F-729

IONOSPHERIC DATA IN JAPAN

FOR SEPTEMBER 2009

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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

SEP. 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	32		32	34	37	A	52	56	51	51	A	A	A	47	A	47	45	47	53	A	A	49	A
2	A		34	34	30		63	A	54	54	A	A	39	A	A			43	53			50	A	A
3	37	A	32	32	31		49	A	A	54	A	53	A		A	46	46	45	46	54	48	48	A	32
4	A	30	32	32	31	37	48	60	62		52			53		52	49	A	58	64	58	58	54	42
5	34	30	34	34	35	37	48	56	61	60				49		48	A	A	A	52	54	47	37	34
6	31	32	32	32	31	42	54	54	52		A			52	49	32	46	41	41	60	32	51	52	30
7	32	34	28	34	32	34	31	48	A	A	60	54	53		A	51	47	45	43	53	51	52	54	
8	31	32	34	35	34	34	44	47	46	52	A				46	47	46	50	53	54	52	61	54	47
9	32	32	34	34	35	32	29	47	51	55	53	59		53	48	46	47	48	58	61		28	A	31
10	29	32	32	32		26	51	46	46	50	A		A	A	A	47	46	45	48		51	52	A	A
11	A	A	A		32	19	A	52	A	A	58	69		56			A	A	A	48	55	51	37	34
12	34	A	30		34	32	A	A		64	A	56	A		A	A	A	A	A	A	52	47	A	37
13			30	29	34	40	A	47	A	A	A	A	54	57	52	47	48	51	55	60	A		37	A
14	32	31	38	38	39	31	47	46	60	52	54		46	A	58	52	47	51	56	34	52	54	43	35
15	37	31	32	32		29	47	55	54	56	54	55	49	52	52	47	47	52	55	54	62	A	43	34
16	30	34	34	30	40	44	44	46	52	53	52		56	49	51	51	51	48	51	54	54	52	45	34
17	33	37	32	40	35	47	51	54	38	53	57	56	61	58	53	50	50	44	44	52	53	50	44	44
18	44	44	44	44	50	52	58	47	54	57	61	55	49	50	47	47	55	51	55	54	51	50	44	34
19		34	30	37	34	38	47	50	57	45	53	53	48	52		50	47	48	54	42	52	47	38	37
20	36	34	30	34	30	36	45	45	50	53	58	51	58		44	51	47	47	54		54	53	43	34
21	29	34	32	38	42	37	52	45	57	56	53	59	58	58		54	59	54	50	43	44	48	45	38
22	32	32	34	31	32	34	40	48	53	58	57	61	53	55	50	48	49	34	44	32	43	28	34	42
23	41	35	32	34	34	34	30	A	52	60	61	61	56	54	52	52	47	51	54	44	45	34	34	34
24	38	34	34	34	34	31	47	56	55	58	56	57	57	42	54	52	50	49	26	42	34	32	35	29
25	36	30	34	34	34	34	42	46	52	59	64	56		56	55	52	56	48	47	44	44	A	34	36
26	34	34	34	34	37	38	43	45	52	54	58	56	54	57	54	54	51		54	48	47	42	41	20
27	41	34	40	41	36	47	A	54	56	64	62	56	58	55	55	54	56	66	54	36	44	38	36	36
28	37	36	34	36	31	37	52	54	65	68	60	62	62	53	57	53	49	54	57	56	53	44	46	38
29		40	40	41	35	41	45	48	58	56	56	58	63	64	54		56	54	48	42	34	34	38	38
30	34	34	36	37	38	34			58	60	65	62	61	58	57	55	55	55	47	47	34	34	30	34
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	23	25	28	28	28	28	24	25	25	25	22	20	19	21	20	25	26	25	27	26	26	26	25	25
MED	34	34	34	34	34	36	47	48	54	56	57	56	56	54	52	51	48	48	53	52	51	48	43	34
U Q	37	34	34	37	35	39	51	54	57	59	60	60	58	57	54	52	51	51	55	54	53	52	45	38
L Q	32	32	32	32	32	33	43	46	52	53	53	55	49	52	48	47	47	45	47	43	44	38	36	34

HOURLY VALUES OF fEs AT Wakkanai

SEP. 2009

LAT. 45°10.0′N LON. 141°45.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

HD \ 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	38	28	32	42	37	29	40	47	G	44	G	44	68	40	G	50	G	37	43	36	60	72	66	58
2	51	40	30	28	G	44	59	102	49	44	45	50	42	38	41	36	49	36	34	44		37	57	58
3	35	56	27	32	G		38	68	56	50	68	G	68	G	41	G	34	36	40	39	58	40	44	26
4	52	29	24	24	26	24	39	46	52	59	48	G	G	G	G	44	56	61	60	56	32	29	40	36
5	G	G	G	G	G	30	42	40	39	36	39	40	G	G	G	44	58	62	69	84	92	69	26	40
6	G	25	28	G	G	32	32	39	46		38	40	39	39	G	G	42	37	34	30		60	49	34
7	26	26	G	G	G	26	37	44	59	73	50	53	G	G	42	44	44	40	30	57	32	33	26	37
8	32	24	25	26	G	G	32	36	40	40	68		38	G	G	G	37	36	38	49	34	36	35	33
9	28	27	G	G	G	28	35	58	46	38	39	G	G	G	G	G			G		G	40	59	33
10	40	34	26	G		36	33	36	40	45	61	64	94	64	43	G	G	36	34	58	38	46	70	69
11	59	43	40	40	29	34	54	40	51	69	59	38	52	39	50	45	52	69	60	34	29	26	26	G
12	31	41	29	40	24	33	42	60	57	44	59	52	56	53	76	80	117	77			60	40	51	36
13	36	43	32	34	34	36	60	39	68	69	61	56	48	62	43	35	34	G	G	51	51	39	32	49
14	35	24	37	31	G	G	32	42	40	49	41	G	G	39	38	39	36	31	38	28	G	G	G	32
15	32	28	40	26	30	25	G	44	G	G	40	G	38	G	N	40	G	33	59	59	60	60	27	28
16	33	26	G	25	28	36	29	40	39	37	39	39	39	G	G	G	36	G	G	G	34	34	33	24
17	29	G	G	G	G	G	28	38	G	40	G	38	39	G	36	36	G	G	G	G	24	29	28	G
18	G	G	G	G	G	G	30	36	38	38	39	G		G	G	G	36	34	34	G	G	G	28	26
19	27	G	G	G	28	23	30	34	36	G	G	38	G	G		G	G	29	G	G	G	26	G	G
20	G	G	G	G	G	G	28	37	59	G	G	39	42	39	38	34	34	33	36	35	34	27	11	G
21	G	G	G	G	27	G	29	32	36	G	G	40	G	40	36	35	G	32	28	G	30	24	G	26
22	G	G	G	G	G	25	G	33	40	40	G	40	39	37	G	34	31	29	G	33	34	32	G	G
23	G	G	G	G	G	26	35	53	40	40	39	G	G	40	38	33	31	26	G	28	30	33	30	28
24	24	G	G	G	G	G		G	G	G	G	G	G		G	G	38	34	32	25	G	G	G	G
25	G	26	27	G	G	G	G	36	40	G	G	G		G	39	35	G	29	28	G	34	38	G	G
26	G	G	G	24	G	G	28	35	35	G	38	G		G	G	34	34	33	27	27	26	G	G	G
27	G	G	G	G	G	30	43	41	37	40	G	39	38	G	40	35	34	32	36	40	28	G	24	G
28	G	G	G	G	G	G	G	37		G	G	39	G	G	G	G	G	G	G	24	G	26	32	28
29	23	G	G	G	23	26	26	34	35	41	48	44	43	37	46	50	40	39	G	G	G	26	G	G
30	G	G	G	G	G	G		G	G	G	63	G	40	G	G	37	35	26	G	G	G	G	G	G
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	30	30	30	30	29	29	28	30	29	29	30	29	27	29	28	30	29	29	29	28	28	30	30	30
MED	26	24	G	G	G	25	32	39	40	40	39	39	39	G	36	35	34	33	32	32	31	32	28	27
U Q	35	28	28	26	26	31	39	44	50	44	50	42	43	39	41	40	41	37	38	46	36	40	40	36
L Q	G	G	G	G	G	G	28	36	35	G	G	G	G	G	G	G	G	29	G	G	G	26	G	G

HOURLY VALUES OF fmin AT Wakkanai

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

HOURLY VALUES OF foF2 AT Kokubunji

SEP. 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	A	A	A	27	41	54	63	A	48	A	A	A	A		45	49	54	55	59	54	39	A
2			30	A	30	27	A	54	62	A	A	A	A	A	A	A	44	53	63	72	66	53	A	28
3				27	27	25	A	A	A	58	A	A	A	A	A	51	51	56	52	66	62	44	A	A
4	A	A			25	28	A	65	75	A	A	A	51		A	51	53		61	70	67	64	52	A
5	A	A			30	28	42	65	45	A	52	A	A	A	A	A	A	A	A	A	74	44	A	A
6	23				A		43	51	62	48	53	A	48	47		49	49	48	56	52	54			28
7	28	30	28	35	34	37	44	44	55	62		56				51	54	48	51	56	53		43	45
8	A	A	30	32	31		46	54	58	46	C				49		49	53	63	62	54	52	46	
9		28	30	30	27	28	41	56	61	52	46	A	62			A	52	54	66	67	36		31	A
10	32	30	31	28	23	30	42	51	44	58		54		48	52	47	A	52	54	59	54	45	45	36
11	39	38	34	31		27	47	59	A	56	61	56	52	A	73	A	A	48	53	64	52	A	A	
12		31				27	39	57	67	62	59	58	A	54	48	A	A	A	A	75	A	45		39
13	39	34					39	56	44	51	59	50	48	A	38	48		61	73	73	47	A	26	34
14	32				28	28	39	47	50	62	60	48				49	56	57	57	61	53	43		
15	30		27		30	27		57	56	51		54	58	60	46	49	47	59	54	64	66	44	27	
16	28	28	28	28	30	32	52	48	46	54	56	58	61	62	51	44	54	59	71	61	52	44	43	32
17	31			31		28	43	59	66	61	60	59	54	55	56	49	47	57	55	53	53	31	A	30
18	34	30	32	32	31	32	44	76	72	57	52	45	53	46		47	47	A	67	76	53		27	
19	30	A	27	28	24	A	A	63	62	60	54	48	54	52	48	46	47	59	59	66	45	44	39	38
20			31	32	31	28	41	54	54	45	54	48	51	53		47	48	49	54	66	52	46	37	32
21	28	31	31	30	30		41	52	47	47	56	48		54	49		55	59	58	52	45	54	41	43
22			28		26		44	65	68	53			59	52	52	47	45	48	53	47	44	44	47	39
23	34	30	27	27		27	45	57		48	59	61	A	58	52	52	57	55	55	50	44	38	32	32
24	32	30	30	32	30	28	46	59	55	A	65	57	59	58	56	48	56	52	64	53	44	A		36
25		30	30	30	27	27	48	55	53	A	58	67	56	55		52	55	55	58	55	39	36	38	37
26	36		31	32	30	28	42	49	59		57	56	63	53	48	51	A	56	61	66	41	32	34	28
27	30	34	30	27	30	31	46	59	59	51	59	58	56		57	55	62	72	77	52	34	32	32	
28	32	28	34		28	31	54	52	66	66	59	56	59	65	59	51	54	56	59	52	46	37	A	
29	37		34	32	34	30	54	51		62	56	60	58	57	68	62	54	64	72		27	30		34
30	31	32	34	32	27	30	50	60	65	64	55	64	58	62	42	53	65	81	70	A	27	32	28	34
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	19	15	21	19	23	24	25	29	26	23	22	21	19	18	18	22	24	26	28	27	29	23	19	18
MED	32	30	30	31	30	28	44	56	59	56	56	56	56	54	52	49	52	56	58	61	52	44	38	34
U Q	34	32	31	32	30	30	46	59	65	62	59	58	59	58	56	51	55	59	65	66	54	46	43	38
L Q	30	30	28	28	27	27	41	51	53	51	54	49	52	52	48	47	47	52	54	53	44	36	31	32

HOURLY VALUES OF fEs AT Kokubunji

SEP. 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	33	29	78	32	52	23	35	40	72	105	48	83	47	45	44		43	36	G	G	31	G	39	40
2	29	G	33	38	24	G	65	72	51	69	99	104	66	78	65	56	35	49	28	29	40	40	53	26
3	28	25	G	G	34	G	52	82	61	49	53	48	57	65	64	G	53	45	43	68	57	47	57	39
4	36	51	29	35	G	G	45	51	64	54	52	57	G	G	66	G	50	53	45	51	59	51	60	57
5	70	51	37	33	27	G	33	45	45	61	51	54	62	73	60	62	81	162	96	79	60	60	67	79
6	43	32	33	33	40	35	38	42	41	44	G	42	G	G		G	G	34	32	37	34	47	22	G
7	G	G	G	G	G	G	26	40	58	45		42			38	38	34	33	39	30	31	40	35	80
8	48	36	26	G	G	30	38	37	G	G	C		G	G	G	G	G	31	G	G	G	34	45	46
9	38	30	28	26	G	G	34	42	59	G	39	49	40		G	56	39	46	53	59	42	36	81	33
10	32	33	29	28	G	G	G	36	G	G		40	48	39	G	G	65	64	40	45	24	33	26	24
11	G	G	24	28	34	G	35	40	78	41	45	43	G	71	50	74	62	50	63		91	91	57	39
12	33	31	36	34	G	G	26	50	78	61	78	G	60	G	G	128	151	110	131	50	67	59	46	34
13	51	G	38	34	30	30	G	35	36	43	50	59	40	52	G	37	48	32	30	27	43	35	G	G
14	G	31	G		G	26	30	36	G	G	42	G	G		G	G	G	31	27	G	G	G		
15	26		26		G	G	33	38	G	G	40	G	G	G	G	G	G	33	G	24	G	G	G	
16	G	G	G	G	G	G	G	35	G	G	G	G	G	G	G	G	37	31	28	G	G	G	G	G
17	G	G		G	G	G	30	36	G	G	47	44	G	39	41	43	37	31	37	27	26	G	40	25
18	28	28	G	G	G	G	G	33	G	G	G	G	G	G	G	G	47	59	29	28	25	34	29	G
19	29	34	G	G	29	40	48	48	G	49	G	G	G	G	G	G	32	41	G	G	G	24	G	G
20	G		G	G	G	G	G	43	38	42	51	40	G	G		G	G	41	53	40	G	24	26	G
21	G	G	G	G	G		29	42	G	G	G	G		G	G	G	G	31	G	G	G	G	G	G
22			G		G	G	29	G	G	G		G	40	G	G	G	G	35	31	31	G	26	G	23
23	29	G	G	G	G	G	43	G		37	51	60	78	60	G	G	37	30	G	G	23	29	26	G
24	G	G	G	G	G	G	28	40	G	61	45	49	45	G	51	G	G	40	36	29	41	60	34	31
25		G	G	G	G	G	G	34	47	74	G	G	G	G		G	G	31	G	36	25	34	G	G
26	G	G	G	G	G	G	28	40	45		39	G	G	40	G	G	59	29	30	33	G	28	G	G
27	G	23	G	G	G	G	G	G	G	G	G	G	39		G	G	G	G	G	11	24	G	25	28
28	G	G	G	G	G	G	G	38	36	G	G	G	40	G	G	G	G	G	G	G	29	24	26	G
29	G		G	G	G	G	G	30		G	G	G	G	G	45	35	32	G	G	11	G	G		G
30	G	G	G	G	G	G	G	33	G	G	G	G	G	38	G	G	G	29	21	26	G	G	G	G
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	28	26	29	27	30	29	30	30	28	29	26	29	28	26	27	29	30	30	30	29	30	30	28	28
MED	27	12	G	G	G	G	29	39	36	37	41	40	G	G	G	G	34	34	30	28	25	31	26	24
U Q	33	31	29	32	24	G	35	42	54	51	51	49	46	45	45	37	48	46	40	38	41	40	45	36
L Q	G	G	G	G	G	G	G	35	G	G	G	G	G	G	G	G	G	31	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

SEP. 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	14	13	13	13	13	13	13	13	17	17	33	30	33	30	15		13	13	28	14	14	14	14	13
2	14	13	13	13	13	14	13	14	18	23	23	18	24	30	30	17	14	13	13	13	13	13	13	13
3	14	14	22	14	13	14	13	13	28	17	21	15	29	18	57	42	14	13	13	13	13	13	13	13
4	13	13	14	15	14	13	13	14	18	21	26	25	43	14	24	20	13	13	14	13	13	13	13	13
5	13	14	14	14	13	13	13	14	20	18	21	21	22	22	14	15	14	13	13	13	13	13	13	14
6	13	13	13	13	13	13	14	13	13	23	20	21	18	43		15	13	14	13	13	13	14	13	13
7	14	14	13	14	13	13	13	13	14	28		25			20	15	13	13	13	13	13	13	14	13
8	13	13	13	13	13	13	13	13	17	18	C		43	17	14	13	15	14	15	13	13	13	13	13
9	13	13	13	13	13	13	13	13	13	42	25	26	43		14	14	13	17	13	13	14	13	13	14
10	13	13	13	13	13	14	20	13	14	40		30	31	31	29	15	14	14	13	13	14	14	15	14
11	13	14	13	14	13	13	13	13	14	14	29	43	30	22	18	14	14	13	13	13	13	14	14	13
12	13	13	13	14	13	13	13	13	15	14	25	44	30	43	42	14	24	13	13	14	13	13	14	14
13	14	13	13	14	14	13	14	13	14	17	18	17	30	29	28	18	14	13	15	14	13	13	21	17
14	14	13	20		13	13	13	13	14	21	29	25	44		17	17	31	13	15	14	34	20		
15	13		13		14	13	13	13	13	20	42	44	44	42	15	15	18	15	14	14	13	13	14	
16	14	14	13	14	14	14	18	18	13	42	18	46	40	40	21	14	13	14	14	14	14	14	14	17
17	14	20		14	13	14	13	13	30	42	30	25	43	21	21	13	13	13	13	13	14	13	13	14
18	13	14	17	14	13	14	13	13	14	21	28	41	18	40	21	14	13	13	14	13	13	14	14	21
19	13	14	14	14	13	13	13	14	15	29	41	40	44	40	38	20	13	13	14	15	13	14	13	14
20	17		14	13	14	13	14	14	22	28	26	41	44	28		22	15	13	14	14	21	13	13	13
21	13	14	13	13	13		13	15	15	21	44	42		40	31	15	31	15	13	14	13	14	15	13
22			17		14	14	13	13	14	14		44	43	40	38	44	17	13	14	13	14	14	14	14
23	15	14	17	14	13	13	20	14		14	34	33	36	20	40	40	13	13	13	14	15	13	13	21
24	14	17	14	15	13	14	15	13	30	28	30	33	28	43	14	40	24	15	14	13	13	14	14	13
25		13	14	13	13	13	13	13	14	28	44	44	44	40		35	18	13	14	13	13	14	13	14
26	14	17	17	14	14	13	13	13	14		31	30	31	33	28	14	14	13	14	15	15	17	14	15
27	15	14	14	14	14	13	17	18	14	33	38	40	20		39	13	13	21	13	13	14	14	15	14
28	14	14	14	14	17	14	17	13	13	17	34	42	33	40	21	13	13	13	15	20	13	13	13	15
29	15		15	13	15	15	17	13		14	24	40	43	42	14	13	13	17	14	13	15	13		14
30	15	14	14	13	14	14	17	13	14	31	41	45	41	39	33	18	29	13	13	14	13	17	17	13
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	28	26	29	27	30	29	30	30	28	29	26	29	28	26	27	29	30	30	30	30	30	30	28	28
MED	14	14	14	14	13	13	13	13	14	21	29	33	34	36	21	15	14	13	14	13	13	14	14	14
U Q	14	14	14	14	14	14	15	14	17	28	34	42	43	40	33	20	17	14	14	14	14	14	14	14
L Q	13	13	13	13	13	13	13	13	14	17	24	25	29	22	15	14	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

SEP. 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	A	30	30	28	29	28		A	A	58	62	54		A	A	A	A	A	63	60			A	A
2	A	A	26	28			30	53	A	61	53	A	A	A	A	A	45	A	A	A	71	59	A	28
3	A	28		29				54	A	A	56	A		A	A	A	48	A	A	63	76	52	A	A
4	A	A				25	29	41	58	A	A	A	A	A	A	A		48	57	73	54	45		A
5	A		32	29	28	29	45	46	47	50	A	A	A	A	A	52	57	58	68	77	64	A	A	A
6	A	A	A	A	A	A	A	47	A	59	49	A	A			53	57	58		72		40	A	
7	A	A			26		32	44	58	60			A			50	56	40	60	64	44	A	30	A
8	28	A			A	25		54	49	A	A	39			55	52	53	56	62	54	60	46	37	30
9	26	A	25				34	47	68	61	A	55	A	52	55	62	63	66	68		38	26	28	
10		29	31	30	24			39	54	47	51			58	A	51		54	54		50	53		32
11	28	30	49				30	47	57	56	A	A	A	A	84	88	77	77	76	70	66	A	28	28
12	36	37	36	36	A	A	A	37	60	58	A	53	A		56	54	56	72	75	75	47	A		41
13	40	34	34	32	35		32	48	44	54	61	61		A	A	52	48	84	89	52	A	A	26	
14	30	29		26	26		34	55	50	64	66	59		47	A	A	60	55	47		72		A	28
15	28			28	28	25	34	55	54	52	49	55	62	66	57	48	50	56	67		79	36	28	28
16	28	29	28	28	26		35	48	54	53	92	57	58			54	52	68	80	78	66	38	36	28
17	28	28	29	49	29	29	36	54	59	58	71	66		60	64	57	48	53	55	66	69			28
18		31	28	30	30	30	34	59		56	A	A	49	53	53	47	46	48	61	78	A			28
19	28	26	30	28	28	26	34	54		52	59	59	64	51	55	50	44	51	60	74	37	37	38	34
20	34	34		A	31		59	66	53	57	53	58	60	63	56	51	50		A	72	85			A
21		30	30	28	29		35	47	56	59	53	64		57	54	54	53	58	55	54	55	53	50	29
22			28		29	29	30	68	44	58	53	52		61	53		46	51	55	52	49	46	54	42
23	36	34	30	28	26		30	54	62	54	55	64	70	62	61	53	53	55	67	71	54	A	28	26
24	32	32	30	30	28	26	34	56	44	46	69	61	64	66	60	56	47	57	67	54	53	42		34
25	28	32	32	30	28	26	32	47		58	58	61	67	67	55	58	57	62	67	55	A		32	32
26	26	32	32	31	29	28	30	52	57	54	61	58	68	68	58	A	51	42	72	66	63	36	34	34
27	34	32		30	29	30	34	55	69	64	63	53	56	57	64	55	56	68	76	54	38	32	28	32
28	32	34	32	32	30	28	34	55	73	72	61	60	76	78	62	57	56	56	55	53	48	46	37	34
29	A	37	34	32	32	26	34	54	66	64	61	57	49	62	76	77	64	67	67		36		28	49
30	30	32	32	34			34	59	68	64	57	56	58	60	54	52	70	76	71	67	37	28	31	31
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	18	21	21	22	21	15	24	29	23	27	22	21	13	18	19	23	27	26	26	24	25	17	17	21
MED	29	32	30	30	29	28	34	54	57	58	58	58	62	60	56	53	53	56	67	66	54	42	31	31
U Q	34	34	32	32	29	29	34	55	62	61	62	61	67	66	62	57	57	67	71	72	67	49	37	34
L Q	28	29	28	28	27	26	31	47	50	54	53	54	57	57	55	51	48	53	57	54	45	36	28	28

HOURLY VALUES OF fEs AT Yamagawa

SEP. 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	26	20	24	31	22	33	67	79	75	70	46	G	51	56	65	42	87	58	34	48	55	53	59
2	33	55	28	27	27	G	28	46	72	46	42	42	59	50	69	66	48	64	59	74	39	36	39	G
3	39	29	33	27	G	G	27	39	67	93	45	72	42	63	96	74	44	58	69	77	70	71	49	59
4	40	34	32	G	G	G	36	44	50	91	62	81	72	59	70	60	G	G	30	27	27	50	39	46
5	44	34	26	26	29	26	36	49	43	50	58	64	55	61	61	G	G	44	51	81	55	108	56	67
6	83	72	79	72	67	57	44		61	49	46	56	43		G	G	G	38	38	26	28	25	34	49
7	43	40	36	31	G	G	G	36	40	41	43	G	48	40		38	42	43	38	35	33	50	36	79
8	48	71	37	48	58	G	36	32	49	50	50	41	G	46	G	G	40	41	27	22	27	G	G	29
9	32	36	26	30	G	32	23	35	50	63	58	40	44	40	G	G	G				23	G	G	33
10	34	67	40	34	36	33	26	46	46	47	50	40	48	47	47	47	47	50	48	46	44	33	33	29
11	24	G	G	28	G	25	G	37	53	50	72	64	92	87	42	66	37	46		33	39	57	26	G
12	34	49	49	40	26	36	34	36	49	62	79	52	105	G	G	G	G	33	G	30	32	67	39	70
13	32	32	28	G	G		G	35	54	48	G	51	G	44	44	45	39	35	G	44	60	34	27	40
14	28	25	30	25	G	G	27	33	G	G	G	40	41	44	60	68	50	40	58	57	34	43	50	25
15	G	G		25	G	G	28	33	59	G	G	54	60	46	G	G	G	G	29	23	24	22	G	G
16	G	24	G	G	G		G	36	42	42	G	G	G	G	46	G	G	38	37	40	24	26	32	25
17	G	G	G	G	G	G	23	40	41	39	39	G	G	40	43	G	G	35	28	26	23	29	28	27
18	37	G	G	G	G	G	G	40	49	46	58	49	G	G	G	G	G	38	49	28	22	29	33	G
19	G	G	G	G	G	27	34	40	43	42	G	41	41	G	G	G	G	35	30	50	32	29	31	G
20	G	32	32	44	G		36	34	49	36	49	54	40	40	38	43	40	57	59	34	33	46	26	71
21	32	G	G	G	G	G	G	35	34	G	G	G		G	G	G	G	34	25	G	G	G	G	11
22	G	G	G	G	G	G	G	36	40	G	G	41		G	G		G	36	40	32	40	27	33	29
23	25	24	G	G	G		G	39	42	61	G	G	G	41	G	G	40	35	29	28	56	59	31	31
24	30	G	G	G	G	G	G	33	35	G	G	G	G	G	G	G	G	32	28	G	32	28	31	27
25	30	29	G	G	G	G	G	40	38	39	45	G	G	G	G		G	44	31	33	46	41	35	32
26	37	G	G	G	G	G	G	G	34	G	48	G	G	G	G	72	G	36	38	36	36	32	40	G
27	G	G		G	G	G	G	29	35	G	G	G	G	G	G	G	G	36	29	28	26	28	G	30
28	G	G	G	G	G	G	G	30	34	40	40	G	G	G	G	G	34	G	28	28	25	G	G	G
29	34	G	G	G	G	G	G	34	34	G	G	G	42	G	G	40	G	35	33	24	20		G	G
30	G	G	G	G	G	G	G	32	36	G	G	G	40	G	G	G	G	36	40	31	11	G	G	G
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	30	30	28	30	30	26	30	29	30	30	30	30	28	29	29	28	30	29	28	29	30	29	30	30
MED	32	24	10	G	G	G	12	36	43	42	42	40	40	40	G	G	G	36	35	32	32	32	32	29
U Q	37	34	32	28	G	25	33	40	50	50	50	52	48	46	46	53	40	44	48	42	40	50	39	46
L Q	G	G	G	G	G	G	G	33	36	G	G	G	G	G	G	G	G	35	28	26	24	25	G	G

HOURLY VALUES OF fmin AT Yamagawa

SEP. 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	15	15	14	15	15	14	15	14	14	15	21	23	20	20	21	18	14	14	14	14	14	14	14	14
2	15	14	14	15	15	15	14	14	14	15	18	20	20	17	21	17	15	14	14	14	14	15	14	18
3	14	16	16	14	15	15	14	14	14	14	26	20	29	32	29	18	16	14	15	14	14	14	14	15
4	15	15	14	20	15	14	14	15	14	14	16	22	21	28	18	16	14	14	14	15	14	14	14	15
5	14	14	15	14	14	14	14	14	14	14	17	20	20	20	17	16	14	14	15	14	14	14	14	14
6	14	14	14	14	14	15	14	14	15	20	23	24	18		17	16	14	14	14	14	14	15	14	15
7	14	14	14	15	14	14	15	14	14	16	18	21	21	20		30	15	14	14	15	15	14	15	14
8	14	14	14	14	14	14	14	14	14	16	20	18	18	18	17	15	14	14	14	14	15	14	15	14
9	14	14	14	15	14	14	15	16	16	16	16	18	20	18	17	15	14	14	14	14	14	14	15	15
10	14	14	14	14	14	15	14	14	14	15	16	16	18	17	18	14	14	14	15	16	14	14	15	14
11	15	15	15	14	14	15	15	14	14	17	17	18	20	18	14	22	14	14	14	14	15	14	14	14
12	14	15	14	14	15	14	15	15	14	15	18	18	27	21	18	17	15	15	17	14	14	14	14	14
13	15	14	14	14	15		15	14	14	15	18	16	18	17	20	17	15	14	18	14	14	15	15	14
14	14	15	14	15	16	15	14	14	14	14	16	20	18	18	17	14	14	14	15	15	14	14	14	14
15	15	16		16	15	16	14	14	14	14	15	24	34	18	17	29	16	15	14	14	15	14	15	15
16	17	15	17	15	15		15	14	14	14	14	20	17	16	21	20	15	15	14	14	15	14	14	14
17	15	15	15	15	15	15	14	14	14	14	22	24	26	18	27	18	14	14	14	15	15	15	15	14
18	14	14	14	17	15	14	15	14	14	14	16	15	20	43	21	17	15	14	14	15	15	14	14	15
19	15	15	15	15	16	14	14	14	14	14	17	20	18	26	14	16	14	14	15	14	15	14	15	17
20	15	14	15	15	16		14	14	14	17	18	21	29	21	44	18	14	14	14	15	14	14	16	14
21	14	15	15	14	14	15	14	14	14	15	16	47		41	42	18	18	15	15	17	15	15	16	15
22	18	16	15	18	14	16	16	14	14	15	17	17	20	21	20		14	14	14	14	15	14	14	14
23	15	15	15	15	15		16	14	14	16	17	21	46	18	21	16	14	14	14	15	14	14	14	15
24	14	15	15	16	14	14	15	15	14	14	16	18	18	22	22	17	14	14	14	15	14	15	14	14
25	15	15	14	14	16	15	14	14	14	16	28	44	35	46	22	22	14	14	15	14	15	14	14	14
26	14	14	14	14	14	14	15	14	14	17	17	18	18	18	18	20	17	14	15	14	15	14	14	14
27	14	15		14	14	15	14	14	14	17	22	22	20	45	20	17	17	14	14	15	16	14	15	14
28	15	15	15	15	14	15	14	14	14	14	20	23	18	18	14	14	14	14	14	15	14	14	15	15
29	14	17	14	16	14	16	15	14	14	16	17	20	20	17	16	14	14	14	14	15	15		15	15
30	14	15	14	14	15	16	15	14	14	14	15	14	21	42	17	17	15	16	14	15	14	17	15	17
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	30	30	28	30	30	26	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	29	30	30
MED	14	15	14	15	15	15	14	14	14	15	17	20	20	20	18	17	14	14	14	14	14	14	14	14
U Q	15	15	15	15	15	15	15	14	14	16	20	22	23	27	21	18	15	14	15	15	15	14	15	15
L Q	14	14	14	14	14	14	14	14	14	14	16	18	18	18	17	16	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

SEP. 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						29	58	A	A	A	53	A	A	A	A	A	A	74	78	86	64	A	
2						A	30	35	63	67		A	A	A		A	56	A	A	A	80	A	A	A
3	A	A		29			29	55	50	53	58	A	A	A	A	A			A	A	85	A	A	A
4	A	A						54	44	A	A	A	A	A	A			55	68	81	67		A	
5						26			A	55	A	39	A	A		A		72	83		50	A	A	A
6	A	A	A	A	A	A	A	51	41	A	A	A	A		56	57	64	70	A	85	82	A	A	
7		A						46		54					A	A	58	64	76	88			A	A
8	A	A			29			59	50	54	A	A	A			A	62	66	78	75	A	34		
9				A			28	46	59	72	71	A	A		70	80	88	101	88	81				
10		A	A	A		A		41	57	50	A	A	A		54	57	53	61	66	74	86			
11								45	53	61	57		A	89	110	110	117	130	127	86	66			
12	34	35	A	44	A	A	A	45	56	A	A	A	A	57		58	60	75	85	76	44		A	A
13		29		30				52	A	62	56		61			52	80	A	A	45	A	A	A	
14			A					50	58	74	64	56	58		66	67	76	A	A	A	82	A		
15		31	30	32	30	28	32	64	59	62	57			73	68	60	51	62	84	82	64	31		
16				28				50	62	74	61	56		60	57	A	A	72		82	A	30	A	A
17							29	62	57	56	70	78	90	106	104	86	77	76	86	87	53	A		
18	A			28				58		59	49		56		68	51		A	61	76	78	A	A	
19							28	46	58	61	54	57	71	86	66	58	46	40	72		A	32		
20		30	32	31				58	53	58	65	62	79	88	102	90	72	67	72	81	86			A
21	A	A						46	55	57	58	66			80	67	61	62	61	54	61	54	42	
22							30		58		56		68	76	76	67	52	48	55	66	72	62	37	31
23	35	32	26		26				58	55	60	A	74	82	75	80	67	66	74	74	59	A		
24			28						60	69	67		77	82	81	66	60	60	77	74	66	36		
25	34		41	34	28		28	56	53	61	58	62	84	97	97	A	106	111	108	75	54			A
26		30	32				28		44	56	64	70	76	75	57		53	72	84	72	67			30
27	29	30	31	30			28	60	68	62	67	60	66	75	78	63	63	72	81	76	51		29	28
28	31							61	76	76	65	72	98	116	116	104	85	71	58	54	54	42	36	
29	32	32	31	30				58	66	62			57	64	75	77	93	76	66	60	37			A
30			37					59	71	64	61	57		65	72	67	74	78	81	76	A			
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	6	8	9	10	4	2	11	25	25	25	20	13	14	16	21	20	24	24	24	25	23	9	4	3
MED	33	30	31	30	28	27	29	54	58	61	60	60	72	79	75	67	64	70	76	76	66	36	36	30
U Q	34	32	34	32	29	28	30	58	61	65	65	68	79	88	89	80	78	75	84	81	82	58	39	31
L Q	31	30	29	29	27	26	28	46	53	55	57	56	61	69	66	58	57	62	67	73	54	31	32	28

HOURLY VALUES OF fEs AT Okinawa

SEP. 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	45	33	34	G			G	41	87	122	73	48	50	73	80	52	62	82	73	58	81	41	31	
2		G				46	31	42	39	54	52	46	53	46	42	50	61	108	103	83	55	74	50	65
3	59	48		G			G	32	39	42	62	87	64	97	50	67	G	66	92	85	55	54	46	38
4	36	40						50	42	57	91	102	96	63	68	G	45	33	46	40	39	29	28	
5	29			G	G	G			52	45	66	43	49	52	51	67		50	54	67	34	58	48	36
6	90	69	48	51	70	30	36	36	40	92	88	82	60	G	G	G	G	44	112	46	68	36	38	30
7	30	51	G	28					G	G	48	42	G		59	62	46	44	40	26			51	54
8	40	35	25	G	26	29	29	34	43	38	49	53	43	G	G	66	54	57	59	79	65	G		
9	G		G	26	26		G	30	41	58	60	65	57	G	G		G				29			G
10	28	52	48	47	36	43	37	39	44	46	50	54	58	51	49	44	G	36	31	27	11	21		
11	27	25	24					32	47	45	40	48	57	42	G	49	G	G	29	G	11	G	31	38
12	31	26	40	50	37	26	31	34	53	66	82	60	92	G	G	G	G	G	G	G	29	G	30	35
13	G	G		G				40	72	54	64	49	G		G	51	37	150			52	58	39	
14			28				G	30	37	54	51	52	52	41	41	G	44	83	90	132	67	113	31	27
15	28	G	G	G	G	27	30	36	G	G	N	G	42	G	G	G	G	45	39	27	11	G		
16	G	G		G			G	33	48	45	G	G	G	41	40	57	59	52	48	50	40	G	29	27
17				G	G		G	32	45	46	G	G	G	G	G	G	G	40	40	60	51	34		
18	40		26	27		G	G	G		42	43	G	G	G	G	38		49	41	50	84	49	32	
19	26	28					25	58	69	G	41	G	G	G	G	G	G	36	94	53	40	28		30
20		G	G	G			G	G	48	42	40	43	G	G	46	G	G	36	38	30	29	28		37
21	43	37	G	G				G	37	G	G	G			G	G	G	G	30	25	G	G	G	
22							G		37		G		G	G	G	G	G	36	40	43	40	29	29	G
23	G	G	G	29	G		G	39	46	50	52	55	50	G	G	G	G	G	G	49	50	36	36	G
24	G		G	G	G				40	G	G	G	G	G	G	G	G	G	G	G	30	29	28	
25	26	31	25	G	G	G	G	29	37	G	48	G	50	G	G	105	G	54	44	42	39	22	34	36
26	36	32	G	G	G		G		37	G	G	G	G	G	G		65	35	34	33	29	60	34	G
27	G	G	G	G		G	G	G	35	G	G	G	G	G	G	G	44	G	40	26	31	G	G	G
28	G					G	G	28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
29	G	G	G	G	G			32	G	G			G	G	G	G	G	G	G	G			25	25
30	G	G	G				G	30	36	G	G	G		47	G	G	46	35	35	G	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	25	22	20	22	13	11	22	25	29	29	28	28	28	27	30	28	28	29	28	28	28	26	22	18
MED	28	27	G	G	G	26	G	32	40	42	48	43	42	G	G	G	G	36	40	41	39	29	31	30
U Q	38	37	27	27	31	30	29	39	47	54	61	53	55	46	42	51	45	53	56	55	53	49	38	37
L Q	G	G	G	G	G	G	G	29	37	G	G	G	G	G	G	G	G	G	30	25	29	G	28	G

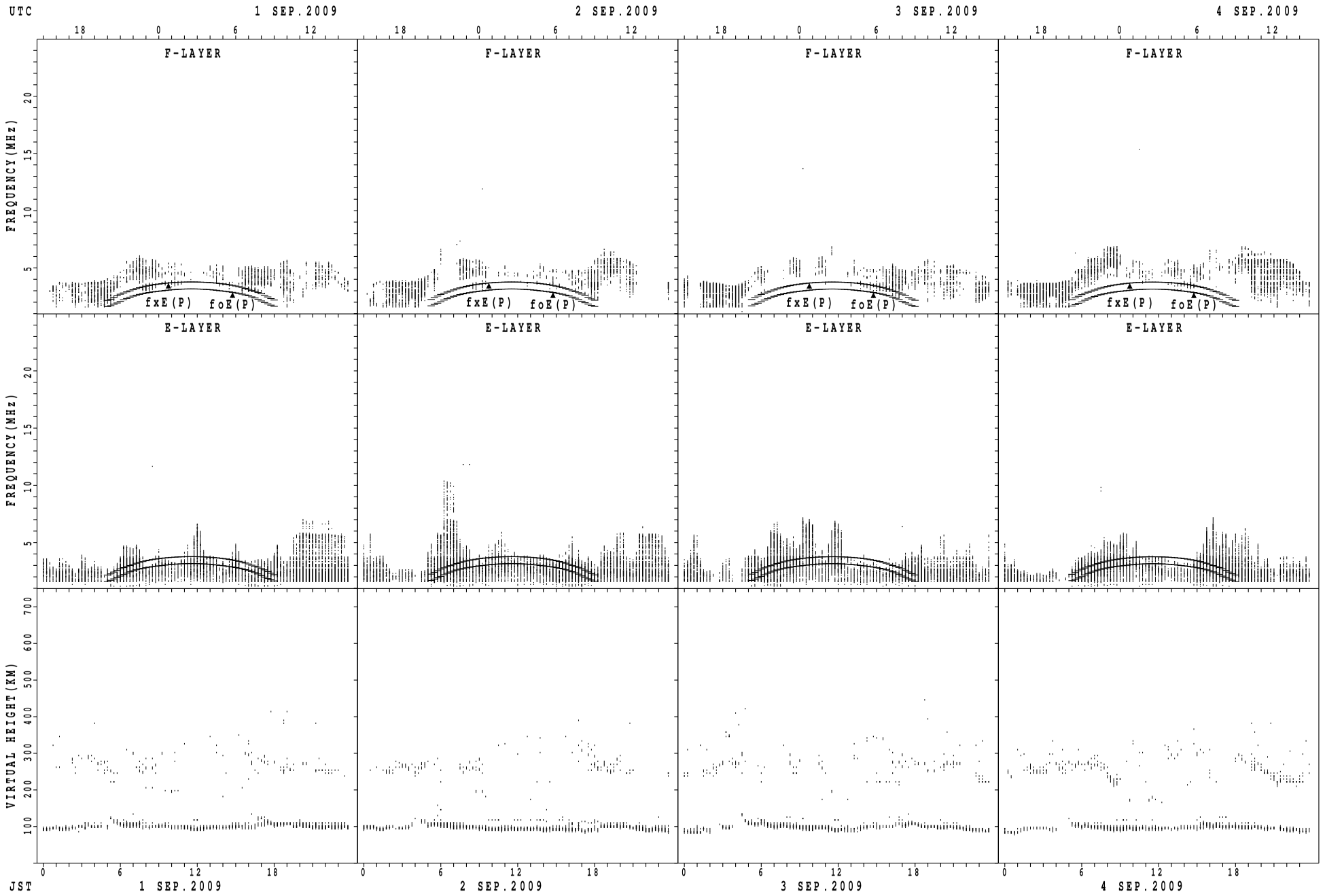
HOURLY VALUES OF fmin AT Okinawa

SEP. 2009

LAT. 26°41.0′N LON. 128°09.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

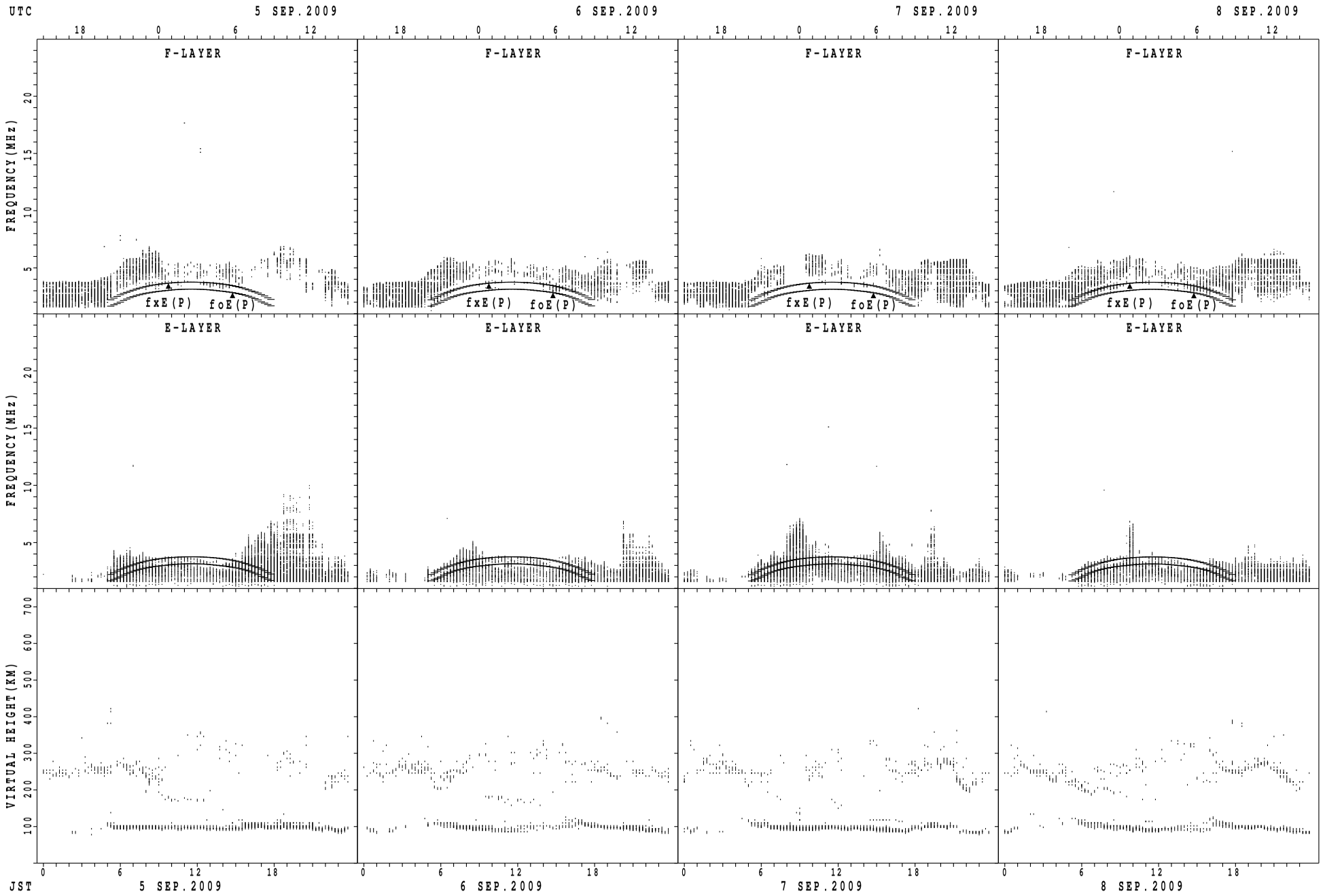
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	14	14	15			18	15	14	22	27	28	35	33	30	29	21	14	14	14	14	15	15	
2		15				18	15	14	14	20	24	27	30	29	28	24	23	15	14	15	15	14	15	14
3	17	16		18			15	14	16	21	26	29	32	35	32	29	22	14	14	14	15	15	14	15
4	14	15						15	14	22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

