F-805

IONOSPHERIC DATA IN JAPAN

FOR JANUARY 2016

VOL. 68 NO. 1

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 foF2 AT Wakkanai

JAN. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29	28	31	A	A	A	A	34	70	67	92	59	67	65	70	68	64	A	34	29			29	30
2	31	32	47	36	37	34		34	68	A	68	69	80	A	73	65	54	A	A	A	A		34	28
3	33	37	32		34	34		34	53	61	67	68	64	63	57	58	52		34	29	29		29	31
4	31	32	25	25	31	26	26	37	55	64	71	67	59	64	67	61	47	A	A	29	34		30	32
5	32	31	34	32	28	34	29	38	54	62	64	65	62	66	65	59	47	34	32	29	29	N	32	32
6	34	A	34	34	34	32	34	43	50	62	66	60	65	72	83	61	48	34	34	34	31	30	36	32
7	34	29	N	34	34	34	34	45	64	64	65	73	65	62	64	64	52	38	36	34	34	28	34	37
8	38	37	32	34	36	32	34	43	63	59	64	N	69	62	67	66	54	41	89	32	28	A	37	31
9	42	37	42	43	45	35	32	46	68	62	68	64	67	72	72	61	56	41	37	34	34	32	38	38
10	34	42	37	32	37	34	32	42	67	67	70	72	68	68	65	63	50	43	36		A	34	37	38
11	40	34	32	34	34	34	32	42	67	67	90	71	69	81	72	63	57	35	38	38	36	A	40	A
12	34	34	A	32	59	32	A	42	66	67	68	96	73	72	71	66	62	51	A	A	52	52	55	58
13	64	58	58	52	54	53	38	47	70	68	71	71	78	86	86	72	60	37	31	A	34	A	A	36
14	A	37	38	43	48	40	32	43	65	65	67	70	71	66	70	62	56	41	44	A	40	A	48	45
15	A	A	A	32	45	34	N	32	64	67	94	87	68	66	72	54	50	37	32	A	A	32	34	34
16	32	34	34	26	35	37	26	37	60	66	68	66	61	68	67	71	57	46	42	34	40		32	37
17	43	50	48	51	51	52	34	44	55	61	68	59	66	68	67	68	55	36	32	34	34	34	32	34
18	30	34	38	40	42	37	32	37	60	67	N	79	67	67	68	68	55	40	46	34	32	34	28	34
19	29	37	32	37	29	29		32	53	66	67	77	67	69	79	68	60	36	29	29	29	29	28	29
20	34	34	34	37	34	26		43	56	61	68	67	71	69	69	64	55	41	31	42	34	38	32	34
21	38	42	34	34	42	32	28	42	65	66	90	90	70	70	73	65	65	54	60	32	26	32	38	
22	52	28	26	A				29	56	63	86	A	73	66	65	65	58	45	38	34	28		28	30
23	31	31	31	32	34	32		41	60	66	73	69	70	67	70	66	55	41	32	34	29	29	A	26
24	34	34	34	37	34	34	32	55	57	62	67	59	71		68	67	62	34	35	28	29	36	38	42
25	36	32	36	32	46	37	37	48	64	62	65	59	79	66	70	64	66	A	A	46	38	29	34	30
26	34	42	43	46	42	43	41	48	58	62	64	68	68	62	68	59	65	46		34	37	42	42	43
27	45	46	47	47	47	43	37	50	58	66	66	68	67	60	64	67	64	28	34	34	34	32	34	37
28	34	34	34	34	34	34	31	44	57	63	66	76	69	68	64	62	60	45	34	34	29	38	31	42
29	36	37	37	30	35	38	40	45	60	64	72	68	70	70	70	66	49	44	31	36	A	34	36	38
30	30	37	36	36	32	37	34	43	64	61	58	70	71	68	64	64	61	37	38	34	N	28	32	32
31	A	34	34	32	42	42	37	51	67	65	67	70	62	65	65	65	59	48	37	44	31	34	34	36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	28	28	29	29	22	31	31	30	30	29	31	29	31	31	31	26	26	25	25	20	29	29
MED	34	34	34	34	36	34	33	43	60	64	68	69	68	67	68	65	56	41	34	34	34	33	34	34
U Q	38	37	38	38	45	37	37	45	66	66	71	72	71	69	72	67	61	45	38	34	35	35	37	38
L Q	31	32	32	32	34	32	32	37	56	62	66	65	66	65	65	62	52	36	32	30	29	29	31	31

HOURLY VALUES OF fEs AT Wakkanai

JAN. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	29	26	G	35	40	34	35	G	G	G	G	G	G	G	G	G	G	40	G	G			G	G
2	G	G	G	G	G	G		G	G	85	G	G	35	38	G	43	40	50	40	34	34		G	G
3	G	G	G		G	G		G	G	G	G	G	G	G	G	G	G		G	G	G		G	G
4	G	G	G	G	G	G	G	G	G	G	35	G	G	G	G	30	34	28	28	26	G		G	G
5	G	G	G	27	G	G	G	G	48	35	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	39	G	G	G	G	G	G	41	35	G	G	G	G	G	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	26	G	G	G	G	G	G	G	G	32	G	G	G	G	G	G	25	G	G
8	G	G	G	G	G	G	G	G	44	G	G	G	G	G	G	G	G	G	G	G	G	28	31	G
9	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	28	G	G	G	G	30	G
10	39	36	G	28	27	G	G	G	G	40	G	G	G	G	G	G	G	38	G	G	26	G	34	G
11	G	G	G	G	G	G	G	G	33	48	G	G	G	G	G	G	G	G	G	G	26	28	34	44
12	28	G	33	G	G	G	24	G	44	G	G	G	G	G	G	G	G	57	69	69	29	54	38	G
13	G	26	32	30	G	G	G	G	G	G	G	35	G	38	G	G	G	G	G	38	31	66	58	27
14	32	31	26	G	26	G	G	G	G	G	G	44	50	G	G	G	G	G	32	34	33	52	38	27
15	46	38	46	32	38	28	G	11	N	38	36	G	G	G	G	G	G	33	28	33	42	28	33	29
16	28	G	G	G	G	G	G	G	33	35	51	G	G	G	G	G	G	27	27	G	36	G	G	G
17	27	28	24	G	G	G	11	11	40	G	G	36	G	G	G	G	G	11	G	G	G	G	G	G
18	G	G	G	G	G	G	G	11	50	N	G	G	G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G		26	G	44	38	37	G	G	37	57	G	G	G	G	G	G	G	G
20	G	32	24	32	G	G	G	26	44	40	59	39	G	36	34	G	G	G	G	G	G	G	G	G
21	G	26	G	G	G	G	G	30	G	46	72	G	G	G	34	G	G	G	G	G	G	G	G	
22	G	G	G	26				G	32	40	55	80	40	38	35	44	33	G	G	G	G		G	G
23	33	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	31	32	G	G	G	34	G
24	G	G	28	G	24	G	G	G	50	54	38	61	46		G	G	G	11	G	28	G	33	G	28
25	34	32	25	G	G	G	G	G	G	G	42	59	G	69	53	36	39	39	34	27	G	G	G	G
26	G	G	G	28	28	G	G	G	G	G	G	G	38	G	G	33	38	38		G	28	G	G	G
27	24	24	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	49	G	39	G	G	52	50	G	G	28	27	G	G	G	G	G
29	G	33	G	G	G	G	G	G	G	G	G	G	40	G	G	34	G	24	G	34	32	38	28	G
30	32	G	G	G	G	23	G	G	33	34	47	62	37	40	G	G	G	G	G	G	G	25	34	41
31	43	G	G	G	G	G	G	24	G	34	G	G	G	G	G	G	G	G	G	G	24	30	26	29
	00	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	30	30	30	26	31	30	30	31	31	31	30	31	31	31	30	30	31	30	26	31	30
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	11	G	G	G	G	G	G
U Q	32	28	24	26	G	G	G	G	41	40	38	36	G	G	G	G	G	32	27	27	28	28	33	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 Wakkanai

JAN. 2016

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

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

HOURLY VALUES OF foF2 AT Kokubunji

JAN. 2016

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	42	34	39	36	45	46	32	51	88	106	133	106	77	77	76	96	76	55	52	44	45	52	51	64
2	52	47	52	47	36	28	28	46	56	62	78	92	80	71	90	66	65	46	31		32	58	27	28
3	27	32	32	34	35		26	45	59	66	74	80	77	60	71	72	59	46	28	34		N		26
4	27	28	31	34	31		30	48	N	64	64	91	81	62	61	66	59	44		34	36		27	27
5	30	38	31	34	34	28	26	46	58	61	65	77	78	66	61	66	56		39	34	N	28	27	28
6	32	32	32	34	34	31	A	51	51	59	61	82	83	71	72	61	55	44	38	N	39	48	30	36
7	38	35	32	34	34	34	36	51	65	71	75	80	75	76	66	70		47	A	A	39	34	27	32
8	38	38	38	38	36	36	36	54	71	74	90	98	91	85	67	71	66	51	34	31	27	N	27	N
9	A	34	39	42	A	27	36	48	65	75	98	91	72	65	68	72	59	45	39	41	25	27		34
10	28	31	34	36	38	30	32	42	66		90	95	75	74	71	66	54	44	34	36	A	34	41	42
11	A	43	44	45	44	36	34	48	61	75	98	86	76	67	74	76	58	45	39	42	25	28	28	32
12	31	34	34	34		32	28	48	61	66	101	109	85	85	67	65	61	55	54	55	47	A	A	A
13	44	A	52	52	53	29	44	52	74	84	88	87	84	98	97	74	61	51	A	A	34	A	N	34
14	34	A	A	39	58	31	34	40	55	65	72	90	72	83	72	68	62	46	34	31	28	32	A	A
15	36	38	39	38	44		27	46	66	77	96	112	100	74	72	75	64	42	26	38	27	N	31	31
16	A	32	32	37	30	N	28	49	57	65	70	73	80	74	76	63	61	48	36	34		31	N	30
17	A	34	A		37	28	28	44	59	62	72	81	92	67	66	56	60	48	43	36	27	26	A	30
18	26	28	32	38	34		24	51	55	62	78	84	77	61	66	64	67	47	A	36	27	26	32	28
19	31	27	34	31	28	28	26	51	58	66	64	90	90	75	64	71	67	52	A	A	38	34	31	
20	32	A	A	41	34	A	N	46	61	69	72	77	71	71	69	65	61	46	37	41	46	43	38	A
21	36	32	32	36	32	38		53	75	108	102	98	84	78	72	80	66	62	55	42	34	34	42	44
22	46	42	37	42	55	44	42	52	62	71	C	C	C	C	C	C	C	70		36		A	26	30
23	31	31	30	32	32			47	68	76	85	88	80	80	68	68	67	A	A	45	35	28	A	
24	31	A	36	40	34	28	26	54	63	67	81	75	76	84	69	72	66	54	28	30	34	27	32	26
25	25	32	32	34	29			49	69	69	72	84	87	75	A	A	55	59	A	42	A	41	30	34
26	32	A	25	36	36	N		46	62	58	67	71	68	72	71	67	59	44	34	27	32	34	32	28
27		34	34	32	37	27	26	42	57	62	65	76	74	77	72	59	67	51	39	34	37	31		32
28	34	34	34	34	36	23	N	44	66	60	66	74	72	74	67	67	62	52	44	32	36	32	25	32
29	34	34	31	32	32	34	38	53	59	58	78	81	81	68	68	72	68	48	39	39	44	A	34	34
30	34	36	34	A	38	A	27	49	51	63	78	84	74	71	80	77	63	61	36	36	30		N	27
31	A	A	A	39	25	27	27	54	65	65	77	82	72	64	69	65	69	46	39	43	46	43	37	39
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	25	27	29	29	21	24	31	30	30	30	30	30	30	29	29	29	29	23	26	25	22	21	25
MED	32	34	34	36	35	30	28	48	62	66	78	84	78	74	69	68	62	48	38	36	34	33	31	32
U Q	37	37	38	39	38	35	35	51	66	74	90	91	84	77	72	72	66	53	39	42	39	41	35	34
L Q	30	32	32	34	32	28	26	46	58	62	70	80	74	67	67	65	59	45	34	34	27	28	27	28

HOURLY VALUES OF fEs AT Kokubunji

JAN. 2016

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	28	30	G	G	G	G	G	40	50	G	G	51	44	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G
3	G	G	G	G	G		G	G	G	35	G	G	G	G	G	G	34	30	24	G		G		G
4	G	G	G	G	G	G	G	G	47	G	G	G	G	G	G	G	G	G		G	G		G	G
5	G	G	G	G	24	G	G	G	G	G	G	39	40	G	G	G	34		G	G	G	G	G	G
6	G	G	G	G	G	G	32	36	31	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	46	G	G		34	34	27	G	G	G	G
8	31	25	G	G	G	G	G	G	G	G	43	66	62	G	58	60	35	G	G	G	24	G	G	G
9	45	34	33	26	36	G	G	G	G	G	44	G	51	G	G	36	32	G	G	G	G	G		G
10	G	G	33	27	30	22	26	28	G		G	G	G	G	G	62	G	G	G	G	28	G	26	G
11	41	32	G	36	28	G	G	G	31	G	G	G	38	G	G	G	G	G	G	G	24	23	G	G
12	G	G	G	G	G	G	G	G	G	G	G	100	113	G	G	60	G	G	G	G	G	60	69	92
13	49	59	33	G	20	G	G	G	G	G	G	48	55	G	G	G	G	42	46	43	28	38	G	34
14	31	34	36	28	G	G	29	G	G	G	45	91	G	40	G	G	G	G	27	G	24	35	39	28
15	G	G	24	G	G		27	41	G	53	G	G	G	G	G	G	G	11	G	G	G	29	25	G
16	50	G	24	28	28	G	G	G	G	61	45	G	G	G	G	107	36	34	29	G		G	G	G
17	26	G	26		26	24	G	G	35	38	G	G	G	G	G	G	G	G	23	G	G	G	24	G
18	G	24	24	G	G		G	G	G	G	G	G	G	G	G	G	G	G	23	G	G	G	G	G
19	G	G	G	G	G	G	G	G	47	35	42	40	G	G	G	G	G	G	39	40	29	27	G	
20	G	33	50	40	29	24	G	G	44	G	G	73	53	G	G	G	G	G	G	31	G	G	26	41
21	25	G	G	G	G	G		G	34	43	68	47	64	50	55	46	46	34	34	23	G	G	G	G
22	G	G	G	G	G	G	G	G	32	37	C	C	C	C	C	C	C	G		G		29	33	G
23	G	G	G	G	G			G	G	G	41	48	68	48	G	50	56	61	44	31	G	24	23	
24	G	35	28	G	G	G	G	G	G	G	G	G	49	G	G	41	54	35	28	G	25	G	G	G
25	G	33	33	27	24	G		G	47	G	G	43	49	71	78	79	49	71	37	29	28	G	G	G
26	G	43	G	G	G	G		G	G	G	G	G	G	G	51	40	G	G	G	G	G	G	G	G
27		27	28	28	G	G	G	43	48	N	G	G	47	41	G	45	G	G	G	G	G	G		G
28	G	G	G	G	G	G	G	G	47	G	G	G	42	42	78	47	72	39	34	24	G	G	G	G
29	G	G	G	G	G	G	G	G	47	35	G	G	G	G	42	G	G	G	G	G	G	33	G	G
30	G	G	G	34	G	34	26	34	34	G	43	51	52	G	50	G	G	G	G	32	G		G	G
31	50	49	33	26	G	G	G	26	33	43	42	43	47	60	43	G	G	28	31	28	26	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	30	31	27	27	31	31	29	30	30	30	30	30	30	29	30	29	30	28	29	28	29
MED	G	G	G	G	G	G	G	G	G	G	G	G	39	G	G	G	G	G	G	G	G	G	G	G
U Q	28	33	28	27	24	G	G	G	44	35	42	48	51	40	42	46	34	34	32	27	24	25	23	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

JAN. 2016

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

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

HOURLY VALUES OF foF2 AT Yamagawa

JAN. 2016

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	34	42	47	45	34	29	B	41	64	99	114	100	96	89	85	88	90	78	50	42	38	43	48	52
2	43	48	47	48	52	32	B	35	62	62	76	86	77	78	83	75	74	67	A	40		34	28	N
3	30	34	34	36	45	N	N	36	58	66	71	72	83	66	70	76	74	66	60	40	40	31	29	B
4	26	28	30	29	34	N	N	34	N	62	64	84	72	67	68	66	67	52	42	30	37	N	N	28
5	30	31	34	34	28	36		30	56	60	63	75	77	71	70	68	62	55	50		34	32	26	28
6	28	27	31	30	34	28	N	34	62	61	61	61	85	82	80	70	81	56	52	59	42	35	29	28
7	59	34	29	34	31	B	30	34	49	67	65	78	85	75	61	67	67	60	44	34	40	37	30	29
8	34	32	32	A	42	28	29	43	62	69	77	77	69	85	77	78	74	72	50	37	34	30	B	28
9	30	29	A	34	34	A	B	34	61	65	77	77	72	75	62	78	75	62	43	36	40	37	29	28
10	30	B	31	34	38	N	B	30	53	72	72	86	84	74	71	64	65	57	46	34	A	30	34	25
11	A	28	34	32	36	A	N	34	60	64	82	80	77	77	86	77	80	68	51	43	48	37	B	28
12	31	B	30	A	34	28	59	40	54	57	88	116	76	75	72	62	65	61	51	48	37	34	N	A
13	40	A	A	36	51	31	N	42	72	75	78	90	100	116	114	103	76	76	69	A	A	37	B	A
14	A	A	A	A	37	A	A	38	56	62	70	92	87	85	97	77	74	62	A	A	A	A	A	A
15	A		36	40	38	59	B	38	78	71	87	96	69	85	84		75	61	40	49	41	A	29	B
16	29	29	30	34	32	B	28	38	55	60	75	82	82	77	86	74	72	60	53	51	38	A	A	A
17	A	29	30	32	36	28	N	34	53	56	66	71	78	75	70	64	64	64	52	A	41	53	42	B
18	28	26	29	34	37		B	37	55	65	64	82	73	71	84	63	66	55	41	A	36	32	32	29
19	28	31	32	32	29	28	29	34	53	67	72	86	96	83	72	71	76	81	58	46	43	A	B	B
20	B		34	A	40	59	B	32	59	69	76	77	71	76	75	71	72	68	A	46	52	53	A	41
21	37	A	47	28	26	28	29	43	71	86	86	92	87	A	92	80	67	62	57	46	40	B	34	40
22	40	29	28	29	30	29	N	37	67	73	80	90	75	76	61	78	80	71	67	36	A	B	B	29
23	32	26	34	28	26	B	B	28	64	85	80	78	74	75	76	73	60	53	A	40	A	A	A	B
24		32	36	33	32	49	B	34	64	75	73	68	70	82	81	69	69	67	50	A	34	40	34	30
25		B	A	29	B	A	A	32	67	68	67	82	95	90	74	65	63	67	58	B	37	40	29	28
26		B	29	30	42	N	B	29	52	60	65	72	70	67	76	72	70	55	46	36	B	31	34	31
27	28	31	31	32	36	29	25	34	53	62	67	72	77	94	82	63	63	76	60	36	36	42	43	29
28	29		B	29	34	29	B	34	57	60	68	81	77	76	71	80	72	59	61	41		34	32	30
29	32	32	32	32	34	32	28	38	53	60	66	88	82	81	72	68	78	63	45	34	44	40	32	30
30	28	29	A	30	31	34	B	36	59	67	74	82	72	96	91	84	90	77	59	B	36	A		25
31	31	37	A	34	N	A	N	34	67	67	72	77	75	78	78	72	78	80	57	43	52	54	38	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	23	21	24	27	29	18	8	31	30	31	31	31	31	30	31	30	31	31	27	23	23	22	19	21
MED	30	31	32	32	34	29	29	34	59	66	72	82	77	77	76	72	72	63	51	40	40	37	32	29
U Q	34	33	34	34	38	34	29	38	64	71	78	88	85	85	84	78	76	71	58	46	42	40	34	30
L Q	28	28	30	30	31	28	28	34	54	61	66	77	72	75	71	67	66	59	46	36	36	32	29	28

HOURLY VALUES OF fEs AT Yamagawa

JAN. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	36	G	32	G	G	G	B	G	G	35	41	39	G	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	B	G	48	G	G	G	G	G	G	G	32	27	34	G	G	G	G	G
3	G	G	G	G	G	G	G	G	G	G	40	G	40	G	G	G	G	G	G	G	G	G	G	B
4	G	G	G	G	G	G	G	G	G	49	G	40	G	G	G	G	G	31	G	G	G	G	G	G
5	G	G	G	G	G	G	G	G	G	33	39	G	40	40	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G	48	N	44	G	44	G	G	G	G	G	G	G	G	G	26	25
7	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	G	29	G	G	G	G	G	G	41	82	51	49	72	87	59	57	11	G	G	G	B	G
9	G	G	29	29	G	28	B	G	G	G	G	G	G	G	G	G	34	G	28	G	G	G	G	G
10	G	B	G	G	26	G	B	G	G	G	G	G	G	G	G	G	G	G	24	24	29	G	G	G
11	38	26	G	31	27	28	G	G	G	35	G	44	60	50	48	G	34	34	G	G	G	G	B	G
12	G	B	G	32	G	G	G	G	G	34	G	51	54	54	67	63	34	G	G	G	G	G	G	103
13	37	49	50	33	29	G	G	G	G	G	39	G	50	G	45	G	60	49	60	50	32	G	B	46
14	40	40	33	34	39	33	26	G	48	G	G	G	52	54	60	49	49	48	66	56	57	43	32	28
15	29	G	G	33	33	26	B	G	G	G	G	G	G	50	G		G	G	G	G	G	28	G	B
16	34	G	G	G	G	B	24	G	G	35	47	71	52	66	50	64	58	32	34	33	G	36	46	38
17	32	G	G	G	G	G	G	G	31	35	42	41	44	G	G	39	G	G	36	40	30	G	G	B
18	G	G	G	G	G	G	B	G	48	G	G	G	42	44	38	G	45	29	G	28	G	G	G	G
19	28	26	G	G	G	G	G	G	G	G	G	49	46	57	62	62	50	69	50	33	33	26	B	B
20	B	G	36	32	G	27	B	G	G	G	G	48	56	60	61	53	G	34	51	37	24	G	36	36
21	G	33	29	24	G	G	G	G	G	G	43	47	54	97	68	40	G	G	G	26	G	B	G	G
22	G	G	G	G	G	G	G	G	29	40	39	44	43	G	G	40	46	G	28	G	27	B	B	G
23	G	G	G	G	G	B	B	25	G	34	G	G	44	44	51	54	41	38	50	36	49	33	28	B
24	G	G	G	G	26	G	B	32	G	G	G	G	G	G	46	65	G	32	25	33	G	G	G	G
25	G	B	34	G	B	31	35	24	G	G	G	G	40	G	G	G	38	32	G	B	G	G	G	G
26	G	B	G	G	G	G	B	G	45	G	G	G	46	43	G	40	G	G	G	G	B	G	G	G
27	G	G	G	G	28	G	G	G	48	G	G	48	G	G	41	G	34	G	G	G	G	G	G	G
28	G	G	B	G	G	G	B	G	G	G	G	G	G	G	42	41	55	50	28	33	G	G	G	G
29	G	G	G	G	G	G	G	G	48	G	G	G	G	G	40	G	G	33	G	G	G	G	G	G
30	G	G	29	24	G	G	B	G	50	G	G	G	G	42	G	64	60	47	36	B	G	27	G	G
31	G	38	34	33	33	25	24	G	G	38	45	60	55	49	56	45	G	30	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	30	31	30	28	19	31	31	30	31	31	31	31	31	30	31	31	31	29	30	29	26	26
MED	G	G	G	G	G	G	G	G	G	G	G	G	42	G	38	20	32	29	G	G	G	G	G	G
U Q	28	G	29	29	26	13	G	G	45	34	40	47	51	50	51	53	46	34	34	33	24	G	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

JAN. 2016

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

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

HOURLY VALUES OF foF2 AT Okinawa

JAN. 2016

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

DAY \ HOUR	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	52	41	40	A	A	B	38	70	141	77	76	100	100	90	86	92	93	66	46	40	46	34	40
2	34	40	36	40	48	36	B	36	66	72	77	72	81	91	98	91	84	90	54	54	52	47	32	B
3	B	N	31	32	38	B	B	31	64	70	80	71	76	92	102	121	116	108	102	67	64	57	52	28
4	N	A	34		30	B	B	32	67	70	75	72	78	72	79	81	72	67	58	41	42	44	24	B
5	28	29	28	32	34	28	B	29	56	94	70	75	77	70	75	72	66	61	54	45	41	40	36	29
6	B	B	30	31	40	B	N	34	63	68	65	64	78	91	87	78	64	60	60	54	47	38	36	32
7		32	30	30	40	B		34	68	70	66	72	88	72	70	71	93	67	55	43	51	42	42	
8		A	32	32	37	B	N	34	70	66	75	82	92	105	102	91	85	87	73	45	46	48	36	B
9	31	34	34	30	34	A	B	34	66	94	71	80	77	85	78	81	86	72	60	51	54	61	42	32
10	34	36	34	30	35	B	B	28	64	81	84	90	90	94	86	81	72	66	58	42	50	48	46	37
11	A	A	A	A	31	N		34	59	74	86	80	94	118	131	131	121	111	87	66	67	64	47	36
12	36	38	39	34	36	28	N	38	67	65	90	116	117	85	80	70	68	65	55	42	44	36	34	B
13	29	A	A	A	45	A	A	34	68	76	88	106	137	152	146	134	118	126	97	80	51	54	A	
14	A	A	A	46	36		B	34	58	64	72	101	102	99	127	140	N	86	58	45	42	A	41	B
15	B	29	32	40	44	A	A	35	65	77	97	114	124	140	139	141	108	105	71	46	51	61	38	36
16	B	B	30	31	36	B	N	34	62	72	78	78	84	90	101	110	110	90	A	80	54	50	44	A
17	A	A	32	B	34	26	N	32	62	64	77	76	80	94	92	91	70	80	71	64	67	76	52	43
18	A		36	40	43		B	34	63	72	72	76	80	90	105	97	77	71	58	46	43	46	29	29
19	28	30	30	30	29	29	28	32	61	72	81	81	101	96	98	94	96	106	107	83	58	62	47	28
20	29	29	32	33	37	A	A	29	58	67	80	76	78	76	80	A	84	85	74	66	64	64	53	46
21	43	A	65	A	A	A	N	45	81	96	101	98	94	88	97	86	67	76	57	52	52	40	40	36
22	40	B	A	N	N	26	B	31	58	77	87	101	71	80	103	108	108	108	87	54	34	A	31	28
23	B	32	42	A	A	B	B	30	66	82	92	80	71	80	78	85	65	62	60	41	51	63	40	31
24	29	30	37	37	28	A	28	29	60	80	84	72	76	88	87	110	81	72	67	54	A	A	46	41
25	N	B	29	A	28	A	A	A	67	64	72	82	102	104	110	94	91	84	88	59	50	74	51	40
26	B	A	31	34	40	29	B	30	61	66	66	70	82	74	78	79	71	61	54	42	33	41	42	37
27	30	30	30	32	B	B	A	32	58	73	72	78	81	111	113	111	93	80	88	61	48	54	62	44
28	B	29	29	30	34	30	B	34	52	64	80	94	84	82	89	98	94	85	87	72	56	47	40	36
29	33	32	36	34	36	29	29	38	65	94	74	82	84	107	102	98	94	102	62	43	47	58	34	28
30	26	28	30	28	A	30	30	34	64	77	84	78	90	118	132	134	123	118	88	64	50	51	42	B
31	B	A	29	34	30	A	A	31	66	76	80	84	86	91	111	111	110	126	111	78	71	83	52	43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	16	27	23	25	10	4	30	31	31	31	31	31	31	31	30	30	31	30	31	30	28	30	22
MED	30	31	32	32	36	29	28	34	64	72	78	80	84	91	98	94	88	85	66	54	50	50	42	36
U Q	34	35	36	37	40	30	29	34	67	80	84	90	94	104	110	111	108	105	87	66	54	61	47	40
L Q	29	29	30	30	32	28	28	31	60	67	72	75	78	82	80	81	72	67	58	45	44	45	36	29

HOURLY VALUES OF fEs AT Okinawa

JAN. 2016

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	28	32	35	34	29	B	23	G	G	G	G	45	G	G	G	G	G	G	29	26	G	G	G
2	G	G	G	G	G	11	B	G	G	G	G	G	G	G	G	G	G	34	34	28	28	26	G	B
3	B	G	G	G	G	B	B	G	G	37	41	G	46	40	G	G	42	G	G	43	G	G	G	G
4	28	26	G	G	G	B	B	G	30	G	G	G	G	G	44	38	36	50	11	G	G	G	G	B
5	G	G	G	G	G	G	B	G	G	G	40	G	46	G	G	G	34	G	G	G	G	G	G	G
6	B	B	G	G	G	B	G	G	G	54	G	G	43	41	50	G	G	G	28	G	G	G	G	G
7	G	G	G	G	G	B	G	G	G	37	G	42	42	G	46	G	39	30	G	27	24	25	G	G
8	G	46	G	G	G	B	G	G	33	G	38	46	40	46	G	39	61	G	G	11	G	G	G	B
9	G	G	G	G	G	29	B	G	G	37	50	48	47	47	44	G	38	G	G	G	G	25	G	G
10	G	G	G	G	G	B	B	G	46	G	G	G	51	G	G	38	35	72	G	G	G	G	G	G
11	26	24	32	28	41	G	G	G	28	35	39	46	60	62	52	57	84	76	43	32	27	34	G	G
12	G	G	G	G	24	G	G	G	G	35	G	52	45	70	95	42	36	G	G	24	G	G	G	B
13	48	46	48	40	G	27	24	G	G	34	40	52	61	G	57	51	55	50	44	35	25	G	36	G
14	36	41	37	34	G	G	B	24	35	G	42	43	G	43	52	G	G	71	40	G	35	27	G	B
15	B	G	25	34	29	48	29	35	G	34	G	59	44	48	G	G	G	G	G	35	27	30	G	26
16	B	B	G	G	24	B	G	G	28	36	G	48	61	50	52	56	62	56	79	51	37	35	28	46
17	28	39	24	B	G	G	G	G	33	39	44	49	54	46	48	42	46	44	52	40	55	32	27	G
18	30	G	G	28	26	G	B	G	G	G	42	47	52	82	59	42	G	31	26	28	26	G	G	G
19	G	G	G	G	G	G	G	G	G	34	40	47	49	64	58	42	40	35	36	55	G	26	27	24
20	G	G	G	G	46	45	30	24	G	G	G	48	61	75	123	149	66	68	83	35	44	45	30	G
21	24	71	54	48	27	28	G	24	32	43	52	51	40	G	93	64	48	41	28	30	27	26	G	G
22	G	B	28	G	G	G	B	G	G	34	G	40	41	41	48	G	G	38	30	23	G	29	G	G
23	B	G	G	26	27	B	B	G	G	34	38	45	46	48	G	42	G	G	G	24	G	23	G	G
24	G	G	G	23	G	27	G	G	G	G	G	G	G	47	46	50	61	48	49	50	50	51	G	G
25	G	B	G	46	24	26	25	34	33	34	G	44	48	53	42	43	47	G	G	24	G	G	G	26
26	B	24	G	G	G	G	B	G	51	G	G	50	47	48	50	G	41	50	G	G	G	G	27	G
27	G	G	G	G	B	B	27	24	G	G	G	44	42	48	42	G	36	G	G	G	G	G	G	G
28	B	G	G	G	G	G	B	G	G	34	44	47	46	46	45	G	40	G	42	48	G	28	34	29
29	G	G	G	G	G	G	G	G	G	G	38	G	G	G	G	43	G	34	G	G	G	G	G	G
30	G	G	G	G	26	24	G	G	G	35	39	43	44	G	82	43	36	32	34	26	G	G	G	B
31	B	39	29	46	44	36	30	24	G	35	40	50	55	68	50	51	40	52	G	11	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	27	31	30	30	22	18	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	25
MED	G	G	G	G	G	6	G	G	G	34	38	45	46	46	46	39	38	34	11	26	G	G	G	G
U Q	26	28	25	28	26	28	25	23	30	35	40	48	51	50	52	43	47	50	40	35	27	28	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	41	G	G	G	G	G	G	G	G	G	G	G

