F-793

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 2015

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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

JAN. 2015

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	37	38	38	31	23	A	A	42	67	72	92	71	59	69	70	72	60	52	34	30	28	28	28	32
2	34	34	32	31	31	30	27	34	64	96	66	80	82	82	66	67	66	58	32	26	30	34	34	32
3	35	34	37	38	34	29	30	46	67	67	89	107	59	93	88	80	63	62	63	37	42	42	46	43
4	43	47	52	34	34	34	34	48	70	86	90	91	72	79	67	69	62	55	40	29	29	30	32	25
5	34		34	34	32	34	A	66	68	69	91	N	68	70	70	70	62	N	41	25	35	32	48	44
6	47	47	46	46	47	43	47	52	N	59	69	75		61	72	74	71	64	58	48	34	29	47	47
7	43	34	37	32	34	32	24	50	70	N	92	92	69	96	79	70	67	67	44	31	52	77	65	51
8	52	A	A	A	28			42	A	94	69	91	90	92	86	70	68	56	47	40		28	31	34
9	34	32	34	34	34	A	32	49	72		95	92	73	N	77	68	67	54	37	34	29	30	29	30
10	31		28	30	A	25	30	51	64	79	70	94	68	72	67	79	64	47	37	34	34	34	37	34
11	44	45	50	47	52	57	62	64	84	59	92	91	81	89	81	70	62	54	38	A	34	36	31	A
12	30	32	34	32	34	32	32	52	64	59	99	93	69	72		86	68	52	47	A	A	A	32	A
13	34	34	A	30	37	31	34	49	68	91	94		70	92	N	73	68	65	52	34	A	A	A	29
14	32	32	30	34	34	32	31	50	86	100	89	91	72	91	91	82	68	57	55	37	29	A	A	A
15		34	31	32	31	34	34	51	82	76	90	96	72	92	86	73	66	53	51	34	34	34	A	34
16	35	32	34	37	34	28	29	50	65	90	N	85	59	72	81	84	67	61	62	46	35	32	34	30
17	36	38	32	32	34	30	32	58	85	89	96	96	91	84	83	70	N	51	48	48	26	A	A	30
18	A	34	34	34	32	32	31	52	67	70	93	88	67	70	67	81	65		43	38	28	A	32	34
19	A	34	34	32	34	34	31	54	70	79	76	86	75	68	68	65	55	54	47	32	29	A	A	A
20	A	32	34	29	34	28	34	53	67	81	69	86		75	69	62	65	48	48	44	32	34	34	47
21	37	40	41	32	34	37	34	51	69	54	85	91	70	71	65	67	64	46	44	37	30	28	34	34
22	34	34	34	37	38	44	A	41	65	80	89	90	85	59	74	70	68	52	43	37	38	37	42	44
23	37	34	46	48	32	28	30	51	67	68	92	91	84	71	83	68	58	48	37	43	30	A	A	34
24	42	46	47	42	44	31	28	38	67	83	87	86	90	68	74	65	62	47	36	34	31	32	31	34
25	34	34	34	34	34	34	30	53	69	74	68	91	86	86	N	70	66	54	42	34	A	32	34	34
26	34	34	38	36	38	37	32	48	64	53	82	66	59	59	70	80	72	50	36	34	32	36	37	42
27	40	32	32	32	34	34	28	54	65	95	86	96	104	96	84	80	71	53	42	36	42	38	31	32
28	37	34	34	38	37	38	34	50	65	81	98	91	95		70		70	67	63	48	34	30	32	34
29	32	31	42	38	38	34	31	53	74	70	89	70	70	70	70		71	60	47	43	42	41	37	34
30	34	37	34	37	37	37	32	52	59	65	68	69	92	91	72	90		59	62	48	42	37	42	43
31	42	N	47	48	51	52	44	64	88	59	75	N	94	92	90	93	87	70	50	53	48	42	46	47
	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	29	30	30	28	27	31	29	29	30	28	29	29	28	29	29	29	31	29	27	24	25	27
MED	35	34	34	34	34	34	32	51	67	76	89	91	72	75	73	70	66	54	44	37	34	34	34	34
U Q	42	38	41	38	37	37	34	53	71	87	92	92	88	91	83	80	68	60	51	43	38	37	42	43
L Q	34	32	34	32	34	30	30	48	65	66	75	85	68	70	69	68	62	51	38	34	29	30	31	32

HOURLY VALUES OF fEs AT Wakkanai

JAN. 2015

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	29	31	26	G	30	34	38	24	38	28	30	34	29	30	27	26	11	G	G	G	G	G	28	33
2	G	G	G	G	G	G	G	G	30	28	29	35	54	46	26	24	G	11	G	25	G	G	G	G
3	25	28	G	G	23	G	G	G	G	26	28	32	32	30	28	25	G	G	35	24	26	26	24	G
4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	26	24	G	G
5	G	G	33	25	29	29	36	30	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G	G	27	G	G		G	G	28	37	G	G	G	G	G	G	G
7	G	G	G	32	G	G	G	25	33	28	G	G	G	G	G	42	G	G	G	G	G	G	G	G
8	34	39	43	48	26			G	80	36	G	34	G	29	28	G	G	G	G	G		G	G	26
9	28	25	G	G	27	36	28	33	29		28	59	36	50	34	39	36	27	26	26	24	G	G	G
10	G		G	G	30	G	G	26	31	26	33	31	30	G	28	24	G	G	G	28	G	G	34	27
11	G	G	24	G	G	G	G	27	24	29	31	32	32	31	28	G	G	G	26	42	G	G	G	33
12	26	23	G	26	G	G	G	32	23	28	30	31	32	G		26	29	42	40	38	37	37	28	34
13	29	G	36	34	G	G	G	24	33	30	29		G	G	G	24	25	G	G	29	38	32	32	G
14	G	32	27	25	G	G	G	32	52	29	30	33	32	32	28	26	G	32	30	G	34	53	43	30
15		G	G	G	G	G	G	G	33	34	N	30	32	30	28	24	G	G	G	G	G	G	34	G
16	33	G	G	G	G	G	G	G	22	28	28	30	31	30	27	G	G	G	G	G	G	G	27	G
17	G	G	G	G	G	G	G	G	34	30	29	38	58	65	66	34	32	26	G	G	33	37	34	32
18	33	G	G	G	G	G	G	G	23	34	36	32	36	31	34	32	28		G	G	G	28	G	29
19	27	27	G	G	G	G	G	28	32	33	35	38	32	31	35	34	G	G	G	28	33	39	39	34
20	28	G	G	G	G	G	24	33	28	37	32	32		30	28	29	G	G	27	G	26	29	G	G
21	26	G	G	G	G	G	G	G	49	57	38	38	39	38	35	24	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	23	25	36	G	G	G	39	G	G	33	G	G	28	24	G	29	G	G
23	G	28	G	G	G	G	G	G	32	51	59	40	40	G	G	G	G	G	G	G	G	25	48	29
24	32	G	G	G	G	G	G	28	33	39	G	G	G	G	G	G	G	29	G	24	G	G	G	G
25	G	24	G	G	G	G	G	23	G	G	G	G	G	G	G	G	G	G	G	G	34	26	25	G
26	G	G	G	G	G	G	G	G	49	35	G	G	G	G	G	36	29	25	G	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	43	G	G	G	G	39	34	G	11	G	29	G	G	G	G
28	G	G	G	G	G	G	G	G	G	56	G	39	N		G		G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	25	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		31	33	G	27	32	29	33
31	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	31	31	30	30	31	31	30	30	30	28	30	30	29	30	30	31	31	30	31	31	31
MED	G	G	G	G	G	G	G	G	29	28	28	31	30	G	26	24	G	G	G	G	G	G	G	G
U Q	28	24	G	G	G	G	G	28	33	35	30	34	34	31	28	32	11	25	26	25	26	29	29	29
L Q	G	G	G	G	G	G	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

JAN. 2015

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

JAN. 2015

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	36	38	34	26	32	32	34	66	80	76	96	104	86	91	76	81	86	57	55	N	28		34	34
2	28	34	39	28	28	31	34	52	74	67	105	104	84	86	90	76	62	55	52	36	31	36	26	34
3	32	36	36	34	27	27	30	61	65	100	96	102	96	88	88	85	74	68	59	51	A	32	34	36
4	37	41	36		N	28	N	53	78	88	105	101	81	78	96	76	77	62	62	38	30	34	36	31
5	36	34	25	31	34	A	34	61	111	118	108	110	104	108	87	77	78	69	49	34		28	30	27
6	58	34	34	32	30	36	36	58	89	110	115	96	99	95	85	76	76	87	64		A	A	34	36
7	40	31		28	32	32	30	54	78	108	126	131	125	107	115	102	71	71	52	37	53	66	74	89
8	65	51	A	A	34		28	65	115	127	141	114	100	100	96	83	80	67	52	45	36	39		27
9	39	43	A	A	31	30	30	59	84	114	130	117	100	92	92	92	81	N	53	39		46	42	38
10	37	37	39	31	28	N	27	50	81	108	122	96	92	85	86	77	72	66	A	A	A	A	39	37
11	37	42	38	30	31	26	A	62	80	102	130	128	131	126	124	105	82	71	73	53	52	62	51	39
12	41	44	34	28		25	A	63	86	130	116	108	102	91	94	91	80	71	A	A	A	A	A	A
13	38	38	42	N	30	32	32	58	85	102	127	115	101	96	101	95	80	67	66	67	46	A	32	34
14	34	36	30	30	30	32	32	67	87	115	115	120	125	115	101	100	90	72	44	45	A	A	36	A
15	36	A	36	31	31	32	31	59	82	102	96	96	95	80	87	87	68	51	51	54	35	38	38	32
16	34	38	41	A		N	30	63	84	81	94	91	95	96	80	77	78	61	64	58	39	35	27	31
17	27	38	38	31	N	31	32	67	84	81	92	115	110	98	93	84	76	61	57	48	28	N	30	34
18	34	28	35	36	28	30	27	54	84	86	81	98	99	90	72	74	74	63	42	44	47			30
19	30	30	31	34	32	28	34	61	75	82	C	C	C	C	C	C	C	55	55	52	35	28	34	32
20	32	32	34	36	31	N	27	52	84	82	88	102	90	75	72	67	65	59	A	44	42	A		
21	30	A	32		36	32	34	62	78	92	95	101	92	82	80	81	65	55	41	39	30	28	30	34
22	34	34	34	38	34	32	32	49	69	78	100	98	97	99	84	77	67	58	45	43	42	38	39	36
23	39	39	42	39	N		N	54	84	83	87	98	105	72	83	88	62	51	39	44	58	N	A	31
24	32	31	39	36	31	28	28	54	73	76	97	112	101	108	88	80	68	55	37	36	36	30	A	
25	34	32	32	34	31	30	28	54	79	77	90	104	105	91	76	82	74	52	46	45	36	27	30	31
26	34	34	36	37	37	34	34	54	66	76	87	91	96	81	80	81	77	71	51	38	43	44	43	45
27	31	27	31	25	26	27	34	65	74	80	105	117	115	102	92	81	72	67	51	48	43	A	34	28
28	33	30	39	39	39	31	34	65	87	82	110	106	90	95	96	86	91	78	76	61	36		30	32
29	A	34	36	38	39	28	30	59	76	87	92	90	101	109	97	88	82	71	49	53	52	53	47	35
30	32	32	32	37	39	31	36	66	87	84	91	97	102	102	94	90	96	88	73	66	47	39	36	34
31	27	34	36	41	41	35	41	53	81	96	107	104	110	111	104	97	95	78	52	42	44	42	38	30
	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	28	25	26	25	27	31	31	31	30	30	30	30	30	30	30	30	28	27	24	19	25	27
MED	34	34	36	34	31	31	32	59	81	87	102	104	100	95	89	82	76	66	52	45	40	38	34	34
U Q	37	38	38	37	34	32	34	63	85	108	115	114	105	102	96	90	81	71	60	53	46	44	39	36
L Q	32	32	33	30	30	28	30	54	76	81	92	98	95	86	83	77	71	57	47	39	35	30	30	31

HOURLY VALUES OF fEs AT Kokubunji

JAN. 2015

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	24	G	G	G	G	G	G	G	27	36	36	33	28	G	31	27	G	30	G	G	G		G	G
2	G	G	G	G	G	G	G	G	24	34	35	32	30	30	28	26	31	26	G	G	G	G	24	28
3	23	G	G	G	G	G	G	G	29	33	31	28	27	32	26	28	31	G	29	25	26	23	25	24
4	G	G	G	G	G	G	G	G	23	28	28	32	G	32	29	27	G	G	G	G	25	G	28	G
5	G	G	G	G	G	43	27	G	G	27	G	G	G	G	30	G	24	G	G	G		G	28	G
6	G	G	G	G	G	G	G	G	33	30	G	29	G	G	29	29	G	G	G		27	29	G	G
7	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	45	G	G	G	G	23	G	26
8	28	32	40	46	34		G	G	28	G	G	G	G	G	31	29	29	32	30	27	27	G		G
9	G	24	26	27	G	G	G	G	27	26	27	28	G	G	45	33	27	G	29	G		G	G	G
10	G	G	G	G	G	G	G	G	27	28	G	G	G	G	G	G	51	30	94	93	86	43	26	31
11	G	G	G	G	G	24	40	33	37	58	49	36	41	80	47	65	36	G	G	59	40	G	26	23
12	G	22	G	G		G	28	30	29	28	32	30	24	29	35	47	23	28	43	48	72	87	67	69
13	30	28	G	G	G	G	G	28	39	38	32	34	48	53	G	27	G	G	G	G	G	53	G	25
14	28	G	G	G	G	G	G	G	34	45	34	33	43	47	40	28	27	26	36	55	45	71	G	36
15	48	31	G	G	G	G	G	26	24	36	31	33	34	34	33	28	27	G	G	G	G	G	G	G
16	G	G	34	31		G	G	26	31	30	31	33	34	32	30	28	25	G	G	29	G	G	G	G
17	G	G	29	G	G	G	G	24	25	27	26	28	31	31	29	28	29	29	27	G	G	G	G	G
18	G	G	G	G	G	G	G	G	47	29	32	33	34	34	31	29	22	G	G	25	G			G
19	G	G	G	G	G	24	G	G	24	29	C	C	C	C	C	C	C	24	G	G	G	G	G	G
20	G	G	G	G	G	G	G	G	23	34	33	33	34	34	35	34	25	47	53	45	43	30	G	
21	29	26	G		G	G	G	50	33	28	29	32	55	30	31	32	34	28	G	G	G	G	G	G
22	G	G	G	G	G	G	G	29	G	G	49	G	G	G	G	37	G	G	G	G	G	G	G	G
23	G	G	G	G	G		G	27	G	G	G	G	G	G	G	G	G	G	25	32	G	G	26	G
24	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G	40	G	G	G	G	G	27	22	
25	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	44	G	G	G	G	G	G	G	G	32	24	30	G	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	37	23	28	G	G	37	G	G
28	G	32	G	G	G	G	G	G	G	G	G	53	G	G	G	G	G	33	G	G	G		G	G
29	29	G	G	G	G	G	G	40	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
31	G	G	G	G	G	G	G	G	G	G	G	G	48	47	44	G	G	G	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	29	29	31	31	31	31	30	30	30	30	30	30	30	31	31	30	29	28	29	29
MED	G	G	G	G	G	G	G	G	24	28	26	28	G	G	29	28	24	G	G	G	G	G	G	G
U Q	23	G	G	G	G	G	G	27	31	33	32	33	34	32	31	29	31	28	29	27	26	28	24	23
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

JAN. 2015

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

HOURLY VALUES OF foF2 AT Yamagawa

JAN. 2015

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	40	43	41	37	34	34	34	47	88	85	86	112	116	110	114	114	119	N	78	54	64	47	43	35
2	B	28	34	29	30		29	40	67	78	63	111	97	97	94	96	78	61	54	71	54	36	A	28
3	30	28	36	37	B		B	41	67	81	88	98	98	87	81	98	86	76	76	66	42	34	32	34
4	36	36	36	B		N	N	34	81	86	90	99	88	85	87	88	78	72	51	50	44	40	44	42
5	34	42	34	N	31	A	A	42	101	117	107	113	112	112	98	96	93	85	52	53	32	33	B	30
6		32	34	B	B	28	59	43	82	105	114	112	118	109	114	114	97	93	87	59	42	42	34	34
7	36	34	31	30	32	30	28	37	72	88	N	146	146	112	113	146	108	73	74	50	74	78	76	76
8	52	48	A	A	A	A	38	47	88	111	154	147	158	102	96	110	87	88	73	54	B	46	44	37
9	50	51	32		29	30	N	40	76	111	109	104	109	96	144	153	94	96	73	52	54	63	53	52
10	35	37	38	29	N		29	42	86	110	113	114	148	96	96	87	90	78	67	A	A	A	42	40
11	43	36	42	34	34	N	32	A	88	91	109	145	152	N	118	114	110	96	87	74	55	A	61	45
12	A	38	37	A	A	A	26	40	81	111	109	116	139	144	78	117	111	90	81	53	52	61	53	42
13	42	40	46	34	B	B	B	42	72	87	98	101	118	113	98	124	117	115	78	76	80	53	A	A
14		38	40	31	B	29	34	43	86	88	101	111	131	116	118	108	101	87	77	52	52	A	A	A
15	32	36	38	36	A	34	36	46	88	94	89	108	114	110	103	112	98	82	74	74	72	52	46	43
16	43	43	35	34	B	26	28	40	81	90	86	101	106	106	93	90	97	90	72	54	50	A	A	A
17	A	A	36	30	34	28	28	40	86	86	87	107	111	117	114	99	85	80	67	61	54	54	40	38
18	36	28	31	34	32	B	28	34	81	106	90	N	103	112	95	80	77	70	66	53	44	45	34	30
19	31	32	30	36	34		30	37	81	108	92	102	98	96	94	87	86	82	76	54	53		44	34
20	25	B	34	34	36	B	B	34	75	81	75	96	95	94	80	74	74	70	55	37	46	53	53	48
21	34	B	26	34	40	A	B	40	76	86	106	111	90	102	98	86	77	75	65	52	43	46	44	42
22	37	34	34	40	40	30	37	41	71	80	96	110	109	114	105	86	68	70	66	47	43	45	34	43
23	38	40	43	38	29	B	B	31	88	89	90	97	113	97	92	90	87	70	51	43	52	34	29	32
24	34	34	32	32	31	59	29	38	71	76	90	110	113	97	110	100	82	75	54	46	43	40	30	32
25	32	59	31	34	37	26	B	36	66	92	81	91	94	100	91	88	86	78	60	48	44	42	38	B
26	29	34	34	34	36	N	32	42	68	78	90	87	86	89	90	74	78	86	80	52	47	54	50	39
27	29	28	29	34	38	31	32	44	67	84	101	117	107	108	97	85	81	86	74	51	46	48	37	B
28	34	34	34	34	37	28	30	43	81	86	90	90	87	95	92	88	96	86	79	78	50	48	34	32
29	34	34	34	37	42	31	28	42	74	87	90	86	99	107	107	96	92	89	80	58	74	72	54	32
30	31	30	32	32	34	32	34	48	84	82	82	94	110	112	99	86	98	101	97	86	67	67	53	38
31	34	34	34	34	38	37	36	42	67	87	103	92	102	117	124	106	100	90	88	52	54	54	52	38
	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	28	30	25	21	16	22	30	31	31	30	30	31	30	31	31	31	30	31	30	29	26	26	26
MED	34	35	34	34	34	30	31	41	81	87	90	108	109	106	98	96	90	84	74	53	52	48	44	38
U Q	38	40	37	36	37	33	34	43	86	105	106	112	118	112	113	112	98	90	79	61	54	54	53	42
L Q	32	33	32	32	31	28	28	38	71	84	88	97	98	96	92	87	81	75	65	51	44	42	34	32

HOURLY VALUES OF fEs AT Yamagawa

JAN. 2015

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	23	39	52	64	42	32	34	30	34	G	48	G	G	G	G	G
2	B	G	G	G	G	G	G	G	27	33	53	43	42	30	33	36	35	G	G	G	G	G	32	G
3	23	G	27	G	B	G	B	G	27	33	36	34	40	35	32	40	24	G	G	G	G	G	G	G
4	G	G	G	B	G	G	G	G	G	38	34	33	37	38	44	39	36	G	40	34	28	28	G	28
5	G	G	G	G	G	34	34	G	28	25	28	G	32	32	28	35	27	24	27	25	G	G	B	G
6	G	G	G	B	B	G	G	G	24	33	32	34	35	33	33	30	34	49	52	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	G	26	G	G	G	G	G	G	34
8	35	36	52	43	51	50	27	28	26	40	49	66	81	53	70	46	40	36	32	26	B	G	G	26
9	G	G	G	G	G	G	G	G	20	35	76	G	G	30	34	28	38	31	30	27	G	G	G	G
10	G	G	G	G	G	G	G	G	G	32	34	G	G	G	G	36	40	52	44	80	48	38	33	32
11	G	G	G	G	G	G	G	32	35	40	66	90	74	84	62	65	36	26	28	53	59	82	36	27
12	40	28	27	27	28	28	G	G	30	34	35	35	47	48	79	50	72	41	39	51	33	40	39	27
13	32	G	G	G	B	B	B	G	30	54	47	57	70	66	G	43	42	48	38	41	40	36	39	38
14	G	G	G	G	B	G	G	G	G	42	48	62	48	70	64	44	44	45	32	43	50	54	36	58
15	G	G	G	28	26	G	G	G	28	34	48	36	34	35	34	38	33	G	28	G	G	28	25	G
16	G	G	G	G	B	G	G	G	G	29	G	55	58	58	71	70	61	78	58	44	39	65	114	79
17	65	50	G	G	G	G	G	G	24	28	34	44	46	36	34	34	34	G	32	25	G	G	G	G
18	G	G	G	G	G	B	G	G	G	26	28	35	35	40	38	31	39	37	30	G	26	G	G	G
19	G	G	G	G	G	G	G	G	G	34	31	36	47	40	42	36	36	35	G	G	G	G	G	G
20	G	B	G	G	G	B	B	G	21	35	41	36	39	46	47	40	35	25	G	G	G	G	G	G
21	G	B	G	G	G	29	B	G	G	35	39	40	41	44	41	39	34	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	23	33	39	G	G	G	G	43	G	G	G	G	40	23	34	G	G
23	G	G	G	G	G	B	B	G	G	G	G	G	G	G	G	G	37	30	G	G	G	G	G	G
24	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	49	26	G	G	G	G
25	G	G	G	G	G	G	B	G	G	G	48	G	G	G	G	G	G	48	G	G	G	G	G	B
26	G	G	G	G	G	G	G	G	32	G	G	G	G	G	44	G	G	41	G	G	G	30	31	25
27	G	G	G	G	G	G	G	G	34	G	43	G	51	G	G	47	G	30	26	G	G	G	G	B
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	G	G	G	G	G	G	46	47	40	G	G	G	G	G	G	G	G
30	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	24	G	30	G
31	G	G	G	G	G	G	G	G	G	G	G	G	G	43	G	G	G	G	30	32	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	31	29	26	27	25	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	30	29
MED	G	G	G	G	G	G	G	G	21	33	34	34	35	35	34	36	34	25	28	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	28	35	48	43	47	46	44	40	38	41	38	34	26	30	31	27
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

JAN. 2015

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	16	15	15	17	16	16	16	15	15	15	20	20	20	21	17	18	18	22	15	17	18	14	17	14
2	B	17	15	16	14	66	15	15	14	15	17	21	18	18	18	17	15	21	16	16	15	17	15	17
3	15	17	15	15	B	66	B	15	21	15	16	18	20	20	18	16	14	21	15	15	16	15	17	16
4	15	16	15	B	66	15	18	15	23	15	17	38	28	24	24	17	20	16	14	14	15	15	15	15
5	16	20	17	17	18	15	15	17	16	15	20	37	24	24	32	17	15	17	17	17	18	18	B	17
6	66	17	17	B	B	18	17	15	15	17	21	22	27	18	21	23	17	14	15	17	15	15	16	15
7	16	15	15	18	15	16	17	15	30	29	35	43	42	42	42	36	20	24	17	16	20	16	18	15
8	15	16	15	15	20	15	15	15	16	20	27	30	32	27	22	21	14	14	15	18	B	15	17	17
9	20	23	15	66	18	18	18	17	26	21	23	50	39	23	22	18	14	17	14	17	17	17	18	16
10	17	16	15	16	17	66	18	15	23	20	35	42	39	43	40	27	20	16	17	15	15	15	16	14
11	15	16	15	17	15	66	15	16	16	18	21	26	29	27	23	21	15	17	15	15	15	14	16	15
12	15	15	15	15	14	16	17	15	15	18	20	39	27	27	28	26	20	15	16	14	15	14	15	14
13	15	16	17	15	B	B	B	16	15	18	21	26	22	23	69	20	17	14	15	14	15	15	14	15
14	20	18	15	17	B	15	15	15	22	18	20	26	28	28	29	23	23	18	15	15	14	17	15	14
15	23	16	16	15	16	18	17	16	23	16	18	21	24	23	21	17	20	24	14	18	20	15	15	14
16	17	15	20	16	B	18	17	14	22	21	34	26	23	22	23	22	21	16	15	15	15	16	15	15
17	15	15	15	15	18	15	18	15	16	28	18	23	23	35	23	17	20	26	14	15	18	16	15	15
18	16	18	18	16	16	B	66	15	26	29	34	23	24	24	22	21	14	18	15	21	17	16	20	17
19	17	21	15	14	18	17	20	17	26	29	20	26	24	22	20	24	14	14	15	15	17	21	15	20
20	18	B	17	15	15	B	B	15	24	16	20	22	28	29	28	24	17	23	16	17	15	16	15	15
21	15	B	15	18	14	15	B	16	14	14	18	26	26	23	21	17	17	23	16	17	18	15	16	17
22	16	17	16	15	14	17	15	15	18	18	16	35	38	28	35	17	14	14	17	15	15	14	18	15
23	15	15	15	15	16	B	B	17	15	18	17	21	48	38	22	17	21	15	15	18	20	15	15	17
24	15	15	15	15	15	15	15	16	15	17	21	22	24	24	21	18	15	14	15	15	14	15	17	15
25	15	17	17	15	15	15	B	16	15	15	17	27	21	22	20	14	15	26	15	15	14	15	15	B
26	16	16	17	14	15	15	16	15	15	16	17	36	24	22	22	21	22	15	15	15	16	14	15	15
27	15	15	18	15	16	15	16	14	21	14	14	22	34	28	24	18	14	14	15	15	18	16	15	B
28	15	15	16	18	14	14	16	17	14	21	21	42	40	26	46	40	15	26	16	15	14	15	17	16
29	16	16	15	17	16	15	16	16	16	17	21	27	26	30	29	23	17	14	17	15	15	21	16	16
30	15	15	18	16	15	16	16	16	22	21	42	36	38	29	29	36	22	26	16	15	15	15	15	18
31	15	17	16	16	14	15	17	15	24	17	16	39	27	22	24	18	17	27	15	15	17	15	16	16
	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	31	29	26	27	25	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	30	29
MED	16	16	15	16	16	16	16	15	16	18	20	26	27	24	23	20	17	17	15	15	15	15	16	15
U Q	17	17	17	17	17	18	17	16	23	21	21	37	34	28	29	23	20	23	16	17	18	16	17	17
L Q	15	15	15	15	15	15	15	15	15	15	17	22	24	22	21	17	15	14	15	15	15	15	15	15

HOURLY VALUES OF foF2 AT Okinawa

JAN. 2015

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	B	B	50	A	A	A		47	89	108	88	94	134	130	134	144	N	94	108	72	88	86	65	34
2	B	B		29	B	B	B	37	74	82	83	97	128	108	107	108	110	86	58	77	86	58	30	B
3	B	B	36		B	B	B	40	70	77	91	90	101	105	86	101	108	90	88	54	67	51		
4		A	A	A	A	B	B	30	83	107	129	108	110	118	105	117	104	76	65	54	55	52	51	47
5	A	52		B	N	B	35	40	98	127	111	120	128	130	130	132	119	107	107	77	52	48	37	41
6	B		A	A	A	B	B	43	85	106	121	136	N	143	134	143	131	107	87	77	63	61	50	B
7		38		B	B	B	B	B	73	107	130	146	130	129	111	141	131	103	87	87	86	86	87	73
8	72	53	43	A	A	A	B	A	84	124	148	136	132	133	132	133	131	120	86	52	67	A	B	47
9	60	52		B	B	B	B	36	85	107	143	133	152	131	132	131	142	125	104	52	72	66	54	53
10		52	51	30	B	B	B	38	88	110	131	N	148	136	119	120	108	111	A	52	60	66	53	B
11						B	B		99	116	131	134	132	130	130	120	130	131	107	104	85	76	52	A
12	54	60	54	B	B	B	30	37	87	113	133	130	139	129	129	136	143	N	104	86	78	54	60	A
13	46		38	B	B	B	B	40	88	107	106	116	134	135	109	143	144	N	121	78	67	100		52
14	51	A	51		B	B		44	81	100	106	121	91	109	N	132	143	132	110	81	80	B	B	B
15	A	A		48	B	B	B	40	88	118	102	108	118	N	130	130	142	132	119	90	79	108	N	73
16	72	59	53		B	B	B	40	86	98	105	107	120	127	131	120	132	126	107	78	82	82	77	
17	41	42	32	B	A	B	B	37	90	104	102	110	117	129	134	133	N	120	108	78	54	77	65	53
18		B				B	B	B	78	108	116	106	120	120	120	112	96	88	80	58	53	72	63	34
19	34	31	37	37	N	B	B	34	77	112	114	107	118	116	116	118	118	108	118	85	88	81	72	54
20	B	40		34	31	B	B	B	72	93	94	100	108	110	101	85	82	78	81	52	50	67	76	54
21	41	B	30	36	27	B	B	B	77	88	130	115	111	130	131	127	105	99	86	72	53	67	54	47
22		42	B		N	B	47	51	74	88	127	136	133	150	131	117	107	103	87	67	B	58	51	48
23	42			32	B	B	B	B	88	123	110	112	113	119	114	130	114	102	72	49	B	N	44	
24		A	34	34	B	B	B	36	69	88	114	114	109	131	109	131	117	121	88	66	58	64	52	39
25	B	39		50	51	32	B	B	66	88	90		92	108	118	118	123	121	89	52	54	53	50	B
26		30		B	B	N	28	37	74	88	101	82	85	98	118	90	102	105	110	77	51	52	74	44
27	N	B	B	B	B			38	72	102	108	107	120	124	119	107	102	106	97	74	52	72	67	37
28	B	B	34	B	B	30	B	37	78	88	C	C	C	C	C	108	106	96	87	88	74	52	51	N
29	B		B	34	42	30	B	40	77	88	97	92	102	93	119	118	111	130	110	106	86	82	85	54
30		B		30	34	29	B	47	87	84	82	100	119	122	108	107	104	108	117	111	86	86	88	52
31		B	N	B	20	38		41	72	88	107	110	92	112	130	118	116	118	110	81	73	66	53	54
	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	13	13	11	6	5	4	23	31	31	30	28	29	29	29	31	29	29	30	31	29	28	26	20
MED	48	42	38	34	32	30	32	40	81	104	109	110	119	127	119	120	116	107	100	77	67	66	54	50
U Q	60	52	51	37	42	35	41	41	88	110	129	125	132	130	131	132	131	121	110	85	83	81	72	54
L Q	41	38	34	30	27	29	29	37	74	88	101	103	108	111	110	112	105	97	87	54	54	56	51	42

HOURLY VALUES OF fEs AT Okinawa

JAN. 2015

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	B	B	G	56	34	27	G	G	33	44	47	46	65	58	G	G	35	G	G	43	G	G	G	G
2	B	B	G	G	B	B	B	G	G	28	G	G	G	48	G	40	32	31	G	G	G	G	G	B
3	B	B	24	G	B	B	B	G	G	26	28	G	36	G	28	27	26	33	G	G	G	G	G	G
4	G	27	27	29	28	B	B	G	G	34	42	G	G	G	G	46	48	45	58	27	G	G	G	G
5	30	26	G	B	G	B	G	G	G	27	28	G	G	G	G	G	27	30	G	G	G	G	G	G
6	B	G	36	33	27	B	B	G	G	29	30	44	G	G	G	G	G	G	G	11	G	G	G	B
7	G	G	G	B	B	B	B	B	G	G	G	G	G	G	G	G	27	G	G	G	G	G	G	37
8	46	G	G	36	66	44	B	36	G	52	61	53	G	G	51	48	36	36	56	34	33	49	B	G
9	G	G	G	B	B	B	B	G	25	32	G	59	G	49	48	46	25	28	29	27	G	G	G	G
10	G	G	G	G	B	B	B	G	G	G	G	G	G	G	G	G	48	60	111	59	31	48	G	B
11	G	G	G	G	G	B	B	G	25	45	43	G	51	55	60	44	44	35	26	39	38	48	G	59
12	33	27	G	B	B	B	G	G	G	27	G	G	G	G	55	63	72	87	86	49	49	33	29	34
13	G	G	G	B	B	B	B	G	G	44	54	50	51	49	G	G	68	44	44	34	59	50	G	G
14	40	28	G	G	B	B	G	G	G	24	46	53	55	50	G	54	G	60	60	28	G	B	B	B
15	50	26	G	G	B	B	B	G	G	27	G	39	G	44	47	26	24	34	36	44	46	32	G	32
16	G	G	G	G	B	B	B	G	G	G	G	G	G	49	55	40	39	41	44	34	G	G	G	G
17	G	G	G	B	28	B	B	G	G	26	G	G	G	G	G	G	G	34	26	11	G	G	G	G
18	G	B	G	G	G	B	B	B	G	35	G	G	G	G	G	G	G	44	45	G	27	G	G	G
19	G	G	G	G	G	B	B	G	G	30	44	G	G	56	47	G	G	36	29	G	G	G	G	G
20	B	G	G	G	G	B	B	B	26	27	G	G	G	G	G	G	40	39	G	G	G	G	G	G
21	G	B	G	G	G	B	B	B	G	34	34	G	G	G	28	36	35	G	G	48	G	G	G	G
22	G	26	B	G	G	B	G	24	36	G	G	G	G	G	G	G	G	44	45	34	B	G	G	G
23	G	G	G	G	B	B	B	B	G	G	G	48	G	50	G	G	46	G	G	G	B	G	G	G
24	G	26	G	26	B	B	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
25	B	G	G	G	G	G	B	B	G	G	G		G	G	G	G	G	G	G	23	G	G	G	B
26	G	G	G	B	B	G	G	G	G	G	G	50	56	54	45	G	G	36	43	G	32	G	G	G
27	G	B	B	B	B	G	G	G	G	G	G	49	52	G	G	44	54	36	38	24	27	G	G	G
28	B	B	G	B	B	G	B	G	G	G	C	C	C	C	C	G	G	38	G	28	G	30	G	G
29	B	G	B	G	G	G	B	G	G	G	G	G	G	54	G	G	G	35	G	G	G	G	G	G
30	G	B	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
31	G	B	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	25	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	22	28	21	16	9	8	25	31	31	30	29	30	30	30	31	31	31	31	31	29	30	29	26
MED	G	G	G	G	G	G	G	G	G	26	G	G	G	G	G	G	26	35	26	24	G	G	G	G
U Q	G	26	G	13	27	14	G	G	G	32	34	47	G	49	45	40	40	41	44	34	29	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

JAN. 2015

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	B	B	21	17	16	17	66	17	15	20	21	32	29	29	44	40	17	27	18	20	21	42	20	17
2	B	B	66	17	B	B	B	17	26	17	38	42	43	39	40	24	14	14	16	26	17	17	16	B
3	B	B	17	71	B	B	B	18	26	14	38	42	40	43	21	18	18	18	18	18	20	16	17	24
4	66	16	15	16	15	B	B	17	24	16	21	43	42	49	42	35	26	20	17	15	16	18	15	17
5	15	15	20	B	15	B	17	17	24	20	18	42	43	42	40	39	36	22	18	22	18	15	21	20
6	B	71	21	17	14	B	B	20	29	18	39	30	40	42	42	38	39	23	18	17	26	20	21	B
7	18	24	66	B	B	B	B	B	27	30	39	42	42	42	39	42	20	27	20	24	18	20	38	15
8	20	17	17	15	15	15	B	15	26	20	33	35	43	42	34	28	23	15	15	16	17	38	B	40
9	21	18	18	B	B	B	B	20	17	22	44	38	44	29	21	27	38	20	21	17	34	20	23	39
10	40	20	20	17	B	B	B	17	36	33	39	44	45	42	44	45	20	17	15	15	16	16	27	B
11	34	30	81	71	66	B	B	15	18	23	41	43	38	38	33	34	20	15	16	15	15	15	17	21
12	17	18	23	B	B	B	17	17	26	36	40	45	47	53	35	30	26	16	15	15	16	15	15	15
13	18	20	27	B	B	B	B	29	29	28	34	34	34	33	84	42	20	17	15	15	16	30	42	21
14	17	46	32	28	B	B	66	18	27	30	32	36	39	36	50	26	40	18	17	18	22	B	B	B
15	16	66	23	18	B	B	B	17	28	20	42	33	44	28	26	22	32	16	20	15	18	18	21	17
16	30	91	44	66	B	B	B	20	26	33	42	40	46	34	33	23	20	18	20	17	32	21	18	20
17	20	21	15	B	15	B	B	20	27	18	40	43	44	44	42	42	38	26	16	18	18	17	15	17
18	71	B	66	66	20	B	B	B	28	20	39	39	44	44	43	39	39	21	18	18	16	18	16	16
19	17	18	17	15	17	B	B	18	32	22	27	47	54	36	39	40	39	17	15	29	17	17	41	22
20	B	17	66	20	18	B	B	B	29	20	42	44	45	46	43	40	21	17	21	16	43	38	40	16
21	17	B	20	16	16	B	B	B	26	17	24	42	43	43	40	21	18	15	17	15	38	18	17	17
22	66	17	B	66	18	B	17	16	17	20	38	40	45	43	44	43	21	26	18	15	B	43	17	18
23	16	18	17	16	B	B	B	B	24	20	21	34	43	40	44	39	41	27	23	15	B	18	18	66
24	71	16	17	15	B	B	B	15	33	21	40	42	44	54	47	26	18	27	18	15	17	18	18	22
25	B	15	71	15	17	15	B	B	27	20	39		42	46	44	20	39	15	21	15	44	20	20	B
26	66	18	66	B	B	18	16	21	24	17	18	42	39	38	43	44	18	17	15	17	14	18	39	16
27	66	B	B	B	B	21	66	18	29	16	39	42	39	39	46	29	18	16	15	16	14	42	40	18
28	B	B	18	B	B	20	B	17	15	36	C	C	C	C	C	49	40	17	24	15	22	15	15	66
29	B	66	B	21	17	18	B	16	27	20	39	42	44	38	45	44	21	16	18	15	18	16	15	16
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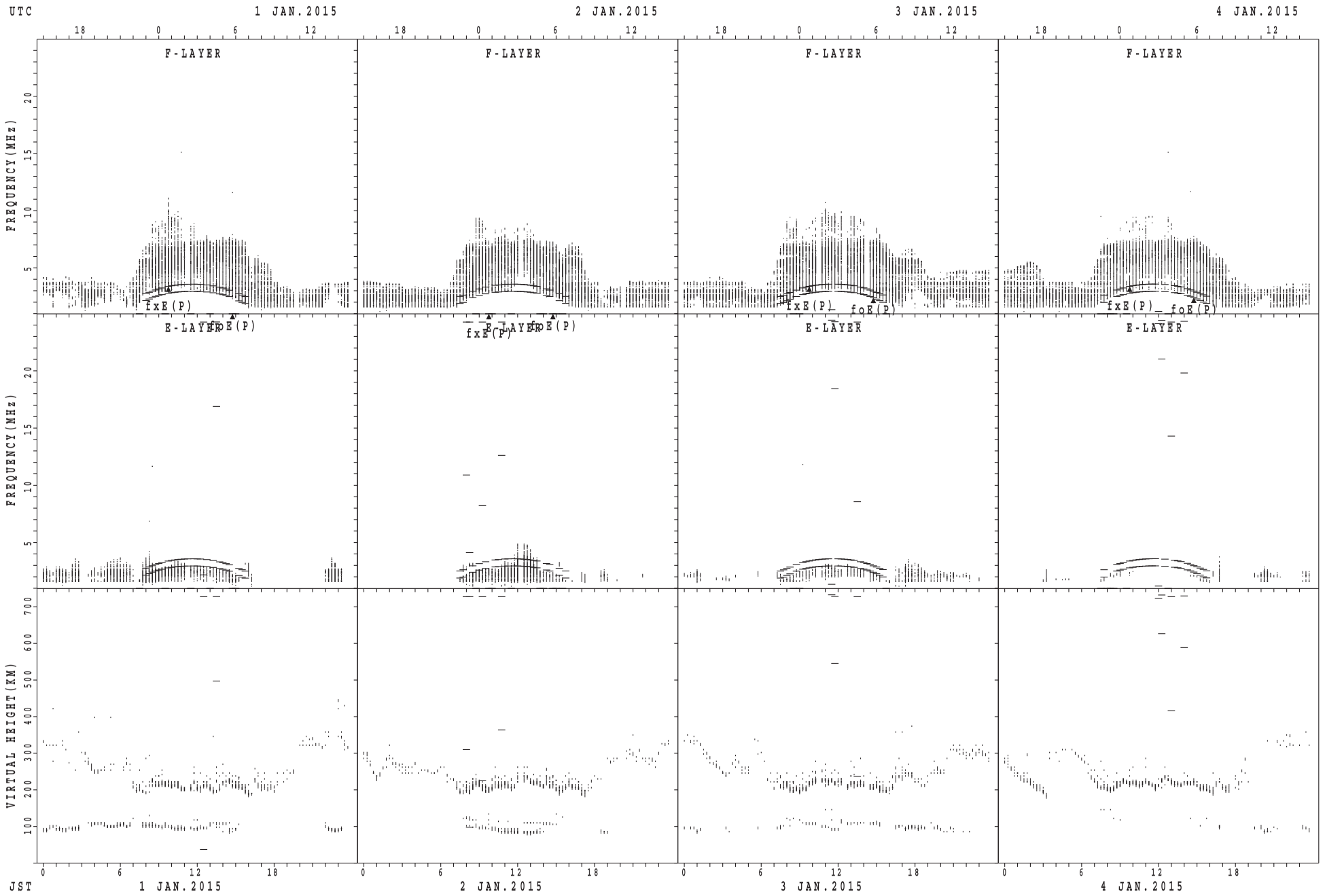
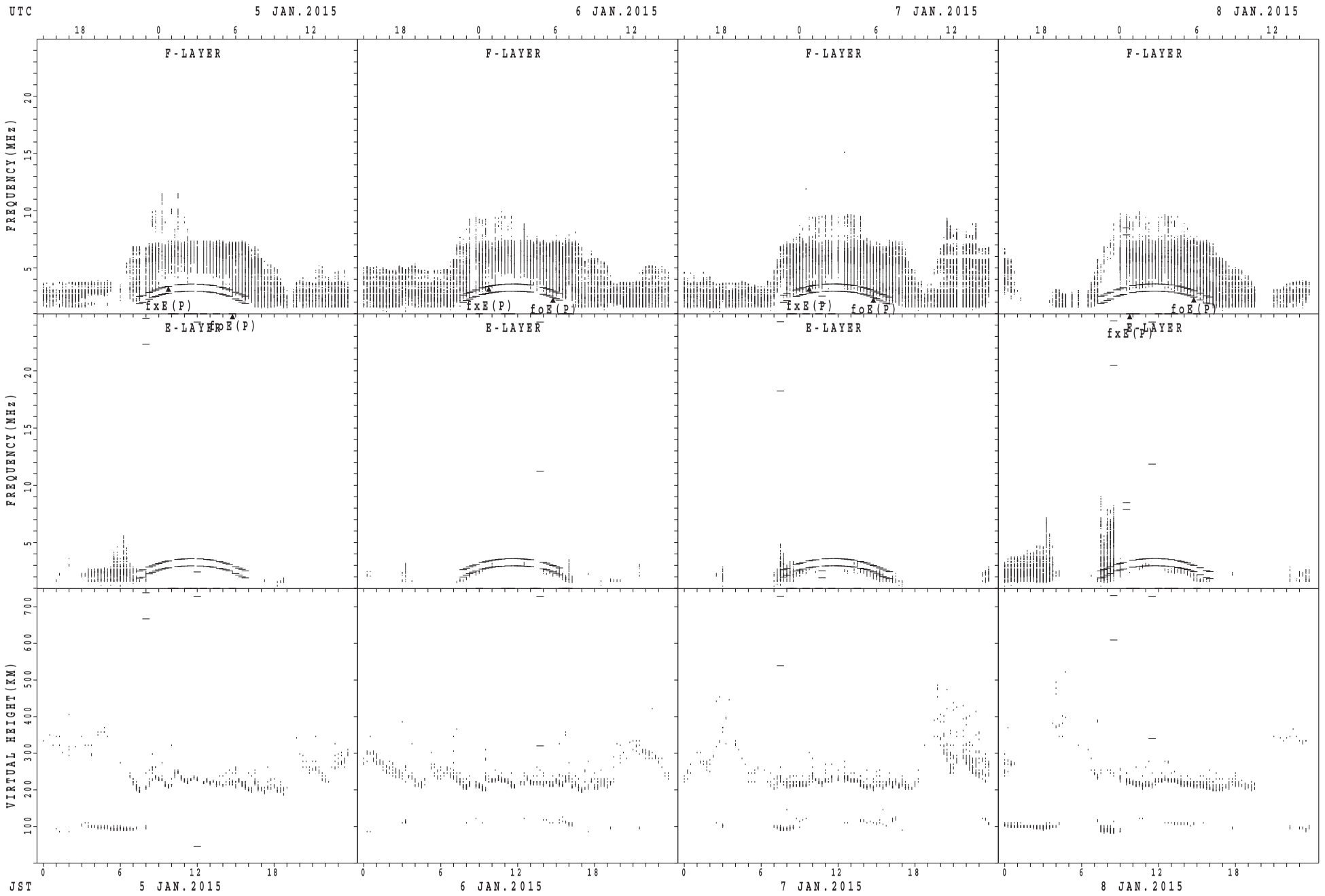
31	21	B	20	B	15	30	66	20	28	18	40	41	46	55	49	40	14	15	26	20	20	20	18	21
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	22	28	21	16	9	8	25	31	31	30	29	30	30	30	31	31	31	31	31	29	30	29	26
MED	20	18	20	17	16	18	42	17	27	20	39	42	43	42	42	39	21	17	18	16	18	18	18	19
U Q	66	30	55	47	18	20	66	20	28	28	40	43	44	44	44	42	39	23	20	18	22	20	25	22
L Q	17	17	17	16	15	15	17	17	24	18	32	37	40	38	39	26	18	16	16	15	16	17	16	17

SUMMARY PLOTS AT Wakkanai



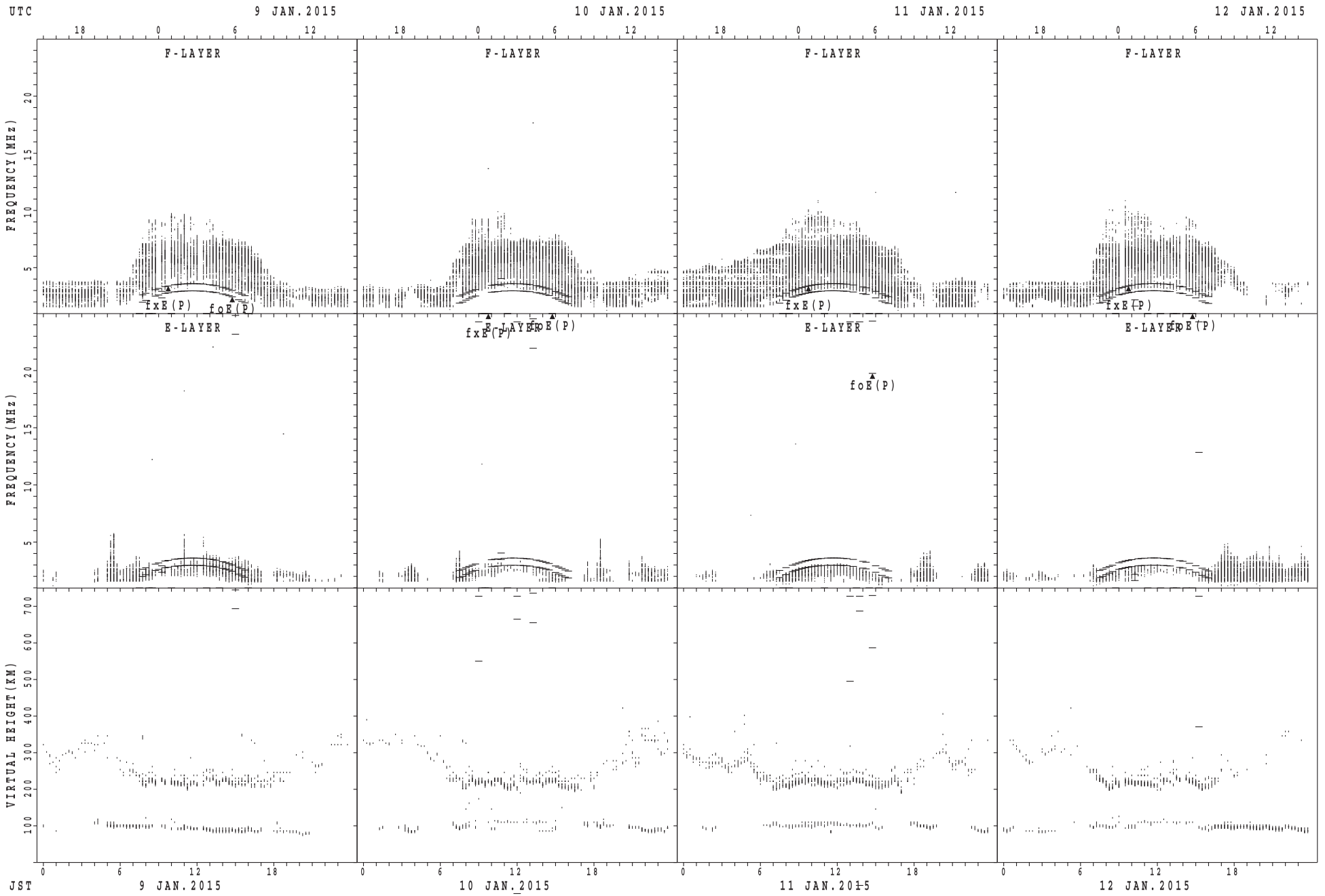
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



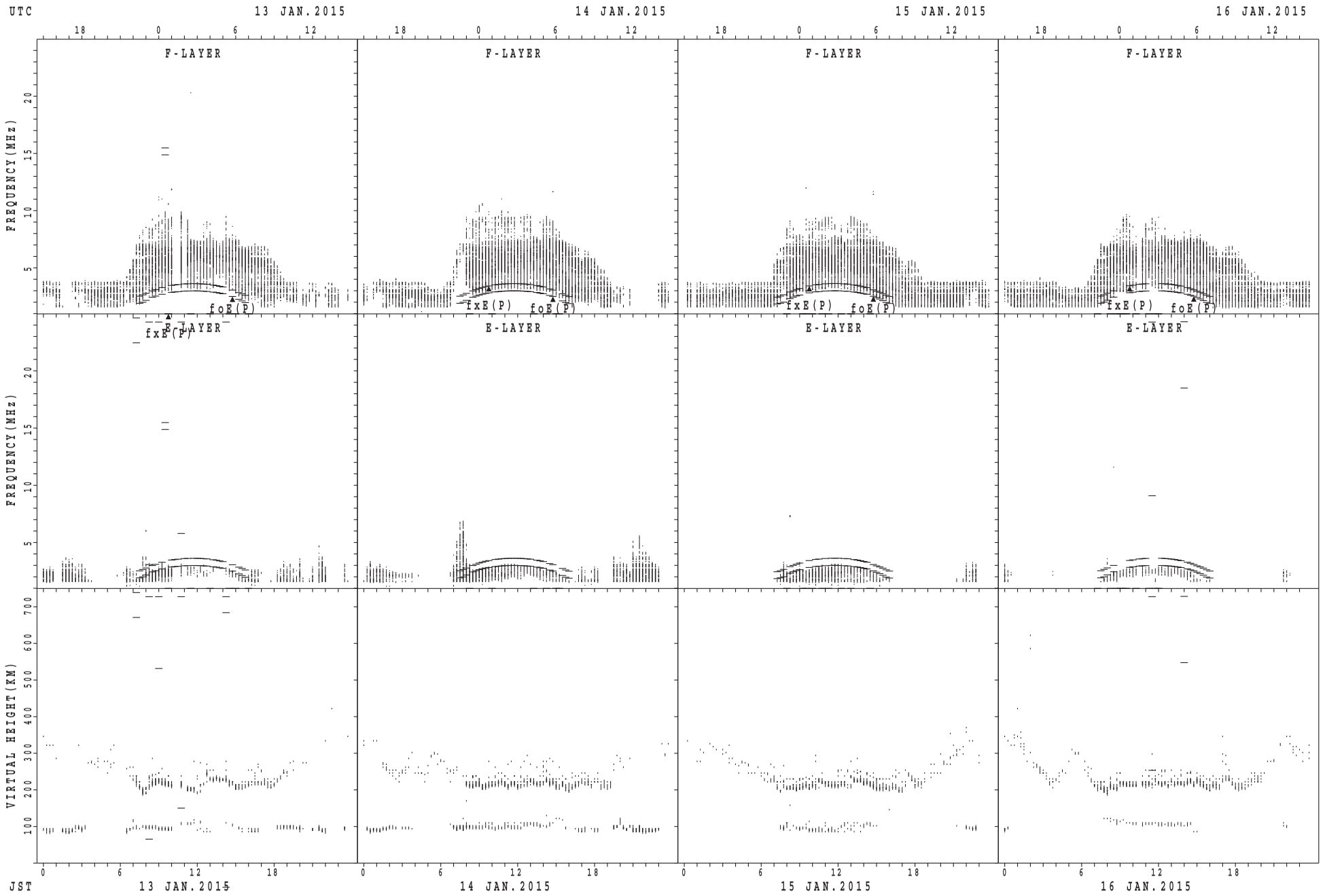
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



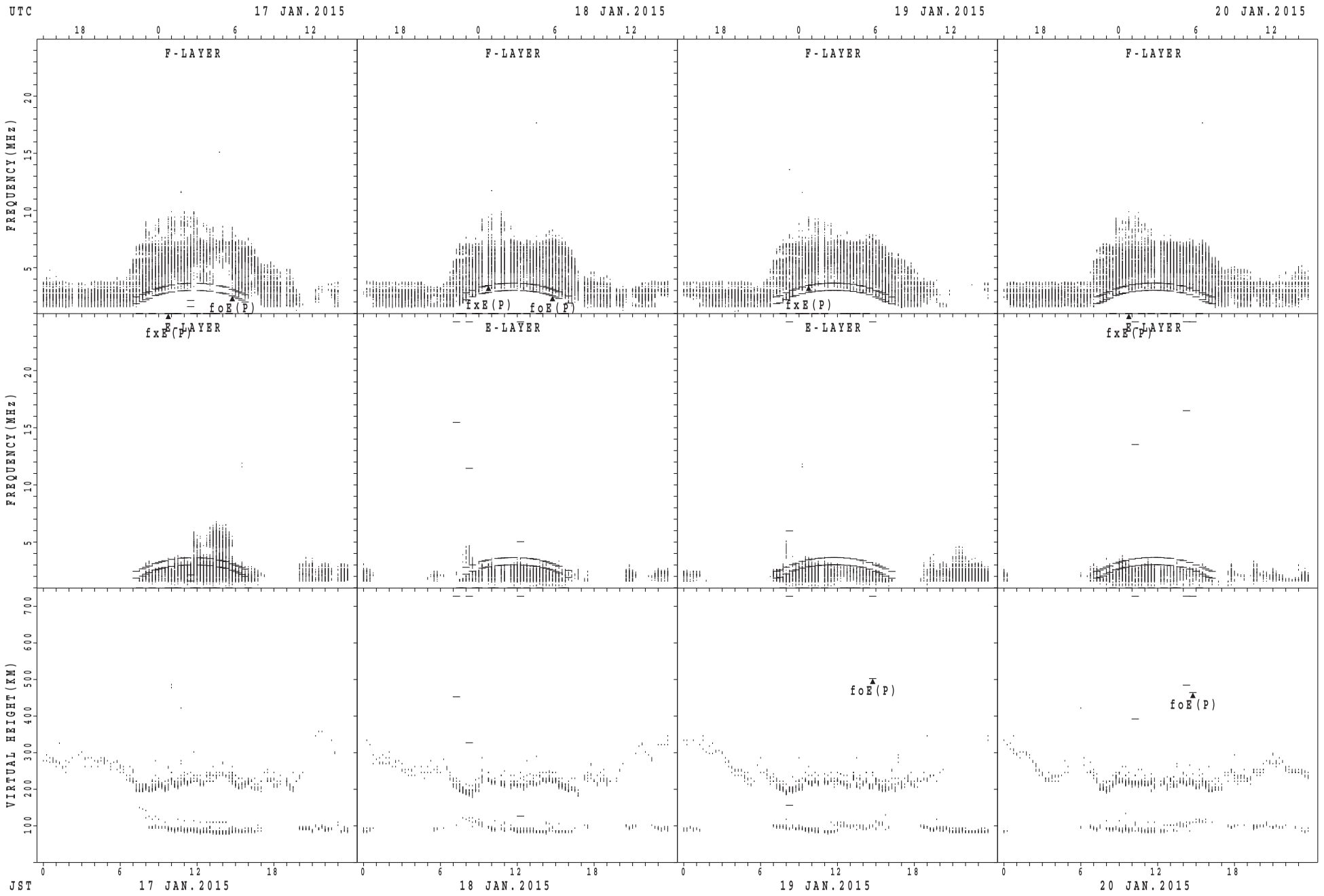
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



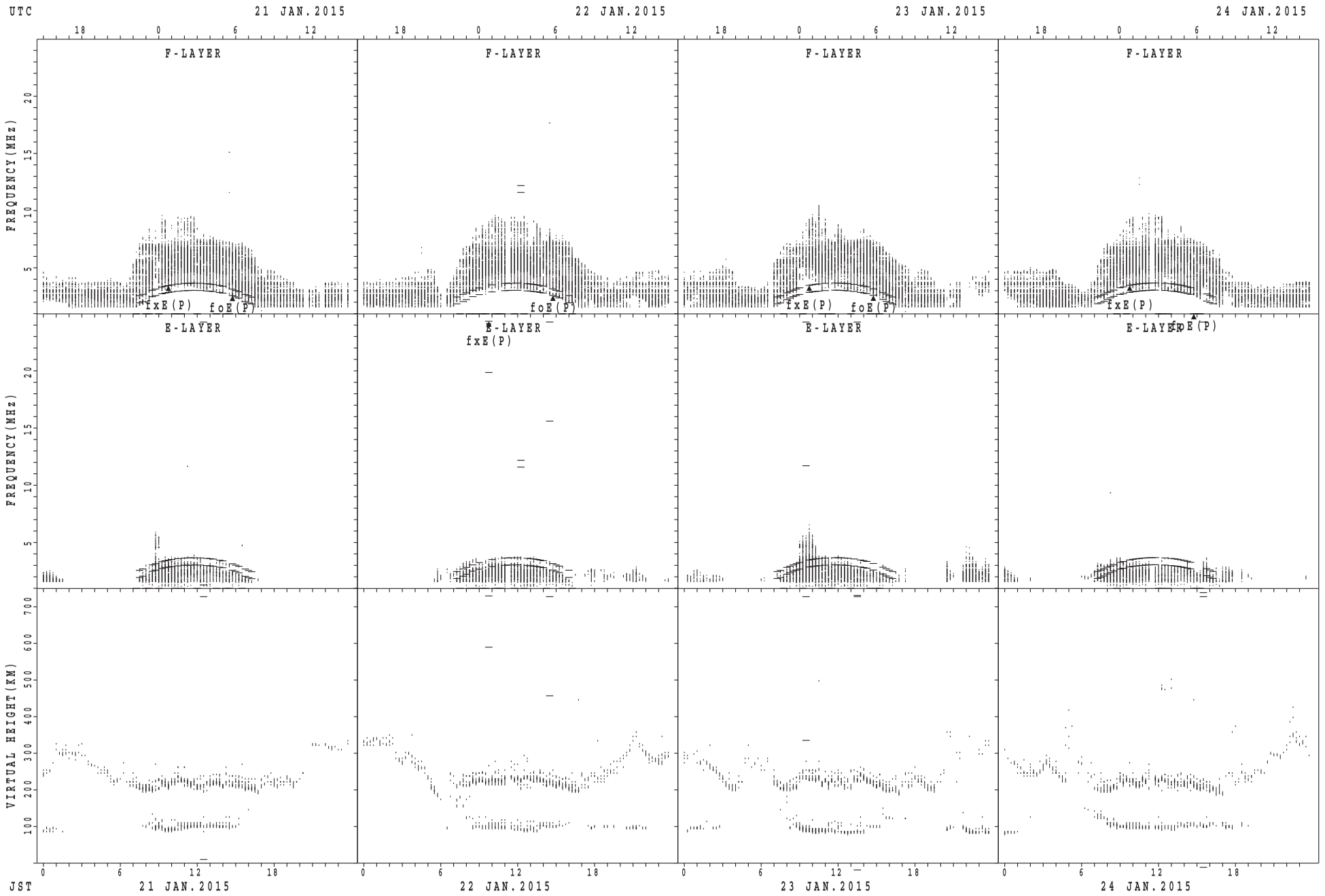
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



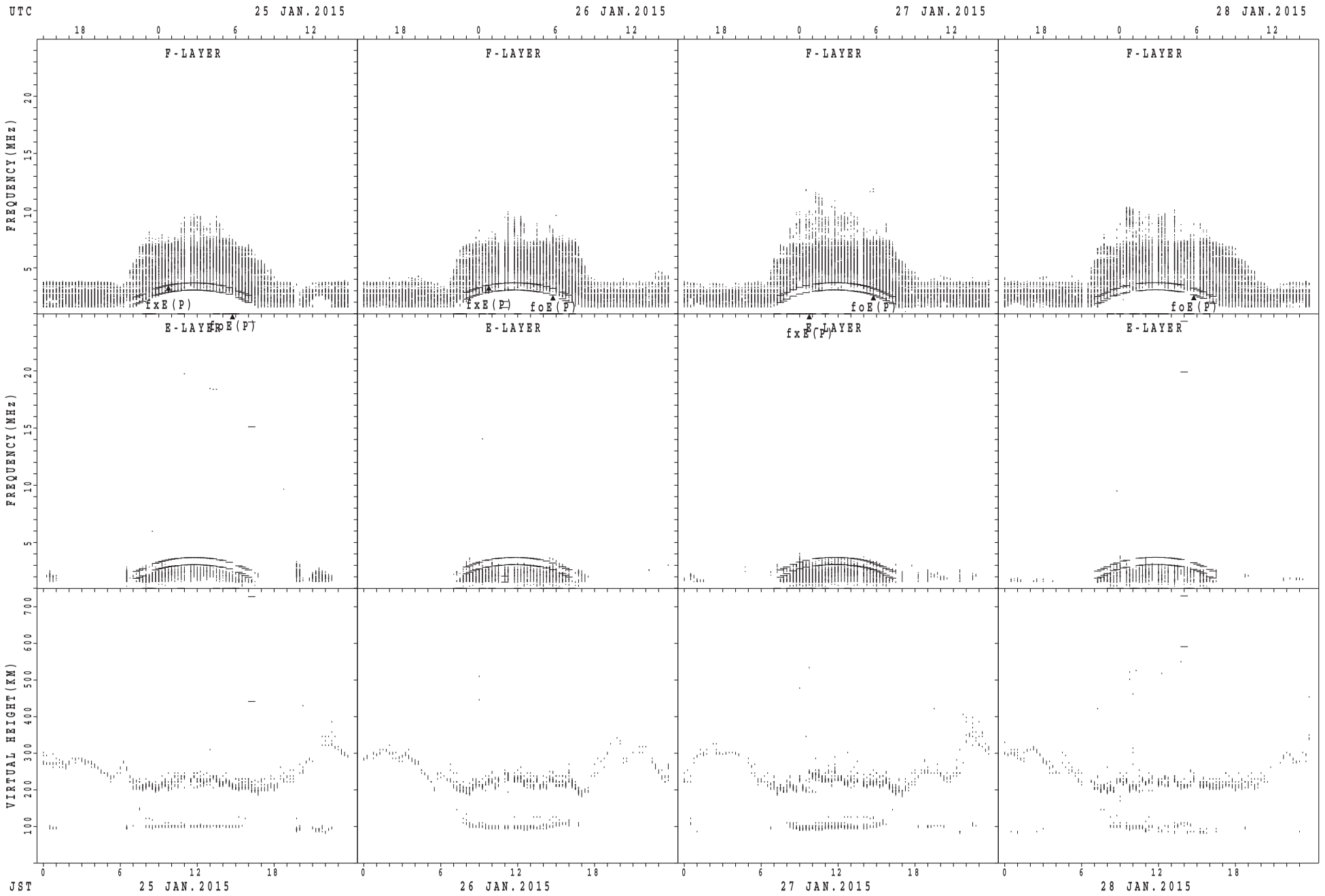
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



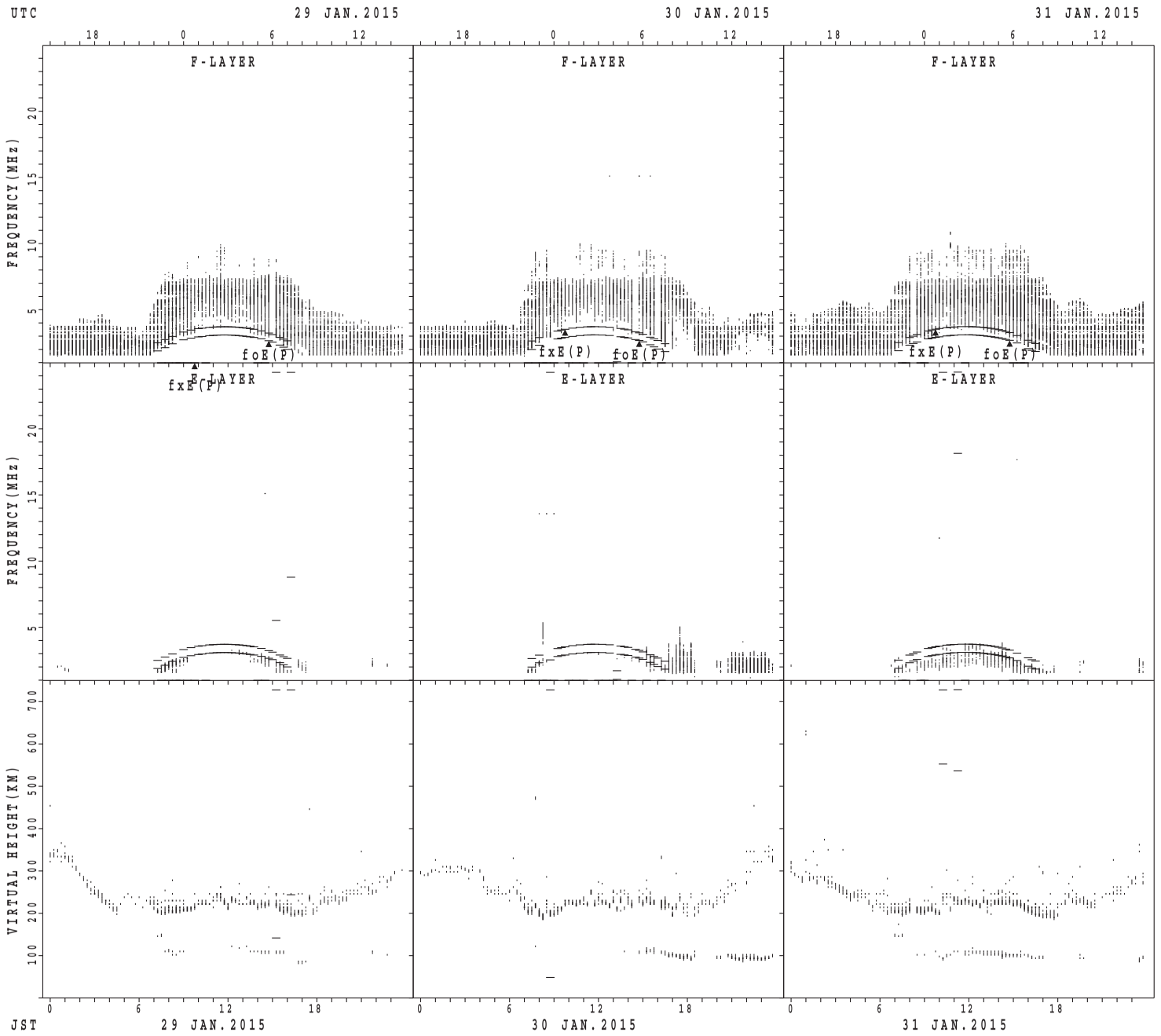
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



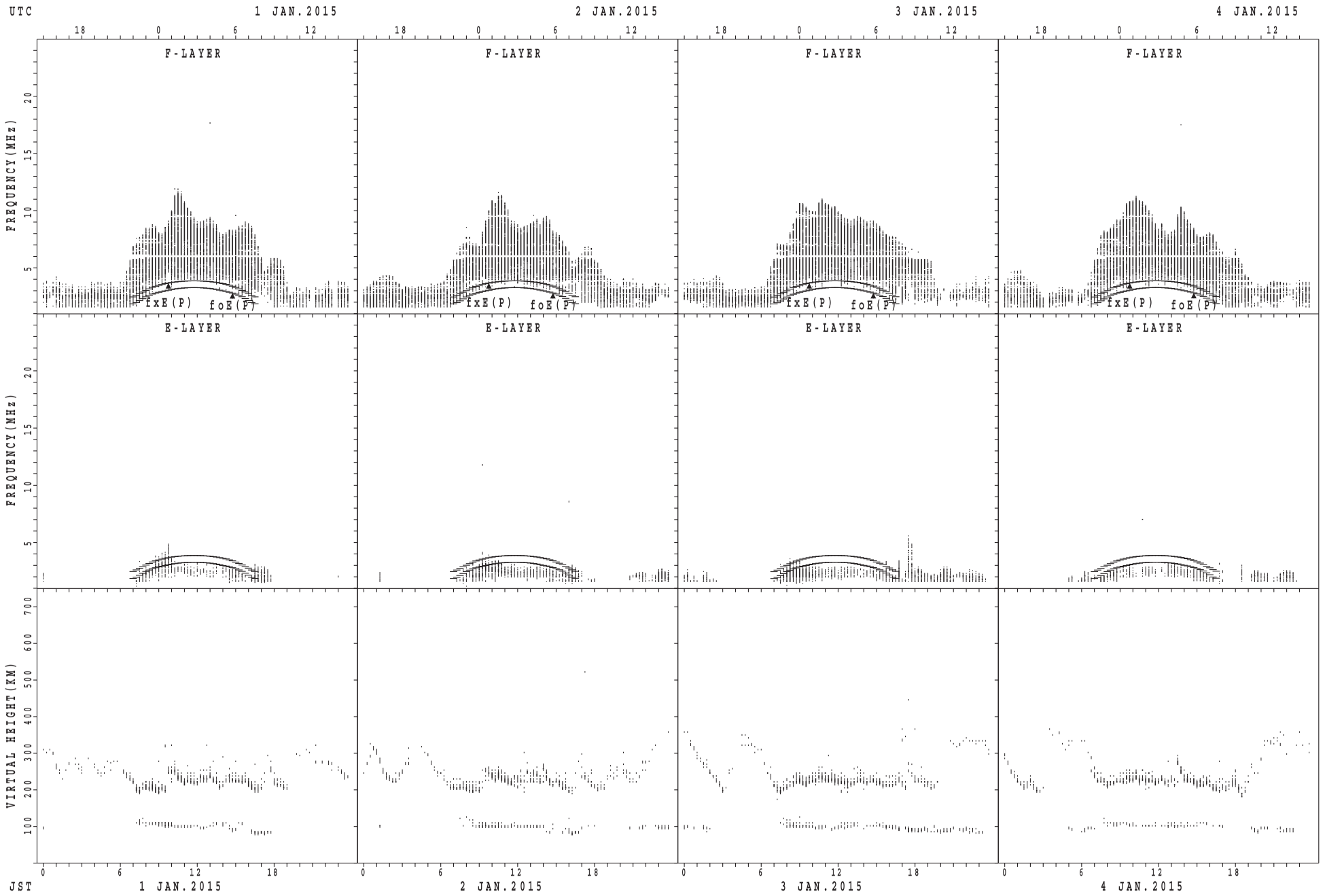
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



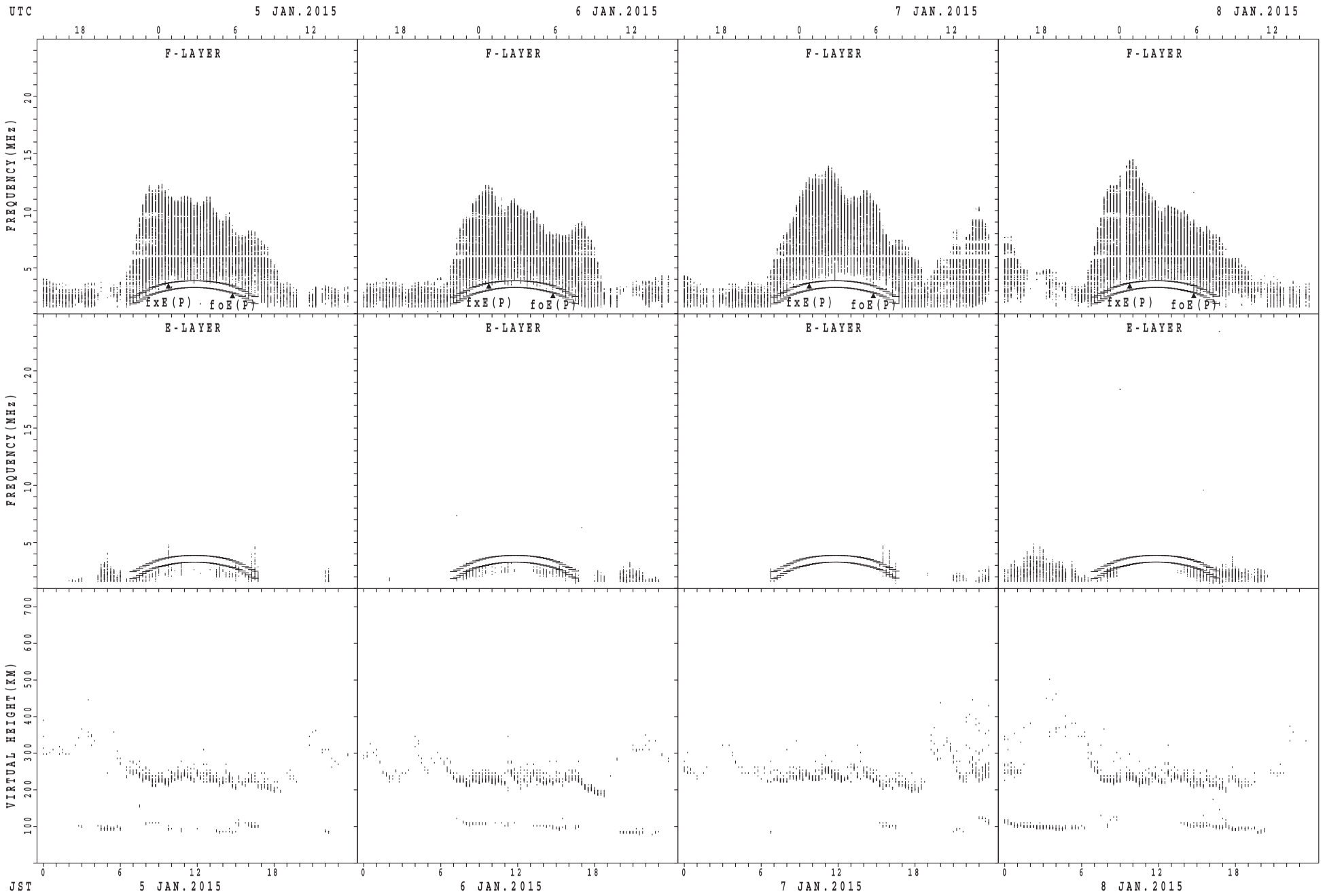
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



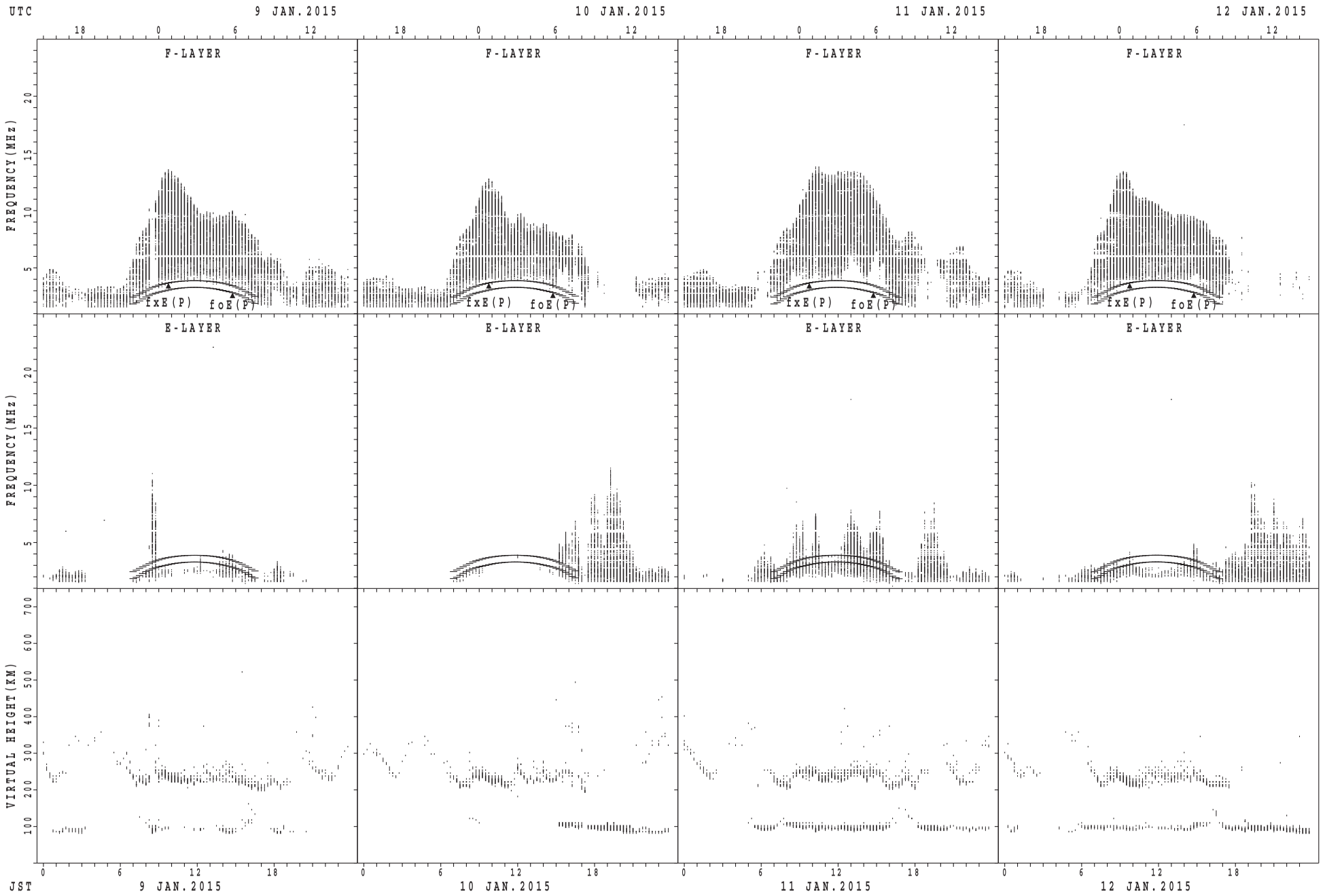
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



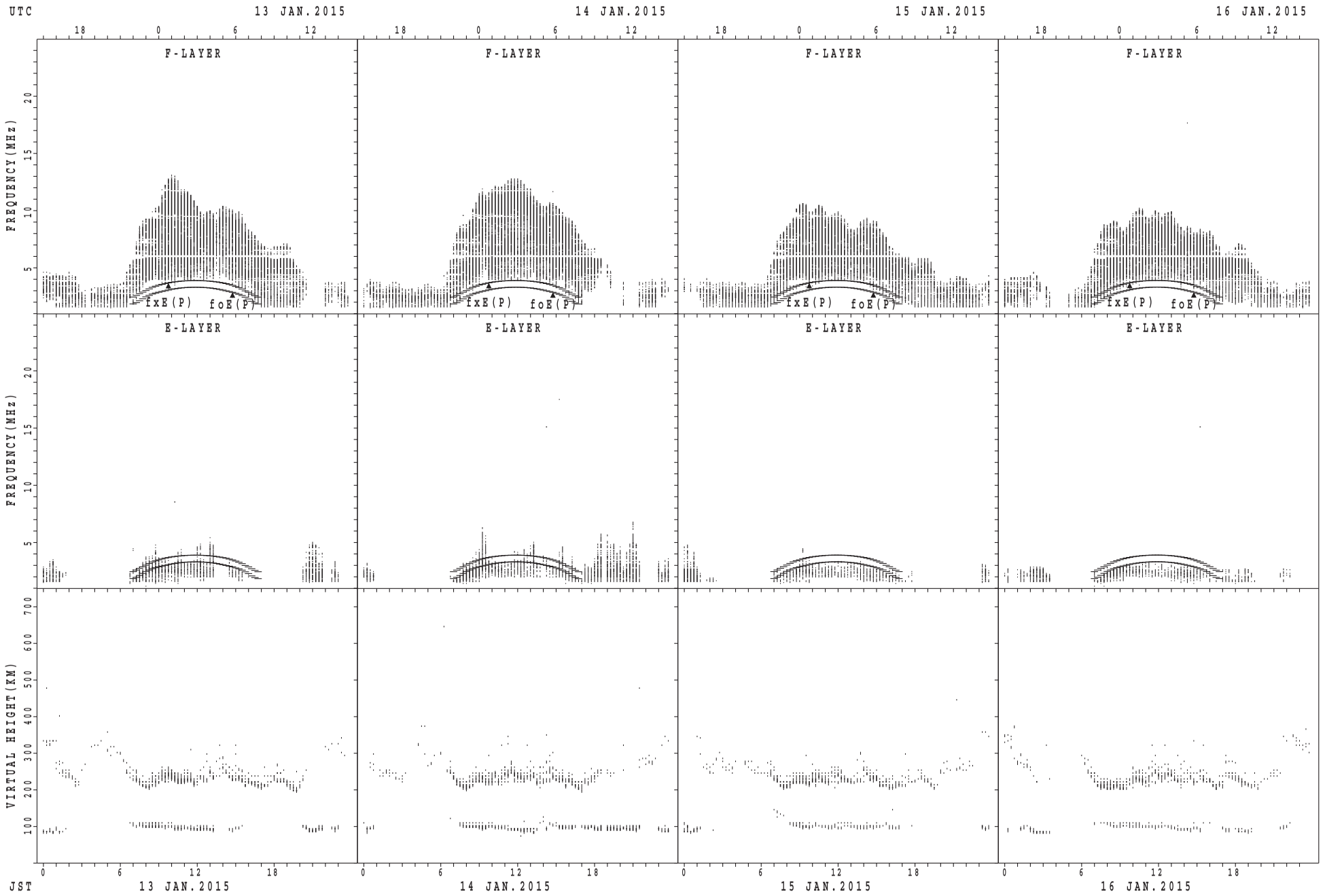
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



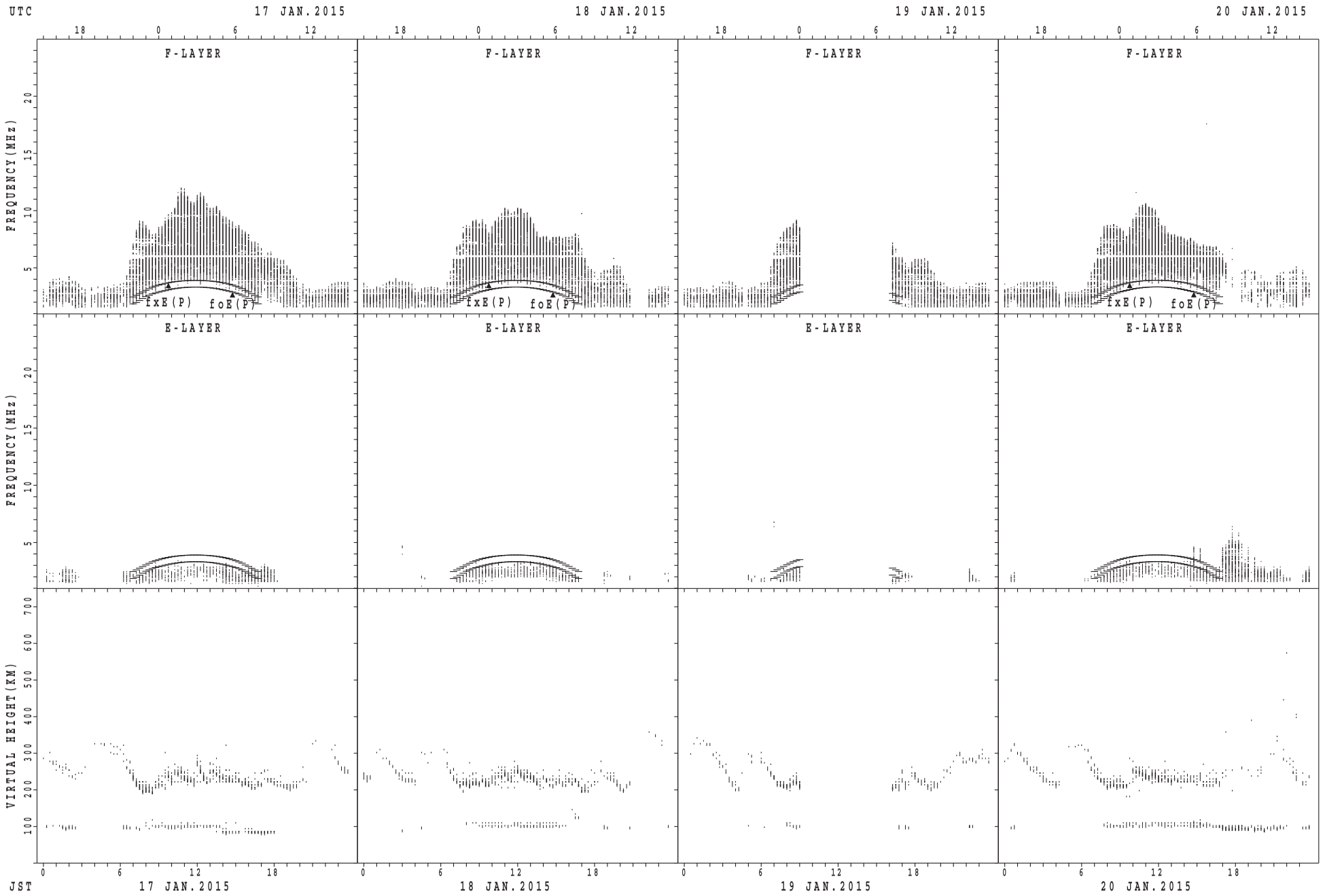
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



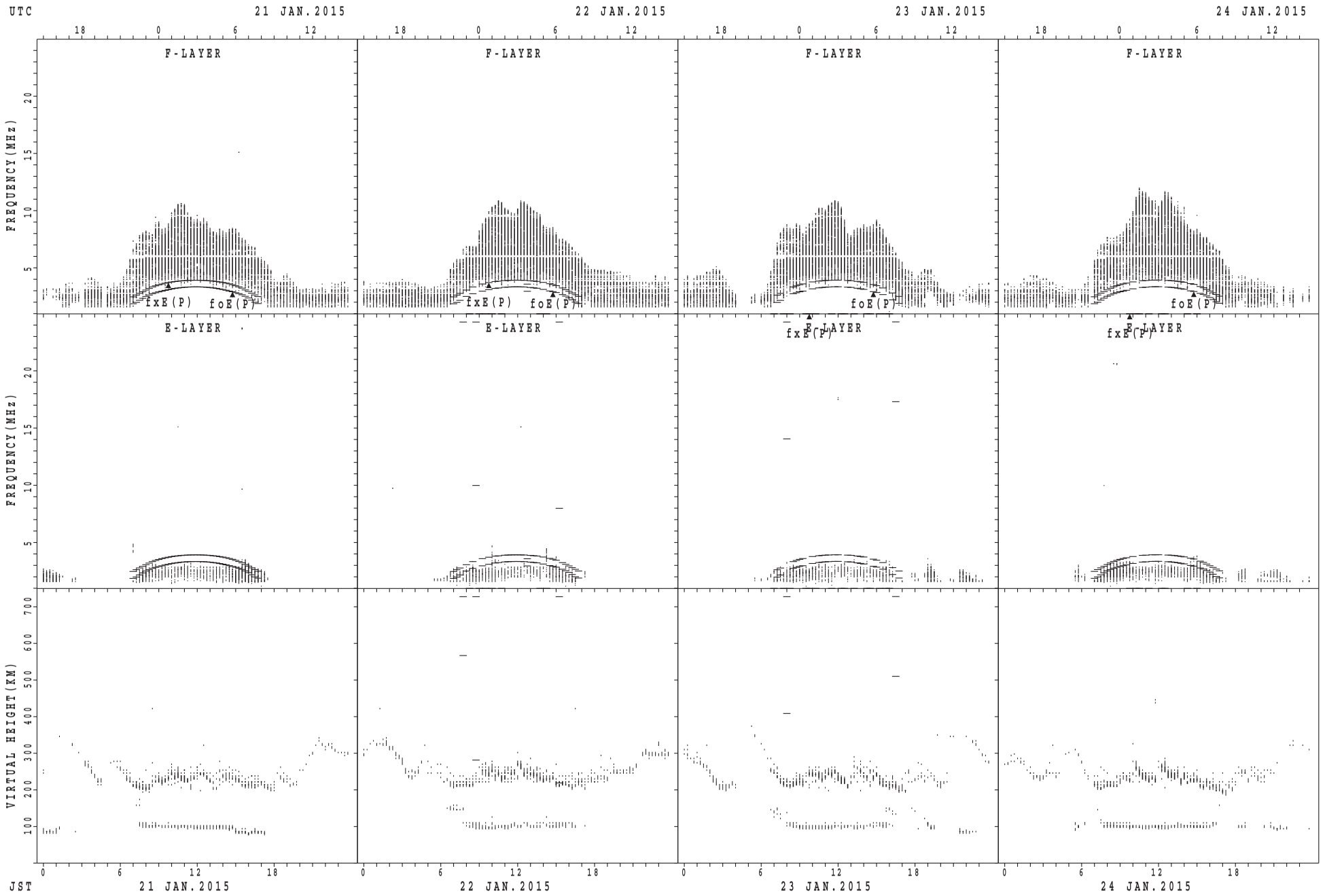
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



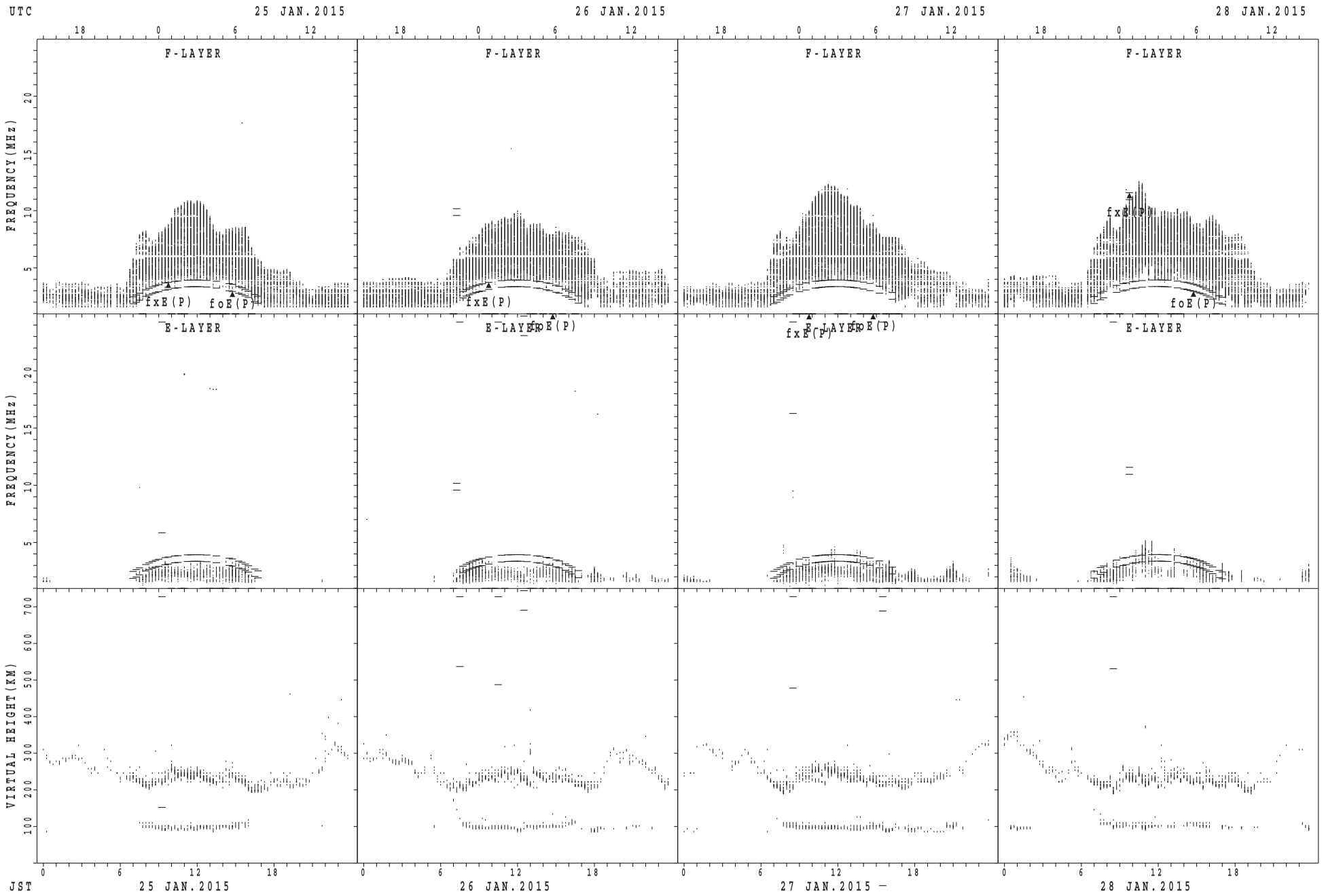
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



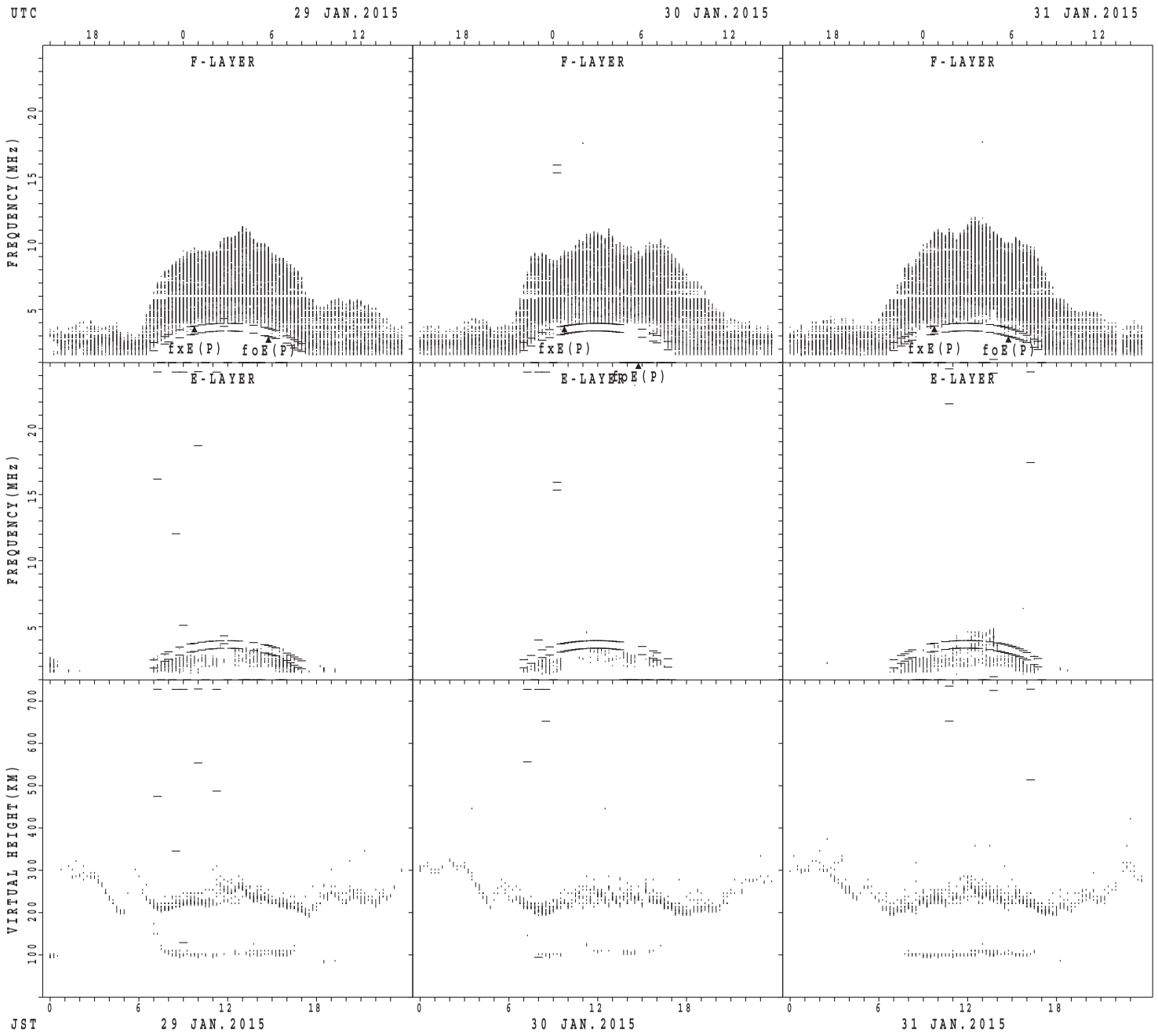
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



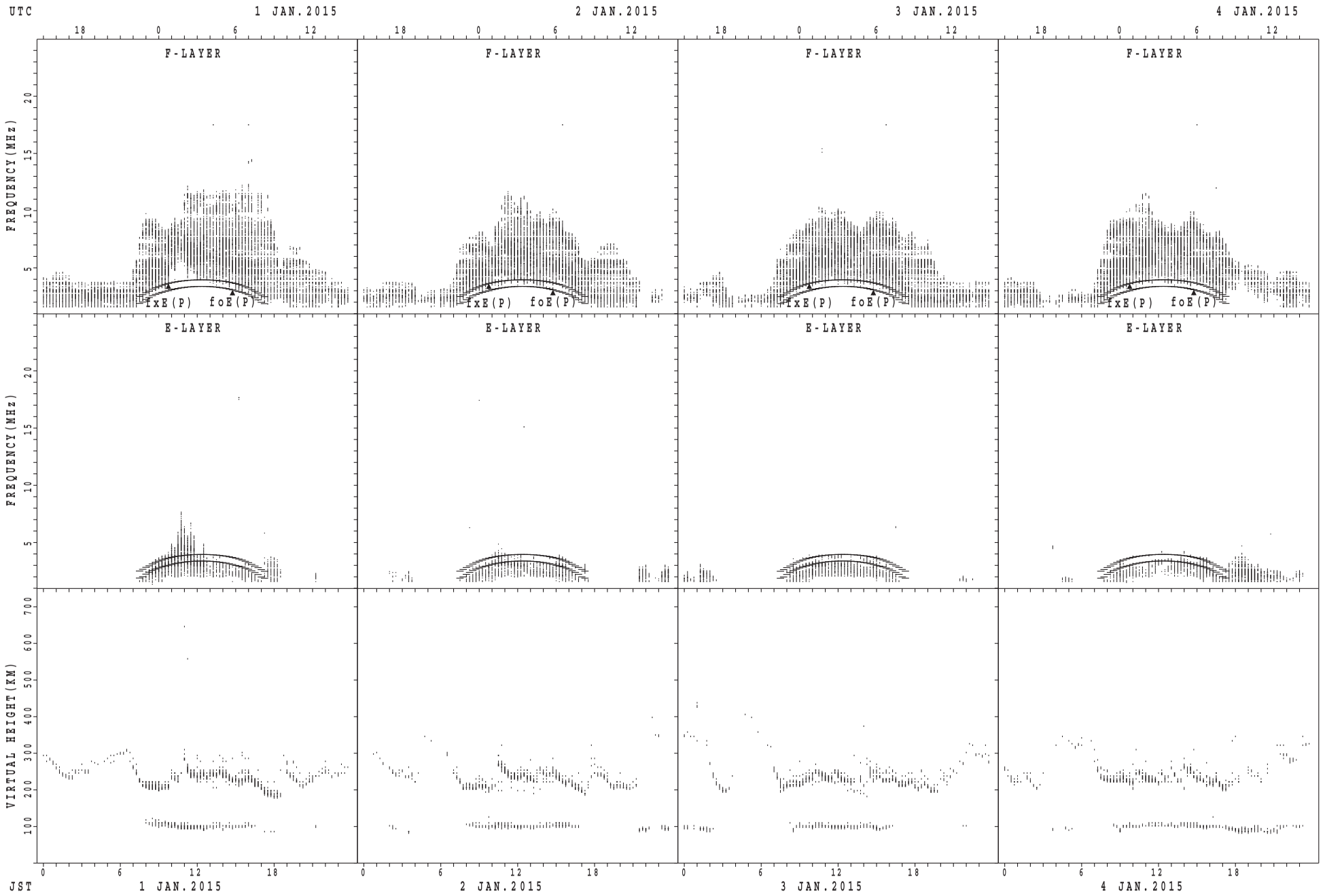
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



