F-791

IONOSPHERIC DATA IN JAPAN

FOR NOVEMBER 2014

VOL. 66 NO. 11

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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.

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.

HOURLY VALUES OF foF2 AT Wakkanai

NOV. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	47	34	34	52	69	109	59	79	69	87	N	59	69	69	64	63	61	32	34		49
2	54	34	34	44	44	54	64	66	67	59	64	59	68	N	59	69	59	63	34	54	52	47	32	32
3	32	35	34	50	47	34	34	67	64	67	64	59	53	59	59	69	61	59	52	54	34	38	34	32
4	34	32	34	34	34	37	47	65	59	59	91	67	59	69	69	59	66	64	49	59	34	34	35	34
5	N	32	34	32	46	29	32	66	68	59	59	69	70	69	70	69	67	68	53	34	A	38	34	A
6	A	A	A	40	34	34	34	67	67	59	N	99	59	A	68	67	65	65	54	53	32	A	34	B
7	A	A	34	32	40	34	32	67	N	60	72	69	59	67	92	93	68	64	58	58	60	34	53	54
8	53	53	54	53	52	37	52	64	72	59	59	61	59	69	59	69	67	64	32	34	28	34	34	34
9	32	34	32	34	34	30	32	65	66	97	69	69	70	68	95	69	65	N	53	35	34	34	28	34
10	32	34	32	31	34	32	32	66	67	59	99	68	N	N	59	N	C	C	60	32	34	49	34	34
11	34	38	34	32	32	34	37	60	59	66	C	C	C	C	C	C	C	C	C	C	50	42	43	32
12	48	53	37	45	43	42	42	66	96	C	120	121	92	90	96	95	59	66	63	61	53	47	48	50
13	47	52	52	A	50	46	47	67	67	100	98	112	106	96	95	94	86	67	58	48	44	37	A	37
14	43	46	38	34	46	32	47	61	103	79	109	95	59	86	87	87	67	57	37	46	42	34	44	35
15	42	A	36	42	34	38	42	67	96	110	93	59	90	75	96	86	68	66	54	34	34	38	38	34
16	A	A	37	34	32	32	34	67	84	89	105	104	89	104	91	117	43	64	51	23	43	41	36	38
17	A	A	34	36	34	38	42	67	N	106	106	118	119	94	85	87	90	66	54	N	34	A	A	34
18	A	A	36	A	A	35	38	67	90	86	N	96	112	122	92	79	48	67	46	42	42	36	34	37
19	34	34	30	40	42	36	34	64	90	72	106	118	107	94	96	90	59	53	50	34	47	34	A	34
20	38	38	A	34	41	41	44	67	86	N	91	118	99	92	91	75	68	53	52	37	A	A	38	32
21	42	38	34	34	34	35	36	67	91	90	96	N	96	96	96	91	70	61	53	37	30	C	32	34
22	34	40	34	36	34	41	48	66	60	59	95	97	95	94	91	90	68	66	48	37	38	37	34	37
23	40	34	32	28	34	34	38	67	87	91	127	118	95	91	94	91	69	63	52	51	36	A	31	34
24	32	34	37	42	42	40	46	67	38	120	122	85	90	80	108	91	68	53	44	34	34	32	37	37
25	31	36	32	32	38	37	42	66	86	N	114	115	94	94	96	87	67	58	38	40	37	34	36	34
26	34	34	34	34	34	32	34	67	82	89	N	97	91	92	92	81	70	50		38	36	29	A	42
27	42	43	17	43	42	42	46	67		120	130	121		91	91	92	71	58	36	A	A	A	A	A
28	A	34	34	36	40	40	28	62	87	115	122	118	97	91	86	92	67	63	A	34	34	A	A	A
29	A	A	34	36	32	34	34	64	90	114	63	122	69	94	92	88	67	66	42	42	34	34	34	34
30	32	35	38	38	30	40	35	54	86	113	114	N	90	94	92	91	68	65	53	49	50	37	37	38
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	22	27	28	29	30	30	30	27	27	26	27	27	25	29	28	28	27	27	27	27	23	23	26
MED	34	35	34	36	34	36	38	66	84	86	97	97	90	91	91	87	67	64	52	40	36	36	34	34
U Q	42	40	37	42	42	40	46	67	90	106	114	118	96	94	95	91	68	66	54	53	44	38	38	37
L Q	32	34	34	34	34	34	34	65	67	59	72	69	68	72	69	69	65	58	44	34	34	34	34	34

HOURLY VALUES OF fEs AT Wakkanai

NOV. 2014

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	35	49	36	33	G	G	G	G	G	39	55	G	G	39	37	G	33	37	40	38	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	33	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G	G	39	G	G	G	G	33	37	G	G	G	G	G	G
4	G	G	G	G	G	G	G	45	G	G	G	G	40	G	G	G	G	G	G	32	G	G	G	G
5	G	G	G	G	G	G	G	G	59	G	G	G	G	G	G	39	32	40	39	35	35	34	G	39
6	26	26	35	29	G	G	G	G	G	G	71	76	G	69	39	G	G	G	G	G	G	33	24	B
7	39	34	G	G	G	G	G	G	40	G	G	G	G	G	G	G	G	G	G	32	27	G	G	G
8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	29	G	G
9	G	G	G	G	G	G	G	G	G	38	54	G	G	G	G	G	G	G	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G	C	C	26	G	G	G	G	G
11	G	G	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	G	G	G	G
12	G	G	G	G	26	G	G	G	G	C	G	G	G	38	G	G	G	G	G	G	G	G	G	34
13	34	38	72	65	34	37	G	G	34	46	42	58	G	69	35	32	33	39	33	34	26	27	29	24
14	G	G	G	G	28	24	G	31	39	46	41	G	G	G	G	34	G	G	G	G	G	G	G	26
15	36	34	26	28	G	G	G	G	48	G	40	G	45	G	G	G	24	G	G	G	G	G	G	G
16	49	36	26	G	G	G	G	35	G	G	G	G	G	G	40	37	37	G	G	27	G	G	27	33
17	40	38	G	G	G	G	27	G	35	49	40	40	44	40	G	58	G	G	G	G	G	27	28	G
18	28	37	28	29	33	G	24	G	32	G	57	G	G	43	54	36	31	30	24	29	G	G	G	G
19	27	G	25	G	G	G	G	G	44	G	G	G	G	39	35	G	G	G	46	G	34	32	43	35
20	37	34	38	29	G	G	G	28	33	40	G	G	39	G	35	38	G	24	G	G	39	32	26	26
21	G	28	G	29	G	G	G	44	37	39	40	59	G	G	34	48	G	G	G	G	G	C	G	G
22	G	G	G	G	G	G	G	27	59	38	G	G	G	G	G	G	26	24	G	G	G	29	G	G
23	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	26	G	59	38	28	G
24	25	27	24	24	G	G	28	G	36	49	50	G	G	G	34	G	32	32	28	29	26	G	G	G
25	G	G	G	24	27	28	30	33	33	37	44	G	G	G	36	31	G	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	G	31	35	38	G	G	G	34	34	32	24		G	G	G	36	34
27	34	36	G	27	G	G	G	28		G	G	G		37	38	34	G	G	G	69	72	54	36	43
28	38	28	G	G	G	G	G	G	33	G	G	G	G	38	38	G	34	28	39	30	30	38	45	40
29	38	34	24	G	G	G	G	39	31	G	55	G	G	37	G	48	G	G	G	G	G	G	G	G
30	G	G	G	G	G	34	24	29	G	G	G	G	G	G	G	G	G	G	G	G	27	26	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	29	29	28	29	29	29	28	28	28	29	30	29	30	29
MED	G	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	35	34	25	27	G	G	G	28	38	38	43	G	G	38	35	35	32	26	27	31	27	30	27	29
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

NOV. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	21	16	15	15	15	17	20	20	20	17	14	14	14	14	15	15	16	17	15	15
2	15	20	15	15	15	14	15	14	17	15	16	18	17	17	16	15	14	16	15	14	15	15	15	14
3	14	14	15	15	15	15	16	23	15	15	15	14	15	15	14	14	14	17	15	15	15	15	14	15
4	16	15	15	15	14	15	15	22	35	15	15	17	22	18	18	18	22	29	18	15	15	16	15	15
5	15	16	17	15	15	16	15	23	15	15	17	18	17	20	15	15	14	14	15	14	15	15	18	15
6	66	16	15	15	17	15	14	23	15	17	17	44	18	54	18	14	15	15	16	15	14	15	15	B
7	15	14	15	16	15	15	15	14	15	21	17	18	55	23	15	14	20	15	18	14	15	15	14	14
8	14	14	15	14	15	15	15	20	15	18	16	16	15	14	14	14	22	18	17	17	15	15	14	16
9	16	15	18	14	14	14	15	14	15	14	17	14	15	15	14	15	18	15	15	15	15	15	15	15
10	20	15	16	18	14	15	16	22	15	15	17	21	15	15	15	14	C	C	16	16	15	15	15	15
11	15	15	15	66	17	15	16	20	28	15	C	C	C	C	C	C	C	C	C	C	15	14	14	14
12	14	15	14	15	14	14	15	14	14	C	14	14	15	14	14	14	18	14	14	14	15	14	14	14
13	14	14	14	14	14	14	14	20	14	14	14	14	16	14	14	14	14	14	14	14	15	14	14	14
14	14	14	14	14	14	14	14	14	14	14	14	15	14	14	14	14	17	15	14	15	14	15	14	14
15	14	14	15	14	14	15	14	14	14	16	15	15	14	14	14	14	14	15	14	15	15	14	15	14
16	14	14	14	14	17	14	14	14	14	14	15	14	14	15	14	14	14	14	14	15	14	14	15	15
17	14	14	14	16	14	14	14	15	14	14	14	15	14	14	14	14	16	14	14	15	14	14	14	15
18	14	14	15	14	15	15	15	21	14	14	14	14	14	15	14	14	14	14	14	14	14	15	15	15
19	14	14	17	15	15	14	14	15	14	15	16	17	15	15	14	14	16	14	14	14	14	14	14	14
20	15	14	14	14	14	15	14	14	14	14	14	15	15	14	14	14	14	14	14	15	14	14	17	14
21	15	15	14	14	16	15	14	15	14	14	14	15	16	14	14	18	14	14	14	14	14	C	14	14
22	15	14	15	14	14	15	14	14	14	14	15	14	16	15	14	14	14	17	14	15	14	14	14	14
23	15	14	15	15	15	14	14	20	14	14	15	16	15	14	14	14	15	15	17	15	14	14	14	16
24	15	14	14	14	14	14	14	18	14	14	14	15	15	14	14	16	14	14	15	14	14	14	14	15
25	15	14	14	14	15	14	14	14	14	14	14	14	14	14	14	14	16	14	14	14	14	15	14	15
26	14	14	15	14	15	14	14	20	14	14	14	14	14	14	14	14	14	14		14	14	15	15	14
27	14	14	14	14	14	15	14	14		14	14	15		14	14	14	16	15	14	14	14	14	14	14
28	14	14	14	14	15	15	14	14	14	15	17	15	15	14	14	14	14	14	15	14	14	14	14	14
29	14	15	14	14	14	14	15	14	14	14	14	14	14	14	14	14	16	14	14	14	14	15	14	15
30	14	14	14	14	14	15	15	14	14	14	14	14	14	14	14	14	16	15	14	14	15	14	15	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	29	29	29	28	29	29	29	28	28	28	29	30	29	30	29
MED	14	14	15	14	15	15	14	15	14	14	15	15	15	14	14	14	14	14	14	14	14	15	14	15
U Q	15	15	15	15	15	15	15	20	15	15	16	17	16	15	14	14	16	15	15	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

NOV. 2014

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	44	44	46	46	38	38	54	90	108	111	105	117	120	124	127	126	102	80	67	54	52	52		45
2	44	49	44	45	46	44	66	99	107	116	126	113	115	118	120	112	94	71	61	62	61	48	47	46
3	45	44	49	55	39	N	47	89	95	117	115	116	116	117	124	120	91	82	52	48	51	48	44	43
4	47	38	43	47	45	32	44	78	86	104	107	100	101	115	115	106	95	73	55	52	54	54	52	43
5	43	38	42	47	44	30	44	85	122	136	130	136	125	117	120	112	106	77	53	44	44	42	45	A
6	44	44	39	37	36	A	47	87	110	117	131	125	118	125	122	104	90	75	59	47	46	43	38	38
7	39	43	38	39	36	34	49	94	102	110	112	112	117	114	117	110	94	71	55	54	52	51	44	44
8	44	44	46	46	43	42	52	81	88	102	115	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	107	106	112	123	111	101	90	75	67	52	54	53	43	48
11	52	47	42	38	42	41	48	92	96	114	136	117	126	122	121	108	98	77	57	53	52	46	42	46
12	47	45	44	45	38	36	49	80	88	102	117	135	118	118	115	110	102	88	61	51	44	46	39	39
13	37	42	38	38	38	34	42	80	94	106	120	127	109	120	124	105	95	81	63	53	46	43	39	39
14	39	37	37	36	36	34	46	86	89	106	107	105	108	107	102	84	87	64	45	44	44	47	44	34
15	31	34	34	A	33	28	38	88	113	111	106	110	118	118	102	96	88	71	51	52	44	43	42	43
16	43	39	47	36	25	31	43	82	110	107	112	115	124	118	112	113	96	74	52	54	46	45	A	40
17	36	39	43	39	36	42	54	82	110	132	140	131	121	125	115	115	107	81	50	48	38	39	36	36
18	36	41	42	37	32	38	42	80	100	112	115	107	121	122	120	117	91	74	55	46	41	43	39	39
19	39	41	43	44	32	37	48	97	97	115	114	111	114	126	107	87	91	69	52	54	52	43	34	34
20	37	36	36	36	37	34	44	81	100	105	110	108	107	120	115	100	90	76	58	47	43	41	36	37
21	39	A	34	34	34	30	44	86	98	102	104	117	107	113	92	90	97	88	54	44	39	36	34	36
22	36	32	26	32	32	34	45	100	97	105	118	108	106	117	114	91	99	87	59	N	37	38	39	36
23	38	36	36	38	28	32	44	83	96	97	105	102	110	106	100	99	87	84	52	44	44	38	A	36
24	37	34	38	36	38	38	43	81	98	122	125	132	111	110	108	110	101	74	48	34	43	45	44	37
25	39	37	37	37	36	36	43	72	106	110	106	117	106	100	101	99	96	64	52	45	53	46	38	38
26	39	34	28	27	26		41	80	97	110	118	107	111	111	114	104	95	54	44	37	42	43	39	39
27	36	36	37	30	34	31	39	85	109	110	121	112	107	105	95	94	81	78	67	A	52	46	44	39
28	34	34	34	32	34	34	46	78	92	120	111	106	102	102	106	102	93	72	N	A	A	A	A	39
29	34	37	39	37	32	32	31	66	85	111	128	120	118	105	100	105	96	74	51	43	42	A	46	44
30	A	39	A	A	A	30	39	87	89	105	118	115	107	106	111	100	88	68	62	51	46	42	31	34
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	26	27	25	28	28	28	28	29	28	28	28	28	28	28	28	27	25	27	26	24	27
MED	39	39	39	38	36	34	44	84	98	110	115	114	113	117	114	104	94	74	55	48	46	44	40	39
U Q	44	44	43	45	38	38	48	88	107	115	123	118	118	121	120	111	97	80	61	53	52	47	44	43
L Q	36	36	36	36	32	31	42	80	93	105	107	107	107	108	104	99	90	71	52	44	43	42	38	36

HOURLY VALUES OF fEs AT Kokubunji

NOV. 2014

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	G	G	G	G	G	G	G	G	G	G	G	45	G	46	G	36	37	G	G	28	24	25		G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	37	35	G	32	G	G	G	G	G
3	G	G	G	G	G	G	23	G	47	G	G	G	G	69	G	G	34	34	31	28	G	G	G	G
4	G	G	G	25	G	G	G	G	G	G	G	57	G	G	39	G	31	24	29	G	G	37	27	30
5	G	G	G	G	G	G	G	G	G	43	45	49	64	45	G	G	31	11	G	28	39	34	39	29
6	47	33	24	24	22	29	27	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G
7	G	G	G	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	G	G	53	60	42	G	30	34	G	G	G	G	G	G
11	G	G	G	G	G	G	11	G	G	G	49	G	G	G	G	82	62	31	29	26	38	G	G	G
12	G	34	G	G	G	G	G	47	G	G	G	G	G	G	G	G	37	29	G	26	23	G	G	G
13	G	G	G	G	G	G	G	G	G	G	G	G	61	45	G	G	G	G	G	G	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	29	29	28	G	G	24	G	G
15	G	G	G	32	29	G	G	29	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	24
16	G	G	G	G	G	G	G	G	G	G	G	G	G	50	G	42	G	G	G	30	49	32	25	G
17	G	G	G	G	G	G	G	G	G	G	54	47	53	55	48	69	36	23	G	27	G	G	G	G
18	G	G	G	G	30	37	28	G	39	G	G	G	G	G	G	G	G	22	G	G	G	G	G	23
19	27	G	G	G	G	G	G	G	68	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	29	G	G	G	42	G	G	G	G	G	28	23	G	G	G	G	G
21	28	35	26	G	G	G	G	33	G	G	43	47	51	58	50	61	34	51	35	G	G	G	G	G
22	G	G	G	G	G	G	G	G	36	39	G	49	G	G	G	G	G	G	G	11	G	G	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	42	31	G	25	25	27	G	28	G
24	G	33	G	G	G	23	25	G	G	G	G	48	42	G	G	G	G	G	G	23	G	G	G	G
25	G	G	G	G	G	G	G	G	G	G	G	G	43	45	39	40	33	43	44	27	22	G	G	G
26	34	31	G	G	G		25	G	34	41	G	49	G	46	45	43	G	35	G	G	G	G	G	G
27	G	G	G	G	25	24	G	G	G	G	G	G	G	G	G	G	G	44	50	50	G	23	G	G
28	G	G	G	G	G	G	G	29	35	45	53	68	G	44	42	34	34	52	G	50	53	49	29	G
29	G	G	G	G	G	G	G	28	G	G	G	G	G	G	G	G	G	G	G	26	35	50	33	31
30	40	43	60	46	30	28	G	32	G	G	49	G	G	G	G	G	G	G	G	G	G	G	G	23
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	27	28	28	28	28	29	28	28	28	28	28	28	28	28	28	28	28	27	28
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	15	22	G	6	G	G	G	G
U Q	G	G	G	G	G	G	6	14	G	G	G	47	21	45	20	38	34	34	28	27	25	23	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

NOV. 2014

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	14	13	13	13	14	14	13	13	20	21	21	40	21	20	13	13	14	14	13	17	15		13
2	14	13	13	17	15	14	13	13	13	15	17	15	20	17	15	14	13	14	14	13	17	14	14	14
3	15	14	13	13	13	17	15	14	13	18	17	18	20	20	14	13	13	13	13	13	18	14	14	13
4	13	14	13	13	13	17	14	18	36	37	20	38	39	17	14	13	13	17	13	14	14	14	13	13
5	14	13	14	13	14	13	13	14	13	17	18	20	31	24	20	17	14	17	14	13	14	13	14	14
6	13	13	14	14	13	13	13	13	13	14	36	40	38	47	35	14	13	13	17	15	14	14	14	14
7	14	13	14	13	14	14	14	18	15	15	14	21	55	40	36	17	14	13	14	14	14	14	13	14
8	13	14	13	14	13	14	13	13	13	18	20	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	22	21	22	20	18	15	13	13	13	14	14	15	20	17
11	14	13	14	14	13	13	15	13	14	20	18	18	39	24	18	14	13	13	13	13	13	13	13	14
12	13	13	13	14	13	15	13	23	14	15	17	21	39	20	38	18	15	13	14	13	14	14	13	13
13	15	15	14	14	13	13	13	13	17	17	18	20	18	18	18	13	22	13	13	13	14	14	14	13
14	14	14	14	13	13	15	15	13	13	15	20	21	17	14	13	13	13	13	14	18	15	14	13	14
15	14	14	13	13	13	18	14	13	13	20	37	39	22	36	17	14	13	14	13	13	13	14	14	13
16	13	14	14	13	17	14	14	13	13	18	20	20	23	36	18	18	14	13	13	14	13	14	14	14
17	13	14	14	13	14	14	13	14	13	15	18	20	22	18	17	13	13	13	13	13	13	14	14	13
18	14	14	13	14	13	13	13	23	13	17	15	18	17	14	18	14	15	13	14	13	13	14	13	14
19	14	15	14	14	13	13	14	26	17	15	17	38	20	23	15	14	23	14	13	14	15	15	14	14
20	14	14	13	13	14	13	14	13	17	17	17	21	20	15	15	13	25	13	13	13	14	14	13	14
21	13	13	14	14	14	13	13	18	14	17	18	20	20	21	15	13	13	13	13	14	13	17	14	14
22	18	14	13	15	14	14	13	22	14	17	24	22	20	18	15	14	22	13	14	13	14	13	13	14
23	14	13	14	13	15	13	14	17	14	13	13	18	20	18	17	14	13	15	14	15	13	13	13	14
24	14	13	13	13	14	13	14	15	13	15	14	18	15	15	13	13	13	13	14	14	21	14	13	15
25	13	13	14	13	13	13	13	22	13	17	17	17	18	15	15	13	14	13	13	13	14	14	13	14
26	13	13	13	15	14		13	13	13	15	15	18	18	18	14	14	13	13	13	13	14	14	14	13
27	14	13	14	13	13	13	14	23	13	14	17	36	14	14	20	15	22	14	13	13	14	13	13	13
28	13	15	13	14	13	14	13	13	13	17	20	20	18	18	15	13	13	14	13	13	13	13	13	14
29	14	14	13	14	14	14	13	13	13	15	20	22	21	20	14	13	22	13	15	14	13	13	13	13
30	13	14	13	13	13	14	14	15	13	15	18	18	17	14	13	14	22	13	13	14	13	13	15	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	27	28	28	28	28	29	28	28	28	28	28	28	28	28	28	28	28	27	28
MED	14	14	13	13	13	14	14	14	13	17	18	20	20	18	16	14	13	13	13	13	14	14	13	14
U Q	14	14	14	14	14	14	14	18	14	17	20	21	27	22	18	14	18	14	14	14	14	14	14	14
L Q	13	13	13	13	13	13	13	13	13	15	17	18	18	16	14	13	13	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

NOV. 2014

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	43	40	43	46	45	34	40	77	90	101	111	111	117	136	139	134	122	111	88	68	66	60	51	48
2	47	46	46	47	42	40	47	80	95	110	116	101	111	118	113	120	98	91	86	66	67	54	50	46
3	43	40	50	50	50	N	37	76	90	91	113	116	111	134	132	130	113	111	91	54	67	70	53	46
4	47	46	43	48	50	28	28	67	78	98	102	117	97	98	130	130	117	87	77	76	68	80	72	47
5	38	34	40	48	45	B	28	63	111	112	130	128	114	109	130	116	112	91	76	54	54	60	54	47
6	43	A	43	A	34	34	36	70	102	117	137	130	122	108	137	129	118	86	75	52	54	52	47	42
7	43	43	44	40	34	30	37	78	100	100	108	116	98	111	129	112	116	90	71	67	54	52	46	44
8	46	46	43	44	43	36	40	73	87	96	108	117	114	118	150	143	118	85	74	67	63	65	46	42
9	38	37	38	42	43	34	B	67	84	96	109	107	107	111	116	117	115	85	71	54	54	54	48	34
10	32	34	34	38	38	59	34	70	88	92	104	112	111	115	96	114	111	95	88	76	67	76	52	50
11	50	50	34	38	38	38	34	74	88	100	128	116	117	117	110	117	114	96	71	53	52	61	46	42
12	44	42	40	39	44	32	31	67	86	93	114	131	116	N	111	117	136	117	106	66	54	54	54	47
13	41	42	44	42	42	34	34	67	86	96	116	129	114	112	137	111	116	108	78	73	52	67	59	43
14	42	37	34	34	36	32	34	67	98	102	107	110	92	97	120	113	87	81	73	67	52	73	68	36
15	31	49	32	34	29	28	28	72	111	100	102	111	117	122	111	112	112	88	77	54	67	51	48	46
16	47	43	43	40	32	30	34	67	88	110	107	103	113	114	114	111	107	88	87	76	76	67	38	38
17	43	42	43	40	37	40	44	77	97	132	151	114	112	112	138	136	117	111	86	79	67	67	54	52
18	43	46	47	38	36	32	29	54	100	106	110	112	113	130	114	117	111	102	83	52	65	66	52	37
19	38	34	38	29	34	34	40	77	101	100	106	90	111	131	126	96	87	100	84	77	44	60	47	36
20	34	36	38	36	36	34	37	67	100	100	104	113	106	113	118	107	98	98	86	77	50	52	53	47
21	36	36	37	34	34	32	38	67	95	87	102	110	96	118	114	88	96	122	89	52	58	53	51	40
22	34	32	34	34	37	34	36	76	90	111	108	107	116	116	117	104	87	108	87	73	60	54	51	50
23	36	36	37	40	34	28	59	62	98	88	98	98	98	118	120	110	97	88	82	55	51	52	51	47
24	44	38	44	38	36	A	36	64	101	125	133	130	126	114	118	124	107	106	89	52	54	54	52	45
25	34	36	34	36	37	30	29	54	90	115	104	120	117	96	112	112	111	96	78	67	73	77	53	50
26	48	40	34	29	30	32	40	77	75	104	107	110	111	96	129	126	113	97	67	58	54	54	54	40
27	36	34	34	30		31	34	67	102	110	96	106	111	110	111	100	96	90	81	71	63	67	50	42
28	40	30	30	32	32	35	60	53	83	88	106	106	N	111	116	108	110	101	77	52	54	52	44	40
29	36	A	37	38	34	28	26	60	90	97	114	124	111	111	117	110	107	90	80	54	67	73	51	43
30	34	A	A	37	A	A	A	67	89	94	112	90	103	111	114	110	100	87	83	74	73	54	46	30
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	29	29	28	26	28	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30
MED	42	40	38	38	36	33	36	67	90	100	108	112	111	113	118	114	111	96	82	66	59	60	51	44
U Q	44	43	43	42	42	34	40	76	100	110	114	117	116	118	130	124	116	106	87	73	67	67	53	47
L Q	36	36	34	34	34	30	32	67	88	96	104	107	106	110	114	110	98	88	76	54	54	54	47	40

HOURLY VALUES OF fEs AT Yamagawa

NOV. 2014

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	G	G	G	G	G	G	G	G	G	42	43	G	48	G	G	G	44	50	45	43	39	35	30	G
2	G	G	G	27	G	G	G	G	35	G	G	G	48	G	G	G	G	45	48	G	G	G	G	G
3	G	G	G	G	G	G	G	31	G	G	G	G	G	42	G	46	49	34	40	40	29	36	31	G
4	G	G	G	G	G	G	G	34	G	G	48	G	G	44	G	45	43	32	G	G	36	35	34	32
5	G	G	25	G	G	B	G	G	G	G	46	60	56	68	56	59	41	G	G	G	G	G	G	58
6	32	48	33	29	G	G	G	27	G	G	G	G	G	G	G	G	45	31	31	G	G	G	G	G
7	G	G	G	G	G	G	G	28	G	44	47	54	49	G	64	41	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	32	29	33	G	G
9	G	G	G	G	G	G	B	G	35	39	G	G	G	G	G	38	G	85	48	26	29	27	G	G
10	G	G	G	G	G	G	G	29	34	G	46	47	G	47	44	69	35	29	39	26	G	G	G	G
11	G	G	G	G	G	G	G	G	G	G	G	G	43	46	49	G	86	28	25	G	48	G	G	G
12	G	G	40	G	G	G	G	G	G	G	G	G	47	46	49	56	34	46	G	32	33	25	G	G
13	G	G	G	G	G	G	G	G	G	G	41	G	46	49	G	G	34	G	25	24	G	G	G	G
14	G	G	G	G	G	G	G	G	36	G	41	G	G	G	G	G	34	34	G	G	33	24	G	G
15	G	G	G	G	G	G	G	G	33	G	41	G	G	G	G	G	G	G	G	G	G	G	G	G
16	G	G	G	G	G	G	G	44	G	G	G	G	53	59	40	47	40	49	40	34	29	26	G	G
17	G	G	G	G	G	G	G	G	34	G	G	G	46	G	45	42	G	G	21	G	G	G	G	G
18	G	G	G	G	G	G	G	28	G	G	G	G	G	G	G	G	35	G	G	G	G	G	G	G
19	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	44	G	G	29	G	G	G	G	G
20	G	G	G	G	G	G	G	G	35	39	G	G	G	45	G	42	G	G	G	G	G	G	27	G
21	G	24	24	G	G	G	G	G	32	40	43	47	51	G	48	50	117	61	50	41	36	30	27	G
22	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	G
23	G	G	G	G	G	G	G	G	48	G	G	49	48	G	G	G	39	29	G	37	34	G	G	G
24	G	G	G	G	G	26	G	32	G	G	G	G	G	G	G	G	G	28	28	35	31	28	G	G
25	G	G	G	G	G	G	G	G	G	G	G	G	G	46	43	G	G	G	11	29	33	G	G	G
26	G	G	G	G	G	G	G	G	G	73	G	G	52	44	43	G	G	G	24	G	G	G	G	G
27	G	G	G	G	G	G	G	27	53	G	G	G	G	41	43	38	G	G	G	27	G	26	G	G
28	26	G	G	G	G	G	G	G	34	39	53	45	48	52	49	51	69	41	11	50	G	30	27	G
29	G	30	G	G	G	G	G	G	G	41	44	47	45	44	42	G	G	28	28	28	34	27	30	G
30	G	45	52	32	33	24	51	29	33	G	40	G	G	G	G	G	40	49	50	26	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	28	22	25	G	G	G	G
U Q	G	G	G	G	G	G	G	28	34	39	43	G	48	46	44	45	41	41	39	32	33	27	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

NOV. 2014

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	17	15	16	15	15	15	15	21	14	14	18	20	23	22	20	21	17	14	14	14	14	15	14	15
2	15	16	16	15	16	18	16	20	14	15	18	21	21	20	18	17	16	15	14	15	15	15	15	15
3	15	15	16	15	14	14	15	18	15	16	17	20	18	22	17	14	14	14	14	15	15	14	15	15
4	15	16	18	15	15	15	15	16	30	17	18	21	24	18	18	15	14	17	14	15	14	15	14	14
5	14	20	15	14	14	B	18	21	14	17	18	20	26	21	21	16	14	18	15	15	14	15	15	15
6	14	14	14	16	15	15	15	14	15	18	21	43	40	56	37	22	16	14	15	15	15	15	15	16
7	16	20	15	14	16	15	15	15	15	15	17	20	42	42	33	20	16	22	15	15	15	15	15	15
8	15	15	15	15	14	15	15	21	15	15	23	20	20	20	21	17	15	21	15	16	15	15	15	15
9	15	15	15	17	17	15	B	20	14	20	17	17	33	20	21	16	14	14	15	15	15	17	15	16
10	15	16	16	15	14	15	15	16	15	16	18	22	18	20	21	17	14	14	15	14	17	14	15	15
11	15	14	16	15	15	15	17	22	14	17	18	18	20	18	21	18	14	14	17	15	15	15	15	15
12	15	16	14	15	15	15	16	14	14	16	16	22	17	28	21	17	16	14	15	14	15	15	14	15
13	15	15	14	15	15	16	15	22	17	16	18	26	21	24	20	18	15	21	15	15	15	15	14	15
14	15	15	15	15	15	15	15	18	15	18	18	22	28	24	22	18	14	15	16	17	14	15	15	14
15	17	15	15	15	15	18	15	14	14	15	17	14	27	22	22	17	16	21	15	15	16	15	15	15
16	16	15	15	15	15	17	15	14	14	17	21	18	27	22	23	17	14	14	15	15	14	15	16	15
17	16	18	15	18	15	15	15	14	14	18	20	20	33	20	17	17	16	21	17	15	15	15	16	17
18	21	15	14	15	15	15	18	14	14	17	18	21	22	18	18	16	15	21	15	15	15	15	14	15
19	14	16	16	15	15	15	15	20	16	15	21	20	28	22	18	17	14	20	14	15	15	15	15	15
20	15	16	14	15	17	16	15	18	14	15	18	20	23	18	17	16	18	22	15	15	17	15	15	15
21	15	15	15	16	17	15	15	18	15	16	22	20	20	18	17	15	16	14	15	14	14	14	15	15
22	15	14	17	16	15	17	15	18	15	18	23	20	18	17	18	14	14	20	14	15	15	15	15	15
23	15	15	15	15	14	16	15	18	18	17	18	17	26	22	20	17	15	14	15	14	16	15	15	15
24	16	15	15	15	14	14	17	14	14	15	18	18	21	20	17	16	15	15	15	14	15	14	15	16
25	16	15	15	15	16	15	17	18	14	15	18	21	18	21	18	18	16	21	15	15	14	15	14	16
26	15	15	15	15	15	15	15	18	15	16	17	18	22	20	18	16	14	20	17	15	18	15	15	15
27	15	15	15	15	66	15	15	14	21	18	35	26	24	24	21	18	17	21	15	16	15	15	15	17
28	15	17	15	18	15	17	15	17	15	14	18	21	26	21	18	16	14	14	15	15	14	15	15	15
29	15	15	15	15	15	15	15	18	15	15	17	21	18	21	17	17	15	14	14	14	14	15	15	16
30	15	16	15	15	15	16	16	14	14	14	16	18	27	18	20	17	14	15	15	17	17	15	16	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	15	18	15	16	18	20	23	21	20	17	15	15	15	15	15	15	15	15
U Q	16	16	16	15	15	16	16	20	15	17	20	21	27	22	21	18	16	21	15	15	15	15	15	15
L Q	15	15	15	15	15	15	15	14	14	15	17	18	20	20	18	16	14	14	15	15	14	15	15	15

HOURLY VALUES OF foF2 AT Okinawa

NOV. 2014

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	58	51	52	55	53	B	B	66	99	108	120	114	130	142	142	142	N	143	119	109	N	88	76	54
2	52		54	52	50	35	B	74	88	110	126	123	102	118	130	118	118	119	112	84	70	67	67	58
3	52	52	39	52	28	B	29	67	87	104	110	118	129	136	143	132	137	131	120	107	86	108	106	87
4	73	73	74	67		40	B	66	88	101	118	109	130	133	142	143	143	C	C	89	108	111	108	52
5	38	A		63	34	B		58	111	131	C	C	117	130	C	C	C	108	88	86	86	86	81	53
6	53	A	A	A	B	B	N	68	89	117	136	C	C	C	C	143	148	133	110	107	108	107	88	73
7	67	52	52	38	38	B	B	67	98	C	114	119	118	120	140	141	143	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	131	130	88	109	89	76	50
9	52		B	52	46	32	N	67	87	97	110	118	114	118	130	126	132	120	88	88	84	85	77	47
10	38	28		B	42			67	88	107	112	116	108	120	144	143	142	134	105	108	107	117	107	77
11	87	67	52	38	29	44	B	71	105	117	118	153	117	108	118	130	129	110	88	78	77	73	54	52
12			42		B	31	B	59	88	96	118	133	132	131	144	139	129	N	142	108	108	108	N	83
13	52	63	72	N	67		B	74	88	102	118	131	119	130	143	147	144	134	89	108	107	101	101	77
14	61	50	47	46	47	47	28	67	88	110	118	119	120	107	144	136	117	107	108	87	76	86	88	53
15		36	34	B	30	B	B	67	104	105	114	109	118	115	118	126	117	110	87	83	87	84	73	54
16	58	51	40	30	B	B	32	52	88	109	110	105	118	119	130	130	121	108	106	106	87	87	53	50
17	47	49		47			46	67	101	134	143	135	120	140	142	144	142	135	94	110	107	108	108	87
18	54	67	72	55	48	B		52	98	120	110	N	135	143	133	140	133	120	118	87	106	110	86	52
19	53	52		42	30	B	N	67	118	116	105	110	116	132	144	118	116	N	109	85	86	87	85	51
20	44	38	42	44	B	34	B	67	89	110	107	110	118	108	108	148	111	108	108	87	81	74	76	67
21	54	42	41	B		B	40	63	106	110	118	112	114	117	132	113	105	112	108	72	83	76	84	52
22	B	34	B	32	B	N	B	54	108	112	118	116	109	131	135	116	113	110	118	108	87	86	N	83
23	53	52	48	64	50	B		54	108	114	114	108	108	125	131	120	107	101	101	76	54	72	67	54
24	66	52	51	53	37	30	B	64	101	126	130	141	130	130	131	131	132	118	110	84	76	N	86	54
25	52	48	46		44	B	B	59	101	130	120	118	133	134	142	143	141	131	120	110	110	107	106	79
26	74	67	52	46	48	48	52	88	107	109	118	130	130	140	142	147	136	131	110	93	74	86	87	67
27	52	52	52	A	50	50	54	86	119	105	100	108	129	136	133	128	117	113	88	86	89	76	86	67
28	53	48	B	42	43	50	B	66	101	100	98	90	105	126	132	131	131	129	107	86	86	87	73	53
29			48	52	40	B	N	66	100	118	107	116	120	118	110	130	132	134	107	87	49	106	86	43
30	47		53	37	B	B	B	73	114	110	120	108	110	118	137	131	118	93	92	69	88	82	67	52
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	22	21	21	20	11	7	29	29	28	28	26	28	28	27	28	27	26	28	29	28	28	27	29
MED	53	52	51	47	44	40	40	67	100	110	118	116	118	128	135	132	131	120	108	87	86	87	85	54
U Q	59	52	52	54	49	48	52	67	106	117	119	123	129	133	142	143	141	131	115	107	107	107	88	75
L Q	52	48	42	40	35	32	29	61	88	105	110	109	114	118	130	127	117	110	93	84	79	83	73	52

HOURLY VALUES OF fEs AT Okinawa

NOV. 2014

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	G	G	G	G	G	B	B	G	40	G	G	48	G	53	G	G	G	G	G	G	33	G	G	G
2	G	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	40	34	G	G	G	G	G	G
3	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	42	53	66	45	G	27	26	G	G
4	G	G	G	G	G	G	B	G	G	G	G	83	G	G	51	48	G	C	C	G	G	G	G	G
5	G	24	G	G	G	B	G	G	G	G	C	C	56	54	C	C	C	50	G	32	G	G	G	G
6	G	27	34	27	B	B	G	G	36	G	G	C	C	C	C	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	B	B	G	G	C	G	56	G	58	G	G	G	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	27	G
9	G	G	B	G	G	G	G	G	G	G	G	G	G	G	52	G	G	G	28	36	G	G	G	G
10	G	G	G	B	G	G	G	26	G	54	49	G	48	54	48	48	57	45	36	G	G	G	G	G
11	G	G	G	G	G	G	B	G	G	G	G	G	G	52	G	G	G	G	G	G	G	G	30	G
12	G	G	G	G	B	G	B	G	G	G	G	52	G	G	G	45	G	G	G	11	G	G	G	G
13	G	G	G	G	G	G	B	G	G	G	G	G	G	G	51	44	G	G	11	G	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	27	G	26	G	G
15	G	G	G	B	G	B	B	G	G	G	46	46	G	G	G	40	G	G	G	G	27	G	G	G
16	G	G	G	G	B	B	G	G	G	G	G	G	54	G	58	G	78	G	G	44	G	24	G	G
17	G	G	G	G	G	G	G	G	G	G	G	49	58	62	48	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	B	G	G	G	G	G	G	G	G	50	48	37	G	G	G	G	G	G	G
20	G	G	G	27	B	G	B	G	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
21	G	G	G	B	G	B	G	G	34	G	G	G	51	58	57	64	59	G	73	28	29	27	28	G
22	B	G	B	G	B	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
23	G	G	G	G	G	B	G	G	G	G	G	50	50	G	G	G	40	35	G	G	28	26	G	G
24	G	G	G	G	G	G	B	G	G	G	G	G	G	G	G	40	56	G	24	48	G	G	G	G
25	G	G	G	G	G	B	B	G	G	G	G	G	61	51	53	50	44	40	G	26	29	G	G	G
26	G	G	G	G	G	G	G	G	G	G	G	48	48	60	G	43	36	30	G	40	11	G	G	G
27	G	G	G	27	G	G	G	G	G	G	G	G	G	G	G	55	57	35	34	82	26	G	G	G
28	G	G	B	G	G	G	B	G	G	40	46	50	60	50	48	49	48	54	51	46	36	G	G	G
29	G	G	G	G	G	B	G	G	G	40	G	G	50	G	G	50	51	50	45	45	27	G	G	G
30	G	G	G	G	B	B	B	G	G	G	49	48	G	G	G	G	G	48	40	33	G	G	G	G
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	26	26	23	15	15	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	20	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	48	50	52	50	48	49	37	31	34	27	G	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Okinawa

NOV. 2014

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	17	16	18	16	21	B	B	27	16	21	40	39	54	39	42	42	38	26	20	17	15	17	16	17
2	40	23	15	20	17	18	B	23	32	21	40	43	43	47	40	42	33	20	22	17	15	15	17	15
3	18	28	15	20	15	B	17	24	14	39	40	47	45	45	41	22	27	16	16	20	15	16	18	17
4	17	17	18	17	71	14	B	24	40	40	39	40	44	39	43	27	38	C	C	22	35	15	42	16
5	20	15	66	15	14	B	18	29	18	38	C	C	40	38	C	C	C	17	20	15	20	28	17	15
6	15	16	15	17	B	B	17	21	20	42	39	C	C	C	C	40	33	17	17	22	18	15	35	18
7	16	15	15	17	17	B	B	23	18	C	40	39	60	42	53	39	20	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	28	16	20	29	18	16	15
9	17	66	B	16	17	17	18	22	16	21	40	43	39	43	42	38	32	24	15	14	18	21	17	16
10	17	23	23	B	18	21	71	20	38	38	40	44	41	33	33	22	22	16	14	15	16	16	17	17
11	16	15	15	18	20	16	B	21	16	40	42	45	43	38	40	38	28	16	18	18	16	16	14	16
12	16	66	16	66	B	16	B	41	17	20	40	48	45	40	42	32	39	28	15	18	20	16	16	21
13	42	36	16	15	24	66	B	27	30	34	42	40	45	40	30	27	20	23	15	28	15	18	17	16
14	16	17	18	16	18	16	18	20	15	21	43	39	42	42	40	40	18	30	15	15	21	15	15	20
15	17	17	16	B	15	B	B	21	14	18	40	42	42	43	42	22	18	24	16	21	15	18	15	15
16	27	17	17	17	B	B	66	21	15	20	28	44	39	43	39	40	20	16	18	14	16	16	15	66
17	16	16	66	15	66	66	15	30	28	22	42	40	39	32	28	38	16	23	17	15	18	21	15	16
18	16	16	16	16	17	B	66	20	36	36	39	42	42	42	40	39	21	23	20	28	15	16	16	15
19	17	42	18	15	18	B	66	21	28	40	39	43	43	44	43	22	16	24	18	20	21	20	16	15
20	18	17	24	15	B	21	B	21	18	21	42	42	50	43	41	39	34	24	18	32	20	20	15	16
21	16	17	16	B	20	B	16	21	17	39	40	42	38	39	34	22	18	26	15	16	15	15	15	16
22	B	16	B	18	B	16	B	20	15	40	40	42	44	21	20	20	17	15	20	20	20	22	17	16
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25	18	17	17	15	15	B	B	20	30	17	39	42	40	37	35	27	15	15	16	15	14	17	16	15
26	16	17	20	18	15	22	16	20	27	22	27	42	44	33	33	30	21	15	15	14	17	18	16	16
27	16	16	15	15	17	18	21	24	15	22	40	44	44	42	40	27	22	20	14	17	15	17	15	18
28	20	16	B	21	18	15	B	21	29	38	41	38	34	38	38	30	20	18	16	17	16	16	20	18
29	71	20	16	17	17	B	18	20	27	20	39	42	40	40	45	22	16	17	14	15	16	20	20	14
30	15	21	15	17	B	B	B	18	28	18	22	24	40	20	45	21	15	14	15	16	20	20	20	17
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	26	26	23	15	15	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	17	17	16	16	17	18	18	21	18	22	40	42	42	40	40	28	20	20	16	17	16	17	16	16
U Q	18	22	18	18	20	21	66	24	28	38	40	43	44	43	42	39	30	24	18	20	20	20	17	17
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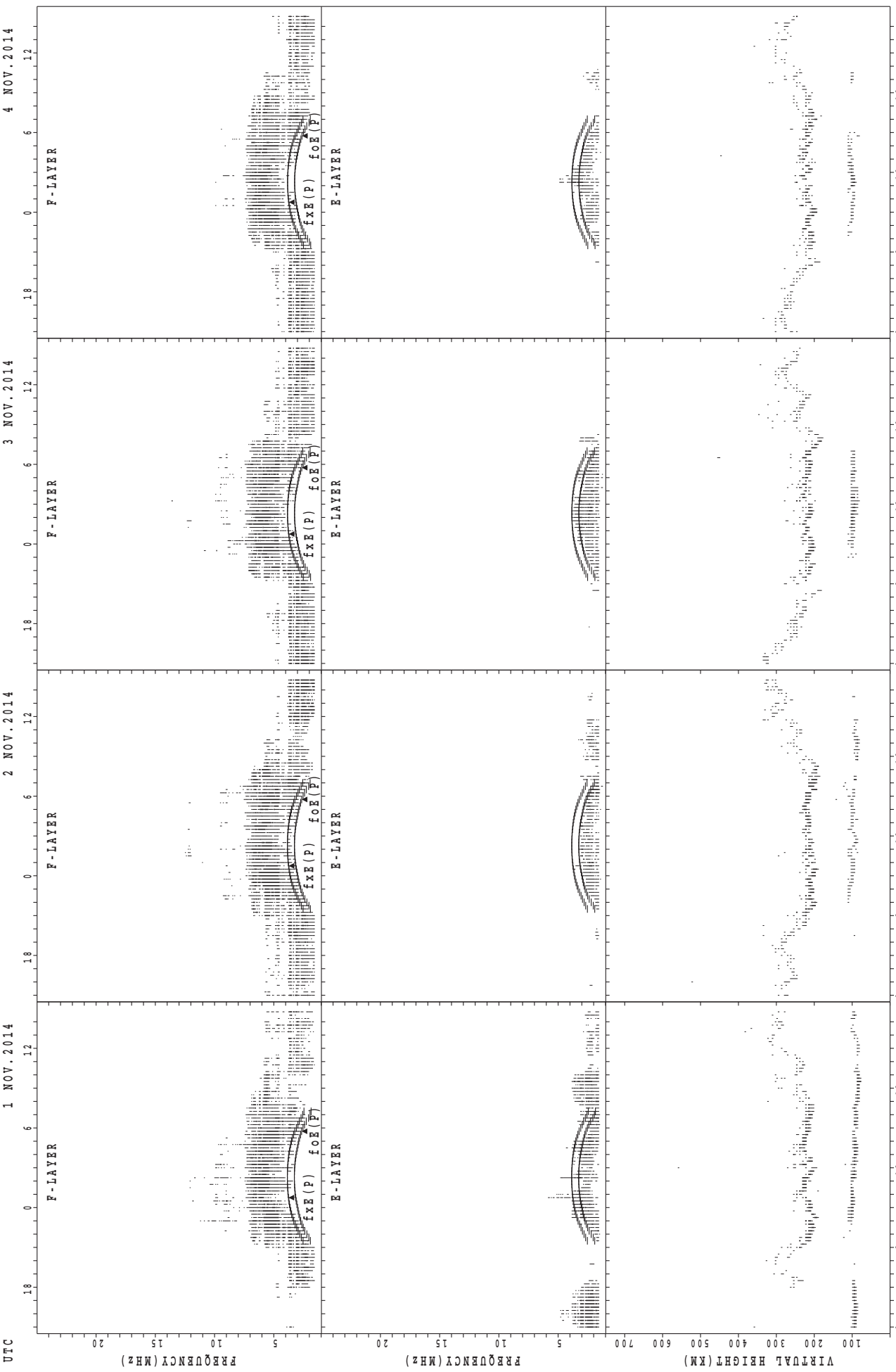
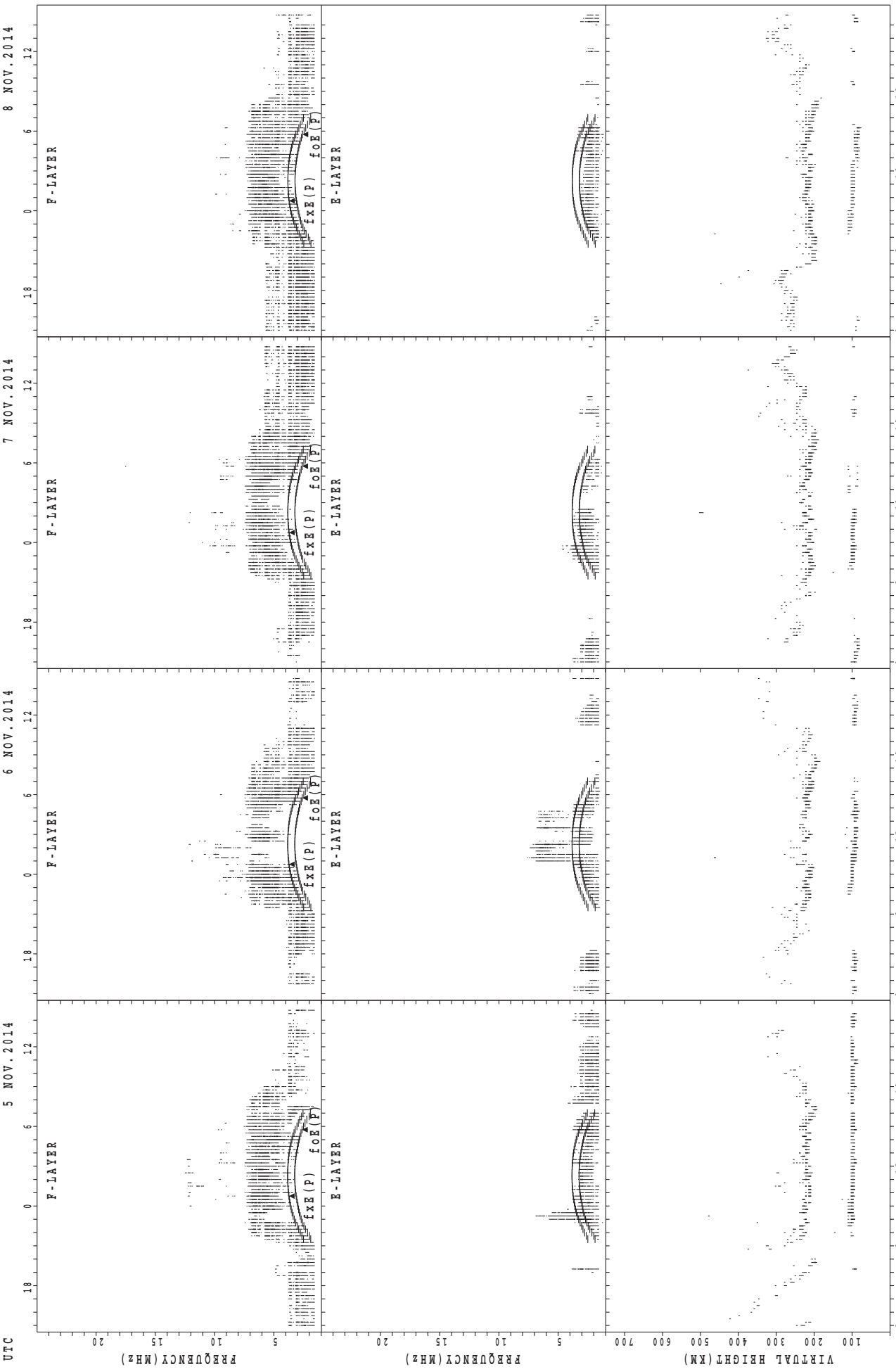
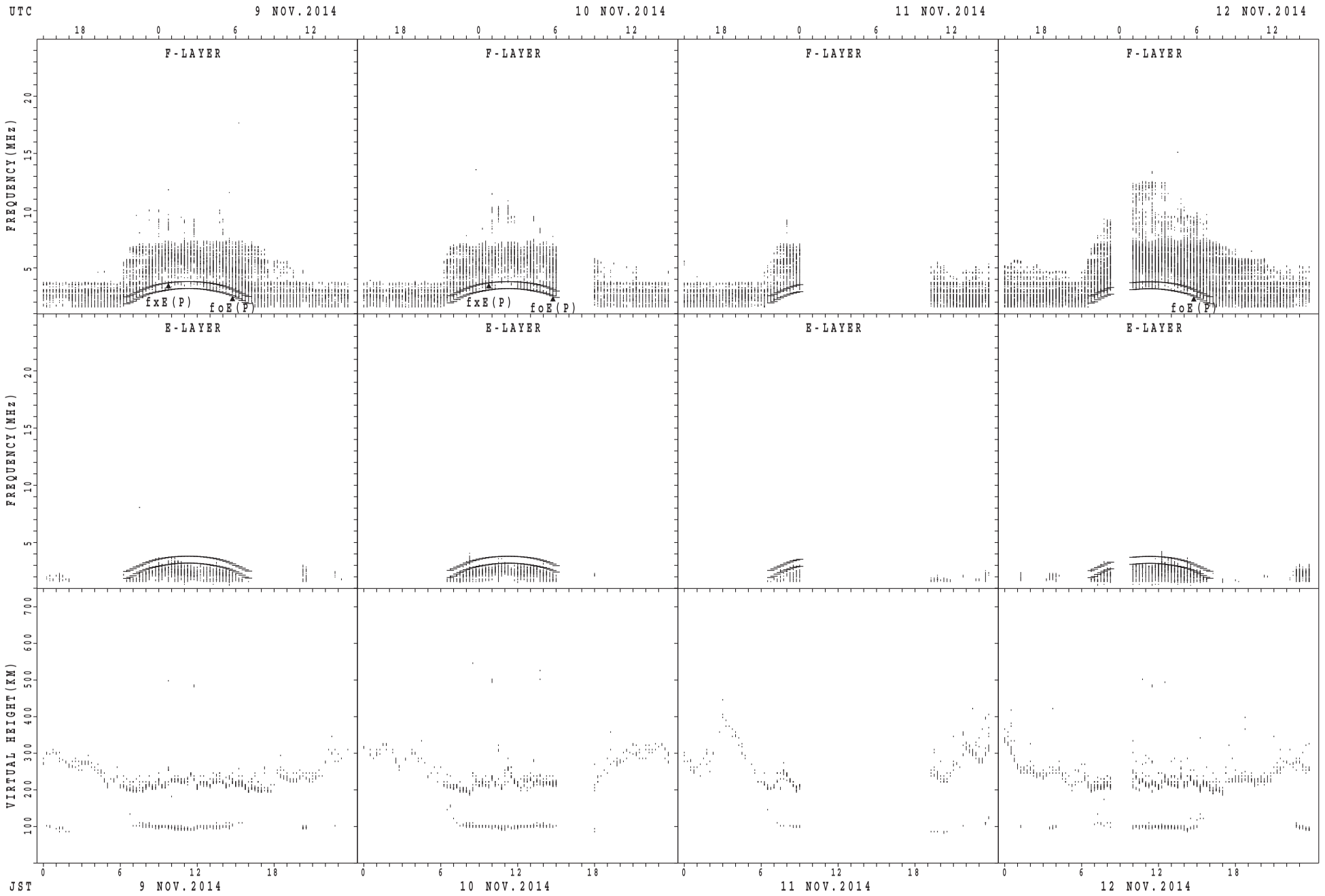

SUMMARY PLOTS AT Wakkanai
UTC
JST
1 NOV.2014
2 NOV.2014
3 NOV.2014
4 NOV.2014
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

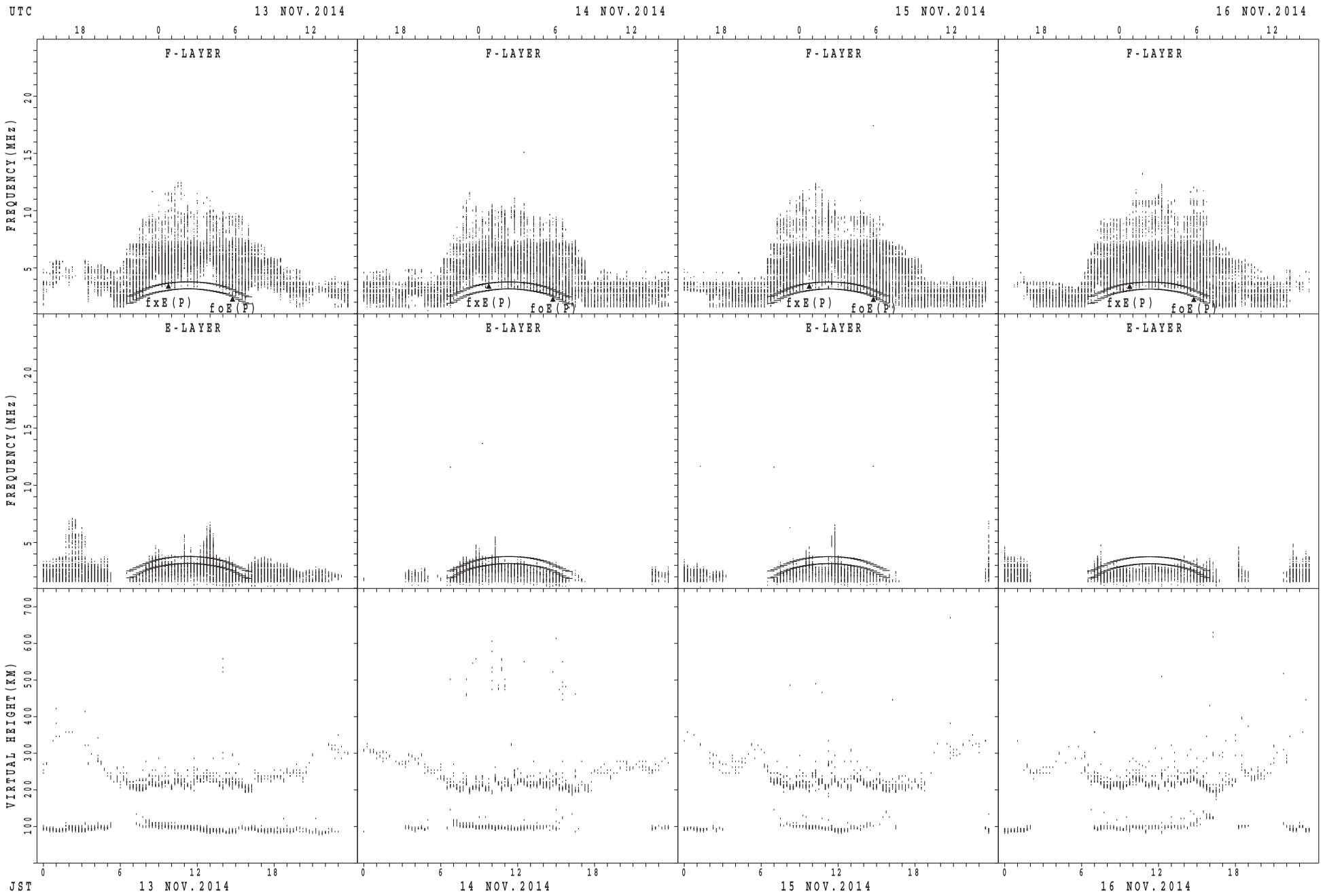

SUMMARY PLOTS AT Wakkanai
UTC
JST
5 NOV.2014
6 NOV.2014
7 NOV.2014
8 NOV.2014
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



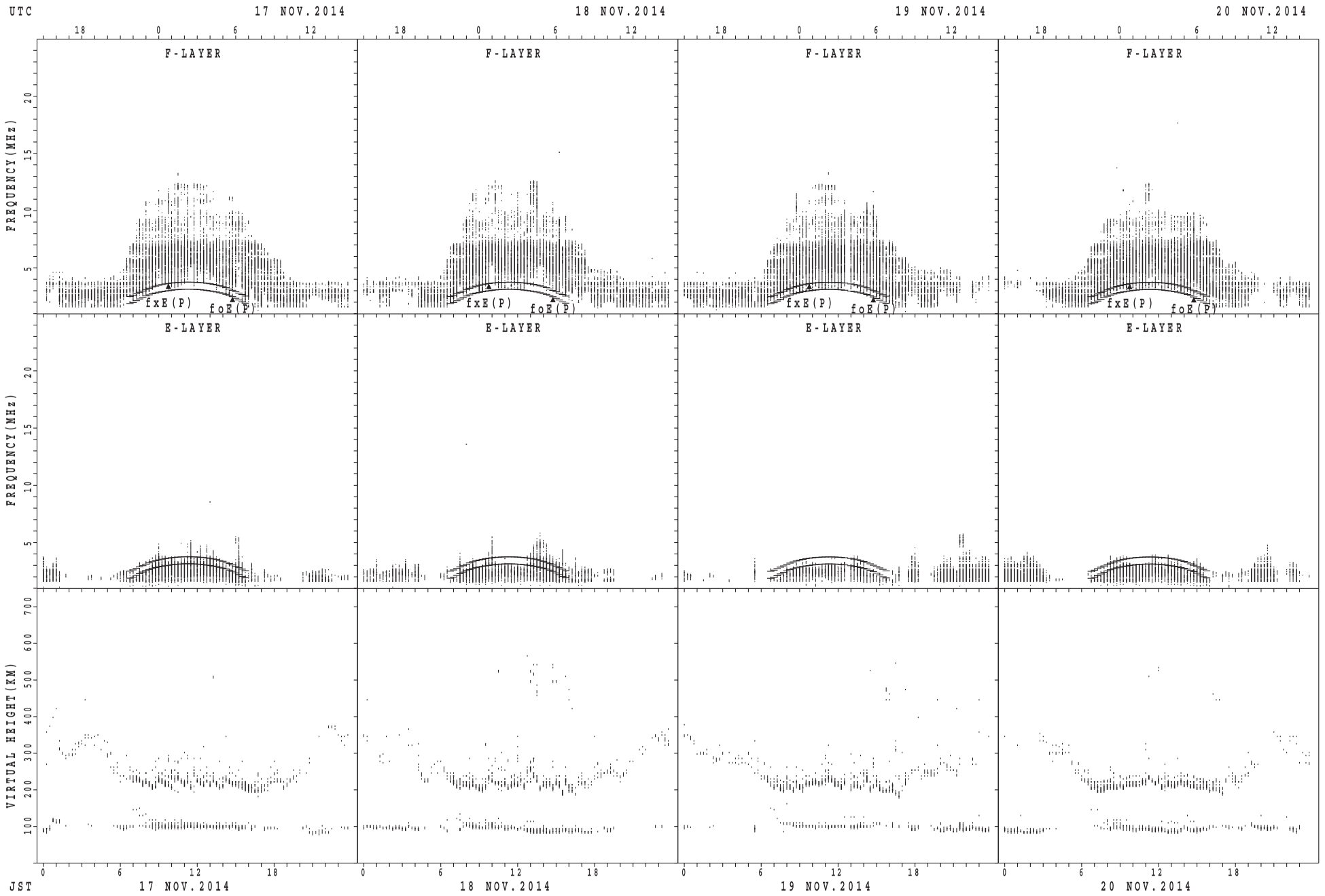
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

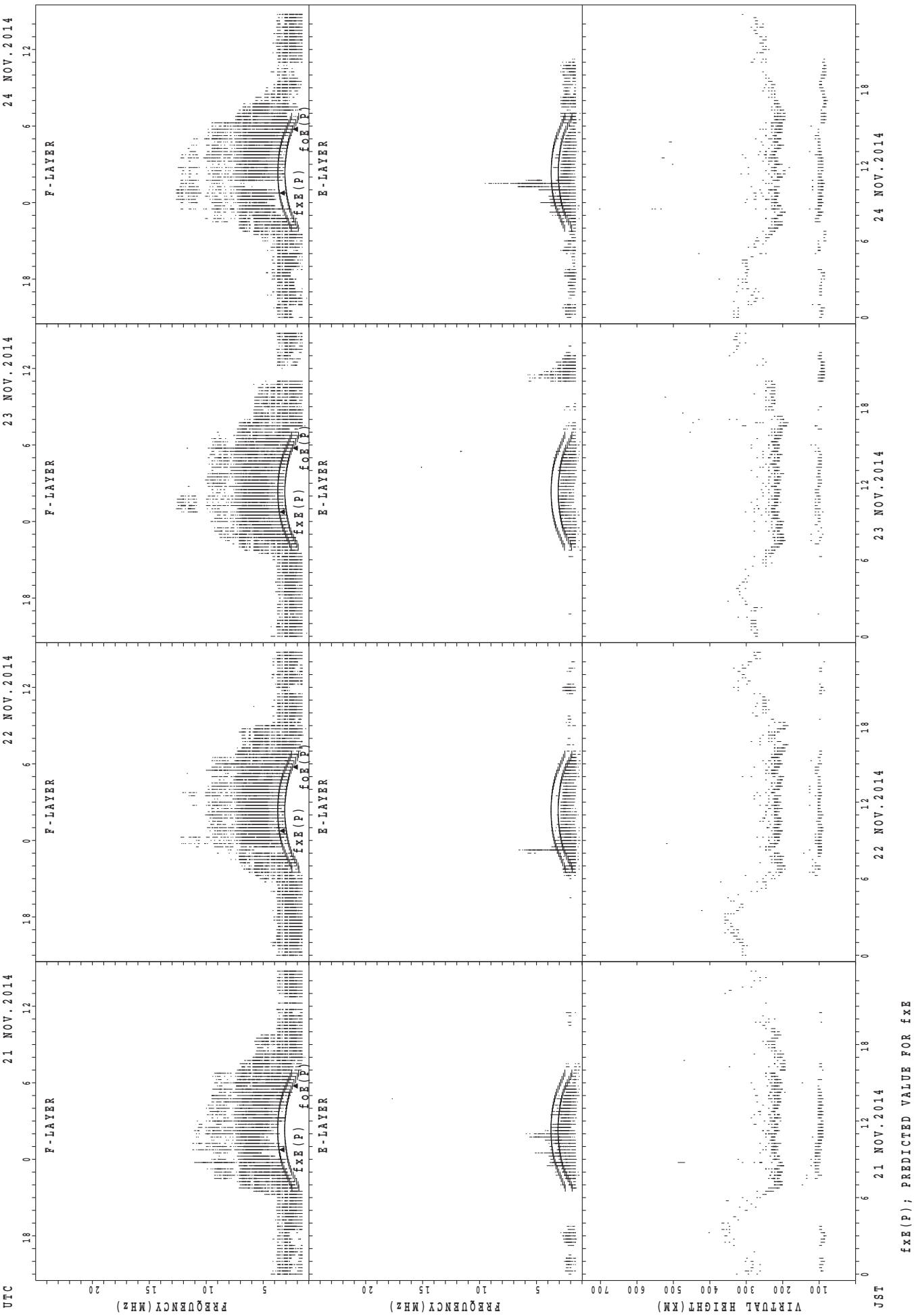


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

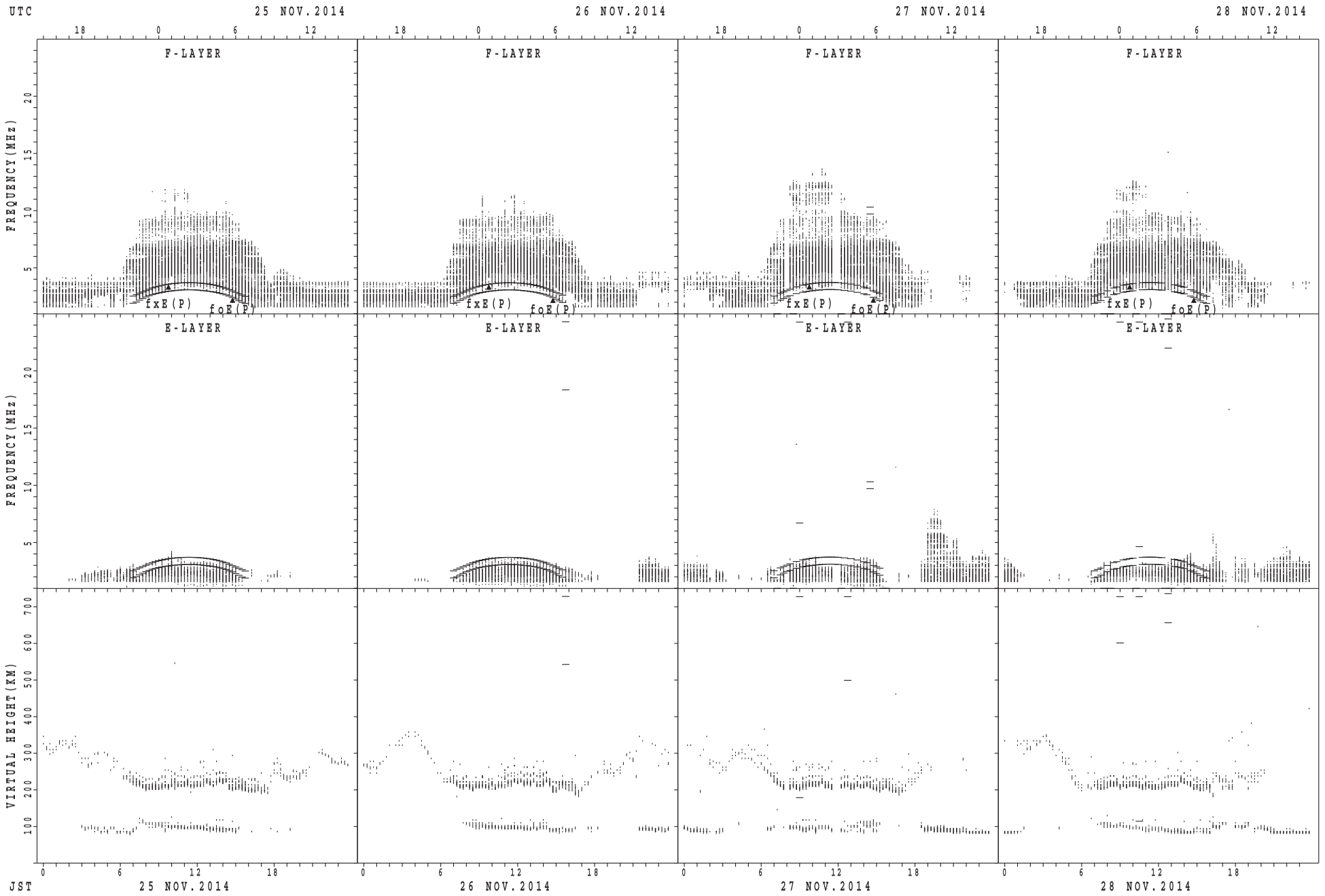
SUMMARY PLOTS AT Wakkanai



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

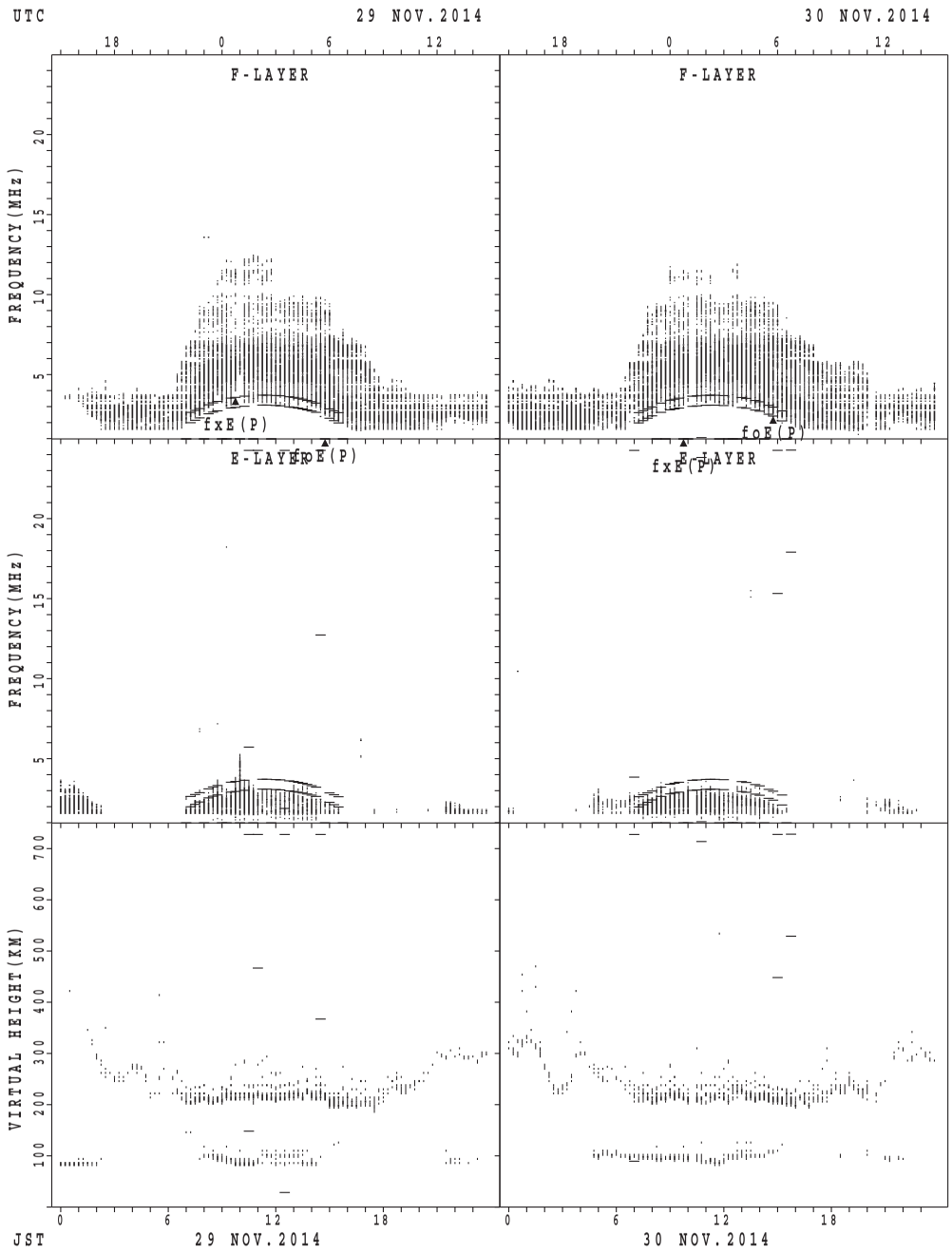

SUMMARY PLOTS AT Wakkanai
UTC
JST
21 NOV.2014
22 NOV.2014
23 NOV.2014
24 NOV.2014
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



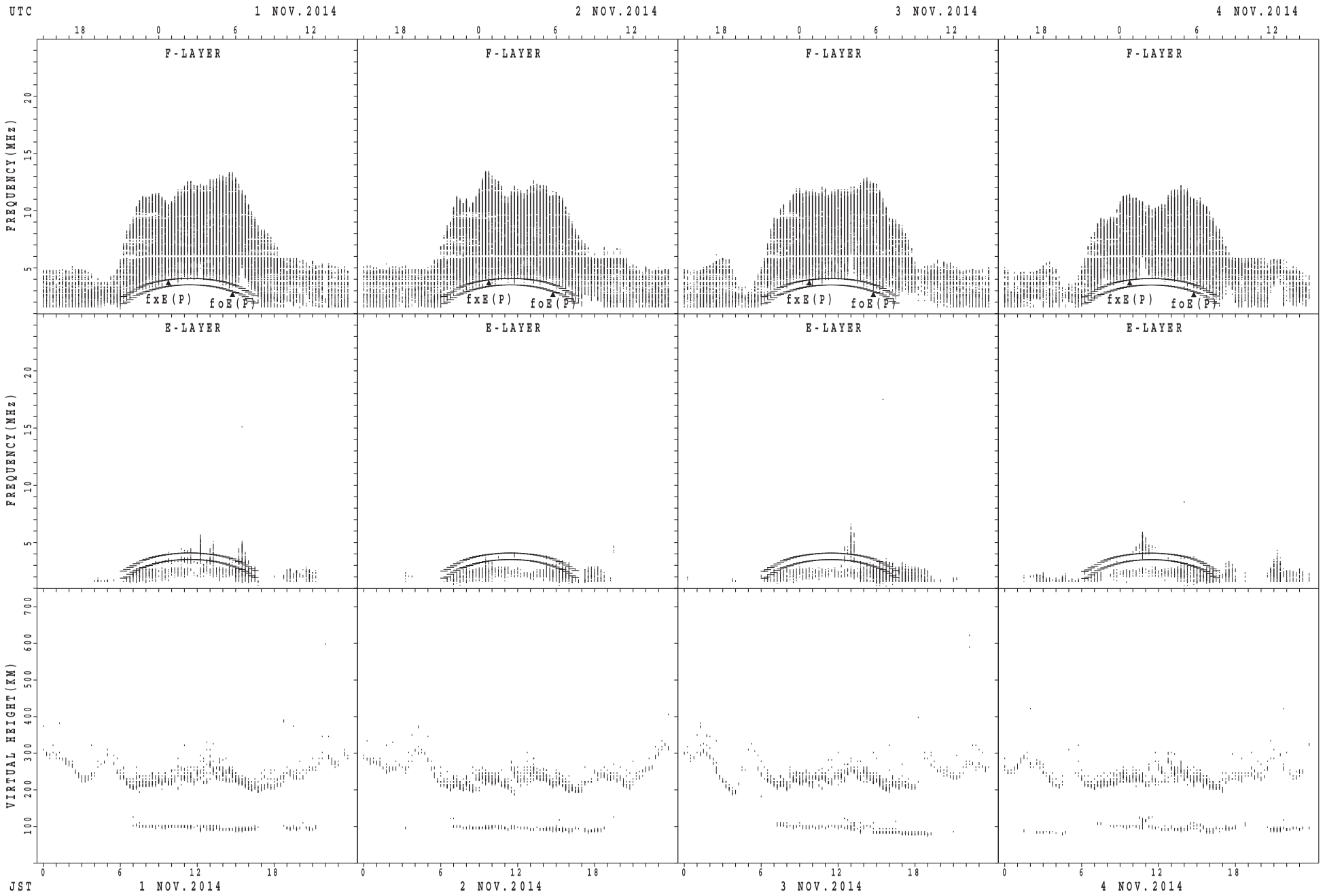
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



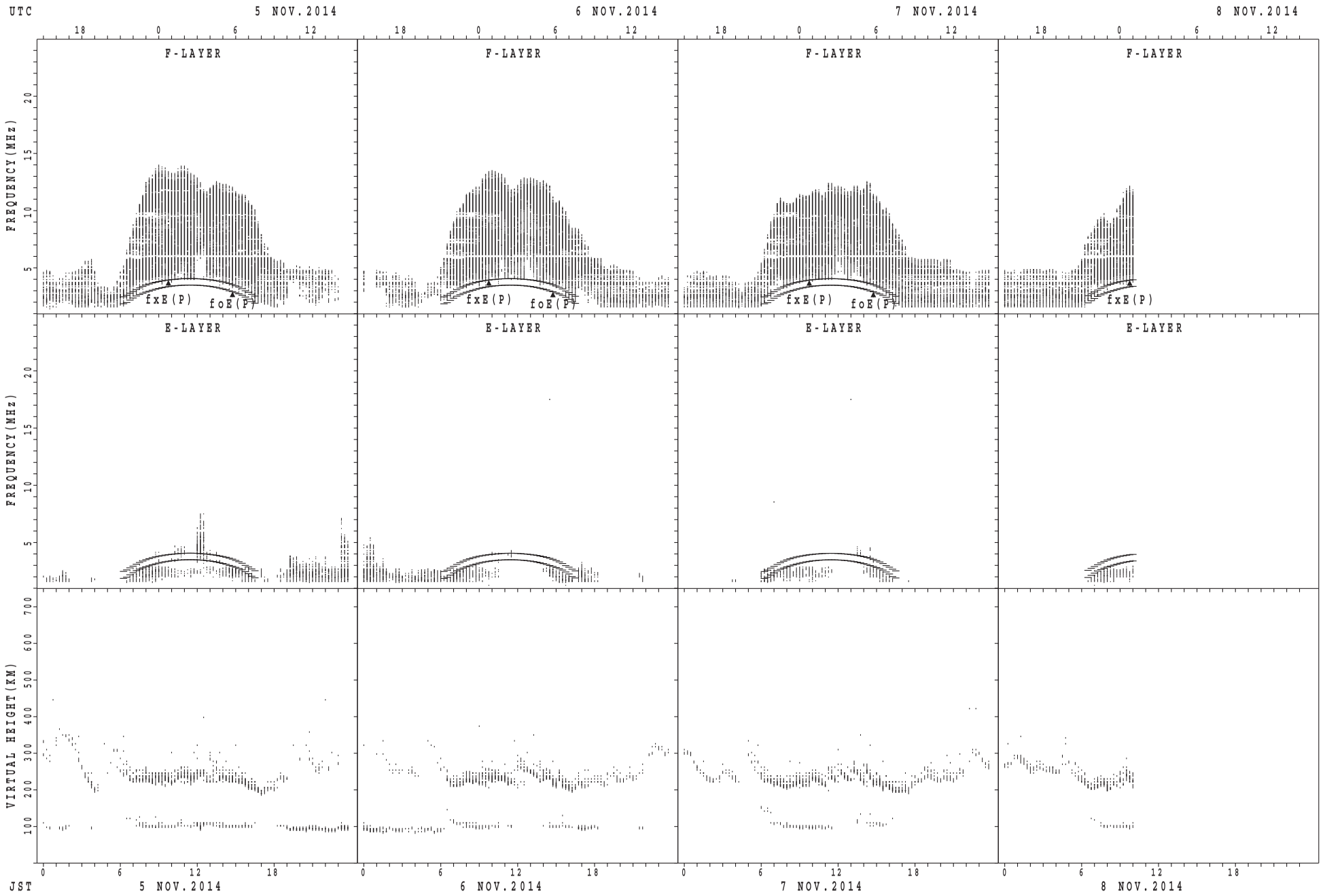
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



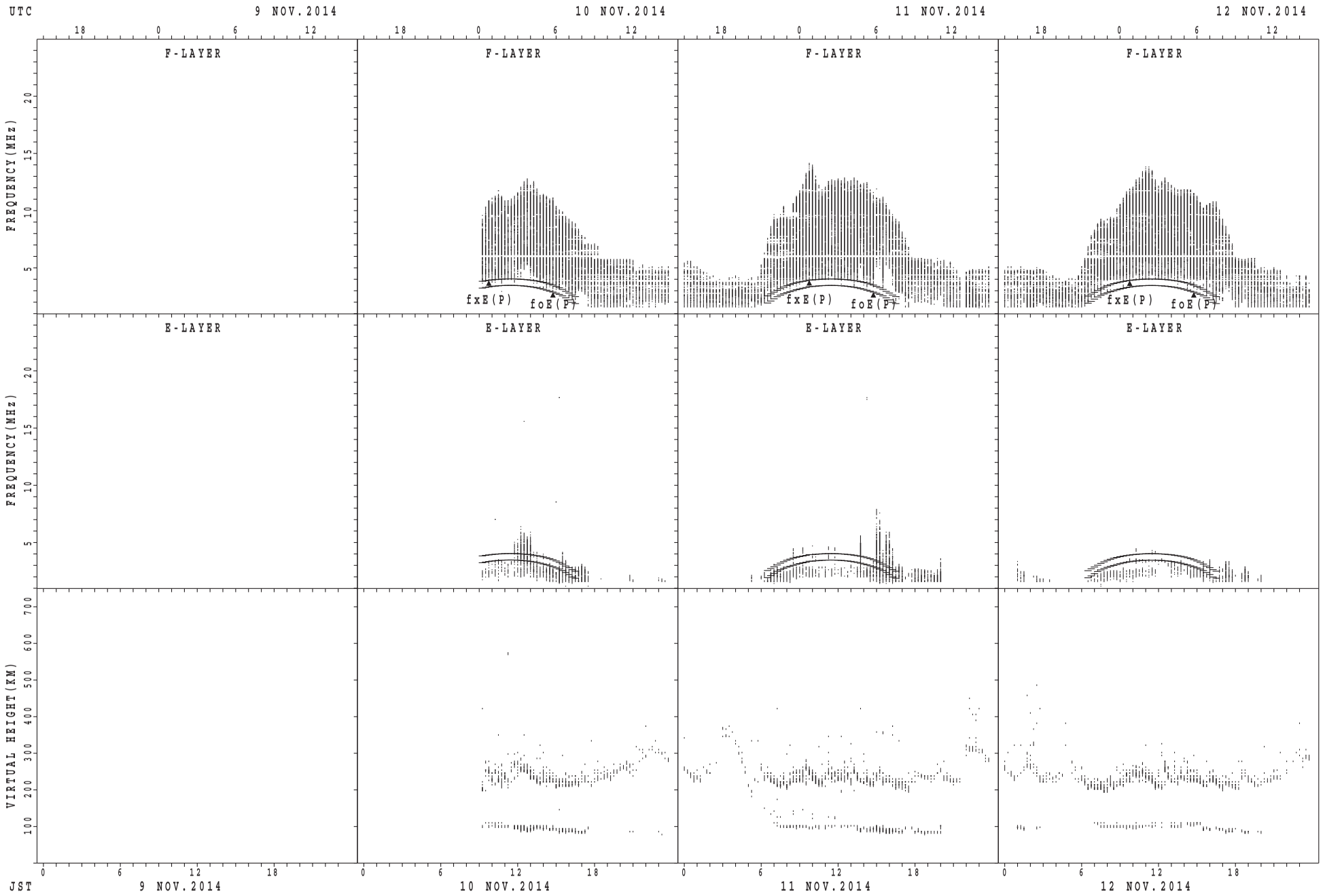
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



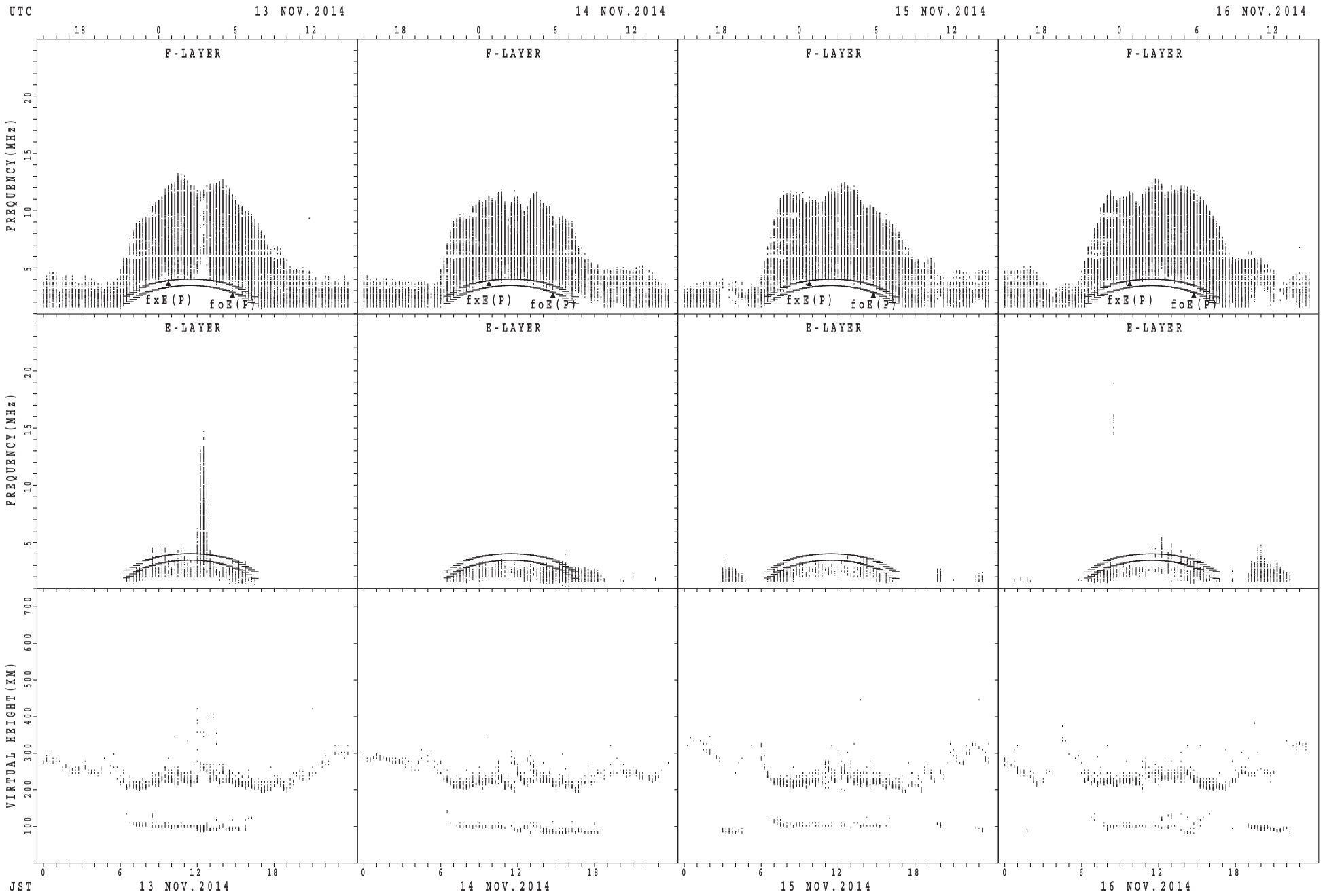
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



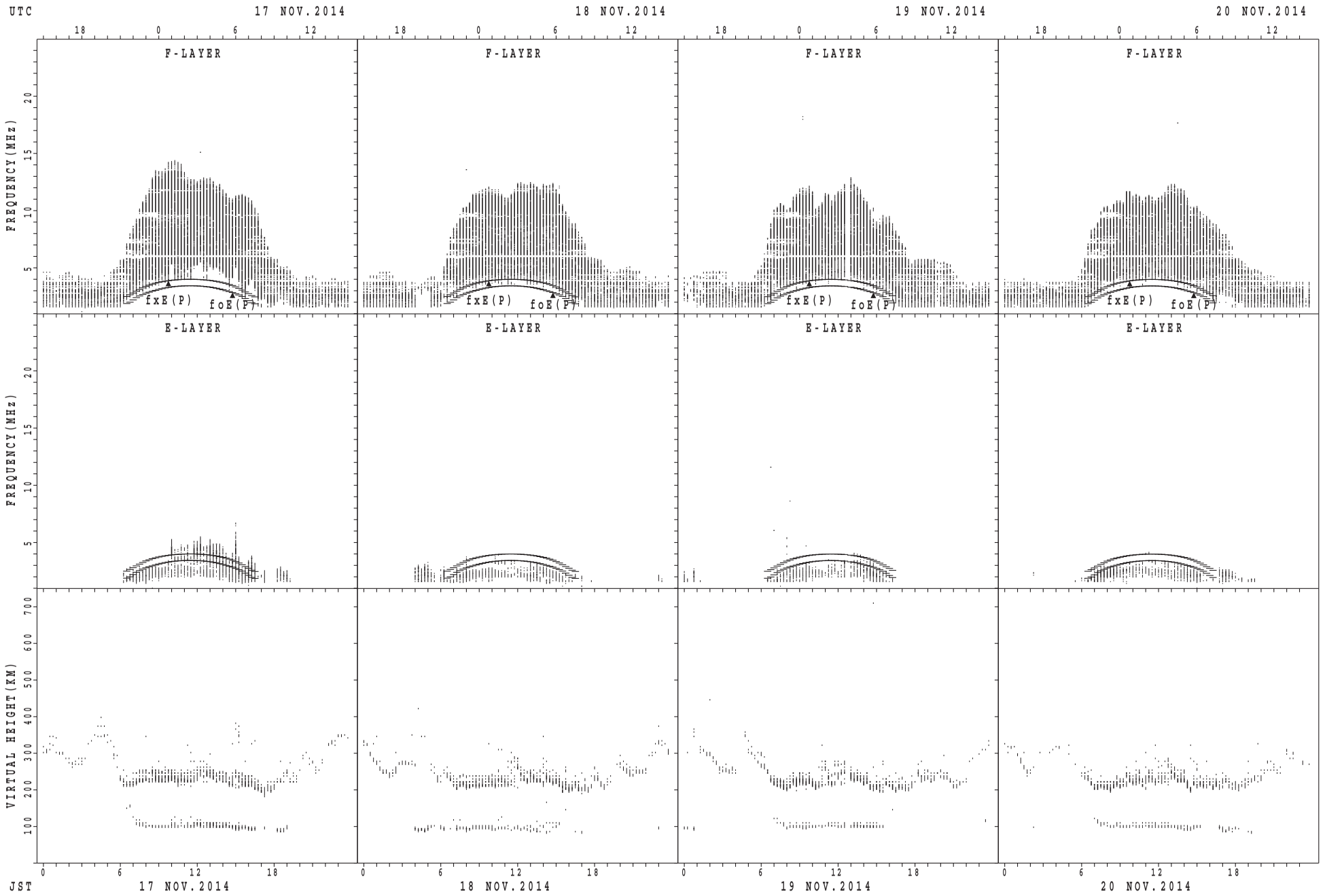
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



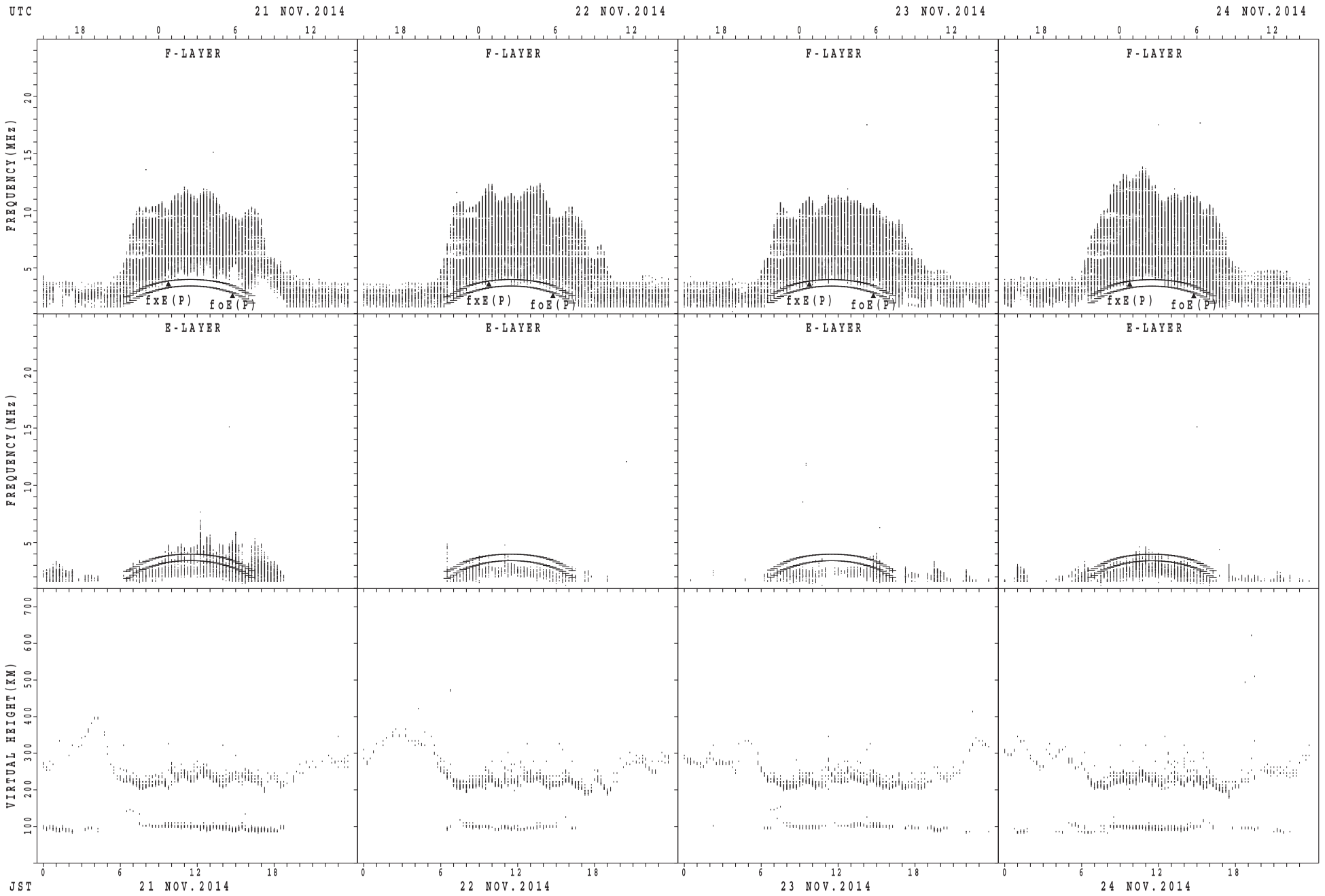
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



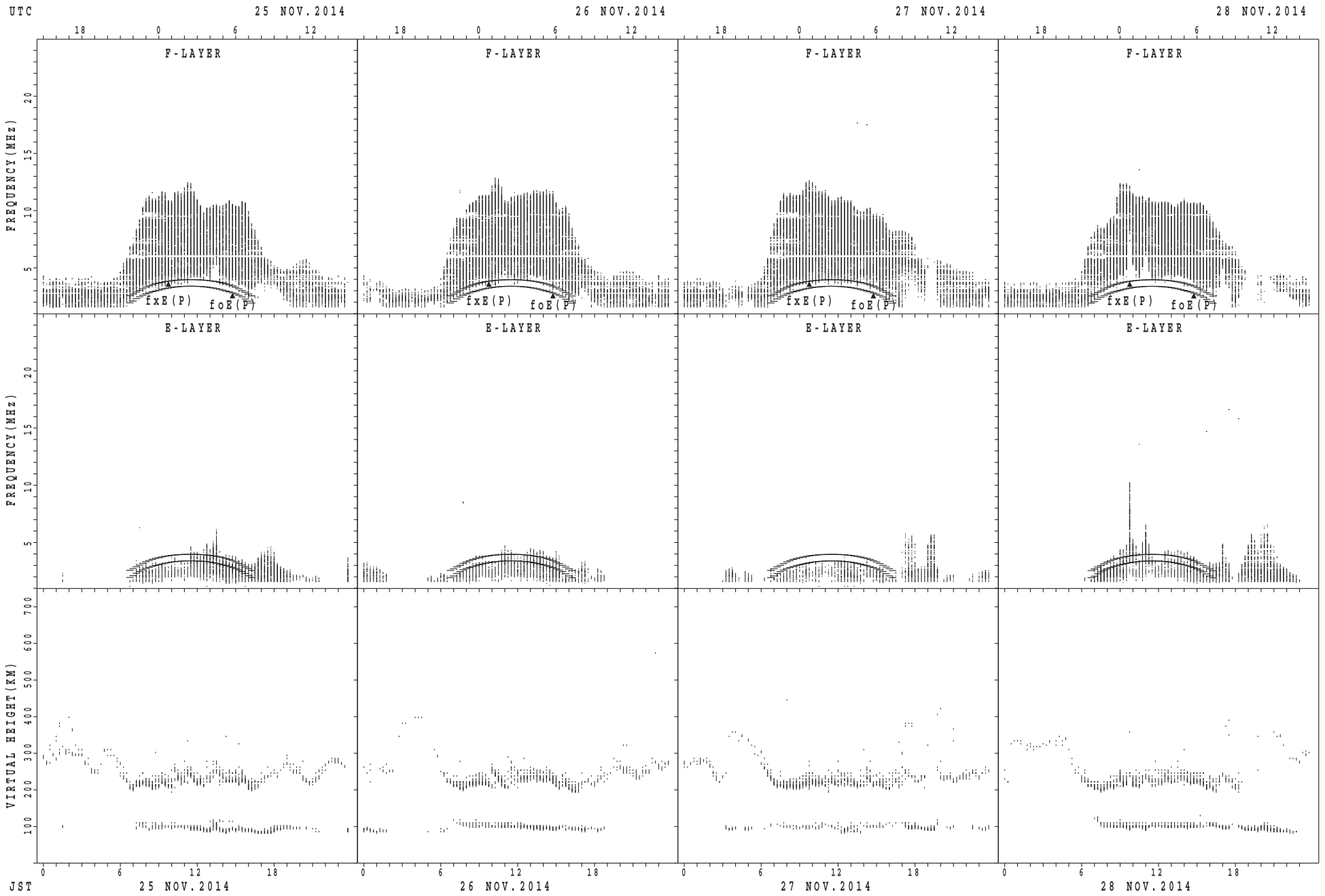
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



