F-725

IONOSPHERIC DATA IN JAPAN

FOR MAY 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

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

HOURLY VALUES OF fEs AT Wakkanai

MAY 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	G	G	G	G	G	28	38	44	45	47	48	52	51	41	50	G	39	36	G	50	35	G	G	G
2	G	G	G	24	G		51	49	45	G	G	G	G	39	39	G	G	38	34	28	38	39	34	G
3	G	33	24	G	G	G	35	41	G	48	44	G	G	39	49	62	53	48	40	30	32	40	G	25
4	G	G	G	G	G		36	44	G	G	G	40	G	40	G	G	60	35	30	G	G	G	G	G
5	G	G	G	G	G	32	40	55	66	62	51	40	G	40	G	70	73	63	67	70	88	51	44	48
6	29	26	33	39	33	41	60	74	74	92	75	81	61	G	G	G	G	G	49	71	51	60	60	68
7	46	39	37	34	G	38	52	84		113	81	65	58	G	G	54	45	57	40	60	58	52	72	70
8	59	35	G	G	27	32	39	71	71	64	59	52	64	68	60	70	62	62	58	47	44	72	51	32
9	34	54	38	26	33	33	41	49	71	49	78	69	74	61	41	52	62	49	53	44	27	G	G	G
10	G	G	G	G	G	34	41	42	44	48	39	40	40	39	39	G	G	37	G	G	G	G	29	27
11	G	G	G	G	G	37	58	70	95	76	72	50	80	50	44	37	62	39	34	32	28	71	40	60
12	70	66	60	30	G	48	65	67	74	110	70	71	40	39	74	G	116	99	85	57	60	41	36	G
13	G	30	37	32	28		44	59	62	62	63	58	48	G	G	50	47	50	71	59	34	59	56	53
14	32	G	G	G	G	34	44	53	51	47	46	42	40	G	G	G	38	46	38	G	26	29	30	23
15	G	G	G	G	G		33	40			52	42	48	51	45	38	38	43	40	32	G	G	G	G
16	26	31	G	G	32	36	42	44	54	46	N	G	G	G	G	48	54	50	61	43	41	44	33	28
17	G	G	G	G	G	G	38	48	63	48	50	44	G	G	G	44	G	39	34	35	29	26	27	49
18	33	33	31	48	38	40	45	54	48	54	52	64	50	56	67	52	56	59	85	61	32	G	30	G
19	G	G	58	48		39	38	54	77	84	70	G	G	39	55	72	114	63	75	102	24	29	39	39
20	50	G	G	G	G	40	38	52	43	C	C	C	39	56	53	56	83	48	39	52	34	55	54	40
21	36	39	46	28	42	38	39	72	C	68	67	C	C	41	C	50	53	50	55	61	68	60	70	38
22	G	31	G	45	25	35	55	55	55	54	49	40	G	39	G	38		51	34	40	32	G	32	
23	60	59	55	36	28	43	60	85	116	81	72	88	70	57	58	59	51	124	158		82	43	46	66
24		81	52	40	30	35	42	44	53	59	118	112	70	39	41	111	130	135		67			44	58
25	59	48	54	33	30	36	48	60	63	54	62	53	52	68	40	40	38	G	29	50	34	48	50	58
26	40	34	26	G	28	40	54	60	63	68	49	G	50	G	39	39	58	91	96	50	54	33	33	39
27		58	34	28	27	34	62	68	62	52	40	G	G	40	G	G	42	52	42	40	26	26	28	33
28	24	26	32	26	G	34	59	70	60	71	60	50	54	G	G	G	56	76	92	60	71	50	35	32
29	G	G	G	G	G	35	39	60	87	73	64	68	70	102	62	72	102	91	42	34	37	39	34	70
30	58	48	38	34	31	43	43	50		80	64	64	57	56	43	39	G	34	103	87	92	60	70	40
31	26	33	29	40	37	51	107	38	73	82	85	74	51	49	G	89	74	95	43	43	71	72	85	94
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	31	31	31	30	27	31	31	27	29	29	29	30	31	30	31	30	31	30	30	30	30	31	30
MED	26	31	26	26	13	36	43	54	62	62	60	50	49	40	40	44	54	50	42	48	34	40	35	38
U Q	43	39	38	34	30	40	55	68	73	78	71	66	58	56	50	59	62	63	71	60	58	55	51	58
L Q	G	G	G	G	G	34	39	44	48	48	48	40	G	G	G	G	38	39	34	34	28	26	29	23

HOURLY VALUES OF fmin AT Wakkanai

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

MAY 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	34	32	A	32	28			47	A	53	A	A	53	62	65	73	77	63	59	62	54	48	A	
2	36	34	A	A	31	A	A	A			A	A	A	58	60	70	73	58	A	62	64	49	A	A
3	A	36	36	31	27	30	55	64	52	58	A	A	52	62	60		66	55	54	62	54	51	46	44
4	42	42	38		A	A	A	A	64	62	56				49		A	53	A	A	66	43		34
5		32	31	30	A	39	54	A	A		A	A	A		A			A		A	A	A	A	
6	A	A	A			34	52	57	A				56	A	74	A			A	61	54	47	44	A
7	A	A		A	30			59	A	A	A			63	77	77	71	159		77	A	A	A	A
8	A	A	A		32	44	45	A	A	53		A	A	A	A	79	69	68	A		63	A		38
9	A	A	A		A	A	60	64	A	A	56	58	57		51	59	65	67	71	66	66	66	65	63
10	54	A	A	A	48	34	51	52	56	53	A		A		59	66	62	74	81	80	77	54	A	
11	A	A	A	32	34	A	63	56	A	A	59	A	A	A	67	80	66	56	54	62	61	53	61	36
12	A			34	37	41	A	A	A	A	A	A	A		53	59	67	75	65	58	46	A	44	44
13	42	A		A	37	38	44	A	A	A	A				66	68	65	66	67	73	63	42	A	A
14	A	A	32	34		A	A	A	A	A	A	A				67	76	70	64	54	59	53	47	
15	44	41	41	39	30	28	47	65	A	55	54	58	66	66	66	67	A	A		49	54	51	42	46
16	46		39			42	A	A		A			A	A		62	A	A	A	A	A	A		46
17	41		38	34	34	42	55	A	52	A	A	A	A	A		A	A	A	67	A	66	A	39	A
18	A	A	A	A	A	A	A	A	A	A	A		59		A	A	A	A	70	80	A	54	A	A
19	A	A		30		38	51	59	A	A	A	A	A	A		A	A			78	85	66	61	52
20	A	A	A	A	36	51	A	A	A	A			A	A	63	A	98	A	72	69	54	60	47	42
21	41	41	36				A	A	A	A	A	A		A		52	A	63	67	64	72	52	52	A
22	A	A		31	30	39	46	A	A	57	57		56	A	A	A	A	A	A	A	A	54	A	A
23	A	A	A			38	47	54	A	A	A	A		A	58	64	58	55	A	56	33	A	A	A
24	A	A	A			42	41	A	A	A	A	A		66	62	54		A	51	52	61	54	A	A
25	A	A	A	A	26		A	A	A	A	A	A	A	A	A			55	59	A	59	54	45	45
26	46	39	A	A	34		A	52	58	A	A	A	A	A		A	A	59	61	A	81	44	A	A
27	A	A	A	23	25	36		A	A	A	A	A	A	A	A	59	65	54	53	A	A	63	A	A
28	A	A	A	37	21	A	51	A	A	A	A		A	A	A	A		54	56	59		52	A	A
29	A	42	A	A	32	A	45	42	A	A	A	A	A	A	A	A	55	A	A	87	72	A	A	A
30	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	63	51	47	A	A	34
31	A		A		28	39	48	48	48	A	A	A				52	A	A	A	A	A	44	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	9	8	12	19	17	17	13	6	7	5	2	7	6	15	17	15	18	18	21	23	22	12	12
MED	42	39	37	32	31	39	51	56	54	55	56	58	56	62	62	66	66	61	64	62	61	52	46	44
U Q	46	41	38	34	34	42	54	61	58	58	58	58	59	66	66	71	73	68	67	75	66	54	56	46
L Q	41	33	34	30	28	35	45	50	52	53	55	58	53	62	58	59	65	55	56	57	54	48	44	37

HOURLY VALUES OF fEs AT Kokubunji

MAY 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	51	33	37	26	G	46		G	51	53	57	51	G	G	G	G	G	G	26	G	39	27	56	36
2	32	35	43	48	58	50	50	71	102	136	86	108	76	52	46	51	46	54	180		71	40	59	82
3	72	33	G	G	29	G	40	35	49	55	68	80	134	G	G	40	42	39	34	33	28	24	46	40
4	G	G	22	47	72	64	87	78	56	50	G	G	42	43	39	56	62	62	99	94	60	31	31	G
5	33	G	G	28	52	33	59	110	91	127	152	150	118	47	83	90	90	125	130	113	125	84	51	32
6	59	72		30	29	31	37	46	61				G	82	46	82	97	126	105	32	57	29	49	
7	59	71	60	50	G			53	70	112	62	47	G	G	66	52	52	106	147	72	71	60		84
8	40	45	40	34	G	32	43	72	56	56	49	63	84	84	76	82	65	62	88	69	49	59	39	37
9	56	48	37	40	45	48	49	46	82	103	52	46	G	G	G	46	G	40	51	52	34	31	35	31
10	G	40	35	39	79	26	34	45	62	52	53	50	49		G	48	60	52	43	41	60	49	82	47
11	51	64	72	51	32	60	38	50	52	64	42	55	61	57	G	G	G	37	29	29	33	36	35	26
12	43	34	37	28	25	34	67	59	93	135	90	84	158	51	51	54	58	54	G	31	43	60	36	52
13	39	40	36	48	47	29	36	80	70	137	143	139	90	61	G	62	52	34	40	G	34	G	40	39
14	51		26	29	30	46	60	78	65	81	60	54		40	G	G	G	36	G	G	G	G	34	30
15	30	26	G	G	G	29	38	40	69	G	G	45	G	65	60	62	129	123	97		31	40	29	32
16	29		33	40	36	32	57	70	82	141	163	83	102	103	65	73	82	84	78	72	91	66	51	53
17	40	40	32	31	36	36	44	71	53	77	66	62	70	106	86	107	68	70	55	60	59	57	39	53
18	82	72	82	80	48	45	84	106	90	72	82	59	52	67	60	61	87	95	53	73	77	39	51	45
19	59	45	31	G	28	G	42	60	109	69	57		106	92	68	144	126	84	124	73	60	81	39	59
20	87	82	60	59	40	42	78	91	97	77	G	G	67	63	40	62	103	92	51	59	84		45	50
21	38	34	32	36	26		53	71	72	90	95	87	94	119		47	84	68	51	77	71	50	59	59
22	86	60	45	33	26	29	47	76	150	51	51		G	90	71	124	113	105	111	85		50	70	69
23	52	41	35	30	28	30	42	57	119	169	127	81	45	79	53	72	58	37	70	45	40	92	57	55
24	59	59	38	38	39	27	35	71	96	79	54	68	57	62	53	64	63	117	50	35	50	40	53	82
25	50	56	51	34	G	31	51	61	93	70	82	97	81	77	61	64	46	35	42	67	39	34	105	40
26	31	32	82	80	49	31	56	51	59	64	62	84	64	44	G	57	82	70	52	86	60	53	53	54
27	51	57	40	26	32	33	50	60	82	78	64	65	73	53	61	50	35	56	47	60	79	66	109	53
28	52	59	70	34	29	34	42	60	77	72	112	89	79	62	83	84	96	47	43	26	43	57	72	68
29	50	39	49	47	34	41	40	49	85	94	107	95	64	59	71	86	67	104	145	95	91		85	48
30	51	39	58	33	46	57	65	82	135	133	134	112	153	90	61	60	82	114	29	29	42	37	40	33
31	57	34	45	27	25	26	36	37	50	64	64	50	43		G	52	60	78	61	60	77	36	51	52
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	29	30	31	31	29	29	31	31	30	30	28	30	29	30	31	31	31	31	29	30	29	30	30
MED	51	40	38	34	32	33	47	60	77	77	64	66	66	62	53	61	63	68	52	60	58	40	51	49
U Q	59	59	51	47	46	45	58	76	93	112	95	88	90	83	66	82	87	104	99	73	71	59	59	55
L Q	38	34	32	28	26	29	39	49	59	64	53	50	43	45	G	50	46	40	42	31	39	32	39	36

HOURLY VALUES OF fmin AT Kokubunji

MAY 2009

LAT.35°43.0′N LON.139°29.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	13	14	13	13	13		14	14	15	30	24	43	26	22	15	13	13	15	14	13	13	13	13
2	13	13	13	13	13	13	13	14	13	21	17	30	22	21	21	20	14	13	13	13	13	13	14	13
3	13	13	13	13	13	17	13	13	17	15	20	30	45	17	34	17	28	14	14	14	13	14	13	13
4	13	13	13	13	13	13	13	13	15	28	15	17	20	44	18	13	13	14	13	13	13	13	14	14
5	13	14	13	13	14	13	13	13	15	15	18	29	21	29	17	17	18	13	13	18	20	14	14	13
6	13	13	13	13	13	14	13	14	15				17	34	43	13	15	13	13	13	14	13	14	13
7	13	13	13	13	13			17	14	26	21	30	44	47	33	30	15	13	13	14	13	14	13	13
8	14	13	13	13	13	13	13	13	29	30	33	31	30	31	30	14	14	13	14	13	13	13	13	14
9	13	13	14	13	13	13	17	13	15	24	26	25	44	45	20	31	17	13	13	13	14	13	13	13
10	13	13	13	13	13	13	13	13	18	22	33	33	33		44	14	14	13	14	14	13	13	13	13
11	13	13	13	13	13	13	13	14	13	24	26	26	22	23	18	13	18	15	14	13	13	15	13	14
12	13	13	13	13	14	13	14	14	20	21	29	29	30	35	34	28	20	14	20	13	13	13	13	13
13	13	13	13	13	13	13	14	15	17	21	28	22	34	25	22	17	14	13	13	14	13	14	13	13
14	13	14	13	13	13	14	13	15	20	24	33	31		30	45	44	17	14	13	22	13	14	13	14
15	13	13	13	14	17	14	14	13	29	34	43	30	46	34	33	30	17	13	13	13	13	13	13	13
16	13		13	13	13	13	15	15	29	30	30	20	33	29	21	31	13	13	14	13	13	13	13	14
17	13	13	13	13	13	13	13	13	14	29	30	30	31	29	34	31	15	13	13	13	13	13	13	14
18	13	13	13	13	13	13	13	13	14	15	31	34	31	31	31	17	14	13	13	13	14	13	13	14
19	13	13	13	18	13	21	13	14	29	30	31	31	24	21	33	29	13	14	13	13	15	13	13	13
20	13	13	13	13	13	13	14	17	30	29	33	46	33	33	31	29	13	13	14	13	13	13	14	14
21	14	13	14	13	13		13	15	20	31	29	29	30	30		18	17	13	14	13	13	13	13	14
22	13	13	13	13	13	13	13	14	15	14	30		29	29	18	17	13	13	13	14	13	13	13	13
23	14	13	13	13	13	13	14	14	14	31	33	31	29	26	36	33	29	14	17	13	13	13	13	13
24	14	13	13	13	13	13	13	14	13	28	33	30	29	29	34	31	15	13	13	13	14	13	14	13
25	13	13	13	13	14	13	15	13	14	20	28	28	29	29	28	21	31	14	13	14	13	13	13	14
26	13	13	13	14	13	13	13	13	17	21	28	28	23	18	20	18	17	13	13	14	13	13	13	13
27	13	13	14	13	13	13	13	13	13	30	33	33	31	30	31	21	14	14	13	13	13	13	13	13
28	13	13	13	13	13	13	13	13	33	33	33	33	34	29	30	26	14	14	13	13	13	13	13	13
29	13	13	13	13	13	13	13	13	20	20	25	33	30	29	28	22	29	14	14	14	13	13	13	13
30	13	13	13	13	13	13	13	13	17	30	30	30	30	35	29	25	14	13	13	13	13	13	14	13
31	13	13	13	13	13	13	13	13	31	26	28	30	24		44	31	15	15	14	14	17	13	13	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	29	29	31	31	30	30	29	30	29	30	31	31	31	31	31	31	31	31	31
MED	13	13	13	13	13	13	13	13	17	25	30	30	30	29	30	21	15	13	13	13	13	13	13	13
U Q	13	13	13	13	13	13	14	14	20	30	33	31	33	33	34	30	17	14	14	14	13	13	13	14
L Q	13	13	13	13	13	13	13	13	14	21	26	28	24	26	21	17	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

MAY 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	A		A	A	A	A	48	A	A	A	A	64	67	67	74	81	78	71	77	77	54	28	34
2	A	A	A	A	A	A	A	A	61	55	A	A	A		63	66	77	77	68	71	70	A	A	A
3				30	29	28	41	66	62	50	A	53	58	55	61	70	72	68	61	64	66	52	40	37
4		A		26	28	A	A	A	A	A	A	50	59	56		A	A	A	A	A	A	A	A	A
5	A	A	A		30	32	A	46	A	A	A	A	A	A		76	82	78	A	78	85	45	A	A
6	A		A	A			44	A	A	A	A			A	A	87	88	84	66	59	A	A	A	A
7	A	A	29	34	28	31	54	A	54	A	A	A	A	A	70	84	80	76	84	78		A	A	34
8	A	A	A	28	28	29	48	53	58	A	A	A	58	72	67	75	A	A	74	84	54	A	A	A
9	A	A	A	26	29	30	A	58	54	A	A		A	62	63	76	82	88	87	78	72	52	52	54
10	53	52	42	37	36	34	42	56	60	65	A	A		65	73	80	90		90		86	66	44	A
11	A	52	50	52	45	45	57	66	66	A		A		70	77	86	83	67	61	66	55		54	
12				32	28	32	48	56	A	A	A		A	62	68	72	88	78	72		54	53	54	52
13	A	36	34	34	A	29	A	A	62	56	A	A		A	66	72	78	87	86	84	72	42	40	40
14	43	38	40	38	26	28	44	58	51	A	A	A	A		64	76	84	78	66		60	53	52	47
15	44	44	40	37	29	26	47	61	60	55	A	A		75	75	78	75	67	52	42	54	A	47	A
16	45	44	42	44	28	30	48	A	A	A	63	72	67	67	68	66	71	62	A	64	70	A	A	A
17	A	38		34	34	34	51	56	50	A	A	A	A	72	78	82	80	70	74	71	54	A	50	50
18	A	A	A	A	34	36	47	A	A	A	A	A	69	A	A	A	A	A	A	88	82	53	A	A
19	A	A	28	A	A	26	A	A	A	A	A	A	A	A	78	A	90	86	78	A	A	A	A	A
20	52	50	41	35	34	32	50	59	A	A	A	A		A	84	84	82	81	A	73	66	50	A	
21	34	A	30		26		44	63	A	57	A	A	A			55	61	A	76	A	71	54	A	A
22	A	A		A	28	A	45	55	A	55	A	A	A	68			A	A	78	A	A	A	A	A
23	A	A	A		29	29	48	54	A	50	A	A	A		72	78	69	65	67	45	54		42	42
24		36	34	32	28	28	51	49	A	A	A	A	A	65		56	52	55	54	55	63	40	37	
25	A		26	A	30	28	45	54	A	A	A	A	A	A	A	A	A	A	A	A	A	A	48	45
26	A	42		32	28	28	A	55	A	57	A	A	A	A	A	A	A	65	70	A	A	A	A	A
27	A	A	A	A	A	A	A	A	A	A	A	A	A	A	54	67	A	A	A	A	66	A	A	A
28	A	A	A	A	A	A	41	A		A	A	A	A	A	A		A	75	A	A	A	50	A	A
29	A	A	A	A	A	29	44	43	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
30	A	A	A	25	A	A	A	A	A	A	A	A	A	A	A	A	47	68	70	52	47			A
31	37	34	32	30	30	29	40		50	A	A	57	A	A	A	61	64	71	72	59		A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	11	13	18	22	22	21	19	12	9	1	4	6	13	18	22	22	22	22	19	21	13	13	10
MED	44	42	34	33	29	29	47	56	59	55	63	55	62	67	68	76	80	76	72	71	66	52	47	44
U Q	52	50	41	37	30	32	49	59	61	57	31	64	67	71	75	80	83	78	78	78	72	53	52	50
L Q	37	36	29	30	28	28	44	53	52	52	31	51	58	62	64	67	71	67	66	59	54	47	40	37

HOURLY VALUES OF fEs AT Yamagawa

MAY 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	57	59	33	50	41	40	43	40	66	84	66	70	55	48	50	42	55	40	40	61	49	54	32	30
2	43	58	40	48	56	33	40	59	59	58	90	116	77	76	51	G	50	40		28	36	71	79	106
3	60	38	59	G	26	G	35	38	38	G	48	43	G	G	G	G	G	38	46	56	37	35	30	33
4	39	46	34	32	26	90	70	88	116	115	91	G	49	42	50	72	101	85	131	81	86	71	58	59
5	81	59	53	33	33	90	55	49	66	72	102	73	114	65	G	G	50	81	91	50	49	40	48	47
6	52	36	34	53	29	27	32	60	71	71	50	46	54	72	102	68	G	G	56	51	149	125	93	83
7	71	50	26	G	G	G	32	61	46	79	60		74	92	G	G	43	45	38	81	70	90	59	56
8	59	51	48	G	28	G	36	45	59	80	70	63	48	G	46	54	96	72	51	59	46	73	44	58
9	92	52	41	39	32	33	58	38	60	84	73	53	46	G	G	G	G	G	G	G	G	G	32	45
10	37	24	G	G	23	32	50	41	50	56	72	52	48	52	58	57	36		69	91	36	49	44	82
11	59	26	40	36	33	40	53	58	52	76	41	57	G	G	48	G	39	42	46	39	43	49	39	40
12	56	49	37	34	26	23	30	48	67	46	54	72	79	48	41	46	56	60	42		37	32	46	32
13	51	34	33	36	40	26	46	55	53	62	85	61	46	64	G	44	G	70	52	35	50	G	G	32
14	G	G	G	G	G	G	29	40	40	92	156	66	57	G	G	40	G	44	35	27	G	G	24	32
15	39	G	G	G	G	G	33	50	46	48	76	92	76	60	75	G	50	51	47	47	40	50	46	54
16	32	G	G	28	25	G	44	51	61	52	46	48	47	46	G	G	G	33	96	35	58	68	60	58
17	81	46		27	60	30	30	42	58	68	103	116	151	56	41	40	50	92	40	49	59	59	40	49
18	49	70		34	29	32	35	70	61	78	113	93	70	82	83	74	104	147	153	90	60	50	59	40
19	58	44	37	40	37	40	48	73	76	156	92	54	68	71	72	92	52	54	58	81	90	79	83	91
20	49	24	G	G	G	G	34	50	83	138		117	76	94	90	62	44	59	77		60	53	70	33
21	28	48	25	28	G		40	54	72	50	77	52	71	40	G	45	G	115	42	92	91	59	60	52
22	58	83	36	40	33	36	44	59	93	50	120	121	101	52	71	59	78	81	78	92	174	151	60	58
23	49	48	48	46	G	G	29	64	52	49	63	95	46	48	73	49	55	39	46	51	36	59	58	G
24	44	37	37	G	G	G	40	48	70	60	152	176	110	54	G	G	47	54	34	44	32	58	53	40
25	53	39	40	49	32	G	36	50	77	96	78	90	92	95	72	78	73	84	64	83	71	59	28	36
26	49	34		33	29	24	52	54	70	54	87	82	43	50	51	50	79	71	43			69	111	82
27	60	60	59	59	50	85	52	95	124	131	112	62	75	66	50	64	149	160	60	94	60	59	88	59
28	59	37	54	50	41	51	58	96	91	93	80	95	92	94	62	60	64	60	82	111	70	59	59	50
29	58	43	43	48	37	25	34	43	70	133	152	84	88	101	102	106	75	80	169	116	92	92	70	57
30	44	39	46	27	40	38	42	90	92	74	112	149	105	152	42	43	41	36	41	44	36	44		46
31	32	34	40	G	G	G	29		46	74	55	64	55	65	66	G	G	42	37	51	60	84	60	45
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	28	31	31	30	31	30	31	31	30	30	31	31	31	31	31	30	30	28	30	31	30	31
MED	52	43	37	33	29	26	40	52	66	74	79	71	70	56	50	45	50	56	49	54	54	59	58	49
U Q	59	51	44	46	37	38	50	61	76	92	103	95	88	76	72	62	73	81	77	86	70	71	60	58
L Q	43	34	29	G	G	G	33	45	52	54	63	54	48	46	G	G	G	40	41	44	37	49	40	36

HOURLY VALUES OF fmin AT Yamagawa

MAY 2009

LAT.31°12.0′N LON.130°37.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	15	14	14	14	15	14	18	22	22	21	21	21	16	14	14	14	15	14	14	14
2	14	14	14	14	15	15	14	14	14	14	21	22	22	20	22	22	17	14	14	14	14	14	14	14
3	14	14	14	14	15	16	14	14	14	17	17	23	24	24	18	17	20	16	16	14	14	14	14	14
4	15	14	14	15	14	14	14	14	14	15	18	22	18	22	16	16	14	14	22	14	14	14	14	14
5	14	14	14	14	15	14	14	14	21	16	17	17	20	21	16	20	17	15	14	15	14	15	14	15
6	14	14	14	14	14	14	14	14	14	16	21	21	18	18	18	20	18	14	14	14	15	14	14	14
7	14	14	14	17	18	16	14	14	14	18	20	32	24	21	20	20	17	14	15	15	14	14	14	14
8	14	14	14	14	14	14	14	14	15	18	18	22	24	27	24	21	18	14	14	14	15	14	14	14
9	15	14	14	15	14	14	15	14	17	16	21	24	24	24	23	21	17	17	14	16	18	16	15	14
10	14	14	15	16	15	14	14	14	15	20	22	21	32	17	18	21	16	14	17	15	15	14	14	15
11	14	14	14	14	14	14	14	14	14	17	21	22	23	23	18	15	14	14	14	16	14	14	14	14
12	14	14	14	14	14	15	14	14	15	18	23	24	21	26	20	20	17	14	15		14	14	14	14
13	15	14	14	15	14	15	14	21	16	20	20	21	23	22	23	21	18	15	14	14	15	15	15	15
14	15	14	14	14	17	14	14	17	16	18	18	20	29	27	21	20	15	14	14	14	15	15	15	14
15	15	17	14	14	17	16	14	14	16	18	18	29	27	23	26	24	18	14	15	15	14	14	14	15
16	14	15	14	14	14	15	15	14	18	15	17	22	23	20	18	20	16	14	14	14	14	14	14	14
17	14	14		14	14	15	14	15	14	14	22	21	22	35	21	18	18	15	15	14	14	14	15	14
18	14	15	14	14	14	14	14	14	17	20	18	23	22	20	18	17	18	14	15	16	14	14	14	14
19	14	14	14	14	14	14	14	14	16	17	27	21	26	22	22	21	17	14	14	15	14	14	15	14
20	15	14	14	14	14	15	14	14	16	17	20	18	22	26	22	20	16	15	14	14	15	15	14	14
21	15	14	14	15	14		14	14	16	18	20	22	26	23	21	30	18	16	17	14	15	14	14	14
22	14	14	14	14	14	14	14	14	16	18	20	18	20	21	21	17	21	14	14	15	14	14	14	14
23	14	15	14	15	14	15	14	14	16	15	20	21	26	30	21	17	16	14	14	14	14	14	15	14
24	14	14	14	15	15	15	14	14	16	16	20	21	23	20	22	17	15	16	14	14	15	14	14	14
25	14	15	14	14	15	15	14	14	14	16	21	27	21	20	27	20	20	14	14	14	14	15	14	14
26	14	14		14	14	14	14	14	14	17	18	20	17	18	18	18	15	16	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	14	16	20	27	29	21	18	20	14	15	14	14	14	15	14	14
28	15	14	14	14	14	15	14	14	14	16	17	21	27	18	21	18	17	15	15	14	14	14	15	14
29	14	14	15	14	14	14	14	14	14	18	20	18	21	22	22	22	18	14	14	14	15	15	15	14
30	14	14	14	14	14	14	14	14	14	16	17	22	20	21	20	22	17	14	14	14	15	15	14	14
31	15	15	14	14	16	15	17		14	15	16	22	17	24	17	20	15	14	14	15	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	29	31	31	30	31	30	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31
MED	14	14	14	14	14	14	14	14	15	17	20	22	23	22	21	20	17	14	14	14	14	14	14	14
U Q	15	14	14	15	15	15	14	14	16	18	21	23	26	24	22	21	18	15	15	15	15	15	15	14
L Q	14	14	14	14	14	14	14	14	14	16	18	21	21	20	18	18	16	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

MAY 2009

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	32	35	69	A	A	A	A	73	81	87	93	90	88		87	A	A	A
2	A	A	A	A	A	A	A	59	A	A	A	A	A	76	84	85	85	98	102	89	85		A	A
3	A	A	A	A	A		36	67	60	46	49			66	70	81	87	90	86	82	83	A		
4	A		31	A		A	A	52	A	A	A	A	80	A	72	71	62	62	62	A	A	A	A	A
5	A	A	A	A	A		A	A	A	A	A		63	74	82	86	92	87	88	88	89	A	A	A
6	A	A	A	A	A		36	52	50	62	A	A	A	76	82	88	101	90	90		64	44		43
7		35	42	30	29	30	52	61	A	52					76	90	90	90	106	111	77		A	A
8	A	A	A	A	A	A	43	63	56	A	A	A	A	81	80	87	105	102	89	88	84	A		
9	A	A	A				42	54	68	76	66		68	88	97	102	112		117	100	77	53	53	53
10	51	45		34	37	30	42	50	75	A		65	76	90	97	102	121	138	130	118	88	78	54	52
11	44	A	42	44	44	34	42	70	63	66	A		65	85	88	101	102	86	70	70	70	53	44	45
12	44		40	30	31	30	46	58	56	54	57	A	72	81	86	96	98	100	77	67	66	54	54	53
13	52	44	44	36	30		38	52	67	A	A	A	A	72	84	92	101	110	118	127	82		48	46
14	50	54	54	45	37		44	60	40	54	A	A	A	66	80	87	91	87	82	A	54	54	51	49
15		29	44			A	43	55	67	A	A		78	88	98	96	86	67	58	A	A	A	47	45
16	A	A	45	26		A	42	46	A	A	A	72	75	77	81	77	80	75	67	71	66	A	A	A
17	A	A	37		32	28	42	55	A	A	A	A	67	78	82	92	97	85	A	63	48	46	47	42
18	42	44	42	31	44		42		A	55	61	70	81	98	105	102	101	113	122		88	A	A	A
19	A	A	A		29	28	44	A	A	A	A	A	70	80	86	96	102	98	100	105		66	A	52
20	44	44	52	38		30	44	A	68	A	A	A	A	A	A	106	88	85	A	77	86	A	A	A
21	36			A			41	62	58	58	A	A		64	A	66	A	75	86	91	78	A	A	A
22	A	A	A	A	A	A	29	A	A	A	A	A	A	78	72	72	78	86	78	A	44	A	A	A
23	36	34	34	29	29		44	58	A	A	A	49	A	A	87	89	88	83	67	63	54	A	A	41
24	34	A			29		44	48	A	A	A	A		66	71	66	66	67	71	66	74	51		
25	A	A	A	A		A	A	51		A	A	A	A	A	A	A	A	A	A	A	59	52	46	
26	38	28			A		A	60	A	49	A	A	A	A	A	62	67	74	78	66	53	50		A
27		A				A	30	A	A	A	A	A	A	A	A	A	A	A	A	77	65	47	A	A
28	A	A	A				A	A	A	A	A	A	A	A	A	75	76	80	81	87	68	54	A	42
29		A	44	A	A	A	A	A	A	A	A	A	A	A	A	74	A	A	A	77	A	A	A	A
30	A	A	A					58	50		A	A	A		60	A	62	70	68	51	A	50	A	42
31	41	41	35	36			34	43	44		62	A	A	A		A	66	78	72	66	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	10	14	11	11	7	23	23	15	10	5	4	11	20	23	27	27	27	26	23	25	14	9	13
MED	43	42	42	34	31	30	42	55	60	54	61	68	72	78	82	87	90	86	84	77	74	52	48	45
U Q	47	44	44	38	37	30	44	60	68	62	64	71	78	83	87	96	101	98	100	91	84	54	53	52
L Q	37	34	37	30	29	28	36	51	50	52	53	57	67	72	76	75	78	75	71	66	61	50	46	42

HOURLY VALUES OF fEs AT Okinawa

MAY 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	84	86	86	53	82	68	38	48	54	67	76	75	79	58	66	50	83	57	62	67	108	93	92	73
2	86	58	72	72	49	72	70	44	61	82	93	60	71	74	50	G	G	G	30	31	32	40	81	44
3			56	72	56	27	29	34	G	41	42	49	50	42	G	G	G	G	36	45	31	58	37	34
4	38	41	31	50	30	43	48	57	85	79	66	118	84	79	52	50	53	54	51	127	110	126	154	94
5	89	90	79	72	73	36	47	73	106	91	69	50	G	49	54	G	50	60	61	34	46	56	39	41
6	39	59	34	34	40	29	31	45	55	75	66	61	88	60	G	G	G	G	43	80	34	58	39	38
7	35	29	G	G	G	G	34	46	56	48	G	G	G		G	G	G	G	58	53	58	48	87	39
8	53	48	71	48	37	28	34	54	59	73	109	74	60	54	47	62	83	56	79	45	43	40	26	30
9	51	48	29	27	28		72	51	58	68	50	61	50	54	70	G	G		G	G	G	G	G	G
10	36	37		G	G	G	28	52	83	62	52	61	51	65	48	50	68	68	84	91	34	G	34	33
11	36	52	44	G	34	G	47	62	53	60	53	G	50	G	42	49	42	36	34	36	28	G	30	28
12	38	49	G	G	G	25	G	46	50	46	47	75	G	42	51	51	52	52	40	54	44	36	49	34
13	57	36	G	G	G	34	28	41	62	81	114	85	82	65	64	51	49	72	43	82	36	32	31	G
14	G	34	G	G	G		28	40	42	43	54	106	121	48	49	57	56	52	58	66	G	G	G	G
15	34	G	G	28		31	32	40	50	71	47	G	G	G	G	60	82	60	65	61	90	80	44	43
16	59	50	56	33		28	33	43	53	61	136	50		50	59	54	53	44	45	53	60	84	59	69
17	82	68	30	41	29	G	70	71	72	130	88	140	G	G	41	G	G	92	127	45	34	37	38	50
18	34	38	28	G	26	35	34		92	48	G	41	64	52	61	50	47	50	73		86	70	88	83
19	49	60	65	27	30	G	35	86	59	150	107	74	52	76	42	65	50	65	71	59	91	39	58	36
20	49	49	59	32	32	26	30	56	60	73	86	96	156	125	128	86	61	G	89	148	124	93	88	70
21	29	27	28	35	38		34	37	58	60	96	71	60	60	89	62	87	62	60	76	31	40	50	59
22	60	40	70	51	39	57	35	61	138	146	106	130	144	52	58	54	51	50	70	135	81	94	72	70
23	32	32	G	G	G	48	28	54	127	106	55	60	129	90	51	42	50	G	38	G	32	49	52	30
24	49	54	27	34	G		32	40	60	63	113		G	G	G	49	G	46	54	60	29	36		30
25	41	51	45	56	28	30	39	36		113	80	72	76	70	65	81	108	162	173	148	58	50	37	40
26	G	G			29		42	52	65	53	76	69	52	63	78	56	52	51	55	32	50	38		36
27	32	53	31	G	G	60	154	84	149	152	109	149	104	146	102	90	96	130	126	78	81	50	71	55
28	59	28	28				54	94	108	91	95	80	90	74	70	70	55	35	58	38	71	58	83	36
29	44	48	38	60	40	34	41	51	72	92	152	95	147	102	101	76	110	104	103	58	66	115	72	68
30	49	57	36	24			G	36	37	41	89	138	60	50	52	62	38	57	52	46	91	29	40	26
31	28	G	G	G	24	G	G	40	G		46		71	68	69	76	53	40	90	126	84	88	83	39
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	29	27	24	31	30	30	30	31	29	30	30	31	31	31	30	31	30	31	31	29	31
MED	42	48	31	32	29	30	34	50	60	72	76	72	62	59	52	51	52	52	58	58	50	49	50	39
U Q	57	54	57	50	39	39	47	57	83	91	106	95	88	74	69	62	68	62	79	80	84	80	82	59
L Q	34	34	14	G	G	13	29	40	53	60	52	55	50	49	42	42	38	36	43	45	32	36	37	30

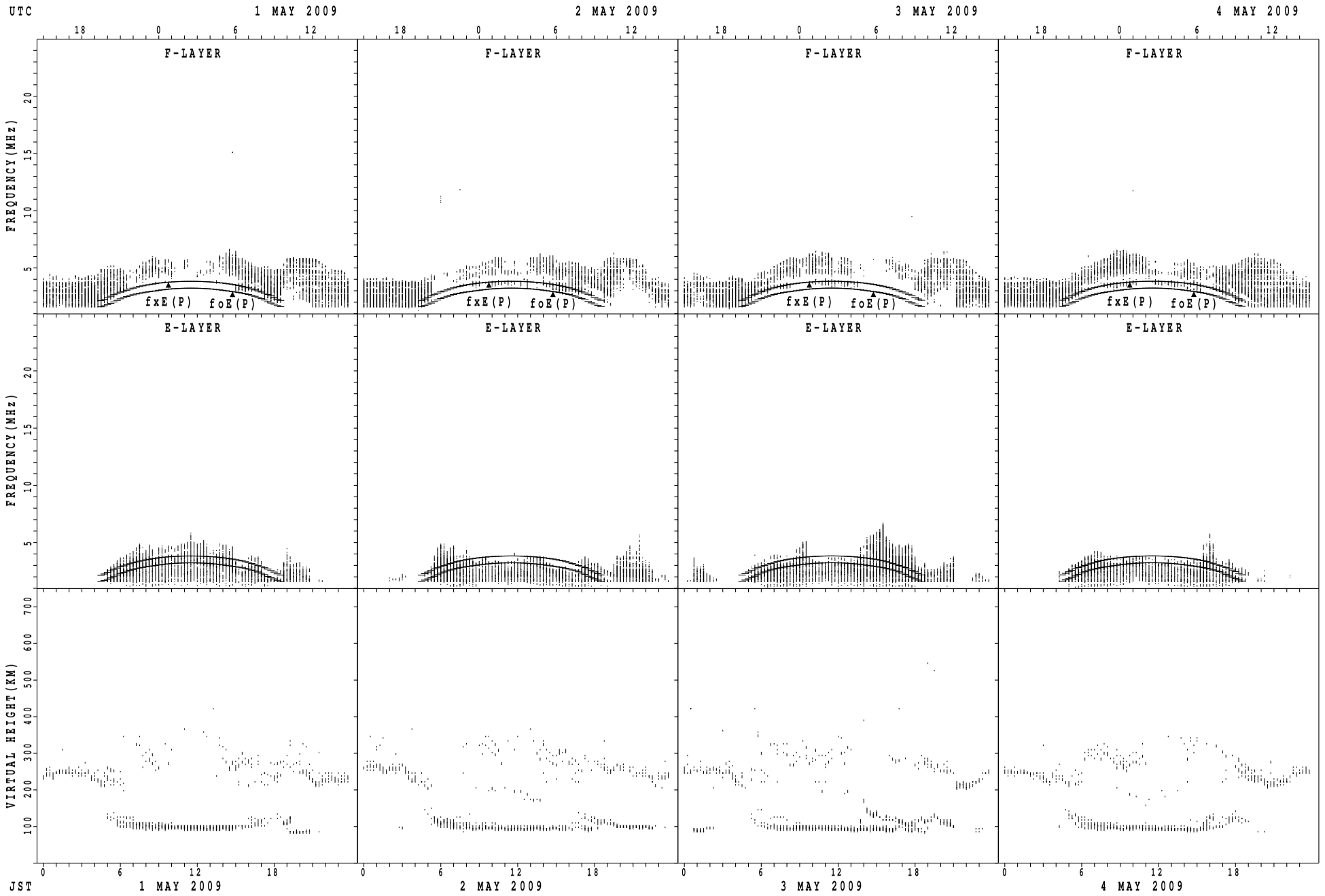
HOURLY VALUES OF fmin AT Okinawa

MAY 2009

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

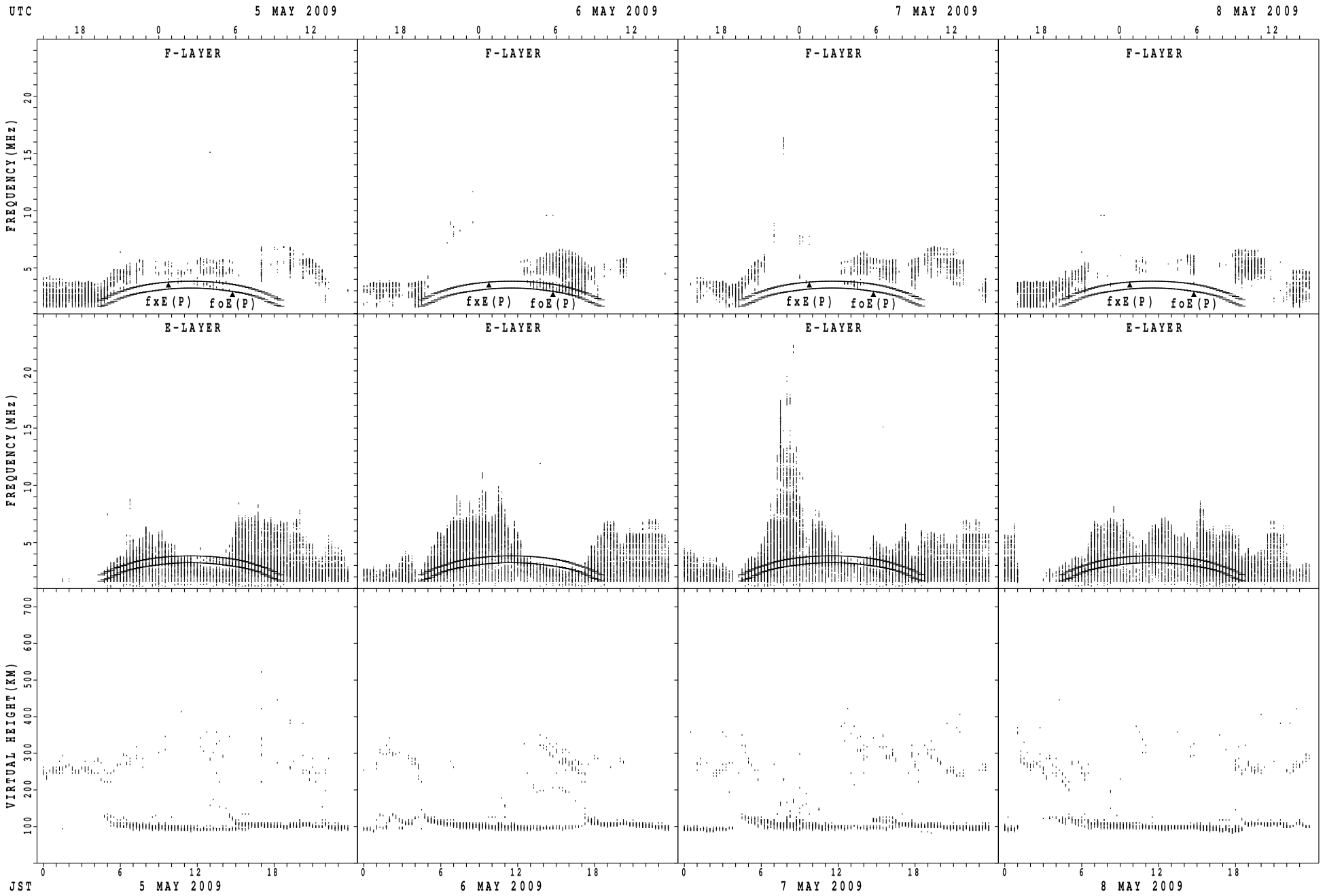
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	15	15	15	14	14	14	21	30	29	30	28	28	24	20	16	14	14	15	15	14	15
2	15	15	15	14	16	15	14	14	16	21	23	26	27	27	28	24	18	35	15	14	14	14	14	14
3	14	14	14	15	15	15	14	14	14	21	23	27	28	23	46	45	43	28	16	14	15	14	16	15
4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

