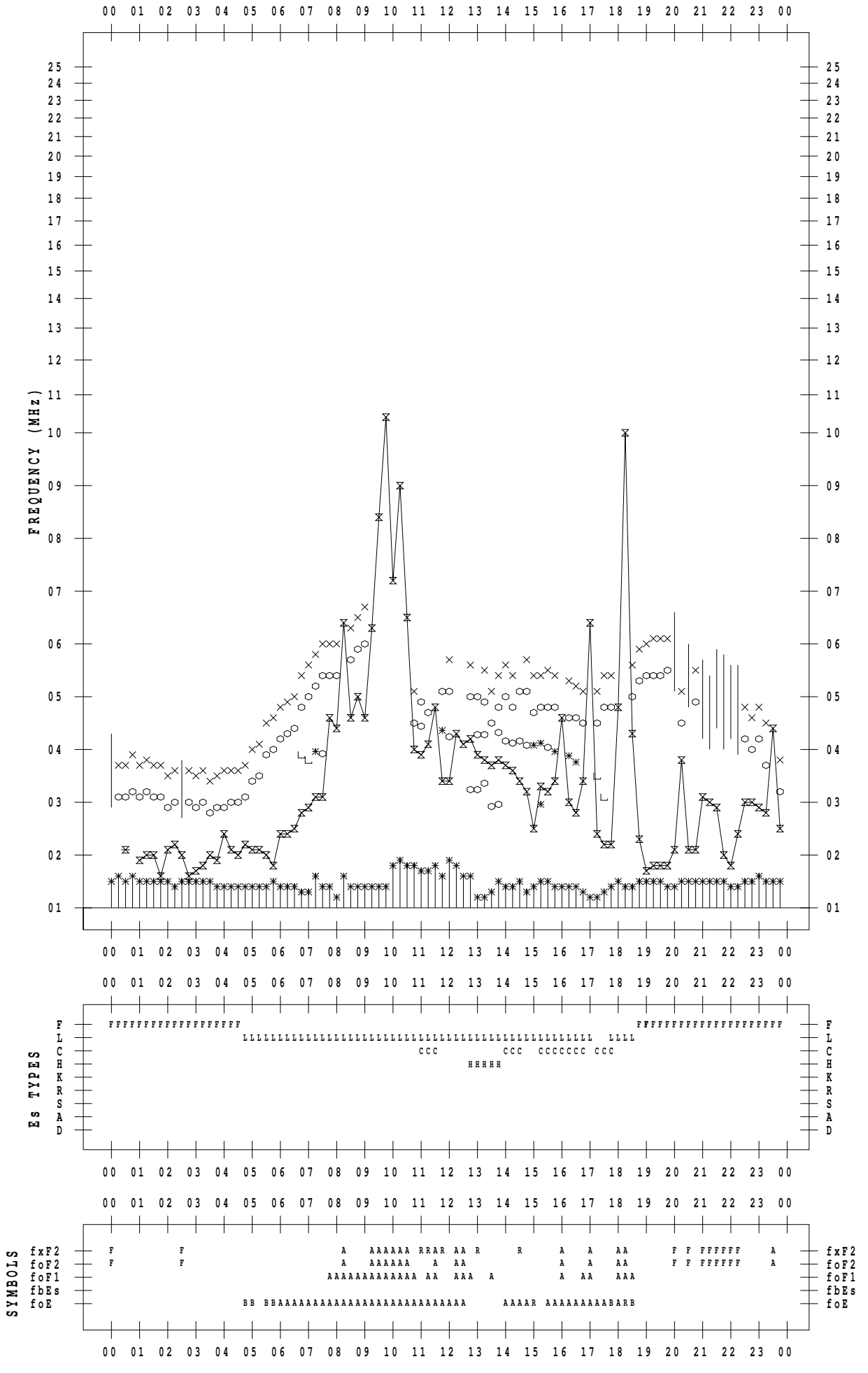
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/27