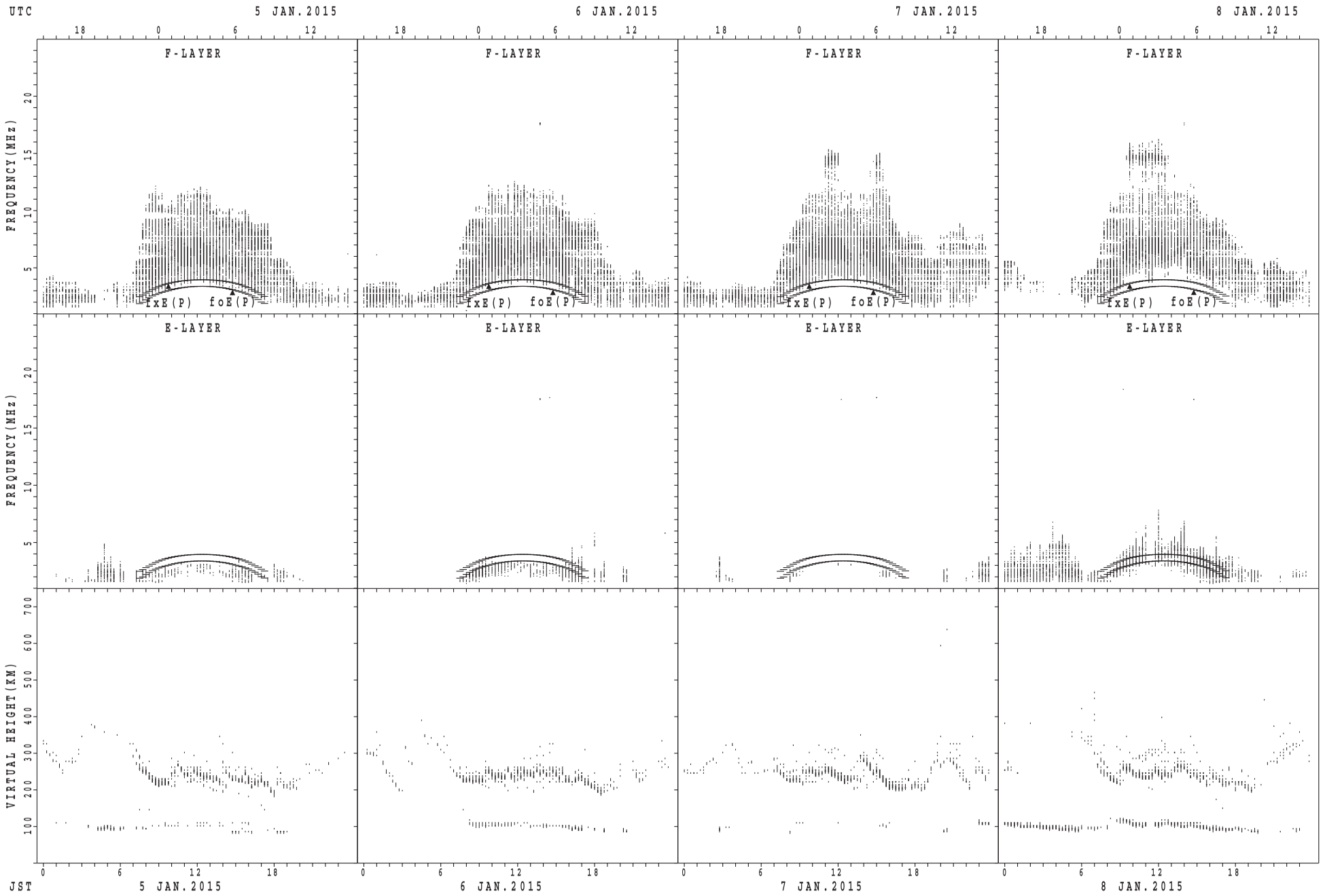
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



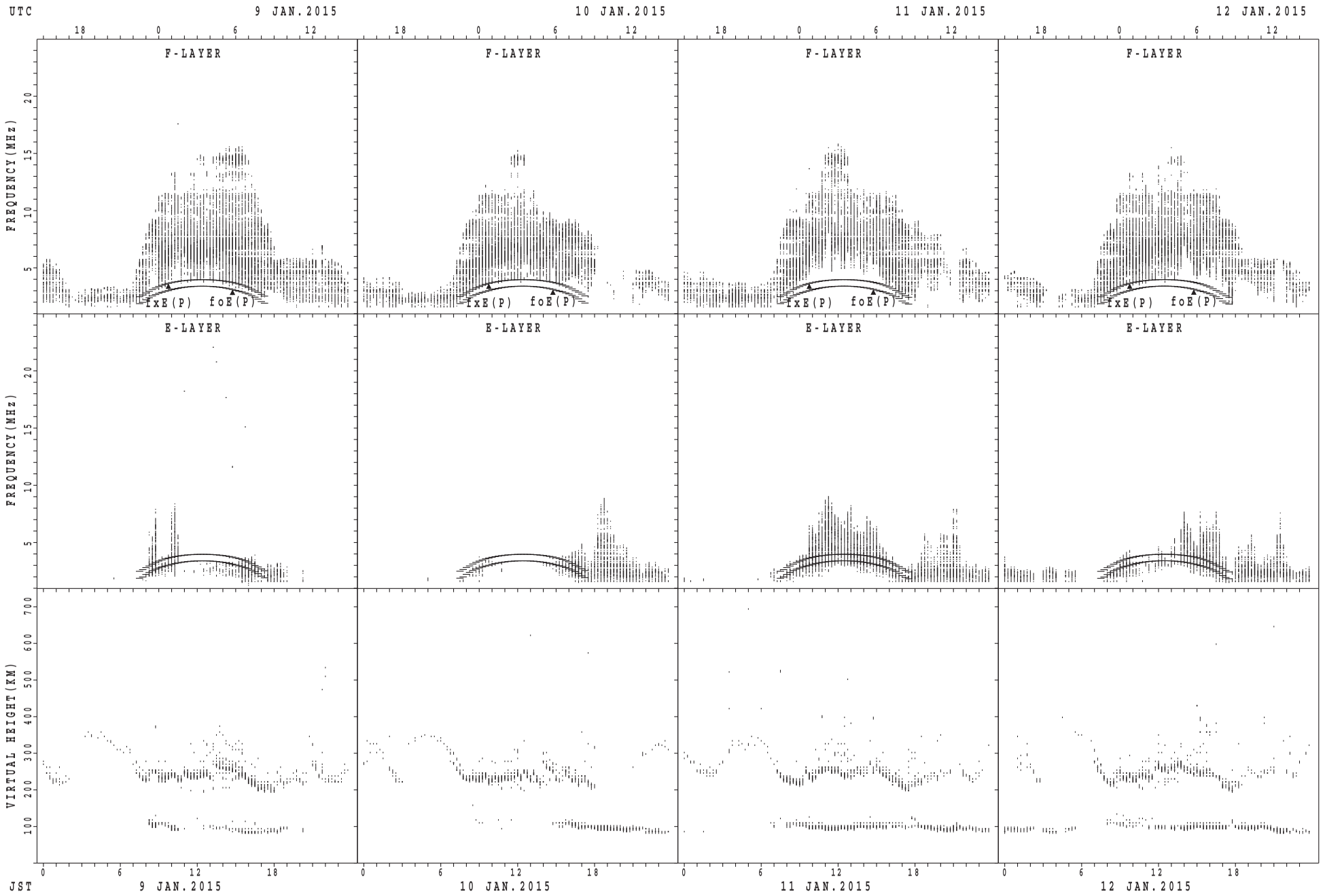
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



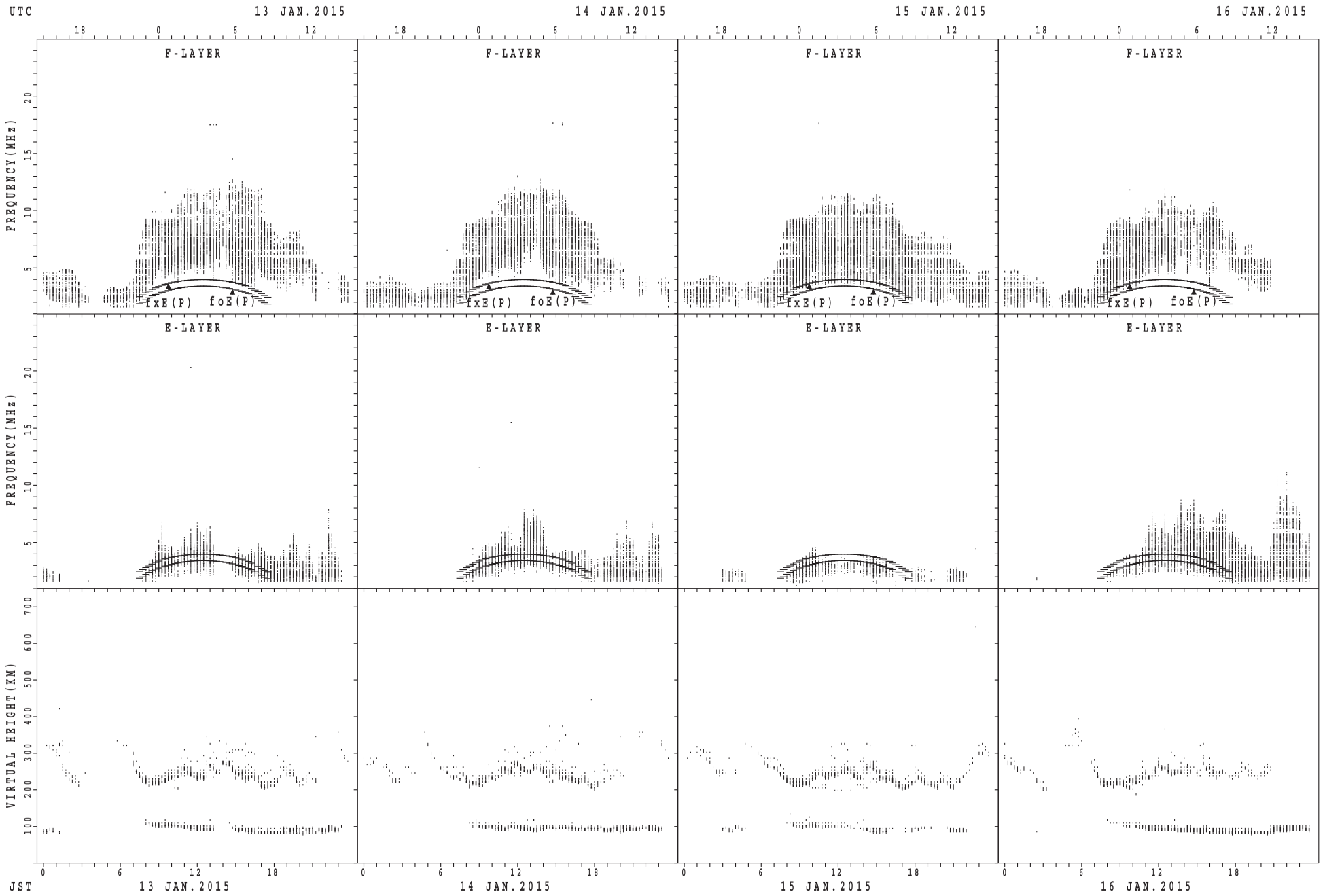
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



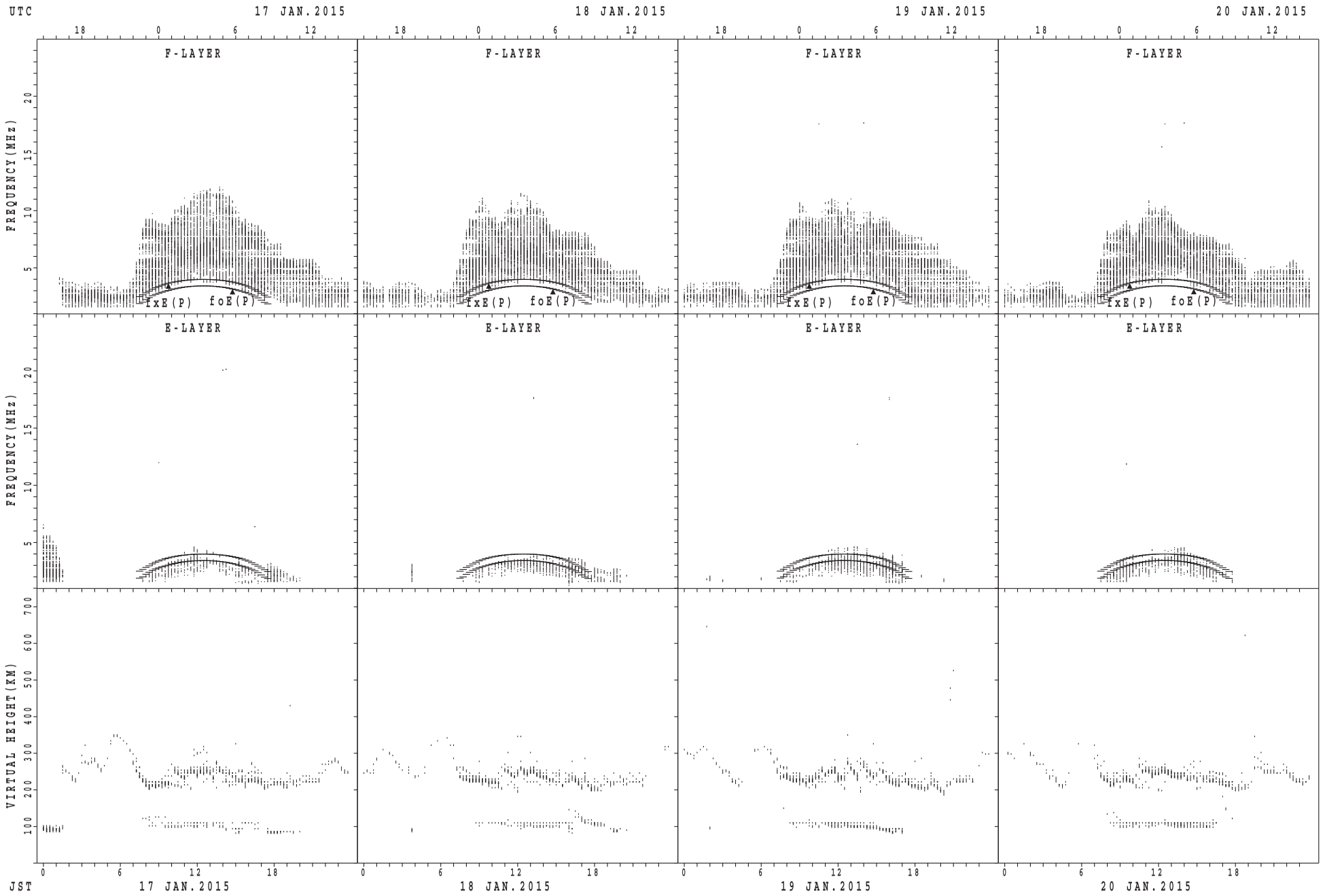
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



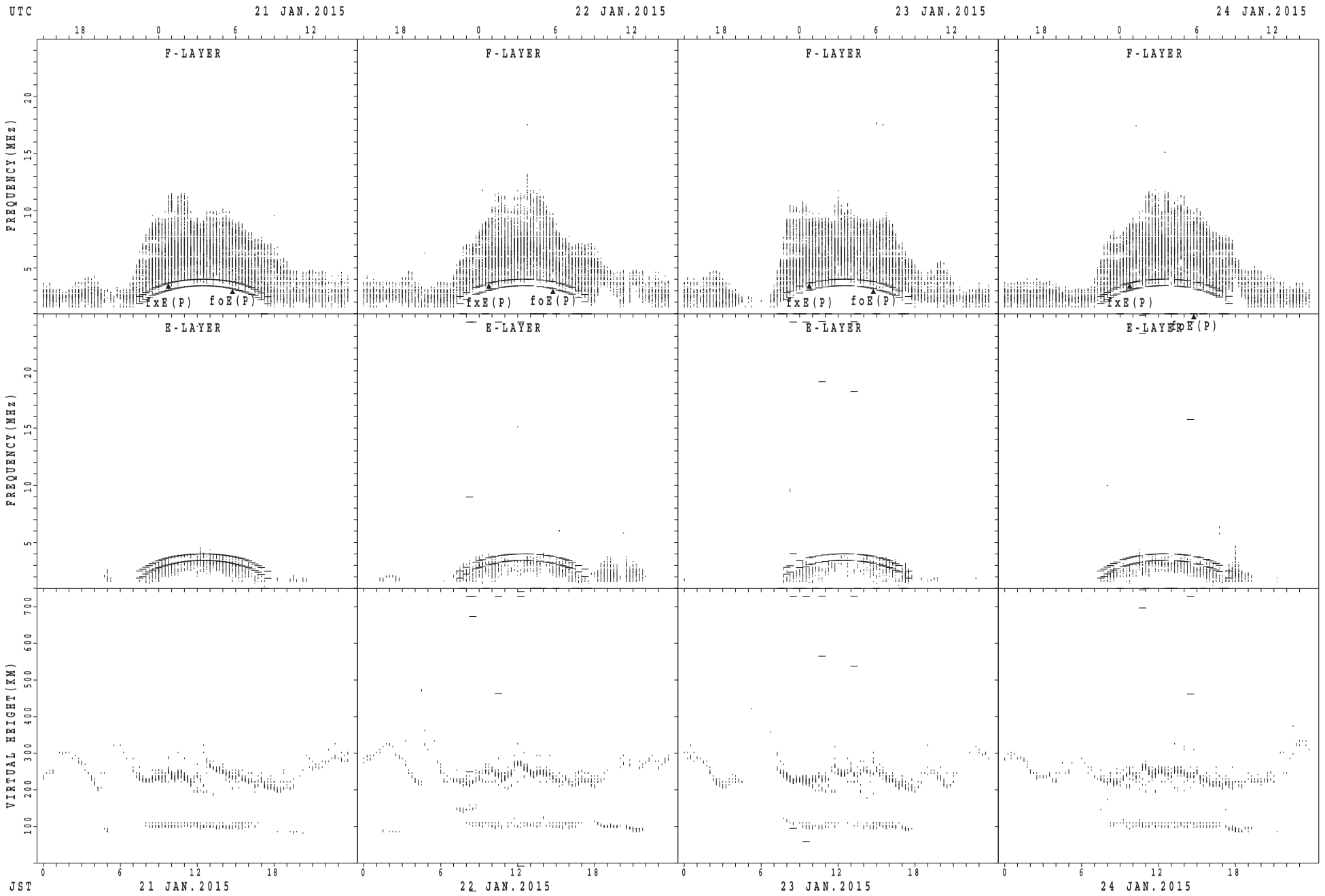
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



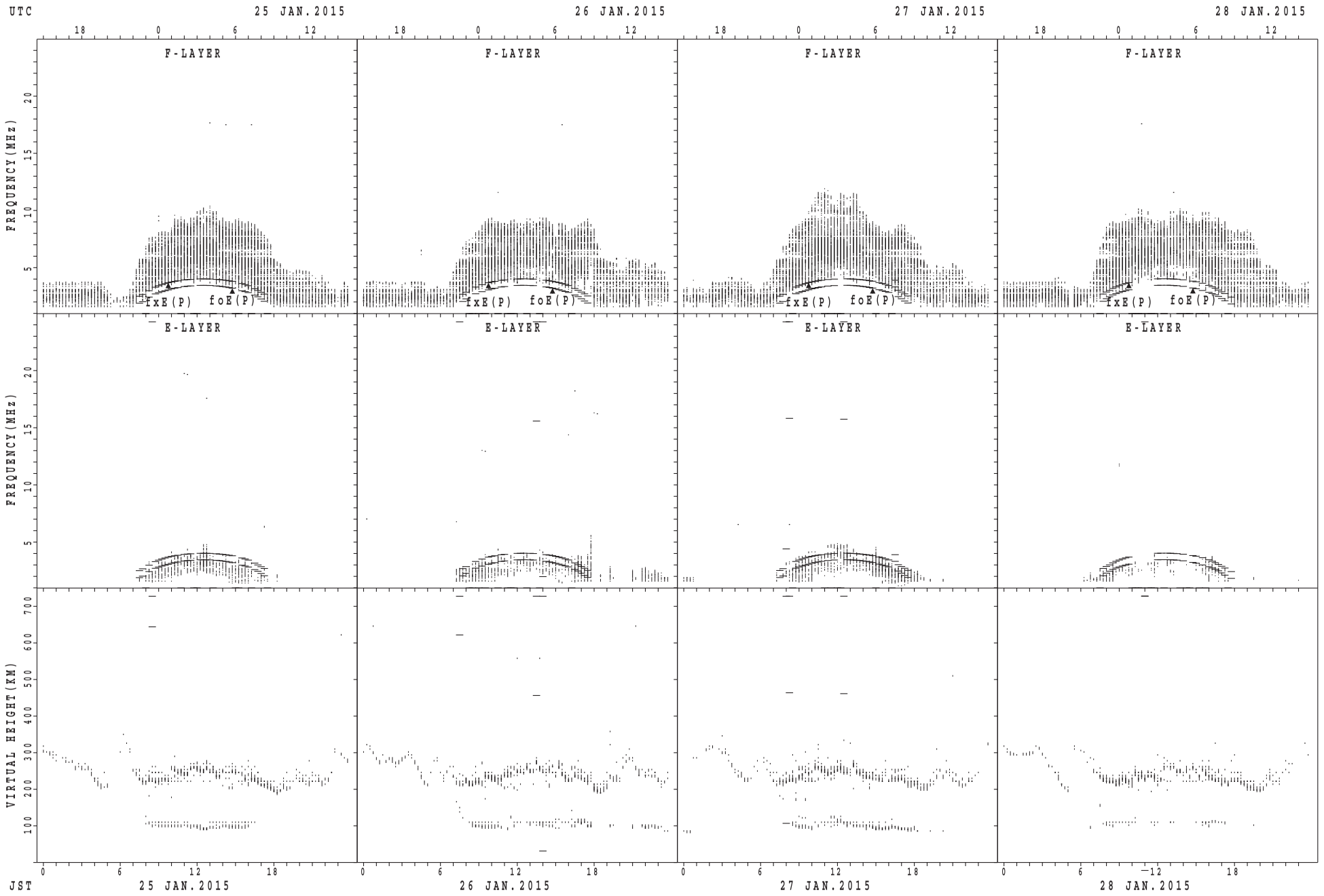
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



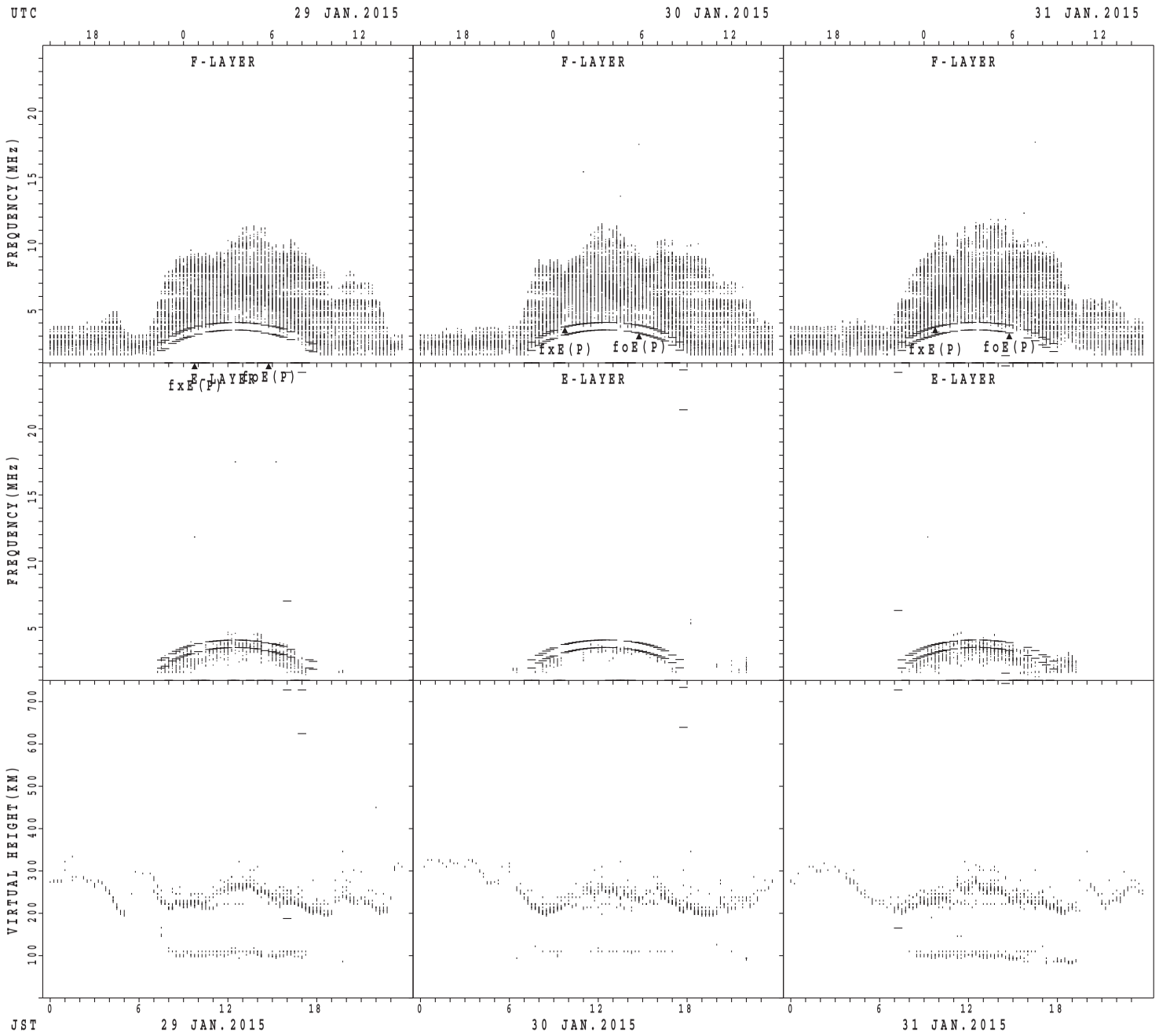
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



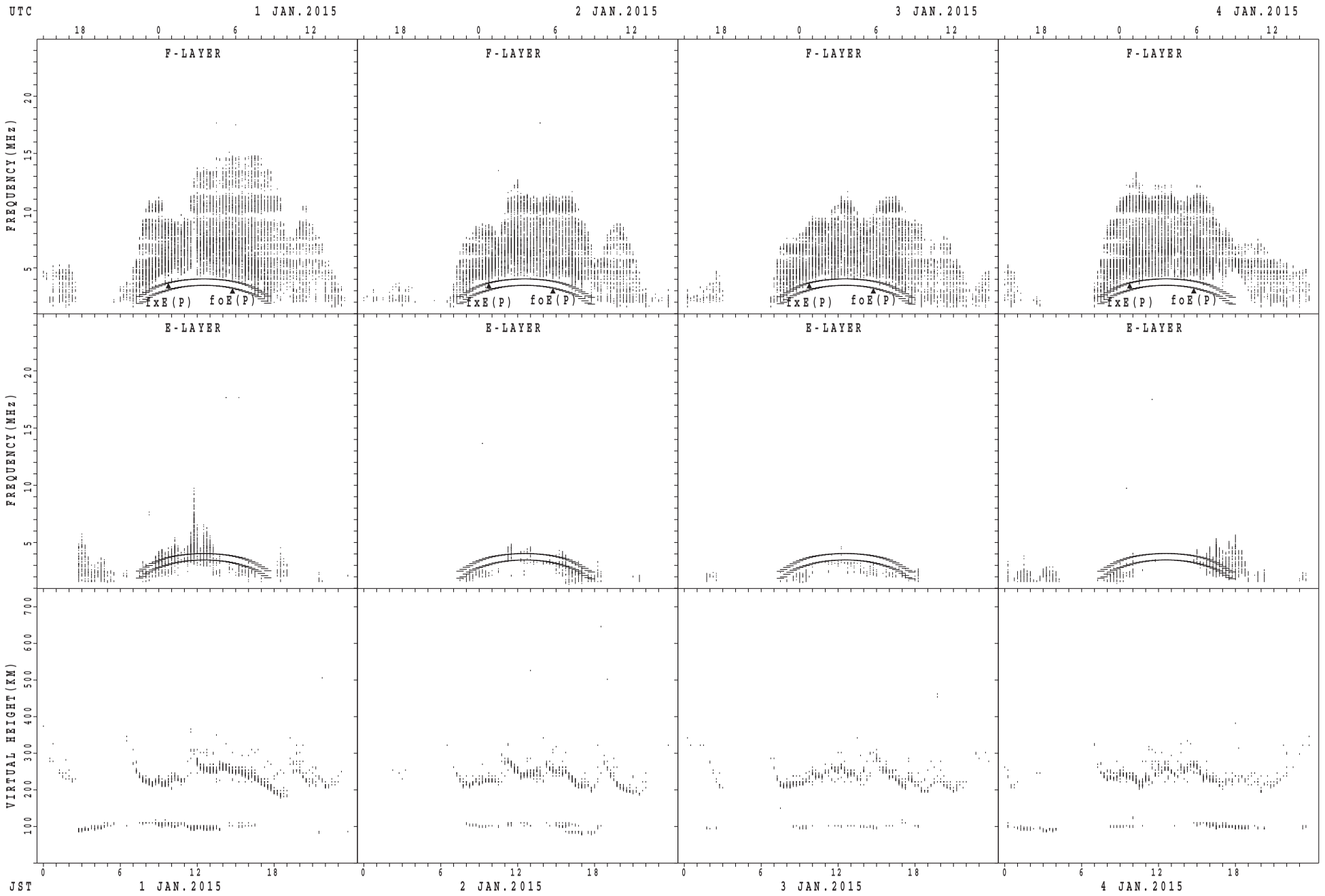
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



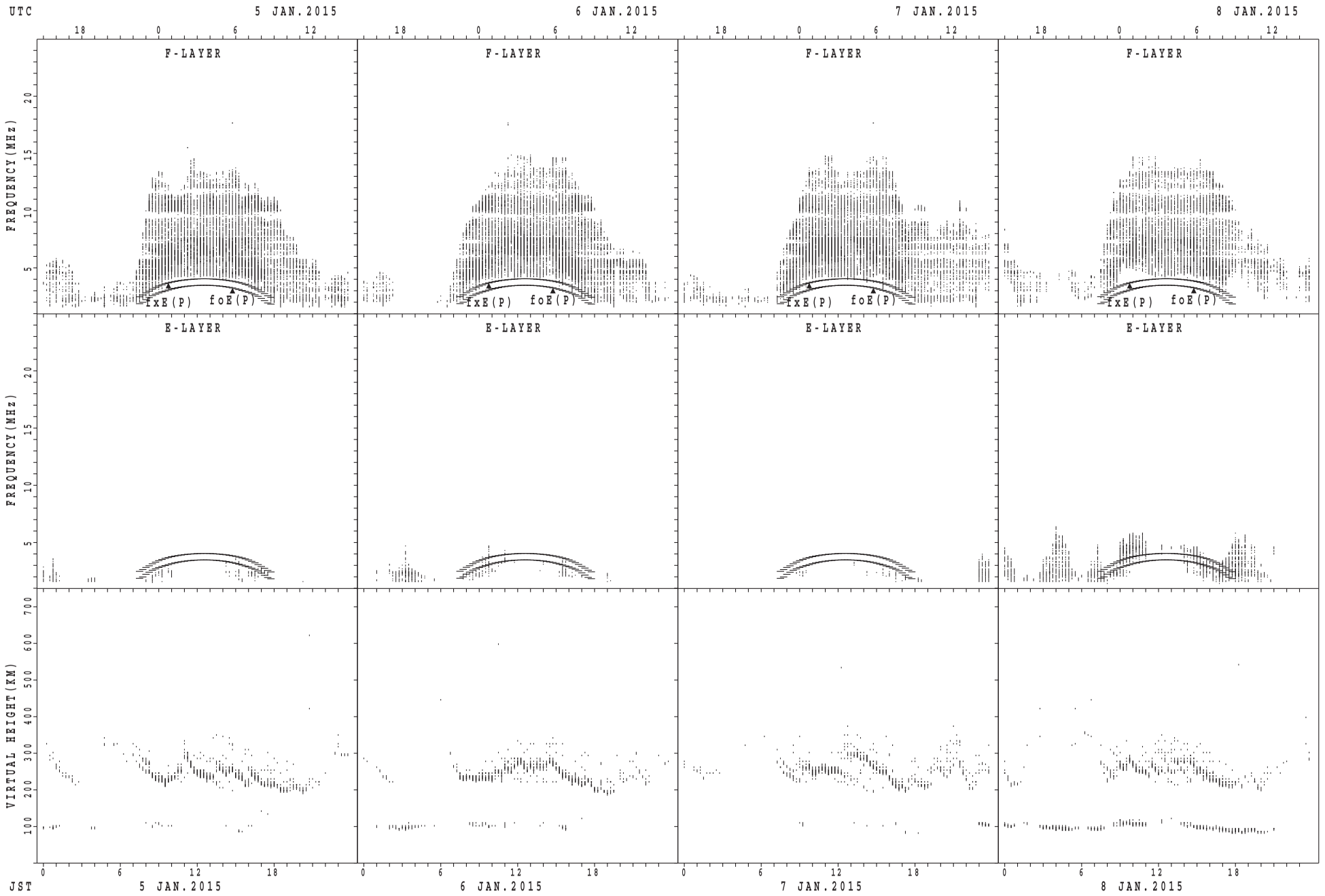
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



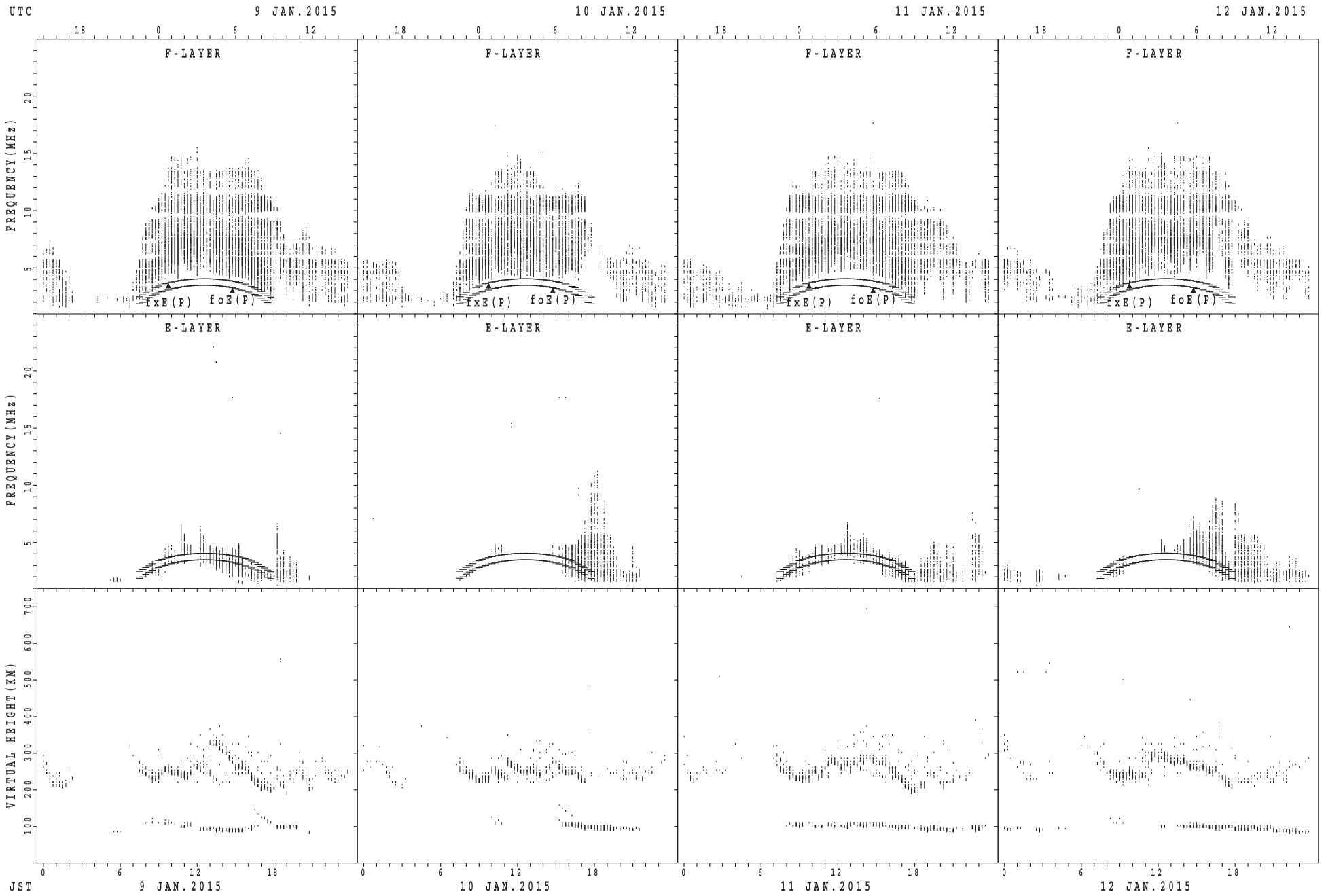
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



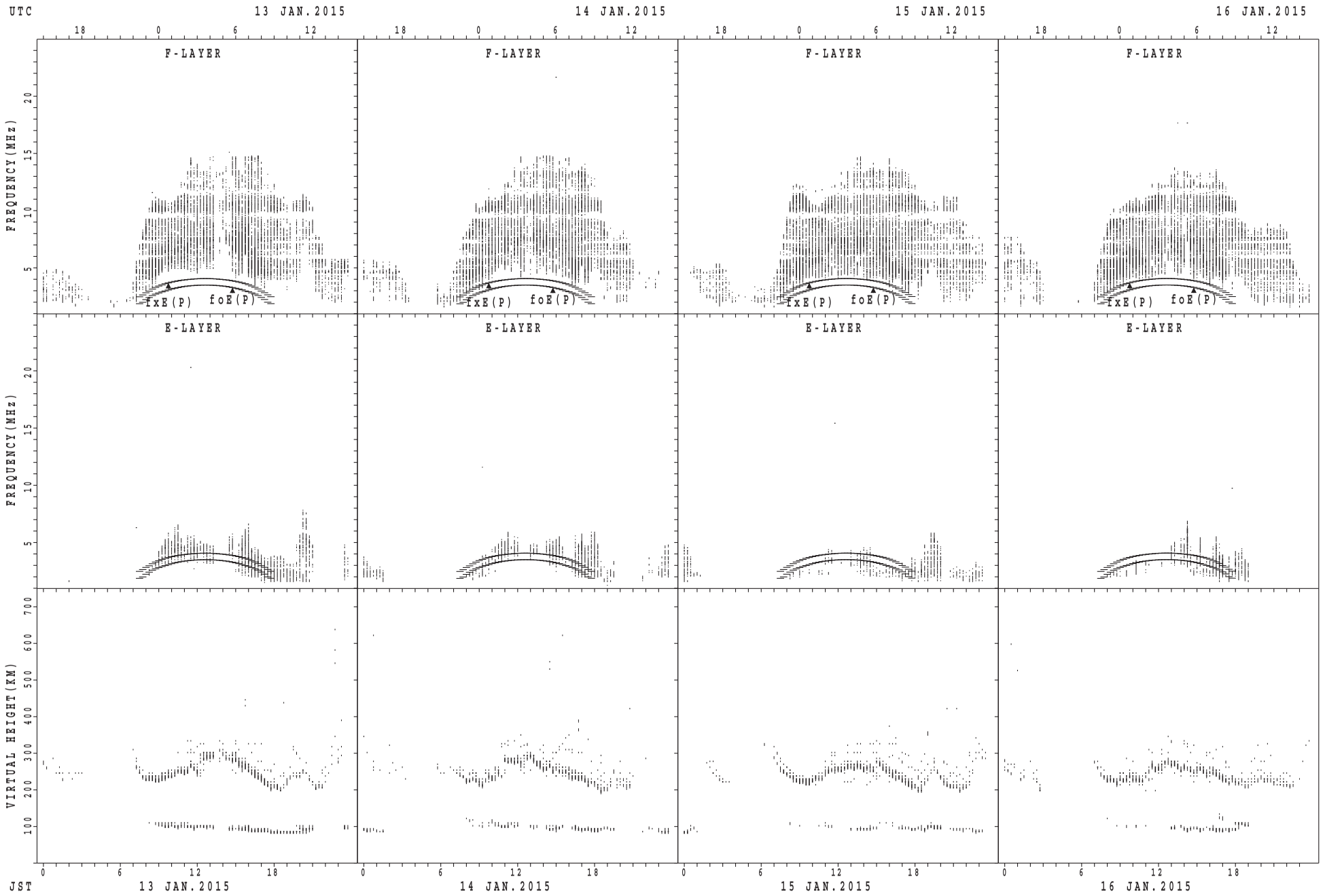
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



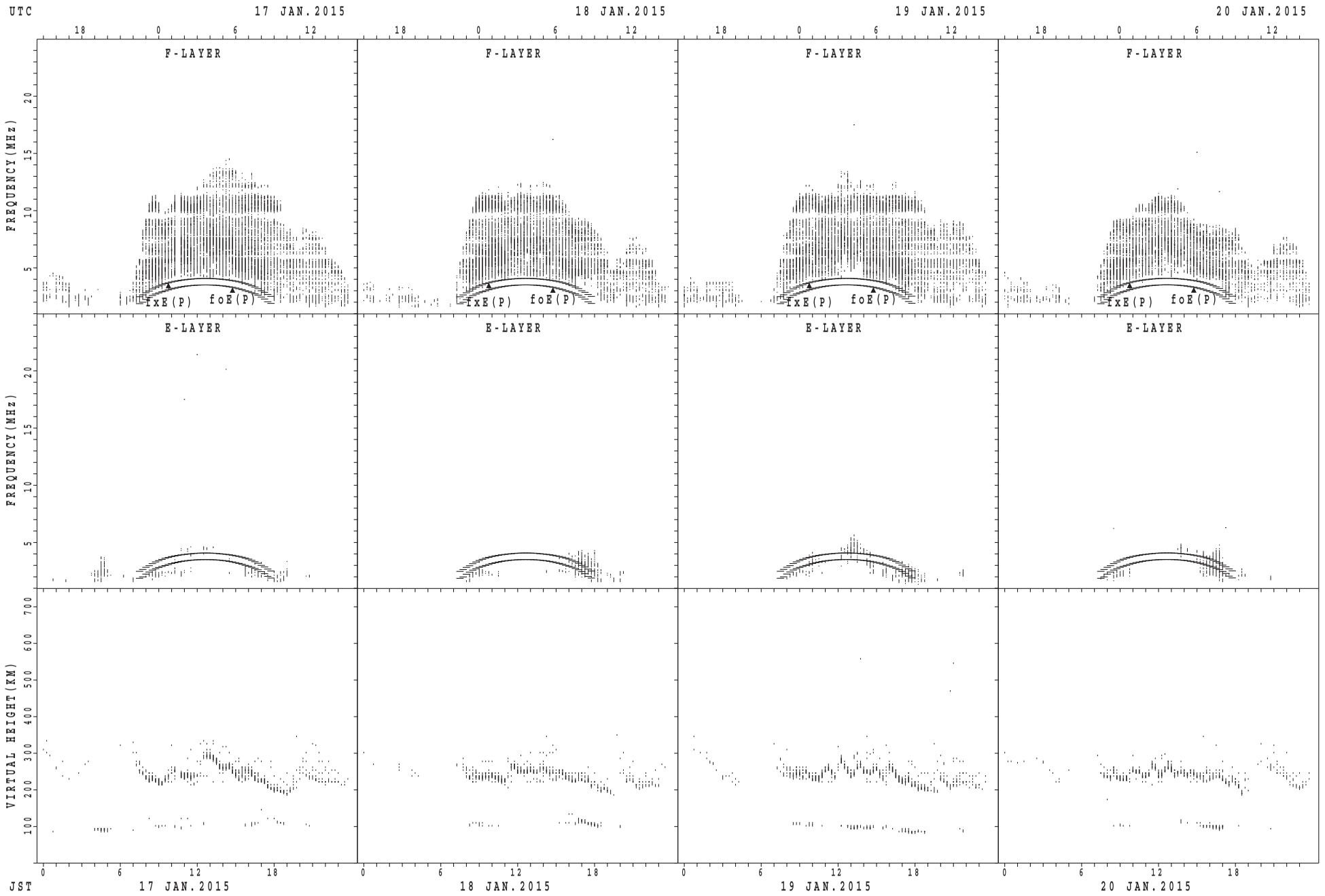
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



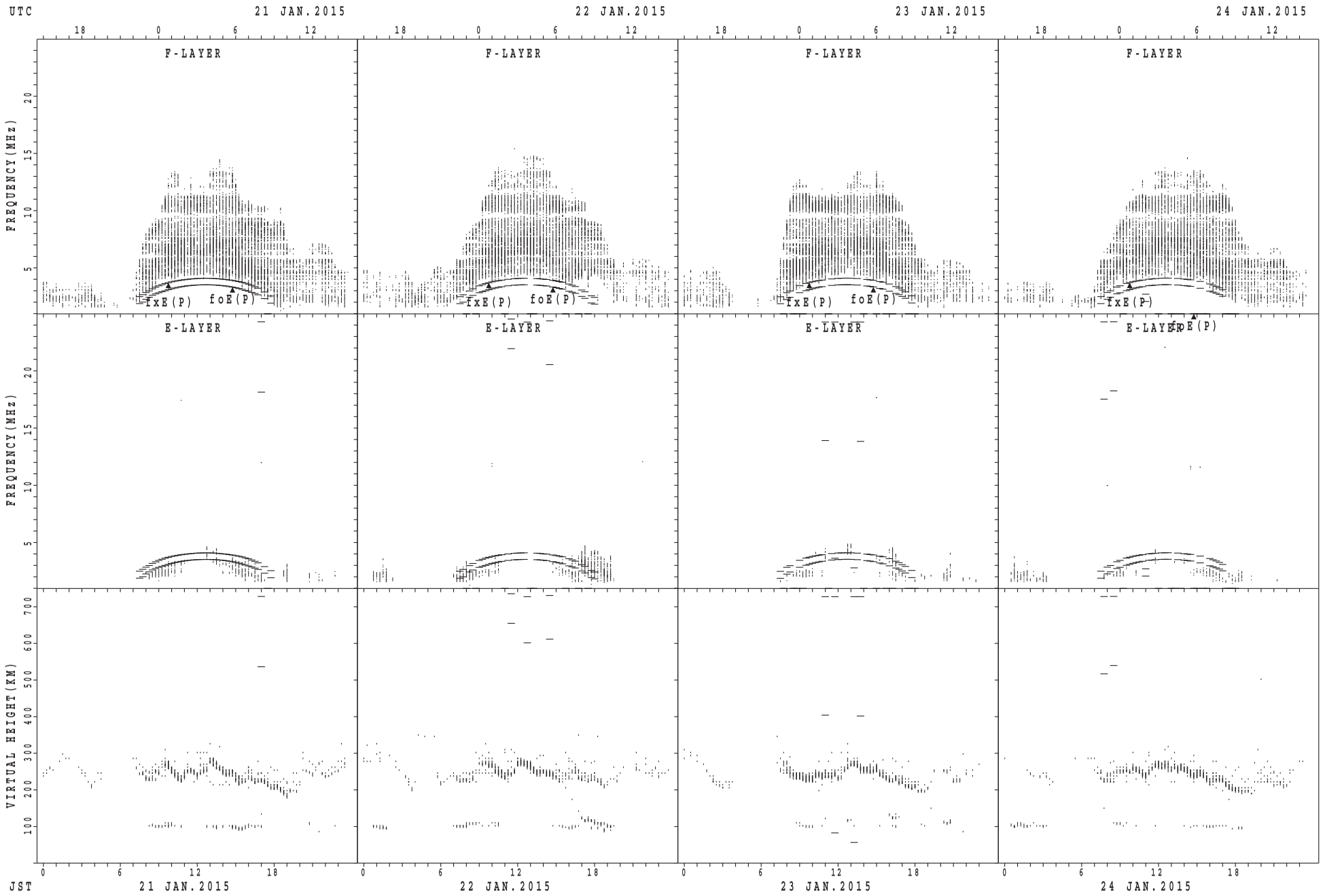
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



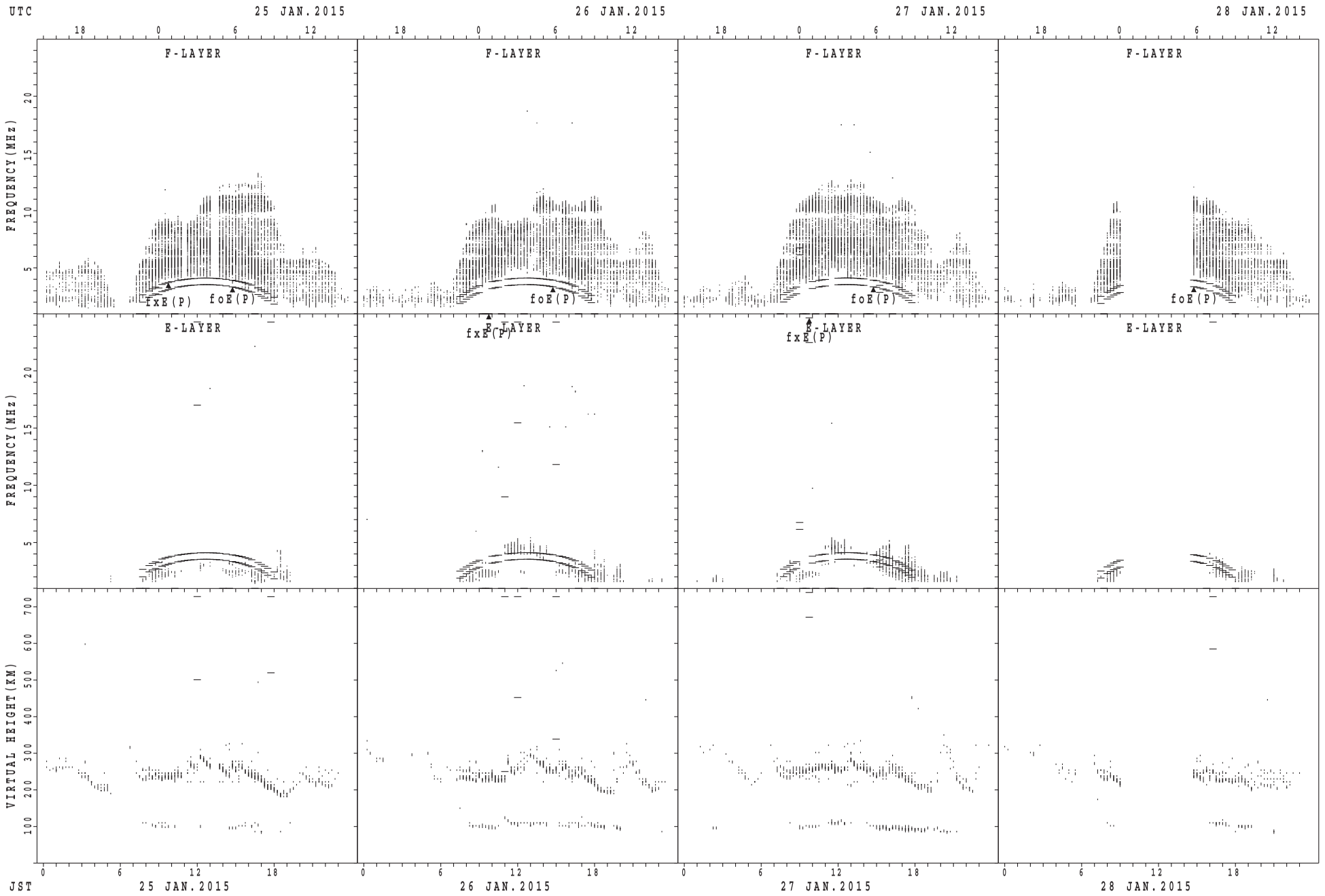
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



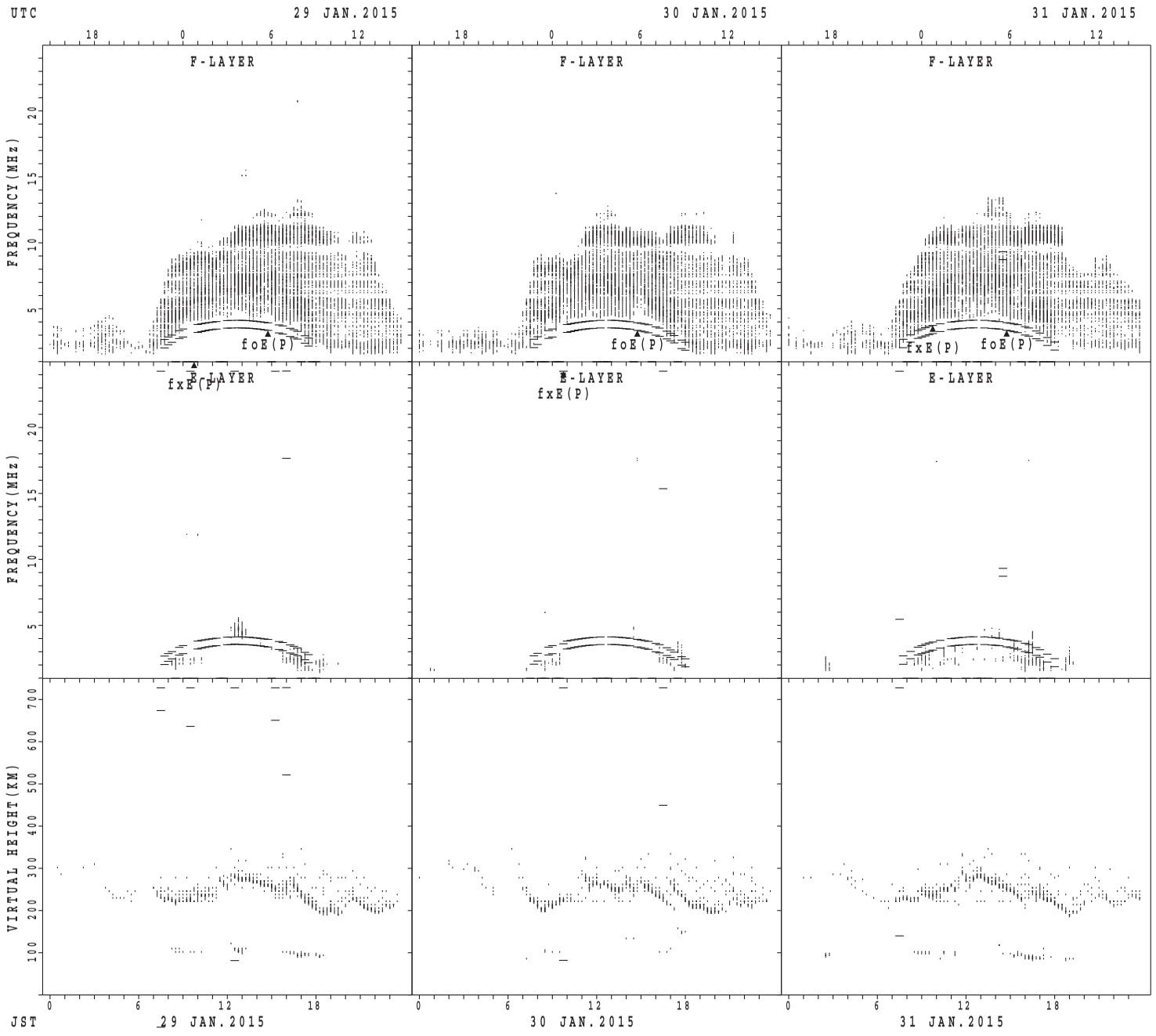
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

JAN.2015 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	25	30	31	30	29	29	28	28	15	3				1	1	
MED								244	222	222	222	222	230	230	235	230	238	238				386	346	
U Q								122	227	230	234	230	231	238	243	237	246	252				193	173	
L Q								122	214	214	218	218	222	228	226	223	224	214				193	173	

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	9	6	6	6	3	5	15	22	23	16	18	16	14	16	19	7	8	8	11	11	13	13	11
MED	92	93	97	99	104	103	103	105	112	113	109	104	107	107	103	113	91	96	98	99	97	97	91	93
U Q	98	96	97	105	111	105	142	123	143	119	116	115	114	113	109	121	105	106	103	103	97	100	98	95
L Q	89	92	91	91	97	99	97	99	97	103	101	89	98	105	101	101	89	90	94	95	91	92	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	1							4	29	31	30	30	27	29	29	29	25	10	3	1			1	1
MED	298							247	222	228	233	230	238	238	244	238	232	240	258	248			358	384
U Q	149							253	233	238	240	240	246	245	253	245	239	240	264	124			179	192
L Q	149							241	214	222	228	226	230	231	238	228	230	234	226	124			179	192

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	7	4	3	1	3	3	11	20	19	15	17	14	14	17	19	18	13	11	10	9	10	9	8
MED	98	95	95	89	97	105	97	111	112	105	105	103	104	102	101	105	105	97	95	97	95	95	93	96
U Q	110	99	100	99	48	115	103	149	122	111	107	105	107	105	108	105	111	100	99	107	103	97	95	99
L Q	93	91	92	87	48	97	95	99	106	103	101	98	97	97	98	101	99	91	91	95	91	89	90	92

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									25	31	30	31	21	21	30	31	31	23	11	4	2	1		1
MED									232	228	234	242	244	242	249	246	240	232	240	243	279	270		282
U Q									240	238	244	254	246	255	262	254	248	240	254	250	316	135		141
L Q									226	220	226	232	236	234	244	238	230	224	224	238	242	135		141

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	3	3	3	3	4	2	3	17	21	21	17	20	20	21	22	22	17	18	14	10	10	10	10
MED	95	95	95	95	97	94	96	105	115	107	107	107	106	101	103	103	103	97	95	92	95	94	94	96
U Q	104	109	105	99	99	96	97	153	134	114	117	108	107	108	105	105	105	115	97	97	103	97	97	99
L Q	89	93	93	91	87	92	95	95	111	105	103	99	100	101	101	95	95	95	89	89	93	91	91	93

MONTHLY MEDIANS OF h'F AND h'Es

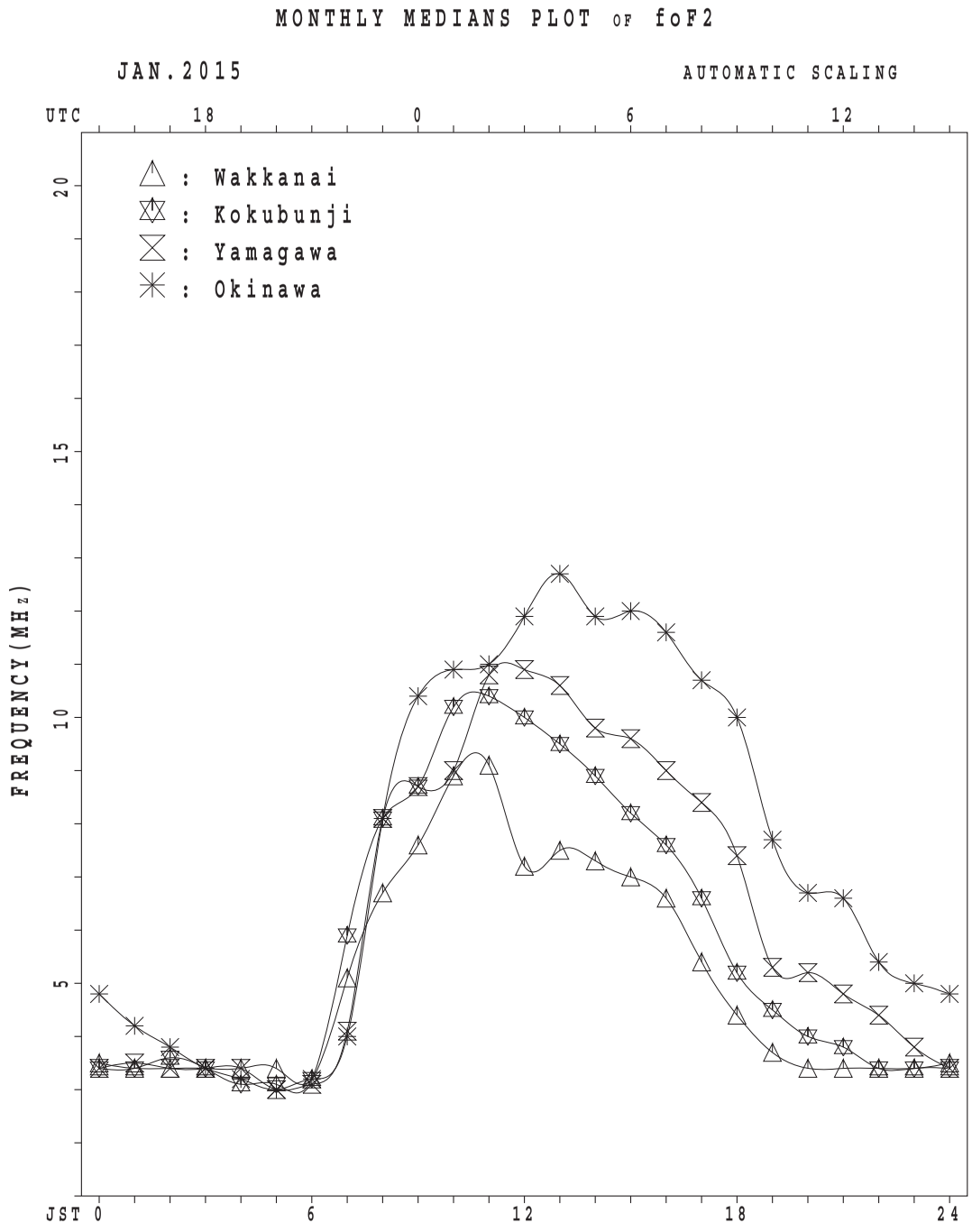
JAN.2015 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1								27	31	30	29	21	21	25	31	31	31	29	16	15	11	10	
MED	322								248	234	238	246	254	256	254	254	244	232	228	245	264	250	245	
U Q	161								262	246	246	262	266	278	270	262	254	248	243	267	274	278	256	
L Q	161								240	224	230	236	246	247	250	240	234	224	216	227	248	232	236	

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	7	3	5	5	2		2	5	18	11	10	7	12	10	12	18	22	16	17	9	7	1	4
MED	97	97	99	99	97	101		101	113	107	107	107	107	105	101	99	104	101	97	99	97	95	91	94
U Q	102	105	99	102	100	107		107	146	111	109	121	107	105	105	105	105	115	106	105	97	97	45	104
L Q	92	91	95	94	95	95		95	104	105	107	105	103	97	97	97	99	95	91	94	92	93	45	90


MONTHLY MEDIANS PLOT OF foF2
JAN.2015
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

JAN. 2015 fxI (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	X 45	X 46	X 47	X 43	X 44	X 41	X 36											X 61	X 45	X 36	X 34	X 35	X 37	X 37
2	X 40	X 40	X 38	X 37	X 37	X 35	X 33											X 66	X 41	X 35	X 35	X 40	X 42	X 39
3	X 40	X 40	X 43	X 44	X 41	X 35	X 36											X 68	X 68	46	X 49	50	X 50	50
4	X 50	X 53	X 56	X 48	X 41	X 39	X 39											X 61	X 47	X 37	X 34	X 35	X 37	X 37
5	X 39	X 38	X 39	X 39	X 42	X 42	X 44	74										X 66	X 54	X 32	X 42	X 50	X 52	X 51
6	X 51	X 51	X 50	X 51	56	X 50	X 51	63										X 74	X 66	57	40	50	54	X 51
7	X 49	X 47	49	X 39	X 39	X 38	X 35											X 76	X 51	X 39	91	94	96	94
8	74	54	A	A	37	39	X 30											X 63	X 54	X 47	X 32	X 34	X 37	X 41
9	X 44	X 42	X 41	X 41	X 43	X 43	X 41											X 62	X 47	X 39	X 36	X 36	X 36	X 35
10	X 37	X 36	X 36	X 36	X 37	X 36	X 36											X 53	X 47	X 39	X 41	46	46	50
11	X 51	X 51	X 55	X 52	58	66	69											X 62	X O 47	X 41	X 41	X 44	45	X 42
12	X 36	X 38	X 40	X 39	X 39	X 39	X 38											X 60	X 53	X 38	X 37	X 39	X 37	X 39
13	X 40	X 43	X 42	X 42	X 44	X 43	X 41											X 73	X 59	X 43	X 39	X 39	X 39	X 37
14	X 39	X 42	X 43	X 40	X 40	X 37	X 37											X 70	X 61	X 49	X 36	A	X O 39	X 39
15	X 39	X 39	X 39	X 39	X 41	X 40	X 40											X 58	X 58	X 42	X 39	X 38	X 39	X 40
16	X 40	X 40	X 43	X 46	X 39	X 34	X 35											X 67	X 69	X 52	X 42	X 40	X 41	X 41
17	X 43	X 45	X 42	X 41	X 44	X 44	X 44											X 57	X 54	X 54	X 31	X 31	X 37	X 39
18	X 39	X 42	X 42	X 40	X 39	X 39	X 37											X 48	X 50	X 46	X 36	X 35	X 39	X 41
19	X 40	X 40	X 40	X 40	X 42	X 41	X 37											X 62	X 54	X 47	X 36	X 34	X O 36	X 38
20	X 38	X 39	X 40	X 43	X 39	X 39	X 39											X 55	X 54	X 52	X 47	X 46	X 50	X 54
21	X 49	X 47	X 47	X 46	X 43	X 43	X 38											X 53	X 49	X 42	X 36	X 35	X 40	X 40
22	X 40	X 42	X 44	X 47	X 49	X 50	X 30												X 48	X 45	X 44	X 45	X 49	X 50
23	X 50	X 50	X 51	X 54	X 42	X 36	X 36											X 56	X 51	X 50	X 35	X 41	X 43	X 46
24	X 48	X 50	X 51	49	49	37	X 31											X 53	X 44	X 41	X 36	X 37	X 38	X 38
25	43	X 44	X 42	X 42	X 42	X 38	X 37											X 61	X 48	X 40	X 37	X 38	X 39	X 39
26	X 42	X 42	X 44	X 43	X 44	X 44	X 37												X 43	X 42	X 42	X 43	X 44	X 50
27	X 45	X 39	X 39	X 38	X 40	X 40	X 40											X 62	X 49	X 46	X 48	X 43	X 43	42
28	X 45	X 46	X 44	X 46	X 43	X 44	X 40												X 72	X 54	X 43	X 37	X 40	X 42
29	X 41	X 43	X 46	X 47	X 45	X 39	X 37												X 53	X 52	X 48	X 45	X 43	X 42
30	X 43	X 43	X 43	X 43	X 43	X 41	X 37												X 68	X 54	X 48	X 48	X 49	X 49
31	50	X 48	X 52	X 55	X 55	X 56	X 53												X 56	X 58	X 58	X 51	X 51	X 51
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	31	31	31	2										25	31	31	31	30	31	31
MED	X 43	X 43	X 43	X 43	X 42	X 40	X 37	68										X 62	X 53	X 45	X 39	X 40	X 41	X 41
U Q	X 49	X 47	X 47	X 47	X 44	X 43	X 40											X 66	X 58	X 52	X 44	46	X 49	X 50
L Q	X 40	X 40	X 40	X 40	X 39	X 38	X 36											X 56	X 47	X 39	X 36	X 36	X 38	X 39

JAN. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 foF2 (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	38	39	40	36	37	34	29	41	64	U R 97	R 98	R 81	J R 83	R 78	77	77	59	54	38	29	27	29	32	30
2	33	33	31	30	30	29	26	40	69	U R 98	72	82	81	81	66	65	68	59	34	28	29	34	35	32
3	34	34	36	37	34	28	29	44	J R 89	R 75	88	R 108	U R 99	94	87	82	64	61	61	38	V 41	F 42	43	F 42
4	43	46	49	41	35	32	32	47	73	87	R 96	92	U R 82	88	74	76	63	54	40	30	27	28	30	30
5	32	32	33	32	35	35	38	F 64	66	U Y 97	101	R 103	U Y 90	76	75	76	68	59	47	25	36	42	45	V 44
6	44	44	44	44	46	43	44	F 52	93	Y	94	108	U Y 89	U Y 81	U Y 80	77	76	67	60	F 46	F 30	F 33	F 42	44
7	42	40	Z 39	32	32	30	28	46	71	85	R 94	R 100	99	103	80	71	73	70	44	32	37	F 52	F 75	F 57
8	F 54	32	A	A	F 19	21	24	43	75	R 96	R 98	97	R 96	95	84	80	73	56	47	40	26	27	31	35
9	35	35	34	34	36	36	34	48	78	R 99	R 102	R 98	Z 92	90	80	72	70	55	39	32	30	30	29	28
10	30	29	29	29	30	29	28	49	70	90	Y	R 97	77	80	73	79	66	46	40	32	34	F 37	F 38	F 38
11	44	44	48	45	F 48	F 56	F 58	64	84	94	U R 100	99	J R 89	89	81	72	62	56	40	34	34	35	F 34	34
12	29	32	33	33	33	33	32	50	U R 88	U R 98	R 104	97	82	80	88	88	72	52	46	31	30	32	30	33
13	34	36	35	35	38	36	34	53	74	J R 109	R 103	U R 102	R 78	91	J R 93	80	68	66	52	36	32	32	32	30
14	33	34	36	33	34	30	30	49	R 95	J R 110	100	R 101	R 90	91	91	R 80	70	62	54	39	28	A	32	32
15	32	32	32	32	34	33	33	50	82	R 82	91	U R 98	U R 82	92	R 85	74	66	52	52	35	32	31	32	33
16	33	34	36	39	33	28	28	48	71	J R 89	93	R 93	R 92	R 84	81	83	68	61	61	44	36	32	34	34
17	36	38	35	34	35	36	38	56	R 88	J R 92	R 104	97	J R 93	84	R 81	75	72	50	47	R 45	25	U A 25	30	31
18	32	35	35	33	32	31	30	52	76	R 77	R 99	86	74	71	R 75	80	64	42	43	39	28	28	33	35
19	34	34	34	33	34	35	30	53	R 74	86	J R 93	93	84	74	75	R 78	62	54	45	40	28	27	29	31
20	31	32	33	36	32	32	32	51	72	94	96	90	77	77	74	69	64	46	46	45	39	39	42	47
21	42	40	40	39	36	36	30	49	76	J R 83	87	96	R 86	80	72	68	64	46	43	35	29	29	33	33
22	34	35	37	40	43	43	23	40	65	83	91	92	R 94	J R 91	R 85	76	71	51	42	39	37	38	42	43
23	42	44	44	46	35	29	28	48	64	R 78	92	R 92	85	80	R 81	70	58	49	44	43	29	34	36	40
24	42	42	44	40	40	F 28	24	43	67	J R 81	96	R 89	R 93	R 79	R 79	72	64	46	37	34	30	30	30	33
25	F 33	36	34	35	35	32	29	51	74	75	76	R 94	94	87	81	73	66	52	41	34	29	30	32	32
26	35	35	36	36	36	37	30	45	64	R 79	J R 83	J R 93	J R 92	J R 86	U Y 79	80	80	56	36	33	35	36	37	43
27	38	32	32	31	32	32	32	54	65	95	97	102	R 103	96	87	J R 83	R 82	55	42	39	40	36	36	F 36
28	38	38	36	39	36	38	32	53	72	J R 88	V 96	J R 97	98	U R 97	U R 79	R 89	R 81	70	66	48	36	28	32	34
29	34	36	39	40	38	32	30	51	74	J R 79	88	J Y 89	U R 78	90	77	86	78	58	46	45	41	38	36	35
30	36	36	36	36	37	34	30	59	U R 94	Y	U R 94	U R 96	96	93	J R 93	U R 90	93	90	63	47	42	42	42	42
31	41	41	45	48	48	49	44	62	87	J R 93	V 86	100	U R 99	95	92	97	88	72	48	52	51	44	44	44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	31	31	31	31	31	29	30	31	31	31	31	31	31	31	31	31	31	30	31	31
MED	35	35	36	36	35	33	30	50	74	R 89	95	R 97	R 90	87	80	77	68	55	45	38	32	32	34	34
U Q	42	40	40	40	37	36	33	53	R 84	R 96	R 99	R 100	R 94	92	85	82	73	61	52	44	37	38	42	42
L Q	33	33	34	33	33	30	28	46	69	R 82	91	92	82	80	75	72	64	51	40	32	29	29	32	32

JAN. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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		172							
2										L		L												
3										296		L	L			U L 276								
4									232			L	L	L										
5															L									
6														L										
7											L		L	L										
8										L	L	L	U L 384		U L 320									
9												L	L	L										
10									248	308		L												
11											L	L	L											
12											L													
13											L	L												
14												L	L	L										
15												L		L										
16											L 344													
17											L	L												
18										348	L		L											
19										308	320	L		L		U L 328	232							
20											L			L										
21												L	L			U L 280								
22								L 212		304	L	L	L	L	L									
23											L	L	L	L	L									
24											L		L	L		U L 332								
25									A 272			L	L	L	L		228							
26												L	L	L										
27										L	L		L	L	L									
28									284		L	L												
29									268				L											
30									260		L			L	L									
31										L	L 372	L	L	L	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	6	5	3		1		1	4	3							
MED								L 212	264	308	L 344		U L 384		U L 320	U L 304	228							
U Q									272	328	L 372					U L 330	232							
L Q									248	300	320					U L 278	172							

JAN. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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								A 232	272	296	308		308	296	268	216	B							
2								J R 156	216	268	292	304	A	A	272	200	A							
3								B 200	264	284	300		300	292	280	A	188							
4								B 204	260	284	B		B	B	256	224	A							
5								A	A	B	B	B	B	B	B	244	B							
6								B	B 272		A	A	A	300	284	220	A							
7								A	A 212	272	296	U R 300	B	308	272	240	A							
8								A	A	A	296	U A 296	320	304	A	212	188							
9								A	A	276	308	A	316	296	A	A	A							
10								A 200	248	284	304		304	296	284	236	180							
11								A 232	284	300	312		316	316	272	248	204							
12								A 200	256	296	316		316	308	292	252	A							
13								A 228	288	300	312		312	312	R 328	260	A							
14								A 252	268	304	312		320	300	292	248	204							
15								B 212	272	292	300		312	308	296	236	188							
16								B 216	276	296	308		320	312	280	228	188							
17								J B 156	216	256	292	312	A	312	A	A	A							
18								B 212	276	300	328		324	312	284	264	A 168							
19								A 204	260	288	312		320	304	288	260	192							
20								A 208	280	288	312		324	304	288	256	172							
21								J B 164	212	272	316	320	312	308	268	232	188							
22								B 204	268	300	324		320	320	304	248	A	B						
23								J B 176	204	260	A	304	304	296	280	228	192							
24								A 212	260	A 296	304		320	316	308	252	208							
25								B 204	272	296	304		308	308	280	232	180							
26								J B 220	284	300	308		284	288	276	252	A	A						
27								B 220	A	268	284		304	312	296	268	184							
28								176	216	264	280	320	328	312	308	276	216	A						
29								168	220	R 264	R 300	324	A	324	316	268	192	A						
30								164	224	R 276	B	R 336	340	B	308	256	U A 212	A						
31								192	236	280	304	320	320	320	A	264	212	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								8	27	28	27	27	24	27	26	28	19							
MED								166	212	272	296	312	316	308	284	248	188							
U Q								176	220	276	300	320	320	312	296	258	204							
L Q								J 160	204	262	288	304	308	300	276	230	184							

JAN. 2015 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 foEs (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	J A 21	J A 24	J A 25	E B 13	J A 23	33	J A 31	J A 24	36	G 25	G 27	31	G 28	30	G 18	J A 24	E B 14	J A 25	E B 12	E B 12	E B 12	E B 12	J A 23	J A 24
2	E B 14	E B 14	E B 14	J A 15	E B 14	E B 14	E B 14	G	22	G 21	G 21	J A 29	J A 48	J A 39	G 20	23	J A 18	E B 14	18	J A 24	20	E B 13	J A 15	E B 13
3	J A 18	J A 20	J A 16	J A 26	J A 16	E B 14	E B 14	E B 14	23	28	G	33	32	32	G	23	G 19	J A 18	J A 29	23	J A 17	J A 19	J A 18	23
4	J A 21	E B 14	E B 14	E B 12	J A 12	J A 12	E B 12	18	21	G	G	E B 30	E B 29	E B 28	28	24	18	E B 11	E B 11	E B 11	J A 19	J A 19	J A 15	J A 18
5	J A 18	J A 18	J A 49	J A 17	J A 20	J A 20	J A 30	J A 23	25	E B 29	E B 29	E B 45	E B 45	E B 40	E B 30	G	E B 19	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
6	J A 20	E B 12	E B 12	J A 20	E S 12	E B 12	E B 12	E B 14	20	G 25	32	32	34	G	G	28	J A 32	J A 16	E B 14	E B 14	19	E B 14	E B 14	E B 14
7	E B 14	E B 14	E B 14	J A 23	E B 13	E B 14	E B 14	J A 18	J A 24	G 26	31	32	E B 31	32	G	28	21	J A 25	E B 13	E B 13	E B 13	E B 13	E B 12	J A 19
8	J A 26	J A 32	J A 37	J A 46	J A 21	E B 10	E B 11	18	J A 72	32	32	32	G	G	28	24	G	E B 14	J A 16	E B 11	E B 11	J A 16	J A 16	J A 19
9	J A 21	J A 19	J A 16	E B 15	J A 19	J A 29	J A 17	J A 24	28	28	G 28	J A 53	38	J A 51	33	J A 33	J A 33	J A 26	J A 18	J A 24	J A 19	J A 17	18	18
10	E B 14	E B 14	J A 17	J A 15	J A 23	18	18	J A 19	J A 23	28	32	32	G	G	30	J A 25	G 17	J A 15	J A 21	J A 20	18	J A 19	J A 29	J A 22
11	J A 15	J A 15	J A 16	E B 15	E B 15	E B 15	E B 14	J A 20	25	G 25	G 21	G 20	G	G	G	G	G	E B 14	J A 19	J A 35	J A 13	E B 12	E B 12	J A 26
12	J A 19	J A 19	J A 14	J A 17	J A 17	E B 14	E B 14	J A 25	23	G 22	G 22	G 22	G 22	G	G	G 22	J A 26	J A 45	J A 45	J A 34	J A 34	J A 34	J A 21	J A 27
13	J A 24	J A 23	J A 30	J A 26	J A 19	J A 17	J A 17	J A 20	J A 27	G 28	G 28	G 22	G 23	G 26	G	G 20	J A 27	J A 21	J A 19	J A 27	J A 29	J A 23	J A 23	E B 12
14	20	J A 24	J A 20	J A 20	J A 19	15	E B 13	J A 24	J A 30	G 26	G 23	G 23	G 23	G	G 19	G	G 18	J A 24	J A 24	E B 12	J A 33	J A 49	J A 43	J A 25
15	J A 21	J A 16	J A 20	E B 14	E B 14	J A 24	E B 14	E B 14	J A 24	G 27	32	32	32	G 20	G 20	G	19	E B 12	J A 19	J A 19	26	J A 16	J A 28	J A 22
16	J A 25	E B 14	E B 14	J A 21	28	20	J A 24	J A 29	G	G	32	G 29	G	G	G	24	G	J A 19	E B 16	E B 16	E B 15	E B 15	J A 19	E B 15
17	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	G	27	28	31	J A 30	J A 49	J A 55	J A 59	J A 27	J A 25	J A 19	E B 11	18	J A 25	J A 32	J A 30	J A 27
18	J A 27	E B 12	E B 12	J A 15	E B 12	J A 15	J A 19	E B 13	G	32	32	G 28	36	G 27	J A 26	J A 26	J A 23	20	J A 18	E B 13	J A 14	J A 21	J A 14	J A 19
19	J A 18	J A 23	J A 20	18	E B 13	J A 13	J A 25	29	J A 27	31	32	34	G 26	G	G 26	26	22	J A 19	E B 11	J A 26	J A 26	J A 33	J A 32	J A 29
20	J A 26	J A 13	J A 15	E B 13	E B 13	E B 14	E B 17	J A 27	25	J A 28	32	G 28	G 31	G 18	G	28	G	E B 13	J A 21	J A 12	J A 17	J A 19	J A 16	J A 16
21	J A 20	J A 24	J A 15	J A 15	E B 14	E B 14	E B 14	G	24	J A 48	G 32	35	35	G 29	E B 12	G	20	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13
22	J A 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	28	31	32	G 28	34	34	G	G	18	E B 11	J A 20	J A 17	J A 17	J A 21	J A 12	J A 12
23	18	J A 22	24	23	E B 16	E B 16	J A 12	G	24	J A 32	J A 52	34	33	33	31	25	G	E B 11	J A 17	E B 11	E B 11	J A 17	J A 42	J A 27
24	J A 26	J A 16	J A 14	J A 14	E B 13	E B 13	J A 14	20	26	30	31	G	G 26	G 26	G 26	G	J A 26	J A 26	J A 14	J A 15	E B 12	E B 12	J A 15	E B 12
25	E B 13	J A 16	E B 13	J A 12	E B 13	E B 13	E B 13	J A 17	24	G	G	G	G	G	G	G	21	E B 12	E B 13	E B 13	J A 29	J A 18	J A 18	E B 12
26	E B 15	20	19	E B 13	E B 13	E B 14	J A 16	G	24	G 26	33	33	34	32	32	30	J A 23	J A 18	E B 10	E B 12	E B 12	J A 11	E B 12	E B 12
27	J A 13	J A 13	E B 12	E B 12	E B 12	E B 12	E B 12	E B 13	24	J A 35	34	34	32	32	32	28	23	J A 16	E B 11	J A 20	J A 15	20	20	E B 11
28	E B 15	J A 15	J A 13	20	18	J A 21	E B 15	G	25	32	G	J A 31	34	32	G 20	J A 26	J A 26	J A 24	J A 21	J A 17	E B 11	E B 11	J A 13	20
29	E B 13	J A 15	E B 12	E B 14	E B 14	E B 14	E B 14	G	23	G 24	33	G	36	G	G	G	21	J A 30	E B 12	E B 12	E B 12	E B 12	E B 12	J A 15
30	E B 13	E B 13	E B 13	E B 15	E B 15	E B 15	E B 15	17	24	G	E B 34	G	G	35	G	30	32	J A 27	J A 30	E B 12	J A 20	J A 28	J A 23	J A 24
31	J A 18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	31	G 24	35	36	35	34	28	G	20	J A 20	J A 17	E B 14	E B 14	17	E B 14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 18	J A 15	J A 14	15	E B 14	E B 14	E B 14	17	24	E G 28	G	30	E G 32	G	G	24	20	J A 18	J A 17	14	17	J A 17	J A 17	J A 18
U Q	J A 21	J A 20	J A 20	J A 20	J A 19	J A 17	J A 17	J A 23	27	31	32	33	35	33	30	28	J A 25	J A 24	J A 20	J A 20	J A 20	J A 21	J A 23	J A 24
L Q	E B 14	E B 14	E B 13	E B 14	E B 13	E B 13	E B 13	G	23	G 26	G 28	G 29	G 31	G	G 26	G	19	E B 14	E B 13	E B 12	E B 13	E B 13	E B 14	E B 13

JAN. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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	16	16	16	E B 13	E B 13	22	E B 13	15	G 16	G 18	G 18	G 18	G 18	G 18	G 18	G 18	E B 14	E B 14	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 19	G 16	G 16	G 16	32	30	G 17	22	15	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13
3	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	G 26	G	31	31	31	G	23	G	15	E B 11	E B 13	E B 13	E B 13	E B 13	E B 13
4	E B 14	E B 14	E B 14	E B 12	E B 12	E B 12	E B 12	E B 12	G 20	G	G	E B 30	E B 29	E B 28	27	24	17	E B 11	E B 11	E B 11	E B 11	E B 11	E B 11	E B 11
5	E B 14	16	E B 15	14	17	16	19	18	21	E B 29	E B 29	E B 45	E B 45	E B 40	E B 30	G	E B 19	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14
6	E B 12	E B 12	E B 12	E B 12	E S 12	E B 12	E B 12	E B 14	U Y 19	G 22	31	U Y 31	32	G	G	24	20	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
7	E B 14	E B 14	E B 14	E B 13	E B 13	E B 14	E B 14	14	G 18	G 21	31	32	E B 31	32	G	26	17	17	E B 13	E B 13	E B 13	E B 13	E B 12	15
8	17	24	A A 37	A A E 46	B E 10	B E 10	B E 11	16	42	29	31	31	G	G	26	22	G	E B 14	E B 11	E B 11	E B 11	E B 12	E B 12	14
9	E B 13	E B 15	E B 15	E B 15	15	18	17	17	23	G 23	G 23	33	G 25	G 24	24	26	17	E B 12	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
10	E B 14	E B 14	E B 14	E B 14	16	E B 14	E B 14	16	G 20	26	G 28	32	G	G	29	G 17	G 17	13	15	E B 12	E B 12	17	12	12
11	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	16	G 23	G 20	G 20	G 18	G	G	G	G	G	E B 14	16	27	E B 12	E B 12	E B 12	13
12	17	E B 14	E B 14	15	E B 14	E B 14	E B 14	E B 14	G 21	G 20	G 20	G 20	G 20	G	G	G 19	19	19	19	19	17	17	17	17
13	E B 12	E B 12	17	18	E B 13	E B 13	E B 15	14	G 19	G 19	G 19	G 19	G 19	G 21	G	G 20	20	E B 15	E B 12	13	18	18	18	E B 12
14	15	E B 18	E B 13	16	E B 13	E B 13	E B 13	14	G 19	G 19	G 19	G 19	G 19	G	G 19	G	G 16	18	18	E B 12	E B A 12	A 49	23	17
15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G 18	G 29	31	32	G 15	G 15	G	G 15	E B 12	E B 12	E B 12	E B 12	E B 12	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	30	G 26	G	G	G	24	G	E B 16	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15
17	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	G	24	26	G 29	G 20	31	G 26	38	23	23	15	E B 11	E B 11	16	17	17	E B 9
18	17	E B 12	E B 12	E B 12	E B 12	E B 12	E B 13	E B 13	G	29	G 30	G 16	G 16	G 16	G 16	G 16	G 16	18	E B 13	E B 13	E B 12	E B 12	E B 12	E B 12
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	14	G 14	28	30	G 30	G 18	G	G 18	G 26	G 18	E B 12	E B 11	12	12	18	18	20
20	19	E B 13	E B 13	E B 13	E B 13	E B 14	E B 14	13	23	G 22	G 29	G 21	G 21	G 17	G	G 25	G	E B 13	17	E B 13	E B 13	E B 13	E B 13	E B 13
21	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	24	G 17	G 30	G 32	G 26	G 23	E B 12	G	G 16	E B 13	E B 13	E B 13	E B 13	E B 13	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	E B 14	26	G 26	31	G 17	G 26	G 28	G	G	17	E B 11	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13
23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	24	G 22	30	31	G 20	G 30	30	24	G	E B 11	E B 11	E B 11	E B 11	E B 11	13	E B 11
24	17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	G 18	G 25	30	G	G 19	G 18	G 18	G	G 18	16	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12
25	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	22	G	G	G	G	G	G	G	G 18	E B 12	E B 13	E B 13	E B 13	E B 13	E B 12	E B 12
26	E B 15	E B 16	E B 16	E B 13	E B 13	E B 14	E B 14	G	G 22	G 22	31	32	32	31	30	G 23	20	16	E B 10	E B 12	E B 12	E B 12	E B 12	E B 12
27	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	E B 12	E B 13	G 20	20	31	32	32	32	32	27	20	E B 14	E B 11	E B 11	E B 11	E B 11	E B 11	E B 11
28	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	24	29	G	G 23	34	G 31	G 19	G 19	G 19	18	E B 12	E B 11	E B 11	E B 11	E B 11	E B 11
29	E B 13	E B 13	E B 12	E B 14	E B 14	E B 14	E B 14	G	G 20	G 21	31	G	34	G	G	G	20	E B 16	E B 12	E B 12	E B 12	E B 12	E B 12	E B 13
30	E B 13	E B 13	E B 13	E B 15	E B 15	E B 15	E B 15	E B 14	23	G	E B 34	G	G	E B 32	G	29	30	18	18	E B 12	16	16	E B 11	16
31	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	29	G 22	33	34	34	30	G 20	G	19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	14	G 22	G 22	G	31	G	G	G	G 24	G 19	E B 15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13
U Q	15	E B 15	E B 15	15	E B 14	E B 14	E B 14	14	23	26	31	G	32	G	27	G	19	16	15	E B 13	14	15	14	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 19	G 20	G 23	G 20	G 20	G 24	G 19	G 22	G 17	E B 13	E B 11	E B 12	E B 12	E B 12	E B 12	E B 12

JAN. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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	13	13	13	13	13	13	13	13	13	13	13	13	13	14	14	14	14	14	12	12	12	12	12	12
2	14	14	14	14	14	14	14	16	11	11	11	11	11	14	14	14	14	14	13	13	13	13	13	13
3	14	14	14	14	14	14	14	14	14	14	14	15	16	16	16	16	16	11	11	13	13	13	13	13
4	14	14	14	12	12	12	12	12	14	14	16	30	29	28	22	14	14	11	11	11	11	11	11	11
5	14	14	15	12	12	12	12	12	14	29	29	45	45	40	30	20	19	15	15	14	14	14	14	14
6	12	12	12	12	12	12	12	14	15	20	22	26	30	23	23	19	15	15	14	14	14	14	14	14
7	14	14	14	13	13	14	14	12	15	17	20	20	31	22	22	18	16	14	13	13	13	13	12	12
8	11	12	12	10	10	10	11	11	12	12	22	26	26	24	22	16	14	14	11	11	11	12	12	12
9	13	15	15	15	15	12	12	12	12	16	16	18	18	18	16	16	12	12	14	14	14	14	14	14
10	14	14	14	14	14	14	14	14	14	15	16	22	22	22	15	14	15	12	12	12	12	12	11	11
11	15	15	15	15	15	15	15	10	10	10	10	12	15	15	15	15	14	14	12	12	12	12	12	12
12	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	12	12	12	12	12	12
13	12	12	12	13	13	13	15	10	10	10	10	10	14	14	25	15	15	15	12	12	12	12	12	12
14	12	13	13	13	13	13	13	13	13	11	11	14	14	14	14	14	14	12	12	12	12	12	12	12
15	14	14	14	14	14	14	14	14	14	14	14	14	12	12	12	12	12	12	12	12	12	12	14	14
16	14	14	14	14	14	14	14	14	14	14	18	18	18	18	18	16	16	16	16	16	15	15	15	15
17	12	12	12	12	12	12	12	12	17	13	10	12	12	12	12	11	11	11	11	11	11	10	9	9
18	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	12	12	12
19	13	13	13	13	13	13	13	13	13	13	14	14	14	14	14	14	14	12	11	11	12	12	12	12
20	13	13	13	13	13	14	14	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13
21	14	14	14	14	14	14	14	14	14	14	14	14	12	12	12	12	12	13	13	13	13	13	13	13
22	14	14	14	14	14	14	14	14	14	14	14	14	16	11	11	11	11	11	13	13	13	13	13	13
23	16	16	16	16	16	16	16	14	14	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
24	13	13	13	13	13	13	13	13	13	13	13	13	15	15	15	15	15	12	12	12	12	12	12	12
25	13	13	13	13	13	13	13	14	13	13	14	14	14	14	17	16	16	12	13	13	13	13	12	12
26	15	16	16	13	13	14	14	14	14	14	14	10	12	14	13	11	10	9	10	12	12	12	12	12
27	12	12	12	12	12	12	12	13	13	13	13	13	13	14	14	14	14	14	11	11	11	11	11	11
28	15	15	15	15	15	15	15	15	14	14	14	12	12	12	12	12	12	12	12	11	11	11	11	11
29	13	13	12	14	14	14	14	14	14	14	18	19	24	24	24	16	16	16	12	12	12	12	12	13
30	13	13	13	15	15	15	15	14	18	18	34	28	28	32	24	19	17	16	12	12	12	12	11	11
31	14	14	14	14	14	14	14	12	12	13	14	17	17	22	21	18	15	14	14	14	14	14	14	14
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	14	14	14	13	13	14	14	13	14	14	14	14	14	14	15	14	14	13	12	12	12	12	12	12
U Q	14	14	14	14	14	14	14	14	14	14	16	19	22	22	22	16	15	14	13	13	13	13	13	13
L Q	13	13	13	13	13	12	13	12	13	13	13	12	12	13	13	12	12	12	11	12	12	12	12	12

JAN. 2015 fmin (0.1MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 M(3000)F2 (0.01) 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	287	284	284	287	319	314	336	349	351	U R 362	R 368	R 356	R	R 371	326	333	342	328	330	360	261	276	274	277
2	290	337	315	324	298	311	313	333	359	U R 376	347	361	349	353	350	357	342	350	337	309	305	279	297	309
3	283	280	315	318	307	306	302	311	R	R 379	351	R 339	U R 367	339	354	356	327	313	339	333	V 311	F 282	290	F 296
4	303	307	340	390	311	298	299	340	358	332	R 360	354	U R 342	360	357	348	355	344	352	338	284	269	281	281
5	274	271	290	281	280	280	283	F 359	323	U Y 381	310	R 363	U Y 366	367	350	346	345	341	351	346	285	299	317	V 283
6	297	297	303	317	316	282	302	F 300	358	Y	346	342	U Y 349	U Y 368	U Y 340	351	354	342	354	F 365	F 323	F 292	F 296	292
7	308	293	Z 299	290	286	326	337	337	355	342	R 357	R 342	341	337	359	342	335	341	350	290	253	F 265	F 260	F 288
8	F 286	350	A	A	F 306	277	303	327	332	R 351	R 371	343	R 340	345	349	353	339	335	353	356	289	273	276	262
9	301	303	296	284	269	296	327	319	346	R 336	R 354	R 358	Z 352	332	332	337	349	340	331	331	320	321	308	279
10	284	284	288	288	278	289	297	337	340	355	Y	R 364	340	347	341	341	336	327	345	319	298	F 275	F 277	F 297
11	270	270	297	294	F 290	F 266	F 311	330	353	345	U R 357	352	R	320	353	333	328	353	347	A 314	280	315	F 321	303
12	291	265	282	286	286	286	281	315	U R 383	U R 358	R 362	356	334	343	322	340	329	320	362	361	296	302	289	268
13	287	293	300	297	298	300	307	320	345	R	R 345	U R 358	R 348	335	R	366	337	326	347	326	308	312	292	284
14	281	283	306	328	297	301	301	315	R 367	R	350	R 358	R 334	346	324	R 367	344	335	334	366	339	A	301	283
15	283	283	290	290	307	314	314	333	349	R 351	345	U R 367	U R 357	347	R 338	352	325	319	322	302	312	320	292	285
16	285	272	295	305	347	299	299	345	352	R	R 359	R 354	R 350	R 349	335	343	324	305	310	360	329	294	280	280
17	294	290	307	295	294	301	304	329	R 359	R	R 361	354	R	341	R 335	363	356	321	345	R 356	357	A	295	289
18	278	286	286	303	311	303	316	341	379	R 349	R 367	365	355	349	R 346	343	353	295	322	352	315	277	283	275
19	292	292	285	295	315	333	327	340	R 394	354	J R 354	346	345	337	349	R 366	337	346	349	333	320	292	316	296
20	297	289	296	318	332	323	315	326	359	358	350	356	346	347	345	344	350	338	333	337	321	299	304	305
21	310	282	283	292	318	318	326	336	357	R	335	352	R 357	338	332	333	333	325	344	342	358	278	282	282
22	279	266	270	290	287	315	339	334	336	349	330	342	R 334	R	R 361	328	336	318	332	337	291	285	283	285
23	303	289	289	332	380	323	337	334	365	R 339	352	R 351	355	325	R 357	364	354	313	330	337	350	289	273	287
24	294	308	300	311	315	F 273	320	338	348	R	351	R 353	R 344	R 357	R 358	350	359	346	337	360	355	306	302	273
25	F 304	281	295	291	291	321	319	354	356	366	363	R 349	351	340	355	345	360	348	338	333	352	306	284	284
26	293	293	283	287	310	303	329	346	349	R 363	J R 364	R	R	R	U Y 338	335	335	346	306	296	283	285	280	302
27	341	299	284	292	281	289	334	375	343	362	337	341	R 357	346	353	J R 331	R 354	304	326	323	314	331	278	F 282
28	292	291	296	290	316	311	347	360	363	R	V 345	R	352	U R 335	U R 367	R 365	R 337	320	318	343	338	316	284	286
29	268	264	298	315	332	294	319	351	356	R	341	Y	U R 379	335	362	347	334	342	323	314	314	298	297	288
30	284	285	285	286	287	312	330	341	U R 376	Y	U R 324	U R 344	343	353	R	U R 320	341	354	323	307	314	315	293	294
31	283	289	285	291	298	311	323	353	349	R	Z 321	356	U R 357	341	333	327	349	336	318	311	321	305	302	293
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	31	31	31	31	30	20	30	28	27	29	29	31	31	31	31	31	31	29	31	31
MED	290	289	295	293	306	303	316	337	356	354	351	354	349	345	349	345	341	335	337	337	314	294	290	285
U Q	297	293	300	315	316	314	329	346	R 359	R 362	R 360	R 358	U R 357	351	356	356	353	344	347	356	329	309	301	294
L Q	283	281	285	290	287	289	302	327	348	347	345	345	R 342	337	335	335	335	320	323	314	291	278	280	281

JAN. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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		485							
2										L		L												
3										407		L	L			U L 392								
4									494			L	L	L										
5															L									
6														L										
7											L		L	L										
8										L	L	L	U L 420		U L 432									
9												L	L	L										
10									472	428		L												
11											L	L	L											
12											L													
13											L	L												
14												L	L	L										
15												L		L										
16											L 445													
17											L	L												
18										428	L		L											
19										472	450	L		L		U L 404	425							
20											L			L										
21												L	L			U L 419								
22								L 414		449	L	L	L	L	L									
23											L	L	L	L	L									
24											L		L	L		U L 377								
25									A 437			L	L	L	L		438							
26												L	L	L										
27										L	L		L	L	L									
28									408		L	L												
29									449				L											
30									461		L			L	L									
31										L	L 381	L	L	L	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	6	5	3		1		1	4	3							
MED								L 414	455	428	L 445		U L 420		U L 432	U L 398	438							
U Q									472	460	450					U L 412	485							
L Q									437	418	L 381					U L 384	425							

JAN. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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	218	214		214		206							
2										216		216												
3										202		218	218			218								
4									214			220	220	220										
5															220									
6														222										
7											242		240	238										
8										244	224	222	222		222									
9												222	222	224										
10									218	218		218												
11											222	222	222											
12											244													
13											226	222												
14												228	224	224										
15												224		228										
16											224													
17											248	234												
18										224	224		224											
19										228	228	228		228		228	226							
20											226			226										
21												238	214			212								
22								232		232	232	232	232	232	232									
23											244	236	236	236	236									
24											234		234	234		216								
25									224			232	232	232	232		232							
26												242	254	236										
27										246	248		248	248	248									
28									190		218	218												
29									216				216											
30									208		224			224	228									
31										228	224	234	234	234	234									
	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	6	9	18	20	18	16	9	4	3							
MED								232	215	228	226	223	224	230	232	217	226							
U Q									218	238	242	233	234	235	235	223	232							
L Q									208	217	224	219	220	224	221	214	206							

JAN. 2015 h'F2 (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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	288	288	288	298	248	A 290	238	228	218	218	218	218	214	212	212	212	B 212	212	208	224	314	314	314	314
2	314	232	248	248	248	248	248	248	226	226	220	220	220	220	220	220	220	218	218	236	272	272	272	274
3	308	308	292	248	258	248	268	226	226	218	218	218	218	218	218	A 218	206	214	214	214	228	272	272	278
4	272	256	234	208	236	270	270	236	166	204	214	214	216	218	218	218	210	210	210	210	274	304	304	304
5	304	318	298	300	300	300	276	228	224	234	220	226	226	226	228	228	216	216	216	216	262	262	240	240
6	264	264	260	256	240	240	240	240	228	222	222	222	222	222	222	222	222	218	218	218	262	274	274	274
7	234	256	256	316	306	236	236	218	218	218	218	220	220	220	220	220	220	220	220	298	340	266	Q 266	Q 250
8	258	258	A	A	370	364	324	264	250	232	232	226	226	226	226	226	220	220	218	218	228	296	296	296
9	276	252	276	296	296	296	272	248	224	224	224	224	210	210	222	222	222	222	222	222	238	238	244	298
10	308	308	308	308	308	286	286	228	166	166	206	206	206	214	214	220	220	218	218	236	250	270	310	310
11	308	296	276	276	276	276	254	226	220	220	220	220	220	220	220	216	214	208	210	E A 344	308	276	276	276
12	274	274	274	274	274	274	274	274	224	224	224	224	224	224	224	224	224	226	226	226	258	262	270	312
13	308	282	296	296	280	274	274	246	196	208	208	208	208	214	218	218	218	218	218	218	262	278	298	298
14	302	A 302	258	254	254	254	254	254	236	236	236	230	230	230	230	230	222	222	222	220	236	A	E A 368	320
15	320	298	298	298	264	264	252	240	222	220	220	220	220	220	220	218	218	216	216	216	234	252	302	294
16	306	312	280	252	238	240	240	236	216	216	216	216	216	216	216	218	218	220	220	220	220	258	294	294
17	264	264	258	260	260	260	260	226	218	214	214	214	214	214	A 230	220	220	214	214	214	214	A	312	298
18	298	276	276	276	254	254	254	234	204	204	214	214	214	214	214	216	212	212	212	212	212	254	268	268
19	280	290	290	290	256	232	232	232	222	202	202	208	210	210	210	210	206	206	206	206	222	A 330	A 318	A 324
20	316	296	290	246	228	238	238	238	202	204	204	208	208	208	208	206	204	204	220	220	222	254	254	254
21	244	284	284	284	278	248	232	232	220	220	220	220	220	220	220	220	220	220	220	220	220	278	306	306
22	310	320	320	286	278	246	230	158	220	202	216	216	216	216	216	216	216	212	214	214	246	294	294	288
23	266	266	266	250	224	248	248	236	228	228	228	228	228	228	228	228	226	226	226	226	226	284	284	284
24	284	270	258	258	258	Q 258	258	218	218	218	218	218	218	218	218	218	214	214	214	214	224	248	268	304
25	Q 280	280	280	280	280	248	248	230	208	208	208	208	208	208	208	206	206	206	206	206	232	236	276	286
26	286	286	286	286	286	240	240	232	216	216	216	220	222	222	222	222	218	210	226	248	292	292	292	256
27	228	246	286	286	286	286	230	230	228	228	216	216	216	216	216	216	216	216	216	222	224	224	Q 300	Q 300
28	298	292	292	288	256	254	238	222	216	216	216	216	216	216	216	216	216	216	216	216	216	238	266	266
29	306	314	302	268	226	226	226	226	170	216	216	216	216	216	216	218	218	212	212	220	228	238	238	260
30	284	284	284	284	284	254	244	240	192	198	210	212	212	212	212	218	218	216	216	216	216	228	248	284
31	284	284	284	274	250	250	246	230	224	218	214	220	220	220	220	220	220	222	214	222	222	224	226	248
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31
MED	286	284	284	278	260	254	248	232	220	218	216	218	216	218	218	218	218	216	216	219	232	266	276	288
U Q	308	298	292	290	284	274	268	240	224	224	220	220	220	220	222	222	220	220	220	224	262	281	302	304
L Q	272	264	266	256	248	246	238	226	208	208	214	214	214	214	216	216	214	212	214	214	222	243	266	268

JAN. 2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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								A 128	128	126	122	118	118	118	118		B 128							
2								B 130	130	122	122	A 122	A 122				A 122							
3								B 122	122	116	116	116	116	116			E B 174							
4								B E B 140	136	130	B 122	B 122	B 122	124	124		A 122							
5								A 122	B 122	B 122	B 122	B 122	B 122	B 122	124		B 122							
6								B 122	B 126	126	A 126	126	126	126	126		A 126							
7								122	126	126	126	126	B 126	126	126		A 126							
8								A 122	A 122	A 120	120	A 120	120	120	A 122		142 122							
9								A 122	132	130	126	130	130	122	122		A 122							
10								122	122	116	116	116	116	116	116	118	E A 192							
11								122	132	122	116	116	116	116	114	110	158 122							
12								A 122	120	120	120	120	120	120	120	120	122							
13								A 122	A 140	132	114	112	112	E A 124	124	124	A 122							
14								122	128	122	122	122	116	114	114	114	E A 170							
15								B 122	140	126	122	112	112	112	112	112	126 122							
16								B 122	126	126	126	126	124	124	124	124	164 122							
17								B 122	114	114	114	114	A 122	114	A 122	A 122	122							
18								B 122	114	112	112	112	112	112	112	112	A 122							
19								122	122	122	122	122	116	116	116	122	128 122							
20								A 122	128	124	124	124	124	124	118	118	118 122							
21								B 122	112	112	112	112	118	118	118	118	E A 182							
22								B 122	134	122	122	120	118	118	118	118	A 122	B 122						
23								B 122	106	126	A 122	126	126	126	126	126	126 122							
24								122	142	A 122	120	116	116	116	116	116	B 166							
25								B 122	108	108	108	108	108	108	108	108	108 122							
26								B 122	114	114	114	114	108	108	108	108	A 122							
27								B 122	114	A 122	114	114	114	114	114	114	114 122							
28								B 178	124	114	114	114	114	114	114	116	116 122	A 122						
29								B 172	114	122	122	122	A 122	122	122	122	122 122	A 122						
30								B 122	122	122	B 122	122	122	B 122	122	122	122 122							
31								140	136	126	126	120	120	120	A 122	120	120 122	A 122						
	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	25	27	27	26	24	27	26	27	18							
MED								B 172	123	122	120	118	116	117	118	118	124							
U Q								B 178	133	126	124	122	120	122	122	124	E A 166							
L Q								140	114	116	114	114	114	114	114	114	120							