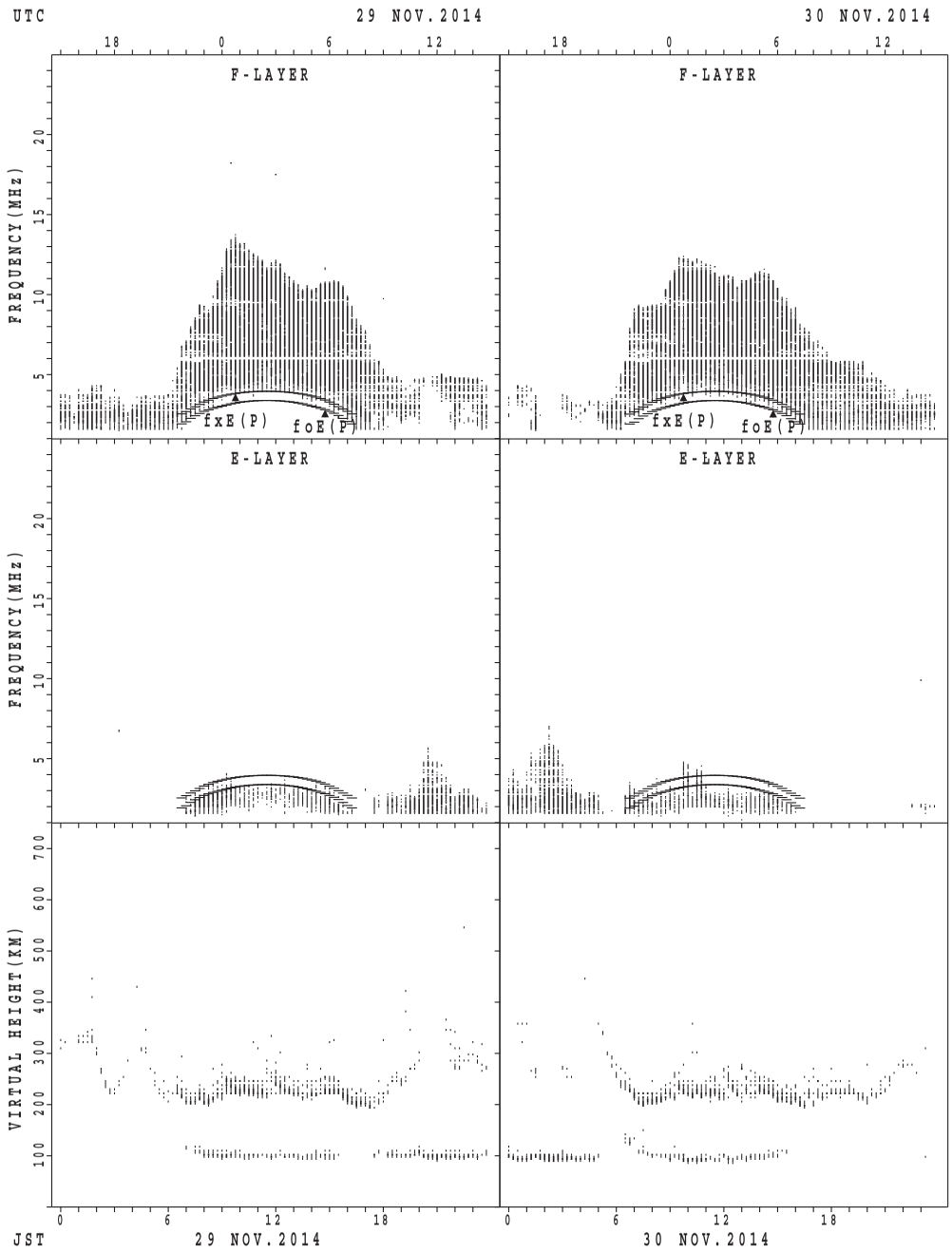
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



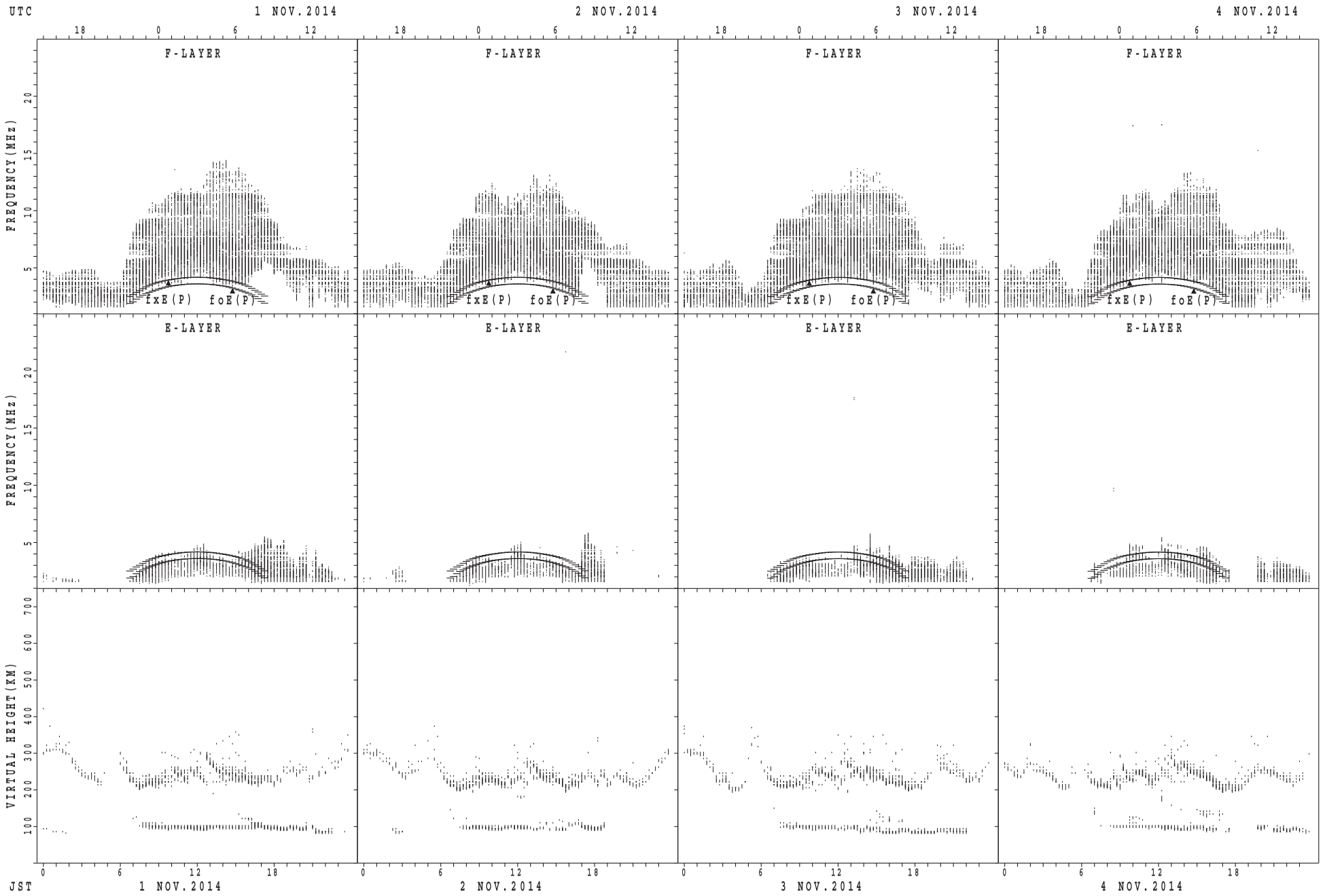
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



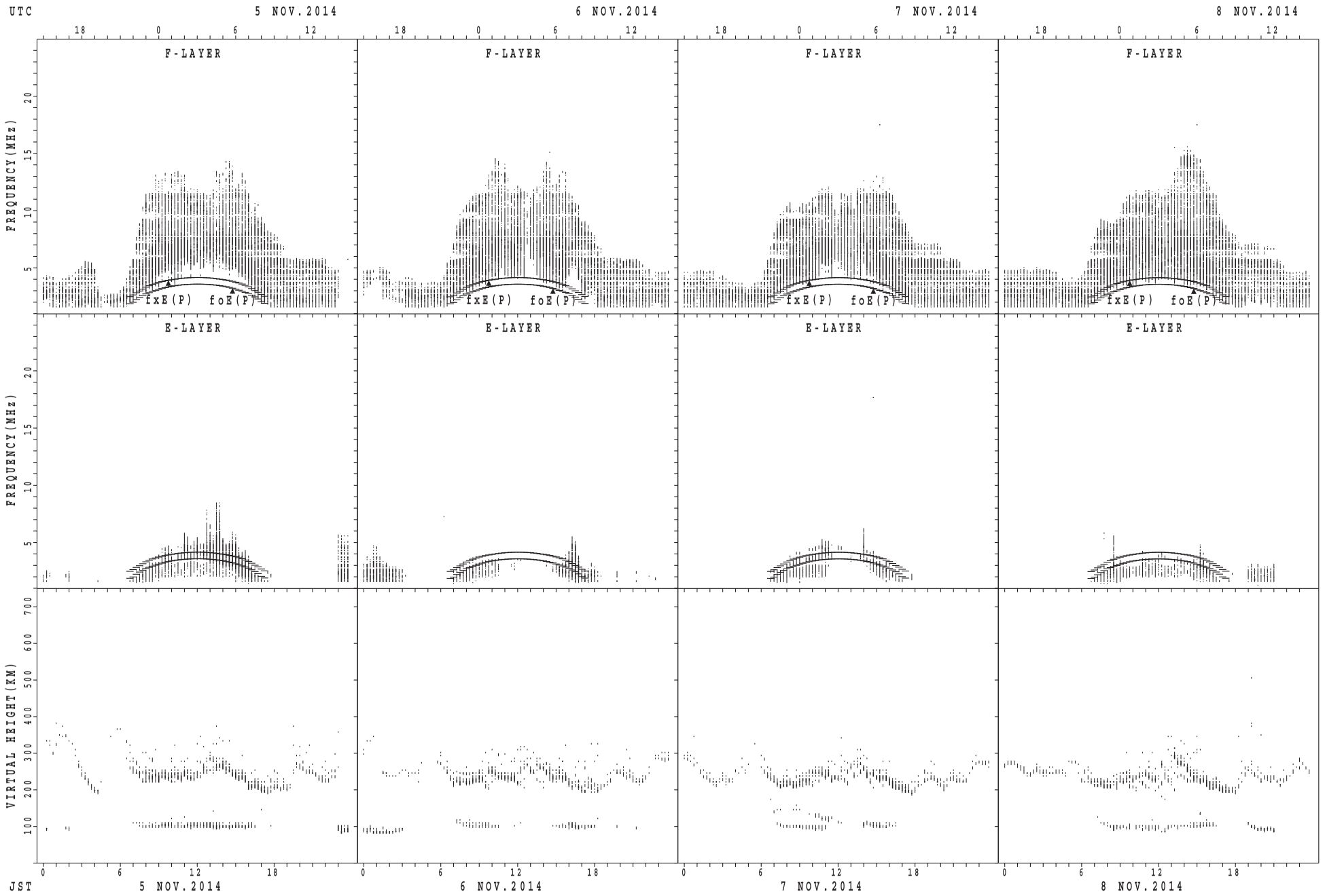
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



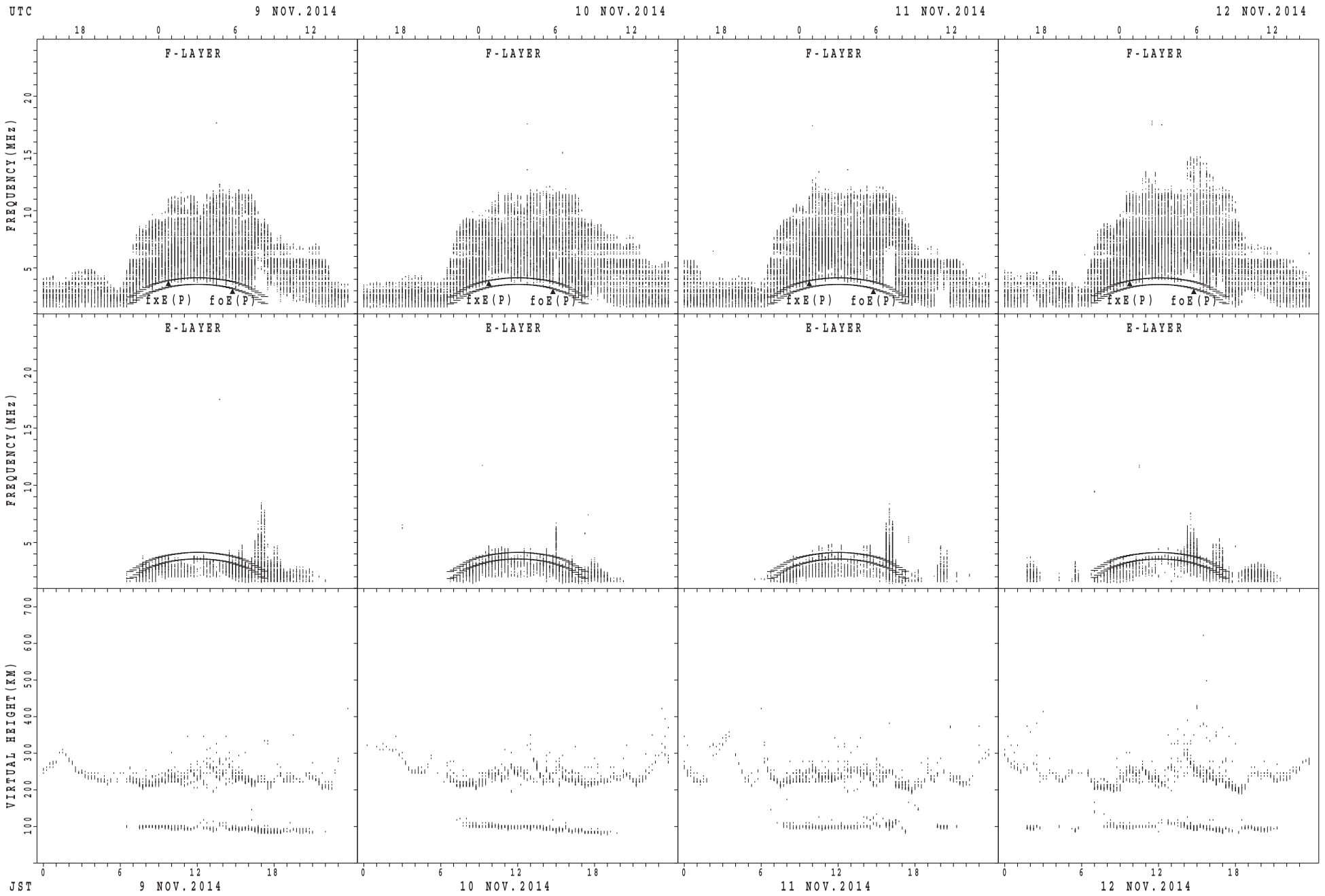
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



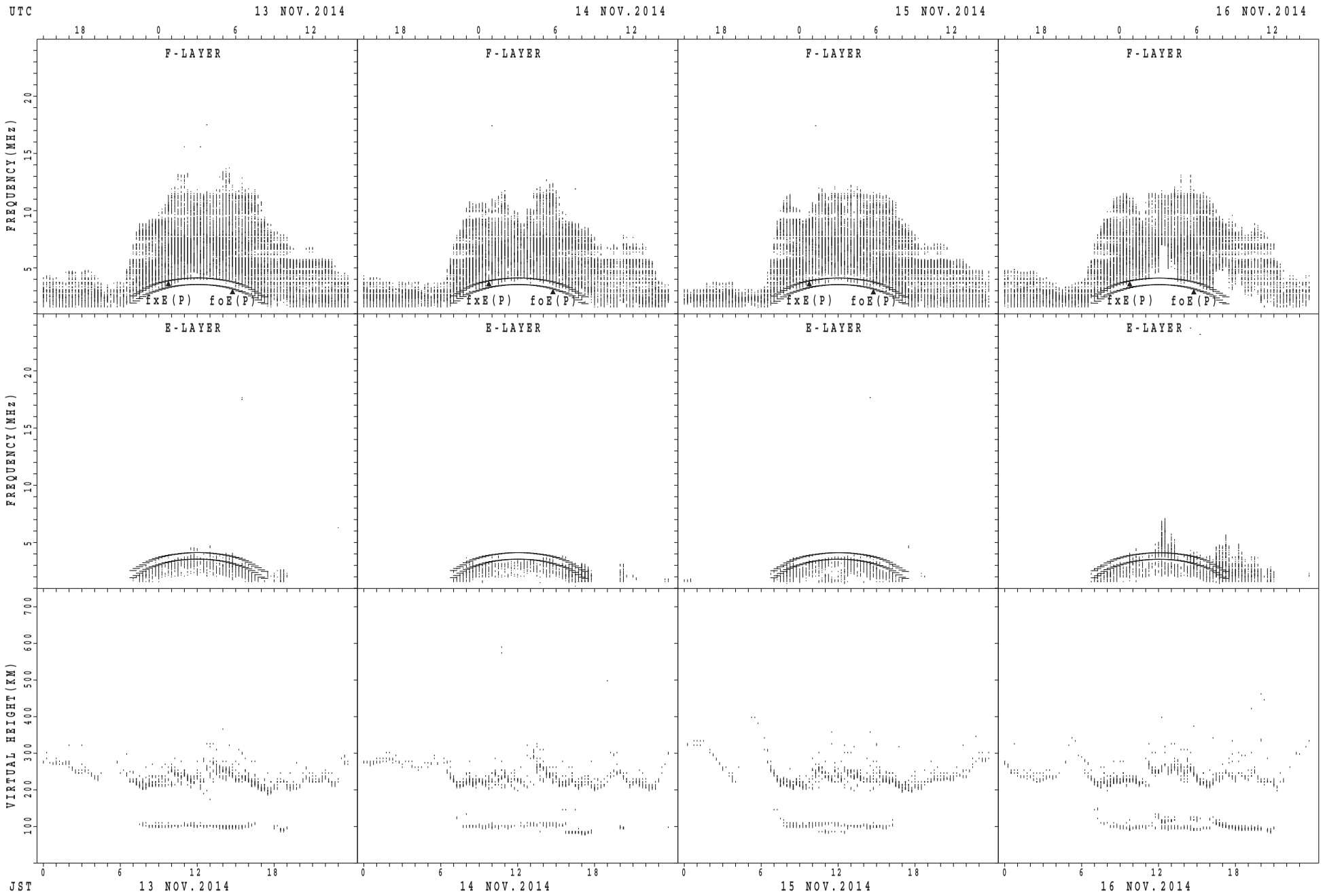
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



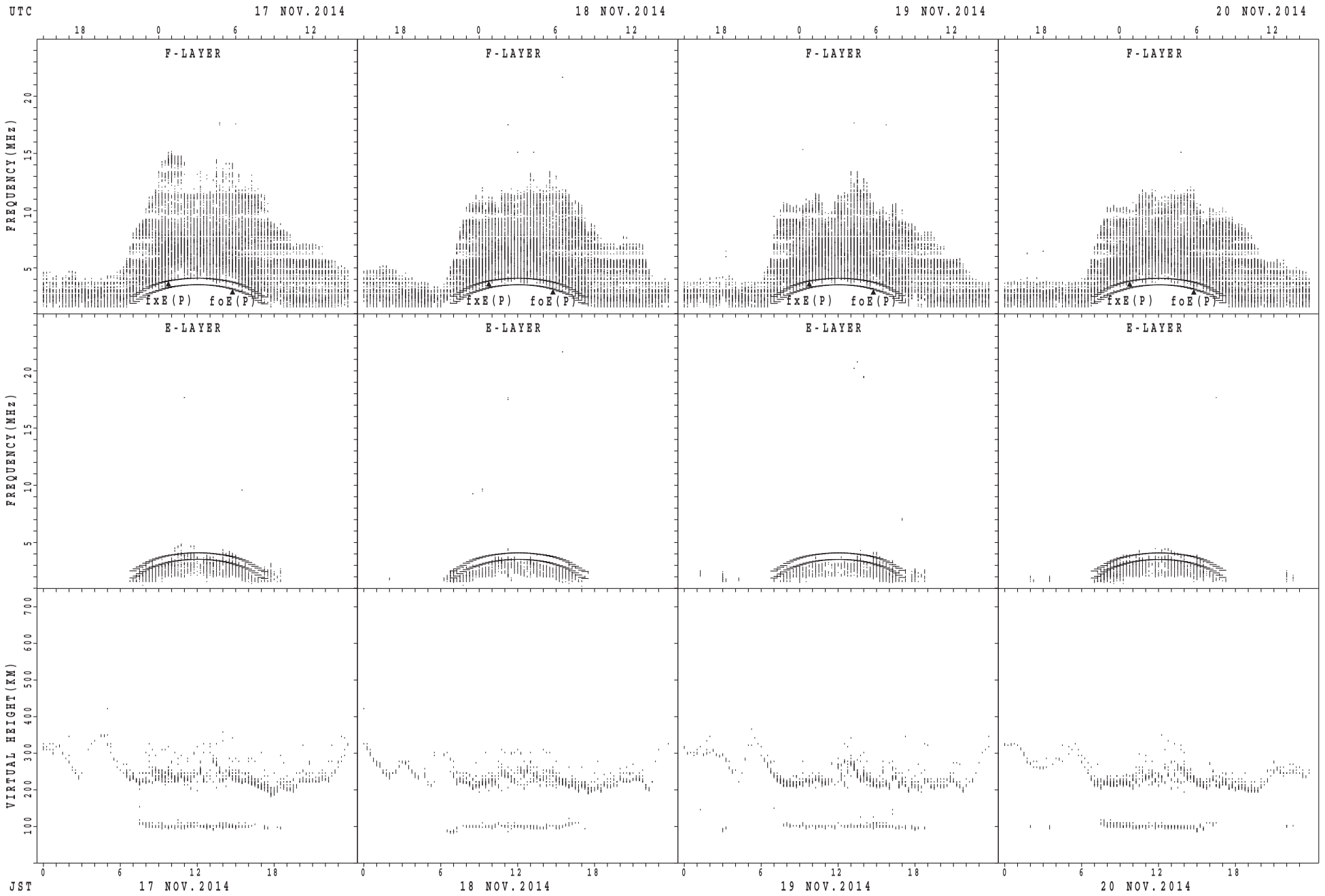
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



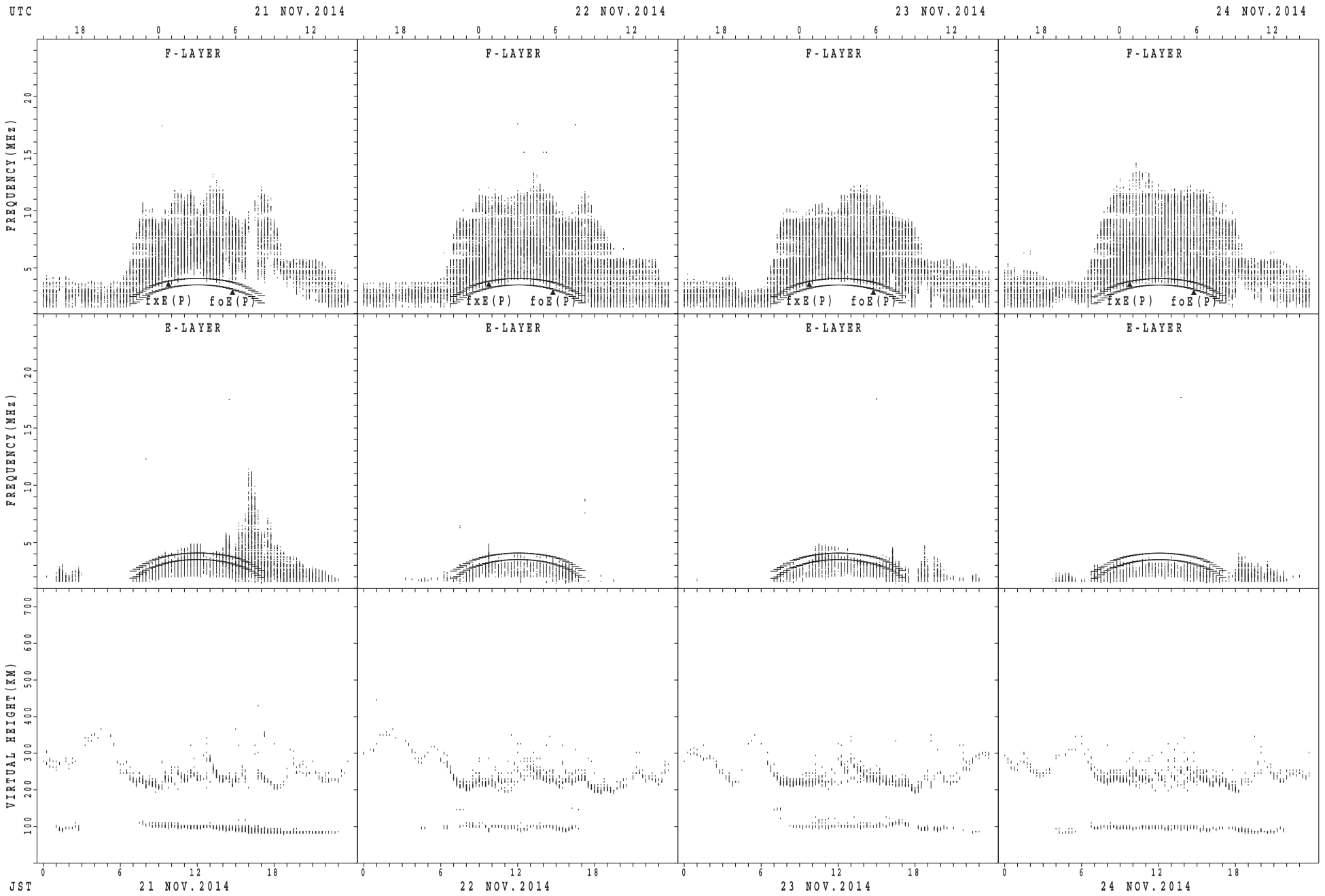
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



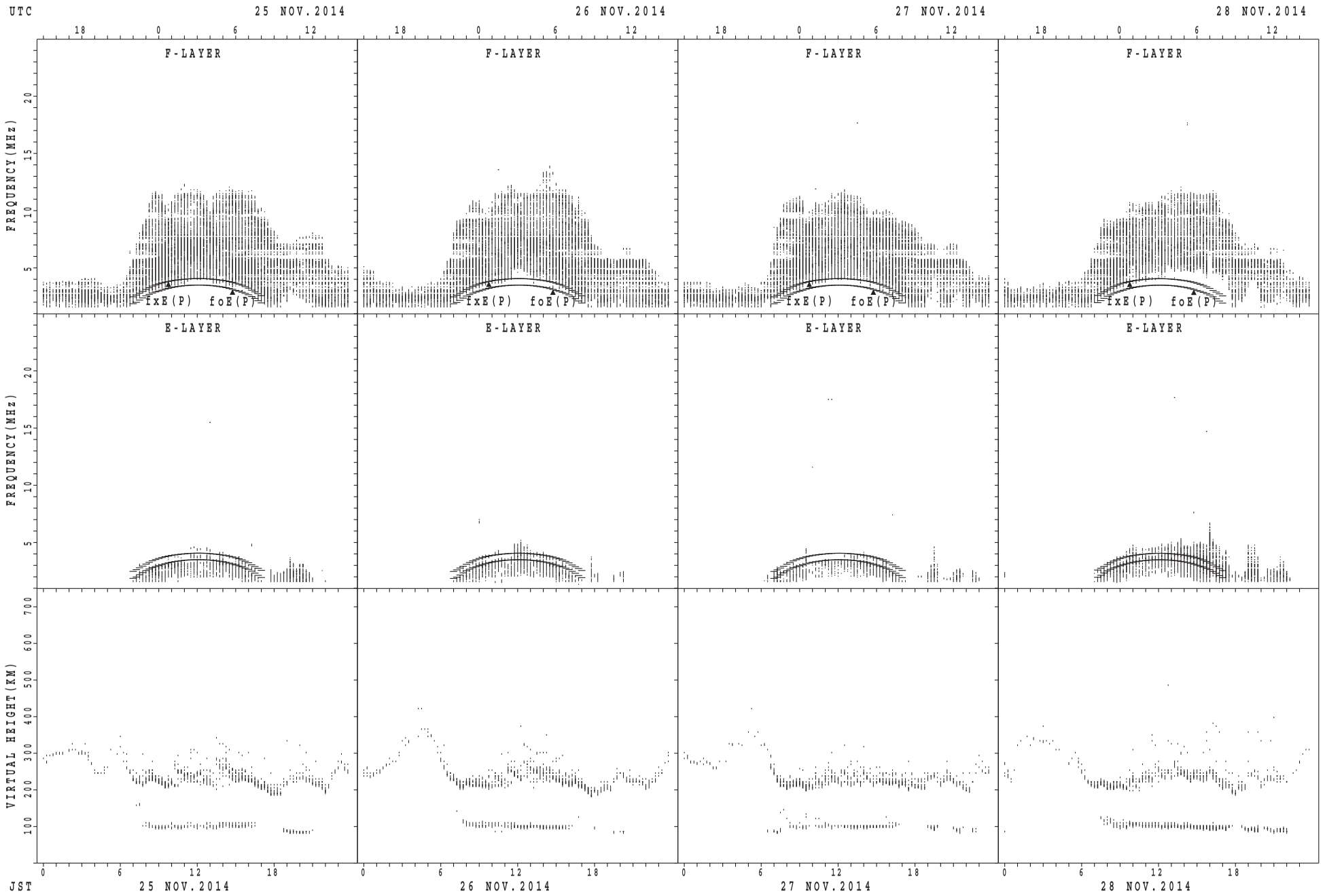
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



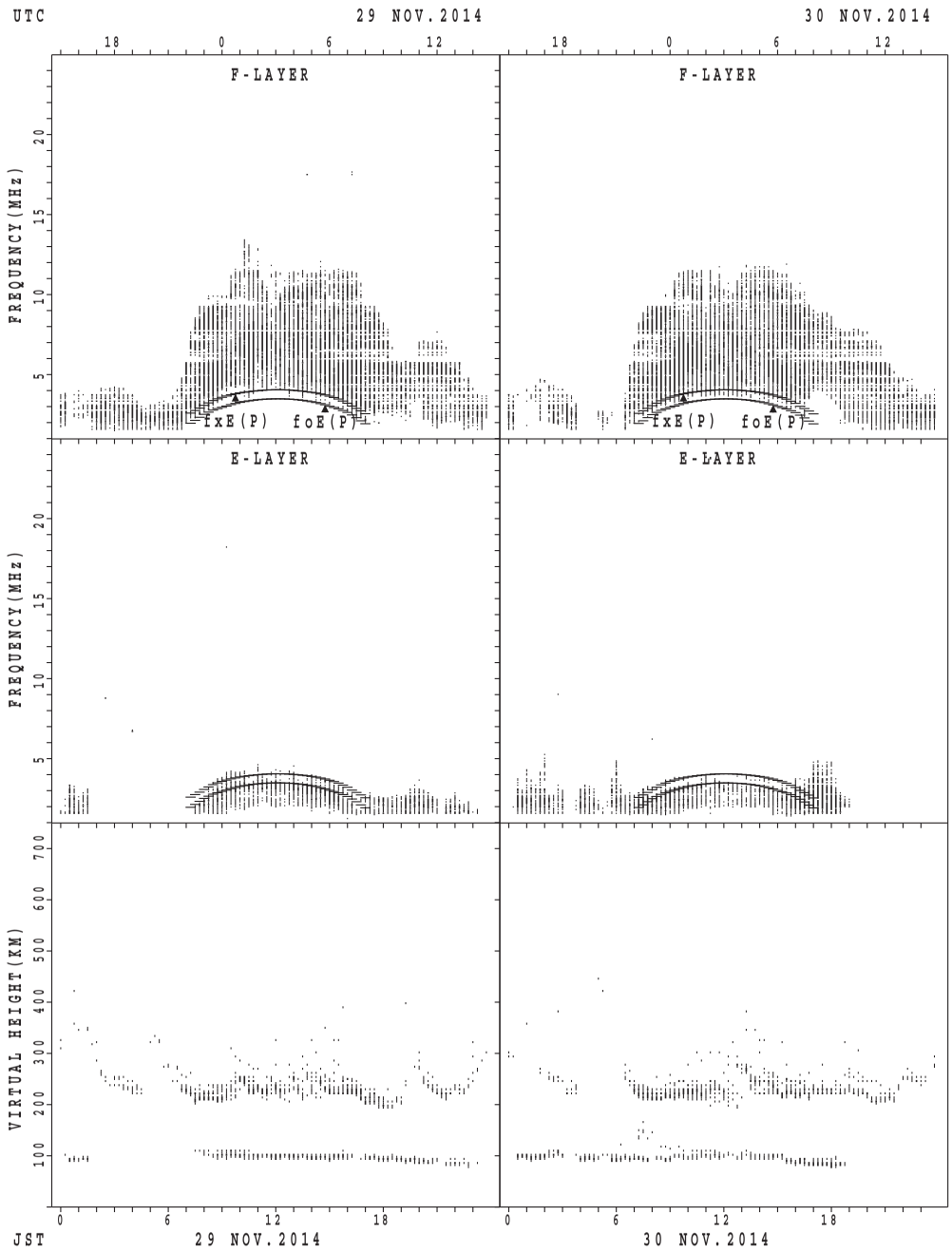
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



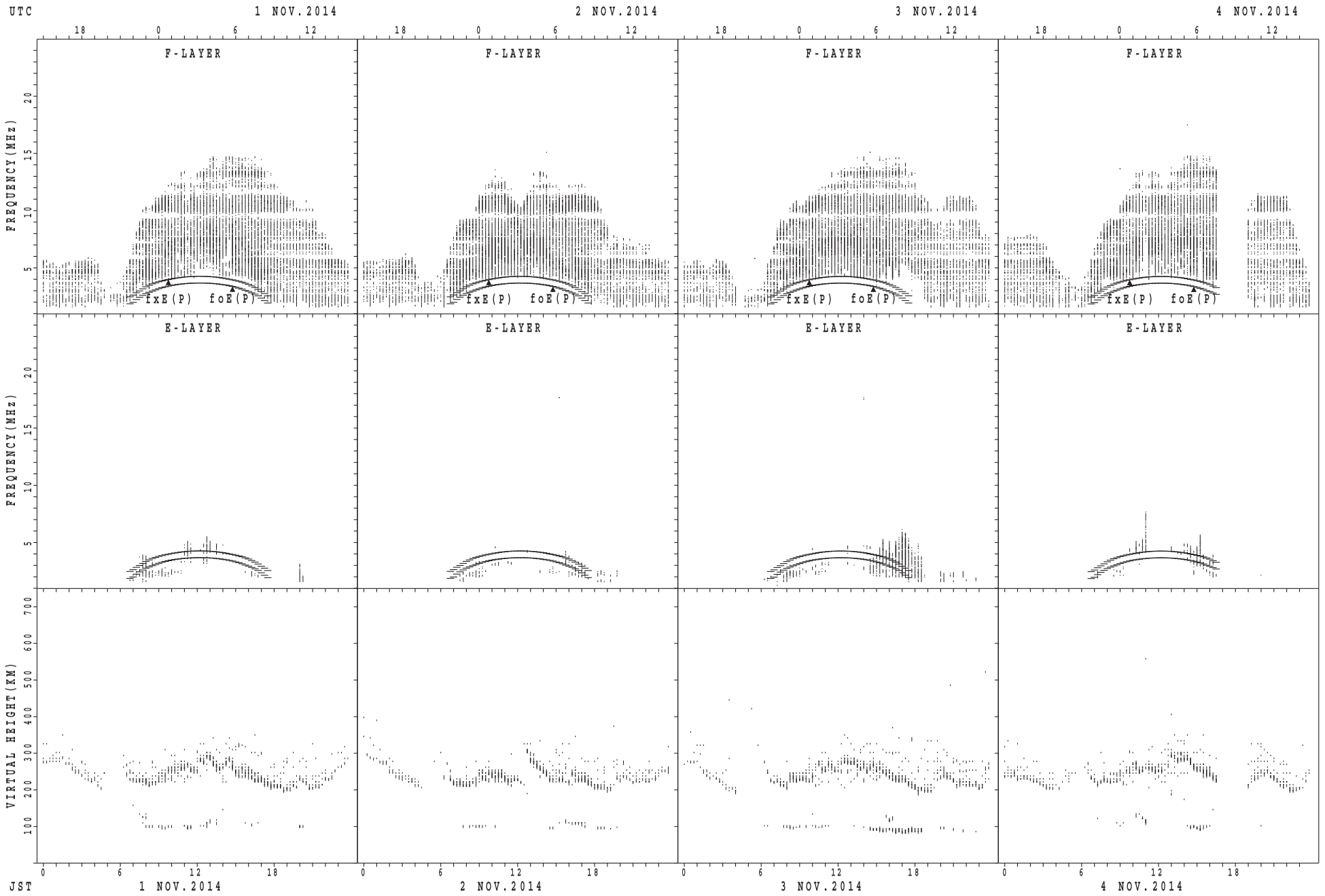
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



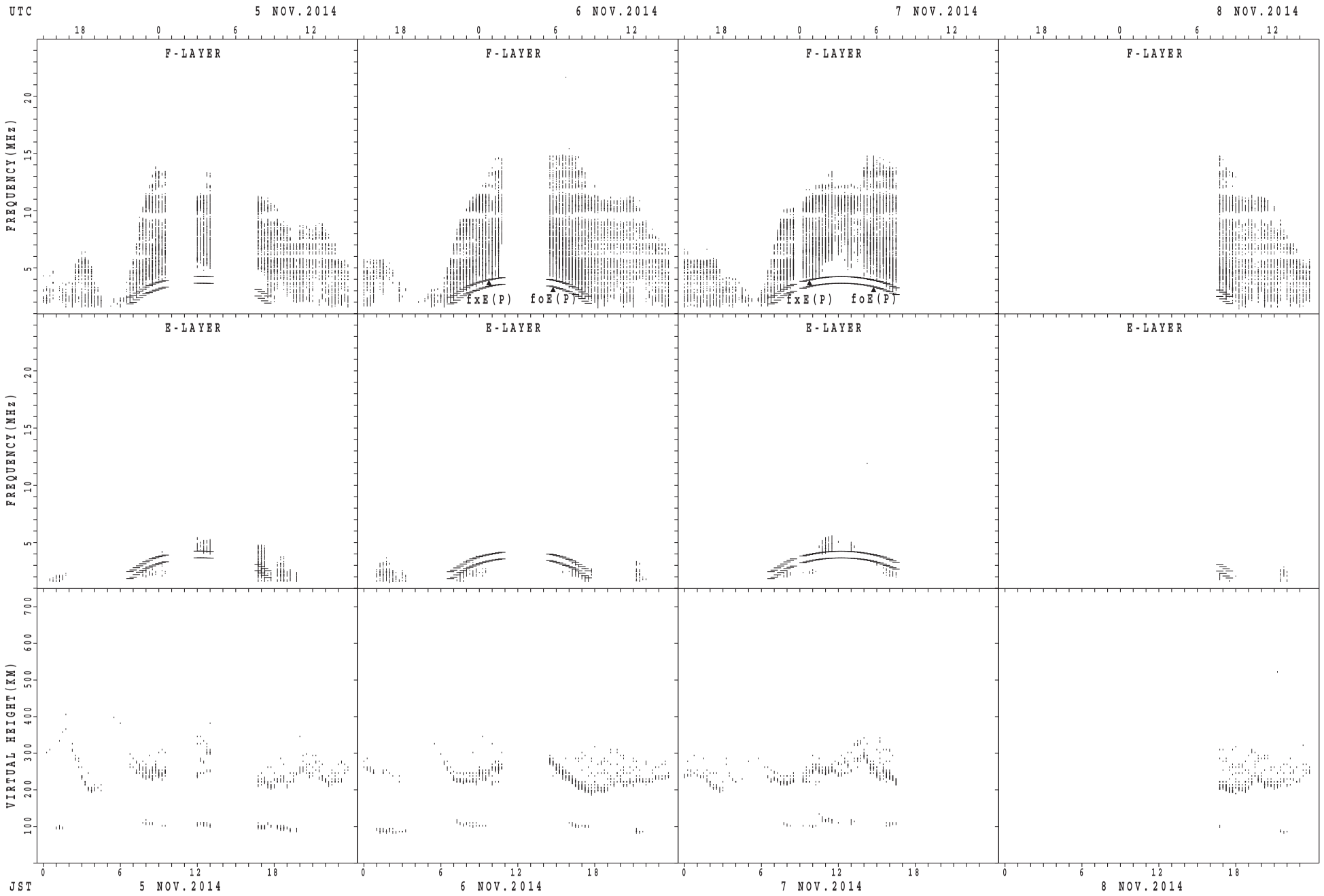
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



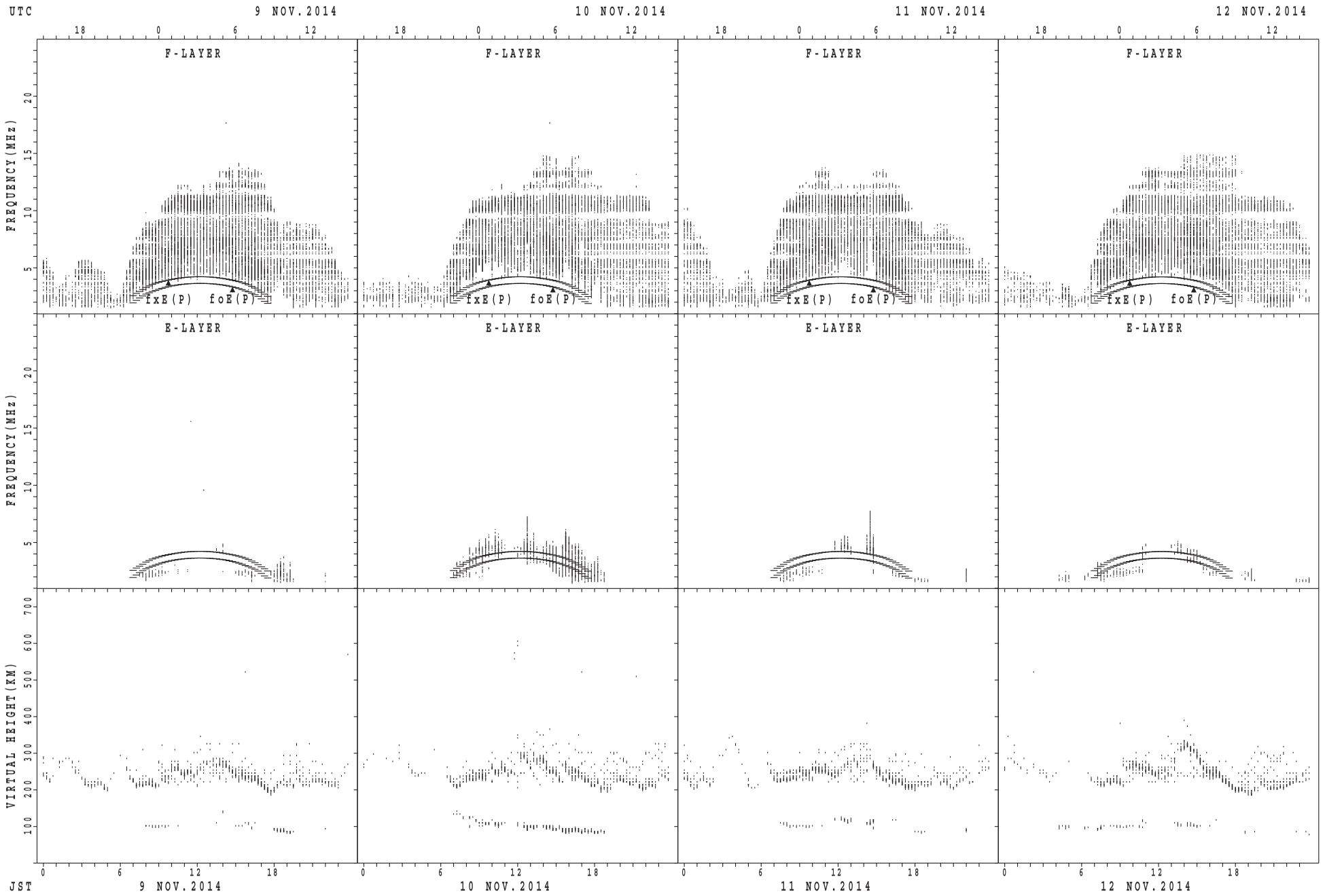
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



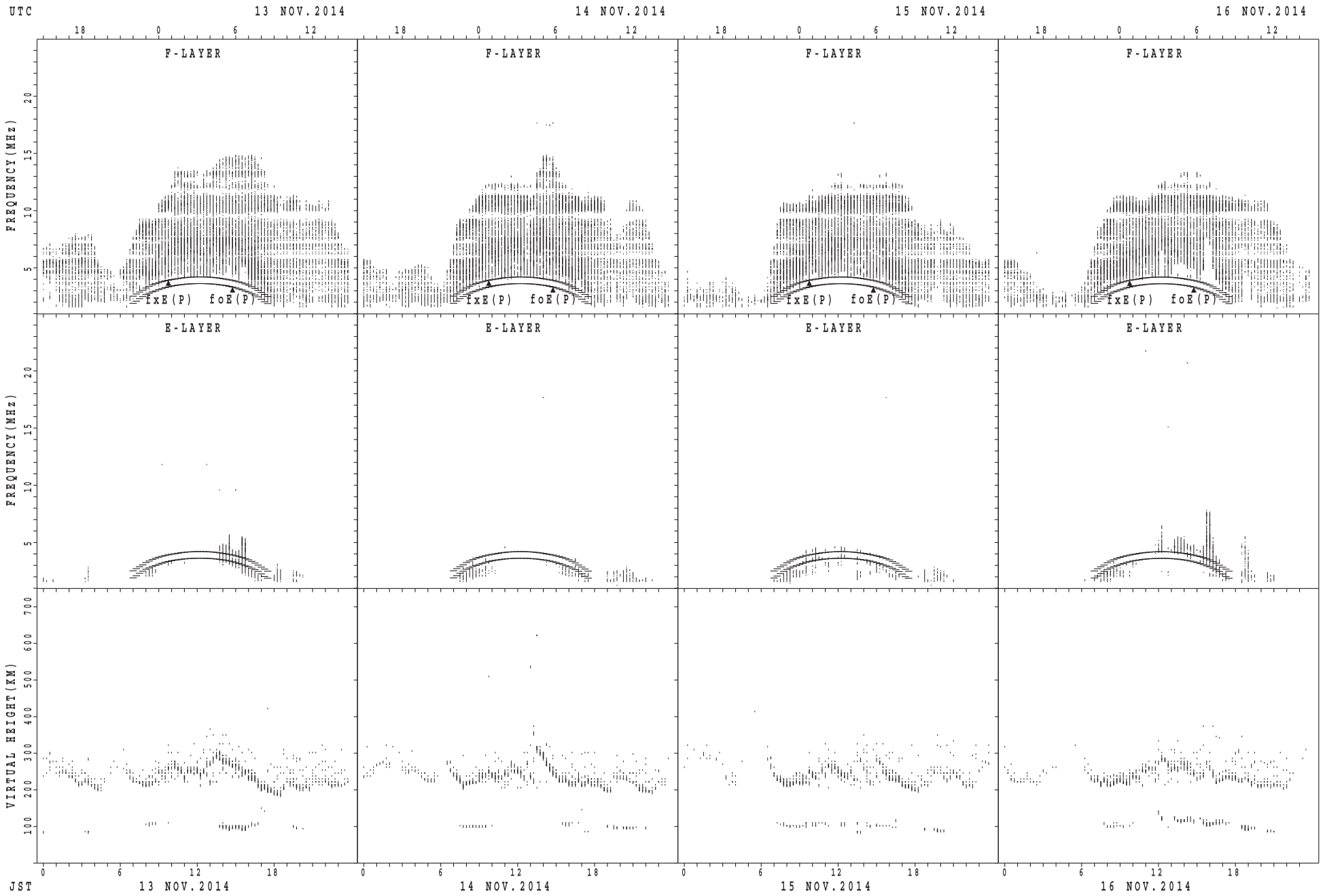
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



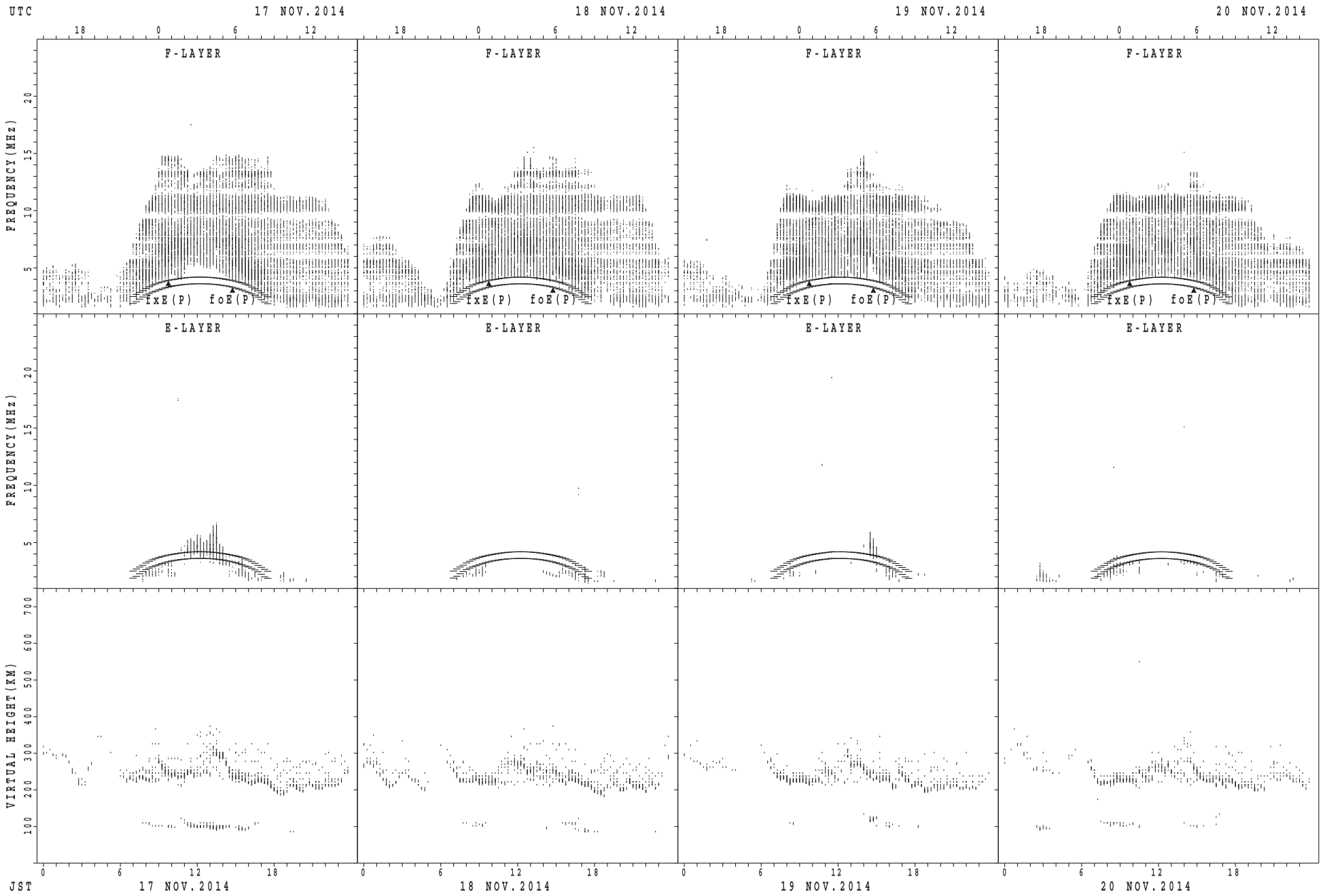
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



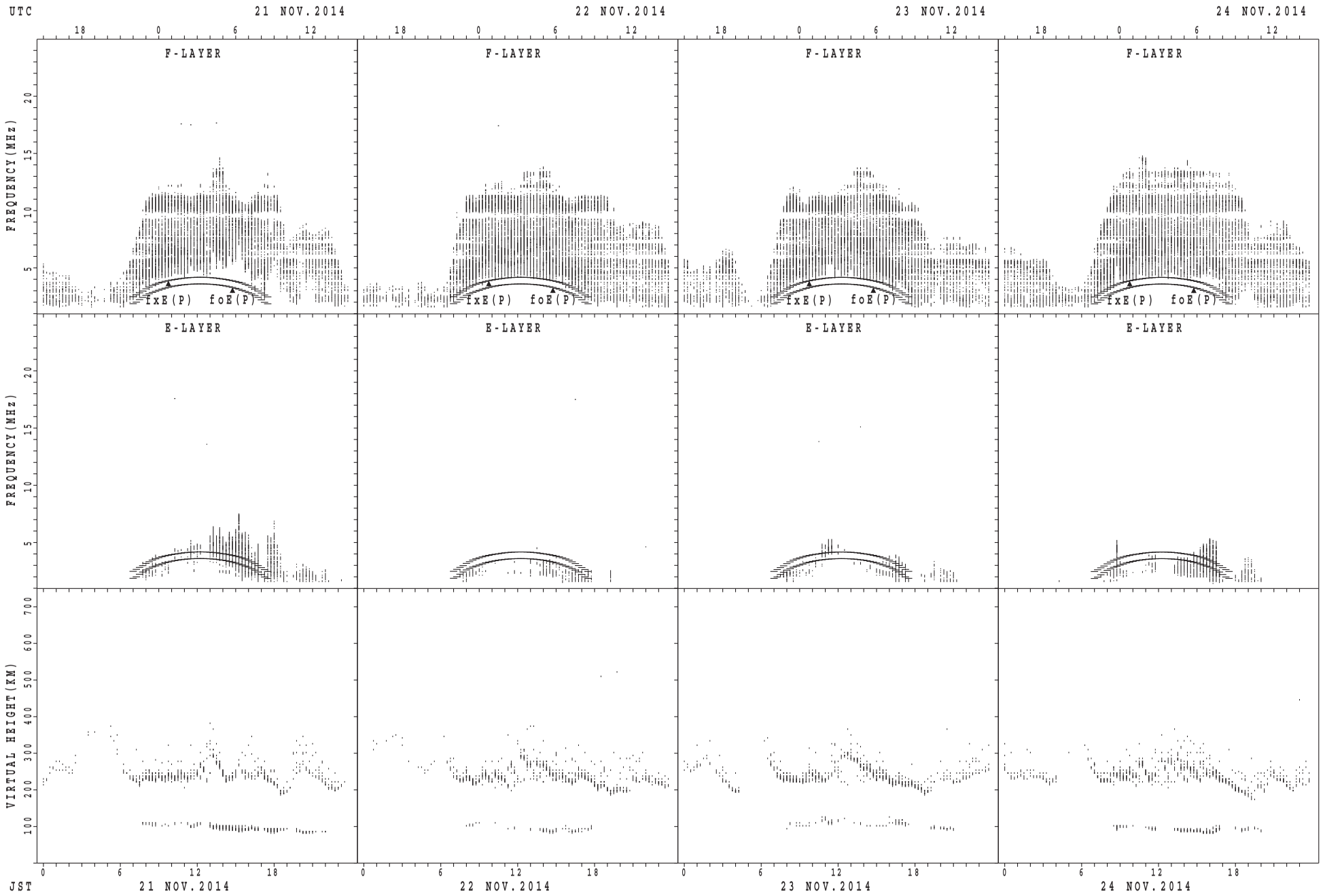
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



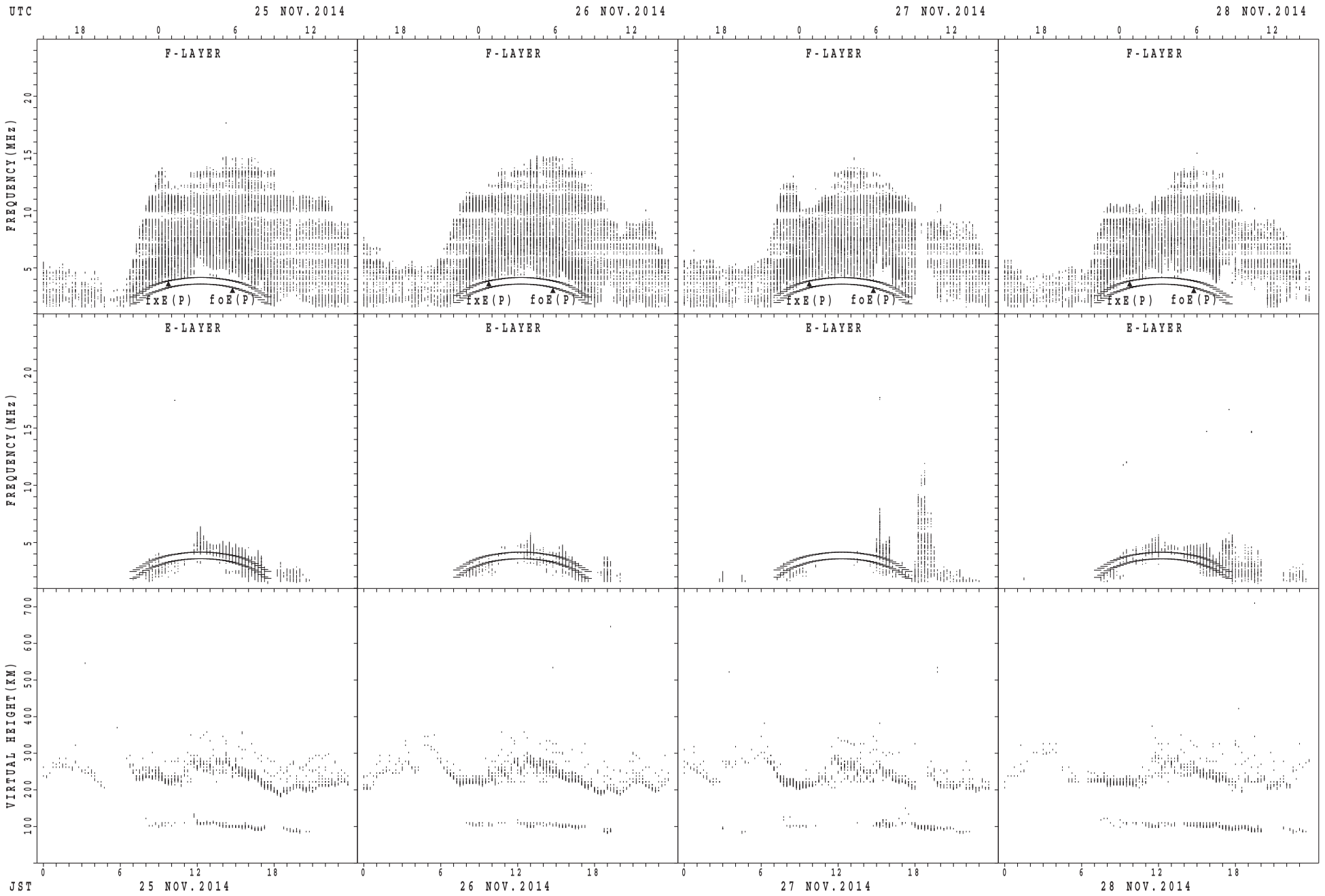
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



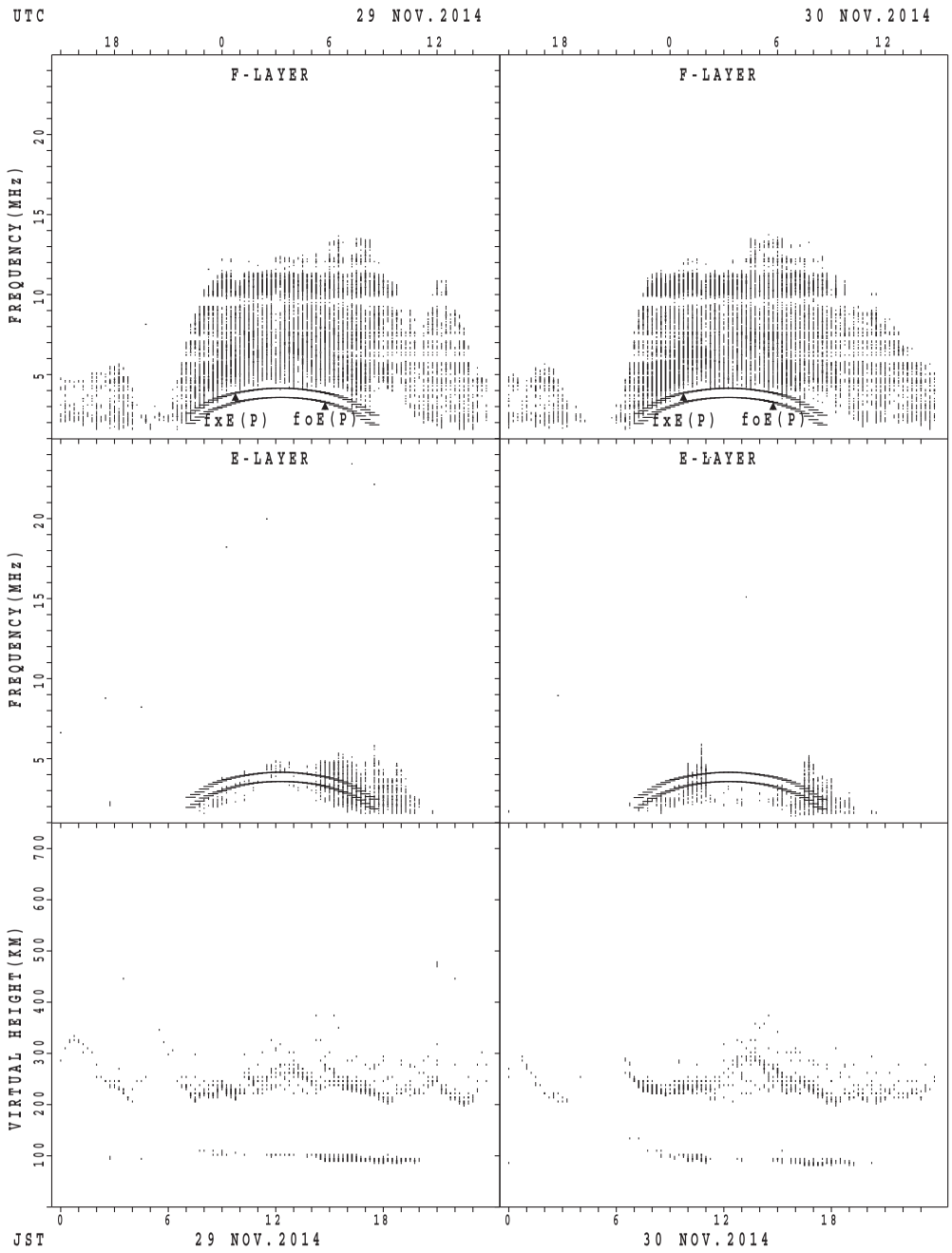
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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

NOV.2014 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								21	29	29	29	29	28	28	29	29	27	5						
MED								240	214	214	222	220	222	222	222	222	224	232						
U Q								248	224	222	238	226	226	235	230	229	230	254						
L Q								227	214	206	215	214	214	217	218	220	216	223						

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	14	10	10	5	4	5	10	18	11	13	5	4	10	13	13	11	10	10	11	10	12	10	10
MED	95	91	97	95	95	97	99	105	119	103	101	99	98	95	101	95	95	96	94	95	96	94	93	96
U Q	97	99	101	97	98	99	105	155	137	107	105	102	103	101	107	122	101	105	97	105	99	97	99	99
L Q	93	89	95	93	92	93	88	99	105	101	97	94	91	91	91	89	89	89	91	89	95	90	89	89

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								27	28	28	24	12	13	25	28	28	28	15	1					
MED								224	217	225	226	231	240	238	235	230	224	232	244					
U Q								234	222	230	230	239	246	246	240	234	231	250	122					
L Q								222	213	222	222	223	229	232	230	223	214	222	122					

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	5	6	3	4	5	5	6	7	6	4	6	10	7	11	7	11	14	15	10	13	10	8	6	6
MED	97	92	97	91	95	95	95	125	103	107	107	104	99	99	97	95	91	93	92	97	96	95	93	96
U Q	101	95	99	94	97	108	157	145	107	108	113	111	107	105	105	103	95	95	99	99	105	101	95	103
L Q	94	89	93	89	89	94	91	115	101	104	103	97	95	95	95	89	89	87	89	92	93	95	89	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								10	30	30	30	10		7	30	30	29	30	21	3	1	4		
MED								248	222	224	236	231		262	246	237	230	232	248	258	276	258		
U Q								256	238	234	246	238		264	256	240	238	242	257	272	138	260		
L Q								240	216	218	230	226		238	240	230	222	218	231	244	138	252		

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	2	4	5	4	1	2	1	10	12	8	12	7	14	14	13	14	18	17	16	16	14	13	7	2
MED	92	94	97	94	95	92	97	127	113	106	105	103	104	104	103	100	105	95	96	95	93	91	89	99
U Q	93	101	101	100	47	97	48	155	125	107	111	113	109	113	105	107	113	103	99	96	95	97	91	105
L Q	91	88	91	92	47	87	48	97	107	102	105	103	101	101	97	95	95	89	89	89	91	89	87	93

MONTHLY MEDIANS OF h'F AND h'Es

NOV.2014 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

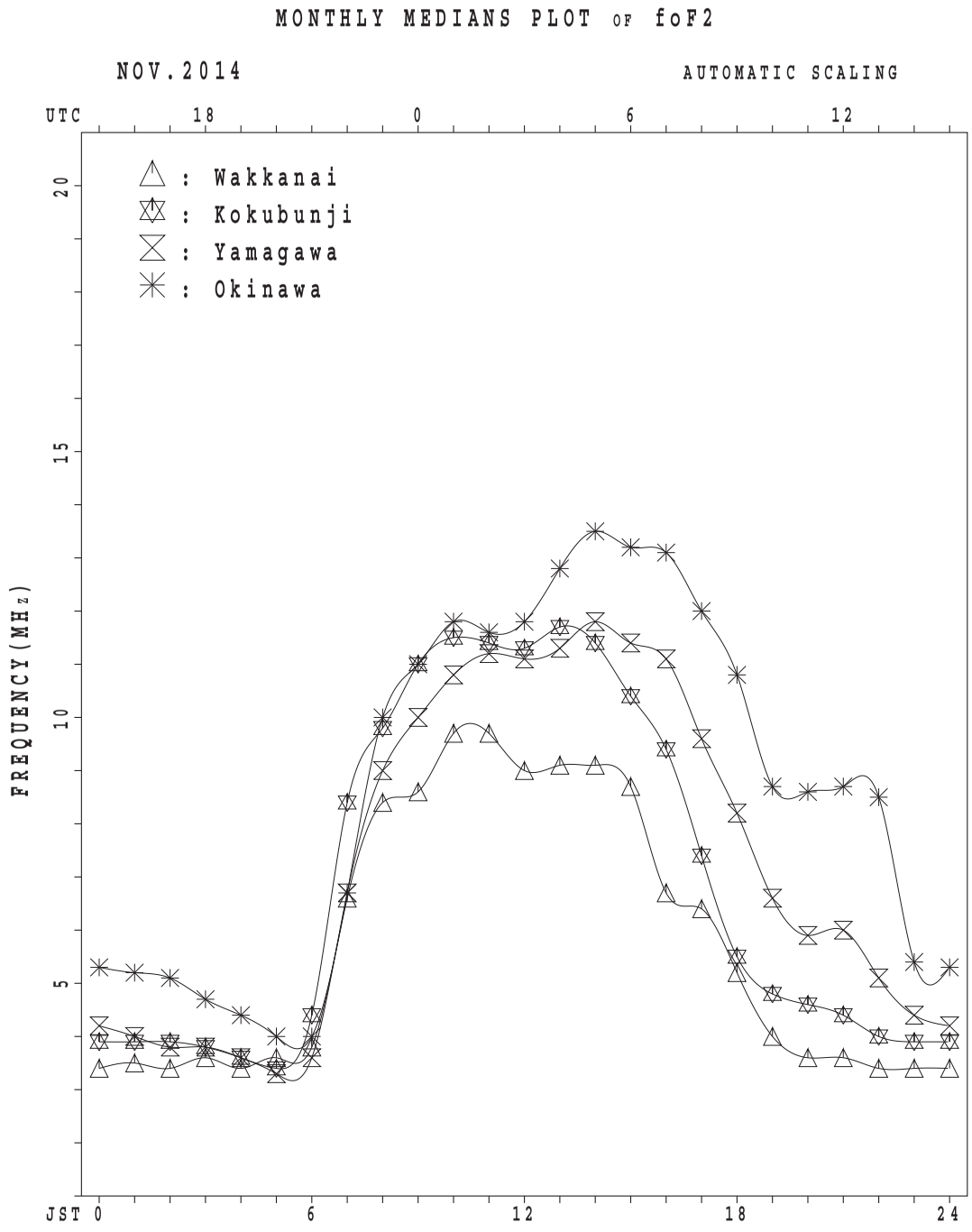
STATION Okinawa LAT. 26°41.0'N LON. 128°09.0'E

h'F

	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		2					14	29	28	28	3			18	28	28	28	28	27	25	26	22	10
MED	308		256					265	228	235	238	232			261	249	238	226	224	240	248	252	247	256
U Q	322		264					272	238	246	255	234			278	259	246	234	235	256	265	262	262	272
L Q	294		248					256	224	224	228	222			254	241	230	222	214	222	236	240	240	246

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		2	1	3				1	4	3	4	10	10	10	10	14	13	11	9	12	9	5	3	
MED		96	93	95				139	112	113	114	114	108	106	108	101	103	97	93	96	95	95	91	
U Q		97	46	99				69	116	123	118	117	119	113	141	105	110	109	97	101	98	97	93	
L Q		95	46	91				69	111	107	105	107	107	103	101	95	96	87	90	91	91	89	89	


MONTHLY MEDIANS PLOT OF foF2
NOV.2014
AUTOMATIC SCALING
UTC
18
0
6
12
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E KSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 50	A	X 53	X 53	X 51	X 50												X 82	X 71	X 69	X 63	X 60	X 59	X 59
2	X 58	X 58	X 59	X 59	X 59	X 60												X 78	X 62	X 61	X 58	X 53	56	55
3	53	X 53	X 56	X 56	X 56	X 49												X 65	X 58	X 63	X 57	X 51	X 51	X 51
4	X 49	X 49	X 50	X 50	X 53	X 54												X 80	X 66	X 65	X 54	X 52	X 53	X 53
5	X 52	X 44	X 47	X 51	X 53	X 34												X 79	X 63	X 54	X 45	X 46	X 49	X 49
6	X 47	X 45	X 46	X 46	X 49	X 47								Y				X 85	X 60	X 59	X 46	X 45	X 46	X 47
7	X 50	X 49	X 53	X 49	X 49	X 48												X 81	X 66	X 63	X 63	X 58	X 58	X 61
8	60	59	61	X 56	X 58	X 58												X 74	X 57	X 57	X 53	X 51	X 49	X 52
9	X 51	X 53	X 52	X 51	X 52	X 44												X 72	X 60	X 59	X 54	X 49	X 42	X 44
10	X 42	X 44	X 44	X 43	X 47	X 43											C	C	X 69	X 56	X 58	X 57	X 55	X 55
11	X 57	X 55	X 45	X 47	X 47	X 46	X 48				C	C	C	C	C	C	C	C	C	C	X 55	X 46	X 48	X 52
12	X 54	X 57	X 54	X 49	X 49	X 48	X 47			C								X 72	X 70	X 68	X 62	X 56	X 54	X 56
13	X 53	59	X 57	X 58	X 55	X 51	X 51											X 74	X 64	X 54	X 52	X 46	X 44	X 47
14	X 49	X 50	X 50	X 50	X 51	X 49	X 52											X 64	X 50	X 52	X 50	X 50	X 51	X 49
15	X 48	X 48	X 49	X 48	X 49	X 46	X 48											X 74	X 62	X 43	X 42	X 42	X 46	X 46
16	X 45	X 48	X 45	X 43	X 40	X 37	X 42											X 70	X 61	X 58	X 52	X 48	X 52	X 49
17	X 47	X 47	X 47	X 46	X 43	X 47	X 49											X 77	X 59	X 49	X 42	X 39	X 39	X 40
18	X 45	X 46	X 44	X 44	X 47	X 43	X 47											X 77	X 52	X 52	X 48	X 43	X 43	X 45
19	X 45	X 49	X 47	X 47	X 47	X 48	X 49											X 66	X 55	X 53	X 51	X 51	X 46	X 45
20	X 46	X 46	X 46	X 46	X 46	X 46												X 62	X 58	X 48	X 41	X 41	X 44	X 44
21	X 48	X 48	X 44	X 44	X 44	X 44	X 44											X 68	X 60	X 48	X 43	C	X 40	X 42
22	X 43	X 45	X 46	X 46	X 46	X 46	57											X 77	X 60	X 47	X 47	X 44	X 46	X 48
23	X 46	X 45	X 43	X 42	X 42	X 42	X 45											X 68	X 64	X 59	X 53	X 46	X 42	X 42
24	X 42	X 48	X 46	X 46	X 47	X 47	X 50											X 61	X 52	X 50	X 46	X 45	X 44	X 44
25	X 42	X 42	X 44	X 46	X 46	X 47	X 47											X 67	X 49	X 50	X 45	X 41	X 42	X 42
26	X 43	X 41	X 40	X 40	X 40	X 41	X 44										C	X 56	X 43	X 46	X 44	X 46	X 49	X 49
27	X 46	X 48	X 49	X 49	X 49	X 49	X 49											X 65	X 48	X 49	A	A	X 46	O X 43
28	X 42	X 42	X 41	X 43	X 45	X 46	X 40											X 72	X 57	X 46	X 41	X 41	A	X 43
29	X 43	X 44	X 47	X 45	X 45	X 43	X 39											X 71	X 49	X 49	X 42	X 42	X 44	X 44
30	X 47	48	X 47	X 42	X 42	X 43	X 40											X 73	X 59	X 58	X 56	X 42	X 45	X 45
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	19											28	29	29	29	28	29	30
MED	X 47	X 48	X 47	X 46	X 47	X 46	X 47											X 72	X 60	X 54	X 51	X 46	X 46	X 47
U Q	X 51	X 52	X 52	X 50	X 51	X 49	X 49											X 77	X 64	X 59	X 56	X 51	X 52	X 52
L Q	X 45	X 45	X 45	X 44	X 45	X 43	X 44											X 66	X 54	X 49	X 44	X 42	X 44	X 44

NOV. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E kSWEEP 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	43	A	46	46	44	43	54	Y	J R 114	J R 93	J R 108	124	U R 124	U R 106	U Y 105	U R 99	U R 98	76	65	62	56	52	52	52
2	51	51	51	51	52	53	62	U Y 77	J R 87	U R 118	J R 121	124	J R 122	Y	J R 103	J R 116	R 98	72	54	54	51	46	F 46	F 46
3	F 44	47	48	48	48	43	43	R 78	J R 116	U R 98	U Y 108	U Y	Y	J R 115	U R 111	R 95	J R 103	59	51	56	50	44	44	44
4	42	42	43	43	46	47	46	U R 74	Y	Y	U R 106	104	U Y 102	U R 100	U R 100	J R 92	80	74	59	58	47	45	46	46
5	45	38	40	R 44	46	27	38	74	Y	J R 122	U R 123	R 124	J R 120	J R 112	Y	U R 96	97	73	56	47	39	39	42	42
6	41	38	39	39	42	39	42	U R 75	U R 98	U R 104	J R 91	J R 120	J R 118	Y	J R 96	99	79	78	54	52	39	38	39	40
7	44	42	46	42	42	41	42	75	Y	106	J R 108	123	Y	J R 104	U R 100	96	86	74	60	56	56	50	50	54
8	52	51	F 51	50	50	51	48	75	Y	Y	J R 115	J R 120	J R 105	U R 100	Y	Y	J R 86	67	49	50	46	44	42	45
9	46	46	45	44	46	37	42	70	J R 84	103	Y	J R 106	Y	U Y 82	R 94	Y	79	65	52	52	46	42	35	37
10	36	38	37	36	40	36	45	75	Y	Y	J R 112	Y	102	Y	J R 91	U R 103	C	C	62	50	51	50	48	48
11	50	46	39	40	40	39	40	58	102	J R 77	C	C	C	C	C	C	C	C	C	C	49	40	41	46
12	47	50	48	42	42	41	Y 39	73	R 95	C	R 120	127	J R 115	U R 104	103	101	R 89	66	64	62	55	48	46	48
13	46	51	50	51	48	44	45	76	J R 93	R 103	114	J R 113	115	R 109	102	101	R 86	68	56	47	45	40	38	40
14	42	43	43	43	44	43	45	R 80	J R 105	U R 92	U Y 101	J R 111	U R 101	J R 94	88	U R 94	R 80	57	43	45	R 44	44	44	42
15	42	41	42	42	42	39	41	75	113	110	R 117	U R 99	102	J R 103	R 106	J R 93	81	66	55	37	35	35	38	39
16	38	41	38	36	33	30	36	72	J R 97	R 101	R 112	R 118	J R 117	106	100	R 114	R 106	64	54	51	46	41	45	41
17	40	41	41	38	37	40	42	75	R 106	114	J R 117	126	U R 132	J R 115	J Y 103	111	92	70	52	42	35	32	33	35
18	38	39	37	37	40	36	40	73	J R 95	110	R 119	J R 111	114	123	U R 102	J R 99	92	70	45	44	41	36	36	38
19	38	40	40	40	41	42	42	69	R 98	J R 105	R 115	125	J R 119	R 100	R 103	U R 99	Z 80	58	48	46	44	44	40	38
20	38	39	39	39	39	39	44	73	92	J R 108	J R 112	118	J R 114	99	R 100	R 90	80	54	51	42	34	34	37	38
21	41	41	37	37	37	37	38	74	J R 93	J R 101	U R 107	R 112	R 103	R 104	102	R 90	R 83	60	53	40	35	C	33	35
22	36	38	39	39	39	39	47	65	J R 89	R 113	J R 107	R 109	104	J R 106	92	90	80	69	53	40	39	38	38	40
23	39	38	37	35	35	35	37	72	R 84	U R 96	R 124	120	Z 108	R 98	95	95	90	62	57	52	46	39	35	35
24	36	42	40	40	40	40	43	76	J R 104	118	128	J R 116	J R 106	115	110	R 98	74	54	44	43	40	38	37	37
25	35	36	37	40	40	40	40	70	J R 97	J R 104	J R 105	R 113	102	R 96	104	U R 88	73	58	41	43	38	34	35	35
26	36	34	33	33	33	34	37	73	J R 103	J R 106	U R 100	J R 112	J R 108	97	97	81	C	49	36	39	38	39	42	42
27	40	41	42	42	42	42	42	R 75	116	R 120	R 129	131	J R 115	102	98	92	86	58	42	42	A	A	40	36
28	35	35	34	36	38	40	33	59	92	113	123	J R 118	102	R 98	U Y 97	R 91	75	65	50	38	34	34	A	36
29	36	37	40	38	38	36	32	62	U R 96	113	U Y 112	122	U R 121	U R 105	102	92	R 80	64	42	42	35	35	37	37
30	40	F 40	40	35	35	36	33	59	U R 96	115	R 109	J R 115	R 103	J R 113	100	92	77	66	52	51	49	35	38	39
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	29	25	26	28	27	26	26	27	27	27	28	29	29	29	28	29	30
MED	40	41	40	40	40	40	42	74	J R 97	R 106	R 112	R 118	R 111	R 104	100	R 95	83	66	52	47	44	40	40	40
U Q	44	44	45	43	44	42	45	75	J R 104	R 113	R 120	124	J R 118	J R 109	103	R 99	R 92	70	56	52	49	44	44	45
L Q	38	38	38	37	38	36	38	70	J R 92	R 101	U R 108	R 112	103	R 99	97	R 92	80	58	46	42	38	36	37	37

NOV. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E {SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	L									
2											L	U L 388												
3											L	L												
4										L				L										
5										L	L	L	L											
6												A		Y										
7											L	L	L	L	L	L								
8										L		L		L										
9										L	L	L	L											
10										U L 356	L		L	L			C							
11									L		C	C	C	C	C	C	C							
12										C	L													
13											L	L	L	A										
14											L	L	L											
15											L		L											
16											L		L											
17													L											
18								220				L		L										
19									L	L	L	L			L									
20									L				L											
21										L	L		L	L	304	256								
22									U L 320															
23												L												
24													L		L									
25													L											
26											L						C							
27													L											
28																								
29																								
30												L												
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	1	1		1			1	1								
MED								220	U L 320	U L 356		U L 388			304	256								
U Q																								
L Q																								

NOV. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	212	A	A	A	324	328	304	A	240	A							
2							B	228	268	304	324	324	324	320	304	244	212							
3							156	200	260	296	304	A	A	304	292	240	A							
4							B	200	R 272	292	316	A	A	316	300	252	A							
5							B	A 188	U A 220	A	A	332	324	316	288	A	A							
6							B	236	A	296	A	A	332	A	A	256	A							
7							B	228	A	288	320	320	R	320	308	260	188							
8							B	216	288	A	312	324	316	312	260	236	A							
9							B	216	252	A	308	320	324	312	288	248	168							
10							B	H 216	A 252	288	312	316	320	288	284	248	C							
11								160	A 224	U R 264	C	C	C	C	C	C	C							
12								224	252	C	312	A	332	320	296	244	168							
13								168	268	A	A	A	312	A	280	236	200							
14								196	260	A	300	324	316	296	288	224	160							
15								192	252	304	A	312	324	308	280	224	176							
16								220	248	288	292	324	320	308	288	232	200							
17								196	224	288	A 316	U A 320	A	A	276	228	A							
18								172	252	296	312	328	312	A	264	A	A							
19								B	244	276	300	316	316	A	272	244	A							
20							B	196	260	280	312	344	328	312	284	248	A							
21								B	244	276	U A 296	A	320	296	264	212	A							
22								188	A	300	316	312	300	280	276	232	A							
23								180	240	292	312	332	312	304	276	240	172							
24								188	A	A	A	316	308	296	260	232	A							
25								U A 192	252	U A 272	A	320	316	308	284	240	B							
26								212	236	292	A	320	320	292	280	240	C							
27								R 180	244	296	304	316	324	304	280	U A 212	156							
28								A	256	292	316	312	308	292	A	224	A							
29								172	256	292	A	328	320	308	256	232	A							
30								184	244	288	316	308	308	272	268	212	A							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	27	25	22	20	23	25	24	26	27	10							
MED							156	196	252	292	312	320	320	306	280	240	174							
U Q								216	260	296	316	324	324	312	288	244	200							
L Q								184	244	288	304	316	312	296	272	228	168							

NOV. 2014 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E kSWEEP 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	JA 31	JA 49	JA 31	JA 26	EB 14	EB 14	EB 14	G	28	JA 33	JA 52	G 30	G 26	JA 31	JA 31	26	JA 25	JA 31	JA 34	JA 34	JA 25	JA 21	JA 24	JA 19
2	EB 16	EB 14	EB 14	EB 14	18	17	EB 14	G 19	G	G	G	33	G 28	G 28	G 26	26	G 21	JA 18	JA 24	JA 25	JA 25	JA 19	JA 16	21
3	EB 15	JA 21	18	EB 14	EB 13	EB 13	G	22	G 20	33	33	36	JA 30	G 30	G 28	G 23	JA 25	JA 17	EB 16	EB 13	EB 14	BJ 15	JA 15	JA 15
4	22	EB 14	EB 14	22	EB 15	EB 15	EB 15	22	G	34	34	36	37	G 22	G 19	G 18	19	JA 17	20	JA 28	EB 14	EB 14	EB 14	EB 14
5	EB 16	JA 15	JA 15	EB 14	JA 49	EB 14	EB 15	23	JA 51	33	33	G 33	G 32	G 32	G 21	JA 32	JA 24	JA 42	JA 30	JA 30	JA 29	JA 29	EB 13	BJ 32
6	JA 19	JA 21	JA 32	JA 26	EB 14	EB 14	EB 14	G	26	G 30	JA 62	JA 68	G 31	JA 63	JA 55	G 23	25	EB 15	EB 15	EB 14	EB 14	BJ 26	JA 19	EB 14
7	JA 31	JA 30	JA 21	22	EB 14	EB 14	EB 16	G 22	JA 31	32	32	36	G 34	G	G 24	G 21	JA 21	JA 23	JA 21	JA 34	JA 19	EB 16	BJ 18	JA 15
8	JA 19	JA 15	JA 17	EB 14	EB 14	EB 14	EB 14	G	G 24	32	G 27	G	G	G 27	G 26	JA 27	18	JA 20	EB 15	BJ 20	EB 15	BJ 26	EB 14	BJ 16
9	JA 16	24	23	EB 15	EB 15	EB 15	EB 15	G 21	G	JA 31	34	G 30	33	G	G	G	G	JA 19	19	19	JA 17	JA 17	EB 14	EB 16
10	EB 16	EB 16	EB 16	JA 17	EB 16	EB 16	EB 13	G	29	31	G 27	32	G 28	G	G	G	C	C	JA 21	JA 16	EB 14	BJ 14	BJ 15	EB 14
11	EB 15	EB 16	BJ 13	EB 16	EB 16	EB 16	EB 16	20	26	30	C	C	C	C	C	C	C	C	C	C	20	JA 15	EB 14	22
12	EB 14	BJ 15	EB 14	EB 14	BJ 17	EB 12	EB 14	G 19	30	C	G	32	G 32	G 32	G 22	27	G	EB 14	20	EB 12	EB 12	EB 12	BJ 13	JA 24
13	JA 27	JA 29	JA 67	JA 58	32	JA 29	EB 12	22	30	44	36	JA 48	G 31	JA 63	G 26	26	JA 24	JA 34	JA 27	34	26	JA 19	JA 26	23
14	JA 15	19	EB 14	BJ 13	AJ 19	AJ 23	AJ 17	23	JA 32	JA 37	40	38	34	G	G 24	26	19	JA 20	JA 15	AJ 17	EB 12	EB 12	EB 13	BJ 20
15	JA 29	JA 26	JA 21	JA 21	JA 15	EB 14	BJ 18	22	28	G	JA 32	G 27	JA 42	G	ES 15	24	24	J 12	JA 16	AE 15	EB 16	EB 16	EB 16	EB 16
16	JA 42	JA 31	AJ 19	EB 14	EB 14	EB 14	EB 14	BJ 29	G 20	G 22	32	G 27	G 26	G 26	32	32	JA 29	EB 15	BJ 22	AJ 17	EB 12	EB 12	BJ 17	AJ 29
17	JA 30	JA 32	20	EB 12	EB 12	BJ 13	AJ 19	22	27	JA 41	39	35	36	JA 37	28	JA 51	JA 23	EB 14	BJ 14	AE 14	BJ 15	AJ 20	AJ 20	22
18	JA 20	JA 30	JA 19	JA 23	AJ 29	EB 11	BJ 16	21	26	G 26	JA 48	G 30	G 30	JA 35	AJ 52	AJ 31	JA 24	JA 26	JA 17	AJ 21	EB 10	18	JA 17	21
19	JA 20	EB 14	BJ 18	JA 18	JA 18	19	EB 14	21	29	31	33	34	34	JA 33	G 26	26	19	EB 17	BJ 43	EB 13	JA 45	AJ 24	AJ 35	AJ 29
20	JA 33	JA 26	AJ 29	AJ 23	AJ 13	AE 14	BJ 15	AJ 17	G 24	31	G 31	G 27	33	G 27	G 20	JA 31	28	J 15	AJ 15	26	AJ 35	AJ 26	AJ 26	AJ 21
21	JA 18	JA 19	AJ 16	AJ 22	AJ 17	EB 15	EB 15	24	28	32	32	JA 55	G 26	G 28	29	25	18	EB 11	EB 13	EB 13	BJ 14	C	EB 13	BJ 14
22	EB 14	18	EB 14	18	EB 14	EB 14	BJ 15	23	25	G 27	G 27	33	G	G 25	29	G 23	JA 19	AJ 19	AJ 16	AE 12	BJ 12	AJ 25	AJ 15	21
23	EB 14	BJ 18	AJ 18	EB 14	EB 14	EB 14	BJ 13	20	G 20	G	GE S 22	14	G 22	33	30	G 17	19	EB 14	BJ 21	AJ 15	AJ 54	AJ 32	AJ 22	AJ 14
24	23	J 19	AJ 19	AJ 19	AJ 16	AJ 18	AJ 21	24	JA 28	AJ 42	JA 42	G 27	G 25	G	G 18	G	JA 24	AJ 24	AJ 24	AJ 24	AJ 24	AE 12	EB 12	BJ 15
25	EB 14	EB 13	21	22	JA 20	AJ 20	AJ 21	AJ 25	G	31	JA 36	G 26	G 26	G 26	G 26	G 24	EB 15	EB 14	BJ 19	AJ 19	19	EB 14	EB 15	EB 14
26	EB 15	EB 15	EB 15	EB 15	18	18	18	G	27	G 27	32	G 28	G 28	G 26	G 19	JA 28	C	JA 17	AJ 19	AE 12	EB 12	EB 12	BJ 32	AJ 27
27	JA 27	JA 29	22	JA 20	AJ 15	AJ 13	20	20	JA 27	G 26	G 22	G 22	G 23	32	32	28	G 16	EB 14	BJ 16	AJ 67	90	J 54	AJ 28	AJ 36
28	JA 32	JA 19	20	EB 15	20	20	EB 12	20	G 24	G 24	G 24	G 24	G 24	G 29	JA 29	24	JA 25	AJ 25	AJ 35	AJ 25	AJ 23	AJ 31	AJ 45	AJ 32
29	JA 32	AJ 30	30	EB 12	BJ 20	AJ 16	EB 12	21	G 21	G 24	JA 51	G 26	G 19	G 19	29	G 20	JA 23	EB 12	EB 12	BE 11	B	22	JA 17	AJ 18
30	JA 18	EB 11	EB 11	EB 11	EB 14	BJ 32	AJ 22	20	28	G 26	G 28	G 22	G 24	G 24	G 22	23	JA 21	AJ 16	AE 16	EB 15	BJ 21	24	JA 22	AJ 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	27	28	29	29	30	29	30	30
MED	JA 19	AJ 19	18	16	16	EB 14	EB 15	G	26	31	32	G 32	G 30	G 32	G 26	25	21	J 17	AJ 19	AJ 17	16	J 19	AJ 16	AJ 20
U Q	JA 29	AJ 29	AJ 21	AJ 22	AJ 18	AJ 18	AJ 17	22	28	33	JA 38	36	G	G	29	JA 28	JA 24	AJ 22	AJ 23	AJ 26	AJ 25	AJ 26	AJ 22	AJ 23
L Q	EB 15	EB 15	EB 15	EB 14	EB 14	EB 14	EB 14	20	G	G 27	G 30	G 27	G 26	G 26	G 22	G 23	19	EB 14	EB 16	EB 14	EB 14	EB 14	EB 14	15

NOV. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	18	A A 49	24	17	E B 14	E B 14	E B 14	G	25	31	32	G 28	G 25	G 23	26	26	21	20	24	20	18	18	E B 15	E B 15
2	E B 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 17	G	G	G	G 32	G 27	G 27	G 22	G 24	G 17	E B 11	20	23	20	E B 15	E B 15	E B 15
3	E B 15	E B 15	E B 15	E B 14	E B 13	E B 13	G	22	G 18	30	31	31	29	G 22	G 21	G 19	19	E B 16	E B 16	E B 13	E B 14	E B 14	E B 14	E B 14
4	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15	E B 15	22	G	G 29	G 30	34	35	G 19	G 18	G 18	18	E B 15	E B 15	18	E B 14	E B 14	E B 14	E B 14
5	E B 16	E B 16	E B 14	E B 14	E B 14	E B 14	E B 15	22	42	31	31	G 25	G 25	G 24	G 21	23	19	20	18	18	18	18	E B 13	20
6	E B 14	E B 14	15	16	E B 14	E B 14	E B 14	G	24	G 23	45	66	G 26	U Y 61	40	G 20	20	E B 15	E B 15	E B 14	E B 14	20	E B 14	E B 14
7	29	23	E B 15	E B 14	E B 14	E B 14	E B 16	G 20	25	30	G 31	G 24	U G 31	G	G 22	G 17	G 17	E B 16	E B 17	E B 17	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 14	E B 14	E B 14	E B 14	G	G 17	26	G 24	G	G	G 22	G 22	G 22	17	17	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14
9	E B 16	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	G 12	G	28	G 28	G 24	33	G	G	G	G	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 13		26	G 28	G 25	G 25	G 23	G	G	G	C	C	17	E B 14	E B 14	E B 14	E B 14	E B 14
11	E B 15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	25	28	C	C	C	C	C	C	C	C	C	C	E B 14	E B 14	E B 14	E B 14
12	E B 14	E B 14	E B 14	E B 14	E B 12	E B 12	E B 14	G 14	26	C	G	30	G 24	G 24	G 19	G 23	G	E B 14	15	E B 12	E B 12	E B 12	E B 12	E B 12
13	E B 15	19	E B 14	23	21	18	E B 12	19	28	39	32	32	G 23	44	G 21	G 19	G 15	15	15	15	E B 14	16	16	E B 14
14	E B 14	E B 14	E B 14	E B 14	15	E B 12	E B 12	G 14	G 15	30	G 24	37	G 20	G	G 20	24	17	12	E B 12	E B 12	E B 12	E B 12	E B 13	E B 13
15	16	16	E B 13	E B 15	E B 15	E B 14	E B 14	20	26	G	29	G 25	G 22	G	E S 15	23	G	E B 11	E B 11	E B 15	E B 16	E B 16	E B 16	E B 16
16	29	20	E B 15	E B 14	E B 14	E B 14	E B 14	G 16	G 17	G 17	G 29	G 19	G 19	G 19	G 28	25	G 17	E B 15	E B 15	E B 15	E B 12	E B 12	E B 12	E B 12
17	22	28	E B 12	E B 12	E B 12	E B 12	16	G 18	24	G 19	G 28	32	32	31	G 22	G 19	16	E B 14	E B 14	E B 14	E B 14	14	14	E B 14
18	15	24	E B 16	13	18	E B 11	E B 11	18	G 25	G 20	G 28	G 23	G 21	25	G 22	24	20	20	E B 10	18	E B 10	E B 12	E B 12	E B 12
19	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	19	29	30	31	32	32	30	G 22	G 24	17	E B 17	20	E B 13	17	17	24	19
20	17	17	20	17	E B 14	E B 14	E B 14	G 15	G 16	G 25	G 22	G 20	G 20	G 20	G 17	G 17	18	E B 12	E B 12	E B 12	18	18	E B 12	E B 12
21	E B 14	17	E B 14	E B 15	E B 15	E B 15	E B 15	19	25	G 27	G 28	31	G 24	G 24	G 26	22	14	E B 11	E B 13	E B 13	E B 13	C	E B 13	E B 13
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 13	24	G 20	G 22	32	G	G 20	G 27	G 17	17	17	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12
23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 15	G 15	G	G 15	E S 14	G 18	G 29	28	G 16	G 16	E B 14	E B 17	E B 14	E B 14	23	E B 13	E B 13
24	E B 16	E B 16	E B 11	E B 11	E B 11	E B 11	E B 13	G	22	36	36	G 22	G 22	G	G 15	G	16	21	15	18	E B 12	E B 12	E B 12	E B 12
25	E B 14	E B 13	E B 15	E B 15	E B 15	E B 15	18	G 18	G	G 27	28	G 24	G 22	G 22	G 25	G 20	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14
26	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	24	G 21	30	G 23	G 23	G 22	G 16	G 16	C	15	E B 12	E B 12	E B 12	E B 12	16	E B 14
27	E B 13	20	E B 13	E B 13	E B 13	E B 13	E B 13	G 14	G	G	G 18	G 19	G 19	G 30	30	22	E B 12	E B 14	E B 14	E B 12	A A 90	A A 54	19	28
28	22	19	E B 14	E B 15	E B 15	E B 15	E B 12	18	G 18	G 19	G 20	G 20	G 20	G 20	26	G 16	19	18	18	18	18	U A 20	A A 45	28
29	26	22	E B 12	E B 12	E B 12	E B 12	E B 12	18	G 18	G 18	31	G 19	G 17	G 17	26	G 17	17	E B 12	E B 12	E B 11	E B 11	E B 11	E B 11	E B 11
30	11	E B 11	E B 11	E B 11	E B 14	17	E B 14	G 17	25	G 20	G 20	G 20	G 17	G 17	G 17	G 10	E B 12	E B 12	E B 16	E B 15	12	12	12	12
31																								

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	27	28	29	29	30	29	30	30
MED	E B 16	E B 16	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G	G 28	G 29	G 25	G 23	G 24	G 22	G 22	G	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	16	19	E B 15	15	E B 15	E B 15	E B 15	G	25	30	31	G	30	G	26	G	18	17	17	18	16	18	15	15
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 13	E B 13	G 16	G 18	G 20	G 24	G 21	G 20	G 21	G 20	G 17	16	E B 13	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12

NOV. 2014 fbEs (0.1MHz)

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	14	14	14	14	14	14	14	14	14	14	14	14	15	15	13	13	13	13	14	15	15	15	15	15
2	16	14	14	14	14	14	14	14	17	17	17	17	17	17	17	10	10	11	11	11	15	15	15	15
3	15	15	15	14	13	13	13	13	14	14	15	15	16	16	16	16	16	16	16	13	14	14	14	14
4	14	14	14	15	15	15	15	15	18	16	16	16	16	16	16	16	16	15	15	14	14	14	14	14
5	16	16	14	14	14	14	15	15	14	14	14	13	12	12	12	13	14	14	12	12	12	12	13	13
6	14	14	14	14	14	14	14	14	13	10	10	20	20	20	16	15	15	15	15	14	14	14	14	14
7	14	14	15	14	14	14	16	16	16	16	16	18	22	22	16	16	16	16	17	17	16	16	16	16
8	16	16	16	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	15	15	14	14
9	16	14	15	15	15	15	15	15	15	16	16	16	16	16	15	15	15	14	14	14	14	14	14	16
10	16	16	16	16	16	16	13	13	13	13	13	14	14	14	15	14	C	C	14	14	14	14	14	14
11	15	16	16	16	16	16	16	13	16	15	C	C	C	C	C	C	C	C	C	C	14	14	14	14
12	14	14	14	14	12	12	14	14	14	C	13	14	14	14	14	14	14	14	12	12	12	12	12	12
13	15	14	14	14	14	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	14	14	14	14
14	14	14	14	14	12	12	12	12	12	12	12	12	12	13	13	13	10	11	12	12	12	12	13	13
15	13	13	13	15	15	14	14	14	14	16	15	15	15	15	15	18	11	11	11	15	16	16	16	16
16	15	15	15	14	14	14	14	14	14	14	14	14	14	14	14	15	15	15	15	15	12	12	12	12
17	12	12	12	12	12	12	12	14	14	14	14	15	14	15	15	15	16	14	14	14	14	14	14	14
18	14	15	16	13	13	11	11	12	12	12	12	12	12	14	14	15	15	13	10	10	10	12	12	12
19	14	14	14	14	14	14	14	14	16	16	16	16	16	16	16	16	16	17	13	13	13	13	13	13
20	14	14	14	14	14	14	14	14	14	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12
21	14	14	14	15	15	15	15	15	15	15	15	15	15	15	15	15	11	11	13	13	13	C	13	13
22	14	14	14	14	14	14	14	14	16	12	12	12	12	12	12	14	14	14	12	12	12	12	12	12
23	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	13
24	16	16	11	11	11	11	13	13	13	12	12	12	12	16	12	12	12	12	12	12	12	12	12	12
25	14	13	15	15	15	15	14	12	12	13	13	13	13	13	13	13	15	14	14	14	14	14	15	14
26	15	15	15	15	15	15	15	15	15	15	15	15	15	14	14	14	C	12	12	12	12	12	14	14
27	13	13	13	13	13	13	13	13	13	13	13	15	14	14	13	12	12	14	14	12	14	14	14	12
28	15	14	14	15	15	15	12	12	12	12	15	15	15	15	13	13	13	11	11	11	11	11	13	13
29	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	12	12	11	11	11	11	11
30	11	11	11	11	14	14	14	14	14	14	13	13	13	13	13	12	12	12	16	15	10	10	10	10
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	27	28	29	29	30	29	30	30
MED	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	13	14	14	14	14
U Q	15	15	15	15	15	15	14	14	15	15	15	15	16	16	15	15	15	14	14	14	14	14	14	14
L Q	14	14	14	14	13	13	13	13	13	12	12	13	12	13	13	13	12	12	12	12	12	12	12	12

NOV. 2014 fmin (0.1MHz)

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	279	A	264	303	276	284	317	Y	R	R	R	331	U R 331	U R 325	U Y 343	U R 342	U R 346	344	311	309	304	295	293	291
2	301	299	297	288	288	307	332	U Y 375	R	U R 348	R	345	R	Y	R	R	R 352	344	311	311	320	277	F 278	F 278
3	F 285	271	286	294	324	328	323	R 351	R	U R 361	U Y 358	U Y	Y	R	R	R 338	R	312	299	305	329	321	298	296
4	292	296	287	289	317	326	326	U R 361	Y	Y	U R 349	315	U Y 354	U R 341	U R 362	R	337	333	336	303	275	281	289	289
5	346	259	292	R 308	324	366	289	347	Y	R	U R 352	R 355	R	R	Y	U R 358	341	345	346	308	291	294	280	281
6	286	288	292	292	303	305	315	U R 359	U R 366	U R 357	R	R	R	Y	R	341	344	355	325	334	339	301	284	278
7	271	301	320	307	291	327	319	371	Y	340	R	325	Y	R	U R 341	339	332	334	289	306	306	276	275	286
8	295	300	F 298	281	280	298	326	346	Y	Y	R	R	R	U R 349	Y	Y	R	350	307	300	327	283	287	288
9	284	281	289	291	291	359	332	339	R	360	Y	R	Y	U Y 367	R 337	Y	361	357	304	312	322	322	293	277
10	283	279	282	288	284	312	302	355	Y	Y	R	Y	337	Y	R	U R 353	C	C	299	298	292	274	281	274
11	286	293	301	256	257	278	323	331	358	R	C	C	C	C	C	C	C	C	C	C	331	291	283	270
12	267	293	298	328	308	314	Y 317	347	R 371	C	R 326	332	R	U R 336	331	353	R 345	301	308	319	337	302	297	291
13	287	270	275	277	291	312	307	357	R	R 340	320	R	324	R 341	331	341	R 342	342	329	328	310	287	289	278
14	264	275	282	288	295	299	303	R 351	R	U R 355	U Y 338	R	U R 338	R	328	U R 348	R 361	335	293	313	R 304	304	304	287
15	290	291	281	284	284	283	277	341	354	339	R 324	U R 349	328	R	R 337	R	338	329	329	313	271	297	269	271
16	277	300	321	293	291	286	281	340	R	R 360	R 338	R 338	J R 328	326	337	R 332	R 348	312	301	320	301	293	283	282
17	281	278	278	269	257	290	302	333	R 359	334	R	336	U R 333	R	J Y 259	331	346	325	330	346	321	298	277	264
18	265	287	292	293	300	302	279	355	R	335	R 336	R	318	325	U R 357	R	345	330	313	316	325	302	271	254
19	283	284	284	284	282	274	283	344	R 345	R	R 337	318	R	R 327	R 319	U R 359	Z 336	313	321	319	310	313	308	283
20	280	288	276	276	276	276	321	350	354	R	R	325	R	343	R 342	R 345	332	326	338	318	303	300	278	275
21	295	295	264	266	266	270	285	341	R	R	U R 348	R 335	R 338	R 336	337	R 324	R 352	328	321	355	343	C	274	305
22	272	289	267	268	271	296	308	352	R	R 362	J R 329	R 327	341	R	332	340	337	291	352	313	323	265	274	299
23	302	302	309	297	282	283	313	345	R 355	U R 334	R 345	341	Z 341	R 340	336	332	340	338	327	334	341	311	293	294
24	292	277	293	288	288	288	293	337	R	341	349	R	R	334	326	R 343	330	326	324	307	315	319	302	302
25	288	271	264	290	290	290	299	351	R	R	R	R 328	323	R 343	335	U R 336	351	347	307	317	342	291	288	295
26	306	321	276	276	269	292	310	343	R	R	U R 361	R	R	341	341	337	C	328	337	310	304	295	275	288
27	303	297	298	300	286	289	287	R 338	344	R 349	R 347	343	R	329	333	339	335	318	306	322	A	A	316	302
28	306	299	293	262	286	305	351	344	328	339	353	R	331	R 341	U Y 346	R 339	351	330	325	368	313	A	A	282
29	271	268	299	309	305	337	315	340	U R 368	326	Y	335	U R 338	U R 346	350	343	R 335	341	322	322	310	295	279	279
30	295	F 280	289	328	295	299	288	348	U R 346	354	R 340	R	R 338	J R 351	345	337	310	319	299	308	342	301	294	285
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	30	29	12	18	18	17	16	19	23	23	25	28	29	29	29	27	29	30
MED	286	288	289	288	288	298	309	347	R 354	344	R 342	335	335	R 341	337	R 340	342	330	321	313	315	295	284	284
U Q	295	298	298	297	295	312	321	354	R 362	R 357	U R 349	342	U 338	U R 343	U 343	U R 345	R 350	343	329	322	330	302	294	291
L Q	279	278	278	277	280	286	289	340	346	339	R 336	326	328	329	331	337	336	322	305	308	304	287	278	278