135 °E MEAN TIME

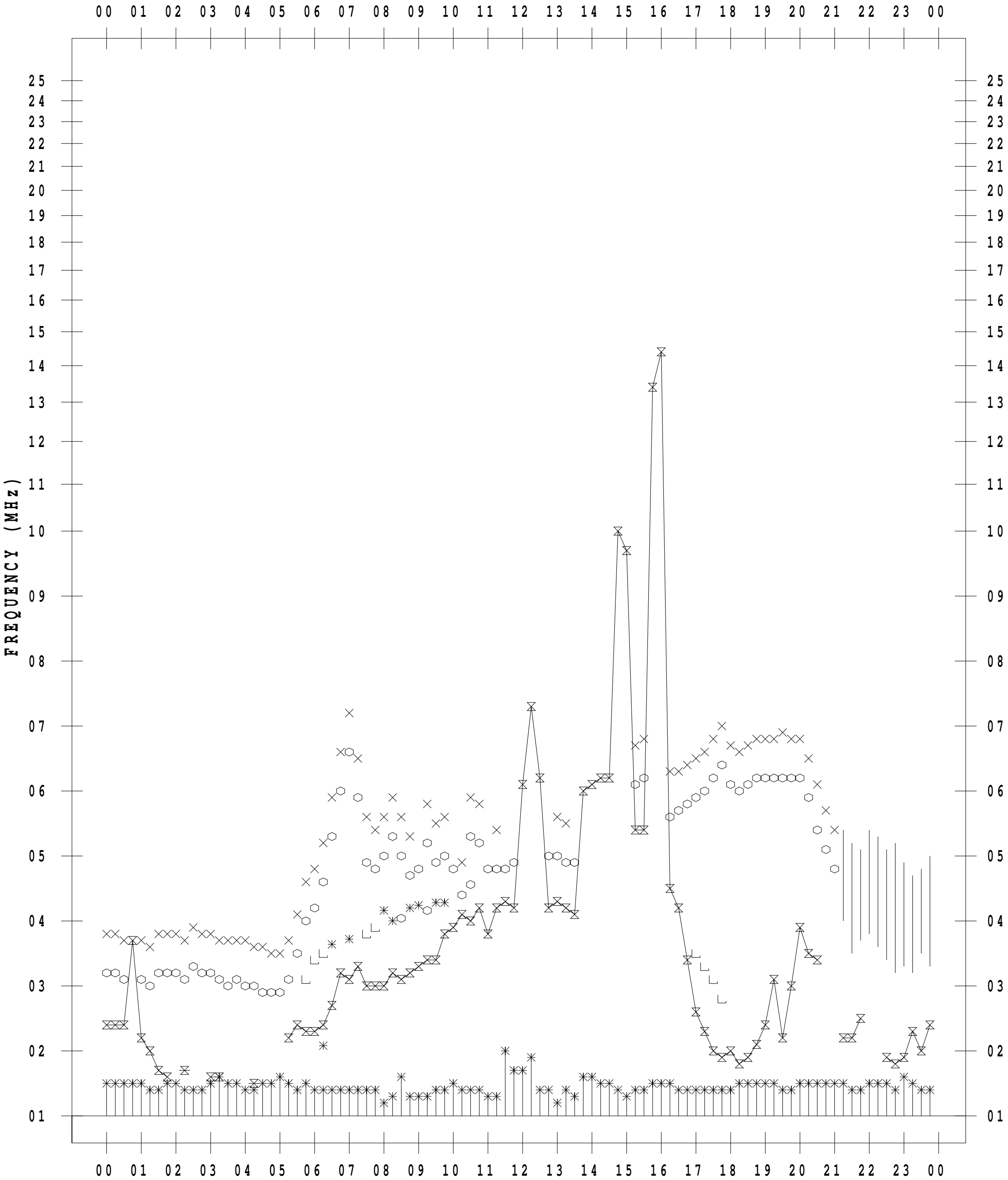


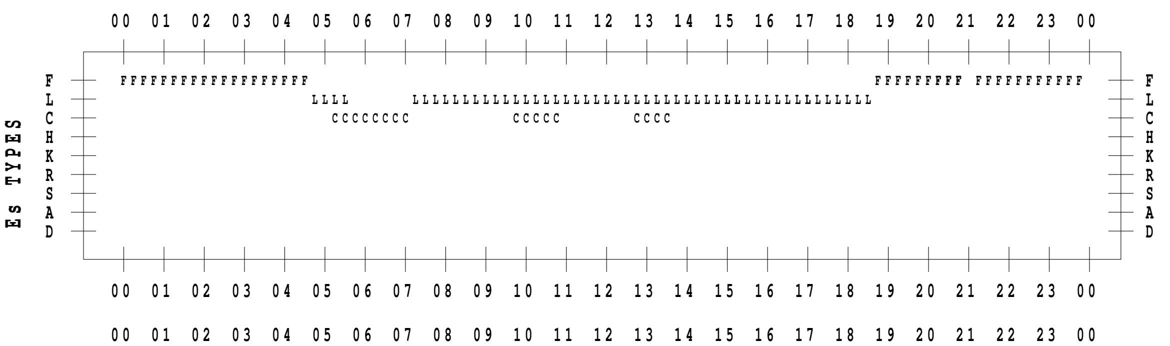
f-PLOT DATA