JAN. 2015 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 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	108	108	104	B	104	104	104	124	108	108	108	106	104	102	104	102	B	102	B	B	B	B	102	102
2	B	B	B	100	B	B	B	G	116	106	106	100	98	94	94	136	96	B	96	96	96	B	106	B
3	100	98	98	98	98	B	B	B	198	198	G	144	144	140	G	126	118	110	108	106	106	106	100	98
4	100	B	B	B	100	100	B	120	152	G	G	B	B	B	162	136	116	B	B	B	116	110	104	104
5	104	104	98	108	108	108	108	106	106	B	B	B	B	B	B	G	B	B	B	B	B	B	B	B
6	94	B	B	114	S	B	B	B	114	112	112	140	126	G	G	136	120	92	B	B	94	B	B	B
7	B	B	B	102	B	B	B	102	100	100	204	170	B	152	G	152	138	100	B	B	B	B	B	136
8	102	102	102	102	102	B	B	114	112	102	150	132	G	G	120	132	G	B	106	B	B	106	100	100
9	96	100	100	B	110	110	110	110	106	106	106	106	104	98	98	96	96	96	96	96	96	104	92	92
10	B	B	120	110	106	106	104	104	104	164	152	144	G	G	166	100	108	106	106	106	106	104	104	104
11	104	102	102	B	B	B	122	120	164	118	104	104	G	G	G	G	G	B	104	104	104	B	B	104
12	104	116	96	96	96	B	B	96	184	112	110	110	106	G	G	106	106	106	106	106	106	106	106	106
13	106	106	92	92	92	92	92	126	108	108	108	108	104	104	G	104	104	104	104	104	104	104	104	B
14	104	104	104	104	104	108	B	108	108	108	108	108	108	G	108	G	108	106	106	B	106	106	106	106
15	106	98	98	B	B	110	B	B	110	102	174	162	154	100	100	G	100	B	100	98	98	98	98	134
16	108	B	B	96	96	96	96	94	G	G	206	110	G	G	G	174	G	104	B	B	B	B	104	B
17	B	B	B	B	B	B	B	G	146	132	146	96	96	102	94	94	94	94	B	94	94	94	94	94
18	94	B	B	110	B	108	108	B	G	178	158	96	94	94	94	94	94	94	94	B	96	96	102	102
19	114	108	108	102	B	106	106	106	106	184	184	168	92	G	92	160	176	112	B	106	106	106	106	100
20	98	98	98	B	B	B	102	102	192	92	140	94	94	94	G	116	G	B	116	116	116	116	116	116
21	100	100	100	100	B	B	B	G	138	110	168	160	122	120	B	G	146	B	B	B	B	B	B	B
22	104	B	B	B	B	B	B	B	146	158	158	108	114	118	G	G	118	B	114	114	114	110	110	110
23	108	106	106	106	B	B	106	G	174	106	102	148	106	170	176	164	G	B	114	B	B	110	106	106
24	100	98	124	106	B	B	160	138	118	140	168	G	114	114	114	G	114	114	114	114	B	B	108	B
25	B	106	B	106	B	B	B	106	156	G	G	G	G	G	G	G	166	B	B	B	106	106	106	B
26	B	96	96	B	B	B	110	G	150	118	158	198	170	170	170	152	130	120	B	B	B	120	B	B
27	172	94	B	B	B	B	B	B	132	110	180	180	180	166	144	134	188	114	B	114	114	114	114	B
28	B	96	96	96	96	96	B	G	132	168	G	92	168	168	96	96	96	96	96	96	B	B	96	96
29	B	100	B	B	B	B	B	G	120	120	158	G	128	G	G	G	168	88	B	B	B	B	B	102
30	B	B	B	B	B	B	B	104	130	G	B	G	G	130	G	130	128	116	104	B	104	104	104	104
31	100	B	B	B	B	B	B	G	G	186	102	152	122	122	120	120	G	112	110	110	B	B	104	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	20	18	18	12	12	13	17	28	26	25	25	22	19	17	22	23	20	18	16	19	19	24	20
MED	104	101	100	102	101	106	106	106	125	112	150	110	111	118	108	128	116	105	106	106	106	106	104	104
U Q	106	106	104	106	105	108	110	120	151	158	168	156	128	152	153	136	138	112	110	112	106	110	106	106
L Q	100	98	98	98	96	98	103	103	108	106	108	105	104	100	95	102	100	96	100	97	96	104	101	100

IONOSPHERIC DATA STATION Wakkanai

JAN. 2015 TYPES OF Es 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	F2	F3	FQ11		F1	F3	F2	C1	L2	L1	L1	L1	L1	L1	L1	L1		F1					F1	F2
2				F1					LL21	L1	L1	L2	L2	L3	L1	H1	L1		F1	F1	F1		F1	
3	F1	F2	F1	FF11	F1				HL11	HL11		HL11	HL11	H1		C1	L1	F2	F1	FF11	FF11	F2	F1	F1
4	F1				F1	F1		C1	H1						H1	HL11	C1				F1	F1	F1	F1
5	F1	F1	F1	F2	F3	F2	FQ31	L3	L1															
6	F1			F1					C1	L1	C1	C1	C1			C1	C3	F1			F1			
7				F1				L1	LH11	L1	H1	H1		H1		H1	LC11	LC11						F1
8	F4	F5	F6	F4	F1			C1	CQ21	C1	H1	H1			C1	H1			F1			F1	F1	F1
9	F1	F1	F1		FF21	F3	F2	L2	LC11	L1	L1	L1	L1	L1	L1	L2	L2	F2	F1	F1	F2	FF11	F1	F1
10			F1	F1	F2	F1	F1	LC11	LH11	H1	HL11	H1			HL11	L1	L1	F1	F1	F1	F1	F2	F2	F2
11	F1	F1	F1				F1	L1	HL11	L1	L1	L1							L1	F3	F1			F3
12	F2	FF21	F2	F2	F1			L3	HL11	L1	L1	L1	L1			L1	CL12	F3	F4	F2	F3	F3	F2	F2
13	FQ11	FQ11	FQ21	F2	FQ11	F1	F1	CL12	L2	L1	L1	L1	L1	L1		L1	L1	FQ11	FQ11	F2	F2	F2	F3	
14	F1	F3	F1	F1	F1	F1		L3	LQ11	L1	L1	L1	L1		L1		L1	F2	F3		F1	F3	F3	F2
15	FQ11	F1	F1			F1			L1	L2	HL11	HL11	HL11	L1	L1		L1		F1	F1	F1	F1	F2	FF11
16	F4			F1	F1	F1	F1	L1			HL11	L1				HL11		F1					F1	
17									C2	CL11	HL11	L2	L2	LL12	L3	L2	L2	F1		FF11	F2	F3	F3	F1
18	FQ11			C2		F1	F2			H1	HL11	L1	L1	L1	L1	L1	LH11	F1	F1		F1	FQ11	F1	F1
19	F2	FQ11	F1	F1		F1	F1	L1	LH21	RL11	RL11	RL11	L1		L2	HC12	HL11	F1		F2	F2	FQ31	FQ31	FQ21
20	FQ21	F1	F1				F1	L3	HL12	L2	HL12	L2	L2	L1		HL21			F2	F1	F1	F1	F1	F1
21	FQ11	FQ11	F1	F1					HL12	L1	HL12	HL12	L2	L2			L1							
22	F1								H2	HL12	HL12	L1	CL11	CL11			C2		F1	F1	F1	F2	F2	F1
23	F1	F2	F1	F1			F1		H1	L2	L3	HL12	L1	HL12	HL12	HL12			F1			F1	F2	F2
24	F3	F2	F1	F1			F1	C3	L2	HL12	HL12		L2	L2	L2		L1	F1	F1	F1			F1	
25		F1		F1				C1	HH11								H1				F2	F2	F3	
26		F1	F1				F2		H1	L1	HL11	HL11	H1	HL11	HL11	CL31	C3	C3				F1		
27	F1	F2							HL11	L2	HL11	HL11	HL11	HL11	CL12	CL12	HL12	F1		F2	F1	F1	F1	
28		F1	F1	F1	F1	F1			HL11	HL11		L2	HL11	HL11	L1	L1	L1	L1	F1	F1			F1	F1
29		F1							C1	L1	H1		C1				H1	L1						F1
30								L1	H1					H1		H1	C2	L8	F3		F1	F2	F1	FQ21
31	F1									H1	L1	H1	C1	C1	C1	L2		L3	F1	F1			F1	
	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																								

JAN. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 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 42	X 46	X 40	X 41	X 41	X 40	X 39	X 71											X 62	X 44	X 35	X 38	X 40	X 40
2	X 35	X 40	X 45	X 35	X 35	X 37	X 38												X 64	X 43	X 42	X 42	X 38	X 39
3	X 40	X 43	X 44	X 40	X 36	X 36	X 37											X 75	X 67	X 63	X 34	X 38	X 40	X 42
4	X 46	X 52	X 43	X 26	X 34	X 36	X 33											X 68	X 68	X 43	X 36	X 39	X 42	X 40
5	X 41	X 40	X 38	X 38	X 41	X 41	X 41												X 56	X 40	X 29	X 35	X 36	X 36
6	X 39	X 42	X 44	X 40	X 42	X 42	X 42												X 71	X 38	X 37	X 41	X 41	X 44
7	X 46	X 41	X 35	X 37	X 39	X 36	X 37												X 65	X 43	X 66	X 70	95	107
8	82	69	52	X 49	52	47	40												X 65	X 50	X 42	X 46	X 37	X 40
9	X 44	X 47	X 36	X 36	X 37	X 37	X 35												X 64	X 44	X 43	X 52	X 54	X 44
10	X 42	X 42	X 44	X 38	X 38	X 36	X 35												X 51	X 36	A	X 43	X 44	X 42
11	48	50	X 45	X 37	X 38	X 36	X 37												X 79		X 57	X 68	X 63	X 44
12	X 47	X 50	X 42	X 34	X 34	X 34	X 34											X 78	X 44	X 38	X 40	X 43	X 49	54
13	54	X 45	X 46	X 35	X 36	X 38	X 37												X 71	X 74	X 53	A	X 41	X 41
14	X 41	X 42	X 40	X 38	X 36	X 40	X 40											X 78	X 70	X 57	X 42	X 41	X 43	X 43
15	X 42	X 44	X 43	X 41	X 39	X 41	X 40												X 58	X 63	X 42	X 42	X 42	X 40
16	X 41	X 44	X 46	X 38	X 33	X 35	X 36												X 70	X 64	X 46	X 42	X 36	X 40
17	X 43	X 43	X 44	X 38	X 37	X 39	X 40										X 82		X 64	X 56	X 43	X 35	X 37	X 40
18	X 41	X 36	X 41	X 42	X 36	X 36	X 36												X 48	X 50	X 54	X 32	X 33	X 36
19	X 38	X 37	X 38	X 40	X 40	X 36	X 40				C	C	C	C	C	C	C		X 60	X 59	X 41	X 37	X 38	X 40
20	X 40	X 40	X 41	X 43	X 37	X 33	X 33												X 46	X 52	X 47	X 43	X 48	X 55
21	X 39	X 37	X 38	X 40	X 44	X 38	X 41												X 43	X 48	X 38	X 36	X 38	X 40
22	X 40	X 40	X 40	X 43	X 39	X 38	X 38												X 51	X 49	X 49	X 47	X 44	X 46
23	X 46	X 46	X 49	X 47	X 31	X 27	X 30												X 46	X 50	X 40	X 32	X 35	X 38
24	X 39	X 40	X 45	X 42	X 38	X 35	X 35												X 44	X 43	X 42	X 38	X 37	X 37
25	X 39	X 40	X 40	X 40	X 40	X 38	X 36												X 52	X 51	X 42	X 34	X 36	X 39
26	X 40	X 39	X 42	X 42	X 42	X 41	X 40												X 60	X 45	X 48	X 50	X 49	X 51
27	X 38	X 36	X 38	X 40	X 40	X 40	X 42												X 56	X 55	X 49	X 43	X 40	X 40
28	X 42	X 44	X 45	X 46	X 46	X 40	X 40											X 84	X 82	X 68	X 44	X 38	X 37	X 40
29	X 41	X 41	X 42	X 44	X 45	X 36	X 36												X 57	X 60	X 58	X 57	X 52	X 41
30	X 44	X 43	X 42	X 43	X 44	X 40	X 42												X 80	X 72	X 54	X 47	X 43	X 43
31	X 42	X 42	X 43	X 44	X 47	X 42	X 46												X 65	X 55	X 52	X 49	X 45	X 44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	1									1	5	31	30	30	30	31	31
MED	X 41	X 42	X 42	X 40	X 39	X 38	X 38	X 71									X 82	X 78	X 62	X 50	X 42	X 42	X 41	X 40
U Q	X 44	X 45	X 45	X 43	X 42	X 40	X 40											X 81	X 68	X 59	X 49	X 47	X 45	X 44
L Q	X 40	X 40	X 40	X 38	X 36	X 36	X 36											X 72	X 51	X 43	X 40	X 38	X 37	X 40

JAN. 2015 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 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	36	40	34	35	35	34	33	65	81	78	96	104	87	91	76	81	86	57	56	38	29	32	34	34
2	29	34	39	29	28	30	32	54	72	68	104	102	83	85	89	77	62	60	58	37	36	36	32	33
3	34	37	38	34	30	30	30	61	70	102	96	102	96	89	88	84	73	69	61	57	28	32	34	36
4	38	46	36	20	28	30	27	54	78	88	104	100	81	78	97	76	77	62	62	36	30	33	36	34
5	35	34	32	32	35	34	35	60	110	118	108	108	102	108	88	77	78	70	50	34	23	29	30	30
6	33	36	38	34	36	36	36	59	90	109	117	96	102	94	84	77	76	86	64	32	31	35	35	38
7	40	35	29	31	33	30	31	55	78	108	125	132	125	108	113	102	71	71	59	37	60	64	F	F
8	F	F	F	42	F	F	F	63	112	125	138	113	97	98	97	83	78	70	58	44	36	40	31	34
9	38	41	30	30	31	31	29	59	83	114	130	117	96	94	91	92	80	64	58	38	37	46	48	38
10	36	36	38	30	32	30	28	56	80	107	122	96	94	84	85	77	73	65	45	30	A	37	38	36
11	F	F	38	31	32	29	31	60	80	100	130	128	132	136	131	106	84	70	72	55	51	62	56	38
12	41	43	36	28	27	28	28	62	91	129	116	107	100	93	92	91	79	72	38	32	34	37	43	F
13	F	39	40	29	31	32	31	58	90	99	127	115	99	96	101	94	80	67	65	68	46	A	35	35
14	35	36	34	32	30	34	34	68	84	111	114	119	125	113	101	100	90	72	64	50	36	35	37	36
15	36	38	37	35	33	35	34	60	82	102	95	94	94	80	88	86	67	57	52	57	36	36	36	34
16	35	38	40	32	27	29	30	62	84	82	94	92	94	96	79	77	78	61	64	58	40	36	30	34
17	36	37	38	32	31	33	34	68	84	81	96	115	110	98	92	83	75	64	58	50	36	29	31	34
18	35	30	35	36	30	30	30	56	82	84	82	98	98	90	74	72	72	64	42	44	48	26	27	30
19	32	31	32	34	34	30	34	60	82	82	C	C	C	C	C	C	C	56	54	53	35	31	32	34
20	33	34	35	37	31	27	27	52	83	82	89	102	90	74	72	68	65	58	40	46	41	37	42	49
21	32	31	32	34	38	32	35	62	78	87	94	102	88	82	79	80	68	57	37	42	31	30	32	34
22	34	34	34	36	33	32	32	50	64	79	98	98	97	98	83	78	68	56	45	43	43	41	38	40
23	40	40	43	41	25	21	24	56	84	83	87	98	104	76	83	88	68	51	40	44	34	26	29	32
24	33	34	39	36	32	28	29	56	73	76	96	112	100	107	89	81	68	54	38	37	36	31	30	30
25	33	34	34	34	33	32	30	58	78	77	89	104	104	91	76	82	72	52	46	45	36	28	29	33
26	34	33	36	36	36	35	34	54	64	76	87	90	96	85	80	79	76	70	54	38	42	44	43	45
27	32	30	32	34	34	34	36	68	73	82	104	118	116	101	88	82	73	66	50	48	43	36	34	34
28	36	38	39	40	40	34	34	65	87	83	108	V 112	92	94	96	86	90	78	76	62	37	32	31	33
29	35	35	36	37	39	30	29	60	75	88	91	90	101	109	97	88	82	70	50	53	52	51	46	35
30	38	37	36	36	38	33	36	65	87	83	91	97	104	101	94	90	96	90	74	66	48	40	37	37
31	36	36	36	38	40	36	40	60	82	95	107	104	111	111	102	97	95	78	59	49	45	43	38	37
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	30	31	30	30	30	31	31	31	30	30	30	30	30	30	30	31	31	31	30	30	30	29
MED	35	36	36	34	32	32	32	60	82	87	101	103	98	94	88	82	76	65	56	44	36	36	34	34
U Q	36	38	38	36	35	34	34	62	84	107	116	113	104	101	97	90	80	70	62	53	43	40	38	37
L Q	33	34	34	31	30	30	29	56	78	82	94	98	94	85	83	77	71	57	45	37	34	31	31	34

IONOSPHERIC DATA STATION Kokubunji

JAN.2015 foF1 (0.01MHz) 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											L			L										
2												L			L									
3													L											
4												L												
5											L	L			A									
6																								
7												L	L		L									
8																								
9												L	L	L										
10													L		L									
11										L	L	L	L			A								
12												L			L									
13											L	A		L	L									
14												L	L											
15												L	L		L									
16											L	L	L	L										
17												A	L	L	L									
18												L	L	L	L									
19											C	C	C	C	C	C	C							
20											L	A	L											
21										L	L	L	L		L									
22											L	L	L	L										
23										L		L	L		L									
24											L	L	L	L	L									
25											L		L	L		L								
26											L	L	L	L										
27										L	L	L		L										
28														L										
29													L	L										
30													L											
31												L		L	L									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

JAN.2015 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 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									U R 256	A	A	A	R	R	R	U R 276	U R 200	B						
2								B	U R 244	A	A	A	A	R	R	U A 260	A	B						
3								B	U R 248	R	R	A	R	A	R	A	A							
4								B	U R 248	A	R	A	A	A	U R 316	U R 276	A							
5								B	U R 236	U R 300	A	A	A	A	A	A	U R 236	B						
6								B	U R 268	A	A	A	R	R	R	R	R	B						
7								B	U R 260	R	A	A	R	R	R	A	A	B						
8								B	R	A	A	A	A	R	R	A	U R 216	B						
9								B	U R 260	U R 312	R	R	A	R	A	U R 296	A	B						
10								B	248	R	A	A	R	R	R	A	A	A						
11								A	A	A	A	A	A	A	A	A	A	B		A				
12								B	U R 272	U R 324	A	R	R	R	A	A	228							
13								B	A	A	U R 340	A	A	A	R	R	204	B						
14								B	A	A	R	U R 344	R	A	A	U R 312	A							
15								B	U A 240	A	U R 340	R	R	A	R	U R 292	U R 228	B						
16								B	U R 256	R	U R 332	R	R	R	R	U R 292	240	B						
17								B	A	A	R	A	A	R	U R 332	R		B						
18								B	248	U R 316	U R 344	R	R	R	U R 336	A	236	B						
19								B	U R 248	R	C	C	C	C	C	C	C	B						
20								B	U R 248	U R 300	R	340	R	U R 352	A	A	R	B						
21								B	U R 256	R	R	R	A	R	A	U R 280	A	B						
22								B	240	R	A	A	U R 348	A	R	A	U R 232	B						
23								B	240	U R 292	A	U R 344	R	A	A	R	U A 224	B						
24								B	A	U R 304	U R 312	A	A	A	U R 312	A	U A 220	B						
25								B	U R 248	U R 332	U R 344	R	R	U R 336	A	A	U R 248	B						
26								U R 196	U R 264	U R 324	A	R	R	332	A	A	A	B						
27								B	244	R	R	R	336	R	A	U R 304	A	B						
28								B	U R 268	A	A	A	A	A	A	A	U R 256							
29								B	U R 264	U R 312	A	A	R	R	U R 344	U R 316	U R 256	B						
30								B	U R 268	A	A	A	R	A	R	A	A	B						
31								B	U R 256	R	356	R	A	A	A	A	236	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	25	10	7	3	2	3	5	10	15							
MED								U R 196	U R 248	U R 312	U R 340	U R 344	342	U R 336	U R 332	U R 292	U R 232							
U Q									U R 262	U R 324	344	U R 344		U R 352	U R 340	U R 304	U R 240							
L Q									246	U R 300	U R 332	340		332	U R 314	U R 276	U 220							

JAN. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 20	E B 16	E B 15	E B 15	E B 15	E B 14	E B 14	E B 16	G	34	J A 38	J A 38	G	G	G	G 24	G	J A 30	21	E B 16	E B 15	E B 15	E B 16	22
2	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	E B 16	G	33	38	34	40	G	G	34	J A 28	J A 23	23	E B 15	E B 16	J A 26	J A 24	J A 22
3	J A 19	21	J A 23	E B 15	E B 15	E B 14	E B 15	E B 16	G	G	G	J A 44	G	G	G	30	J A 26	J A 23	J A 29	J A 20	J A 23	J A 20	J A 22	J A 22
4	J A 30	E B 15	E B 15	E B 14	J A 44	21	20	22	G	35	G	36	36	36		G	G	22	J A 21	E B 14	E B 15	J A 26	23	J A 24	J A 22
5	J A 20	E B 15	19	20	J A 24	J A 40	J A 22	20	G	G	38	38	44	36	40	33	G	E B 16	E B 15	E B 14	E B 15	E B 14	J A 24	18
6	E B 15	20	21	E B 15	J A 28	E B 15	E B 15	E B 16	G	35	J A 37	36	G	G	G	G 28	J G 23	E B 15	E B 15	E B 14	J A 25	J A 22	20	J A 23
7	E B 15	E B 15	E B 14	E B 14	E B 14	J A 22	E B 14	20	G	G	42	40	G	G	G	J A 38	J A 41	E B 14	E B 15	J A 22	22	J A 22	J A 24	J A 21
8	J A 24	J A 29	J A 36	J A 44	J A 30	22	21	J A 25	G	J A 37	41	J A 38	42	G	G	37	G	19	J A 30	J A 22	J A 24	E B 15	E B 14	E B 15
9	J A 18	J A 20	J A 22	J A 23	J A 18	E B 14	E B 15	20	G	J A 43	G	G 30	J A 40	G	J A 43	J A 33	28	E B 15	J A 30	J A 23	20	E B 14	J A 22	E B 15
10	20	E B 15	18	E B 14	20	E B 15	20	20	29	G	40	39	G	G	G	34	J A 45	J A 71	J A 95	J A 114	J A 99	J A 41	J A 23	J A 30
11	J A 21	E B 15	J A 20	20	E B 14	J A 20	J A 46	J A 28	J A 34	J A 55	J A 44	J A 40	J A 42	J A 76	J A 43	J A 61	J A 33	J A 20	22	J A 63	J A 43	22	J A 24	J A 24
12	J A 17	J A 18	18	22	J A 20	22	J A 25	J A 25	G 23	G 26	35	G	G	G 30	J A 38	J A 45	28	20	J A 38	J A 69	J A 88	J A 85	J A 66	J A 74
13	J A 31	J A 27	E B 15	E B 15	J A 21	E B 15	E B 15	J A 22	J A 34	J A 37	G	40	J A 45	J A 51	G	G	25	E B 14	J A 19	20	J A 21	J A 54	J A 22	J A 25
14	J A 29	J A 24	E B 14	E B 14	E B 15	E B 14	E B 15	19	J A 34	J A 42	G	G 29	G 35	J A 46	41	G	28	J A 20	J A 34	J A 63	J A 44	J A 73	J A 19	J A 34
15	J A 47	J A 28	J A 22	J A 19	21	J A 24	E B 15	20	28	J A 36	G	G 28	G 25	41	G	G 26	J A 28	23	J A 20	E B 15	E B 14	E B 14	J A 18	E B 15
16	J A 20	J A 23	J A 28	J A 28	J A 20	E B 14	E B 15	19	G	G	G	G	G	G 26	G 28	G 24	27	23	J A 21	J A 25	J A 18	E B 15	J A 24	J A 20
17	J A 22	J A 20	J A 26	E B 13	E B 14	E B 14	21	J A 20	27	36	G	40	36	G 30	G 26	G 22	J A 28	J A 26	J A 24	E B 15	E B 16	E B 15	E B 15	E B 15
18	E B 15	E B 15	E B 15	E B 15	E B 14	20	E B 15	E B 16	28	G	G	G	G	G 30	G 27	J A 38	G	E B 16	J A 18	J A 22	E B 15	E B 14	E B 14	E B 15
19	J A 22	J A 18	E B 15	E B 14	E B 14	J A 20	19	E B 16	G	G	C	C	C	C	C	C	C	J A 24	20	E B 15	E B 15	E B 15	E B 14	21
20	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	19	J A 18	G 22	G 27	G 31	40	G	G		38	35	G	J A 42	J A 52	J A 42	J A 41	J A 28	J A 20	20
21	J A 27	J A 27	21	21	E B 15	20	E B 14	19	G	G 27	G 27	G 30	J A 50	G 32	37	J A 32	34	J A 26	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	J A 23	29	G	41	40	G	38	G 31	34	G	J A 22	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15
23	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	20	21	29	G	40	G	G	40	34	G	29	E B 16	J A 21	J A 28	21	20	J A 22	J A 18
24	20	E B 14	20	E B 14	19	E B 15	J A 20	19	J A 33	G	G	40	39	37	G 30	J A 38	26	E B 14	J A 20	J A 24	21	J A 24	J A 20	22
25	J A 18	20	19	19	18	E B 14	E B 14	E B 15	G 22	G 25	G 26	G 30	G 28	G 30	34	J A 36	G	E B 16	E B 15	E B 14	E B 14	E B 15	E B 15	E B 14
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	G 25	39	G 28	G 27	38	38	34	26	J A 20	J A 24	20	19	21	19	21
27	J A 19	J A 22	20	E B 14	E B 15	E B 14	E B 15	19	27	G	G	G	40	G 28	38	G 28	J A 33	J A 19	J A 24	21	22	J A 42	22	E B 14
28	J A 28	J A 28	22	E B 14	E B 15	E B 15	19	21	G	36	36	J A 49	41	42	40	34	G 23	J A 29	E B 14	E B 15	20	E B 15	E B 14	21
29	J A 24	J A 19	J A 20	E B 14	E B 14	E B 15	J A 25	22	G	G	40	40	G	G	G	G	G	G	22	22	19	E B 14	E B 14	E B 14
30	E B 15	E B 16	E B 14	E B 15	E B 15	E B 15	E B 16	20	G	34	42	42	G	41	G 32	40	30	E B 17	E B 15	E B 15	21	E B 15	E B 15	E B 15
31	J A 21	E B 15	E B 15	E B 15	E B 15	20	E B 14	20	G	G 28	39	G 34	42	J A 42	40	J A 39	30	E B 15	E B 13	21	E B 15	E B 15	E B 14	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	J A 20	18	18	E B 15	E B 15	E B 15	E B 16	20	G	G	36	37	G	G	G	34	26	20	J A 21	20	20	E B 15	J A 20	20
U Q	J A 24	J A 22	J A 21	19	J A 20	J A 20	J A 20	J A 21	28	J A 36	40	40	40	40	38	J A 37	29	J A 23	J A 24	J A 24	J A 24	J A 24	J A 23	J A 22
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	G	G	G	G	G	G	G	G	G	G	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

JAN. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 fbEs (0.1MHz) 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	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14	E B 14	E B 16	G	30	34	33	G	G	G	G 20	G	20	E B 15	E B 16	E B 15	E B 15	E B 16	E B 15
2	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	E B 16	G	31	34	32	35	G	G	30	18	18	20	E B 15	E B 16	16	E B 15	E B 15
3	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16	G	G	G	34	G	G	G	28	22	18	E B 15	E B 16	E B 15	E B 16	E B 15	E B 15
4	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	17	G	32	G	34	34	34	G	G	20	E B 15	E B 14	E B 15	E B 15	E B 16	E B 15	E B 14
5	E B 15	E B 15	E B 16	E B 15	E B 15	20	18	18	G	G	34	37	35	33	37	30	G	E B 16	E B 15	E B 14	E B 15	E B 14	E B 16	E B 16
6	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	33	34	34	G	G	G	G 26	G 17	E B 15	E B 15	E B 14	16	21	E B 14	E B 14
7	E B 15	E B 15	E B 14	E B 14	E B 14	15	E B 14	18	G	G	38	38	G	G	G	33	31	E B 14	E B 15	16	E B 16	E B 15	E B 14	E B 15
8	E B 15	E B 15	28	34	E B 15	E B 15	E B 15	E B 16	G	34	38	36	37	G	G	33	G	17	18	E B 15	16	E B 15	E B 14	E B 15
9	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	19	G	G 25	G	G 28	36	G	32	G 24	25	E B 15	17	E B 16	E B 15	E B 14	E B 15	E B 15
10	E B 16	E B 15	E B 14	E B 14	E B 16	E B 15	E B 15	18	27	G	37	37	G	G	G	32	31	20	27	18	A A 99	20	E B 15	E B 15
11	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	23	19	27	34	34	34	36	40	34	53	24	19	E B 15	32	38	E B 14	E B 15	E B 16
12	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	19	G 21	G 24	33	G	G	G 28	33	37	26	20	28	18	18	20	17	18
13	20	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	18	29	32	G	37	38	37	G	G	24	E B 14	E B 15	E B 14	E B 16	A A 54	E B 15	E B 15
14	E B 15	E B 15	E B 14	E B 14	E B 15	E B 14	E B 15	19	24	32	G	G 26	G 32	37	40	G	26	18	24	34	22	22	E B 15	24
15	18	18	E B 15	E B 15	E B 15	E B 14	E B 15	18	27	32	G	G 28	G 25	35	G	G 24	G 16	18	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15
16	E B 15	E B 15	E B 15	20	E B 15	E B 14	E B 15	16	G	G	G	G	G	G 25	G 27	G 21	26	20	18	20	E B 15	E B 15	E B 14	E B 15
17	E B 15	E B 15	18	E B 13	E B 14	E B 14	E B 15	17	24	32	G	37	33	G 29	G 24	G 19	20	20	20	E B 15	E B 16	E B 15	E B 15	E B 15
18	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	26	G	G	G	G	G 28	G 26	30	G	E B 16	E B 15	16	E B 15	E B 14	E B 14	E B 15
19	E B 14	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15	E B 16	G	G	C	C	C	C	C	C	C	16	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
20	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	16	G 21	G 26	G 31	37	G	G	35	32	G	30	20	20	19	E B 14	E B 15	E B 15
21	E B 16	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	18	G	G 26	G 26	G 30	38	G 30	32	G 19	27	18	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
22	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	21	27	G	36	36	G	35	G 30	32	G	16	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15
23	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 15	19	25	G	38	G	G	36	32	G	27	E B 16	17	E B 15	E B 15	E B 15	16	E B 15
24	E B 15	E B 14	E B 16	E B 14	E B 16	E B 15	E B 15	18	26	G	G	35	37	35	G 29	32	25	E B 14	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15
25	E B 14	E B 15	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	G 20	G 23	G 23	G 30	G 26	G 29	32	29	G	E B 16	E B 15	E B 14	E B 14	E B 15	E B 15	E B 14
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	G 22	32	G 26	G 25	38	36	32	25	18	20	E B 15	E B 15	E B 15	E B 15	E B 15
27	E B 16	E B 15	E B 14	E B 14	E B 15	E B 14	E B 15	18	25	G	G	G	38	G 27	36	G 27	24	18	17	E B 15	E B 15	16	E B 14	E B 14
28	E B 16	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	18	G	31	35	43	38	39	38	34	G 23	24	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15
29	18	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	21	G	G	35	38	G	G	G	G	G	G	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14
30	E B 15	E B 16	E B 14	E B 15	E B 15	E B 15	E B 16	18	G	32	38	40	G	36	G 30	35	29	E B 17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
31	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14	19	G	G 27	38	G 33	39	38	37	32	26	E B 15	E B 13	E B 16	E B 15	E B 15	E B 14	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	G	G	32	34	G	G	G	30	G	17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	19	25	32	35	37	36	36	34	32	26	19	18	16	16	16	E B 15	E B 15
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 16	G	G	G	G 33	G	G	G	G 27	G	E B 16	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15

JAN. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 fmin (0.1MHz) 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	15	16	15	15	15	14	14	16	15	13	16	18	19	16	16	14	15	14	15	16	15	15	16	15
2	15	15	15	15	14	15	16	16	14	14	16	17	13	18	18	16	14	15	15	15	16	14	15	15
3	15	15	16	15	15	14	15	16	14	13	13	17	16	16	14	14	13	14	15	16	16	16	15	15
4	15	15	15	14	15	15	15	15	14	15	15	14	13	16	15	14	13	15	14	15	14	16	15	14
5	15	15	16	15	15	14	14	14	14	15	16	13	14	16	14	13	12	16	15	14	15	14	16	16
6	15	15	14	15	15	15	15	16	14	14	16	17	18	16	17	14	14	15	15	14	14	15	14	14
7	15	15	14	14	14	14	14	14	14	14	20	20	18	19	18	19	16	14	15	14	16	15	14	15
8	15	15	15	14	15	15	15	16	15	18	18	18	18	19	18	14	15	12	16	15	15	15	14	15
9	15	15	15	15	14	14	15	14	14	15	18	20	16	18	16	14	14	15	14	16	15	14	15	15
10	16	15	14	14	16	15	15	15	12	16	19	19	17	19	20	15	15	14	14	14	15	16	15	15
11	15	15	15	15	14	15	15	15	15	14	18	17	20	17	15	14	13	14	15	16	14	14	15	16
12	15	15	15	15	15	15	16	14	13	14	14	19	18	15	14	14	13	13	15	15	14	14	14	14
13	14	15	15	15	14	15	15	13	14	15	13	16	17	16	20	16	14	14	15	14	16	14	15	15
14	15	15	14	14	15	14	15	15	14	14	16	17	18	17	12	14	14	15	15	15	14	15	15	14
15	15	15	15	15	15	14	15	15	13	12	15	18	18	15	14	13	15	15	15	15	14	14	14	15
16	15	15	15	14	15	14	15	14	14	14	16	15	16	16	14	14	15	14	14	15	15	15	14	16
17	15	15	14	13	14	14	15	15	14	14	13	16	18	14	12	15	14	14	15	15	16	15	15	15
18	15	15	15	15	14	15	15	16	13	14	15	18	18	16	15	14	14	16	16	15	15	14	14	15
19	14	15	15	14	14	15	15	16	14	13	C	C	C	C	C	C	C	14	15	15	15	15	14	15
20	15	15	15	14	15	15	15	16	14	13	13	13	16	15	13	13	13	14	15	16	14	14	15	15
21	16	15	14	15	15	15	14	14	14	13	14	14	13	15	14	12	14	14	15	16	15	15	15	15
22	15	15	15	15	15	15	15	14	14	14	14	16	18	15	16	14	14	14	14	15	15	14	15	15
23	14	14	15	14	14	14	15	14	14	12	13	14	15	16	10	13	14	16	16	15	15	15	15	15
24	15	14	16	14	15	15	15	14	14	13	16	15	14	17	15	15	13	14	15	16	15	15	14	15
25	14	15	15	14	15	14	14	15	15	13	13	15	13	13	12	15	13	16	15	14	14	15	15	14
26	15	15	15	14	14	14	14	14	14	13	15	13	15	12	16	13	13	14	15	15	15	15	15	15
27	16	15	14	14	15	14	15	14	14	13	12	13	13	15	13	14	13	15	15	15	15	14	14	14
28	16	15	15	14	15	15	15	15	15	16	14	15	17	18	19	18	14	14	14	15	15	15	14	15
29	15	15	14	14	14	15	15	14	14	13	14	14	18	18	13	19	15	14	15	15	15	14	14	14
30	15	16	14	15	15	15	16	16	16	12	17	20	21	18	17	15	15	17	15	15	15	15	15	15
31	15	15	15	15	15	17	14	14	15	14	14	14	16	17	19	17	15	15	13	16	15	15	14	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	15	15	15	14	15	15	15	15	14	14	15	16	17	16	15	14	14	14	15	15	15	15	15	15
U Q	15	15	15	15	15	15	15	16	14	14	16	18	18	18	17	15	15	15	15	16	15	15	15	15
L Q	15	15	14	14	14	14	15	14	14	13	14	14	15	15	14	14	13	14	15	15	14	14	14	15

JAN. 2015 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 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	291	323	309	303	313	311	329	355	380	329	318	349	343	357	321	333	359	347	337	362	300	301	308	324
2	328	275	353	316	292	311	336	354	372	346	350	361	344	332	343	358	382	318	354	317	318	337	311	283
3	273	304	321	372	296	285	292	345	348	356	352	351	352	341	342	348	348	336	323	352	314	293	285	277
4	294	355	346	376	268	292	280	336	361	349	349	360	338	344	359	352	360	338	356	300	304	274	312	272
5	286	282	294	267	284	261	313	312	345	342	341	336	336	340	324	330	347	333	358	336	313	275	310	305
6	296	291	312	296	277	305	288	337	365	342	353	316	321	330	346	340	327	351	366	296	276	309	271	288
7	314	323	286	273	303	296	332	331	330	325	329	322	334	304	325	352	342	336	360	269	246	293	F	F
8	F	F	F	264	F	F	F	330	338	328	339	320	332	321	333	344	348	338	344	336	301	309	270	264
9	302	353	313	283	280	281	323	338	334	322	348	341	330	332	318	340	349	336	359	341	284	288	316	292
10	273	299	310	301	276	290	311	332	341	340	351	361	335	330	344	341	332	350	340	357	A	271	302	275
11	F	F	333	280	270	271	311	360	359	337	334	332	326	296	289	311	312	313	332	314	306	307	343	290
12	287	313	303	316	277	281	288	336	321	351	351	334	330	331	330	327	337	343	338	305	296	289	261	F
13	F	269	337	308	278	288	305	333	362	338	340	336	323	332	320	325	333	325	319	348	324	A	293	294
14	293	314	324	332	291	311	289	348	356	343	325	322	320	322	311	330	343	332	341	360	306	298	297	293
15	269	292	310	307	294	309	306	341	355	357	346	347	340	331	339	345	346	327	312	347	295	309	309	285
16	274	312	320	334	291	298	311	345	371	368	346	344	335	341	322	323	341	322	317	350	321	322	283	274
17	296	311	329	317	286	278	282	352	373	345	336	346	320	323	325	333	348	341	351	355	329	282	291	310
18	342	302	312	336	341	310	298	343	364	347	337	340	342	357	341	345	340	340	345	341	369	310	272	279
19	289	276	286	327	348	311	311	350	364	367	C	C	C	C	C	C	C	343	323	347	332	293	304	292
20	289	282	311	342	358	298	300	329	372	367	330	346	356	348	345	340	346	348	324	324	317	279	298	356
21	316	282	293	302	338	291	327	368	374	373	340	349	332	345	344	355	358	338	348	336	315	288	284	283
22	292	278	280	309	308	312	340	363	377	331	336	334	315	340	344	356	354	346	319	326	307	300	292	288
23	293	298	332	359	360	292	305	345	377	368	345	334	363	313	329	347	372	357	317	351	373	279	284	288
24	302	312	333	342	304	291	327	358	364	340	317	340	316	335	353	352	363	352	340	329	344	312	287	288
25	295	319	295	297	307	311	343	338	384	349	340	337	343	356	324	348	370	339	343	352	346	313	275	306
26	281	294	298	305	295	292	346	371	354	340	351	340	340	325	342	320	342	344	350	297	284	281	291	327
27	305	283	291	295	297	292	296	361	371	331	327	325	335	334	354	354	330	352	324	343	316	320	294	285
28	264	281	289	304	327	289	329	350	373	331	344	V 347	312	340	347	337	342	332	329	344	331	311	288	285
29	299	287	297	289	327	318	333	354	356	350	352	325	329	335	331	349	343	345	321	307	306	333	338	319
30	278	293	282	288	313	301	326	347	361	357	341	329	334	352	328	302	325	344	326	324	324	295	302	294
31	286	282	283	278	323	296	331	352	357	346	339	332	314	323	334	322	333	342	324	325	310	321	311	291
	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	30	31	30	30	30	31	31	31	30	30	30	30	30	30	30	31	31	31	30	30	30	29
MED	292	294	310	305	296	294	311	345	362	345	340	338	334	333	334	340	344	340	338	336	314	299	294	288
U Q	300	312	324	332	323	310	329	354	372	356	349	347	340	341	344	349	354	346	350	350	324	311	309	300
L Q	284	282	293	289	284	289	298	336	354	337	336	332	323	325	324	330	337	333	323	317	301	288	284	283

JAN. 2015 M(3000)F2 (0.01)

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IONOSPHERIC DATA STATION Kokubunji

JAN.2015 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Kokubunji

JAN.2015 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											256			240										
2												234			270									
3													238											
4												238												
5											248	254			218									
6																								
7												258	244		266									
8																								
9												236	240	254										
10													260		254									
11										250	250	242	246			E A 234								
12												260			260									
13											252	236		266	266									
14												264	258											
15												236	254		264									
16											254	232	254	254										
17												236	272	266	250									
18												246	256	242	252									
19											C	C	C	C	C	C	C							
20											258	242	242											
21										242	250	240	248		258									
22											256	240	282	252										
23										226		236	240		256									
24											286	240	270	242	234									
25											260		248	236		250								
26											250	250	256	298										
27										256	268	268		238										
28														254										
29													270	270										
30													248											
31												244		252	246									
	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	12	21	19	14	13	2								
MED										246	255	240	254	253	256	242								
U Q										253	259	252	260	266	265									
L Q										234	250	236	244	242	248									

JAN.2015 h'F2 (KM)

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JAN. 2015 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 282	E B 250	E B 256	E B 240	E B 254	E B 242	E B 254	220	206	196	192	212	208	202	210	224	216	206	212	196	E B 266	E B 274	E B 264	E B 246
2	E B 232	E B 290	224	E B 228	E B 264	E B 274	E B 230	206	206	200	214	200	208	220	224	222	194	232	202	206	E B 230	214	E B 248	E B 304
3	E B 336	E B 284	E B 242	204	E B 248	E B 306	E B 286	212	200	222	220	222	204	196	208	220	214	216	216	206	222	E B 298	E B 302	E B 304
4	E B 286	222	214	204	E B 320	E B 294	E B 306	E A 234	216	216	226	202	202	220	228	214	218	202	212	202	E B 244	E B 304	E B 272	E B 304
5	E B 294	E B 272	E B 276	E B 322	E B 314	E A 368	E A 270	244	234	218	212	212	224	216	A	210	220	210	200	216	228	E B 298	E B 270	E B 254
6	E B 272	E B 286	226	224	E B 264	E B 246	E B 274	232	218	224	222	212	220	216	216	220	226	220	200	218	E A 310	E A 294	E B 298	E B 300
7	E B 248	E B 232	E B 242	E B 300	E B 278	224	212	224	218	220	214	204	210	218	208	228	210	210	200	E A 284	E B 280	E B 276	222	226
8	228	224	E A 324	E A 382	E B 338	E B 308	E B 316	E B 254	222	220	230	210	214	228	224	214	214	208	216	198	E A 254	E B 242	E B 254	E B 312
9	E B 278	222	E B 256	E B 292	E B 310	E B 310	E B 248	232	218	224	218	196	198	194	208	222	214	208	210	204	E B 270	E B 252	E B 232	E B 240
10	E B 286	E B 290	E B 248	E B 252	E B 288	E B 304	E B 256	232	210	228	214	210	180	228	212	226	232	210	222	212	A	E A 344	E B 254	E B 298
11	E B 288	E B 264	E B 232	E B 268	E B 298	E B 336	E A 324	226	216	216	214	210	202	222	224	A	210	220	204	E A 238	E A 294	E B 248	212	E B 254
12	E B 286	E B 236	E B 250	E B 252	E B 316	E B 316	E B 310	238	218	232	210	206	216	218	216	228	214	212	222	E A 274	E A 276	E A 314	E A 368	E A 270
13	E A 306	E B 254	E B 234	220	E B 278	E B 286	E B 274	228	214	212	222	A	206	208	222	228	216	206	226	216	200	A	E B 288	E B 286
14	E B 284	E B 252	E B 232	224	E B 272	E B 262	E B 268	232	206	214	212	216	208	224	214	224	224	196	216	220	E A 264	E A 324	E B 264	E A 306
15	E A 310	E A 314	E B 244	E B 250	E B 244	E B 258	E B 234	230	208	222	220	206	206	206	210	232	208	214	216	218	226	E B 252	E B 248	E B 262
16	E B 330	E B 262	E B 256	210	E B 258	E B 278	E B 272	226	206	206	196	200	206	216	214	218	222	210	228	210	210	228	E B 312	E B 314
17	E B 286	E B 258	E A 242	E B 226	E B 286	E B 300	E B 284	232	200	206	216	A	202	198	216	218	214	206	214	206	210	E B 264	E B 294	E B 266
18	E B 228	E B 262	E B 268	228	218	E B 262	E B 280	E B 230	216	220	218	204	198	218	206	214	220	202	208	230	208	E B 234	E B 340	E B 322
19	E B 290	E B 310	E B 300	E B 260	208	E B 292	E B 264	232	210	212	C	C	C	C	C	C	C	218	E B 230	208	210	E B 248	E B 258	E B 274
20	E B 266	E B 286	E B 252	222	210	E B 276	E B 288	E B 238	216	204	214	A	216	214	212	218	212	216	214	E A 248	E A 240	E B 272	E B 264	224
21	220	E B 262	E B 296	E B 268	E B 232	E B 256	E B 248	214	206	208	208	212	204	214	204	222	212	212	200	216	212	E B 256	E B 298	E B 298
22	E B 284	E B 306	E B 310	E B 272	E B 234	E B 246	E B 234	210	214	220	214	206	218	222	222	214	212	212	214	222	234	E B 240	E B 286	E B 280
23	E B 282	E B 268	E B 238	206	202	E B 316	E B 300	E A 246	218	200	E A 242	204	208	204	198	220	206	200	224	222	210	E B 286	E A 322	E B 300
24	E B 262	E B 266	E B 238	222	236	E B 268	E B 244	216	216	212	216	204	204	212	204	220	210	196	210	216	220	E B 232	E B 280	E B 310
25	E B 282	E B 252	E B 266	E B 264	E B 240	E B 254	222	222	214	218	208	224	210	208	202	202	204	200	E B 216	212	214	E B 230	E B 248	E B 304
26	E B 284	E B 276	E B 272	E B 272	E B 238	E B 250	212	206	206	H 194	214	208	204	216	226	222	226	214	204	E B 250	E B 274	E B 270	E B 256	226
27	222	E B 272	E B 300	E B 278	E B 254	E B 268	E B 228	212	206	208	212	212	228	204	222	212	216	212	216	220	230	210	E B 248	E B 288
28	E B 308	E B 308	E B 280	E B 256	230	228	232	218	212	206	220	216	208	214	234	220	224	210	222	192	206	E B 218	E B 274	E B 292
29	E A 280	E B 284	E B 276	E B 274	226	202	E B 246	216	210	218	218	210	222	220	226	220	220	208	200	240	222	224	216	E B 222
30	E B 282	E B 288	E B 296	E B 298	E B 252	E B 230	226	216	208	206	216	218	212	210	212	216	226	212	194	200	204	E B 240	E B 242	E B 248
31	E B 276	E B 280	E B 298	E B 268	E B 242	E B 248	222	198	212	224	220	202	224	216	204	206	218	204	200	206	226	220	E B 246	E B 286
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	27	30	30	29	29	30	31	31	31	30	30	31	31
MED	E B 282	E B 268	E B 256	E B 252	E B 254	E B 268	E B 256	222	212	216	214	210	208	216	214	220	215	210	213	212	217	E B 252	E B 264	E B 286
U Q	E B 288	E B 286	E B 280	E B 272	E B 286	E B 304	E B 284	232	216	220	220	212	216	220	223	223	220	214	216	E 222	E 264	E 286	E B 294	E B 304
L Q	E B 266	E B 252	E B 238	224	234	E B 248	232	216	206	206	212	204	204	208	208	214	212	206	202	206	210	232	E B 248	E B 254

JAN. 2015 h'F (KM)

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JAN. 2015 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									124	A	A	A	120	116	118	116	118	B						
2								B	114	114	A	A	110	108	118	114	112	B						
3								B	112	120	110	108	110	110	110	A	A							
4								B	114	114	114	A	A	A	110	110	A							
5								B	116	116	A	A	A	A	A	A	116	B						
6								B	116	A	A	A	110	116	116	116	110	B						
7								B	118	122	A	A	126	116	116	A	A	B						
8								B	120	122	128	120	122	122	120	112	118	B						
9								B	122	122	116	116	A	112	A	112	114	B						
10								B	124	122	122	A	126	116	114	116	A	A						
11								A	120	A	A	A	A	A	A	A	A	B		A				
12								B	120	120	A	116	114	114	A	A	112							
13								B	A	A	110	A	A	A	118	112	112	B						
14								B	A	A	116	118	116	A	116	116	A							
15								B	116	A	116	120	118	A	116	122	118	B						
16								B	116	114	112	110	110	116	112	114	114	B						
17								B	118	112	112	112	A	118	114	110		B						
18								B	114	110	110	112	110	116	118	A	112	B						
19								B	116	114	C	C	C	C	C	C	C	B						
20								B	124	122	124	114	114	114	114	A	114	B						
21								B	108	120	112	116	116	118	A	110	A	B						
22								B	110	118	118	114	112	A	120	118	116	B						
23								B	114	114	114	108	108	A	A	114	112	B						
24								B	114	112	112	A	A	112	114	A	110	B						
25								B	112	112	114	114	114	116	A	A	114	B						
26								138	110	116	A	116	114	114	116	110	114	B						
27								B	122	116	116	112	112	112	110	112	A	B						
28								B	118	A	A	A	114	110	112	A	120							
29								B	114	112	A	112	120	120	118	116	116	B						
30								B	114	A	116	118	114	A	122	116	120	B						
31								B	114	122	112	114	116	A	A	A	108	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	29	23	20	19	23	20	22	19	21							
MED								138	116	116	114	114	114	116	116	114	114							
U Q									120	122	116	116	118	116	118	116	117							
L Q									114	114	112	112	110	112	114	112	112							

JAN. 2015 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	98	B	B	B	B	B	B	B	G	106	106	102	G	G	G	98	G	88	98	B	B	B	B	112
2	B	B	B	B	B	B	B	B	G	112	108	104	124	G	G	128	90	96	104	B	B	126	108	108
3	110	98	98	B	B	B	B	B	G	G	G	118	G	G	G	108	106	100	94	92	90	96	96	90
4	94	B	B	B	96	100	96	96	G	120	G	108	108	108	G	G	108	106	B	B	96	100	98	94
5	94	B	116	110	110	98	98	152	G	G	100	102	94	108	92	118	G	B	B	B	B	B	94	92
6	B	98	94	B	106	B	B	B	G	106	104	106	G	G	G	102	102	B	B	B	90	86	90	90
7	B	B	B	B	B	96	B	160	G	G	108	102	G	G	G	102	106	B	B	98	98	98	92	122
8	118	108	106	106	98	98	100	102	G	126	126	122	122	G	G	116	G	138	96	96	98	B	B	B
9	96	100	96	90	94	B	B	144	G	96	G	96	96	G	96	96	118	B	96	98	90	B	90	B
10	96	B	96	B	96	B	100	152	156	G	114	108	G	G	G	122	106	106	98	98	98	96	90	90
11	94	B	94	94	B	120	102	102	122	106	102	100	100	100	100	100	104	156	116	98	98	98	98	98
12	94	94	102	94	98	98	102	102	102	102	100	G	G	100	100	104	158	106	102	114	96	98	98	94
13	90	94	B	B	100	B	B	110	106	108	G	102	102	100	G	G	140	B	106	94	96	96	120	94
14	104	96	B	B	B	B	B	110	106	106	G	104	96	96	114	G	102	102	102	98	98	98	100	98
15	96	98	96	96	96	96	B	124	134	104	G	102	102	106	G	102	102	102	100	B	B	B	100	B
16	100	98	98	92	92	B	B	120	G	G	G	G	G	98	98	98	144	102	94	94	94	B	102	104
17	98	100	100	B	B	B	100	100	128	118	G	122	108	104	96	92	92	92	90	B	B	B	B	B
18	B	B	B	B	B	94	B	B	166	G	G	G	G	108	106	108	G	B	102	102	B	B	B	B
19	98	98	B	B	B	104	104	B	G	G	C	C	C	C	C	C	C	104	100	B	B	B	B	104
20	B	B	B	B	B	B	108	108	108	108	106	160	G	G	128	106	G	104	98	98	98	98	102	102
21	92	92	104	96	B	96	B	160	G	104	102	104	118	104	106	96	92	90	B	B	B	B	B	B
22	B	B	B	B	B	B	158	152	148	G	110	124	G	106	106	112	G	104	B	B	B	B	B	B
23	B	B	B	B	B	B	142	136	142	G	112	G	G	106	106	G	132	B	138	114	100	90	90	90
24	90	B	108	B	112	B	110	158	124	G	G	106	106	128	104	104	114	B	108	100	98	98	96	102
25	96	94	96	98	98	B	B	B	102	102	98	104	102	104	104	106	G	B	B	B	B	B	B	B
26	B	B	B	B	B	B	B	G	G	100	102	100	100	144	120	120	116	98	96	94	94	102	102	102
27	96	94	96	B	B	B	B	138	166	G	G	G	142	96	114	106	96	104	96	96	96	104	104	B
28	116	102	100	B	B	B	100	138	G	106	104	102	118	128	116	106	106	102	B	B	94	B	B	112
29	100	104	104	B	B	B	94	154	G	G	102	122	G	G	G	G	G	G	92	90	90	B	B	B
30	B	B	B	B	B	B	B	160	G	106	128	136	G	108	108	114	122	B	B	B	84	B	B	B
31	94	B	B	B	B	98	B	158	G	102	152	104	124	108	106	110	144	B	B	88	B	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	16	17	9	12	11	14	23	14	19	19	25	17	20	19	25	22	19	21	18	20	15	19	19
MED	96	98	98	96	98	98	101	138	126	106	106	104	106	106	106	106	106	102	98	98	96	98	98	98
U Q	100	100	104	102	103	100	108	154	148	108	112	120	120	108	114	113	122	106	103	98	98	100	102	104
L Q	94	94	96	93	96	96	100	108	106	102	102	102	100	100	100	101	102	98	96	94	92	96	92	92

IONOSPHERIC DATA STATION Kokubunji

JAN. 2015 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	F2									L2	L2	L2				L2		L2	F1					F2
2										C3	L2	L2	C1			C2	CL12	L1	F1			FF11	F1	F2
3	F2	F1	F2									C1				L1	L1	L2	F3	F2	F3	F2	F2	F2
4	F2				F1	F3	F2	L1		C2		L1	L1	L1			L1	L3			F1	F1	F2	F1
5	F2		F2	F3	F1	F5	F3	HL11			L2	L2	L2	L2	L2	CL12							F2	F1
6		F1	F1		F1					L2	L2	L2				L2	L1				F3	F3	F2	F1
7						F1		H1			L1	L1				L2	L2			F2	F1	F1	F1	F3
8	F1	F3	F4	F4	F3	F2	F1	L2		C1	C1	C1	C1			C1		HL22	F2	F2	F2			
9	F2	F2	F2	F2	F2			H1		L2		L1	L2		L2	L1	C2		F2	F1	F1		F1	
10	F1		F1		F1		F1	H2	H1		C1	L2				C2	L2	L3	F3	F3	F3	F3	F2	F3
11	F1		F1	F2		F2	F4	L4	C2	L3	L2	L2	L2	L2	L2	L3	L3	H2	F1	F5	F4	F1	F3	F2
12	F2	F2	F1	F1	F1	F2	F2	L3	L2	L2	L2			L2	L2	L2	H2	L2	F3	FF25	F3	F6	F4	F3
13	F4	F2			F2			C1	L2	L2		L2	L2	L2			H2		F1	F1	F3	F3	F1	F2
14	F2	F1						L1	L2	L2		L1	L2	L2	C1		L2	L2	F5	F5	F4	F3	F2	F3
15	F3	F2	F2	F1	F1	F1		C2	C2	L2		L2	L1	L2		L1	L1	L2	F2				F1	
16	F1	F2	F3	F2	F2			C1						L1	L2	L2	H1	L2	F5	F3	F1		F2	F2
17	F2	F2	F3				F1	L2	C1	C1		C1	L2	L2	L2	L2	L2	L2	F2					
18						F1			H1					L2	L2	L2			F1	F2				
19	F1	F1				F2	F1											L1	F1					F1
20							F1	L1	L2	L2	L2	H1			C1	L2		L3	F3	F4	F4	F2	F2	F1
21	F2	F2	F1	F1		F1		H1		L2	L2	L1	CL12	L2	L1	L2	L3	L3						
22							F1	H1	H1		C1	C1		L2	L1	CL11		L2						
23							F2	H3	H2		C2			L1	L1		C2		F1	F2	F1	F2	F3	F2
24	F1		F1		F1		F1	HL21	CL11			L1	L2	C1	L2	L2	C2		F1	F1	F2	F1	F2	F1
25	F2	F1	F1	F1	F2				L2	L2	L3	L2	L2	L2	L1	L1								
26										L2	L1	L2	L2	HL12	C1	C1	C1	L1	F6	F1	F1	F1	F1	F1
27	F3	F2	F1					H1	HL12				HL11	L2	CL11	L2	L3	L1	F2	F2	F2	F2	F2	
28	F1	F2	F2				F1	H2		L2	L2	L2	C2	C1	C1	L2	L2	L3			F2			F1
29	F3	F2	F1				F2	H2			L1	CL11							F1	F1	F1			
30								H2		L2	C1	C2		L1	L2	C1	C1				F2			
31	F1					F1		H2		L2	H1	L2	C1	L2	L2	L2	H1			F1				
	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																								

JAN. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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 45	X 48	X 47	X 44	X 42	X 41	X 40												X 92	X 70	X 72	X 54	X 50	X 41
2	X 36	X 37	X 40	X 40	X 36	X 32	X 34												X 64	X 77	X 67	X 48	O X 32	X 34
3	X 37	X 36	X 43	X 43	X 28	X 31	X 32												X 82	X 77	X 49	X 41	X 39	X 42
4	X 45	X 45	X 42	X 28	X 30	X 33	X 33												X 62	X 56	X 52	X 44	X 50	X 46
5	X 45	X 48	X 41	X 36	X 38	X 38	X 40												X 71	X 59	X 40	X 42	X 38	X 37
6	X 37	X 38	X 40	X 31	X 31	X 34	X 39												X 94	X 58	X 48	X 49	X 40	X 42
7	X 44	X 40	X 37	X 37	X 39	X 37	X 35												X 82	X 62	X 86	X 92	X 89	X 83
8	X 70	X 55	X 46	X 46	A	X 44	X 44	52											X 79	X 70	X 48	X 57	X 52	X 50
9	X 56	X 56	X 38	X 32	X 35	X 36	X 36												X 80	X 64	X 68	X 70	X 66	X 58
10	X 47	X 44	X 43	X 35	X 32	X 34	X 36												X 72	X 52	X 47	X 47	X 51	X 44
11	X 48	X 49	X 46	X 40	X 38	X 38	X 38												X 96	X 80	X 81	X 64	X 71	X 50
12	48	X 45	X 43	X 36	X 30	X 33	X 32													X 64	X 64	X 65	X 58	X 49
13	X 48	X 44	X 50	X 38	X 31	X 34	X 34												X 86	X 83	X 86	X 62	X 48	X 47
14	X 46	X 44	X 46	X 38	X 32	X 36	X 40												X 86	X 64	X 56	A	X 43	X 42
15	X 42	X 42	X 44	X 43	X 40	X 42	X 44												X 80	X 82	X 80	X 70	X 52	X 49
16	X 49	X 48	X 45	X 39	X 28	X 32	X 32												X 78	X 72	X 62	X 59	A	A
17	X 42	X 45	X 43	X 38	X 40	X 37	X 36												X 74	X 68	X 62	X 61	X 46	X 44
18	X 42	X 35	X 38	X 40	X 38	X 34	X 34												X 71	X 58	X 51	X 51	X 39	X 36
19	X 37	X 38	X 40	X 42	X 41	X 32	X 36												X 82	X 74	X 71	X 60	X 52	X 40
20	X 38	X 37	X 38	X 39	X 42	X 32	X 32												X 63	X 46	X 51	X 54	X 55	X 54
21	X 42	X 36	X 38	X 41	X 46	X 34	X 37												X 72	X 58	X 50	X 52	X 52	X 47
22	X 46	X 43	X 42	X 44	X 45	X 36	X 43												X 70	X 54	X 50	X 52	X 48	X 49
23	X 46	X 46	X 49	X 44	X 35	X 26	X 25												X 56	X 48	X 58	X 43	X 36	X 39
24	X 40	X 41	X 44	X 44	X 39	X 36	X 34												X 66	X 52	X 49	X 45	X 38	X 38
25	X 39	X 40	X 41	X 41	X 44	X 32	X 27												X 67	X 51	X 50	X 48	X 44	X 36
26	X 38	X 39	X 39	X 39	X 41	X 35	X 38												X 86	X 60	X 54	X 58	X 54	X 54
27	X 36	X 37	X 38	X 40	X 46	X 40	X 38												X 80	X 56	X 53	X 56	X 46	X 37
28	X 40	X 40	X 42	X 42	X 43	X 35	X 36												X 85	X 87	X 62	X 52	X 41	X 38
29	X 41	X 41	X 42	X 44	X 48	X 38	X 34												X 87	X 72	X 81	X 80	X 68	X 38
30	X 37	X 38	X 39	X 38	X 40	X 39	X 40												X 110	X 102	X 78	X 78	X 64	X 46
31	X 42	X 41	X 41	X 43	X 46	X 45	X 42												X 96	X 67	X 63	X 68	X 57	X 47
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	1											30	31	31	30	30	30
MED	X 42	X 41	X 42	X 40	X 39	X 35	X 36	52											X 80	X 64	X 58	X 55	X 50	X 44
U Q	X 46	X 45	X 44	X 43	X 42	X 38	X 40												X 86	X 74	X 71	X 64	X 55	X 49
L Q	X 38	X 38	X 39	X 38	X 32	X 33	X 34												X 71	X 56	X 50	X 48	X 41	X 38

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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	39	42	41	38	36	35	34	46	92	86	86	112	118	112	R 118	118	J R 141	J R 136	86	64	66	48	44	35
2	30	31	34	34	30	26	28	39	70	78	70	117	105	102	96	96	79	60	58	71	61	42	R 26	28
3	31	V 30	37	37	22	25	26	40	68	80	92	102	105	88	83	98	89	76	76	71	43	35	33	36
4	39	39	36	22	24	27	27	34	80	92	95	116	88	84	90	90	79	72	56	50	46	38	44	40
5	39	42	35	30	32	32	34	40	103	113	108	117	U R 125	112	R 103	98	93	86	65	53	34	36	32	31
6	31	32	34	25	25	28	33	42	84	102	R 124	118	124	R 128	R 122	116	R 99	92	88	52	42	43	34	36
7	38	34	31	31	33	31	29	38	72	96	132	147	147	116	U R 124	146	113	73	76	56	R 80	86	83	77
8	64	49	Z 42	40	A	38	38	45	98	R 120	164	R 160	162	J R 140	R 136	116	R 94	90	73	64	R 42	V 51	R 46	44
9	50	50	32	26	29	30	30	39	76	R 110	131	R 135	U R 145	R 142	151	156	R 142	R 100	V 74	58	62	64	R 60	52
10	41	38	37	29	26	28	30	41	86	109	116	J R 130	153	J R 134	101	90	92	78	66	46	41	41	45	39
11	42	43	40	34	32	32	32	46	92	100	113	147	156	J R 142	122	118	115	U R 106	90	74	75	58	65	44
12	40	39	37	30	24	27	26	39	80	120	133	J R 123	R 140	J R 144	U R 144	R 127	118	104	83	58	58	59	52	43
13	42	38	V 44	32	25	28	28	40	91	U R 97	98	R 118	R 124	U R 123	R 124	131	123	115	80	77	80	56	42	V 41
14	40	38	40	32	26	30	34	42	86	92	101	116	130	U R 126	R 125	R 118	103	93	80	58	50	A	37	36
15	36	36	38	37	34	36	38	44	87	93	94	109	115	114	105	113	105	83	74	76	74	64	46	43
16	43	42	39	33	R 22	26	26	40	80	90	87	100	R 107	113	R 102	92	99	88	72	66	56	53	A	A
17	36	39	37	32	34	31	30	40	92	86	92	108	118	118	118	105	85	82	68	62	56	55	40	38
18	36	29	32	34	32	28	28	34	80	106	95	98	106	110	95	79	77	75	65	52	45	45	33	30
19	32	32	34	36	35	26	30	37	83	108	93	104	109	110	100	88	86	76	76	68	65	54	46	34
20	32	31	32	33	36	26	26	33	78	81	75	101	101	94	81	74	74	69	57	40	45	48	49	48
21	36	30	32	35	40	28	V 31	40	76	92	112	112	92	103	100	86	77	74	66	52	44	46	46	41
22	40	37	36	38	39	30	37	41	66	81	109	114	118	128	113	87	68	70	64	48	44	46	42	43
23	40	40	43	38	29	20	19	32	94	102	94	96	109	104	94	91	88	69	50	42	52	37	30	33
24	34	35	38	38	33	30	28	38	69	76	91	113	116	110	111	R 103	82	73	60	46	43	39	32	32
25	33	34	35	35	38	26	21	36	65	77	82	91	99	102	90	88	87	78	61	45	44	42	38	30
26	32	33	33	33	35	29	32	42	70	78	91	91	89	88	92	80	78	86	80	54	48	52	48	48
27	30	31	32	34	40	34	32	46	71	84	102	118	112	111	103	85	80	86	74	50	47	50	40	31
28	34	34	36	36	37	29	30	42	81	86	93	96	88	96	98	93	96	90	79	81	56	46	35	32
29	35	35	36	38	42	32	28	42	76	86	92	90	100	109	110	R 103	99	95	81	66	75	74	62	32
30	31	32	33	32	34	33	34	49	85	83	84	100	112	114	100	88	99	102	104	96	71	70	58	40
31	36	35	35	37	40	39	36	43	68	87	105	99	110	118	U R 125	108	102	99	90	61	57	62	51	41
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30
MED	36	35	36	34	33	29	30	40	80	92	95	112	112	112	103	98	93	86	74	58	52	49	44	38
U Q	40	39	38	37	36	32	34	42	87	102	112	R 118	125	R 126	R 122	116	103	95	80	68	65	58	49	43
L Q	32	32	33	32	26	27	28	38	71	83	91	100	105	103	96	88	80	74	65	50	44	42	35	32

JAN. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2015 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									228			L	L	L	L	L	L							
2									240	L	364	L	L	L	L	L		220						
3									256	312	L	L	L	L	U L 412	L	R 268	208						
4									232	L	L	L	L	L	L	L								
5									L	284	L	L	L	L	L	L								
6										L	L	L	L	L	L	L								
7											L	L	L	L	L	L								
8										L	L	L	L	L	A	392	L							
9										L	L	L	L	L	L	L								
10										L	L	L	L	L	L									
11										L	L	A	A	A	L	L								
12									240	L	L	L	L	L	A	L								
13									256	L	L	L	L	L	L	L	L							
14											L	L	L	A	L	L	L							
15											L	L	L	L	L	L								
16										L	L	L	L	L	A	L	L	A						
17												L	L	L	L	L								
18									248	L	L	L	U L 496	L	L	L	L							
19										L	L	L	L	L	U L 500	L								
20									244	L	L	L	L	L	L	U L 424	U L 324							
21									240	L	L	L	U L 484	U L 536	U L 480	L	L							
22									272	L	L	U L 468	L	L	L	L								
23									L	L	L	L	U L 500	L	U L 492	L	L							
24									244	L	L	U L 508	L	L	L	L	L							
25									256	L	L	U L 476	U L 492	L	L	L	L	236						
26										L	L	U L 484	L	U L 460	L	L	L							
27									264	324	L	L	L	L	L	L	L	236						
28									248	320	L	L	L	L	L	L	L							
29									252	308	L	L	L	L	L	L	L							
30									256			L	L	L	L	L	L							
31									244		L		L	L	L	L	L	264						
	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									17	5	1	4	4	2	4	2	2	5						
MED									248	312	364	U L 480	U L 494	U L 498	U L 486	408	296	236						
U Q									256	322		U L 496	U L 498		U L 496			250						
L Q									240	296		U L 472	U L 488		U L 446			214						

JAN.2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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								A	A 252	U A 308	U A 320	U A 324	344	340	332	304	264	188						
2								B	200	268	304	A 312	340	344	328	U A 308	276	188						
3								B	208	272	316	U A 312	340	340	316	296	240	184						
4								B	208	280	308	324	U A 324	U A 344	A 324	U A 292	A	A						
5								B	200	256	316	336	324	332	324	308	276	220						
6								B	224	272	320	336	A 328	332	332	320	272	A						
7								B	228	R 284	312	B	340	328	328	312	256	212						
8								A	232	A 308	U A 308	A	A 372	A 364	U A 352	U A 328	A	208						
9								B	236	308	336	A	356	352	340	324	280	208						
10								B	228	284	324	336	U R 336	R 364	364	356	U A 276	A						
11								A	A	U A 280	A	A	A	A	A	A	U A 244	220						
12								B	B	308	U A 316	344	A	A	A	A	A	A	208					
13								B	208	U A 284	U A 316	A	A	A	B	R 340	A	A						
14								B	216	U A 264	A	A	A	A	A	332	A	A						
15								A	220	A 300	A 332	352	356	364	340	320	R 288	R 220						
16								B	224	U A 272	A 304	A	A	A	A	A	A	A						
17								B	228	268	320	340	A 344	A 328	U A 304	324	288	212						
18								B	B	288	320	A 340	364	364	348	324	280	U A 228						
19								B	212	280	328	U A 344	A	U A 360	A	312	A	A						
20								B	216	280	U A 312	332	U A 340	332	A	A	276	228						
21								B	208	304	U A 284	U A 296	U A 320	R 364	R 348	320	264	220						
22								B	200	288	316	328	328	348	352	328	284	224						
23								B	212	284	304	328	336	328	324	U A 288	A	220						
24								B	196	276	312	324	340	344	336	320	280	200						
25								B	220	288	324	348	352	352	340	312	268	204						
26								B	212	276	308	R 340	352	348	U A 336	332	292	U A 220						
27								B	220	280	324	340	352	R 360	348	A	288	224						
28								A	A	296	U A 316	U A 336	U R 360	A 360	352	344	300	252						
29								B	216	288	332	352	A 388	352	A	348	316	240						
30								A	224	276	B	352	360	U A 348	U A 336	332	304	224						
31								A	212	292	332	356	372	364	352	328	292	236						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									27	31	28	24	25	26	23	26	23	23	1					
MED									216	284	316	336	344	348	336	322	280	220	208					
U Q									224	292	324	344	358	360	348	332	288	224						
L Q									208	276	310	A 326	336	340	328	312	268	208						

JAN. 2015 foE (0.01MHz)

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IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 20	26	J A 32	J A 49	J A 60	J A 44	G 24	G 25	G	28	J A 21	J A 19	E B 16	J A 19	E B 16	18	E B 16
2	E B 16	E B 16	J A 22	J A 19	J A 19	18	E B 16	E B 16	22	28	34	J A 41	J A 36	39	34	34	J A 28	G 18	E B 16	E B 16	E B 16	21	J A 27	J A 18
3	J A 21	20	J A 26	E B 16	E B 16	E B 20	E B 16	E B 16	23	30	34	34	35	G 31	G	J A 33	25	20	E B 16	E B 16	E B 16	E B 16	J A 16	E B 16
4	E B 16	18	17	E B 16	17	J A 16	18	E B 16	J A 20	J A 33	34	G	36	37	37	J A 34	J A 29	J A 22	J A 33	J A 34	J A 26	J A 27	J A 20	J A 30
5	E B 16	J A 18	22	20	21	J A 35	J A 31	J A 21	J A 24	26	G 19	G 18	G	G	G	35	30	24	J A 23	J A 21	20	19	J A 22	20
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 22	E B 16	24	33	35	G	35	G	G	G 30	J A 28	J A 44	J A 27	J A 21	E B 16	E B 16	E B 16	E B 16
7	18	E B 16	E B 16	E B 16	20	E B 16	E B 16	E B 16	27	G	G	E B 38	G	G	G	37	G	23	E B 17	E B 16	J A 21	21	J A 20	J A 28
8	J A 33	J A 33	J A 46	J A 38	J A 50	J A 51	J A 23	J A 22	29	34	J A 43	J A 62	J A 87	J A 47	J A 67	39	J A 37	J A 34	J A 31	J A 26	J A 20	E B 16	J A 21	J A 26
9	J A 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	J A 32	J A 75	32	G 24	G 31	G 29	34	J A 31	J A 27	J A 24	J A 27	18	E B 16	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	J A 17	E B 16	E B 16	G	32	35	G	36	40	40	42	33	J A 46	J A 50	J A 75	J A 52	J A 35	J A 34	J A 28
11	J A 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 25	27	J A 33	J A 71	J A 94	J A 67	J A 78	J A 62	J A 60	36	J A 27	J A 24	J A 51	J A 53	J A 96	J A 35	J A 21
12	J A 35	J A 24	J A 23	J A 22	J A 25	J A 23	20	E B 16	23	34	34	G	J A 46	J A 44	J A 74	J A 50	J A 71	J A 43	J A 32	J A 48	J A 34	J A 41	J A 40	J A 22
13	J A 28	J A 18	E B 16	J A 20	J A 26	E B 16	E B 16	E B 16	24	J A 47	J A 46	J A 54	J A 65	J A 62	E B 48	J A 38	J A 36	J A 44	J A 35	J A 38	J A 36	J A 40	J A 33	J A 35
14	E B 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	34	J A 43	J A 59	J A 45	J A 63	J A 62	J A 37	J A 38	J A 39	J A 32	J A 39	J A 52	J A 52	J A 41	J A 53
15	E B 20	E B 16	17	J A 22	J A 24	J A 20	20	19	G	32	J A 46	G	G	G 32	G 32	36	J A 32	24	J A 27	J A 23	E B 20	J A 22	J A 18	21
16	E B 16	E B 16	22	J A 20	E B 16	22	E B 16	E B 16	G	30	34	J A 49	J A 65	J A 53	J A 67	J A 69	J A 56	J A 76	J A 53	J A 43	J A 32	J A 74	J A 120	J A 81
17	J A 65	J A 52	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G 25	35	36	40	35	34	34	G 18	G 17	J A 25	J A 23	21	18	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	J A 20	J A 19	E B 16	E B 16	E B 23	G 23	G 22	36	G	39	38	34	J A 43	30	J A 24	J A 20	J A 24	17	E B 16	E B 16
19	19	21	J A 18	18	E B 16	E B 16	21	E B 16	23	G	G	37	J A 42	40	J A 35	J A 33	J A 30	35	E B 16	J A 16	17	20	E B 16	J A 17
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	34	37	37	38	J A 42	J A 34	G	25	J A 18	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	17	J A 26	E B 16	E B 16	22	32	32	33	35	J A 39	G	G	28	25	20	21	19	E B 16	E B 16	E B 16
22	E B 16	22	J A 17	20	E B 16	E B 16	E B 16	J A 16	26	32	34	38	37	37	43	36	31	G	J A 20	J A 33	J A 17	J A 32	J A 18	E B 16
23	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	G	32	G	G	G	G	32	J A 31	J A 23	J A 17	20	21	20	E B 16	E B 16
24	E B 16	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	G 22	G 25	35	34	G	G 31	G 29	G 26	23	J A 45	J A 20	17	20	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	E B 16	24	32	35	39	39	G 34	38	36	29	22	J A 16	19	19	E B 16	E B 16	E B 18
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	G	38	G 24	36	37	36	G	J A 36	E B 16	19	E B 16	J A 27	J A 27	J A 20
27	J A 18	20	18	E B 16	20	E B 16	E B 16	J A 18	26	31	36	40	46	40	G 32	J A 43	33	J A 27	J A 21	20	19	E B 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	J A 17	23	31	33	35	38	40	G	G	32	26	17	19	E B 16	19	E B 16	J A 18
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	35	37	44	40	J A 40	39	G	J A 23	E B 16	17	18	E B 20	E B 16	E B 16
30	E B 16	E B 16	E B 18	E B 16	E B 16	E B 16	20	17	24	G	E B 38	G	38	37	36	G	G 27	G	E B 17	E B 16	J A 18	J A 22	J A 29	J A 17
31	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	22	33	36	40	42	39	G	38	31	24	J A 27	J A 27	18	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	31	34	36	37	38	34	35	30	25	J A 23	J A 21	19	20	J A 18	17
U Q	J A 20	19	J A 18	J A 19	J A 20	J A 19	18	J A 17	24	33	J A 38	J A 40	J A 44	J A 40	J A 42	J A 38	J A 33	J A 35	J A 31	J A 33	J A 24	27	J A 27	J A 22
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 22	G	G 32	G	G 34	G	G	G 33	G	22	E B 17	E B 17	E B 17	E B 16	E B 16	E B 16

JAN. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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	E B 16	G 21	G 30	37	52	37	G 24	G 25	G	28	21	E B 16	E B 16	16	E B 16	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	28	33	35	34	38	34	32	G 28	G 18	E B 16	E B 16	E B 16	E B 16	23	E B 16
3	E B 16	E B 16		E B 16	E B 16	E B 20	E B 16	E B 16	23	30	33	34	35	G 31	G	32	25	19	E B 16	E B 16	E B 16	E B 16	E B 16	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	E B 16	G 20	29	32	G	36	36	36	32	28	20	28	21	E B 16	19	E B 16	E B 16
5	E B 16	16	E B 16	E B 16	E B 16	E B 16	22	E B 16	23	26	G 19	G 18	G	G	G	35	29	24	20	21	E B 16	E B 16	18	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	35	G	U Y 35	G	G	G 30	G 27	26	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	E B 16	G 23	G	G	E B 38	G	G	G	37	G	23	E B 17	E B 16	18	E B 16	16	24
8	21	19	22	23	A A 50	22	E B 16	20	24	32	38	37	40	45	58	37	31	26	E B 16	19	E B 16	E B 16	E B 16	16
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G 31	35	U Y 32	G 24	G 31	G 29	U Y 34	30	25	20	20	E B 16	E B 16	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	E B 16	G	31	35	G	U Y 36	U Y 40	40	36	32	22	35	28	24	20	23	22
11	17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	24	30	38	55	60	46	32	49	31	23	20	18	44	49	23	20
12	29	E B 16	E B 16	16	19	21	16	E B 16	21	G 30	34	G	40	42	69	37	36	32	29	32	20	20	20	17
13	23	E B 16	E B 16	E B 16	20	E B 16	E B 16	E B 16	24	35	38	37	42	44	E B 48	35	32	32	29	28	30	22	24	22
14	E B 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	36	42	38	54	38	35	36	36	24	33	20	A A 52	24	28
15	E B 20	E B 16	E B 16	20	E B 16	18	E B 16	E B 16	G	G 30	34	G	G	G 32	G 32	36	30	23	23	20	E B 20	20	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	E B 16	G	30	33	38	42	46	51	41	31	57	38	30	27	40	A A 120	A A 81
17	25	27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G 25	35	36	38	U Y 35	U Y 34	34	G 18	G 17	22	E B 16	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	E B 16	E B 23	G 23	G 22	36	G	38	36	33	31	28	21	19	17	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	19	E B 16	22	G	G	36	37	37	35	G 31	30	30	E B 16	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	E B 16	24	G	33	36	37	38	35	33	G	24	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	E B 16	22	31	U Y 32	U Y 33	U Y 35	G 36	G	G	28	25	E B 16	E B 16	19	E B 16	E B 16	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	E B 16	26	32	33	36	36	37	42	G 32	30	G	17	32	E B 16	28	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	E B 16	23	G	U Y 32	G	G	G	G	32	26	23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	G 22	G 25	34	G 34	G	G 31	G 29	G 26	23	28	E B 16	E B 16	E B 16	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	E B 16	24	31	35	38	36	G 34	38	36	28	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 18
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	G	38	G 24	U Y 36	36	35	G	32	E B 16	E B 16	E B 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	E B 16	26	31	35	38	43	40	G 32	32	29	G 22	19	E B 16	E B 16	E B 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	E B 16	22	31	33	35	36	37	G	G	32	26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	G	35	37	39	38	36	37	G	G 23	E B 16	E B 16	E B 16	E B 20	E B 16	E B 16
30	E B 16	E B 16	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16	23	G	E B 38	G	38	37	36	G	G 27	G	E B 17	E B 16	E B 16	E B 16	17	E B 16
31	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	33	36	39	41	38	G	34	30	24	22	24	E B 16	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	34	36	36	37	34	34	29	23	17	E B 16	E B 16	E B 16	E B 16	E B 16
U Q	16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	31	35	38	39	40	38	36	31	26	23	21	19	20	18	17
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	30	G 32	G	G	G	G	G	G	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

JAN. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2015 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	16	16	16	17	20	18	21	16	16	16	16	16	16	16	16	16	16
2	16	16	16	16	16	16	16	16	16	16	16	19	16	16	16	16	16	16	16	16	16	16	16	16
3	16	16	16	16	16	20	16	16	16	16	16	17	16	18	16	16	16	16	16	16	16	16	16	16
4	16	16	16	16	16	16	16	16	16	16	16	20	16	20	19	17	17	16	16	16	16	16	16	16
5	16	16	16	16	16	16	16	16	16	16	17	20	19	20	21	16	16	16	16	16	16	16	16	16
6	16	16	16	16	16	16	16	16	16	16	18	20	20	18	19	20	16	16	16	16	16	16	16	16
7	16	16	16	16	16	16	16	16	16	20	28	38	24	19	21	18	17	18	17	16	16	16	16	16
8	16	16	16	16	16	16	16	16	16	19	23	24	21	21	21	18	14	15	16	16	16	16	16	16
9	16	16	16	16	16	16	16	16	16	18	22	21	22	22	23	19	15	16	16	16	16	16	16	16
10	16	16	16	16	16	16	16	16	16	16	18	24	26	26	26	21	17	16	16	16	16	16	16	16
11	16	16	16	16	16	16	16	16	16	20	20	20	21	22	18	20	16	16	16	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	16	20	28	22	25	24	20	17	16	16	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	18	20	20	20	18	48	20	16	14	16	16	16	16	16	16
14	20	16	16	16	16	16	16	16	16	18	20	20	26	28	29	20	17	16	16	16	16	16	16	16
15	20	16	16	16	16	16	16	16	16	14	16	16	21	21	18	15	16	16	16	16	20	16	16	16
16	16	16	16	16	16	16	16	16	16	18	21	24	21	20	21	20	18	16	15	16	16	16	16	16
17	16	16	16	16	16	16	16	16	16	16	17	20	20	20	20	16	14	14	15	16	16	16	16	16
18	16	16	16	16	16	16	16	16	23	16	19	19	19	22	20	18	14	16	15	16	15	16	16	16
19	16	16	16	16	16	16	16	16	14	19	16	20	21	19	16	16	16	15	16	16	16	16	16	16
20	16	16	16	16	16	16	16	16	15	16	19	20	25	23	20	17	16	16	16	16	16	16	16	16
21	16	16	16	16	16	16	16	16	14	16	18	20	20	20	20	20	16	16	16	16	16	16	16	16
22	16	16	16	16	16	16	16	16	16	16	16	18	18	20	29	18	15	16	16	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	16	16	20	20	19	19	16	16	16	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	16	20	20	16	19	22	20	16	16	16	16	16	16	16	16
25	16	16	16	16	16	16	16	16	16	16	16	18	20	20	16	16	16	14	16	16	16	16	16	18
26	16	16	16	16	16	16	16	16	16	15	16	16	17	21	20	16	20	16	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	16	14	14	16	17	20	20	16	14	12	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	14	16	20	20	18	20	28	21	16	16	16	16	16	16	16	16
29	16	16	16	16	16	16	16	16	16	16	20	20	19	24	25	23	19	14	16	16	16	20	16	16
30	16	16	18	16	16	16	16	16	16	16	38	18	18	24	28	28	20	16	17	16	16	16	16	16
31	16	16	16	16	16	16	16	16	16	19	16	22	22	18	20	20	14	20	15	16	16	16	16	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	16	16	16	16	16	16	16	16	16	16	18	20	20	20	20	18	16	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	18	20	20	21	22	24	20	17	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	16	18	18	19	19	16	16	16	16	16	16	16	16	16

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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	298	320	337	320	299	302	299	317	378	373	341	319	336	347	R 346	331	R	R	355	299	333	325	320	320
2	316	308	332	338	356	290	296	322	371	377	H 322	342	345	348	333	353	348	385	320	343	355	357	R 329	283
3	288	V 281	327	408	276	276	280	316	361	361	361	363	351	353	311	325	330	340	345	358	306	326	284	292
4	317	345	360	311	283	293	289	309	346	350	344	355	328	340	326	350	365	369	348	339	325	286	280	272
5	278	304	301	269	269	273	288	303	348	358	327	336	U R 333	339	R 315	333	362	339	324	347	305	309	308	314
6	301	292	332	H 276	277	288	290	317	347	345	R 348	329	334	R 329	R 334	323	R 330	341	355	322	301	314	318	302
7	330	331	312	294	301	307	332	316	347	311	328	321	333	326	U R 316	323	339	345	336	322	R 291	280	315	310
8	282	332	Z 285	269	A	270	269	277	333	R 321	335	R 326	320	R	R 308	314	R 320	345	343	355	R 346	V 271	R 275	273
9	307	354	353	289	281	284	304	313	336	R 347	R 335	R 334	U R 312	R 291	301	312	R 323	R 349	V 324	310	326	291	R 335	311
10	292	290	326	351	295	289	286	312	360	353	347	R	330	R	319	321	341	349	370	339	300	301	302	283
11	291	306	334	308	280	280	284	313	358	351	348	322	318	R	307	306	325	U R 320	335	318	326	301	314	317
12	271	313	312	329	282	279	284	308	349	343	343	R	R 312	R	U R 307	R 317	312	332	347	325	320	310	314	306
13	F 278	285	V 342	334	314	283	298	318	369	U R 364	331	R 334	R 332	U R 322	R 320	306	320	329	325	323	354	313	289	V 289
14	306	303	331	323	325	293	324	332	366	364	342	318	318	U R 318	R 315	R 310	324	334	343	325	323	A	302	296
15	293	288	302	333	312	289	303	320	361	369	343	333	328	336	312	324	326	337	313	336	302	319	297	274
16	284	317	328	381	R 294	279	298	328	362	366	356	339	R 325	326	R 311	329	326	341	328	330	322	337	A	A
17	288	313	327	308	315	282	283	315	374	358	321	327	325	331	317	327	331	347	338	339	319	326	293	311
18	325	307	307	327	347	299	295	306	353	363	355	332	319	334	348	320	328	H 324	347	363	339	326	310	295
19	296	303	296	329	357	300	308	319	348	358	358	325	338	325	326	324	349	335	331	323	H 335	311	317	295
20	299	296	305	324	355	294	289	295	367	358	367	335	342	354	345	339	342	345	341	329	304	304	314	346
21	344	311	302	321	364	306	296	320	359	352	361	356	330	329	338	345	351	356	360	345	293	303	291	290
22	300	290	287	305	366	288	333	322	363	337	326	336	313	339	332	350	357	334	339	340	292	314	307	302
23	287	296	326	373	350	274	284	301	359	364	352	349	342	333	331	340	361	368	346	319	343	339	315	297
24	300	297	330	340	350	314	320	333	358	350	338	336	334	330	339	R 336	352	341	359	331	340	346	315	278
25	292	303	317	321	355	383	318	312	357	363	334	346	335	340	335	328	336	361	365	351	325	326	337	306
26	292	298	310	305	317	345	324	342	368	366	370	341	346	337	336	334	327	339	361	330	296	301	313	345
27	326	303	286	292	329	332	300	331	346	347	322	341	324	312	345	339	327	345	350	345	319	327	324	286
28	289	288	297	299	334	345	293	324	370	361	342	350	345	330	323	332	333	336	315	342	350	337	319	290
29	300	297	297	308	330	363	309	320	361	363	358	331	320	322	328	R 329	327	340	333	309	305	317	353	281
30	284	287	290	288	298	311	299	328	381	367	338	321	318	331	332	334	326	332	326	348	302	312	328	304
31	310	290	290	291	304	324	326	333	342	341	343	307	316	328	U R 321	322	321	326	351	337	289	323	326	305
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	31	31	31	29	31	27	31	31	30	30	31	31	31	30	30	30
MED	296	303	312	320	314	293	298	317	359	358	343	334	330	331	326	328	330	340	343	336	320	314	314	296
U Q	307	313	331	333	350	311	309	324	367	364	355	342	336	339	335	336	348	347	351	345	335	326	320	310
L Q	288	290	297	294	294	282	288	312	348	347	334	326	319	326	315	321	326	334	328	323	302	303	302	286

JAN. 2015 M(3000)F2 (0.01)

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JAN. 2015 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									425			L	L	L	L	L	L							
2									453	L	460	L	L	L	L	L		408						
3									446	478	L	L	L	L	U L 422	L	R 526	485						
4									431	L	L	L	L	L	L	L								
5									L	511	L	L	L	L	L	L								
6										L	L	L	L	L	L	L								
7											L	L	L	L	L	L								
8										L	L	L	L	L	A	432	L							
9										L	L	L	L	L	L	L								
10										L	L	L	L	L	L									
11										L	L	A	A	A	L	L								
12									538	L	L	L	L	L	A	L								
13									505	L	L	L	L	L	L	L	L							
14											L	L	L	A	L	L	L							
15											L	L	L	L	L	L								
16										L	L	L	L	L	A	L	L	A						
17												L	L	L	L	L								
18									438	L	L	L	U L 395	L	L	L	L							
19										L	L	L	L	L	U L 366	L								
20									470	L	L	L	L	L	L	U L 407	U L 434							
21									478	L	L	L	U L 400	U L 361	U L 373	L	L							
22									513	L	L	U L 395	L	L	L	L								
23									L	L	L	L	U L 376	L	U L 381	L	L							
24									467	L	L	U L 360	L	L	L	L	L							
25									451	L	L	U L 394	U L 382	L	L	L	L	455						
26										L	L	U L 394	L	U L 394	L	L	L							
27									491	497	L	L	L	L	L	L	L	405						
28									461	420	L	L	L	L	L	L	L							
29									472	451	L	L	L	L	L	L	L							
30									A			L	L	L	L	L	L							
31									A		L		L	L	L	L	L	421						
	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	5	1	4	4	2	4	2	2	5						
MED									467	478	460	U L 394	U L 388	U L 378	U L 377	420	480	421						
U Q									491	504		U L 394	U L 398		U L 402			470						
L Q									446	436		U L 377	U L 379		U L 370			406						

JAN. 2015 M(3000)F1 (0.01)

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JAN. 2015 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									208			284	238	240	238	226	236							
2									206	214	204	254	232	230	248	238		194						
3									210	214	232	230	238	218	216	248	220	212						
4									226	230	220	230	224	260	266	234								
5									244	214	244	244	242	234	262	240								
6										224	240	234	246	242	250	242								
7											250	254	232	230	280	252								
8										252	242	232	242	240	260	232	254							
9										238	238	242	234	234	260	254								
10										230	226	230	240	228	278									
11										216	224	252	250	232	242	274								
12									220	246	228	240	264	264	256	254								
13									222	220	232	258	230	268	274	246	234							
14											234	260	268	248	250	256	224							
15											232	234	242	246	272	252								
16										218	218	246	266	242	246	242	246	238						
17												236	242	246	246	234								
18									226	226	220	256	242	250	234	222	222							
19										230	224	242	230	260	264	236								
20									226	226	222	256	246	236	240	222	226							
21									220	234	234	228	238	264	246	234	222							
22									218	250	252	230	272	244	244	220								
23									240	226	226	232	246	252	252	252	222							
24									220	226	242	260	248	240	242	250	214							
25									218	224	256	242	254	246	252	248	248	214						
26										220	228	236	248	248	248	236	228							
27									218	230	250	248	252	242	242	236	226	228						
28									222	216	228	230	222	266	264	248	240							
29									212	218	226	248	266	262	248	240	230							
30									204			256	256	256	242	238	260							
31									216		238		258	256	258	236	228	226						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									19	24	28	30	31	31	31	30	18	6						
MED									220	226	232	242	242	246	250	240	228	220						
U Q									226	230	241	254	254	256	262	250	240	228						
L Q									212	218	225	232	238	236	242	234	222	212						

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JAN. 2015 h'F (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	276	254	228	248	264	258	290	258	214	200	218	284	222	208	204	216	222	204	178	242	210	224	244	224
2	254	274	248	234	212	314	290	248	182	206	176	H 178	H 178	202	H 206	230	220	E A 212	240	218	204	202	310	314
3	318	320	260	192	252	412	312	252	198	176	214	H 226	208	200	190	H 222	132	168	206	208	222	228	274	274
4	250	214	218	228	290	298	314	272	192	220	206	H 210	H 196	H 200	202	220	218	200	222	234	208	274	280	278
5	306	272	272	304	352	324	324	288	244	144	210	234	214	206	H 196	226	222	222	184	204	208	246	268	272
6	276	272	224	192	248	290	288	250	220	214	232	210	206	214	H 206	216	222	226	202	196	232	248	228	268
7	246	236	258	276	284	246	250	252	226	222	218	224	220	216	H 208	230	204	202	208	218	264	270	218	242
8	220	220	286	342	A	334	316	282	240	216	234	212	212	232	A	206	198	214	200	196	200	268	278	306
9	258	216	220	296	300	306	286	264	226	226	222	208	204	204	H 202	234	218	202	190	208	216	260	222	214
10	260	296	248	212	308	324	308	270	228	220	212	206	H 186	224	220	230	236	210	202	222	270	258	284	298
11	286	242	236	258	310	300	310	272	224	214	222	A	A	A	204	246	226	206	212	198	244	328	236	230
12	344	260	248	240	368	374	328	274	132	214	216	H 190	212	222	A	220	230	208	202	244	220	248	248	260
13	326	278	224	216	324	320	296	266	156	212	212	198	220	228	240	230	230	210	206	238	212	210	276	310
14	276	266	238	232	238	300	252	234	222	214	210	228	214	A	216	220	A	228	198	238	206	A	278	332
15	276	294	266	242	244	290	274	260	224	216	206	202	200	200	206	224	226	202	222	210	218	198	234	288
16	278	252	246	192	306	312	306	254	216	216	202	H 186	218	240	A	238	234	A	228	240	234	272	A	A
17	352	298	228	262	262	270	318	270	210	210	210	212	H 202	212	218	210	222	216	210	206	212	216	246	258
18	232	250	278	244	230	260	302	272	196	218	204	200	192	212	210	212	218	204	200	218	218	218	212	284
19	284	282	284	240	208	246	292	266	232	218	210	210	218	200	196	198	218	222	210	200	194	218	218	246
20	276	294	284	256	222	240	304	278	184	208	H 170	204	H 196	232	214	202	190	216	200	198	254	240	242	216
21	226	260	276	256	212	244	288	254	162	228	210	H 216	192	192	184	210	H 210	220	202	204	236	250	260	270
22	266	280	310	280	220	288	242	224	162	226	218	204	H 176	226	A 248	218	218	224	208	248	252	278	264	254
23	280	274	242	204	218	388	380	278	230	222	210	192	192	186	H 184	H 198	212	212	196	230	222	218	258	290
24	278	280	242	230	216	238	262	236	160	214	H 202	190	194	204	192	198	210	204	204	220	214	214	238	312
25	294	268	256	250	218	200	288	248	208	216	H 204	212	212	210	210	206	210	182	196	196	214	214	210	298
26	288	276	266	270	266	210	240	234	220	218	H 182	202	198	208	H 196	214	218	230	200	204	H 204	280	218	216
27	222	256	290	290	240	218	254	222	168	160	222	228	224	210	214	202	196	A 236	210	198	228	220	200	238
28	294	284	282	284	236	192	276	250	172	A 230	206	H 204	H 180	192	H 208	228	228	216	220	202	194	212	242	292
29	268	274	278	254	236	192	260	250	174	192	218	208	218	220	224	218	222	216	204	196	234	234	210	224
30	294	296	306	296	286	254	288	238	A	202	218	212	212	210	208	216	224	224	214	196	196	210	228	230
31	254	286	286	282	268	236	212	206	A	224	218	218	220	216	202	208	208	A 214	206	206	240	218	228	248
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	30	31	31	31	29	31	31	30	30	29	28	31	30	30	31	31	31	30	30	30
MED	276	274	258	250	250	288	290	254	210	216	210	209	207	210	206	218	218	213	204	208	218	231	242	269
U Q	294	284	282	280	290	314	310	272	225	220	218	216	218	221	214	228	224	222	210	230	234	260	268	292
L Q	254	254	238	230	222	240	262	248	173	208	206	202	194	201	199	208	210	204	200	198	208	216	222	238

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JAN. 2015 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								A	112	100	98	100	108	106	106	100	102	120						
2								B	108	102	100	100	110	110	106	104	104	122						
3								B	108	98	118	100	118	110	100	A	104	116						
4								B	112	104	100	104	94	102	102	100	A	A						
5									A	106	104	104	102	102	102	104	104	108						
6								B	126	104	106	106	104	100	104	112	116	A						
7								B	126	108	122	B	106	100	100	100	102	150						
8								A	A	110	110	110	106	102	104	102	A	A						
9								B	114	112	112	A	108	112	112	112	A	A						
10								B	122	96	96	106	108	108	108	108	104	A						
11								A	A	104	A	A	A	A	A	A	104	E A 154						
12								B	B	102	102	110	A	A	A	A	A	A	122					
13								B	108	102	104	A	A	A	B	104	A	A						
14								B	112	98	A	A	A	A	A	A	A	A						
15								A	108	100	100	100	102	102	108	106	106	E A 116						
16								B	116	100	100	A	A	A	A	A	A	A						
17								B	116	110	98	98	98	98	88	106	104	112						
18								B	B	112	104	104	100	104	106	108	118	118						
19								B	108	108	104	104	98	98	94	A	A	A						
20								B	110	106	106	100	106	106	106	106	104	104						
21								B	110	114	102	102	102	A	100	98	100	104						
22								B	110	104	98	98	98	100	106	112	110	H 106						
23								B	116	98	98	98	102	98	100	104	A	A 124						
24								B	108	108	112	100	104	100	110	112	110	106						
25								B	108	100	100	100	108	108	102	102	104	106						
26								B	106	102	96	96	102	102	100	106	108	108						
27								B	110	98	102	98	98	100	110	A	110	110						
28								A	106	106	100	102	102	100	110	104	110	A						
29								B	110	100	100	102	102	104	104	100	102	110						
30								A	118	106	B	100	98	100	106	110	110	110						
31								A	104	98	96	100	98	98	96	102	104	118						
	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	31	28	25	26	25	26	24	22	20	1					
MED									110	104	101	100	102	102	104	104	104	110	122					
U Q									116	108	105	104	106	106	106	108	110	119						
L Q									108	100	99	100	98	100	100	102	104	107						

JAN. 2015 h'E (KM)

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IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 h'Es (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	B	B	B	B	B	B	B	90	134	116	102	100	108	92	92	G	224	90	86	B	108	B	96	B
2	B	B	104	92	90	92	B	B	170	180	110	104	98	154	166	108	104	100	B	B	B	100	90	96
3	94	100	90	B	B	B	B	B	200	168	136	102	100	98	G	96	126	152	B	B	B	B	104	B
4	B	106	106	B	98	90	92	B	92	92	112	G	104	108	106	100	98	98	92	88	88	84	102	100
5	B	112	106	110	100	96	94	110	96	132	94	92	G	G	G	86	174	152	92	88	84	84	86	88
6	B	B	B	B	B	B	106	B	154	110	184	G	110	G	G	102	98	94	94	94	B	B	B	B
7	90	B	B	B	98	B	B	B	90	G	G	B	G	G	G	200	G	174	B	B	90	88	82	112
8	110	106	104	98	96	92	96	92	96	120	106	106	106	106	102	102	96	94	94	104	90	B	92	90
9	100	B	B	B	B	B	B	B	G	106	96	96	94	98	96	194	84	86	90	116	94	B	B	B
10	B	B	B	B	B	94	B	B	G	150	132	G	114	192	190	124	110	100	98	96	94	94	90	90
11	86	B	B	B	B	B	B	102	100	104	98	98	98	98	116	116	110	100	122	100	94	94	94	92
12	90	90	90	90	90	92	104	B	106	112	118	G	98	98	96	102	100	98	100	98	100	94	90	90
13	90	90	B	110	98	B	B	B	110	104	104	100	96	96	B	94	90	102	88	98	96	96	90	92
14	B	B	B	B	B	B	B	B	130	100	98	96	98	94	96	96	98	96	96	90	100	94	98	94
15	B	B	94	92	92	92	92	96	G	136	110	G	G	94	92	198	90	192	94	94	B	92	90	90
16	B	B	90	126	B	92	B	B	G	110	108	96	94	94	92	90	86	86	86	86	84	96	96	96
17	92	92	B	B	B	B	B	B	G	100	124	108	104	106	100	88	88	90	86	86	86	86	B	B
18	B	B	B	B	94	98	B	B	B	100	92	122	G	166	142	164	100	116	106	106	104	96	B	B
19	116	100	96	98	B	B	98	B	152	G	G	112	106	104	104	98	90	88	B	92	92	130	B	94
20	B	B	B	B	B	B	B	B	172	G	108	112	108	106	102	104	G	158	122	B	B	B	B	B
21	B	B	B	B	96	90	B	B	156	206	102	100	104	100	G	G	200	218	88	90	84	B	B	B
22	B	92	88	88	B	B	B	148	142	152	156	118	112	164	126	102	198	G	114	102	104	92	92	B
23	102	B	B	B	B	B	B	B	154	G	130	G	G	G	G	102	100	98	98	96	94	90	B	B
24	B	108	B	B	B	B	B	B	120	100	100	106	100	G	98	100	100	162	92	92	92	88	B	B
25	B	B	B	B	B	B	B	B	186	186	178	142	96	98	198	198	204	170	104	90	108	B	B	B
26	B	B	B	B	B	B	B	B	148	186	G	132	96	126	106	124	G	108	B	110	B	98	98	96
27	88	90	94	B	94	B	B	108	160	158	140	126	112	112	98	96	92	92	92	90	90	B	B	B
28	B	B	B	B	B	B	B	98	104	218	120	120	118	116	G	G	212	148	92	104	B	142	B	76
29	B	B	B	B	B	B	B	B	158	G	152	152	116	108	104	102	G	96	B	90	92	B	B	B
30	B	B	B	B	B	B	94	98	176	G	B	G	118	124	110	G	98	G	B	B	128	108	90	90
31	B	B	B	B	B	B	B	96	172	190	170	152	134	138	G	94	90	212	88	86	86	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	11	11	9	11	10	8	10	25	25	27	23	26	26	22	27	27	29	24	25	24	20	17	16
MED	92	100	94	98	96	92	95	98	148	120	110	106	104	106	103	102	100	100	93	94	93	94	92	92
U Q	102	106	104	110	98	94	101	108	165	174	136	122	112	124	116	124	126	155	99	101	100	97	97	96
L Q	90	90	90	91	92	92	93	96	105	104	102	100	98	98	96	96	90	94	89	90	89	89	90	90