NOV. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV.2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	L									
2											L	U L 4 5 6												
3											L	L												
4										L				L										
5										L	L	L	L											
6												A		Y										
7											L	L	L	L	L	L								
8										L		L		L										
9										L	L	L	L											
10										U L 3 7 0	L		L	L			C							
11									L		C	C	C	C	C	C	C							
12										C	L													
13											L	L	L	A										
14											L	L	L											
15											L		L											
16											L		L											
17													L											
18								4 2 3				L		L										
19									L	L	L	L			L									
20									L				L											
21										L	L		L	L	4 2 4	4 8 4								
22									U L 4 1 1															
23												L												
24													L		L									
25													L											
26											L						C							
27													L											
28																								
29																								
30												L												
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	1	1		1			1	1								
MED								4 2 3	U L 4 1 1	U L 3 7 0		U L 4 5 6			4 2 4	4 8 4								
U Q																								
L Q																								

NOV.2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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									222	222	234	234	256	256	234									
2											262	226												
3											226	226												
4										204				220										
5										254	226	224	224											
6												228		Y										
7											246	246	246	246	232	228								
8										218		214		216										
9										238	238	238	218											
10										218	230		228	228			C							
11									234		C	C	C	C	C	C	C							
12										C	234													
13											216	216	222	222										
14											254	246	232											
15											262		226											
16											238		258											
17													242											
18								222				222		250										
19									240	220	220	226			232									
20									218				222											
21										222	222		220	220	220	220								
22									224															
23												224												
24													230		230									
25													230											
26											226						C							
27													222											
28																								
29																								
30												238												
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	5	8	15	14	15	8	5	2								
MED								222	224	221	234	226	228	225	232	224								
U Q									237	230	246	238	242	248	233									
L Q									220	218	226	224	222	220	225									

NOV. 2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	316	A	330	260	260	264	252	214	214	H 200	212	212	212	212	212	212	212	212	234	236	236	250	280	280
2	274	274	272	272	272	252	248	224	224	218	218	196	198	204	208	208	208	208	208	248	248	298	Q 292	B 292
3	300	300	266	266	222	222	240	226	226	218	218	218	218	218	218	218	216	202	224	230	230	230	270	258
4	258	280	280	278	244	208	208	H 208	208	208	208	208	208	208	210	210	210	210	210	252	252	258	272	272
5	246	326	326	302	234	222	270	240	238	H 212	212	212	212	212	212	212	210	208	208	240	274	274	274	A 328
6	284	280	280	280	262	238	238	238	236	234	230	A	230	Y	230	230	228	200	200	212	212	288	288	292
7	A 354	A 300	260	248	252	218	222	222	220	220	220	204	214	214	214	214	214	214	214	226	226	226	248	250
8	250	250	250	252	262	220	216	216	216	216	216	216	216	216	216	216	216	216	218	218	218	218	276	276
9	268	274	268	268	268	216	216	216	216	196	194	196	200	200	218	218	218	218	218	222	222	222	240	272
10	284	286	294	280	280	244	244	218	212	196	196	196	206	206	206	208	C	C	208	252	262	296	296	296
11	288	258	258	374	344	266	226	224	230	224	C	C	C	C	C	C	C	C	C	C	224	250	308	294
12	322	276	274	250	250	230	230	216	216	C	216	216	216	216	216	216	214	212	214	222	222	234	240	252
13	234	296	296	296	290	250	214	H 172	190	202	202	202	202	A	226	226	216	216	216	220	222	242	262	262
14	286	286	286	284	284	264	248	234	234	222	188	188	194	206	206	206	206	206	224	234	246	246	246	246
15	284	294	294	272	268	274	274	232	228	228	224	214	214	214	214	214	214	214	214	214	294	294	304	304
16	A	304	254	254	254	276	264	234	224	224	H 204	206	206	206	212	212	212	214	218	218	222	262	262	280
17	A 352	E A 396	296	308	312	306	256	234	234	228	216	214	214	214	214	214	214	214	214	214	216	252	332	332
18	310	A 332	286	286	286	216	240	186	206	206	206	206	206	206	206	206	206	206	218	232	232	256	294	314
19	318	308	302	284	284	276	244	210	210	H 210	H 202	214	214	214	214	214	214	206	248	248	248	248	A 288	288
20	302	302	316	316	302	296	242	236	222	222	222	222	222	222	222	222	222	220	220	228	244	262	272	274
21	274	272	272	318	328	274	274	218	216	216	216	216	216	216	216	168	184	204	226	226	226	C	320	264
22	268	278	294	310	310	272	252	218	214	214	214	214	214	214	214	214	214	214	214	222	226	268	274	274
23	274	274	274	282	290	282	236	228	218	216	216	216	216	216	216	216	216	210	234	234	234	250	268	292
24	290	290	282	282	282	282	270	232	230	230	230	218	218	218	218	218	212	212	212	242	242	242	242	242
25	290	290	290	290	290	288	282	220	216	216	216	216	216	216	216	216	216	210	226	226	226	272	284	264
26	248	248	278	310	326	306	250	228	226	226	226	226	226	226	226	214	C	208	218	238	238	258	290	290
27	258	276	276	272	278	278	278	240	222	222	222	222	214	214	214	214	214	208	212	244	A	A	274	E A 356
28	A 316	316	316	316	306	280	198	216	216	216	216	216	216	216	216	216	210	210	222	222	222	A	A	A 390
29	E A 390	A 360	290	250	250	230	230	228	228	226	218	218	218	218	218	218	218	218	218	218	232	278	278	278
30	278	304	284	238	258	258	246	222	222	222	222	222	220	220	220	220	218	218	218	236	236	236	260	276
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	30	30	30	30	30	29	29	28	29	27	29	29	27	28	29	29	29	27	29	30
MED	284	288	283	281	279	264	244	223	221	218	216	214	214	214	216	214	214	211	218	228	232	252	274	278
U Q	313	304	294	302	290	278	256	232	228	224	221	217	217	216	218	218	216	214	223	239	245	272	291	294
L Q	268	275	272	266	258	230	230	216	216	211	207	206	207	208	212	212	210	208	213	221	222	242	262	264

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	114	A	A	A	114	114	114	A	114								
2							B	A 140	126	114	114	114	114	114	114	114	120							
3							162	136	120	120	120			120	120	120	A							
4							B	120	120	120	118		A 118	110	110	110	A							
5							B		122	A		122	122	122	116	A	A							
6							B	116		116	A	A	116	A	A	116	A							
7							B		A	112	112	112	A	112	112	112	112							
8							B	112	112		112	108	108	108	108	108	A							
9							B	E A 146	114	A	114	114	114	114	114	114	E B 182							
10							B	126	A	124	118	118	118	118	118	118	C							
11								118	A	118	C	C	C	C	C	C	C							
12								E A 156	122	C	120		120	122	112	112	E B 210							
13								118	118	F	114	A	114	A	114	114	114							
14								118	128		128	128	128	102	116	116	120							
15								144	126	118	A	118	116	116	116	116	174							
16								E A 154	120	118	112	112	112	112	112	112	A 152							
17								E A 152	114	114	114	114			114	B 142								
18								140	134	126	124	124	124	A	110	A	A							
19								B	110	110	116	116	116	A	132	120								
20							B	140	116	116	114	114	114	112	112	A								
21								B	108	108	108	A	108	108	106	106	A							
22								130		130	122	106	104	104	104	126	A							
23								E A 166	112	112	112	112	112	112	118	118	B 160							
24								B 178	A	A	A	114	114	110	110	122	A							
25								110	108	108	A	118	118	118	118	118	B							
26								156	126	132	A	120	120	120	114	114	C							
27								E A 150	134	124	112	112	112	112	112	112	B 146							
28								A	A 142	130	118	118	118	118	A	118	A							
29								136	132	118		116	116	116	116	116	A							
30								E A 182	134	134	126	120	120	112	112	114	A							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	25	23	22	21	23	26	24	26	26	10							
MED							162	U 129	120	118	114	114	116	113	114	115	U 134							
U Q								E A 153	128	124	120	118	118	118	116	118	E B 174							
L Q								118	114	114	112	112	114	111	112	112	120							

NOV. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	98	98	98	B	B	B	G	114	114	114	114	112	102	102	144	104	96	96	96	96	96	96	100
2	B	B	B	B	94	94	B	112	G	G	G	128	102	102	102	128	112	112	102	102	102	102	102	102
3	B	102	102	B	B	B	G	180	100	104	104	104	104	104	104	104	104	98	B	B	B	98	98	98
4	98	B	B	98	B	B	B	166	G	166	138	104	104	104	104	104	104	104	104	104	B	B	B	B
5	B	110	96	B	116	B	B	148	112	112	112	112	112	112	112	112	112	112	114	114	106	106	B	106
6	106	106	106	106	B	B	B	G	106	106	106	100	100	98	112	100	94	B	B	B	B	94	94	B
7	100	100	100	100	B	B	B	100	100	152	108	108	100	G	100	100	98	98	98	98	98	B	98	98
8	98	98	98	B	B	B	B	G	100	100	100	G	G	100	100	100	100	100	B	100	B	100	B	100
9	110	94	94	B	B	B	B	104	G	104	104	104	168	G	G	G	G	100	100	100	100	100	B	B
10	B	B	B	100	B	B	B	G	156	156	120	108	108	G	G	G	C	C	98	98	B	B	120	B
11	B	B	118	B	B	B	B	134	154	132	C	C	C	C	C	C	C	C	C	C	90	90	B	106
12	B	106	B	B	106	B	B	108	158	C	G	124	122	116	108	188	G	B	108	B	B	B	108	108
13	100	100	100	100	100	100	B	152	132	122	118	112	112	102	102	102	102	96	94	94	92	92	92	92
14	92	92	B	96	96	110	110	110	110	110	110	190	96	G	94	148	164	96	96	96	B	B	B	104
15	100	96	110	110	110	B	100	188	158	G	108	104	94	G	S	156	130	124	106	B	B	B	B	B
16	96	96	96	B	B	B	B	96	96	94	152	94	94	96	116	116	116	B	132	120	B	B	120	116
17	106	106	106	B	B	106	106	158	154	114	116	116	116	116	116	110	110	B	104	B	104	96	96	96
18	110	110	106	106	100	B	100	162	162	112	112	112	112	102	102	102	102	102	102	100	B	100	100	96
19	96	B	96	96	96	96	B	146	160	208	200	200	158	110	110	188	118	B	106	B	110	106	106	106
20	104	104	102	102	102	B	102	102	102	120	118	106	106	106	106	106	106	106	106	106	106	106	118	106
21	104	104	104	102	102	B	B	150	144	132	128	96	96	96	200	150	102	B	B	B	102	C	B	102
22	B	94	B	94	B	B	120	120	106	106	106	150	G	116	130	108	108	108	108	B	108	108	108	100
23	B	100	100	B	B	B	100	118	98	G	98	S	98	150	150	106	106	B	106	106	106	106	106	106
24	98	98	98	98	120	120	120	100	100	100	100	100	100	G	100	G	100	100	100	100	100	B	B	100
25	B	B	100	100	100	98	98	98	G	100	100	100	100	100	100	100	B	B	100	100	100	B	B	B
26	B	B	B	B	96	96	96	G	158	110	110	110	110	110	110	96	C	96	96	B	B	B	96	96
27	100	100	100	100	118	116	116	108	108	108	108	108	100	140	118	118	118	B	118	118	102	100	98	96
28	94	94	94	B	94	94	B	112	112	112	100	100	98	96	96	96	92	100	100	104	104	104	100	90
29	90	90	90	B	92	92	B	142	112	112	90	90	90	90	168	98	98	B	B	B	B	98	98	98
30	100	B	B	B	B	100	100	100	150	112	110	104	104	104	104	98	98	98	B	B	98	98	98	98
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	22	22	16	16	12	12	25	26	26	27	27	27	23	26	26	24	18	23	18	18	19	20	24
MED	100	100	100	100	100	99	101	118	112	112	110	108	104	104	105	106	104	100	102	100	102	100	99	100
U Q	104	104	104	102	108	108	113	151	154	122	118	114	112	112	116	128	112	106	106	106	106	106	107	106
L Q	97	96	96	98	96	95	100	103	102	106	104	100	98	100	102	100	100	98	98	98	98	96	97	97

NOV. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

NOV. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.45°10.0'N LON.141°45.0'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	F2	F2	F2	F3					C1	C1	C1	L1	L1	L2	L1	HL11	L3	F3	F3	F2	F1	F2	FQ11	F1
2					F1	F1		L2				CL11	L1	L1	L2	HL11	L2	L1	F2	F2	F2	F1	F1	F1
3		F1	F1					H1	L1	C1	C1	C1	C1	L1	L2	L2	L1	F1				F1	F1	F1
4	F1			F1				H1		H1	CL11	L1	CL21	L1	L1	L1	L1	F1	F1	F2				
5		F1	F1		F1			HL11	C2	C2	C2	L2	L1	L2	L2	L2	L2	F4	F2	F2	F2	F3		F3
6	F1	F1	FF21	F2					L1	L1	L2	L2	L1	L1	CL21	L1	L2					F3	FF11	
7	F3	F3	F1	F1				L1	L2	HL12	L1	L2	L1		L1	L1	L1	F1	F2	F2	F2		F1	F1
8	F1	F1	F1						L1	L1	L1			L1	L1	L1	L1	F2		F1		F2		F2
9	FF11	F1	F1					L2		L2	L1	L1	H1					F1	F1	F1	F1	F1		
10				F1					HL11	HL11	L1	L1	L1						F1	F1			F1	
11			F1					H1	HL11	HL11											F1	F1		F2
12		F1			F2			L2	HL11			C2	L1	L1	L1	HL11			F1				F1	F2
13	F2	F5	F3	F5	FQ21	F4		H1	C2	C2	CL21	C2	L2	LQ21	L2	L2	L2	L3	F3	FF21	F1	F2	F2	F2
14	F1	F1		F1	F3	FF11	F1	L1	L2	L2	L1	HL12	L2		L2	HL12	HL12	FQ11	F1	F1				F1
15	F2	F2	F1	F1	F1		F1	H1	H1		L2	L2	L1			H1	L1	F1	F1					
16	F5	FQ21	FQ11					L3	L1	L2	H1	L1	L1	L1	CL11	CL11	L2		F1	F1			F2	F2
17	F6	F4	F2			F1	F2	HL11	HL11	LC11	CL11	CL11	C2	L1	L2	L2	L2		F2		FF11	F2	F2	F1
18	F2	FF62	F2	F3	F3		FQ11	H1	CL11	L1	C1	L2	L2	L3	LH21	L2	L2	F3	F1	F3		F1	F1	FF11
19	F2		F1	F1	F1	F1		HL11	HL11	HL11	HL11	HL11	HL11	L1	L1	HL11	C2		F3		FF12	F2	FQ31	FQ31
20	FQ21	F3	F6	F2	F1		L1	L1	L1	CL11	L1	L1	L2	L2	L1	L3	L2	F1	F1	F1	F3	F2	F1	F2
21	F1	F2	F1	F2	F1			H2	H2	C1	C1	C2	L1	L1	HL11	H1	L2				F1			F1
22		F1		F1			F1	L1	L2	LF22	L2	H1		L1	HL11	L1	L1	F1	F1		F1	F1	FF11	F1
23		F1	F1				F1	L1	L1		L1		L1	HL11	HL11	L1	L1		F1	F1	F2	F3	FQ11	F1
24	F2	F1	F1	F2	FF11	FF11	FF22	L2	L2	L3	L2	L1	L2		L1		L3	F2	F2	F3	F1			F1
25			F1	F1	F2	F2	F3	CQ21		C1	C2	L1	L2	L2	L4	L2			F1	F1	F1			
26					F1	F1	F1		HL11	L2	L2	L1	L2	L2	L2	L2		F1	F2				FQ31	F2
27	FQ21	F5	F2	FQ11	F1	F1	F1	L1	L2	L2	L1	L1	L2	HL11	CL11	CL12	L1		F1	F3	FQ41	FQ51	F3	F5
28	F4	F3	F1		F1	F1		C2	L2	L1	L1	L2	L2	L2	L2	L2	LC21	F2	F2	F1	F3	F6	F4	FQ51
29	F6	FQ31	FQ21		F1	F1		C3	L1	L1	LQ31	L1	L2	L2	HL12	L1	L1					FF11	F1	FQ11
30	F1					F2	F2	L1	HL11	L1	L1	L1	L1	L1	L1	L1	L1	F1			F1	F1	F1	F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 52	X 52	X 52	X 53	X 46	X 45																		
2																				X 69	X 69	X 56	X 53	X 51
3	X 52	X 51	X 55	X 60	X 46	X 37												X 90	X 57	X 55	X 58	X 54	X 52	X 52
4	X 52	X 47	X 48	X 54	X 52	X 39	X 55											X 79	X 66	X 64	X 63	X 59	X 57	X 48
5	X 50	X 47	X 48	X 55	X 51	X 36													X 60	X 52	X 54	X 53	X 51	X 49
6	X 49	X 50	X 48	X 45	X 44	X 40												X 81	X 64	X 54	X 53	X 50	X 44	X 46
7	X 46	X 49	X 48	X 46	X 43	X 42													X 62	X 61	X 60	X 58	X 50	X 50
8	X 52	X 52	X 52	X 52	X 51	X 49						C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C									X 73	X 66	X 62	X 60	X 56	X 56
11	X 59	X 54	X 48	X 46	X 48	X 46													X 66	X 60	X 60	X 55	X 49	X 52
12	X 53	X 49	X 48	X 49	X 44	X 42													X 67	X 64	X 56	X 53	X 48	X 45
13	X 47	X 48	X 46	X 45	X 44	X 42													X 70	X 58	X 52	X 48	X 46	X 45
14	X 47	X 45	X 44	X 44	X 43	X 43													X 58	X 52	X 53	X 52	X 54	X 41
15	X 39	X 41	X 43	X 44	X 41	X 39	X 48												X 64	X 60	X 51	X 49	X 49	X 49
16	X 50	X 51	X 54	X 43	X 38	X 40													X 66	X 68	X 62	X 51	X 47	X 48
17	X 50	X 48	X 49	X 47	X 46	X 48													X 63	X 55	X 44	X 46	X 43	X 44
18	X 44	X 48	X 49	X 44	X 41	X 44												X 79	X 62	X 52	X 51	X 50	X 47	X 46
19	X 46	X 46	X 49	X 49	X 45	X 45												X 76	X 60	X 62	X 60	X 52	X 41	X 41
20	X 43	X 46	X 42	X 42	X 43	X 42													X 67	X 53	X 49	X 47	X 43	X 44
21	X 46	X 44	X 42	X 41	X 41	X 44													X 60	X 49	X 47	X 43	X 42	X 42
22	X 41	X 40	X 40	X 40	X 41	X 41													X 65	X 56	X 44	X 44	X 46	X 42
23	X 46	X 47	X 42	X 44	X 41	X 41												X 91	X 66	X 52	X 51	X 46	X 41	X 43
24	X 45	X 45	X 46	X 42	X 46	X 46													X 54	X 50	X 51	X 52	X 50	X 44
25	X 45	X 43	X 42	X 42	X 43	X 42													X 58	X 52	X 60	X 55	X 47	X 47
26	X 46	X 41	X 38	X 36	X 34	X 34													X 50	X 44	X 48	X 49	X 46	X 46
27	X 44	X 43	X 45	X 38	X 40	X 41													X 73	X 55	X 58	X 54	X 50	X 47
28	X 40	X 41	X 42	X 41	X 40	X 40													X 69	A	X 46	X 46	X 46	X 44
29	X 42	X 42	X 45	X 44	X 39	X 40	X 35												X 57	X 50	X 48	X 51	X 51	X 49
30	X 44	X 45	X 45	X 42	X 33	X 36														X 63	X 55	X 46	X 42	X 42
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	3											6	25	26	27	27	27	27
MED	X 46	X 47	X 46	X 44	X 43	X 42	X 48											X 80	X 64	X 55	X 53	X 51	X 47	X 46
U Q	X 50	X 49	X 49	X 49	X 46	X 44	X 55											X 90	X 66	X 62	X 60	X 54	X 51	X 49
L Q	X 44	X 43	X 42	X 42	X 41	X 40	X 35											X 79	X 59	X 52	X 49	X 47	X 44	X 44

NOV. 2014 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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	46	46	46	46	40	39	55	90	109	113	104	118	119											
2																				63	63	50	47	45
3	46	45	49	54	40	31	48	90	94	117	115	115	117	117	124	119	90	84	51	49	52	48	46	46
4	46	41	42	48	46	32	49	76	92	106	108	100	100	114	115	106	95	73	59	58	57	53	51	42
5	44	41	42	49	45	30	43	85	121	137	130	136	126	116	120	113	106	76	54	46	48	47	45	43
6	43	44	42	39	37	34	50	87	110	117	132	126	118	126	122	103	89	75	58	48	47	44	38	40
7	40	43	42	40	37	36	51	92	103	110	112	114	118	115	117	110	94	72	56	55	53	52	44	44
8	46	46	46	46	45	42	58	82	88	101	114	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	104	105	112	120	110	100	90	75	67	60	56	54	50	50
11	52	48	42	40	42	40	50	93	94	114	137	118	126	124	121	105	98	79	60	54	54	48	43	46
12	47	43	42	43	37	36	48	80	87	102	117	136	118	118	115	108	103	90	61	58	50	46	42	39
13	41	42	40	39	38	35	46	79	92	105	119	125	114	120	123	105	95	80	64	52	46	42	40	39
14	41	39	38	38	37	37	47	87	94	104	107	104	108	108	103	88	88	64	52	46	47	46	48	35
15	33	35	36	38	35	33	42	87	112	111	106	110	118	118	102	96	88	72	58	54	45	43	43	43
16	44	45	48	36	32	34	44	82	110	108	112	116	122	118	118	110	97	74	60	62	56	45	40	42
17	44	42	43	41	40	42	55	83	110	133	139	132	122	126	114	110	107	82	57	49	38	40	37	38
18	38	41	43	38	34	38	42	81	99	113	115	108	120	121	120	116	92	73	56	46	45	45	41	40
19	40	40	43	43	39	39	48	96	97	116	113	112	114	125	108	88	92	70	54	56	54	46	35	35
20	37	40	36	36	37	36	46	81	100	105	110	109	107	120	114	100	89	76	61	47	43	41	37	38
21	40	37	36	35	35	38	44	86	98	101	106	118	106	112	93	90	97	89	54	43	41	37	36	36
22	35	34	34	34	35	35	45	100	97	104	118	108	108	118	113	90	98	88	59	50	38	37	40	36
23	40	40	36	38	35	35	45	83	96	97	104	104	110	106	99	99	87	84	60	46	45	40	35	37
24	39	39	40	36	40	40	44	81	98	122	124	134	111	109	108	109	102	79	48	43	45	46	44	38
25	38	37	36	36	37	36	42	72	106	110	107	117	106	99	100	99	95	64	52	45	54	49	41	41
26	40	35	32	30	28	28	39	81	98	109	119	106	110	111	113	103	94	59	44	38	42	43	40	40
27	38	37	39	32	34	35	40	85	110	110	121	113	108	104	94	93	81	79	67	49	52	48	44	41
28	34	35	36	34	34	34	45	78	87	120	112	107	103	101	106	102	94	72	63	A	40	40	40	38
29	36	36	39	37	33	34	29	70	90	113	128	121	117	104	100	103	96	74	51	43	42	45	45	43
30	38	39	39	36	27	30	40	87	90	104	118	116	107	105	111	100	88	69	62	57	49	40	36	36
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	27	28	27	27	26	26	26	26	26	26	26	27	27	27	27
MED	40	40	40	38	37	35	45	83	98	110	114	115	114	116	113	103	94	75	58	49	47	45	41	40
U Q	44	43	43	43	40	38	49	87	109	116	120	121	118	120	118	109	97	80	61	56	54	48	45	43
L Q	38	37	36	36	34	34	42	81	92	104	108	108	108	108	103	99	89	72	54	46	43	41	38	38

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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		L											
2																								
3												L	L	A	L									
4										L	A		L	L										
5										L		L			L									
6											L		L	A										
7											L													
8										L		C	C	C	C	C	C	C						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10							C	C	C	C	L	L	L	A	L									
11											A	L	A											
12											L	L												
13												L		L	L									
14													L											
15												L	L											
16											L	L	L											
17												L												
18												A	L											
19												L												
20													L	L										
21											L	L	L	A	A									
22											L													
23																								
24														L	L									
25															A									
26											L		L	L										
27																								
28																								
29													L											
30												L		L										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2014 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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	U A 236	A	A	A	A	A											
2																								
3							B	232	U R 288	R	U R 360	A	A	A	A	R	A							
4								208	R	R	A	A	A	R	A	A	U A 228							
5							B	220	A	A	A	A	A	A	A	A	A	B						
6							B	236	A	A	A	A	A	A	A	U R 292	U R 220							
7							B	224	A	A	R	A	A	A	A	A	A	B						
8							B	236	U R 300	A	A	C	C	C	C	C	C	C						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10							C	C	C	C	A	A	A	A	A	U R 280	A	B						
11							B	216	R	U R 340	A	R	A	A	R	A	A	B						
12							B	220	R	R	A	A	A	A	R	A	A	B						
13							B	232	A	A	A	A	A	A	U R 320	R	U R 224	B						
14							B	216	A	A	A	R	R	R	R	A	A	B						
15								U R 224	R	A	R	R	A	R	U A 312	R	U R 204	B						
16							B	U R 236	288	U R 324	U R 368	A	A	A	A	U A 268	U R 208	B						
17							B	212	280	U R 340	A	A	A	A	A	A	A	B						
18							B	204	A	R	A	A	A	R	U R 324	R	192							
19							B	200	U R 288	R	A	R	A	A	A	U R 280	192							
20							B	204	U R 292	A	A	A	A	A	A	U R 268	U R 208	B						
21							B	204	288	A	A	A	A	A	A	A	A	B						
22							B	U R 212	A	A	A	A	A	R	R	R	U R 212	B						
23							B	B	264	U R 308	348	A	U R 360	U R 360	A	A	A							
24							B	R	U R 288	R	A	A	A	U R 328	A	U A 276	U R 204	B						
25							B	R	U R 280	U R 316	A	A	A	A	A	A	A	B						
26							B	U R 196	U R 280	A	A	A	U R 352	A	A	A	A	B						
27							B	176	276	U R 328	R	U R 368	R	A	R	U R 280	U R 208	B						
28							B	184	A	A	A	A	A	A	A	A	A	B						
29								U R 200	U R 292	A	U R 356	R	A	U R 356	R	U R 276	U R 196	B						
30							B	A	288	A	A	R	R	A	U R 320	U R 272	B	B	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								23	14	6	4	1	2	3	4	9	12							
MED								216	U R 288	U R 326	U R 358	U R 368	U R 356	U R 356	U R 320	U R 276	U R 208							
U Q								232	U R 288	U R 340	U R 364			U R 360	U R 322	U R 280	U R 216							
L Q								204	280	U R 316	352			U R 328	U 316	U R 270	200							

NOV. 2014 foE (0.01MHz)

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NOV. 2014 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	E B 15	E B 15	E B 16	E B 16	20	20	E B 14	28	32	36	37	J A 42	36											
2																				21	E B 15	E B 15	E B 14	E B 14
3	22	J A 19	E B 14	E B 15	20	E B 15	E B 16	28	G	G	G 28	40	37	J A 67	J A 40	J G 25	J A 30	J A 40	J A 30	28	20	22	18	E B 14
4	E B 15	E B 15	J A 21	J A 22	21	20	E B 16	26	G	G	44	J A 52	42	G 29	34	32	J A 30	J A 24	J A 30	E B 16	20	J A 33	J A 22	J A 26
5	J A 19	21	J A 18	E B 14	J A 18	E B 15	J A 22	27	36	J A 40	39	J A 47	J A 60	J A 40	35	35	25	E B 15	E B 16	J A 22	J A 41	J A 38	J A 36	J A 26
6	J A 60	J A 29	J A 21	J A 23	J A 22	J A 26	J A 24	G	33	34	J A 39	41	42	48	42	G	G	J A 31	J A 24	E B 14	E B 15	E B 15	20	19
7	E B 16	E B 15	E B 15	E B 15	21	E B 15	J A 20	29	38	40	G 30	40	43	41	40	39	25	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14
8	E B 16	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	37	37	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	J A 40	37	J A 55	J A 56	J A 39	G	J A 29	J A 30	J A 20	19	E B 15	22	21	22
11	21	E B 15	E B 15	E B 14	J A 18	E B 15	J A 16	27	G	G	42	G	41	41	G 27	J A 76	J A 61	J A 28	J A 25	J A 22	J A 38	E B 15	E B 15	E B 14
12	E B 15	J A 32	E B 16	20	E B 15	E B 15	E B 15	26	G	G	40	39	35	36	G	30	J A 37	J A 23	J A 19	J A 21	J A 19	J A 19	E B 15	E B 15
13	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	27	31	38	41	J A 42	J A 60	J A 42	G	G 23	G	E B 14	E B 15	E B 14	E B 14	E B 15	E B 15	E B 15
14	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 16	25	31	36	39	G 33	G 27	G 22	G 31	J A 36	J A 28	J A 27	J A 25	J A 20	J A 20	J A 20	E B 15	J A 20
15	J A 26	E B 15	E B 15	J A 28	J A 25	21	E B 15	G	G	36	G	G	40	G	40	G	G	E B 16	E B 16	E B 14	J A 26	J A 16	E B 15	J A 20
16	E B 15	E B 15	20	E B 15	E B 14	E B 16	22	G	33	G	G 30	40	41	45	35	35	G	E B 15	E B 15	J A 28	J A 45	J A 30	J A 23	20
17	E B 14	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	26	32	G	J A 49	J A 44	J A 48	J A 49	J A 42	J A 61	J A 31	J A 18	E B 16	J A 24	E B 15	E B 15	E B 15	E B 15
18	E B 15	E B 14	E B 15	E B 15	J A 29	J A 45	J A 24	25	J A 36	G 25	38	40	40	G 25	G	G	24	J A 23	E B 15	E B 15	E B 14	E B 14	E B 15	J A 17
19	J A 23	J A 21	E B 14	E B 14	E B 15	E B 14	E B 15	24	G	G	38	G	40	37	38	G	24	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15
20	19	20	E B 15	E B 14	21	21	21	25	G	36	41	37	J A 40	36	G 26	G	G	J A 26	J A 22	20	E B 15	E B 14	E B 15	20
21	J A 26	J A 32	J A 23	20	22	E B 16	E B 16	26	36	34	38	J A 42	J A 47	J A 52	J A 46	J A 56	J A 31	J A 50	J A 31	22	20	E B 16	20	E B 15
22	E B 16	E B 16	E B 15	E B 16	E B 15	E B 14	E B 15	G	30	J A 37	36	J A 45	40	G	G	G	G	23	J A 21	E B 14	E B 14	E B 14	E B 14	E B 14
23	20	18	18	E B 15	E B 14	20	E B 15	25	G	G	G 26	40	G	G	37	J A 37	25	J A 24	J A 19	J A 20	J A 22	E B 15	J A 22	E B 15
24	20	J A 29	20	J A 19	21	J A 19	J A 20	J A 24	G 20	G 29	38	J A 44	J A 42	G 27	35	G	G	E B 15	21	22	J A 18	21	20	20
25	18	E B 16	E B 14	18	E B 15	E B 15	E B 15	G	G	G	34	37	J A 40	J A 40	36	J A 36	J A 28	J A 40	J A 40	24	22	21	E B 15	E B 14
26	J A 34	J A 26	19	E B 16	E B 15	20	J A 25	G	G	35	36	J A 44	J A 38	J A 40	J A 38	J A 38	J A 24	J A 31	22	20	E B 14	E B 14	E B 14	E B 14
27	E B 15	E B 15	E B 16	20	J A 22	J A 20	20	22	G	G	G	G	G	J A 40	G 22	G	G	J A 45	J A 45	J A 45	21	J A 23	E B 15	J A 22
28	J A 22	E B 15	E B 15	E B 16	E B 15	E B 14	E B 15	23	30	J A 40	J A 50	J A 63	39	J A 40	35	J A 34	J A 29	J A 48	20	J A 44	J A 62	J A 56	J A 24	20
29	20	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	J A 38	G	G 31	39	G 30	G 26	G	G	E B 14	22	J A 26	J A 36	J A 52	J A 30	J A 28
30	J A 43	J A 42	J A 68	J A 44	J A 26	J A 24	20	27	34	J A 37	J A 46	J G 30	G	36	G 28	G	23	E B 15	E B 15	E B 14	E B 15	E B 14	E B 14	J A 20
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	27	28	27	27	26	26	26	26	26	26	27	27	27	27	27
MED	19	E B 15	E B 16	E B 15	18	E B 15	E B 16	25	G	34	38	40	40	40	35	G	24	J A 24	20	20	19	E B 16	E B 15	17
U Q	J A 22	J A 21	J A 19	J A 20	J A 21	J A 20	J A 20	27	33	J A 37	40	J A 44	J A 42	J A 42	J A 39	J A 36	J A 29	J A 31	J A 25	J A 24	J A 22	J A 22	J A 21	J A 20
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	G	G	G	G	G 37	G	G	G	G	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14

NOV. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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	E B 15	E B 15	E B 16	E B 16	E B 14	E B 15	E B 14	26	30	34	36	38	36											
2																				E B 15	E B 15	E B 15	E B 14	E B 14
3	E B 16	E B 14	E B 14	E B 15	14	E B 15	E B 16	25	G	G	G 26	38	35	56	32	G 19	24	23	21	23	18	E B 15	E B 15	E B 14
4	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	24	G	G	42	49	39	G 26	33	30	G 19	18	16	E B 16	E B 16	18	18	18
5	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	24	32	34	36	38	38	36	32	31	24	E B 15	E B 16	19	23	17	23	E B 15
6	20	24	E B 15	E B 16	E B 15	E B 15	17	G	31	33	34	40	38	44	36	G	G	16	E B 14	E B 14	E B 15	E B 15	E B 14	E B 16
7	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	18	25	32	36	G 30	37	40	36	37	35	23	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14
8	E B 16	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	G	G	34	36	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	34	E B 37	36	40	32	G	23	22	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15
11	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	15	25	G	G	38	G	37	37	G 26	31	44	18	19	17	25	E B 15	E B 15	E B 14
12	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15	E B 15	23	G	G	37	36	35	35	G	29	29	20	17	E B 15	E B 15	E B 15	E B 15	E B 15
13	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	25	30	33	37	36	38	36	G	G 21	G	E B 14	E B 15	E B 14	E B 14	E B 15	E B 15	E B 15
14	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 16	23	30	34	35	G 32	G 26	G 22	G 18	30	22	18	20	E B 15	E B 16	E B 15	E B 15	E B 15
15	E B 15	E B 15	E B 15	17	E B 15	E B 16	E B 15	G	G	34	G	G	38	G	36	G	G	E B 16	E B 16	E B 14	20	E B 15	E B 15	E B 15
16	E B 15	E B 15	E B 16	E B 15	E B 14	E B 16	E B 16	G	G 24	G	G 29	38	36	43	34	32	G	E B 15	E B 15	E B 15	32	20	E B 15	15
17	E B 14	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	24	30	G	45	39	44	43	38	45	26	15	E B 16	15	E B 15	E B 15	E B 15	E B 15
18	E B 15	E B 14	E B 15	E B 15	E B 16	19	E B 15	22	30	G 24	35	37	36	G 24	G	G	21	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15
19	E B 16	E B 14	E B 14	E B 14	E B 15	E B 14	E B 15	23	G	G	35	G	38	34	34	G	23	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15
20	E B 15	E B 16	E B 15	E B 14	E B 16	E B 16	E B 15	23	G	31	35	35	35	33	G 24	G	G	16	E B 15	E B 16	E B 15	E B 14	E B 15	16
21	E B 16	18	17	E B 15	E B 16	E B 16	E B 16	24	30	32	35	39	38	41	36	52	23	28	22	E B 15	E B 16	E B 16	E B 15	E B 15
22	E B 16	E B 16	E B 15	E B 16	E B 15	E B 14	E B 15	G	27	31	32	33	36	G	G	G	G	E B 16	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
23	E B 16	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	23	G	G	G 24	36	G	G	32	33	22	E B 16	17	E B 16	17	E B 15	18	E B 15
24	E B 15	22	E B 16	E B 16	E B 14	E B 15	17	18	G 19	G 26	33	38	33	G 24	32	G	G	E B 15	E B 15	E B 15	E B 16	E B 14	E B 15	E B 15
25	E B 16	E B 16	E B 14	E B 15	E B 15	E B 15	E B 15	G	G	G	32	35	36	37	34	30	23	27	24	17	E B 15	E B 15	E B 15	E B 14
26	20	20	E B 15	E B 16	E B 15	E B 16	E B 15	G	G	32	34	35	G 31	30	33	28	20	20	15	E B 15	E B 14	E B 14	E B 14	E B 14
27	E B 15	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	20	G	G	G	G	G	33	G 20	G	G	E B 15	21	38	E B 15	E B 15	E B 15	E B 15
28	E B 15	E B 15	E B 15	E B 16	E B 15	E B 14	E B 15	21	29	33	38	42	34	34	33	27	22	45	E B 15	A A 44	18	23	18	E B 15
29	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	32	G	G 30	36	G 30	G 24	G	G	E B 14	E B 15	16	E B 16	28	E B 15	18
30	23	E B 15	18	20	16	E B 15	E B 16	24	31	33	36	G 26	G	34	G 26	G	20	E B 15	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	27	28	27	27	26	26	26	26	26	26	27	27	27	27	27
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	G	31	35	36	36	34	32	G	22	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 16	16	E B 16	E B 16	E B 15	E B 15	E B 16	24	30	33	36	38	38	37	34	31	23	20	17	16	17	15	15	15
L Q	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	G	G	G	G	G	G 34	G	G	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14

NOV. 2014 fbEs (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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	16	16	14	15	14	15	14	16	16	18	18											
2																				15	15	15	14	14
3	16	14	14	15	14	15	16	14	14	14	14	14	14	18	14	13	14	15	15	15	14	15	15	14
4	15	15	15	15	15	15	16	14	14	13	15	14	18	14	12	13	14	15	15	16	16	16	15	15
5	15	15	15	14	15	15	15	14	14	15	18	19	15	18	16	14	14	15	16	14	15	14	16	15
6	16	15	15	16	15	15	14	15	14	14	15	21	18	28	18	13	14	14	14	14	15	15	14	16
7	16	15	15	15	15	15	14	12	14	15	14	17	21	20	22	16	14	14	15	15	15	15	15	14
8	16	14	15	15	15	14	15	14	14	14	15	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	18	37	15	18	17	13	14	14	14	15	15	15	15	16
11	15	15	15	14	14	15	15	14	14	15	14	16	16	17	18	14	13	14	15	14	14	15	15	14
12	15	15	16	16	15	15	15	14	13	15	12	17	16	12	18	18	15	14	15	15	15	15	15	15
13	15	15	16	15	15	14	15	14	16	16	17	16	16	18	16	14	15	14	15	14	14	15	15	15
14	15	14	15	15	14	15	16	15	14	15	18	16	14	13	15	13	14	14	14	15	16	15	15	14
15	15	15	15	13	15	16	15	15	14	15	15	16	18	16	14	12	13	16	16	14	15	15	15	15
16	15	15	16	15	14	16	16	14	14	15	18	18	16	16	14	12	15	15	15	15	14	14	14	15
17	14	15	16	15	15	15	15	13	14	14	16	15	17	18	14	15	14	14	16	14	15	15	15	15
18	15	14	15	15	16	15	15	14	13	14	14	15	18	14	14	13	13	15	15	15	14	14	15	15
19	16	14	14	14	15	14	15	14	15	14	13	16	20	18	15	13	13	15	15	15	14	15	15	15
20	15	16	15	14	16	16	15	14	16	14	17	20	17	15	14	13	13	14	15	16	15	14	15	14
21	16	15	15	15	16	16	16	16	15	14	14	17	18	17	13	15	14	14	14	15	16	16	16	15
22	16	16	15	16	15	14	15	14	13	12	15	17	17	18	14	16	14	16	15	14	14	14	14	14
23	16	15	15	15	14	14	15	16	16	14	14	14	17	17	14	13	14	16	14	16	14	15	13	15
24	15	14	16	16	14	15	16	13	14	13	14	15	13	14	15	14	14	15	15	15	16	14	15	15
25	16	16	14	15	15	15	15	13	13	15	14	14	16	13	13	14	14	15	16	14	15	15	15	14
26	16	14	16	16	15	16	15	14	15	13	15	19	17	15	15	16	16	15	15	15	14	14	14	14
27	15	15	16	14	15	15	14	14	16	16	15	16	14	13	13	13	14	15	14	14	14	15	15	15
28	15	15	15	16	15	14	15	13	14	13	14	17	16	19	14	14	13	14	15	15	15	15	15	15
29	15	15	14	14	14	14	14	14	14	12	16	15	18	14	14	14	14	14	15	15	16	16	15	14
30	15	15	15	15	14	15	16	16	15	14	16	17	14	11	A 15	13	15	15	15	14	15	14	14	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	27	28	27	27	26	26	26	26	26	26	27	27	27	27	27
MED	15	15	15	15	15	15	15	14	14	14	15	16	17	16	14	14	14	15	15	15	15	15	15	15
U Q	16	15	16	16	15	15	16	15	15	15	16	18	18	18	16	14	14	15	15	15	15	15	15	15
L Q	15	14	15	14	14	14	15	14	14	14	14	15	15	14	14	13	14	14	15	14	14	14	14	14

NOV. 2014 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E KSWEEP 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	282	280	298	317	301	291	319	337	352	351	323	318	310											
2																				329	336	321	304	271
3	278	280	272	344	334	276	321	363	344	344	331	347	329	312	321	332	339	340	360	296	309	320	297	299
4	313	301	303	328	368	304	338	351	335	331	343	307	320	321	318	329	344	342	316	308	312	306	307	318
5	279	248	269	305	348	323	308	332	331	335	323	324	326	306	321	326	341	336	320	304	312	308	313	293
6	287	302	287	316	319	292	300	351	344	332	336	337	308	317	317	326	360	343	324	315	317	321	285	286
7	279	308	327	307	337	286	334	361	355	347	336	311	309	310	303	332	348	331	315	321	307	324	284	288
8	299	289	309	304	303	292	346	357	367	336	338	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	327	334	315	328	320	329	331	321	304	311	293	305	270	271
11	291	313	295	272	274	312	315	364	334	324	344	309	316	306	319	319	332	344	310	321	322	332	276	286
12	308	296	283	336	319	307	325	364	339	332	318	325	316	312	302	329	324	336	336	319	306	317	303	285
13	300	296	319	312	313	307	316	357	350	336	331	331	311	317	335	330	331	336	318	323	314	306	288	290
14	286	283	299	292	301	289	324	367	356	346	334	342	344	310	326	326	344	337	309	297	304	311	315	305
15	281	278	279	300	312	274	295	348	352	342	339	323	317	325	333	327	340	328	328	321	304	282	283	283
16	293	307	326	325	280	286	315	348	339	341	347	318	326	311	318	327	329	326	295	315	324	313	273	287
17	273	273	289	282	259	275	329	337	324	333	330	319	308	318	321	317	331	355	326	324	288	303	290	262
18	271	299	329	298	291	306	294	354	358	345	338	329	330	322	323	342	333	330	317	311	306	300	292	272
19	282	277	282	303	285	276	309	357	342	350	360	329	312	341	343	343	337	331	297	319	317	347	299	287
20	276	288	305	288	284	291	315	359	356	339	338	314	317	326	342	333	348	327	336	319	316	298	290	296
21	303	303	298	274	256	287	314	348	352	343	328	331	321	333	320	333	330	357	335	313	295	295	299	289
22	304	272	257	263	271	279	309	361	360	332	346	325	301	322	339	322	340	349	322	362	295	302	297	300
23	289	300	299	297	294	271	314	350	366	337	360	312	324	328	319	340	331	342	341	324	320	306	286	271
24	282	283	292	290	281	299	299	351	333	329	326	334	331	319	312	331	338	331	347	315	307	309	309	288
25	291	270	295	286	309	293	312	340	350	338	322	326	322	324	321	329	354	333	338	302	312	313	288	272
26	314	325	311	253	259	277	313	363	342	343	327	325	320	312	320	336	342	337	322	310	305	315	316	305
27	300	295	311	313	269	270	302	354	356	342	358	335	323	334	319	324	325	322	348	315	325	325	313	317
28	314	272	281	267	271	290	328	373	342	350	352	327	326	317	324	328	347	330	347	A	309	280	292	287
29	273	275	281	306	303	316	354	360	355	322	339	331	331	325	319	326	350	338	323	325	300	281	301	282
30	303	285	314	326	273	276	305	363	364	333	343	329	316	329	331	333	337	312	326	330	334	300	285	289
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	27	28	27	27	26	26	26	26	26	26	26	27	27	27	27
MED	289	288	298	303	294	290	315	357	350	338	337	326	320	320	320	329	338	336	324	317	309	308	292	287
U Q	303	301	311	316	313	304	325	363	356	344	344	331	326	326	326	333	344	342	336	323	317	320	304	296
L Q	279	277	282	286	273	276	308	348	339	332	328	318	312	312	319	326	331	330	316	311	304	300	285	282

NOV. 2014 M(3000)F2 (0.01)

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IONOSPHERIC DATA STATION Kokubunji

NOV.2014 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		L											
2																								
3												L	L	A	L									
4										L	A		L	L										
5										L		L			L									
6											L		L	A										
7											L													
8										L		C	C	C	C	C	C	C						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10							C	C	C	C	L	L	L	A	L									
11											A	L	A											
12											L	L												
13												L		L	L									
14													L											
15												L	L											
16											L	L	L											
17												L												
18												A	L											
19												L												
20													L	L										
21											L	L	L	A	A									
22											L													
23																								
24														L	L									
25															A									
26											L		L	L										
27																								
28																								
29													L											
30												L		L										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV.2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV.2014 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E KSWEEP 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										232	246		256											
2																								
3												246	254	266	268									
4										268	250		276	286										
5										258		256			262									
6											244		280	252										
7											246													
8										246		C	C	C	C	C	C	C						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10							C	C	C	C	248	248	280	244	260									
11											236	244	254											
12											260	254												
13												242		270	258									
14													256											
15												266	274											
16											244	274	258											
17												244												
18												232	276											
19												266												
20													266	264										
21											266	264	252	238	216									
22											238													
23																								
24														264	278									
25															248									
26											272		258	260										
27																								
28																								
29													260											
30												240		276										
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										4	11	13	14	10	7									
MED										252	246	248	259	264	260									
U Q										263	260	265	276	270	268									
L Q										239	244	243	256	252	248									

NOV.2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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 B 280	E B 282	E B 264	E B 228	226	E B 266	230	204	212	A	204	214	198											
2																				232	218	204	E B 236	E B 280
3	E B 296	E B 288	E B 286	220	194	E B 268	E B 238	216	204	220	212	202	192	A	218	220	206	208	200	E A 276	E A 242	E B 232	E B 254	E B 254
4	E B 254	E B 252	E B 262	E B 248	212	E B 260	224	210	216	216	A	214	212	214	210	224	212	196	218	E B 236	224	E A 266	E A 238	234
5	E B 282	E B 310	E B 316	E B 260	196	E B 248	E B 250	220	220	216	210	206	222	214	218	222	208	190	198	216	E A 250	E A 262	E A 258	E B 248
6	E A 298	E A 272	E B 252	E B 246	E B 234	E B 290	E A 260	216	218	218	208	226	206	A	224	216	206	202	206	214	222	226	E B 248	E B 292
7	E B 292	E B 262	226	E B 232	230	E B 292	228	220	206	206	204	214	218	224	220	220	210	198	208	228	E B 222	E B 224	E B 242	E B 282
8	E B 264	E B 272	E B 252	E B 254	E B 246	E B 258	220	204	206	208	214	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	204	204	190	A	208	214	214	214	216	232	E B 240	E B 238	E B 274	E B 288
11	E B 248	228	E B 236	E B 320	E B 312	208	E B 254	224	208	226	A	202	A	218	214	216	212	206	214	222	E A 244	216	E B 290	E B 300
12	E B 254	228	E B 254	218	218	E B 236	220	208	198	216	208	220	208	208	224	228	224	208	202	222	216	E B 230	E B 240	E B 290
13	E B 266	E B 262	E B 248	E B 252	E B 242	E B 252	214	212	210	218	214	200	216	200	206	220	212	200	204	194	226	224	E B 254	E B 276
14	E B 276	E B 272	E B 272	E B 262	E B 250	E B 266	E B 238	212	208	212	218	210	200	220	222	214	212	198	216	220	E B 240	E B 236	222	222
15	E B 280	E B 298	E B 296	E B E A 266	E A 240	E B 290	E B 282	218	210	208	214	206	200	208	212	216	216	198	206	232	E A 232	E B 290	E B 268	E B 296
16	E B 266	E B 250	230	212	E B 270	E B 286	E B 238	224	218	214	206	198	216	228	228	226	210	202	220	232	E A 242	E A 246	E B 296	E A 304
17	E B 292	E B 298	E B 270	E B 258	E B 318	E B 324	226	216	228	224	226	206	218	228	224	224	214	198	194	E A 220	224	E B 258	E B 268	E B 322
18	E B 322	E B 264	E B 236	E B 252	E B 254	E B E A 290	216	216	212	218	210	A	204	224	220	222	204	194	220	208	E B 258	226	E B 238	E B 300
19	E B 292	E B 314	E B 282	E B 248	E B 240	E B 296	E B 260	222	208	216	218	202	230	222	220	208	214	204	202	228	E B 232	208	216	E B 294
20	E B 296	E B 296	E B 234	E B 278	E B 286	E B 296	E B 234	204	212	212	220	210	212	214	224	210	214	198	196	214	218	E B 240	E B 264	E A 270
21	E B 264	E A 254	E A 276	E B 296	E B 362	E B 290	222	220	210	214	202	210	204	A	A	224	228	208	220	204	E B 236	E B 250	E B 256	E B 252
22	E B 264	E B 292	E B 324	E B 340	E B 320	E B 304	E B 248	218	206	208	202	212	H 188	224	218	212	222	212	216	196	E B 238	E B 258	E B 262	E B 254
23	E B 276	E B 258	E B 278	E B 268	E B 240	E B 300	E B 244	222	206	216	224	212	216	226	222	218	208	204	204	198	230	E B 236	E A 270	E B 304
24	E B 288	E A 312	E B 280	E B 256	E B 282	E B 270	E A 254	208	208	H 200	210	226	214	208	214	218	220	198	204	214	E B 234	E B 236	E B 236	E B 254
25	E B 274	E B 276	E B 286	E B 284	E B 230	E B 274	234	208	218	204	192	208	218	220	A	224	208	210	224	E A 268	E B 242	214	E B 250	E B 266
26	E A 256	E A 252	E B 236	E B 346	E B 372	E B 322	E B 246	220	210	222	208	210	208	200	214	214	212	204	204	222	E B 252	E B 230	E B 234	E B 254
27	E B 258	E B 260	E B 256	214	E B 306	E B 312	E B 272	216	208	210	208	212	216	212	214	218	204	220	210	E A 282	228	220	228	228
28	230	E B 284	E B 300	E B 300	E B 320	E B 284	222	208	202	212	212	214	212	216	216	222	210	226	204	A	E A 242	E A 292	E A 290	E B 266
29	E B 298	E B 300	E B 290	222	E B 246	E B 254	214	208	212	212	218	218	206	218	216	226	208	200	202	222	E B 250	E B 312	E A 270	E A 284
30	E A 280	E B 270	E A 242	E A 250	E A 266	E B 324	E B 250	212	206	214	222	204	214	208	218	214	210	200	216	216	204	222	E B 252	E B 252
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	27	27	27	27	27	27	26	26	26	26	22	24	26	26	26	26	26	27	27	27	27
MED	E B 276	E B 272	E B 264	E B 254	E B 246	E B 286	E 238	216	210	214	210	210	212	217	218	219	212	202	206	219	E 234	E 236	E B 254	E B 276
U Q	E B 292	E B 296	E B 286	E B 278	E B 306	E B 296	E B 250	220	212	218	218	214	216	224	222	224	214	208	216	E 232	E B 242	E B 258	E B 268	E B 294
L Q	E B 264	E 258	E B 242	232	230	E B 260	222	208	206	210	206	204	204	208	214	214	208	198	202	214	224	224	E 238	E B 254

NOV. 2014 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV.2014 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E KSWEEP 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	118	112	A	A	A	A											
2																								
3							B	114	114	112	116	116	A	A	A	118	A							
4								112	118	112	122	122	112	112	A	A	116							
5							B	120	112	110	A	A	A	A	A	A	A	B						
6							B	116	A	A	A	A	A	A	A	114	114							
7							B	114	114	A	116	A	A	A	116	116	118	B						
8							B	114	114	110	A	C	C	C	C	C	C	C						
9							C	C	C	C	C	C	C	C	C	C	C	C						
10							C	C	C	C	A	A	A	A	A	110	A	B						
11							B	112	116	110	112	112	A	A	116	A	A	B						
12							B	112	112	112	114	112	A	A	124	A	A	B						
13							B	118	A	A	A	A	A	A	118	112	120	B						
14							B	116	116	A	A	118	116	110	110	A	A	B						
15								116	114	A	114	114	A	114	114	118	118	B						
16							B	114	116	116	118	A	112	110	106	116	118	B						
17							B	118	112	112	112	114	114	A	A	A	A	B						
18							B	118	A	114	114	114	112	110	112	112	114							
19							B	114	114	112	A	114	A	A	A	112	112							
20							B	122	116	A	A	A	A	A	110	112	116	B						
21							B	116	116	116	A	A	A	A	A	A	A	B						
22							B	118	A	A	A	A	A	114	114	112	112	B						
23							B	B	112	112	114	110	114	112	A	A	A							
24							B	122	114	118	A	A	A	118	A	114	118	B						
25							B	120	116	114	A	A	A	A	112	112	A	B						
26							B	122	112	A	A	A	124	A	A	A	A	B						
27							B	114	108	110	118	118	114	A	116	110	116	B						
28							B	116	116	A	A	A	A	A	A	A	A	B						
29								120	120	A	116	118	A	116	118	114	112	B						
30							B	126	112	114	A	112	110	A	120	114	B	B	B					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								26	23	16	12	13	9	9	14	16	13							
MED								116	114	112	115	114	114	112	115	113	116							
U Q								120	116	114	117	118	115	115	118	115	118							
L Q								114	112	111	114	112	112	110	112	112	113							

NOV.2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.35°43.0'N LON.139°29.0'E KSWEEP 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	B	B	B	96	98	B	134	128	108	102	106	106											
2																				98	B	B	B	B
3	100	92	B	B	100	B	B	154	G	G	106	120	106	106	102	90	90	92	88	86	86	88	88	B
4	B	B	90	90	96	92	B	148	G	G	124	120	122	100	96	102	98	100	102	B	96	92	98	96
5	106	102	106	B	100	B	90	144	118	116	108	108	106	110	108	108	106	B	B	102	94	96	94	98
6	98	100	92	92	92	92	90	G	106	104	104	102	106	110	106	G	G	104	104	B	B	B	98	98
7	B	B	B	B	98	B	142	138	124	104	104	102	104	108	126	118	118	B	B	B	B	B	B	B
8	B	B	B	B	B	B	B	G	G	120	108	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	104	104	102	100	102	G	94	92	98	96	B	92	92	92
11	92	B	B	B	96	B	148	140	G	G	118	G	104	106	100	100	94	94	94	90	94	B	B	B
12	B	98	B	102	B	B	B	154	G	G	114	116	102	104	G	108	92	92	92	90	90	108	B	B
13	B	B	B	B	B	B	B	134	108	104	102	106	102	94	G	94	G	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	170	120	106	106	104	98	94	94	92	90	90	88	88	90	94	B	94
15	94	B	B	94	92	92	B	G	G	106	G	G	108	G	128	G	G	B	B	B	114	100	B	100
16	B	B	94	B	B	B	104	G	158	G	104	104	134	128	126	122	G	B	B	102	100	92	92	96
17	B	B	B	B	B	B	B	162	170	G	116	116	116	106	102	102	102	98	B	94	B	B	B	B
18	B	B	B	B	98	96	102	152	96	98	132	116	116	98	G	G	138	92	B	B	B	B	B	92
19	102	100	B	B	B	B	B	160	G	G	106	G	108	106	106	G	154	B	B	B	B	B	B	B
20	98	98	B	B	106	104	100	162	G	104	104	104	104	104	100	G	G	100	96	94	B	B	B	94
21	104	94	94	94	94	B	B	142	140	118	106	100	102	98	98	98	98	98	96	96	100	B	96	B
22	B	B	B	B	B	B	B	G	106	100	104	102	104	G	G	G	G	96	96	B	B	B	B	B
23	114	102	100	B	B	100	B	144	G	G	100	118	G	G	108	106	108	102	98	98	96	B	94	B
24	94	90	92	92	92	102	100	92	94	104	104	104	100	100	98	G	G	B	96	96	94	94	96	96
25	96	B	B	114	B	B	B	G	G	G	106	104	98	94	118	110	92	92	92	98	96	96	B	B
26	96	92	92	B	B	98	96	G	G	106	104	106	106	104	98	98	104	102	96	96	B	B	B	B
27	B	B	B	96	96	96	98	132	G	G	G	G	G	100	92	G	G	108	102	100	102	102	B	100
28	100	B	B	B	B	B	B	132	116	106	100	98	102	102	102	104	104	100	106	100	98	98	94	94
29	92	B	B	B	B	B	B	G	G	104	G	104	106	106	102	G	G	B	104	104	110	102	98	104
30	104	94	100	104	98	102	150	134	142	94	96	102	G	102	104	G	140	B	B	B	B	B	B	108
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	15	11	9	9	14	11	11	19	14	17	25	23	24	23	22	15	17	17	17	18	15	13	11	14
MED	98	98	94	94	96	98	100	144	119	104	104	104	105	104	102	102	102	98	96	96	96	96	94	96
U Q	104	100	100	103	98	102	142	154	140	107	108	116	107	106	108	108	113	101	102	100	100	101	98	100
L Q	94	92	92	92	94	92	96	134	106	104	104	102	102	100	98	98	93	92	93	94	94	92	92	94

NOV. 2014 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

NOV. 2014 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					F1	F2		C2	C1	L1	L1	L2	L1											
2																				F1				
3	F2	F1			F1			H3			L2	CL22	L2	L2	L2	L2	L2	F3	F4	F2	F1	F2	F1	
4			F1	F2	F3	F2		H1			CL11	CL21	C2	L1	L1	L1	L2	F3	F3		F1	F3	F2	F3
5	F2	F2	F1		F1		L1	H1	C1	C1	L2	L1	L3	L1	L1	L1	L2			F3	F5	F3	F3	F2
6	F4	F5	F2	F2	F2	F2	L3		L2	L2	L2	L1	L1	L1	L1			L1	F1				F2	F1
7					F1		H2	H2	C1	L1	L1	L1	L2	L1	C1	C1	C1							
8										C1	L1													
9																								
10											L2	L2	L2	L2	L2		L3	L3	F1	F1		F2	F1	F2
11	F2				F1		H1	H2			C1		L1	L2	L2	L2	L3	L3	F3	F3	F2			
12		F2		F1				H2			CL11	CL21	L2	L1		L1	L2	L3	F3	F2	F2	F1		
13								H2	L2	L2	L2	L2	L2	L2		L2								
14								H2	C1	L1	L1	L1	L1	L1	L1	L2	L2	L3	F2	F2	F2	F1		F1
15	F1			F2	F3	F1				L2			L1		C1						F3	F1		F2
16			F2				L1		HL22		L2	L1	C1	CL31	CL22	C2				F2	F4	F4	F2	F1
17								H2	H2		C2	C1	C2	L2	L3	L3	L3	F1		F1				
18					F2	F3	L1	HL21	L2	L2	CL11	CL11	C2	L2			H1	F1						F2
19	F1	F2						H2			L2		L2	L1	L1		H1							
20	F2	F2			F1	F1	L2	H2		L1	L2	L2	L2	L2	L1			L1	F3	F2				F2
21	F2	F2	F3	F2	F2			H2	H1	C1	L2	L2	L1	L2	L3	L3	L2	L3	F4	F1	F1		F2	
22									L2	L2	L2	L2	L2					L2	F1					
23	F2	F1	F1			F1		H2			L1	C1			L2	L2	L2	L1	F1	F2	F4		F3	
24	F2	F4	F1	F1	F1	F2	L2	L2	L2	L2	L2	L2	L2	L2	L2				F1	F3	F3	F2	F2	F2
25	F1			F1							L1	L2	L2	L3	CL22	CL22	L2	L4	F3	F2	F2	F2		
26	F4	F4	F2			F2	L2			L1	L1	L2	L1	L2	L3	L3	L2	L2	F1	F2				
27				F1	F2	F4	L1	C2						L2	L2			L2	F2	F4	F1	F2		F2
28	F1							H2	C2	L2	L2	L2	L2	L2	L1	L2	L3	L5	F1	F6	F3	F5	F2	F2
29	F1									L2		L2	L1	L1	L2				F1	F2	F2	F3	F3	F3
30	F6	F5	F3	F3	F3	F2	H1	C2	H1	LC21	L3	L2		L2	L2		H1							F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 49	X 47	X 50	X 52	X 51	X 40	X 46												X 98	X 74	X 72	X 65	X 58	X 54
2	X 52	X 52	X 56	X 54	X 48	X 47	X 53												X 92	X 72	X 74	X 67	X 55	X 51
3	X 51	X 50	X 54	X 55	X 50	X 36	X 42												X 96	X 67	X 74	X 77	X 65	X 56
4	X 54	X 52	X 50	X 53	X 56	X 34	X 36												X 85	X 82	X 86	X 89	X 79	X 53
5	X 45	X 44	X 46	X 54	X 51	X 30	X 33												X 82	X 63	X 64	X 66	X 60	X 51
6	X 50	X 53	X 48	X 44	X 41	X 39	X 42												X 80	X 64	X 66	X 65	X 52	X 49
7	X 48	X 49	X 49	X 46	X 40	X 37	X 43												X 77	X 73	X 71	X 64	X 50	X 50
8	X 51	X 52	X 50	X 51	X 48	X 43	X 46												X 80	X 78	X 72	X 68	X 52	X 48
9	X 47	X 43	X 46	X 50	X 49	X 41	X 36												X 78	X 75	X 72	X 72	X 63	X 40
10	X 39	X 40	X 41	X 44	X 46	X 40	X 41									X 126			X 104	X 84	X 77	X 83	X 64	X 56
11	X 60	X 56	X 42	X 45	X 45	X 47	X 40												X 76	X 71	X 66	X 67	X 52	X 48
12	X 49	X 48	46	X 46	X 49	X 39	X 37												X 116	X 78	X 74	X 70	X 60	X 52
13	X 46	X 47	X 50	X 49	X 47	X 40	X 41												X 87	X 80	X 70	X 72	X 69	X 49
14	X 47	X 44	X 42	X 41	X 41	X 39	X 39												X 80	X 72	X 79	X 79	X 72	X 42
15	X 37	X 38	X 40	X 40	X 35	X 34	X 36												X 84	X 72	X 78	X 64	X 58	X 52
16	X 53	X 51	X 50	X 46	X 39	X 38	X 42												X 94	X 86	X 90	X 72	X 47	X 45
17	X 49	X 48	X 49	X 46	X 45	X 47	X 50												X 102	X 87	X 80	X 74	X 70	X 58
18	X 52	X 53	X 52	X 47	X 43	X 39	X 36												X 89	X 74	X 78	X 78	X 68	X 44
19	X 44	X 44	X 44	X 45	X 43	X 41	X 45												X 92	X 86	X 76	X 68	X 54	X 43
20	X 42	X 42	X 45	X 44	X 43	X 42	X 44												X 98	X 86	X 63	X 60	X 56	X 53
21	X 45	X 45	X 44	X 40	X 41	X 41	X 45												X 107	X 64	X 66	X 60	X 57	X 48
22	X 40	X 39	X 40	X 40	X 43	X 41	X 44												X 104	X 81	X 72	X 69	X 62	X 54
23	X 41	X 42	X 43	X 45	X 39	X 35	X 37												X 88	X 62	X 60	X 58	X 56	X 53
24	X 52	X 50	X 50	X 45	X 43	X 42	X 44												X 99	X 64	X 67	X 69	X 58	X 53
25	X 43	X 42	X 41	X 42	X 42	X 38	X 39												X 87	X 76	X 79	X 84	X 71	X 56
26	X 55	X 48	X 40	X 38	X 37	X 39	X 44												X 76	X 66	X 68	X 69	X 64	X 47
27	X 42	X 40	X 39	X 37	X 36	X 37	X 38												X 88	X 78	X 71	X 75	X 58	X 47
28	X 45	X 36	X 36	X 38	X 38	X 40	X 45												X 84	X 74	X 70	X 70	X 51	X 45
29	X 42	X 43	X 44	X 45	X 40	X 35	X 38												X 88	X 68	X 72	X 80	X 63	X 48
30	X 44	X 46	X 48	X 42	X 33	X 32	A												X 89	X 82	X 80	X 71	X 52	X 45
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	29									1			30	30	30	30	30	30
MED	X 47	X 46	X 46	X 45	X 43	X 39	X 42									X 126			X 88	X 74	X 72	X 70	X 58	X 50
U Q	X 51	X 50	X 50	X 49	X 48	X 41	X 44												X 98	X 81	X 78	X 75	X 64	X 53
L Q	X 43	X 42	X 42	X 42	X 40	X 37	X 38												X 82	X 68	X 68	X 66	X 54	X 47

NOV. 2014 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	43	41	44	46	45	34	40	77	95	102	115	118	R 124	136	R 140	132	124	111	92	68	66	59	52	48
2	46	46	50	48	42	41	47	79	95	115	R 122	107	112	122	R 121	121	100	100	86	66	68	61	49	45
3	45	44	48	49	44	30	36	76	90	94	109	120	111	133	130	132	118	113	90	61	68	71	59	50
4	48	46	44	47	50	28	30	68	80	100	R 108	118	101	118	130	130	R 122	90	79	76	80	83	73	47
5	39	38	40	48	45	24	27	62	112	129	129	J R 129	116	118	138	J R 131	115	92	76	57	58	60	54	45
6	44	47	42	38	35	33	36	70	102	118	137	138	R 124	U R 130	138	131	120	92	74	58	60	59	46	43
7	42	43	43	40	34	31	37	77	100	100	108	122	R 113	112	R 130	128	118	91	70	67	65	58	44	44
8	45	46	44	45	42	37	40	73	87	96	108	118	115	R 126	150	142	120	91	74	72	66	62	46	42
9	41	37	40	44	43	35	30	66	84	96	109	108	108	111	116	118	114	91	72	69	66	66	57	34
10	33	34	35	38	40	34	35	70	92	92	105	116	110	118	J R 116	R 120	115	107	98	78	71	77	58	50
11	54	50	36	39	39	41	34	75	96	107	129	122	118	118	118	118	113	100	70	65	60	61	46	42
12	43	42	38	40	43	33	31	66	87	94	118	134	128	R 124	131	144	138	122	110	70	68	64	54	46
13	40	41	44	43	41	34	35	67	85	96	R 122	132	116	120	R 136	J R 128	118	110	80	74	64	66	63	43
14	41	38	36	35	35	33	33	66	98	104	107	112	95	104	R 128	115	92	82	74	66	73	73	66	36
15	31	32	34	34	29	28	30	72	111	100	104	111	118	R 122	112	115	108	91	78	66	70	58	52	46
16	47	45	44	40	33	32	36	68	96	110	108	105	118	118	126	116	108	94	88	80	84	66	41	39
17	43	42	43	40	39	41	44	77	97	133	152	140	R 134	J R 128	138	J R 136	J R 129	116	94	81	72	68	64	52
18	46	47	46	42	37	33	30	60	100	107	109	115	R 118	131	J R 126	R 130	113	102	83	68	72	72	62	38
19	38	38	38	39	37	35	39	76	102	100	107	96	112	133	R 126	96	97	101	86	80	70	62	48	37
20	36	36	39	38	37	36	38	66	100	100	105	115	105	113	J R 125	109	99	100	92	80	57	54	50	47
21	39	39	38	34	35	35	39	68	98	87	104	110	103	R 126	114	91	98	R 123	101	58	60	54	51	40
22	34	33	34	34	37	35	38	76	92	111	108	108	116	J R 125	119	105	94	109	98	75	66	63	56	48
23	35	36	37	39	33	29	31	62	98	93	100	100	108	118	118	111	98	94	82	56	54	52	50	47
24	46	44	44	39	37	36	38	64	100	U R 126	133	U R 130	126	118	120	122	108	106	93	58	61	63	52	47
25	37	36	35	36	36	32	33	60	94	118	104	120	118	108	116	118	113	102	81	70	73	78	R 65	50
26	49	40	34	32	31	33	38	77	98	104	108	116	115	R 127	130	U R 129	112	106	68	60	62	R 63	58	41
27	36	34	33	31	30	31	32	68	104	109	96	108	113	115	109	102	97	90	82	70	65	69	52	41
28	39	30	30	32	32	34	39	64	88	96	106	106	112	115	118	115	115	R 104	78	68	64	64	45	39
29	36	37	38	39	34	29	32	61	92	99	126	R 124	113	113	116	114	113	100	82	62	66	74	57	42
30	38	40	42	36	27	26	A	66	92	101	115	108	106	112	115	111	104	99	83	76	74	65	46	39
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	41	40	40	39	37	33	36	68	96	100	108	116	114	118	126	119	113	100	82	68	66	64	52	44
U Q	45	44	44	43	42	35	38	76	100	110	122	122	118	126	130	130	118	107	92	75	71	69	58	47
L Q	37	36	36	36	34	31	32	66	92	96	106	108	110	115	116	114	100	92	76	62	62	60	48	40

NOV. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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								212		L	L	L	L	U 536 L	L	L								
2								236	L 376	L	L	L	L	U 500 L	L	L	L							
3								232		324	L	L	L	L	L	L								
4										L	L	L	L	L	L	L								
5									L	L	L	A	A	L	L	L								
6										L	L	L	L		L	L	A							
7									292	L	L	L	L	L	A	L		200						
8										368	U L 436	L	L	L	L	L								
9								204	U L 324	U L 376	L	L	L	L	L	L								
10										L	L	L	L	L	L		L							
11									276	L	L	L	U L 488	L	L	L	A	220						
12									284	L	L	L	L	L	L	L	L							
13										L	L	L	L	L	L	L	L	212						
14										L	L	L	L	L	L	L								
15								208	276		L	U L 448	L	L	L	L								
16											L	L	L	L	L	L								
17									272	L	L	L	L	L	L	L	L	200						
18										L 364	L	L	L	L	L	U L 428	L	224						
19									276	L	U L 432	L	L	L	L	L	L							
20									288		L	L	L	L	U L 448		L							
21											L	L	L	U L 540	L	L	L							
22									260	L	L	L	L	L	L		272	200						
23									276			L	L	L	L	L								
24									292	L	L	L	L	U L 480	L	L								
25									280	L	L	L	L	L	L	L								
26										L	L	L	L	L	L	L								
27										L	L	L	L	L	L	L		204						
28											L	L	L	L	L	L	A							
29								184		L	L	L	L	L	L	L								
30											L	L	L	L	L	L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								6	13	4	2	1	1	4	1	1	1	7						
MED								210	280	366	U L 434	U L 448	U L 488	U L 518	U L 448	U L 428	272	204						
U Q								232	292	372				U L 538				220						
L Q								204	276	344				U L 490				200						

NOV. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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								188	A 276	A 308	U A 316	344	A	A	340	320	284	U A 184						
2								208	U A 268	296	324	U A 328	A	U A 340	336	312	264	U A 180						
3								200	268	308	U A 332	344	352	R 364	344	312	288	A						
4								220	288	316	340	348	R 364	384	356	332	292	204						
5								188	268	A 304	332	344	356	U A 344	A	A	U A 224	200						
6								208	U A 276	A 316	332	R	U A 340	B	A	320	268	A						
7								216	256	308	344	352	B	384	A 364	U A 320	R 268	A						
8								204	264	304	R 320	340	328	R 328	A 320	308	268	212						
9								A	A 260	U A 308	336	348	U A 352	A 340	344	312	R 280	A						
10								168	272	U A 304	U A 340	A 336	356	A	336		A	A						
11								200	240	312	328	A 344	344	U A 320	R 344	308	268	A						
12								208	U A 248	308	340	344	340	A 352	U A 320	A	276	A						
13								176	260	312	340	U A 360	U A 360	A	340	A	264	176						
14								180	248	320	A 328	344	352	364	352	324	264	A						
15								B	252	U A 292	U A 316	U A 352	A 360	A 348	U A 324	300	264	160						
16								212	264	308	344	356	364	352	U R 332	320	264	B						
17								200	A 236	300	336	356	U A 352	360	U A 324	A	256	U A 212						
18								220	252	304	336	A 344	U A 344	352	328	308	U A 260	A						
19								192	248	304	336	R 352	380	344	U A 344	308	260	172						
20								196	256	320	U A 336	U A 340	376	U A 348	336	A	260	188						
21								184	260	A 304	U A 316	U A 340	A	A	A	A	A	A						
22								184	A 228	304	340	A 352	352	352	332	300	260	176						
23								196	240	304	336	352	356	348	340	312	268	B						
24								A	244	308	336	340	340	344	328	304	256	180						
25								180	224	308	340	340	360	352	U A 332	316	260	184						
26								176	A 236	U A 308	A 328	348	U A 340	A	A	308	248	196						
27								A	256	316	340	364	364	368	R	316	U A 268	176						
28								176	248	A 300	U A 344	A 348	U A 360	U A 344	U A 344	A 292	A	A						
29								172	A 232	U A 296	316	U A 336	364	372	R	312	252	A						
30								A	264	316	336	356	364	348	336	304	264	A						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								25	30	30	30	29	26	24	24	23	27	15						
MED								196	256	308	336	344	356	350	336	312	264	184						
U Q								208	264	312	340	352	364	362	344	320	268	200						
L Q								180	244	304	328	A 340	344	A 344	A 330	308	260	176						

NOV. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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 23	J A 16	J A 23	22	E B 16	E B 16	E B 16	20	29	35	36	40	J A 44	J A 37	36	34	37	J A 45	J A 39	J A 37	J A 33	J A 34	J A 27	22
2	21	J A 22	J A 24	J A 29	J A 16	J A 16	18	G	28	32	J A 34	38	J A 44	36	38	34	30	J A 40	J A 42	E B 16	E B 16	18	E B 16	J A 16
3	18	E B 16	J A 17	E B 16	E B 16	E B 16	18	22	29	32	34	37	G 29	40	37	39	J A 43	J A 29	J A 37	J A 34	J A 23	J A 31	J A 27	22
4	J A 16	21	21	E B 16	E B 16	E B 16	E B 16	28	G 24	34	42	40	44	44	38	39	36	25	E B 16	20	J A 34	J A 30	J A 30	J A 27
5	J A 18	E B 16	J A 22	21	E B 16	J A 39	E B 16	21	29	34	39	J A 54	J A 50	J A 72	J A 60	J A 53	J A 36	21	J A 16	E B 16	E B 16	E B 16	E B 16	J A 53
6	J A 34	J A 45	J A 30	J A 26	E B 16	E B 16	E B 16	21	30	34	36	39	37	E B 54	33	G 31	J A 38	J A 24	J A 30	J A 21	J A 20	J A 20	J A 16	20
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	28	37	40	46	48	40	J A 58	J A 44	G	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	28	33	34	37	37	35	34	32	28	24	J A 17	J A 25	J A 26	J A 27	E B 16	E B 16
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 28	J A 30	J A 34	37	37	39	36	G 26	J A 36	32	J A 87	J A 45	J A 26	J A 27	J A 21	21	J A 18
10	E B 16	E B 16	E B 16	19	E B 16	18	J A 16	22	30	33	40	42	39	J A 40	J A 40	J A 62	J A 30	J A 23	J A 34	J A 23	J A 20	E B 16	E B 16	E B 16
11	18	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	26	34	38	39	42	39	41	34	J A 98	J A 26	J A 20	J A 20	J A 44	E B 16	E B 16	E B 16
12	E B 16	E B 16	J A 35	J A 17	J A 27	20	J A 16	G	27	34	35	39	40	39	J A 42	J A 49	J A 32	J A 41	J A 16	J A 28	J A 30	J A 22	20	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	20	28	32	35	38	J A 40	J A 38	38	33	G	20	J A 27	J A 18	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	J A 52	32	35	G	G 23	38	38	34	28	J A 32	J A 19	E B 16	J A 26	J A 17	E B 16	E B 16
15	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	27	31	36	38	38	38	35	G 29	G 20	20	E B 16	J A 16	E B 16	E B 16	E B 16	20
16	E B 16	E B 16	E B 16	17	E B 16	E B 16	E B 16	G	28	34	39	39	47	J A 54	36	40	33	J A 44	J A 49	J A 29	J A 23	J A 21	19	20
17	J A 17	E B 16	E B 16	21	18	E B 16	E B 16	G	27	32	38	41	39	40	39	J A 35	G 18	23	26	J A 17	18	E B 16	E B 16	E B 16
18	E B 16	E B 16	20	E B 16	E B 16	21	19	J A 22	G	G	35	37	37	38	G 25	G 21	28	J A 22	J A 16	E B 16	E B 16	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	J A 20	E B 16	20	E B 16	G	26	G	35	G 26	41	G	36	38	28	J A 21	J A 27	J A 18	E B 16	E B 16	E B 16	18
20	18	E B 16	J A 20	21	20	E B 16	J A 16	J A 19	28	G	36	36	40	38	G J 31	J A 35	28	21	19	E B 16	E B 16	E B 16	J A 23	E B 16
21	E B 16	J A 20	J A 19	J A 20	21	E B 16	E B 16	J A 20	27	33	36	40	J A 44	J A 37	J A 41	J A 47	J A 116	J A 62	J A 51	J A 41	J A 32	27	20	20
22	J A 17	E B 16	E B 16	21	19	22	20	23	24	G 26	G 34	36	G 26	G 24	G 18	G 28	J A 29	J A 20	E B 13	E B 16	18	E B 16	E B 16	E B 16
23	E B 16	20	E B 16	E B 16	E B 16	J A 26	19	J A 28	26	32	36	44	41	39	36	34	33	J A 24	E B 16	J A 33	J A 31	J A 16	20	21
24	E B 16	E B 16	E B 16	E B 16	J A 21	J A 26	J A 19	J A 27	27	32	36	G 31	G 28	G 28	G 26	G 28	27	J A 22	J A 26	J A 28	J A 26	J A 23	J A 16	J A 20
25	J A 20	18	E B 16	E B 16	E B 16	E B J 26	A E 16	B J 20	25	33	36	36	40	39	36	33	G	G	E B 16	J A 23	28	22	17	17
26	E B 16	E B 16	E B 16	20	E B 16	E B 16	E B 16	22	28	34	36	38	J A 46	J A 38	J A 36	J A 31	26	G	J A 17	19	J A 24	20	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	J A 19	E B 16	J A 16	J A 20	27	32	36	G 32	G 28	G 34	J A 37	J A 32	28	20	J A 17	J A 22	J A 30	J A 20	19	22
28	J A 22	E B 16	J A 16	21	20	E B 16	E B 16	22	29	33	J A 50	39	42	J A 46	42	J A 45	J A 63	J A 43	J A 16	J A 47	J A 21	J A 24	J A 23	20
29	J A 23	J A 31	A E 16	B J 18	A E 16	B E 16	E B 16	J A 33	26	34	38	41	J A 39	J A 42	J A 37	J A 30	G 24	J A 22	J A 21	J A 23	J A 32	J A 26	J A 31	J A 22
30	E B 16	J A 44	J A 48	J A 45	J A 29	J A 24	J A 44	J A 23	28	G 31	35	38	G 31	G 26	G 26	G 28	J A 33	J A 44	J A 45	J A 28	E B 16	E B 16	E B 16	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	17	E B 16	E B 16	E B 16	21	28	33	36	38	40	38	36	34	30	J A 24	J A 20	J A 22	J A 23	19	16	18
U Q	J A 18	J A 18	J A 20	21	19	J A 20	18	J A 23	29	34	38	40	J A 44	J A 40	J A 39	J A 39	J A 36	J A 40	J A 34	J A 28	J A 30	23	20	20
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 19	26	G 32	35	37	G 37	G 36	G 34	G 31	G 27	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

NOV. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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 B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	28	34	36	36	37	36	36	34	36	36	37	34	28	E B 16	19	E B 16
2	E B 16	E B 16	E B 16	20	E B 16	E B 16	E B 16	G	28	32	33	36	36	36	38	33	28	28	42	E B 16	E B 16	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	31	U Y 34	36	G 29	40	37	37	40	23	24	27	20	18	18	E B 16
4	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	G 24	33	40	39	43	43	37	38	35	24	E B 16	E B 16	20	21	20	16
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	29	33	35	52	49	40	38	36	27	G 20	E B 16	E B 16	E B 16	E B 16	E B 16	24
6	E B 16	34	20	18	E B 16	E B 16	E B 16	G 21	28	32	36	U Y 39	U Y 37	E B 54	U Y 33	G 31	37	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	28	36	38	45	46	39	54	G 32	G	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	28	32	U Y 34	37	37	U Y 34	U Y 34	32	27	23	E B 15	20	18	19	E B 16	E B 16
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	27	31	37	37	37	36	G 26	32	30	39	24	18	18	18	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	32	36	37	39	36	35	57	26	20	23	18	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	33	37	36	39	36	40	U Y 34	47	18	18	E B 16	41	E B 16	E B 16	E B 16
12	E B 16	E B 16	19	E B 16	E B 16	E B 16	E B 16	G	26	32	35	39	39	38	41	38	G 28	36	E B 16	E B 16	19	17	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	28	32	35	37	38	38	37	32	G	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	27	G 32	35	G	G 23	38	37	34	27	22	E B 16	E B 16	24	E B 16	E B 16	E B 16
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	26	31	35	36	38	37	35	G 29	G 20	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	28	33	38	38	45	47	36	39	32	32	28	26	21	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	32	37	40	38	38	38	34	G 18	E B 16	20	E B 16	E B 16	E B 16	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 20	G	G	35	36	37	38	G 25	G 21	27	17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	G	U Y 35	G 26	41	G	36	35	27	20	19	E B 16	E B 16	E B 16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	28	G	36	36	40	36	G 31	32	28	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G 26	32	36	36	42	36	36	36	52	41	36	30	25	22	18	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	24	G 26	G 34	36	G 26	G 24	G 18	G 28	G 26	19	E B 13	E B 16	E B 16	E B 16	E B 16	E B 16
23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	25	31	36	38	40	38	36	32	30	21	E B 16	28	20	E B 16	E B 16	E B 16
24	E B 16	E B 16	E B 16	E B 16	E B	E B 16	E B 16	22	27	32	36	G 31	G 28	G 28	G 26	G 28	27	20	E B 16	23	19	17	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	24	32	36	35	38	38	36	G 31	G	G	E B 16	20	21	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 17	26	32	35	38	42	37	35	G 30	26	G	E B 16	E B 16	16	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	27	G 31	35	G 32	G 28	G 34	35	32	28	19	E B 16	19	E B 16	16	E B 16	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	26	32	G 34	37	40	45	40	42	51	31	E B 16	31	E B 16	19	E B 16	E B 16
29	E B 16	16	E B 16	E B 16	E B 16	E B 16	E B 16	G 17	26	33	36	41	37	G 37	34	G 30	U Y 24	20	18	18	24	E B 16	18	E B 16
30	E B 16	E B 16	17	18	21	E B 16	A A 44	18	27	G 31	35	37	G 31	G 26	G 26	G 28	G 26	30	28	E B 16	E B 16	E B 16	E B 16	E B 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	27	32	36	37	38	E G 37	36	32	G	20	E B 16	E B 16	16	E B 16	E B 16	E B 16
U Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	28	32	36	38	40	38	37	36	32	28	23	20	20	17	16	E B 16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	26	32	35	36	G 37	36	G 34	G 31	27	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

NOV. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	16	16	16	16	16	16	16	14	16	16	17	20	20	20	18	17	18	14	16	16	16	16	16	16
2	16	16	16	16	16	16	16	16	16	16	17	17	20	17	17	16	16	16	16	16	16	16	16	16
3	16	16	16	16	16	16	16	16	16	16	16	17	16	20	16	14	15	16	16	16	16	16	16	16
4	16	16	16	16	16	16	16	16	20	17	18	18	18	17	19	16	16	16	16	16	16	16	16	16
5	16	16	16	16	16	16	16	16	16	16	17	18	20	20	17	16	16	16	16	16	16	16	16	16
6	16	16	16	16	16	16	16	15	16	16	18	31	28	54	31	20	16	16	16	16	16	16	16	16
7	16	16	16	16	16	16	16	16	16	16	16	20	42	24	28	20	16	16	16	16	16	16	16	16
8	16	16	16	16	16	16	16	16	16	16	16	18	17	16	17	17	17	17	15	16	16	16	16	16
9	16	16	16	16	16	16	16	16	16	19	17	16	18	17	16	16	16	16	16	16	16	16	16	16
10	16	16	16	16	16	16	16	16	16	16	16	22	19	21	17	16	16	14	16	15	16	16	16	16
11	16	16	16	16	16	16	16	16	15	16	16	16	17	16	19	16	14	14	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	16	16	17	18	16	17	18	16	15	16	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	16	16	21	20	21	16	17	16	16	16	16	16	16	16	16
14	16	16	16	16	16	16	16	16	16	16	16	20	16	19	16	17	16	16	16	16	16	16	16	16
15	16	16	16	16	16	16	16	16	15	16	17	15	16	16	16	16	16	15	16	16	16	16	16	16
16	16	16	16	16	16	16	16	16	15	16	16	19	19	21	21	16	16	16	16	16	16	16	16	16
17	16	16	16	16	16	16	16	15	16	16	20	18	21	20	16	17	17	16	16	16	16	16	16	16
18	16	16	16	16	16	16	16	15	16	16	16	18	16	16	19	16	16	14	16	16	16	16	16	16
19	16	16	16	16	16	16	16	16	16	16	17	19	20	18	16	16	16	16	16	16	16	16	16	16
20	16	16	16	16	16	16	16	16	16	16	18	20	20	20	18	16	16	16	16	16	16	16	16	16
21	16	16	16	16	16	16	16	16	16	16	17	17	19	16	17	15	16	14	16	16	16	16	16	16
22	16	16	16	16	16	16	16	16	16	16	18	18	17	17	16	16	15	16	13	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	16	16	20	17	20	16	16	16	16	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	16	16	18	20	17	17	17	16	15	16	16	16	16	16	16
25	16	16	16	16	16	16	16	16	15	16	16	18	16	19	20	17	16	16	16	16	16	16	16	16
26	16	16	16	16	16	16	16	16	16	16	14	16	20	21	18	16	16	16	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	16	16	16	17	20	19	20	18	16	16	16	16	16	16	16	16
28	16	16	16	16	16	16	16	15	16	16	16	20	21	20	19	16	16	15	16	16	16	16	16	16
29	16	16	16	16	16	16	16	16	16	16	16	20	20	16	16	16	16	16	12	16	16	16	16	16
30	16	16	16	16	16	16	16	16	16	16	16	16	16	20	17	16	16	16	16	16	16	16	16	16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	16	16	16	16	16	16	16	16	16	18	20	19	17	16	16	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	16	17	20	20	20	19	17	16	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	16	17	17	17	16	16	16	15	16	16	16	16	16	16

NOV. 2014 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	292	279	293	322	338	298	299	351	351	346	330	335	R 315	311	R 311	313	327	327	335	307	306	316	305	297
2	282	289	304	336	310	287	313	360	354	345	R 352	334	317	315	R 325	339	319	344	345	326	323	331	311	301
3	283	287	304	328	361	271	303	350	365	345	328	335	308	317	311	321	323	338	336	305	293	322	342	314
4	307	327	311	329	363	378	303	354	352	316	R 329	348	308	311	322	324	R 341	351	320	296	317	313	332	341
5	276	279	266	332	398	284	279	316	331	R 329	326	R	309	319	315	R	343	351	327	332	299	307	326	308
6	295	316	330	294	316	289	299	337	342	338	330	336	R 313	U R 314	312	311	351	337	334	302	306	333	318	283
7	295	312	339	345	312	285	308	354	359	347	331	335	R 316	315	R 315	317	347	347	312	308	327	329	307	293
8	304	304	311	324	323	288	319	354	362	338	334	338	307	R 300	317	322	330	340	302	295	314	333	318	309
9	305	302	298	323	344	369	308	351	362	343	341	330	326	316	322	335	337	357	326	323	306	329	329	306
10	285	288	284	307	321	289	301	344	363	347	325	325	311	298	R	R 307	314	327	320	309	305	324	285	265
11	304	327	281	270	286	328	274	339	349	339	332	326	327	317	311	317	326	338	322	318	329	326	342	288
12	287	318	300	328	350	315	H 301	345	368	342	341	334	322	R 307	297	308	316	339	337	297	301	319	322	290
13	296	307	307	310	326	284	318	342	353	338	R 330	340	322	312	R 306	J R 291	340	H 316	329	334	298	315	320	292
14	295	298	305	310	310	310	311	352	351	365	338	346	337	299	316	340	338	335	330	304	325	321	355	337
15	293	278	291	311	348	280	279	339	364	361	327	339	325	R 320	302	312	322	331	326	312	310	278	297	289
16	295	322	325	329	318	277	298	345	347	352	353	314	324	307	306	326	315	318	314	309	317	343	286	284
17	281	276	294	298	273	275	307	343	320	332	336	325	R 305	J R 289	302	J R 309	R	336	320	324	295	312	311	289
18	273	299	334	300	322	341	303	328	350	349	344	329	R 324	317	R	R 319	327	325	326	322	311	318	339	279
19	280	286	281	301	311	272	289	340	367	350	340	326	312	320	R 329	332	316	328	322	330	329	330	315	287
20	281	283	305	303	289	288	297	334	362	355	344	334	314	309	R 354	341	323	326	330	336	317	282	289	301
21	299	310	310	277	269	277	303	347	371	343	331	341	324	R 323	338	342	310	R 335	350	300	299	301	305	318
22	288	281	273	279	296	284	294	349	369	347	337	325	313	R	326	327	322	321	347	345	297	290	308	340
23	292	293	299	321	356	278	279	331	363	358	336	333	312	313	330	322	333	335	348	337	316	321	294	280
24	293	299	311	319	303	290	281	320	341	U R 347	329	U R 327	324	317	309	320	320	337	370	348	294	325	299	320
25	295	298	286	281	317	286	293	335	341	365	325	333	324	302	313	324	330	344	334	322	301	322	R 315	277
26	301	320	311	269	272	272	298	347	358	359	328	318	334	R 313	313	U R 319	324	347	329	330	301	R 314	322	305
27	298	303	315	304	289	269	270	339	369	370	341	330	324	319	328	320	325	328	339	323	310	350	359	299
28	323	286	283	285	281	309	322	355	382	357	346	336	325	304	326	318	322	R 340	322	320	312	319	310	289
29	279	276	301	336	346	281	315	331	356	347	330	R 343	331	321	308	311	321	333	338	287	306	325	334	310
30	290	289	314	342	350	257	A	348	367	346	341	341	319	309	312	323	320	321	331	318	332	321	282	303
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	29	30	30	30	30	29	30	29	28	29	29	30	30	30	30	30	30	30
MED	293	298	304	310	318	286	301	344	358	347	333	334	320	313	314	320	324	336	330	319	308	321	315	298
U Q	298	310	311	328	346	298	308	351	365	355	341	338	324	317	326	326	335	340	337	330	317	329	329	309
L Q	283	286	291	298	296	277	291	337	350	342	329	326	312	307	310	312	320	327	322	305	301	314	305	288

NOV. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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								450		L	L	L	L	U L 363	L	L								
2								A	L 410	L	L	L	L	U L 383	L	L	L							
3								506		460	L	L	L	L	L	L								
4										L	L	L	L	L	L	L								
5									L	L	L	A	A	L	L	L								
6										L	L	L	L		L	L	A							
7									493	L	L	L	L	L	A	L		413						
8										457	U L 410	L	L	L	L	L								
9								442	U L 425	U L 432	L	L	L	L	L	L								
10										L	L	L	L	L	L		L							
11									466	L	L	L	U L 402	L	L	L	A	441						
12									460	L	L	L	L	L	L	L	L							
13										L	L	L	L	L	L	L	L	398						
14										L	L	L	L	L	L	L								
15								507	496		L	U L 411	L	L	L	L								
16											L	L	L	L	L	L								
17									473	L	L	L	L	L	L	L	L	456						
18										L 422	L	L	L	L	L	U L 399	L	413						
19									447	L	U L 420	L	L	L	L	L	L							
20									458		L	L	L	L	U L 400		L							
21											L	L	L	U L 356	L	L	L							
22									511	L	L	L	L	L	L		455	456						
23									484			L	L	L	L	L								
24									A	L	L	L	L	U L 399	L	L								
25									455	L	L	L	L	L	L	L								
26										L	L	L	L	L	L	L								
27										L	L	L	L	L	L	L		A						
28											L	L	L	L	L	L	A							
29								401		L	L	L	L	L	L	L								
30											L	L	L	L	L	L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								5	12	4	2	1	1	4	1	1	1	6						
MED								450	463	444	U L 415	U L 411	U L 402	U L 373	U L 400	U L 399	455	427						
U Q								506	488	458				U L 391				456						
L Q								422	451	L 427				U L 360				413						

NOV. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV.2014 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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								222		218	240	232	260	272	248	242								
2								210	208	234	232	218	234	256	230	226	208							
3								216		216	260	244	236	268	240	252								
4										290	232	238	282	290	266	244								
5									244	234	236	240	230	290	264	236								
6										238	252	236	222		262	240	216							
7									212	226	248	236	230	262	260	236		198						
8										224	224	242	H 232	290	268	236								
9								218	214	214	234	236	232	266	242	230								
10										230	244	256	244	304	220		224							
11									222	234	256	240	234	252	246	264	222	206						
12									206	234	252	244	224	258	296	258	236							
13										216	256	242	238	264	256	232	226	198						
14										224	244	240	228	276	260	238								
15								240	210		252	236	238	240	222	260								
16											228	282	250	248	242	228								
17									222	242	238	230	244	238	228	232	224	206						
18										210	226	242	252	260	236	226	210	208						
19									210	216	220	218	262	274	240	212	206							
20									216		230	234	240	274	246		228							
21											234	226	230	282	224	224	270							
22									200	228	228	222	252	258	232		222	228						
23									216			222	286	284	242	226								
24									218	230	240	232	242	238	278	238								
25									220	222	220	242	244	230	260	240								
26										216	214	220	236	264	246	230								
27										218	218	228	230	232	246	256		216						
28											222	234	254	286	244	238	242							
29								224		210	250	232	234	256	240	226								
30											226	226	226	268	246	230								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								6	14	23	29	30	30	29	30	27	13	7						
MED								220	215	224	234	236	237	264	246	236	224	206						
U Q								224	220	234	249	242	250	279	260	242	232	216						
L Q								216	210	216	226	228	230	254	240	228	213	198						

NOV.2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'E KSWEEP 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	278	296	280	236	226	258	264	198	214	204	210	H 202	202	196	230	218	222	216	210	248	248	230	242	256
2	294	286	268	234	248	272	248	A	184	H 184	192	H 204	H 180	186	H 214	216	206	218	222	210	228	208	212	254
3	284	288	258	218	198	262	268	158	210	188	214	200	200	238	226	228	220	218	200	226	256	242	218	222
4	262	234	258	242	220	200	262	216	208	H 202	222	214	H 226	H 220	220	240	228	196	202	220	242	242	214	214
5	286	302	336	240	196	326	326	246	222	220	218	A	A	H 210	216	230	206	198	204	202	258	244	220	260
6	274	296	226	246	230	280	264	216	218	H 208	218	224	216	252	210	222	A	198	198	212	240	224	228	274
7	278	254	220	224	230	252	256	224	160	212	212	A	A	206	A	216	218	A	196	224	208	226	218	270
8	260	260	230	240	242	248	220	214	210	182	210	206	H 184	166	232	222	204	194	190	246	222	230	224	258
9	244	266	276	236	228	212	230	174	200	198	216	212	208	198	220	220	222	212	198	220	214	230	204	246
10	288	300	298	276	242	258	228	218	212	208	200	212	H 190	H 192	212	A	H 216	216	212	220	224	220	226	282
11	252	218	274	314	286	214	H 248	230	172	224	216	212	196	H 194	230	212	A	190	204	240	260	222	210	270
12	276	250	280	228	228	234	224	204	188	200	220	220	210	194	230	228	232	224	200	202	220	224	224	248
13	266	264	262	246	226	280	242	220	208	208	214	208	186	H 178	226	222	224	A	194	204	204	218	230	218
14	268	268	270	260	250	254	260	222	220	220	H 204	204	186	202	224	222	216	212	202	220	244	212	208	210
15	286	314	294	246	212	320	328	144	162	210	206	H 194	208	206	202	H 204	220	198	206	216	222	226	230	274
16	264	234	230	224	222	290	254	218	214	218	224	210	232	A 244	220	A	210	218	222	224	218	210	250	292
17	310	298	266	230	306	316	230	232	190	230	226	216	200	198	220	210	H 204	148	188	198	218	222	226	254
18	322	264	228	266	230	214	258	234	220	198	H 208	H 192	H 202	H 200	200	204	202	192	192	204	226	226	206	274
19	298	286	296	268	232	292	284	236	198	204	198	H 202	224	H 200	224	A 206	206	216	198	218	208	222	206	264
20	298	306	258	250	260	290	268	214	194	218	206	194	210	H 204	192	216	210	216	200	196	204	246	240	238
21	248	250	256	318	332	328	244	222	210	206	H 196	H 214	222	H 186	220	A	254	232	202	220	244	254	222	220
22	286	310	328	318	276	286	278	230	136	212	212	194	H 186	H 192	228	220	198	202	198	200	204	224	220	210
23	264	288	276	236	208	292	296	240	168	216	214	206	198	H 220	238	220	216	216	192	220	240	214	250	274
24	272	244	250	232	264	268	294	234	A	220	220	H 204	H 200	204	H 206	212	214	218	196	206	242	228	228	234
25	254	276	292	290	246	258	280	226	H 168	220	208	H 188	218	216	208	220	226	202	186	206	230	214	192	254
26	236	234	262	306	320	338	274	226	216	212	206	206	224	210	214	216	214	208	188	200	236	214	202	228
27	274	262	256	262	306	330	316	244	206	214	206	208	208	210	212	218	218	A	206	218	208	216	198	252
28	236	288	312	314	298	250	244	210	204	210	198	190	220	230	230	228	A	206	186	232	198	226	208	264
29	300	318	274	228	222	296	248	A	210	210	202	226	212	216	210	218	224	204	188	192	260	220	224	242
30	276	282	236	222	256	386	A	226	212	214	212	206	214	210	218	222	218	220	216	226	214	206	230	236
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	29	28	29	30	30	28	28	30	29	27	27	27	30	30	30	30	30	30
MED	275	279	267	244	237	276	260	222	208	210	211	206	208	204	220	220	216	212	199	218	225	224	221	254
U Q	286	296	280	268	264	296	279	231	213	218	216	212	217	216	227	222	222	218	204	224	242	230	228	270
L Q	262	254	256	232	226	252	244	214	186	204	206	201	197	H 194	211	216	206	198	192	204	214	216	208	234