SUMMARY PLOTS AT Wakkanai



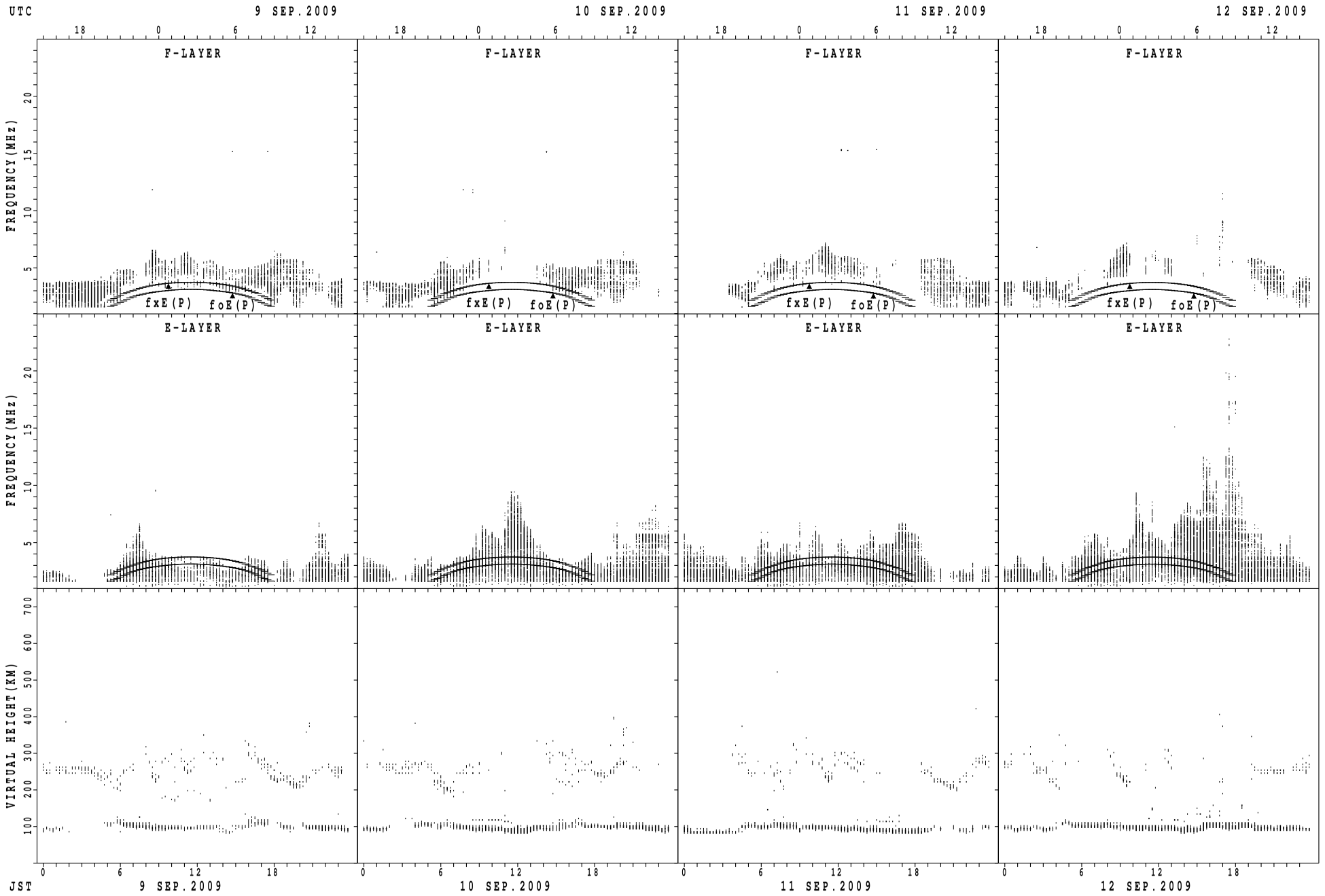
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



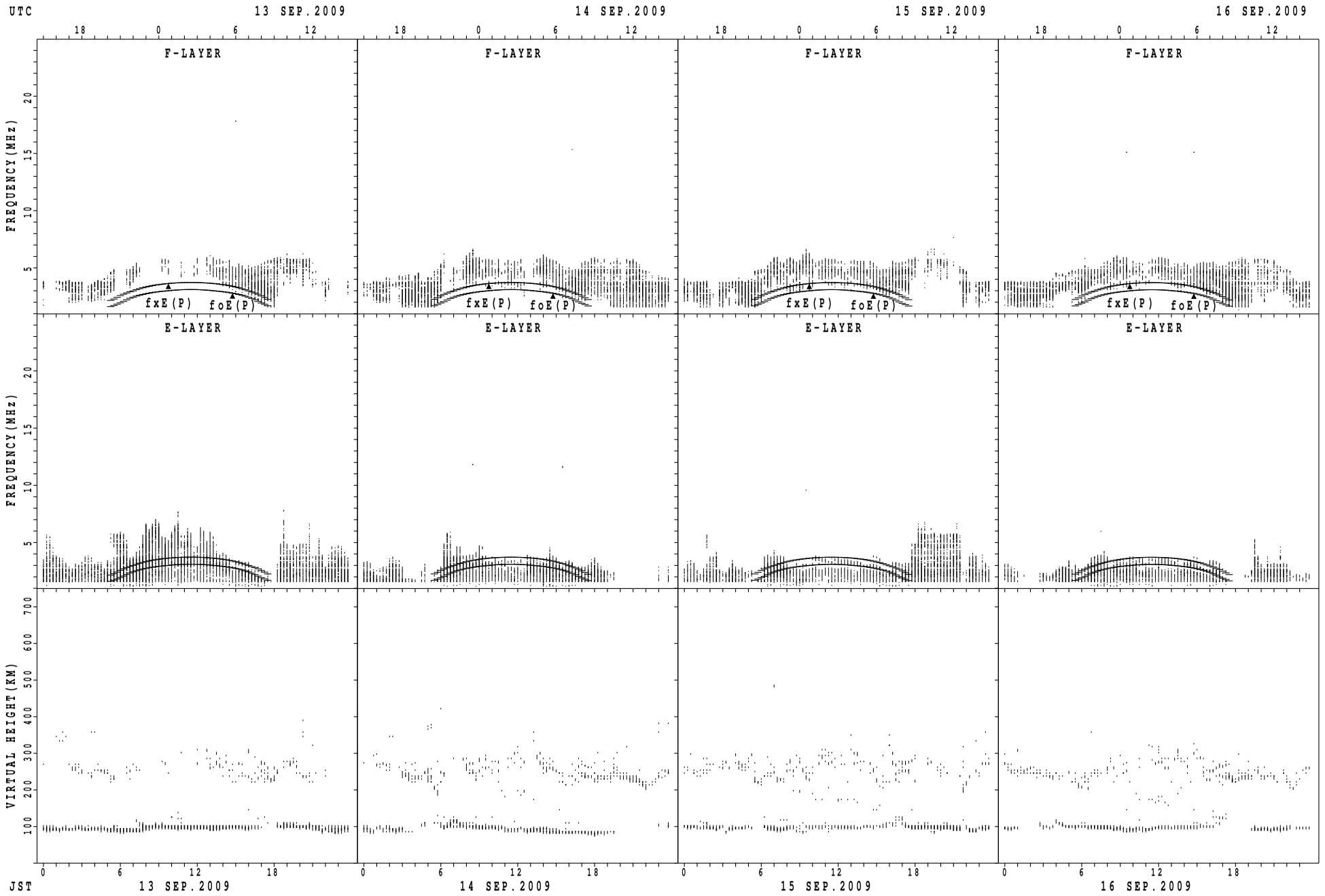
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



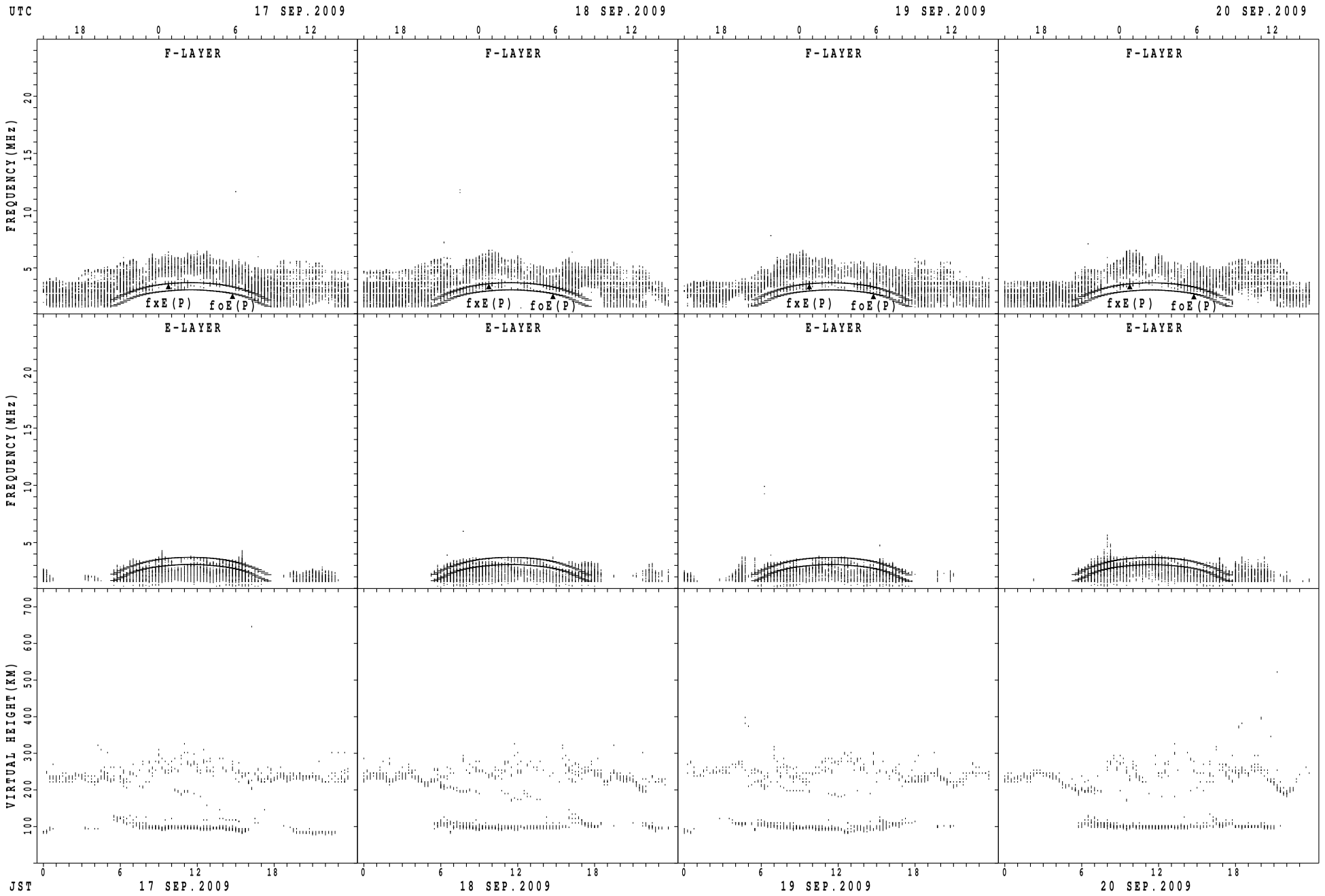
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



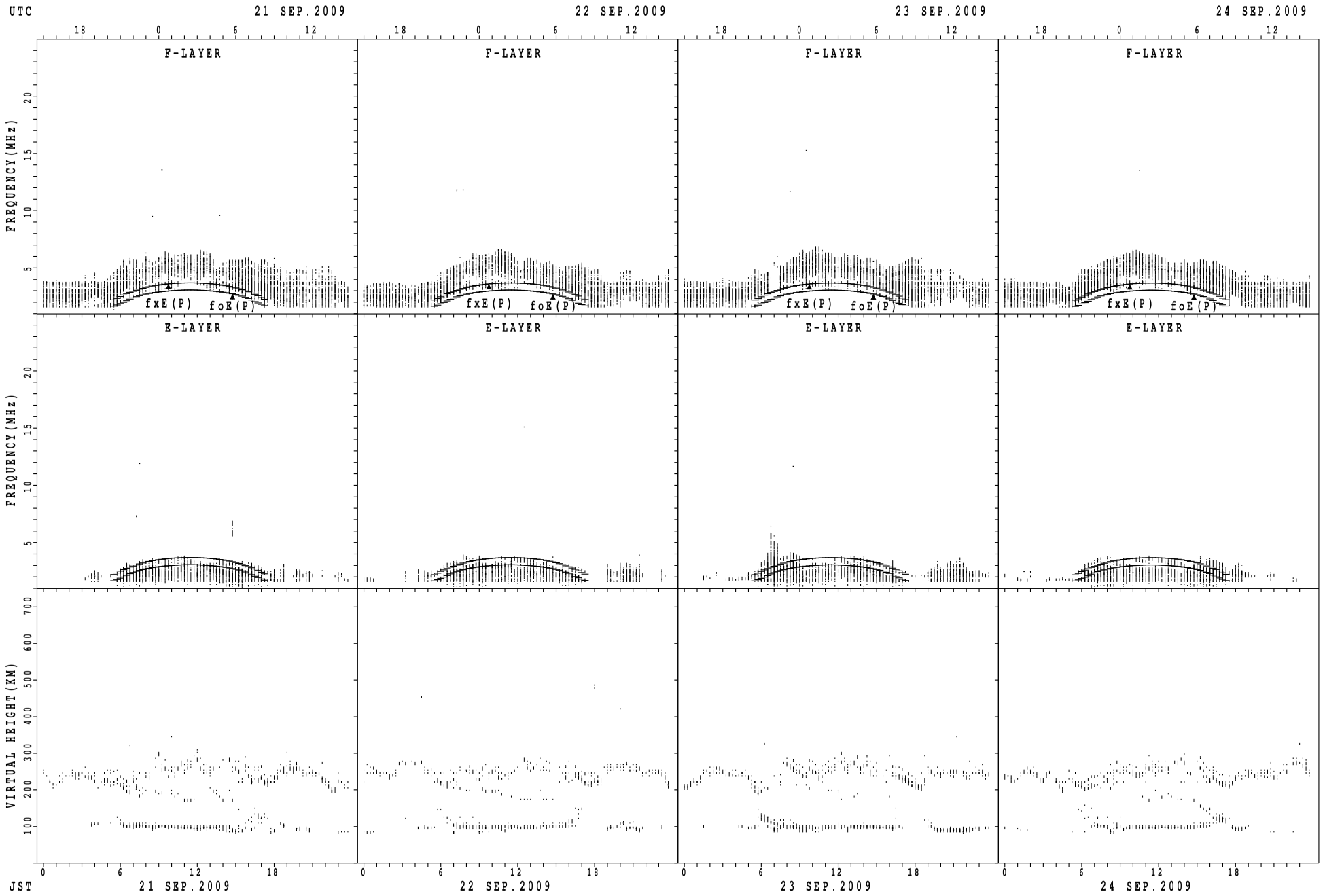
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



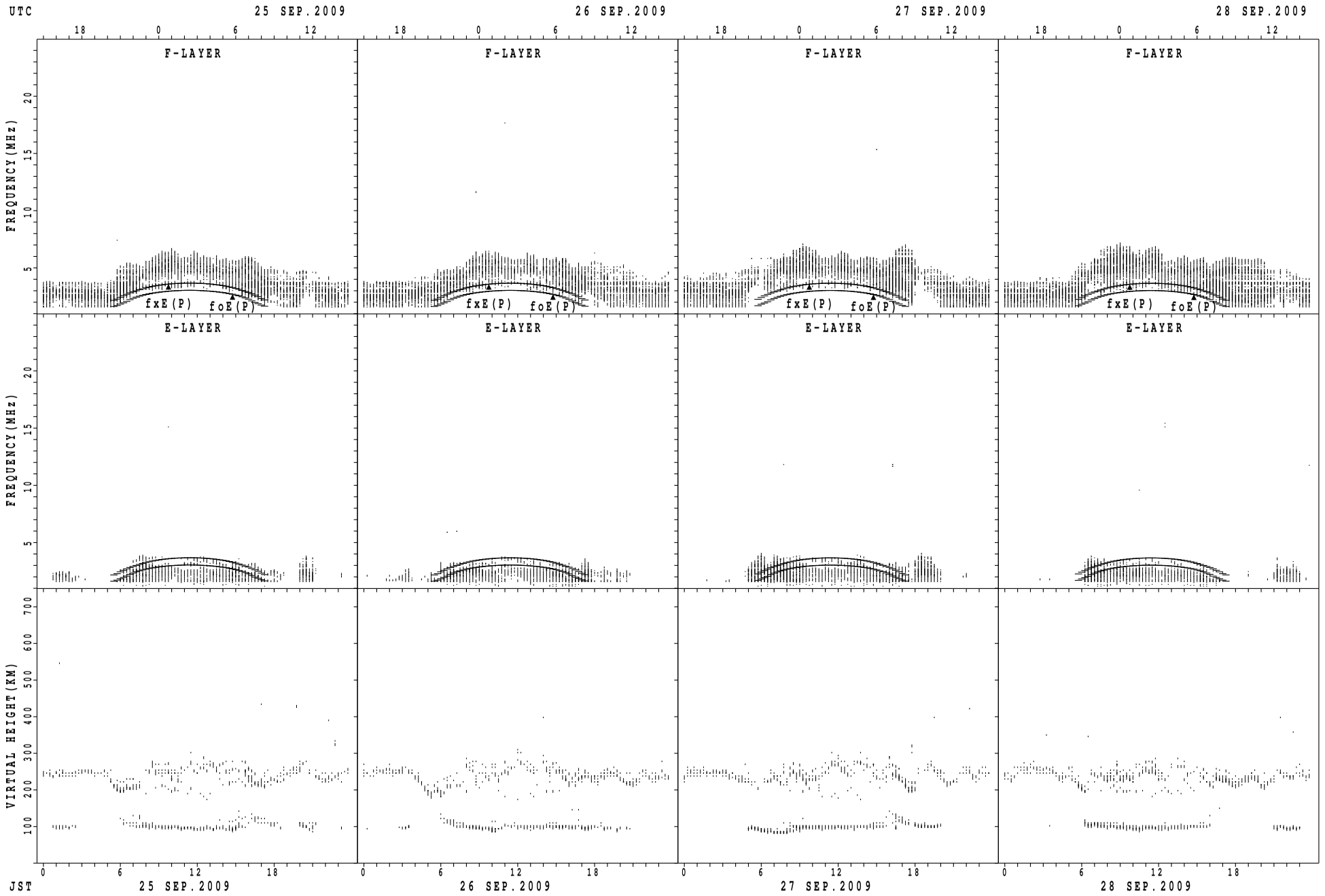
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



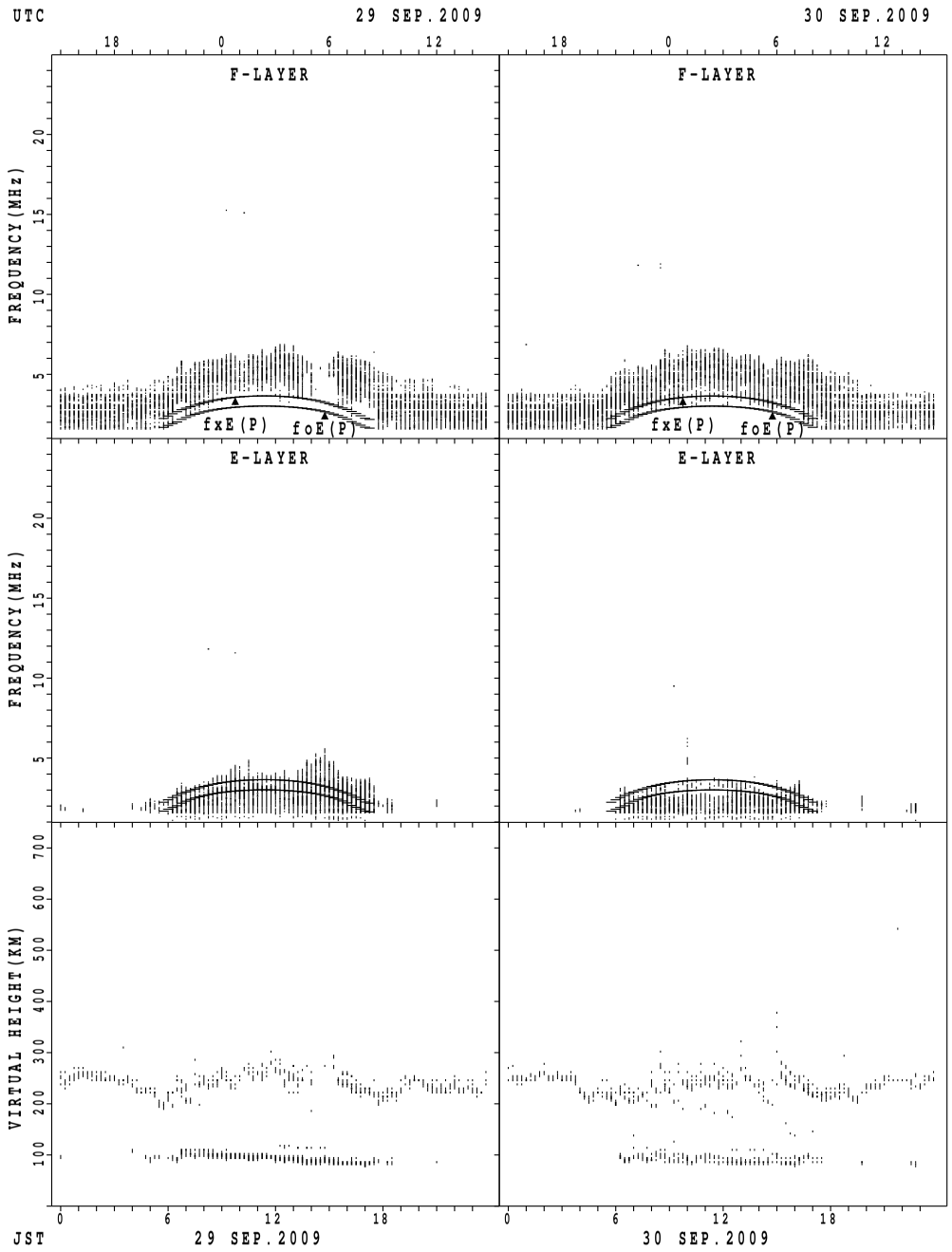
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



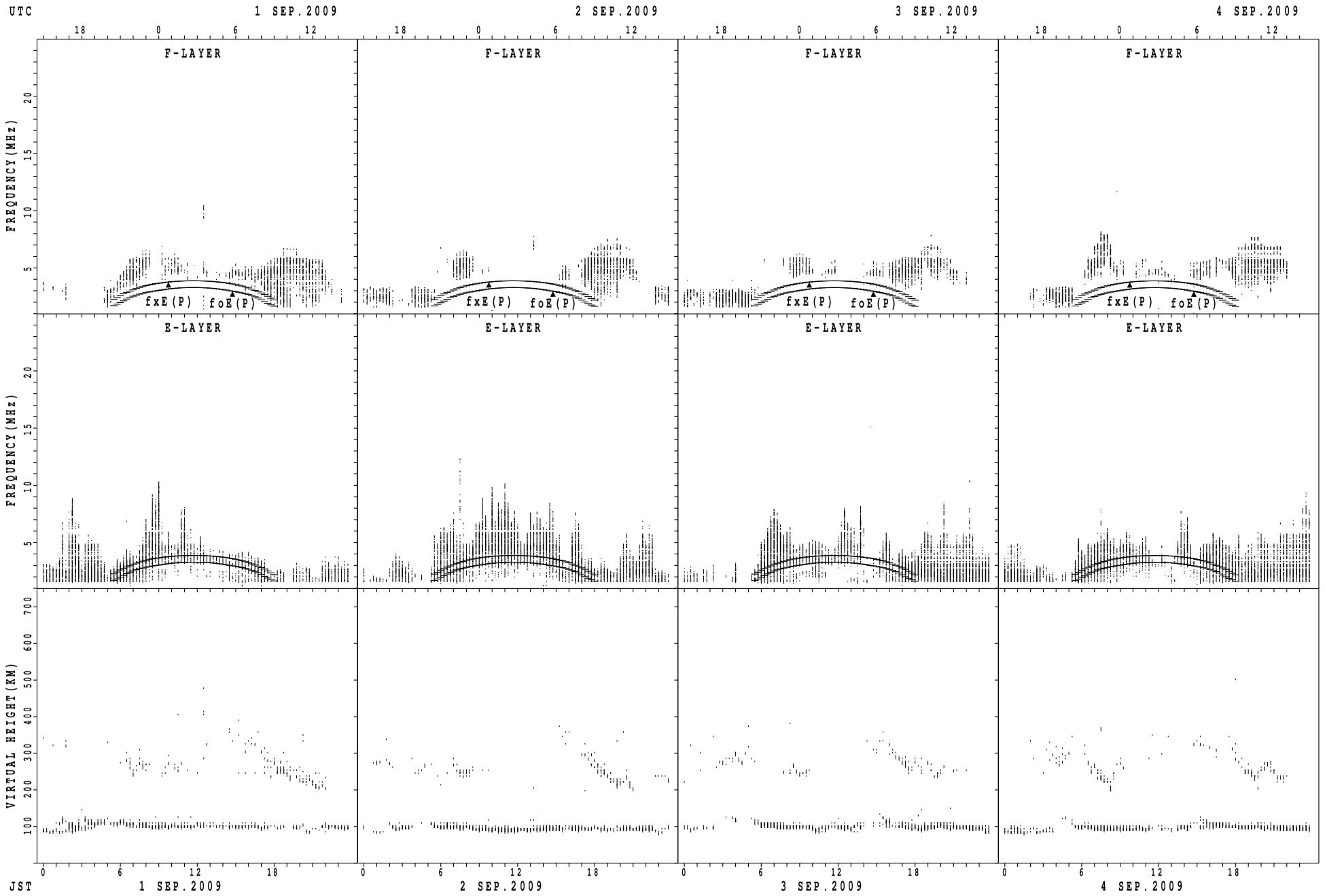
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



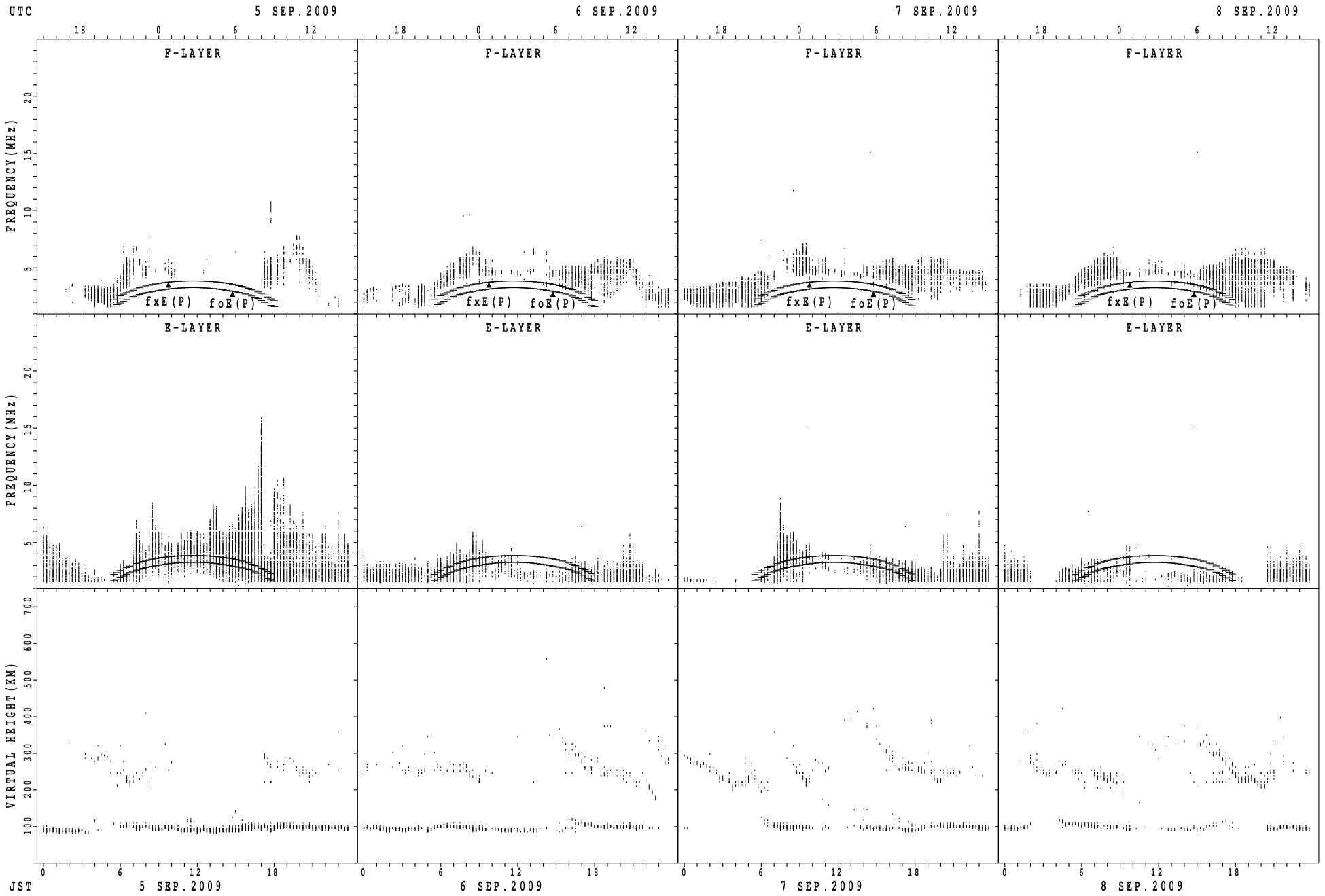
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



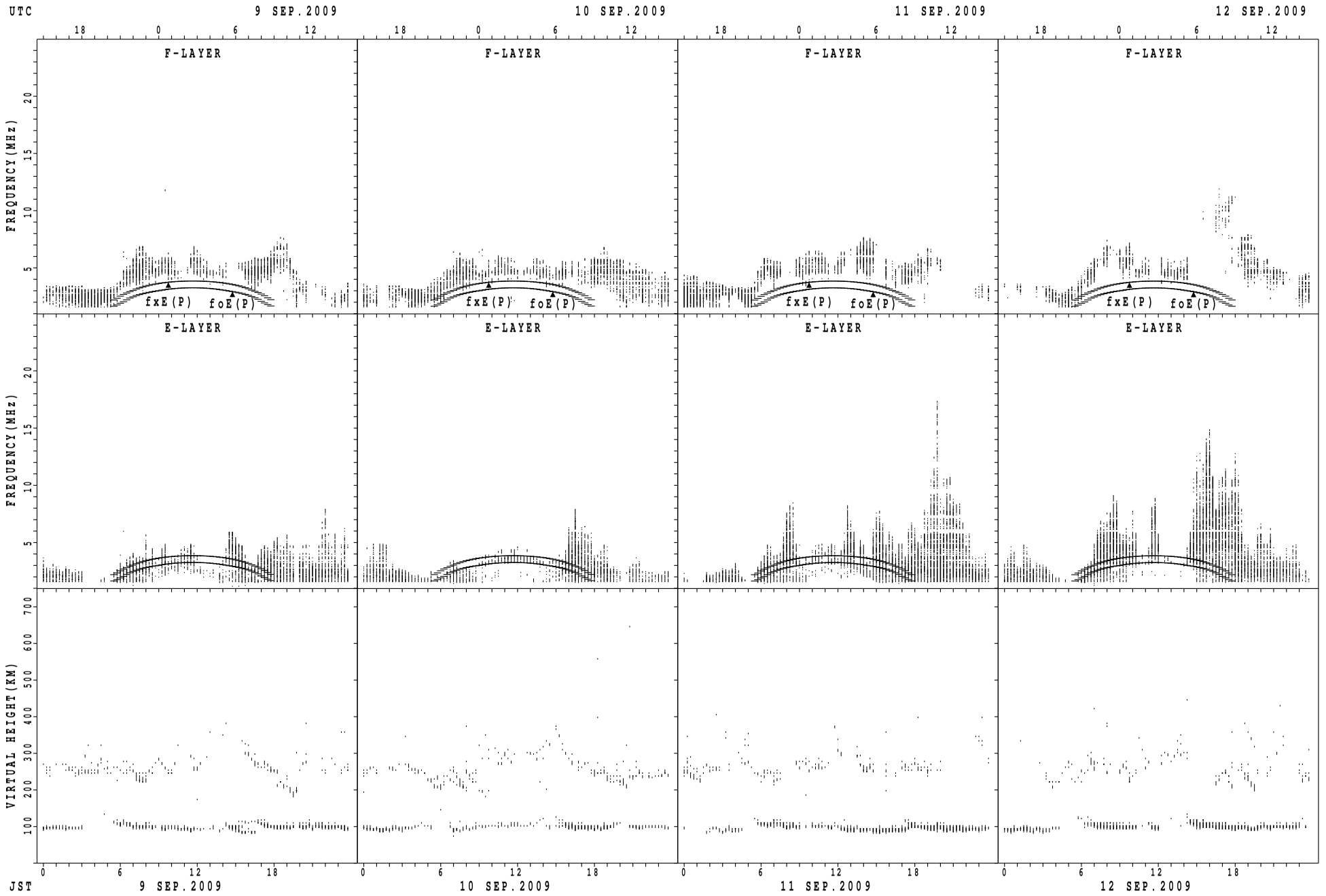
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



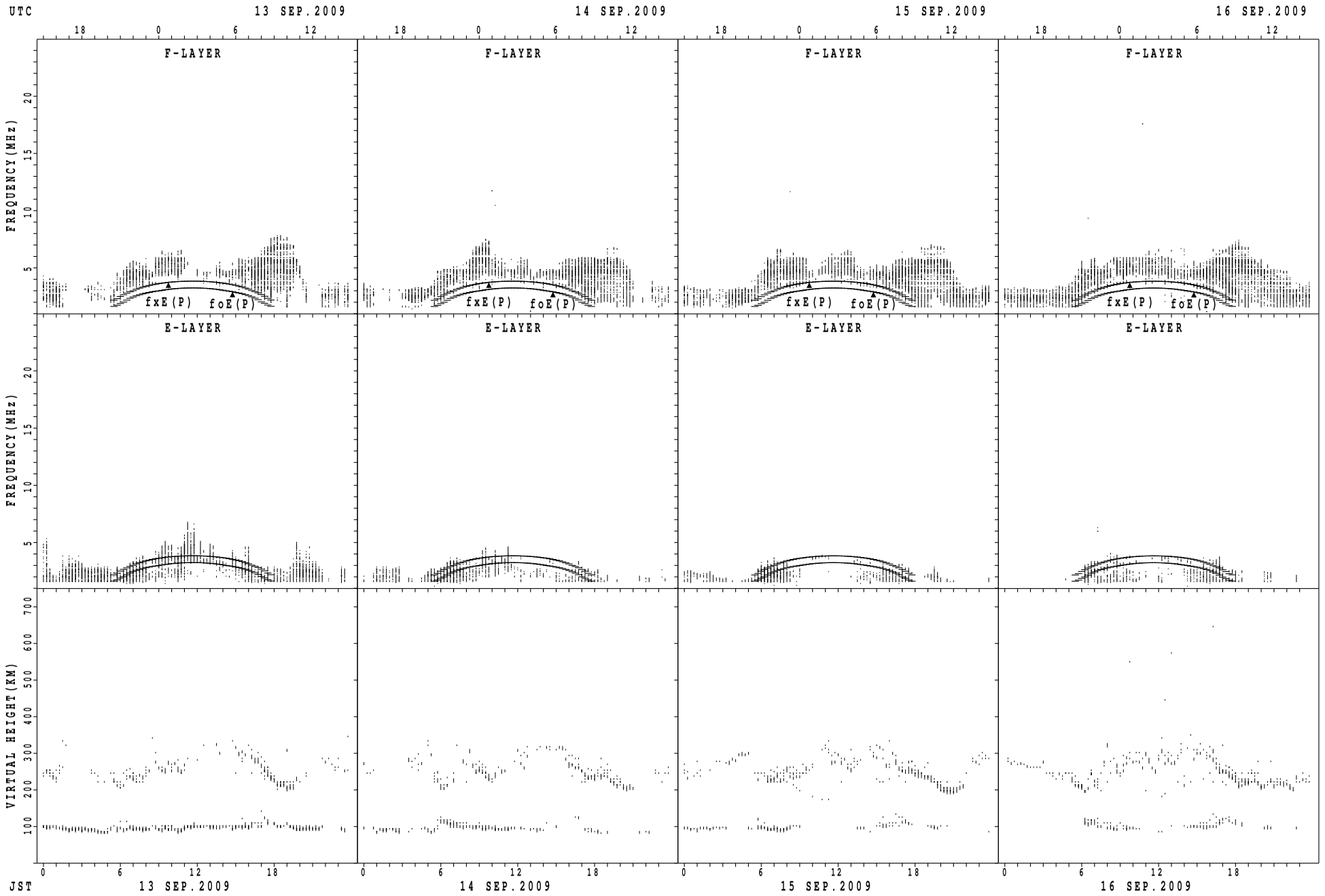
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