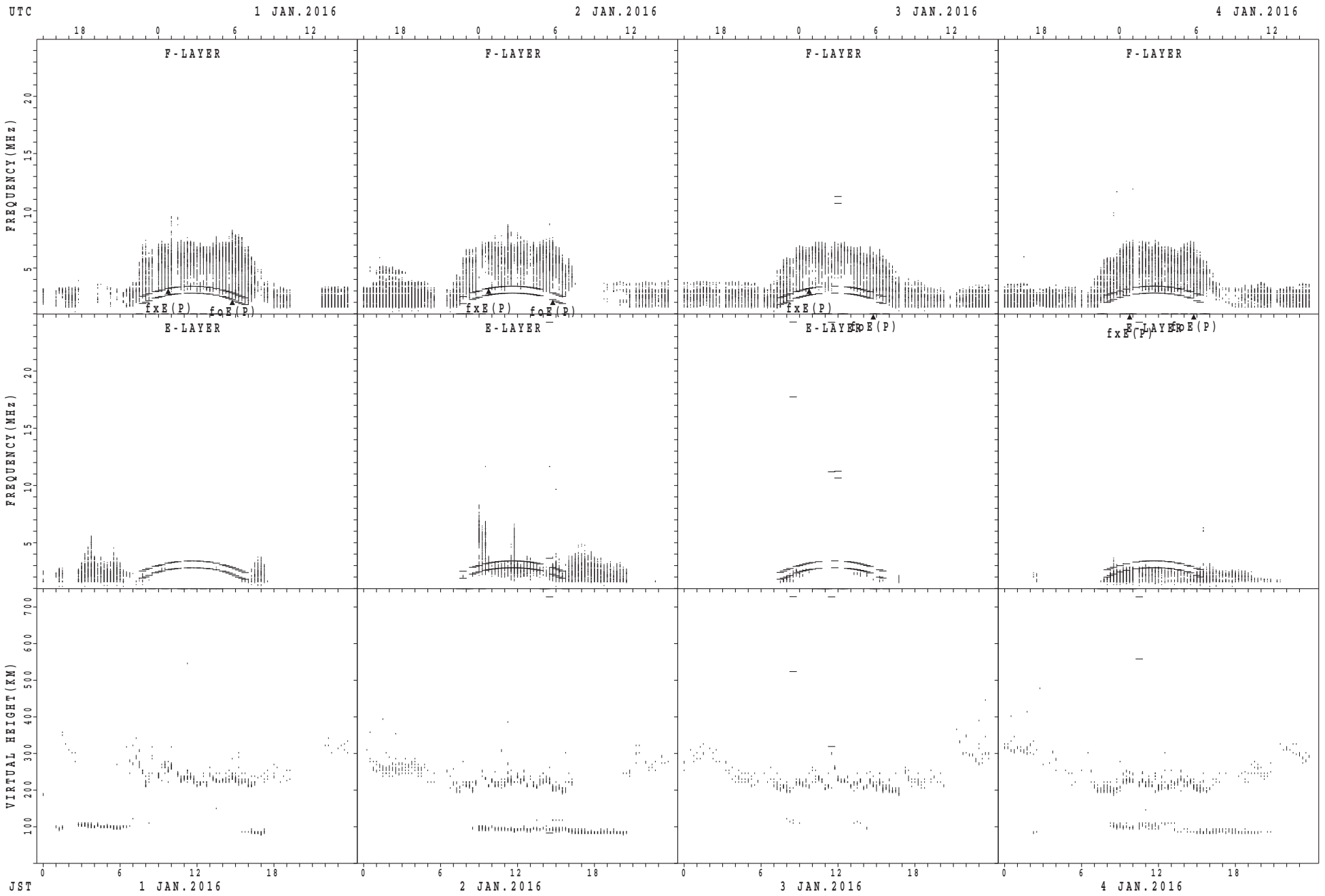
HOURLY VALUES OF fmin AT Okinawa

JAN. 2016

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

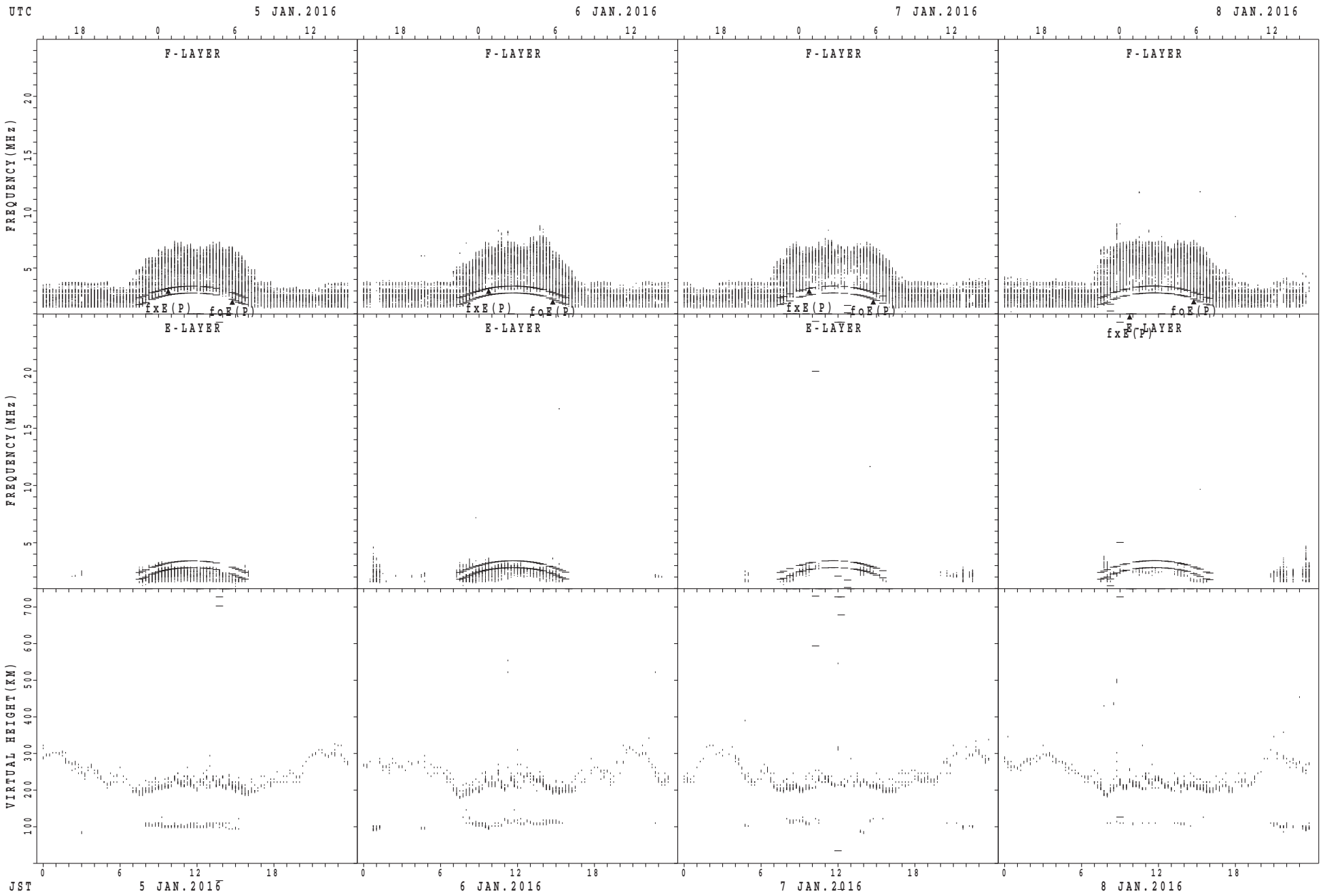
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	14	14	14	14	14	B	14	22	14	14	14	18	35	20	18	15	14	14	14	14	15	16	15
2	15	15	15	14	15	14	B	14	26	34	35	40	36	42	38	21	18	14	14	14	14	14	15	B
3	B	16	14	14	14	B	B	15	14	14	15	15	22	17	14	14	14	14	17	14	16	15	14	15
4	17	14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

SUMMARY PLOTS AT Wakkanai



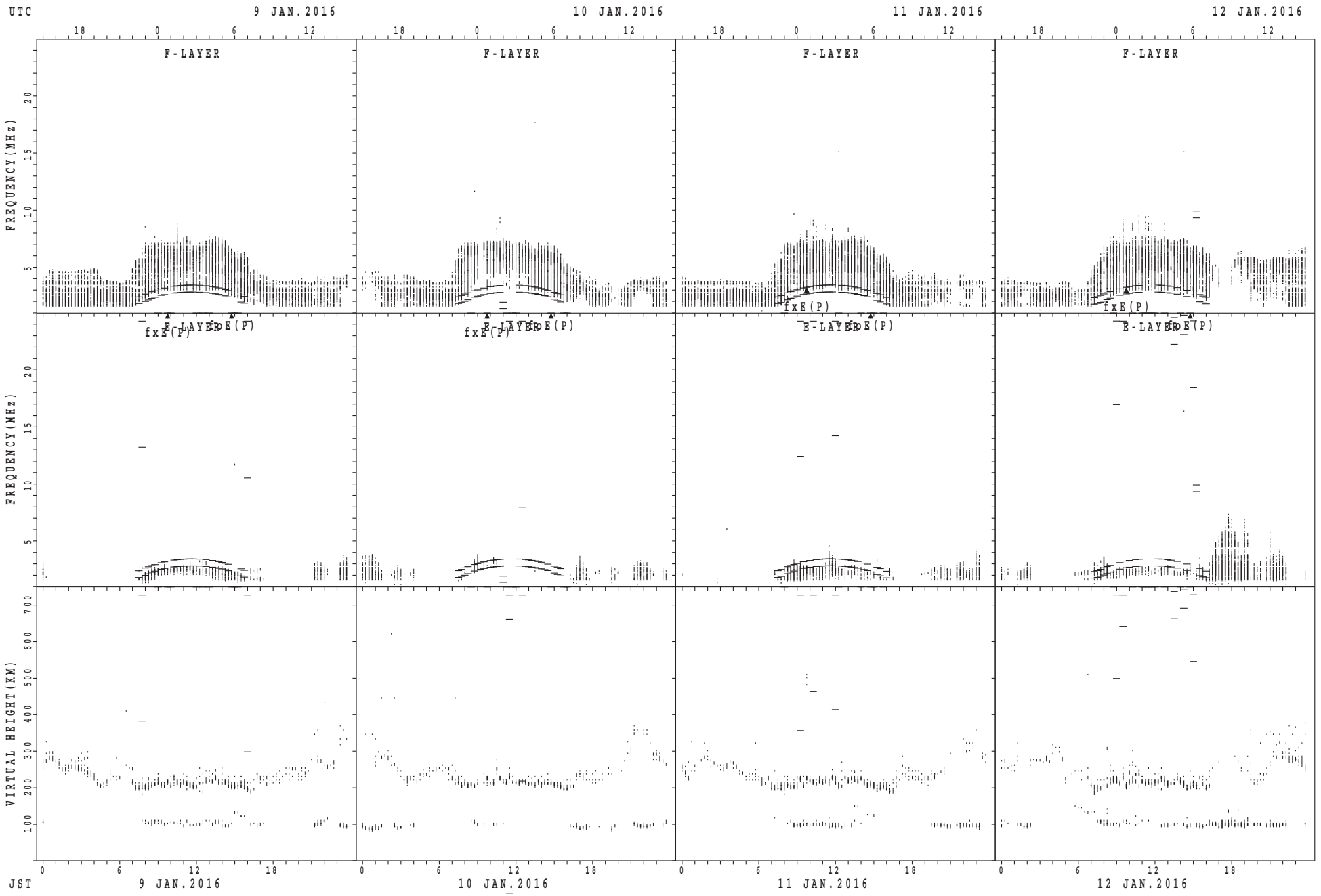
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



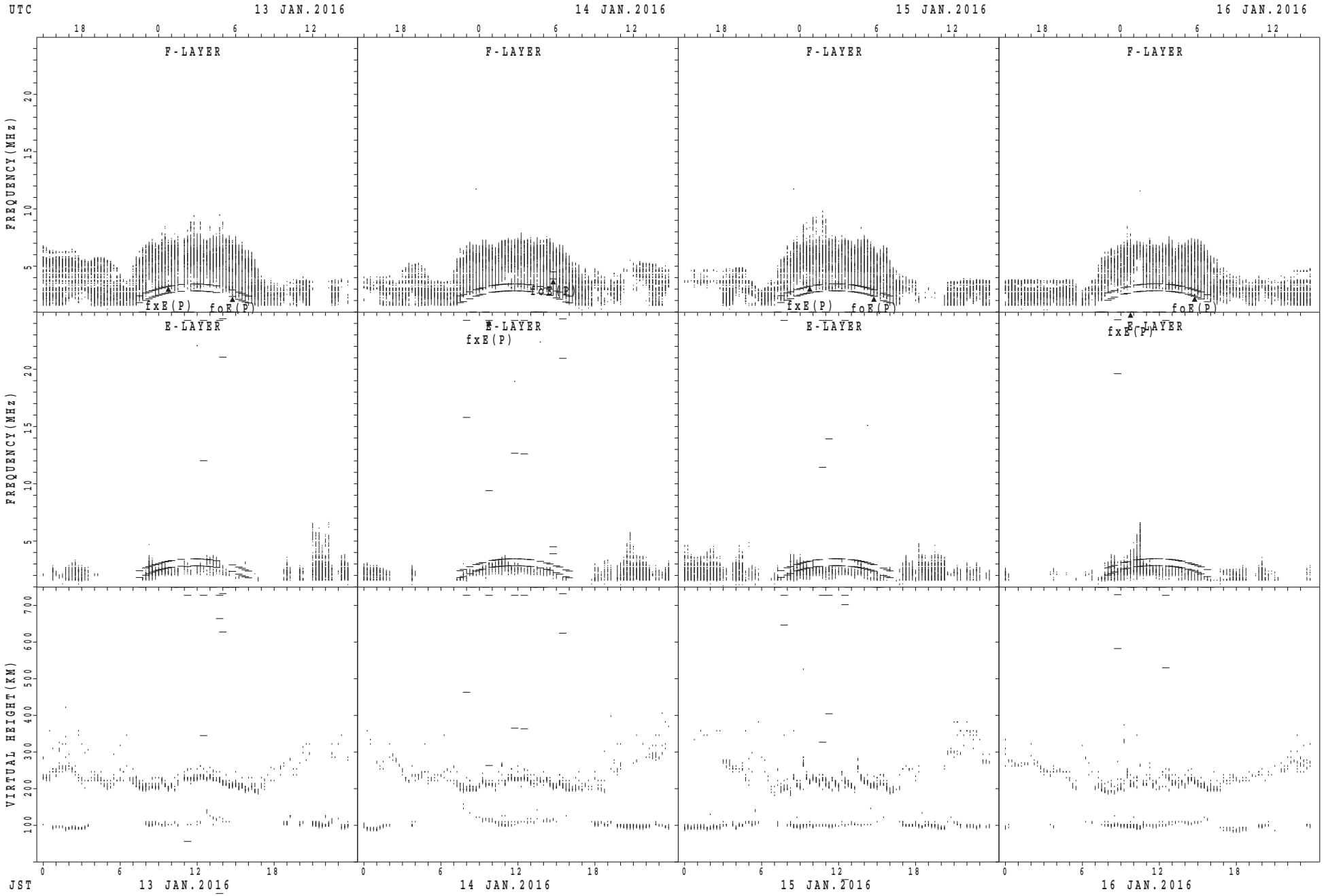
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



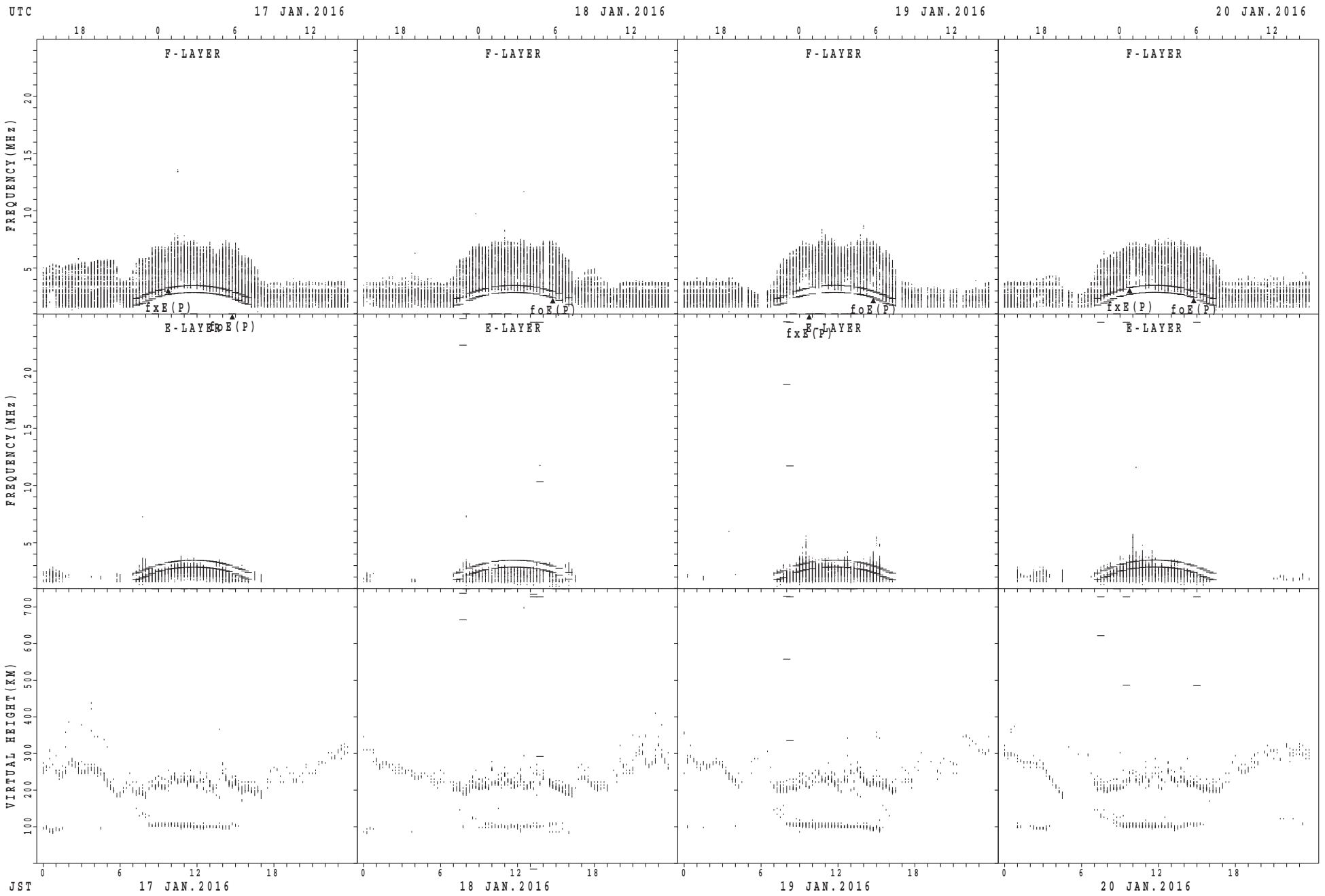
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



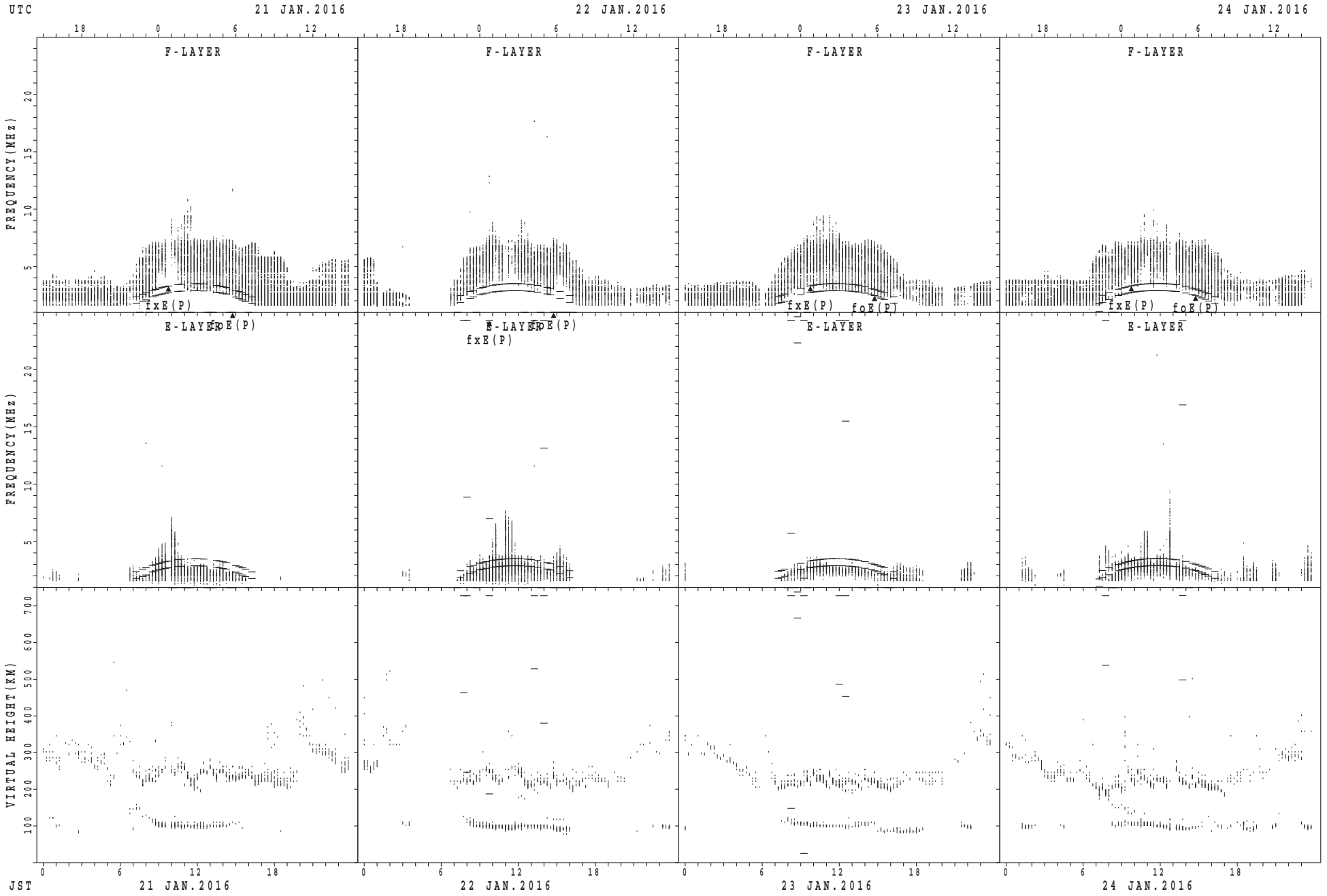
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



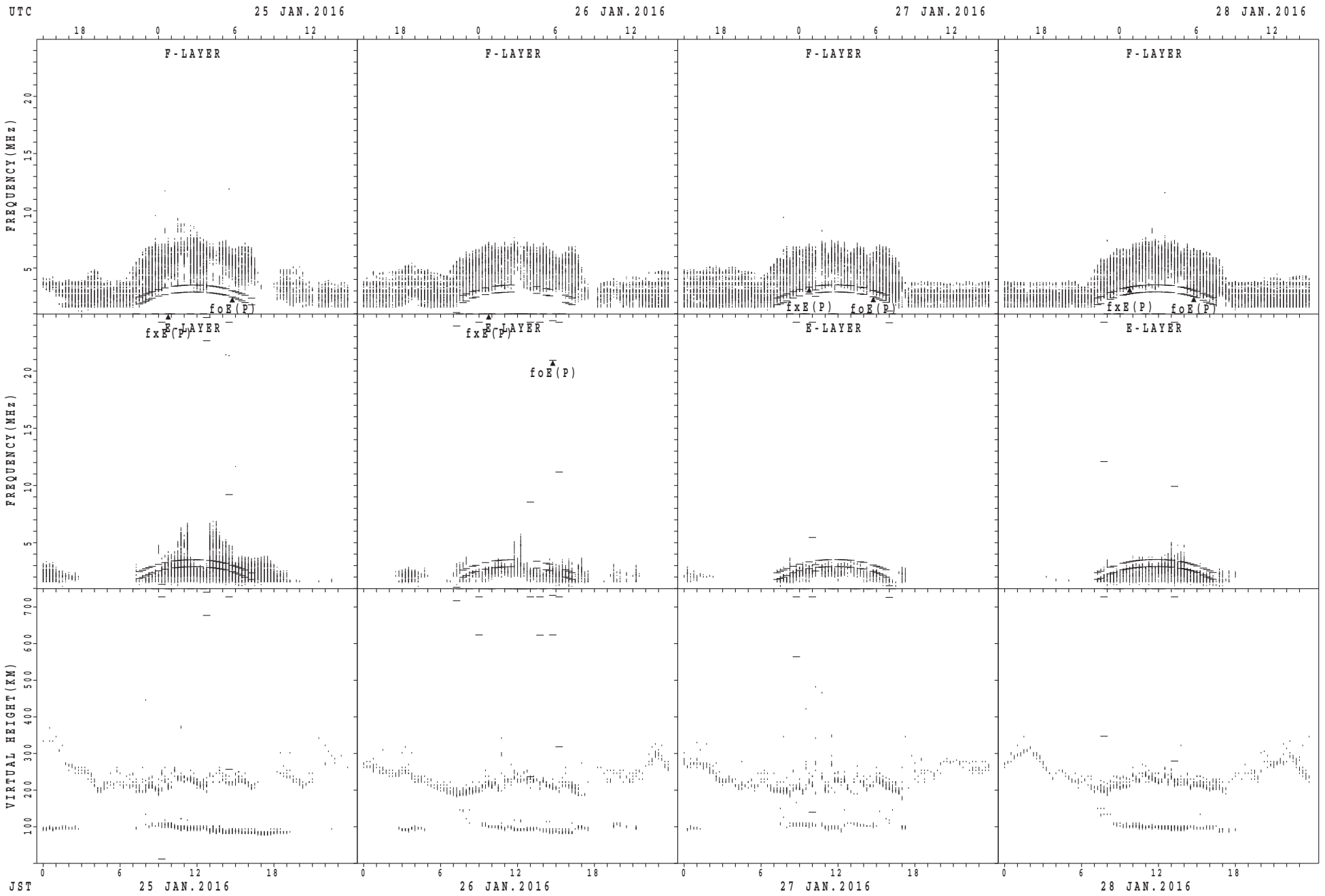
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



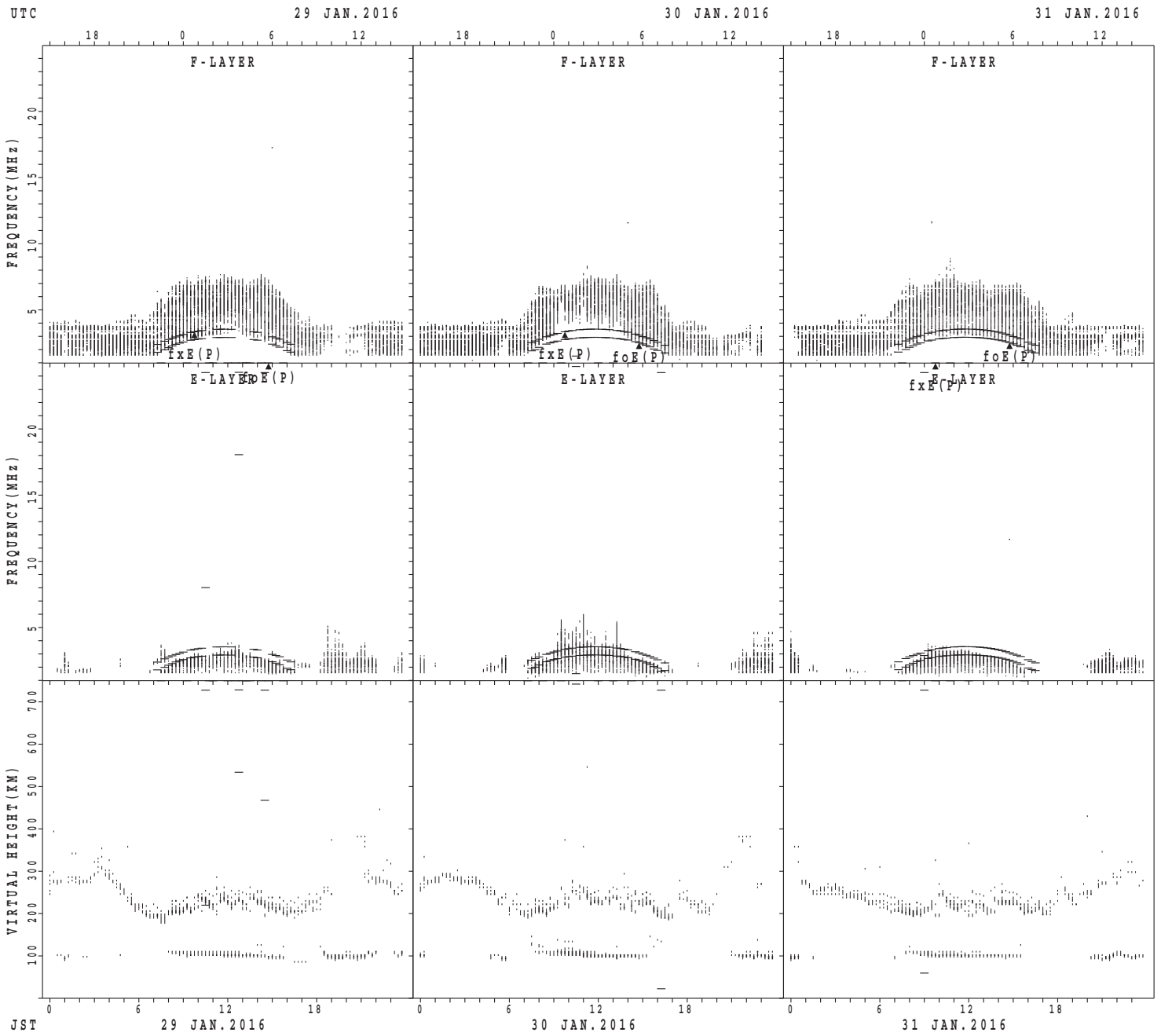
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



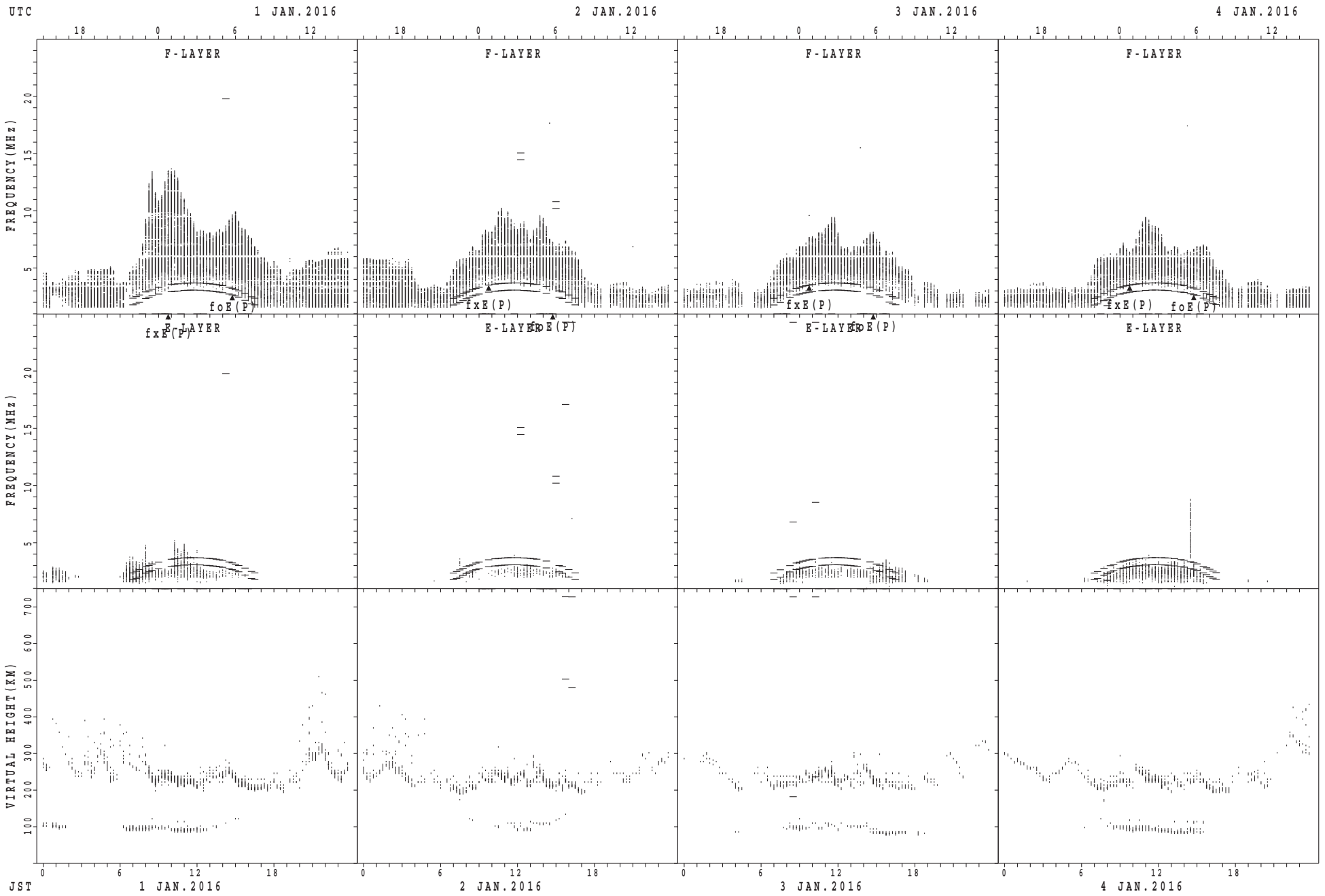
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



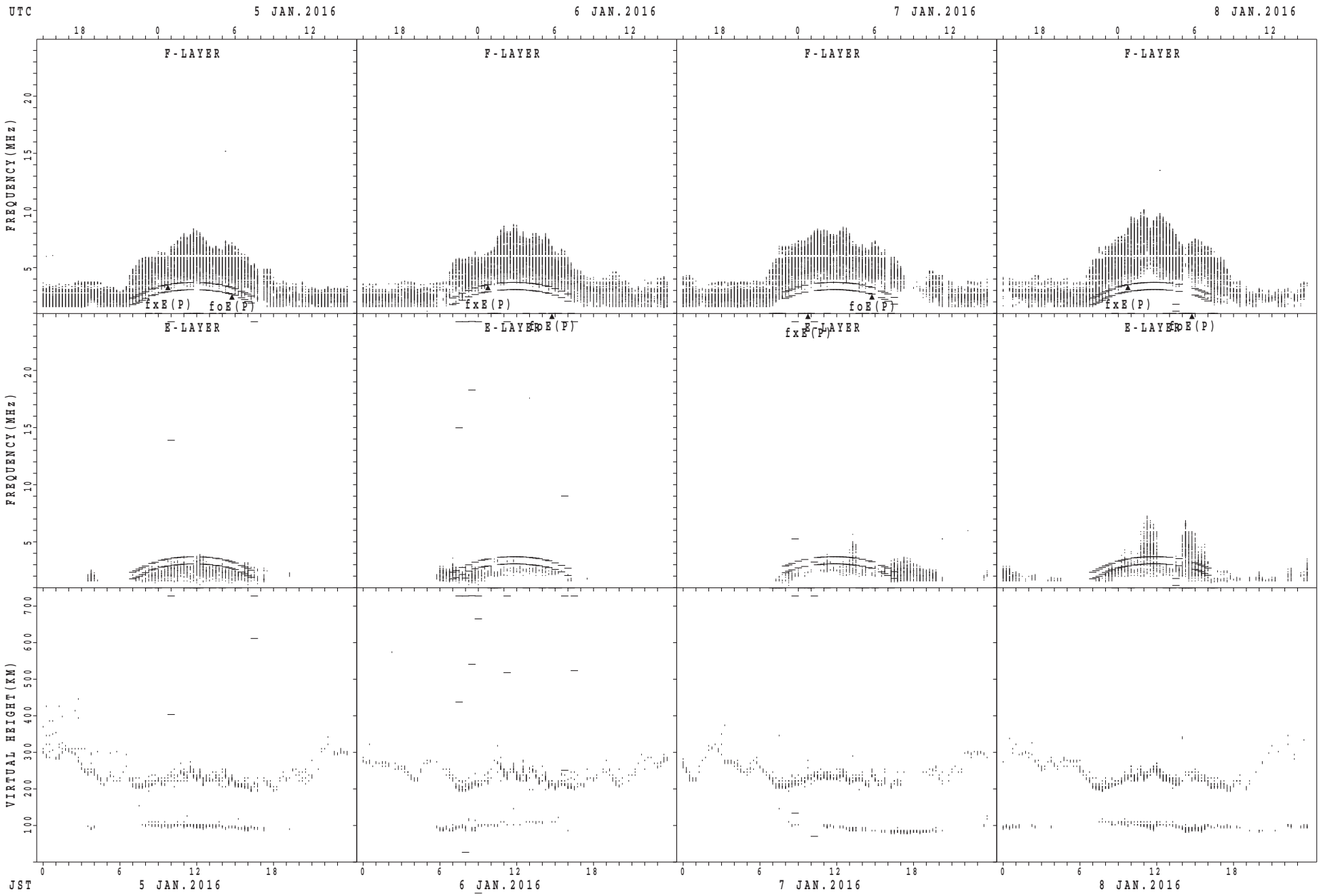
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