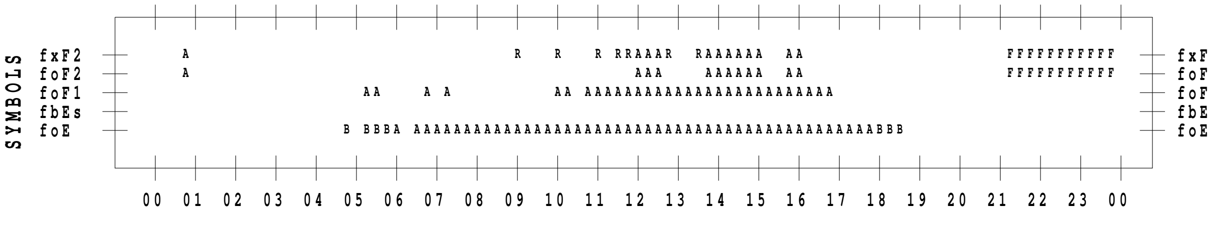
SCALER : I.NISHIMUTA

STATION : Kokubunji   DATE : 2009/ 8/28

135 °E MEAN TIME







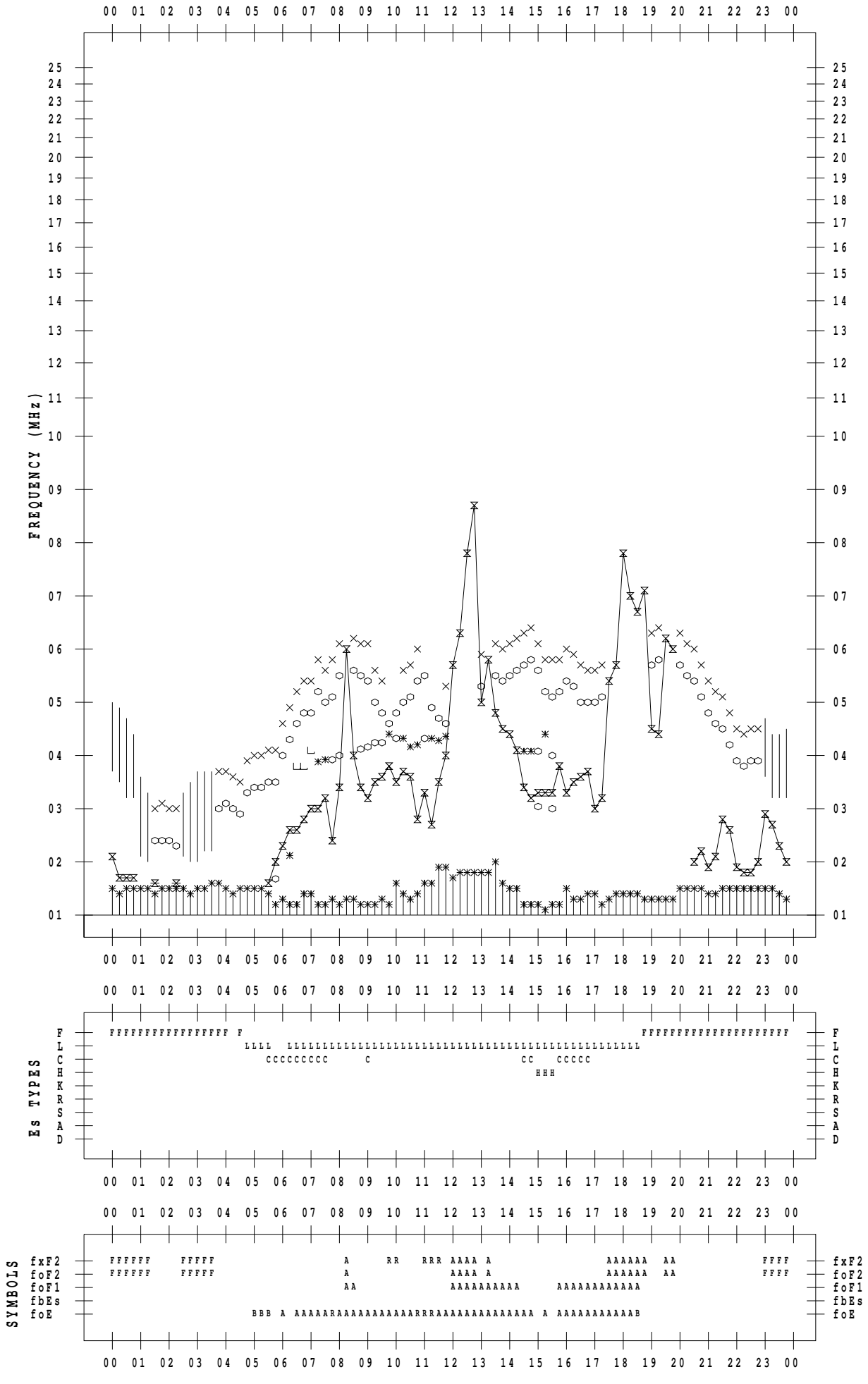
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/29