SUMMARY PLOTS AT Wakkanai



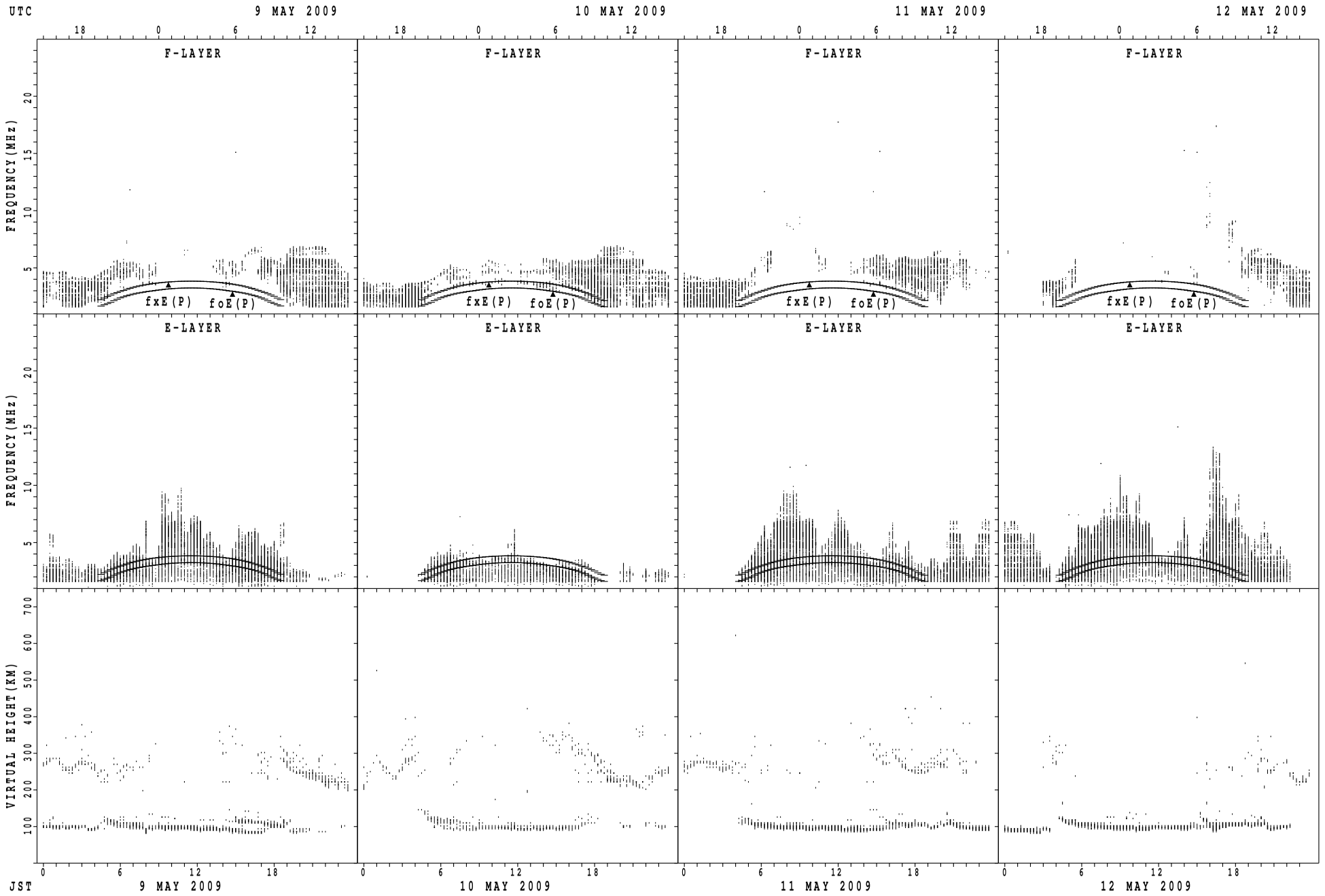
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



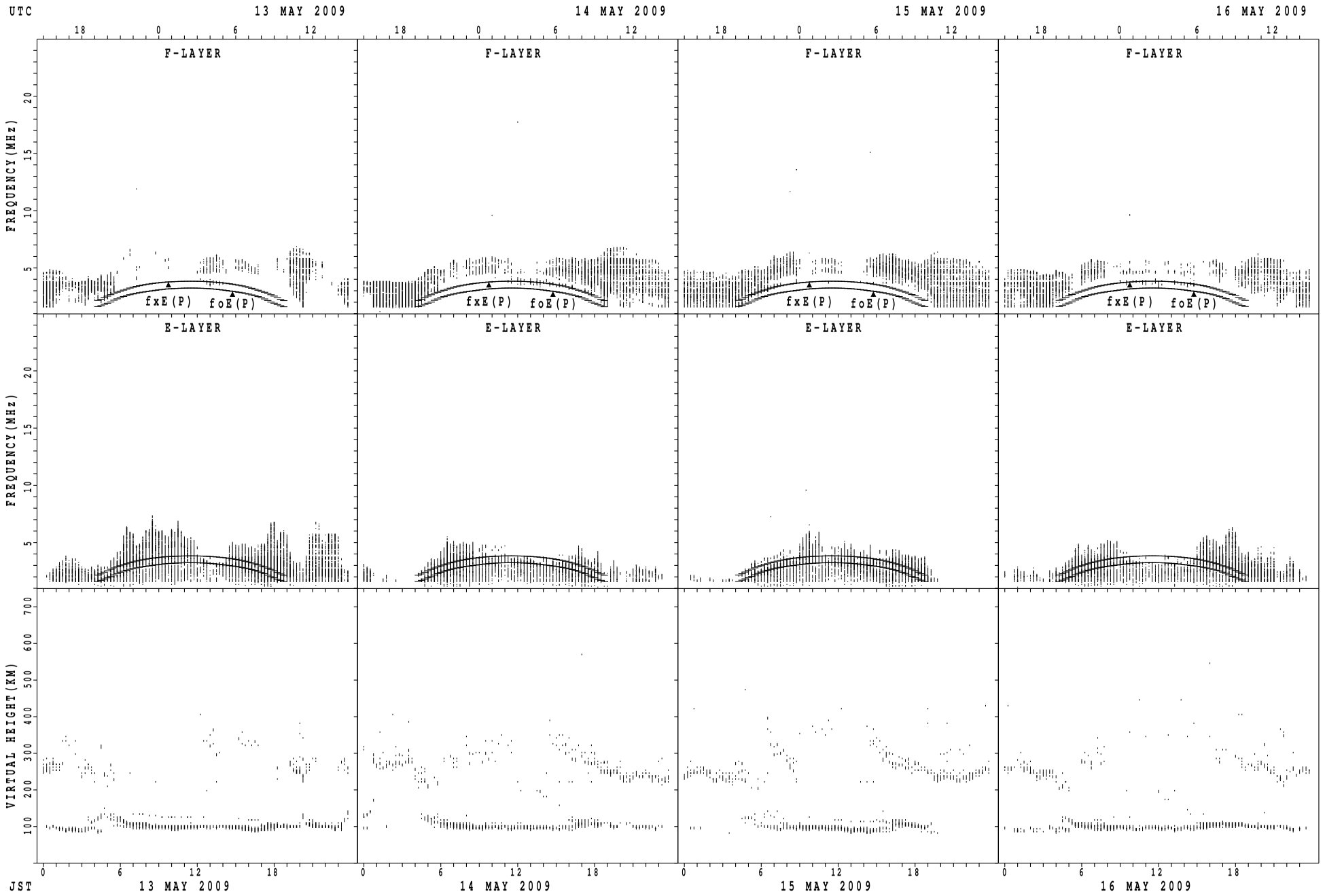
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



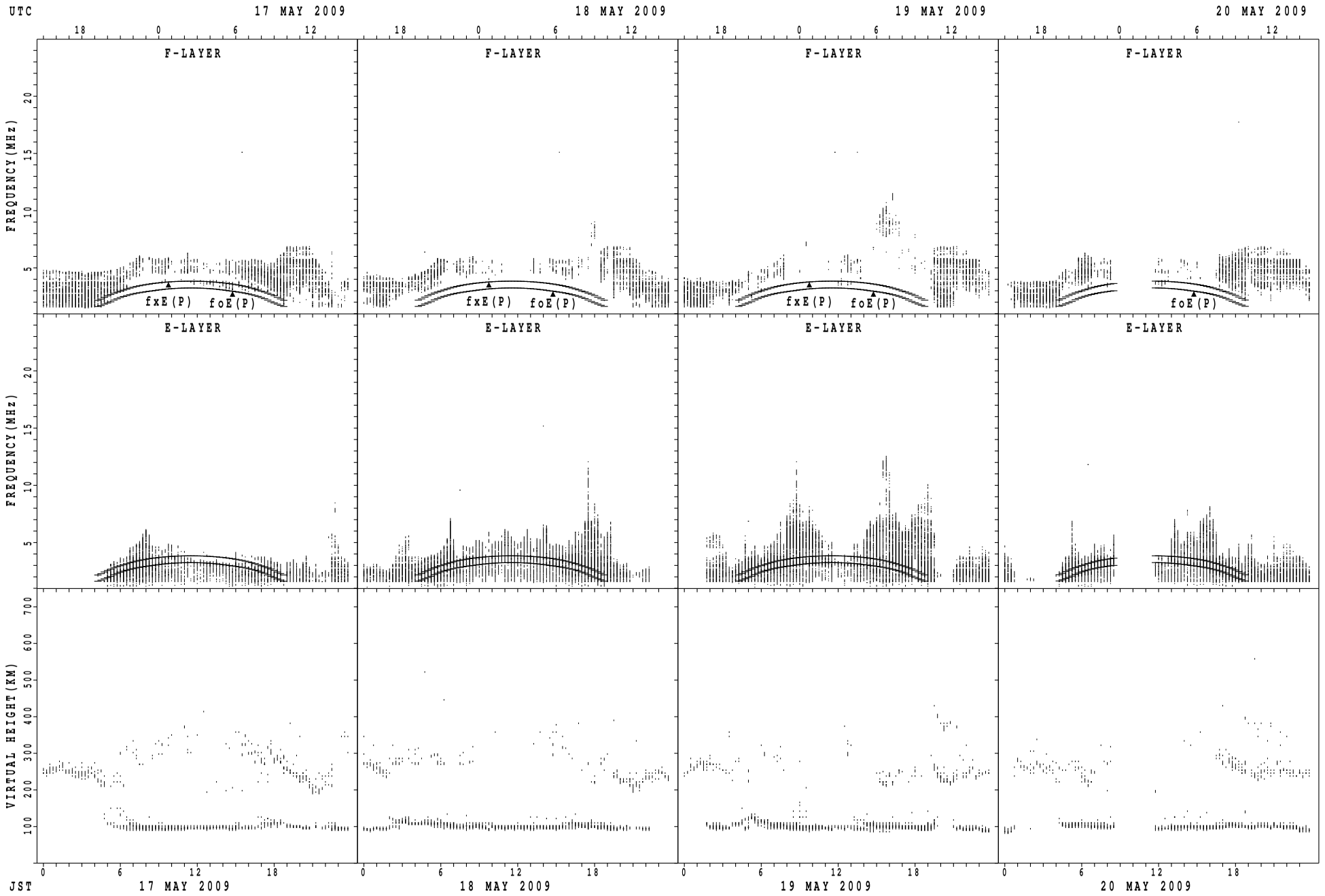
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



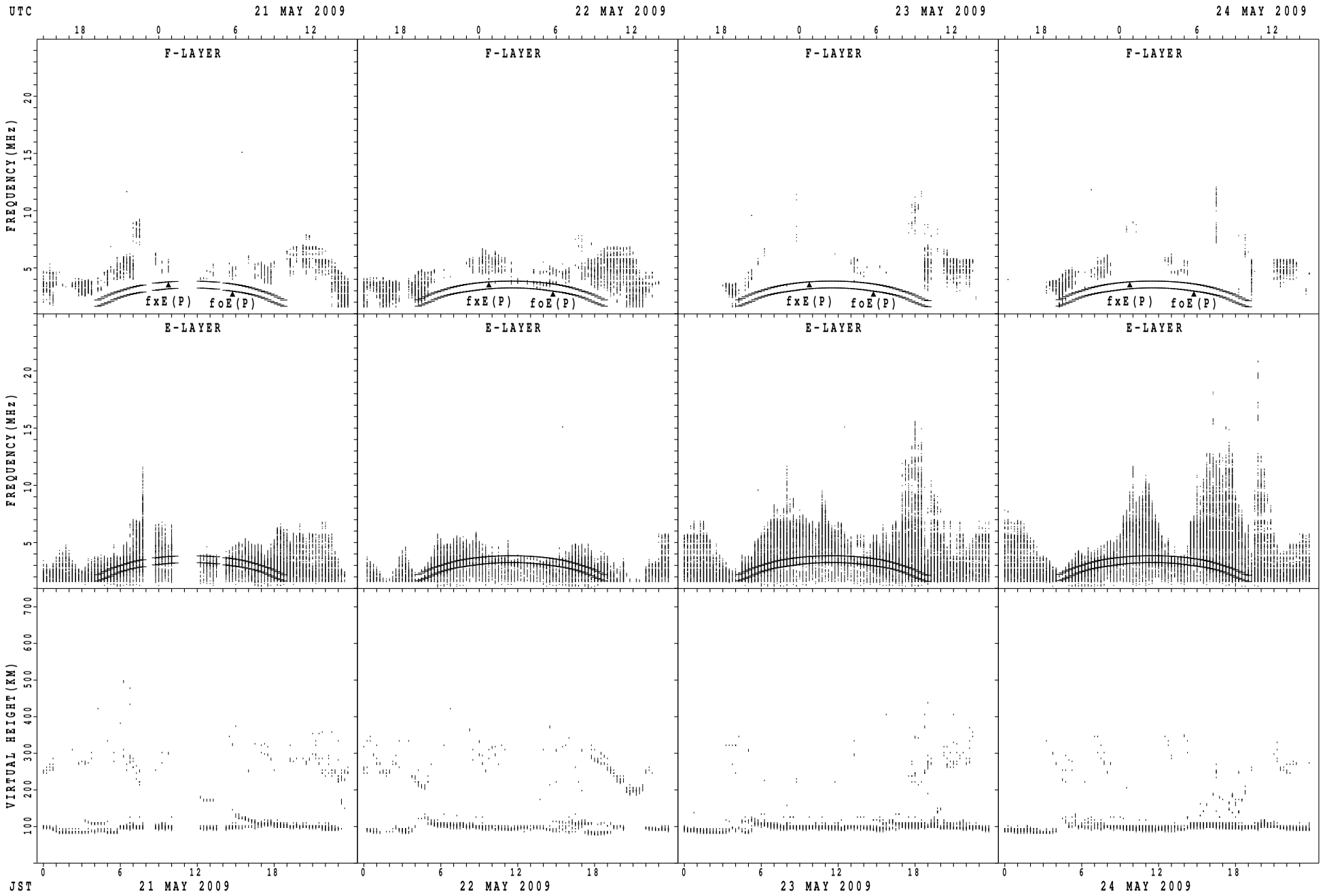
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



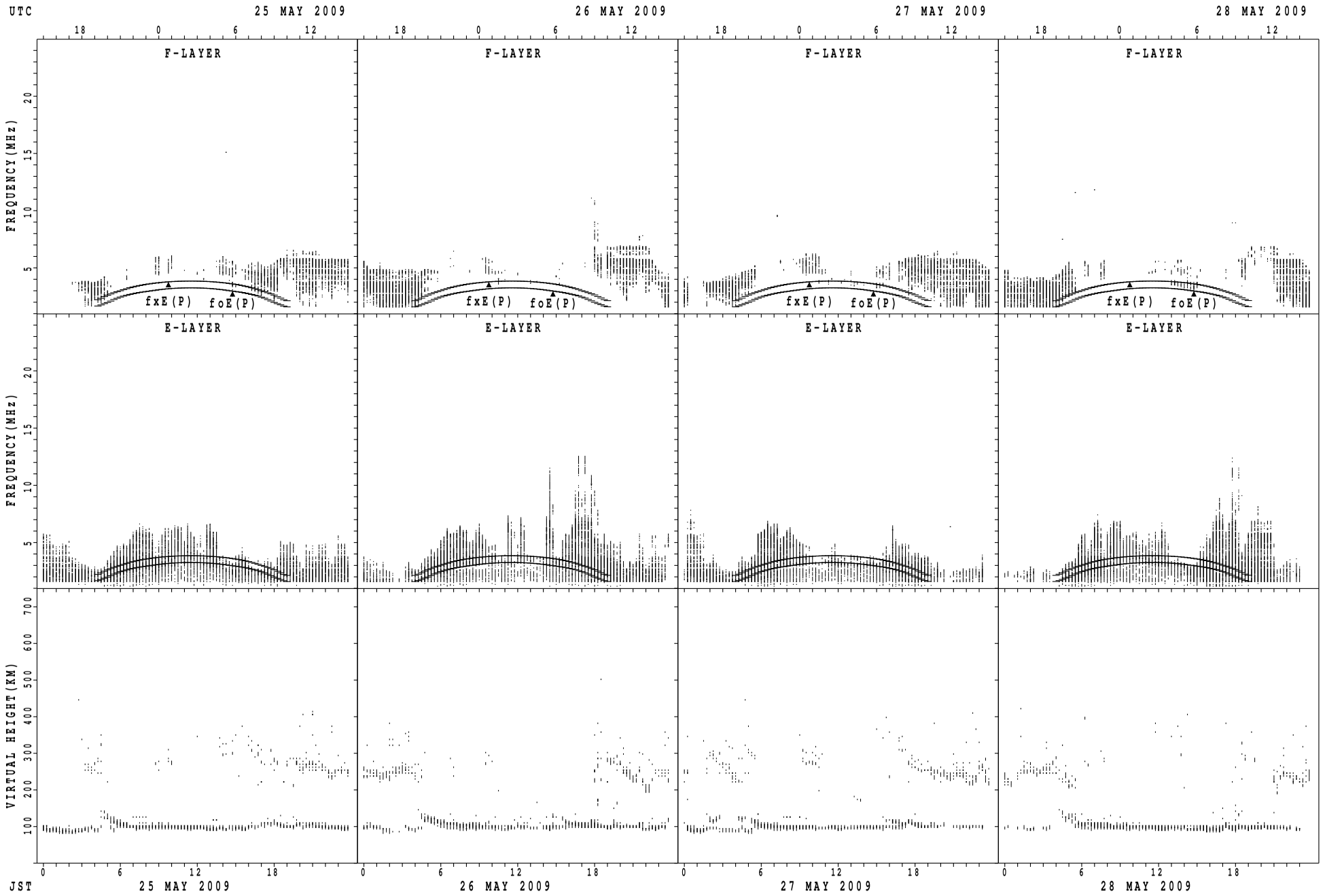
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



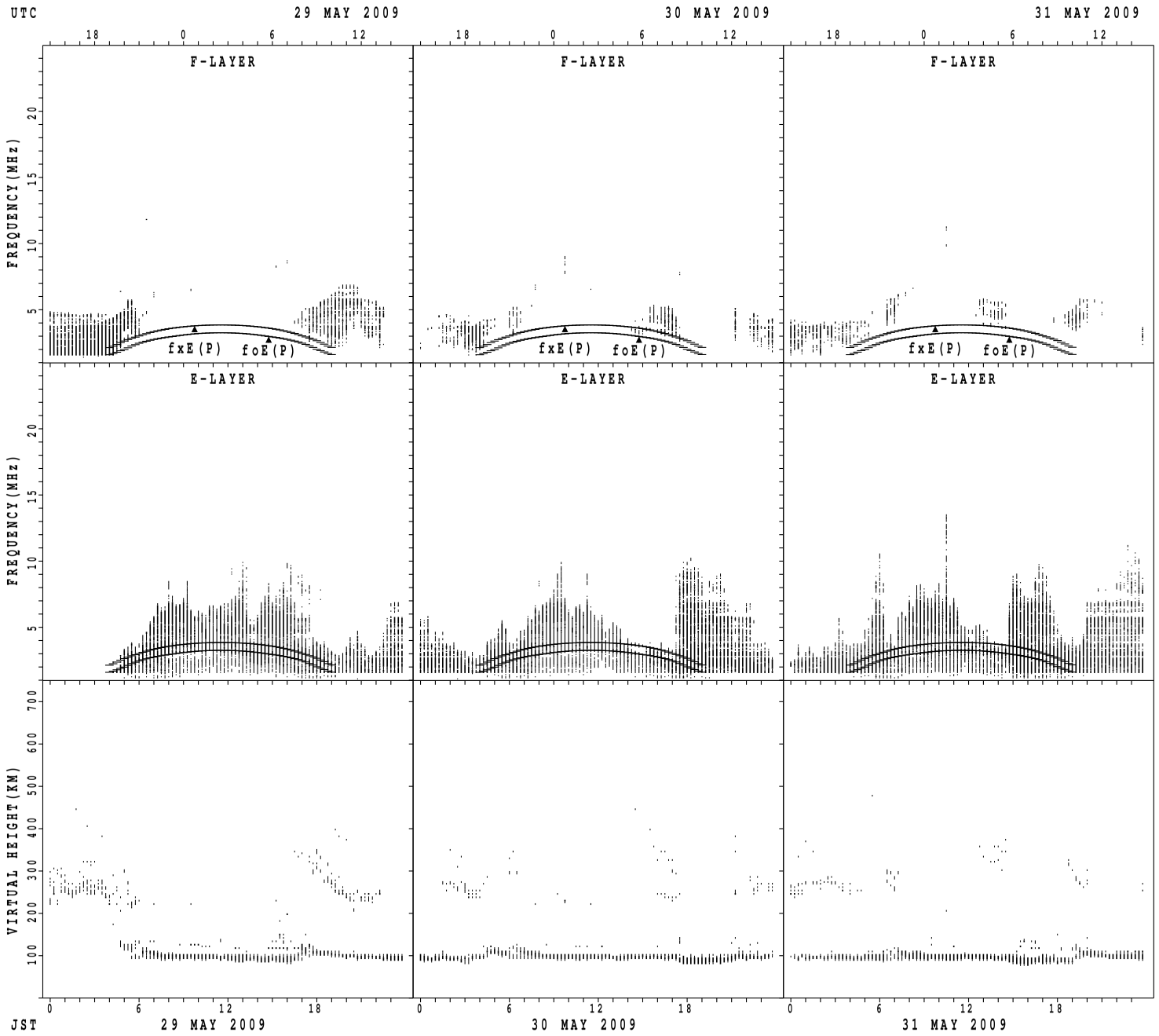
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



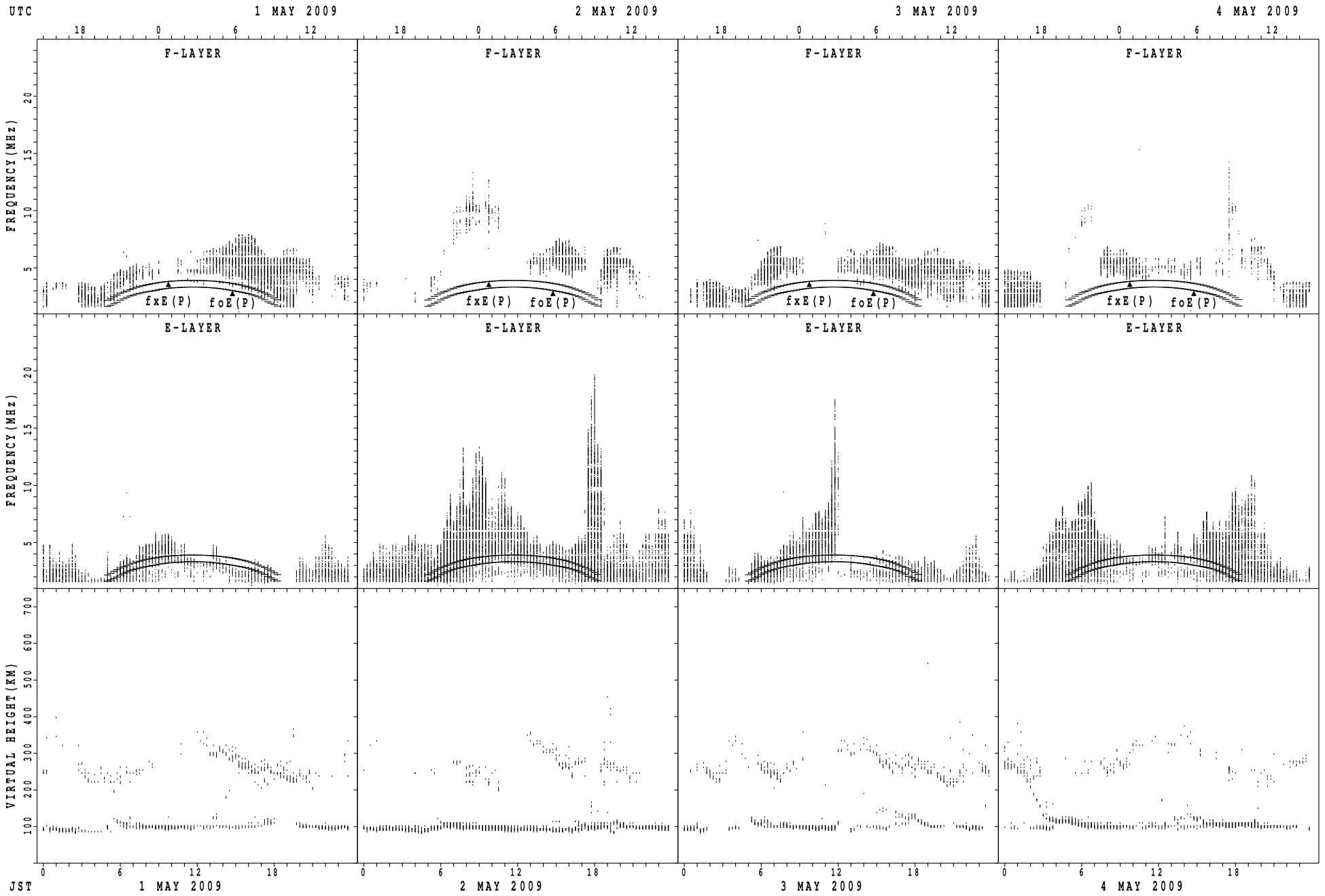
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



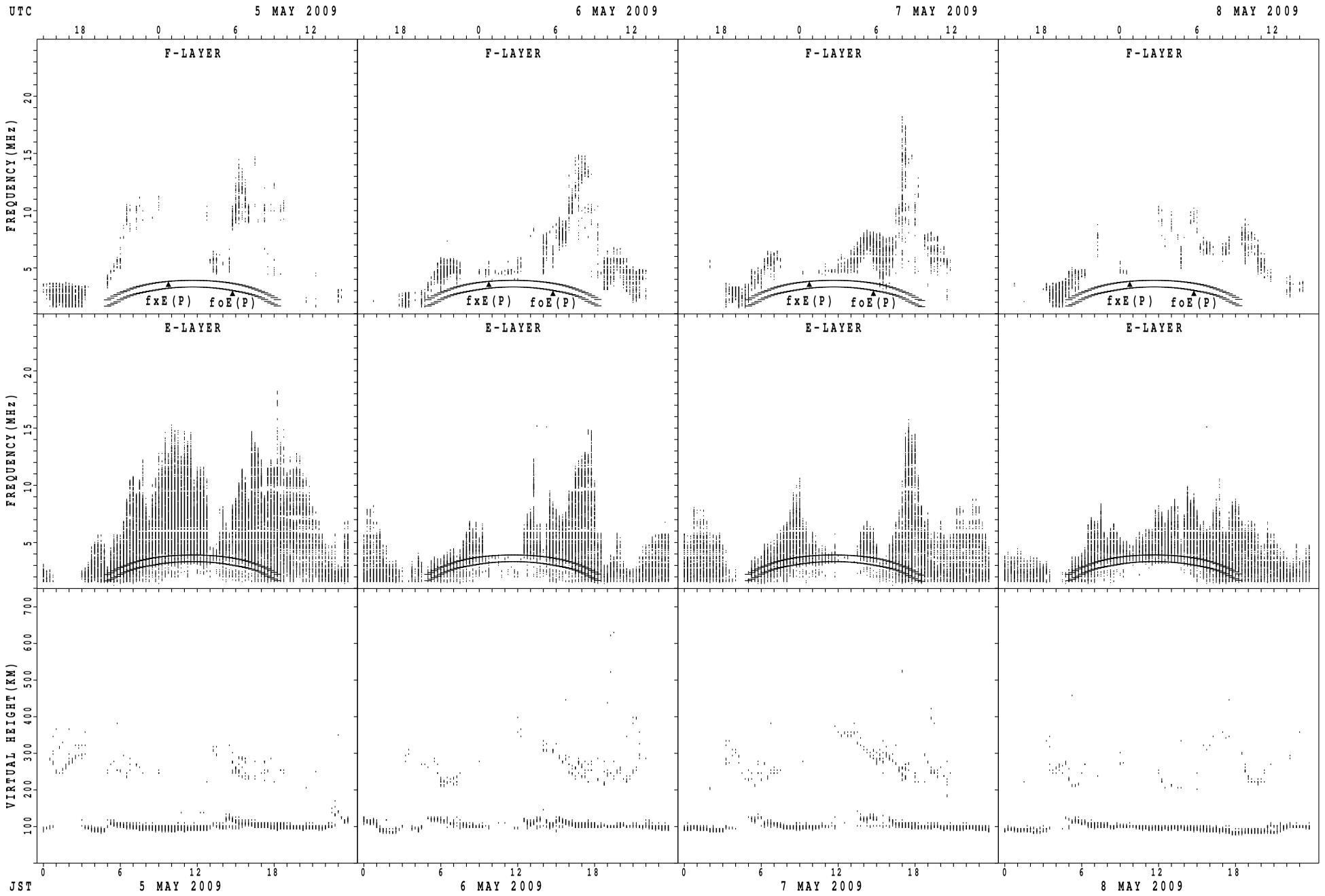
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



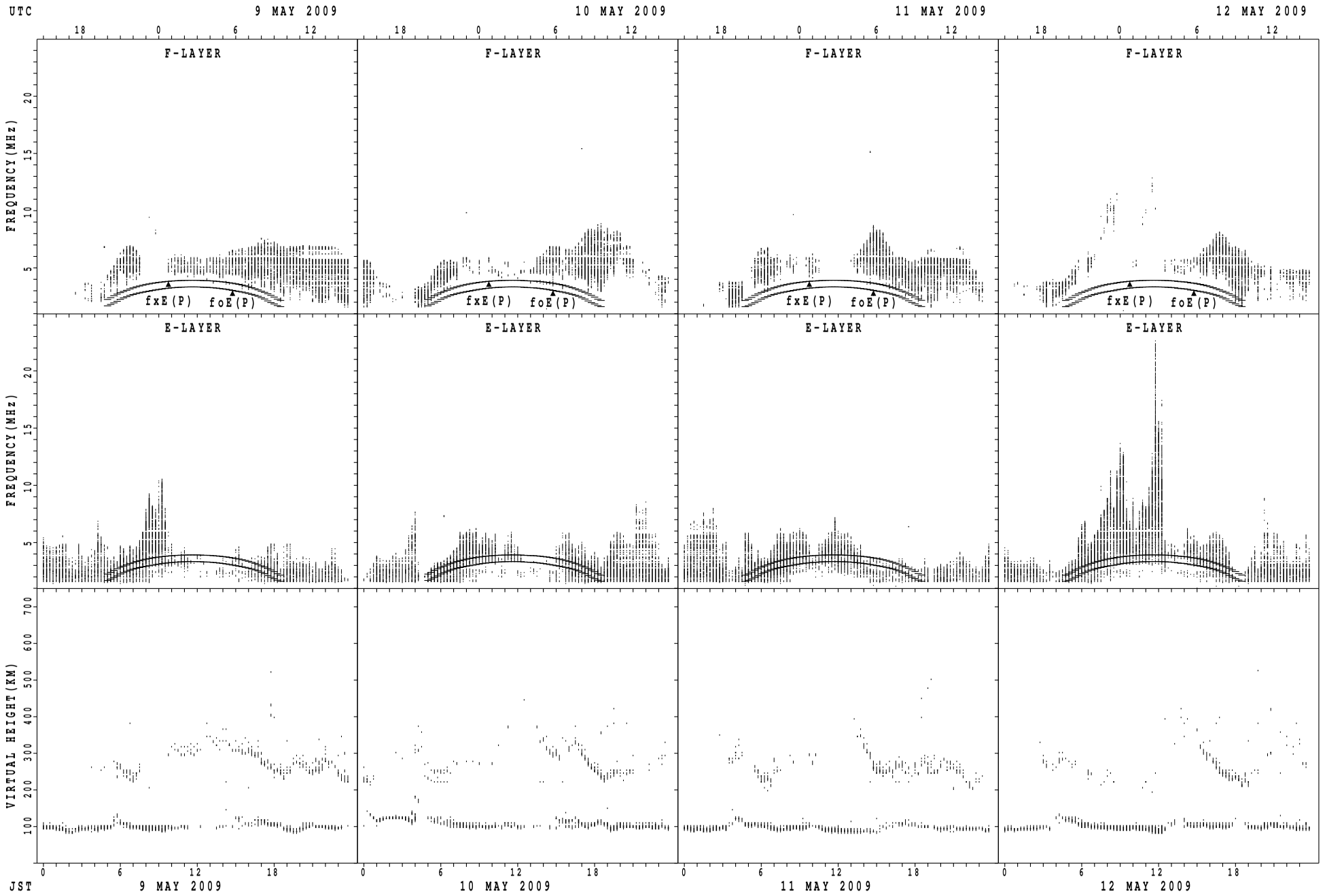
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



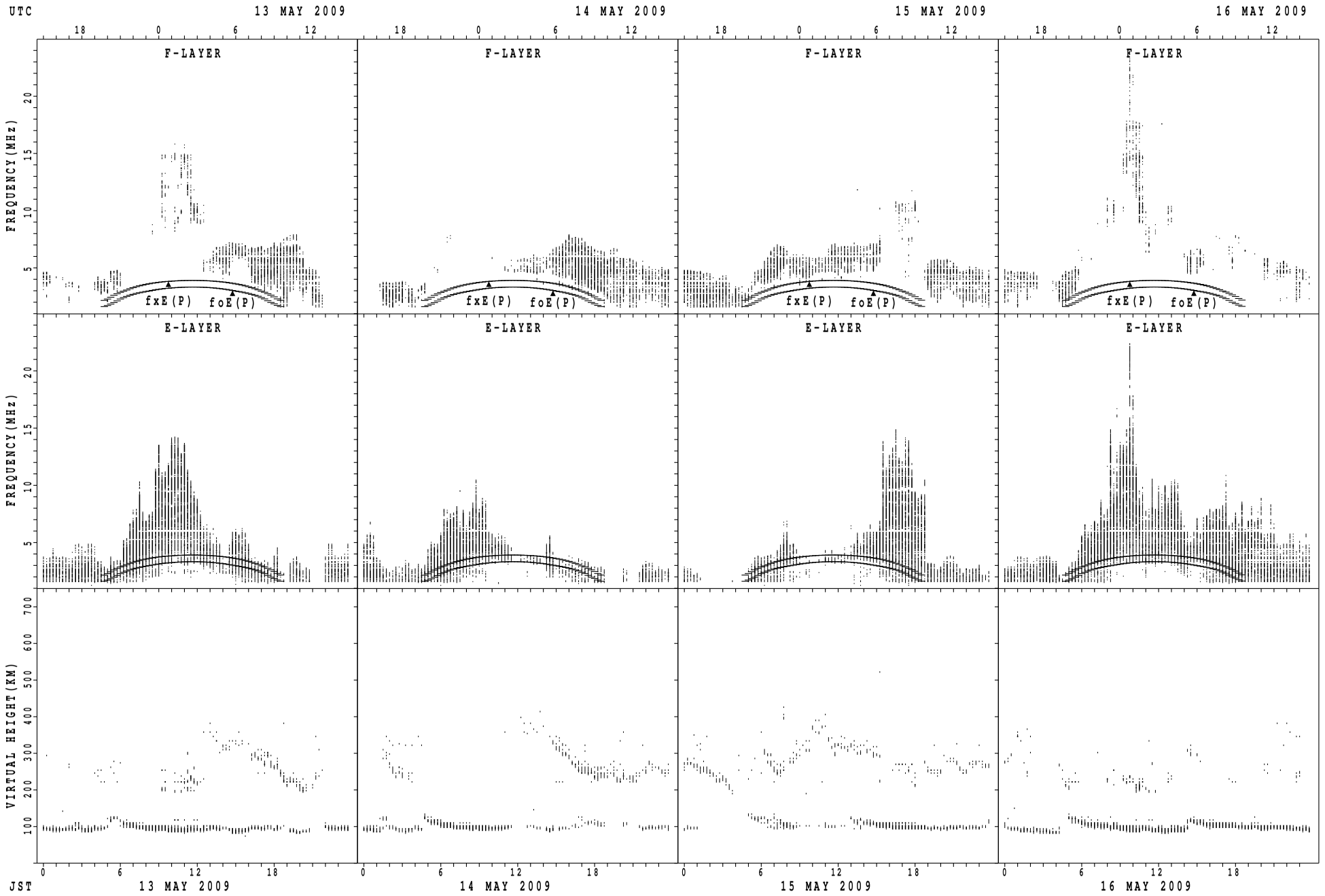
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



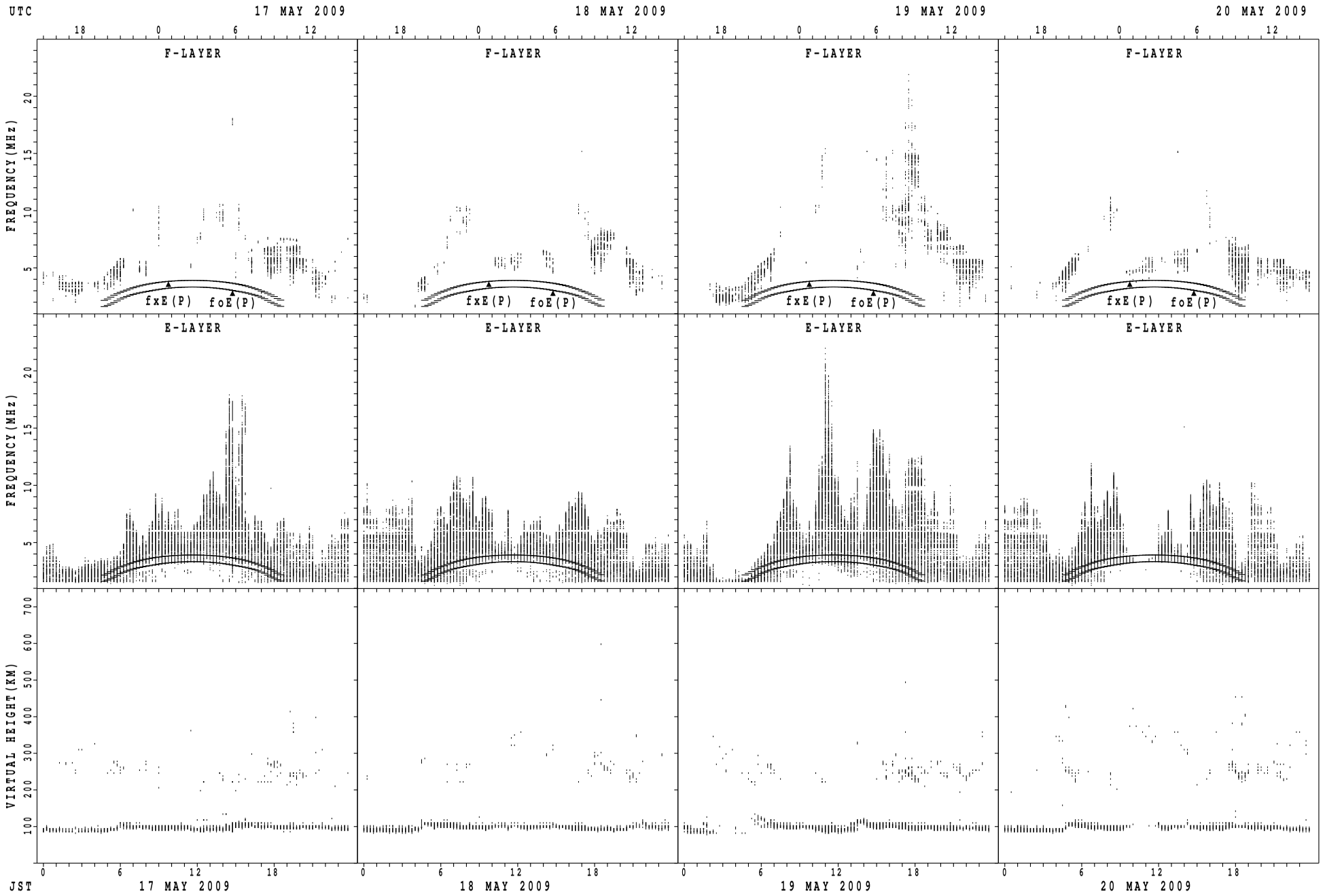
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



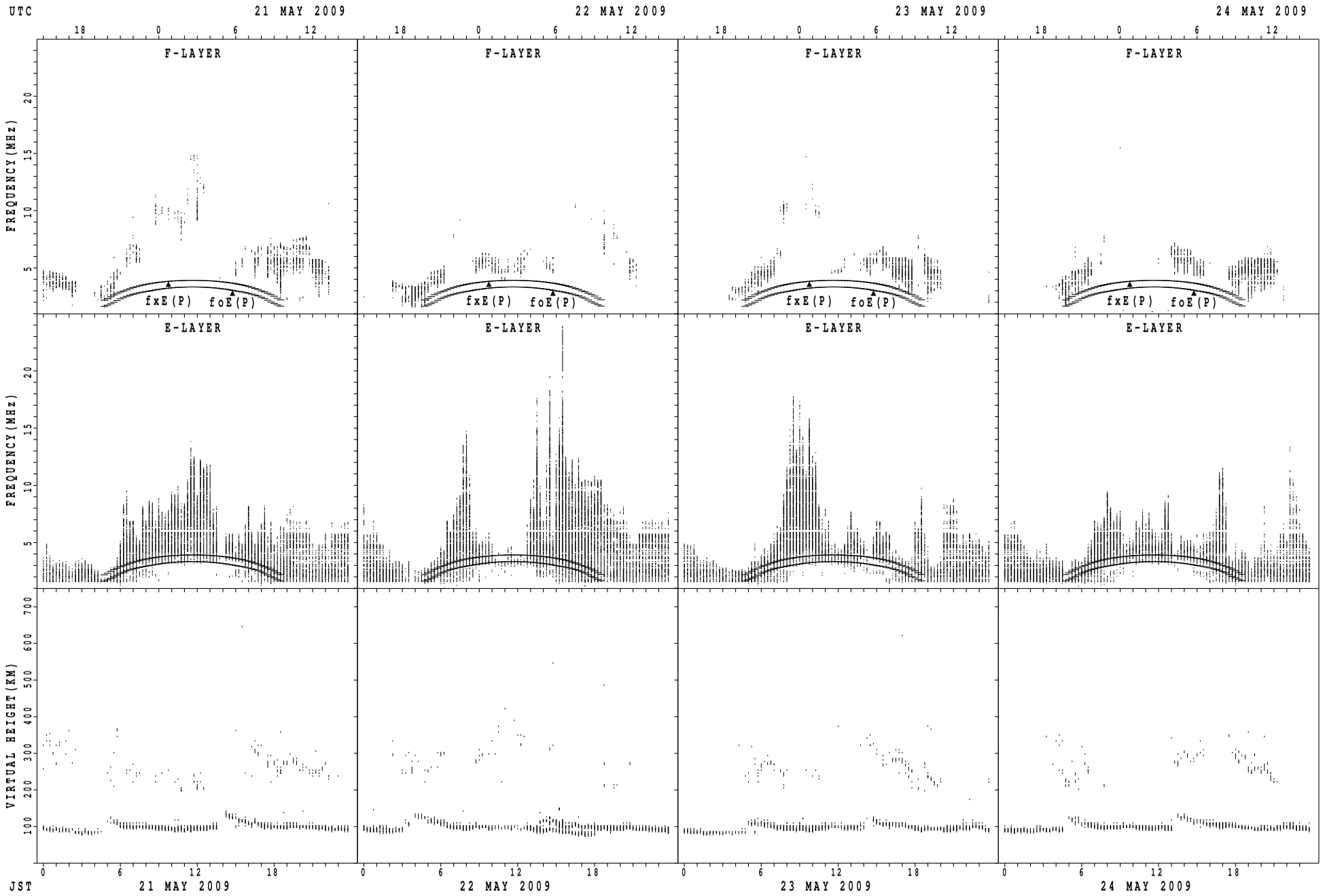
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