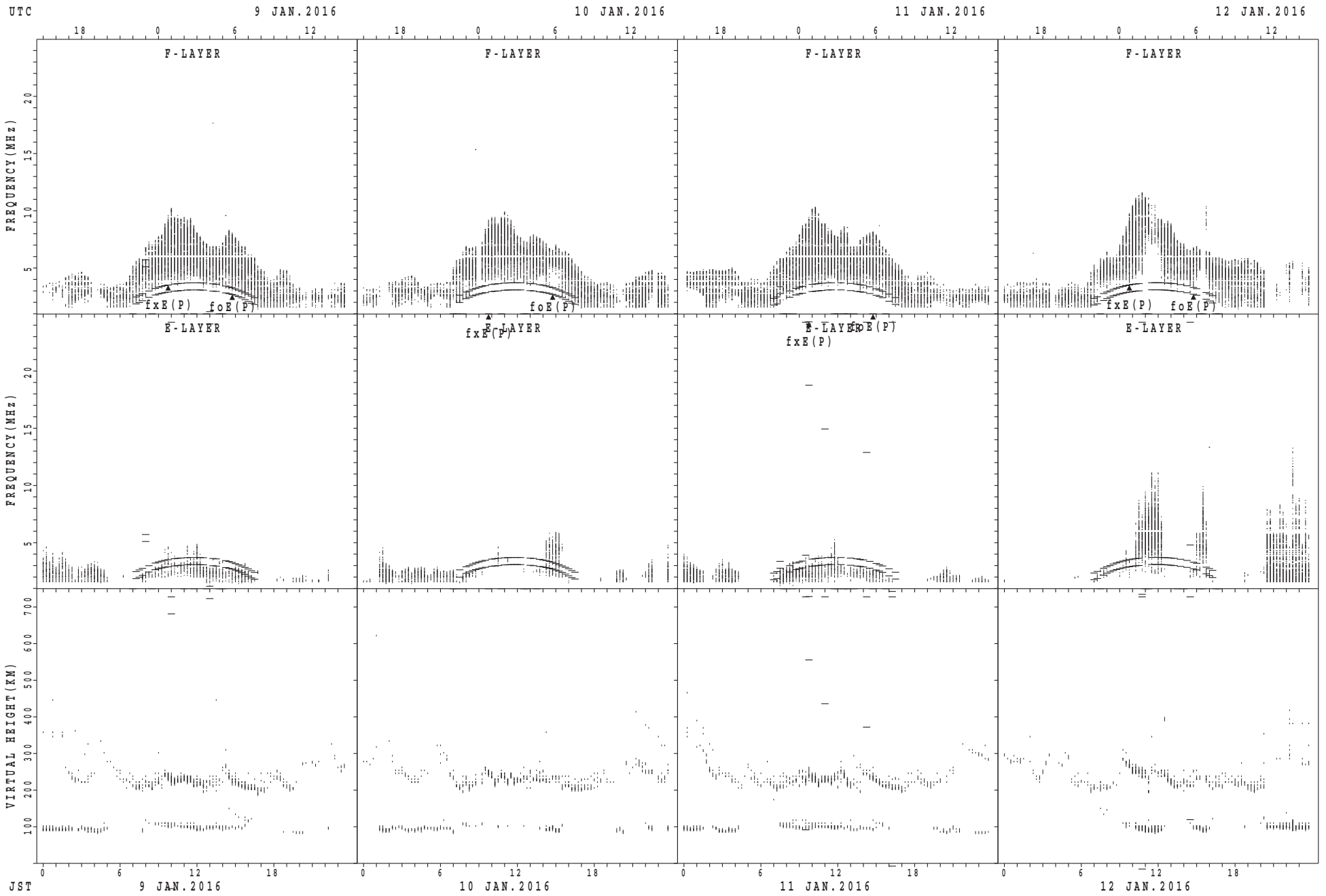
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



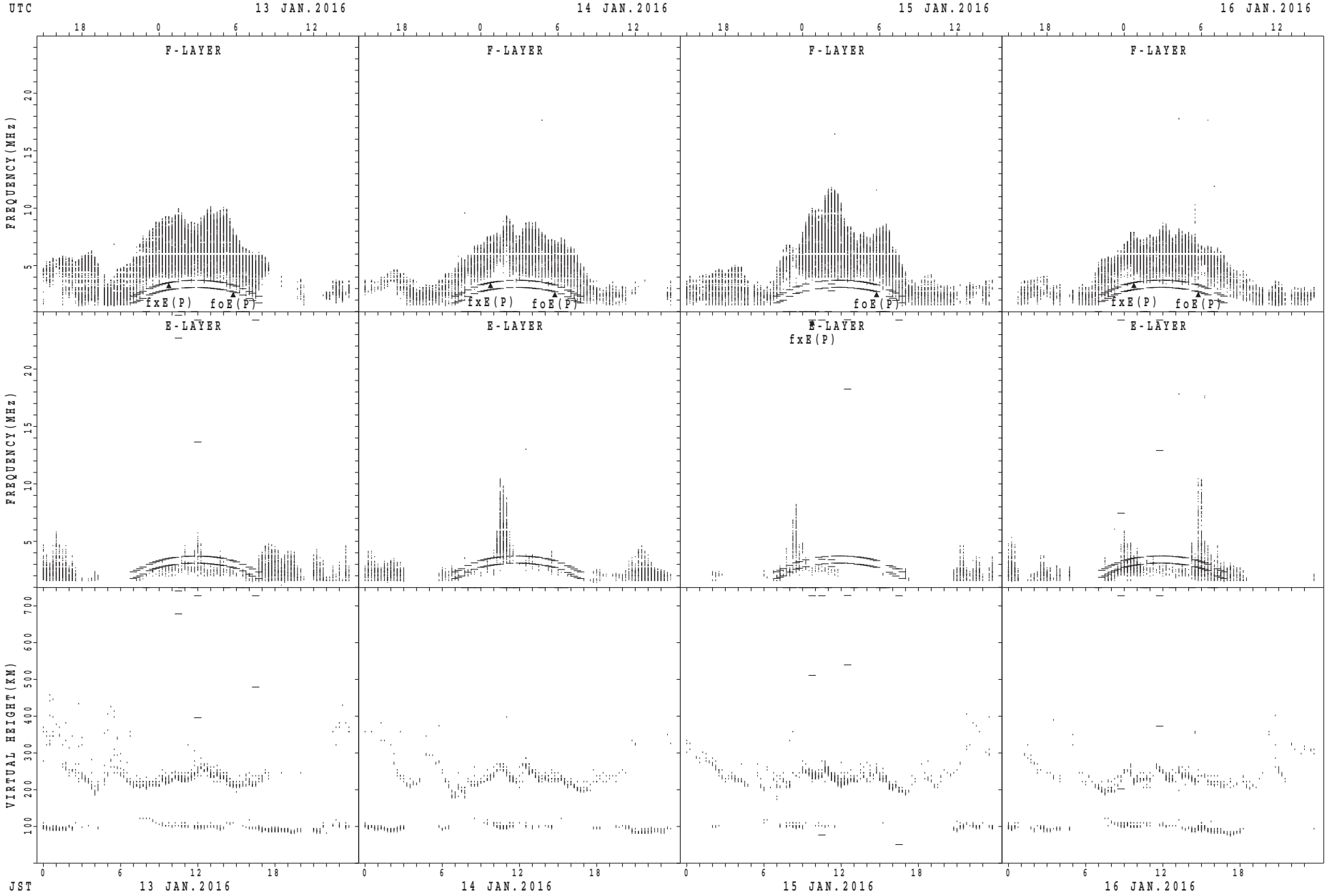
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



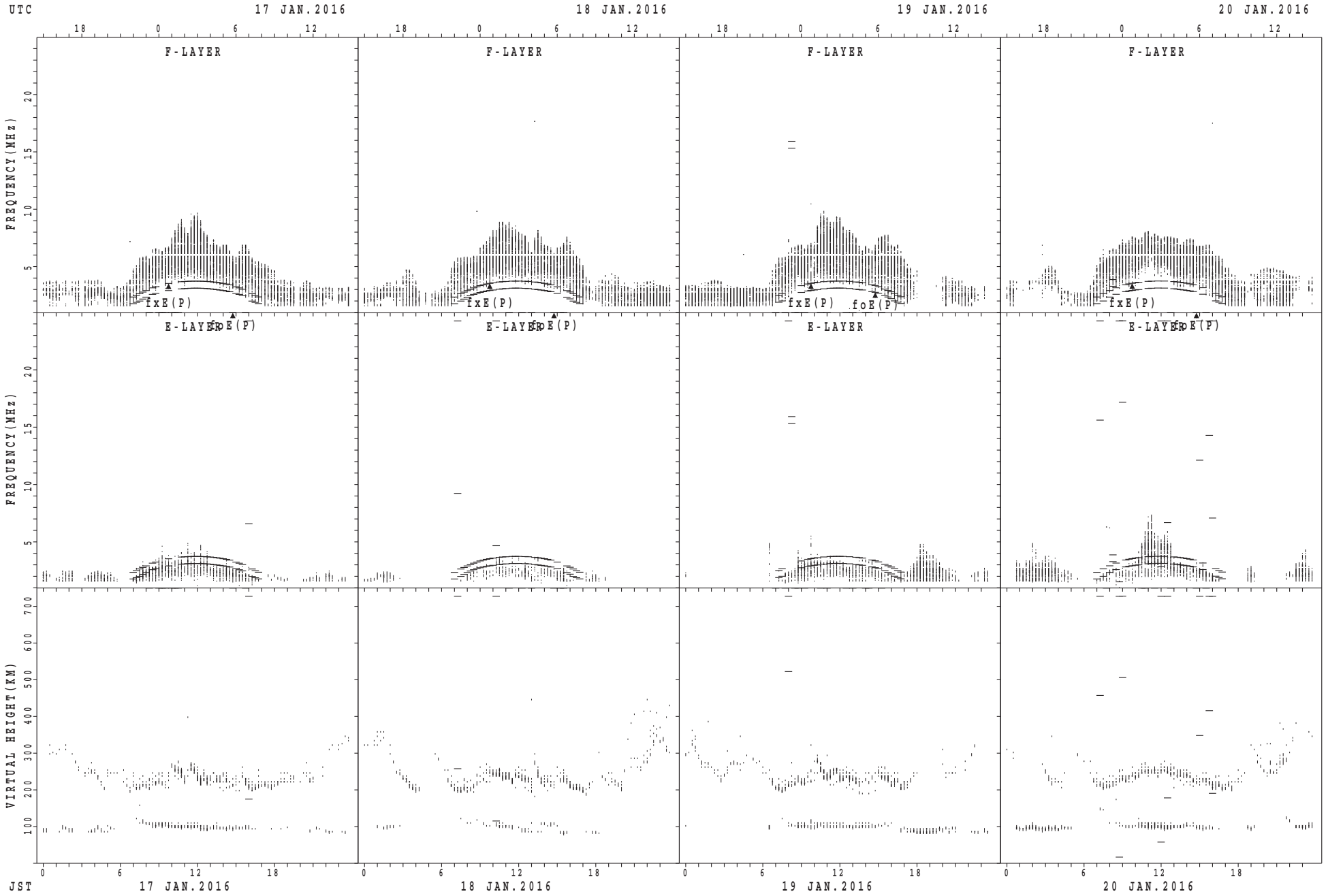
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



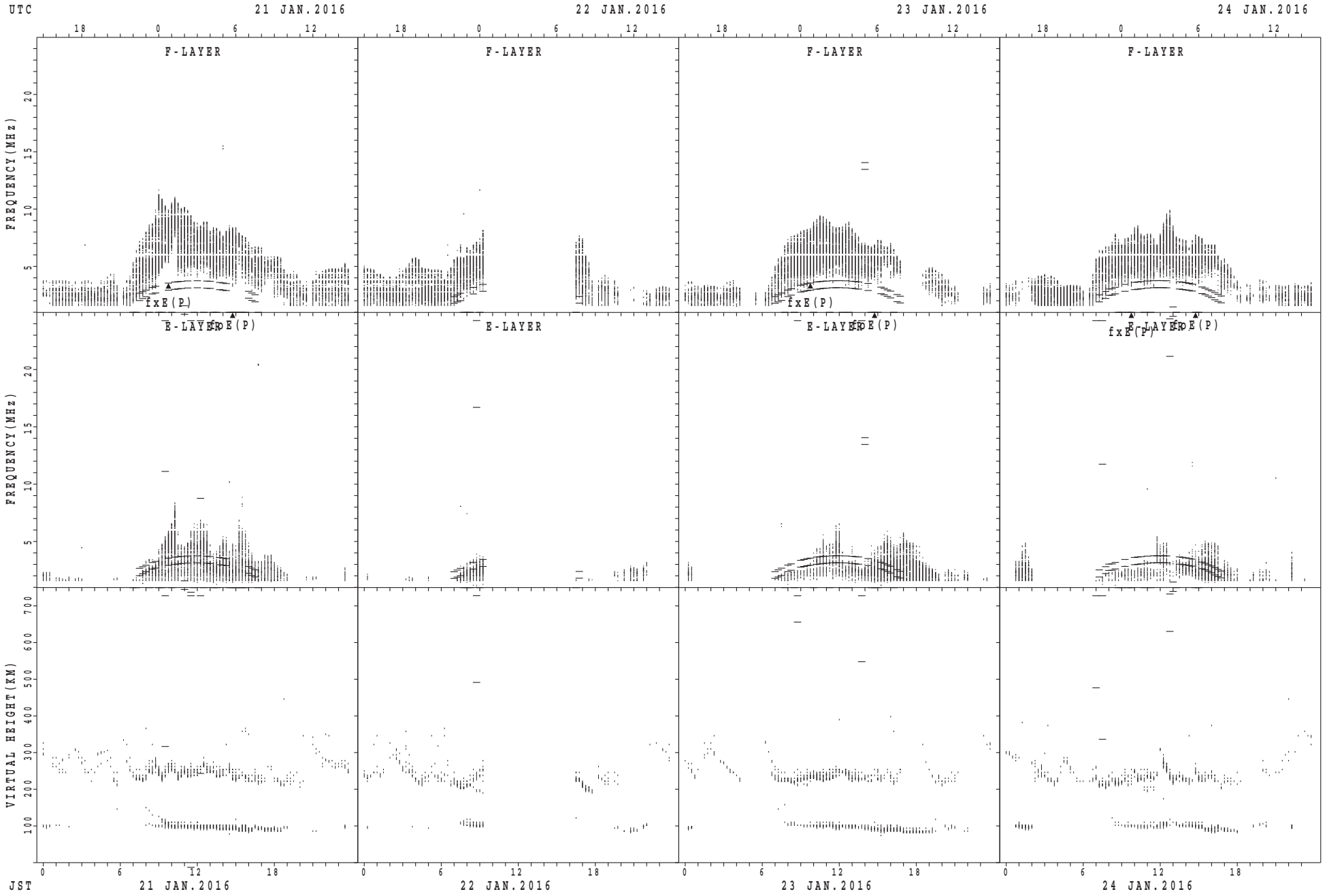
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



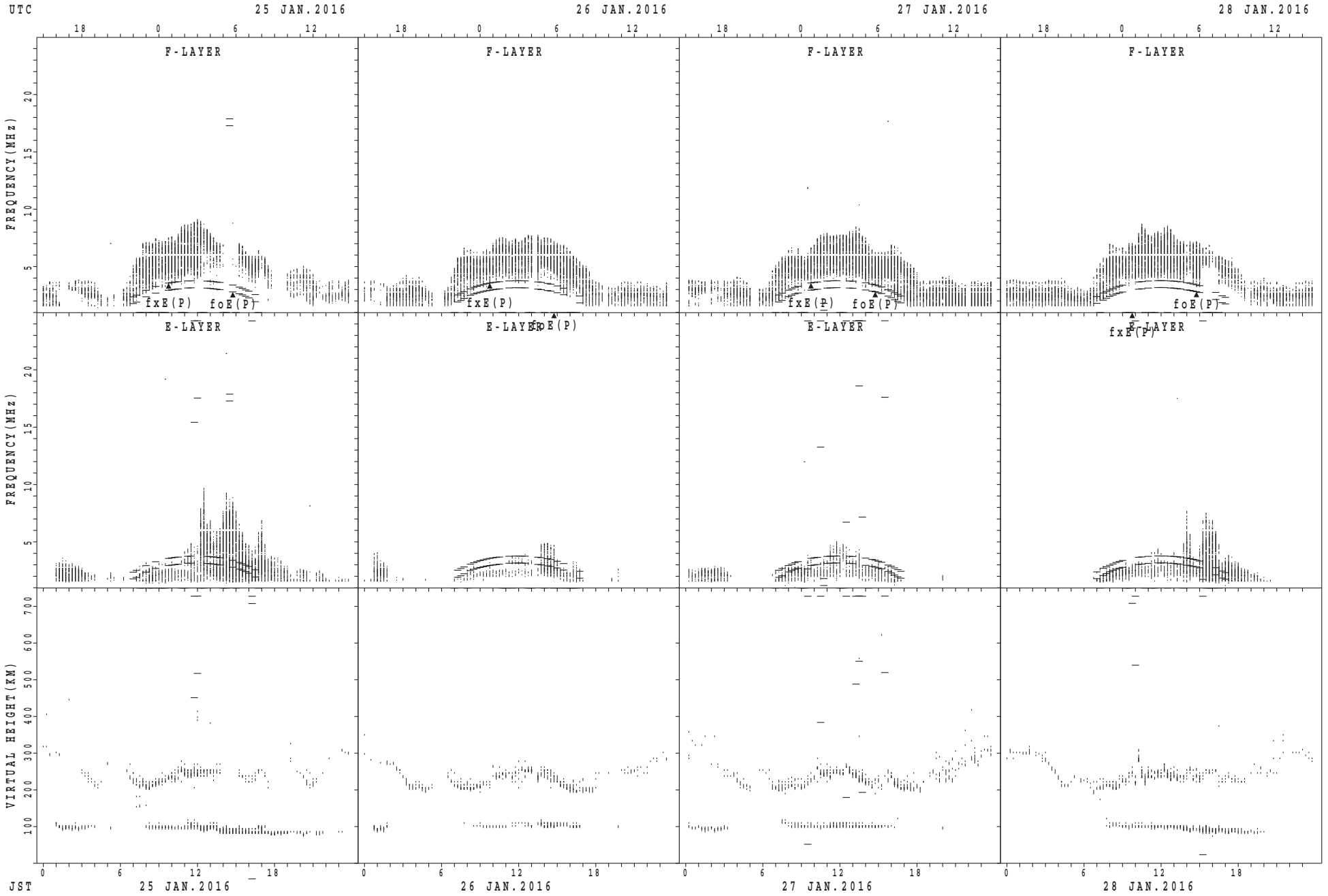
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



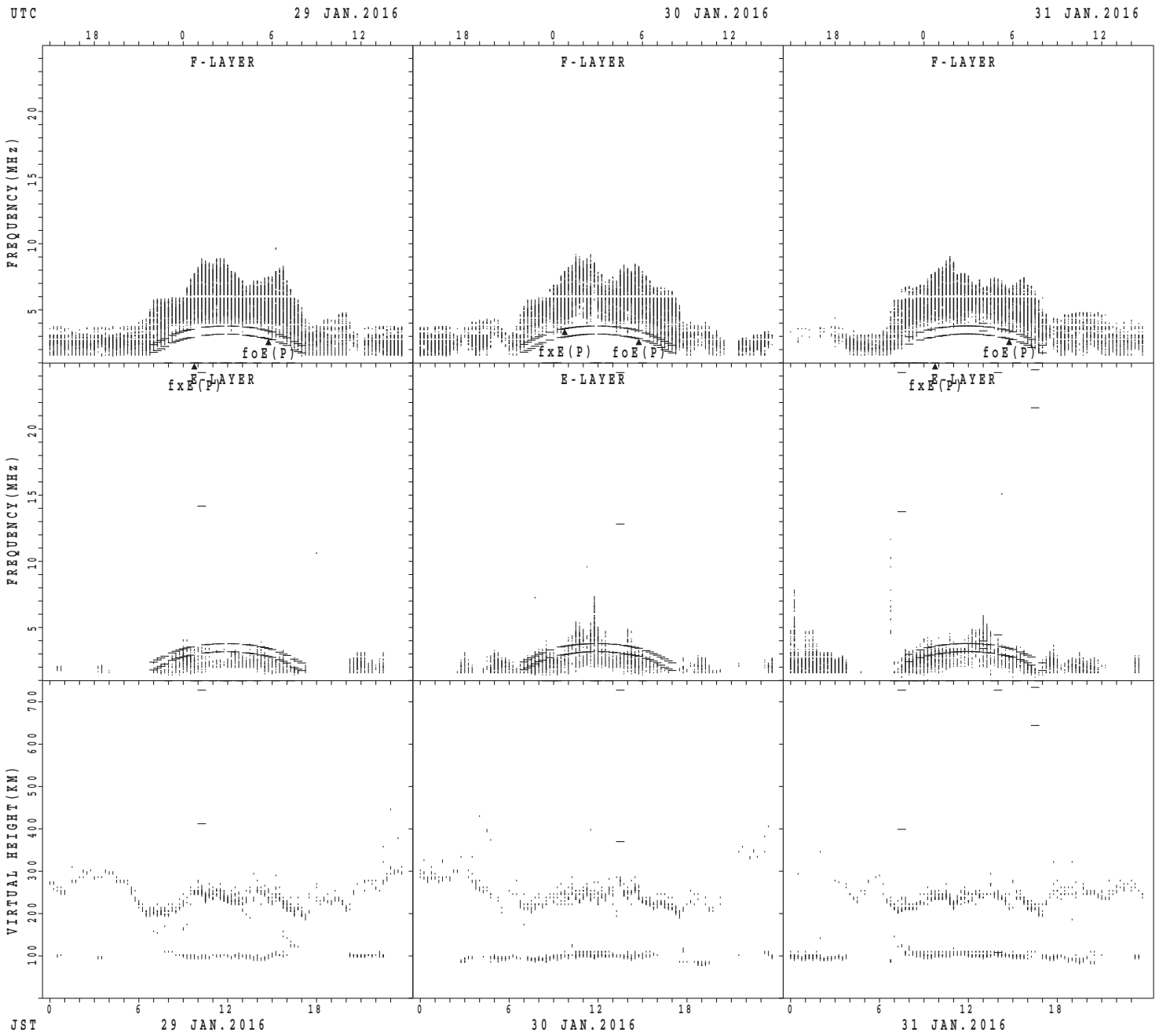
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



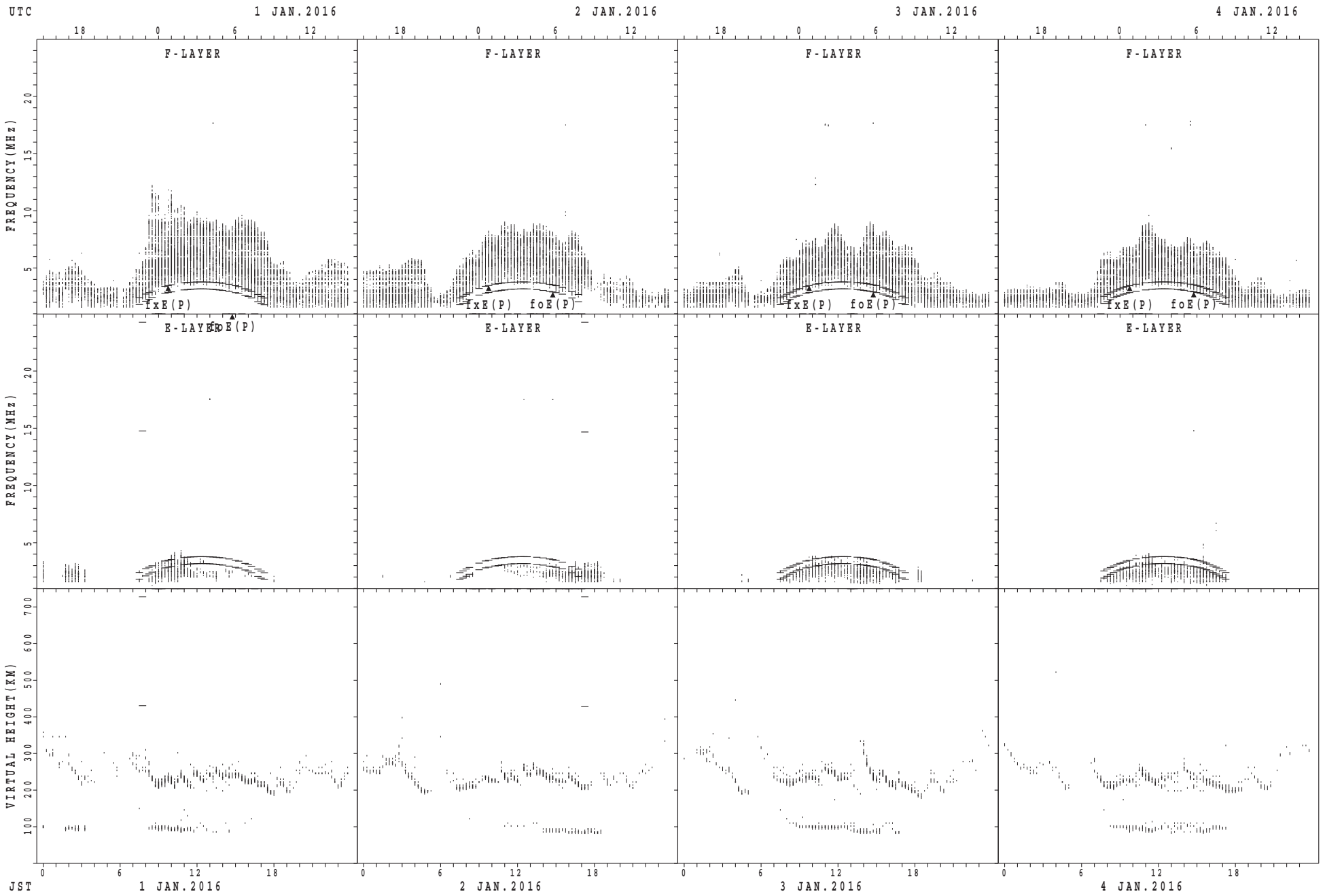
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



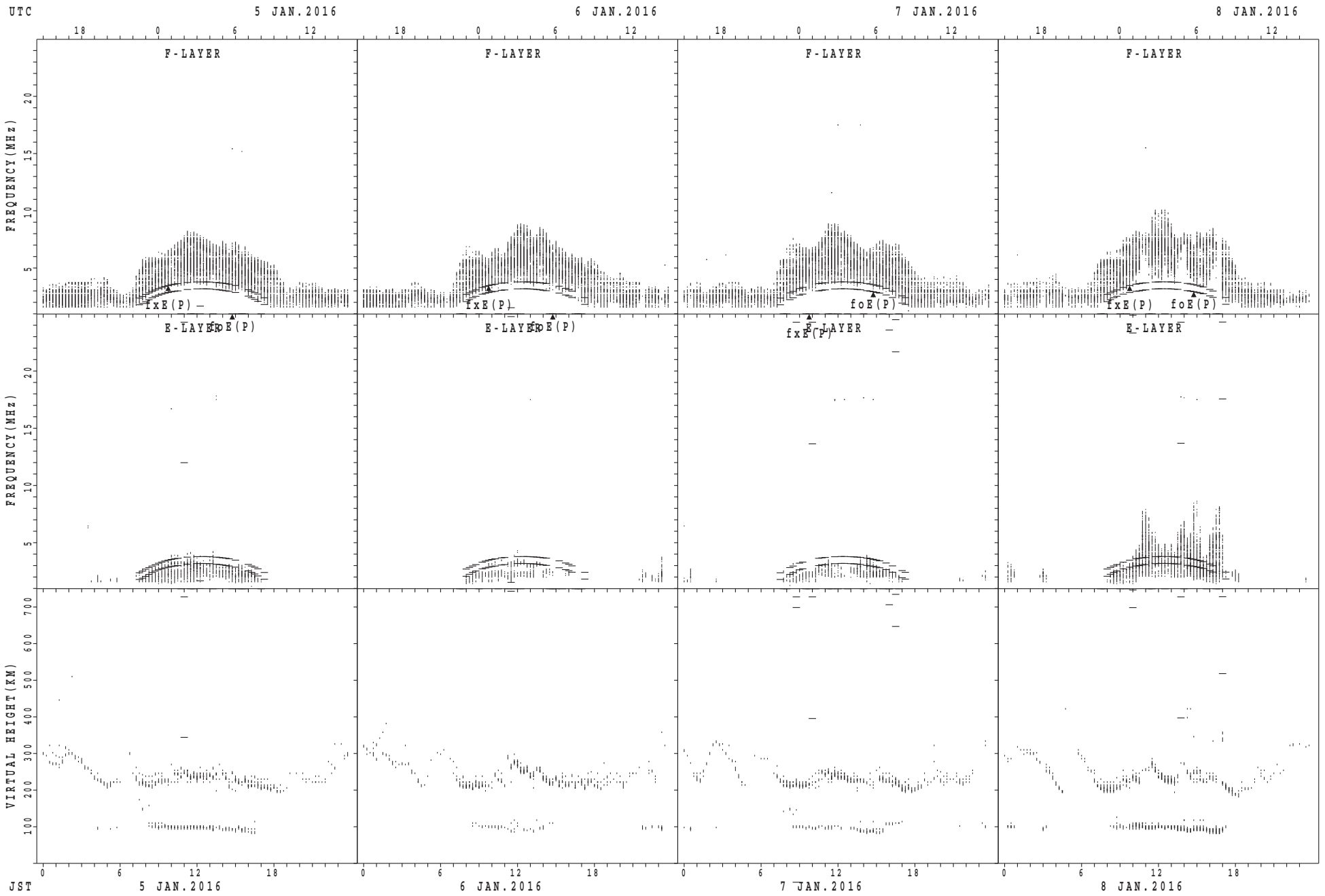
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



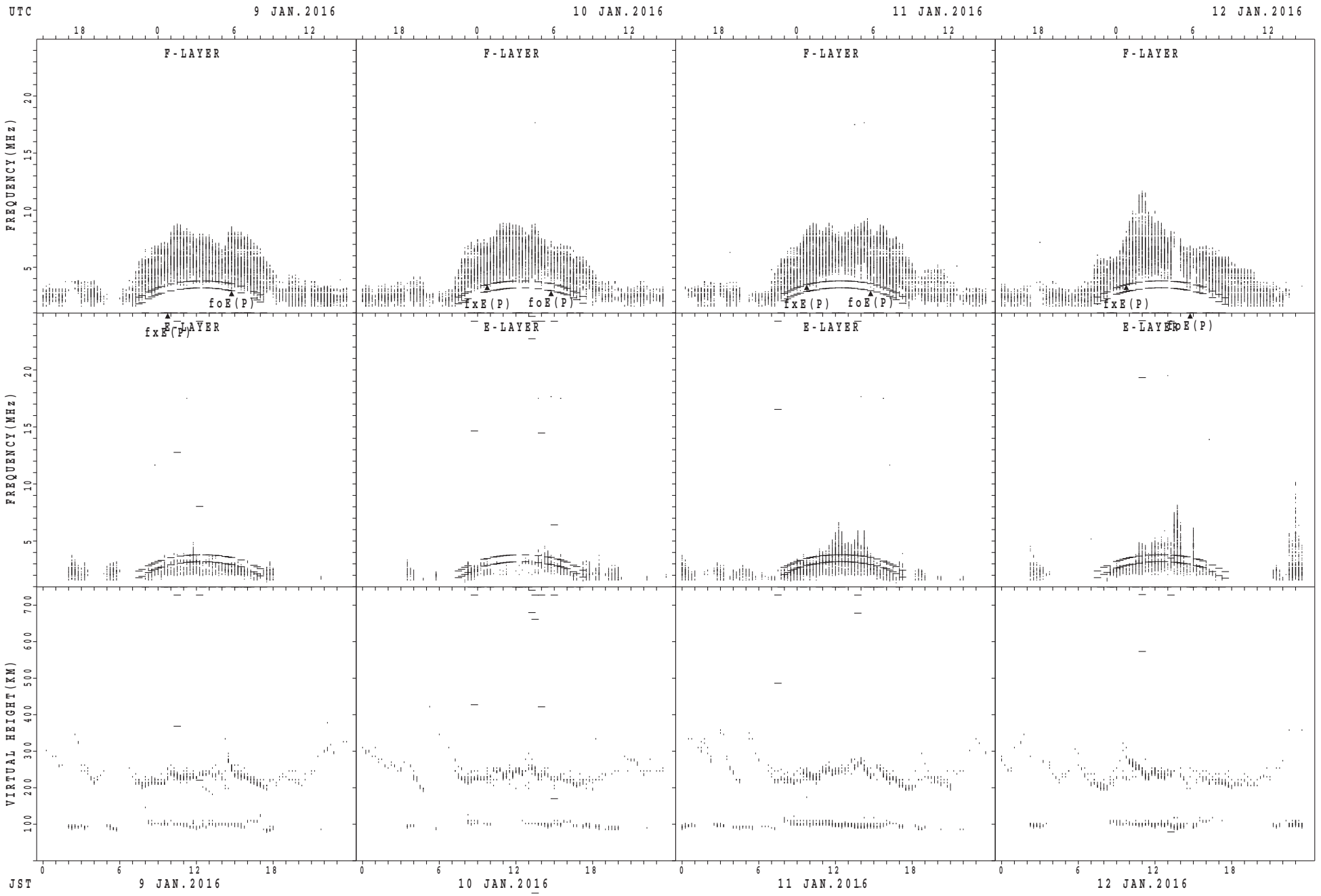
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



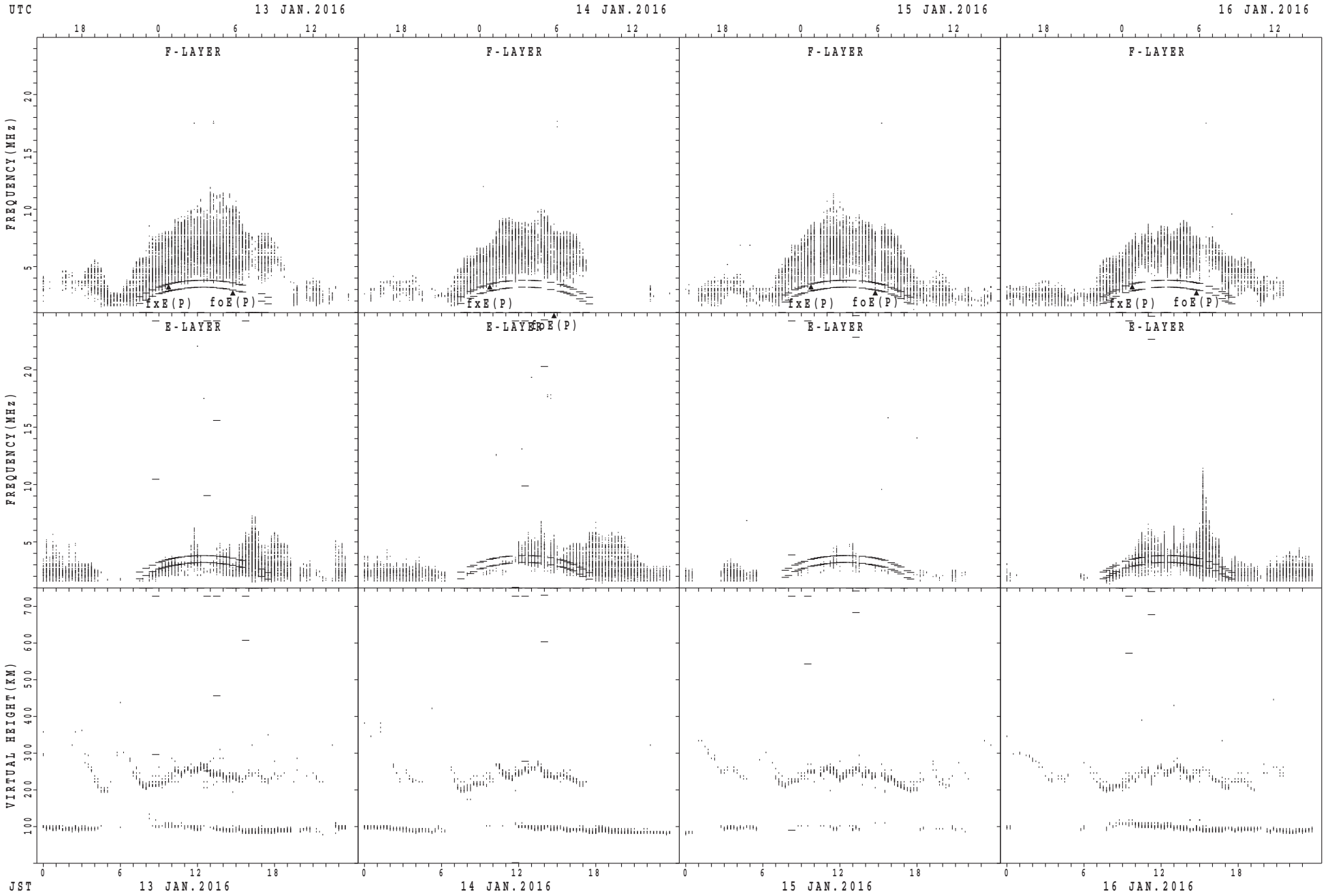
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