IONOSPHERIC DATA STATION Yamagawa

JAN. 2015 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								L 1	H 1	C 1	C 1	C 3	CL 11	L 1	L 1		H 1	LH 11	F 1		F 1		F 1	
2			F 1	F 1	F 1	F 1			HL 11	H 1	C 2	C 1	L 1	HL 11	HL 11	C 2	C 2	L 1				F 1	F 3	F 1
3	FQ 11	F 1	F 2						H 1	H 1	HL 11	C 1	L 1	L 1		LH 21	CL 11	H 1					F 2	
4		F 1	F 1		F 1	F 2	F 1		L 1	LH 11	C 1		C 1	C 1	C 1	C 2	L 1	L 2	F 3	FQ 21	FQ 21	F 2	F 1	F 2
5		F 1	F 1	F 1	F 2	FQ 21	F 4	LH 11	LH 31	HL 11	L 1	L 1				LH 21	HL 12	HL 21	F 3	FF 22	F 1	F 1	F 1	F 1
6							F 1		HL 11	C 1	H 1		C 1			L 1	L 2	L 3	F 1	F 1				
7	F 1				F 2				L 1							H 1		H 1			F 1	F 1	F 1	FF 21
8	F 4	F 3	F 7	F 5	F 5	F 4	F 1	L 3	L 2	C 1	C 2	C 1	C 1	C 2	C 2	C 1	L 2	LH 21	F 1	FF 11	F 1		F 1	F 1
9	F 1									L 1	L 2	L 1	L 1	L 1	L 1	HL 11	LH 31	LH 31	FF 31	FF 12	F 1			
10						F 1				H 1	H 1		C 1	H 1	H 1	C 1	C 1	L 2	F 6	F 4	F 3	F 3	F 2	F 2
11	F 2							L 2	L 2	C 2	L 2	L 4	L 3	L 3	LL 11	LL 22	C 1	L 2	FF 21	F 3	F 8	F 3	F 4	F 2
12	F 4	F 2	F 2	F 2	F 3	F 2	F 1		C 2	C 1	C 1		L 1	L 1	L 3	L 2	L 3	L 2	L 3	F 4	F 3	F 4	F 3	F 3
13	F 3	F 1		F 1	FF 11				C 2	C 2	C 2	L 1	L 2	L 2		L 1	L 1	LL 12	F 3	FF 33	FF 33	FF 21	FF 31	F 2
14									H 1	C 3	L 2	L 2	L 1	L 3	L 1	L 1	L 3	L 2	F 2	F 3	FF 14	F 4	F 2	F 4
15			F 1	F 2	F 1	F 1	F 1	L 1		H 1	C 1			L 1	L 1	HL 11	L 1	HL 11	F 2	F 1		F 3	F 1	F 1
16			F 1	F 1		F 1				C 1	C 1	L 2	L 2	L 2	L 2	L 2	L 2	L 3	F 3	F 3	F 3	FF 32	F 3	F 2
17	FQ 21	FQ 31								L 1	C 1	C 1	C 2	C 1	C 1	L 2	L 1	L 1	F 3	F 1	F 1	F 1		
18					F 1	F 1				L 1	L 1	CL 11		H 1	HL 11	HL 11	LHL 11	C 2	F 2	FF 21	FF 11	F 1		
19	F 1	FF 11	FF 11	F 1			F 1		H 1			C 1	C 1	C 1	C 1	L 1	L 2	L 2		F 1	F 1	F 1		F 1
20									H 1		C 2	C 1	C 1	C 1	C 1	C 1		H 1	F 1					
21					F 1	F 2			HL 11	HL 11	C 1	C 1	C 1	C 1			H 1	H 1	F 1	F 1	F 1			
22		F 1	F 2	F 2				H 1	H 1	H 1	H 1	C 1	C 1	H 1	C 1	L 1	HL 11		F 2	F 4	F 1	F 3	F 1	
23	F 1								H 1		C 1					CL 11	L 1	LH 21	F 1	F 1	F 1	F 1		
24		F 1							C 1	L 1	L 1	C 1	L 1		L 1	L 1	L 1	H 1	F 5	F 3	F 1	F 1		
25									H 1	H 1	H 1	H 1	L 1	L 1	HL 11	HL 11	HL 11	H 1	F 1	F 1	F 1			
26									H 1	HL 11		H 1	L 1	C 1	C 1	CL 21		C 2		F 1		F 2	F 2	F 2
27	FF 31	F 1	F 1		F 1			C 1	H 2	H 1	HL 11	C 1	C 1	CC 11	L 1	L 1	L 2	LH 21	F 2	F 1	F 1			
28								L 1	C 3	H 1	C 1	C 1	C 1	C 1			HL 11	HC 11	F 1	F 1		F 1		FF 11
29									H 1		H 1	H 1	C 1	C 1	C 1	CL 11		L 1		F 1	F 1			
30							F 2	L 1	H 1				C 1	C 1	C 1		L 1				F 2	F 1	F 1	F 1
31								L 1	H 1	H 1	H 1	H 1	H 1	HL 11		L 1	L 1	H 1	F 2	F 3	F 1			
	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																								

JAN. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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 55	X 56	X 57	A	X 38	X 39	X 38													X 94	X 106	X 98	X 70	X 42
2	X 37	X 35	X 44	X 38	X 32	X 30	X 32													X 84	X 92	X 70	X 37	X 35
3	X 36	X 37	X 43	X 40	X 24	X 27	X 26													X 79	X 81	X 68	X 49	X 47
4	X 54	X 44	X 33	A	A	X 28	X 29													X 76	X 78	X 65	X 59	X 56
5	X 55	X 63	X 55	X 37	43	X 40	X 42													X 87	X 72	X 62	X 46	X 48
6	X 49	X 50	X 47	X 28	A	X 27	X 29													X 84	X 73	X 68	X 58	X 48
7	X 47	X 47	X 38	X 34	X 34	X 36	X 31													X 99	X 106	X 100	X 120	X 90
8	X 89	X 59	X 50	X 49	A	X 49	53													X 91	X 80	X 68	X 56	X 56
9	X 67	X 66	X 46	X 32	X 33	X 34	X 35													X 82	X 87	X 76	X 78	X 68
10	X 63	X 61	X 64	X 48	X 32	X 34	X 34													X 64	X 67	X 73	X 63	X 56
11	X 61	X 57	X 53	X 46	X 39	X 38	X 38													X 110	X 109	X 82	X 66	66
12	70	X 68	X 61	X 51	X 43	X 41	X 40													X 97	X 85	X 79	X 70	X 66
13	X 54	X 56	X 48	X 36	X 33	X 33	X 33													X 116	X 128	X 110	X 72	X 64
14	X 62	X 64	X 59	X 47	X 35	X 33	X 42													X 93	X 88	X 68	X 49	X 52
15	X 55	X 56	X 56	X 56	X 37	X 35	X 37													X 112	X 128	X 129	X 96	X 81
16	X 86	X 86	X 63	X 44	X 19	X 27	X 29													X 91	X 94	X 96	X 86	X 49
17	X 47	X 48	X 41	X 38	X 39	A	X 36													X 94	X 86	X 90	X 77	X 60
18	X 43	X 38	X 39	X 38	X 37	X 34	X 32													X 69	X 67	X 82	X 71	X 48
19	X 43	X 43	X 42	X 43	X 38	X 30	X 33													X 100	X 104	X 103	X 89	X 66
20	X 51	X 48	X 42	X 40	X 40	X 29	X 29													X 64	X 64	X 76	X 84	X 68
21	X 47	X 40	X 40	X 44	X 36	X 26	X 32													X 79	X 70	X 78	X 78	X 60
22	X 54	X 52	X 46	X 49	X 33	X 42	X 54													X 75	X 58	X 62	X 62	X 56
23	X 50	X 49	X 53	X 47	X 26	O X 28	X 26													X 57	X 61	X 65	X 57	X 44
24	X 41	X 40	X 43	X 40	X 32	X 36	X 34													X 74	X 68	X 74	X 59	X 52
25	X 55	X 58	X 58	X 61	X 60	X 41	X 26													X 71	X 69	X 72	X 63	X 50
26	X 40	X 39	X 39	X 39	X 38	X 40	X 33													X 93	X 82	X 77	X 90	X 53
27	X 39	X 36	X 37	X 39	X 46	X 43	X 32													X 85	X 70	X 80	X 76	X 47
28	X 40	X 40	X 40	X 39	X 38	X 38					C	C	C	C	C					X 100	X 82	X 73	X 60	X 40
29	X 40	X 41	X 40	X 42	X 48	X 40	X 32													X 132	X 120	X 132	X 96	X 65
30	X 48	X 40	X 40	X 40	X 40	X 39	X 36													X 136	X 120	X 115	X 106	X 70
31	X 47	X 43	X 40	X 41	X 44	X 44	X 37													X 102	X 98	X 96	X 86	X 72
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	29	28	30	30													31	31	31	31	31
MED	X 50	X 48	X 44	X 40	X 38	X 36	X 33													X 91	X 82	X 77	X 70	X 56
U Q	X 55	X 58	X 55	X 47	X 40	X 40	X 37													X 100	X 104	X 96	X 86	X 66
L Q	X 43	X 40	X 40	X 38	X 33	X 30	X 31													X 76	X 70	X 68	X 59	X 48

JAN. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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	49	50	51	A	32	33	32	46	100	106	92	94	137	142	152	R 158	R 156	U R 158	146	88	100	92	64	36
2	31	29	38	32	26	24	26	39	74	83	82	96	130	115	110	111	115	91	63	78	86	64	31	29
3	30	31	37	34	18	21	20	41	72	77	93	92	102	106	91	101	111	100	96	73	75	62	43	41
4	48	38	27	A	A	22	23	37	84	108	133	118	121	122	107	122	105	82	71	70	72	59	53	50
5	49	57	49	31	32	J R 34	36	J R 40	98	134	118	124	149	135	136	137	123	111	113	81	66	56	40	42
6	J R 43	44	41	22	A	21	23	44	86	106	123	146	U R 159	160	152	U R 155	138	115	99	78	67	62	52	42
7	41	41	32	28	28	30	25	35	73	109	144	R 161	150	138	146	R 154	R 144	104	99	93	100	94	114	84
8	83	53	44	J R 43	A	43	F 42	J R 43	84	129	R 165	R 155	R 155	R 152	R 152	150	144	126	99	85	R 74	62	50	50
9	61	60	40	26	27	28	29	37	85	109	147	R 156	U R 155	142	R 148	150	152	129	108	76	81	70	72	62
10	57	55	58	42	26	28	28	39	100	114	132	149	U R 158	154	130	122	115	119	88	58	61	R 67	57	50
11	55	51	47	40	33	32	32	42	99	122	138	151	U R 160	R 150	U R 144	R 138	141	141	116	104	103	76	60	F 58
12	62	62	55	R 45	37	35	34	42	90	124	148	146	R 150	U R 154	R 167	J R 148	150	137	112	91	79	73	64	60
13	48	50	42	30	27	27	27	40	91	107	105	R 132	156	R 158	U R 160	U R 160	R 158	152	130	110	122	104	66	58
14	56	58	53	R 41	29	27	36	44	78	99	107	123	144	U Y 164	U R 162	U R 158	150	J R 145	135	87	82	62	43	46
15	49	50	50	50	31	29	31	39	93	120	102	110	131	J R 147	152	142	143	138	131	106	122	R 123	90	75
16	80	80	57	38	J B 13	21	23	38	86	98	105	108	124	135	142	R 133	135	J R 131	110	85	88	90	80	43
17	41	42	35	32	33	A	30	37	95	103	103	113	118	139	R 150	R 144	135	127	114	88	80	84	71	54
18	37	32	33	32	31	28	26	31	78	115	117	110	R 126	126	122	112	98	91	84	63	61	76	65	42
19	R 37	37	36	37	32	24	27	34	78	115	122	113	U R 125	J R 128	J R 127	R 122	119	116	119	94	98	97	83	60
20	45	42	36	34	34	23	23	29	72	96	95	100	118	117	R 101	90	83	83	82	58	58	70	78	62
21	41	34	34	38	30	20	26	35	76	96	R 134	119	124	R 136	R 148	R 128	105	100	93	72	64	72	72	54
22	48	46	40	43	27	36	48	51	74	97	R 133	140	R 146	R 160	R 149	119	106	105	94	69	52	56	56	50
23	44	43	47	41	20	22	20	30	92	123	110	113	120	R 132	138	132	117	102	71	51	55	59	51	38
24	35	34	37	34	26	30	28	36	67	91	110	120	134	142	R 151	143	121	122	91	68	62	68	53	46
25	49	52	52	55	54	R 35	R 20	32	65	90	90	86	92	115	122	122	R 132	132	104	65	63	66	57	R 44
26	34	33	33	33	32	34	27	38	73	92	102	V 84	88	99	118	102	103	104	115	87	76	71	R 84	47
27	33	30	31	J R 33	40	37	26	40	76	103	116	126	122	125	124	107	J R 103	109	99	79	64	74	70	J R 41
28	34	34	34	33	32	32	23	37	78	97	C	C	C	C	C	116	106	96	90	94	76	67	54	34
29	34	35	34	J R 36	42	34	26	39	78	90	97	91	102	117	123	122	120	130	126	126	114	126	90	59
30	R 42	34	34	34	34	33	30	46	87	84	83	101	121	124	116	108	104	110	127	130	114	109	100	64
31	41	37	36	35	38	38	31	40	72	94	109	112	118	130	136	129	116	122	123	96	92	90	80	66
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	29	28	30	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31
MED	44	42	38	34	32	30	27	39	78	103	110	116	128	136	140	129	120	116	104	85	76	71	64	50
U Q	49	52	49	41	34	34	31	42	91	115	133	140	R 150	R 150	R 151	R 148	143	131	119	94	98	90	80	60
L Q	37	34	34	32	27	24	23	36	74	94	102	101	120	124	122	116	106	102	91	70	64	62	53	42

JAN. 2015 foF2 (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

JAN. 2015 foF1 (0.01MHz) 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											L	L	U L 512	L	U L 500	L	L							
2											L	L	U L 516	L	L	L	L							
3											L	L	L	L	L	U L 504								
4										L	L	L	L	L	L	L								
5									L	L	L	L	L	L	L		L							
6											L	L	L	L	L	L	L							
7									244	L	L	L	L	L	L	L		L						
8									L	L		L	L	L	L		L							
9									L	L	L	A	L	L	U L 564	L	L							
10									L	L	L	L	L	L	L	L								
11										L	L	L	L	L	L	L								
12										L	L	L	L	L	L		L							
13											L	L	L	U L 584		L								
14										L	L	U L 560	L	L	L	L								
15									L	L	L	L	L	L	L	L	L							
16										L	L	U L 496	U L 528	L	L	L	L							
17											L	L	L	U L 568	L	L	L							
18										L	L	L	U L 484	U L 508	L	L	L							
19										L	L	U L 504	L	L	L	L	L							
20										L	L	U L 472	L 500	U L 504	L	L	L							
21										L	L	U L 480	L	L	L 500	L	L	L						
22										L	L	L	L	L	L	L								
23									L	L	L	U L 480	L	L	L	L	L							
24										L	L	U L 480	U L 532	U L 512	L 512	L 464	L							
25										L	L	L	L	U L 500	L 488	U L 452	L							
26									L	L	L	L	A	U L 556	U L 496	L								
27										L	L	L	L	L	U L 504	L	L							
28											C	C	C	C	C	L								
29											L	L	L	L	L	L	L	L						
30											L	L	L	L	L	L	L	L						
31									L	L	L	L	L	L	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1			7	6	7	7	3								
MED									244			U L 480	U L 514	U L 512	U L 500	U L 464								
U Q												U L 504	U L 528	U L 568	L 512	U L 504								
L Q												U L 480	L 500	U L 504	L 496	U L 452								

JAN. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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								B	A	A	A	A	A	A	340	324	280	220	B					
2								B	204	272	324	R 324	A	A	A	A	A	A	A					
3								B	192	264	308	A	A 348	A	328	A 332	264	U A 212	A					
4								B	216	280	320	R 352	R 356	U R 372	R 364	A	U A 280	A	A					
5								B	216	268	R 300	U R 320	340	B	348	R 340	284	224	B					
6								B	216	U A 300	316	A	A	R 348	340	324	288	220	B					
7								B	216	276	R 264	B	348	344	340	328	308	208	A					
8								B	220	A	A	A	A	A	A	A	R 292	A	A					
9								B	A	A	A	A	A	A	A	A	R 288	212	A					
10								B	232	300	328	A	A	R 384	364	376	A	A	A					
11								B	A	A	A	B	A	A	A	A	A	A	A					
12								B	236	280	356	360	A	R	A	A	A	A	A					
13								B	A	U A 284	A	A	A	A	B	A	A	A	A					
14								B	A	288	U A 328	A	A	A	B	A	A	A	A					
15								B	232	292	B	A	A	A	A	R 340	300	A	A					
16								B	204	276	316	A	A	A	A	A	300	U A 256	A					
17								B	236	288	316	U A 348	U A 328	A	A	U R 300	308	236	A					
18								B	216	280	R 308	U R 324	368	U R 360	372	332	304	U A 224	A					
19								B	224	296	U A 324	372	A	A	A	332	292	252	A					
20								B	212	284	R	U A 360	U A 352	364	A	A	A	264	A					
21								B	216	R 296	A	A	A	A	348	332	288	240	168					
22								B	A	280	324	360	356	R 344	B	R 324	296	236	A					
23								B	228	280	320	336	B	364	U R 364	R 348	R 312	244	B					
24								B	212	288	R 324	A	A	R	A	A	292	240	A					
25								B	224	292	332	U R 360	R 360	U R 364	U R 352	R 312	292	248	A					
26								B	204	288	324	R 364	U R 360	A	U A 340	324	304	U A 252	A					
27								B	216	296	336	360	A	A	A	A	A	A	A					
28							J K 152	B	232	304	C	C	C	C	C	B	308	A	A					
29								B	248	304	324	R 380	U R 384	372	A	A	324	268	A					
30								B	236	284	B	U R 360	B	U R 368	B	J K	U R 324	248	A					
31								B	208	296	328	R 352	A	U R 376	360	A	300	264	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1		25	27	21	16	11	12	13	15	23	20	1					
MED							J K 152		216	288	324	R 360	356	R 364	348	332	296	240	168					
U Q									232	296	328	R 360	U R 360	R 372	364	R 340	308	252						
L Q									212	280	316	U R 342	348	R 354	340	324	288	222						

JAN. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 foEs (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	E B 13	E B 13	E B 13	J A 54	J A 34	J A 24	J A 18	E B 14	26	J A 38	J A 43	J A 41	J A 64	J A 60	G 24	G	G 20	G 20	17	22	E B 13	J A 16	J A 21	E B 13
2	21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	24	G	35	36	37	42	37	J A 36	31	J A 30	J A 22	E B 13	E B 13	E B 13	E B 13	E B 13
3	E B 13	E B 13	J A 22	20	E B 14	E B 14	E B 13	E B 14	22	G	G	37	J A 34	34	G 27	36	G	26	J A 22	E B 13	E B 13	E B 13	E B 13	E B 13
4	20	J A 24	J A 22	J A 24	J A 22	18	E B 13	E B 14	24	31	36	G	G	G	G	J A 40	J A 42	J A 38	J A 52	J A 21	J A 20	E B 13	19	J A 26
5	J A 25	J A 24	E B 13	E B 13	J A 16	E B 13	17	E B 14	G	G 19	G	G	G	E B 36	G 24	38	G	29	E B 16	E B 13	E B 13	J A 16	E B 13	E B 13
6	J A 19	J A 22	J A 51	J A 45	J A 27	J A 20	18	J A 18	24	35	G	41	42	G	G	G	G 23	G	E B 14	E B 13	J A 19	E B 13	E B 13	E B 13
7	E B 13	J A 19	E B 13	19	20	18	J A 14	E B 14	23	G	G	E B 38	G	G	G	36	33	25	20	J A 17	E B 13	E B 13	E B 13	J A 32
8	J A 45	19	J A 16	J A 31	J A 60	J A 40	J A 20	J A 38	G 20	J A 49	J A 59	J A 47	J A 42	J A 41	J A 46	J A 42	32	J A 30	J A 54	J A 31	J A 28	J A 45	J A 20	E B 20
9	E B 14	E B 13	E B 13	E B 13	E B 13	20	J A 16	E B 14	24	33	J A 54	J A 52	J A 43	J A 42	J A 41	J A 40	G 26	27	J A 23	J A 28	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	J A 18	E B 14	G	G	41	40	41	G	G	43	J A 42	J A 59	J A 156	J A 98	J A 28	J A 46	18	18
11	E B 13	E B 13	E B 13	E B 13	E B 13	J A 16	19	E B 14	J A 27	J A 42	43	43	J A 46	J A 58	J A 59	J A 39	J A 42	J A 32	J A 20	J A 38	J A 42	J A 47	50	J A 66
12	J A 32	J A 23	J A 22	J A 22	J A 20	J A 22	E B 13	E B 13	G	33	G 30	G	46	G	54	J A 57	J A 73	J A 83	J A 81	J A 53	J A 54	J A 31	41	J A 31
13	J A 20	18	19	E B 13	E B 13	19	E B 13	E B 14	26	J A 39	J A 55	J A 47	J A 46	J A 46	E B 70	J A 43	J A 68	J A 38	J A 41	J A 31	J A 58	J A 51	E B 14	E B 13
14	J A 45	J A 28	J A 21	18	E B 13	E B 14	E B 13	E B 14	24	G	40	J A 48	J A 59	J A 48	E B 44	J A 48	36	J A 54	J A 60	J A 29	E B 13	24	29	J A 30
15	J A 50	J A 28	E B 13	E B 13	E B 13	E B 13	J A 18	19	G	G	E B 39	J A 40	42	J A 42	47	G 34	G 23	J A 30	J A 36	J A 41	J A 45	J A 27	J A 23	J A 28
16	19	E B 16	E B 16	E B 14	E B 14	E B 14	E B 13	E B 14	23	32	35	41	39	J A 46	J A 49	J A 41	J A 41	34	J A 38	J A 27	E B 14	E B 13	E B 13	18
17	E B 13	J A 22	18	E B 13	J A 26	J A 35	J A 17	J A 15	G	G	G	40	42	40	40	32	G	28	20	J A 21	J A 16	E B 13	E B 13	E B 13
18	E B 13	E B 13	E B 13	E B 13	E B 13	21	19	18	25	G	G	G	42	G	40	G	36	J A 38	J A 40	J A 23	J A 21	E B 13	E B 13	E B 13
19	E B 13	E B 13	E B 13	20	J A 17	E B 13	E B 13	E B 14	24	G	37	G	42	J A 50	J A 46	G	G	29	J A 25	27	19	E B 13	J A 30	E B 13
20	18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	31	G 25	G	40	40	42	39	J A 37	J A 42	J A 23	J A 21	J A 20	J A 21	E B 13	E B 13
21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 14	25	G	36	42	41	43	G 30	G 21	G	G	E B 14	E B 13	J A 17	19	22	J A 20
22	E B 13	J A 26	J A 17	E B 13	E B 13	E B 13	E B 13	J A 17	J A 29	G	G	G	41	G	E B 44	G 31	40	J A 38	J A 38	J A 28	J A 20	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 14	E B 14	E B 14	G	G	G	40	E B 42	44	41	40	40	G	18	J A 16	J A 18	J A 22	J A 21	19
24	E B 13	J A 28	J A 21	J A 23	E B 13	E B 13	E B 13	E B 14	24	G	G	35	41	39	41	36	G 26	28	J A 22	21	19	19	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	18	18	26	G	G	G	G 32	G 30	G 30	G 28	G	28	J A J 22	A 17	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	E B 14	24	33	34	44	J A 49	J A 50	J A 44	G	34	31	J A 39	J A 18	J A 35	E B 13	J A 16	19
27	E B 13	19	J A 17	20	J A 16	21	E B 13	E B 14	26	34	37	43	46	42	J A 40	44	J A 49	J A 33	J A 34	J A 36	J A 22	J A 21	E B 13	E B 13
28	E B 13	J A 64	E B 13	E B 13	E B 13	E B 13	J K 15	G	26	G	C	C	C	C	C	E B 40	38	J A 31	J A 23	J A 28	E B 13	J A 26	20	18
29	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	G	G	47	48	J A 41	J A 41	G	J A 31	J A 19	19	E B 13	E B 13	E B 13	E B 13
30	E B 13	18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	E B 38	G 32	E B 43	G 26	45	E B 43	36	G	22	E B 13	E B 13	E B 13	E B 13	E B 13
31	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	32	G 23	G	38	G	G	36	G 26	J A 26	E B 20	J A 24	18	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31
MED	E B 13	E B 16	E B 13	E B 13	E B 13	E B 14	E B 13	E B 14	24		G E G 34	39	42	40	40	37	33	J A 30	J A 23	J A 22	J A 19	E B 13	E B 13	E B 13
U Q	J A 20	J A 23	J A 18	J A 20	J A 17	J A 20	18	15	25	33	39	42	J A 46	J A 46	45	J A 41	J A 40	J A 38	39	29	J A 22	24	21	J A 20
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	G	G	39	G	G	G	G	G 26	20	E B 17	E B 13	E B 13	E B 13	E B 13

JAN. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 fbEs (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	E B 13	E B 13	E B 13	A A 54	19	18	E B 13	E B 14	24	36	36	40	40	41	G 22	G	G 18	G 20	E B 14	E B 13	E B 13	E B 13	20	E B 13
2	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	23	G	35	36	36	41	36	34	29	24	18	E B 13	E B 13	E B 13	E B 13	E B 13
3	E B 13	E B 13	E B 13	E B 13	E B 14	E B 14	E B 13	E B 14	22	G	G	37	G 28	34	G 23	36	G	25	19	E B 13	E B 13	E B 13	E B 13	E B 13
4	E B 13	20	16	A A 24	A A 22	E B 13	E B 13	E B 14	24	30	36	G	G	G	G	37	40	25	46	20	E B 13	E B 13	E B 13	E B 13
5	21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G 18	G	G	G	E B 36	G 22	38	G	28	E B 16	E B 13	E B 13	E B 13	E B 13	E B 13
6	16	17	E B 13	E B 13	A A 27	E B 13	E B 13	E B 14	24	31	G	40	40	G	G	G	G 21	G	E B 14	E B 13	E B 13	E B 13	E B 13	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	E B 14	23	G	G	E B 38	G	G	G	36	32	25	17	E B 13	E B 13	E B 13	E B 13	28
8	40	E B 13	E B 13	30	A A 60	30	E B 13	25	G 19	36	49	42	42	41	41	40	30	26	29	20	20	37	17	E B 20
9	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	32	38	52	40	42	41	39	G 25	26	17	17	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	E B 14	G	G	38	40	41	G	G	42	40	38	46	31	18	31	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	E B 14	24	36	37	40	43	43	42	37	41	29	18	29	22	25	E B 13	35
12	21	21	E B 13	20	18	E B 13	E B 13	E B 13	G	32	G 27	G	41	G	53	51	41	41	80	30	23	19	16	27
13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	26	37	40	41	40	42	E B 70	39	41	32	35	29	41	42	E B 14	E B 13
14	26	20	19	E B 13	E B 13	E B 14	E B 13	E B 14	24	G	37	43	42	43	E B 44	40	36	45	42	21	E B 13	20	21	21
15	39	21	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	E B 39	39	42	40	43	G 22	G 19	26	28	21	30	24	21	24
16	17	E B 16	E B 16	E B 14	E B 14	E B 14	E B 13	E B 14	23	31	35	40	39	42	42	38	34	30	29	25	E B 14	E B 13	E B 13	E B 13
17	E B 13	20	E B 13	E B E B 13	18	A A 35	E B 13	E B 14	G	G	G	40	42	40	39	U Y 32	G	27	18	19	E B 13	E B 13	E B 13	E B 13
18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	G	G	G	42	G	40	G	35	32	37	17	18	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	E B 14	24	G	36	G	42	46	40	G	G	28	24	22	E B 13	E B 13	29	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	E B 14	25	31	U G 25	G	40	40	40	37	32	G 23	18	E B 13	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 13	E B 14	E B 14	25	G	35	41	40	42	G	G 28	G	G 20	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
22	E B 13	17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	28	G	G	G	41	G	E B 44	G 29	38	36	36	22	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 14	E B 14	E B 14	G	G	G	40	E B 42	42	40	39	39	G	18	E B 13	E B 13	E B 13	E B 13	17
24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	G	G	U Y 35	40	39	39	34	G 20	28	18	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 16	E B 14	25	G	G	G	G 29	G 30	G 28	G 23	G	27	19	E B 13	E B 13	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	E B 14	24	32	34	42	49	42	39	G	34	30	22	E B 14	20	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 13	E B 14	26	33	37	43	45	41	40	42	42	28	23	19	20	18	E B 13	E B 13
28	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	K 15	G	25	G	C	C	C	C	C	E B 40	37	30	22	18	E B 13	25	E B 13	E B 13
29	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	G	G	40	46	40	41	G	G 19	18	E B 13	E B 13	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 13	E B 13	E B 14	G	G	E B 38	G 32	E B 43	G 26	44	E B 43	36	G	21	E B 13	E B 13	E B 13	E B 13	E B 13
31	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	32	G 21	G	38	G	G	36	G 20	G 21	E B 20	19	17	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	G	E G 34	38	40	40	40	36	32	27	20	17	E B 13	E B 13	E B 13	E B 13
U Q	14	16	E B 13	13	14	E B 13	E B 13	E B 14	25	32	37	40	42	42	42	40	38	30	29	21	18	19	13	13
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	G	G	G	G 39	G	G	G	G	G	18	E B 13	E B 13	E B 13	E B 13	E B 13

JAN. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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	14	18	21	21	24	22	17	17	15	14	14	13	13	13	13	13
2	13	13	13	13	13	13	13	14	14	15	18	21	24	30	26	22	14	14	14	13	13	13	13	13
3	13	13	13	13	14	14	13	14	14	14	15	18	18	21	20	17	17	17	14	13	13	13	13	13
4	13	13	13	13	13	13	13	14	14	14	18	34	23	22	24	22	18	19	18	14	13	13	13	13
5	13	13	13	13	13	13	13	14	14	16	16	24	24	36	20	17	16	16	16	13	13	13	13	13
6	13	13	13	13	13	13	13	14	16	18	20	24	24	24	22	23	16	17	14	13	13	13	13	13
7	13	13	13	13	13	13	13	14	17	18	21	38	20	32	24	20	18	16	14	13	13	13	13	13
8	13	13	13	13	13	13	13	14	14	20	20	24	33	24	21	19	18	14	14	13	13	13	13	20
9	14	13	13	13	13	13	13	14	14	21	22	28	34	28	16	16	18	14	14	13	13	13	13	13
10	13	13	13	13	13	13	13	14	15	28	24	32	32	32	24	22	17	15	14	13	13	13	13	13
11	13	13	13	13	13	13	13	14	14	21	21	33	31	31	26	23	18	15	13	13	13	13	13	13
12	13	13	13	13	13	13	13	13	14	17	22	29	24	32	24	23	20	14	14	13	13	13	13	13
13	13	13	13	13	13	13	13	14	19	22	24	24	30	20	70	24	20	16	14	13	13	14	14	13
14	13	13	13	13	13	14	13	14	14	15	18	24	32	34	44	24	22	18	14	13	13	13	13	13
15	13	13	13	13	13	13	13	14	15	18	39	20	21	23	22	20	16	14	14	13	13	13	13	13
16	13	16	16	14	14	14	13	14	14	21	22	20	24	24	24	24	17	14	14	13	14	13	13	13
17	13	13	13	13	13	13	13	14	16	18	18	21	26	28	24	20	21	15	14	13	13	13	13	13
18	13	13	13	13	13	13	13	14	14	14	14	25	30	30	21	22	18	16	14	13	13	13	13	13
19	13	13	13	13	13	13	13	14	14	19	22	22	22	27	23	24	19	16	13	13	13	13	13	13
20	13	13	13	13	13	13	13	14	14	16	22	20	25	24	21	22	20	14	14	13	13	13	13	13
21	13	13	13	13	13	13	14	14	14	15	20	21	21	24	19	17	16	14	14	13	13	13	13	13
22	13	13	13	13	13	13	13	14	13	14	20	23	25	21	44	20	19	15	14	13	13	13	13	13
23	13	13	13	13	13	14	14	14	14	16	17	24	42	24	22	21	17	14	14	13	13	13	13	13
24	13	13	13	13	13	13	13	14	19	20	23	24	20	24	22	19	17	14	14	13	13	13	13	13
25	13	13	13	13	13	13	14	14	14	16	24	22	22	21	18	18	14	14	14	13	13	13	13	13
26	13	13	13	13	13	13	13	14	14	15	14	19	19	30	22	20	17	16	14	14	13	13	13	13
27	13	13	13	13	13	13	13	14	14	15	19	24	26	21	24	21	16	14	14	13	13	13	13	13
28	13	13	13	13	13	13	13	14	14	21	C	C	C	C	C	40	22	15	14	13	13	13	13	13
29	13	13	13	13	13	13	13	14	16	17	21	22	24	28	23	24	21	16	14	13	13	13	13	13
30	13	13	13	13	13	13	13	14	14	E S 14	38	24	43	24	38	43	22	17	14	13	13	13	13	13
31	13	13	13	13	13	13	13	13	14	14	17	20	20	24	21	19	14	14	20	13	14	13	13	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	31	31	31	31	31	31	31	31	31
MED	13	13	13	13	13	13	13	14	14	17	20	24	24	24	22	21	18	15	14	13	13	13	13	13
U Q	13	13	13	13	13	13	13	14	15	20	22	24	30	30	24	23	20	16	14	13	13	13	13	13
L Q	13	13	13	13	13	13	13	14	14	15	18	21	22	23	21	19	16	14	14	13	13	13	13	13

JAN. 2015 fmin (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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	278	318	345	A	271	303	296	309	353	361	356	311	329	324	323	R 321	R 322	U R 327	331	308	310	338	360	322
2	302	304	285	344	339	287	291	317	364	359	368	318	340	325	303	324	328	351	304	317	356	359	364	280
3	290	295	322	392	328	267	268	327	375	360	351	332	317	335	323	306	319	332	331	316	341	351	319	280
4	305	365	338	A	A 298	284	301	334	338	346	337	318	319	314	335	339	341	345	320	330	324	306	277
5	272	318	330	309	260	J R 287	290	J R 287	326	345	340	297	326	317	314	320	312	329	335	341	335	309	307	279
6	J R 291	299	363	379	A	265	280	320	352	339	320	313	U R 318	313	301	U R 321	329	309	347	325	318	297	329	293
7	310	326	339	298	273	315	286	298	324	303	337	R 336	304	300	299	R 317	R 330	338	320	327	297	274	310	301
8	318	317	286	J R 276	A	289	F 276	J R 279	318	318	R 322	R 315	R 290	R 295	R 305	314	320	332	341	311	R 315	314	299	283
9	303	344	352	291	266	285	287	303	340	328	343	R 343	U R 317	286	R 293	301	314	318	334	317	305	306	312	314
10	302	282	312	340	294	271	295	305	340	351	319	309	R	304	304	311	314	350	352	330	300	R 321	311	295
11	291	324	323	328	288	301	283	303	340	346	321	311	U R 324	R 319	U R 299	R 296	301	322	326	316	333	320	313	F 289
12	276	308	321	R 304	277	280	284	280	325	332	338	304	R 324	U R 324	R 309	J R 323	310	329	335	324	328	320	315	325
13	294	298	332	341	281	289	286	300	353	360	340	R 315	307	R 308	U R 304	U R 306	R 311	324	328	307	318	347	294	290
14	290	328	308	R 334	322	302	334	322	356	352	336	308	316	R	U R 318	U R 313	311	J R 323	344	325	319	308	320	290
15	280	278	309	332	318	277	282	309	343	363	348	319	319	J R 314	311	308	306	321	340	316	R 323	R 336	314	287
16	299	316	310	343	B	287	294	312	356	350	345	314	318	312	309	312	309	J R 329	320	316	311	326	343	306
17	283	329	338	317	295	A	286	297	349	366	330	342	297	312	R 315	R 317	320	331	343	327	296	316	320	330
18	316	316	317	327	333	295	283	298	335	351	346	335	R 320	316	321	316	323	340	346	354	299	335	335	310
19	R 287	300	314	340	363	308	275	306	330	343	350	321	U R 308	J R 331	J R 314	R 324	317	322	343	344	309	327	347	347
20	297	313	306	305	355	350	285	305	348	359	343	334	338	338	R 343	333	329	340	349	332	290	307	332	347
21	322	300	311	332	343	327	297	311	356	334	R 342	329	313	R 313	R 329	R 346	322	333	338	351	272	304	308	302
22	297	291	294	319	333	280	333	329	338	306	R 322	331	R 311	R 331	R 324	315	298	324	338	344	298	294	315	317
23	289	296	332	360	350	259	269	293	338	364	347	343	318	R 313	327	321	323	341	358	306	306	330	313	305
24	311	300	328	346	334	289	321	320	342	331	331	339	321	322	R 340	332	329	339	356	342	313	323	327	284
25	292	291	295	310	348	R 385	R 287	320	342	361	358	349	310	314	322	307	R 321	343	351	321	289	318	328	R 300
26	281	312	313	302	299	304	382	326	354	354	347	330	320	311	325	313	327	318	351	337	287	294	R 348	342
27	300	290	285	J R 283	317	361	311	300	338	333	331	327	331	312	326	314	J R 305	327	349	346	268	311	356	J R 304
28	286	285	303	281	325	340	269	307	339	367	C	C	C	C	C	333	316	324	317	337	324	327	319	322
29	296	315	293	J R 292	325	348	312	321	351	347	342	336	315	312	315	319	307	330	331	322	314	332	344	333
30	R 278	288	290	291	304	321	275	316	368	361	345	307	322	326	317	316	320	303	321	338	306	301	311	329
31	303	301	292	306	304	337	332	324	349	336	336	324	313	313	313	317	299	312	334	302	295	303	323	311
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	29	27	30	31	31	31	31	30	30	29	29	30	31	31	31	31	31	31	31	31	31
MED	294	304	313	319	318	296	286	307	342	350	342	326	318	314	314	317	319	329	338	325	310	320	319	304
U Q	303	318	332	340	334	321	297	320	353	360	347	336	323	324	323	323	323	339	347	338	323	330	335	322
L Q	286	295	295	300	288	285	282	300	338	334	331	313	312	312	305	312	310	322	331	316	297	306	311	289

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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	U L 360	L	U L 374	L	L							
2											L	L	U L 362	L	L	L	L							
3											L	L	L	L	L	U L 362								
4										L	L	L	L	L	L	L								
5									L	L	L	L	L	L	L		L							
6											L	L	L	L	L	L	L							
7									469	L	L	L	L	L	L	L		L						
8									L	L		L	L	L	L		L							
9									L	L	L	A	L	L	U L 354	L	L							
10									L	L	L	L	L	L	L	L								
11										L	L	L	L	L	L	L								
12										L	L	L	L	L	L		L							
13											L	L	L	U L 356		L								
14										L	L	U L 365	L	L	L	L								
15									L	L	L	L	L	L	L	L	L							
16										L	L	U L 408	U L 376	L	L	L	L							
17											L	L	L	U L 355	L	L	L							
18										L	L	L	U L 386	U L 384	L	L	L							
19										L	L	U L 388	L	L	L	L	L							
20										L	L	U L 405	L 383	U L 371	L	L	L							
21										L	L	U L 387	L	L	L 370	L	L	L						
22										L	L	L	L	L	L	L								
23									L	L	L	U L 392	L	L	L	L	L							
24										L	L	U L 402	U L 354	U L 377	L 366	L 385	L							
25										L	L	L	L	U L 376	L 381	U L 393	L							
26									L	L	L	L	A	U L 351	U L 370	L								
27										L	L	L	L	L	U L 378	L	L							
28											C	C	C	C	C	L								
29											L	L	L	L	L	L	L	L						
30											L	L	L	L	L	L	L	L						
31									L	L	L	L	L	L	L	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1			7	6	7	7	3								
MED									469			U L 392	U L 369	U L 371	U L 370	U L 385								
U Q												U L 405	L 383	U L 377	L 378	U L 393								
L Q												U L 387	U L 360	U L 355	L 366	U L 362								

JAN. 2015 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Okinawa

JAN. 2015 h'F2 (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											228	232	278	256	262	252	238							
2											236	280	252	246	238L	252	238							
3											246	256	254	250	260	292								
4										250	236	236	270	250	256	268								
5									280	232	234	302	246	240	262		260							
6											240	272	282	274	272	264	238							
7									242	280	252	256	252	296	292	262		216						
8									264	272		252	254	264L	284		238							
9									252	244	252	242	266	322L	312	270	254							
10									256	228	260	238	260	260	234L	282								
11										238	258	266	276	270	282	278								
12										246	244	246	290	282	284		256							
13											242	254	254	296		292								
14										220	236	286	284	294	264	264								
15									254	226	228	248	262	268	260	280	248							
16										234	234	246	266	272	266	260	252							
17											256	238	246	296	266	246	260							
18										240	240	226	252	258	266	256	238							
19										252	232	256	266	240	254	262	272							
20										234	256	238	242	258	246	240	232							
21										254	256	236	240	284	254	236	256	230						
22										284	270	240	276	262	252	240								
23									264	240	238	244	238	276	256	258	228							
24										262	260	236	266	260	258	244	224							
25										238	236	246	274	270	258	262	248							
26									234	242	244	234	260	296	272	260								
27										254	262	262	262	288	264	244	270							
28											C	C	C	C	C	244								
29											252	246	260	280	274	262	264	242						
30											238	294	270	258	270	270	240	278						
31									232	246	248	266	280	288	272	252	256							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									9	22	29	30	30	30	29	28	21	4						
MED									254	243	244	246	262	270	264	261	248	236						
U Q									264	254	256	262	274	288	272	269	258	260						
L Q									238	234	236	238	252	258	256	249	238	223						

JAN. 2015 h'F2 (KM)

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IONOSPHERIC DATA STATION Okinawa

JAN. 2015 h'F (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	272	252	222	A	E A 312	A 276	292	272	224	226	204	198	204	A 222	216	214	224	220	192	180	250	208	208	212
2	264	272	254	228	220	300	312	264	220	220	H 204	H 182	184	234	204	224	216	214	194	248	204	196	200	320
3	324	288	264	196	286	396	382	260	214	220	214	198	218	202	202	224	232	214	218	190	216	198	206	282
4	254	212	226	A	A	292	330	284	232	226	218	212	212	226	198	230	230	208	A 236	204	196	210	236	282
5	A 318	258	234	240	382	328	292	290	250	226	218	Y 230	214	210	H 202	242	210	224	214	196	196	208	222	276
6	278	256	216	218	A	380	358	268	236	232	196	210	216	218	212	224	224	218	206	190	218	232	212	282
7	252	242	230	252	306	266	258	292	178	224	214	206	220	222	212	236	236	220	224	210	252	266	224	236
8	242	212	274	E A 364	A	E A 318	312	A 328	226	244	272	226	212	216	H 218	248	208	216	208	204	194	E A 254	236	300
9	256	210	222	284	290	298	294	284	240	222	218	A	208	H 220	208	242	244	204	206	190	228	202	238	216
10	244	266	232	204	250	320	294	290	244	224	208	204	204	204	198	236	244	222	216	210	228	242	228	262
11	262	218	240	236	302	260	322	286	244	226	218	200	230	226	224	218	252	226	200	232	212	224	218	E A 308
12	288	250	222	A 254	A 260	306	306	292	242	222	222	208	200	214	A 248	260	242	222	A 232	210	226	220	220	244
13	260	234	222	224	288	306	320	282	230	228	224	208	182	A 208	298	230	258	232	210	208	234	212	212	264
14	284	244	218	226	244	310	240	256	226	214	212	220	224	224	E B 236	226	230	232	210	188	210	196	256	A 288
15	E A 366	E A 290	248	214	252	282	302	286	242	224	216	206	200	210	226	218	216	228	210	210	236	206	210	272
16	254	228	228	190	B	B 336	314	278	230	210	206	200	H 182	230	226	224	222	234	218	204	222	212	212	224
17	292	256	222	248	A 280	A	308	294	238	220	218	218	206	196	222	Y	220	228	202	190	228	230	216	218
18	236	256	258	246	232	268	310	288	240	218	222	200	210	216	206	218	224	230	220	200	240	222	210	202
19	268	288	266	232	210	268	294	280	240	226	218	200	208	A	214	200	228	224	218	200	228	212	220	206
20	262	262	256	262	212	230	316	280	236	232	214	204	212	220	228	210	204	230	220	190	264	254	224	204
21	236	260	262	240	206	224	294	274	234	234	220	204	212	210	198	H 196	208	216	206	184	206	234	236	248
22	258	A 282	274	254	222	302	212	240	230	216	222	226	218	234	242	216	232	232	228	196	224	260	242	232
23	268	268	228	206	246	E B 402	374	292	246	232	214	200	230	224	248	244	A	224	208	202	236	222	234	254
24	268	276	236	232	232	282	236	254	228	224	210	214	214	214	208	210	216	224	202	194	218	212	204	256
25	266	248	252	232	210	200	352	252	230	234	214	224	204	204	216	206	206	224	204	186	210	216	206	226
26	290	268	266	280	272	276	222	218	192	216	220	218	A	224	214	212	238	250	220	192	222	264	212	200
27	246	282	286	294	254	222	222	278	236	234	228	230	252	212	212	A 226	A 236	242	214	202	244	244	202	222
28	294	298	284	300	252	218	370	264	230	218	C	C	C	C	C	B 230	222	226	228	208	208	208	206	226
29	280	268	288	266	242	218	268	254	232	224	222	216	208	A 242	218	230	220	238	208	202	210	216	202	206
30	266	290	290	276	270	230	326	252	214	212	212	212	218	216	228	B 234	230	218	228	210	202	202	218	222
31	238	262	284	264	264	238	216	218	224	226	222	208	212	212	214	214	210	236	220	190	212	230	214	224
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	29	27	30	31	31	31	31	30	29	29	29	30	30	30	31	31	31	31	31	31	31
MED	265	259	248	240	252	279	306	278	232	224	218	208	212	216	214	224	224	224	214	200	222	216	216	234
U Q	284	276	266	265	286	310	322	288	240	228	222	218	218	224	226	234	236	232	220	208	234	234	228	276
L Q	254	244	226	225	232	238	268	256	226	220	212	200	204	210	208	214	216	218	206	190	210	208	208	218

JAN. 2015 h'F (KM)

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IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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								B	A	A	A	A	A	A	110	110	110	E A 142	B					
2								B	114	108	108	108	A	A	A	A	A	A	A					
3								B	110	108	108	A	114	A	108	A	108	118	A					
4								B	112	108	118	118	110	110	110	A	110	A	A					
5								B	110	110	108	110	110	B	106	106	112	112	B					
6								B	116	110	110	A	A	110	110	114	108	116	B					
7								B	122	114	110	B	110	114	110	110	110	114	A					
8								B	122	A	A	A	A	A	A	A	A	A	A					
9								B	A	A	A	A	A	A	A	A	112	112	A					
10								B	116	132	110	A	A	116	116	116	A	A	A					
11								B	A	A	A	A	A	A	A	A	A	A	A					
12								B	116	108	118	118	A	112	A	A	A	A	A					
13								B	A	110	A	A	A	A	B	A	A	A	A					
14								B	A	110	110	A	A	A	B	A	A	A	A					
15								B	116	110	B	A	A	A	A	110	110	A	A					
16								B	110	108	108	A	A	A	A	A	112	120	A					
17								B	120	112	108	108	108	A	A	108	108	112	A					
18								B	112	112	110	108	110	112	108	108	110	114	A					
19								B	114	114	110	110	A	A	A	110	110	118	A					
20								B	110	110	A	108	110	110	A	A	A	156	A					
21								B	112	110	A	A	A	A	108	108	108	132	B					
22								B	A	110	110	110	110	108	B	114	112	110	A					
23								B	114	110	110	110	B	110	106	110	110	110	B					
24								B	116	112	110	A	A	106	A	A	108	108	A					
25								B	110	110	108	108	114	112	112	108	108	112	A					
26								B	112	110	108	108	108	A	110	110	110	110	A					
27								B	112	112	112	112	A	A	A	A	A	A	A					
28							B	B	112	112	C	C	C	C	C	B	112	A	A					
29								B	116	110	110	110	110	110	A	A	110	114	A					
30								B	118	110	B	110	B	114	B	B	114	112	A					
31								B	112	108	108	108	A	108	108	A	108	110	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									25	27	21	16	11	14	13	14	22	20						
MED									114	110	110	110	110	110	110	110	110	112						
U Q									116	112	110	110	110	112	110	110	112	118						
L Q									112	110	108	108	110	110	108	108	108	111						

JAN. 2015 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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	98	104	108	116	B	112	112	108	106	104	104	98	G	96	104	92	112	B	98	92	B
2	92	B	B	B	B	B	B	92	170	G	182	110	114	158	112	110	108	108	108	B	B	B	B	B
3	B	B	104	100	B	B	B	B	152	G	G	108	104	106	100	182	G	112	108	B	B	B	B	B
4	114	100	100	98	98	100	B	B	164	150	120	G	G	G	G	108	108	108	104	104	102	B	106	106
5	102	106	B	B	100	B	112	B	G	100	G	G	G	B	96	170	G	140	B	B	B	90	B	B
6	90	104	98	98	104	104	106	116	150	114	G	108	114	G	G	G	102	G	B	B	96	B	B	B
7	B	104	B	96	100	102	148	B	164	G	G	B	G	G	G	198	192	148	90	90	B	B	B	114
8	108	112	112	104	104	100	100	100	104	124	112	112	114	116	108	104	160	98	96	96	88	92	90	B
9	B	B	B	B	B	96	94	B	116	114	114	108	114	100	98	96	100	122	112	108	B	B	B	B
10	B	B	B	B	B	B	104	B	G	G	116	116	116	G	G	162	146	104	104	118	100	98	98	94
11	B	B	B	B	B	108	144	B	108	104	106	106	108	108	108	108	102	102	100	100	100	94	102	102
12	98	98	98	98	98	100	B	B	G	116	104	G	114	G	108	108	104	104	100	100	100	96	96	92
13	96	92	92	B	B	92	B	B	114	108	110	110	102	104	B	100	108	96	92	90	102	100	B	B
14	94	94	92	92	B	B	B	B	114	G	110	108	108	108	B	100	102	100	96	98	B	96	96	96
15	92	94	B	B	B	B	98	96	G	G	B	106	110	102	98	102	100	100	96	106	102	96	96	92
16	94	B	B	B	B	B	B	B	120	116	110	108	106	100	100	100	98	120	114	112	B	B	B	90
17	B	96	96	B	96	96	96	96	G	G	G	118	116	108	112	112	G	140	118	112	112	B	B	B
18	B	B	B	B	B	98	96	96	190	G	G	G	180	G	144	G	128	118	112	110	106	B	B	B
19	B	B	B	102	102	B	B	B	176	G	110	G	106	104	102	G	G	134	92	94	92	B	96	B
20	94	B	B	B	B	B	B	B	172	174	106	G	112	144	114	112	106	104	104	104	104	102	B	B
21	B	B	B	B	B	B	B	B	170	G	108	110	108	110	G	102	G	102	B	B	118	114	92	108
22	B	102	96	B	B	B	B	108	106	G	G	G	124	G	B	106	182	128	118	108	98	B	B	B
23	B	B	B	B	B	B	B	B	G	G	G	116	B	116	180	172	132	G	170	158	122	114	96	88
24	B	110	110	110	B	B	B	B	160	G	G	114	106	106	102	102	104	188	98	98	98	94	B	B
25	B	B	B	B	B	B	172	162	206	G	G	G	104	102	102	100	G	182	96	120	112	B	B	B
26	B	B	B	B	B	B	B	B	152	162	160	120	108	108	110	G	118	118	108	106	100	B	102	96
27	B	100	104	104	104	104	B	B	186	156	152	122	110	114	110	104	102	102	96	96	96	94	B	B
28	B	96	B	B	B	B	B	G	172	G	C	C	C	C	C	B	114	110	110	108	B	94	94	94
29	B	B	B	B	B	B	B	B	G	G	G	G	116	108	112	108	G	100	100	96	B	B	B	B
30	B	88	B	B	B	B	B	B	G	G	B	104	B	104	130	B	214	G	150	B	B	B	B	B
31	B	B	B	B	B	B	B	B	174	194	94	G	106	G	G	102	96	94	B	92	92	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	15	11	11	10	12	12	8	23	14	17	19	25	21	21	24	24	28	27	25	20	15	13	12
MED	94	100	98	98	101	100	105	98	160	116	110	110	110	108	108	107	107	108	104	104	100	96	96	95
U Q	102	104	104	104	104	104	130	112	172	156	118	116	114	112	112	112	130	125	112	111	105	100	100	104
L Q	92	94	96	98	98	97	97	96	114	112	107	108	106	104	100	102	102	102	96	96	97	94	93	92

JAN. 2015 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

JAN. 2015 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				F3	F3	F2	F1		C1	C2	C1	C1	L1	L1	L1		L1	L1	L1	FF11		F1	F1	
2	F1							L1	H1		H1	C1	C1	HC11	C1	C1	CL11	CL13	CL12					
3			FQ11	F1					H1			C1	L1	C1	L1	HL11		C1	L1					
4	F1	F4	F3	F7	F4	F1			H1	H1	CL11					C1	C1	C1	L4	F2	F1		F1	F2
5	F2	F2			F1		F1			L1					L1	H1		H1				F1		
6	F1	F1	F2	F2	FQ21	F1	F1	C1	H1	C1		C1	C1				L1				F1			
7		F1		F1	F1	F1	F1		H1							H1	H1	H1	L1	F2				F5
8	F2	F1	F1	F8	F6	F5	F3	L4	L1	C1	C2	C1	C1	C1	C1	L1	HL12	L5	LQ21	F2	F2	F1	F1	
9						F1	F1		C1	C1	C1	C1	C1	L2	L1	L1	L1	C1	CL11	F4				
10							F1				C1	C1	C1			HC11	HC12	LQ31	LQ31	FF15	F1	F4	F1	F1
11						F1	F1		C1	L2	C1	C1	C1	C1	C1	C1	L2	L2	LC11	FQ31	F4	F3	F1	F3
12	F2	F4	F1	F2	F2	F1				C1	L1		C1		C2	C2	L2	L2	L5	FQ21	FQ21	F3	F3	F3
13	F1	F1	F1			F1			C1	C1	C1	C1	L1	L1		L1	CL31	L2	L3	F3	FF33	FF21		
14	F3	F3	F1	F1					C1		C1	C1	C1	C1		L1	L1	L3	L4	F2		F1	F1	F1
15	F4	F2					F1	L1				C1	C1	L1	L1	L1	L1	L1	L2	F2	F2	F2	F2	F2
16	F1								C1	C1	C1	C1	C1	L1	L1	L2	LH11	CL12	CL12	F3				F1
17		F2	F1		F2	F2	F1	L1				C1	C1	C1	C1	C1		H1	C2	F1	F1			
18						F1	F1	L1	H1				H1		H1		C1	C2	C3	F4	F3			
19				F1	F1				H1		C1		C1	C2	L1			HL11	L2	F2	F1		F2	
20	F1								H1	H1	L1		C1	HC11	C1	C1	L1	L1	L1	F1	F1	F1		
21									H1		C1	C1	C1	C1		L1		L1			F1	F1	F1	F1
22		F3	F2					C1	C2				C1			L1	HL11	C2	CL32	F5	F1			
23												C1		C1	H1	H1	H1		H1	FF11	FF11	F1	F1	F1
24		F2	F1	F2					H1			C1	C1	C1	L1	L1	L1	H1	L1	F1	F1	F1		
25							F1	H1	H1				L1	L1	L1	L1		HL11	LH11	FF11	F1			
26									H1	H1	H1	C1	C1	C1	C1		C1	C1	C3	F3	F2		F1	F1
27		F1	F1	F1	F1	F1			H1	HL11	H1	C1	C1	C1	C1	L1	L2	L2	L3	F3	F3	F1		
28		F1					K1		H1								C1	C1	CL21	F3		F2	F1	F1
29													C1	C2	C1	C1		L1	L1	F1				
30		F1										L1		L1	H1		H1		H1					
31									H1	H1	L1		L1			L1	L1	L1		F2	F1			
	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																								

JAN. 2015 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

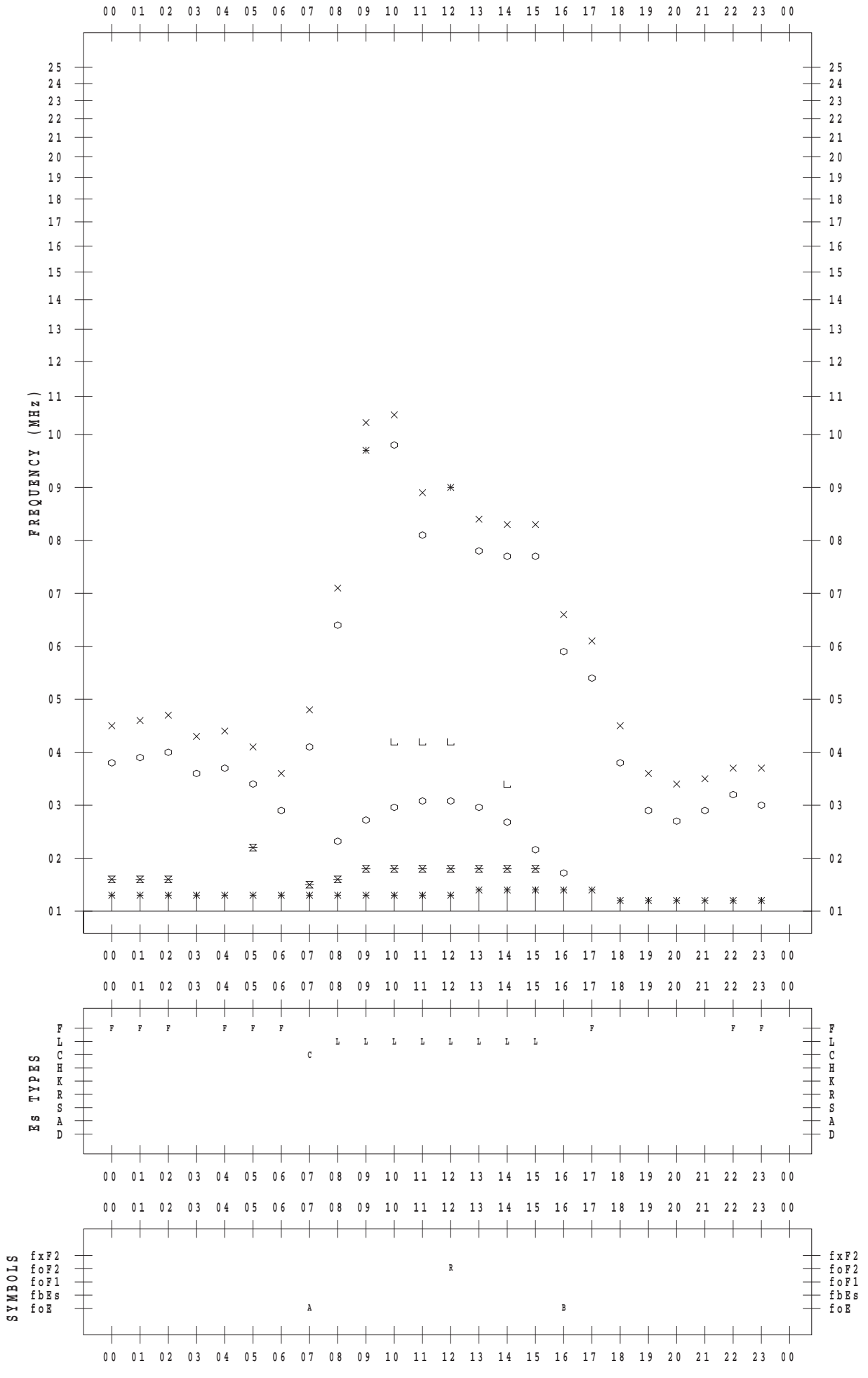
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 1

135 °E MEAN TIME



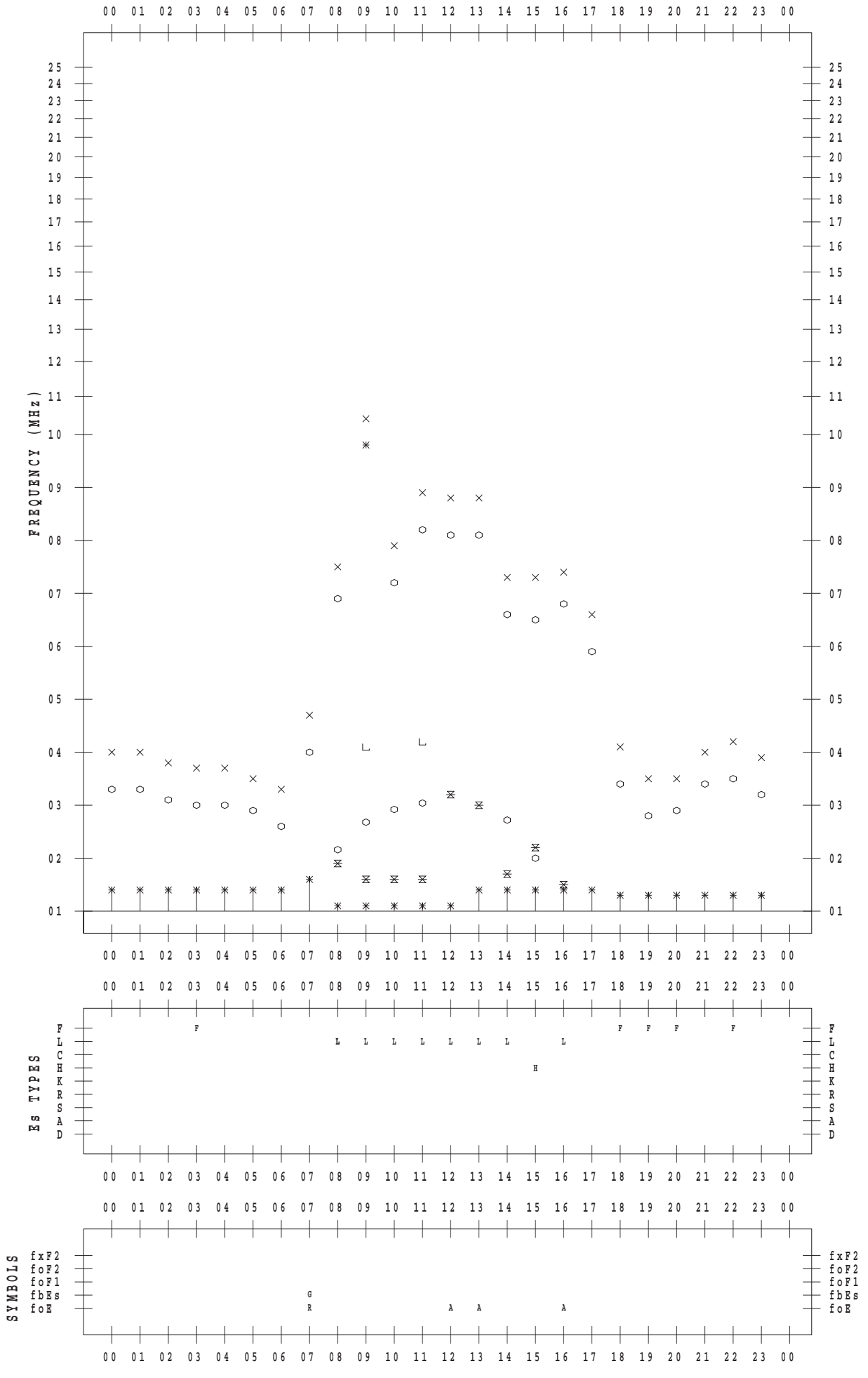
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 2

135 °E MEAN TIME



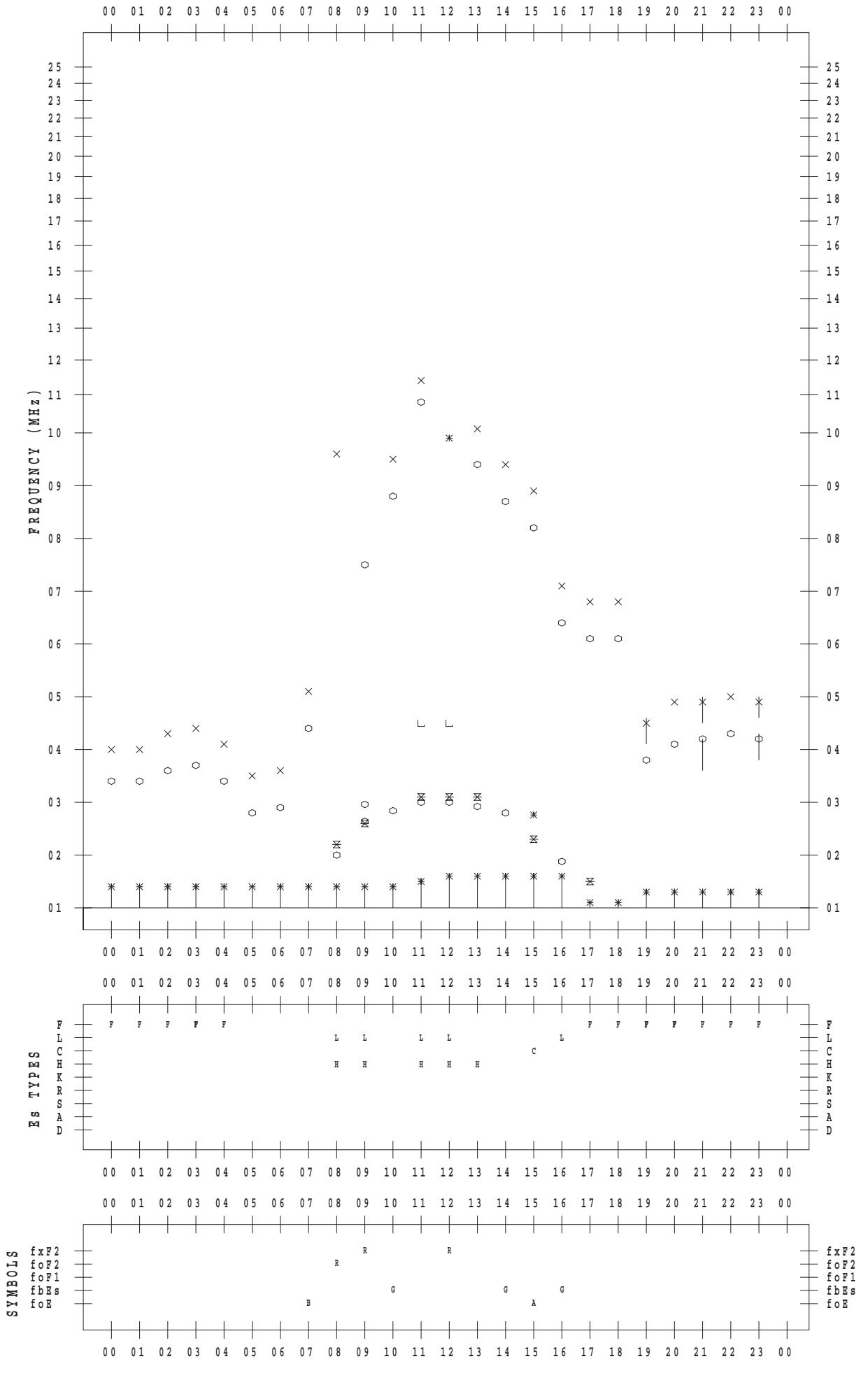
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 3

135 °E MEAN TIME



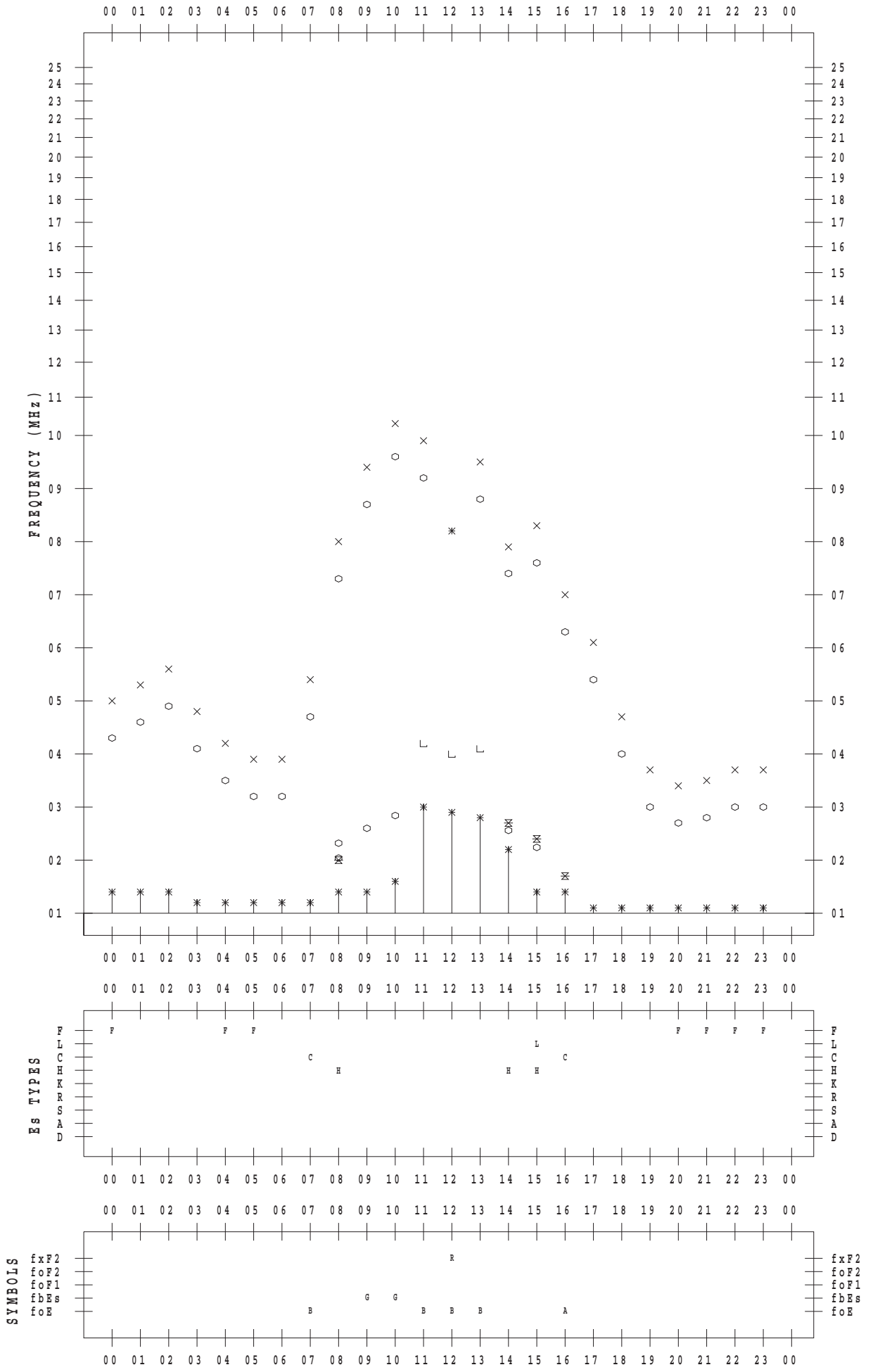
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 4

135 °E MEAN TIME



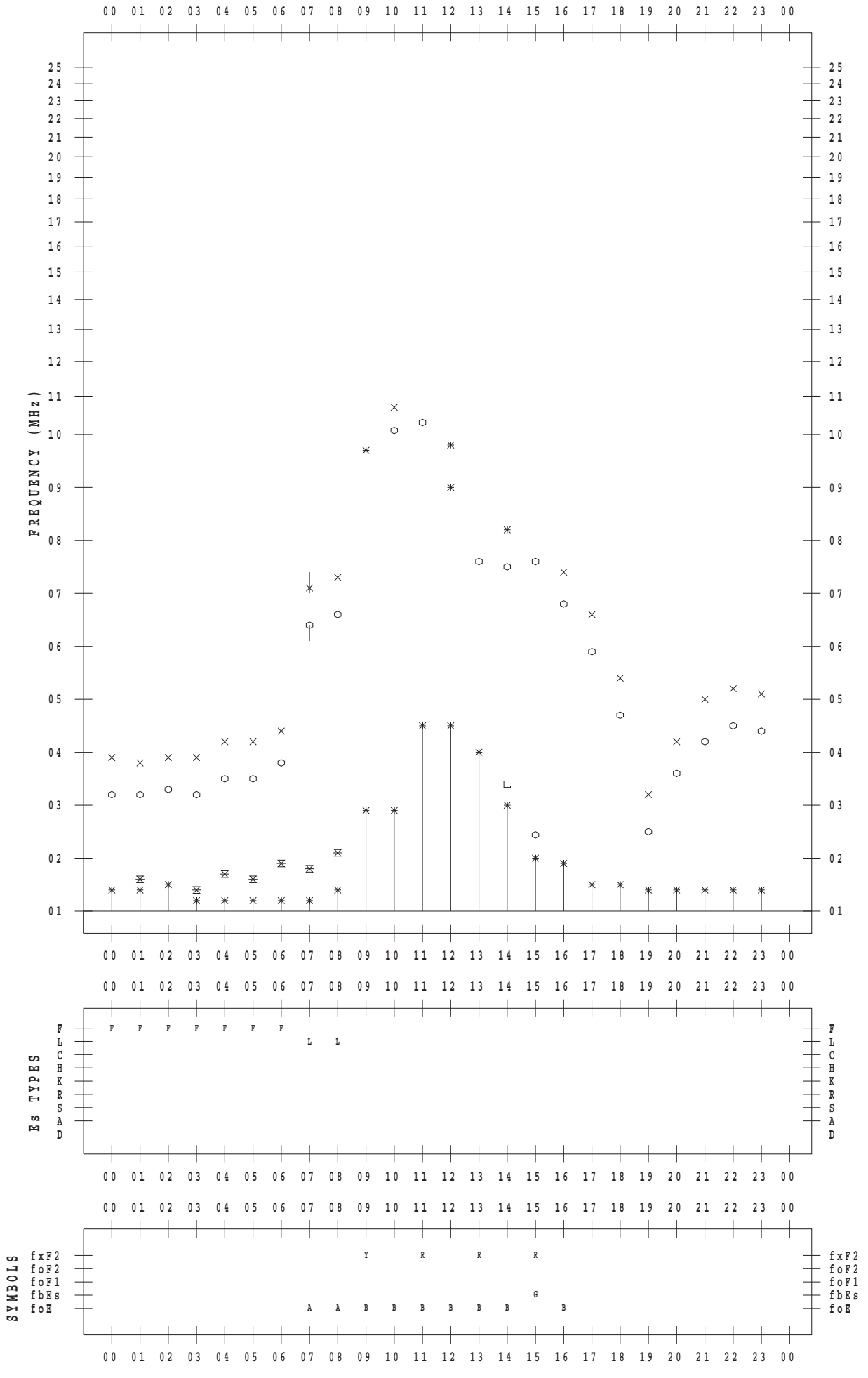
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 5

135 °E MEAN TIME



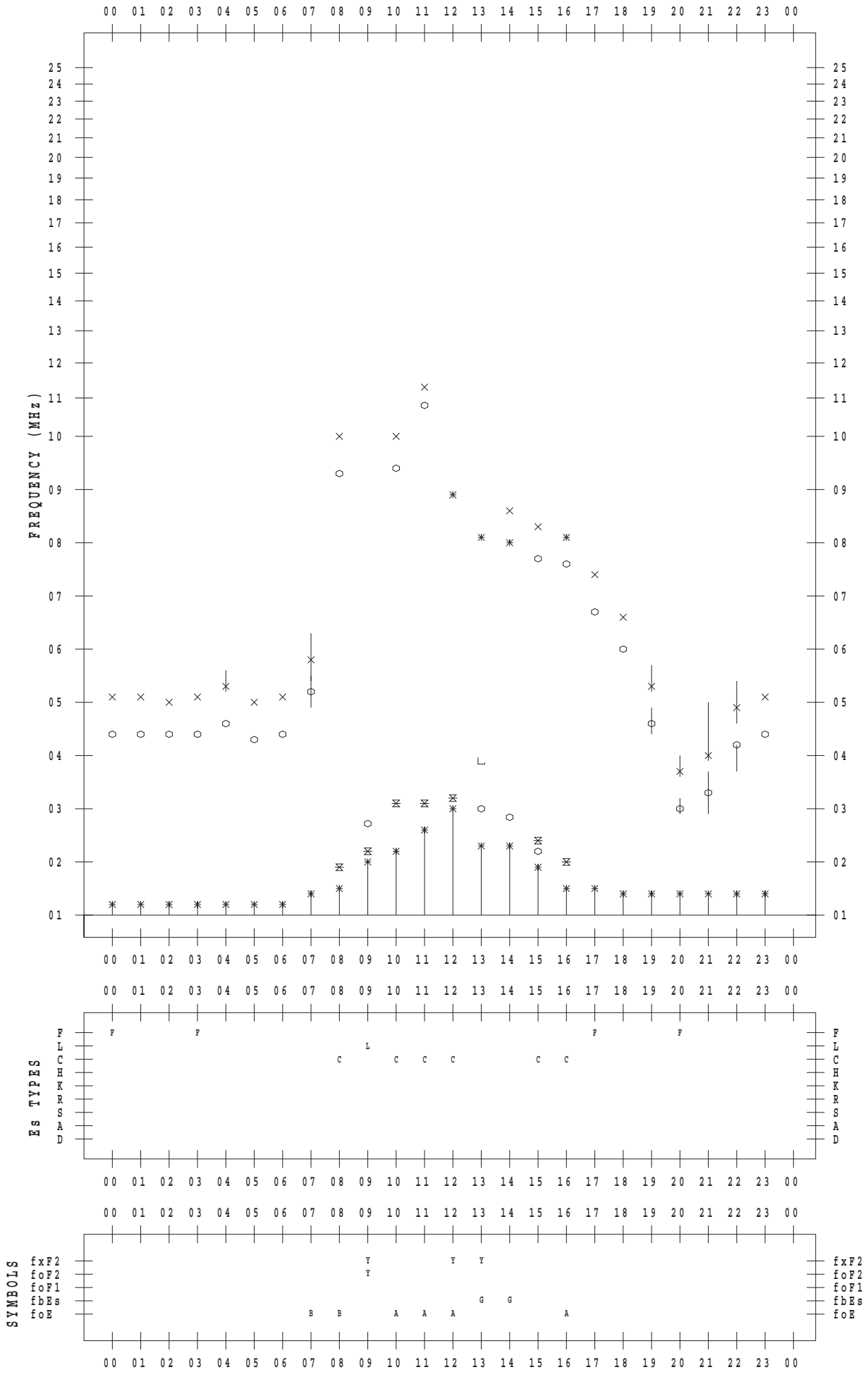
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 6

135 °E MEAN TIME



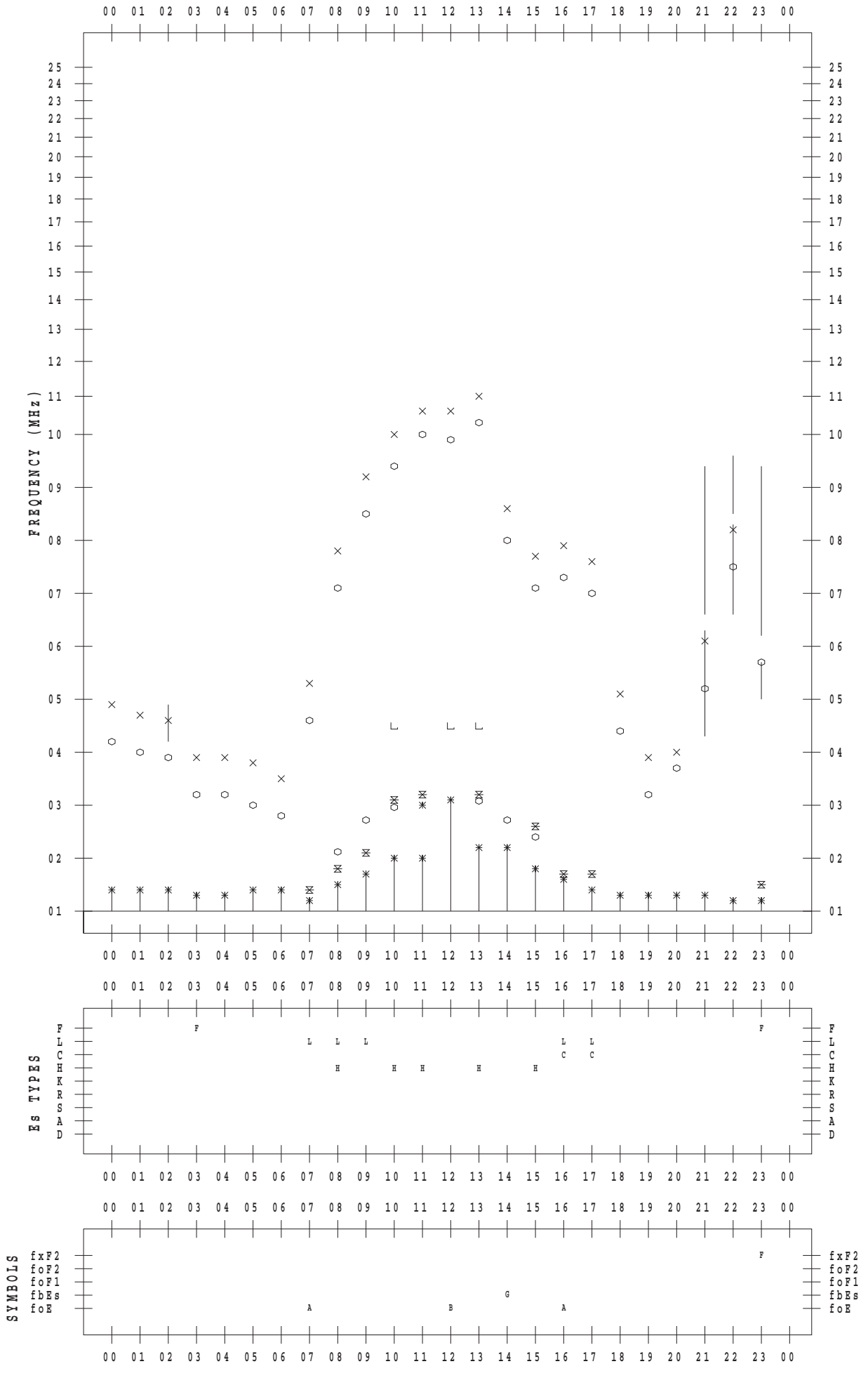
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 7

135 °E MEAN TIME



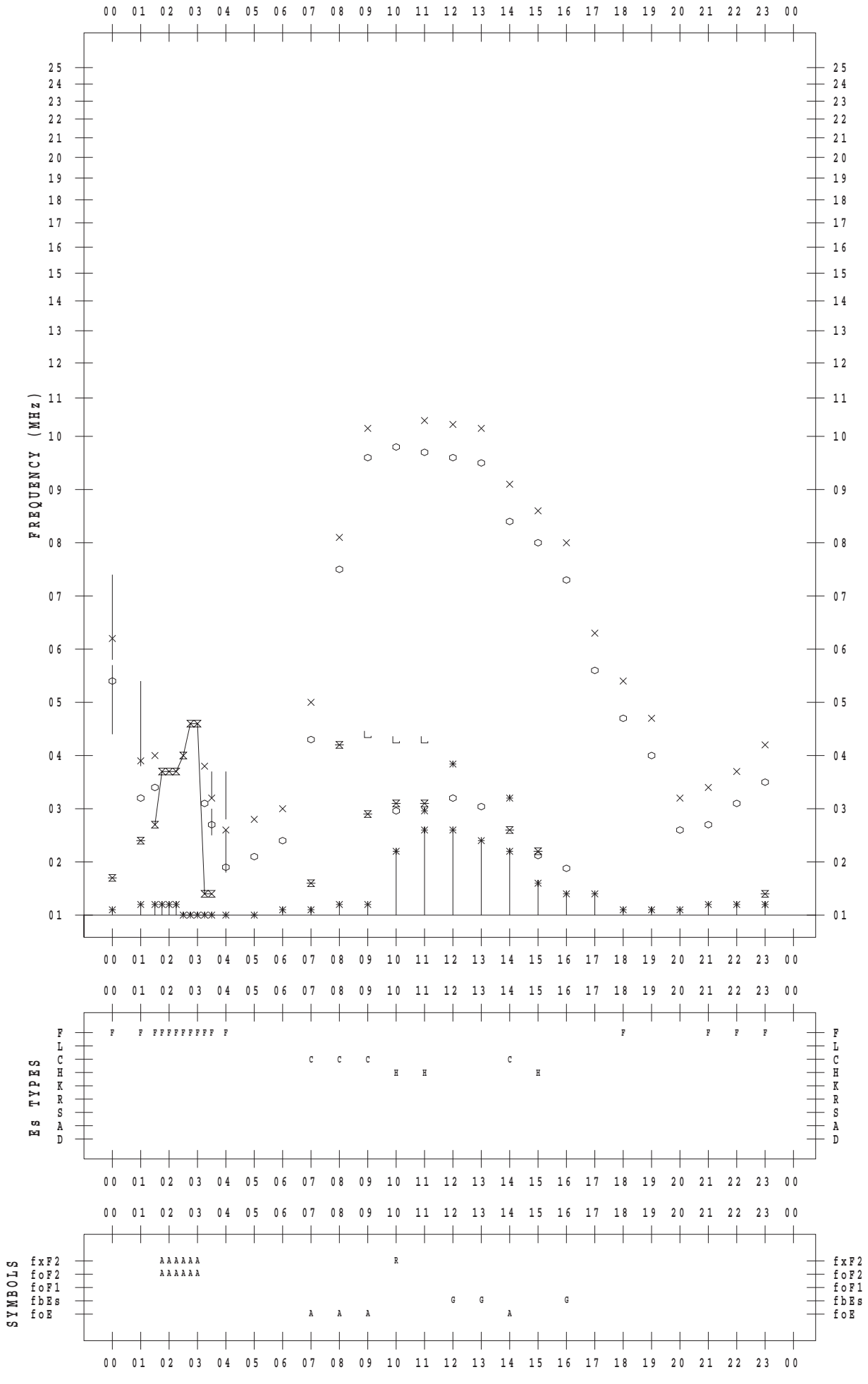
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 8

135 °E MEAN TIME



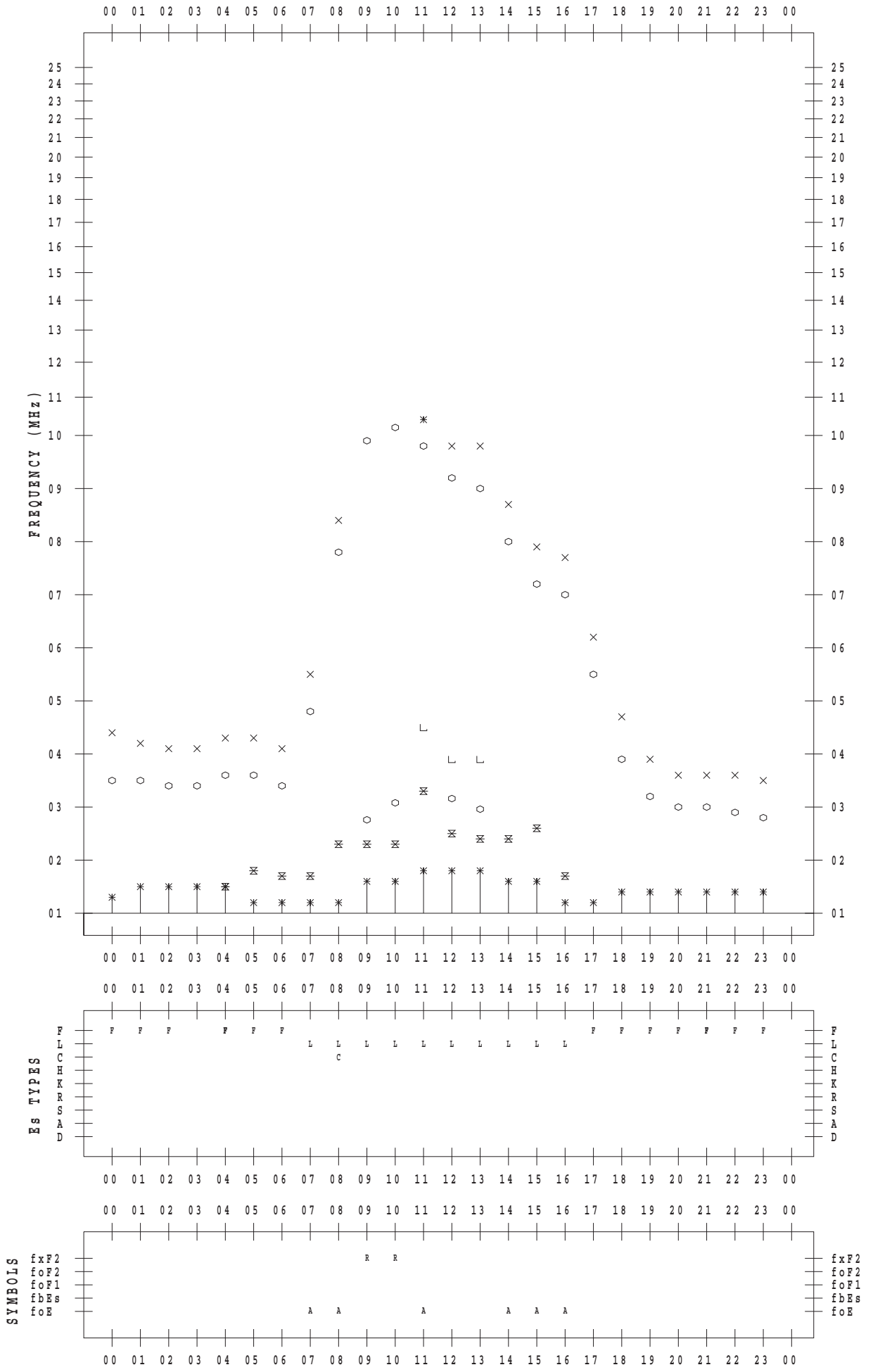
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/ 9

135 °E MEAN TIME



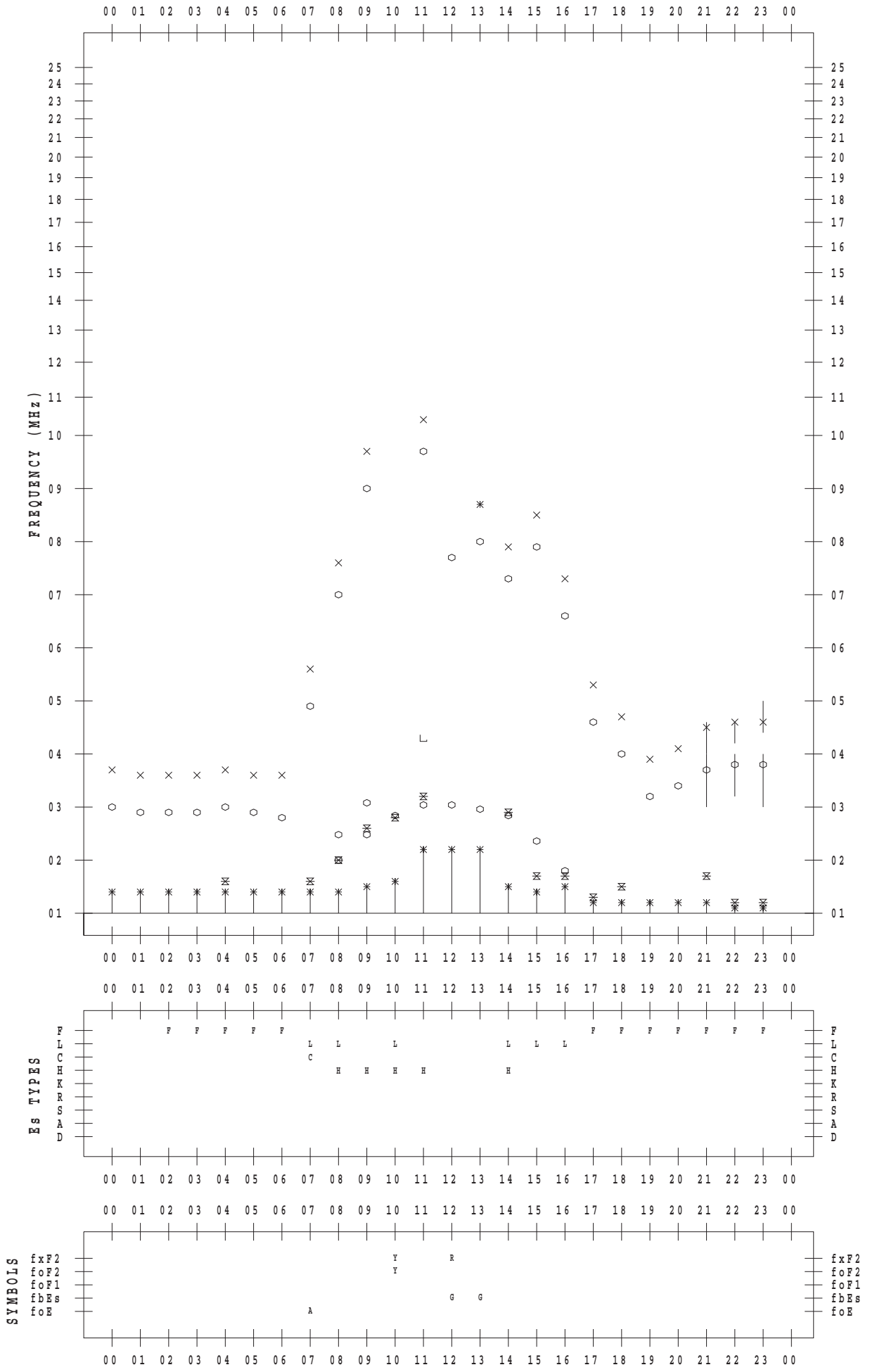
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/10

135 °E MEAN TIME



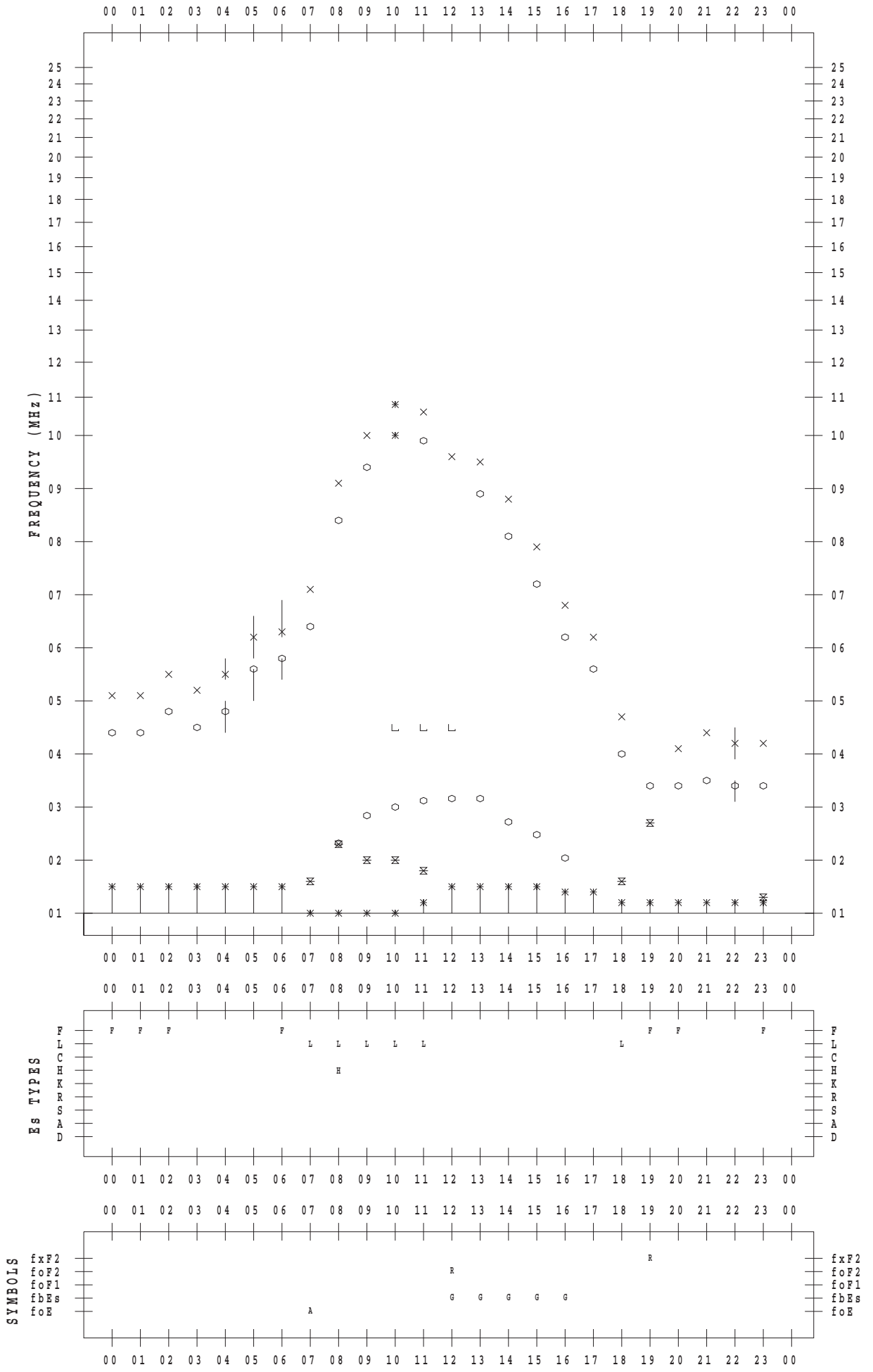
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/11

135 °E MEAN TIME



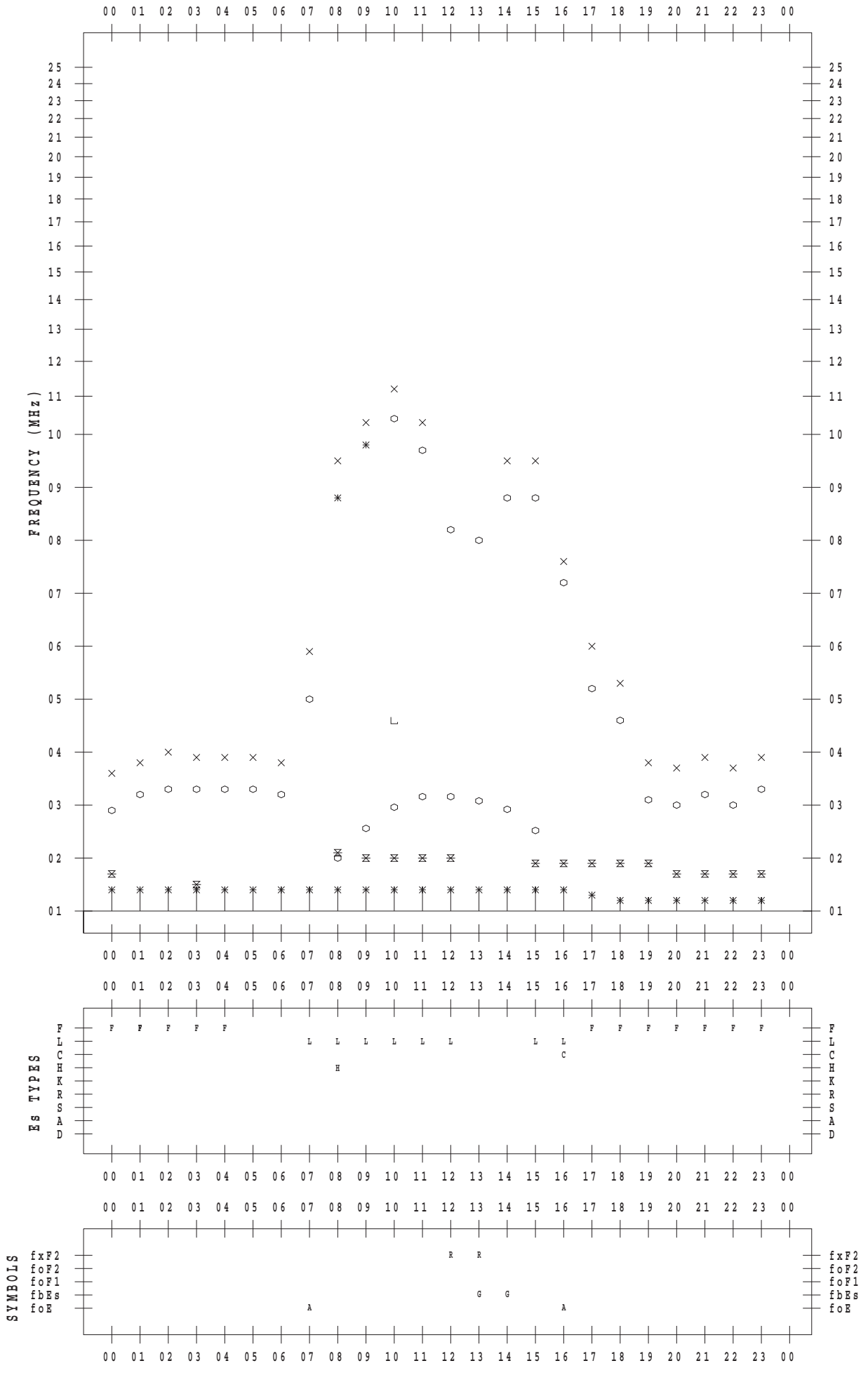
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/12

135 °E MEAN TIME



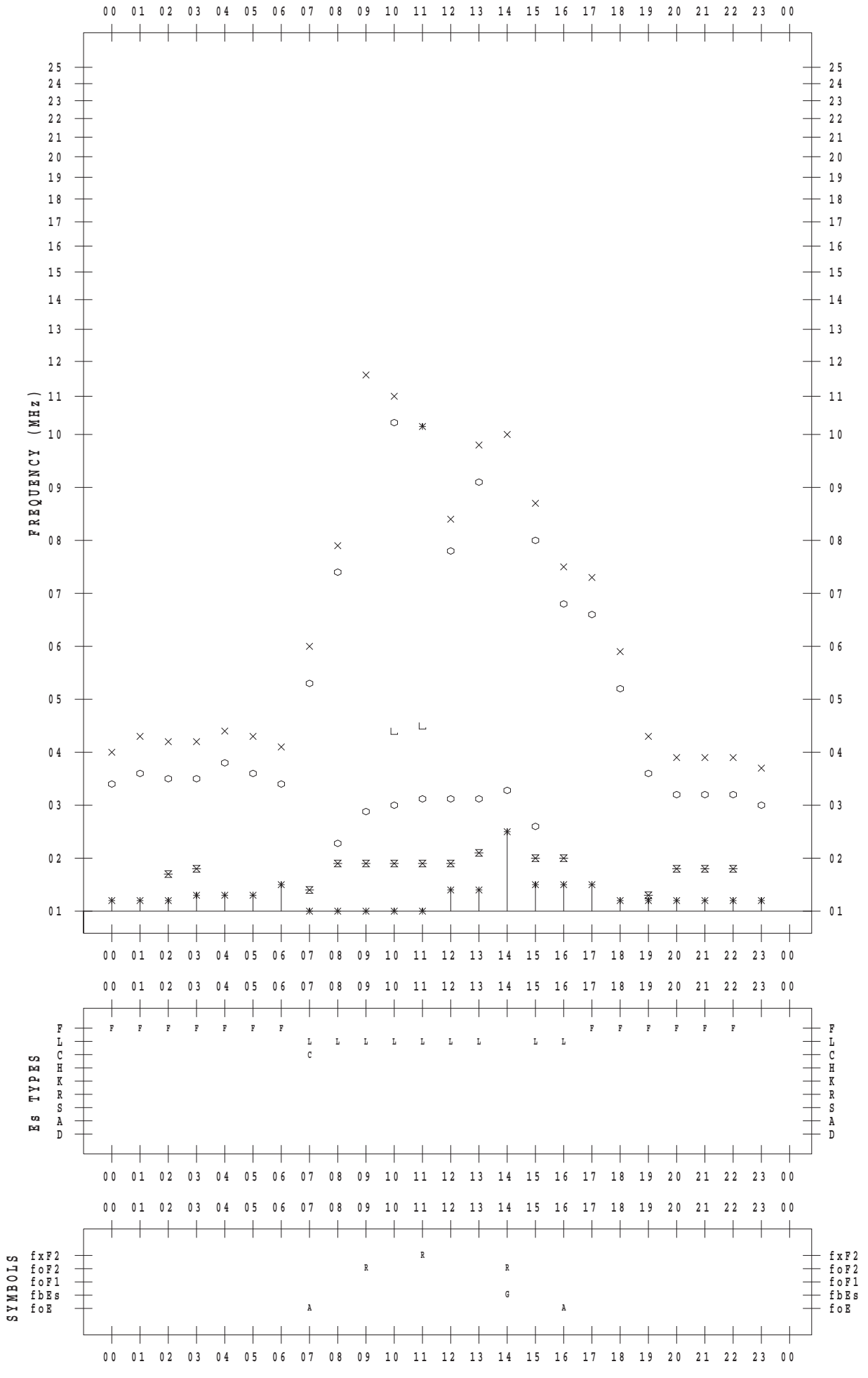
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/13