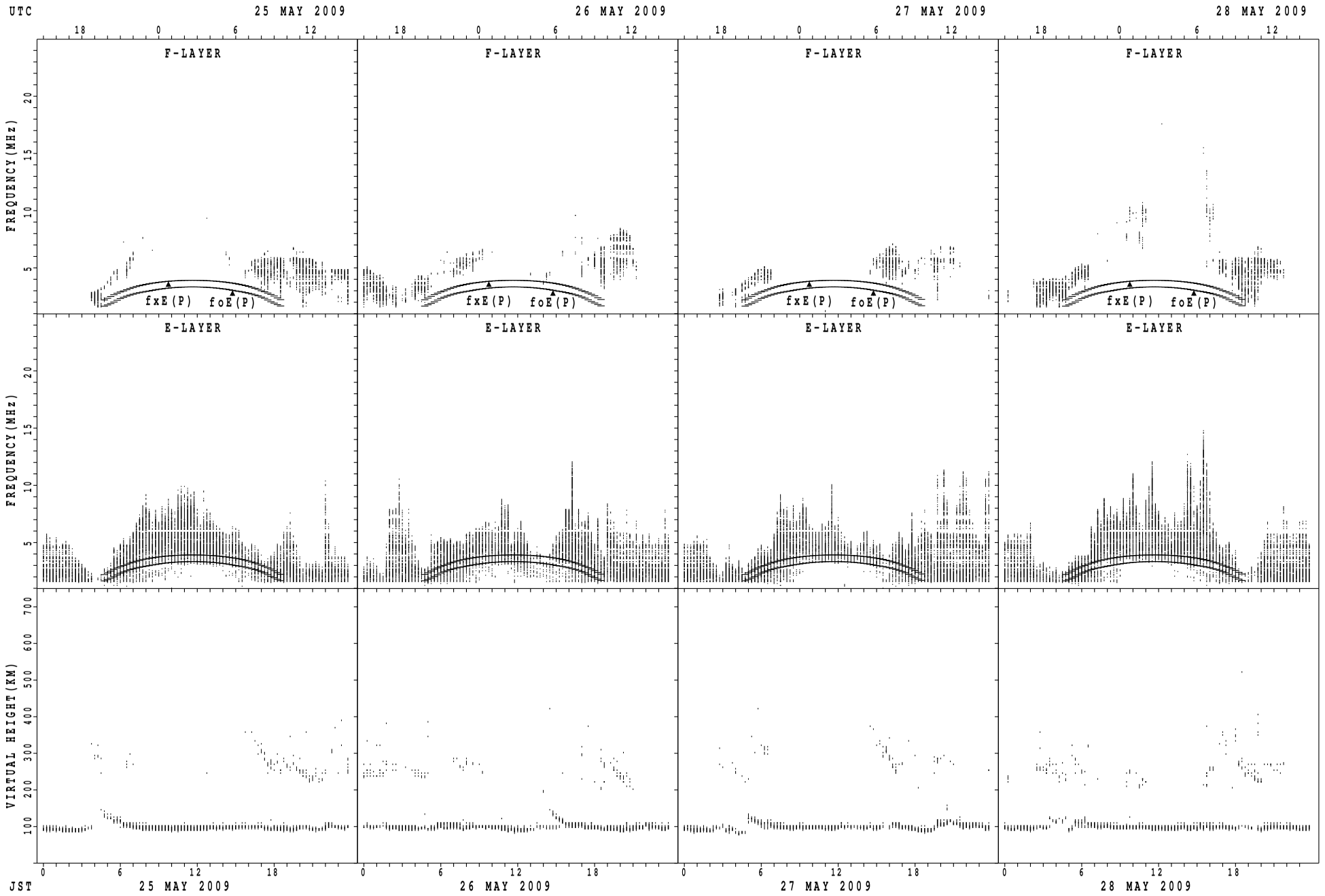
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



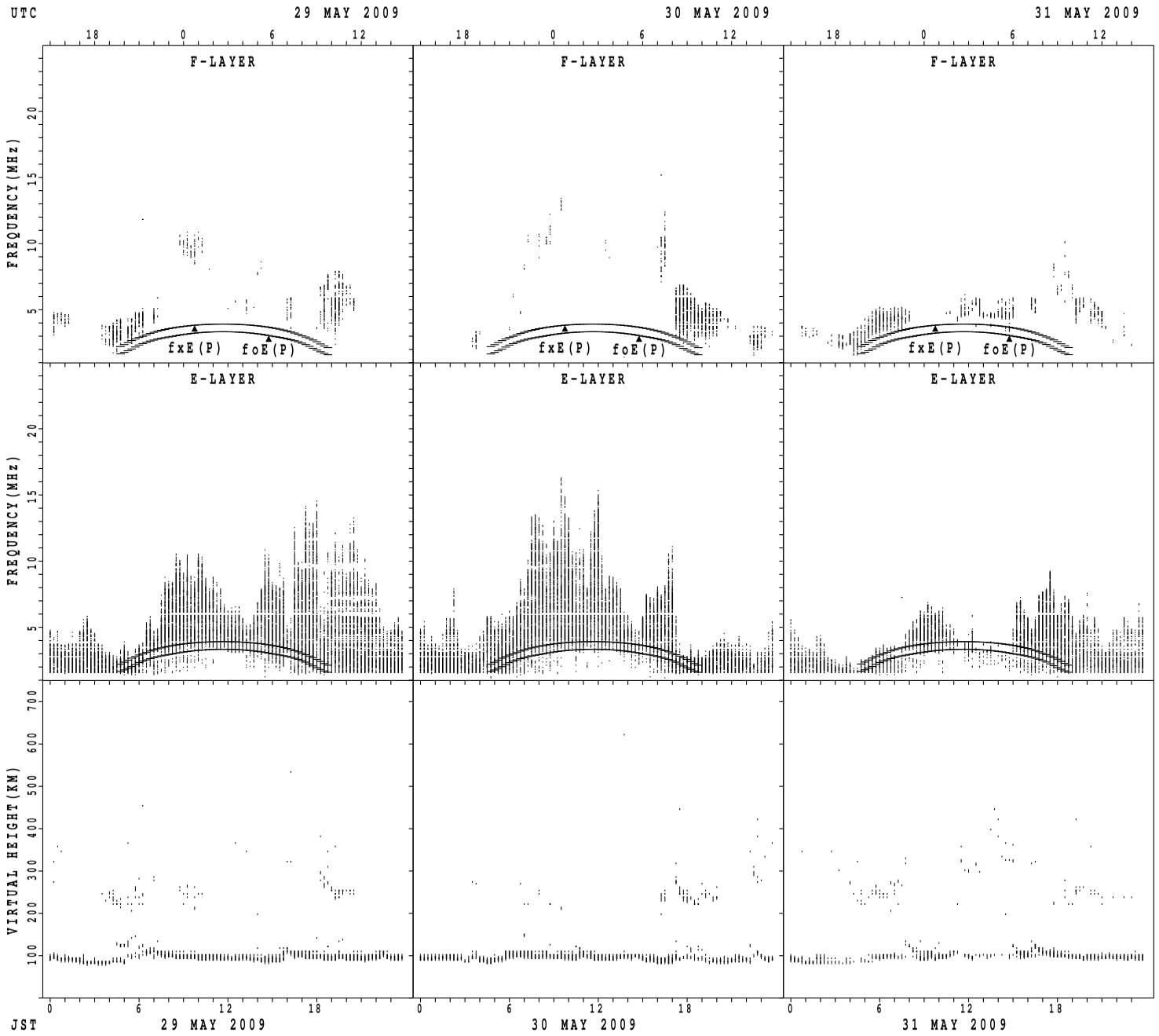
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



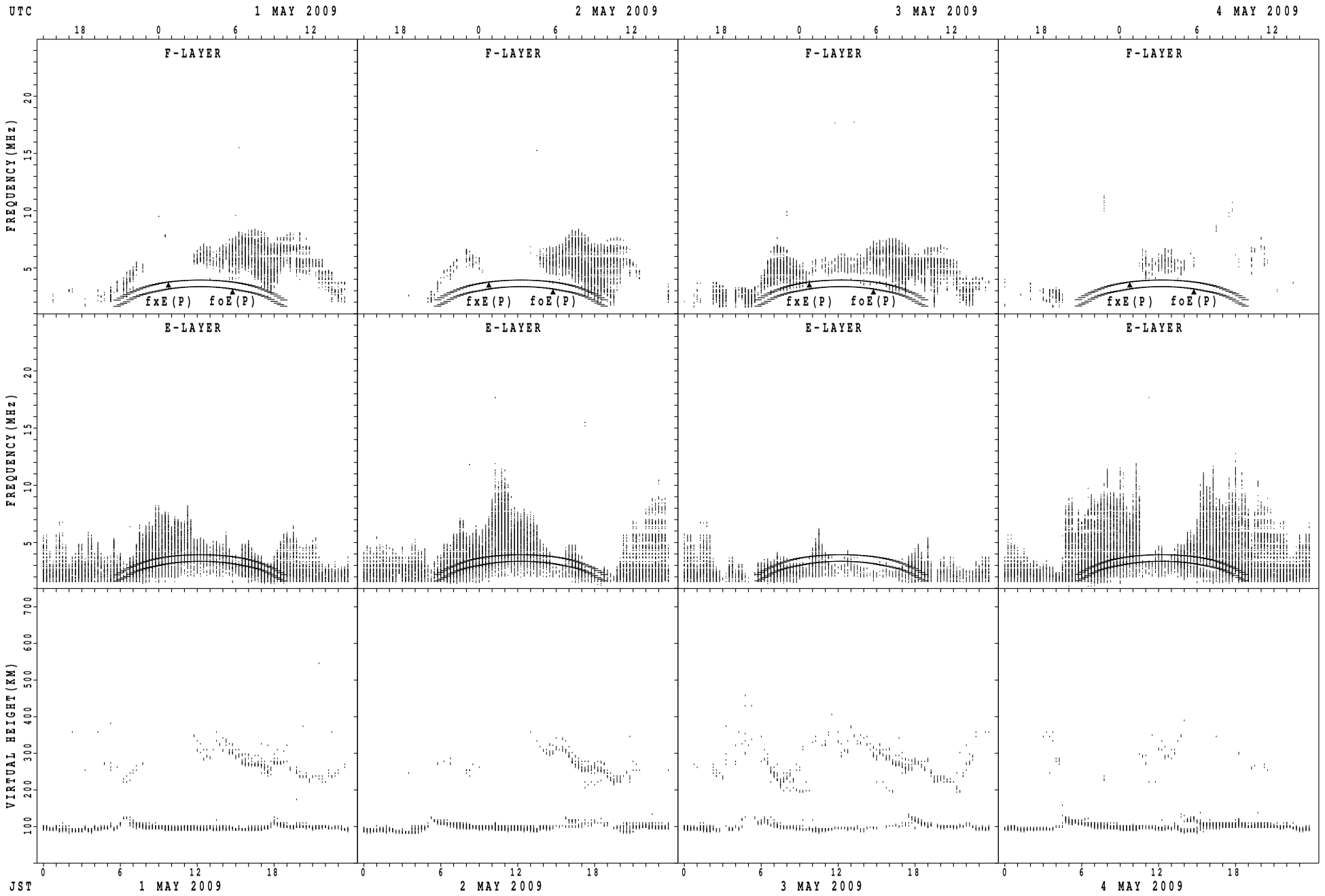
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



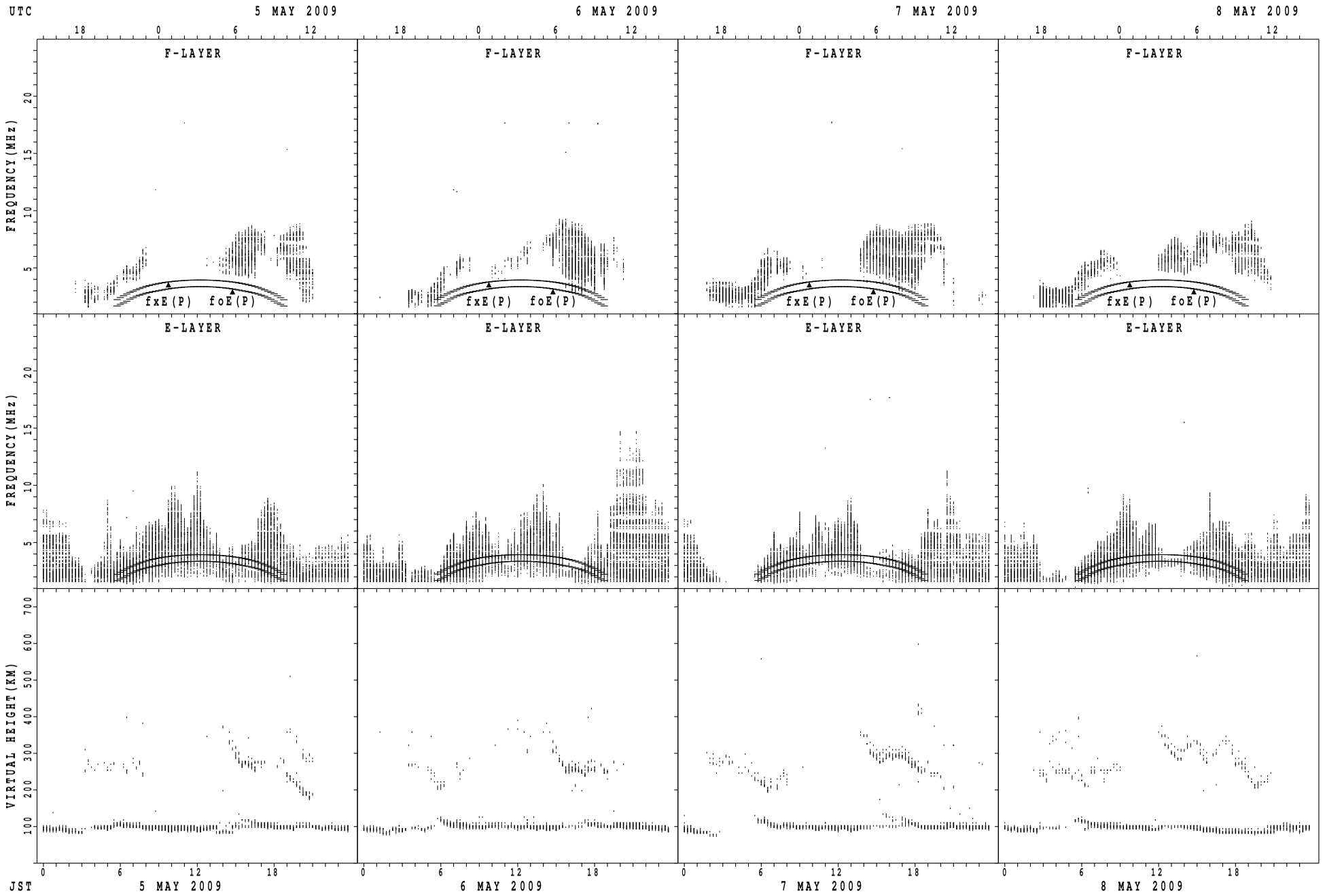
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



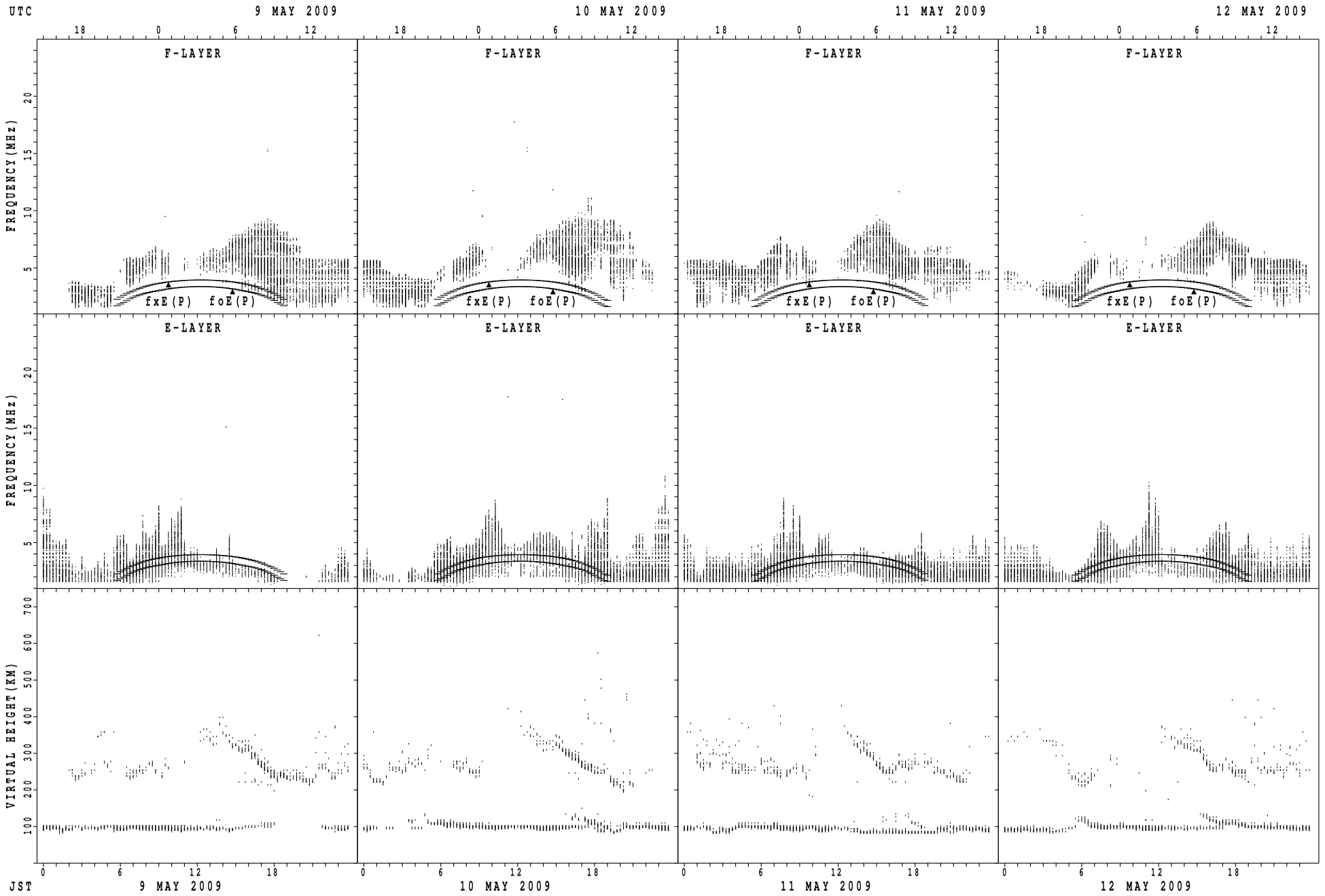
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



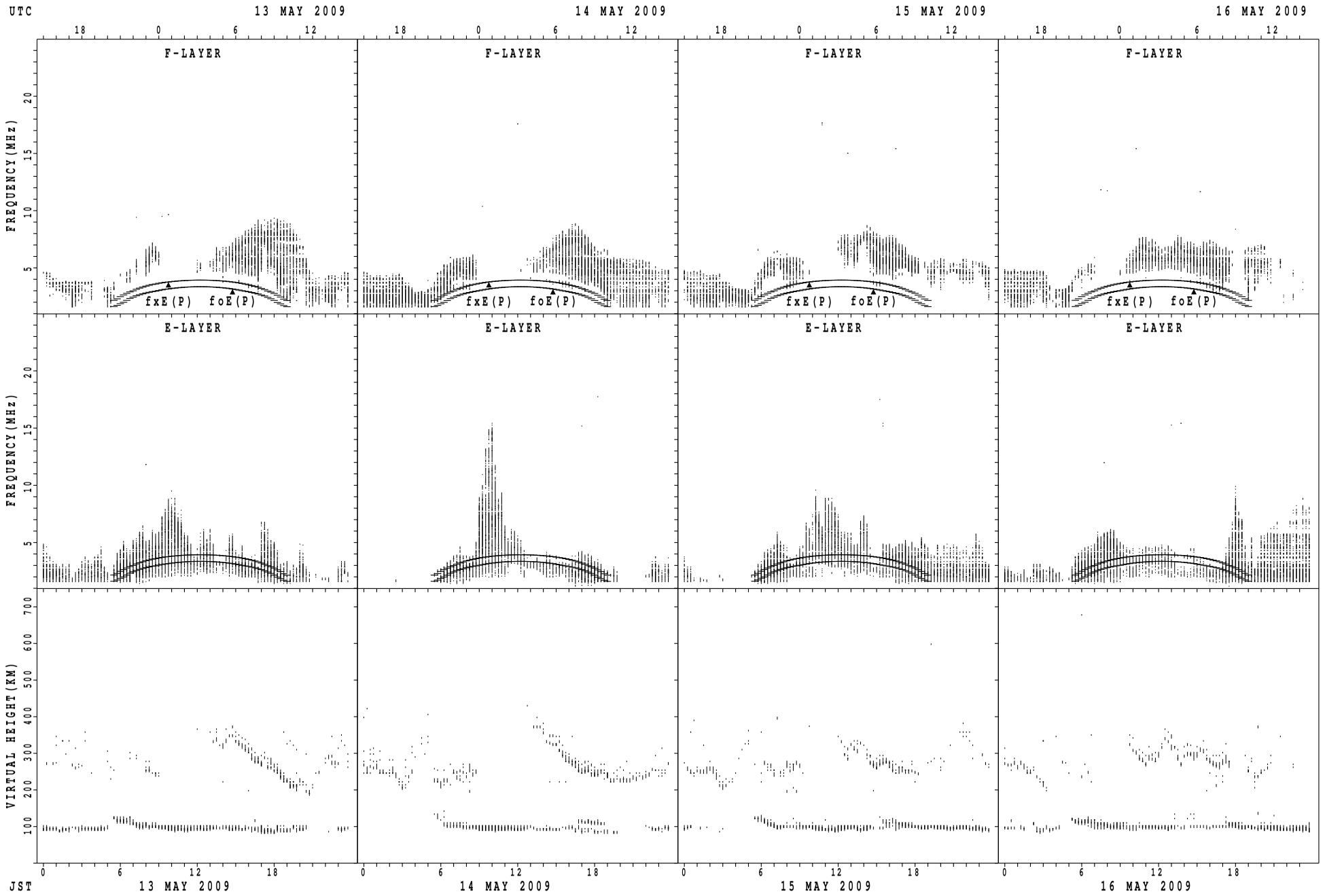
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



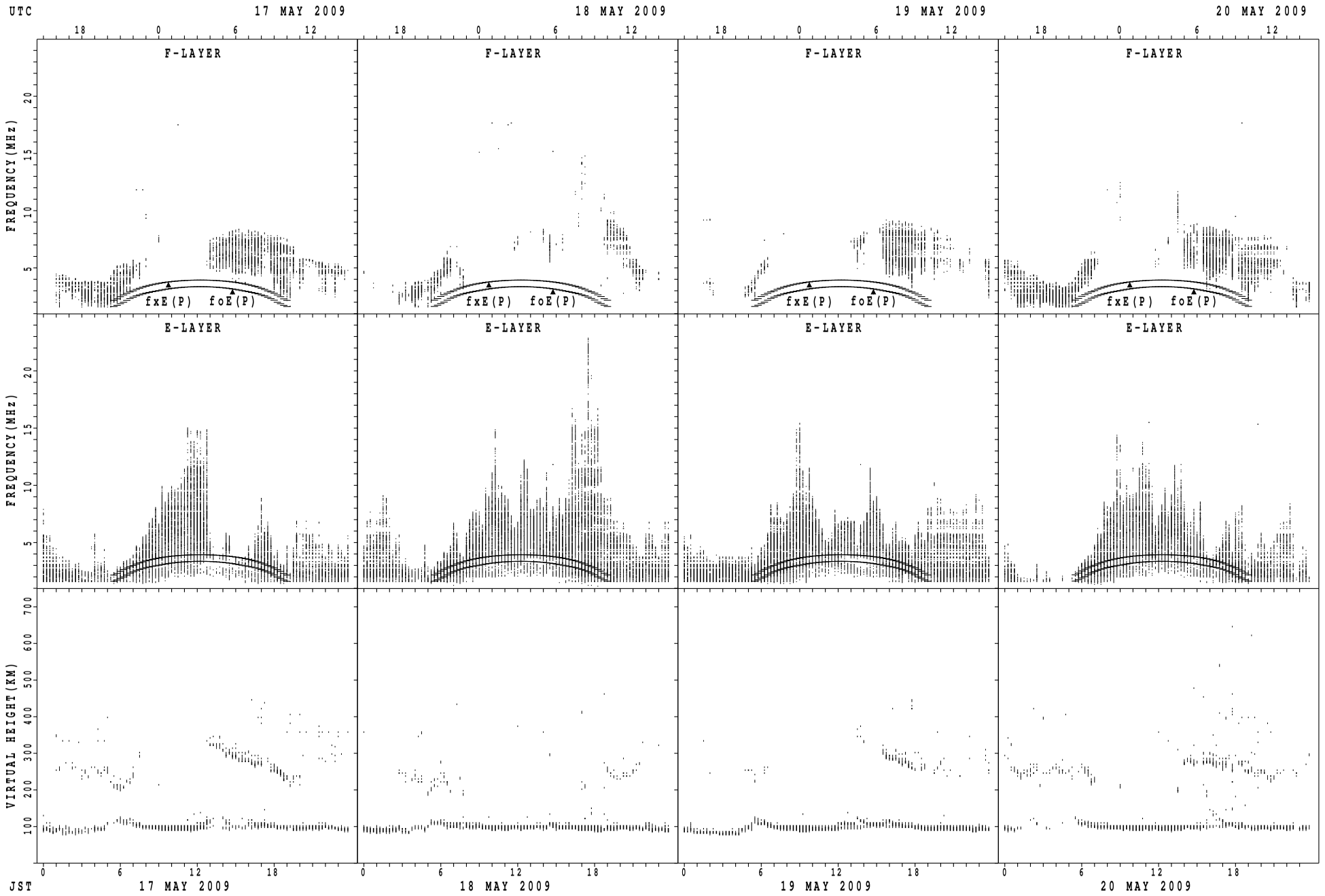
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



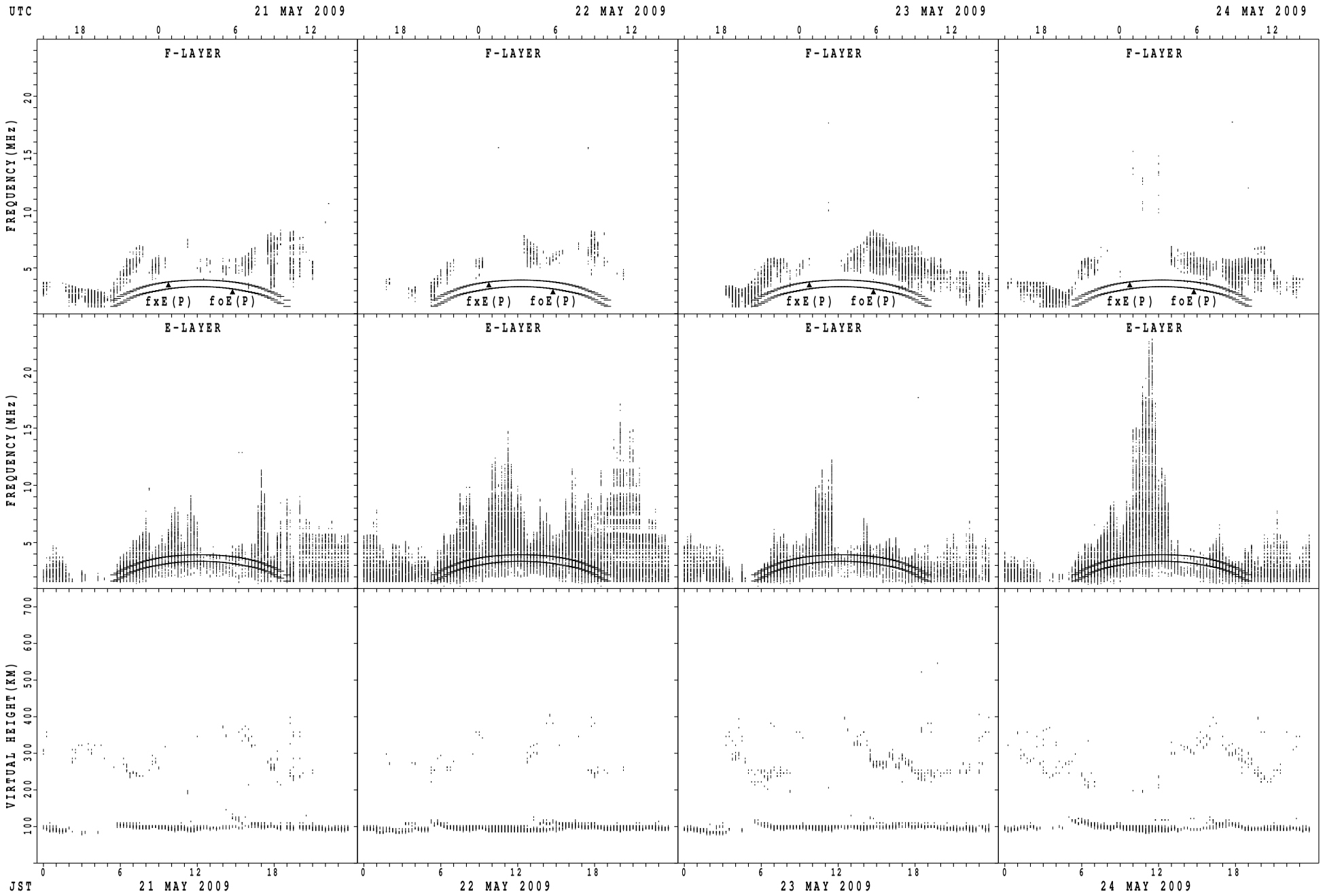
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



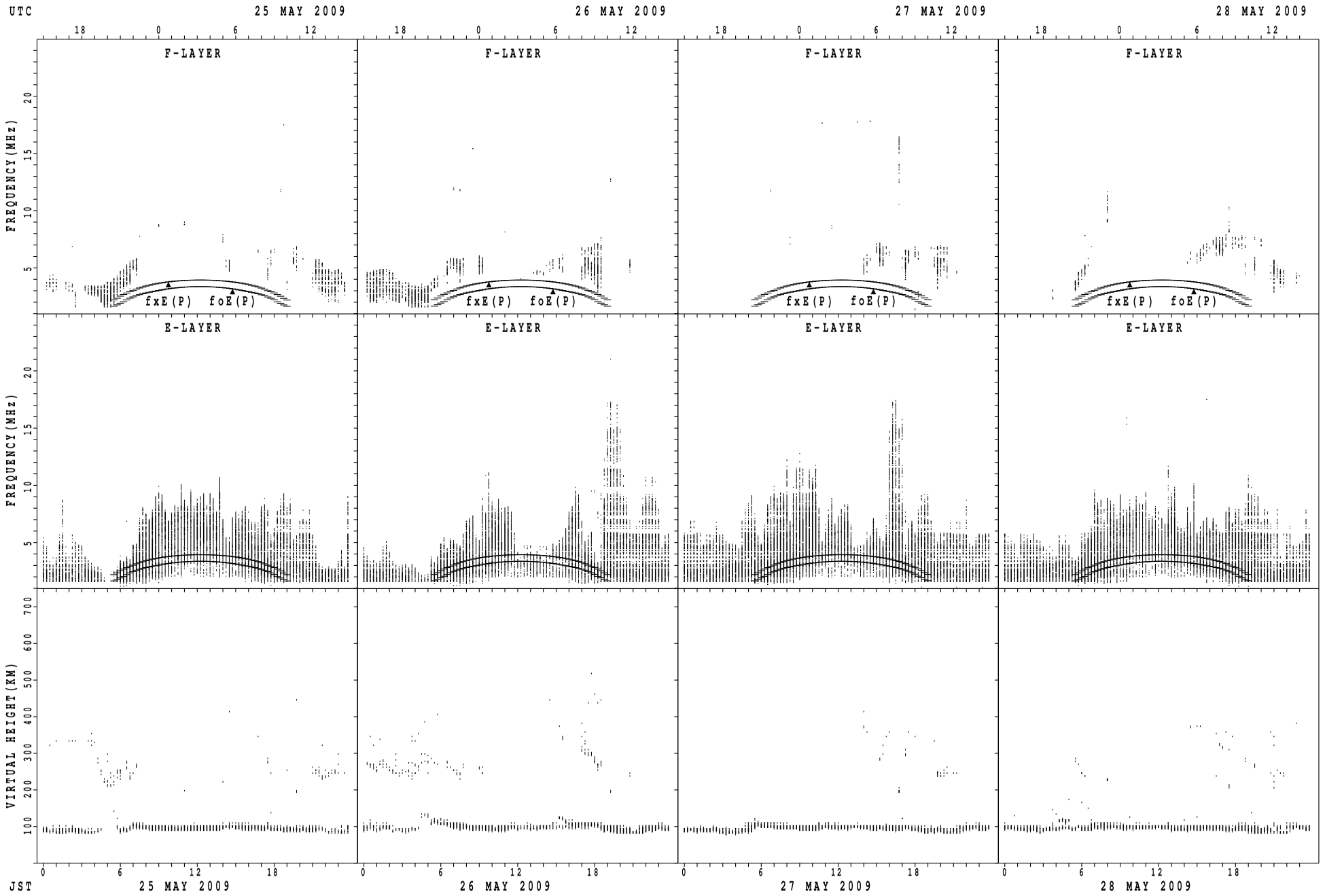
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



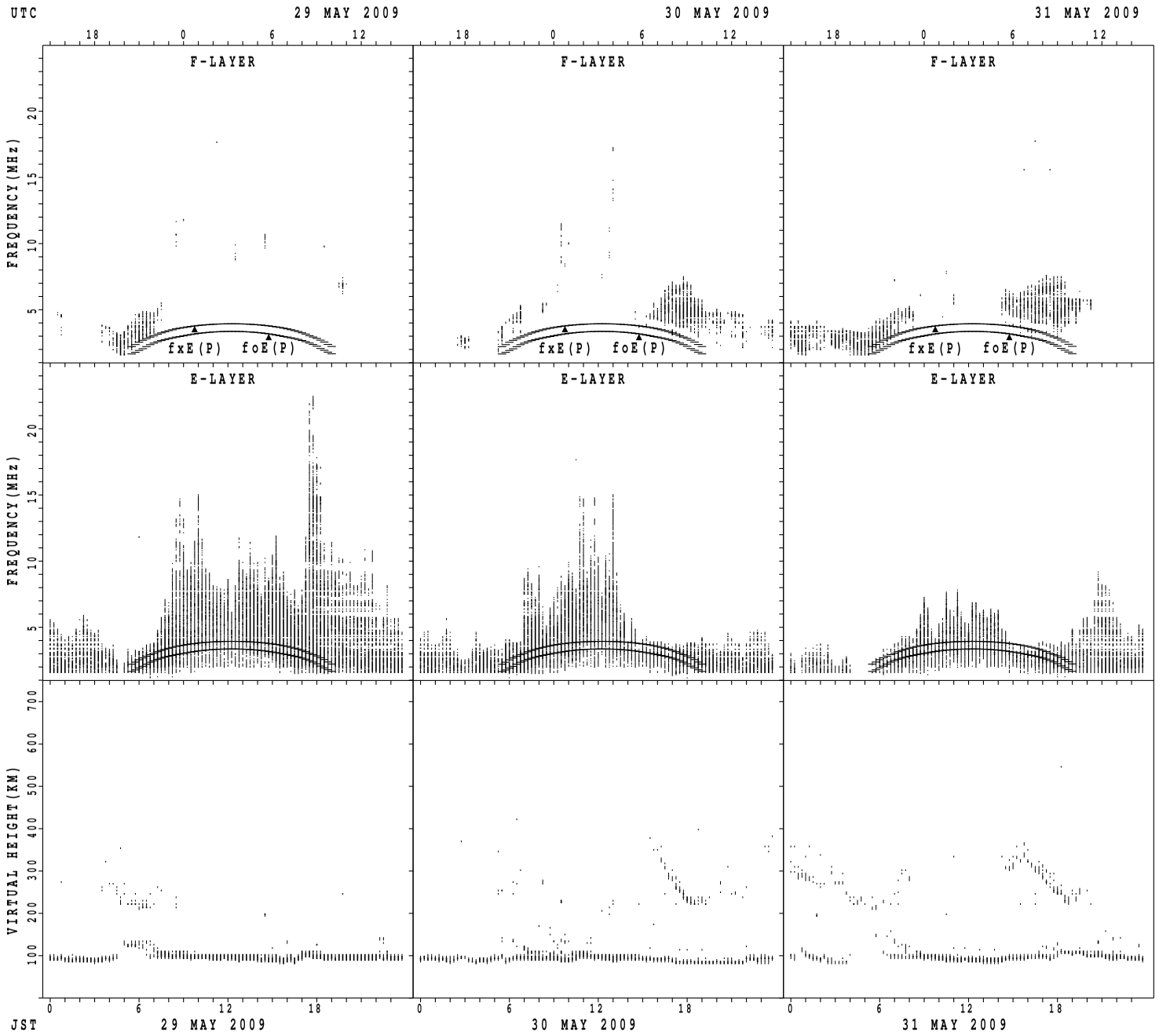
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



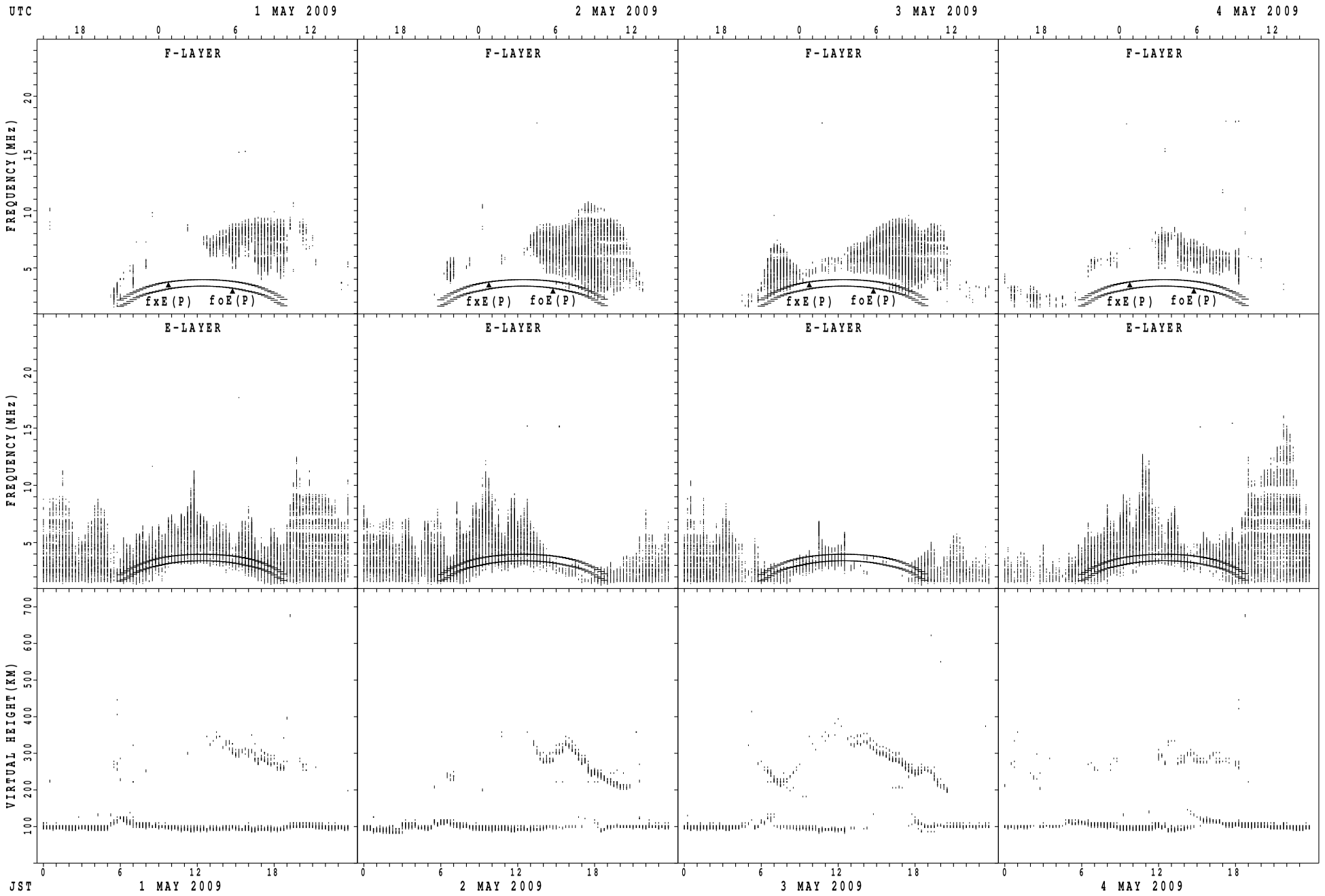
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