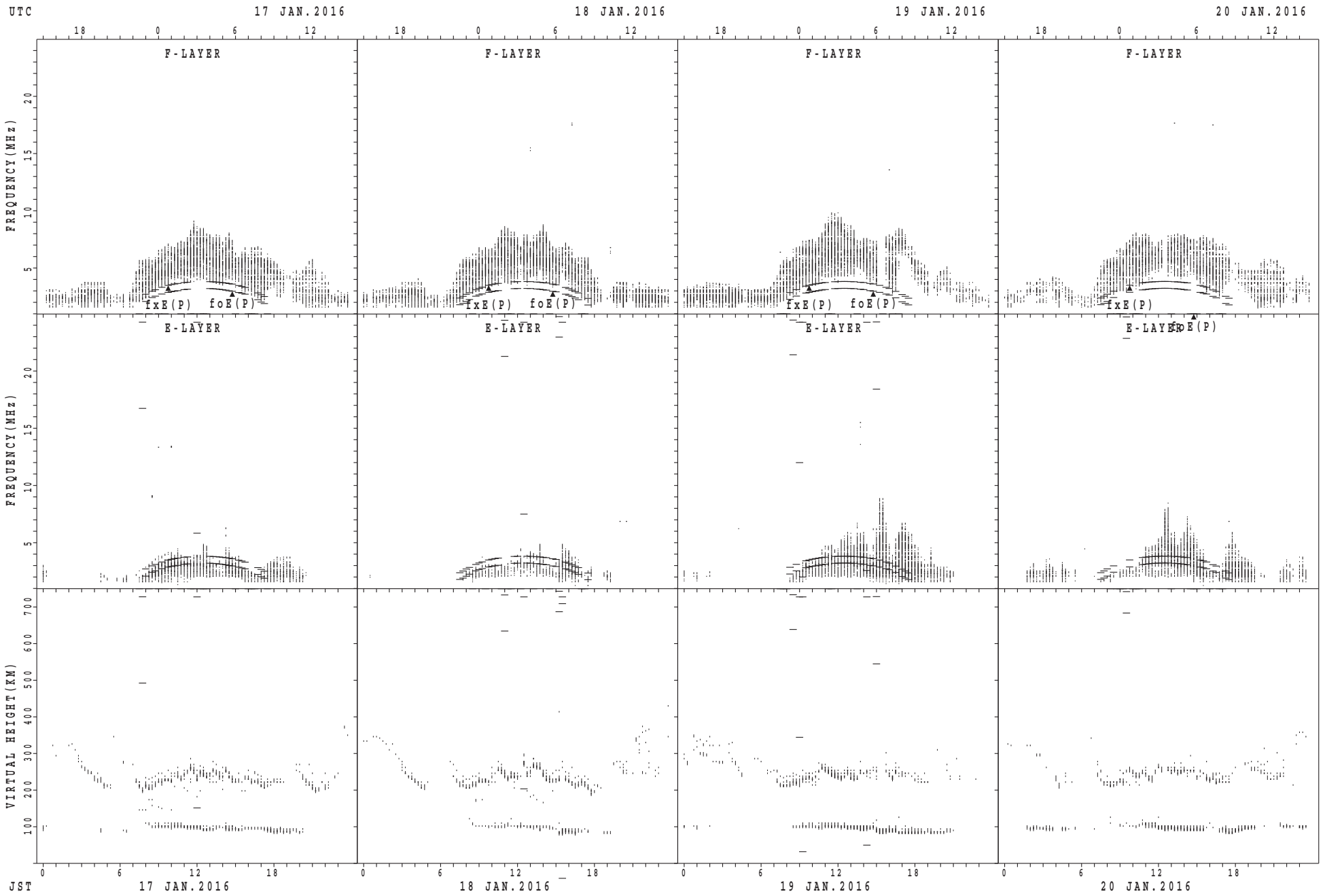
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



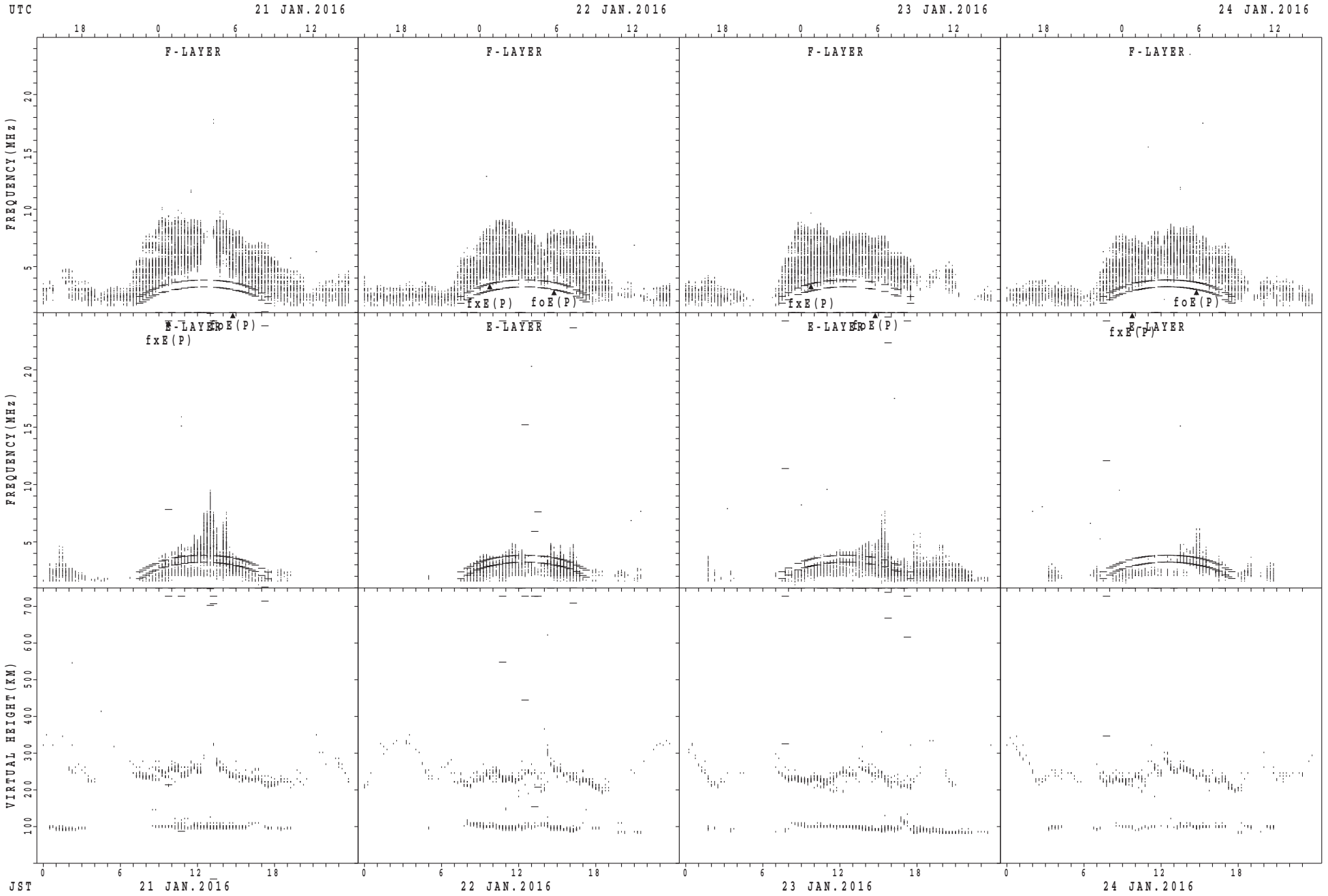
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



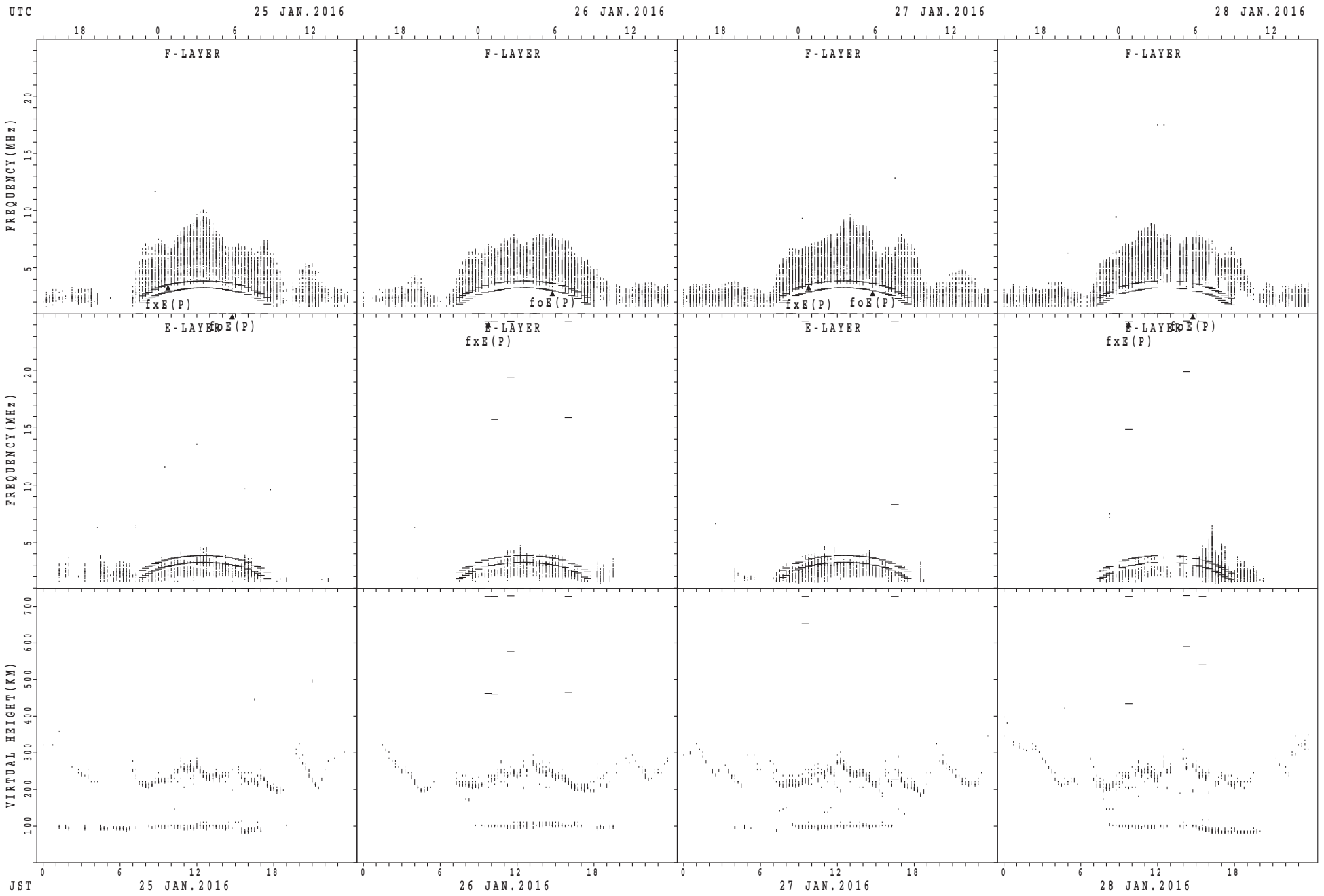
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



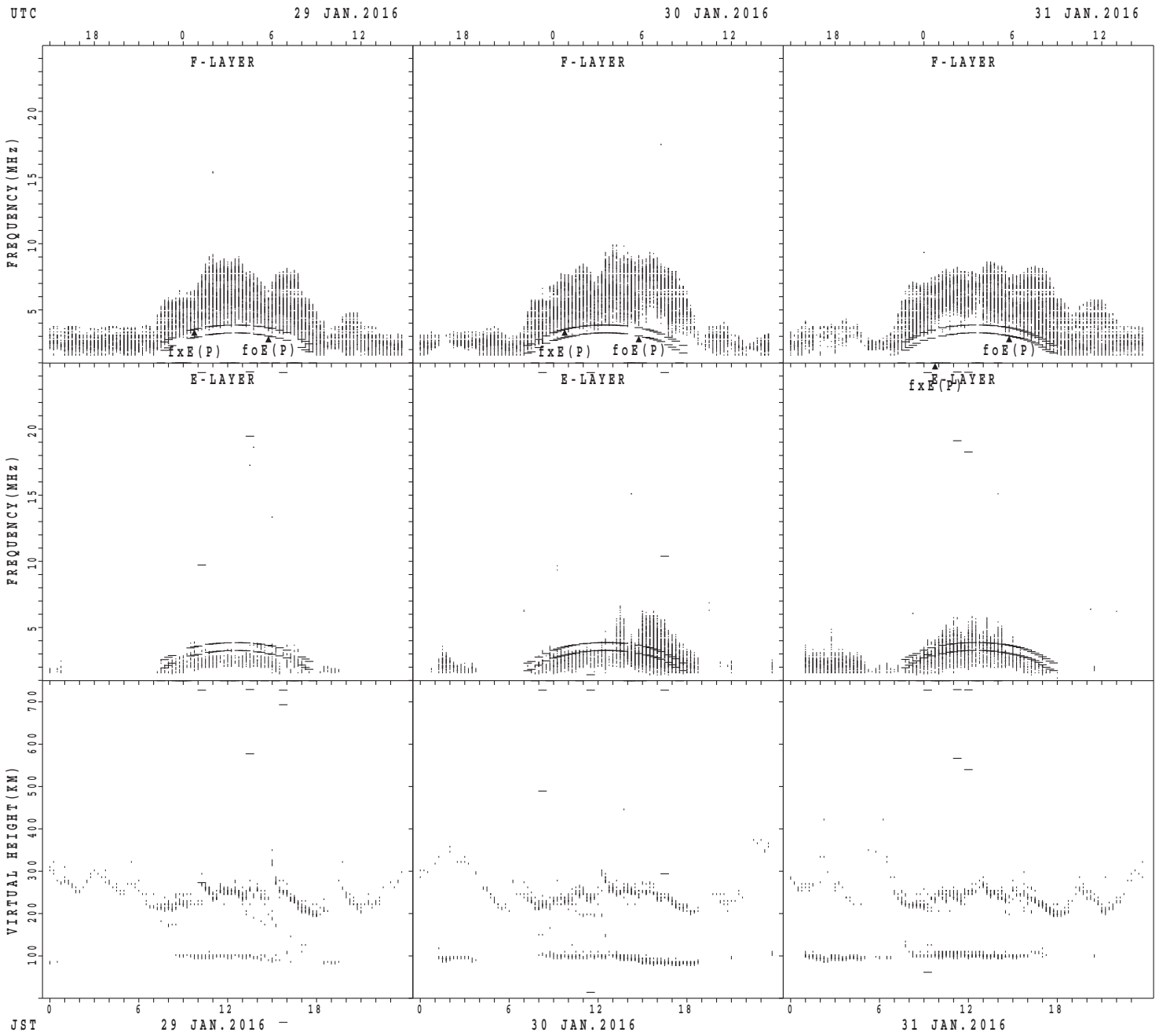
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



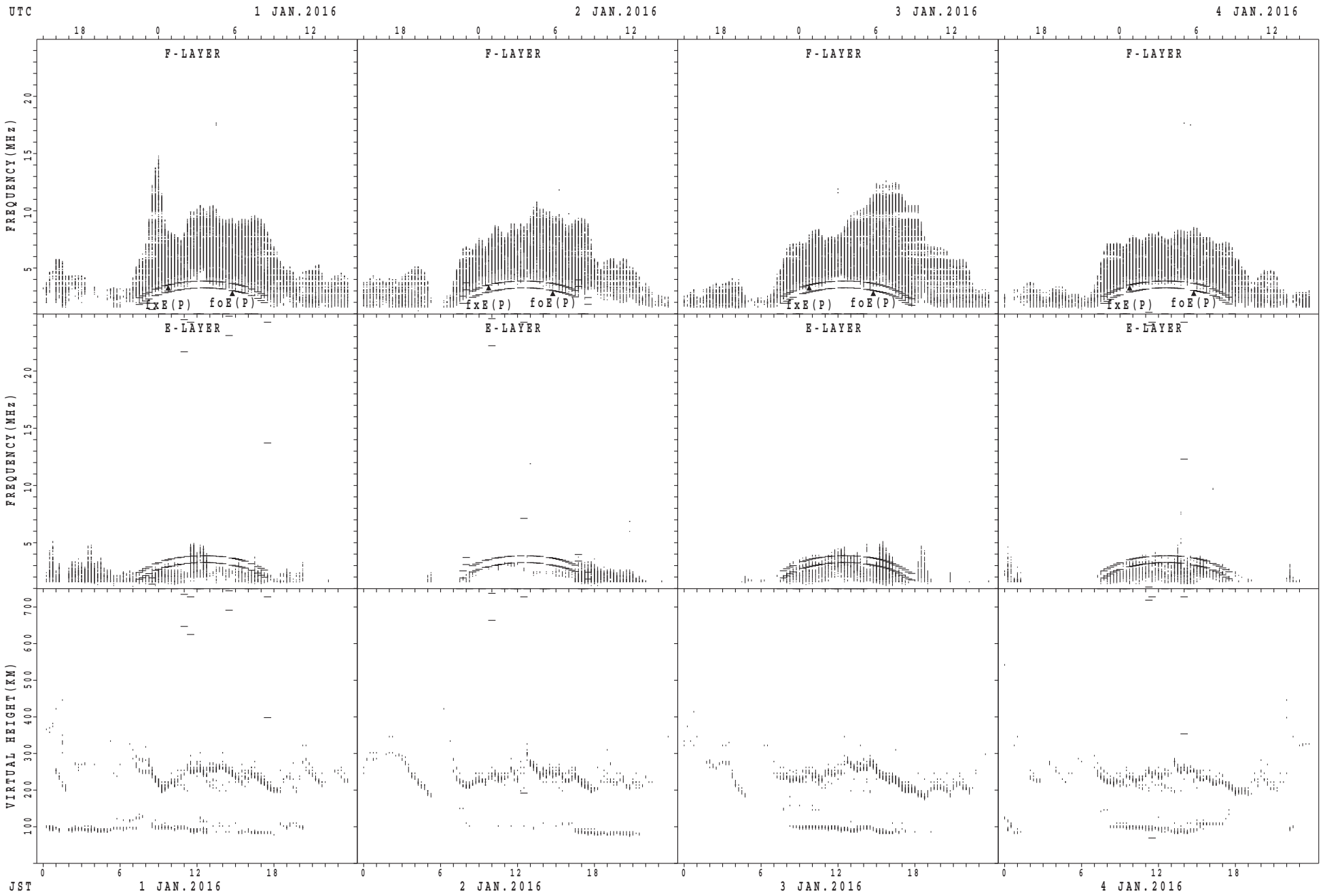
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



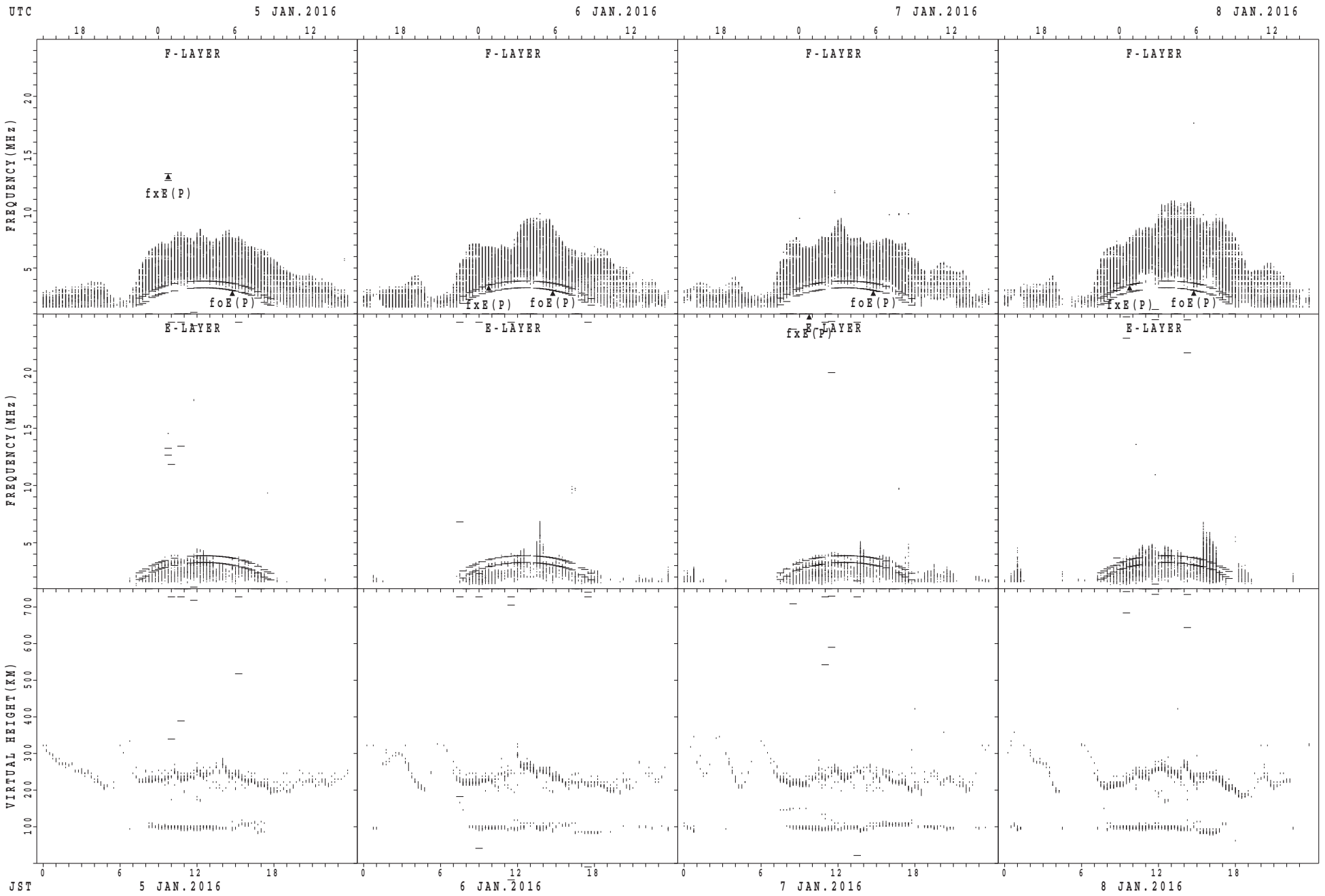
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



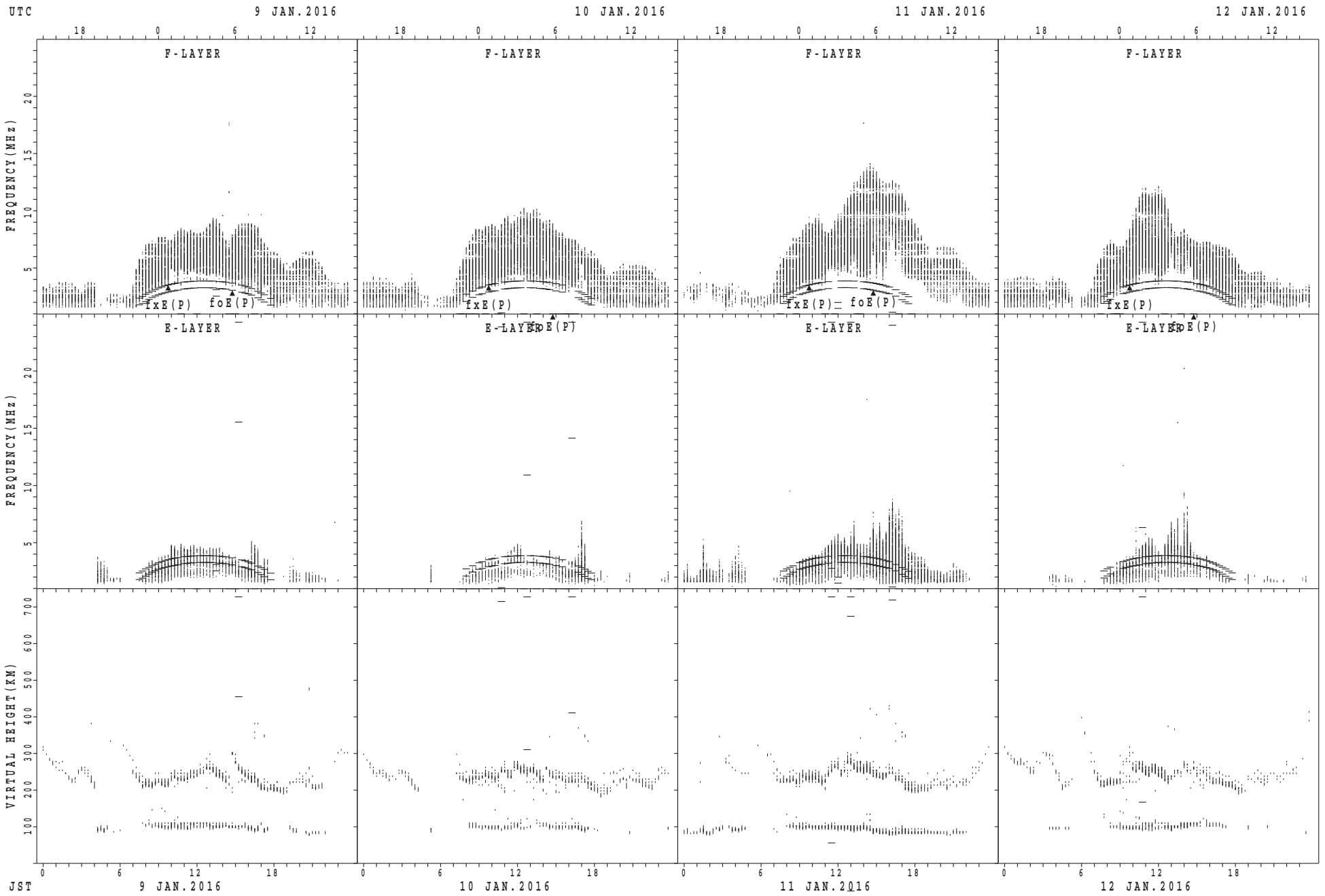
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



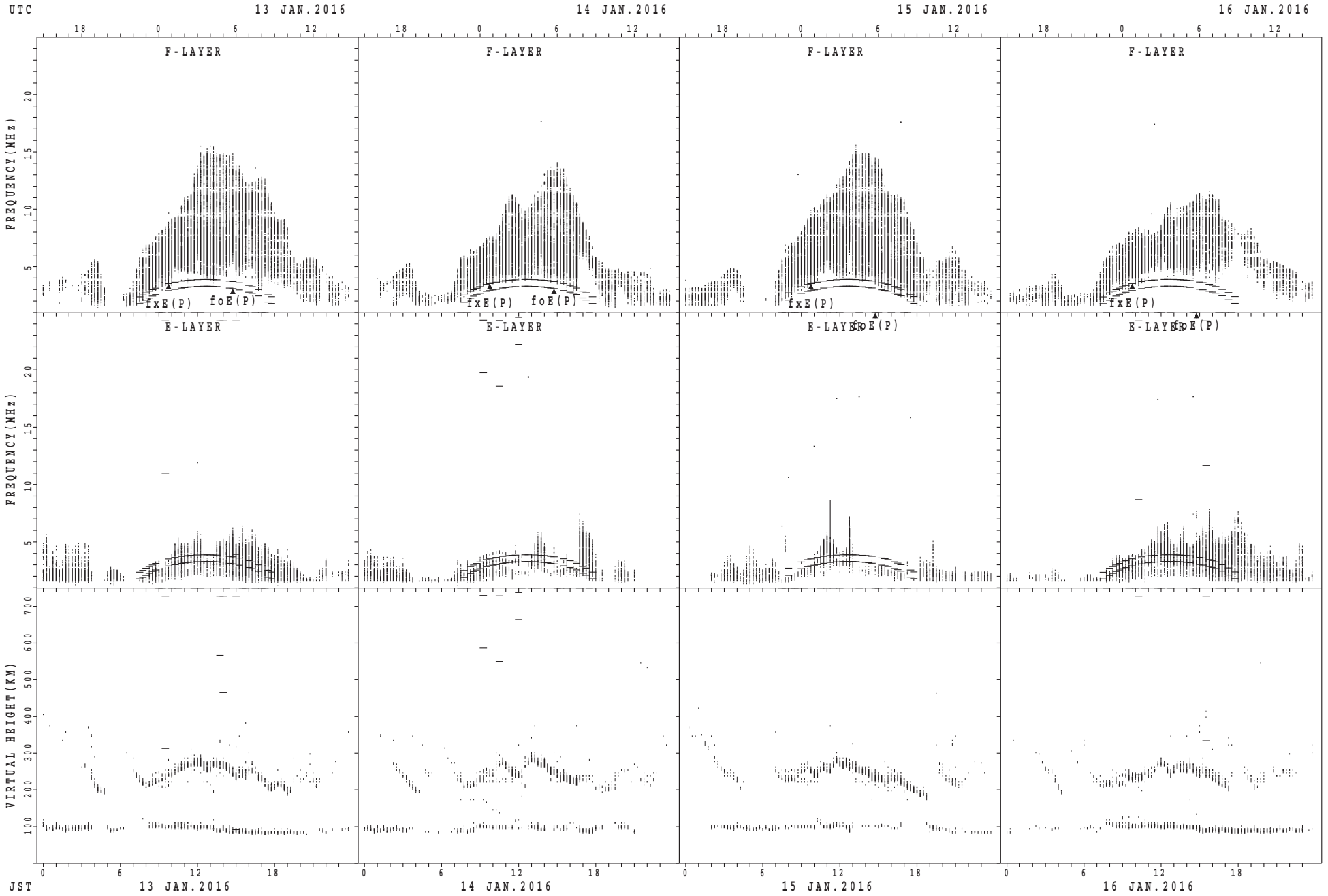
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



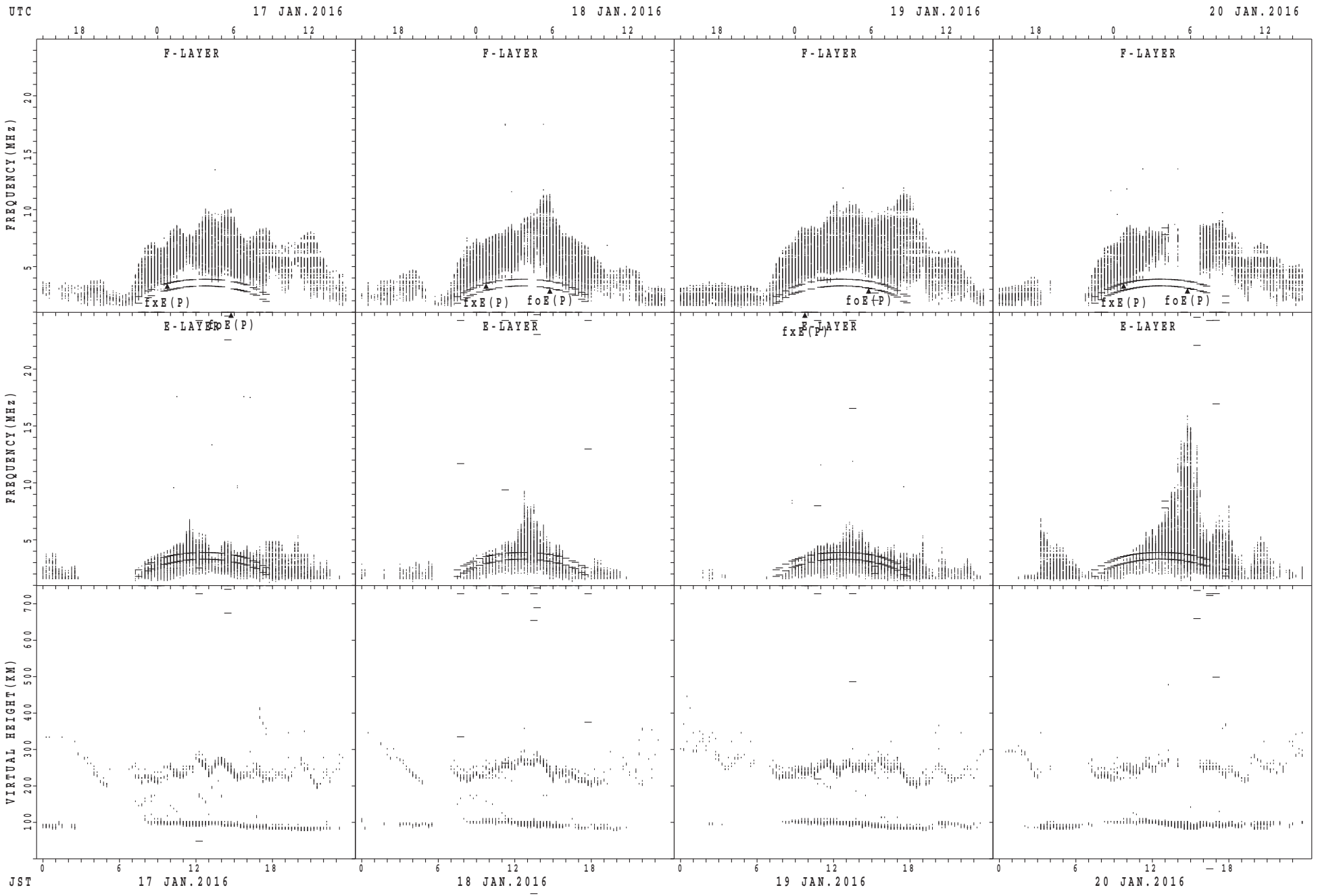
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



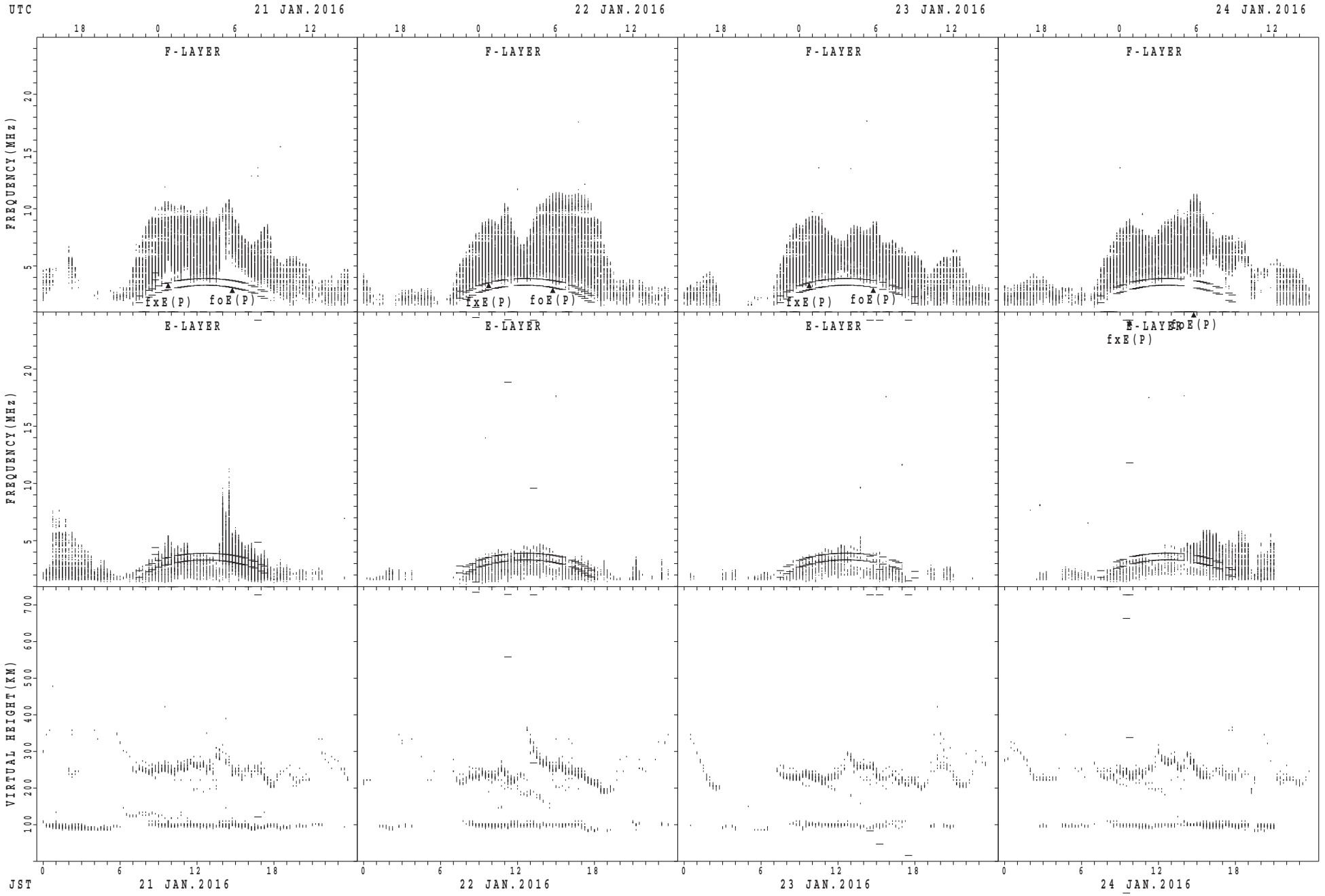
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