135 °E MEAN TIME

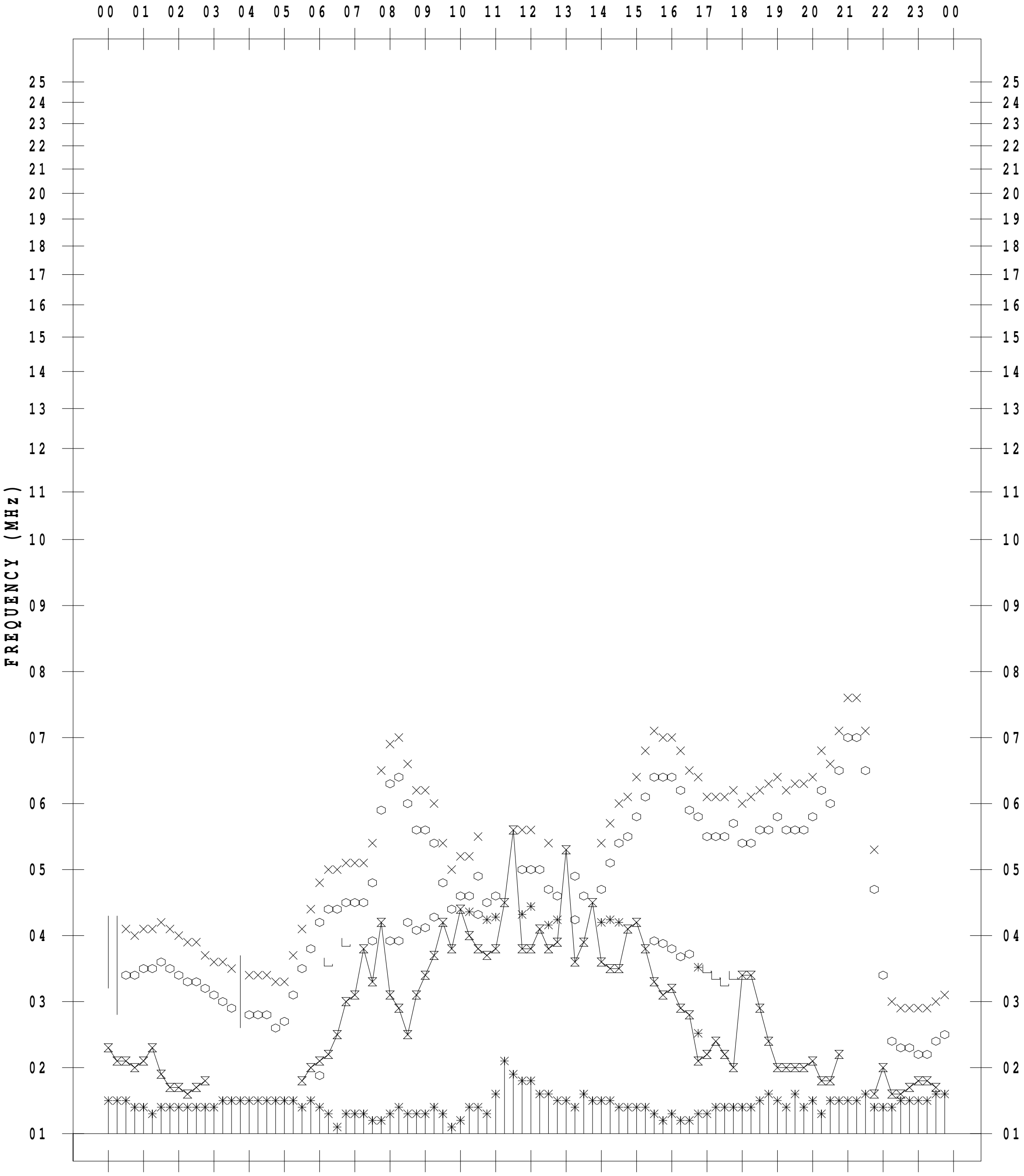


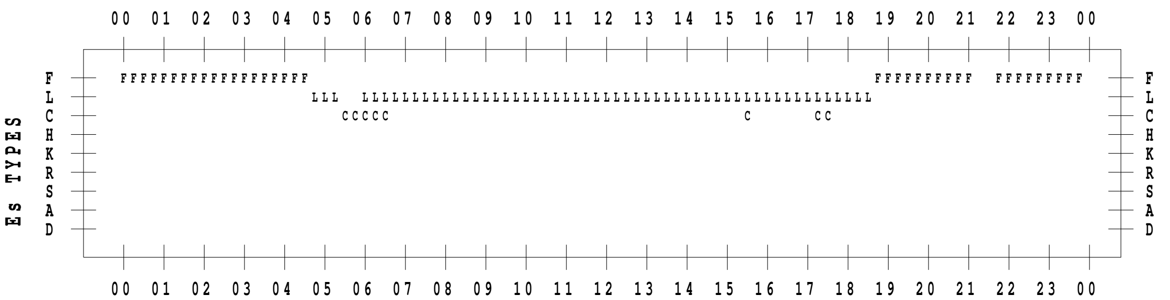
f-PLOT DATA

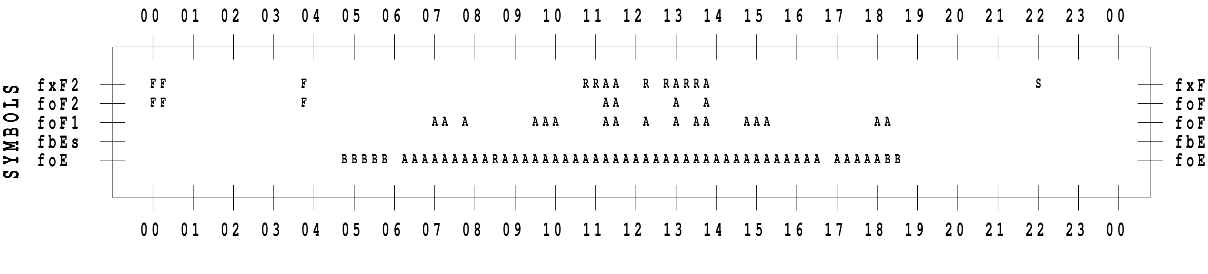
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/30