135 °E MEAN TIME



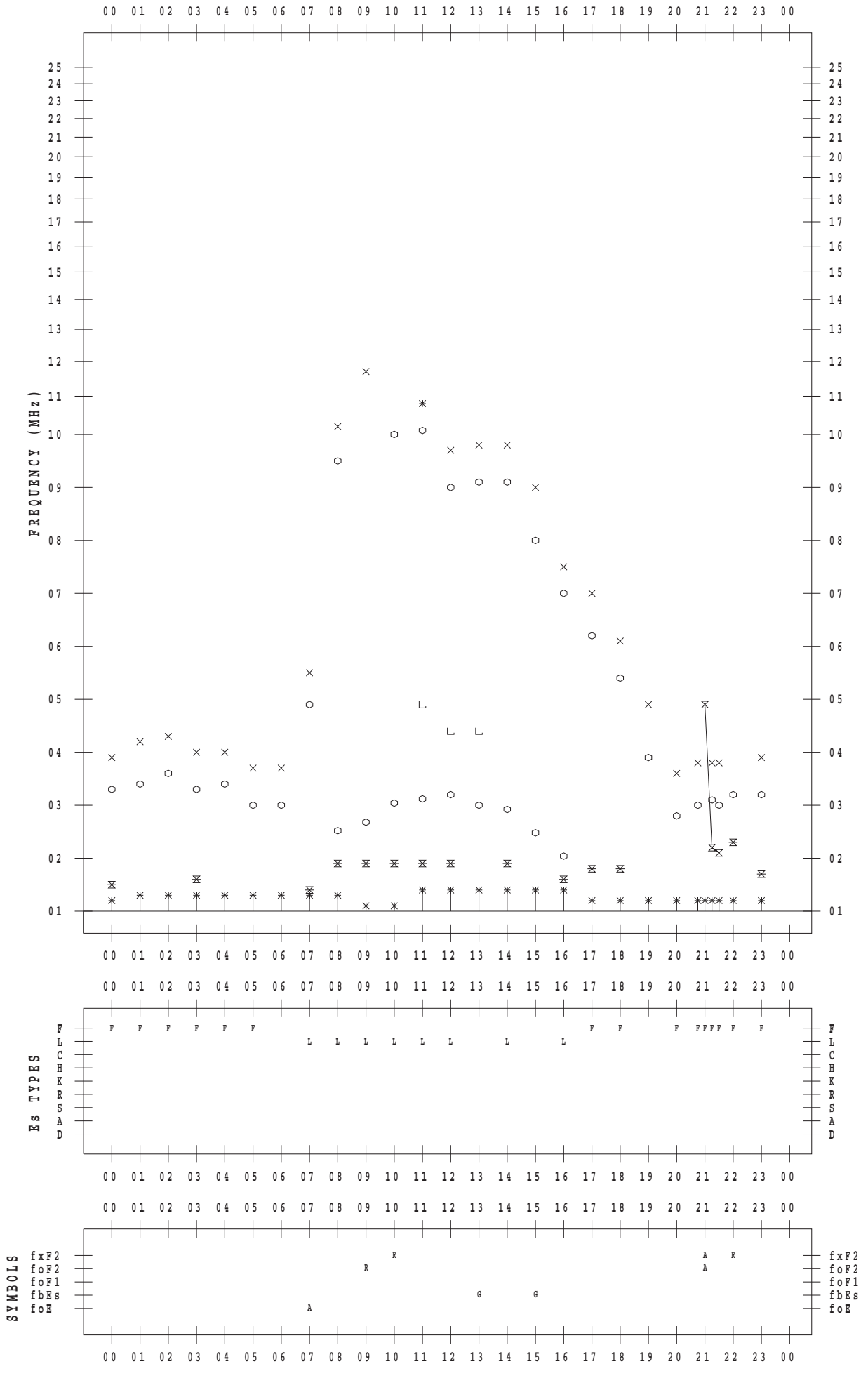
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/14

135 °E MEAN TIME



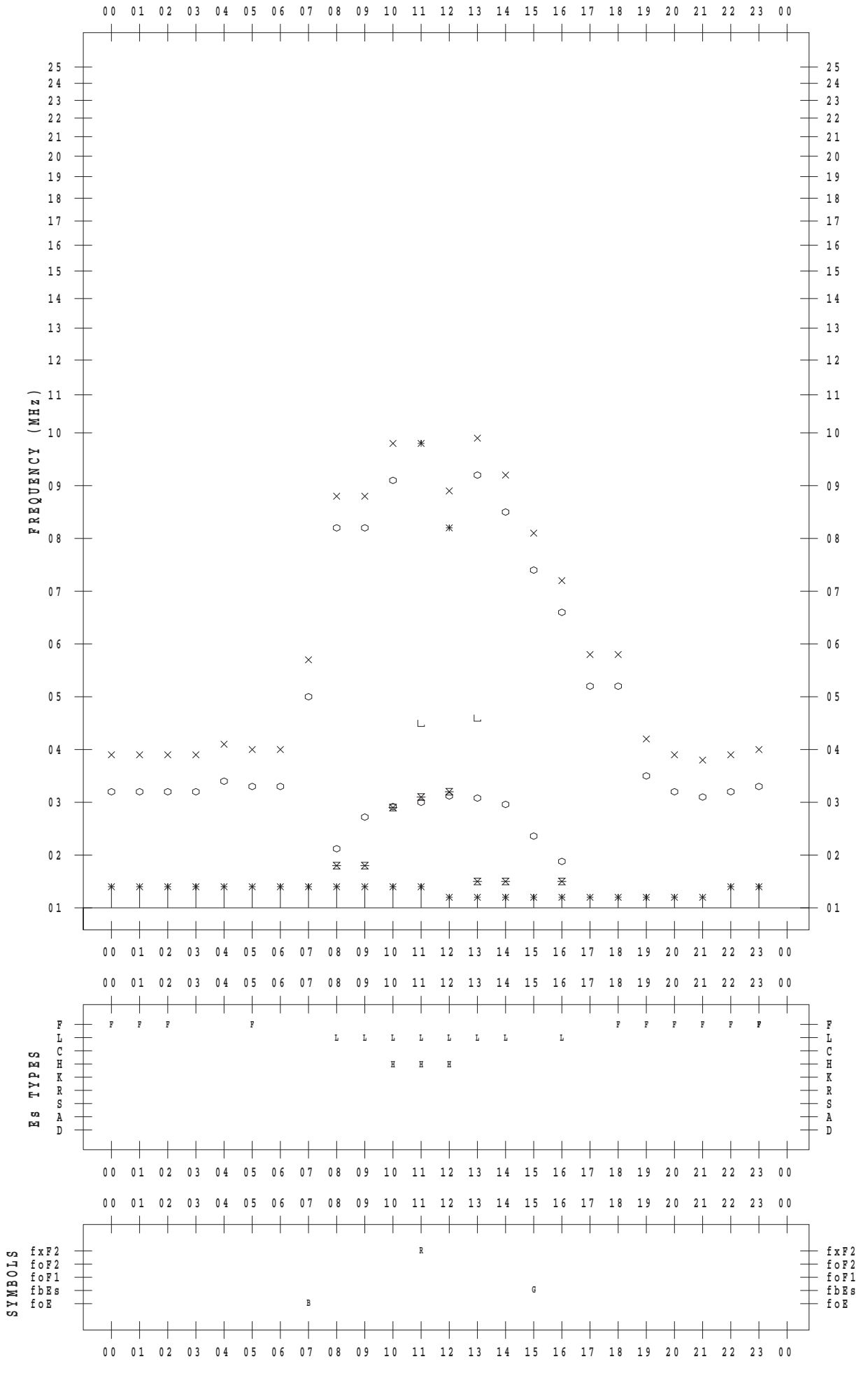
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/15

135 °E MEAN TIME



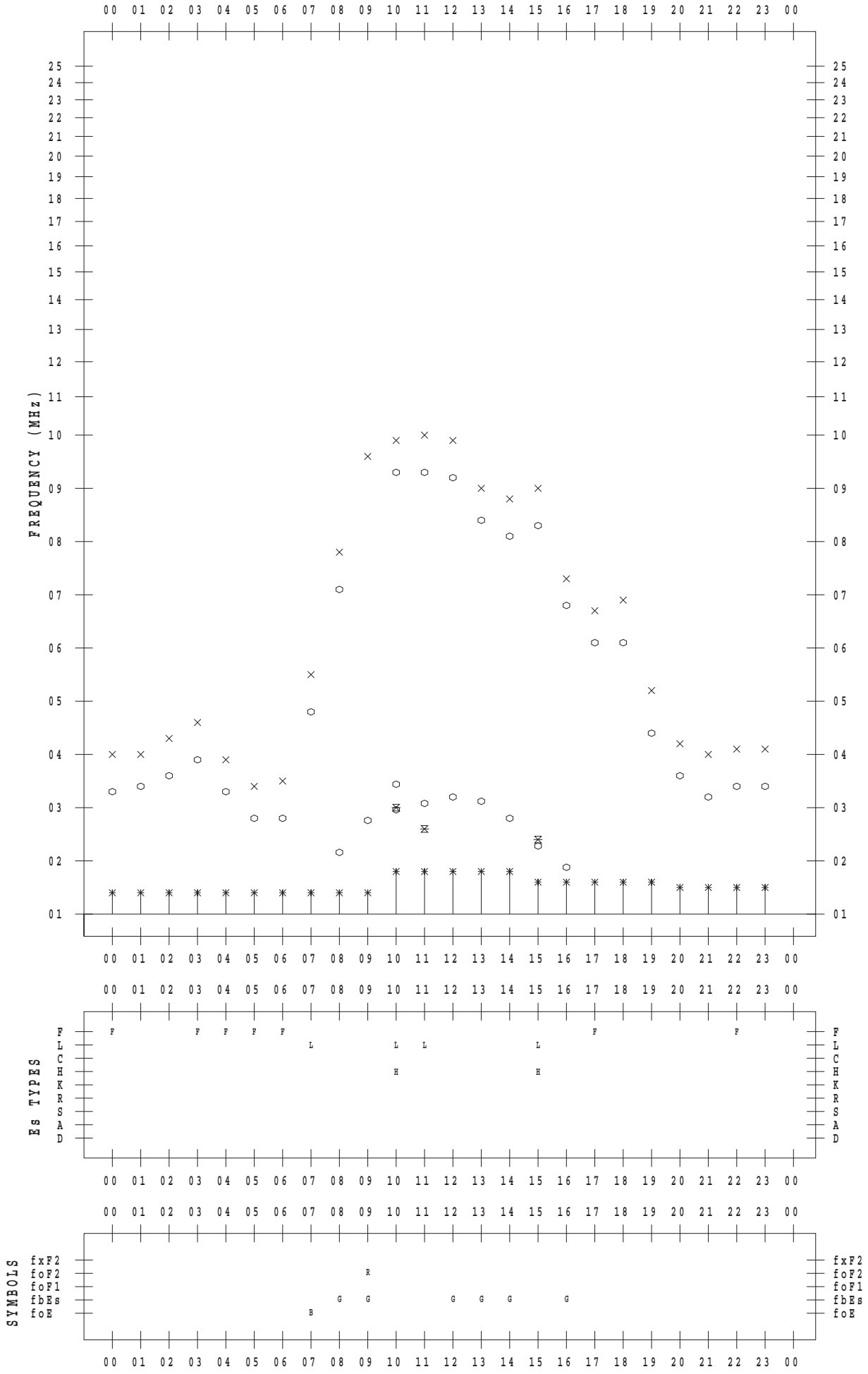
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/16

135 °E MEAN TIME



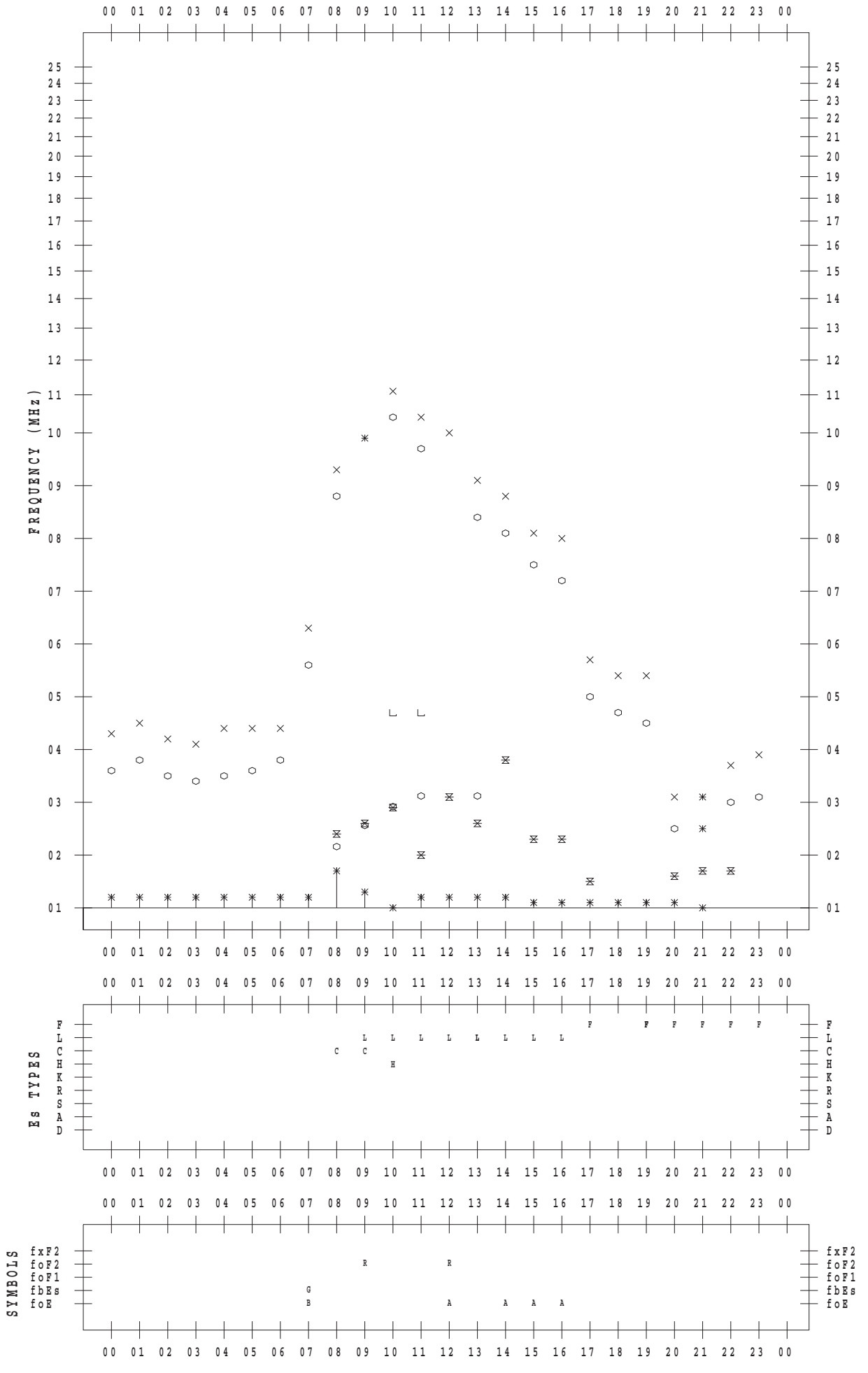
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/17

135 °E MEAN TIME



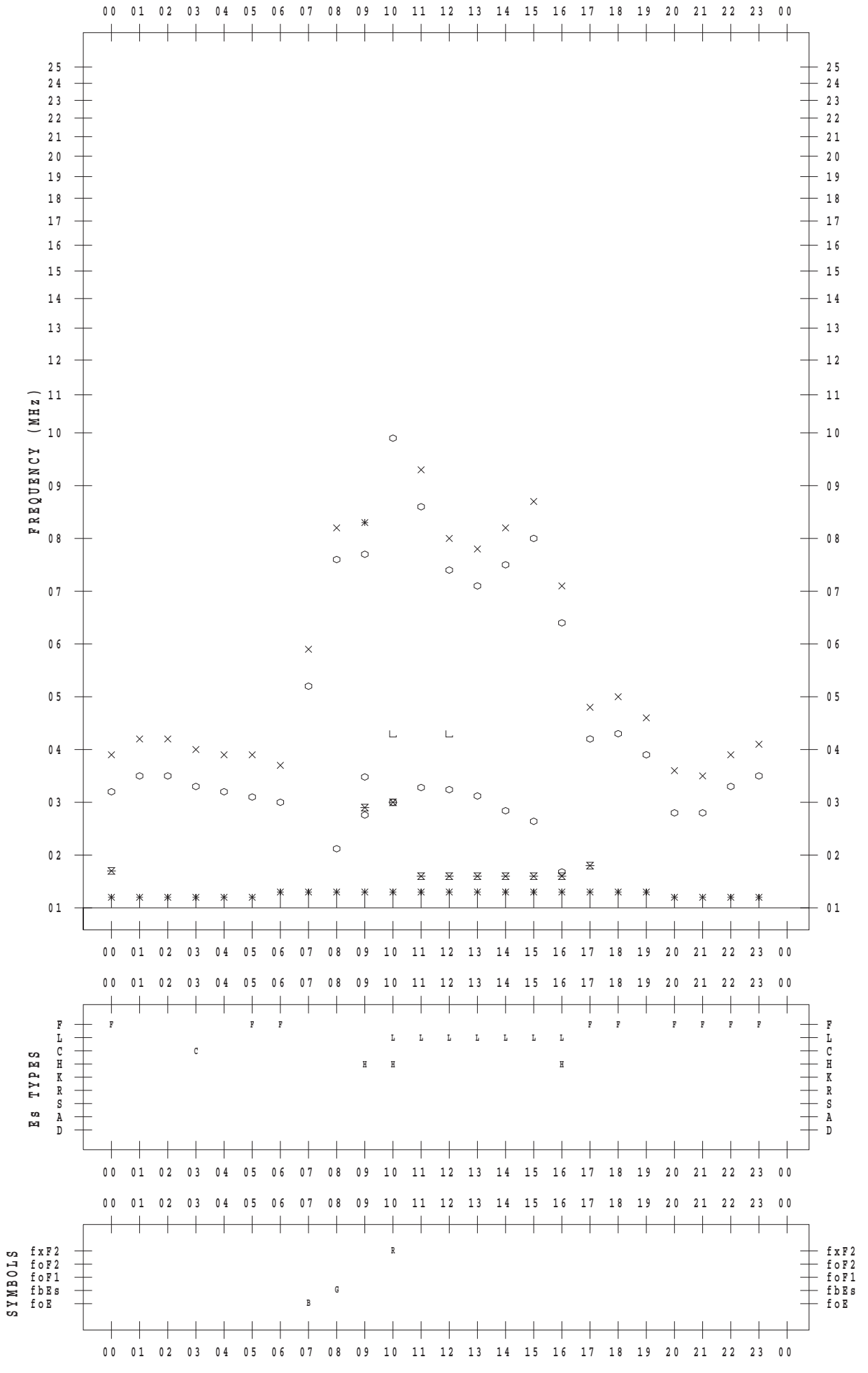
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/18

135 °E MEAN TIME



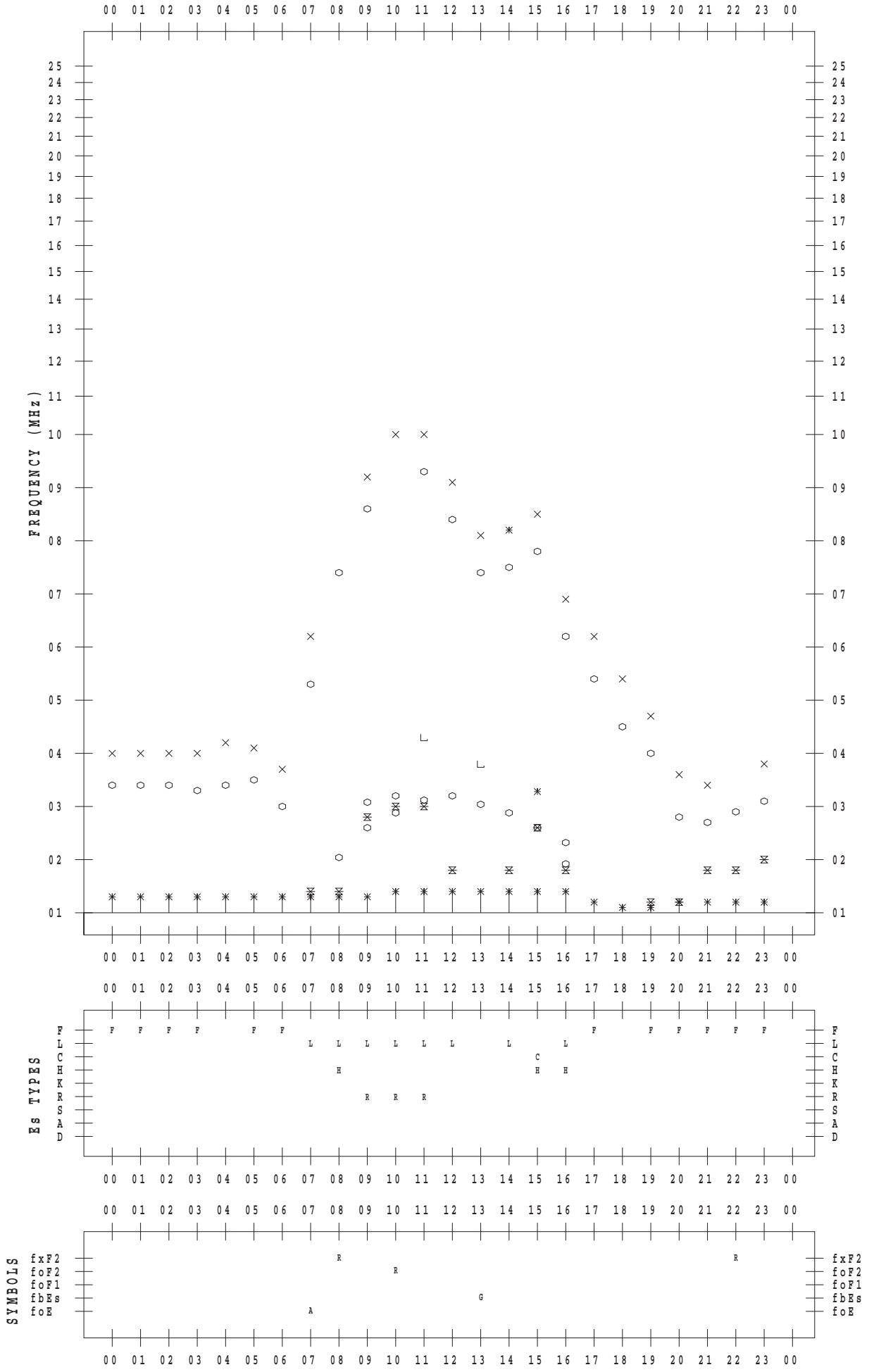
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/19

135 °E MEAN TIME



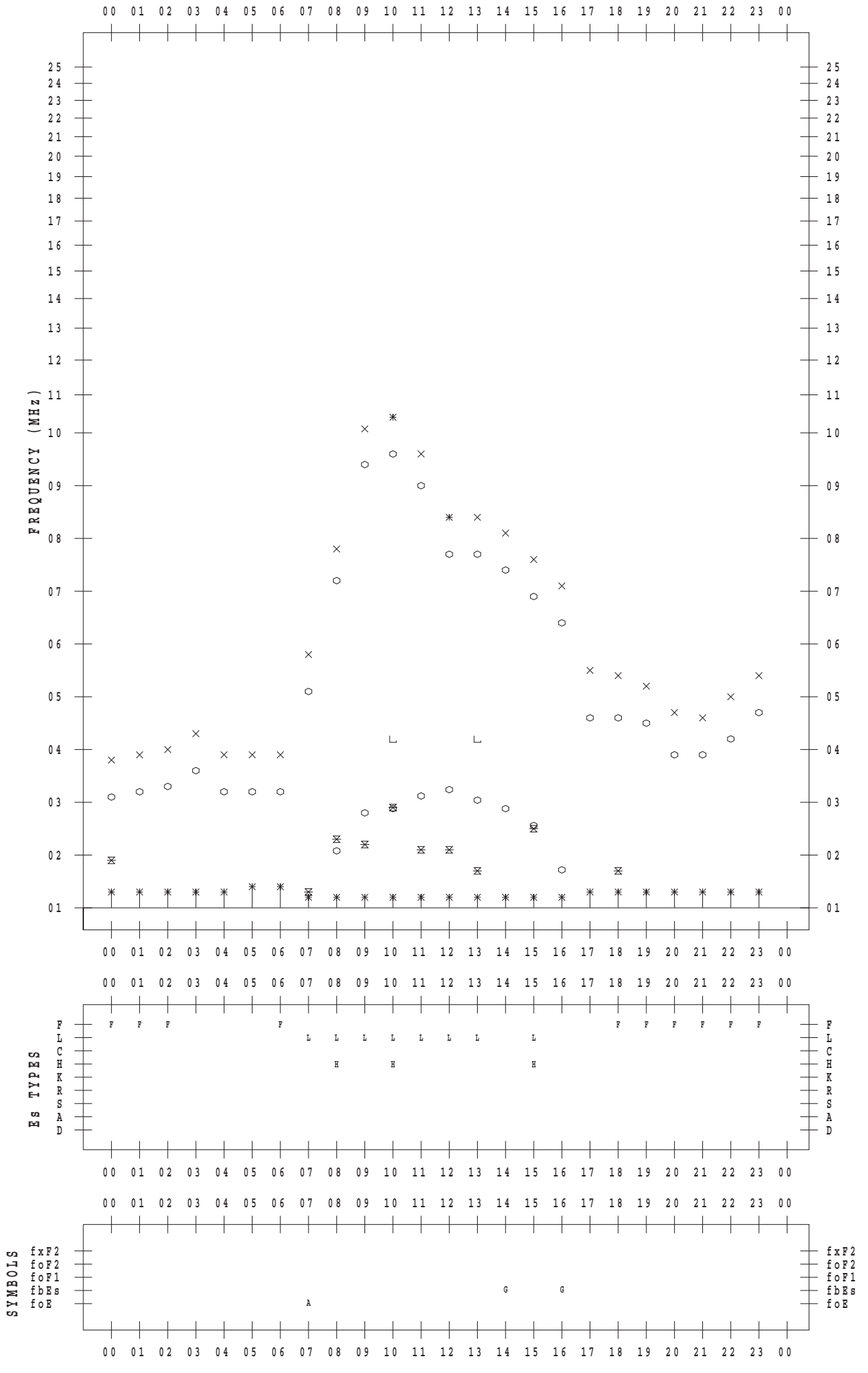
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/20

135 °E MEAN TIME



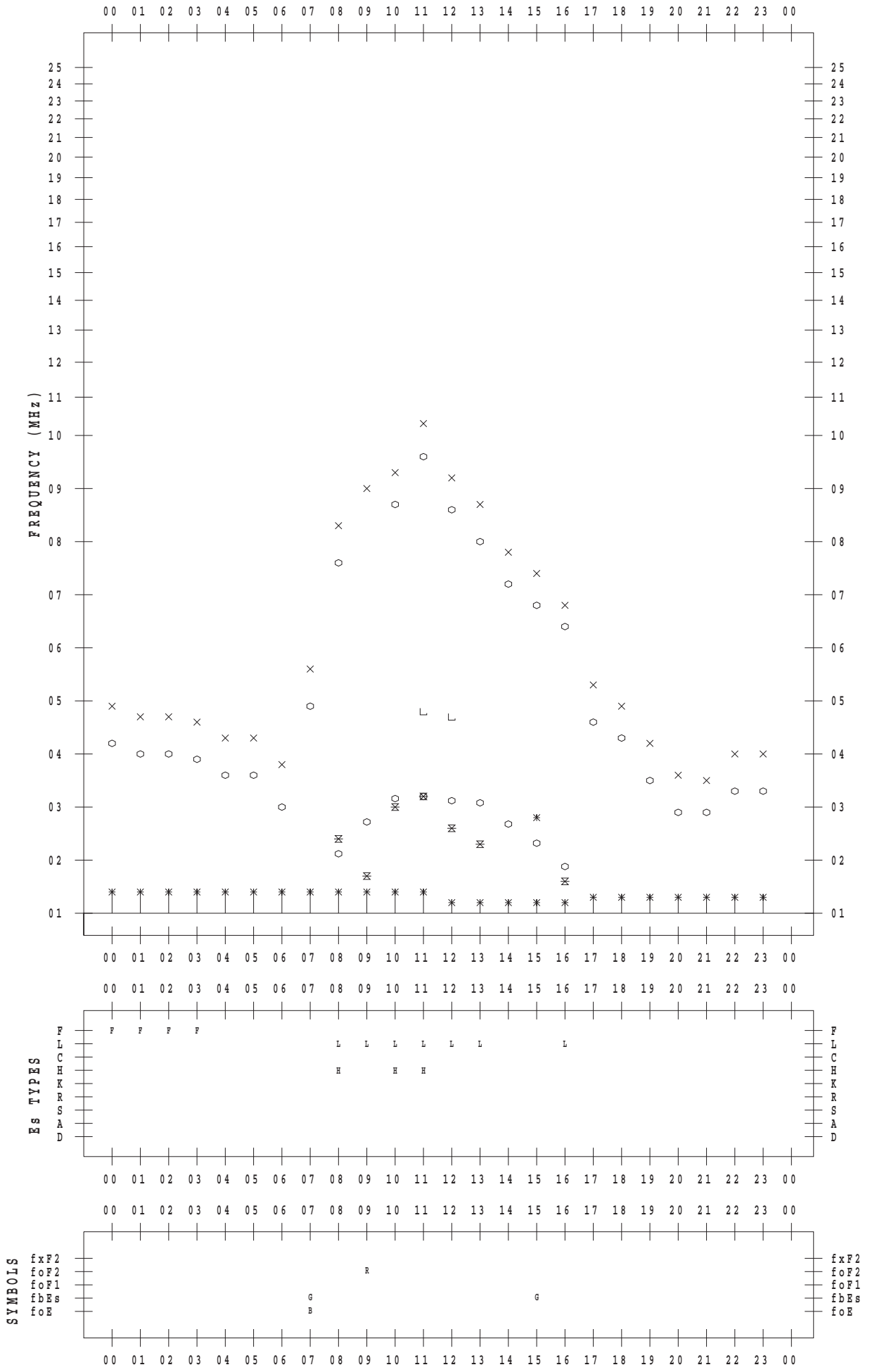
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/21

135 °E MEAN TIME



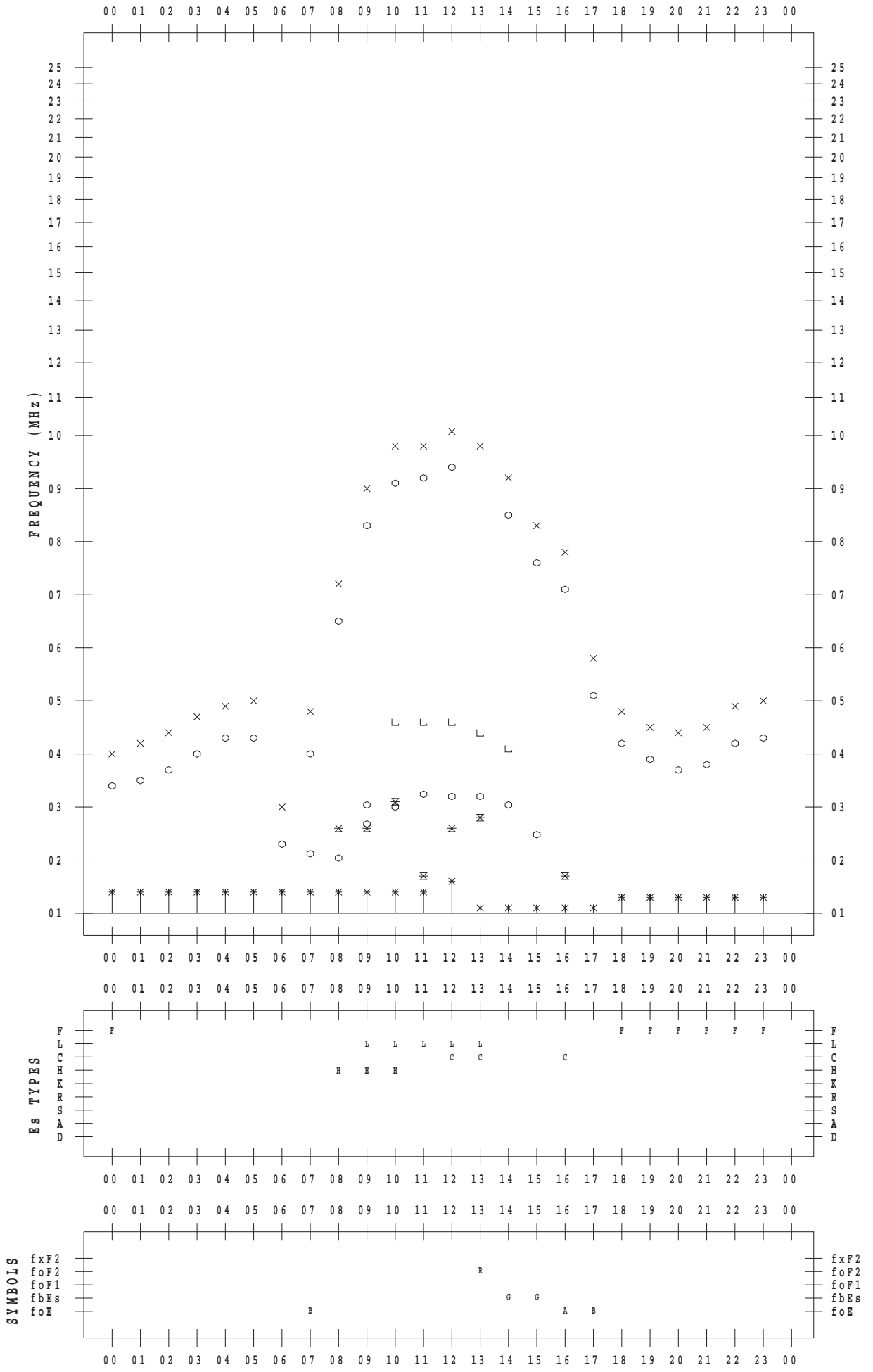
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/22

135 °E MEAN TIME



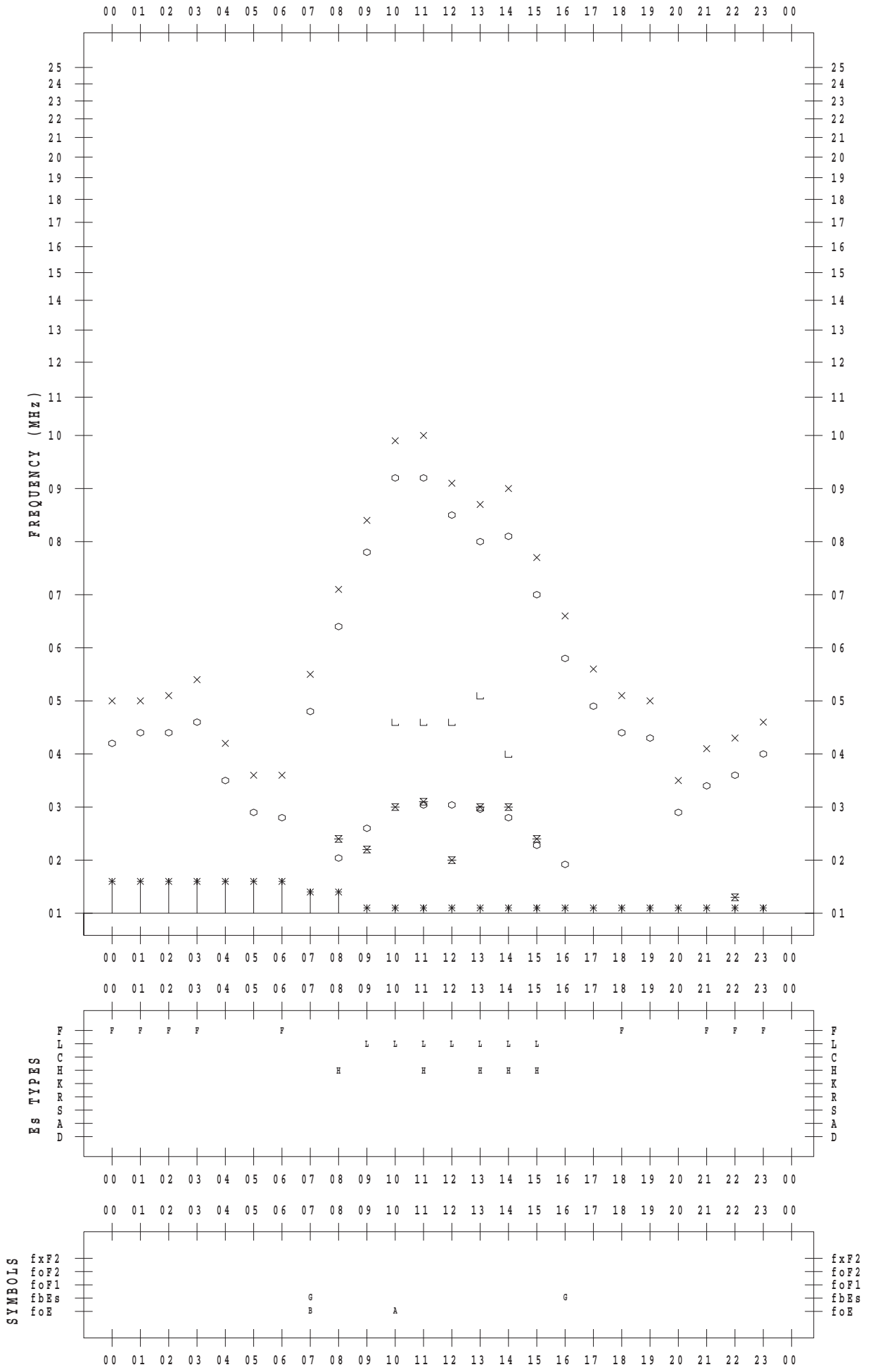
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/23

135 °E MEAN TIME



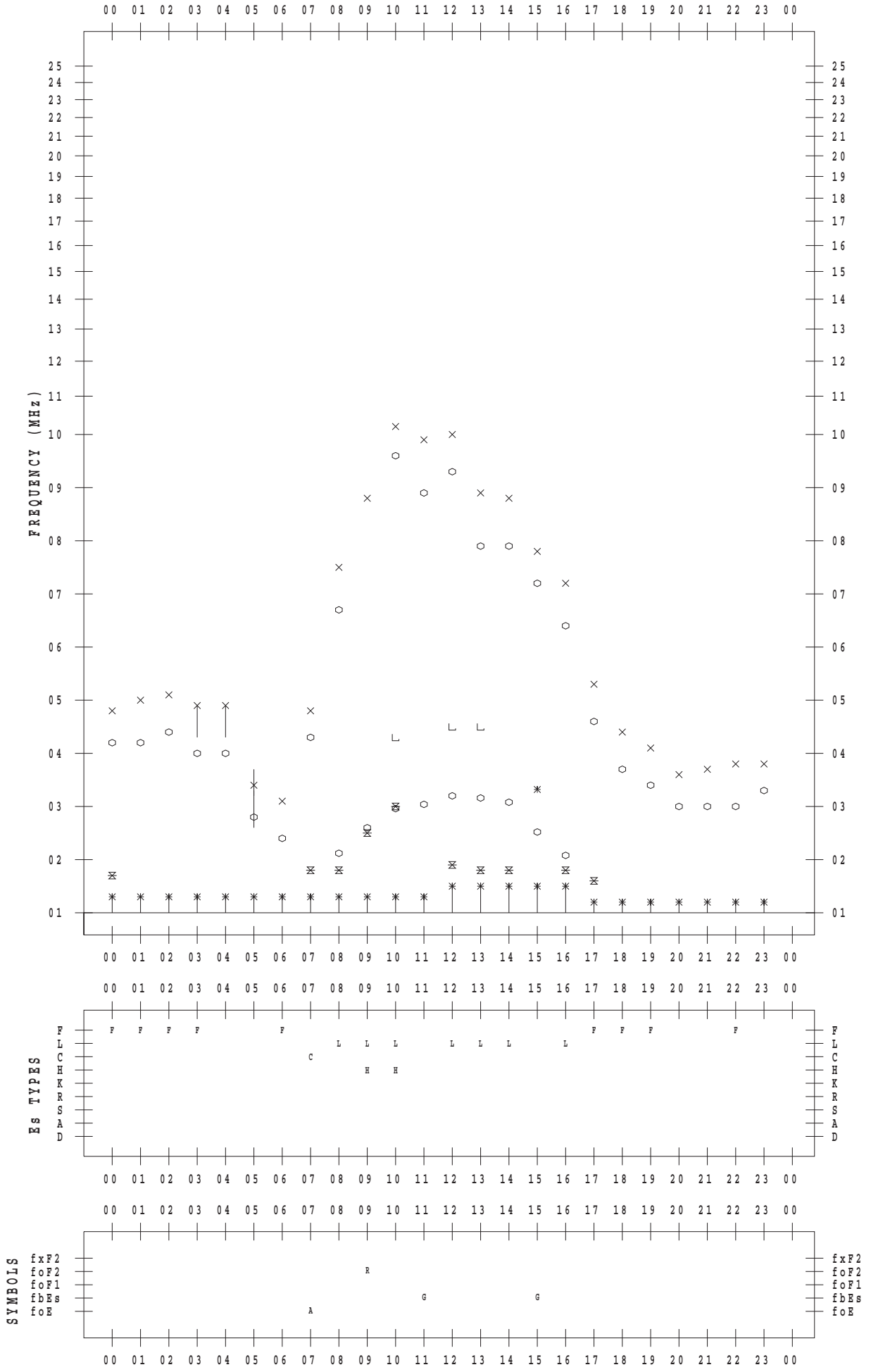
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/24

135 °E MEAN TIME



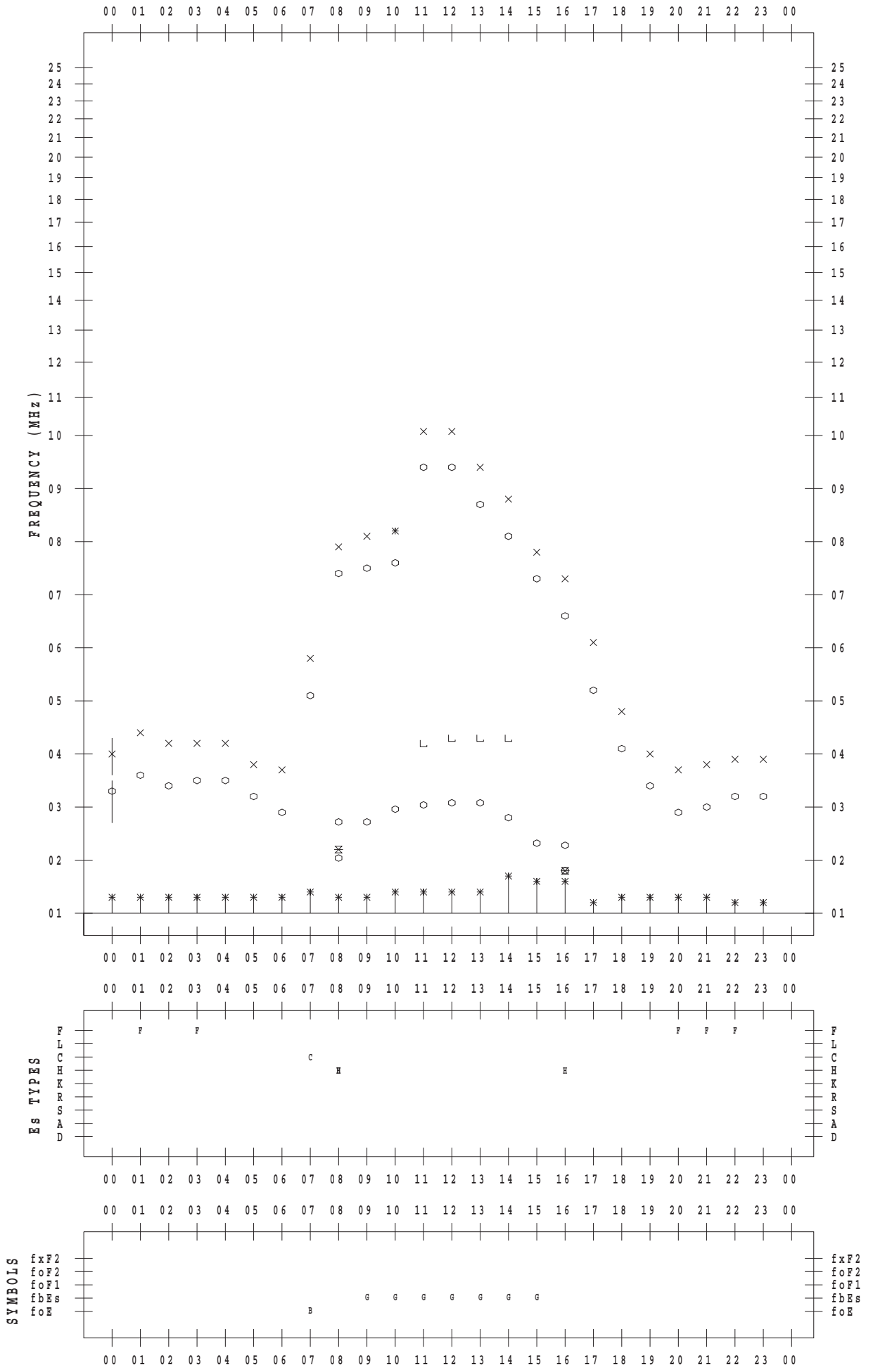
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/25

135 °E MEAN TIME



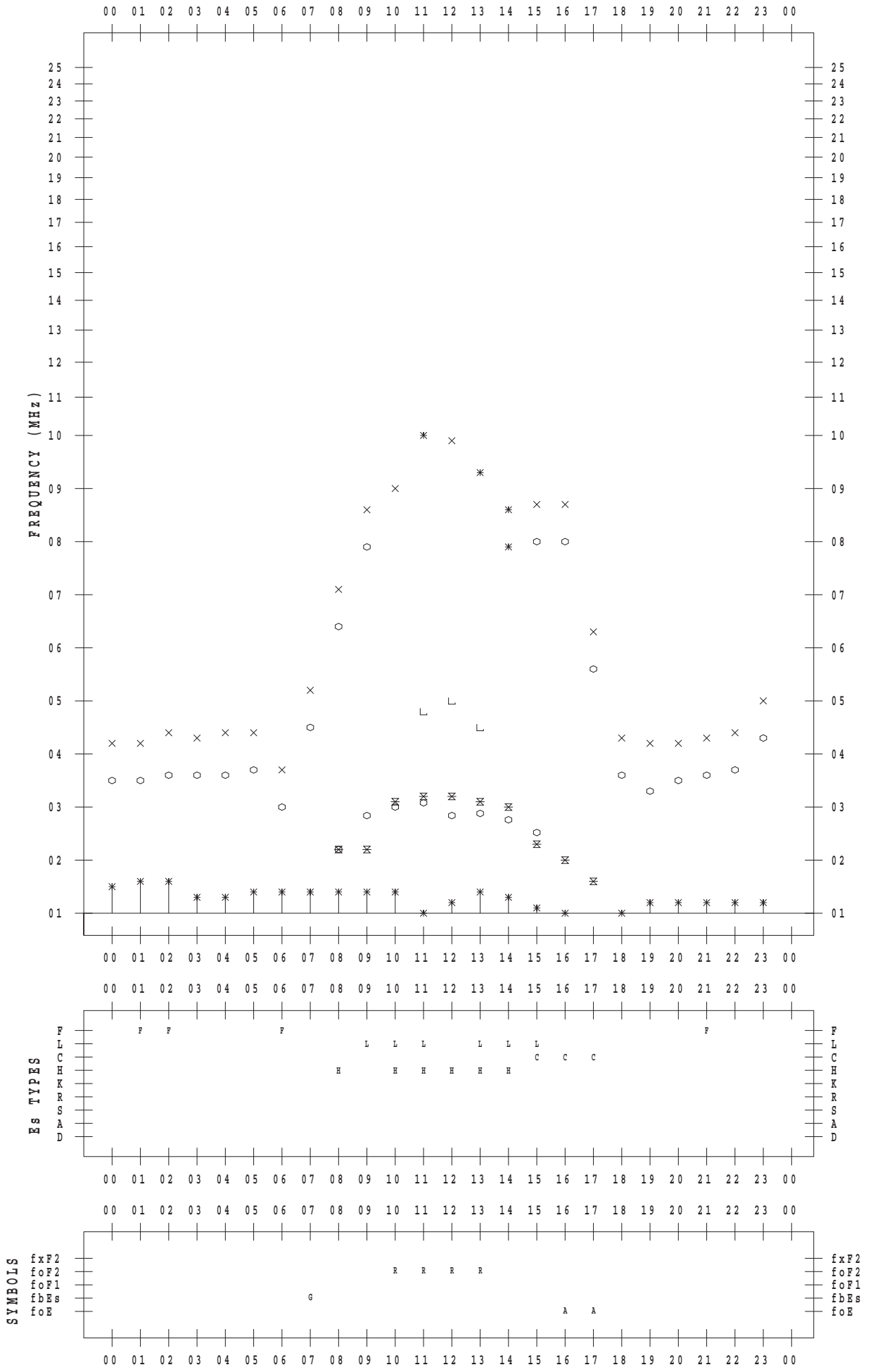
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/26

135 °E MEAN TIME



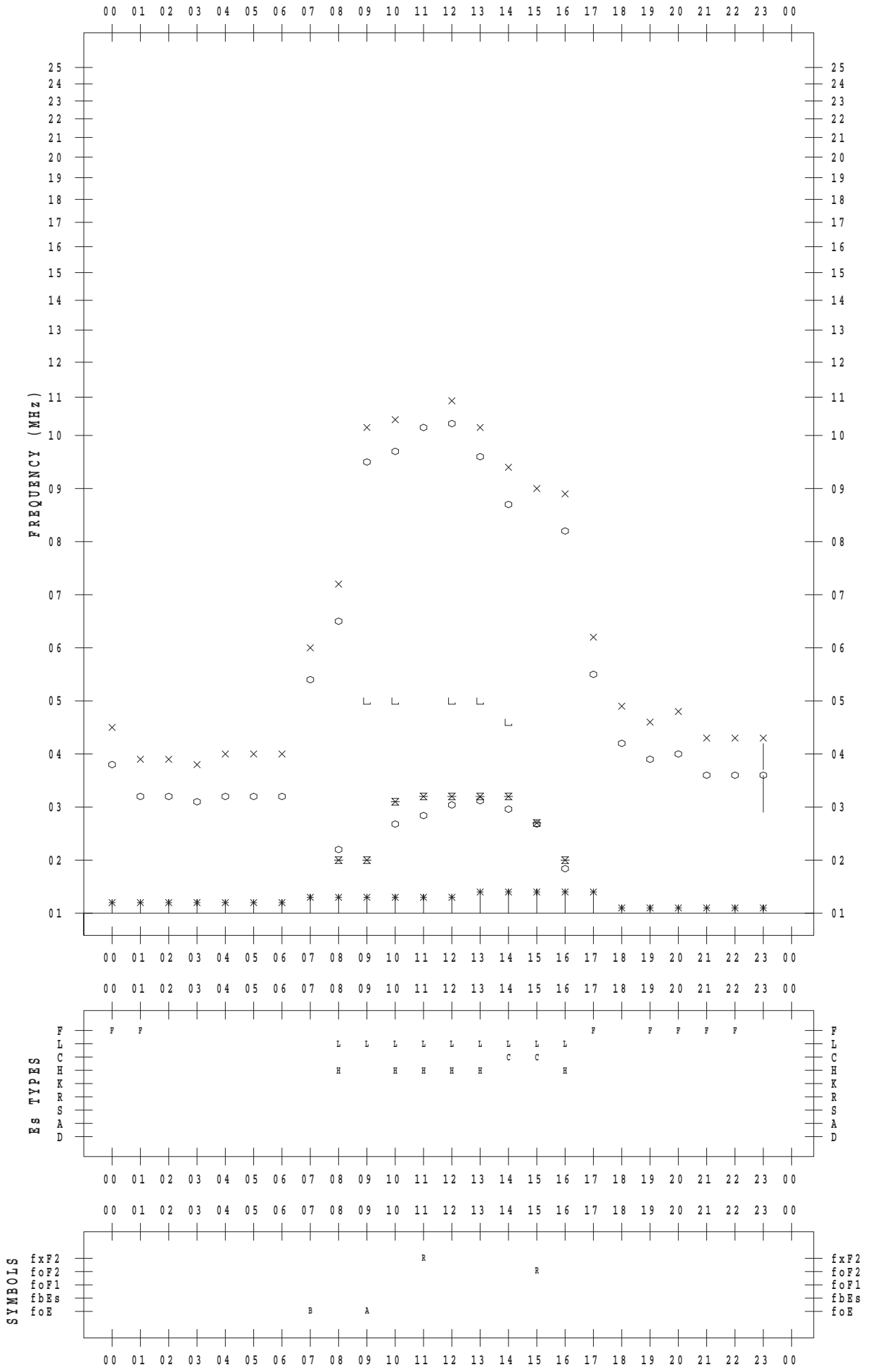
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/27

135 °E MEAN TIME



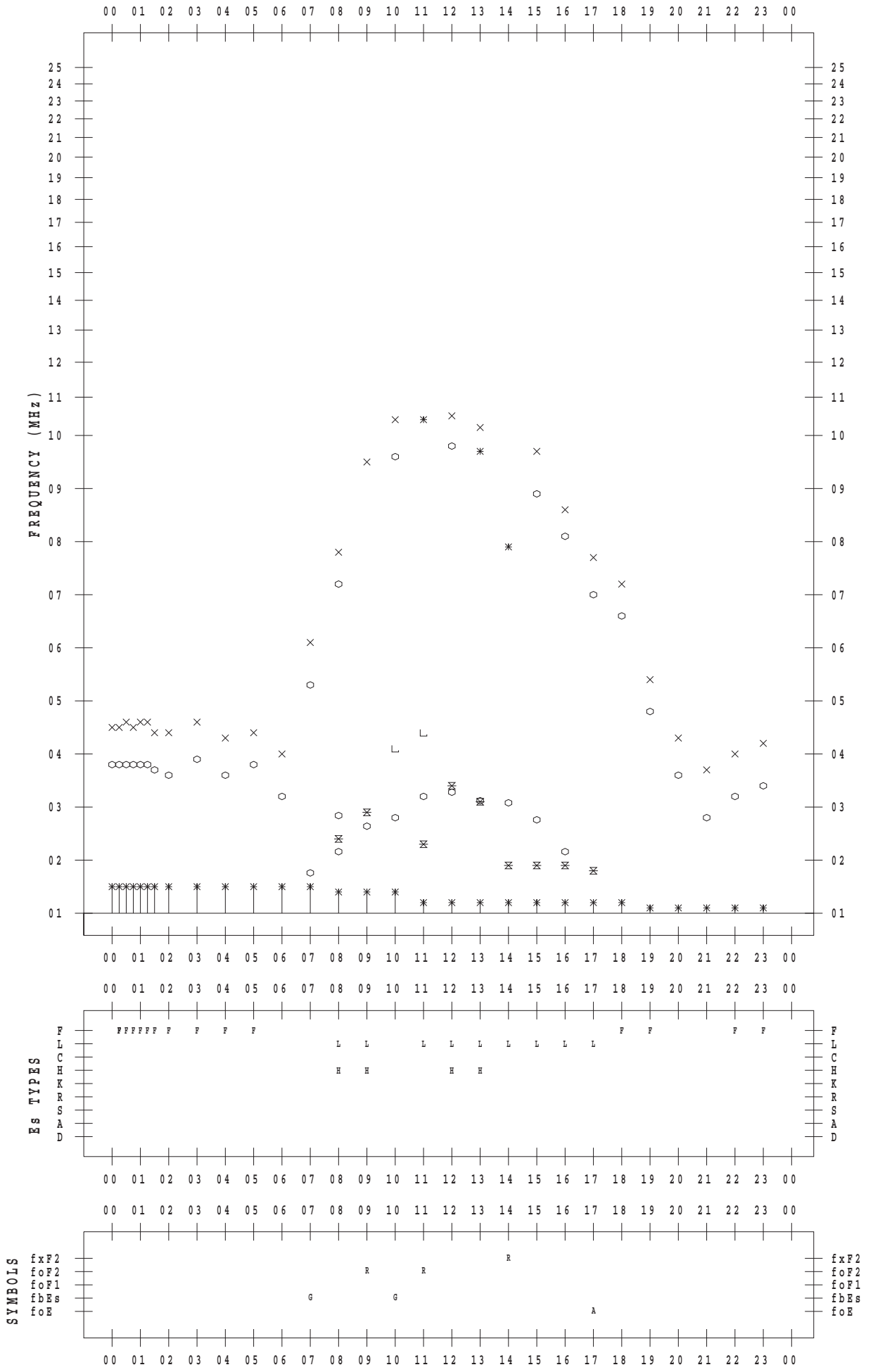
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/28

135 °E MEAN TIME



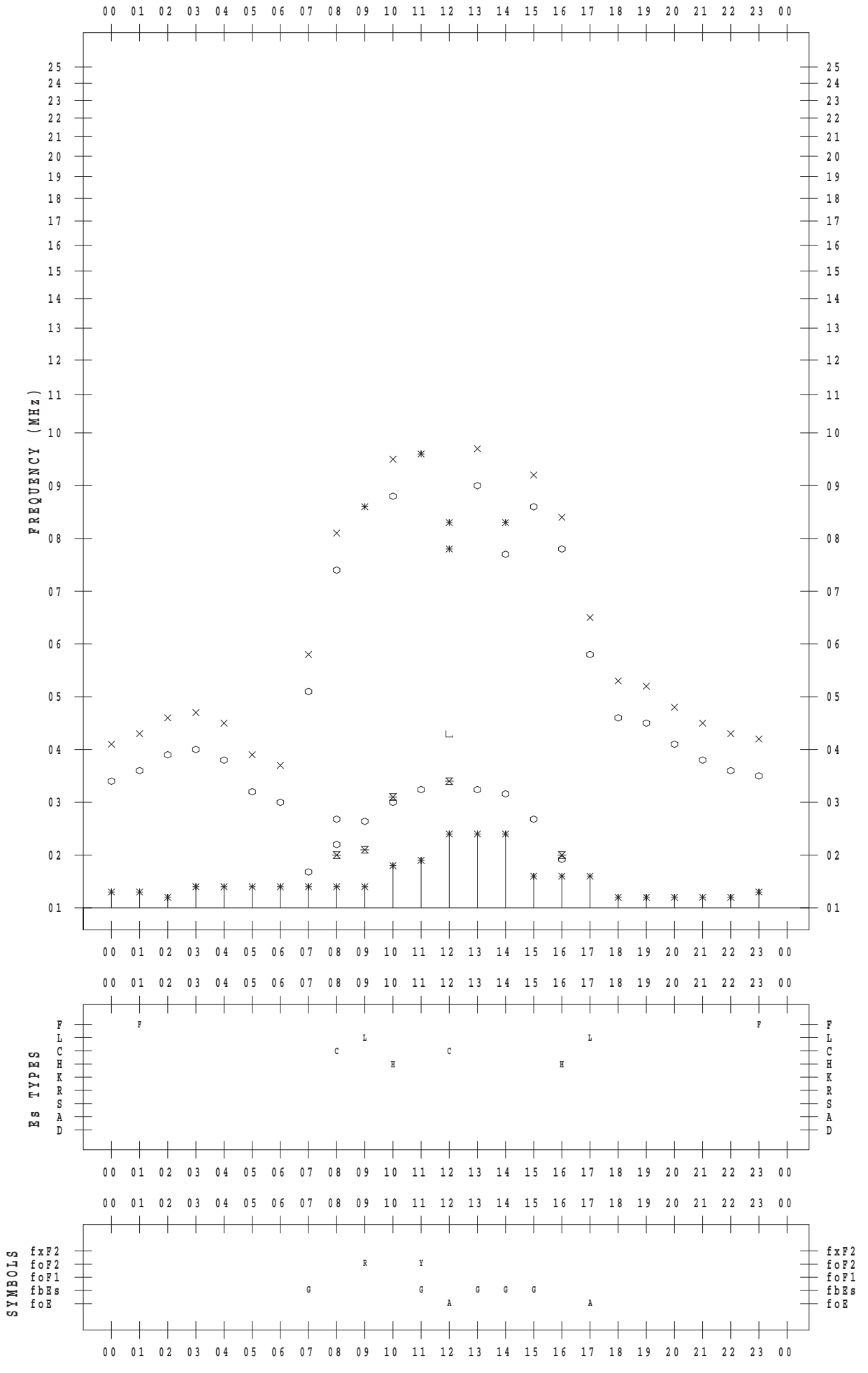
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/29

135 °E MEAN TIME



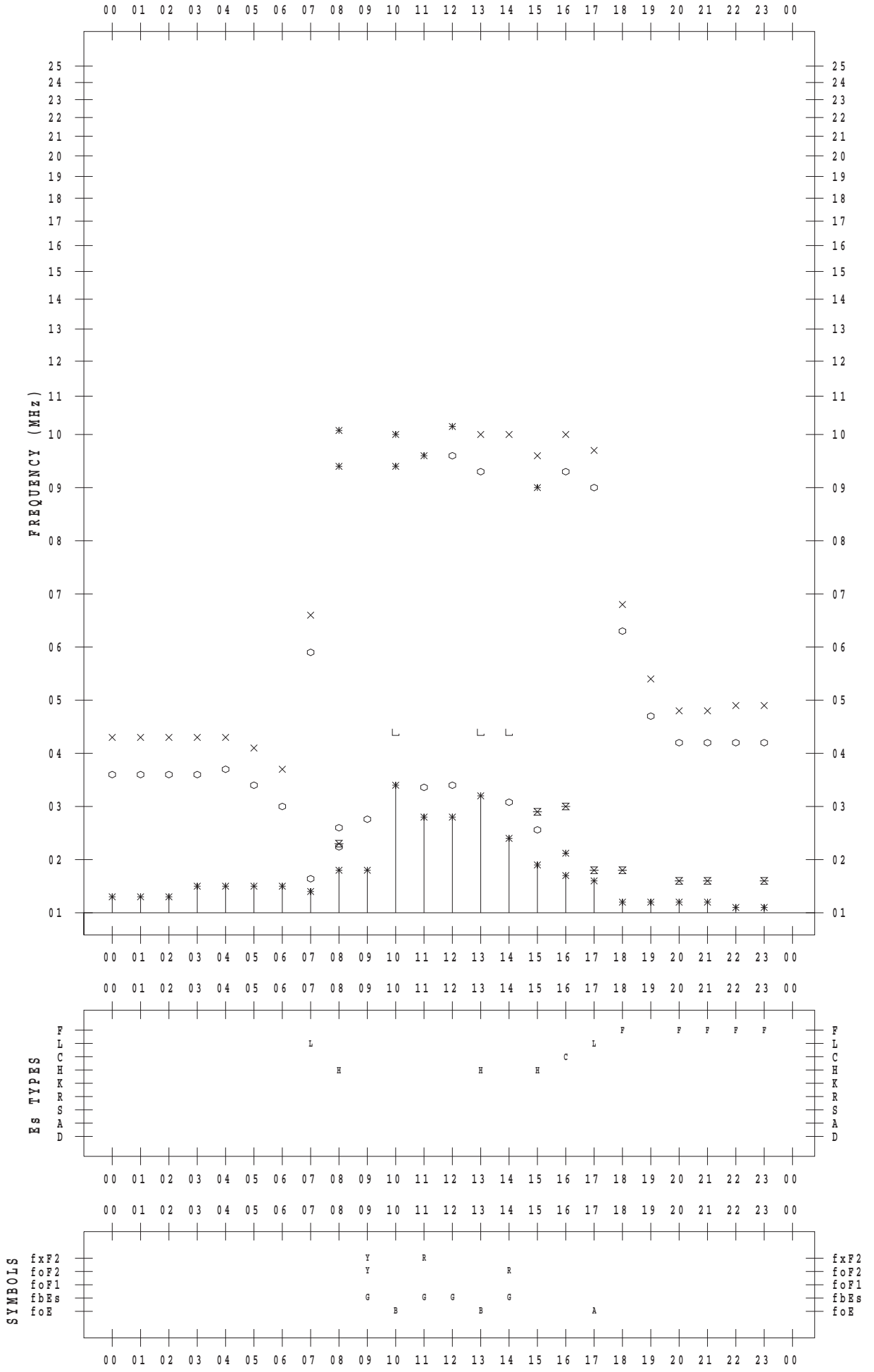
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/30

135 °E MEAN TIME



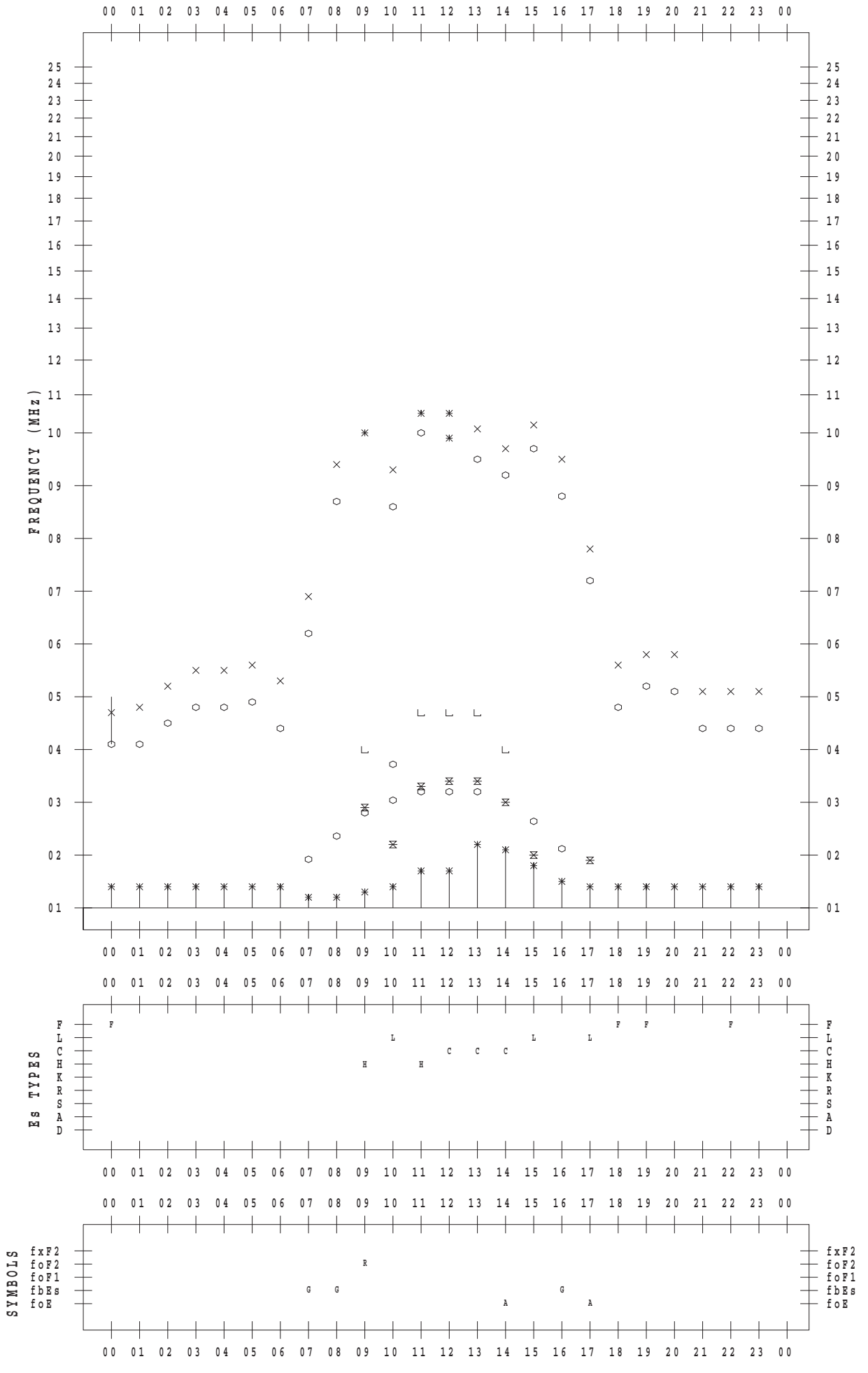
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 1/31

135 °E MEAN TIME



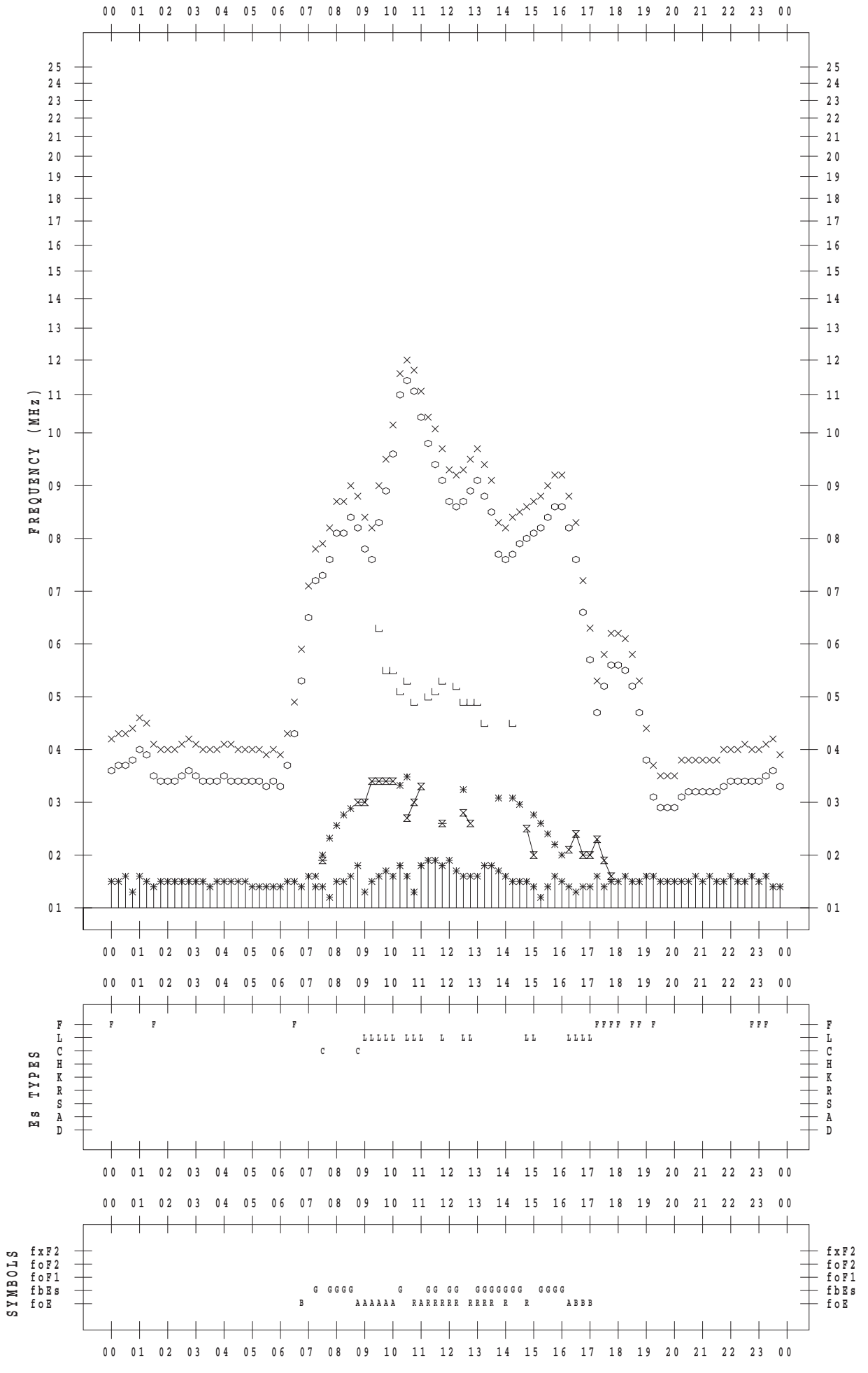
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 1

135 °E MEAN TIME



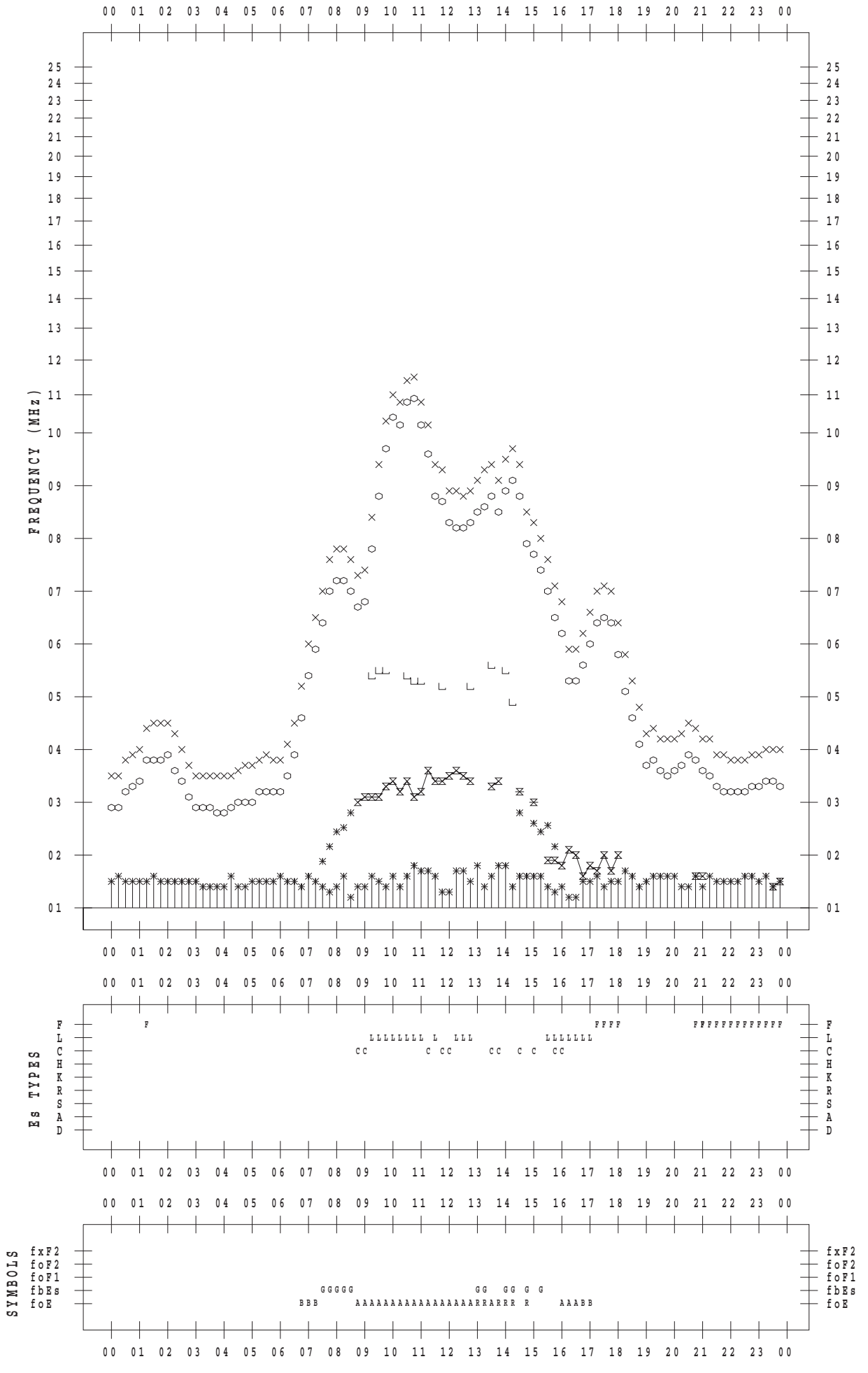
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 2

135 °E MEAN TIME



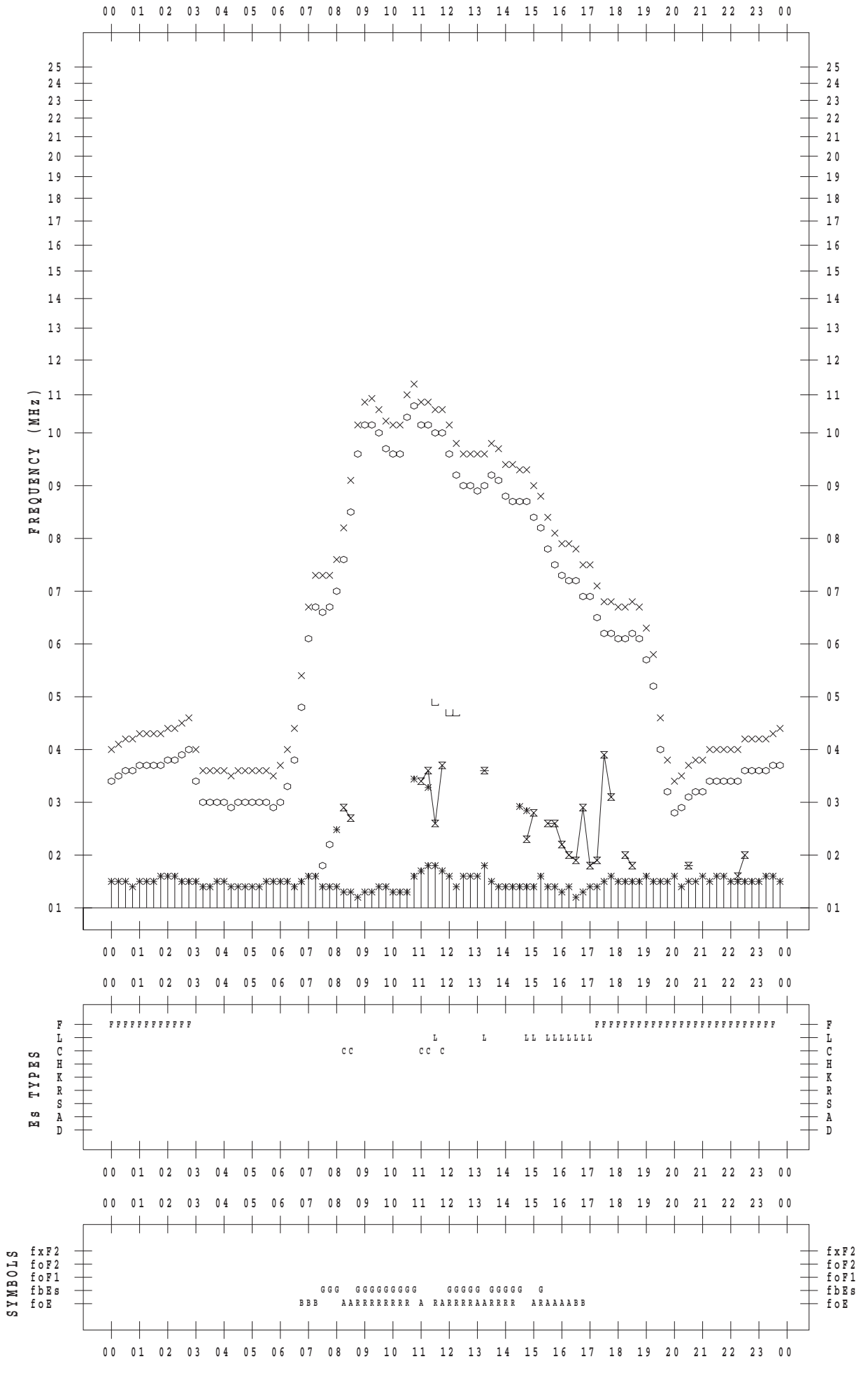
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 3

135 °E MEAN TIME



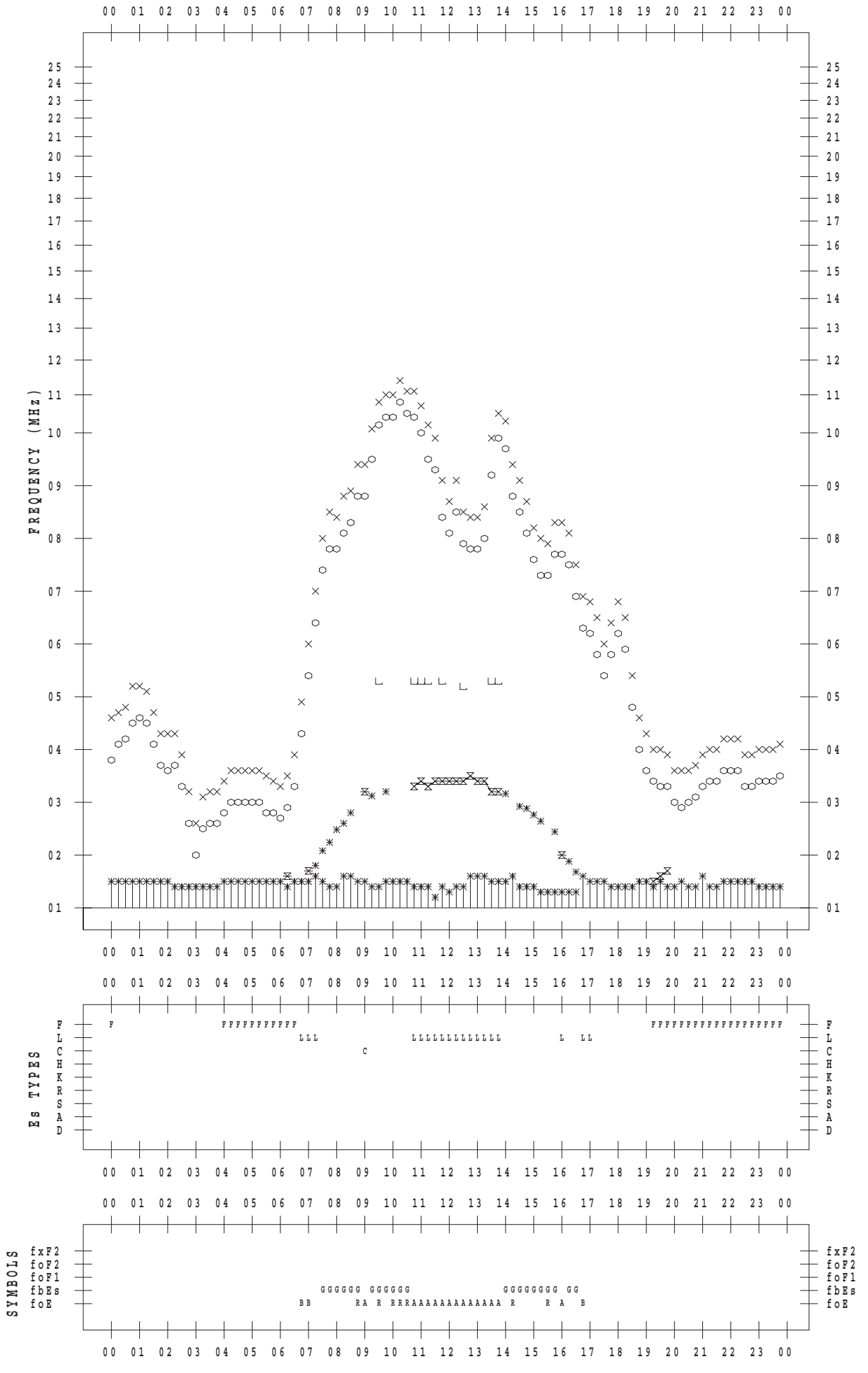
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 4

135 °E MEAN TIME



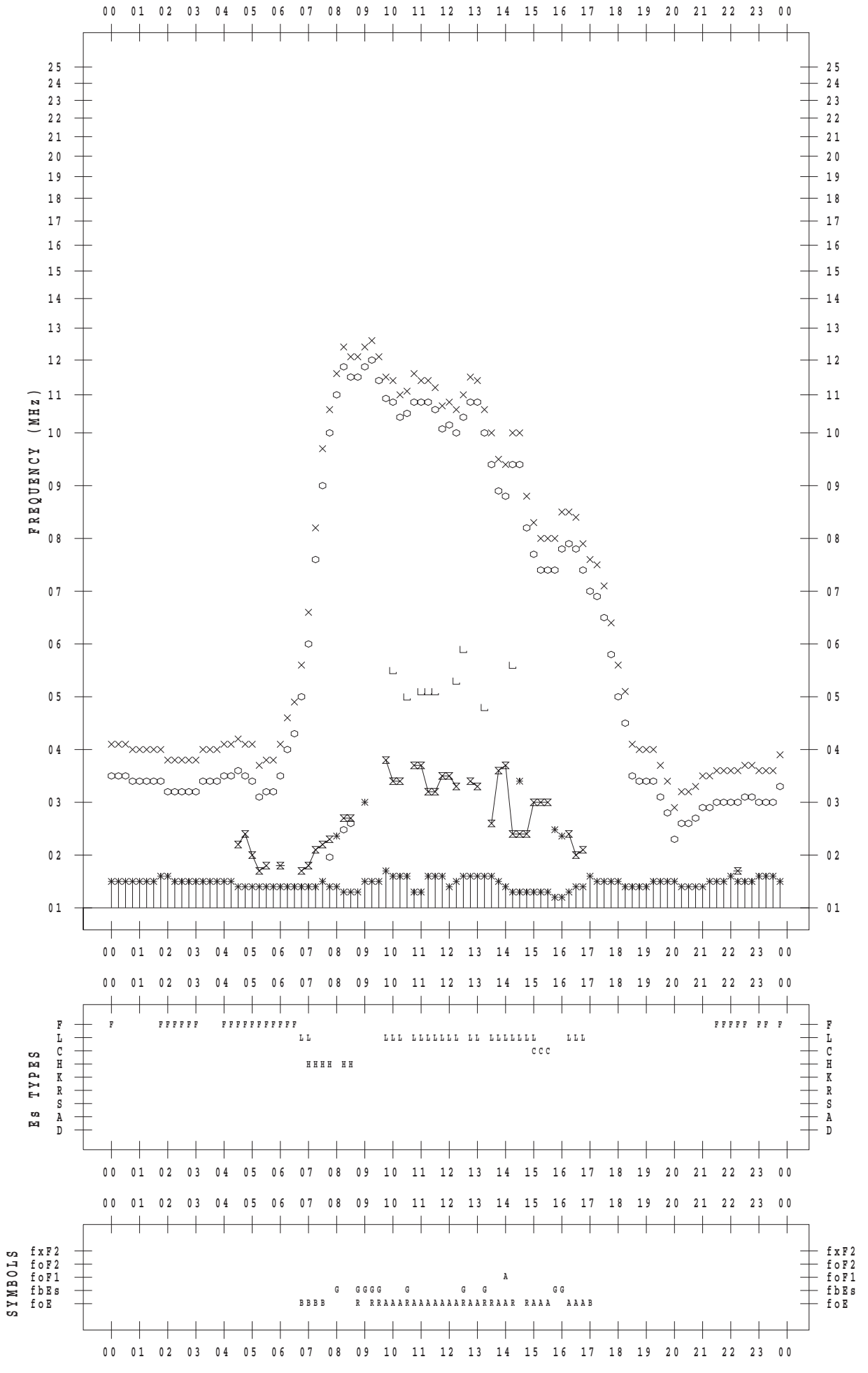
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 5

135 °E MEAN TIME



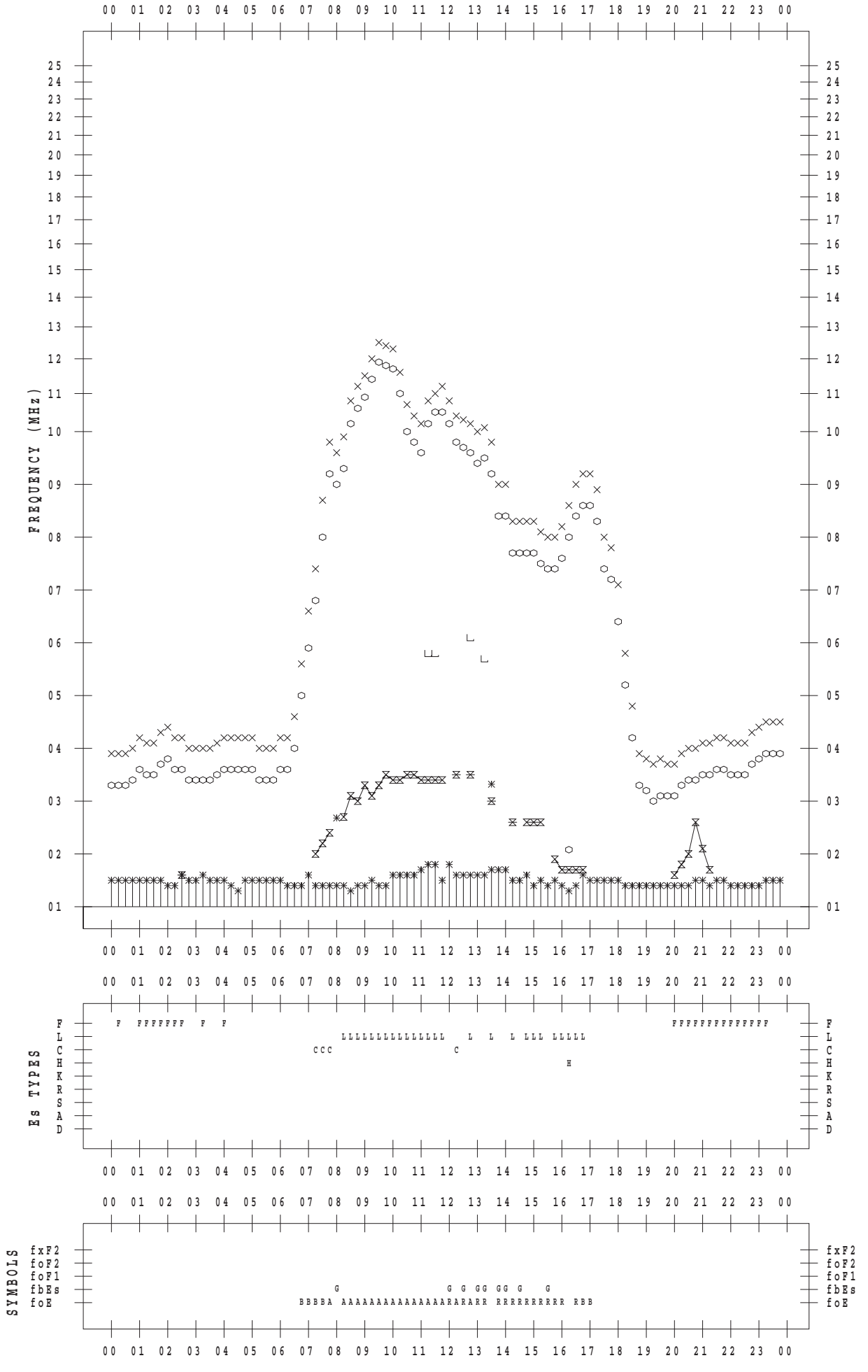
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 6

135 °E MEAN TIME



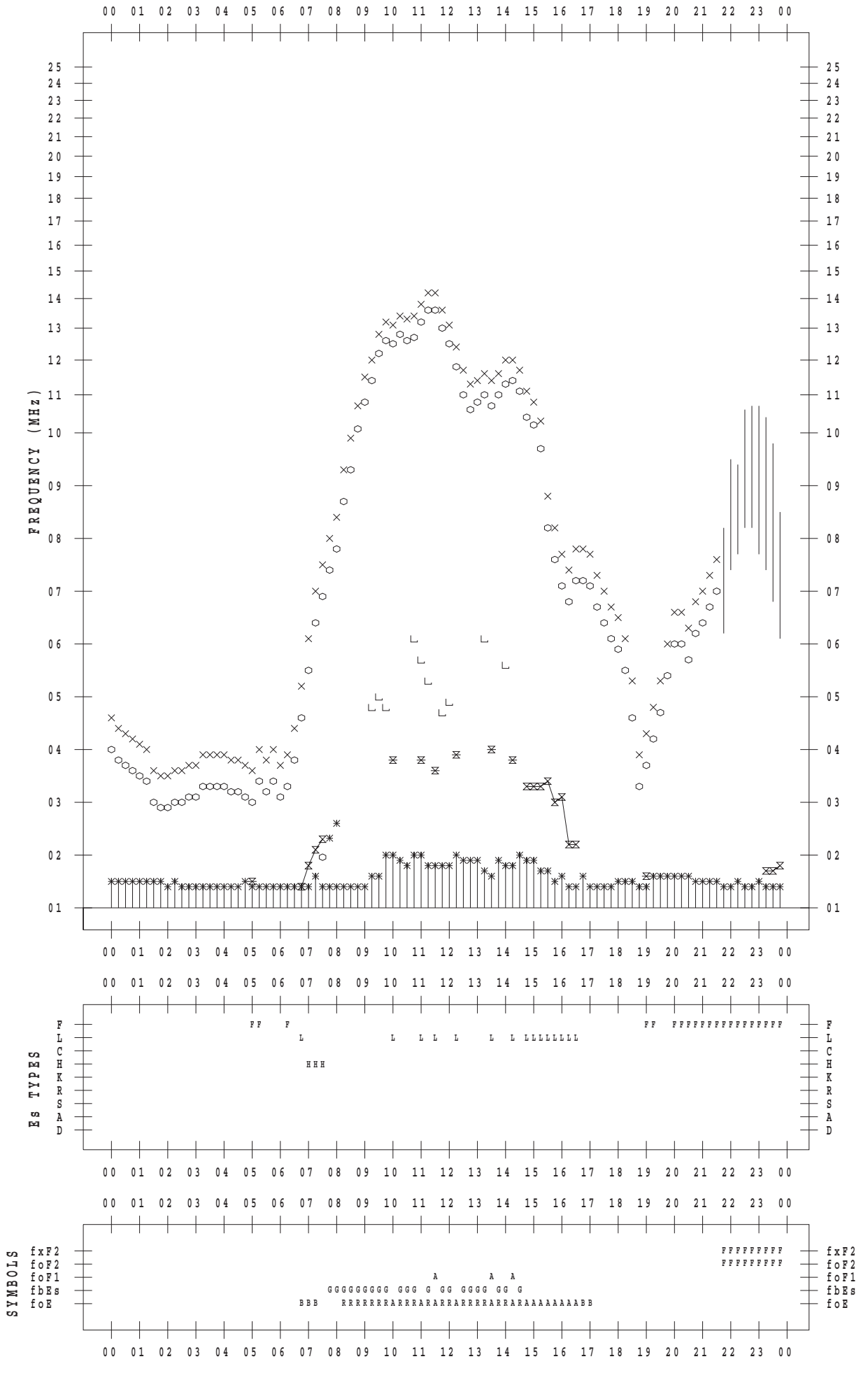
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 7

135 °E MEAN TIME



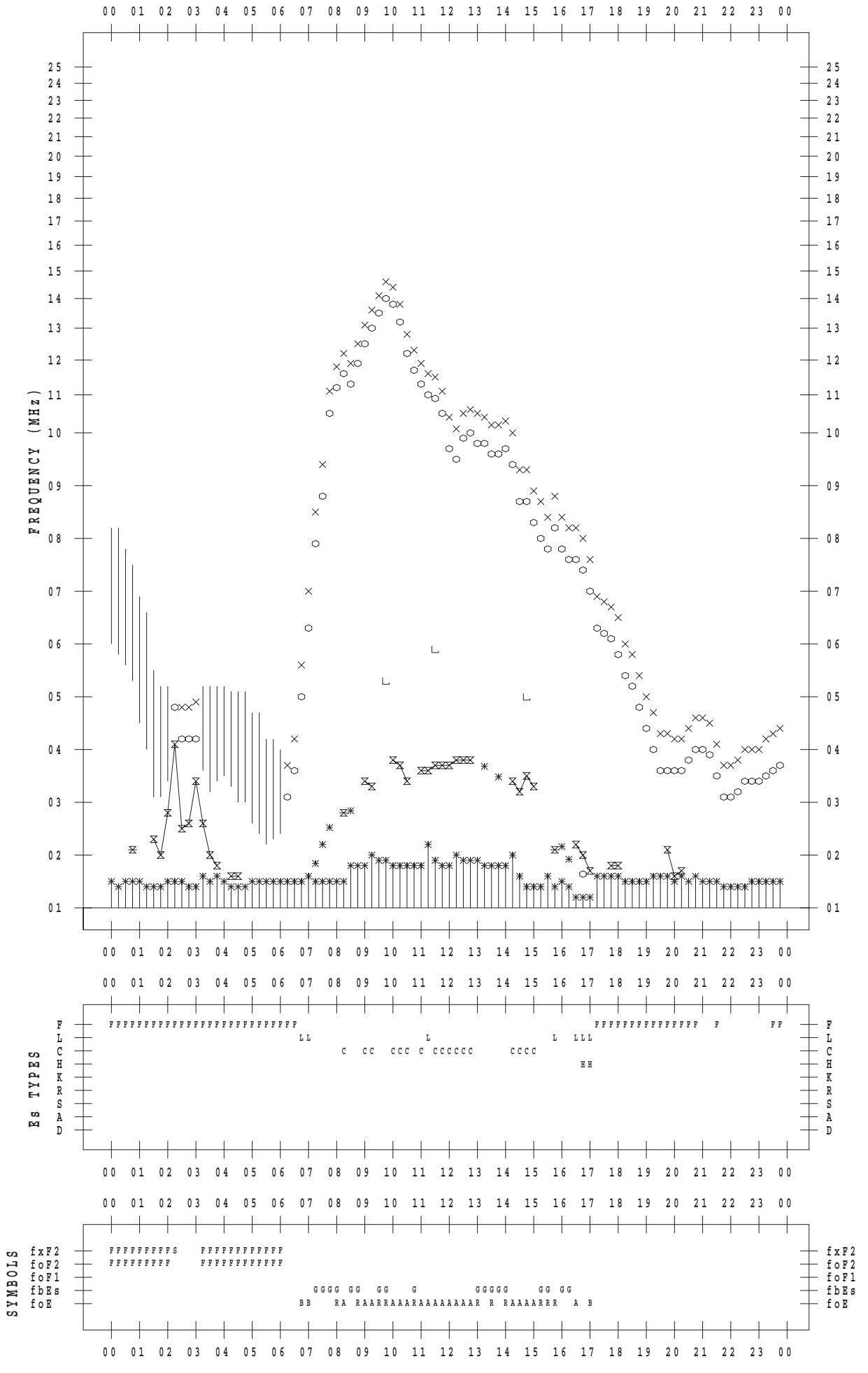
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 8

135 °E MEAN TIME



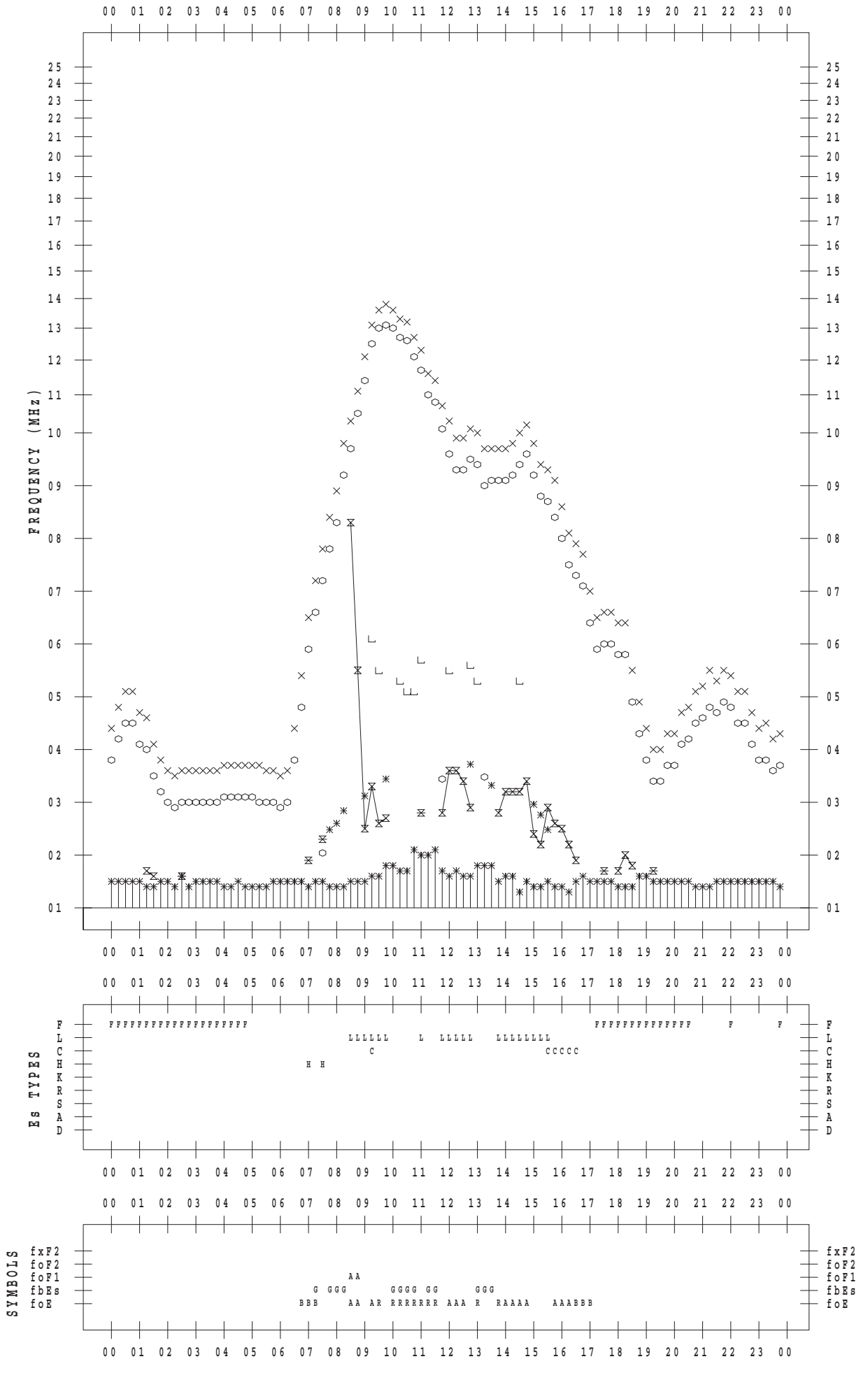
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/ 9