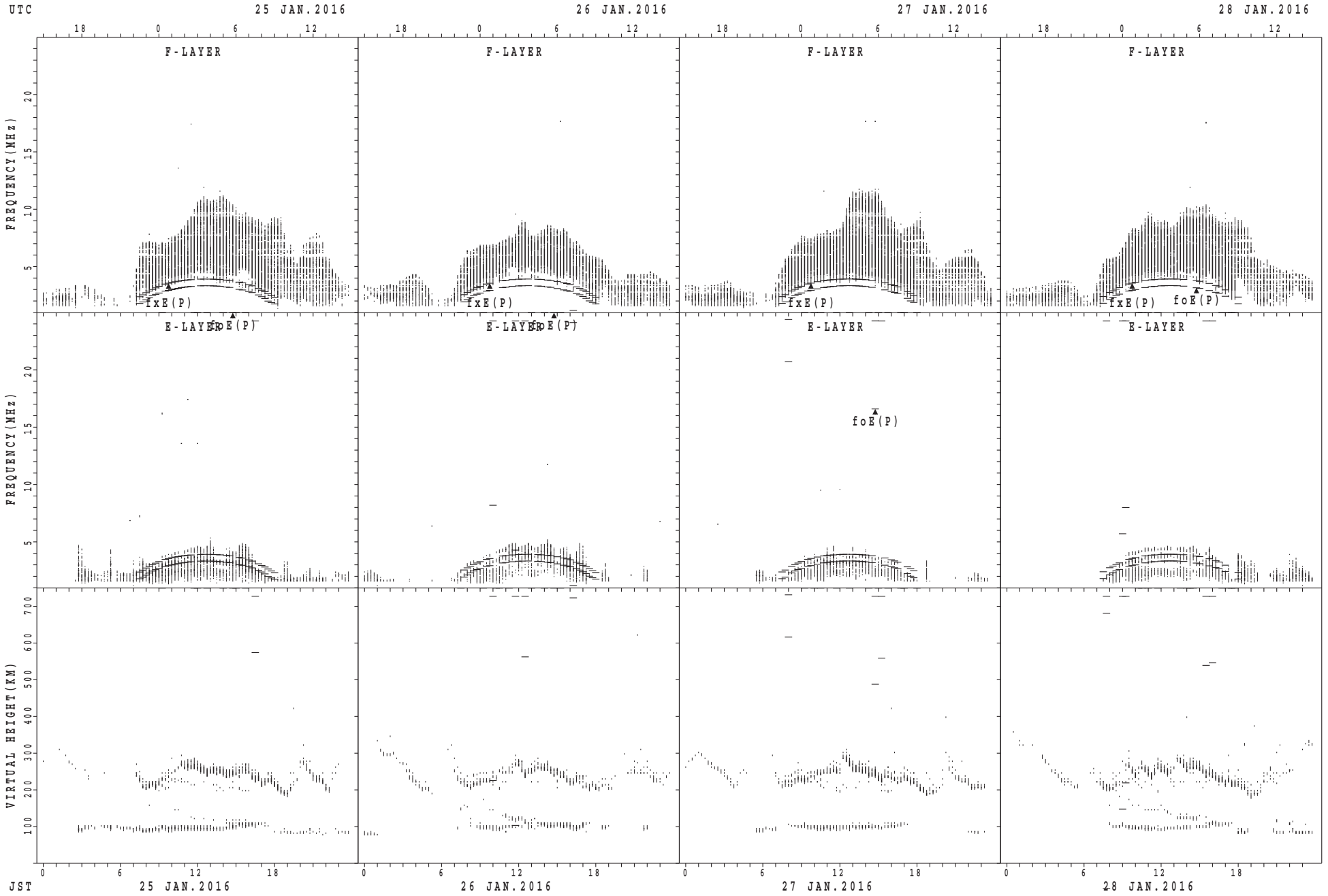
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



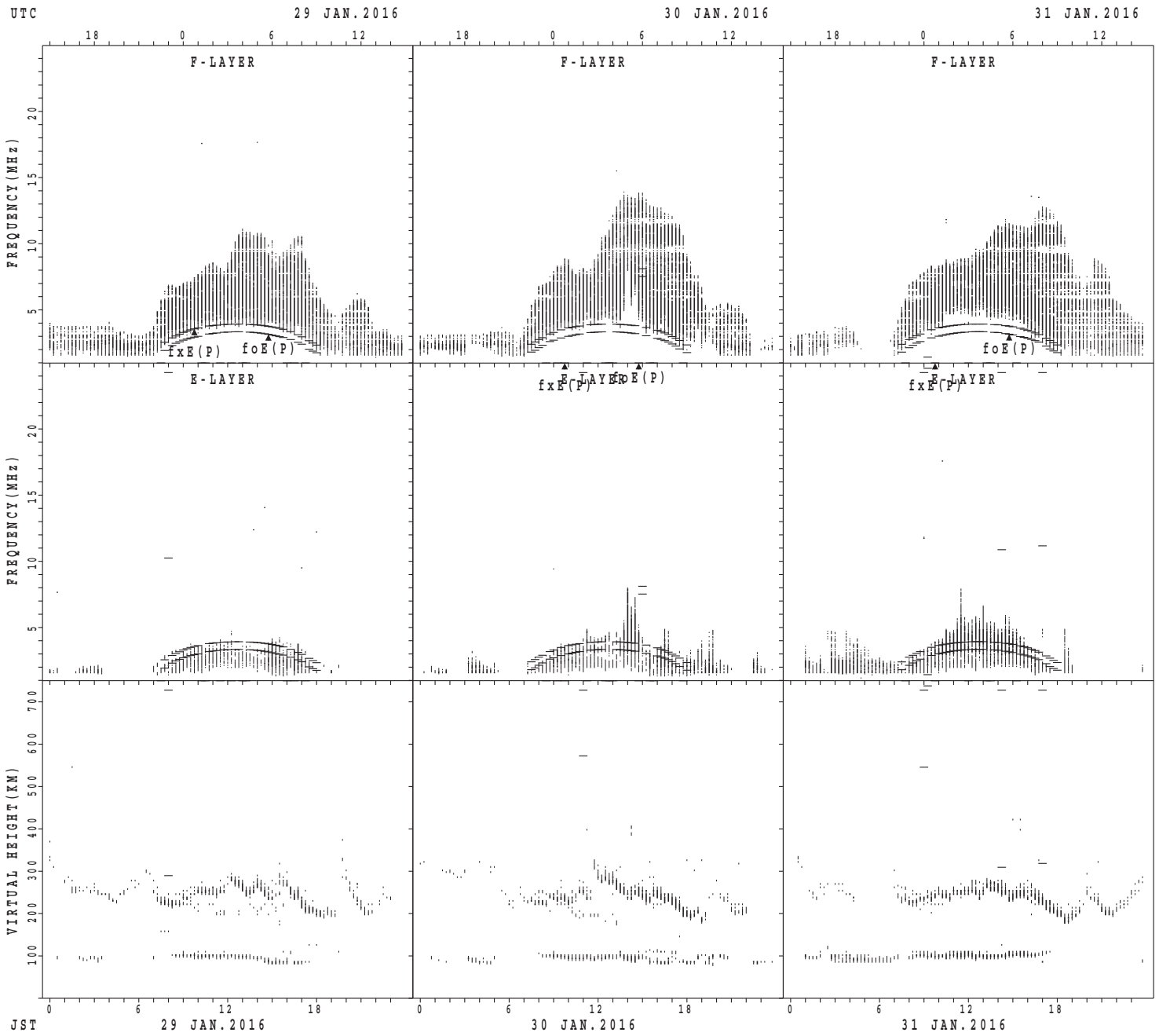
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

JAN.2016 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									12	27	27	30	30	27	28	23	3		1					
MED									229	232	236	224	230	232	236	232	246		362					
U Q									233	240	248	236	244	254	245	238	306		181					
L Q									222	216	230	214	220	224	230	222	232		181					

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	12	8	8	6	4	2	4	13	14	11	9	7	7	7	7	5	14	9	9	11	11	12	7
MED	97	95	98	96	102	106	123	146	143	107	103	105	103	99	97	91	87	91	89	99	99	105	103	105
U Q	104	100	102	106	107	109	149	148	167	113	109	110	107	107	103	99	92	99	105	106	105	109	109	111
L Q	95	95	96	95	95	104	97	121	125	103	101	103	95	95	89	89	87	89	88	89	95	99	99	97

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									12	19	26	29	21	27	23	18	11	1						1
MED									232	248	238	234	230	240	246	237	230	222						292
U Q									240	256	246	240	243	252	256	240	232	111						146
L Q									223	232	234	228	218	230	234	230	222	111						146

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	10	13	13	10	9	4	5	7	15	9	9	13	16	8	8	12	10	10	14	10	9	9	8	4
MED	102	97	97	97	95	97	95	157	143	103	105	103	103	102	101	98	92	90	89	90	89	93	106	103
U Q	103	103	102	97	100	99	105	167	167	108	111	106	105	103	108	106	95	95	93	93	94	100	112	105
L Q	95	95	93	95	91	95	93	91	113	102	103	102	100	100	95	95	87	87	87	87	89	91	89	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									5	13	26	30	15	15	27	23	23	12	3					
MED									242	236	247	245	240	246	248	248	242	235	242					
U Q									253	250	256	250	246	262	256	260	256	243	248					
L Q									235	223	236	238	232	242	238	238	232	228	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	8	6	9	11	8	7	4	3	10	10	11	13	19	15	16	15	16	17	14	12	8	6	5	6
MED	98	99	95	95	96	97	96	97	169	106	107	105	101	101	97	97	92	95	91	92	90	92	89	100
U Q	103	101	97	97	97	99	99	103	173	111	125	110	105	103	103	99	98	100	93	96	93	97	103	103
L Q	93	97	95	95	95	95	93	91	161	103	101	101	97	97	95	95	89	88	87	89	89	89	88	89

MONTHLY MEDIANS OF h'F AND h'Es

JAN.2016 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

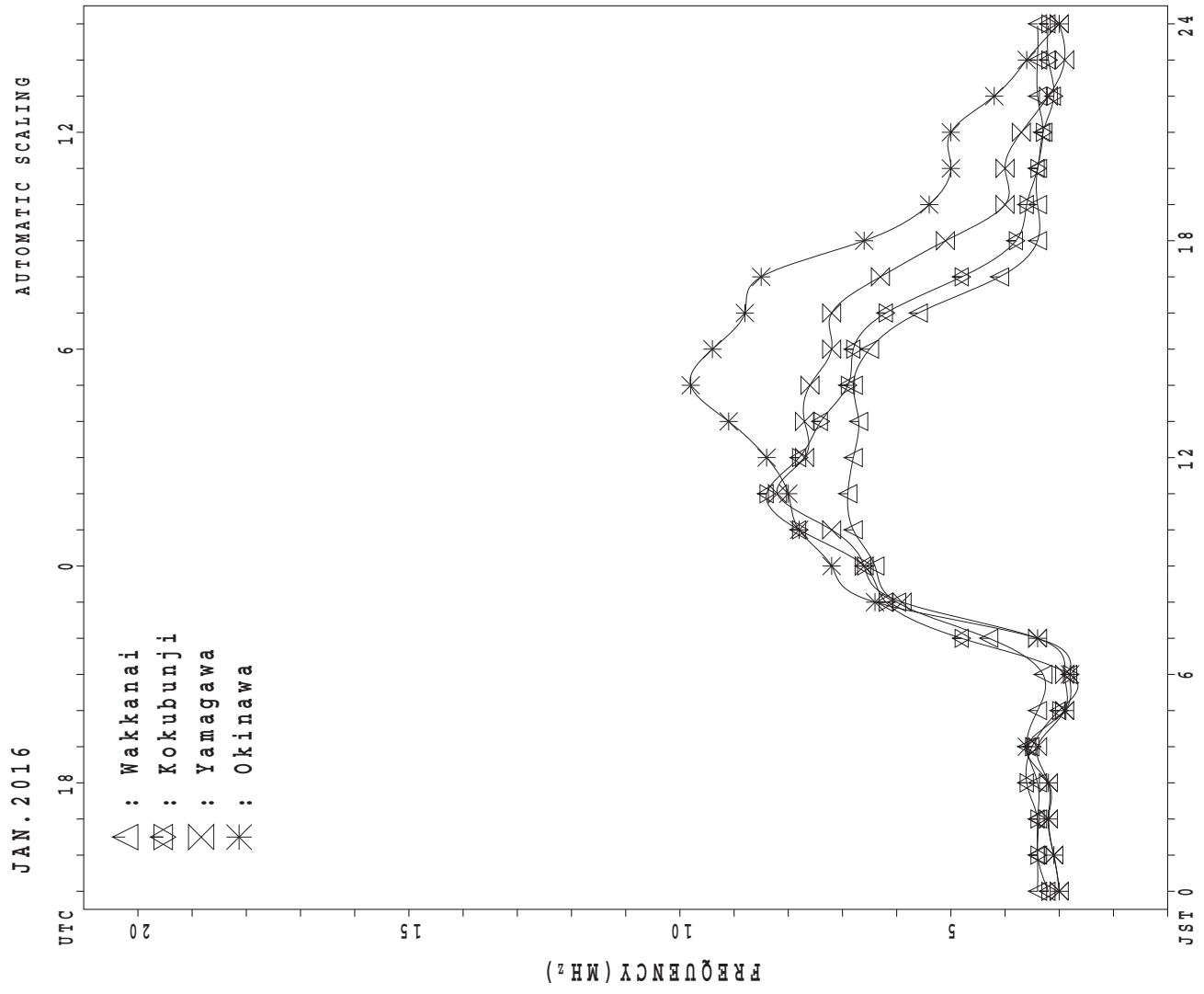
h'F

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						15	26	31	29			20	30	28	25	13	4		2		
MED			256						242	238	242	246			257	239	243	226	222	229		245		
U Q			128						250	248	248	253			265	250	252	245	228	239		248		
L Q			128						230	228	234	238			246	234	234	219	209	215		242		

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	7	10	9	11	12	10	6	8	10	18	16	22	26	21	22	18	22	19	15	20	13	15	7	5
MED	95	95	95	95	95	96	94	95	125	107	109	107	103	103	101	101	96	95	87	93	89	95	95	87
U Q	111	97	98	101	97	97	95	101	155	143	146	119	107	112	109	105	107	107	95	101	102	99	97	95
L Q	89	89	92	95	93	89	91	94	97	103	104	107	101	97	99	91	89	89	87	87	87	87	87	87


MONTHLY MEDIANS PLOT OF foF2
JAN.2016
AUTOMATIC SCALING
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
UTC
0
6
12
18
JST 0
6
12
18
24
5
10
15
20
FREQUENCY (MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 32	X 35	X 38	X 38	X 39	X 37													X 41	X 36	X 29	X 29	X 36	X 35
2	X 36	56	X 54	49	49	X 40	X 30											X 39	X 36	X 38	X 40	X 38	X 41	X 43
3	X 42	X 43	X 44	X 42	X 42	X 41	X 34												X 41	X 37	X 36	X 31	X 34	X 36
4	X 36	X 37	X 37	X 37	X 37	X 37	X 32												X 36	X 35	X 39	X 33	X 35	X 38
5	X 38	X 38	X 39	X 39	X 39	X 39	X 35												X 39	X 36	X 33	X 33	X 37	X 40
6	X 41	X 40	X 42	X 42	X 42	X 42	X 39			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	X 41	X 42	X 42	X 41												X 39	X 39	X 35	X 40	X 44	X 46
9	X 47	X 49	X 47	X 49	X 50	X 43	X 37													X 40	X 42	X 41	X 44	X 47
10	X 46	X 47	X 47	X 48	X 43	X 40		X 49											X 42	X 36	X 36	X 39	X 43	X 47
11	X 45	X 41	X 41	X 41	X 41	X 40												X 45	X 50	X 47	X 43	X 42	X 46	X 42
12	X 43	X 41	X 40	X 37	X 37	X 40													X 59	X 63	X 56	X 57	X 60	X 66
13	X 66	X 63	X 63	X 55	X 57	X 57	50												X 39	X 39	X 39	X 41	X 43	X 43
14	X 44	X 45	X 44	X 54	X 54													X 50	X 50	X 38	X 47	X 56	X 54	56
15	54	50	50	53	53	X 39													X 39	X 35	X 38	X 39	X 39	X 41
16	X 40	X 41	X 39	X 41	X 41	X 43													X 47	X 41	X 45	X 42	X 46	X 49
17		X 54	57	58	62	X 56												X 44	X 41	X 41	X 41	X 41	X 41	X 42
18	X 44	X 45	X 46	X 45	X 47	X 43													X 51	X 41	X 38	X 40	X 41	X 41
19	43	X 44	X 41	X 43	X 43	X 34													X 37	X 36	X 35	X 34	X 33	X 36
20	X 38	X 41	X 41	X 42	X 46	X 31	X 28												X 45	X 47	X 46	X 46	X 47	X 45
21		X 47	X 41	X 42	X 47	X 43												62	68	52	41	53	58	58
22	58	56	X 28	X 27	X 26	X 25													X 45	X 40	X 36	X 32	X 33	X 35
23	X 37	X 37	X 37	X 37	X 39	X 38													X 47	X 41	X 35	X 34	X 36	X 37
24	X 40	X 42	X 41	50	X 46	X 41		64											X 44	X 42	X 40	X 41	X 45	X 46
25	51	51	X 43	47	51	X 42													X 50	X 52	X 53	X 42	X 40	X 44
26	X 44	X 48	X 49	X 55	X 53	51													X 37	X 43	X 45	X 46	X 46	X 50
27	51	X 51	X 52	X 52	X 51	X 49													X 40	X 41	X 39	X 39	X 41	X 42
28	X 42	X 43	X 40	X 40	X 40	X 40		X 49										X 52	X 40	X 40	X 41	X 45	X 45	X 47
29	44	X 43	44	X 41	44	X 43		X 53											X 44	X 44	X 36	X 40	X 42	X 46
30	X 42	X 42	X 43	X 43	X 43	X 44												X 45	X 47	X 41	X 30	X 35	X 37	X 39
31	X 40	44	X 41	44	X 46	51		X 55											X 45	X 49	X 42	X 41	X 42	X 42
	00	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	29	29	30	30	29	9	5										7	28	29	29	29	29	29
MED	X 43	X 44	X 42	X 42	X 44	X 41	X 35	X 53										X 45	X 43	X 41	X 39	X 40	X 42	X 43
U Q	46	50	X 47	X 49	X 50	X 43	X 40	60										52	X 47	X 44	X 42	X 42	X 46	X 47
L Q	X 40	X 41	X 40	X 41	X 41	X 39	X 31	X 49										X 44	X 39	X 38	X 36	X 34	X 37	X 40

JAN. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	25	28	31	31	32	30	23	35	62	73	91	87	73	66	72	70	64	45	34	29	22	22	V 29	28
2	29	F 41	47	F 36	F 36	33	23	35	62	R 67	R 78	J R 84	80	72	72	65	54	32	R 29	31	33	31	34	36
3	35	36	37	35	35	34	27	34	58	67	72	Y 73	Y	67	58	59	50	32	34	30	29	24	27	29
4	29	30	30	30	30	30	25	36	56	63	73	74	71	64	69	61	46	31	29	28	32	26	28	31
5	31	31	33	33	32	32	28	37	53	61	64	64	60	65	62	60	48	37	32	29	26	26	30	33
6	34	34	35	35	35	35	32	40	49	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	34	35	35	34	41	62	J R 83	J R 83	Y 76	J R 84	R 69	75	68	53	42	32	32	28	33	37	39
9	40	42	40	42	43	36	30	43	65	80	76	80	68	R 78	74	60	54	40	37	33	35	34	37	40
10	39	40	40	41	36	33	31	42	69	74	76	R 81	U R 81	70	64	65	48	42	35	29	29	32	36	40
11	38	34	34	34	34	33	31	41	65	72	90	Y 76	83	79	78	62	54	38	43	40	36	35	39	35
12	36	34	33	30	30	34	26	43	64	Y 73	Y 74	102	82	78	R 80	66	59	48	52	56	49	50	53	59
13	59	56	56	48	50	50	F 36	45	65	71	72	Y 77	Y 82	J R 85	J R 85	72	60	40	32	32	32	34	36	36
14	37	38	37	Z 47	47	39	V 31	43	65	64	65	Y 75	76	72	73	61	55	43	43	31	40	49	47	F 42
15	F 39	F 39	F 39	F 34	F 41	32	23	32	64	67	95	88	68	68	R 78	V 58	51	37	32	28	31	32	32	34
16	33	34	32	34	34	36	24	38	59	64	73	64	V 66	68	68	72	56	44	40	34	38	35	39	42
17	C	47	F 42	F 46	F 48	49	38	41	52	66	73	R 77	70	71	68	69	53	37	34	34	34	34	34	35
18	37	38	39	38	40	36	V 31	39	55	66	74	J R 79	70	66	74	69	52	40	44	34	31	33	34	34
19	F 34	37	34	36	36	26	20	38	54	65	67	75	66	70	R 83	68	58	38	30	29	28	27	26	29
20	31	34	34	35	39	24	22	41	57	58	68	68	73	75	R 75	62	54	39	38	40	39	39	40	38
21	40	40	34	35	40	36	26	41	60	70	86	102	74	75	Y 73	63	63	F 48	F 54	F 32	F 25	F 34	F 40	F 46
22	F 45	24	21	20	19	18	18	34	56	64	85	66	82	65	65	70	58	42	38	33	29	25	26	28
23	30	30	30	30	32	31	19	40	56	66	86	J R 87	R 79	69	71	65	54	40	40	34	28	27	29	30
24	33	35	34	F 34	Z 39	34	31	F 54	57	68	70	U R 90	80	67	67	69	60	43	37	35	33	34	38	39
25	F 38	F 34	36	F 34	F 38	35	35	46	61	67	71	90	80	68	70	63	64	42	43	45	46	35	33	V 37
26	37	41	42	48	46	F 39	Z 40	46	57	63	68	72	70	69	69	57	65	46	30	36	38	39	39	43
27	F 40	44	45	45	44	42	38	46	62	68	68	Y	73	61	63	66	62	40	33	34	32	32	34	35
28	35	36	33	33	33	33	28	42	55	62	71	76	R 76	74	65	61	56	45	33	33	34	38	38	40
29	F 34	36	F 36	34	F 34	36	38	46	58	67	75	67	77	70	73	66	50	41	37	37	29	33	35	39
30	35	35	36	36	36	37	33	42	62	59	60	74	78	72	64	70	59	38	40	34	23	28	30	32
31	R 33	F 33	34	F 33	39	F 39	38	48	67	64	74	78	67	64	64	64	53	47	38	42	36	34	35	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	28	29	29	30	30	30	30	30	30	29	29	28	28	29	29	29	29	29	29	29	29	29	29	29
MED	35	36	35	34	36	34	30	41	60	67	73	76	75	69	71	65	54	40	37	33	32	33	35	36
U Q	38	40	40	38	40	36	34	43	64	70	80	86	80	73	R 74	69	60	44	40	36	36	35	38	40
L Q	33	34	33	33	34	32	24	38	56	64	69	74	70	66	65	61	52	38	32	30	28	28	30	32

JAN. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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							A	A		A	396	380	L											
2										A			L		L									
3										L		L	400	L	L	L								
4									248			L	L											
5									L	L			L		L	L								
6									L	C	C	C	C	C	C	C	C	C						
7								C	C	C	C	C	C	C	C	C	C	C						
8											L	432	L		324									
9												L	L	L										
10										A			L	L	L									
11									L		L	L	420	312		L	188							
12											L	L	L	L										
13												372	L	L	L	260	L							
14														L	L	L								
15											L	L	L	L	L	276	L							
16											L		364	356	L									
17	C											420	416	L	L	L								
18											L	420		L	L	L								
19												L	L	L										
20												L	L	L	L		L							
21												412	420	L	388	L								
22											L		404	L	L									
23											L	L	L	384	L	L								
24									L				L	L	L									
25									L			424	L			276								
26												L	U Y 464	400	L	304								
27											L	L			L									
28										L	L	L	420			L								
29									276		L	L	L	L	L		L							
30													L	L	L									
31											L	412	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									2		1	8	8	4	2	4	1							
MED									262		396	416	418	370	356	276	188							
U Q												422	420	392		290								
L Q												396	402	334		268								

JAN. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	156	204	272	B	B	B	R 284	B	B	A	A						
2								160	B	A	296	A	A	A	A	6 229	A							
3								B 208	260		B	B	284	B	256	216	A	A						
4								B 208	248	272	288	288	264	264	244	208	184							
5								B 184	248	276	284	284	268	240	204	160	A							
6								B 208	C	C	C	C	C	C	C	C	C							
7								C	C	C	C	C	C	C	C	C	C							
8								B	U R 188	228	B	U R 304	U R 300	U R 300	260	224	164	B						
9								B 216	264	280	288	304	288	260	212	168	A	136						
10							B	212	A	A	A	B	284	260	208	180	A								
11							B	140	196	252	280	288	296	276	264	232	184							
12							A	A	A 256	268	296	296	A	260	220	188	A							
13							B	140	A 244	280	296	292	296	260	216	B	B							
14						140	B	164	196	240	A	A	308	296	276	220	176							
15							B	156	212	260	U R 292	288	296	272	248	224	168	A						
16							204	B 232	264	288	300	280	272	276	216	192	A							
17	C						B	164	176	260	288	300	304	292	272	220	184							
18							B	B 200	256	276	312	308	284	256	240	172	B							
19							B	176	232	256	292	308	300	296	268	228	188	B						
20								172	200	260	268	296	296	296	272	220	172	B						
21	180						B	168	208	208	240	256	268	268	260	216	172							
22							B	R 204	248	236	232	236	220	A	A	A	A							
23							B	B	A 244	264	296	296	280	264	244	A	A							
24							B	B 184	248	284	296	A	A	272	232	A	A							
25							B	A 184	224	256	A	296	A	A	232	A	A							
26							B	B 196	256	284	304	A	304	284	252	A	A							
27							B	B 216	268	300	312	304	300	276	232	200	A							
28							B	232	244	272	260	304	A	276	240	180								
29							B	204	264	292	292	300	296	260	244	188	A							
30							B	172	212	264	292	304	296	288	276	232	196							
31							B	216	260	284	304	304	308	276	236	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	1					1	1	11	26	27	24	23	24	23	25	27	20	1	1					
MED	180					140	204	164	206	256	280	296	296	288	264	228	182	184	136					
U Q								172	212	260	290	304	304	296	276	236	188							
L Q								156	196	244	270	288	290	272	260	216	172							

JAN. 2016 foE (0.01MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	23	26	34	34	JA 43	JA 28	JA 31	G	22	G	EB 28	EB 29	EB 29	G	EB 27	EB 22	19	JA 34	EB 14	JA 25	EB 14	25	22	EB 14
2	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	G	EB 21	JA 77	32	35	JA 49	38	31	JA 35	JA 35	JA 49	JA 43	JA 28	JA 32	EB 14	EB 14	26
3	EB 14	36	23	EB 15	EB 14	EB 14	EB 14	EB 14	22	G	EB 29	EB 30	31	EB 31	G	G	JA 18	JA 24	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14
4	EB 14	19	24	26	21	JA 19	EB 14	EB 14	24	32	35	32	31	29	27	JA 27	34	JA 29	JA 26	JA 26	23	JA 26	23	EB 14
5	EB 14	25	24	28	EB 14	29	EB 14	22	27	29	32	31	G 25	32	27	22	19	21	EB 14	EB 14	EB 14	19	EB 14	EB 14
6	19	JA 41	24	EB 14	22	24	EB 14	EB 14	24	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	22	22	EB 14	EB 14	EB 14	20	29	30	G	G	G	G	24	G	EB 14	EB 14	EB 14	EB 14	28	JA 29	32
9	34	EB 14	EB 14	EB 14	EB 15	EB 14	20	EB 14	G 24	G	G 28	G 30	G 27	G	30	26	18	JA 21	JA 18	JA 15	EB 14	20	32	JA 19
10	39	37	22	29	28	EB 14	EB 14	EB 15	24	40	26	30	EB 31	G	G	23	G	JA 51	EB 14	24	26	27	34	EB 15
11	23	EB 15	22	EB 14	EB 14	EB 14	EB 15	21	24	35	31	G 23	36	30	28	G 22	G 17	EB 14	EB 14	23	JA 18	27	JA 31	JA 42
12	31	24	34	EB 13	EB 14	EB 14	24	JA 18	JA 36	G 23	G 26	G	G 24	G 30	G 22	23	23	JA 53	84	JA 65	30	JA 61	JA 39	23
13	25	25	33	31	23	EB 14	EB 15	22	25	32	G 23	32	32	37	32	G 20	EB 14	EB 14	EB 14	JA 34	31	JA 60	JA 53	JA 26
14	34	32	27	EB 14	26	24	EB 14	23	26	28	33	JA 39	32	G	G 26	G	G	EB 13	34	34	33	JA 51	39	27
15	JA 45	41	46	32	36	31	22	22	24	41	36	G	G	G	28	26	G 18	34	JA 27	34	JA 37	29	34	29
16	32	EB 14	EB 14	EB 14	24	24	26	20	35	JA 28	JA 44	33	31	30	G	26	G 24	27	JA 28	22	JA 32	28	19	22
17	C	32	25	23	EB 14	EB 14	EB 14	22	22	29	32	37	35	G 26	30	25	G	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14
18	24	23	24	EB 14	27	27	EB 14	EB 14	24	28	31	G 27	G 18	30	29	G 20	JA 19	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14
19	EB 14	EB 14	EB 14	EB 14	28	EB 14	EB 14	26	32	JA 42	34	39	JA 31	31	JA 31	JA 27	G	JA 18	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14
20	24	30	27	32	EB 14	EB 15	20	25	25	32	JA 51	33	G 29	37	32	25	19	EB 15	EB 14	EB 14	EB 14	20	20	20
21	21	26	EB 14	EB 14	EB 14	EB 14	22	33	G	JA 38	JA 69	JA 31	34	34	34	25	20	EB 14	22	EB 14	EB 14	EB 14	EB 14	EB 14
22	EB 14	EB 14	24	26	24	EB 14	EB 15	24	26	JA 35	JA 49	JA 73	JA 33	JA 33	JA 29	JA 38	34	27	EB 14	EB 14	EB 14	23	22	EB 14
23	JA 25	EB 14	EB 14	EB 14	EB 14	EB 15	JA 33	EB 14	26	32	34	34	G 27	G 27	G 28	26	JA 25	32	32	24	23	23	35	EB 14
24	EB 14	24	JA 25	EB 14	23	EB 14	EB 14	EB 14	22	35	36	62	JA 40	JA 62	31	31	JA 27	JA 19	27	29	22	33	EB 14	JA 20
25	33	33	25	21	EB 13	EB 14	EB 14	28	21	26	36	JA 35	36	JA 61	JA 47	JA 31	JA 33	40	JA 27	28	JA 20	21	EB 14	28
26	19	EB 14	EB 15	28	28	25	EB 14	EB 14	25	30	31	34	G 38	G 28	G 25	33	37	JA 56	22	EB 15	29	22	25	EB 14
27	24	27	25	23	EB 14	EB 14	EB 14	EB 14	25	30	32	34	34	32	G 24	27	G 20	33	EB 14	14	21	EB 14	EB 14	20
28	EB 14	26	22	22	22	19	EB 14	EB 14	G 19	27	33	31	34	JA 45	JA 45	28	27	28	JA 25	19	EB 14	EB 14	EB 14	EB 14
29	EB 14	33	20	20	EB 14	22	EB 14	EB 14	G	G 27	31	32	33	G 33	33	JA 26	20	25	28	J 32	JA 30	38	29	EB 14
30	33	24	EB 14	EB 14	22	24	24	G	27	34	40	61	37	39	31	28	24	EB 14	EB 14	25	EB 14	26	34	JA 43
31	JA 51	21	24	19	21	18	21	24	G 20	33	37	34	34	36	33	31	G 17	EB 14	EB 14	EB 14	23	32	27	29
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
MED	24	25	24	20	22	EB 14	EB 14	G	24	30	32	32	33	G	29	26	24	24	EB 14	22	20	23	22	19
U Q	32	32	25	26	24	24	21	22	26	35	36	35	36	36	32	28	26	JA 34	27	28	30	28	33	26
L Q	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	22	G 28	30	G	G 30	30	G 28	G 22	19	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14	EB 14

JAN. 2016 foEs (0.1MHz)

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	E B 14	14	E B 13	E A 18	22	E B 14	20	G	21	G	E B 28	E B 29	E B 29	G	E B 27	E B 22	17	21	E B 14	E B 14	E B 14	E B 14	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	G	E B 21	E A 63	30	31	30	33	28	G 27	21	21	22	17	17	E B 14	E B 14	E B 14
3	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	G 21	G	E B 29	E B 30	30	E B 31	G	G	E B 14	E B 14	E B 14	E B 14	E B 14	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	G 20	G 24	30	31	29	28	G 25	G 24	G 21	G 17	15	E B 14	E B 14	14	E B 14	E B 14
5	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	14	20	25	30	29	G 23	30	25	22	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
6	E B 14	15	E B 14	E B 14	E B 14	14	E B 14	E B 14	22	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	E B 14	14	E B 14	E B 14	E B 14	20	26	28	G	G	G	G	G 22	G	E B 14	E B 14	E B 14	E B 14	18	E B 14	E B 14
9	14	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	G 22	G	G 26	G 29	G 25	G	27	23	G 17	16	G 14	E B 14	E B 14	E B 14	E B 14	E B 14
10	21	21	E B 14	18	E B 14	E B 14	E B 14	E B 15	23	33	U Y 25	U Y 29	E B 31	G	G	23	G	18	E B 14	14	16	E B 14	14	E B 15
11	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14	22	29	28	G 22	31	29	27	G 21	G 15	E B 14	E B 14	E B 14	E B 15	17	E B 14	15
12	E B 14	14	14	E B 13	E B 14	E B 14	15	14	33	G 21	G 26	G	G 22	G 28	G 22	G 22	G 16	28	25	28	19	19	19	14
13	E B 14	E B 14	20	16	15	E B 14	E B 15	E B 14	22	25	G 23	32	30	32	28	G 18	E B 14	E B 14	E B 14	15	15	20	20	E B 14
14	17	17	E B 14	E B 14	E B 14	E B 14	E B 14	G 14	21	26	30	36	31	G	G 25	G	G	E B 13	18	18	17	20	17	E B 14
15	18	18	22	Q 14	E B 14	14	E B 14	G 15	22	28	30	G	G	G	28	23	G 14	14	18	15	19	E B 14	E B 14	E B 14
16	E B 15	E B 14	E B 14	E B 14	14	E B 14	G E B 14	E B 14	G 23	G 25	30	30	29	29	G	25	G 18	E B 14	16	E B 14	E B 14	E B 14	E B 14	E B 14
17	C	14	E B 14	E B 14	E B 14	E B 14	E B 14	G 14	21	27	30	32	G 30	G 23	G 26	G 22	G	E B 14	E B 14	E B 14	E B 14	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	22	26	30	G 25	G 16	G 28	27	G 18	G 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 16	24	34	31	G 30	30	G 28	29	25	G	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
20	E B 14	15	14	16	E B 14	E B 15	E B 14	G 16	24	29	41	31	G 26	31	G 27	24	19	E B 15	E B 14	E B 14	E B 14	14	E B 14	E B 14
21	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	20	G	30	48	28	28	28	26	22	G 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
22	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	14	22	G 24	30	44	28	27	29	34	24	14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	E B 20	E B 14	21	26	29	G 29	G 25	G 26	G 26	G 23	21	21	18	E B 14	E B 14	E B 14	E B 14	E B 14
24	E B 14	E B 15	15	E B 14	E B 14	E B 14	E B 14	E B 14	19	33	35	48	35	32	G 27	26	19	18	E B 14	19	E B 14	16	E B 14	16
25	16	E B 14	E B 14	E B 15	E B 13	E B 14	E B 14	17	20	26	31	29	G 29	42	31	G 23	26	21	23	18	18	E B 14	E B 14	14
26	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	23	28	29	31	G	G 26	G 22	G 24	21	18	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14
27	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	29	G 30	G 31	32	31	G 22	26	G 19	14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
28	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	26	30	30	32	40	31	26	20	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
29	E B 14	16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G 26	30	30	31	G 31	29	25	G 18	17	E B 14	18	E B 14	18	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	E B 14	G	24	32	37	52	35	33	29	27	21	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	14
31	A 26	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G 19	28	30	32	G 30	G 29	29	G 24	G 15	E B 14	E B 14	E B 14	E B 14	16	E B 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	28	29	29	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
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	26	30	31	G	31	G	24	G 19	14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	14	15	14	14	14	E B 14	E B 14	G 15	G	29	30	32	31	31	28	26	G	18	16	15	15	16	14	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	21	G	28	29	G 28	G 28	G 26	G 22	G 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14