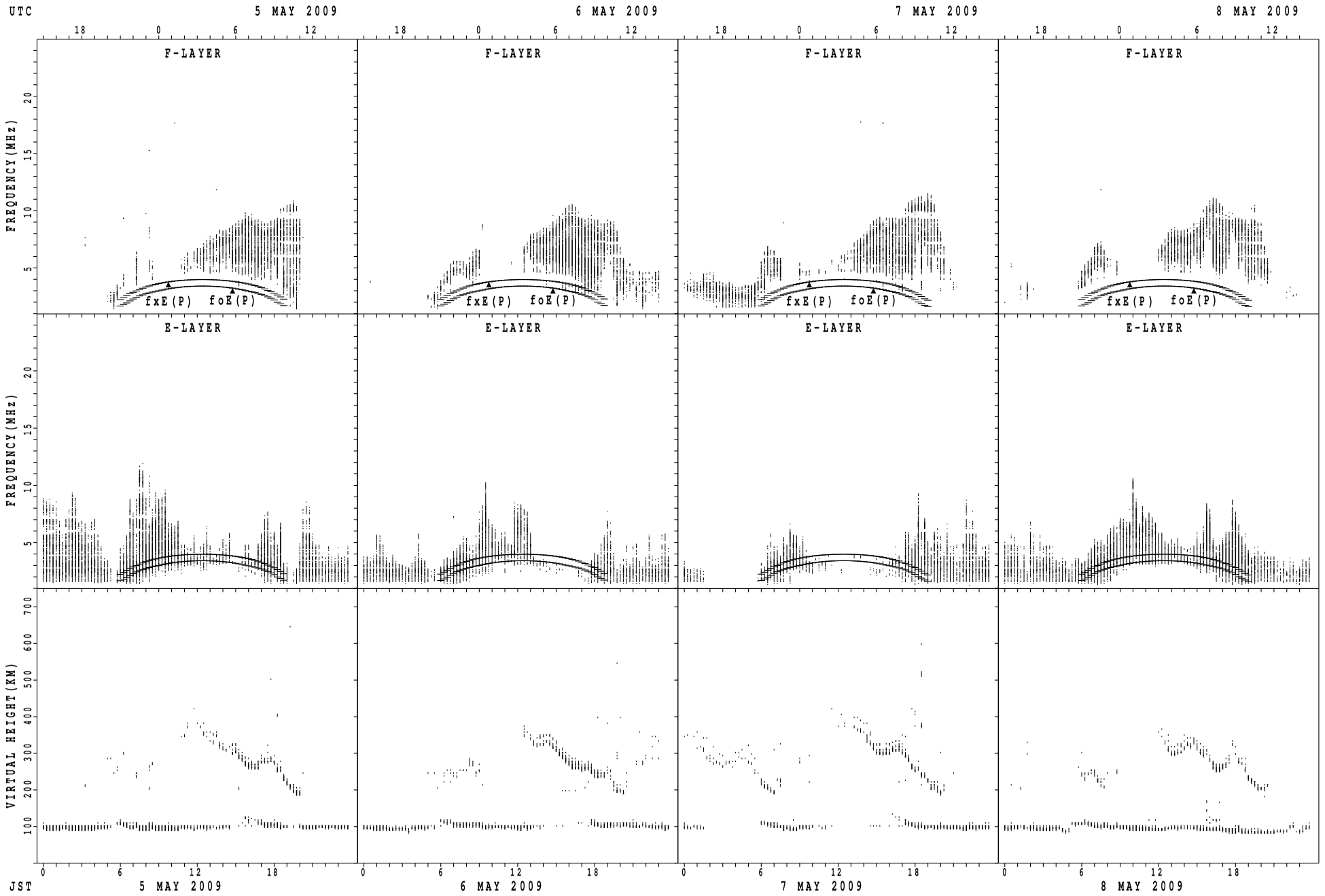
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



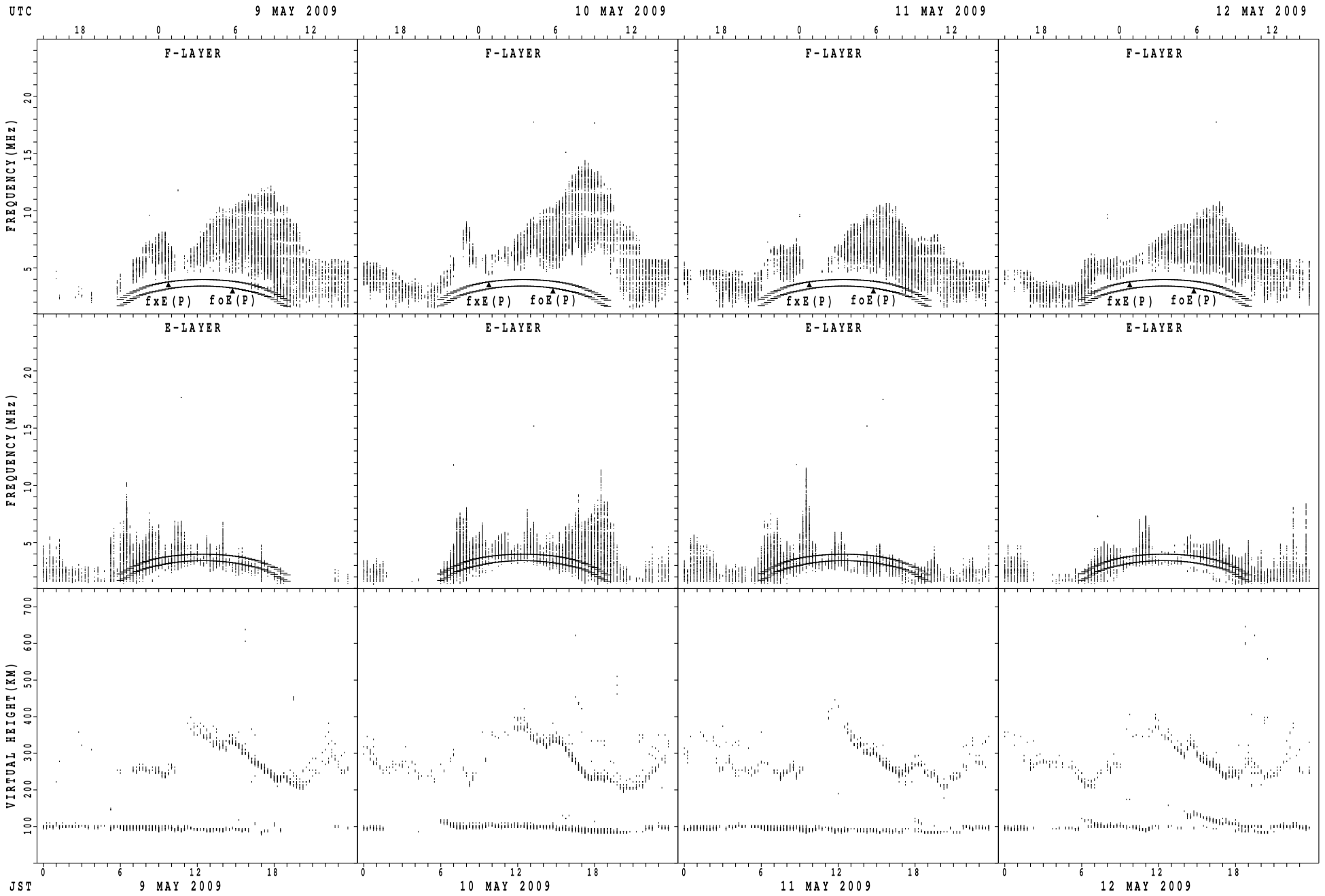
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



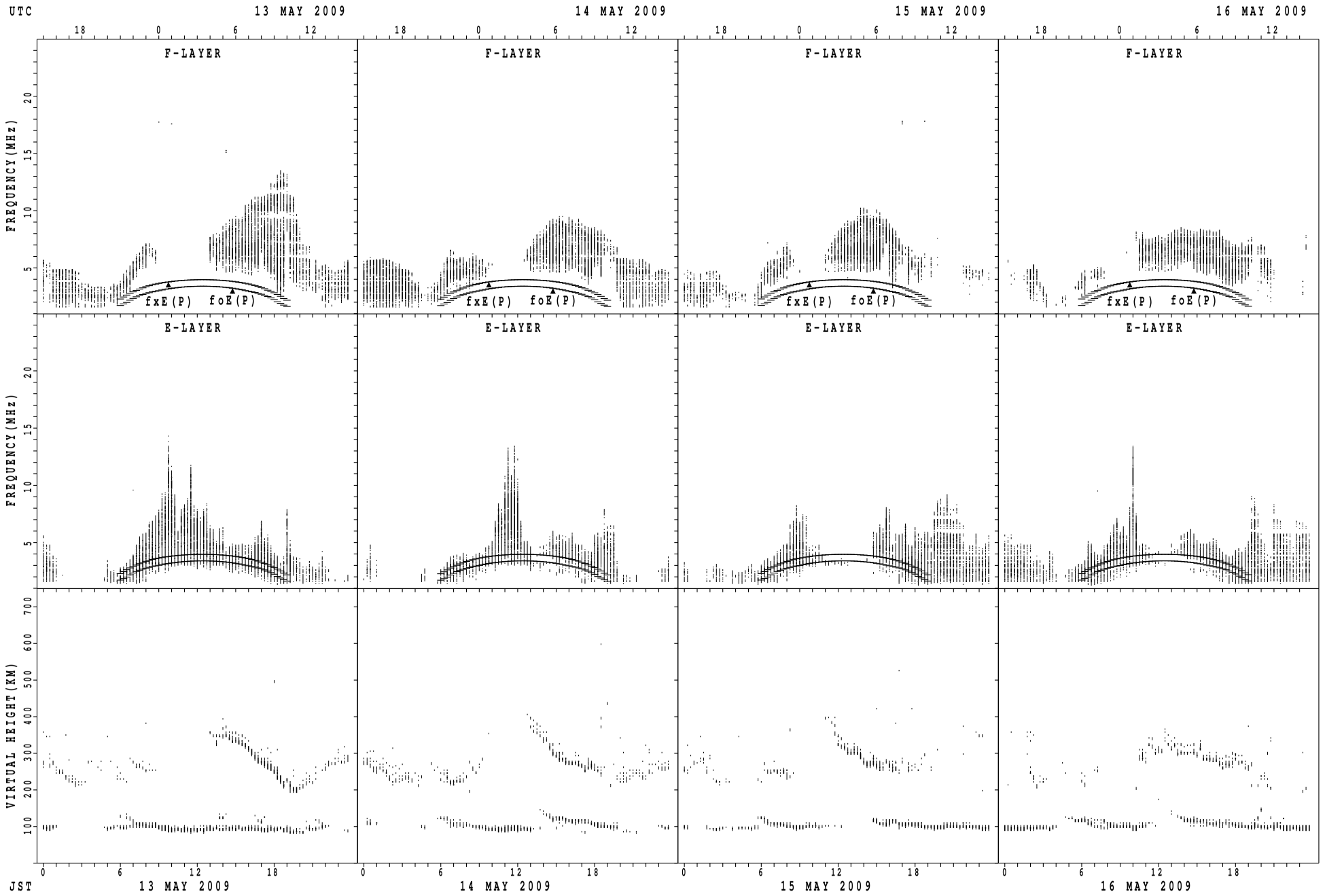
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



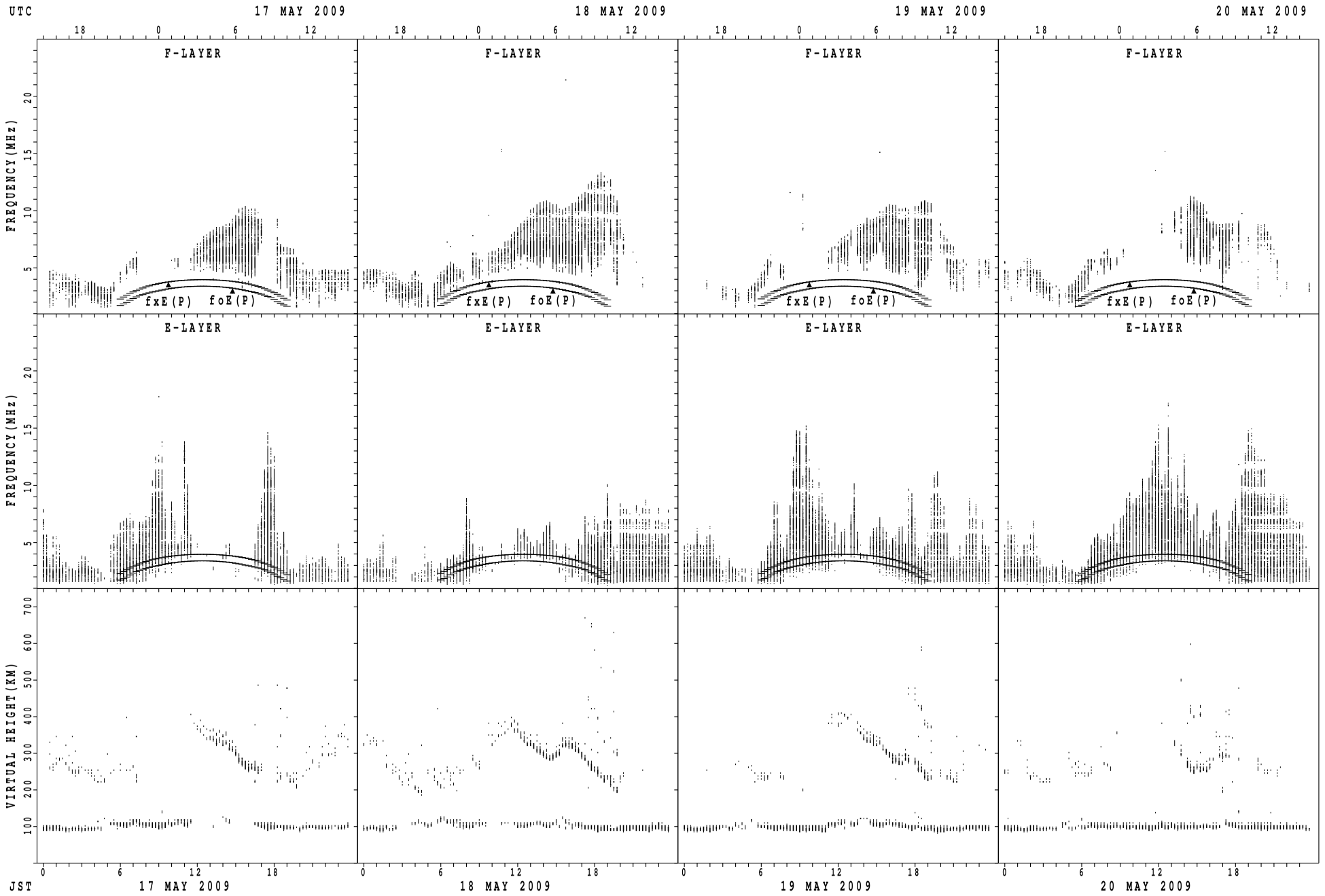
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



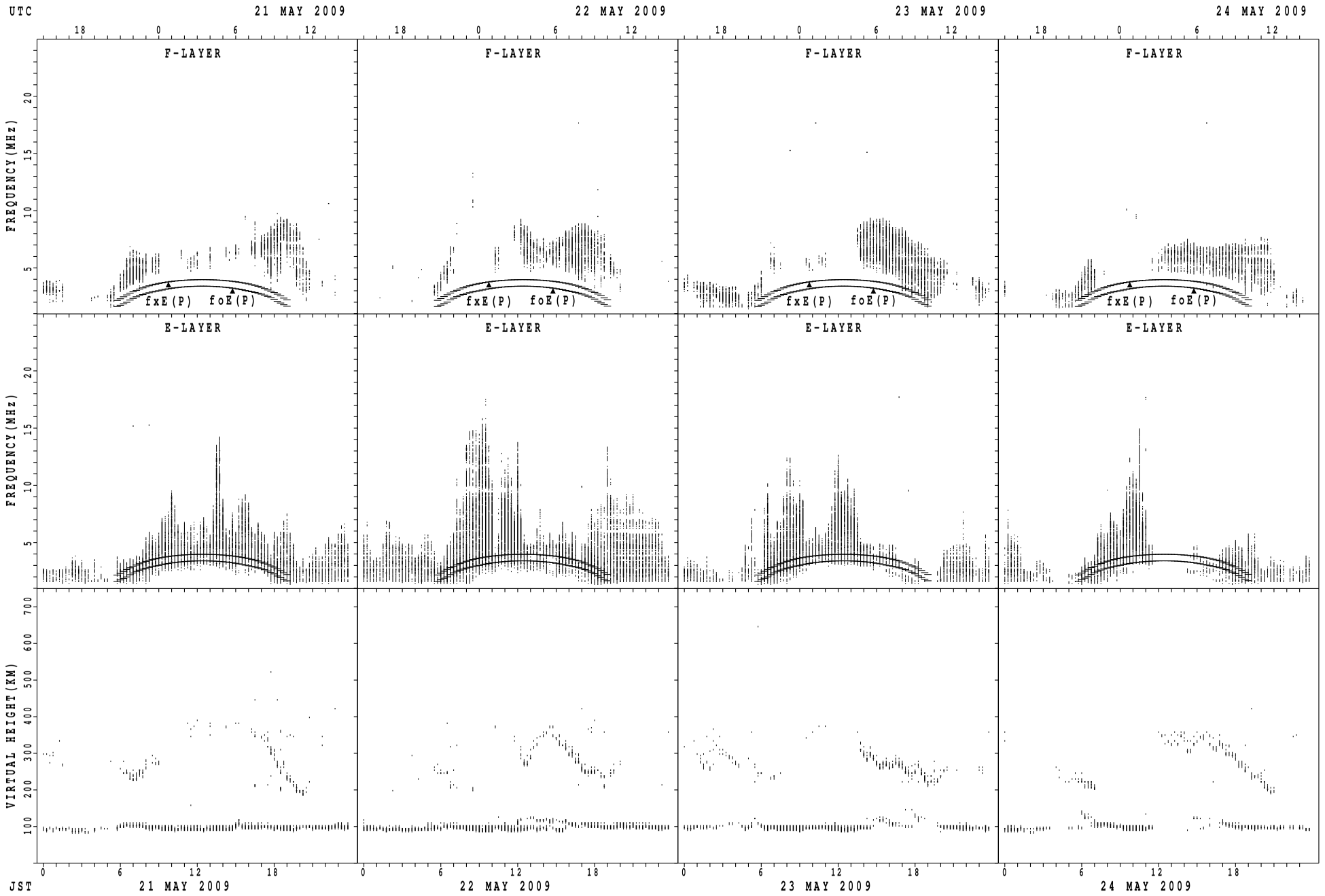
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



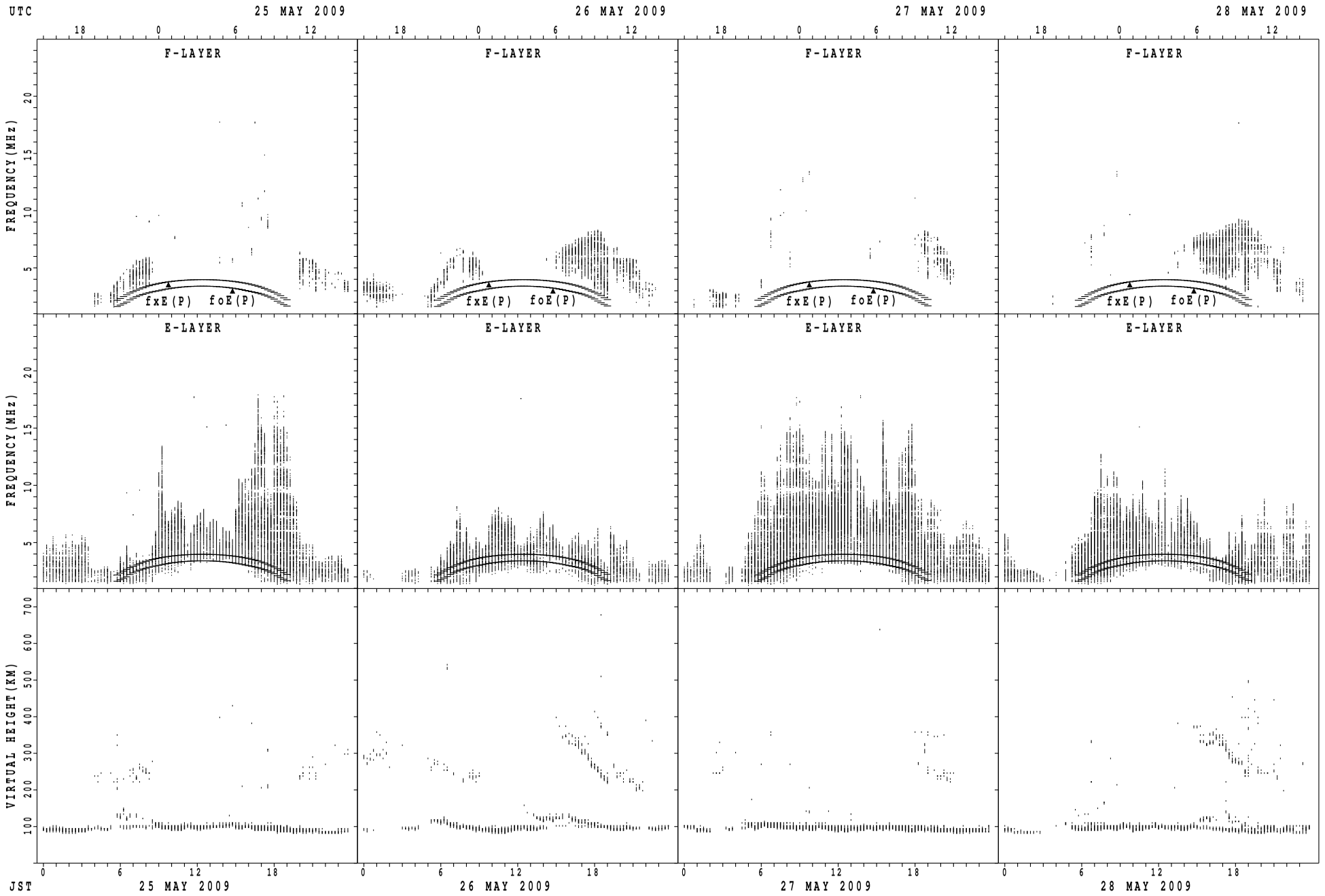
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



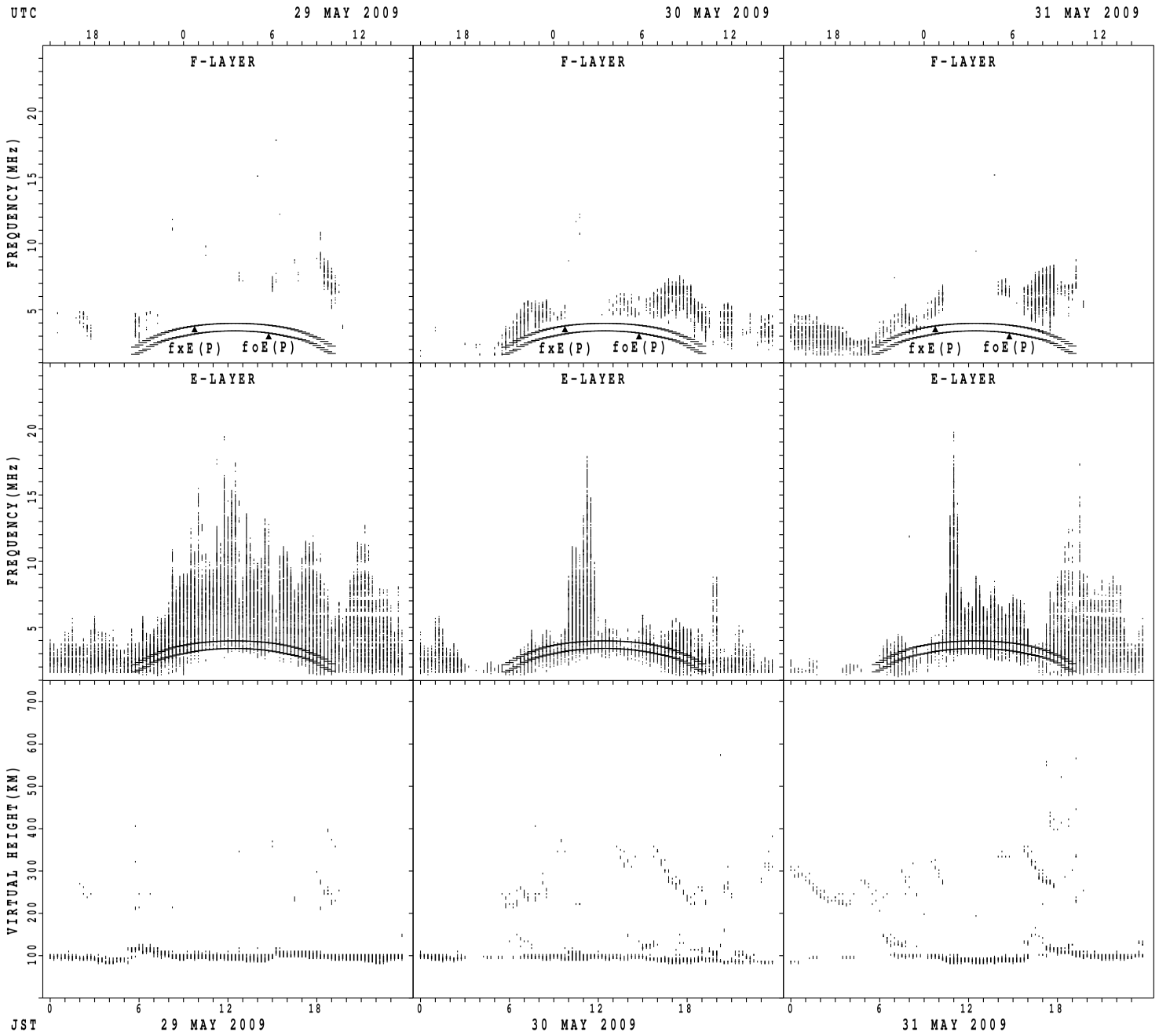
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

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

h′F STATION Wakkanai LAT. 45°10.0′N LON. 141°45.0′E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1										1	1	4	3	7	4	1	
MED							260										296	222	225	282	280	245	216	
U Q							130										148	111	279	304	334	250	108	
L Q							130										148	111	219	224	262	241	108	

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	19	17	17	15	25	31	31	25	27	27	23	21	23	18	22	25	29	28	27	27	23	26	23
MED	98	95	95	95	95	113	111	107	103	103	103	99	101	103	98	107	111	111	107	103	103	105	101	99
U Q	101	97	110	97	107	120	115	111	106	107	105	103	103	171	109	113	116	113	110	109	111	109	105	105
L Q	95	91	91	90	91	107	107	105	103	101	99	97	97	97	95	99	101	105	103	103	103	101	97	97

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							2	3									10	9	12	8	10	1		
MED							236	248									277	256	261	253	253	266		
U Q							240	276									298	311	276	273	266	133		
L Q							232	240									236	230	215	239	248	133		

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	29	27	27	28	26	27	29	30	31	29	27	26	24	25	21	28	27	30	29	26	29	27	30	29
MED	97	95	93	95	96	111	109	103	101	101	99	99	97	99	103	112	105	103	103	99	99	103	101	99
U Q	98	97	97	99	107	123	112	109	103	103	101	103	102	106	116	120	111	111	106	101	105	105	103	101
L Q	94	93	91	89	89	99	105	101	97	99	95	95	95	95	95	97	101	101	97	95	95	97	97	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	6									18	18	10	9	1		
MED								261	256									268	268	254	242	240		
U Q								272	280									282	282	292	265	120		
L Q								256	250									264	256	246	239	120		

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	28	23	22	23	19	31	30	31	30	30	29	29	26	22	21	23	28	29	27	28	28	29	30
MED	97	95	93	90	95	103	111	106	103	101	97	95	97	99	100	101	111	107	103	101	99	100	99	97
U Q	99	97	95	93	97	111	117	107	105	103	101	100	101	103	105	109	119	111	109	103	104	104	105	101
L Q	95	93	89	89	91	95	105	103	99	99	95	95	95	95	95	95	97	100	98	95	95	98	97	95

MONTHLY MEDIANS OF h′F AND h′Es

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

h′F

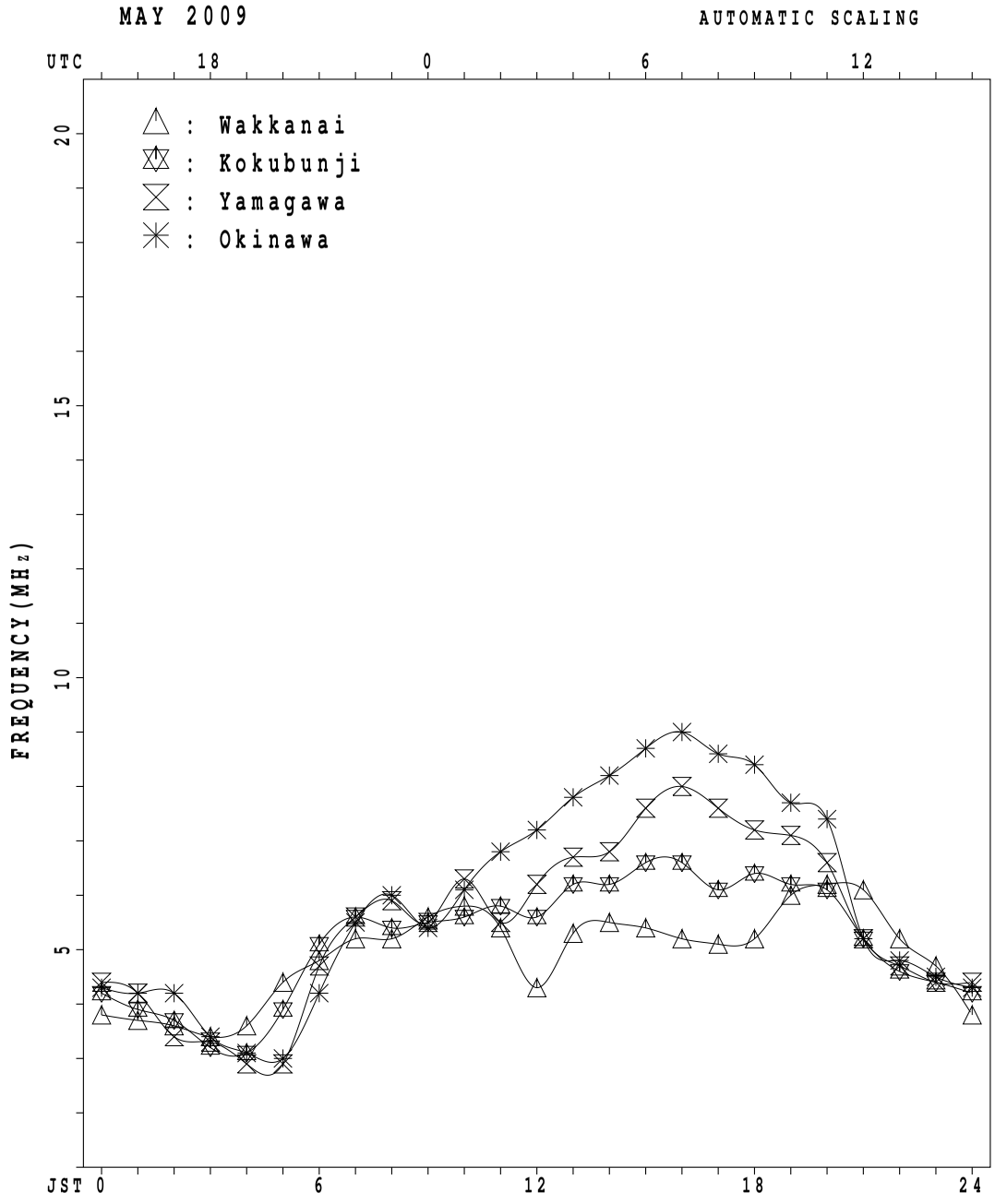
STATION Okinawa LAT. 26°41.0′N LON. 128°09.0′E

	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								7	8									26	24	17	17			
MED								242	256									278	257	234	224			
U Q								256	270									298	284	267	242			
L Q								230	238									262	247	229	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	28	27	22	19	19	18	28	30	28	30	29	26	24	26	26	24	24	24	30	28	29	27	27	28
MED	98	97	96	97	97	101	113	108	103	99	97	99	97	97	101	105	112	107	105	100	99	99	101	99
U Q	103	99	101	101	105	105	119	113	104	103	101	103	103	109	119	120	119	111	107	103	105	103	103	101
L Q	96	95	93	95	95	97	105	103	99	97	95	95	95	95	97	97	103	97	99	97	94	95	97	97

MONTHLY MEDIANS PLOT OF foF2



IONOSPHERIC DATA STATION Kokubunji

MAY 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	42	44	X 42	40	X 35															X 68	X 66	X 55	A	X 44
2	X 42	X 40	X 37	A	X 40															X 68	X 69	X 56	A	A
3	X 43	42	X 43	38	37															X 68	X 69	X 63	56	61
4	55	51	49	X 35	A															A	X 74	X 48	X 39	X 40
5	41	X 39	38	37	A															A	A	A	A	X 34
6	A	A	X 30	X 32	X 31															X 67	X 70	X 53	51	51
7	A	A	A	X 40	X 36															X 84	X 74	X 46	A	A
8	A	X 38	X 39	40	39	X 48														X 100	X 69	X 48	X 46	X 42
9	X 42	X 40	X 42	X 38	X 37															X 72	X 72	X 70	73	73
10	X 58	X 45	X 37	A	X 35															X 88	X 86	X 69	X 56	X 46
11	X 42	42	A	43	44															X 67	X 68	X 69	X 67	X 46
12	A	43	40	44	46															X 65	X 55	54	56	55
13	52	X 45	X 40	44	X 42															X 78	X 74	X 54	X 43	46
14	A	X 41	41	X 39	X 32															X 68	X 67	X 62	X 55	X 53
15	X 50	X 50	X 47	X 45	X 35															X 56	X 60	X 56	X 54	X 52
16	X 50	49	49	X 44	46															X 72	X 67	X 56	59	X 52
17	51	X 45	46	45	43					A										X 80	X 73	X 54	X 44	A
18	A	A	A	A	X 37															X 92	X 77	67	X 52	X 46
19	X 43	X 40	44	X 36	X 35															X 91	X 94	X 74	X 66	66
20	A	53	X 47	48	X 40															X 75	X 71	X 66	X 54	52
21	50	51	44	X 38	X 37															X 75	X 77	X 64	X 57	A
22	47	48	46	40	X 34															X 85	X 66	X 61	A	A
23	A	A	A	X 36	X 34															X 68	X 57	A	53	47
24	A	A	A	44	X 39															X 64	X 66	X 63	54	50
25	A	A	A	A	X 31															X 65	X 66	X 62	X 56	53
26	56	49	X 48	43	46															X 76	X 86	X 68	A	A
27	A	A	X 29	37	38															X 64	72	X 69	A	A
28	A	49	A	47	X 40															X 65	X 72	X 59	X 39	A
29	52	50	51	A	X 39															X 79	77	A	A	A
30	A	A	A	40	X 36															X 55	X 54	X 43	X 40	X 40
31	X 39	43	X 35	X 33	X 34															A	X 66	X 51	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	23	23	26	29	1														28	30	28	22	21
MED	48	45	X 42	40	X 37	X 48														X 70	X 70	X 60	X 54	X 50
U Q	52	49	47	44	40															X 80	X 74	X 66	X 56	53
L Q	X 42	X 41	X 38	X 37	X 35															X 66	X 66	X 54	X 46	X 45

IONOSPHERIC DATA STATION Kokubunji

MAY 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	F	F	36	F	29	32	45	47	48	52	50	52	52	61	64	71	74	61	56	62	60	49	A	38
2	36	34	31	A	34	34	44	A	A	A	A	A	58	57	60	69	70	57	52	62	63	50	A	A
3	37	F	37	F	F	30	51	62	56	53	54	A	58	60	58	65	66	56	54	62	62	56	F	F
4	F	F	F	29	A	A	A	A	64	63	55	54	55	54	50	55	58	52	A	A	68	42	33	34
5	F	33	F	F	A	38	54	A	A	A	A	A	A	61	58	A	A	A	A	A	A	A	A	27
6	A	A	24	26	25	34	57	55	A	51	50	50	55	A	74	86	A	A	A	61	64	47	F	F
7	A	A	A	34	30	39	48	58	A	A	47	50	56	61	77	77	73	68	A	78	68	40	A	A
8	A	32	33	F	F	42	45	A	A	53	48	A	A	A	A	74	68	66	76	94	62	42	40	36
9	35	33	36	32	30	39	60	63	A	A	55	59	57	56	56	61	64	68	70	65	66	64	F	F
10	52	39	30	A	28	34	49	50	55	53	54	50	49	52	60	66	62	73	83	82	80	63	50	40
11	36	F	A	F	F	A	61	56	54	55	58	A	52	56	67	80	64	56	53	61	62	63	60	40
12	A	F	F	F	F	39	A	54	A	A	54	A	A	54	54	58	68	76	65	59	49	F	F	F
13	F	39	34	F	36	36	43	A	A	A	A	A	A	59	65	68	64	64	65	72	68	48	37	F
14	A	35	F	33	26	36	A	A	A	A	56	54	54	56	57	65	72	72	64	62	61	55	49	47
15	44	44	41	38	29	34	47	64	61	56	55	59	66	66	66	67	A	A	A	50	54	49	48	46
16	44	F	F	38	F	41	A	A	A	A	A	66	A	A	58	61	A	A	A	66	61	50	F	46
17	F	39	F	F	F	41	53	A	52	A	A	A	62	A	A	70	59	61	68	74	67	48	38	A
18	A	A	A	A	31	40	A	A	A	A	A	56	60	A	62	A	A	A	74	86	71	F	46	40
19	36	34	F	30	29	37	50	62	A	A	48	A	A	62	62	A	71	73	A	85	88	68	60	F
20	A	F	41	F	34	50	A	A	A	A	50	56	59	60	62	64	70	75	72	69	66	60	48	F
21	F	F	F	32	31	34	52	68	A	A	A	A	A	A	49	52	A	67	66	69	71	58	51	A
22	F	F	F	F	28	38	47	A	A	58	57	53	57	63	60	A	A	A	A	79	60	55	A	A
23	A	A	A	30	27	36	50	54	A	A	A	A	52	A	58	64	58	55	A	62	51	A	F	F
24	A	A	A	F	33	41	46	A	A	A	A	56	58	65	62	56	50	A	50	58	60	57	F	F
25	A	A	A	A	25	35	47	62	A	A	A	A	A	A	58	57	50	56	58	59	60	56	50	F
26	F	F	42	F	F	35	50	52	57	62	A	A	A	49	48	A	A	57	59	70	80	62	A	A
27	A	A	23	F	F	36	44	48	A	56	57	A	A	A	A	59	64	54	53	58	F	63	A	A
28	A	F	A	F	34	36	49	50	59	A	A	A	A	50	A	54	54	52	54	59	66	53	33	A
29	F	F	F	A	33	A	44	48	A	A	A	A	54	56	A	A	54	A	A	73	F	A	A	A
30	A	A	A	F	30	A	40	A	A	A	A	A	A	A	A	A	A	A	62	49	48	36	33	34
31	33	F	29	27	28	39	48	48	49	A	A	A	58	51	52	56	A	A	A	A	60	45	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	10	13	11	21	27	25	18	10	11	16	13	19	21	25	24	21	21	20	28	28	26	15	11
MED	36	34	34	32	30	36	48	54	56	55	54	54	57	57	60	64	64	61	63	64	62	54	48	40
U Q	44	39	39	34	33	39	52	62	59	58	56	58	58	61	63	70	70	70	69	74	68	60	50	46
L Q	36	33	30	29	28	34	45	50	52	53	50	51	54	54	56	58	58	56	54	60	60	48	37	34

IONOSPHERIC DATA STATION Kokubunji

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

LAT.35°43.0'N LON.139°29.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	L	A	A	A	U L 436	U L 428	432	424	U L 420	396	L						
2								A	A	A	A	A	A	428	A	A	A	A	L					
3							A	376	A	A	A	A	436	440	420	416	U L 388	L	L					
4						A	A	A	A	A	U L 452	440	A	A	U L 424	A	A	A	A					
5								A	A	A	A	A	A	U L 436	A	A	A	A	A					
6							A	A	A	A	U L 432	U L 432	432	A	A	A	A	A	A					
7							A	A	A	A	A	432	U L 440	U L 440	A	A	A	A	A					
8								A	A	A	A	A	A	A	A	A	A	A	A					
9								A	A	A	U L 432	448	452	436	428	A	404	U L 364	A					
10							L	L	A	A	A	U L 436	440	432	436	U L 416	A	A	A					
11						A	L	L	A	A	440	A	A	A	U L 428	412	U L 400	L	L					
12							A	A	A	A	A	A	A	U L 436	A	A	A	A	L					
13								A	A	A	A	A	A	A	424	A	A	360						
14							A	A	A	A	A	A	444	U L 452	U L 444	428	404	U L 372	L					
15							U L 396	U L 396	A	432	U L 452	456	448	U L 452	A	A	A	A	A					
16							A	A	A	A	A	U L 448	A	A	A	A	A	A	A					
17							A	A	A		A	A	A	A	A	A	A	A	A					
18							A	A	A	A	A	A	A	A	A	A	A	A	A					
19							L	A	A	A	A	A	A	A	A	A	A	A	A					
20							A	A	A	A	U L 436	452	U L 452	A	440	A	A	A	A					
21						U L 300	A	A	A	A	A	A	A	A	A	A	A	A	A					
22							A	A	A	424	U L 436	U L 448	U L 448	A	A	A	A	A	A					
23							A	A	A	A	A	A	444	A	A	A	A	364	A					
24							352	A	A	A	A	A	A	A	A	420	A	A	A					
25							A	A	A	A	A	A	A	A	A	A	A	364	A					
26							A	A	A	A	A	A	A	U L 432	U L 408	A	A	A	A					
27							A	A	A	A	A	A	A	A	A	A	400	A	A					
28							A	A	A	A	A	A	A	A	A	A	A	A	A					
29						A		A	A	A	A	A	A	A	A	A	388	A	A					
30						A	A	A	A	A	A	A	A	A	A	A	A	A	L					
31							L	U L 396	A	A	A	A	U L 440	U L 424	436	424	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	2	3		2	7	10	12	12	11	7	7	5						
MED						U L 300	374	U L 396		428	U L 436	444	442	U L 436	428	420	400	364						
U Q								U L 396			U L 452	448	448	U L 440	436	424	404	U L 368						
L Q								376			U L 432	U L 436	438	432	424	416	388	362						

MAY 2009 foF1 (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

MAY 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	256	A	A	A	A	A	R	R	A	R	A	A	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
3						B	U A 204	A	A	A	A	A	A	A	R	312	280	224	B					
4						B	A	A	A	A	A	R	364	340	A	A	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
6						B	U A 232	A	A	A	A	A	356	A	A	A	A	A	B					
7						B	U A 248	A	A	A	A	A	A	A	328	A	A	A	B					
8							A	A	A	A	A	A	A	A	A	A	A	A	B					
9						B	A	A	A	A	A	A	R	R	320	A	R	A	B					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
11						B	A	A	A	A	384	A	A	A	A	A	A	A	B					
12						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
13						B	A	A	A	A	A	A	A	A	U A 336	A	A	A	B					
14						B	A	A	A	A	A	A	A	368	A	312	A	A	A					
15						B	U A 228	A	A	A	A	A	U A 356	A	A	A	A	A	B					
16						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
17						B	A	A	A		A	A	A	A	A	A	A	A	B					
18						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
19						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
20						B	A	A	A	A	A	R	A	A	A	A	A	A	B					
21						B	A	A	A	A	A	A	A	A	352	A	A	A	B					
22						B	A	A	A	A	A	R	A	A	A	A	A	A	A					
23						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
24						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
25						U A 176	U A 236	A	A	A	A	A	A	A	A	A	A	A	A					
26						B	A	A	A	A	A	A	A	A	R	A	A	A	B					
27						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
28						B	U A 244	A	A	A	A	A	A	A	A	A	A	A	B					
29						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
30						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
31						B	A	308	A	A	A	A	A	A	336	A	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	7	1			1		3	2	5	2	1	1						
MED						U A 176	U A 236	308			384		356	354	336	312	280	224						
U Q							248						364		344									
L Q							U A 228						356		324									

