F-817

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 2017

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CONTENTS

≪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 fEs AT Wakkanai

JAN. 2017

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	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	11	G		G	G	G	G	26
2	G	G	26	G	G	G	93	G	46	38	34	G	49	G	57	25	G	G	G		G	G	G	G
3	G	G	G	G	G	G	26	25	G	52	G		132	G	27	61	11	G	G	G	G	G	G	G
4	G	204	G	98	G	G	218	26	G	33	G		G	G	G	G	11	G	G	G	26	31	G	G
5		G	G	25	G	G	G	G	24	44	G	G	49	G	46	27	G	G	G	G	G	G	27	G
6	G	G	G	G	G	G	G	G	23	90	41	G	G	G	48	23	G	G	G	G	G	26	32	G
7	G	G	G	G	G	93	G	G	24	G	G	46	40	35	91	G	G	25	G	G	G		32	G
8	G	G	G	G	G	52	G	35	G	26	32	G	G	G	G	G	24		59	26	G	G	G	G
9	26	G	G	G	G	G	G	G	23	38	40	G	G	41	38	G	46	11	G	G	G	G	G	G
10	G		G	25	G	41	G	84	43	34	G	G	G	G	G	G	G	G	G	60	G	G	G	G
11	G	G	G	G	G	G	35	11	G	G	G	G	G	32	G	G	G	G	G	G	G	G	G	G
12	G	G	G	53	G	G		G	G	G	G	G	G	G	G	25	G	24	41	32	26	G	26	G
13	G	G	27	24	60	G	G	34	24	35		G	G	G	43	185	34	72	46	29	11	G	G	G
14	G	G	G	38	38	38	24	G	50	G	153	G	G	G	G	G	109	31	G	G	G	G	G	G
15	47	48	G	G	23	58	79	36	105	46	28	G	G	G	G	40	G	G	G	26		G	26	26
16	G	G	G	G	24	G	23	84	72	71	G	35	115	34	39	26	G	G	G	G	28	26	35	25
17	38	G		G	G	G	G	11	48	49	40	34	49	G	G	G	G	G	111		G	G	105	48
18	36	G	G	G	G	G	G	24	153	26	40	35	28	36	26	G	G	25	G	G	G	G	G	40
19	39	46	33	28	G	G	34	37	40	55	50	G	G	G	G	48	G	G	G	25	26	G	G	25
20	25	116	25	26	G	G	11	56	78		32	84	50	G	G	G	G	G		G	G	G	26	32
21	27	26	G	G	G	34	G	27	34	26	35	G	G	50	27	G	G	11	G	G	G	G	26	G
22	48	23	G	G	G	11	G	11	32	37	39	36	34	33	34	G	G	25	25	36	G	G	G	27
23	60	40	27	27	25	126	G	30	62	108	62		33	50	G	24	G	G	G	G	G	G	G	109
24	24	G		G	G	G	26	26	48	48	38	52	32	115	G	N	52		34	26	25	26	32	34
25	31	36	G	G	25	G	G	27	48	28	G	53	34	G	G	G	21	G	25	G	32	25	32	34
26	24	G	26	25	26	G		20	44	26	135	68	G	G	104	27	G	20	39	30	41	36	G	G
27	G	G	25	25	G	G	G	G	33	G	32	143	G	50	38	40	21	33	39	126	92	27	39	41
28	G	24	G	G	G	G	G	G	G	38	85	G	G	G	G	34	G	11	G	G	G	67	43	32
29	32	32	G	27	G	G	G	32	G	131	39	58	52	G	34	48	39	G	G	G	G	G	G	G
30	G	G	G	G	24	19	G	38	32	33	34	36	59	37	34	33	103		G	G	G	G	25	G
31	G	G	G	G	G	29	G	25	32	G	G	36	37	35	34	33	95	G	G	G	G	G	25	26
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	28	30	30	30	28	30	30	29	30	28	31	31	31	30	31	28	29	29	30	30	31	31
MED	G	G	G	G	G	G	G	25	32	35	33	G	G	G	26	24	G	G	G	G	G	G	G	G
U Q	31	29	13	25	23	29	25	34	48	48	40	41	49	35	38	33	24	22	29	26	25	25	32	32
L Q	G	G	G	G	G	G	G	G	23	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

JAN. 2017

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	C	C	C	C	C	C	C	C	C	C	27	28	28	28	27	20	15	14		17	14	16	17	15
2	18	14	15	14	14	15	14	14	17	21	18	28	26	15	15	14	15	14	15		15	24	18	14
3	14	14	14	15	14	14	15	14	22	18	28		27	27	27	15	15	14	15	18	15	15	14	14
4	15	16	14	14	14	14	89	14	22	26	29		30	30	28	27	16	14	14	14	18	14	15	14
5		15	14	17	14	14	16	14	14	17	18	28	27	17	20	15	15	15	14	15	14	16	14	14
6	14	15	17	15	14	14	17	14	15	14	14	15	17	17	15	15	17	14	14	14	15	15	14	14
7	14	14	14	15	15	15	17	17	15	17	17	28	18	15	27	26	16	15	15	14	15		14	14
8	14	14	14	14	14	14	16	14	17	16	20	28	28	27	28	22	14		15	17	14	15	14	15
9	16	15	15	14	23	15	18	16	14	15	15	17	28	17	16	15	15	14	14	15	15	14	14	14
10	14		14	14	14	14	14	14	14	14	18	29	28	29	27	26	17	14	16	14	14	14	14	14
11	18	14	14	14	14	14	15	14	15	24	29	29	29	20	28	26	15	14	14	14	14	14	15	14
12	14	14	14	14	14	15		14	24	28	32	32	34	32	29	27	18	14	14	15	14	15	14	14
13	14	15	15	14	14	14	14	14	27	28		35	35	32	28	28	18	14	14	14	14	14	14	14
14	14	14	14	14	14	14	15	14	17	29	28	30	30	29	28	26	15	14	16	14	14	14	14	14
15	14	14	14	14	15	14	14	14	14	27	28	29	29	28	27	21	15	14	15	15		15	14	14
16	17	15	14	14	14	14	14	14	14	15	29	27	27	27	14	15	17	14	15	15	14	14	14	14
17	14	14		14	14	14	14	14	14	14	15	17	15	18	18	26	17	14	15		18	14	14	14
18	14	14	14	14	14	14	14	14	14	14	14	15	15	14	15	14	18	15	14	14	14	14	15	14
19	14	14	14	14	14	16	14	14	14	14	14	20	18	15	15	14	18	14	14	14	14	14	14	14
20	14	15	15	14	15	14	17	16	14		14	15	17	15	17	27	16	14		15	15	15	15	14
21	14	14	14	14	14	14	18	16	14	14	15	16	18	18	15	26	20	15	14	17	15	16	15	15
22	14	15	14	14	14	14	15	15	14	14	14	15	15	14	14	14	18	15	15	14	14	14	15	15
23	14	14	14	14	15	14	17	14	14	14	15		15	18	18	27	20	15	14	14	14	15	14	14
24	14	14		15	14	14	15	15	14	14	16	16	30	17	17	15	20		14	14	14	14	14	14
25	14	14	14	14	14	14	15	16	20	16	18	30	27	26	17	26	20	21	14	14	15	18	14	15
26	15	15	14	14	14	14		14	17	17	17	20	18	20	18	18	17	18	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	14	28	18	17	17	15	14	14	27	14	14	16	14	14	14	14
28	14	15	14	17	15	14	15	15	14	14	14	15	14	15	15	14	14	14	14	14	17	14	14	15
29	14	14	14	15	14	14	15	15	15	14	14	14	15	16	14	14	17	14	15	14	14	15	14	15
30	14	14	15	14	15	14	14	14	14	14	14	14	14	14	14	14	14		14	14	14	14	14	14
31	14	14	15	14	14	14	17	15	14	14	14	14	14	15	14	14	17	15	14	15	14	15	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	29	29	28	30	30	30	28	30	30	29	30	28	31	31	31	31	31	28	29	29	30	30	31	31
MED	14	14	14	14	14	14	15	14	14	15	17	20	26	18	17	18	17	14	14	14	14	14	14	14
U Q	14	15	14	14	14	14	17	15	17	22	27	28	28	27	27	26	18	15	15	15	15	15	15	14
L Q	14	14	14	14	14	14	14	14	14	14	14	15	15	15	15	14	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

JAN. 2017

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	30	30		27	28	24	N	41	63	59	63	68	59	67	65	58	52	39	27	38	27	A	N	27
2	28	28	31	31	27	N	N	39	44	51	57	62	59	65	62	59	55	N	28	36	27		N	N
3	N	N	N	30	28	N	27	36	47	48	49	50	55	49	50	49	51		28	31	34			
4	27	28	26	N	N		N	38	47	54	65	62	54	66	51	61	56	36	31	36	N	A		24
5	N	30	27	34	28	27	28	47	51	56	59	66	70	58	58	66	51	34	30	N	27	30	32	34
6	32	31	32	26	27	N		21	42	51	69	80	63	61	47	51	52	46		31	32	37	34	34
7	34	34	36	N	28	30	N	42	44	59	61	68	61	51	52	56	44	38	34	34	A	A	A	30
8	30	30	30	N	N	N	N	42	47	48	76	65	55	55	54	57	47	A	A	34	36	27	28	28
9	31	28	N					39	45	57	61	75	63	56	54	39	45	36	31	A	30	30	28	37
10	39	38	36	38	37	A	A	38	54	44	67	62	65	44	55	49	39	30	48	45	34	27	27	A
11	27	27	28	26	30	28	44	38	45	51	65	59	53	61	59	58	49	47	30		30	A	30	23
12	31	31	30	32	N	A	A	44	51	C	C	C	C	C	C	C	C	41	A	36	A	A	27	30
13	30	30	27	N	N	N	N	42	55	52	56	59	59					A		45	27			
14	27	27	31	32	30	34	28		57	N		72		59		58	49	41	39					
15			27	26	N	N	26	42	47		58	58	65	56	56		48			34	30	30		
16	32	30	28	28				39	56	58	51	64	48	52	67	50	46	36		31	32		32	28
17	26	30	27	27	48	N	N	38	37	48	N	61	57	57	55	61	48	42	25	N		A	26	28
18	26	30	31	30	N	N		42	46	48	63	69	87	64	53	56	51	39	34	A	34	A	28	31
19	30	30	A	A	A	A	N	24	47	58	80	94	72	61	61	57	59	41	34	39	A	29	A	N
20	A	28	A	30	28	N	N	36	46	56	55	60	62	61	55	58	57	39	30	28	29	A	27	30
21	28	27	30	32	27			44	48	58	66	69	71	66	62	61	44	44	36	32	39	32	28	30
22	28	30	30	30	28		N	45	49	48	52	64	64	66	64	62	47	37	30	30	36	30	27	30
23	30	30	32	36	N			45	41	54	66	80	65	56	51	58	50	A	A	38		N	26	26
24	30	27	27	28	26	N	N	44	55	59	56	73	61	56	61	55	58	38		28	30		31	A
25	A	31	35	27				45	49	52		65	62	57	59	61	56	39	30	38	34	32	32	
26	32	34	36	36	37	30	32	48	48	49	55	65	70		58	59	N	36	47	49		42	50	39
27	31	38	39	42	42	28	28	42	65	66	72	98	106	100	66	61	57	40	38	45	35		A	32
28	A	39	40	45	36	32	38	49	54	57	74	67	64	62	60	60	55	46	34	34	34	28		31
29	34	36	34	58		27		44	59		66	90	62	54	57	51	50	44		28	36	31	28	32
30	32	30	39	30	28	28	27	47	49	59	63	61	58	56	55	52	48	36			38			
31		30	34		N			41	47	58	78	76	65	64	62	58	56	42	30	31	A	34	34	32
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	29	26	24	18	10	9	30	31	27	27	30	29	28	28	28	28	25	21	24	22	14	19	21
MED	30	30	31	30	28	28	28	42	48	54	63	66	62	58	58	58	50	39	31	34	33	30	28	30
U Q	32	31	35	35	36	30	35	44	54	58	67	73	65	64	61	60	55	42	35	38	35	32	32	32
L Q	28	28	28	27	28	27	27	38	46	49	56	62	58	56	54	53	47	36	30	31	30	29	27	28

HOURLY VALUES OF fEs AT Kokubunji

JAN. 2017

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G		G	G	G	G	G	27	55	34	G	G	G	G	39	G	G	G	G	G	33	G	G
2	G	G	G	G	G	G	G	G	27	30	G	G	36	G	35	G	G	G	G	G	G		G	G
3	G	G	G	G	G	G	G	G	24	44	49	33	33	G	50	G	G		G	G	G			
4	G	G	G	G	G		G	G	27	27	G	29	37	42	49	G	G	G	G	G	G	24		G
5	G	G	G	G	G	G	G	G	G	31	34	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G		G	26	33	39	35	33	G	G	G	24	G		G	G	27	29	G
7	23	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G	G	G	G	G	48	55	46	26
8	G	G	30	G	G	G	G	G	G	32	G	G	G	G	G	26	41	54	27	28	G	G	G	29
9	G	30	26					G	G	42	49	36	41	36	G	G	G	G	24	26	24	G	G	G
10	G	G	G	G	G	29	24	28	29	27	44	43	G	G	G	28	35	G	G	G	G	G	G	29
11	G	G	G	G	G	G	G	36	35	29	31	31	31	31	40	38	G	G	G		34	29	G	25
12	G	G	G	G	28	31	30	G	G	C	C	C	C	C	C	C	C	49	50	35	34	36	25	26
13	G	G	22	22	26	29	G	40	44	G	G	G	G		G			24	G	11	G			
14	G	G	G	G	G	G	G	G	G	G		G		G		G	G	G	G	G				G
15			G	G	G	G	G	G	G		G	G	G	G	G	G	G		G	G	24	32		
16	G	G	G	G			G	G	G	G	G	G	G	G	G	G	G	G		G	G		G	G
17	G	G	G	G	G	G	G	G	G	34	34	34	34	47	G	28	27	26	23	G	G	26	G	32
18	G	G	25	G	G	G		G	40	31	39	43	43	31	29	28	G	G	23	35	34	35	24	G
19	G	26	31	37	37	34	G	33	34	51	53	47	41	35	29	32	G	G	G	G	58	22	27	G
20	33	27	32	22	29	24	11	28	35	53	64	49	33	39	29	G	24	G	G	27	G	34	29	30
21	G	G	G	G	G			27	29	35	36	34	33	30	29	33	G	G	G	23	G	24	G	G
22	G	G	G	24	25		G	46	30	35	44	43	35	35	34	29	G	G	G	G	27	G	G	G
23	G	24	23	G	G			28	30	36	N	60	70	51	G	55	37	35	34	G		G	G	G
24	G	G	G	G	G	G	G	G	31	36	58	34	31	G	35	33	31	26	G	G	G		G	33
25	39	33	23	G				G	G	G		35	51	G	G	35	G	G	G	G	G	G	G	G
26	G	G	G	G	G	G	G	G	24	36	G	50	50		G	G	G	G	G	G		G	G	G
27	G	23	G	G	G	G	G	G	G	G	48	G	34	G	G	G	G	G	G	G	G	G	50	25
28	34	25	G	23	G	G	G	G	G	G	30	G	36	G	G	G	G	G	G	G	G	G		G
29	G	G	G	G		23		G	G		G	G	55	33	G	G	G	G		G	G	G	30	29
30	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G			
31		G	G	G	G			G	G	G	34	G	G	40	34	G	G	G	G	23	29	23	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	29	30	30	30	27	23	23	31	31	28	27	30	29	28	29	29	29	29	28	30	28	24	24	27
MED	G	G	G	G	G	G	G	G	24	31	34	30	33	G	G	G	G	G	G	G	G	22	G	G
U Q	G	G	22	G	G	23	G	27	30	36	44	36	39	35	31	30	12	G	G	11	25	30	26	26
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. 2017

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

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

HOURLY VALUES OF foF2 AT Yamagawa

JAN. 2017

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

HOURLY VALUES OF fEs AT Yamagawa

JAN. 2017

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

HOURLY VALUES OF fmin AT Yamagawa

JAN. 2017

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

HOURLY VALUES OF foF2 AT Okinawa

JAN. 2017

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	B	B	36	30	34	42	48	56	58	71	98	92	68	101	88	71	56	B	43	43	B	B
2	B		28	B			B	N	46	57	54	61	75	92	85	92	112	106	74	A	A	50		B
3	B	B	B	34	B	B	B	30	55	61	54	64	61	69	A	61	62	71	56	A	44	51	36	37
4	32		B	B	B	B	B	N	52	56	64	60	60	49	82	81	87	82	66	A		36		B
5	A	B	B	29	B	B	B	38	41	52	55	53	78	86	80	70	65	55	43	41		B	B	N
6	B	B	79	B	B	B	B	N	48	68	49	67	82	76	68	58	57	66	51	38		30		B
7	B	B	A	29	B	B	B	34	46	51	49	66	50	56	64	66	66	60	48		32	B	B	B
8	B	30	B	B	B	B	B	B	48	56	68	64	61	60	65	79	77	68	47	48	60	67	B	B
9	B	B	A	B	B	B	B	31	49	52	55	61	86	44	55	50	65	52	40	B	B	B	B	B
10	B	B	B	36	B	B	B	B	50	66	54	56	48	58	53	53	55	57		45	B	42	B	B
11	B	B	A	28	B	B		32	45	53	44	49	73	73	64	55	61	54	43		B	B	B	B
12	B	26	N	B	59	B	B	B	50	57	44	58	74	62	62	72	66	55	52	46	38	B	B	B
13	B	B	N	26	A	B	B	B	48	62	72	64	64		59	53	54	55	40	A	40	A	B	B
14	B	B	B	36	B	B	B	B	48	56	85	70	90	108	81	53	54	54	46	B	32	29	N	B
15	B	B	B	26	28	N	B	B	44	54	56	63	86	83	77	55	51	50	38	A	B	N	26	
16	B	B	B	28	34	B	B	B	51	53	71	104	129	104	102	68	60	55	56	A	A		B	B
17	B	B	B	34	B	B	B	B	47	50	54	61	65	97	110	104	85	66	46	A	A	30	28	B
18	A	28	29	A	B	B	B		44	55	73	82	92	106	111	112	97	90	65	A	42	A	B	B
19	B	B	42	B	A	A	A	A	A	63	71	90	83	90	A	90	68	54	42	A		A		B
20	B	B	B	B	34	B	B	B	50	52	62	62	A	80	90	93	111	108	73	44	44	42	B	N
21	B	B	A	N	B	B	B	B	51	56	60	63	87	112	134	121	111	93	63	37	A	37		B
22	30	B	34	B	34	B	B	N	49	56	54	65	79	80	A	75	63	61	59	43	B	A	34	28
23	B	32	B	28		B	B		59	77	92	62	83	86	68	58	63	68	52	B	A	B	B	B
24	B	B	B	B	B	B	B	B	48	55	60	67	71	85	72	63	63	53	47	B	B	B	N	B
25	B		28	B	B	B	B	B	50	59	44	61	58	69	B	72	61	57	52	37	B	B	A	B
26	B	B	B		25	B	A	N	51	58	58	50	48	90	81	71	55	48	52	47	44		B	B
27		B	B	29	A	B	B	N	51	53	62	105	123	137	124	103	93	86	80	50	50	40	B	B
28	B	B	48			N	B	29	49	55	63	72	82	84	87	80	69	61	54	32	B	B	32	32
29	31	32	30	A	N	B	A	N	53	60	71	67	64	64	60	60	62	57	47	A		40	B	
30	37	37	43		B	B	B	B	52	61	72	86	81	76	67	60	58	56	51	37	B	A	B	B
31	B	B	B	N	B	B	B		46	63	77	95	104	86	67	64	65	48	44	A	B	A	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	4	6	9	12	7	1	1	7	30	31	31	31	30	30	27	31	31	31	30	13	11	13	5	3
MED	32	31	34	29	34	30	34	32	49	56	60	64	78	84	72	70	65	57	52	43	43	40	32	32
U Q	34	32	45	34	36	15	17	38	51	61	71	71	86	92	87	90	85	71	56	46	44	46	35	37
L Q	30	28	28	28	28	15	17	30	47	53	54	61	64	69	64	58	60	54	46	37	38	33	27	28

HOURLY VALUES OF fEs AT Okinawa

JAN. 2017

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	26	25	B	B	G	G	G	G	47	37	G	46	G	G	G	G	G	G	24	B	G	38	B	B
2	B	G	G	B	G	G	B	G	G	G	G	G	G	G	G	G	G	G	26	26	26	G	G	B
3	B	B	B	G	B	B	B	G	G	G	G	40	45	38	52	33	G	34	26	25	G	G	G	G
4	G	G	B	B	B	B	B	G	G	G	40	34	46	57	51	40	G	G	G	57	G	G	G	B
5	34	B	B	G	B	B	B	G	G	30	G	G	G	G	G	G	G	G	23	G	G	B	B	G
6	B	B	G	B	B	B	B	G	G	G	G	33	G	45	40	30	31	G	G	G	G	G	G	B
7	B	B	32	27	B	B	B	G	G	40	36	G	G	G	G	G	G	G	11	G	G	B	B	B
8	B	G	B	B	B	B	B	B	30	G	G	40	44	41	G	36	G	G	23	G	40	G	B	B
9	B	B	33	B	B	B	B	G	G	35	31	38	37	G	G	30	29	37	G	B	B	B	B	B
10	B	B	B	G	B	B	B	B	33	34	31	34	42	G	50	G	G	G	G	G	B	G	B	B
11	B	B	31	G	B	B	G	G	G	30	32	G	43	G	44	36	33	25	G	G	B	B	B	B
12	B	G	G	B	G	B	B	B	G	G	G	42	G	50	51	58	61	48	52	36	G	B	B	B
13	B	B	G	G	24	B	B	B	G	37	G	G	G	G	G	G	G	100	19	29	G	32	B	B
14	B	B	B	G	B	B	B	B	G	30	32	G	G	G	G	G	G	G	11	B	G	G	G	B
15	B	B	B	G	G	G	B	B	32	G	G	48	47	G	G	G	40	32	27	46	B	27	G	G
16	B	B	B	G	G	B	B	B	G	32	G	G	G	G	G	G	42	44	39	38	40	G	B	B
17	B	B	B	28	B	B	B	B	25	36	39	42	39	48	45	G	32	36	39	35	55	33	G	B
18	27	G	G	27	B	B	B	G	30	G	42	49	53	59	72	46	96	G	G	36	51	40	B	B
19	B	B	22	B	25	43	28	30	50	46	51	109	59	52	85	59	36	32	27	32	G	30	G	B
20	B	B	B	B	G	B	B	B	G	G	41	46	110	50	51	42	38	32	G	G	G	G	B	G
21	B	B	32	32	B	B	B	B	G	26	40	45	53	59	52	54	57	36	33	43	32	25	G	B
22	G	B	G	B	G	B	B	G	G	G	G	G	57	68	78	64	50	51	G	28	B	34	G	G
23	B	26	B	G	G	B	B	G	24	31	G	G	36	G	G	38	33	42	33	B	28	B	B	B
24	B	B	B	B	B	B	B	B	G	42	40	44	G	48	47	G	39	33	43	B	B	B	G	B
25	B	G	G	B	B	B	B	B	24	G	36	30	G	42	B	G	G	G	G	G	B	B	29	B
26	B	B	B	G	G	B	25	G	G	30	30	G	52	48	G	42	28	G	G	G	G	G	B	B
27	G	B	B	G	27	B	B	G	G	34	37	56	80	81	140	73	35	35	G	G	G	G	B	B
28	B	B	29	G	G	G	B	G	G	G	G	46	43	G	G	36	G	28	G	G	B	B	G	G
29	G	G	25	24	G	B	36	G	G	G	G	44	52	42	33	38	G	25	G	37	G	G	B	G
30	G	G	G	G	B	B	B	B	G	33	40	44	44	44	G	G	34	29	29	27	B	48	B	B
31	B	B	B	G	B	B	B	G	25	38	34	50	59	62	63	45	31	33	32	46	B	29	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	8	10	15	19	14	5	5	18	31	31	31	31	31	31	30	31	31	31	31	26	21	22	13	7
MED	G	G	G	G	G	G	25	G	G	30	31	40	43	42	36	33	31	29	19	26	G	G	G	G
U Q	26	G	31	24	G	22	32	G	25	35	39	46	52	50	51	42	38	36	29	36	30	32	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

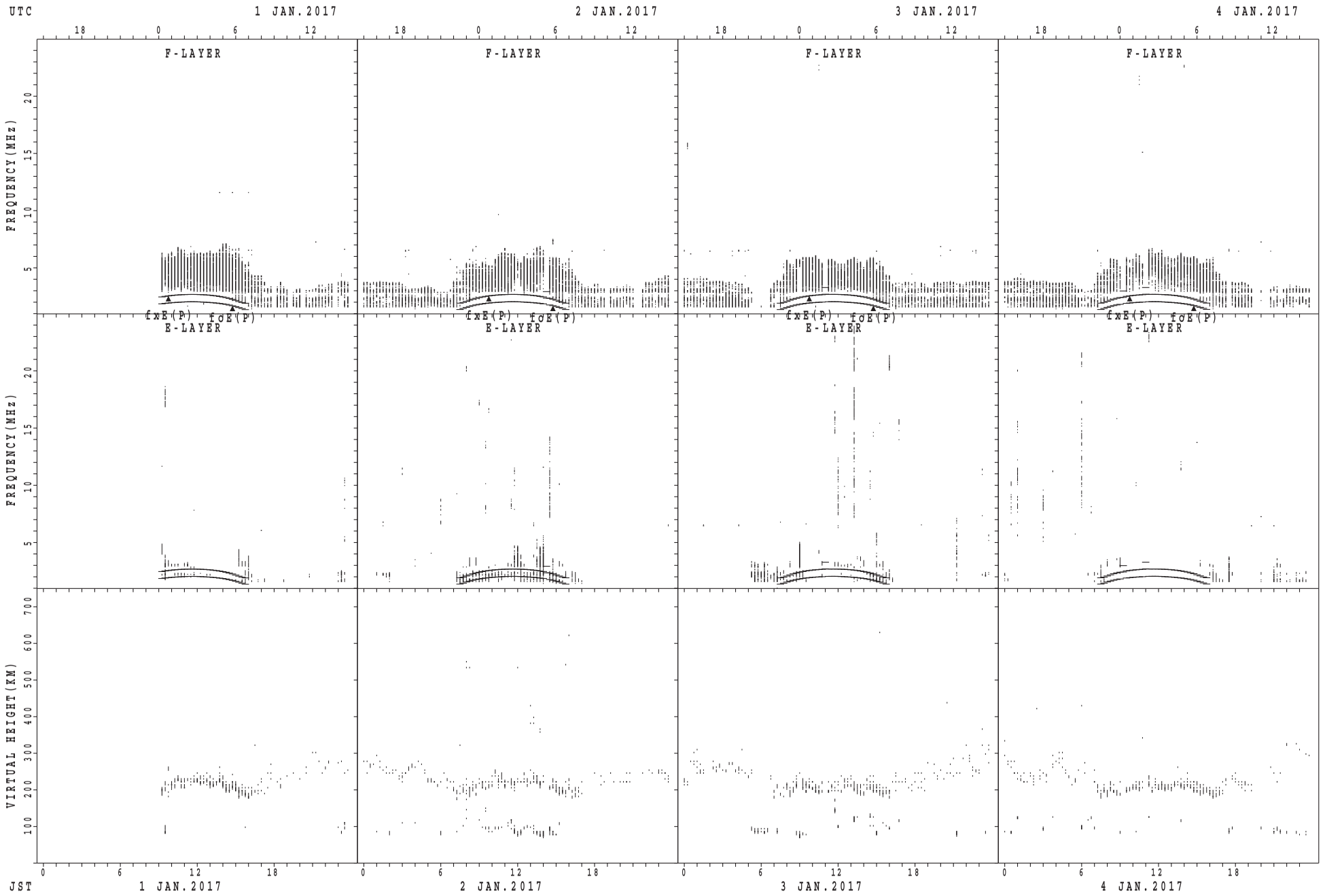
HOURLY VALUES OF fmin AT Okinawa

JAN. 2017

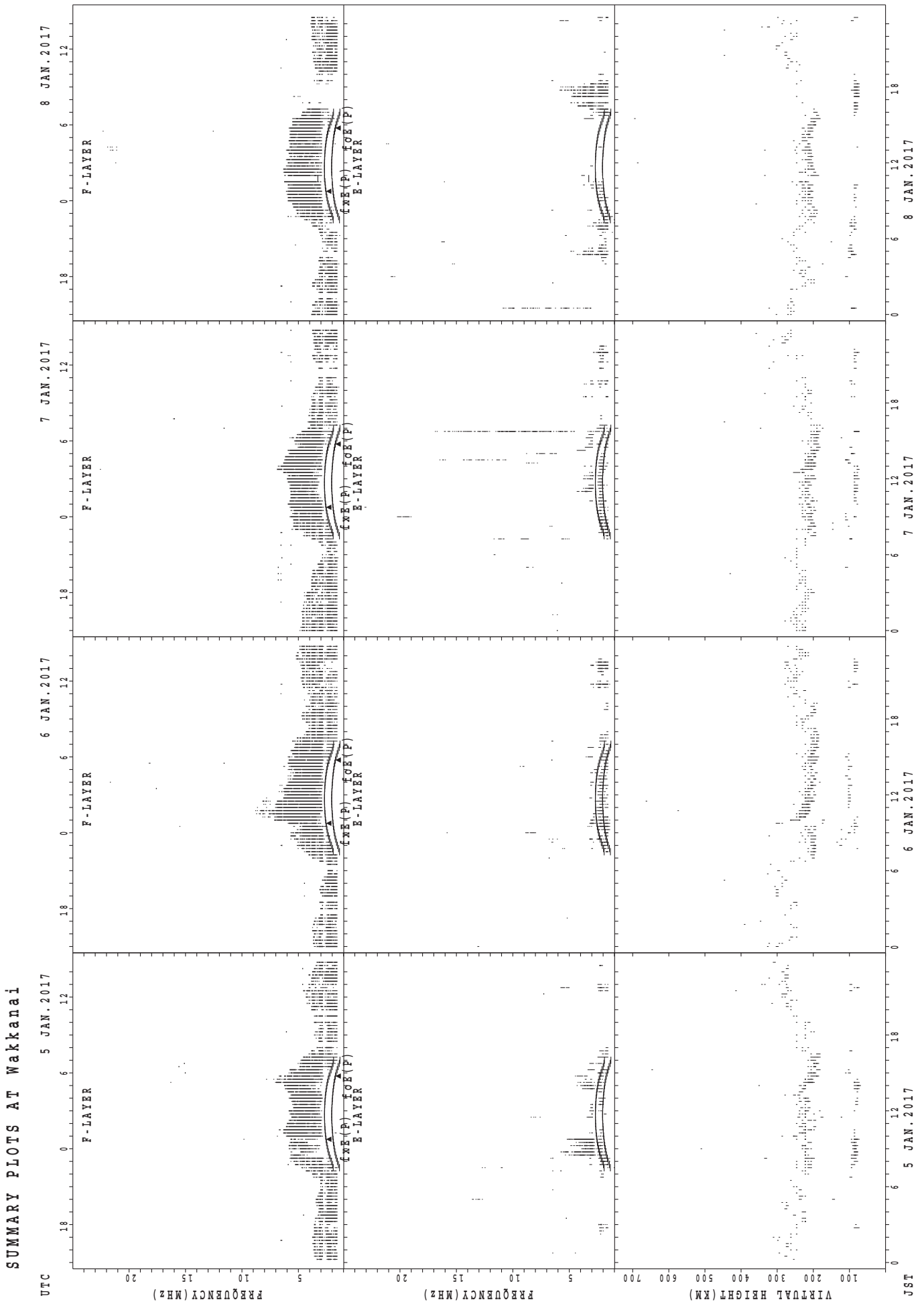
LAT. 26°41.0'N LON. 128°09.0'E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

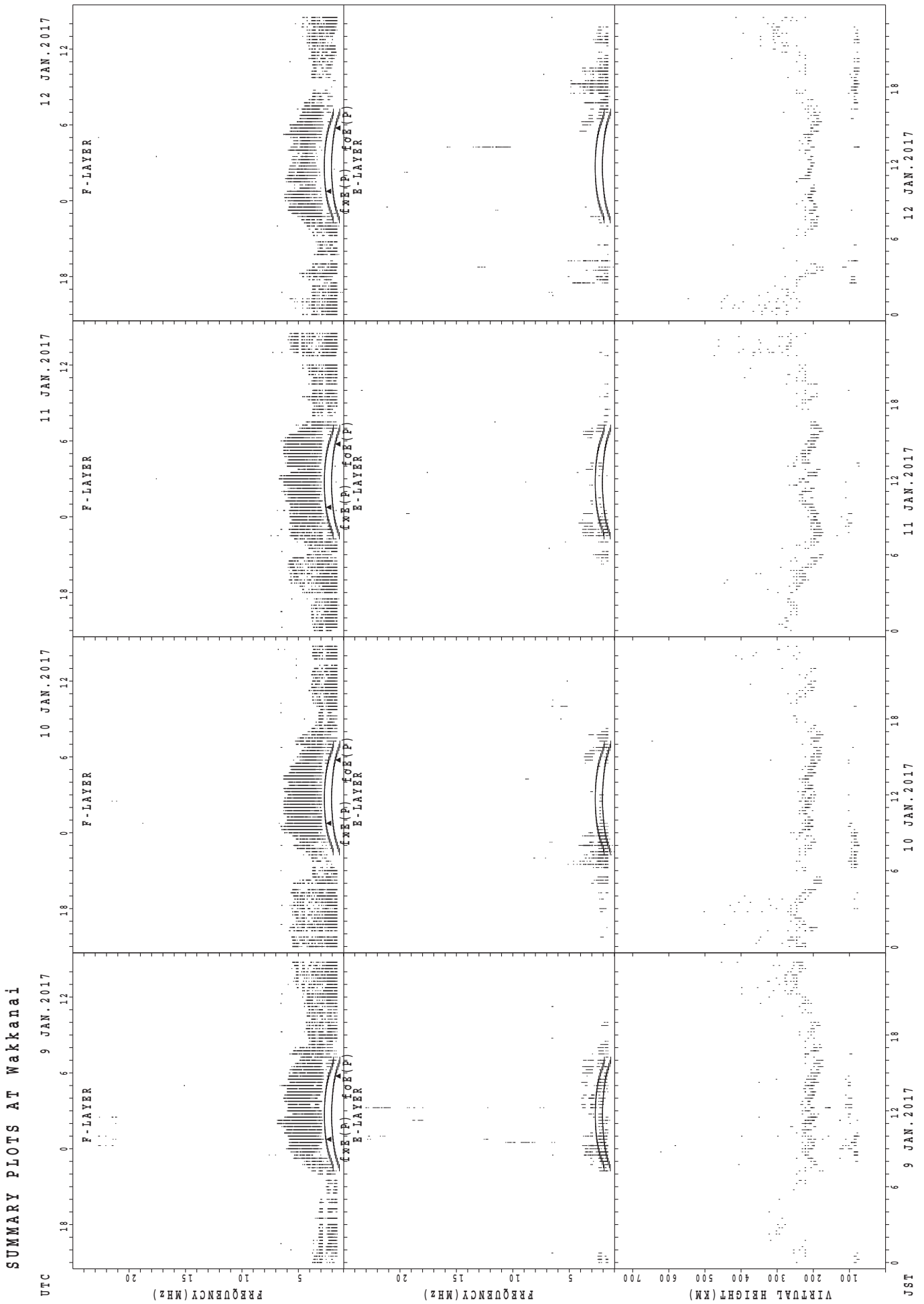
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	16	B	B	17	16	66	15	16	16	42	32	48	45	39	36	28	24	15	B	20	16	B	B
2	B	18	66	B	71	17	B	17	24	29	36	40	41	39	44	40	34	22	15	18	15	21	66	B
3	B	B	B	15	B	B	B	15	22	34	39	38	42	18	17	17	33	18	15	16	15	16	15	17
4	20	20	B	B	B	B	B	66	22	29	26	27	26	24	18	17	18	28	28	18	23	20	66	B
5	15	B	B	16	B	B	B	18	22	15	20	42	46	44	39	17	16	23	15	18	26	B	B	15
6	B	B	18	B	B	B	B	20	23	29	38	40	36	30	27	17	24	22	21	17	16	18	66	B
7	B	B	15	14	B	B	B	66	21	15	15	22	39	40	42	39	18	23	16	26	20	B	B	B
8	B	17	B	B	B	B	B	B	23	16	18	23	21	18	39	20	16	27	16	16	18	28	B	B
9	B	B	17	B	B	B	B	17	22	15	16	21	24	23	39	17	39	15	20	B	B	B	B	B
10	B	B	B	17	B	B	B	B	20	15	15	40	21	40	30	36	35	23	71	16	B	21	B	B
11	B	B	15	15	B	B	16	15	23	15	16	44	21	20	20	22	17	17	18	23	B	B	B	B
12	B	16	15	B	16	B	B	B	22	32	17	22	43	22	29	17	17	14	14	16	16	B	B	B
13	B	B	15	17	15	B	B	B	23	20	32	42	47	45	42	38	38	22	21	15	16	15	B	B
14	B	B	B	16	B	B	B	B	23	17	42	42	44	44	33	17	18	23	15	B	15	66	16	B
15	B	B	B	16	15	18	B	B	18	28	37	34	44	43	44	39	17	27	16	16	B	16	15	66
16	B	B	B	16	16	B	B	B	26	15	20	44	45	45	42	21	17	14	15	15	15	66	B	B
17	B	B	B	14	B	B	B	B	18	15	21	23	26	24	33	21	18	14	15	15	16	16	15	B
18	15	17	16	15	B	B	B	66	15	15	18	21	28	20	18	16	16	24	15	15	16	15	B	B
19	B	B	23	B	15	15	15	15	17	16	17	22	22	24	24	20	17	17	16	16	17	16	27	B
20	B	B	B	B	17	B	B	B	23	16	27	29	28	26	27	24	17	16	17	24	16	18	B	15
21	B	B	15	15	B	B	B	B	23	16	24	27	29	24	21	17	16	15	15	17	16	14	16	B
22	17	B	16	B	20	B	B	15	23	14	17	42	23	28	23	18	15	15	18	15	B	15	16	16
23	B	15	B	15	16	B	B	18	23	18	18	41	41	42	40	22	14	16	15	B	15	B	B	B
24	B	B	B	B	B	B	B	B	23	15	16	16	42	27	17	17	14	15	15	B	B	B	15	B
25	B	18	16	B	B	B	B	B	22	15	18	21	42	45	B	40	29	24	17	16	B	B	16	B
26	B	B	B	18	20	B	15	15	23	16	20	23	34	29	38	26	16	29	18	21	17	66	B	B
27	21	B	B	18	15	B	B	15	23	17	18	24	27	26	24	21	21	16	17	81	42	17	B	B
28	B	B	15	16	16	16	B	15	23	17	37	32	31	42	41	20	18	14	20	16	B	B	16	17
29	16	15	14	15	17	B	15	18	22	27	17	21	30	29	41	26	17	15	16	15	66	17	B	66
30	16	17	21	71	B	B	B	B	23	16	18	28	24	26	41	38	16	14	14	16	B	15	B	B
31	B	B	B	16	B	B	B	66	16	17	17	21	35	33	28	21	17	15	14	15	B	15	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	8	10	15	19	14	5	5	18	31	31	31	31	31	31	30	31	31	31	31	26	21	22	13	7
MED	16	17	16	16	16	16	15	17	23	16	18	28	34	29	33	21	17	17	16	16	16	16	16	17
U Q	18	18	18	17	17	17	41	20	23	20	32	40	42	42	41	36	24	23	18	18	20	21	46	66
L Q	15	16	15	15	15	15	15	15	21	15	17	22	26	24	24	17	16	15	15	15	15	15	15	15

SUMMARY PLOTS AT Wakkanai



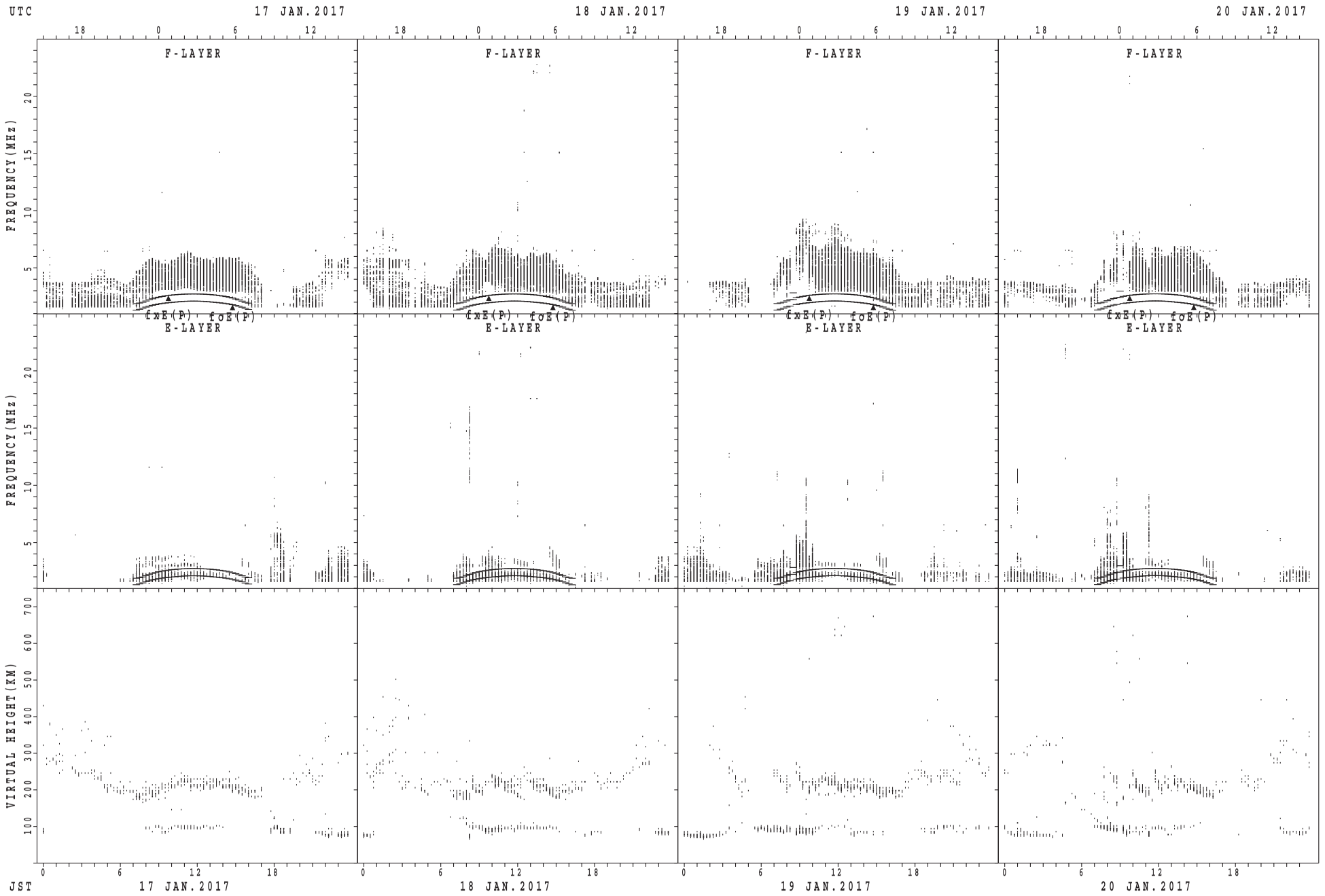
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
5 JAN.2017
6 JAN.2017
7 JAN.2017
8 JAN.2017
F-LAYER
E-LAYER
fxE(P), foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

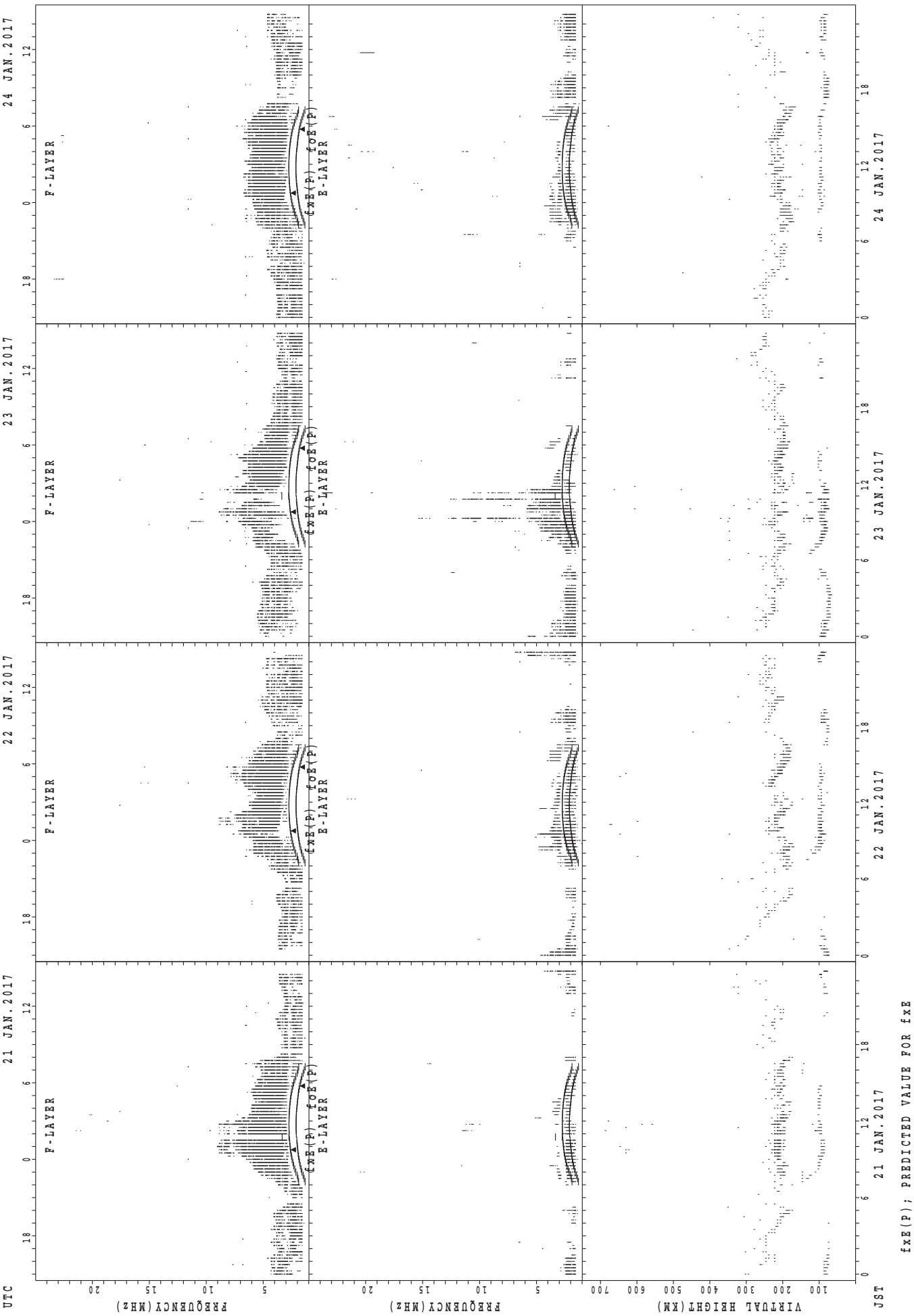

SUMMARY PLOTS AT Wakkanai
UTC
JST
9 JAN.2017
10 JAN.2017
11 JAN.2017
12 JAN.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

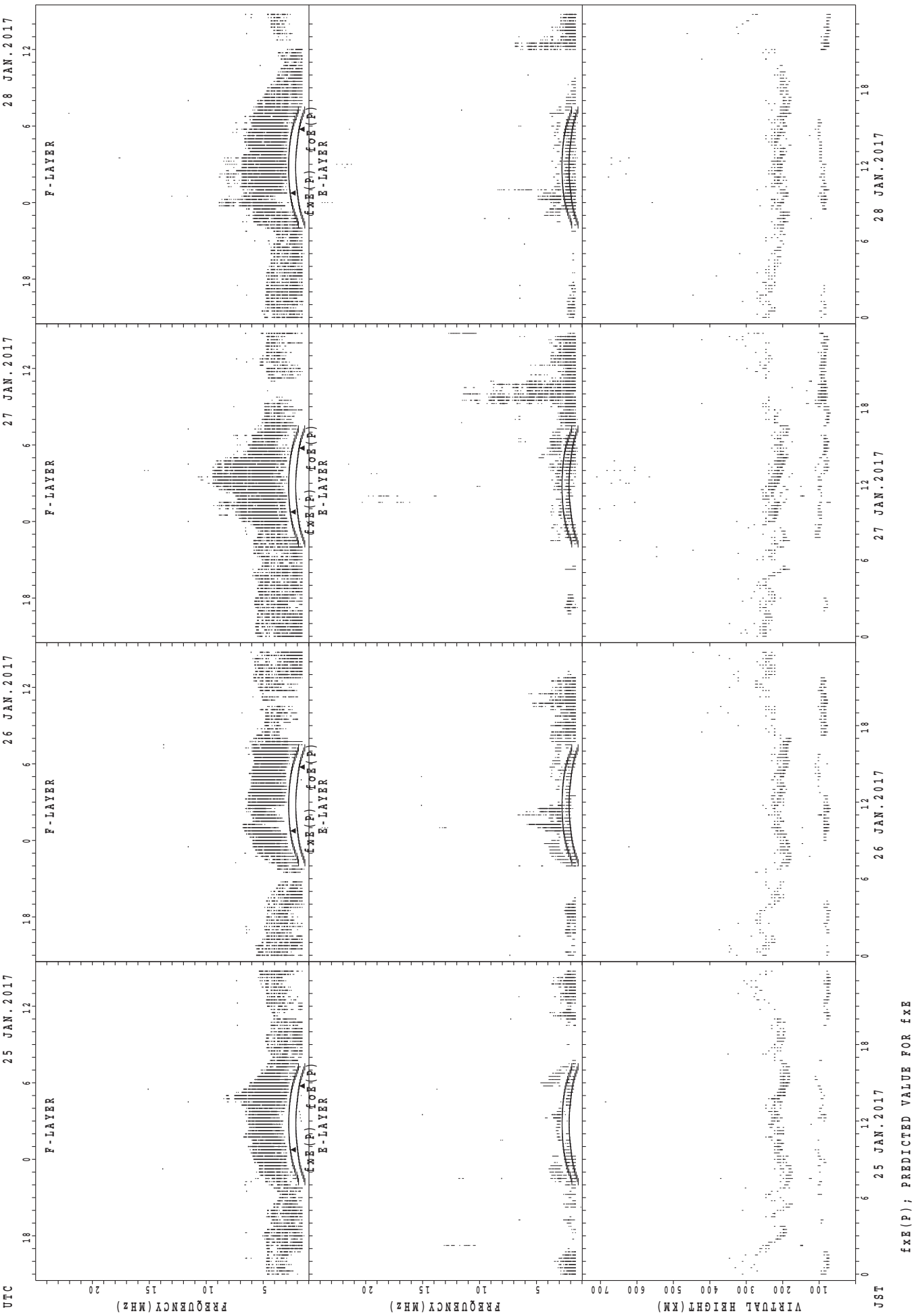

SUMMARY PLOTS AT Wakkanai
UTC
JST
13 JAN.2017
14 JAN.2017
15 JAN.2017
16 JAN.2017
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

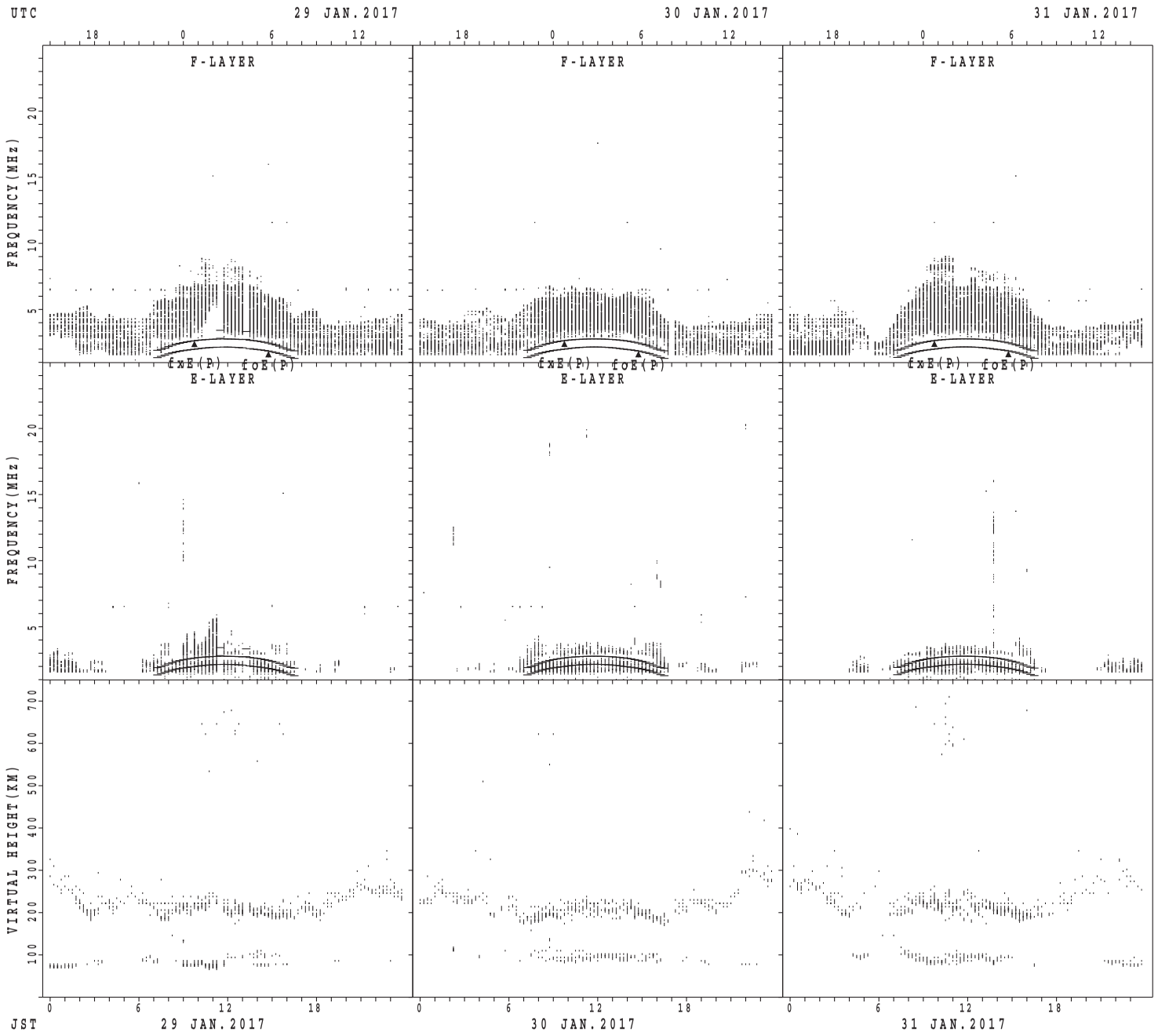


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
21 JAN.2017
22 JAN.2017
23 JAN.2017
24 JAN.2017
F-LAYER
E-LAYER
fxE(P), foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

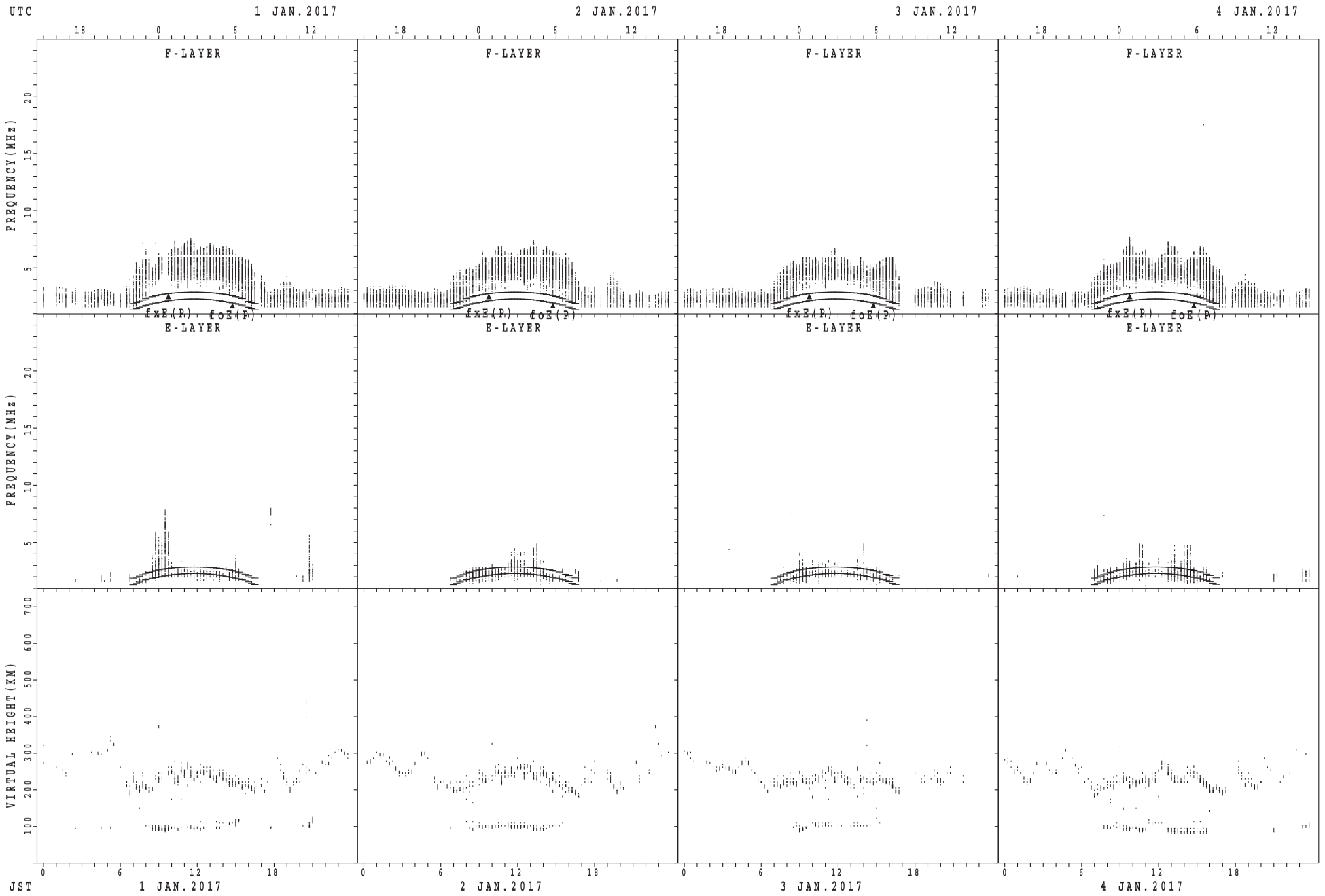

SUMMARY PLOTS AT Wakkanai
UTC
JST
25 JAN.2017
26 JAN.2017
27 JAN.2017
28 JAN.2017
F-LAYER
E-LAYER
fxE(P), foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai

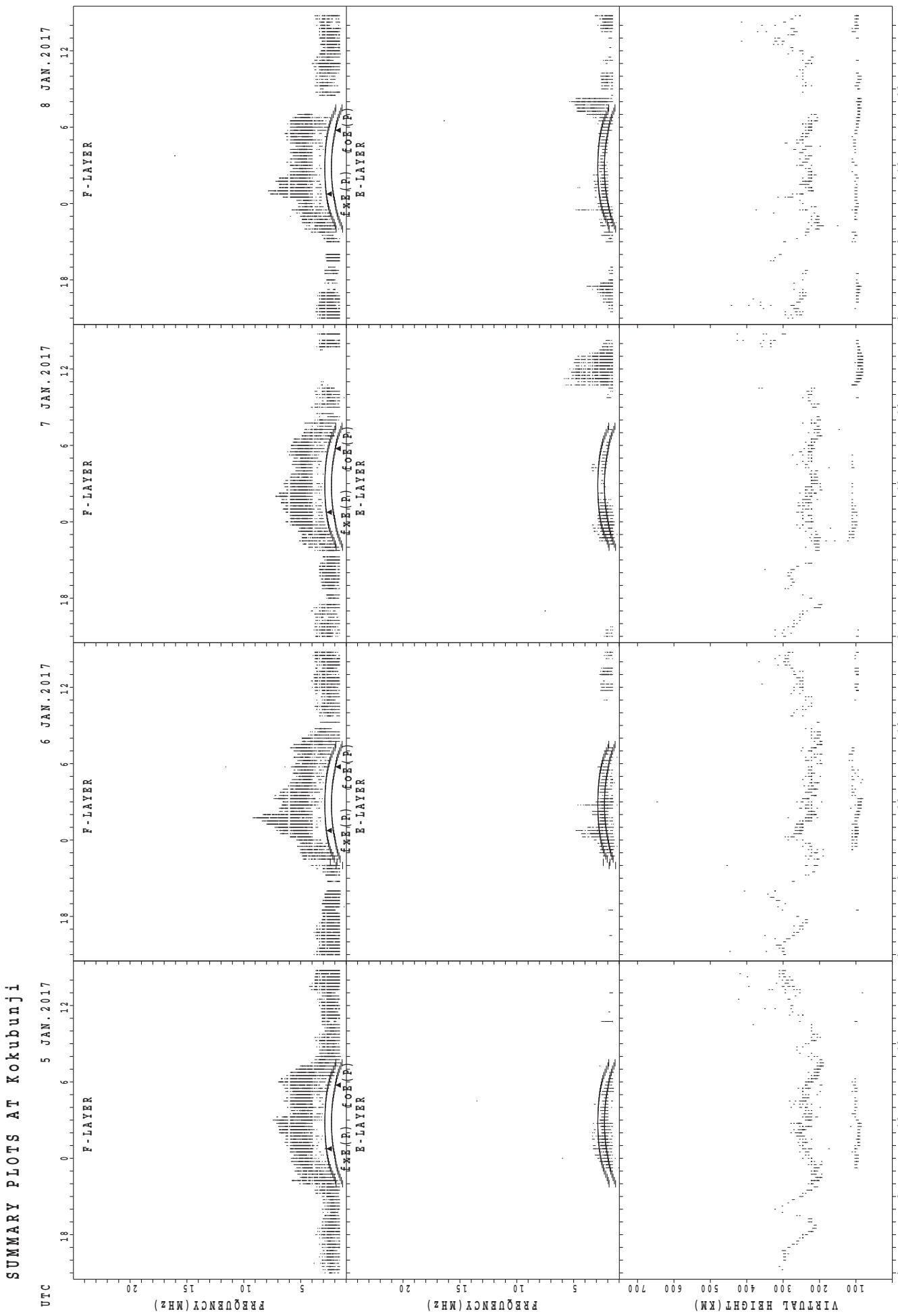


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

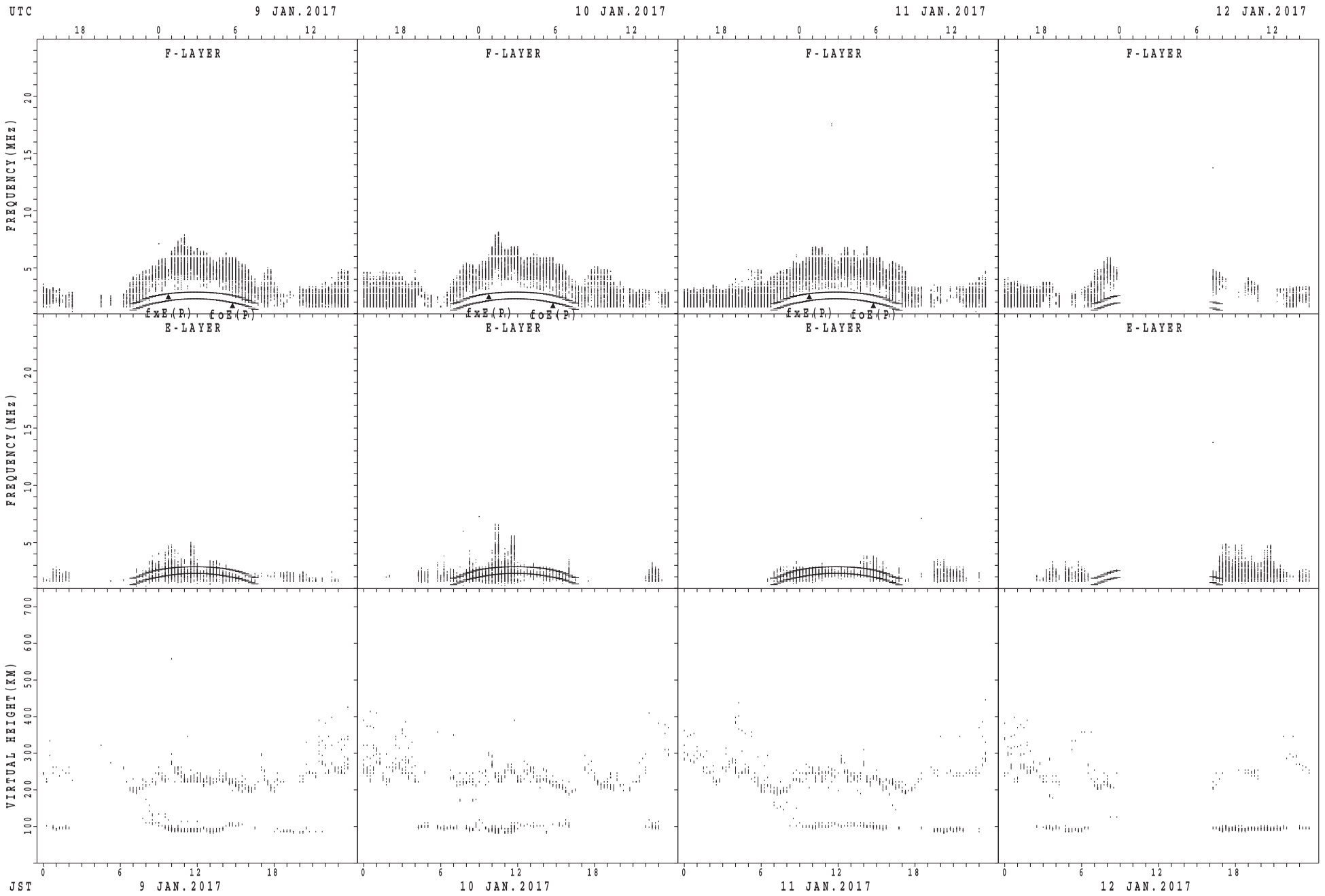
SUMMARY PLOTS AT Kokubunji



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

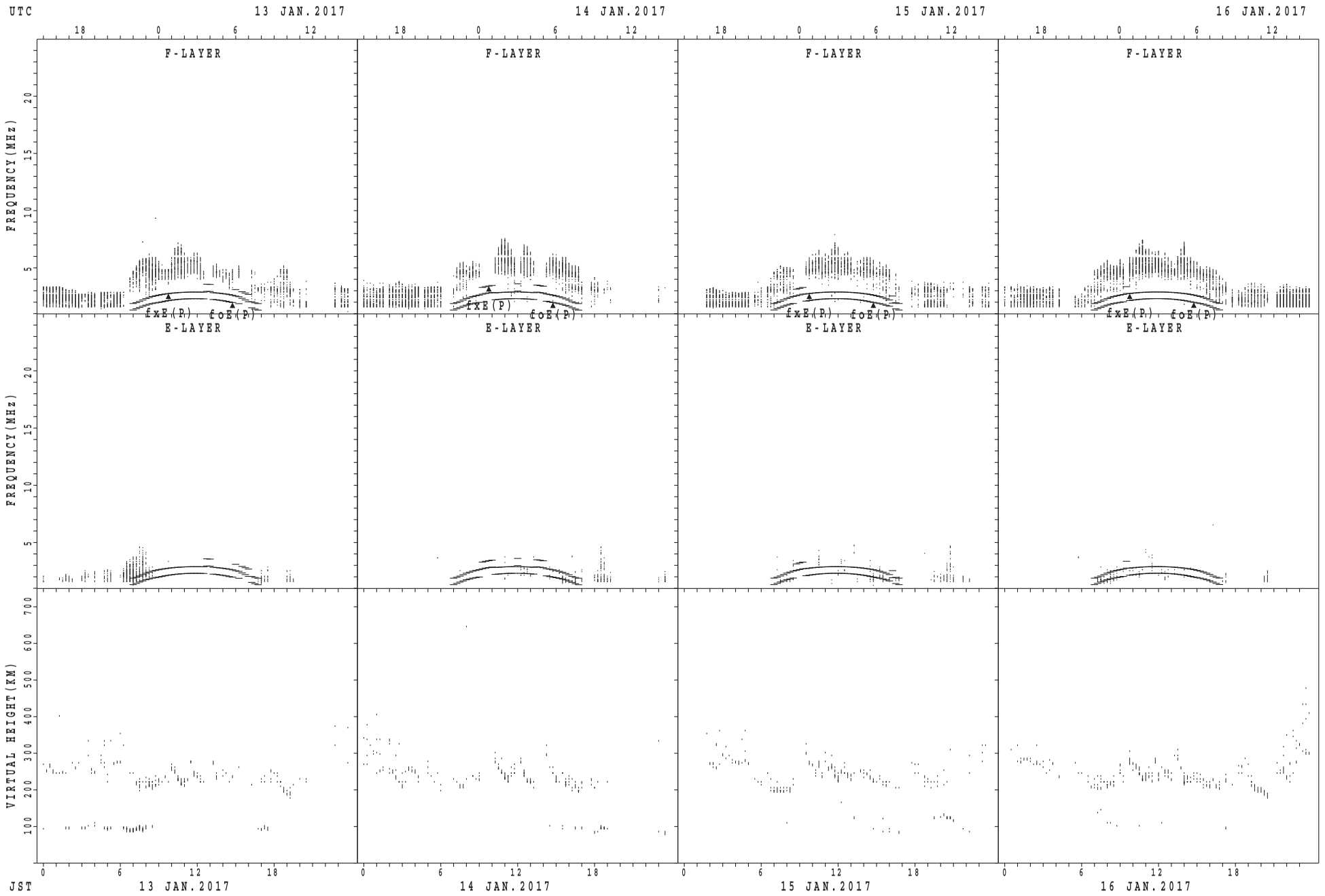

SUMMARY PLOTS AT Kokubunji
UTC
JST
5 JAN.2017
6 JAN.2017
7 JAN.2017
8 JAN.2017
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P), foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



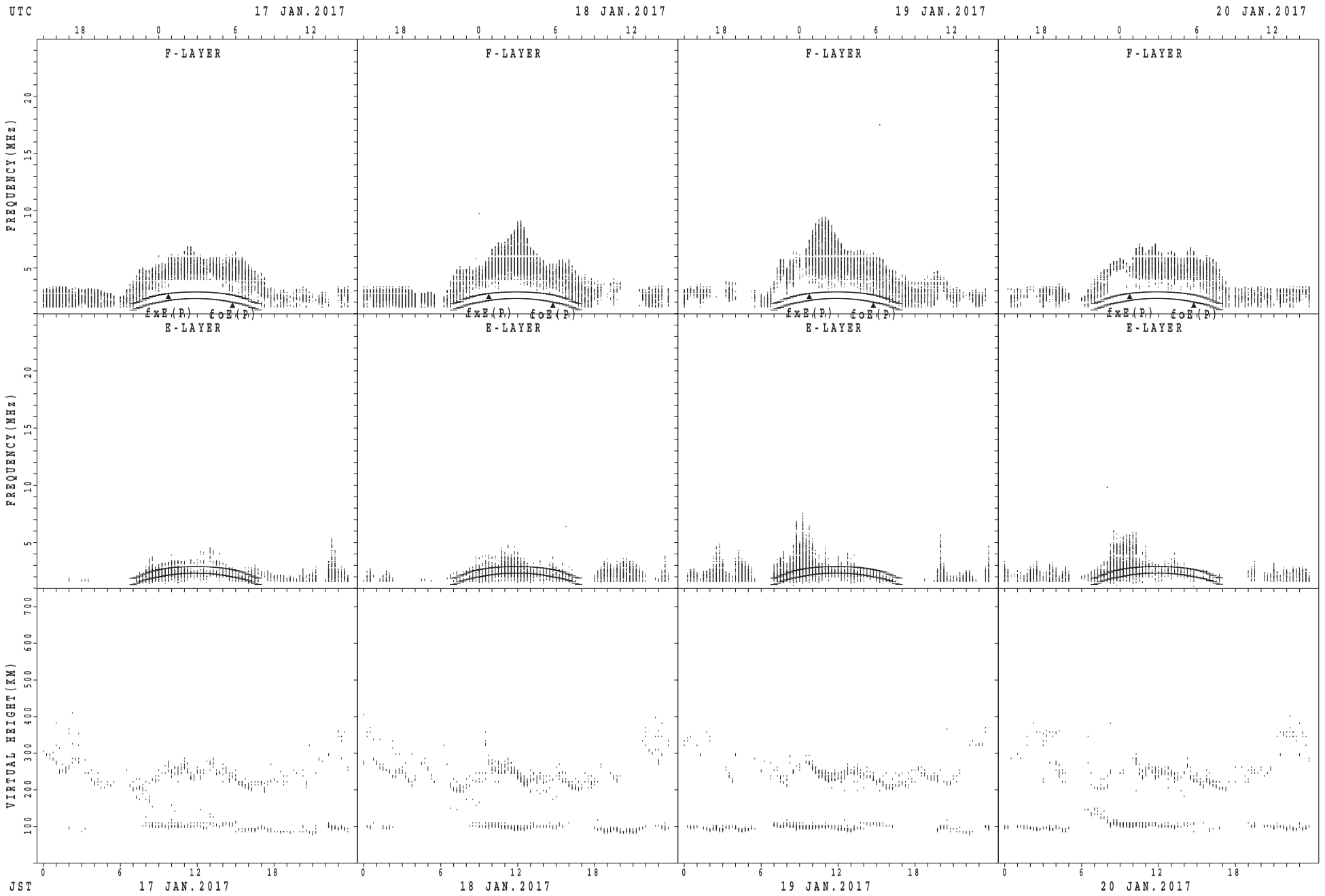
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



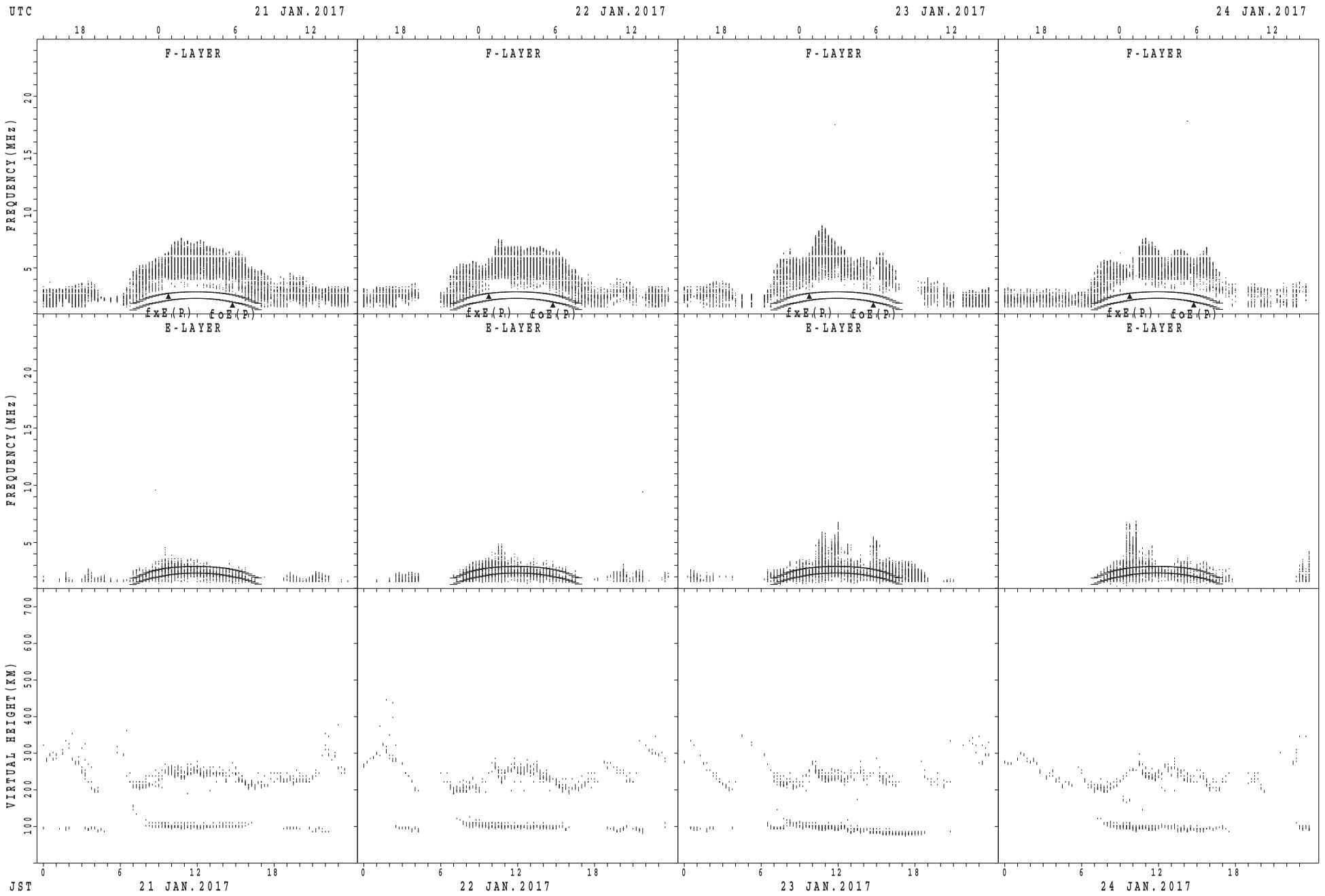
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji

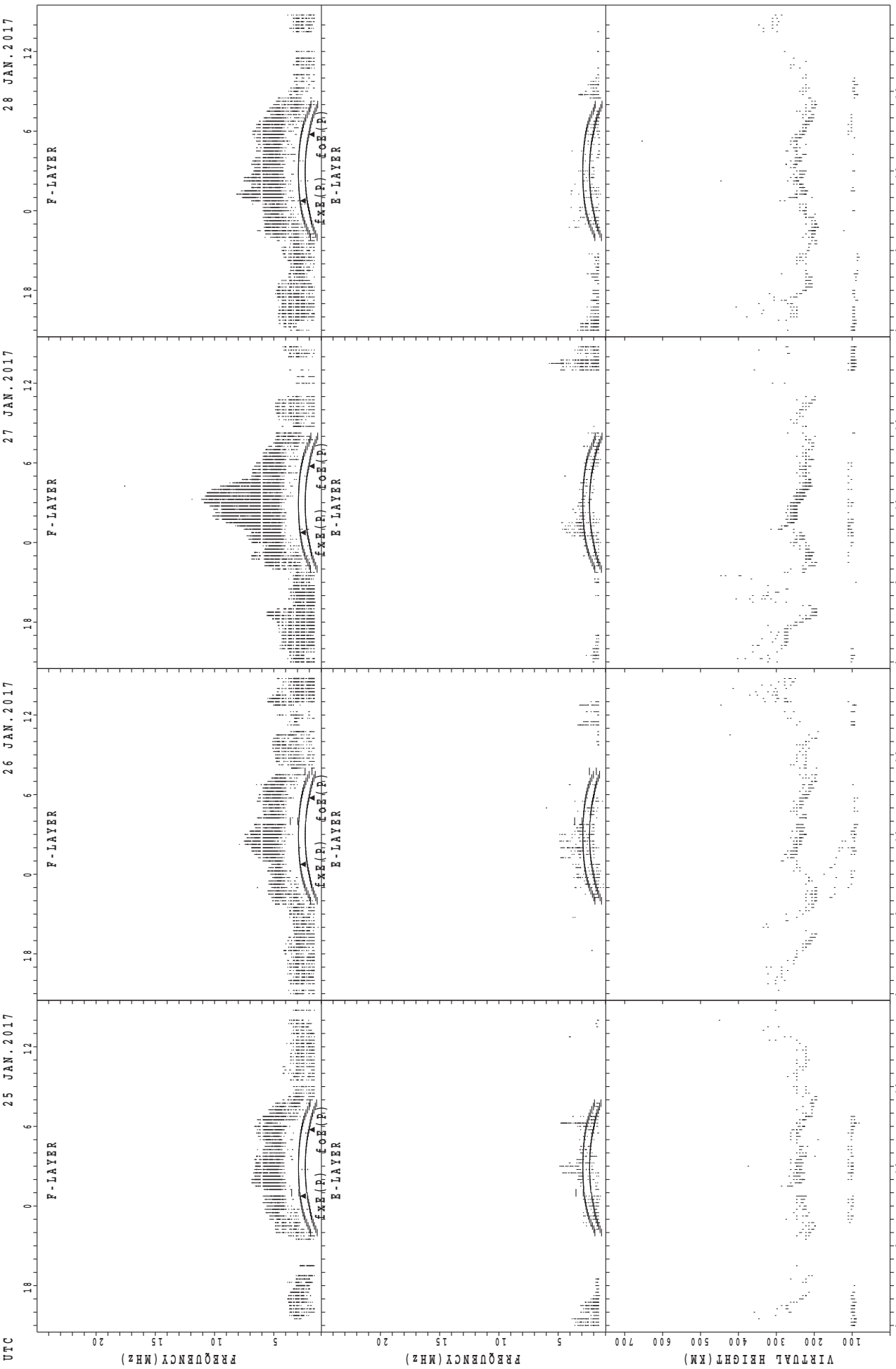


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

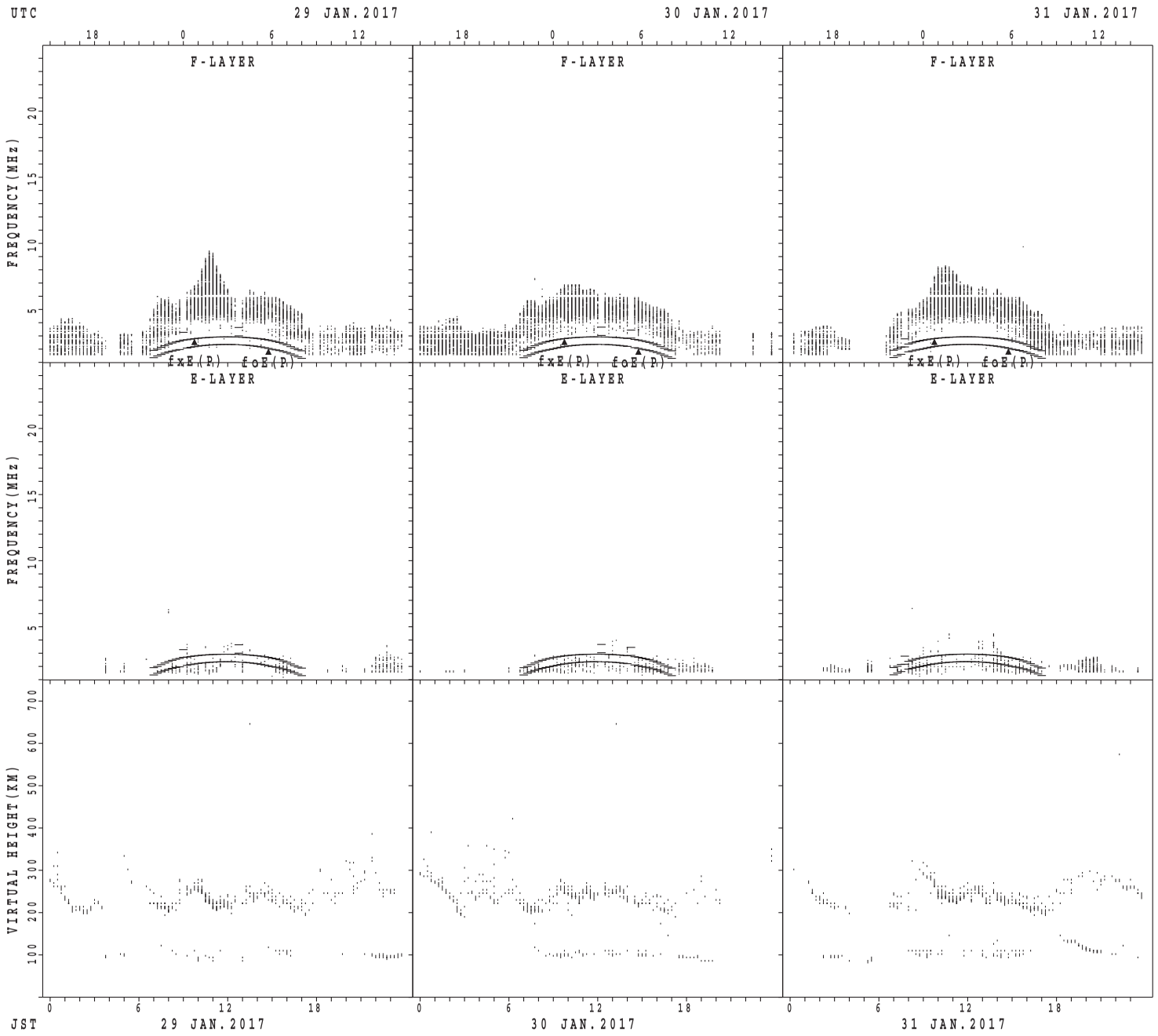
SUMMARY PLOTS AT Kokubunji



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

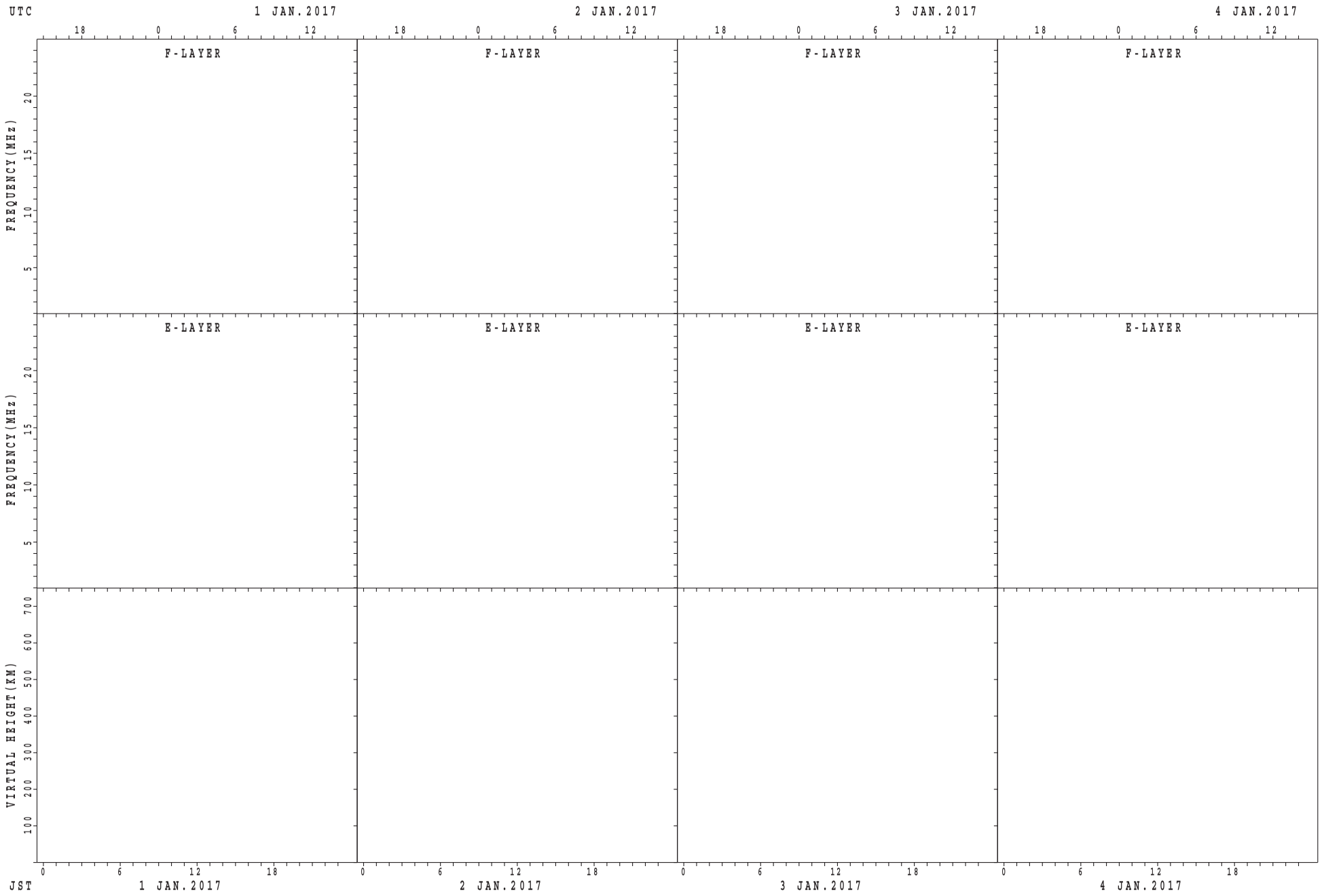

SUMMARY PLOTS AT Kokubunji
UTC
JST
25 JAN.2017
26 JAN.2017
27 JAN.2017
28 JAN.2017
F-LAYER
E-LAYER
fxE(P), foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



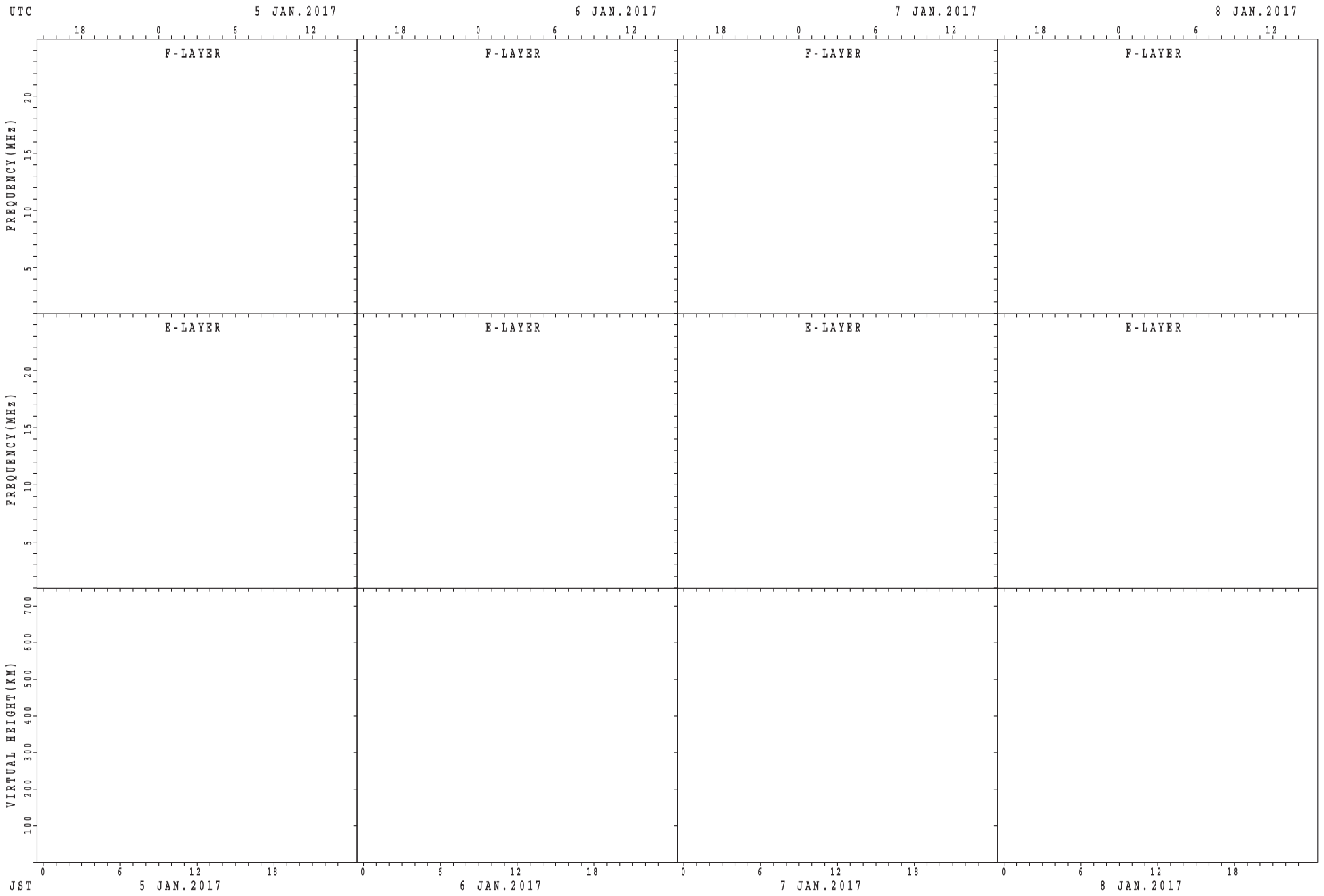
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



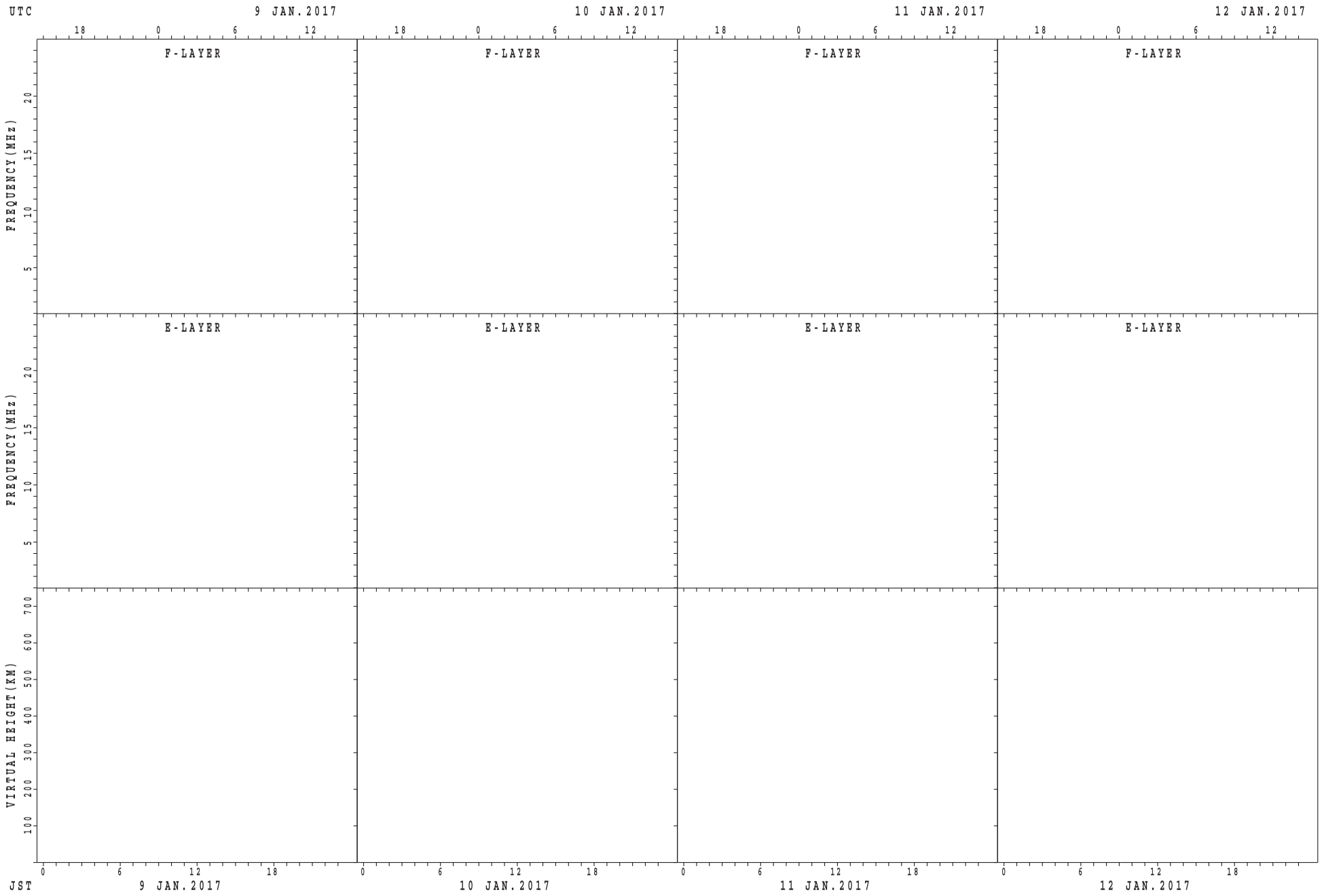
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