JAN. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	362	267	279	294	295	301	270	290	369	340	315	355	354	327	346	348	335	326	312	326	287	244	V 272	288
2	290	F 295	260	F 295	F 296	321	338	338	373	R 310	R 361	R	349	361	362	369	350	309	R 319	348	327	282	299	290
3	296	283	285	306	331	339	336	362	380	373	350	Y	Y	378	373	342	359	309	333	315	324	272	303	313
4	278	264	267	287	295	349	344	345	360	330	349	365	384	356	337	383	365	320	321	330	321	303	277	284
5	285	291	297	300	315	350	315	368	366	372	328	364	349	354	366	360	348	328	327	347	340	303	291	274
6	310	307	305	306	306	306	312	379	388	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	294	301	302	312	341	342	R	R	Y	R	R 321	361	363	370	334	332	360	302	288	294	314
9	294	301	300	284	321	308	321	343	368	373	350	378	346	R 353	352	344	361	341	342	331	308	289	315	286
10	289	314	287	324	326	336	310	325	352	353	363	R 383	343	362	360	354	366	342	355	327	327	291	279	270
11	306	305	293	306	306	322	342	349	342	336	343	Y	373	359	362	376	364	322	332	352	344	310	287	293
12	287	300	301	305	295	338	323	373	367	Y	Y	359	365	373	R 366	359	348	310	319	339	328	280	293	277
13	319	298	298	344	315	331	F 285	333	362	348	353	Y	Y	R	R	370	338	342	320	312	312	278	277	279
14	298	300	285	Z 330	314	316	V 328	326	352	355	369	Y	343	362	347	358	368	332	360	340	316	306	295	F 274
15	F 277	F 280	F 290	F 298	F 329	337	300	384	358	366	365	378	361	375	R 362	V 315	364	338	366	303	334	263	269	287
16	283	292	297	324	321	336	310	337	346	388	362	368	V 307	363	321	363	358	337	345	342	353	298	309	287
17	C	319	F 299	F 306	F 291	324	355	349	381	355	333	R	377	373	337	355	367	354	300	331	331	324	305	274
18	262	312	302	296	333	317	V 340	371	375	371	337	R	325	371	333	380	390	309	358	351	293	275	295	259
19	F 290	290	307	306	319	306	301	354	370	359	342	359	355	350	R 363	357	364	321	315	314	302	311	270	290
20	283	293	314	310	357	297	300	348	372	363	353	341	346	366	R 363	367	357	336	290	314	298	290	272	281
21	278	298	281	285	309	319	271	333	330	343	346	331	343	338	Y	350	316	F 311	F 294	F 314	F 241	F 261	F 253	F 281
22	F 273	294	272	287	230	266	323	314	350	346	365	357	326	367	367	373	367	352	326	359	355	296	294	300
23	284	284	281	289	303	307	269	352	359	344	340	R	R 356	344	347	365	359	322	322	335	360	305	288	263
24	262	288	276	F 321	Z 287	323	328	F 364	377	368	351	U R 349	347	318	360	351	347	340	321	337	324	291	277	294
25	F 267	F 280	299	F 293	F 330	326	326	363	367	380	328	340	361	346	341	326	349	340	317	317	347	324	286	V 287
26	306	298	320	306	337	F 341	Z 338	361	379	344	367	343	355	352	351	364	342	371	298	327	310	325	300	273
27	F 297	298	306	302	338	322	316	357	385	365	366	Y	363	322	375	342	365	371	328	321	309	309	301	319
28	315	285	284	316	311	328	341	367	377	363	341	352	R 369	364	342	364	358	373	311	311	297	271	286	300
29	F 286	271	F 263	275	F 291	324	351	354	354	336	342	357	355	363	348	359	374	341	330	330	287	296	288	293
30	285	285	301	301	301	314	339	360	373	361	345	321	352	320	339	310	367	340	330	352	348	268	253	288
31	R 285	F 285	294	F 300	327	F 306	316	340	381	344	332	370	300	362	347	345	376	353	301	341	322	304	297	291
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	30	30	30	30	30	30	27	27	19	26	28	27	29	29	29	29	29	29	29	29	29
MED	286	293	294	302	312	322	322	350	368	355	349	357	353	360	352	359	361	337	322	331	322	291	288	287
U Q	298	300	301	306	327	336	338	363	377	368	362	368	361	365	363	366	367	342	332	344	337	306	298	293
L Q	280	284	281	294	296	307	310	338	354	344	340	343	343	345	342	346	348	322	314	316	302	276	277	276

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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							A	A		A	353	383	L											
2										A			L		L									
3										L		L	365	L	L	L								
4									395			L	L											
5									L	L			L		L	L								
6									L	C	C	C	C	C	C	C	C	C						
7								C	C	C	C	C	C	C	C	C	C	C						
8											L	381	L		430									
9												L	L	L										
10										A			L	L	L									
11									L		L	L	386	398		L	412							
12											L	L	L	L										
13												401	L	L	L	414	L							
14														L	L	L								
15											L	L	L	L	L	422	L							
16											L		407	396	L									
17	C											382	396	L	L	L								
18											L	371		L	L	L								
19												L	L	L										
20												L	L	L	L		L							
21												357	377	L	342	L								
22											L		382	L	L									
23											L	L	L	400	L	L								
24									L				L	L	L									
25									L			392	L			416								
26												L	Y	396	L	419								
27											L	L			L									
28										L	L	L	407			L								
29									426		L	L	L	L	L			L						
30													L	L	L									
31											L	388	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									2		1	8	7	4	2	4	1							
MED									410		353	382	386	397	386	418	412							
U Q												390	407	399		420								
L Q												376	377	396		415								

JAN. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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							E A	270		250	290	258	238											
2										E A 352			256		238									
3										230		220	242	234	232	228								
4									224			236	224											
5									218	232			246		238	226								
6									212	C	C	C	C	C	C	C	C	C						
7								C	C	C	C	C	C	C	C	C	C	C						
8											238	250	248		238									
9												232	232	246										
10										230			238	238	244									
11									232		244	240	234	240		226	214							
12											264	236	240	230										
13												250	250	260	236	232	226							
14														244	246	236								
15											246	232	224	224	236	230	220							
16											226		248	232	254									
17	C											250	226	234	272	228								
18											280	266		246	258	226								
19												244	240	264										
20												258	266	252	246		220							
21												276	252	280	272	254								
22											254		270	236	242									
23											268	236	236	236	266	226								
24									210				242	226	240									
25									224			250	244			246								
26												246	238	254	244	234								
27											238	222			232									
28										232	262	262	248			248								
29									224		264	238	246	250	250		222							
30													252	270	270									
31											262	232	242	242	256									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	7	6	13	21	26	21	21	13	5							
MED								270	224	232	262	244	242	242	244	230	220							
U Q									224	250	266	254	248	253	257	241	224							
L Q									212	230	241	234	238	234	238	226	217							

JAN. 2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	180	324	284	E A 272	E A 256	256	A	A	232	A	202	230	216	260	236	238	242	240	238	240	276	E B 360	286	264
2	264	252	Q 238	Q 238	Q 262	214	218	234	234	A	236	232	208	238	226	210	236	236	A	242	236	236	276	284
3	244	286	296	270	234	224	210	228	206	194	194	208	204	204	206	214	220	210	220	220	220	E B 306	284	E B 256
4	E B 290	292	E B 292	256	256	238	222	226	210	218	240	218	214	222	234	222	216	220	244	232	Q 256	242	292	292
5	264	284	274	256	246	218	236	208	180	186	244	234	200	236	212	196	212	232	206	218	218	272	292	318
6	270	272	264	264	268	268	254	224	200	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	276	286	262	242	252	202	232	226	204	204	218	192	228	222	228	224	220	230	314	302	284
9	274	274	262	Q 256	232	216	226	228	210	234	234	212	202	196	238	228	218	226	226	248	246	264	264	286
10	286	Q 268	288	Q 230	226	238	254	230	236	A	240	230	206	202	202	216	216	216	222	242	228	270	310	288
11	254	262	290	268	268	230	234	218	194	228	216	206	206	206	244	220	E B 166	208	246	248	230	284	298	298
12	274	262	298	276	228	228	258	218	228	228	218	206	206	212	232	232	214	246	250	212	226	240	282	Q 282
13	252	Q 252	270	218	238	212	Q 236	250	216	230	224	190	196	230	218	202	194	224	224	238	238	E A 286	E A 308	280
14	280	278	302	248	238	242	238	222	228	236	224	232	244	212	212	204	226	216	216	200	248	240	272	Q 292
15	Q 316	284	Q 294	Q 258	242	222	254	204	212	216	216	210	190	190	216	198	202	224	206	228	258	Q 274	Q 312	Q 296
16	274	266	286	254	252	236	272	222	210	220	198	236	192	202	206	226	220	230	232	228	238	250	266	Q 258
17	C	258	Q 278	Q 252	Q 252	230	202	226	208	236	260	218	208	198	190	202	232	196	222	222	244	244	272	Q 280
18	332	286	272	272	246	246	248	228	208	228	228	228	256	208	202	208	210	240	218	214	250	Q 256	Q 274	Q 316
19	Q 248	282	266	266	230	246	B 268	236	220	228	242	214	204	204	246	238	218	218	218	250	232	240	E B 302	290
20	Q 290	296	278	262	222	E B 274	244	246	220	230	240	212	212	226	226	234	190	210	258	274	274	288	318	324
21	312	292	292	264	264	258	302	254	254	260	246	218	210	198	236	236	268	Q 232	Q 220	Q 210	Q 282	Q 282	Q 282	Q 260
22	Q 260	Q 260	310	284	A	E B 346	268	242	240	246	222	224	186	206	192	230	222	260	216	226	230	254	294	286
23	286	286	296	E B 270	262	224	224	248	236	234	202	210	210	196	202	218	230	214	246	242	242	272	278	Q 338
24	Q 318	286	286	Q 240	Q 250	Q 220	246	224	172	206	238	238	192	190	198	246	232	204	228	236	248	282	Q 288	Q 298
25	Q 306	Q 290	Q 272	Q 254	222	222	236	242	196	212	228	204	204	242	244	188	236	212	280	258	238	236	258	294
26	282	264	264	264	224	230	208	212	210	224	224	214	Y	202	202	202	226	194	206	222	250	250	266	Q 300
27	Q 274	Q 274	Q 266	Q 222	222	222	232	224	218	230	218	218	242	218	186	262	224	198	232	224	264	264	264	264
28	278	292	308	278	254	242	240	208	214	214	210	216	208	246	236	214	222	214	268	268	252	Q 258	Q 258	Q 258
29	Q 258	276	Q 290	298	Q 290	262	224	200	182	220	220	212	204	212	212	240	188	230	230	240	254	288	Q 276	Q 262
30	Q 262	Q 284	284	Q 278	Q 276	252	224	218	226	232	234	262	214	214	202	236	218	204	238	228	216	278	332	Q 248
31	A	Q 276	Q 258	Q 250	250	Q 230	240	226	220	238	192	216	200	212	202	238	224	220	228	234	254	254	286	292
	00	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	29	29	30	29	30	29	29	30	26	29	29	28	29	29	29	29	29	28	29	29	29	29	29
MED	274	278	284	260	248	232	238	226	213	228	224	216	206	212	212	222	220	220	227	232	244	260	283	286
U Q	Q 290	286	293	272	262	252	254	239	228	234	239	230	211	224	235	236	228	231	241	242	254	283	300	Q 297
L Q	260	265	268	Q 252	231	222	224	218	206	218	216	210	201	202	202	206	213	210	219	221	230	247	272	Q 264

JAN. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A				B	B	B		B	B	A	A						
								116	116	116				122										
2								B	B	A		A	A	A	A	A	A							
											112													
3								B			B	B		B				A						
									112	112			112		112	112	100							
4								B																
									116	116	116	116	116	108	106	106	106	112						
5								B									A	A						
									122	122	122	122	122	122	122	116								
6								B		C	C	C	C	C	C	C	C	C						
									136															
7								C	C	C	C	C	C	C	C	C	C	C						
8								B		E B		B												
									122	116			118	118	118	118	104							
9								B										A						
									134	102	112	112	120	120	110	114	132							
10							B			A	A	A	B					A						
									136					114	114	114	152							
11							B										A							
									112	114	114	114	114	114	114	120								
12							A	A	A					A			A	A						
										120	120	116	114		116	116								
13							B		A								B	B						
								140		116	116	120	110	114	116	124								
14							B					A												
								142	116	116	118		118	118	118	122	122							
15							B	A	A								A	A						
										122	116	116	116	116	116	116								
16								B										A						
							114		130	124	120	120	108	114	114	114	114							
17	C						B	A									E B							
								138	100	124	124	124	122	114	118	118	150							
18							B	B									A	B						
									130	114	114	114	114	114	116	114								
19							B											B						
								142	134	124	124	120	120	116	116	116	138							
20																	B	B						
								138	110	118	118	118	118	126	126	126								
21	128						B										A							
								134	134	110	124	118	118	118	130	130								
22							B								A	A	A	A						
								128	108	120	120	112	112	112										
23							B	B	A								A	A						
									128	128	116	122	124	124	110									
24							B	B					A	A			A	A						
									110	128	116	120			116	108								
25							B	A				A		A	A		A	A						
									118	118	118		118			118								
26							B	B					A				A	A						
									118	118	118	118		114	114	114								
27							B	B										A						
									126	126	126	114	114	120	120	118	134							
28							B							A										
									134	120	112	112	112		114	114	124							
29							B											A						
									114	124	124	124	112	124	114	120	120							
30							B																	
								142	126	126	116	116	116	116	122	122	122							
31							B											B						
									128	128	128	128	120	120	120	120	134							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1						1	9	25	27	25	23	24	23	25	26	14	1						
MED	128						114	138	122	120	118	118	116	116	116	116	122	112						
U Q								142	132	124	124	120	119	120	120	120	134							
L Q								131	113	116	116	114	113	114	114	114	114							

JAN. 2016 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	108	112	98	114	118	118	108	G	136	G	B	B	B	G	B	B	94	94	B	106	B	98	100	B
2	B	B	B	B	B	B	B	G	B	108	132	102	102	102	102	102	102	98	98	98	98	B	B	98
3	B	98	98	B	B	B	B	B	140	G	B	B	202	B	G	G	98	98	B	B	B	B	B	B
4	B	98	98	98	98	92	B	B	100	112	114	134	144	142	96	96	96	96	96	96	96	110	96	B
5	B	114	110	94	B	110	B	100	112	120	138	150	106	128	140	130	94	94	B	B	B	132	B	B
6	96	110	102	B	102	106	B	B	154	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	100	100	B	B	B	118	118	114	G	G	G	G	162	G	B	B	B	B	116	116	100
9	114	B	B	B	B	B	106	B	116	G	116	106	110	G	146	146	118	106	106	106	B	106	118	118
10	104	104	100	100	108	B	B	B	158	114	104	104	B	G	G	144	G	104	B	98	98	112	110	B
11	116	B	96	B	B	B	B	120	112	104	152	106	106	168	158	130	106	B	B	106	106	106	106	106
12	106	108	108	B	B	B	148	136	110	106	122	G	104	104	110	136	106	124	118	112	112	112	112	112
13	110	102	102	102	102	B	B	162	114	114	114	170	122	128	128	118	B	B	B	118	118	118	118	120
14	114	108	108	B	114	94	B	118	140	128	114	108	166	G	118	G	G	B	112	112	110	110	110	110
15	110	110	102	110	110	116	116	126	168	106	106	G	G	G	160	138	130	114	114	Q 114	112	120	106	106
16	106	B	B	B	106	106	110	134	108	108	108	132	142	150	G	134	96	96	96	96	110	100	96	96
17	C	104	104	114	B	B	B	116	130	154	114	114	114	110	180	188	G	B	B	B	B	B	B	B
18	94	94	94	B	94	94	B	B	156	176	150	110	106	140	128	94	94	B	B	B	B	B	B	B
19	B	B	B	B	104	B	B	152	114	116	122	112	118	106	110	106	G	102	B	B	B	B	B	B
20	102	108	112	108	B	B	162	158	140	128	116	116	112	116	116	142	156	B	B	B	B	156	134	112
21	128	110	B	B	B	B	148	98	G	114	110	110	116	114	114	136	96	B	96	B	B	B	B	B
22	B	B	120	108	92	B	B	112	124	116	116	108	108	108	108	108	102	94	B	B	B	92	102	B
23	102	B	B	B	B	B	96	B	118	118	118	104	108	108	118	100	100	98	98	98	98	106	106	B
24	B	106	106	B	106	B	B	B	164	160	150	116	110	104	106	132	88	106	118	100	100	116	B	116
25	106	106	106	106	B	B	B	100	134	134	114	110	102	102	102	102	102	98	98	98	90	90	B	90
26	90	B	B	104	Q 104	104	B	B	142	142	142	106	G	106	96	96	96	118	98	B	114	114	114	B
27	108	102	102	102	B	B	B	B	128	150	142	100	168	132	108	158	122	110	B	B	92	B	B	98
28	B	98	108	116	106	106	B	B	126	136	122	114	100	106	106	156	110	98	96	98	B	B	B	B
29	B	106	106	106	B	106	B	B	G	116	176	114	114	114	114	106	172	92	94	114	114	114	120	B
30	110	116	B	B	108	108	116	G	136	136	122	110	110	110	110	182	138	B	B	100	B	104	116	116
31	106	106	106	106	106	106	106	106	114	120	114	114	114	126	116	124	124	B	B	B	104	104	112	106
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	21	21	16	17	13	10	14	27	26	27	24	24	22	24	26	23	19	14	17	16	21	18	15
MED	106	106	104	106	106	106	113	119	128	118	116	110	111	112	114	131	102	98	98	100	105	110	111	106
U Q	110	110	108	109	108	109	148	136	140	136	138	115	120	128	128	144	122	106	112	112	112	116	116	116
L Q	102	102	99	101	101	99	106	106	114	114	114	106	106	106	107	106	96	96	96	98	98	104	106	98

IONOSPHERIC DATA STATION Wakkanai

JAN. 2016 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	F1	F2	FF11	F4	F4	F2	L3		C1								L2	L3		F1		F1	F1	
2										L2	CL11	L1	L1	L1	L1	L2	L2	F2	F2	F2	F3			FF11
3		FF11	F1						C1				C1				C1	L1						
4		F1	F1	F1	F1	F1			LC11	C1	C1	C1	CL11	C1	LC11	LC11	L2	L1	FQ11	FQ11	F1	FF11	F1	
5		F1	F1	F1		F1		L1	C1	C2	CL11	CL11	LC11	C2	C2	CL11	L1	L1				F1		
6	F1	F3	F1		F1	FF11			CL21															
7																								
8				F1	F1				C2	C2	C1					C1						F2	F2	F1
9	F1						F1		CL11		CL11	CL11	L1		CL11	CL11	LC11	L3	F1	F1		F1	F1	F1
10	F4	F4	F1	F2	F1				C1	L1	C1	L1				C1		L3		F2	F2	F1	F3	
11	F1		F1					L1	LC11	LC11	HL11	L1	L1	H1	H1	L1	L1			L1	L1	F2	F2	F3
12	F1	F1	F2				L1	C1	C3	L1	L1		L1	L1	L1	CL11	L1	L4	L3	F4	F2	F3	F5	F1
13	F1	F2	F4	F3	F2			H1	L1	L1	L1	HL11	C1	C1	C2	L1				F3	F3	F3	F3	F1
14	F2	F2	F1		F1	F1		LC11	C2	C1	L1	L1	C1		L1				F3	F3	F2	F3	F2	F1
15	F3	F2	F3	F2	F3	F1	L1	L1	HL11	LC11	LC11				C1	C2	L1	L1	F2	F2	F3	F2	F2	F2
16	F1				F1	F1	C1	L1	L2	C2	L1	C2	C2	C1		C2	C1	L1	F1	F1	F1	F1	F1	F1
17		F1	F1	F1				C1	C1	CL11	LC11	LC11	LC11	LC11	CL11	CL11								
18	F1	F1	F1		F1	F1			C2	C1	C1	L1	L1	C2	C2	L1	L1							
19					F1			C1	CL11	C3	C2	C2	C2	C2	C2	LC11		L1						
20	L1	F3	F1	F3			F1	C1	C2	C2	C3	C2	L1	C1	C2	C2	C2					C1	L1	L1
21	C2	FF21					C1	LC12		C3	C2	C2	C2	C2	C2	C2	L1		F1					
22			F1	F1	F1			C1	C1	C2	C2	C3	C2	C2	C2	C2	C2	C1				C1	F1	
23	F2						L1		L1	C1	C1	C1	L1	L1	L1	L1	L2	L3	F2	F1	F1	F1	F2	
24		F1	F2		F1				C1	C2	C2	C2	C2	L2	L1	C2	L2	L3	F1	F3	F1	F3		F2
25	F2	F2	F1	F1				L1	C1	C1	C2	L2	L2	L2	L2	L2	L2	L3	F2	F2	F2	F1		F1
26	F1			F1	F1	FF11			C1	C1	C1	LC11	L1	L1	L1	L1	L2	L3	F1		F1	F1	F1	
27	F2	F2	F1	F1					C1	C1	C1	LC11	CL11	C1	L1	C1	L2	L3			L1			L1
28		L1	F1	FF11	F1	F1			LC11	C1	C2	C2	L1	L3	L2	CL11	LC11	L6	F1	F1				
29		F4	F1	F1		F1				C1	HL11	CL11	C2	L1	L2	L2	HL11	L2	F1	F4	FF11	F3	F1	
30	F2	F2			F1	FF11	L1		C2	C2	C2	C2	C2	C2	C2	HL11	H2			F1		F2	F2	F2
31	F4	F1	F1	F1	F1	F1	L1	L1	L2	LC11	L1	L2	C2	C2	C2	C2	LC11				C2	FF11	FF11	F2
	00	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. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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 49	X 42	X 45	X 40	51	54	X 35											X 63	X 58	X 45	58	65	66	70
2	69	64	66	63	57	X 35	X 35											X 52	X 40	X 36	X 41	X 37	X 37	X 38
3	X 38	X 39	X 40	X 41	X 42	X 34	X 34												X 39	X 40	X 30	X 31	X 29	X 32
4	X 34	X 35	X 38	X 40	X 37	X 35	X 37												X 34	X 39	X 41	X 31	X 34	X 34
5	40	38	41	X 38	X 40	X 34	X 32												X 46	X 41	X 40	X 34	X 34	X 36
6	X 36	X 37	X 38	X 40	X 38	X 38	X 40												X 44	X 45	X 45	X 38	X 38	X 42
7	X 44	X 39	X 38	X 40	X 39	X 40	X 41												X 42	X 46	X 46	X 40	X 38	X 41
8	X 44	X 44	X 43	X 44	X 42	X 42	X 42												X 41	X 38	X 34	X 33	X 35	X 38
9	X 40	X 42	X 47	X 45	X 35	X 39	X 41												X 44	X 50	X 36	X 36	X 36	X 40
10	X 38	X 37	X 41	X 42	X 43	X 36	X 40												X 41	X 41	X 36	X 39	50	X 47
11	52	X 47	52	X 49	X 48	X 41	X 39												X 44	X 49	X 41	X 33	X 35	X 38
12	X 38	X 40	X 40	X 39	X 37	X 37	X 35												X 61	X 62	X 53	53	56	56
13	57	63	58	X 56	X 58	45	52												A	A	X 41	A	X 36	X 39
14	X 39	X 41	X 46	X 45	X 38	X 37	X 40											X 52	X 40	X 38	X 35	X 38	X 40	X 38
15	X 40	X 43	X 45	X 45	X 48	X 36	X 33												X 38	X 44	X 36	X 36	X 36	X 36
16	X 39	X 38	X 40	X 41	X 35	X 31	X 33											X 56	X 47	X 40	X 35	X 38	X 33	X 35
17	X 38	X 40	X 41	X 42	X 44	X 36	X 35												X 48	X 42	X 35	X 34	X 34	X 35
18	X 36	X 36	X 38	X 45	X 40	X 32	X 35												X 39	X 45	X 41	X 37	X 38	43
19	X 37	X 37	X 38	X 36	X 35	X 33	X 31											X 58	X 50	A	X 43	X 40	X 37	X 36
20	X 39	X 39	X 41	X 49	X 40	X 31	X 31												X 43	X 44	X 51	X 49	X 44	A
21	X 44	X 43	X 40	X 42	X 39	X 44	X 33												X 63	X 48	X 42	X 43	X 49	X 52
22	X 54	X 47	X 42	51	X 58	X 50	48				C	C	C	C	C	C	C		X 45	X 42	X 35	X 34	X 32	X 34
23	X 38	X 36	X 35	X 37	X 39	X 31	X 28												X 41	X 51	X 46	X 35	X 33	X 36
24	X 39	X 40	X 42	X 44	X 38	X 36	X 31												X 40	X 38	X 41	X 38	X 37	X 36
25	X 38	X 39	X 39	X 40	X 38	X 26	X 29												X 44	X 47	X 52	X 48	X 41	X 40
26	X 41	A	X 38	X 42	X 41	X 32	X 30												X 41	X 35	X 38	X 40	X 38	X 38
27	X 39	X 40	X 39	X 40	X 41	X 35	X 32												X 47	X 41	X 41	X 38	41	45
28	X 38	X 40	X 39	X 39	X 43	X 34	X 32												X 50	X 39	X 40	X 39	X 38	X 39
29	X 42	X 40	X 39	X 40	X 40	X 40	X 44												X 43	X 46	X 50	X 37	X 40	X 39
30	X 40	X 40	X 38	X 40	X 43	X 45	X 32	X 55											X 42	X 43	X 36	X 30	X 33	X 34
31	X 36	X 37	X 38	X 39	X 38	X 33	X 33												X 48	X 49	X 51	X 50	X 45	X 45
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	31	31	31	31	1										5	30	29	31	30	31	30
MED	X 39	X 40	X 40	X 41	X 40	X 36	X 35	X 55										X 56	X 44	X 43	X 41	X 38	X 37	X 38
U Q	X 44	X 42	X 43	X 45	X 43	X 40	X 40											X 60	X 47	X 46	X 46	X 40	41	42
L Q	X 38	X 38	X 38	X 40	X 38	X 33	X 32											X 52	X 41	X 40	X 36	X 34	X 34	X 36

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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	42	36	39	34	F	F	30	50	92	106	133	105	79	76	78	95	76	56	52	38	F	F	F	F
2	F	F	F	F	F	29	28	46	54	67	77	92	83	72	90	66	66	46	34	30	35	31	31	32
3	32	33	34	35	36	28	28	46	58	64	73	82	78	60	70	72	59	47	33	34	24	25	23	26
4	28	29	32	34	31	29	31	48	58	63	62	91	82	61	61	64	59	44	28	33	35	25	28	28
5	F	F	F	32	34	27	26	45	57	61	64	77	80	64	62	65	56	45	40	34	34	28	28	30
6	30	31	32	34	32	32	34	50	56	57	61	82	83	71	72	60	55	43	38	39	39	32	32	36
7	38	33	32	34	33	33	35	51	64	70	76	79	75	78	66	69	62	48	36	40	40	34	32	35
8	38	38	37	38	36	36	36	53	65	73	90	97	90	85	66	71	66	57	35	32	28	27	29	32
9	33	36	41	39	29	33	35	48	64	74	97	91	76	65	68	72	60	46	38	44	30	30	30	34
10	32	31	35	36	37	30	33	48	64	69	91	95	74	74	70	64	58	44	35	35	30	33	F	40
11	F	41	F	43	42	35	33	48	60	76	97	84	77	66	73	75	58	45	38	42	35	27	29	32
12	32	34	34	33	31	31	28	49	60	67	100	108	90	86	67	66	59	54	55	56	47	F	F	F
13	F	F	F	50	52	F	F	52	72	83	88	87	82	96	97	73	60	57	A	A	35	A	30	33
14	33	35	40	38	32	30	34	45	55	64	72	89	73	84	72	68	63	46	34	31	29	32	34	32
15	34	37	39	39	42	30	27	46	64	76	94	114	99	74	71	79	63	42	32	38	30	30	30	30
16	33	32	34	35	29	25	27	49	52	63	70	71	83	72	74	62	62	50	41	34	29	32	27	29
17	32	34	35	36	37	31	29	44	56	61	71	82	92	64	65	54	61	50	41	36	29	28	28	29
18	30	30	32	39	34	26	29	52	55	62	78	84	76	58	66	62	66	47	33	39	35	31	32	F
19	31	31	32	29	28	27	25	49	58	65	69	88	89	75	64	71	65	52	44	A	37	34	30	30
20	33	33	35	43	34	25	24	47	59	69	71	76	70	70	69	64	60	48	37	37	44	43	38	A
21	38	37	34	36	33	38	27	51	76	109	101	97	84	76	73	79	67	63	56	42	36	37	43	45
22	48	40	36	F	52	44	F	51	62	69	C	C	C	C	C	C	C	70	38	36	29	28	26	28
23	32	30	29	31	33	25	22	47	69	76	85	88	79	78	67	68	65	47	35	45	40	29	27	30
24	33	34	36	38	32	30	25	54	62	65	80	74	77	84	69	72	67	52	34	32	35	32	31	30
25	31	33	33	34	32	20	22	48	70	68	72	82	87	74	64	65	55	56	37	41	46	42	35	34
26	35	A	32	36	36	26	24	45	62	58	68	71	68	72	71	66	58	48	35	29	32	34	32	32
27	33	34	33	34	35	29	26	47	61	61	65	75	74	77	72	60	65	52	41	35	35	32	F	F
28	32	34	33	33	37	28	26	42	65	62	66	74	76	74	66	66	61	51	44	32	34	33	32	33
29	36	34	33	34	34	34	38	53	55	58	79	81	80	68	68	72	67	48	37	40	44	31	34	33
30	34	34	32	34	37	39	26	48	57	65	78	84	73	68	77	76	63	62	36	37	30	24	27	28
31	30	31	32	33	32	27	27	54	64	64	77	81	72	63	70	65	67	46	42	43	45	44	39	39
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	29	29	29	29	31	31	31	30	30	30	30	30	30	30	31	30	29	30	28	27	26
MED	33	34	34	35	34	30	28	48	61	65	77	84	79	73	70	67	62	48	37	37	35	32	30	32
U Q	35	36	36	38	37	33	33	51	64	73	90	91	83	77	72	72	66	54	41	40	39	34	32	34
L Q	32	31	32	34	32	27	26	46	57	62	70	79	75	66	66	64	59	46	35	34	30	28	28	30

IONOSPHERIC DATA STATION Kokubunji

JAN.2016 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

JAN.2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	A	A	R	A	A	R	R	U R 264	U R 184							
2								B	220	R	U R 336	A	R	R	R	A	A							
3								B	228	A	A	R	R	R	R	U R 264	A	B						
4								B	216	284	U R 336	320	U R 344	U R 308	292	U R 268	U R 208	B						
5								B	U R 228	272	300	A	A	U R 316	R	U R 260	A	B						
6								B	A	R	U R 328	U R 328	U A 320	R	R	U R 272	R	B						
7								B	216	R	A	A	R	A	A	A	A	B						
8								B	U R 232	U R 292	A	A	A	U R 312	A	A	U R 220	B						
9								B	R	A	A	A	A	R	U R 308	A	A	B						
10								B	R	R	A	A	A	A	A	A	U R 208	B						
11								B	A	A	A	A	A	R	R	U R 272	R	B						
12								B	U A 248	R	A	A	A	R	R	A	A	B						
13								B	R	R	A	A	A	R	A	R	A	B						
14								B	228	R	A	A	A	A	A	R	U R 216							
15								B	A	A	A	R	R	R	R	R	R	B						
16								B	U R 248	A	A	R	A	U R 336	R	A	A							
17								B	244	A	A	A	A	R	U R 320	U R 276	A	B						
18								B	U R 244	R	R	R	328	U R 328	R	R	U A 200	B						
19								B	U R 232	R	A	A	A	U R 324	R	U R 268	U R 224							
20								B	236	292	A	A	A	U R 328	A	R	U R 228	B						
21								B	236	A	A	A	A	A	A	A	A	B						
22								B	U R 240	A	C	C	C	C	C	C	C	B						
23								B	U R 244	R	A	A	A	A	U R 312	U A 268	A	B						
24								B	232	R	A	A	A	A	A	A	A	B						
25								B	224	U R 284	304	A	A	A	A	A	A	B						
26								B	U R 240	R	A	A	A	A	A	A	236	B						
27								B	U R 236	U R 292	A	A	A	A	A	A	228	B						
28								B	U R 244	A	A	A	A	A	A	A	A	B						
29								B	228	A	316	A	A	R	R	R	240	B						
30									A	U R 300	A	A	A	U R 352	A	A	244	B						
31								B	A	A	A	A	A	A	A	A	U R 244	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	7	6	2	3	8	4	9	13							
MED									234	U R 292	322	324	U 328	U R 326	U R 310	U R 268	U R 224							
U Q									U R 244	U R 292	U R 336		U R 344	U R 332	U R 316	U R 272	238							
L Q									228	284	304		U A 320	U R 314	300	U R 264	U R 208							