MAY 2009 foE (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

MAY 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 57	J A 30	J A 36	J A 22	20	J A 52	35	32	J A 45	J A 47	J A 50	J A 44	G 31	G 32	39	G 25	32	28	21	E B 14	J A 33	J A 24	J A 52	J A 32
2	J A 28	J A 33	J A 42	J A 54	J A 57	J A 51	J A 45	J A 66	J A 100	J A 132	J A 84	J A 102	J A 71	J A 49	J A 45	J A 45	46	J A 50	J A 200	J A 84	J A 66	J A 42	J A 56	J A 78
3	J A 76	J A 42	E B 15	J A 21	J A 25	19	J A 35	33	J A 44	J A 51	J A 63	J A 74	J A 146	J A 41	G 27	40	36	32	27	J A 28	J A 22	J A 20	J A 56	J A 38
4	20	19	22	J A 43	J A 67	J A 58	J A 82	J A 73	J A 51	J A 44	40	G 32	44	43	40	J A 51	J A 58	J A 59	J A 95	J A 88	J A 74	J A 30	J A 26	21
5	J A 28	20	E B 15	J A 26	J A 58	J A 28	J A 52	J A 103	J A 95	J A 126	J A 150	J A 150	J A 117	J A 42	J A 77	J A 84	J A 84	J A 118	J A 134	J A 130	J A 123	J A 90	J A 52	J A 29
6	J A 70	J A 74	J A 59	J A 28	J A 24	26	31	J A 40	J A 59	J A 50	37	40	40	J A 79	J A 42	J A 77	J A 92	J A 121	J A 112	27	J A 56	28	49	J A 84
7	J A 63	J A 80	J A 60	J A 46	J A 28	J A 21	J A 39	J A 48	J A 66	J A 109	J A 59	J A 42	41	41	J A 61	J A 51	J A 47	J A 100	J A 141	J A 80	J A 66	J A 65	J A 86	J A 98
8	J A 41	J A 43	J A 45	J A 32	E B 14	26	36	J A 68	J A 50	J A 50	J A 43	J A 59	J A 80	J A 77	J A 70	J A 76	J A 60	J A 59	J A 86	J A 67	J A 53	J A 63	J A 40	J A 34
9	J A 52	J A 43	J A 42	J A 39	J A 39	J A 42	J A 44	J A 41	J A 78	J A 102	J A 46	41	G 32	G 26	38	40	G 19	J A 38	J A 45	J A 58	J A 42	J A 28	J A 32	J A 26
10	20	J A 37	J A 33	J A 34	J A 75	19	29	J A 40	J A 59	J A 46	J A 48	J A 45	J A 46	37	36	J A 45	J A 55	J A 47	J A 38	38	J A 54	J A 51	J A 99	J A 54
11	J A 62	J A 84	J A 71	J A 68	J A 28	J A 60	J A 32	J A 46	J A 47	J A 60	J A 43	J A 48	J A 62	J A 50	38	38	33	31	22	J A 24	J A 27	J A 36	J A 40	J A 20
12	J A 59	J A 32	J A 37	J A 28	J A 20	J A 29	J A 62	J A 53	J A 88	J A 132	J A 86	J A 90	J A 152	J A 45	45	J A 49	J A 52	J A 48	21	J A 25	J A 43	J A 60	J A 41	J A 52
13	J A 33	J A 44	J A 41	J A 47	J A 46	J A 24	J A 33	J A 76	J A 64	J A 132	J A 138	J A 132	J A 84	J A 59	37	J A 57	J A 46	J A 34	39	J A 21	J A 30	28	J A 40	J A 35
14	J A 47	J A 64	J A 21	J A 23	J A 29	J A 40	54	J A 72	J A 61	J A 78	J A 53	J A 51	37	40	36	35	34	31	24	E B 20	J A 22	19	J A 31	J A 27
15	J A 27	J A 20	E B 15	E B 14	E B 16	22	32	34	J A 66	38	36	38	42	44	J A 53	J A 57	J A 122	J A 123	J A 94	J A 86	J A 26	J A 39	J A 23	J A 26
16	J A 27	J A 36	J A 29	J A 37	J A 34	24	J A 51	J A 64	J A 77	J A 138	J A 174	J A 82	J A 100	J A 106	J A 61	J A 67	J A 76	J A 78	J A 73	J A 68	J A 96	J A 66	J A 51	J A 48
17	J A 40	J A 39	J A 29	J A 29	J A 30	J A 32	J A 39	J A 64	J A 48	J A 74	J A 62	J A 60	J A 64	J A 100	J A 80	J A 94	J A 62	J A 64	J A 50	J A 62	J A 53	J A 61	J A 36	J A 49
18	J A 78	J A 74	J A 87	J A 78	J A 44	J A 38	J A 79	J A 100	J A 93	J A 65	J A 79	J A 60	J A 47	J A 61	J A 56	J A 58	J A 82	J A 93	J A 48	J A 69	J A 72	J A 35	J A 47	J A 48
19	J A 78	J A 42	J A 29	J A 20	J A 23	J A 22	J A 39	J A 54	J A 102	J A 64	J A 52	J A 221	J A 106	J A 85	J A 64	J A 138	J A 122	J A 83	J A 125	J A 68	J A 59	J A 90	J A 40	J A 53
20	J A 96	J A 99	J A 61	J A 72	J A 34	J A 36	J A 75	J A 99	J A 93	J A 71	41	G 28	J A 62	J A 57	39	J A 58	J A 96	J A 85	J A 46	J A 77	J A 90	J A 97	J A 41	J A 56
21	J A 37	J A 31	J A 27	J A 36	J A 29	21	J A 48	J A 66	J A 72	J A 96	J A 90	J A 85	J A 98	J A 117	42	43	J A 77	J A 62	J A 46	J A 81	J A 67	J A 46	J A 53	J A 61
22	J A 86	J A 54	J A 46	J A 34	J A 23	22	J A 43	J A 70	J A 146	J A 48	J A 51	G 33	41	J A 84	J A 69	J A 125	J A 107	J A 98	J A 108	J A 83	J A 100	J A 55	J A 64	J A 66
23	J A 52	J A 38	J A 34	J A 27	J A 24	23	J A 36	J A 53	J A 125	J A 174	J A 132	J A 76	J A 44	J A 73	J A 48	J A 65	J A 52	J A 34	J A 70	J A 47	J A 45	J A 102	J A 53	J A 50
24	J A 62	J A 69	J A 37	J A 41	J A 34	J A 25	30	J A 65	J A 90	J A 74	J A 53	J A 66	J A 52	J A 59	46	J A 58	J A 60	J A 114	J A 45	J A 32	J A 49	J A 35	J A 52	J A 96
25	J A 46	J A 50	J A 46	J A 30	E B 15	26	J A 45	J A 61	J A 90	J A 67	J A 76	J A 96	J A 75	J A 77	J A 56	J A 59	J A 45	J A 36	J A 37	J A 71	J A 45	J A 31	J A 104	J A 39
26	J A 25	J A 29	J A 75	J A 80	J A 45	J A 28	J A 52	J A 44	J A 54	J A 59	J A 58	J A 95	J A 60	J A 46	G 34	J A 52	J A 75	J A 64	J A 45	J A 83	J A 54	J A 60	J A 53	J A 54
27	J A 51	J A 54	J A 43	J A 21	J A 32	26	J A 43	J A 54	J A 77	J A 73	J A 59	J A 60	J A 69	J A 48	J A 58	J A 44	36	J A 50	J A 43	J A 61	J A 78	J A 62	J A 121	J A 49
28	J A 48	J A 62	J A 75	J A 28	J A 24	J A 30	J A 37	J A 57	J A 71	J A 67	J A 105	J A 84	J A 74	J A 58	J A 97	J A 77	J A 95	J A 41	J A 40	J A 22	J A 39	J A 62	J A 70	J A 80
29	J A 57	J A 45	J A 47	J A 45	J A 32	J A 36	J A 37	J A 44	J A 83	J A 92	J A 102	J A 92	J A 60	J A 56	J A 65	J A 80	J A 64	J A 100	J A 140	J A 92	J A 109	J A 109	J A 98	J A 53
30	J A 52	J A 48	J A 65	J A 32	J A 45	J A 51	J A 61	J A 81	J A 134	J A 127	J A 132	J A 108	J A 150	J A 83	J A 55	J A 60	J A 76	J A 109	24	J A 30	J A 41	J A 35	J A 36	J A 27
31	J A 54	J A 32	J A 41	J A 24	J A 22	J A 22	J A 30	J A 34	43	J A 59	J A 59	J A 45	J A 42	J A 40	J A 40	J A 46	J A 57	J A 73	J A 58	J A 60	J A 73	J A 37	J A 50	J A 46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 52	J A 43	J A 41	J A 32	J A 29	J A 26	J A 39	J A 57	J A 72	J A 71	J A 59	J A 60	J A 62	J A 56	J A 46	J A 57	J A 60	J A 62	J A 46	J A 62	J A 54	J A 46	J A 51	J A 49
U Q	J A 62	J A 62	J A 59	J A 45	J A 44	J A 38	J A 52	J A 70	J A 93	J A 109	J A 90	J A 92	J A 84	J A 77	J A 61	J A 76	J A 82	J A 98	J A 95	J A 81	J A 73	J A 63	J A 56	J A 56
L Q	J A 33	J A 32	29	J A 26	23	22	35	44	J A 54	J A 51	48	44	42	42	39	45	46	38	38	J A 28	J A 41	J A 31	J A 40	J A 32

MAY 2009 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

MAY 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	17	18	23	E B 15	16	19	34	30	40	44	42	37	G 31	G 31	35	G 25	30	26	20	E B 14	29	18	A A 52	24
2	19	24	25	A A 54	E B 15	20	30	A A 66	A A 100	A A 132	A A 84	A A 102	52	40	43	42	40	43	18	27	29	33	A A 56	A A 78
3	18	E B 15	E B 15	15	E B 15	17	32	28	40	41	48	A A 74	36	36	G 26	38	34	28	20	21	18	17	18	18
4	E B 16	E B 15	E B 15	20	A A 67	A A 58	A A 82	A A 73	40	41	38	G 32	43	41	38	47	53	43	A A 95	A A 88	35	19	E B 15	E B 15
5	17	E B 15	E B 15	E B 15	A A 58	20	46	A A 103	A A 95	A A 126	A A 150	A A 150	A A 117	38	43	A A 84	A A 84	A A 118	A A 134	A A 130	A A 123	A A 90	A A 52	E B 15
6	A A 70	A A 74	20	16	17	24	28	36	A A 59	44	36	38	39	A A 79	40	73	A A 92	A A 121	A A 112	21	36	20	20	33
7	A A 63	A A 80	A A 60	16	E B 15	19	32	38	A A 66	A A 109	43	40	40	39	57	46	36	47	A A 141	58	40	36	A A 86	A A 98
8	A A 41	24	22	21	E B 14	22	32	A A 68	A A 50	45	40	A A 59	A A 80	A A 77	A A 70	69	56	38	62	44	32	20	24	24
9	30	29	28	20	18	34	36	37	A A 78	A A 102	38	38	G 32	G 24	37	37	G 18	28	28	15	19	19	19	18
10	E B 15	30	21	A A 34	19	17	25	34	47	42	42	40	40	34	34	34	41	39	34	19	39	36	32	E B 15
11	22	E B 14	A A 71	E B 14	E B 15	A A 60	28	34	41	47	41	A A 48	44	47	36	36	32	30	19	21	22	29	20	17
12	A A 59	23	22	17	17	24	A A 62	50	A A 88	A A 132	46	A A 90	A A 152	39	41	42	46	44	19	21	26	23	23	23
13	20	28	17	21	19	20	32	A A 76	A A 64	A A 132	A A 138	A A 132	A A 84	46	36	54	40	30	36	16	24	16	18	25
14	A A 47	20	E B 16	18	E B 15	30	A A 54	A A 72	A A 61	A A 78	49	46	37	39	36	33	33	30	23	E B 20	E B 14	E B 15	19	E B 15
15	18	E B 16	E B 15	E B 14	E B 16	21	30	32	53	35	35	38	39	40	43	51	A A 122	A A 123	A A 94	24	22	26	19	21
16	E B 16	16	21	28	19	21	A A 51	A A 64	A A 77	A A 138	A A 174	38	A A 100	A A 106	44	44	A A 76	A A 78	A A 73	58	41	34	32	17
17	17	24	19	18	18	28	35	A A 64	42	A A 74	A A 62	A A 60	59	A A 100	A A 80	56	56	48	44	59	45	28	28	A A 49
18	A A 78	A A 74	A A 87	A A 78	A E B 15	35	A A 79	A A 100	A A 93	A A 65	A A 79	45	44	A A 61	51	A A 58	A A 82	A A 93	44	59	66	27	21	30
19	28	20	22	16	17	19	29	44	A A 102	A A 64	42	A A 221	A A 106	54	53	A A 138	58	61	A A 125	57	54	40	28	33
20	A A 96	32	31	E B 15	24	27	A A 75	A A 99	A A 93	A A 71	38	G 27	38	55	38	55	56	67	29	27	20	36	26	29
21	21	18	20	24	19	18	44	63	A A 72	A A 96	A A 90	A A 85	A A 98	A A 117	41	41	A A 77	58	44	40	30	37	30	A A 61
22	19	23	18	E B 15	E B 15	20	34	A A 70	A A 146	39	38	G 33	38	45	46	A A 125	A A 107	A A 98	A A 108	70	50	37	A A 64	A A 66
23	A A 52	A A 38	A A 34	20	17	20	33	43	A A 125	A A 174	A A 132	A A 76	38	A A 73	46	54	49	27	A A 70	20	21	A A 102	24	19
24	A A 62	A A 69	A A 37	22	17	19	28	A A 65	A A 90	A A 74	A A 53	50	45	50	44	36	39	A A 114	28	22	23	28	40	35
25	A A 46	A A 50	A A 46	A A 30	A E B 15	24	35	52	A A 90	A A 67	A A 76	A A 96	A A 75	A A 77	52	45	40	26	35	35	E B 15	21	18	28
26	E B 15	E B 15	E B 15	16	17	19	47	41	49	54	A A 58	A A 95	A A 60	38	G 32	A A 52	A A 75	41	32	36	19	39	A A 53	A A 54
27	A A 51	A A 54	16	E B 15	E B 15	24	38	44	A A 77	52	53	A A 60	A A 69	A A 48	A A 58	40	35	35	32	49	36	41	A A 121	A A 49
28	A A 48	20	A A 75	18	E B 15	19	31	46	56	A A 67	A A 105	A A 84	A A 74	45	A A 97	52	41	38	34	18	24	37	24	A A 80
29	33	24	27	A A 45	19	A A 36	31	38	A A 83	A A 92	A A 102	A A 92	45	46	A A 65	A A 80	35	A A 100	A A 140	32	21	A A 109	A A 98	A A 53
30	A A 52	A A 48	A A 65	22	19	A A 51	36	A A 81	A A 134	A A 127	A A 132	A A 108	A A 150	A A 83	A A 55	A A 60	A A 76	A A 109	21	17	20	24	22	E B 15
31	22	21	21	17	E B 15	18	26	34	40	A A 59	A A 59	A A 45	39	38	38	37	A A 57	A A 73	A A 58	A A 60	52	22	A A 50	A A 46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	28	24	22	18	17	21	34	50	A A 72	A A 67	53	A A 59	45	46	43	47	49	44	36	27	29	28	26	28
U Q	A A 52	A A 38	A A 34	A A 22	19	28	A A 46	A A 70	A A 93	A A 109	A A 90	A A 92	A A 80	A A 73	A A 53	A A 58	A A 76	A A 93	A A 94	58	40	37	A A 52	A A 49
L Q	18	E B 18	E B 17	E B 15	E B 15	19	30	37	49	45	41	38	39	39	37	38	36	30	28	20	21	20	20	E B 18

MAY 2009 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

LAT.35°43.0'N LON.139°29.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

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

IONOSPHERIC DATA STATION Kokubunji

MAY 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	F	F	329	F	360	352	385	367	361	354	318	325	311	332	323	319	339	338	330	333	337	360	A	307
2	326	319	320	A	357	353	361	A	A	A	A	A	334	325	323	335	346	350	315	323	350	357	A	A
3	283	F	325	F	F	359	362	368	355	352	339	A	329	333	310	324	347	346	335	329	339	347	F	F
4	F	F	F	338	A	A	A	A	375	342	319	330	323	327	303	337	345	346	A	A	365	358	318	317
5	F	312	F	F	A	368	390	A	A	A	A	A	A	316	300	A	A	A	A	A	A	A	A	321
6	A	A	332	318	334	365	392	386	A	355	251	298	312	A	307	316	A	A	A	337	344	328	F	F
7	A	A	A	302	309	353	362	373	A	A	334	292	303	302	312	330	321	315	A	332	342	331	A	A
8	A	304	314	F	F	371	384	A	A	362	313	A	A	A	A	338	322	301	304	354	358	325	324	299
9	336	324	334	323	338	337	360	375	A	A	342	340	335	313	296	320	313	325	325	324	308	326	F	F
10	337	343	330	A	311	334	356	361	373	361	360	306	282	301	309	332	314	304	321	337	356	344	367	309
11	310	F	A	F	F	A	381	345	326	351	351	A	294	299	312	345	353	345	330	318	315	323	352	337
12	A	F	F	F	F	343	A	355	A	A	314	A	A	311	313	308	318	348	352	358	302	F	F	F
13	F	322	319	F	333	346	337	A	A	A	A	A	A	299	317	315	316	314	311	344	370	303	309	F
14	A	318	F	344	318	360	A	A	A	A	358	311	314	312	297	302	313	346	355	317	324	319	321	325
15	312	313	324	346	300	329	306	345	341	343	301	294	301	310	308	329	A	A	A	323	315	305	316	306
16	308	F	F	316	F	375	A	A	A	A	A	338	A	A	324	332	A	A	A	326	327	305	F	313
17	F	334	F	F	F	348	369	A	378	A	A	A	320	A	A	335	322	320	329	335	346	320	309	A
18	A	A	A	A	316	338	A	A	A	A	A	319	332	A	324	A	A	A	310	345	352	F	305	327
19	314	328	F	310	335	356	367	378	A	A	336	A	A	307	314	A	304	299	A	324	344	335	345	F
20	A	F	325	F	312	360	A	A	A	A	285	318	315	294	326	312	314	333	328	324	323	336	347	F
21	F	F	F	322	323	297	335	375	A	A	A	A	A	A	298	305	A	322	324	310	331	352	340	A
22	F	F	F	F	338	348	346	A	A	347	320	284	308	325	323	A	A	A	A	350	345	338	A	A
23	A	A	A	302	303	349	351	351	A	A	A	A	301	A	309	330	340	344	A	340	347	A	F	F
24	A	A	A	F	317	384	334	A	A	A	A	320	315	317	316	336	311	A	326	315	326	358	F	F
25	A	A	A	A	333	308	283	374	A	A	A	A	A	A	320	339	313	316	326	325	317	345	337	F
26	F	F	299	F	F	339	356	347	370	367	A	A	A	311	283	A	A	326	299	306	353	396	A	A
27	A	A	317	F	F	359	329	333	A	336	358	A	A	A	A	316	332	327	325	306	F	337	A	A
28	A	F	A	F	343	383	370	342	366	A	A	A	A	302	A	314	324	310	305	311	369	332	345	A
29	F	F	F	A	357	A	341	361	A	A	A	A	317	328	A	A	312	A	A	329	F	A	A	A
30	A	A	A	F	336	A	346	A	A	A	A	A	A	A	A	A	A	A	341	328	341	321	286	314
31	307	F	314	352	350	374	365	367	324	A	A	A	336	295	301	320	A	A	A	A	376	365	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	10	13	11	21	27	25	18	10	11	16	13	19	21	25	24	21	21	20	28	28	26	15	11
MED	312	320	324	322	333	353	360	364	364	352	327	318	315	311	312	326	321	326	326	327	343	336	324	314
U Q	331	328	330	344	340	365	370	374	373	361	346	328	329	325	322	335	340	346	330	337	352	352	345	325
L Q	308	313	316	310	314	339	339	347	341	343	314	296	303	302	302	316	313	314	313	320	325	323	309	307

IONOSPHERIC DATA STATION Kokubunji

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

LAT.35°43.0′N LON.139°29.0′E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	L	A	A	A	UL 401	UL 406	399	413	UL 370	370	L						
2								A	A	A	A	A	A	391	A	A	A	A	L					
3							A	389	A	A	A	A	408	392	416	433	UL 352	L	L					
4						A	A	A	A	A	UL 393	407	A	A	UL 367	A	A	A	A					
5								A	A	A	A	A	A	UL 406	A	A	A	A	A					
6							A	A	A	A	UL 429	UL 416	407	A	A	A	A	A	A					
7							A	A	A	A	A	416	UL 381	UL 408	A	A	A	A	A					
8								A	A	A	A	A	A	A	A	A	A	A	A					
9								A	A	A	UL 425	423	409	396	376	A	389	UL 365	A					
10							L	L	A	A	A	UL 435	380	397	385	UL 375	A	A	A					
11						A	L	L	A	A	374	A	A	A	UL 397	386	UL 390	L	L					
12							A	A	A	A	A	A	A	UL 361	A	A	A	A	L					
13								A	A	A	A	A	A	A	417	A	A	381						
14							A	A	A	A	A	A	394	UL 382	UL 382	378	375	UL 372	L					
15							UL 353	UL 383	A	420	UL 352	392	365	UL 390	A	A	A	A	A					
16							A	A	A	A	A	UL 382	A	A	A	A	A	A	A					
17							A	A	A		A	A	A	A	A	A	A	A	A					
18							A	A	A	A	A	A	A	A	A	A	A	A	A					
19							L	A	A	A	A	A	A	A	A	A	A	A	A					
20							A	A	A	A	UL 414	393	UL 383	A	402	A	A	A	A					
21						UL 336	A	A	A	A	A	A	A	A	A	A	A	A	A					
22							A	A	A	414	UL 437	UL 419	UL 389	A	A	A	A	A	A					
23							A	A	A	A	A	A	428	A	A	A	A	386	A					
24							393	A	A	A	A	A	A	A	A	379	A	A	A					
25							A	A	A	A	A	A	A	A	A	A	A	374	A					
26							A	A	A	A	A	A	A	UL 425	UL 437	A	A	A	A					
27							A	A	A	A	A	A	A	A	A	A	392	A	A					
28							A	A	A	A	A	A	A	A	A	A	A	A	A					
29						A		A	A	A	A	A	A	A	A	A	385	A	A					
30						A	A	A	A	A	A	A	A	A	A	A	A	A	L					
31							L	UL 388	A	A	A	A	UL 407	UL 425	364	397	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	2	3		2	7	10	12	12	11	7	7	5						
MED						UL 336	373	UL 388		417	UL 414	412	400	UL 396	397	379	385	374						
U Q								389			UL 429	UL 419	408	UL 407	416	397	390	384						
L Q								UL 383			374	393	382	UL 390	376	UL 375	370	UL 368						

MAY 2009 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Kokubunji

MAY 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							234	248	E A 288	276	342	328	348	296	306	288	262	258						
2								A	A	A	A	A	E A 302	326	300	284	264	246	286					
3							254	246	262	274	E A 304	A	304	294	318	294	266	264	264					
4						A	A	A	238	266	312	322	314	310	362	E A 306	E A 306	E A 264	A					
5								A	A	A	A	A	A	314	336	A	A	A	A					
6							220	228	A	E A 274	526	380	356	A	310	E A 328	A	A	A					
7							242	236	A	A	E A 324	400	356	348	294	274	286	280	A					
8								A	A	268	356	A	A	A	A	E A 320	E A 298	310	E A 340					
9								228	A	A	288	294	306	344	330	308	304	280	258					
10							262	266	248	268	264	386	446	384	340	298	312	300	252					
11						A	238	280	302	E A 280	276	A	392	E A 370	320	252	250	266	270					
12							A	E A 282	A	A	336	A	A	350	340	330	E A 288	236	238					
13								A	A	A	A	A	A	344	310	E A 304	304	284						
14							A	A	A	A	E A 290	352	340	342	360	318	288	252	244					
15							334	252	E A 280	288	364	368	318	316	312	E A 290	A	A	A					
16							A	A	A	A	A	286	A	A	318	292	A	A	A					
17							240	A	252		A	A	E A 362	A	A	274	E A 352	E A 298	254					
18							A	A	A	A	A	328	306	A	312	A	A	A	E A 272					
19							258	232	A	A	E A 328	A	A	E A 342	E A 334	A	E A 322	E A 332	A					
20							A	A	A	A	420	340	336	E A 362	310	E A 318	E A 308	E A 290	252					
21						396	E A 286	E A 252	A	A	A	A	A	A	E A 328	354	A	E A 304	E A 268					
22							284	A	A	282	324	408	344	300	308	A	A	A	A					
23							258	250	A	A	A	A	378	A	324	E A 296	E A 284	282	A					
24							290	A	A	A	A	E A 342	326	310	302	298	E A 336	A	284					
25							E A 352	244	A	A	A	A	A	A	E A 330	282	338	304	256					
26							E A 300	278	256	E A 258	A	A	A	358	418	A	A	290	308					
27							E A 302	E A 338	A	E A 322	E A 298	A	A	A	A	308	284	252	272					
28							242	E A 306	E A 274	A	A	A	A	E A 364	A	E A 374	318	E A 308	E A 328					
29						A		268	A	A	A	A	E A 336	320	A	A	310	A	A					
30						A	E A 298	A	A	A	A	A	A	A	A	A	A	A	242					
31							244	258	E A 312	A	A	A	302	378	380	328	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	19	18	10	11	16	13	19	21	25	24	21	21	18					
MED						396	250	250	U 256	271	321	342	336	U 331	316	295	294	273	260					
U Q							E A 298	E A 278	E A 288	282	349	383	356	360	338	319	315	302	284					
L Q							242	244	252	268	294	325	306	312	310	289	284	261	252					

MAY 2009 h′F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

MAY 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 232	E A 286	E A 256	E B 240	216	208	A	196	A	A	A	212	198	206	198	194	210	208	222	222	224	200	A	E A 282
2	E A 248	E A 304	E A 322	A	224	216	230	A	A	A	A	A	A	E A 240	A	A	A	A	218	E A 252	220	222	A	A
3	E A 322	E B 246	E B 232	224	E B 298	224	A	208	A	A	A	A	190	206	190	210	E A 236	E A 230	224	E A 238	226	206	E A 244	E A 240
4	E B 250	E B 246	202	E A 256	A	A	A	A	A	A	206	194	A	A	E A 250	A	A	A	A	A	212	206	E B 238	E B 256
5	E A 288	E B 248	E B 264	E B 272	A	218	218	A	A	A	A	A	A	218	A	A	A	A	A	A	A	A	A	E B 274
6	A	A	E A 332	E A 266	E A 270	E A 232	A	A	A	A	190	196	220	A	A	A	A	A	A	E A 232	E A 234	E A 230	E A 282	E A 322
7	A	A	A	E A 298	E B 276	220	A	A	A	A	A	214	E A 264	202	A	A	A	A	A	E A 270	222	E A 304	A	A
8	A	E A 312	E A 288	E A 306	E B 238	232	224	A	A	A	A	A	A	A	A	A	A	A	A	220	206	216	E A 266	E A 312
9	E A 300	E A 320	E A 306	E A 282	E A 240	E A 296	250	A	A	A	200	192	178	196	220	A	208	222	A	220	E A 260	E A 240	E A 284	E A 250
10	214	E A 256	E A 282	A	E A 284	226	218	218	A	A	A	200	E A 238	188	216	214	A	A	A	218	216	226	214	E B 256
11	E A 292	E B 308	A	E B 286	E B 270	A	214	202	A	A	E A 232	A	A	A	210	E A 230	198	218	224	E A 246	E A 254	E A 258	212	206
12	A	E A 298	E A 316	E A 274	E A 252	E A 244	A	A	A	A	A	A	A	E A 290	A	A	A	A	208	210	E A 262	E A 286	E A 300	E A 280
13	E A 236	E A 302	E A 256	E A 274	218	202	238	A	A	A	A	A	A	A	202	A	A	218	E A 258	216	204	202	E A 254	E A 330
14	A	E A 284	E B 258	E A 236	224	E A 260	A	A	A	A	A	A	196	E A 238	202	202	226	E A 230	214	228	E B 216	216	226	E B 242
15	E A 250	E B 256	E B 238	222	E B 234	218	232	210	A	190	198	194	E A 260	222	A	A	A	A	A	E A 234	E A 240	E A 272	E A 244	E A 272
16	E B 258	E A 270	E A 254	E A 298	E A 294	204	A	A	A	A	A	208	A	A	A	A	A	A	A	E A 330	E A 270	E A 296	E A 290	216
17	E A 266	210	E A 252	E A 276	E A 278	E A 236	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 280	E A 230	E A 252	E A 312	A
18	A	A	A	A	E B 260	E A 284	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 250	E A 296	226	E A 264	E A 294
19	E A 298	E A 282	E A 258	E A 262	E B 246	232	218	A	A	A	A	A	A	A	A	A	A	A	A	E A 266	E A 238	224	214	E A 242
20	A	E A 306	E A 302	E B 242	E A 312	E A 232	A	A	A	A	200	214	212	A	196	A	A	A	A	226	226	E A 254	E A 222	E A 268
21	E A 260	E A 270	E A 268	E A 300	E A 288	E A 234	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 262	E A 244	216	E A 250	A
22	E A 244	E A 282	E A 270	E B 234	E B 236	222	A	A	A	206	194	190	208	A	A	A	A	A	A	E A 252	E A 270	E A 238	A	A
23	A	A	A	E A 312	E A 312	216	A	A	A	A	A	A	198	A	A	A	A	204	A	220	204	A	E A 310	E A 314
24	A	A	A	E A 294	E A 244	210	204	A	A	A	A	A	A	A	A	228	A	A	A	E A 248	E A 244	206	E A 322	E A 292
25	A	A	A	A	E B 264	E A 250	A	A	A	A	A	A	A	A	A	A	A	216	A	E A 256	230	210	216	E A 292
26	218	208	E B 242	E A 250	E A 230	204	A	A	A	A	A	A	A	H 192	198	A	A	A	A	E A 264	212	202	A	A
27	A	A	E A 292	E B 246	E B 238	222	A	A	A	A	A	A	A	A	A	A	220	A	A	E A 342	E A 244	E A 244	A	A
28	A	E A 242	A	E A 248	228	208	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 240	208	E A 236	228	A
29	E A 294	E A 288	E A 238	A	222	A	218	A	A	A	A	A	A	A	A	A	E A 246	A	A	E A 236	208	A	A	A
30	A	A	A	E A 282	E A 238	A	A	A	A	A	A	A	A	A	A	A	A	A	208	212	212	E A 256	E A 318	E B 250
31	E A 302	E A 286	E A 302	E A 282	E B 246	206	206	222	A	A	A	A	212	210	218	206	A	A	A	A	E A 244	214	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	23	23	26	29	27	12	6		2	7	10	12	12	11	7	7	8	8	28	30	28	22	21
MED	E A 259	E A 282	E A 264	E A 273	E A 246	215	218	209		198	199	198	204	204	202	208	214	215	218	E A 239	U 216	U 214	E A 252	E A 272
U Q	E A 294	E A 302	E A 302	E A 286	E A 277	E A 234	231	218			206	212	E A 229	E A 230	218	228	E A 236	E A 226	224	259	E A 244	E A 253	E A 290	E A 293
L Q	E A 244	E A 248	E 252	E B 246	232	210	216	202			194	194	197	199	198	202	208	212	211	221	212	212	226	E 246

MAY 2009 h'F (KM)

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IONOSPHERIC DATA STATION Kokubunji

MAY 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	126	122	A	A	A	A	114	112	110	114	116	118	B					
2						B	A	A	A	A	A	A	A	A	A	A	A	116	B					
3						B	112	118	A	A	A	A	A	A	112	116	120	124	B					
4						B	116	A	A	A	A	114	118	116	114	116	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	118	118	A	B					
6						B	116	120	A	A	110	114	120	A	116	116	A	A	B					
7						B	126	116	A	A	A	A	116	118	122	120	122	A	B					
8							114	A	A	A	A	A	A	A	A	A	A	A	B					
9						B	124	A	A	A	A	A	118	120	114	114	120	120	B					
10						B	114	A	A	A	A	A	A	110	A	114	122	118	B					
11						B	A	A	A	A	120	A	A	A	A	112	114	A	B					
12						B	A	A	A	A	A	A	A	A	126	A	A	A	B					
13						B	114	A	A	A	A	A	A	A	110	A	A	A	B					
14						B	A	A	A	A	A	A	A	116	124	124	114	114	112					
15						B	122	116	A	A	A	A	116	120	118	A	A	A	B					
16						B	A	A	A	A	A	A	A	A	A	118	A	A	A					
17						B	114	A	A		A	A	A	A	A	A	A	A	B					
18						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
19						B	122	A	A	A	A	A	A	118	116	A	A	A	B					
20						B	A	A	A	A	A	116	A	A	A	A	A	A	B					
21						B	A	A	A	A	A	A	A	A	120	120	116	A	B					
22						B	116	A	A	A	A	116	A	A	A	A	A	A	A					
23						B	118	A	A	A	A	A	A	A	A	116	A	A	B					
24						B	110	A	A	A	A	A	A	A	112	112	A	A	B					
25						116	124	A	A	A	A	A	A	A	A	A	A	A	A					
26						B	A	A	A	A	A	A	A	A	118	116	A	A	B					
27						B	114	A	A	A	A	A	A	A	A	A	114	A	B					
28						B	122	A	A	A	A	A	A	A	A	A	A	A	B					
29						B	122	118	A	A	A	A	A	A	A	A	120	A	B					
30						A	A	A	A	A	A	A	A	A	A	A	A	A	116					
31						B	A	124	116	A	A	A	A	122	120	114	A	118	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	19	7	1		2	4	6	9	15	16	11	7	2					
MED						116	116	118	116		115	115	117	118	116	116	118	118	114					
U Q							122	122				116	118	120	120	118	120	120						
L Q							114	116				114	116	114	112	114	114	116						

IONOSPHERIC DATA STATION Kokubunji

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

LAT.35°43.0'N LON.139°29.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	98	94	92	90	86	98	160	122	104	100	98	106	102	102	118	98	124	130	108	B	108	102	100	98
2	100	94	92	94	90	90	96	104	100	100	100	96	96	96	94	92	92	112	102	104	108	102	100	102
3	98	100	B	94	96	124	112	124	106	104	102	98	106	92	100	142	136	126	122	108	100	106	98	96
4	96	100	94	100	114	118	108	106	104	104	100	100	156	164	122	128	104	106	104	110	102	102	102	102
5	96	102	B	102	96	108	104	104	102	100	98	96	100	100	104	120	114	102	102	104	100	100	100	142
6	118	112	96	94	100	124	118	116	104	104	114	106	150	102	134	116	108	104	104	104	106	108	110	104
7	100	98	96	94	94	132	124	116	100	100	100	104	128	128	122	126	122	106	104	100	104	102	100	98
8	96	94	94	92	B	120	114	104	104	104	102	100	100	100	94	92	92	94	88	88	92	112	102	104
9	100	100	98	94	94	98	118	100	96	96	100	100	100	102	140	122	102	122	112	98	94	106	106	100
10	102	124	126	126	120	124	120	108	104	104	104	104	104	106	108	122	118	114	108	110	104	106	106	104
11	102	98	96	98	120	106	104	96	94	100	170	98	96	96	92	120	114	102	102	100	100	100	100	100
12	94	96	96	100	124	124	104	102	102	98	100	100	92	104	122	102	104	98	118	104	100	108	108	100
13	92	92	92	98	96	100	120	102	104	96	92	94	98	98	134	92	92	102	96	98	86	90	100	98
14	96	94	98	96	98	122	104	104	102	98	94	94	102	150	136	142	124	122	112	B	104	108	102	100
15	98	92	B	B	B	130	120	120	104	104	106	104	120	120	116	106	102	102	100	98	100	98	104	100
16	112	96	92	92	94	120	106	102	102	100	98	98	96	92	94	112	104	104	104	100	102	104	104	98
17	96	94	94	90	92	94	114	102	102	102	102	100	98	98	96	106	106	100	100	102	98	100	100	98
18	96	94	94	94	92	108	104	104	102	102	100	102	100	100	104	102	100	100	94	96	94	98	106	98
19	98	92	94	94	88	136	122	104	102	102	102	96	94	116	116	104	106	104	100	98	98	98	98	98
20	92	92	92	92	94	104	102	102	98	96	104	100	102	100	104	102	100	100	100	102	100	98	96	94
21	92	96	92	88	86	114	104	100	102	100	100	96	96	100	162	122	112	102	102	102	102	104	100	100
22	100	94	94	94	134	120	118	104	98	104	98	94	100	100	116	108	102	102	100	100	100	102	94	94
23	96	88	84	82	86	104	116	102	102	98	98	100	104	104	104	118	104	102	98	96	96	92	98	104
24	98	94	90	94	94	126	114	102	100	104	100	100	100	102	120	118	104	104	100	100	100	100	100	98
25	102	96	96	96	B	126	120	104	100	104	98	98	100	100	102	100	100	104	98	94	98	98	98	104
26	104	104	96	100	100	96	108	108	104	102	102	102	96	96	104	118	106	104	102	102	98	94	110	102
27	100	98	94	100	94	118	118	104	102	100	98	96	100	102	100	100	116	104	98	92	104	116	108	106
28	100	100	102	100	116	94	116	106	104	102	100	98	98	98	100	94	100	98	96	94	96	102	102	96
29	94	96	94	88	88	128	120	118	106	98	100	98	96	98	94	96	118	102	106	98	96	98	100	104
30	100	98	100	96	98	90	104	106	102	102	102	106	98	96	104	100	96	94	124	94	92	98	98	102
31	96	96	94	92	90	90	100	158	118	100	102	102	100	124	156	122	100	116	104	98	98	98	98	98
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	28	30	28	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	31	31
MED	98	96	94	94	94	118	114	104	102	100	100	100	100	100	104	108	104	104	102	100	100	102	100	100
U Q	100	100	96	98	100	124	120	108	104	104	102	102	102	104	122	122	114	106	106	103	102	106	104	104
L Q	96	94	92	92	91	98	104	102	100	100	98	96	96	98	100	100	100	102	100	97	96	98	98	98

IONOSPHERIC DATA STATION Kokubunji

MAY 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	F3	F4	F5	F2	F2	L2	HL22	CL22	L3	L2	L3	L2	L2	L1	CL12	L2	CL12	CL12	L2		F5	F3	F6	F4
2	F5	F4	F4	F4	F4	L3	L3	L4	L3	L3	L3	L3	L2	L2	L2	L2	L3	CL32	L3	F4	F4	F3	F6	F5
3	F4	F4		F1	F2	L3	C4	CL22	L2	L2	L3	L3	L2	L2	L2	HL12	HL22	HL22	C2	F3	F4	F3	F6	F6
4	F2	F3	F1	F3	F5	C5	C5	L6	L2	L2	L2	L2	HL12	HL11	CL22	CL22	L3	L3	L3	F4	F4	F3	F3	F2
5	F2	F1		F1	F3	L2	L4	L3	L3	L3	L3	L3	L3	L2	L2	CL32	CL32	L4	L4	F5	F5	F4	F4	FF22
6	F5	F4	F3	F2	F2	C3	C2	CL22	L3	L3	CL12	CL11	HL12	L3	CL21	CL22	L5	L4	L5	F6	F4	F3	F4	F4
7	F4	F5	F4	F4	F2	C2	CL32	CL32	L3	L3	L2	L2	CL12	CL12	CL22	CL22	CL22	L3	L4	F4	F5	F4	F3	F4
8	F4	F4	F3	F4		CL22	C3	L3	L3	L3	L2	L3	L3	L3	L3	L3	L4	L2	L4	F3	F4	FF23	F4	F4
9	F4	F5	F2	F3	F3	L4	CL42	L3	L4	L3	L2	L2	L2	L2	HL12	CL12	L2	CL22	C3	F3	F2	F3	F5	F4
10	F1	FF52	F7	F6	F4	C2	C3	L2	L3	L2	L2	L2	L2	L2	L2	CL21	CL21	CL21	L3	F3	F3	F8	F3	F2
11	F6	F4	F4	F2	F2	L4	L2	L2	L2	L3	HL12	L2	L3	L3	L2	CL12	CL22	L2	L3	F2	F5	F5	F5	F3
12	F5	F5	F3	F3	F3	C4	L5	L4	L4	L3	L2	L3	L3	L2	C2	L2	L3	L2	C2	F3	F3	F4	F5	F4
13	F6	F4	F4	F3	F3	L3	C2	L4	L3	L3	L3	L3	L3	L2	CL12	L3	L3	L2	L3	F3	F5	F2	F2	F5
14	F7	F4	FF22	F3	F2	C4	L4	L3	L4	L3	L3	L2	L2	HL12	CL12	HL12	CL12	CL22	CL22		F3	F1	F4	F2
15	F4	F2				C3	CL22	CL22	L4	L2	L2	L2	CL12	CL22	CL22	L3	L3	L4	L5	F4	F5	F6	F6	F8
16	F3	F4	F3	F4	F3	C3	L3	L4	L3	L3	L3	L3	L3	L3	L2	CL22	L4	L4	L4	F7	F4	F4	F3	F6
17	F4	F5	F2	F3	F3	L4	CL42	L4	L3	L3	L3	L2	L3	L3	L3	L2	L3	L4	L4	F5	F5	F6	F7	F6
18	F7	F4	F5	F4	F3	C4	L4	L4	L3	L3	L3	L2	L2	L3	L3	L3	L4	L4	L4	F4	F6	F2	F3	F4
19	F4	F3	F3	F2	F2	CL22	CL22	L3	L3	L3	L3	L3	L2	CL22	CL22	L4	L3	L4	L4	F6	F6	F3	F5	F4
20	F5	F4	F5	F3	F5	F4	L4	L4	L3	L3	L2	L2	L2	L3	L2	L3	L3	L3	L3	F5	F4	F5	F5	F5
21	F5	F5	F4	F4	F3	CL21	L2	L4	L3	L3	L3	L3	L3	L3	HL12	CL32	CL42	L4	L4	F4	F7	F4	F6	F5
22	F4	F4	F3	F2	F1	C3	C3	L4	L4	L2	L2	L1	L2	L2	CL12	LL32	LL32	LL33	LL33	F4	F5	F4	F4	F4
23	F4	F4	F4	F3	F3	L3	C2	L3	L3	L3	L3	L2	L2	L2	L2	CL32	L3	L3	L2	F4	F3	F5	F4	F5
24	F5	F3	F3	F3	F3	C2	C2	L3	L3	L3	L3	L2	L2	L2	C2	CL21	L2	L3	L3	F3	F4	F3	F6	F4
25	F4	F5	F4	F4		C3	CL32	L3	L3	L3	L3	L3	L2	L3	L2	L3	L2	L2	L3	F4	F2	F4	F3	F5
26	F2	F3	F3	F2	F3	L5	L3	L3	L2	L2	L3	L2	L2	L2	L2	CL12	L3	L3	L4	F5	F3	F5	F5	F4
27	F3	F3	F4	F2	F3	CL22	CL32	L3	L3	L3	L3	L3	L2	L2	L2	L2	CL22	L3	L3	F5	F5	F5	F4	F6
28	F6	F5	F4	F3	F2	L3	CL22	L3	L3	L3	L3	L3	L2	L2	L2	L2	L3	L3	L3	F2	F3	F6	F4	F5
29	F3	F3	F4	F4	F3	CL23	CL22	CL22	L3	L3	L3	L3	L3	L2	L3	L4	CL22	L3	L4	F4	F3	F4	F5	F4
30	F4	F4	F4	F5	F3	L5	L3	L3	L3	L3	L3	L2	L3	L3	L3	L3	L4	L3	CL22	F2	F3	F4	F4	F2
31	F4	F5	F3	F3	F2	L2	L3	HL12	CL22	L3	L3	L2	L2	CL12	HL12	CL22	L4	CL42	L5	F5	F3	F5	F5	F7
	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																								