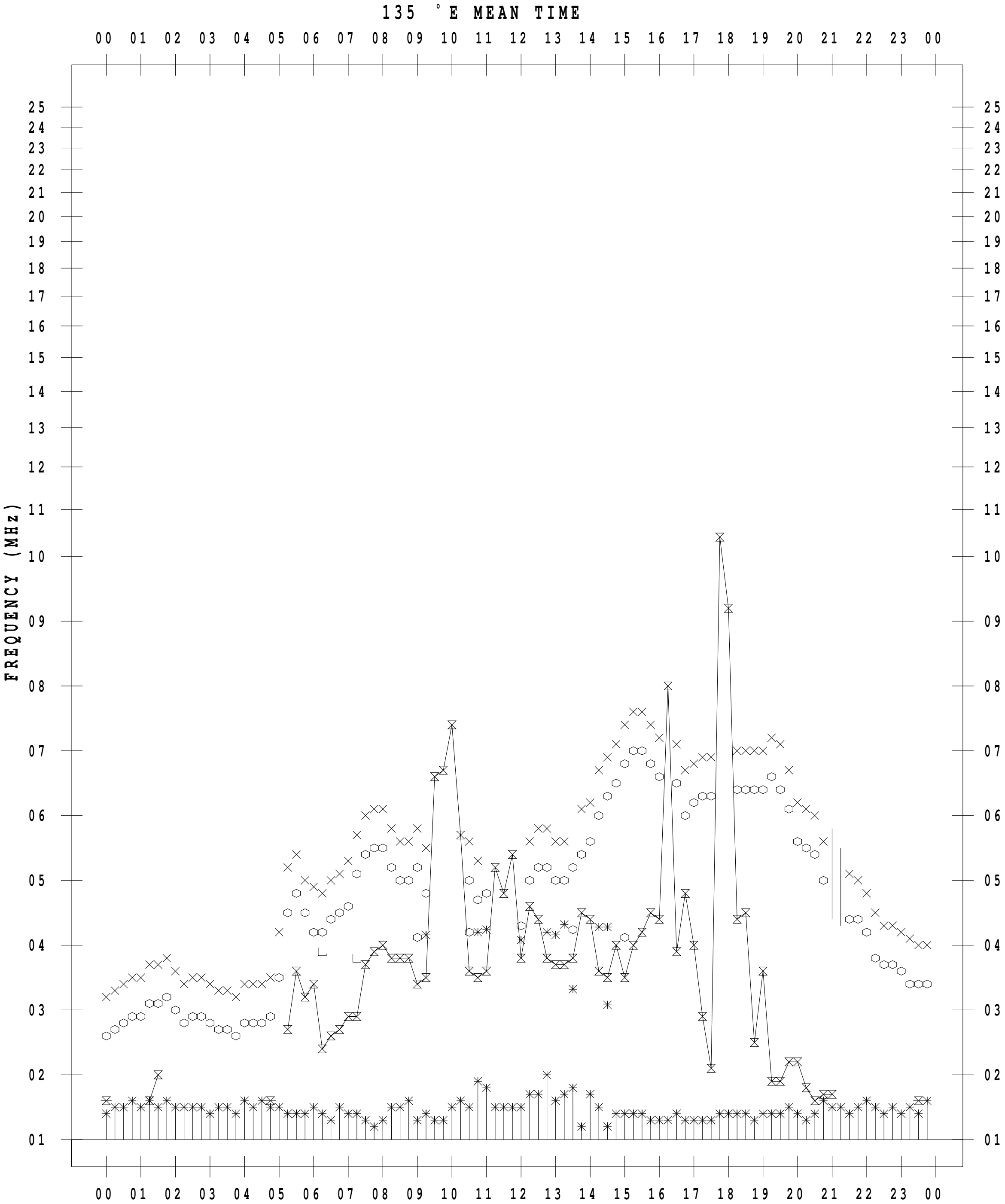


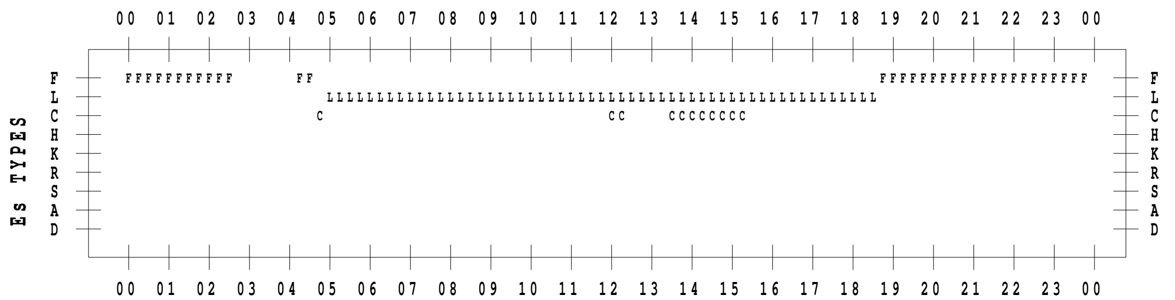
f-PLOT DATA

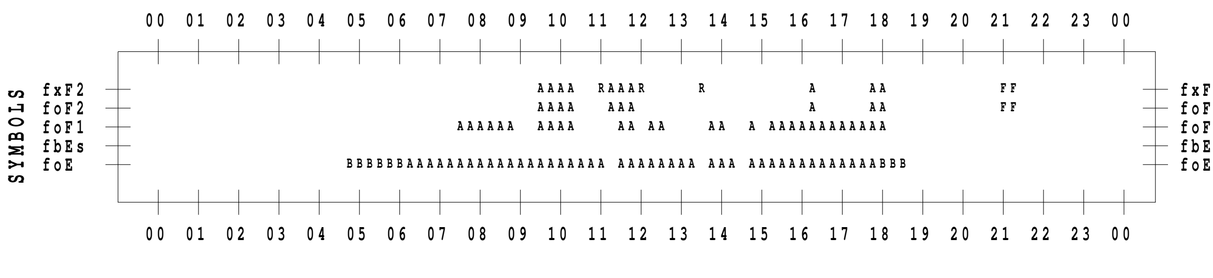
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 8/31