135 °E MEAN TIME



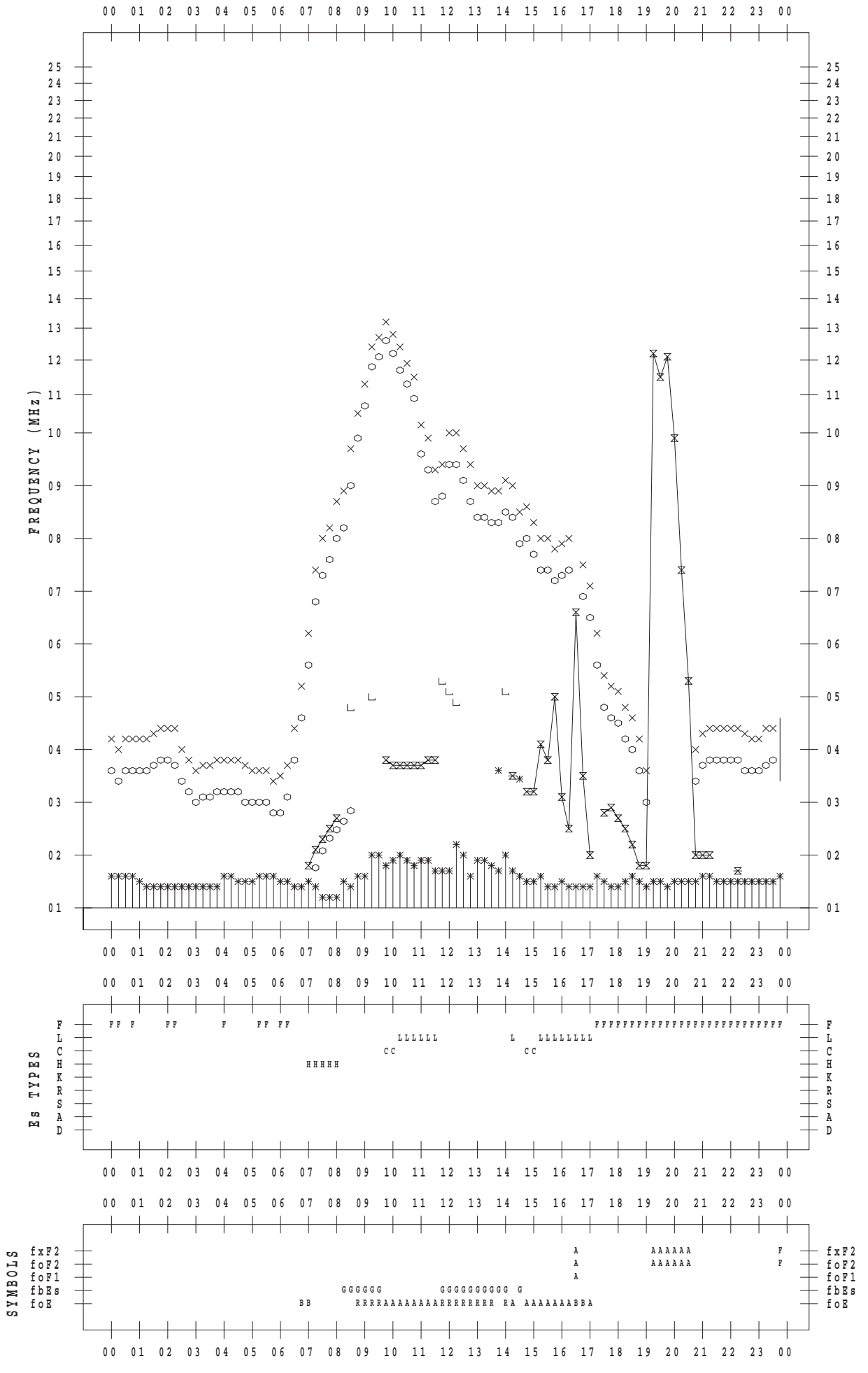
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/10

135 °E MEAN TIME



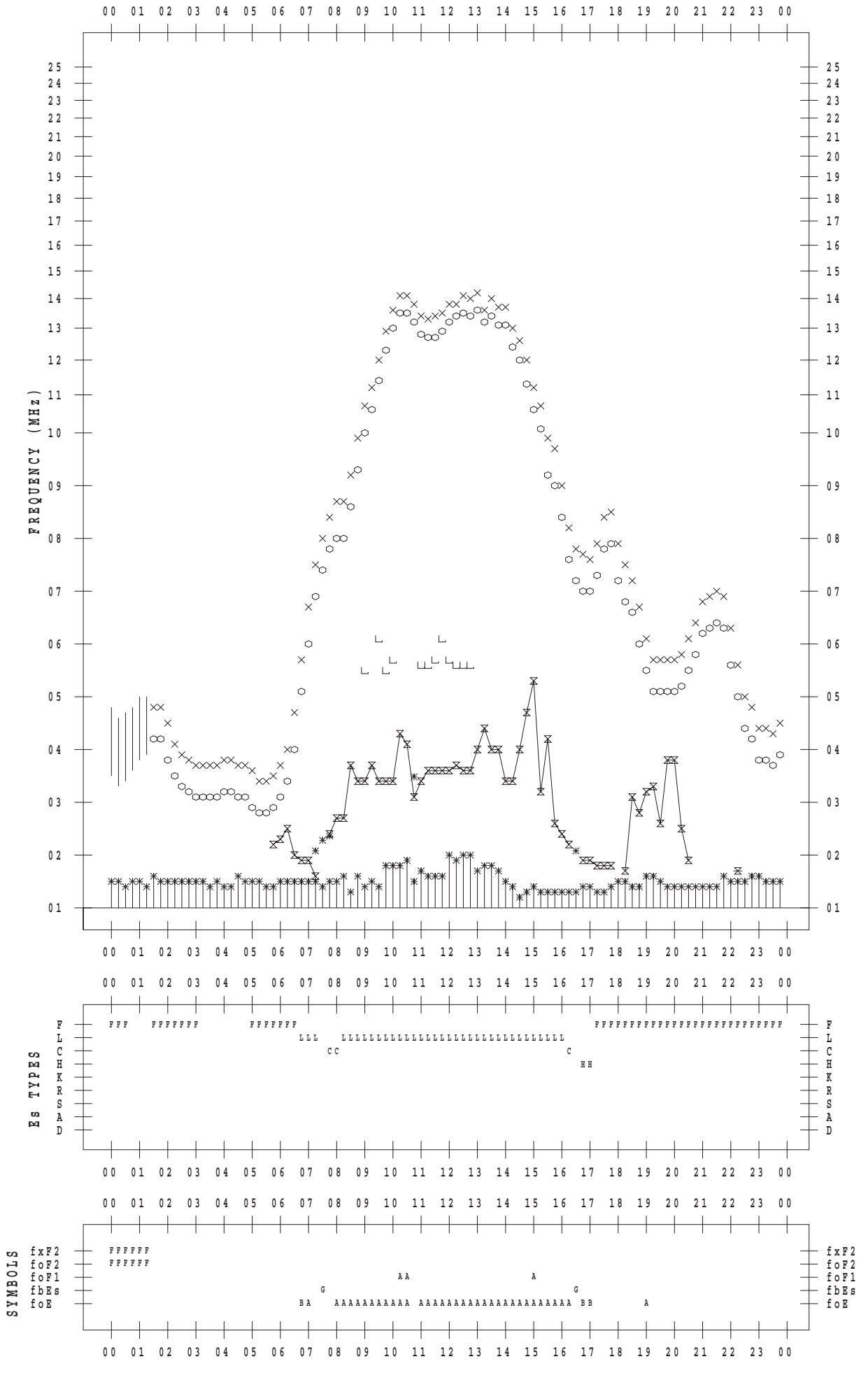
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/11

135 °E MEAN TIME



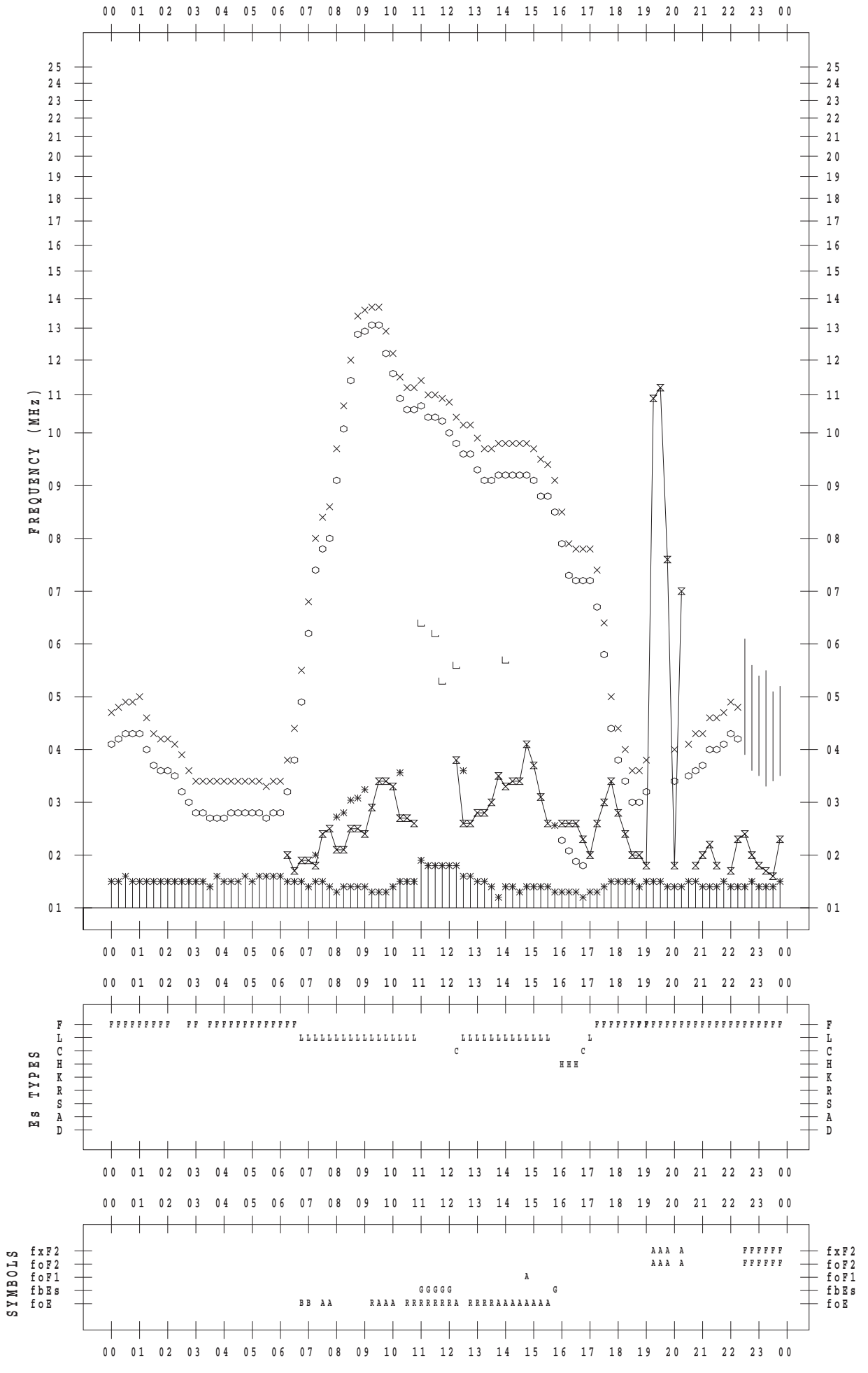
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/12

135 °E MEAN TIME



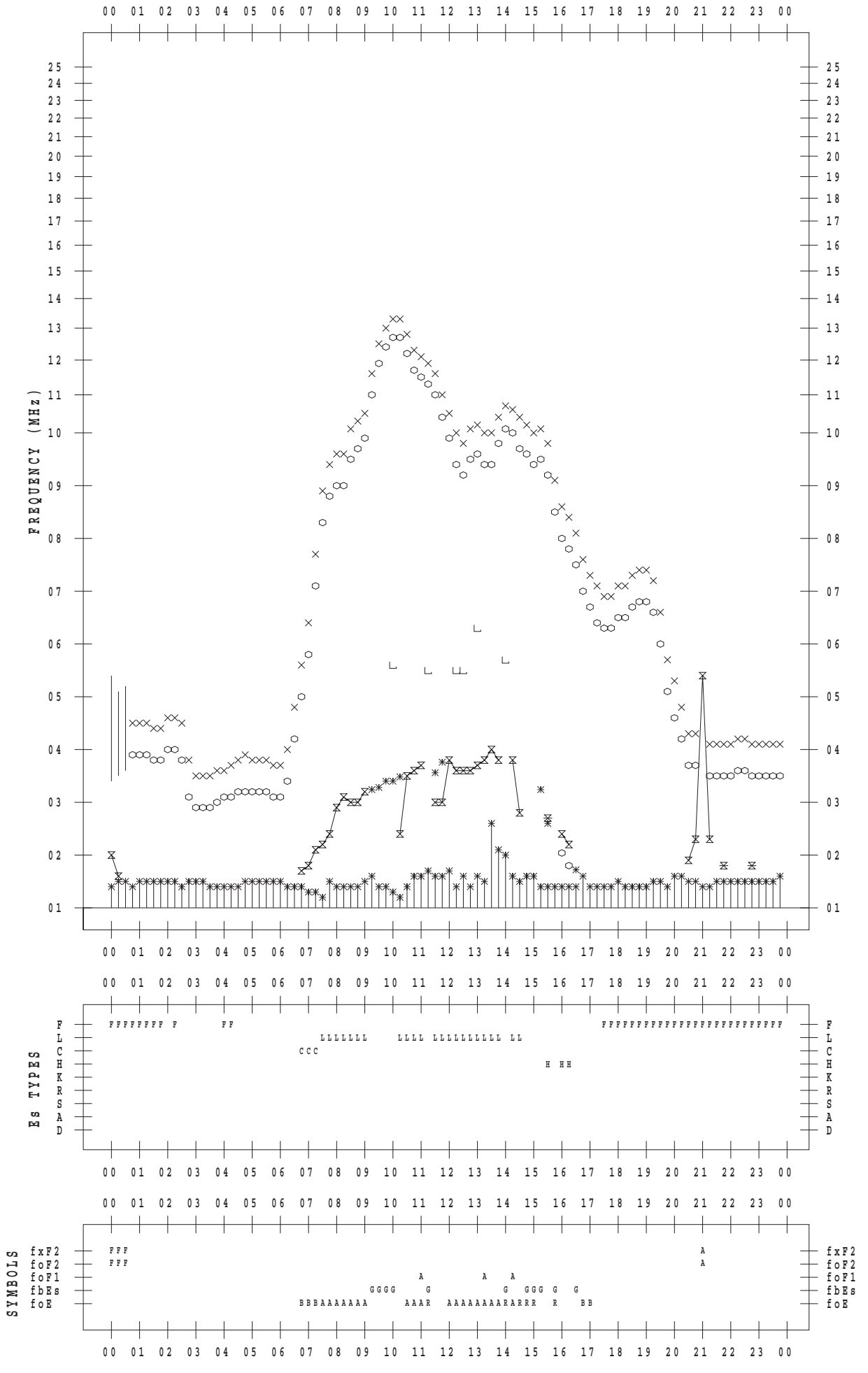
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/13

135 °E MEAN TIME



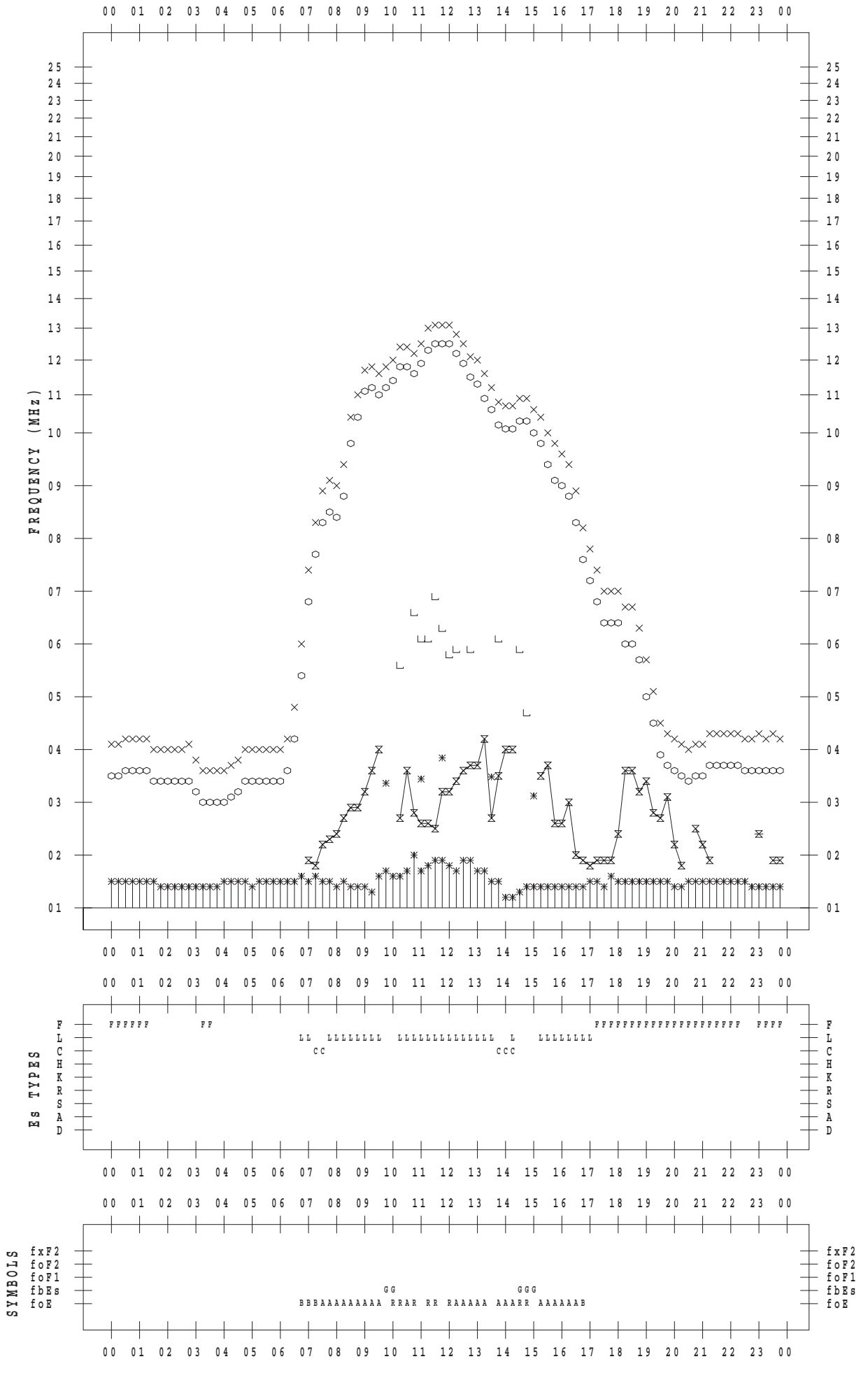
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/14

135 °E MEAN TIME



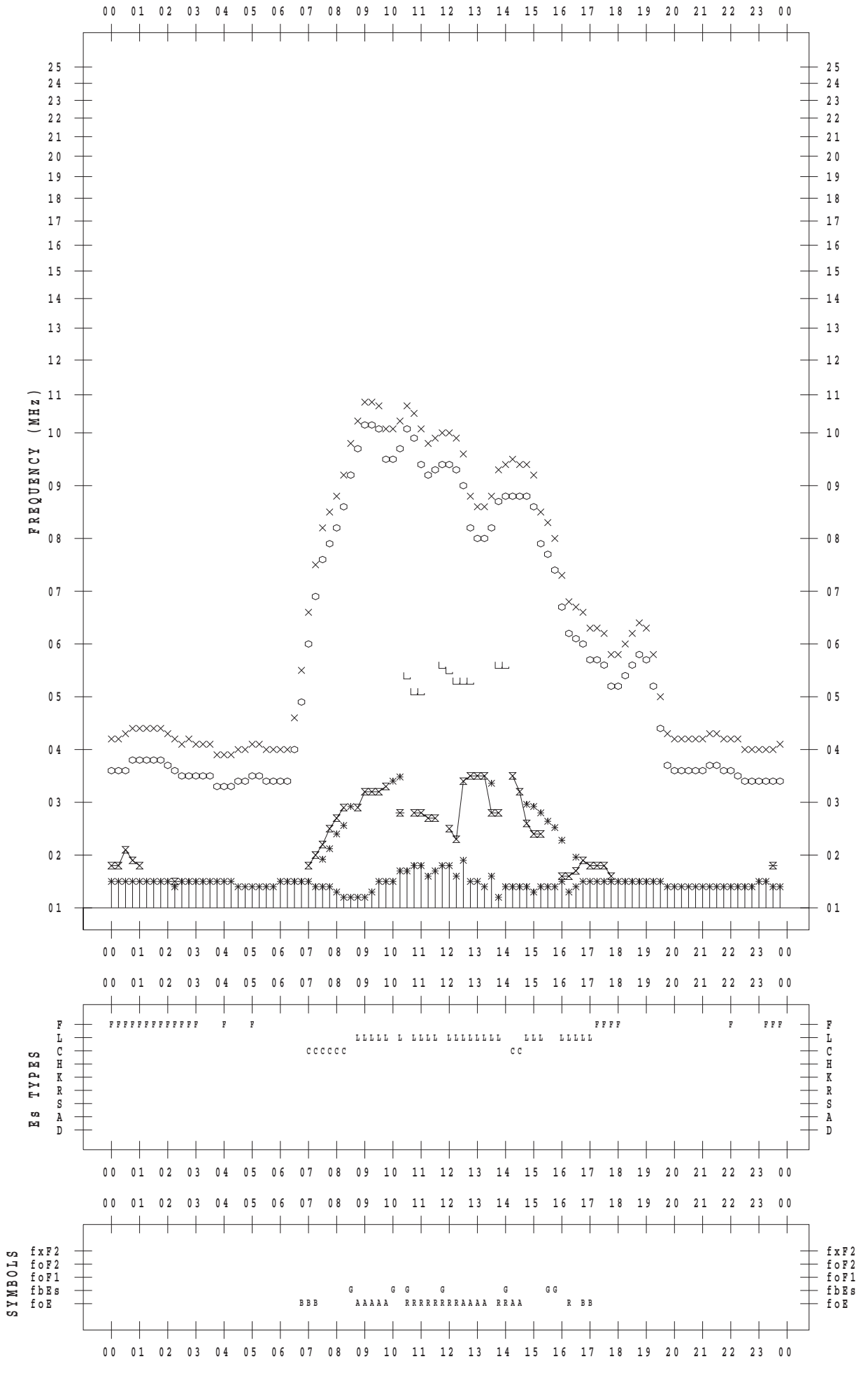
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/15

135 °E MEAN TIME



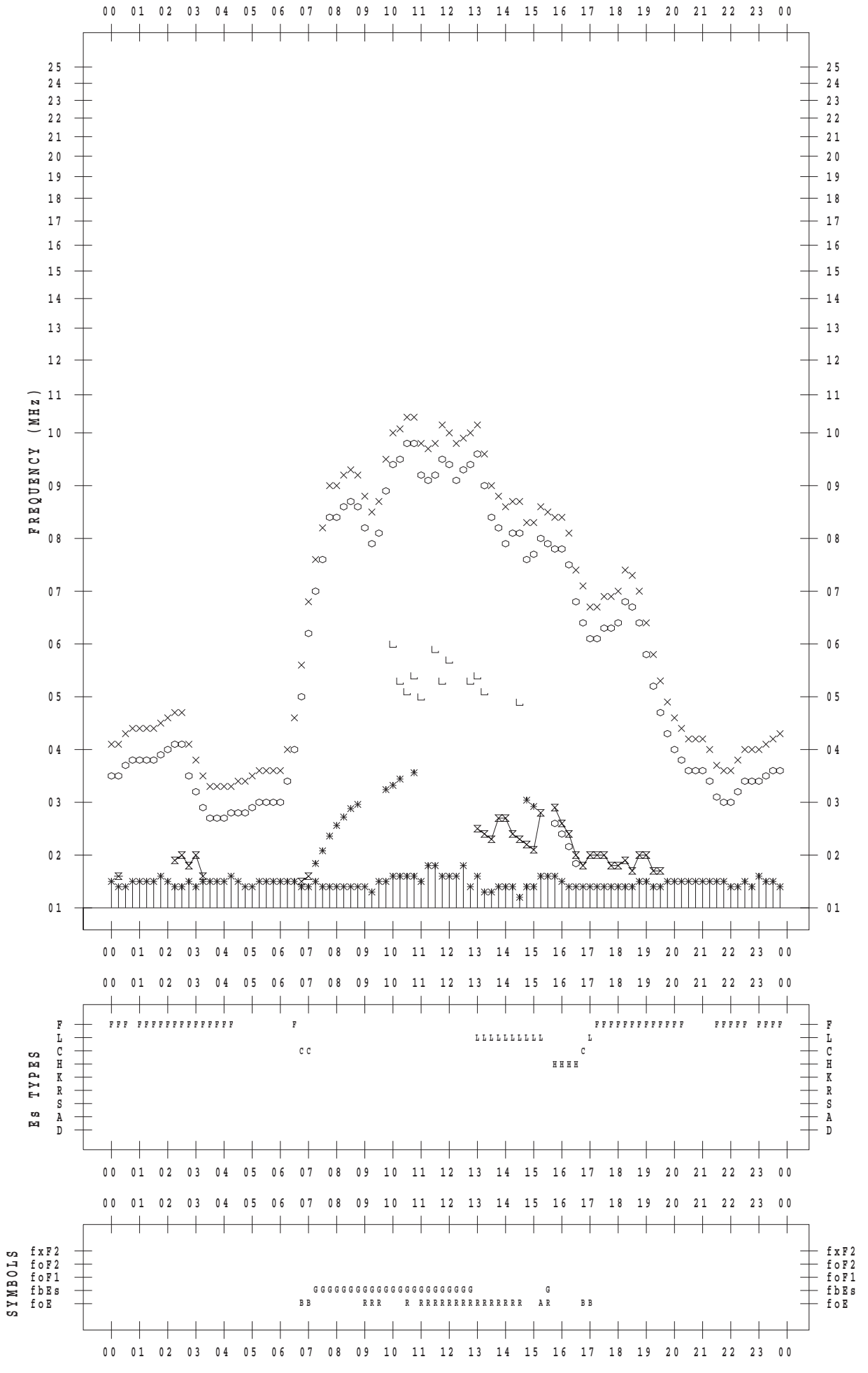
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/16

135 °E MEAN TIME



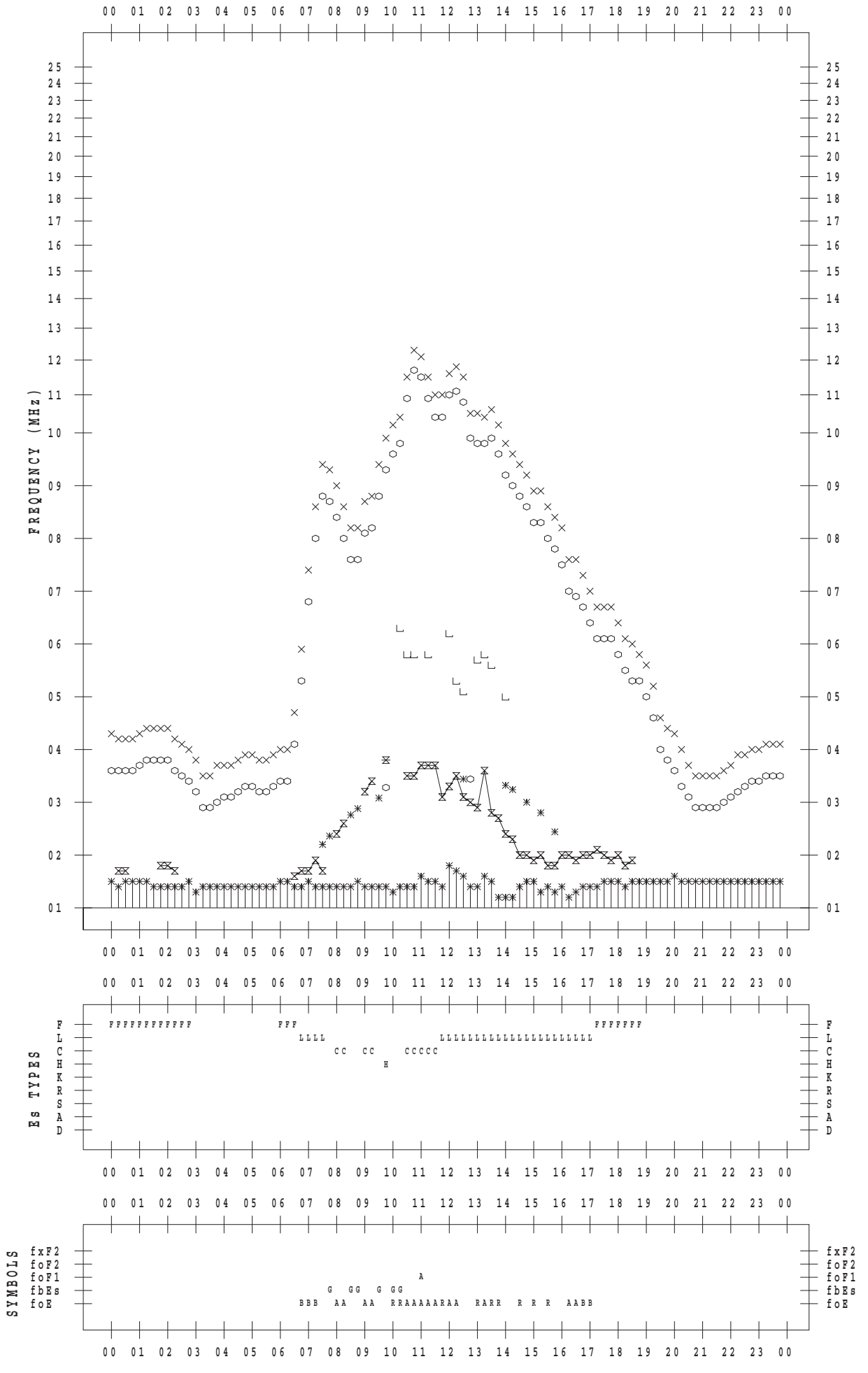
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/17

135 °E MEAN TIME



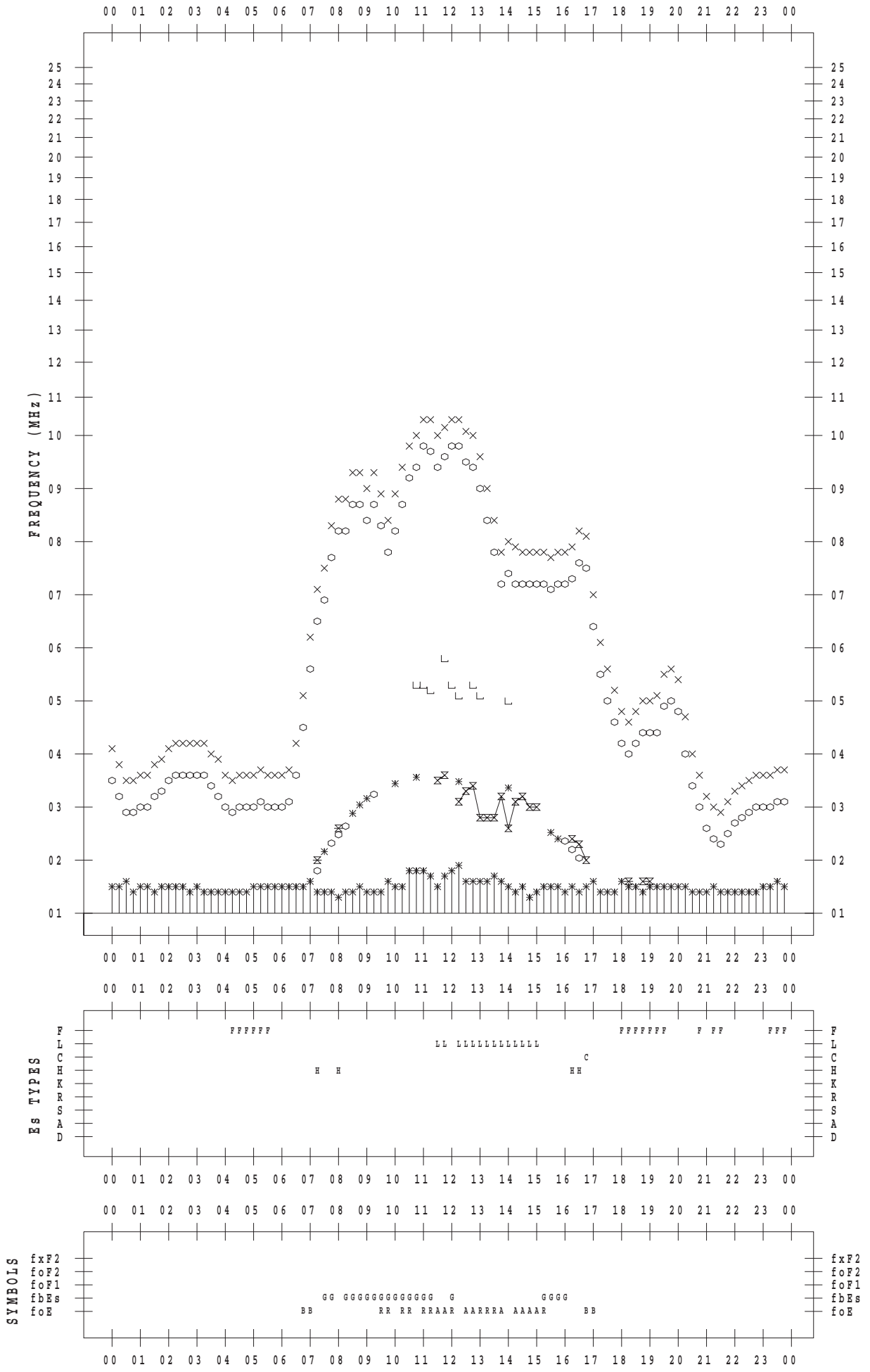
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/18

135 °E MEAN TIME



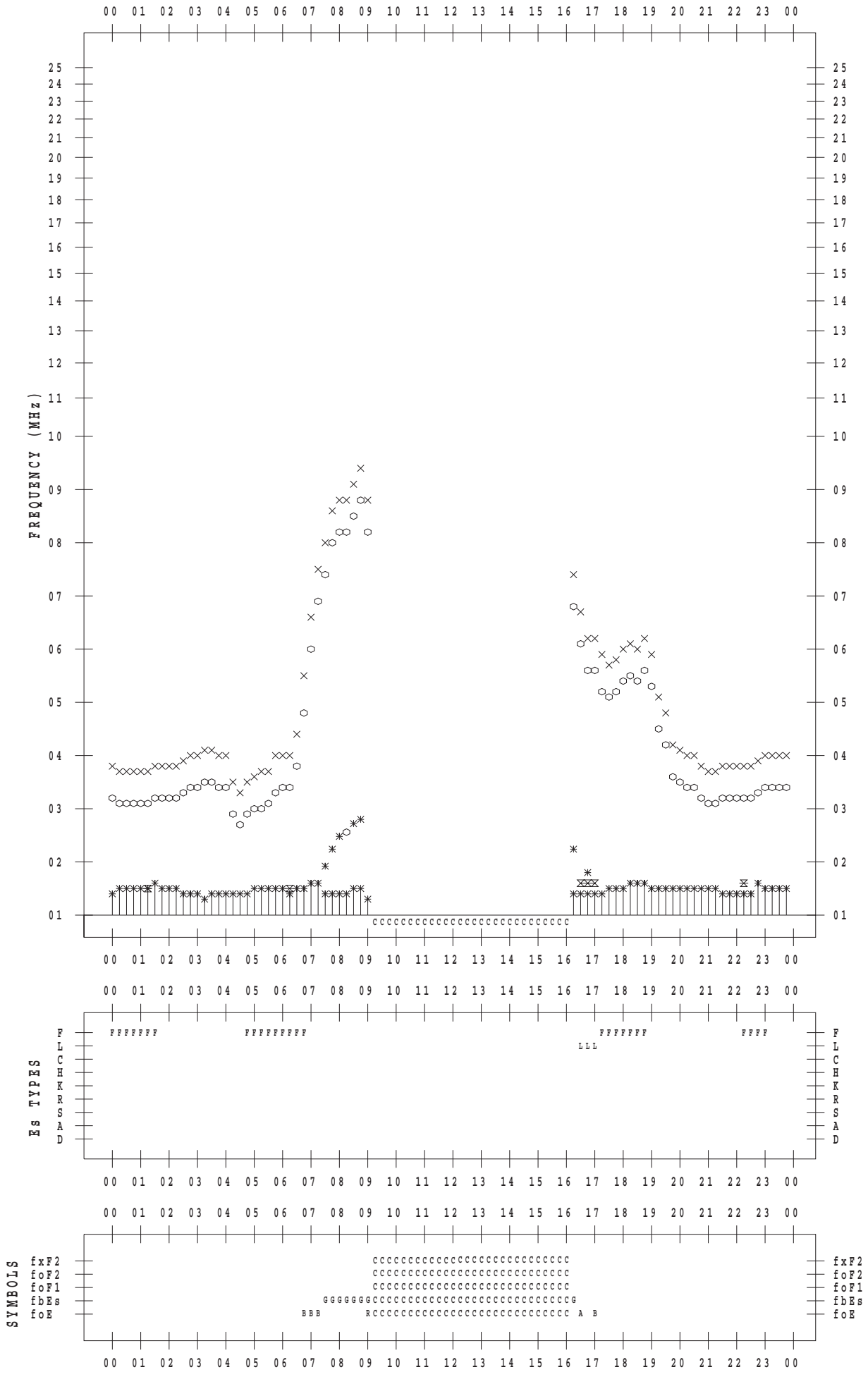
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/19

135 °E MEAN TIME



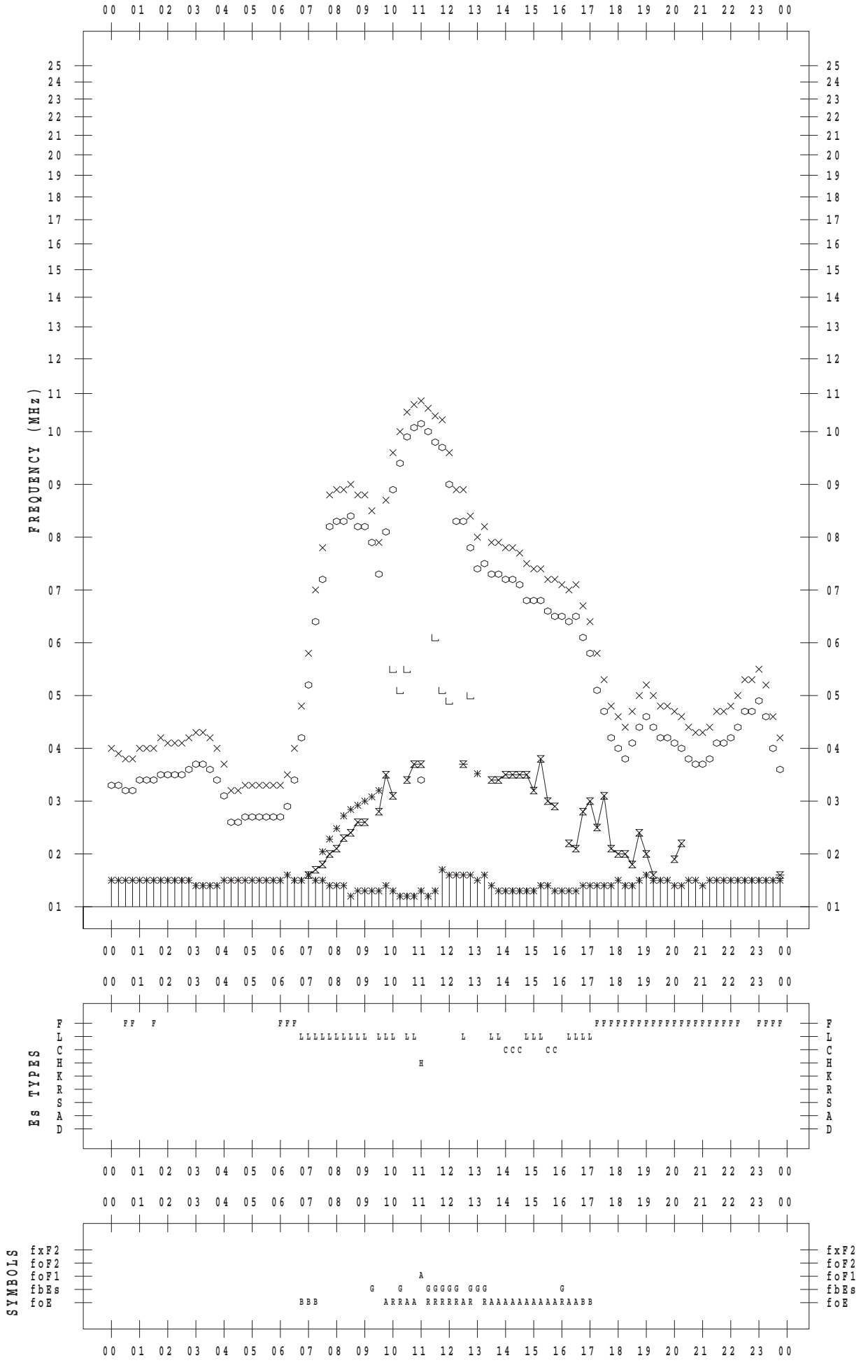
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/20

135 °E MEAN TIME



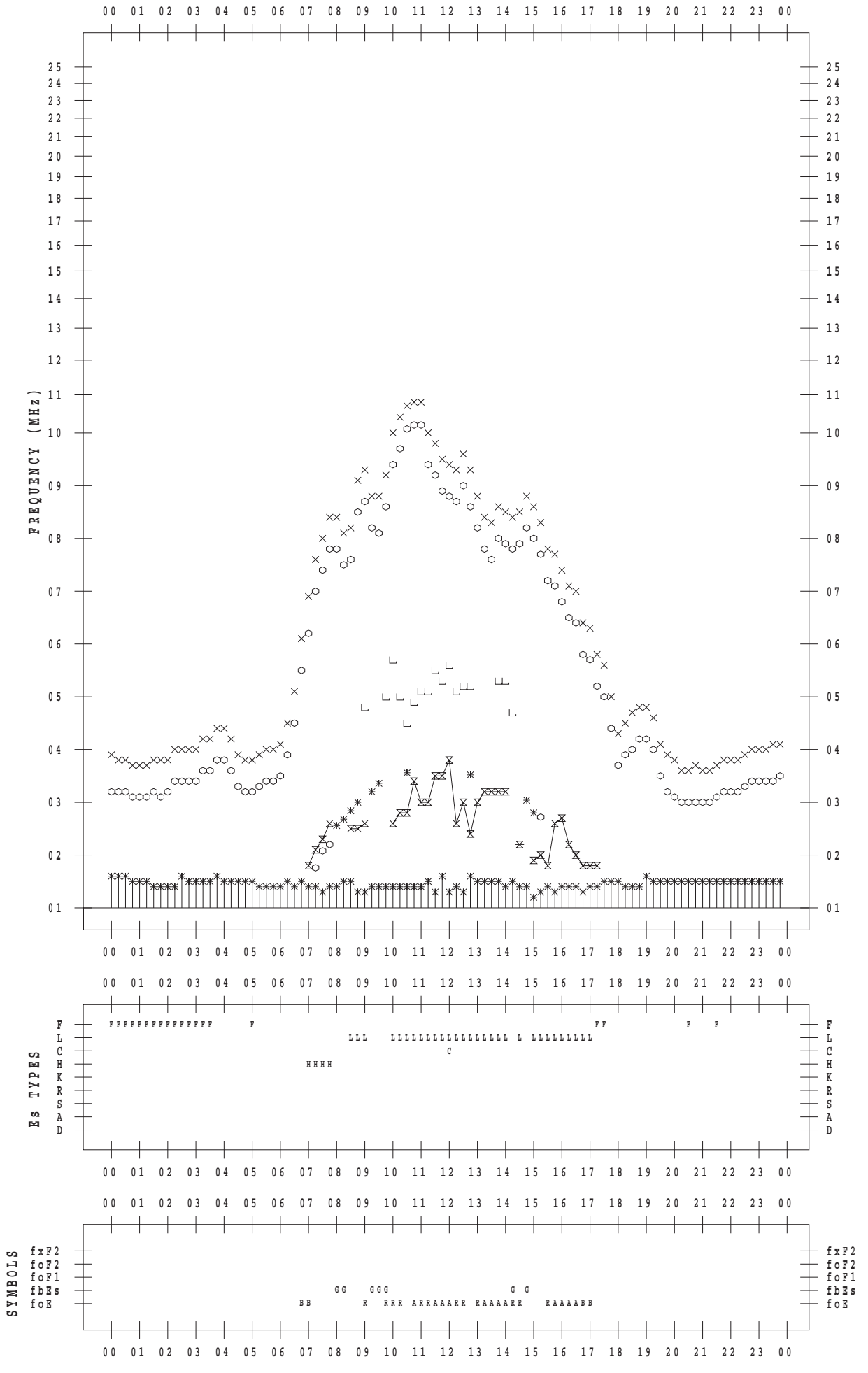
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/21

135 °E MEAN TIME



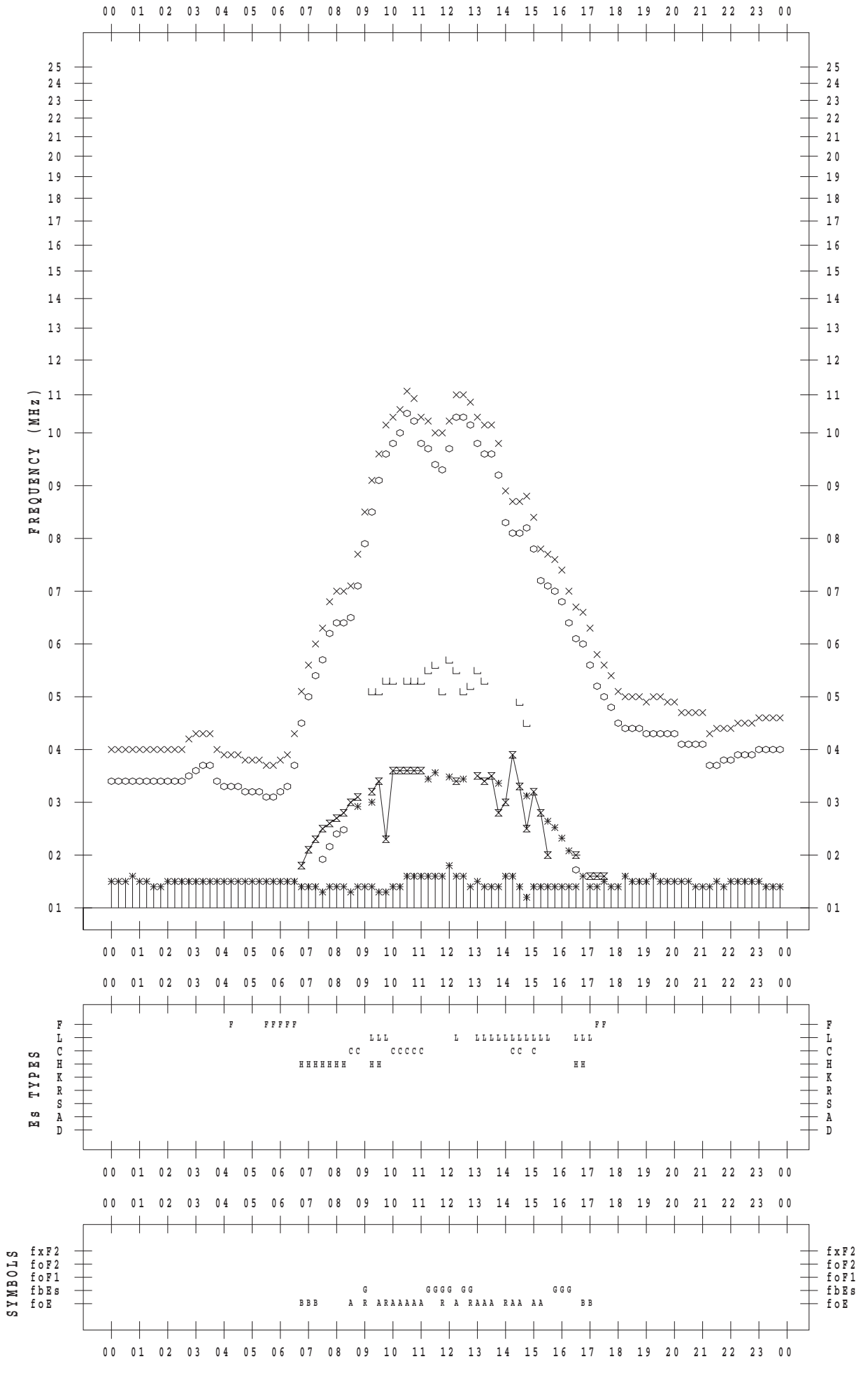
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/22

135 °E MEAN TIME



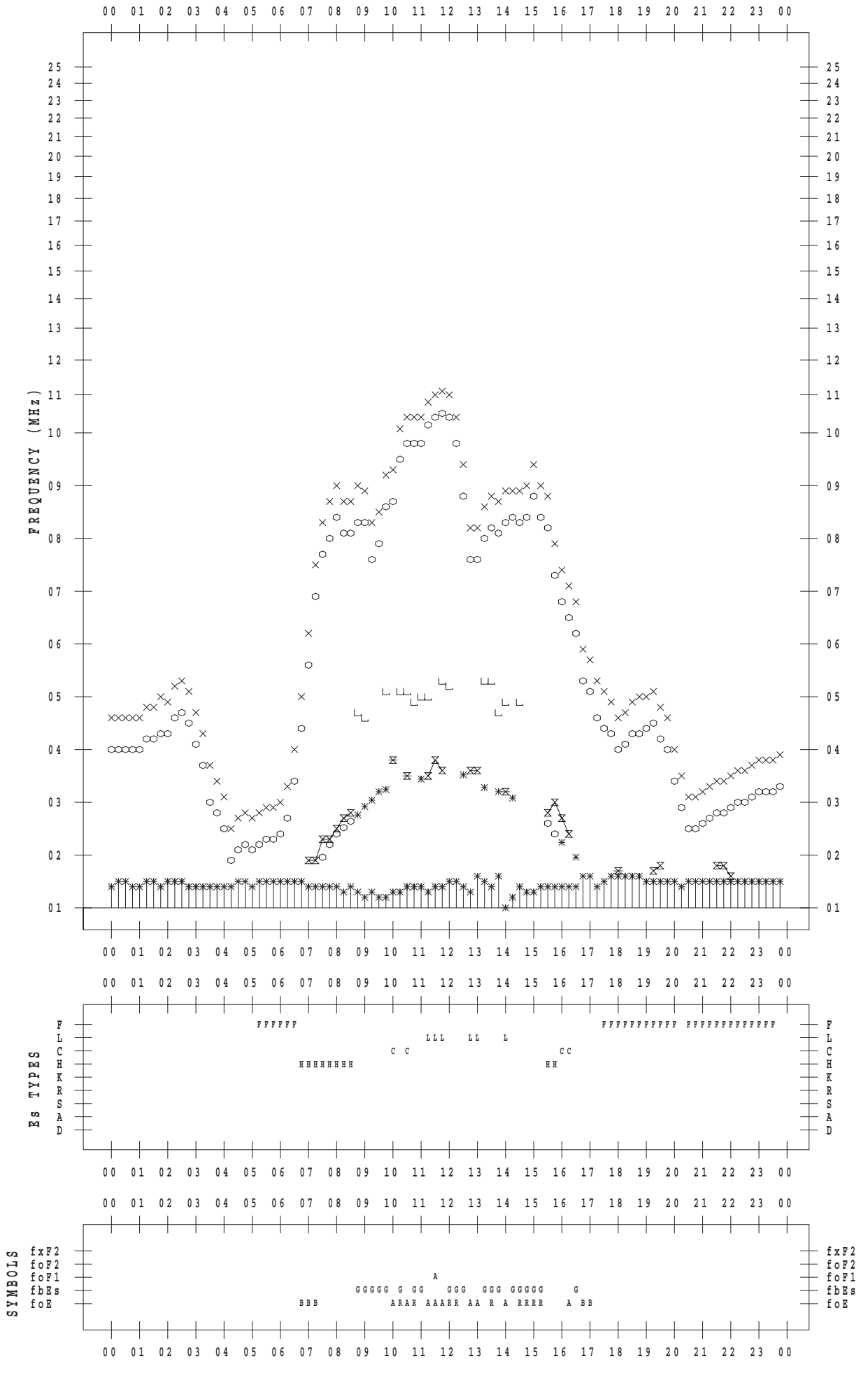
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/23

135 °E MEAN TIME



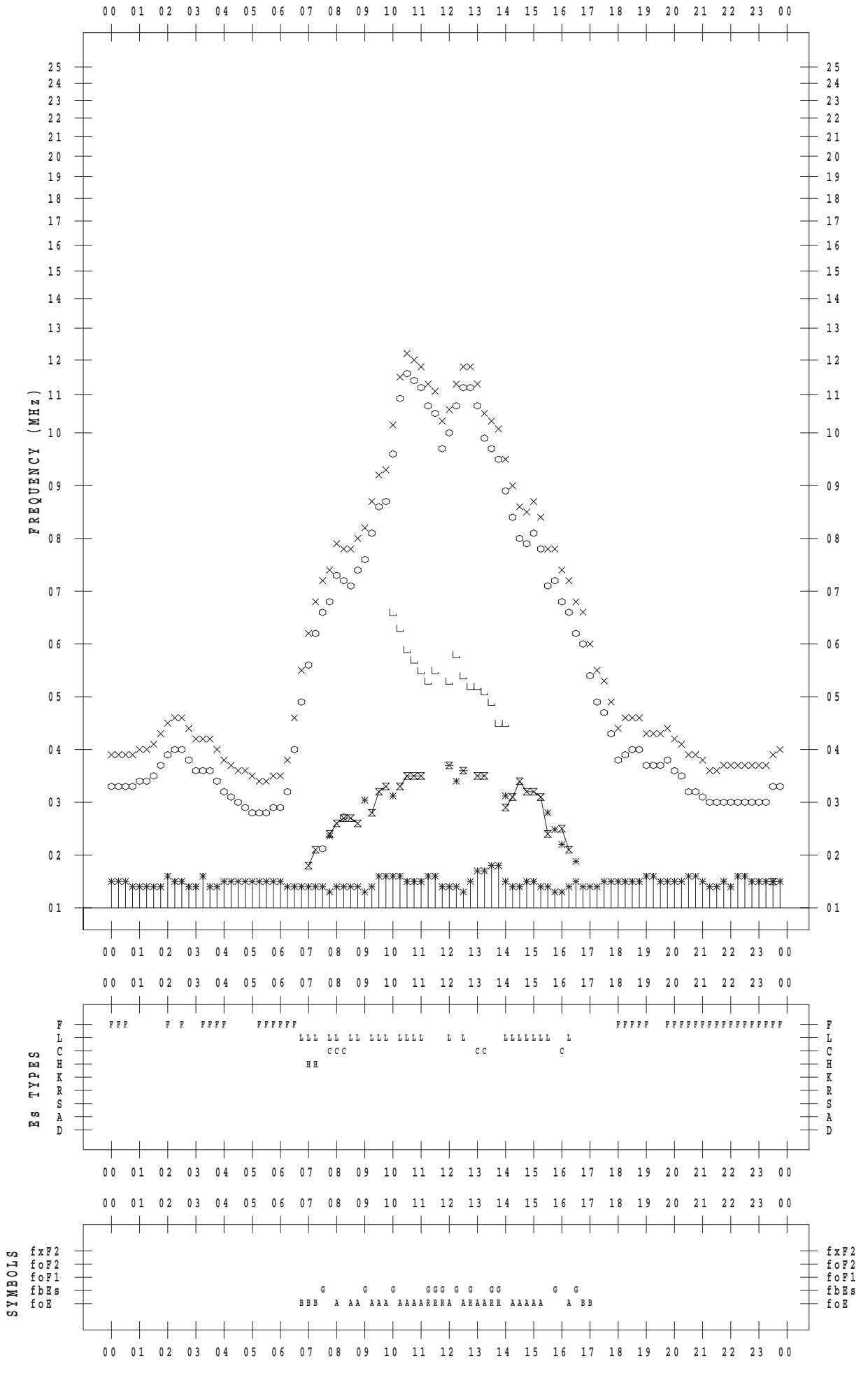
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/24

135 °E MEAN TIME



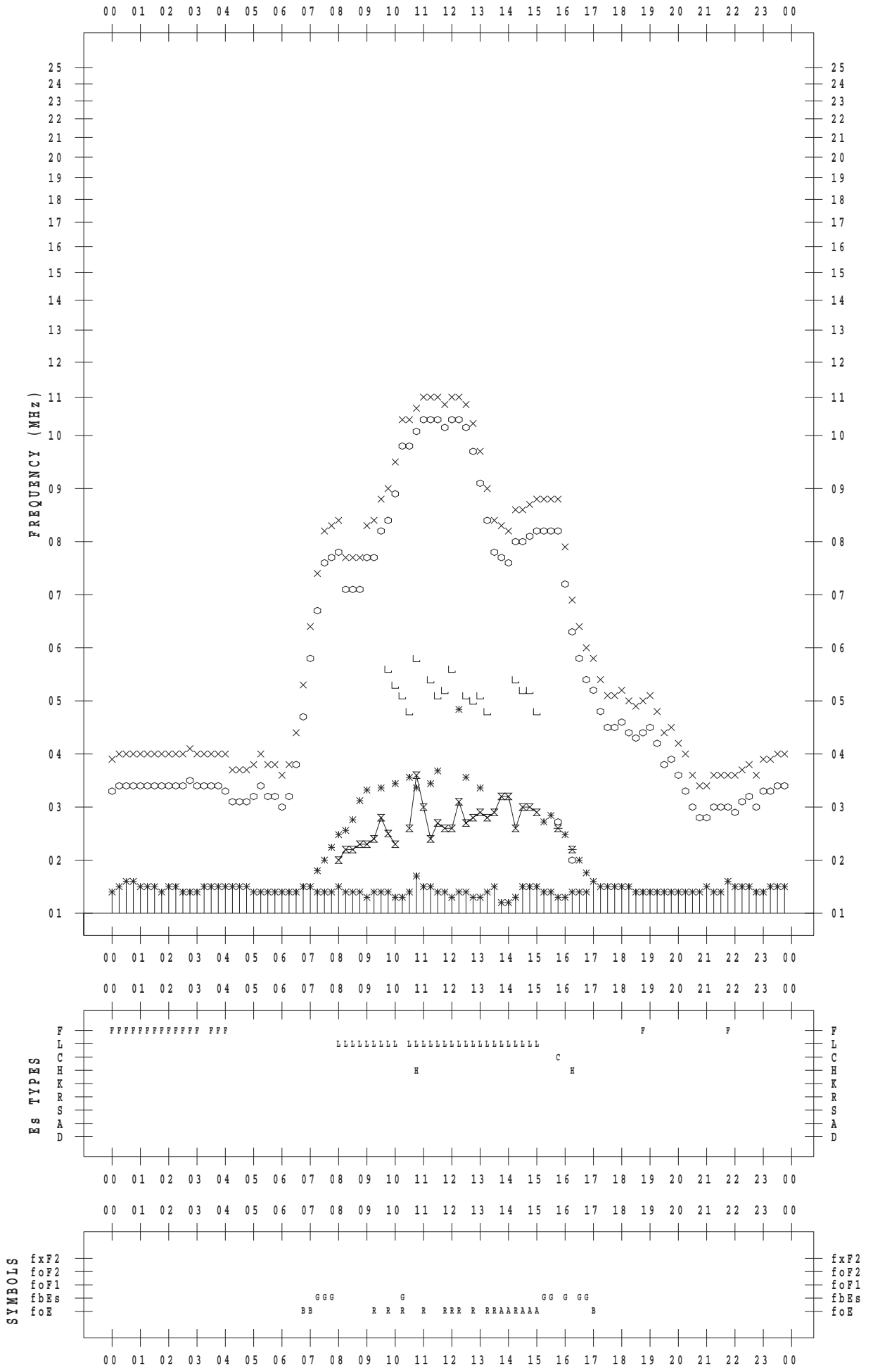
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/25

135 °E MEAN TIME



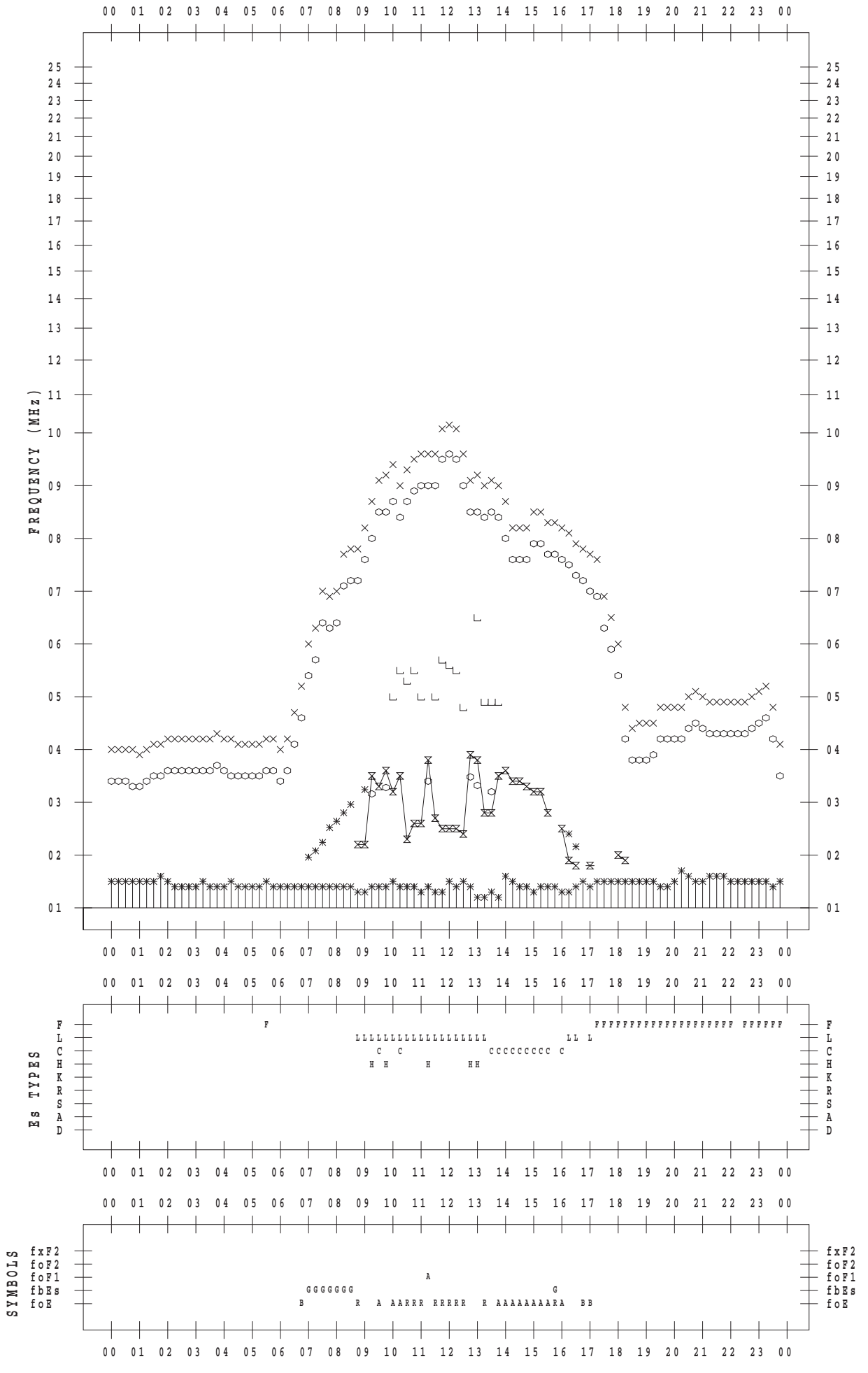
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/26

135 °E MEAN TIME



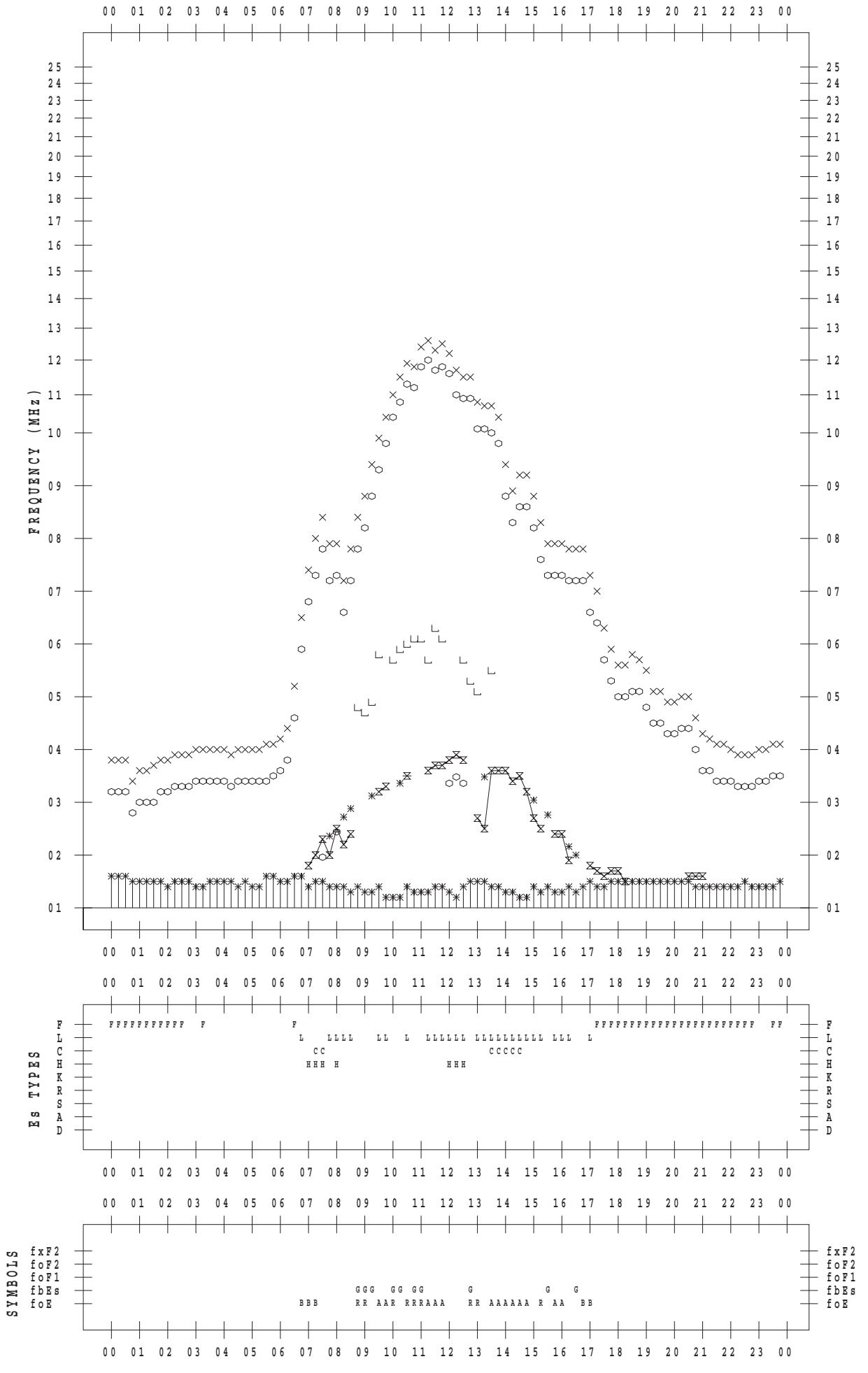
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/27

135 °E MEAN TIME



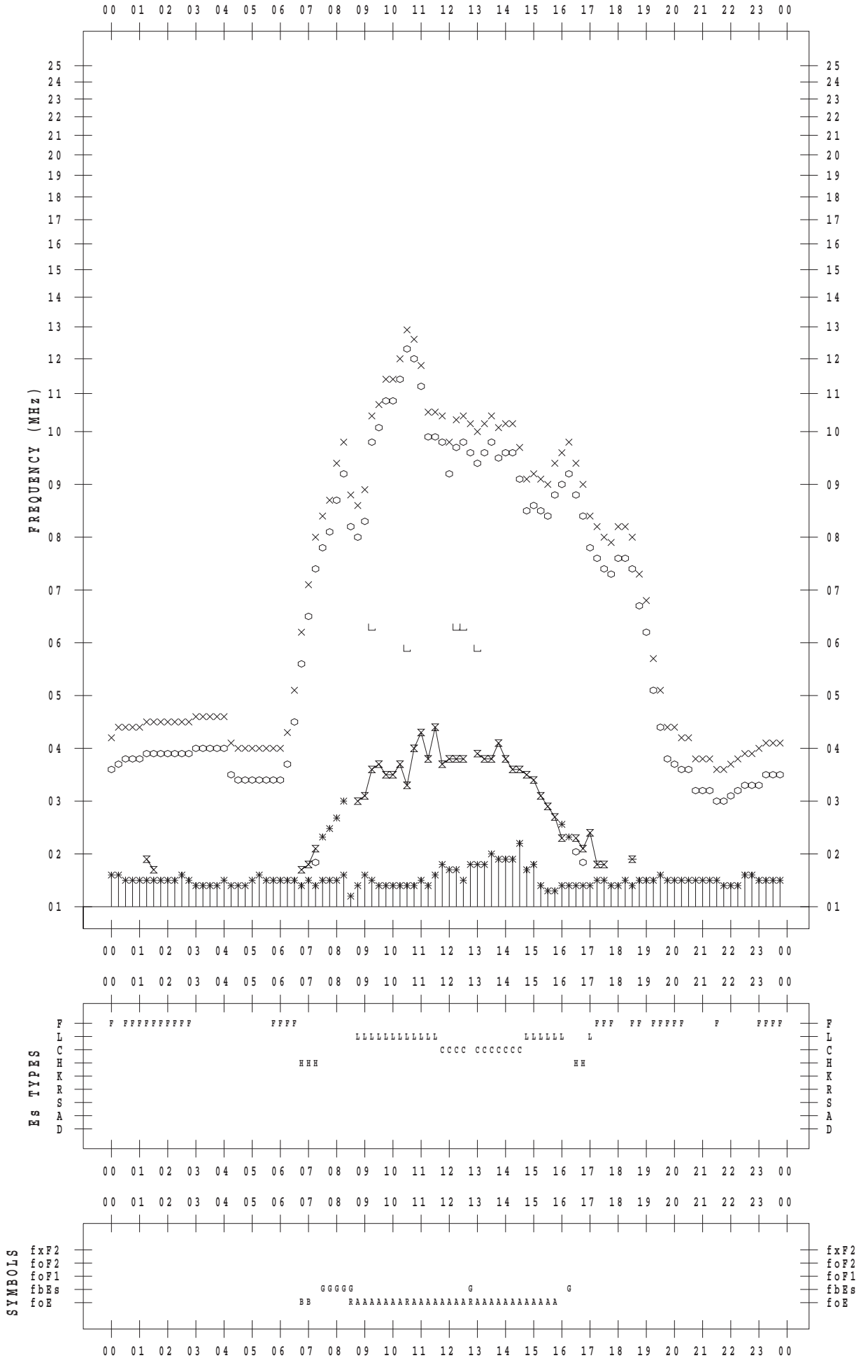
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/28

135 °E MEAN TIME



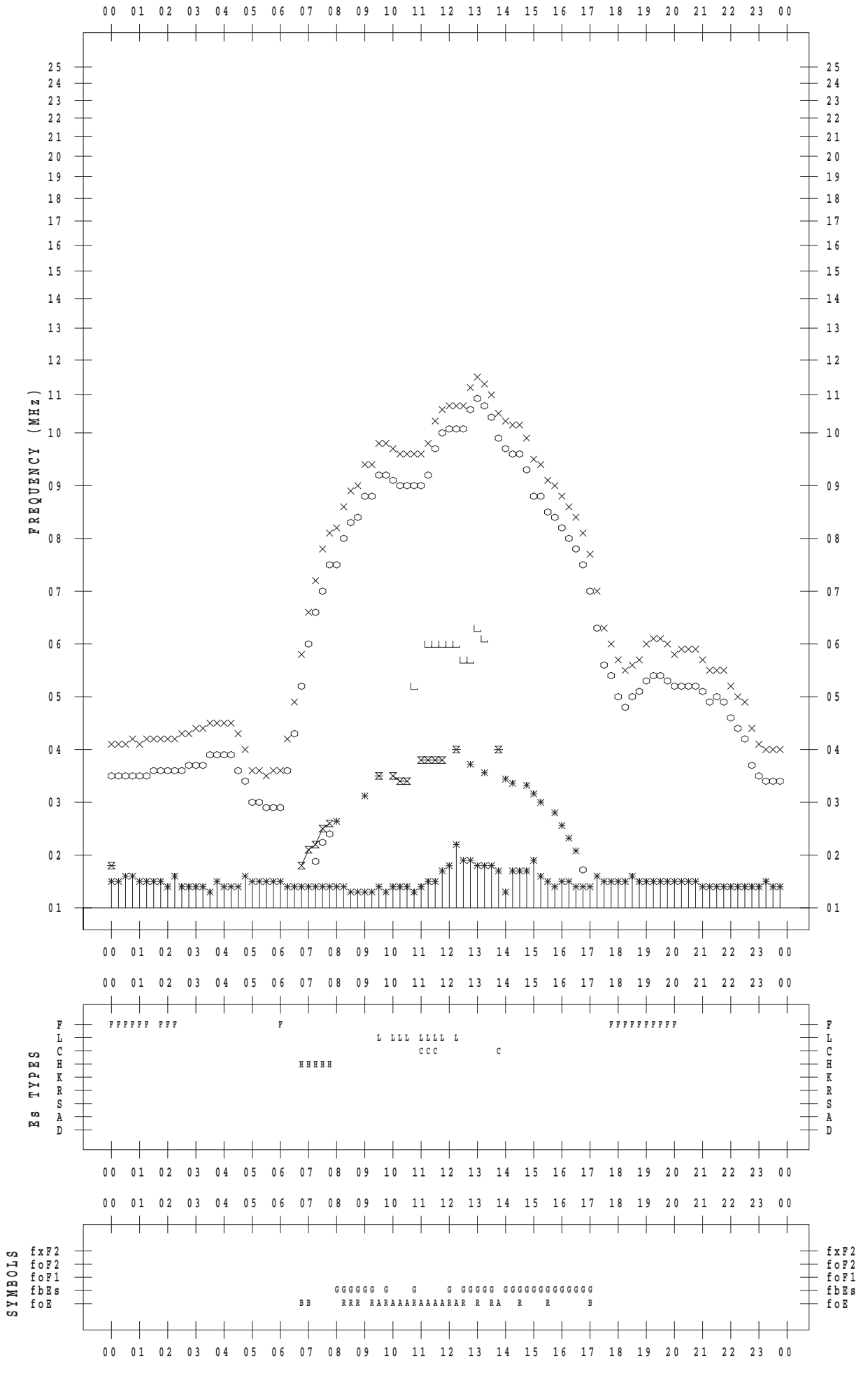
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/29

135 °E MEAN TIME



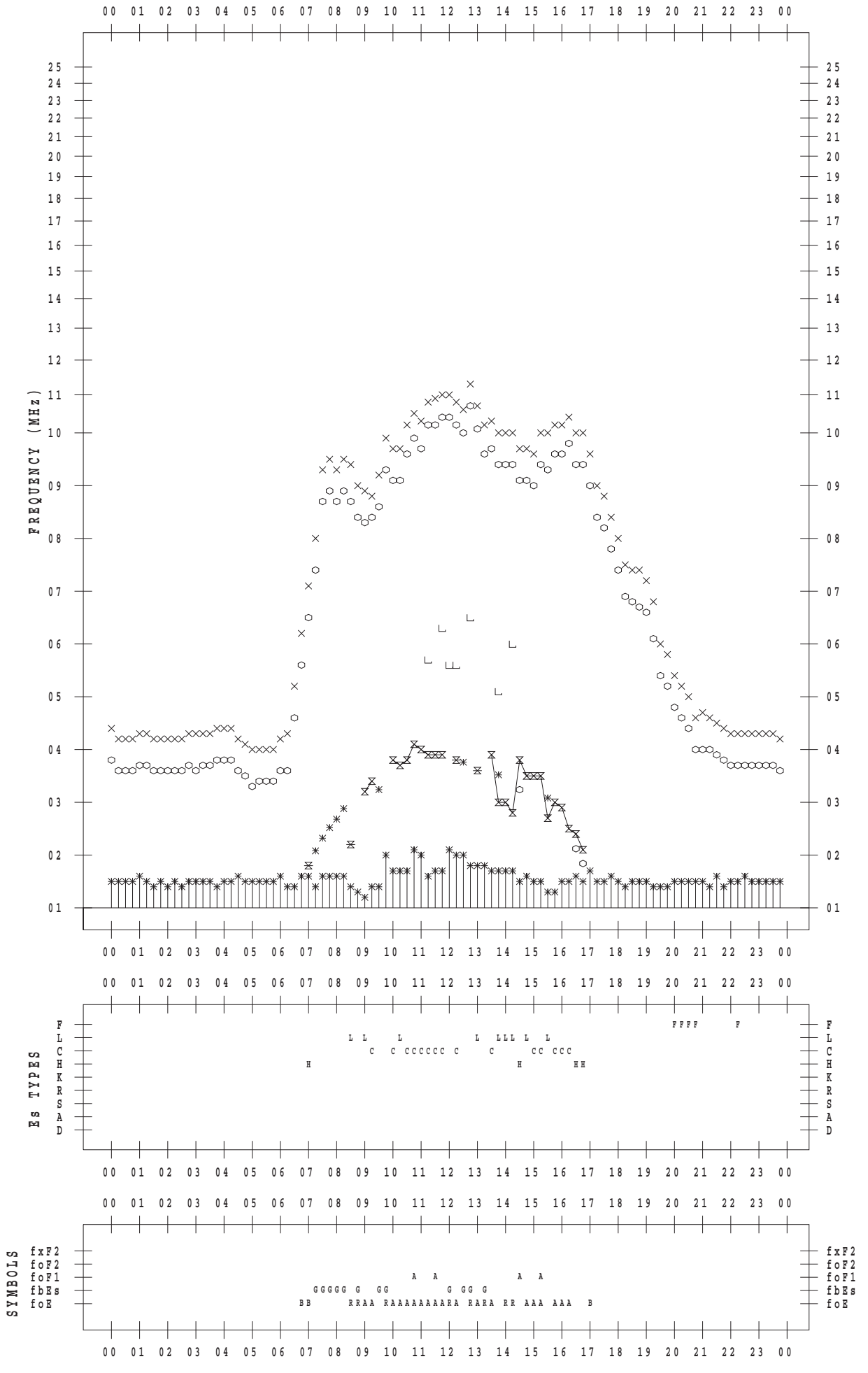
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/30

135 °E MEAN TIME



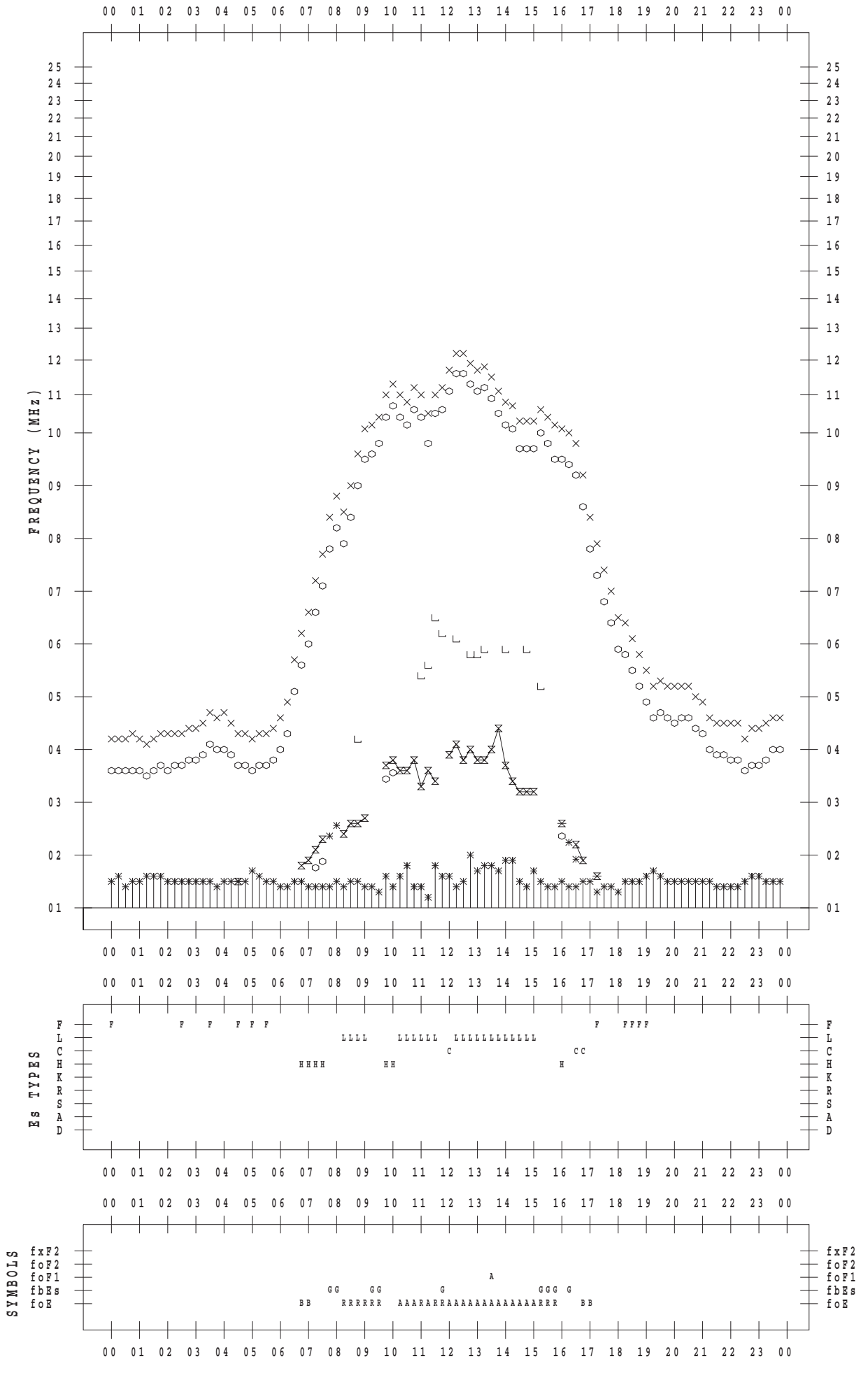
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 1/31

135 °E MEAN TIME



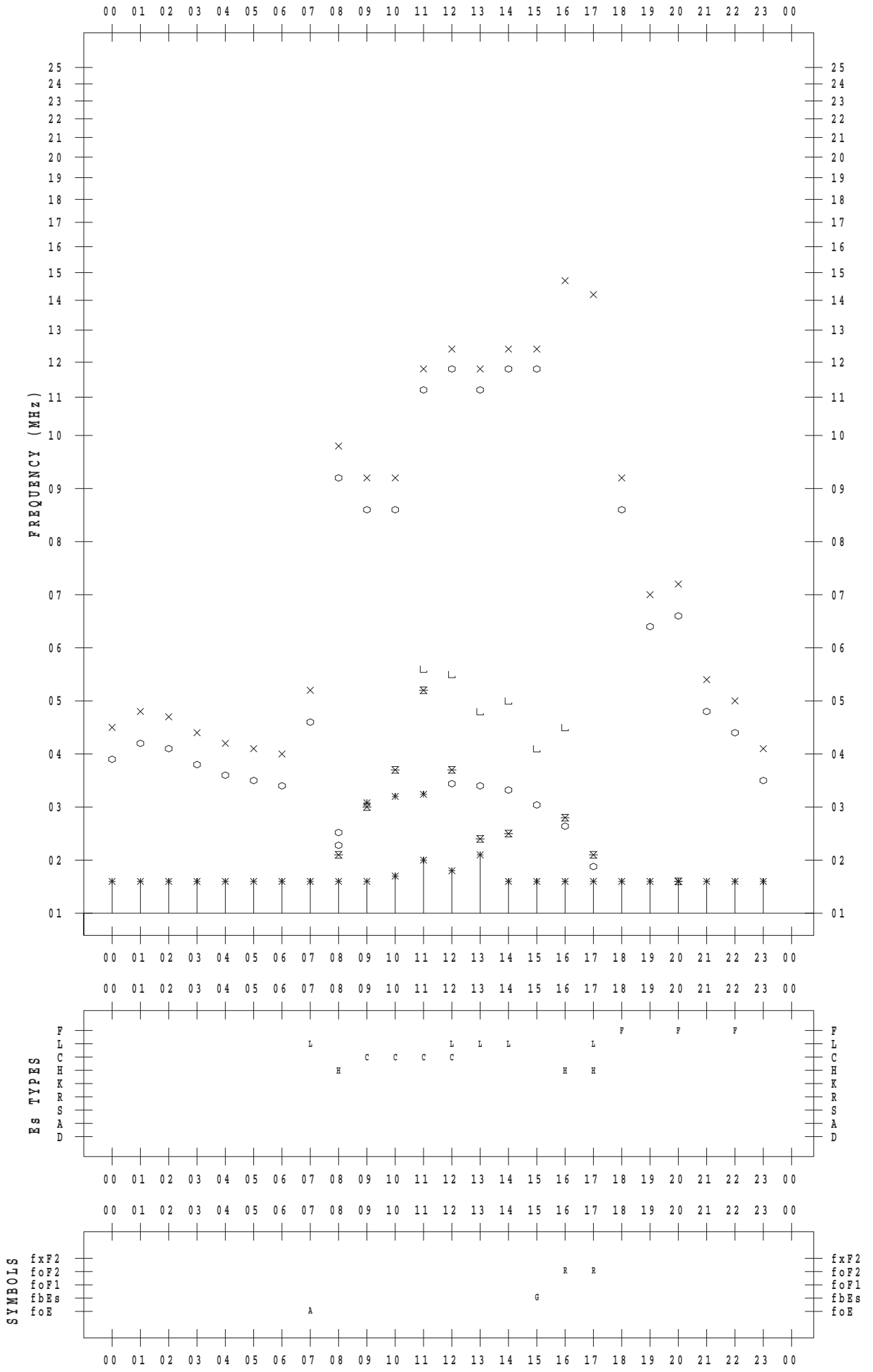
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 1

135 °E MEAN TIME



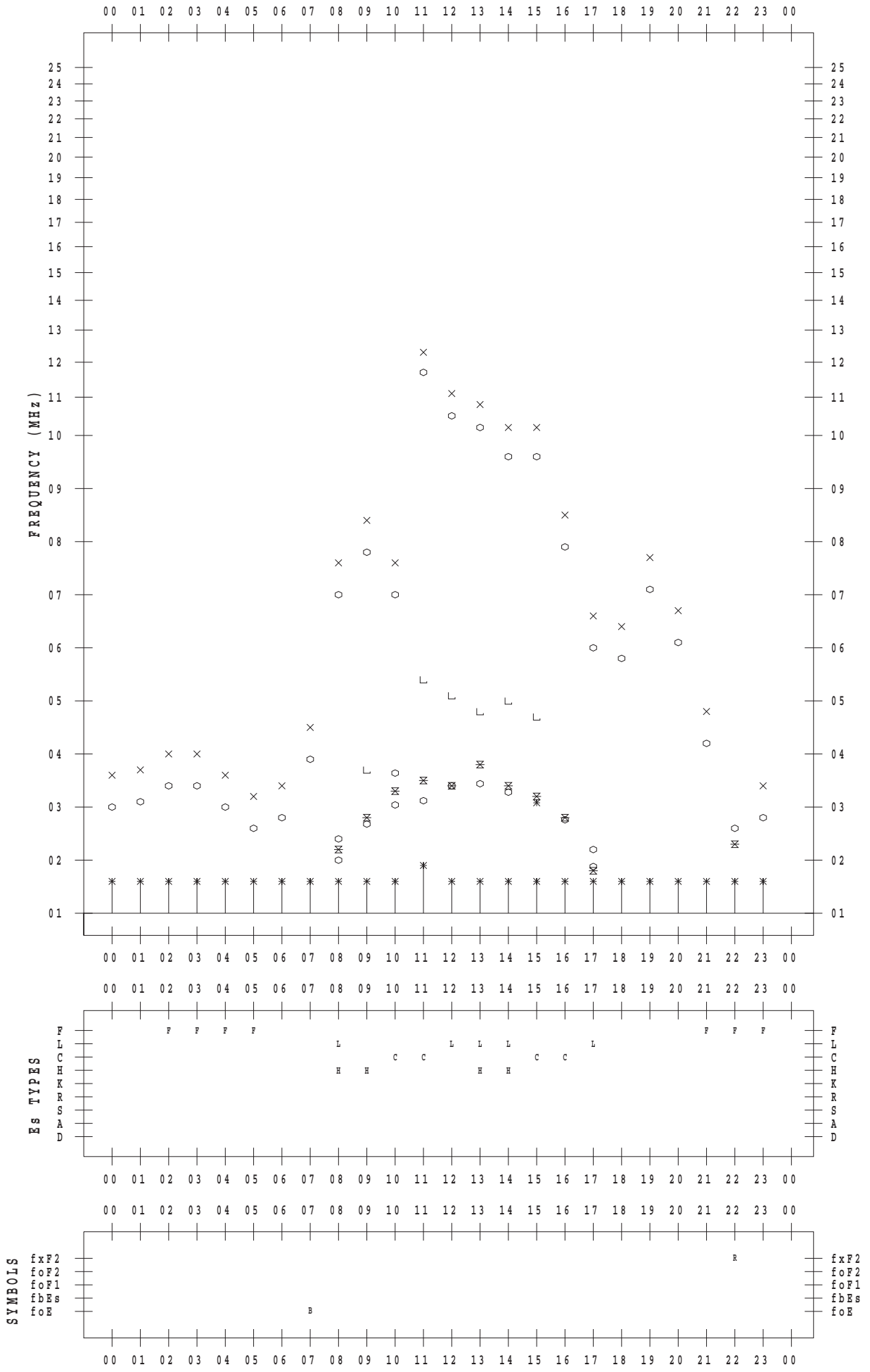
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 2

135 °E MEAN TIME



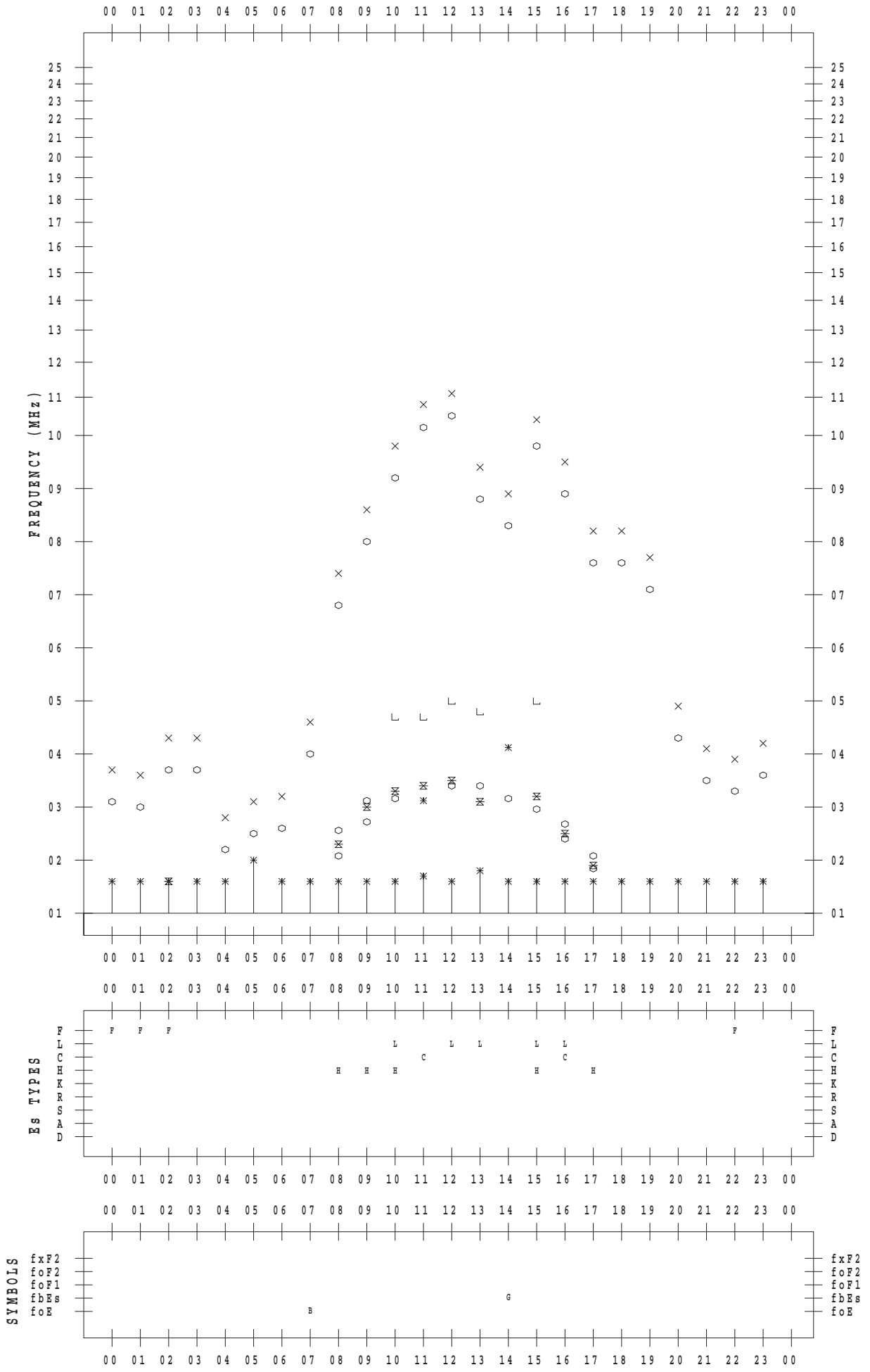
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 3

135 °E MEAN TIME



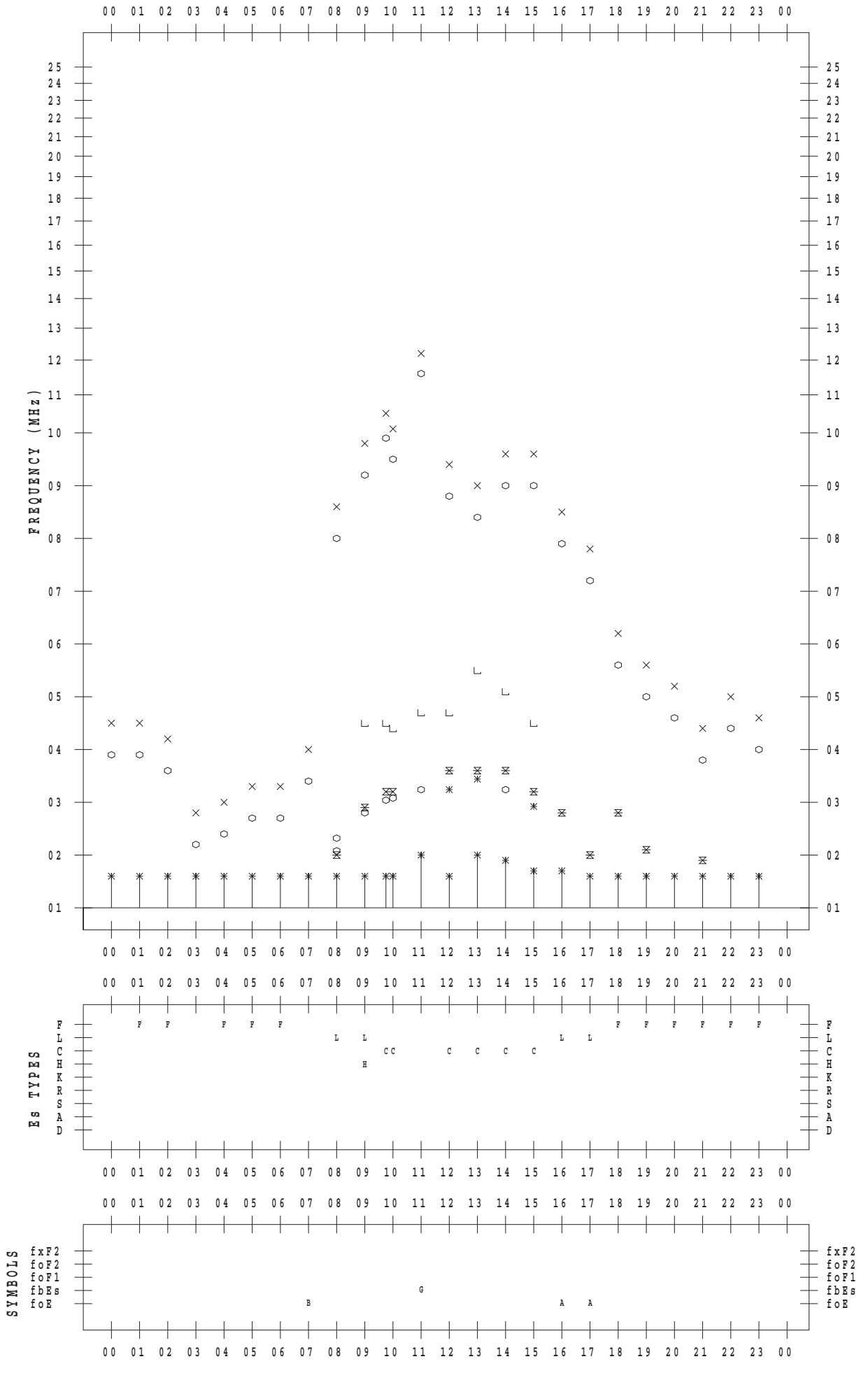
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 4

135 °E MEAN TIME



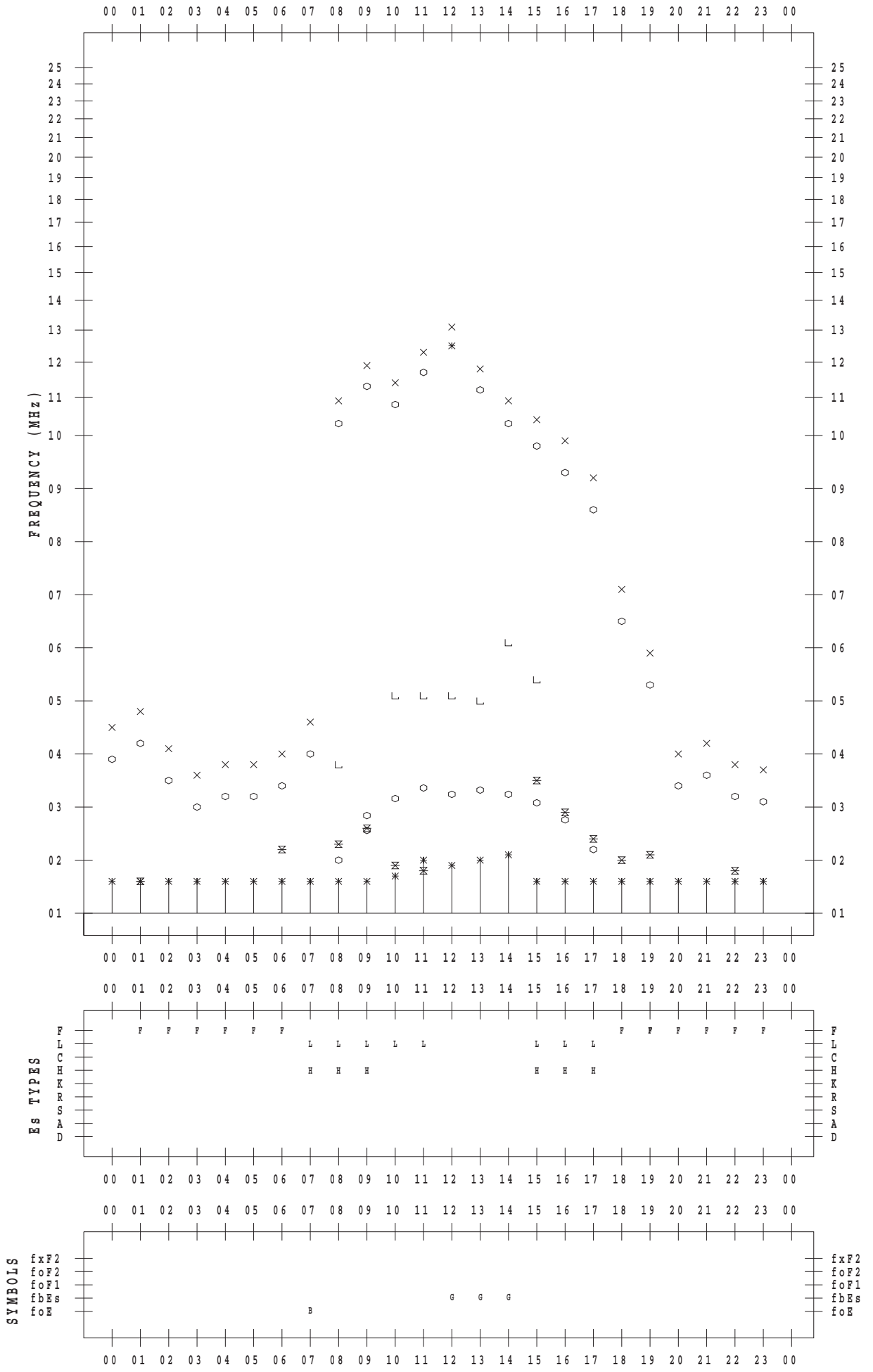
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 5

135 °E MEAN TIME



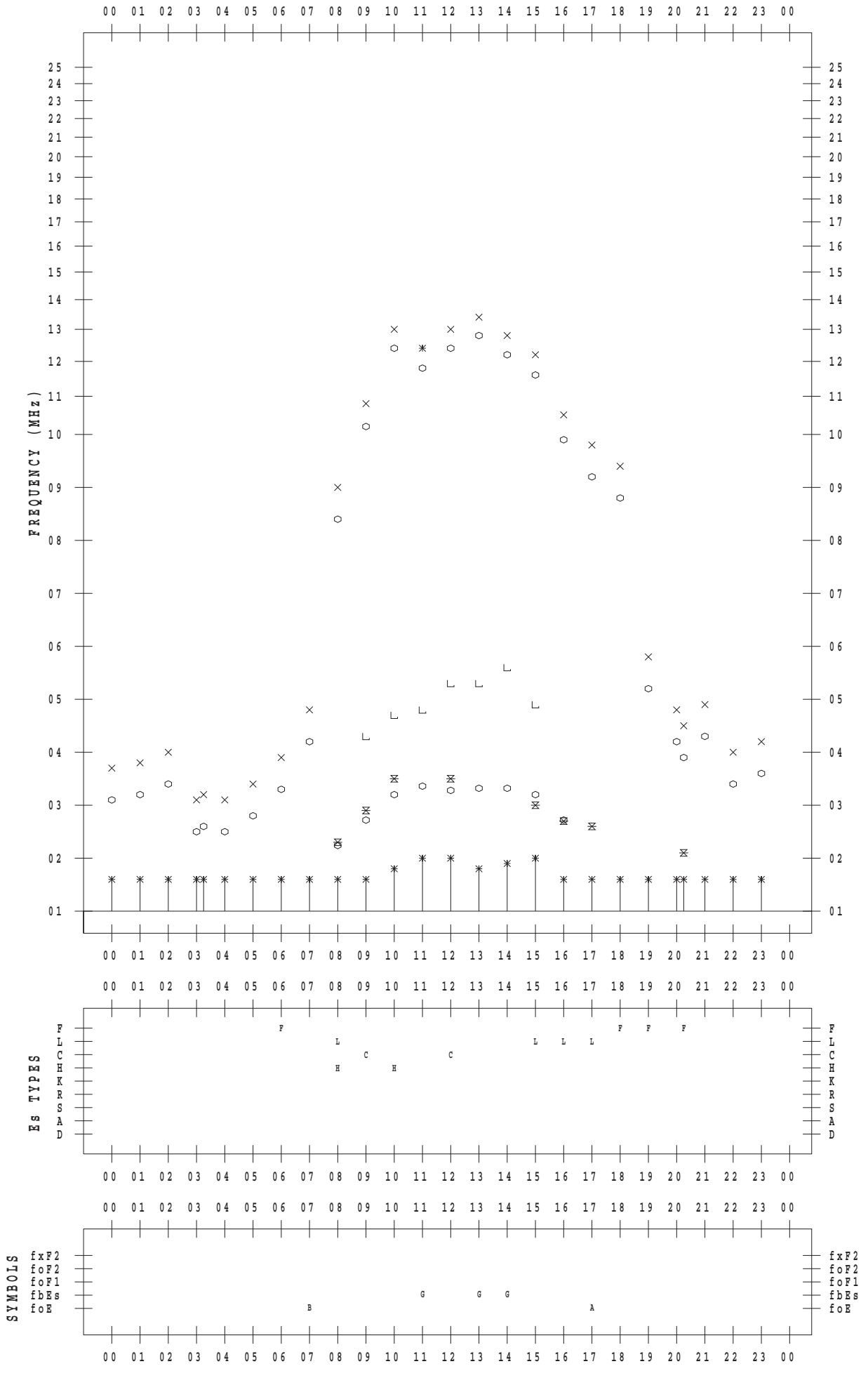
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 6