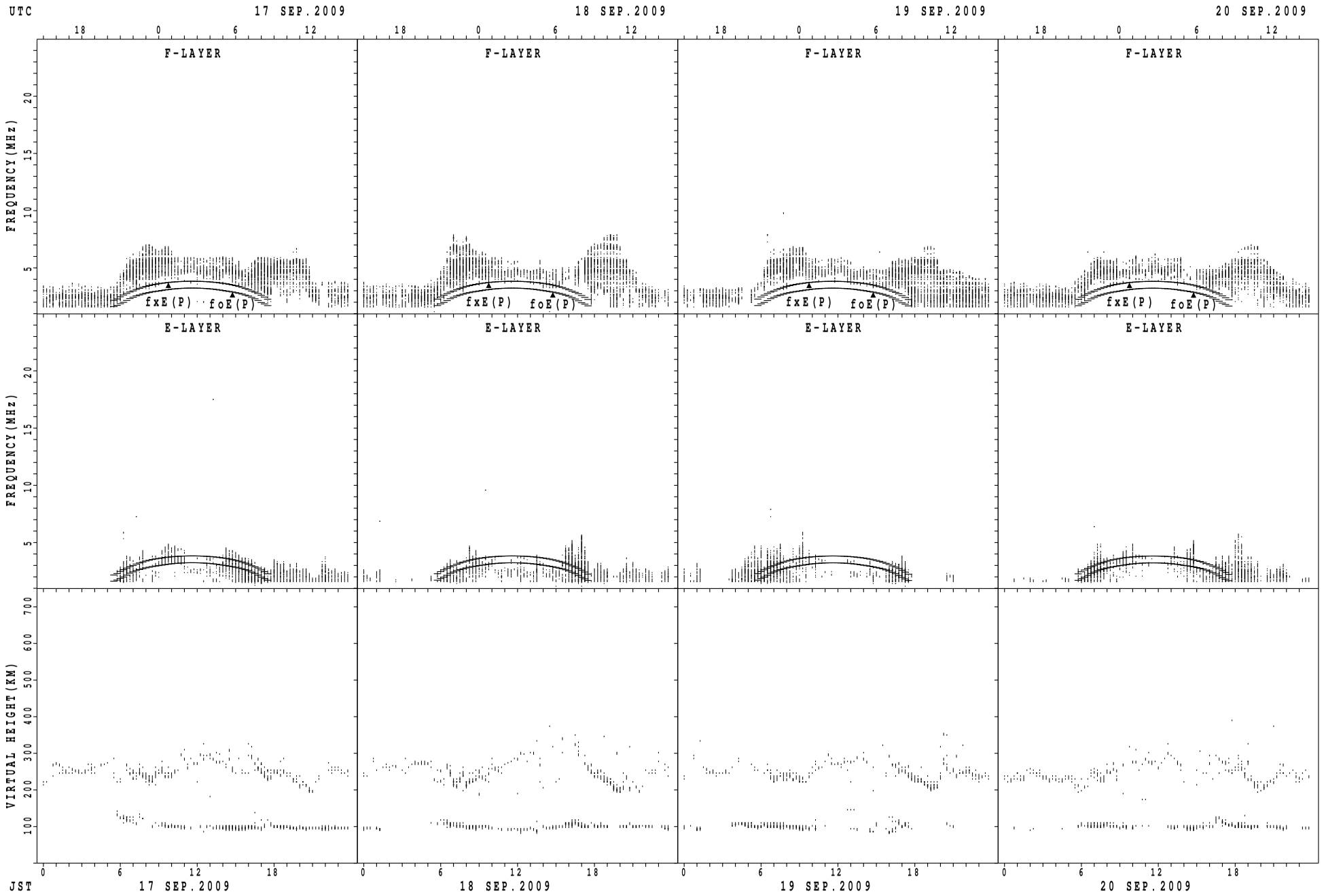
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



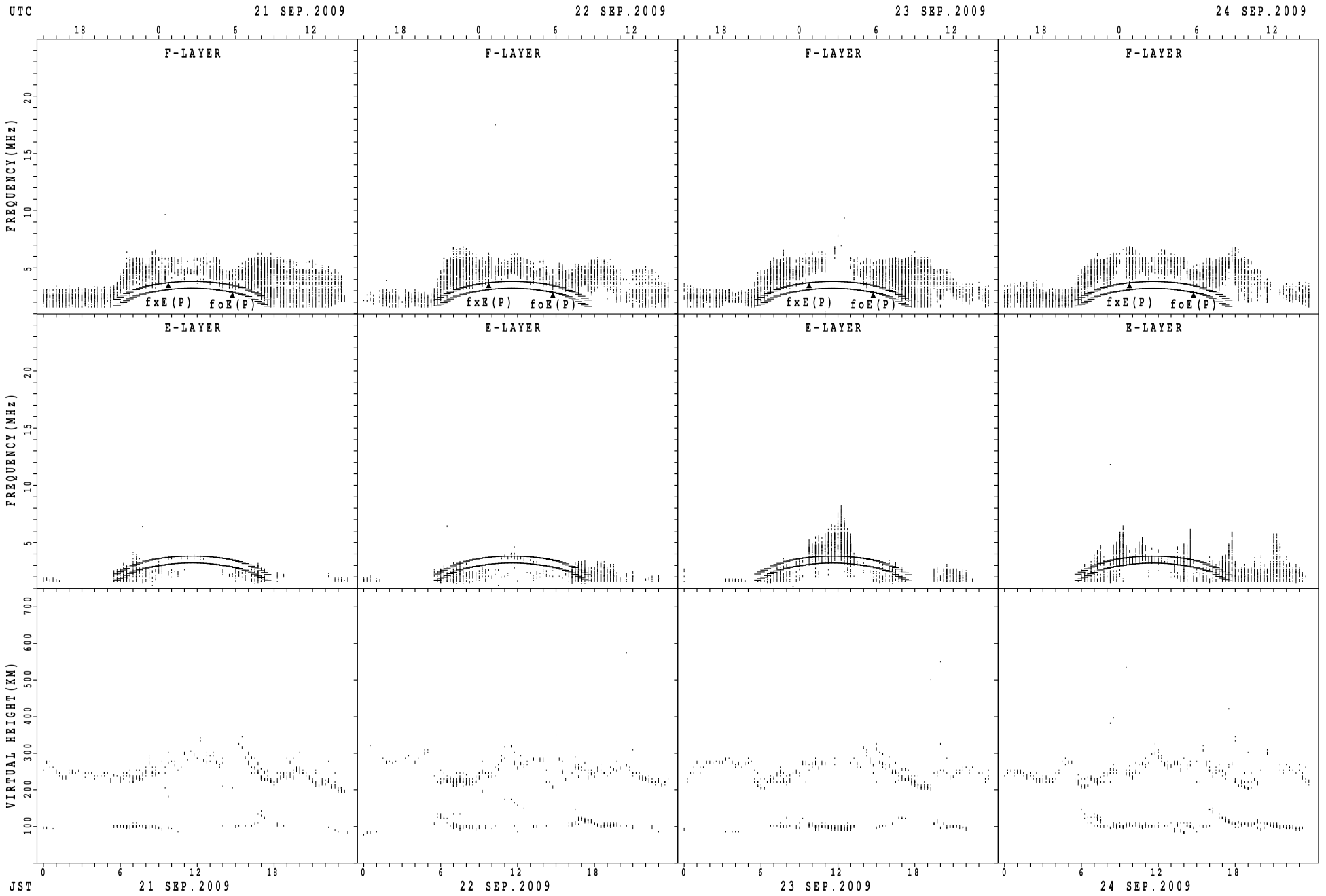
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



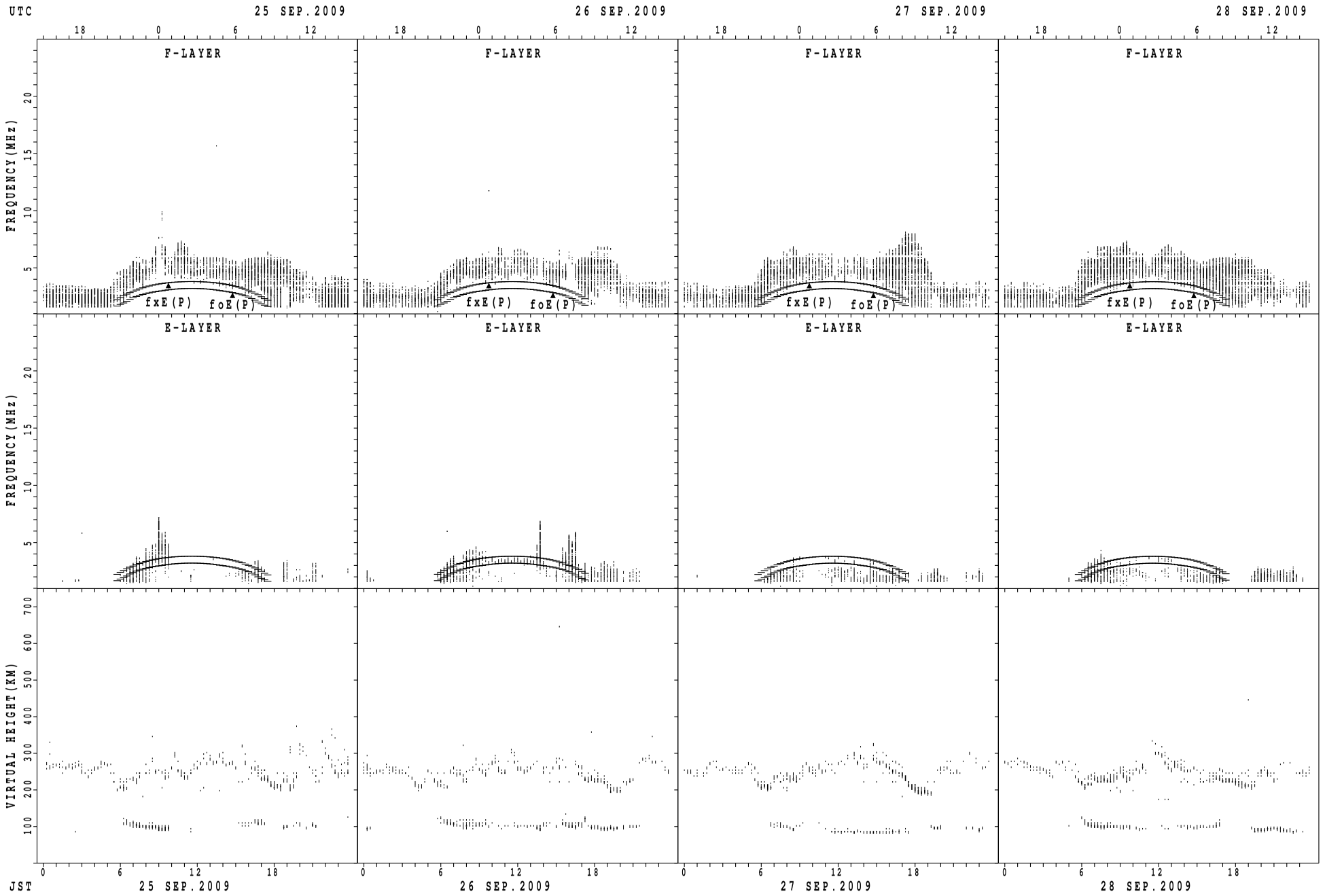
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



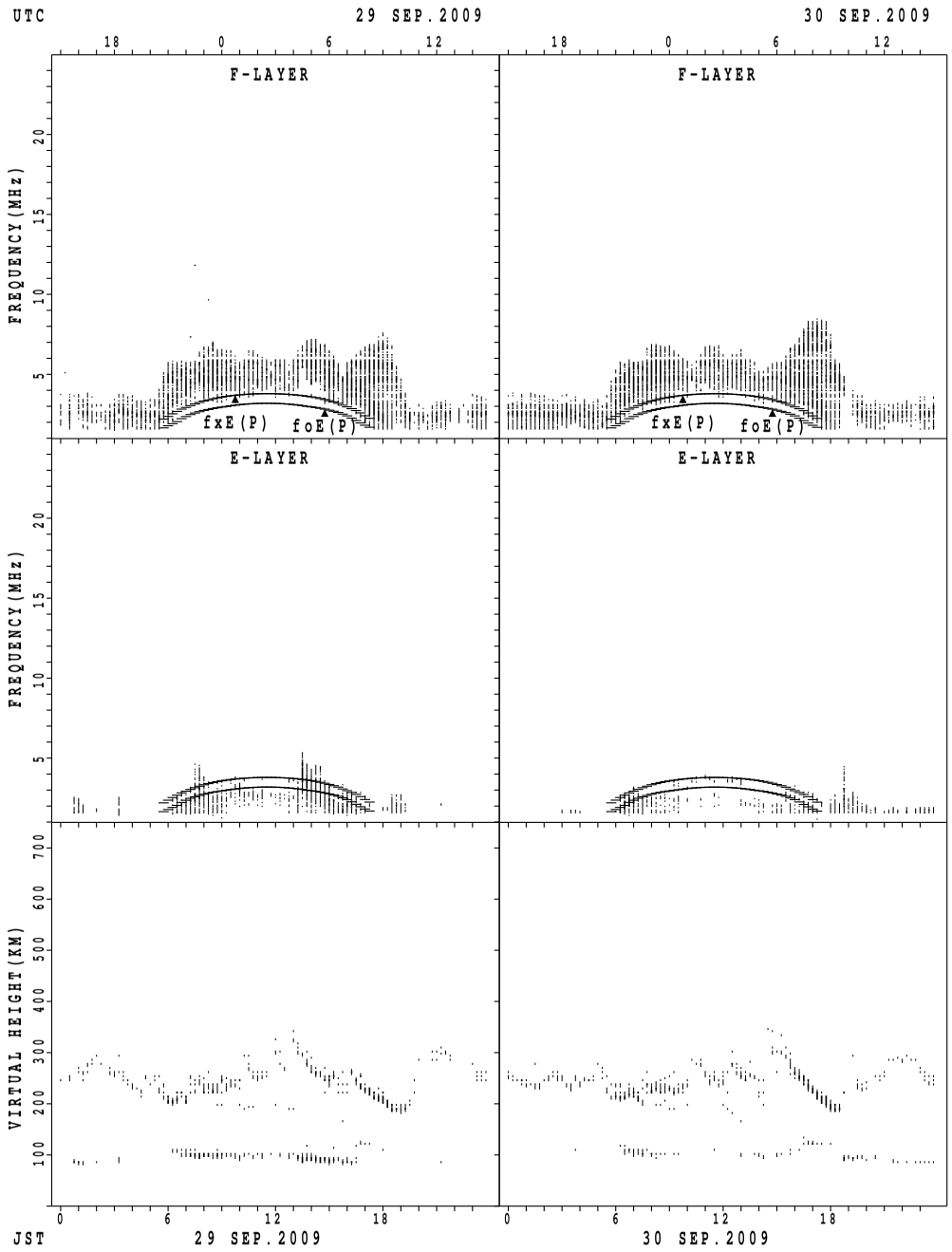
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



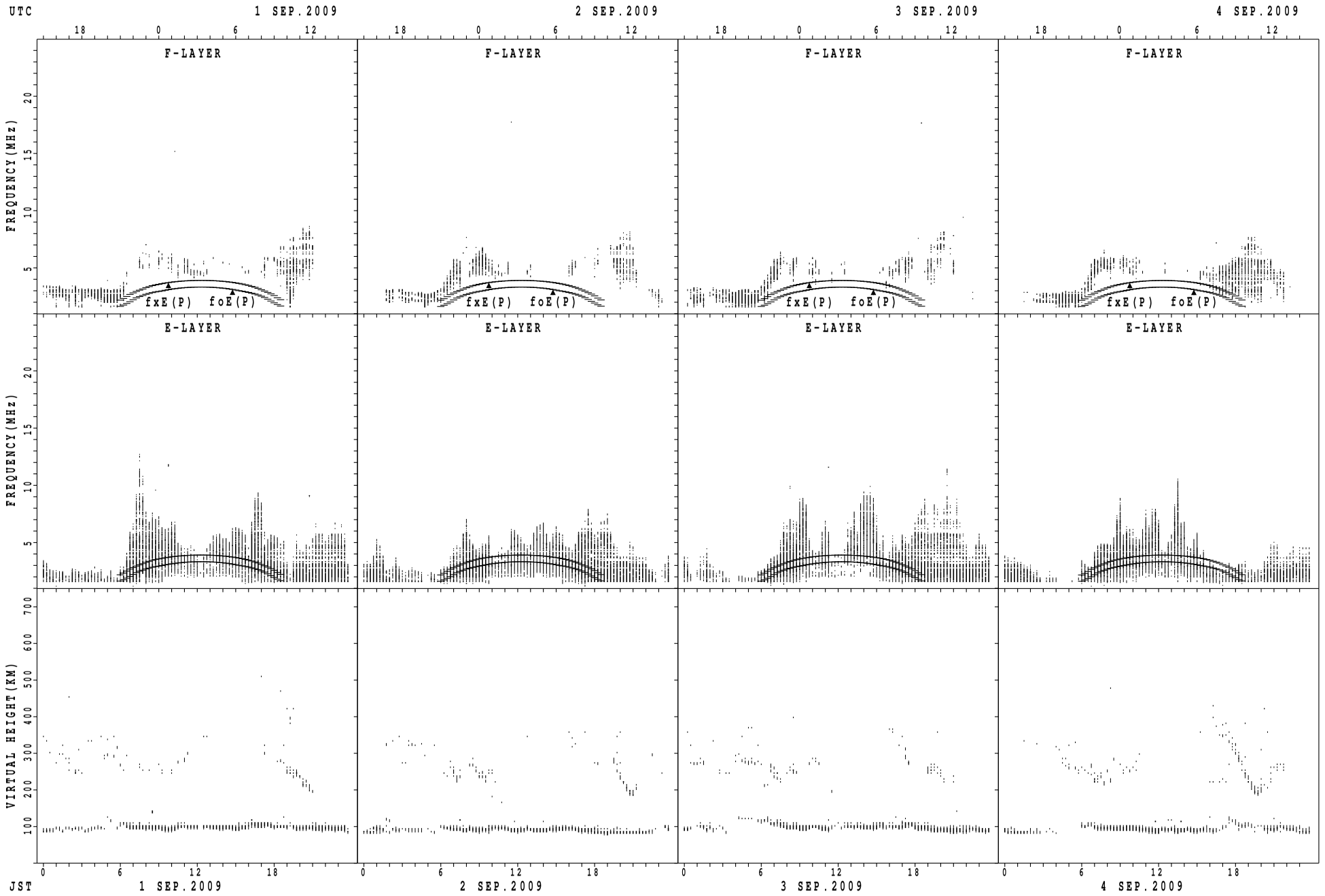
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



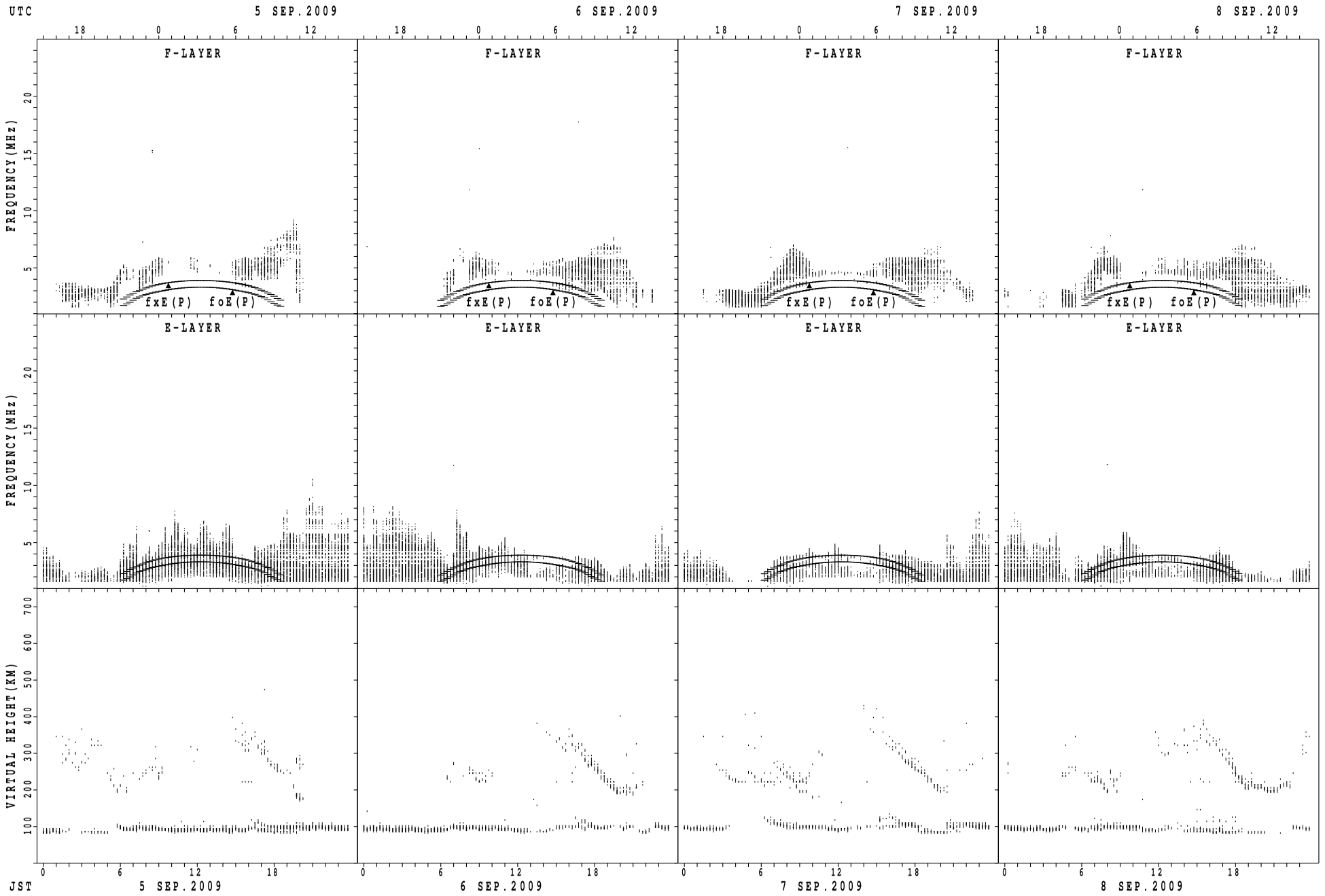
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



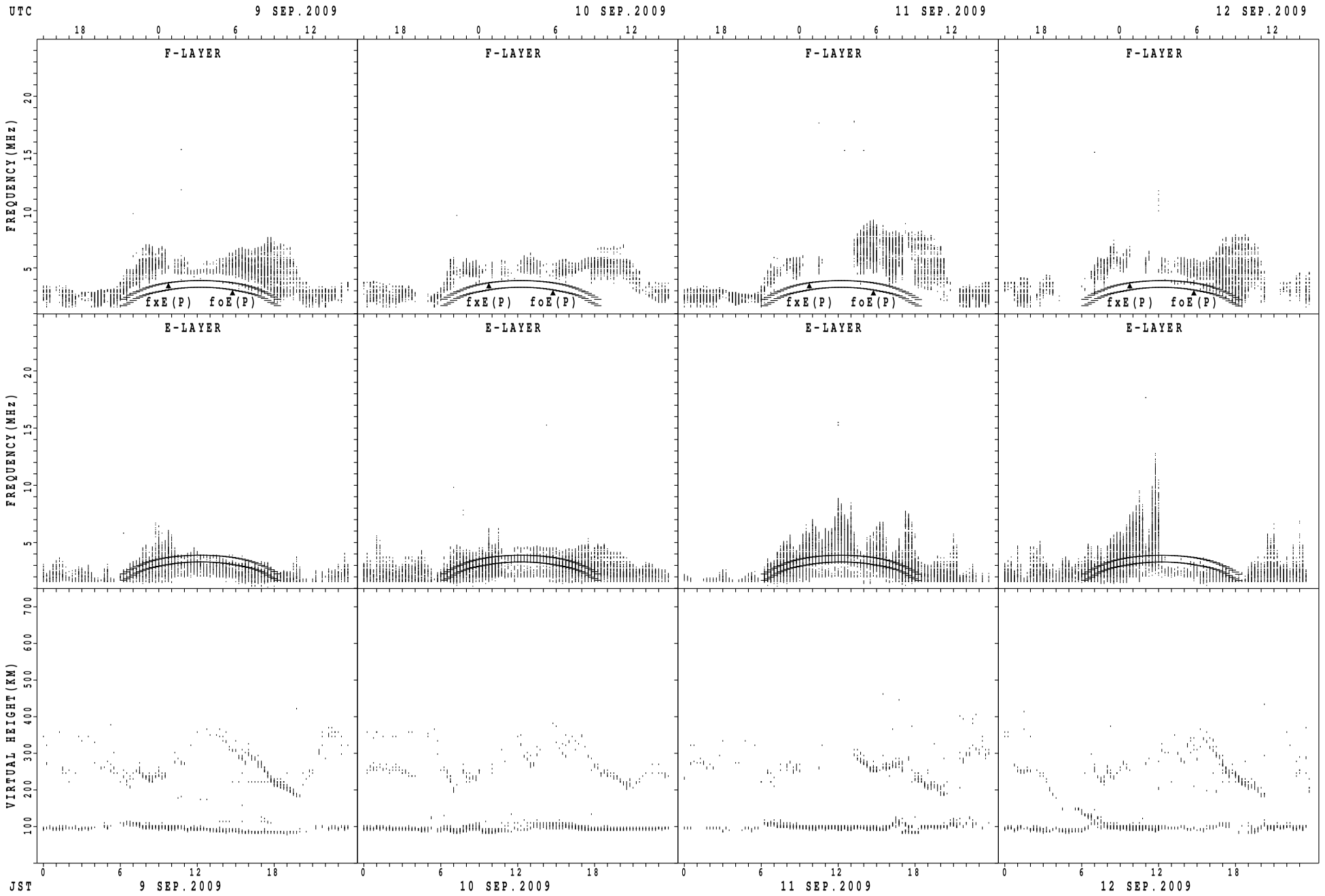
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



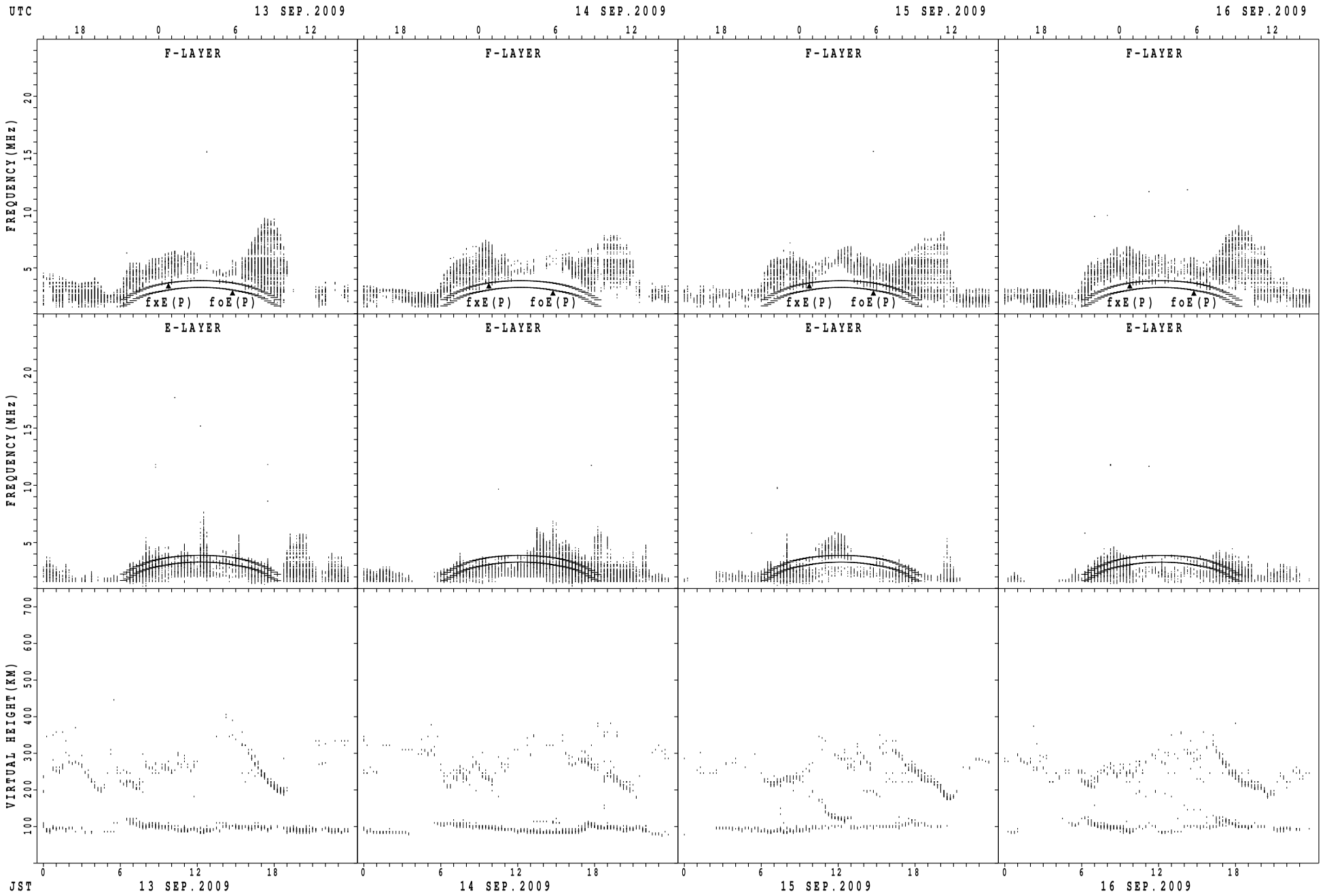
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



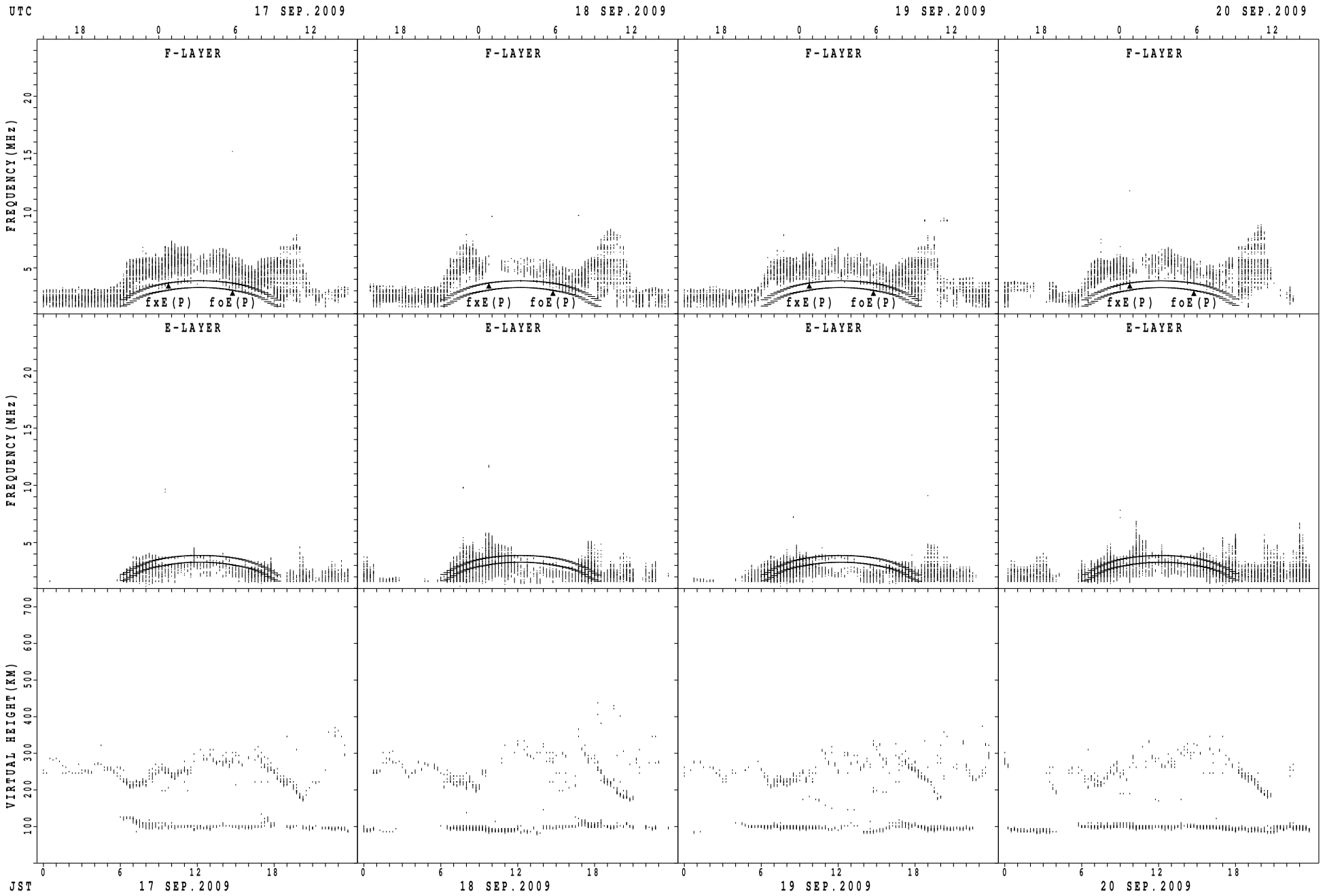
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



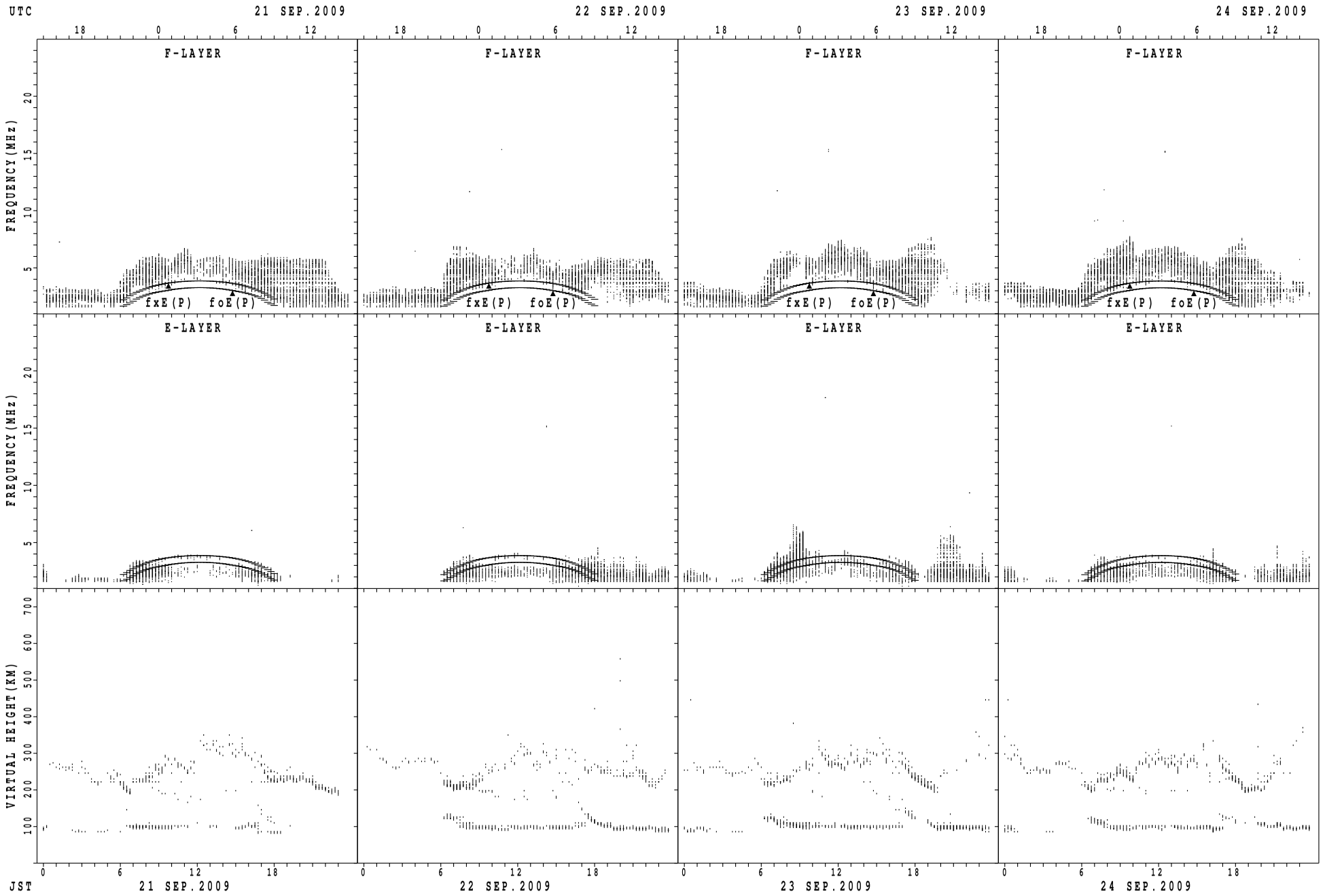
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



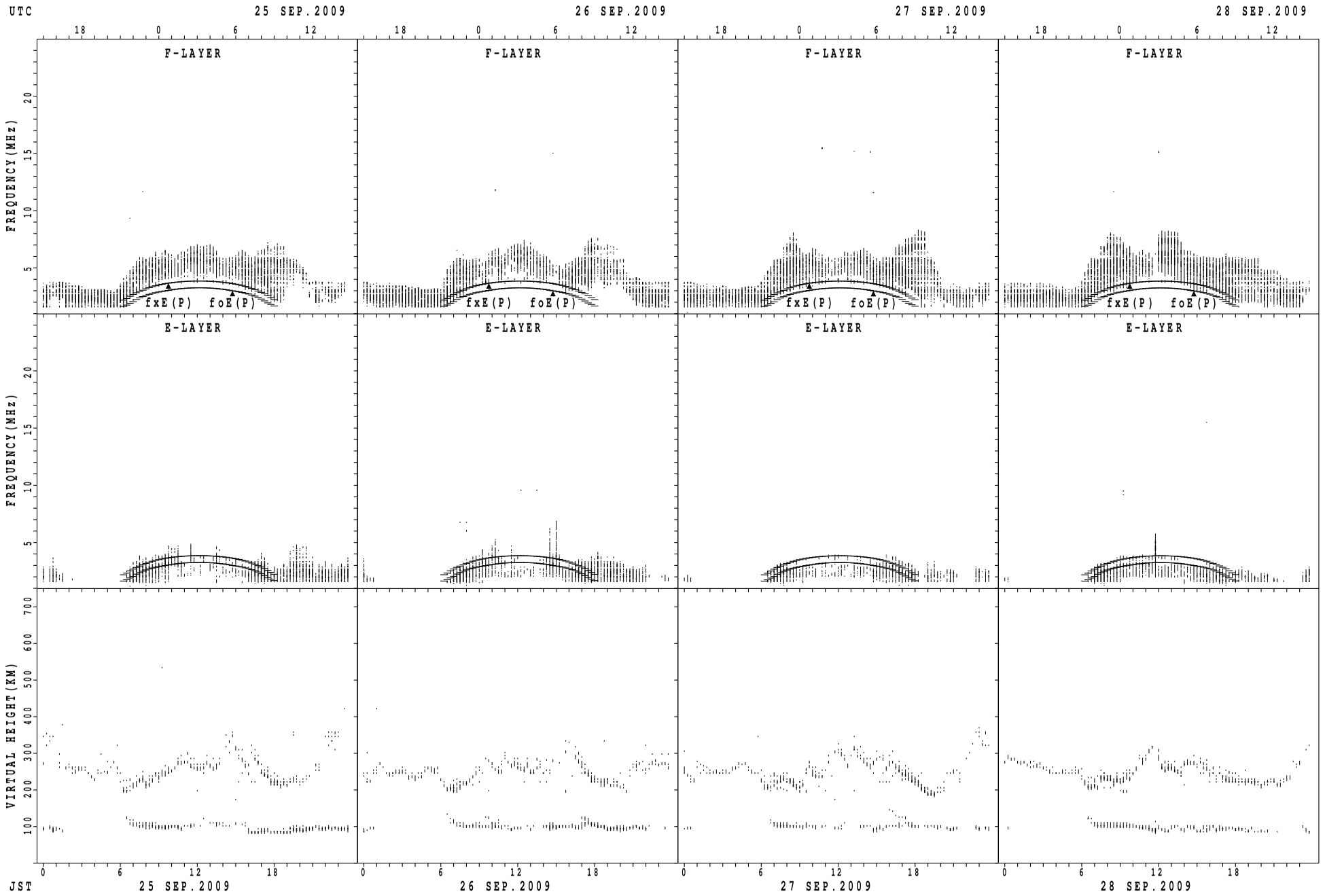
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



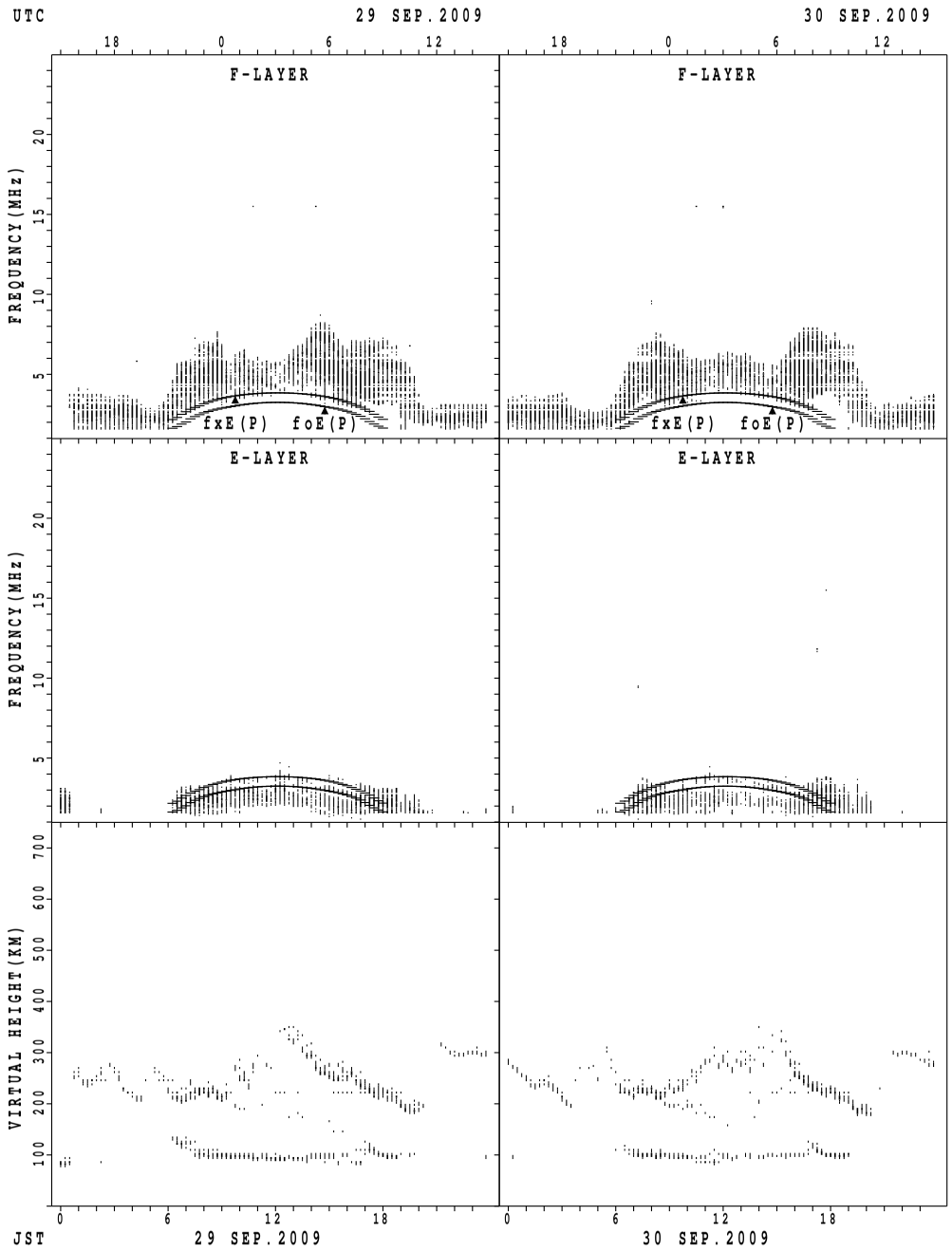
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