NOV. 2014 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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								108	100	96	96	A	A	A	108	110	108	106						
2								116	118	A	118	114	A	108	106	108	104	A						
3								132	114	112	118	102	102	108	108	106	A	A						
4								130	124	110	98	98	110	110	110	A	104	116						
5								116	102	100	100	100	100	100	A	100	100	138						
6								A	104	100	100	106	106	B	A	114	114	A						
7								138	102	100	98	98	B	104	108	104	104	112						
8								124	106	98	100	106	104	104	102	112	104	132						
9								A	110	A	110	110	110	108	106	110	116	A						
10								136	110	100	100	100	104	A	108		A	A						
11								150	100	98	96	110	96	96	100	106	106	A						
12								138	110	114	104	112	102	104	102	A	112	A						
13								140	102	100	100	102	100	100	114	A	102	160						
14								120	102	110	98	100	104	104	106	102	106	A						
15								B	100	100	100	102	104	102	100	112	104	B						
16								144	98	104	112	104	106	106	114	112	112	B						
17								136	102	100	108	106	108	108	104	A	104	108						
18								108	102	100	100	102	100	100	106	106	104	A						
19								148	106	96	96	108	108	98	96	100	118	A						
20								150	102	102	98	98	A	96	112	A	106	154						
21								150	104	100	102	96	A	98	A	A	A	A						
22								116	122	116	112	106	106	102	102	106	106	E B 130						
23								142	106	96	94	96	100	100	100	100	104	B						
24								A	114	A	114	108	106	106	102	102	106	110						
25								142	102	116	114	108	104	104	100	110	106	132						
26								152	104	100	102	100	100	100	A	A	106	160						
27								A	114	100	100	108	106	108	A	110	112	A						
28								128	112	100	100	100	104	100	98	98	A	A						
29								146	106	96	96	98	108	A	110	110	110	A						
30								A	106	106	112	112	110	106	110	108	108	A						
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								24	30	27	30	29	25	26	25	22	26	12						
MED								137	105	100	100	102	104	104	106	107	106	131						
U Q								145	110	106	110	108	107	106	109	110	110	146						
L Q								122	102	100	98	100	101	100	101	102	104	111						

NOV. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	90	88	84	92	B	B	B	176	132	104	104	98	98	98	190	150	112	102	98	96	96	98	88	90
2	86	90	90	86	98	92	88	G	122	116	96	98	98	116	116	112	128	102	96	B	B	94	B	90
3	92	B	92	B	B	B	102	150	180	130	128	112	94	160	164	130	118	116	86	84	88	88	88	92
4	94	90	86	B	B	B	B	136	104	148	116	118	186	160	166	142	130	134	B	94	96	92	92	92
5	94	B	92	94	B	94	B	170	132	122	112	102	102	104	128	100	100	142	108	B	B	B	B	94
6	94	88	86	90	B	B	B	130	112	110	108	106	108	B	118	102	108	100	102	104	100	100	94	92
7	B	B	B	B	B	B	B	172	152	136	128	112	112	132	104	106	G	114	B	B	B	B	B	B
8	B	B	B	B	B	B	B	174	160	122	146	110	112	114	112	180	184	202	98	108	92	90	B	B
9	B	B	B	B	B	B	B	132	100	100	172	162	112	114	100	94	154	86	86	106	100	88	84	86
10	B	B	B	90	B	92	110	150	142	120	104	102	184	96	96	92	88	90	86	84	84	B	B	B
11	120	B	B	B	B	B	160	G	170	128	108	116	110	104	120	134	108	90	152	88	100	B	B	B
12	B	B	98	110	100	100	98	G	122	120	128	110	106	106	102	96	96	88	90	94	90	90	96	B
13	B	B	B	B	B	B	90	172	134	150	132	112	106	104	100	98	G	158	96	94	B	B	B	B
14	B	B	B	B	B	B	B	138	134	114	106	G	94	194	144	156	158	82	90	B	96	96	B	B
15	96	B	B	B	B	B	B	144	114	112	106	108	106	106	106	98	98	138	B	96	B	B	B	94
16	B	B	B	94	B	B	B	G	174	158	144	148	122	114	132	112	118	106	142	94	94	94	88	98
17	96	B	B	92	92	B	B	G	104	112	122	112	112	108	102	98	98	112	92	92	88	B	B	B
18	B	B	96	B	B	90	92	88	G	G	122	118	110	180	94	96	112	88	90	B	B	B	B	B
19	B	B	B	90	B	90	B	G	188	G	182	98	180	G	136	110	156	98	94	98	B	B	B	118
20	112	B	100	104	98	B	98	88	180	G	112	106	184	102	98	90	166	198	92	B	B	B	100	B
21	B	100	94	94	100	B	B	100	94	104	104	102	98	106	96	92	90	88	88	86	86	84	84	88
22	88	B	B	98	96	100	106	112	126	100	100	126	94	94	82	94	94	90	B	B	84	B	B	B
23	B	100	B	B	B	110	104	104	156	172	120	114	112	112	210	150	118	110	B	94	94	90	90	88
24	B	B	B	B	92	84	84	98	158	184	202	96	98	96	94	92	212	90	92	88	90	88	92	94
25	92	104	B	B	B	96	B	96	134	176	188	134	122	112	108	120	G	G	B	90	86	90	94	90
26	B	B	B	88	B	B	B	88	110	108	110	112	100	102	98	98	172	G	92	92	108	90	B	B
27	B	B	B	B	98	B	98	88	150	174	140	100	100	98	100	100	112	156	88	102	114	94	88	88
28	88	B	98	92	92	B	B	98	118	112	108	102	102	102	102	100	96	96	104	92	96	90	88	94
29	82	94	B	100	B	B	B	100	108	106	100	100	98	100	98	96	98	98	94	94	90	90	86	86
30	B	100	100	102	96	98	92	96	148	92	142	120	94	96	94	96	88	88	86	88	B	B	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	9	12	16	10	11	13	24	29	27	30	29	30	28	30	30	27	28	24	23	21	18	15	17
MED	93	94	93	93	97	94	98	121	134	120	118	110	106	106	103	100	112	101	92	94	94	90	88	92
U Q	96	100	98	99	98	100	105	150	157	148	140	117	112	114	128	120	154	125	98	96	98	94	94	94
L Q	88	89	88	90	92	90	91	97	113	108	106	102	98	101	98	96	98	90	89	88	88	90	88	88

NOV. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

NOV. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT.31°12.0'N LON.130°37.0'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	F1	F1	FF21	F1				H1	H1	C2	C2	L2	L1	L1	HL11	HL11	CL22	CL31	F8	F8	F5	F2	F5	F1
2	F2	F1	F1	F2	F1	F1	F1		CL12	CL12	L1	LC11	L1	CL11	CL11	CL12	C1	C4	F8			F1		F1
3	F1		F1				F1	H2	HL12	HL11	CL11	CL11	L1	HCL11	HL11	HL12	CL22	CL22	F4	F6	F2	F3	F2	F1
4	F1	F1	F1					H2	L1	HL11	C1	C1	HL11	HL21	HL11	HLL11	CHL11	HHL21		F1	FQ41	FF41	FF41	F3
5	FF11		F2	F1		F1		HL11	H1	C1	C1	C2	C2	C1	CC11	CC21	C2	HL11	FF11					F3
6	FF21	FQ31	F3	FF11				LL11	C2	C1	C1	C1	C1		C1	L1	CL22	L2	FQ11	FQ11	F1	F1	F1	F1
7								H2	H1	H1	C1	C1	C1	H1	C2	C1		C1						
8								H2	H1	C2	H1	CL11	CL11	CL11	C1	HL11	H1	H1	F1	F2	F2	FF21		
9								LL11	LC12	LC21	HL11	HL11	CL11	CL12	L1	L2	HL12	L4	F3	FF12	FF12	FF21	F1	F1
10				F1		F1	F1	H2	HL21	C1	C1	C1	HL11	L2	LH21	L5	L3	L2	F3	F2	F1			
11	F1						F1		H1	C1	C1	CL11	C1	C1	CC21	HL11	CL41	L3	FF11	FQ11	FF51			
12			F4	F1	F1	F1	F1		CL11	CL11	CL11	CL11	CL11	CL11	C2	L2	L1	L5	FF11	FQ11	FQ21	F1	F1	
13							F1	HL11	HL11	H1	H1	C1	C1	C1	L1	L1		H1	F2	F1				
14								H1	HC11	C1	C1		L1	HL11	HL11	H1	HL12	L2	FF11		F3	F1		
15	F2							HL11	C2	C1	C1	CL12	CL11	CL11	CL11	L1	L1	HL11		F1				F1
16				F1					H1	HL11	HL11	HL11	CL11	CL21	HL11	CL22	CL21	C7	FF16	FFF21	F4	FF11	F1	F1
17	F1			F1	F1				C1	C1	CL11	CL11	CL11	CL11	CL21	L2	L1	CL11	F2	F1	F1			
18			F1			F1	F1	L3			CL11	CL11	C1	HL11	L1	L1	C1	L1	F1					
19				F2		F1			H1		H1	L1	HL11		H1	C2	HL12	LH21	F3	F1				F1
20	F1		FF21	F1	F1		F1	L1	H1		C1	C1	HC11	C1	L1	L2	H1	H2	F1				F2	
21		F1	FQ11	FQ11	F1			L1	L1	C2	C1	C1	L2	C1	L4	L4	L4	L4	F6	F5	F5	F3	F4	F1
22	F1			F1	F1	F2	F1	CL11	CL11	L1	L1	CL11	L1	L1	L1	L2	LH11	LH11			F1			
23		F1				F1	F1	L1	HL11	H1	C1	C1	C1	C1	H1	H1	C3	C3		F4	F3	F2	F1	F2
24					FQ11	FQ21	F1	L4	HL11	HL12	HL12	L1	L1	L1	L1	L2	HL12	LH21	FQ11	F4	F5	F5	F1	F1
25	F1	F1				F1		L1	H1	HL11	HL11	HL11	CL11	CL11	C1	CL11				F3	F4	F2	F1	F1
26				F1				L1	C2	C1	CL11	CL11	C2	C1	L2	L2	HL11		F1	F1	FF13	F1		
27					F1		F1	L3	HL11	H1	HL11	L1	L1	L1	L2	L2	CL11	HC11	F1	F2	F2	F3	F1	F2
28	F1		F1	F1	F1			L1	CL11	C2	C1	C1	C2	C2	C2	C3	L4	L5	F1	F5	F1	F3	F2	F1
29	F2	FF22		F1				L1	C2	C2	C2	C1	L1	L1	L2	L2	L2	L2	F5	F5	F4	F2	FF21	F1
30		F3	F3	FF21	F3	F2	F6	L2	HL11	L2	HL11	CL11	L1	L1	L1	L1	L3	L5	FQ41	F1				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E ;SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 66	X 59	X 58	X 61	X 61	X 39	X 42													X 136	X 126	X 117	X 86	X 69
2	X 59	X 58	X 65	X 64	X 55	X 42	X 47													X 90	X 83	X 80	X 76	X 64
3	X 62	X 62	X 59	X 60	X 38	X 34	X 39													X 121	X 126	X 132	X 131	X 113
4	X 82	X 88	X 90	X 77	X 54	X 44	X 38											C	C	X 126	X 133	X 137	X 126	X 71
5	X 52	X 50	X 48	X 68	X 44	X 28	X 32				C	C			C	C	C			X 96	X 92	X 97	X 97	X 70
6	X 61	X 59	X 58	X 40	X 35	X 36	X 39					C	C	C	C					X 128	X 132	X 131	X 110	X 96
7	X 80	X 68	X 68	X 48	X 45	X 35	X 38			C								C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			X 134	X 136	X 125	X 94	X 70
9	X 64	X 52	X 49	X 61	X 53	X 40	X 34													X 99	X 103	X 96	X 84	X 56
10	X 44	X 43	X 44	X 46	X 48	X 41	X 42													X 135	X 136	X 153	X 130	X 111
11	X 114	X 92	X 63	X 49	X 43	X 50	X 39													X 96	X 98	X 85	X 75	X 63
12	X 56	X 52	X 46	X 43	X 39	X 36	X 34													X 139	X 128	X 131	X 121	X 102
13	X 78	X 74	X 84	X 80	X 74	X 53	X 52													X 130	X 132	X 125	X 116	X 92
14	X 70	X 59	X 54	X 52	X 54	X 54	X 42													X 111	X 102	X 118	X 98	X 66
15	X 52	X 48	X 45	X 47	X 38	X 33	X 33													X 93	X 99	X 92	X 85	X 67
16	X 66	X 58	X 46	X 38	X 36	X 35	X 38													X 126	X 118	X 107	X 80	X 57
17	X 55	X 54	X 57	X 52	X 38	X 44	X 51													O X 145	X 142	X 136	X 122	X 100
18	X 85	X 83	X 80	X 65	X 53	X 38	X 34													X 134	X 149	X 150	X 116	X 84
19	X 66	X 63	X 54	X 48	X 44	X 38	X 40													X 121	X 115	X 111	X 96	X 68
20	X 50	X 46	X 52	X 51	X 42	X 41	X 40													X 113	X 94	X 86	X 82	X 78
21	X 54	X 49	X 47	X 36	X 39	X 36	X 47													X 86	X 91	X 89	X 92	X 63
22	X 43	X 41	X 40	X 40	X 42	X 40	X 40													X 123	X 110	X 112	X 105	X 92
23	X 64	X 59	X 64	X 71	X 58	X 33	X 34													X 82	X 76	X 80	X 80	X 74
24	X 72	X 68	X 63	X 60	X 43	X 38	X 40													X 98	X 94	X 100	X 96	X 73
25	X 59	X 56	X 52	X 50	X 51	X 34	X 36													X 139	X 146	X 128	X 122	X 102
26	X 86	X 73	X 67	X 60	X 59	X 55	X 66													X 121	X 106	X 106	X 109	X 80
27	X 69	X 68	X 69	X 58	X 57	X 58	X 62													X 104	X 110	X 109	X 102	X 86
28	X 67	X 56	X 47	X 49	X 51	X 56	X 52													X 112	X 108	X 113	X 82	X 63
29	X 54	X 52	X 55	X 59	X 47	X 34	X 42													X 112	X 100	X 117	X 98	X 64
30	X 54	X 55	X 59	X 44	X 36	X 31	X 35													X 115	X 108	X 100	X 83	X 66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29													29	29	29	29	29
MED	X 64	X 58	X 57	X 52	X 45	X 38	X 40													X 121	X 110	X 112	X 97	X 71
U Q	X 71	X 68	X 64	X 61	X 54	X 44	X 44													X 132	X 132	X 130	X 116	X 92
L Q	X 54	X 52	X 48	X 46	X 39	X 34	X 36													X 98	X 98	X 96	X 84	X 65

NOV. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	60	53	52	55	55	33	36	70	99	110	125	134	132	150	150	150	R 150	144	140	130	120	111	80	63
2	53	52	59	58	49	36	41	75	95	112	127	126	102	124	135	123	120	124	112	84	77	74	70	58
3	56	56	53	54	32	28	33	71	93	100	111	126	129	147	148	R 146	J R 148	R 146	136	115	120	126	R 125	107
4	76	82	84	71	48	38	32	65	88	102	127	135	132	137	148	150	148	C	C	R 120	127	131	120	65
5	R 46	44	42	62	38	22	26	59	114	138	C	C	R 120	135	C	C	C	110	R 103	90	86	91	91	64
6	55	53	52	34	29	30	33	71	98	118	140	C	C	C	C	U R 167	U R 168	U R 146	R 134	122	126	125	104	90
7	74	62	62	42	39	29	32	70	98	C	114	126	123	123	142	144	143	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R 154	R 143	128	130	R 119	88	64
9	58	46	43	55	47	34	28	68	87	96	113	120	117	124	136	J R 136	136	R 133	105	93	97	90	78	50
10	38	37	38	40	42	35	36	68	93	108	114	119	119	130	150	144	147	147	R 145	R 129	130	U R 147	124	J R 105
11	J R 108	86	57	43	37	44	33	71	104	118	128	135	119	124	128	137	130	116	96	90	92	79	69	57
12	49	46	40	37	33	30	28	60	93	97	124	139	139	137	153	U R 170	U R 166	U R 171	U R 165	133	122	125	115	96
13	72	68	78	74	68	47	46	74	93	103	126	136	134	142	152	R 156	R 153	R 151	R 132	124	126	119	110	86
14	64	53	H 48	46	48	48	36	69	95	116	124	123	126	U R 122	150	144	120	112	116	U R 105	U R 96	112	92	60
15	46	42	39	41	32	27	27	69	102	104	107	118	R 130	120	129	126	126	120	102	87	93	86	79	61
16	60	52	40	32	30	29	32	67	97	110	110	105	119	129	135	130	123	112	120	120	112	101	74	51
17	49	48	51	46	32	38	45	68	100	137	155	140	135	141	R 156	156	146	147	144	R 139	U R 136	R 130	116	94
18	79	77	74	59	47	32	28	59	98	121	110	118	136	144	144	144	145	R 144	136	U R 128	U R 143	J R 144	R 110	R 78
19	60	57	48	42	38	32	34	70	118	116	105	116	116	135	146	127	117	124	122	115	R 109	J R 105	90	62
20	44	40	46	45	36	35	34	67	98	118	108	114	119	R 117	R 118	132	113	114	115	107	88	80	76	72
21	48	43	43	30	33	30	41	65	106	119	R 124	116	116	124	140	109	105	126	125	80	85	83	86	57
22	37	35	34	34	36	34	34	65	108	112	122	118	119	134	138	118	110	116	126	117	R 104	J R 106	99	86
23	58	53	V 58	65	52	27	28	R 64	110	108	112	110	116	130	137	125	113	104	101	76	70	74	74	68
24	66	62	57	54	37	32	34	63	100	126	130	R 151	134	136	141	135	136	J R 134	130	92	88	94	90	67
25	53	50	J R 46	44	45	H 29	30	60	101	137	123	124	134	138	144	149	147	149	144	133	140	122	116	96
26	80	67	61	54	53	49	60	92	109	115	122	132	142	R 148	R 152	155	R 147	141	R 132	115	R 100	100	103	74
27	63	62	63	52	51	52	56	86	123	104	100	114	137	144	140	134	127	116	103	98	104	R 103	96	80
28	61	50	41	43	45	50	46	67	100	100	98	98	116	127	137	138	R 134	132	118	106	102	J R 107	76	57
29	48	46	49	53	41	28	36	70	99	119	110	118	119	125	126	133	133	138	124	R 106	94	111	92	58
30	48	49	53	38	30	25	29	73	110	112	122	119	116	124	140	139	129	130	116	109	R 102	94	77	60
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	58	52	51	46	39	32	34	68	99	112	122	120	122	132	141	138	135	132	124	115	104	106	91	65
U Q	65	62	58	55	48	38	38	71	107	118	126	134	134	140	150	150	R 147	R 146	136	126	126	124	110	86
L Q	48	46	42	40	33	29	30	65	95	104	110	116	118	124	136	131	122	116	114	92	92	90	78	59

NOV. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	UL 560	L									
2										L		L	L	UL 524	L									
3									324		L	L	L	L	L	L								
4											L	L	L	UL 552	L	L		C	C					
5										L	C	C		L	C	C	C							
6										L	L	C	C	C	C	L	L							
7										C	L				UL 592			C						
8							C	C	C	C	C	C	C	C	C	C	C							
9										L	L	L	L	L	L	L	L							
10											L	L	L	L	L	A	A							
11										L	L	L	L	L	L	L	L							
12											L	L	L	L	L	L	L							
13										L	L	L	L	L	L	L								
14											L	L	L		UL 528									
15										L	UL 496	L	L	L	L	L								
16											L	L		L	L									
17										L	L	L		L	L	L		232						
18											L	L	L	L	L	L	L							
19										L	L	L		L	L									
20											L	L	L	L	L	L								
21										L	L	L	L	L	A	A								
22									L	L	B	L	L	L	L									
23											L	L	L	L	L									
24										L	L	L	L	L	L									
25										L	L	L		L	L	L								
26											L	L	L	L	L	L								
27												L	L	L	L	L								
28											L		L	L	L	L								
29										L		L	L	L	L									
30										L	L	L	L	L	L	L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1		1			3	2			1						
MED									324		UL 496			UL 552	UL 560			232						
U Q														UL 560										
L Q														UL 524										

NOV. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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								192	264	A	UR 324	A	A	A	UA 380	364	296	212	B					
2								192	268	324	R	R	R	B	364	332	UA 284	A	A					
3								192	260	304	360	UR 356	A	R	UR 372	324	A	A	A					
4								200	B	UR 332	R 356	R 368	A	A	A	A	296	C	C					
5								188	A	332	C	C	364	R 360	C	C	C	A	A					
6								A	A	308	360	C	C	C	C	B	A	A	B					
7								A	284	C	UR 324	A	B	B	B	340	300	C						
8							C	C	C	C	C	C	C	C	C	C	C	R 212	B					
9								B	268	320	R	R	UR 352	R	R	356	272	212	A					
10								A	276	R 316	340	A	352	A	A	A	A	A	A					
11								208	256	R 312	332	R 348	R 400	UR 376	R	320	284	224	A					
12								192	264	308	UR 332	B	B	A	A	A	A	UR 208	B					
13								B	264	A	A	UR 384	A	B	A	A	296	192	B					
14								180	276	304	R	R	B	B	UR 388	R 336	288	220	B					
15								188	256	300	324	348	A	A	R	A	288	208	B					
16								208	256	316	356	UR 364	UR 376	R	A	A	280	A	A					
17								180	256	304	356	356	A	A	A	328	R 272	A	B					
18								192	256	320	R 316	B	R	R	336	R 328	276	A	A					
19								180	260	R	348	B	R	UR 368	R 380	336	A	212	A					
20								B	268	A	R	R	R	B	A	A	UR 288	UA 212	B					
21								A	A	A	A	A	A	A	A	A	A	212	A					
22								A	244	312	B	R 344	R	A	A	332	UR 276	220	A					
23								192	252	316	R 376	368	UR 380	R	R 336	332	292	A	B					
24								180	256	A	R	A	B	R	A	A	A	A	A					
25								184	248	312	340	R 388	UR 388	372	A	A	A	A	B					
26								A	256	A	356	A	364	A	A	A	A	A	B					
27								176	260	R 316	R 336	R 348	B	UR 384	UR 368	A	A	A	A					
28								A	264	300	A	A	356	A	R 348	A	A	A	A					
29								180	R 228	UA 292	332	A	A	A	A	A	A	A	A					
30								A	260	312	A	A	UR 368	UR 360	UR 360	A	276	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								18	25	21	18	11	10	6	10	12	16	12						
MED								190	260	312	340	R 356	R 366	UR 370	R 366	332	286	212						
U Q								192	266	318	356	R 368	UR 380	UR 376	UR 380	338	294	216						
L Q								180	256	304	R 332	R 348	356	R 360	R 348	328	276	210						

NOV. 2014 foE (0.01MHz)

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E kSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	36	35	35	J A 44	44	46	43	40	G	23	E B 14	E B 14	J A 27	E B 13	E B 13	19
2	E B 13	J A 20	E B 13	J A 16	E B 13	E B 13	E B 13	22	G	36	45	G 32	G 28	E B 40	G	G	34	28	J A 20	J A 22	J A 19	E B 13	E B 14	E B 13
3	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	19	G	G 24	G 27	40	G	39	G 33	42	36	J A 46	J A 63	J A 38	J A 18	J A 21	J A 20	J A 19	19
4	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	E B 32	G	G	J A 79	42	48	44	J A 42	36	C	C	E B 13	J A 22	E B 13	J A 22	E B 13
5	E B 13	J A 20	E B 13	E B 13	E B 13	E B 13	E B 13	G	31	G	C	C	J A 50	J A 48	C	C	C	J A 47	J A 22	J A 29	J A 20	E B 13	J A 20	E B 13
6	E B 13	J A 28	J A 32	J A 27	A E 17	B E 13	E B 13	19	30	34	G	C	C	C	C	E B 40	31	23	19	J A 20	E B 13	B J 20	J A 20	E B 13
7	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	30	C	G	J A 50	56	J A 52	E B 40	G 32	G	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	E B 14	E B 14	J A 19	E B 13	J A 29	E B 13
9	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 21	G	G	G 25	G 26	G 29	G 25	45	38	G	G	J A 31	J A 40	E B 13	E B 13	J A 26	E B 13
10	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	26	34	J A 47	J A 53	J A 47	42	J A 52	J A 42	J A 42	J A 51	J A 43	J A 34	J A 17	E B 13	E B 13	E B 13	E B 13
11	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	G	G	G	48	46	G 26	37	G	G	J A 22	J A 20	E B 13	21	J A 26	E B 13
12	E B 13	E B 13	E B 13	E B 13	E B 13	B J 20	21	J A 19	G	G	G	45	E B 43	J A 43	40	40	26	G 18	20	J A 19	18	E B 13	E B 13	J A 18
13	22	18	E B 13	20	J A 20	J A 17	19	E B 20	G	32	35	G	37	E B 41	J A 44	44	G 25	22	E B 14	E B 13	J A 22	A J 19	E B 13	E B 13
14	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G 24	35	G	J A 42	E B 42	E B 42	42	39	31	25	J A 16	J A 22	J A 20	A J 20	21	E B 13
15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	33	40	41	43	38	G 25	37	G 24	G 18	J A 16	J A 20	J A 29	19	E B 13	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	29	35	39	J A 41	47	45	J A 52	40	J A 72	24	23	J A 41	17	J A 18	E B 13	E B 13
17	E B 13	E B 13	20	E B 13	E B 13	E B 14	E B 13	G	G	32	G	43	J A 52	A J 59	A J 42	G 28	G 25	J A 28	A J 18	19	19	E B 13	E B 13	E B 13
18	E B 13	E B 13	E B 13	E B 14	E B 13	E B 13	J A 26	G	G	36	G 23	E B 41	31	30	38	G 23	32	J A 26	A J 21	19	E B 13	E B 13	E B 13	E B 13
19	E B 13	E B 13	E B 13	E B 13	20	19	E B 13	G	G	G	G	E B 40	G	G	43	43	31	24	22	J A 21	E B 13	E B 13	E B 13	E B 13
20	E B 13	E B 13	E B 13	J A 23	A J 21	19	E B 13	20	G	36	G	41	G	E B 42	42	38	G	24	E B 14	E B 14	J A 20	E B 13	E B 13	E B 13
21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 19	E B 13	18	J A 29	33	40	42	44	J A 51	J A 50	J A 59	J A 52	46	J A 73	A J 23	A J 46	A J 26	A J 22	20
22	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	27	G	E B 42	G	34	40	36	J A 39	A J 27	A J 24	A J 21	20	E B 13	E B 13	E B 13	E B 13
23	E B 13	J A 17	E B 13	E B 13	J A 17	E B 13	E B 13	G	28	35	42	44	44	G	G	36	36	28	E B 14	B J A 16	A J 30	A J 19	E B 13	E B 13
24	E B 13	E B 13	E B 13	E B 13	18	18	E B 13	G	G	40	J A 38	32	E B 41	28	40	41	J A 49	26	J A 18	A J 20	A J 16	A J 20	E B 13	E B 13
25	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	29	36	G	G	54	45	46	J A 44	A J 45	A J 34	19	J A 25	A J 24	21	E B 13	E B 13
26	E B 13	E B 13	E B 13	E B 13	E B 13	18	E B 13	20	G	38	G	42	44	J A 56	A J 43	A J 39	J A 34	24	J A 15	A J 36	E B 13	18	18	E B 13
27	E B 13	E B 13	E B 13	J A 22	A J 18	A E 13	B E 14	G	28	G 29	G	G	E B 41	G	G 34	J A 51	J A 51	28	J A 29	A J 107	A J 22	A J 22	A J 17	A J 14
28	E B 13	E B 13	E B 13	E B 14	E B 13	E B 13	E B 13	18	G	34	41	44	J A 53	A J 47	42	J A 45	A J 42	A J 47	A J 56	A J 45	A J 34	A J 19	25	J A 30
29	E B 13	E B 14	18	J A 17	A E 13	B E 13	E B 13	G	28	35	39	42	J A 44	45	A J 42	A J 45	A J 46	A J 45	A J 42	A J 42	A E 26	B E 13	E B 13	E B 13
30	20	E B 13	E B 13	E B 13	E B 13	E B 14	E B 13	20	28	G	J A 42	J A 42	G 23	G 26	G	36	G 24	J A 45	J A 39	J A 30	20	22	E B 13	19
31																								

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	34	G	41	42	42	42	40	32	26	J A 20	A J 20	J A 20	18	E B 13	E B 13
U Q	E B 13	13	E B 13	J A 14	15	16	13	20	29	36	40	J A 44	46	J A 48	A J 43	A J 42	A J 46	A J 38	A J 30	A J 30	A J 23	A J 20	A J 20	14
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	G	G	G	G 36	G	G 36	36	G	G 23	E B 16	E B 18	E B 13	E B 13	E B 13	E B 13

NOV. 2014 foEs (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E kSWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	33	35	34	40	43	45	42	40	G	22	E B 14	E B 14	24	E B 13	E B 13	E B 13
2	E B 13	18	E B 13	E B 13	E B 13	E B 13	E B 13	21	G	36	42	U G 32	U G 28	E B 40	G	G	33	26	16	E B 13	E B 13	E B 13	E B 14	E B 13
3	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G 20	G 26	40	G	39	U G 33	42	35	44	48	28	E B 13	E B 14	E B 13	E B 13	E B 13
4	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	E B 32	G	G	42	41	46	44	40	35	C	C	E B 13	E B 13	E B 13	E B 13	E B 13
5	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	30	G	C	C	49	46	C	C	C	36	16	20	18	E B 13	E B 13	E B 13
6	E B 13	20	24	20	E B 17	E B 13	E B 13	19	29	34	G	C	C	C	C	E B 40	31	22	E B 14	E B 13	E B 13	E B 13	19	E B 13
7	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	30	C	G	45	49	48	E B 40	G 29	G	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	E B 14	E B 14	17	E B 13	20	E B 13
9	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 21	G	G	U G 25	U G 26	G 29	G 25	44	37	G	G	E B 14	15	E B 13	E B 13	E B 13	E B 13
10	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	21	32	45	42	43	41	40	41	40	48	40	27	E B 14	E B 13	E B 13	E B 13	E B 13
11	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	G	G	G	42	44	U G 26	37	G	G	E B 14	16	E B 13	E B 13	25	E B 13
12	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G 10	G	G	G	43	E B 43	42	40	40	26	G 17	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
13	17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 20	G	U Y 32	U Y 35	G	U Y 37	E B 41	43	43	G 23	22	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
14	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G 21	35	G	39	E B 42	E B 42	41	38	31	24	E B 14	18	18	18	E B 13	E B 13
15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	32	39	40	43	U Y 38	U G 25	37	G 23	G 18	E B 13	18	21	E B 13	E B 13	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	28	35	38	41	44	44	45	38	70	23	18	32	E B 13	18	E B 13	E B 13
17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 13	G	G	32	G	41	47	47	40	G 26	G 24	21	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
18	E B 13	E B 13	E B 13	E B 14	E B 13	E B 13	E B 13	G	G	36	G 22	E B 41	U G 31	U G 30	37	G 22	30	23	19	16	E B 13	E B 13	E B 13	E B 13
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	G	G	E B 40	G	G	43	43	30	23	18	E B 13	E B 13	E B 13	E B 13	E B 13
20	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	G	35	G	40	G	E B 42	41	37	G	24	E B 14	E B 14	E B 13	E B 13	E B 13	E B 13
21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 19	E B 13	18	29	32	40	42	43	44	49	55	44	G 17	23	21	22	24	20	E B 13
22	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	27	G	E B 42	G	U Y 34	40	U Y 36	G 22	G 20	G 20	16	E B 13	E B 13	E B 13	E B 13	E B 13
23	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	28	34	40	44	42	G	G	35	33	26	E B 14	E B 13	20	E B 13	E B 13	E B 13
24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	38	38	U G 32	E B 41	U G 28	40	38	42	23	15	E B 13	E B 13	E B 13	E B 13	E B 13
25	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	29	36	G	G	54	44	44	42	31	30	E B 14	19	20	E B 13	E B 13	E B 13
26	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	G	37	G	42	43	44	40	38	32	23	E B 14	29	E B 13	E B 13	E B 13	E B 13
27	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	28	G 24	G	G	E B 41	G	G 33	43	44	27	25	33	16	E B 13	E B 13	E B 13
28	E B 13	E B 13	E B 13	E B 14	E B 13	E B 13	E B 13	17	G	33	41	42	44	43	40	41	40	46	29	31	23	E B 13	19	21
29	E B 13	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13	G	27	34	39	42	42	40	40	42	33	24	30	36	19	E B 13	E B 13	E B 13
30	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 13	19	28	G	38	40	G 22	G 26	G	34	G 21	33	32	22	E B 13	18	E B 13	E B 14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	32	G	40	42	42	40	38	31	23	14	E B 14	E B 13	E B 13	E B 13	E B 13
U Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	29	35	40	42	43	44	43	40	38	26	21	20	18	13	13	E B 13
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	G	G	G	G	G 36	G	G 36	G 35	G	G	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13

NOV. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	13	13	13	13	13	13	13	14	15	18	20	21	21	30	25	24	21	18	14	14	13	13	13	13
2	13	13	13	13	13	13	13	14	17	18	20	21	24	40	28	18	19	18	13	13	13	13	14	13
3	13	13	13	13	13	13	13	14	14	18	20	23	22	25	23	21	19	15	14	13	14	13	13	13
4	13	13	13	13	13	13	13	14	32	19	18	22	25	23	23	24	14	C	C	13	13	13	13	13
5	13	13	13	13	13	13	13	14	16	16	C	C	21	29	C	C	C	14	13	13	13	13	13	13
6	13	13	13	13	17	13	13	14	20	18	20	C	C	C	C	40	21	16	14	13	13	13	13	13
7	13	13	13	13	13	13	13	14	16	C	18	39	44	42	40	26	20	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	18	14	14	13	13	13	13
9	13	13	13	13	13	13	13	21	16	20	24	22	20	23	22	20	14	15	14	14	13	13	13	13
10	13	13	13	13	13	13	13	17	15	17	22	32	24	23	21	22	20	14	14	14	13	13	13	13
11	13	13	13	13	13	13	13	14	15	22	22	22	23	24	24	20	20	14	14	14	13	13	13	13
12	13	13	13	13	13	13	13	14	15	18	20	40	43	37	33	30	20	14	14	13	13	13	13	13
13	13	13	13	13	13	13	13	20	20	30	28	30	35	41	30	22	20	14	14	13	13	13	13	13
14	13	13	13	13	13	13	13	13	15	16	20	24	42	42	24	24	14	14	14	13	13	13	13	13
15	13	13	13	13	13	13	13	14	14	15	20	25	22	37	17	22	16	14	13	13	13	13	13	13
16	13	13	13	13	13	13	13	14	14	20	20	20	30	22	37	34	20	14	14	13	13	13	13	13
17	13	13	13	13	13	14	13	14	16	20	20	20	24	21	22	22	17	14	14	13	13	13	13	13
18	13	13	13	14	13	13	13	14	18	22	18	41	29	28	20	19	16	14	14	13	13	13	13	13
19	13	13	13	13	13	13	13	14	18	20	24	40	33	22	25	21	15	20	14	13	13	13	13	13
20	13	13	13	13	13	13	13	14	17	20	23	24	32	42	22	20	22	18	14	14	13	13	13	13
21	13	13	13	13	13	19	13	14	17	20	24	32	24	32	23	20	19	14	14	13	13	13	13	13
22	13	13	13	13	13	13	13	14	14	20	42	22	22	20	21	15	15	14	14	13	13	13	13	13
23	13	13	13	13	13	13	13	14	15	20	20	24	31	24	25	21	18	14	14	13	13	13	13	13
24	13	13	13	13	13	13	13	14	14	16	22	24	41	22	20	18	14	14	14	13	13	13	13	13
25	13	13	13	13	13	13	13	14	14	17	20	25	30	32	24	21	14	14	14	13	13	13	13	13
26	13	13	13	13	13	13	13	14	18	20	22	37	24	31	25	21	17	14	14	13	13	13	13	13
27	13	13	13	13	13	13	14	14	16	22	24	30	41	31	31	23	21	17	14	14	13	13	13	13
28	13	13	13	14	13	13	13	14	14	15	20	25	29	38	30	21	20	14	14	13	13	13	13	13
29	13	14	13	13	13	13	13	14	15	16	22	36	24	28	24	20	16	14	14	13	13	13	13	13
30	13	13	13	13	13	14	13	13	17	16	20	21	20	20	23	21	13	13	13	13	13	14	13	14
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	13	13	13	13	13	13	13	14	16	18	20	24	24	28	24	21	18	14	14	13	13	13	13	13
U Q	13	13	13	13	13	13	13	14	17	20	22	32	32	37	28	24	20	16	14	14	13	13	13	13
L Q	13	13	13	13	13	13	13	14	14	16	20	22	22	23	22	20	15	14	14	13	13	13	13	13

NOV. 2014 fmin (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	282	276	297	326	354	288	292	341	352	332	324	317	305	312	302	307	R 315	321	322	308	285	302	309	288
2	273	296	313	342	356	297	314	351	345	334	347	341	322	304	326	313	306	330	338	330	302	320	334	308
3	280	277	318	340	400	283	297	349	330	355	321	314	308	308	313	R 310	J R 325	R 323	349	304	299	330	R 324	300
4	306	299	319	342	353	338	289	351	345	322	321	319	316	297	305	317	326	C	C	R 292	296	323	322	326
5	R 266	277	262	347	368	257	274	299	321	334	C	C	R 305	297	C	C	C	322	R 314	304	275	R 297	327	328
6	299	323	351	335	306	283	300	333	339	330	319	C	C	C	C	U R 336	U R 341	U R 329	R 321	302	309	320	316	303
7	296	300	345	309	342	292	299	334	357	C	321	324	328	302	293	319	317	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	R 328	R 319	317	315	R 311	311	279
9	320	301	301	337	357	373	298	358	354	333	322	329	310	303	307	J R 306	321	R 339	322	317	300	316	332	325
10	298	295	296	283	334	307	308	341	343	344	332	334	298	296	312	305	308	316	R 330	R 327	320	U R 323	300	J R 278
11	J R 290	313	321	276	275	352	252	328	339	327	320	332	315	302	298	315	318	333	324	301	302	317	331	297
12	297	315	309	342	347	299	327	337	352	313	323	317	315	294	284	U R 320	U R 334	U R 336	U R 329	326	314	318	317	321
13	288	295	311	327	359	312	289	338	345	334	319	321	319	293	306	R 316	R 329	R 321	R 335	317	312	313	316	329
14	299	279	H 261	298	312	310	290	327	349	338	334	330	323	U R 283	312	325	305	322	320	U R 322	U R 306	320	335	324
15	266	270	288	316	354	262	264	339	355	341	342	312	R 323	309	304	301	311	326	316	306	308	307	319	285
16	307	343	349	319	327	292	309	338	346	356	342	323	303	305	301	297	306	299	318	314	313	302	289	263
17	273	279	284	316	288	272	323	339	319	318	344	322	293	293	R 311	310	306	319	326	R 318	U R 332	R 340	314	303
18	266	294	331	314	336	299	292	322	337	357	334	307	310	313	307	318	313	R 324	338	U R 318	U R 329	J R 330	R 320	R 293
19	265	280	285	292	305	268	284	326	350	359	336	322	299	309	320	308	322	320	326	326	R 300	J R 302	323	286
20	287	279	298	310	306	298	282	336	348	351	338	321	317	R 334	R 305	316	318	313	333	323	316	300	306	331
21	321	304	307	299	279	293	301	330	347	342	R 337	338	309	299	336	313	299	321	350	308	294	294	327	345
22	274	282	278	287	336	311	287	322	348	325	325	322	298	304	313	318	311	316	335	353	R 299	J R 301	318	322
23	287	280	V 274	316	378	294	277	R 315	355	356	329	320	297	301	316	316	331	330	335	338	296	310	301	294
24	291	301	314	334	338	280	274	325	331	338	338	R 340	302	304	304	301	311	J R 329	333	336	291	308	347	318
25	312	272	J R 299	295	323	H 247	276	325	331	341	338	315	309	306	302	310	310	331	340	332	333	317	319	312
26	315	296	298	296	295	271	298	348	346	349	335	326	319	R 310	R 315	318	R 310	327	R 337	323	R 308	301	326	330
27	281	294	296	282	291	285	279	329	367	360	325	317	315	307	312	305	311	318	320	318	325	R 316	323	313
28	272	294	285	277	265	303	316	343	358	365	356	309	307	306	306	315	R 319	329	343	299	296	J R 298	332	282
29	273	266	295	326	332	328	288	337	354	349	316	326	313	304	302	296	313	320	323	R 295	293	314	349	312
30	281	304	339	363	336	235	291	331	356	341	343	328	312	296	300	305	304	321	328	294	R 302	322	317	296
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	28	27	28	28	27	28	28	28	28	29	29	29	29	29
MED	287	294	299	316	336	293	291	336	347	341	333	322	310	304	306	313	313	322	328	317	302	314	320	308
U Q	299	301	318	336	354	308	300	341	354	353	338	329	316	308	313	318	322	329	336	326	314	320	329	324
L Q	273	279	286	296	306	276	280	326	339	332	322	317	304	297	302	306	309	320	322	304	296	302	315	290

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E +SWEEP 1.0MHz TO 30.0MHz IN 15.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	U L 354	L									
2										L		L	L	U L 381	L									
3									438		L	L	L	L	L	L								
4											L	L	L	U L 370	L	L		C	C					
5										L	C	C		L	C	C	C							
6										L	L	C	C	C	C	L	L							
7										C	L				U L 358			C						
8							C	C	C	C	C	C	C	C	C	C	C							
9										L	L	L	L	L	L	L	L							
10											L	L	L	L	L	A	A							
11										L	L	L	L	L	L	L	L							
12											L	L	L	L	L	L	L							
13										L	L	L	L	L	L	L								
14											L	L	L		U L 360									
15										L	U L 389	L	L	L	L	L								
16											L	L		L	L									
17										L	L	L		L	L	L		389						
18											L	L	L	L	L	L	L							
19										L	L	L		L	L									
20											L	L	L	L	L	L								
21										L	L	L	L	L	A	A								
22									L	L	B	L	L	L	L									
23											L	L	L	L	L									
24										L	L	L	L	L	L									
25										L	L	L		L	L	L								
26											L	L	L	L	L	L								
27												L	L	L	L	L								
28											L		L	L	L	L								
29										L		L	L	L	L									
30										L	L	L	L	L	L	L								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1		1			3	2			1						
MED									438		U L 389			U L 370	U L 359			389						
U Q														U L 381										
L Q														U L 354										

NOV. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'E KSWEEP 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									226	230	264	270	284	288	268									
2										254		232	234	286	258									
3									210		244	260	270	284	272	264								
4											270	260	258	296	290	264		C	C					
5										256	C	C		304	C	C	C							
6										256	270	C	C	C	C	266	238							
7										C	250				286			C						
8							C	C	C	C	C	C	C	C	C	C	C							
9										258	268	250	254	268	276	248	246							
10											268	260	306	270	282	246	246							
11										264	266	258	256	264	260	262	240							
12											272	264	250	L 290	326	300	258							
13										254	270	238	254	278	284	276								
14											246	250	254		292									
15										226	242	248	262	250	266	244								
16											242	256		264	282									
17										286	244	242		298	296	244		228						
18											228	276	270	260	246	252	238							
19										232	228	260		278	264									
20											234	240	264	254	L 250	254								
21										246	240	242	248	298	246	242								
22									252	230	224	232	296	274	272									
23											248	234	L 278	296	262									
24										248	240	250	244	282	264									
25										248	232	252		274	278	272								
26											238	248	276	284	268	260								
27												236	282	272	258	250								
28											222		280	280	274	262								
29										242		234	268	280	250									
30										230	240	240	278	252	290	270								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									3	16	25	25	22	26	27	18	6	1						
MED									226	248	244	250	266	279	272	261	243	228						
U Q									252	256	267	260	278	288	284	266	246							
L Q									210	231	236	239	254	268	260	248	238							

NOV. 2014 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	266	274	262	238	220	220	256	228	220	212	210	214	H 224	248	224	244	232	226	212	204	224	204	232	252
2	284	282	250	228	210	238	236	218	216	212	240	214	200	188	228	216	222	232	212	198	224	218	222	240
3	250	262	224	208	192	292	280	222	198	228	226	204	210	218	226	228	242	226	206	196	234	224	214	204
4	238	230	228	214	200	220	246	224	222	228	218	216	232	250	244	250	242	C	C	202	236	232	210	202
5	248	310	328	234	198	382	332	256	234	234	C	C	244	238	C	C	C	208	210	210	250	234	222	220
6	264	248	230	A 238	246	308	274	232	224	218	220	C	C	C	C	E B 230	230	208	196	198	222	218	216	228
7	236	236	216	192	218	246	252	230	222	C	230	238	238	246	236	236	236	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	212	194	204	218	206	214	222
9	238	234	270	232	208	196	258	224	218	212	210	232	212	218	236	234	224	218	194	206	228	218	212	206
10	248	276	276	278	238	258	260	214	228	236	220	220	210	206	244	A	A	236	214	202	230	218	202	222
11	232	208	214	274	294	210	240	234	230	230	220	228	218	A 228	220	216	214	220	204	214	218	204	230	238
12	252	258	234	222	226	254	240	218	220	218	228	228	212	218	H 202	240	222	226	204	188	212	202	214	218
13	230	232	236	216	206	228	232	224	218	218	Y 236	224	206	H 216	254	242	236	206	192	202	202	216	220	210
14	230	252	250	252	244	220	244	242	220	230	230	206	H 206	234	228	240	220	216	212	198	230	214	198	206
15	254	286	266	254	210	302	332	244	216	216	214	200	236	216	208	210	232	218	202	214	238	240	208	248
16	258	220	214	224	230	256	264	226	218	230	202	216	232	228	234	228	256	232	232	226	208	212	206	220
17	292	280	260	214	258	308	236	230	230	218	236	216	230	228	214	216	226	E A 240	202	192	200	212	216	218
18	258	246	208	242	218	204	286	254	224	222	206	204	220	226	214	218	208	222	198	186	200	212	196	214
19	278	260	244	260	228	276	292	248	228	Y 226	214	206	228	234	232	236	232	244	214	196	202	210	208	214
20	250	308	266	248	234	264	294	242	224	230	220	210	220	232	222	230	222	220	216	208	206	234	238	218
21	216	246	244	290	316	352	254	230	236	226	220	202	222	232	A	A	230	248	212	184	254	230	214	202
22	254	304	314	310	246	232	278	236	230	218	B	220	H 192	230	224	234	228	240	214	200	196	224	232	220
23	240	258	266	222	198	232	310	258	230	224	230	218	214	230	224	230	226	218	210	194	226	218	234	240
24	252	230	236	232	220	266	308	248	230	232	224	224	214	222	230	228	232	226	204	184	206	238	216	216
25	228	256	256	250	228	E B 242	310	246	238	232	220	210	256	228	236	234	230	220	198	194	208	200	210	216
26	206	232	248	248	248	300	270	236	224	222	218	218	234	234	218	228	222	222	200	200	186	218	214	196
27	242	246	218	248	254	260	290	260	220	208	212	214	204	224	222	226	232	224	210	218	210	204	202	198
28	198	236	268	278	288	220	216	228	220	218	214	222	228	222	224	234	236	232	208	216	214	214	210	248
29	268	304	248	230	202	228	268	236	228	220	224	220	226	220	226	238	228	232	212	210	222	236	208	208
30	244	262	222	204	234	E B 402	302	252	230	220	216	204	206	192	226	230	228	230	210	216	208	212	212	210
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	27	27	28	28	26	26	27	28	28	29	29	29	29	29
MED	248	256	248	238	228	250	268	234	224	222	220	216	220	228	226	230	230	224	209	202	218	218	214	218
U Q	258	278	266	253	246	296	293	247	230	230	228	222	231	233	234	236	232	232	212	210	229	227	221	225
L Q	234	235	226	222	209	224	245	225	220	218	214	206	210	218	222	228	222	218	201	195	206	211	208	207

NOV. 2014 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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								126	114	A	A	A	A	A	112	112	112	112	B					
2								118	108	A	A	A	A	B	110	106	112	A	A					
3								128	116	114	112	110	A	A	A	A	A	A	A					
4								132	B	110	110	112	A	A	A	A	108	C	C					
5								120	A	112	C	C	110	110	C	C	C	A	A					
6								A	A	110	110	C	C	C	C	B	A	A	B					
7								A	110	C	106	A	B	B	B	118	118	C						
8							C	C	C	C	C	C	C	C	C	C	C	108	B					
9								B	110	110	110	A	110	114	A	108	108	112	A					
10								A	110	108	108	A	108	A	A	A	A	A	A					
11								152	112	110	110	110	110	110	A	110	114	116	A					
12								136	110	110	108	B	B	A	A	A	A	118	B					
13								B	114	A	A	114	A	B	A	A	112	112	B					
14								144	120	110	108	108	B	B	114	114	114	118	B					
15								156	112	110	110	110	A	A	A	A	116	122	B					
16								154	110	110	110	114	110	A	A	A	110	A	A					
17								148	112	106	106	108	108	A	A	114	118	A	B					
18								148	114	110	110	B	A	A	116	112	112	A	A					
19								146	114	108	110	B	112	112	110	110	108	140	A					
20								B	114	A	110	106	110	B	A	A	106	120	B					
21								A	A	A	A	A	A	A	A	A	A	126	A					
22								A	108	108	B	112	A	A	A	110	110	146	A					
23								148	110	110	110	110	110	110	110	110	110	A	B					
24								150	108	A	108	A	B	A	A	A	A	A	A					
25								166	112	110	110	110	110	112	A	A	A	A	B					
26								A	112	A	112	A	112	A	A	A	A	A	B					
27								154	108	114	110	108	B	112	120	A	A	A	A					
28								A	114	106	A	A	106	A	112	A	A	A	A					
29								156	112	110	108	A	A	A	A	A	A	A	A					
30								A	108	108	A	A	108	108	108	A	108	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								18	25	21	21	13	13	8	9	11	17	12						
MED								148	112	110	110	110	110	111	112	110	112	118						
U Q								154	114	110	110	112	110	112	115	114	114	124						
L Q								132	110	108	108	108	108	110	110	110	108	112						

NOV. 2014 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

LAT.26°41.0'N LON.128°09.0'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	B	B	B	B	B	B	152	124	104	134	104	104	114	140	168	G	180	B	B	106	B	B	94
2	B	102	B	94	B	B	B	182	G	172	164	102	104	B	G	G	112	108	102	98	108	B	B	B
3	B	B	B	B	B	B	108	G	102	100	126	G	104	104	148	150	124	94	94	108	100	96	94	90
4	B	B	B	B	B	B	B	G	B	G	G	116	154	188	170	100	146	C	C	B	104	B	98	B
5	B	98	B	B	B	B	B	G	116	G	C	C	110	108	C	C	C	104	134	100	94	B	94	B
6	B	94	96	94	B	B	B	114	112	114	G	C	C	C	C	B	108	104	98	98	B	120	96	B
7	B	B	B	B	B	B	B	146	166	C	G	130	122	122	B	122	G	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	B	B	96	B	94	B
9	B	B	B	B	B	B	B	B	G	G	102	102	102	102	140	178	G	G	98	94	B	B	94	B
10	B	B	B	B	B	B	B	138	126	112	116	114	108	106	104	98	96	96	94	94	B	B	B	B
11	B	B	B	B	B	B	B	G	G	G	G	G	122	120	102	124	G	G	92	90	B	104	96	B
12	B	B	B	B	B	104	104	100	G	G	G	116	B	114	110	106	106	98	90	96	90	B	B	92
13	86	92	B	90	90	90	94	B	G	112	112	G	112	B	106	104	104	150	B	B	96	92	B	B
14	B	B	B	B	B	B	B	G	104	200	G	124	B	B	170	162	166	148	92	108	102	102	100	B
15	B	B	B	B	B	B	B	G	G	124	110	110	110	114	92	104	102	102	102	100	94	94	B	B
16	B	B	B	B	B	B	B	G	166	160	152	162	134	132	118	118	114	110	110	100	92	92	B	B
17	B	B	96	B	B	B	B	G	G	124	G	112	106	108	102	102	100	100	102	94	94	B	B	B
18	B	B	B	B	B	B	96	G	G	176	96	B	102	102	120	100	116	98	94	94	B	B	B	B
19	B	B	B	B	96	100	B	G	G	G	G	B	G	G	136	124	106	184	104	106	B	B	B	B
20	B	B	B	106	102	102	B	166	G	112	G	112	G	B	110	106	G	124	B	B	108	B	B	B
21	B	B	B	B	B	B	B	162	120	112	112	112	108	108	102	100	100	102	98	94	92	92	92	92
22	B	B	B	B	B	B	B	204	162	G	B	G	110	108	96	96	98	98	100	98	B	B	B	B
23	B	102	B	B	102	B	B	G	164	148	136	118	114	G	G	148	122	112	B	106	98	96	B	B
24	B	B	B	B	110	108	B	G	G	198	150	100	B	100	190	96	96	100	100	96	96	118	B	B
25	B	B	B	B	B	B	B	G	174	142	G	G	116	112	104	104	106	100	100	98	94	94	B	B
26	B	B	B	B	B	90	B	154	G	114	G	112	114	106	106	108	108	102	102	94	B	96	96	B
27	B	B	B	96	98	B	B	G	128	106	G	G	B	G	108	118	110	112	110	104	100	94	94	90
28	B	B	B	B	B	B	B	190	G	114	110	108	108	106	108	108	106	104	100	100	96	96	96	96
29	B	B	112	96	B	B	B	G	108	110	106	106	106	106	108	100	100	100	98	96	96	B	B	B
30	92	B	B	B	B	B	B	136	152	G	102	100	96	96	G	96	94	94	94	96	90	90	B	96
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	5	3	6	6	6	4	12	15	20	15	19	22	21	23	26	23	25	23	24	21	15	12	7
MED	89	98	96	95	100	101	100	153	126	114	112	112	109	108	108	106	106	102	100	98	96	96	95	92
U Q		102	112	96	102	104	106	174	164	154	136	116	114	114	140	124	114	112	102	100	101	102	96	96
L Q		93	96	94	96	90	95	137	112	112	106	104	104	105	104	100	100	99	94	94	94	92	94	90

NOV. 2014 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

NOV. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

LAT. 26°41.0'N LON. 128°09.0'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								H 1	CL 11	L 1	CL 11	L 1	L 1	CL 11	H 1	H 1		H 1			F 2			F 1
2		F 1		F 1				H 1		HL 11	HL 11	L 1	L 1				C 1	C 2	L 1	F 1	F 1			
3							F 1		L 1	L 1	CL 11		L 1	L 1	HL 11	HL 11	CL 12	L 3	L 4	F 1	F 1	F 2	F 1	F 1
4												C 1	HL 11	HL 11	HC 11	L 1	H 1				F 2		F 1	
5		F 1						C 1					C 1	C 1				L 3	HC 11	F 2	F 1		F 1	
6		F 2	FQ 21	F 2				C 1	C 1	C 1							C 1	C 1	L 1	FF 11		FF 11	F 1	
7								H 1	H 1			C 1	C 1	C 1		L 1								
8																					F 1		F 2	
9											L 1	L 1	L 1	L 1	HL 11	H 1			L 3	F 3			F 3	
10								H 1	C 1	C 1	C 2	C 1	C 1	C 1	L 1	L 1	L 2	L 3	L 5	F 1				
11													C 1	C 1	L 1	C 1			L 1	F 1		F 1	F 2	
12						F 1	F 1	L 1				C 1		C 1	C 1	C 1	C 1	L 1	L 1	F 1	F 1			F 2
13	F 1	F 1		F 1	F 1	F 1	F 1			C 1	C 1		C 1		C 1	L 1	L 1	H 1			F 2	F 1		
14									L 1	HC 11		C 1			H 1	H 1	HL 11	HL 11	L 1	F 2	F 2	F 1	F 1	
15										C 1	C 1	C 1	C 1	C 1	L 1	L 1	L 1	L 1	L 1	F 1	F 2	F 2		
16									H 1	H 1	H 1	HL 11	H 1	HL 11	C 1	C 1	C 3	C 1	C 1	F 5	F 1	F 3		
17			F 1							C 1		C 1	C 1	C 2	L 1	L 1	L 1	L 1	L 1	F 1	F 1			
18							F 1			H 1	L 1		L 1	L 1	CL 11	L 1	CL 11	L 1	L 1	F 1				
19					F 1	F 1									H 1	C 1	C 1	H 1	L 1	F 1				
20				F 2	F 1	F 1		H 1		C 1		C 1			C 1	C 1		C 1			FF 11			
21								H 1	C 1	C 1	C 1	C 1	C 1	C 2	L 1	L 5	L 3	L 1	L 4	F 3	F 4	F 5	F 1	F 1
22								H 1	H 1				CL 11	CL 11	L 1	L 1	L 1	L 1	L 1	F 1				
23		F 1			F 1				HL 11	H 1	H 1	C 1	C 1			H 1	C 1	C 1		F 1	F 2	F 2		
24					F 1	F 1				HL 11	H 1	L 1		L 1	HL 11	L 1	L 4	L 1	L 1	F 1	F 1	F 1		
25									H 1	H 1			C 1	C 1	C 2	C 1	L 1	L 2	L 1	F 4	FF 51	F 1		
26						F 1		HL 11		C 1		C 1	C 1	C 2	C 1	C 1	C 1	L 1	L 1	F 6		F 1	F 1	
27				F 2	F 1				C 1	L 1					L 1	CL 11	C 2	C 1	C 2	F 3	F 3	F 2	F 2	F 1
28								H 1		C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	L 4	L 5	F 5	F 3	F 1	F 1	F 2
29			F 1	F 1					C 1	C 1	C 1	C 1	C 1	C 1	C 1	L 1	L 1	L 1	L 6	F 6	F 3			
30	F 1							HL 22	H 1		L 2	L 1	L 1	L 1		L 1	L 1	L 3	L 3	F 3	F 1	F 1		F 1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

NOV. 2014 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

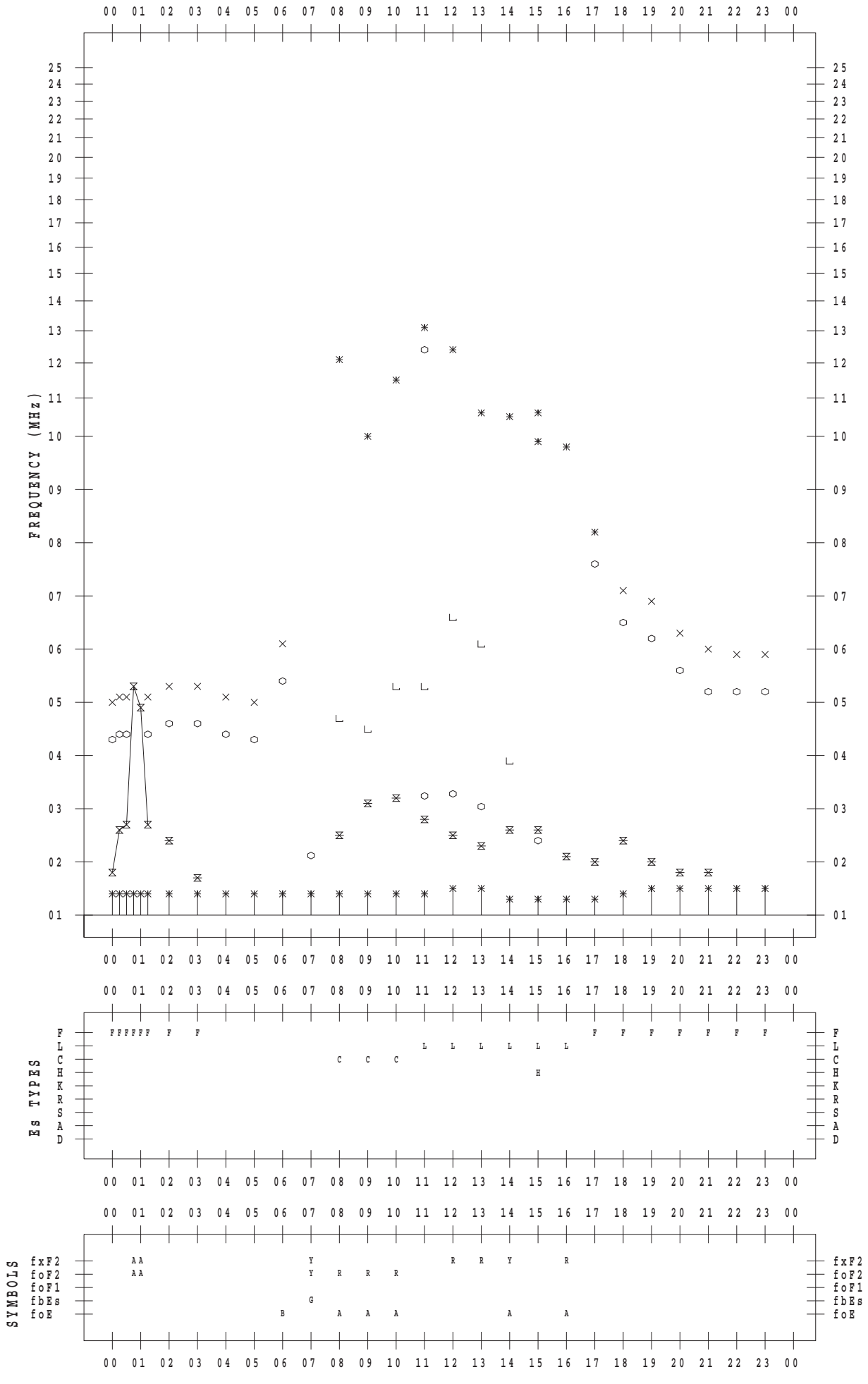
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 1

135 °E MEAN TIME



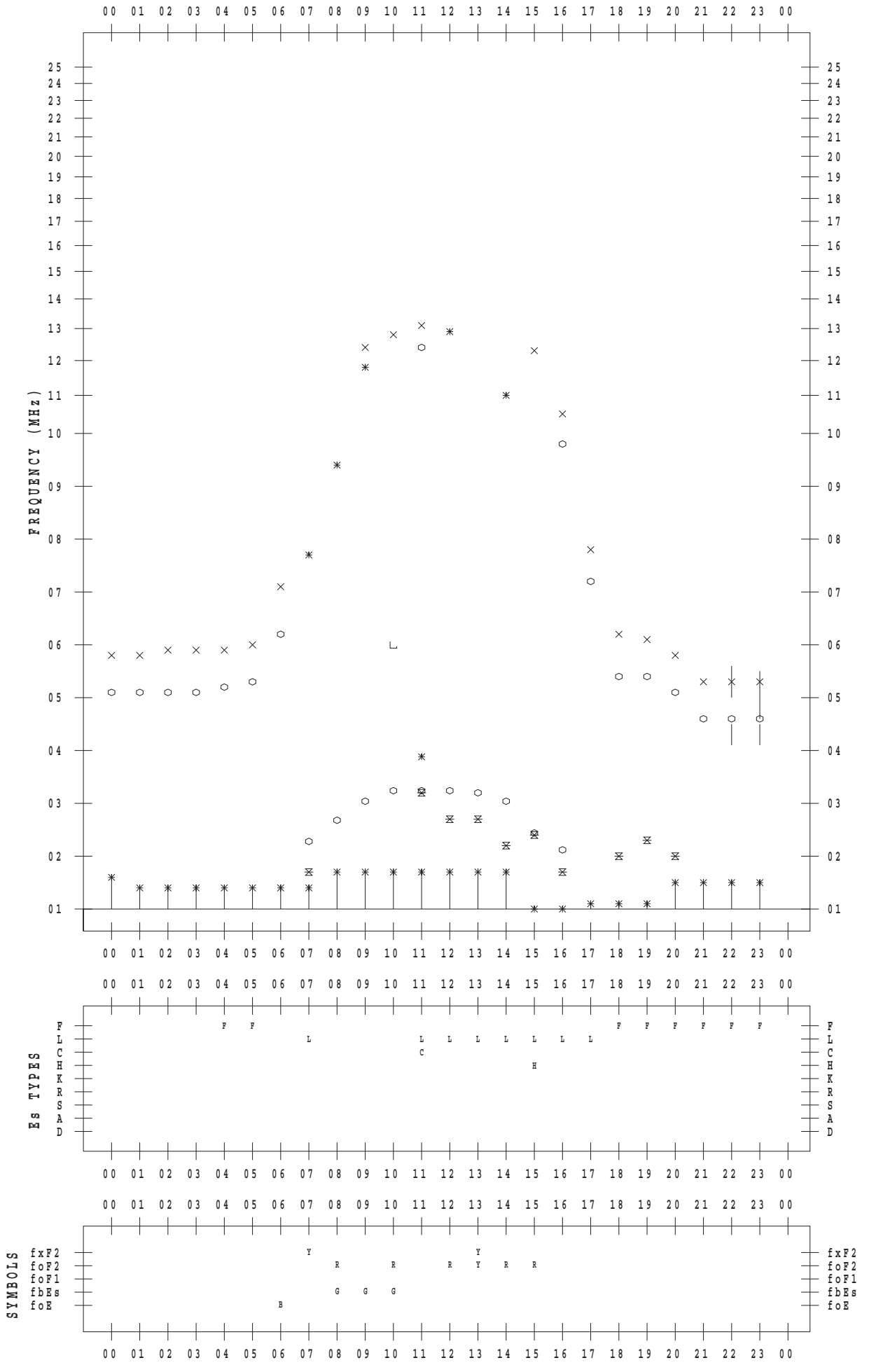
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 2

135 °E MEAN TIME



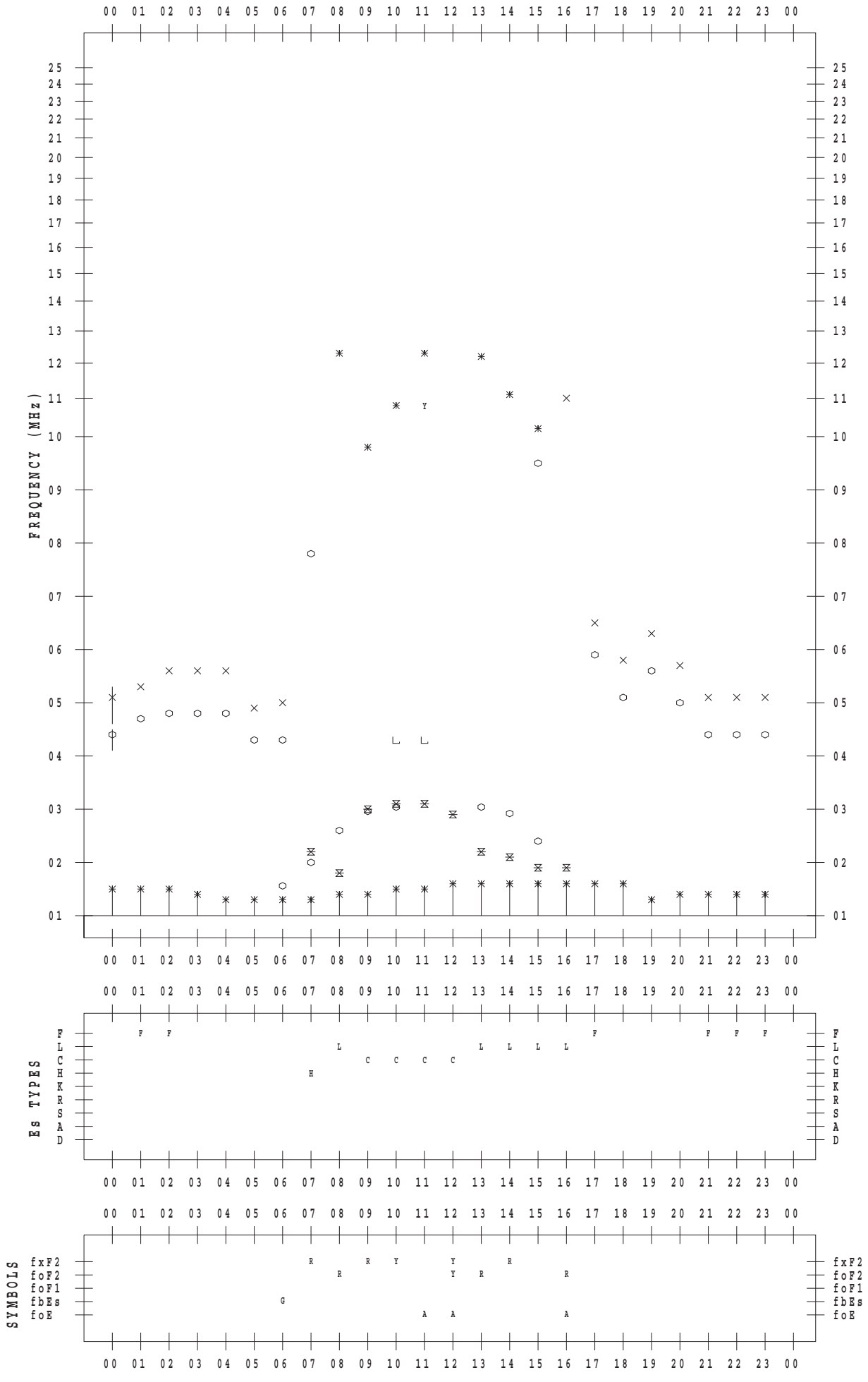
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 3

135 °E MEAN TIME



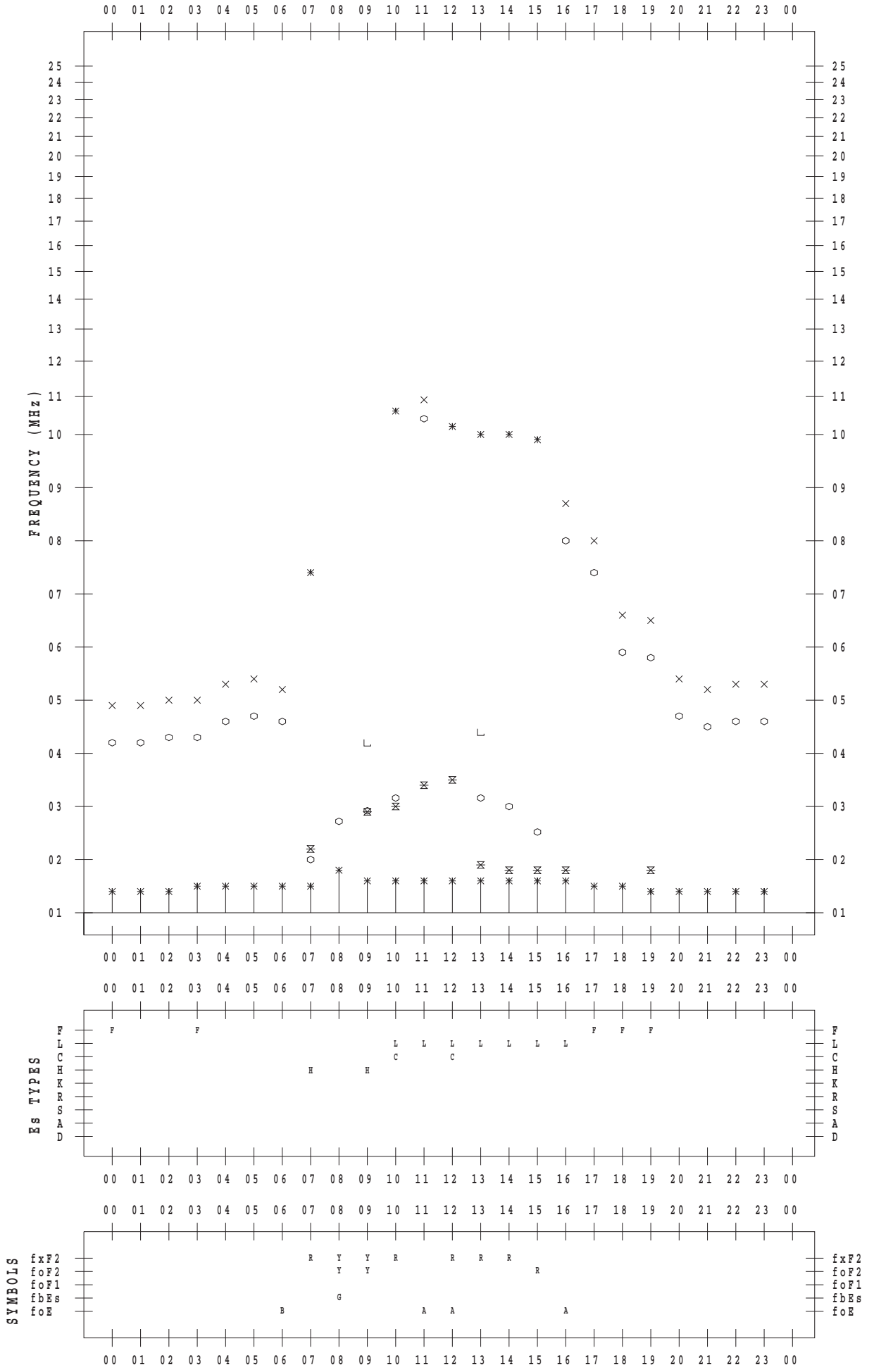
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 4

135 °E MEAN TIME



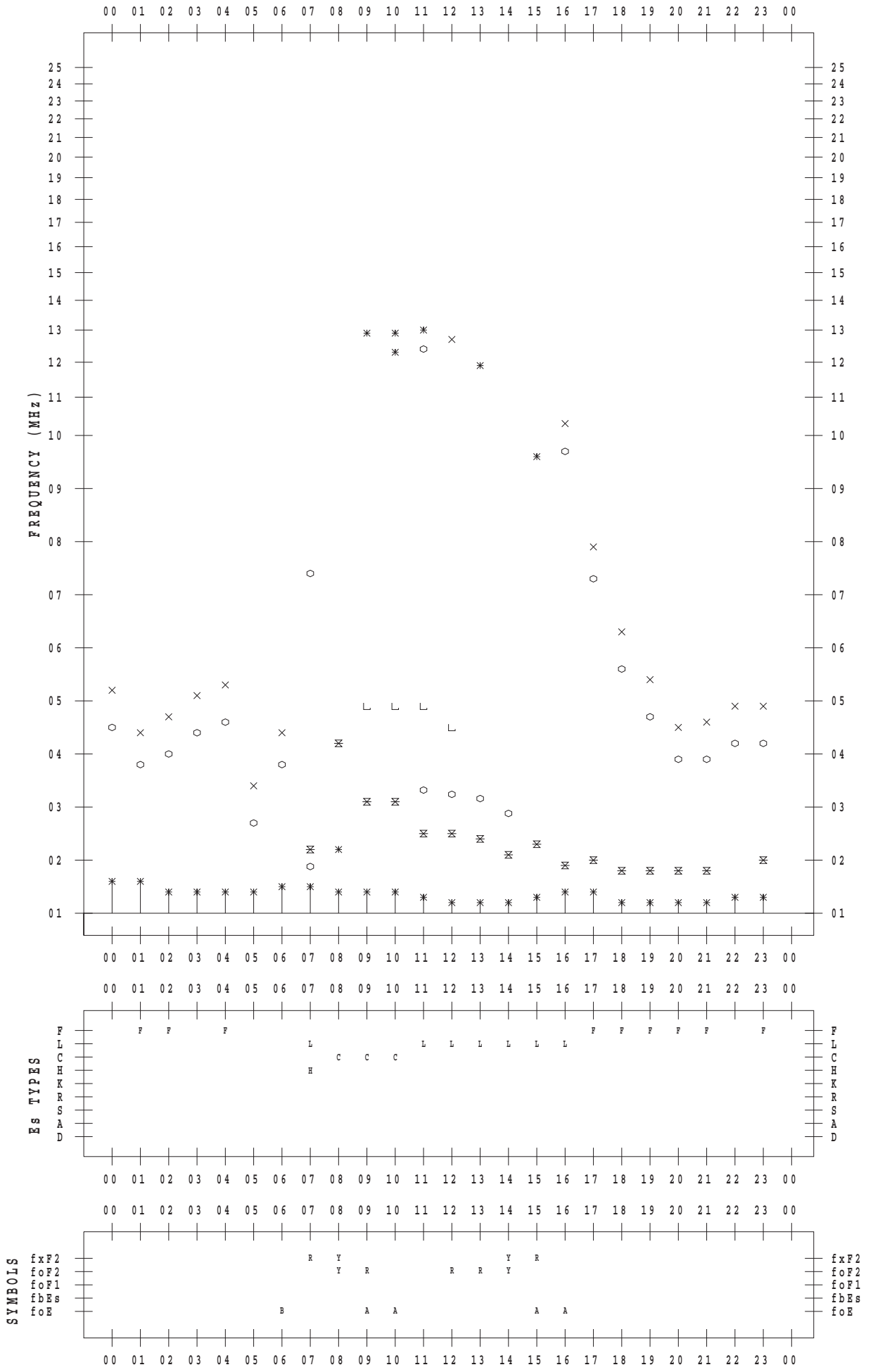
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 5

135 °E MEAN TIME



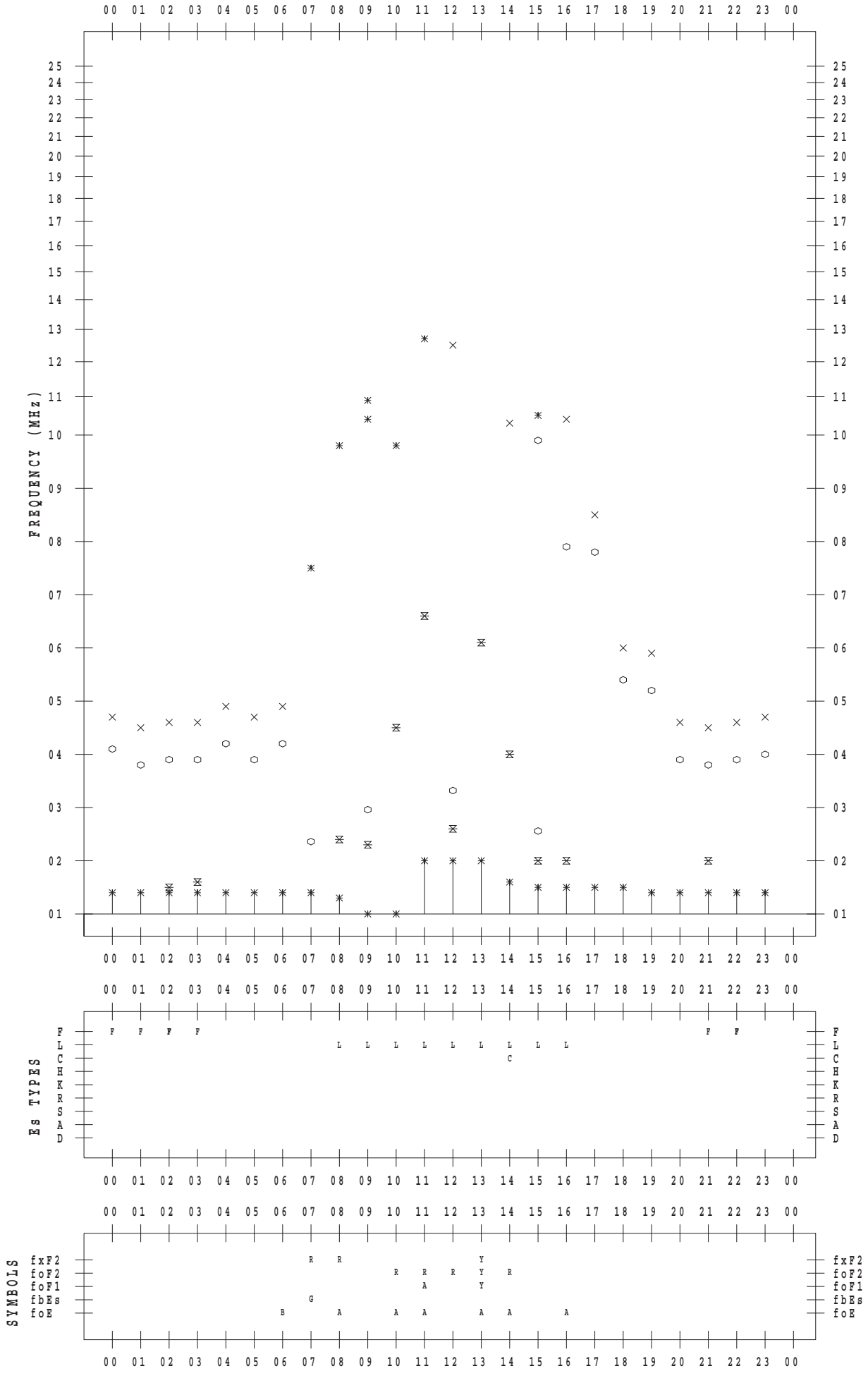
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 6

135 °E MEAN TIME



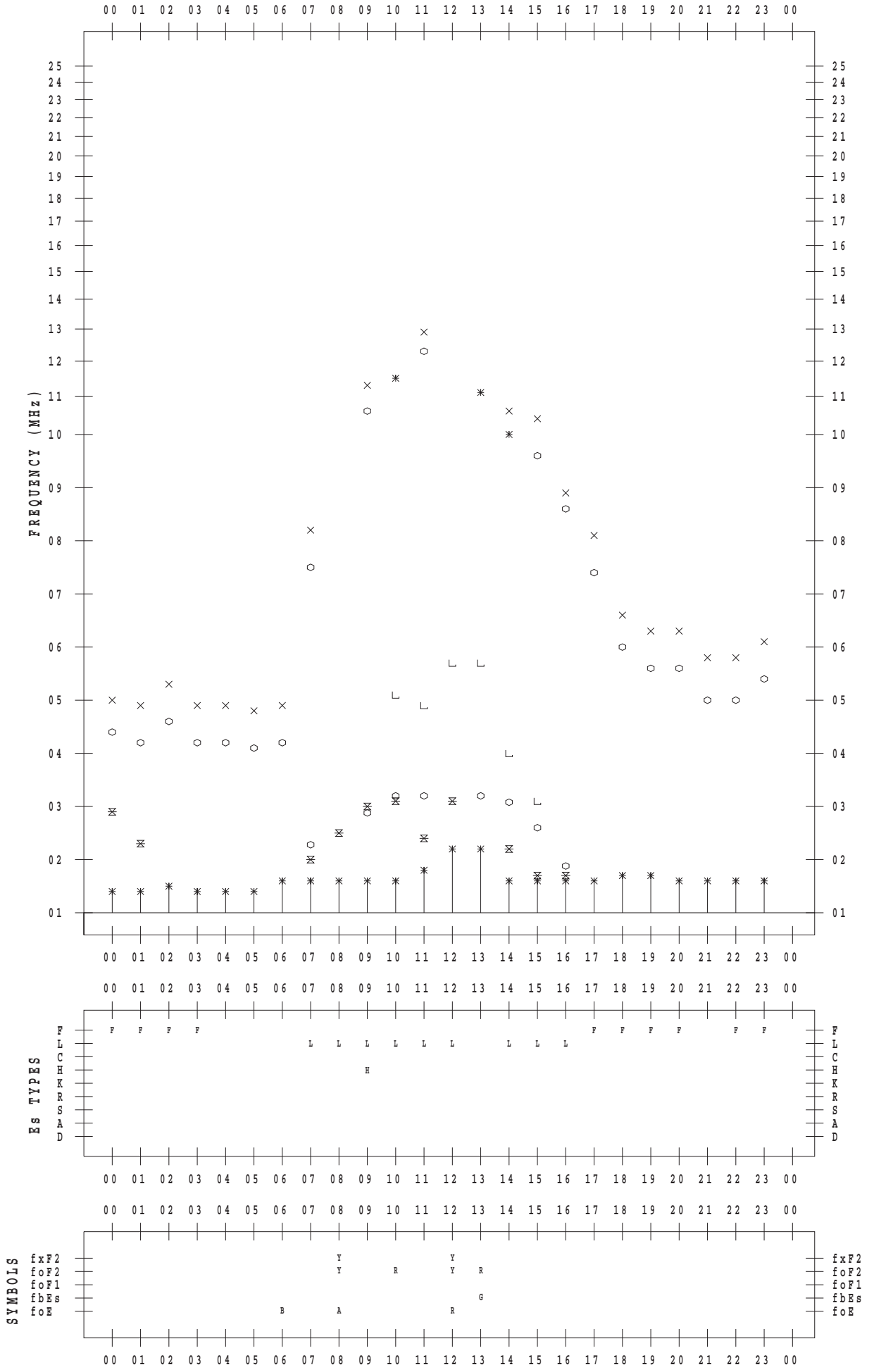
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 7

135 °E MEAN TIME



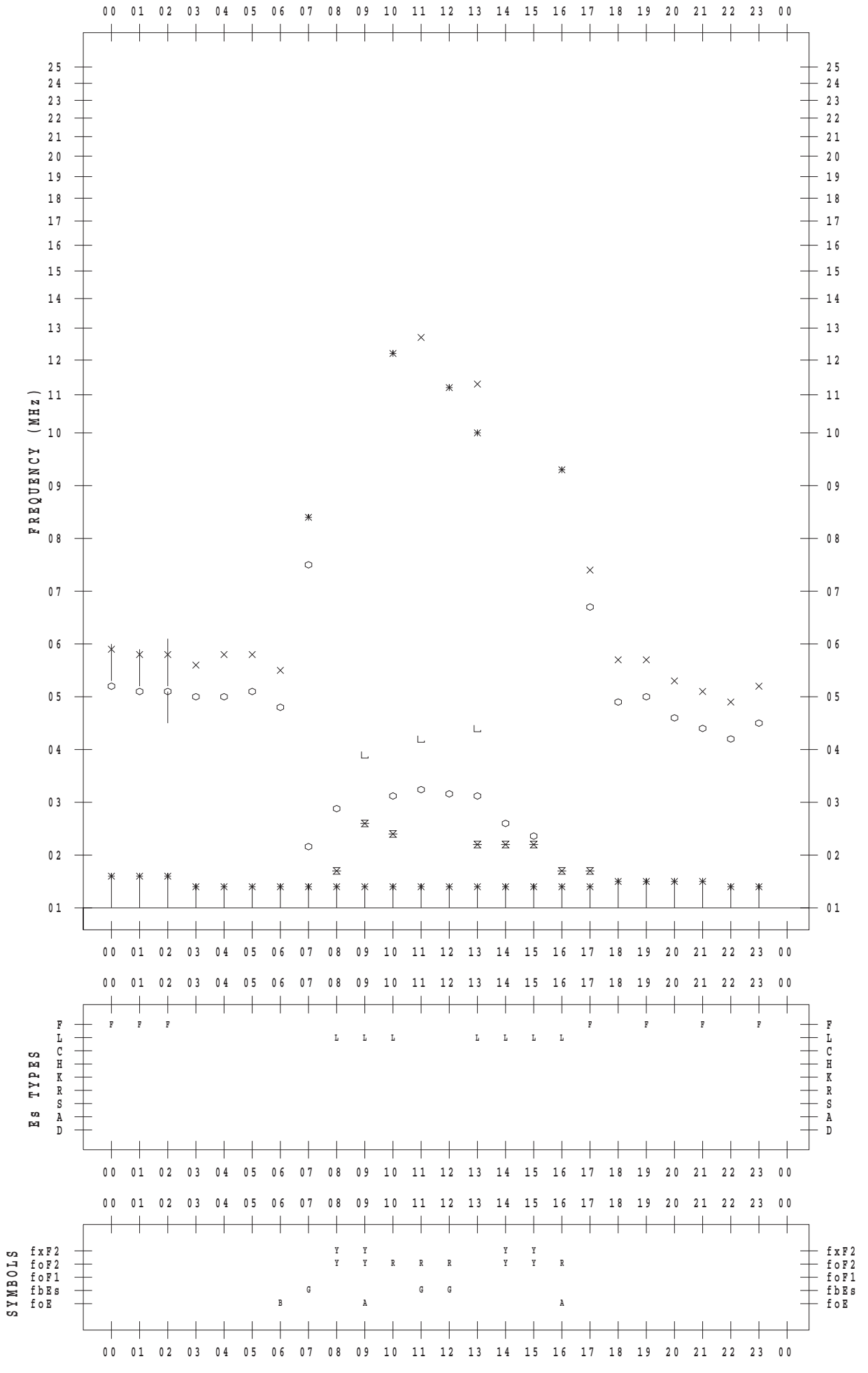
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 8

135 °E MEAN TIME



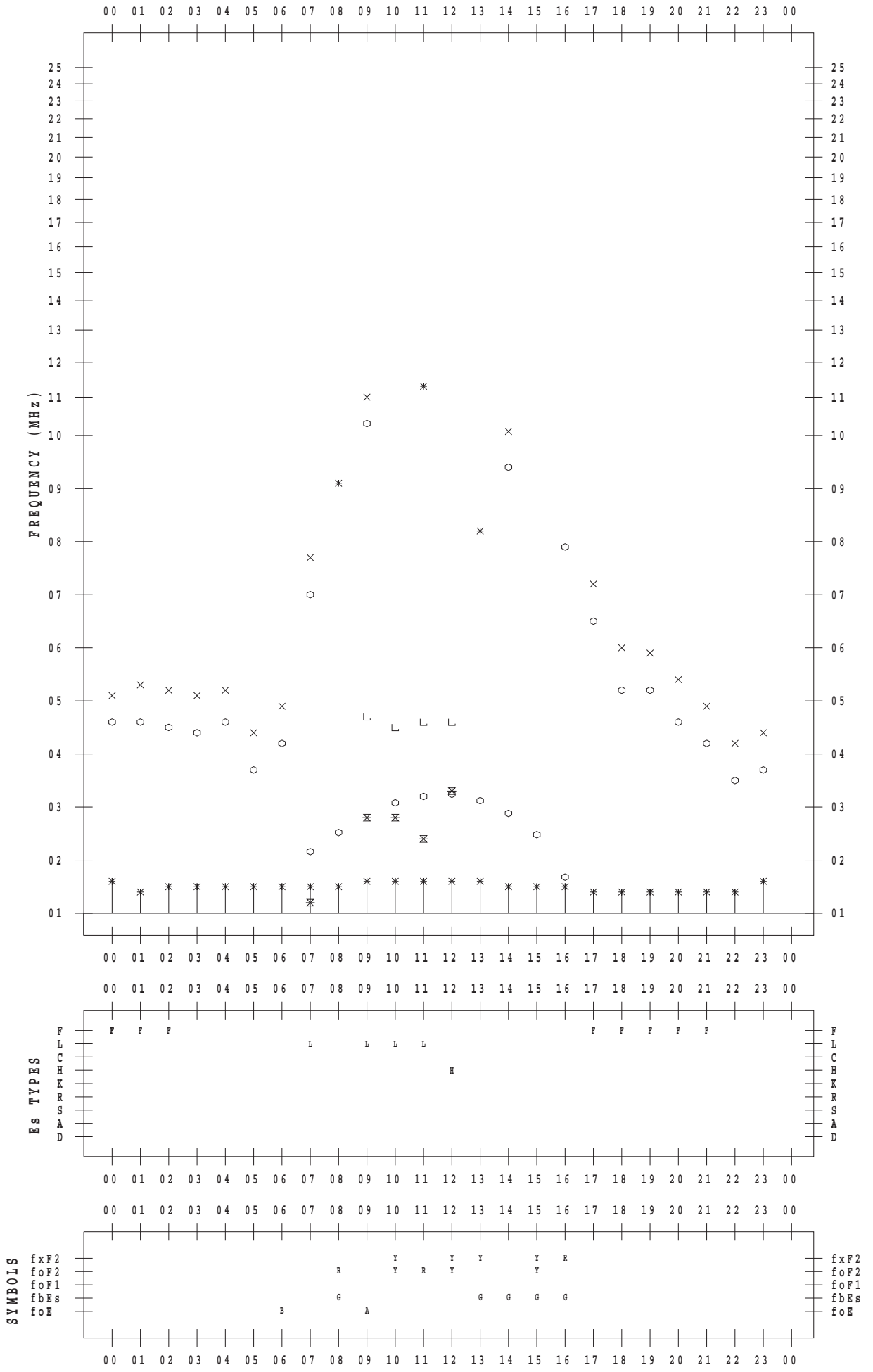
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/ 9

135 °E MEAN TIME



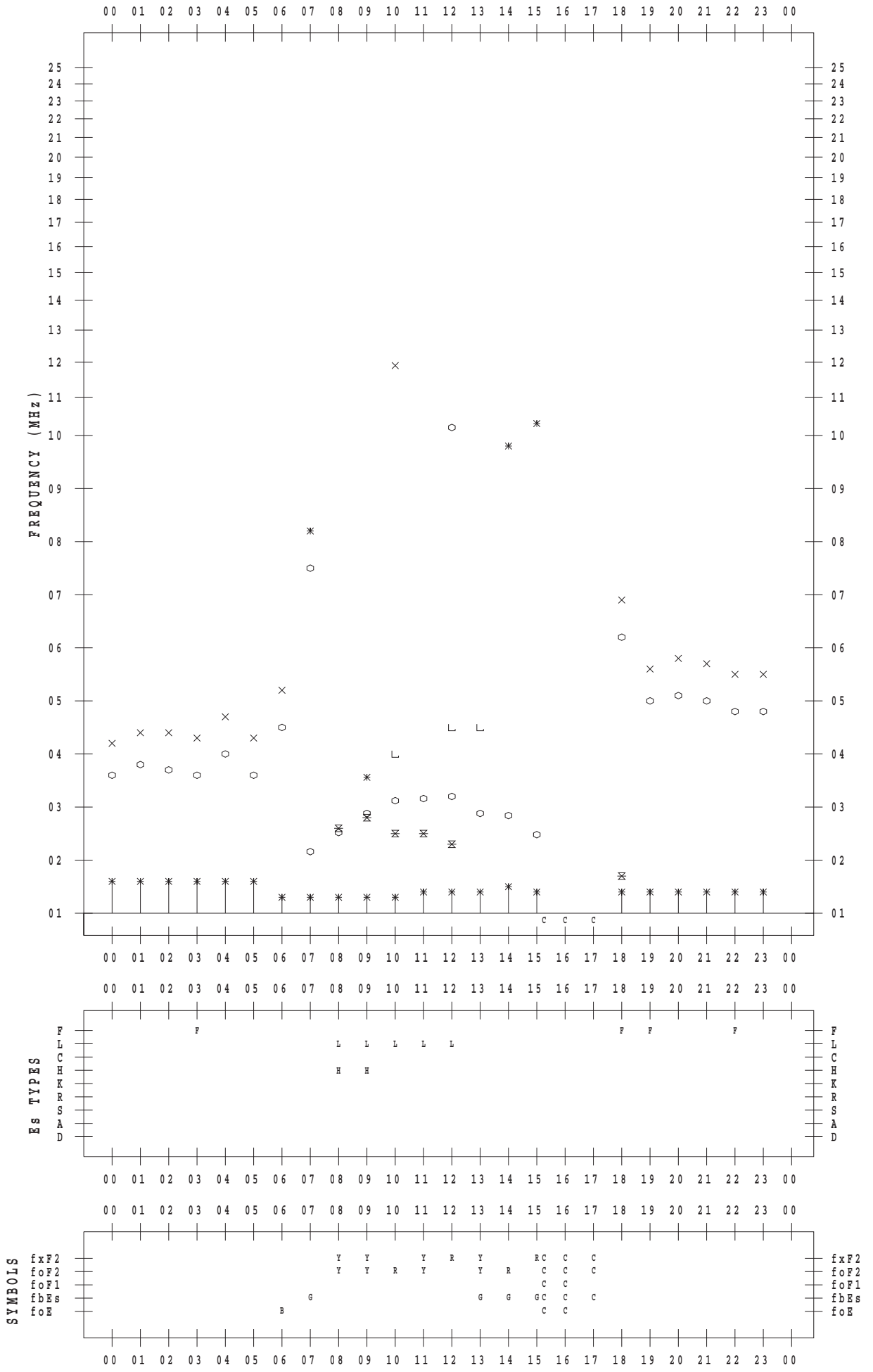
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/10

135 °E MEAN TIME



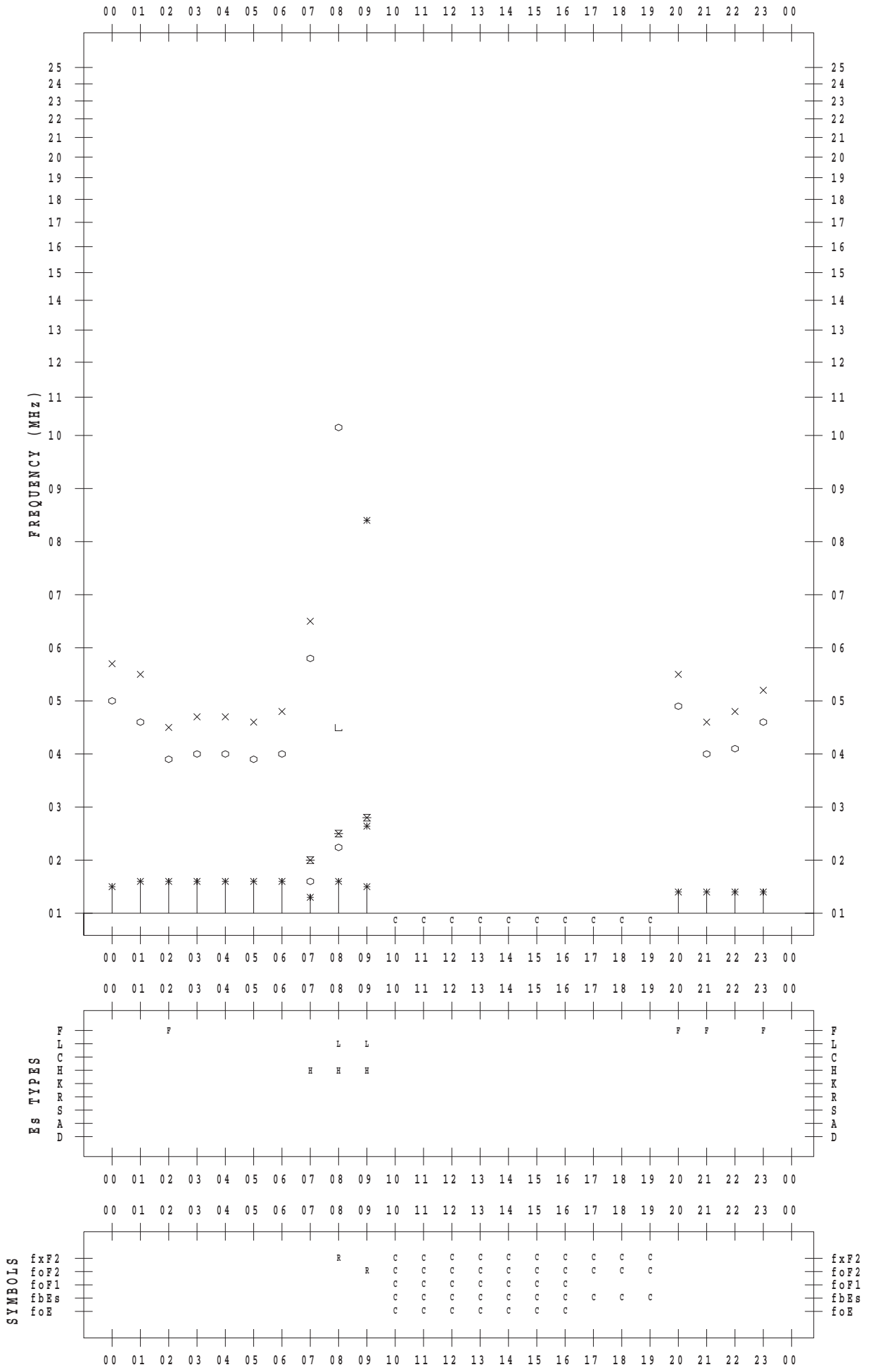
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/11

135 °E MEAN TIME



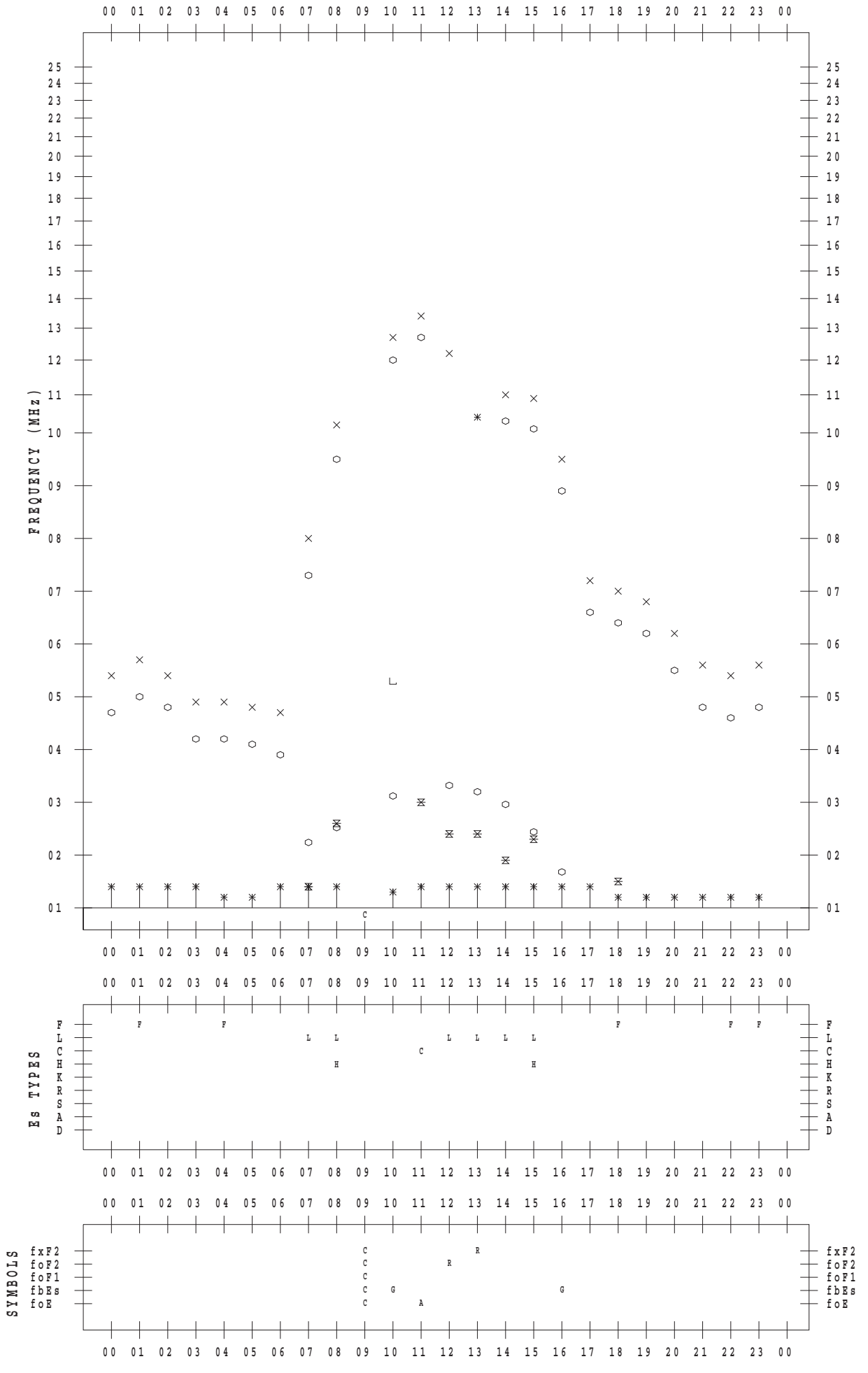
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/12