135 °E MEAN TIME



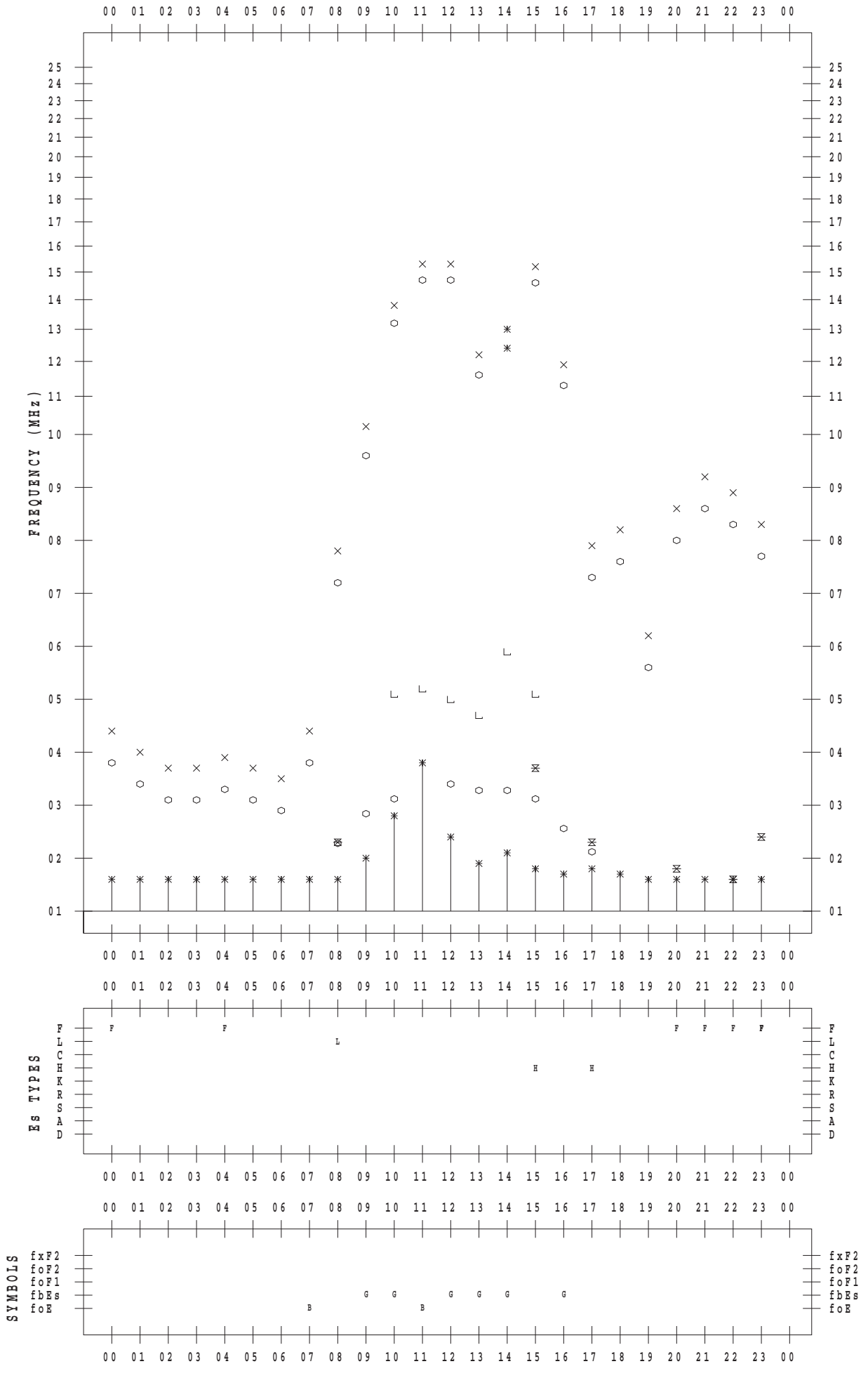
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 7

135 °E MEAN TIME



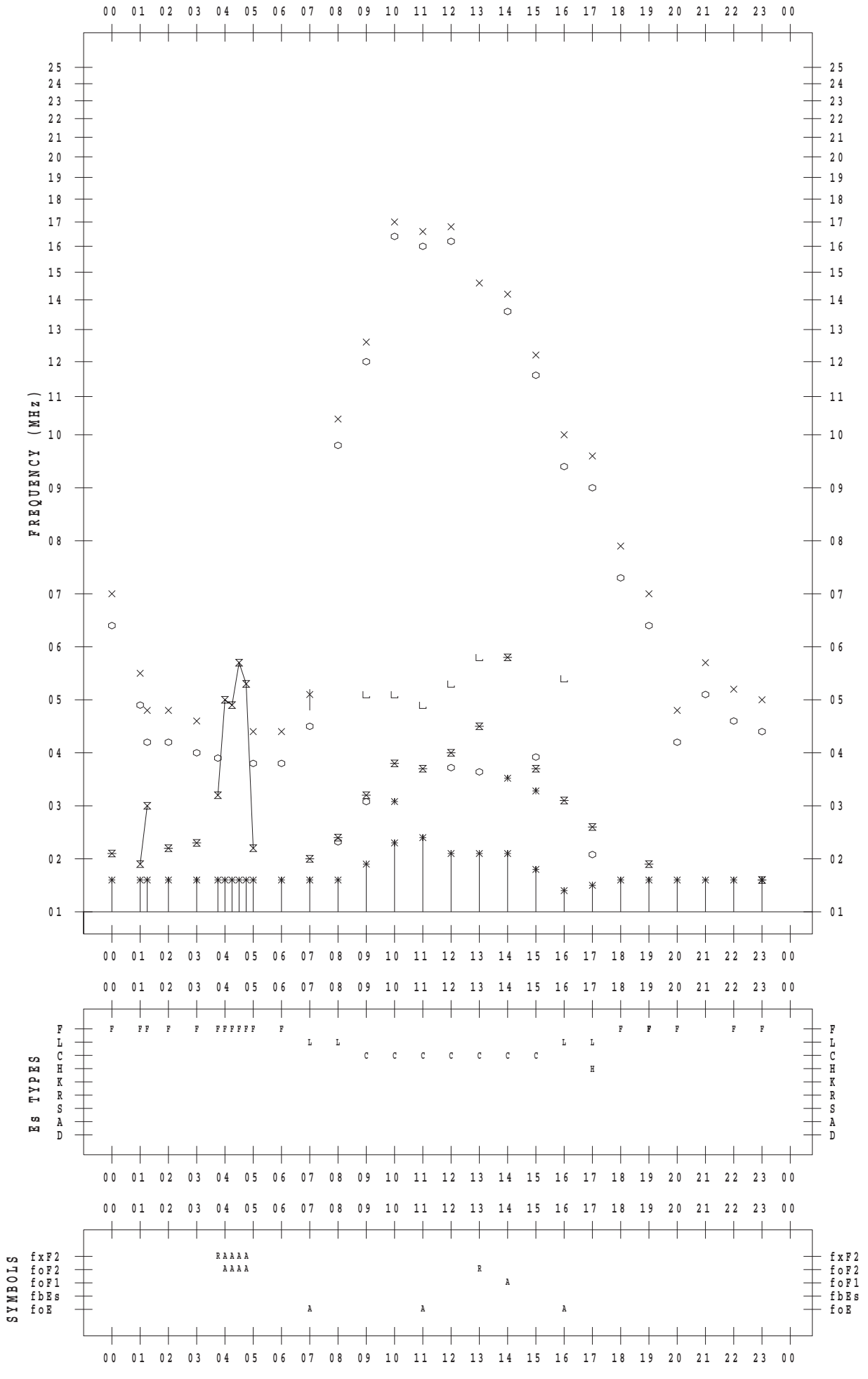
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 8

135 °E MEAN TIME



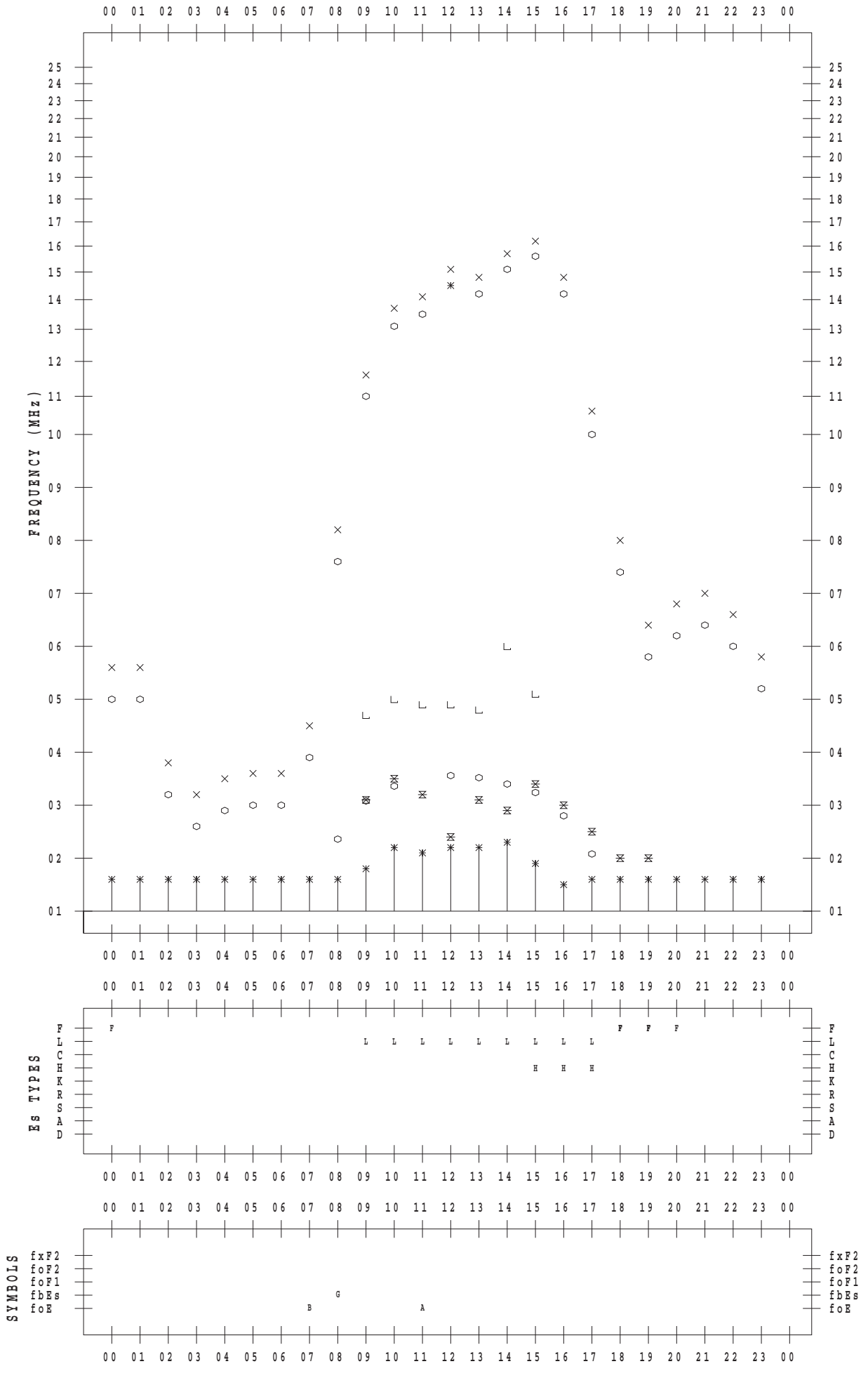
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/ 9

135 °E MEAN TIME



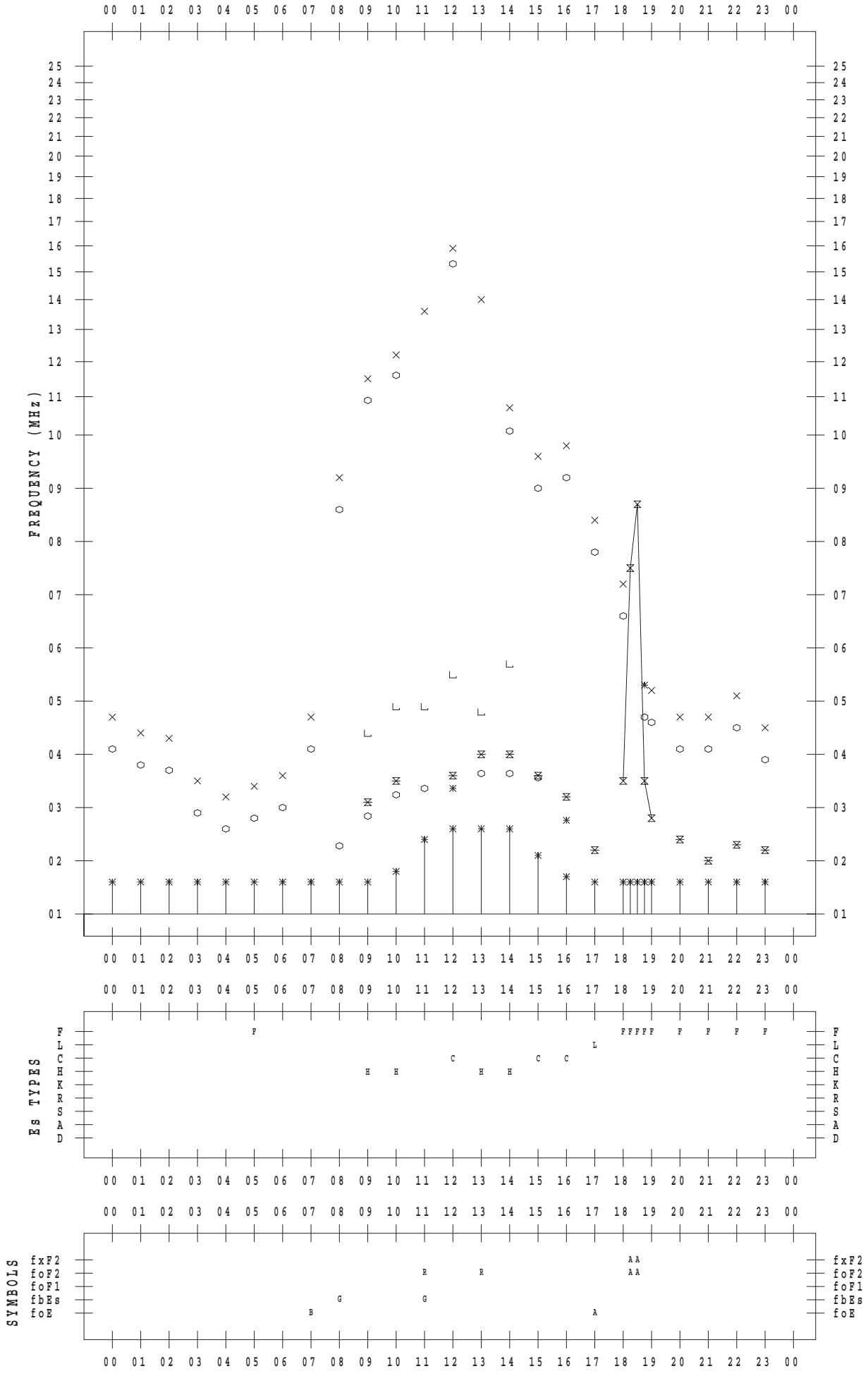
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/10

135 °E MEAN TIME



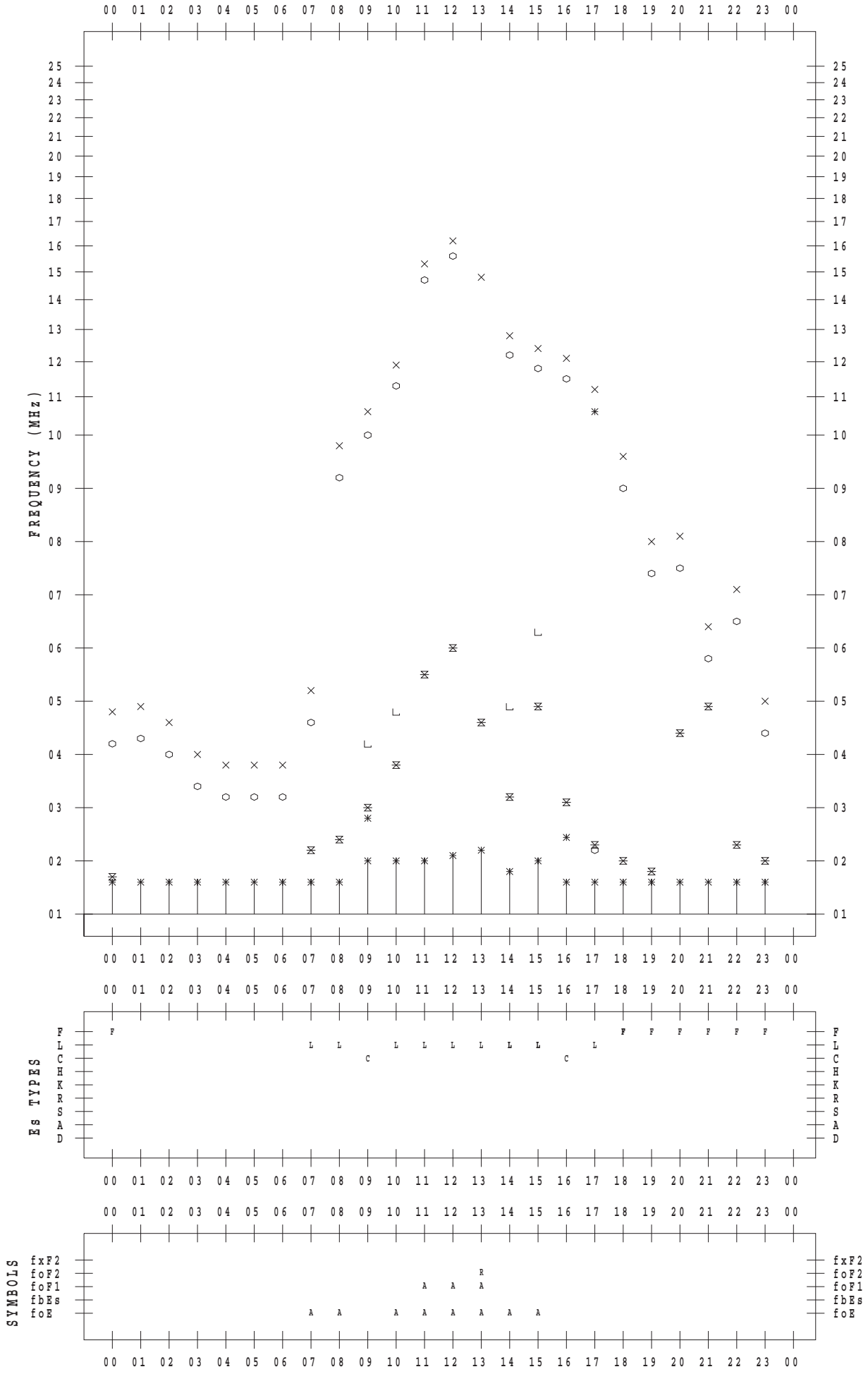
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/11

135 °E MEAN TIME



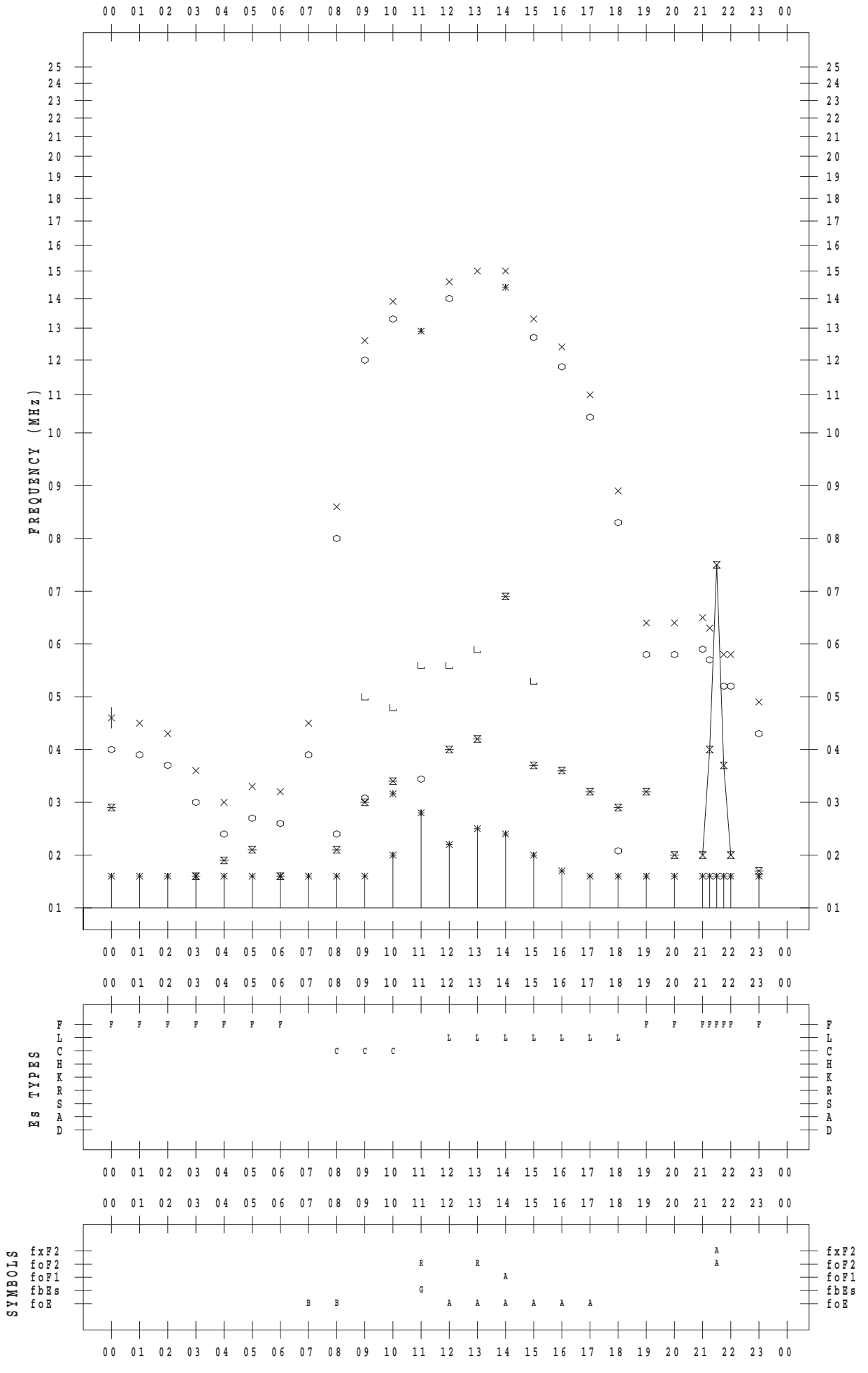
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/12

135 °E MEAN TIME



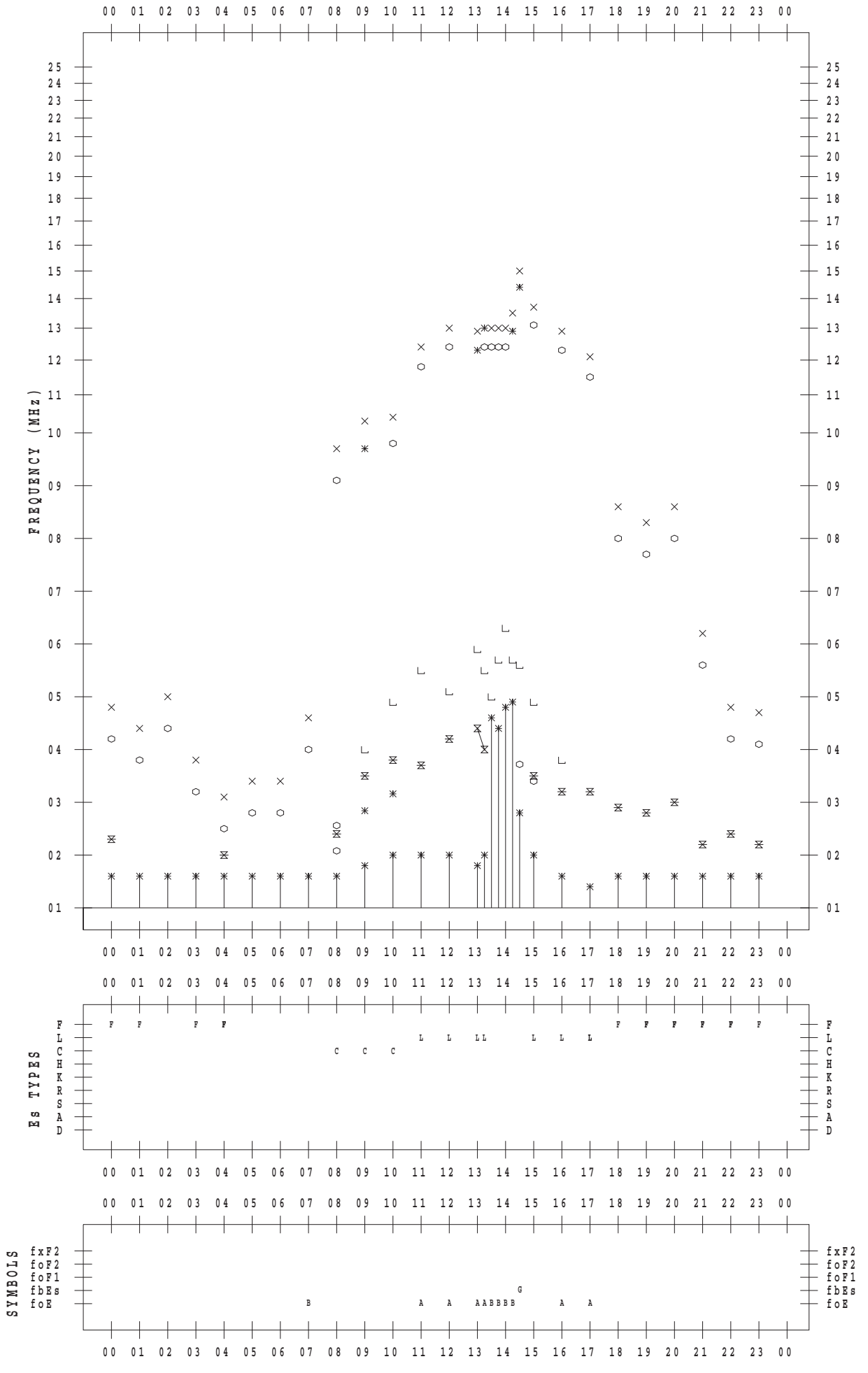
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/13

135 °E MEAN TIME



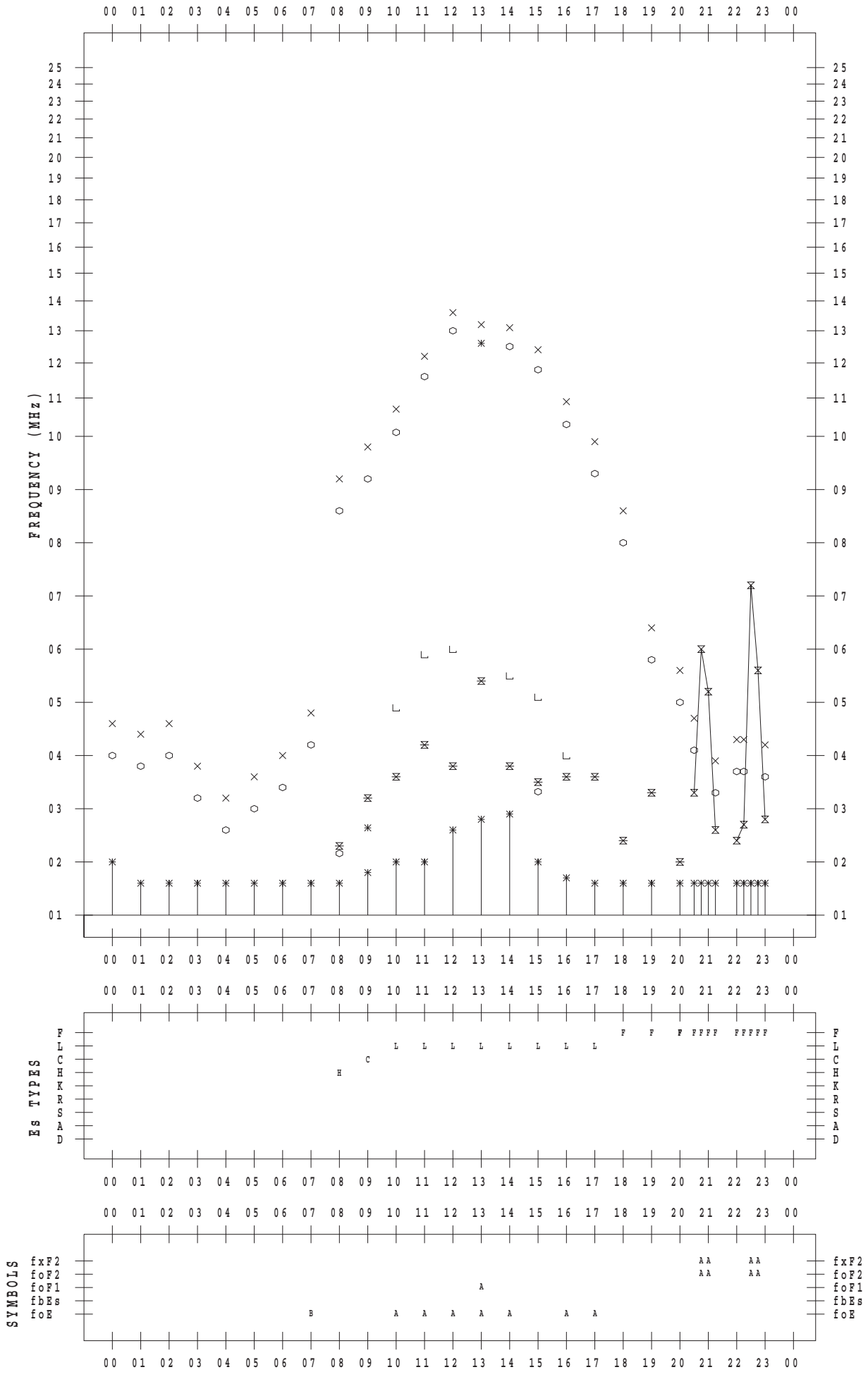
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/14

135 °E MEAN TIME



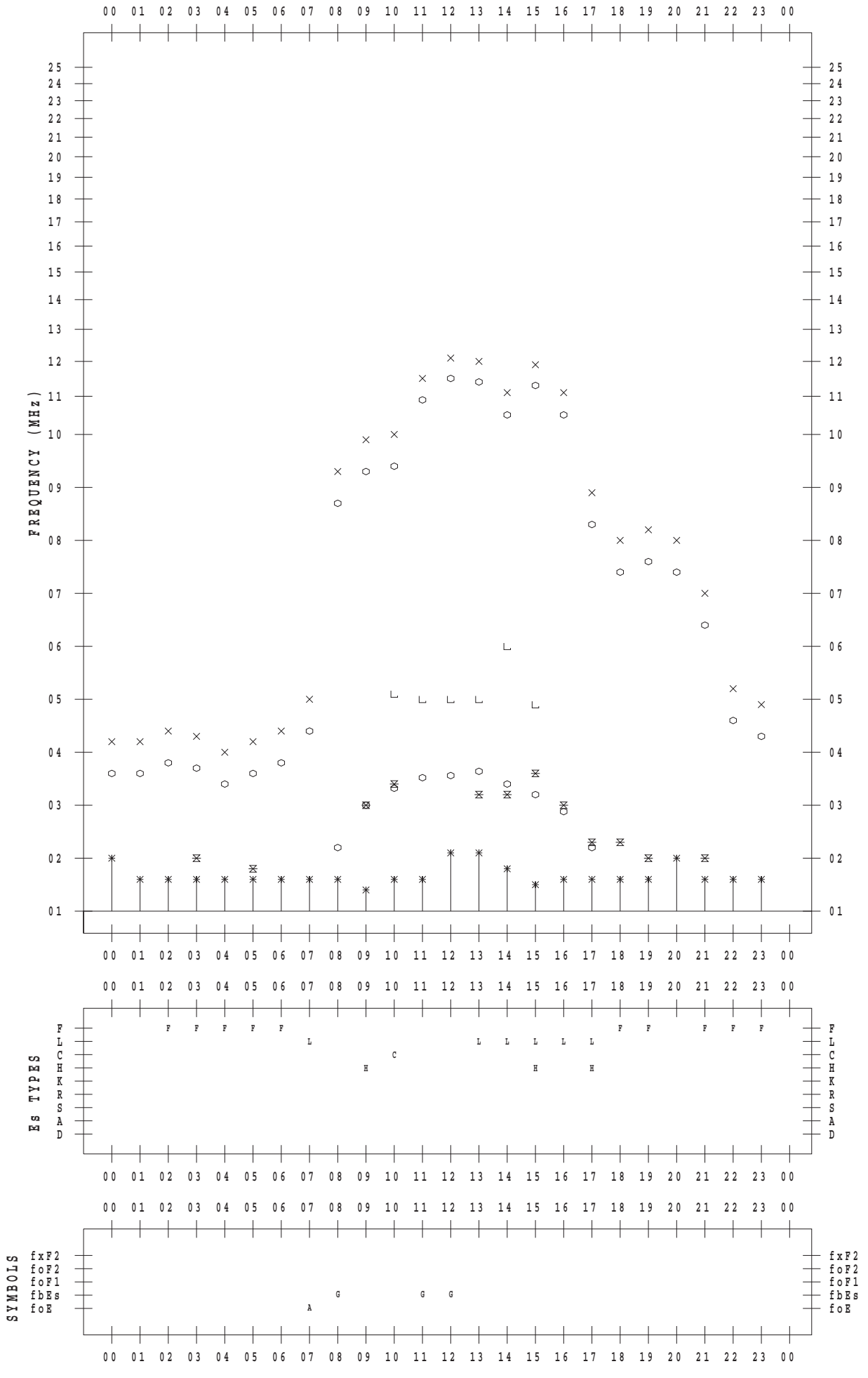
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/15

135 °E MEAN TIME



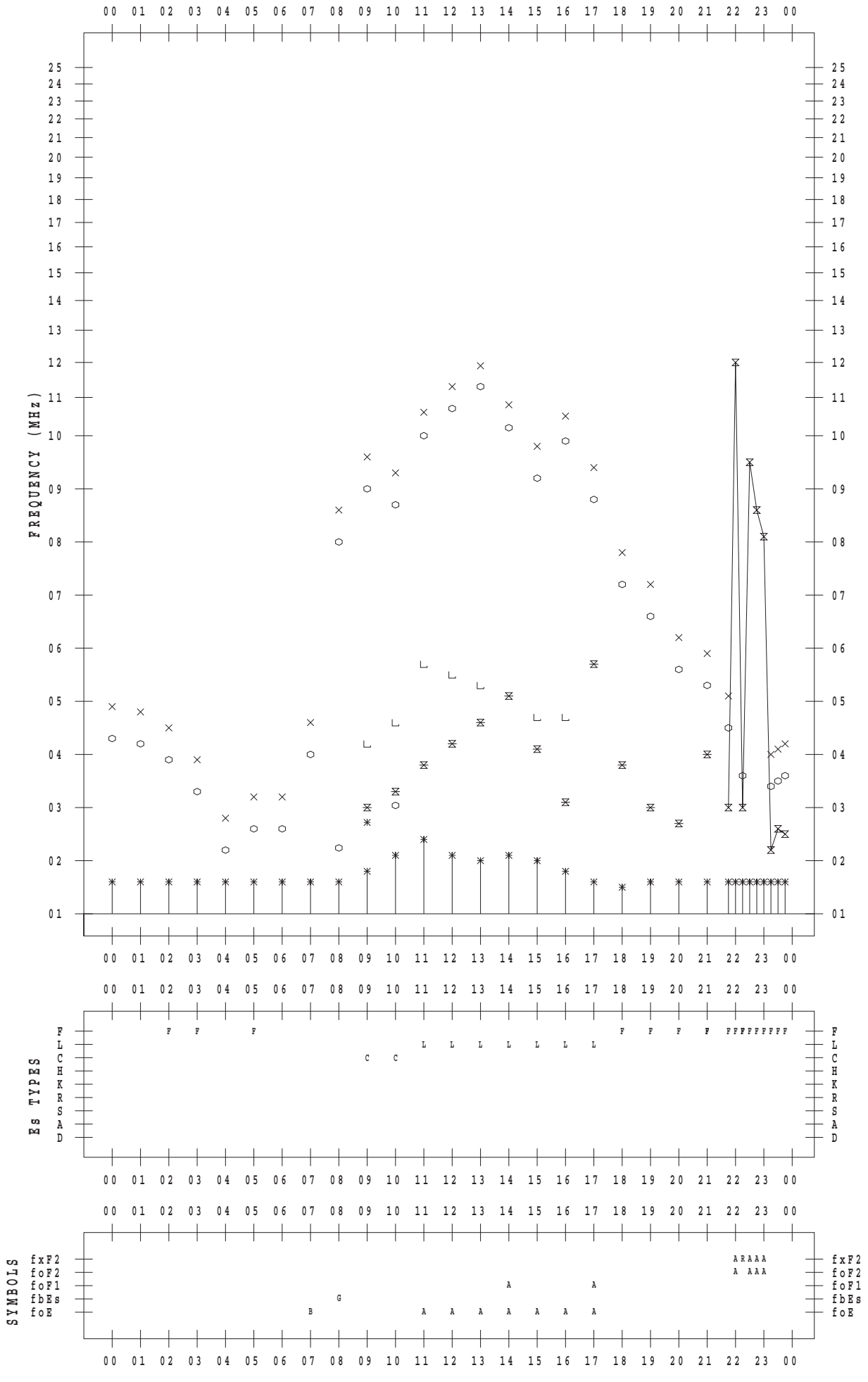
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/16

135 °E MEAN TIME



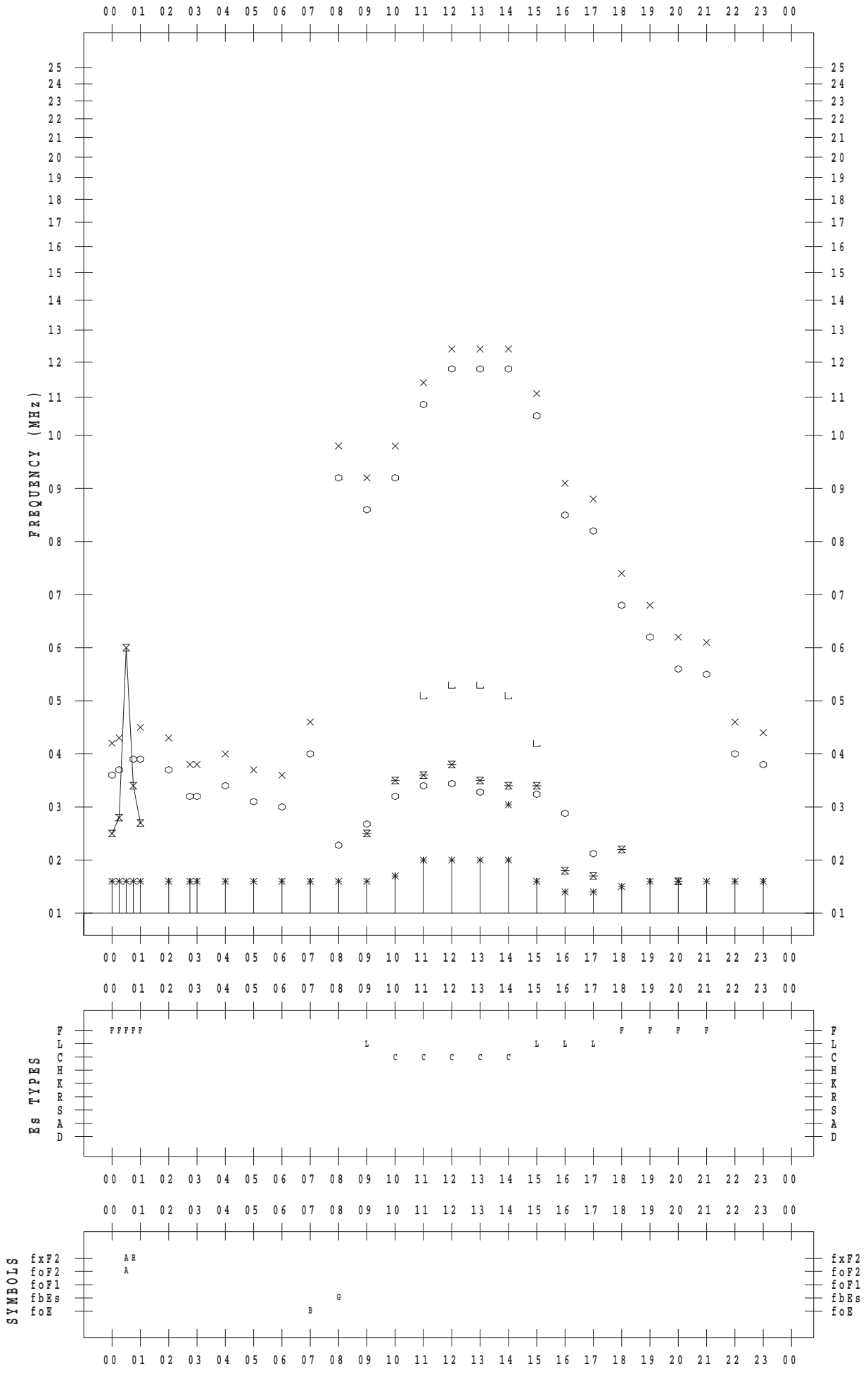
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/17

135 °E MEAN TIME



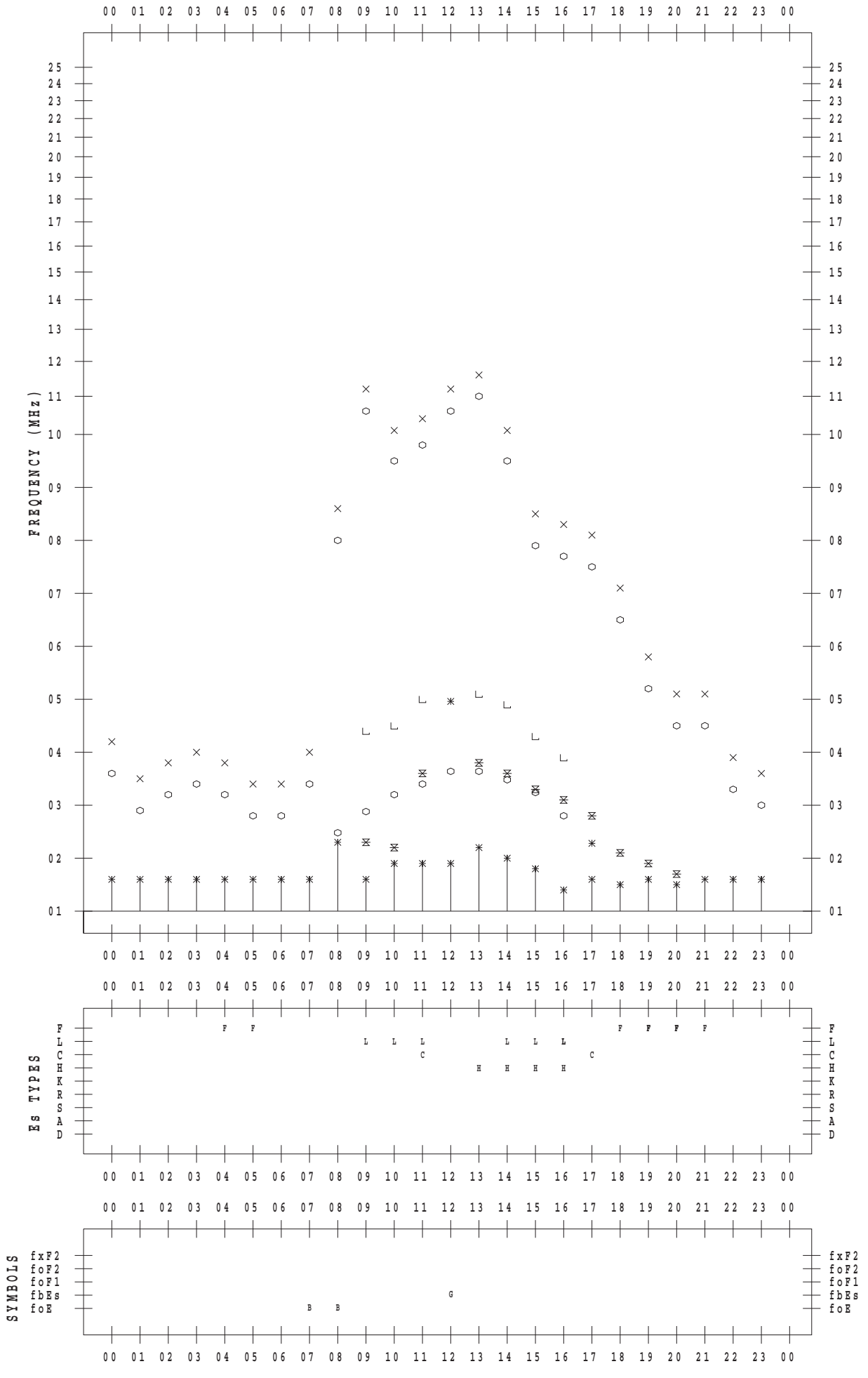
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/18

135 °E MEAN TIME



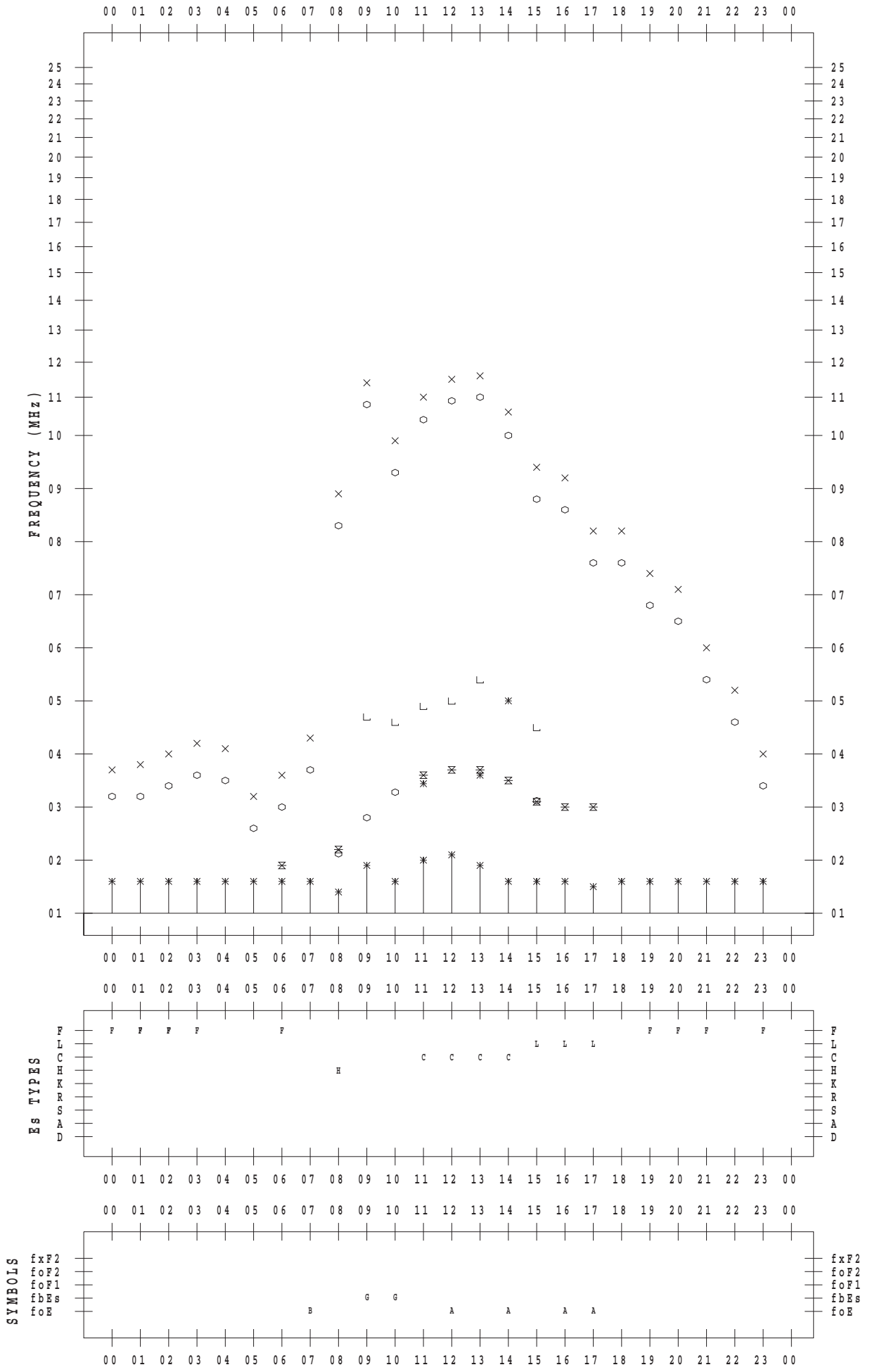
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/19

135 °E MEAN TIME



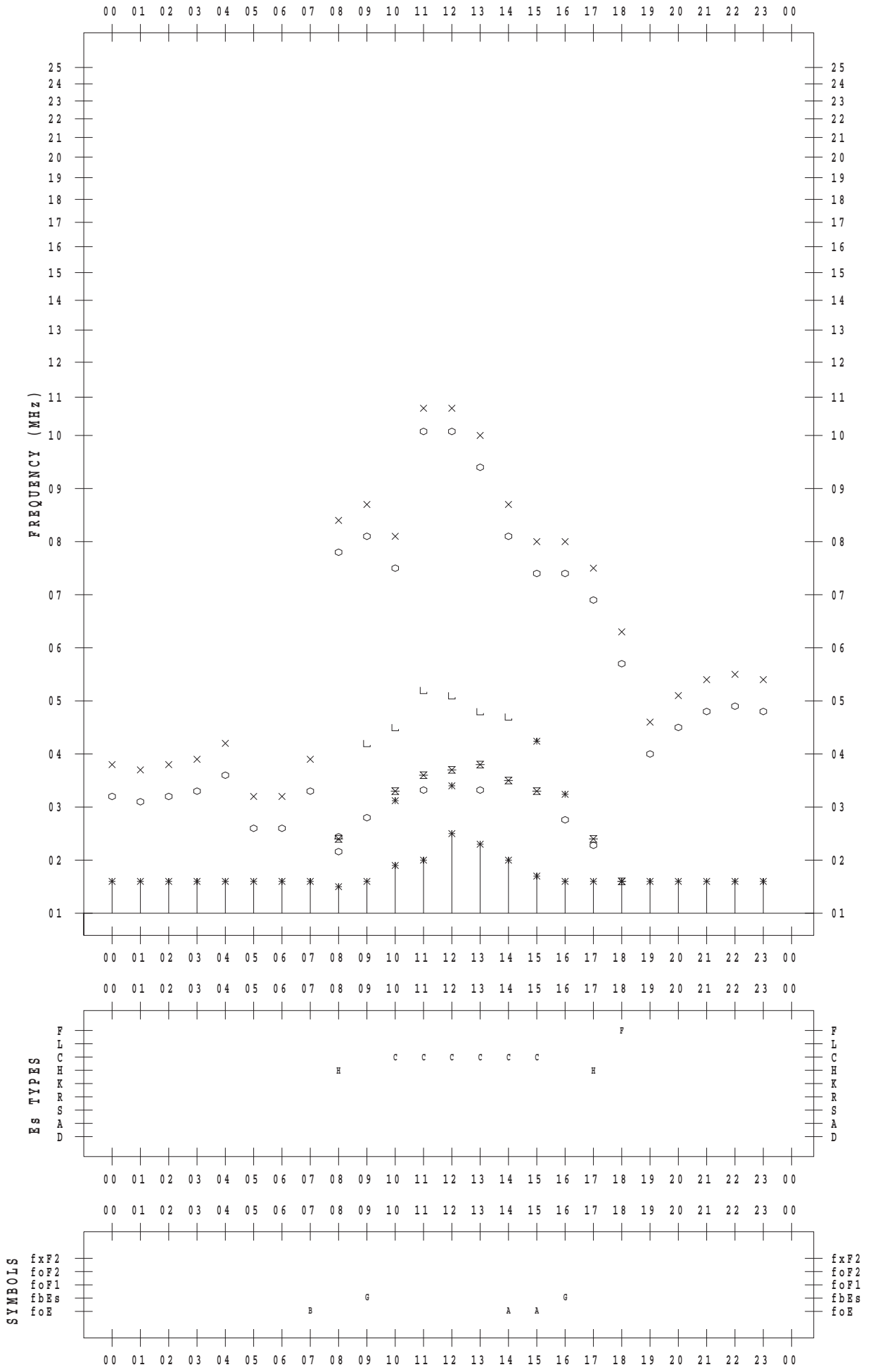
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/20

135 °E MEAN TIME



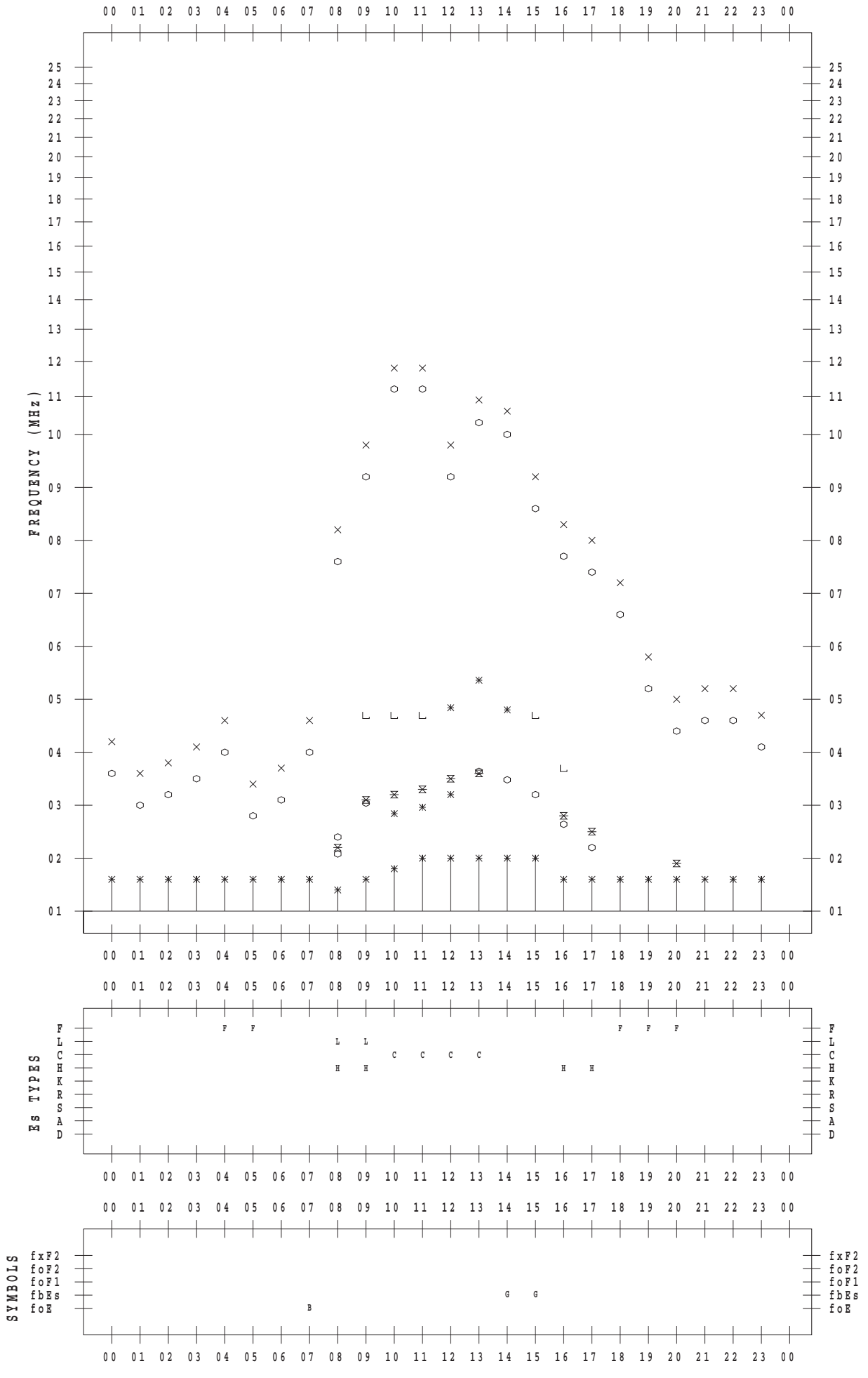
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/21

135 °E MEAN TIME



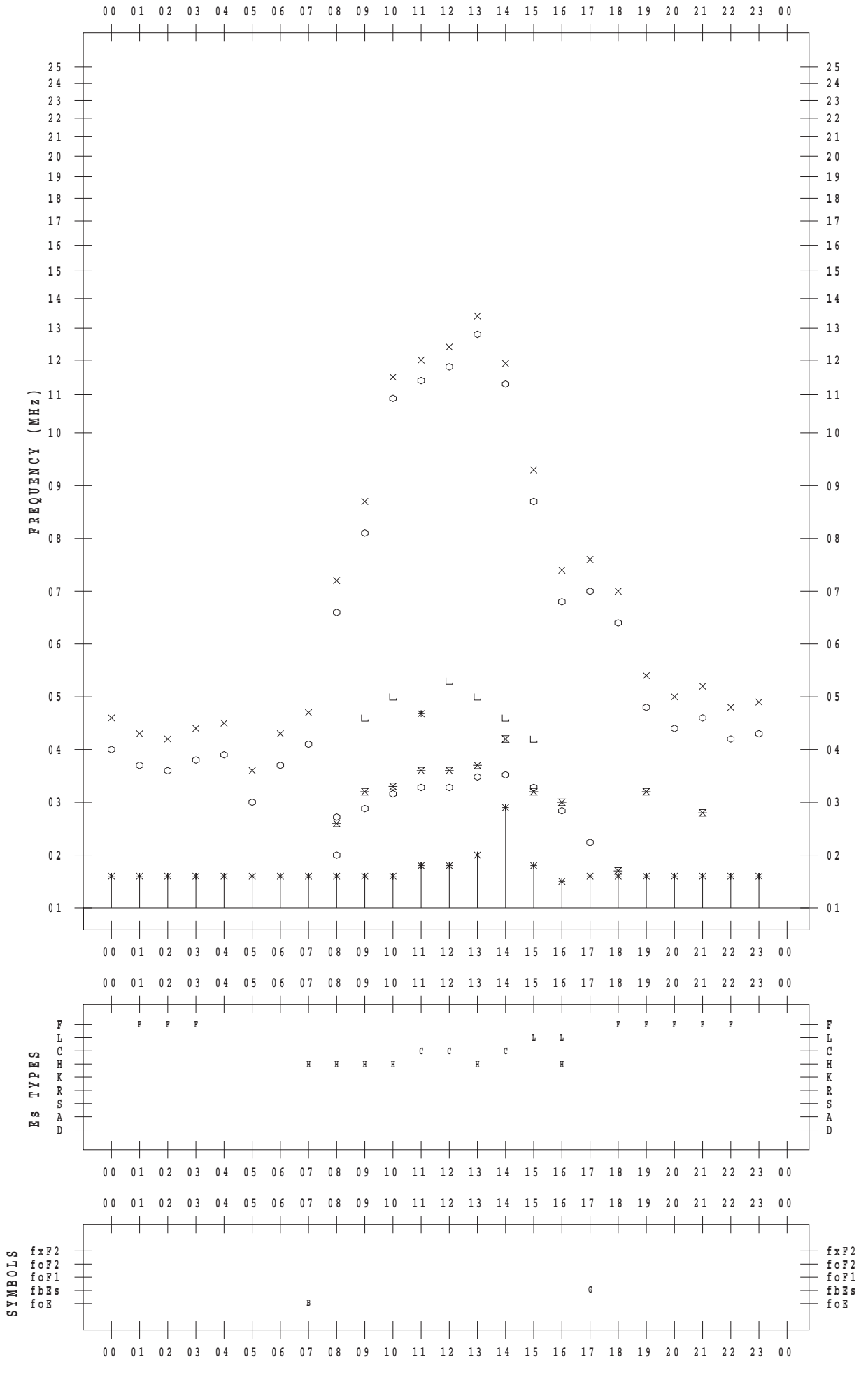
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/22

135 °E MEAN TIME



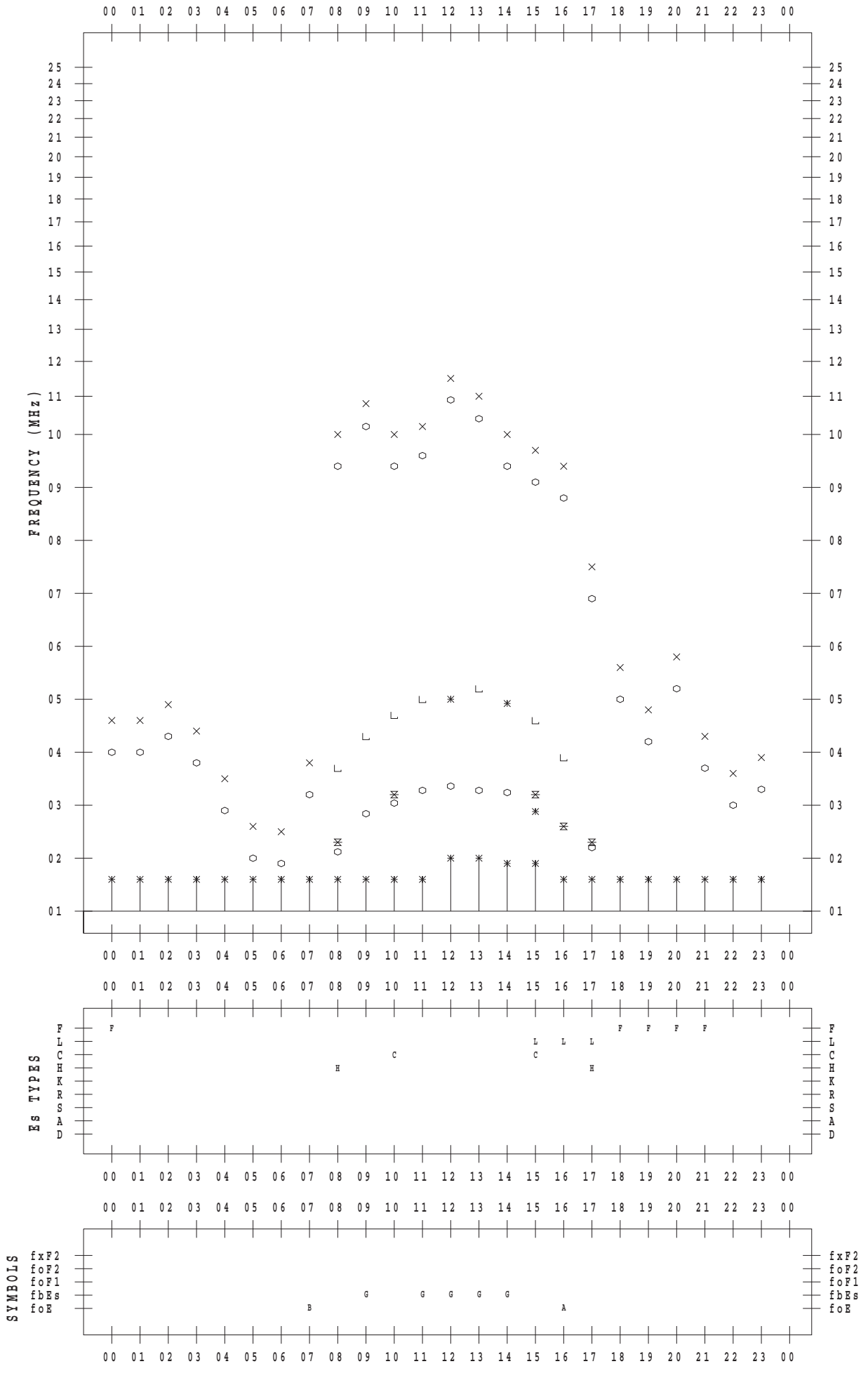
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/23

135 °E MEAN TIME



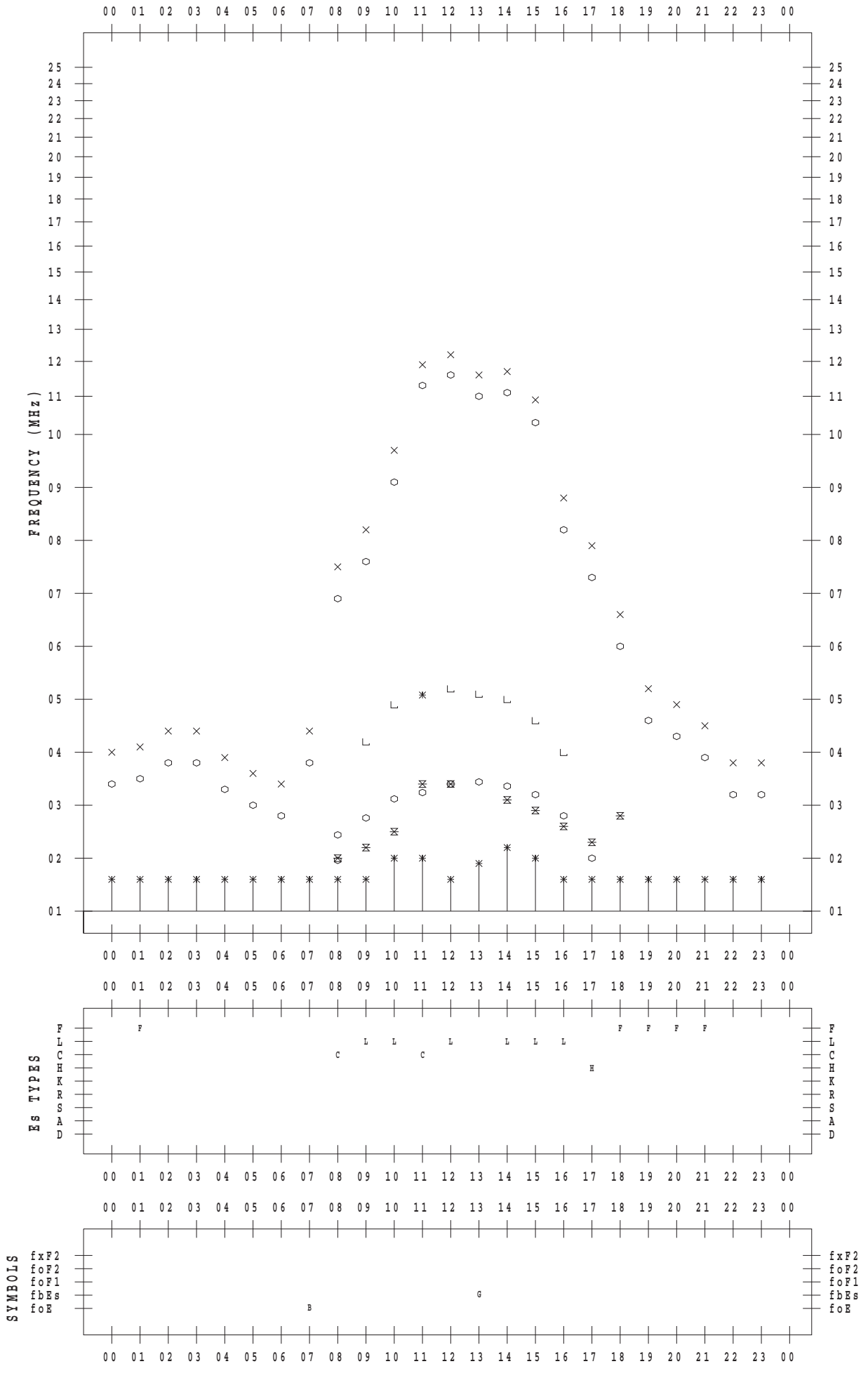
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/24

135 °E MEAN TIME



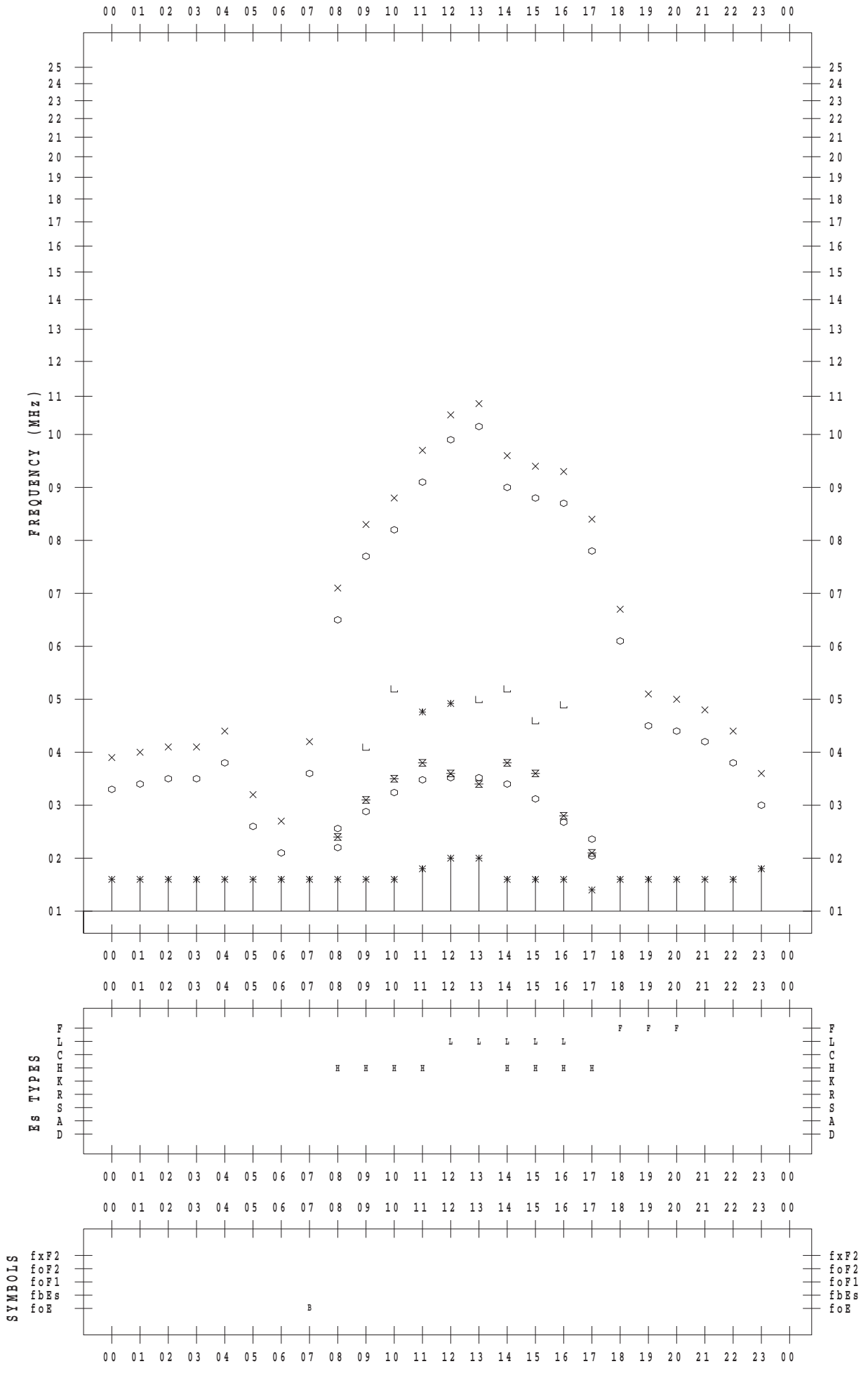
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/25

135 °E MEAN TIME



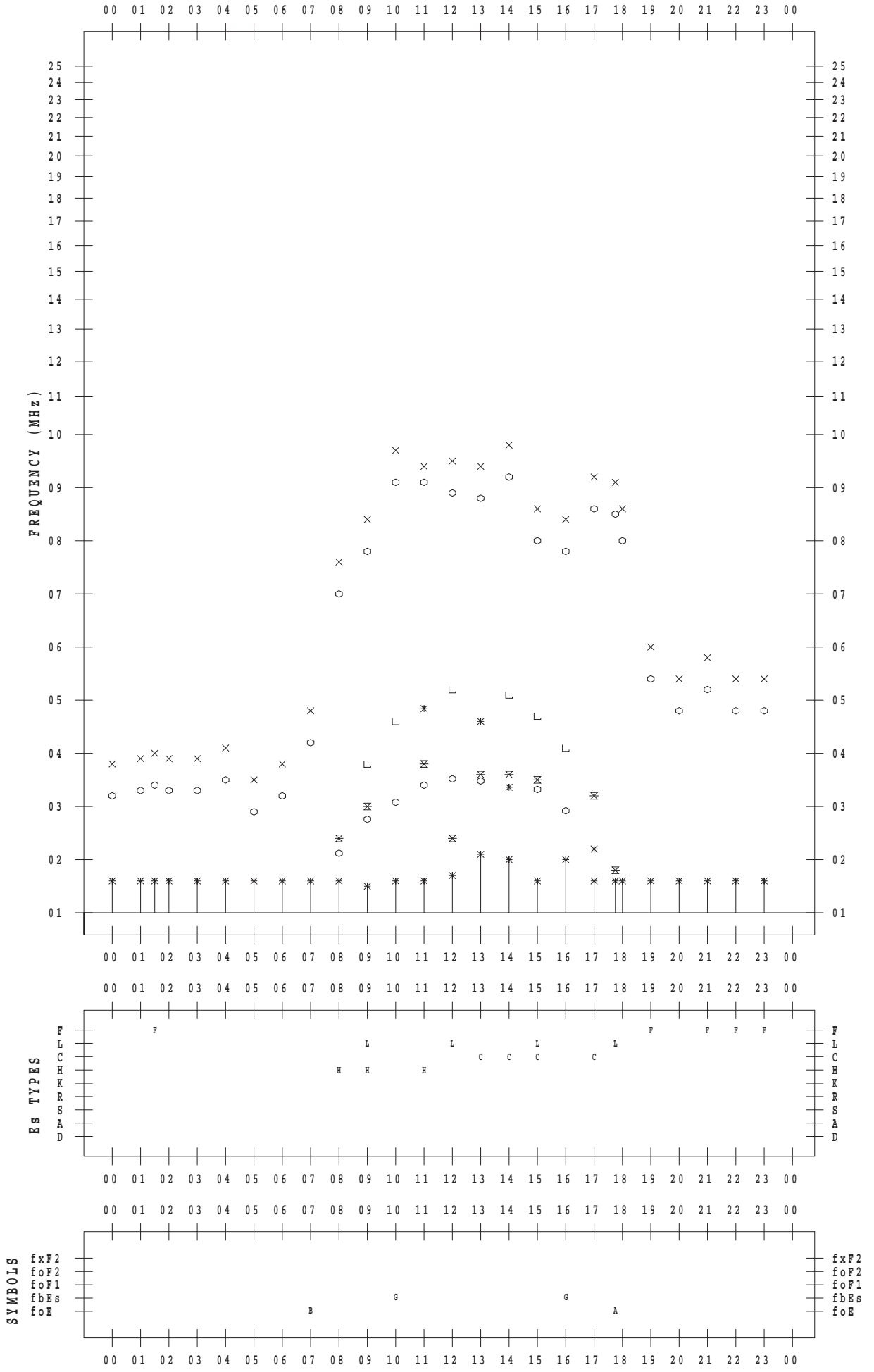
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/26

135 °E MEAN TIME



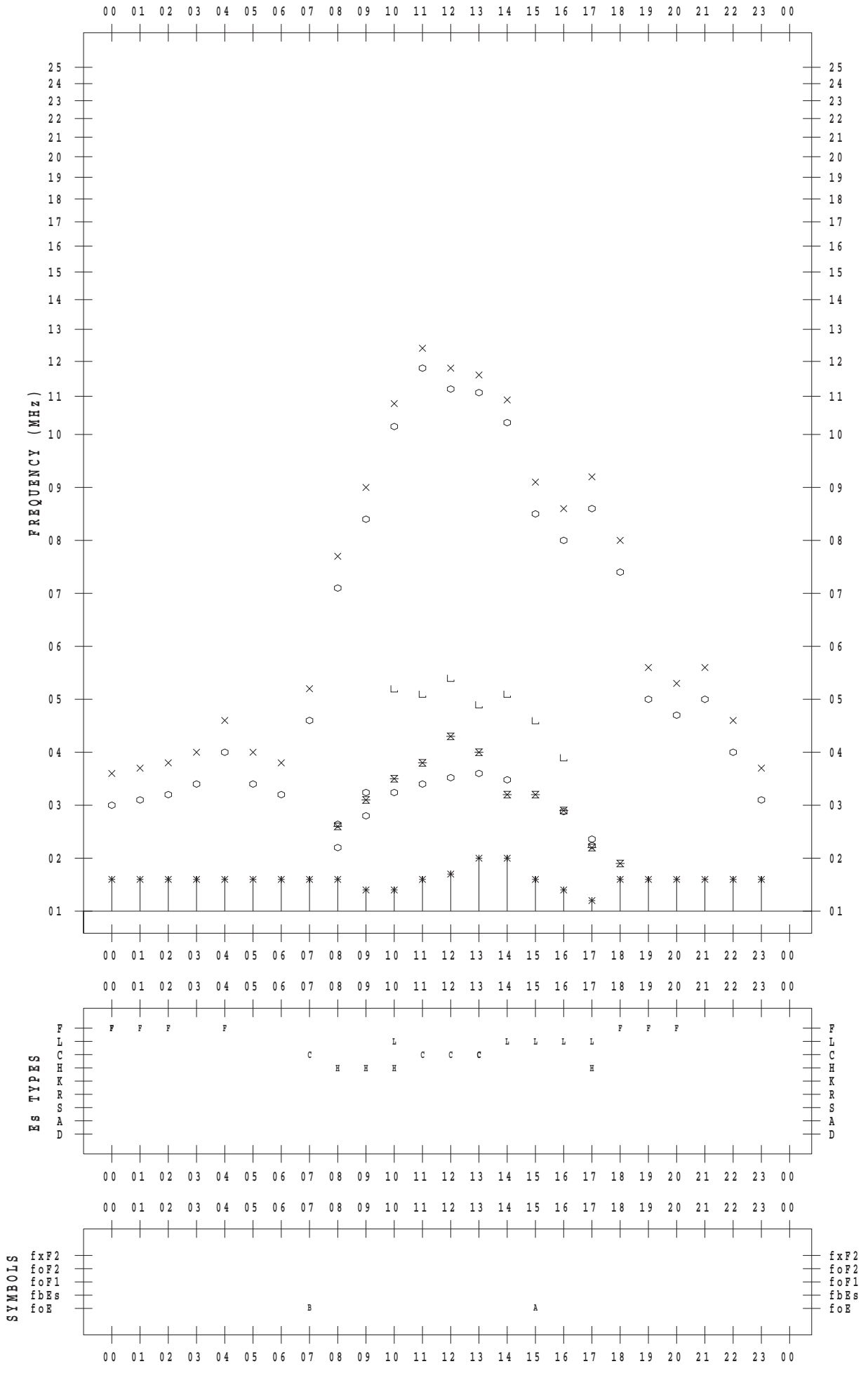
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/27

135 °E MEAN TIME



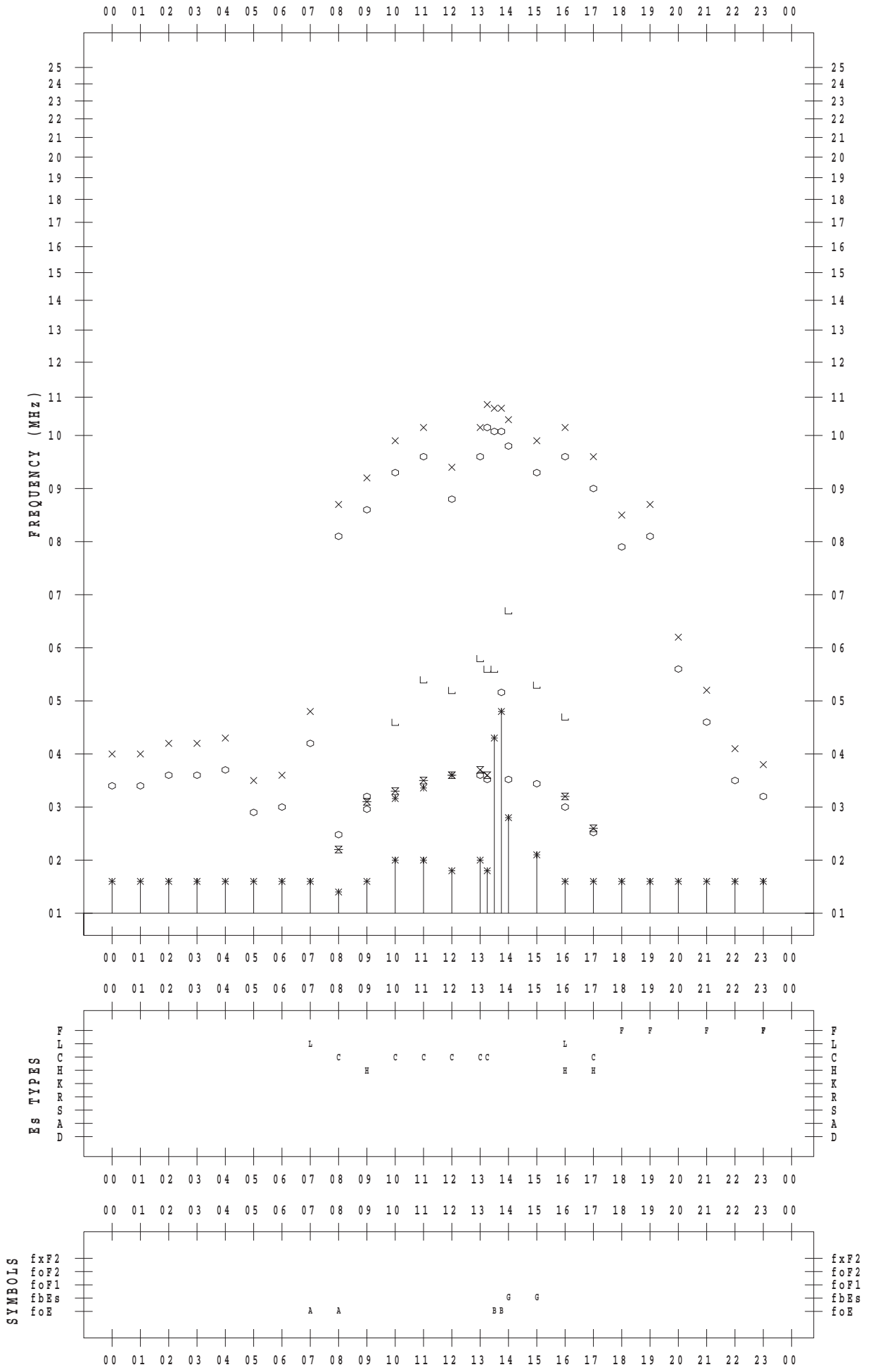
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/28

135 °E MEAN TIME



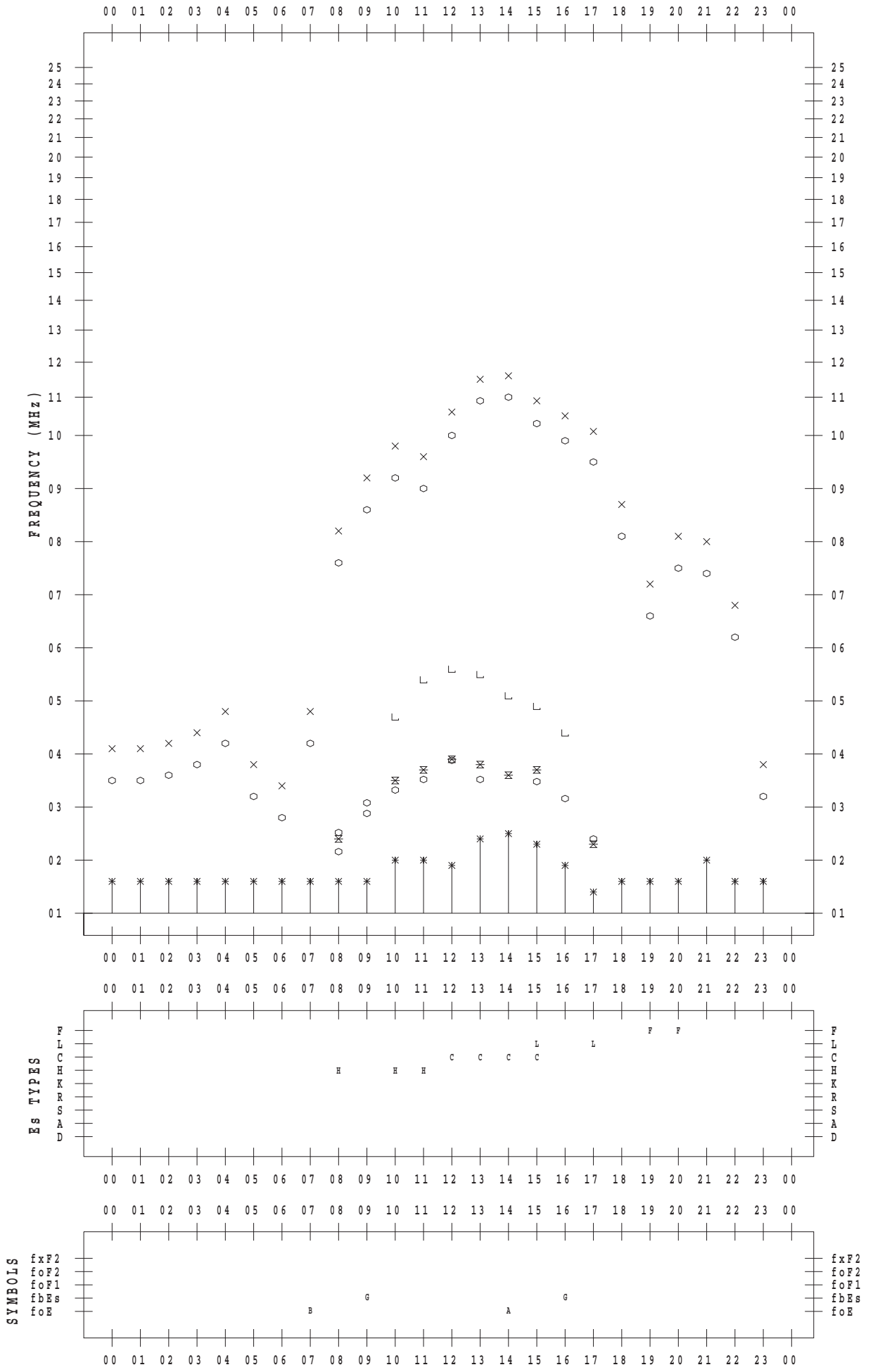
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/29

135 °E MEAN TIME



f-PLOT DATA

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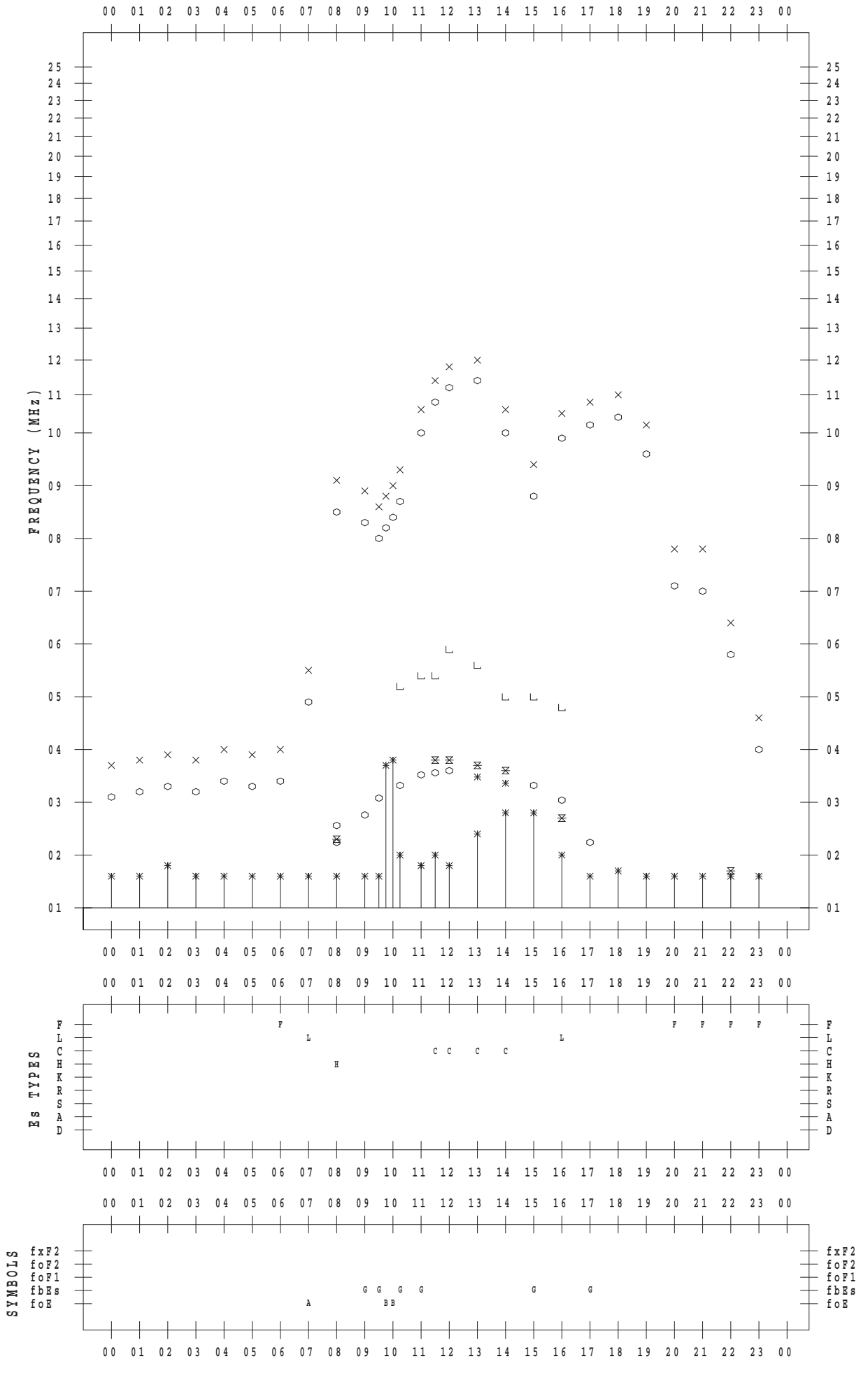
STATION : Yamagawa

DATE : 2015/ 1/30

135 °E MEAN TIME



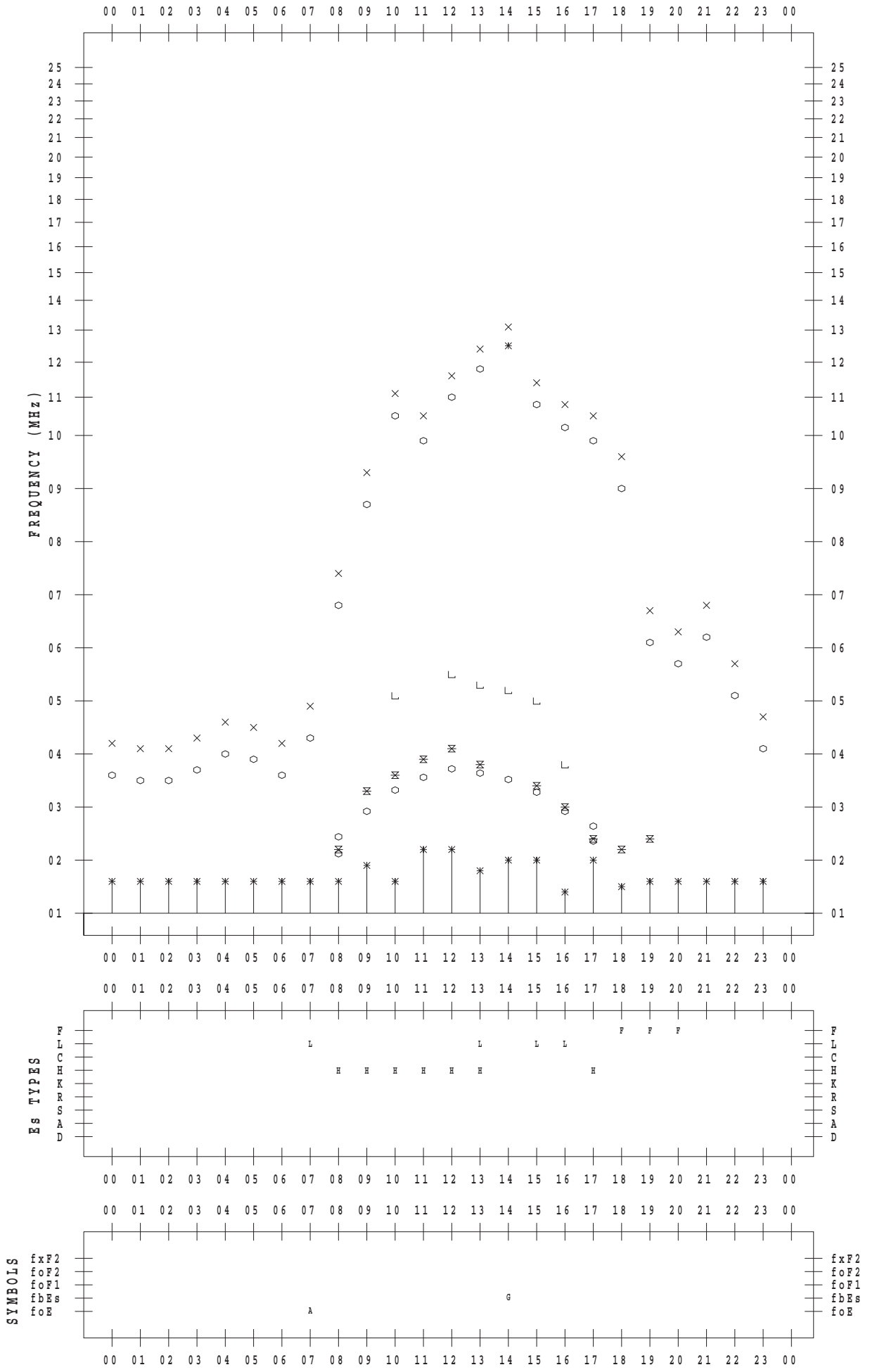
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 1/31

135 °E MEAN TIME



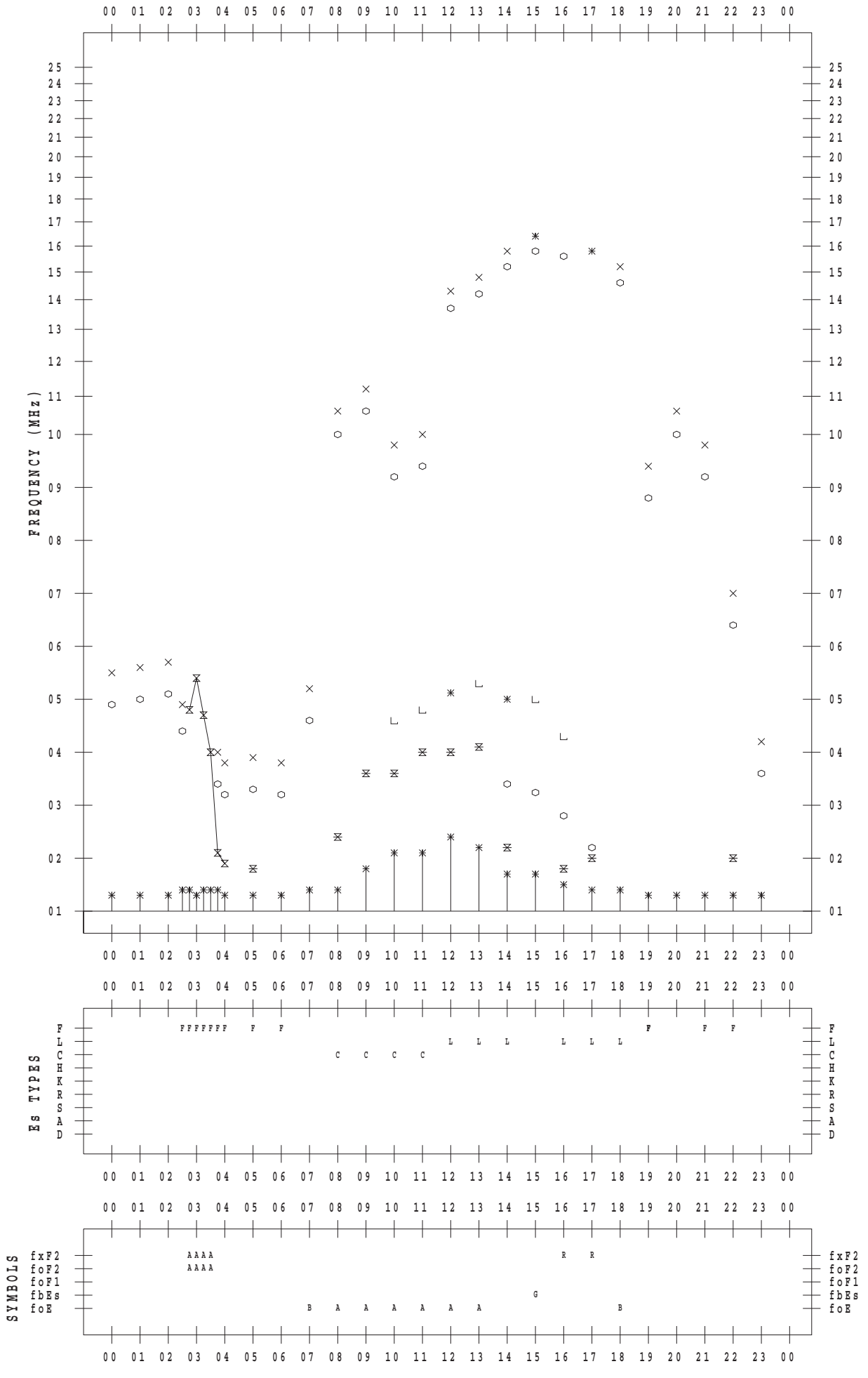
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 1

135 °E MEAN TIME



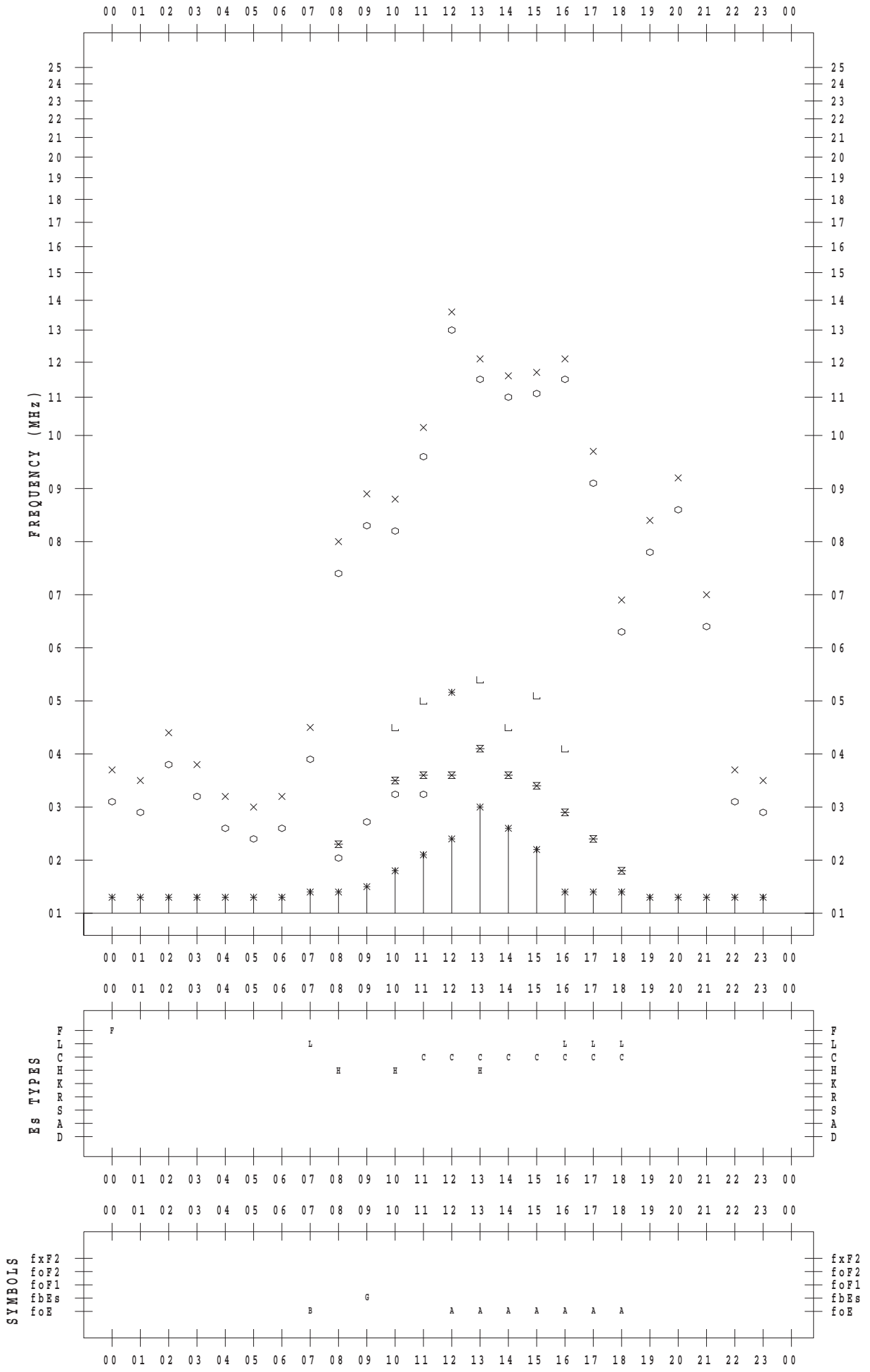
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 2

135 °E MEAN TIME



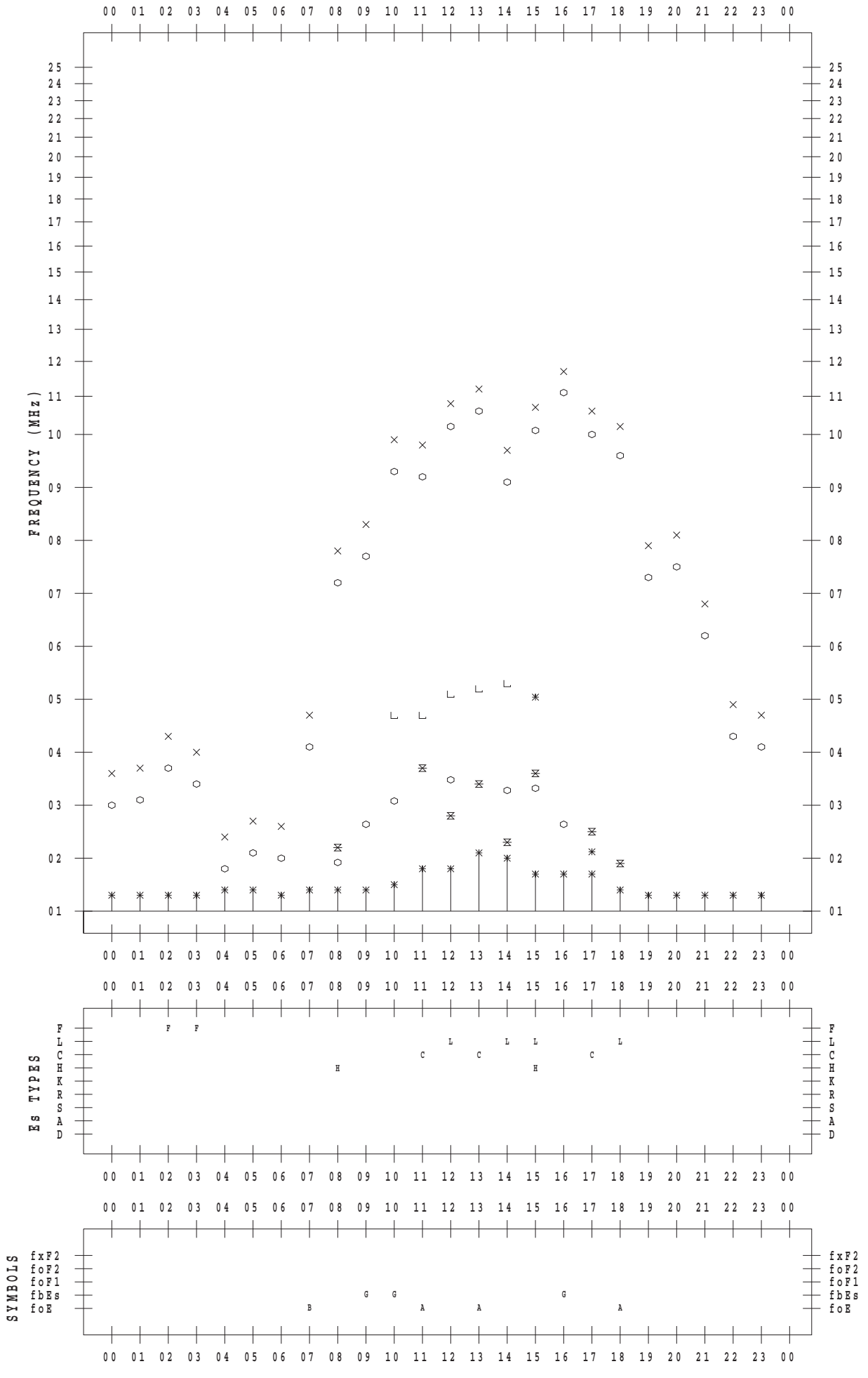
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 3