MAY 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

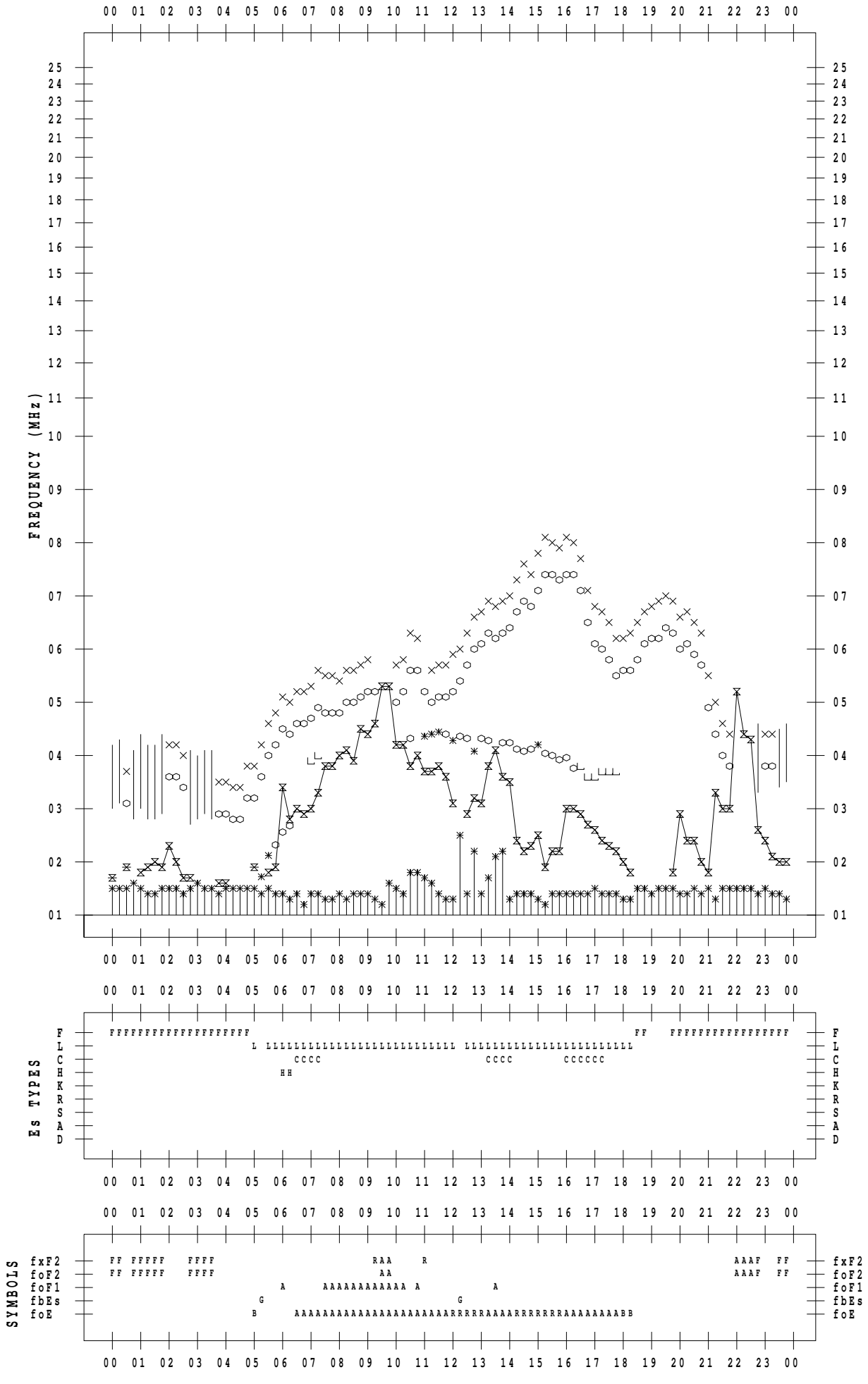
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 1

135 °E MEAN TIME



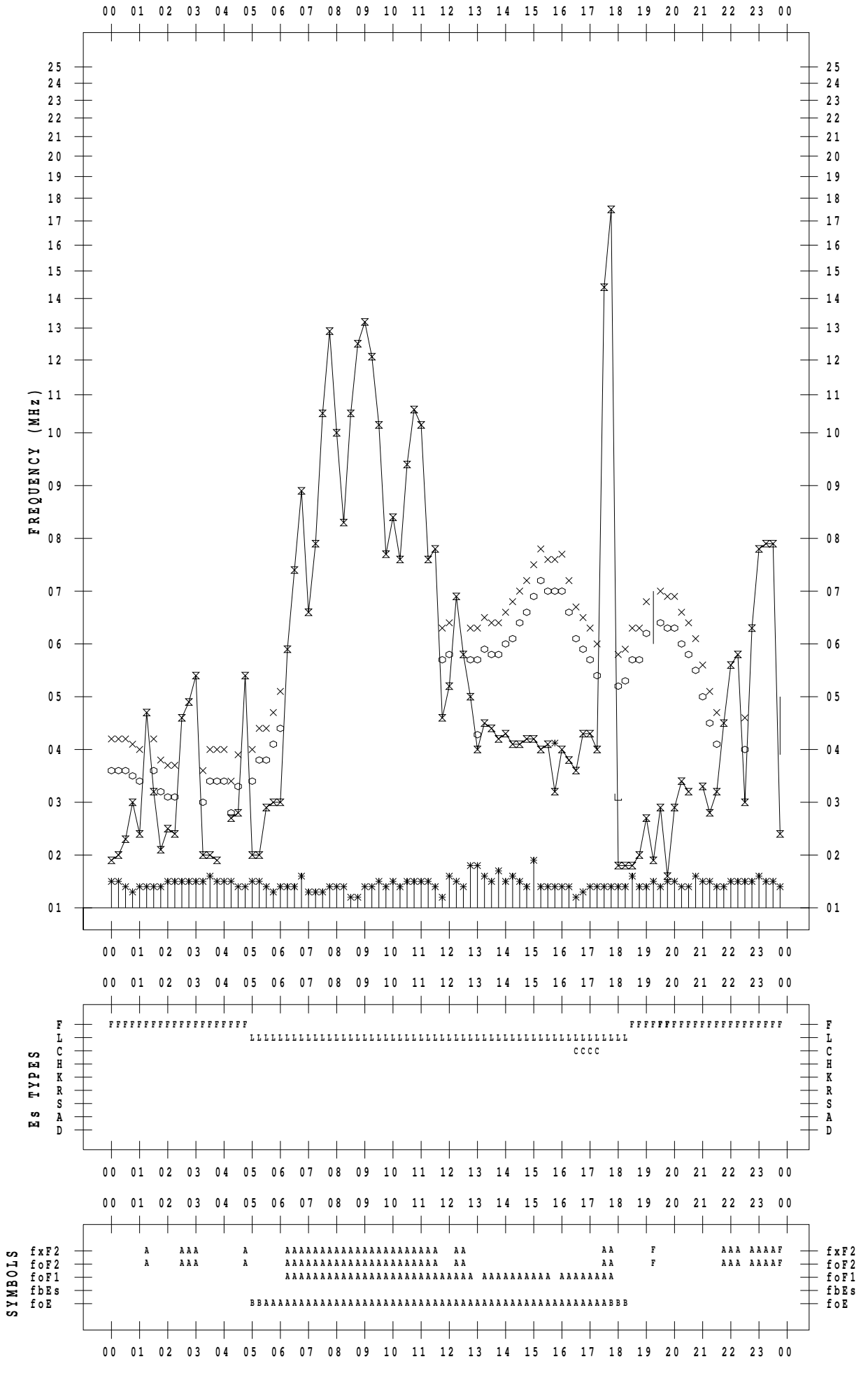
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 2

135 °E MEAN TIME



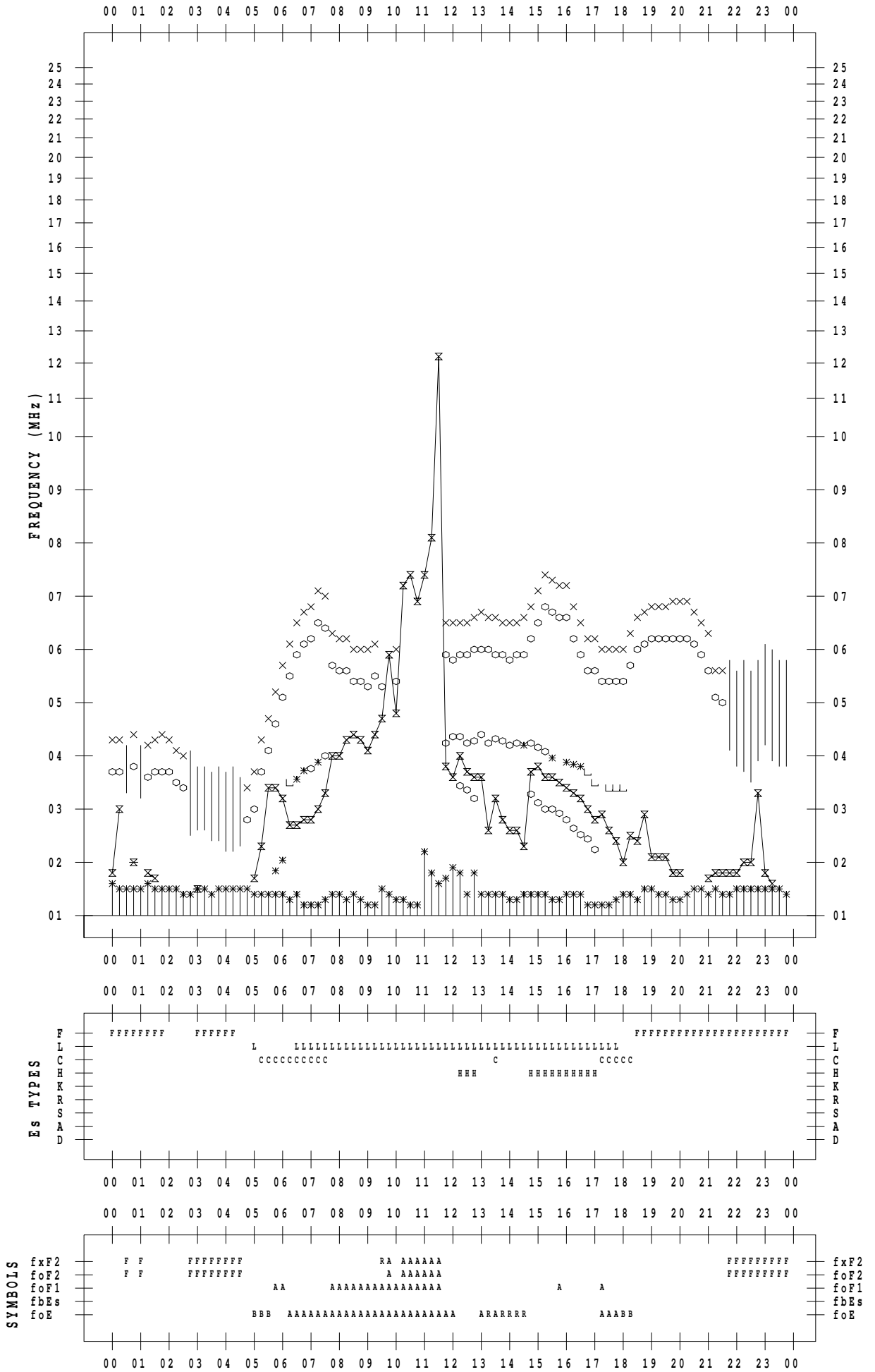
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 3

135 °E MEAN TIME



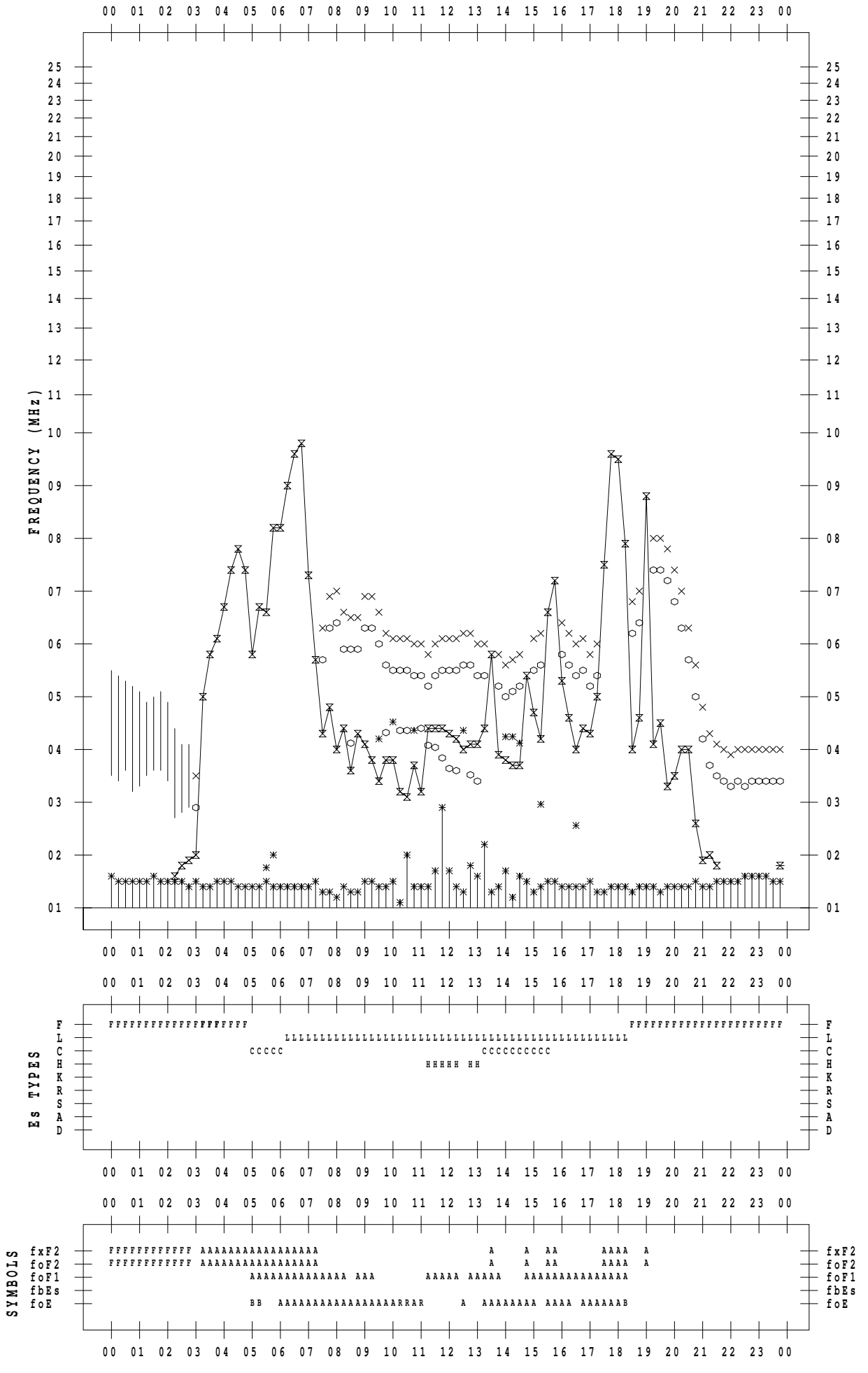
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 4

135 °E MEAN TIME



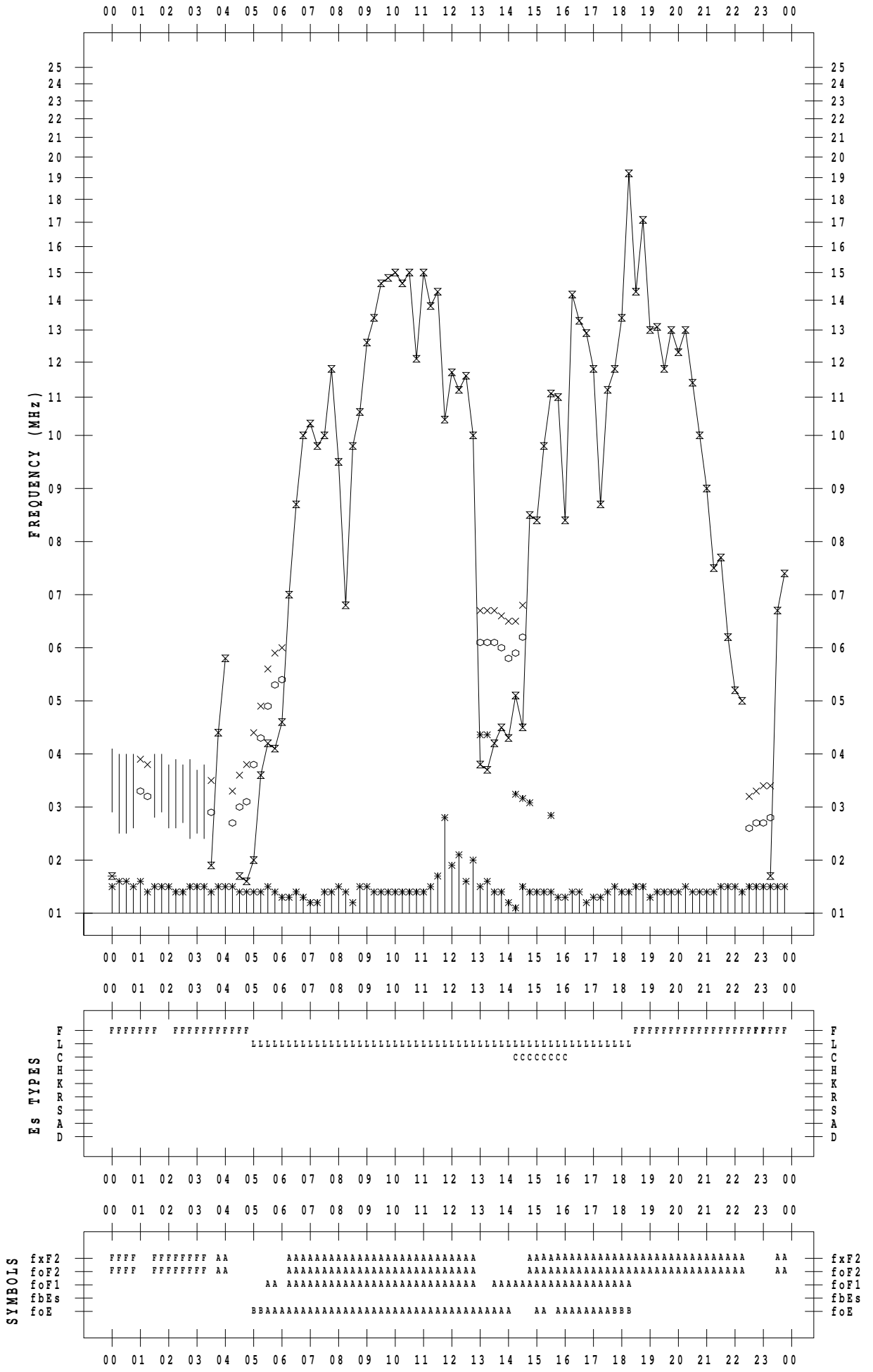
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 5

135 °E MEAN TIME



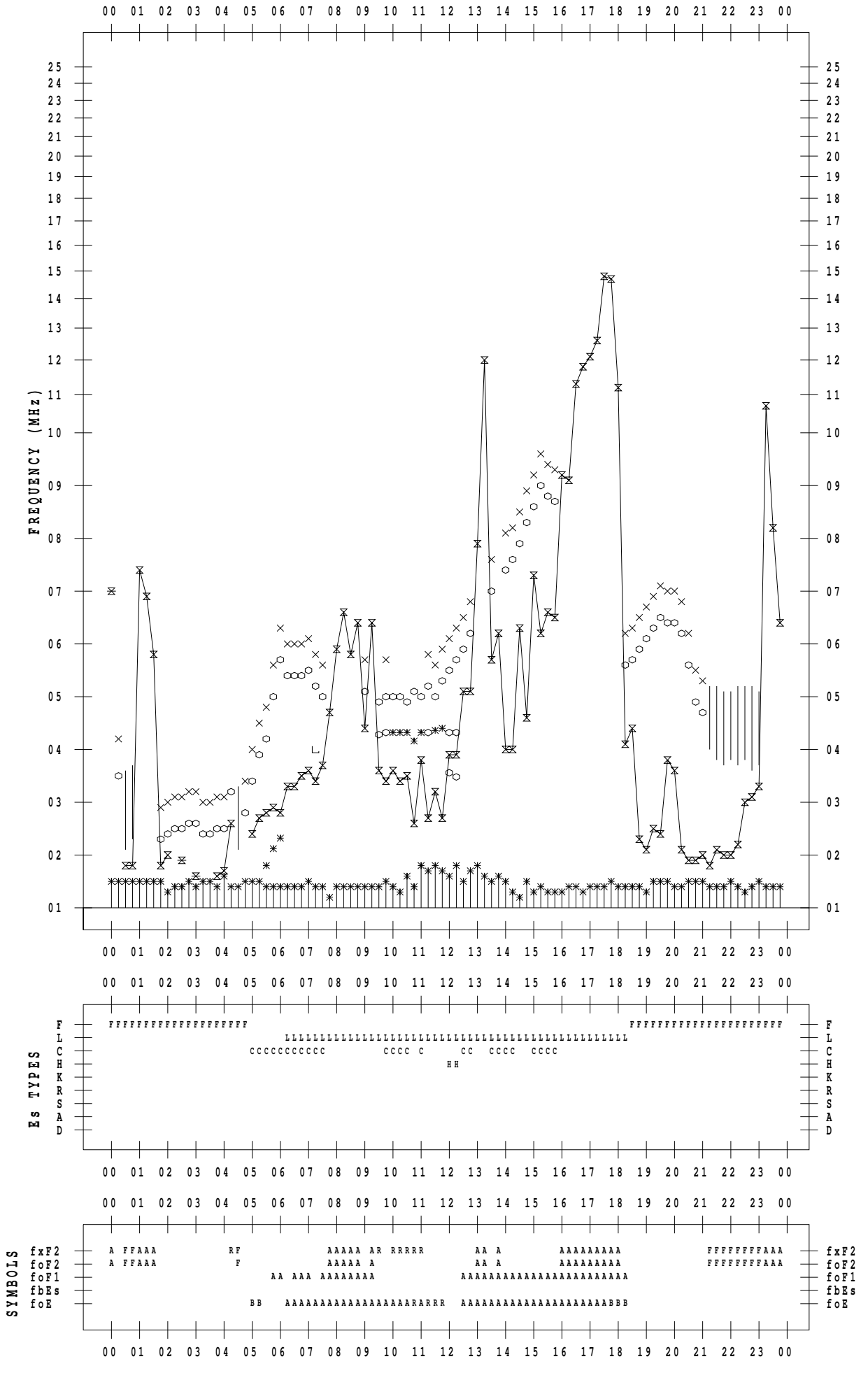
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 6

135 °E MEAN TIME



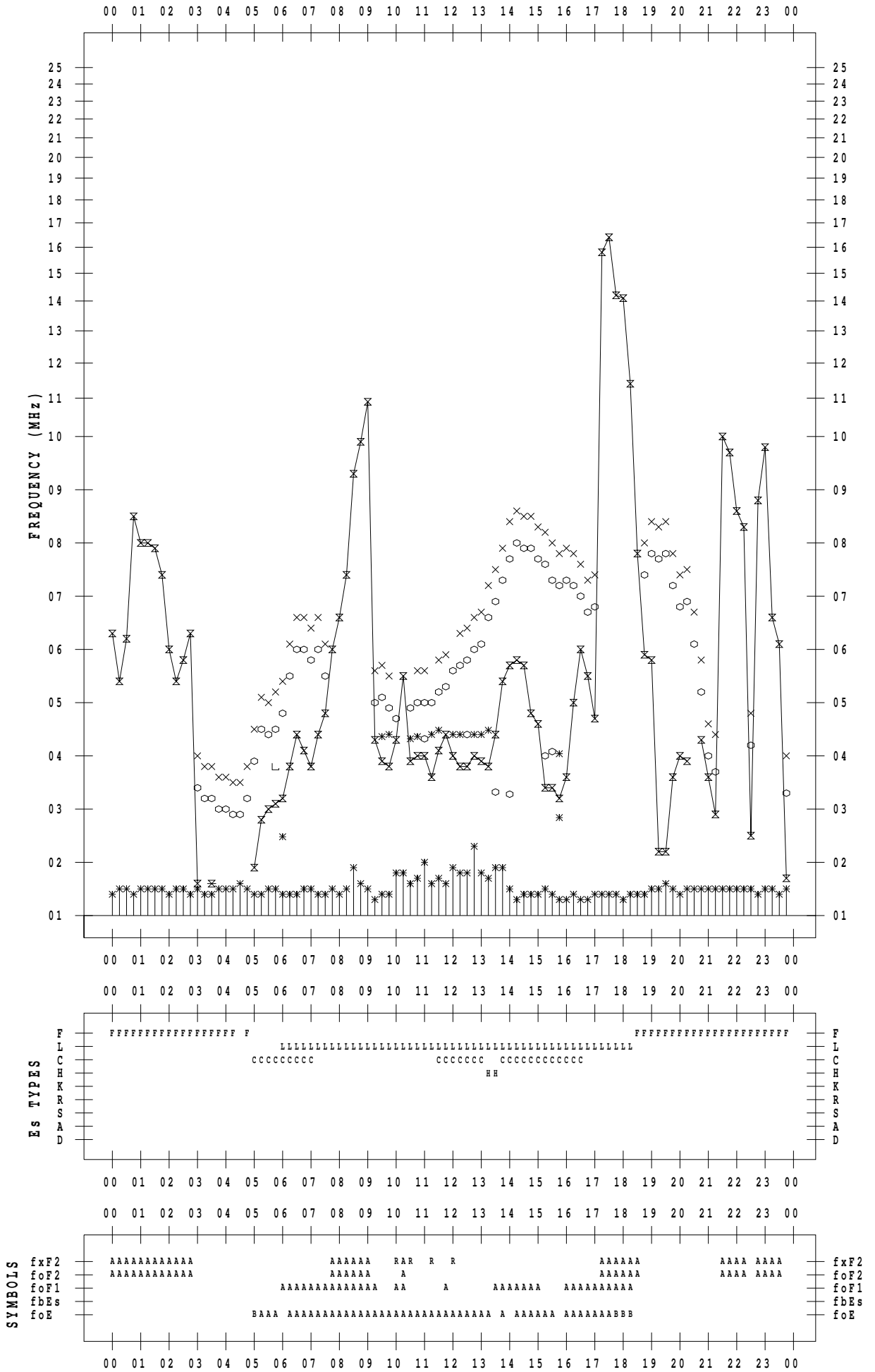
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 7

135 °E MEAN TIME

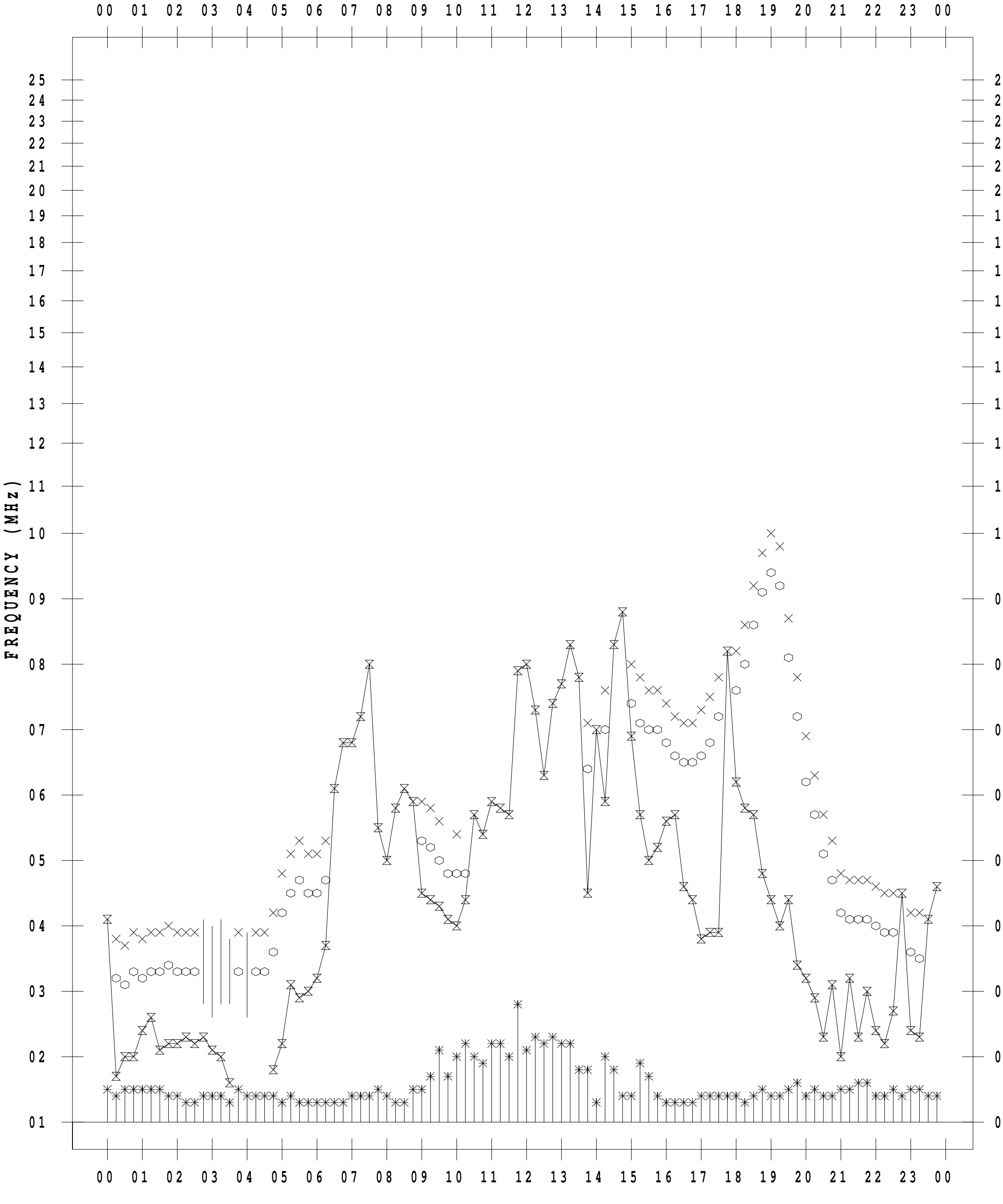


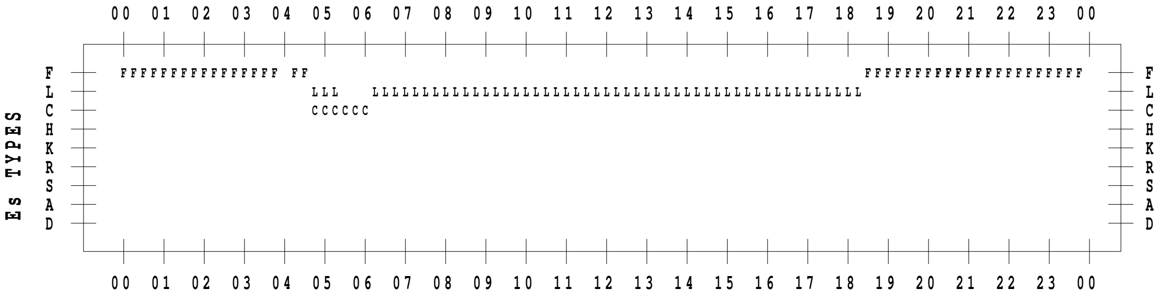
f-PLOT DATA

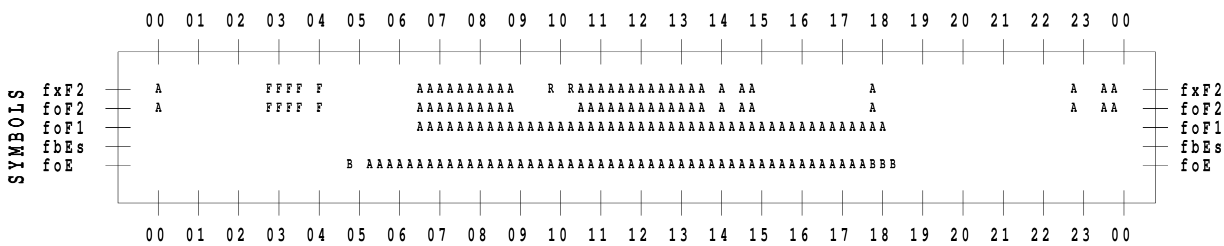
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 5/ 8

135 °E MEAN TIME







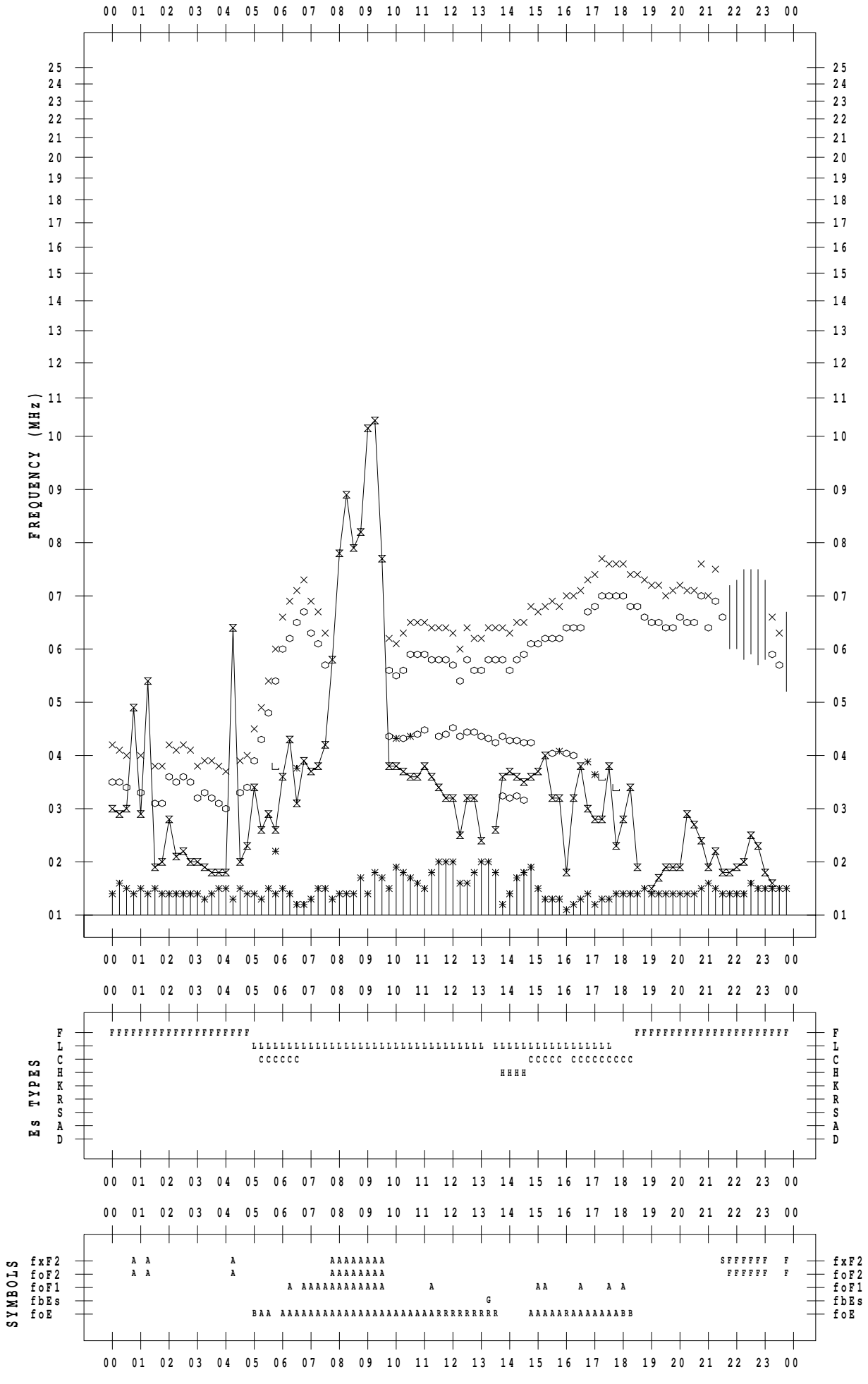
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/ 9

135 °E MEAN TIME



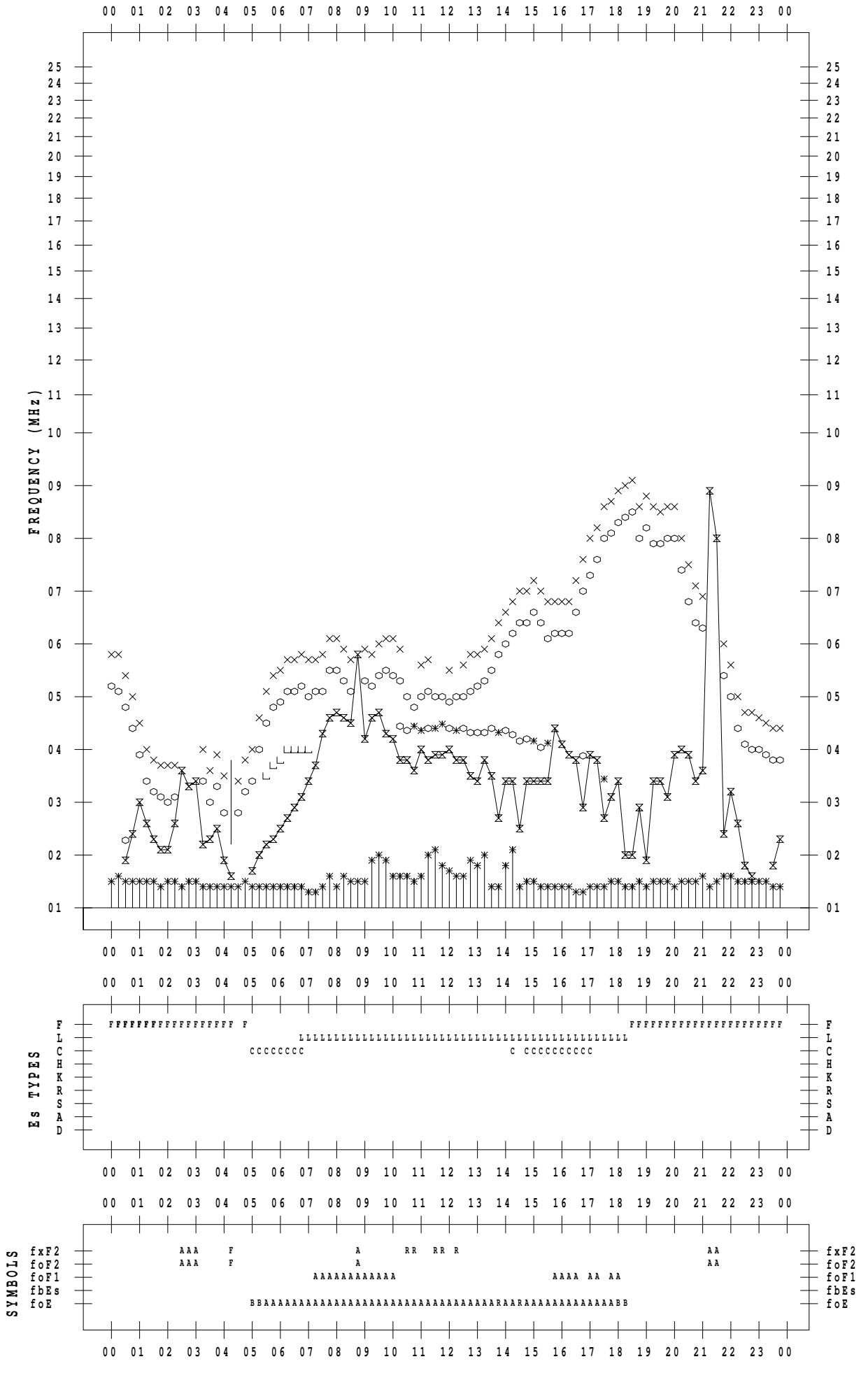
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/10

135 °E MEAN TIME



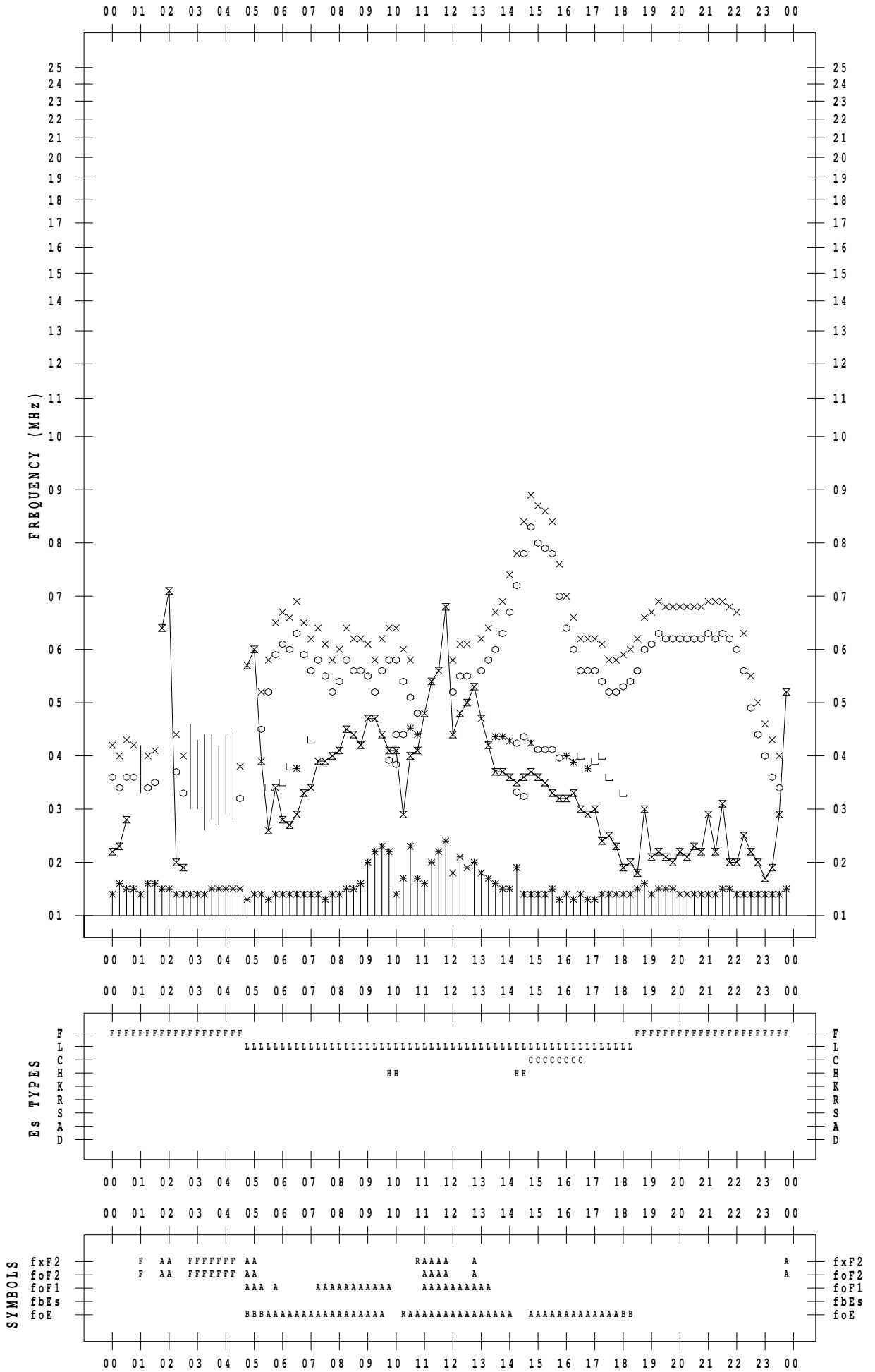
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/11