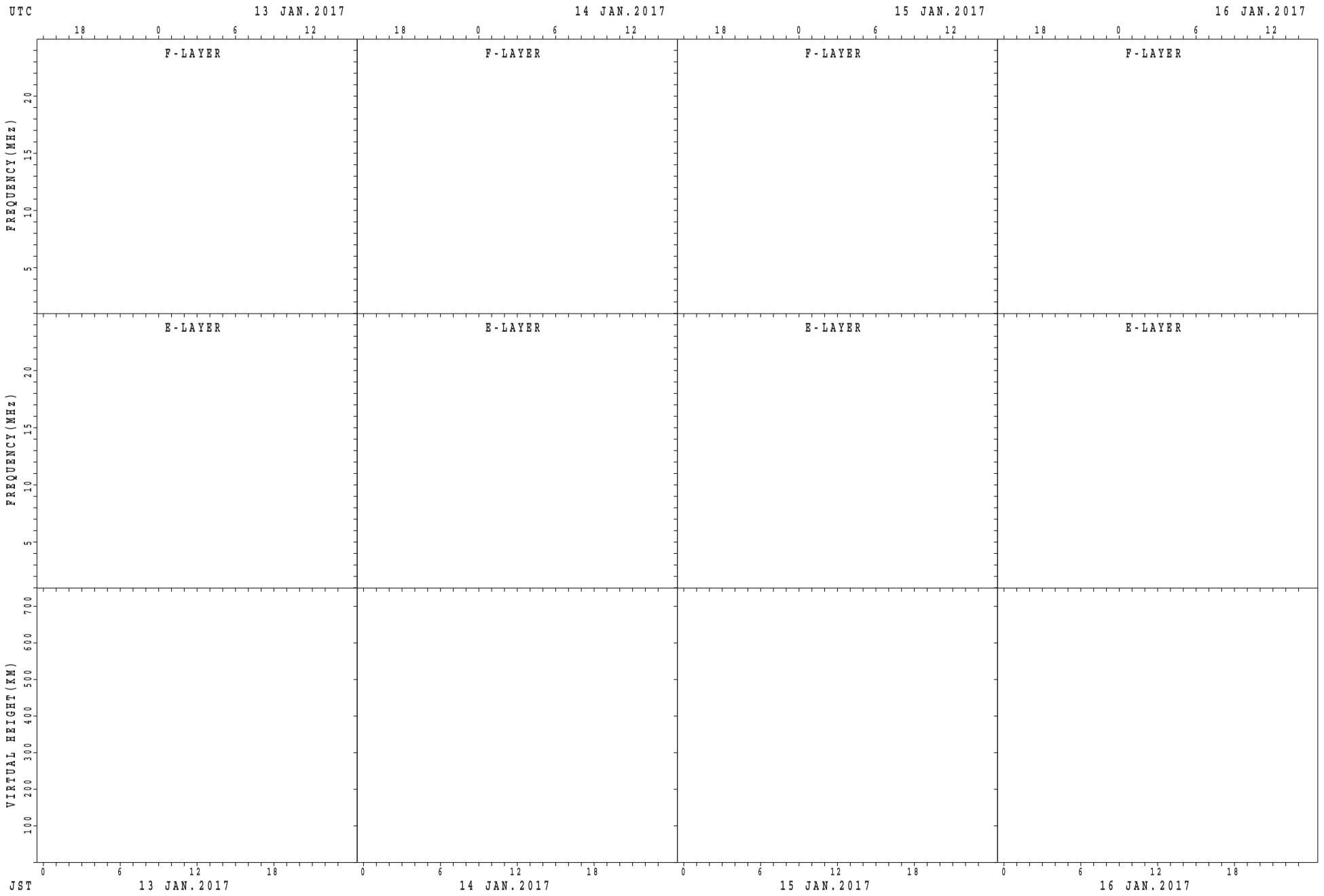
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



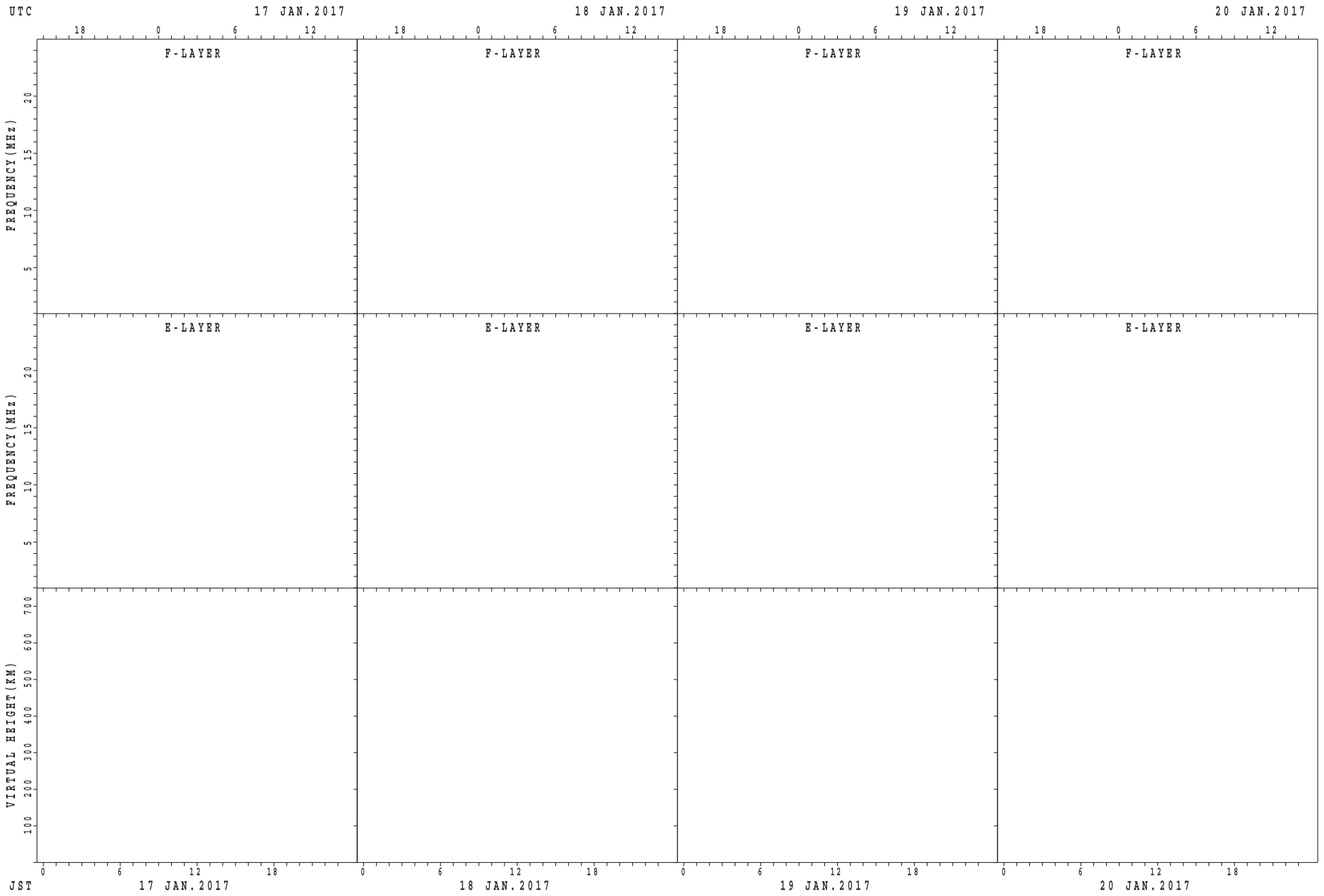
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



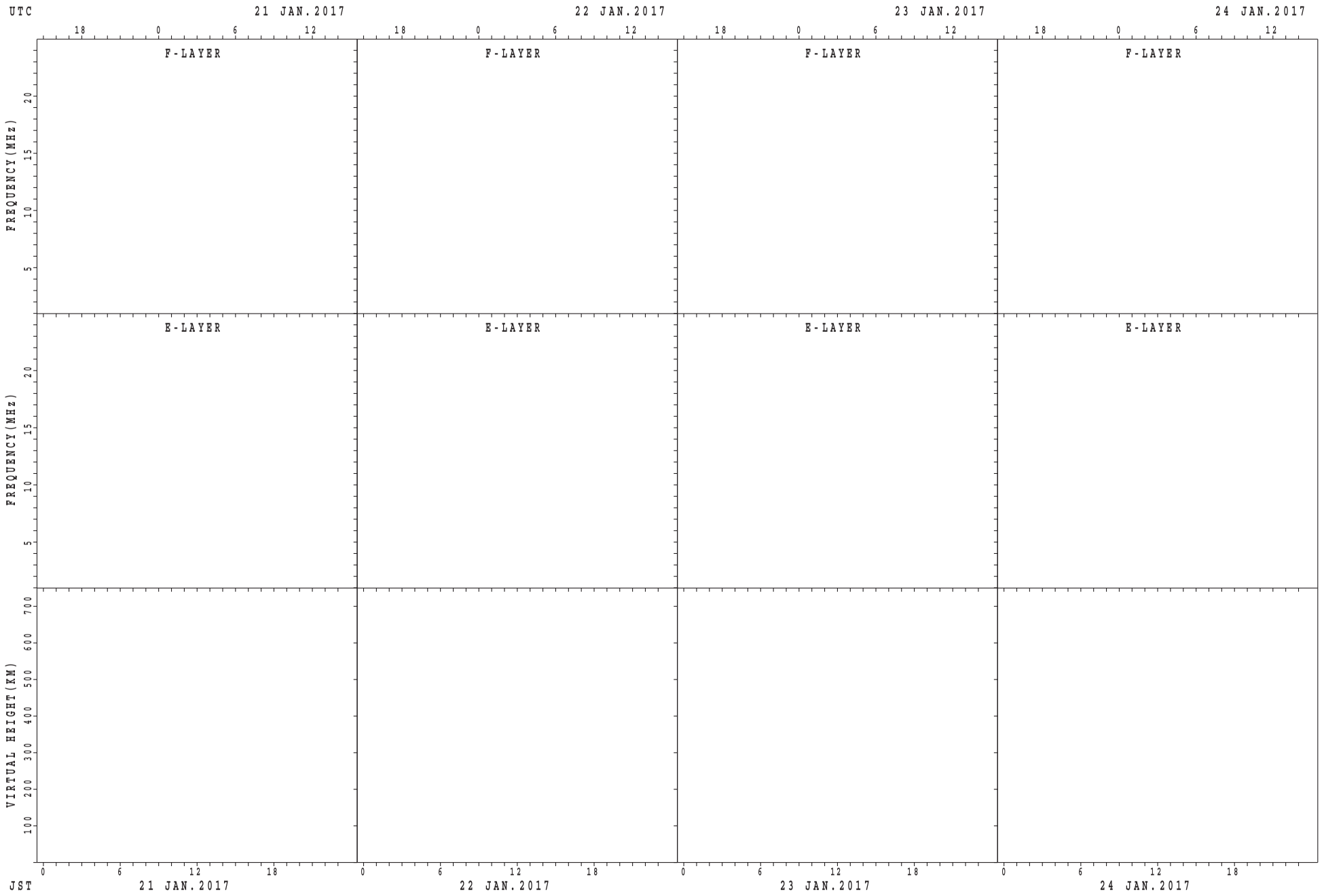
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



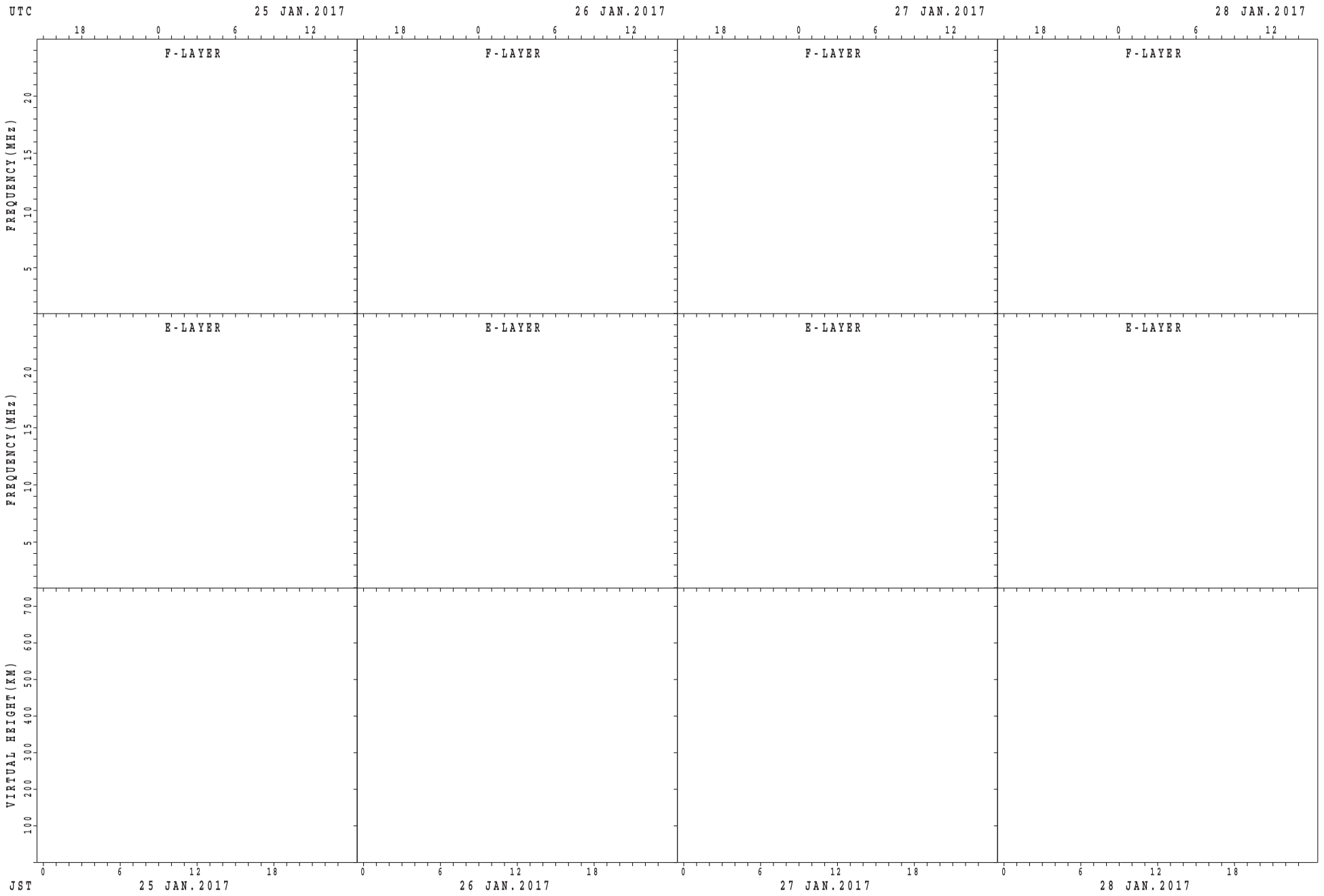
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



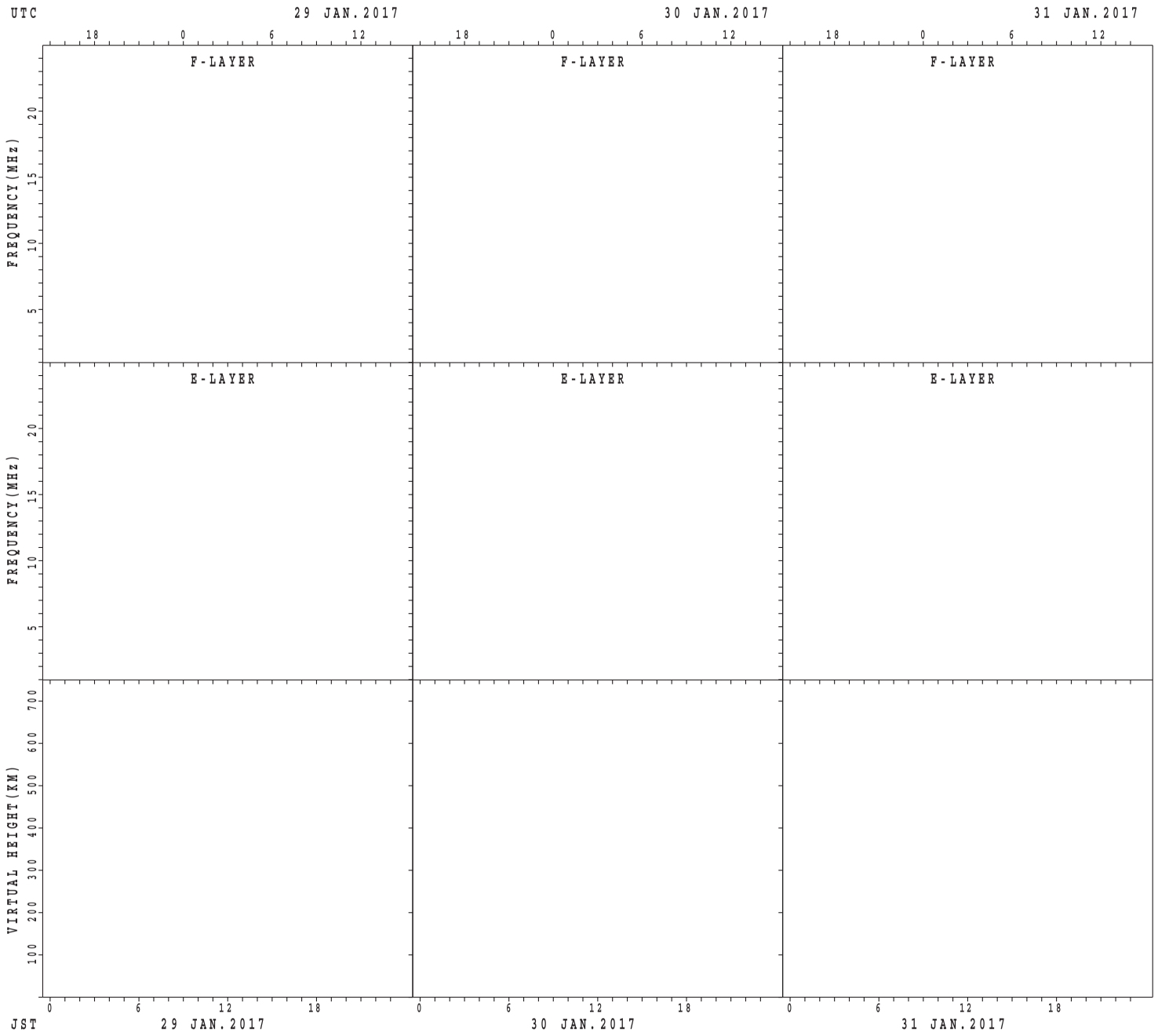
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



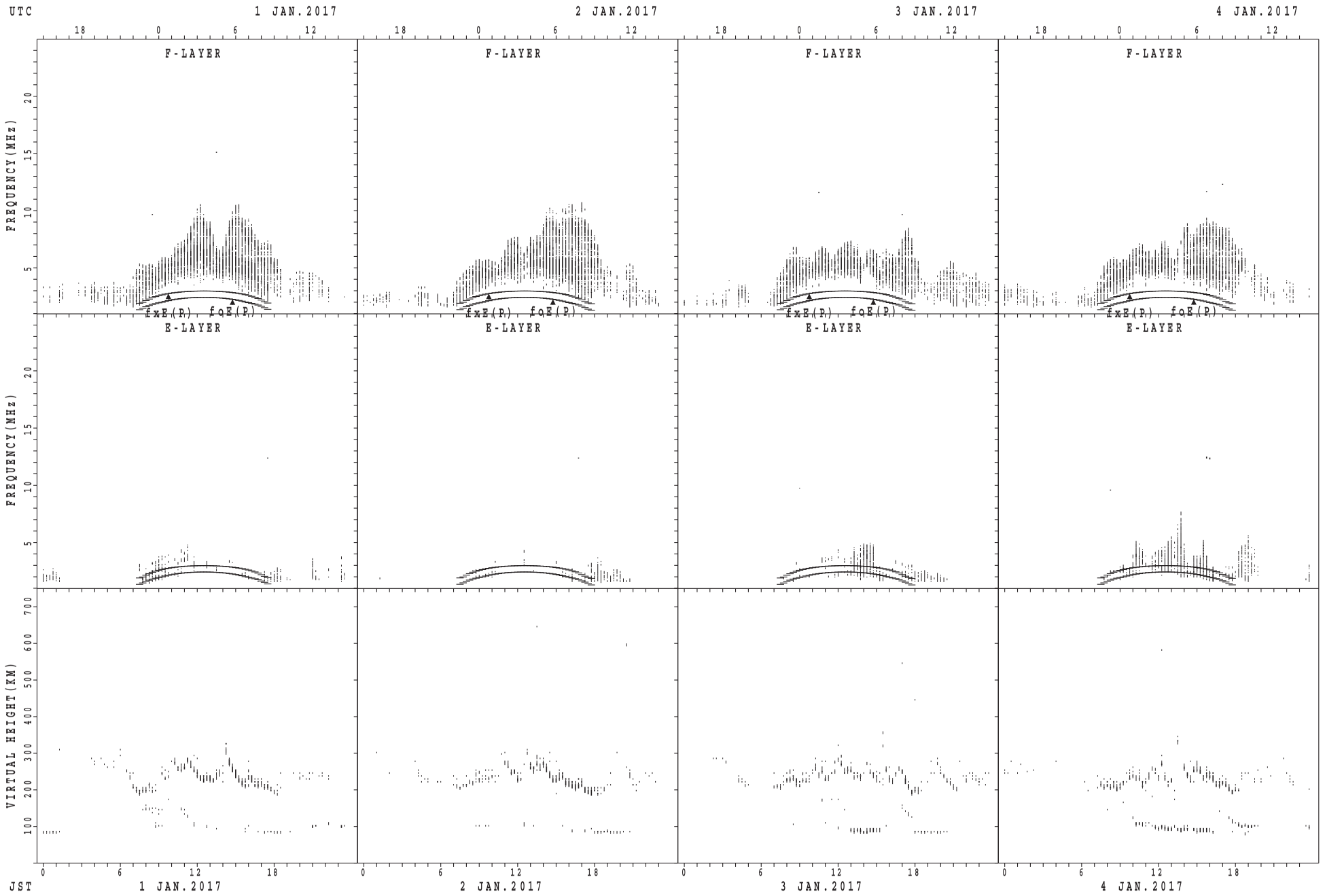
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



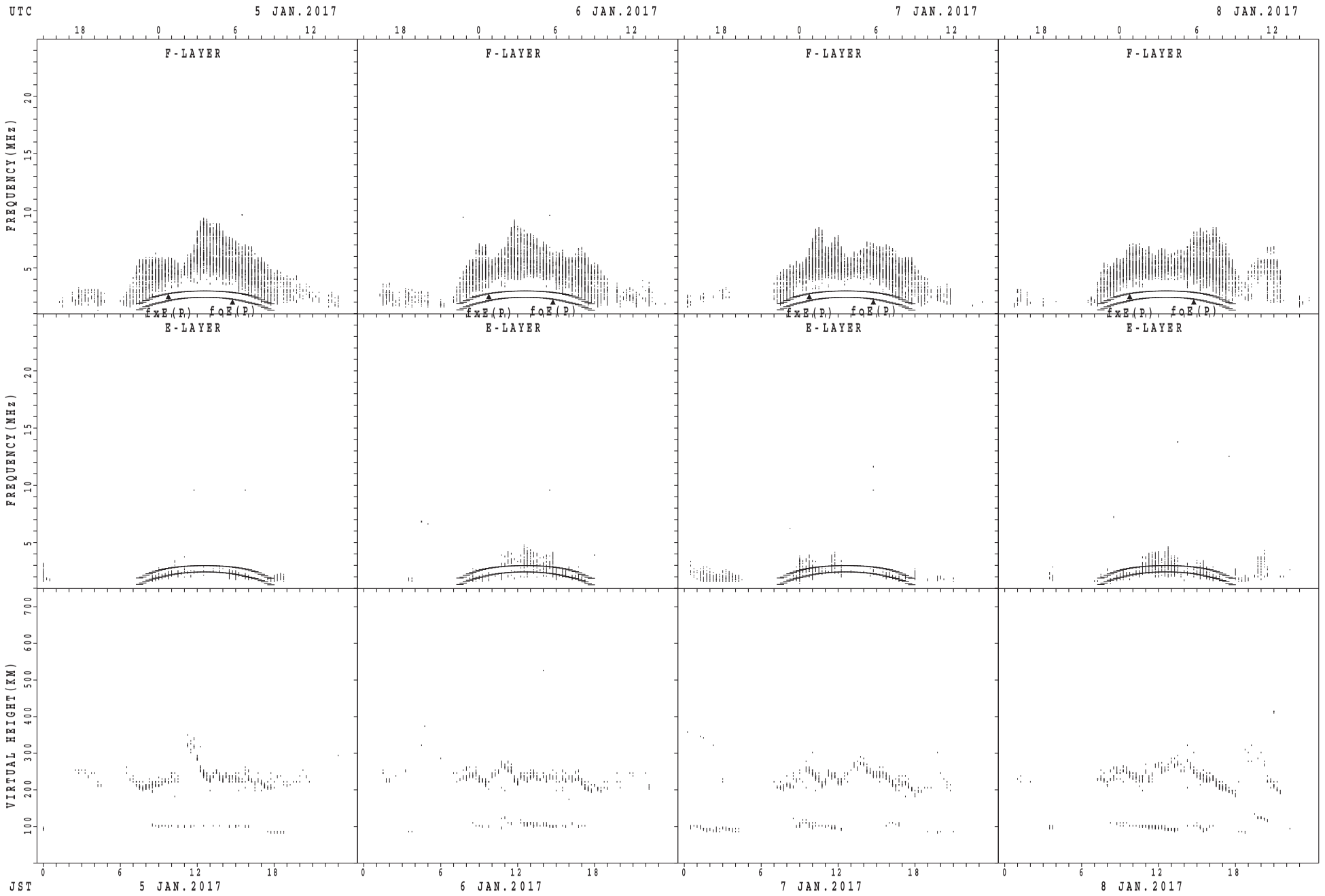
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa

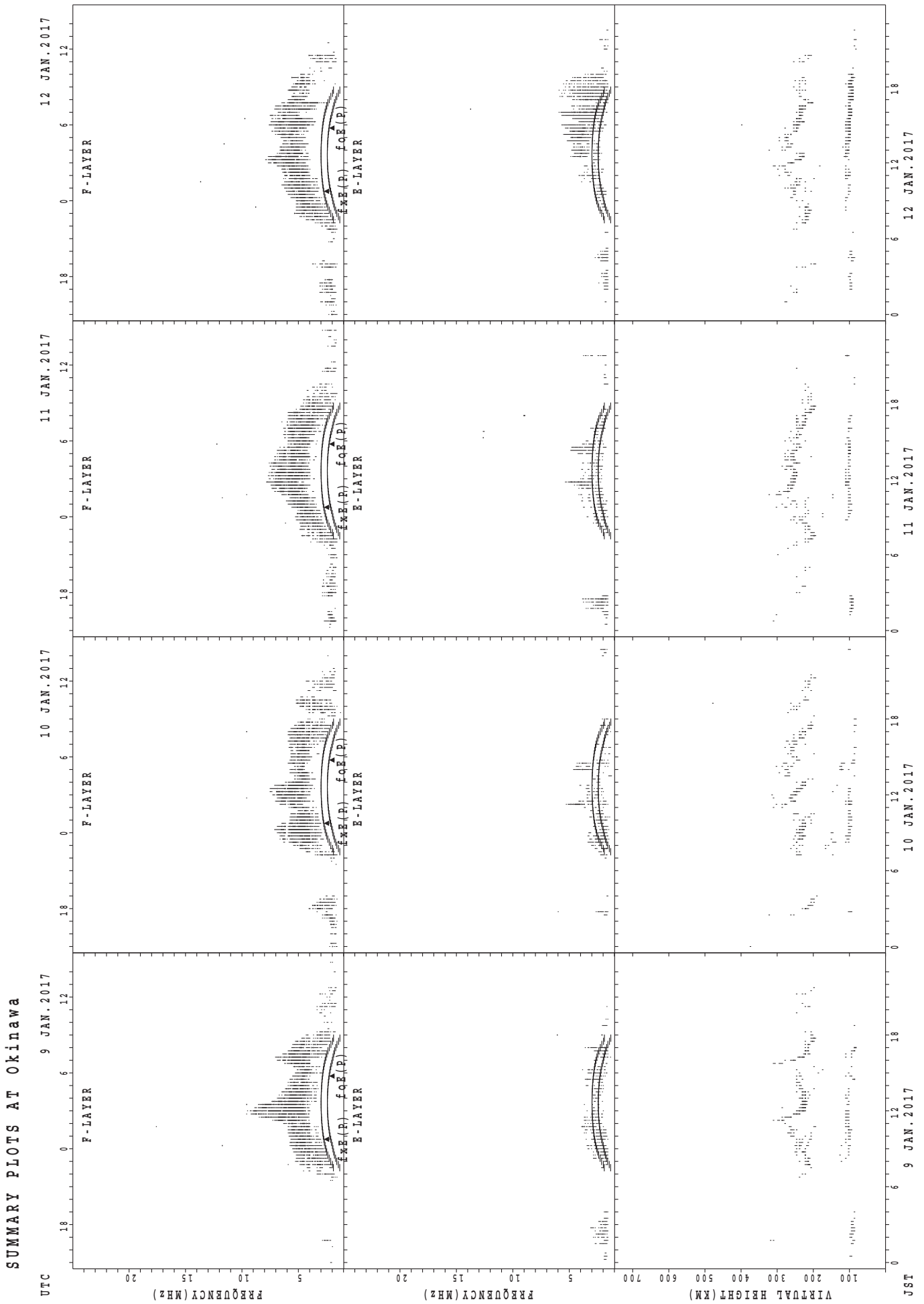


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

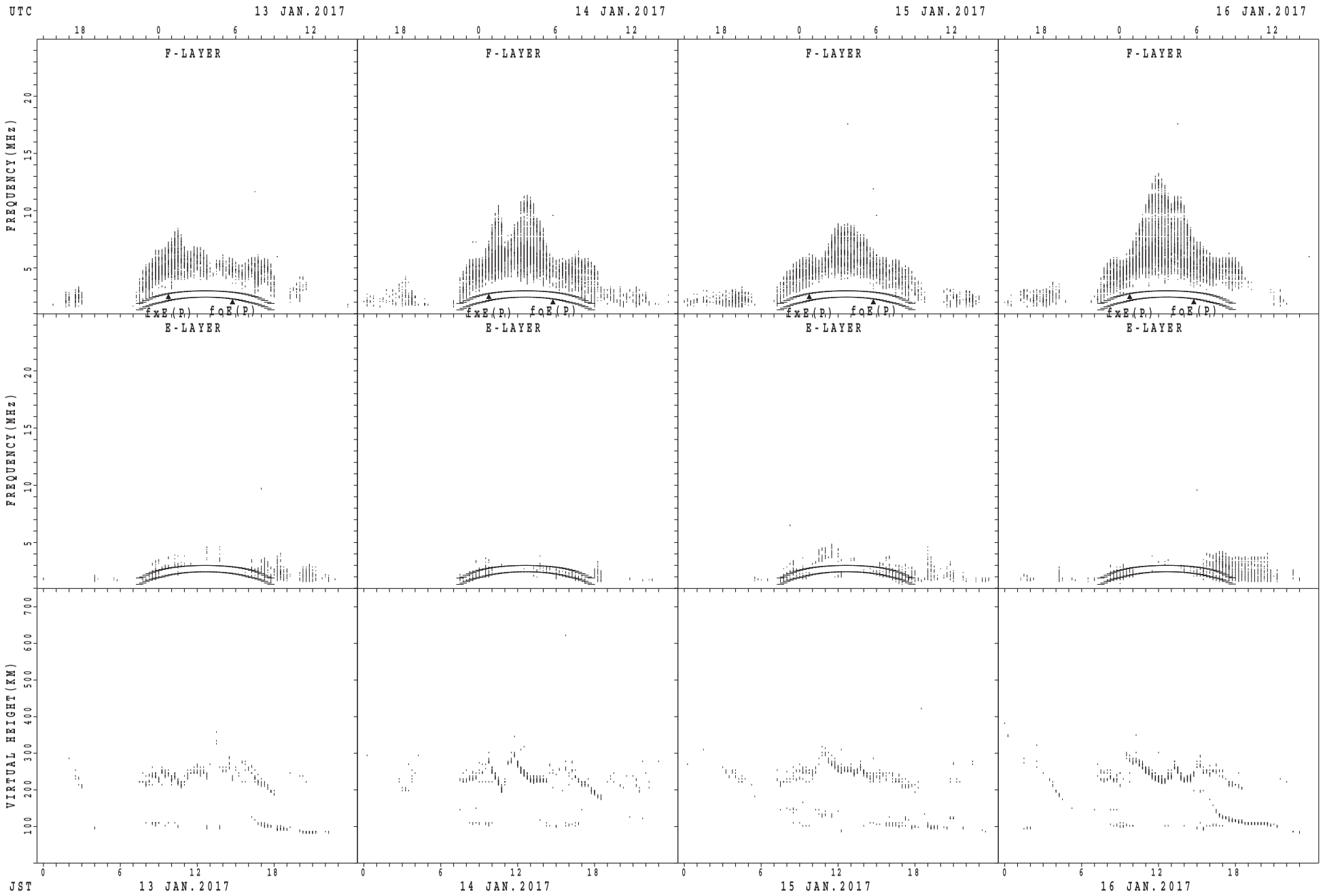
SUMMARY PLOTS AT Okinawa



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

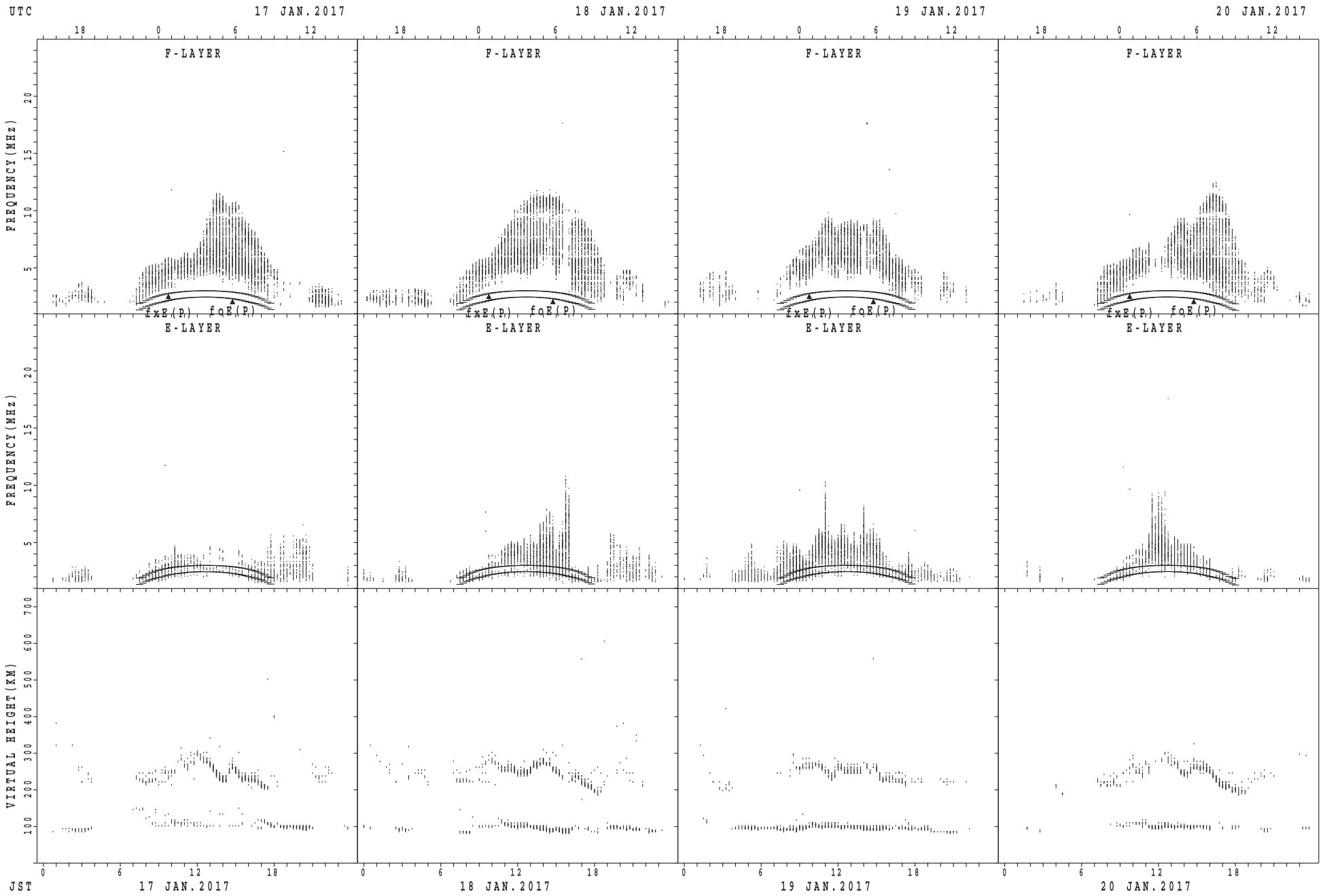

SUMMARY PLOTS AT Okinawa
UTC
JST
9 JAN.2017
10 JAN.2017
11 JAN.2017
12 JAN.2017
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



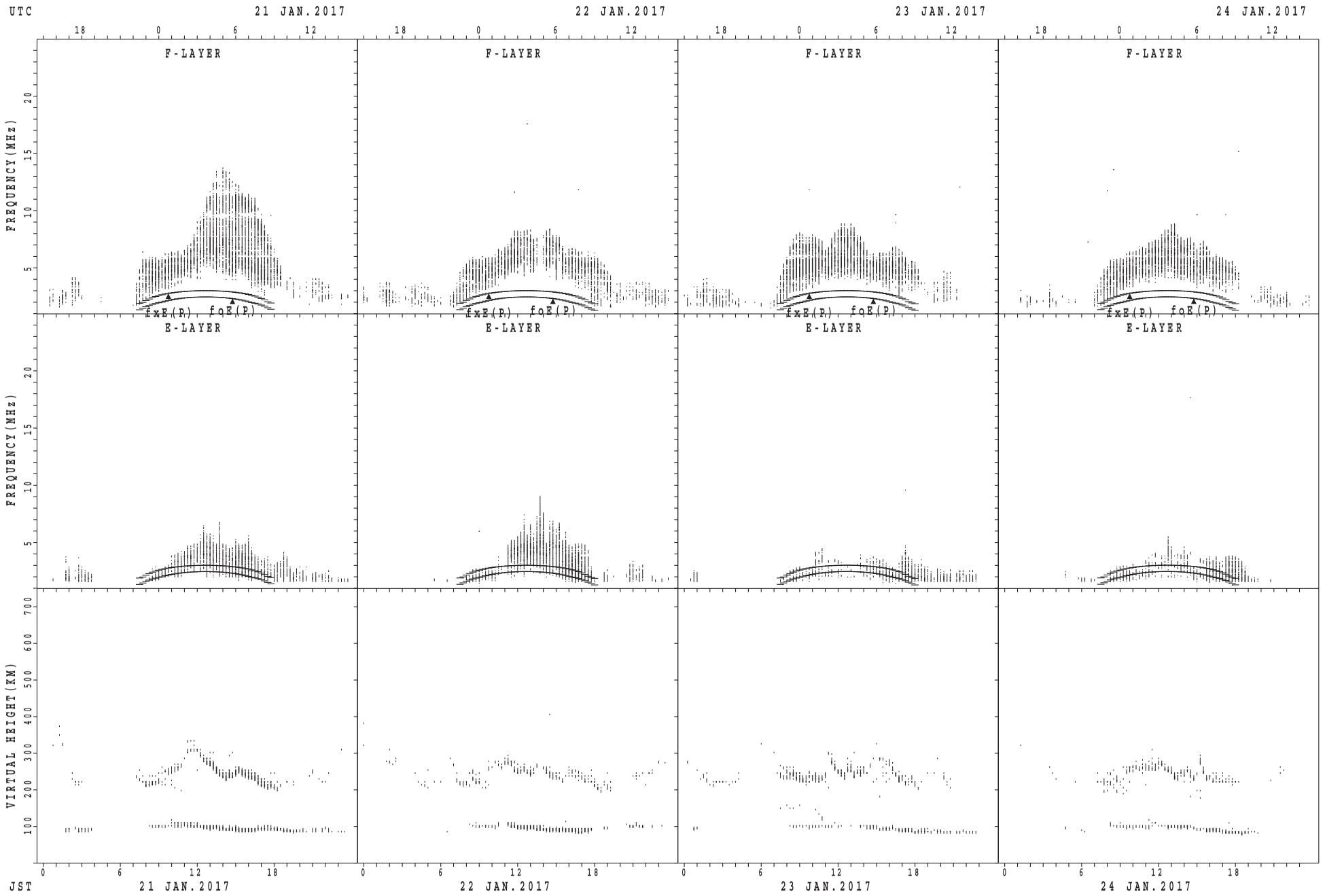
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



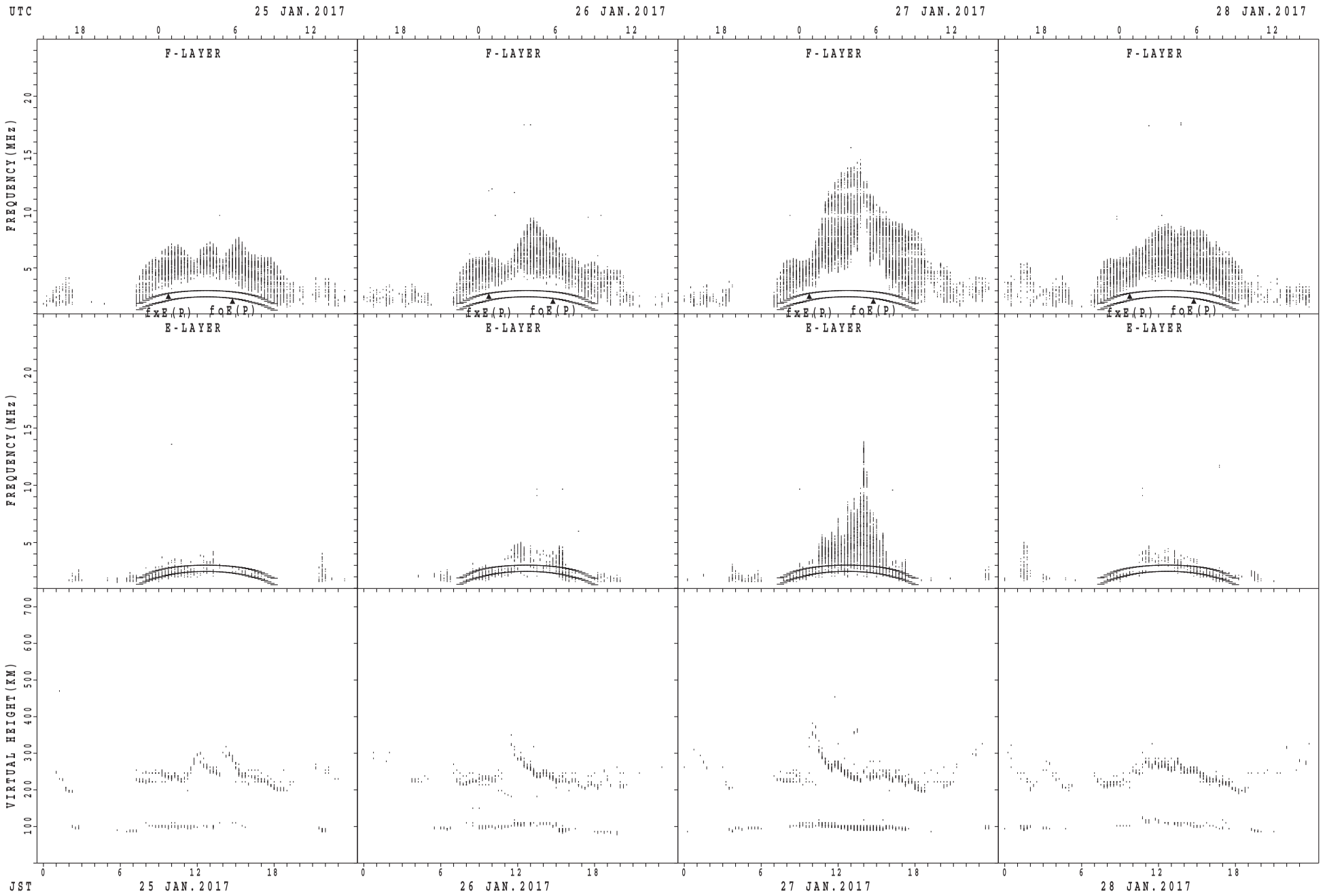
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



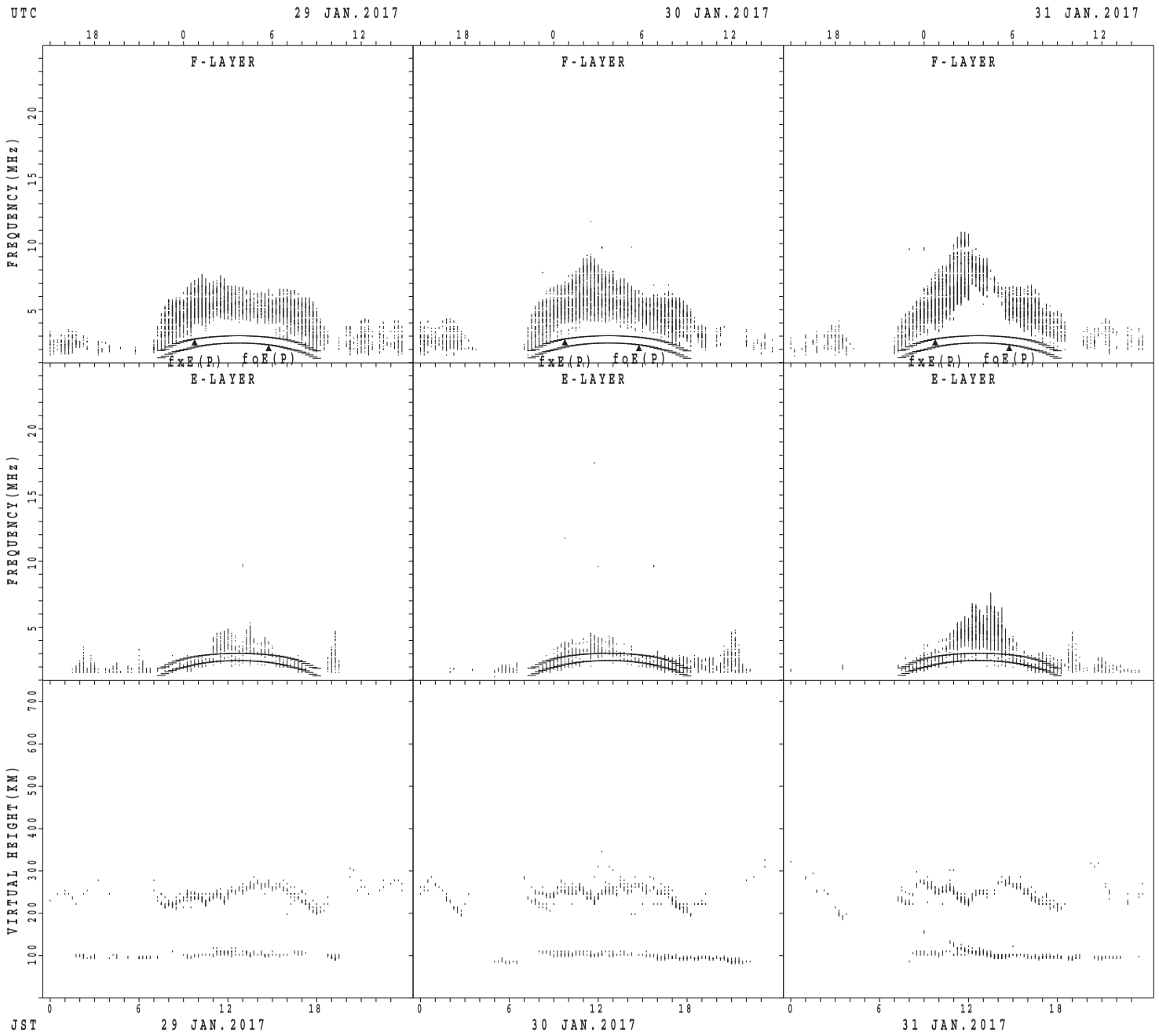
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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.2017 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										7	12	14	15	10	9	5	1							
MED										242	224	225	226	224	226	222	248							
U Q										246	233	232	232	240	239	239	124							
L Q										224	224	220	212	222	214	216	124							

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	13	10	7	12	8	9	9	18	22	23	19	13	15	12	16	16	10	8	9	10	8	8	15	14
MED	83	87	81	86	96	103	99	105	119	95	99	107	105	101	95	108	98	85	89	88	87	89	87	89
U Q	90	113	89	92	100	154	108	137	145	145	131	145	175	137	99	145	123	90	102	97	97	92	89	99
L Q	79	81	79	81	86	95	94	93	93	89	85	96	91	97	93	100	89	83	83	85	82	88	83	81

h'F STATION Kokubunji LAT. 35°43.0'N LON. 139°29.0'E

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2	4	14	5		6	10	6								
MED									221	250	257	240		248	257	246								
U Q									222	269	272	257		268	264	252								
L Q									220	237	242	223		234	250	240								

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	4	7	8	5	5	6	2	8	17	19	17	16	18	13	11	12	7	6	6	7	9	13	8	10
MED	98	99	95	97	97	95	95	121	119	107	105	102	101	103	103	99	95	94	95	95	95	93	97	97
U Q	99	103	96	97	103	103	97	159	149	149	134	105	105	107	107	107	103	95	97	115	110	107	99	99
L Q	97	95	95	94	95	95	93	97	107	103	100	98	97	89	95	97	91	91	89	89	90	89	92	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

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																								
MED																								
U Q																								
L Q																								

MONTHLY MEDIANS OF h'F AND h'Es

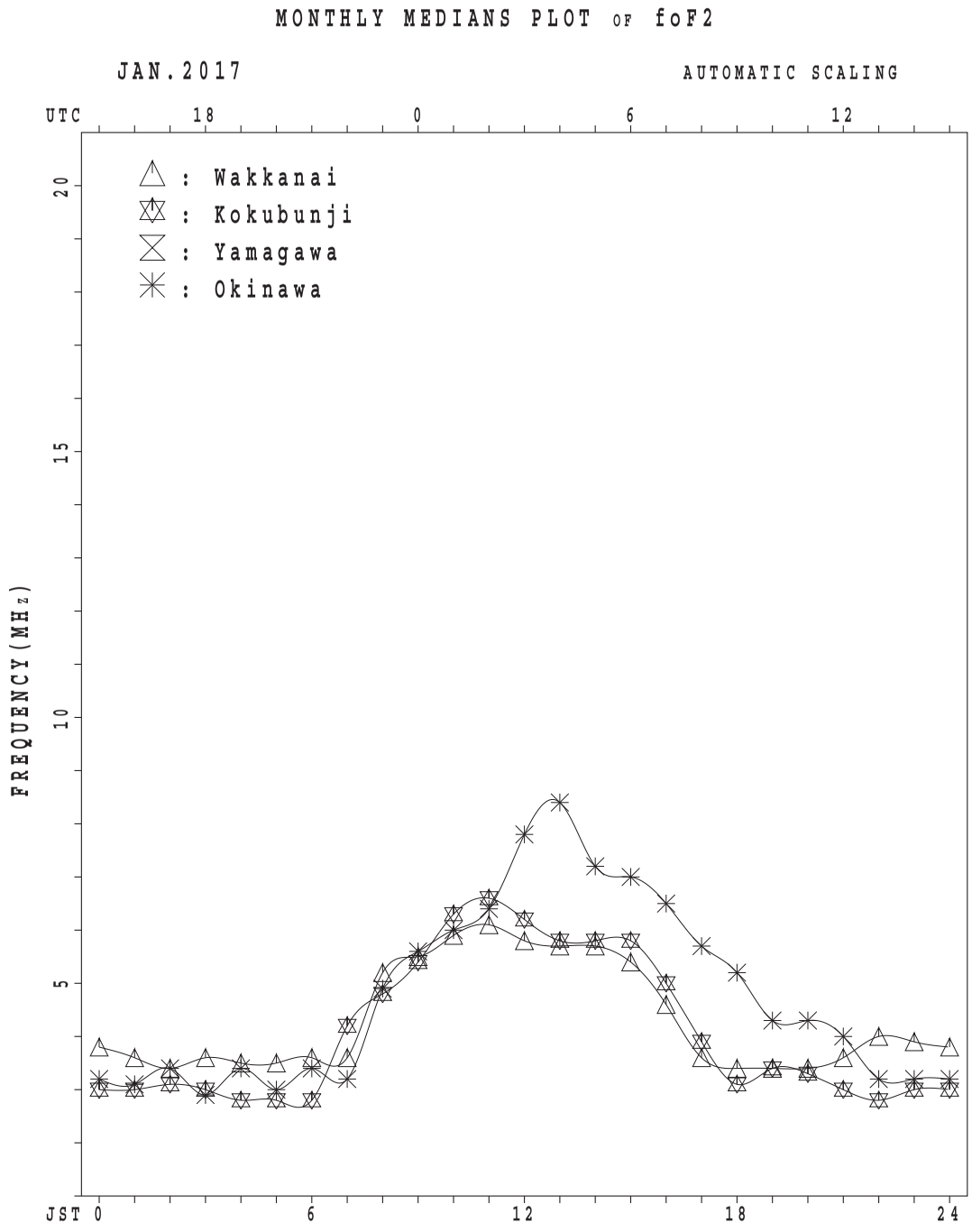
JAN.2017 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	6	18					18	19	12	6			1		
MED									220	242	253					246	240	226	215			230		
U Q									110	256	268					254	248	237	226			115		
L Q									110	234	244					238	236	217	214			115		

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	3	2	7	5	3	1	3	1	10	18	17	21	19	18	16	18	18	19	16	15	7	10	1	
MED	95	92	97	95	95	97	97	97	152	112	105	111	105	103	100	101	98	97	95	97	97	95	93	
U Q	105	95	103	98	97	48	97	48	157	155	111	122	111	109	106	105	113	107	101	101	111	103	46	
L Q	87	89	95	90	95	48	97	48	95	105	102	105	103	97	96	95	95	95	88	95	89	89	46	


MONTHLY MEDIANS PLOT OF foF2
JAN.2017
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. 2017 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	C	C	C	C	C	C	C	C	C	C									X 34	X 33	X 33	X 33	X 37	X 40
2	X 39	X 39	X 39	X 38	X 34	X 34	X 30												X 37	X 31	X 34	X 34	X 39	X 42
3	X 43	X 43	X 42	X 41	X 38	X 35	X 27										X 44		X 38	X 34	X 38	X 38	X 38	X 38
4	X 38	X 41	X 40	X 40	X 37	X 37	X 31												X 39	X 37	X 31	X 35	X 34	X 33
5	X 34	X 38	X 38	X 37	X 33	X 35	X 29										X 48		X 38	X 39	X 41	X 45	49	X 38
6	X 38	X 37	X 39	X 31	X 31	X 29	X 25	X 39											X 47	X 45	X 45	X 48	X 51	X 53
7	X 51	X 46	X 45	X 45	X 39	X 32	X 30													X 36	X 33	X 33	X 38	X 37
8	X 39	X 38	X 35	X 31	X 33	X 31	X 31												X 44		X 39	X 37	X 41	X 39
9	X 39	X 35	X 31	X 31	X 32	X 31	X 27												X 39	X 43	X 43	X 44	56	54
10	64	X 54	X 58	57	56	56	38												X 33	X 34	X 45	X 39	X 37	X 41
11	X 38	40	X 45	X 46	61	61													X 37	X 37	X 37	X 47	57	60
12	59	47	47	48	39	X 32	39												X 36	X 37		48	56	58
13	54	42	X 37	X 36	X 33	X 39													X 45	X 46	56	56	56	56
14	56	40	X 31	X 30	X 30	X 32													X 38	X 31	X 37	X 39	X 38	X 44
15	X 44	X 39	40	40	40	X 39	X 32											X 45	X 38	X 38	X 39	X 45	X 45	X 42
16	X 37	X 40	X 37	X 38	X 42	X 52													X 40	X 38	X 42	54	56	58
17	54	55	X 40	44	37	X 46	X 39												X 31	X 32	X 33	X 38	58	X 55
18	69	X 81	X 69	56	60	40	35												X 39	X 37	X 39	X 39	48	X 45
19	X 38	X 38	X 38	X 38	X 38	X 31													X 37	X 42	X 43	X 45	X 39	X 41
20	X 40	X 38	X 37	X 37	X 34	X 34													X 33	X 38	X 37	X 38	X 40	X 40
21	X 41	X 43	X 43	X 44	42	X 38													X 37	X 37	X 39	X 31	X 34	X 37
22	X 37	X 37	X 37	X 37	X 39	X 33													X 44	X 49	X 53	X 46	X 50	X 49
23	X 52	X 54	X 54	X 51	X 53	X 48													X 42	X 43	X 37	X 37	X 39	X 45
24	X 39	X 38	X 38	X 43	X 45	X 46		X 51											X 37	X 41	X 39	X 40	X 42	X 47
25	X 48	X 48	X 46	X 51	X 44	X 46													X 49	X 46	X 45		X 47	X 54
26	X 54	X 53	X 49	X 45	X 45	X 44													X 47	X 51		X 55	X 61	X 60
27	X 59	59	X 58	X 54	X 55	X 59													X 49	A	X 45	X 50	X 51	X 47
28	X 51	X 49	X 49	X 46	X 45	X 45	X 39											X 57	X 47	X 39	X 35	X 39	X 38	X 45
29	50	X 49	X 52	X 42	X 46	X 45													X 50	X 41	X 41	X 42	X 43	46
30	X 46	X 41	X 43	X 42	X 45	X 41												X 43	X 37	X 40		X 41	X 43	48
31	57	X 47	48	X 49	X 46	X 34													X 38	X 38	X 39	X 39	X 39	X 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	30	30	30	30	30	30	14	2									2	3	30	29	28	30	31	31
MED	X 45	X 42	X 41	X 42	X 40	X 38	X 31	X 45									X 46	X 45	X 38	X 38	X 39	X 40	X 43	X 45
U Q	54	X 49	X 48	X 46	X 45	X 46	38											X 57	X 44	X 42	X 43	X 46	51	54
L Q	X 39	X 38	X 38	X 37	X 34	X 33	X 29											X 43	X 37	X 36	X 37	X 38	X 38	X 40

JAN. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	58	58	56	59	66	60	42	39	27	26	26	26	30	33
2	32	32	32	31	27	27	23	32	44	46	48	58	49	52	50	54	42	30	30	24	27	27	32	35
3	36	36	35	34	31	28	20	32	52	52	54	52	48	52	45	47	37	30	31	26	31	31	31	31
4	31	34	33	33	30	30	24	30	44	52	54	58	58	52	54	52	50	35	32	30	24	28	27	26
5	27	31	31	30	26	28	22	31	49	51	55	53	53	52	57	50	42	30	31	31	34	38	F 36	31
6	31	30	Z 32	24	24	22	18	32	45	47	66	65	56	53	49	48	48	39	41	38	38	41	44	46
7	44	39	38	38	32	25	23	26	47	52	53	52	54	60	52	49	37	36	32	30	26	26	31	30
8	32	31	28	24	26	24	24	32	46	54	54	56	56	55	53	51	41	36	37	28	32	30	34	32
9	32	28	24	24	25	24	20	27	40	56	52	64	54	58	60	49	44	42	32	36	36	37	F 41	F 40
10	F 50	47	51	F 42	F 42	F 46	F 24	30	47	58	55	57	54	54	R 54	46	46	36	26	27	38	32	30	34
11	31	F 29	38	39	F 49	F 49	41	41	52	51	51	60	62	55	58	59	44	31	30	30	30	40	F 42	F 39
12	F	F 33	F 35	F 33	25	24	25	37	49	56	50	54	50	54	52	50	40	33	29	30	32	F 30	F	F 30
13	F 38	F 30	30	29	26	32	31	41	49	52	59	53	53	52	54	R 49	40	36	38	39	F 42	F 36	F 36	F
14	F 35	F 30	23	23	23	25	22	30	44	55	R 54	62	49	50	56	51	40	32	31	24	29	32	31	37
15	37	32	F 25	F 30	F 32	32	25	36	46	50	53	55	51	50	50	46	39	38	31	31	32	38	38	35
16	30	33	30	31	35	45	43	A	47	51	51	53	49	59	47	57	47	26	33	31	35	F 42	F 44	F 42
17	F 38	F 37	R 33	23	31	39	32	35	48	50	51	56	54	51	53	53	46	30	24	25	26	31	F 33	48
18	F	F 70	F	F 35	F 46	F 26	22	36	46	55	63	60	55	58	56	48	40	40	32	30	32	32	F 36	38
19	31	31	31	31	31	24	A	35	51	72	62	65	71	61	60	56	46	34	30	35	36	38	32	34
20	33	31	30	30	27	27	26	31	39	68	63	49	62	59	63	58	44	33	26	31	31	31	33	33
21	34	36	36	37	30	31	20	32	48	60	72	66	70	56	55	49	46	36	30	30	32	24	27	30
22	30	30	30	30	32	26	24	36	53	56	64	70	56	58	66	57	49	32	37	42	46	39	43	42
23	45	47	47	44	46	41	38	48	52	67	65	66	60	62	66	49	43	39	35	36	30	30	32	38
24	32	31	31	36	38	39	36	44	49	53	58	55	59	54	62	58	49	36	30	34	32	33	35	40
25	41	41	39	44	37	39	31	40	48	53	56	61	61	60	70	55	42	38	42	39	38	40	40	47
26	47	46	42	38	38	37	23	37	48	55	61	56	58	56	56	52	56	52	40	44	44	48	54	53
27	52	F 48	51	47	48	52	43	50	50	63	71	70	84	75	66	57	51	44	42	A	38	43	44	40
28	44	42	42	39	38	38	32	40	57	69	62	63	63	56	60	55	53	50	40	32	28	32	31	38
29	F 34	42	45	35	39	38	38	44	50	62	64	64	63	65	58	54	45	42	43	34	34	35	36	F 36
30	39	34	36	35	38	34	38	44	53	57	58	58	58	55	55	54	44	36	30	33	33	34	36	F 31
31	F 40	40	F 38	F 38	39	27	19	34	50	64	73	70	64	63	59	55	46	37	31	26	32	32	32	34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	30	29	30	30	30	29	29	30	30	31	31	31	31	31	31	31	31	31	30	31	31	30	30
MED	34	34	33	34	32	30	24	35	48	55	58	58	56	56	56	52	44	36	31	31	32	32	34	36
U Q	40	41	38	38	38	39	34	40	50	60	63	64	62	59	60	56	47	39	37	35	36	38	40	40
L Q	32	31	30	30	27	26	22	32	46	52	53	55	53	52	53	49	41	32	30	28	30	30	31	32

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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								C	C	C	L	L	L	L	L									
2									L	L	L	L		L										
3											L	348	356	356										
4										472			L	L										
5											L	L	356	L										
6											L	384	360	352	L									
7								L			L	L	L	L	L									
8												A	356	356										
9									L		L	L	L		L									
10									L	L	L	L	L	L	L		L							
11										L	L	L	368	368										
12												L												
13											L	L		L										
14											L	L	L	L										
15												392	L	L	L									
16								A				L		L	L									
17										L		L	L		L									
18										L	L	392	376		L	L								
19							A			L	L	396	396		L	L	L							
20								L		L	L			L	L	L	L							
21										L	384	L	L	384		L								
22												L	396	380		L								
23								L				L	392	L	L									
24												L	L	L			220							
25							196				L	396	292	L	L	L	L	L						
26												L	L	L	L									
27										L	L	L	L	388	368									
28								L		344	L	388	L	L	L									
29											L	404	356	L	L		L							
30											L	376	L	L			204							
31										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			2	1	9	11	7	1	1	1							
MED							196			408	384	392	360	368	368	220	204							
U Q												396	392	384										
L Q												380	356	356										

JAN. 2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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								C	C	C	R 248	Y	B	Y	B	208	B	B						
2	212							B	180	204	248	292	A	R 268	A	A	192	B						
3								A	224	A	252	B	B	U R 248	220	216		A 188						
4								A	B	A	B	B	B	B	B	B	B	B						
5								168	A	A	A	Y	Y	Y	348	A		A						
6									176	228	260	268	268	264	236	212	A	B						
7								B	220	244	252	A	A	232	A	224	164	228	208					
8								204	204	224	A	A	B	B	B	208	A	A		204				
9								A	228	228	436	256	272	244	220	224	B	B						
10							A	156	208	232	U R 272	268	248	B	B	220	204	B						
11							A 592	A	A	236	312	380	B	A	B	B	B	B						
12							B	B	B	B	B	B	B	B	B	A	184	A			A	188		
13							A	A	276	R 288	B	B	B	B	300	A	A	A						
14							A	B	A	B	B	B	B	288	B	248	A	A						
15								228	216	244	280	304	304	B	R 284	232	160							
16							A	A	224	240	304	300	284	276	A	232	176	B					152	
17		B						B	208	240	288	300	300	288	248	196	184	B						
18	160						B	188	200	240	A	276	288	272	272	220	184	A						
19							A	A	A	A	A	A	280	280	280	216	A	B						
20							228	200	236	244	284	284	284	264	276	240	B	B						
21							B	B	212	244	276	288	A	288	268	236	200	B						
22							200	164	216	264	A	252	284	284	252	208	192	236						
23							B	A	A	A	A	A	264	308	276	216	188	A						
24							A		216	244	276	272	304	276	260	224	224	A						
25							A 176	A	212	240	308	328	328	308	260	256	200	A				A		
26							B	U R 216	216	A	A	A	A	276	300	228	196	196			A			
27							B	B	204	248	264	280	292	280	264	256	220	A						
28								B	212	236	260	280	280	272	280	236	192							
29							B	A	220	264	268	A	288	312	268	232	A	B						
30							A	A	228	256	U R 912	288	296	284	256	232	184				176			
31							B	208	192	248	260	U R 288	288	288	260	232	184	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	2						4	9	23	22	20	18	18	22	21	25	18	4	1	1	1	1	1	
MED	186						214	200	216	242	274	286	286	278	268	224	190	212	208	204	176	188	152	
U Q							410	212	224	248	296	300	296	288	280	234	200	232						
L Q							188	166	204	236	260	272	280	268	254	216	184	192						

JAN. 2017 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	G	Y	E B 30	Y	E B 30	26	E B 16	E B 16	E B 16	23	E B 16	J A 49	E B 16	J A 18
2	J A 19	J A 23	26	E B 15	J A 31	E B 15	J A 87	E B 16	G	24	G 23	G	48	J A 53	J A 60	J A 28	G	E B 15	E B 16	E B 16	E B 16	E B 16	24	E B 16
3	E B 15	E B 15	E B 15	E B 16	E B 16	23	J A 45	J A 83	G	52	G	J A 213	J A 125	G	26	J A 56	E B 16	25	E B 16	24	E B 16	E B 16	E B 16	E B 16
4	53	E B 16	E B 16	J A 105	E B 14	E B 14	E B 15	26	E B 20	32	E B 30	E B 32	E B 30	E B 29	E B 30	E B 28	J A 83	E B 15	E B 15	J A 24	J A 25	28	J A 19	25
5	E B 16	E B 16	25	25	E B 14	E B 14	E B 15	23	J A 25	J A 41	35	Y	Y	Y 25	J A 44	J A 25	E B 16	J A 84	J A 53	E B 16	E B 15	E B 16	26	25
6	E B 15	23	E B 16	E B 16	E B 14	J A 60	E B 15	E B 15	24	J A 83	31	G 21	G	G	G	22	18	E B 16	E B 16	20	20	J A 26	34	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	J A 96	J A 112	E B 16	G 18	G 20	J A 35	J A 49	J A 54	J A 39	J A 84	G	J A 27	32	E B 16	J A 27	23	25	34	24
8	23	E B 16	J A 19	E B 16	21	J A 44	25	J A 31	J A 18	27	31	E B 30	E B 20	E B 28	E B 28	G 20	32	42	J A 54	26	E B 15	21	E B 15	26
9	J A 21	24	J A 75	E B 16	E B 16	E B 16	E B 16	J A 24	31	J A 35	J A 33	G	G	J A 34	J A 30	G	E B 16	E B 16	24	E B 16	J A 21	E B 16	E B 16	E B 16
10	E B 16	E B 16	E B 16	25	25	E B 16	27	J A 78	J A 35	J A 31	G	G	G	E B 30	E B 27	G	J A 26	E B 15	E B 16	J A 83	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	23	E B 16	E B 16	E B 16	G 22	J A 76	22	G	G	E B 30	E B 31	33	E B 30	E B 22	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	26	E B 15
12	E B 16	E B 16	E B 16	J A 51	22	E B 16	E B 14	92	E B 23	E B 29	E B 31	E B 32	E B 35	E B 33	E B 30	26	22	J A 25	J A 37	53	33	J A 19	J A 26	J A 23
13	E S 16	E B 16	J A 20	33	60	E B 15	E B 15	J A 28	32	38	E B 31	E B 32	E B 33	E B 30	42	J A 219	J A 35	J A 65	46	J A 28	23	E B 15	E B 15	E B 16
14	25	25	25	39	J A 31	J A 30	25	E B 16	25	E B 30	E B 29	E B 32	E B 30	G 32	E B 30	G	J A 141	J A 24	20	E B 16	E B 16	26	E B 16	27
15	48	48	E B 12	E B 16	J A 23	45	92	28	J A 109	28	30	32	G	E B 29	G	G	G	E B 16	E B 16	J A 27	28	E B 16	J A 51	31
16	E B 16	E B 16	19	E B 16	25	E B 12	23	84	J A 65	J A 65	G 26	33	33	34	J A 34	27	G	J A 105	E B 16	E B 16	J A 23	26	35	30
17	J A 32	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	24	G 22	33	33	G 24	G	G 24	G 23	G 19	E B 16	J A 106	44	55	24	44	54
18	J A 35	24	23	24	22	20	E B 16	24	24	32	J A 64	J A 30	37	37	32	G 22	20	24	25	24	E B 14	E B 16	22	J A 42
19	J A 37	J A 51	J A 33	30	23	19	J A 33	37	J A 34	J A 47	J A 48	G 28	G 24	G 22	G 22	G 22	22	E B 15	E B 16	J A 36	J A 31	26	J A 33	36
20	25	J A 111	J A 38	27	25	19	G	J A 50	J A 65	J A 86	J A 45	J A 86	G	J A 26	G 22	G	E B 19	E B 16	E B 24	E B 16	E B 16	24	J A 27	38
21	J A 25	27	27	20	24	E B 14	J A 120	E B 17	26	J A 24	37	G	28	G	G 21	G	G	E B 16	E B 16	E B 15	E B 15	E B 15	J A 19	J A 19
22	J A 46	J A 26	25	25	25	E B 16	G	24	33	J A 31	J A 31	38	37	34	34	J A 24	G	J A 25	24	J A 33	20	25	19	29
23	J A 52	J A 31	30	28	25	28	E B 16	28	39	60	62	67	33	G	G	J A 30	G	26	26	E B 16	J A 21	J A 44	24	J A 149
24	26	E B 16	E B 16	E B 16	E B 16	22	26	27	G	G 23	33	G 24	G	J A 109	G	G	J A 57	33	J A 32	J A 25	24	26	J A 48	34
25	J A 31	J A 32	25	23	29	J A 22	23	26	25	J A 49	G 24	G	G	36	G 24	G 23	22	23	24	E B 16	31	J A 31	33	37
26	25	J A 85	J A 25	J A 30	J A 30	E B 15	E B 15	26	26	25	52	J A 61	J A 35	G 25	38	26	20	27	36	31	J A 45	J A 37	25	E B 16
27	E B 16	E B 16	25	26	E B 16	E B 16	E B 16	E B 16	34	28	32	G 25	E B 16	41	38	39	G 19	33	41	J A 127	J A 85	J A 32	J A 40	J A 41
28	24	24	22	E B 15	E B 15	19	E B 15	E B 16	G 20	J A 51	J A 83	J A 57	32	33	37	J A 26	25	E B 15	E B 15	E B 15	E B 15	E B 15	J A 61	J A 48	36
29	31	J A 52	26	27	24	E B 16	E B 16	36	30	38	J A 51	58	J A 53	G	38	38	J A 47	E B 16	E B 15	E B 16	E B 15	E B 15	E B 16	26
30	24	E B 15	E B 15	19	27	21	22	25	26	34	G 35	34	G 33	36	34	34	J A 143	E B 16	J A 25	26	26	20	26	25
31	22	E B 16	E B 16	E B 16	E B 16	29	E B 16	25	J A 27	31	37	J A 50	38	G 32	34	J A 27	G	E B 16	E B 16	E B 16	E B 15	25	25	26
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	31	29	30	30	31	31	31	31	31	31	31	31	31	31
MED	24	20	22	22	22	18	G	26	26	32	35	32	G	G	30	E G 24	G	E B 16	20	24	20	24	25	26
U Q	J A 31	J A 27	25	27	25	23	J A 26	36	J A 33	J A 47	J A 37	J A 50	35	34	37	28	J A 27	27	J A 32	J A 28	26	J A 26	34	36
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	E B 15	E B 17	G 22	27	31	G	E B 30	30	G	G	E B 19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

JAN. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	G	Y	E B 30	Y	E B 30	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
2	E B 16	E B 15	16	E B 15	E B 15	E B 15	E B 15	E B 16	G	22	G 22	G	37	28	28	22	G	E B 15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
3	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16	E B 16	15	G	42	G	E B 29	E B 29	G	25	G 20	E B 16	G 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
4	E B 15	E B 16	E B 16	E B 15	E B 14	E B 14	E B 15	E B 15	E B 20	30	E B 30	E B 32	E B 30	E B 29	E B 30	E B 28	E B 17	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
5	E B 16	E B 16	E B 16	E B 16	E B 14	E B 14	E B 15	E B 16	21	32	28	Y	Y	Y	G 30	23	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16	16	E B 16
6	E B 15	E B 16	E B 16	E B 16	E B 14	E B 15	E B 15	E B 15	19	28	30	G 19	G	G	G	G 21	17	E B 16	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 16	G 18	28	28	32	34	29	G	G 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	E B 17
8	E B 16	E B 16	E B 15	E B 16	E B 14	E B 16	E B 16	E B 16	G 18	24	29	E B 30	E B 20	E B 28	E B 28	G 19	22	26	29	E B 14	E B 15	E B 15	E B 15	E B 15
9	17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 22	28	G 29	G	G	30	27	G	E B 16	E B 16	E B 16	E B 16	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 15	18	G 20	28	G	G	G	E B 30	E B 27	G	G 17	E B 15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	G	G	E B 30	E B 31	30	E B 30	E B 22	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15
12	E B 16	E B 16	E B 16	E B 15	E B 14	E B 16	E B 14	15	E B 23	E B 29	E B 31	E B 32	E B 35	E B 33	E B 30	23	19	19	17	19	17	G E 18	E B 16	E B 16
13	E S 16	E B 16	E B 17	17	E B 16	E B 15	E B 15	24	G 27	33	E B 31	E B 32	E B 33	E B 30	40	30	23	16	21	17	E B 15	E B 15	E B 15	E B 16
14	E B 15	E B 16	E B 16	19	16	20	14	E B 16	24	E B 30	E B 29	E B 32	E B 30	G 29	E B 30	G	29	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
15	29	E B 16	E B 12	E B 16	E B 16	17	18	G 22	22	27	29	G 30	G	E B 29	G	G	G	E B 16	E B 16	16	E B 16	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 12	E B 16	A A 84	28	36	G 24	32	31	32	28	25	G	E B 16	E B 16	E B 16	E B 16	E B 16	20	16
17	17	E B 16	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	22	G 20	30	31	G 21	G	G 22	G 21	G 18	E B 16	18	16	E B 16	E B 16	E B 15	E B 21
18	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	27	28	29	G 29	29	28	G 22	G 18	E B 16	E B 16	E B 16	E B 14	E B 16	E B 16	16
19	20	29	18	16	E B 16	E B 16	A A 33	18	23	26	28	G 21	G 21	G 20	G 19	G 19	18	E B 15	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16
20	E B 16	20	E B 16	E B 16	E B 16	E B 16	G	G 17	G 20	30	G 28	30	G	G 23	G 21	G	E B 19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	16
21	E B 16	E B 16	E B 16	E B 16	E B 14	E B 14	E B 16	E B 17	22	G 22	28	G	25	G	G 18	G	G	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	E B 16
22	22	E B 16	E B 16	E B 16	E B 16	E B 16	G	17	27	28	28	29	G 28	G 28	28	23	G	G 16	E B 16	E B 16	E B 16	E B 16	E B 16	18
23	16	E B 16	16	17	E B 16	16	E B 16	22	27	37	51	35	29	G	G	28	G E 16	E B 16	E B 16	E B 16	E B 16	17	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	G	G 23	30	G 24	G	28	G	G	G 20	19	18	E B 15	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	20	22	29	G 22	G	G	G 30	G 22	G 22	G 18	E B 16	E B 16	E B 16	20	E B 16	22	22
26	E B 16	E B 16	16	E B 16	E B 16	E B 15	E B 15	G 19	24	24	36	30	30	G 25	31	G 23	G 19	20	28	20	20	17	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	G 24	30	G E 25	E B 16	29	29	29	G 19	20	A A 18	127	18	E B 16	20	E B 16
28	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	E B 15	E B 16	G 18	27	27	30	30	28	G 28	G 24	20	E B 15	E B 15	E B 15	E B 15	16	E B 16	20
29	17	19	E B 15	16	E B 15	E B 16	E B 16	21	G 22	28	28	28	G 28	G	28	24	17	E B 16	E B 15	E B 16	E B 15	E B 15	E B 16	E B 16
30	E B 15	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16	E B 16	G 22	G 24	G 29	31	G 30	29	28	28	G 17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	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	G 18	23	28	28	G 29	30	G 30	30	26	G	E B 16	E B 16	E B 16	E B 15	E B 15	18	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	30	30	30	30	30	30	30	30	30	31	29	30	29	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	22	28	28	G	G	30	28	G	G 19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
U Q	16	E B 16	16	16	E B 16	E B 16	E B 16	18	26	30	30	31	30	G	G 30	24	G	16	16	16	16	16	16	16
L Q	E B 16	E B 16	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	G 20	G	28	G 29	29	28	G 27	G 22	E B 17	E B 16	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16

JAN. 2017 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	20	20	30	21	30	17	16	16	16	16	16	16	16	16
2	16	16	15	15	15	15	16	16	16	17	18	17	19	16	16	15	16	15	16	16	16	16	16	16
3	15	15	15	16	16	16	16	13	16	17	18	29	29	18	18	14	16	16	16	16	16	16	16	16
4	15	16	16	15	14	14	15	15	20	22	30	32	30	29	30	28	16	15	15	16	16	16	16	15
5	16	16	16	16	14	14	15	15	15	17	17	21	16	16	21	16	16	16	16	16	15	16	16	16
6	15	16	16	16	14	16	15	15	15	16	15	16	17	14	16	16	16	16	16	15	15	16	16	16
7	16	16	16	16	16	16	16	16	16	18	17	16	18	16	15	18	10	16	16	16	17	17	17	17
8	16	16	15	16	14	16	16	16	16	16	18	30	20	28	28	17	15	15	16	14	15	15	15	16
9	16	16	16	16	16	16	16	16	16	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16
10	16	16	16	16	16	16	15	15	15	16	16	22	18	30	27	16	16	15	16	16	16	16	16	16
11	16	16	16	16	16	16	16	16	16	20	20	30	31	17	30	22	16	15	16	16	16	16	16	15
12	16	16	16	15	15	16	14	14	23	29	31	32	35	33	30	22	16	15	15	16	16	16	15	16
13	16	16	17	15	15	15	15	14	21	30	31	32	33	30	30	22	16	14	12	15	15	15	15	16
14	16	16	16	16	16	15	12	16	16	30	29	32	30	24	30	21	16	14	15	16	16	15	16	15
15	16	15	12	16	16	16	16	15	16	19	20	19	28	29	18	16	12	16	16	15	16	16	16	16
16	16	16	16	16	15	12	15	14	16	16	22	22	21	24	14	16	14	16	16	16	16	16	16	15
17	15	16	16	15	15	15	15	15	16	15	17	18	16	19	18	16	15	16	16	16	16	16	16	16
18	16	16	16	16	16	15	16	16	15	16	16	16	16	15	15	15	14	15	16	14	14	16	16	16
19	16	16	16	16	16	16	14	16	16	16	16	18	16	16	16	15	14	15	16	16	15	16	15	16
20	16	16	16	16	16	16	18	16	16	15	15	16	16	15	19	17	19	16	16	16	16	16	16	16
21	16	15	16	16	14	14	16	17	14	12	16	16	17	18	17	15	15	16	16	15	15	15	16	16
22	16	16	16	16	16	16	16	16	16	14	15	15	15	14	14	16	16	16	13	15	15	15	16	16
23	16	15	16	15	15	16	16	16	16	16	16	16	16	18	17	16	16	10	16	16	15	16	16	16
24	16	16	16	16	16	16	16	16	16	16	17	15	18	16	17	16	16	15	16	16	16	14	16	16
25	16	16	16	16	16	15	16	16	15	15	18	21	28	20	18	20	18	16	16	16	15	16	16	16
26	16	16	15	16	15	15	15	14	15	17	17	17	17	21	19	15	15	16	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	14	17	19	18	16	16	16	16	16	13	15	18	16	16	16	16
28	16	16	16	15	15	15	15	16	16	15	15	16	16	16	16	16	15	15	15	15	15	15	16	16
29	16	16	15	15	15	16	16	16	15	14	16	15	14	15	15	15	16	16	15	16	15	15	16	16
30	15	15	15	16	16	16	16	16	16	14	14	15	15	15	16	14	15	16	16	16	16	16	16	16
31	16	16	16	16	16	16	16	16	13	16	14	14	12	16	14	10	14	16	16	16	15	15	14	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	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	17	18	17	17	17	16	16	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	17	20	22	28	24	27	17	16	16	16	16	16	16	16	16
L Q	16	16	16	15	15	15	15	15	15	15	16	16	16	16	16	15	15	15	15	15	15	15	16	16

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	369	359	357	363	365	371	388	357	328	344	334	289	324	297
2	314	311	314	331	309	346	370	380	375	357	338	353	383	351	377	370	377	366	320	328	346	347	314	316
3	340	315	324	306	309	340	367	386	377	374	380	388	387	371	375	383	389	335	357	311	339	339	293	311
4	318	336	315	316	291	336	306	349	382	306	360	376	384	381	372	364	362	342	346	365	285	339	315	320
5	313	318	306	314	357	332	337	348	358	378	354	371	377	377	361	384	364	338	346	356	299	300	F 286	285
6	266	292	Z 311	330	291	317	337	352	378	354	348	364	361	372	370	381	355	349	338	327	325	303	316	336
7	332	303	324	318	347	325	351	359	376	374	373	366	393	374	379	369	337	329	351	347	337	298	308	290
8	289	287	307	352	330	326	326	359	361	360	382	342	342	387	370	385	383	356	309	343	284	283	307	322
9	309	336	329	293	307	310	364	350	363	377	343	377	370	379	373	387	368	375	365	321	334	308	F 273	F 285
10	F 291	316	279	F 290	F 313	F 332	F 342	362	389	347	379	376	347	354	R 323	380	344	356	343	314	337	339	324	294
11	262	F 310	282	279	F 282	F 313	361	365	375	362	369	373	361	352	364	366	368	351	338	323	323	271	F 248	F 255
12	F	F 285	F 267	F 341	378	334	299	332	361	369	386	376	393	381	354	386	374	361	346	353	312	F 291	F	F 287
13	F 262	F 317	273	311	318	305	368	364	408	384	380	372	365	363	353	R 341	357	309	341	330	F 365	F 269	F 278	F
14	F 282	F 324	322	308	299	357	317	371	421	389	R 324	387	421	358	351	372	318	353	352	332	322	340	305	274
15	318	311	F 324	F 292	F 276	349	352	385	370	388	347	368	358	349	374	381	375	361	371	335	331	296	297	378
16	318	314	315	270	318	313	329	A	367	379	379	373	403	375	373	368	373	383	329	307	310	F 340	F 271	F 260
17	F 263	F 268	R 286	290	320	319	359	349	387	392	357	356	367	360	375	375	373	381	327	347	315	332	F 333	302
18	F	F 238	F	F 327	F 251	F 370	339	374	385	376	347	366	381	363	360	396	359	342	332	343	331	288	F 256	297
19	313	313	313	313	338	403	A	338	357	367	366	348	371	376	357	381	365	343	332	344	337	344	309	280
20	302	317	316	287	313	333	349	363	391	399	335	367	371	313	374	369	373	355	324	341	336	280	283	311
21	300	310	294	288	353	373	280	349	370	354	352	363	384	367	359	370	363	358	331	332	347	345	309	300
22	300	284	317	324	348	378	297	385	371	355	359	376	384	328	352	377	375	358	304	325	337	329	313	318
23	302	303	340	322	344	321	324	363	341	360	371	364	384	375	376	385	349	347	318	344	332	313	289	268
24	305	317	317	313	339	356	331	355	395	366	368	355	364	351	372	361	359	363	345	322	342	308	309	293
25	287	287	305	370	341	341	343	370	388	371	372	381	358	349	377	387	374	315	326	346	355	324	316	300
26	297	288	319	317	307	317	324	362	382	362	370	369	360	376	368	371	352	378	334	321	320	311	273	283
27	282	F 276	312	337	301	348	308	347	349	341	345	352	345	354	371	382	373	345	327	A	313	323	336	321
28	319	329	325	324	352	344	356	341	382	368	312	365	366	363	357	367	381	358	374	355	290		316	313
29	F 312	306	332	355	350	302	321	355	379	374	353	353	377	378	368	370	370	331	361	339	339	311	301	F 301
30	301	340	328	336	307	348	331	346	386	388	369	369	369	377	377	388	383	352	342	354	355	313	300	F 283
31	F 257	262	F 273	F 318	364	334	338	354	355	353	362	367	335	342	374	378	373	363	304	352	324	325	320	332
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	30	29	30	30	30	29	29	30	30	31	31	31	31	31	31	31	31	31	30	31	30	30	30
MED	302	310	315	316	318	334	337	359	376	368	362	367	370	363	370	377	370	355	338	340	332	312	308	298
U Q	314	317	324	330	347	348	354	368	386	378	372	376	384	376	374	384	375	361	346	347	339	339	316	316
L Q	284	287	300	293	307	319	322	349	363	357	347	359	360	352	359	369	359	342	327	325	315	296	F 286	285

JAN. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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								C	C	C	L	L	L	L	L									
2									L	L	L	L		L										
3											L	408	416	413										
4										378			L	L										
5											L	L	405	L										
6											L	381	404	409	L									
7								L			L	L	L	L	L									
8												A	414	368										
9									L		L	L	L		L									
10									L	L	L	L	L	L	L		L							
11										L	L	L	394	392										
12												L												
13											L	L		L										
14											L	L	L	L										
15												389	L	L	L									
16								A				L		L	L									
17										L		L	L		L									
18										L	L	401	416		L	L								
19							A			L	L	393	389		L		L							
20								L		L	L			L	L		L							
21										L	395	L	L	411	L									
22												L	396	410	L									
23								L				L	395	L	L									
24												L	L	L		548								
25							427				L	411	559	L	L	L	L	L						
26												L	L	L	L									
27										L	L	L	L	396	400									
28								L		416	L	381	L	L	L									
29											L	404	432	L	L		L							
30											L	406	L	L			403							
31										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			2	1	9	11	7	1	1	1							
MED							427			397	395	401	405	409	400	548	403							
U Q												407	416	411										
L Q												385	395	392										

JAN. 2017 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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								C	C	C	218	228	246	228	228									
2									212	206	242	232		256										
3											224	230	222	236										
4										348			240	236										
5											262	244	234	240										
6											254	240	240	228	234									
7								250			234	234	216	222	216									
8												204	240	230										
9									216		246	232	238		226									
10									220	268	228	234	234	252	230		258							
11										224	232	232	254	278										
12												240												
13											232	246		220										
14											296	228	206	212										
15												246	236	236	224									
16								A				240		236	224									
17										210		248	234		234									
18										218	262	232	232	246	230	208								
19							A			244	232	254	230	226	230		230							
20								230		222	256		238	296	232		218							
21										232	232	232	224	224	242									
22												224	224	244	244									
23								232				242	218	230	230									
24												236	252	244		244								
25							226				234	226	232	244	212	212	212	246						
26												230	230	230	230									
27										252	234	248	242	242	206									
28								230		222	280	234	226	226	232									
29											240	248	212	224	224		212							
30											226	232	232	232			212							
31										246	234	230	252	236			218							
	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	3	12	21	29	27	28	19	3	7	1						
MED							226	231	216	228	234	234	234	236	230	212	218	246						
U Q								241	220	249	255	243	240	244	232	244	230							
L Q								230	212	220	232	230	224	227	224	208	212							

JAN. 2017 h'F2 (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	192	188	222	204	216	216	196	220	220	230	230	272	258	272
2	268	268	248	238	278	228	220	222	184	174	192	202	210	186	222	222	220	202	224	E B 224	214	192	246	258
3	224	274	264	264	254	252	204	198	236	222	202	194	182	180	210	210	198	234	244	224	252	252	260	260
4	274	236	236	268	250	252	248	240	210	194	226	230	200	200	224	224	214	212	206	224	E A 268	256	256	248
5	B 246	246	248	232	222	242	E B 234	244	222	224	226	208	186	202	236	218	218	234	226	212	244	244	Q 274	286
6	284	264	264	246	276	258	E B 284	222	212	230	190	216	198	190	196	210	210	212	230	214	252	258	258	230
7	242	260	238	220	232	232	242	202	222	230	202	184	E A 214	216	202	224	196	214	218	216	216	268	258	Q 258
8	Q 258	Q 236	230	210	226	246	246	208	208	222	222	A	200	200	230	212	202	196	A	206	242	300	236	262
9	248	232	260	260	240	274	232	212	194	226	192	198	200	220	206	206	198	200	236	214	228	232	Q 244	Q 248
10	Q 234	Q 234	Q 234	Q 250	Q 230	190	226	210	210	210	204	212	192	194	208	202	202	202	E B 238	244	218	Q 192	Q 192	Q 222
11	224	254	Q 254	Q 254	Q 226	224	190	214	202	192	192	216	208	198	236	216	202	204	230	220	226	Q 226	Q 274	Q 244
12	Q 244	Q 240	260	220	208	196	220	218	234	220	216	216	216	232	244	214	214	214	218	226	240	Q 250	Q 246	Q 266
13	Q 218	Q 220	276	262	226	220	202	228	196	214	196	196	214	194	254	210	214	224	206	232	208	Q 226	Q 244	Q 244
14	266	Q 224	268	E A 324	270	240	228	188	188	206	206	220	204	188	230	222	278	228	220	226	230	210	Q 234	284
15	A 292	Q 238	260	Q 258	Q 252	210	216	194	196	212	224	202	198	190	198	212	204	210	200	202	206	228	228	196
16	250	250	236	262	246	212	200	A	200	220	216	204	214	214	190	230	216	194	216	228	240	206	266	Q 270
17	288	Q 262	Q 262	Q 226	226	190	190	198	208	180	224	214	190	230	206	234	210	202	258	220	220	228	228	228
18	248	254	282	212	Q 206	Q 190	210	204	200	200	194	206	188	196	196	186	220	220	248	228	Q 208	244	Q 264	E A 278
19	294	A	266	272	246	196	A	218	218	224	196	196	196	196	196	212	202	204	218	236	242	232	278	Q 264
20	254	A 278	282	276	276	218	A	192	198	212	198	210	192	200	200	208	188	200	242	202	202	280	292	Q 274
21	274	252	252	252	214	192	E B 216	238	220	198	198	198	206	184	196	222	222	196	232	232	220	200	256	278
22	A 300	282	266	254	224	184	236	192	216	206	224	196	182	182	210	220	194	200	278	240	214	254	254	240
23	242	258	224	230	216	210	222	194	200	224	192	192	184	206	206	210	226	216	250	236	228	254	Q 282	Q 236
24	250	234	268	252	206	206	232	204	208	200	216	194	196	190	238	194	202	202	212	238	236	254	266	278
25	256	Q 268	258	208	206	216	226	204	204	214	212	206	184	204	212	192	192	212	234	216	226	250	250	266
26	252	Q 236	242	256	Q 228	208	220	202	204	210	214	186	186	192	202	202	210	206	224	238	238	264	242	242
27	252	250	250	218	240	224	248	224	194	194	200	200	172	188	198	212	202	214	242	A	260	258	230	254
28	254	246	246	236	228	222	214	206	206	190	206	198	198	192	192	214	212	202	208	214	216	234	192	304
29	230	244	226	206	228	228	242	214	214	222	202	176	176	206	192	206	198	244	206	228	230	270	240	Q 254
30	Q 236	236	252	244	244	194	220	200	200	212	202	190	194	194	228	214	180	218	218	236	214	248	Q 276	Q 276
31	276	Q 276	256	Q 222	200	214	E B 274	224	232	214	216	202	196	196	218	208	196	210	210	210	224	284	258	240
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30	28	29	30	30	31	30	31	31	31	31	31	31	30	30	31	31	31	31
MED	252	250	255	246	228	217	222	208	207	212	202	201	196	196	208	212	202	210	223	225	227	250	256	258
U Q	274	263	264	260	246	232	239	222	216	222	216	210	206	204	228	220	214	218	238	232	240	258	266	274
L Q	242	236	242	222	222	196	215	199	200	200	196	194	186	190	198	208	198	202	216	214	216	228	240	242

JAN. 2017 h'F (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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								C	C	C	104	122	B	110	B	122	B	B						
2	110							B	120	94	108	108	A	108	110	A	106	B						
3								A	138	A	104	B	B	104	102	102		A						
4								A	B	A	B	B	B	B	B	B	B	B						
5								112		A	A	Y	Y	Y	94	A		A						
6									134	120	110	116	114	114	114	116	A	B						
7								B	128	118	106	A	94	94	A	118	102	102	100					
8								112	94	104	A	A	B	B	B	128	A	A		104				
9								128	118	118	112	100	114	106	106	124	B	B						
10							A	A	108	114	114	114	106	B	B	B	106	B						
11							A	A	A	112	108	222	B	A	B	B	B	B						
12							B	B	B	B	B	B	B	B	B	A	104	A			A	98		
13							A	A	100	100	B	B	B	B	A	A	A	A						
14							A	B	A	B	B	B	B	122	B	114	A	A						
15								118	114	114	118	118	124	B	110	116	108							
16							A	A	116	116	116	110	116	116	A	116	126	B						
17		B						B	118	118	100	110	110	110	110	110	152	B						
18							B	136	118	118	A	118	118	114	114	114	E A 152	A						
19							A	A	A	A	A	A	110	102	106	106	A	B						
20							138	128	128	128	116	116	116	106	128	114	B	B						
21							B	B	124	112	112	112	A	112	112	112	134	B						
22							110	128	128	118	A	110	110	110	110	110	128	100						
23							B	A	A	A	A	A	100	108	108	98	88	A						
24							A		106	112	112	112	112	112	104	104	130	A						
25							A	A	110	110	112	112	112	112	112	128	102	A				A		
26							B	138	122	A	A	A	A	112	112	96	96	108			A			
27							B	B	106	114	114	114	102	102	102	102	102	A						
28								B	116	116	106	106	106	106	112	110	110							
29							B	A	124	102	102	A	102	108	94	104	A	B						
30							A	A	116	116	116	108	108	114	114	114	114				94			
31							B	112	112	112	112	112	112	112	112	112	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	1						2	9	23	22	20	19	19	23	21	24	18	3	1	1	1	1		
MED	110						124	128	118	114	112	112	110	110	110	113	108	102	100	104	94	98		
U Q								132	124	118	114	116	114	112	112	116	128	108						
L Q								112	110	112	106	110	106	106	105	105	102	100						