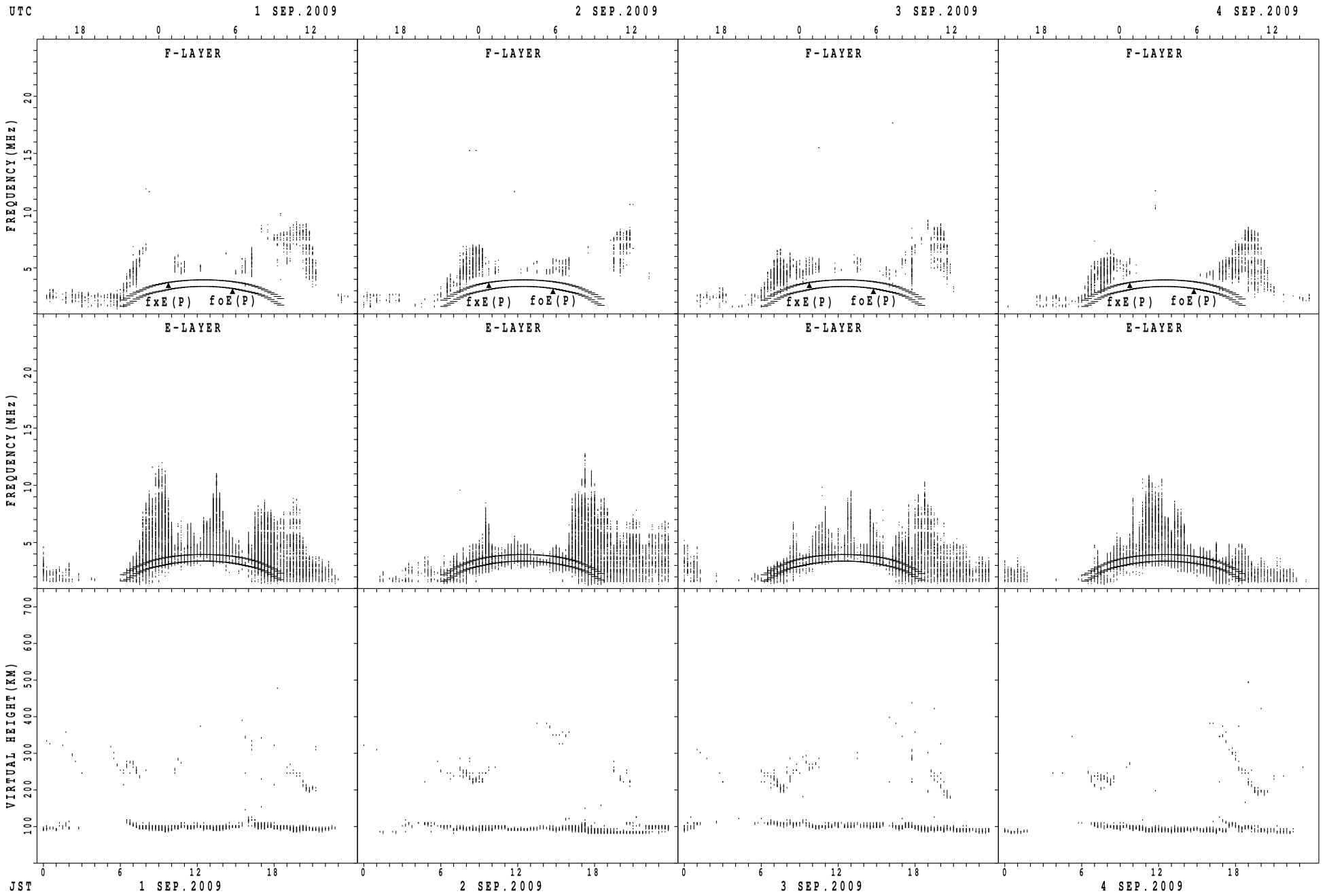
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



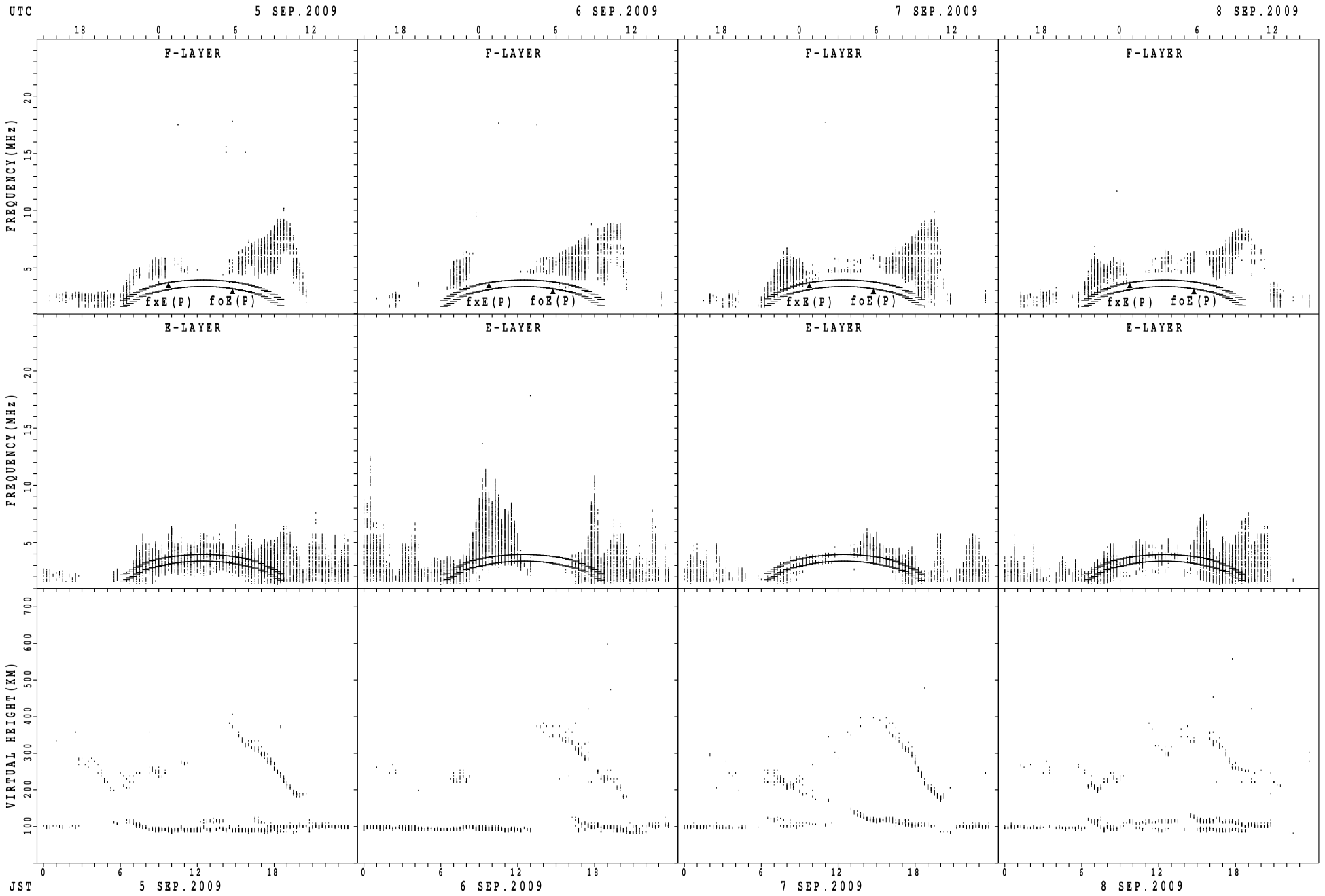
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



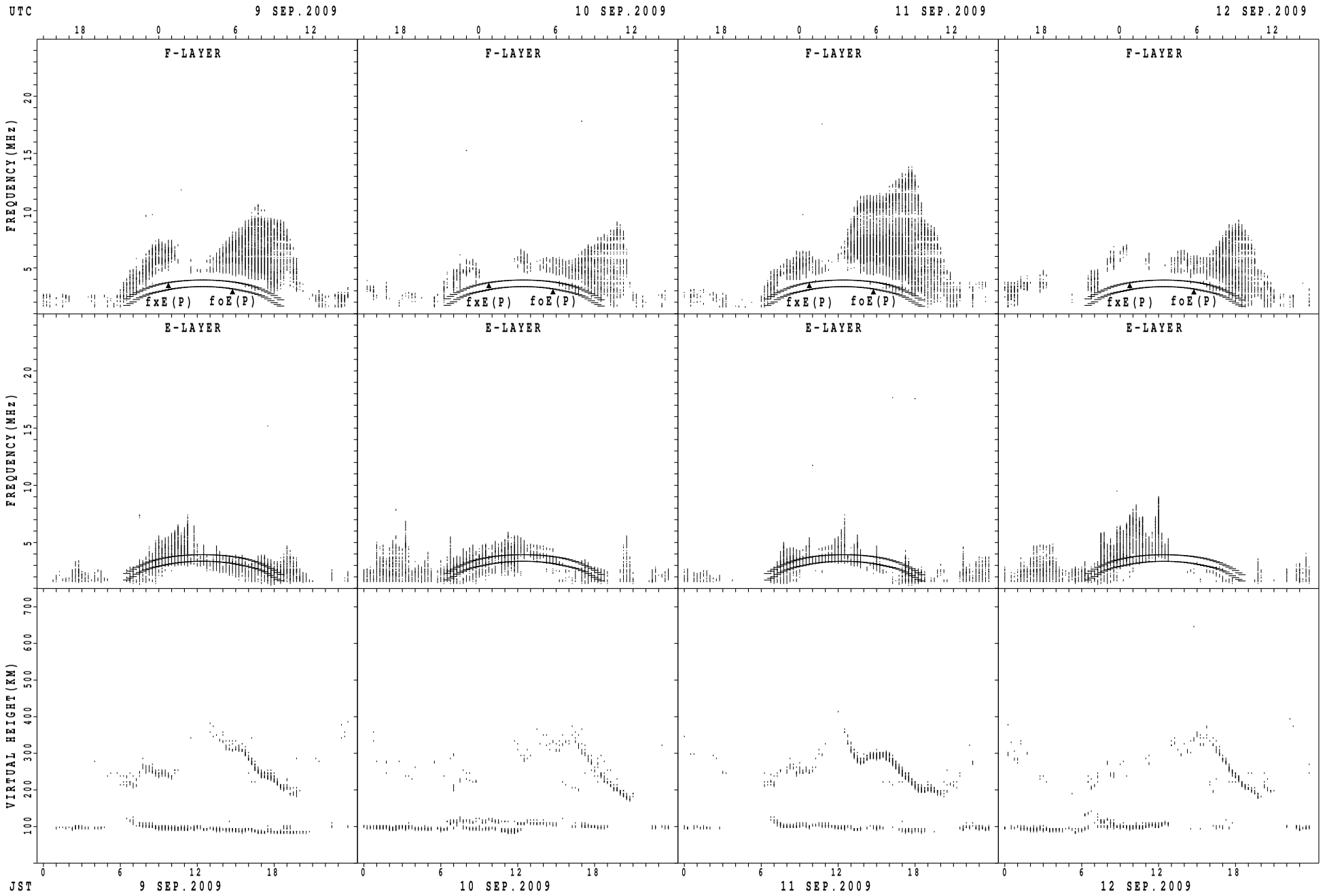
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



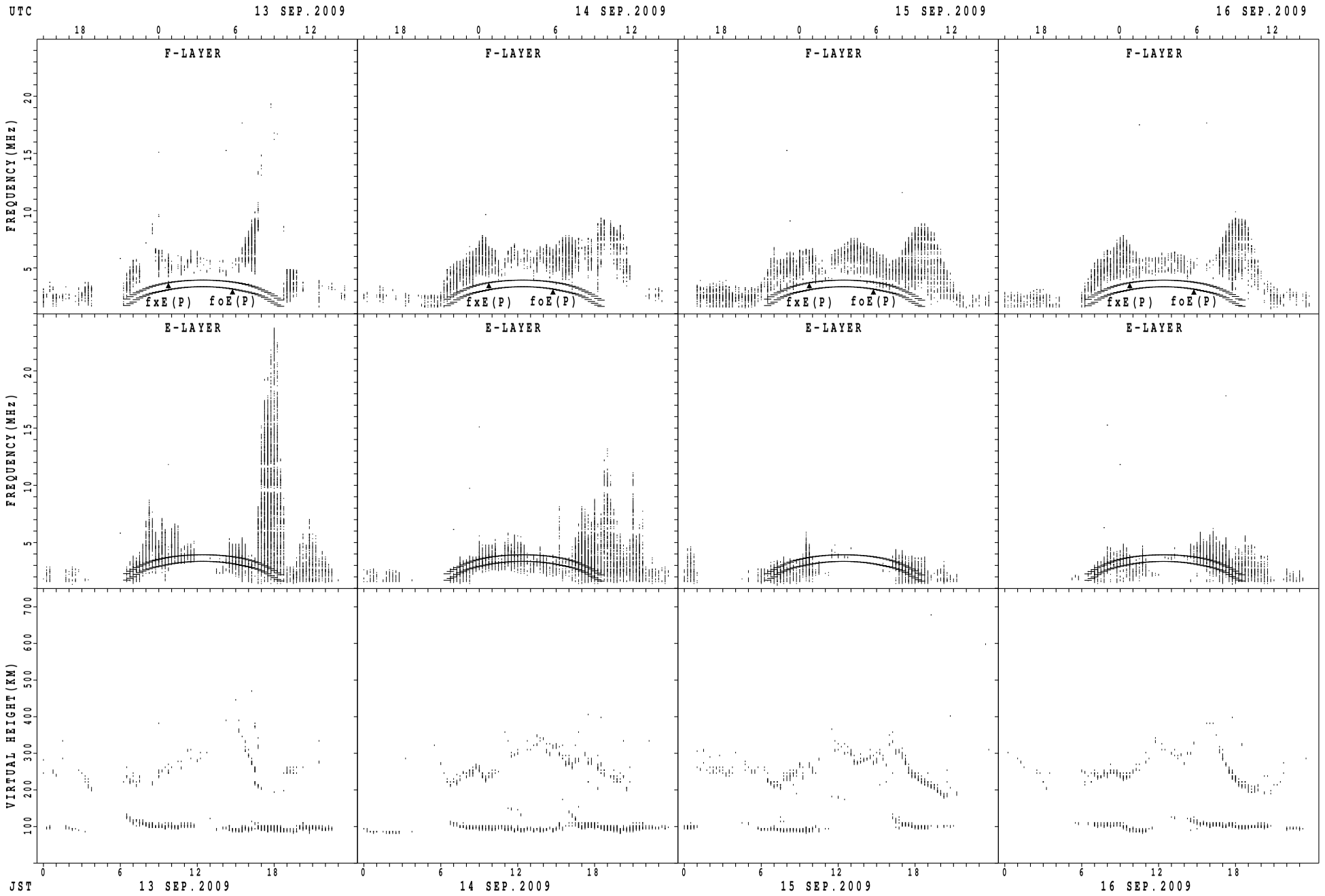
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



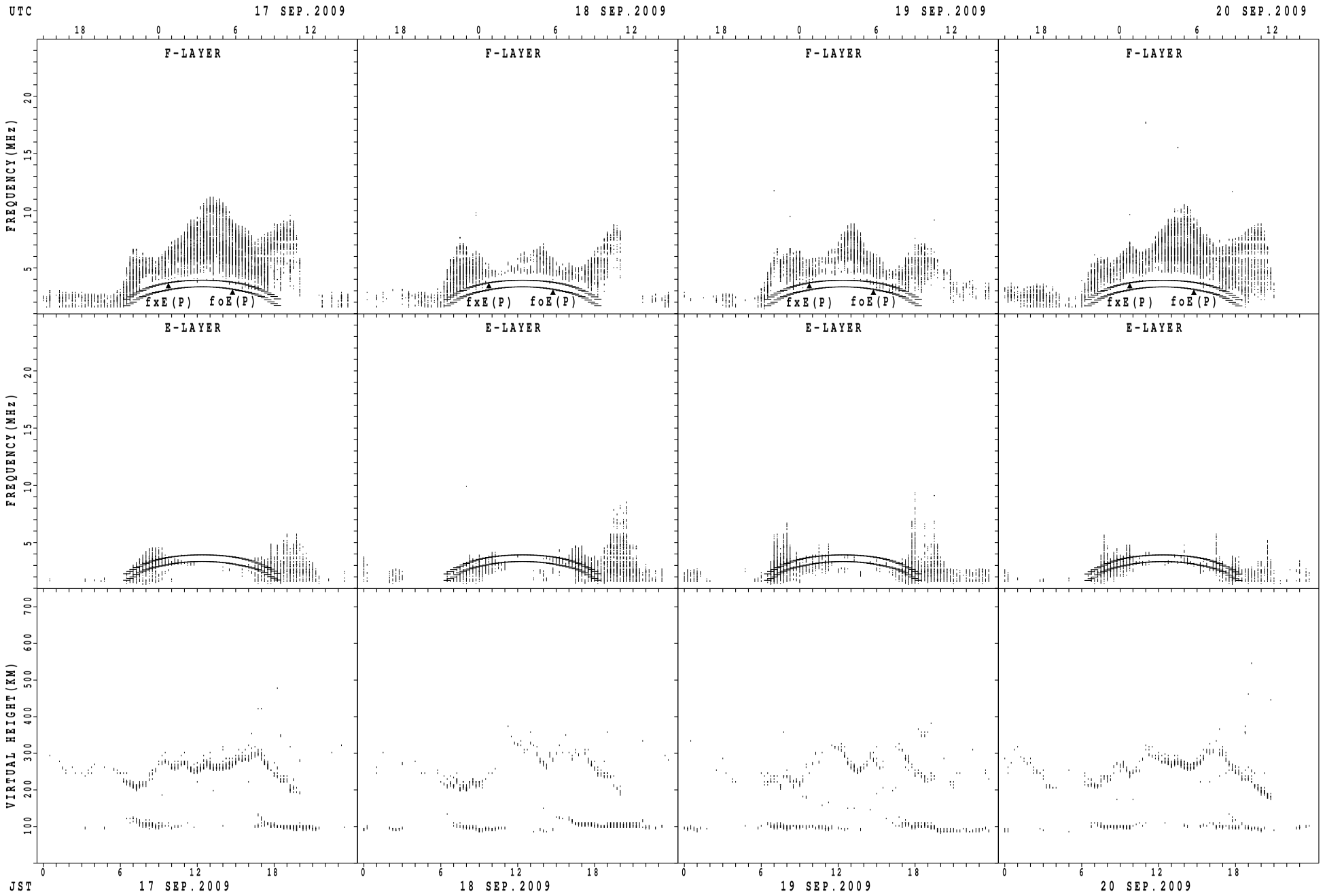
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



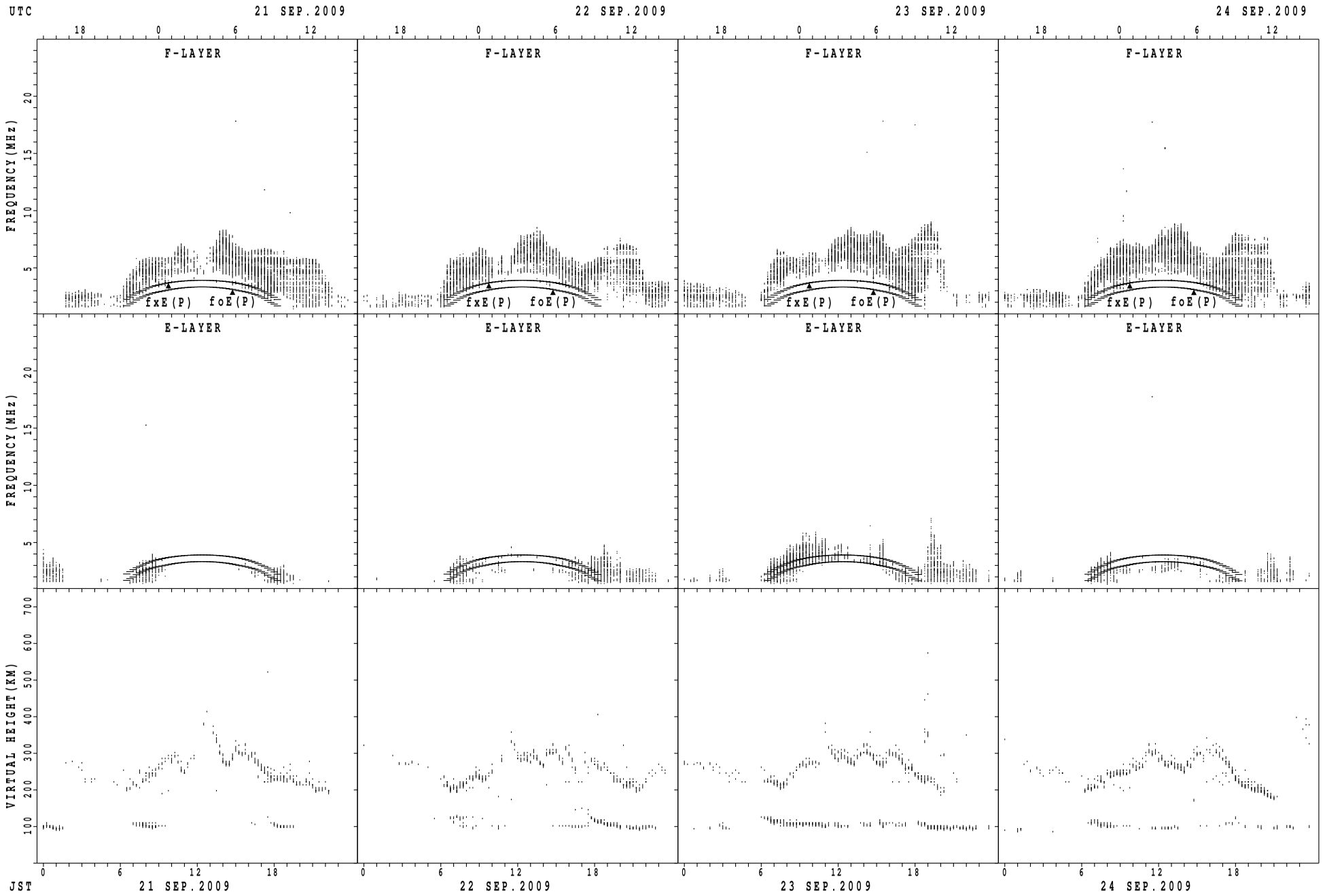
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



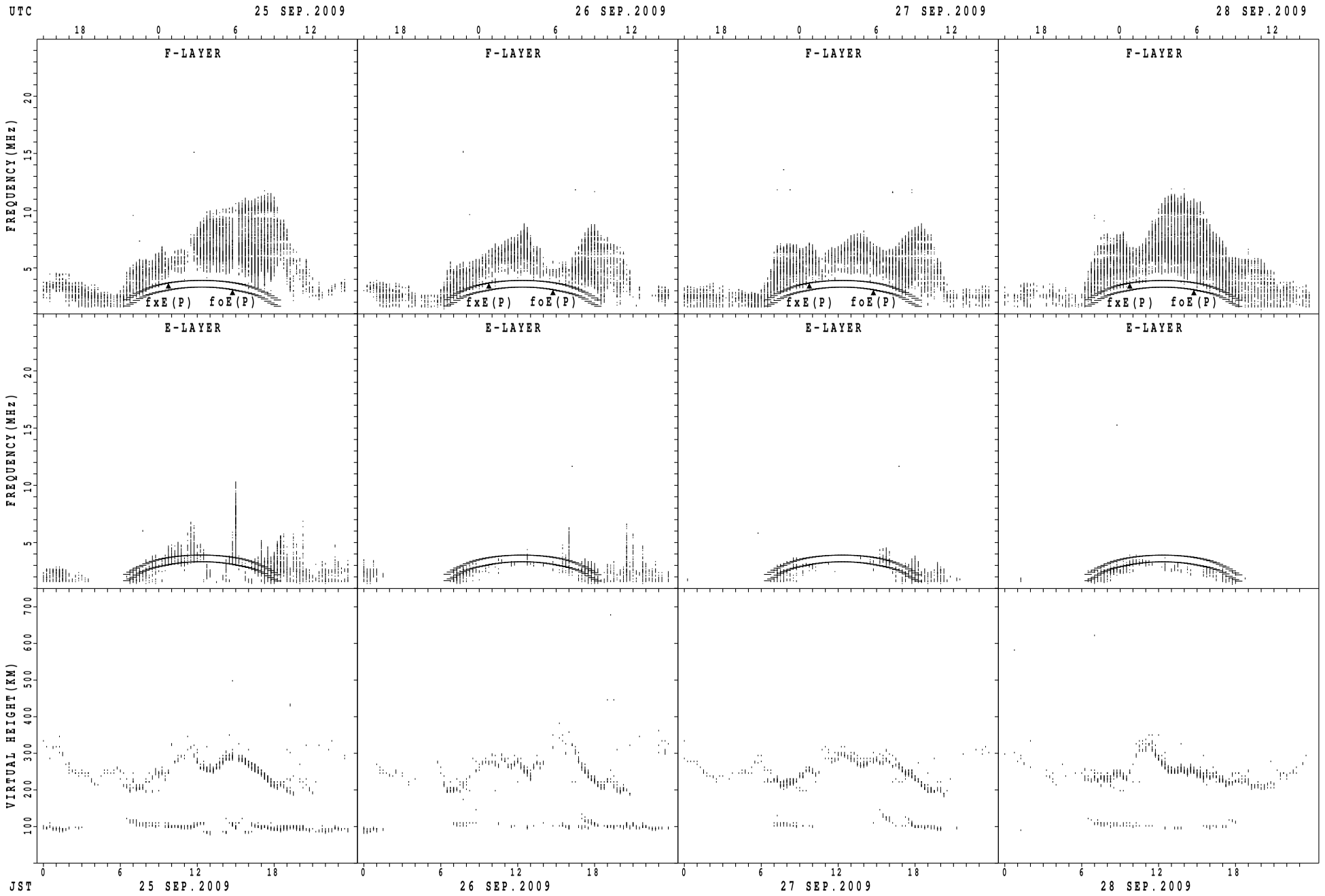
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



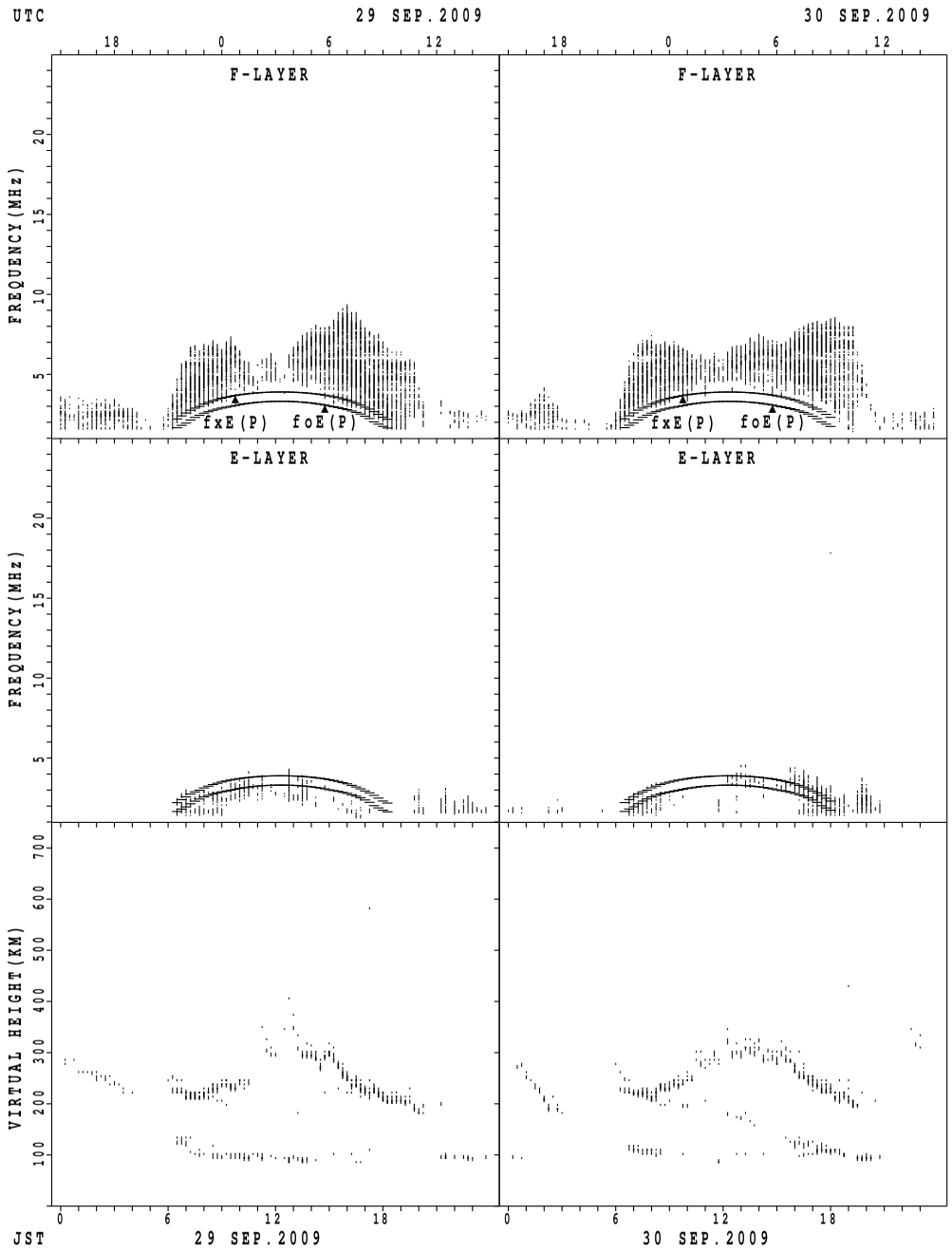
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

SEP.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	4								1	1	1	1	1			
MED							250	274	266								240	248	230	288	256			
U Q							125	137	278								120	124	115	144	128			
L Q							125	137	252								120	124	115	144	128			

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	18	16	13	12	10	18	24	28	24	20	20	18	17	13	15	20	21	25	19	20	20	24	20	19
MED	95	95	95	97	101	104	105	105	101	98	97	103	99	97	97	100	111	105	103	103	102	97	95	95
U Q	97	97	98	102	111	107	112	110	105	101	137	181	175	137	101	103	131	113	105	107	104	101	100	97
L Q	89	91	93	95	95	99	101	101	97	95	95	97	95	94	89	93	95	97	99	99	96	94	92	91

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								8	9							1	2	3	5	8	4			
MED								244	240							254	281	248	224	272	229			
U Q								254	249							127	282	264	249	279	248			
L Q								231	235							127	280	230	212	241	226			

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	15	13	12	10	8	6	20	27	15	15	16	15	13	11	10	9	18	27	20	19	19	21	19	15
MED	95	95	92	92	103	97	107	105	103	99	104	99	105	99	95	97	102	111	103	103	103	103	97	97
U Q	97	97	96	95	113	111	120	107	107	101	106	105	166	109	97	104	111	115	105	105	105	103	103	103
L Q	91	95	91	91	94	91	103	103	99	95	97	97	96	95	93	93	95	103	99	97	99	95	95	95

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								3	14								5	6	14	14	10	2		
MED								232	230								276	255	248	232	224	208		
U Q								236	240								306	280	256	246	244	218		
L Q								216	224								262	242	236	230	210	198		

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	21	17	14	14	7	8	15	28	29	21	18	18	16	16	11	12	12	26	26	27	28	24	22	20
MED	95	95	95	91	95	93	103	108	103	99	97	97	97	99	101	100	102	107	104	99	96	96	97	97
U Q	96	98	97	95	97	102	115	117	104	103	103	145	116	120	109	111	119	113	107	105	103	103	99	97
L Q	91	91	93	91	91	90	93	99	97	95	95	95	90	95	93	96	95	97	95	95	91	95	95	95

MONTHLY MEDIANS OF h′F AND h′Es

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

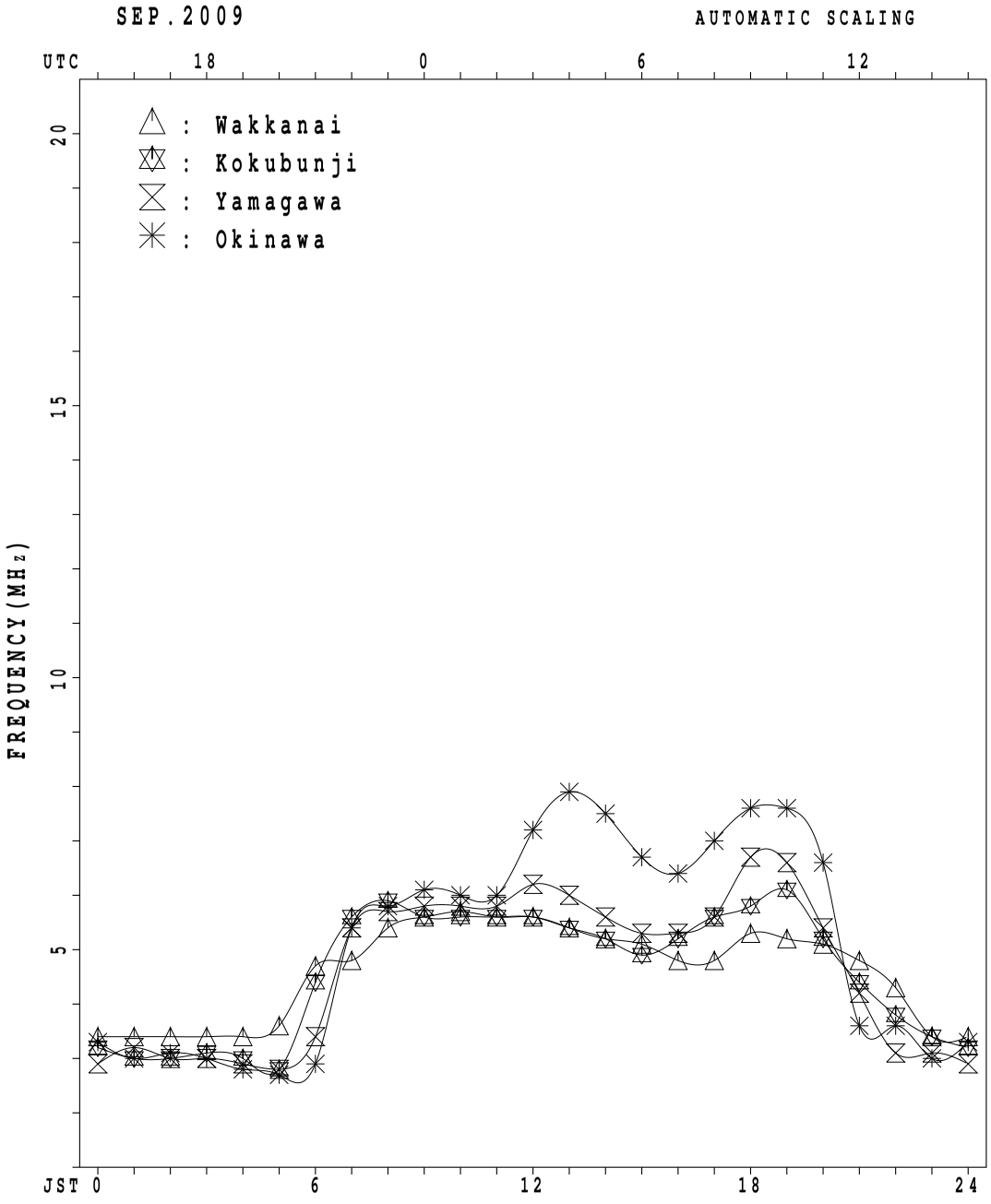
h′F STATION Okinawa LAT. 26°41.0′N LON. 128°09.0′E

	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								5	14	11							12	18	18	21	13	2		
MED								234	234	248							282	281	239	230	216	231		
U Q								243	248	270							297	310	258	249	233	248		
L Q								217	224	240							266	244	230	218	209	214		

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	16	13	9	7	5	6	7	21	25	18	19	16	15	10	10	12	11	21	23	22	23	18	19	13
MED	99	101	97	97	99	98	95	111	105	102	101	103	101	101	102	103	115	107	103	101	97	98	97	97
U Q	102	103	100	99	101	109	103	115	108	107	113	105	105	111	111	114	119	111	107	105	103	105	103	100
L Q	96	94	94	95	95	95	95	104	102	95	95	96	95	97	95	95	99	101	101	97	95	95	95	95

MONTHLY MEDIANS PLOT OF foF2



IONOSPHERIC DATA STATION Kokubunji

SEP. 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	X 40	X 40	X 36	X 35	A														X 62	X 70	X 67	X 63	X 50	X 36
2	X 34	X 34	X 35	X 33	X 34	X 33													X 70	X 78	X 74	X 59	A	40
3	X 31	X 32	X 32	X 32	X 31	X 32													X 65	X 71	X 68	X 58	X 50	42
4	X 37	A	36	X 32	38	37													X 67	X 75	X 76	X 74	58	A
5	A	X 38	X 36	X 38	X 38	X 33													A	74	80	54	A	35
6	38	X 33	37	X 37	X 37	36													X 58	X 63	X 61	X 61	X 44	X 35
7	X 34	39	39	X 39	44	45													X 56	X 63	X 63	X 52	54	57
8	X 32	X 35	47	42	X 37	X 40					C								X 68	X 68	X 69	59	54	50
9	42	37	37	X 35	X 33	X 33													X 72	X 74	X 46	X 36	X 38	X 38
10	X 38	X 36	X 37	X 35	X 34	X 35													X 65	X 69	X 65	X 58	X 52	X 48
11	X 46	X 43	X 40	X 37	X 35	35													X 61	X 69	61	A	A	36
12	X 39	41	X 35	X 34	X 31	35													A	X 80	X 58	58	51	49
13	X 44	43	X 36	X 34	43	X 33													X 78	X 80	X 56	A	X 38	X 40
14	X 39	X 37	X 36	X 34	X 35	X 33													X 64	X 69	X 65	X 49	X 41	X 42
15	X 38	X 35	X 36	X 36	X 36	X 33													X 66	X 71	X 73	X 49	X 37	X 37
16	X 38	X 36	X 37	X 36	X 37	X 38													X 76	X 71	X 62	X 54	X 49	X 41
17	X 40	X 36	X 38	X 38	X 37	X 35													X 63	X 63	X 68	X 42	X 41	X 40
18	X 40	X 39	X 40	X 40	X 37	X 38													X 75	X 80	X 73	X 53	X 38	X 38
19	X 38	X 35	X 36	X 36	X 34	A													X 65	X 72	X 49	X 50	X 45	X 44
20	X 42	X 41	X 40	X 39	X 37	X 35													X 64	X 71	X 70	X 51	X 43	X 40
21	X 36	X 37	X 38	X 37	X 36	X 37													X 65	X 60	X 58	X 59	X 53	X 50
22	X 31	X 33	X 35	X 35	X 33	X 31													X 60	X 60	X 51	X 53	X 53	X 48
23	X 40	X 37	X 36	X 34	X 34	X 33													X 66	X 63	X 50	X 45	X 44	X 43
24	X 41	X 41	X 42	X 40	X 36	X 35													X 70	X 60	X 50	A	43	X 36
25	41	42	X 36	X 36	X 34	X 32													X 65	X 61	51	51	X 42	45
26	X 42	X 40	X 40	X 39	X 40	X 35													X 68	X 71	X 49	X 40	X 41	X 41
27	X 43	X 41	X 38	X 37	X 35	X 37													X 84	X 59	X 41	X 42	X 41	X 42
28	X 40	X 40	X 40	X 40	X 37	X 37													X 65	X 64	X 52	X 48	X 44	X 45
29	X 44	X 44	X 42	X 41	X 40	X 39													X 78	X 49	X 35	X 36	X 39	X 40
30	X 41	X 41	X 40	X 40	X 39	X 39													X 78	X 44	X 40	X 40	X 40	X 42
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	29	29	30	30	29	28													28	30	30	27	27	29
MED	X 40	X 38	X 37	X 36	X 36	X 35													X 66	X 69	X 61	X 52	X 44	X 41
U Q	X 42	X 41	X 40	X 39	X 38	X 37													X 71	X 72	X 68	X 58	51	45
L Q	X 38	X 36	X 36	X 35	X 34	X 33													X 64	X 63	X 50	X 45	X 41	X 38