135 °E MEAN TIME



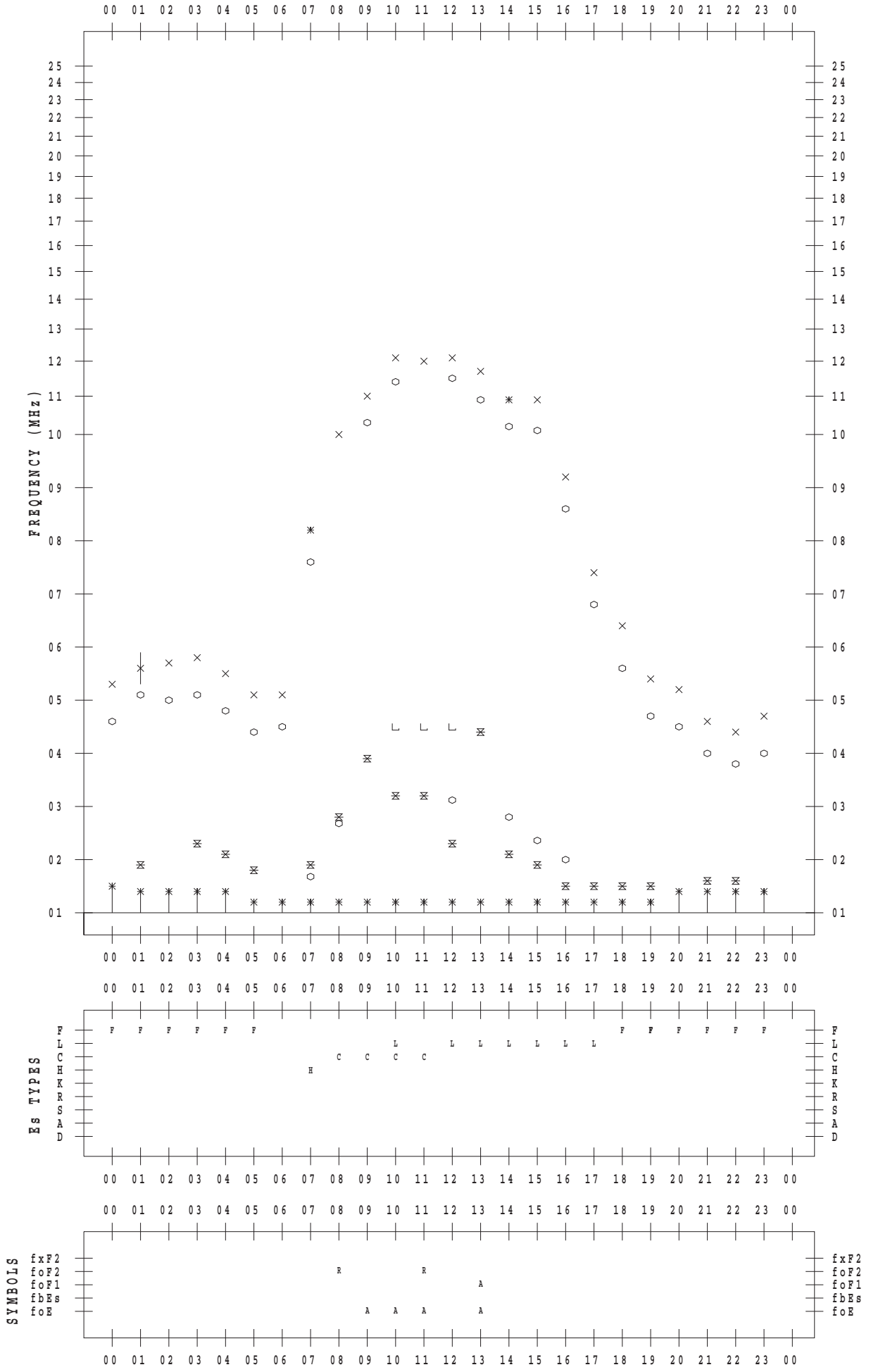
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/13

135 °E MEAN TIME



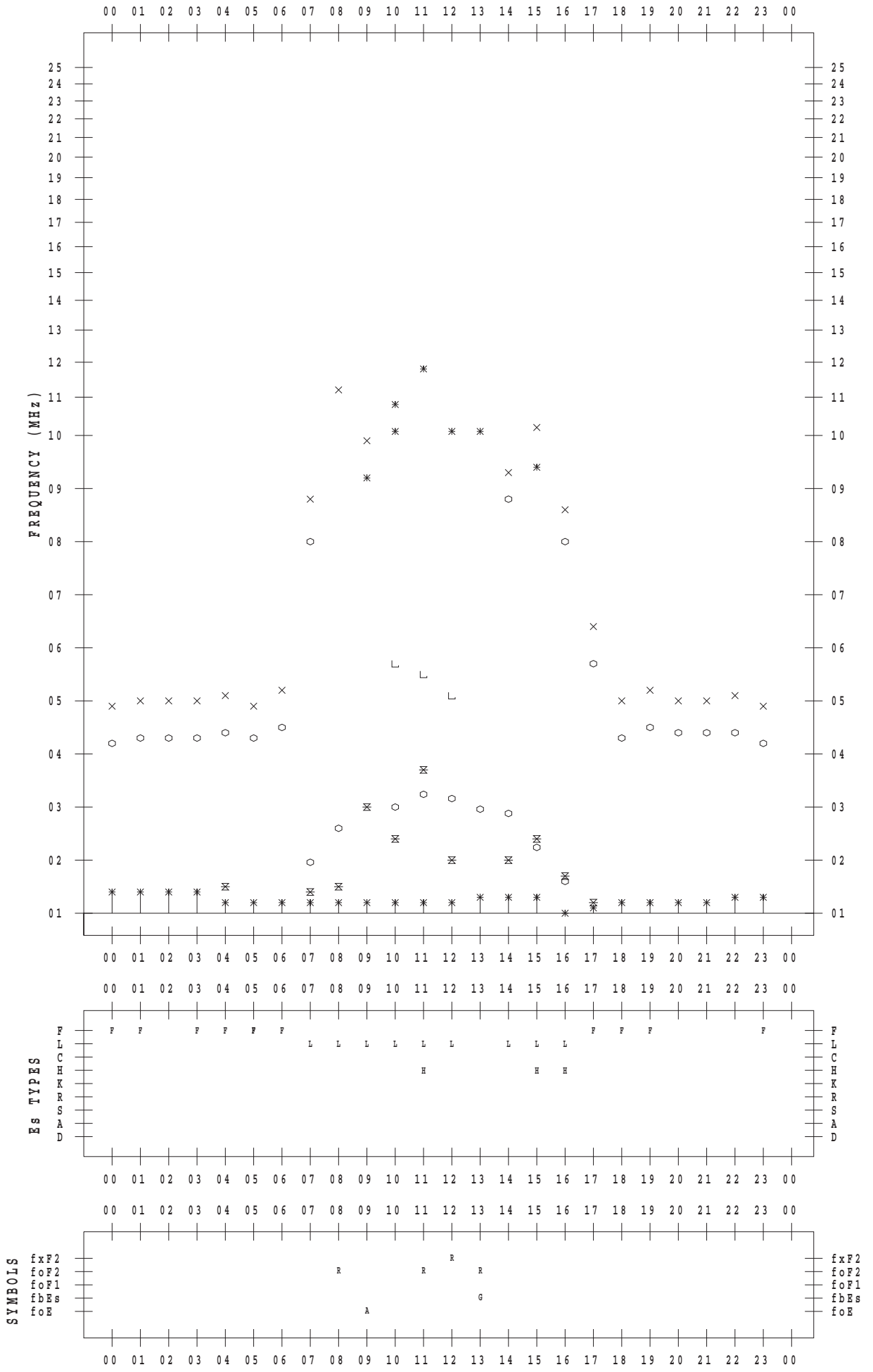
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/14

135 °E MEAN TIME



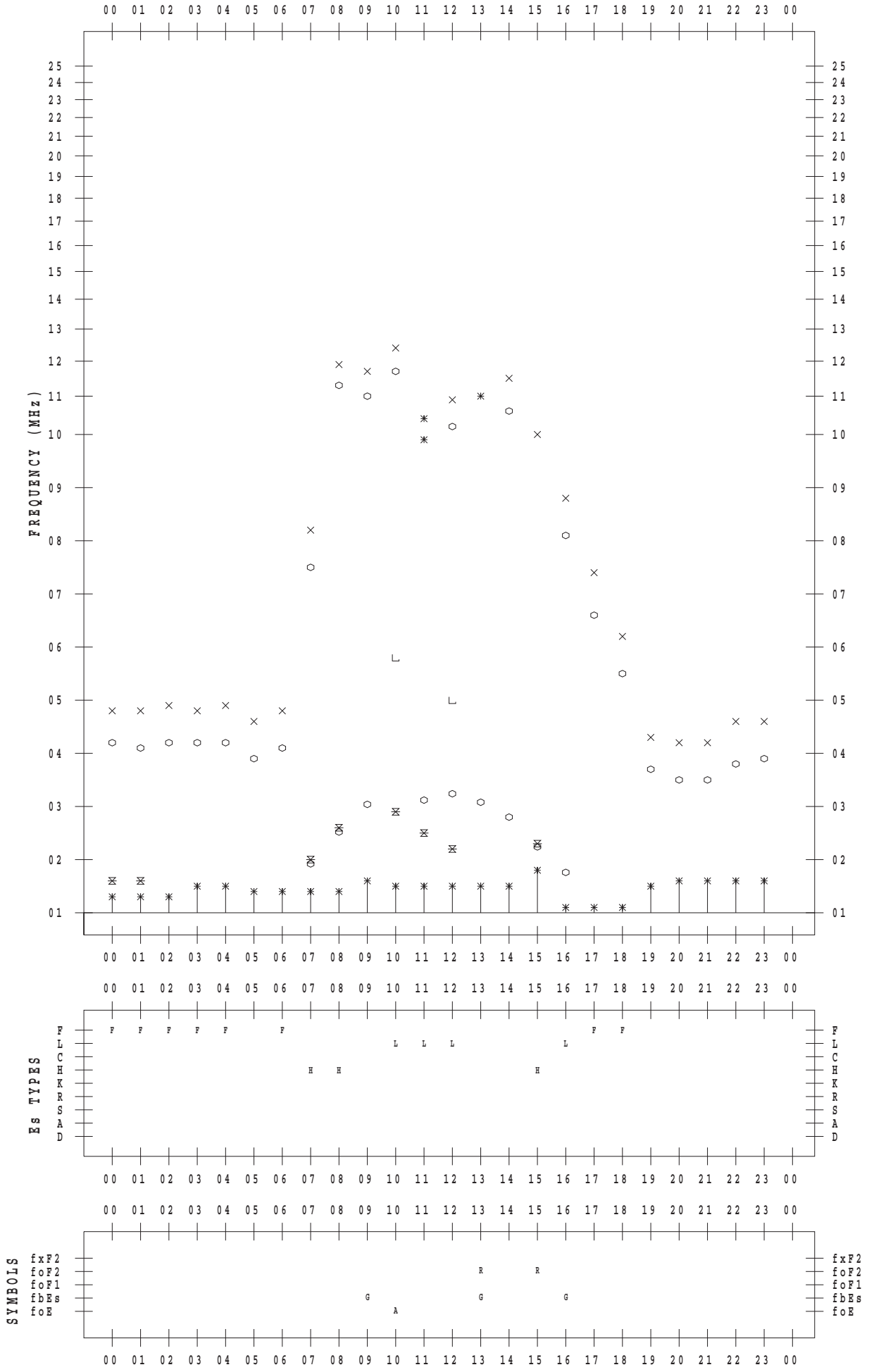
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/15

135 °E MEAN TIME



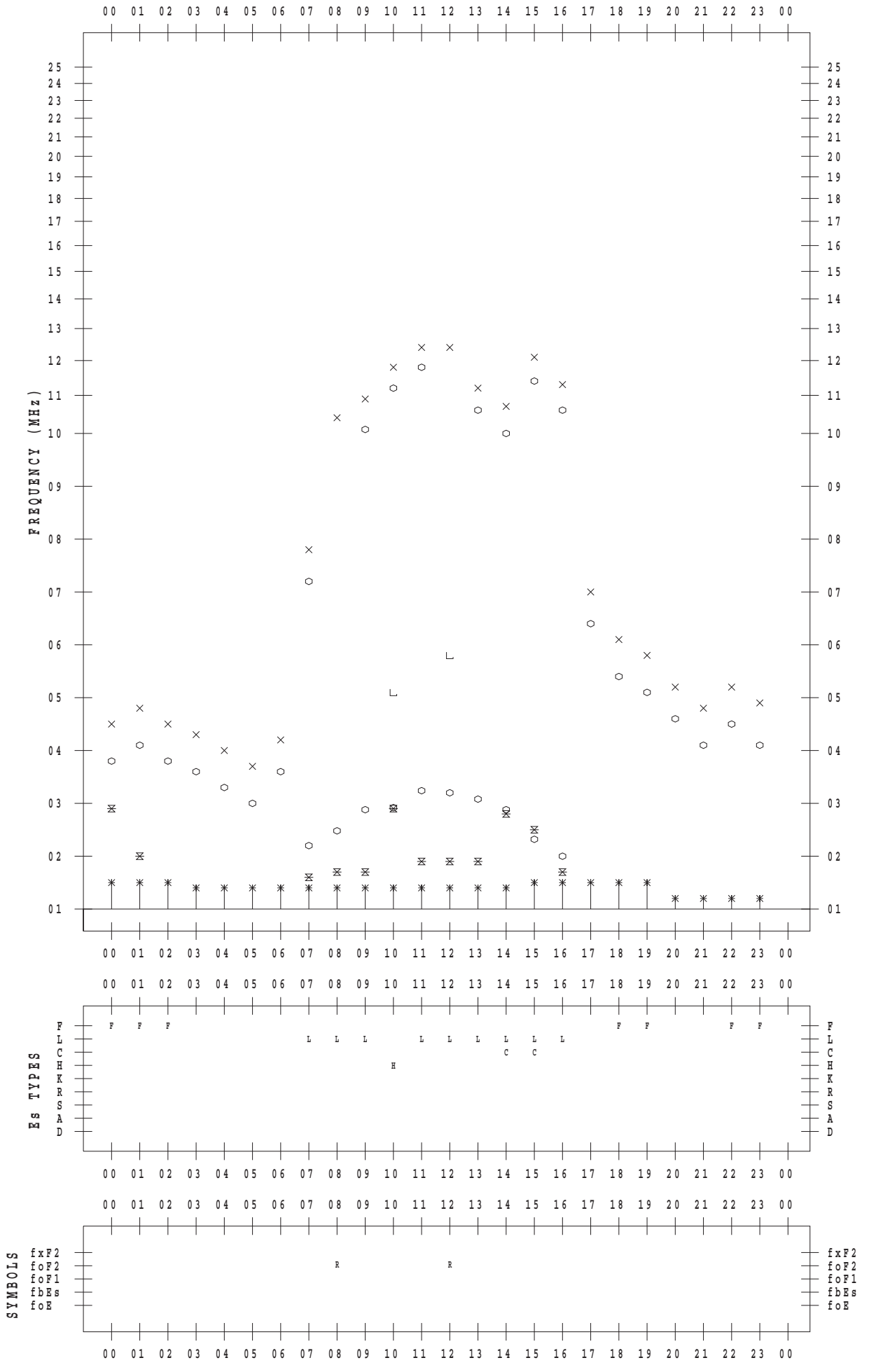
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/16

135 °E MEAN TIME



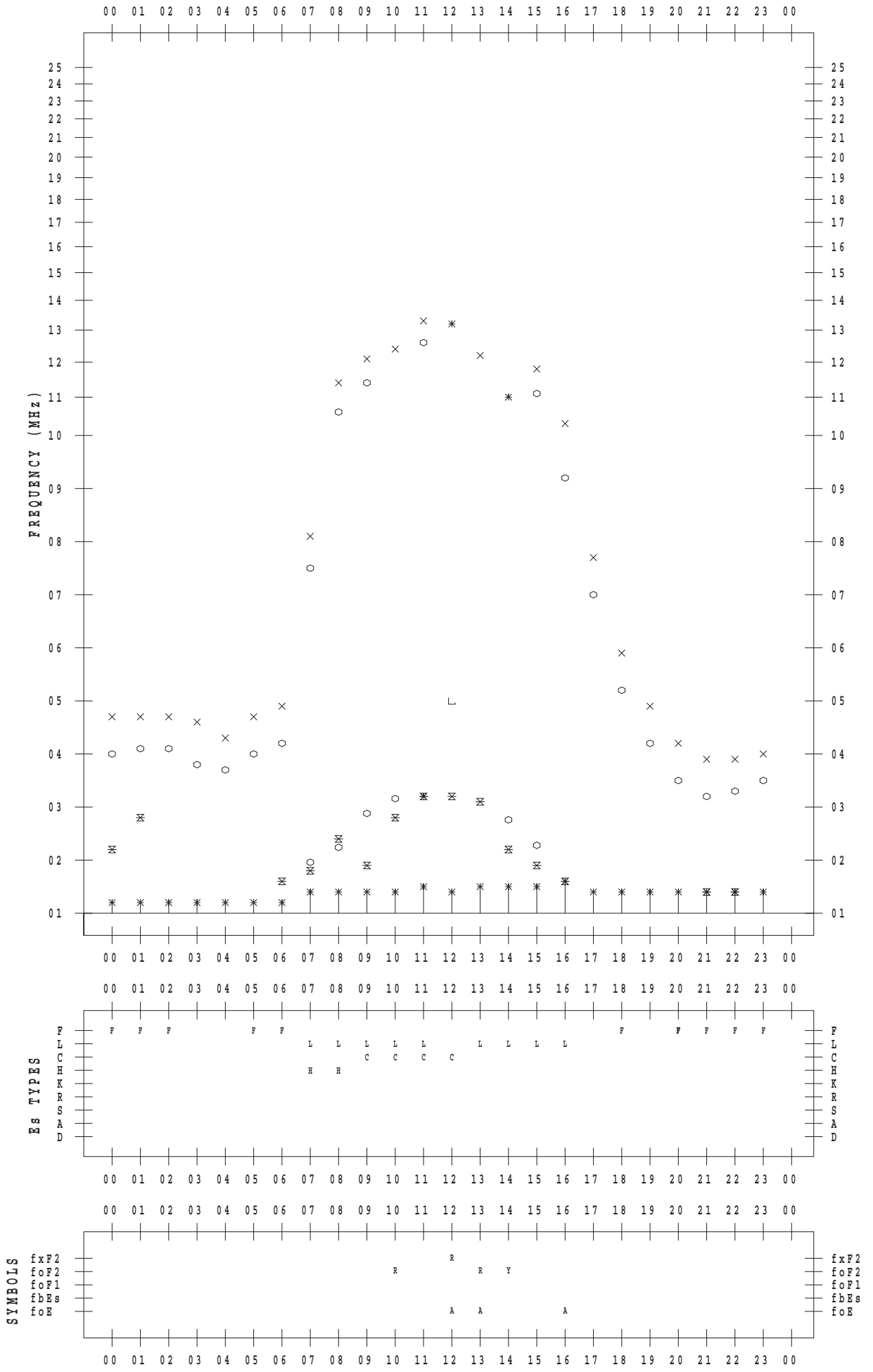
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/17

135 °E MEAN TIME



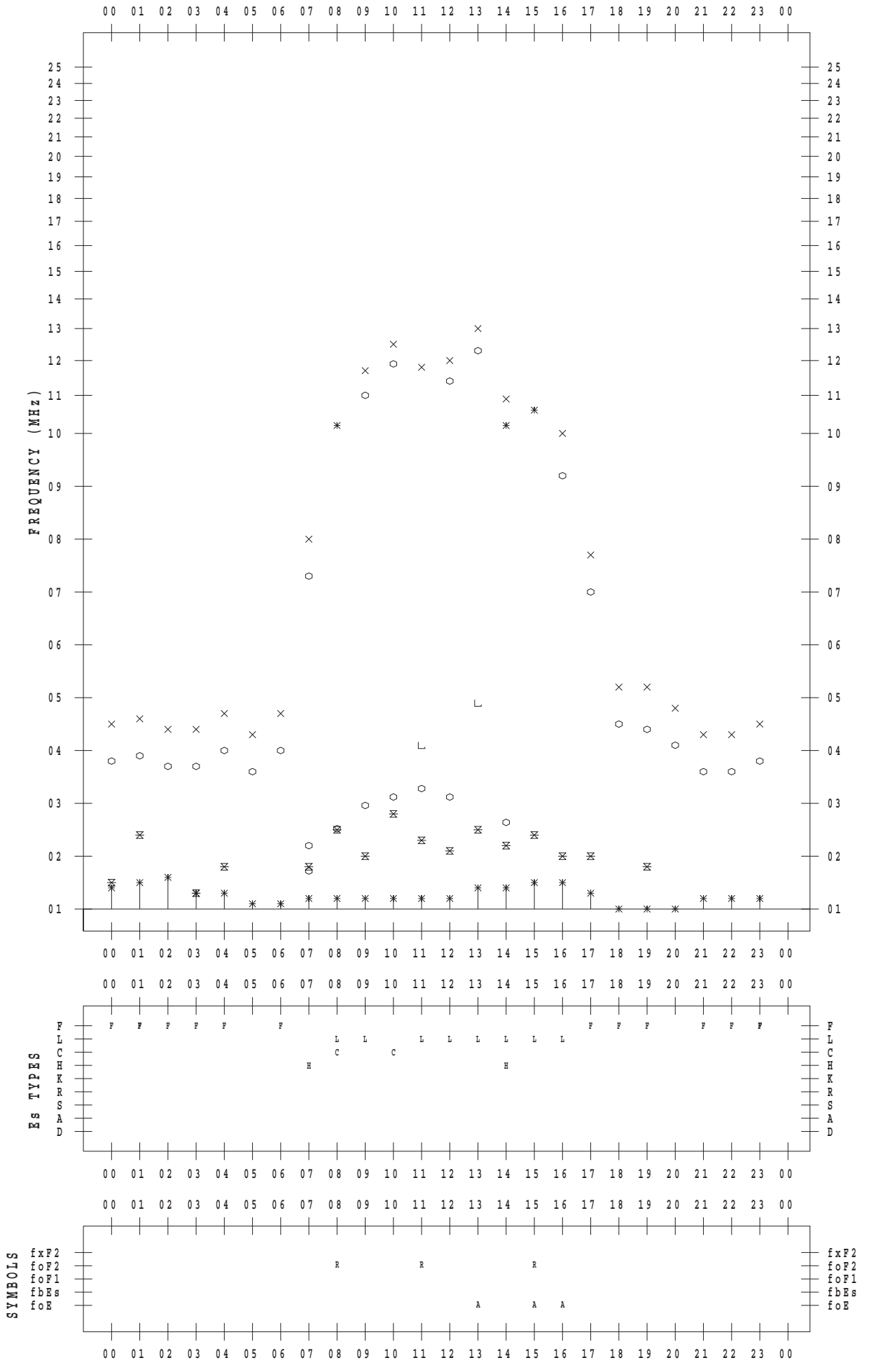
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/18

135 °E MEAN TIME



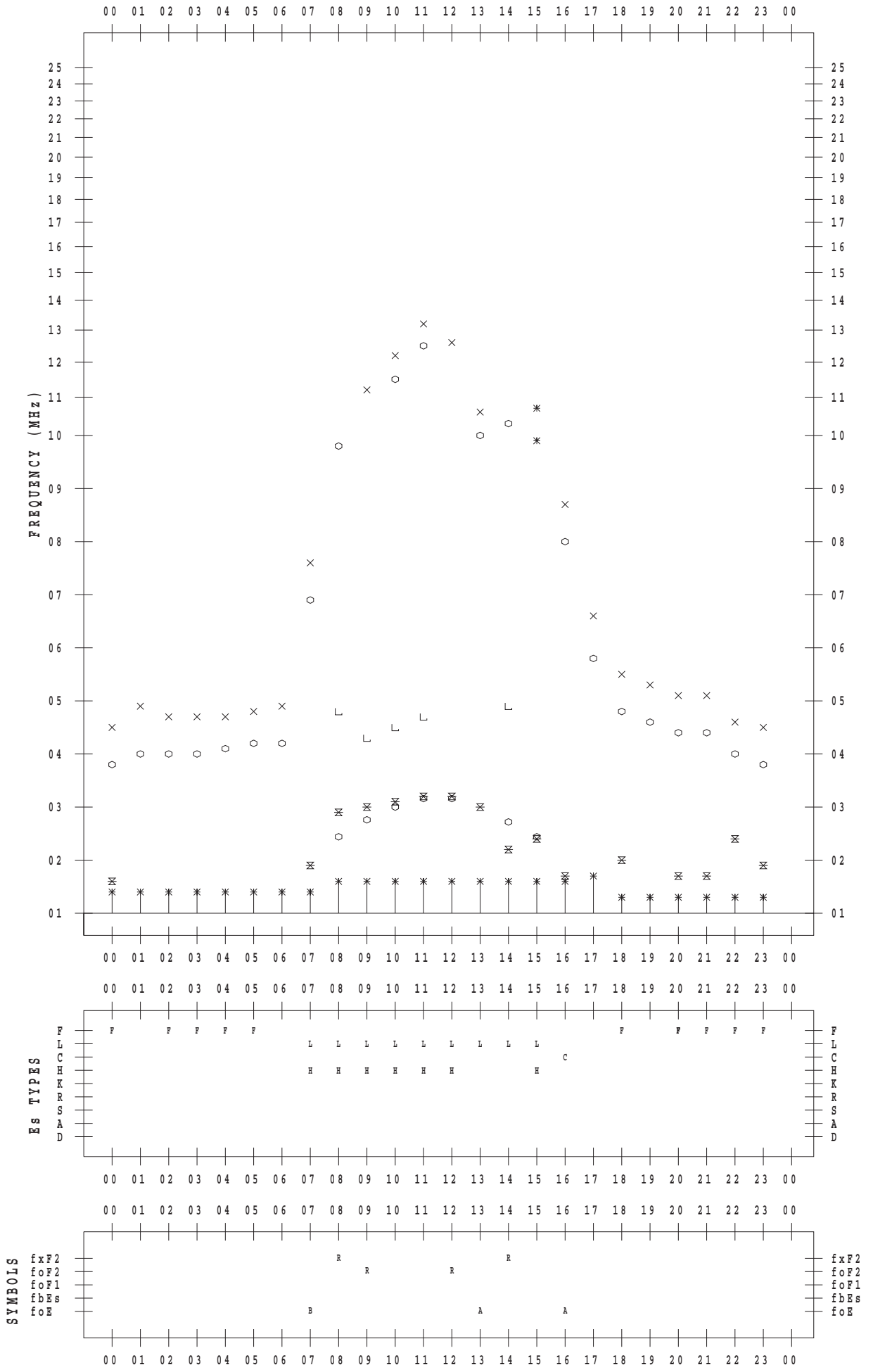
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/19

135 °E MEAN TIME



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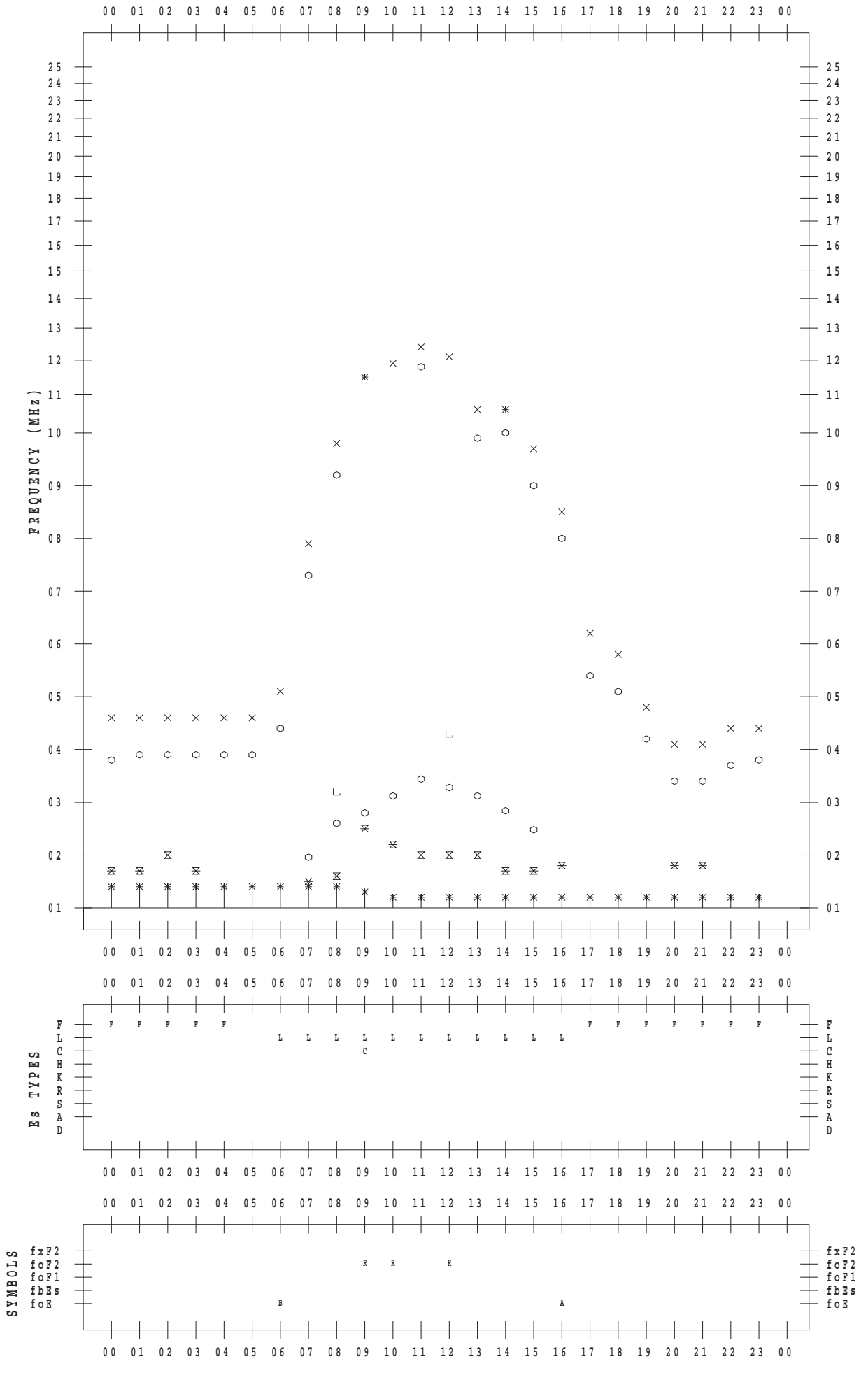
SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/20

135 °E MEAN TIME



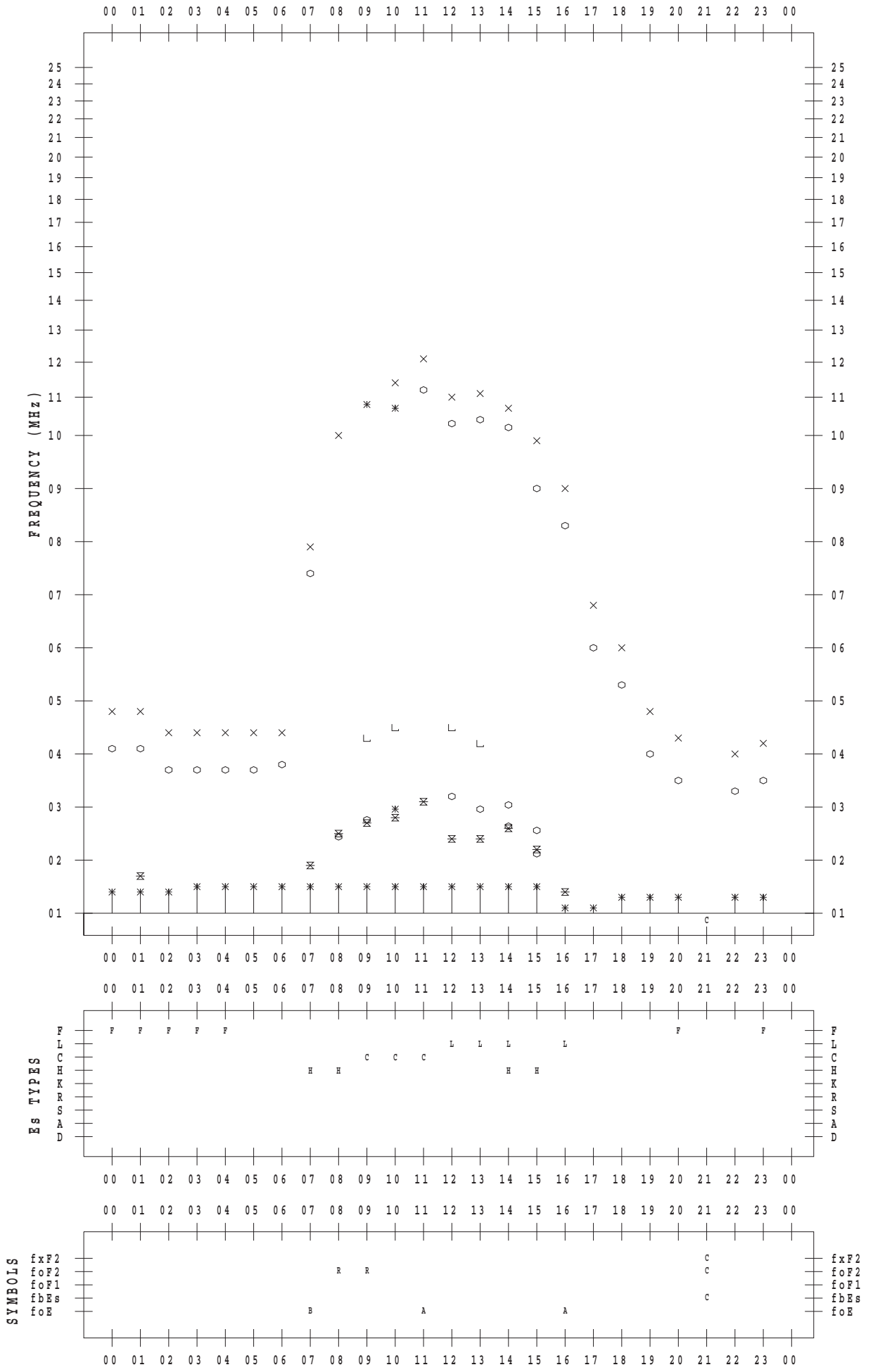
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/21

135 °E MEAN TIME



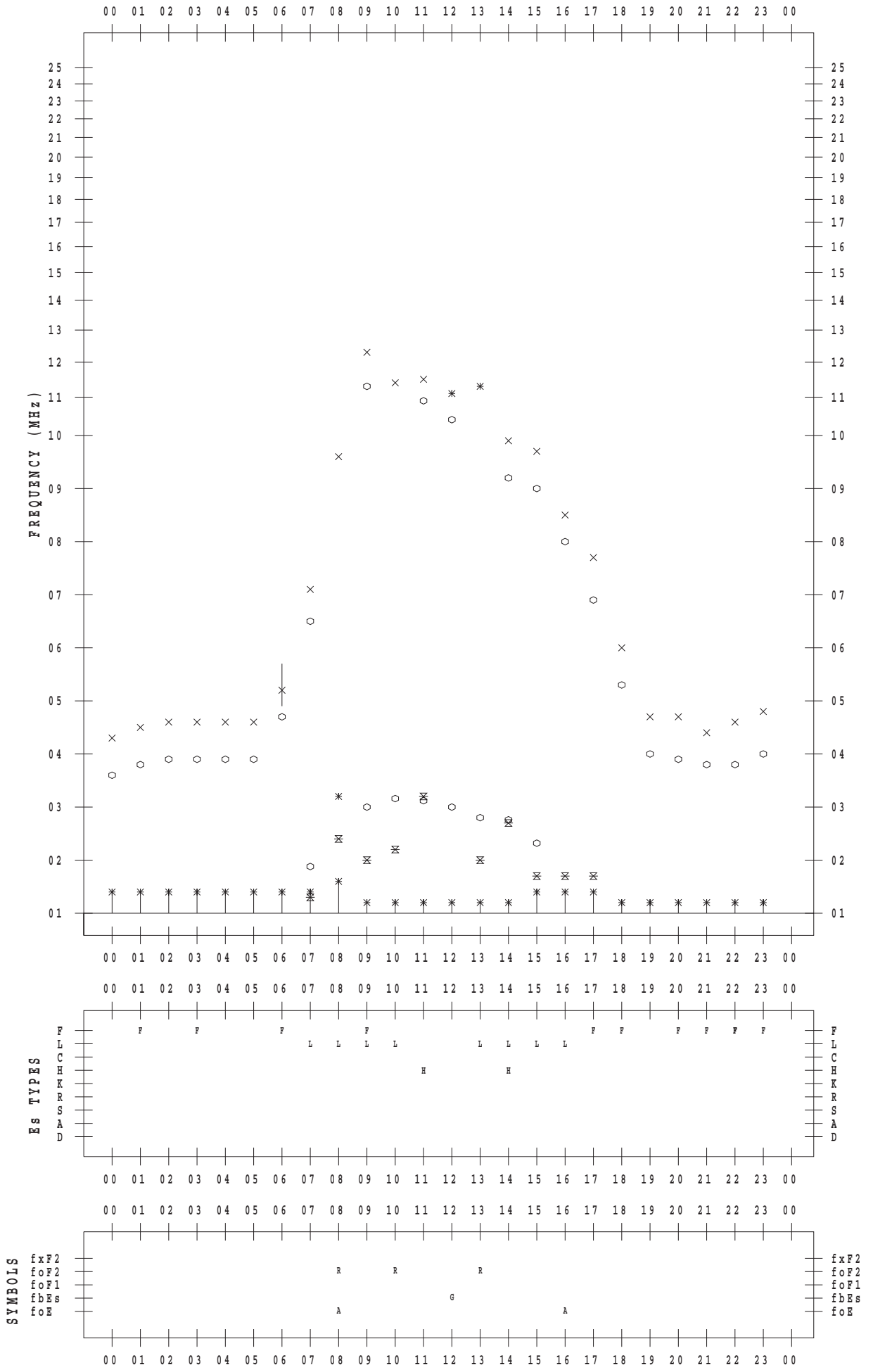
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/22

135 °E MEAN TIME



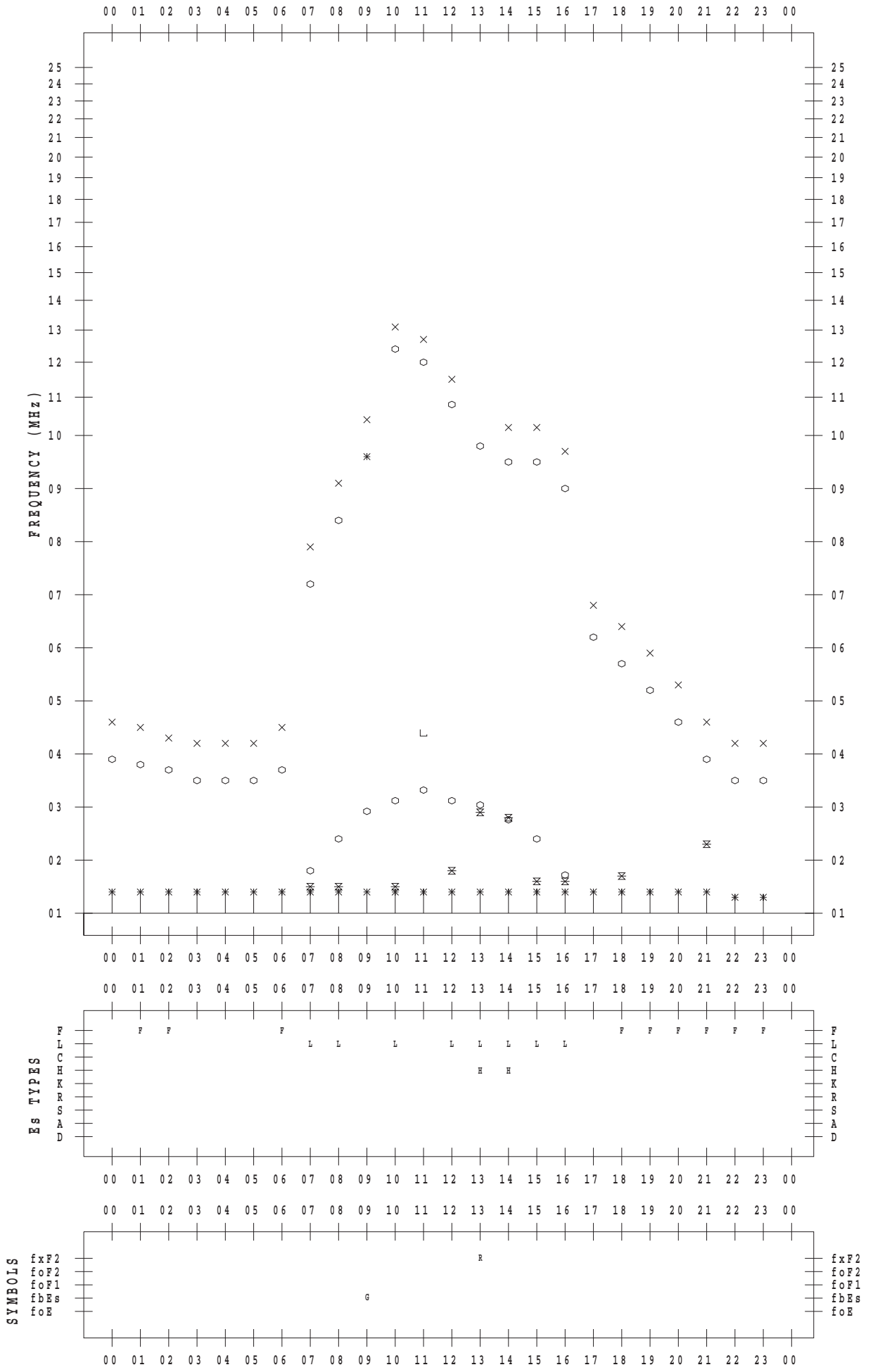
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/23

135 °E MEAN TIME



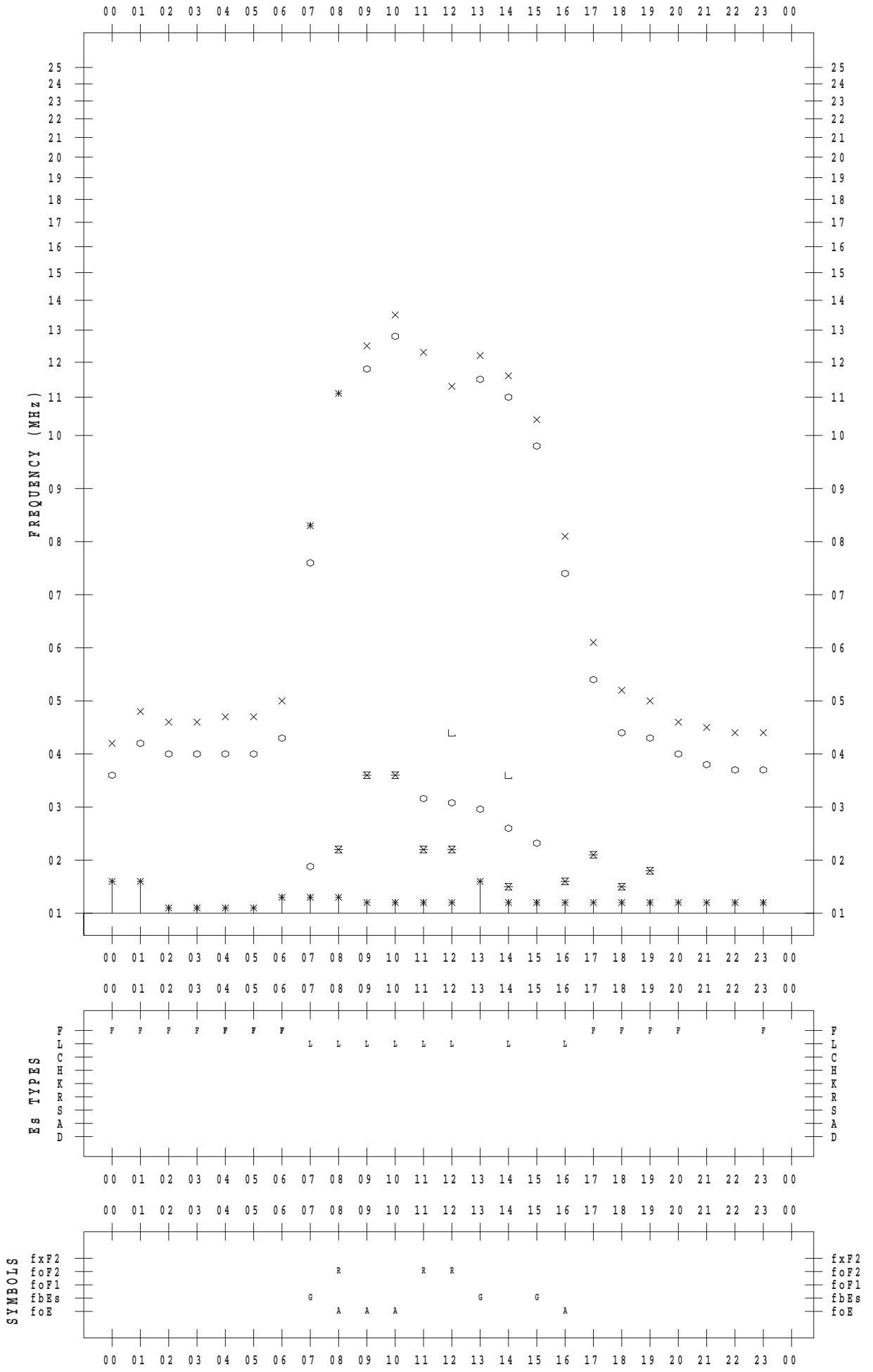
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/24

135 °E MEAN TIME



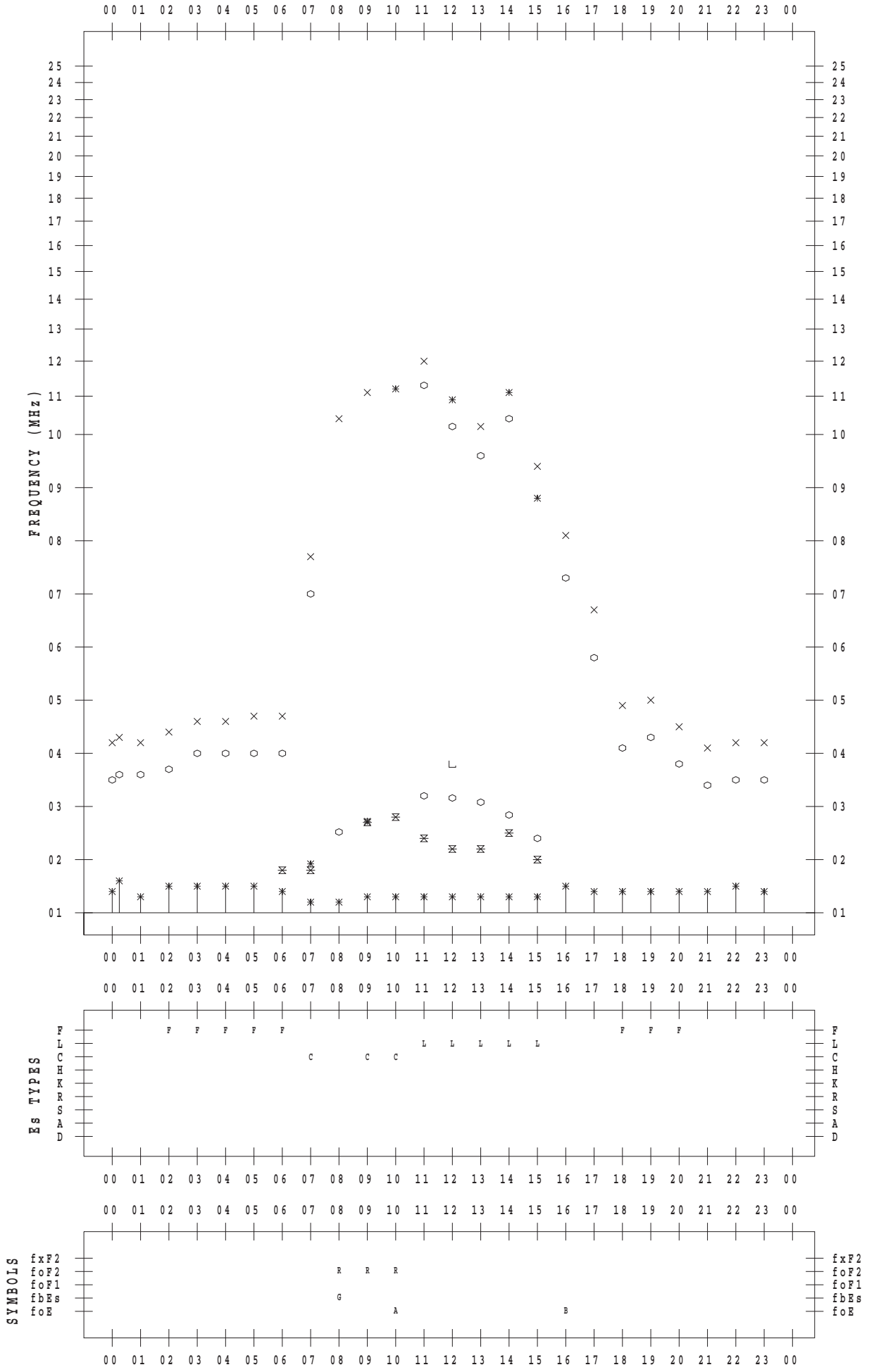
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/25

135 °E MEAN TIME



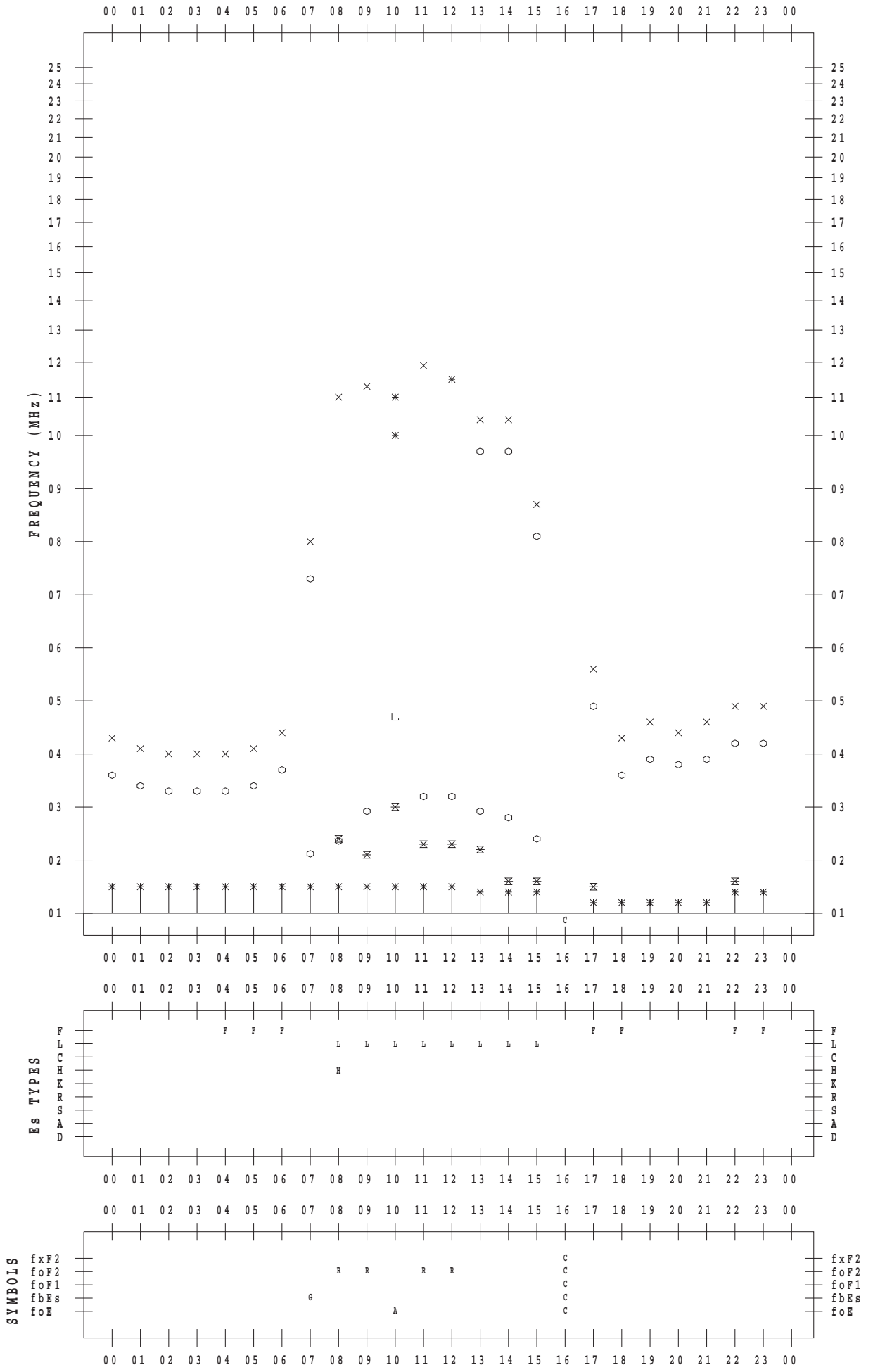
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/26

135 °E MEAN TIME



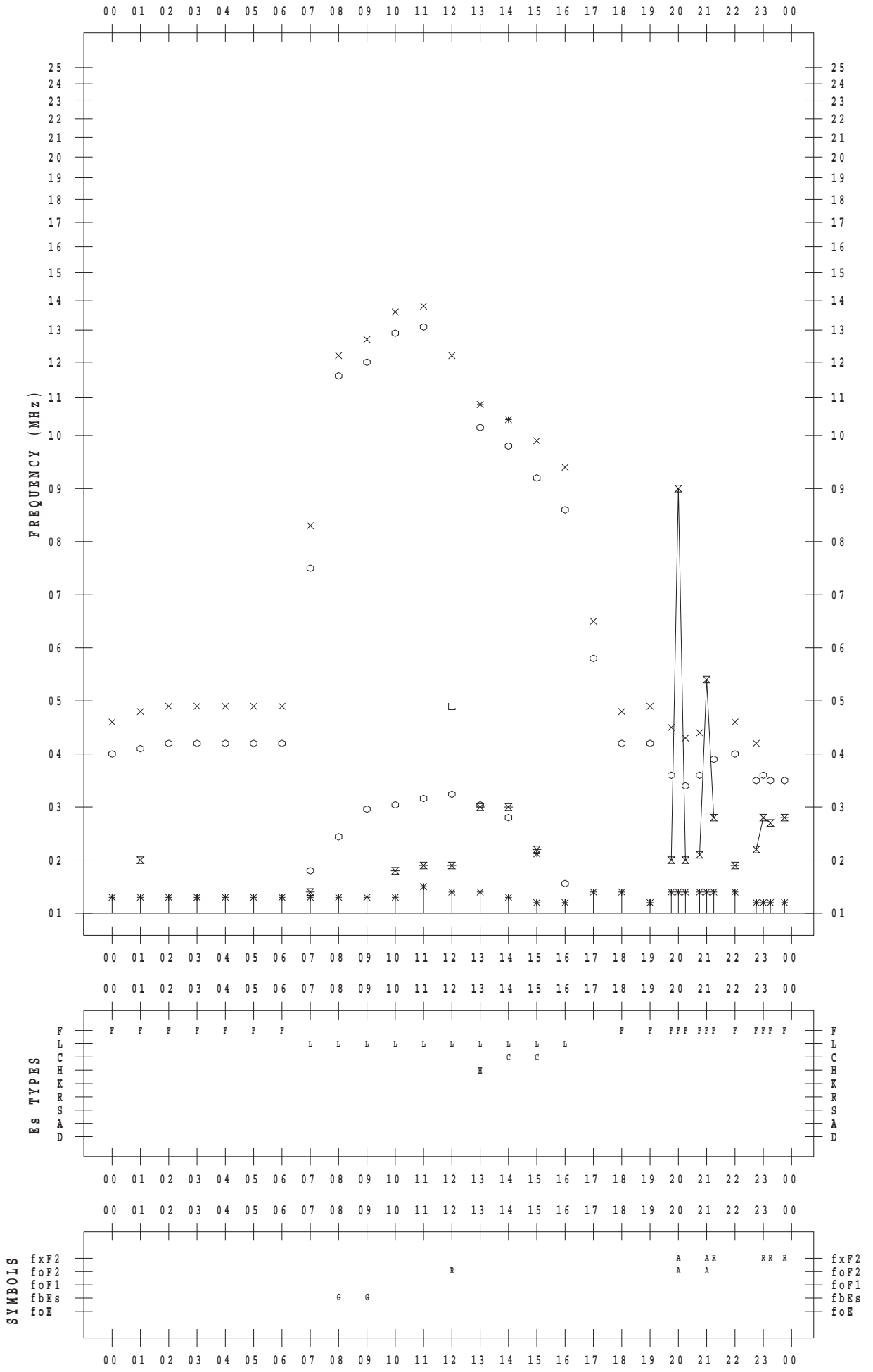
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/27

135 °E MEAN TIME



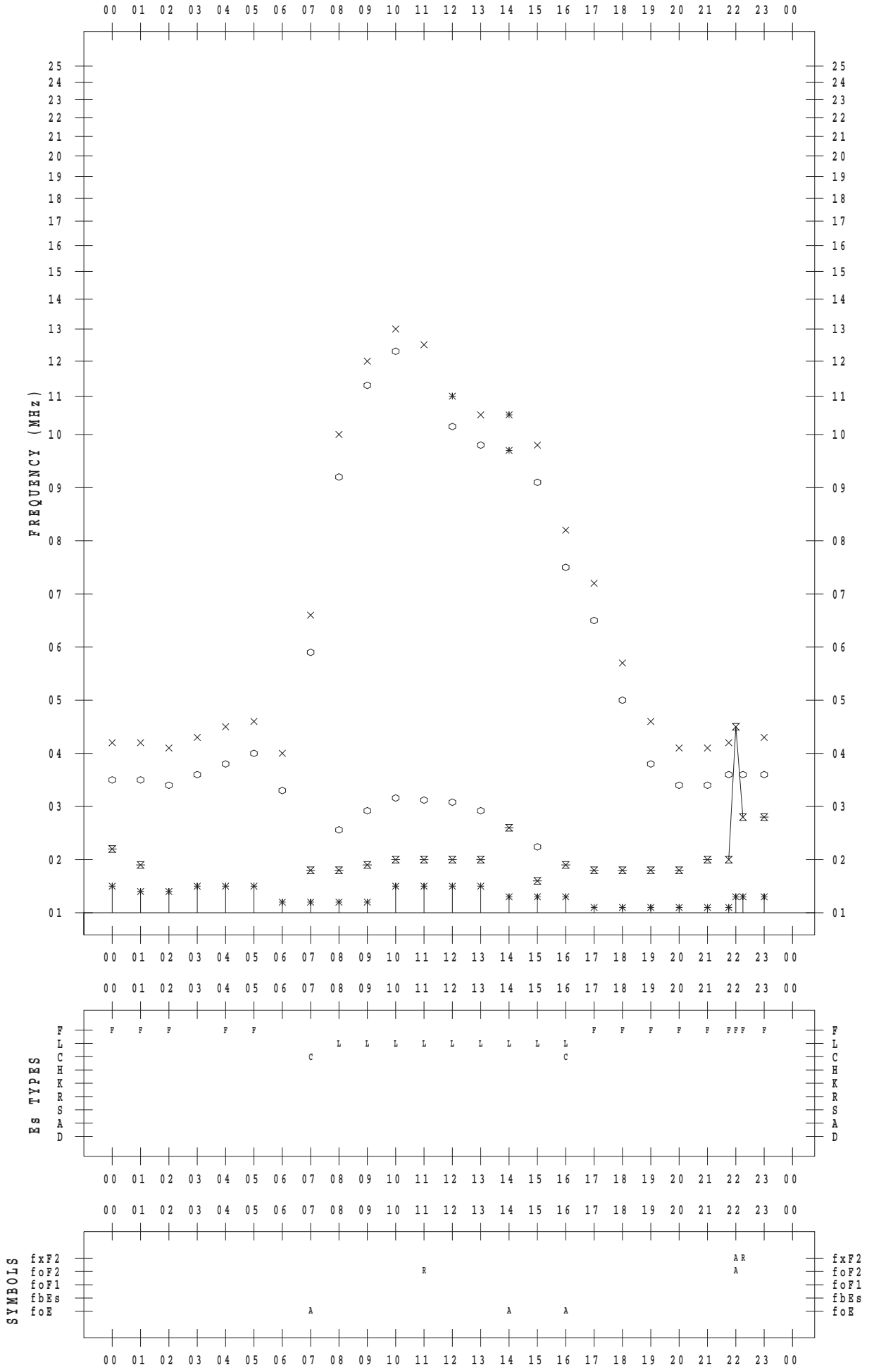
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/28

135 °E MEAN TIME



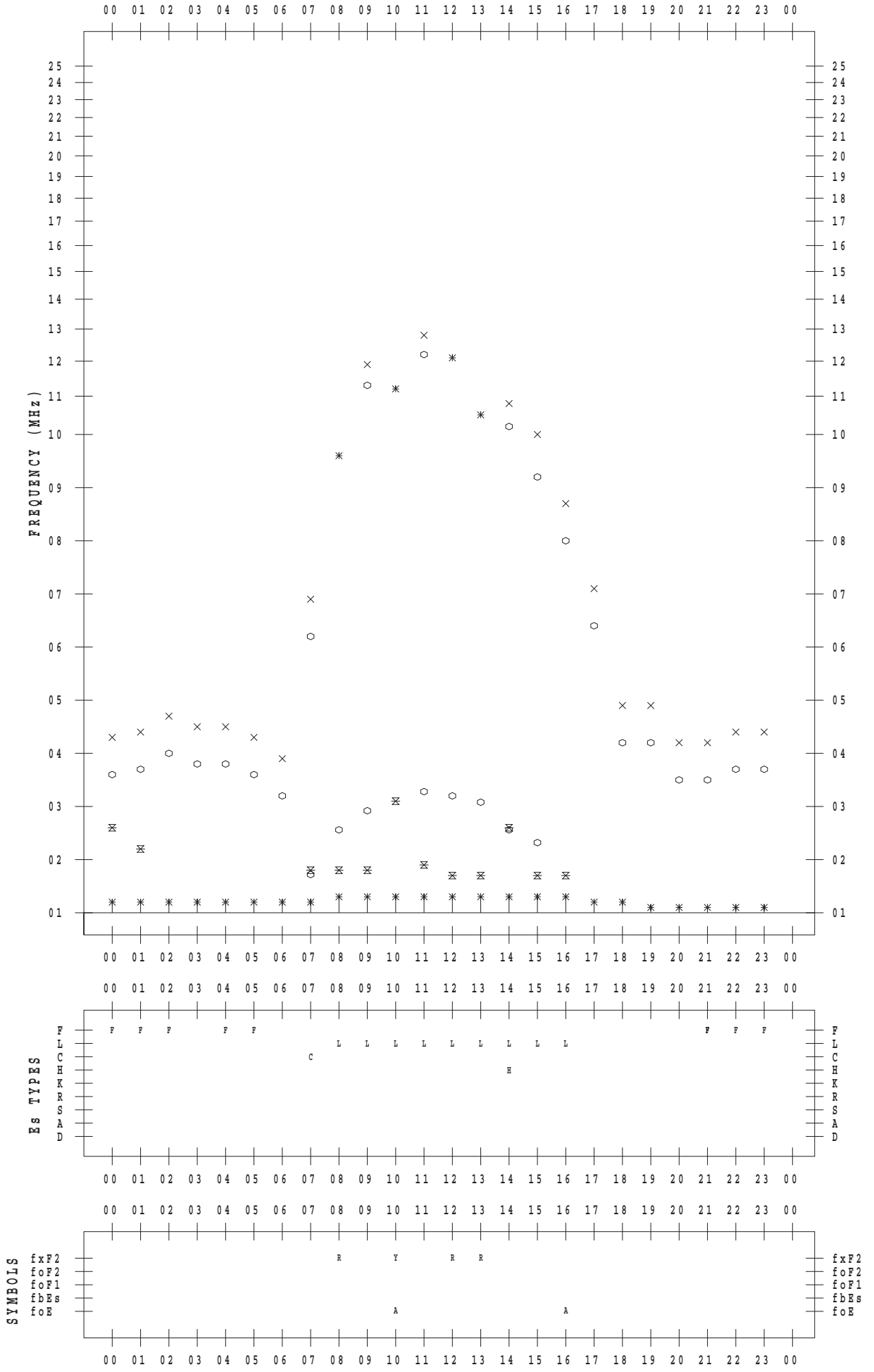
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/29

135 °E MEAN TIME



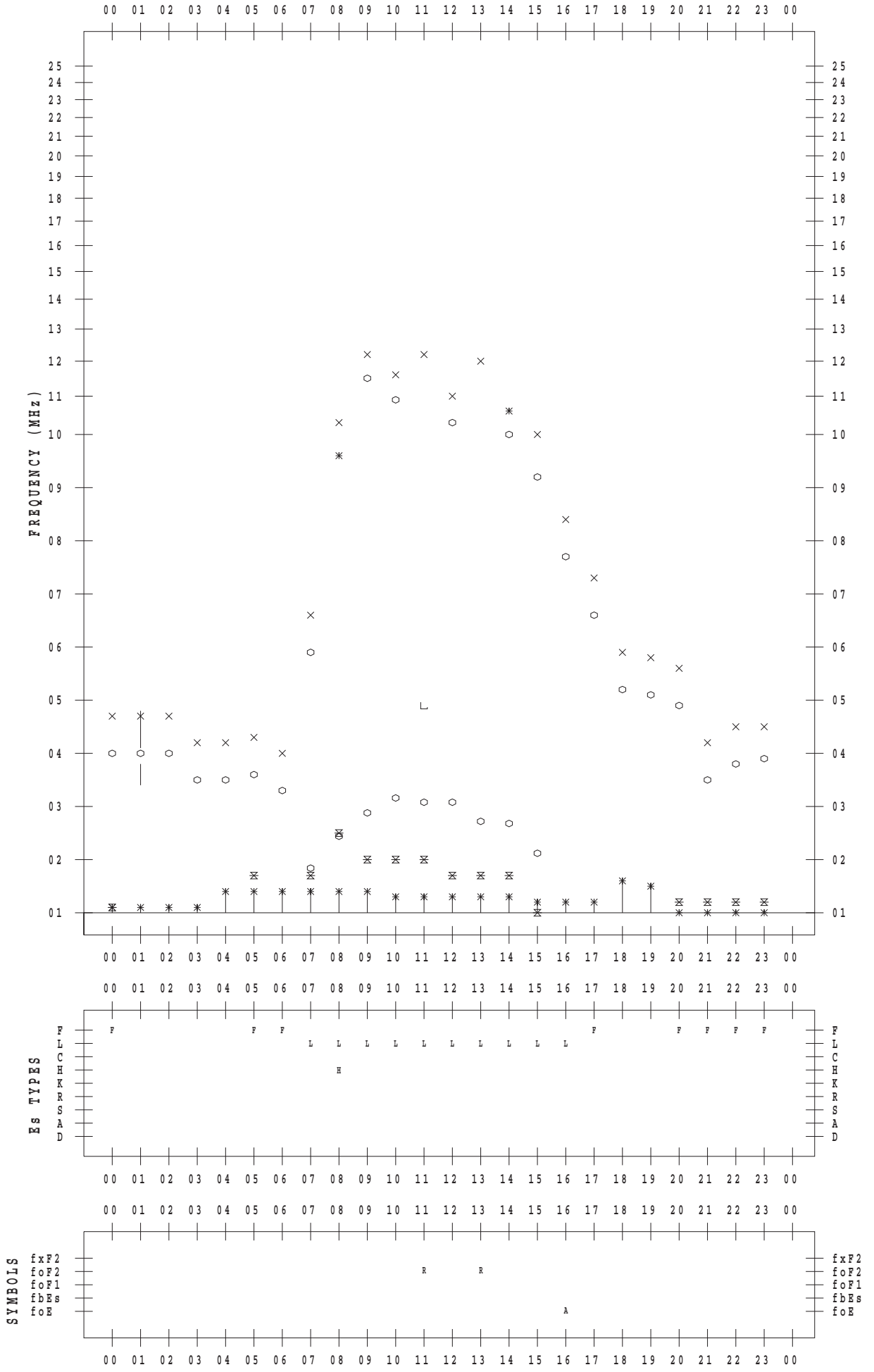
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/11/30

135 °E MEAN TIME



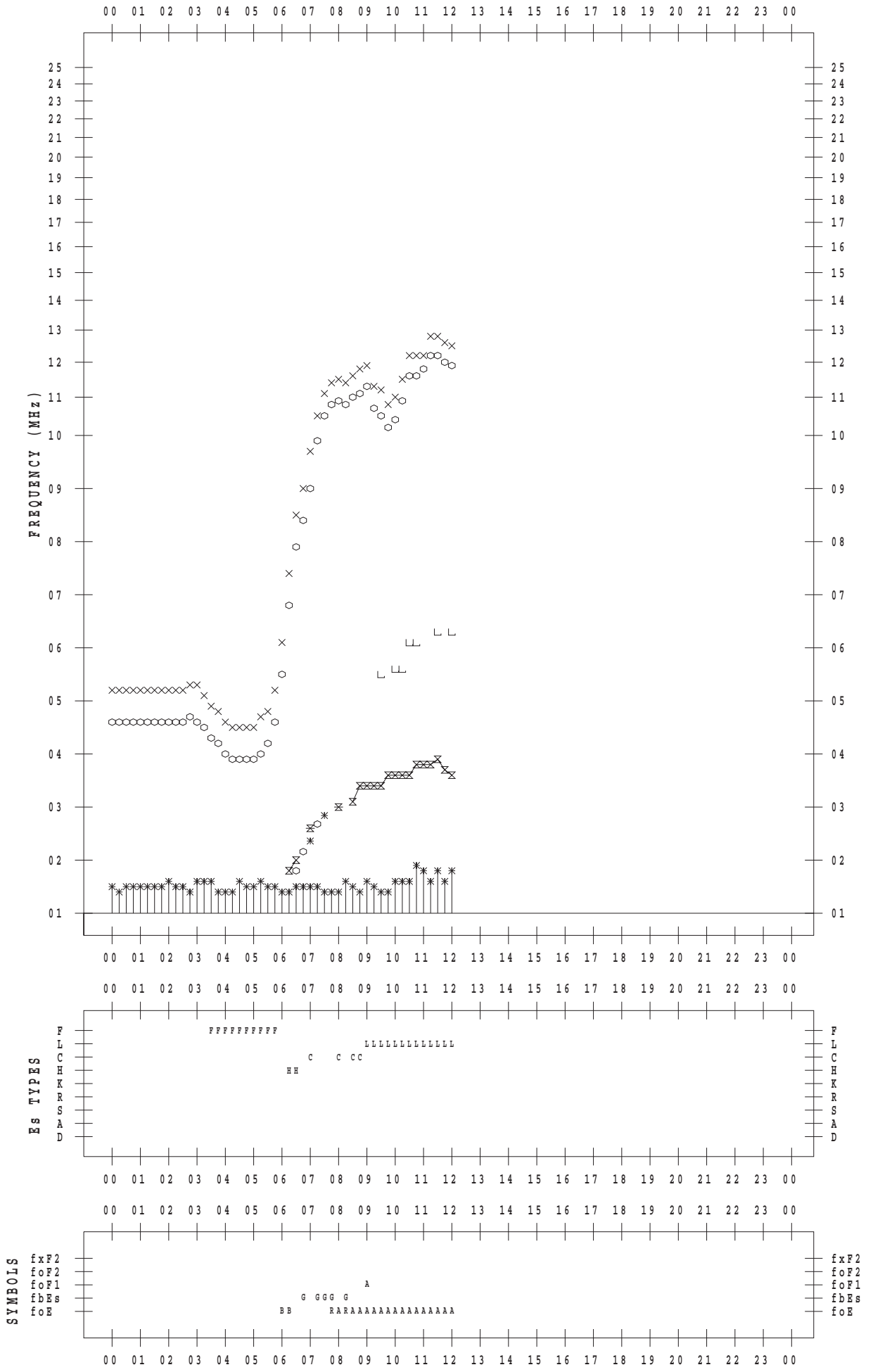
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 1

135 °E MEAN TIME



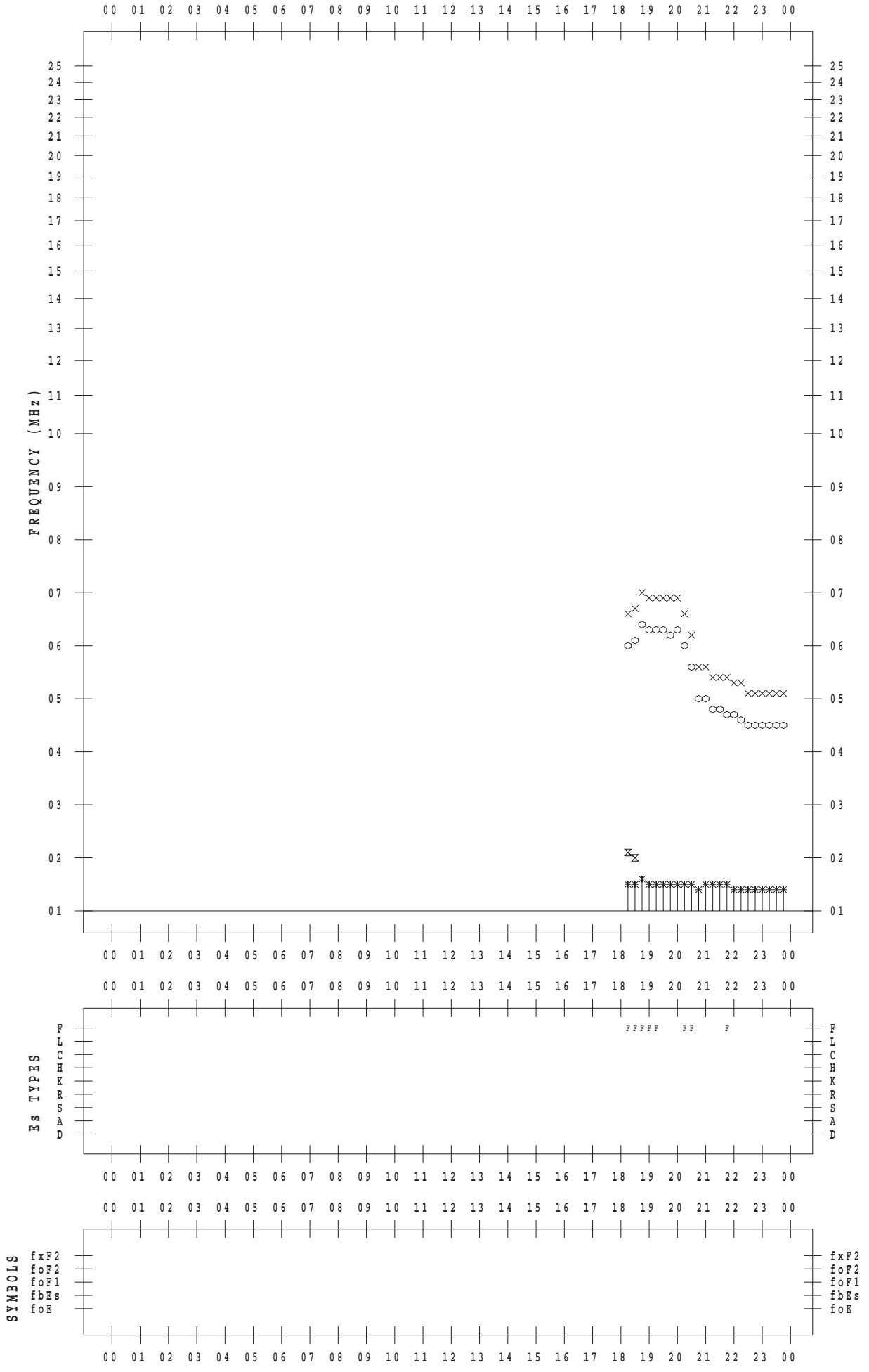
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 2

135 °E MEAN TIME



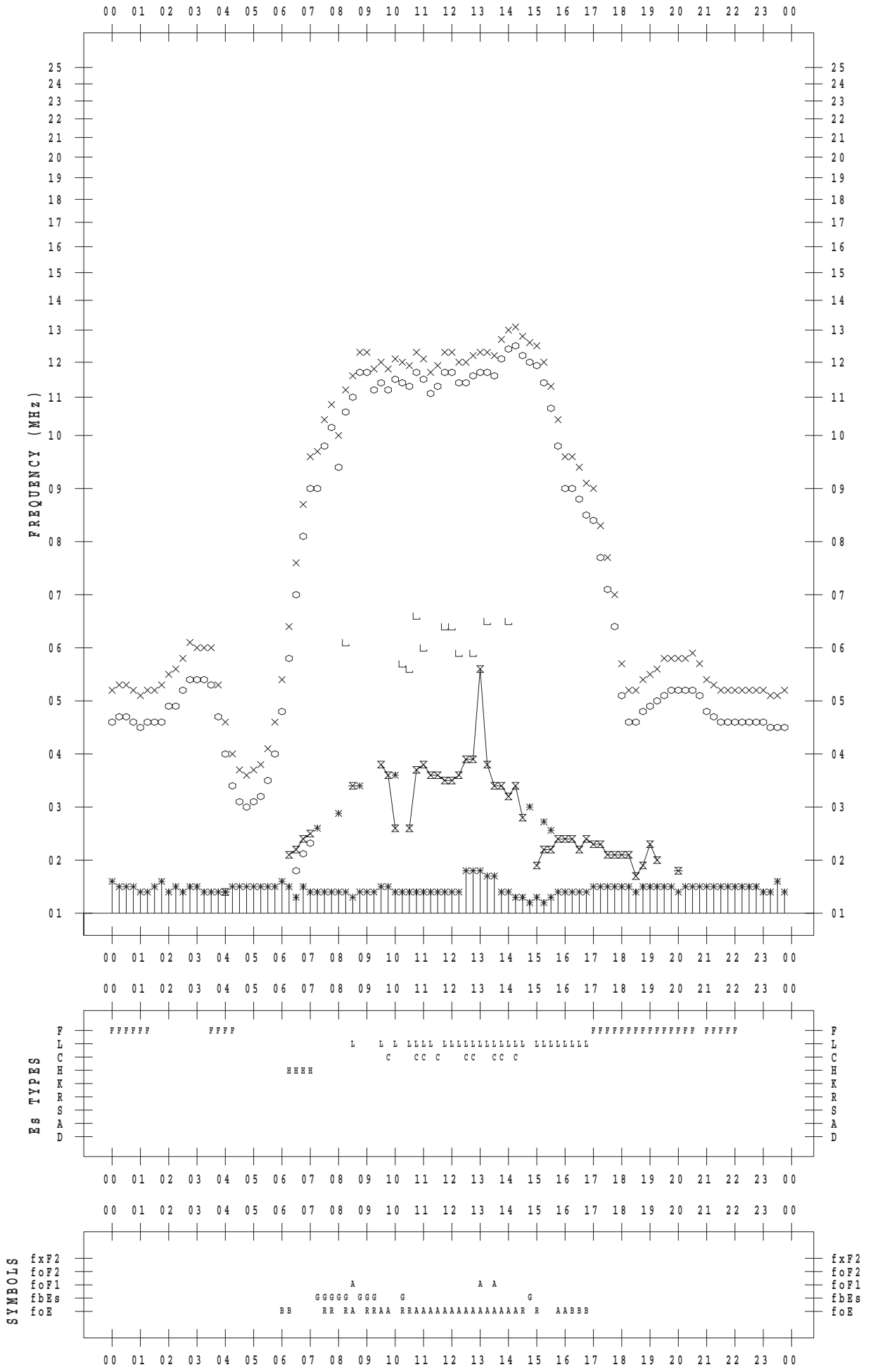
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 3

135 °E MEAN TIME



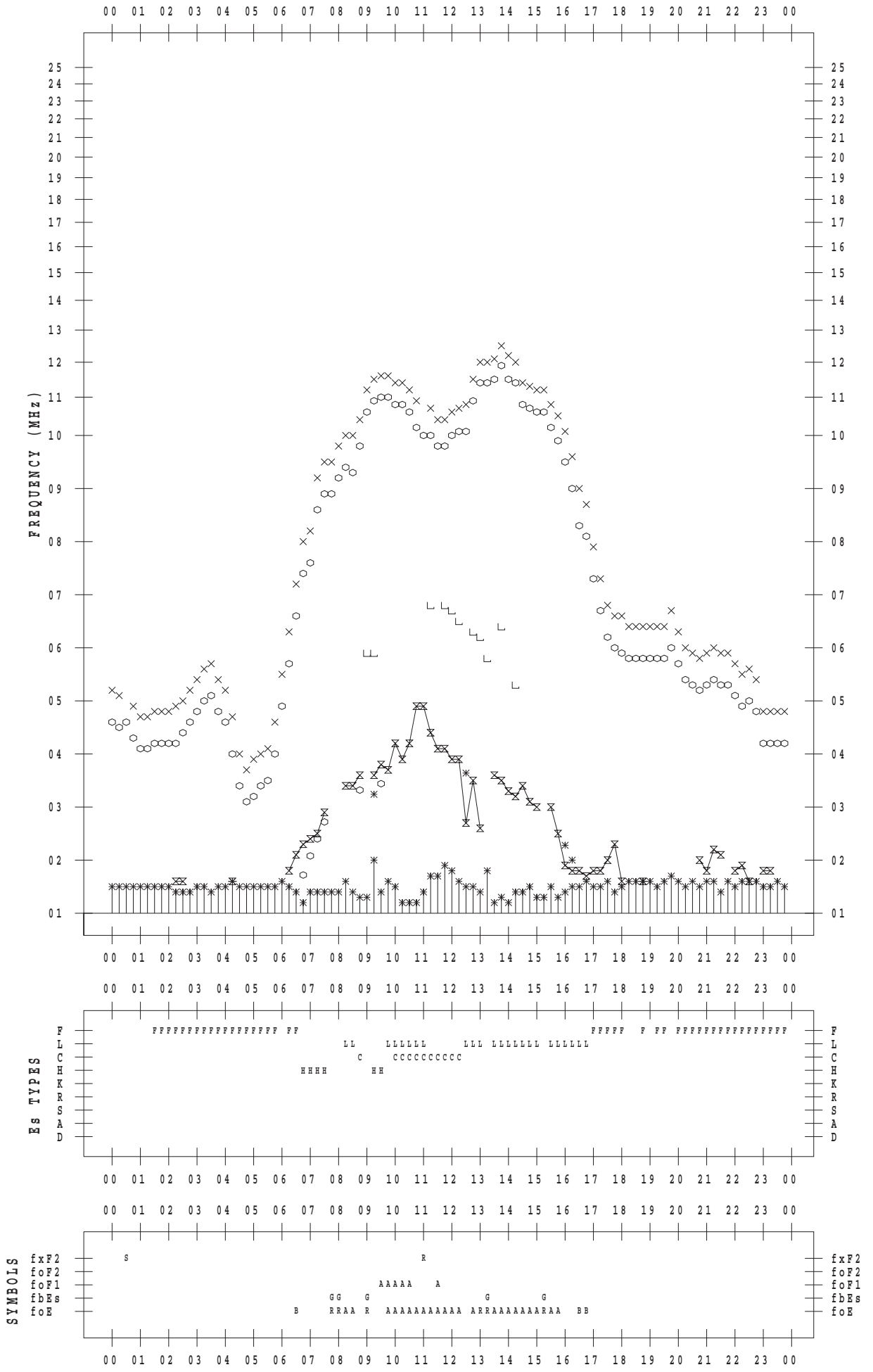
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 4

135 °E MEAN TIME



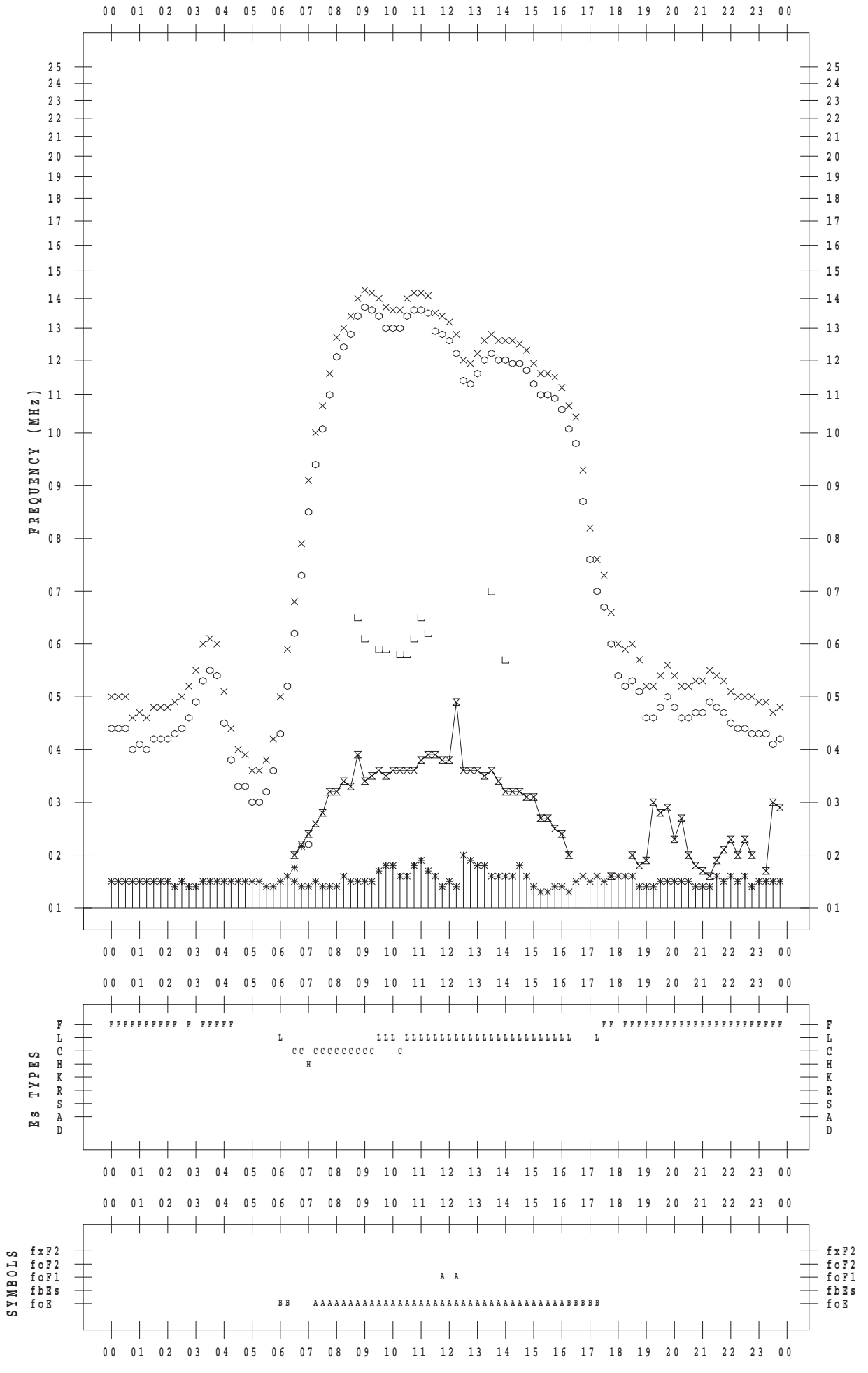
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 5

135 °E MEAN TIME



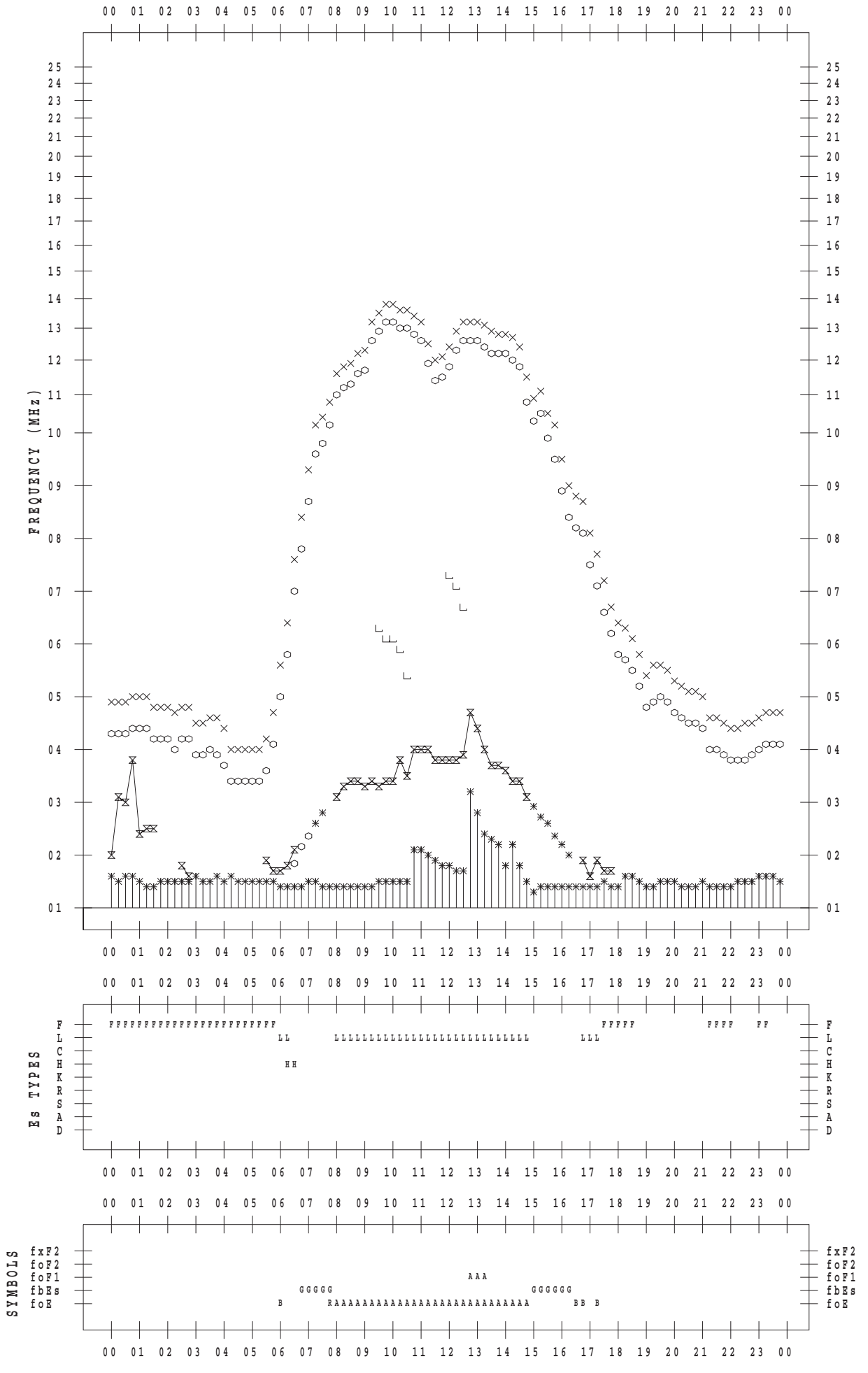
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 6

135 °E MEAN TIME



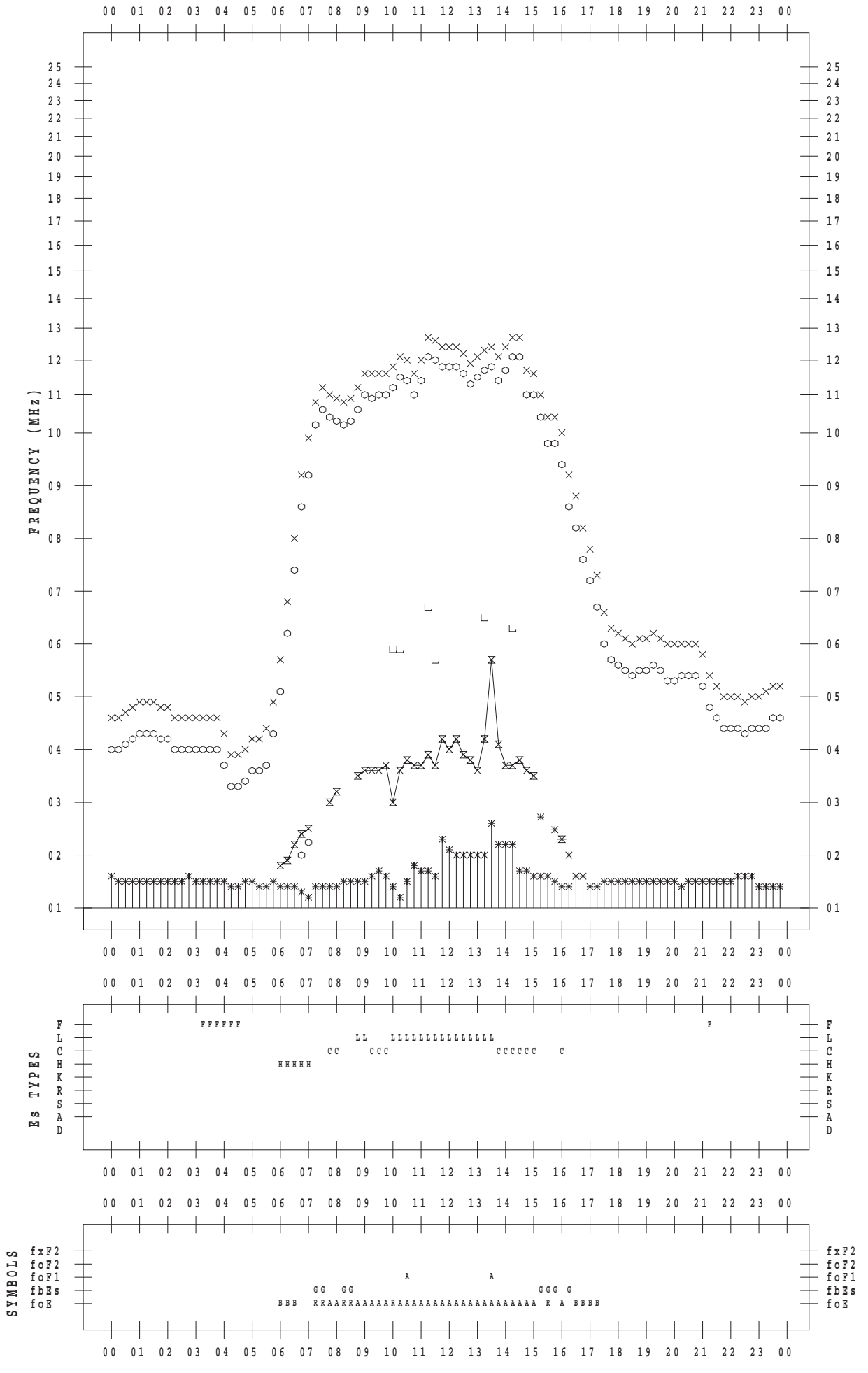
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 7

135 °E MEAN TIME



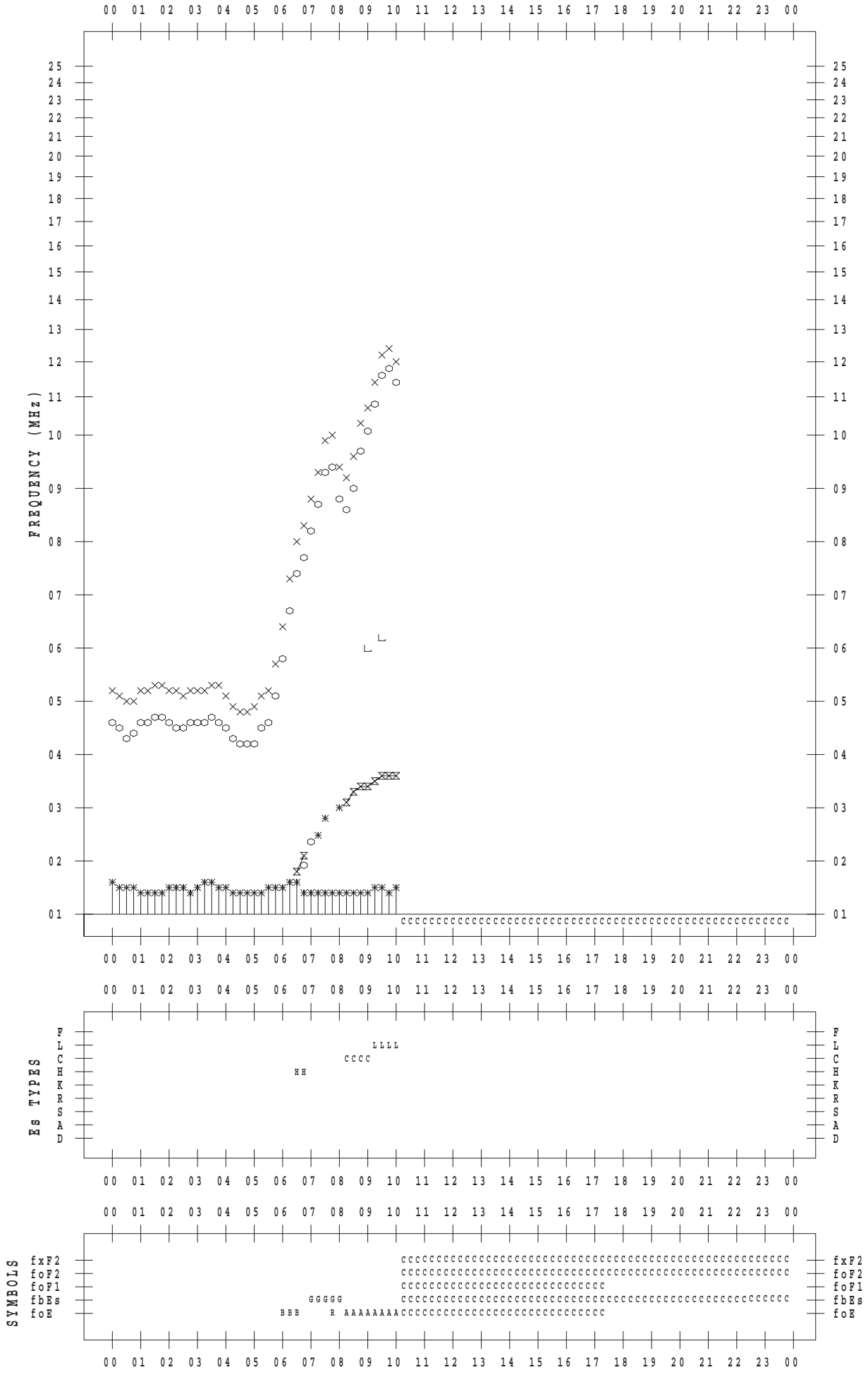
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 8