JAN. 2017 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	G	Y	B	Y	B	112	B	B	B	92	B	120	B	104
2	96	96	90	B	114	B	88	B	G	130	104	G	90	114	100	92	G	B	B	B	B	B	86	B
3	B	B	B	B	B	118	100	100	G	92	G	142	106	G	134	94	B	106	B	94	B	B	B	B
4	94	B	B	100	B	B	B	100	B	88	B	B	B	B	B	B	88	B	B	98	98	98	98	94
5	B	B	92	92	B	B	B	100	94	94	94	Y	Y	86	86	110	B	100	108	B	B	B	96	96
6	B	82	B	B	B	90	B	B	118	98	162	106	G	G	G	114	112	B	B	112	112	104	90	B
7	B	B	B	B	B	110	106	B	112	110	92	92	92	92	98	G	84	84	B	94	98	86	82	98
8	92	B	92	B	112	98	100	100	98	150	88	B	B	B	B	116	96	96	96	92	B	94	B	94
9	84	96	108	B	B	B	B	108	100	100	90	G	G	106	106	G	B	B	88	B	100	B	B	B
10	B	B	B	88	88	B	102	116	94	94	G	G	G	B	B	G	100	B	B	94	B	B	B	B
11	B	B	96	B	B	B	104	86	118	G	G	B	B	190	B	B	B	B	B	B	B	B	96	B
12	B	B	B	114	104	B	B	134	B	B	B	B	B	B	B	98	98	98	98	110	92	92	92	98
13	S	B	104	104	Q 104	B	B	100	94	94	B	B	B	B	104	114	102	102	96	96	94	B	B	B
14	102	118	118	98	102	94	100	B	116	B	B	B	B	186	B	G	134	102	98	B	B	82	B	88
15	88	108	B	B	108	108	108	108	102	150	152	118	G	B	G	G	G	B	B	102	100	B	96	96
16	B	B	92	B	116	B	108	104	104	102	88	114	108	110	84	138	G	94	B	B	96	96	96	98
17	98	B	B	B	B	B	B	B	168	102	138	138	104	G	104	104	136	B	124	108	168	114	94	94
18	88	88	90	90	90	90	B	124	110	100	86	100	100	98	98	104	98	90	90	96	B	B	96	96
19	96	92	92	96	96	102	102	102	102	102	102	108	98	90	90	90	90	B	B	100	100	100	100	110
20	104	108	94	84	84	84	G	106	106	134	106	106	G	90	108	G	B	B	90	B	B	112	98	98
21	90	90	90	90	86	B	154	B	136	102	110	G	110	G	104	G	G	B	B	B	B	B	90	90
22	90	96	96	96	92	B	G	146	120	112	112	100	106	100	100	138	G	84	84	92	92	92	102	102
23	102	92	92	82	82	98	B	116	106	94	94	94	94	G	G	86	G	86	86	B	100	124	116	130
24	100	B	B	B	B	106	102	102	G	104	140	100	G	112	G	G	114	90	90	90	90	96	104	90
25	100	90	98	98	106	106	106	106	142	90	106	G	G	98	98	110	100	92	92	B	92	92	92	92
26	92	92	92	92	86	B	B	150	150	96	96	96	96	104	122	114	100	100	100	100	100	100	100	B
27	B	B	90	90	B	B	B	B	106	106	106	96	B	86	92	92	G	92	106	104	126	102	102	102
28	102	92	92	B	B	104	B	B	98	102	90	102	142	110	112	116	116	B	B	B	B	98	100	88
29	88	88	92	92	92	B	B	98	108	88	88	88	88	G	88	88	88	B	B	B	B	B	B	88
30	92	B	B	100	100	96	88	106	104	118	118	164	100	102	102	106	94	B	94	94	94	94	90	90
31	90	B	B	B	B	104	B	136	114	100	120	108	106	106	96	112	G	B	B	B	B	96	88	88
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	15	19	17	18	15	14	22	25	27	23	18	15	18	20	21	17	15	16	18	17	20	23	23
MED	93	92	92	92	98	102	102	106	106	102	104	104	100	103	100	110	100	94	95	96	98	97	96	96
U Q	100	96	96	99	106	106	106	116	118	110	118	114	106	110	105	114	113	100	99	102	100	103	100	98
L Q	90	90	92	90	88	94	100	100	101	94	90	96	94	92	94	93	92	90	90	94	93	93	90	90

JAN. 2017 h'Es (KM)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2017 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																L 1				F 1		F 1		F 1
2	F 1	F 1	F 1		F 1		F 1			C 1	L 1		L 2	C 1	L 2	L 1							F 1	
3						F 1	F 1	L 1		L 2		L L 1 1	L 1		C 1	L C 1 1		L 1		F 1				
4	F 1			F 1				L 1		L 1							L 1			F 1	F 1	F 2	F 1	F 2
5			F 1	F F 1 1				L 1	L 2	L 2	L 2			L 1	L 2	L 1		L 1	F 1				F 1	F 1
6		F 1				F 1			C 1	L 1	H L 1 1	L 1				L 1	L 1			F 1	F 1	F 1	F 1	
7						F 1	F 1		L 1	L 1	L 1	L 1	L 1	L 1	L 1		L 1	L 1		F 1	F 1	F 1	F 2	F 1
8	F 1		F 1		F 1	F 2	F 1	F 2	L 2	H L 1 1	L 1					L 1	L 1	L 2	F F 2 1	F 1		F 1		F 1
9	F 2	F 1	F F 1 1					L 1	L 2	L C 1 1	L 1			C 1	C 1				F 1		F 1			
10				F 1	F 1		L 1	L L 1 2	L 3	L 3							L 1			F 1				
11			F 1				L 1	L 1	C 1					L 1									F 1	
12				L L 1 2	L 1			L 1								L 1	L 1	L 1	F 2	F F 1 1	F 2	F 1	F 1	F 1
13			F 2	F 3	F 1			L 3	C 2	L 1					L 1	L L 1 1	L 4	L 2	F 3	F 2	F 1			
14	F 1	F 1	F 1	F 2	F 2	F 2	L 1		L L 1 1					C 1			H L 2 2	L 2	F 1			F 1		F 2
15	F 3	F F 1 1			F 2	F F 3 1	L 2	L 5	L 1	C 1	C 1	C 1								L 1	L 1		L 1	F 3
16			F 1		F 1		L 1	L 5	L 2	L 2	L 1	C 1	C 1	C 1	L 1	C 1		L 1			F 1	F 1	F 2	F 1
17	F 2								H L 1 1	L 1	C 1	C 1	C 1		L 1	C 1	L 1		F F 2 2	F 2	F F 1 1	F 1	F 2	F 2
18	F 2	F Q 1 1	F 1	F 1	F 1	F 1		C 1	C 2	C 1	L L 1 1	L 1	L 2	L 1	L 1	L 1	L 1	L 1	F 2	F 1			F 1	F F 2 1
19	F 5	F 3	F 3	F 3	F 1	F 1	L 6	L 5	L 3	L 2	L 1	L 1	L 1	L 1	L 1	L 1	L 1			F 2	F 1	F 2	F 2	F 1
20	F 2	F 2	F 1	F 2	F 1	F 1		C 1	L Q 1 1	C L 1 2	L 1	L 1		L 1	L 1				F 1			F 1	F 1	F 4
21	F Q 2 1	F 2	F 2	F 1	F 1		L 1		C 1	L 1	C 1		L 1		L 1								F 2	F 1
22	F 3	F 1	F 1	F 2	F 1			H 1	H 2	C 2	C 1	L 2	L 1	C L 1 1	C L 1 1	C 1		L 1	F 2	F 2	F 1	F 1	F 1	F 1
23	F 3	F 3	F 2	F 3	F 1	F 2		L 4	L 3	L 2	L 3	L 3	L 1			L C 1 1		L 1	F 1		F 1	F 1	F F 1 1	F F 1 1
24	F 2					F 1	L 1	L L 1 1		C 1	C 1	L 1		C 1			C 1	L 2	F 2	F 1	F 1	F 2	F 1	F 2
25	F 2	F 2	F 1	F 1	F 1	F 1	L 1	L 1	C 1	C 1	C 1			L 1	L 1	L 1	L 1	L 1	F 1		F 2	F 2	F 4	F 4
26	F 2	F 1	F 2	F F 1 1	F 1			C 1	C 1	L 1	L 1	L 1	L 1	L 1	L 1	C 1	C 2	L 1	F 3	F 4	F 3	F 3	F 1	
27			F Q 1 1	F Q 1 1					C 1	C 1	C 1	L 1		L C 1 1	C 1	L 1	L 1	L 2	F 2	F 5	F F 1 2	F 2	F 2	F 2
28	F F 1 1	F F 1 1	F 2			F 1			L 2	L C 1 1	L 1	C 1	C 2	C 1	C 1	C 2	C 2					C 2	C 2	L 3
29	F F 3 1	F 3	F F 1 1	F 3	F 1			L 2	L C 1 1	L 3	C L 2 2	L Q 2 1	L C 1 1		L C 1 1	L C 1 2	L 1							F Q 1 1
30	F 1			F 1	F 2	F 1	L 1	L 1	L C 1 2	C L 2 1	C L 1 1	C L 1 1	L C 1 1	L 1	L C 1 1	C 2	C 1		F 1	F 1	F 1	F 1	F 1	F 1
31	F 1					F 2		C 1	C 2	C L 2 1	C L 1 2	L C 1 1	C 1	L C 2 1	L C 1 1	L C 2 1						F C 1 1	F C 3 1	F 3
	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. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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 35	X 37	X 35	X 35	X 34	X 32	X 31												X 34	X 46	X 33	X 36	X 35	X 35
2	X 38	X 37	X 38	X 38	X 34	X 32	X 31											X 38	X 36	X 42	X 35	X 31	X 31	X 31
3	X 33	X 35	X 37	X 36	X 35	X 33	X 33												X 35	X 38	X 40	X 33	X 32	X 33
4	X 34	X 36	X 34	X 32	X 32	X 31	X 32											X 45	X 38	X 41	X 32	X 33	X 32	X 33
5	X 34	X 36	X 37	X 38	X 36	X 32	X 35												X 41	X 34	X 34	X 34	X 41	50
6	48	43	X 37	X 32	X 32	30	X 28												X 41	X 38	X 40	X 41	X 40	X 40
7	X 39	X 41	X 42	X 32	X 35	X 36	X 33												X 43	X 40	X 40	X 33	X 37	37
8	40	40	X 35	X 28	X 27	X 28	X 28												X 42	X 40	X 42	X 34	X 35	41
9	X 35	X 35	X 30	X 25	X 26	X 28	X 28												X 42	X 32	X 35	X 35	42	51
10	52	48	50	50	52	X 27	X 26												X 55	X 51	X 41	X 32	X 33	X 31
11	X 31	X 33	X 35	42	X 34	50	54												X 36	X 31	X 35	X 38	X 36	47
12	52	49	42	42	34	X 29	X 30			C	C	C	C	C	C	C	C		X 40	X 40	40	X 34	X 32	X 36
13	X 35	X 35	X 32	X 29	X 30	X 29	35	X 48											X 42	X 51	X 32	41	X 32	37
14	38	41	X 40	X 38	X 34	X 34	X 34				C				C				X 44	X 45	X 31	X 30	X 29	X 35
15	X 34	X 35	X 32	35	X 30	33	X 32												X 40	X 40	X 35	X 34	X 34	X 36
16	X 37	X 35	X 34	X 35	X 34	X 27	X 32											X 46	X 32	X 38	X 38	X 32	38	40
17	38	35	35	X 32	X 32	X 28	X 26												X 33	X 32	X 34	X 32	X 33	X 32
18	X 36	X 35	X 36	X 34	X 29	X 28	X 24												X 41	X 39	X 44	A	X 34	X 35
19	X 34	X 36	X 35	X 38	X 38	X 33	X 29												X 41	X 46	X 47	X 35	X 33	X 32
20	X 34	X 35	X 34	40	X 34	X 28	X 24												X 35	X 34	X 38	X 34	X 33	X 34
21	X 35	X 34	X 32	41	X 39	X 25	X 26												X 42	X 44	X 43	X 37	X 33	X 35
22	X 35	X 35	X 35	X 36	X 38	X 28	X 29												X 40	X 39	X 42	X 37	X 36	X 36
23	X 36	X 38	X 38	X 41	X 31	X 28	X 28												X 41	X 44	X 40	X 33	X 32	X 34
24	X 34	X 34	X 34	X 36	X 34	X 32	X 31												X 40	X 42	X 42	X 33	X 37	X 40
25	47	44	47	X 33	X 31	X 27	X 29												X 36	X 45	X 44	X 40	X 39	X 38
26	X 38	X 40	X 41	X 41	X 41	X 35	X 37												X 51	X 55	X 42	X 47	57	54
27	50	50	51	52	51	46	37												X 46	X 52	X 42	X 36	X 38	X 40
28	47	51	51	X 49	X 42	X 40	X 44												X 42	X 39	X 36	X 32	X 37	X 39
29	X 39	47	50	X 34	X 31	X 32	X 34												X 33	X 42	X 40	44	44	46
30	44	50	49	46	X 33	42	X 32												X 35	X 37	X 39	X 35	X 34	X 32
31	X 36	X 36	X 39	X 38	X 29	X 28	X 32												X 36	X 38	X 38	X 39	X 40	X 40
	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										3	31	31	31	30	31	31
MED	X 36	X 36	X 37	X 36	X 34	X 31	X 31	X 48										X 45	X 40	X 40	X 40	X 34	X 35	X 36
U Q	40	43	42	41	X 36	X 33	X 34											X 46	X 42	X 45	X 42	X 37	X 38	40
L Q	X 34	X 35	X 34	X 33	X 31	X 28	X 28											X 38	X 36	X 38	X 35	X 33	X 33	X 34

JAN. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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	29	31	29	29	28	26	25	41	61	60	64	69	63	68	65	58	54	40	28	40	27	30	29	29
2	31	31	32	32	28	26	25	40	45	51	50	63	58	64	62	58	54	32	30	36	28	25	25	25
3	27	29	30	30	29	26	27	35	48	50	53	56	55	50	51	50	55	31	29	32	34	27	26	27
4	28	30	28	26	26	25	26	39	47	58	64	61	54	66	50	60	55	39	32	35	25	27	26	27
5	28	30	31	33	30	26	29	48	51	54	58	64	70	56	56	66	50	33	35	28	27	28	35	F
6	F	F	31	26	26	F	22	37	47	51	69	80	64	62	53	52	52	46	35	32	34	35	34	34
7	33	35	36	26	29	30	26	41	45	58	61	68	61	50	53	55	44	39	37	34	34	27	31	F
8	F	F	29	22	21	22	22	42	46	49	73	65	56	52	58	56	48	A	36	34	36	28	28	F
9	29	29	24	19	20	22	22	39	43	54	61	75	63	55	V 58	56	45	37	36	26	29	29	F	F
10	F	F	F	F	F	21	20	36	50	48	68	61	64	56	55	50	39	32	48	45	35	26	27	25
11	25	27	29	F	28	F	F	35	44	50	63	58	53	57	61	55	50	47	30	25	29	32	30	F
12	F	F	F	F	F	23	24	41	56	C	C	C	C	C	C	C	C	40	34	34	F	28	26	30
13	29	29	26	23	23	23	F	42	53	52	56	60	59	42	49	48	44	39	36	45	26	F	26	F
14	F	F	34	32	28	28	28	39	48	50	C	71	54	60	C	57	50	41	38	39	25	24	23	28
15	28	29	27	F	24	F	26	41	46	42	58	58	64	56	56	49	46	32	34	34	29	28	28	30
16	31	29	28	29	28	21	26	42	52	53	56	63	60	52	69	52	47	40	26	32	32	26	F	F
17	F	F	F	26	26	22	20	36	45	48	57	60	57	55	54	60	49	41	27	26	28	26	27	26
18	30	29	30	28	23	22	18	40	45	48	62	69	85	63	52	51	53	39	35	33	38	A	28	29
19	28	30	29	32	32	27	23	39	47	57	80	92	72	62	61	56	46	40	35	40	41	29	26	26
20	28	29	28	F	28	22	18	36	46	54	55	59	62	60	56	59	56	38	29	28	32	28	27	28
21	29	28	26	F	33	18	20	42	49	56	66	70	70	64	63	62	46	44	36	38	37	31	27	29
22	29	29	29	30	32	22	23	44	49	48	58	63	66	64	63	62	48	38	34	33	36	31	30	30
23	30	31	32	35	25	22	22	45	60	54	65	79	65	56	56	58	48	39	35	38	34	26	26	28
24	28	28	28	30	28	26	25	44	52	50	56	72	62	59	60	54	56	38	34	36	36	27	31	34
25	F	F	F	27	25	21	23	44	49	52	52	64	61	56	59	62	52	39	30	39	38	34	32	32
26	32	34	35	35	35	29	31	48	48	48	56	65	70	62	56	58	52	38	45	48	36	43	F	F
27	F	F	F	F	F	F	F	47	64	65	70	97	106	98	68	62	52	44	40	46	36	30	32	34
28	F	F	F	43	36	34	38	47	54	58	73	65	63	62	60	64	54	46	36	33	30	26	31	33
29	33	F	F	28	24	26	28	47	56	55	68	89	63	54	56	57	49	42	27	36	34	F	F	F
30	F	F	F	F	26	F	26	49	51	56	66	60	57	54	56	52	48	39	29	31	33	29	28	26
31	30	30	33	32	23	22	26	40	46	54	78	76	64	64	62	57	50	42	30	32	32	33	34	34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	20	23	23	28	26	28	31	31	30	29	30	30	30	29	30	30	30	31	31	30	28	27	22
MED	29	29	29	29	28	23	25	41	48	52	62	65	63	58	56	57	50	39	34	34	34	28	28	29
U Q	30	30	32	32	29	26	26	44	52	56	68	72	65	63	62	60	53	41	36	39	36	30	31	32
L Q	28	29	28	26	24	22	22	39	46	50	56	61	58	55	54	52	47	38	30	32	29	26	26	27

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											U L 368	L	L	U L 400										
2												L	L	U L 408	L	L								
3										A	L	L	U L 416	L	L	A								
4											A	L	U L 412		A	L								
5									L		L	U L 400	L	L	L	L								
6										L	A		U L 408	L	L									
7											L	L	L	L	L	L								
8										A	A		L		L			A						
9											A	408	A	L	L	L								
10											U L 400	A	A	L	L	A								
11											L	L	U L 432	A	U L 396	A								
12										C	C	C	C	C	C	C	C							
13										L	L	A	A		L									
14											C				C		L							
15										L			L	E C	E C	L								
16										U L 432	U L 400	U L 420	U L 424	U L 420	E C	E C								
17									L		L	L	A	A	L	L								
18											U L 412	U L 428	424	412	L	L								
19										A	L	U L 428	U L 424	L	L	L								
20											U L 460	L	L	L	U L 404	L								
21										L	L	L	U L 428	L	L	L								
22											L	L	U L 436	L	L	L								
23									L		L		A	U L 428	U L 396	A								
24											L	U L 432	L	L	L	L								
25											L	L	A	L	L									
26											U L 444	A	A	A	L	A								
27										L	U L 460	A	A	L	L									
28											L	L	L	L	L	L								
29										L	L		L		L		L							
30										L	L	L	L	L	L		L							
31										U L 412	U L 420	U L 408	L	U L 396	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										2	8	7	9	6	3									
MED										U L 422	U L 416	U L 420	U L 424	U L 410	U L 396									
U Q											U L 452	U L 428	U L 430	U L 420	U L 404									
L Q											U L 400	408	U L 414	U L 400	U L 396									

JAN. 2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	A	A	R	R	R	R	A	A	UR 168	B						
2								B	UR 208	252	A	A	A	R	A	UR 228	R							
3								B	208	A	R	UR 284	R	R	R	240	184	B						
4								B	232	276	296	A	UR 308	A	A	UR 232	UR 196							
5								B	UR 200	256	R	R	UR 296	R	R	R	UA 172	B						
6								B	B	A	A	R	UR 312	R	R	R	A	B						
7								B	196	244	UR 300	A	R	R	R	R	R	B						
8								B	228	A	300	292	R	A	R	A	A	B						
9								B	208	252	A	A	A	A	R	UR 240	UR 180	B						
10								B	220	260	296	A	316	A	A	A	B	B						
11								B	204	276	A	A	A	A	A	A	A	B						
12								B	A	C	C	C	C	C	C	C	C	B						
13									UR 232	R	R	A	A	A	A	R	R	B						
14								B	B	EC	CE	CE	C	EC	C	EC	UA 192	B						
15								B	R	R	EC	EC	EC	EC	EC	R	A	B						
16								B	220	R	R	EC	EC	EC	EC	EC	R							
17								B	A	268	292	UA 320	304	A	A	A	A	B						
18								B	216	280	A	A	A	UR 320	R	UR 256	UR 200	B						
19								B	A	A	A	A	A	A	UR 292	R	UR 200	B						
20								B	A	A	A	A	A	A	R 300	R	A	B						
21								B	UR 248	UR 292	A	A	A	UR 316	R	R	UR 204	B						
22								B	UR 228	A	A	A	A	A	R	UR 260	UR 204	B						
23								B	236	A	320	A	A	A	R	A	A	B						
24								B	B	A	328	324	R	UR 316	UR 288	A	A	B						
25								B	UR 260	A	A	A	A	A	A	A	UR 212	B						
26								B	212	A	316	A	A	A	A	A	UR 248	B						
27								B	UR 244	UR 272	A	A	A	A	UR 272	R	R	B						
28								B	UR 236	A	R	A	A	R	R	R	UR 240	B						
29								B	UR 232	R	R	R	A	A	R	R	UR 240	B						
30								B	UR 236	R	R	A	R	R	A	A	UR 220	B						
31								B	UR 252	296	292	R	R	R	A	R	A	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									22	12	9	4	5	3	4	6	15							
MED									228	270	300	306	UR 308	UR 316	UR 290	UR 240	UR 200							
U Q									UR 236	278	318	322	314	UR 320	R 296	UR 256	UR 220							
L Q									208	254	294	288	300	UR 316	UR 280	UR 232	U 184							

JAN. 2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	J A 20	E B 16	J A 19	E B 15	20	E B 15	E B 14	27	J A 52	G 26	G	G 27	G	34	J A 36	G	E B 16	E B 15	E B 15	E B 15	J A 43	E B 15	E B 15
2	E B 16	E B 15	E B 15	20	E B 14	J A 24	E B 14	E B 15	G	31	33	38	J A 39	G	J A 33	G	G	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14
3	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 15	24	J A 41	G	G	G	G	G	31	24	E B 14	E B 14	E B 15	E B 14	E B 15	J A 20	J A 20
4	J A 18	J A 21	21	E B 14	E B 14	E B 15	E B 14	E B 15	G 21	32	37	37	GJ A 39	J A 44	J A 20	G	G	J A 22	22	E B 14	E B 15	J A 19	E B 14	J A 17
5	J A 21	E B 14	E B 14	E B 15	E B 15	E B 15	18	J A 18	G	32	G 25	G	G	G	G	G	G	E B 14	E B 15	E B 14	23	18	22	E B 14
6	E B 15	E B 14	J A 18	E B 14	E B 14	E B 14	E B 15	E B 15	22	29	J A 38	J G 28	J G 27	G	G 22	G	25	E B 15	E B 15	J A 22	J A 21	J A 22	J A 24	20
7	J A 20	J A 20	J A 21	E B 14	E B 16	E B 15	E B 15	E B 16	24	30	G	34	G	G	G	G	G	E B 14	E B 15	J A 20	J A 46	J A 56	J A 48	J A 21
8	20	21	J A 25	21	20	E B 15	J A 20	21	25	J A 35	33	34	G	39	G 26	J A 34	J A 40	J A 53	J A 26	J A 26	J A 20	E B 14	21	J A 25
9	21	J A 30	J A 24	E B 14	E B 14	E B 15	20	E B 15	26	35	38	J A 37	J A 41	J A 34	J G 21	G	G	J A 21	J A 21	J A 21	J A 20	21	20	20
10	20	E B 15	J A 18	E B 15	E B 14	J A 28	J A 39	J A 23	27	32	34	J A 40	38	37	32	28	J A 31	E B 16	19	E B 15	E B 15	E B 14	J A 20	J A 32
11	E B 15	E B 15	E B 17	E B 15	E B 15	E B 15	E B 14	19	25	32	31	34	34	36	J A 35	J A 35	23	E B 14	22	21	J A 41	J A 24	22	J A 21
12	E B 14	E B 14	E B 14	J A 21	J A 35	J A 29	J A 31	E B 15	25	C	C	C	C	C	C	C	C	J A 45	J A 46	J A 34	J A 32	J A 36	J A 22	J A 24
13	J A 24	E B 15	21	J A 18	J A 28	J A 26	J A 21	J A 38	J A 44	G	G	39	40	39	G	G	G	24	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15
14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 16	E B 19	E C 40	C	E C 39	E C 42	E C 40	C	E C 30	25	J A 23	22	22	J A 23	J A 29	24	23
15	J A 21	J A 25	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	G	G	E C 42	E C 40	E C 32	E C 43	E C 37	G	26	19	E B 16	E B 15	J A 23	J A 37	J A 26	E B 15
16	E B 15	E B 14	E B 14	J A 22	E B 15	E B 16	E B 14	E B 15	27	G	G	E C 38	E C 38	E C 30	E C 38	E C 33	G	26	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14
17	E B 16	E B 14	J A 20	20	E B 15	E B 15	E B 16	E B 16	J A 27	32	36	38	36	J A 42	35	29	J A 24	J A 22	J A 17	J A 24	J A 19	J A 22	20	J A 43
18	J A 22	20	J A 23	E B 14	E B 14	E B 14	19	20	G	33	36	J A 40	J A 40	G 28	G 24	G 23	24	E B 14	J A 21	J A 33	J A 31	J A 35	J A 21	22
19	19	J A 23	J A 29	J A 38	J A 39	J A 30	E B 15	27	J A 31	J A 47	J A 52	J A 44	J A 40	J A 37	G 24	G	G	E B 15	22	20	J A 63	23	J A 26	20
20	J A 39	J A 23	J A 29	21	J A 30	J A 22	21	20	J A 33	J A 52	J A 60	J A 43	32	J A 37	G	G	25	E B 14	E B 15	B J A 25	J A 20	J A 31	J A 28	J A 32
21	22	E B 15	21	19	22	22	20	20	G	G	J A 39	38	36	G 27	G	G	G	J A 20	21	J A 20	21	J A 21	J A 21	22
22	19	20	20	J A 24	J A 20	E B 15	E B 15	E B 15	G	J A 31	J A 40	J A 40	J A 38	36	G 26	G	G	E B 16	20	22	J A 30	J A 22	20	20
23	19	J A 23	J A 23	20	20	E B 15	E B 15	B J A 22	26	32	36	J A 57	J A 69	J A 47	G 25	J A 51	J A 35	J A 37	J A 30	J A 22	21	20	E B 16	E B 15
24	E B 14	E B 15	E B 14	E B 15	E B 15	20	18	E B 16	24	J A 34	36	34	G	G 23	J A 33	J A 35	J A 29	J A 27	19	E B 14	E B 14	E B 13	E B 14	J A 32
25	J A 46	J A 30	J A 23	20	18	E B 14	E B 12	E B 15	G	34	30	39	J A 45	34	30	J A 37	G	18	E B 13	E B 15	E B 14	E B 14	E B 14	21
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 13	18	27	31	40	44	J A 44	J A 39	J A 37	35	G	E B 16	E B 14	20	J A 25	J A 21	J A 29	E B 16
27	J A 22	J A 24	21	19	E B 15	21	22	E B 15	G	G	J A 44	35	J A 40	36	G	G	G	J A 22	21	E B 14	E B 15	E B 14	B J A 48	J A 26
28	J A 30	J A 23	19	J A 20	J A 20	20	E B 15	E B 15	G	28	G	J A 40	J A 41	G	G	G	G	E B 14	J A 30	J A 21	20	20	21	19
29	E B 15	E B 15	E B 14	E B 14	B J A 22	J A 26	21	E B 16	G	G	G	G	J A 37	36	G	G	G	E B 15	E B 15	B J A 15	J A 23	22	J A 27	J A 26
30	21	E B 15	18	E B 15	E B 14	E B 14	20	21	G	G	G	J A 37	G	G	J A 34	29	G	19	22	22	E B 14	E B 14	24	E B 15
31	E B 14	E B 14	19	J A 26	20	23	23	E B 16	G	35	37	G	G	G	35	G	25	19	E B 15	23	J A 23	J A 19	22	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	29	30	30	30	29	30	30	31	31	31	31	31	31	31
MED	19	E B 15	19	18	E B 15	E B 15	E B 15	E B 16	24	32	35	38	36	34	G	G	G	18	19	20	J A 20	21	21	20
U Q	J A 21	J A 23	J A 21	J A 20	J A 20	J A 22	20	20	27	J A 35	J A 38	J A 40	J A 40	39	34	J A 33	25	J A 22	22	J A 22	J A 23	J A 24	J A 24	J A 24
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 15	G	G 28	G	G 34	G	G	G	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15

JAN. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14	25	34	G 23	G	G 24	G	32	30	G	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
2	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	E B 14	E B 15	G	28	28	34	34	G	28	G	G	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14
3	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 15	23	34	G	G	G	G	G	29	21	E B 14	E B 14	E B 15	E B 14	E B 15	E B 14	E B 15
4	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 14	E B 15	G 20	29	32	33	G	31	30	G 18	G	E B 14	E B 15	E B 14	E B 15	E B 15	E B 14	E B 14
5	E B 15	E B 14	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	G	31	G 25	G	G	G	G	G	G	E B 14	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14
6	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 15	19	26	32	G 24	G 20	G	G 18	G	22	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15
7	E B 16	E B 15	E B 16	E B 14	E B 16	E B 15	E B 15	E B 16	23	29	G	30	G	G	G	G	G	E B 14	E B 15	E B 15	18	21	18	E B 16
8	E B 16	E B 15	17	E B 15	E B 15	E B 15	E B 16	E B 16	24	30	31	32	G	35	G 26	27	30	A A 53	E B 14	E B 15	E B 15	E B 14	E B 14	E B 14
9	E B 15	16	E B 15	E B 14	E B 14	E B 15	E B 16	E B 15	24	34	36	32	32	29	G 19	G	G	16	E B 15	18	E B 15	E B 15	E B 15	E B 15
10	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	17	25	30	32	34	35	32	30	27	22	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 16
11	E B 15	E B 15	E B 17	E B 15	E B 15	E B 15	E B 14	17	23	29	29	32	32	31	31	29	22	E B 14	E B 15	E B 15	17	17	E B 15	E B 15
12	E B 14	E B 14	E B 14	E B 16	E B 15	18	18	E B 15	23	C	C	C	C	C	C	C	C	25	18	20	23	16	E B 16	E B 16
13	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	18	G 18	G	G	38	37	33	G	G	G	21	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15
14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 16	E B 19	E C 40	C	E C 39	E C 42	E C 40	C	E C 30	20	18	E B 15	21	20	E B 16	20	E B 15
15	E B 16	16	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	G	G	E C 42	E C 40	E C 32	E C 43	E C 37	G	22	E B 14	E B 16	E B 15	E B 16	22	18	E B 15
16	E B 15	E B 14	E B 14	E B 14	E B 15	E B 16	E B 14	E B 15	22	G	G	E C 38	E C 38	E C 30	E C 38	E C 33	G	23	E B 15	E B 16	E B 15	E B 15	E B 15	E B 14
17	E B 16	E B 14	E B 15	14	E B 15	E B 15	E B 16	E B 16	22	29	34	34	35	37	33	28	20	16	E B 15	E B 15	E B 16	E B 15	E B 14	15
18	16	E B 16	E B 15	E B 14	E B 14	E B 14	E B 16	17	G	31	33	34	32	G 21	G 21	G 21	23	E B 14	16	20	19	A A 35	E B 15	E B 15
19	E B 16	E B 15	E B 15	20	23	21	E B 15	20	20	37	35	33	31	30	G 19	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15
20	E B 14	E B 15	E B 15	E B 15	E B 15	E B 16	E B 16	19	26	30	32	32	32	32	G	G	22	E B 14	E B 15	E B 16	E B 16	18	E B 15	E B 15
21	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	18	G	G	30	34	32	G 20	G	G	G	E B 15	E B 15	E B 16	E B 14	16	E B 15	E B 15
22	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	27	32	33	32	32	G 25	G	G	E B 16	E B 15	E B 15	18	E B 14	E B 14	E B 14
23	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	26	31	34	36	38	32	G 22	42	22	28	23	E B 15	20	E B 16	E B 16	E B 15
24	E B 14	E B 15	E B 14	E B 15	E B 15	E B 16	E B 16	E B 16	22	26	35	G 32	G	G 20	G 22	25	24	18	E B 15	E B 14	E B 14	E B 13	E B 14	20
25	21	E B 14	E B 15	E B 15	E B 14	E B 14	E B 12	E B 15	G	30	28	34	41	30	29	27	G	16	E B 13	E B 15	E B 14	E B 14	E B 14	E B 16
26	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 13	16	24	28	38	40	36	35	33	29	G	E B 16	E B 14	17	18	E B 15	E B 15	E B 16
27	E B 15	E B 15	E B 14	E B 14	E B 15	E B 14	E B 15	E B 15	G	G	36	32	34	32	G	G	G	18	E B 14	E B 14	E B 15	E B 14	E B 15	E B 15
28	18	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	26	G	35	34	G	G	G	G	E B 14	20	E B 15	E B 15	E B 16	E B 15	E B 15
29	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	E B 15	E B 16	G	G	G	G	32	31	G	G	G	E B 15	E B 15	E B 15	E B 15	E B 16	E B 15	18
30	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	16	G	G	G	30	G	G	24	26	G	18	E B 15	E B 15	E B 14	E B 14	19	E B 15
31	E B 14	E B 14	E B 15	E B 16	E B 15	18	19	E B 16	G	34	34	G	G	G	33	G	22	16	E B 15	E B 15	20	E B 15	E B 15	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	29	30	30	30	29	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	E B 16	G	29	32	32	32	30	G	G	G	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	16	23	31	34	34	35	32	30	28	22	18	15	16	18	16	15	E B 15
L Q	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G	G 26	G	G	G	G	G 24	G	G	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15

JAN. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	16	15	15	15	15	14	13	15	14	14	13	16	16	13	15	16	15	15	15	15	15	15
2	16	15	15	15	14	16	14	15	15	14	15	14	14	13	13	14	13	15	15	15	14	14	14	14
3	15	15	15	14	14	14	15	15	14	14	14	15	15	16	17	13	14	14	14	15	14	15	14	15
4	15	15	14	14	14	15	14	15	13	13	14	12	16	12	13	13	14	14	15	14	15	15	14	14
5	15	14	14	15	15	15	15	15	14	13	13	14	14	16	13	11	14	14	15	14	15	15	15	14
6	15	14	14	14	14	14	15	15	15	12	14	12	13	14	11	14	14	15	15	15	16	15	15	15
7	16	15	16	14	16	15	15	16	14	13	16	16	16	13	14	13	13	14	15	15	14	16	16	16
8	16	15	15	15	15	15	16	16	14	13	16	14	15	16	13	13	13	13	14	15	15	14	14	14
9	15	15	15	14	14	15	16	15	13	14	11	13	12	13	13	14	14	16	15	15	15	15	16	16
10	15	15	15	15	14	15	15	14	14	12	14	10	13	16	15	15	14	16	15	15	15	14	14	16
11	15	15	17	15	15	15	14	14	13	12	14	14	17	12	14	14	16	14	15	15	14	15	15	15
12	14	14	14	16	15	14	15	15	14	C	C	C	C	C	C	C	C	14	12	14	15	16	16	16
13	15	15	15	15	14	14	15	13	15	16	19	18	18	19	14	18	19	14	14	14	14	15	15	15
14	15	15	15	14	14	14	15	16	19	E C 40	C	E C 39	E C 42	E C 40	C	E C 30	13	14	15	15	15	16	14	15
15	16	16	15	14	15	14	14	15	15	22	E C 42	E C 40	E C 32	E C 43	E C 37	23	14	14	16	15	16	16	15	15
16	15	14	14	14	15	16	14	15	14	12	16	E C 38	E C 38	E C 30	E C 38	E C 33	15	15	15	16	15	15	15	14
17	16	14	15	14	15	15	16	16	14	14	14	14	14	16	18	13	12	13	15	15	16	15	14	14
18	16	16	15	14	14	14	16	15	13	13	14	13	14	12	12	14	13	14	14	14	15	14	15	15
19	16	14	15	15	16	15	15	15	14	14	14	14	13	13	14	12	14	15	15	15	15	15	16	15
20	14	15	15	15	15	16	16	15	14	16	15	13	12	13	15	14	14	14	15	16	16	15	15	15
21	15	15	15	15	15	15	15	15	15	13	13	12	14	13	14	13	13	15	15	16	14	16	15	16
22	14	15	15	15	15	15	15	15	15	14	14	14	14	14	14	14	14	16	14	15	15	14	14	14
23	15	16	16	15	15	15	15	15	14	14	14	11	16	15	15	12	14	14	14	15	16	15	16	15
24	14	15	14	15	15	16	16	16	14	13	13	15	12	14	12	13	12	14	15	14	14	13	14	15
25	15	14	15	15	14	14	12	15	13	13	12	12	17	13	12	12	10	12	13	15	14	14	14	16
26	15	15	15	14	14	14	13	14	13	13	14	14	16	15	11	14	17	16	14	15	15	15	15	16
27	15	15	14	14	15	14	15	15	14	12	15	15	14	14	16	13	14	13	14	14	15	14	15	15
28	15	15	15	15	15	15	15	15	15	15	13	13	15	16	15	18	14	14	15	15	15	16	15	15
29	15	15	14	14	14	15	15	16	14	13	12	14	19	12	15	14	13	15	15	15	15	16	15	15
30	14	15	15	15	14	14	14	16	14	15	14	14	15	14	12	14	14	14	15	15	14	14	14	15
31	14	14	15	16	15	15	15	16	15	12	14	20	17	16	15	12	14	14	15	15	15	15	15	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	29	30	30	30	29	30	30	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	15	15	14	13	14	14	14	14	14	14	14	14	15	15	15	15	15	15
U Q	15	15	15	15	15	15	15	16	15	14	15	15	17	16	15	14	14	15	15	15	15	15	15	15
L Q	15	14	14	14	14	14	14	15	14	13	14	13	14	13	13	13	13	14	14	15	14	14	14	15

JAN. 2017 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	322	309	328	302	303	326	361	382	381	346	367	345	356	374	366	361	357	306	366	348	306	305	296
2	316	305	308	330	316	318	364	389	372	345	322	359	355	364	354	371	395	318	317	336	365	325	320	307
3	301	296	323	320	320	313	366	369	383	353	385	353	374	391	398	349	374	357	336	349	346	314	313	299
4	315	329	341	322	326	319	333	375	393	329	381	388	335	363	383	368	405	378	313	350	344	323	361	317
5	300	317	309	331	337	298	332	374	379	375	364	356	374	368	348	371	382	341	347	351	337	314	326	F
6	F	F	326	331	303	F	352	385	372	325	350	378	352	386	370	356	359	358	351	317	334	321	313	293
7	302	313	355	332	309	297	305	382	382	379	381	378	395	395	371	374	378	345	367	353	382	335	276	F
8	F	F	359	360	390	310	329	387	391	360	384	378	360	349	357	376	393	A	339	338	346	294	289	F
9	328	336	349	308	325	324	333	386	381	357	341	386	394	395	V 349	383	384	319	385	355	367	323	F	F
10	F	F	F	F	F	334	323	363	382	366	341	356	377	368	374	377	388	304	346	367	333	323	324	298
11	286	291	302	F	309	F	F	388	372	364	374	361	319	341	337	355	352	365	345	328	348	351	307	F
12	F	F	F	F	F	342	316	358	385	C	C	C	C	C	C	C	C	356	332	360	F	324	309	318
13	332	345	308	332	313	343	F	371	370	384	361	379	371	360	361	376	369	341	347	383	351	F	325	F
14	F	F	309	340	330	321	358	349	391	382	C	379	338	398	C	392	362	331	368	362	344	317	395	300
15	310	315	313	F	323	F	351	391	411	381	343	320	374	389	382	373	391	346	324	366	345	365	341	313
16	315	319	309	319	324	317	353	376	391	368	364	374	388	387	382	381	376	356	320	348	380	291	F	F
17	F	F	F	343	357	383	331	372	391	359	382	346	355	364	356	375	372	362	359	346	346	338	315	338
18	316	314	327	318	344	358	327	382	378	342	361	346	370	366	398	344	389	343	348	348	355	A	284	331
19	280	289	309	321	370	341	345	342	364	342	340	365	362	360	366	368	374	349	327	346	360	320	297	267
20	320	305	312	F	306	333	347	377	371	375	319	354	366	371	358	379	375	363	348	330	325	303	294	295
21	298	307	278	F	360	306	327	379	387	377	359	357	351	358	361	346	395	359	338	349	330	350	308	319
22	319	307	305	313	392	336	356	397	399	385	325	348	362	362	359	373	383	347	322	306	332	344	300	279
23	308	292	351	364	377	294	314	358	383	369	335	378	383	378	368	349	384	355	321	345	351	336	293	311
24	319	307	311	346	340	363	356	366	372	369	355	368	350	335	372	362	395	357	339	341	354	287	311	300
25	F	F	F	359	356	360	355	385	371	364	377	376	377	380	342	370	359	391	358	325	344	350	312	301
26	298	292	304	309	363	313	348	396	398	375	334	357	380	370	377	381	393	362	350	360	359	299	F	F
27	F	F	F	F	F	F	F	350	384	346	323	347	344	364	367	352	398	345	321	349	350	317	273	306
28	F	F	F	344	364	325	334	378	382	374	354	361	361	369	350	360	389	381	349	335	318	327	319	296
29	314	F	F	354	318	325	318	364	394	352	350	384	384	372	358	369	367	371	332	337	333	F	F	F
30	F	F	F	F	325	F	326	376	380	360	364	358	360	355	356	370	365	382	331	330	328	332	338	269
31	300	318	339	365	393	373	370	378	365	330	364	372	376	356	372	365	377	382	330	322	293	316	311	315
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	20	23	23	28	26	28	31	31	30	29	30	30	30	29	30	30	30	31	31	30	28	27	22
MED	310	310	311	331	328	324	334	376	382	365	355	363	364	367	366	370	380	356	339	348	346	323	311	300
U Q	318	318	339	346	362	342	354	385	391	375	369	378	377	380	374	376	391	363	349	355	354	336	324	315
L Q	300	300	308	320	317	313	326	364	372	352	340	356	352	360	356	360	369	345	324	335	333	314	297	296

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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											U L 445	L	L	U L 389										
2												L	L	U L 377	L	L								
3										A	L	L	U L 387	L	L	A								
4											A	L	U L 420		A	L								
5									L		L	U L 401	L	L	L	L								
6										L	A		U L 416	L	L									
7											L	L	L	L	L	L								
8										A	A		L		L			A						
9											A	378	A	L	L	L								
10											U L 370	A	A	L	L	A								
11											L	L	U L 385	A	U L 393	A								
12										C	C	C	C	C	C	C	C							
13										L	L	A	A		L									
14											C				C		L							
15										L			L	E C	E C	L								
16										U L 344	U L 355	U L 401	U L 396	U L 457	E C	E C								
17									L		L	L	A	A	L	L								
18											U L 375	U L 374	371	407	L	L								
19										A	L	U L 372	U L 384	L	L	L								
20											U L 359	L	L	L	U L 401	L								
21										L	L	L	U L 390	L	L	L								
22											L	L	U L 372	L	L	L								
23									L		L		A	U L 392	U L 385	A								
24											L	U L 365	L	L	L	L								
25											L	L	A	L	L									
26											U L 377	A	A	A	L	A								
27										L	U L 389	A	A	L	L									
28											L	L	L	L	L	L								
29										L	L		L		L		L							
30										L	L	L	L	L	L		L							
31										U L 366	U L 368	U L 376	L	U L 407	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										2	8	7	9	6	3									
MED										U L 355	U L 372	U L 376	U L 387	U L 400	U L 393									
U Q											U L 383	U L 401	U L 406	U L 407	U L 401									
L Q											U L 364	U L 372	U L 378	U L 389	U L 385									

JAN. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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											254	244	246	244										
2												246	266	260	250	230								
3										230	230	246	232	230	226	228								
4											230	230	264		226	240								
5									234		252	258	246	238	240	240								
6										264	250		244	224	234									
7											238	234	220	216	230	232								
8										238	226		252		256			A						
9											270	240	230	228	234	228								
10											272	240	234	252	242	222								
11											254	248	252	246	278	234								
12										C	C	C	C	C	C	C	C							
13										236	254	222	242		240									
14											C				C		234							
15										234			234	228	236	216								
16										248	262	232	246	232	224	228								
17									224		250	266	250	258	254	250								
18											264	258	242	232	226	244								
19										254	262	232	232	248	242	234								
20											310	246	244	246	254	240								
21										242	256	246	260	246	252	252								
22											286	238	250	258	244	224								
23									234		274		234	246	234	264								
24											262	238	252	244	240	266								
25											228	236	240	230	262									
26											284	252	236	234	242	222								
27										274	294	256	250	244	234									
28											256	246	240	244	260	240								
29										258	260		222		238		238							
30										256	246	246	250	246	242		234							
31										292	246	240	246	246	242									
	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	12	27	24	29	25	28	20	3							
MED									234	251	256	245	244	244	241	234	234							
U Q									234	261	270	247	250	246	251	242	238							
L Q									224	237	246	237	234	231	234	228	234							

JAN. 2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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 268	E B 254	E B 242	E B 260	E B 278	E B 286	E B 250	206	208	222	174	188	192	184	206	212	210	210	E B 260	214	218	E B 230	E B 252	E B 282
2	E B 264	E B 272	E B 264	E B 240	E B 252	E B 280	208	198	H 184	218	196	196	210	206	210	190	204	206	E B 236	230	202	E B 242	E B 236	E B 294
3	E B 286	E B 276	E B 258	E B 248	E B 240	E B 250	214	H 188	218	A	188	H 166	172	196	196	A	218	196	E B 228	220	218	E B 236	E B 240	E B 294
4	E B 272	E B 242	212	E B 260	236	E B 278	228	188	206	206	A	204	184	228	A	204	200	190	E B 254	208	198	E B 236	212	E B 266
5	E B 270	E B 270	E B 278	E B 240	208	E B 296	E B 244	216	178	224	180	194	210	194	198	196	202	200	220	206	224	E B 258	E B 244	E B 272
6	E B 286	E B 288	E B 230	E B 246	E B 284	E B 318	232	210	208	194	A	216	192	198	196	196	220	206	204	226	216	E B 244	E B 244	E B 276
7	E B 276	E B 262	218	204	E B 248	E B 262	222	206	206	224	212	208	188	182	198	198	202	204	212	214	200	E A 282	E A 308	E B 276
8	E B 254	E B 250	232	224	220	E B 294	E B 268	210	206	A	A	224	198	226	196	224	206	A	E B 236	E B 238	218	228	E B 294	E B 280
9	E B 236	E A 242	230	E B 284	E B 296	E B 276	E B 258	200	204	E B 238	A	214	A	190	192	208	194	E B 250	196	224	212	228	E B 244	E B 242
10	E B 242	E B 254	222	E B 240	216	230	E B 282	218	220	222	208	A	A	198	204	A	196	216	224	208	210	200	220	E B 276
11	E B 276	E B 270	E B 236	E B 242	E B 256	E B 244	198	198	196	222	200	206	202	A	190	A	220	202	198	E B 234	222	216	214	E B 234
12	E B 234	E B 222	E B 242	214	188	E A 300	E A 270	220	212	C	C	C	C	C	C	C	C	212	E A 242	226	E A 234	E A 268	E B 260	E B 240
13	E B 240	228	E B 246	E B 258	232	214	E B 244	218	H 188	194	198	A	A	202	200	200	202	210	212	190	220	210	224	E B 240
14	E B 238	E B 250	E B 240	214	E B 238	226	204	218	208	224	C	236	E C 268	E C 226	C	218	194	202	200	210	228	E B 266	E A 288	E B 274
15	E B 274	E B 254	E B 260	E B 270	E B 260	E B 260	208	198	200	190	E C 268	E C 278	210	E C	E C	158	210	196	230	214	206	E A 242	E A 236	E B 258
16	E B 266	E B 268	E B 270	E B 252	E B 240	E B 276	E B 236	208	212	186	220	216	216	196	E C	E C	212	228	220	228	194	E B 234	230	E B 300
17	E B 272	E B 272	E B 254	E B 244	E B 210	E B 206	E B 284	200	178	228	208	222	A	A	210	212	210	204	204	216	226	218	E B 238	E B 286
18	E B 250	E B 270	E B 242	E B 236	218	E B 244	232	210	H 182	216	E A 236	208	198	196	192	184	214	202	206	E A 234	212	A	E B 276	E B 268
19	E B 306	E B 300	E B 288	E A 282	218	E A 264	228	224	212	A	E A 234	212	200	204	200	202	208	214	216	230	210	210	E B 236	E B 306
20	E B 302	E B 270	E B 302	E B 290	E B 248	194	E B 270	210	208	220	202	196	194	198	180	210	220	204	220	214	232	E A 262	E B 294	E B 294
21	E B 270	E B 286	E B 292	E B 248	200	E B 268	E B 274	210	210	210	204	208	186	198	198	210	210	212	218	218	214	208	E B 280	256
22	E B 248	E B 274	E B 278	E B 254	204	220	220	196	198	204	178	200	192	222	214	194	200	204	216	E B 244	E A 240	210	E B 282	E B 286
23	E B 250	E B 272	E B 242	210	194	E B 270	E B 280	214	204	202	198	224	A	186	178	A	222	230	E A 274	220	212	218	E B 288	E B 258
24	E B 264	E B 262	E B 266	224	218	212	228	202	196	204	202	198	212	196	192	200	200	200	220	214	206	212	E B 260	E A 292
25	E A 318	E B 260	232	208	206	232	E B 250	212	208	220	196	204	A	196	188	228	212	202	212	E B 226	E B 214	E B 218	E B 252	E B 270
26	E B 276	E B 272	E B 250	E B 232	206	E B 252	226	198	198	188	220	A	A	A	200	A	200	196	220	212	216	E B 240	E B 266	E B 270
27	E B 282	E B 282	E B 264	E B 232	204	E B 290	E B 266	218	214	214	208	A	A	206	202	208	214	210	224	220	204	E B 254	E B 312	E B 264
28	E A 258	E B 250	E B 254	224	208	222	214	206	198	222	214	194	192	192	212	210	208	202	214	214	228	E B 248	E B 252	E B 290
29	E B 270	E B 232	204	200	218	E B 272	E B 258	214	206	210	216	212	186	204	190	222	200	206	214	232	230	E B 250	E B 272	E A 240
30	E B	E B 262	E B 238	190	226	E B 220	E B 250	208	206	204	202	198	192	194	194	214	190	206	212	228	226	E B 234	E A 266	E B 312
31	E B 262	E B 266	224	202	202	202	206	214	208	216	218	212	206	200	190	196	210	206	214	244	E A 296	E B 258	E B 270	E B 254
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	31	31	31	31	27	25	26	22	26	26	24	30	30	31	31	31	30	31	31
MED	E B 269	E B 266	E B 242	E B 240	211	E B 260	E 236	210	206	215	203	208	194	198	197	206	208	204	215	217	215	E 235	E B 252	E B 274
U Q	E B 276	E B 272	E B 264	E B 254	E B 248	E B 278	E B 266	214	208	222	217	216	210	204	202	212	212	210	E B 228	230	226	E B 250	E B 280	E B 290
L Q	E B 250	E B 250	232	214	206	222	220	200	198	204	197	198	192	194	192	196	200	202	212	214	210	218	236	E B 258

JAN. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	112	A	112	118	118	108	114	112	112	B						
2								B	112	110	114	114	A	120	A	112	118							
3								B	112	A	114	114	114	114	112	116	114	B						
4								B	122	118	116	A	116	A	A	112	120							
5								B	114	120	118	110	110	112	116	114	114	B						
6								B	B	114	A	116	112	112	112	112	112	B						
7								B	112	112	114	116	116	116	116	116	116	B						
8								B	118	A	118	112	112	116	116	A	A	B						
9								B	112	114	116	A	A	A	116	114	118	B						
10								B	118	116	116	A	116	116	110	110	B	B						
11								B	114	116	112	112	A	A	A	A	A	B						
12								B	114	C	C	C	C	C	C	C	C	B						
13									110	114	114	124	118	120	124	124	132	B						
14								B	B	E C	C	E C	E C	E C	C	E C	112	B						
15								B	112	112	E C	E C	E C	E C	E C	114	A	B						
16								B	120	120	122	C	C	C	C	C	118							
17								B	128	124	124	120	112	116	112	114	A	B						
18								B	118	110	112	A	A	112	118	116	114	B						
19								B	A	A	A	A	A	A	116	118	118	B						
20								B	122	A	A	A	A	A	112	110	A	B						
21								B	116	112	A	A	A	116	118	118	118	B						
22								B	120	A	A	A	A		116	112	114	B						
23								B	118	118	116	A	A	A	112	A	A	B						
24								B	B	A	122	120	122	112	116	A	A	B						
25								B	122	116	A	114	A	A	A	A	112	B						
26								B	118	110	120	114	A	A	A	A	126	B						
27								B	116	110	A	A	A	A	116	116	116	B						
28								B	116	116	116	A	A	112	116	120	120	B						
29								B	120	120	120	120	A	A	118	118	118	B						
30								B	114	114	114	A	112	112	A	A	112	B						
31								B	116	116	112	112	116	116	116	116	A	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									27	22	21	15	13	16	21	21	21							
MED									116	115	116	114	116	115	116	114	116							
U Q									120	118	119	120	117	116	116	117	118							
L Q									112	112	114	112	112	112	112	112	113							

JAN. 2017 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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	B	98	B	100	B	102	B	B	128	100	98	G	98	G	124	120	G	B	B	B	B	118	B	B
2	B	B	B	100	B	100	B	B	G	156	118	118	104	G	100	G	G	B	B	B	B	B	B	B
3	B	B	B	B	B	B	B	B	154	98	G	G	G	G	G	144	138	B	B	B	B	B	116	100
4	106	100	96	B	B	B	B	B	98	160	142	140	G	92	94	92	G	88	94	B	B	96	B	112
5	106	B	B	B	B	B	106	106	G	158	104	G	G	G	G	G	G	B	B	B	104	96	94	B
6	B	B	104	B	B	B	B	B	116	116	100	104	92	G	92	G	116	B	B	114	110	98	102	124
7	100	96	98	B	B	B	B	B	148	146	G	128	G	G	G	G	G	B	B	96	104	90	90	96
8	120	108	98	100	100	B	106	108	164	104	150	150	G	124	108	100	98	94	96	96	100	B	98	104
9	102	96	94	B	B	B	128	B	162	124	118	92	90	94	98	G	G	96	94	92	92	92	92	88
10	104	B	104	B	B	104	102	100	156	150	140	86	138	136	126	120	110	B	94	B	B	B	104	104
11	B	B	B	B	B	B	B	142	142	148	120	114	108	108	106	106	102	B	102	100	96	94	92	100
12	B	B	B	104	102	98	94	B	130	C	C	C	C	C	C	C	C	96	98	98	98	98	98	104
13	96	B	104	104	102	100	110	96	98	G	G	132	112	110	G	G	G	98	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	130	100	90	96	96	96	92	92
15	88	88	B	B	B	B	B	B	G	G	C	C	C	C	C	G	92	92	B	B	126	122	92	B
16	B	B	B	104	B	B	B	B	146	G	G	C	C	C	C	C	G	104	B	B	B	B	B	B
17	B	B	98	94	B	B	B	B	132	158	146	144	152	124	124	118	98	96	94	100	94	92	92	102
18	112	108	102	B	B	B	102	140	G	158	140	106	102	102	100	100	160	B	98	94	94	94	100	106
19	100	98	96	96	98	92	B	110	110	106	100	100	102	98	98	G	G	B	112	112	98	98	96	94
20	104	104	104	100	100	98	160	140	118	104	106	106	106	106	G	G	92	B	B	118	106	106	102	106
21	106	B	102	102	98	96	96	150	G	G	106	106	106	106	G	G	G	108	106	94	94	96	94	94
22	94	94	96	100	100	B	B	B	G	106	108	104	102	102	102	G	G	B	104	100	94	102	102	100
23	92	92	94	100	92	B	B	98	168	128	150	98	96	92	94	88	90	86	84	90	88	86	B	B
24	B	B	B	B	B	94	94	B	112	104	160	144	G	100	92	98	98	102	98	B	B	B	B	108
25	102	100	100	106	108	B	B	B	G	114	108	110	100	106	106	104	G	126	B	B	B	B	B	90
26	B	B	B	B	B	B	B	156	140	126	148	118	102	98	94	106	G	B	B	106	106	102	108	B
27	106	106	104	104	B	98	98	B	G	G	106	106	106	104	G	G	G	100	98	B	B	B	100	98
28	98	98	98	98	98	98	B	B	G	114	G	108	108	G	G	G	G	B	96	96	96	96	96	94
29	B	B	B	B	98	106	106	B	G	G	G	G	106	100	G	G	G	B	B	B	102	102	102	102
30	108	B	102	B	B	B	100	100	G	G	G	104	G	G	106	108	G	150	100	102	B	B	94	B
31	B	B	100	100	98	98	94	B	G	158	152	G	G	G	122	G	108	158	B	134	124	108	106	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	18	14	19	16	12	13	14	12	18	22	21	22	19	18	18	13	13	16	17	18	20	21	23	21
MED	103	98	100	100	99	98	102	109	136	125	118	107	104	103	101	106	102	99	98	99	98	96	98	100
U Q	106	104	104	104	101	101	106	141	154	156	147	128	108	108	108	119	123	106	101	106	105	102	102	105
L Q	98	96	96	100	98	97	96	100	116	106	106	104	100	98	94	99	95	95	94	96	94	94	92	94

JAN. 2017 h'Es (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2017 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		F2		F1			C1	L2	L2		L2		C1	C1						F2		
2				F1		F1				H1	C1	C2	L2		L2									
3									H2	L2						H1	H2						F1	F1
4	F2	F2	F1						L2	HL12	HL12	HL12		L3	L2	L2		L2	F1			F2		F1
5	F1						F1	L1		HL12	L2										F1	F1	F2	
6			F1						C2	C2	L2	L2	L2		L2		C2			F1	F2	F1	F2	F1
7	F1	F1	F1						H2	H2		C1								F2	F3	F4	F3	F1
8	F1	F2	F5	F2	F2		F1	L2	HL12	L2	H1	H1		C1	L1	L2	L3	L3	F3	F2	F3		F2	F2
9	F1	F3	F2				F1		H1	C2	CL22	L3	L2	L2	L2			L2	F3	F3	F3	F2	F2	F1
10	F1		F1			F2	F2	L3	HL22	HL12	HL12	L3	HL12	C1	C1	C1	C2		F1				F2	F1
11								H2	H2	H1	C1	C1	L2	L2	L2	L2	L2		F1	F1	F4	F4	F1	F2
12				F1	F2	F4	F3		C1									L2	F2	F2	F5	F3	F1	F2
13	F2		F1	F2	F1	F2	F1	L3	L2			C2	C2	C2				L2						
14																	CL22	L2	F2	F3	F2	F2	F1	F2
15	F2	F2															L2	L2			F2	F3	F2	
16				F1					H1									L2						
17			F1	F1					CL12	HL12	HL12	HL12	HL12	C2	C2	CL22	L2	L2	F2	F3	F3	F3	F2	F3
18	F1	F1	F2				F2	H2		H1	HC22	L2	L2	L2	L2	L2	HL12		F2	F4	F4	F3	F1	F1
19	F2	F2	F2	F2	F6	F3		C2	L2	L3	L2	L2	L2	L2	L1				F1	F1	F2	F2	F3	F1
20	F2	F2	F2	F2	F2	F2	F1	H2	C2	L2	L2	L2	L1	L2			L2			F1	F1	F2	F2	F2
21	F1		F1	F1	F3	F2	F1	HL21			L2	L2	L1	L2				C1	F1	F2	F1	F2	F2	F2
22	F1	F2	F1	F2	F3					L2	L2	L2	L2	L2	L1				F1	F2	F4	F3	F2	F1
23	F1	F1	F2	F1	F1			L2	HL12	C2	HL12	L2	L2	L2	L2	L3	L3	L3	F3	F2	F2	F2		
24						F1	F1		C3	L2	HL12	HL12		L2	L2	L3	L2	L2	F2					F2
25	F3	F3	F2	F1	F1					C2	L2	C2	L2	L2	L1	L2		C1						F1
26								H1	H2	C1	HL21	CL22	L2	L2	L2	L2				F1	F3	F2	F2	
27	F2	F2	F1	F1		F1	F2				L2	L2	L2	L2				L2	F1				F3	F2
28	F3	F4	F2	F2	F1	F2				C1		L2	L2						F3	F2	F1	F1	F2	F1
29					F2	F1	F2						L2	L1							F2	F1	F2	F3
30	F2		F1				F2	L2				L2			L2	L2		H2	F1	F2			F2	
31			F1	F2	F1	F3	F4			H1	H1				C1		L2	H2		F1	F6	F2	F4	
	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. 2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2017 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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								C	C	C	C	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C					
19								C	C	C	C	C	C	C	C	C	C	C	C					
20								C	C	C	C	C	C	C	C	C	C	C	C					
21								C	C	C	C	C	C	C	C	C	C	C	C					
22								C	C	C	C	C	C	C	C	C	C	C	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31								C	C	C	C	C	C	C	C	C	C	C	C					
	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.2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2017 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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								C	C	C	C	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C					
19								C	C	C	C	C	C	C	C	C	C	C	C					
20								C	C	C	C	C	C	C	C	C	C	C	C					
21								C	C	C	C	C	C	C	C	C	C	C	C					
22								C	C	C	C	C	C	C	C	C	C	C	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31								C	C	C	C	C	C	C	C	C	C	C	C					
	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.2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2017 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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								C	C	C	C	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C					
19								C	C	C	C	C	C	C	C	C	C	C	C					
20								C	C	C	C	C	C	C	C	C	C	C	C					
21								C	C	C	C	C	C	C	C	C	C	C	C					
22								C	C	C	C	C	C	C	C	C	C	C	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31								C	C	C	C	C	C	C	C	C	C	C	C					
	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 Yamagawa

JAN.2017 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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								C	C	C	C	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C					
19								C	C	C	C	C	C	C	C	C	C	C	C					
20								C	C	C	C	C	C	C	C	C	C	C	C					
21								C	C	C	C	C	C	C	C	C	C	C	C					
22								C	C	C	C	C	C	C	C	C	C	C	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31								C	C	C	C	C	C	C	C	C	C	C	C					
	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.2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 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								C	C	C	C	C	C	C	C	C	C	C	C					
2								C	C	C	C	C	C	C	C	C	C	C	C					
3								C	C	C	C	C	C	C	C	C	C	C	C					
4								C	C	C	C	C	C	C	C	C	C	C	C					
5								C	C	C	C	C	C	C	C	C	C	C	C					
6								C	C	C	C	C	C	C	C	C	C	C	C					
7								C	C	C	C	C	C	C	C	C	C	C	C					
8								C	C	C	C	C	C	C	C	C	C	C	C					
9								C	C	C	C	C	C	C	C	C	C	C	C					
10								C	C	C	C	C	C	C	C	C	C	C	C					
11								C	C	C	C	C	C	C	C	C	C	C	C					
12								C	C	C	C	C	C	C	C	C	C	C	C					
13								C	C	C	C	C	C	C	C	C	C	C	C					
14								C	C	C	C	C	C	C	C	C	C	C	C					
15								C	C	C	C	C	C	C	C	C	C	C	C					
16								C	C	C	C	C	C	C	C	C	C	C	C					
17								C	C	C	C	C	C	C	C	C	C	C	C					
18								C	C	C	C	C	C	C	C	C	C	C	C					
19								C	C	C	C	C	C	C	C	C	C	C	C					
20								C	C	C	C	C	C	C	C	C	C	C	C					
21								C	C	C	C	C	C	C	C	C	C	C	C					
22								C	C	C	C	C	C	C	C	C	C	C	C					
23								C	C	C	C	C	C	C	C	C	C	C	C					
24								C	C	C	C	C	C	C	C	C	C	C	C					
25								C	C	C	C	C	C	C	C	C	C	C	C					
26								C	C	C	C	C	C	C	C	C	C	C	C					
27								C	C	C	C	C	C	C	C	C	C	C	C					
28								C	C	C	C	C	C	C	C	C	C	C	C					
29								C	C	C	C	C	C	C	C	C	C	C	C					
30								C	C	C	C	C	C	C	C	C	C	C	C					
31								C	C	C	C	C	C	C	C	C	C	C	C					
	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. 2017 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2017 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
4	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
14	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
17	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
18	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
19	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
20	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	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. 2017 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2017 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																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								
27																								
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

JAN.2017 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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 38	X 38	X 44	X 39	X 42	X 39	X 39													X 39	X 49	X 48	X 40	X 28
2	X 30	X 33	X 34	X 32	X 36	X 34	X 29													X 55	X 48	X 56	X 34	X 29
3	X 28	X 31	X 32	X 34	X 38	X 34	X 25													X 43	X 53	X 58	X 46	X 47
4	X 40	X 39	X 36	X 32	X 33	X 32	X 32													X 54	X 52	X 42	X 40	X 33
5	A	X 30	X 32	X 36	X 36	X 28	X 29													X 47	X 41	X 36	X 31	X 34
6	X 34	X 37	X 40	X 35	X 36	X 33	28													X 44	X 39	X 36	X 41	X 26
7	X 30	35	X 34	X 38	X 28	X 27	X 26													X 43	X 41	X 37	X 28	X 29
8	X 31	X 36	X 29	X 25	29	28	X 26													X 54	X 67	X 72	X 31	X 30
9	X 28	X 30	X 35	X 27	O X 24	X 23	X 25													X 35	X 38	X 34		X 26
10	28	30	35	44	X 28	X 18	24													X 50	X 50	X 47		X 30
11	X 31	34	36	36	31	29	30													X 46	X 30	X 32	X 28	X 33
12	32	X 32	36	X 43	45	X 26	31	37												X 53	X 42	X 34	X O X 31	O X 30
13	X 30	X 33	35	X 34	X 28	X 27	X 24													X 39	X 44	X 42	X 27	X 28
14	X 30	X 32	X 32	45	41	27	X 25													X 37	X 38	X 35	X 33	X 28
15	X 32	X 32	34	X 32	38	35	X 22													A	X 33	X 34	X 32	X 31
16	X 31	38	38	36	X 42	X 22	A													X 42	A	X 34	X 30	X 27
17	X 31	31	34	43	X 33	X 23	X 23													X 40	A	37	37	33
18	37	X 33	X 34	34	X 33	X 31	X 22													X 48	X 48	X 49	X 39	X 36
19	X 39	X 39	X 48	X 47	X 33	A	X 33													X 41	X 47	X 43	X 42	O X 29
20	X 30	X 32	X 34	X 35	X 40	X 25	X 24													X 52	X 52	X 47	X 34	X 33
21	X 33	X 33	X 36	X 36	X 30	X 26	X 27													X 45	X 41	X 45	X 39	X 33
22	X 36	X 39	X 40	X 38	X 40	X 36	X 31													X 50	X 39	X 45	X 40	X 36
23	X 37	X 40	X 41	X 36	X 32	X 24	X 26													X 40	X 43	X 42	X 32	X 29
24	X 31	X 33	X 33	X 33	X 35	X O 31	X 24												X 54	X 37	X 36	X 36	X 31	X 29
25	X 32	X 38	X 43	X 24	X 26	X 28	X 25													X 44	X 40	X 44	X 44	X 38
26	37	X 36	37	X 37	X 38	X 30	X 27													X 53	X 50	X 36	X 33	X 36
27	X 37	X 36	X 34	X 37	X 30	28	X 24													X 64	X 56	X 46	X 44	X 44
28	X 46	X 52	X 54	X 38	X 43	X 36	X 29													X 41	X 46	X 44	X 39	X 40
29	39	38	X 35	X 29	X 27	X 26	X 25													X 36	X 40	X 45	X 47	X 45
30	X 44	X 44	X 47	X 33	X 23	X 24	A													X 42	X 41	A	X 39	X 35
31	X 34	X 35	X 36	X 43	X 27	X 20	X 20													X 39	X 41	X 44	X 44	X 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	30	31	31	31	31	30	29	1											1	30	29	30	29	31
MED	X 32	X 35	X 35	X 36	X 33	X 28	X 26	37											X 54	X 44	X 42	X 42	X 37	X 33
U Q	X 37	X 38	X 40	X 38	X 38	X 32	X 29													X 50	X 50	X 46	X 40	X 36
L Q	X 30	X 32	X 34	X 33	X 28	X 25	X 24													X 40	X 40	X 36	X 31	X 29

JAN. 2017 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	32	32	38	33	36	33	33	41	48	52	58	71	98	86	68	101	83	70	59	33	43	42	33	22
2	24	27	28	26	30	28	23	28	46	53	52	64	J R 75	74	84	90	102	105	74	49	42	50	28	23
3	22	25	26	28	32	28	19	32	56	60	54	64	66	69	49	H 58	61	72	58	37	47	52	40	41
4	34	33	30	26	27	26	26	28	51	50	62	60	59	56	82	80	89	82	72	48	R 45	36	34	27
5	A	24	26	30	30	22	23	38	58	54	54	51	79	88	78	70	64	57	44	41	35	30	25	28
6	28	31	34	29	30	27	F 22	28	48	67	58	68	82	76	69	58	60	65	51	38	33	30	35	20
7	24	F 26	28	32	22	21	20	34	46	48	73	65	74	57	65	65	65	56	52	37	35	31	22	23
8	25	30	23	19	F 21	F 21	20	26	48	54	66	65	63	60	63	78	77	71	46	48	61	66	25	24
9	22	24	29	21	18	17	19	31	48	52	54	60	92	65	56	50	65	52	38	29	32	28	18	20
10	20	F 22	F 25	F 35	22	E B 16	F 19	24	50	65	54	56	71	57	54	53	54	56	40	J R 44	R 44	41	24	24
11	25	F 26	F 27	F 26	24	22	F 23	32	44	49	57	68	73	72	67	56	61	56	42	40	24	26	22	27
12	F 25	26	28	R 37	F 35	20	F 23	28	49	50	58	57	74	62	62	72	64	55	53	47	36	28	25	24
13	24	27	F 26	28	22	21	18	23	49	61	72	64	63	52	59	52	54	54	41	33	38	36	21	22
14	24	26	26	F 36	F 30	F	19	25	49	55	84	71	92	110	79	53	55	56	47	31	32	29	27	22
15	26	26	F 26	26	F 28	F 25	16	24	44	54	58	64	86	85	76	56	50	47	40	A	27	28	26	25
16	25	F 30	26	F 27	36	J A 16	A	24	50	54	70	104	131	106	102	70	59	56	55	36	A	28	24	21
17	25	24	F 27	F 34	27	17	17	24	46	49	54	60	64	98	116	106	84	66	48	34	A	F 29	F 28	F 24
18	F 26	27	28	28	27	25	16	25	44	52	60	82	98	112	116	114	99	93	72	42	42	43	33	30
19	33	33	42	41	27	A	27	29	47	62	71	94	84	89	82	92	69	53	45	35	41	37	36	23
20	24	26	28	29	34	19	18	26	49	52	61	62	64	79	91	99	116	110	74	46	46	41	28	27
21	27	27	R 30	30	24	20	21	27	57	54	60	63	86	118	U R 145	121	111	92	65	39	35	39	33	27
22	30	33	34	32	34	30	25	29	49	54	56	65	79	79	78	74	61	59	59	44	33	39	34	30
23	31	34	35	30	26	18	20	24	60	77	75	62	82	85	68	58	62	62	52	34	37	36	26	23
24	25	27	27	27	29	25	18	27	48	55	60	66	71	84	71	64	62	55	48	31	30	30	25	23
25	26	32	J R 37	18	20	22	19	25	49	59	66	62	59	70	58	71	60	57	52	38	34	38	38	32
26	F 30	30	F 31	31	32	24	21	29	50	58	57	50	69	91	80	71	56	48	52	47	44	30	27	30
27	31	30	R 27	31	24	19	18	28	52	52	62	105	126	146	135	104	92	88	81	58	50	40	38	38
28	40	46	48	32	37	30	23	30	55	57	62	72	82	84	83	80	70	62	54	35	J R 40	J R 38	33	34
29	F 31	F 30	29	23	21	20	19	27	54	60	70	68	64	63	59	60	62	58	47	31	34	39	U R 41	39
30	38	38	41	27	17	18	A	24	52	63	72	86	80	75	66	60	58	60	51	36	35	A	33	29
31	28	29	30	37	20	J B 14	J B 14	26	44	63	77	95	104	85	68	64	65	52	46	33	35	38	38	35
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	29	29	31	31	31	31	31	31	31	31	31	31	31	31	30	29	30	31	31
MED	26	27	28	29	27	21	20	27	49	54	60	65	79	79	71	70	64	58	52	38	36	36	28	25
U Q	31	32	34	32	32	26	23	29	52	60	70	71	86	89	83	90	83	71	59	44	44	40	34	30
L Q	24	26	26	26	22	18	18	25	47	52	57	62	66	65	63	58	60	55	46	34	34	30	25	23

JAN. 2017 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	U L 432	L	L	440	U L 412	L 412	L	L						
2									232	L	L	U L 424	L	L 404	412	400	L 380							
3									U L 244		R 384	L 416	L	U L 420	L	L	L 356							
4											L	L 416	U L 416	L	U L 420	L	L							
5											L	U L 436	412	420	424	L	L							
6									U L 244		L 388	U L 420		U L 424	L 416	U L 400	U L 316							
7											L 404	416	L 420	U L 432	U L 412	L 400	L 352	240						
8											L 400	L 408	U L 420	L 424	L 412	U L 412	L							
9										L	U L 412	U L 424	L 424	424	U L 408		U L 368	A						
10										L	L 392	U L 396	L	428	L	396	U L 364	L						
11									L		U L 412	424	424	432	L 424	U L 400	U L 364	L						
12									224	U L 316	L 412	U L 428	420	A	A	408	L							
13										L	L	420	L	L	L 420	U L 388								
14										L	412	416	424	432	428	U L 392	L							
15										L	L 408	U L 428	428	432	424	L	L							
16										L	416	424	440	436	432	L								
17											408	424	L 436	436	432	408	L							
18											424	428	U A 428	L 440	440	432	U A 396							
19										L	416	A	L 436	444	A	A	L							
20									224		U L 420	U L 440	A	448	432	L 432	L							
21											U L 416	U L 444	L 464	460	432	424	L							
22									U L 240	L	U L 428	L 444	A	L 452	A	L 416	L							
23									L	L	L 428	L 436	L 452	L 444	L 432	L	U L 392							
24									L	320	U L 424	L 436	448	444	440	U L 416	L							
25										L	420	440	U L 424	436	L	L 424	L							
26										L	L		448	424	452	420	L	L 272						
27											U L 444	A	436	A	A	A	356							
28										L	L	L 444	L 456	452	L 440	L 424	L	L						
29											L	L 432	L 436	L 440	L 428	U L 412	U L 388							
30										L	424	436	440	432	428	U L 416	L	L						
31										U L 400	420	A	A	A	A	L	U L 380							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									6	3	24	26	22	26	23	21	12	2						
MED									236	U L 320	L 416	L 426	432	434	428	L 412	U L 366	256						
U Q									U L 244	U L 400	U L 424	L 436	440	444	432	422	U L 384							
L Q									224	U L 316	L 408	L 420	424	L 424	L 416	L 400	L 356							

JAN. 2017 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	172	236	296	328	B	A	R 344	U R 288	252	A	A					
2								B	B 244	280	R 312	316		A	R 304	U R 292	240	180	A					
3								B	B 248	U R 308	R 316	U R 352		A	A	R 288	256	196	A					
4								B	B 268	280	U A 288		A	A	A	A	252	A	A					
5								B	188	260	276	A	308	B	296	276	232	172	A					
6								B	B 244	U R 288	288	304		A	A	292	256	A	B					
7								B	200	A	A	A	A	304	300	U R 268	260	192	A					
8								B	176	252	268	A	A	A	296	288	252	176	A					
9								B	212	244	U A 268	A	A	R 316	312	284	244	A	A				J K 128	
10								B	188	240	288	300	320	U R 324	300	280	220	A	A				J K 128	
11								B	180	252	292	296	A	320	U A 292	A	A	204	B					
12								B	196	260	U R 296	A	336	320	304	A	A	A	A					
13								B	208	A	272	A	A	B	A	U R 304	260	A	A					
14								B	196	260	A	A	A	336	312	300	272	208	B					
15								B	164	252	304	332	324	340	312	300	268	A	A					
16								A	188	252	292	A	A	A	A	A	264	200	A					
17								B	200	260	A	336	348	352	328	304	272	212	A					
18								B	A 240	284	300	304		A	A	A	A	204	A					
19								B	A	A	A	A	A	A	A	A	272	A	A					
20								B	184	264	284	308		A	A	A	A	220	A					
21								B	180	260	A	A	A	A	A	A	A	A	A					
22								B	168	236	296	312		A	A	A	A	A	A					
23								B	192	252	292	A	A	U R 316	A	A	284	A	A					
24								B	184	260	300	304	324	A	A	300	A	A						
25								B	204	264	292	R 332	U R 312	R 316	U R 288	U R 332	272	220	B					
26								B	192	256	284	300	332	316	A	A	A	A	A					
27								B	184	276	296	U A 316	A	A	A	A	A	A	B					
28								B	224	240	308	316	A	A	A	A	272	220	A					
29								B	196	260	312	316	A	A	A	A	272	236	B					
30								B	200	264	A	316	A	A	A	316	272	224	A					
31								B	200	268	300	320	332	332	U A 316	316	264	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									25	28	25	20	13	12	14	17	22	15					2	
MED									192	254	292	314	324	320	304	292	262	204					J K 128	
U Q									200	260	298	318	334	334	312	304	272	220						
L Q									182	244	282	300	310	316	296	286	252	192						

JAN. 2017 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	J A 24	J A 25	22	J A 16	E B 14	E B 15	E B 15	E B 15	25	36	35	40	36	32	G	G	G 21	J A 25	J A 24	J A 20	20	J A 35	J A 21	J A 31
2	E B 14	J A 17	J A 15	J A 20	J A 16	E B 14	E B 14	E B 14	E B 18	28	34	G	36	32	36	G	G 22	22	J A 26	J A 31	J A 29	20	20	E B 14
3	E B 14	E B 14	E B 14	19	19	E B 14	E B 15	E B 14	E B 20	28	G	38	40	36	J A 46	32	G	27	J A 22	J A 25	J A 20	18	18	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	30	34	J A 37	J A 40	J A 53	J A 46	J A 38	27	25	J A 30	J A 55	J A 19	E B 14	E B 14	J A 18
5	J A 43	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G 28	34	G	E B 33	G	G	G	23	J A 16	J A 23	18	19	E B 15	J A 16
6	E B 14	E B 14	E B 14	E B 14	J A 16	E B 14	E B 14	E B 14	19	28	G	34	35	J A 43	35	30	G	23	E B 16	E B 14	E B 14	E B 14	E B 15	E B 15
7	E B 14	J A 31	J A 29	J A 28	J A 26	20	18	E B 14	G	J A 37	J A 35	37	J A 38	G	G	G	G	J A 16	J A 16	J A 16	J A 16	J A 19	19	E B 14
8	E B 17	E B 14	E B 14	E B 14	19	E B 14	18	18	22	28	U Y 31	34	J A 38	J A 38	G	G	27	21	J A 19	J A 19	J A 37	E B 14	J A 25	E B 14
9	J A 16	J A 19	J A 40	J A 24	J A 19	18	17	19	G	28	31	J A 34	J A 33	G	G	G 22	G 21	J A 36	J A 19	J A 18	18	E B 14	J K 13	E B 14
10	E B 14	20	E B 14	J A 15	E B 14	E B 16	E B 14	20	26	28	31	J A 34	36	36	J A 45	30	U Y 26	25	J A 19	E B 14	E B 15	E B 14	J K 13	J A 19
11	J A 21	19	J A 28	E B 14	E B 14	E B 14	E B 14	E B 14	21	29	33	39	J A 42	G	37	31	J A 30	J A 26	J A 16	J A 17	J A 16	20	19	E B 14
12	J A 16	20	J A 16	J A 24	J A 20	J A 20	J A 16	E B 14	G	G	G	J A 43	G	J A 44	J A 46	J A 55	J A 56	J A 43	J A 55	J A 44	J A 34	J A 21	21	J A 23
13	22	E B 14	J A 15	J A 15	J A 26	E B 14	J A 20	18	22	30	32	35	38	E B 42	40	G	U G 34	J A 30	J A 25	J A 31	J A 24	J A 30	J A 21	20
14	E B 14	E B 14	E B 14	E B 14	E B 14	18	E B 15	E B 14	24	29	32	36	38	G	G	G	G	24	E B 14	E B 14	E B 14	B J A 15	20	E B 14
15	E B 14	E B 14	E B 14	18	E B 14	20	E B 14	E B 14	25	29	34	40	42	39	G	G	34	26	J A 21	J A 43	J A 28	J A 28	J A 32	20
16	J A 15	19	J A 17	19	18	E B 16	B J A 18	J A 16	G	27	G	35	37	37	33	31	35	37	J A 36	J A 32	J A 35	J A 18	J A 42	J A 16
17	J A 18	19	J A 32	J A 31	E B 14	E B 14	E B 14	J A 15	24	30	J A 34	36	J A 39	43	39	G	33	30	J A 36	J A 38	J A 51	J A 31	E B 14	E B 14
18	J A 28	J A 20	E B 14	J A 28	18	E B 14	18	J A 15	J A 24	28	34	J A 43	J A 48	J A 56	J A 67	J A 40	J A 100	26	J A 18	J A 30	J A 51	J A 37	J A 38	J A 28
19	J A 23	J A 32	J A 51	J A 21	J A 24	J A 43	J A 32	J A 43	J A 45	J A 42	J A 46	J A 106	J A 56	J A 52	J A 84	J A 60	J A 32	J A 27	J A 25	J A 31	J A 23	J A 32	J A 27	20
20	E B 17	E B 14	B J A 20	J A 24	E B 14	19	E B 14	B J A 20	21	28	35	39	J A J 106	J A 45	J A 48	J A 35	J A 32	J A 27	J A 26	J A 20	J A 22	J A 24	J A 21	J A 15
21	E B 14	20	J A 28	J A 32	J A 20	E B 14	E B 14	B J A 15	23	30	34	J A 40	J A J 50	J A 54	J A 49	J A 52	J A 51	J A 35	J A 32	J A 42	J A 28	J A 18	J A 24	J A 20
22	J A 15	20	20	E B 14	B J A 15	E B 14	18	E B 14	20	27	G	36	J A 52	J A 64	J A 76	J A 62	J A 49	J A 48	J A 21	J A 23	J A 16	J A 36	J A 18	J A 16
23	J A 27	J A 20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	30	33	37	36	39	33	J A 34	J A 29	J A 38	J A 36	J A 31	J A 23	J A 20	J A 21	J A 17
24	J A 18	J A 20	J A 22	J A 16	J A 17	J A 21	20	J A 18	20	G 22	G	36	G	J A 42	J A 42	G 24	J A 33	J A 29	J A 45	J A 29	J A 16	J A E 14	B J A 16	E B 14
25	E B 14	E B 14	B J A 20	J A 24	J A 18	J A 17	J A 15	J A 17	23	30	G	G	G	36	34	G 30	30	25	E B 16	E B 14	B J A 20	J A 16	J A 27	E B 14
26	20	E B 14	E B 14	E B 15	B J A 19	J A 17	J A 22	J A 19	23	30	32	36	J A J 47	J A 46	J A 38	36	J A 31	24	J A 23	J A 20	J A 18	E B 14	J A 21	E B 14
27	E B 14	J A 18	J A 27	J A 17	J A 26	J A 20	J A 18	20	22	G	G	J A 50	J A J 75	J A 81	J A 134	J A 68	J A 30	J A 30	J A 20	J A 22	E B 17	J A 28	20	20
28	J A 21	E B 14	J A 33	J A 20	E B 14	E B 14	18	E B 14	G	26	G	39	J A J 39	J A 37	J A 35	35	G	J A 21	J A 20	J A 19	22	19	20	E B 14
29	E B 14	E B 14	B J A 25	J A 25	J A 16	20	J A 32	18	22	G	G	38	J A J 48	J A 39	J A 35	J A 34	G	G	E B 16	J A E 38	B E 14	E B 14	E B 14	E B 14
30	19	20	J A 23	J A 17	19	19	J A 21	E B 14	22	29	34	36	J A J 41	J A 40	34	G	G 26	G 21	J A 24	J A 22	J A 23	J A 49	J A 19	J A 16
31	20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	32	34	42	J A J 53	J A 55	J A 57	39	G 25	J A 27	J A 26	J A 45	J A 21	J A 28	J A 24	J A 17
	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	18	J A 17	J A 17	16	E B 15	15	E B 15	22	28	32	37	J A 39	39	37	31	33	26	J A 22	J A 23	J A 20	J A 19	J A 20	16
U Q	J A 21	J A 20	J A 27	J A 24	J A 19	19	J A 18	18	24	30	34	J A 40	J A J 48	J A 46	J A 46	J A 38	G	J A 30	J A 26	J A 32	J A 28	28	24	20
L Q	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 19	G 27	G	35	36	36	G 33	G	G 27	23	18	19	16	E B 14	E B 16	E B 14

JAN. 2017 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	18	21	18	16	E B 14	E B 15	E B 15	E B 15	23	32	34	40	35	32	G	G	G 18	20	19	19	16	29	E B 14	E B 14
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 18	27	34	G	36	32	U G 36	G	G 20	22	20	18	17	14	E B 14	E B 14
3	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	E B 20	28	G	38	40	36	41	32	G	26	20	16	16	E B 14	E B 14	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	29	34	34	37	38	36	38	27	25	26	32	17	E B 14	E B 14	15
5	A A 43	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G 22	32	G	E B 33	G	G	G	23	E B 14	E B 14	E B 14	18	E B 15	E B 14
6	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	19	28	G	33	35	36	32	G 23	G	23	E B 16	E B 14	E B 14	E B 14	E B 15	E B 15
7	E B 14	E B 14	E B 14	E B 14	18	E B 14	E B 15	E B 14	G	28	31	33	34	G	G	G	G	G 15	E B 14	E B 14	E B 14	16	E B 15	E B 14
8	E B 17	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	22	28	U Y 31	33	37	33	G	G	27	21	16	16	34	E B 14	E B 14	E B 14
9	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	28	30	32	32	G	G	G 17	G 18	30	16	16	E B 14	E B 14	J K 13	E B 14
10	E B 14	E B 14	E B 14	E B 14	E B 14	E B 16	E B 14	E B 14	25	28	30	33	35	36	40	30	U Y 26	22	19	E B 14	E B 15	E B 14	J K 13	E B 14
11	17	E B 14	17	E B 14	E B 14	E B 14	E B 14	E B 14	21	29	32	37	35	G	36	30	27	G 18	E B 14	E B 15	E B 14	16	E B 14	E B 14
12	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	G	33	G	42	43	31	30	38	30	29	E B 14	18	20	22
13	17	E B 14	E B 14	E B 14	17	E B 14	E B 15	E B 14	22	29	32	35	38	E B 42	40	G	34	27	21	20	20	24	18	E B 14
14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	23	29	32	36	38	G	G	G	G	23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
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	25	29	34	40	40	38	G	G	32	25	19	A A 43	E B 14	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 16	A A 18	E B 14	G	27	G	35	37	35	33	31	35	36	32	29	A A 35	17	17	E B 14
17	E B 14	E B 14	E B 14	18	E B 14	E B 14	E B 14	E B 14	24	29	32	36	36	42	37	G	31	26	18	30	A A 51	E B 14	E B 14	E B 14
18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	20	28	34	41	43	38	38	34	29	26	17	24	21	24	20	20
19	E B 14	22	18	17	18	A A 43	16	E B 14	30	30	36	45	40	36	47	41	G 20	24	18	22	16	18	14	18
20	E B 17	E B 14	E B 14	17	E B 14	E B 14	E B 14	16	20	28	34	38	45	39	36	34	31	G 18	18	16	16	20	18	E B 14
21	E B 14	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	23	29	34	38	40	40	37	32	30	25	24	26	25	16	16	E B 14
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	20	27	G	34	44	42	50	37	31	28	16	19	E B 14	18	E B 14	E B 14
23	E B 14	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	24	30	33	36	36	36	33	32	G 18	28	23	19	21	E B 14	19	E B 14
24	E B 14	18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	20	G 18	G	36	G	36	35	G 20	29	24	31	17	16	E B 14	E B 14	E B 14
25	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	30	G	G	G	36	34	G 24	30	24	E B 16	E B 14	17	E B 14	21	E B 14
26	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	23	29	32	35	43	38	38	35	29	23	18	17	E B 14	E B 14	19	E B 14
27	E B 14	E B 14	18	E B 14	16	E B 14	E B 14	E B 14	22	G	G	44	37	47	91	59	30	21	E B 16	22	E B 17	15	E B 14	18
28	17	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	26	G	38	35	36	33	32	G	G 16	17	16	20	E B 14	E B 14	E B 14
29	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	G	36	36	34	34	32	G	G	E B 16	27	E B 14	E B 14	E B 14	E B 14
30	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	A A 21	E B 14	22	28	32	36	38	35	34	G	G 23	G 18	23	19	21	A A 49	17	E B 14
31	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	23	31	33	42	50	53	54	38	G 23	24	18	24	E B 14	18	18	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	E B 14	22	28	32	36	37	36	G	30	27	24	18	19	16	14	E B 14	E B 14
U Q	14	14	14	14	14	E B 14	E B 15	E B 14	23	29	34	38	40	39	40	34	30	26	21	24	20	18	18	14
L Q	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 19	G 27	G	33	35	33	35	G	G	G 21	E B 16	E B 16	E B 14	E B 14	E B 14	E B 14

JAN. 2017 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	14	14	14	14	14	15	15	15	15	15	20	21	33	24	24	21	14	15	14	14	14	14	14	14
2	14	14	14	14	14	14	14	14	18	20	18	20	24	24	20	20	16	14	15	14	14	14	14	14
3	14	14	14	14	14	14	15	14	20	17	25	19	18	20	17	14	17	15	14	14	14	14	14	14
4	14	14	14	14	14	14	14	14	18	18	18	20	19	21	17	17	15	15	14	14	14	14	14	14
5	14	15	14	14	14	14	14	14	16	15	20	19	20	33	22	16	17	14	14	14	14	15	15	14
6	14	14	14	14	14	14	14	14	15	16	20	21	16	17	16	17	17	16	16	14	14	14	15	15
7	14	14	14	14	14	14	15	14	16	15	14	19	20	18	19	19	18	15	14	14	14	14	15	14
8	17	14	14	14	14	14	14	14	14	16	19	18	18	18	15	16	16	15	14	14	14	14	14	14
9	14	14	14	14	14	14	14	14	14	15	14	18	18	20	19	14	17	15	14	14	14	14	14	14
10	14	14	14	14	14	16	14	14	14	15	15	16	15	13	14	14	12	14	14	14	15	14	14	14
11	14	14	14	14	14	14	14	14	14	15	16	16	19	18	18	18	16	16	14	15	14	14	14	14
12	14	14	14	14	14	14	14	14	16	16	17	20	21	21	20	16	16	15	14	14	14	14	15	14
13	14	14	14	14	14	14	15	14	15	18	19	24	31	42	28	25	18	18	14	14	14	14	14	14
14	14	14	14	14	14	14	15	14	15	18	20	24	28	23	16	17	17	14	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	15	18	17	21	19	25	20	19	15	14	14	14	14	14	14	14
16	14	14	14	14	14	16	15	14	15	14	19	20	24	28	24	20	15	15	15	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	15	17	17	18	19	20	17	16	14	14	14	14	14	14	14
18	14	14	14	14	14	14	14	14	15	15	16	19	18	15	17	16	15	17	14	14	14	14	14	14
19	14	14	14	14	14	14	14	14	16	16	17	20	18	19	20	17	16	18	14	14	14	14	14	15
20	17	14	14	14	14	14	14	14	17	18	15	17	19	22	22	22	18	16	14	14	14	14	14	14
21	14	14	14	14	14	14	14	14	15	16	18	20	22	20	16	15	17	16	14	14	14	14	14	14
22	14	14	14	14	14	14	14	14	14	14	14	17	18	23	19	20	15	15	14	14	14	14	14	14
23	14	14	14	14	14	14	14	14	15	18	17	18	18	18	17	16	15	16	14	14	14	14	14	14
24	14	14	14	14	14	14	14	14	16	16	16	17	16	18	17	14	13	15	15	14	14	14	14	14
25	14	14	14	14	14	14	14	14	15	15	17	17	17	20	20	19	20	17	16	14	14	14	14	14
26	14	14	14	15	14	14	14	14	15	15	17	22	20	20	18	18	14	18	15	14	14	14	14	14
27	14	14	14	14	14	14	14	14	15	18	16	18	20	20	19	19	20	15	16	14	17	14	14	15
28	14	14	14	14	14	14	14	14	16	16	18	18	22	25	20	18	15	14	15	14	14	14	14	14
29	14	14	14	14	14	14	14	14	14	14	16	19	24	20	20	18	18	14	16	14	14	14	14	14
30	14	14	14	14	14	14	14	14	14	16	17	18	19	17	20	18	16	14	13	14	14	14	14	14
31	14	14	14	14	14	14	14	14	15	16	17	19	20	20	18	18	17	16	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	14	14	14	14	14	15	16	17	19	19	20	19	18	16	15	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	16	18	19	20	22	23	20	19	17	16	15	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	15	16	18	18	18	17	16	15	14	14	14	14	14	14	14

JAN. 2017 fmin (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	304	307	343	337	326	321	310	372	402	351	329	347	365	381	291	357	341	353	358	333	347	363	365	335
2	301	310	351	329	347	372	362	353	380	380	373	336	J R 374	357	335	344	369	367	373	336	308	348	368	342
3	297	294	313	311	349	384	357	353	358	372	338	387	325	361	379	H 371	363	355	389	328	333	355	343	353
4	329	330	329	302	318	300	344	345	384	397	370	378	353	390	354	340	345	350	359	364	335	366	344	339
5	A	292	324	342	366	381	310	366	407	395	375	302	333	367	371	361	373	363	332	355	360	352	307	315
6	306	329	366	343	322	274	F 324	338	354	386	375	346	381	348	377	365	340	369	357	351	347	334	370	366
7	295	F 303	326	373	359	299	312	369	381	372	372	384	389	338	343	364	373	360	353	397	336	354	348	317
8	324	347	366	346	F 312	F 299	308	340	388	351	365	351	348	335	340	353	352	367	357	290	313	371	377	331
9	326	316	343	342	411	309	308	367	375	374	358	330	375	390	371	356	357	378	378	324	356	340	350	292
10	289	F 301	F 319	F 380	421	B	F 323	337	360	369	382	326	361	391	355	364	363	380	384	J R 331	R 361	363	354	312
11	313	F 294	F 323	F 346	378	380	F 321	363	380	374	348	345	349	342	343	335	364	364	357	354	298	352	328	336
12	F 310	311	326	R 350	F 400	292	F 323	366	391	351	362	345	357	333	341	360	362	388	366	359	344	343	330	321
13	375	342	F 321	375	400	329	326	336	377	382	371	378	365	368	366	353	348	372	393	330	326	371	348	322
14	316	310	348	F 390	F 377	F	354	337	360	353	355	341	335	361	359	359	322	361	397	338	354	351	350	330
15	323	314	F 356	326	F 358	F 378	415	331	354	366	366	312	347	344	355	374	360	390	393	A	336	339	331	311
16	334	F	329	F 347	400	G	A	331	362	365	329	342	355	326	359	318	344	346	369	377	A	362	384	310
17	323	283	F 303	F 371	412	387	329	330	382	373	370	355	320	322	346	338	343	379	356	378	A	F 335	F 344	F 332
18	F 312	307	336	344	338	356	284	337	360	349	342	333	353	332	321	329	335	361	348	355	325	345	351	314
19	300	294	344	380	371	A	325	323	348	352	346	345	333	338	324	324	344	363	358	328	348	351	347	310
20	282	312	325	325	392	375	312	343	373	357	357	332	326	317	341	296	338	358	371	309	304	348	331	304
21	314	307	R 353	376	330	341	315	327	385	366	359	309	290	325	R 344	329	345	352	376	378	308	330	352	296
22	296	316	314	327	345	358	361	333	371	390	349	342	357	361	348	360	343	358	366	351	316	343	340	315
23	312	347	370	347	353	340	309	320	350	371	373	362	351	345	350	304	345	365	376	348	351	360	343	319
24	296	306	326	315	363	358	307	335	359	350	358	355	345	357	357	313	367	369	380	362	319	349	337	302
25	297	330	J R 412	322	328	345	323	337	373	364	380	374	318	356	308	344	350	367	371	352	336	322	341	331
26	F 296	305	F 322	339	365	359	322	320	373	373	383	364	336	350	355	378	371	359	354	348	360	353	301	328
27	337	315	R 345	340	384	268	295	341	374	363	288	328	331	347	347	339	338	342	344	345	344	317	301	294
28	300	336	373	319	351	378	313	335	380	368	352	333	347	350	346	359	372	367	381	337	J R 319	J R 335	308	303
29	F 351	F 330	346	319	359	312	286	331	377	361	369	360	367	363	343	344	352	364	381	360	291	311	U R 304	311
30	328	322	363	371	310	293	A	332	358	363	345	348	356	345	349	347	355	366	363	350	307	A	308	320
31	303	313	334	357	353	B	B	337	360	347	339	349	364	350	333	337	356	374	366	353	306	319	343	350
	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	27	28	31	31	31	31	31	31	31	31	31	31	31	31	30	29	30	31	31
MED	311	312	336	343	359	341	322	337	373	366	359	345	351	350	347	347	352	364	366	350	335	348	343	319
U Q	324	329	353	371	384	375	328	353	381	374	372	360	364	361	357	360	363	369	380	359	348	355	351	332
L Q	297	305	F 324	326	338	299	310	331	360	353	346	333	333	338	341	335	343	358	357	333	310	335	330	310