B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso August 2009

Single-frequency observations

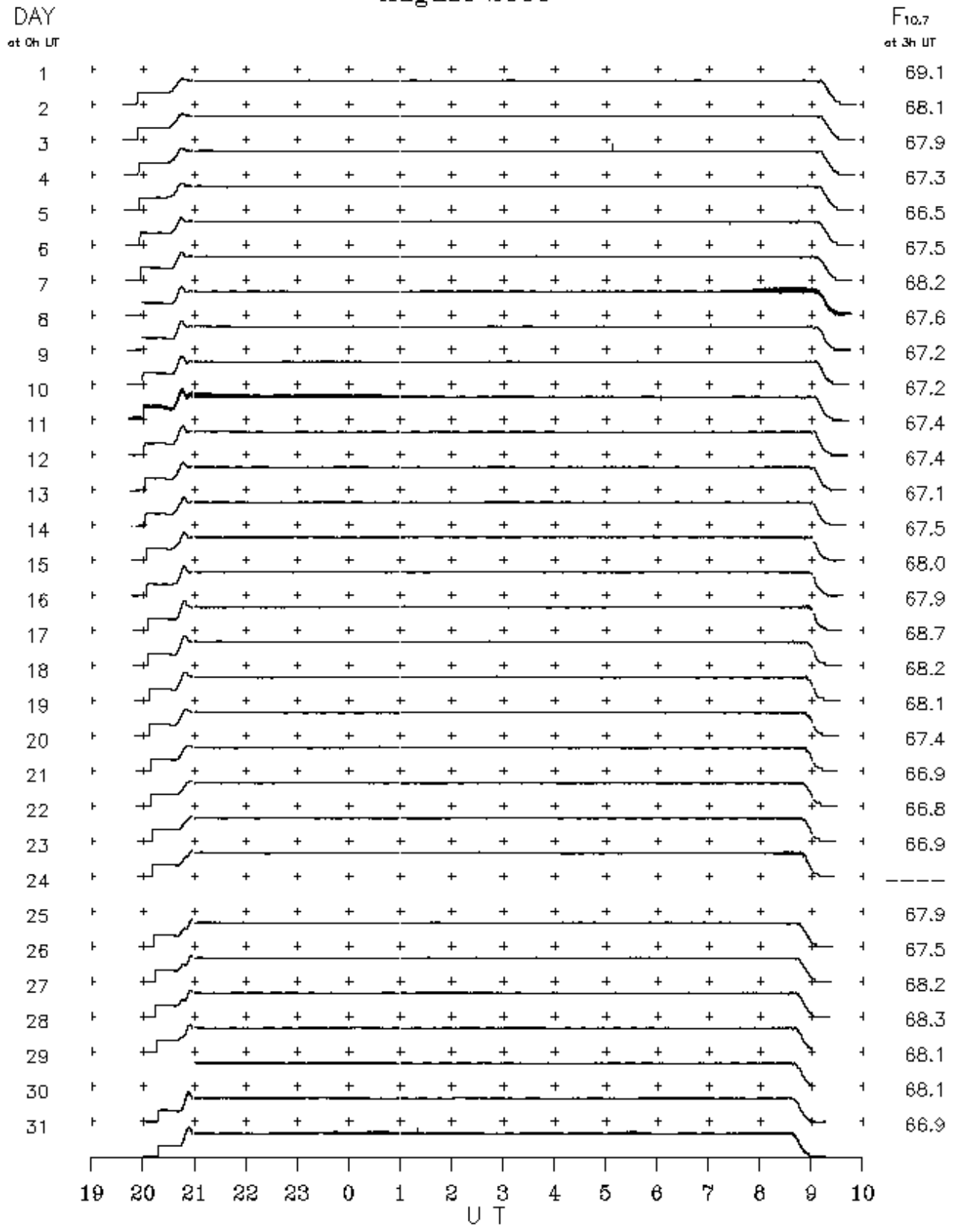
Normal observing period: 1950 - 0935 U.T. (sunrise to sunset)

AUG. 2009	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS

B.Solar Radio Emission

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

August 2009



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°
A link to the daily plot data directory : http://sunbase.nict.go.jp/solar/denpa/hirasDB/2009/08/