SEP. 2009 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.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	34	34	29	29	A	27	40	53	62	66	55	53	46	46	46	50	48	49	56	63	60	57	44	30
2	28	28	29	26	28	27	A	54	61	A	A	A	A	A	A	48	47	53	64	72	67	53	A	F
3	25	26	26	26	25	26	A	A	A	58	53	49	52	A	56	51	51	54	59	65	62	52	44	F
4	30	A	F	26	F	F	A	60	74	54	50	54	52	46	50	51	53	53	61	69	70	68	F	A
5	A	32	30	32	32	27	41	62	54	57	50	50	A	A	50	A	A	A	A	F	F	F	A	F
6	F	27	F	31	31	F	42	50	60	60	52	58	48	52	52	48	48	48	52	57	55	55	38	29
7	28	F	F	33	F	F	42	44	53	62	54	57	51	49	47	50	53	49	50	57	57	46	F	F
8	26	29	F	F	31	33	46	54	57	52	C	50	51	48	50	48	49	51	62	62	63	F	F	F
9	F	F	F	29	27	27	40	54	59	53	56	48	60	51	49	51	52	53	66	68	40	F	32	32
10	32	30	30	29	28	28	40	48	53	45	50	56	50	52	53	47	54	52	59	62	59	51	46	42
11	40	37	34	30	28	F	48	53	A	55	60	57	58	63	72	65	53	49	55	62	F	A	A	F
12	33	F	29	27	25	F	40	55	70	62	60	56	54	54	53	A	A	64	A	74	52	F	F	F
13	38	F	30	27	F	26	42	53	49	57	59	56	52	47	48	52	51	60	72	74	50	A	32	34
14	33	30	30	28	29	27	44	48	50	67	62	53	54	51	50	50	55	56	58	63	59	43	35	36
15	32	29	30	30	30	27	44	57	55	56	48	54	58	58	48	49	48	54	60	64	67	43	31	31
16	32	30	30	30	31	32	52	55	51	58	56	58	57	54	50	49	53	61	70	64	55	48	43	35
17	34	30	32	32	30	29	42	59	66	61	60	56	54	57	56	51	48	58	57	57	62	36	35	34
18	34	33	34	34	31	32	44	74	74	59	58	52	53	50	49	47	46	55	69	74	67	47	32	32
19	32	29	30	30	28	A	40	62	61	64	54	51	54	52	49	46	49	53	58	66	43	44	39	38
20	36	35	34	33	31	29	40	51	53	49	53	54	56	54	42	44	48	49	57	65	64	44	36	34
21	30	31	32	31	30	30	42	57	53	59	56	53	54	54	50	47	55	60	58	54	52	53	47	44
22	25	27	29	29	27	25	44	62	64	53	57	54	59	52	52	47	45	48	54	54	45	46	46	42
23	34	30	30	28	28	27	44	53	59	56	60	60	A	58	53	52	55	54	60	57	44	38	38	37
24	35	35	35	34	30	29	46	60	56	59	64	57	59	59	54	49	54	57	64	54	44	A	F	F
25	F	F	30	30	27	26	43	52	52	A	58	67	56	56	56	52	54	55	59	54	F	F 42	36	F
26	36	34	34	33	33	28	41	50	57	56	55	58	62	58	56	51	A	56	62	64	43	34	35	35
27	36	35	32	31	30	31	47	52	61	57	58	57	56	54	58	56	62	72	78	53	35	36	35	36
28	34	34	34	34	31	30	55	60	66	64	60	56	60	64	58	53	54	56	59	58	46	42	38	40
29	38	38	36	35	34	33	53	56	63	62	55	60	58	58	68	60	53	62	72	43	29	30	33	34
30	34	35	34	34	33	33	50	59	65	64	54	63	59	62	48	54	65	80	72	38	34	34	34	36
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	26	24	25	29	26	24	27	29	28	28	28	29	27	27	29	28	27	29	28	29	27	23	22	20
MED	34	30	30	30	30	28	43	54	59	58	56	56	54	54	50	50	53	54	60	62	55	44	36	35
U Q	35	34	34	33	31	30	46	60	64	62	60	58	58	58	56	52	54	59	65	66	62	52	43	38
L Q	30	29	30	28	28	27	41	52	53	56	54	53	52	51	49	48	48	52	58	56	44	38	34	33

IONOSPHERIC DATA STATION Kokubunji

SEP. 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								L	A	A	444	A	428	UL416	UL404	UL400	A	348						
2							A	A	A	A	A	A	A	A	A	A	UL396	A						
3							A	A	A	A	A	428	A	A	UL488	UL396	A	A						
4							A	A	A	A	432	A	428	UL428	A	408	A	A						
5							L	A	UL404	A	420	A	A	A	A	A	A	A						
6								A	396	420	428	UL432	UL428	UL420	UL424	404	UL380	L						
7								392	A	416	A	428	UL428	UL424	424	392	368	L						
8								L	UL400	420	C	UL412	424	UL416	408	396	368	L						
9								A	UL404	428	432	UL432	UL432	UL428	424	A	376	A						
10								L	UL416	UL436	440	428	432	UL428	424	UL404	A	A						
11								L	A	412	424	428	UL432	A	A	A	A	A						
12								A	A	A	A	436	A	420	UL420	A	A	A						
13									L	UL404	A	A	A	A	UL408	404	UL384	L						
14								L	L	408	UL428	UL428	UL440	UL428	UL424	UL400	UL356	L						
15								L	L	420	UL424	UL424	424	420	UL412	L	UL408	L						
16									UL456	412	UL428	440	UL432	412	420	UL412	L	L						
17								L	UL400	420	A	UL432	432	420	408	A	L	L						
18								L	396	408	424	UL432	432	UL432	L	UL400	A	A						
19								A	400	412	420	432	432	UL428	UL408	UL416	UL368	A						
20								A	L	UL428	428	432	UL436	UL420		A	L	A						
21								L	UL400	UL424	UL432	444	432	436	L		L							
22									L	L	432	UL432	UL412	UL428	UL408									
23									L	UL416	A	A	A	A	UL432	UL424	L							
24								A	L	A	436	A	440	UL432	A	UL412	A	A						
25									UL408	A	440	436	436	UL432	420	L	L							
26									A	412	UL428	UL424	UL440	L	A	L	A							
27								L	L	L	UL416	432	UL444	L	UL408	UL396	L							
28								L	L	L	UL432	L	UL444	424	L	L								
29									L	UL436	L	424	UL452	UL448	A	A								
30									L	416	L	UL428	436	UL440	L	A	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	11	19	20	22	24	22	18	15	9	1						
MED								392	UL400	416	428	432	432	UL428	UL420	UL404	UL376	348						
U Q									UL408	UL424	432	432	UL438	UL432	UL424	UL412	UL390							
L Q									400	412	424	428	428	420	UL408	396	368							

SEP. 2009 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.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						
2							B	A 332	A	A	A	A	A	A	A	A	U R 292	A						
3							A	A	A	A	A	A	A	A	A	R	A	A						
4							B	A	A	A	A	A	A 344		A	A	A	A						
5							A	A	A	A	A	A	A	A	A	A	A	A						
6							B	A	A	A	R	A	A	R	R	284	U A 256	A						
7							B	A	A	A	A	A	R	R	308	A	A	A						
8							B	A	R	R	C	R	R	R	R	R	R	U A 192						
9							A	A	A	R	A	A	R	R	A	A	A	U A 184						
10							B	A	A	A	A	A	A	A	A	A	A	B						
11							B	A	A	A	A	A	A	A	A	A	A	B						
12							B	A	A	A	A	R	A	A	316	A	A	A						
13							B	A	A	A	A	A	A	A	A	A	A	B						
14							B	A	R	R	A	A	R	R	R	R	R	U A 180						
15							B	A	A	R	R	R	R	R	A	A	A	U A 180						
16							B	A	A	A	A	R	R	R	316	U A 276	A	A						
17							U A 176	A	A	A	A	A	R	R	A	A	A	A						
18							B	A	A	A	A	R	R	R	A	A	A	A						
19							A	A	A	A	R	R	324	296	R	R	A	A						
20							B	A	A	A	A	R	R	A	A	A	A	A						
21							B	A	A	A	R	R	R	R	R	R	A	U A 184						
22							180	A	A	R	R	R	R	312	R	R	R	A						
23							B	R	A	A	A	A	A	A	R	R	240	A						
24							172	244	R	A	A	A	A	A	A	R	240	U A 172						
25							B	A	A	A	R	R	R	292	R	R	R	A						
26							B	A	A	A	A	A	A	A	A	R	A	A						
27							B	236	A	R	R	R	R	A	R	R	R	B						
28							B	A	U R 300	R	R	R	R	R	R	264	U R 244	B						
29							B	A	A	R	A	R	R	R	A	A	A	B						
30							U R 176	A	A	R	R	R	R	R	R	276	228	B						
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							4	3	1				1	4	3	4	6	6						
MED							176	244	U R 300				324	304	316	276	242	U A 182						
U Q							178	A 332						328	316	280	U 256	U A 184						
L Q							174	236						294	308	270	240	U A 180						

SEP.2009 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP.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 28	J A 36	J A 82	J A 48	J A 50	J A 18	J A 32	33	J A 66	J A 98	J A 44	J A 89	J A 43	J A 42	38	34	42	J A 29	26	J A 20	J A 28	J A 21	J A 36	J A 34
2	J A 26	21	J A 42	J A 37	23	E B 15	J A 62	J A 71	J A 46	J A 63	J A 94	J A 102	J A 61	J A 72	J A 59	J A 59	J A 32	J A 48	J A 24	J A 31	J A 37	J A 45	J A 55	J A 23
3	J A 23	J A 22	J A 19	E B 14	J A 27	E B 15	J A 50	J A 76	J A 57	J A 44	J A 48	J A 43	J A 51	J A 58	J A 61	G 29	J A 47	J A 40	J A 41	J A 73	J A 58	J A 50	J A 56	J A 47
4	J A 44	J A 52	J A 29	J A 33	22	25	J A 39	J A 45	J A 58	J A 49	J A 48	J A 51	39	39	J A 61	37	J A 47	J A 48	J A 42	J A 46	J A 54	J A 51	J A 61	J A 54
5	J A 71	J A 56	J A 34	J A 30	J A 23	J A 52	J A 29	J A 40	J A 42	J A 55	J A 46	J A 51	J A 57	J A 66	J A 56	J A 62	J A 82	J A 157	J A 92	J A 76	J A 60	J A 61	J A 78	J A 86
6	J A 42	J A 27	J A 28	J A 27	J A 47	J A 30	J A 32	J A 36	J A 36	J A 41	G J A 28	J A 37	37	G 26	G 25	35	32	J A 30	J A 27	J A 37	J A 41	J A 45	23	J A 18
7	J A 19	20	20	E B 14	19	E B 15	22	J A 33	J A 54	J A 39	J A 42	34	G	G 30	37	J A 34	31	30	J A 35	J A 32	J A 28	J A 50	J A 31	J A 86
8	J A 44	J A 35	J A 30	E B 14	20	J A 27	J A 33	J A 33	G 31	G 30	C	G 25	G 27	G 25	G 25	G 22	G 20	25	J A 19	E B 15	E B 15	J A 39	J A 44	J A 45
9	J A 34	J A 26	J A 24	J A 22	E B 16	E B 15	J A 29	J A 36	J A 62	G 26	39	J A 44	G 29	G 27	36	J A 50	33	J A 40	J A 47	J A 57	J A 46	J A 46	J A 84	J A 35
10	J A 29	J A 45	J A 32	J A 24	J A 22	21	21	J A 32	30	34	37	J A 39	42	40	37	36	J A 59	J A 59	J A 39	J A 41	J A 22	J A 35	J A 24	J A 18
11	J A 18	E B 15	J A 22	J A 23	J A 31	E B 15	J A 30	33	J A 71	J A 42	J A 40	J A 42	39	J A 66	J A 45	J A 71	J A 57	J A 46	J A 62	J A 107	J A 105	J A 103	J A 55	J A 43
12	J A 35	J A 28	J A 37	J A 32	21	20	21	J A 49	J A 74	J A 60	J A 72	35	J A 55	36	38	J A 134	J A 146	J A 104	J A 130	J A 49	J A 63	J A 54	J A 44	J A 33
13	J A 60	22	J A 44	J A 29	J A 29	J A 32	22	30	J A 36	J A 38	J A 44	J A 53	J A 42	J A 47	35	J A 37	J A 47	J A 27	33	J A 28	J A 45	J A 35	21	21
14	J A 22	J A 26	J A 26	J A 18	J A 22	J A 23	J A 24	30	G	G 28	J A 37	39	G 29	G 24	G 25	G	G 18	25	J A 23	22	20	E B 18	22	E B 15
15	J A 21	J A 20	J A 20	20	E B 14	20	J A 28	J A 35	J A 30	G 27	G 28	G	G	G 27	36	34	30	26	20	22	21	E B 14	E B 15	22
16	22	E B 15	E B 14	E B 15	J A 16	E B 14	21	29	33	33	36	G 24	G 22	G 26	38	33	30	25	J A 23	J A 25	J A 20	21	E B 16	23
17	E B 16	E B 14	E B 15	E B 15	E B 15	E B 15	25	30	34	36	J A 42	J A 40	G 28	G 30	36	J A 39	J A 33	27	J A 32	J A 24	J A 22	21	J A 44	J A 24
18	J A 23	J A 23	21	22	19	E B 15	22	J A 30	33	J A 36	J A 38	G 30	G 29	G 26	35	33	J A 41	J A 53	J A 22	J A 28	J A 20	J A 33	J A 23	J A 21
19	J A 24	J A 28	20	E B 15	J A 24	J A 38	J A 47	J A 43	32	J A 43	G 31	G 25	38	38	G	G 25	29	J A 36	21	E B 15	E B 15	J A 22	E B 15	E B 15
20	E B 14	21	20	19	20	21	J A 24	J A 38	J A 36	37	J A 46	G 31	G 27	J A 39	J A 38	J A 33	29	J A 37	J A 56	J A 38	24	J A 22	J A 25	E B 15
21	21	18	E B 15	E B 14	E B 15	22	J A 24	J A 37	30	J A 36	G 30	G	G	G	G 25	G 24	32	24	E B 15	E B 15	E B 15	E B 16	19	21
22	J A 22	21	E B 14	E B 16	E B 15	E B 14	22	30	34	G 23	G 23	G 24	G 28	37	G	G 22	G	J A 31	J A 26	J A 28	21	J A 24	19	22
23	J A 24	E B 15	E B 15	20	20	19	23	G 22	34	38	J A 46	J A 56	J A 72	J A 54	G 26	G 25	31	22	20	E B 15	23	J A 24	J A 24	J A 20
24	18	19	E B 14	E B 14	E B 14	E B 14	23	34	G 25	J A 57	40	J A 44	38	35	J A 44	G 22	34	36	J A 38	J A 25	J A 38	J A 54	J A 45	J A 29
25	20	20	20	20	E B 15	E B 15	17	J A 29	J A 42	J A 70	G 24	G 30	G 29	38	G	G 22	G J 19	A E 26	B J 15	A J 37	A J 24	A E 28	B E 14	B E 14
26	21	E B 15	E B 14	E B 15	E B 14	E B 15	21	J A 35	J A 39	J A 38	39	38	39	J A 41	39	G 25	J A 52	J A 25	J A 24	J A 30	J A 22	J A 21	E B 14	E B 14
27	E B 15	J A 19	E B 15	E B 14	E B 14	E B 15	E B 16	27	35	G 24	G 26	G 28	G 30	38	G 21	G 26	G 22	E B 18	19	J A 19	J A 20	20	J A 19	J A 22
28	E B 15	E B 16	E B 15	E B 15	E B 15	20	19	J A 32	G 27	G 28	G 30	G 22	G 23	G 26	G 24	30	G 22	20	J A 17	20	J A 25	J A 22	J A 24	J A 19
29	E B 15	J A 21	20	E B 15	J A 16	E B 14	19	J A 27	35	G 29	36	G 29	G 28	G 30	J A 40	35	28	21	21	E B 15	E B 15	21	20	E B 15
30	E B 16	E B 15	E B 16	20	19	E B 14	G	29	32	G 26	G 27	G	G	G 26	G 25	34	29	23	20	30	22	18	20	22
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	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 22	21	20	20	20	16	24	J A 33	35	J A 38	39	36	G	36	36	34	32	J A 30	J A 25	J A 28	J A 24	J A 26	J A 24	J A 22
U Q	J A 29	J A 27	J A 29	J A 24	J A 23	J A 22	30	37	46	44	45	44	J A 42	J A 41	J A 39	J A 37	J A 47	40	39	J A 38	J A 41	46	J A 44	J A 34
L Q	E B 18	E B 18	E B 15	E B 15	E B 15	E B 15	21	30	32	G 29	G 30	G 30	G 29	G 27	G 26	G 25	G 29	25	20	E B 20	20	21	E B 19	E B 18

SEP.2009 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

SEP. 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	20	23	20	16	A A 50	E B 16	25	30	39	62	38	45	36	38	36	33	38	26	21	E B 15	21	E B 16	18	18
2	E B 15	16	E B 16	20	17	E B 15	A A 62	42	40	A A 63	A A 94	A A 102	A A 61	A A 72	A A 59	39	G 22	32	17	16	28	34	A A 55	16
3	E B 15	E B 15	E B 15	E B 14	15	E B 15	A A 50	A A 76	A A 57	40	44	37	43	A A 58	42	G 26	41	35	30	32	36	18	21	20
4	18	A A 52	18	17	E B 15	E B 15	A A 39	40	39	45	38	42	36	37	42	32	40	41	31	31	35	34	34	A A 54
5	A A 71	20	17	19	E B 15	E B 15	23	34	34	51	36	42	A A 57	A A 66	43	A A 62	A A 82	A A 157	A A 92	25	43	26	A A 78	17
6	16	E B 15	E B 15	17	E B 16	16	28	35	31	36	G 24	36	34	G 24	G 23	32	30	24	22	E B 16	18	26	E B 15	E B 15
7	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	20	32	46	36	41	34	G	G 29	36	32	29	25	25	18	E B 15	20	24	21
8	19	20	16	E B 14	E B 14	20	28	28	G 29	G 27	C	G 24	G 26	G 24	G 24	G 21	G 20	22	16	E B 15	E B 15	17	20	24
9	18	E B 15	E B 15	E B 15	E B 16	E B 15	26	34	31	G 26	37	39	G 29	G 26	34	45	29	36	42	41	20	18	E B 15	25
10	E B 15	17	16	16	E B 15	E B 14	19	28	26	32	36	36	38	37	35	34	42	35	30	20	E B 15	16	18	E B 14
11	E B 15	E B 15	E B 15	16	17	E B 15	28	29	A A 71	35	36	35	36	43	40	56	47	33	43	19	38	A A 103	A A 55	17
12	19	17	19	18	16	E B 14	20	36	44	41	43	34	49	35	36	A A 134	A A 146	57	A A 130	28	35	29	26	16
13	15	E B 15	16	20	20	16	20	28	31	36	41	46	41	40	34	32	29	22	30	16	36	A A 35	E B 15	E B 15
14	16	21	18	E B 15	E B 15	17	20	27	G	G 28	34	38	G 28	G 24	G 24	G	G 16	23	18	18	E B 14	E B 18	21	E B 15
15	E B 15	16	16	E B 15	E B 14	E B 15	20	25	28	G 26	G 27	G	G	G 25	34	31	29	24	15	E B 15	E B 14	E B 14	E B 15	E B 15
16	E B 15	E B 15	E B 14	E B 15	E B 14	E B 14	19	27	30	33	35	G 22	G 20	G 26	35	32	28	23	16	E B 15	E B 15	E B 15	E B 16	E B 15
17	E B 16	E B 14	E B 15	E B 15	E B 15	E B 15	21	28	32	33	40	38	G 27	G 29	32	34	29	24	29	17	18	E B 15	17	16
18	E B 16	18	E B 15	15	E B 15	E B 15	19	26	31	32	33	G 28	G 27	G 24	33	31	39	45	20	19	17	E B 15	17	E B 16
19	E B 16	20	E B 14	E B 15	18	A A 38	26	33	30	36	G 30	G 24	38	35	G	G 24	28	32	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15
20	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	18	30	31	34	37	G 30	G 26	34	35	29	28	28	18	18	18	17	E B 15	E B 15
21	E B 16	E B 16	E B 15	E B 14	E B 15	E B 15	18	27	29	31	G 26	G	G	G	G 22	G 23	28	22	E B 15	E B 15	E B 15	E B 16	E B 15	E B 16
22	17	E B 14	E B 14	E B 16	E B 15	E B 14	21	26	31	G 22	G 22	G 24	G 27	36	G	G 22	G	25	20	18	E B 15	E B 15	E B 14	15
23	20	E B 15	E B 15	E B 14	E B 15	E B 15	21	G 20	31	36	43	44	A A 72	48	G 25	G 21	30	20	E B 15	E B 15	16	17	E B 15	E B 16
24	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	20	31	G 24	53	37	40	38	34	42	G 21	31	34	31	18	16	A A 54	19	16
25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	16	26	33	A A 70	G 22	G 26	G 28	38	G	G 22	G 18	20	E B 15	20	16	18	E B 14	E B 14
26	E B 15	E B 15	E B 14	E B 15	E B 14	E B 15	19	29	35	36	36	36	38	36	32	G 25	A A 52	19	20	22	17	16	E B 14	E B 14
27	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 16	25	32	G 23	G 26	G 26	G 29	30	G 20	G 25	G 21	E B 18	E B 15	E B 15	E B 15	E B 15	E B 15	17
28	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	18	28	G 23	G 26	G 28	G 22	G 22	G 25	G 24	30	G 20	18	E B 16	17	17	15	17	E B 15
29	E B 15	17	E B 16	E B 15	15	E B 14	18	24	30	G 28	G 35	G 28	G 28	G 27	36	30	27	19	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
30	E B 16	E B 15	E B 16	E B 15	E B 15	E B 14	G	25	30	G 23	G 26	G	G	G 24	G 23	32	28	20	E B 15	25	E B 15	E B 15	E B 15	E B 15
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	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	20	28	31	34	36	34	G	34	34	31	29	24	20	18	16	16	16	E B 16
U Q	17	17	16	16	16	15	26	33	35	40	39	39	38	38	36	33	39	34	30	20	21	26	21	17
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	19	26	30	G 28	G 28	G 28	G 28	G 26	G 25	G 25	G 27	22	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	351	312	345	313	A	308	332	371	369	313	368	362	326	325	293	324	329	322	320	327	349	356	379	338
2	335	335	322	350	335	328	A	354	375	A	A	A	A	A	A	300	315	322	313	339	369	406	A	F
3	358	329	337	327	326	311	A	A	A	378	362	350	347	A	301	337	334	345	322	329	348	352	363	F
4	356	A	F	344	F	F	A	365	400	364	344	355	352	265	317	322	321	304	310	329	329	318	F	A
5	A	330	312	321	313	322	330	381	354	375	354	359	A	A	322	A	A	A	A	F	F	F	A	F
6	F	325	F	331	333	F	352	373	357	393	387	312	322	342	273	326	333	344	333	338	335	375	350	326
7	315	F	F	341	F	F	365	327	359	367	373	375	351	295	307	319	339	350	332	308	357	339	F	F
8	302	323	F	F	336	348	373	378	391	406	C	311	355	304	317	300	334	326	341	330	354	F	F	F
9	F	F	F	335	338	342	355	367	388	347	384	279	366	304	312	322	332	343	344	388	339	F	346	313
10	334	326	332	327	340	382	381	367	382	350	342	336	336	342	347	307	338	338	340	340	345	348	330	328
11	335	345	331	327	325	F	374	375	A	357	344	359	335	340	358	352	348	347	339	353	F	A	A	F
12	307	F	328	352	379	F	342	364	366	360	390	367	352	349	332	A	A	336	A	363	320	F	F	F
13	350	F	314	331	F	355	385	382	389	366	366	377	356	332	355	331	329	334	355	362	379	A	322	327
14	321	332	323	325	316	328	392	369	365	365	378	370	339	336	317	333	349	351	339	344	365	356	311	340
15	324	340	333	336	312	303	360	378	377	380	372	331	337	366	348	345	316	348	319	329	377	390	320	322
16	313	334	319	338	341	337	394	398	332	373	355	342	344	354	339	330	339	339	344	348	359	348	360	323
17	355	339	320	330	327	329	346	371	378	357	379	346	353	342	351	346	329	352	332	326	361	372	315	328
18	331	326	318	329	319	317	347	386	391	366	349	352	349	334	386	353	339	324	334	356	385	355	317	325
19	343	317	335	340	336	A	340	377	374	392	374	363	359	351	351	334	332	343	334	369	313	320	311	337
20	341	337	335	342	348	349	364	381	368	379	357	350	353	337	398	374	344	337	326	350	361	357	337	337
21	328	343	323	334	345	366	365	381	374	386	347	334	346	350	359	323	343	356	357	319	318	342	347	360
22	308	319	331	310	326	313	361	389	394	382	379	348	365	340	353	326	329	336	338	336	319	331	348	340
23	341	328	325	325	325	320	385	381	375	376	365	353	A	357	323	330	356	349	362	363	332	348	320	328
24	326	340	343	341	334	328	382	372	375	365	379	360	339	348	363	326	351	357	363	363	332	A	F	F
25	F	F	334	332	341	336	396	372	383	A	353	382	373	345	348	356	331	352	352	355	F	F	312	F
26	325	337	341	335	373	338	375	364	377	364	352	378	361	341	370	346	A	345	352	371	359	335	319	311
27	325	338	332	326	330	327	382	380	382	363	377	365	333	324	362	332	345	342	372	383	328	325	308	318
28	318	324	326	325	316	320	383	380	379	369	360	370	331	363	360	352	354	359	347	371	323	333	312	319
29	321	330	318	327	336	331	386	398	382	375	387	365	336	322	347	367	337	367	375	385	310	317	310	329
30	339	340	334	328	339	314	369	378	398	383	384	359	368	369	377	329	343	370	393	384	323	321	315	326
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	26	24	25	29	26	25	27	29	28	28	28	29	27	27	29	28	27	29	28	29	27	22	22	20
MED	330	331	331	331	334	328	369	377	377	368	367	359	349	341	348	330	337	344	340	350	345	348	320	328
U Q	341	338	334	339	340	340	383	381	386	380	379	366	356	350	360	346	344	352	354	366	361	356	347	337
L Q	321	326	321	326	325	318	352	368	368	364	354	344	336	325	317	324	329	336	332	330	323	331	312	322

IONOSPHERIC DATA STATION Kokubunji

SEP. 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								L	A	A	425	A	414	UL448	UL406	UL397	A	348						
2							A	A	A	A	A	A	A	A	A	A	UL359	A						
3							A	A	A	A	A	423	A	A	UL386	UL388	A	A						
4							A	A	A	A	421	A	399	UL400	A	371	A	A						
5							L	A	UL404	A	426	A	A	A	A	A	A	A						
6								A	399	394	405	UL421	UL422	UL437	UL392	374	UL379	L						
7								362	A	409	A	470	UL388	UL448	401	385	375	L						
8								L	UL397	428	C	UL471	395	UL412	400	391	379	L						
9								A	UL420	409	395	UL456	UL439	UL415	384	A	366	A						
10								L	UL407	UL412	399	411	389	UL394	382	UL382	A	A						
11								L	A	404	423	433	UL418	A	A	A	A	A						
12								A	A	A	A	423	A	411	UL399	A	A	A						
13									L	UL423	A	A	A	A	UL397	370	UL357	L						
14								L	L	390	UL394	UL429	UL404	UL392	UL378	UL393	UL369	L						
15								L	L	414	UL429	UL438	442	395	UL388	L	UL363	L						
16									UL353	409	UL404	399	UL385	431	391	UL371	L	L						
17								L	UL387	397	A	UL416	419	415	398	A	L	L						
18								L	395	431	428	UL416	419	UL388	L	UL369	A	A						
19								A	398	415	445	414	415	UL401	UL401	UL380	UL367	A						
20								A	L	UL409	408	434	UL400	UL438		A	L	A						
21								L	UL403	UL390	UL411	421	419	400	L		L							
22									L	L	420	UL450	UL463	UL397	UL397									
23									L	UL392	A	A	A	A	UL380	UL373	L							
24								A	L	A	398	A	404	UL391	A	UL375	A	A						
25									UL394	A	408	400	422	UL410	394	L	L							
26									A	424	UL438	UL429	UL409	L	A	L	A							
27								L	L	L	UL444	422	UL408	L	UL394	UL385	L							
28								L	L	L	UL414	L	UL406	397	L									
29									L	UL384	L	417	UL392	UL397	A	A								
30									L	428	L	UL429	403	UL410	L	A	L							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	11	19	20	22	24	22	18	15	9	1						
MED								362	UL398	409	417	423	408	UL406	UL394	UL380	UL367	348						
U Q									UL404	423	427	UL434	419	UL415	UL399	UL388	377							
L Q									UL394	UL394	404	416	UL400	UL397	UL386	371	UL361							

SEP. 2009 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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								240	248	EA374	252	266	344	348	384	334	EA308	306						
2							A	268	236	A	A	A	A	A	A	370	336	292						
3							A	A	A	236	252	288	282	A	350	302	292	274						
4							A	260	216	268	306	282	290	466	334	332	314	EA298						
5							298	228	264	EA258	276	284	A	A	336	A	A	A						
6								256	252	226	248	290	338	306	392	304	296	274						
7								330	EA266	246	256	256	300	390	384	332	288	284						
8								244	228	222	C	352	284	370	330	368	302	284						
9								252	228	284	246	440	256	356	350	EA334	294	260						
10								258	258	324	300	288	312	304	290	364	288	252						
11								242	A	258	266	260	308	286	258	EA264	EA290	262						
12								260	236	242	228	266	EA298	280	300	A	A	EA302						
13									248	262	248	248	278	286	294	316	304	264						
14								242	262	258	234	252	308	288	322	306	266	260						
15								246	248	236	266	316	294	260	286	286	340	262						
16									312	242	274	288	284	272	310	302	290	256						
17								234	234	242	240	286	276	288	280	254	302	260						
18								218	214	236	254	274	282	300	254	278	EA302	EA302						
19								220	236	230	250	274	270	270	286	298	300	246						
20								242	254	254	282	274	258	284		214	274	272						
21								232	240	240	282	298	288	282	274		282							
22									222	236	236	282	260	290	280									
23									236	240	262	266	A	266	312	308	266							
24								230	244	EA268	230	264	286	264	272	288	258	244						
25									242	A	256	238	262	282	280	262	272							
26									230	252	274	244	264	258	246	276	A							
27								236	234	230	246	254	278	274	256	280	268							
28								246	226	250	244	246	300	252	254	258								
29									228	238	234	252	296	314	262	244								
30									228	226	232	258	238	252	244	270	270							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	21	28	28	28	29	27	27	28	26	24	20						
MED							298	242	236	241	252	274	284	286	288	296	290	264						
U Q								257	250	258	270	288	300	306	332	332	302	288						
L Q								233	228	236	242	255	270	270	267	270	273	260						

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	E A 248	E A 282	E A 268	E A 276	A	E B 290	224	216	A	A	184	A	194	192	192	194	A	E A 248	E A 268	238	214	212	204	222
2	E B 260	E A 246	E B 258	E A 272	E A 264	E B 260	A	A	A	A	A	A	A	A	A	A	216	A	236	220	204	198	A	218
3	210	228	E B 246	E B 250	E A 268	E B 278	A	A	A	A	A	204	A	A	210	208	A	A	E A	E A 260	224	212	226	226
4	214	A	E A 284	236	E B 262	E B 262	A	A	A	A	190	A	202	208	A	204	A	A	E A 278	238	230	232	212	A
5	A	E A 288	E A 274	E A 270	E B 258	E B 260	212	A	202	A	186	A	A	A	A	A	A	A	A	E A 268	E A 230	216	A	E A 260
6	228	E B 246	E B 286	E A 254	E B 244	E B 292	E A 234	A	202	202	210	196	188	182	202	202	222	218	E A 248	220	224	208	214	E B 300
7	E B 262	E B 256	E B 250	220	204	E B 210	194	218	A	210	A	174	210	176	218	214	228	222	244	E A 244	212	220	E A 328	220
8	E A 300	E A 280	E A 276	E B 236	232	E A 248	224	208	200	196	C	160	212	188	188	202	218	220	236	222	214	222	E A 274	E A 270
9	218	E B 242	E B 244	E B 252	E B 236	E B 244	218	A	198	190	216	184	174	208	198	A	230	A	E A 238	210	216	E A 274	218	E A 318
10	226	E A 246	E A 258	E A 246	E B 246	222	204	210	194	194	196	180	226	222	216	218	A	A	E A 234	220	212	218	220	222
11	232	220	E B 250	E A 264	E A 280	E B 252	216	206	A	200	202	190	190	A	A	A	A	A	E A 270	222	222	A	A	E A 286
12	E A 300	E A 286	E A 294	E A 258	212	E B 254	220	A	A	A	A	170	A	178	208	A	A	A	A	220	E A 264	E A 288	E A 302	234
13	220	218	E A 274	E A 304	E A 234	218	210	222	200	210	A	A	A	A	208	E A 234	214	218	224	208	210	A	E B 250	E B 242
14	E A 262	E A 270	E A 282	E B 258	E B 254	E A 268	208	198	206	188	198	198	196	208	196	206	226	220	226	232	204	200	E A 260	228
15	E B 234	E A 238	E A 250	E B 252	E B 268	E B 286	214	212	198	198	188	182	186	216	192	218	228	224	238	226	200	188	224	E B 258
16	E B 270	E B 250	E B 246	E B 252	224	228	208	208	206	194	182	184	198	184	212	218	E A 232	214	216	212	212	208	210	212
17	208	E B 234	E B 234	226	E B 246	E B 258	216	A	210	208	A	196	192	184	198	A	218	228	E A 242	228	204	192	E A 256	E A 246
18	226	E A 252	E B E 246	E A 248	E B 252	E B 254	222	A	194	186	172	H 164	188	186	200	210	A	A	230	216	198	198	220	E B 250
19	212	E A 278	E B 236	E B 232	E A 262	A	234	A	192	204	188	192	198	218	196	186	194	A	224	206	228	E B 238	E B 236	224
20	224	218	E B 232	228	216	216	200	A	206	194	206	180	188	180	206	A	204	A	E A 238	216	198	208	220	210
21	232	E B 244	230	224	E B 224	228	210	208	194	202	180	184	184	180	212	200	192	226	216	230	E B 242	216	208	194
22	E A 286	E B 280	E B 260	E B 260	E B 266	E B 290	214	214	202	198	194	178	168	204	194	204	220	228	222	222	E B 248	232	220	212
23	E A 236	E B 242	E B 254	E B 260	E B 248	E B 260	194	220	206	212	A	A	A	A	H 176	218	222	224	212	200	222	210	236	228
24	220	230	222	214	226	E B 250	210	A	208	A	206	A	196	186	A	204	A	A	218	202	208	A	236	238
25	216	E B 250	E B 244	E B 246	E B 244	E B 248	202	H 194	192	A	202	186	204	202	198	200	216	226	206	204	E A 284	E A 234	E B 266	E B 232
26	E B 240	228	E B 240	E B 234	210	228	212	216	A	190	H 180	194	206	190	A	220	A	230	216	204	192	208	E B 270	E B 260
27	E B 234	E B 234	E B 238	E B 248	E B 238	E B 258	208	180	196	180	200	186	178	198	186	216	222	234	200	180	E B 234	E B 236	E B 266	E A 270
28	E B 252	E B 254	E B 254	E B 246	E B 242	E B 260	216	210	198	192	196	194	184	178	222	206	220	224	212	210	236	220	E A 262	E B 234
29	E B 232	E B 248	E A 262	E B 254	226	226	208	210	198	192	194	186	192	192	A	A	208	228	204	182	E B 248	E B 268	E B 264	E B 256
30	E B 242	E B 228	220	E B 236	224	E B 246	212	214	192	194	190	190	196	170	180	A	226	224	192	198	216	E B 236	E B 266	E B 256
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	29	29	30	30	29	29	27	18	22	22	22	23	24	24	23	21	20	18	27	30	30	27	27	29
MED	E 232	E 246	E B 250	E 249	E B 244	E B 254	212	210	199	195	194	186	193	189	198	206	220	224	219	217	212	212	U 222	E 234
U Q	E 256	E A 263	E A 268	E A 258	A E 260	E B 261	218	216	206	202	202	194	200	206	210	218	226	228	E A 238	228	E 230	E B 234	E B 266	E A 259
L Q	220	232	E B 240	236	225	228	208	208	194	192	186	180	187	181	192	202	215	220	216	206	208	208	220	222

SEP. 2009 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	A	A	A						
2							B	A	A	A	A	A	A	A	A	A	114	A						
3							A	A	A	A	A	A	A	A	A	120	A	A						
4							B	A	A	A	A	A	A	114	A	120	114	A						
5							A	A	A	A	A	A	A	A	A	A	A	A						
6							B	A	A	A	114	A	A	108	110	112	112	114						
7							B	112	A	A	A	A	122	120	126	A	122	118						
8							B	A	124	122	C	114	112	110	114	112	118	118						
9							116	A	A	122	A	A	114	112	112	A	112	114						
10							B	A	A	A	A	A	A	A	114	120	A	B						
11							B	A	A	A	A	A	A	A	A	A	A	B						
12							B	A	A	A	A	120	A	120	120	A	A	A						
13							B	122	A	A	A	A	A	A	A	A	A	B						
14							B	116	116	116	A	A	112	112	112	110	114	120						
15							B	A	A	116	118	122	112	112	114	116	124	112						
16							B	A	A	A	A	116	112	118	116	122	124	120						
17							120	120	116	114	A	A	118	120	A	A	A	118						
18							B	A	A	A	A	116	114	112	A	116	A	A						
19							A	A	A	A	118	116	116	116	110	122	A	A						
20							B	A	A	A	A	124	120	A	A	A	128	120						
21							B	A	A	A	114	112	114	116	120	112	120	122						
22							126	124	A	114	112	114	112	120	112	120	118	120						
23							B	118	118	114	A	A	A	A	118	118	118	118						
24							122	128	124	A	A	A	A	A	A	110	118	124						
25							B	A	A	A	130	122	112	118	112	116	120	A						
26							B	A	A	A	A	A	A	A	A	114	A	A						
27							B	124	130	118	118	110	108	A	108	108	108	B						
28							B	A	118	112	114	110	110	108	114	112	118	B						
29							B	A	A	120	A	112	112	110	A	A	112	B						
30							126	A	126	114	116	112	112	114	114	120	116	B						
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							5	8	8	11	9	14	17	18	17	19	19	13						
MED							122	121	121	116	116	115	112	114	114	116	118	118						
U Q							126	124	125	120	118	120	115	118	117	120	120	120						
L Q							118	117	117	114	114	112	112	112	112	112	114	116						

SEP. 2009 h′E (KM)

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	96	92	102	98	114	114	108	106	106	98	102	104	108	104	102	102	100	102	102	108	100	90	102	98
2	100	90	102	100	100	B	104	100	104	100	96	96	96	96	98	102	98	96	94	94	98	96	96	90
3	94	94	102	B	120	B	108	100	102	100	98	92	100	100	106	102	110	104	102	98	106	102	102	102
4	92	92	86	90	98	124	102	100	96	98	100	98	100	148	100	128	116	108	104	100	104	102	94	96
5	96	92	92	92	118	110	104	104	102	98	98	98	92	92	92	116	106	100	98	102	102	100	98	98
6	98	98	96	96	96	96	102	100	100	100	96	94	94	94	96	146	136	116	104	102	102	102	106	98
7	96	98	104	B	102	B	116	110	104	98	98	100	G	102	144	102	128	116	110	100	106	108	106	100
8	98	96	112	B	132	110	106	108	104	98	C	96	104	96	94	92	98	124	106	B	B	98	98	98
9	98	98	100	98	B	B	112	102	106	102	102	96	94	96	116	102	112	112	102	102	108	102	106	108
10	100	96	94	98	96	104	146	98	100	104	102	110	102	104	114	122	104	102	98	98	112	100	102	98
11	100	B	98	94	94	B	106	106	104	102	106	108	102	98	98	98	94	94	104	102	102	96	96	96
12	94	94	96	96	98	106	118	108	104	104	104	108	104	118	150	106	108	102	98	104	104	106	104	108
13	102	98	96	96	100	92	114	122	96	96	100	100	104	104	102	100	106	104	110	110	100	100	98	98
14	92	92	90	92	92	94	114	114	G	102	98	98	100	96	92	G	98	120	94	90	90	B	90	B
15	94	94	94	94	B	100	118	98	96	100	106	G	G	102	126	122	130	116	98	104	102	B	B	94
16	92	B	B	B	120	B	118	106	108	102	104	96	88	100	142	126	120	110	114	108	108	102	B	98
17	B	B	B	B	B	B	130	122	116	110	102	100	98	102	102	98	102	122	104	100	96	94	96	98
18	98	96	96	94	98	B	108	106	104	96	98	100	94	92	96	124	106	104	104	106	104	104	102	102
19	100	100	110	B	110	108	104	106	106	102	100	98	148	136	G	108	128	104	92	B	B	102	B	B
20	B	98	94	94	98	98	100	106	106	104	102	104	102	98	100	100	124	114	106	104	100	102	102	B
21	94	90	B	B	B	106	106	102	100	96	96	G	G	G	104	104	130	126	B	B	B	B	88	90
22	88	84	B	B	B	B	134	124	106	98	96	96	96	140	G	102	G	124	112	108	102	100	104	90
23	90	B	B	88	92	94	142	106	122	118	104	102	98	98	102	98	132	118	126	B	98	102	96	94
24	92	92	B	B	B	B	132	126	104	104	104	104	104	106	92	88	138	122	116	112	112	106	104	100
25	92	94	94	94	B	B	106	104	102	98	100	100	108	130	G	104	108	106	B	104	110	106	B	B
26	100	B	B	B	B	B	118	106	104	104	104	104	102	102	106	106	102	102	100	98	98	100	B	B
27	B	92	B	B	B	B	B	146	120	102	102	96	92	90	90	90	88	B	92	110	100	102	102	94
28	B	B	B	B	B	102	118	106	102	102	100	94	100	100	108	144	102	138	122	106	96	96	92	92
29	B	90	90	B	90	B	126	106	102	102	100	96	102	98	92	90	128	110	114	B	B	92	94	B
30	B	B	B	110	112	B	G	104	128	100	96	G	G	100	100	164	140	114	110	96	94	96	88	90
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	24	23	20	17	20	15	28	30	29	30	29	27	26	29	27	29	29	29	28	25	26	27	25	24
MED	96	94	96	94	99	104	113	106	104	101	100	98	100	100	102	102	108	110	104	102	102	102	98	98
U Q	99	98	102	98	113	110	118	108	106	102	103	104	104	104	108	122	128	119	110	107	106	102	103	99
L Q	92	92	94	93	96	96	106	102	102	98	98	96	96	96	96	99	102	103	98	99	98	96	95	94