135 °E MEAN TIME



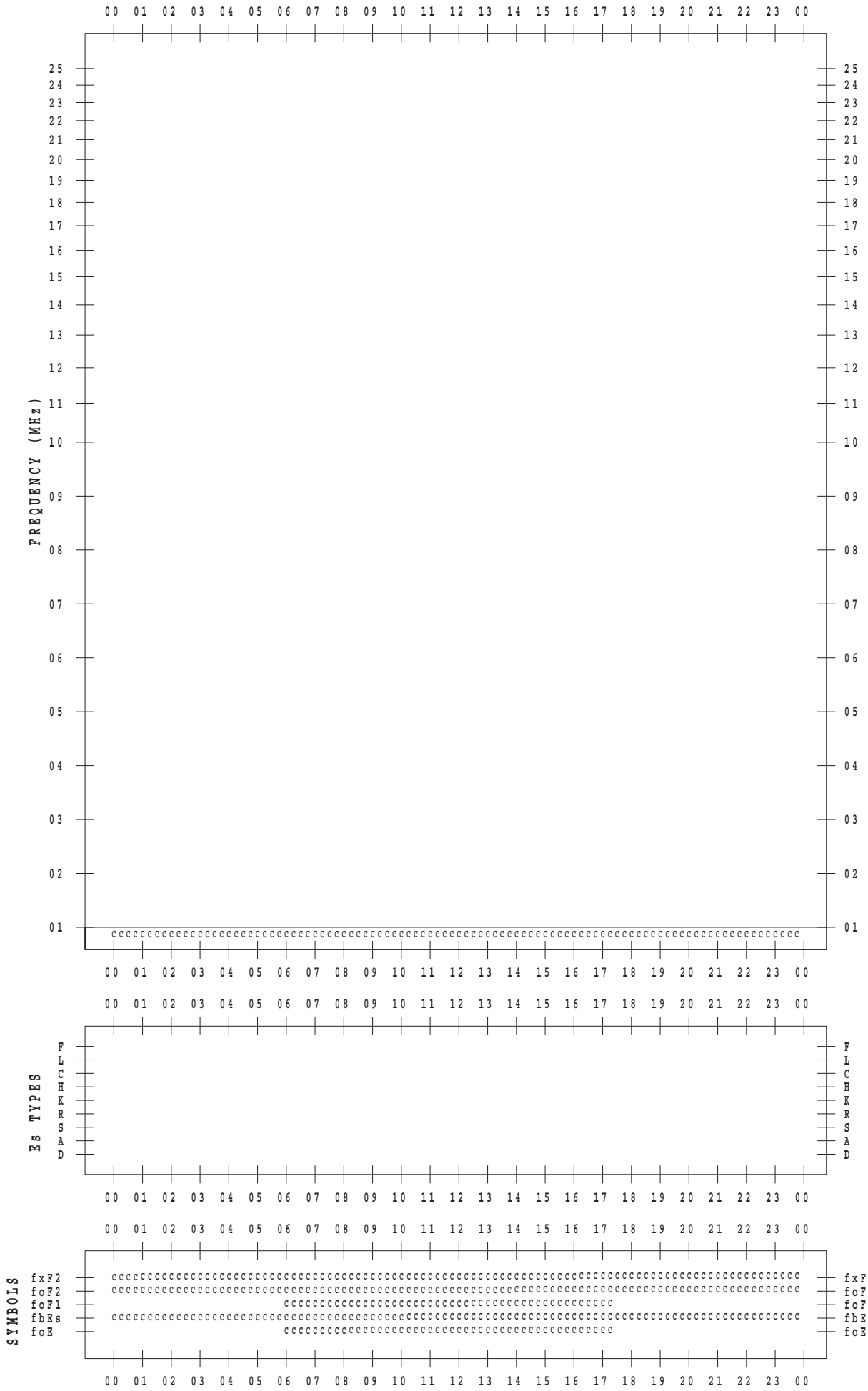
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/ 9

135 °E MEAN TIME



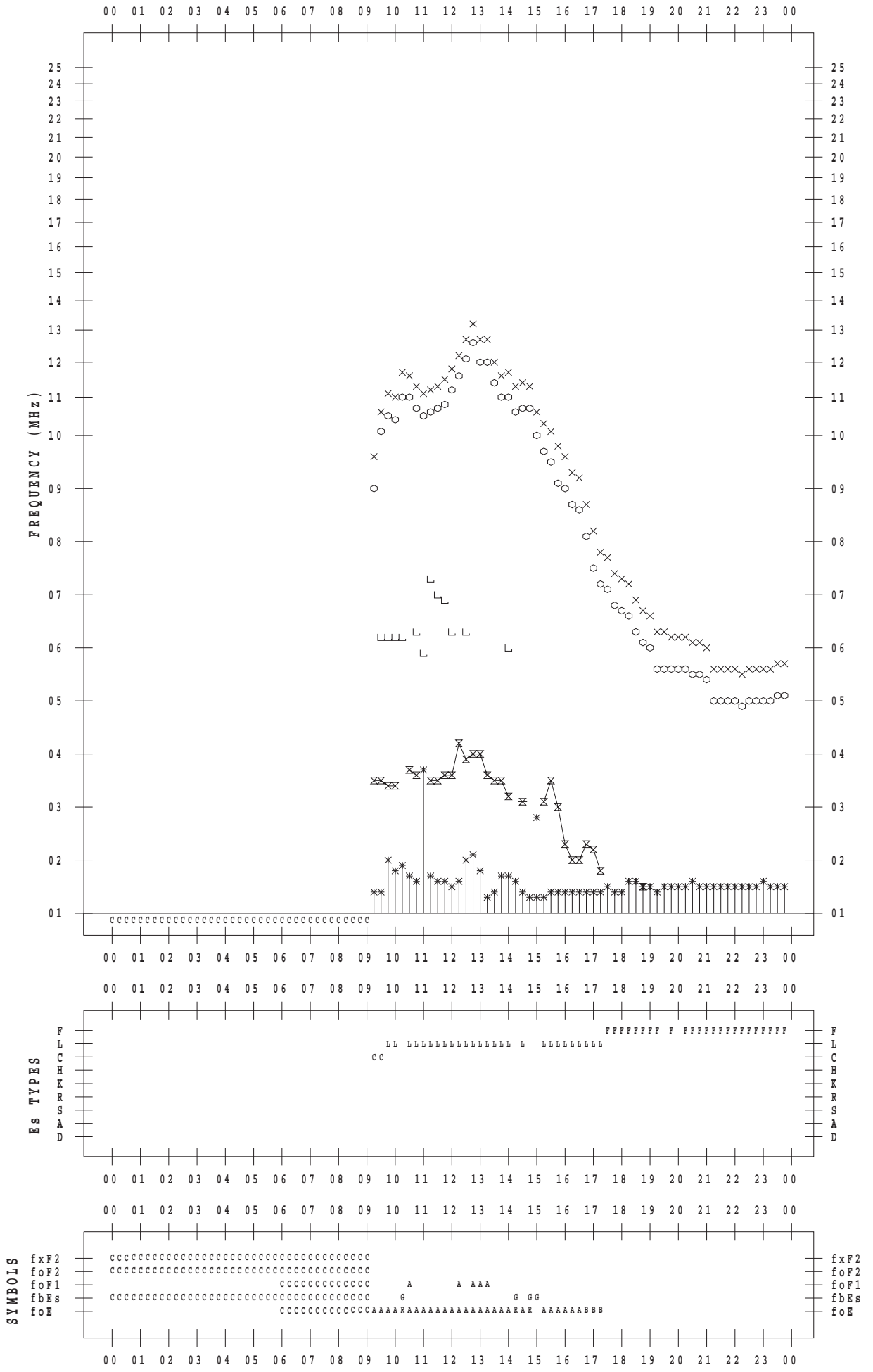
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/10

135 °E MEAN TIME



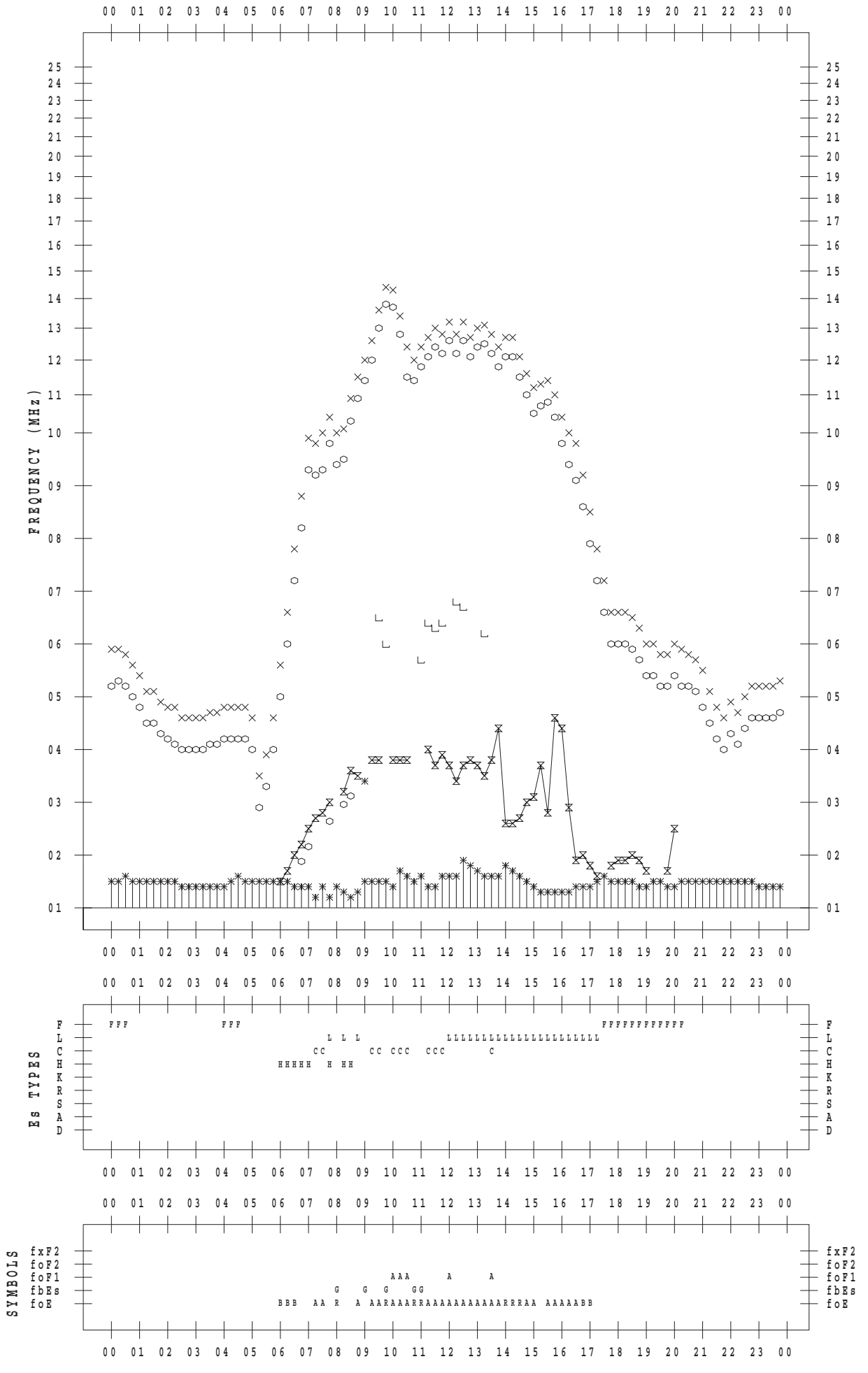
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/11

135 °E MEAN TIME



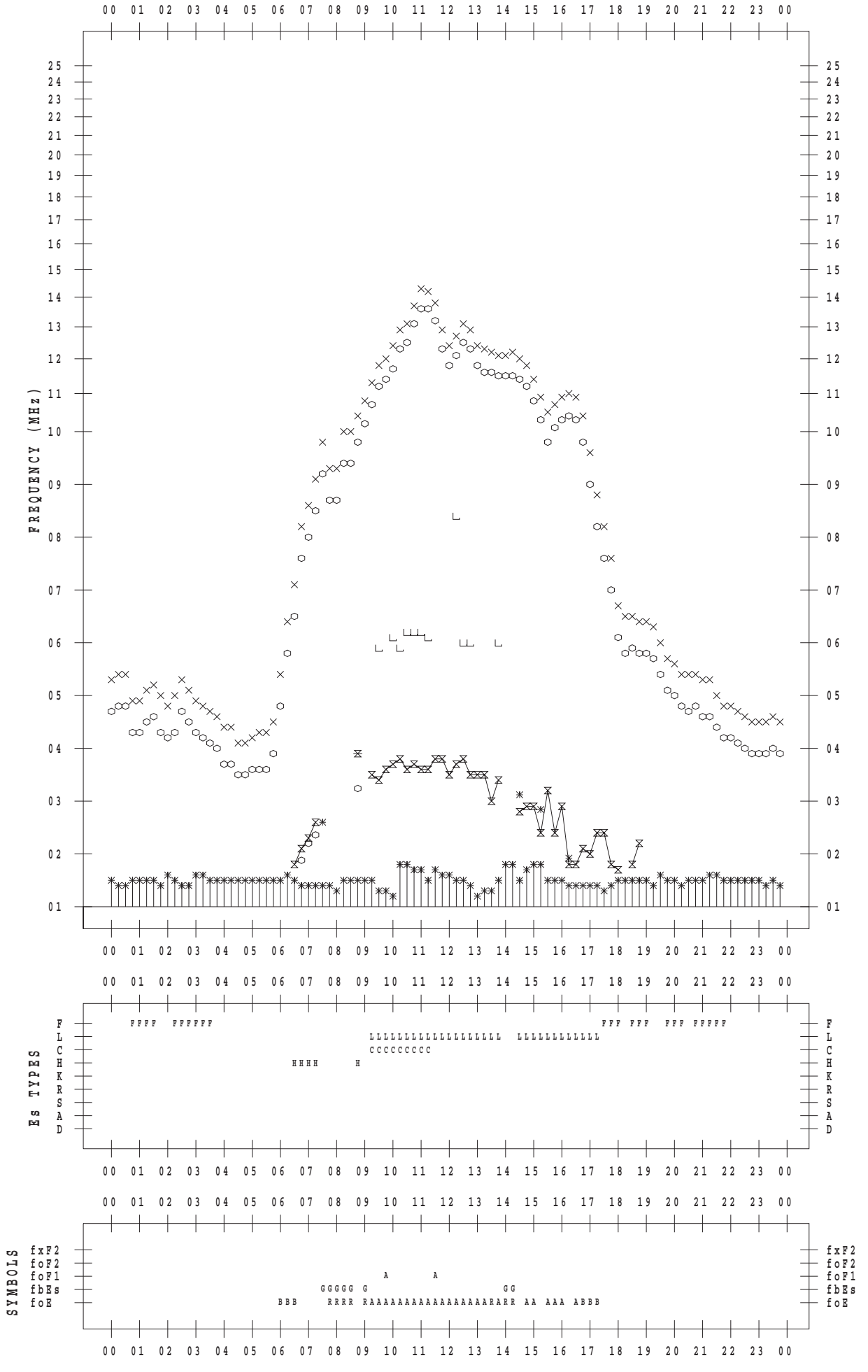
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/12

135 °E MEAN TIME



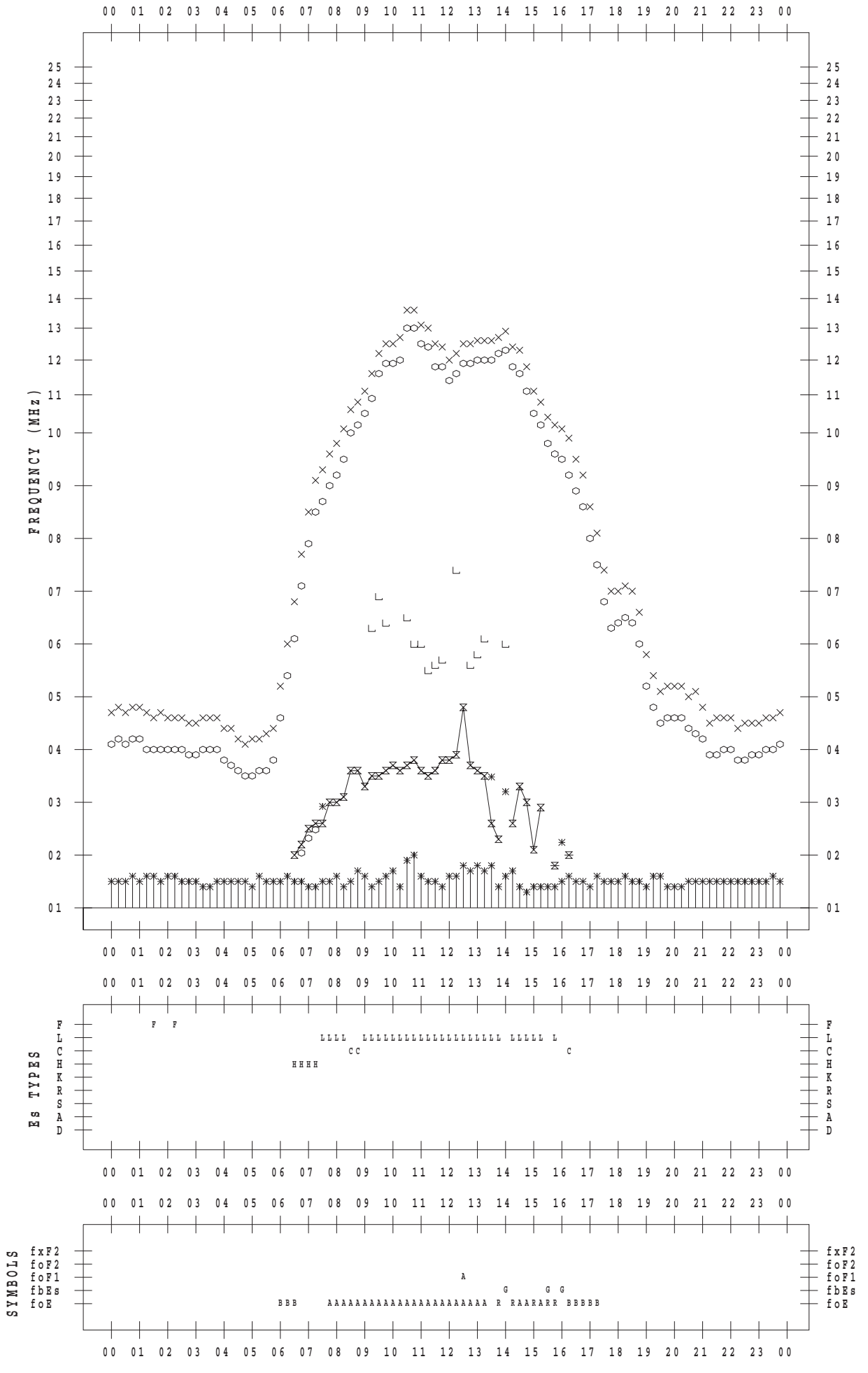
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/13

135 °E MEAN TIME



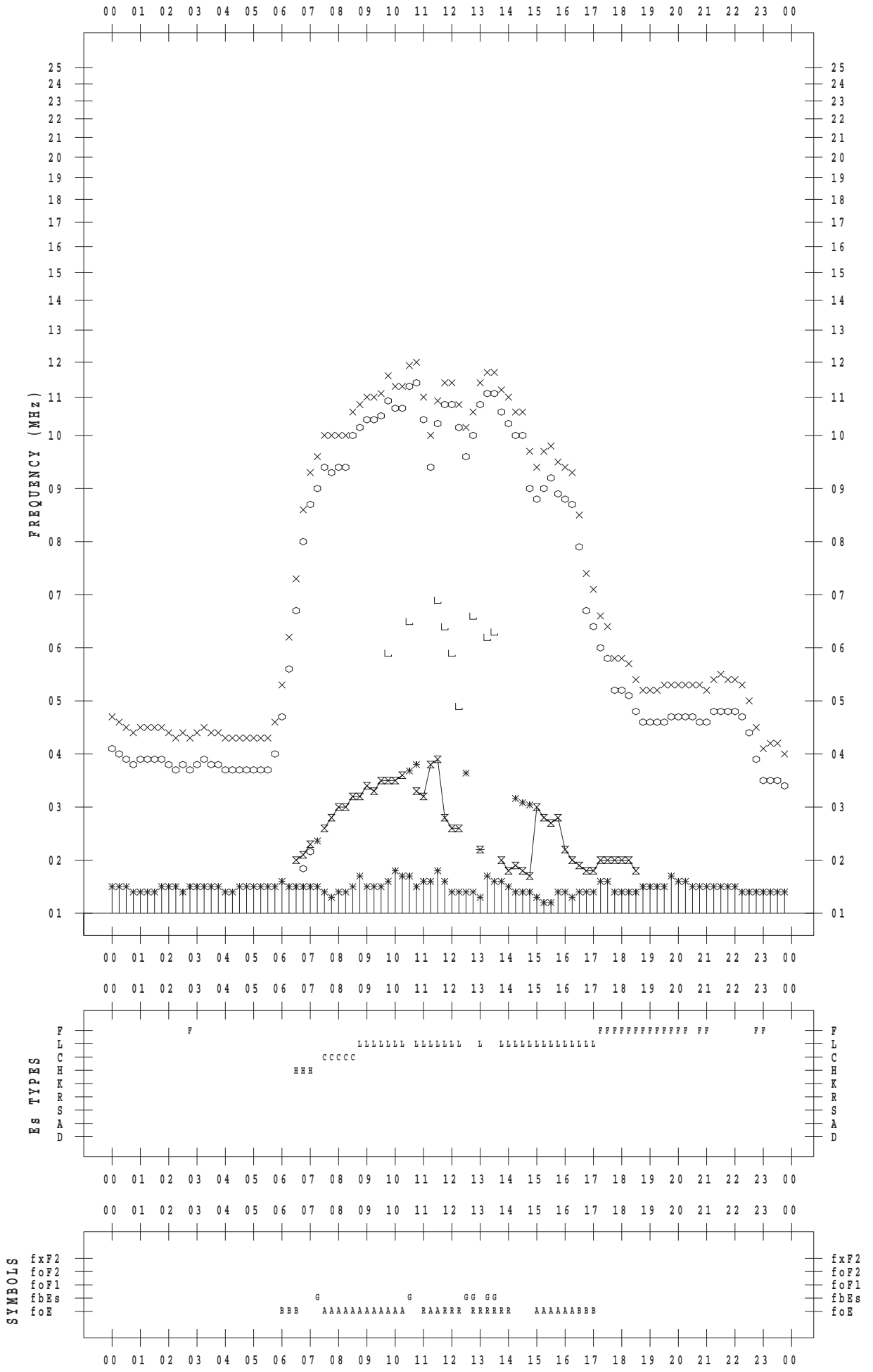
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/14

135 °E MEAN TIME



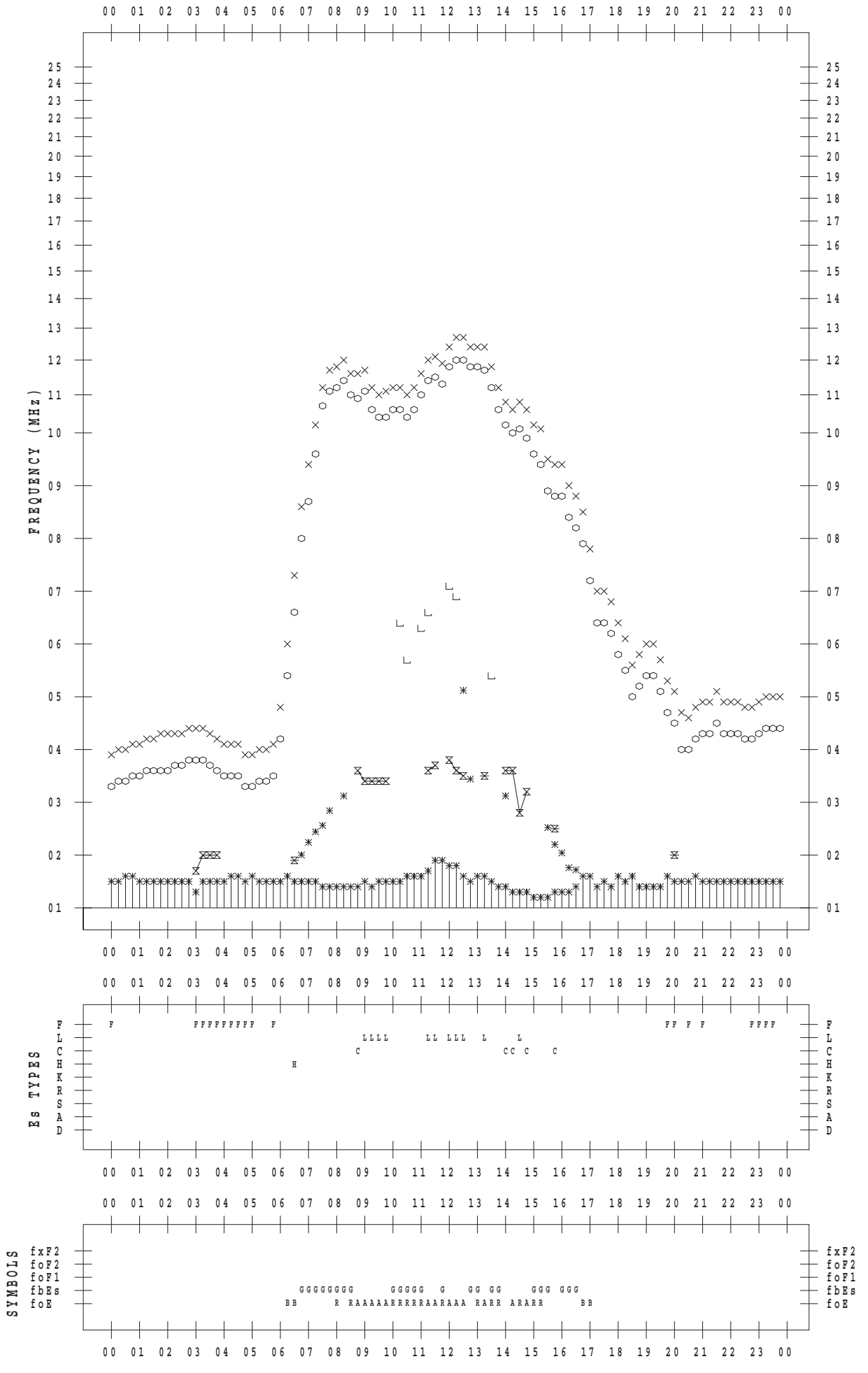
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/15

135 °E MEAN TIME



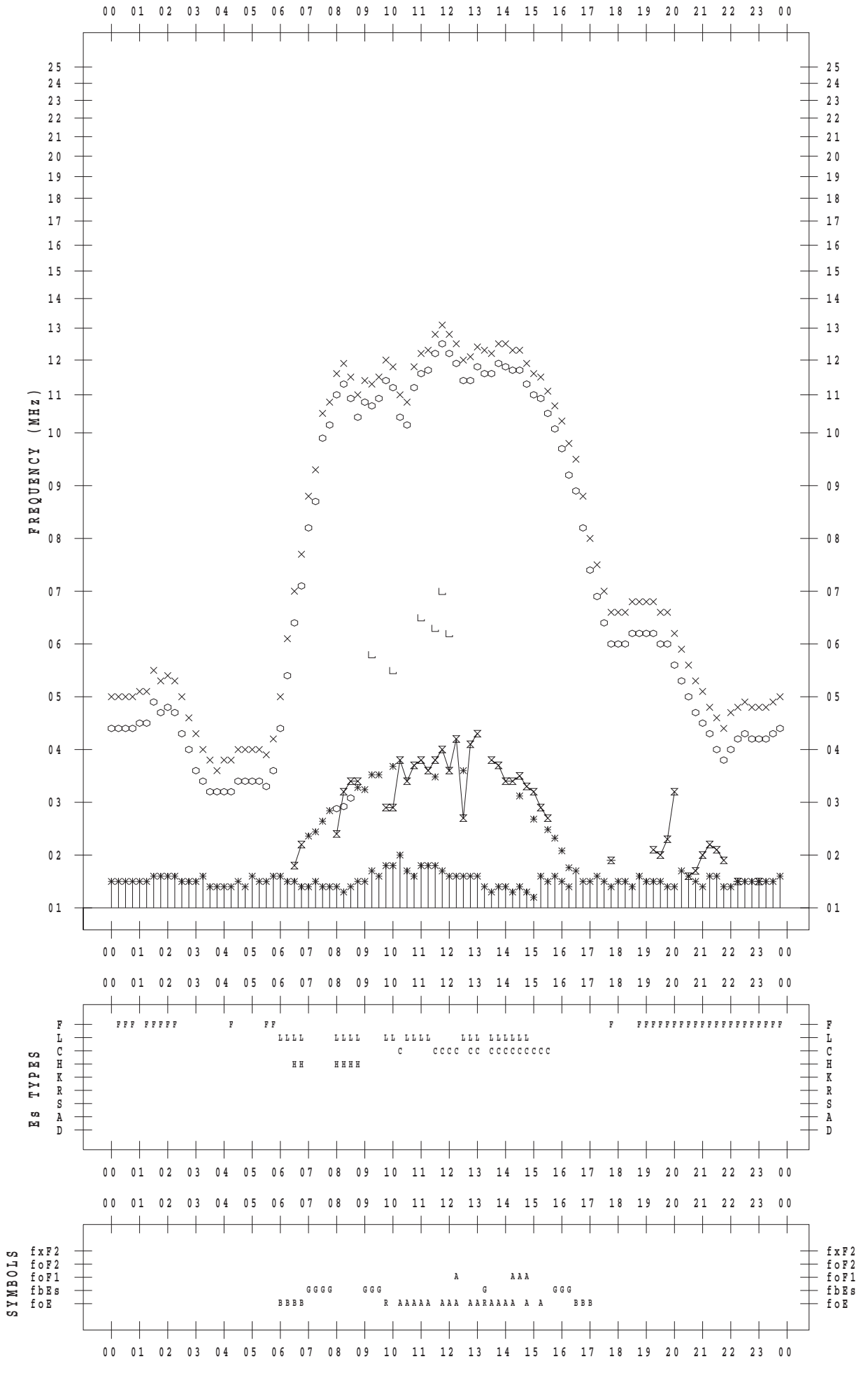
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/16

135 °E MEAN TIME



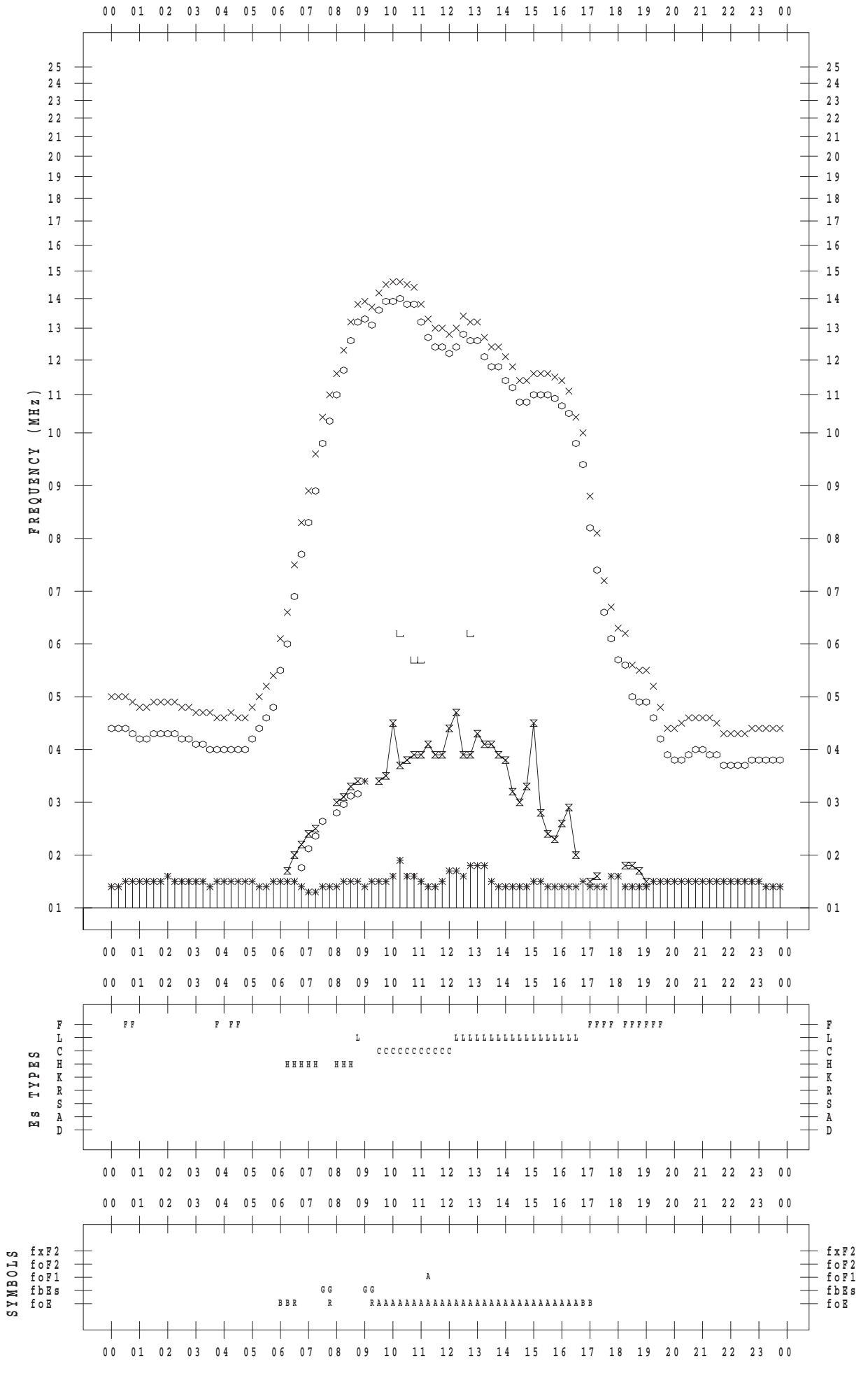
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/17

135 °E MEAN TIME



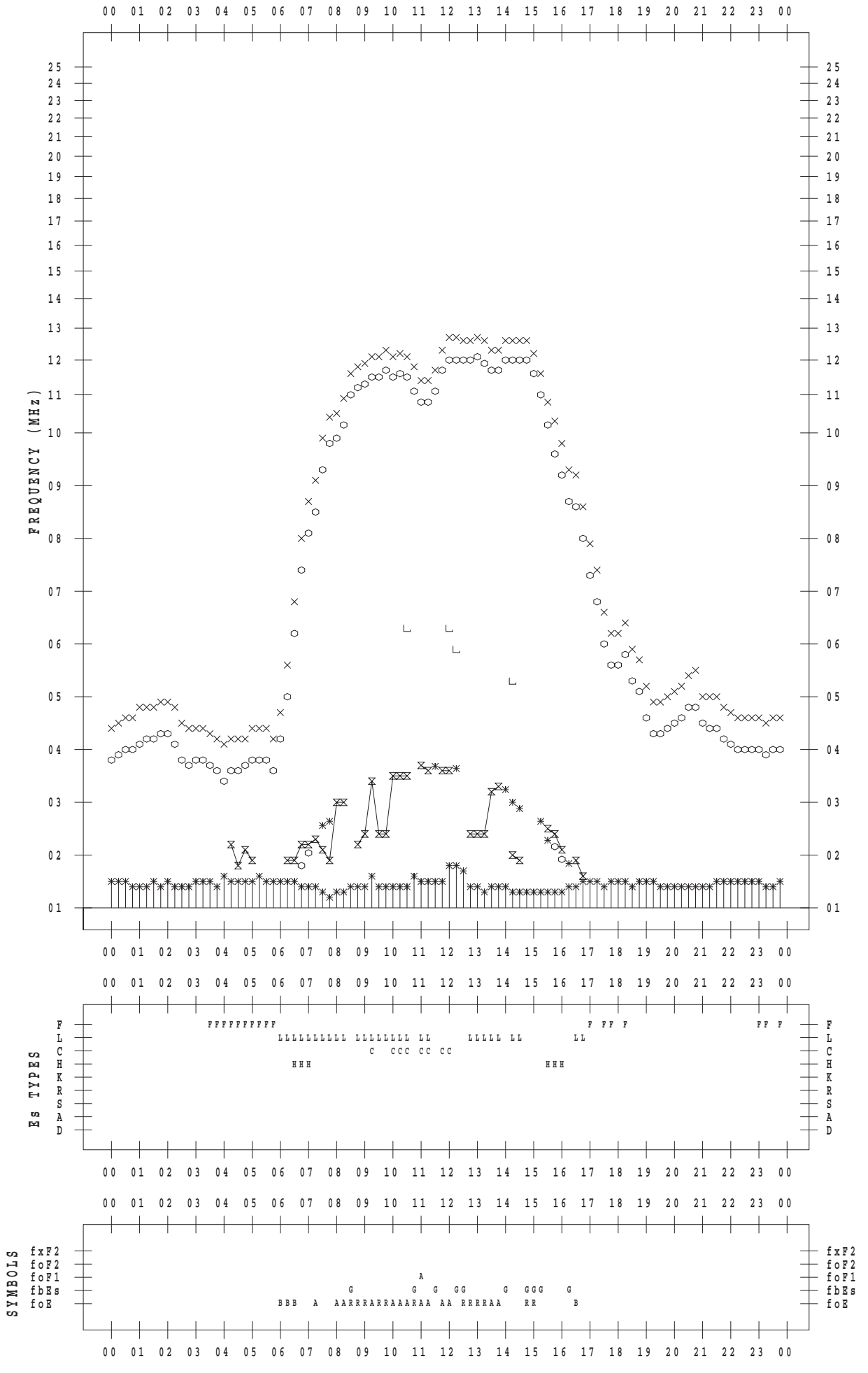
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/18

135 °E MEAN TIME



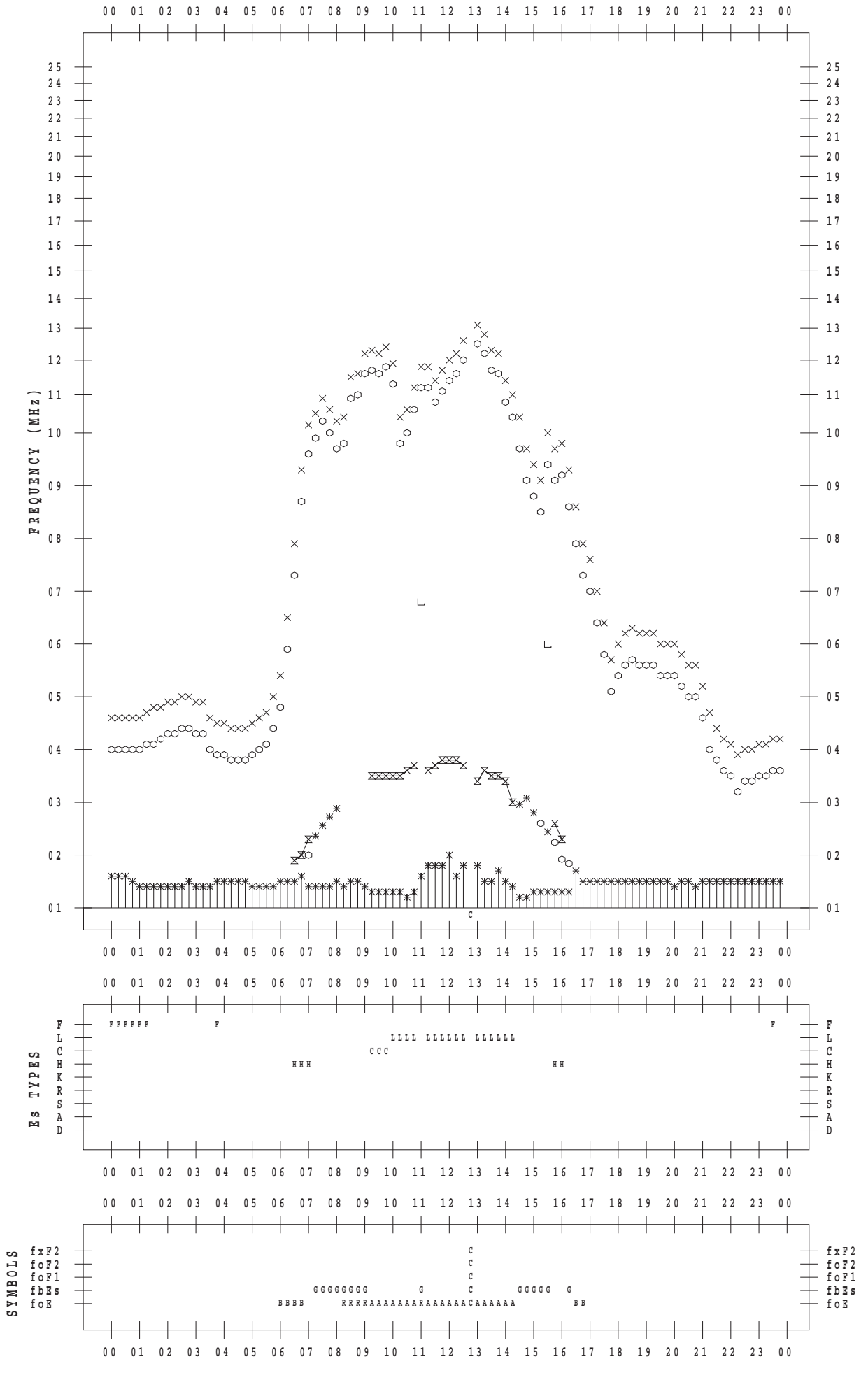
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/19

135 °E MEAN TIME



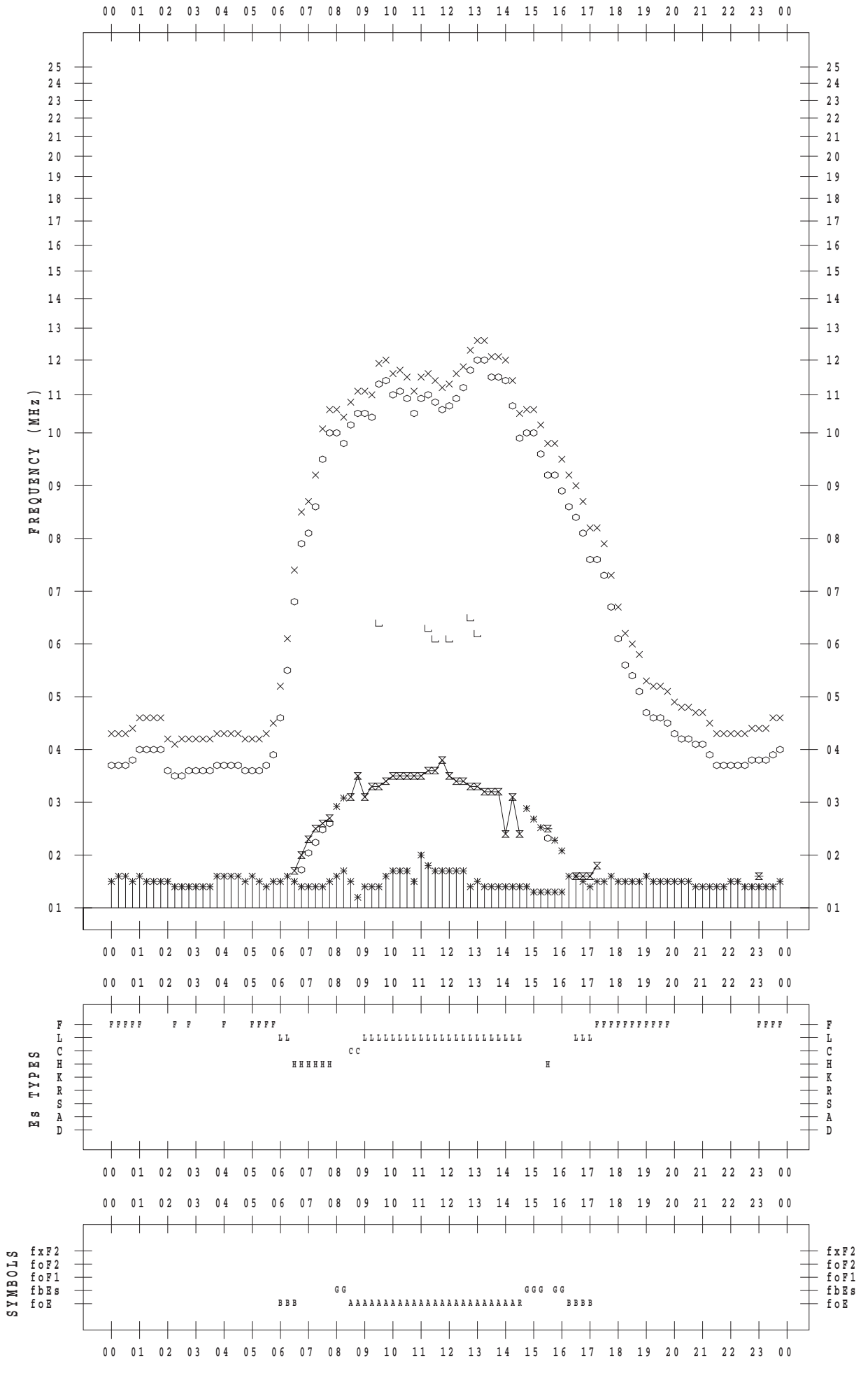
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/20

135 °E MEAN TIME



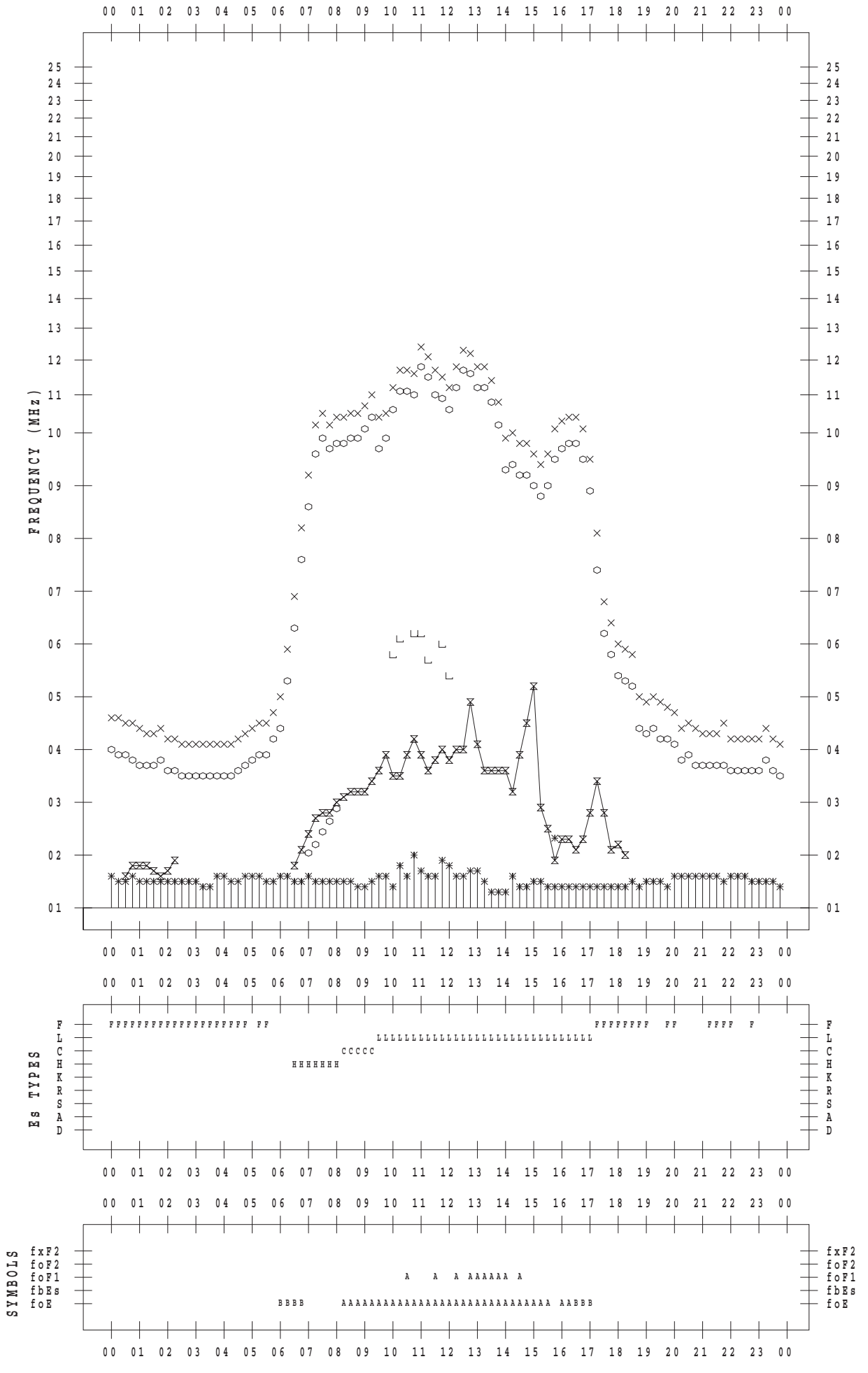
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/21

135 °E MEAN TIME



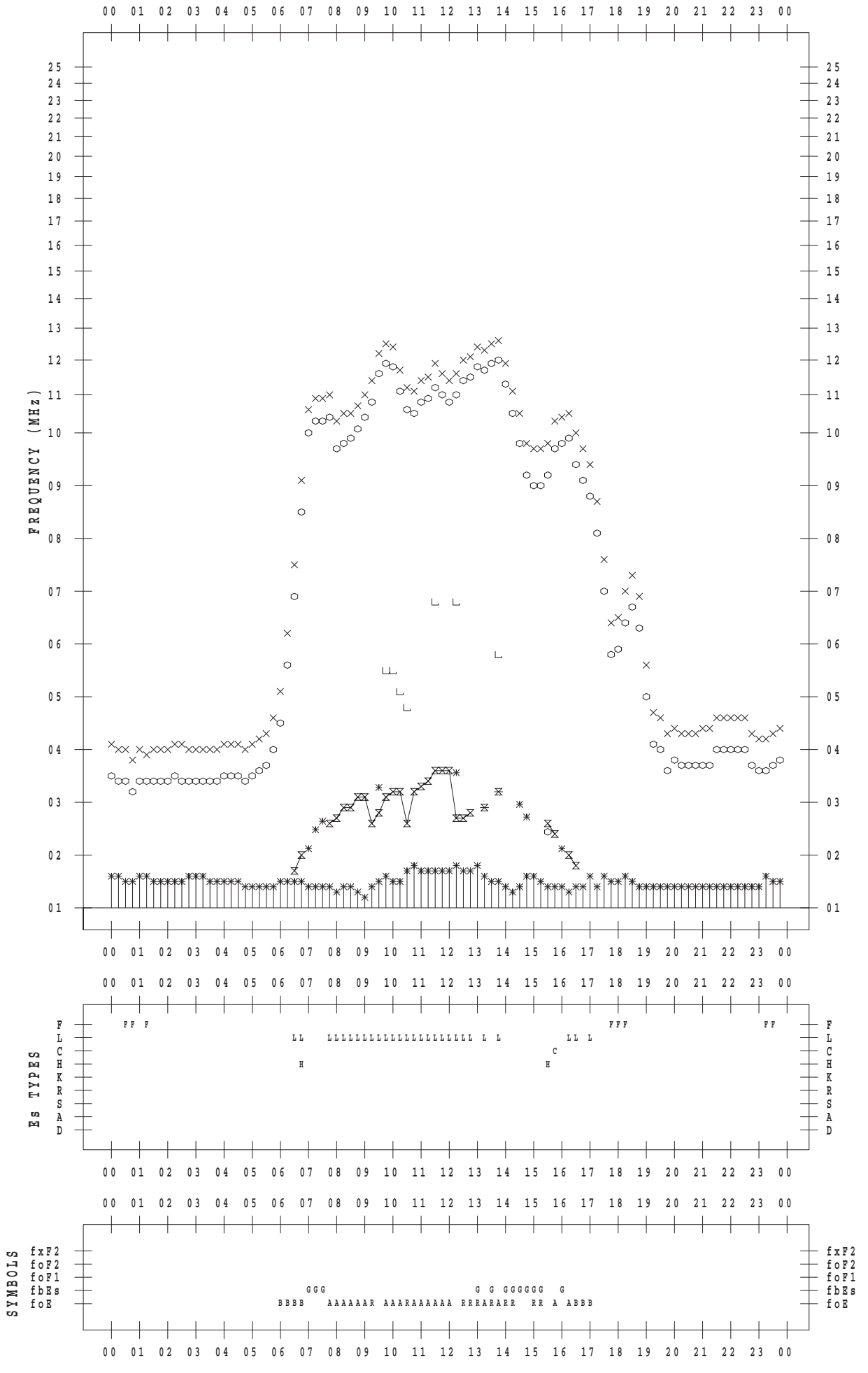
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/22

135 °E MEAN TIME



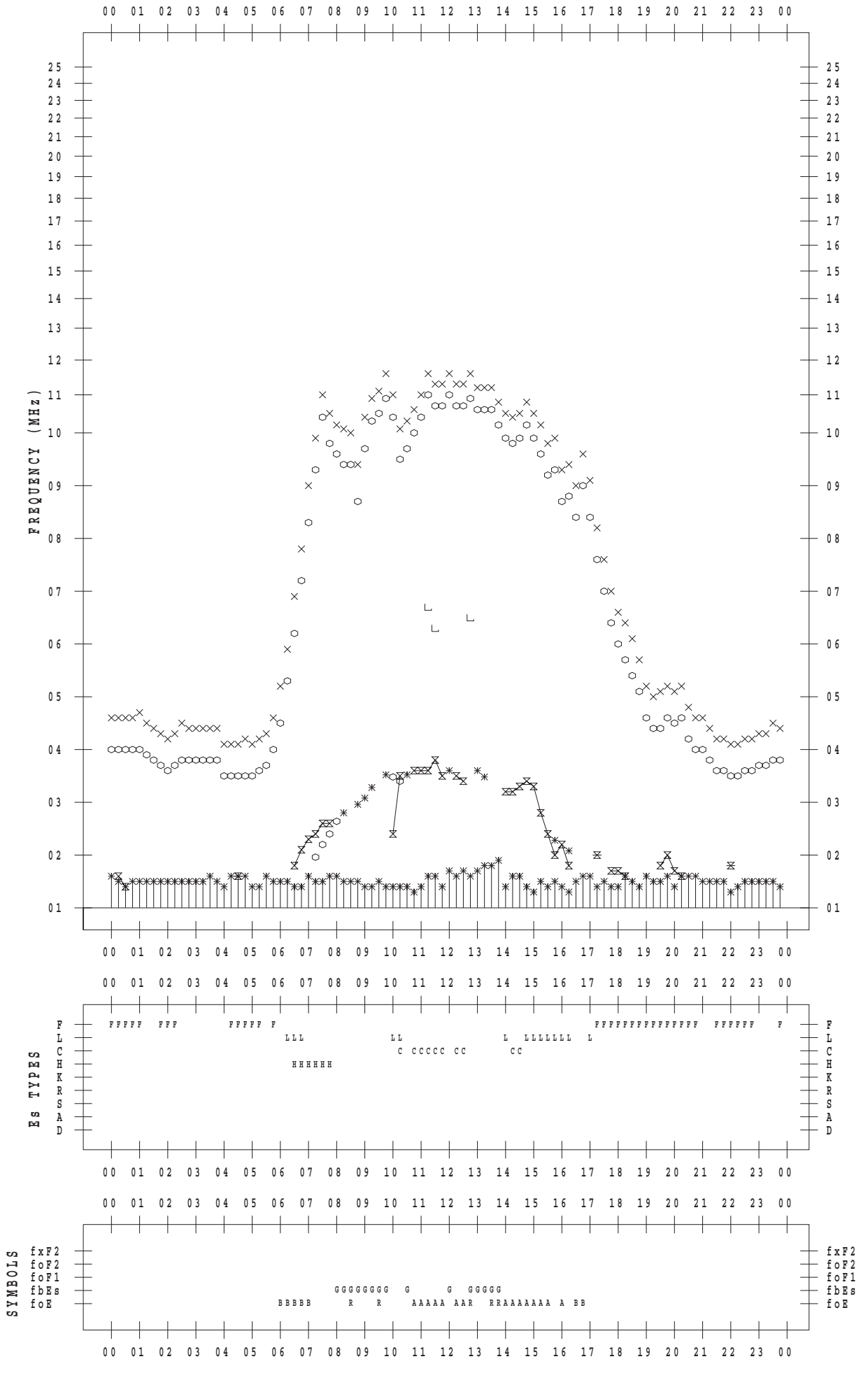
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/23

135 °E MEAN TIME



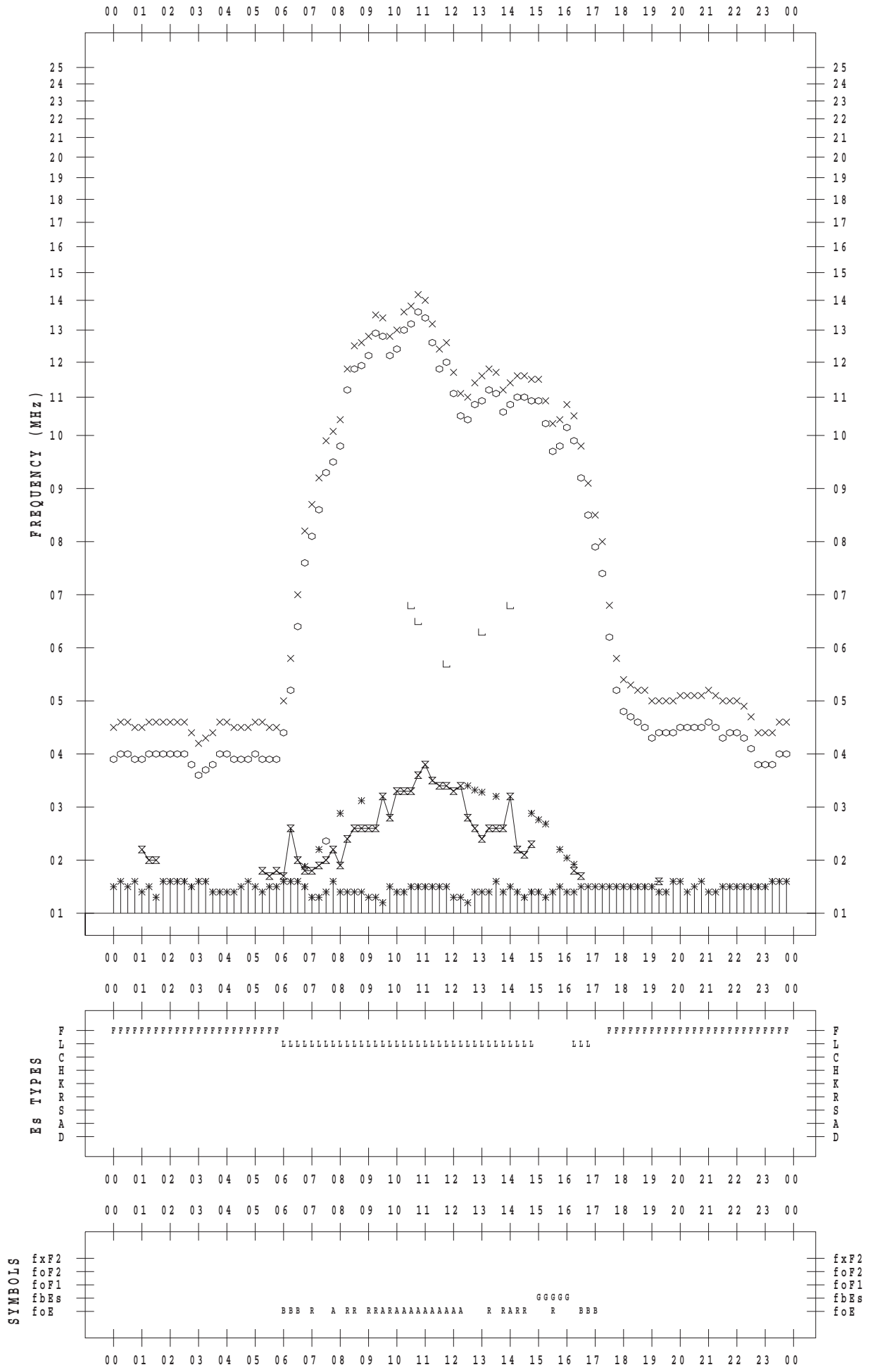
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/24

135 °E MEAN TIME



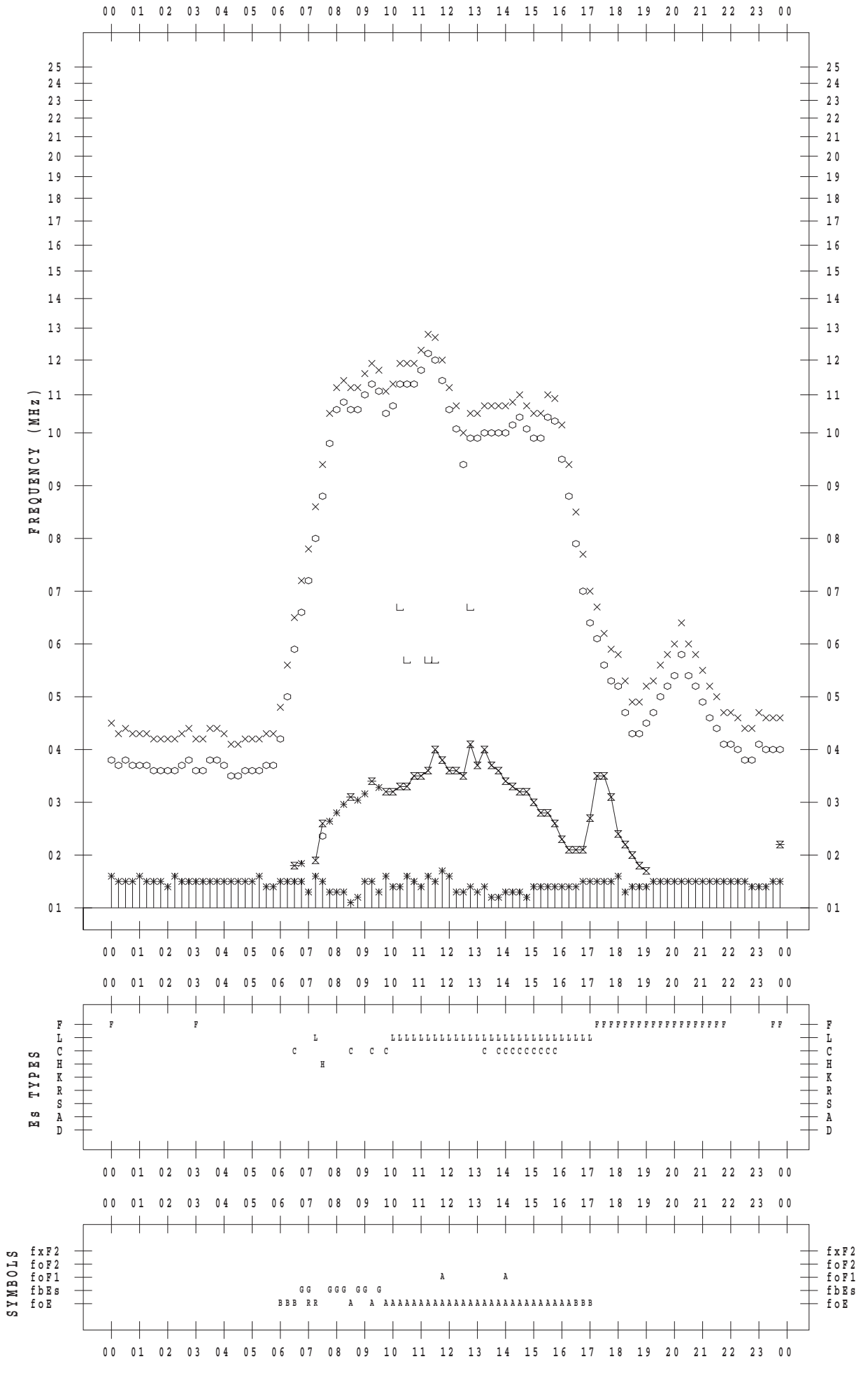
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/25

135 °E MEAN TIME



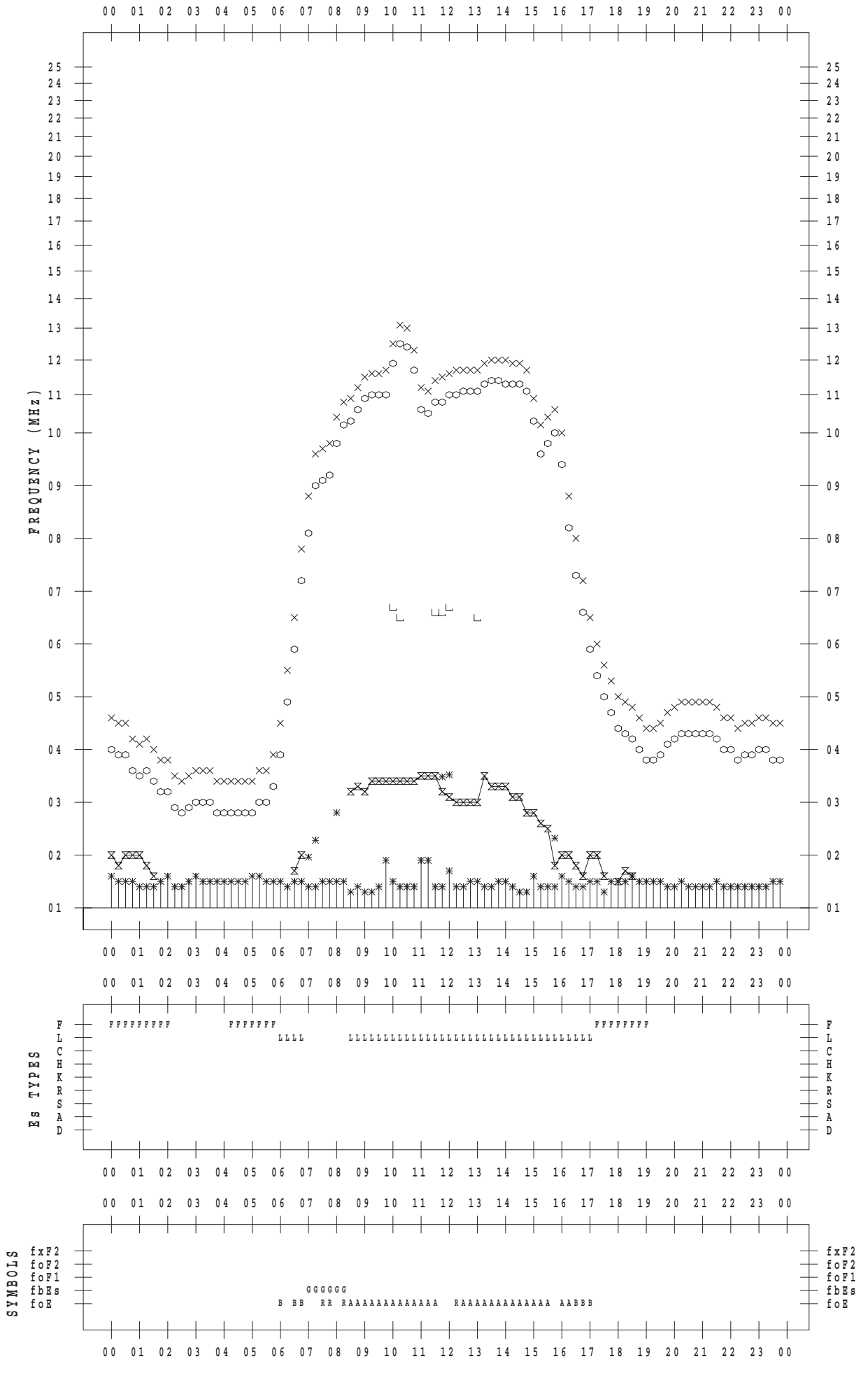
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/26

135 °E MEAN TIME



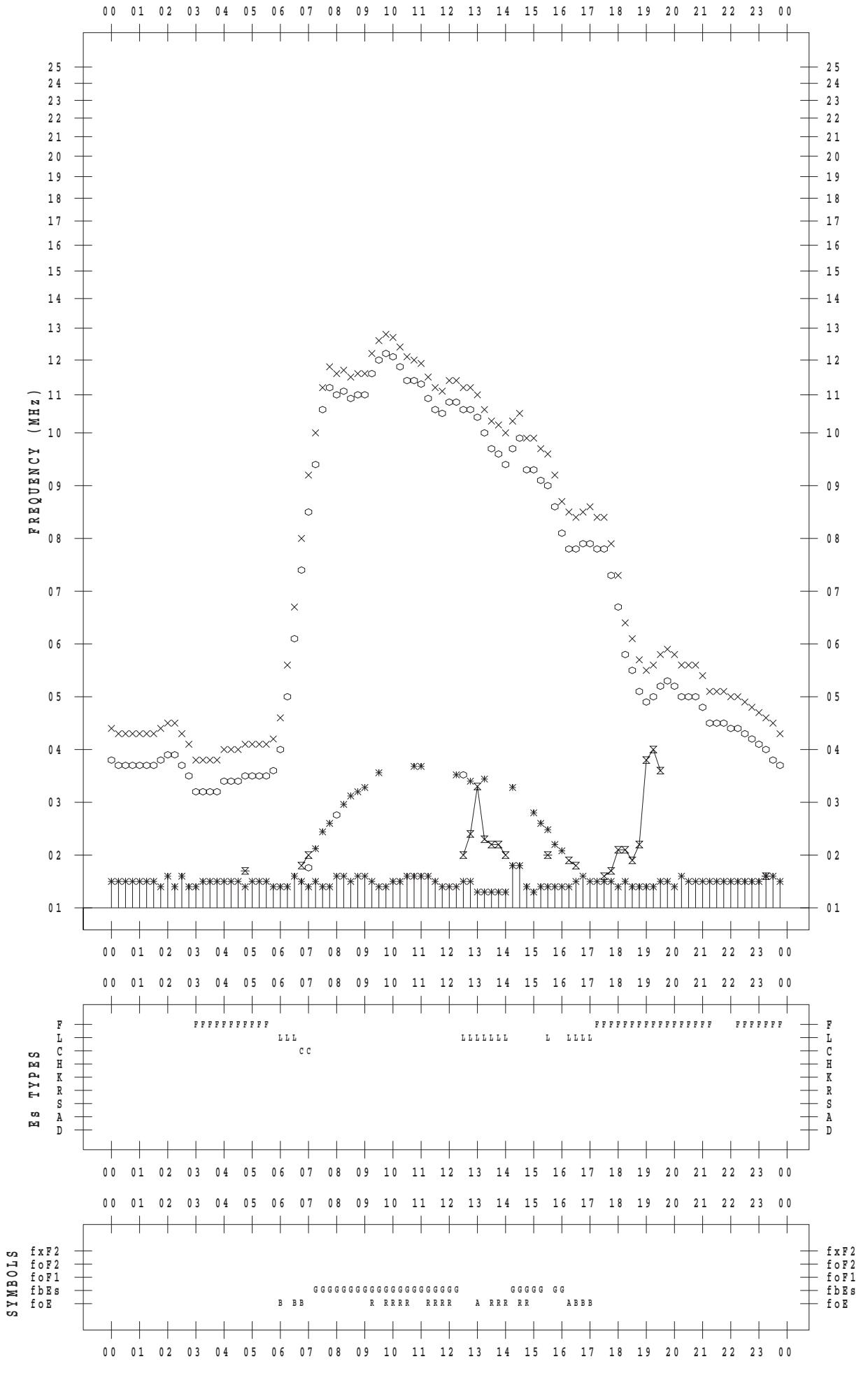
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/27

135 °E MEAN TIME



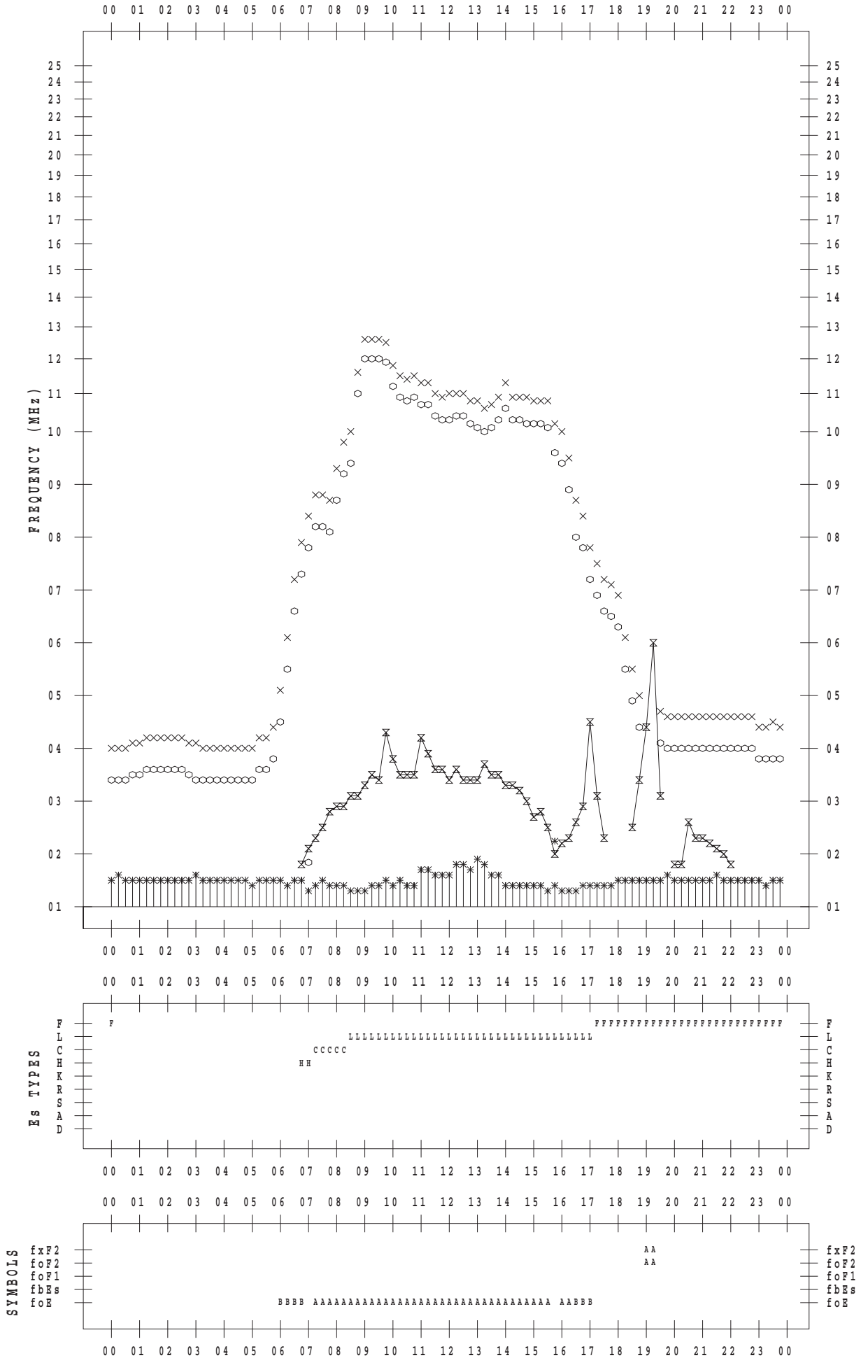
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/28

135 °E MEAN TIME



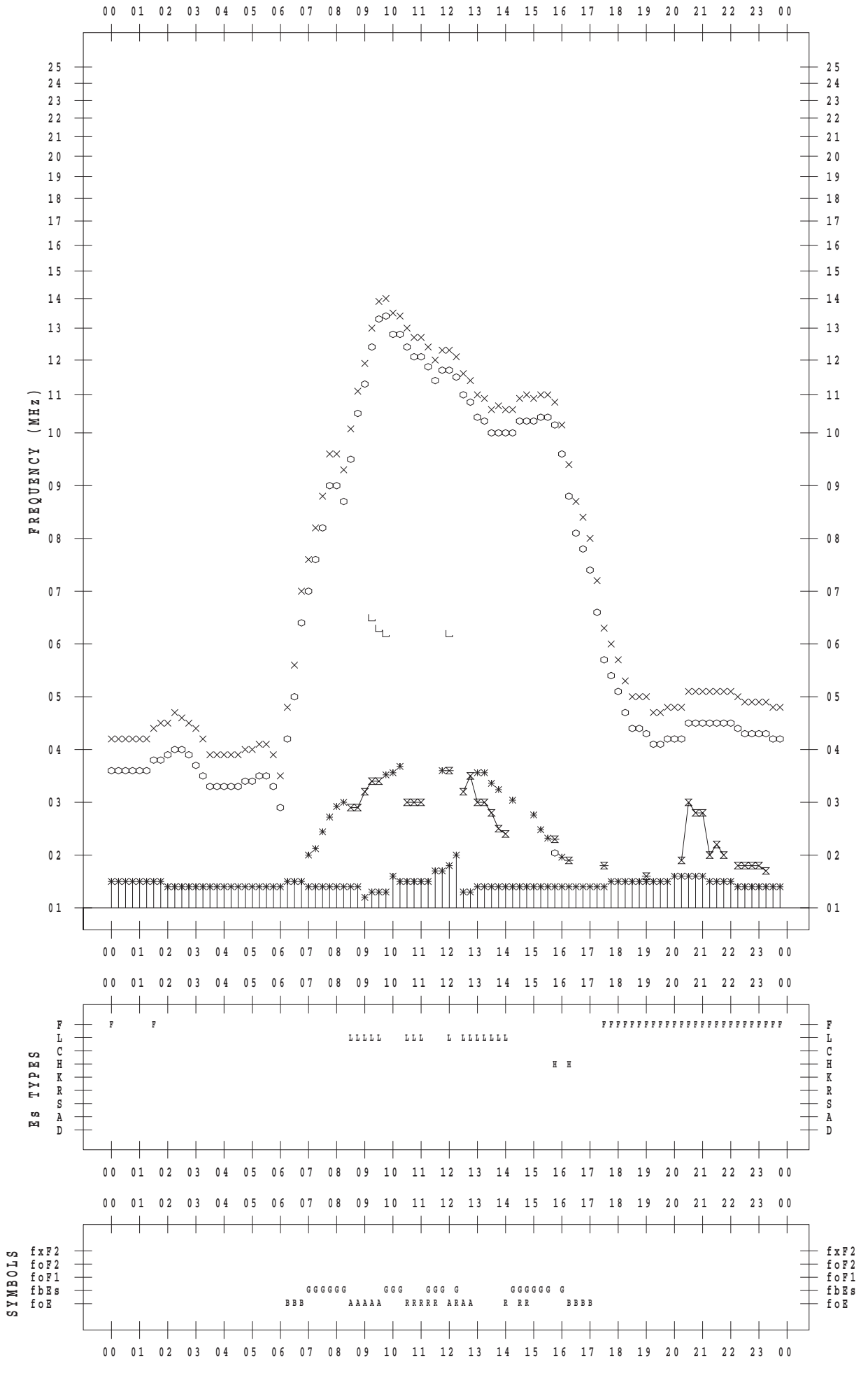
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/29

135 °E MEAN TIME



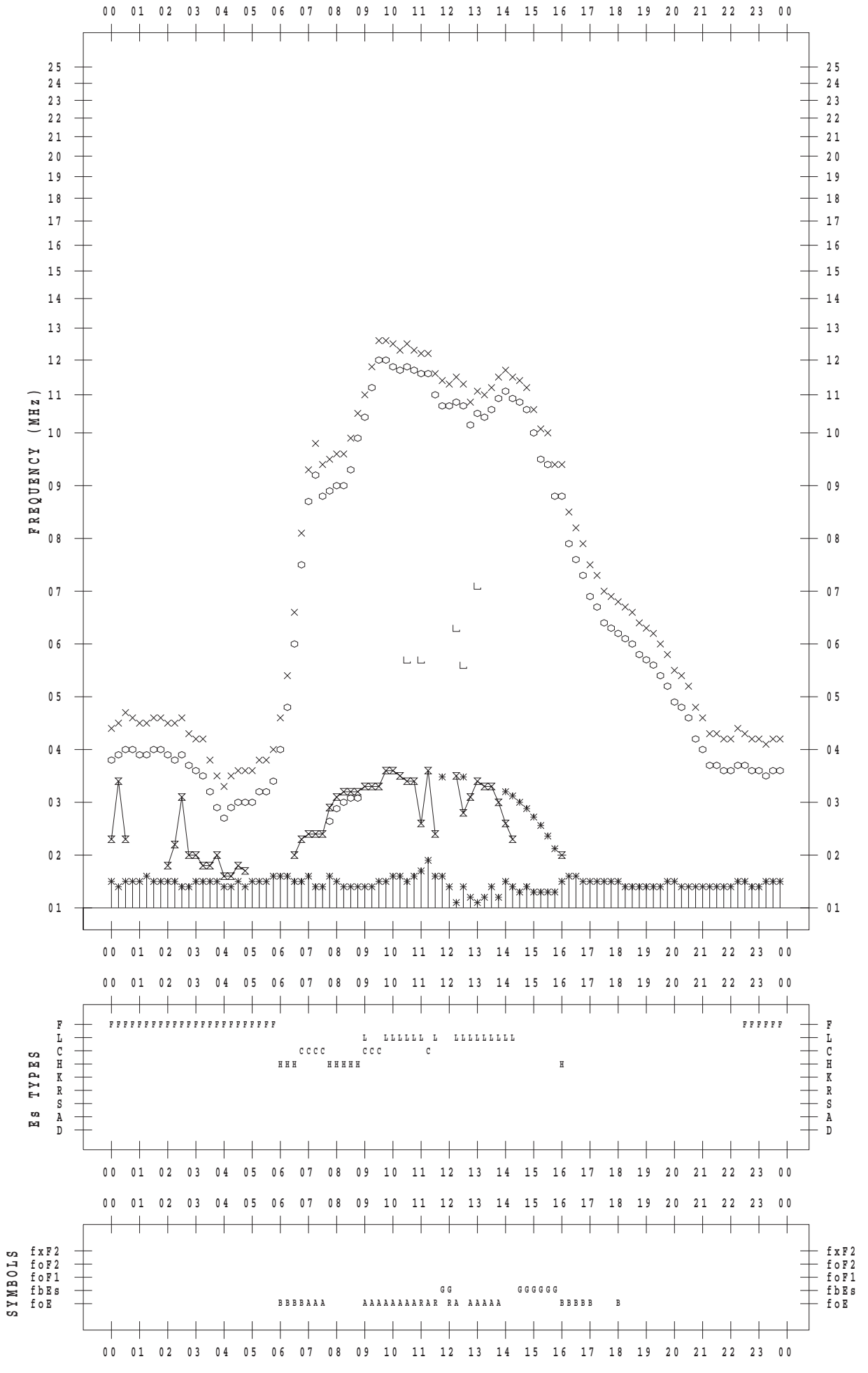
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/11/30

135 °E MEAN TIME



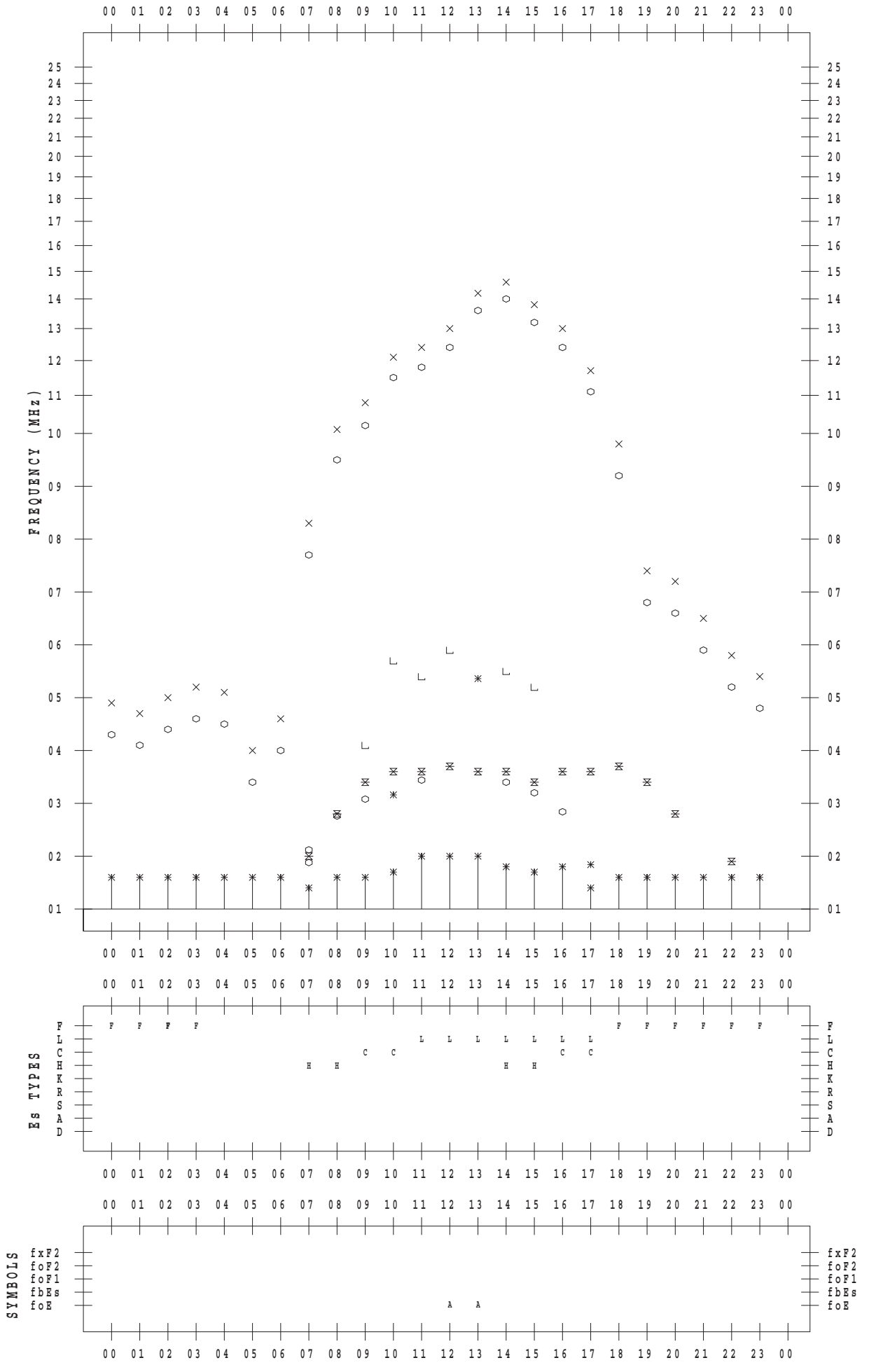
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 1

135 °E MEAN TIME



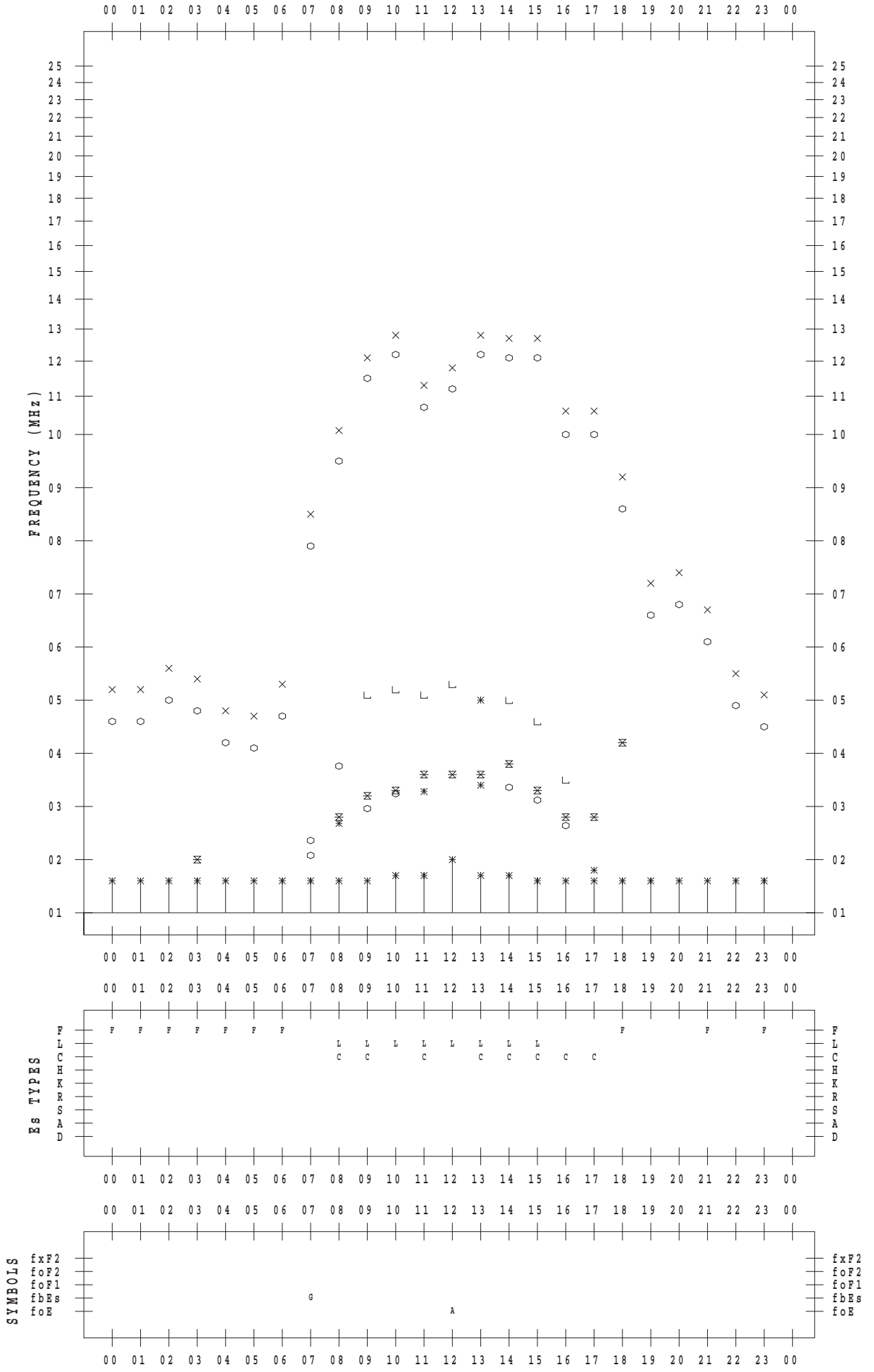
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 2

135 °E MEAN TIME



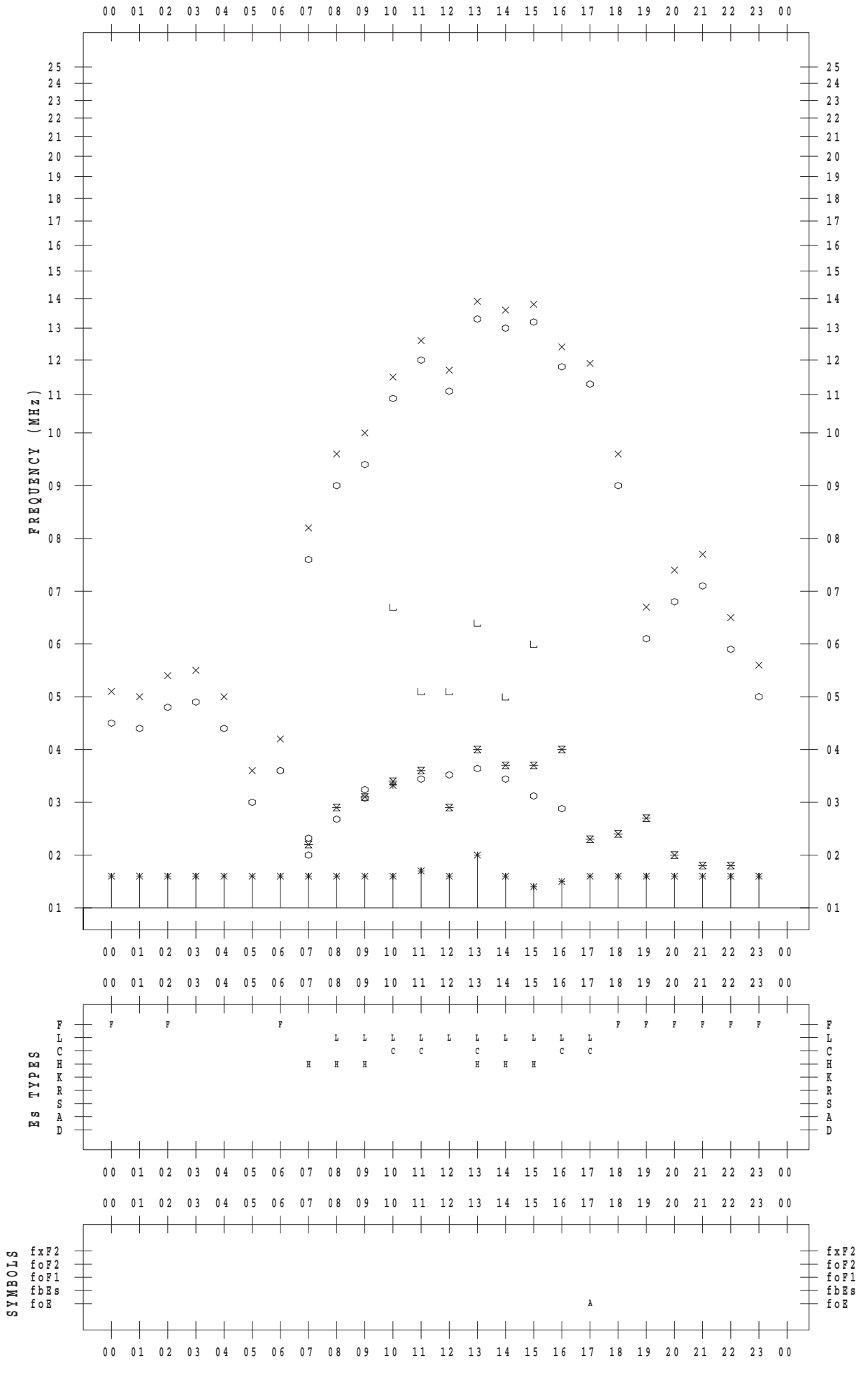
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 3

135 °E MEAN TIME



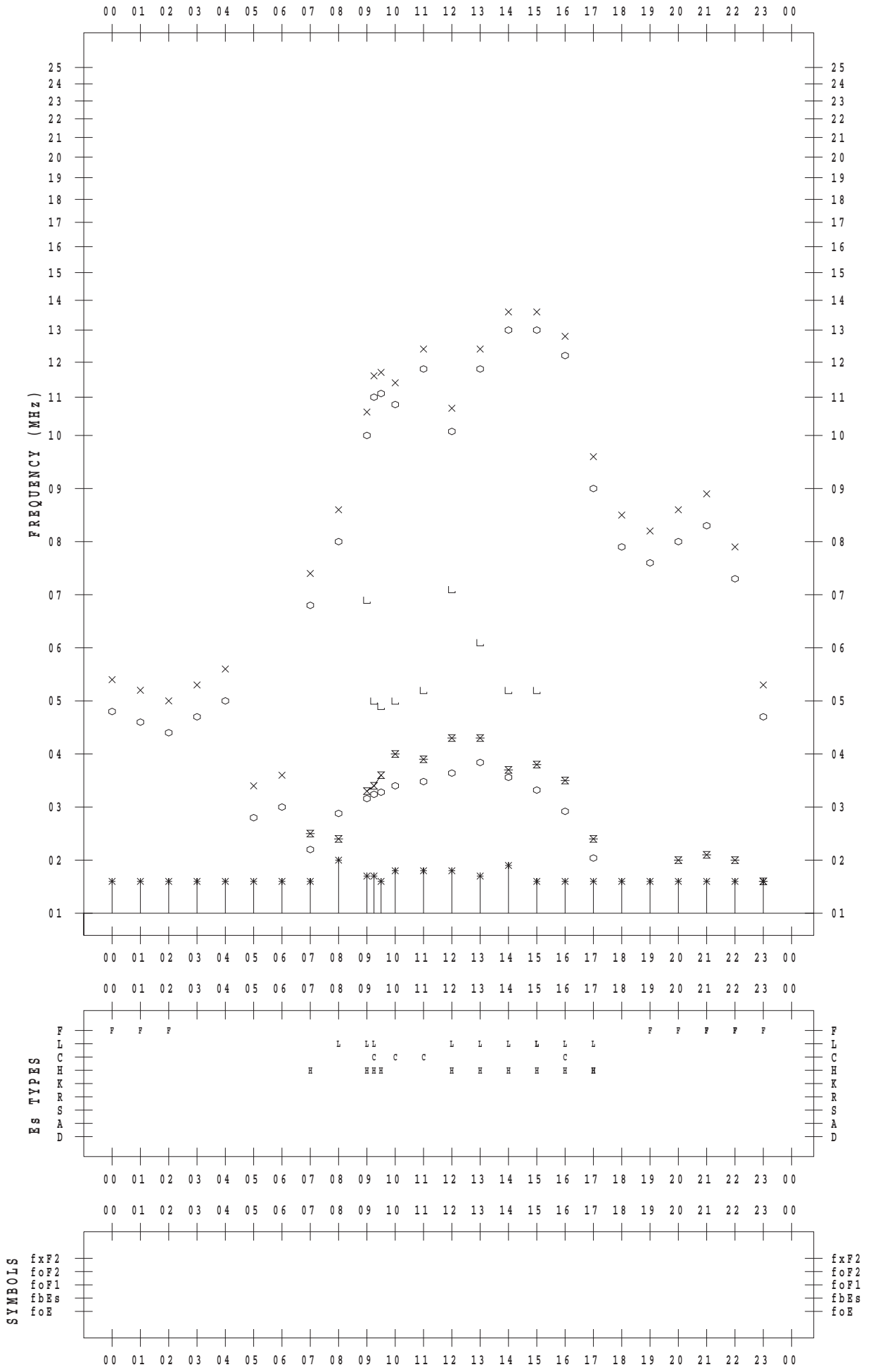
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 4

135 °E MEAN TIME



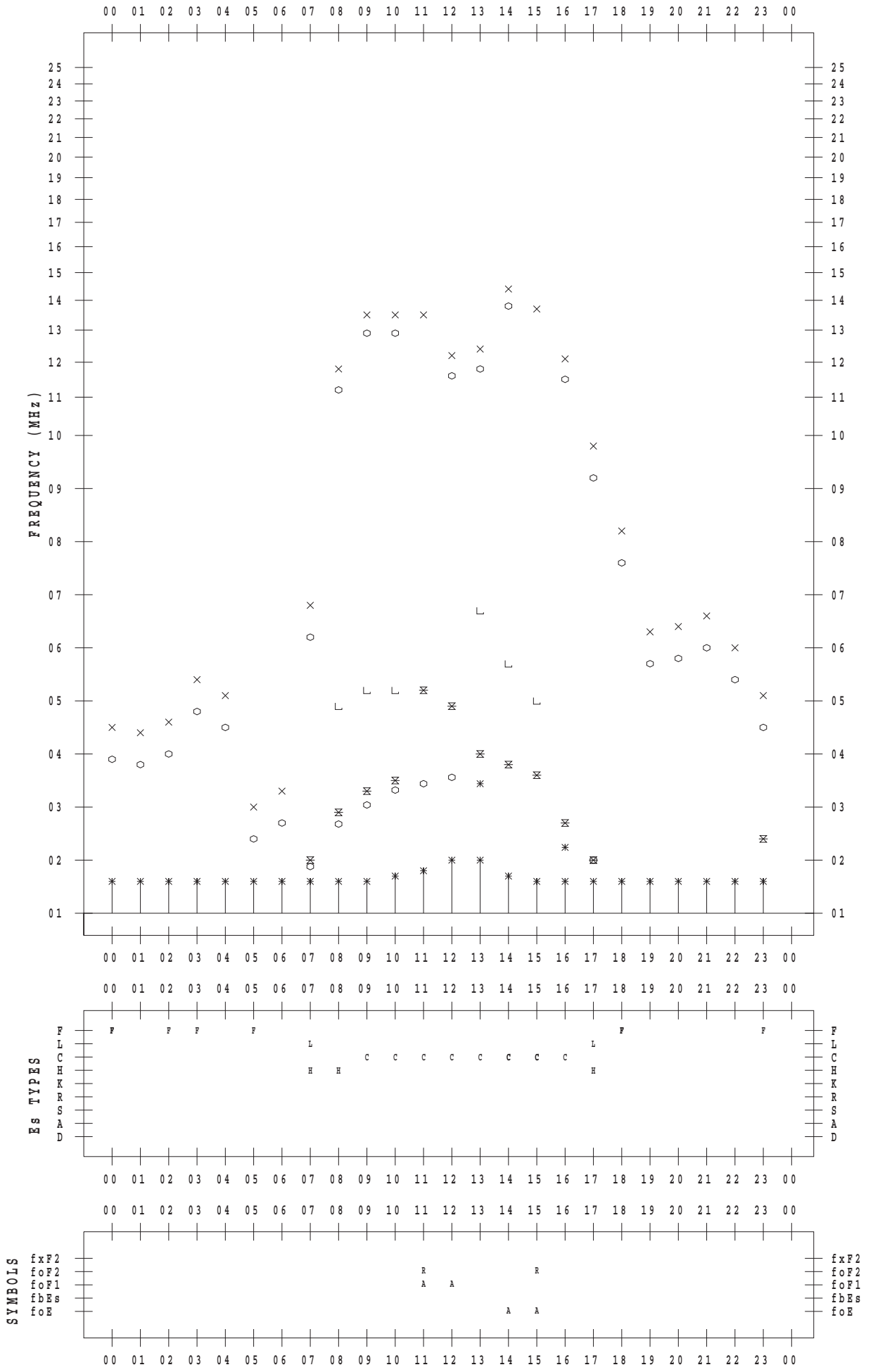
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 5