JAN. 2017 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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 373	L	L	394	U L 401	L 368	L	L						
2									452	L	L	U L 396	L	L 408	G	395	L 390							
3									U L 422		R 442	A	L	U L 401	L	L	L 395							
4											L	L 409	U L 458	L	U L 359	L	L							
5											L	U L 416	405	404	383	L	L							
6									U L 400		L 394	U L 401		U L 402	L 385	U L 400	U L 438							
7											L 380	401	L 393	U L 388	U L 390	L 379	L 392	432						
8											L 394	L 411	U L 397	L 395	L 390	U L 376	L							
9										L	U L 390	U L 391	L 376	387	U L 416		U L 365	A						
10										L	L 396	U L 435	L	398	L	403	U L 390	L						
11									L		U L 377	379	399	384	L 383	U L 392	U L 409	L						
12									453	U L 450	L 391	U L 383	403	A	A	370	L							
13										L	L	411	L	L	A	U L 405								
14										L	371	425	A	371	386	U L 408	L							
15										L	L 383	A 385	A	365	381	L	L							
16										L	377	390	390	399	380	L								
17											395	383	L 395	A	382	387	L							
18											376	A	A	L 405	355	376	U A 368							
19										L	377	A	A 399	373	A	A	L							
20									475		U L 370	U L 388	A	378	379	L 370	L							
21											U L 398	U L 395	L 365	365	382	377	L							
22									U L 441	L	U L 387	L 380	A	A	A	L 392	L							
23									L	L	L 384	L 404	L 376	L 397	L 399	L	U L 373							
24									L	451	U L 385	L 393	392	377	400	U L 403	L							
25										L	386	403	U L 435	423	L	L 372	L							
26										L	L		A	415	369	398		L 439						
27											U L 360	A	404	A	A	A	433							
28										L	L	L 369	L 369	372	L 380	L 371	L	L						
29											L	L 392	L 398	L 379	L 390	U L 384	U L 384							
30										L	385	390	403	411	395	U L 384	L	L						
31										U L 362	379	A	A	A	A	L	U L 375							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									6	3	24	24	18	24	21	21	12	2						
MED									446	U L 450	L 384	L 394	L 398	394	383	L 384	U L 390	436						
U Q									453	451	L 392	L 406	403	403	L 392	U L 399	L 402							
L Q									U L 422	U L 362	377	L 386	L 390	378	380	L 374	U L 374							

JAN. 2017 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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									204	238	284	260	240	232	270	242	236	216						
2									212	234	242	278	230	262	268	228	218							
3									226		248	230	282	254	252	230	226							
4											240	224	232	224	260	258	238							
5											238	370	286	228	228	234	230							
6									232		238	264		236	238	234	236							
7											248	224	224	258	270	240	228	218						
8											236	248	268	282	254	240	230							
9										242	262	286	232	226	236		256	220						
10										244	228	286	254	226	266	248	246	224						
11									214		264	270	254	262	260	266	232	224						
12									214	228	258	274	262	282	276	248	226							
13										228	228	220	248	272	254	252								
14										256	254	218	272	226	224	248	242							
15										256	246	296	258	254	244	240	240							
16										248	278	256	226	240	228	270								
17											244	270	300	268	226	254	234							
18											278	256	248	254	278	252	248							
19										260	266	252	260	250	268	260	228							
20									214		266	278	300	270	248	262	250							
21											250	290	308	274	244	246	240							
22									222	224	266	274	252	244	264	240	240							
23									258	236	232	240	248	258	254	L 334	272							
24									218	214	254	258	266	252	246	248	234							
25										246	230	236	298	252	L 286	264	244							
26										234	232		288	260	246	224	226	210						
27											352	280	264	238	236	236	238							
28										226	262	280	264	254	250	246	226	220						
29											238	242	240	250	274	256	258							
30										244	250	250	242	254	256	258	250	236						
31										270	248	250	224	248	A 258	268	250							
	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	18	31	30	30	31	31	30	29	8						
MED									216	240	248	259	256	254	254	248	238	220						
U Q									226	248	264	278	272	262	268	258	247	224						
L Q									214	228	238	242	240	238	244	240	229	217						

JAN. 2017 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	294	E A 306	254	244	256	252	278	208	194	210	206	A	200	206	222	226	214	206	190	224	230	240	220	228
2	292	280	234	268	244	222	208	210	158	226	220	190	224	H 172	A	190	206	216	196	198	252	210	222	226
3	322	310	282	278	242	202	E B 254	208	186	212	196	A	A	240	E A 232	222	206	250	200	200	244	206	226	212
4	224	240	232	288	270	294	250	212	214	210	224	198	194	208	246	A 236	226	222	202	A 220	208	208	238	214
5	A	312	276	232	218	218	294	224	210	214	198	184	188	198	222	222	194	222	198	202	206	228	252	264
6	274	262	210	250	260	372	Q 278	222	H 166	226	200	196	220	212	202	198	180	220	214	200	202	218	218	238
7	Q 308	Q 292	262	Q 212	246	312	324	216	220	214	200	200	192	190	180	188	208	186	184	192	234	204	240	282
8	278	224	206	280	Q 300	Q 338	308	234	218	226	210	192	A 214	184	178	216	216	208	188	264	A 270	204	212	244
9	254	264	252	234	220	372	336	214	220	220	210	190	H 178	216	190	190	172	A	190	238	222	226	278	348
10	Q 358	Q 304	Q 284	Q 206	192	B	312	262	232	220	208	188	H 200	208	A	196	214	222	198	236	202	200	234	272
11	298	Q 292	A 250	Q 220	Q 206	Q 206	Q 254	214	186	226	218	232	190	196	208	204	190	192	210	204	236	224	250	252
12	Q 252	Q 266	236	242	Q 196	338	Q 278	224	184	184	194	192	182	A	A	192	218	212	208	208	226	218	E A 274	E A 322
13	238	260	Q 264	Q 202	212	272	294	242	220	222	212	196	234	250	A	202	228	216	190	228	234	210	A 274	266
14	278	292	228	198	Q 200	Q 270	266	242	224	222	216	204	A	220	208	190	218	216	194	214	206	210	222	254
15	276	268	234	256	Q 234	Q 200	B	242	226	234	232	E A 250	A	240	212	214	206	206	202	A	236	230	246	272
16	282	Q 218	254	Q 240	196	168	A	264	232	212	192	204	216	184	188	256	246	238	214	E A 238	A	206	A 216	284
17	262	Q 298	Q 282	Q 206	192	B	B	252	222	218	216	222	204	A	218	204	214	212	200	E A 236	A	Q 242	Q 218	228
18	280	274	240	242	236	218	B	240	224	228	218	A	A	212	E A 240	214	214	224	198	214	A 242	208	208	A 270
19	282	E A 328	238	198	206	A	260	250	236	236	228	A	E A 232	206	A	A	222	220	214	236	226	208	192	E A 302
20	340	292	258	264	202	238	B	244	170	216	216	214	A	A 224	212	202	236	216	204	190	230	216	256	276
21	262	292	244	200	268	250	268	250	216	218	216	196	E A 224	E A 250	A 220	206	224	220	204	208	E A 270	226	208	282
22	298	276	264	252	228	204	214	232	184	186	208	214	A	A	A	E A 234	202	232	214	198	232	238	204	252
23	270	234	216	224	212	B	304	268	232	224	214	200	210	182	H 172	188	234	230	212	A 220	A 242	192	E A 266	274
24	312	A 298	258	264	218	210	356	228	190	184	206	218	196	208	204	198	218	224	212	210	246	214	234	300
25	302	246	198	E B 306	278	240	E B 314	240	220	230	214	212	180	180	166	216	218	224	210	196	234	254	238	218
26	292	280	260	238	214	214	280	238	220	218	214	188	A	198	A 238	206	192	180	216	228	206	232	E A 292	250
27	238	266	E A 266	234	200	E B 410	E B 380	240	222	218	202	A	190	A	A	A	202	230	212	206	214	210	272	294
28	286	236	204	244	222	200	294	240	216	H 192	190	E A 230	206	200	206	204	212	210	200	200	242	216	246	262
29	224	Q 246	216	260	238	302	B	244	224	214	234	208	186	186	196	202	198	230	202	E A 262	292	252	252	252
30	244	252	218	202	E B 342	E B 354	A	256	220	212	202	198	198	186	186	212	220	224	204	212	E A 276	A	E A 252	256
31	292	270	238	216	214	B	B	240	224	228	216	A	A	A	A	A 240	192	220	216	E A 252	262	268	230	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	30	31	31	31	31	26	23	31	31	31	31	25	23	26	23	29	31	30	31	30	29	30	31	31
MED	281	271	242	239	219	238	279	240	220	218	212	199	198	204	206	204	214	220	202	210	233	216	232	258
U Q	298	292	262	260	246	312	312	244	224	226	216	214	216	216	222	219	220	224	212	236	245	230	252	282
L Q	262	252	228	212	206	210	260	222	190	212	202	192	190	186	188	197	202	212	198	200	218	208	218	238

JAN. 2017 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	134	108	112	112	B	A	112	112	108	A	A					
2								B	B	108	108	110	112	A	110	110	112	118	A					
3								B	B	112	114	114	114	A	A	108	108	122	A					
4								B	B	112	110	110	A	A	A	A	110	A	A					
5								B	124	112	110	A	110	B	110	110	110	116	A					
6								B	B	108	108	108	108	A	A	114	114	A	B					
7								B	118	A	A	A	A	112	112	108	112	112	A					
8								B	122	114	108	A	A	A	108	108	106	108	A					
9								B	118	110	106	A	A	110	110	110	110	A	A				B	
10								B	112	108	108	108	112	112	110	110	A	A	A				B	
11								B	114	112	108	108	A	108	108	A	A	118	B					
12								B	116	112	110	A	110	110	110	A	A	A	A					
13								B	116	A	110	A	A	B	A	110	110	A	A					
14								B	112	114	A	A	A	112	112	110	110	112	B					
15								B	116	114	110	108	108	110	110	112	112	A	A					
16								A	112	110	110	A	A	A	A	A	114	112	A					
17								B	118	112	A	112	110	110	112	110	110	114	A					
18								B	A	110	110	110	110	A	A	A	A	112	A					
19								B	A	A	A	A	A	A	A	A	114	A	A					
20								B	116	110	110	110	A	A	A	A	A	116	A					
21								B	110	110	A	A	A	A	A	A	A	A	A					
22								B	112	108	108	108	A	A	A	A	A	A	A					
23								B	110	110	108	A	A	108	A	A	108	A	A					
24								B	108	108	106	106	108	A	A	110	A	A						
25								B	112	110	108	108	106	106	108	114	114	114	B					
26								B	114	110	106	106	108	108	A	A	A	A	A					
27								B	110	110	110	112	A	A	A	A	A	A	B					
28								B	136	110	110	110	A	A	A	A	110	114	A					
29								B	114	106	108	108	A	A	A	A	108	112	B					
30								B	112	110	A	110	A	A	A	112	106	106	A					
31								B	110	110	110	110	110	108	108	108	116	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									25	28	25	20	13	12	14	17	21	15						
MED									114	110	110	110	110	110	110	110	110	114						
U Q									118	112	110	110	111	111	112	112	113	116						
L Q									112	109	108	108	108	108	108	109	108	112						

JAN. 2017 h'E (KM)

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	90	88	94	90	B	B	B	B	150	146	176	136	172	104	G	G	96	96	90	90	84	106	114	120
2	B	108	104	98	102	B	B	B	B	160	170	G	140	108	192	G	96	156	92	90	90	92	112	B
3	B	B	B	102	102	B	B	B	B	162	G	190	162	162	94	160	G	148	128	94	88	96	96	B
4	B	B	B	B	B	B	B	B	142	158	122	112	102	100	100	98	162	136	118	106	106	B	B	104
5	102	B	B	B	B	B	B	B	G	G	104	104	G	B	G	G	G	188	92	94	90	90	B	100
6	B	B	B	B	96	B	B	B	116	186	G	120	114	114	106	104	G	108	B	B	B	B	B	B
7	B	104	98	98	94	96	96	B	G	108	110	104	110	G	G	G	G	96	96	94	90	90	90	B
8	B	B	B	B	100	B	100	100	152	162	112	104	104	100	G	G	166	144	92	92	126	B	98	B
9	98	98	98	98	94	96	96	96	G	120	110	112	110	G	G	98	98	94	94	94	92	B	B	B
10	B	118	B	106	B	B	B	102	154	146	148	108	144	154	122	160	108	88	90	B	B	B	B	110
11	106	102	96	B	B	B	B	B	156	168	152	136	114	G	108	108	102	100	100	98	94	112	114	B
12	114	106	102	102	106	98	98	B	G	G	G	104	G	112	112	110	100	100	102	100	96	90	90	90
13	90	B	108	100	96	B	96	96	160	108	110	106	148	B	104	G	126	110	122	98	94	90	92	92
14	B	B	B	B	B	92	B	B	148	152	150	170	156	G	G	G	G	146	B	B	B	128	122	B
15	B	B	B	102	B	102	B	B	156	166	152	132	126	140	G	G	120	132	104	106	106	124	136	104
16	94	102	102	98	92	B	142	140	G	152	G	112	108	108	108	104	162	128	122	116	116	110	98	92
17	96	96	96	96	B	B	B	B	146	138	116	148	112	136	130	G	126	116	108	106	106	100	B	B
18	100	100	B	96	96	B	156	94	92	150	118	116	108	104	104	100	94	166	92	114	100	100	96	96
19	120	118	118	98	102	104	100	116	100	104	114	108	108	106	100	102	102	102	100	100	94	90	98	90
20	B	B	100	100	B	96	B	94	128	180	116	114	102	106	104	104	102	100	100	100	96	96	96	96
21	B	98	96	96	96	B	B	96	172	176	116	108	112	104	102	98	96	100	100	96	96	96	96	94
22	94	94	98	B	94	B	94	B	118	132	G	118	104	104	100	98	98	98	102	102	112	108	104	106
23	118	98	B	B	B	B	B	B	158	164	154	126	114	112	104	100	98	96	96	94	94	94	90	94
24	94	94	100	100	100	102	96	102	138	102	G	148	G	104	104	98	98	94	92	90	92	B	92	B
25	B	B	102	104	104	96	96	96	166	188	G	G	G	112	112	104	136	126	B	B	96	96	94	B
26	94	B	B	B	104	102	98	102	162	148	156	164	110	110	110	110	96	96	94	94	90	B	92	B
27	B	104	102	100	98	96	96	96	150	G	G	112	102	102	100	98	102	100	100	92	B	98	98	98
28	100	B	102	98	B	B	98	B	G	136	G	114	116	114	114	104	G	100	100	96	94	94	90	B
29	B	B	106	106	102	108	100	98	144	G	G	116	112	112	108	108	G	G	B	102	B	B	B	B
30	90	90	98	98	96	94	92	B	190	116	108	110	108	110	110	G	98	98	98	98	98	94	94	94
31	92	B	B	B	B	B	B	B	162	152	144	126	118	114	106	118	104	102	102	100	100	100	100	100
	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	17	19	21	19	13	16	14	23	27	21	29	27	25	24	21	24	30	27	27	26	23	24	17
MED	96	100	100	98	98	96	97	97	150	152	118	114	112	110	106	104	102	101	100	98	95	96	96	96
U Q	104	105	102	102	102	102	100	102	160	164	152	134	126	114	111	109	123	132	102	102	100	106	102	104
L Q	93	95	98	98	96	96	96	96	138	132	111	108	108	104	103	98	98	98	92	94	92	92	92	93

JAN. 2017 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

JAN. 2017 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	F2	F2	F1	F1					H2	HH11	H1	H1	H1	L1			L1	L1	F2	F2	F1	F2	F1	FF11
2		FF11	F1	F1	F1					H1	H1		H1	C1	H1		L1	HL11	L2	F2	F2	F1	F1	
3				F1	F1					H1		H1	H1	HL11	L3	HL11		HL11	CL12	F2	F2	F1	F1	
4									H1	H1	HH11	C1	L1	L2	LH11	LH21	HL11	HL11	CL31	FF22	FF11			F1
5	F3										L1	L1						HH11	L2	F1	F1	F1		F1
6					F1				C1	H1		C1	C1	C1	C1	L1		C1						
7		FQ21	FQ41	FQ21	FQ31	FQ11	F1			CQ11	C1	L1	C1					L1	L1	F1	F1	F2	F1	
8					F1		F1	L1	H1	H1	C1	L1	L1	L1			H1	H1	L1	F2	F3		F1	
9	F1	F2	FQ31	FQ31	FQ21	F1	F1	L2		C1	C1	C1	C1			L1	L1	L2	L1	F1	F1		K1	
10		F1		F1				LH11	H3	H1	H1	C1	H1	HL11	C1	HL11	C1	L1	L1				K1	F1
11	F1	F2	F6						H1	H1	H1	HH11	C1		C1	C1	L1	L1	L1	F1	F2	F1	FF11	
12	FF11	F2	F2	FQ21	FQ11	FQ21	FQ11					L1		C2	C2	C1	LQ21	L2	L3	FQ21	F1	F2	F1	F1
13	F1		F1	FF11	FQ11		F1	L1	H1	C1	C1	C1	HL11		L1		C1	C1	CL11	FQ21	F4	F3	F3	F1
14						F1			H1	HC11	HC11	HC11	HC11					HC11				F1	F1	
15				F1		F1			HC11	H1	H1	H1	C1	H1			C1	HL11	L2	FQ31	F2	F2	FFF11	F2
16	F1	F1	FF11	F1	F1		F2	H1		H1		C1	C1	C1	C1	L1	H1	C3	C2	F8	F7	F2	F2	F2
17	F2	F1	F3	FQ31				H1	H1	H1	C1	H1	CQ11	H1	H1		C1	CL11	C2	F7	F8	F2		
18	F2	F2		FQ31	F2		F1	L1	L3	H1	C1	C2	C2	L1	L2	L2	L5	HCL11	L1	FF12	FF22	F4	F2	F1
19	FF11	FF11	FF21	F1	F2	FQ51	FQ21	CLQ21	LQ31	LH11	C1	C2	C2	LQ11	L2	L2	LHC11	L1	L1	FQ21	FQ21	F3	F1	F1
20			FQ11	F1		F1		L1	C1	H1	C1	C1	L2	L1	L1	L1	L2	L1	L3	F1	F2	F3	F2	F1
21		F1	F2	F3	F1			L1	H1	H1	C1	C1	C1	L2	L1	LQ11	LQ21	LQ11	L2	F5	F4	F4	F4	F2
22	F2	FQ11	F1		F1		F1		C1	H1		C1	L2	L2	L2	L3	LQ21	LQ21	L1	F3	F1	F5	F1	F1
23	F1	F3							H1	H1	H1	C1	C1	C1	L1	L1	L1	L3	L3	F3	F4	F3	F2	F1
24	F1	F1	F1	FF11	F1	FQ11	F1	L1	H1	L1		HC11		L1	L1	L1	L2	L2	LQ41	FQ21	F2		F1	
25			FQ11	FQ11	F1	F2	F1	L2	H1	H1				C1	C1	L1	HL11	C1			F1	F1	F3	
26	F1				F1	F1	F2	L1	H1	HL11	H1	H1	C1	C1	C1	C1	LQ11	L1	L2	F2	F2		F1	
27		F1	F2	F1	F2	F2	F2	L1	H1			C2	L2	L2	L3	L3	L1	L1	L1	FF11		F2	F1	F1
28	F2		F1	F2			F1			H1		C1	C1	C1	C1	L1		L1	L1	F1	F2	F1	F1	
29			FQ31	FQ21	FQ21	F1	F2	L1	H1			C1	C1	C1	C1	C1				F3				
30	F1	F1	F2	F1	F2	F2	F3		H1	C1	C1	C1	C1	C1	C1		L1	L2	L2	F5	F5	F4	F2	F1
31	F1								HL11	H1	H1	C1	C2	C2	C2	C1	L1	L2	L2	FQ51	FQ11	FQ21	FQ21	FQ11
	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. 2017 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

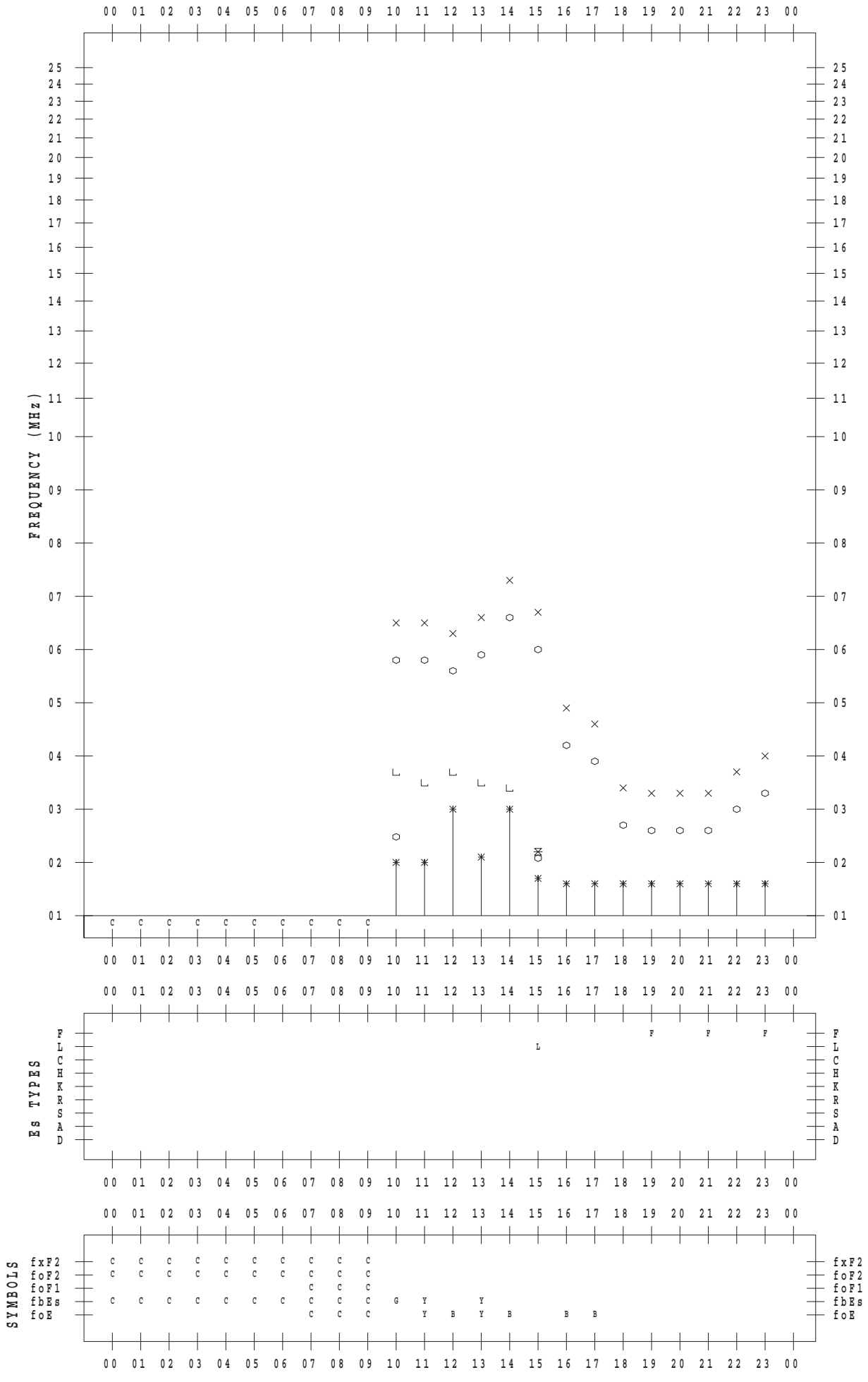
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 1

135 °E MEAN TIME



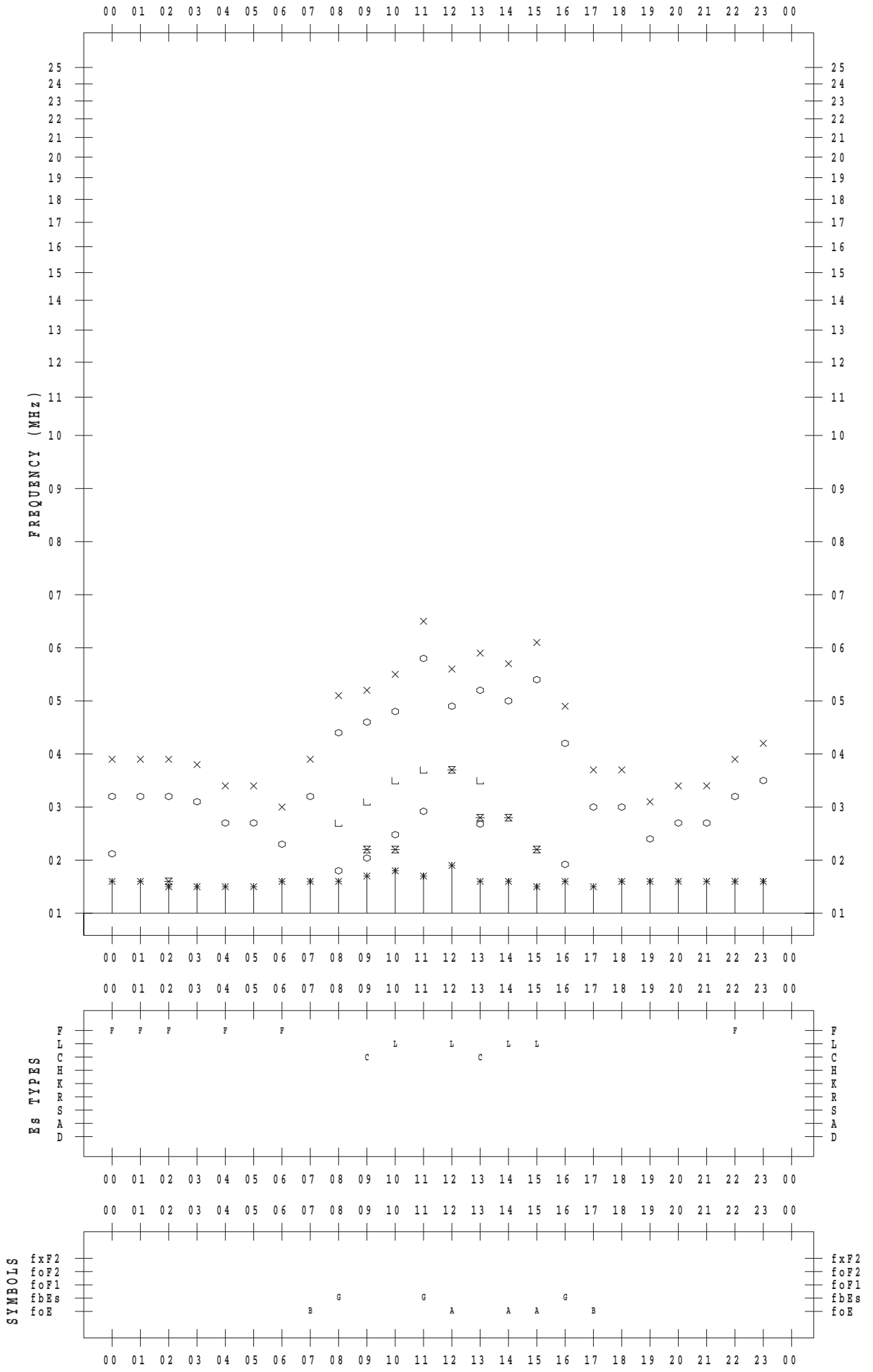
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 2

135 °E MEAN TIME



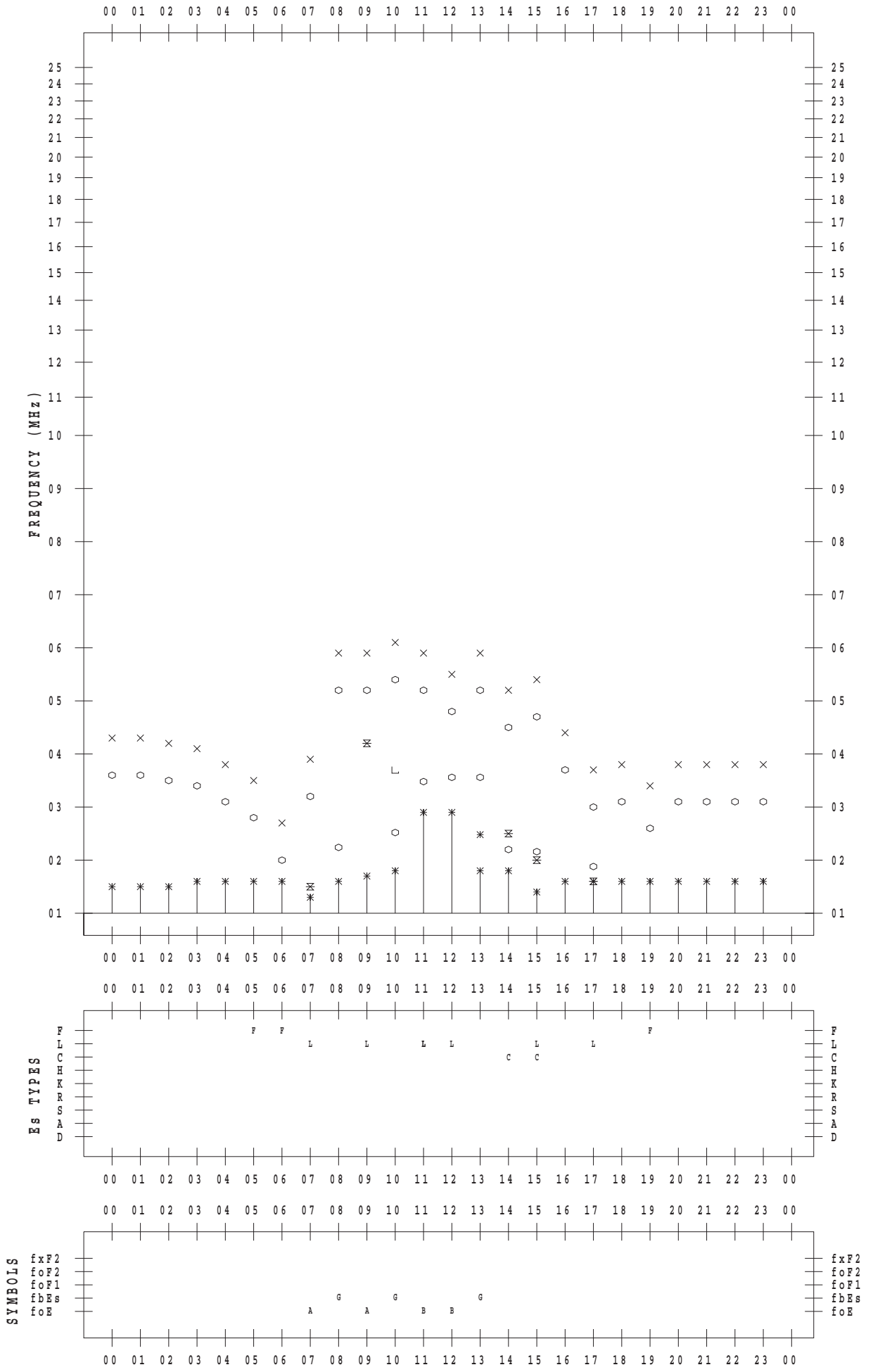
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 3

135 °E MEAN TIME



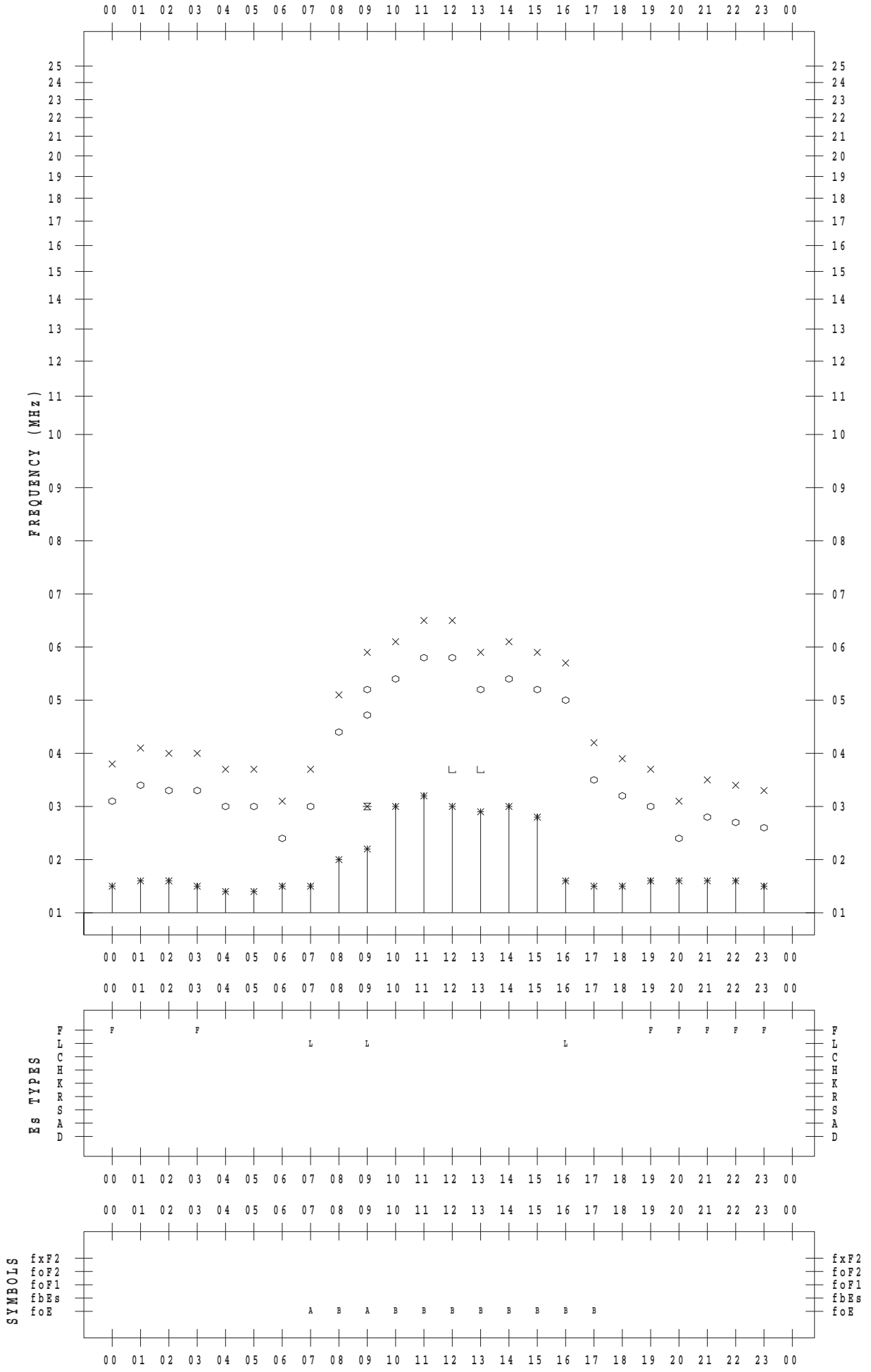
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 4

135 °E MEAN TIME



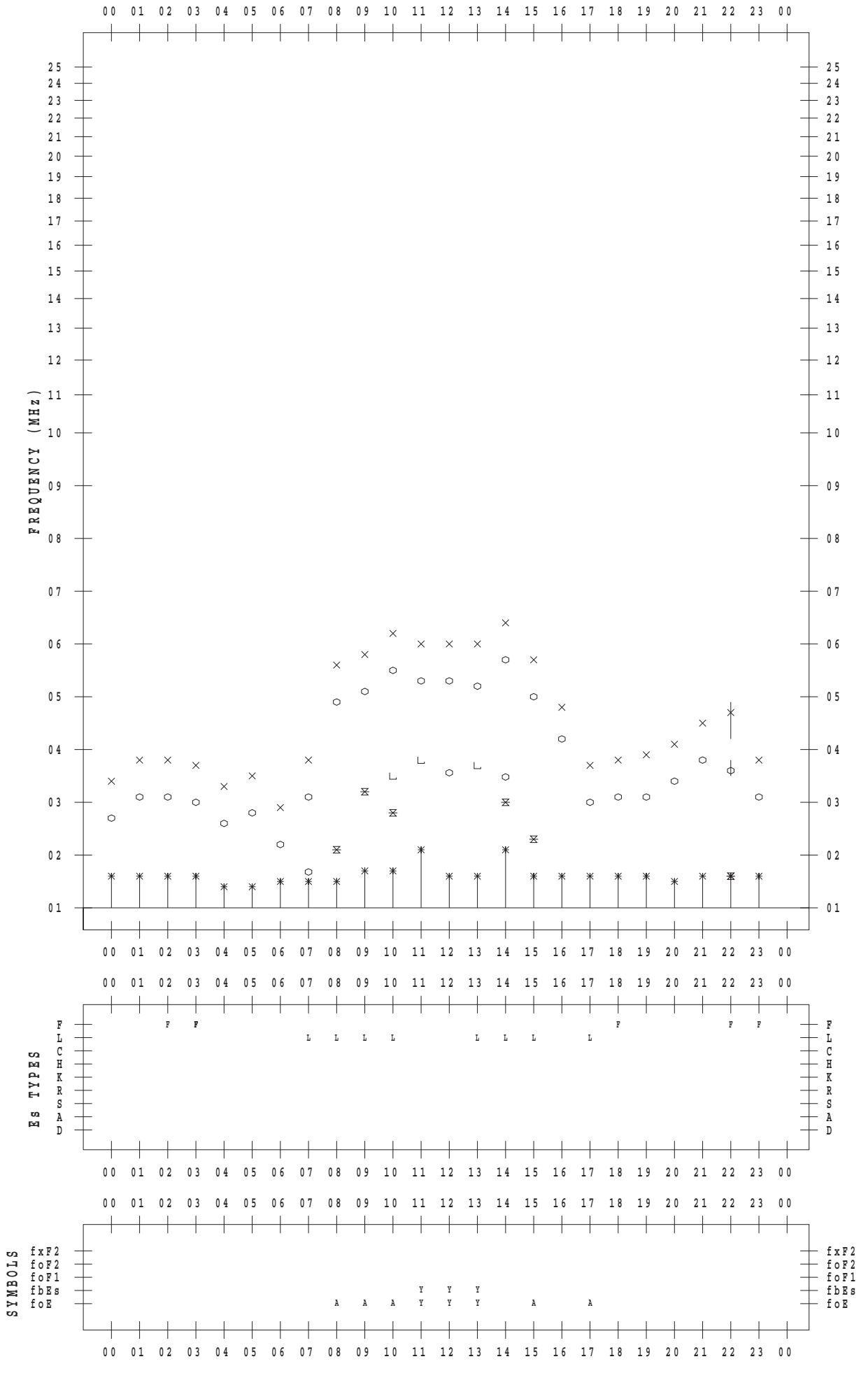
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 5

135 °E MEAN TIME



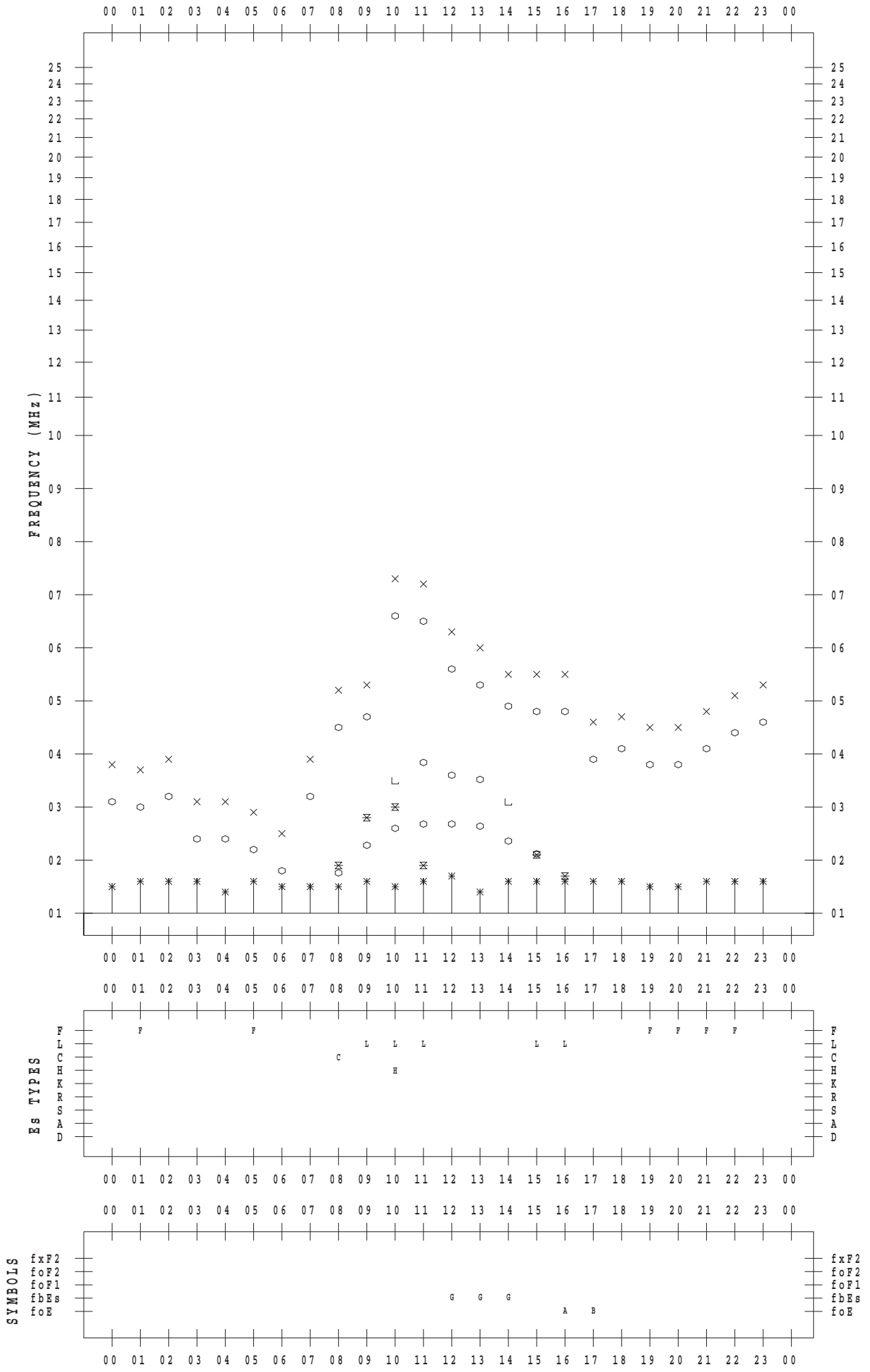
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 6

135 °E MEAN TIME



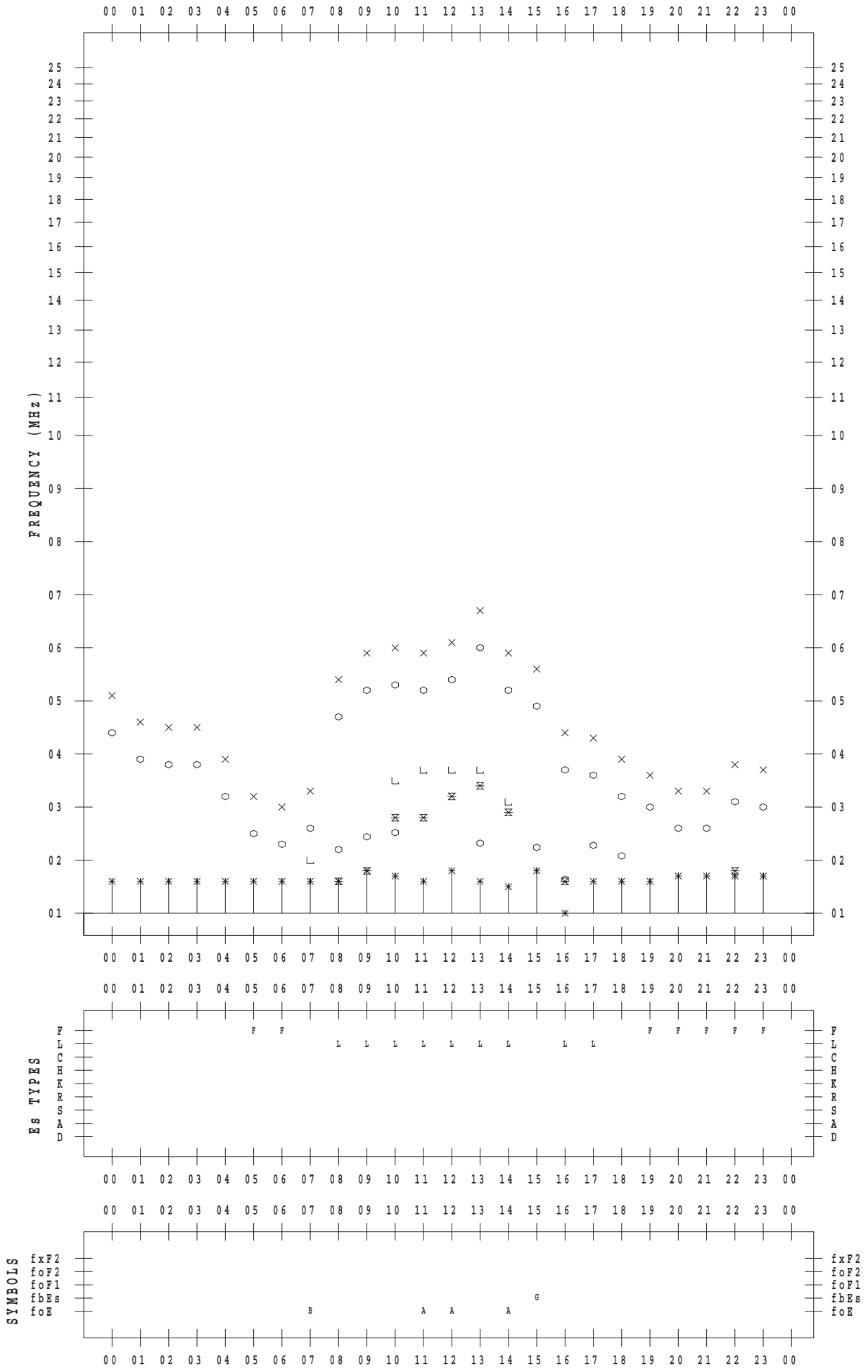
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 7

135 °E MEAN TIME



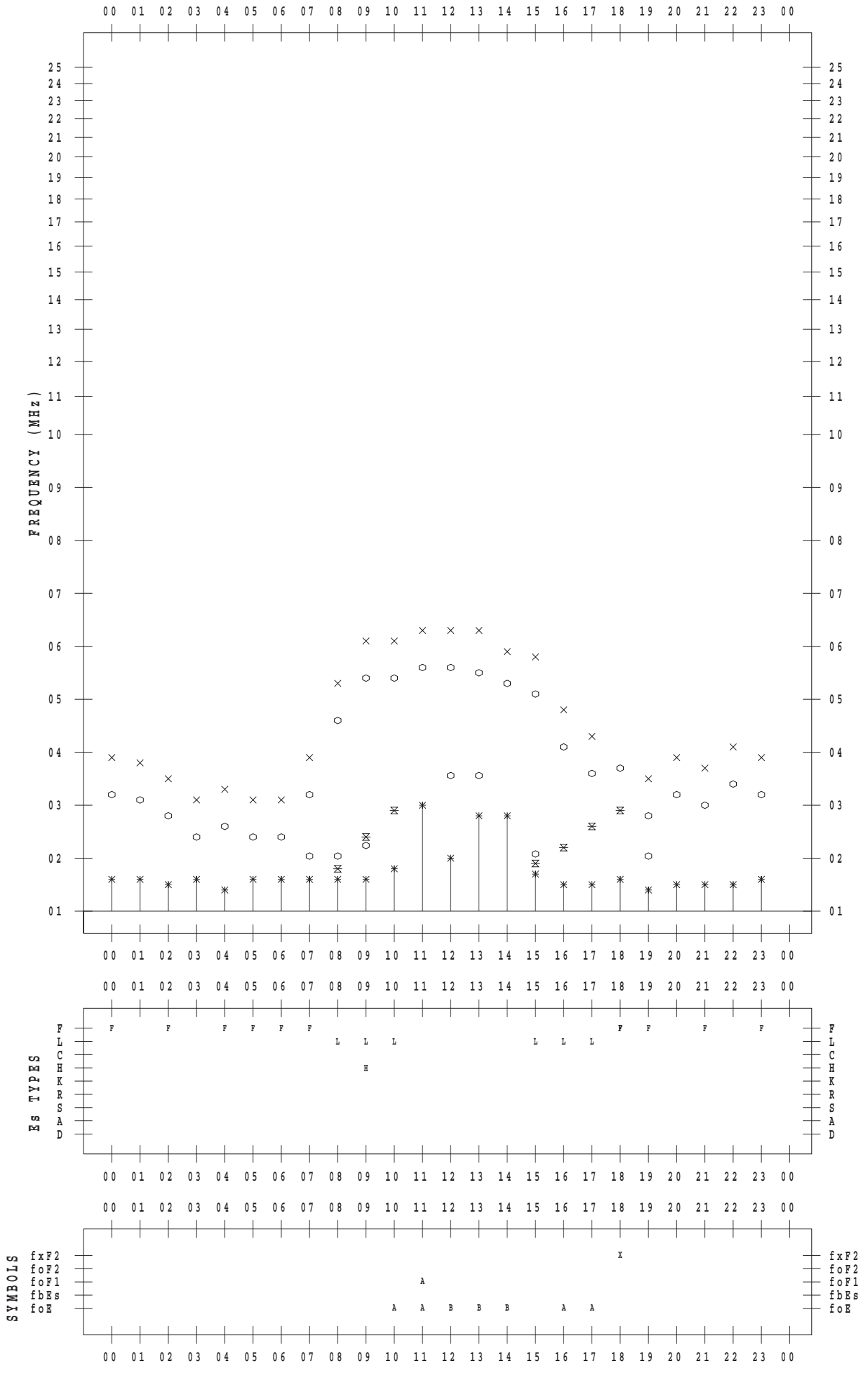
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 8

135 °E MEAN TIME



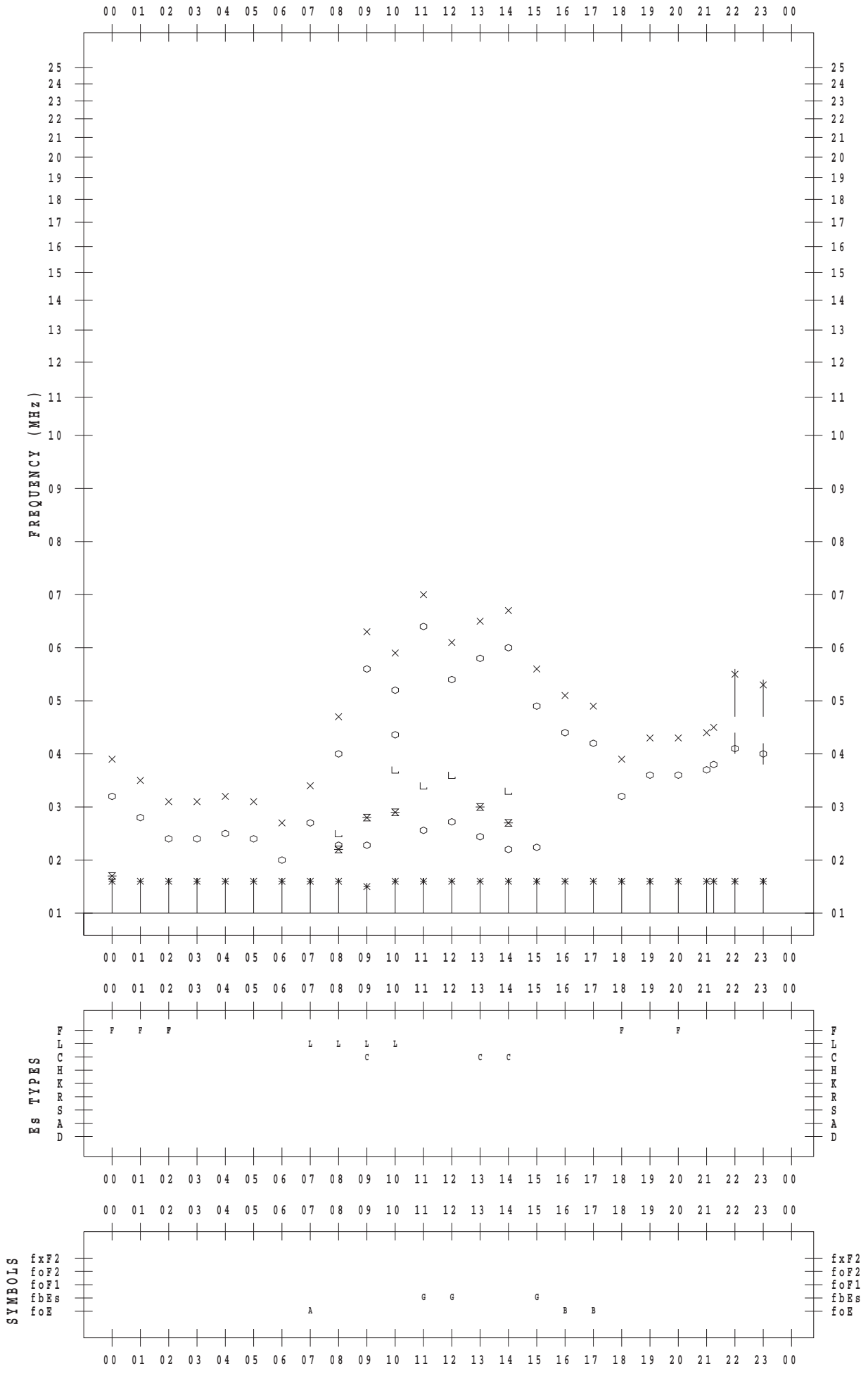
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/ 9

135 °E MEAN TIME



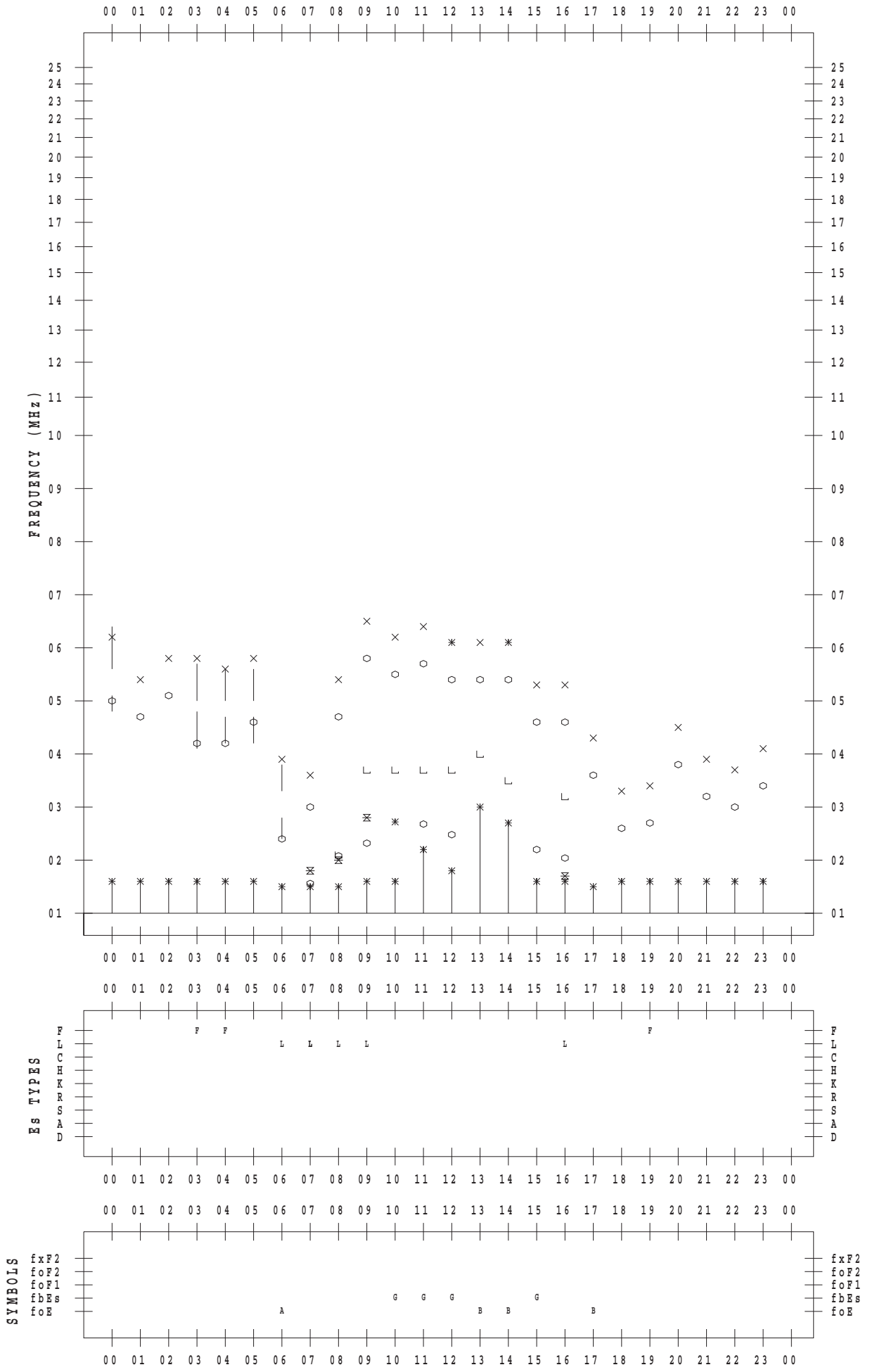
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/10

135 °E MEAN TIME



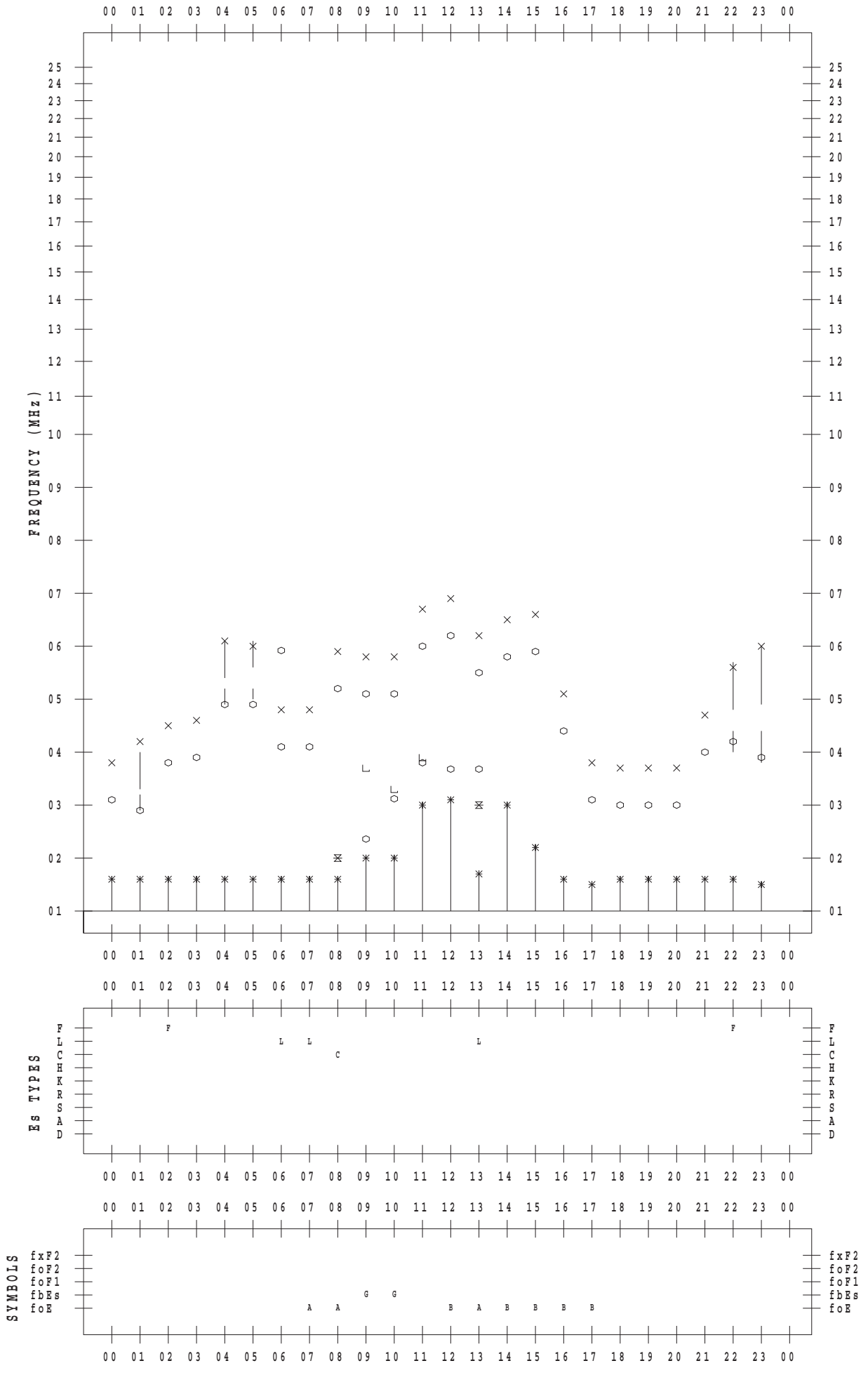
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/11

135 °E MEAN TIME



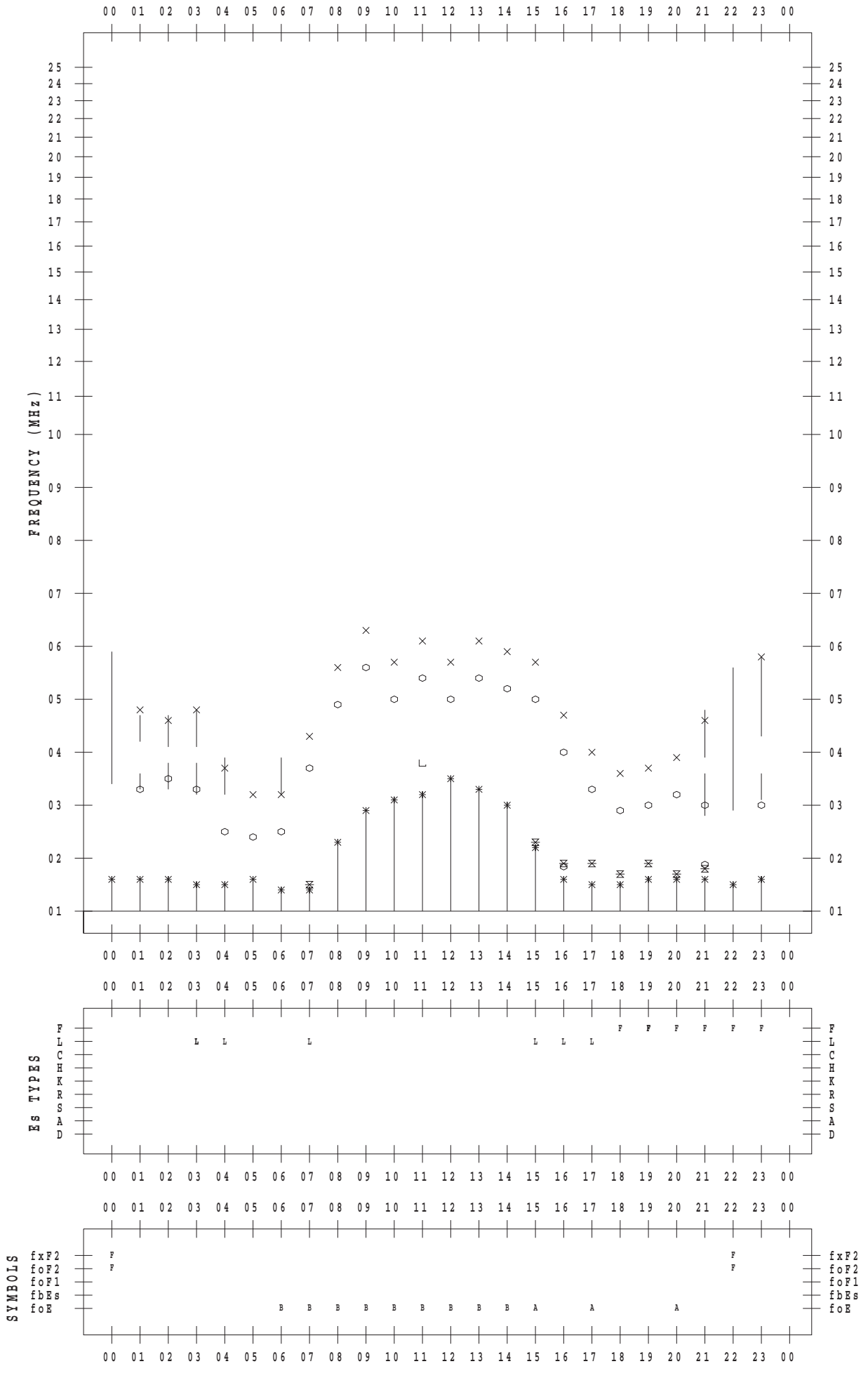
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/12

135 °E MEAN TIME



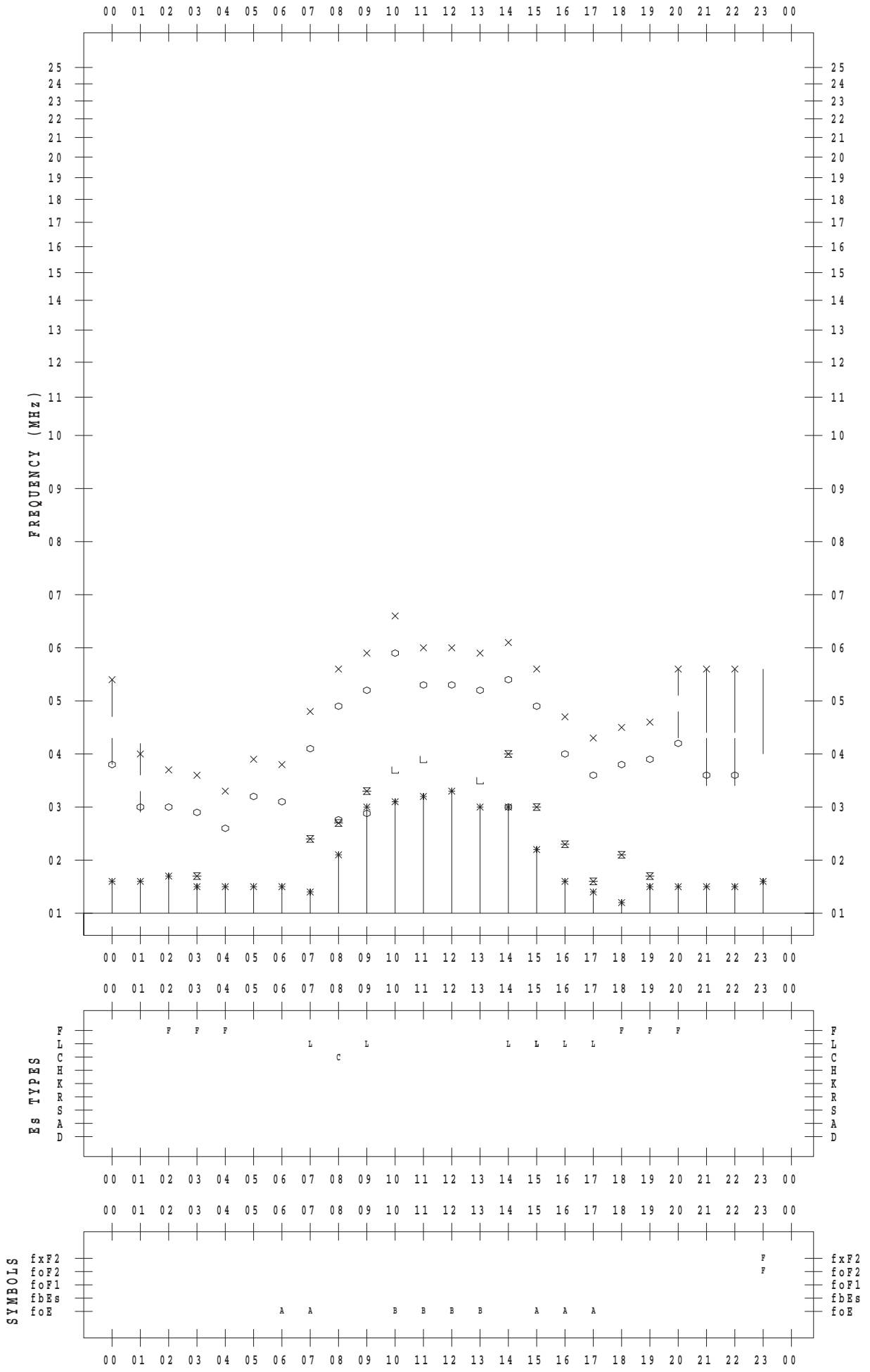
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/13

135 °E MEAN TIME



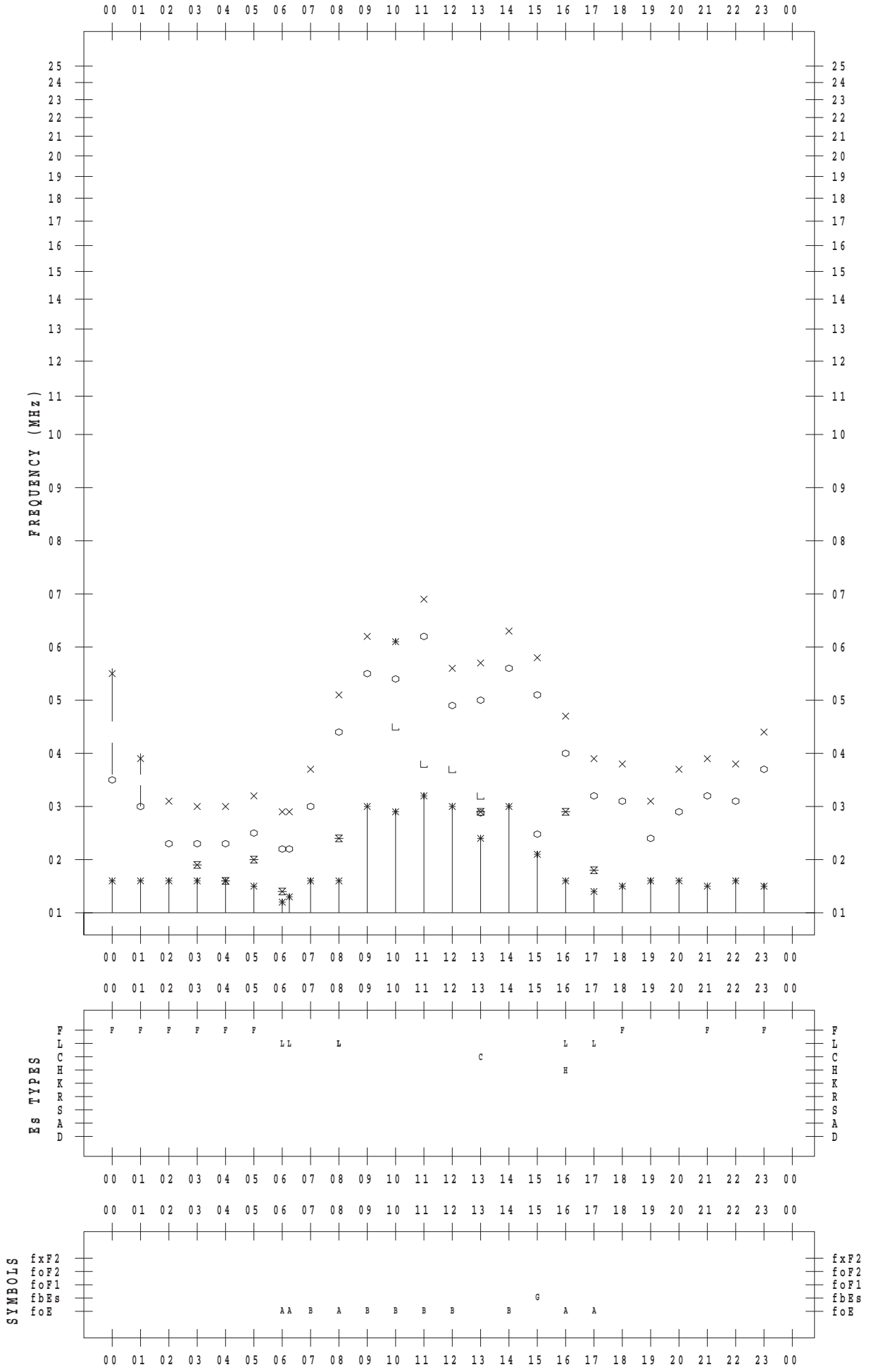
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/14

135 °E MEAN TIME



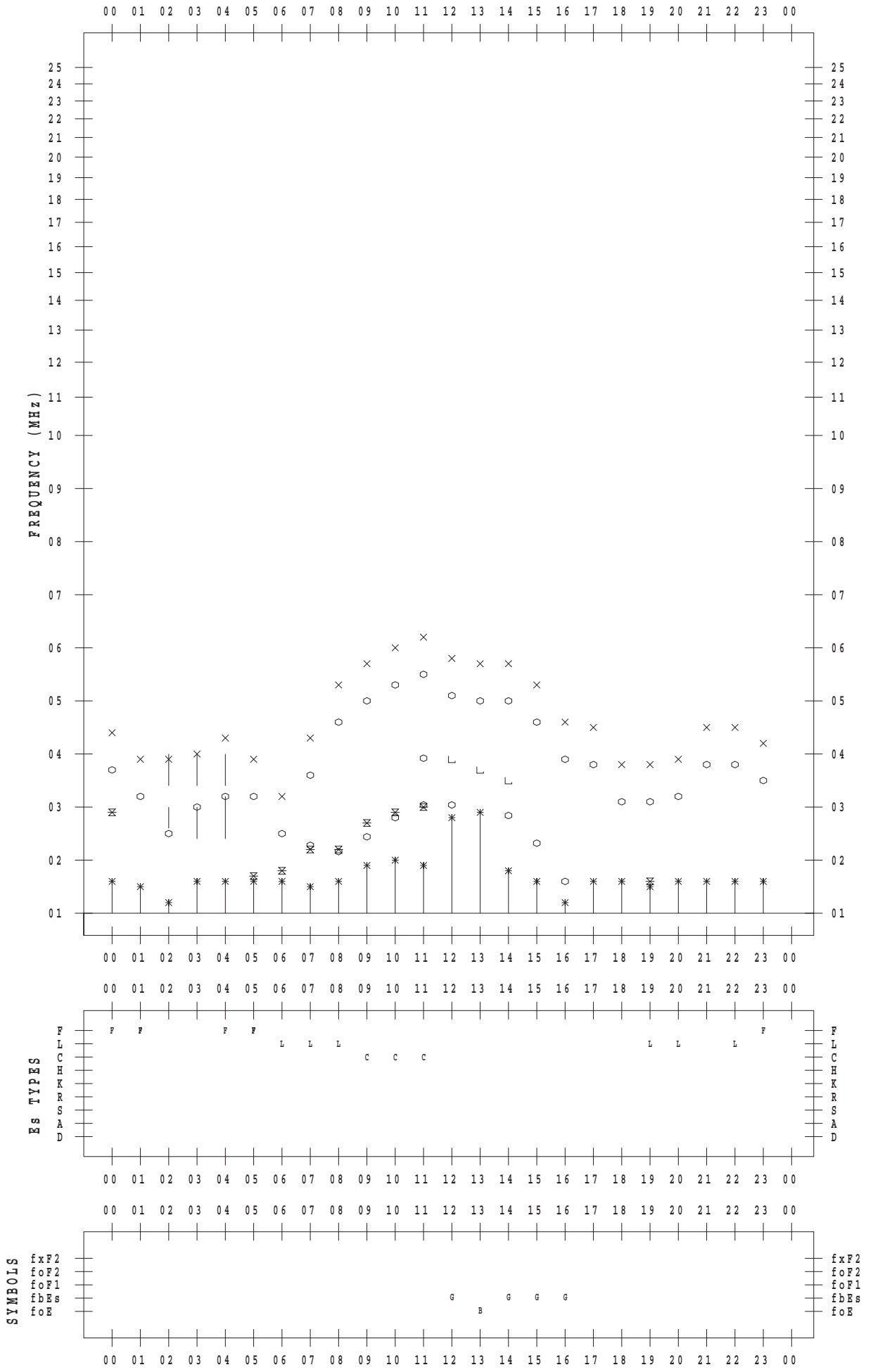
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/15

135 °E MEAN TIME



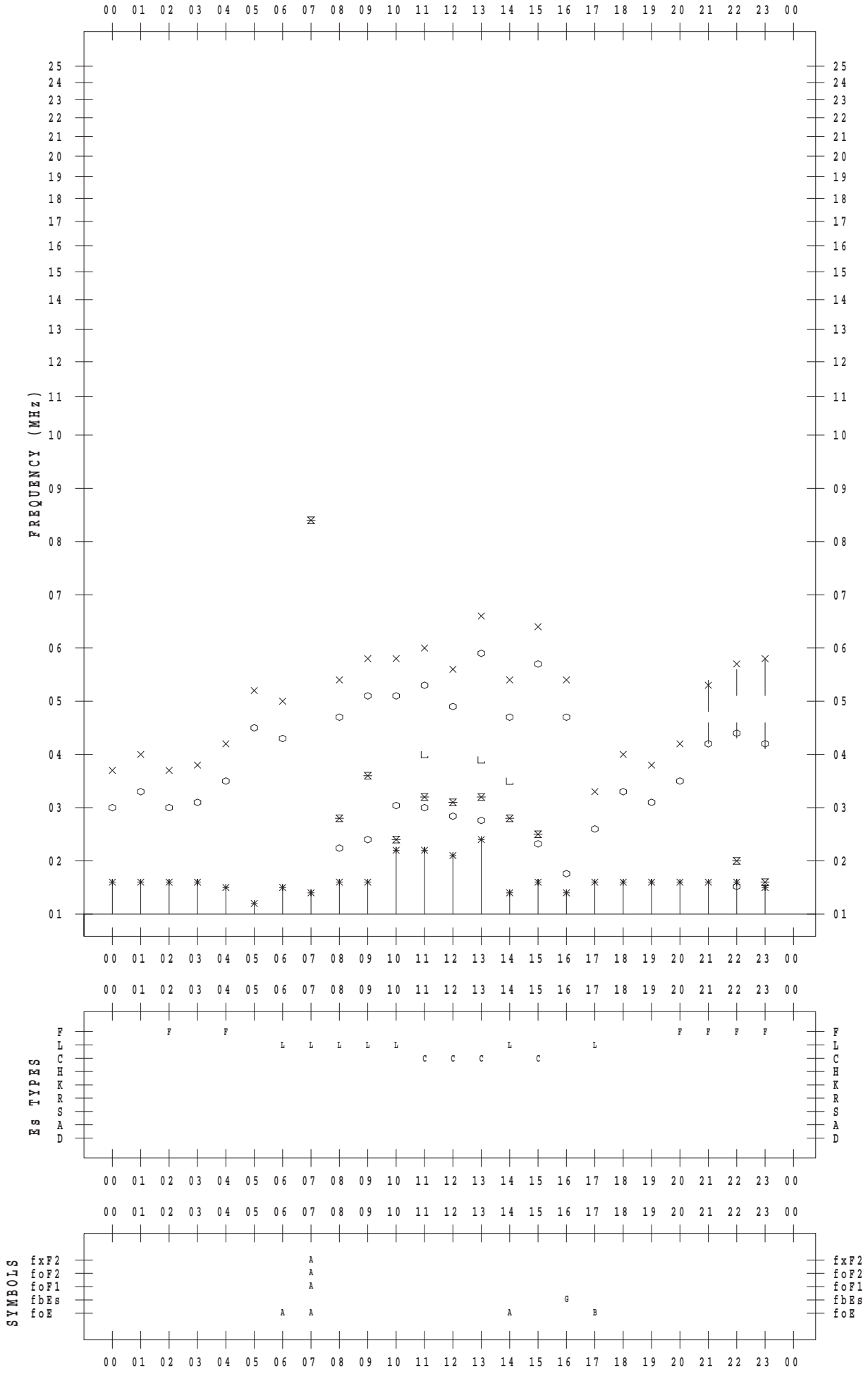
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/16

135 °E MEAN TIME



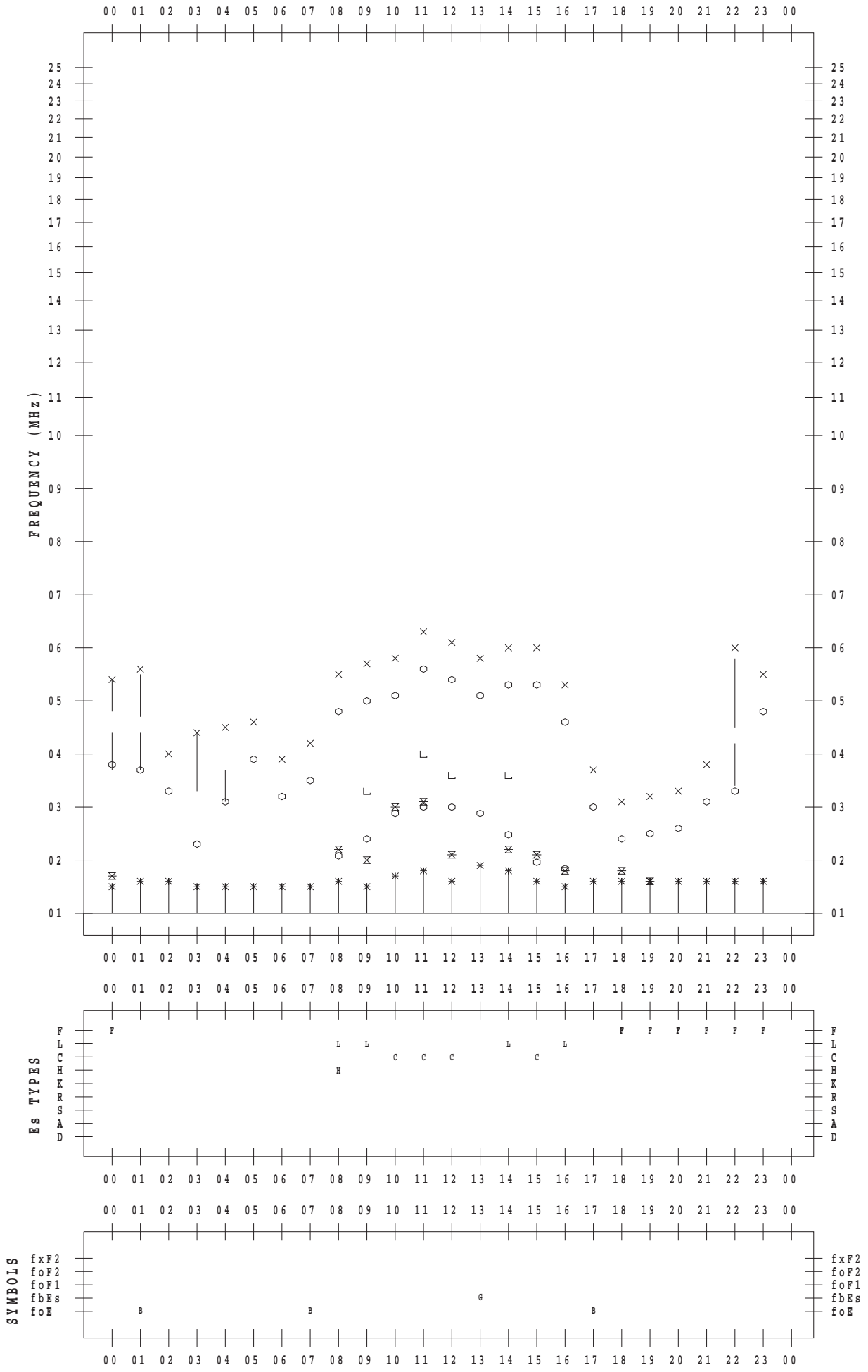
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/17

135 °E MEAN TIME



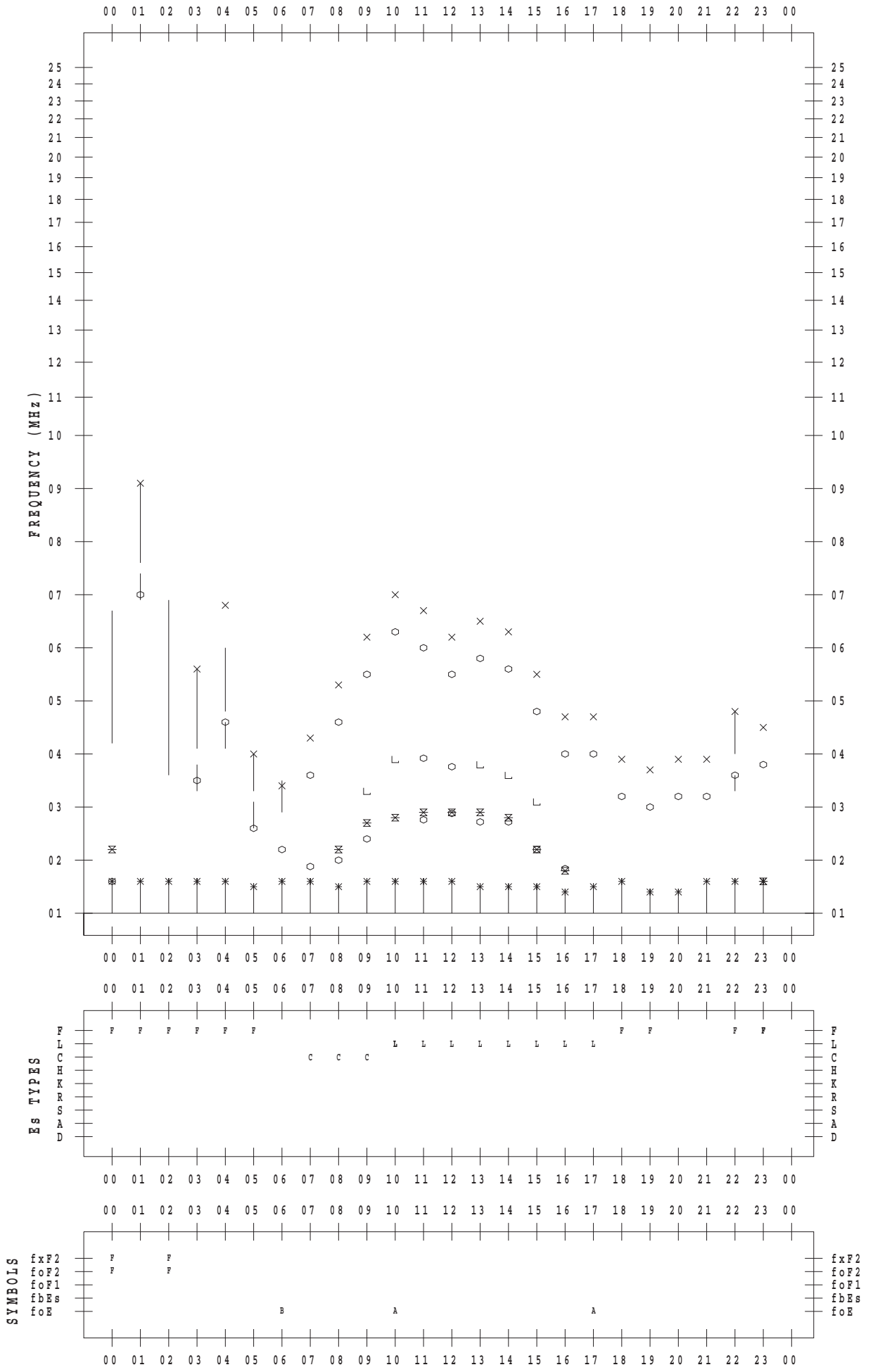
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/18

135 °E MEAN TIME



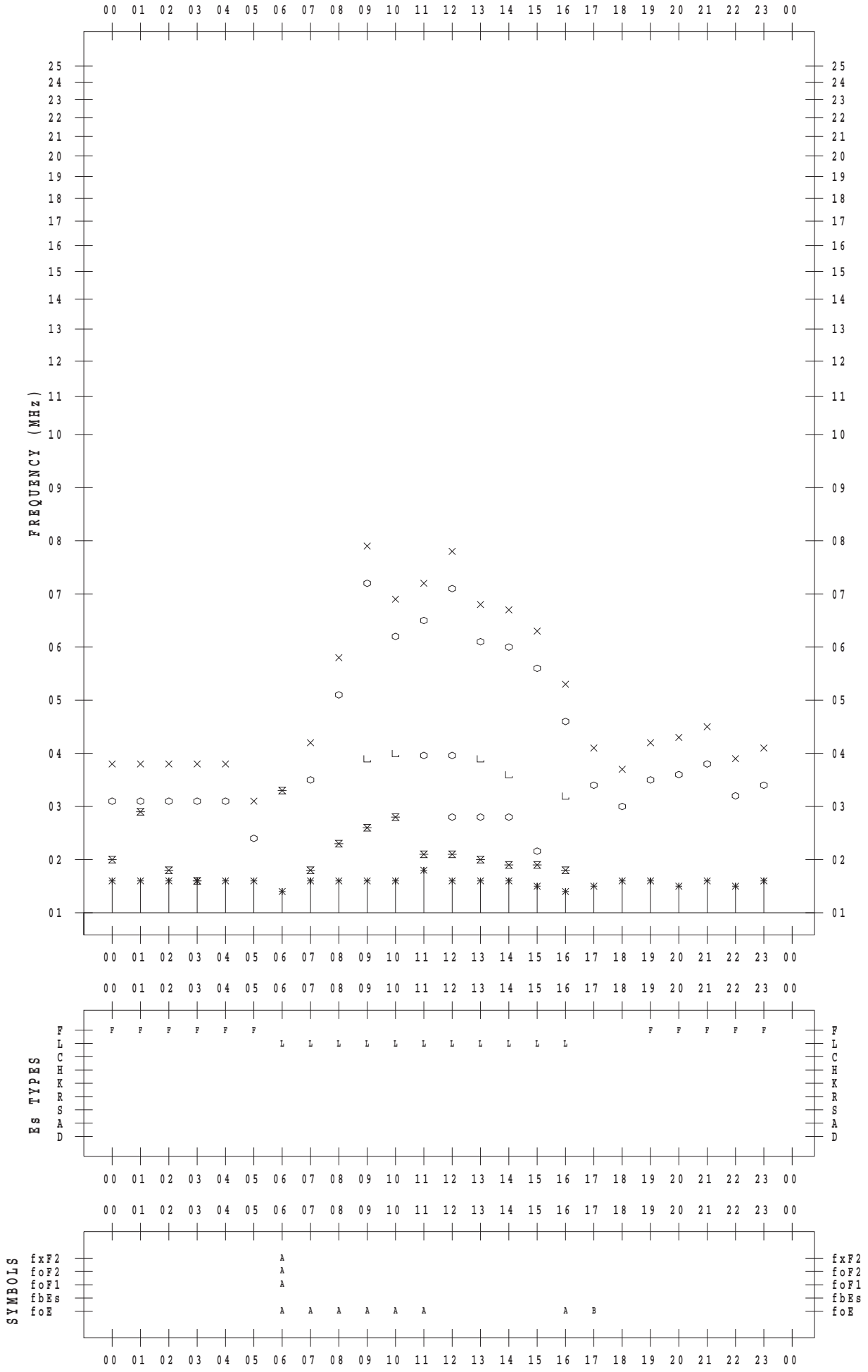
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/19

135 °E MEAN TIME



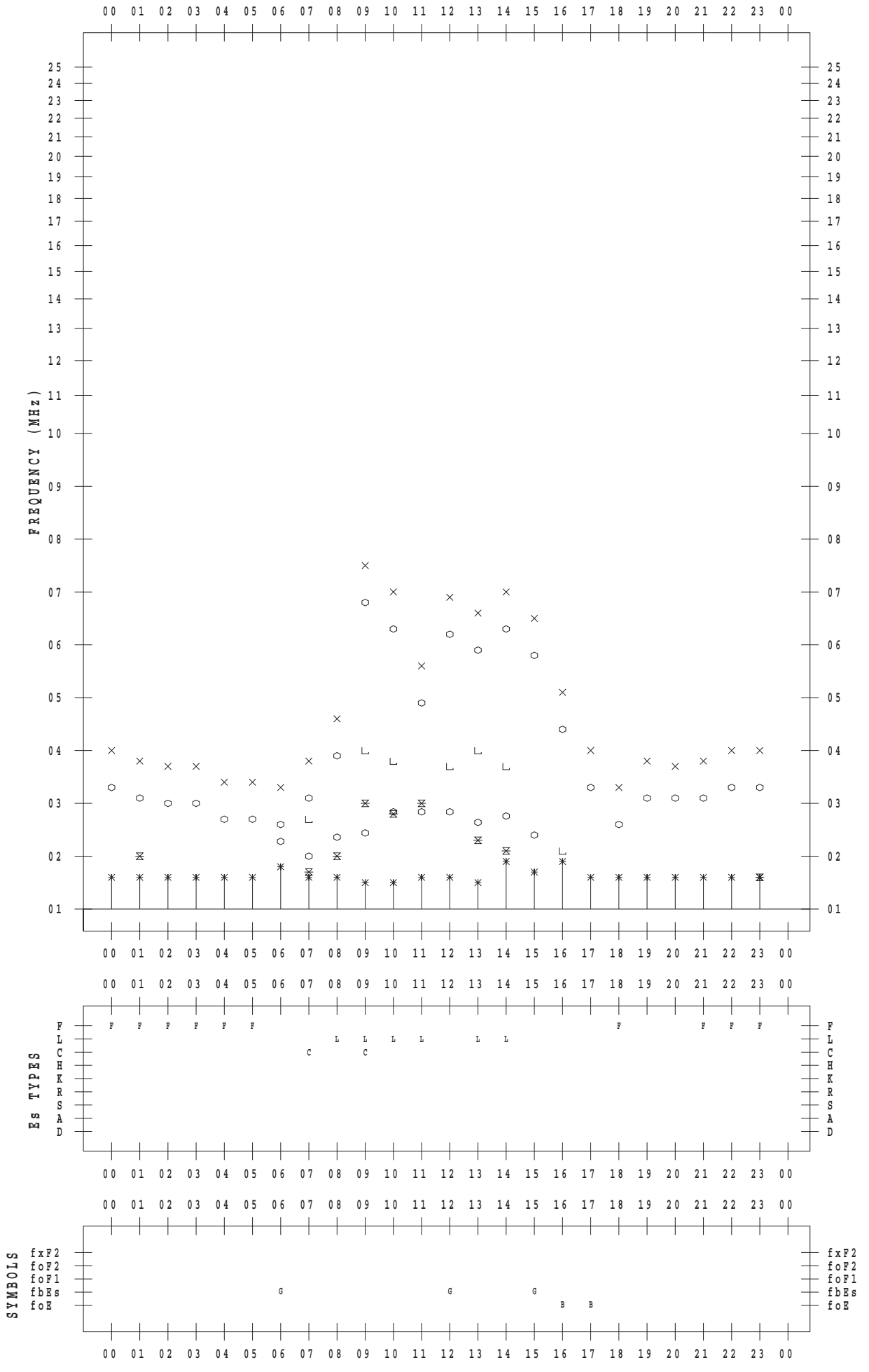
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/20