IONOSPHERIC DATA STATION Kokubunji

SEP. 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	F5	F4	F3	F5	C2	L4	L3	L2	L3	L2	L2	L2	L2	L2	L2	L3	L3	F2	F2	F5	F2	F4	F4
2	F2	F2	F3	F3	F1		L4	L3	L3	L4	L3	L3	L3	L3	L3	L2	L3	L2	F2	F2	F5	F5	F4	F2
3	F2	F3	F2		F4		L3	L5	L3	L2	L2	L2	L2	L3	L2	L2	L3	L3	F4	F4	F4	F2	F5	F4
4	F4	F3	F3	F3	F2	F1	L5	L3	L2	L3	L2	L2	L2	HL12	L2	CL12	CL22	L3	F4	F4	F3	F4	F4	F5
5	F4	F3	F3	F4	F2	F2	L3	L3	L2	L3	L2	L3	L3	L3	L2	CL23	LL33	L3	F5	F4	F6	F4	F4	F3
6	F3	F3	F3	F3	F3	F6	L3	L2	L2	L2	L2	L2	L2	L2	L2	HL12	CL12	CL32	F3	F2	F2	F3	F2	F2
7	F1	F2	F1		F1		C2	C2	L3	L2	L2	L2		L2	HL12	L2	CL12	CL12	FF32	F4	F2	F2	F6	F4
8	F3	F4	F3		F3	F6	L3	L3	L2	L2		L2	L2	L2	L2	L2	L2	C2	F2			F3	F2	F3
9	F3	F3	F2	F3			C2	L2	L2	L2	L2	L2	L2	L2	C2	L3	CL22	C3	F6	F5	F3	F3	F2	F5
10	F3	F3	F4	F3	F2	L2	HL12	L3	L2	L2	L2	L2	L2	L2	CL12	CL12	L2	L3	F4	F3	F1	F2	F2	F2
11	F2		F3	F3	F4		L3	L2	L3	L2	L2	L2	L2	L2	L2	L3	L3	L3	F4	F3	F3	F4	F4	F3
12	F4	F5	F4	F3	F3	F1	C2	L2	L2	L2	L2	L2	L2	CL11	CL11	L3	L3	L4	F4	F2	F4	F3	F5	F2
13	F2	F3	F4	F4	F3	F3	CL22	CL22	L2	L2	L2	L2	L2	L2	L2	L2	L2	L2	F3	F3	F4	F5	F2	F2
14	F2	F3	F4	F2	F2	F4	C2	C2		L2	L2	L2	L2	L2	L2		L2	CL22	F2	F2	F1		F1	
15	F2	F2	F3	F2		F2	CL22	L3	L3	L2	L2			L2	CL11	CL21	CL21	C3	F1	F2	F2			F1
16	F2				F2		C2	L2	L2	L2	L2	L2	L2	L2	HL22	CL22	CL32	CL32	F3	F2	F2	F2		F2
17							C3	C2	C2	C2	L2	L2	L2	L2	L2	L3	L2	CL22	F4	F5	F3	F2	F3	F2
18	F2	F3	F2	F1	F1		L2	L2	L2	L2	L2	L2	L2	L2	L3	CL12	L3	L4	F3	F2	F3	F2	F2	F2
19	F3	F2	F1		F7	F6	L3	L2	L2	L2	L2	L2	HL12	HL12		L2	CL12	L2	F1			F2		
20		F2	F2	F2	F2	F1	L2	L2	L2	L2	L2	L2	L2	L2	L2	L3	CL12	C3	F3	F3	F3	F3	F2	
21	F2	F2				F1	L3	L2	L2	L2	L2				L2	L2	CL11	C2					F1	F3
22	F4	F3					C3	CL22	L2	L2	L2	L2	L2	HL12		L2		CL21	F3	F5	F3	F3	F1	F3
23	F2			F2	F2	F2	H2	L2	CL22	CL11	L2	L2	L3	L3	L2	L2	HL12	C2	F3		F2	F2	F2	F1
24	F1	F1					H2	CL21	L2	L3	L2	L2	L2	L2	L2	L2	HL21	C2	F3	F3	FF21	F5	F4	F4
25	F1	F1	F1	F1			L2	L2	L2	L2	L2	L2	L2	CL11		L2	L2	L2		F3	F2	F4		
26	F2						C3	L3	L2	L2	L2	L2	L2	L2	L2	L2	L4	L2	F3	F3	F3	F2		
27		F2						HL12	C2	L2	L2	L2	L2	L2	L2	L2	L2		F1	F1	F1	F1	F2	F4
28						F2	C2	L2	L2	L2	L2	L2	L2	L2	L1	HL11	L2	C2	F2	F2	F2	F2	F3	F2
29		F4	F1		F2		C2	L2	L2	L2	L2	L2	L2	L2	L2	L2	CL12	C2	F1			F1	F2	
30				F1	F1			L2	CL12	L2	L2			L2	L2	HL11	HL11	C3	F1	F2	F2	F2	F2	F3
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																								
MED																								
U Q																								
L Q																								

SEP. 2009 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

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

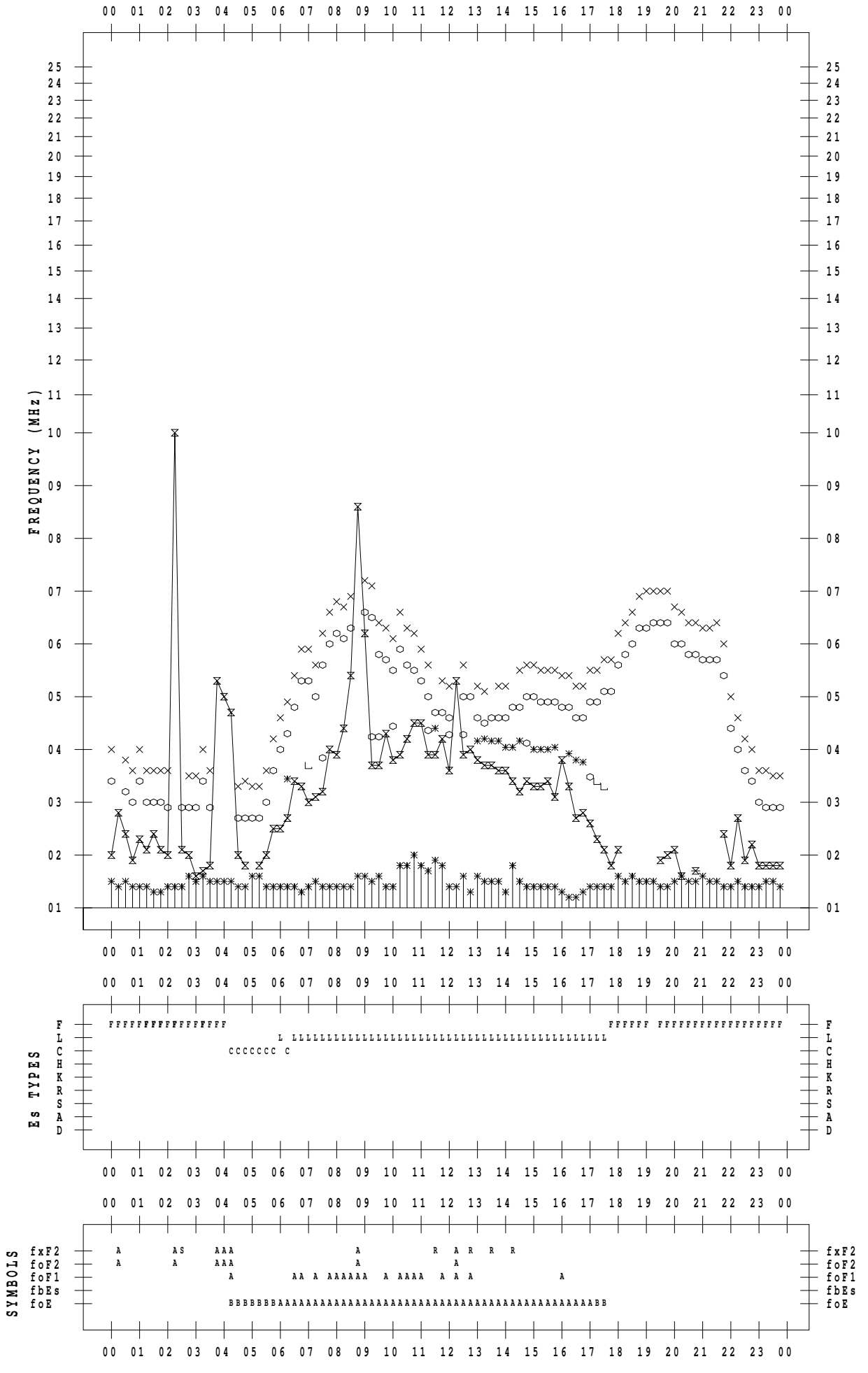
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 1

135 °E MEAN TIME



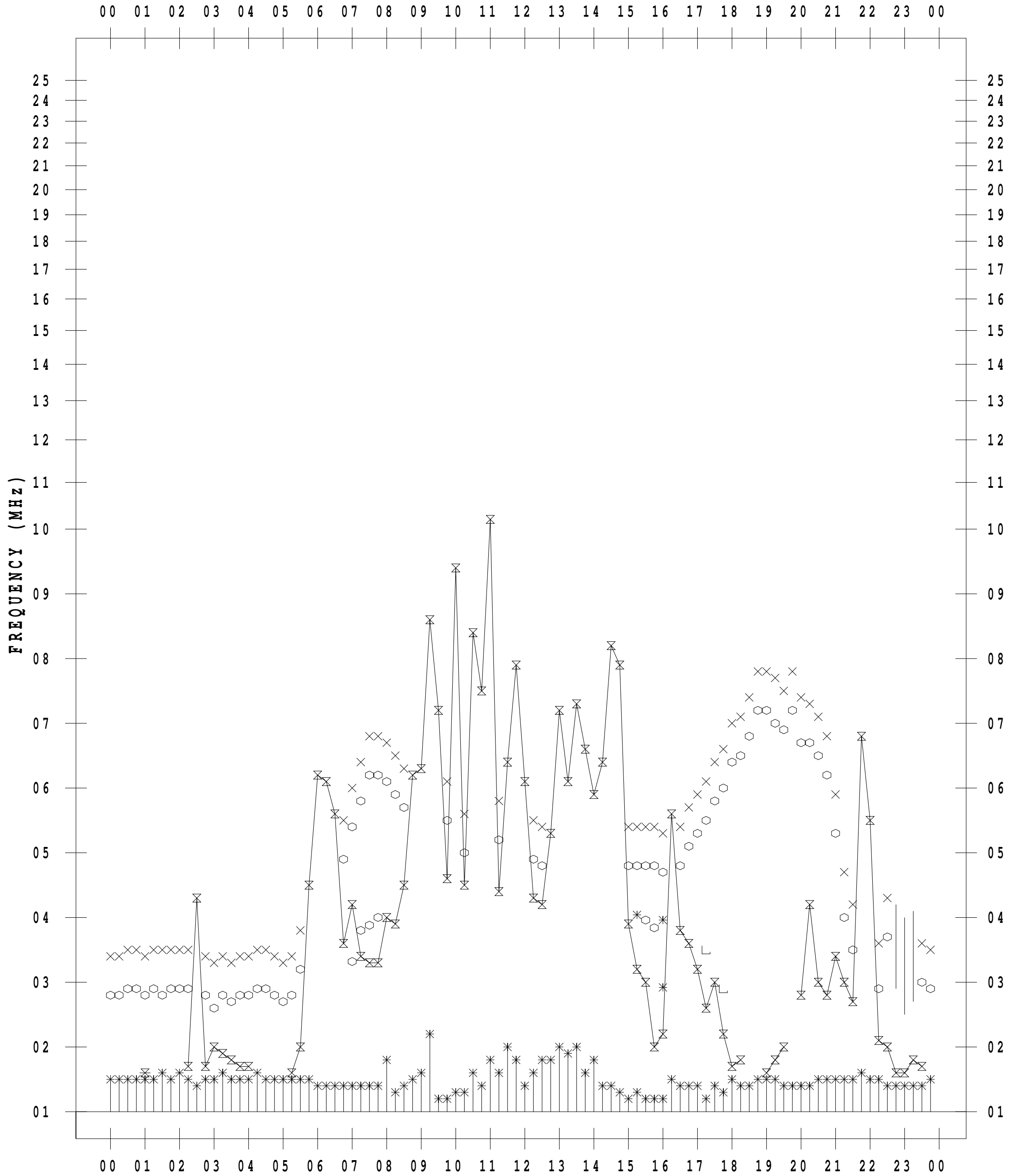
f-PLOT DATA

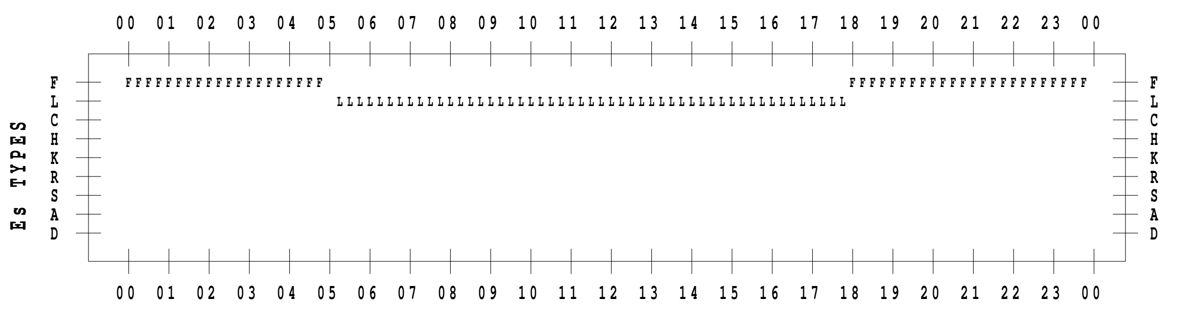
SCALER : I.NISHIMUTA

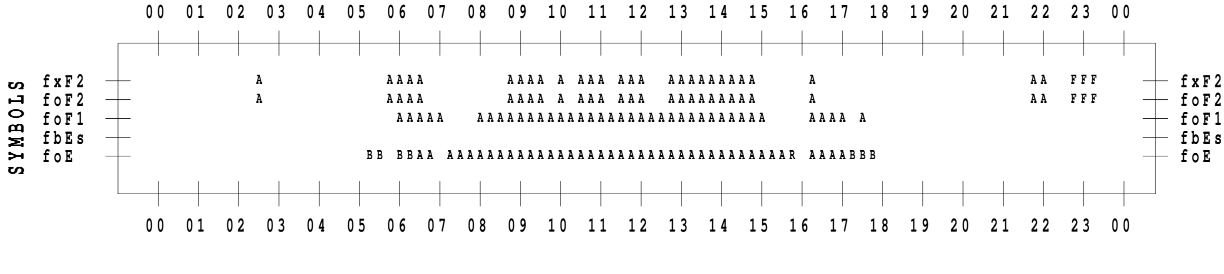
STATION : Kokubunji

DATE : 2009/ 9/ 2

135 °E MEAN TIME







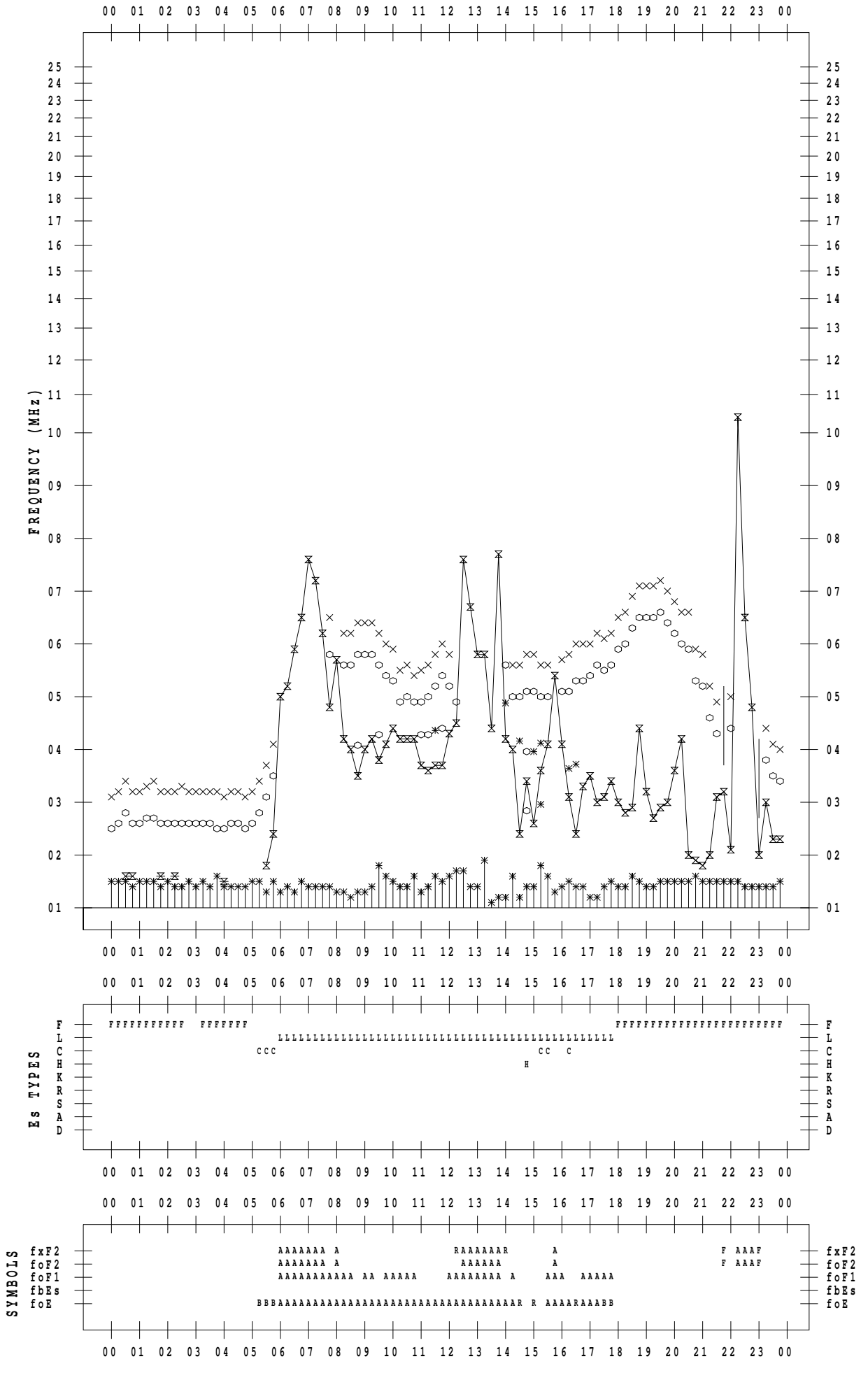
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 3

135 °E MEAN TIME



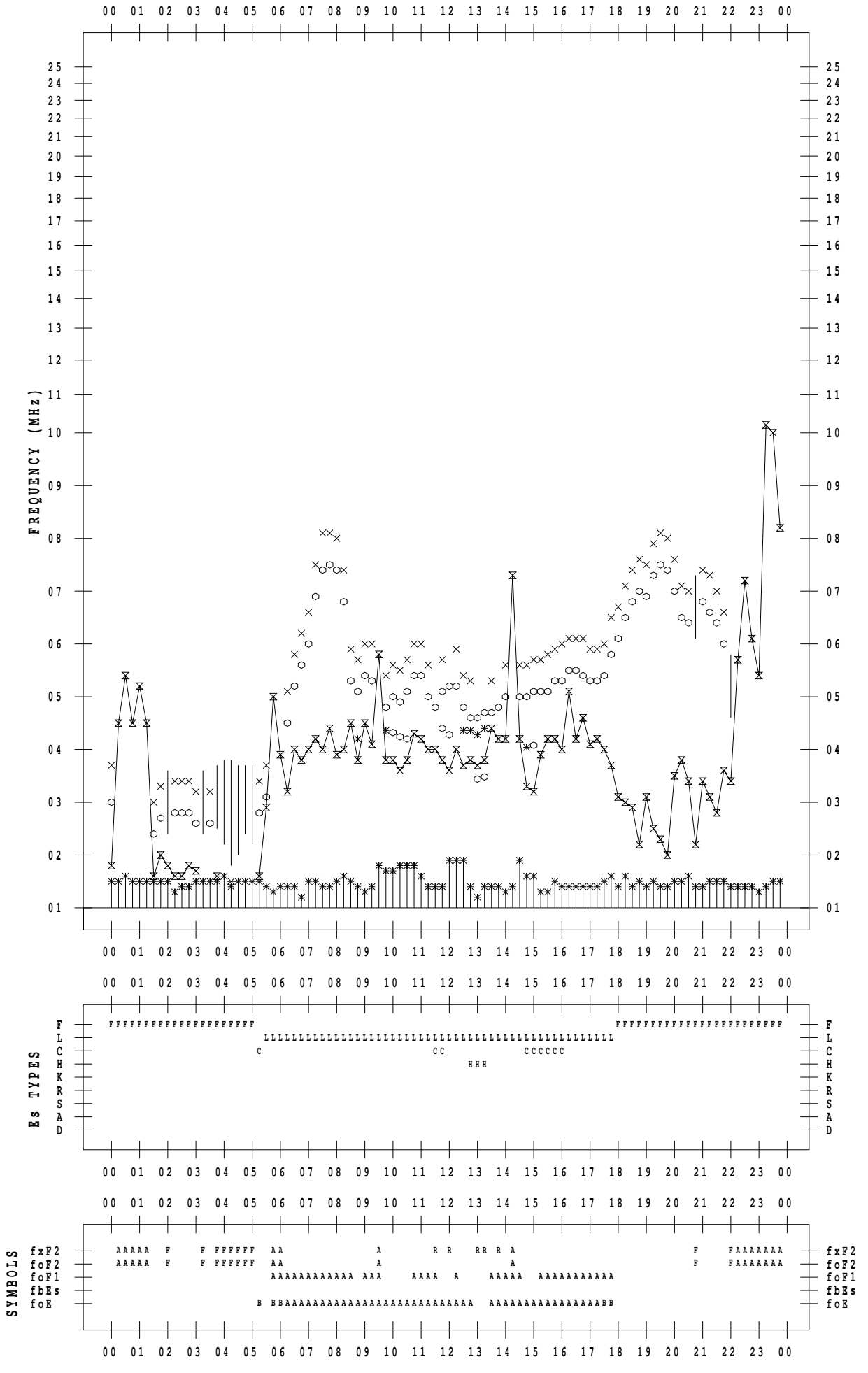
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 4

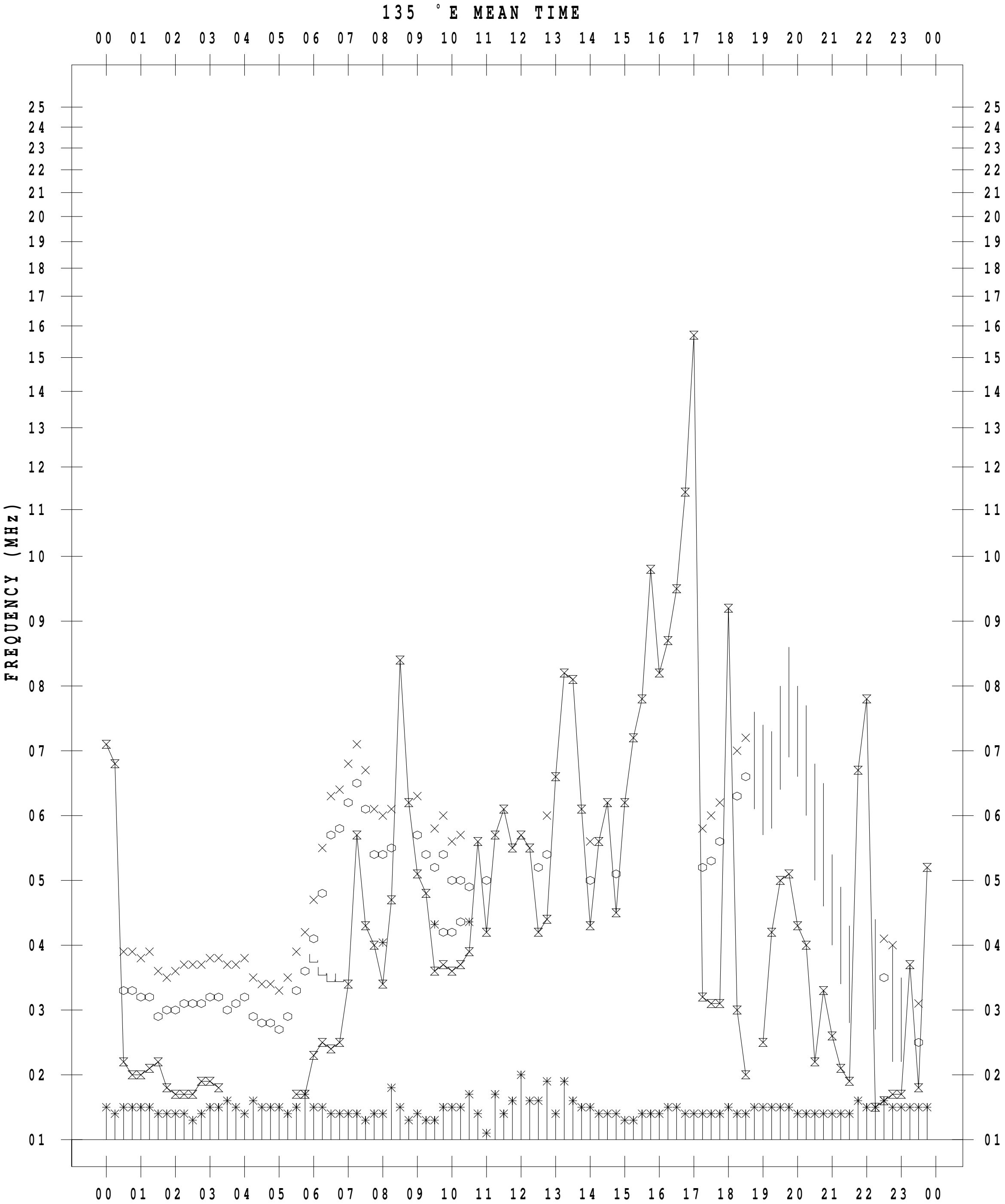
135 °E MEAN TIME

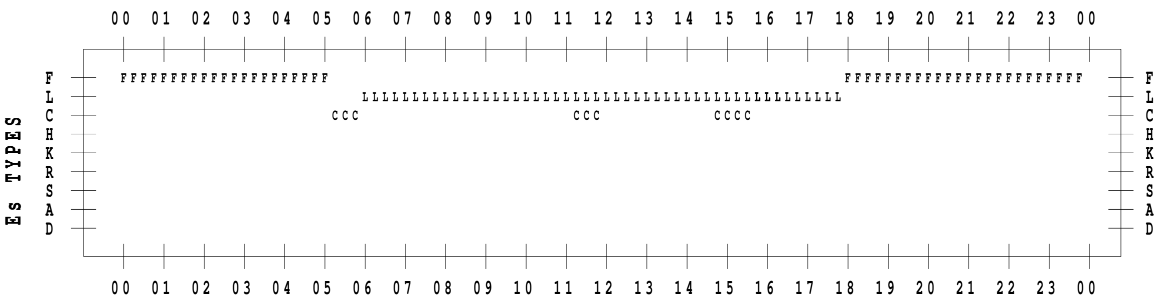


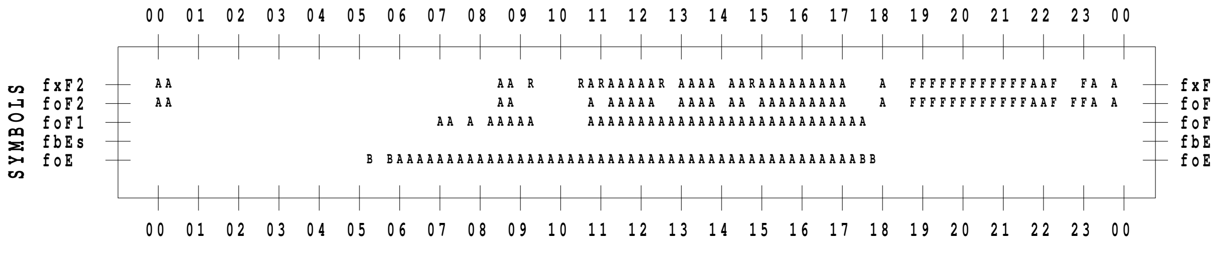
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 9/ 5







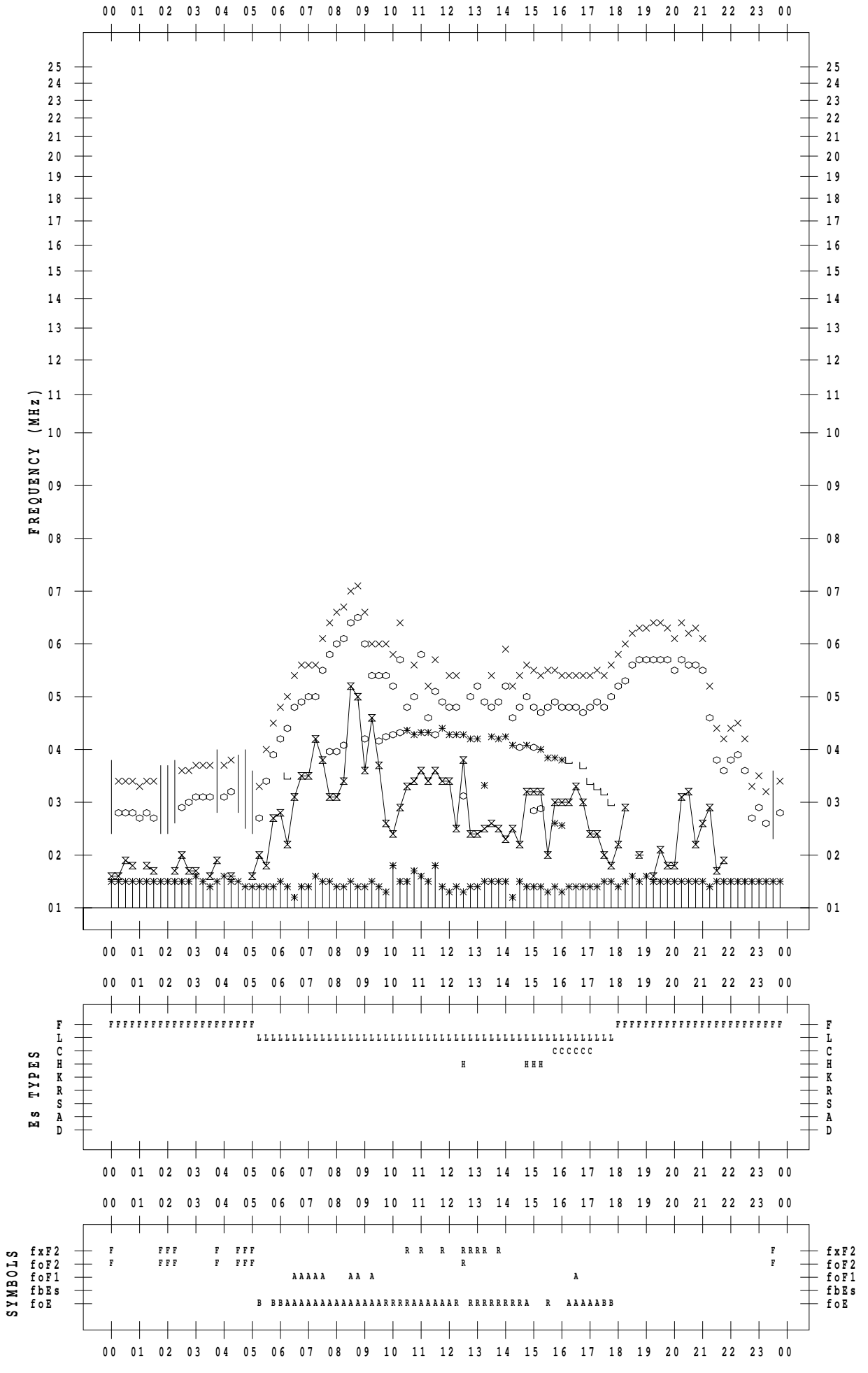
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 6

135 °E MEAN TIME



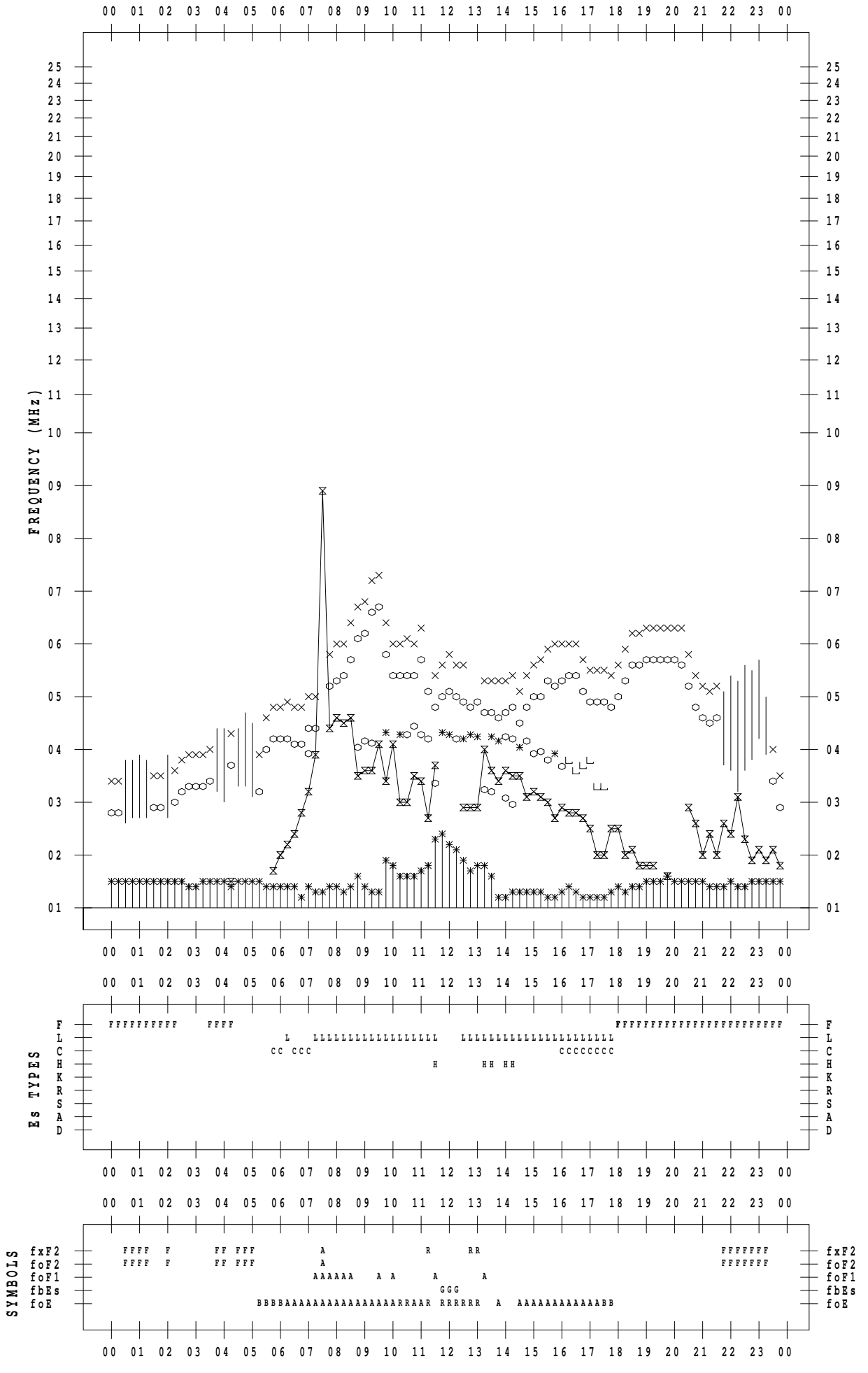
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 7

135 °E MEAN TIME



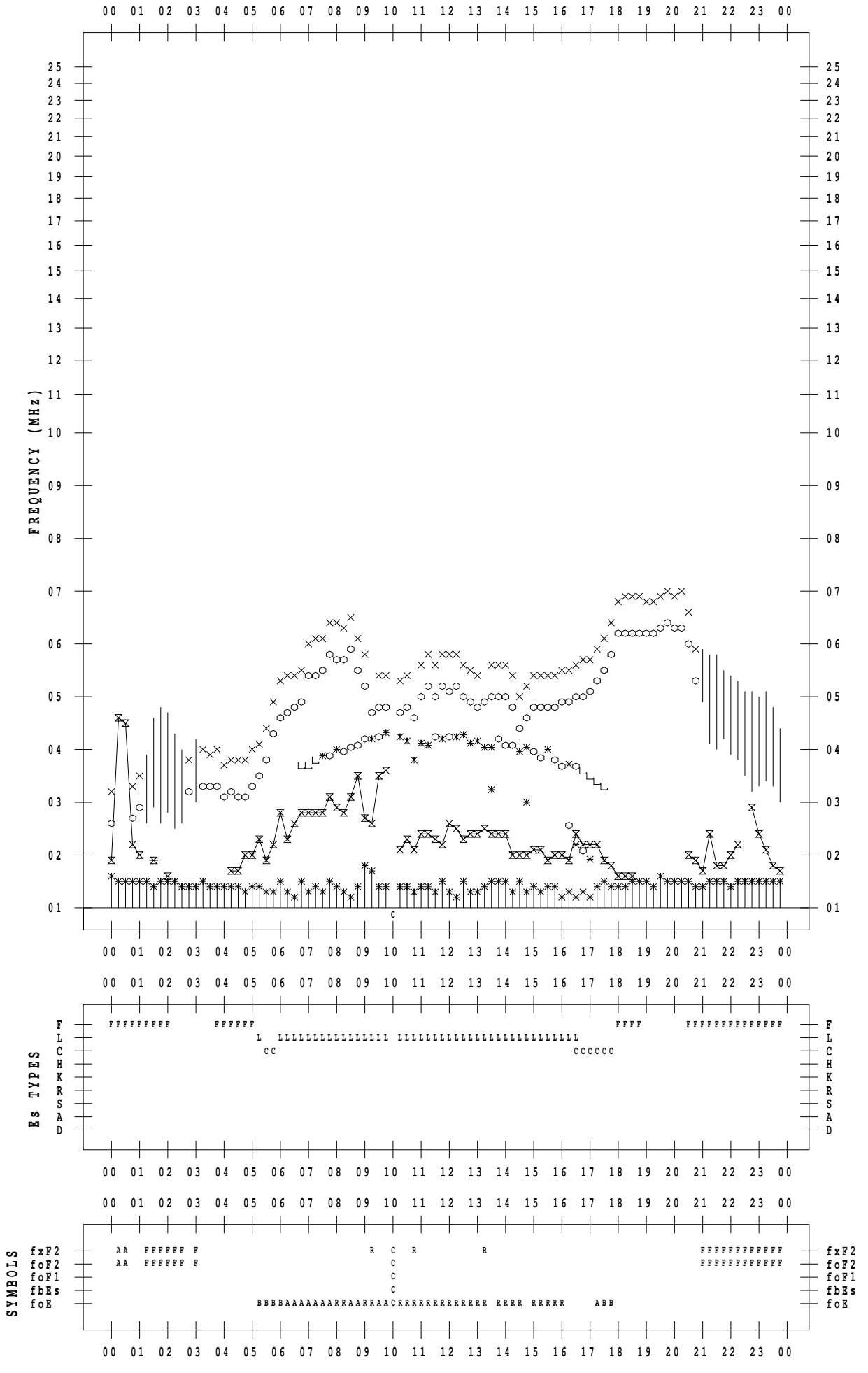
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 8

135 °E MEAN TIME



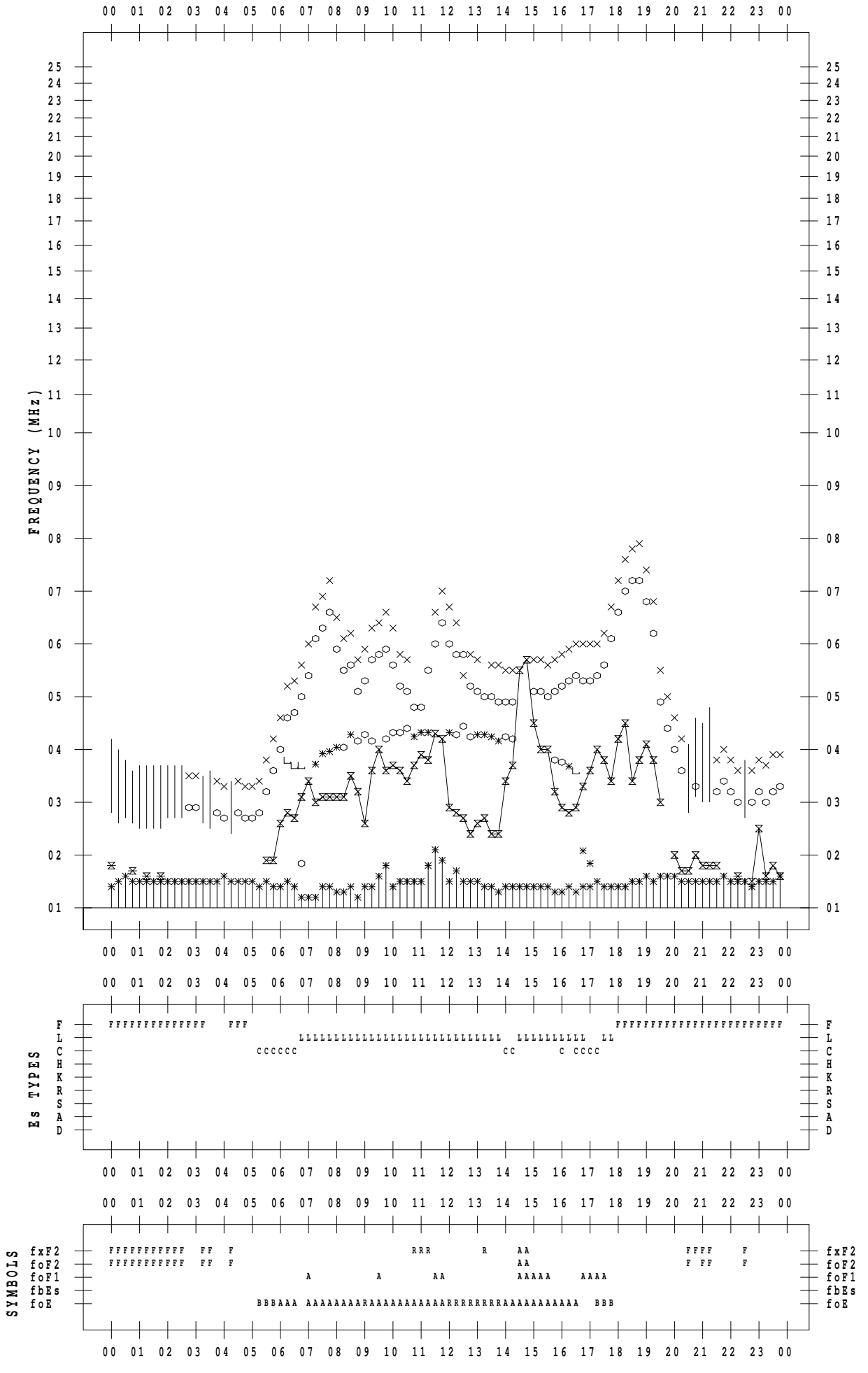
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/ 9