135 °E MEAN TIME



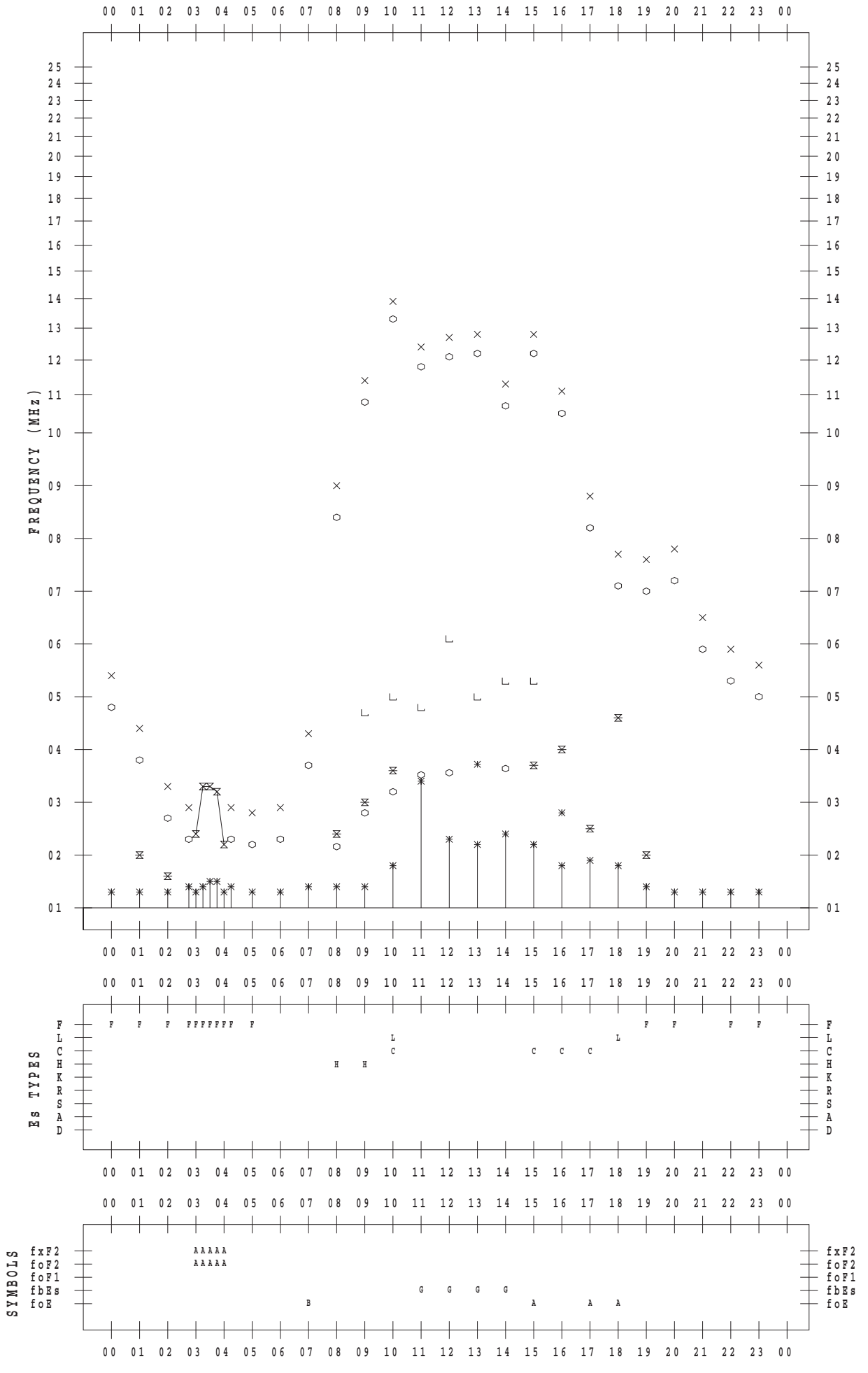
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 4

135 °E MEAN TIME



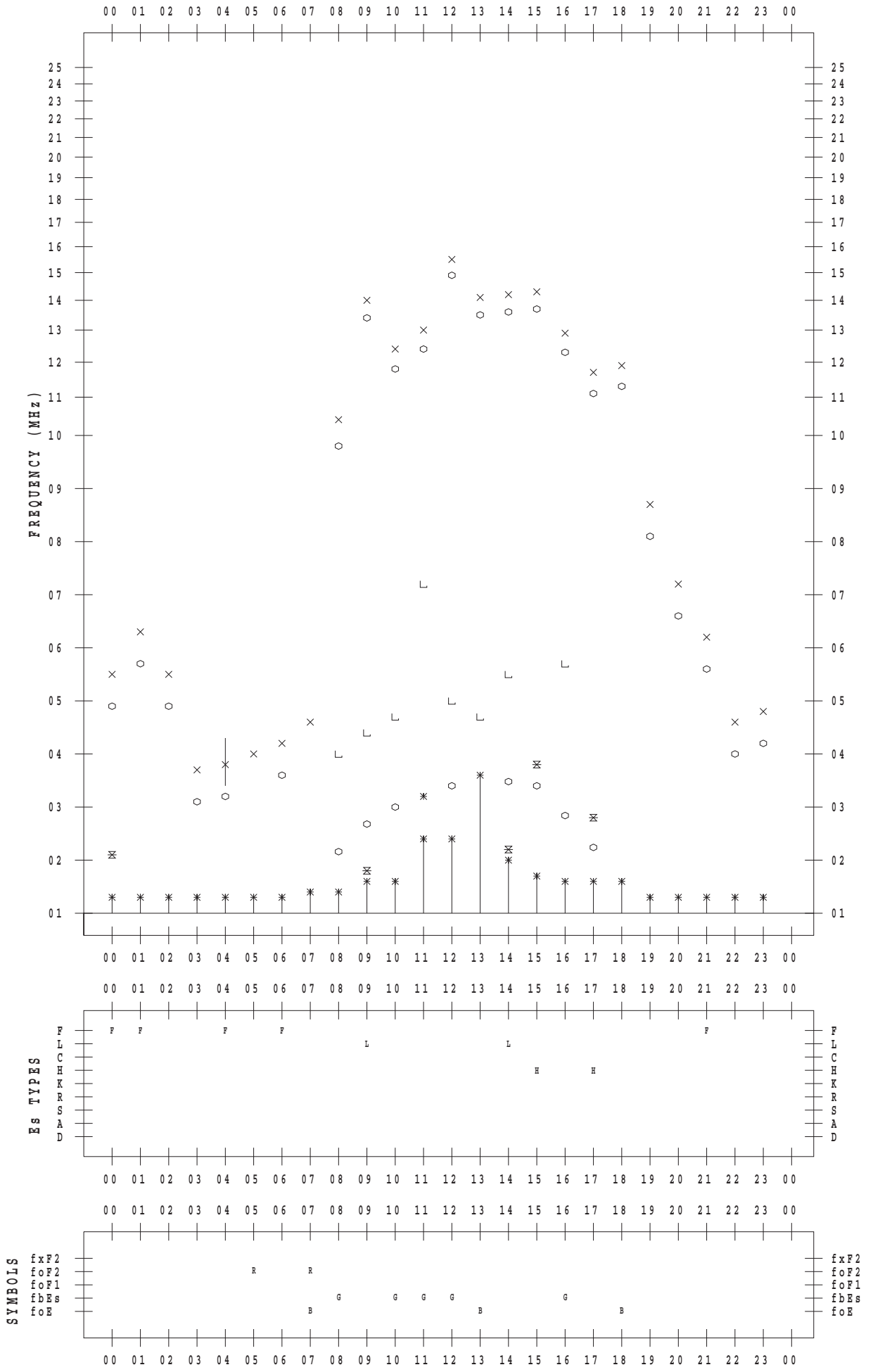
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 5

135 °E MEAN TIME



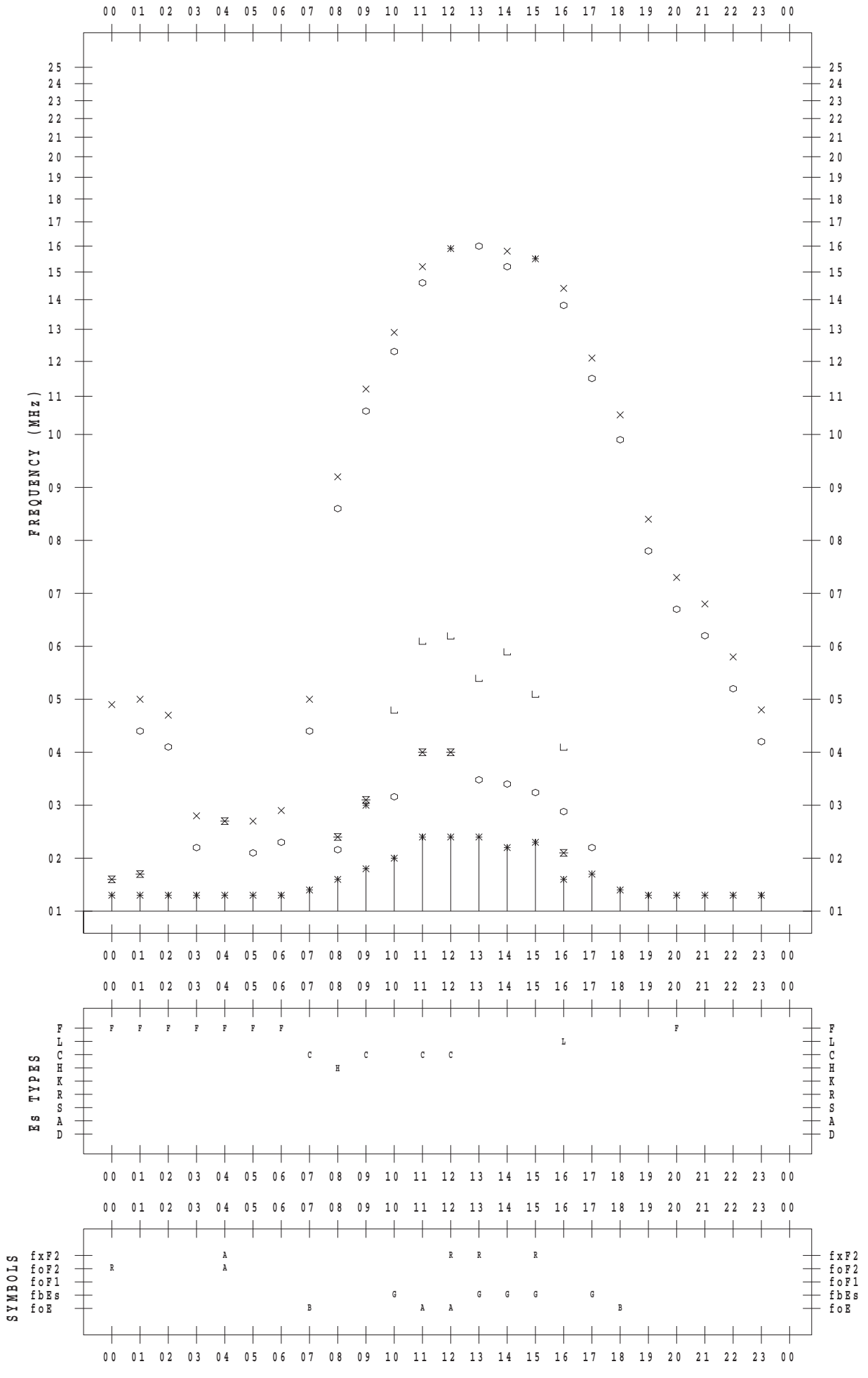
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 6

135 °E MEAN TIME



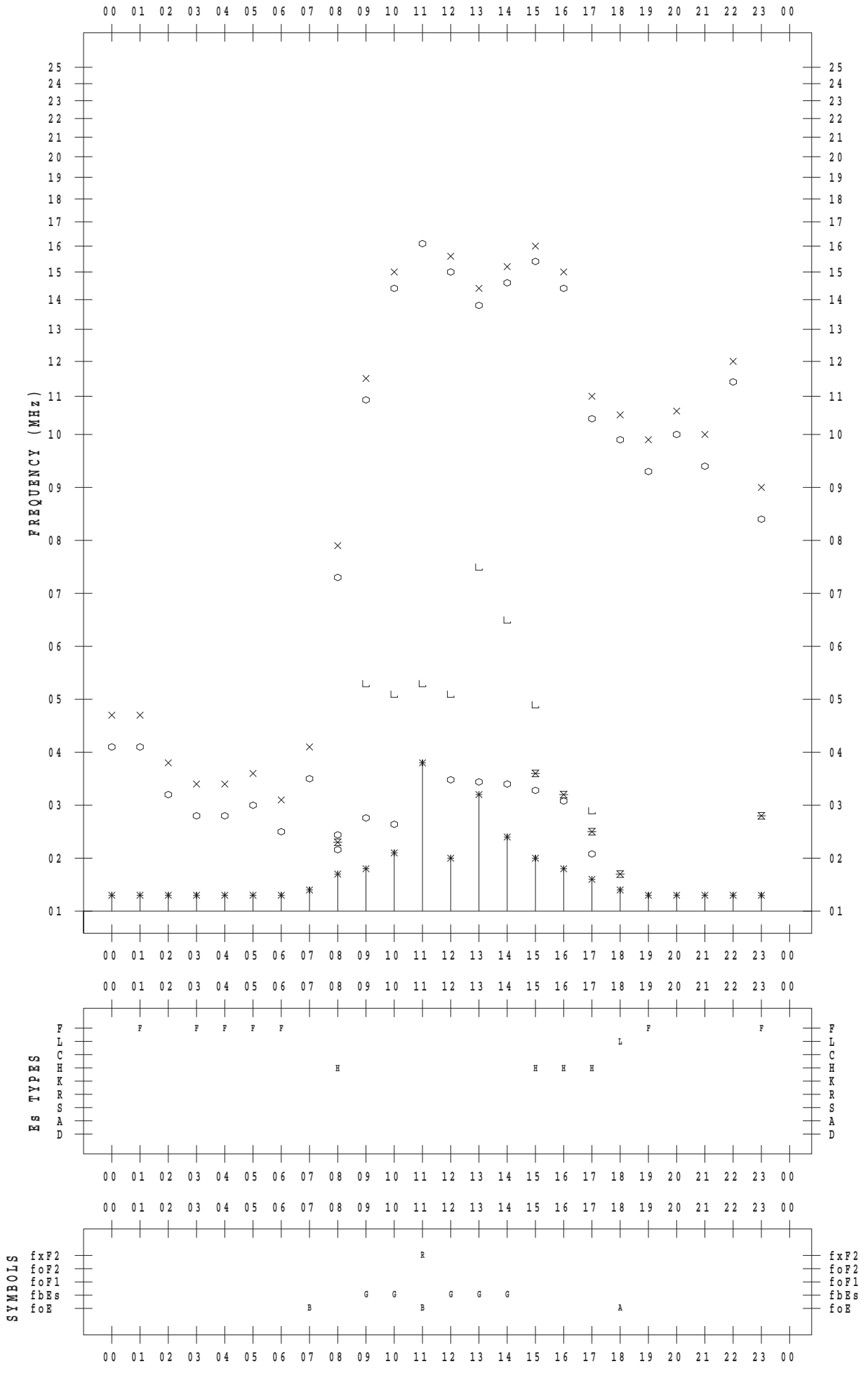
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 7

135 °E MEAN TIME



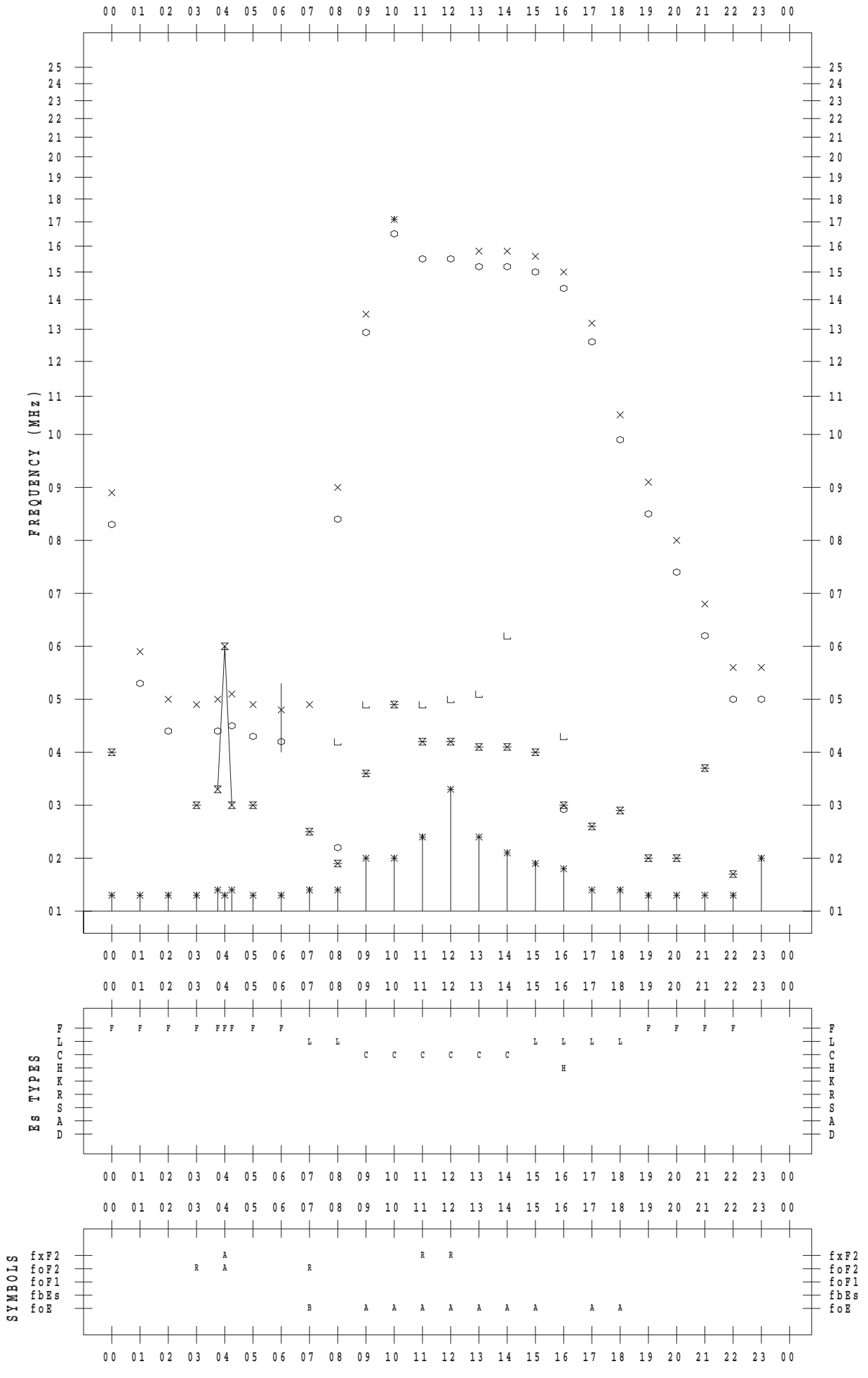
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 8

135 °E MEAN TIME



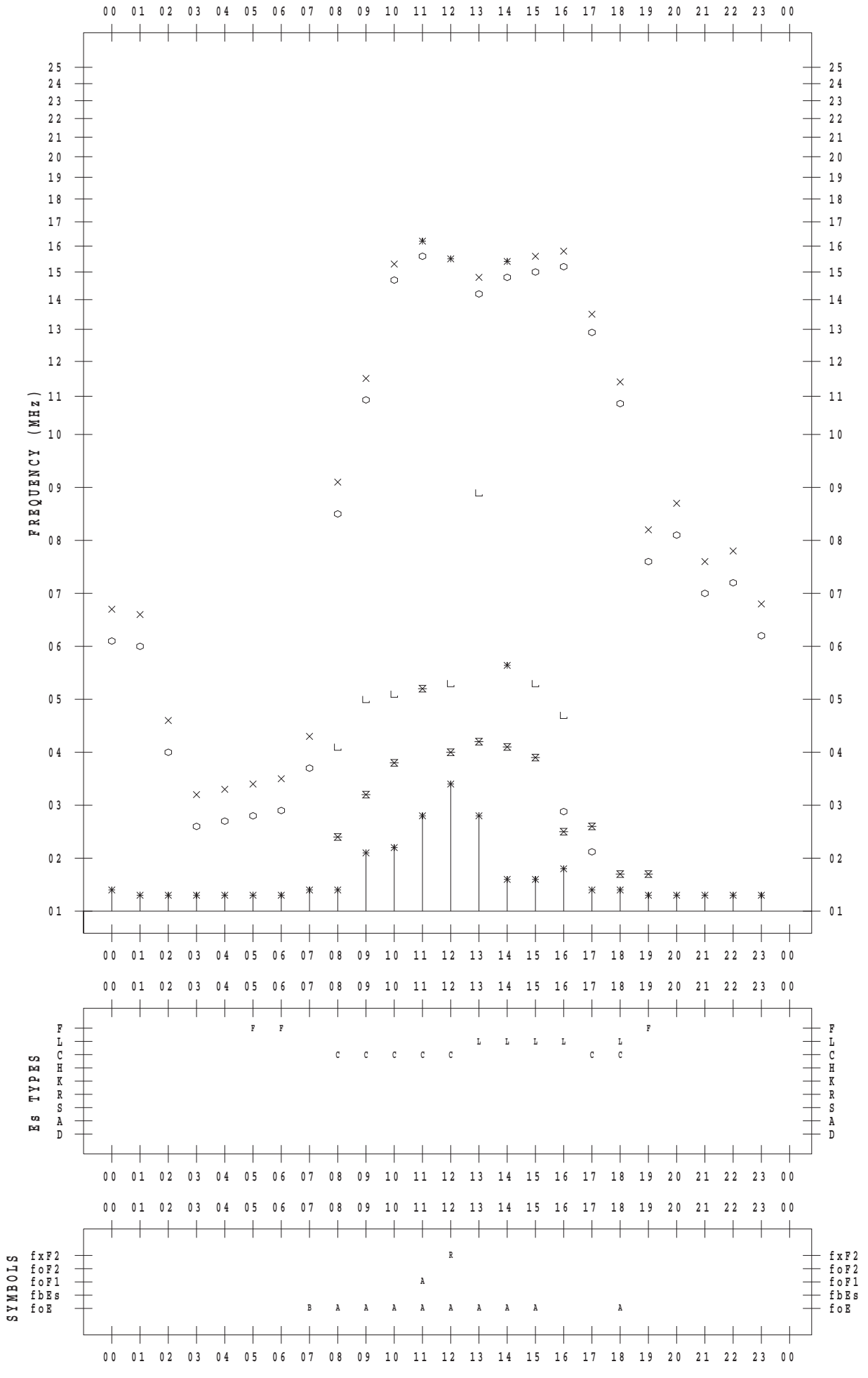
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/ 9

135 °E MEAN TIME



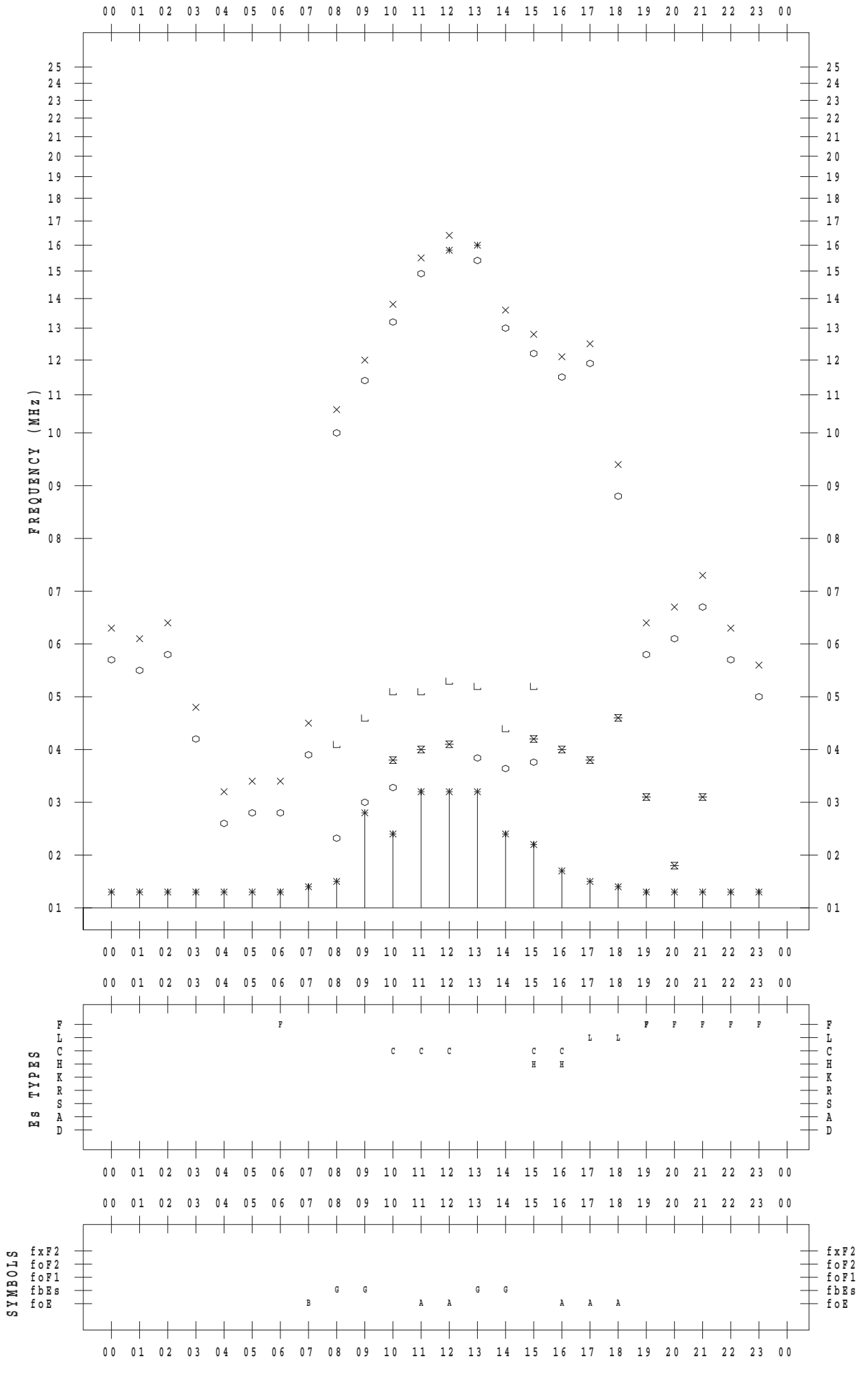
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/10

135 °E MEAN TIME



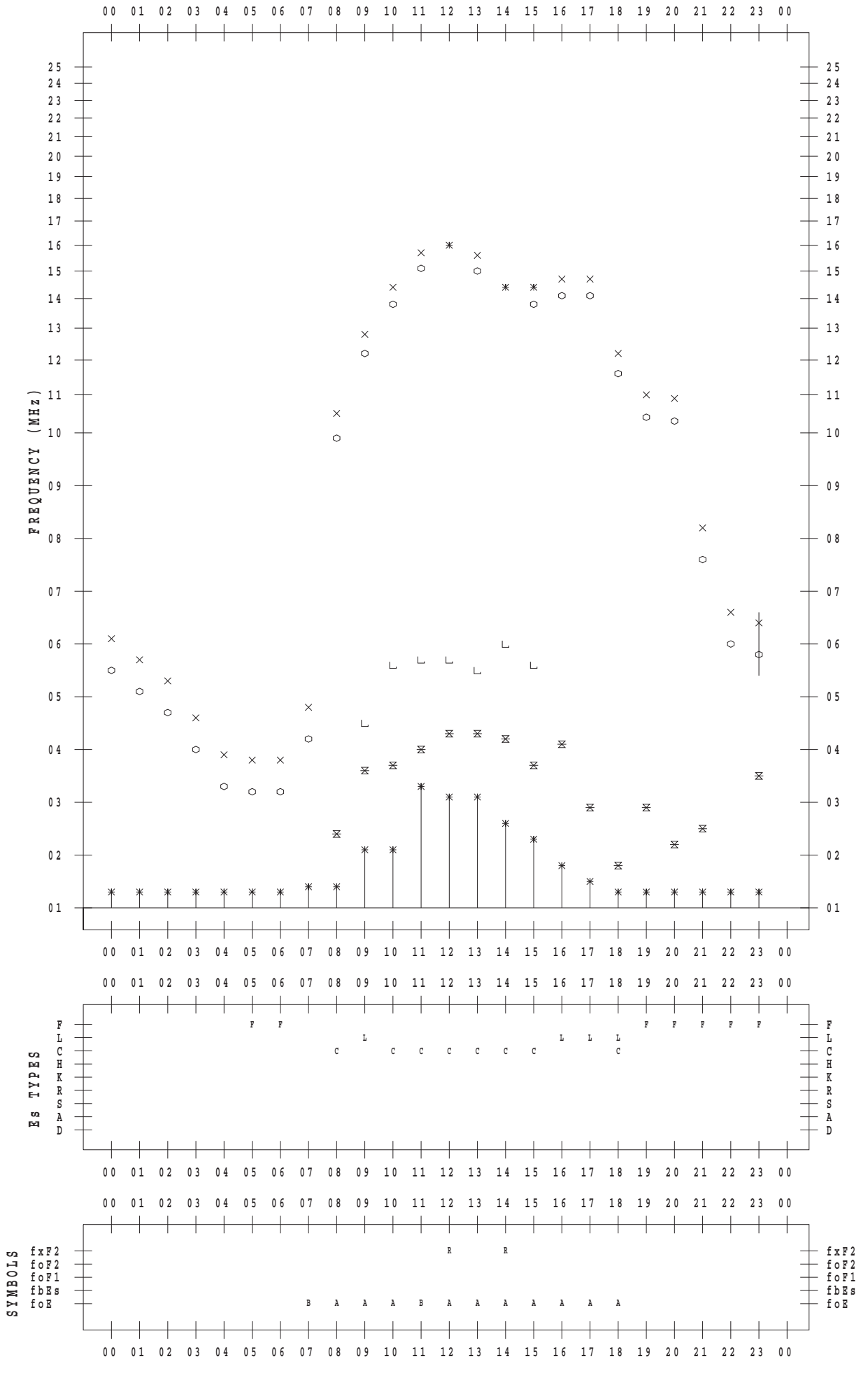
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/11

135 °E MEAN TIME



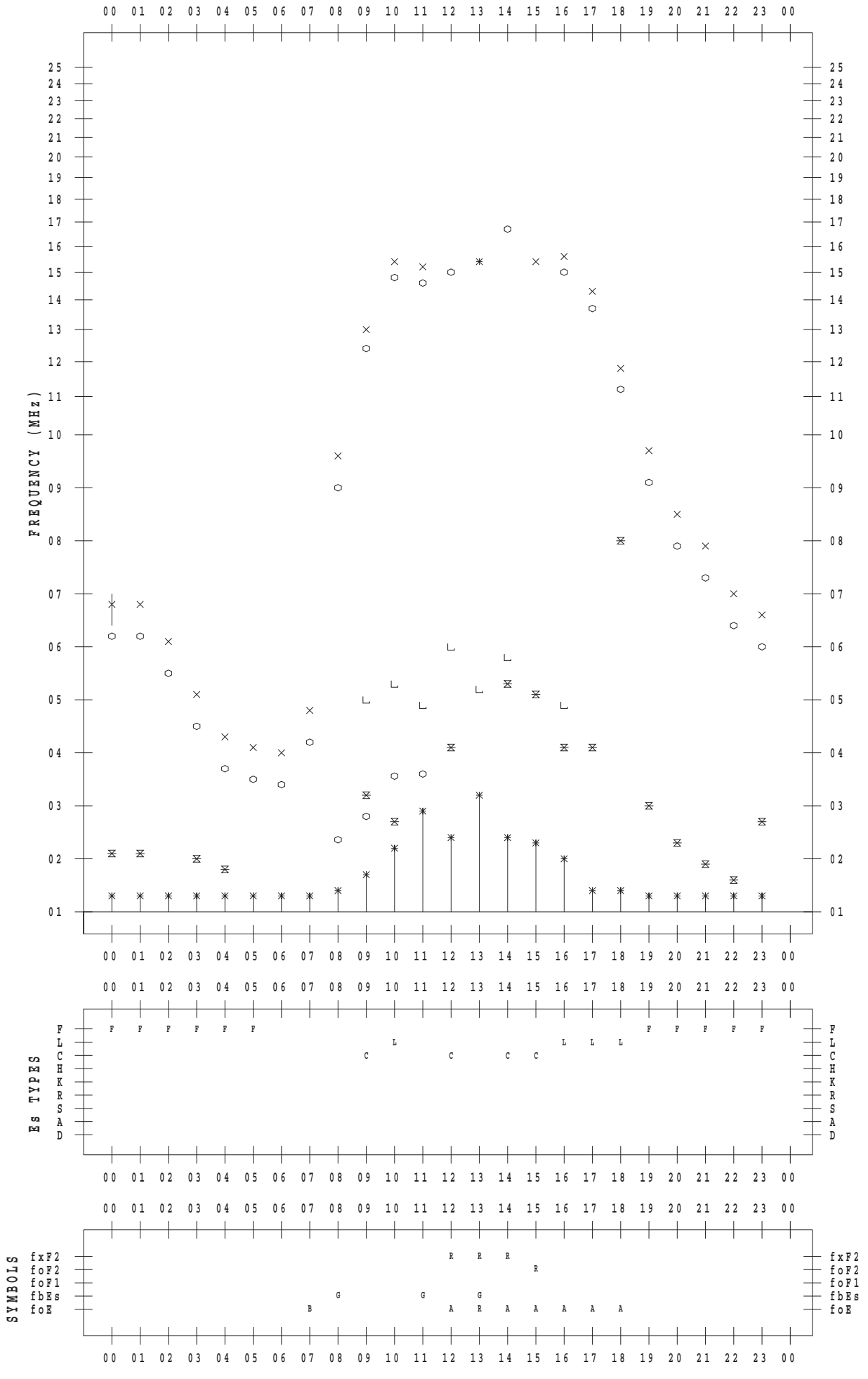
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/12

135 °E MEAN TIME



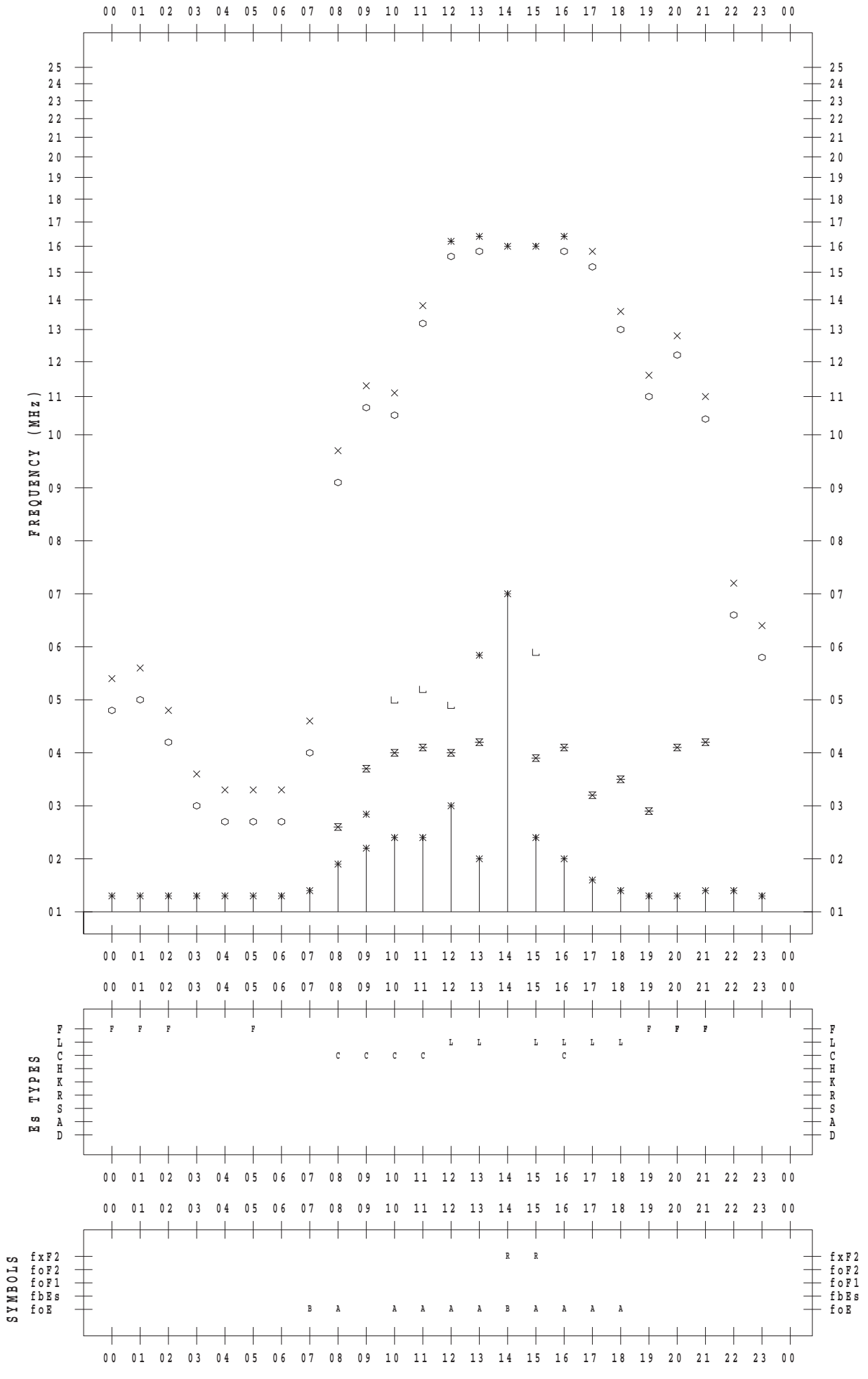
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/13

135 °E MEAN TIME



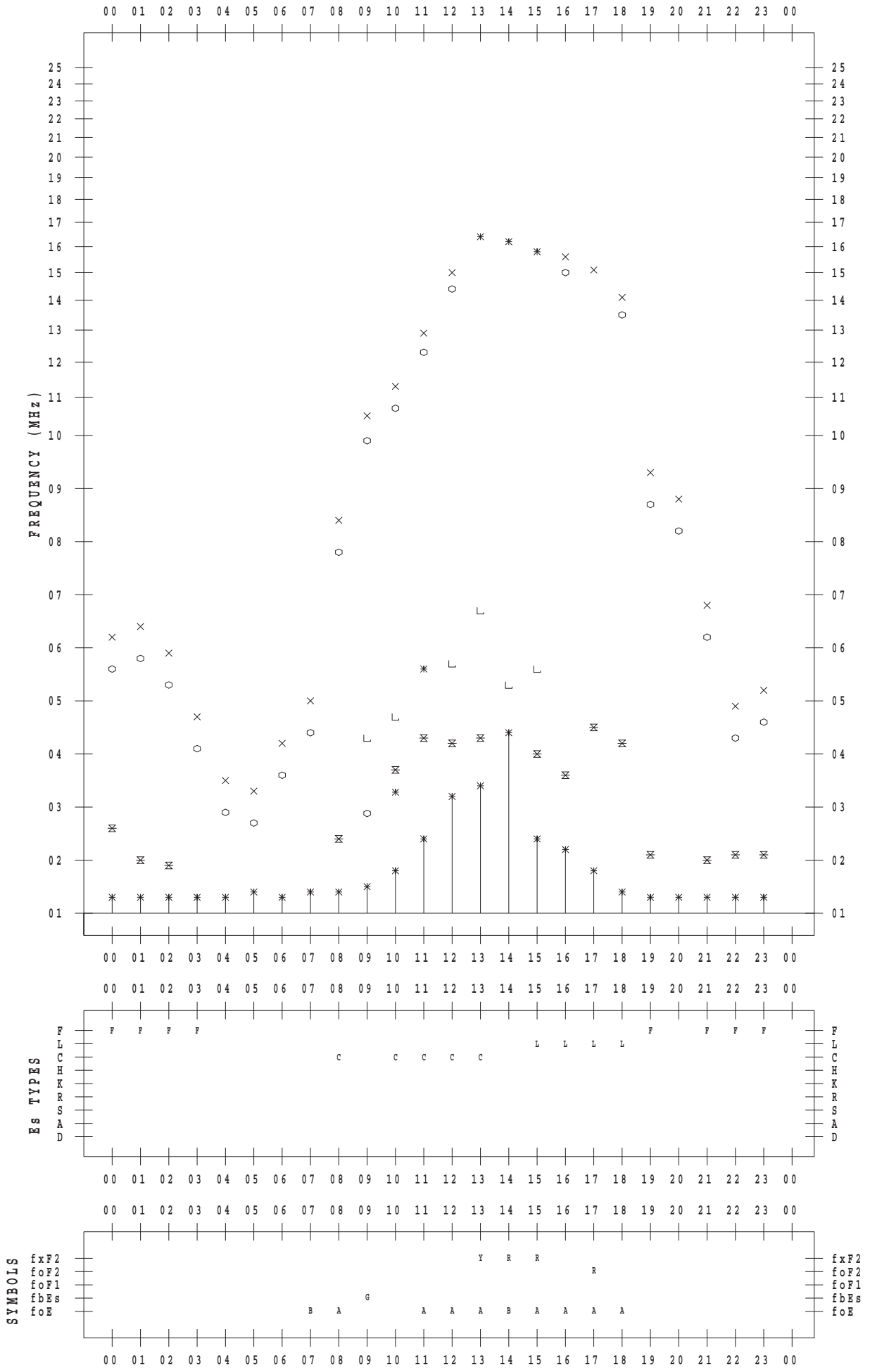
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/14

135 °E MEAN TIME



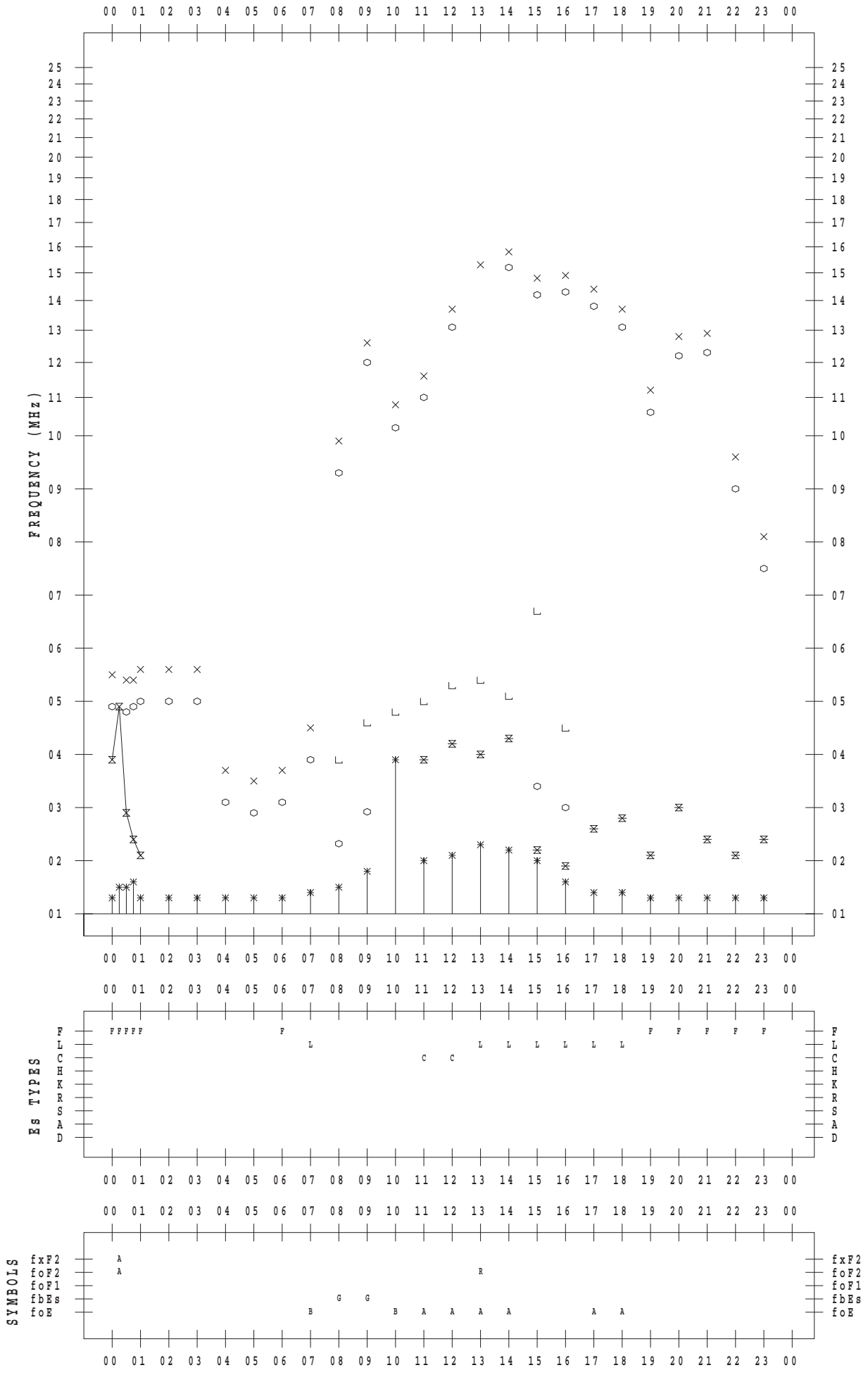
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/15

135 °E MEAN TIME



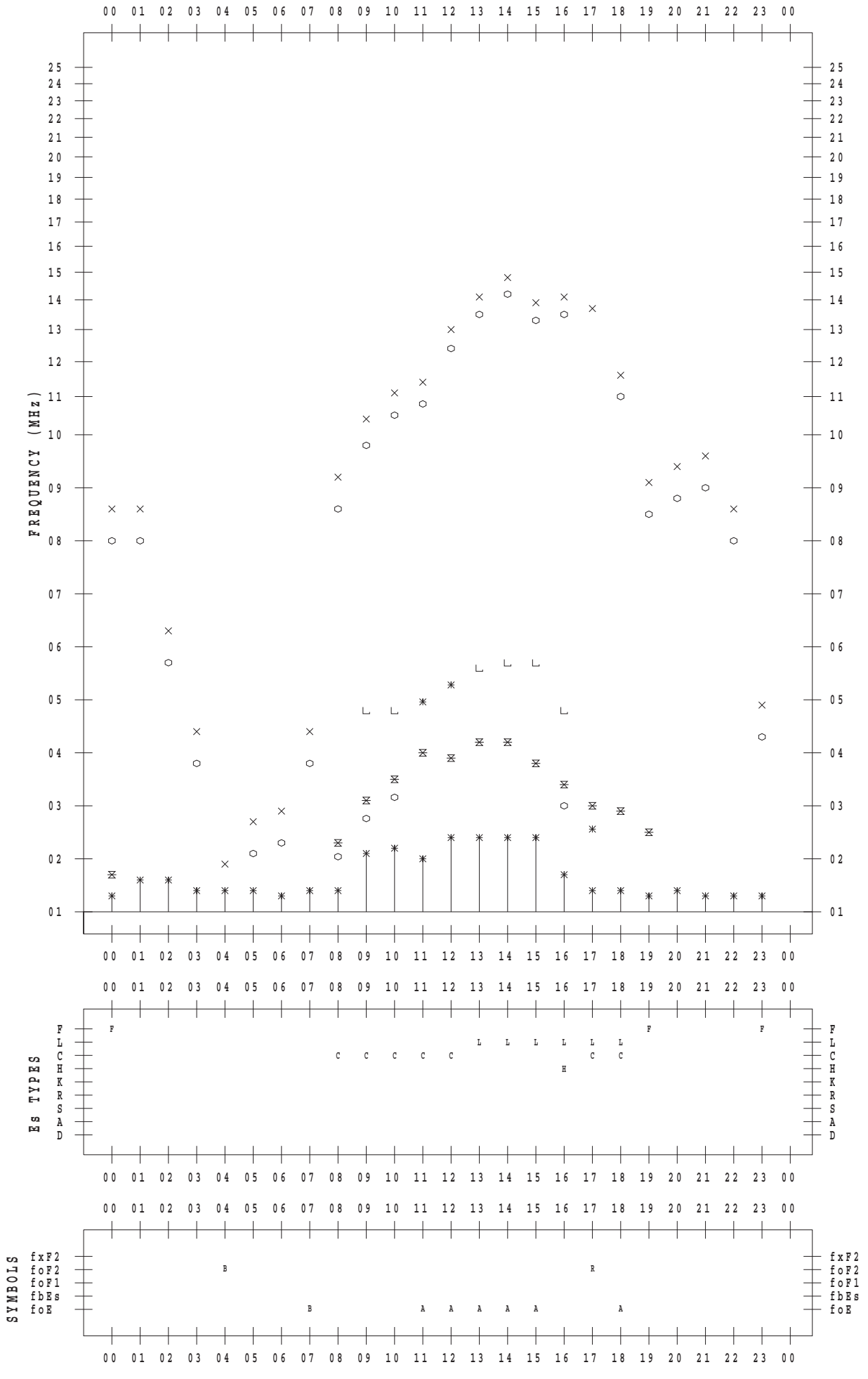
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/16

135 °E MEAN TIME



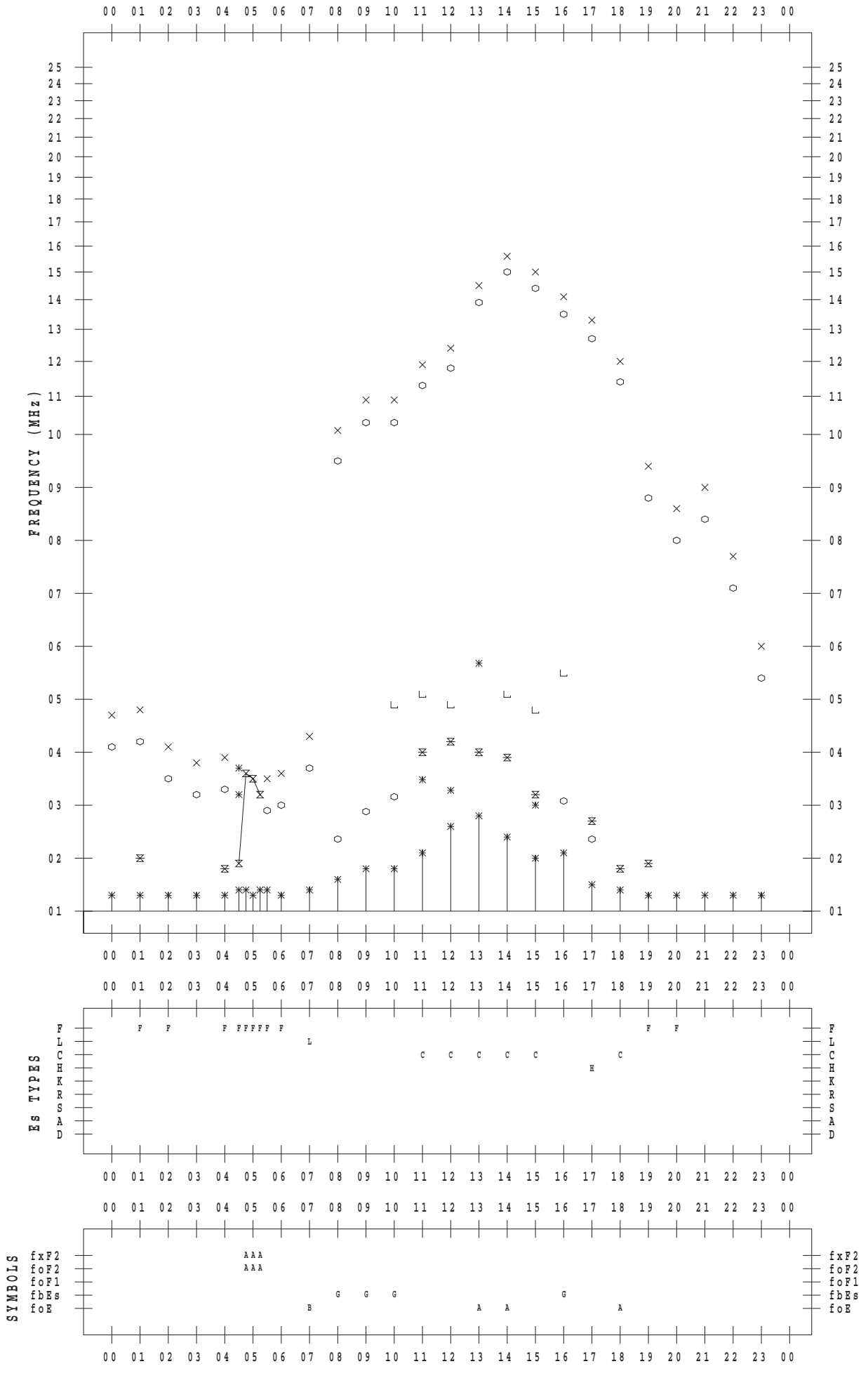
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/17

135 °E MEAN TIME



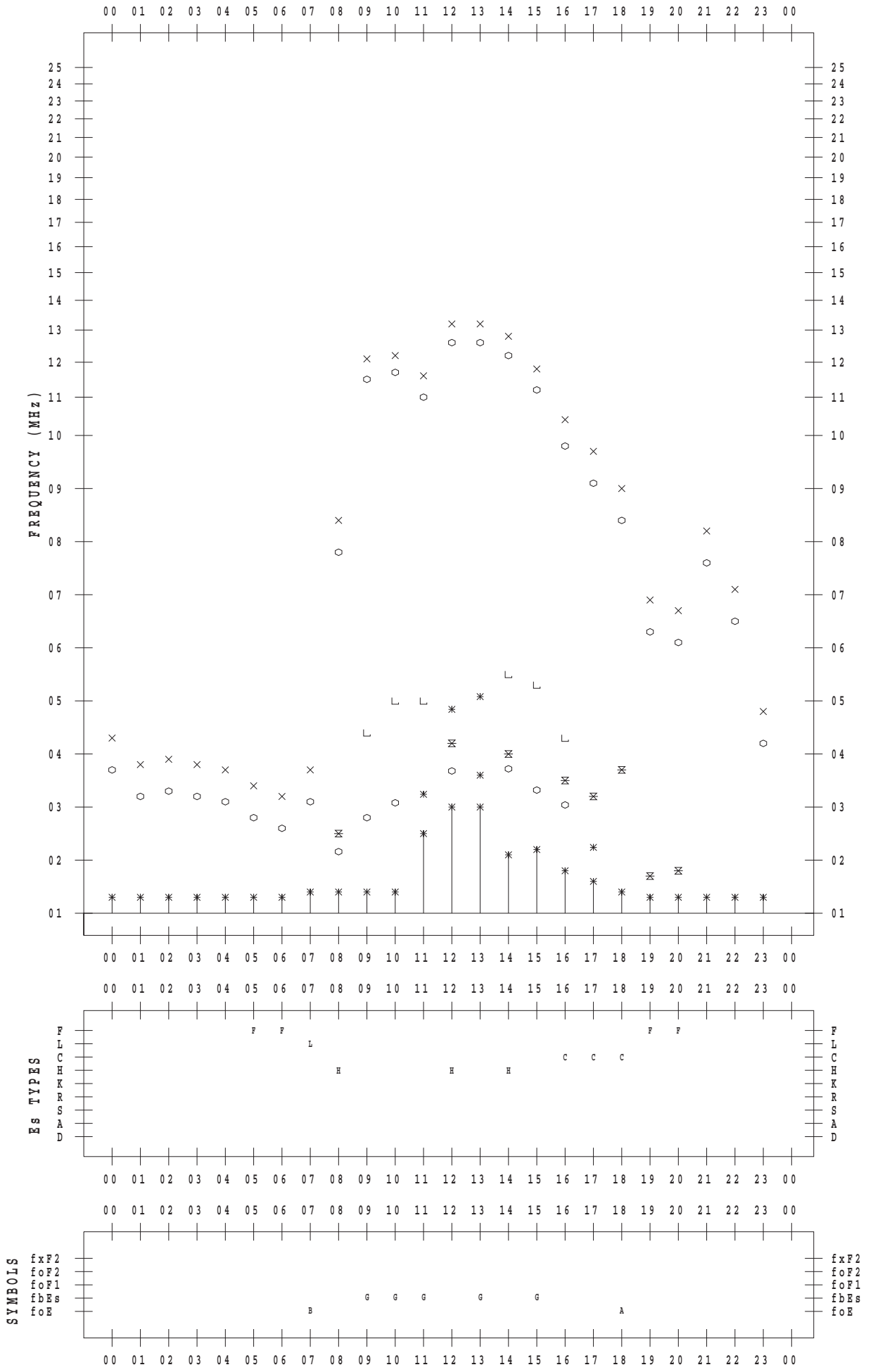
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/18

135 °E MEAN TIME



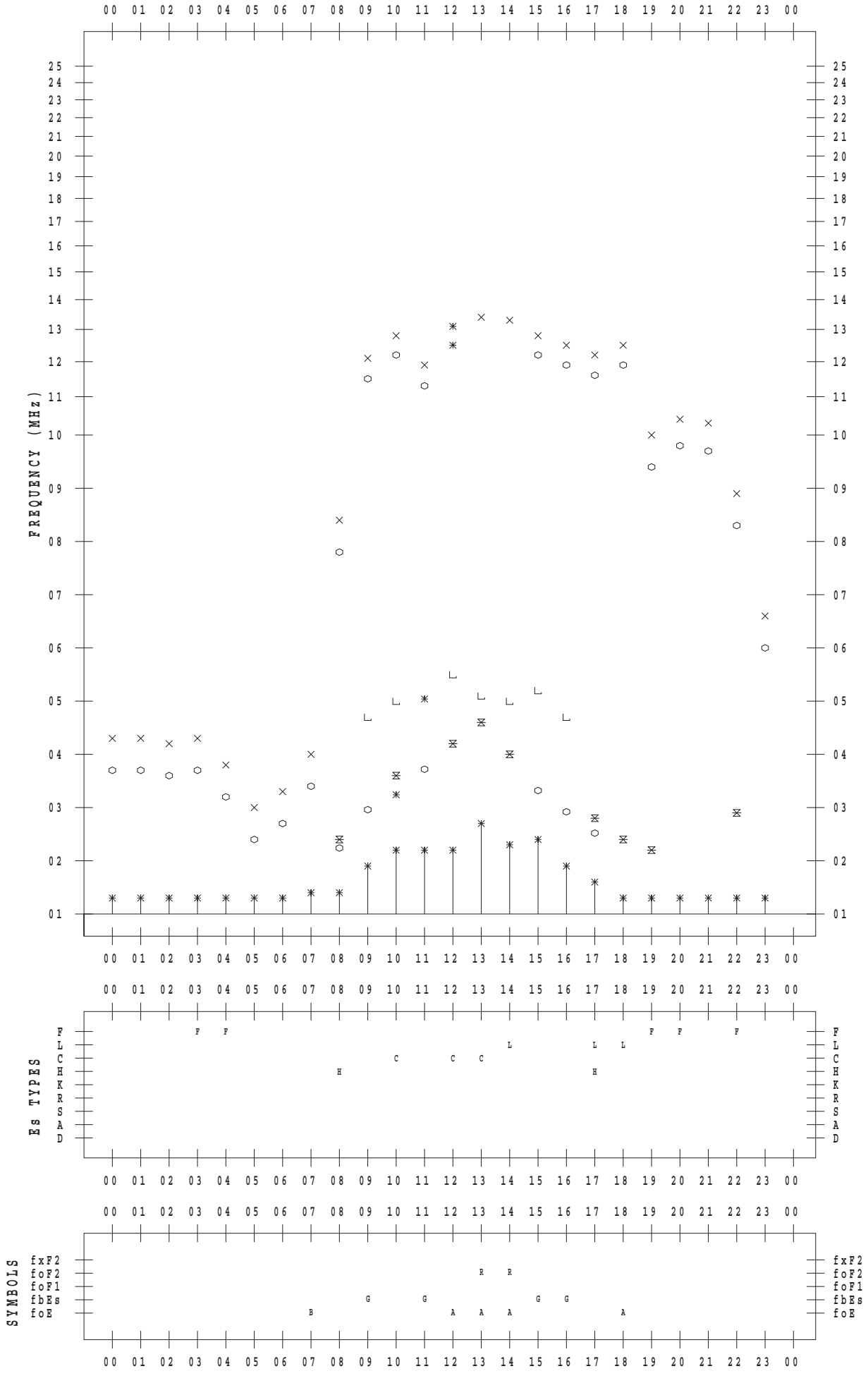
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/19

135 °E MEAN TIME



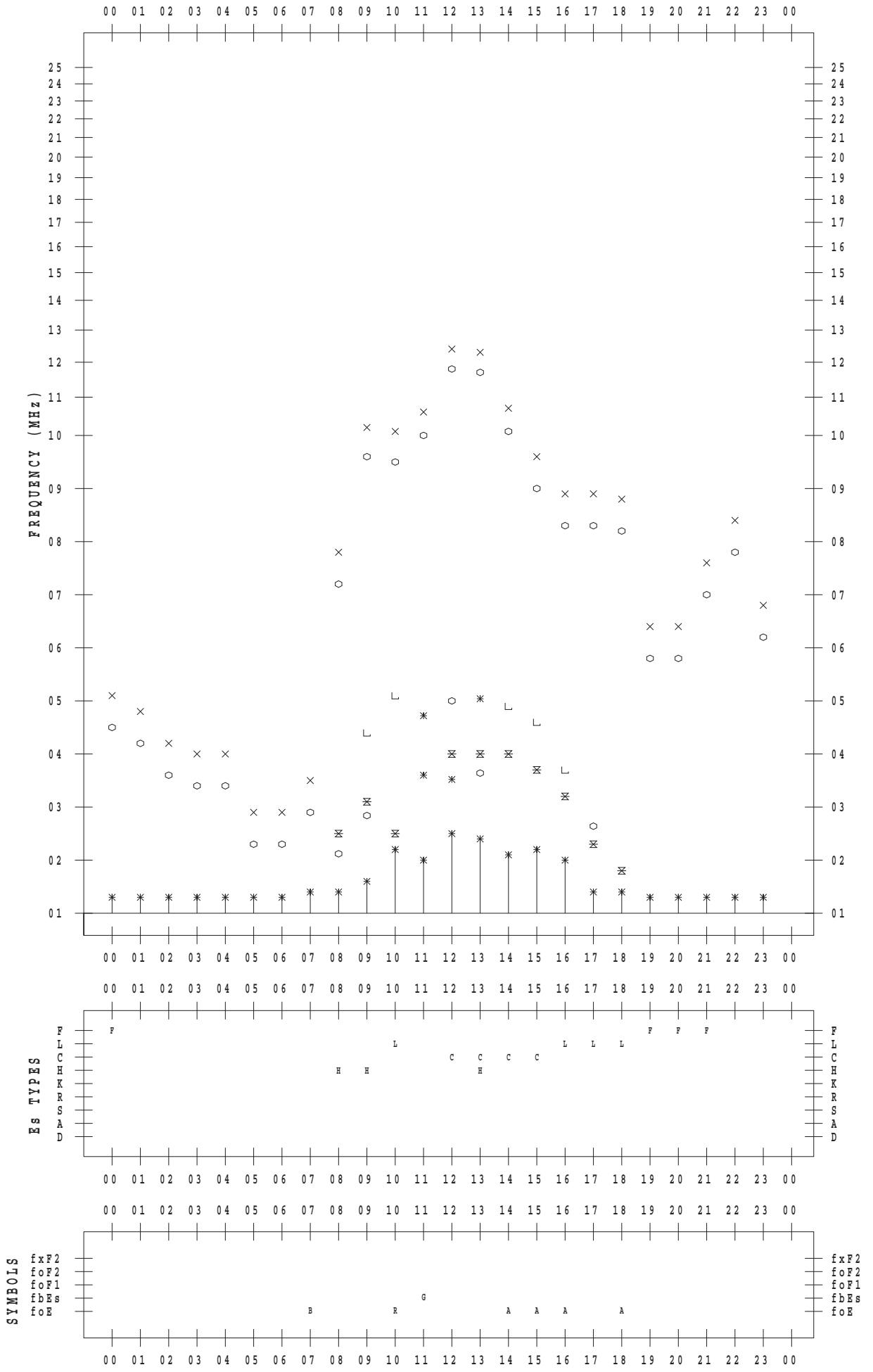
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/20

135 °E MEAN TIME



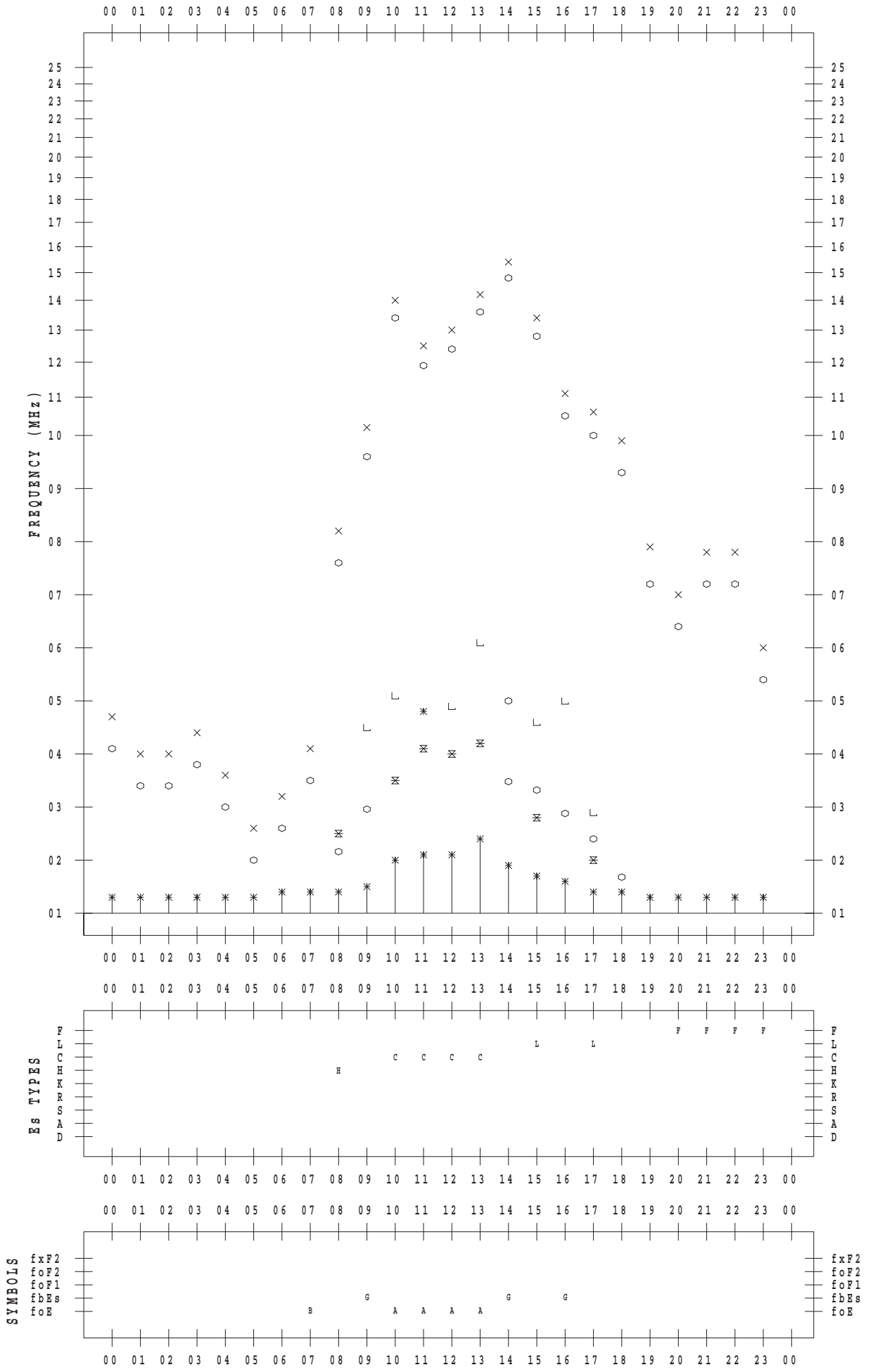
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/21

135 °E MEAN TIME



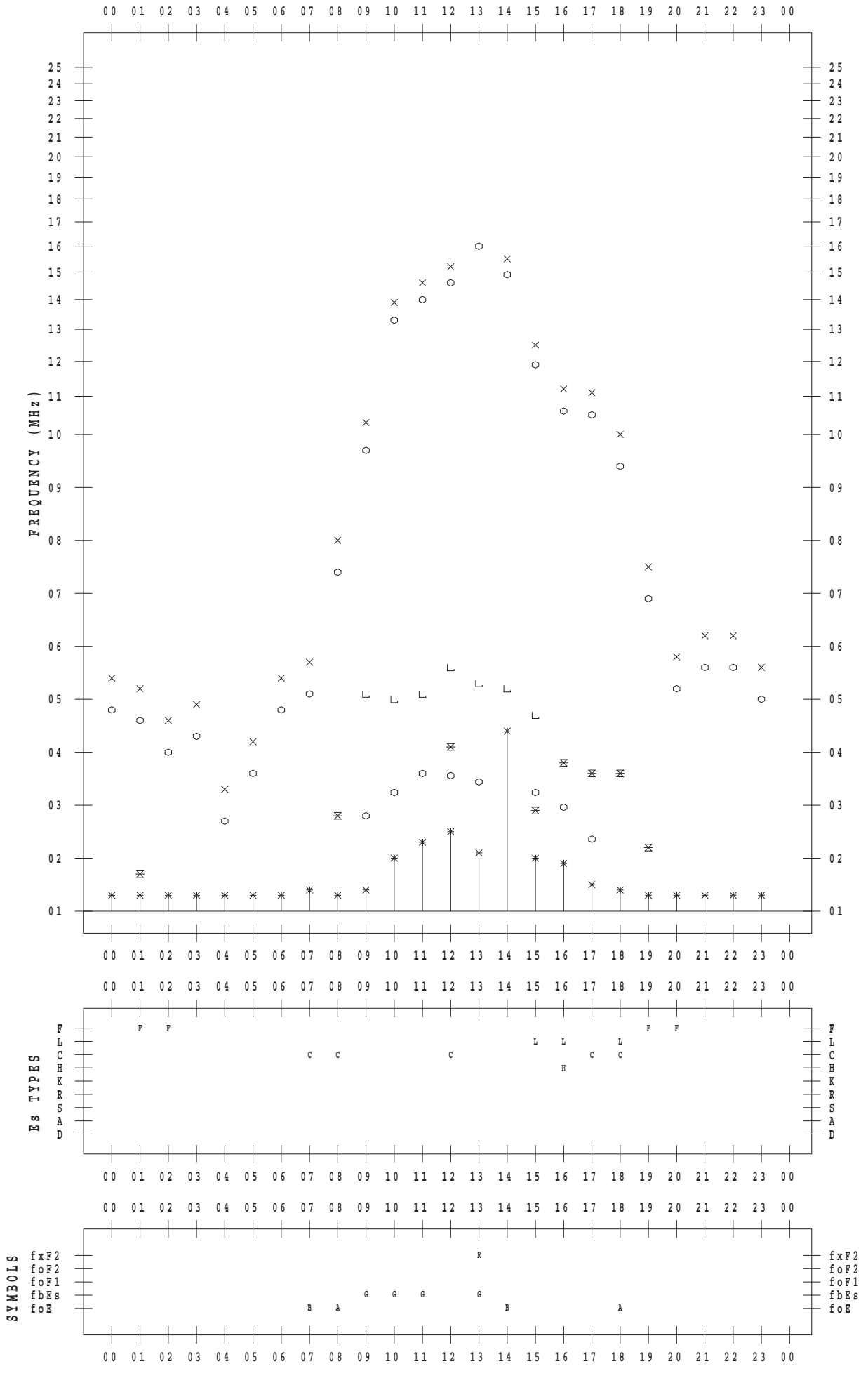
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/22

135 °E MEAN TIME



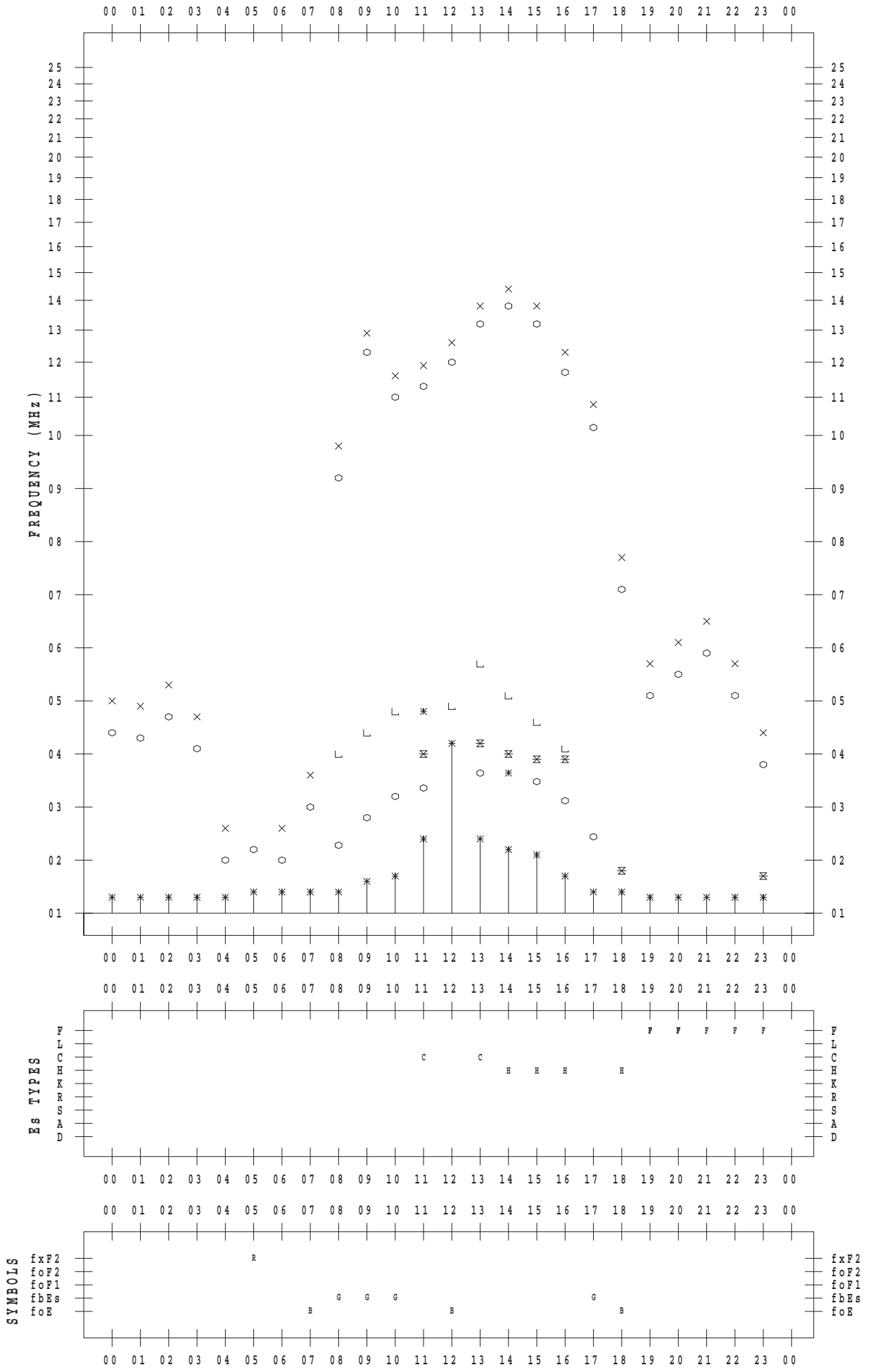
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/23

135 °E MEAN TIME



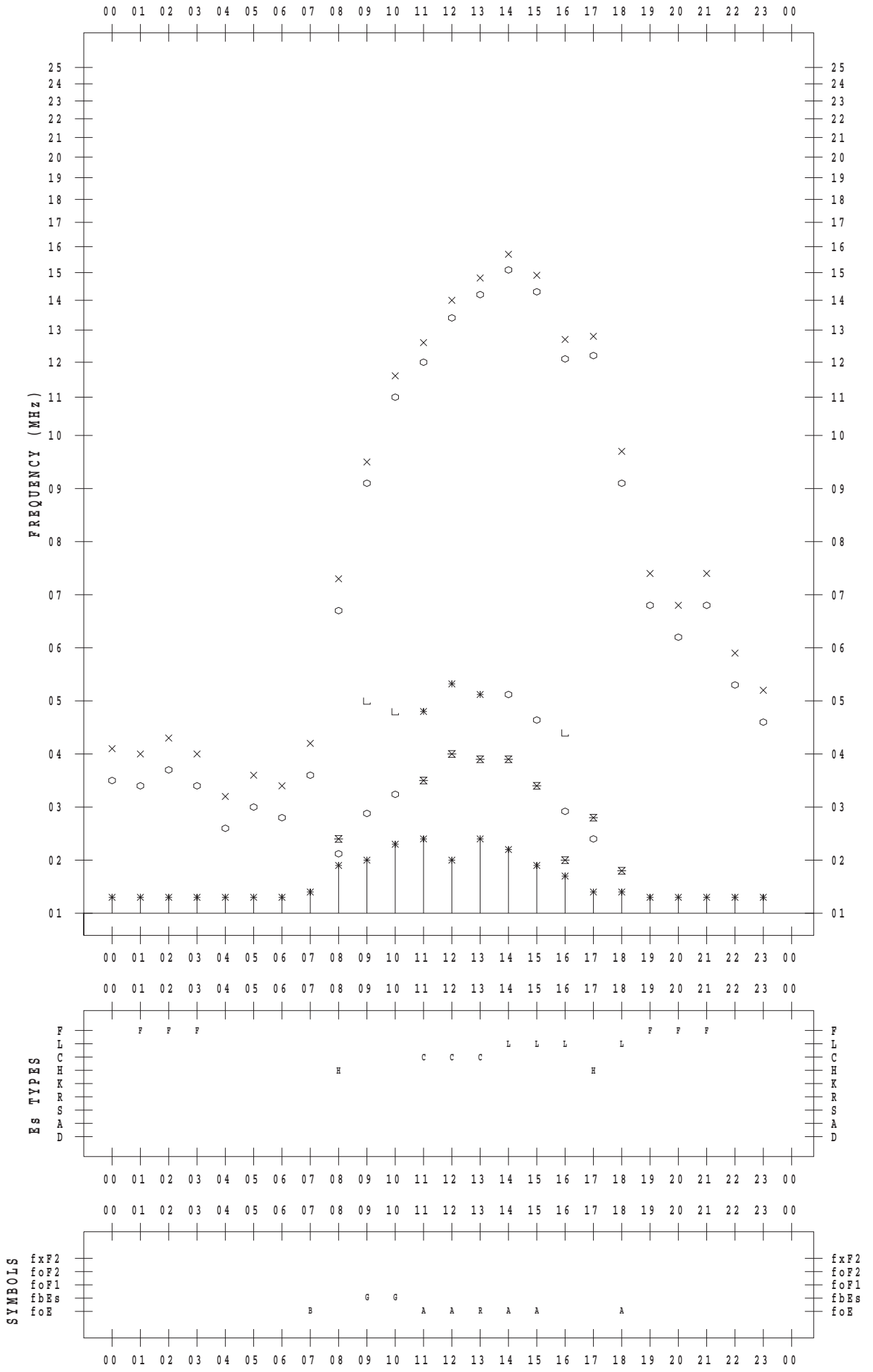
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/24

135 °E MEAN TIME



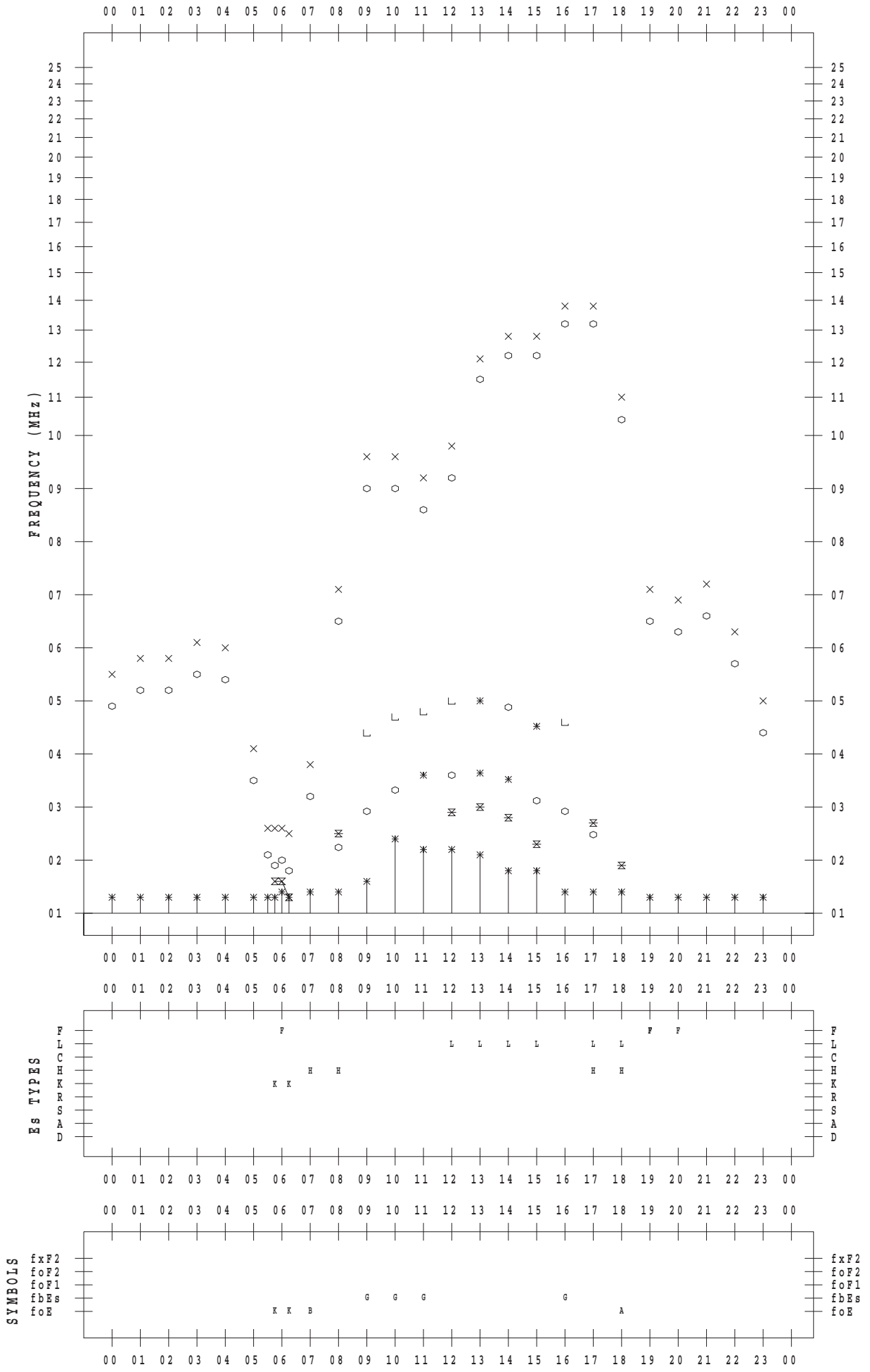
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/25

135 °E MEAN TIME



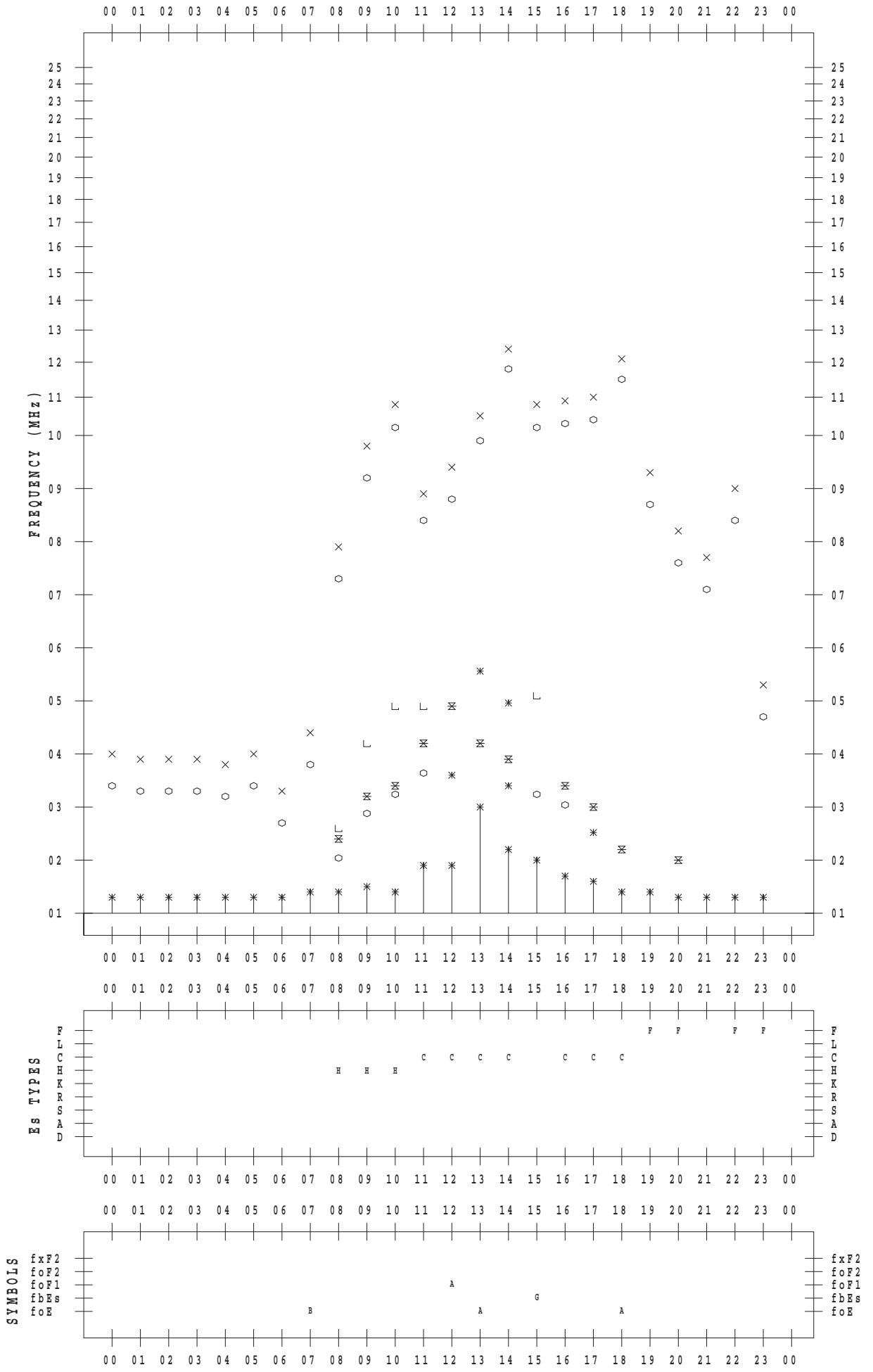
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/26

135 °E MEAN TIME



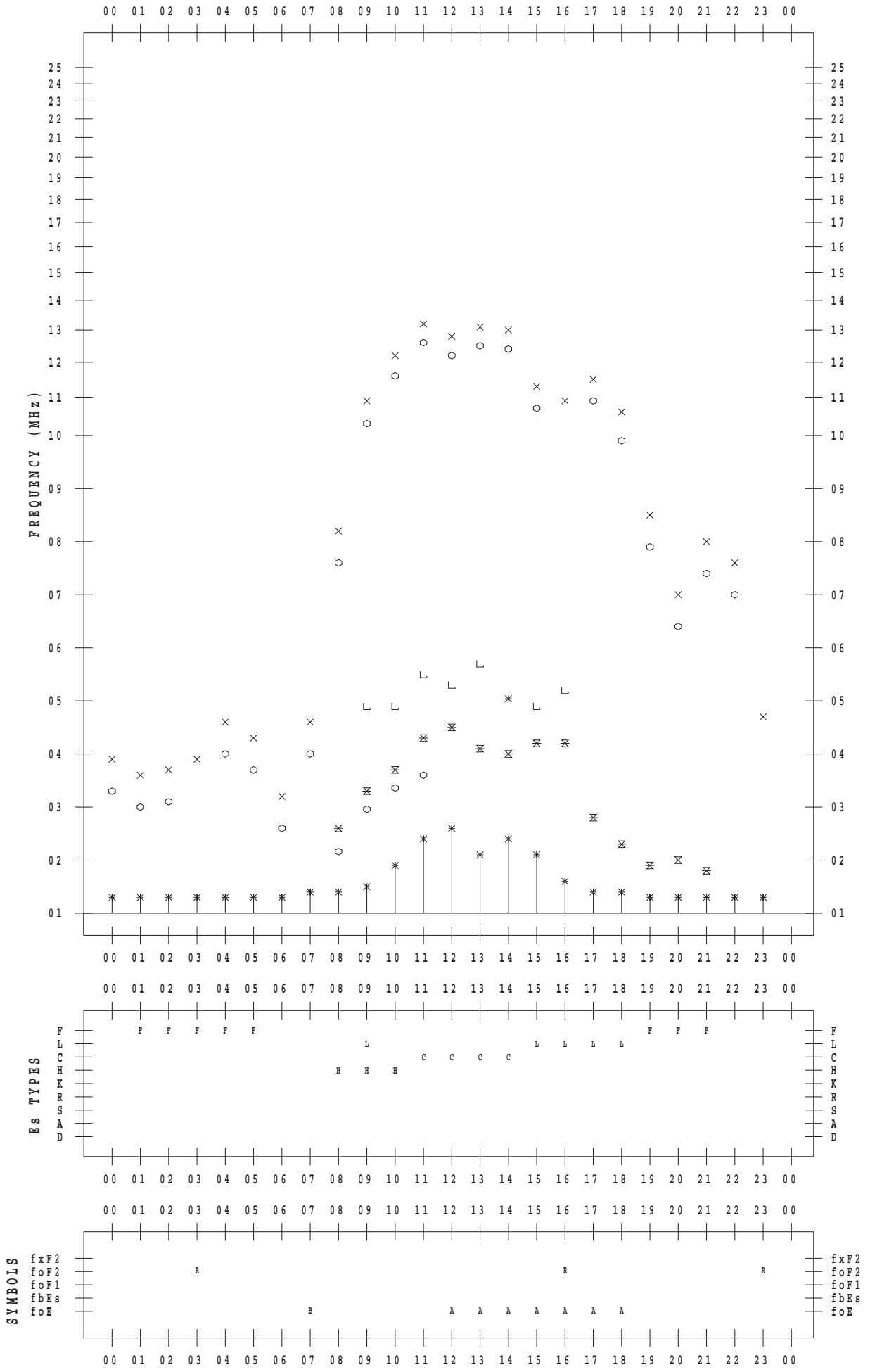
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/27

135 °E MEAN TIME



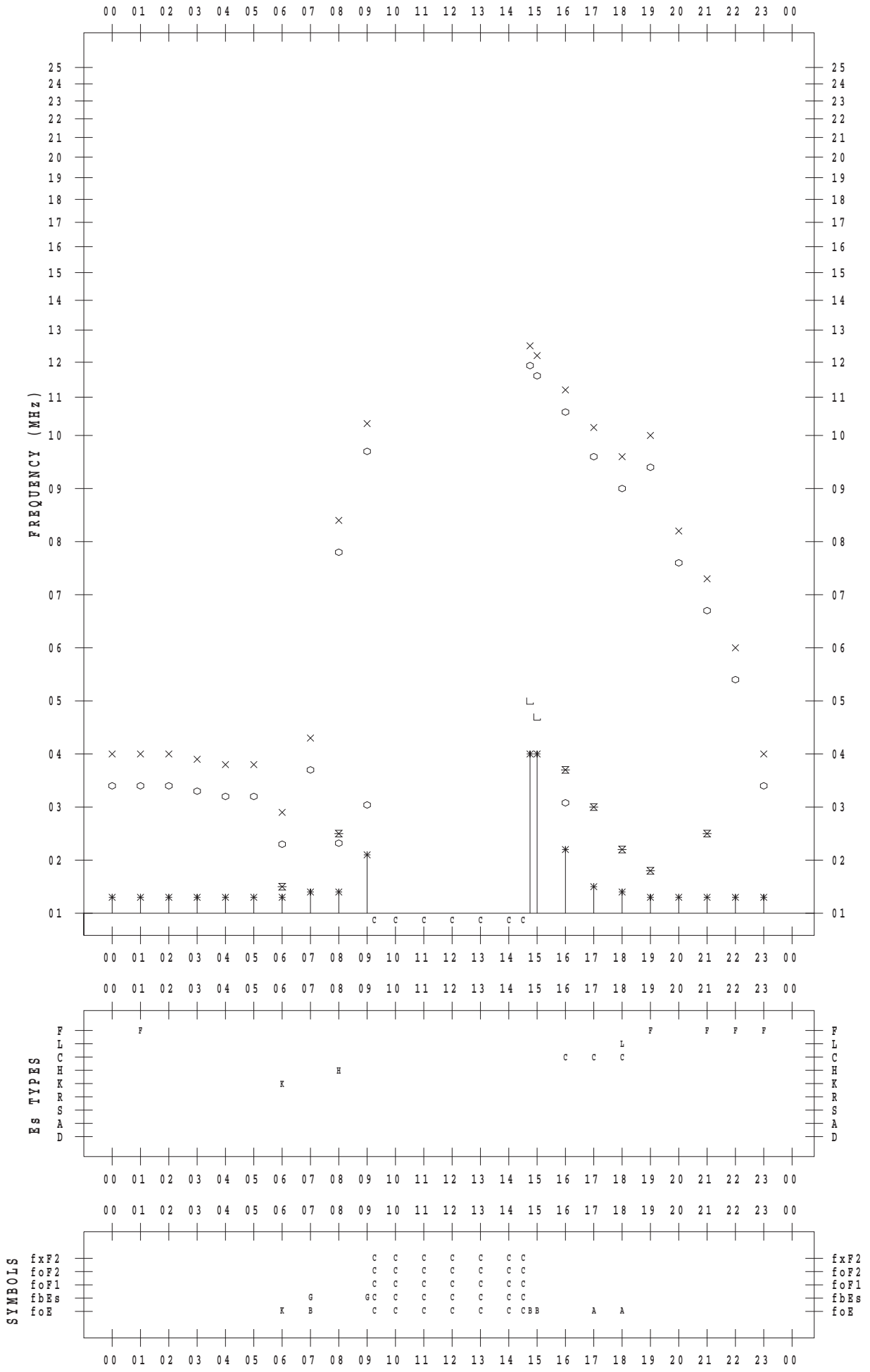
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/28

135 °E MEAN TIME



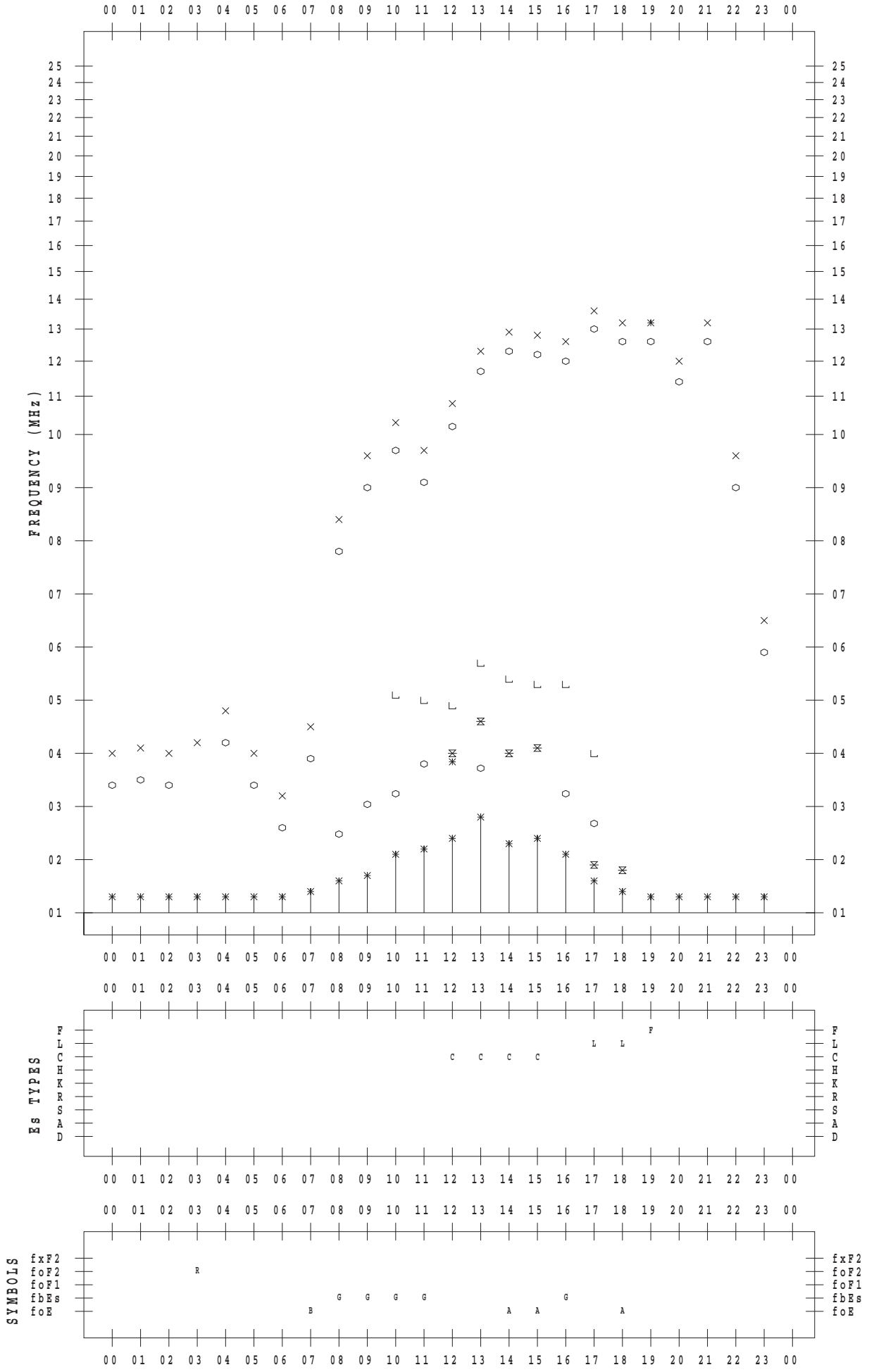
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/29

135 °E MEAN TIME



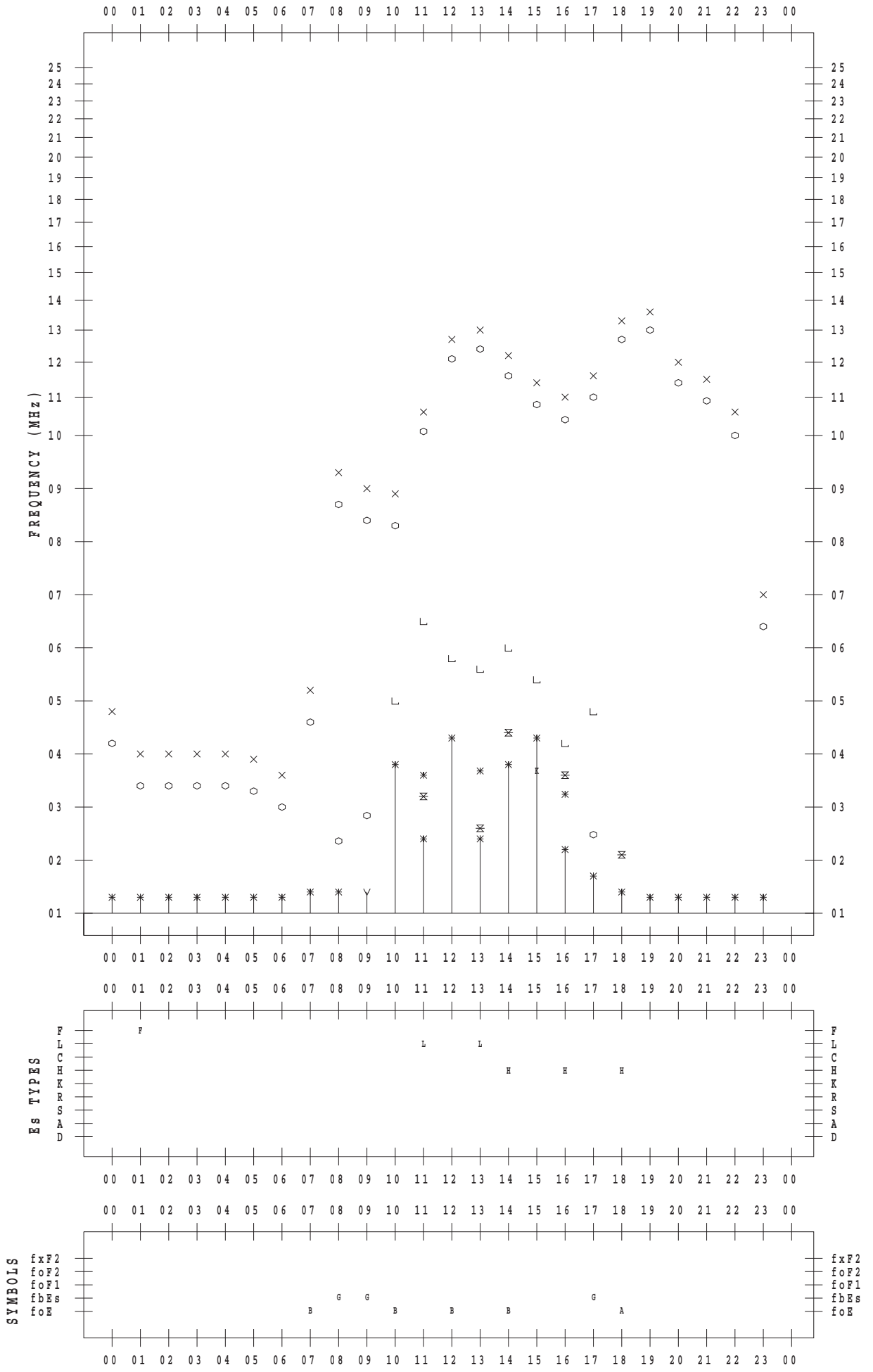
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 1/31

135 °E MEAN TIME