135 °E MEAN TIME



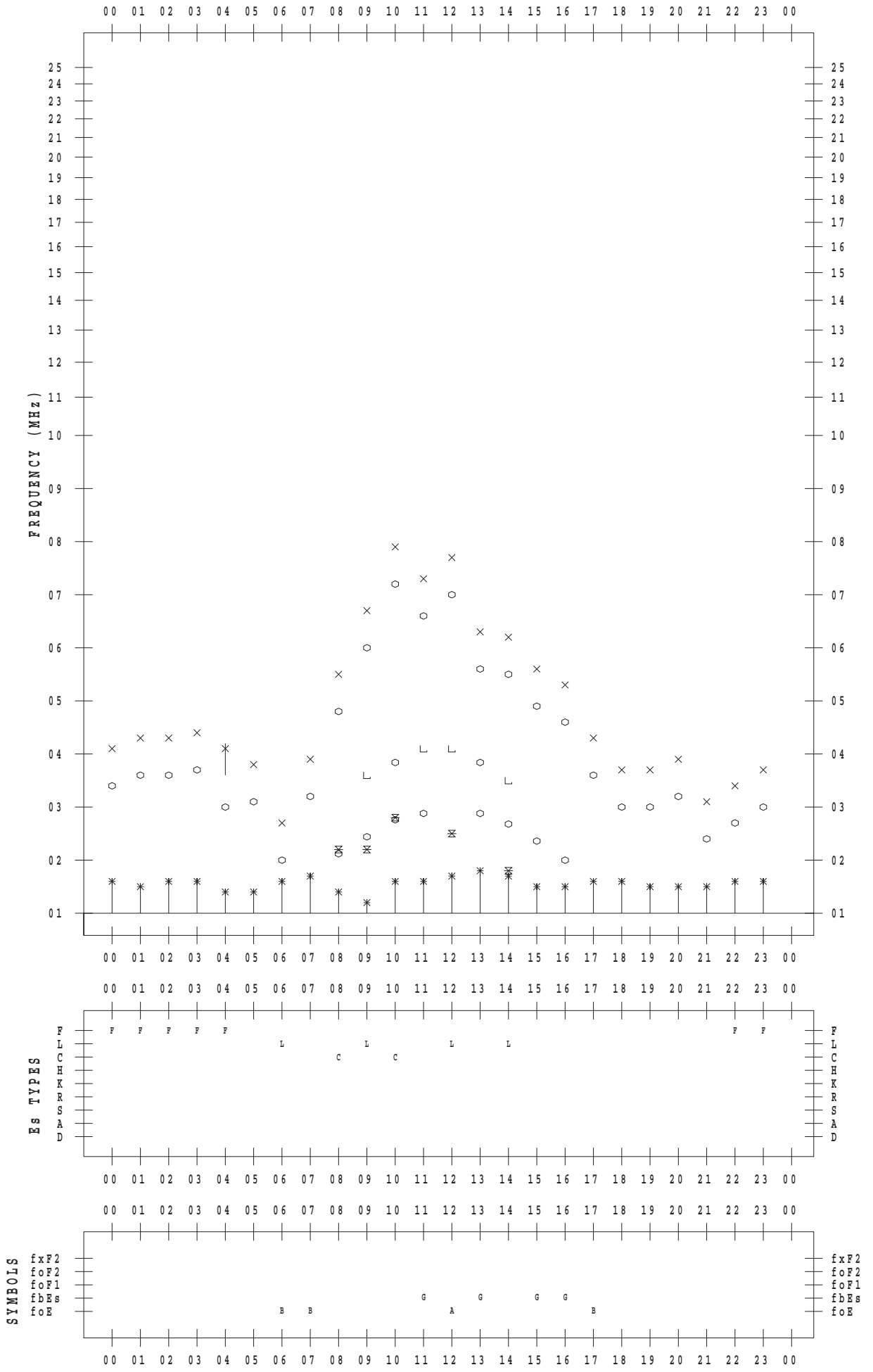
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/21

135 °E MEAN TIME



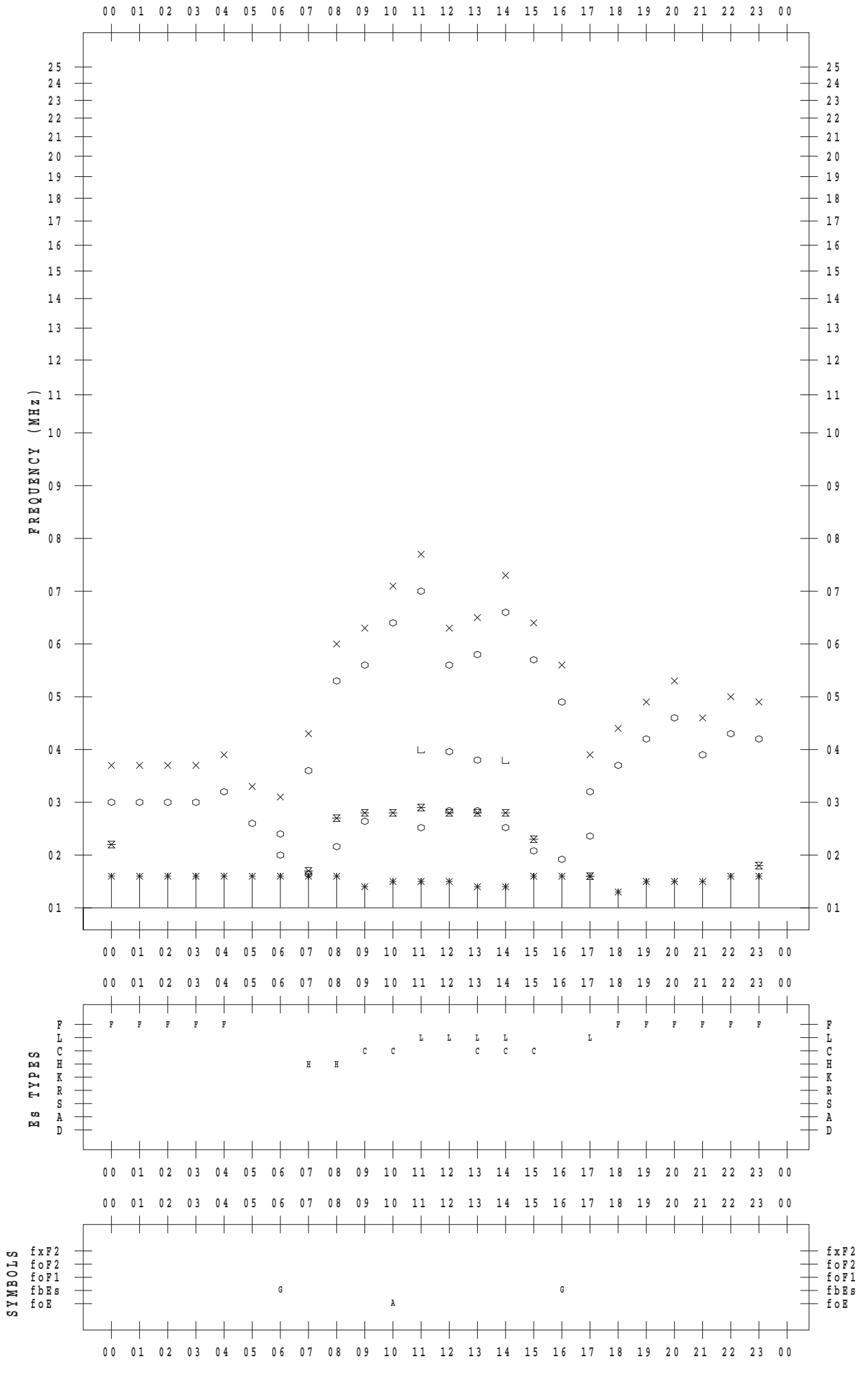
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/22

135 °E MEAN TIME



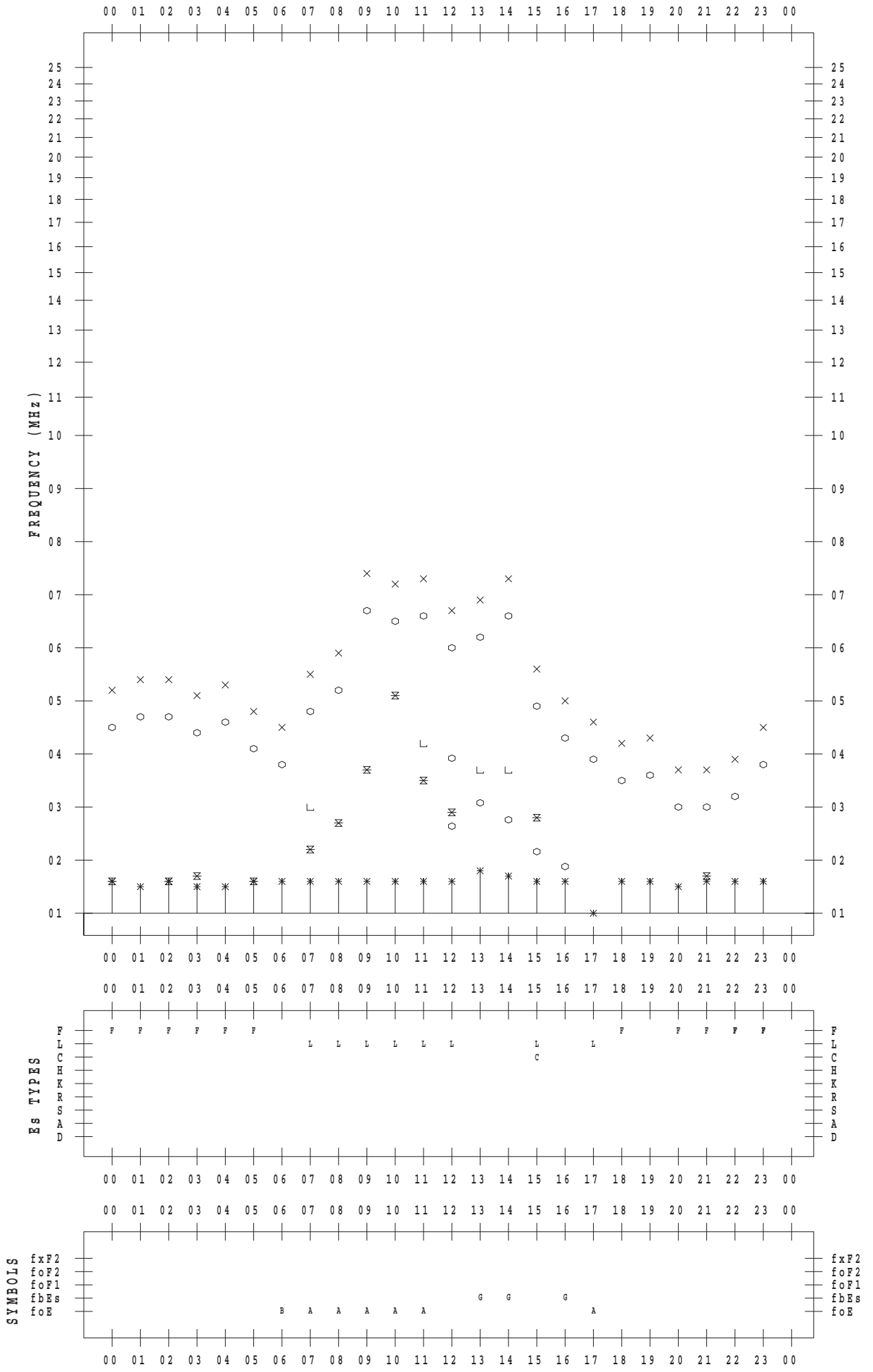
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/23

135 °E MEAN TIME



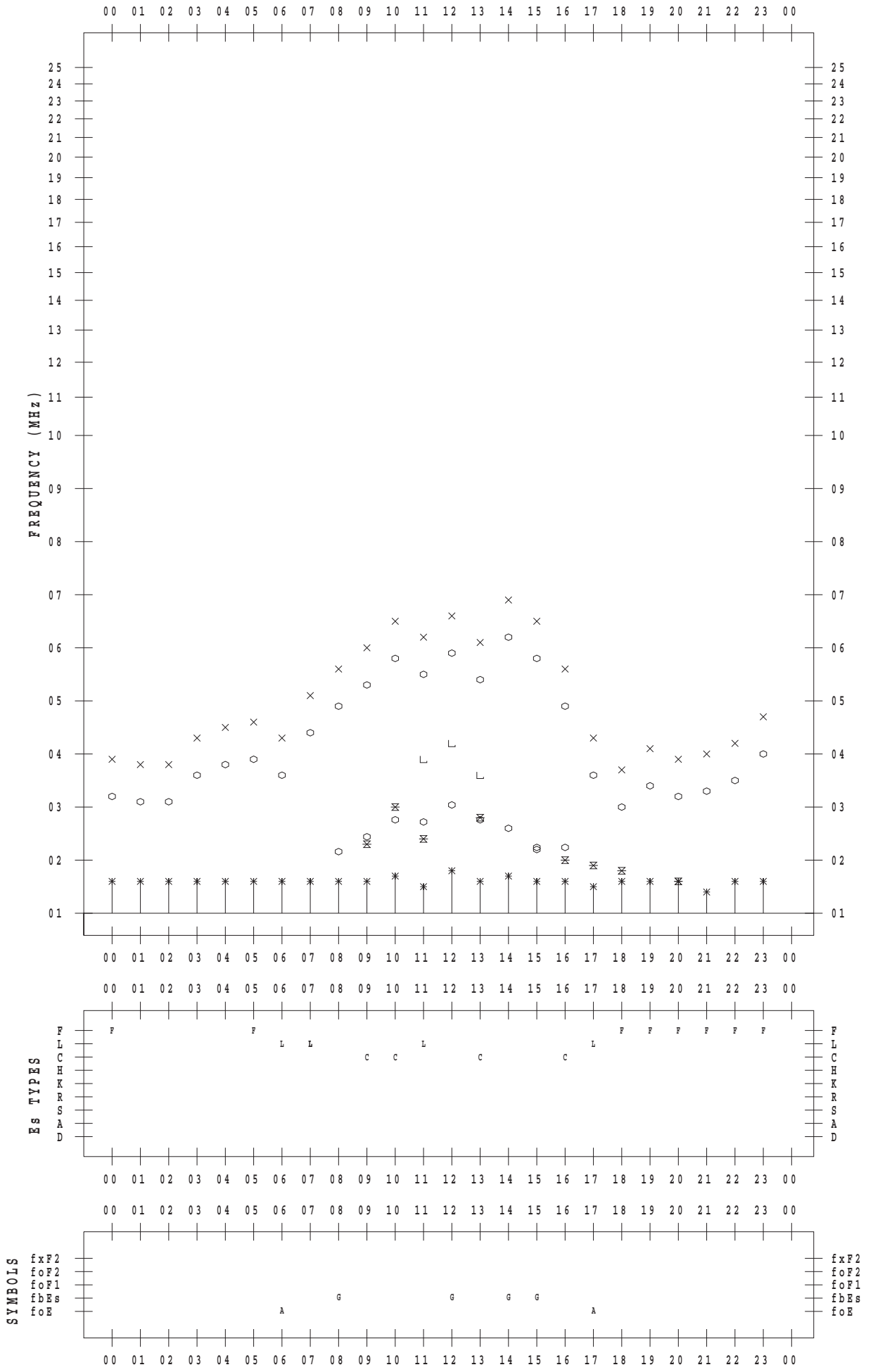
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/24

135 °E MEAN TIME



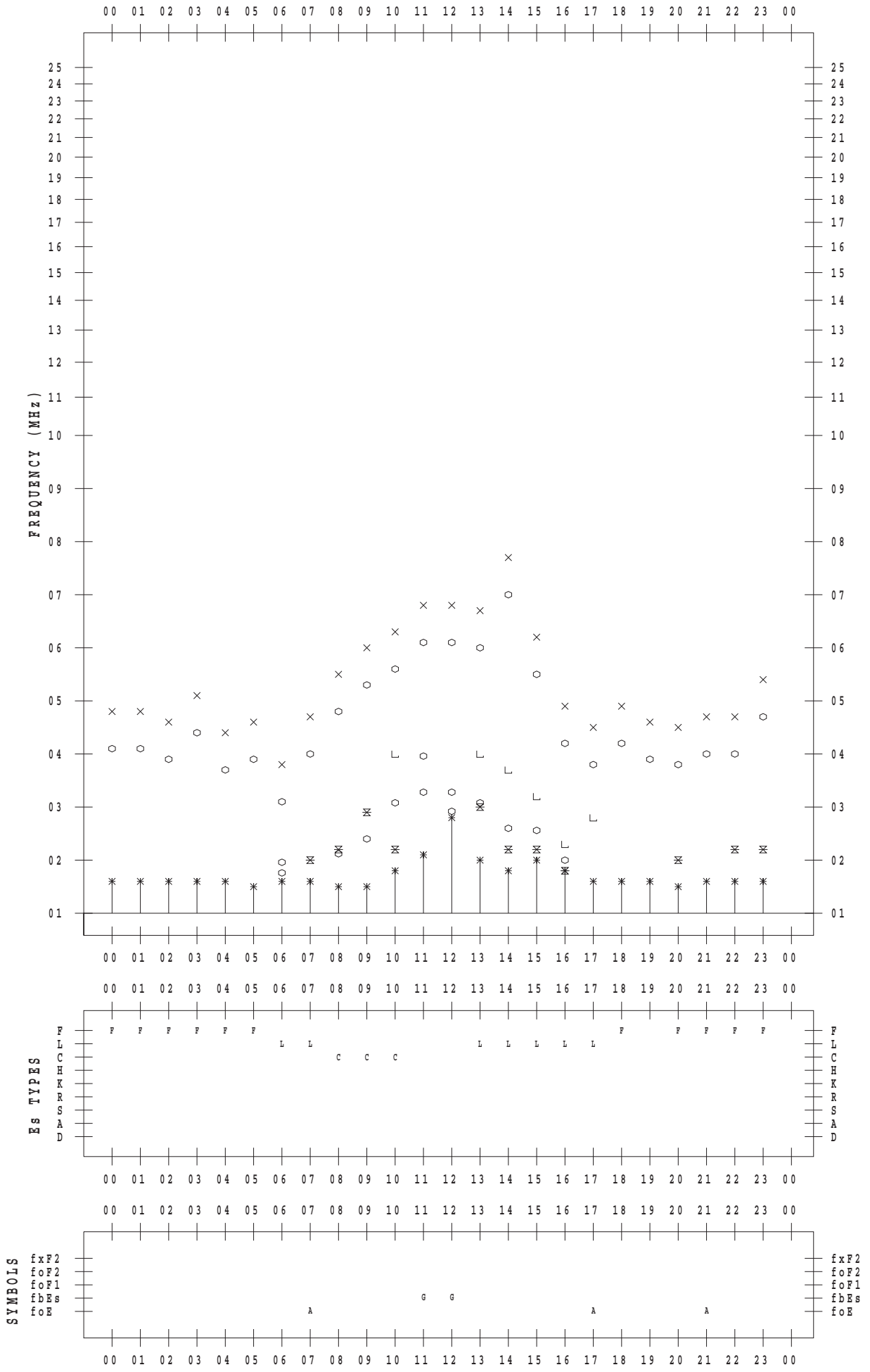
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/25

135 °E MEAN TIME



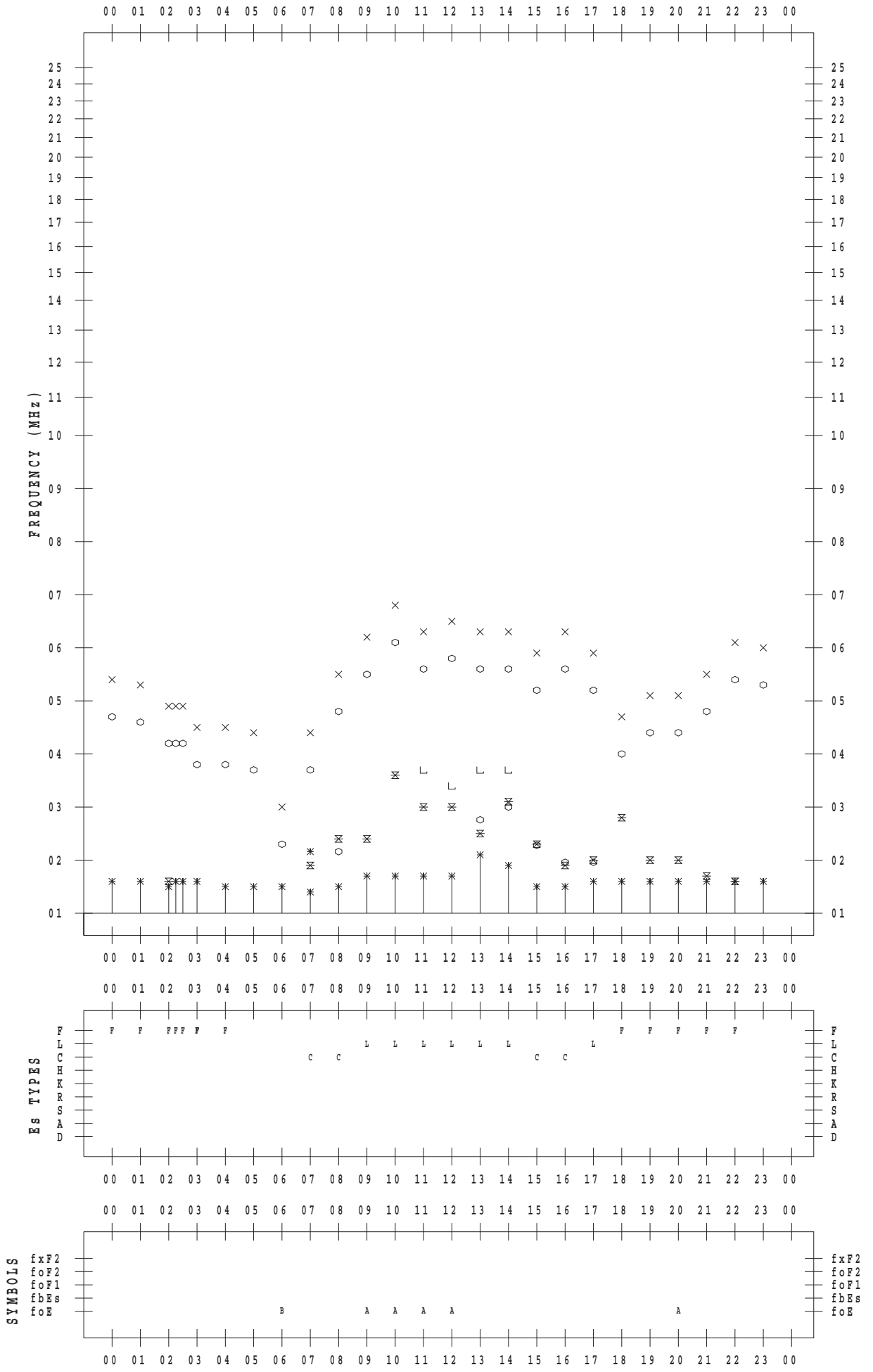
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/26

135 °E MEAN TIME



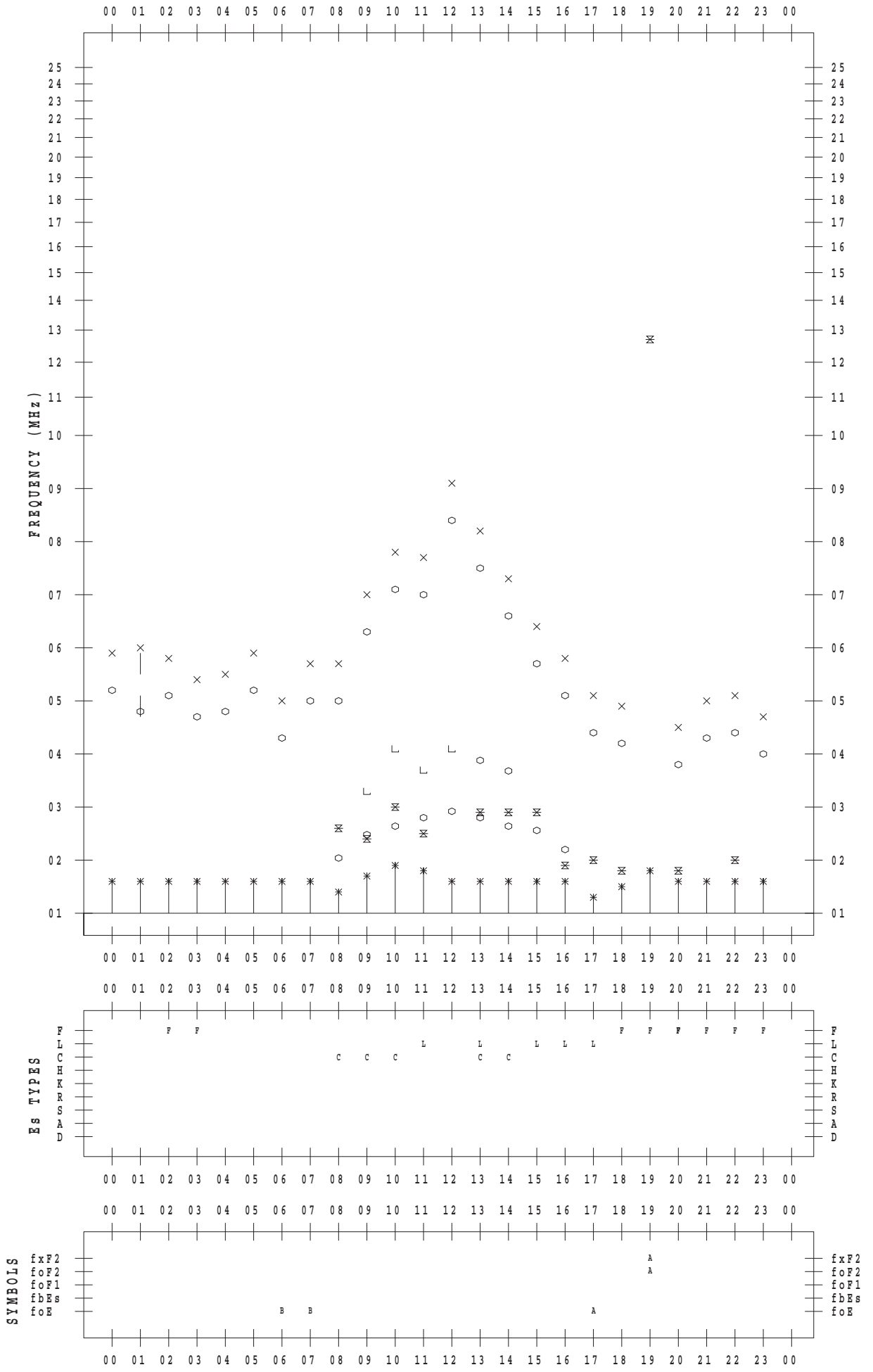
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/27

135 °E MEAN TIME



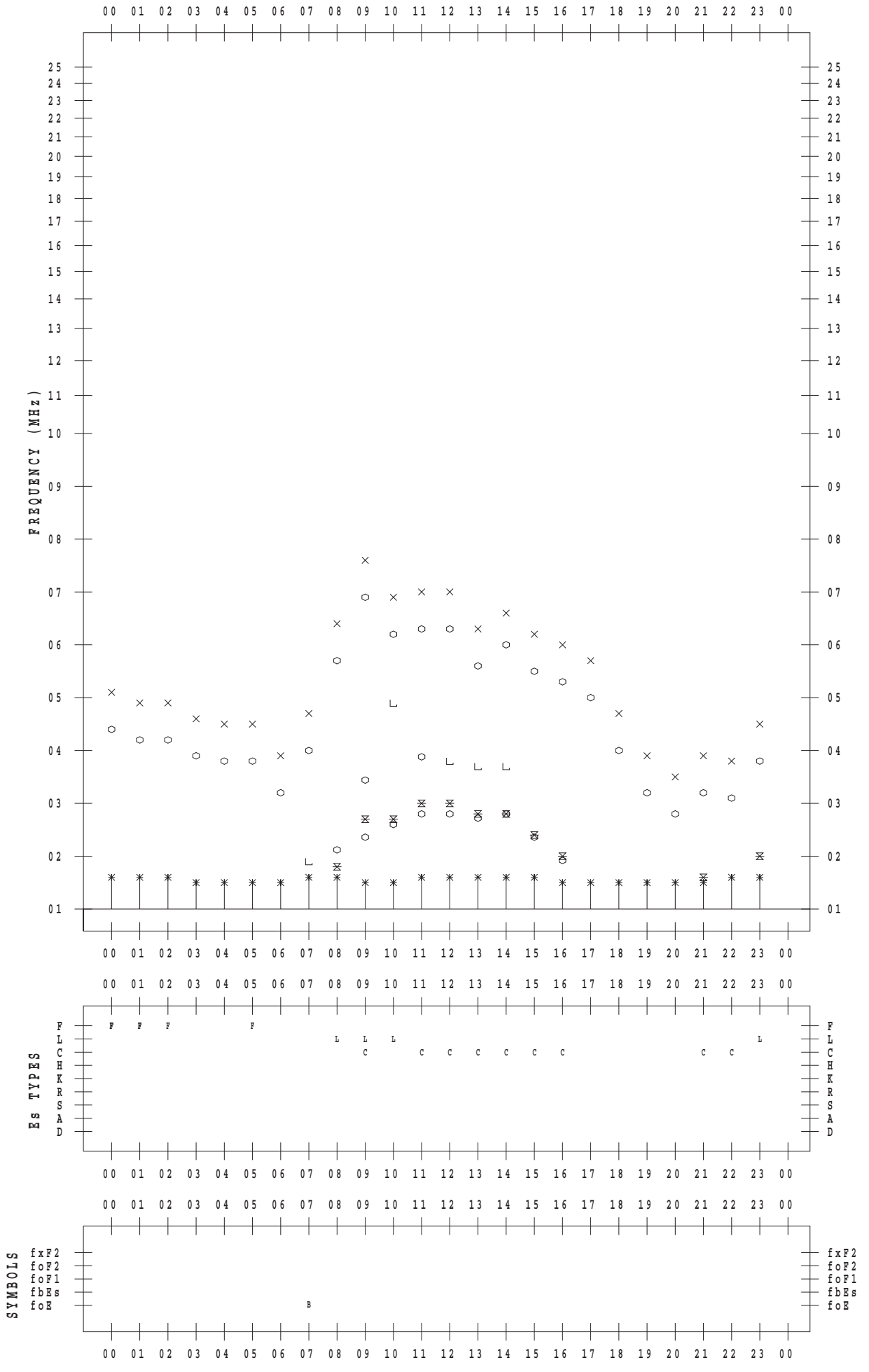
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/28

135 °E MEAN TIME



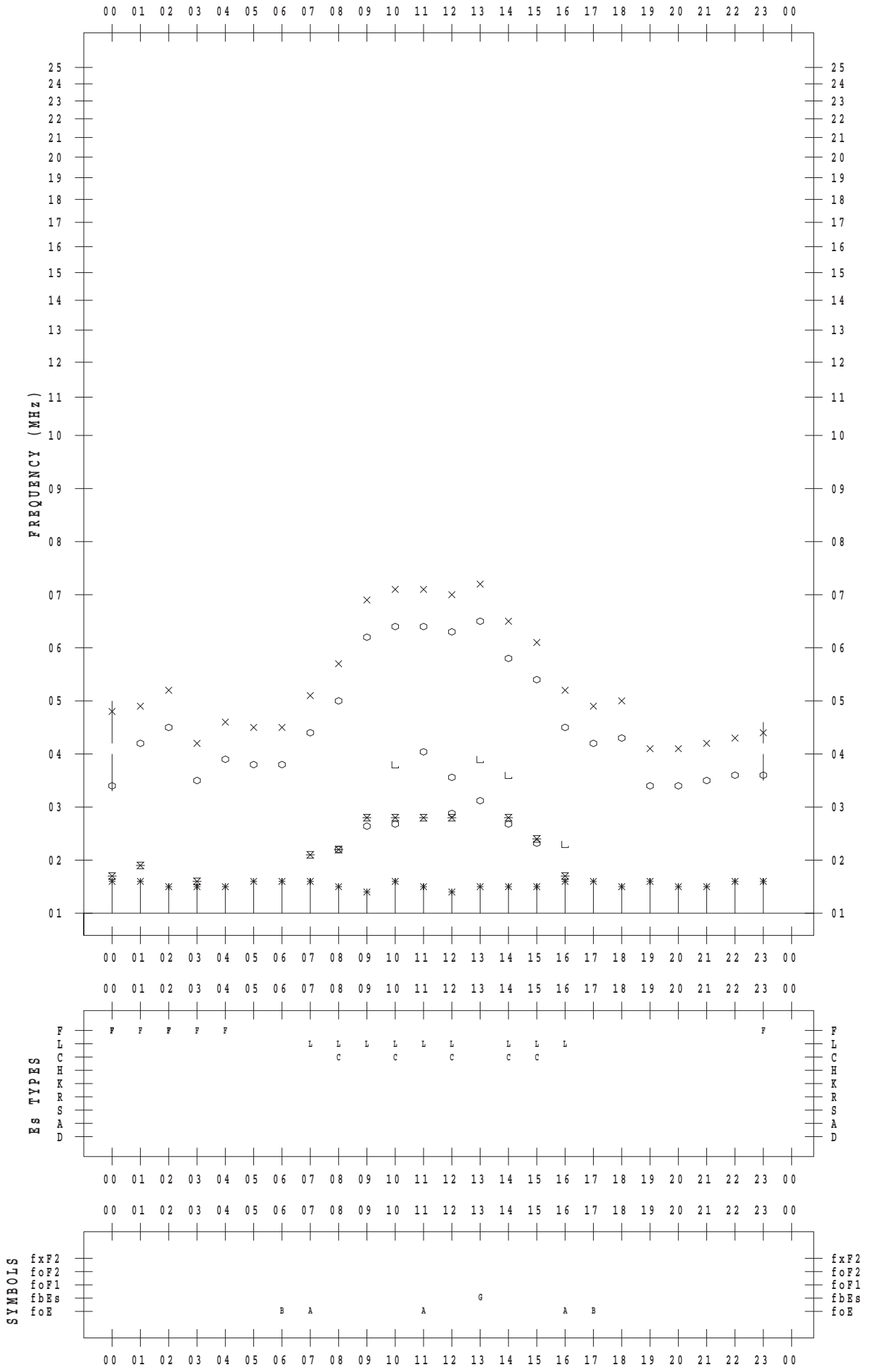
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/29

135 °E MEAN TIME



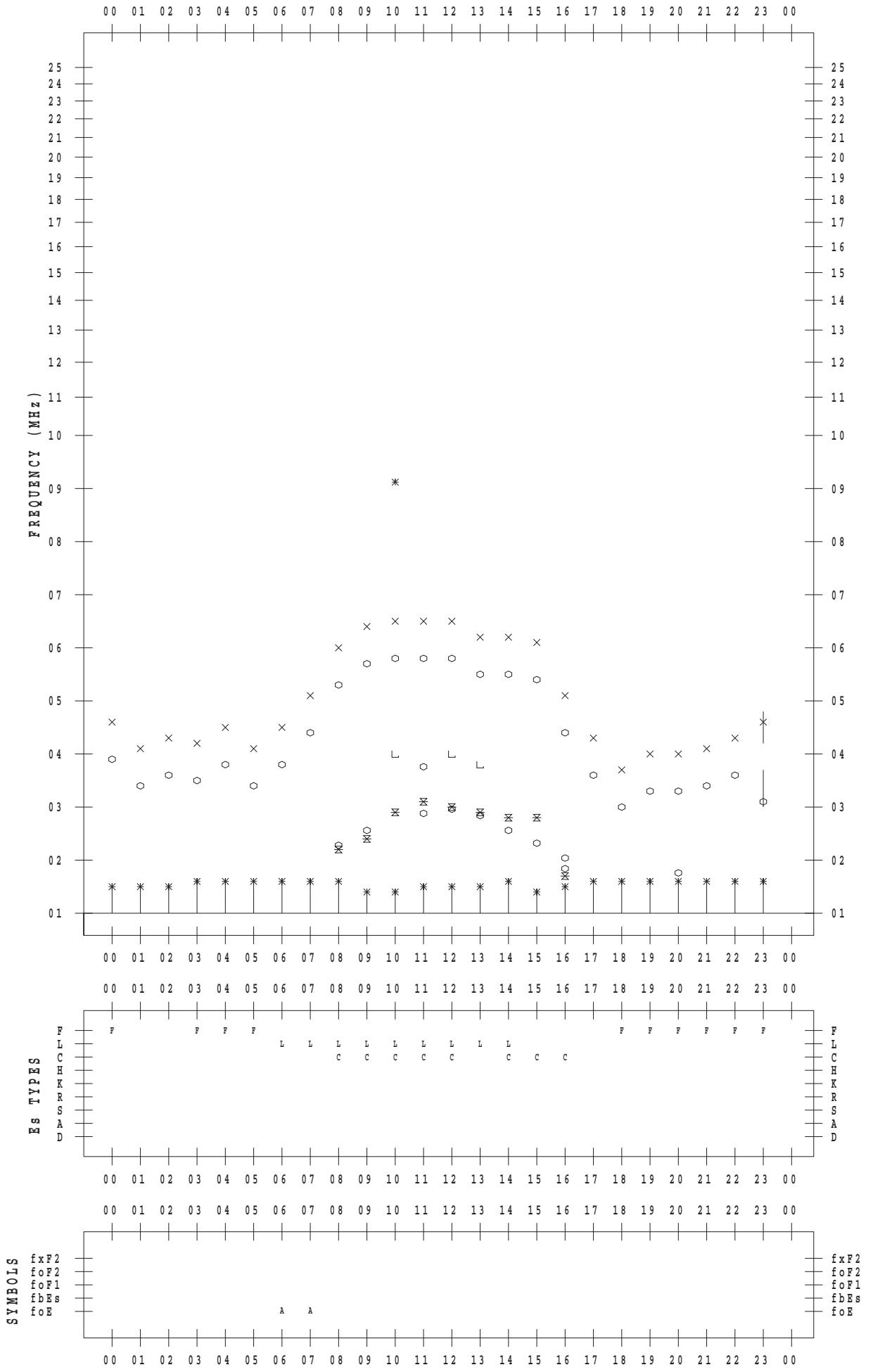
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/30

135 °E MEAN TIME



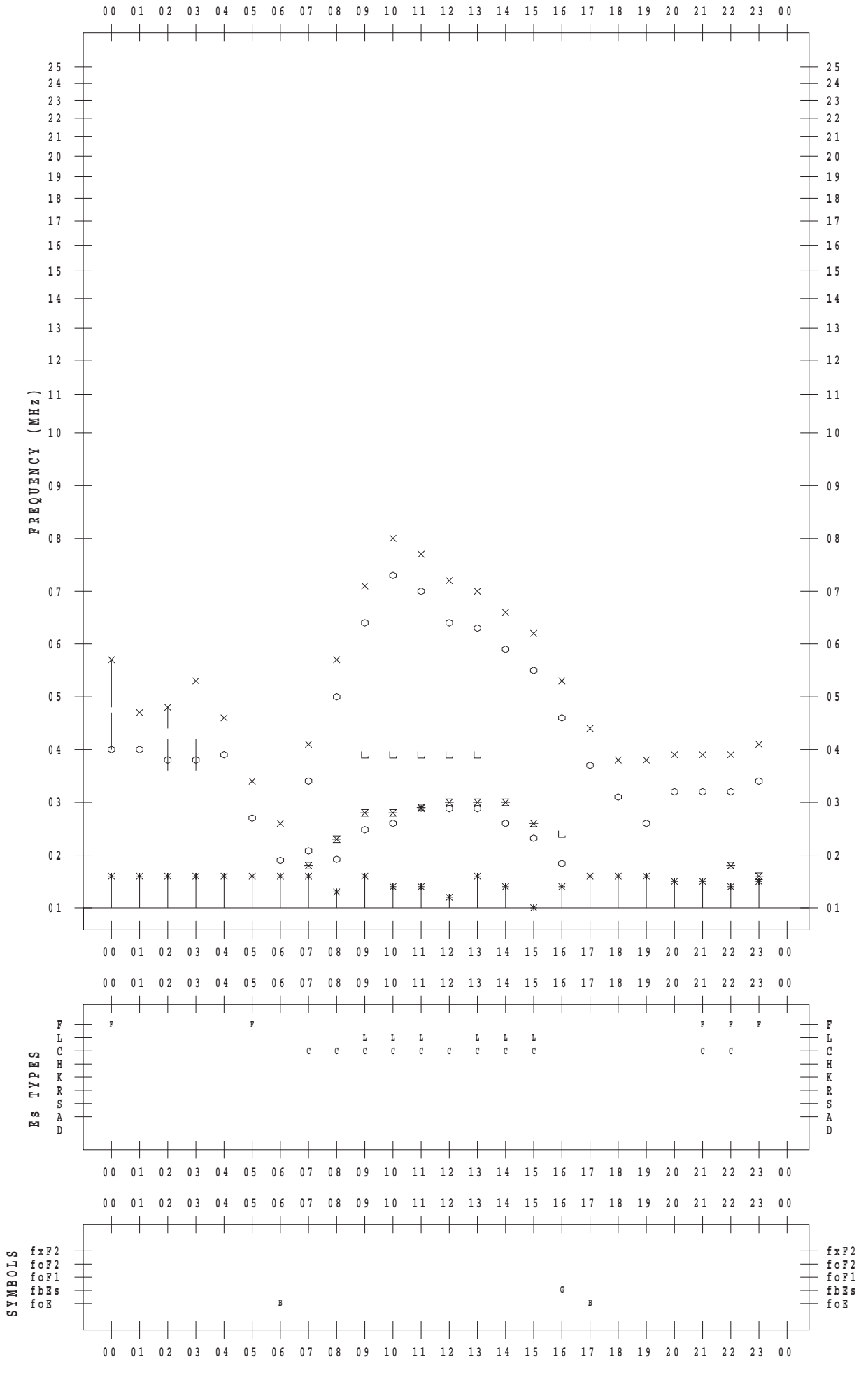
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2017/ 1/31

135 °E MEAN TIME



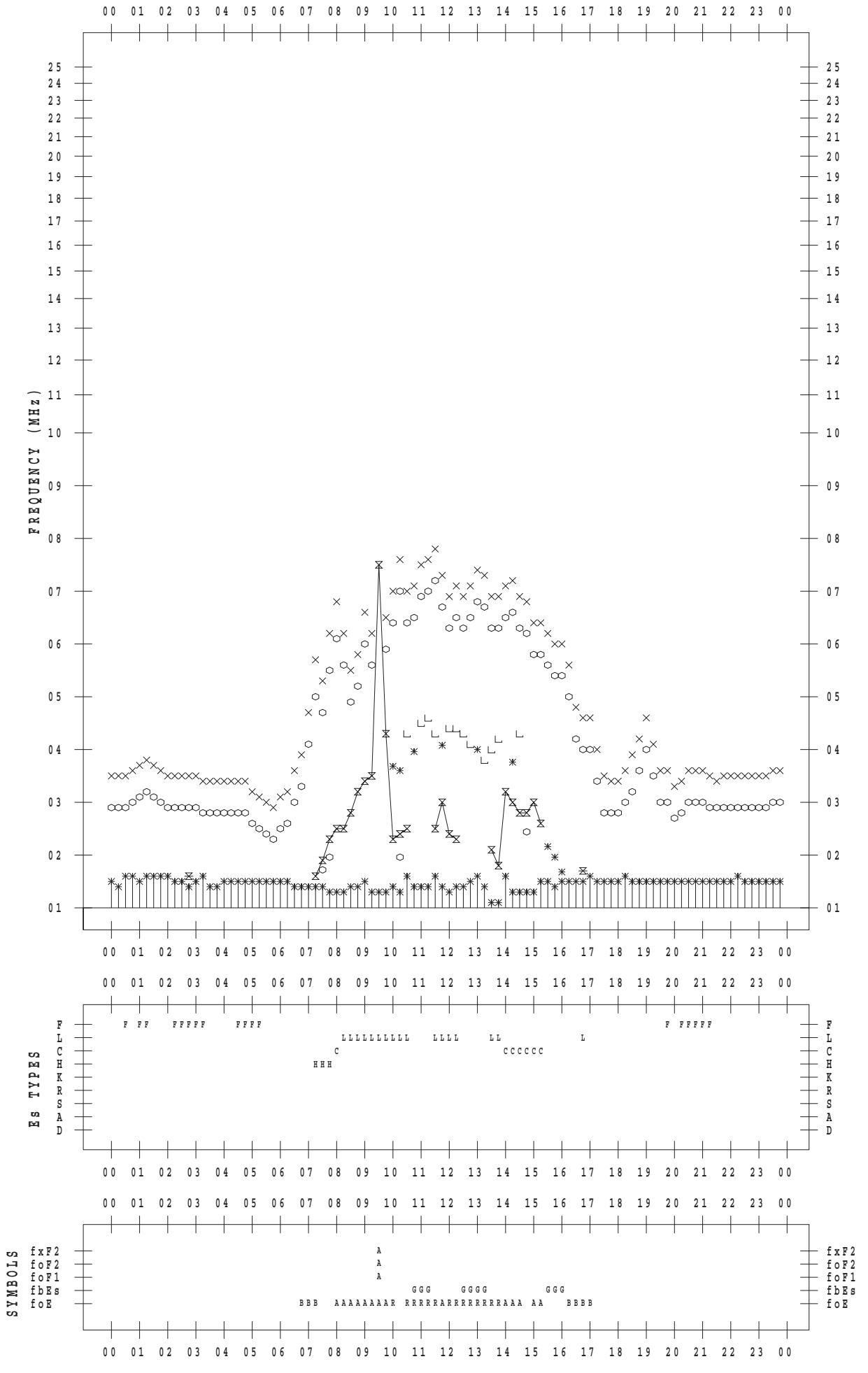
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 1

135 °E MEAN TIME



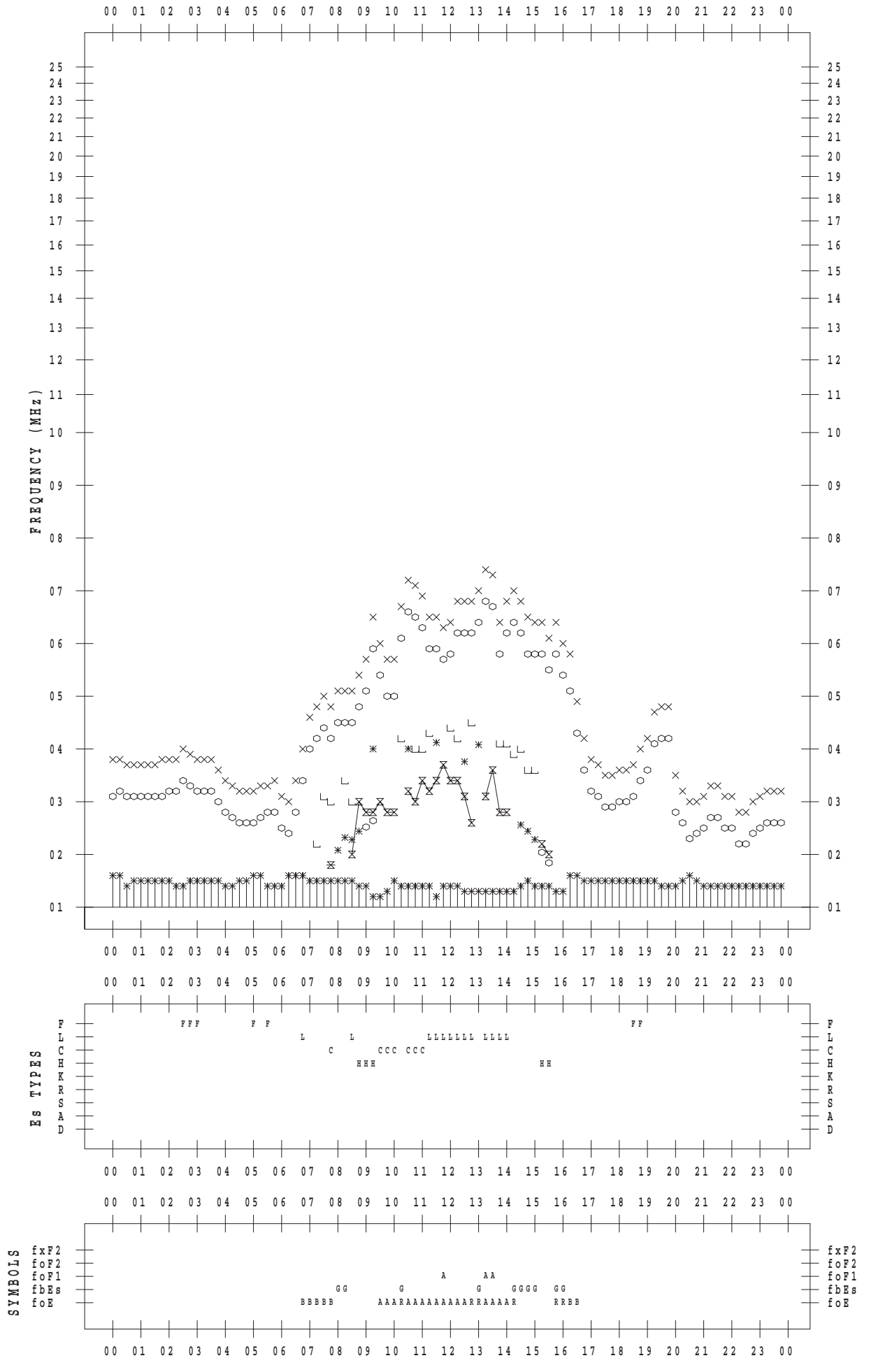
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 2

135 °E MEAN TIME



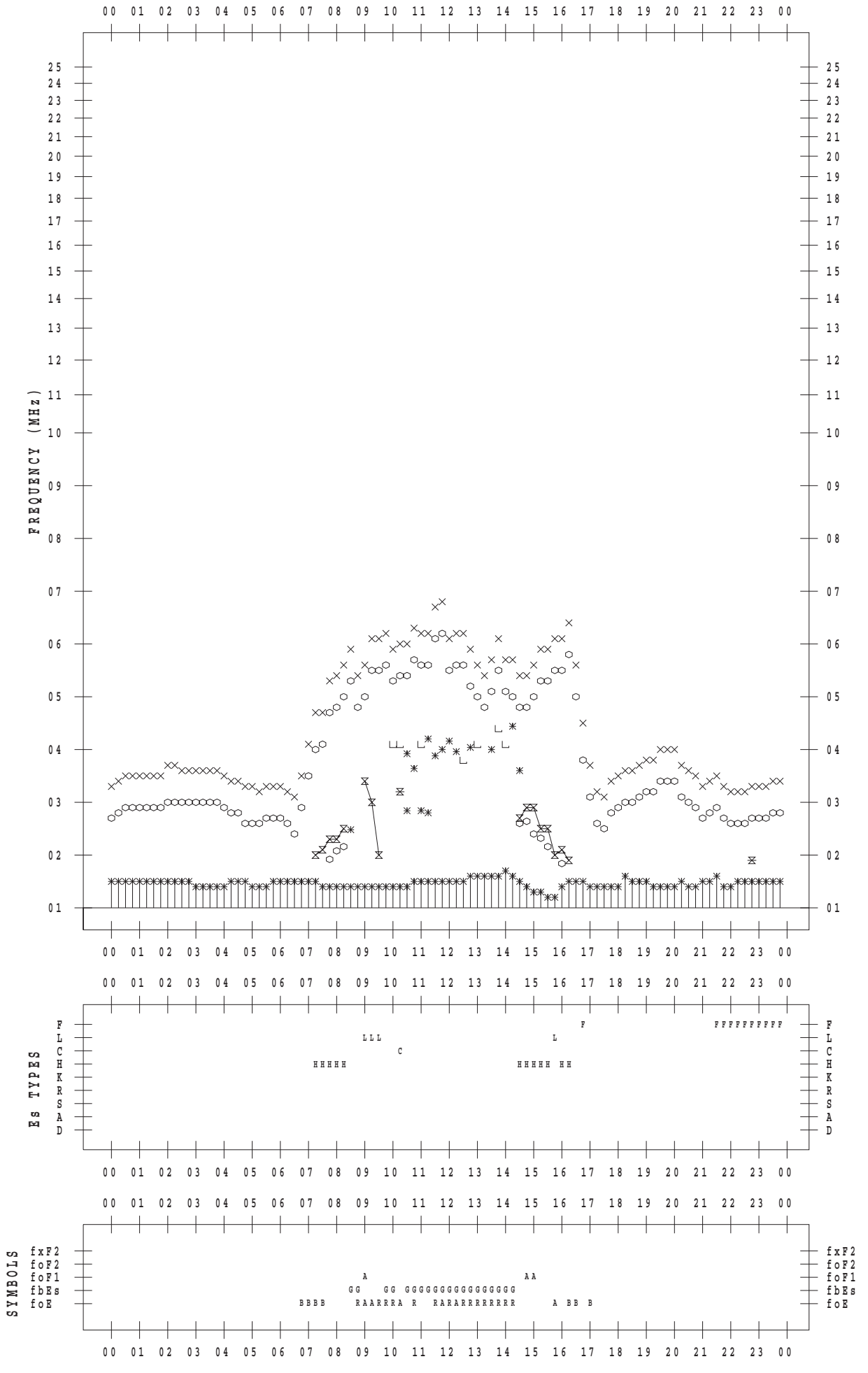
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 3

135 °E MEAN TIME



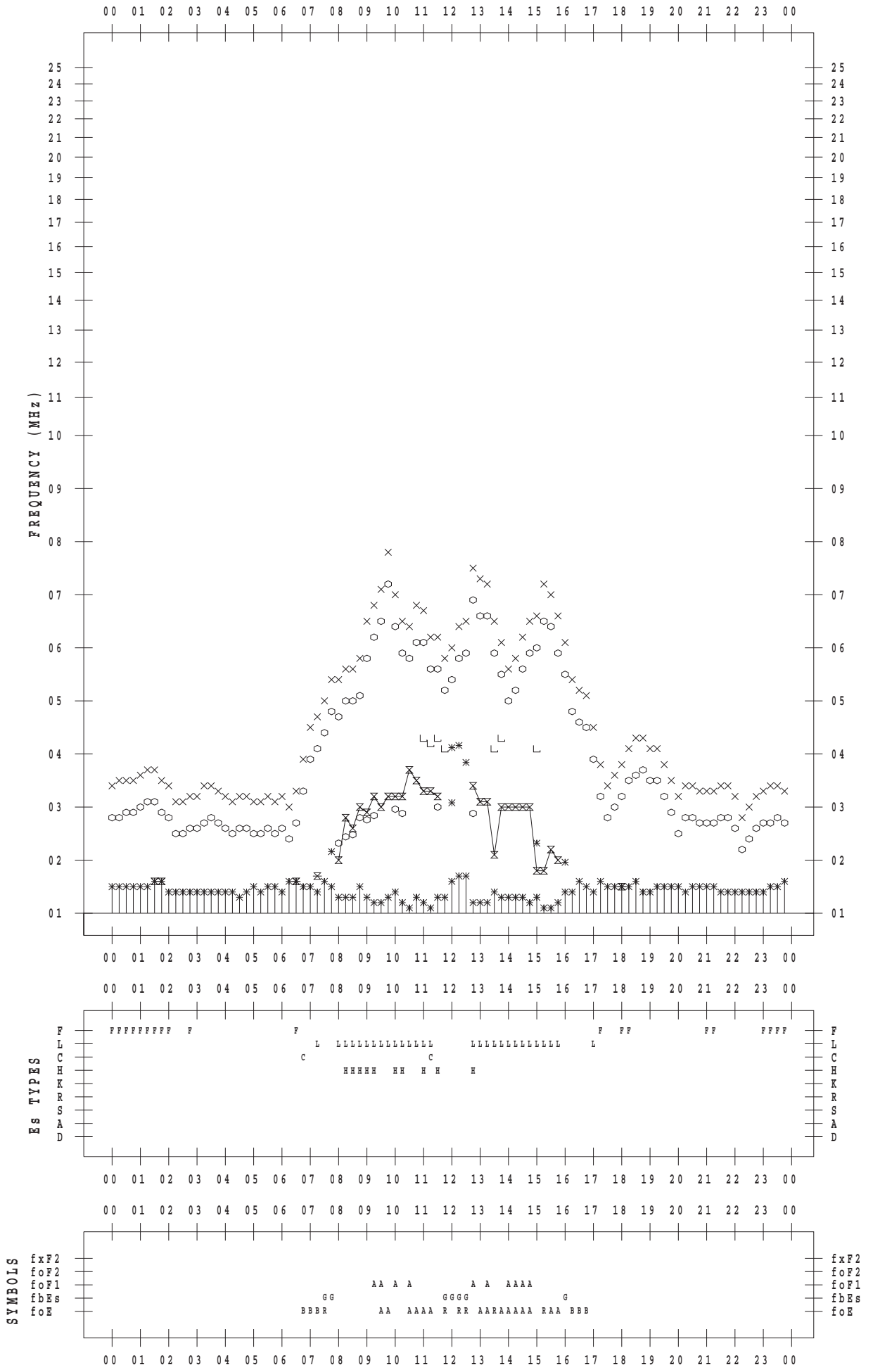
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 4

135 °E MEAN TIME



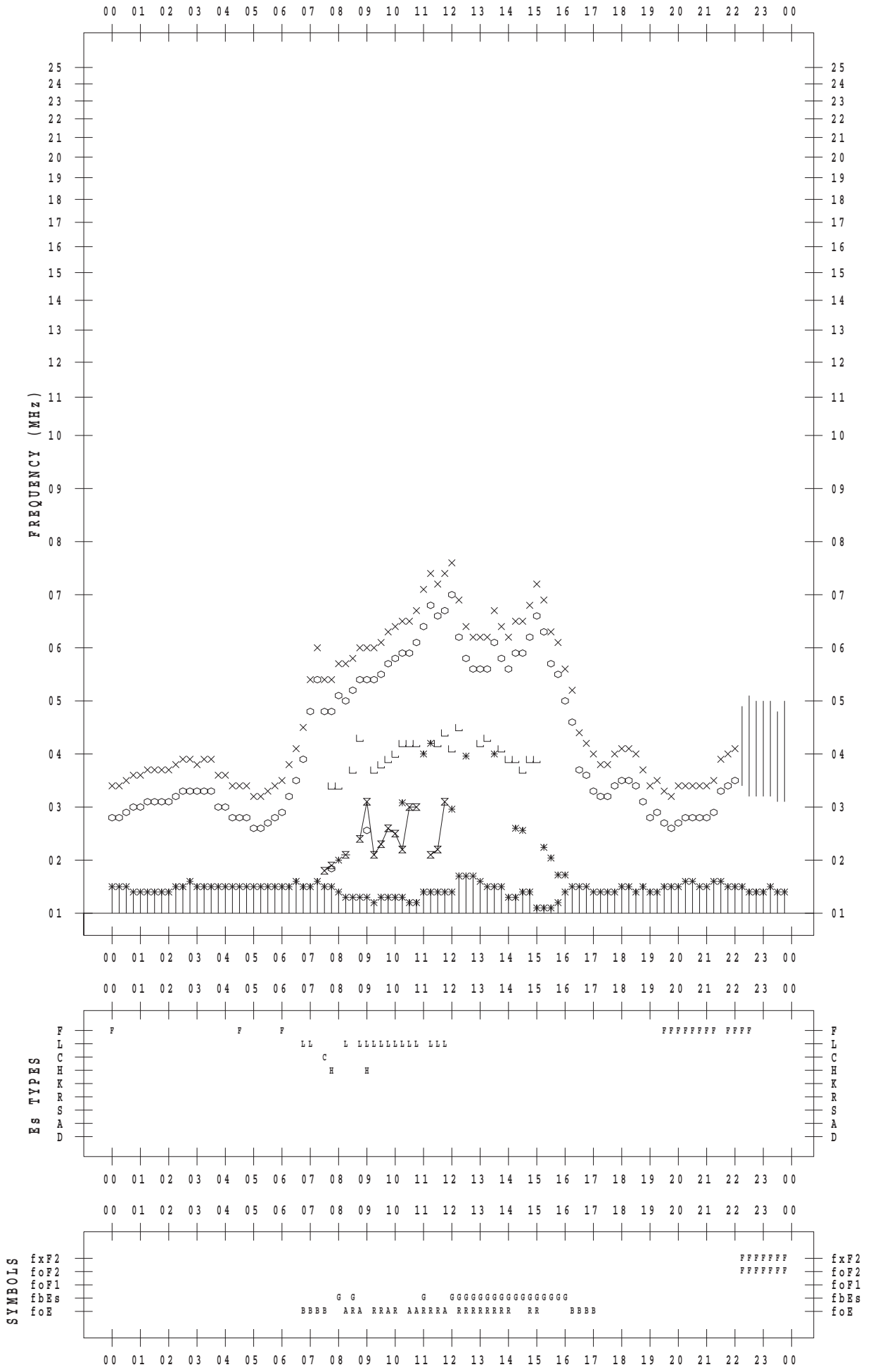
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 5

135 °E MEAN TIME



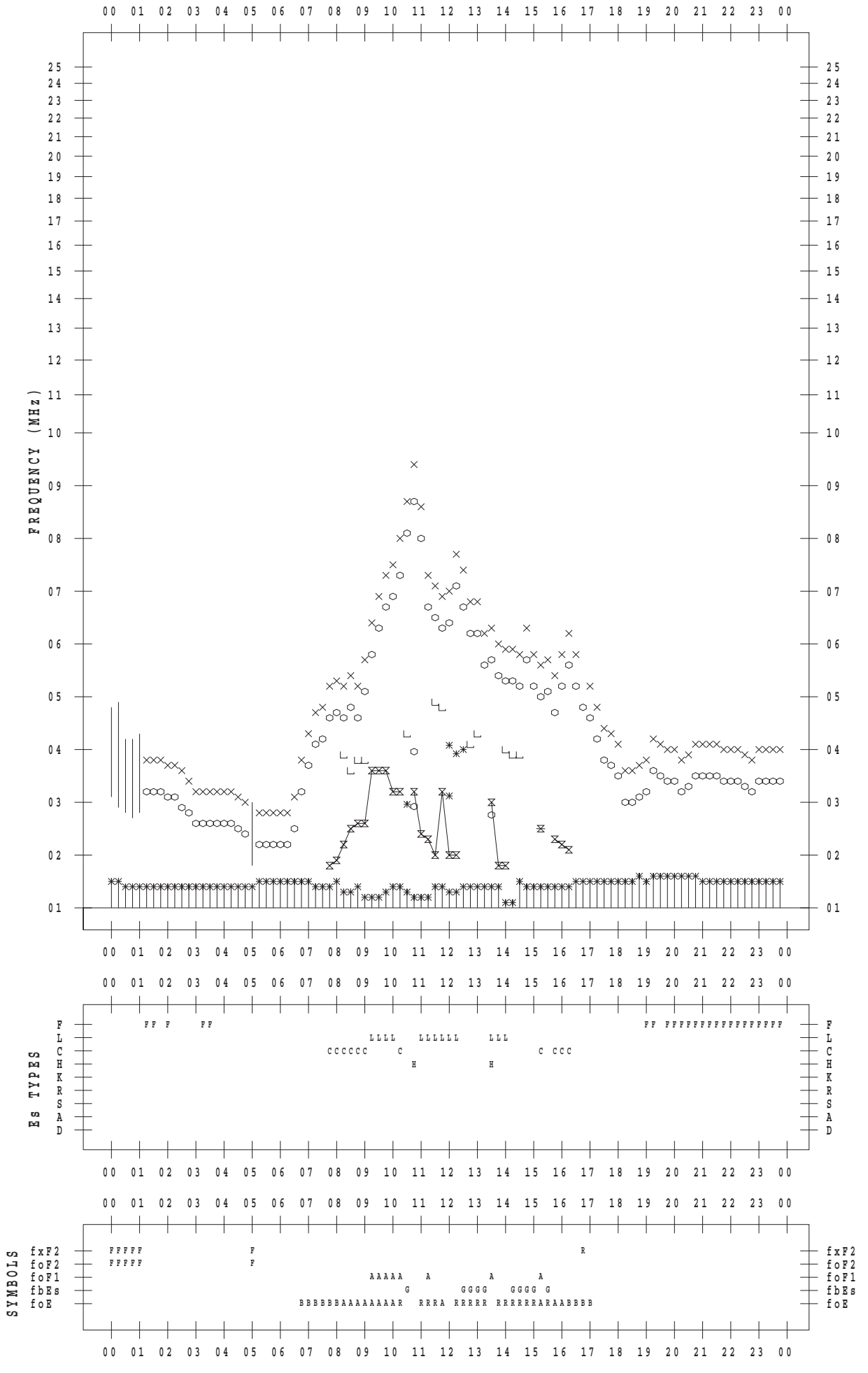
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 6

135 °E MEAN TIME



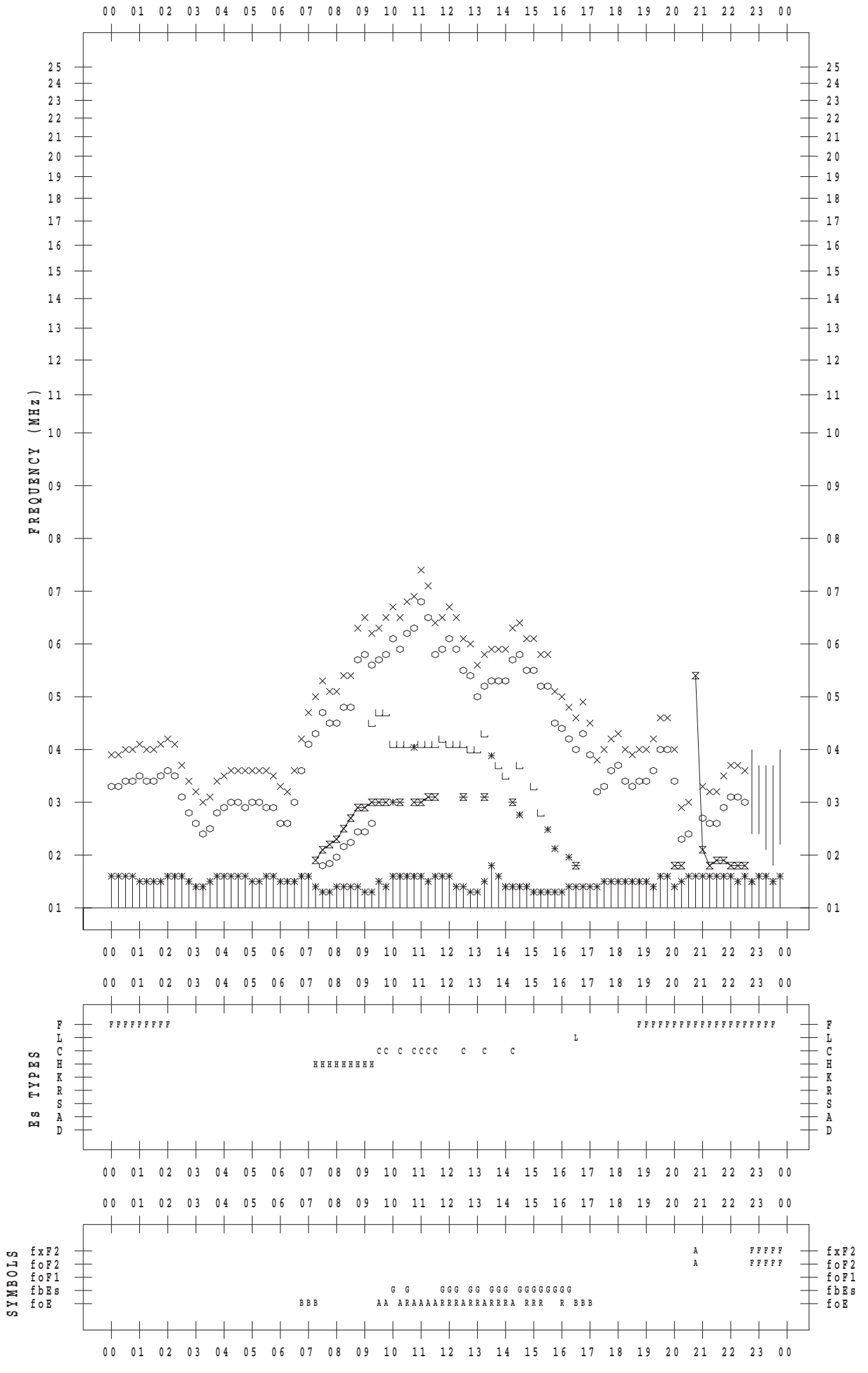
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 7

135 °E MEAN TIME



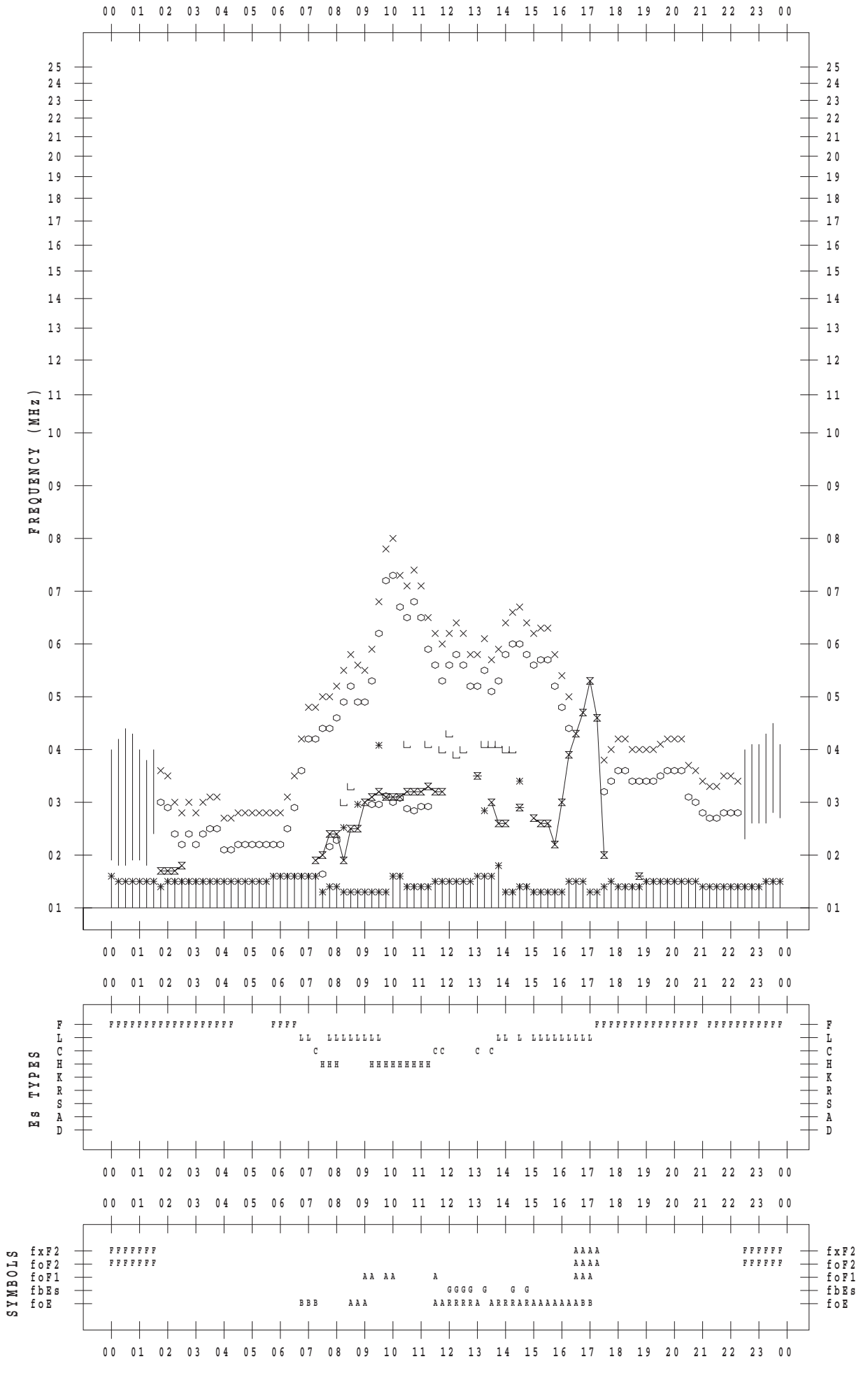
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 8

135 °E MEAN TIME



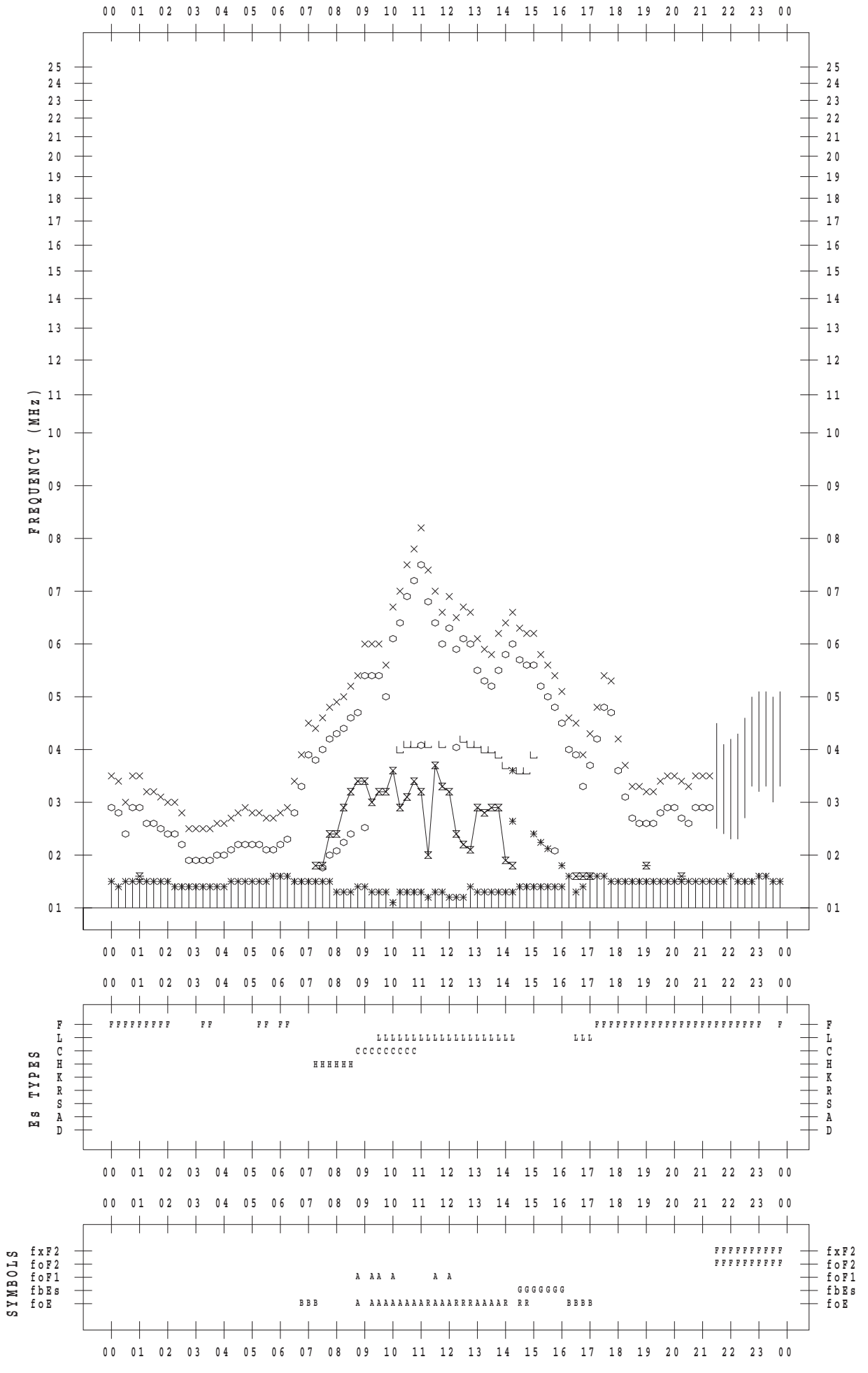
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/ 9

135 °E MEAN TIME



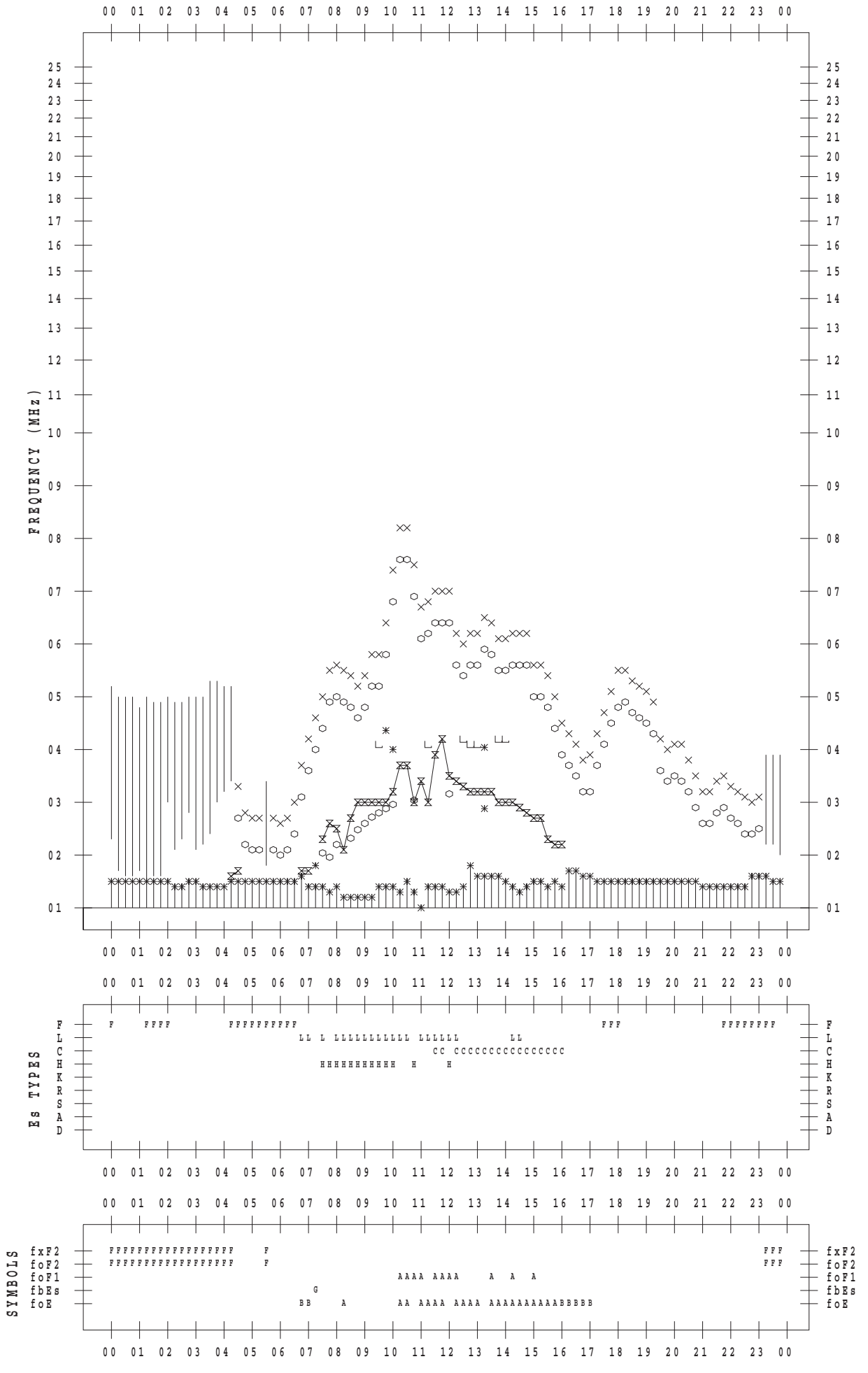
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/10

135 °E MEAN TIME



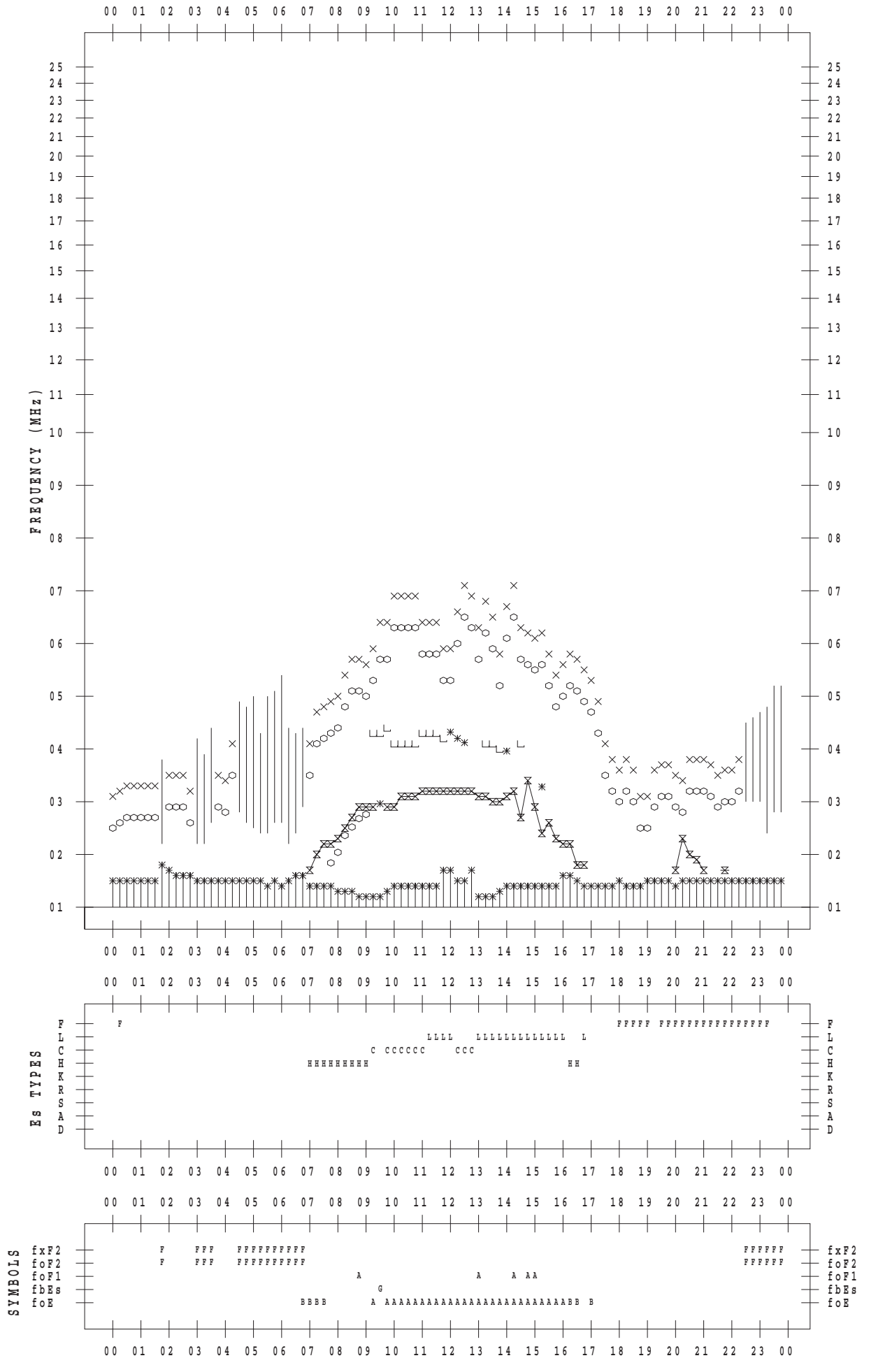
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/11

135 °E MEAN TIME



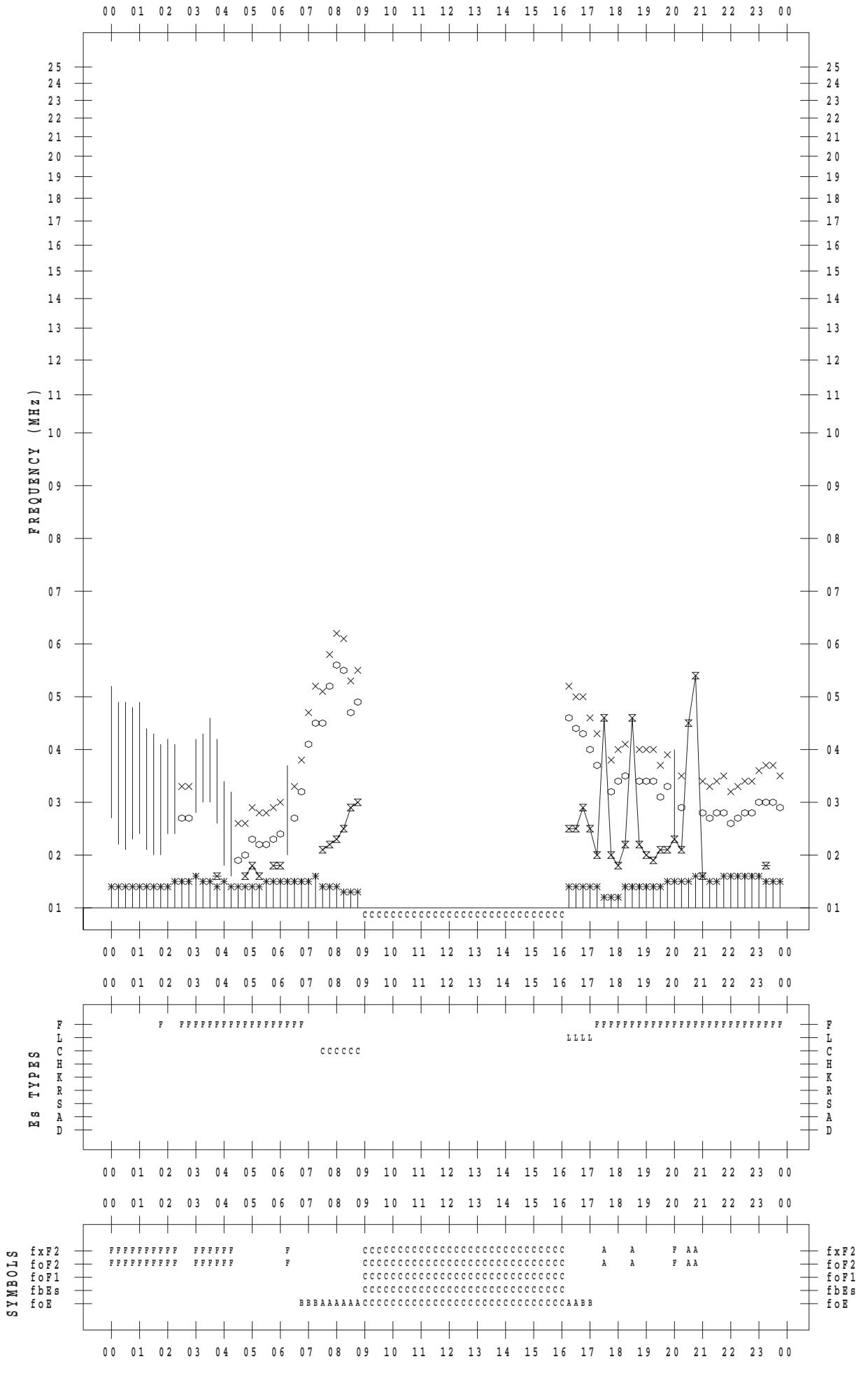
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/12

135 °E MEAN TIME



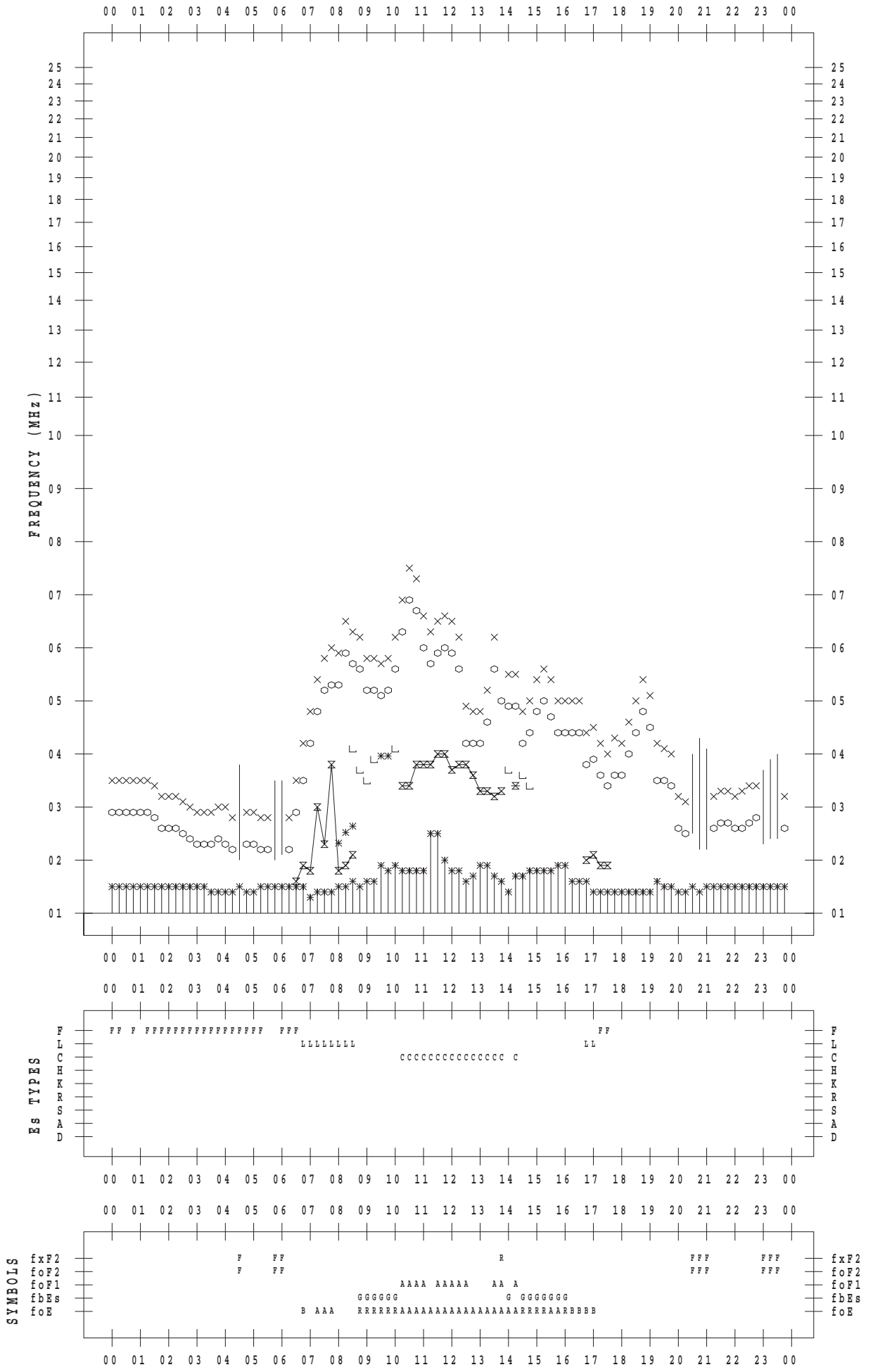
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/13

135 °E MEAN TIME



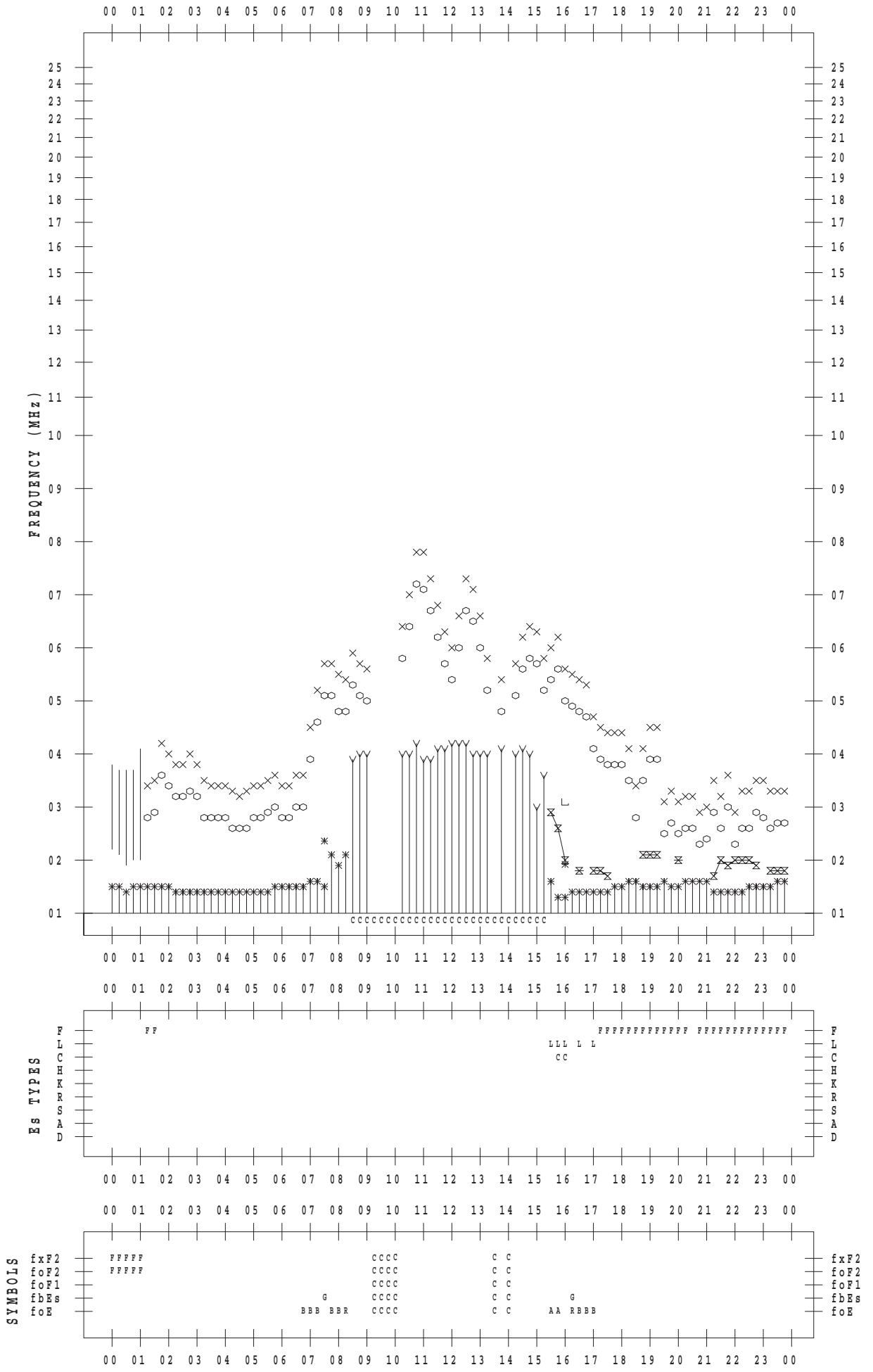
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/14

135 °E MEAN TIME



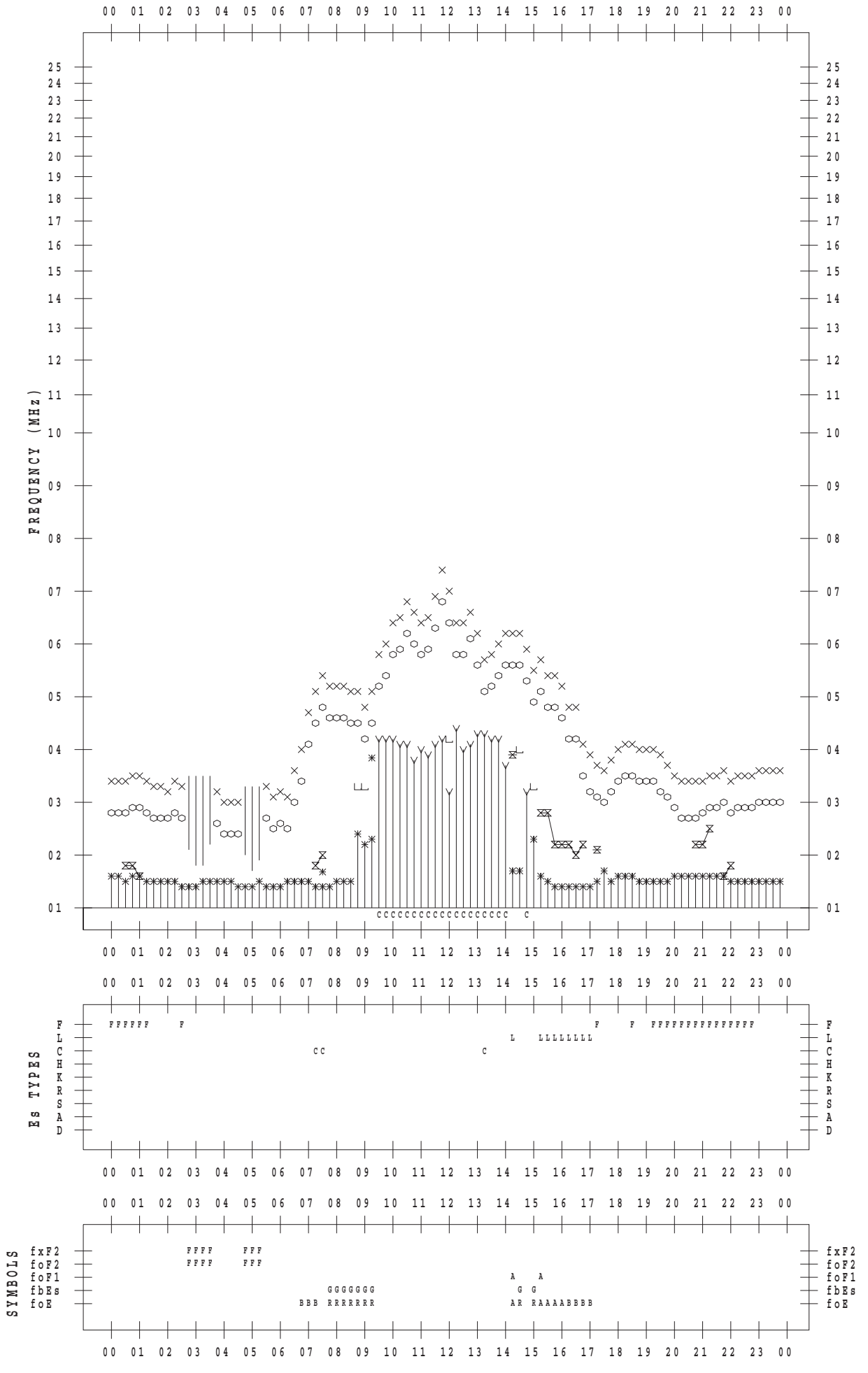
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/15