135 °E MEAN TIME



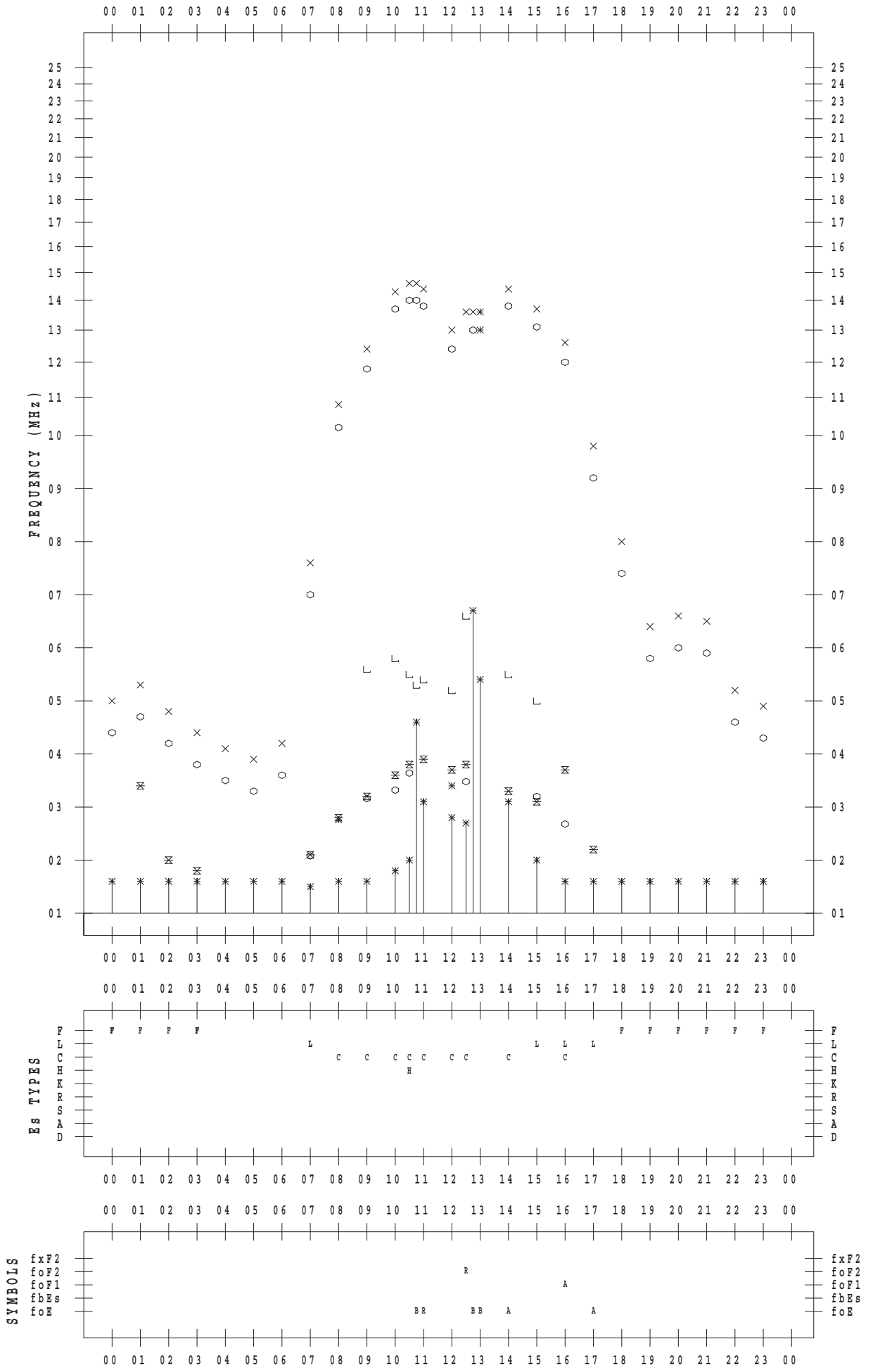
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 6

135 °E MEAN TIME



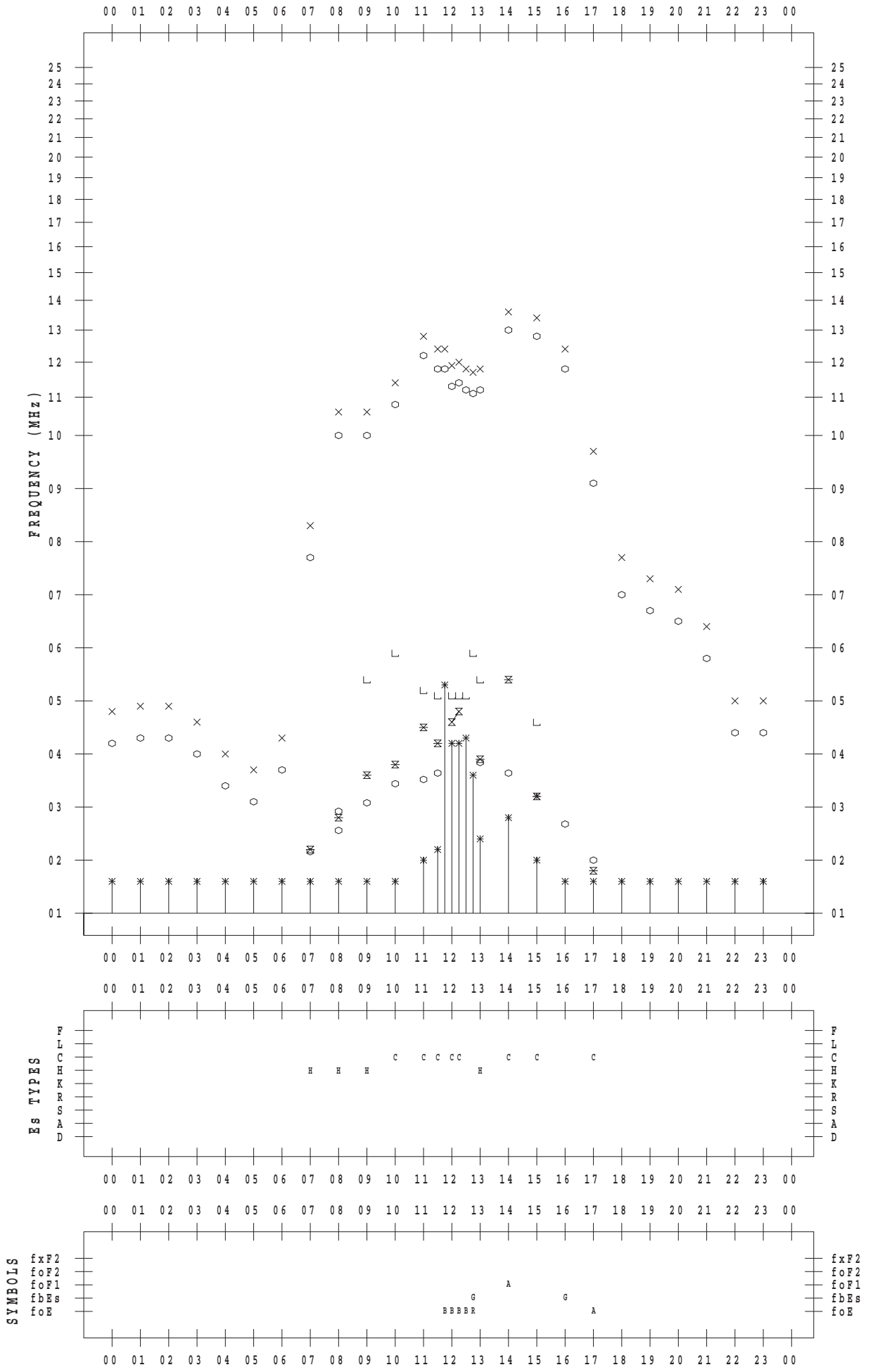
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 7

135 °E MEAN TIME



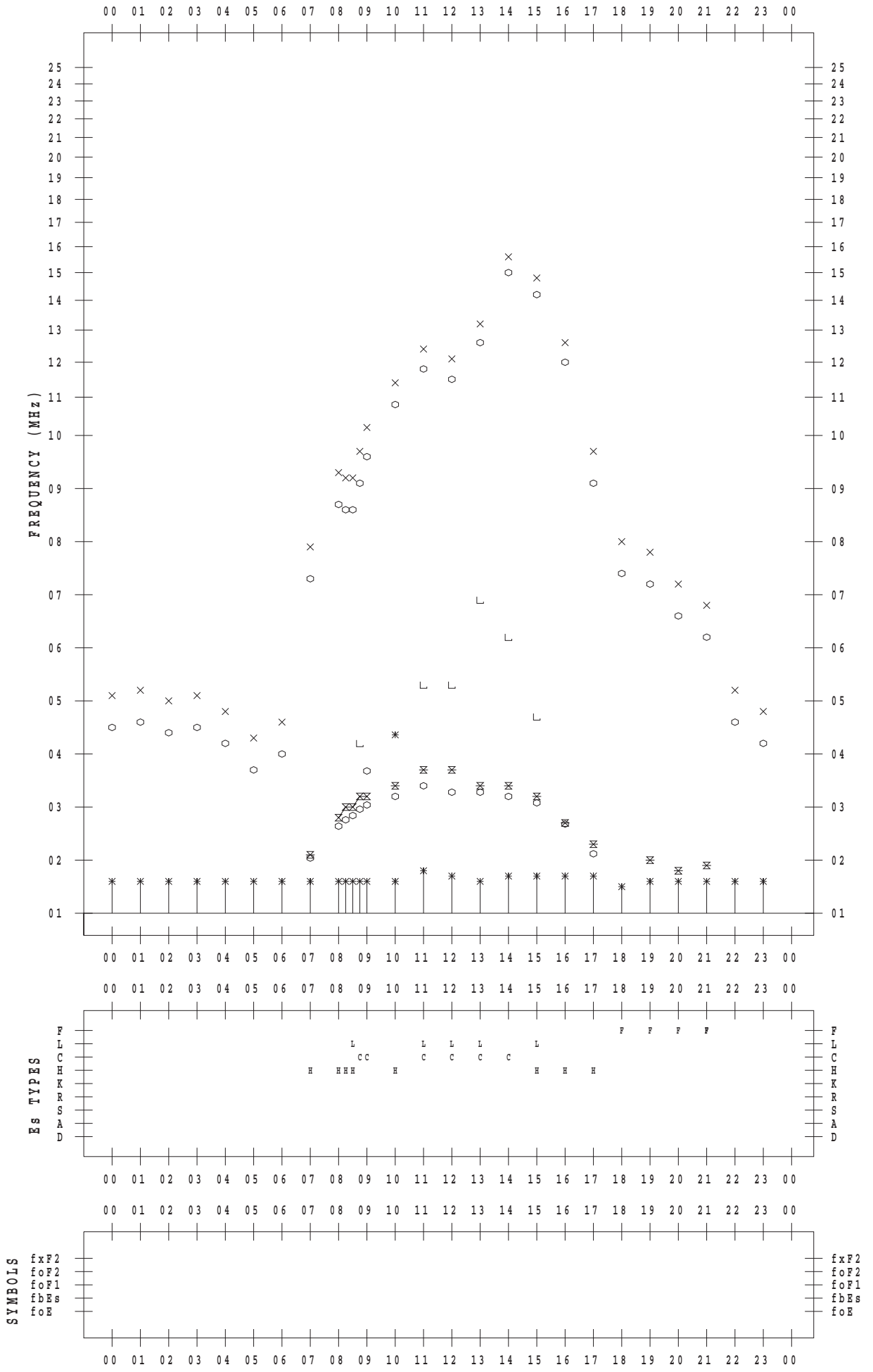
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 8

135 °E MEAN TIME



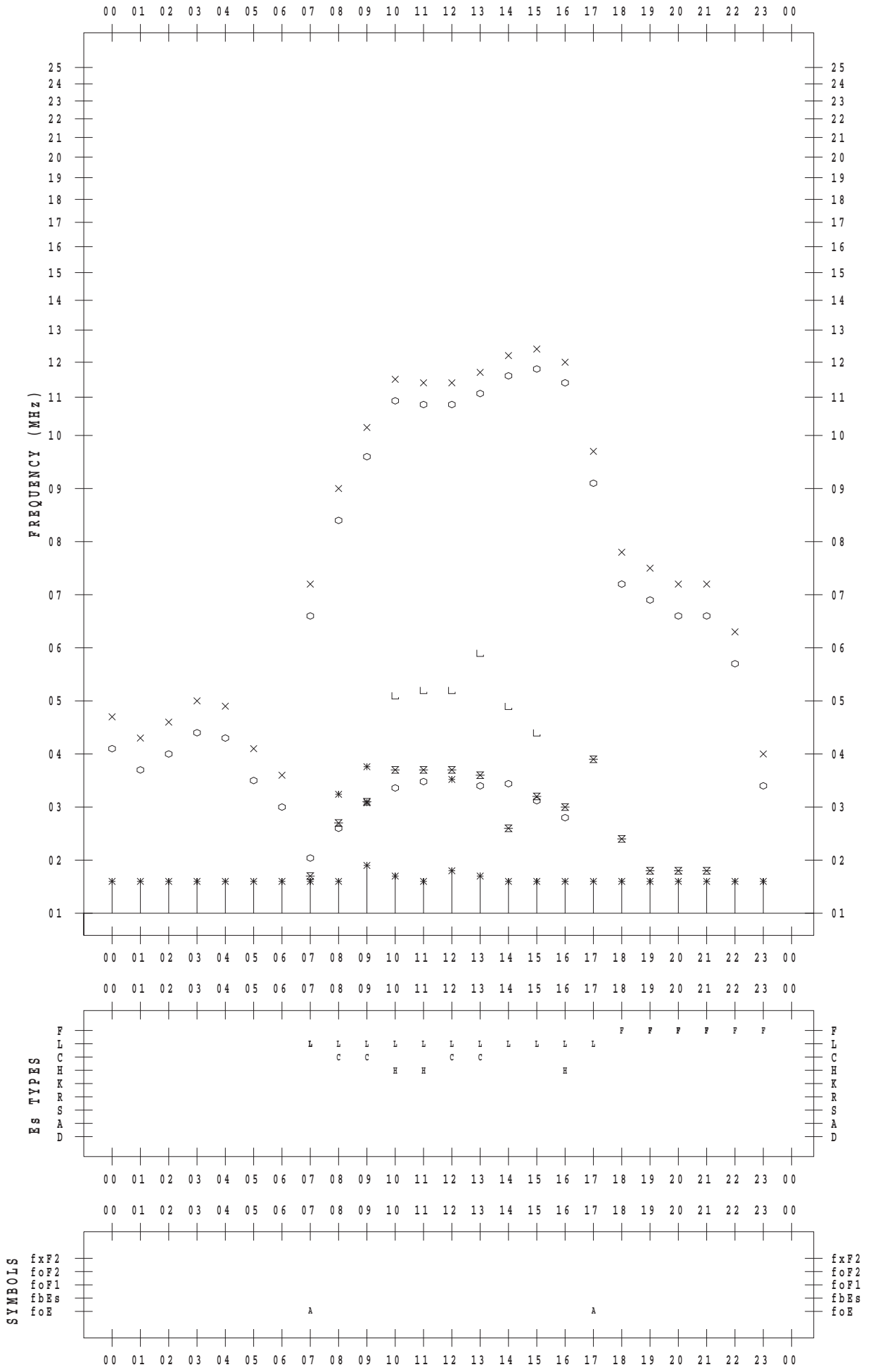
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/ 9

135 °E MEAN TIME



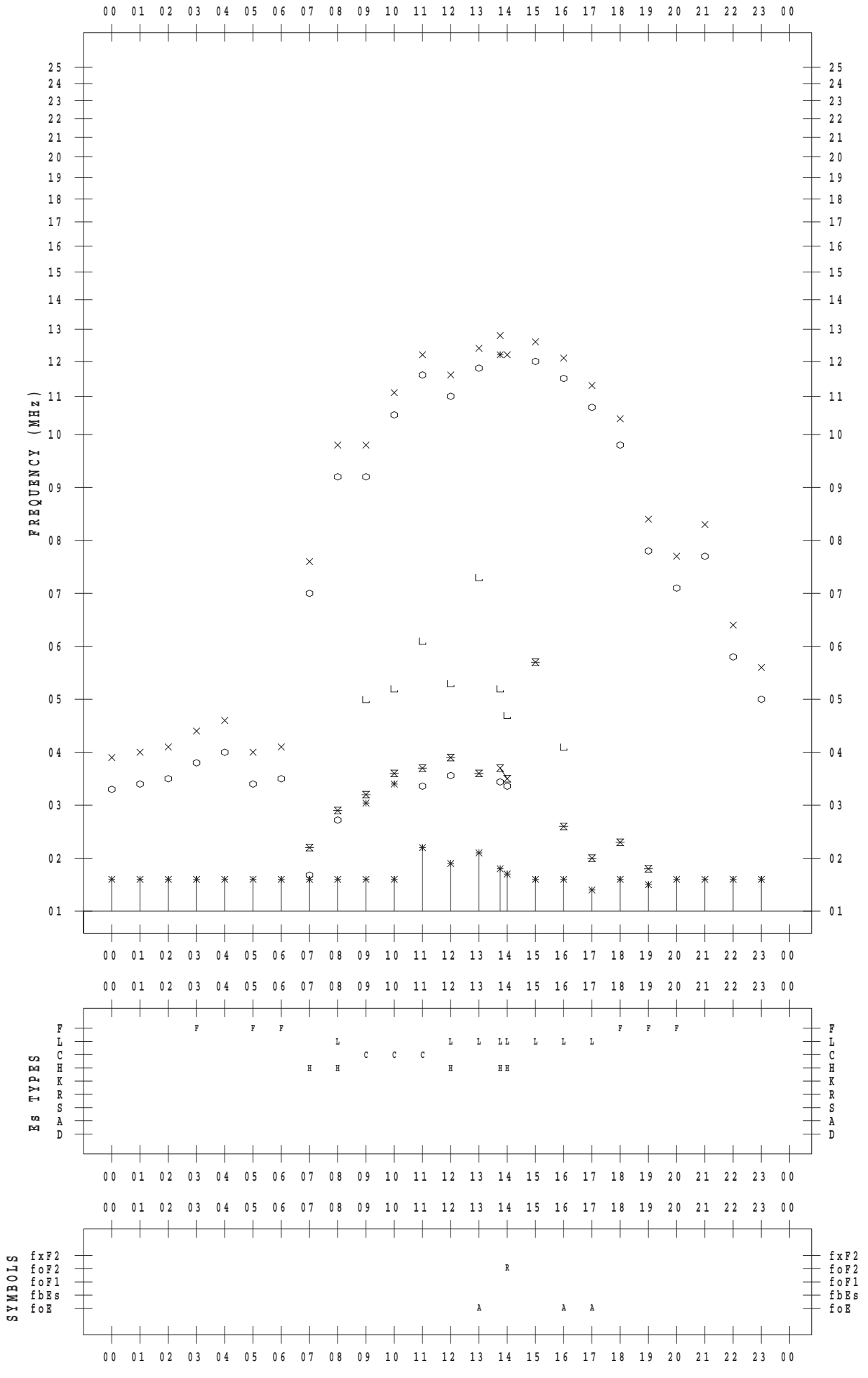
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/10

135 °E MEAN TIME



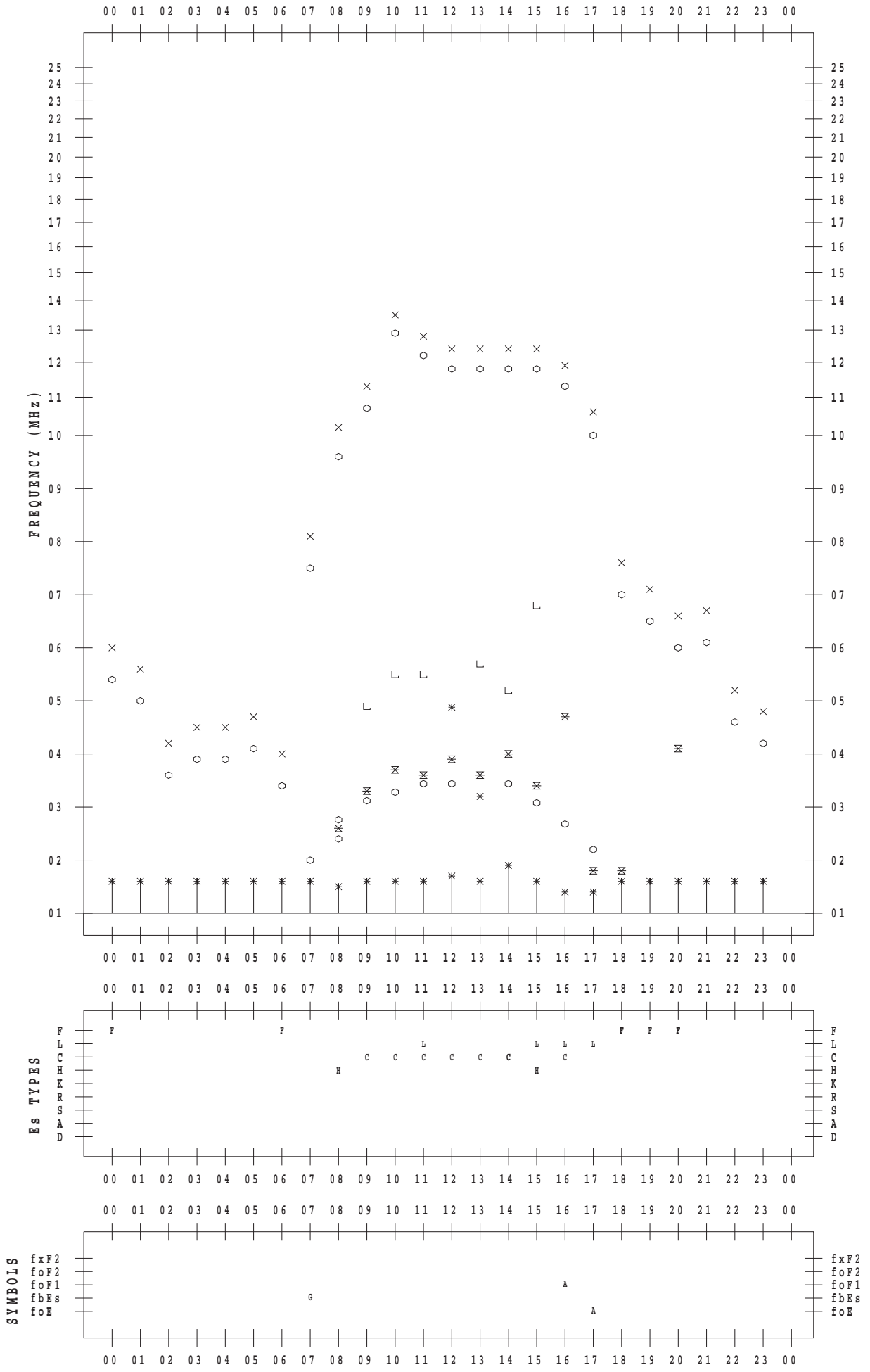
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/11

135 °E MEAN TIME



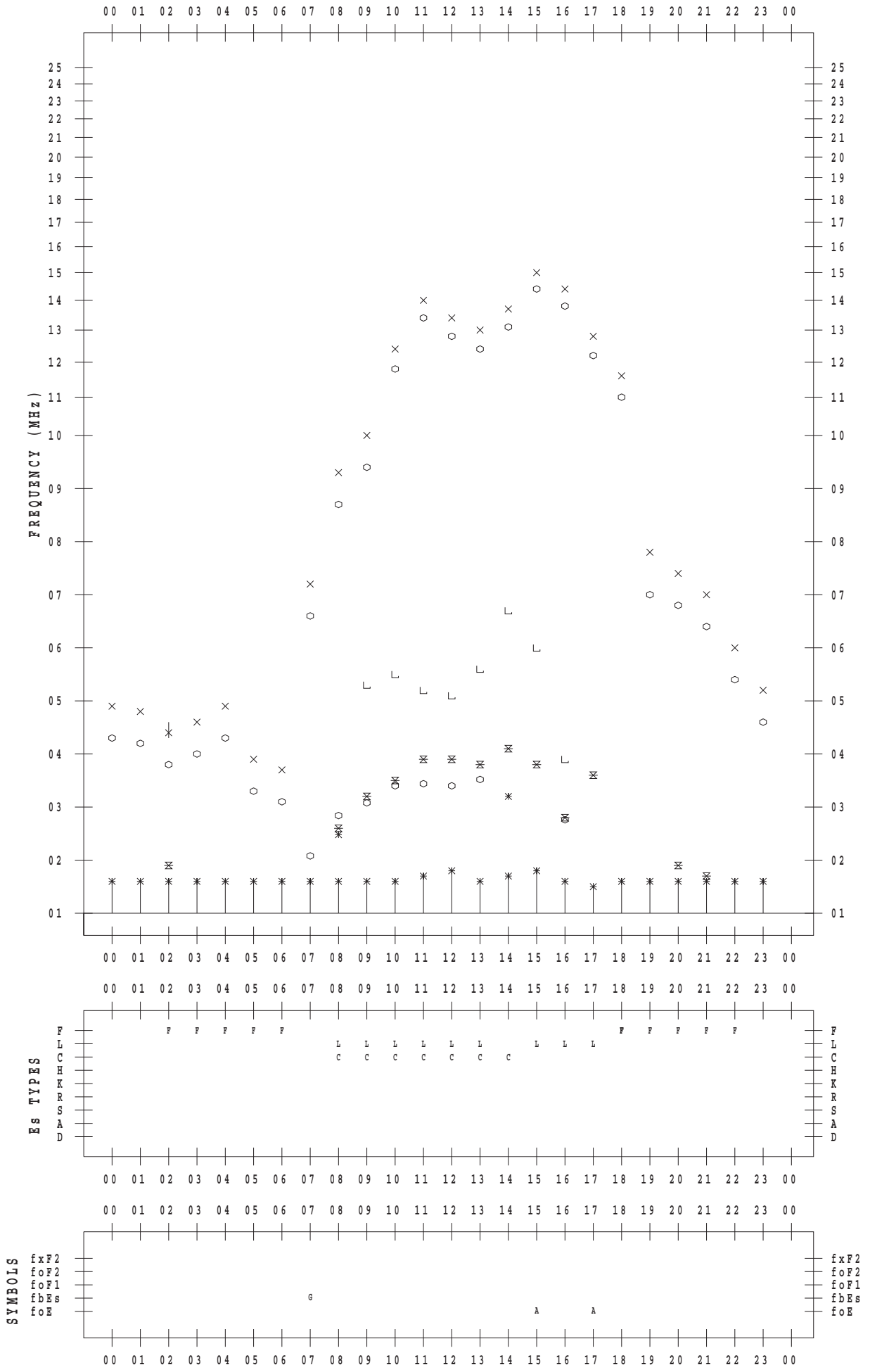
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/12

135 °E MEAN TIME



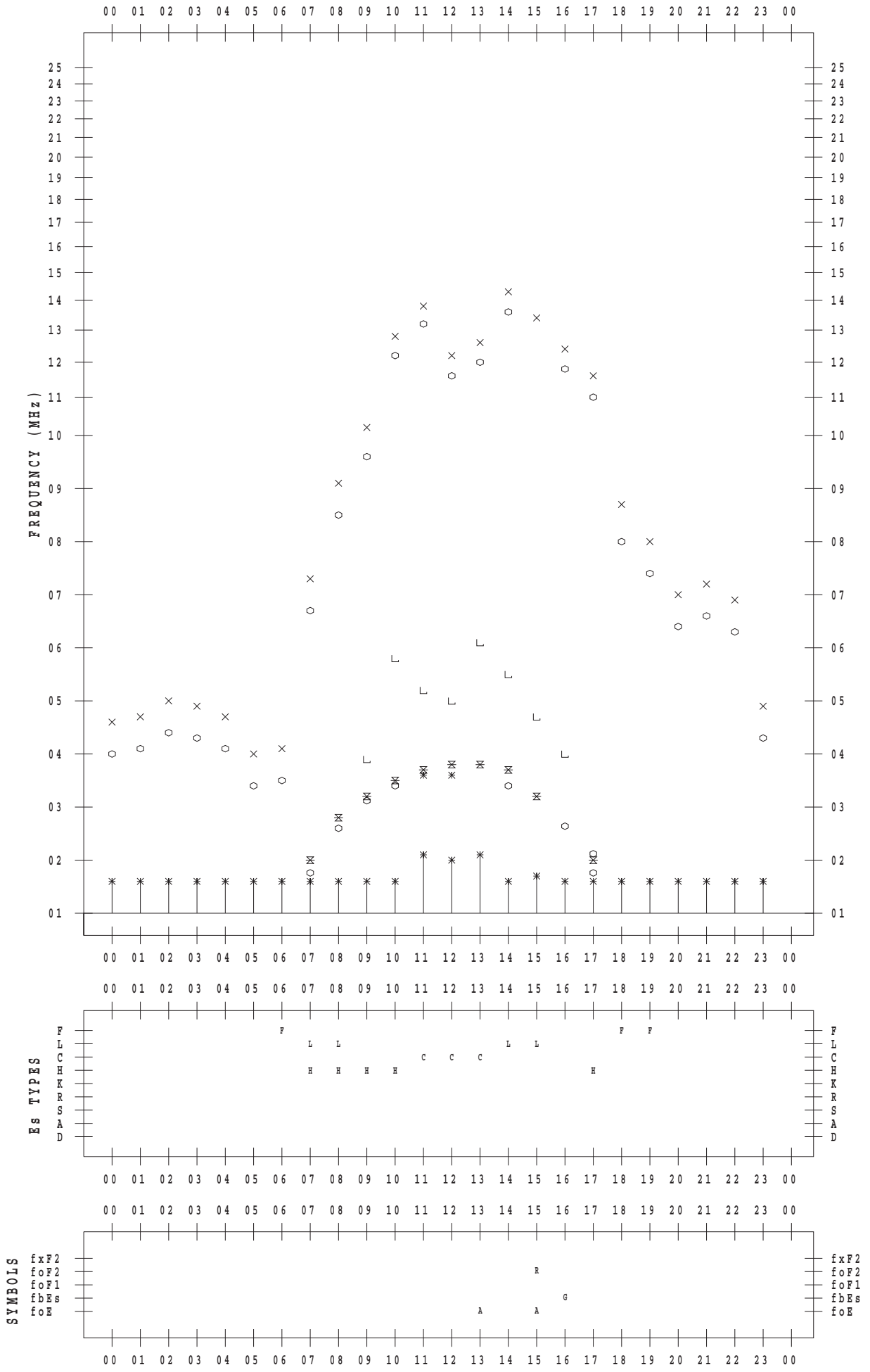
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/13

135 °E MEAN TIME



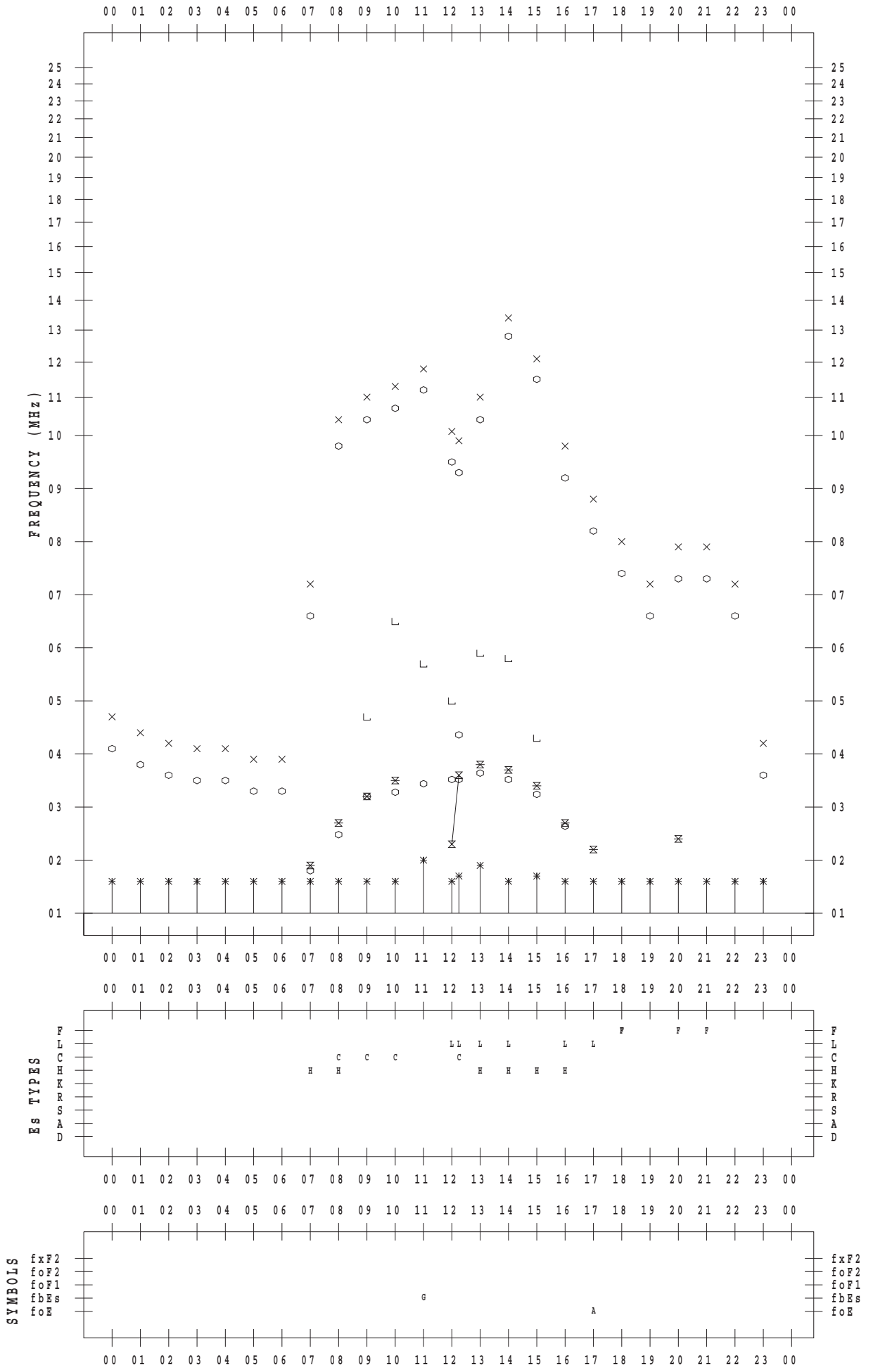
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/14

135 °E MEAN TIME



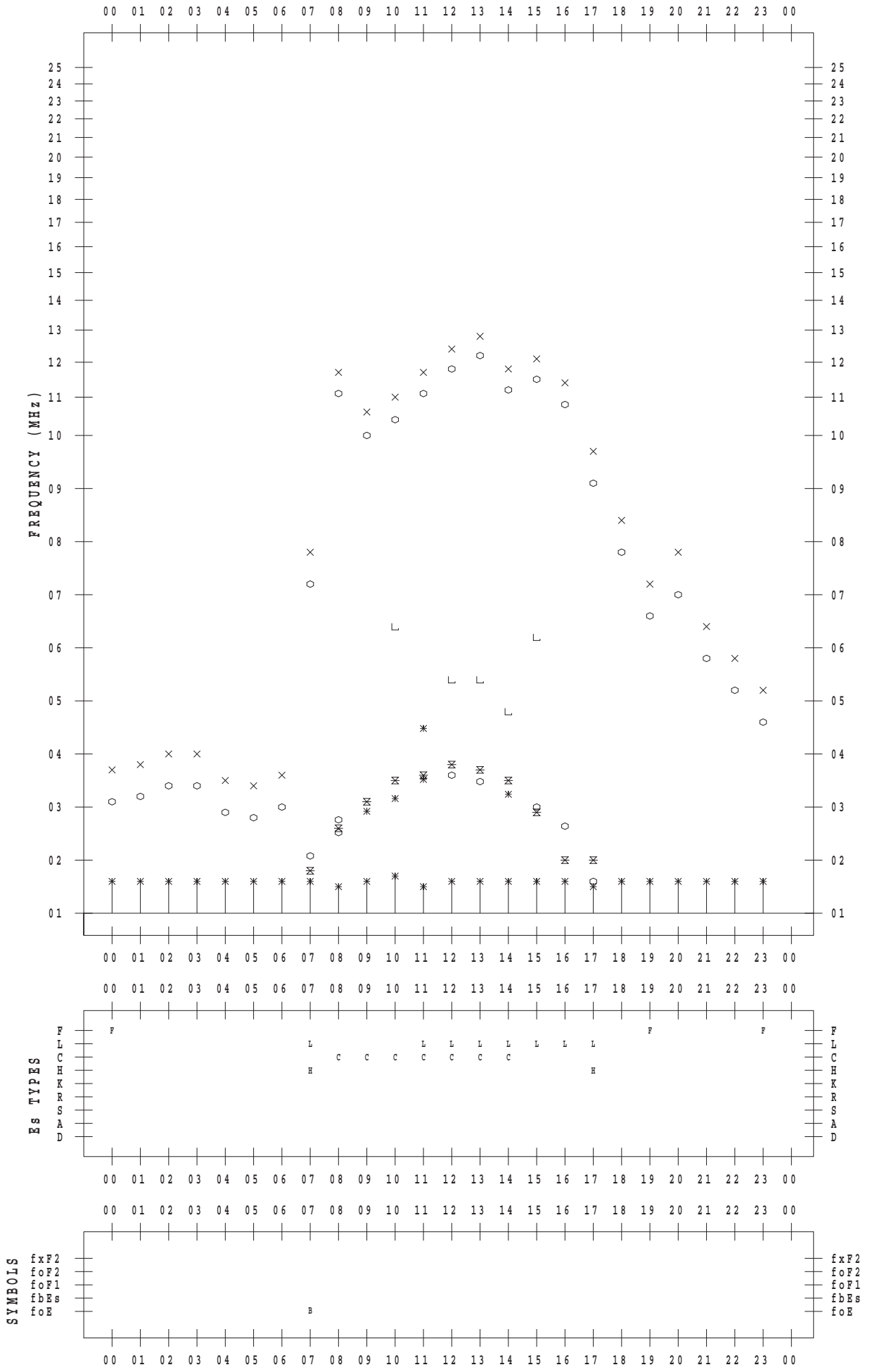
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/15

135 °E MEAN TIME



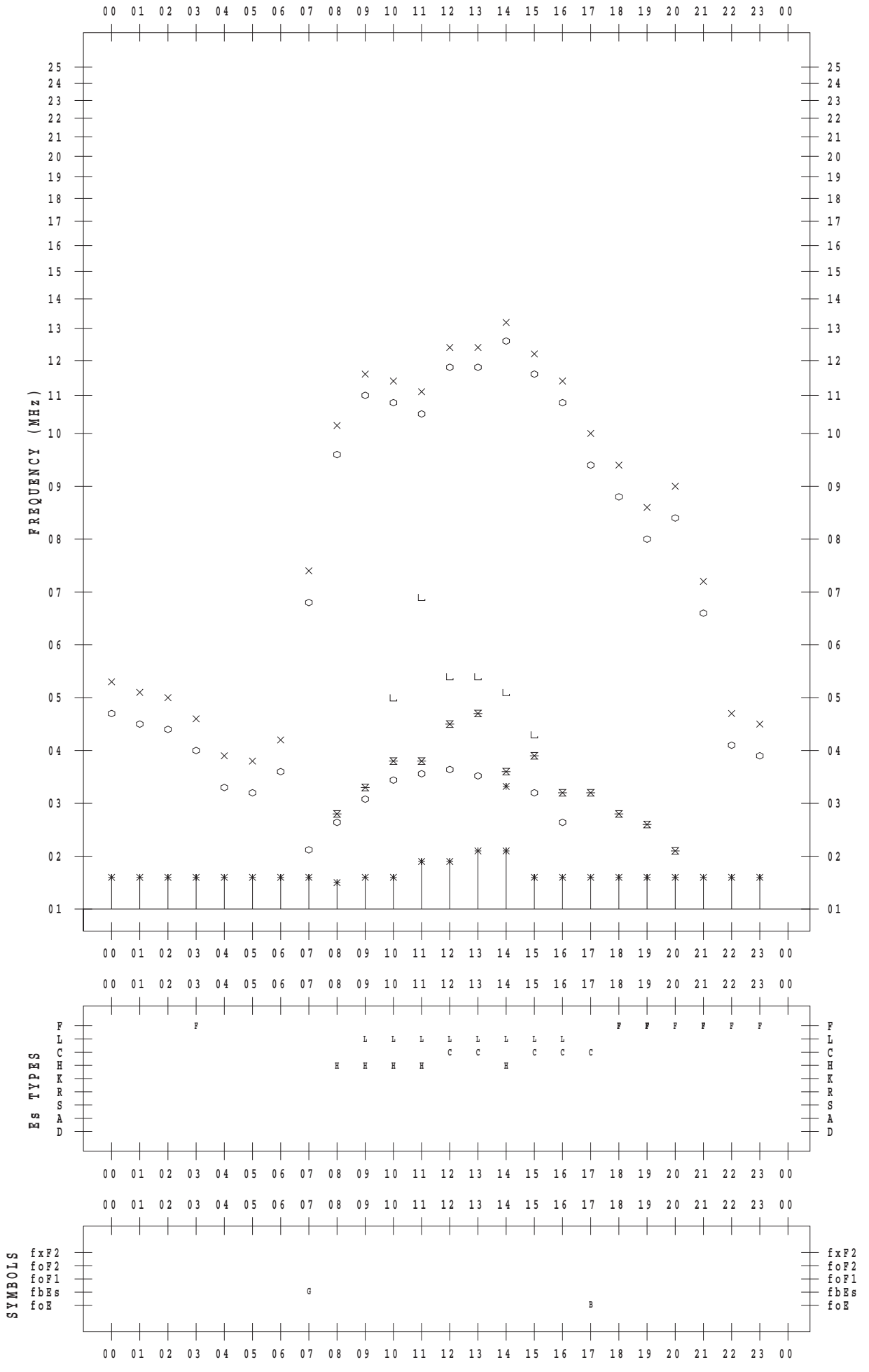
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/16

135 °E MEAN TIME



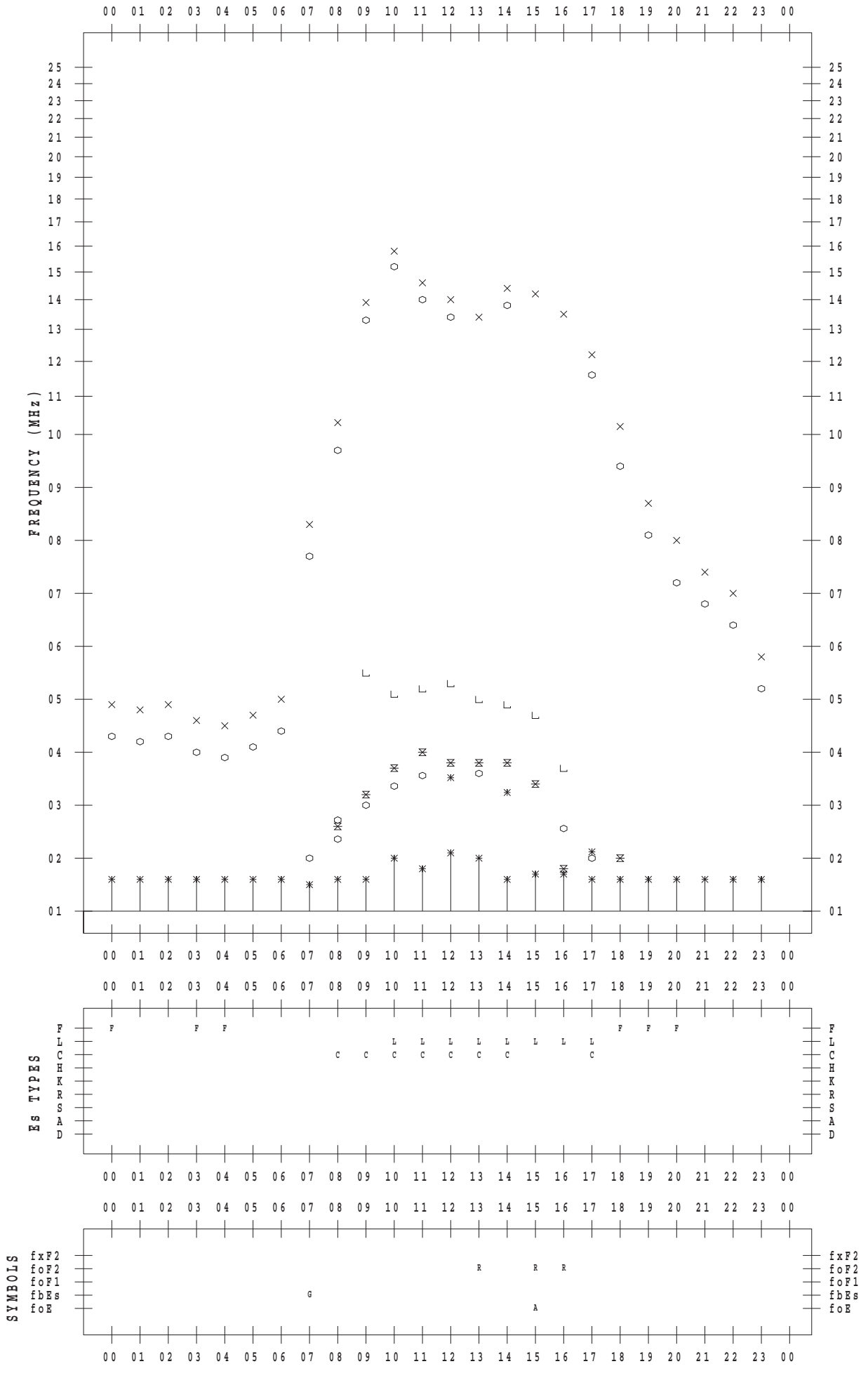
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/17

135 °E MEAN TIME



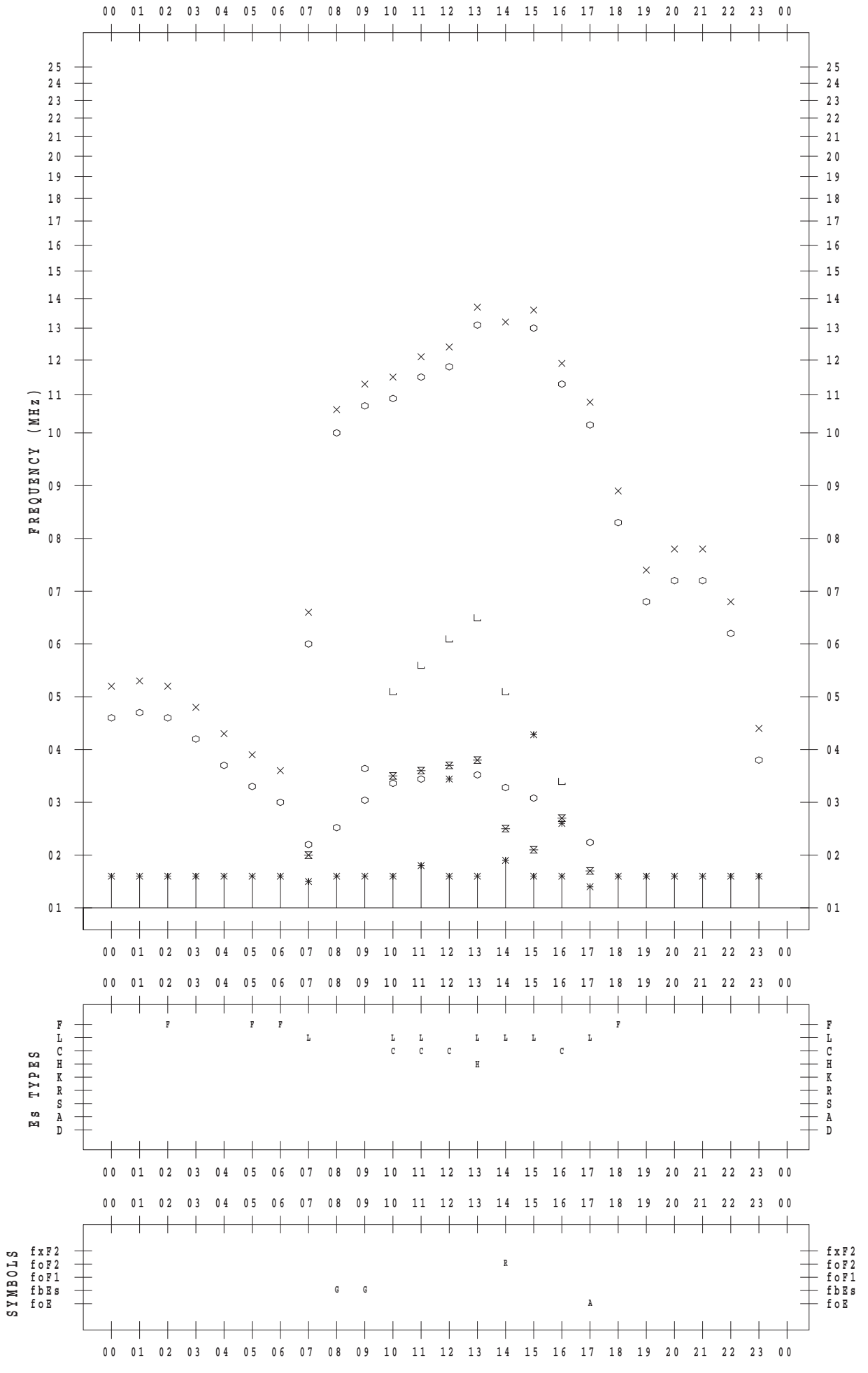
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/18

135 °E MEAN TIME



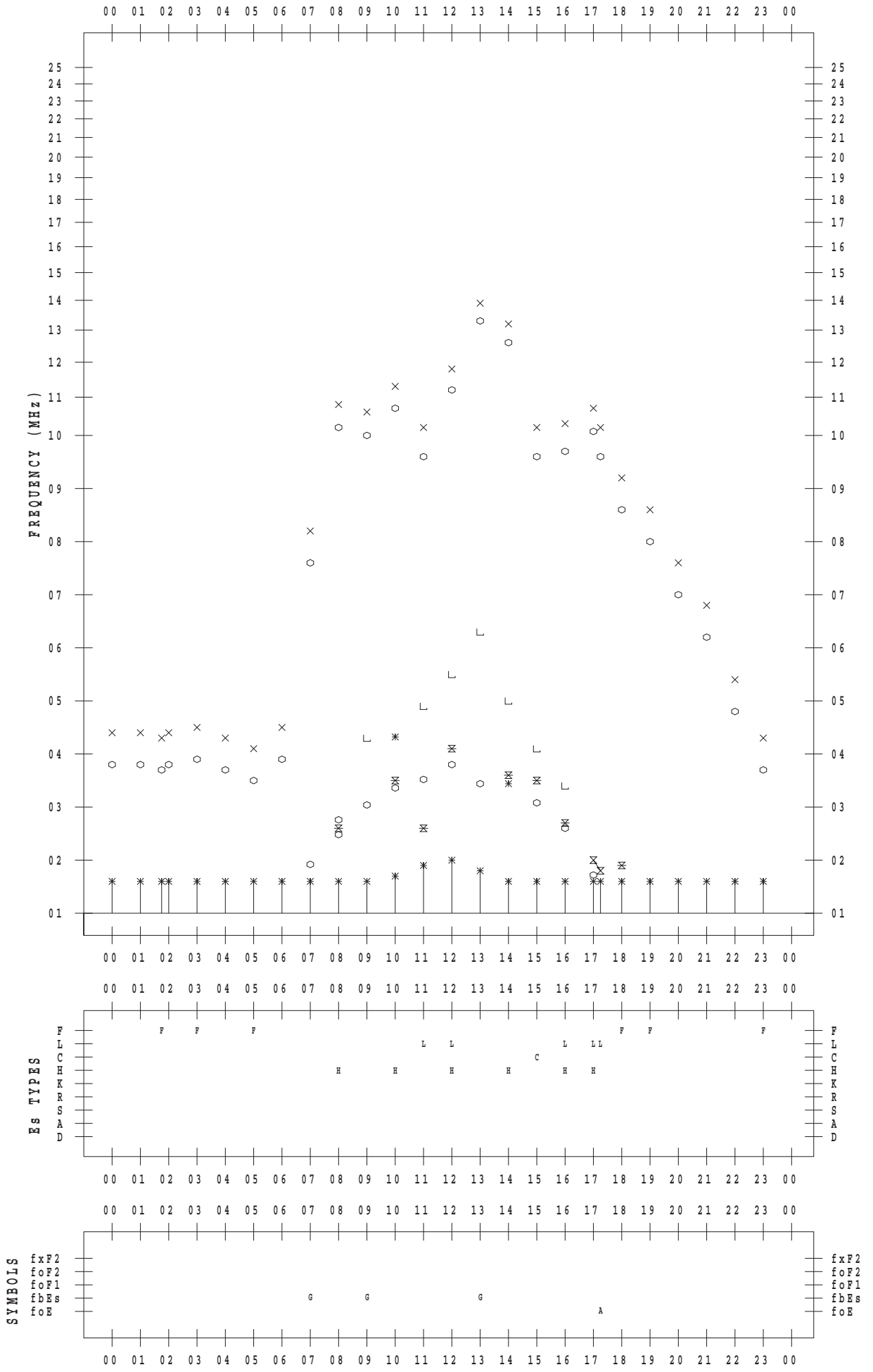
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/19

135 °E MEAN TIME



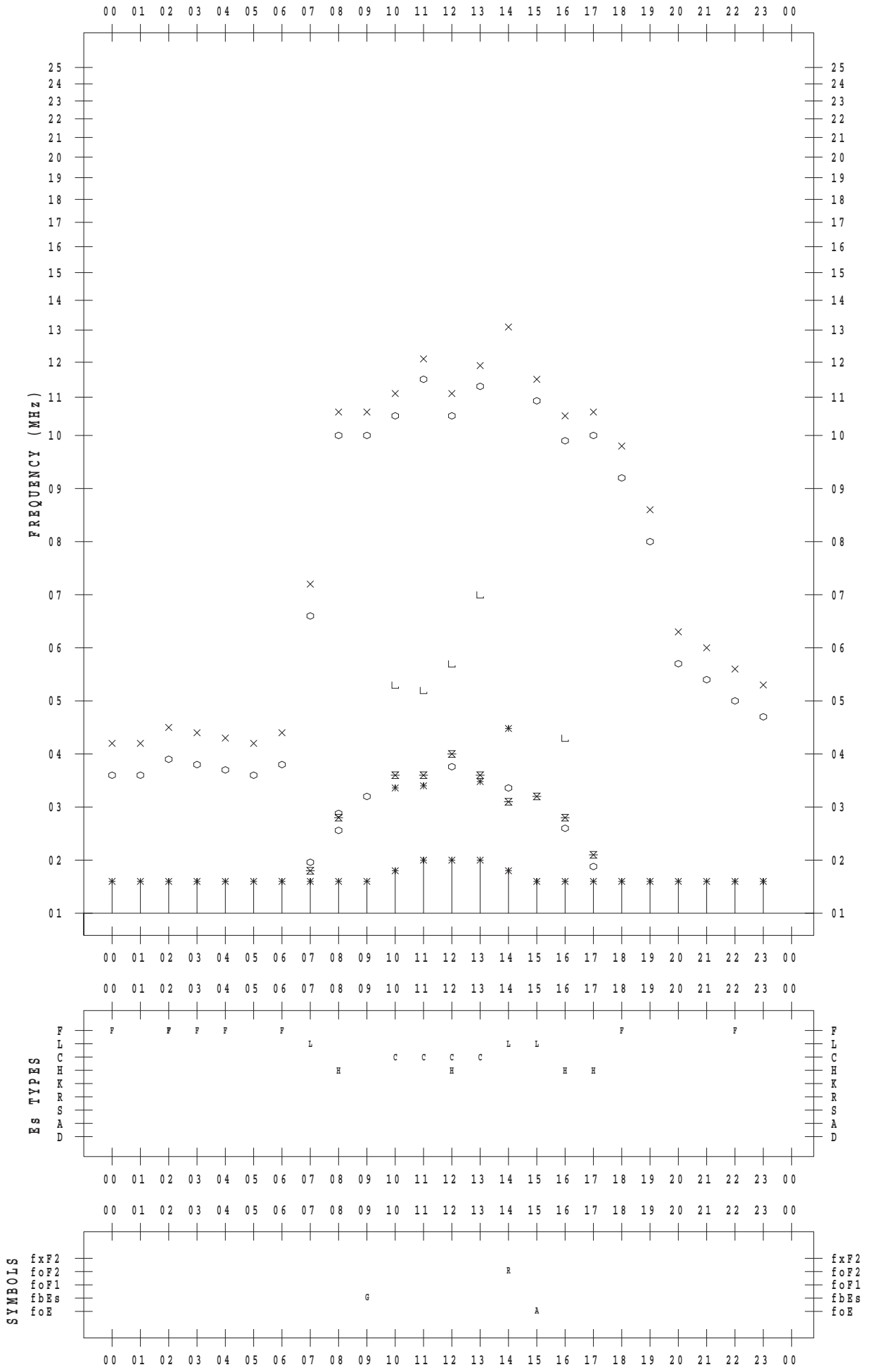
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/20

135 °E MEAN TIME



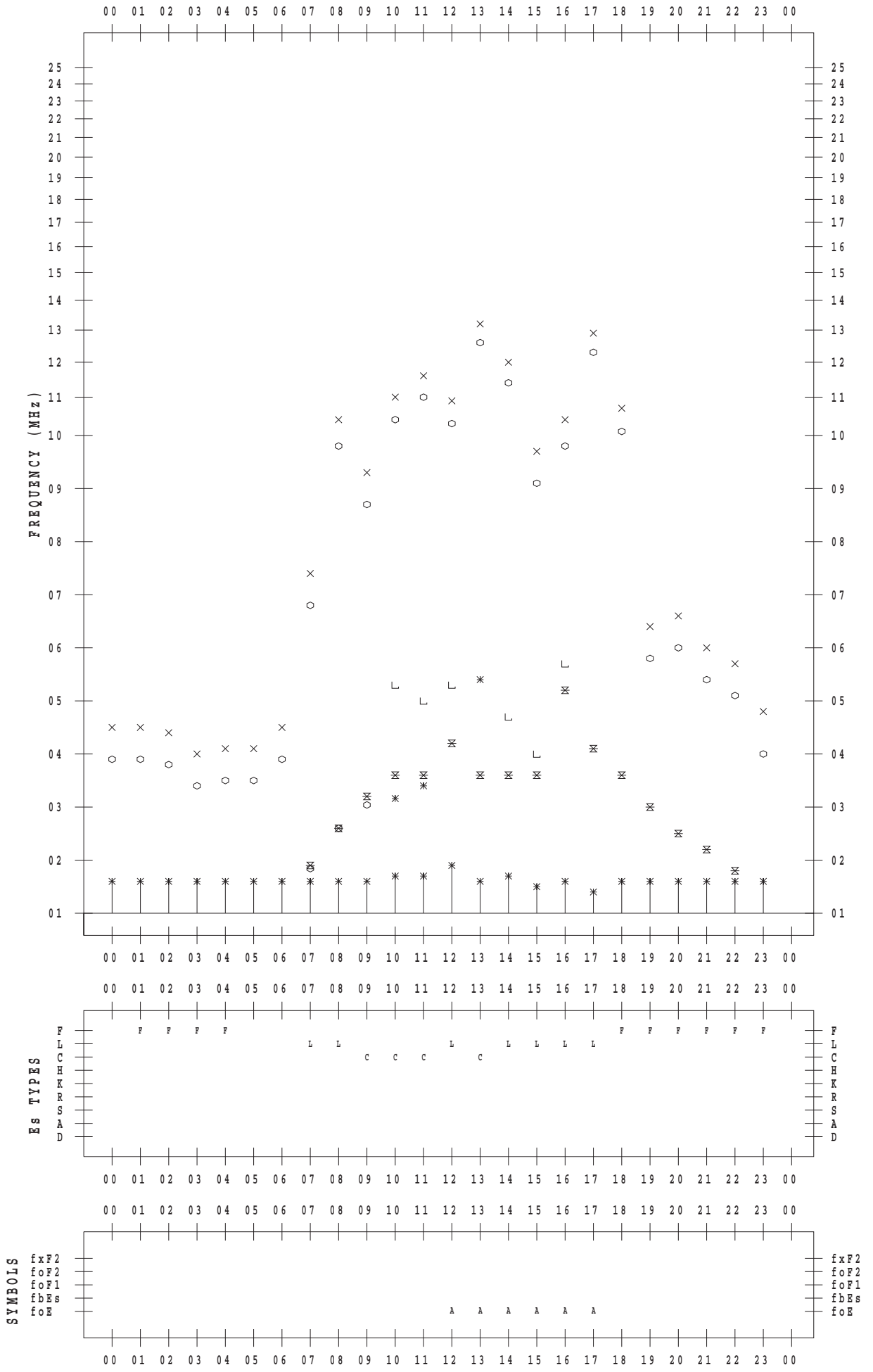
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/21

135 °E MEAN TIME



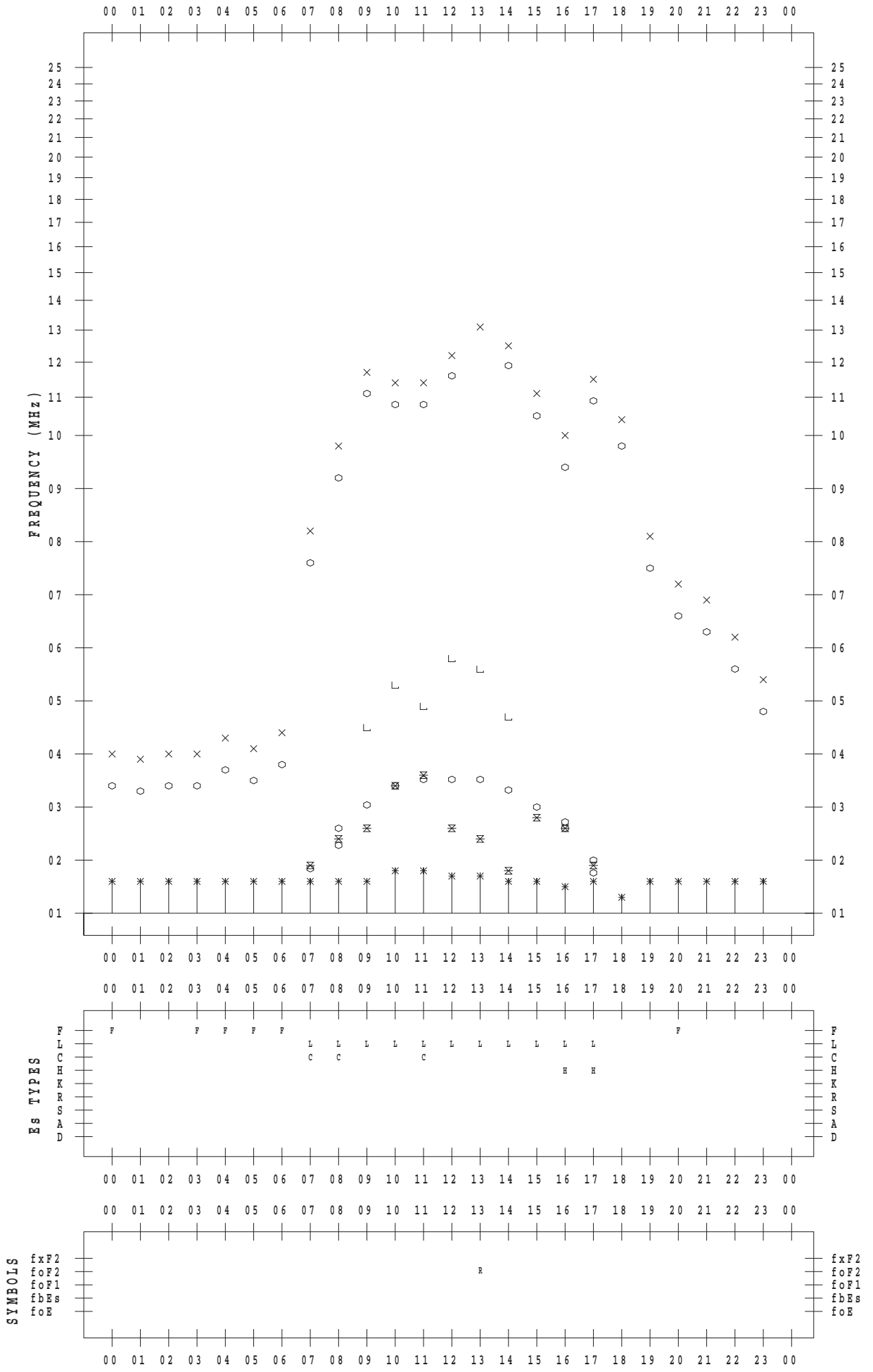
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/22

135 °E MEAN TIME



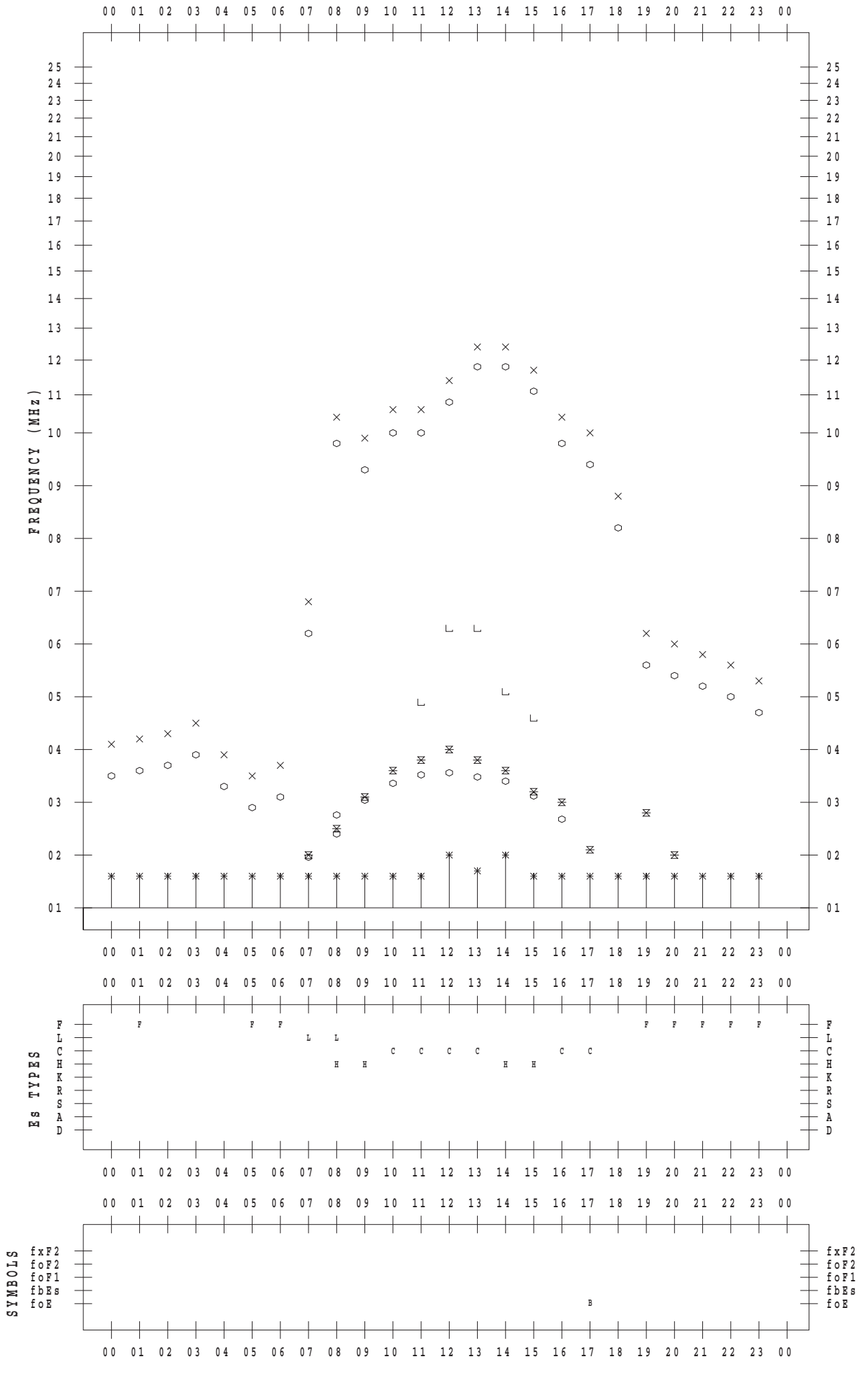
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/23

135 °E MEAN TIME



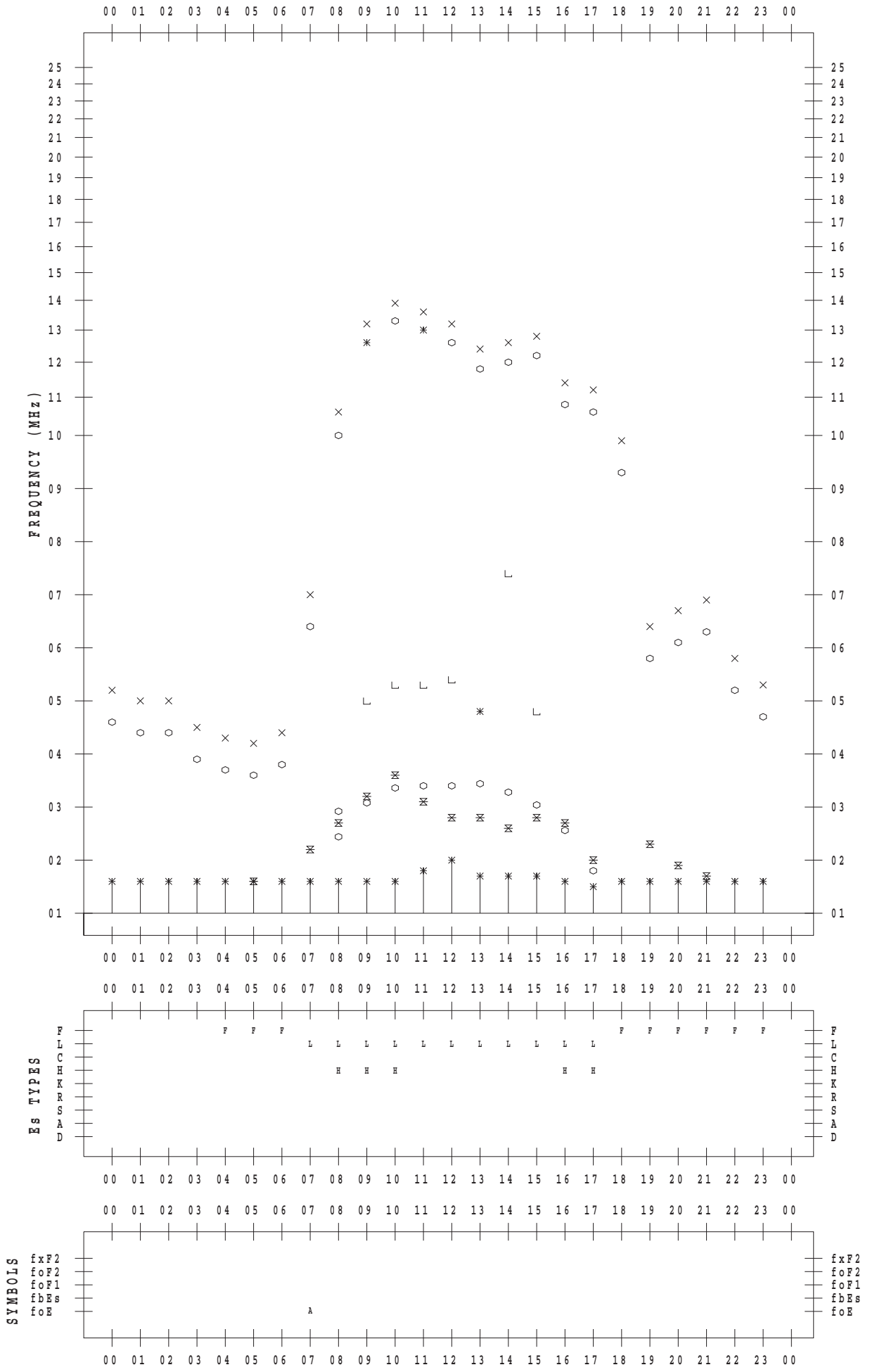
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/24

135 °E MEAN TIME



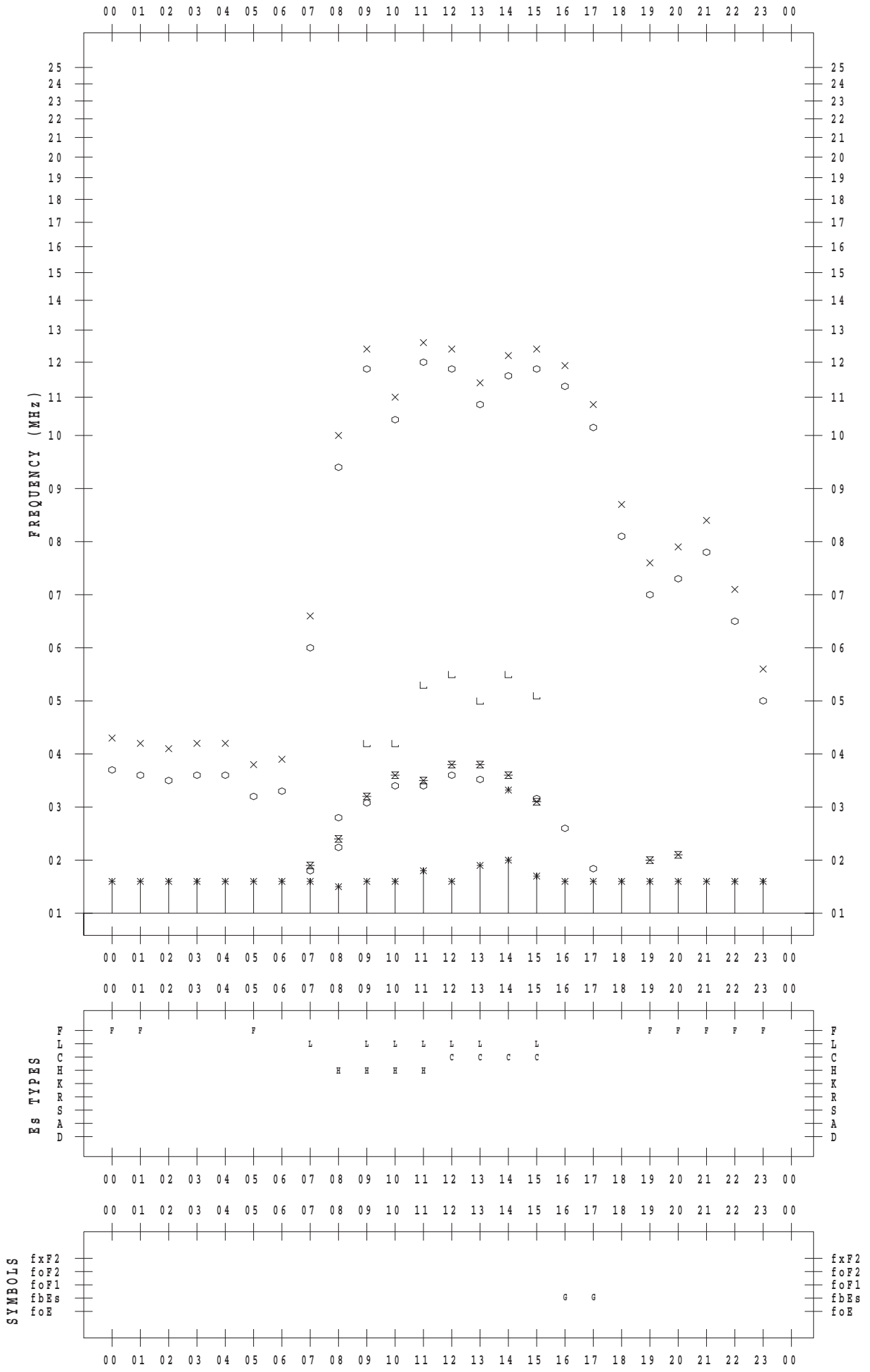
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/25

135 °E MEAN TIME



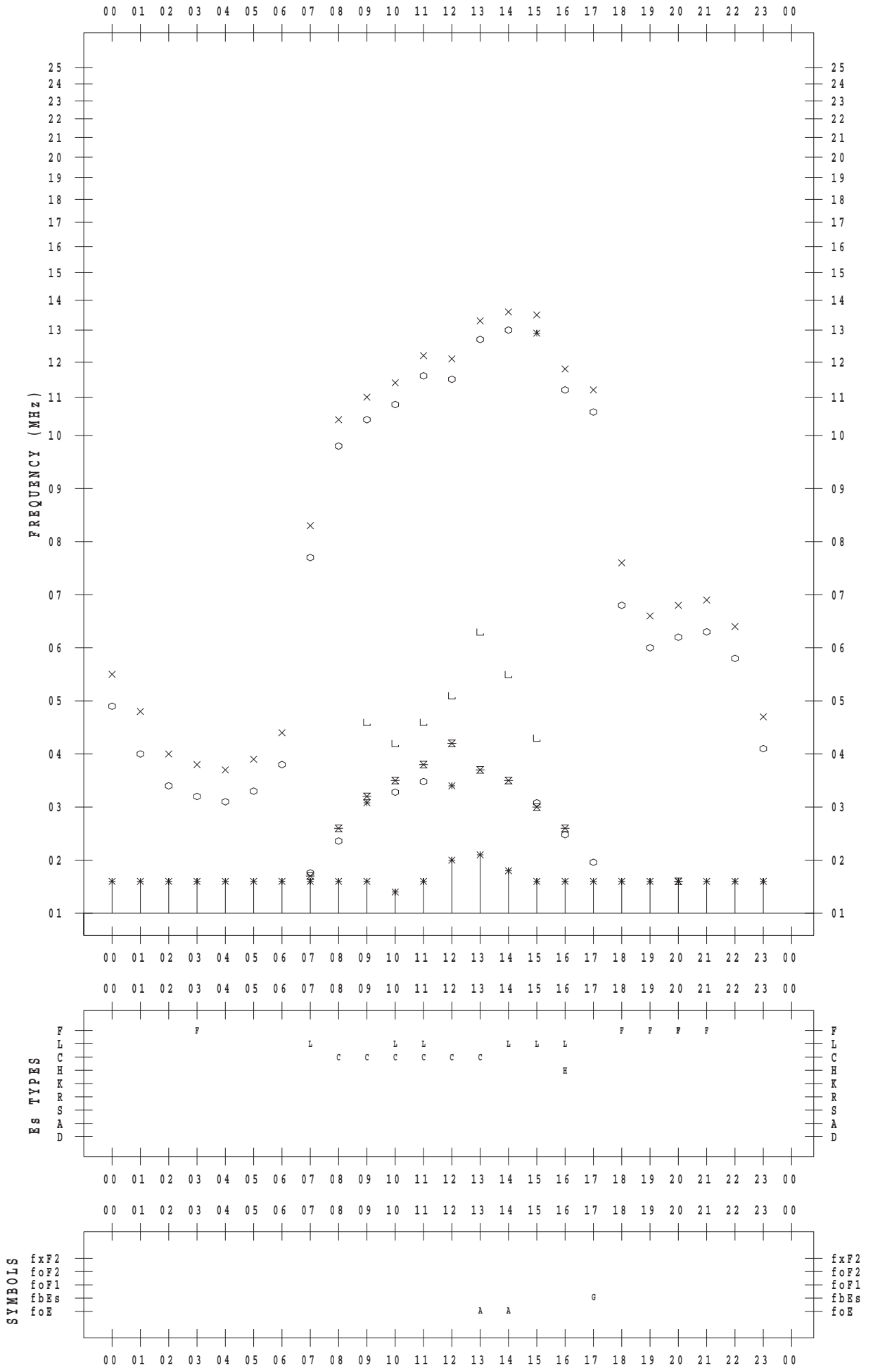
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/26

135 °E MEAN TIME



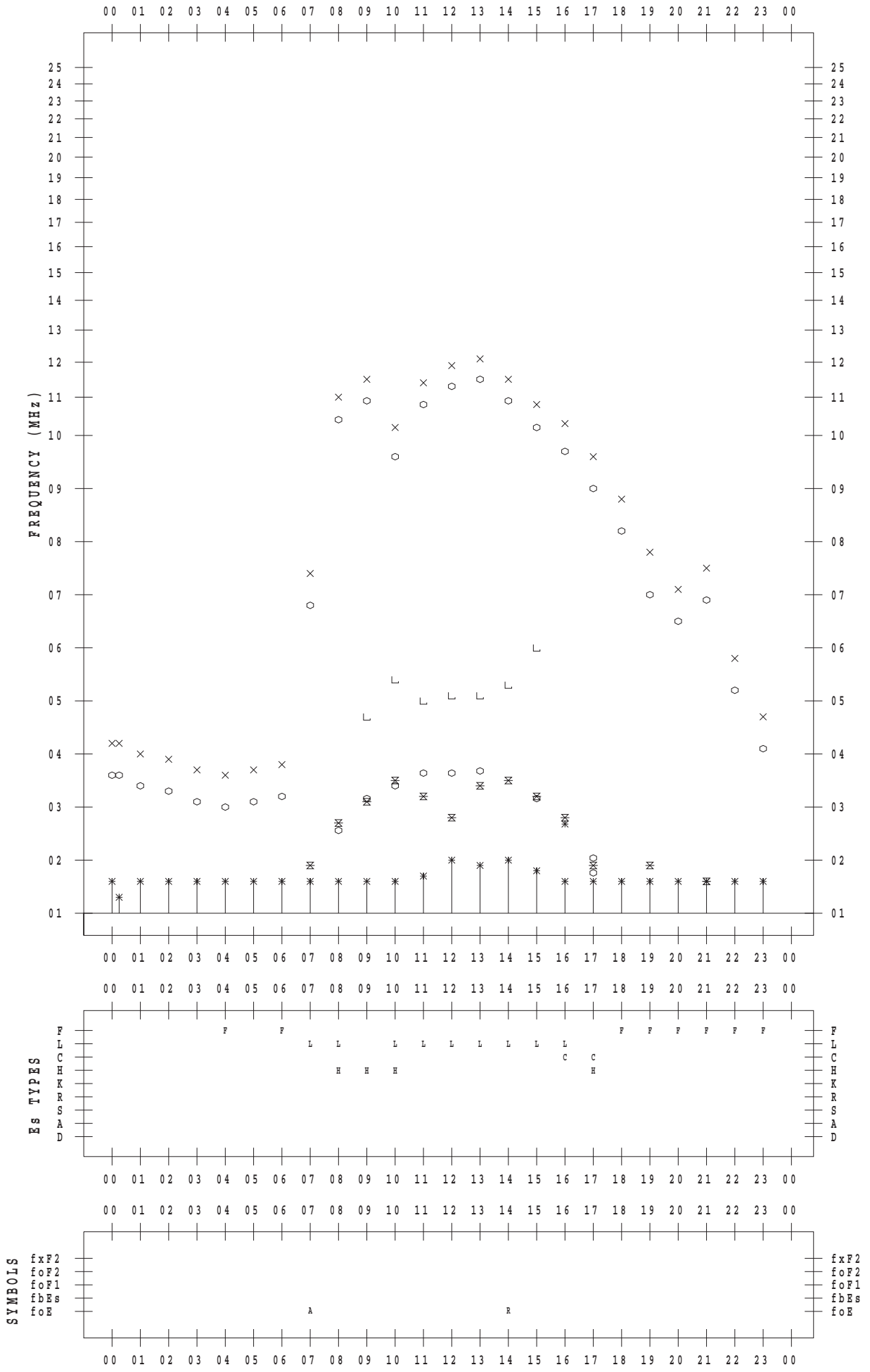
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/27

135 °E MEAN TIME



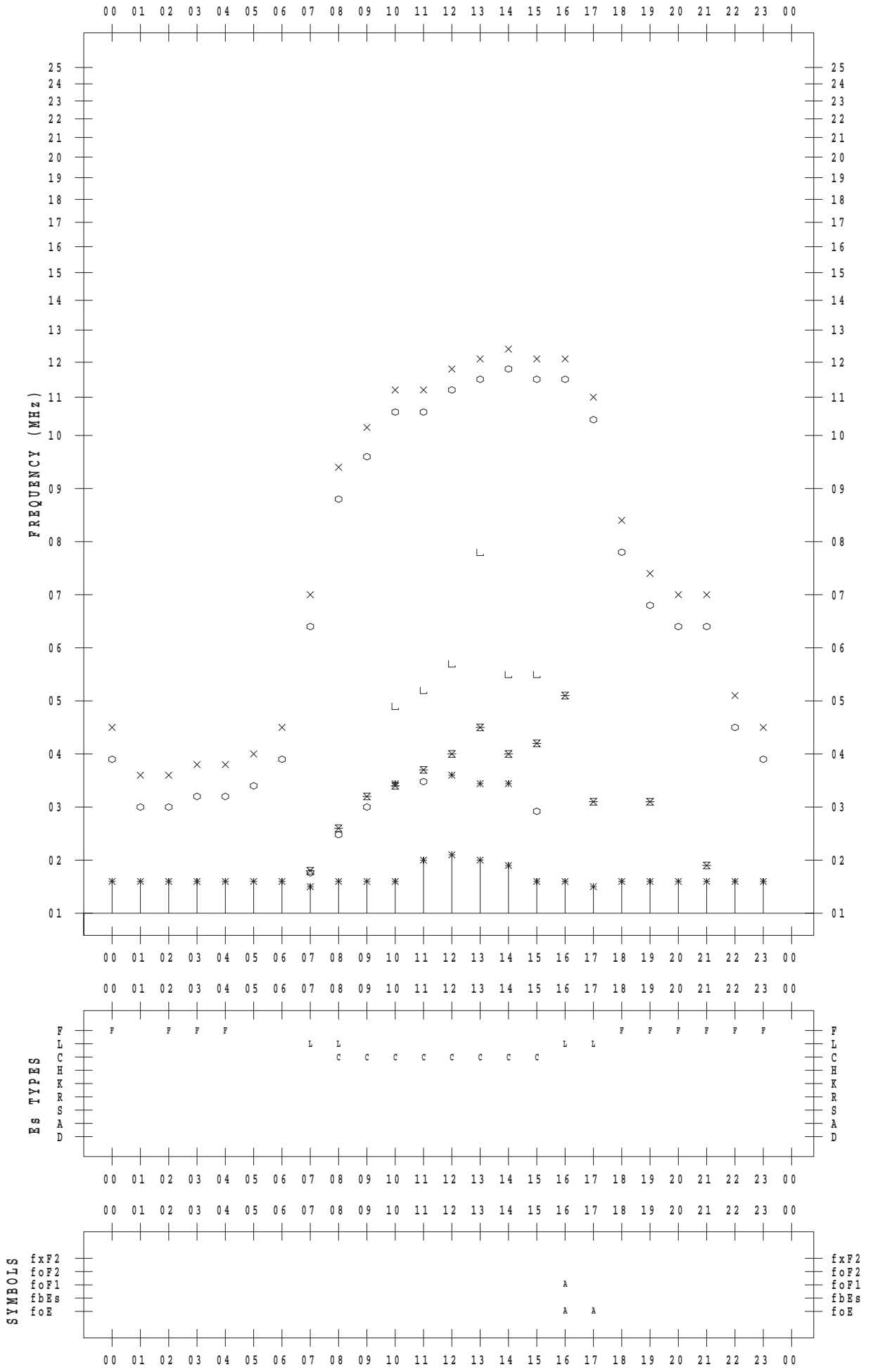
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/28

135 °E MEAN TIME



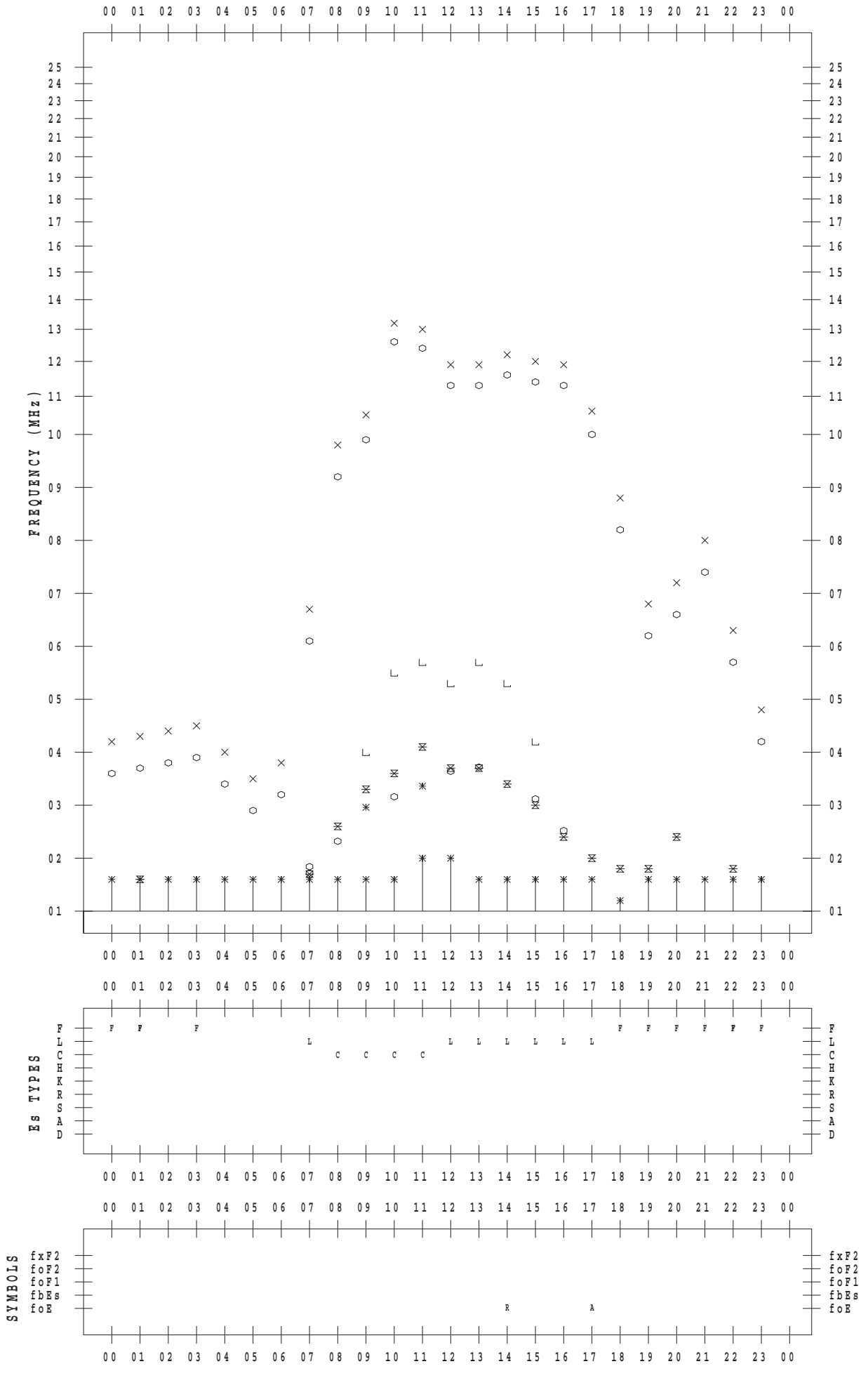
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/29

135 °E MEAN TIME



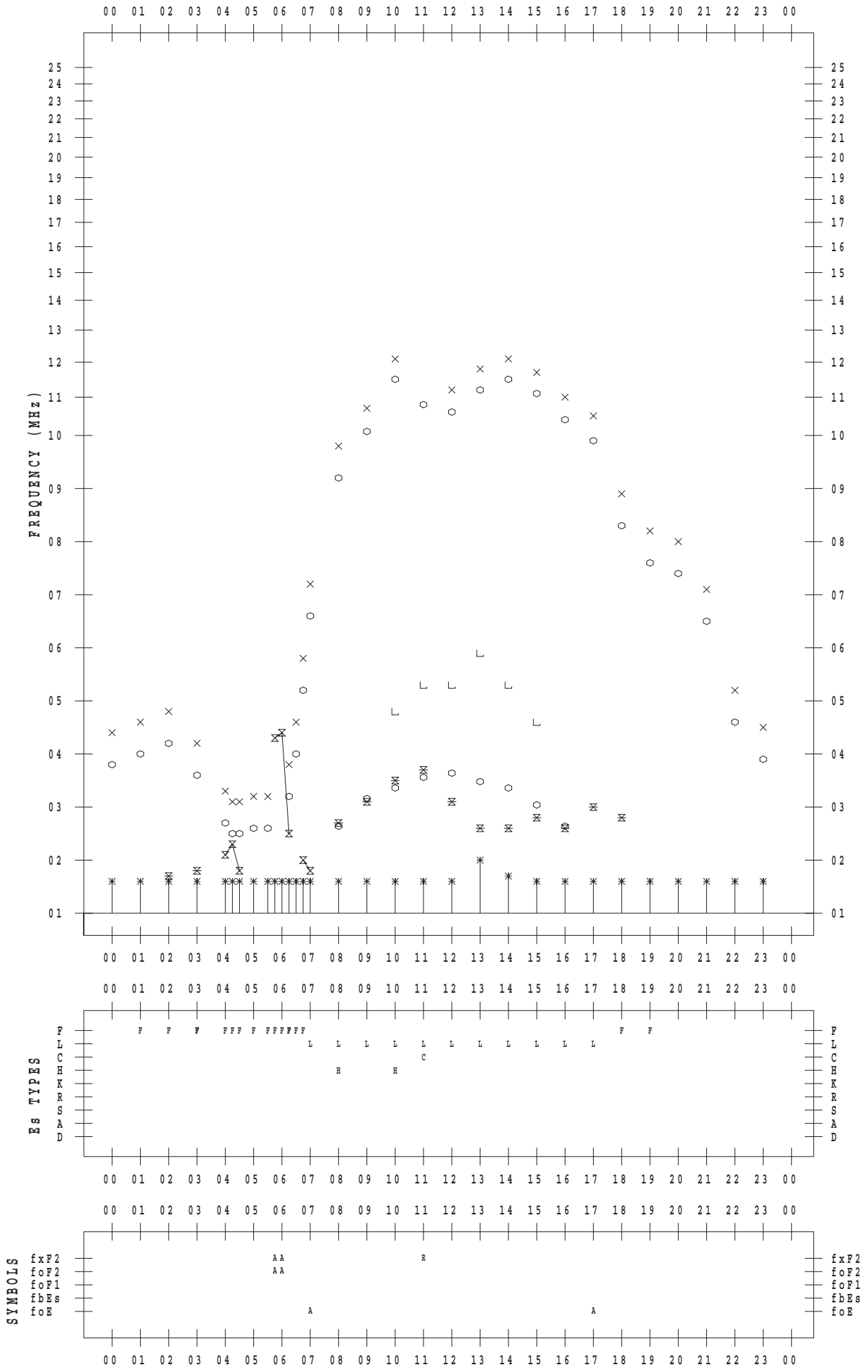
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/11/30

135 °E MEAN TIME



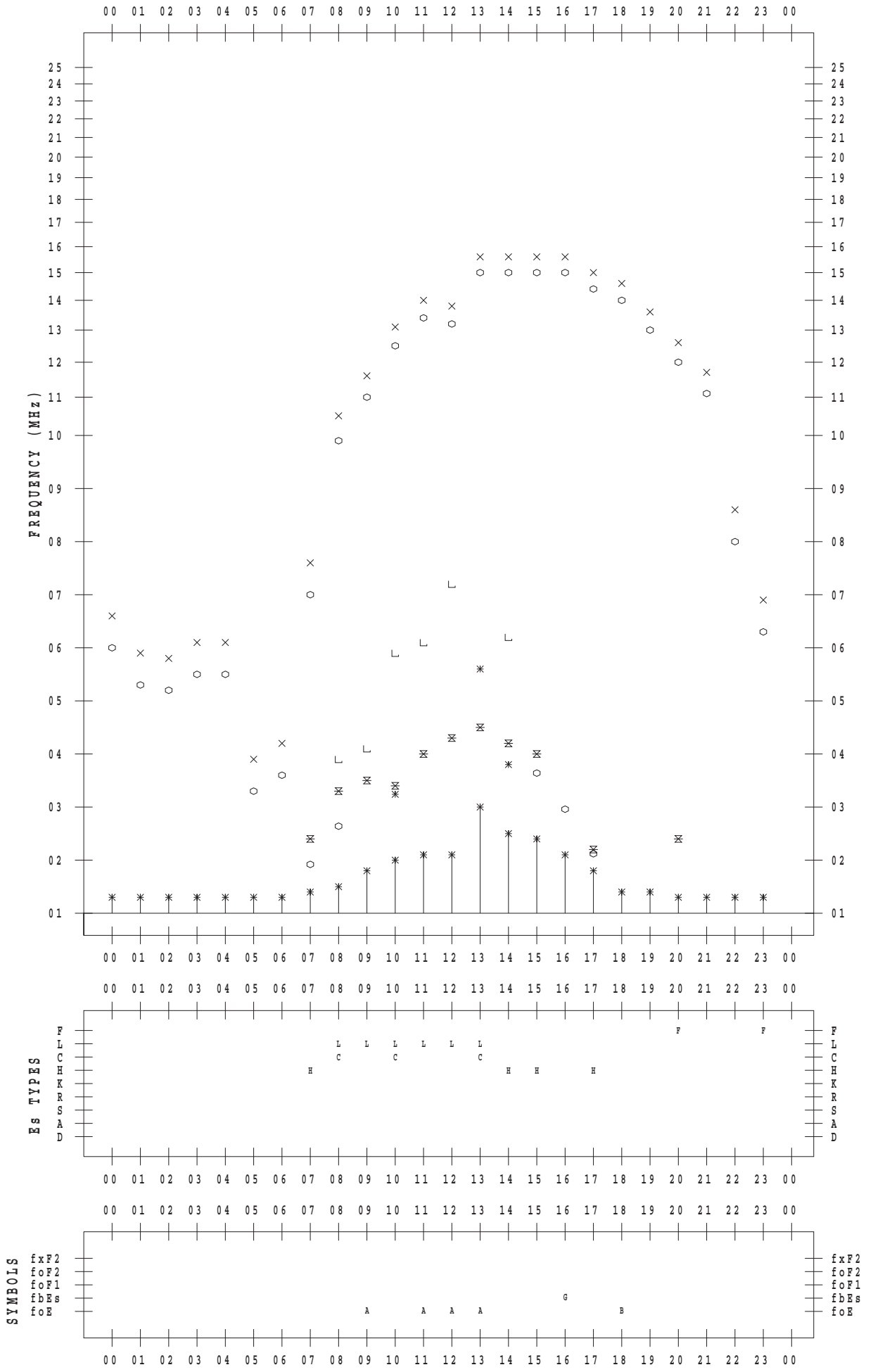
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 1

135 °E MEAN TIME



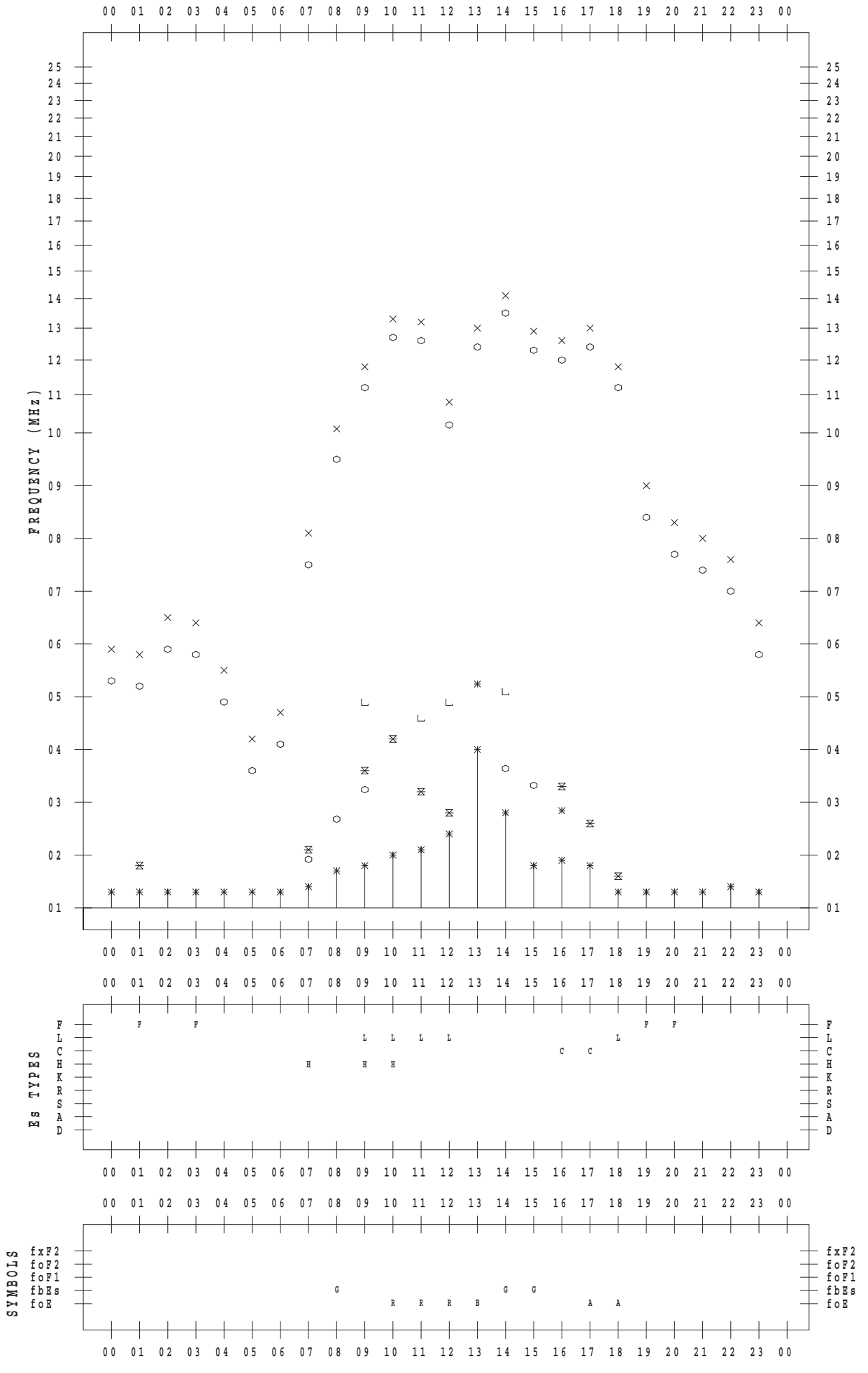
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 2