135 °E MEAN TIME



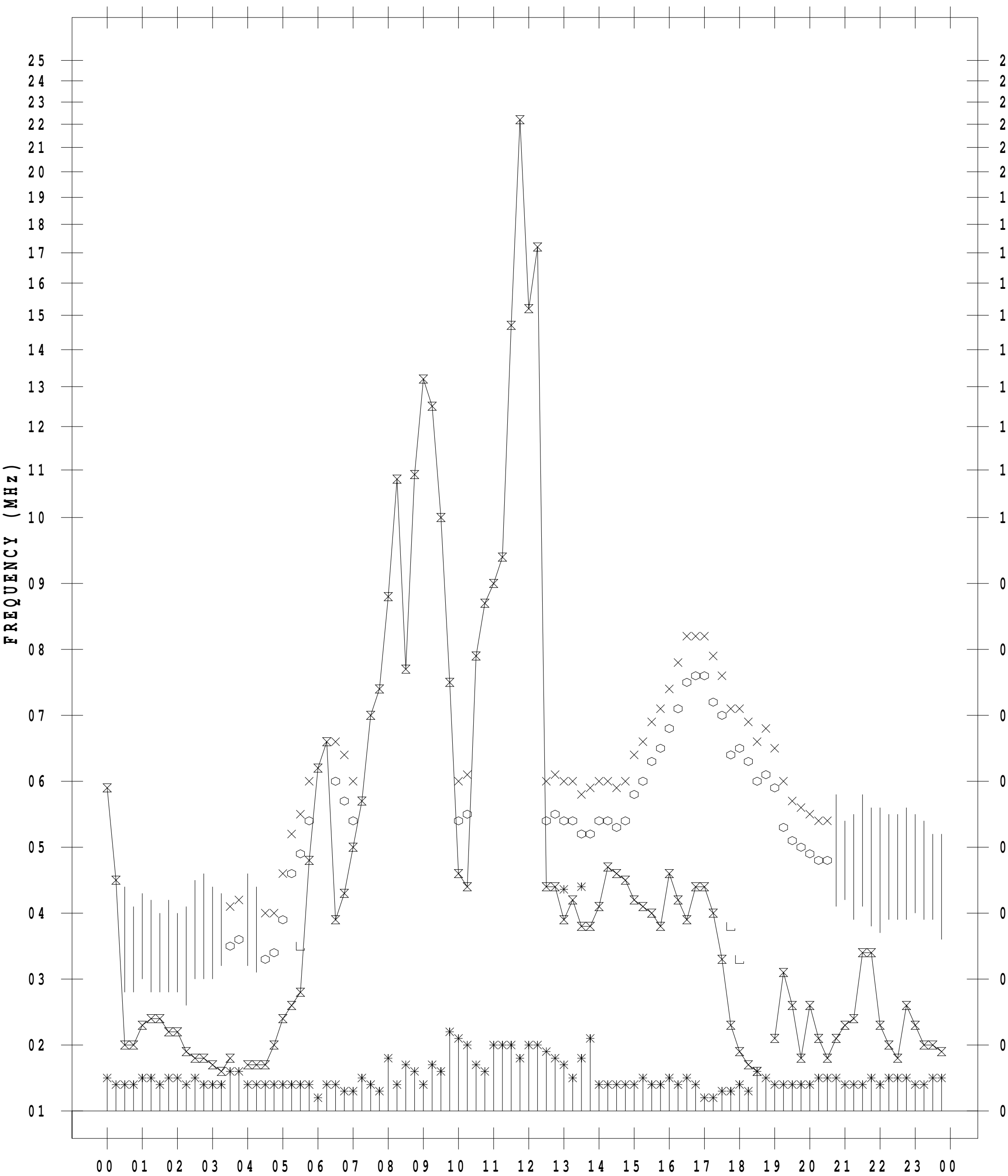
f-PLOT DATA

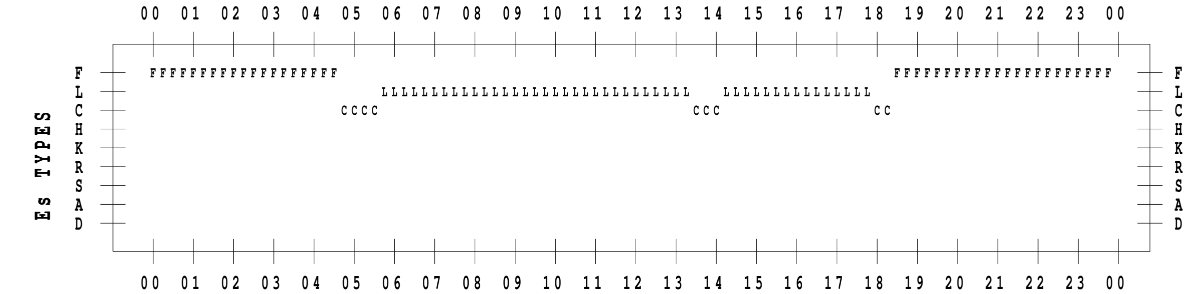
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/12

135 °E MEAN TIME





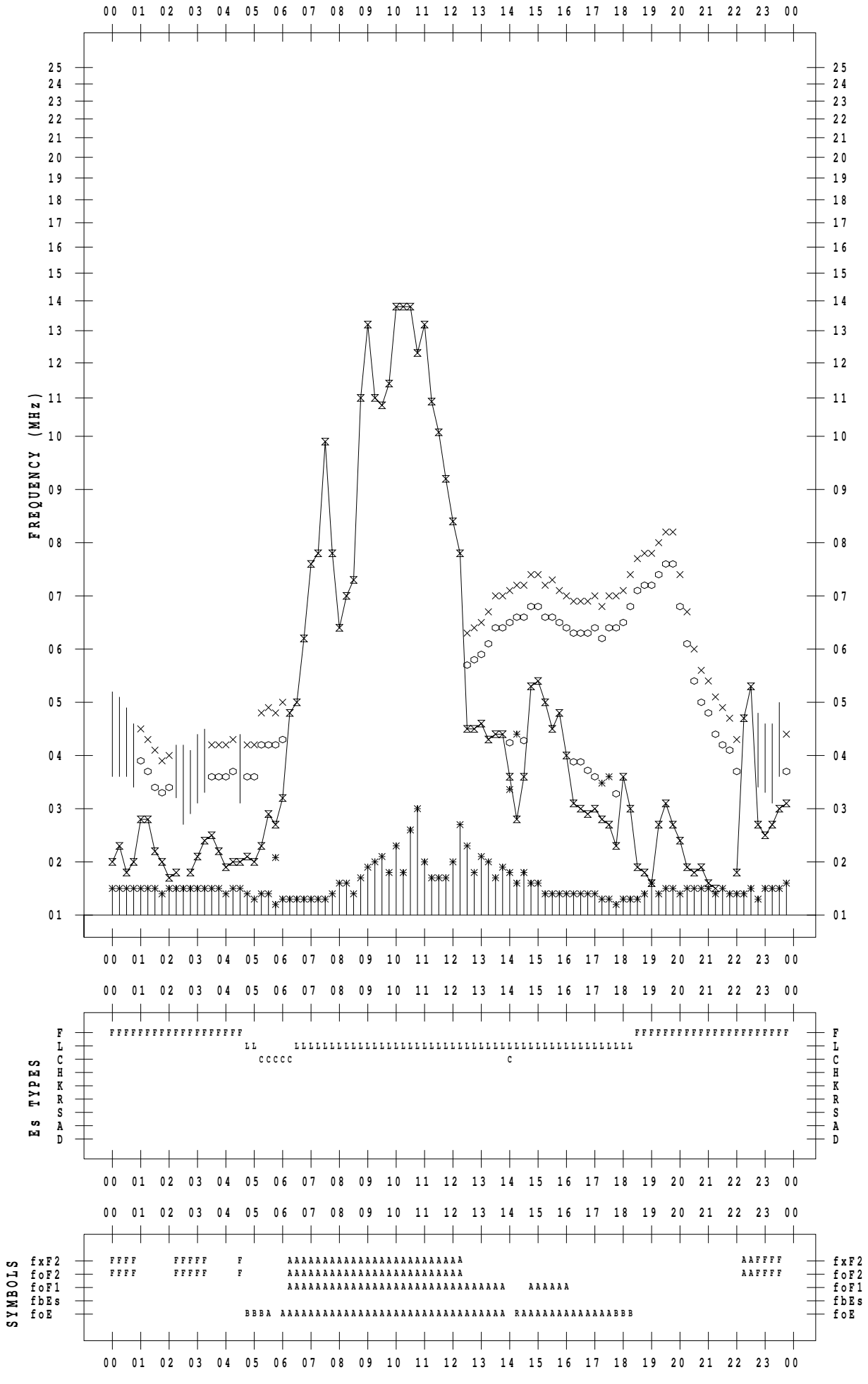
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/13

135 °E MEAN TIME



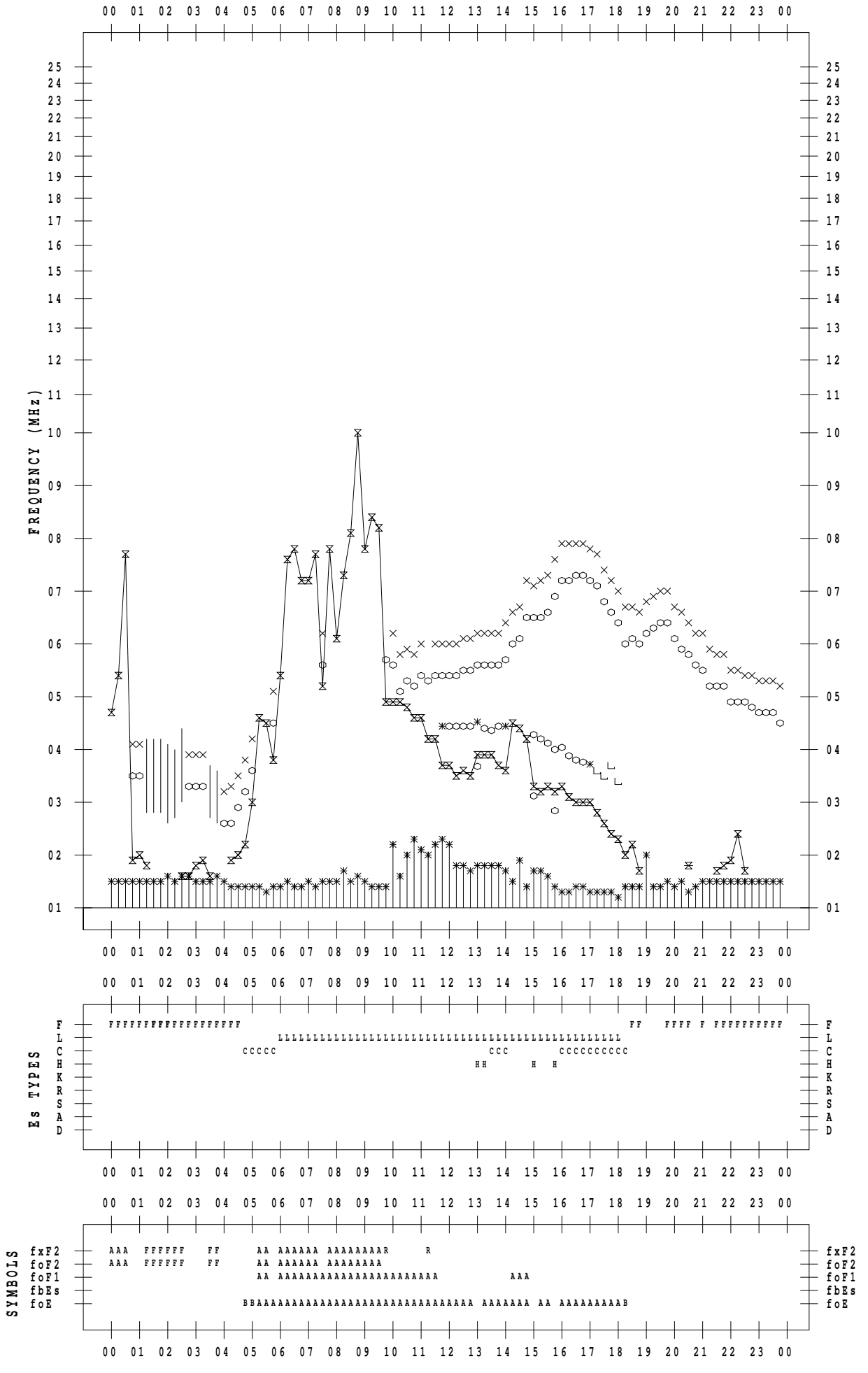
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/14

135 °E MEAN TIME



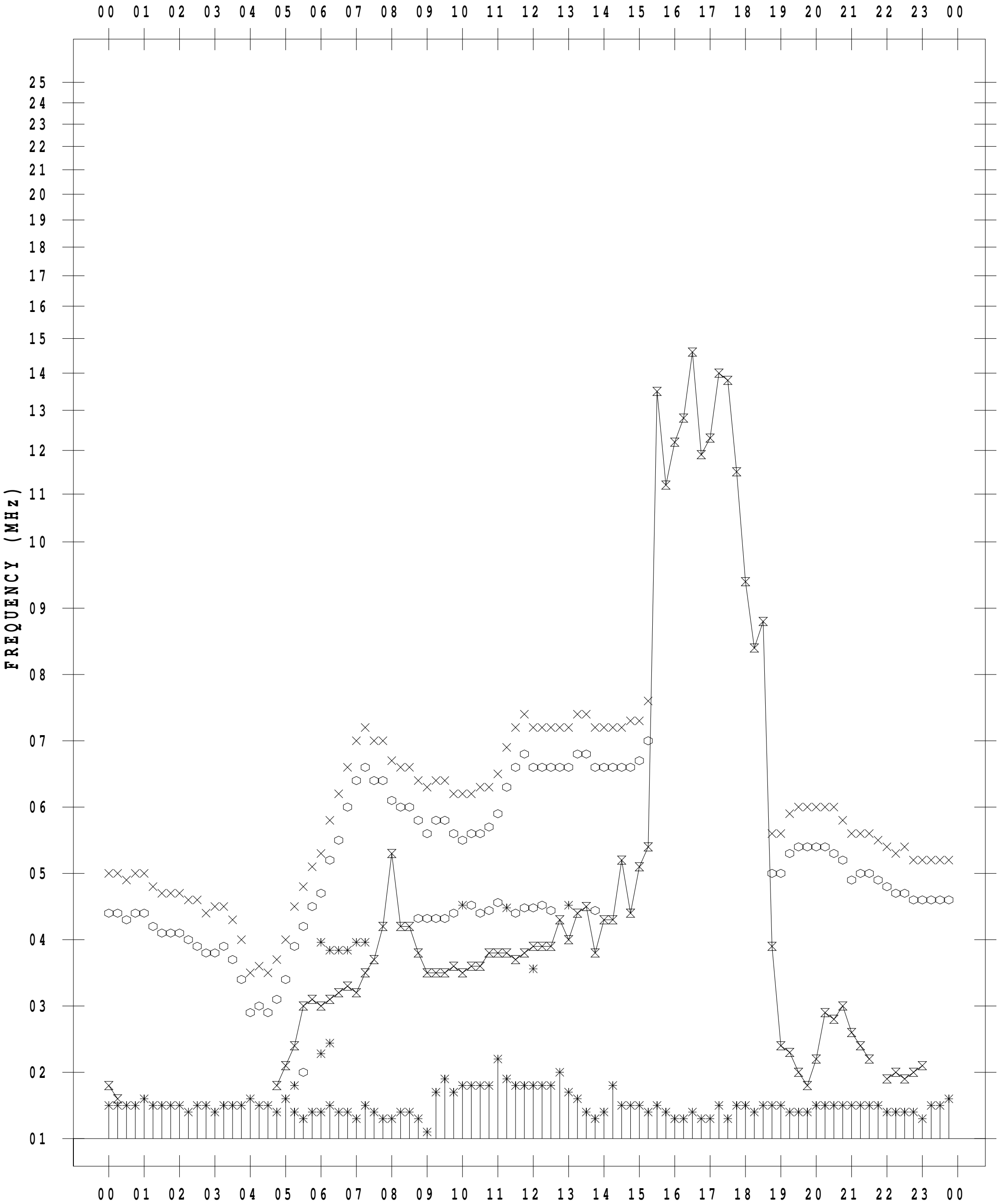
f-PLOT DATA

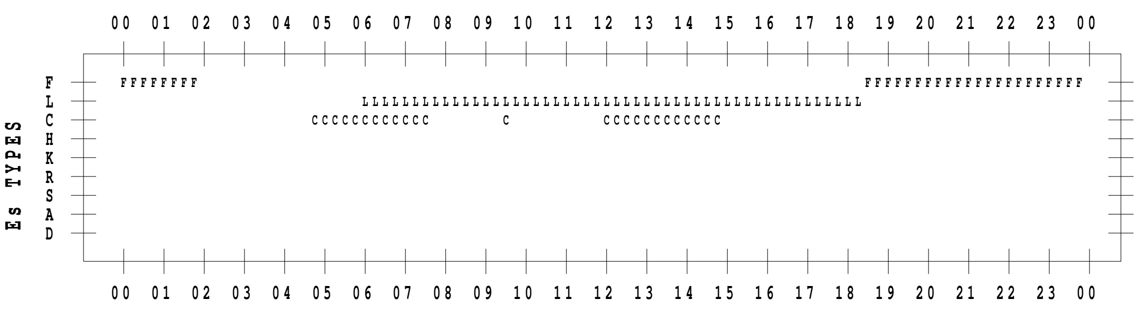
SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/15

135 °E MEAN TIME





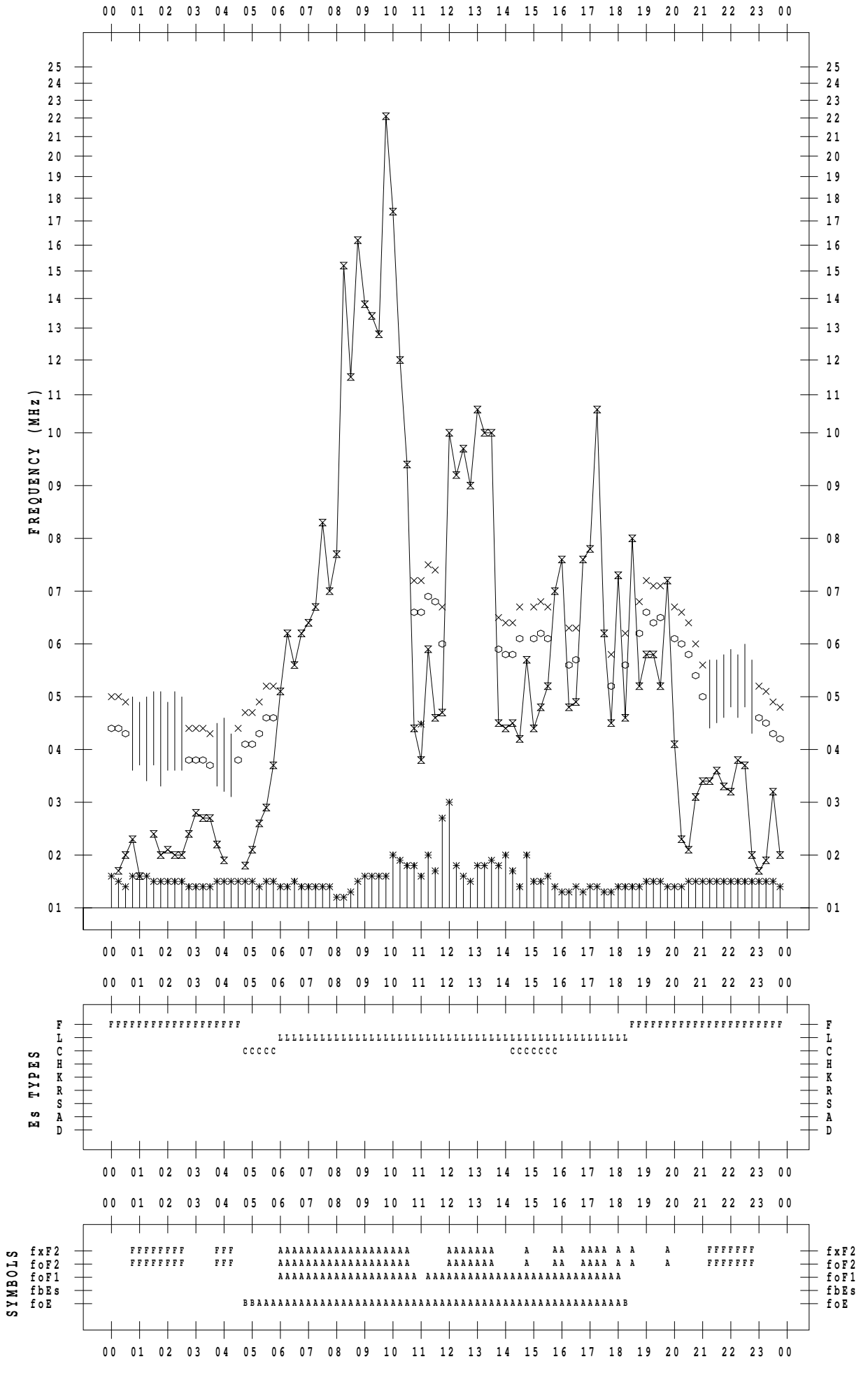
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/16

135 °E MEAN TIME

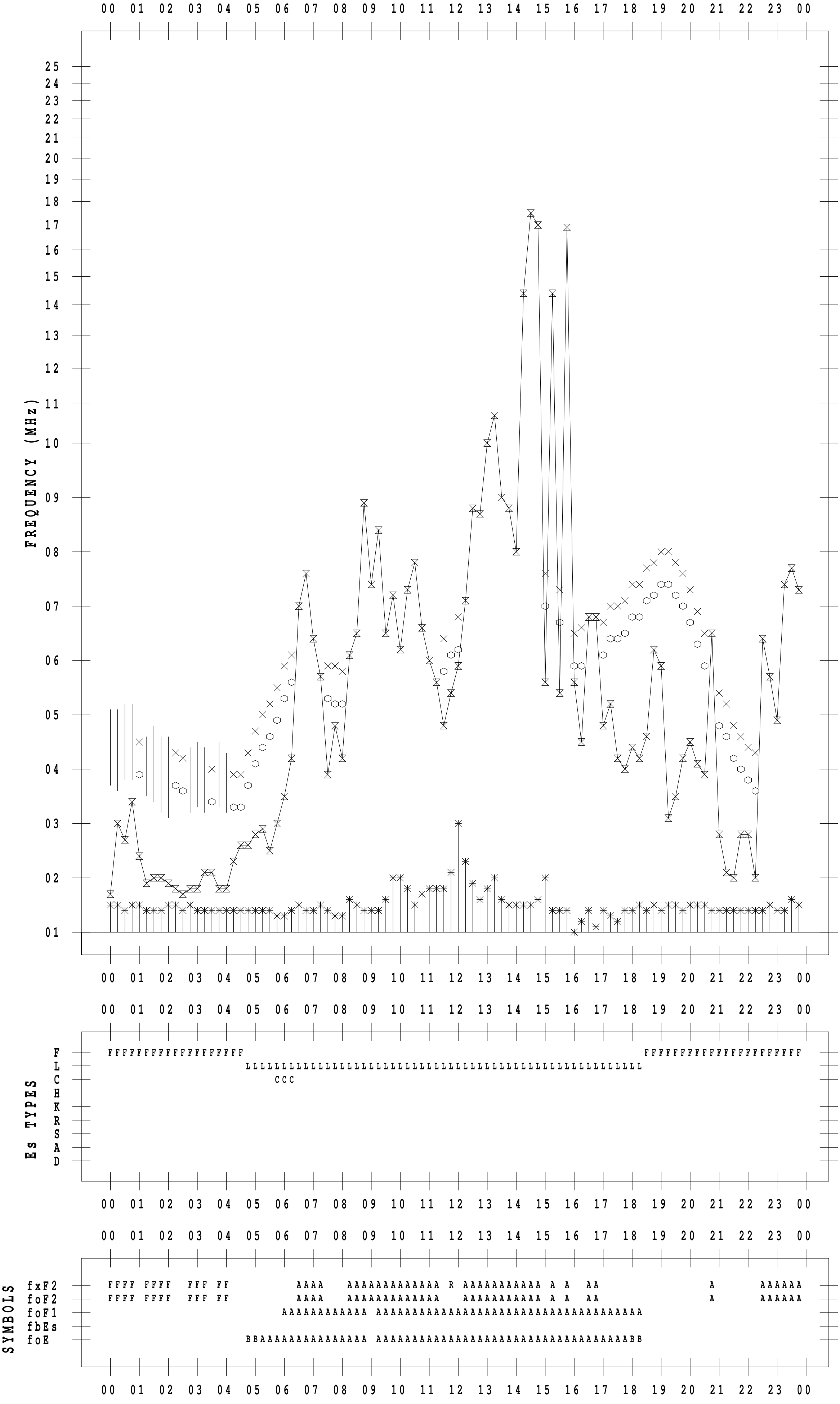


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 5/17

135 °E MEAN TIME

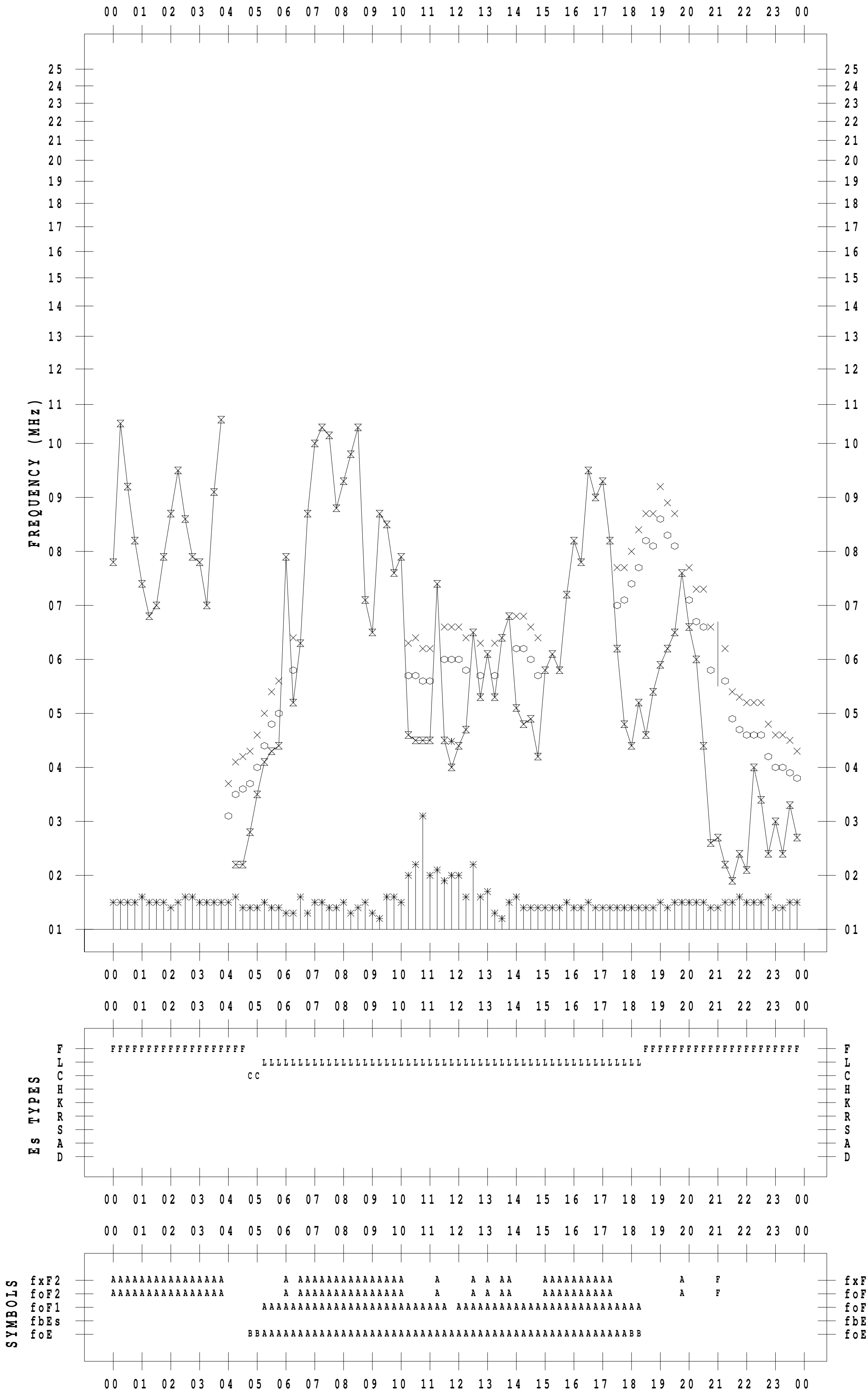


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 5/18

135 °E MEAN TIME



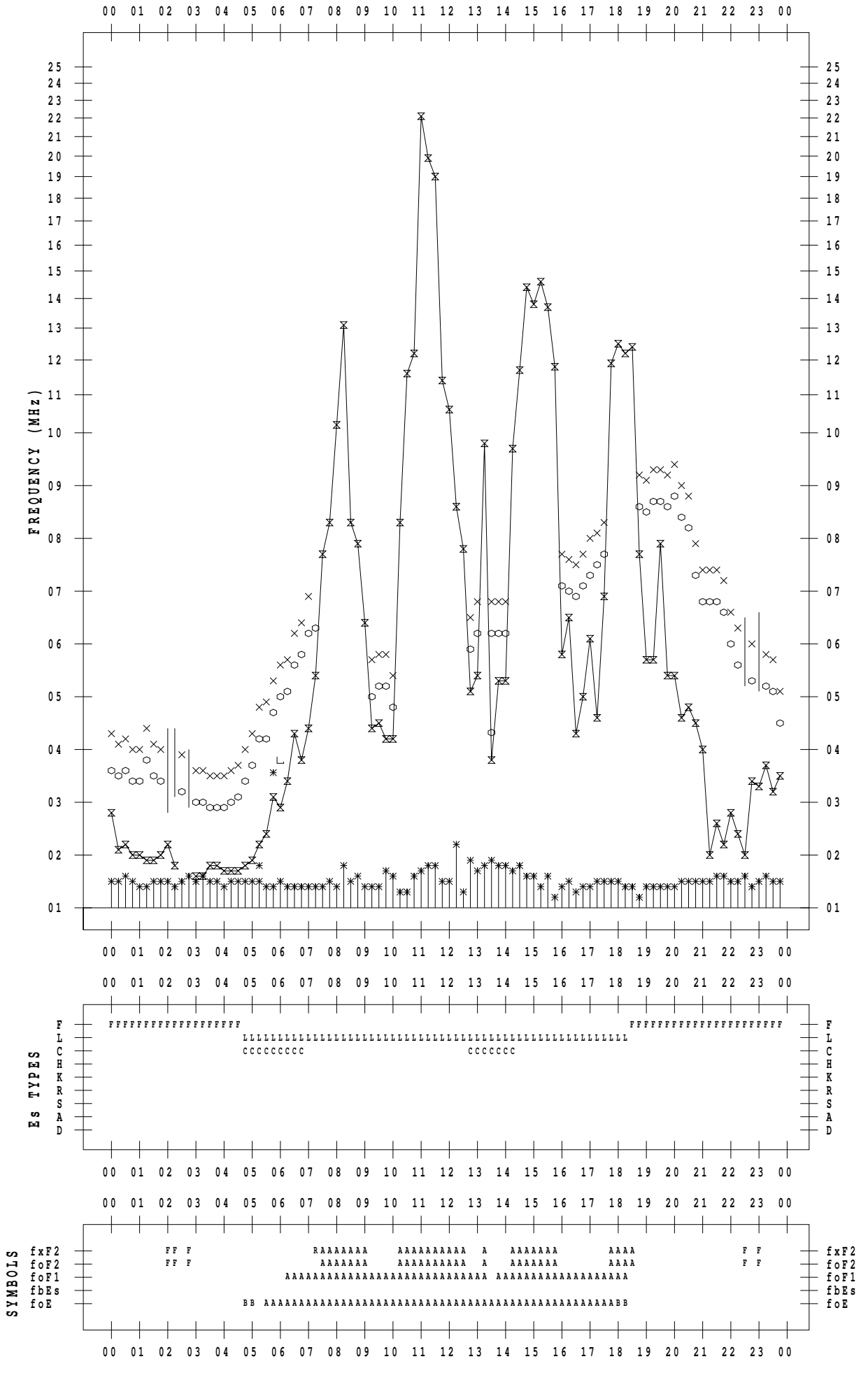
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/19

135 °E MEAN TIME



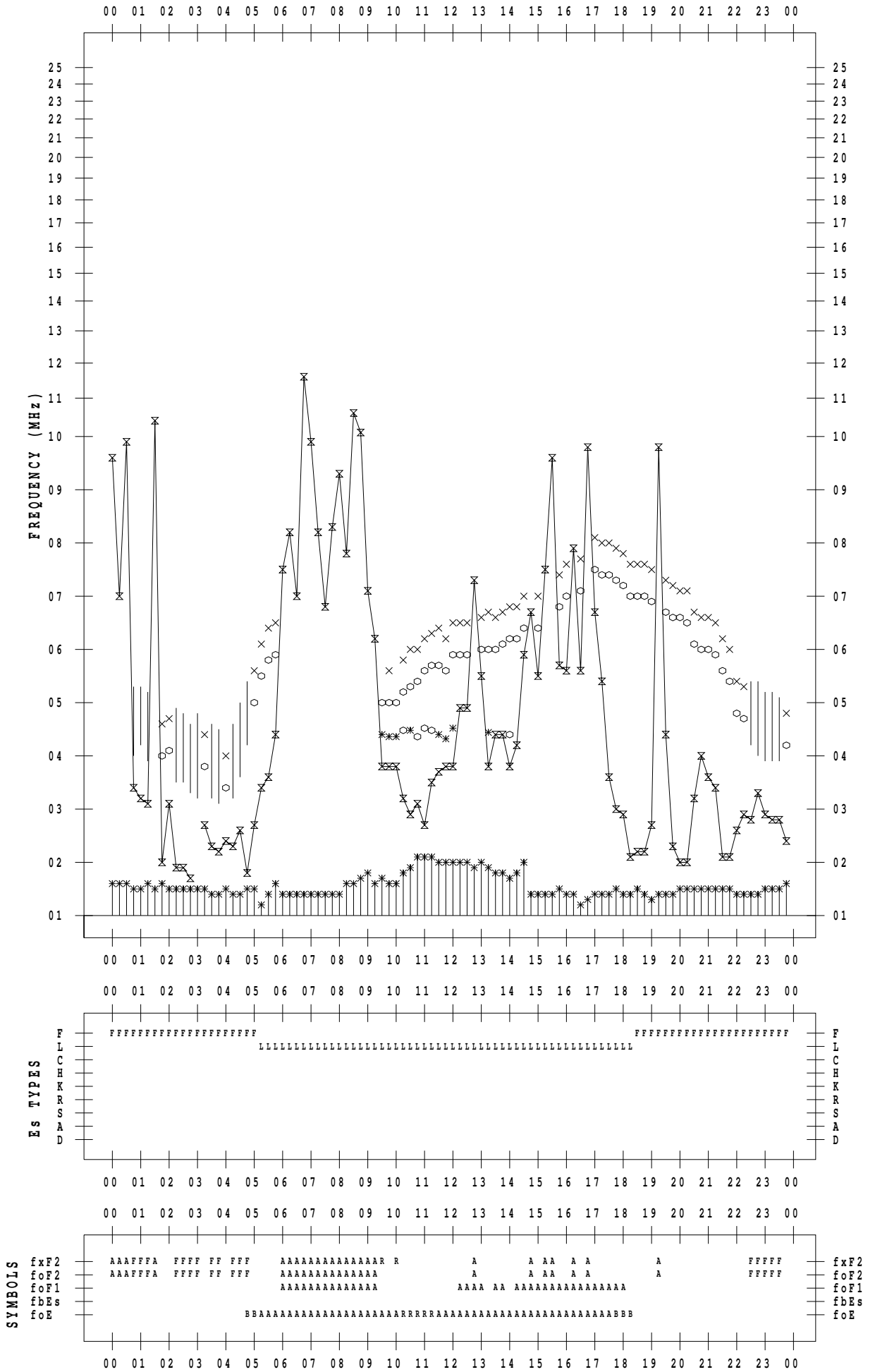
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/20

135 °E MEAN TIME



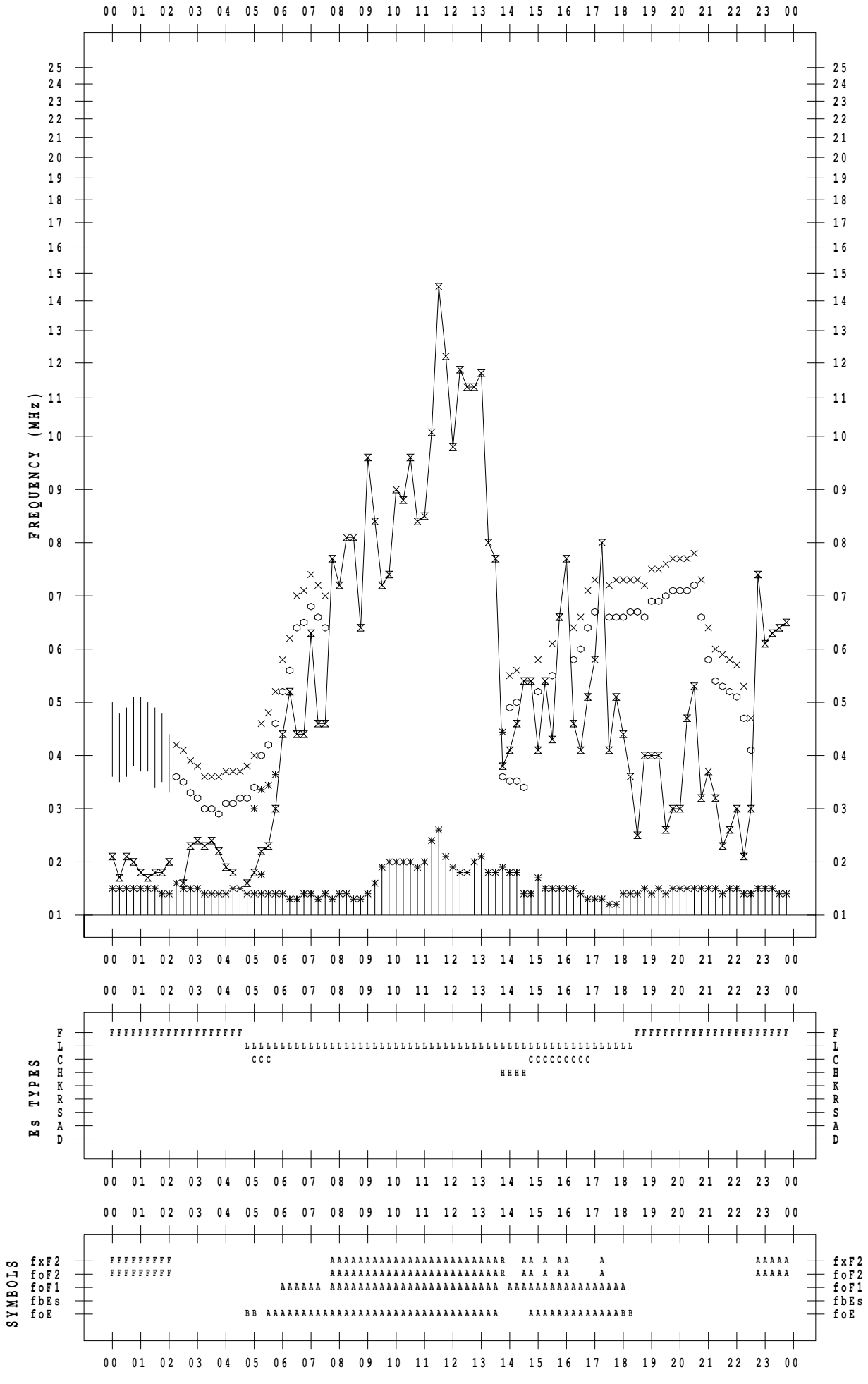
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/21

135 °E MEAN TIME



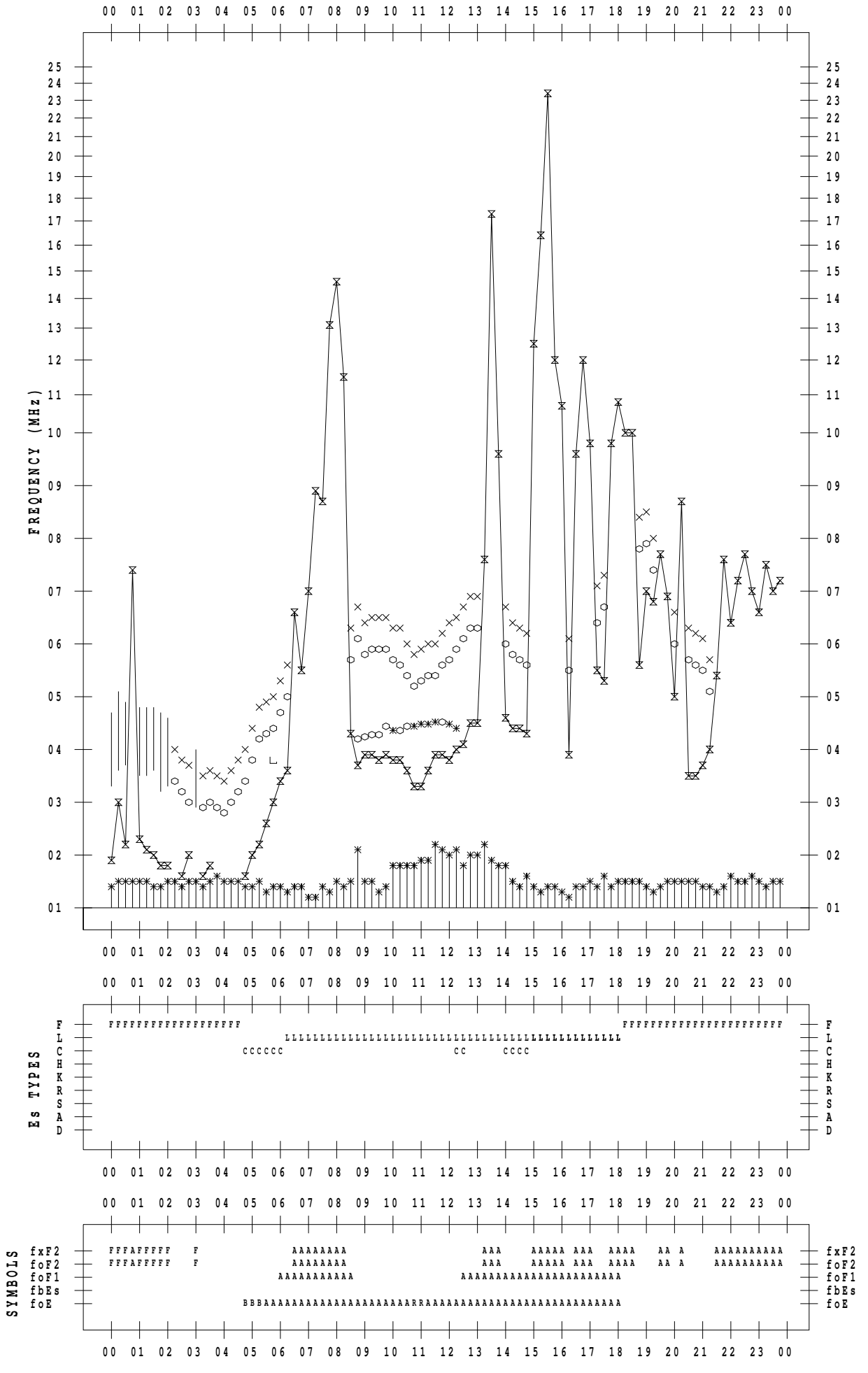
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/22