135 °E MEAN TIME



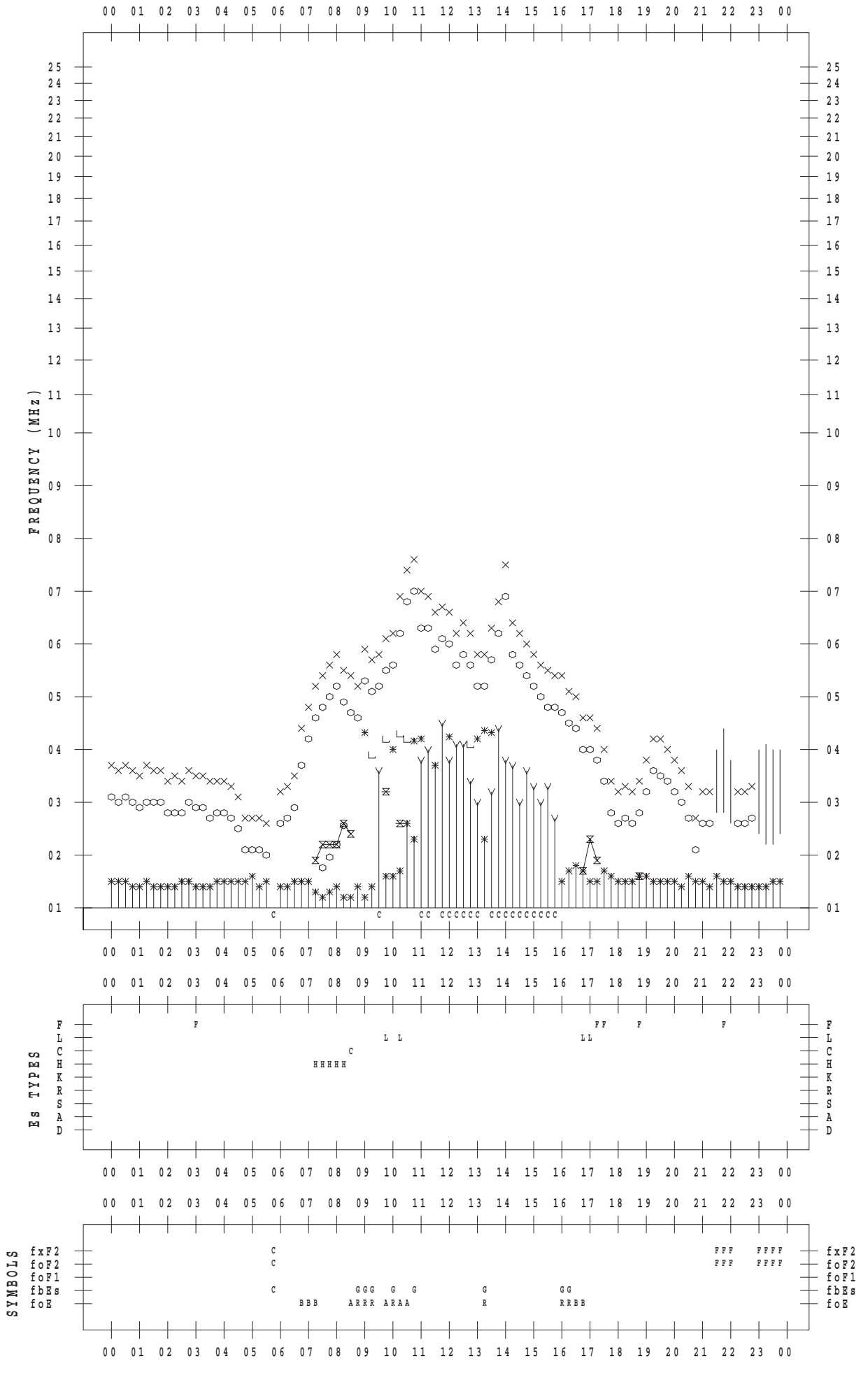
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/16

135 °E MEAN TIME



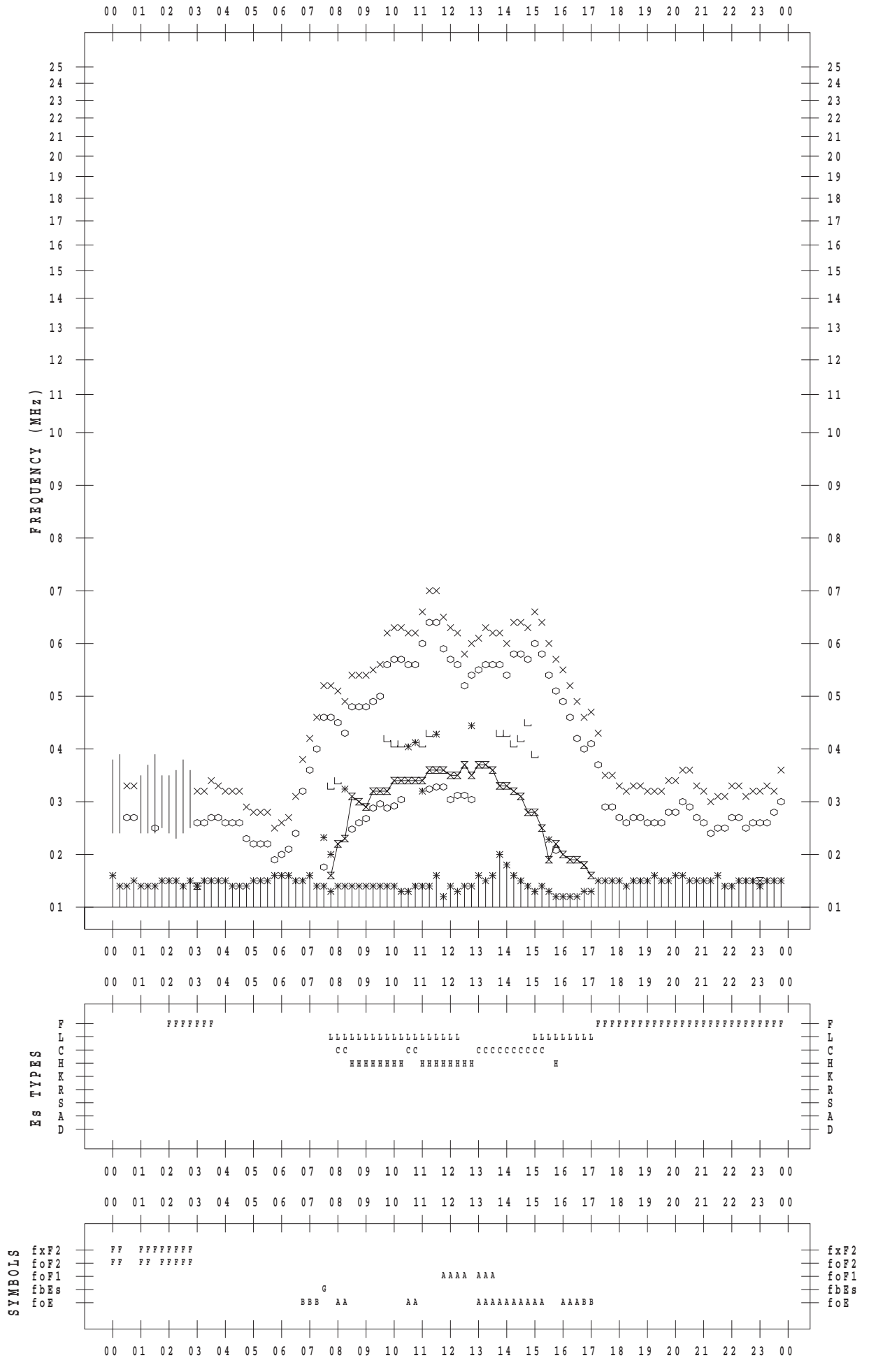
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/17

135 °E MEAN TIME



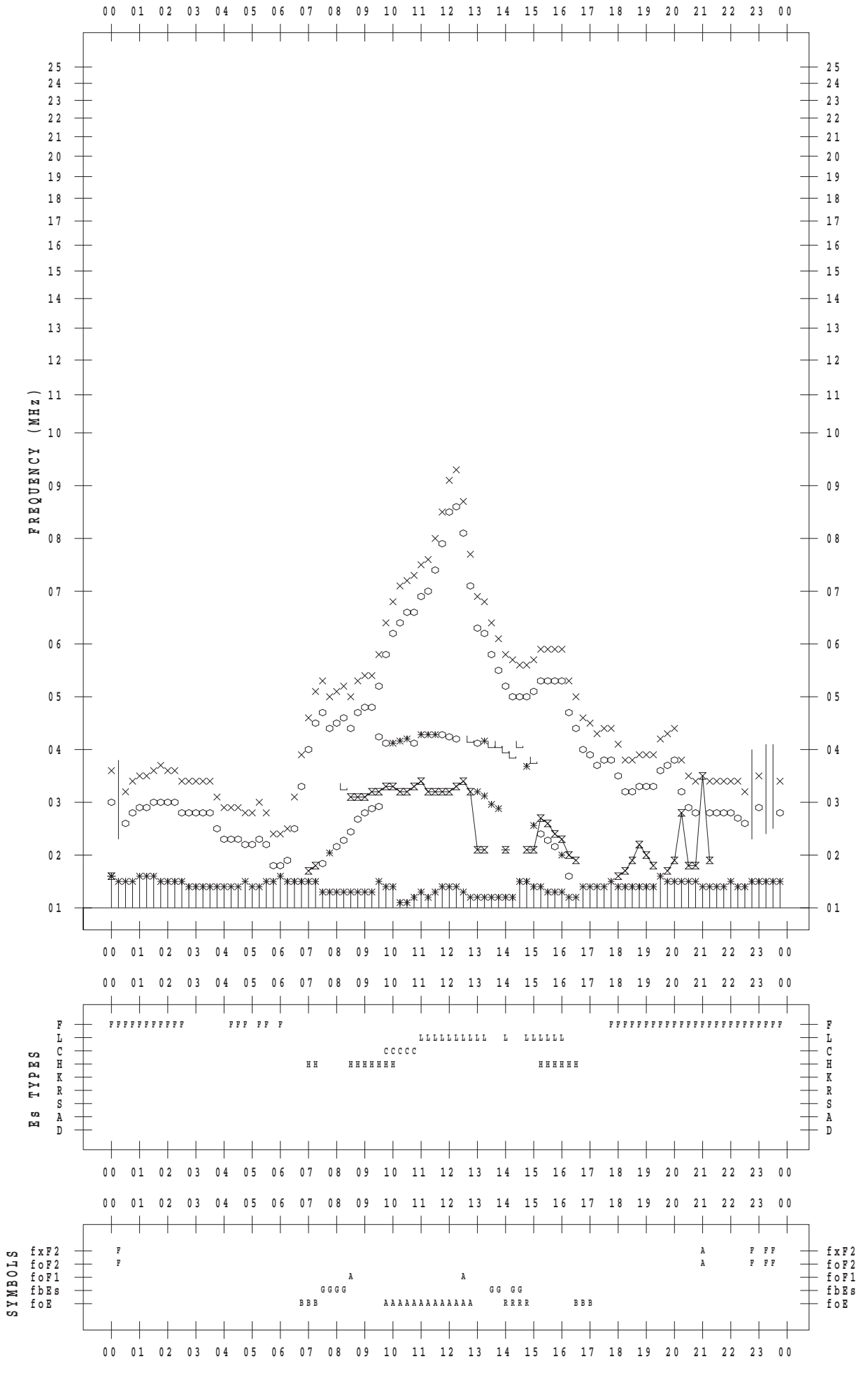
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/18

135 °E MEAN TIME



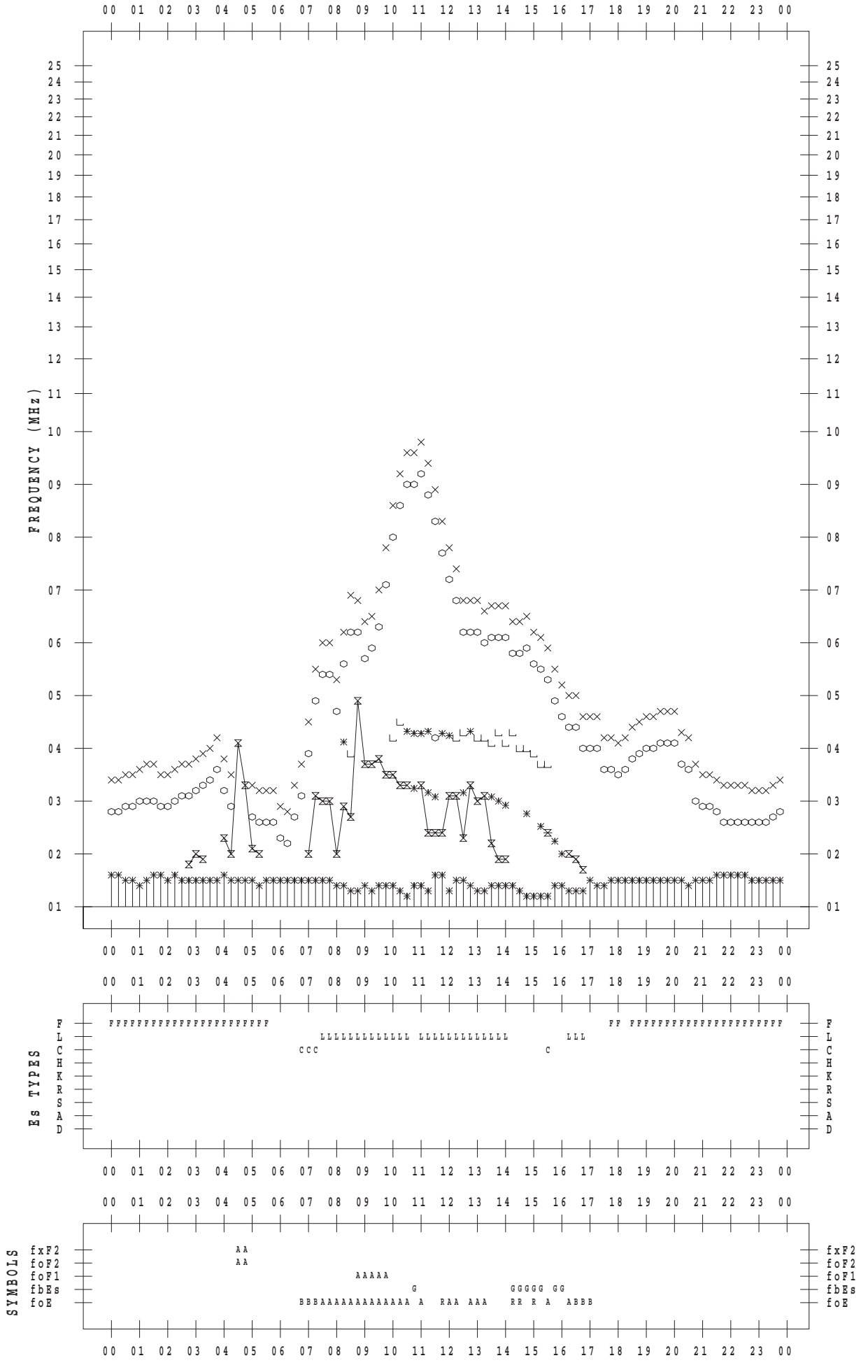
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/19

135 °E MEAN TIME



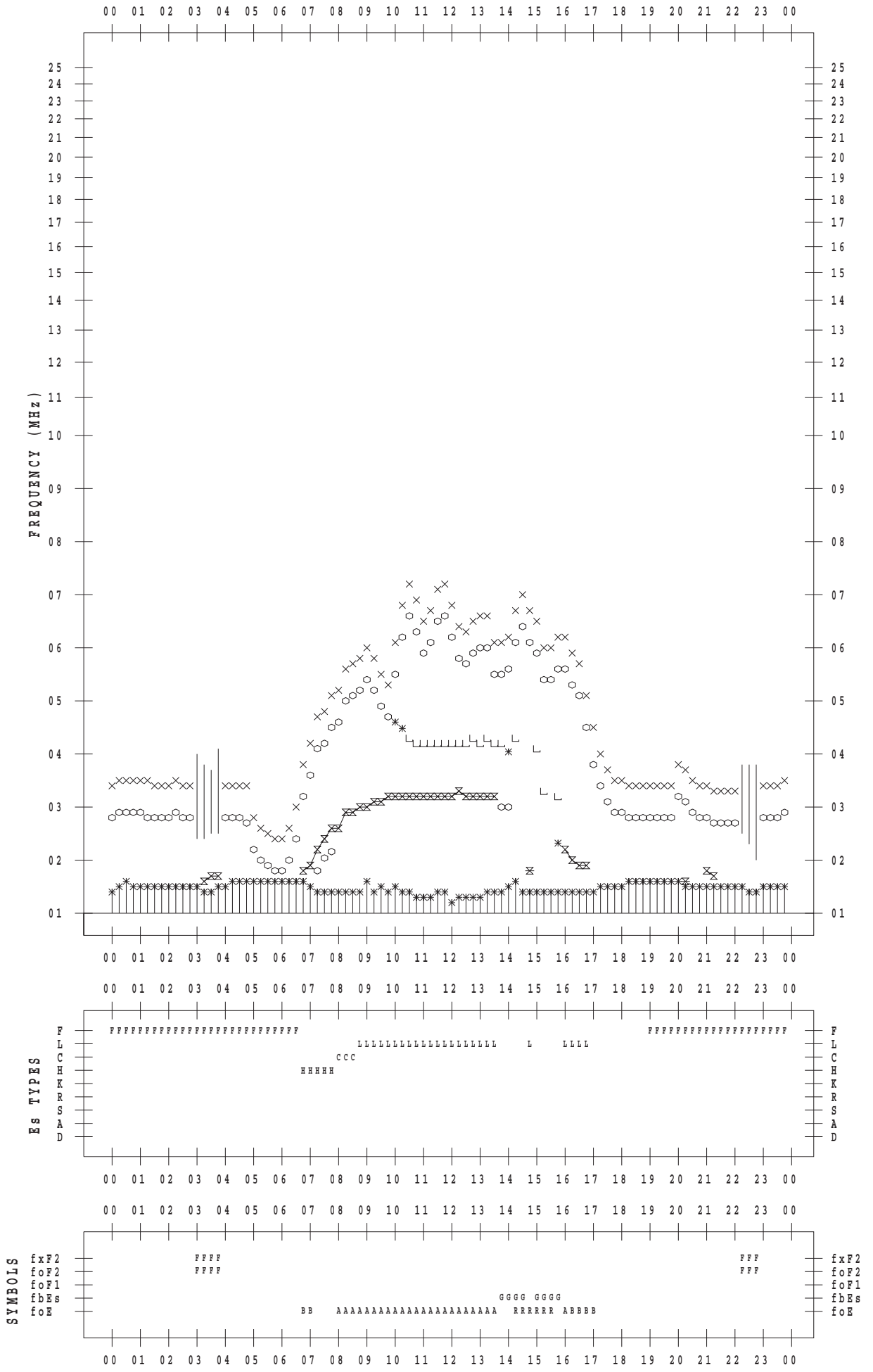
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/20

135 °E MEAN TIME



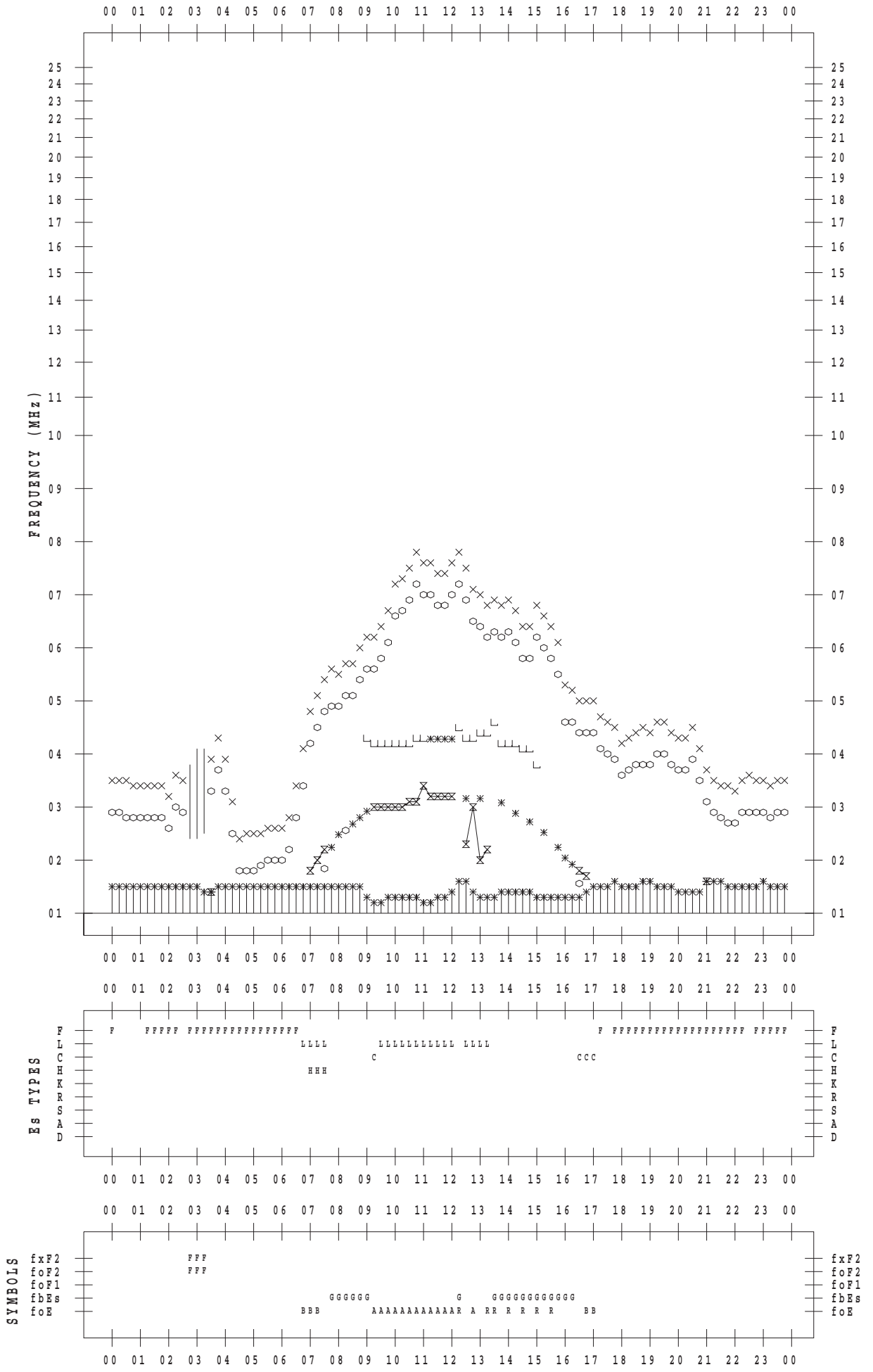
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/21

135 °E MEAN TIME



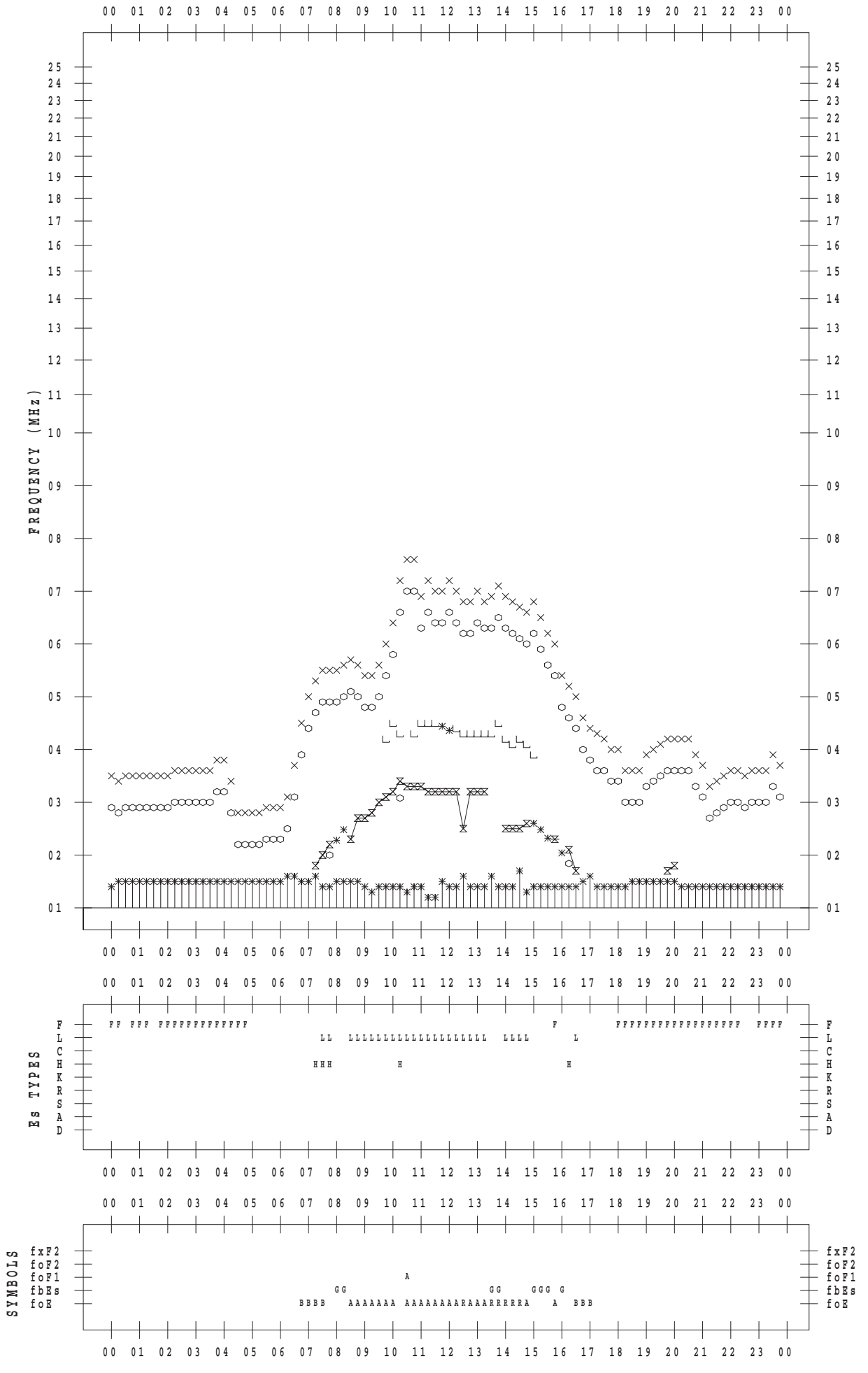
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/22

135 °E MEAN TIME



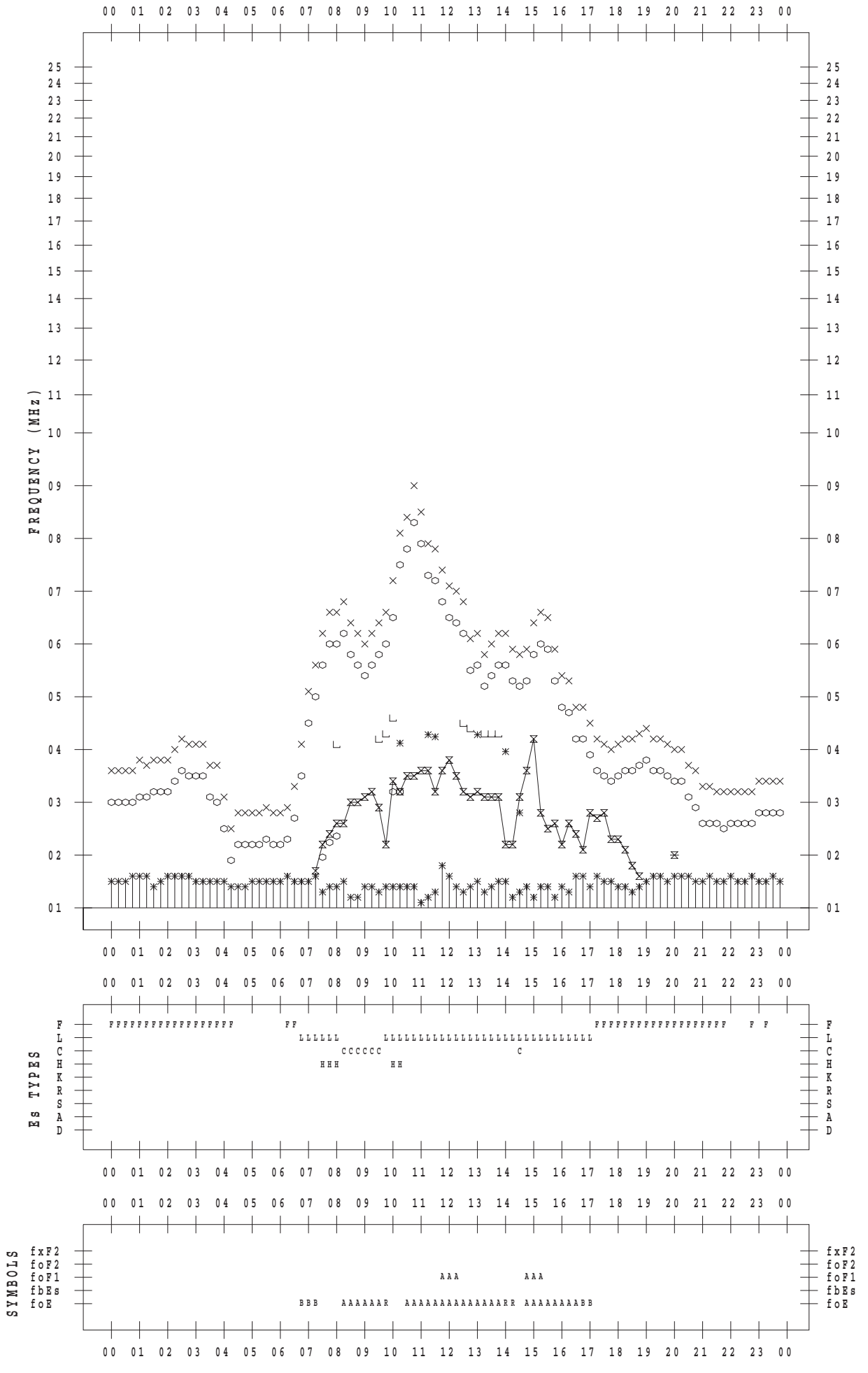
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/23

135 °E MEAN TIME



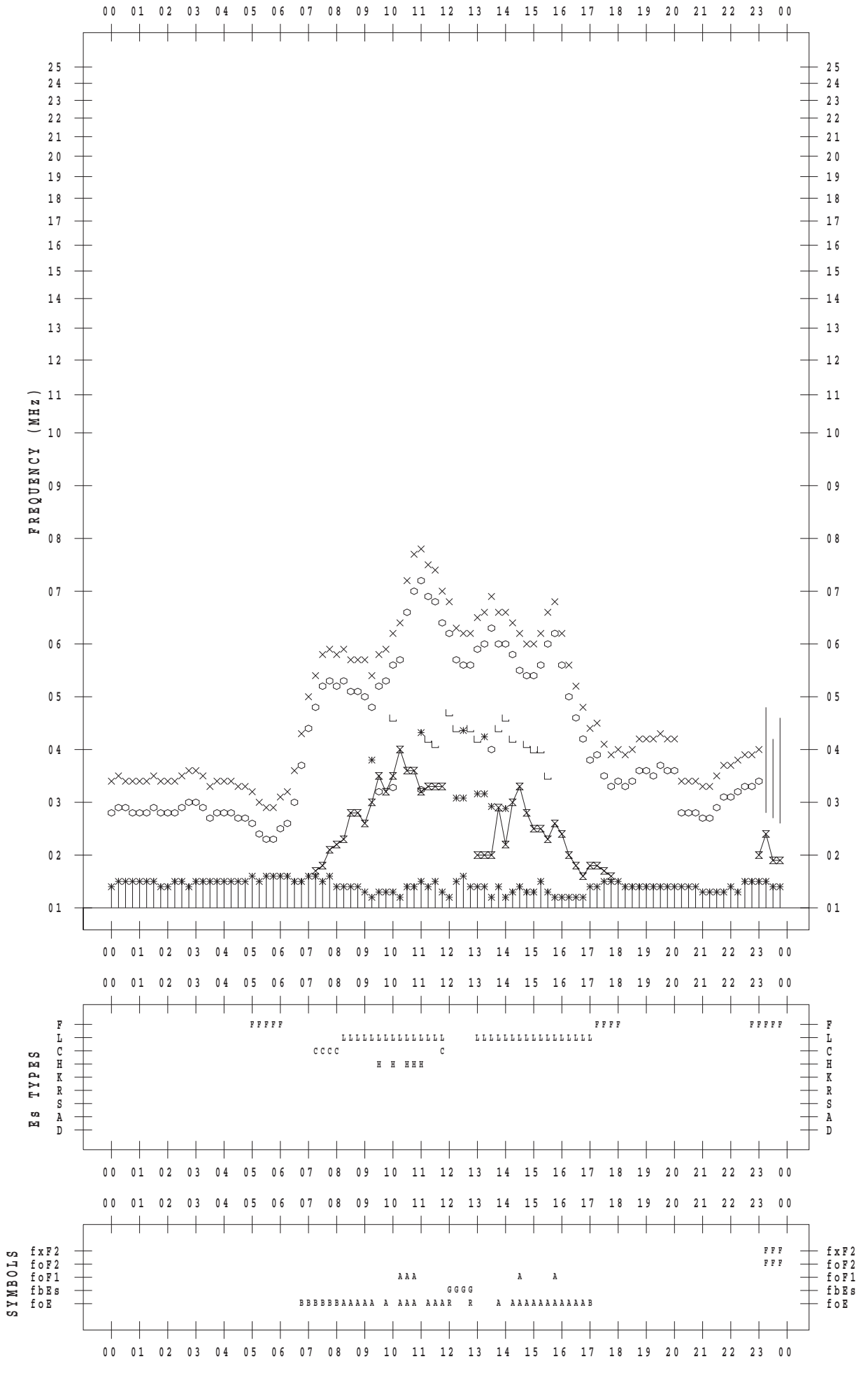
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/24

135 °E MEAN TIME



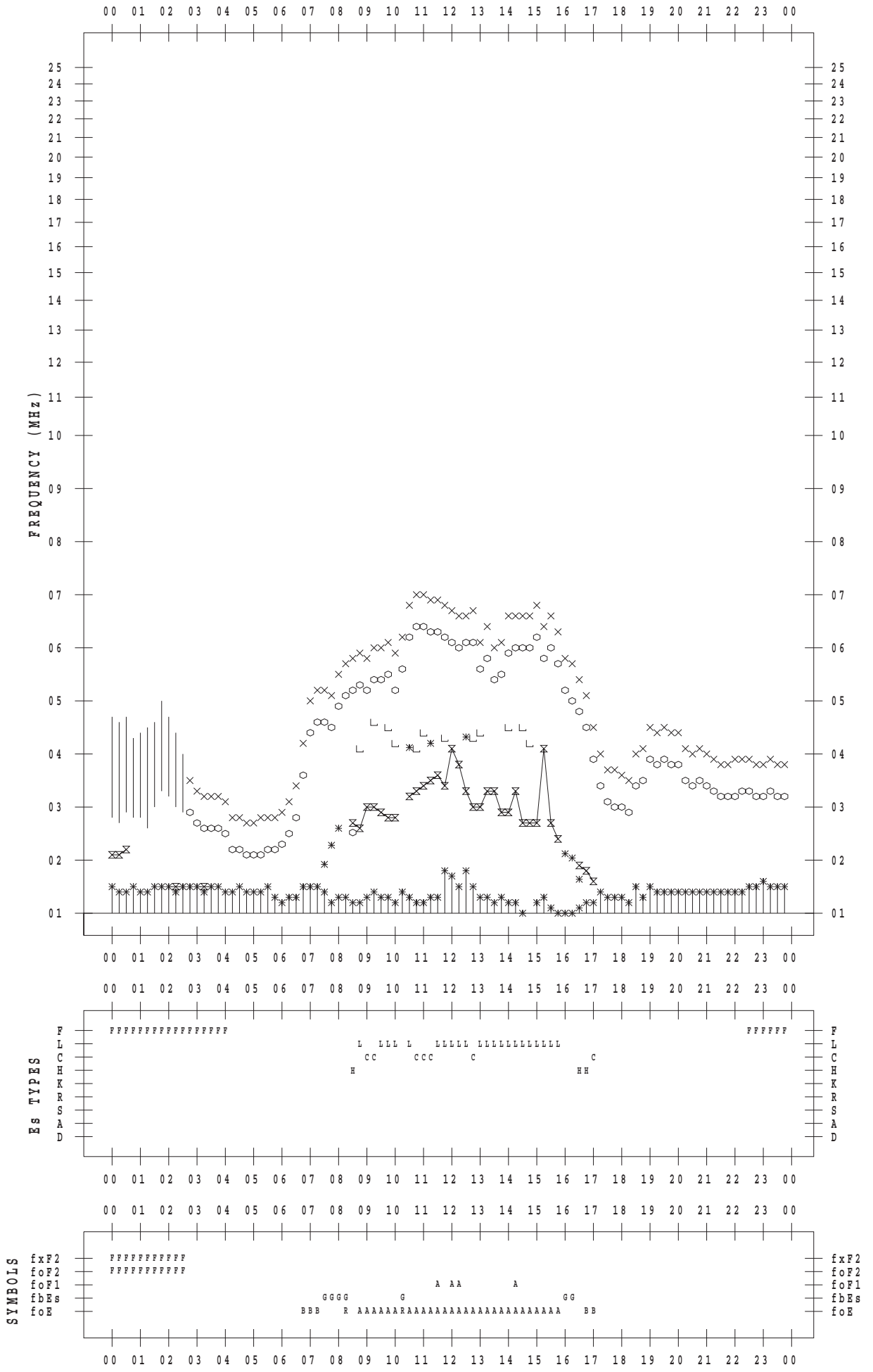
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/25

135 °E MEAN TIME



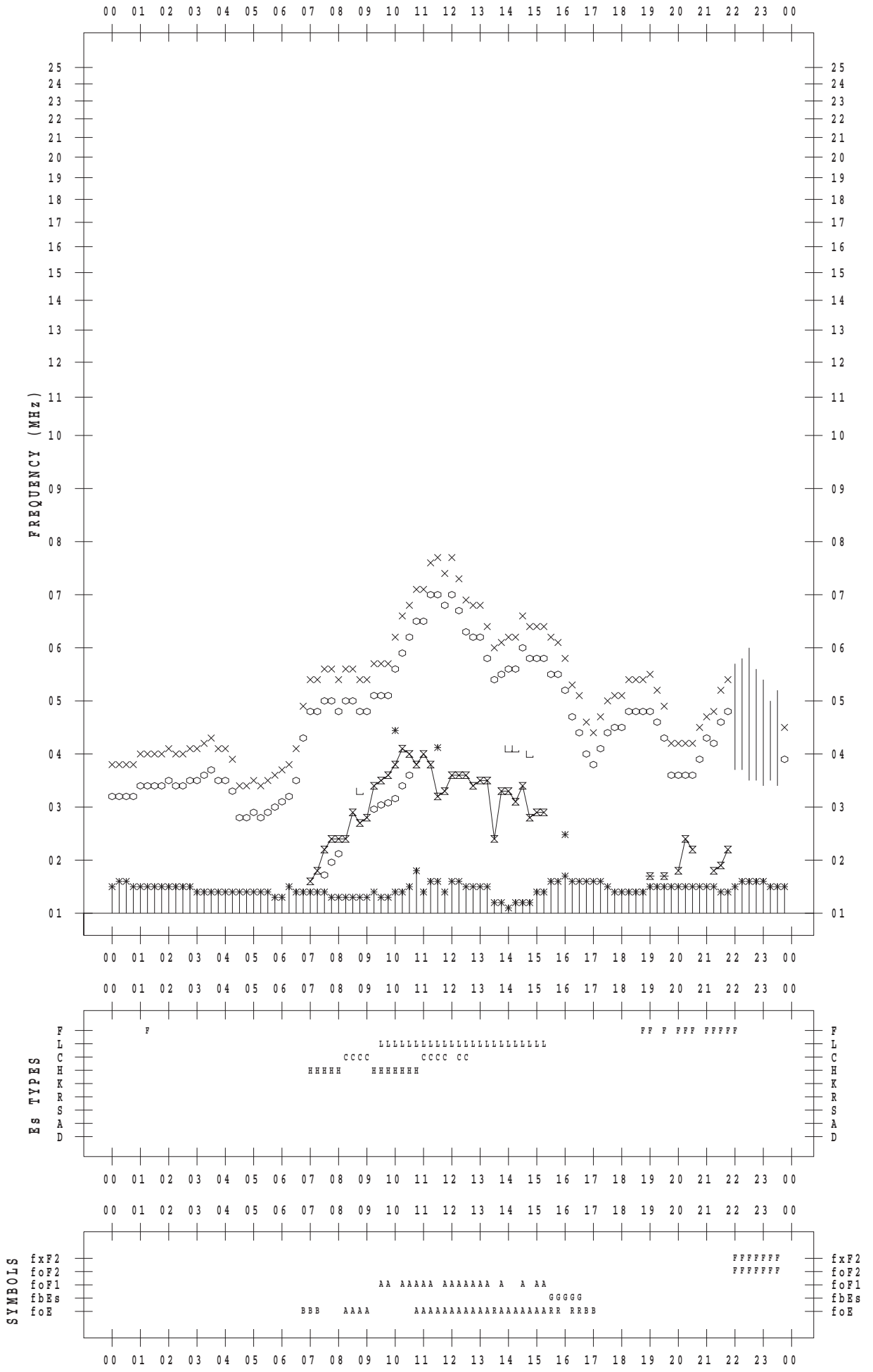
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/26

135 °E MEAN TIME



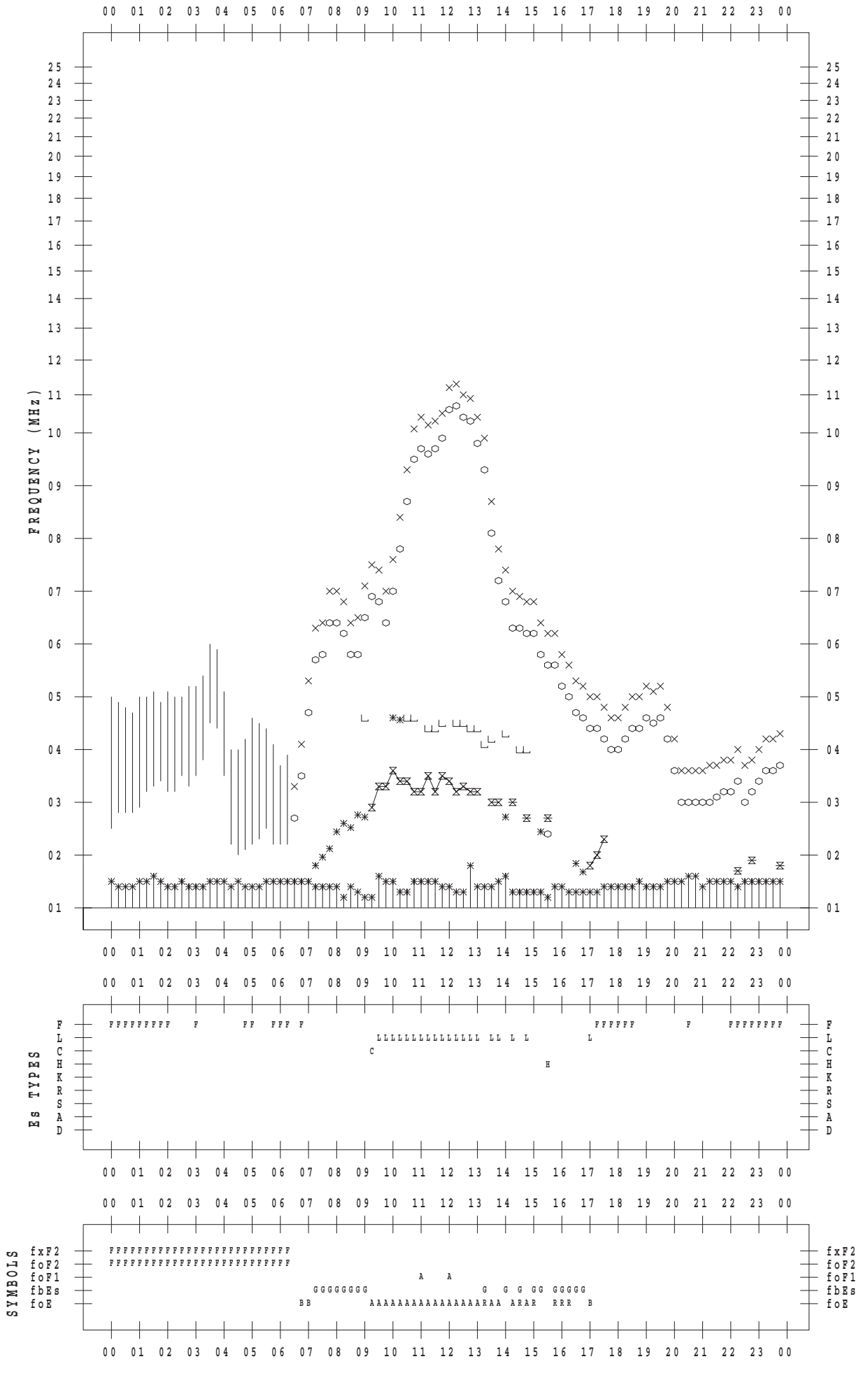
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/27

135 °E MEAN TIME



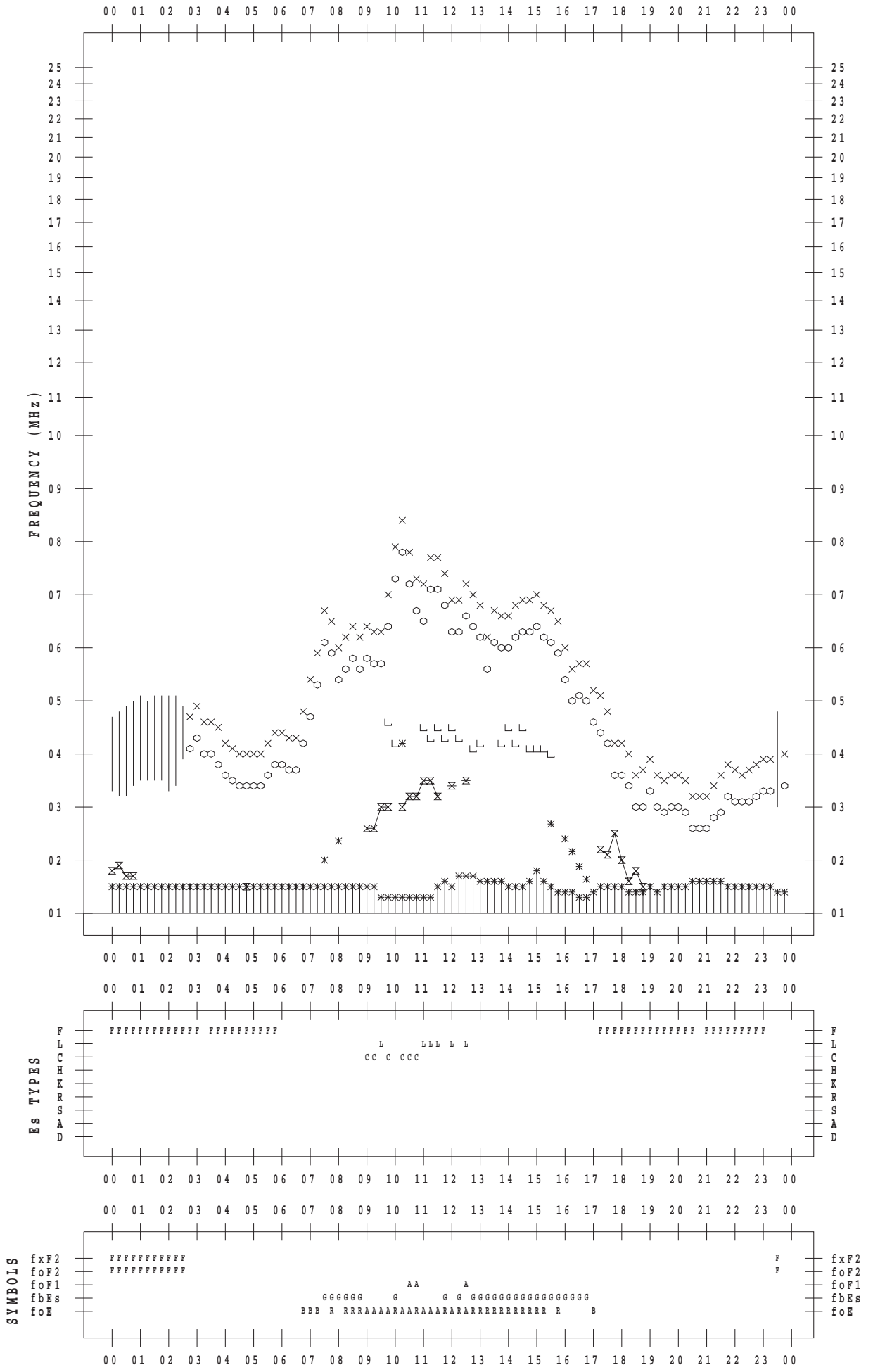
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/28

135 °E MEAN TIME



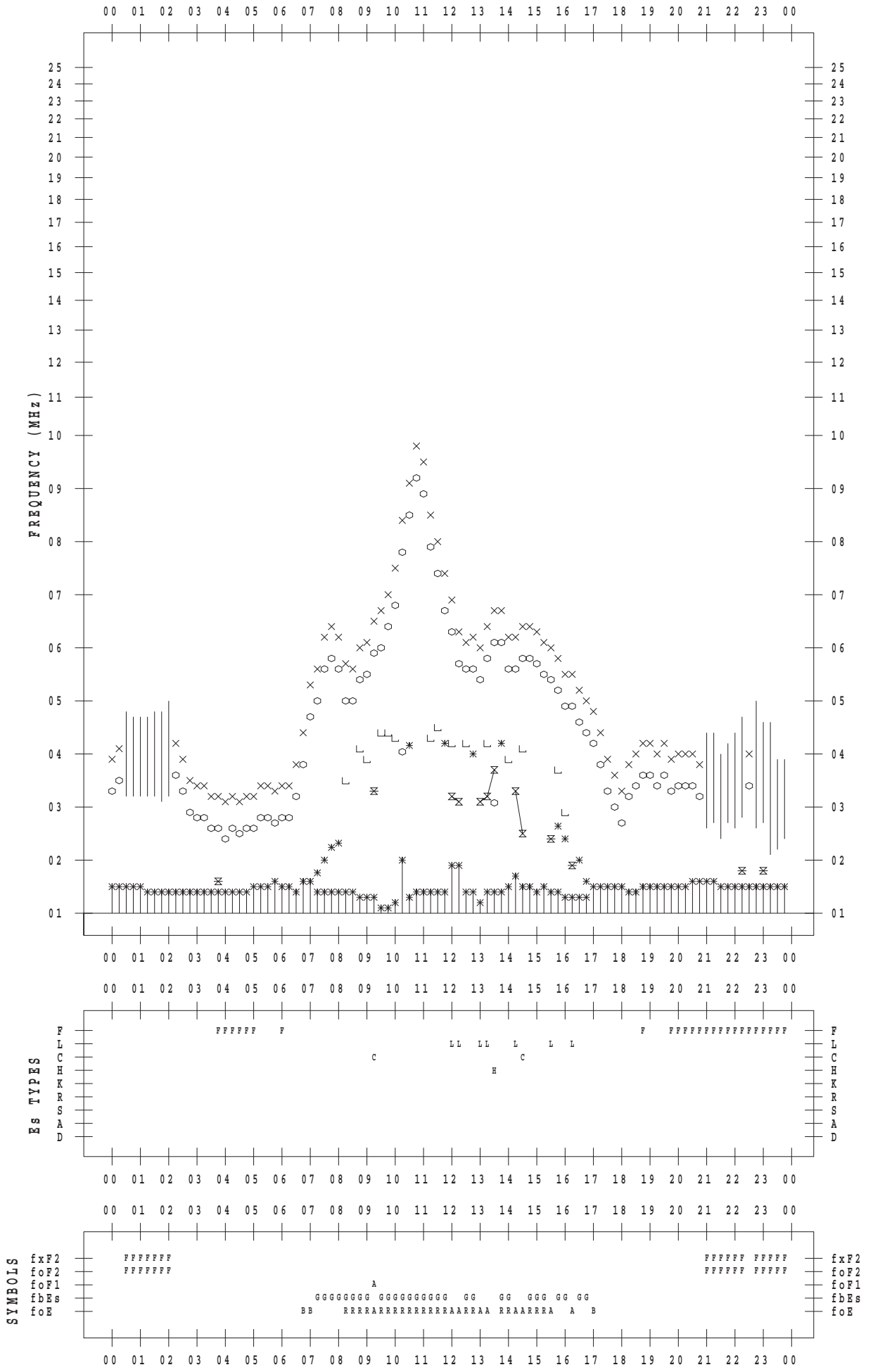
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/29

135 °E MEAN TIME



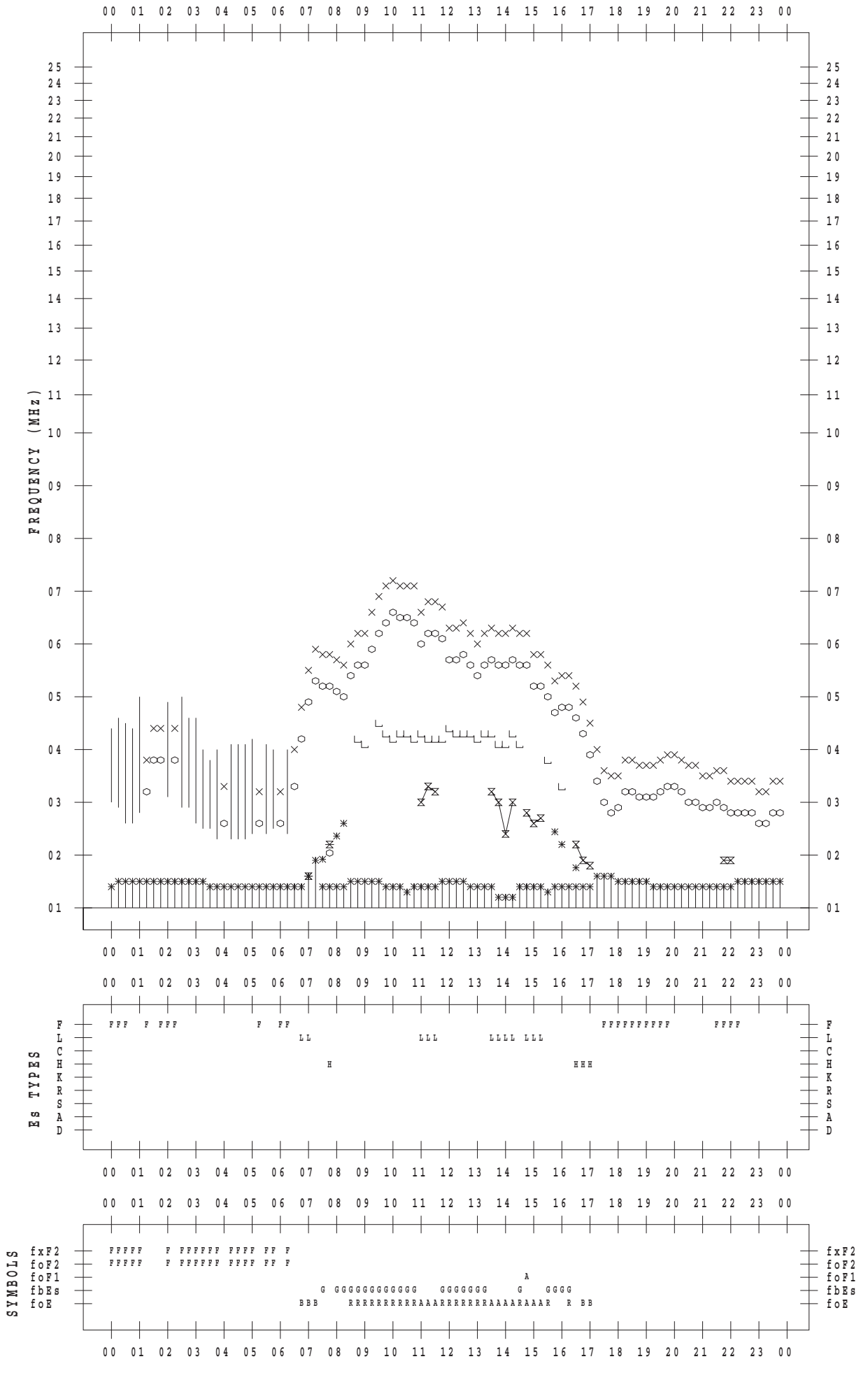
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/30

135 °E MEAN TIME



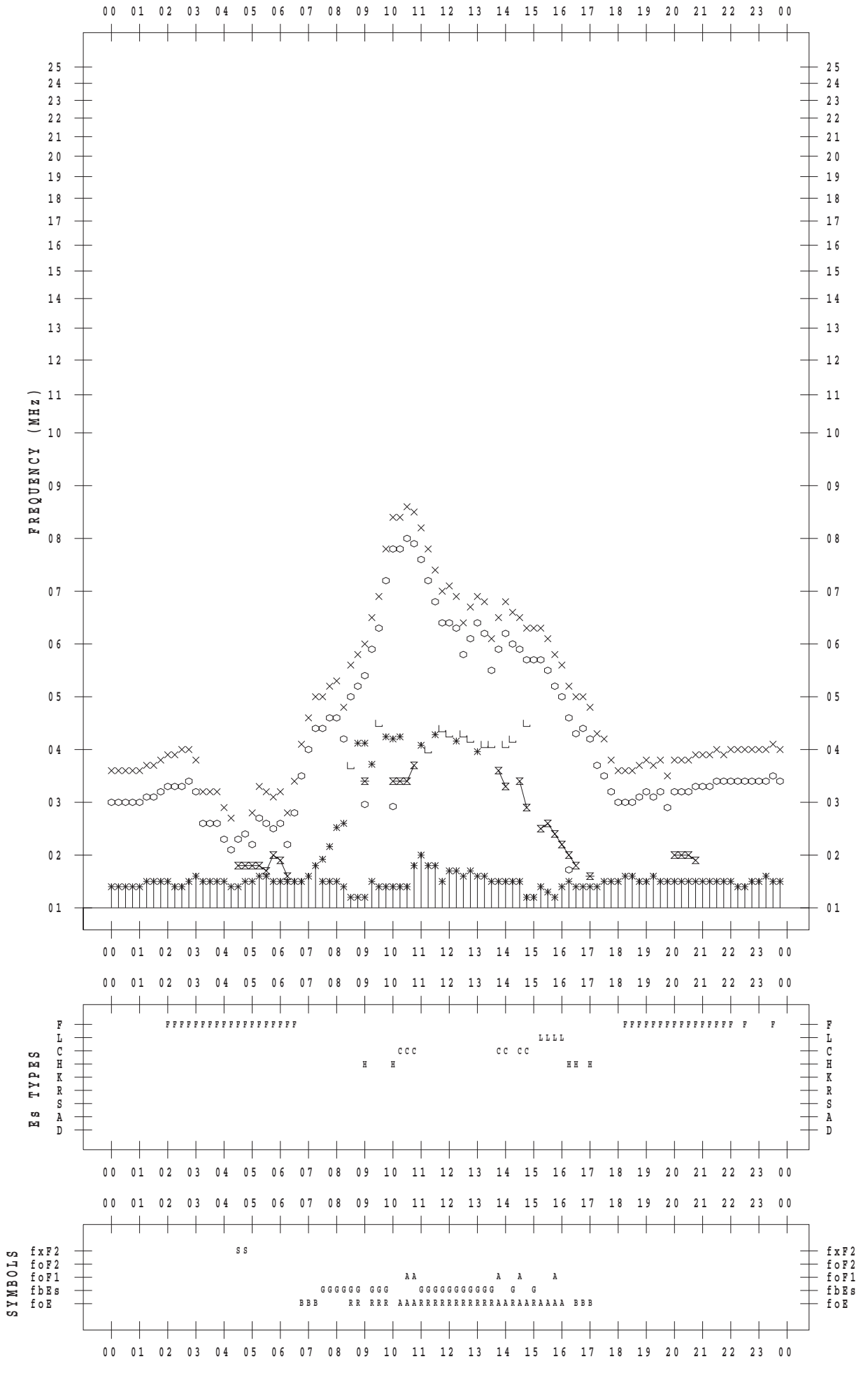
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2017/ 1/31

135 °E MEAN TIME



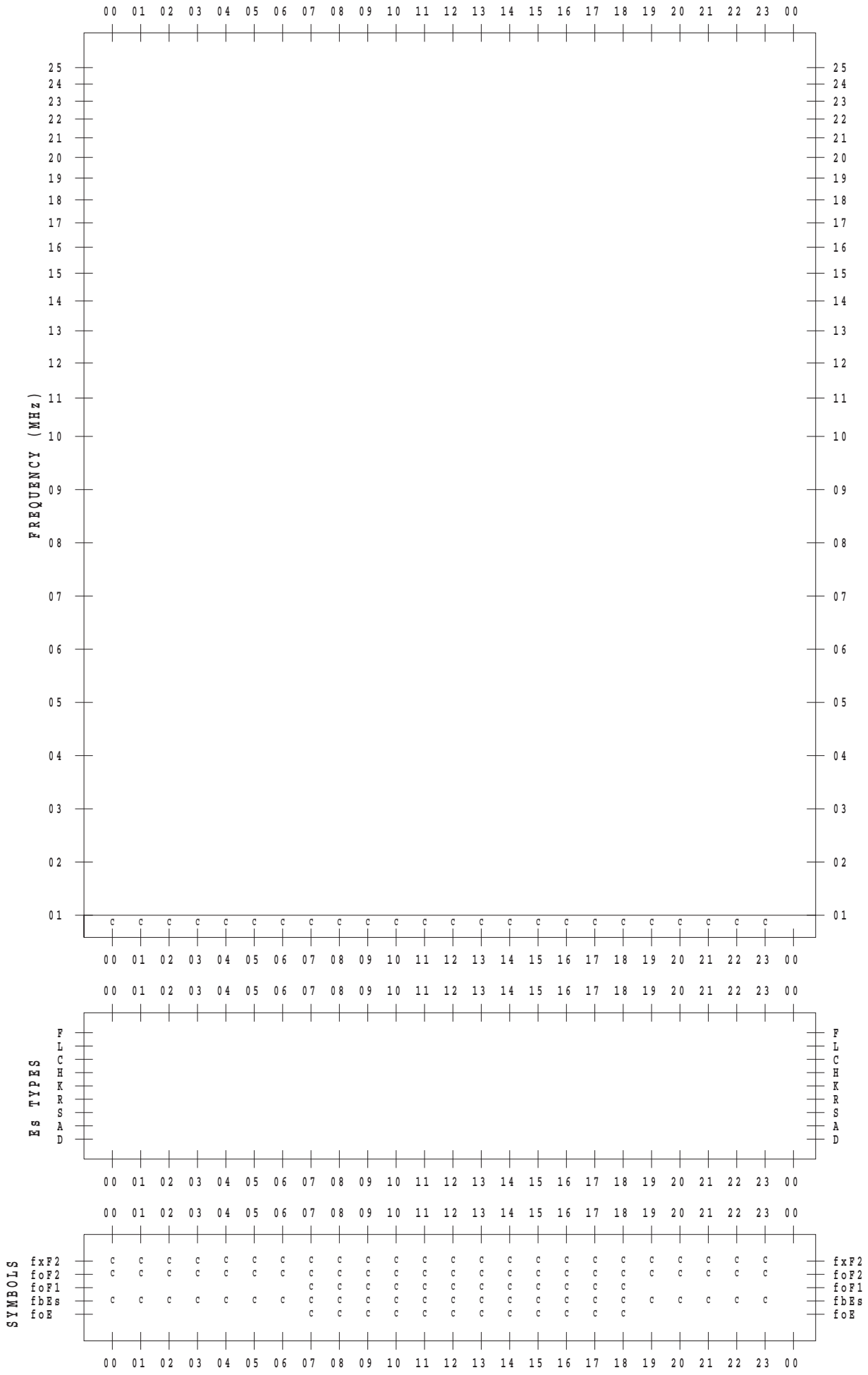
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 1

135 °E MEAN TIME



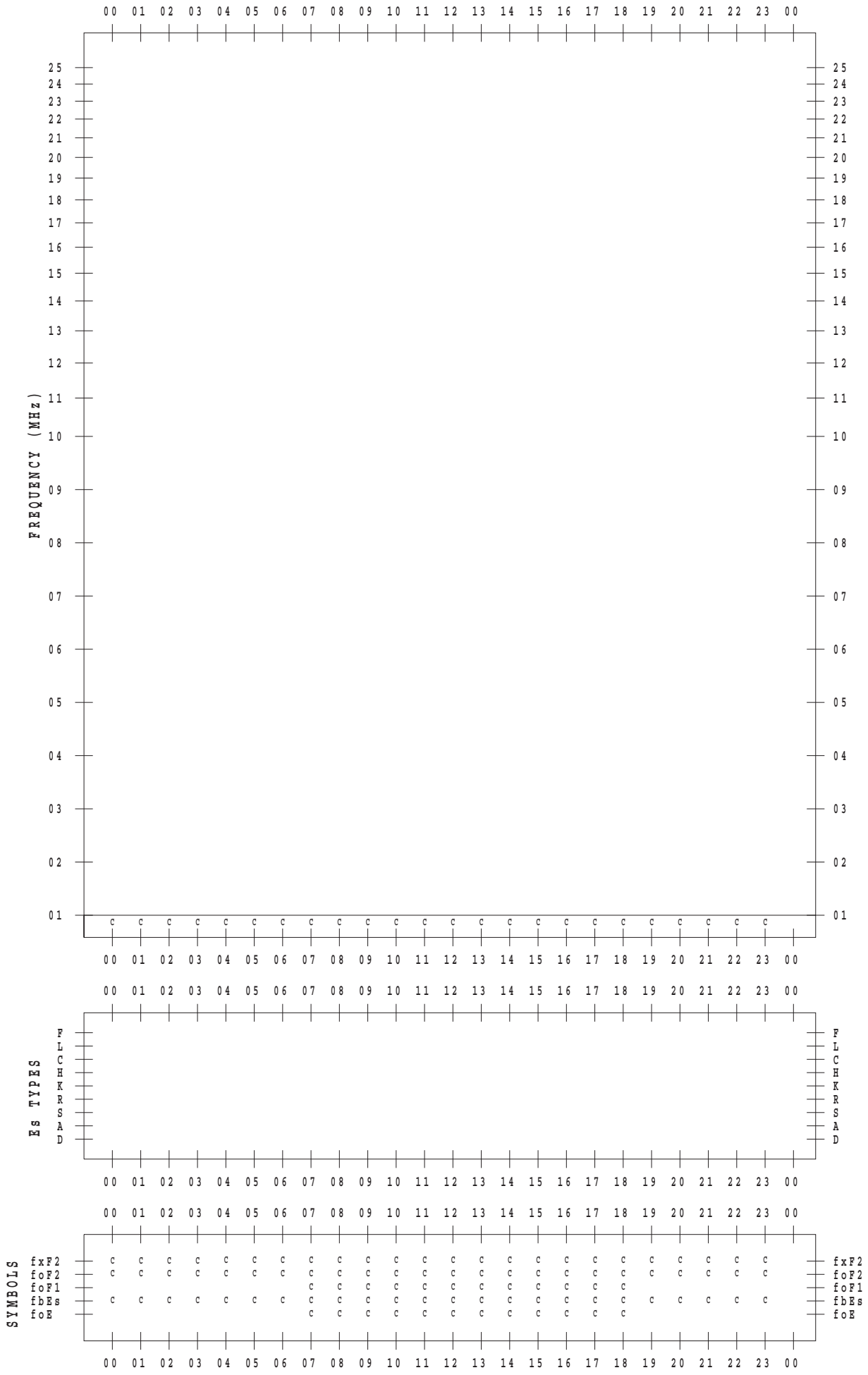
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 2

135 °E MEAN TIME



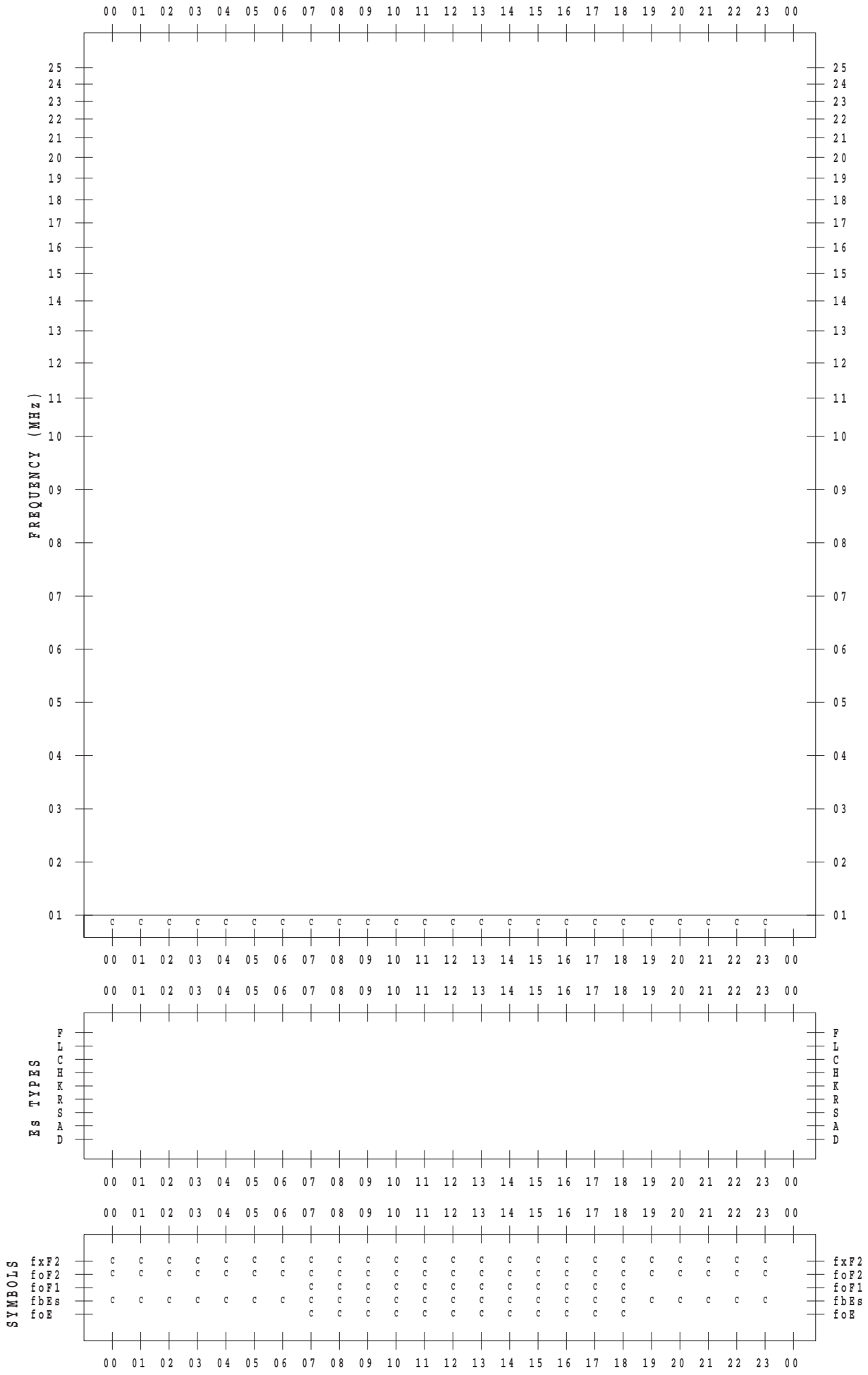
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 3

135 °E MEAN TIME



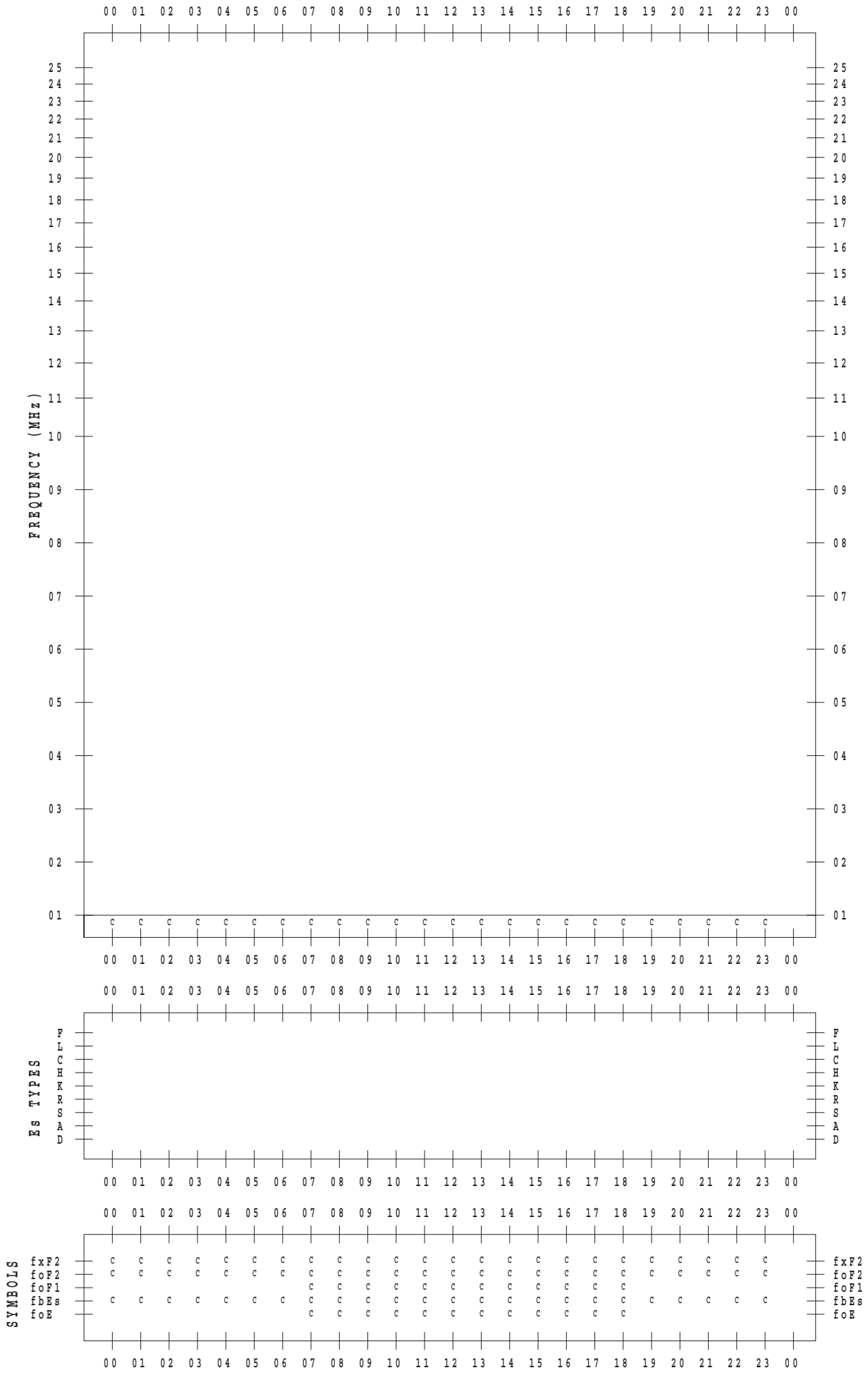
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 4

135 °E MEAN TIME



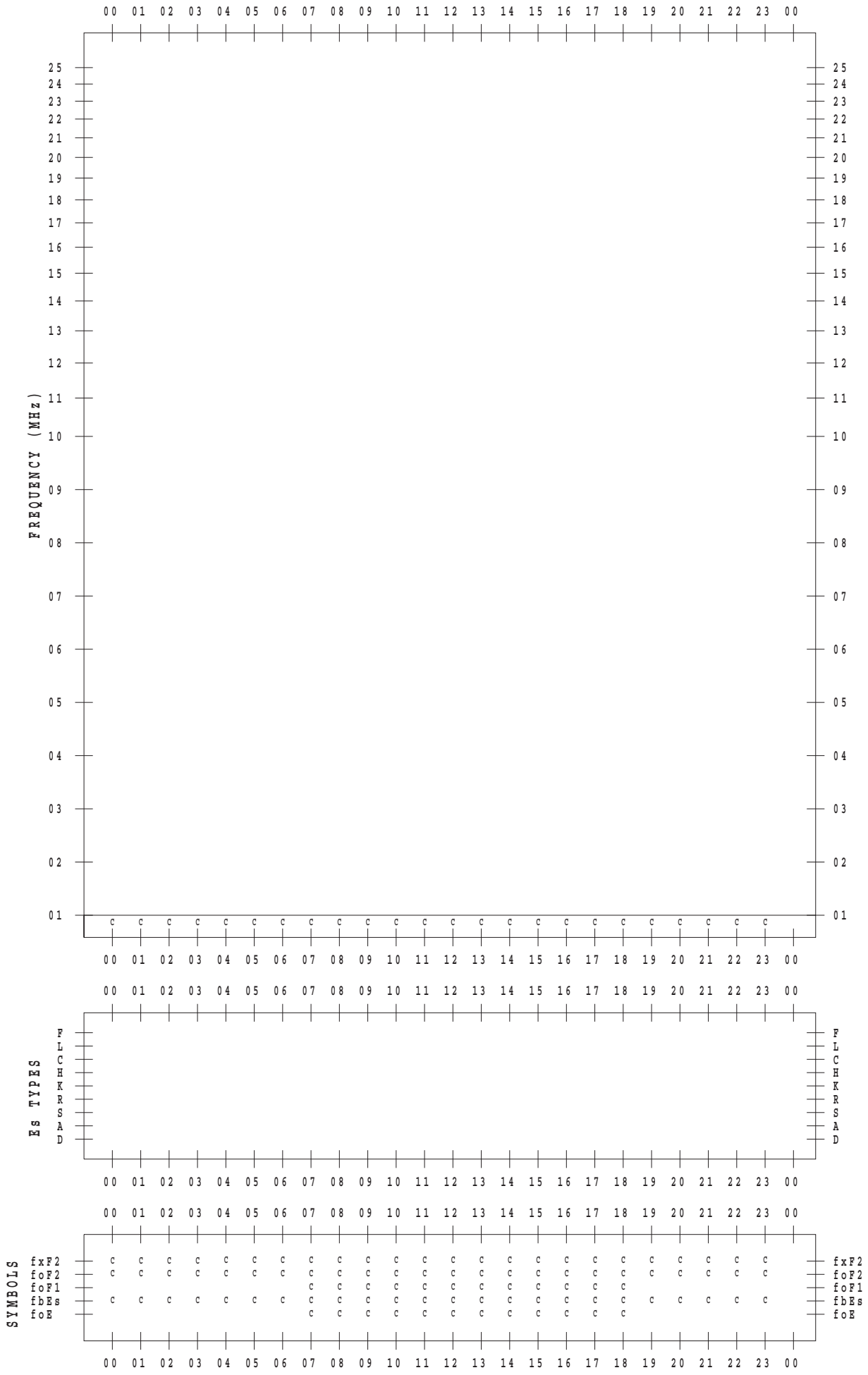
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 5

135 °E MEAN TIME



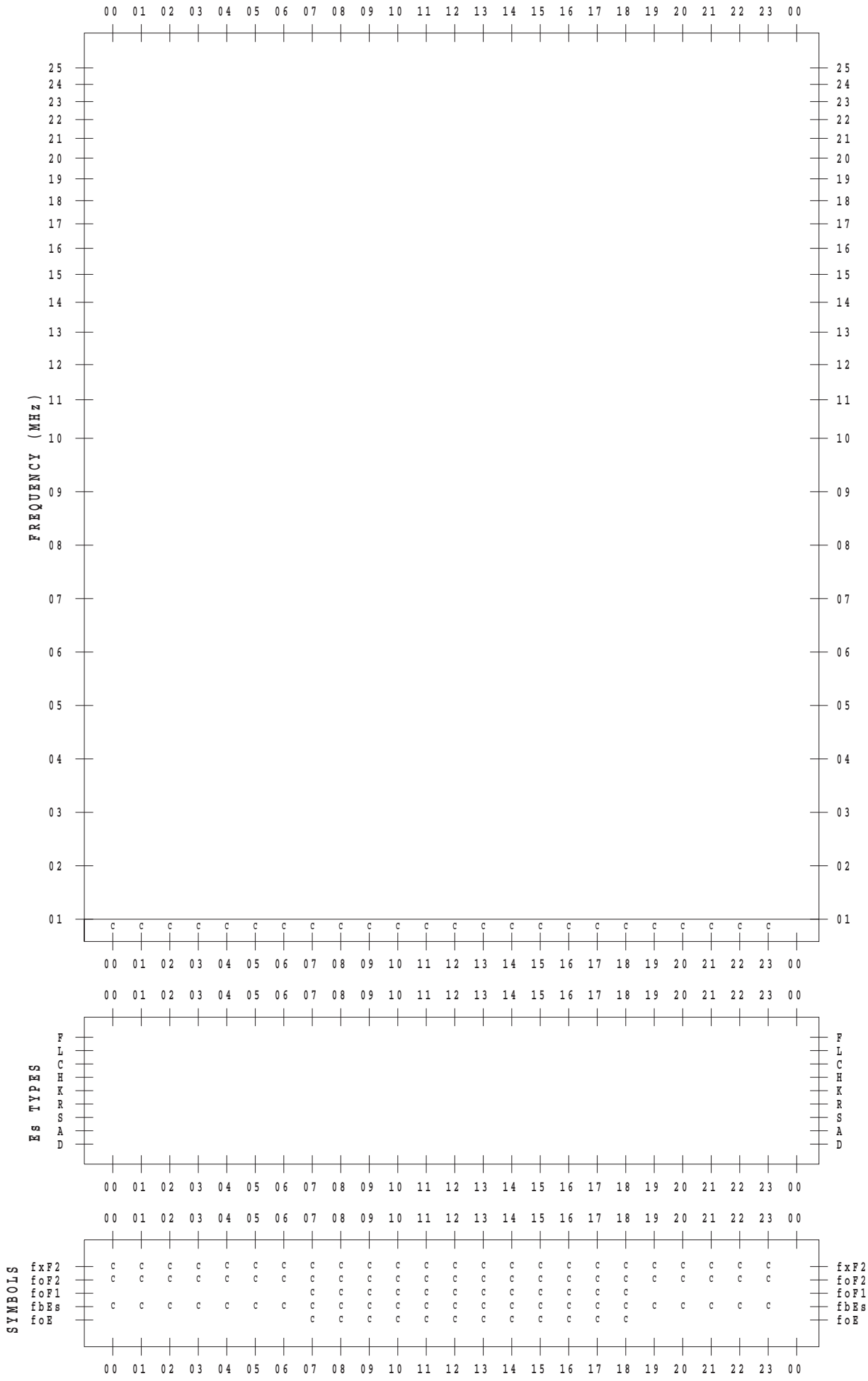
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 6

135 °E MEAN TIME



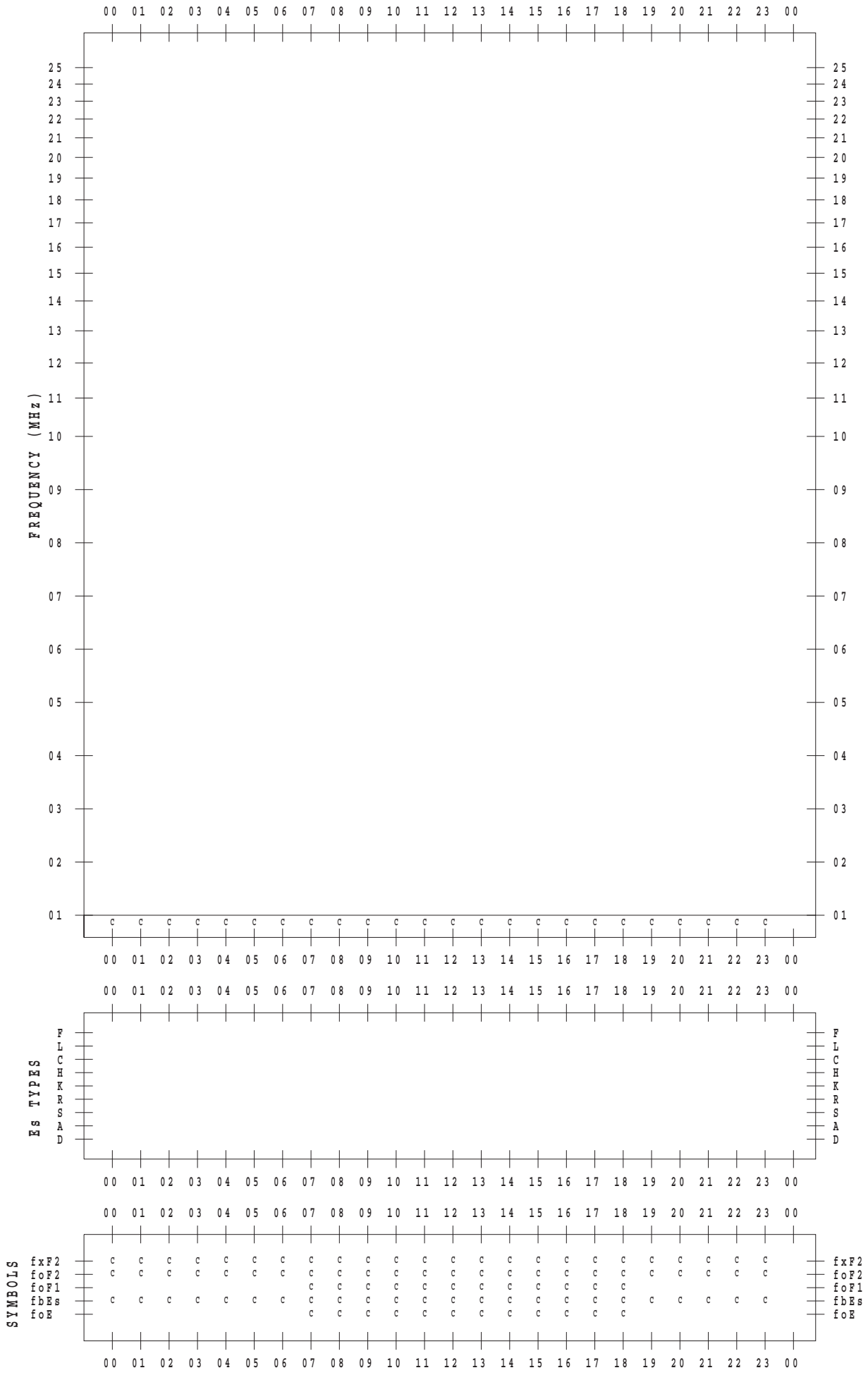
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 7

135 °E MEAN TIME



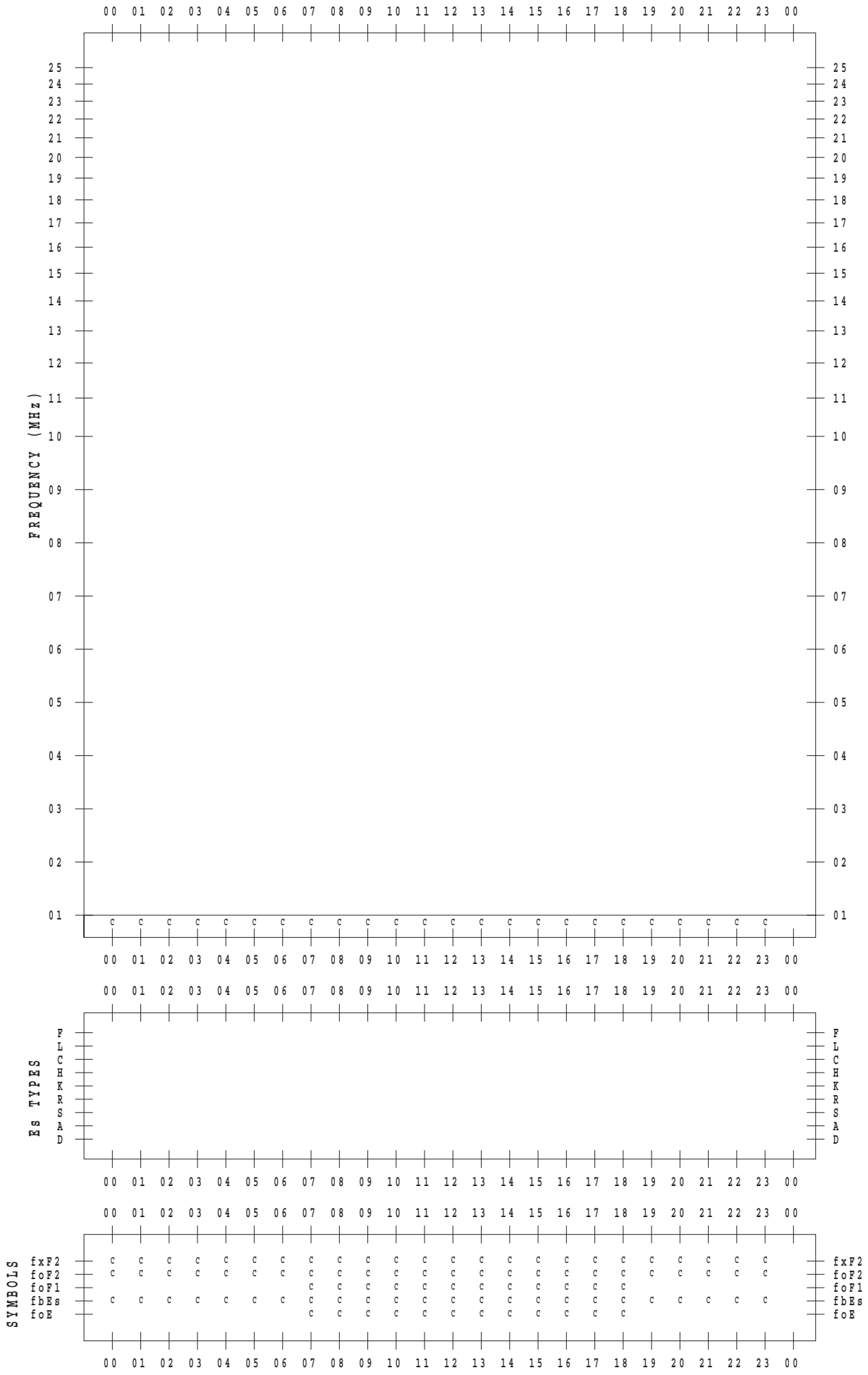
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 8

135 °E MEAN TIME



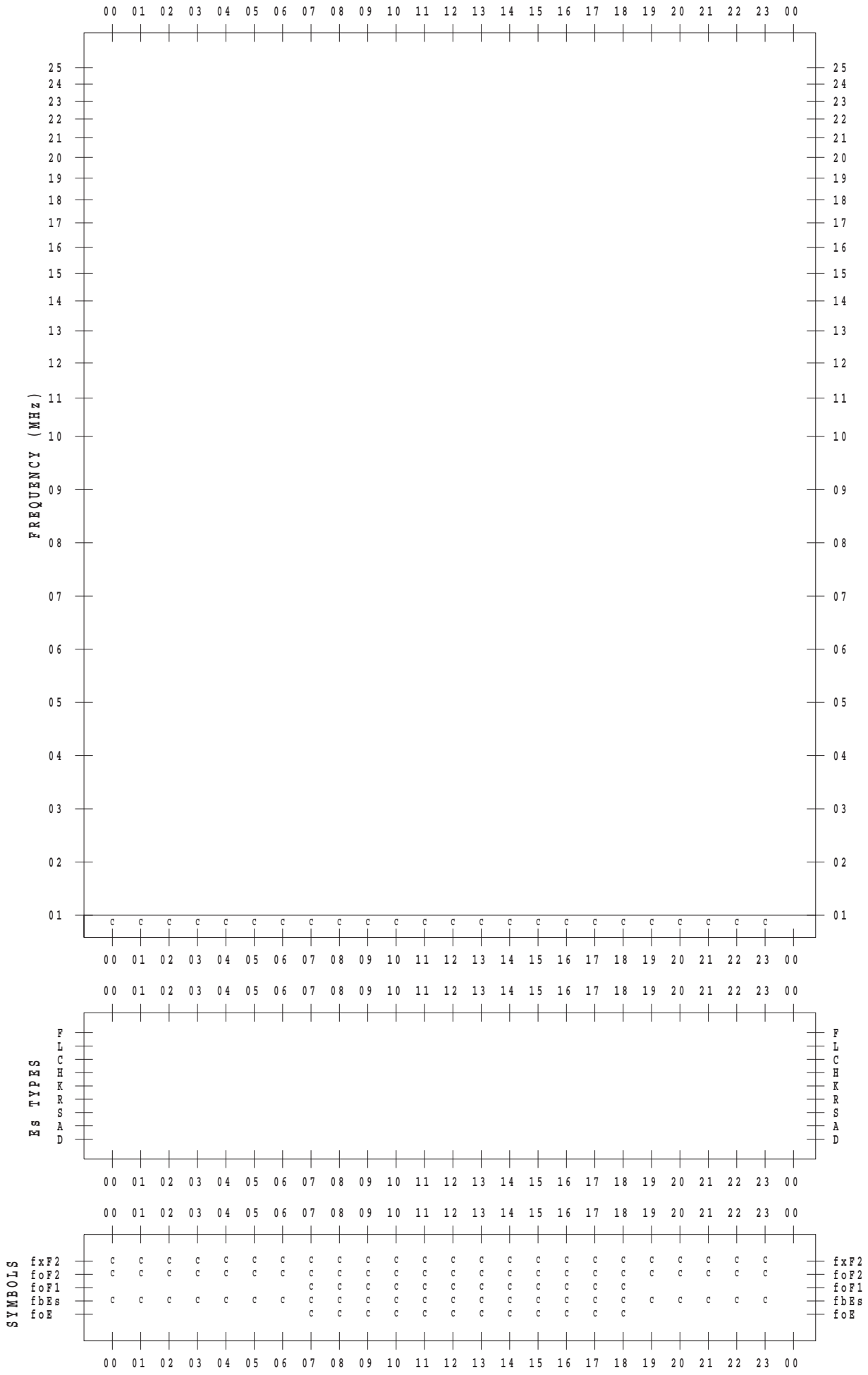
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/ 9

135 °E MEAN TIME



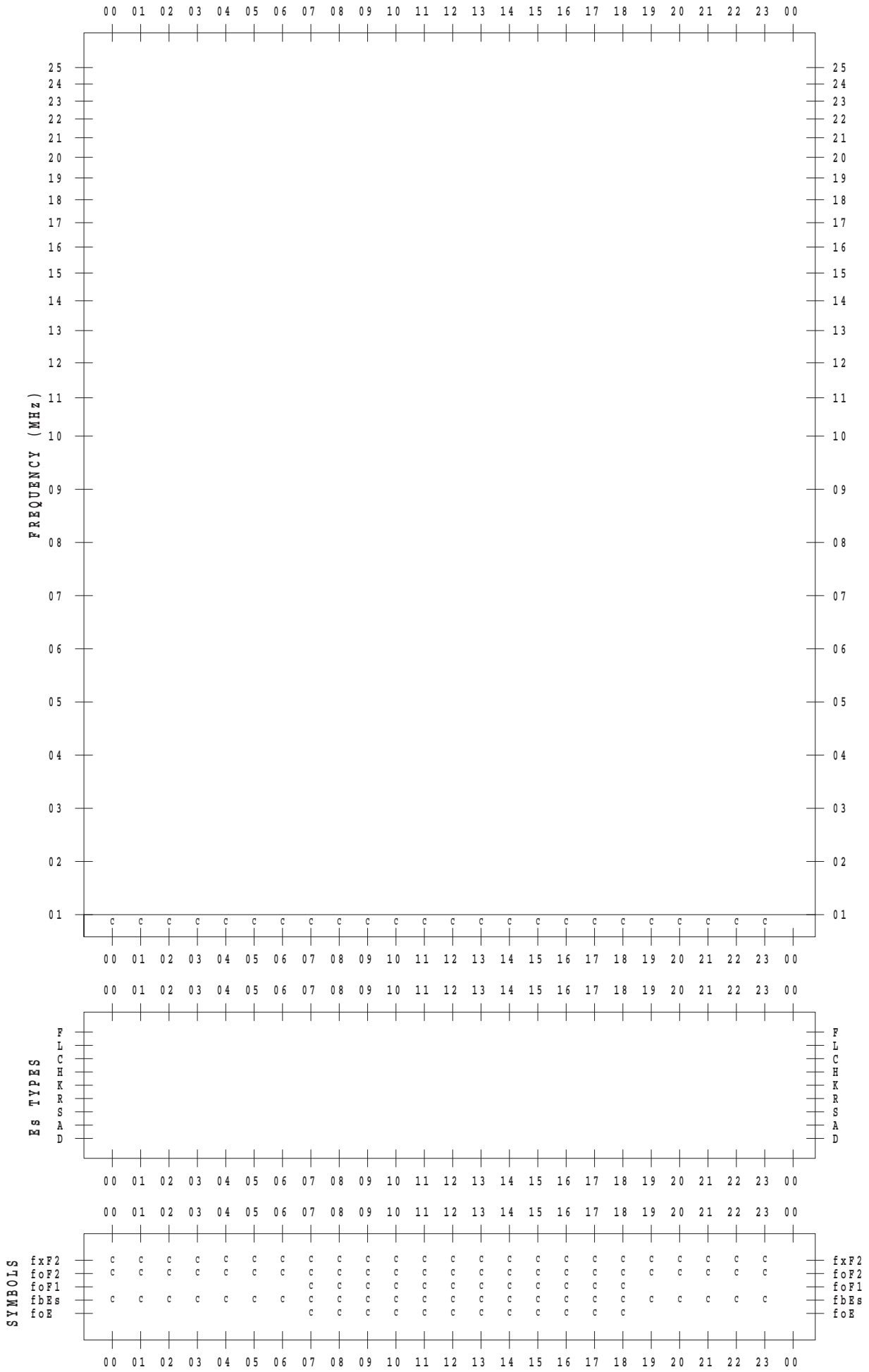
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/10