JAN. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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	JA 25	JA 24	22	EB 15	21	EB 15	JA 17	JA 35	JA 44	JA 34	G 28	JA 45	JA 39	G	G	G	G	EB 15	EB 14	EB 15	EB 15	EB 14	EB 15	EB 15
2	EB 16	EB 15	EB 15	EB 15	20	EB 15	EB 15	EB 16	G	G	G	39	G 26	G 27	G	30	22	EB 14	EB 15	EB 14	EB 14	EB 14	20	EB 16
3	EB 15	EB 15	EB 15	EB 15	21	EB 15	EB 15	EB 16	27	JA 35	36	G 24	G 25	G	GJ	G 22	JA 30	JA 26	JA 22	20	EB 14	EB 15	EB 15	EB 16
4	EB 16	EB 15	EB 16	JA 19	EB 15	EB 15	20	EB 15	G	33	G 30	G 25	G 26	GJ 29	34	J G 23	GJ	A 18	19	20	19	EB 16	EB 16	EB 16
5	EB 16	EB 15	EB 15	EB 15	JA 22	EB 15	EB 15	EB 16	G	33	34	JA 37	JA 43	G 28	GJ 25	21	JA 28	JA 30	EB 16	JA 21	EB 15	20	EB 15	EB 15
6	EB 15	EB 14	EB 14	EB 14	EB 14	20	JA 28	JA 34	JA 29	G	G	38	38	G	G	G	GJ	A 23	EB 15	EB 14	EB 14	EB 15	EB 14	EB 15
7	EB 15	EB 15	EB 15	EB 16	EB 15	EB 15	EB 14	EB 15	25	G	34	38	GJ	A 44	38	31	JA 34	JA 34	JA 28	JA 22	JA 18	20	EB 15	EB 15
8	JA 28	JA 20	20	19	21	19	EB 15	EB 15	G	G	JA 39	JA 61	JA 58	G 28	JA 51	JA 54	JA 38	JA 20	JA 18	21	JA 20	JA 19	JA 30	EB 15
9	JA 44	JA 31	JA 32	JA 23	JA 35	21	EB 15	EB 17	G	34	JA 42	JA 45	JA 48	G 28	G 28	31	26	EB 15	20	JA 18	21	JA 22	JA 26	EB 15
10	19	JA 30	JA 30	JA 22	JA 24	21	JA 24	JA 22	G	G	39	37	39	38	JA 54	JA 61	G	EB 14	EB 15	EB 16	JA 23	20	JA 21	EB 15
11	JA 44	JA 28	EB 15	JA 31	JA 22	EB 15	EB 15	19	28	32	36	34	JA 40	G 29	G 24	G	G 21	EB 15	EB 15	20	JA 19	JA 26	EB 15	21
12	JA 20	EB 14	EB 15	EB 15	EB 15	EB 15	EB 15	EB 15	32	G	39	JA 98	JA 113	G	GJ	A 53	27	EB 14	EB 15	JA 22	JA 20	JA 70	JA 78	JA 104
13	JA 60	JA 58	JA 36	20	20	EB 14	EB 15	EB 15	G	G	34	JA 47	JA 52	G 26	36	G 23	25	JA 37	JA 44	JA 38	JA 24	JA 36	21	JA 30
14	JA 40	JA 32	JA 34	JA 26	EB 14	20	JA 23	EB 15	G	G	JA 44	JA 96	JA 41	41	38	G	G	19	JA 21	24	JA 22	JA 38	JA 38	JA 27
15	22	21	JA 22	JA 18	EB 14	EB 14	JA 23	EB 16	34	JA 50	JA 35	G	G	G	G	G	G	EB 15	EB 15	EB 15	EB 15	JA 43	JA 24	JA 26
16	JA 57	22	JA 23	JA 28	JA 22	21	EB 15	EB 15	G	JA 55	JA 44	G 29	35	G	JG	JA 29	JA 105	JA 35	JA 30	JA 28	EB 15	EB 14	EB 14	EB 14
17	JA 20	22	JA 26	20	JA 21	JA 20	20	20	28	JA 35	35	JA 37	JA 39	G	G	G 23	JA 26	JA 20	JA 18	20	20	20	JA 20	20
18	19	JA 19	JA 21	EB 15	EB 14	EB 14	EB 14	EB 15	G	G	G	G 33	39	G 24	G 22	G	26	EB 14	JA 25	EB 15	EB 15	EB 15	EB 14	EB 15
19	JA 19	EB 15	EB 15	EB 15	EB 15	EB 15	EB 15	18	GJ	A 33	37	JA 40	37	G	G	G	GJ	A 20	JA 37	JA 40	JA 27	JA 24	20	24
20	JA 18	JA 32	JA 45	JA 39	JA 25	JA 20	EB 15	20	28	33	36	JA 73	JA 54	G 32	32	G 24	G 21	EB 16	EB 15	EB 26	JA 14	EB 21	JA 22	JA 36
21	JA 20	20	21	18	EB 15	EB 15	20	19	28	37	JA 64	JA 42	JA 64	JA 44	JA 49	JA 42	JA 43	JA 28	JA 30	20	21	22	EB 16	EB 16
22	22	22	EB 14	EB 14	21	21	EB 15	EB 16	G	JA 38	C	C	C	C	C	C	C	EB 15	EB 15	JA 18	JA 21	JA 30	JA 28	EB 15
23	EB 15	EB 15	EB 15	EB 15	EB 14	EB 15	EB 15	20	G	G	36	JA 46	JA 67	JA 43	JA 31	JA 37	JA 52	JA 76	JA 44	JA 28	JA 21	JA 21	JA 22	20
24	EB 15	JA 43	JA 22	JA 20	EB 15	EB 14	EB 15	18	G	G	37	37	JA 48	37	35	J A 38	JA 51	JA 30	JA 26	JA 22	JA 29	21	JA 20	EB 15
25	EB 15	JA 36	JA 31	JA 23	22	JA 20	EB 15	20	27	G	36	36	JA 44	JA 72	JA 75	JA 73	JA 45	JA 65	JA 35	JA 28	JA 24	JA 21	JA 24	JA 23
26	20	JA 40	22	20	20	22	EB 14	20	G	G	36	37	40	JA 42	JA 46	JA 39	G 23	20	JA 22	EB 16	EB 15	EB 15	EB 15	EB 14
27	JA 22	JA 24	JA 24	JA 23	21	EB 14	EB 15	20	G	G	37	38	JA 44	38	32	30	27	EB 14	EB 14	EB 14	21	18	EB 15	EB 15
28	18	EB 14	EB 14	EB 15	EB 15	EB 14	EB 14	18	G	34	34	36	35	36	JA 73	33	JA 66	JA 34	JA 31	JA 19	21	20	EB 15	EB 15
29	EB 15	20	EB 15	EB 15	19	21	EB 15	20	G	36	40	39	39	G	G 27	G	G	EB 14	BJ	AE 17	BE 14	EB 15	JA 28	AE 20	EB 15
30	EB 15	EB 15	19	JA 43	18	JA 36	JA 23	22	JA 29	G 26	38	JA 46	JA 47	G	JA 44	33	G	JA 21	JA 22	JA 30	21	21	EB 15	EB 15
31	JA 55	JA 46	JA 33	JA 24	EB 15	EB 15	EB 14	19	29	JA 38	36	38	JA 42	JA 57	36	31	G	JA 25	JA 34	JA 24	JA 24	22	19	EB 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	19	21	21	19	20	EB 15	EB 15	18	G	32	36	38	JA 40	G	32	30	26	JA 20	JA 20	JA 20	20	21	20	EB 15
U Q	JA 25	JA 31	JA 26	JA 23	JA 21	20	JA 20	20	28	JA 35	JA 39	JA 45	JA 48	JA 38	JA 38	JA 38	JA 34	JA 30	28	24	JA 21	JA 24	JA 22	JA 21
L Q	EB 15	EB 15	EB 15	EB 15	EB 15	EB 15	EB 15	EB 15	G	G	G 34	G 36	G 37	G 29	G	G	G	EB 15	EB 15	EB 15	EB 15	EB 16	EB 15	EB 15

JAN. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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 16	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	20	26	28	G 26	35	33	G	G	G	G	E B 15	E B 14	E B 15	E B 15	E B 14	E B 15	E B 15
2	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	G	G	G	36	G 24	G 26	G	28	22	E B 14	E B 15	E B 14	E B 14	E B 14	E B 15	E B 16
3	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	26	28	31	G 21	G 24	G	G	G 19	25	20	18	E B 15	E B 14	E B 15	E B 15	E B 16
4	E B 16	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	G	32	G 28	G 23	G 21	G 21	32	G 19	G	E B 15	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16
5	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 16	G	31	32	32	32	G 26	G 23	G 20	25	21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
6	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	17	17	22	G	G	34	35	G	G	G	G	17	E B 15	E B 14	E B 14	E B 15	E B 14	E B 15
7	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	E B 15	24	G	32	35	G	34	34	30	28	29	28	20	E B 14	E B 15	E B 15	E B 15
8	E B 15	E B 14	E B 15	E B 14	E B 16	E B 15	E B 15	E B 15	G	G	34	36	40	G 28	33	32	G 18	17	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
9	21	E B 15	E B 15	E B 16	E B 15	E B 15	E B 15	E B 17	G	32	34	34	34	G 25	G 26	29	25	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
10	E B 14	E B 15	20	16	19	E B 16	16	20	G	G	38	34	36	35	33	32	G	E B 14	E B 15	E B 15	18	E B 14	E B 14	E B 15
11	22	18	E B 15	21	18	E B 15	E B 15	18	24	30	35	34	27	G 27	G 21	G	G 19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 14
12	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	28	G	37	50	55	G	G	33	24	E B 14	E B 15	E B 16	E B 15	20	18	22
13	E B 15	31	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	G	G	32	34	35	G 24	34	G 22	24	29	A A 44	A A 38	18	A A 36	18	E B 16
14	E B 16	19	25	16	E B 14	E B 15	16	E B 15	G	G	35	44	33	36	34	G	G	E B 14	16	E B 15	E B 15	16	20	19
15	E B 14	E B 15	E B 15	14	E B 14	E B 14	E B 15	E B 16	28	35	34	G	G	G	G	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
16	19	E B 15	E B 15	19	E B 15	E B 15	E B 15	E B 15	G	32	34	G 28	34	G	G 24	G 30	28	23	20	E B 15	E B 14	E B 14	E B 14	E B 14
17	E B 14	E B 15	E B 15	E B 15	E B 15	E B 16	16	18	26	31	31	34	35	G	G	G 20	21	17	E B 15	E B 15	E B 15	E B 16	E B 16	E B 16
18	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 15	G	G	G	G 30	37	G 21	G 19	G	22	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15
19	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	17	G	G 23	33	35	34	G	G	G	G	E B 15	22	A A 40	20	18	E B 15	20
20	E B 16	19	18	20	E B 15	E B 14	E B 15	19	25	31	35	35	37	G 27	32	G 22	G 16	E B 16	E B 15	21	E B 14	E B 15	E B 15	A A 36
21	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	17	26	34	57	37	34	37	35	28	30	23	23	E B 15	E B 16	E B 16	E B 16	E B 16
22	E B 15	E B 14	E B 14	E B 14	E B 16	E B 15	E B 15	E B 16	G	28	C	C	C	C	C	C	C	E B 15	E B 15	E B 15	17	18	E B 15	E B 15
23	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	18	G	G	34	38	39	34	G 20	30	30	25	24	19	E B 14	E B 14	E B 14	E B 15
24	E B 15	E B 15	18	E B 15	E B 15	E B 14	E B 15	17	G	G	35	34	36	35	32	30	28	20	18	E B 16	E B 15	E B 15	E B 15	E B 15
25	E B 15	E B 15	19	E B 15	E B 14	E B 14	E B 15	18	26	G	35	35	36	34	38	40	28	40	29	23	20	E B 16	E B 15	E B 15
26	E B 15	A A 40	E B 14	E B 15	E B 15	E B 15	E B 14	19	G	G	34	36	34	34	32	29	G 20	18	E B 16	E B 16	E B 15	E B 15	E B 15	E B 14
27	E B 15	E B 15	E B 15	E B 14	E B 16	E B 14	E B 15	18	G	G	36	35	37	35	31	29	26	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15	E B 15
28	E B 15	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	18	G	30	32	34	35	34	39	30	34	24	22	E B 15	E B 15	E B 15	E B 15	E B 15
29	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B	G	35	35	34	39	G	G 24	G	G	E B 14	E B 15	E B 14	E B 15	17	E B 15	E B 15
30	E B 15	E B 15	E B 15	16	E B 14	17	E B 16	20	27	G 24	37	41	39	G	31	32	G	18	E B 14	23	E B 15	E B 15	E B 15	E B 15
31	18	18	E B 15	17	E B 15	E B 15	E B 14	18	26	31	33	35	36	39	35	30	G	16	E B 14	16	E B 15	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	30	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	17	G	G	34	34	35	G	G	28	22	16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	16	15	15	16	E B 15	E B 15	E B 15	18	26	31	35	36	37	34	33	30	26	21	20	16	15	16	E B 15	16
L Q	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15	G	G	G 32	G 34	G 33	G 27	G	G	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15

JAN. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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	16	16	15	15	15	15	15	14	14	12	14	13	14	14	18	17	15	15	14	15	15	14	15	15
2	16	15	15	15	15	15	15	16	15	16	17	15	15	17	14	15	14	14	15	14	14	14	14	16
3	15	15	15	15	14	15	15	16	14	13	14	12	14	15	12	12	14	12	14	15	14	15	15	16
4	16	15	16	15	15	15	15	15	14	14	13	15	14	14	14	12	11	15	15	15	15	16	16	16
5	16	15	15	15	14	15	15	16	13	13	14	13	14	13	15	12	14	14	16	15	15	15	15	15
6	15	14	14	14	14	15	15	15	14	14	14	14	14	14	15	14	14	16	15	14	14	15	14	15
7	15	15	15	16	15	15	14	15	14	13	16	16	18	18	14	18	16	14	14	14	14	15	15	15
8	15	14	15	14	16	15	15	15	15	14	15	16	16	16	17	14	13	15	15	16	15	15	15	15
9	15	15	15	16	15	15	15	17	14	14	19	20	15	13	14	13	13	15	15	15	15	15	15	15
10	14	15	14	15	14	16	15	15	14	15	16	16	14	13	17	13	14	14	15	15	14	14	14	15
11	15	16	15	14	15	15	15	16	13	13	15	14	15	16	13	13	14	15	15	15	15	15	15	14
12	15	14	15	15	15	15	15	15	13	14	16	20	18	18	17	16	15	14	15	16	15	15	15	15
13	15	15	15	15	15	14	15	15	14	15	16	17	18	12	14	16	14	14	14	14	14	15	16	16
14	16	15	14	15	14	15	14	15	12	14	14	20	13	16	15	14	13	14	15	15	15	16	15	15
15	14	15	15	14	14	14	15	16	12	16	16	14	20	18	18	18	16	15	15	15	15	15	15	15
16	15	15	15	14	15	15	15	15	14	16	14	18	18	16	16	14	13	14	15	15	14	14	14	14
17	14	15	15	15	15	16	16	15	14	13	14	14	14	19	14	14	14	15	15	15	16	16	16	16
18	15	15	16	15	14	14	14	15	14	14	15	16	18	14	14	16	14	14	15	15	15	15	14	15
19	15	15	15	15	15	15	15	14	14	14	15	16	15	14	15	14	14	15	15	15	15	15	15	15
20	16	14	14	15	15	14	15	14	13	16	15	14	14	16	16	13	15	16	15	14	14	15	15	14
21	15	15	15	15	15	15	15	15	14	14	14	16	14	14	14	13	14	14	14	15	16	16	16	16
22	15	14	14	14	16	15	15	16	14	13	C	C	C	C	C	C	C	15	15	15	15	15	15	15
23	15	15	15	15	14	15	15	15	14	14	14	16	14	13	13	12	14	14	14	15	14	14	14	15
24	15	16	14	15	15	14	15	15	16	16	15	14	12	14	16	15	13	13	14	16	16	17	16	15
25	15	15	15	15	14	14	15	16	13	14	13	13	14	14	15	13	14	14	14	14	14	16	15	15
26	15	14	14	15	15	15	14	15	14	15	16	15	16	17	18	14	14	14	16	16	15	15	15	14
27	14	15	14	14	16	14	15	15	13	12	13	15	15	14	15	14	14	14	14	14	15	15	15	15
28	15	14	14	15	15	14	14	14	14	13	14	15	15	16	14	13	14	14	14	15	15	15	15	15
29	15	15	15	15	15	15	15	14	14	14	15	15	14	17	13	15	14	14	15	14	15	15	15	15
30	15	15	15	15	14	14	16	15	13	14	14	14	16	16	15	14	14	15	14	15	16	15	15	15
31	15	16	15	16	15	15	14	14	16	14	15	15	17	17	15	13	14	14	14	14	15	16	16	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	15	15	14	14	15	15	15	16	15	14	14	14	15	15	15	15	15	15
U Q	15	15	15	15	15	15	15	16	14	15	16	16	16	17	16	15	14	15	15	15	15	15	15	15
L Q	15	15	14	15	14	14	15	15	13	13	14	14	14	14	14	13	14	14	14	14	14	15	15	15

JAN. 2016 fmin (0.1MHz)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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	321	265	310	319	F	F	270	326	301	341	350	343	355	342	343	361	356	338	337	327	F	F	F	F
2	F	F	F	F	F	300	371	368	370	321	347	348	329	342	371	349	372	359	323	310	332	327	290	290
3	293	301	309	339	373	319	346	359	374	357	368	344	357	369	337	356	353	350	355	348	347	324	303	283
4	308	320	327	353	328	307	329	361	375	354	324	374	371	356	352	351	383	352	296	341	360	335	279	270
5	F	F	F	307	336	345	326	361	372	353	360	356	340	365	334	376	379	332	375	337	334	350	296	297
6	304	317	319	314	349	303	313	365	372	382	333	362	354	325	331	370	385	342	339	323	343	329	314	316
7	312	331	288	301	301	320	316	347	373	360	339	369	339	355	367	365	377	370	324	348	327	322	300	290
8	309	301	300	311	304	307	321	353	373	365	347	362	356	370	368	351	354	364	354	366	303	305	303	310
9	305	290	322	351	344	304	330	355	362	363	374	371	372	353	342	374	353	349	324	361	312	312	294	303
10	315	296	308	343	371	310	300	337	373	349	356	356	363	346	374	358	371	355	336	341	306	303	F	317
11	F	299	F	320	363	329	348	376	361	346	359	376	319	370	345	366	359	364	331	356	335	317	299	299
12	291	308	308	317	301	292	366	378	366	316	336	353	353	372	373	361	361	331	331	353	341	F	F	F
13	F	F	F	305	353	F	F	356	370	364	352	354	322	345	345	355	355	354	A	A	324	A	270	280
14	295	292	333	349	352	297	331	363	361	367	349	365	319	350	362	345	368	364	336	339	311	307	320	283
15	290	327	311	334	331	312	360	365	371	329	344	352	365	361	330	348	372	374	313	352	321	331	281	293
16	317	297	323	346	347	296	367	377	386	365	357	355	342	337	367	369	355	351	337	346	336	335	304	296
17	292	293	316	332	338	300	325	359	375	360	340	363	369	356	349	345	372	334	350	335	358	327	321	279
18	272	289	312	356	381	298	329	379	374	344	359	353	353	368	361	348	369	383	283	327	348	323	299	F
19	310	294	320	334	315	305	334	367	367	384	319	363	368	362	343	336	357	354	323	A	322	311	314	285
20	296	296	304	351	391	305	328	362	362	357	362	361	337	341	354	338	371	333	331	298	319	303	284	A
21	291	310	304	312	280	297	288	332	320	352	339	336	345	338	334	365	362	344	323	320	343	291	292	301
22	319	307	297	F	324	276	F	360	374	333	C	C	C	C	C	C	C	368	316	337	325	332	295	294
23	304	334	299	318	337	305	316	347	373	371	355	367	355	361	356	362	375	346	302	329	356	333	300	273
24	291	301	325	351	352	331	364	352	360	368	353	359	308	352	379	349	356	360	356	309	317	321	314	286
25	269	297	271	341	381	321	306	352	382	368	366	354	361	369	353	353	361	367	309	307	333	344	311	301
26	304	A	314	342	365	374	305	367	387	380	335	360	356	352	358	374	386	355	332	312	320	312	308	308
27	309	298	315	331	349	357	344	368	366	359	338	360	312	329	352	343	367	352	364	321	323	302	F	F
28	299	292	292	298	342	350	350	357	375	377	345	359	344	357	338	364	369	343	351	329	329	319	288	288
29	311	303	301	297	290	311	354	376	375	343	347	351	369	357	341	318	378	391	340	329	363	313	320	291
30	294	298	298	307	318	358	342	361	365	349	343	354	355	331	343	361	338	357	320	343	351	301	277	287
31	296	310	312	325	310	311	322	371	373	354	355	371	357	368	348	333	370	373	330	304	321	322	313	304
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	27	29	29	29	29	31	31	31	30	30	30	30	30	30	30	31	30	29	30	28	27	26
MED	304	299	310	331	342	307	329	361	372	357	348	359	354	356	350	356	368	354	331	335	330	322	300	292
U Q	310	310	319	344	358	325	349	368	374	367	357	363	361	365	362	365	372	364	340	347	343	330	313	301
L Q	292	294	300	312	316	300	316	353	365	346	339	353	339	342	342	348	356	344	323	320	321	309	290	285

IONOSPHERIC DATA STATION Kokubunji

JAN.2016 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

JAN.2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN.2016 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								260	300		246			260	252									
2															234									
3											232	258			270									
4													242		264									
5											246	254	242	242		240								
6										230		246		264										
7												244	254											
8												242	258	240										
9												244	232	234	262									
10											244	240	232	258	236									
11										258	242		248		260									
12										292	266	240	236	224	232									
13											242		254	248	246									
14												242		252	240									
15											248	250	228	238		250								
16												244	256		244									
17											274	238	238		258									
18											252	236				250								
19											266	244	238	240	232	252								
20											250	248	252	248	250									
21											254	246	246	252	246									
22										250	C	C	C	C	C	C	C							
23										238	244	242	248	228	244									
24											252	238	310	226		238								
25										228	242	250	250	234	244									
26											282	252	256	256	254	242								
27												254	250			242								
28									228	234		246	250	242	234	230	222							
29											264	248	240	234	268									
30											248	242	228	266	252	240								
31											246	234	244	230	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								1	2	7	20	25	24	21	22	9	1							
MED								260	264	238	248	244	247	242	248	242	222							
U Q										258	259	249	253	254	258	250								
L Q										230	244	241	238	234	240	239								

JAN.2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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 266	E B 346	E B 266	E B 234	E B 242	E B 254	E B 266	A	240	226	202	218	212	198	206	226	210	204	216	208	208	E B 274	E B 290	E B 234
2	E B 244	E B 234	E B 258	E B 232	200	E B 248	208	204	194	220	220	222	212	220	206	208	214	194	214	E B 244	230	230	E B 266	E B 252
3	E B 270	E B 258	E B 268	E B 238	208	220	220	204	216	212	200	216	218	208	202	220	212	206	206	220	214	E B 252	E B 268	E B 302
4	E B 280	E B 268	E B 256	230	E B 228	E B 254	E B 234	214	H 168	218	210	226	208	198	194	208	208	202	220	226	216	212	E B 308	E B 316
5	E B 298	E B 278	E B 298	E B 256	232	212	216	212	H 182	220	192	218	184	210	206	202	208	218	206	220	220	220	E B 290	E B 292
6	E B 272	E B 260	E B 260	E B 248	228	E B 244	E A 256	216	202	192	208	A	228	202	202	204	206	210	218	E B 240	204	214	E B 250	E B 246
7	E B 256	220	E B 284	E B 282	E B 264	E B 234	E B 248	218	206	210	216	210	206	216	224	220	216	210	E A 280	E A 238	E B 232	220	E B 254	E B 278
8	E B 260	E B 282	E B 282	E B 250	E B 262	E B 258	E B 252	210	204	212	228	212	A	218	204	226	218	210	198	198	E B 250	E B 266	E B 274	E B 272
9	E A 308	E B 280	E B 246	214	214	E B 262	230	210	210	212	220	214	200	192	192	224	210	198	224	210	216	E B 246	E B 262	E B 252
10	E B 244	E B 278	E A 284	E A 246	212	230	E A 272	232	196	214	A	204	A	198	198	222	212	204	E B 204	222	228	E B 260	E B 242	224
11	E A 310	E A 282	E B 250	E A 242	218	224	210	212	208	212	204	214	198	210	202	222	210	202	218	210	208	E B 230	E B 292	E B 278
12	E B 270	E B 270	E B 266	E B 234	E B 268	E B 274	208	208	210	220	234	A	A	194	194	222	214	210	212	206	206	E A 260	E A 274	E A 326
13	E B 268	E A 318	228	E B 230	194	220	E B 230	214	212	214	208	202	204	198	200	206	218	214	A	A	E A 242	A	E A 316	E B 314
14	E B 308	E A 314	E A 274	214	208	E B 266	E A 240	186	182	212	228	A	202	A	A	216	216	200	220	E B 232	222	E A 272	E A 272	E A 352
15	E B 298	E B 270	E B 268	230	220	214	202	H 186	214	232	210	210	204	202	200	206	208	192	210	218	226	228	E B 292	E B 288
16	E A 280	E B 276	E B 262	E A 234	214	E B 304	210	212	196	214	220	202	202	220	202	216	214	214	222	200	214	E B 246	E B 282	E B 292
17	E B 280	E B 280	E B 286	E B 244	E B 234	212	E B 222	212	208	222	182	208	196	214	198	202	208	208	204	214	218	214	E B 242	E B 296
18	E B 308	E B 312	E B 284	E B 230	202	E B 282	E B 248	206	202	214	214	200	E A 236	200	210	198	210	198	E B 254	214	204	E B 246	E B 268	E B 326
19	E B 276	E B 274	E B 254	E B 228	E B 254	E B 268	E B 238	206	214	218	210	218	212	202	188	190	216	206	E A 244	A	E A 260	E A 240	E B 252	E A 326
20	E B 278	E A 284	E A 302	E A 234	204	E B 268	E B 246	218	212	228	216	218	206	204	212	214	214	206	220	E A 298	E B 246	E B 244	E B 282	A
21	E B 286	E B 256	E B 264	E B 266	216	E B 266	230	E B 236	226	E A 242	A	204	196	A	A	228	224	214	226	206	206	E B 314	E B 266	E B 258
22	E B 234	232	E B 268	E B 248	228	218	210	220	208	200	C	C	C	C	C	C	C	212	190	214	E A 236	E A 256	E B 278	E B 306
23	E B 272	E B 232	E B 284	E B 258	E B 230	210	E B 270	230	220	218	208	206	210	200	206	218	216	208	E A 284	E A 238	212	210	E B 296	E B 310
24	E B 290	E B 276	E A 262	E B 234	214	E B 244	214	232	212	214	204	200	194	A	222	200	218	206	208	E B 234	E B 244	E B 234	E B 258	E B 288
25	E B 308	E B 280	E A 338	228	200	E B 242	294	220	208	194	214	208	196	200	A	226	212	224	224	E A 282	E A 248	214	230	E B 274
26	E B 280	A	E B 262	230	206	194	226	210	206	210	202	210	202	210	216	206	204	198	198	E B 238	E B 248	228	E B 230	E B 266
27	E B 266	E B 282	E B 264	E B 242	224	200	224	208	H 174	208	218	202	202	E A 238	210	182	238	208	204	E B 234	214	226	E B 252	E B 264
28	E B 290	E B 286	E B 286	E B 280	E B 230	210	210	200	H 182	196	216	A	218	208	A	A	A	214	212	E B 238	E B 242	E B 240	E B 268	E B 278
29	E B 266	E B 246	E B 270	E B 282	E B 290	E B 268	222	202	H 176	218	E A 230	216	208	194	180	222	210	200	226	222	208	E A 256	E B 248	E B 270
30	E B 282	E B 272	E B 272	E A 280	E B 256	218	210	218	216	228	212	A	A	200	204	A	216	214	200	228	204	E B 248	E B 318	E B 322
31	E A 300	E A 282	E B 272	E A 264	E B 240	E B 246	E B 258	216	218	216	204	210	202	A	198	212	214	202	E B 234	E B 240	E B 244	230	E B 240	E B 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	31	30	31	31	31	31	31	30	31	31	28	25	26	26	26	28	29	31	30	29	31	30	31	30
MED	E B 280	E B 277	E B 268	E B 238	U 213	E B 244	220	212	208	214	210	210	204	202	202	215	214	206	213	214	213	E 240	E B 268	E B 283
U Q	E B 298	E B 282	E B 284	E B 256	E B 240	E B 266	E B 248	218	214	220	219	217	212	210	206	222	216	212	E 224	E B 238	E B 242	E B 256	E B 290	E B 310
L Q	E B 266	E B 260	E B 262	230	208	218	210	206	H 196	212	204	204	200	198	198	205	210	202	206	212	208	226	E B 252	E B 264

JAN. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

JAN.2016 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

JAN.2016 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 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	106	106	106	B	106	B	148	102	102	100	98	92	96	G	G	G	G	B	B	B	B	B	B	B
2	B	B	B	B	92	B	B	B	G	G	G	116	98	94	G	132	128	B	B	B	B	B	128	B
3	B	B	B	B	94	B	B	B	140	104	124	100	94	G	G	92	86	86	88	86	B	B	B	B
4	B	B	B	102	B	B	104	B	G	158	94	100	98	94	156	92	G	92	92	92	92	B	B	B
5	B	B	B	B	100	B	B	B	G	156	156	102	100	100	100	100	96	96	B	96	B	102	B	B
6	B	B	B	B	B	102	96	96	96	G	G	136	138	G	G	G	G	92	B	B	B	B	B	B
7	B	B	B	B	B	B	B	B	146	G	118	104	G	96	96	122	96	90	86	86	92	92	B	B
8	100	100	100	100	100	100	B	B	G	G	106	106	104	108	100	94	104	100	100	100	98	92	116	B
9	92	92	96	96	96	92	B	B	G	108	108	102	100	102	104	132	124	B	92	96	92	92	98	B
10	88	92	94	100	94	100	96	92	G	G	104	104	106	100	102	98	G	B	B	98	90	102	110	B
11	100	96	B	94	90	B	B	170	118	118	108	104	102	100	104	G	100	B	B	98	94	94	B	92
12	88	B	B	B	B	B	B	B	140	G	104	96	94	G	G	100	96	B	B	104	106	104	102	100
13	100	100	100	102	102	B	B	B	G	G	104	106	104	104	100	100	120	96	94	94	90	94	86	110
14	108	102	96	96	B	102	100	B	G	G	110	102	102	102	102	G	G	102	102	100	100	92	90	94
15	100	100	100	104	B	B	108	B	108	102	106	G	G	G	G	G	G	B	B	B	B	96	106	110
16	100	148	96	98	96	102	B	B	G	106	104	110	108	G	100	96	96	90	88	B	B	B	B	B
17	94	98	98	96	96	94	94	152	150	106	106	102	106	G	G	96	100	100	98	98	108	98	90	90
18	92	100	100	B	B	B	B	B	G	G	G	106	172	94	94	G	130	B	92	B	B	B	B	B
19	102	B	B	B	B	B	B	150	G	106	116	106	108	G	G	G	G	96	94	90	94	94	98	92
20	96	100	102	96	98	96	B	150	160	148	120	106	106	104	106	102	102	B	B	100	B	126	120	106
21	104	104	104	104	B	B	146	150	140	126	100	102	102	104	98	96	94	96	92	94	94	94	B	B
22	104	106	B	B	100	100	B	B	G	106	C	C	C	C	C	C	C	B	B	100	96	90	104	B
23	B	B	B	B	B	B	B	146	G	G	114	102	106	106	102	96	92	92	90	92	100	98	98	90
24	B	106	102	104	B	B	B	150	G	G	132	120	106	106	106	100	98	94	90	90	104	102	104	B
25	B	108	100	98	102	104	B	158	158	G	140	118	104	104	96	88	90	98	84	84	86	86	88	90
26	88	94	102	102	102	102	B	152	G	G	142	128	116	108	108	108	108	108	96	B	B	B	B	B
27	136	100	100	100	100	B	B	154	G	G	130	116	106	104	104	104	160	B	B	B	96	94	B	B
28	94	B	B	B	B	B	B	150	G	108	108	106	104	104	100	142	94	96	90	90	88	88	B	B
29	B	102	B	B	98	98	B	148	G	160	144	120	126	G	102	G	G	B	110	B	B	106	108	B
30	B	B	102	94	100	104	98	98	98	98	120	106	102	G	108	116	G	96	90	90	90	92	B	B
31	108	106	102	96	B	B	B	130	130	118	116	108	106	106	106	106	G	102	98	98	94	98	98	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	20	20	18	18	18	13	9	17	13	17	27	29	28	20	22	22	20	19	20	22	20	23	17	10
MED	100	100	100	99	99	100	100	150	140	108	110	106	104	104	102	100	99	96	92	95	94	94	102	93
U Q	104	106	102	102	100	102	127	152	148	137	124	113	106	105	106	108	114	100	97	98	99	102	109	106
L Q	93	99	98	96	96	97	96	116	105	105	104	102	101	100	100	96	95	92	90	90	91	92	94	90

IONOSPHERIC DATA STATION Kokubunji

JAN. 2016 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F1	F2	F2		F1		F1	L3	L2	L2	L1	L2	L2											
2					F1							C1	L2	L2		C1	C1						F1	
3					F3				H2	L2	C2	L2	L2			L2	L2	L2	F2	F1				
4				F2			F2			HL12	L2	L2	L2	L2	HL12	L2		L1	F1	F2	F2			
5					F2					H1	H2	L2	L2	L2	L2	L1	L2	L3		F4		F1		
6						F2	F3	F3	L2			C1	C1					L2						
7									H1		C1	L1		L2	L2	CL11	L2	L3	F3	F3	F1	F3		
8	F2	F2	F1	F1	F1	F1					L1	L1	L2	L2	L2	L2	L2	L1	F1	F1	F2	F2	F2	
9	F2	F3	F2	F2	F2	F2				L2	L2	L2	L2	L2	L2	CL11	C2		F1	F1	F2	F1	F1	
10	F2	F2	F2	F3	F3	F2	F2	L3			L2	L2	L2	L2	L2	L2				F1	F3	F2	F1	
11	F3	F2		F4	F3			H2	C1	C1	L2	L2	L2	L2	L2		L2			F1	F2	F2		F2
12	F2								H1		L2	L2	L2			L1	L3			F1	F1	F3	F3	F3
13	F3	F5	F2	F2	F1						L2	L2	L2	L2	L1	L1	CL11	L4	F4	F4	F3	F2	F3	F2
14	F2	F4	F4	F2		F1	F2				L2	L2	L2	L2	L2			L1	F3	F1	F1	F3	F2	F2
15	F1	F1	F1	F1			F1		L2	L2	L2											F2	F1	F2
16	F3	F1	F1	F2	F2	F1				L1	L1	L1	L2		L2	L2	L2	L3	F3					
17	F2	F1	F2	F1	F3	F2	F1	H2	H2	L2	L1	L2	L2			L1	L1	L1	F1	F1	F1	F2	F2	F1
18	F1	F2	F3									L2	H1	L2	L2		CL12		F2					
19	F2							H1		L2	C2	L2	L2					L2	F4	F3	F3	F2	F2	F2
20	F2	F2	F3	F3	F2	F2		H2	H1	H1	C1	L2	L2	L2	L2	L2	L1			F4		F3	F3	F7
21	F2	F2	F3	F2			F1	H2	H2	CL22	L3	L2	L2	L2	L2	L2	L2	L3	F3	F1	F1	F2		
22	F1	F1			F1	F1				L2										F1	F2	F2	F2	
23								H2			C1	L2	L2	L1	L1	HL12	L2	L3	F2	F2	F1	F2	F2	F2
24		F2	F3	F2				H1			C2	C2	L2	L2	L1	L2	L2	L2	F2	F1	F2	F1	F2	
25		F1	F2	F3	F1	F2		H1	H2		HL11	CL21	L2	L2	L3	L2	L2	L3	F4	F2	F1	F2	F2	F1
26	F2	F3	F2	F1	F1	F1		H1			H1	C1	C2	L2	L2	L2	L2	L2	F2					
27	F1	F2	F2	F2	F1			H2			C1	C1	L2	L2	L2	L2	H2				F1	F1		
28	F1							H2		L1	L1	L2	L2	L2	L2	CL12	L2	L2	F3	F1	F1	F1		
29		F1			F2	F1		H2		HL12	HL21	CL11	CL11		L2				F1			F5	F2	
30			F2	F2	F1	F2	F2	LH11	L3	L2	C1	L1	L2		L2	C2		L1	F2	F3	F2	F1		
31	F3	F3	F2	F3				H2	C1	C2	C2	L1	L2	L2	L1	L1		L1	F1	F2	F2	F1	F1	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