135 °E MEAN TIME



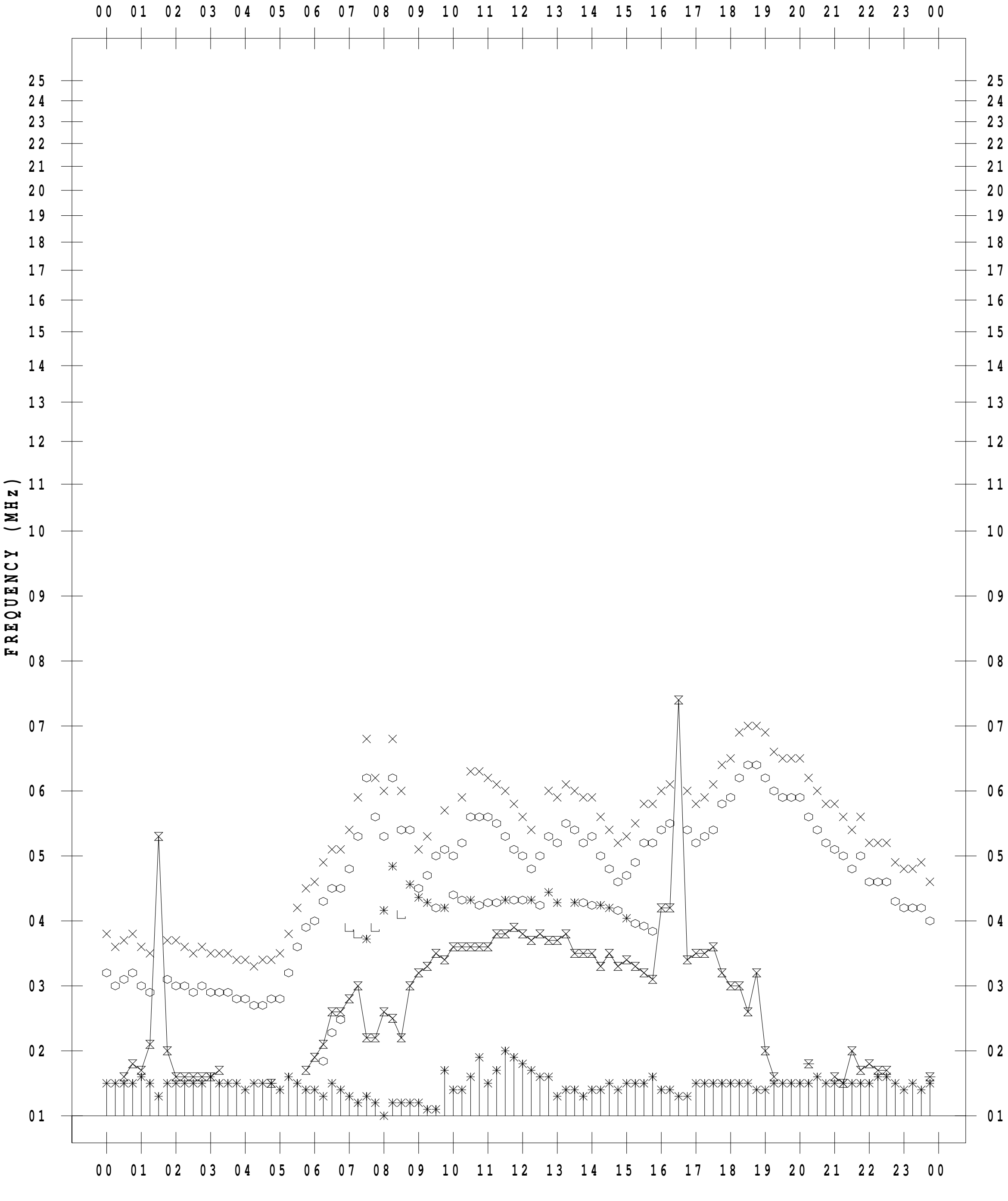
f-PLOT DATA

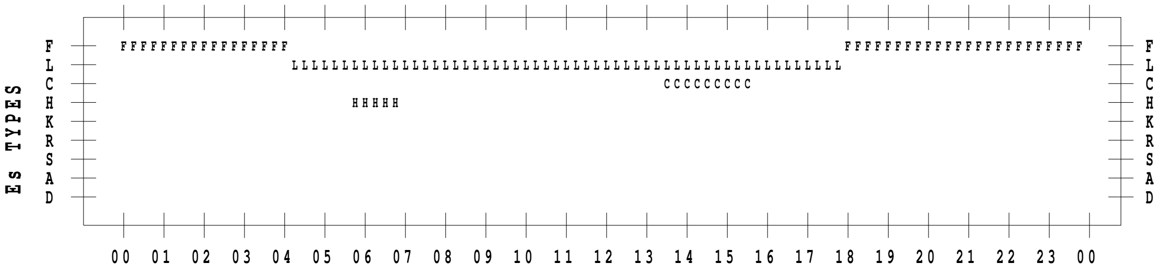
SCALER : I.NISHIMUTA

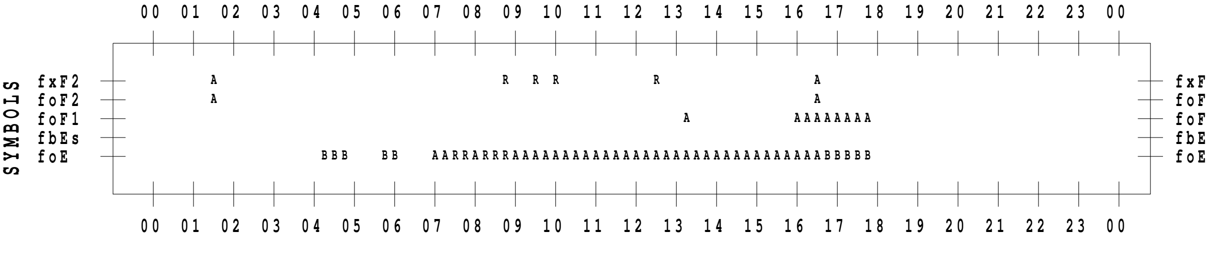
STATION : Kokubunji

DATE : 2009/ 9/10

135 °E MEAN TIME







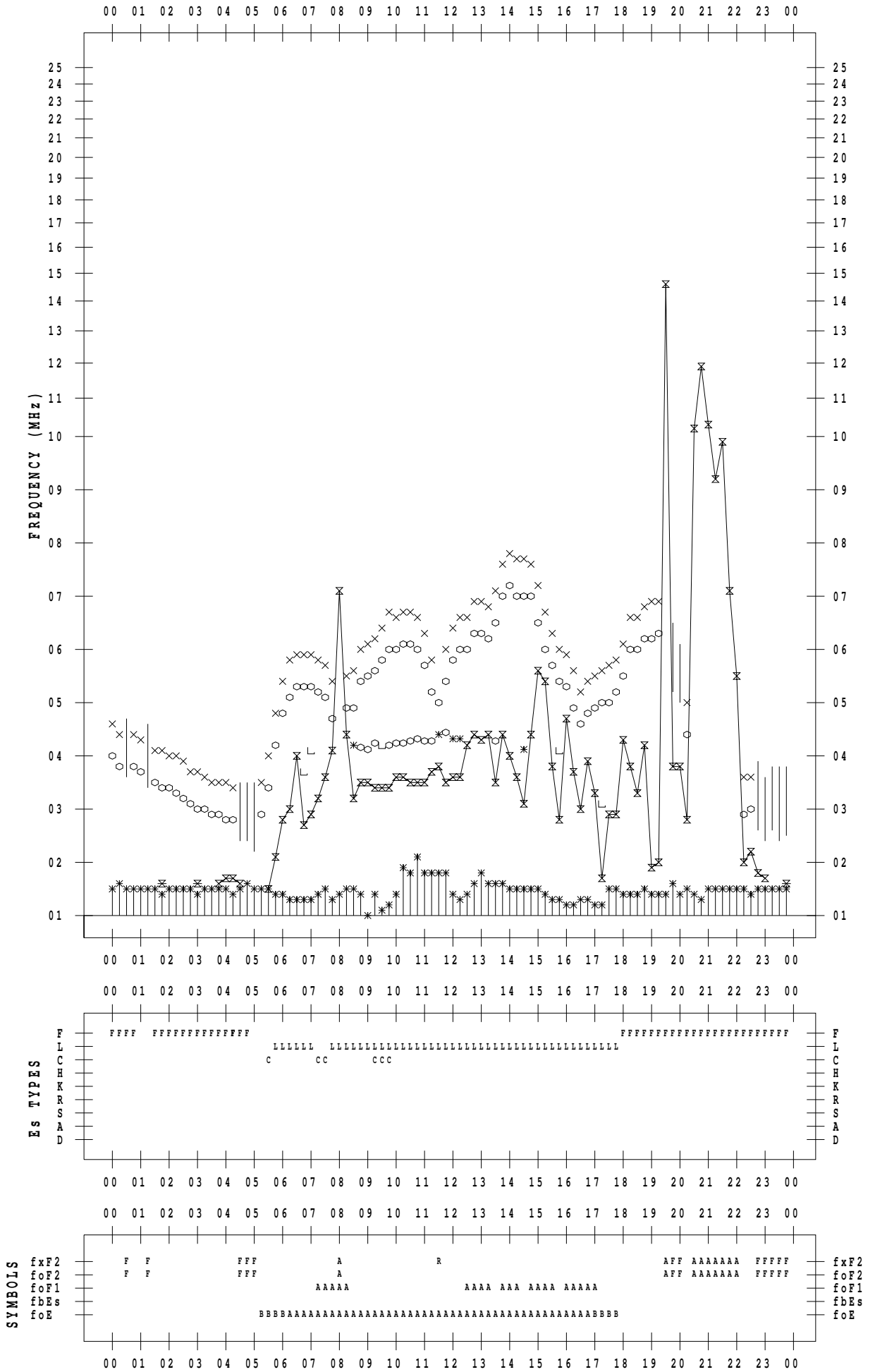
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/11

135 °E MEAN TIME



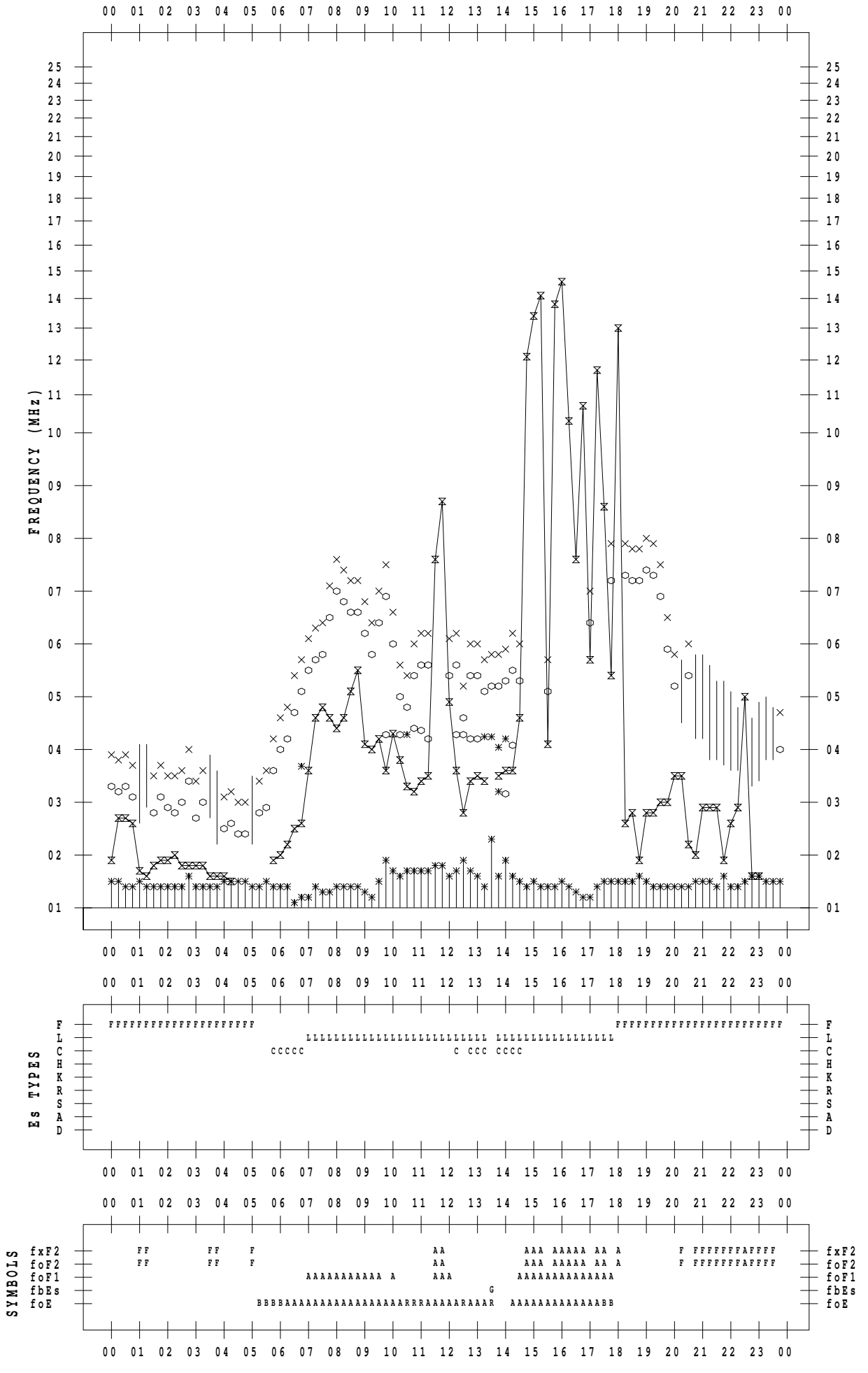
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/12

135 °E MEAN TIME



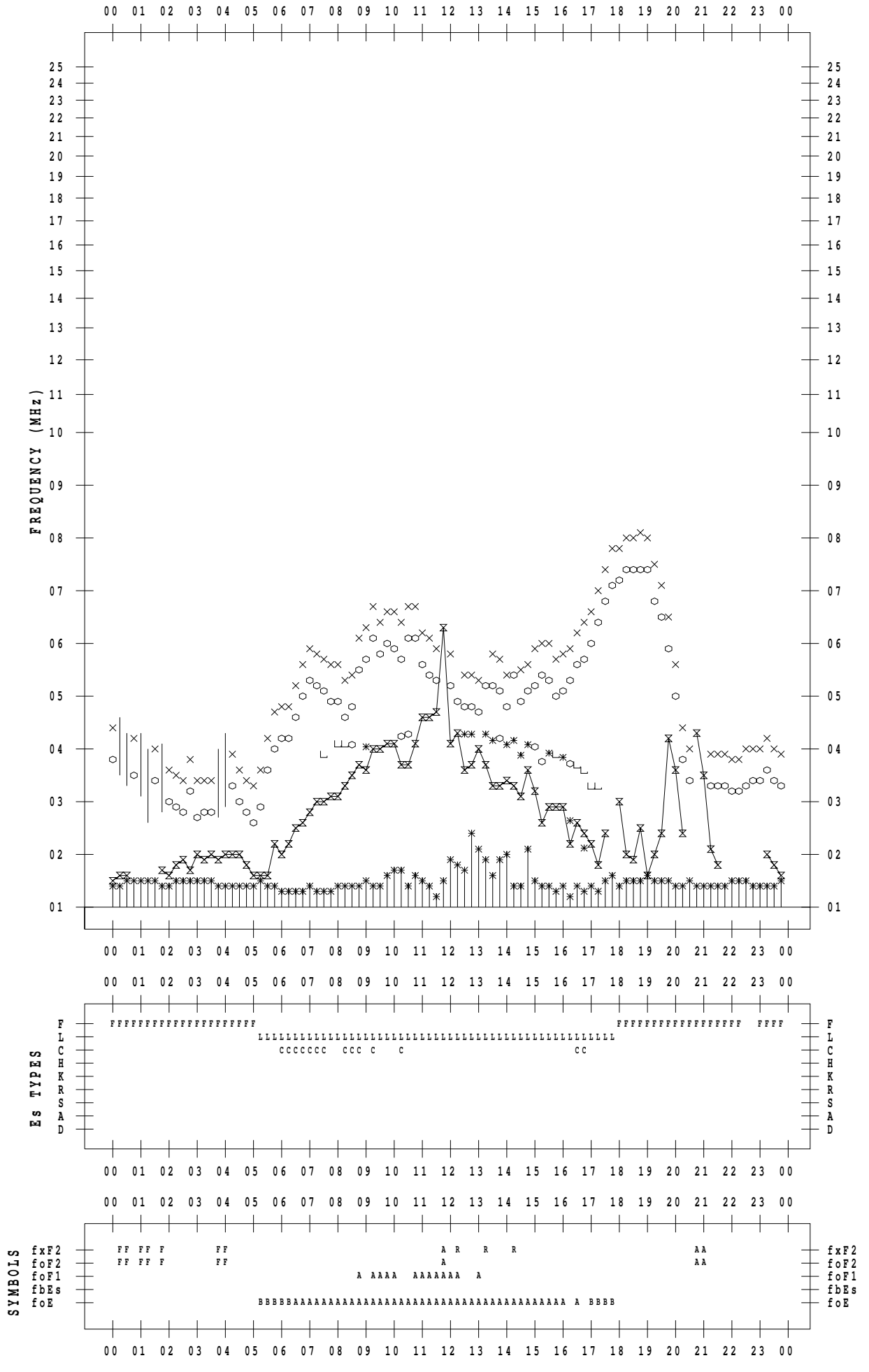
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/13

135 °E MEAN TIME



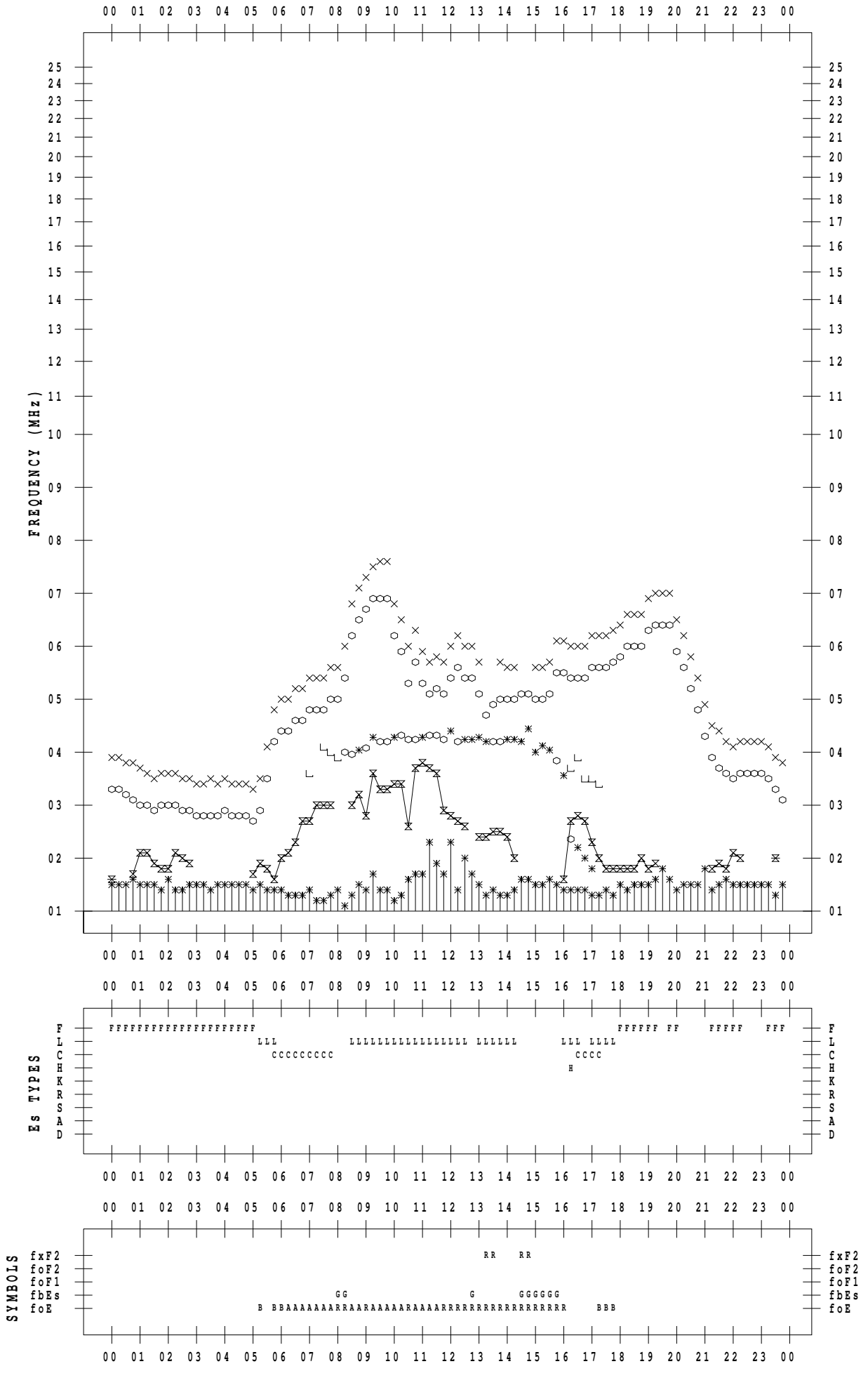
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/14

135 °E MEAN TIME



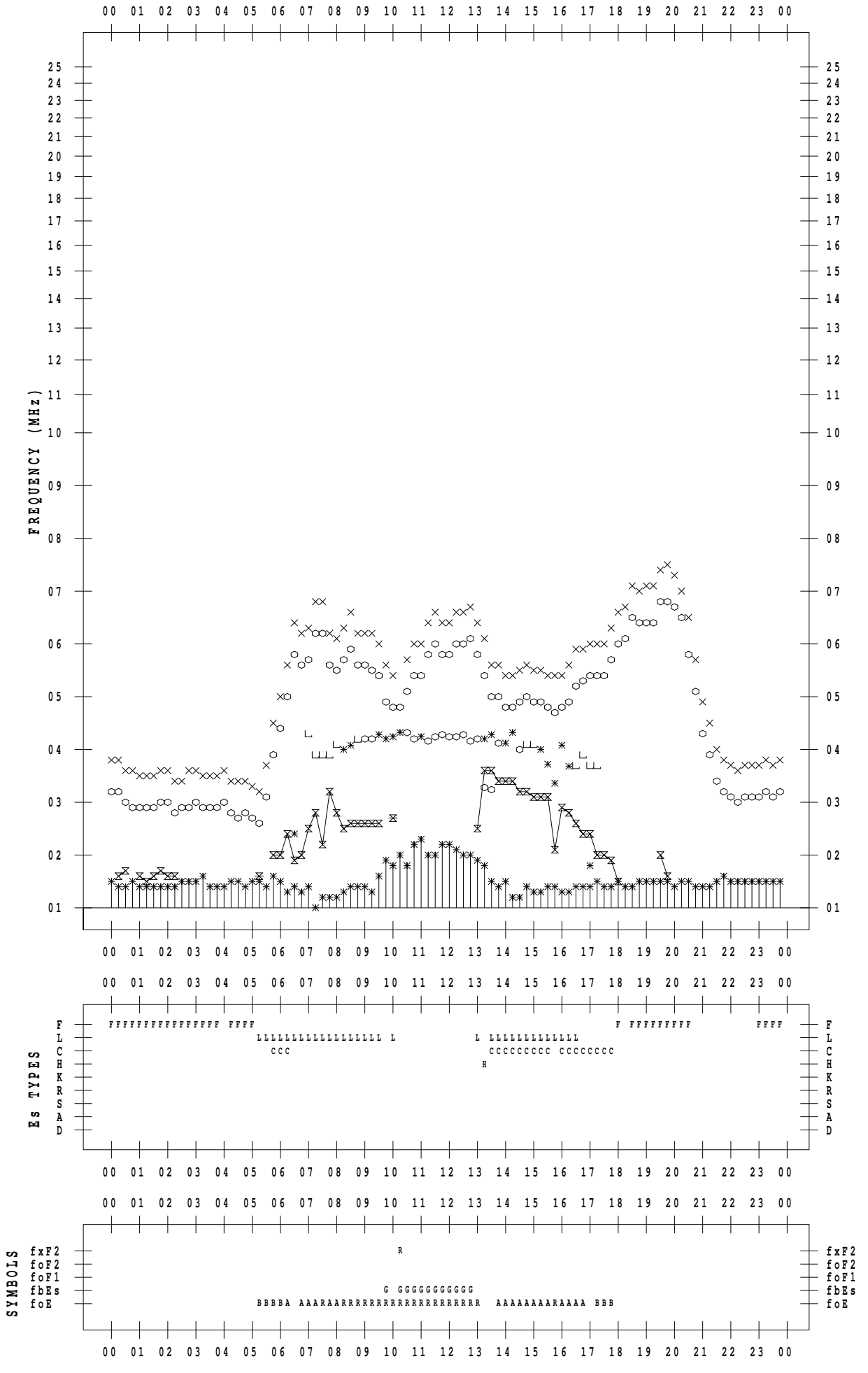
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/15

135 °E MEAN TIME



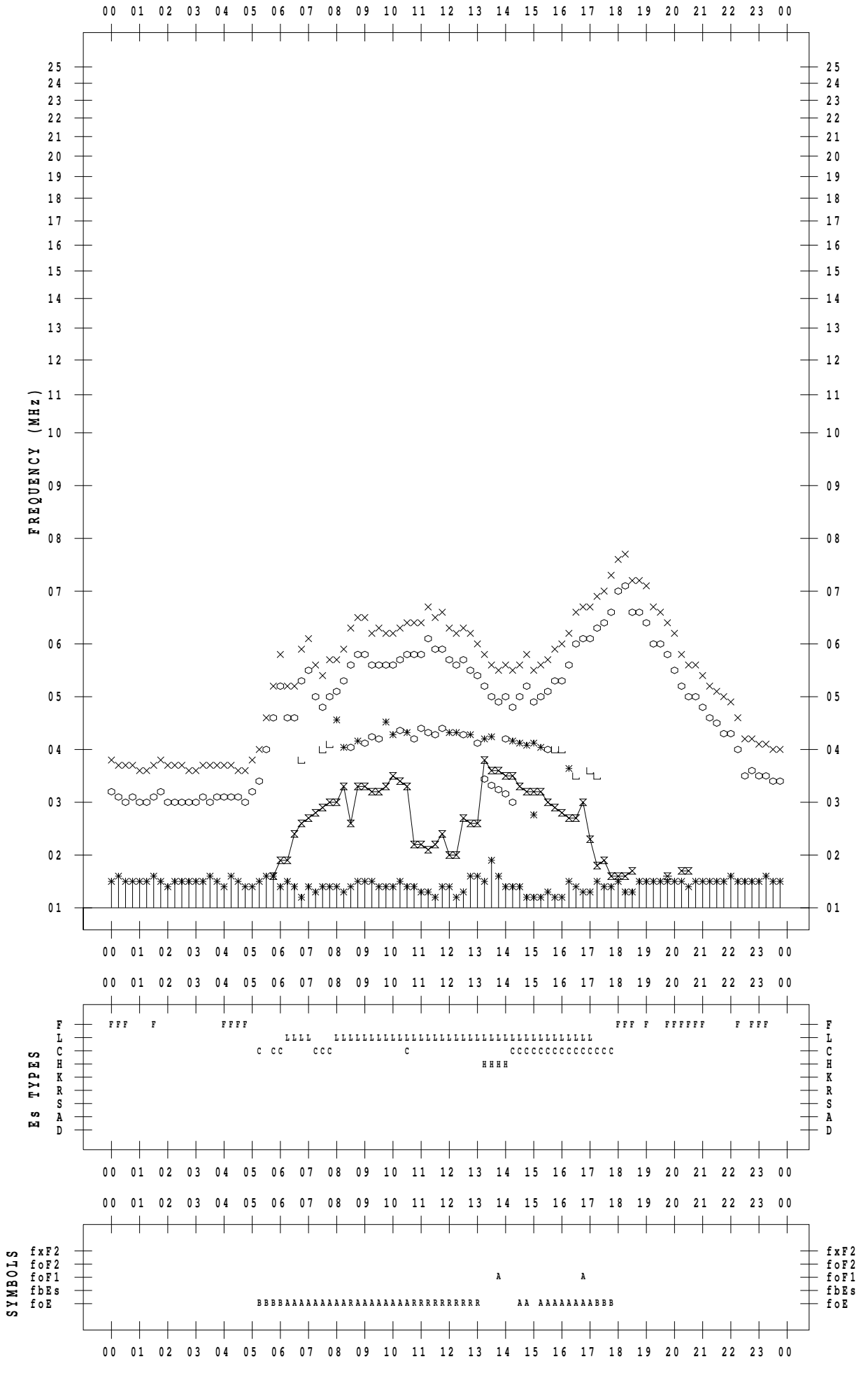
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/16

135 °E MEAN TIME



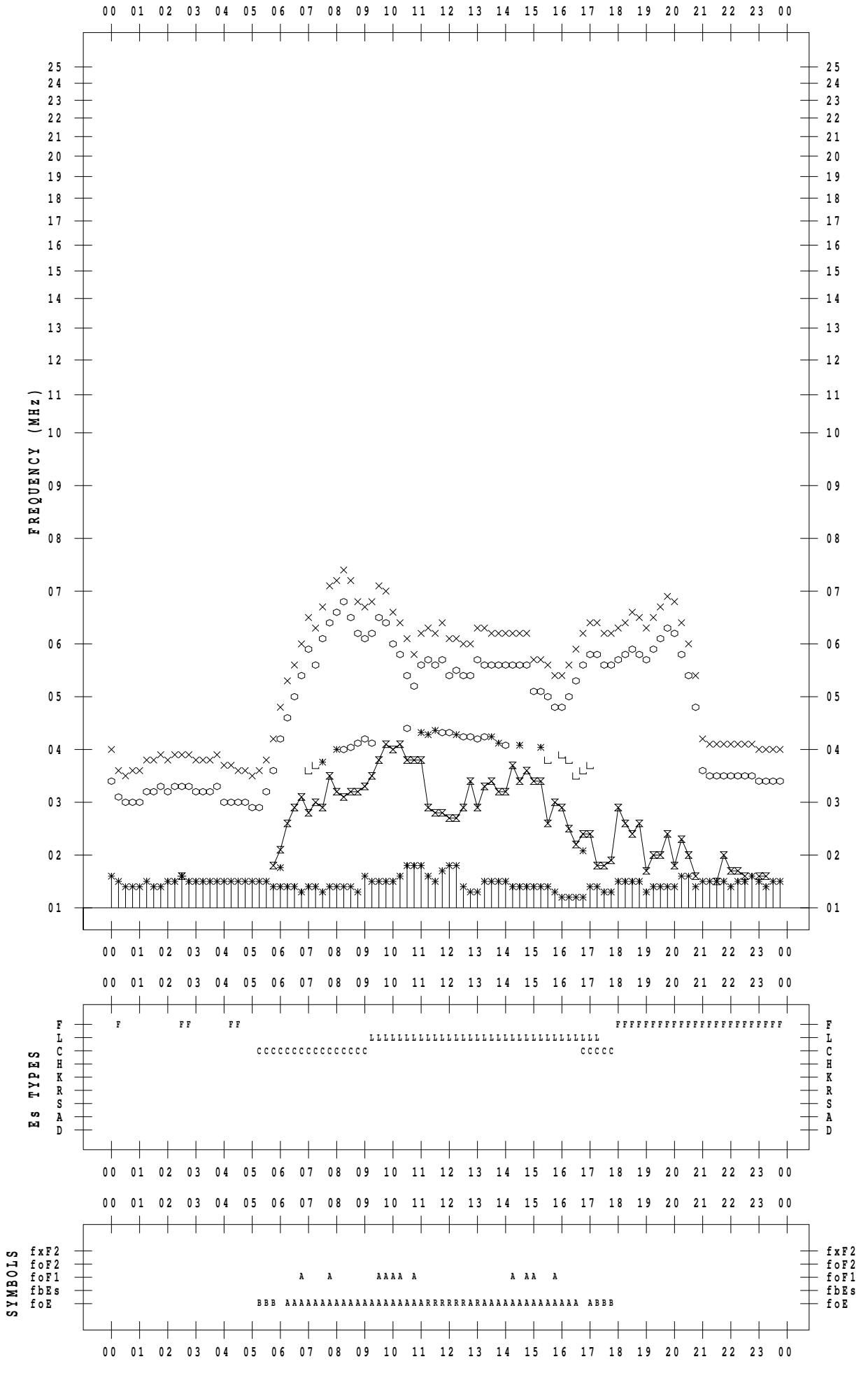
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/17

135 °E MEAN TIME



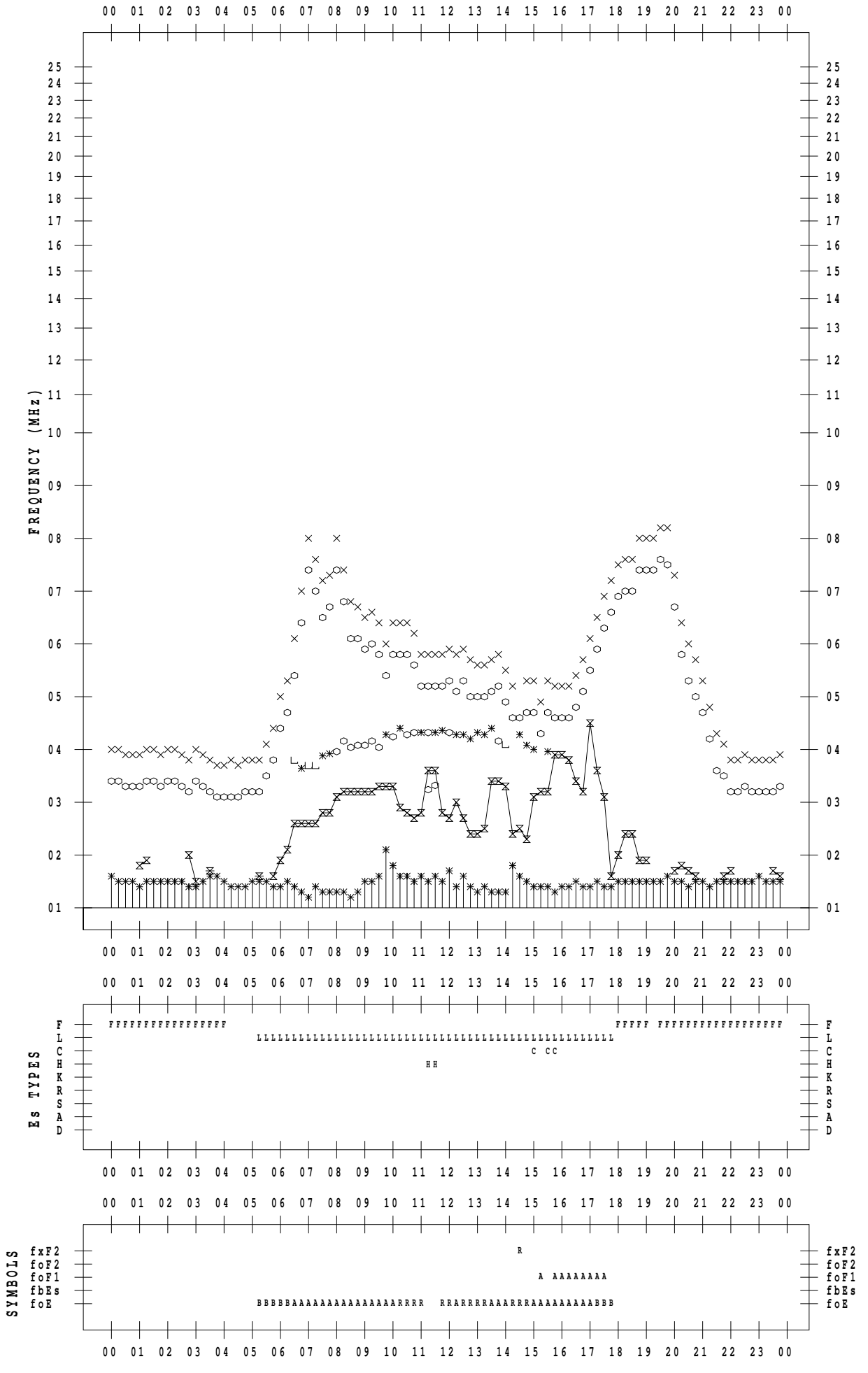
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/18

135 °E MEAN TIME



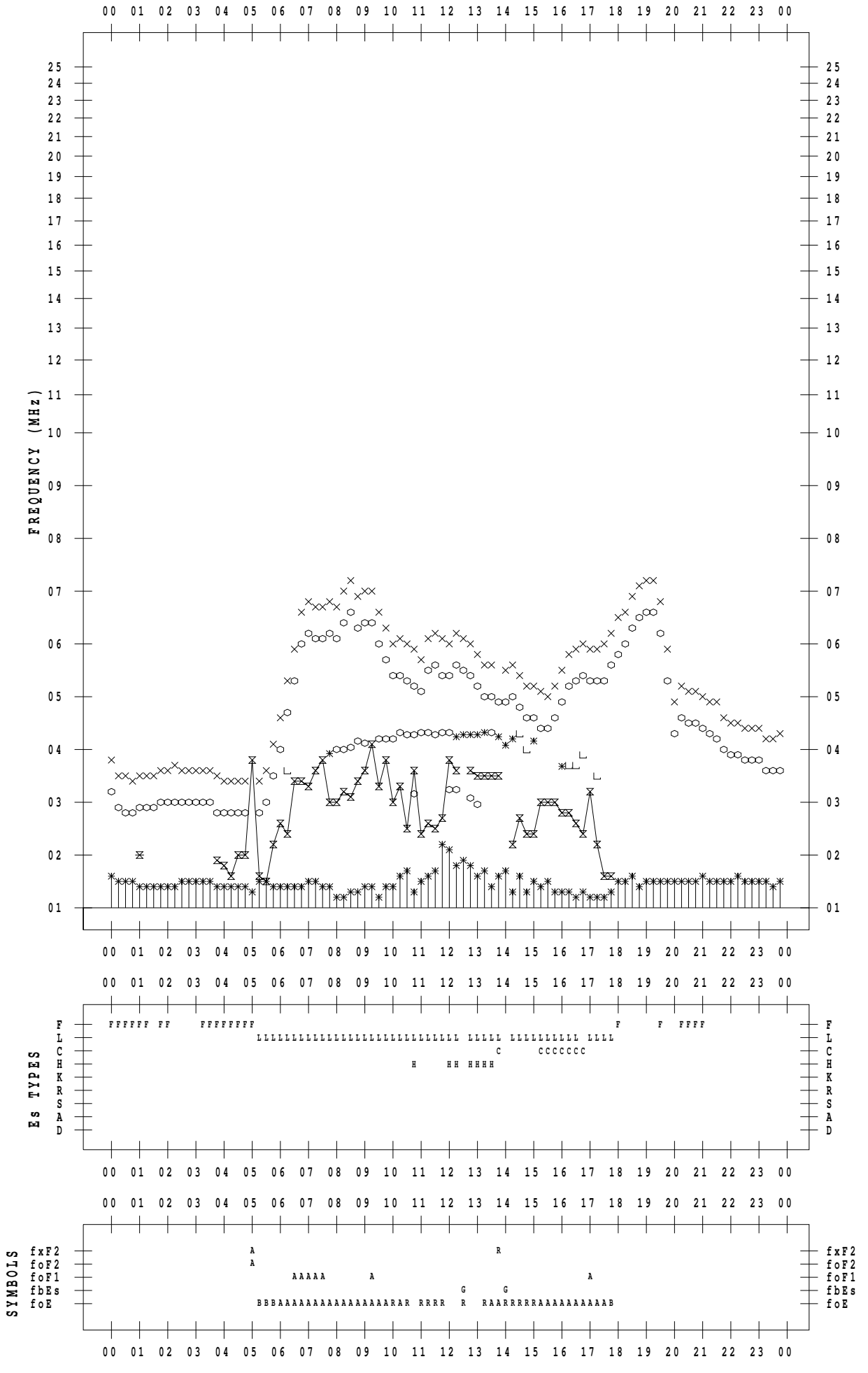
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/19

135 °E MEAN TIME



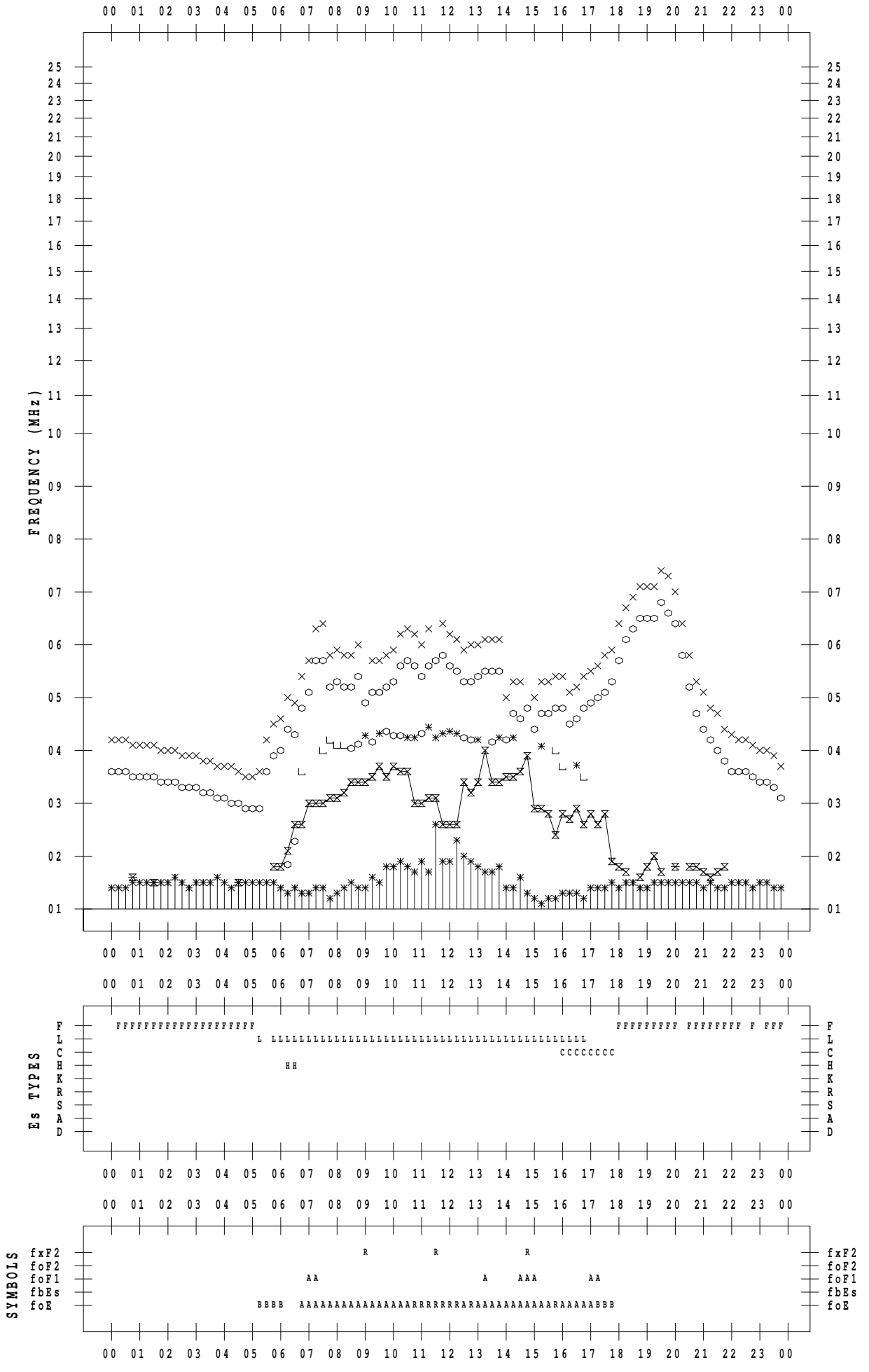
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/20