135 °E MEAN TIME



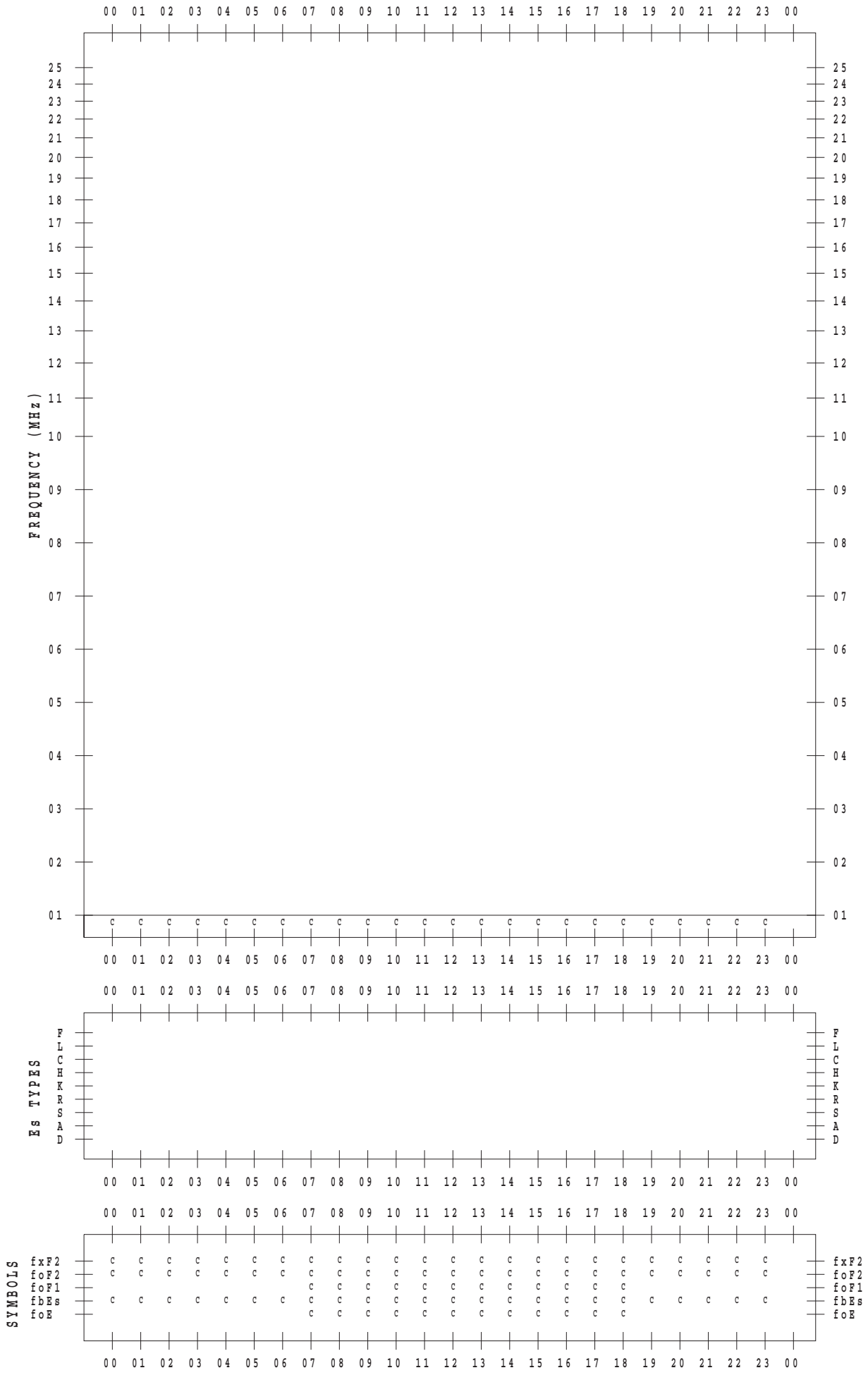
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/11

135 °E MEAN TIME



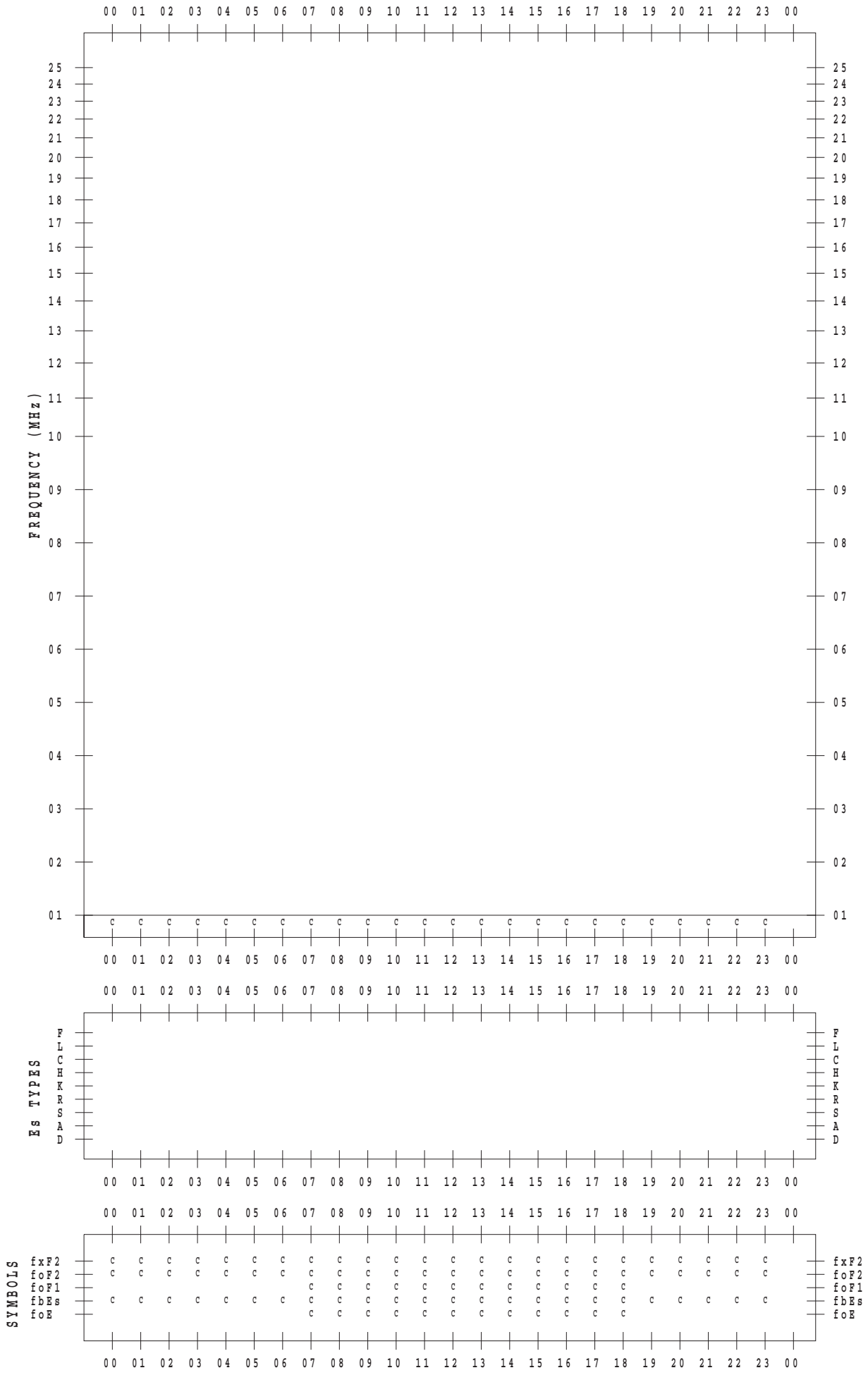
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/12

135 °E MEAN TIME



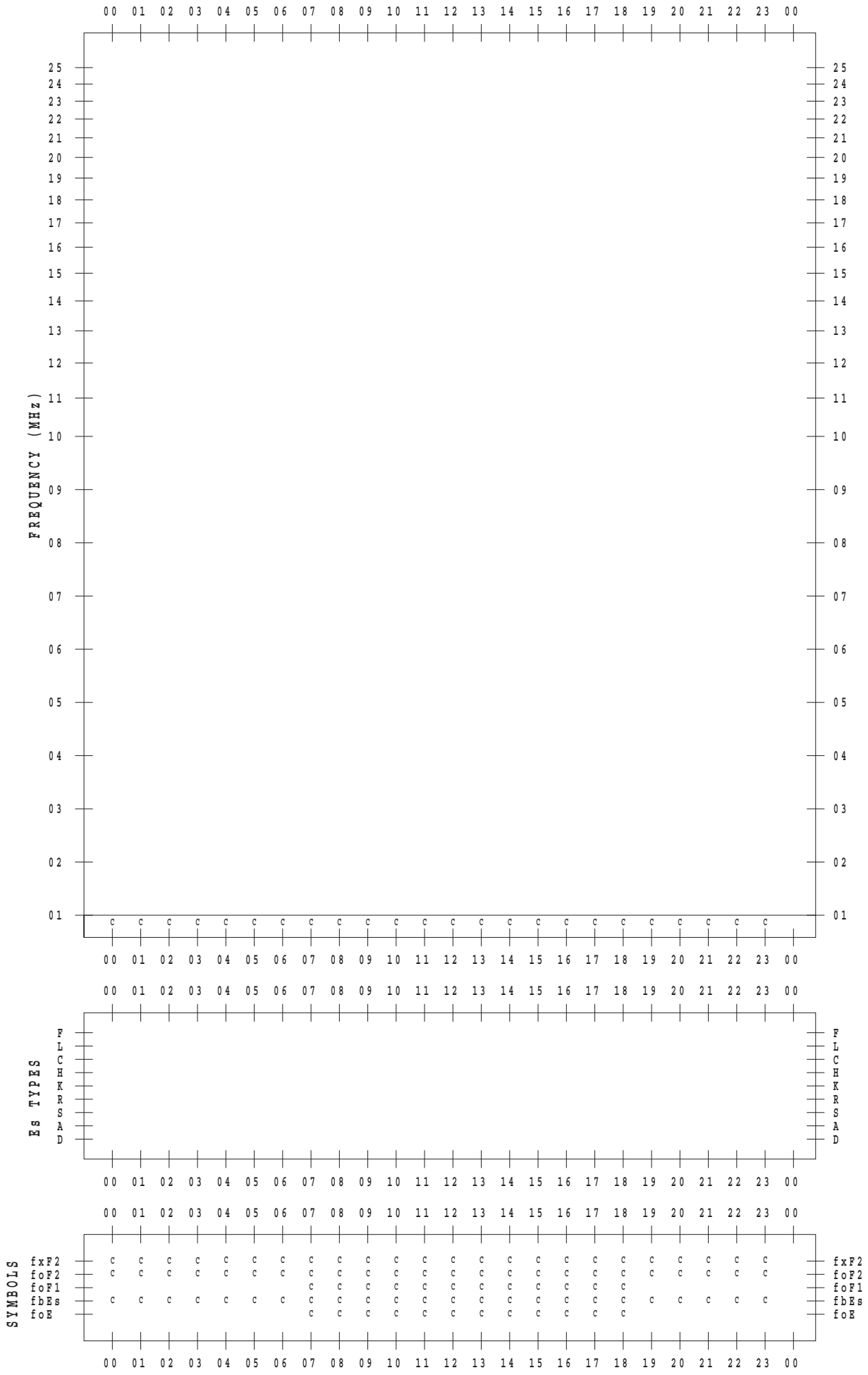
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/13

135 °E MEAN TIME



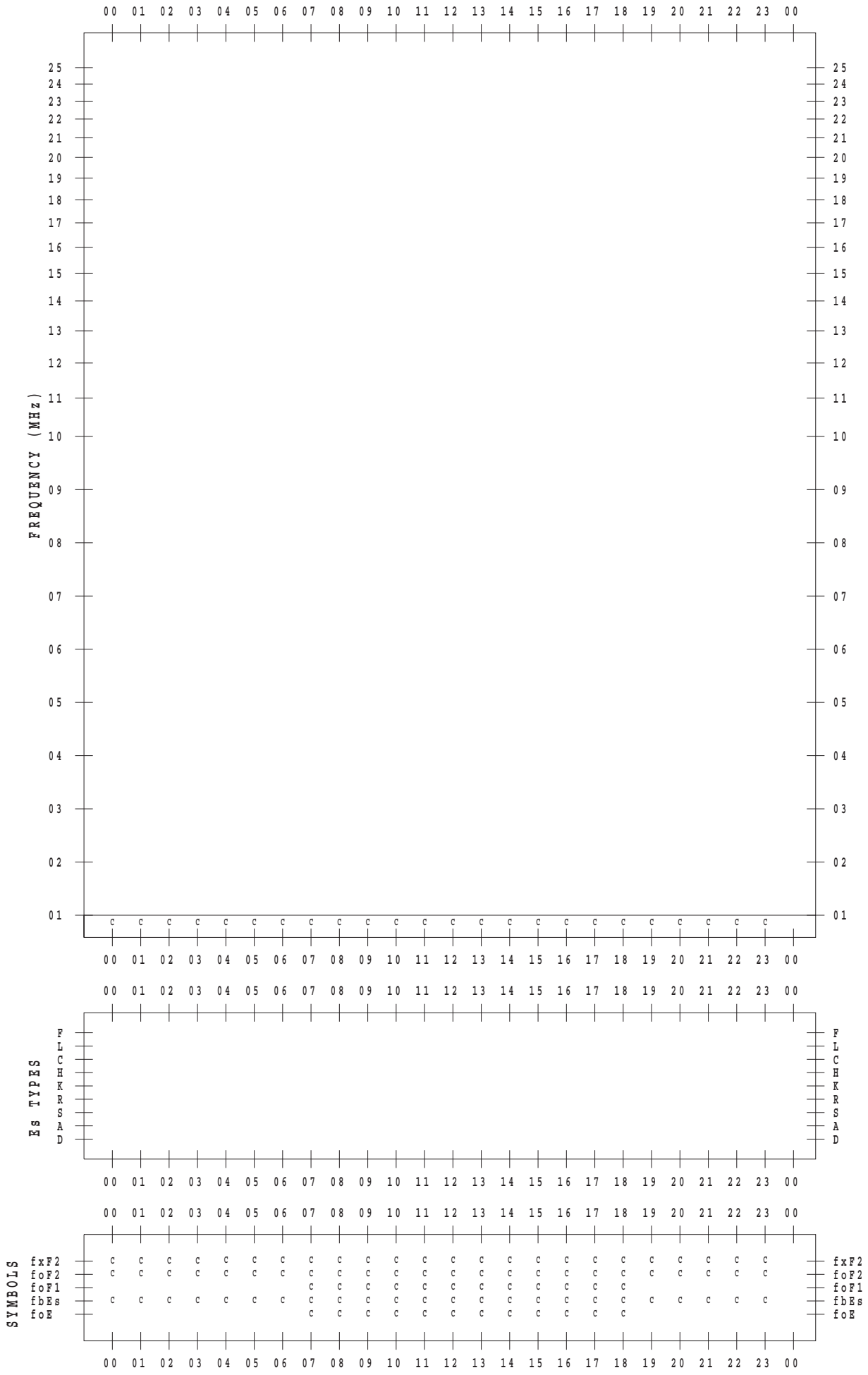
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/14

135 °E MEAN TIME



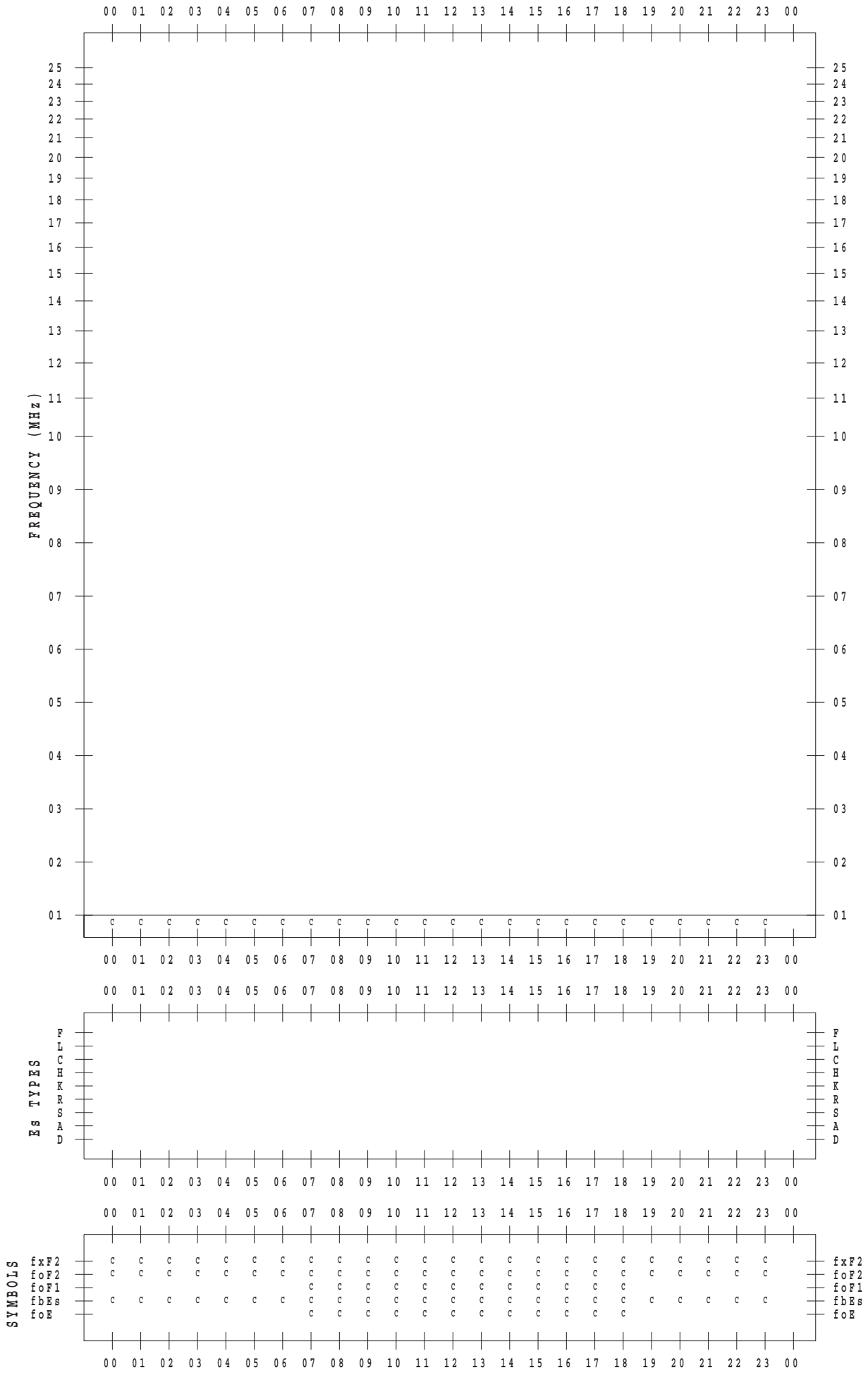
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/15

135 °E MEAN TIME



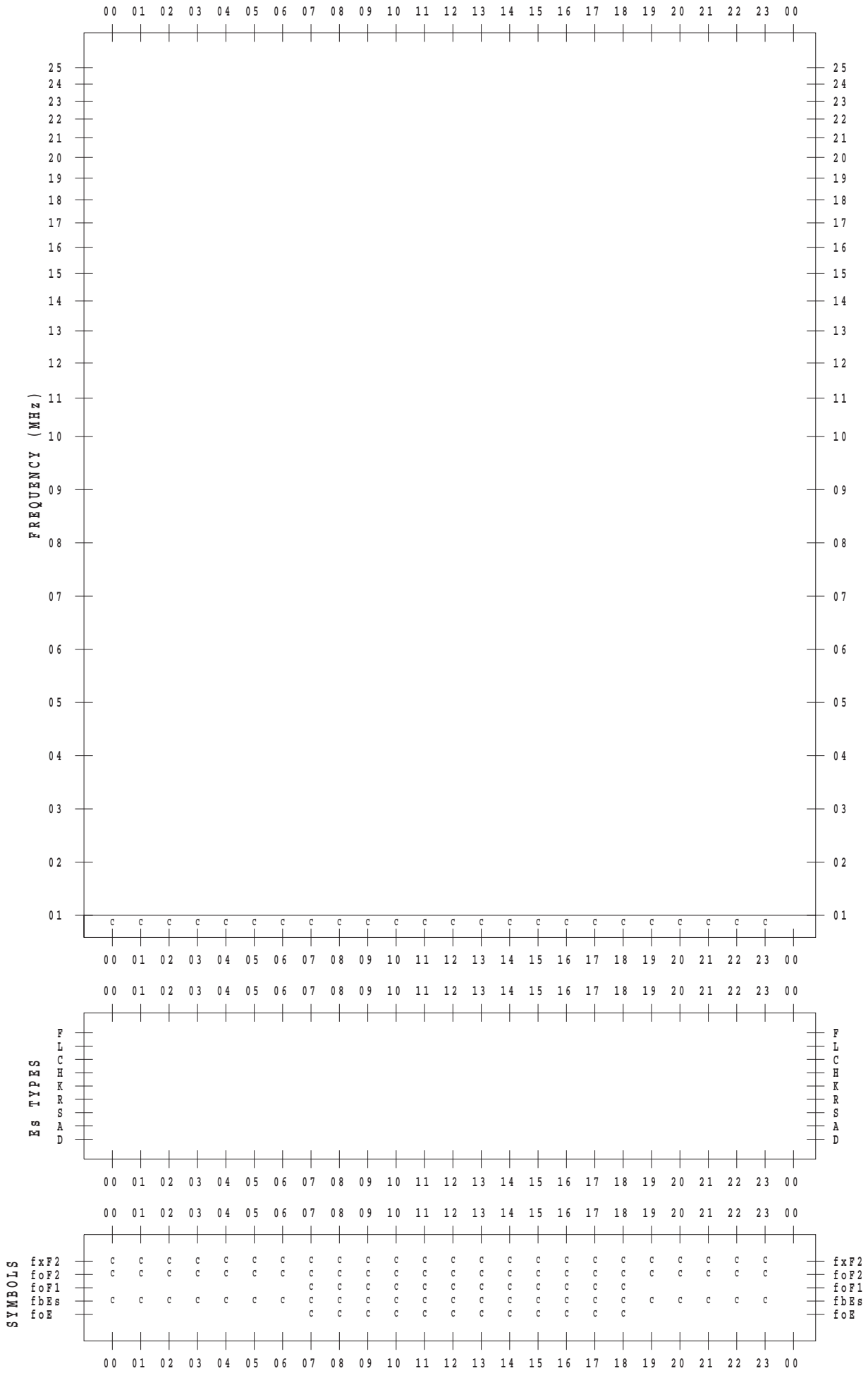
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/16

135 °E MEAN TIME



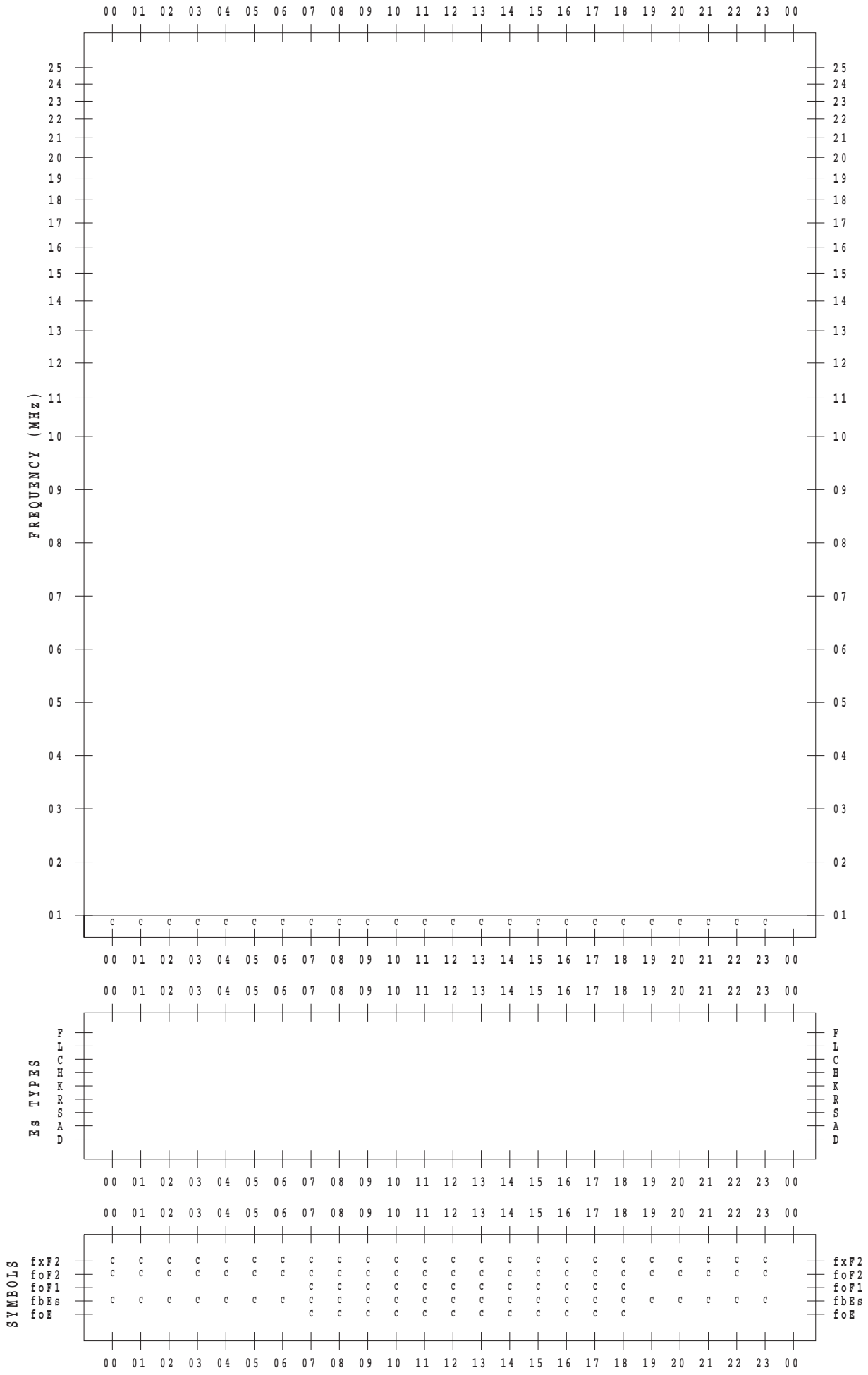
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/17

135 °E MEAN TIME



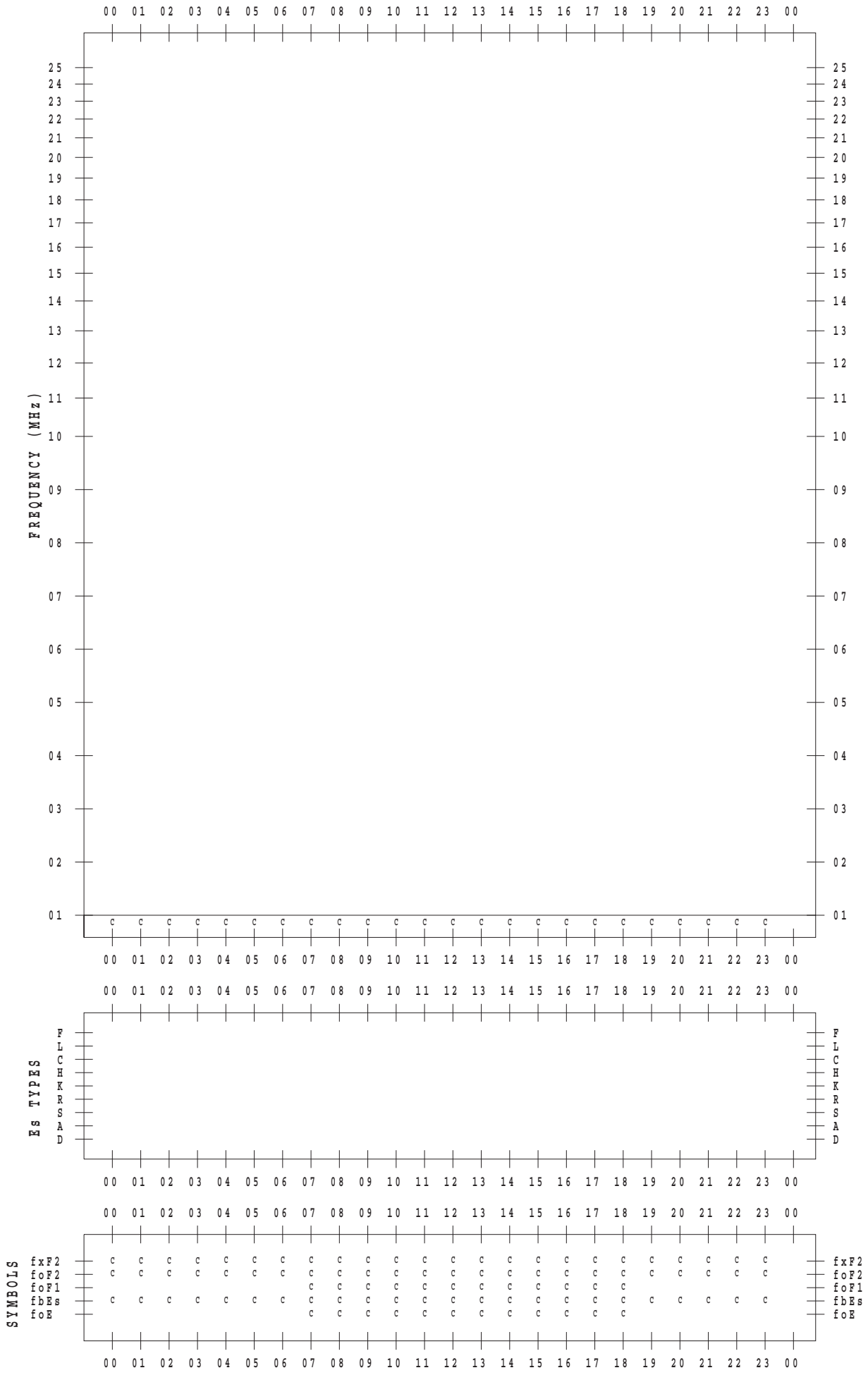
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/18

135 °E MEAN TIME



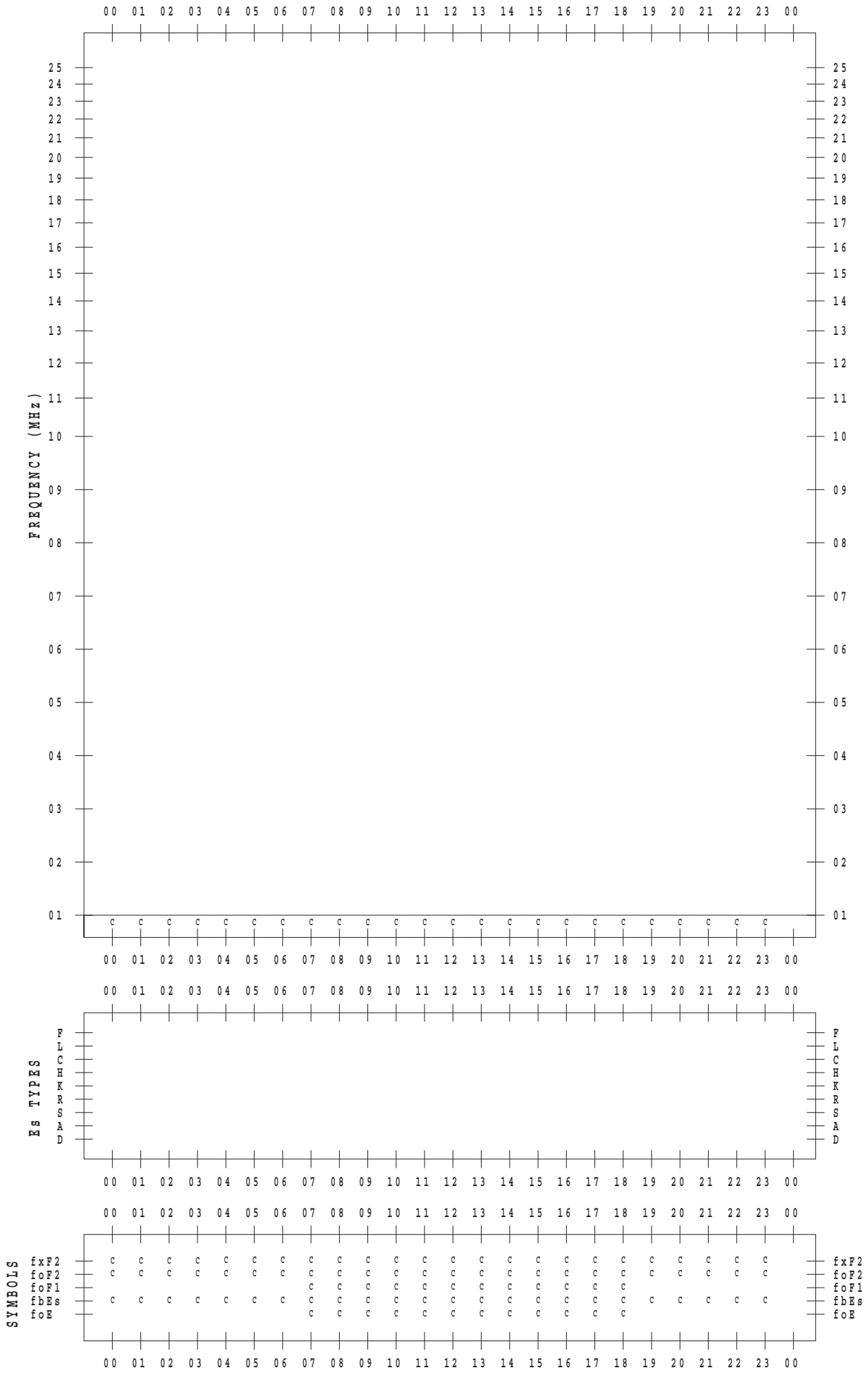
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/19

135 °E MEAN TIME



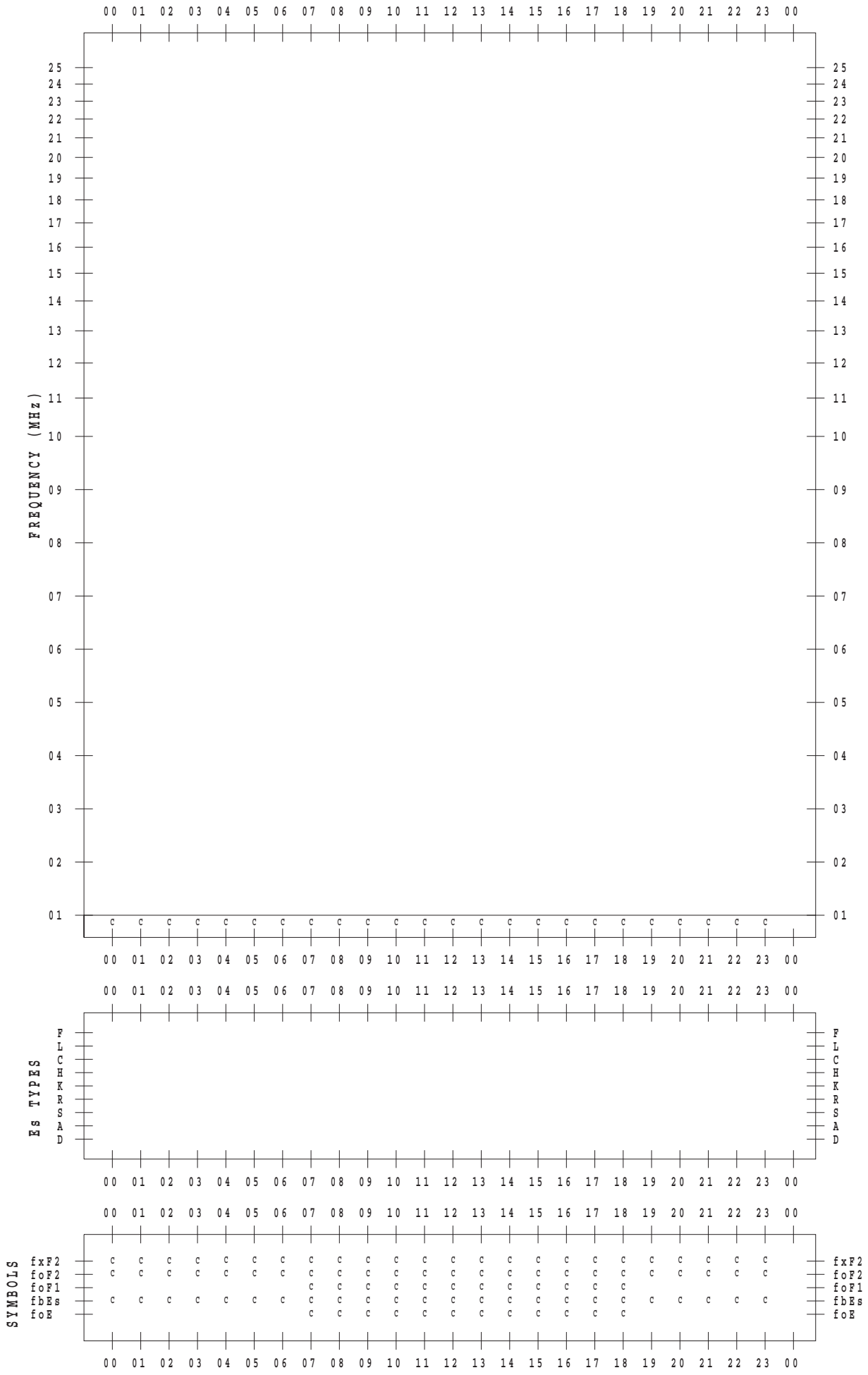
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/20

135 °E MEAN TIME



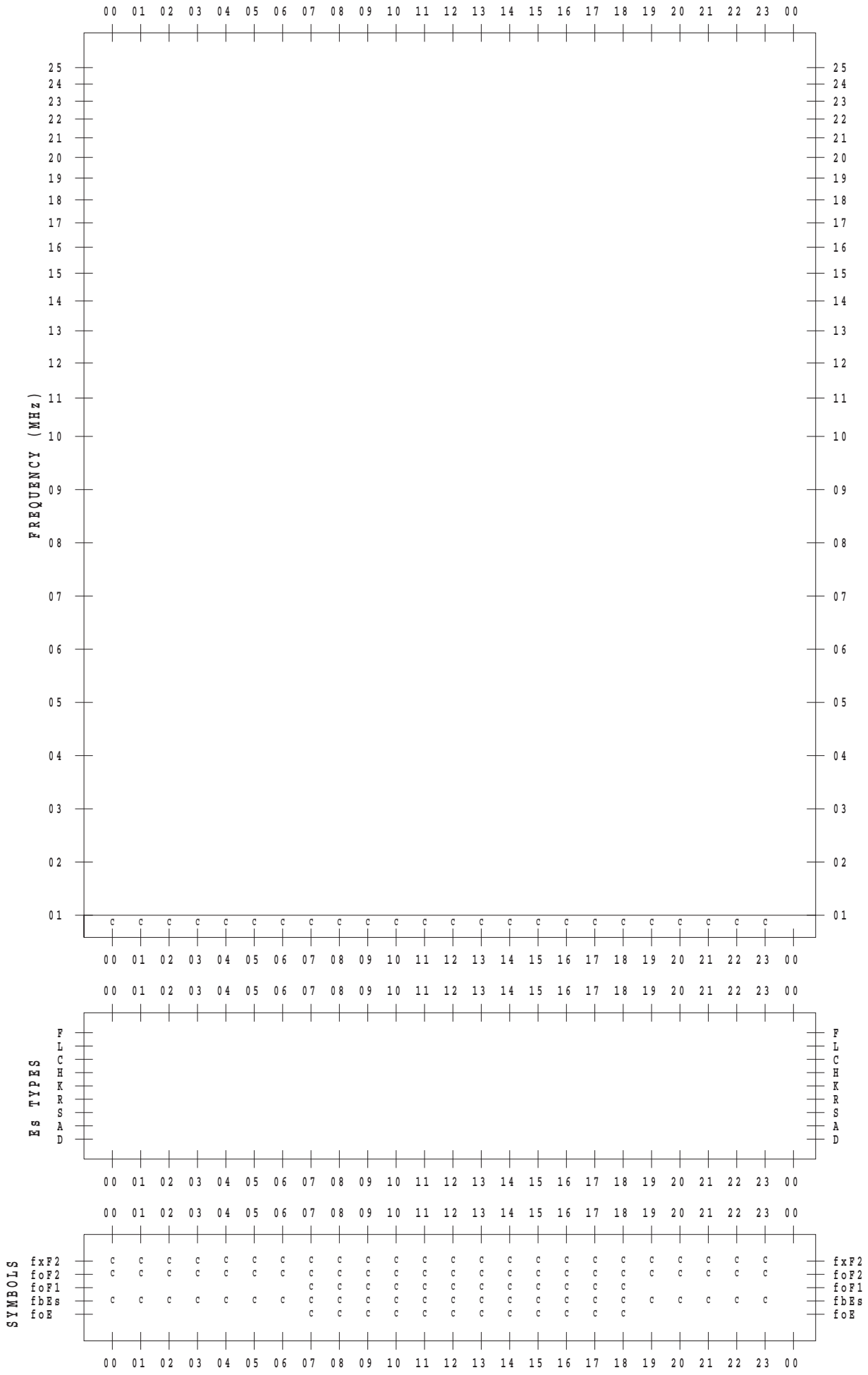
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/21

135 °E MEAN TIME



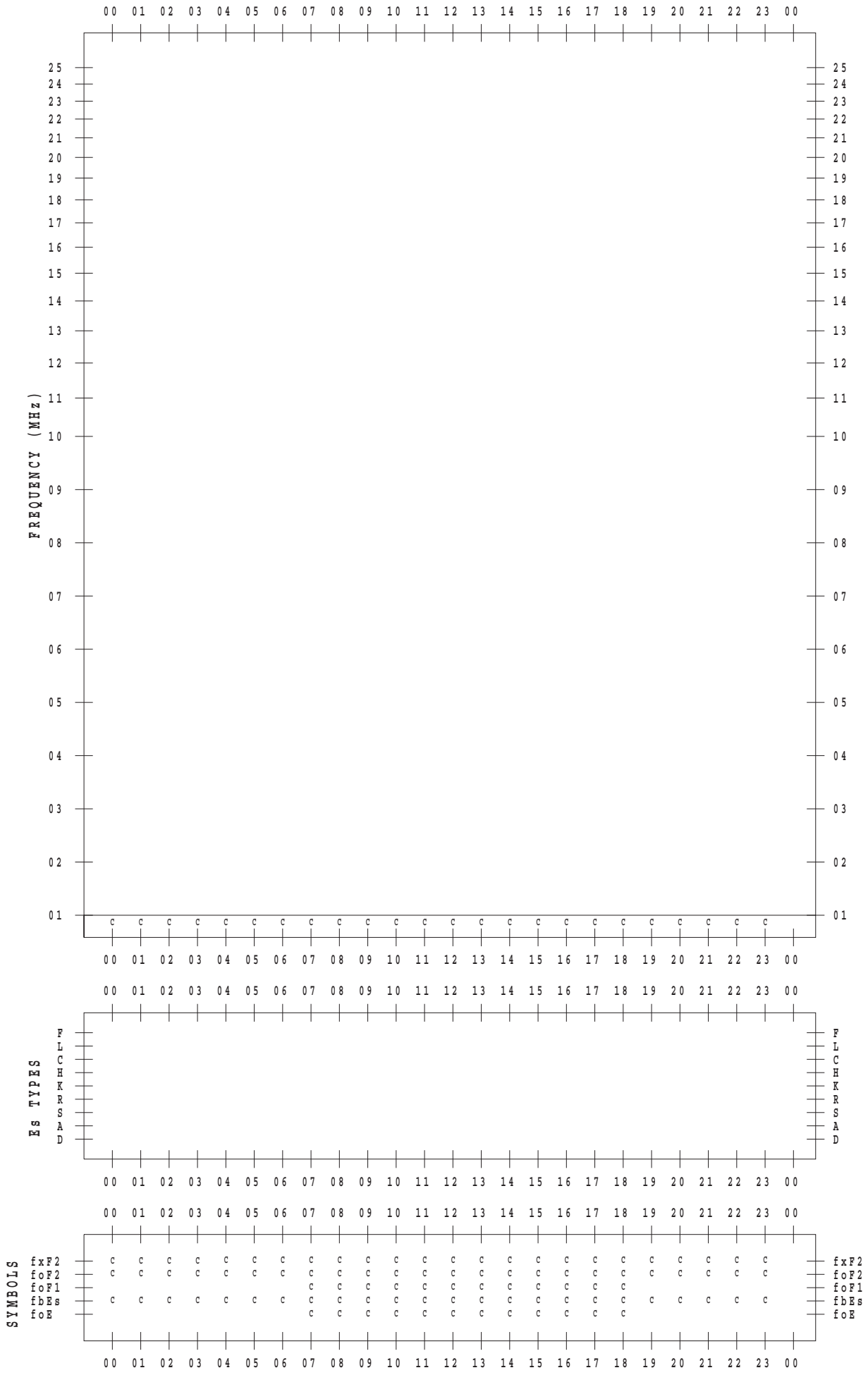
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/22

135 °E MEAN TIME



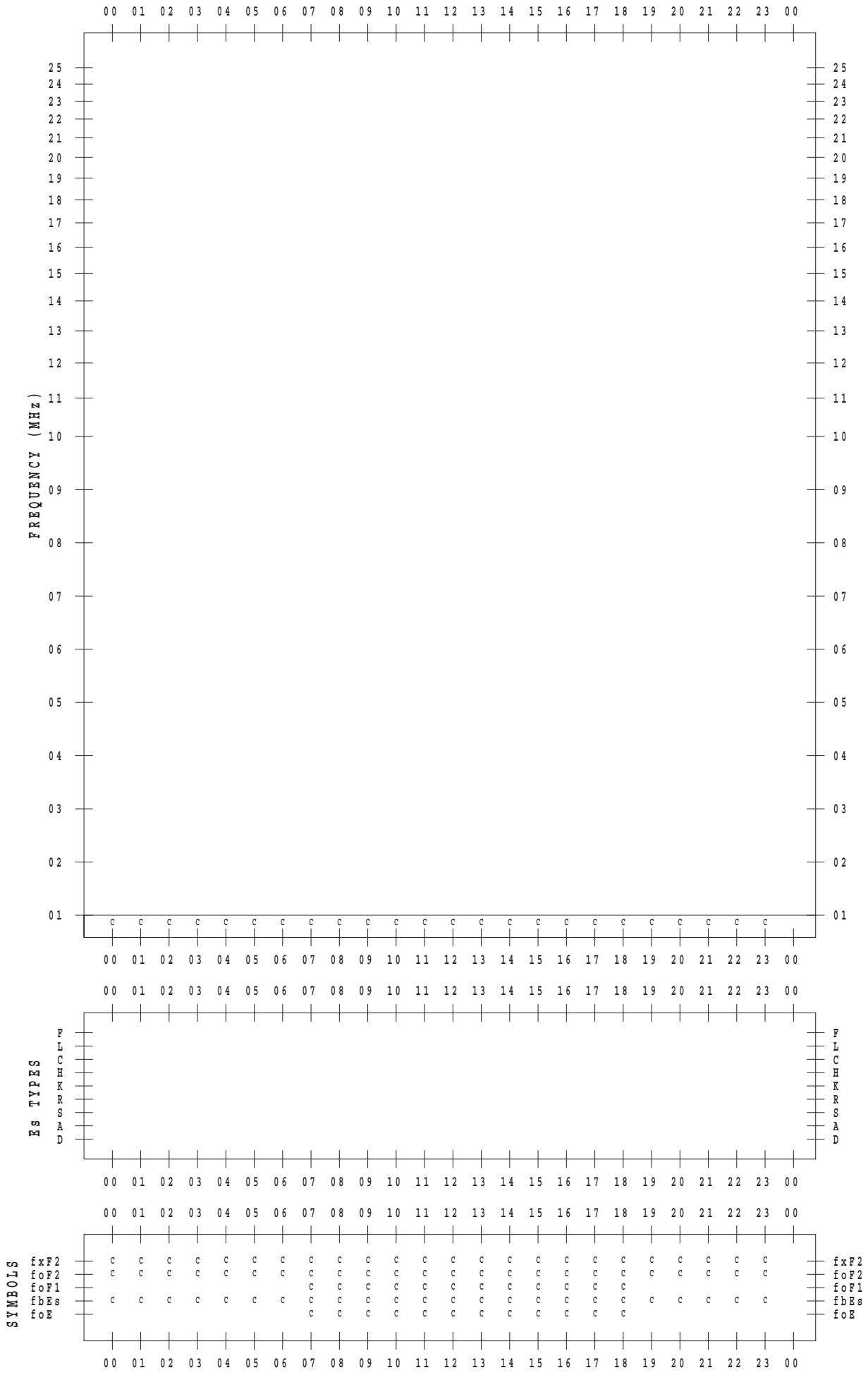
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/23

135 °E MEAN TIME



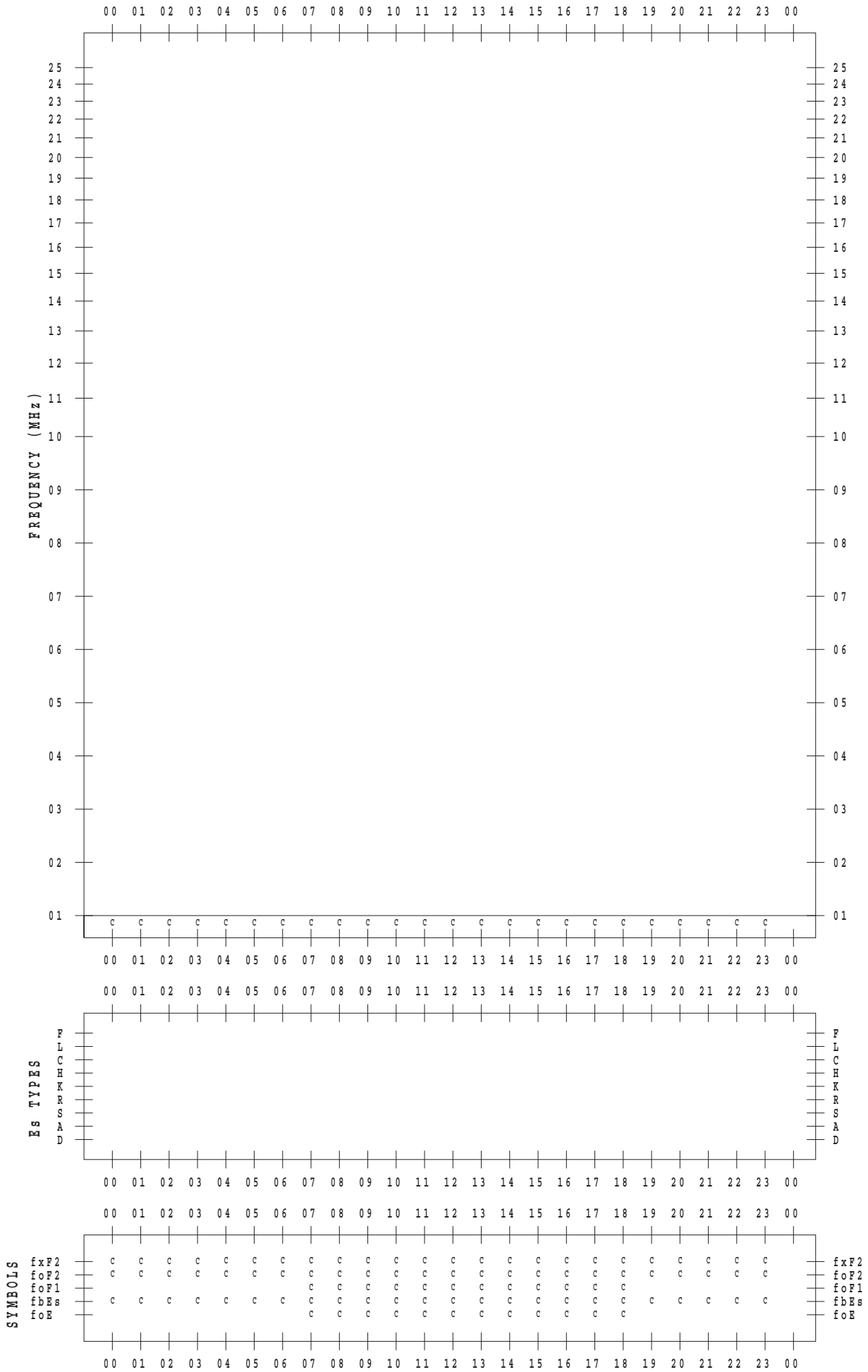
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/24

135 °E MEAN TIME



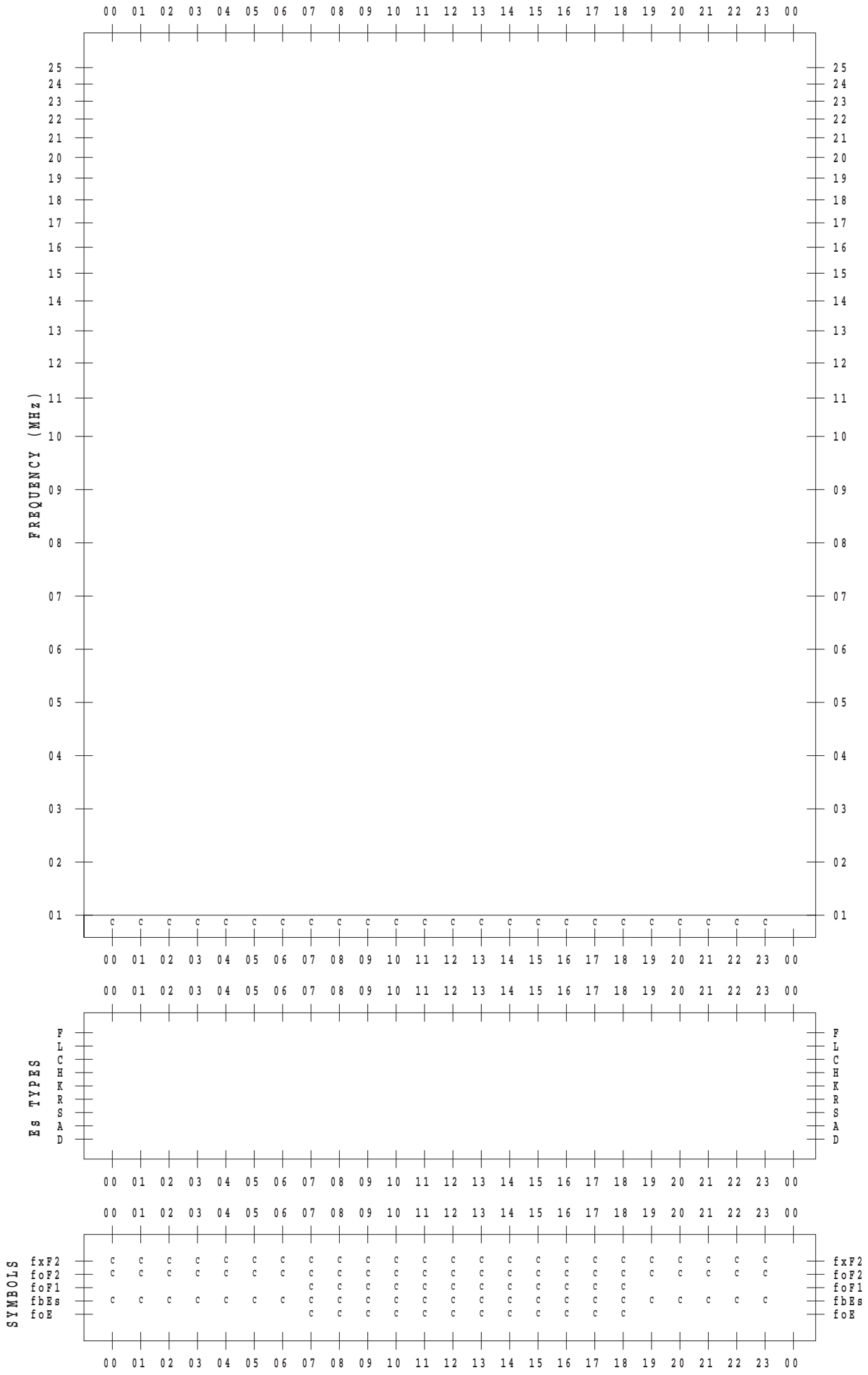
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/25

135 °E MEAN TIME



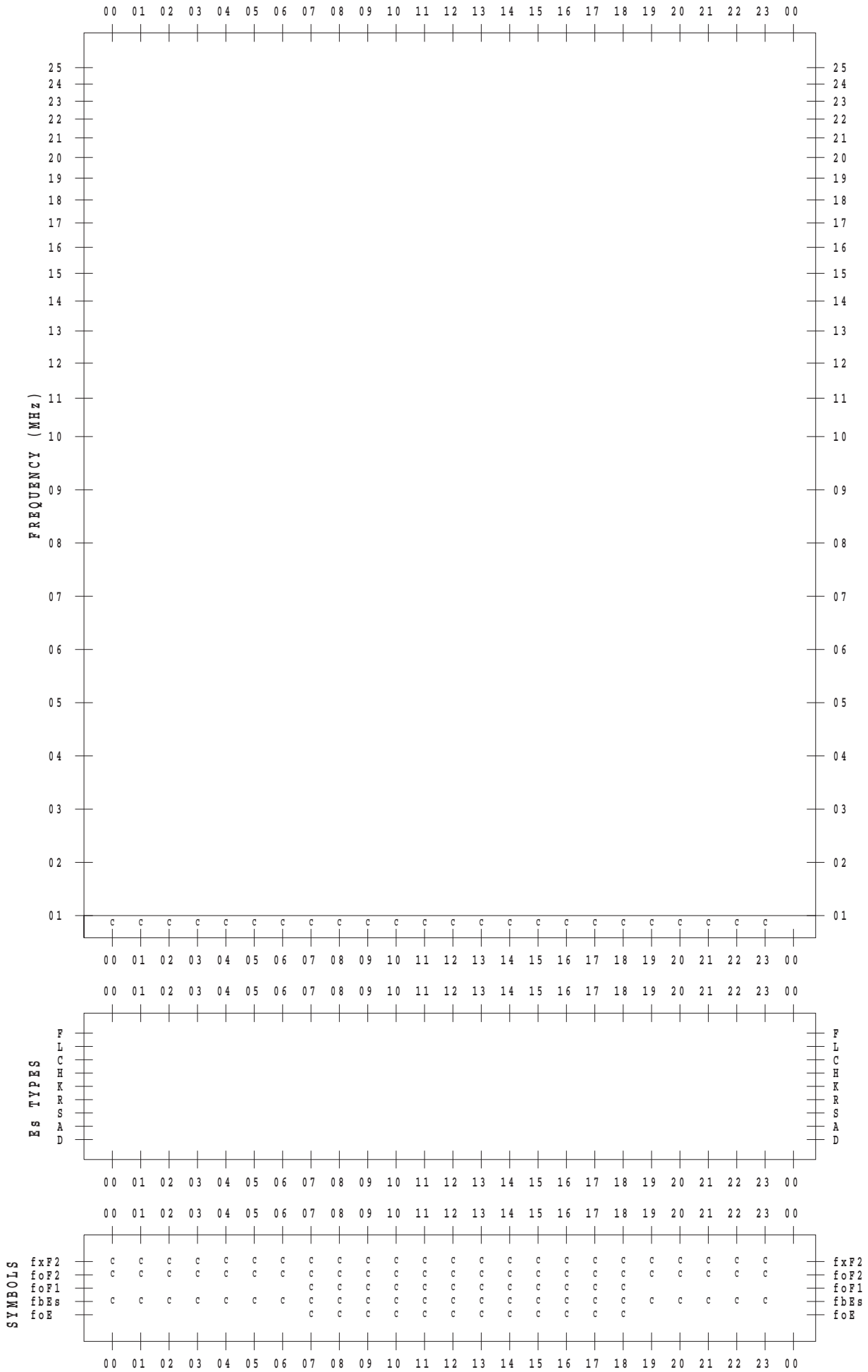
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/26

135 °E MEAN TIME



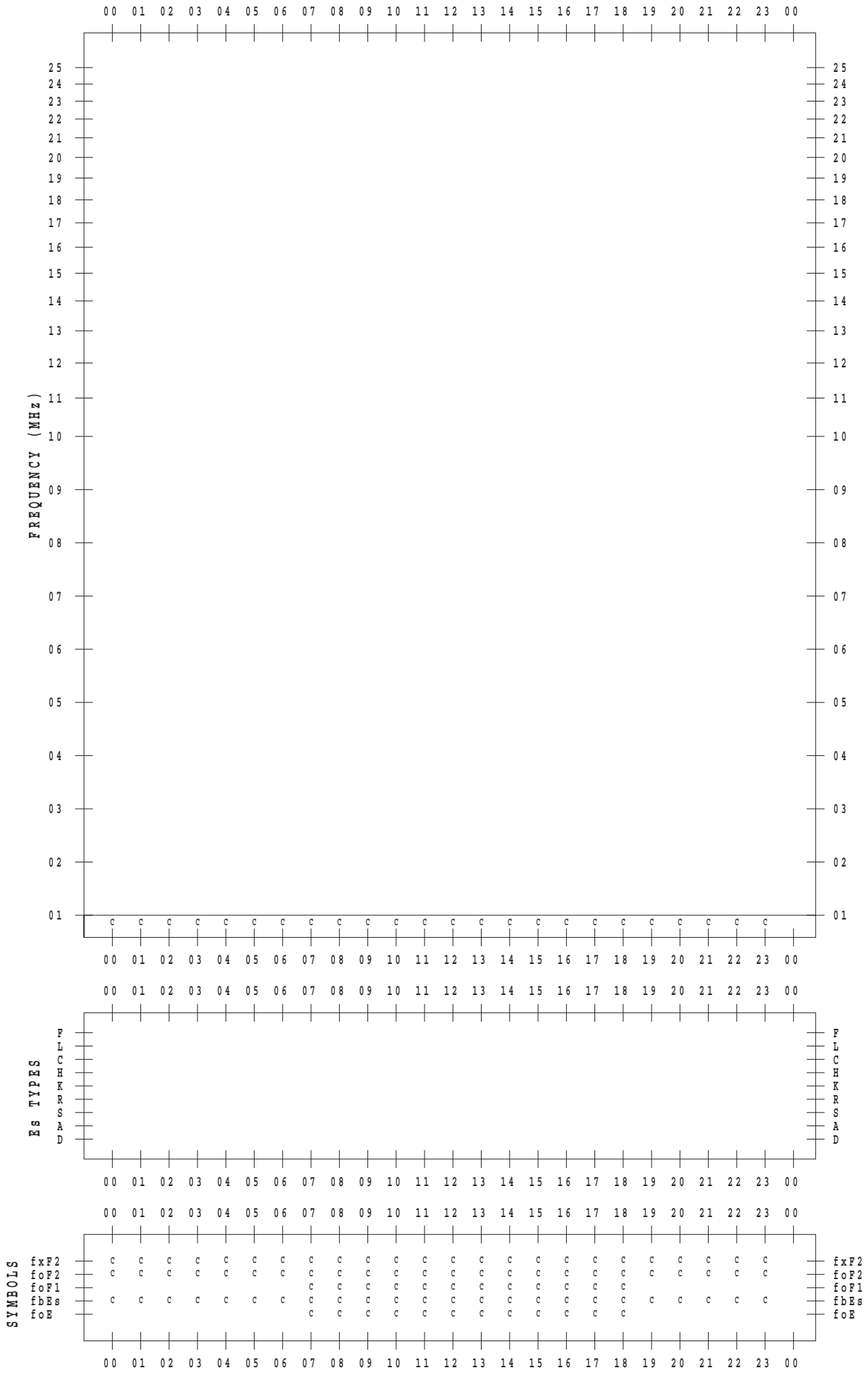
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/27

135 °E MEAN TIME



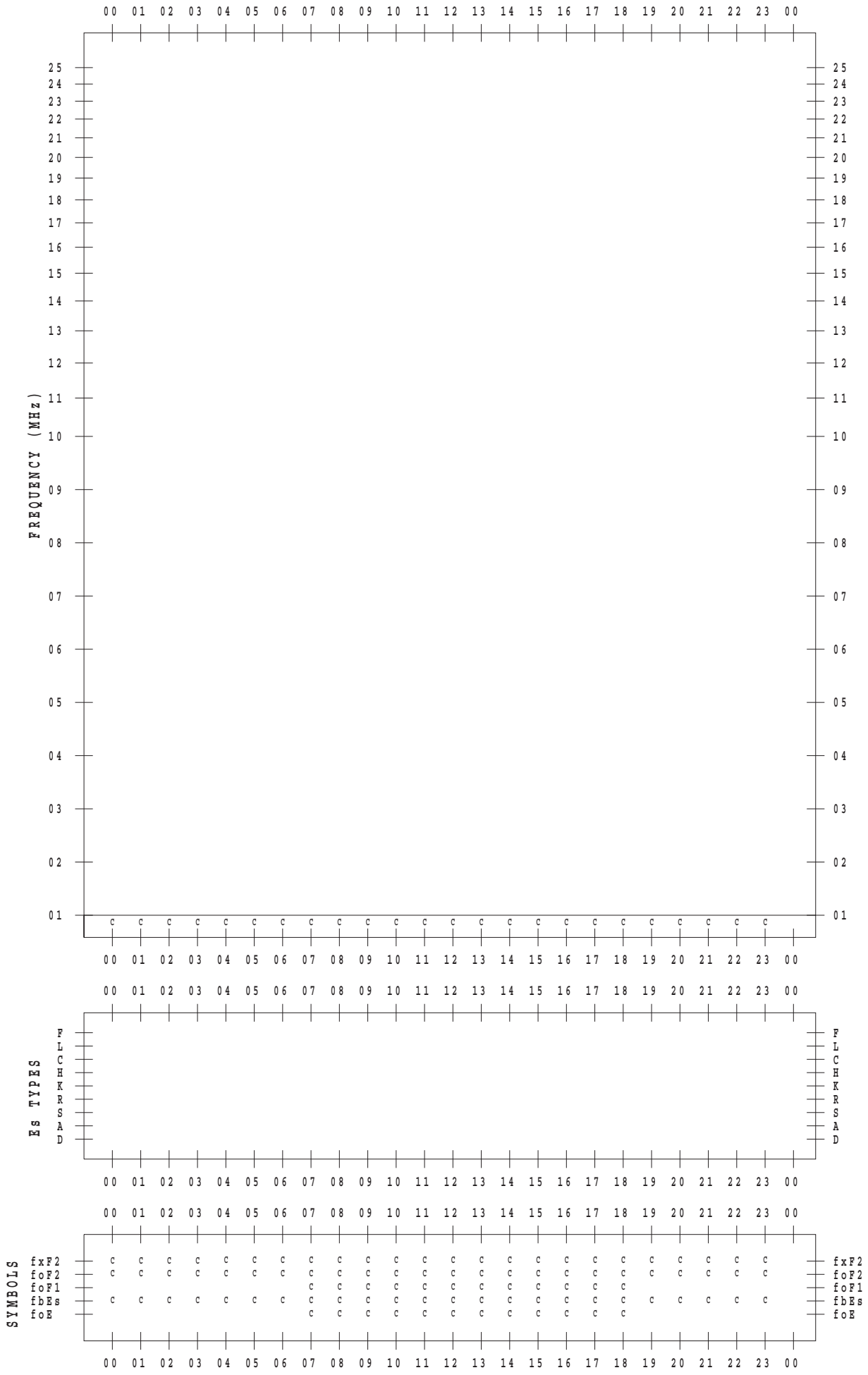
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/28

135 °E MEAN TIME



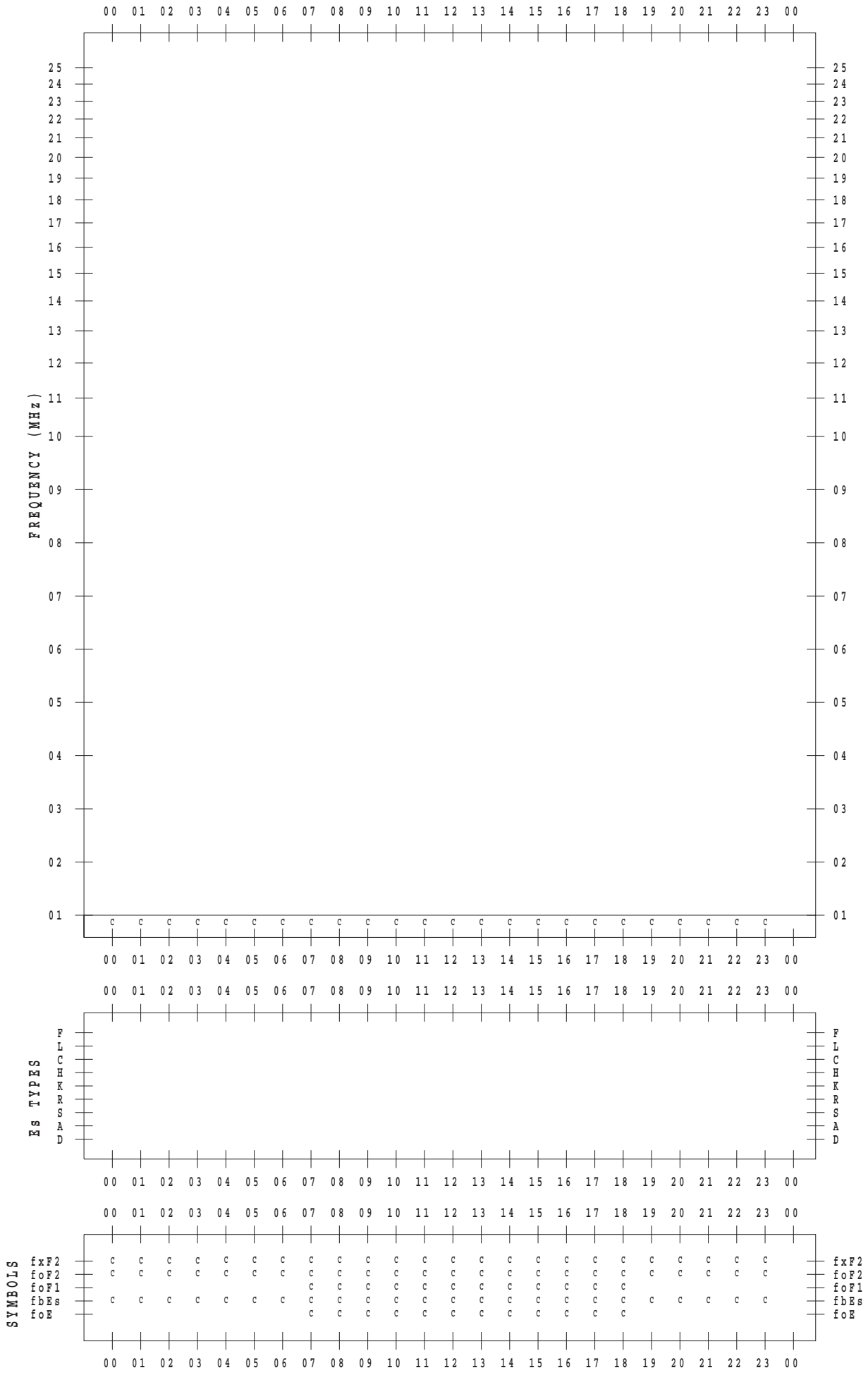
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/29

135 °E MEAN TIME



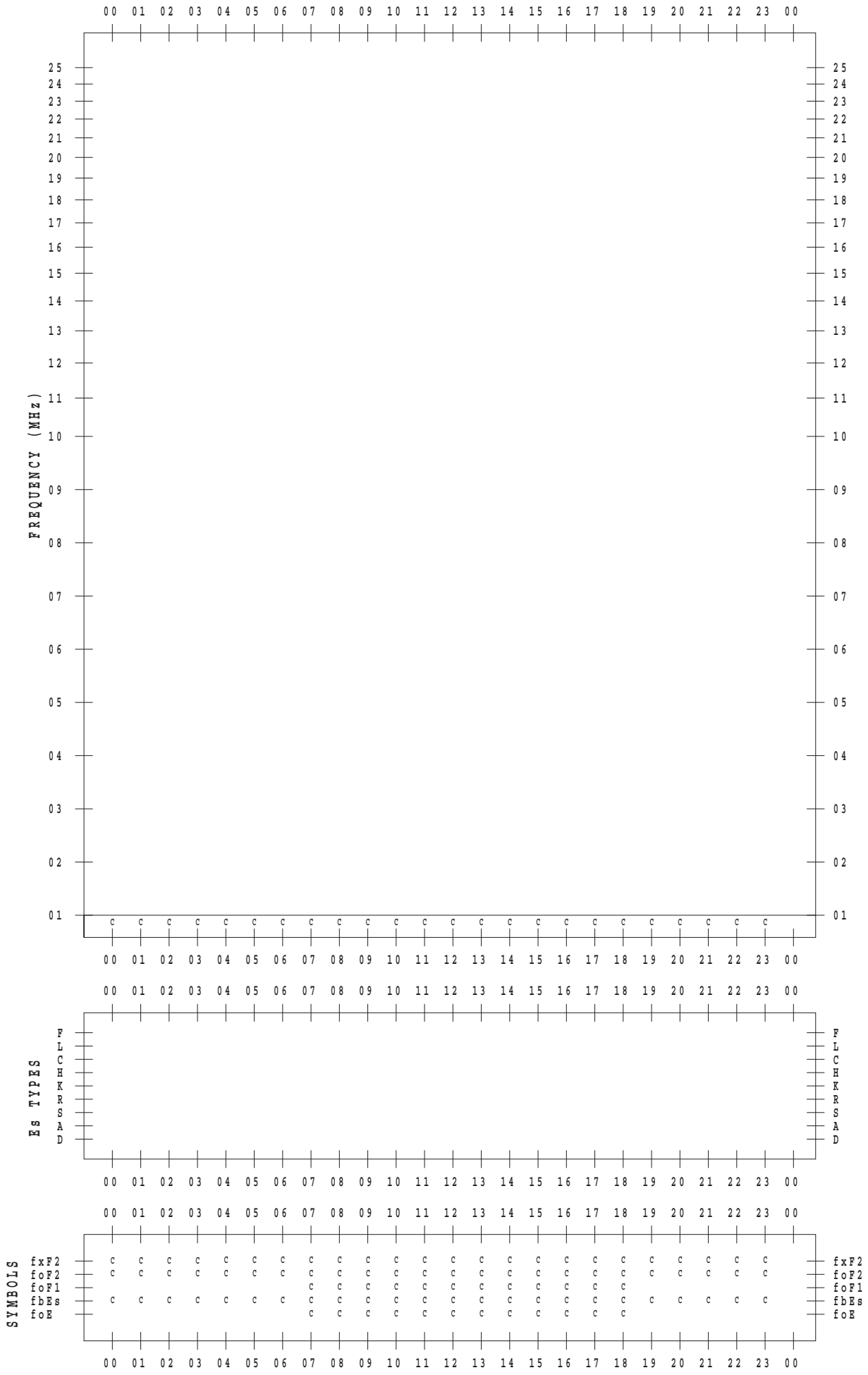
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/30

135 °E MEAN TIME



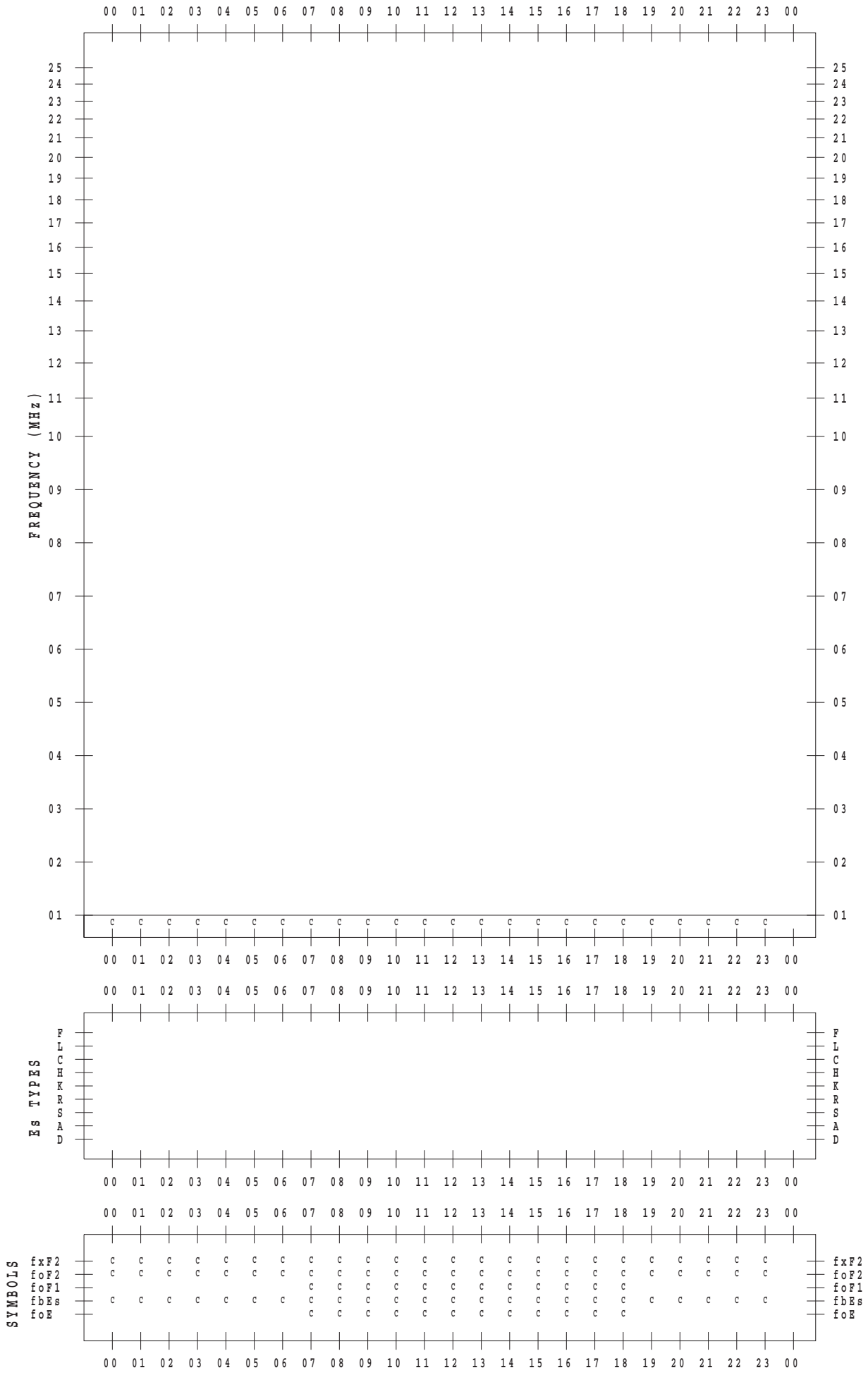
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2017/ 1/31

135 °E MEAN TIME



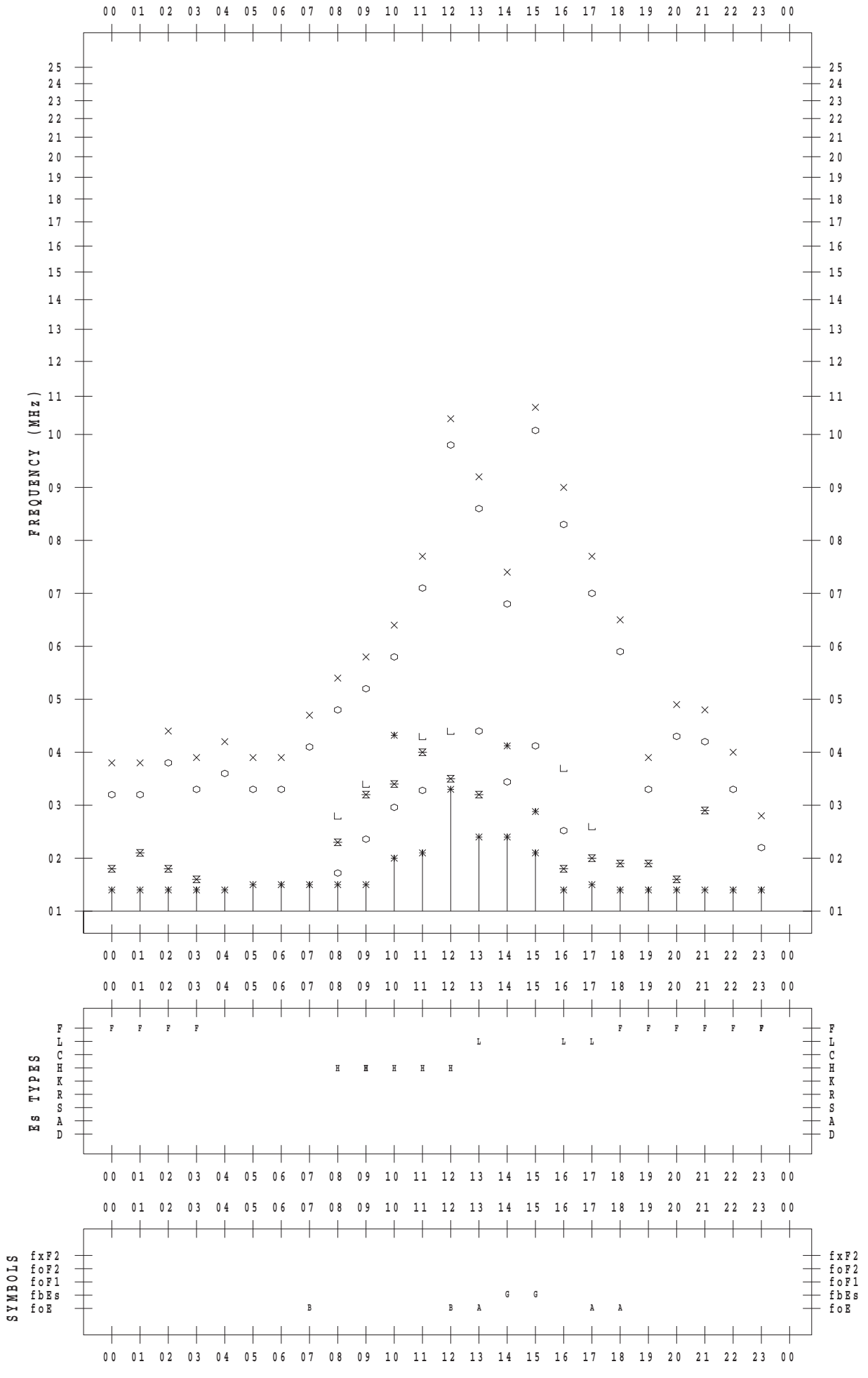
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 1

135 °E MEAN TIME



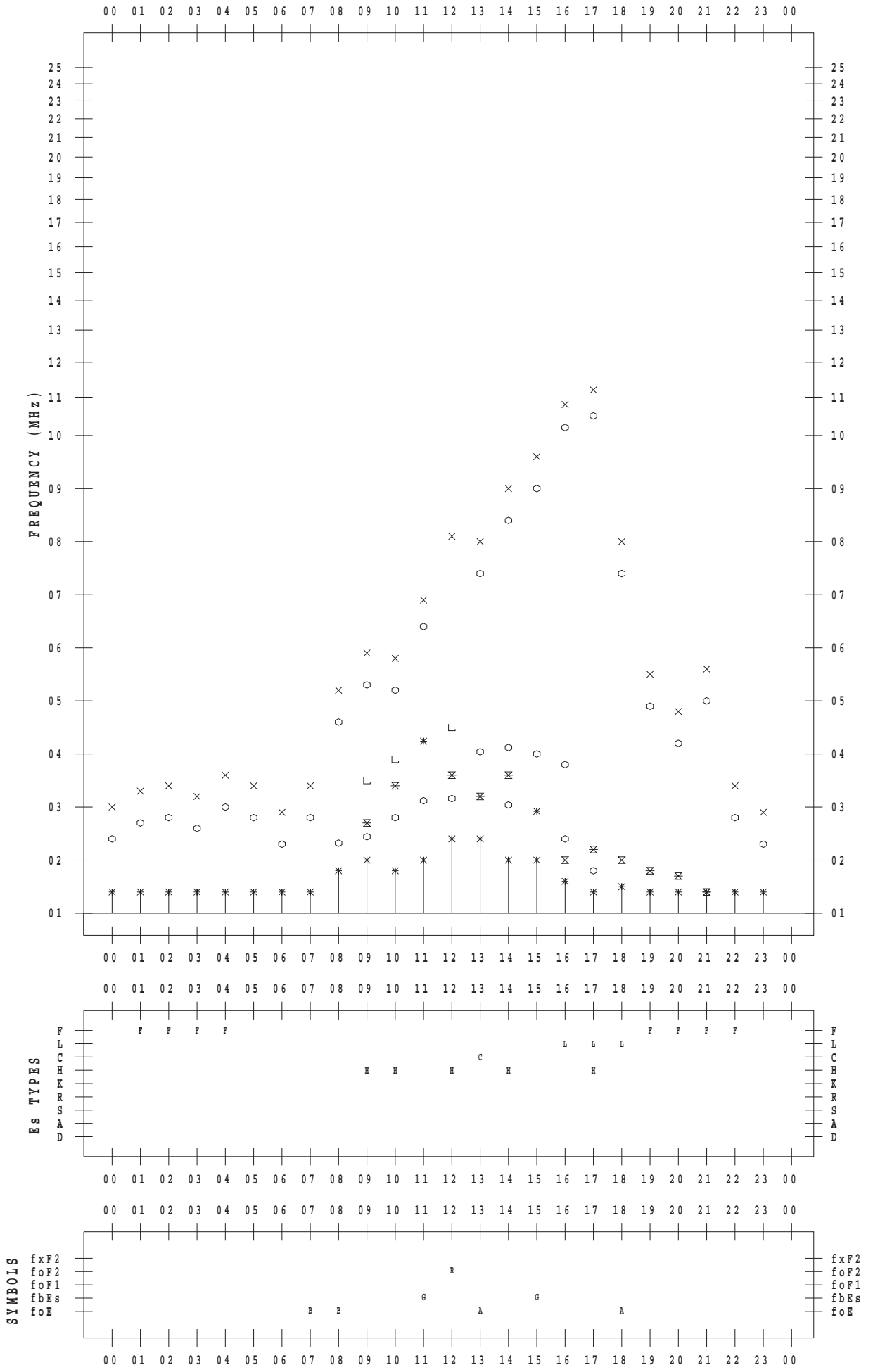
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 2

135 °E MEAN TIME



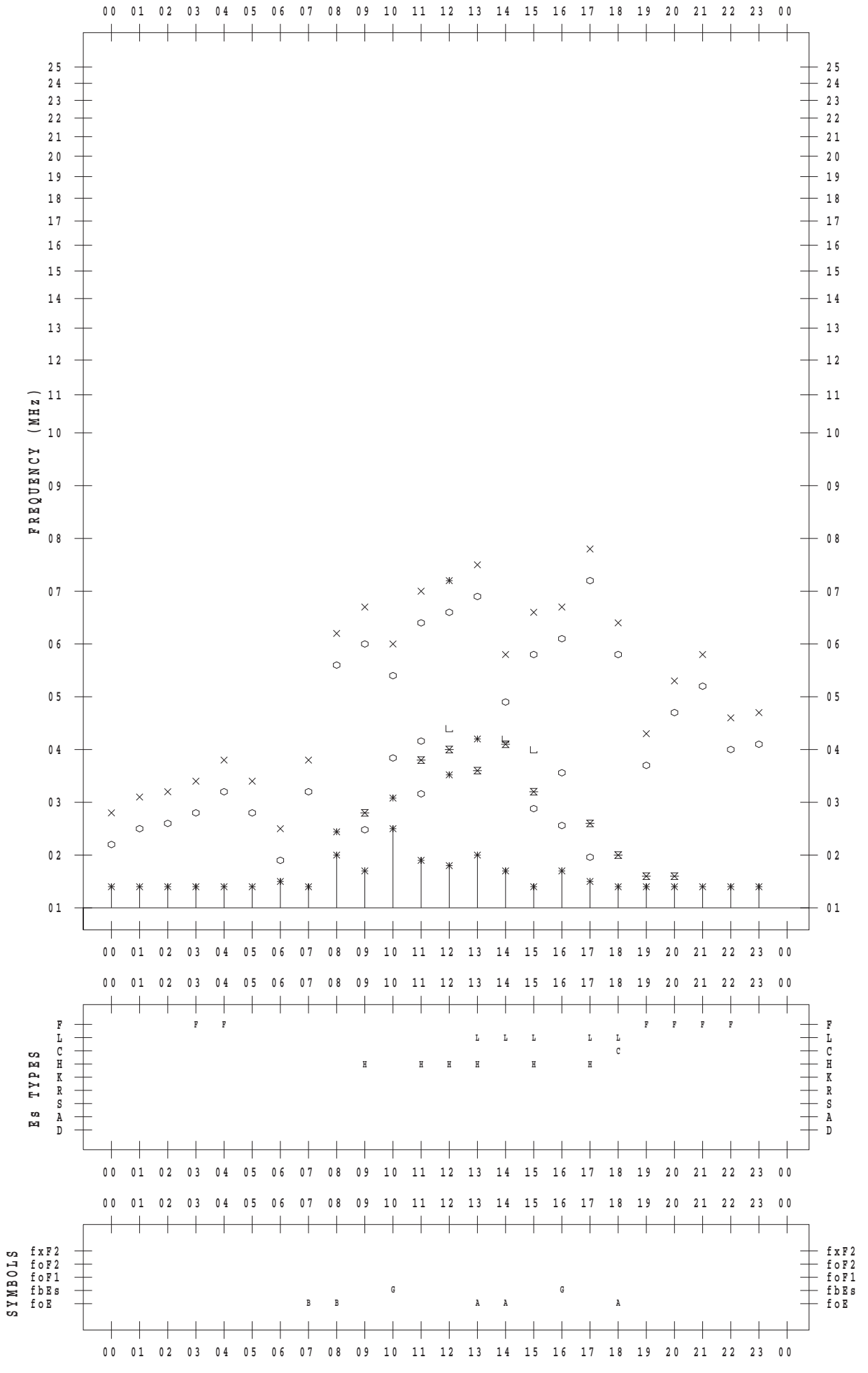
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 3

135 °E MEAN TIME



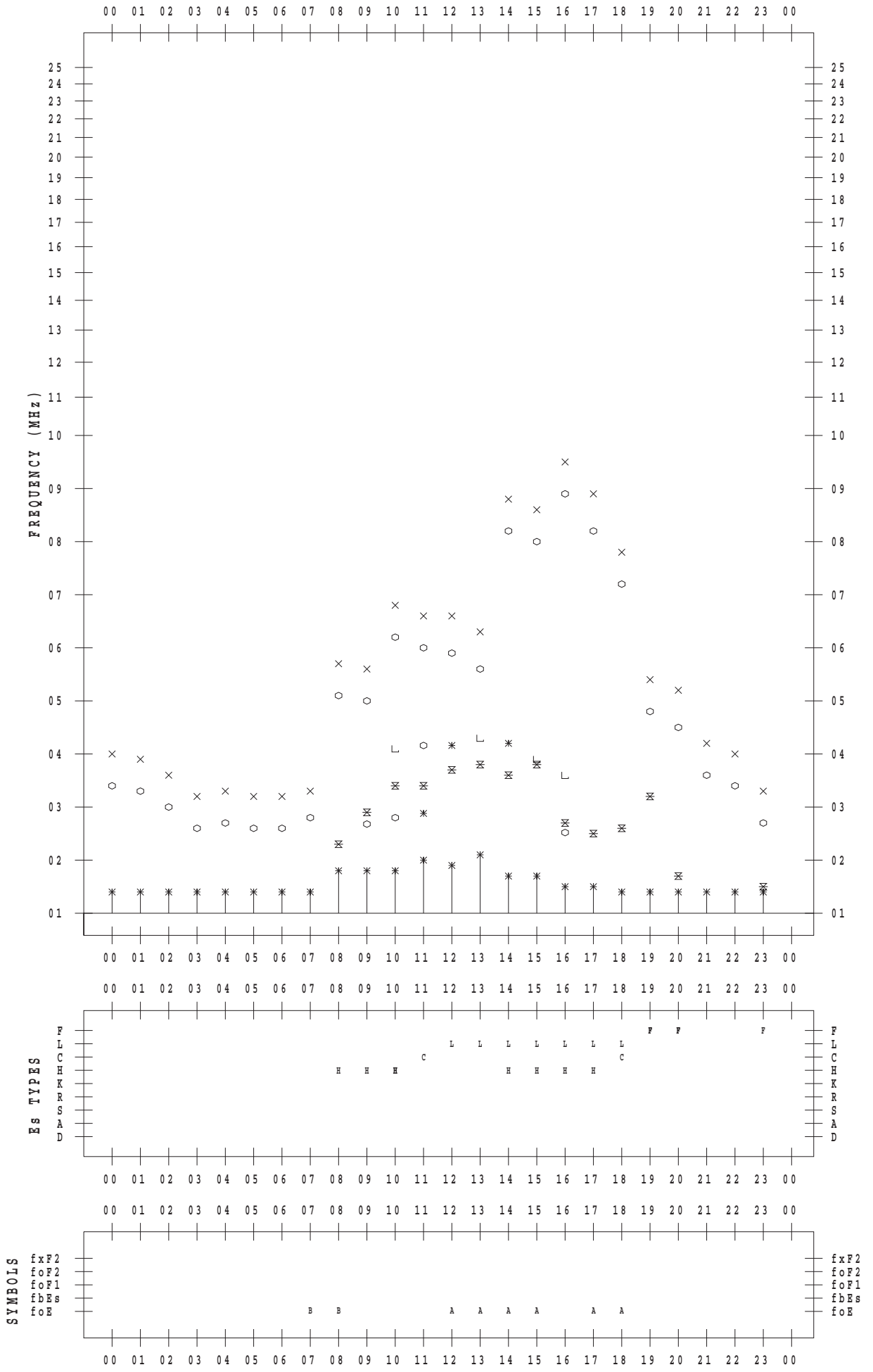
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 4