135 °E MEAN TIME



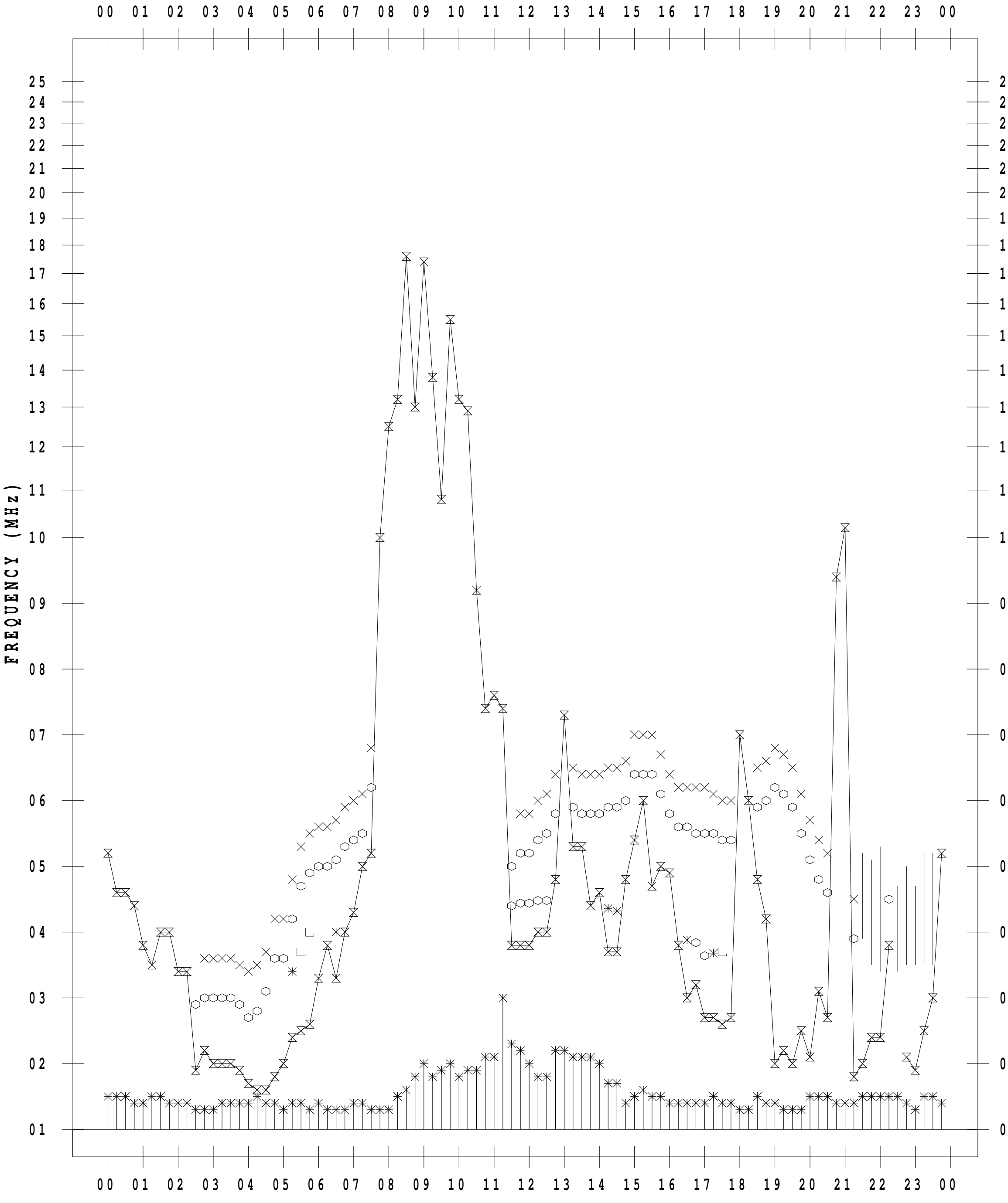
f-PLOT DATA

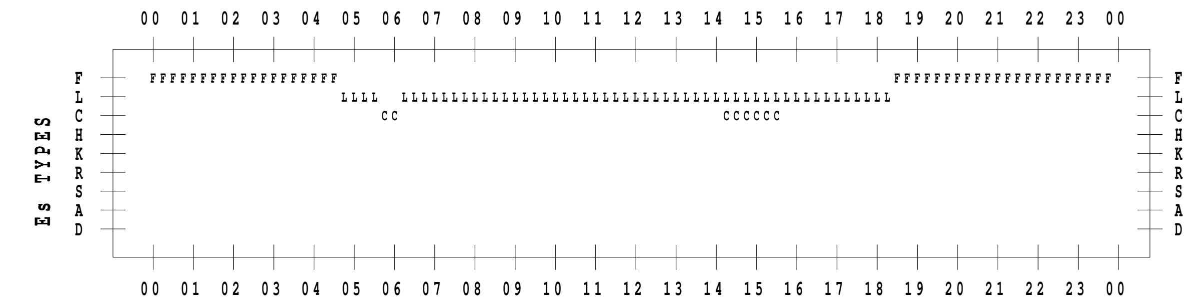
SCALER : I.NISHIMUTA

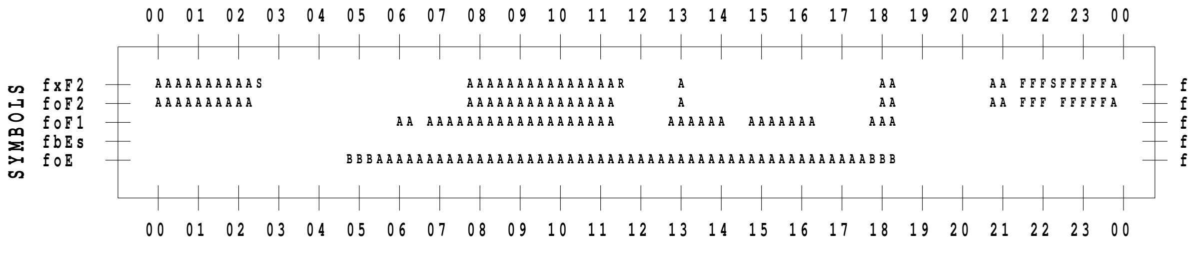
STATION : Kokubunji

DATE : 2009/ 5/23

135 °E MEAN TIME







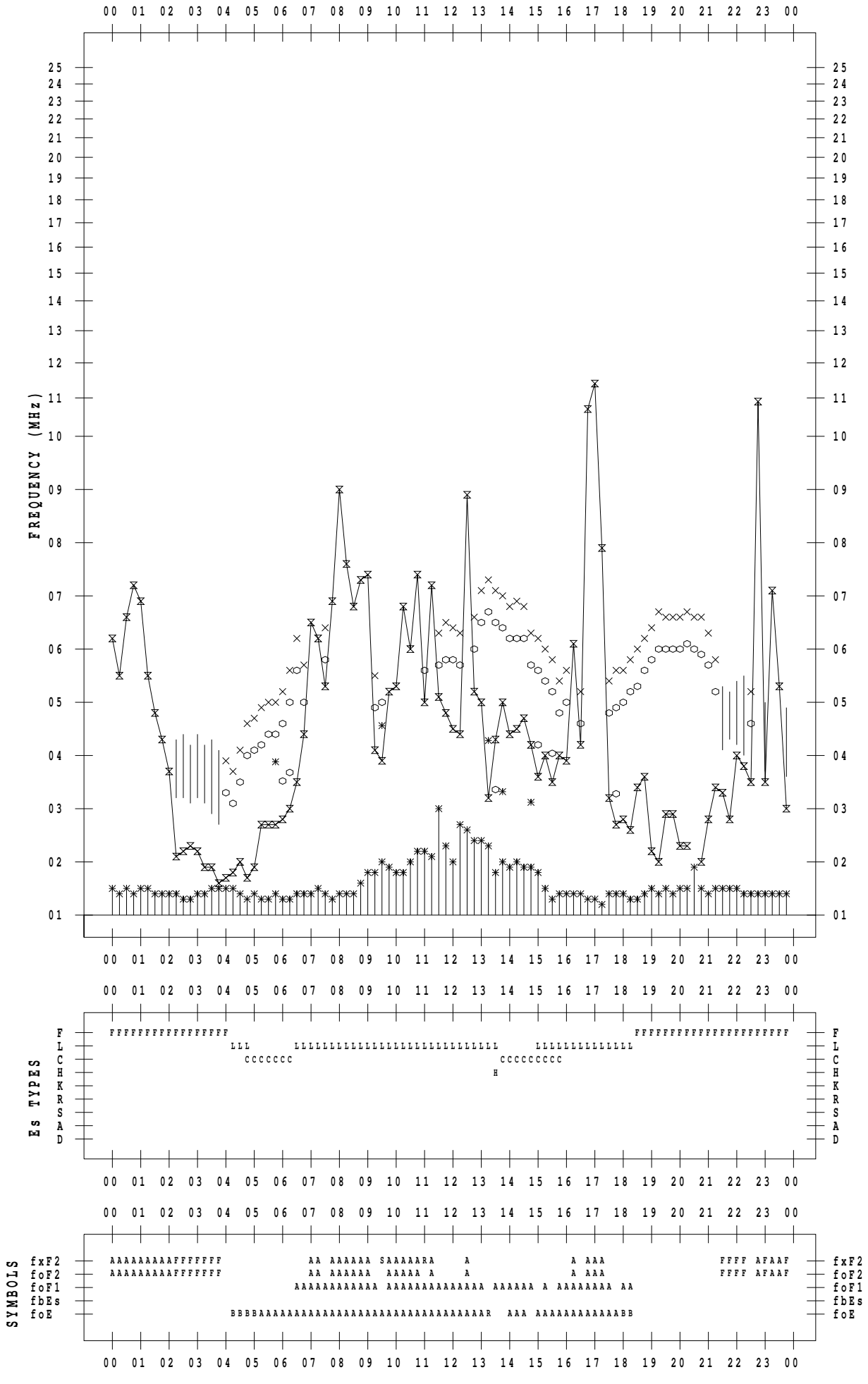
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/24

135 °E MEAN TIME

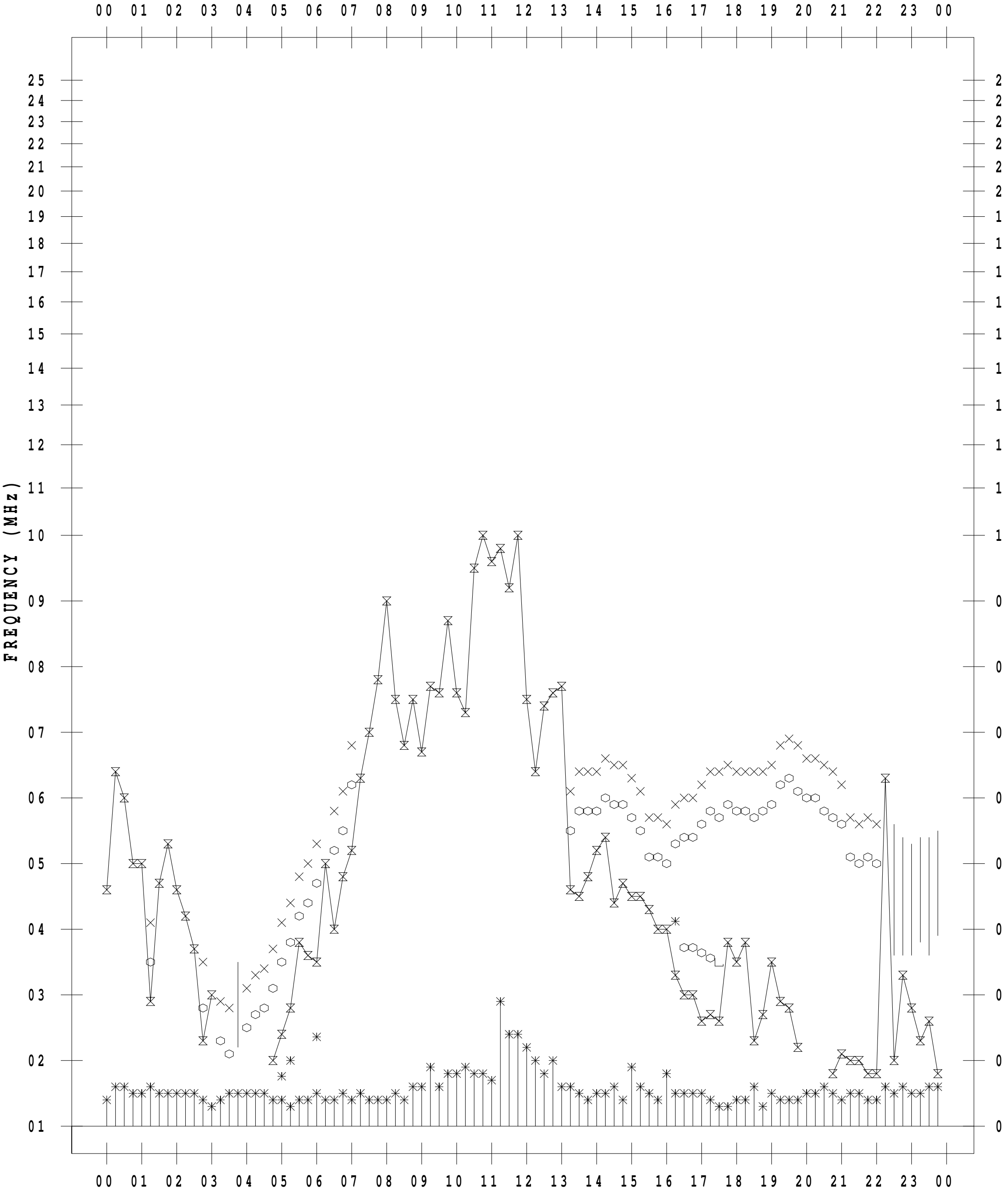


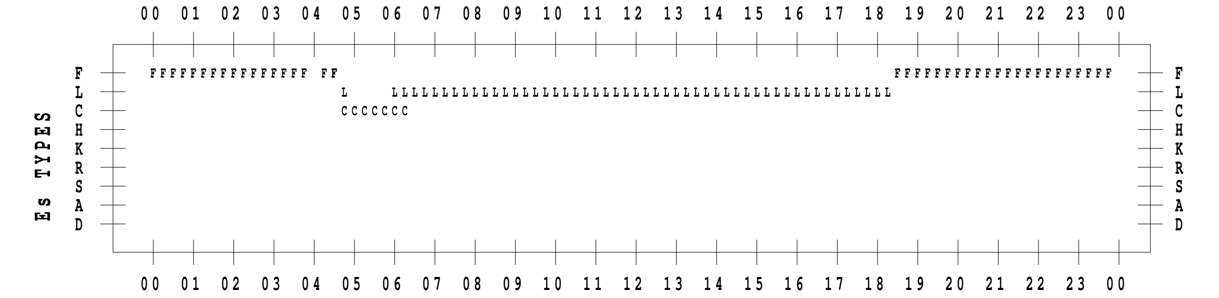
f-PLOT DATA

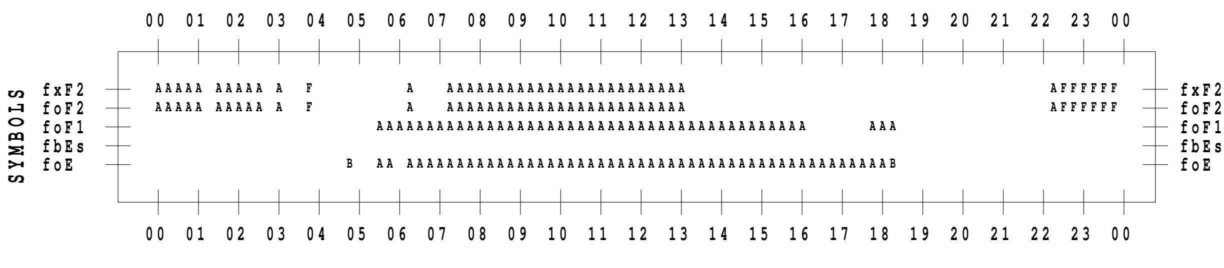
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 5/25

135 °E MEAN TIME







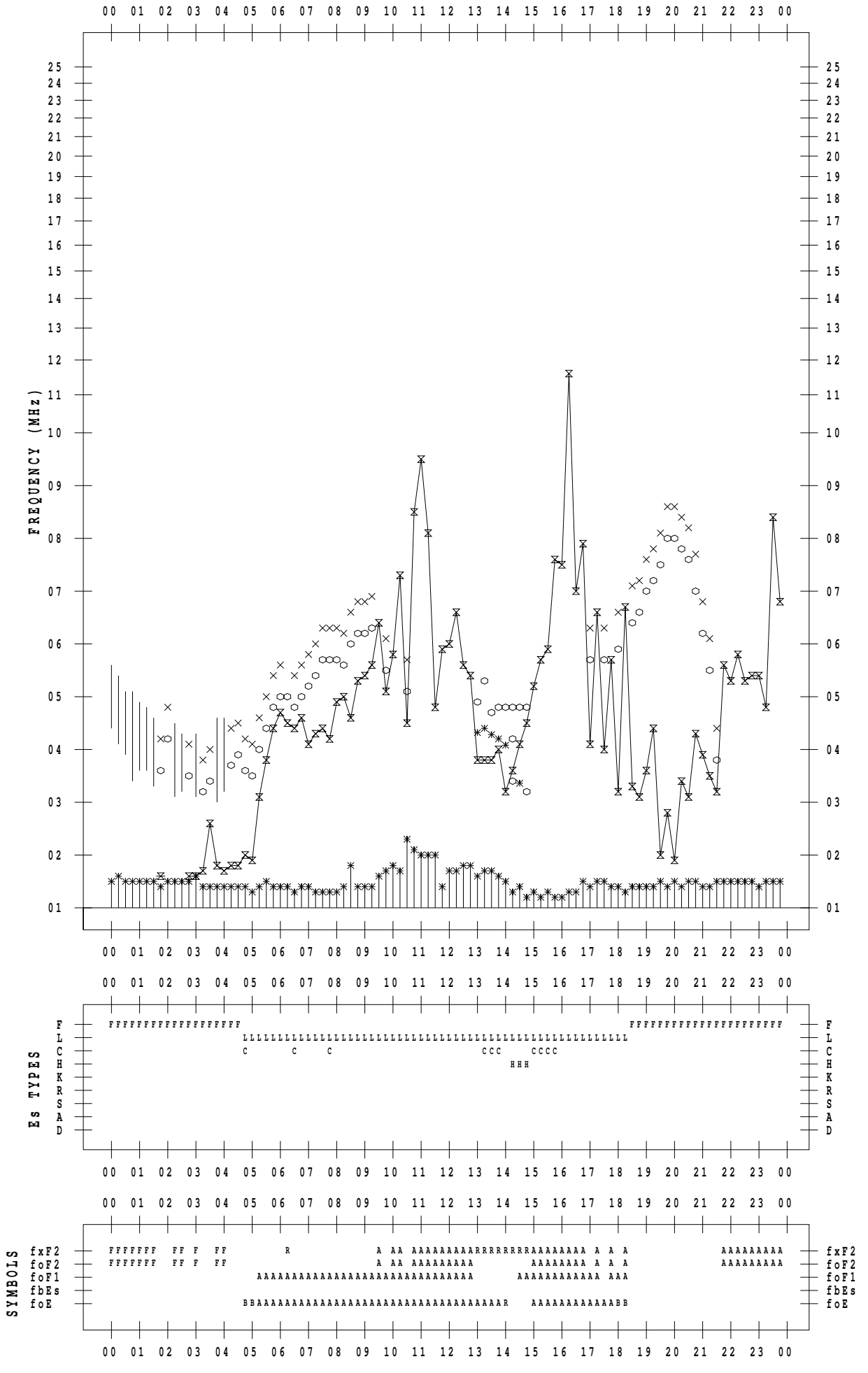
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/26

135 °E MEAN TIME



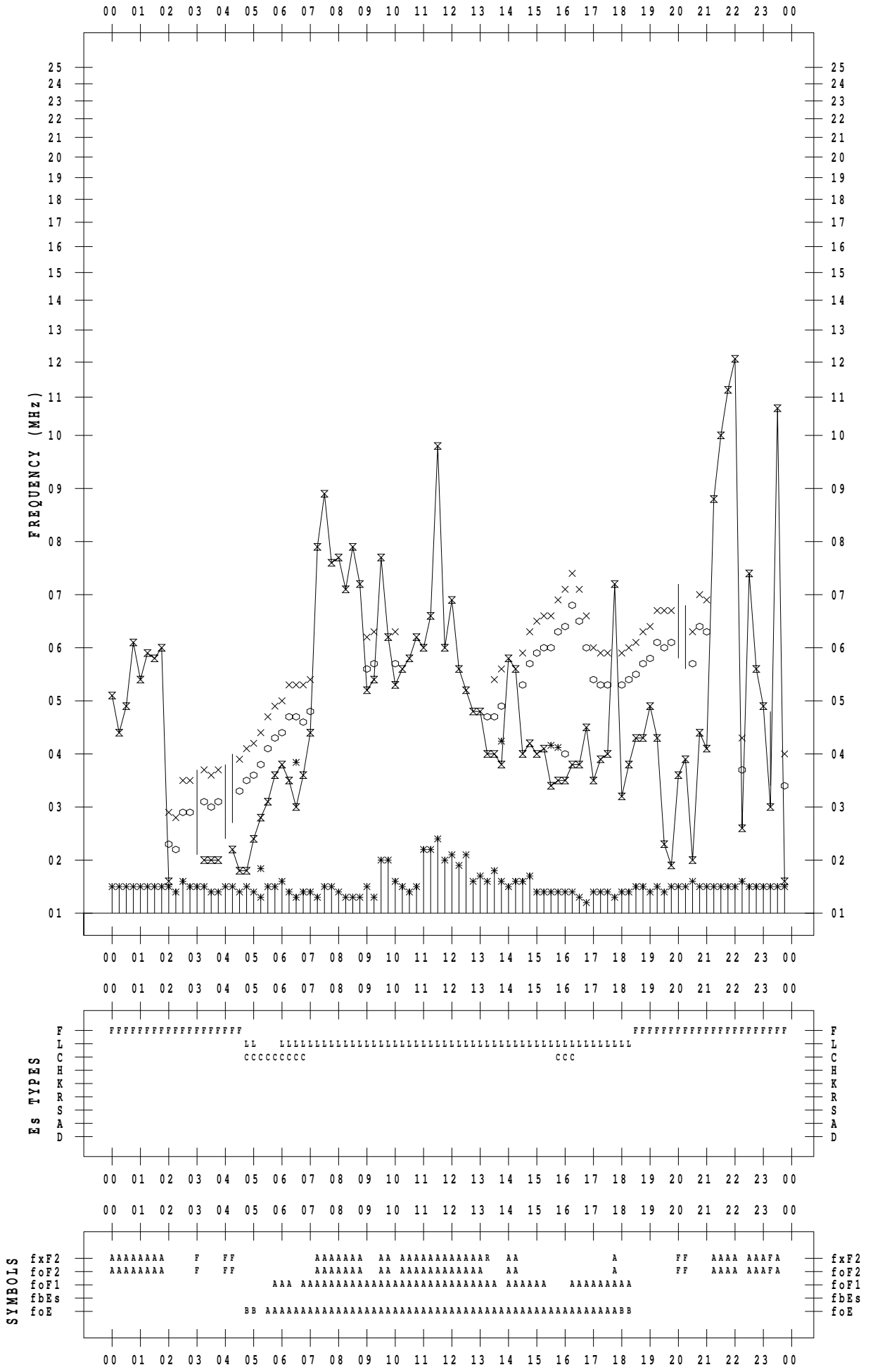
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/27

135 °E MEAN TIME

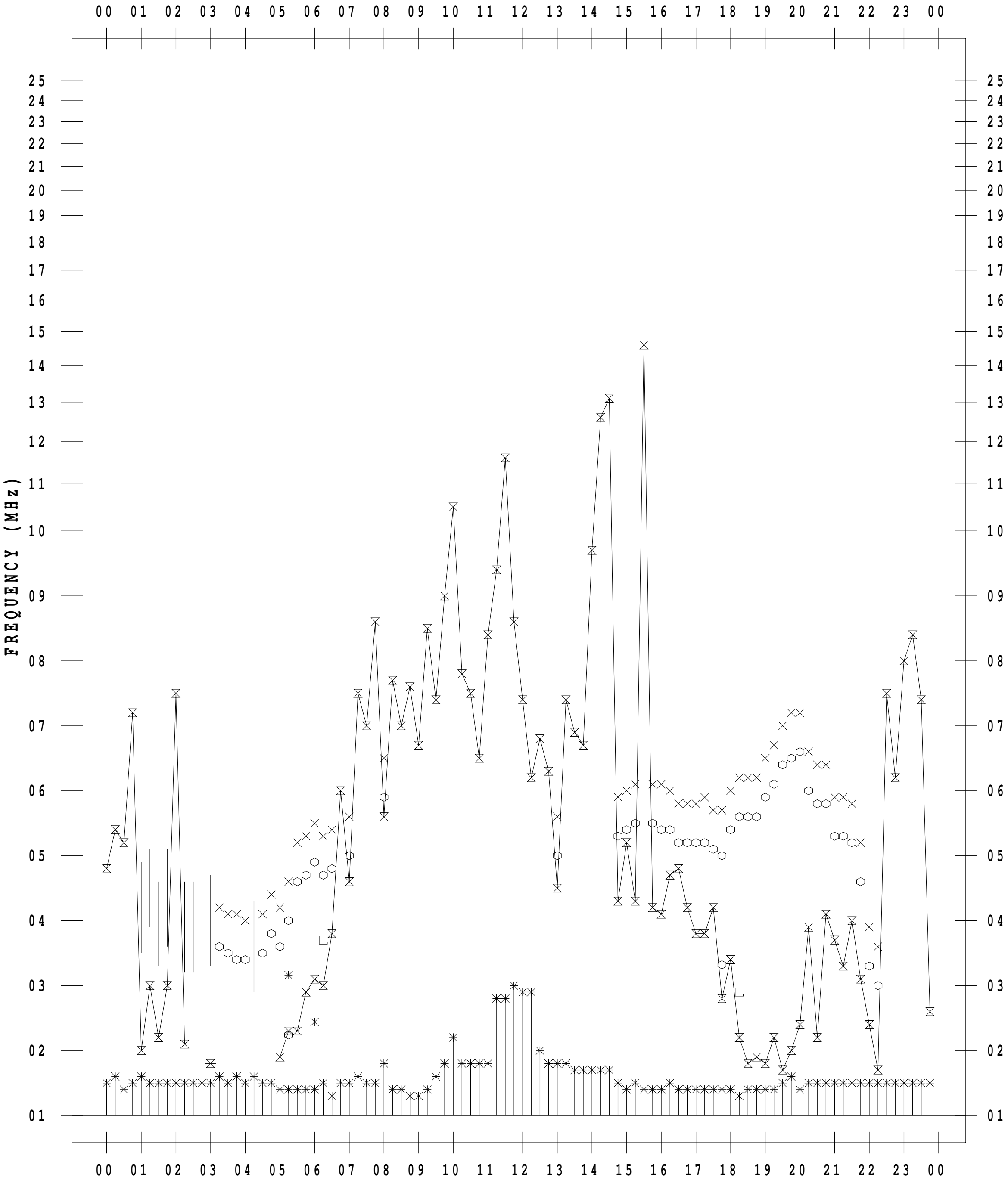


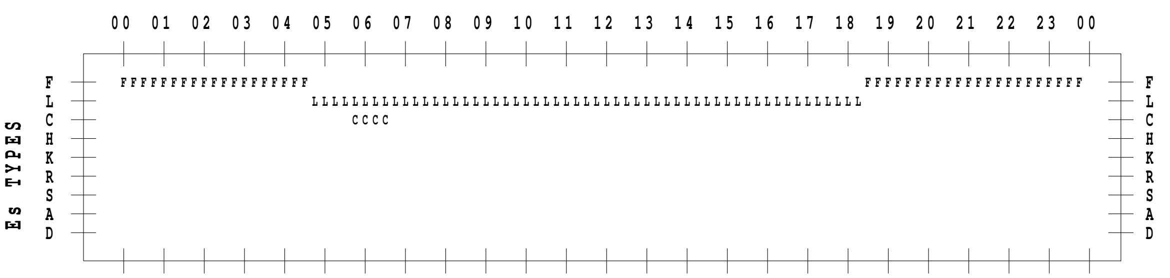
f-PLOT DATA

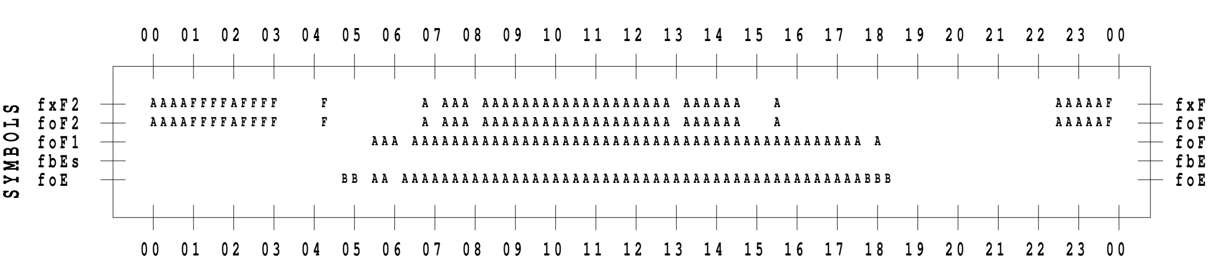
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2009/ 5/28

135 °E MEAN TIME





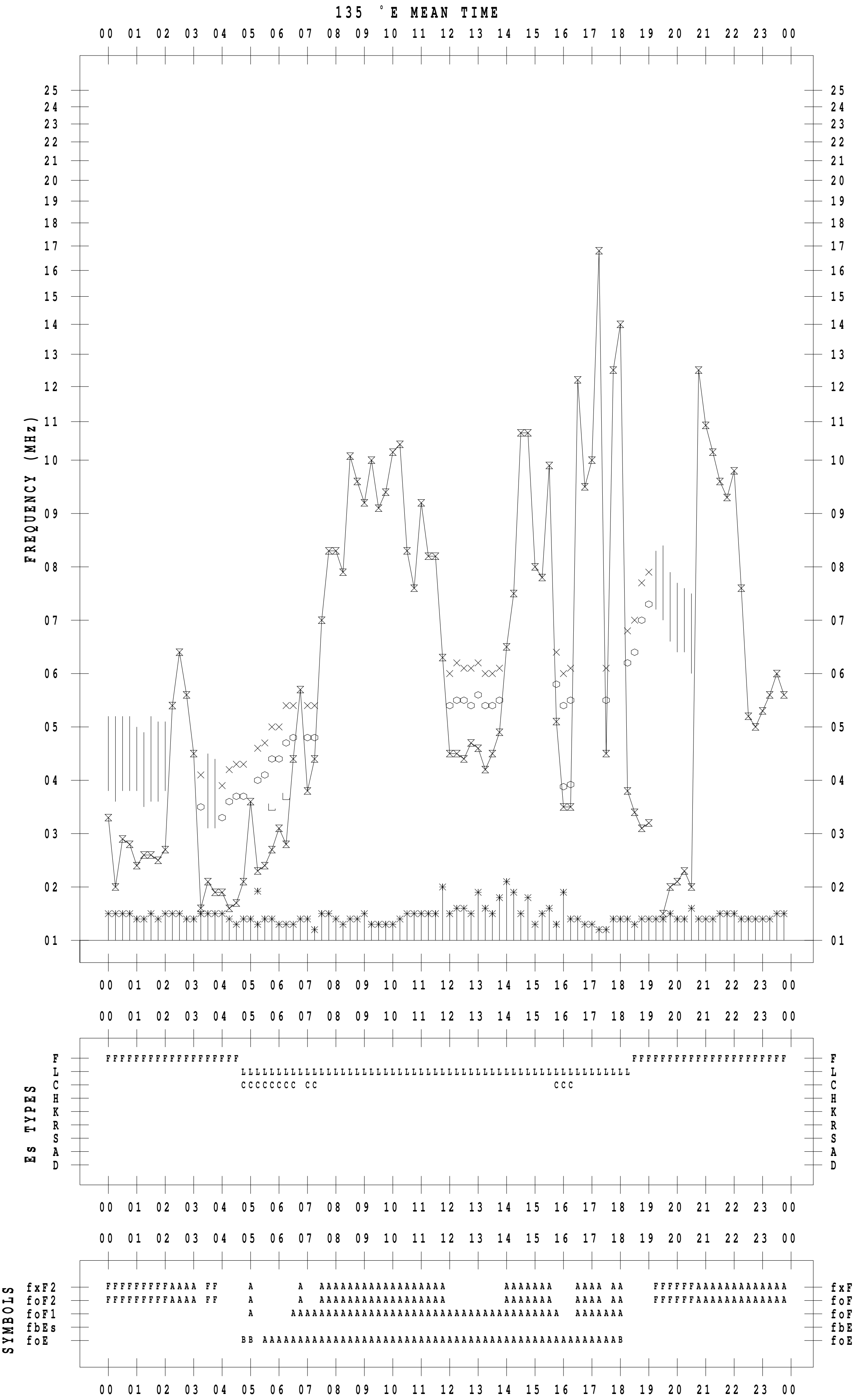


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/29

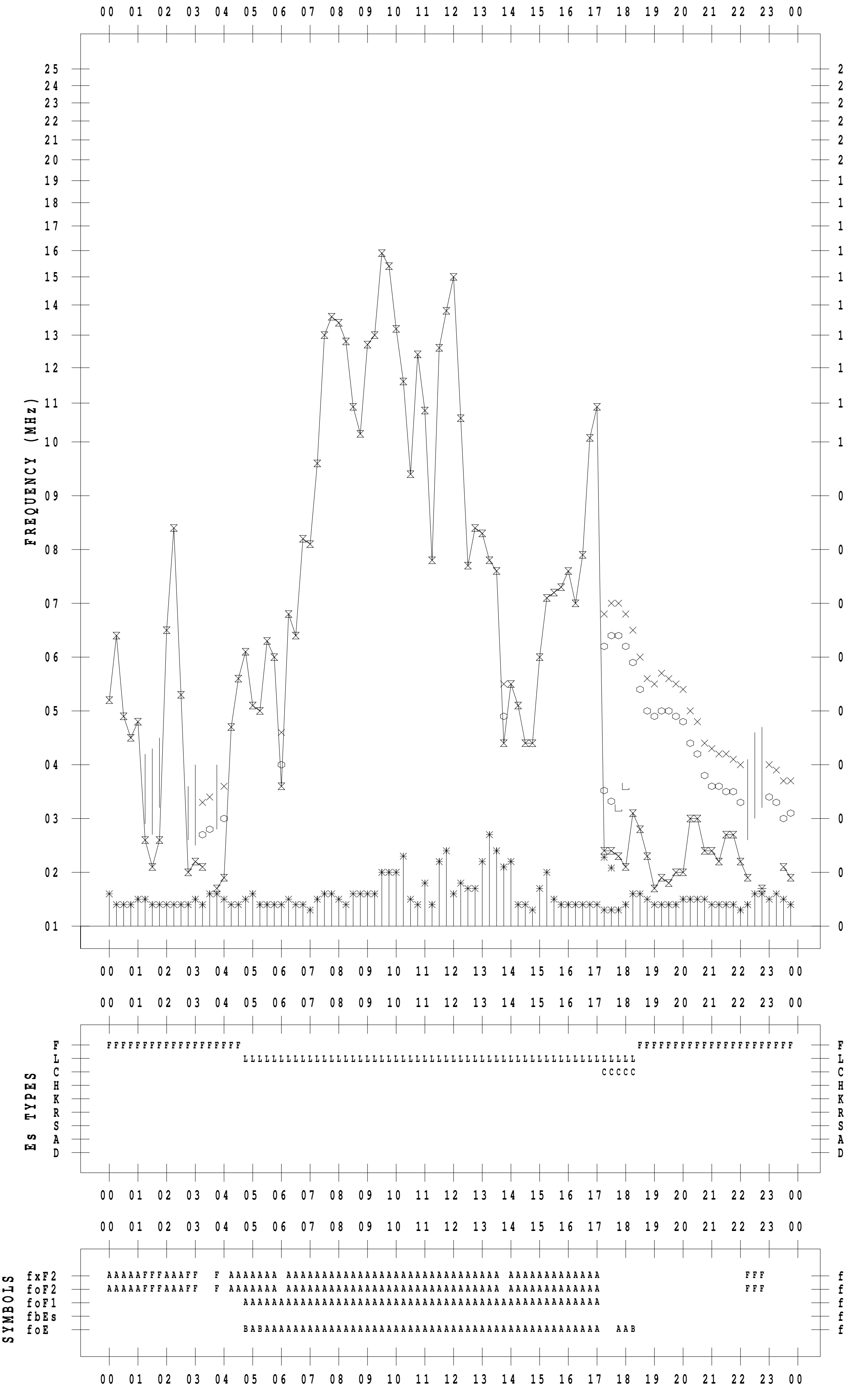


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/30



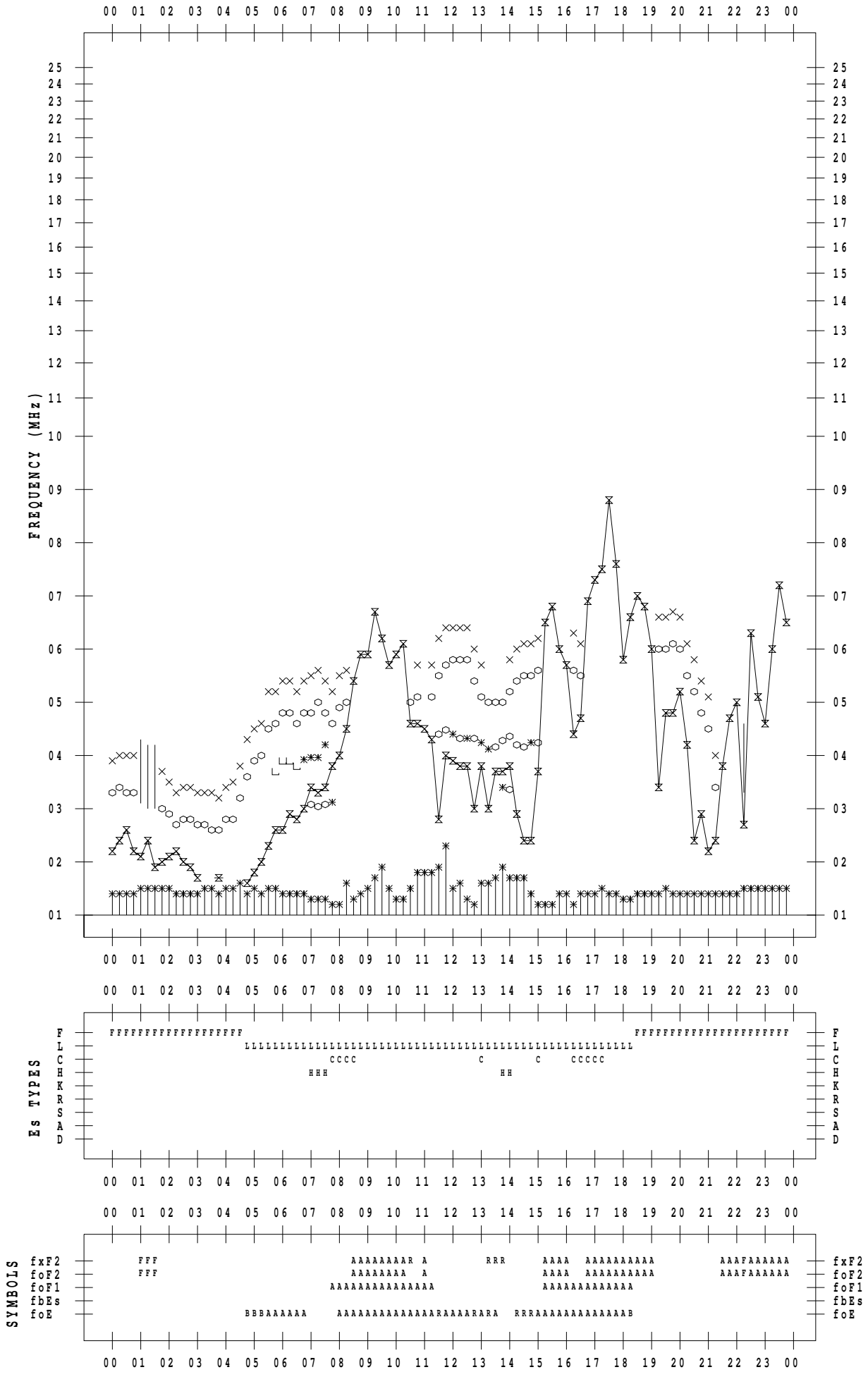
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2009/ 5/31

135 °E MEAN TIME



B. Solar Radio Emission
B1.Outstanding Occurrences at Hiraiso

Hiraiso May 2009

Single-frequency observations
Normal observing period: **** - **** U.T. (sunrise to sunset)

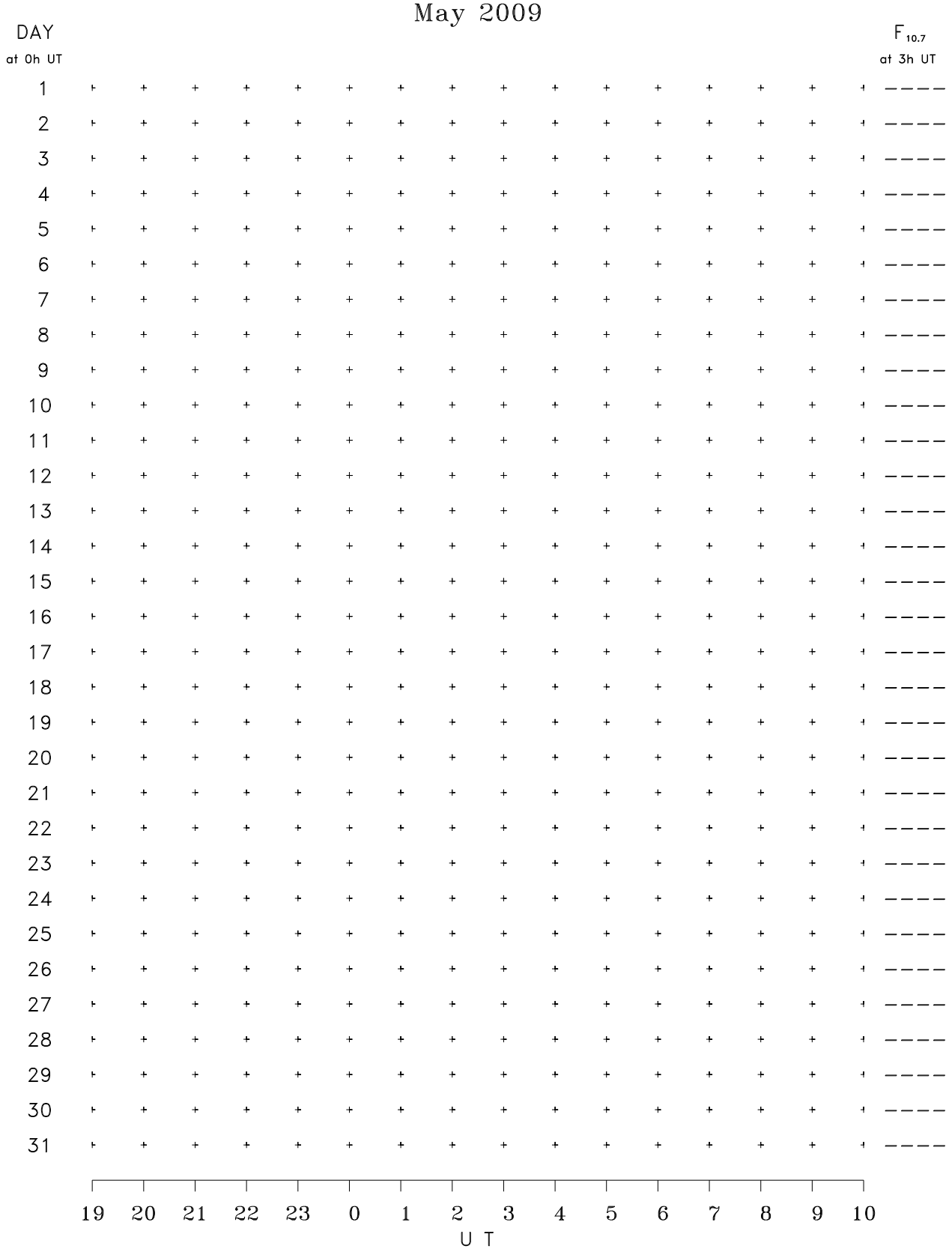
MAY 2009	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) PEAK	FLUX DENSITY (10^{-22} W m^{-2} Hz^{-1}) MEAN	POLARIZATION REMARKS

No data for the 2800MHz fixed-frequency observation are available due to system maintenance.

B. Solar Radio Emission

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

May 2009



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