135 °E MEAN TIME



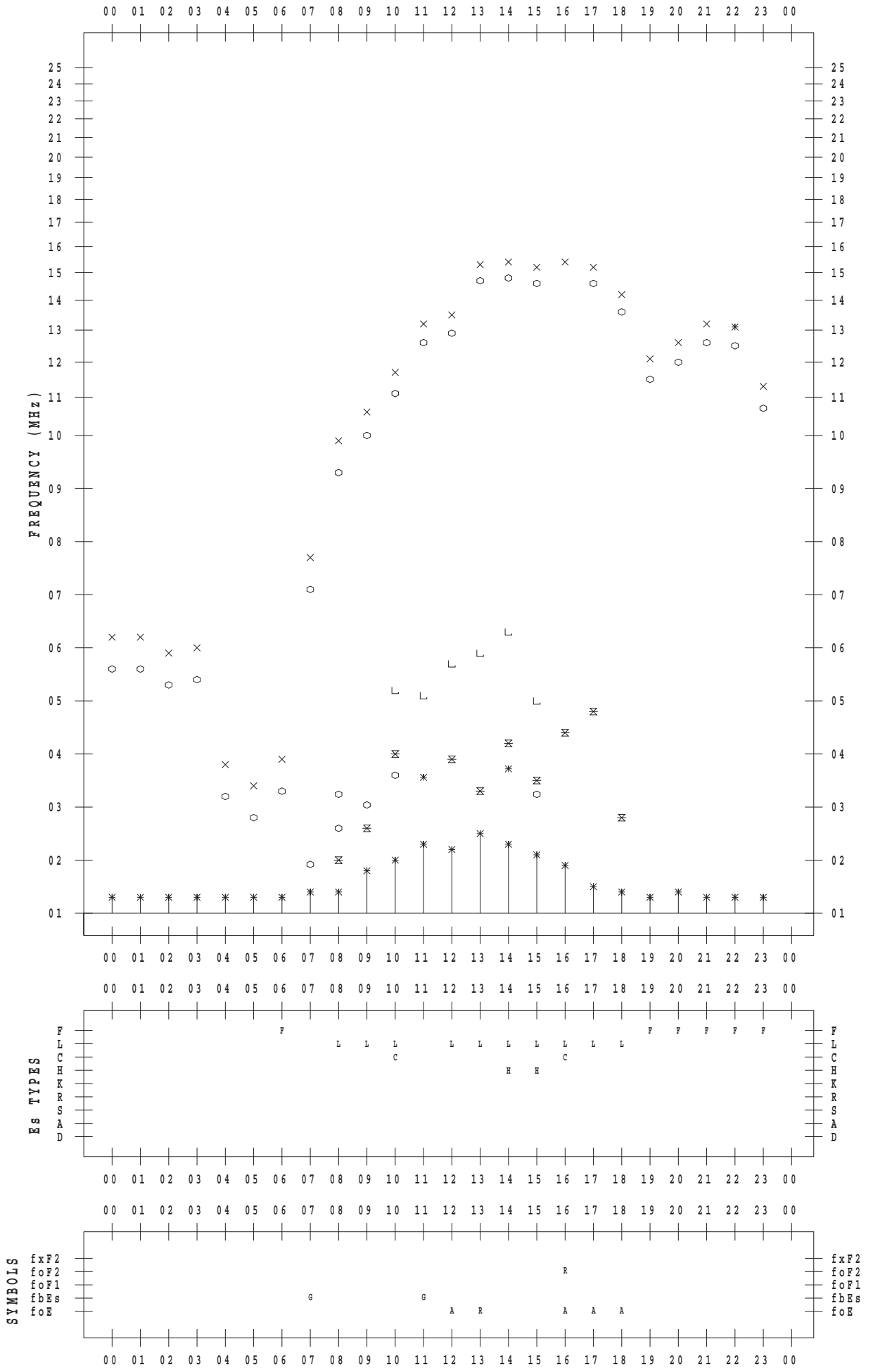
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 3

135 °E MEAN TIME



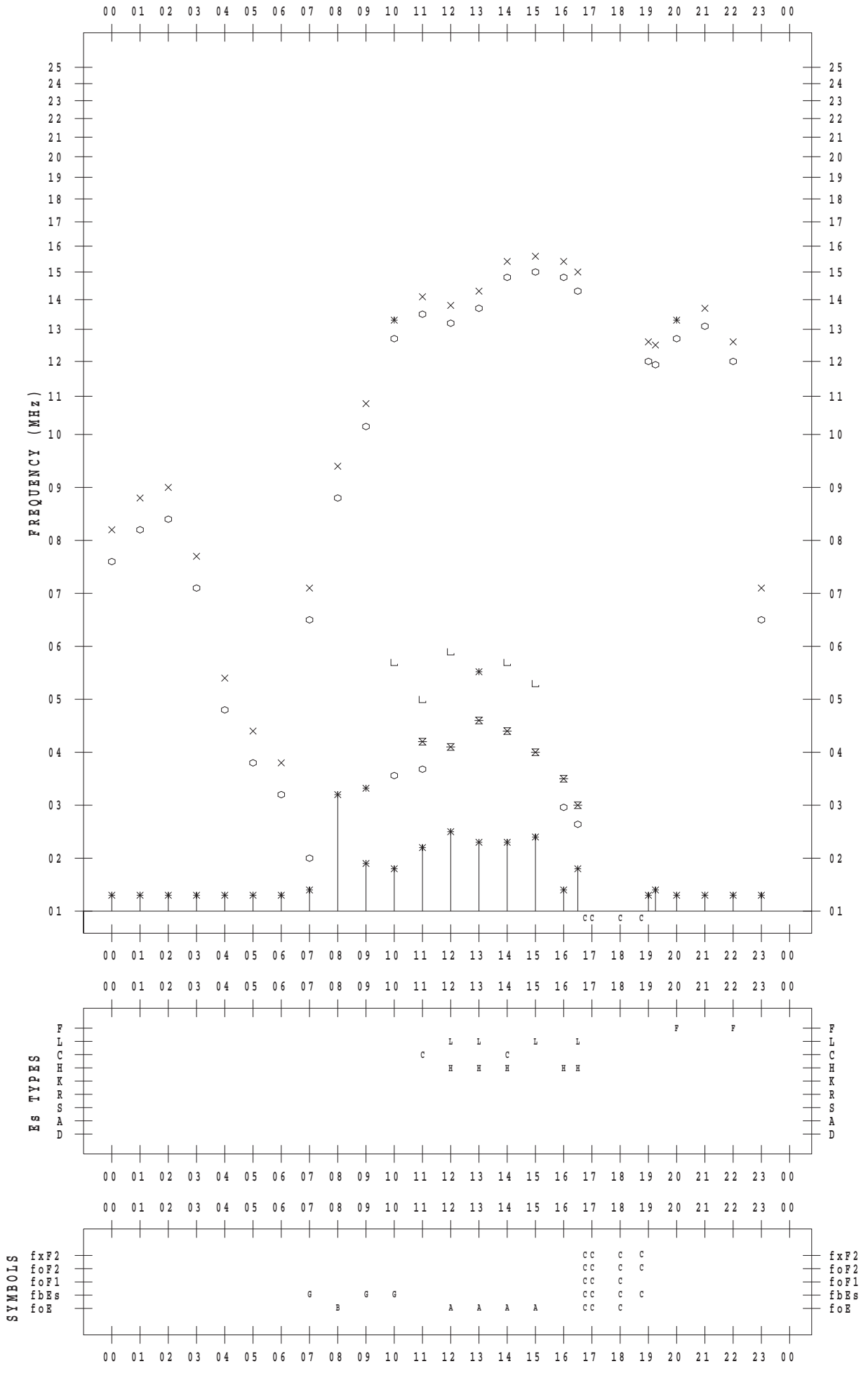
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 4

135 °E MEAN TIME



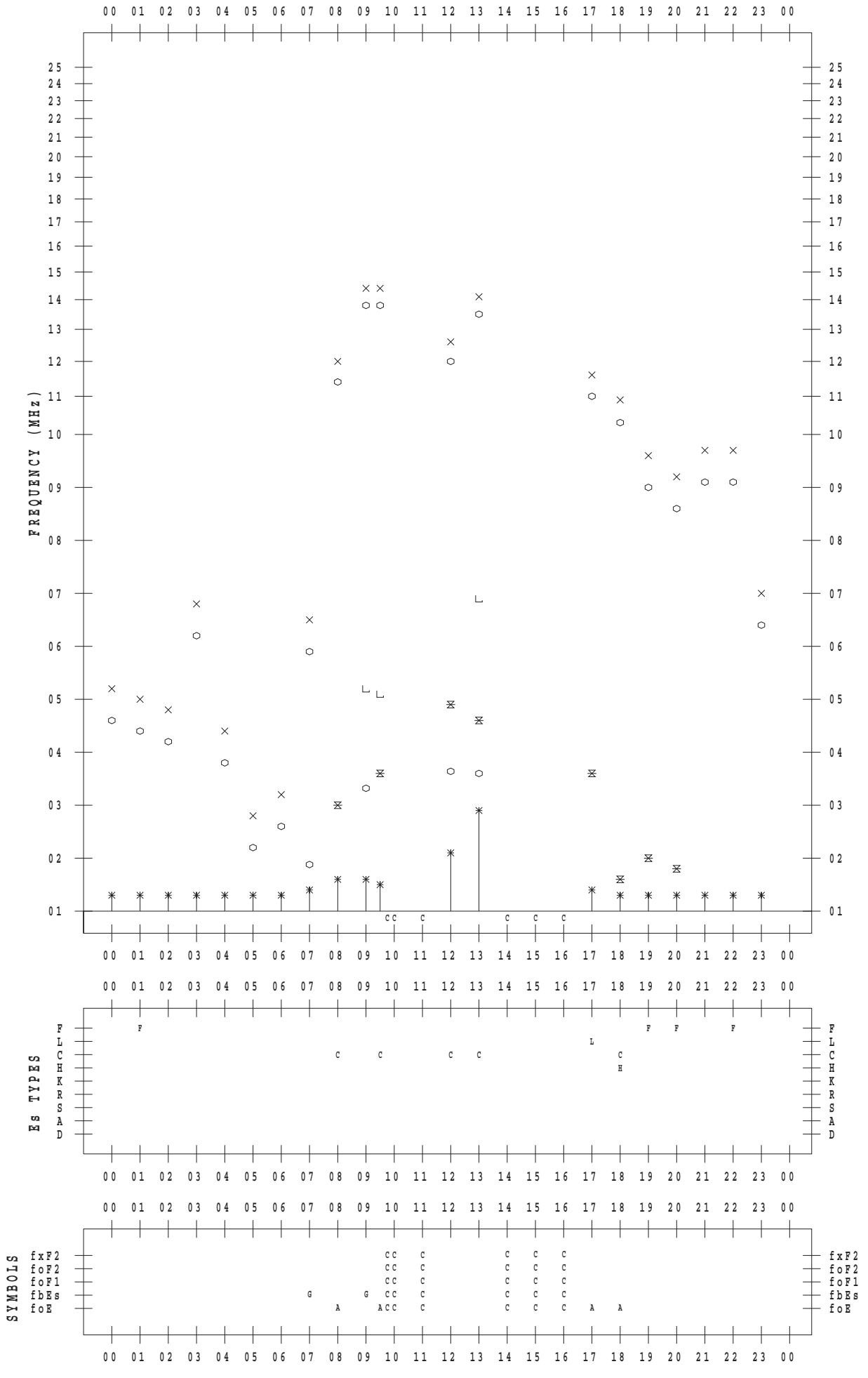
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 5

135 °E MEAN TIME



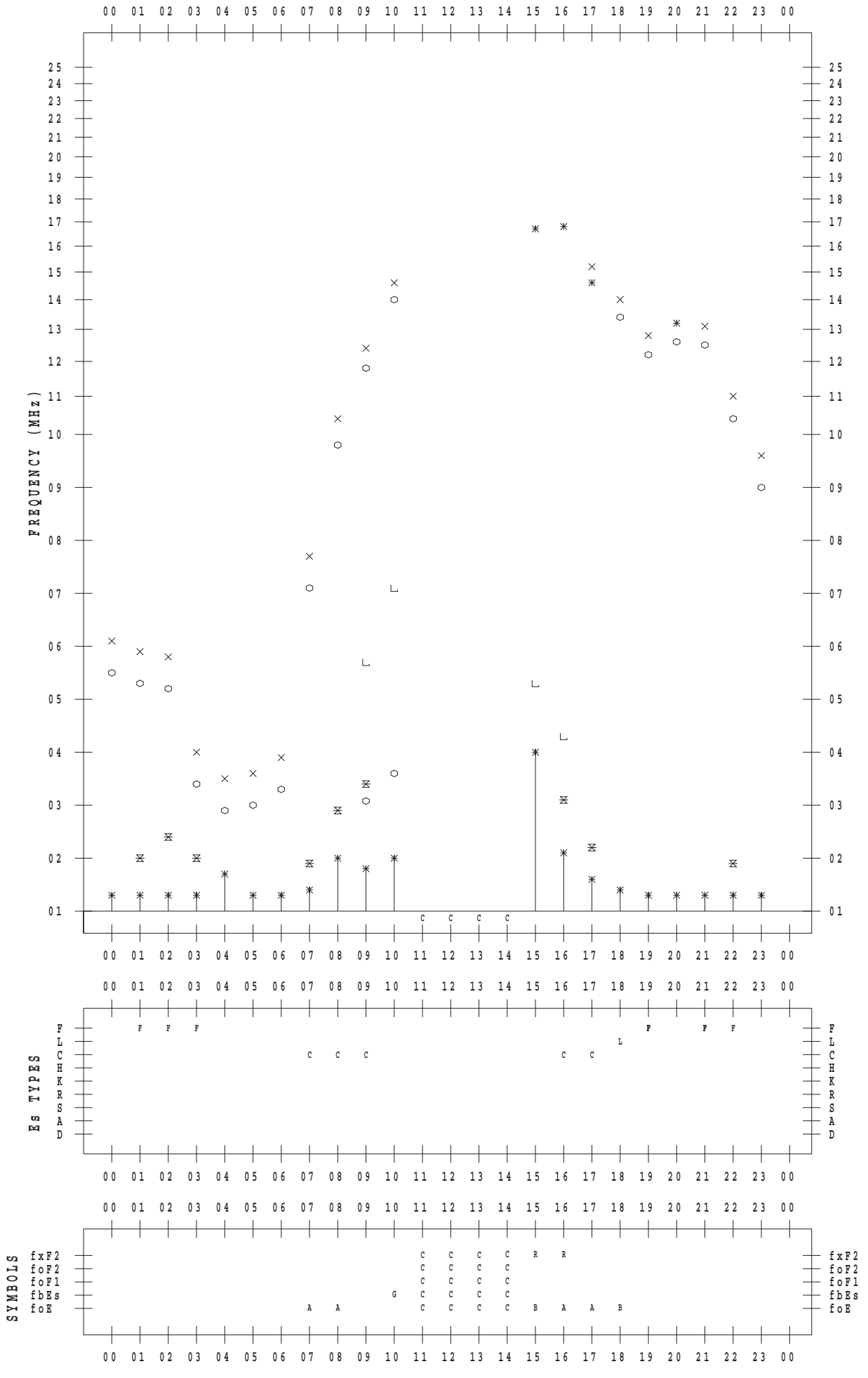
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 6

135 °E MEAN TIME



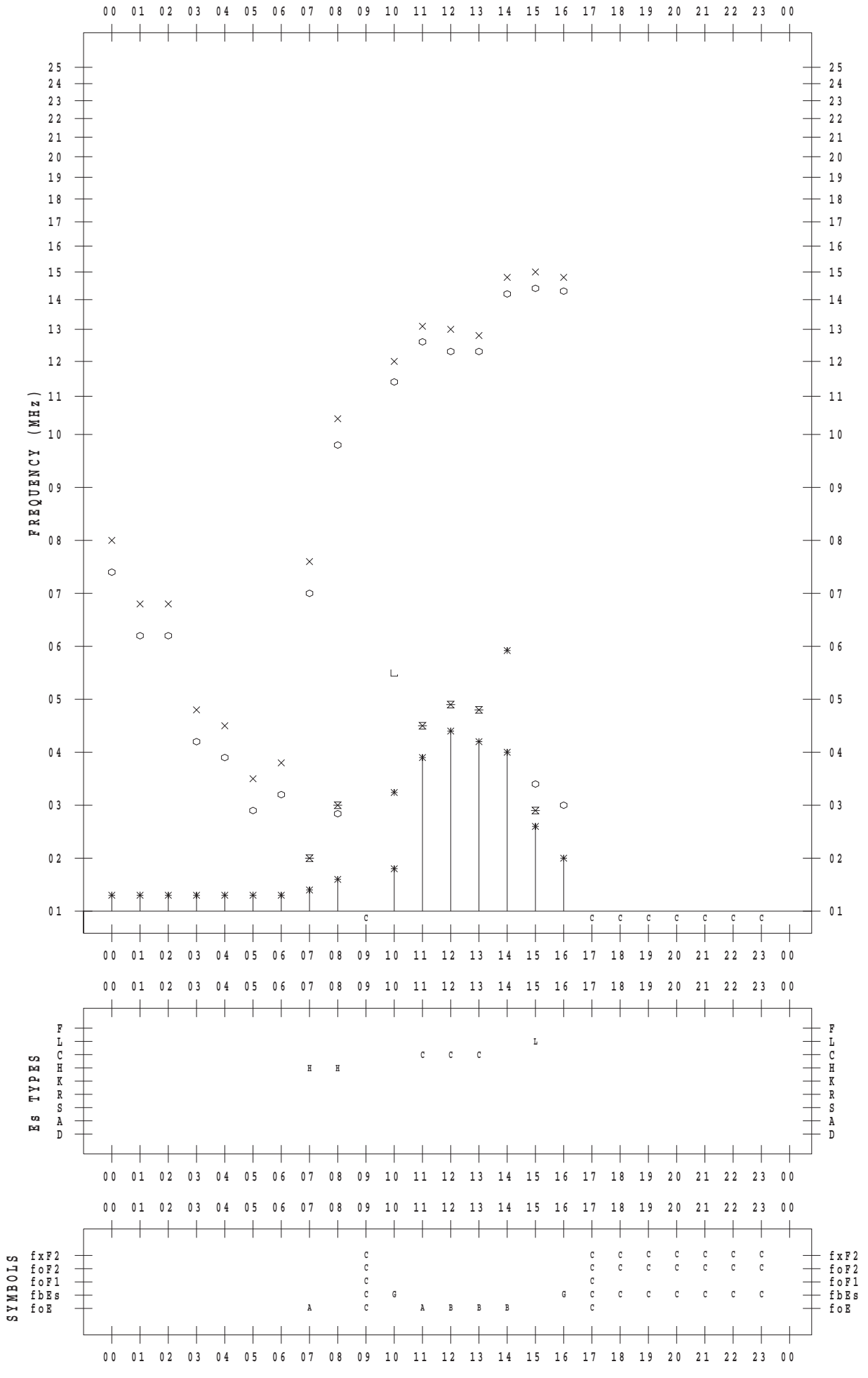
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 7

135 °E MEAN TIME



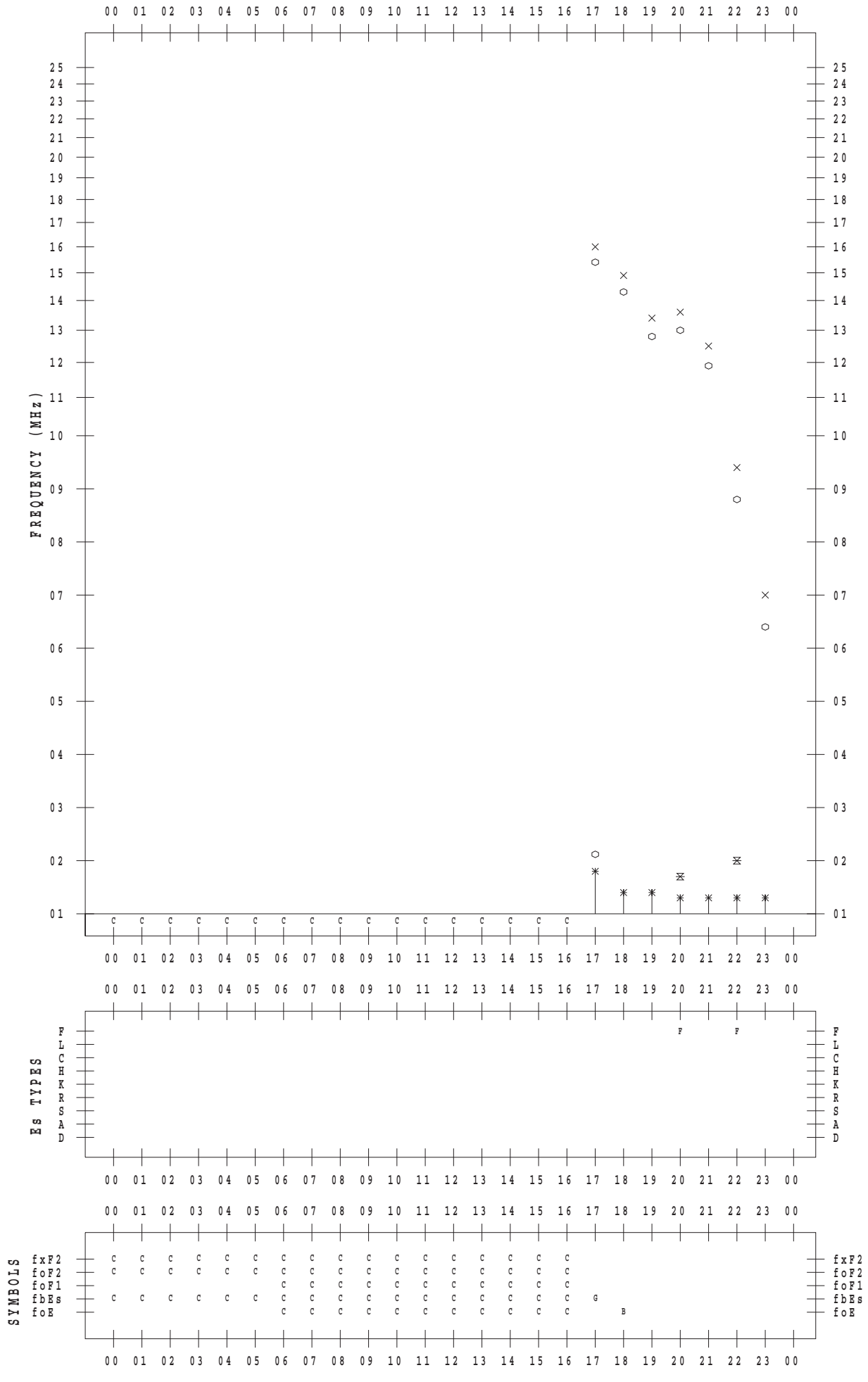
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 8

135 °E MEAN TIME



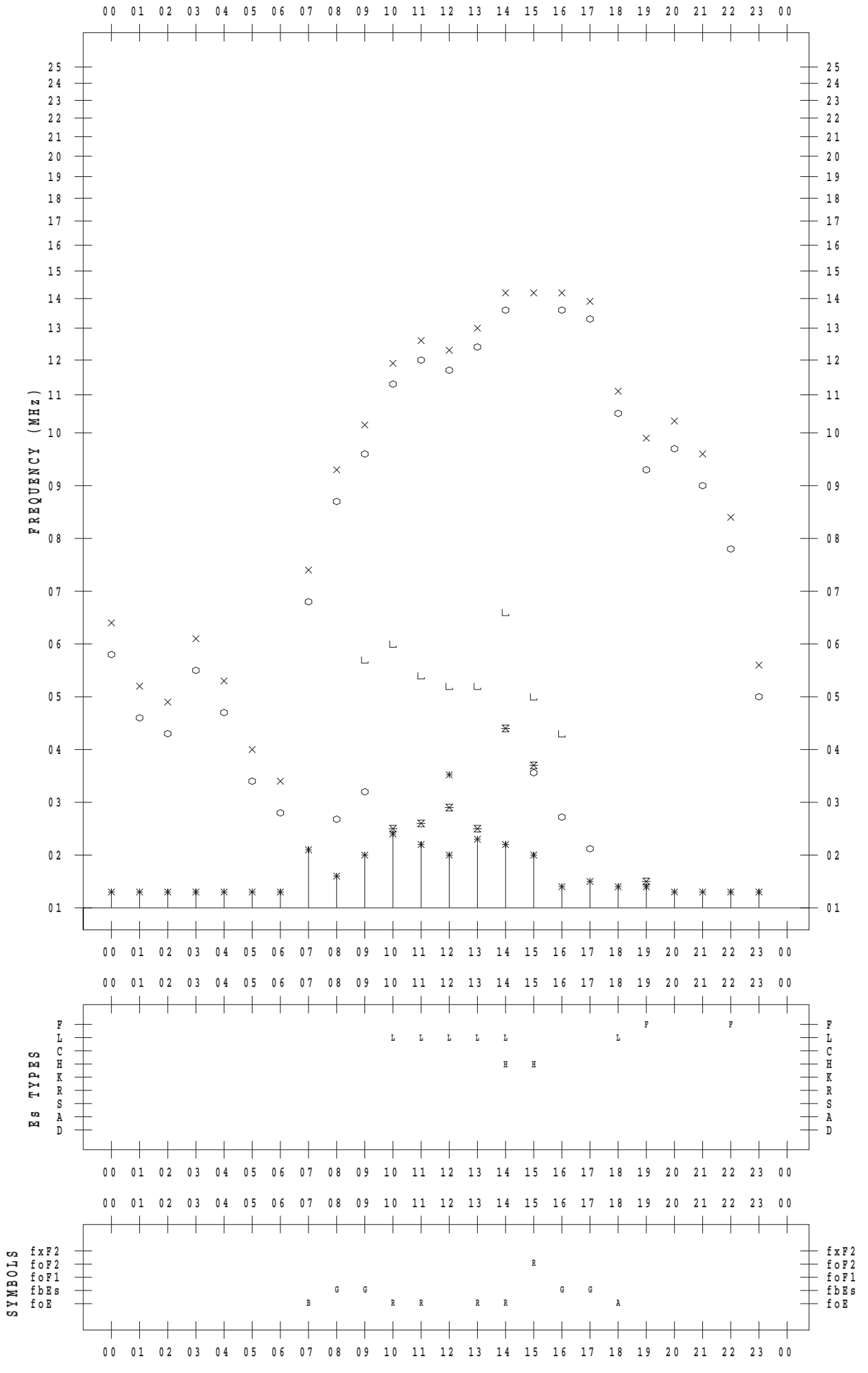
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/ 9

135 °E MEAN TIME



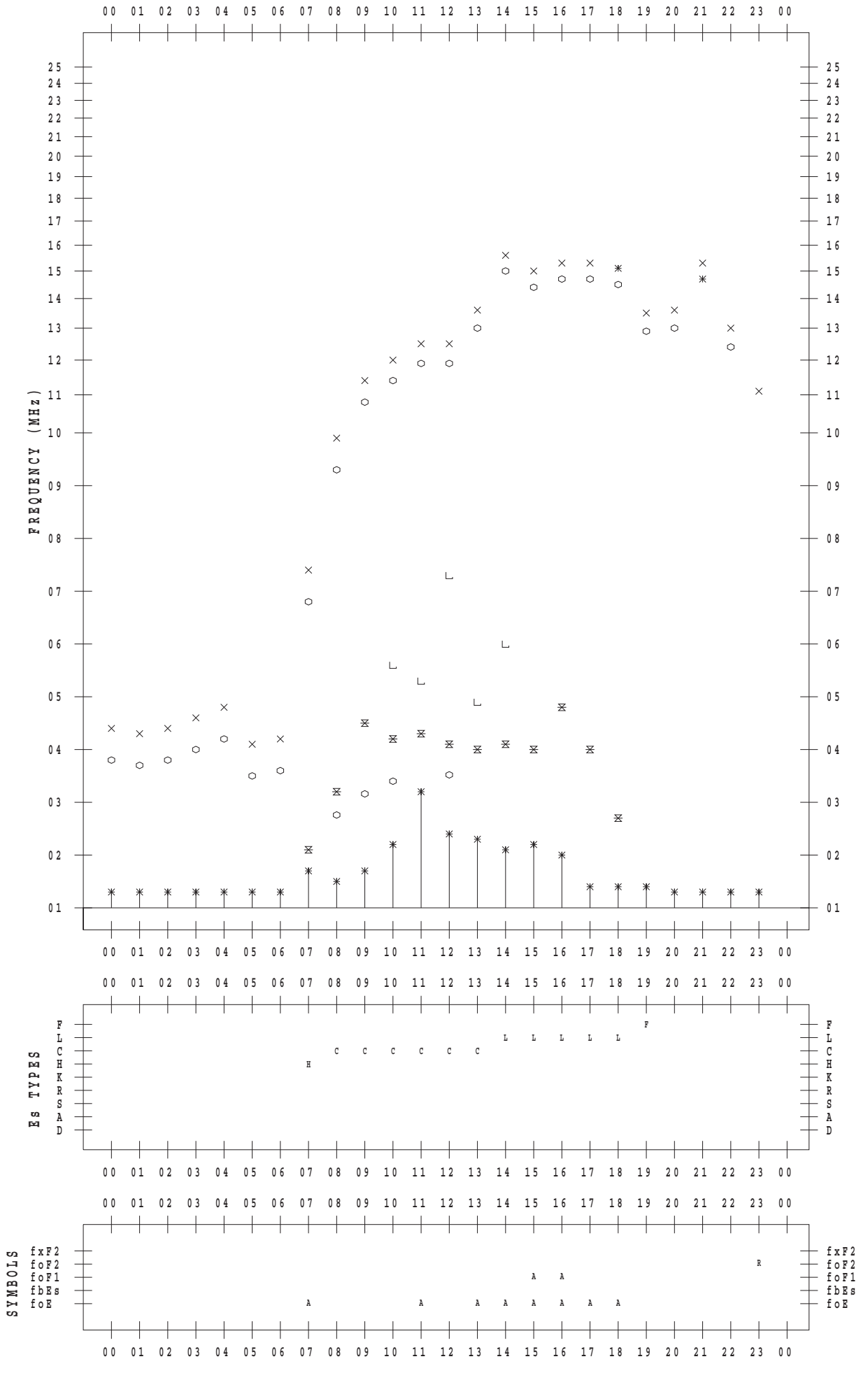
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/10

135 °E MEAN TIME



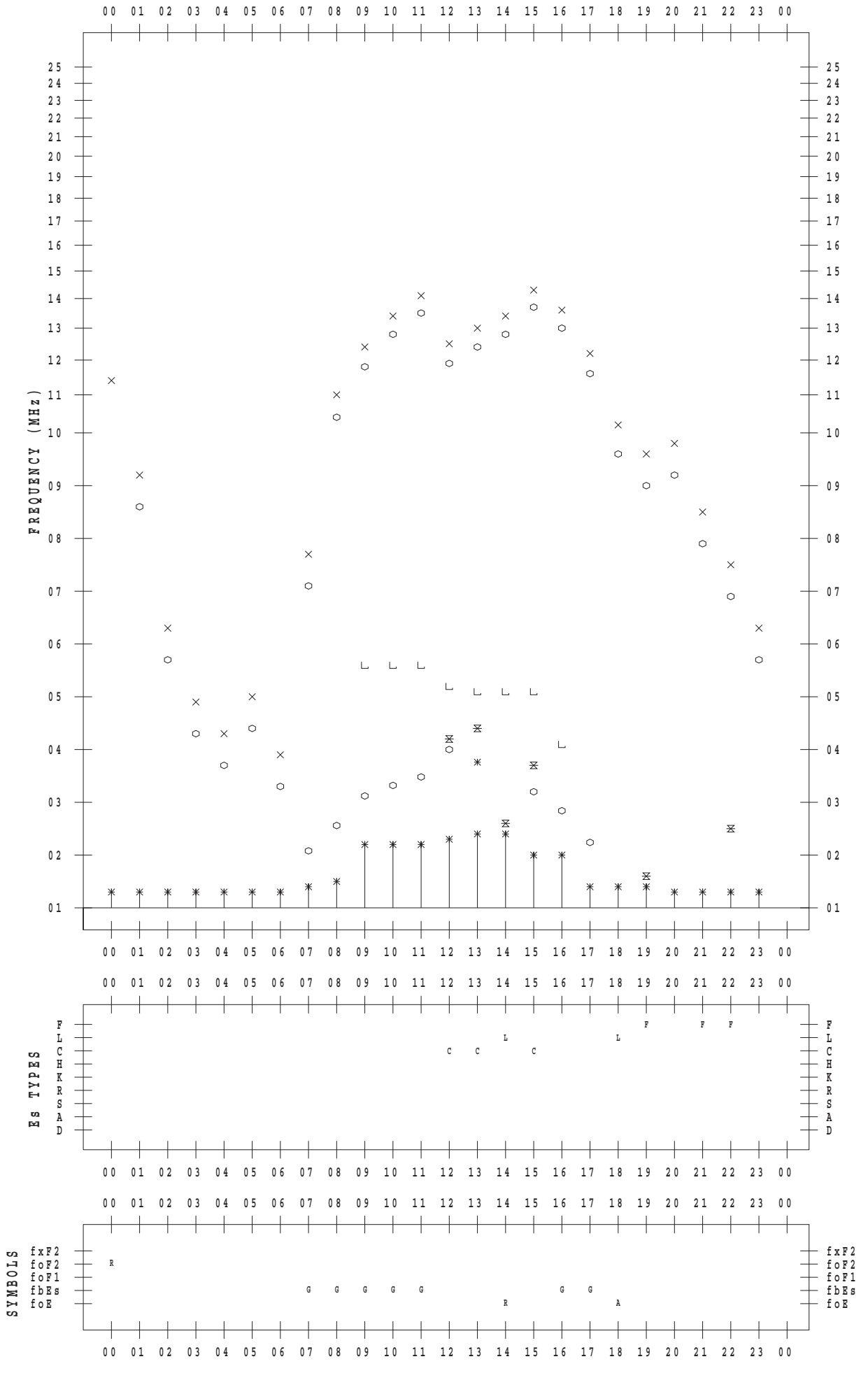
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/11

135 °E MEAN TIME



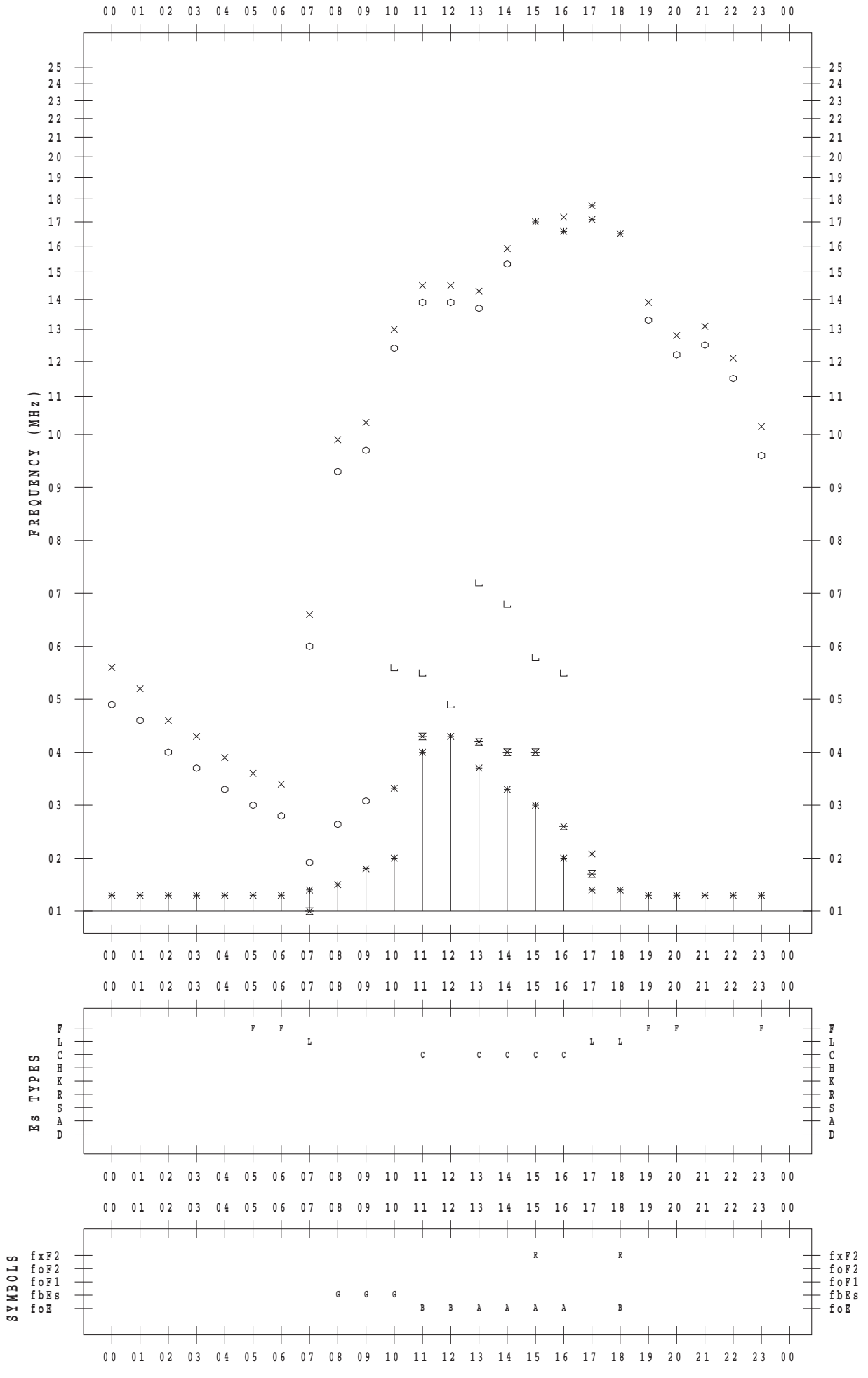
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/12

135 °E MEAN TIME



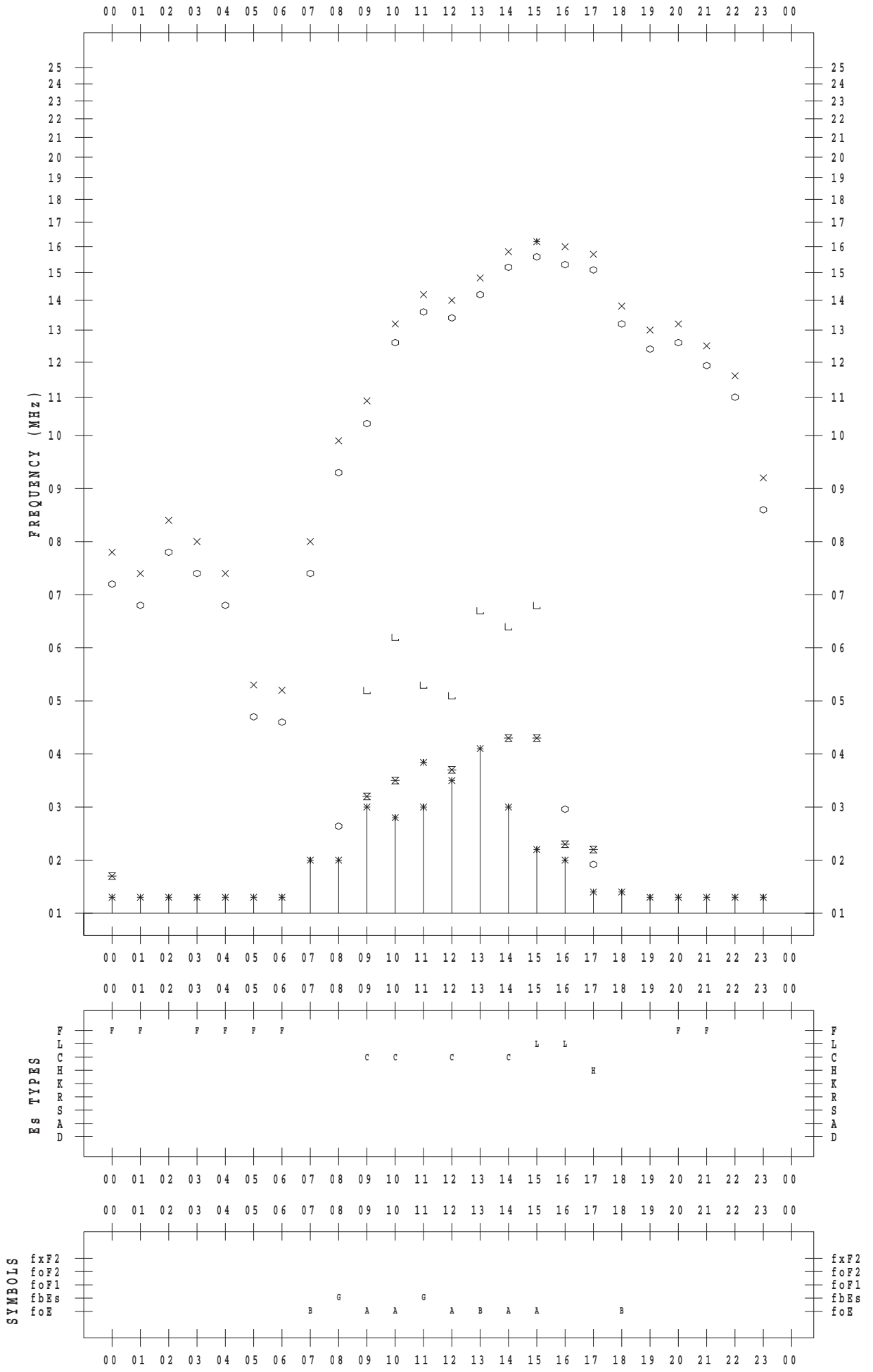
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/13

135 °E MEAN TIME



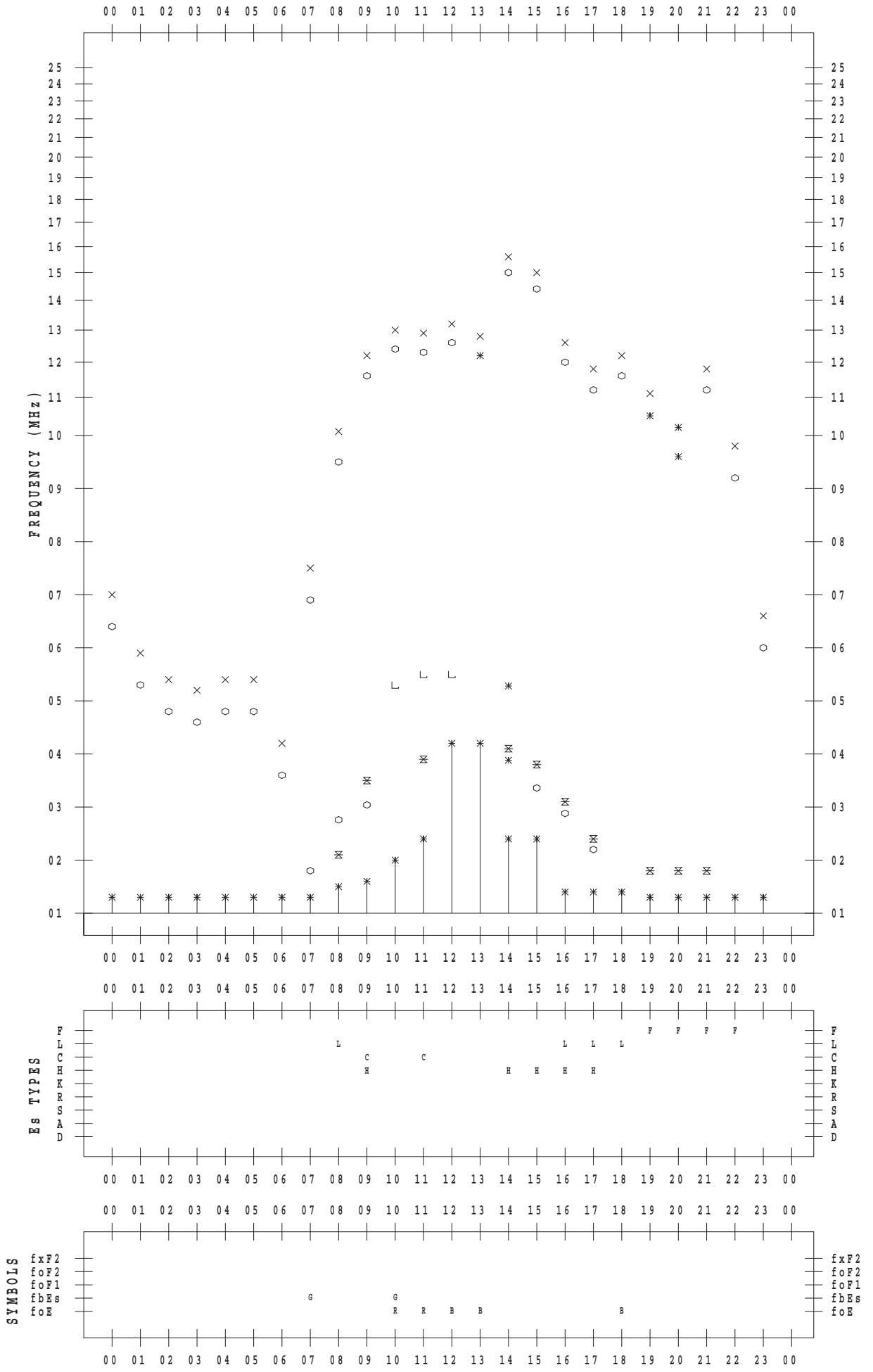
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/14

135 °E MEAN TIME



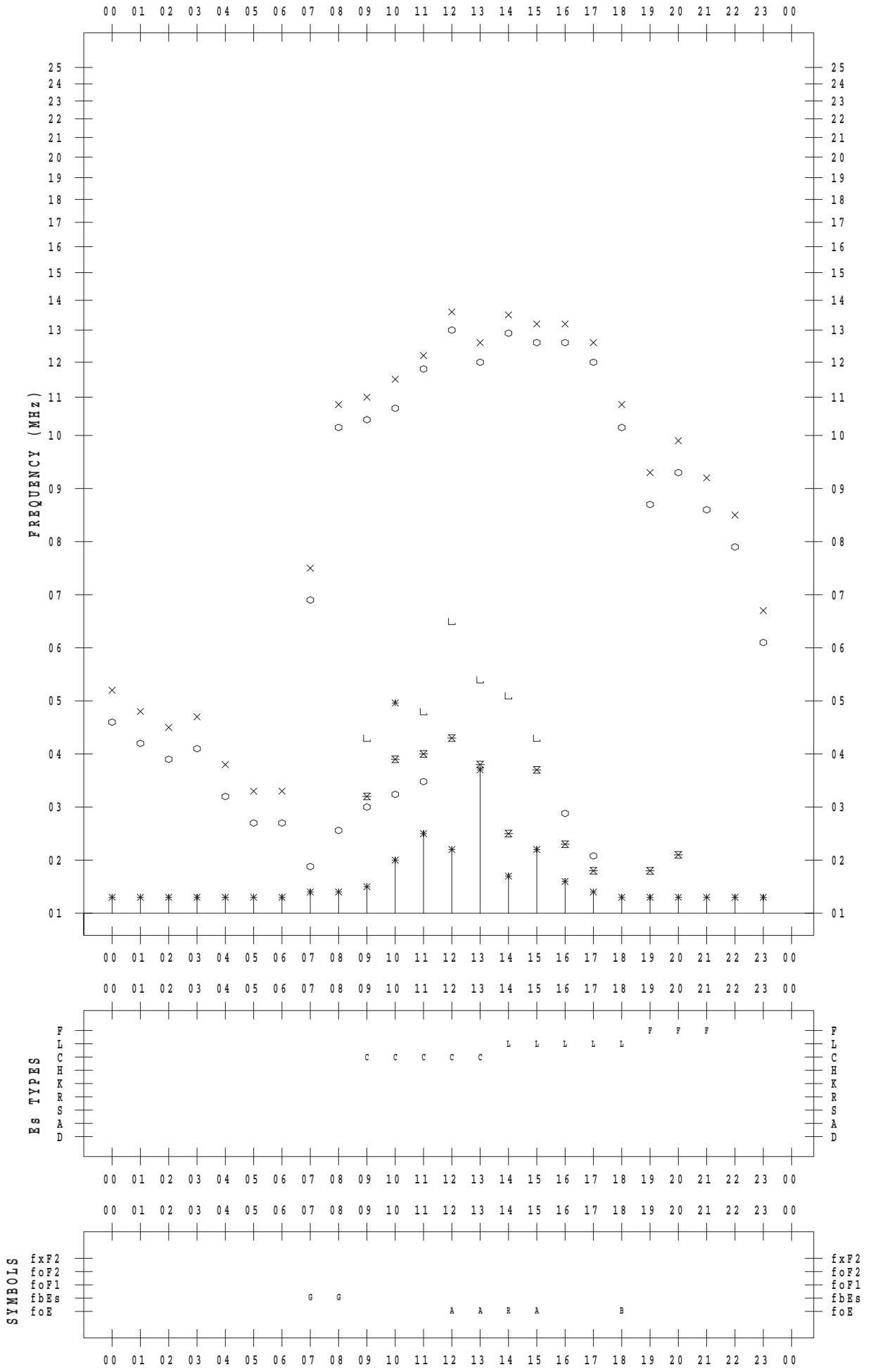
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/15

135 °E MEAN TIME



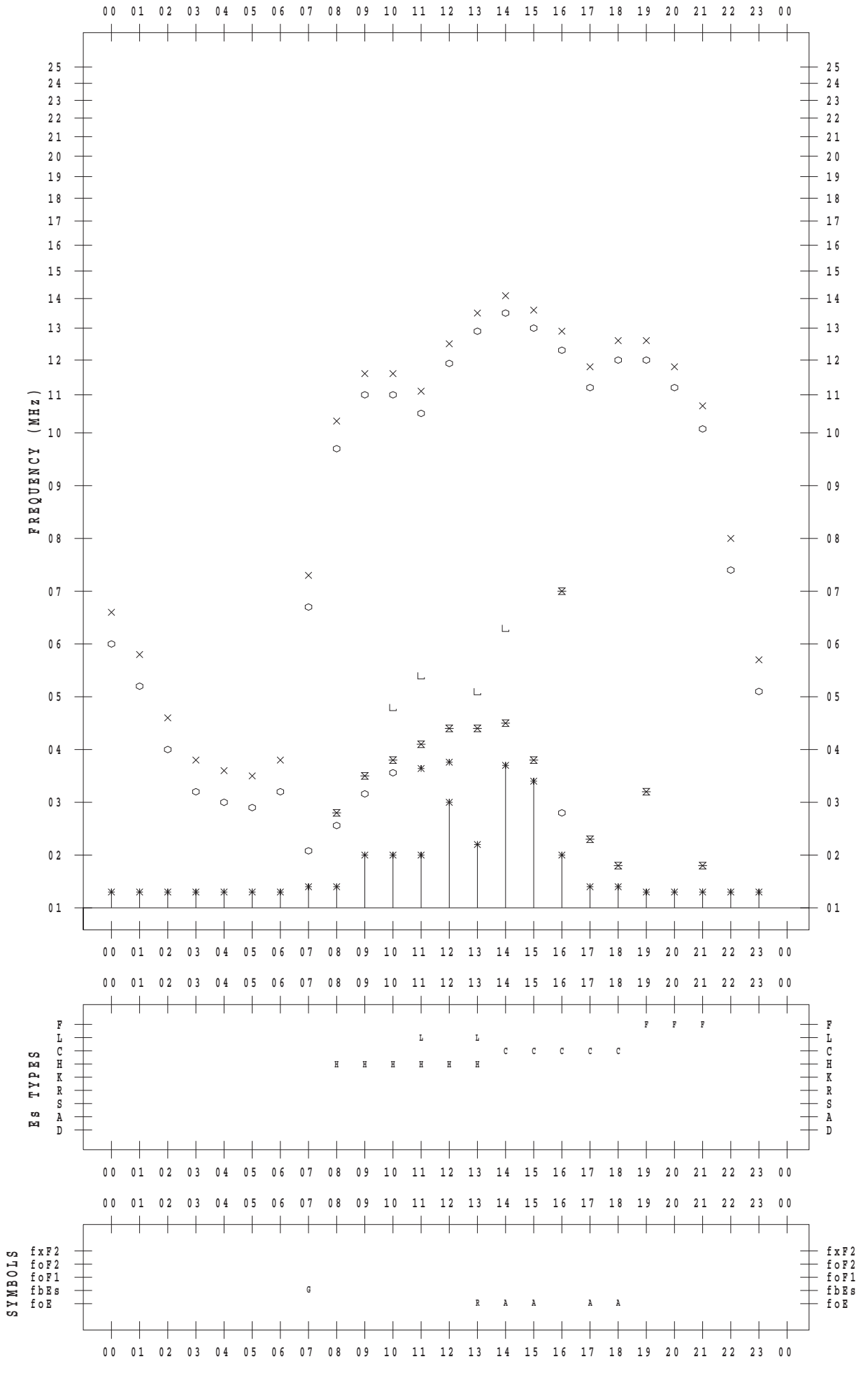
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/16

135 °E MEAN TIME



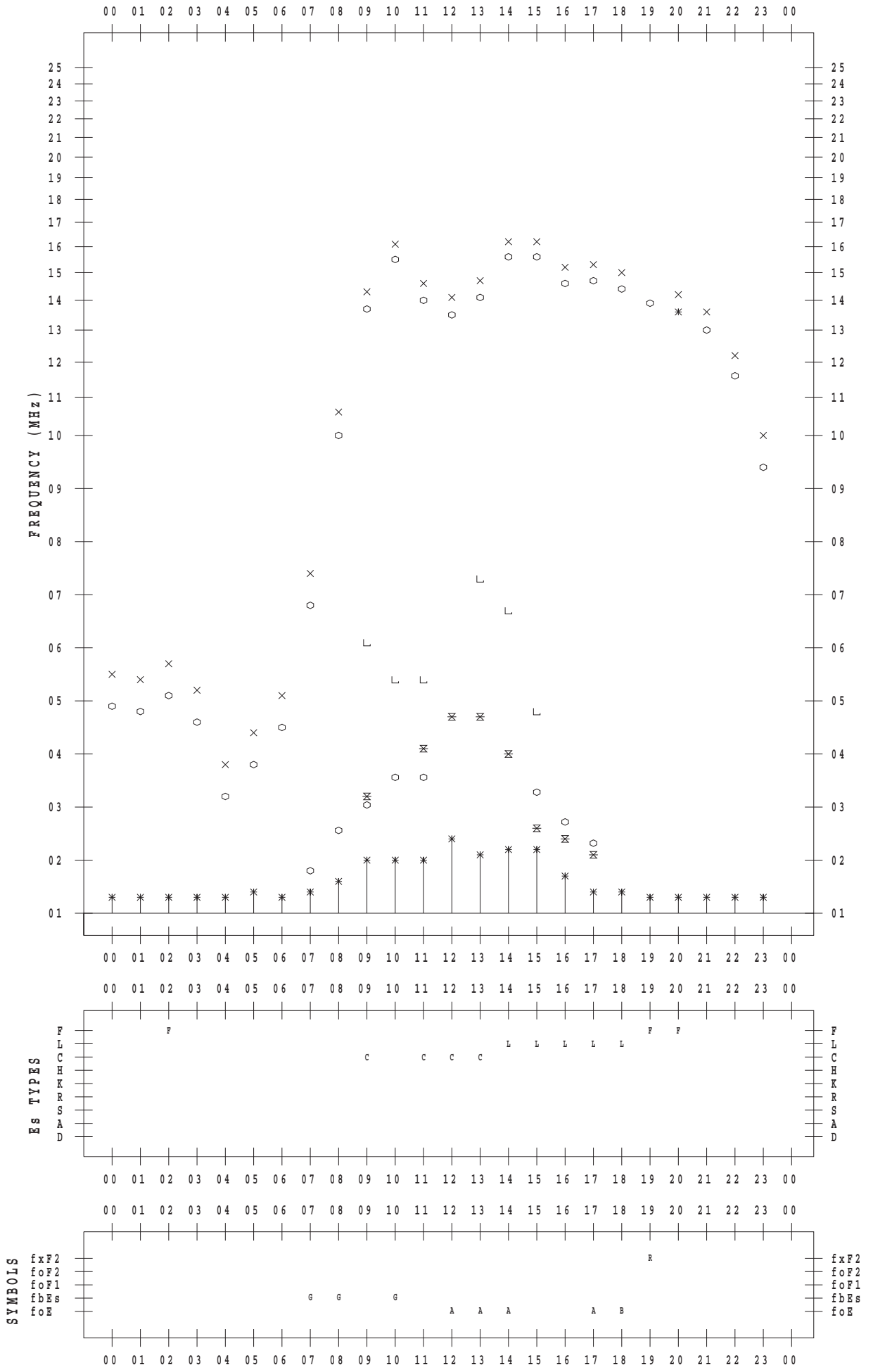
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/17

135 °E MEAN TIME



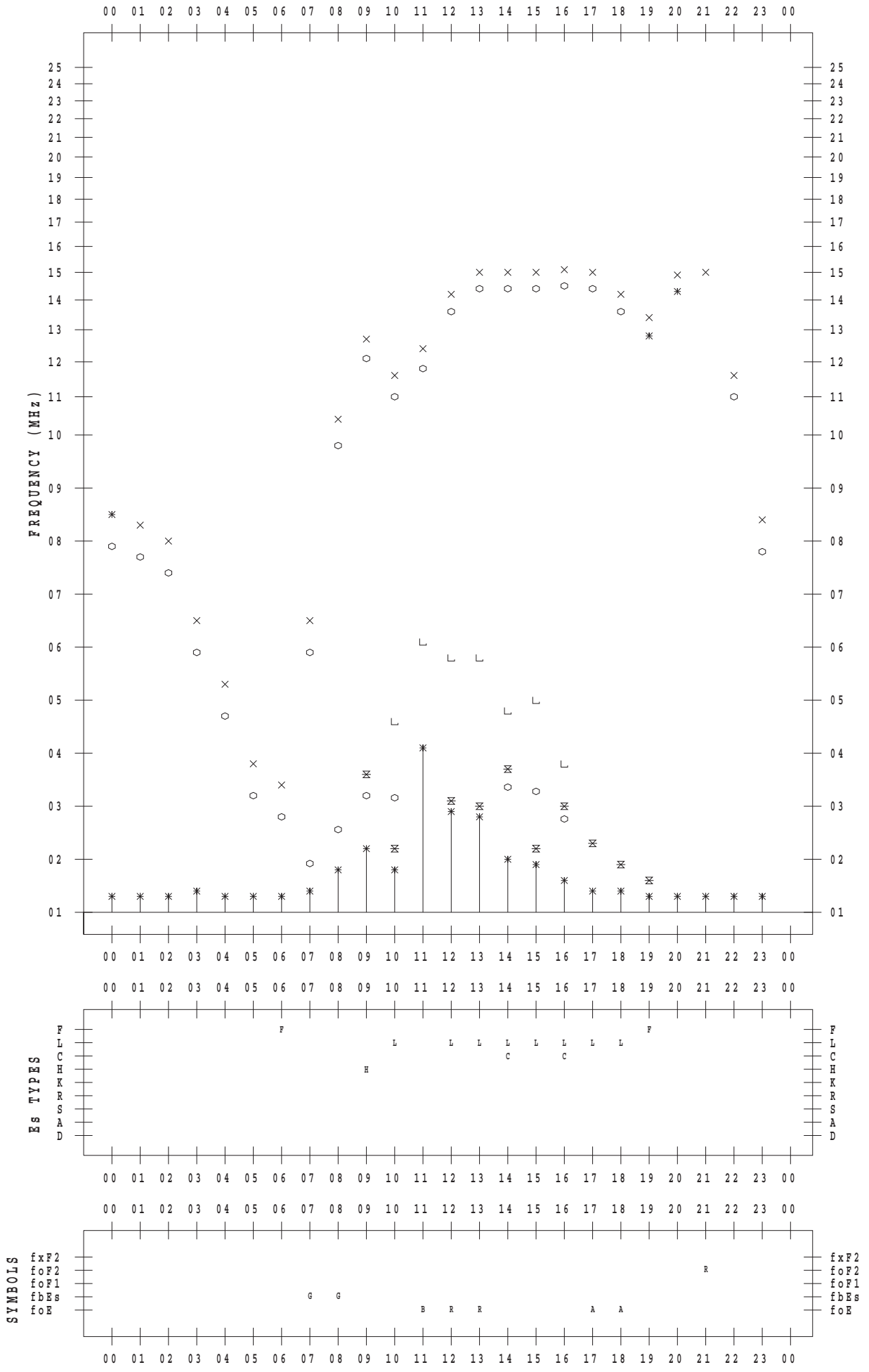
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/18

135 °E MEAN TIME



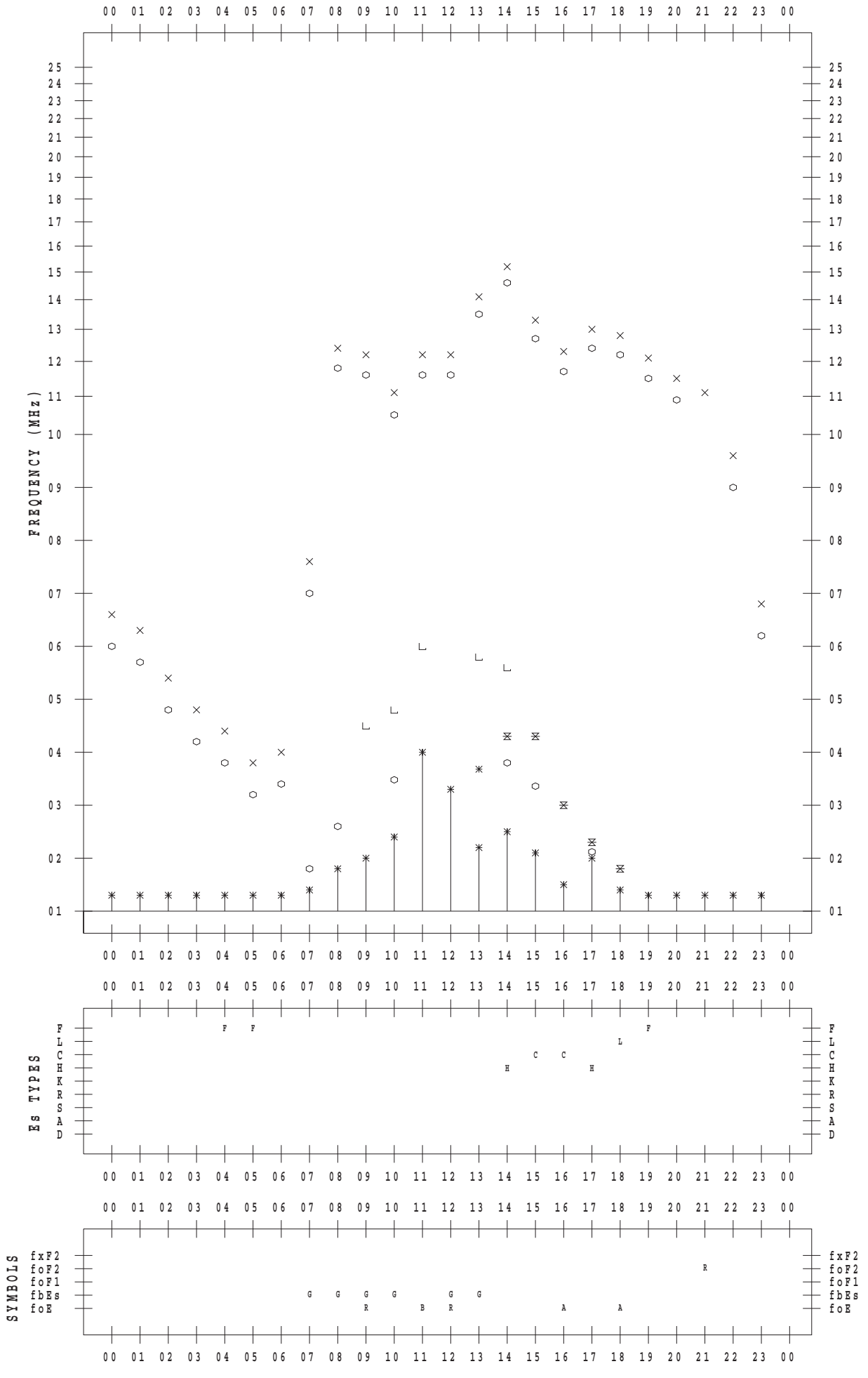
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/19

135 °E MEAN TIME



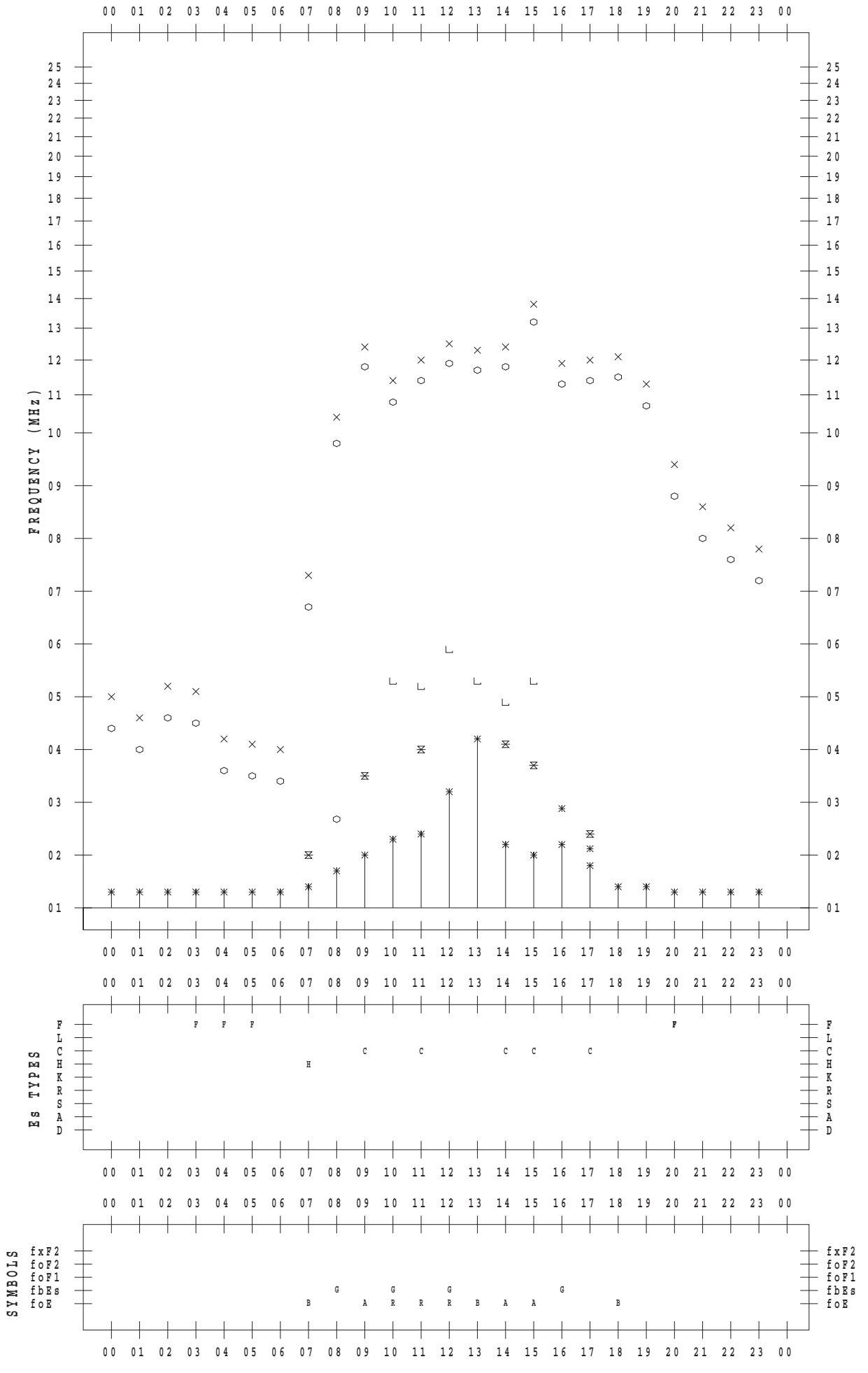
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/20

135 °E MEAN TIME



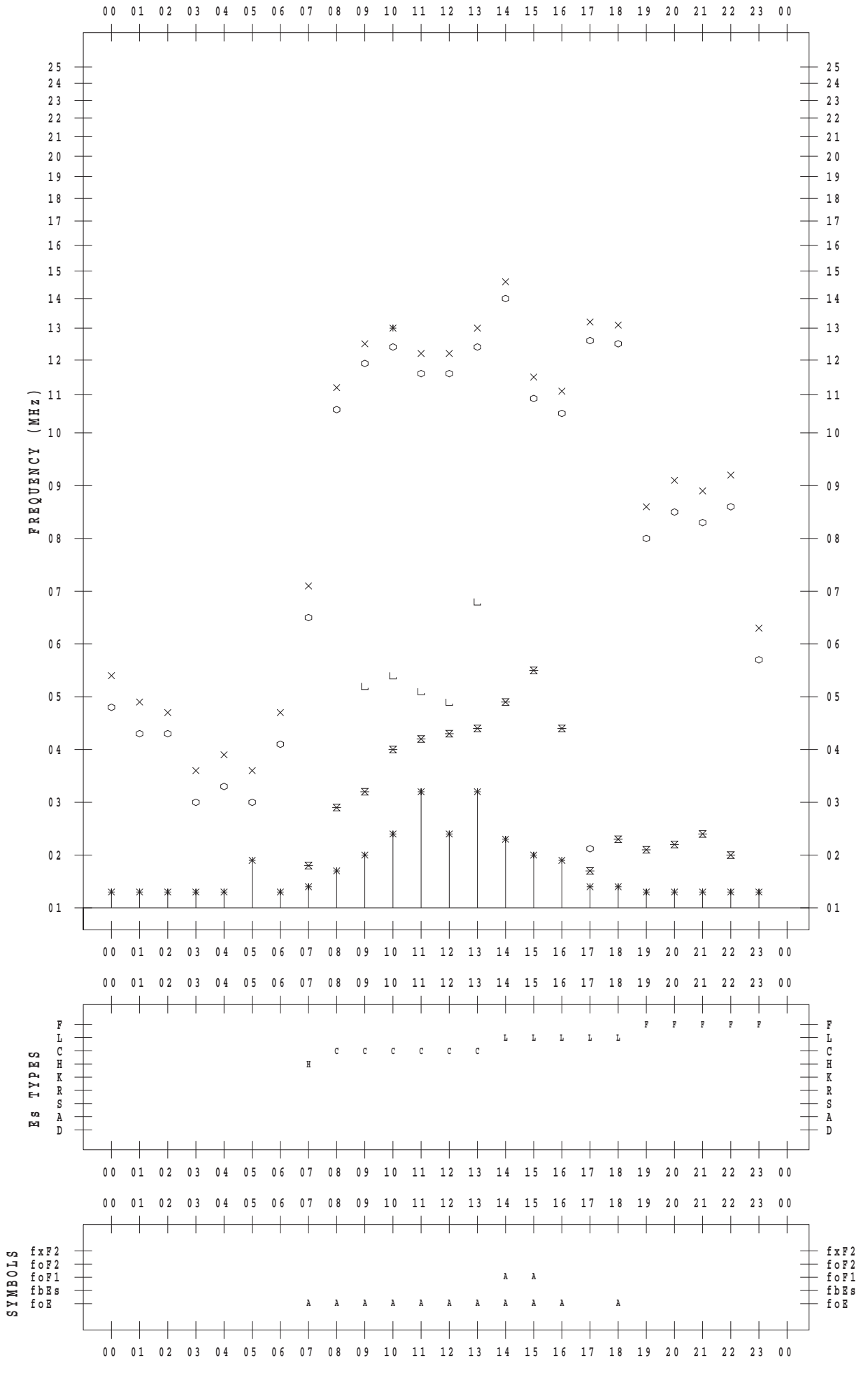
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/21

135 °E MEAN TIME



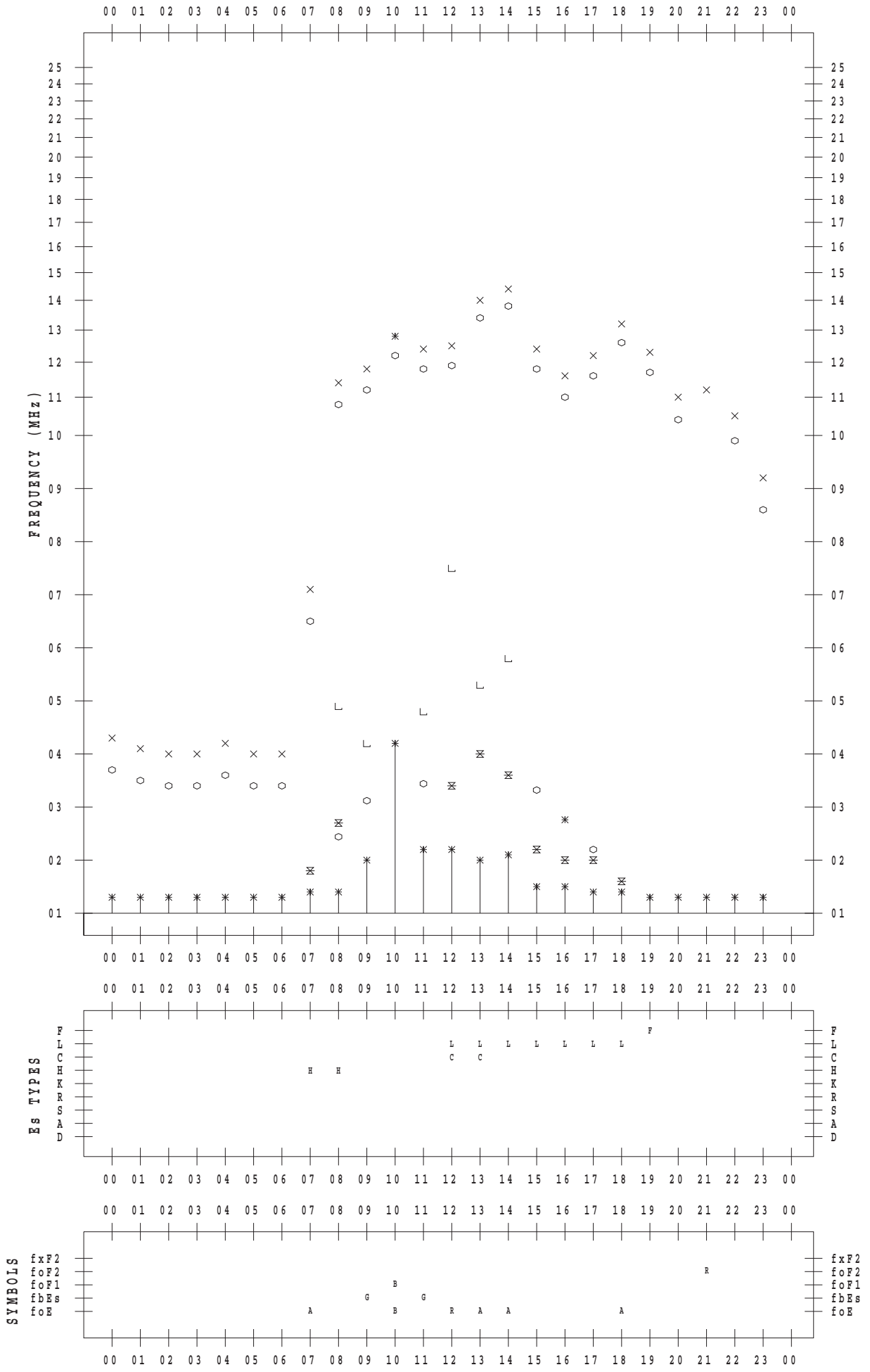
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/22

135 °E MEAN TIME



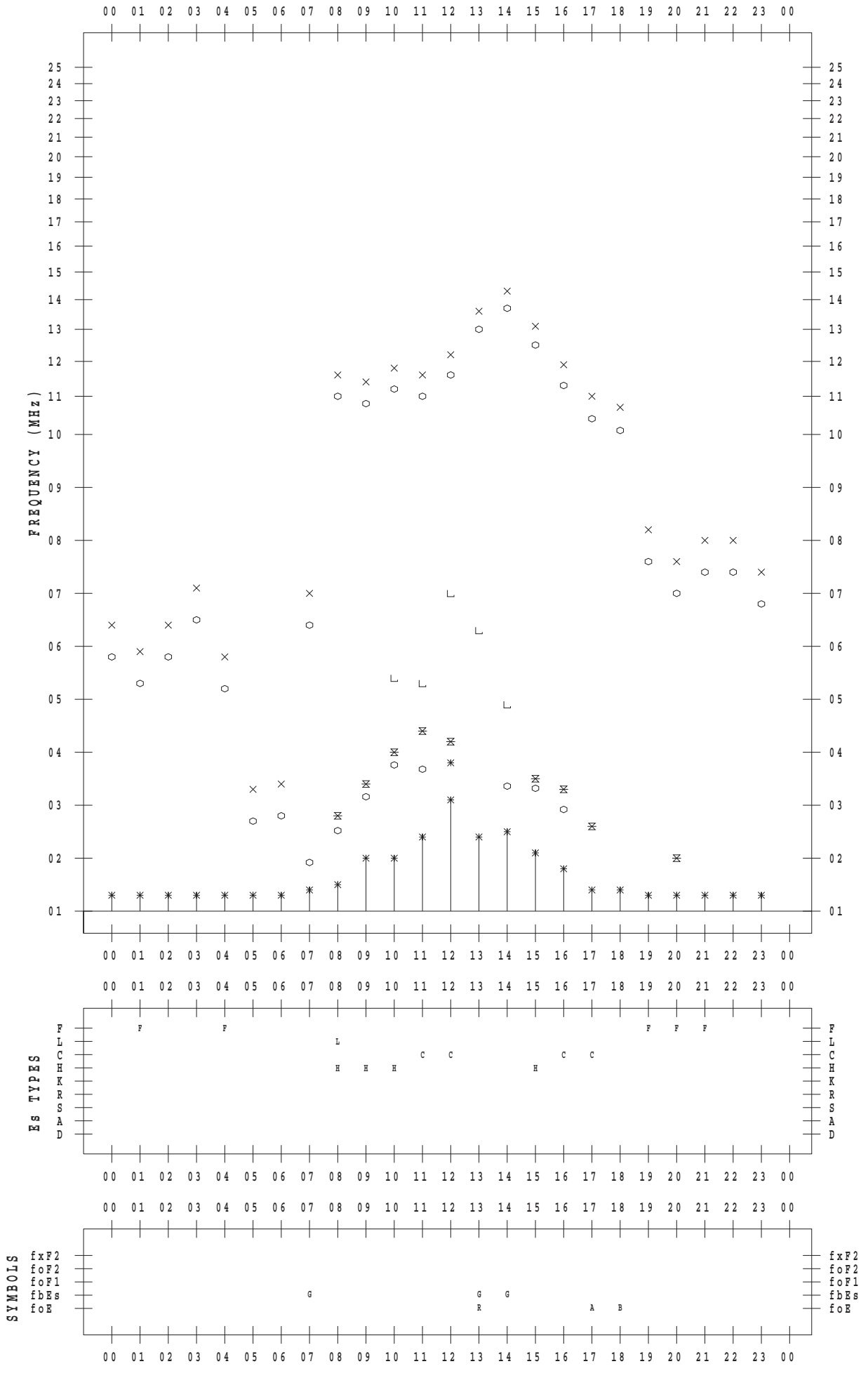
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/23

135 °E MEAN TIME



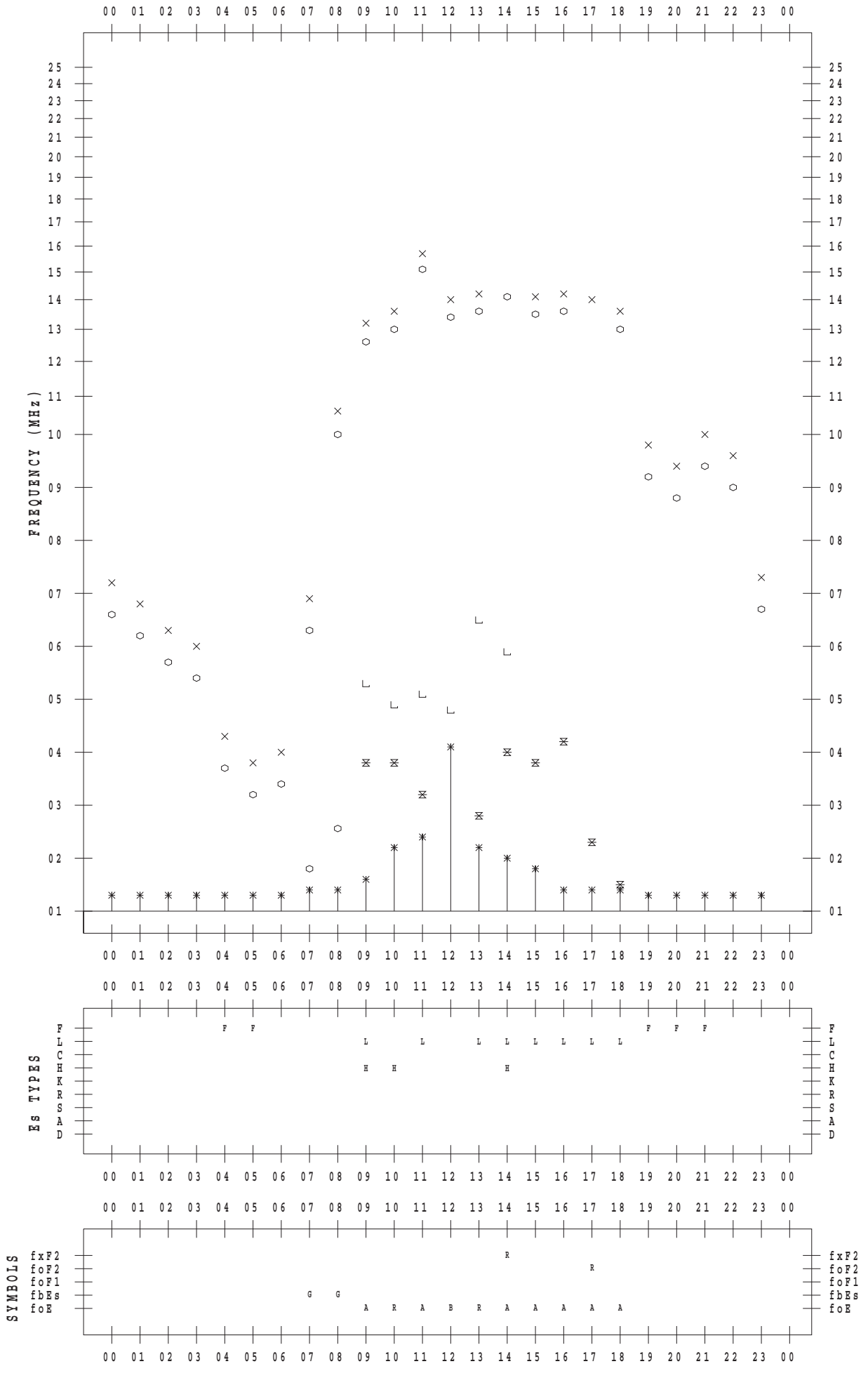
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/24

135 °E MEAN TIME



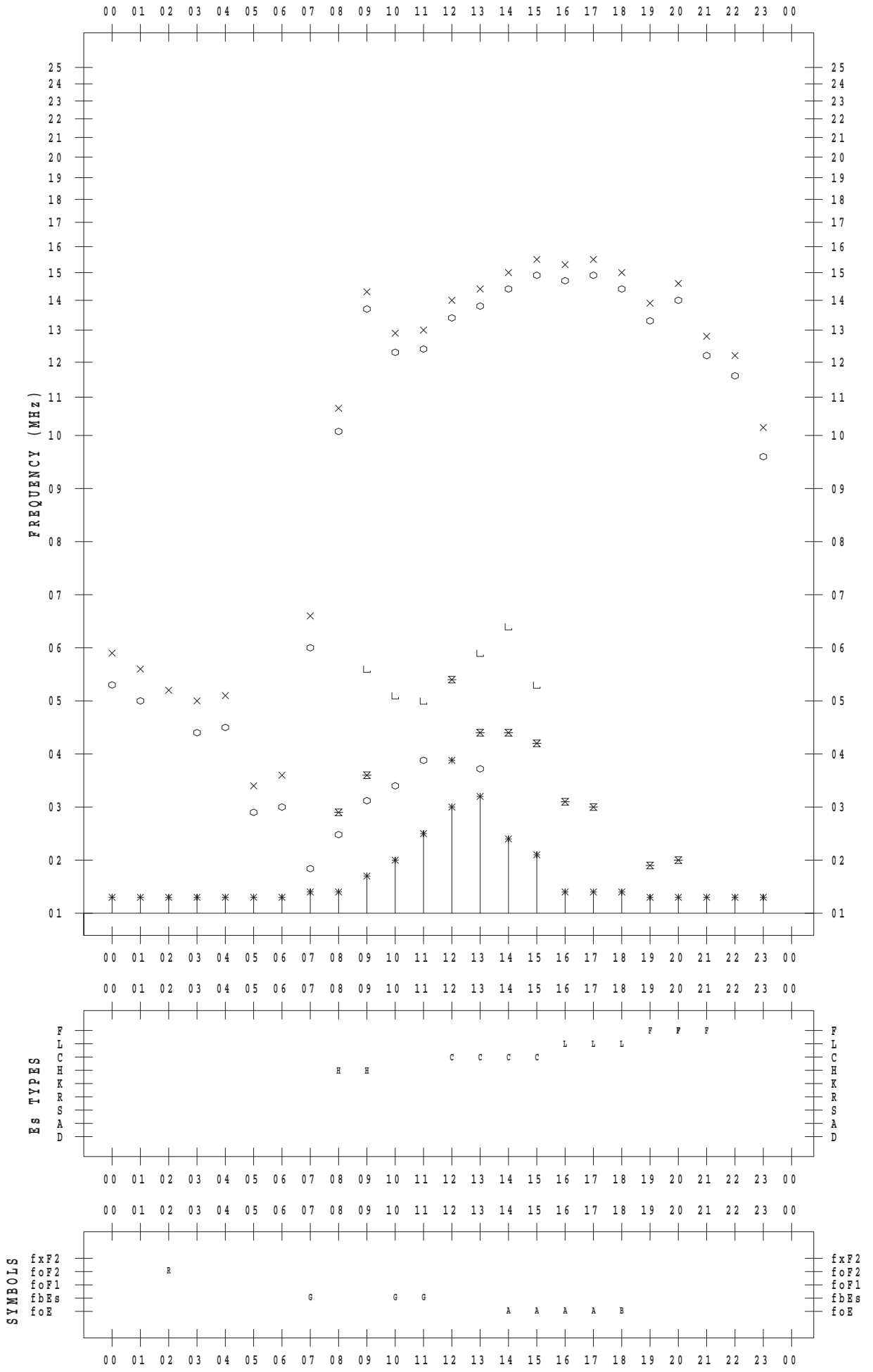
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/25

135 °E MEAN TIME



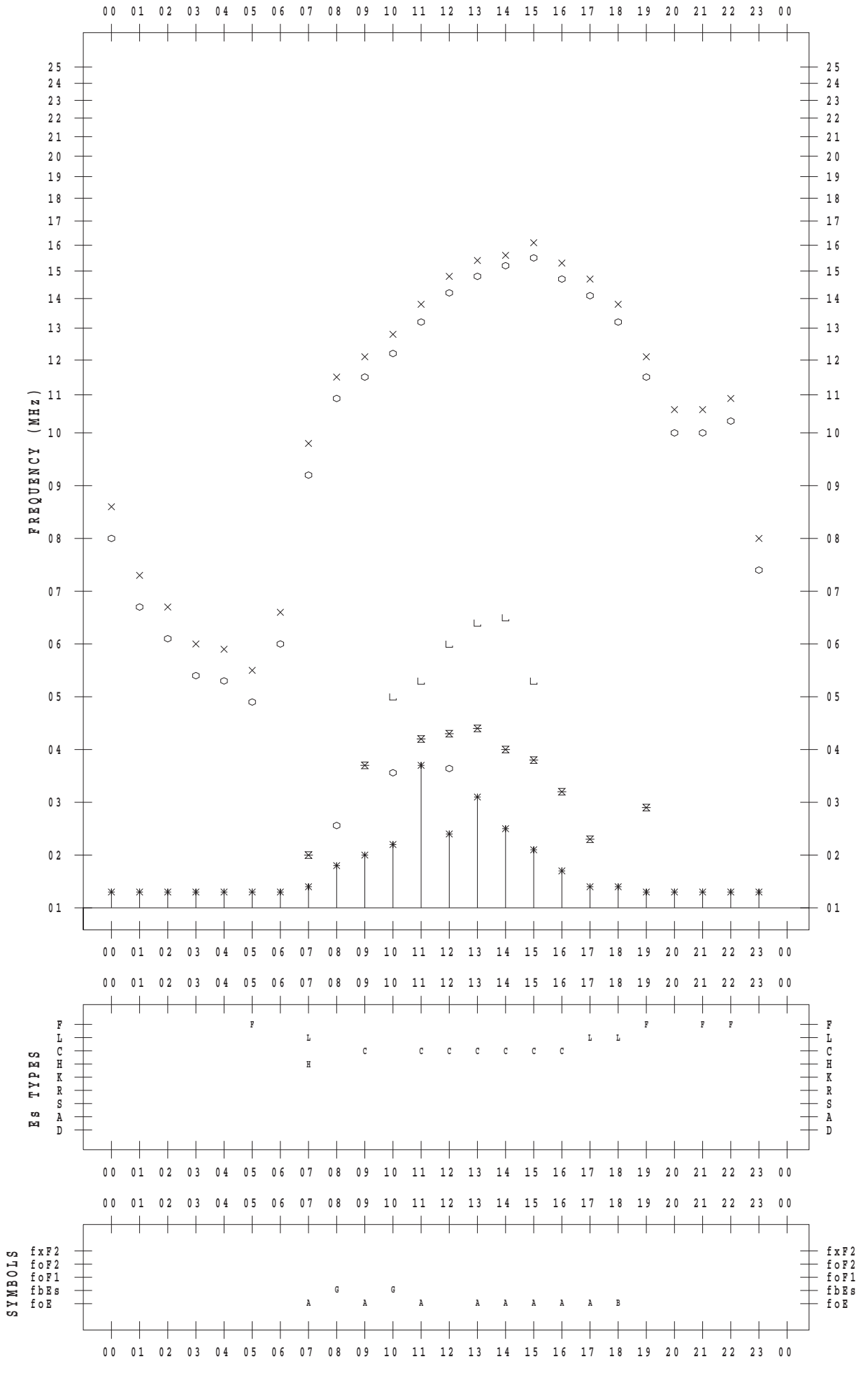
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/26

135 °E MEAN TIME



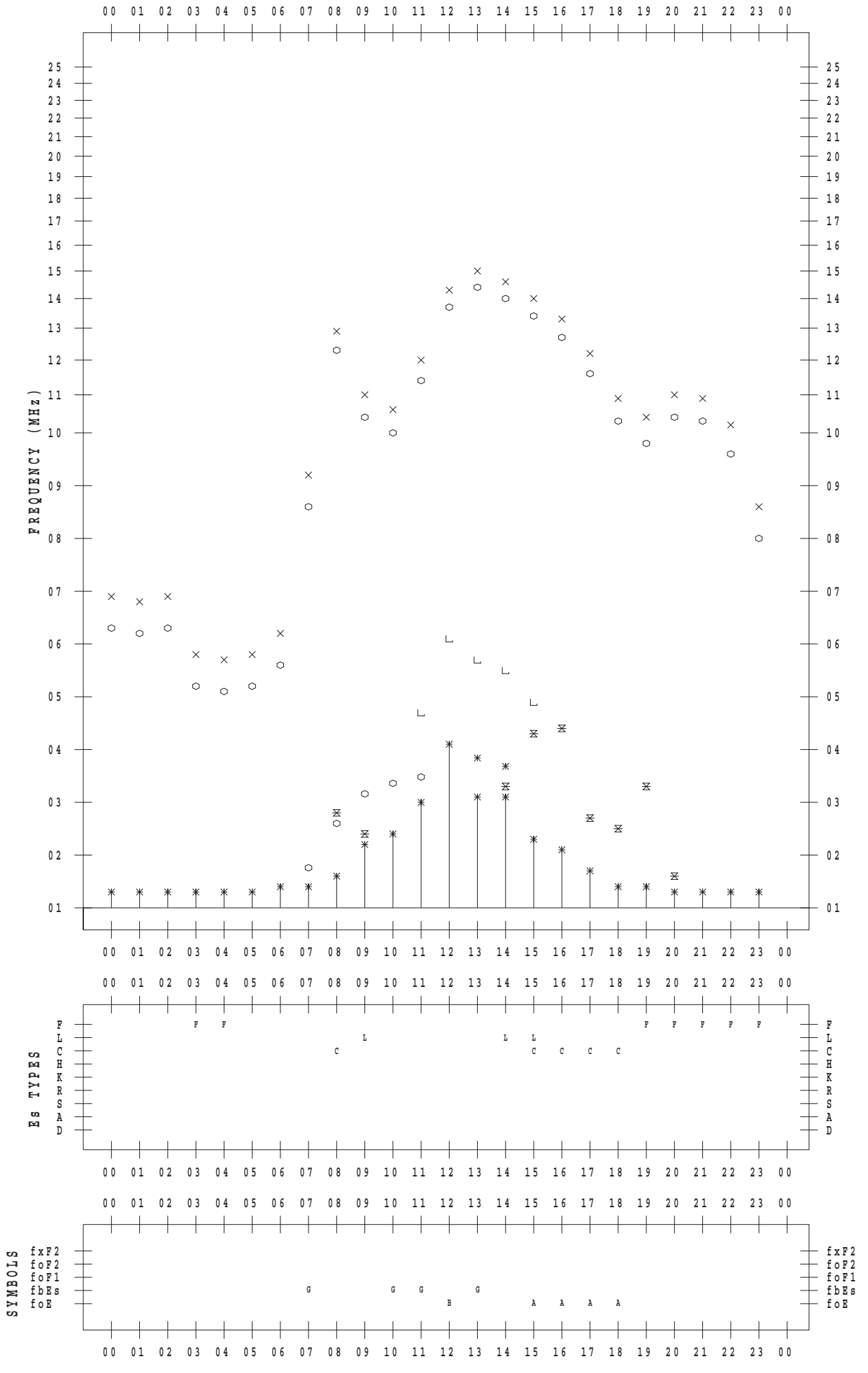
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/27

135 °E MEAN TIME



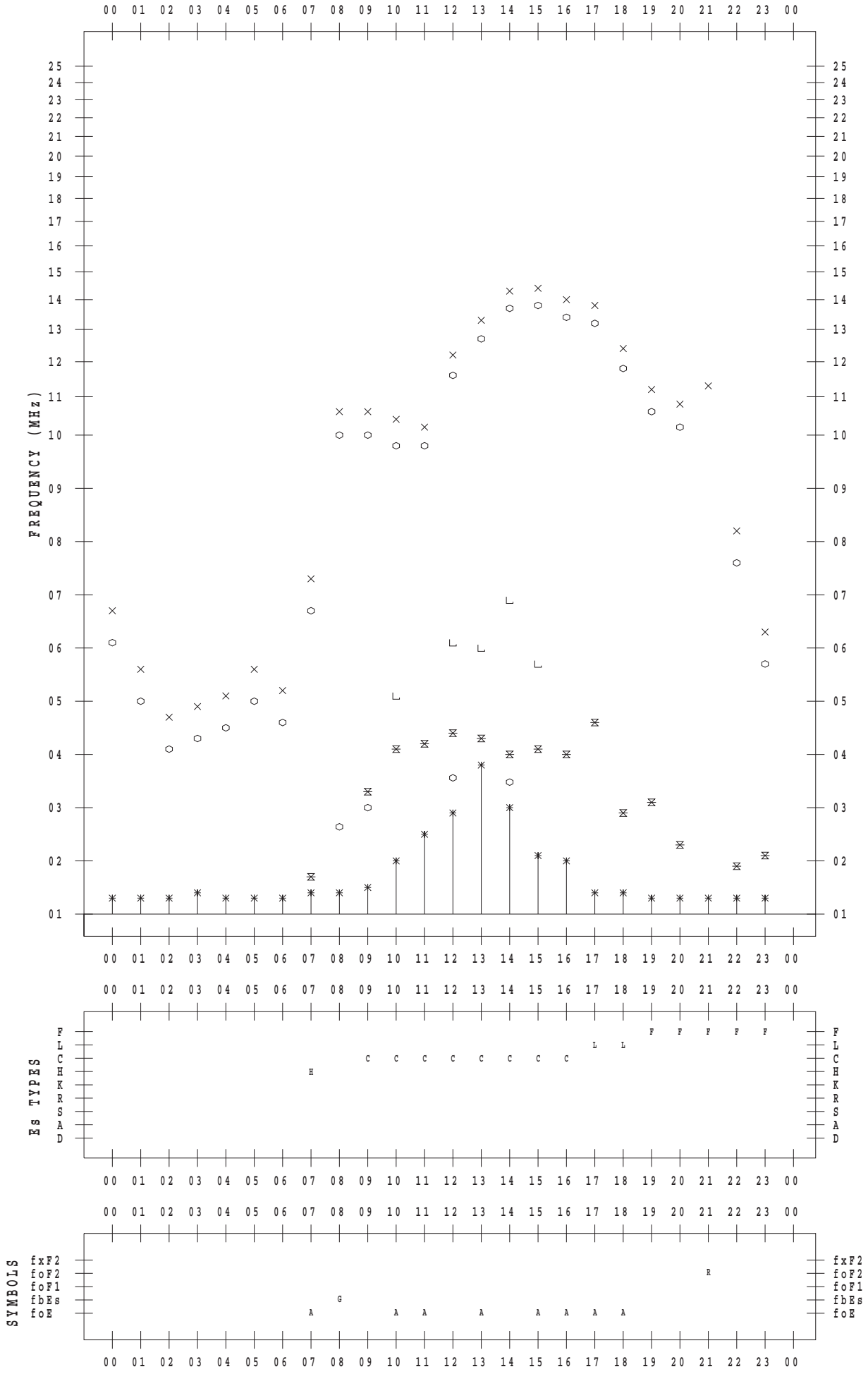
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/28

135 °E MEAN TIME



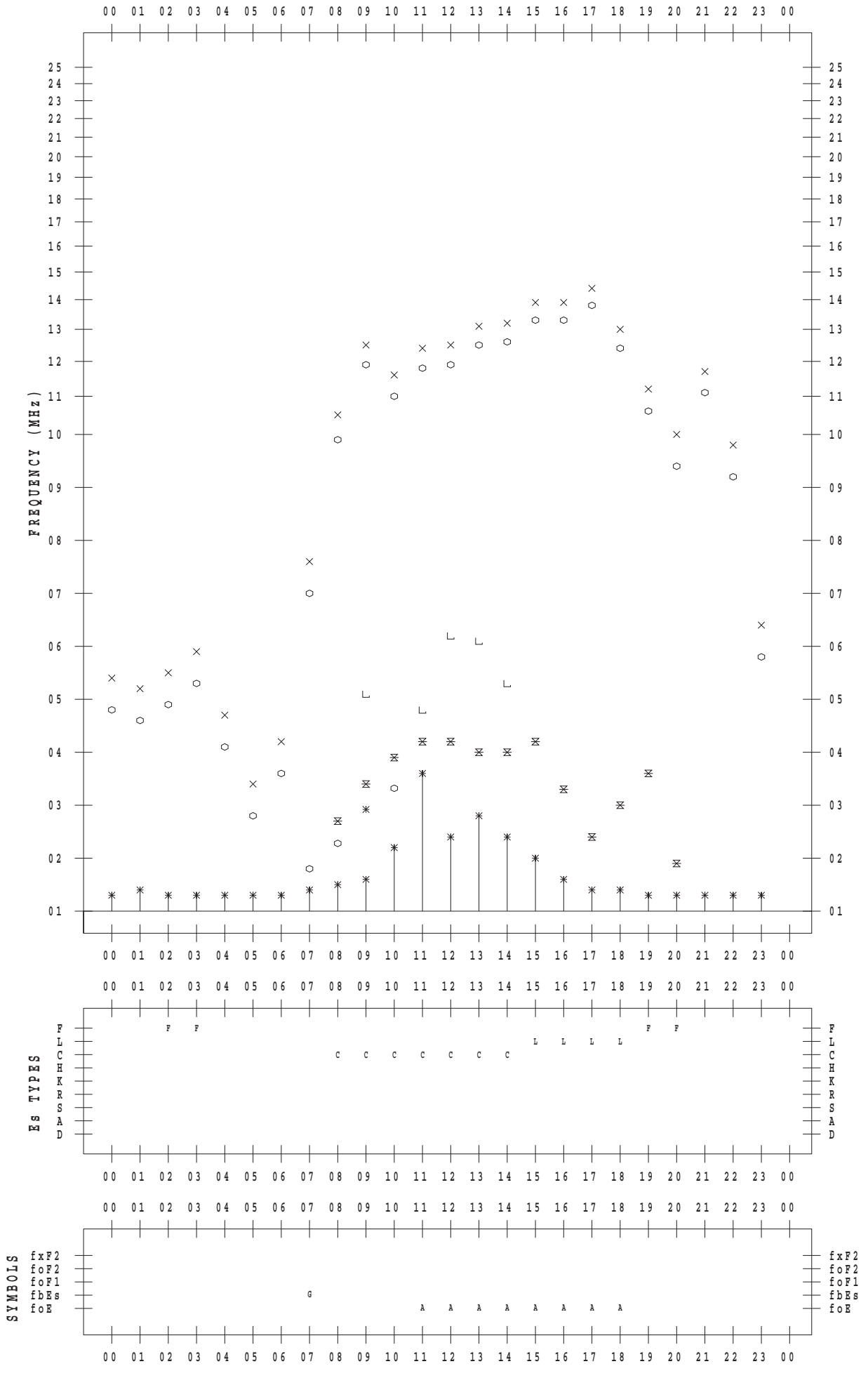
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/29

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/11/30

135 °E MEAN TIME