135 °E MEAN TIME



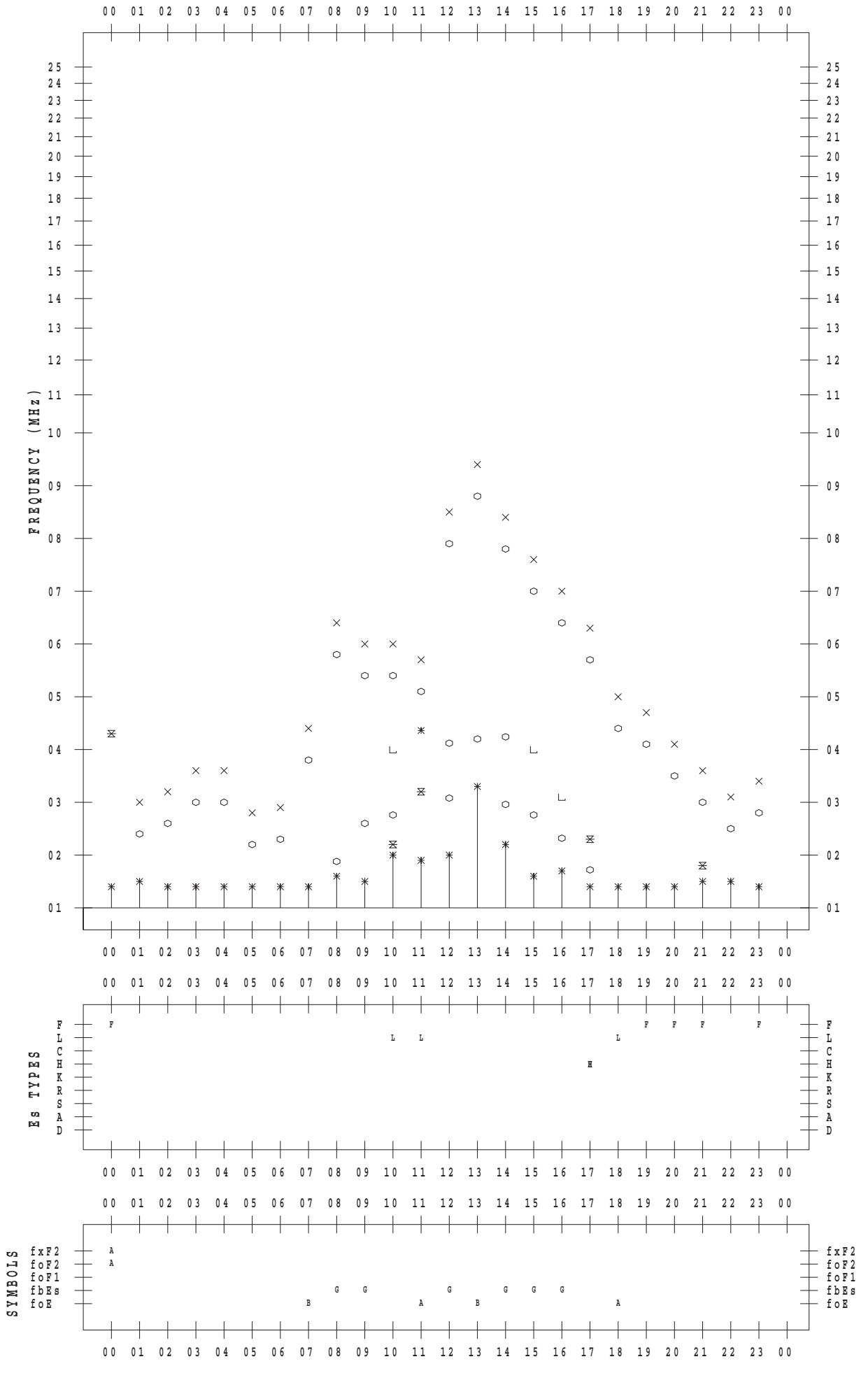
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 5

135 °E MEAN TIME



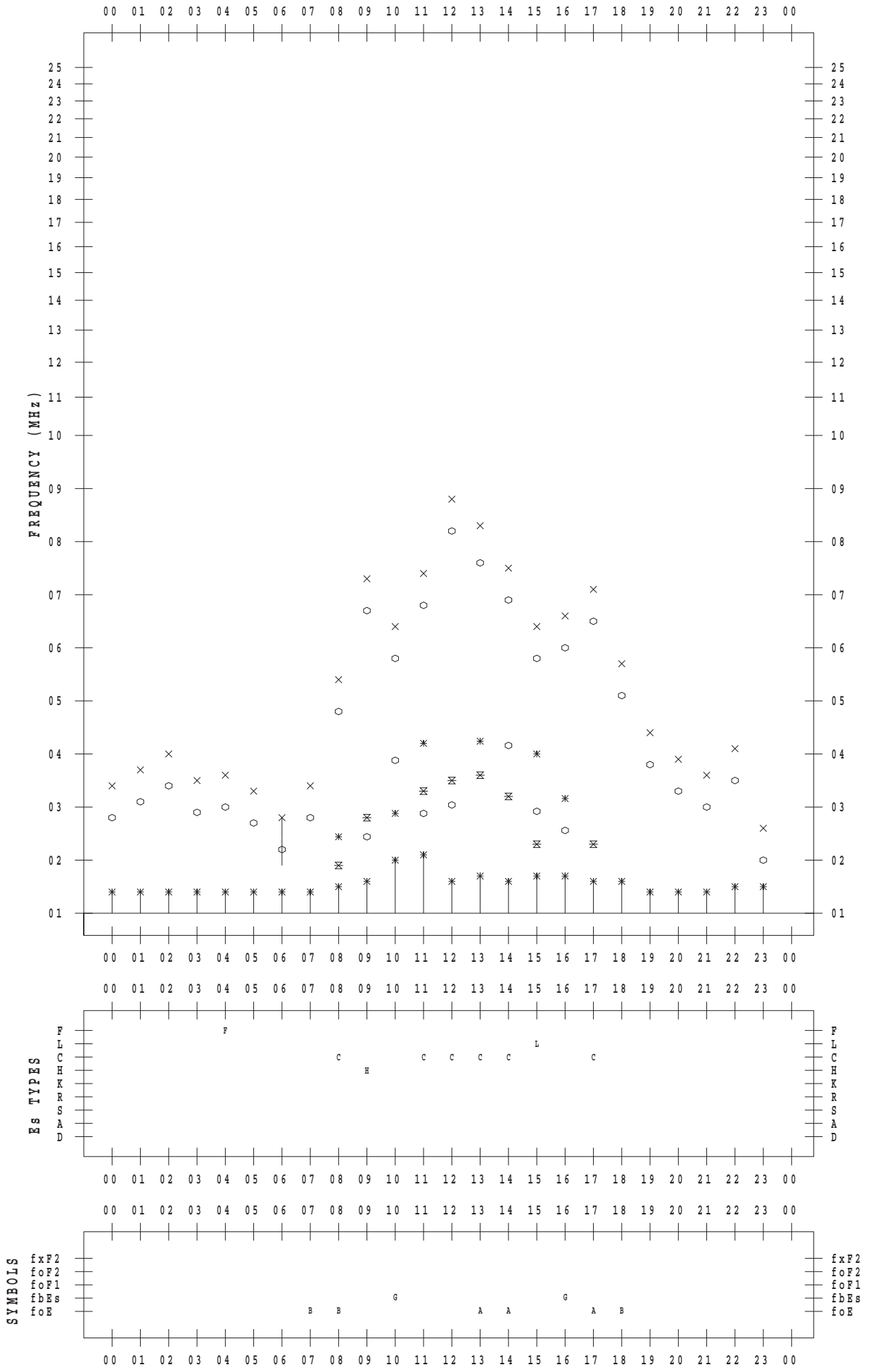
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 6

135 °E MEAN TIME



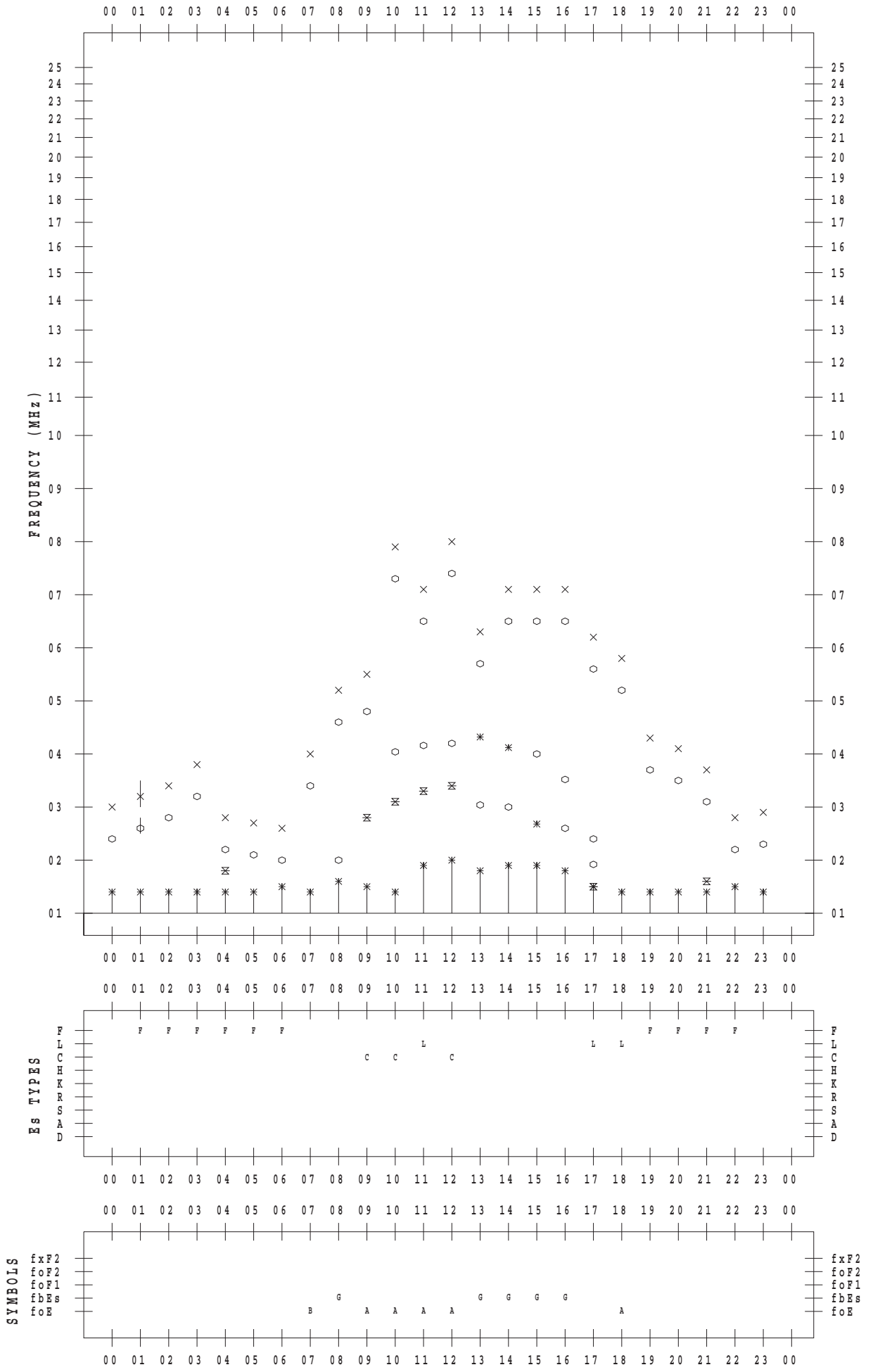
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 7

135 °E MEAN TIME



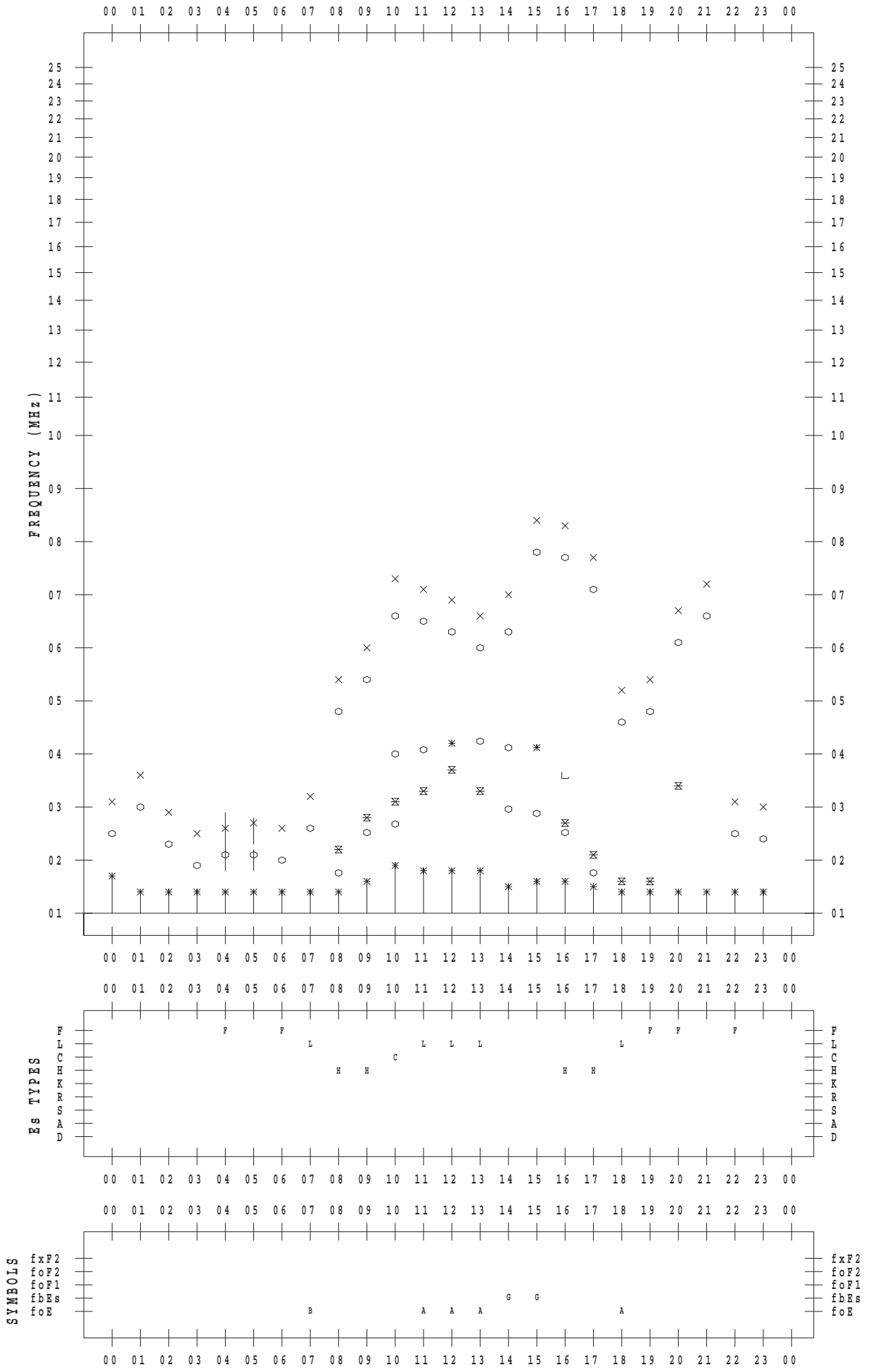
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 8

135 °E MEAN TIME



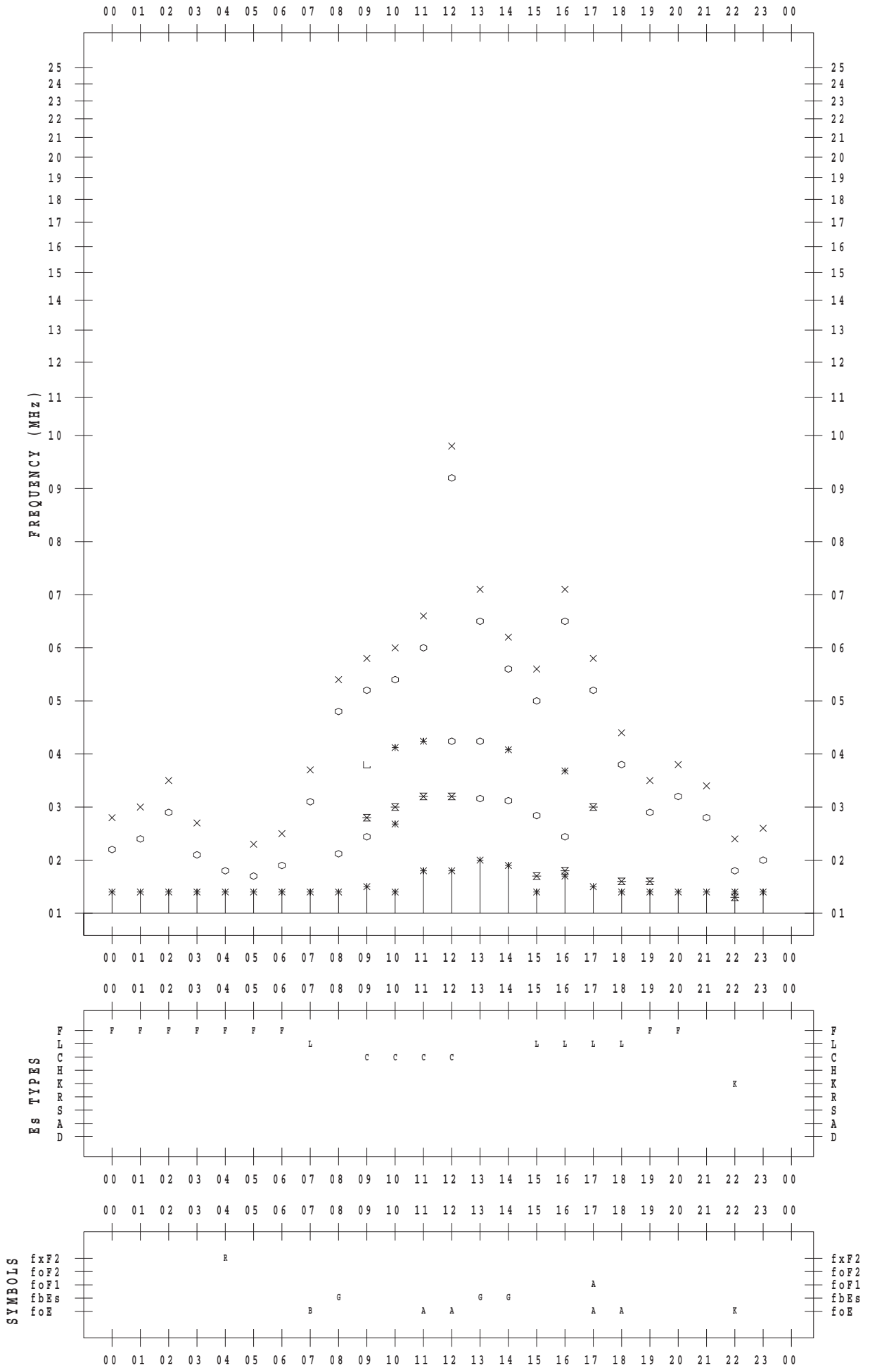
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/ 9

135 °E MEAN TIME



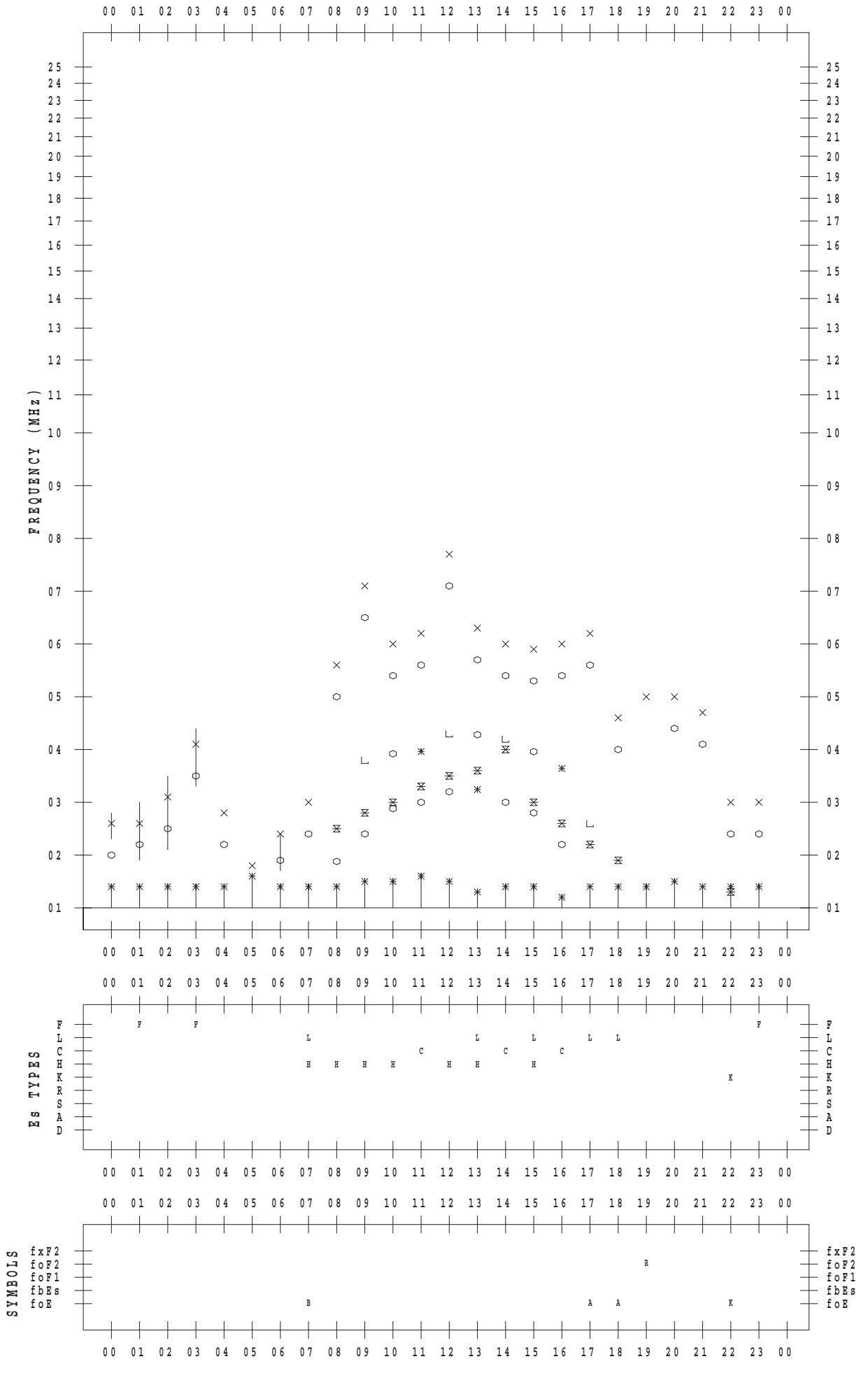
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/10

135 °E MEAN TIME



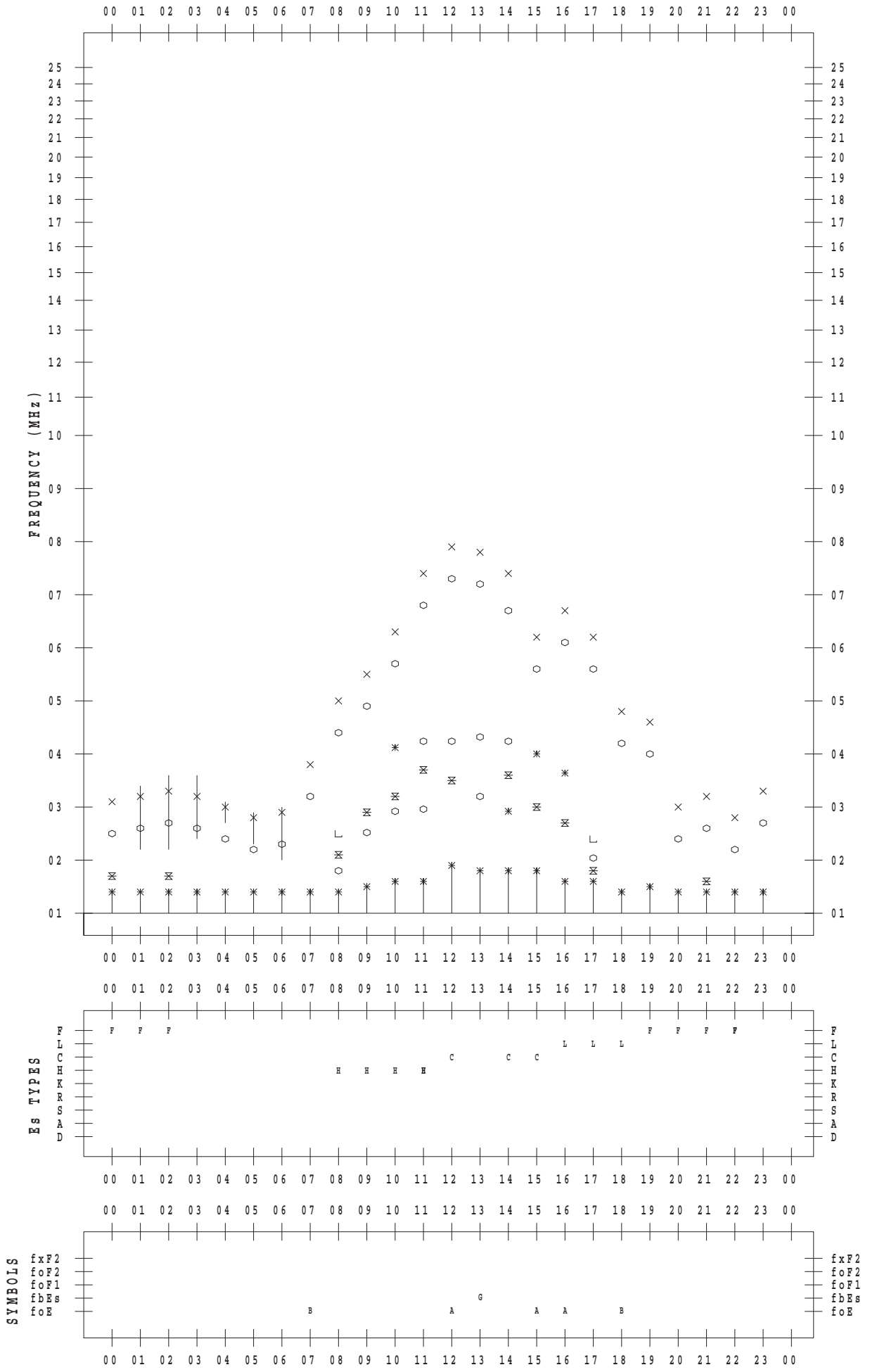
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/11

135 °E MEAN TIME



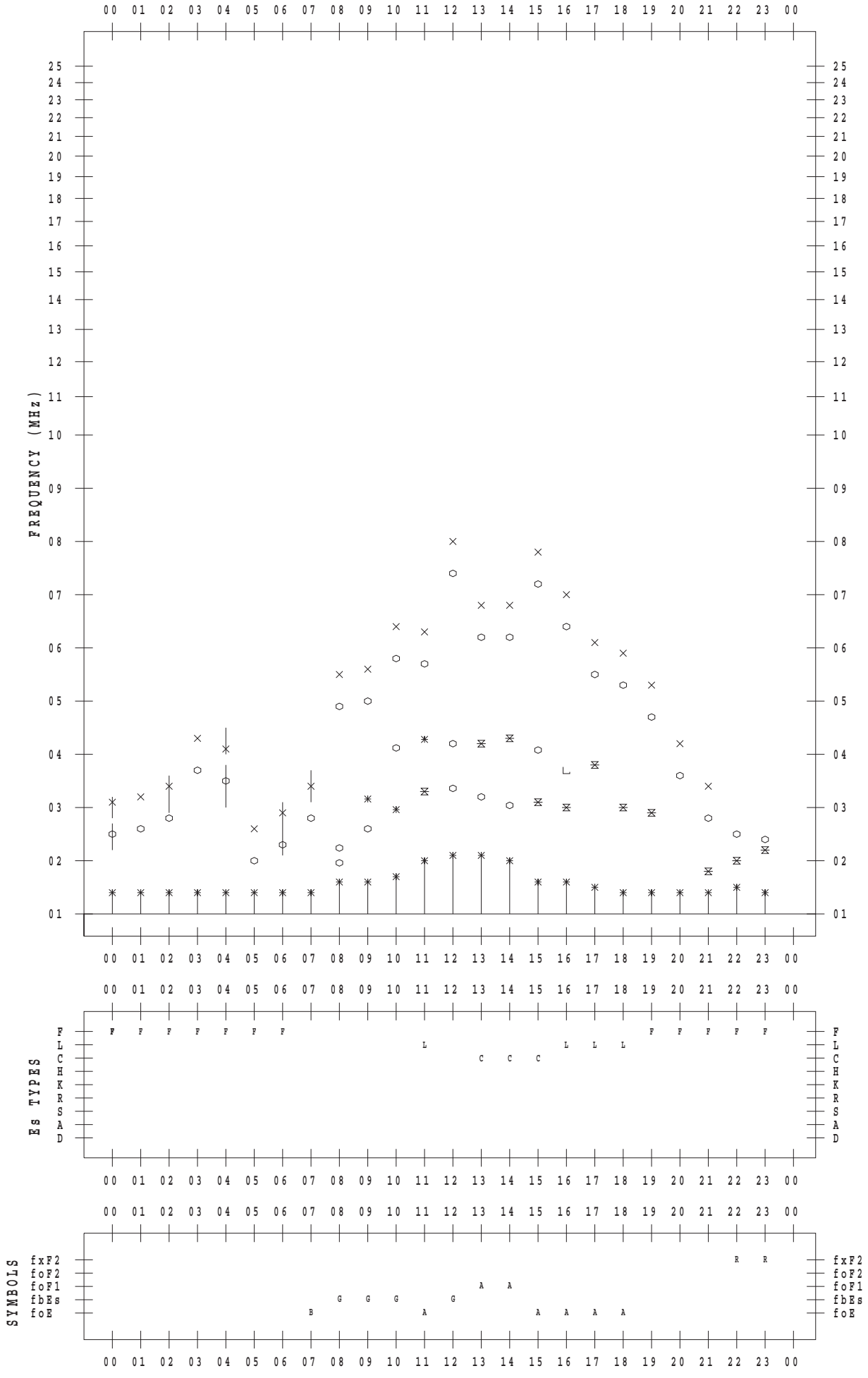
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/12

135 °E MEAN TIME



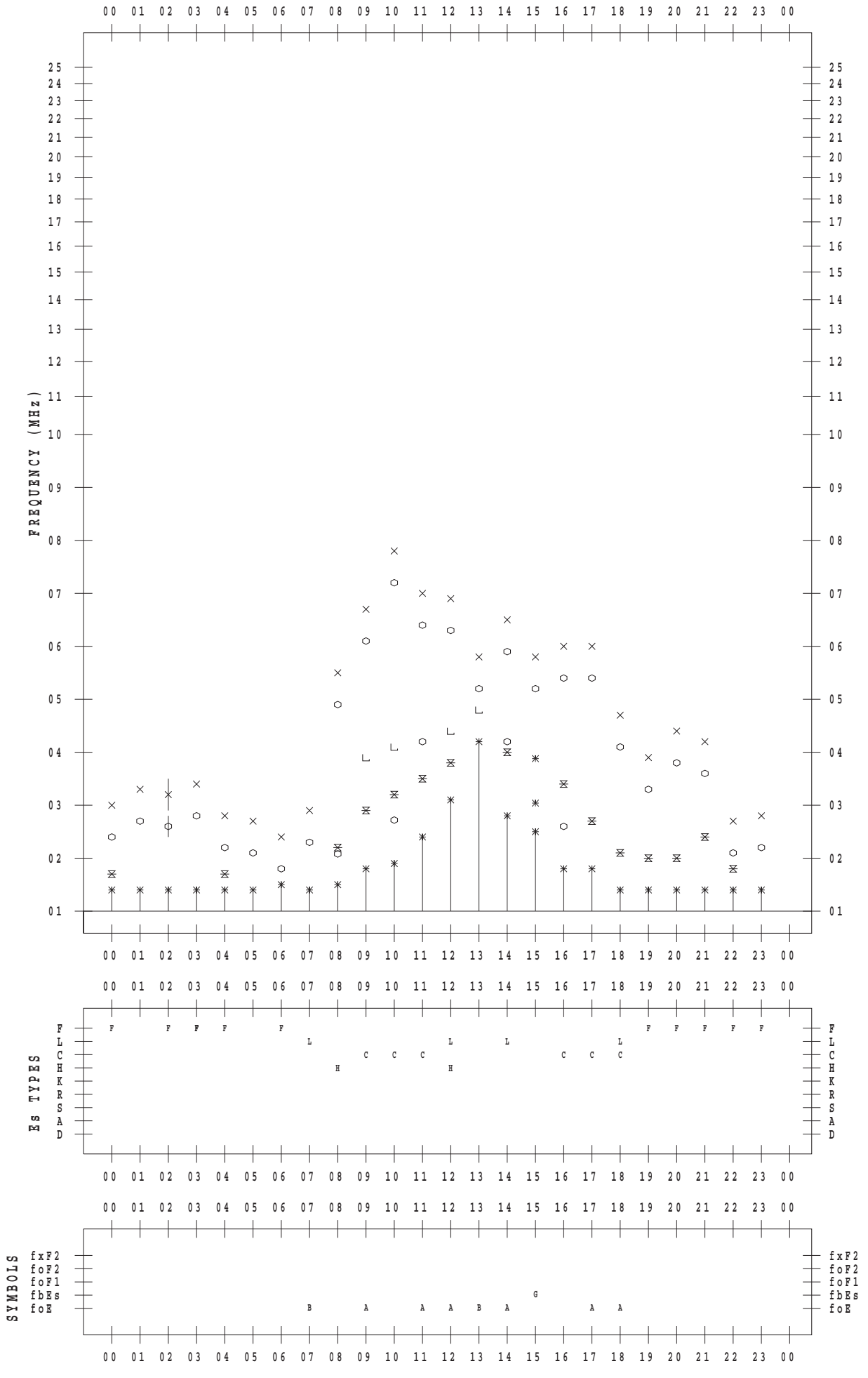
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/13

135 °E MEAN TIME



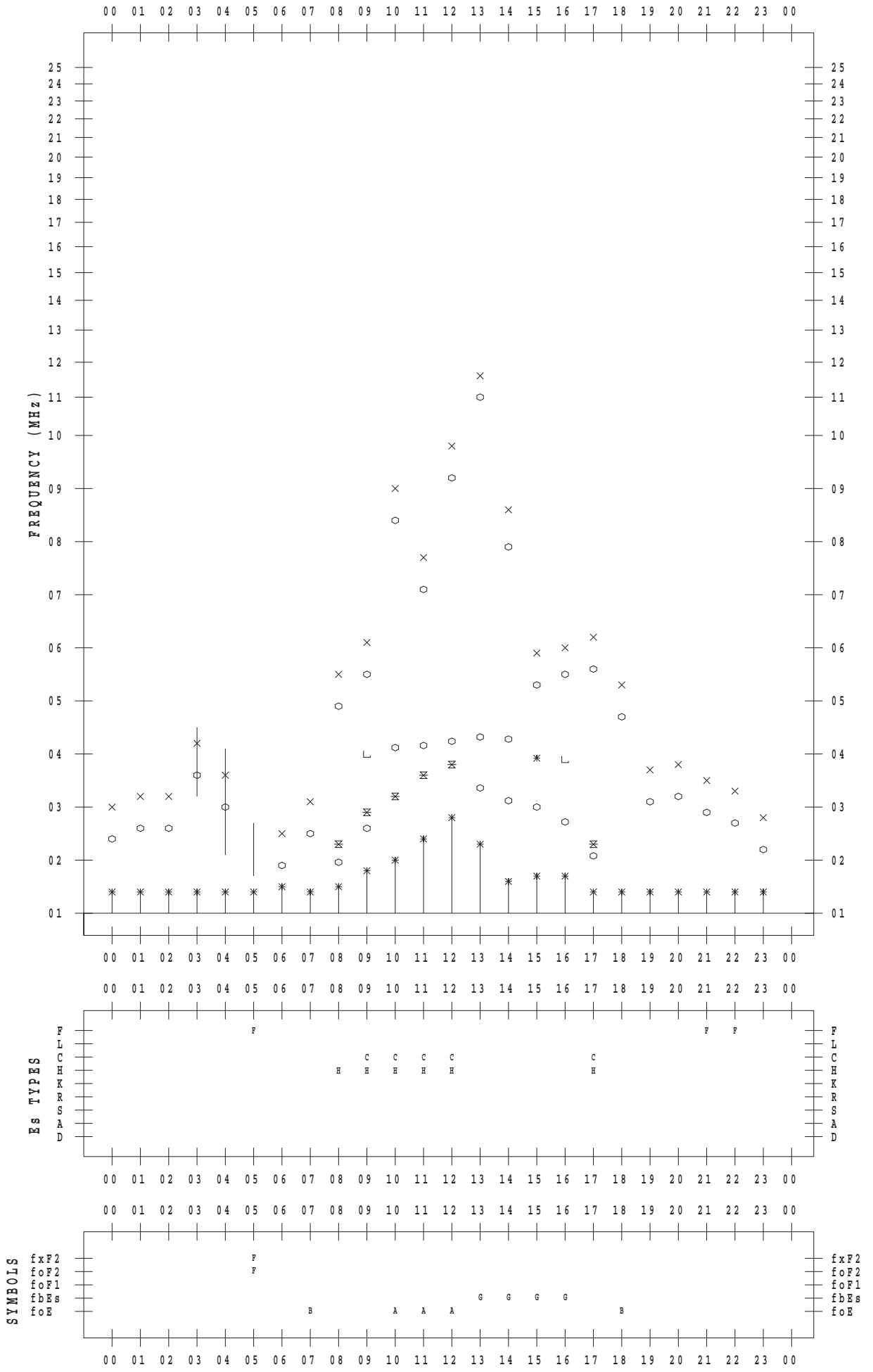
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/14

135 °E MEAN TIME



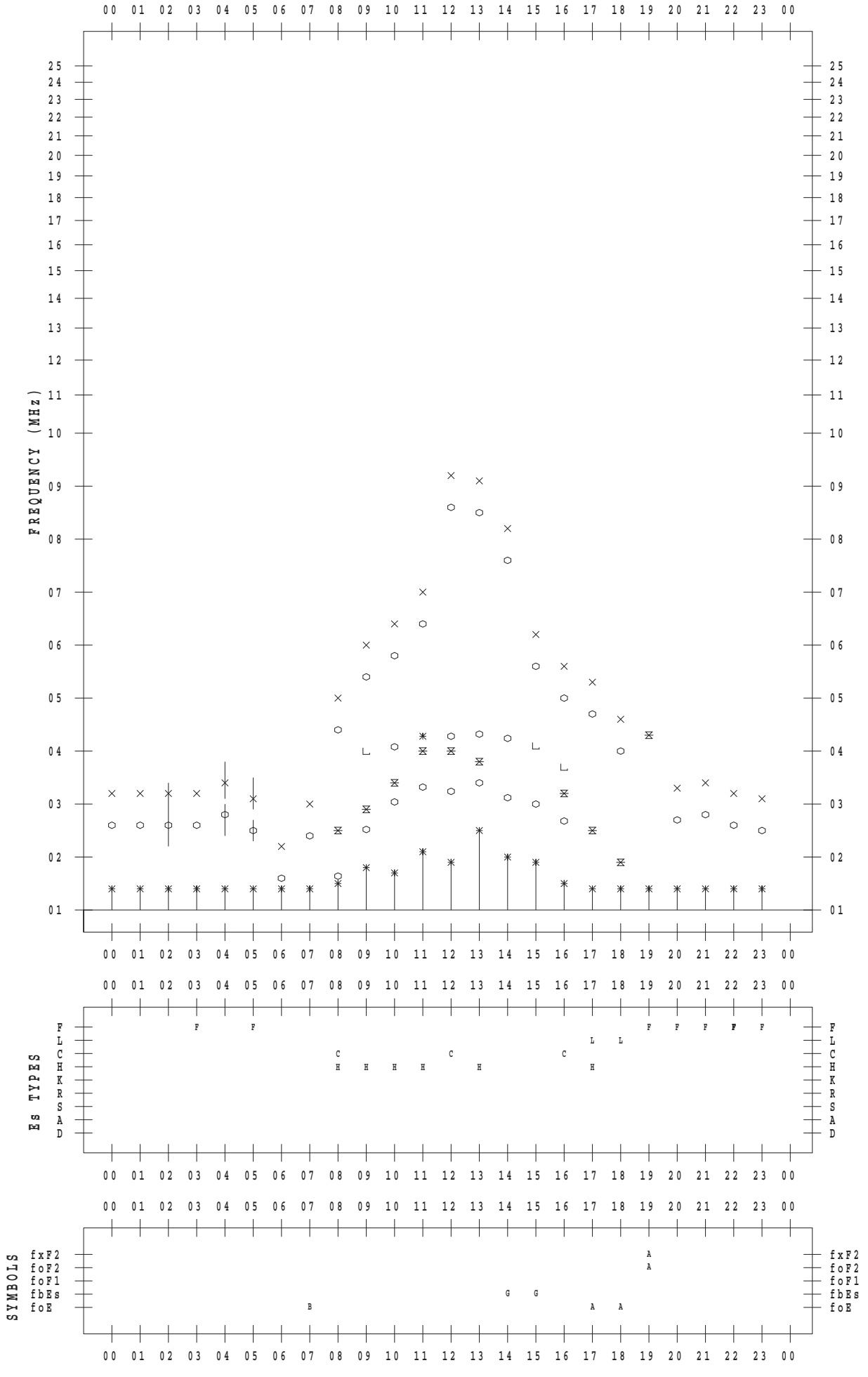
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/15

135 °E MEAN TIME



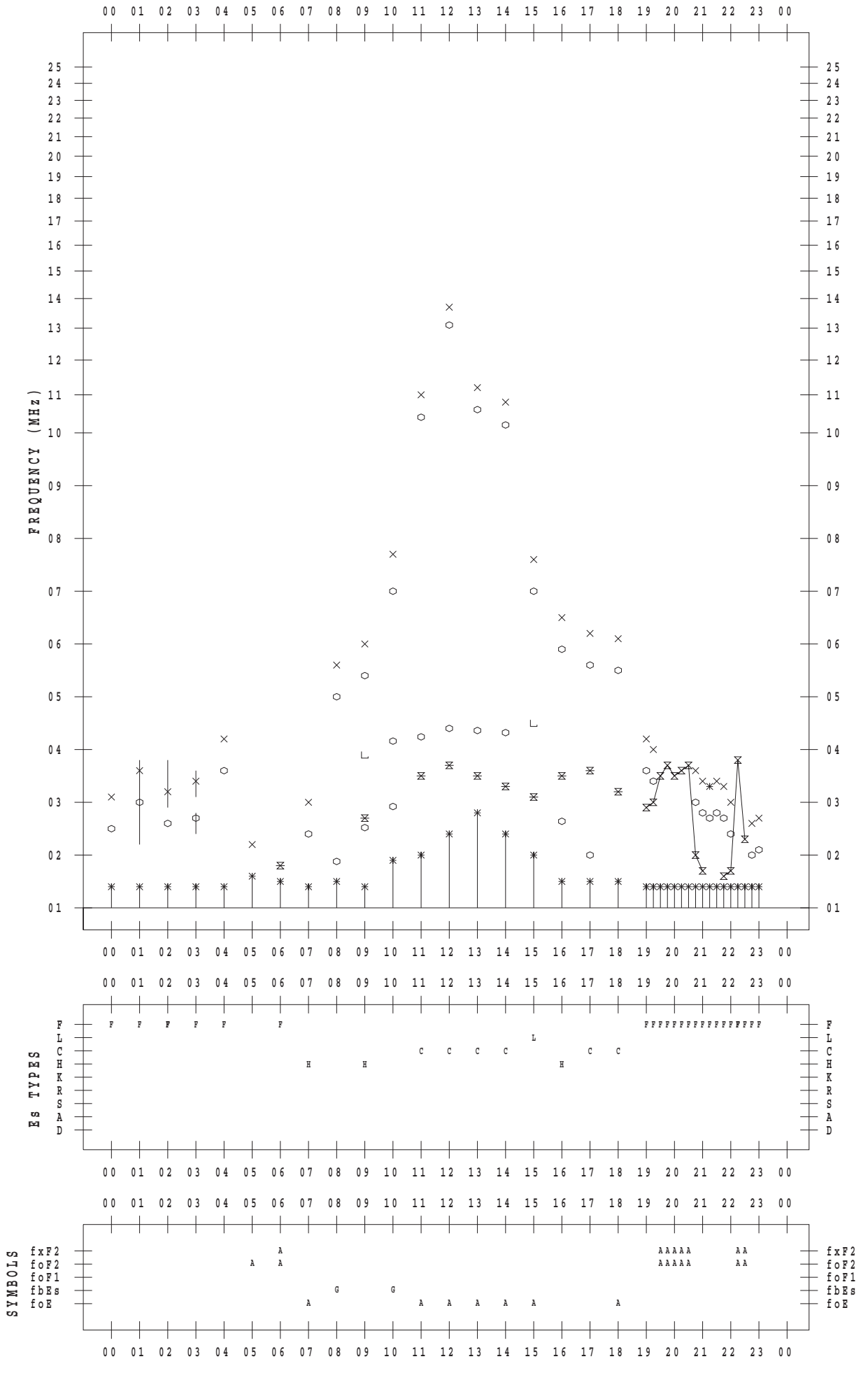
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/16

135 °E MEAN TIME



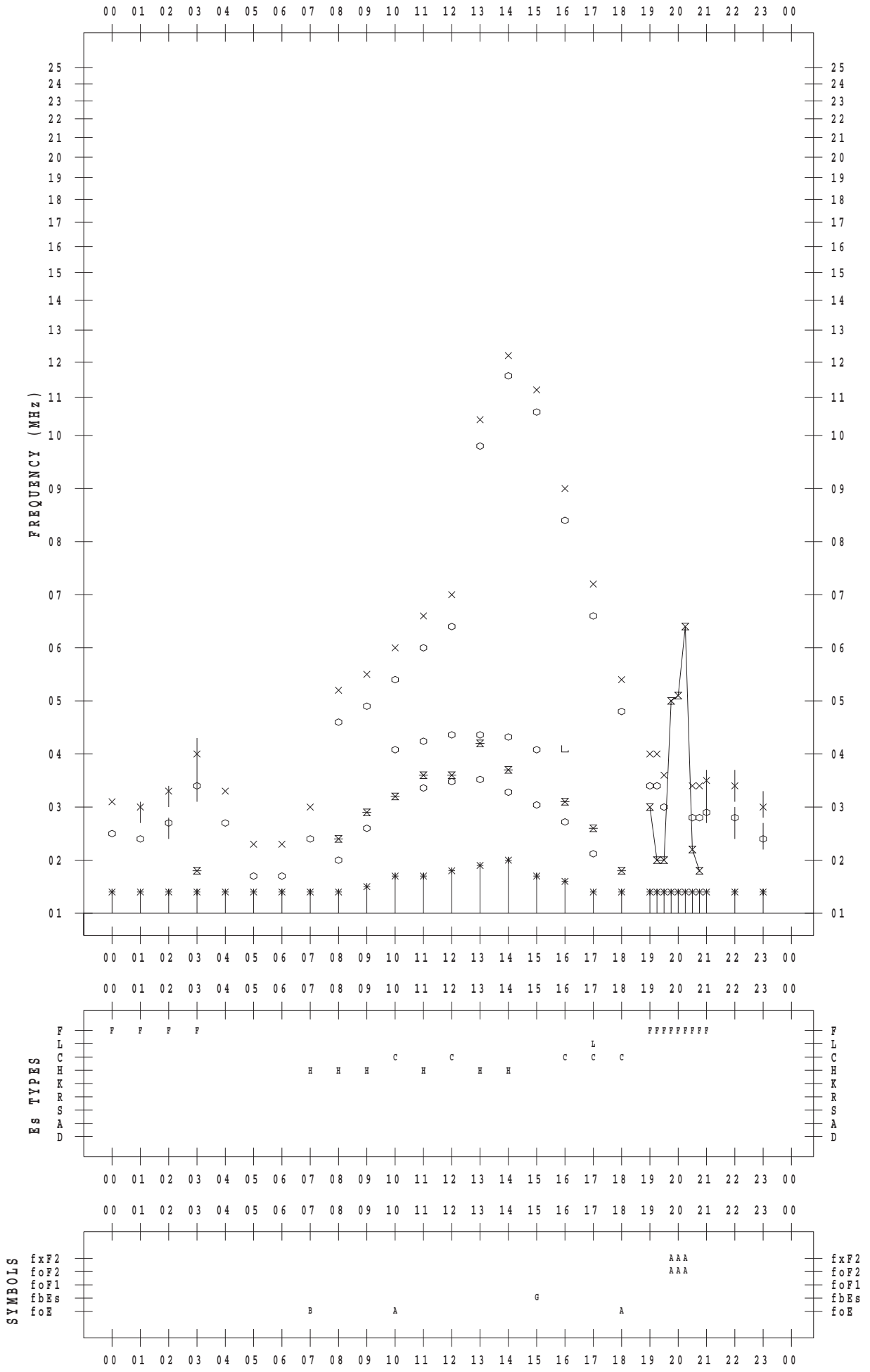
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/17

135 °E MEAN TIME



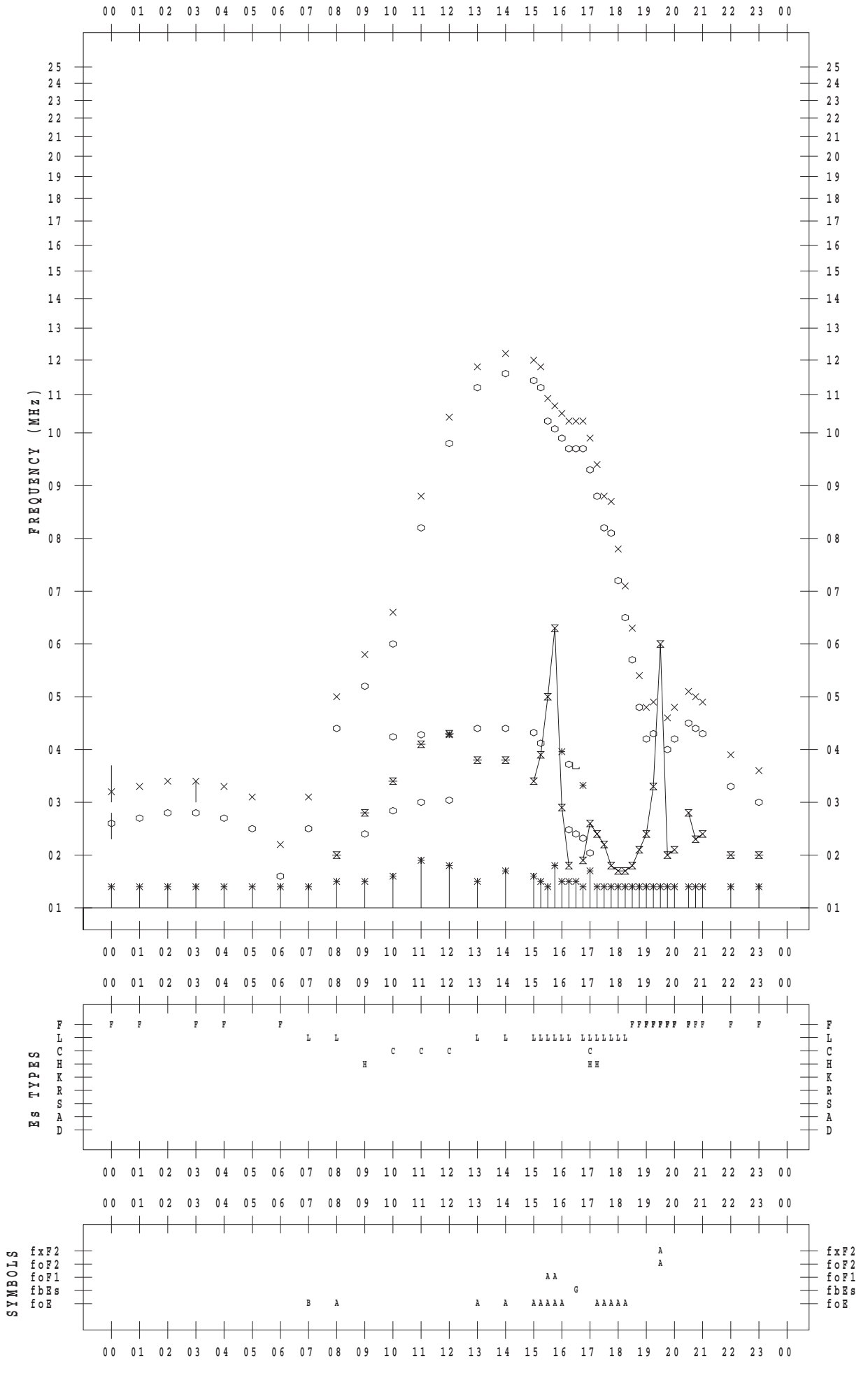
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/18

135 °E MEAN TIME



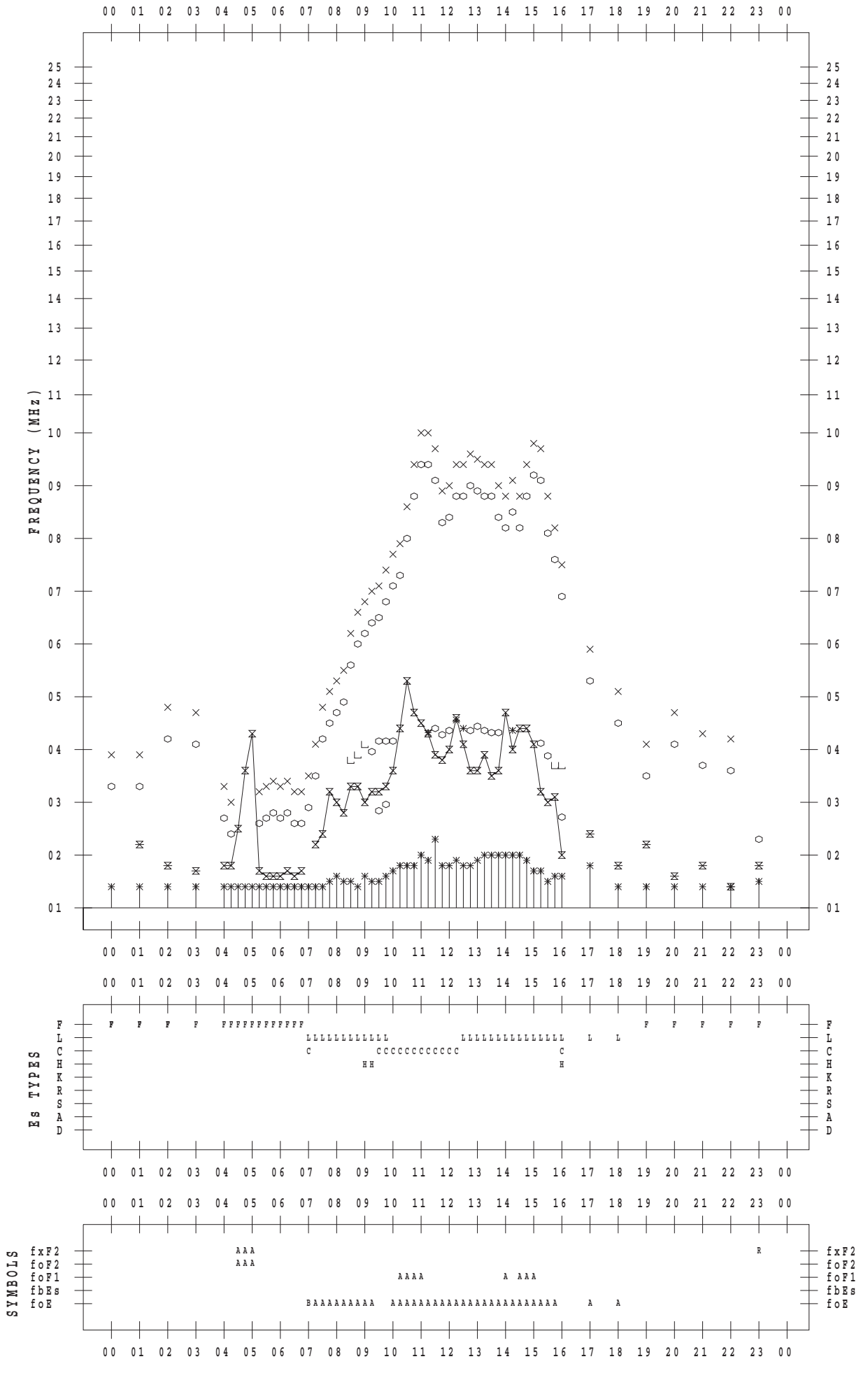
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/19

135 °E MEAN TIME



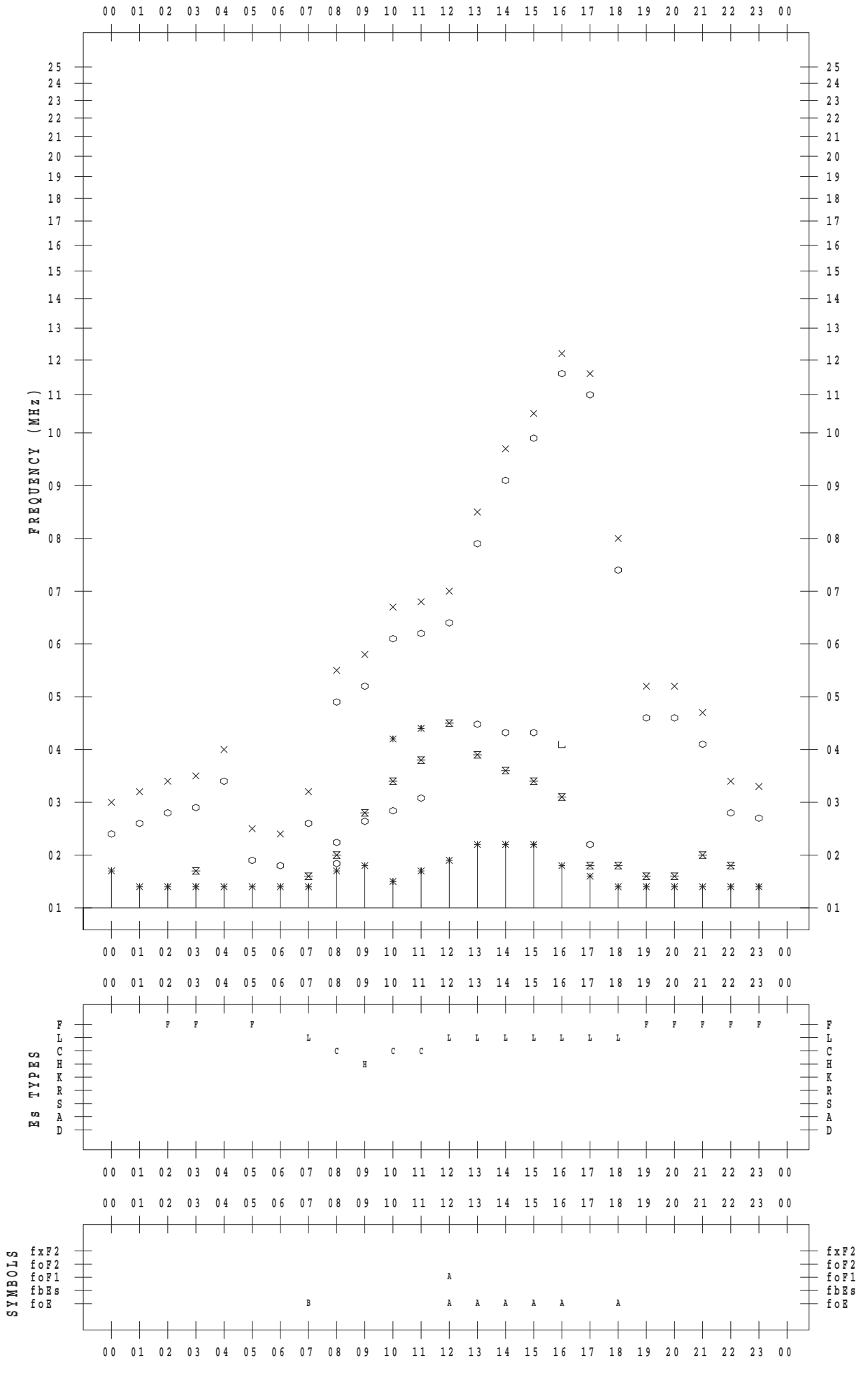
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/20

135 °E MEAN TIME



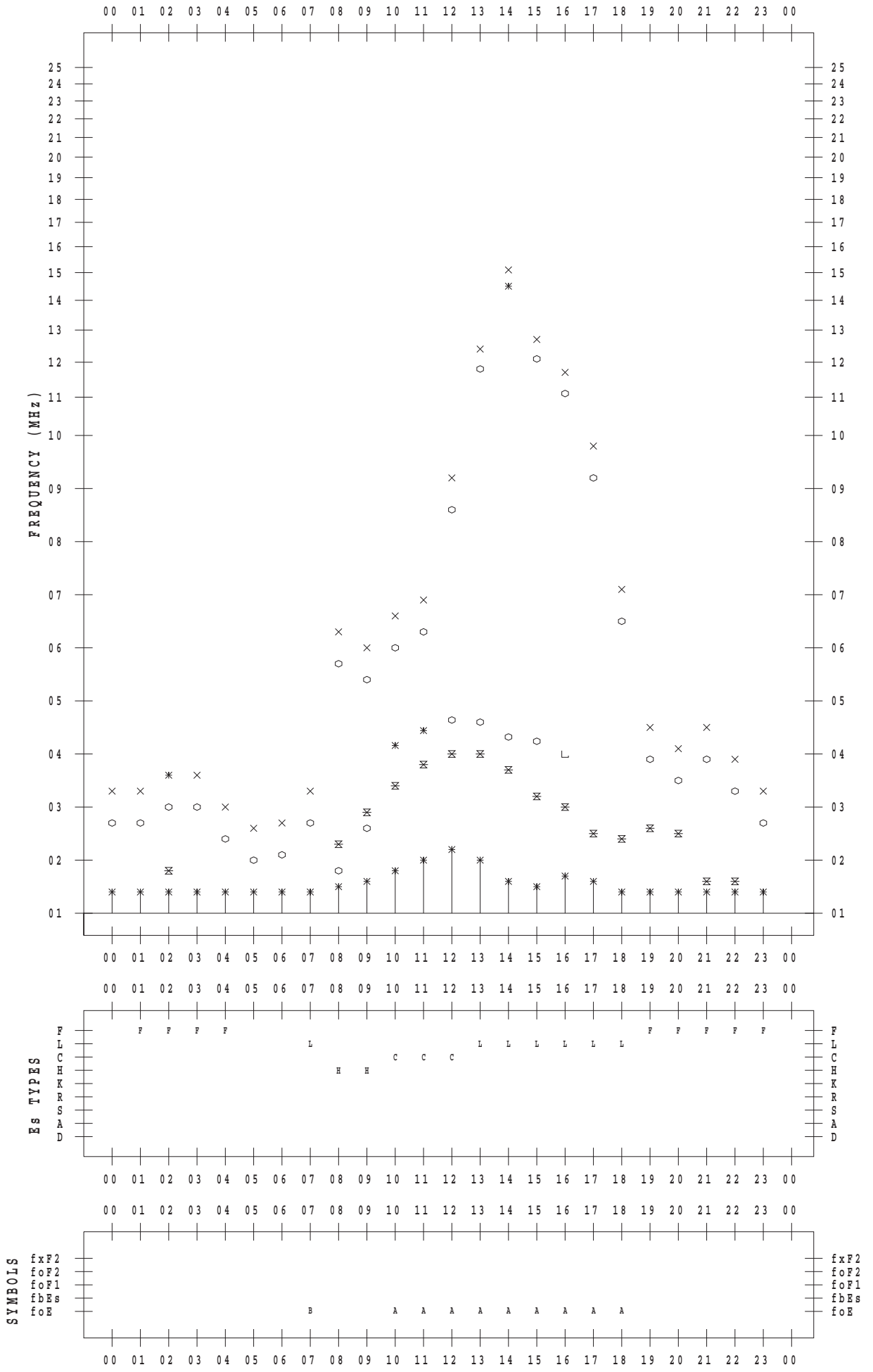
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/21

135 °E MEAN TIME



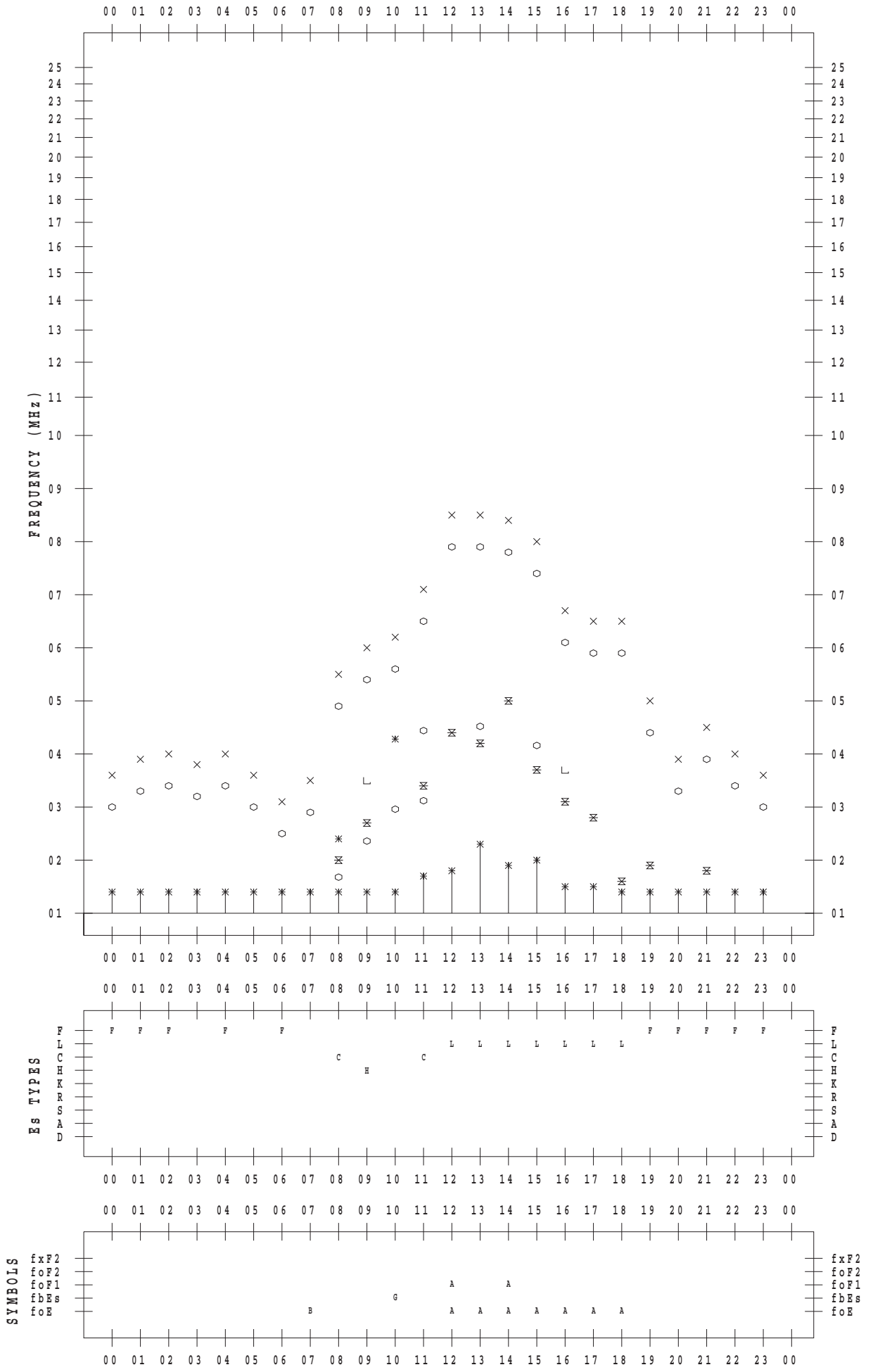
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/22

135 °E MEAN TIME



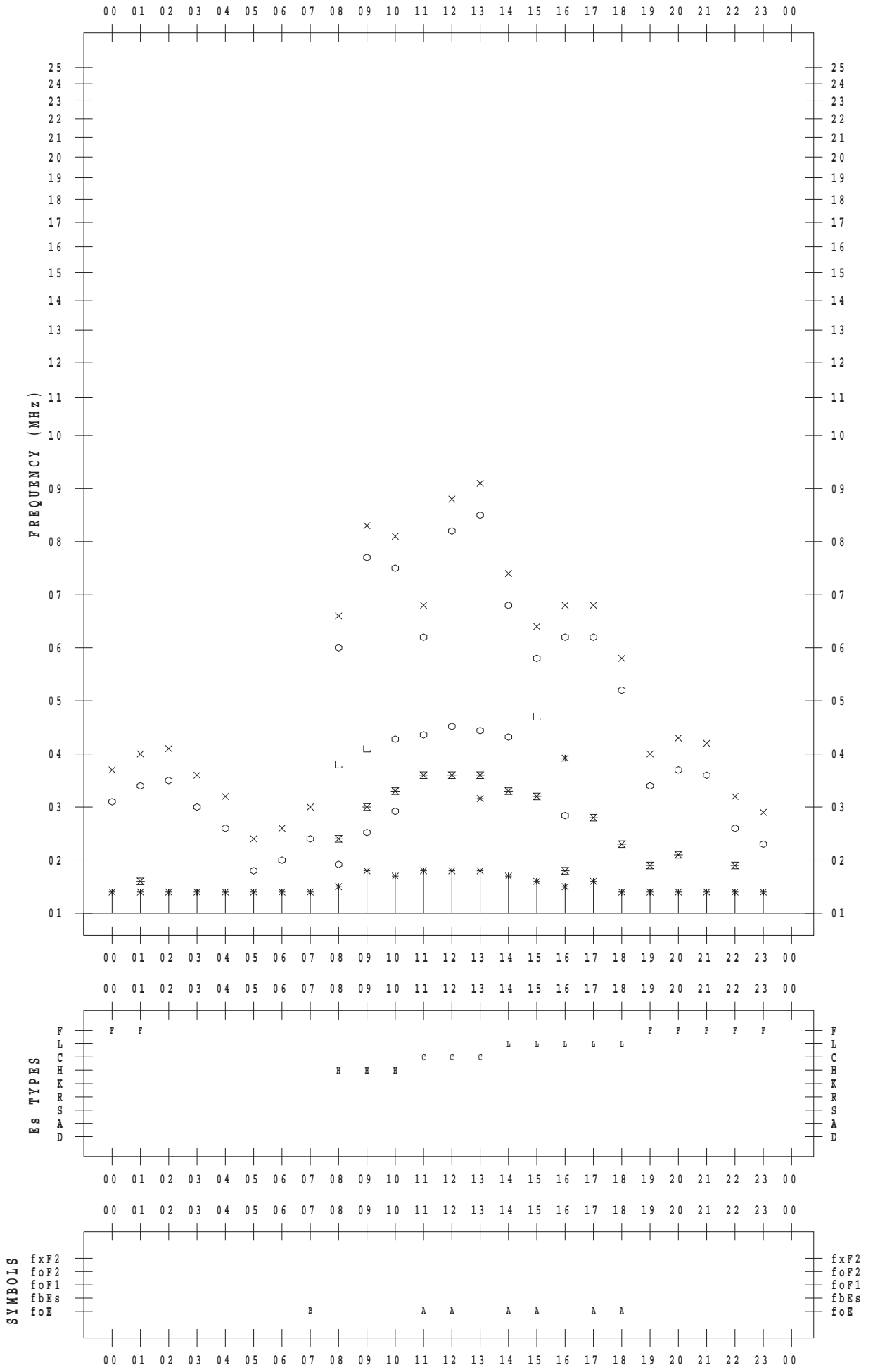
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/23

135 °E MEAN TIME



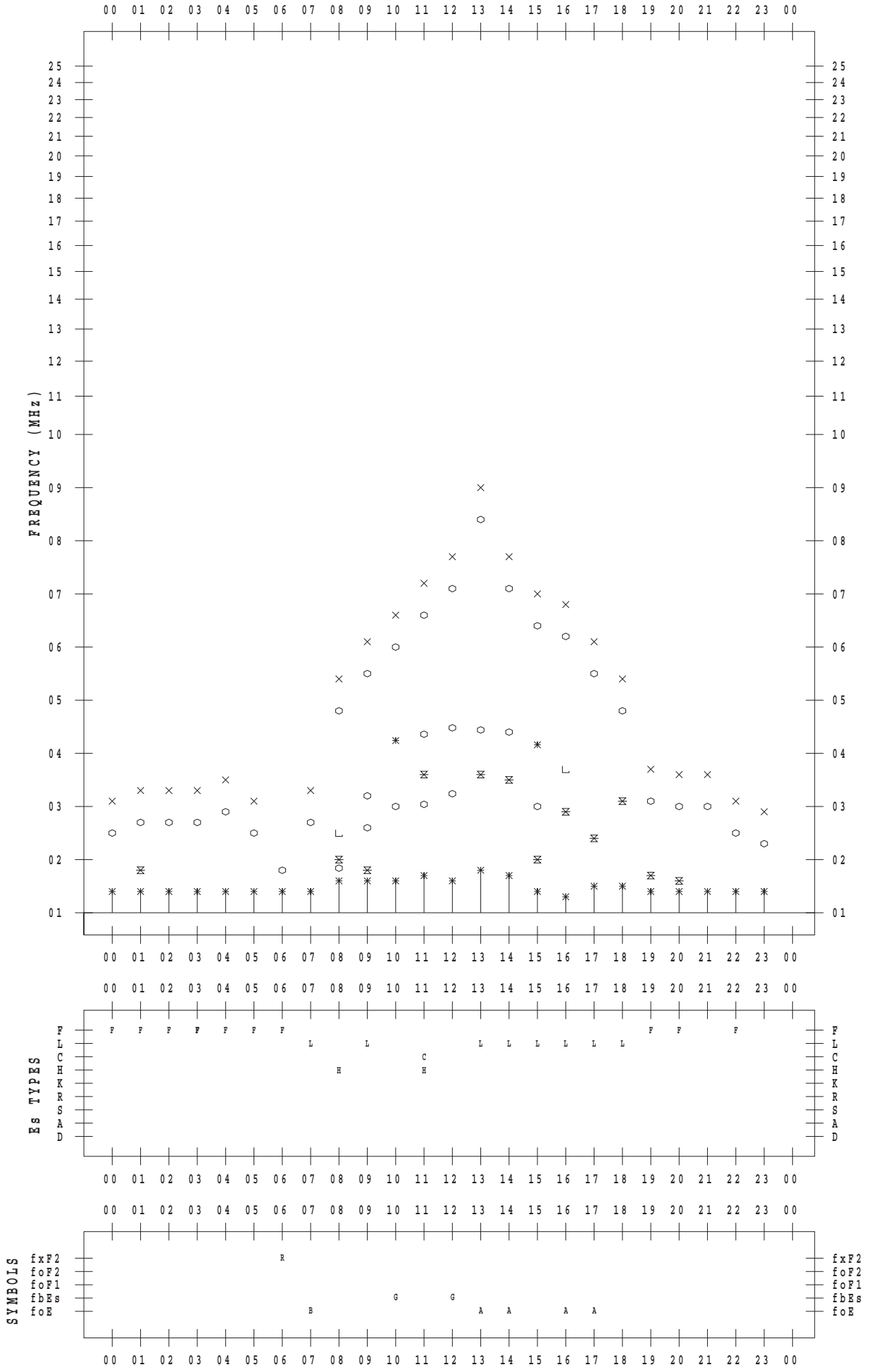
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/24

135 °E MEAN TIME



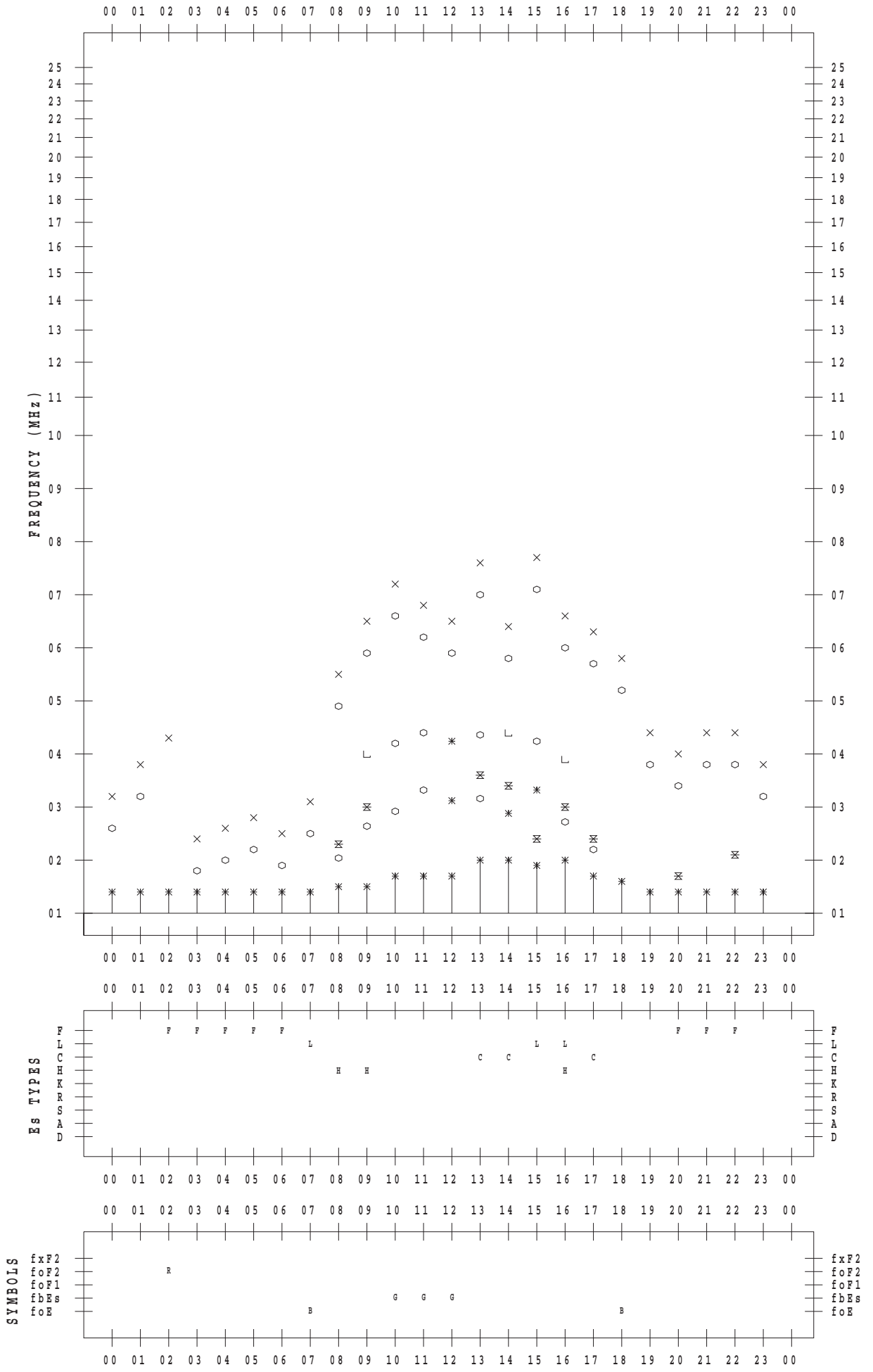
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/25

135 °E MEAN TIME



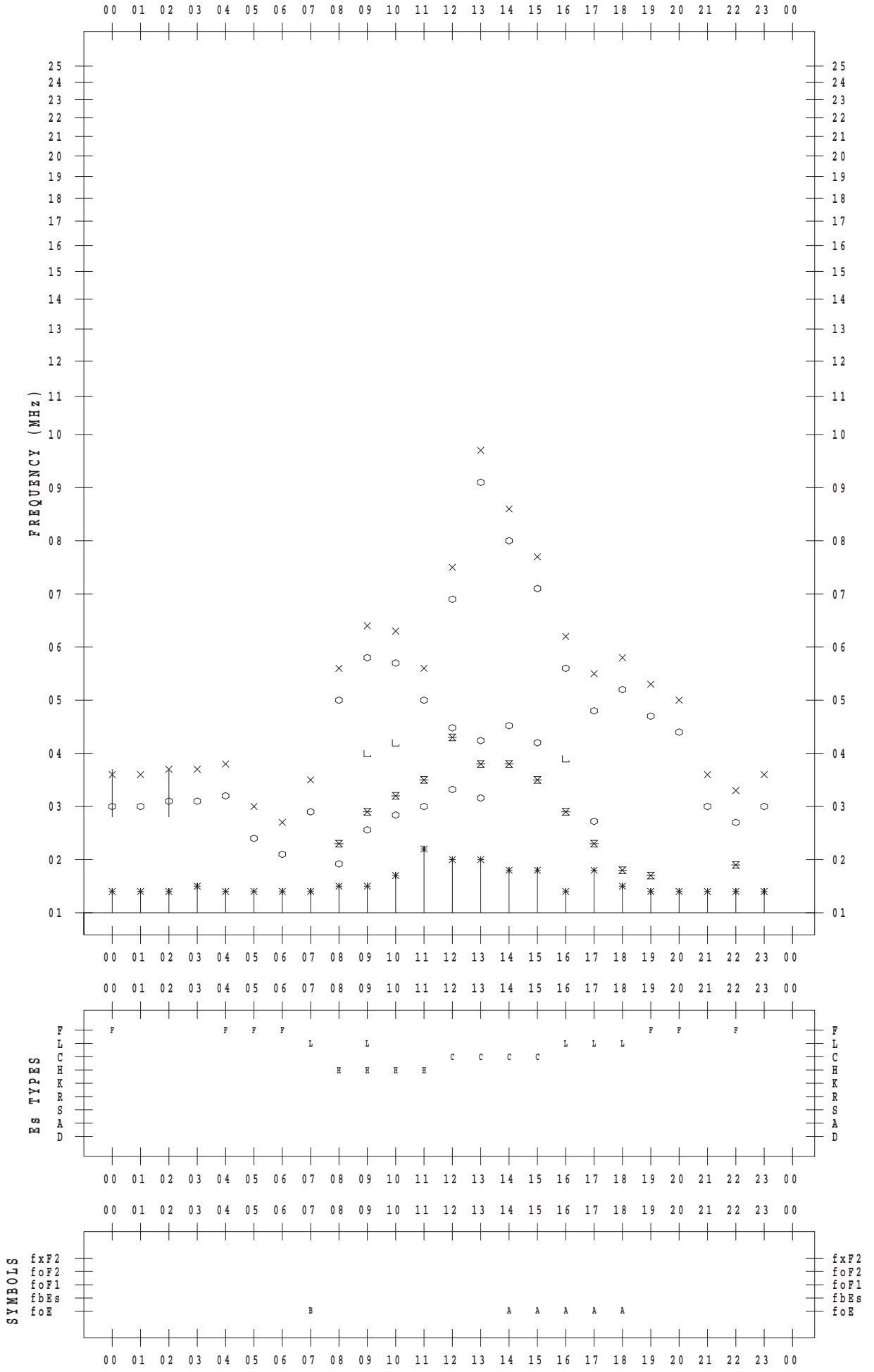
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/26

135 °E MEAN TIME



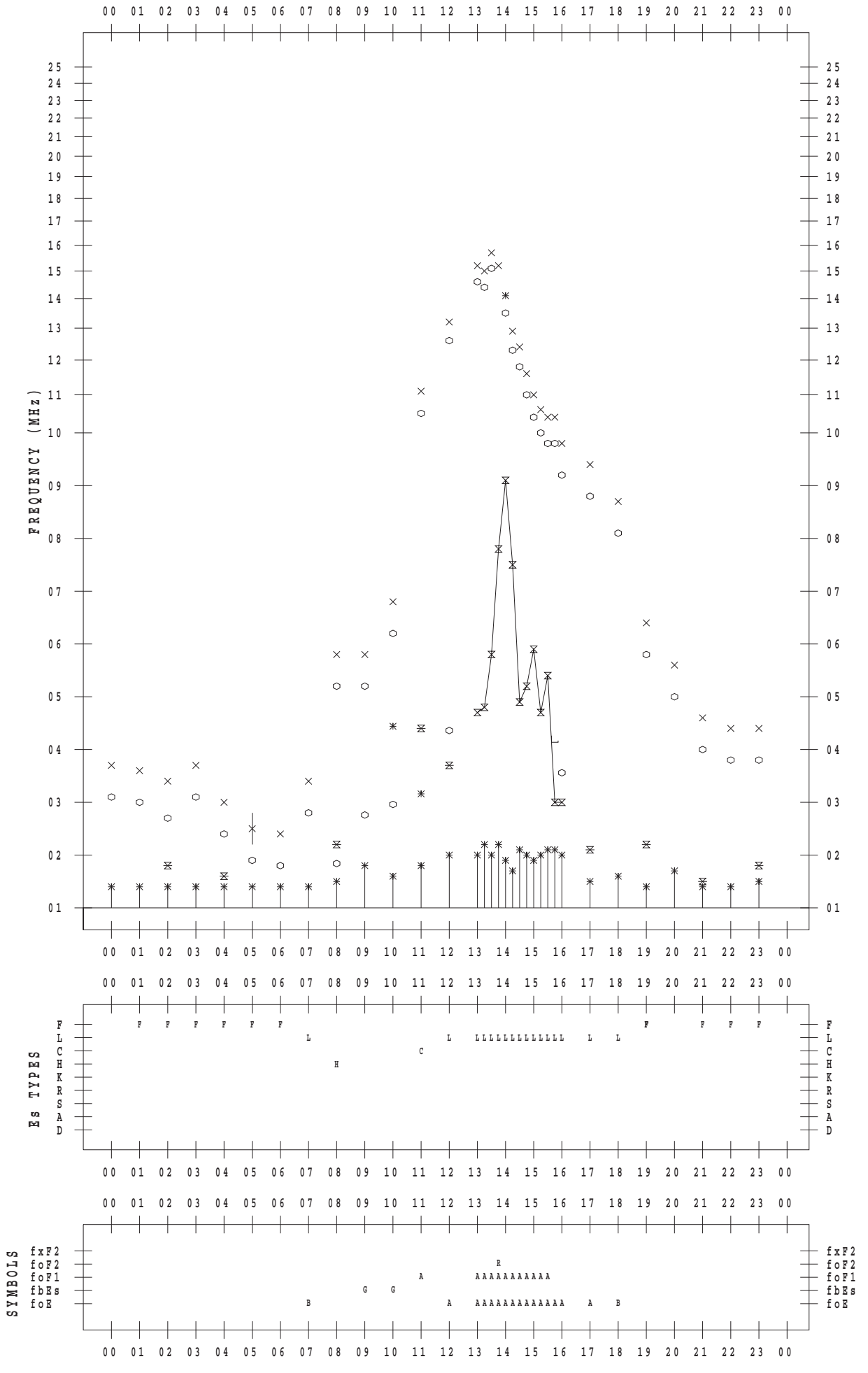
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/27

135 °E MEAN TIME



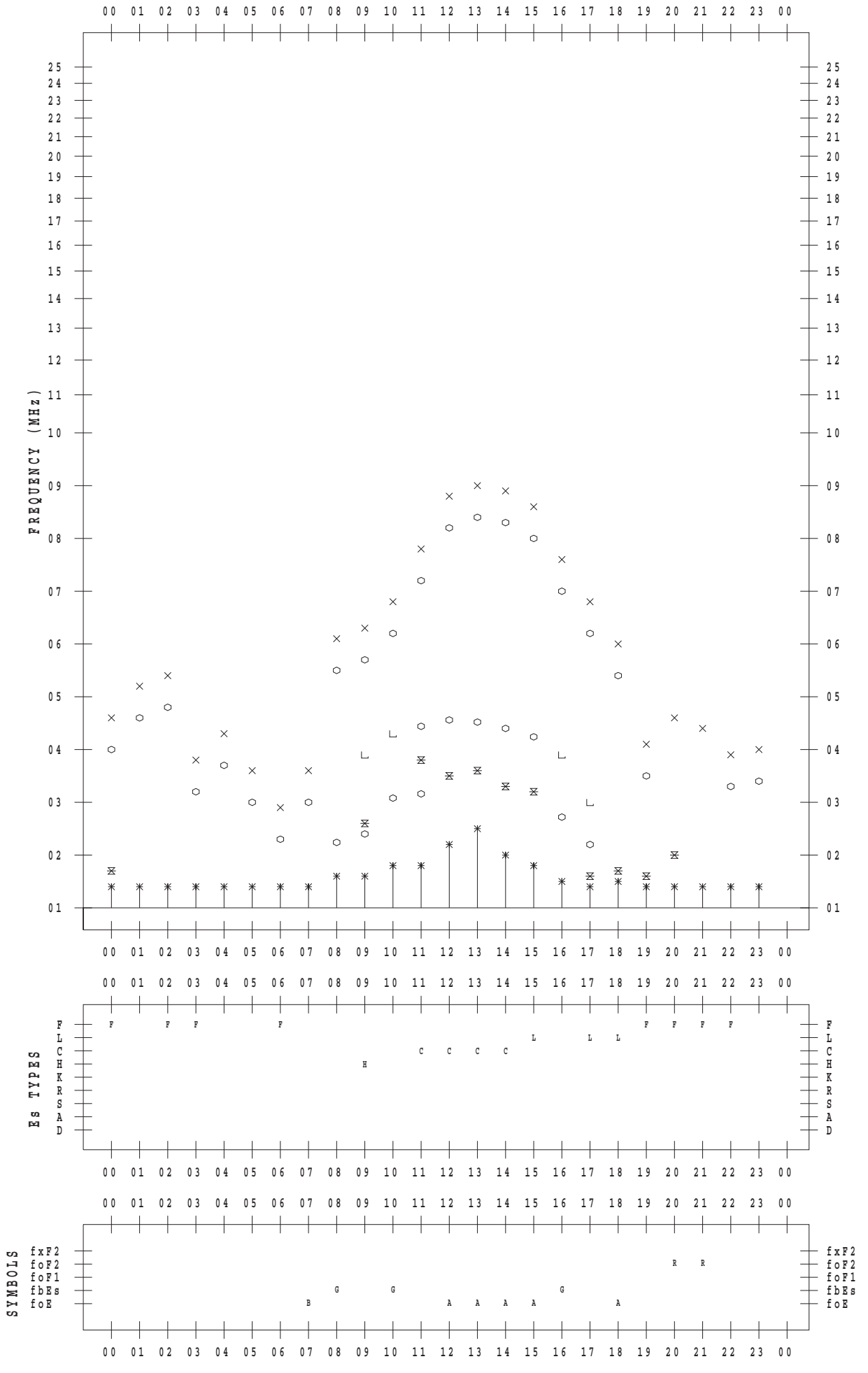
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/28

135 °E MEAN TIME



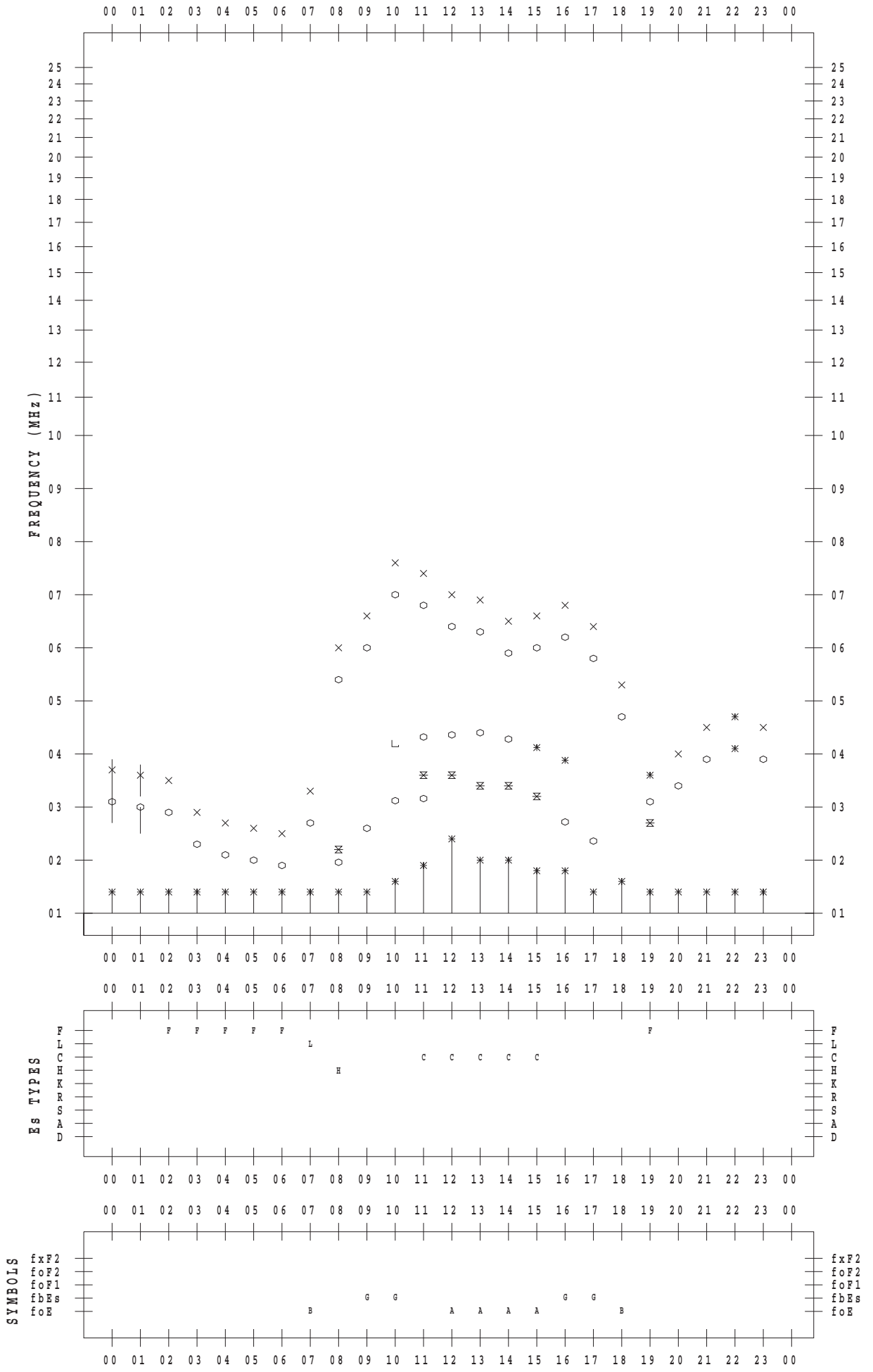
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/29

135 °E MEAN TIME



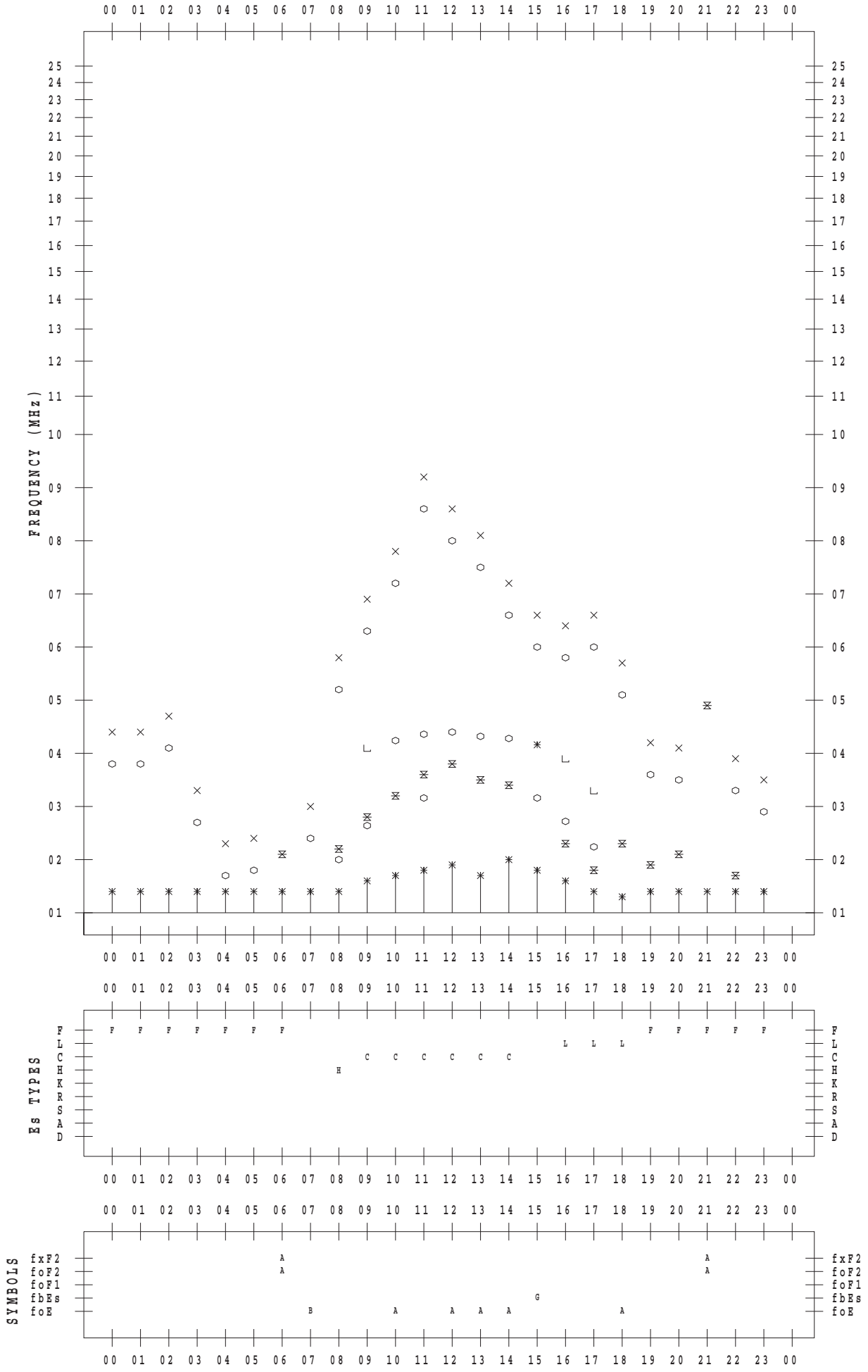
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2017/ 1/31

135 °E MEAN TIME