135 °E MEAN TIME



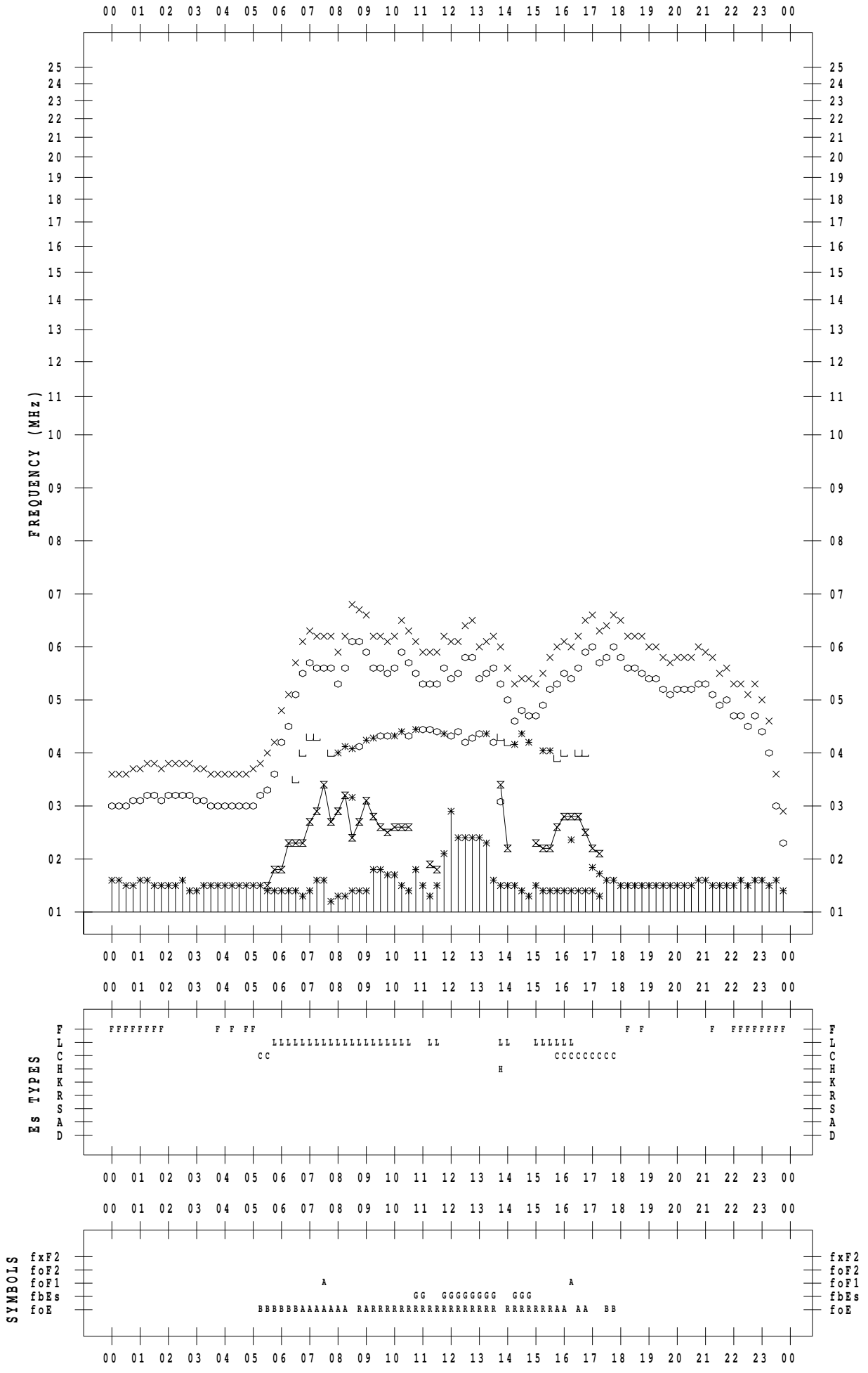
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/21

135 °E MEAN TIME



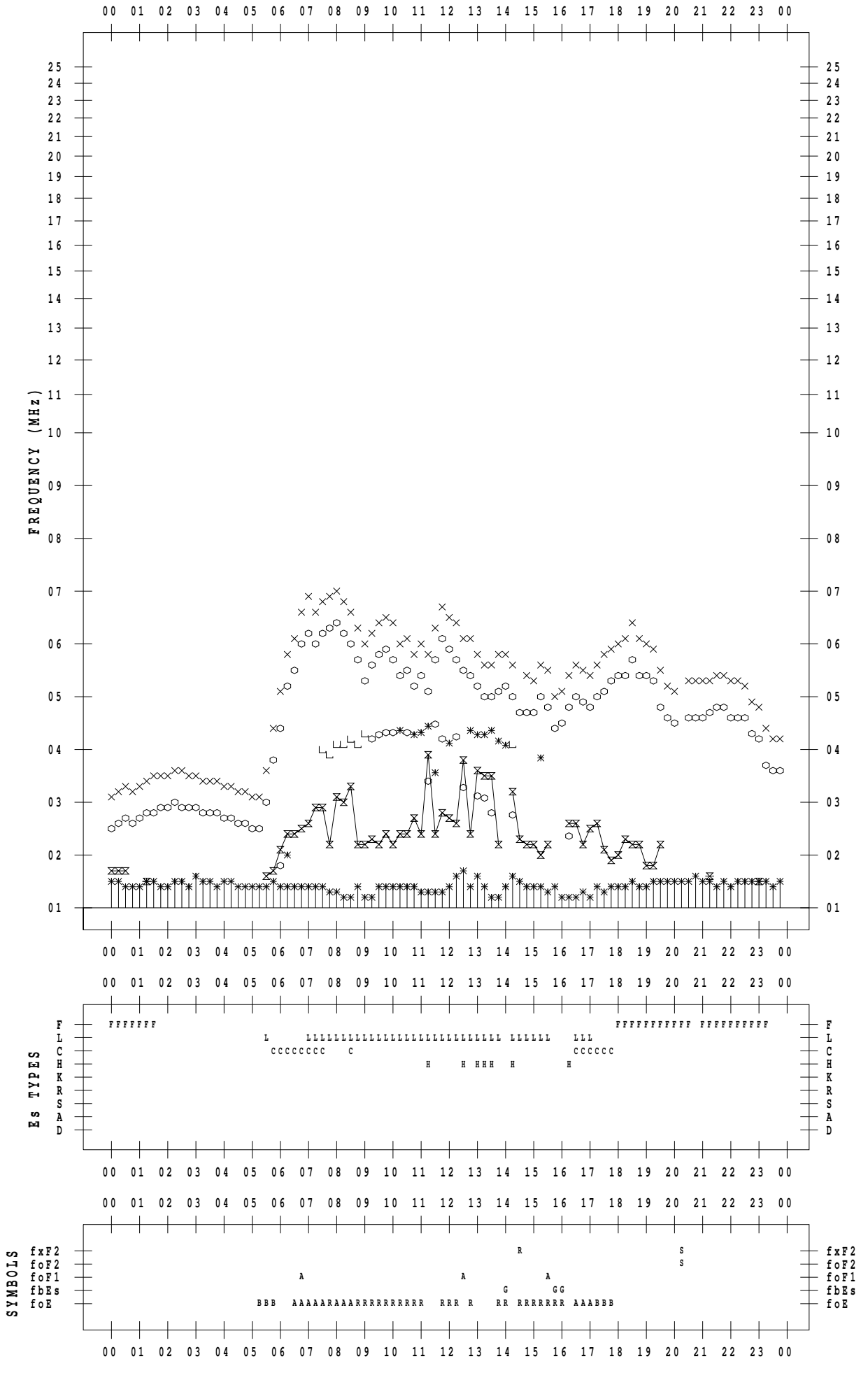
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/22

135 °E MEAN TIME



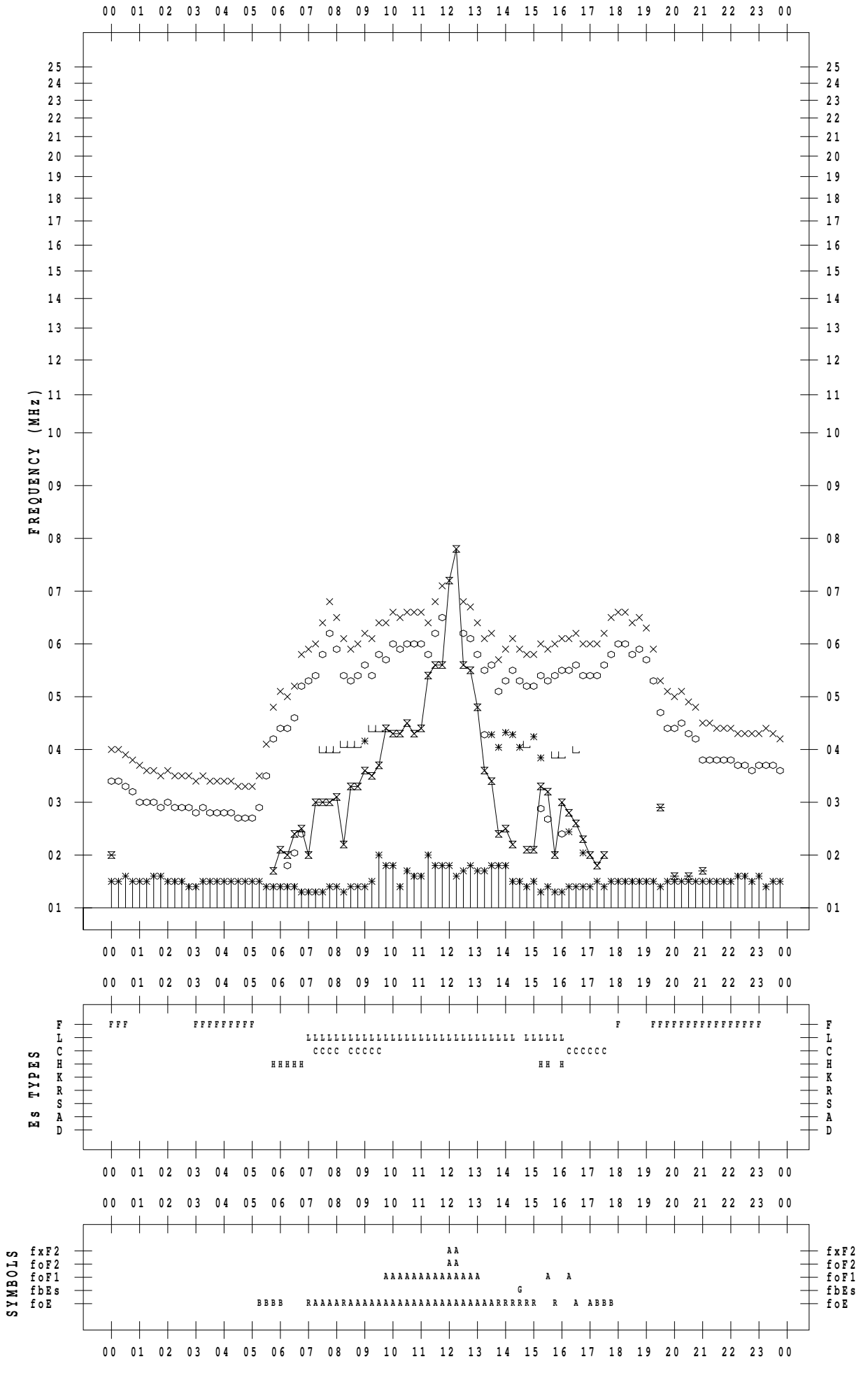
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/23

135 °E MEAN TIME



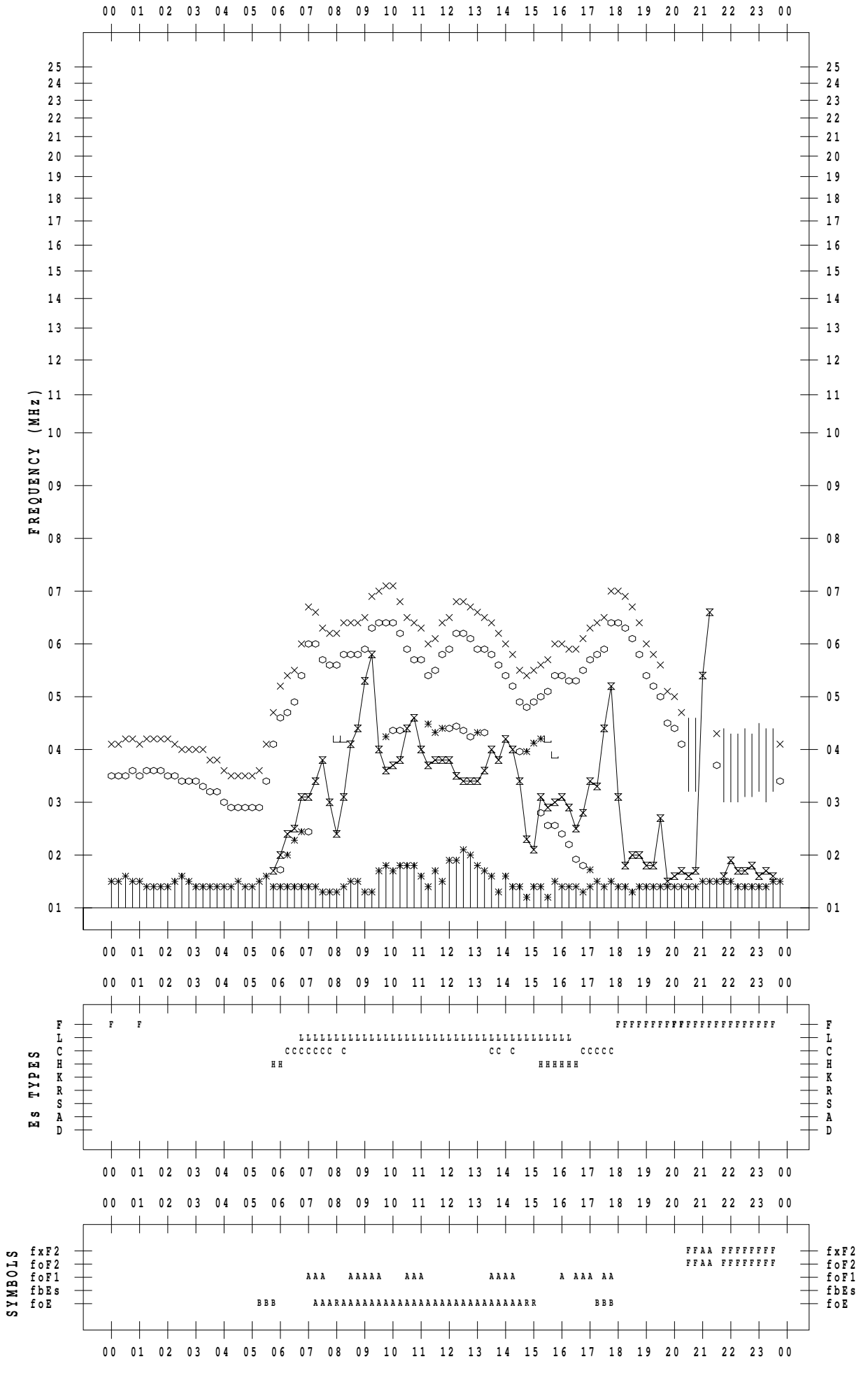
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/24

135 °E MEAN TIME



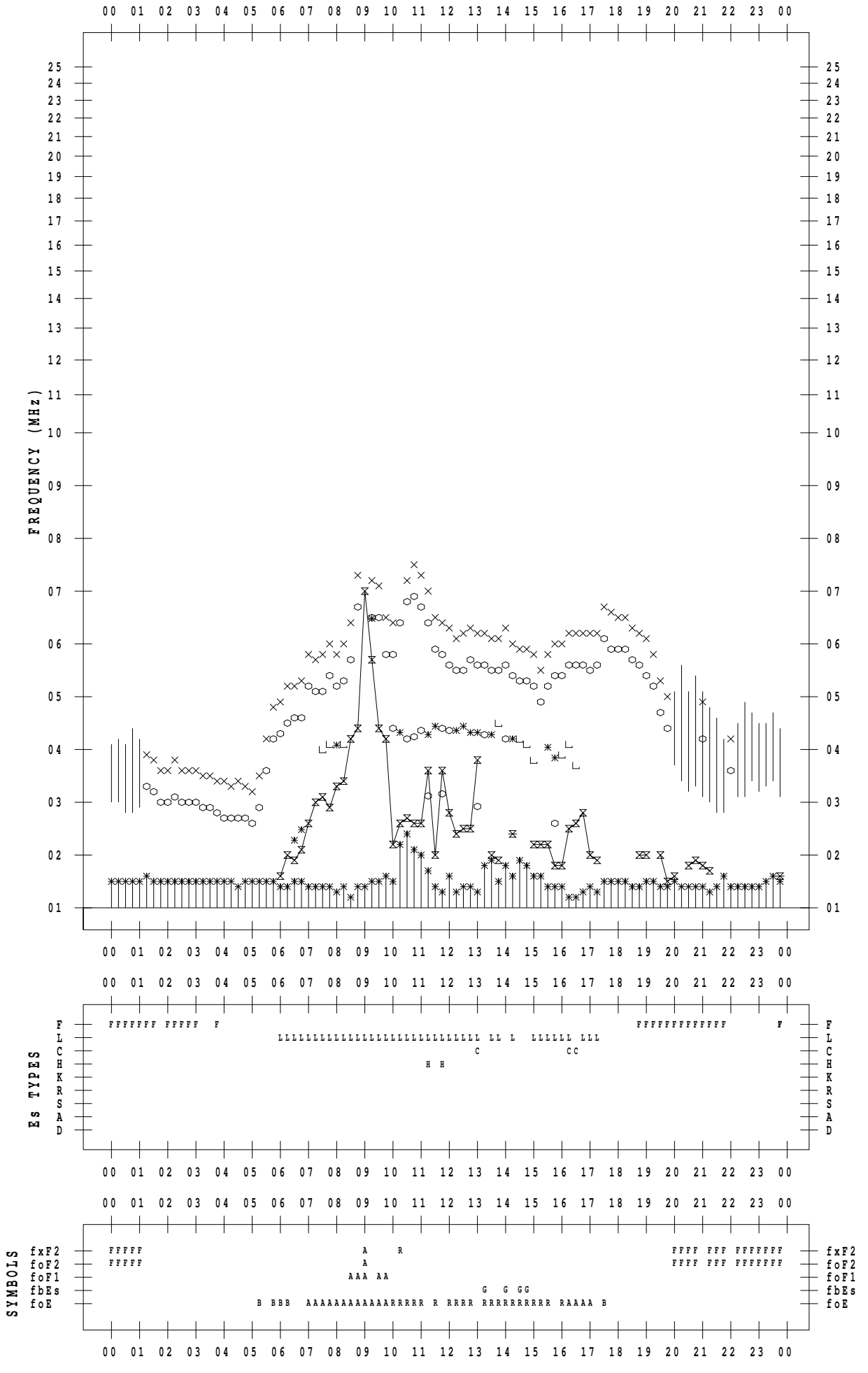
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/25

135 °E MEAN TIME



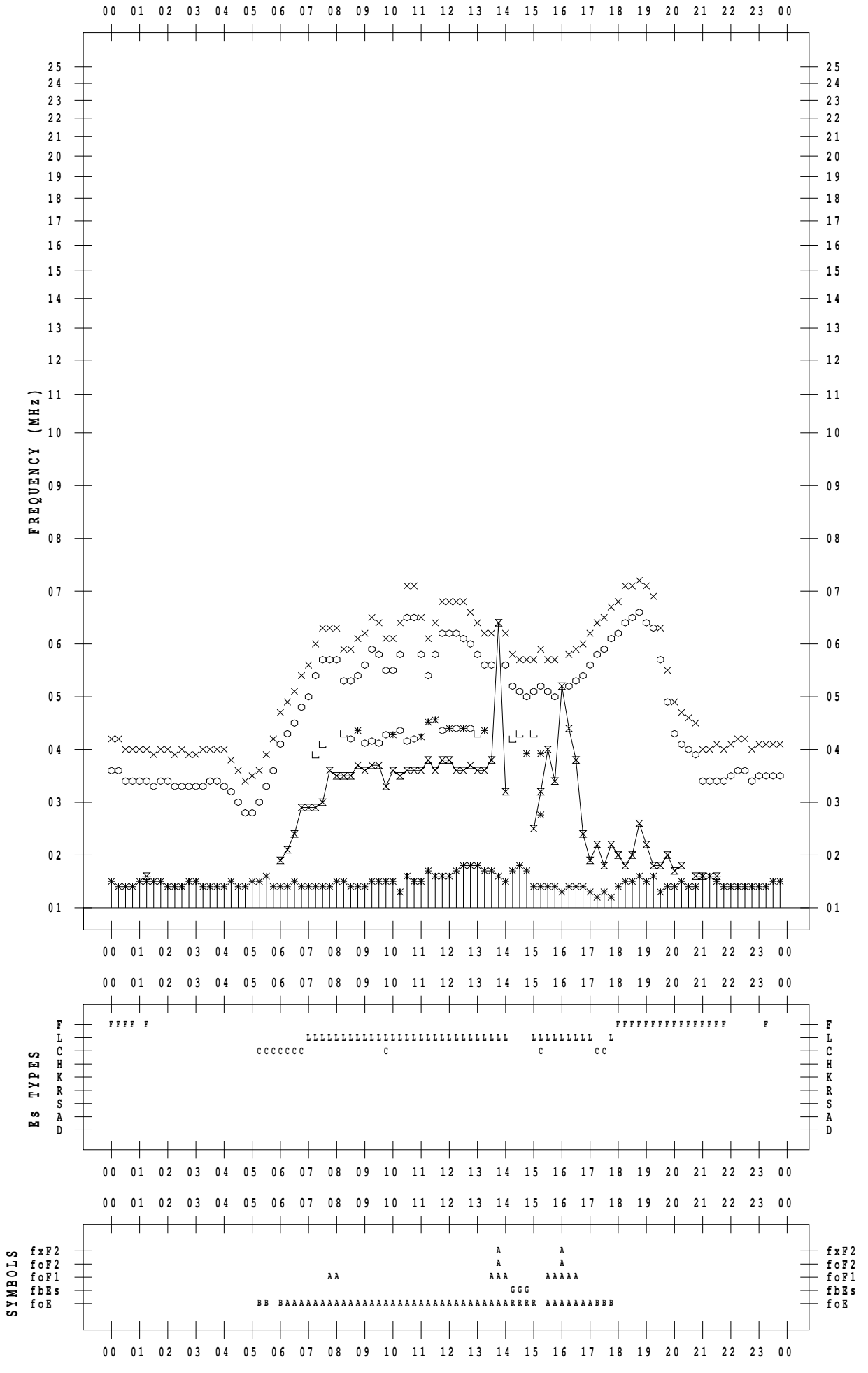
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/26

135 °E MEAN TIME



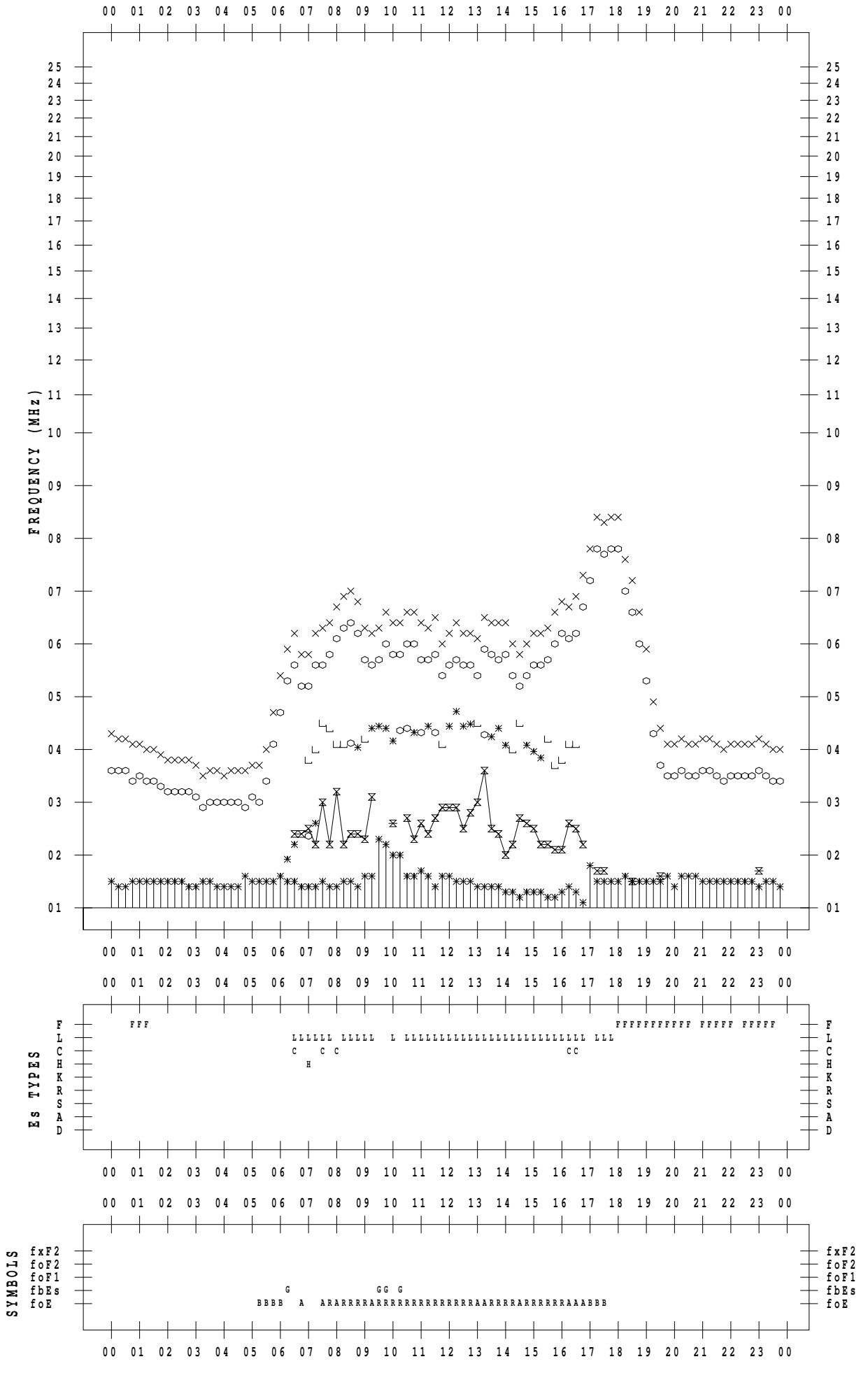
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/27

135 °E MEAN TIME



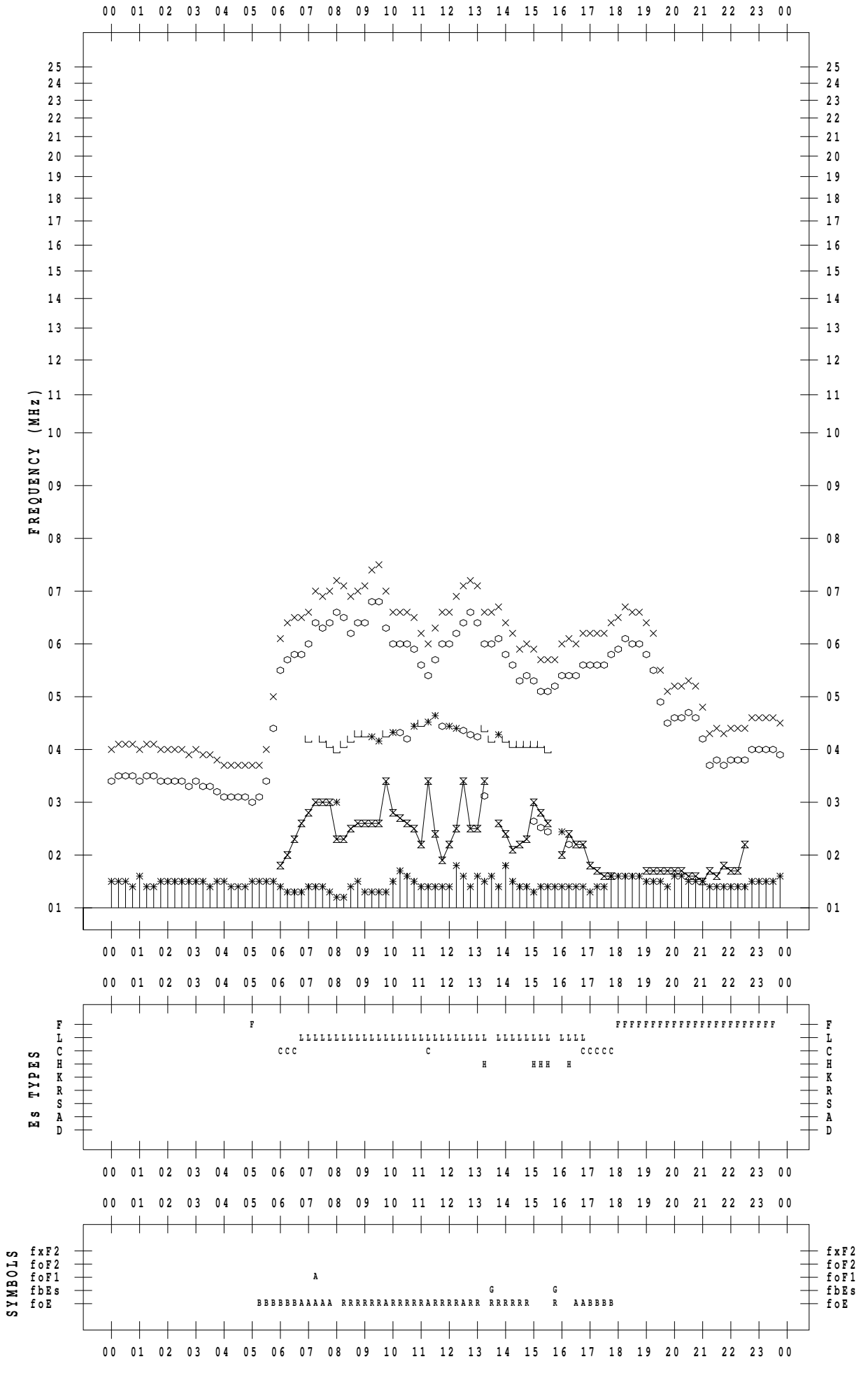
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/28

135 °E MEAN TIME



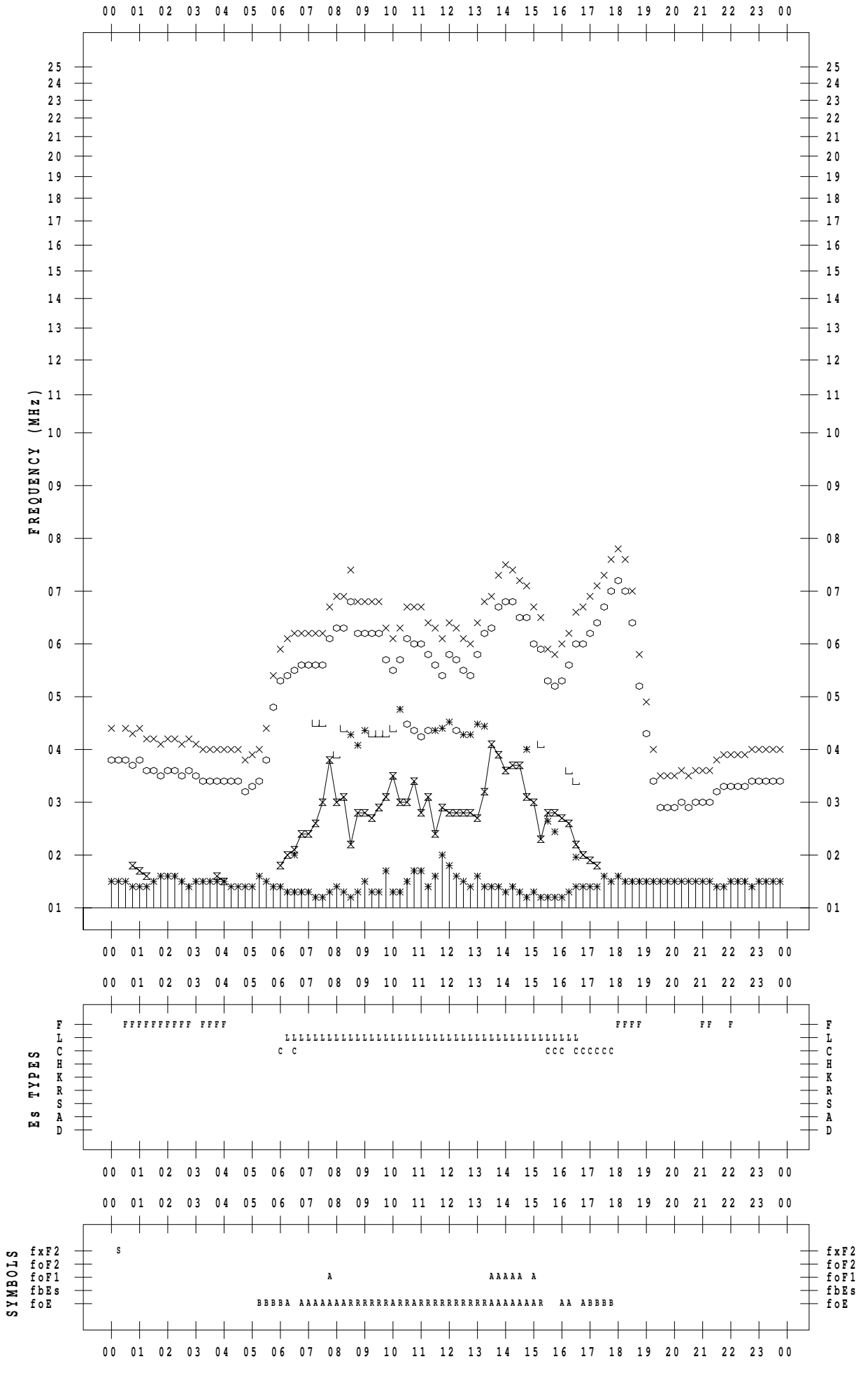
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/29

135 °E MEAN TIME



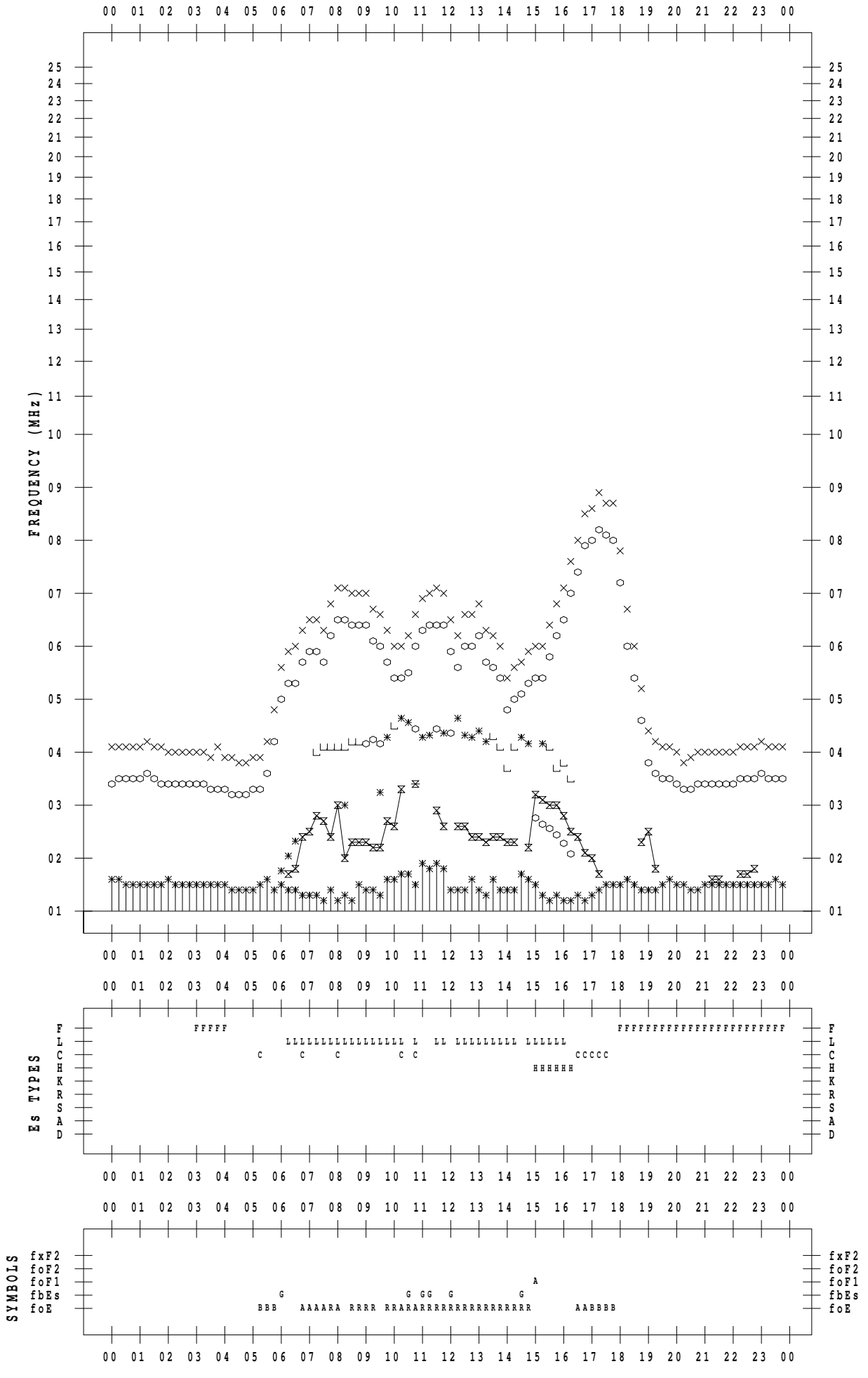
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 9/30

135 °E MEAN TIME



B. Solar Radio Emission

B1.Outstanding Occurrences at Hiraiso

Hiraiso September 2009

Single-frequency observations

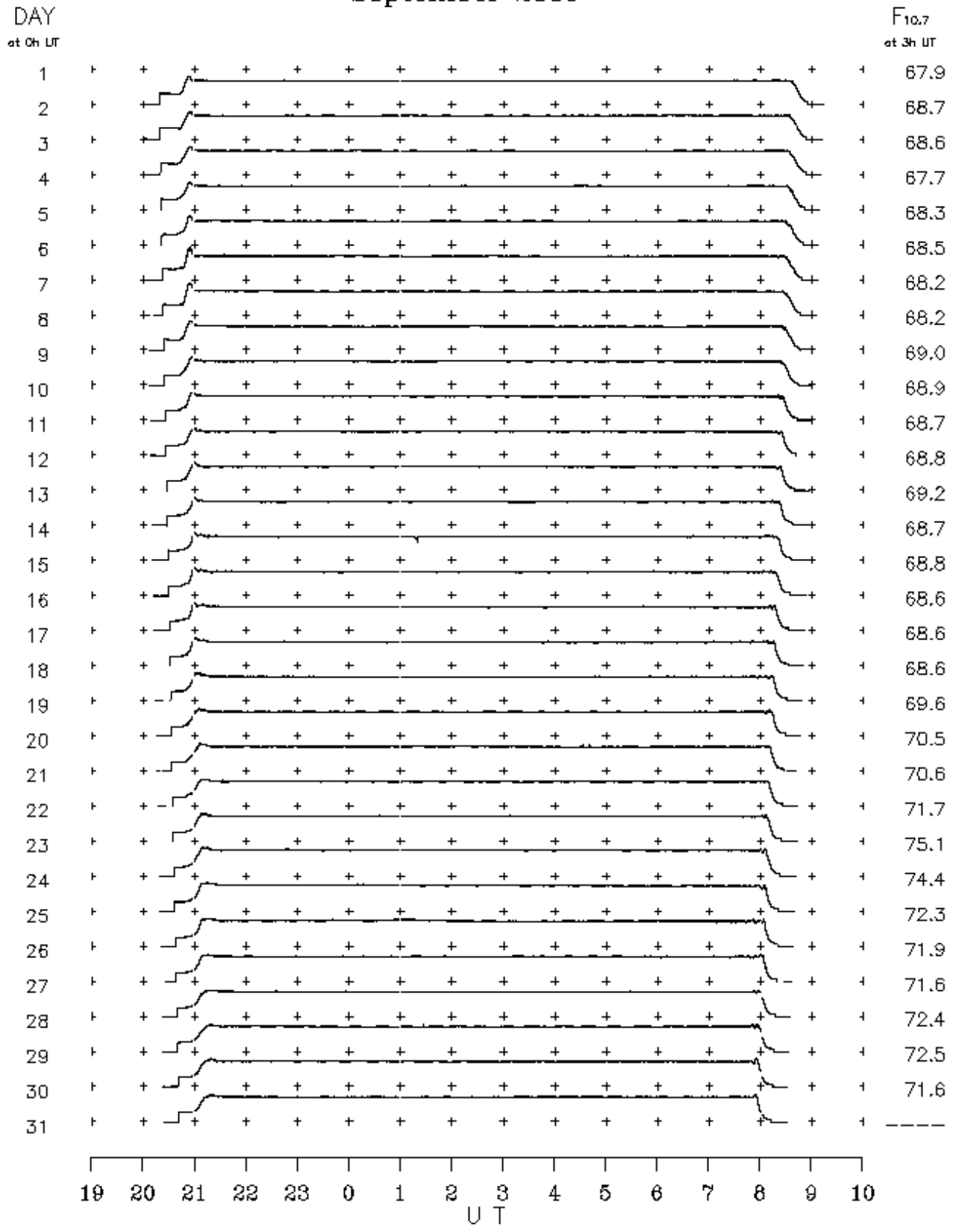
Normal observing period: 2015 - 0850 U.T. (sunrise to sunset)

SEP. 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

September 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/2009/09/