JAN. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 45	X 50	X 54	X 50	X 38	X 36	X 34												X 58	X 52	X 45	X 51	X 55	X 58
2	X 54	X 57	X 55	X 55	X 57	X 37	X 33												X 45	X 46	X 44	X 41	X 33	X 33
3	X 36	X 38	X 41	X 42	X 50	X 31	O X 26												X 65	X 45	X 48	X 38	X 33	X 30
4	X 32	X 36	X 37	X 36	X 39	X 32	X 31												X 48	X 37	X 44	X 32	X 31	X 33
5	X 36	X 38	40	X 38	X 44	X 41	X 30												X 55	X 37	X 39	X 39	X 33	X 34
6	X 35	X 36	X 36	X 36	X 40	X 33	X 32												X 58	X 48	X 47	X 39	X 36	X 33
7	X 38	X 41	X 36	X 38	X 42	X 34	X 37												X 50	X 44	X 47	X 44	X 38	X 35
8	X 39	X 39	X 42	X 44	X 47	X 36	X 38												X 55	X 43	X 40	X 38	X 33	X 33
9	X 37	X 37	X 40	X 40	X 40	X 32	X 34												X 49	X 45	X 46	X 41	X 35	X 34
10	X 36	X 38	X 37	X 38	X 43	X 28	X 32												X 49	X 39	X 38	X 38	X 39	X 36
11	X 34	X 38	X 39	X 37	X 42	X 30	X 31												X 56	X 50	X 54	X 41	X 34	X 34
12	X 38	X 33	X 36	X 39	X 38	X 33	X 38												X 58	X 55	X 44	X 40	X 38	A
13	42	46	X 47	X 41	X 55	X 36	X 32												X 75	O X 46	X 43	X 42	X 34	X 36
14	X 37	X 38	X 42	X 41	X 43	X 32	X 34												O X 39	A	A	A	X 36	X 34
15	X 37	X 38	X 42	X 45	X 46	X 36	X 34												X 46	X 42	X 46	X 36	X 35	X 33
16	X 35	X 36	X 37	X 41	X 38	X 32	X 33												X 59	X 56	X 43	X 42	A	A
17	X 35	X 36	X 35	X 38	X 42	X 35	X 32												X 58	X 47	X 52	X 62	X 47	X 31
18	X 32	X 33	X 36	X 40	X 42	X 30	X 32												X 47	X 36	X 41	X 39	X 38	X 34
19	X 37	X 37	X 38	X 38	X 36	X 33	X 33												X 67	X 52	X 49	X 46	X 40	X 35
20	X 35	X 38		X 43	X 44	X 36	X 29												X 58	X 52	X 57	X 62	X 46	X 45
21	X 44	X 46	X 52	X 42	X 33	X 35	X 36												X 64	X 51	X 46	X 36	X 42	X 46
22	X 44	X 35	X 37	X 39	X 39	X 40	X 32												X 72	X 44	X 38	X 39	X 33	X 36
23	X 38	X 41	X 46	X 33	X 32	X 26	X 26												X 50	X 46	X 54	X 46	X 32	X 36
24	X 36	X 40	X 43	X 39	X 38	X 37	X 32												X 55	X 42	X 41	X 46	X 39	X 37
25	X 32	X 33	X 35	X 36	X 34	O X 28	A												X 65	X 39	X 50	X 56	X 42	X 35
26	X 34	X 34	X 36	X 37	X 47	X 32	X 27												X 52	X 42	X 38	X 38	X 41	X 38
27	X 35	X 37	X 39	X 38	X 42	X 34	X 33												X 68	X 42	X 42	X 48	X 49	X 36
28	X 36	X 34	X 36	X 36	X 41	X 34	X 29												X 68	X 46	X 38	X 39	X 38	X 36
29	X 39	X 40	X 39	X 38	X 39	X 38	X 40												X 51	X 39	X 50	X 45	X 40	X 36
30	X 35	X 36	X 37	X 37	X 38	X 41	X 33												X 66	X 36	X 42	X 37	X 28	X 32
31	X 37	X 43	X 39	X 39	X 46	X 27	X 31												X 64	X 50	X 58	X 62	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	31	31	30	31	31	31	30												31	30	30	30	30	29
MED	X 36	X 38	X 39	X 39	X 42	X 34	X 32												X 58	X 45	X 44	X 41	X 38	X 35
U Q	X 38	X 40	X 42	X 41	X 44	X 36	X 34												X 65	X 50	X 49	X 46	X 41	X 36
L Q	X 35	X 36	X 36	X 37	X 38	X 32	X 31												X 50	X 42	X 41	X 38	X 33	X 33

JAN. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	39	44	48	44	32	30	28	38	70	112	114	100	96	91	85	89	92	78	52	46	39	45	49	52
2	48	51	V 49	V 49	V 51	V 31	F 25	37	57	62	75	86	76	80	83	75	74	67	39	40	38	35	27	V 27
3	30	32	35	36	44	25	20	34	58	61	70	72	82	65	73	76	75	65	59	39	40	32	27	24
4	26	30	31	30	33	26	25	34	62	61	63	84	72	67	69	65	68	59	R 42	31	38	26	R 25	27
5	30	32	32	32	38	35	24	32	56	60	64	74	76	70	70	68	61	53	49	31	33	33	27	28
6	29	30	30	30	34	27	26	34	60	59	60	61	85	82	81	69	57	56	52	42	41	33	30	27
7	32	35	30	32	36	28	31	34	66	66	65	80	85	74	63	68	67	60	44	38	41	38	32	29
8	33	33	36	38	41	30	32	42	61	64	78	78	J R 105	84	76	78	81	73	49	37	34	32	27	27
9	31	31	34	34	34	26	28	35	60	66	77	79	73	74	62	78	74	62	43	39	40	35	29	28
10	30	32	31	32	37	22	26	31	64	72	72	87	83	76	71	66	64	56	43	33	32	32	33	30
11	28	32	V 33	31	36	24	25	34	60	64	82	80	78	78	87	77	79	68	50	44	48	35	28	V 28
12	32	27	30	33	32	27	32	39	54	58	90	118	97	76	72	62	65	61	52	49	38	34	32	A
13	35	36	41	35	V 49	30	26	40	66	74	79	94	R 105	119	116	104	76	76	69	40	37	36	28	30
14	31	32	36	35	37	26	28	38	55	62	70	92	88	84	97	79	75	60	U R 33	A	A	A	30	28
15	31	32	36	39	40	30	28	38	59	70	88	R 104	107	89	90	86	81	60	40	36	40	30	29	27
16	29	30	31	35	32	26	27	38	54	60	75	83	81	77	86	72	72	58	53	50	37	36	A	A
17	29	30	29	32	36	29	26	34	55	61	65	70	84	75	69	62	65	64	52	40	46	56	41	25
18	26	27	30	34	36	24	26	36	58	64	63	82	73	72	84	63	65	57	41	30	35	33	32	28
19	31	31	32	32	30	27	27	34	56	66	71	87	95	83	72	71	76	80	61	46	43	40	34	29
20	29	32		37	38	30	23	32	58	64	76	77	70	76	75	70	71	68	52	46	51	56	40	39
21	38	40	46	36	27	29	30	43	74	90	88	94	90	A	90	80	67	68	58	45	40	30	36	40
22	38	29	31	33	33	34	26	35	64	73	82	89	75	76	67	80	79	73	66	38	32	33	27	30
23	32	35	40	27	26	20	20	28	63	84	80	78	74	75	75	73	60	58	44	40	48	40	26	30
24	30	34	37	33	32	31	26	35	64	74	72	68	71	82	81	70	64	66	49	36	35	40	33	31
25	26	27	29	30	28	22	A	33	68	68	67	82	94	R 94	73	66	63	67	59	33	44	50	36	29
26	28	28	30	31	41	26	21	32	58	60	65	72	71	67	75	72	70	54	46	36	32	32	35	32
27	29	31	33	32	36	28	27	33	58	61	67	72	76	94	83	63	64	75	62	36	36	42	43	30
28	30	R 28	30	30	35	28	23	33	57	62	69	80	76	74	70	79	72	61	62	40	32	33	32	30
29	33	34	33	32	33	32	34	37	58	58	67	88	83	82	71	69	78	63	45	33	44	39	34	30
30	29	30	31	31	32	35	27	36	60	67	72	81	73	96	90	88	88	76	60	30	36	31	22	26
31	31	37	33	V 33	40	21	25	35	65	66	73	78	75	78	79	72	77	78	58	44	52	54	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	31	31	30	31	31	31	30	31	31	31	31	31	31	30	31	31	31	31	31	30	30	30	30	29
MED	30	32	32	33	36	28	26	35	60	64	72	81	81	78	75	72	72	64	52	39	38	35	32	29
U Q	32	34	36	35	38	30	28	38	64	70	79	88	90	84	85	79	77	73	59	44	43	40	35	30
L Q	29	30	30	31	32	26	25	33	57	61	67	77	74	74	71	68	65	59	44	36	35	32	27	27

JAN. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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									220	260	L	L	L	L	U L 428	L								
2									240	304		L	L	L	U L 384	L								
3									232	308	L	U L 448	L	L	456	L								
4									228	296	348	L 452	L	U L 424	L 444	L	U L 296							
5									236	U L 304	U L 388	U L 440	U L 448	U L 444	L	U L 408		208						
6									232	292	L	364	L	L	L	L	L							
7									228	280	U L 344	U L 428	L	L	L	L	L							
8									216	L	L	A	A	L	A	L	A	204						
9										308	L	L	U L 456	U L 456	L	L	L							
10									224	304	332	L	U L 452	U L 476	L	L	L	216						
11									228	L	L	L	L	U L 464	U L 472	L	L							
12									212	U L 348	L	U L 452	L	L	L	A	L							
13									244	292	L	L	L	L	L	L	A							
14									244	300	U L 372	L	L	L	L	L	A							
15									240	L	L	U L 480	L	L 468	L 452	L	L	204						
16									232	L	L	L 452	L	A	L	L	A							
17									248	320	L	U L 452	L 452	L	U L 452	L	U L 328	L 236						
18									260	L 312	L	U L 456	L	U L 468	L 432	L	L	U L 248						
19									236	292	L	U L 472	U L 476	U L 472	U L 456	L	L	A						
20									232	L	L	U L 448	L	U L 456	U L 452	L	L							
21										L	L	L 440	L	A	L	L	L							
22									228	L	L	L	L 440	L	L	L	L							
23									240		L	L 448	U L 460	U L 460	L	L								
24									228	U L 312	L	L	U L 464	U L 456	L	L	L	232						
25									240	296	L	U L 464	U L 488	U L 472	L	L	L	240						
26									252	312	L	L	L	L	L 456	L	L	L						
27									256	308	L	U L 416	L	U L 464	U L 464	U L 428	L	244						
28									248	L	L	U L 456	U L 452	U L 460	U L 472	L 436	L							
29									256	312	L	L 464	U L 472	L 456	L 464	480	L	248						
30									248	L	L	L 436	L	L 472	L	L	L	L						
31									232	L	L	U L 464	U L 468	L 468	U L 440	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									29	20	5	20	12	17	15	4	2	10						
MED									236	304	U L 348	U L 452	U L 458	U L 464	U L 452	L 432	U L 312	234						
U Q									246	312	U L 380	U L 460	U L 470	U L 470	U L 464	458		244						
L Q									228	294	338	L 440	L 452	U L 456	U L 440	U L 418		208						

JAN. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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								B	U A 180	A	A	316	316	320	308	U A 320	256	184						
2								A	180	296	328	328	332	316	R 312	292	264	220						
3								B	196	260	A	U A 308	336	324	312	292	256	A						
4								B	192	252	300	A 312	316	332	316	292	268	A						
5								A	B	252	292	320	340	332	312	292	272	220						
6								B	200	252	304	328	U A 316	328	316	292	260	188						
7								B	A 188	232	296	328	328	328	324	300	264	208						
8								B	200	256	A 312	A 316	A 312	A	A	A	A	A						
9								A	208	264	308	A 316	U A 312	340	328	A 304	268	216						
10								B	R 192	276	304	A 308	324	300	A	304	264	U A 212						
11								A	U A 200	264	316	A	A	A	A	300	268	A						
12								A	188	U A 252	312	U A 312	A	R 336	A	A	276	U A 192						
13								B	204	A 264	U A 316	324	A	332	324	300	A	A						
14								224	B	260	304	A 304	A 300	A	A	A	A	A						
15								A	B	R 280	U R 296	A 312	336	A	A	304	A 268	B						
16								B	U A 212	A 276	A 300	U A 316	U A 308	A	A	A	A	A						
17								A	A	U A 260	324	328	A 324	332	324	A 300	268	A						
18								B	180	264	308	320	U A 316	A	320	296	A	A						
19								B	184	252	312	316	A 328	A	A	A	A	A						
20								A	188	260	312	328	328	U A 304	A	A	264	A						
21								B	200	256	292	312	308	A 312	A	A	264	188						
22								B	248	U A 272	A 280	332	A	U A 300	A	A 296	A	200						
23								A	196	264	300	A 320	304	280	A	A	A 276	U A 212						
24								A	180	264	296	316	336	320	304	A	S	216						
25								A	A 180	A 248	304	320	320	U A 304	324	316	288	216						
26								A	204	268	308	320	328	A 320	U A 316	308	280	224						
27								A	192	256	316	336	340	344	U A 324	312	276	204						
28								B	180	276	308	328	U R 336	328	324	U A 228	A	A						
29								B	200	264	308	328	320	332	320	308	272	220						
30								A	208	272	308	336	332	332	328	A 328	364	A						
31								A	188	U A 288	U A 316	A 328	A 332	U A 332	A	312	292	196						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	27	30	29	30	27	24	18	22	22	17						
MED								224	192	264	308	320	324	328	320	300	268	212						
U Q									200	272	312	328	332	332	324	308	276	218						
L Q									184	256	300	A 316	A 316	A 314	312	292	264	194						

JAN. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 33	E B 16	J A 30	J A 20	J A 17	J A 19	21	20	21	J A 29	J A 34	J A 38	35	35	G	35	G	G	E B 16	E B 16	18	E B 16	E B 16	20
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 17	20	G	G	34	G	G 22	34	J A 31	J A 28	J A 29	J A 29	J A 21	J A 16	20	E B 16	18
3	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	29	J A 34	J A 32	37	33	34	J A 29	G 23	J A 21	J A 17	E B 16	E B 16	E B 16	E B 16	E B 16
4	E B 16	E B 16	E B 16	E B 16	21	E B 16	E B 16	E B 16	20	28	33	J A 36	G 25	G 28	35	J A 52	J A 28	J A 26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
5	E B 16	17	E B 16	E B 16	E B 16	19	21	20	J A 19	26	34	35	37	J A 34	33	G 29	J A 27	J A 21	20	E B 16	E B 16	E B 16	19	20
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	27	34	35	38	34	G 27	G 22	G	21	E B 16	E B 16	E B 16	19	J A 19	J A 23
7	J A 18	E B 16	E B 16	E B 16	E B 16	E B 16	J A 17	E B 16	22	26	32	39	35	G 30	33	J A 32	28	G	E B 16	E B 16	E B 16	E B 16	18	E B 16
8	E B 16	J A 22	E B 16	J A 27	E B 16	E B 16	E B 16	E B 16	22	29	34	J A 75	J A 44	J A 56	J A 65	J A 100	J A 56	J A 89	J A 18	E B 16	E B 16	E B 16	E B 16	E B 16
9	J A 18	E B 16	J A 27	J A 27	20	J A 34	J A 30	J A 18	23	28	33	35	J A 39	G	G	35	G 27	J A 28	J A 30	J A 17	E B 16	E B 16	21	E B 16
10	E B 16	E B 16	E B 16	E B 16	J A 21	J A 16	J A 16	E B 16	22	30	33	33	33	34	J A 35	G	G	J A 23	J A 23	J A 23	J A 23	J A E B 16	E B 16	E B 16
11	J A 41	J A 20	J A 22	J A 27	J A 21	J A 26	19	J A 17	J A 25	J A 29	33	J A 40	J A 56	J A 46	J A 44	J A J A 31	G	J A 28	J A 18	J A 18	J A 18	20	21	E B 16
12	18	19	E B 16	J A 28	J A 21	E B 16	18	J A 26	21	J A 29	33	J A 46	J A 52	J A 54	J A 75	J A 57	34	23	E B 16	E B 16	E B 16	17	J A 18	J A 108
13	J A 44	J A 45	J A 51	J A 31	J A 28	21	21	E B 16	G	29	J A 41	J A 40	J A 58	G 31	J A 41	J A 30	J A 54	J A 49	J A 59	J A 46	J A 30	J A 22	J A 19	J A 51
14	J A 42	J A 40	J A 34	J A 35	J A 36	J A 30	J A 21	G 20	E B 20	G	34	35	J A 46	J A 49	J A 54	J A 43	J A 48	J A 44	J A 66	J A 55	J A 53	J A 40	J A 27	J A 27
15	J A 26	J A 20	21	J A 29	J A 32	J A 20	J A 19	18	E B 20	31	34	34	35	J A 50	38	G	30	19	J A 18	J A 20	J A 18	J A 25	E B 16	E B 16
16	J A 35	22	17	E B 16	E B 16	18	J A 24	E B 16	J A 27	30	J A 42	J A 69	J A 46	J A 62	J A 55	J A 96	J A 53	J A 26	J A 28	J A 27	J A 22	J A 33	J A 41	J A 36
17	J A 30	22	J A 16	18	J A 20	J A 16	22	J A 16	J A 21	J A 29	38	J A 39	J A 41	J A 33	G 26	J A 40	31	J A 26	J A 34	J A 38	J A 26	22	21	E B 16
18	J A 19	J A 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	29	33	39	36	J A 38	36	32	J A 40	J A 27	J A 16	J A 23	17	E B 16	E B 16	J A 18
19	J A 21	J A 23	J A 27	E B 16	E B 16	E B 16	E B 16	E B 16	21	28	G	J A 44	38	J A 60	J A 57	J A 74	J A 49	J A 66	J A 50	J A 28	J A 30	J A 30	18	E B 16
20	E B 20	E B 16		J A 27	J A 27	J A 24	J A 23	J A 22	22	28	G	41	J A 49	J A 62	J A 59	J A 59	28	J A 54	J A 60	J A 33	J A 20	20	J A 30	J A 42
21	J A 18	J A 32	J A 24	J A 20	21	18	21	J A 16	23	31	37	40	J A 47	J A 93	J A 70	J A 33	G 22	21	J A 18	J A 20	20	18	E B 16	E B 16
22	20	E B 16	E B 16	19	E B 16	J A 16	18	18	26	J A 34	J A 32	38	J A 37	J A 32	32	J A 42	J A 41	22	J A 23	J A 21	J A 28	J A 22	21	J A 16
23	19	E B 16	E B 16	20	20	18	E B 16	J A 19	22	28	32	34	38	J A 38	J A 45	J A 48	J A 43	J A 32	J A 52	J A 39	J A 59	J A 28	J A 28	J A 16
24	J A 16	17	E B 16	J A 22	J A 21	19	J A 19	J A 28	21	30	32	G	G	36	39	J A 65	E B 29	J A 32	J A 20	J A 39	J A 28	J A 16	E B 16	E B 16
25	E B 16	E B 16	J A 39	E B 16	21	J A 26	J A 34	J A 20	22	26	34	36	J A 40	J A 37	36	G 24	J A 32	J A 27	J A 17	J A 23	J A 16	22	J A 18	E B 16
26	17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 18	24	30	34	36	40	40	35	34	G 19	J A 26	J A 20	J A 19	E B 16	20	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	J A 25	J A 18	J A 20	J A 24	20	27	35	42	36	36	35	32	G 19	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	32	33	38	36	G 41	J A 34	J A 48	J A 52	J A 28	J A 29	J A 26	J A 16	E B 16	E B 16
29	J A 18	19	E B 16	20	E B 16	E B 16	E B 16	19	22	30	34	36	35	G 23	G 27	32	31	26	21	J A 19	19	E B 16	E B 16	E B 16
30	E B 16	J A 23	J A 27	J A 19	20	18	E B 16	J A 16	24	31	33	G	G	G	J A 70	J A 69	J A 56	J A 47	J A 33	J A 22	22	J A 21	E B 16	17
31	J A 20	J A 44	J A 29	J A 42	J A 29	J A 22	J A 21	20	21	J A 42	J A 40	J A 54	J A 53	J A 44	J A 59	J A 41	G	23	24	20	E B 16	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	18	16	E B 16	19	20	18	18	17	22	29	34	38	38	J A 36	36	J A 34	29	J A 26	J A 20	J A 20	18	18	E B 16	E B 16
U Q	J A 21	J A 22	J A 27	J A 27	J A 21	J A 20	J A 21	J A 20	22	30	J A 34	J A 40	J A 46	J A 49	J A 55	J A 52	J A 43	J A 32	J A 30	J A 28	J A 26	J A 22	21	J A 20
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	28	33	35	35	G	G 33	G 31	G	22	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16

JAN. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	18	E B 16	E B 16	E B 16	E B 16	E B 16	20	26	33	35	35	35	G	35	G	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	G	U Y 34	G	G 22	U Y 34	30	27	G 21	20	20	E B 16	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	32	32	U Y 37	33	G 31	G 29	G 23	20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
4	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	28	32	34	G 25	G 28	35	30	G 25	23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	26	33	34	36	34	32	G 29	G 26	G 18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	27	33	35	37	U Y 34	G 27	G 22	G	20	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	22	25	30	34	35	G 30	33	32	28	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	17	E B 16	E B 16	E B 16	E B 16	21	26	32	55	42	37	58	31	38	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	E B 16	23	28	33	34	35	G	G	31	G 27	G 22	18	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 16	E B 16	21	30	32	32	U Y 33	U Y 34	33	G	G	G 18	E B 16	E B 16	18	E B 16	E B 16	E B 16
11	24	E B 16	E B 16	17	16	16	E B 16	E B 16	22	28	G 32	34	42	39	39	G 30	G	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
12	E B 16	E B 16	E B 16	19	E B 16	E B 16	E B 16	E B 16	20	28	32	35	40	36	39	47	G 28	U Y 23	E B 16	E B 16	E B 16	E B 16	E B 16	A A 108
13	16	21	21	E B 16	19	E B 16	E B 16	E B 16	G	28	32	33	38	G 31	36	30	38	30	42	38	26	E B 16	17	20
14	E B 16	20	18	E B 16	20	21	E B 16	G 20	E B 20	G	32	35	44	42	36	38	37	29	24	A A 55	A A 53	A A 40	19	22
15	19	17	E B 16	20	19	E B 16	E B 16	E B 16	E B 20	30	32	U Y 34	U Y 35	38	35	G	30	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 20	28	37	36	45	50	36	30	47	23	24	20	E B 16	22	A A 41	A A 36
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	E B 16	20	27	35	35	36	G 33	G 26	30	G 26	21	22	35	21	E B 16	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	29	32	36	35	37	G 32	30	35	23	E B 16	20	E B 16	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	27	G 42		35	35	37	31	29	53	30	20	25	25	E B 16	E B 16
20	E B 20	E B 16		17	E B 16	E B 16	E B 16	E B 16	21	28	G 35		45	37	38	32	U Y 28	22	31	24	E B 16	E B 16	24	20
21	16	27	22	E B 16	E B 16	E B 16	E B 16	E B 16	23	30	35	39	45	A A 93	44	31	G 22	21	18	E B 16	E B 16	E B 16	E B 16	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 20	29	31	36	34	32	31	32	28	21	16	E B 16	19	20	E B 16	E B 16
23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	28	31	34	36	35	37	37	30	29	28	23	30	20	17	16
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	20	27	31	G	G	36	38	33	E B 29	G 21	E B 16	23	E B 16	E B 16	E B 16	E B 16
25	E B 16	E B 16	20	E B 16	16	19	A A 34	E B 16	21	26	33	35	35	36	35	G 24	G 28	22	E B 16	20	E B 16	E B 16	17	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	29	33	36	38	39	34	32	G 19	G 21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	26	33	37	36	36	33	32	G 19	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	31	32	37	36	G 38	32	36	36	18	17	E B 16	E B 16	E B 16	E B 16	E B 16
29	E B 16	16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	33	36	34	G 23	G 27	32	31	23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	31	G	G	G	34	35	G 33	24	24	19	E B 16	16	E B 16	E B 16
31	E B 16	E B 16	E B 16	16	E B 16	E B 16	E B 16	E B 16	21	30	35	35	38	37	37	32	G	G 18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	28	32	35	36	35	35	31	G 29	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
U Q	16	16	16	16	16	E B 16	E B 16	E B 16	22	29	33	36	38	37	37	32	G	23	22	20	16	16	16	16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	G	34	35	G	G	G 30	G 27	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

JAN. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2016 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

JAN.2016 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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	289	299	315	354	342	310	272	321	308	379	374	376	358	360	340	337	345	356	345	361	322	303	312	343
2	312	322	V 281	V 304	F 360	V 392	F 279	346	376	355	365	368	361	340	357	362	350	384	337	347	322	372	339	314
3	302	292	313	319	361	400	475	343	376	363	360	344	371	358	321	354	348	362	381	314	370	355	339	293
4	296	320	340	318	329	350	315	335	386	363	364	372	368	359	341	359	371	372	R 369	320	376	344	R 315	288
5	299	318	298	319	351	379	329	322	373	371	349	357	370	362	355	371	383	374	371	330	333	343	331	310
6	287	310	312	311	346	318	301	330	378	391	358	339	343	363	374	373	378	380	359	337	353	345	324	311
7	297	356	294	301	325	319	322	331	379	385	361	353	371	384	370	346	360	391	345	333	330	341	368	305
8	300	302	298	326	359	287	304	348	384	353	363	343	R	381	344	350	359	371	383	355	330	313	327	301
9	296	323	320	332	375	299	300	344	372	376	361	371	351	353	360	358	366	367	351	332	348	313	292	305
10	301	316	329	333	358	426	288	314	371	361	355	364	350	335	364	356	363	361	349	333	334	307	348	349
11	323	302	V 319	305	351	307	333	342	361	354	375	347	362	328	330	328	361	377	369	320	345	363	306	299
12	316	301	314	328	347	355	311	341	394	350	333	357	361	340	358	365	354	366	336	334	356	325	296	A
13	F 295	F 283	F 311	302	V 357	396	F 293	347	374	367	340	335	R 335	349	326	344	335	337	357	320	312	326	288	298
14	290	280	316	371	383	292	315	344	374	374	337	358	350	336	367	348	359	381	U R 279	A	A	A	337	295
15	273	283	309	346	350	316	313	332	356	348	345	R 340	362	346	349	330	362	388	360	314	366	322	349	293
16	284	301	312	347	349	317	320	357	383	364	369	367	356	341	369	360	369	362	345	371	327	333	A	A
17	300	309	302	326	356	375	322	337	378	368	378	353	371	362	355	380	352	362	354	332	330	361	373	303
18	290	291	297	332	364	355	301	333	377	384	356	365	367	329	367	362	370	360	351	306	318	332	329	331
19	F 313	F 310	F 301	312	318	318	333	333	370	361	364	348	358	363	325	341	345	359	346	329	295	343	336	338
20	297	299		325	351	349	329	317	370	369	360	362	342	349	336	342	353	364	341	313	306	328	324	285
21	281	300	328	327	380	288	315	338	351	339	333	346	343	A	341	342	348	356	357	327	342	272	305	310
22	377	303	284	287	295	325	340	347	379	352	346	368	355	370	303	333	343	343	366	369	332	355	320	296
23	297	330	375	352	337	323	316	328	362	381	371	383	346	350	353	350	363	366	358	304	335	386	281	315
24	297	302	336	371	345	342	322	330	360	376	365	345	338	357	346	352	356	366	364	336	314	340	336	350
25	301	303	320	349	376	325	A	330	383	370	356	351	345	R 366	362	335	351	345	366	331	302	340	317	318
26	303	300	316	340	377	383	342	338	373	375	368	364	368	343	358	372	380	380	350	357	331	311	347	338
27	331	295	320	322	366	312	347	338	371	367	359	362	335	356	359	H 377	350	360	376	348	297	323	353	369
28	283	R 306	292	308	354	367	362	349	381	357	342	355	380	361	334	355	347	351	362	367	310	300	334	286
29	304	311	332	309	322	309	320	349	377	370	333	363	346	361	350	318	353	375	370	295	333	355	337	321
30	306	302	295	289	307	345	317	332	367	352	367	362	306	345	339	335	350	361	379	321	331	361	322	275
31	316	337	324	V 333	R 371	400	302	326	367	376	350	359	354	340	354	344	342	354	350	310	321	358	352	300
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	31	30	31	31	31	31	31	30	30	31	31	31	31	31	30	30	30	30	29
MED	299	302	314	326	351	325	316	337	374	367	360	358	356	354	353	350	354	364	357	332	330	340	330	305
U Q	306	316	320	340	364	375	329	344	379	376	365	365	367	362	360	362	363	375	369	347	342	355	339	326
L Q	290	299	298	309	342	312	302	330	367	355	346	347	345	341	339	341	348	359	346	320	318	322	315	296

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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									476	493	L	L	L	L	U L 393	L								
2									455	A		L	L	L	U L 424	L								
3									490	497	L	U L 405	L	L	382	L								
4									489	481	424	L 387	L	U L 417	L 370	L	U L 416							
5									479	U L 427	U L 423	U L 393	U L 392	U L 396	L	U L 397		431						
6									463	447	L	477	L	L	L	L	L							
7									509	510	U L 426	U L 398	L	L	L	L	L							
8									477	L	L	A	A	L	A	L	A	381						
9										456	L	L	U L 407	U L 400	L	L	L							
10									445	492	495	L	U L 405	U L 397	L	L	L	495						
11									515	L	L	L	L	U L 397	U L 368	L	L							
12									498	U L 424	L	U L 391	L	L	L	A	L							
13									410	438	L	L	L	L	L	L	A							
14									470	479	U L 426	L	L	L	L	L	A							
15									443	L	L	U L 376	L	L 386	L 387	L	L	492						
16									450	L	L	L 411	L	A	L	L	A							
17									513	499	L	U L 413	L 416	L	U L 399	L	U L 426	L 413						
18									461	L 425	L	U L 377	L	U L 394	H 431	L	L	U L 421						
19									437	461	L	U L 374	U L 387	U L 384	U L 398	L	L	A						
20									465	L	L	U L 383	L	U L 394	U L 383	L	L							
21										L	L	L 391	L	A	L	L	L							
22									489	L	L	L	L 421	L	L	L	L							
23									498		L	L 403	U L 393	U L 389	L	L								
24									465	U L 414	L	L	U L 395	U L 386	L	L	L	414						
25									464	463	L	U L 372	U L 367	U L 383	L	L	L	419						
26									477	441	L	L	L	L	L 377	L	L	L						
27									494	472	L	U L 406	L	U L 372	U L 383	U L 420	L	499						
28									483	L	L	U L 381	U L 404	U L 384	U L 384	L 373	L							
29									460	482	L	L 382	U L 379	L 398	L 391	378	L	A						
30									501	L	L	L 422	L	L 402	L	L	L	L						
31									534	L	L	U L 390	U L 392	L 392	U L 394	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									29	19	5	20	12	17	15	4	2	9						
MED									477	463	U L 426	U L 391	U L 394	U L 394	U L 387	L 388	U L 421	421						
U Q									496	492	460	L 406	L 406	U L 398	U L 398	U L 408		494						
L Q									460	U L 438	424	U L 382	U L 390	U L 385	L 382	376		414						

JAN. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN.2016 h'F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									252	210	220	226	242	242	234	250								
2									208	220		234	224	246	242	228								
3									220	226	232	256	228	244	300	226								
4									206	216	216H	232	222	234	262	236	220							
5									212	220	236	246	232	240	244	230		206						
6									208	208	242	212	268	238	232	232	214							
7									216	210	216	244	234	224	224	242	222							
8									198	210	234	246	236	220	258	246	232	206						
9										212	240	224	230	242	224	234	224							
10									216	222	218H	228	244	256	230	220	220	210						
11									214	220	232	246	236	254	272	236	224							
12									200	224	268	240	238	234	224	236	228							
13									204	212H	238	250	252	242	234	230	236							
14									200	216	226	238	240	262	238	236	230							
15									216	240	248	256	228	244	236	238	234	204						
16									200	216	224	250	260	250	234	234	226							
17									212	222	228	242	230	240	238	220	230	212						
18									208	224	240	238	236	254	240	232	224	216						
19									214	212H	232	254	236	232	238	254	242	238						
20									214	232	250	242	266	248	254	238	230							
21										256	258	238	248	A	252	236	232							
22									212	230	250	220	228	246	214H	254	238							
23									226		232	216	244	244	254	242								
24									226	224	236	246	246	244	254	236	230	224						
25									208	220	234	256	264	230	236	234	222	228						
26									214	208	232	244	234	254	250	230	218	204						
27									208	212	240	238	272	242	242	216	224	224						
28									202	224	256	244	220	246	282	252	240							
29									212	220	240	236	250	234	254	314	246	206						
30									212	232	230	244	250	254	252	252	238	222						
31									220	218	244	240	248	266	238	256	240	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									29	30	30	31	31	30	31	31	26	14						
MED									212	220	235	242	238	244	240	236	230	214						
U Q									216	224	242	246	250	250	254	246	236	224						
L Q									207	212	230	234	230	238	234	230	224	206						

JAN.2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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	318	264	268	214	218	264	252	268	162	140	216	224	H 198	198	194	234	220	212	190	198	236	232	246	210
2	254	244	258	262	216	190	322	222	176	A	224	224	208	214	202	214	238	206	198	216	228	206	238	260
3	270	292	268	248	220	184	166	236	160	156	220	H 184	226	202	180	198	212	212	192	200	198	220	244	288
4	308	262	244	256	250	202	266	248	156	170	208	212	H 180	192	H 202	208	200	206	196	224	206	198	272	308
5	296	264	292	268	228	206	218	244	146	192	204	H 188	206	196	202	200	210	202	206	198	232	218	214	260
6	298	284	274	254	232	230	286	240	180	202	206	184	H 220	232	210	194	212	216	210	214	214	230	226	228
7	282	226	286	300	254	224	256	244	144	150	204	198	216	208	202	194	218	200	200	214	220	228	208	286
8	274	298	290	262	210	296	272	222	186	198	H 208	A	A	202	A	188	A	A	186	198	228	236	244	300
9	292	264	258	244	208	272	296	224	204	190	H 200	200	200	186	180	H 208	222	202	206	216	208	232	280	292
10	296	270	248	238	224	186	310	256	204	170	166	H 178	200	198	208	200	208	152	192	212	232	246	228	232
11	320	292	268	306	234	282	252	230	156	198	H 186	206	230	204	218	198	A	206	194	232	208	198	236	288
12	272	274	274	266	230	224	254	208	168	H 192	H 210	200	230	212	214	A	214	214	200	210	202	218	246	A
13	284	314	284	290	220	190	256	242	202	208	H 198	H 196	224	206	214	196	A	222	228	354	290	234	246	314
14	324	348	278	206	208	360	260	222	168	174	200	232	A	244	224	224	A	200	346	A	A	A	250	334
15	342	320	284	242	242	242	250	230	186	230	224	216	H 196	200	210	200	226	158	200	240	210	244	222	276
16	310	278	270	232	226	246	248	216	186	186	216	180	A	A	H 196	200	A	204	218	194	236	248	A	A
17	294	286	300	256	224	202	272	226	142	154	220	208	182	H 164	204	202	196	212	212	298	250	202	206	242
18	322	320	302	254	218	208	280	236	154	208	H 186	224	210	184	164	H 182	A	A	188	266	232	226	226	238
19	280	284	282	264	260	254	254	224	190	190	212	248	208	204	194	180	232	A	216	208	290	226	240	230
20	314	286		256	220	218	246	256	180	H 188	214	220	262	208	214	212	222	220	238	254	248	226	248	322
21	316	308	252	242	206	306	248	244	234	228	232	222	A	A	A	216	222	220	214	214	216	320	258	262
22	204	304	292	302	296	224	232	218	158	206	H 172	216	186	166	H 166	H 184	222	222	200	198	248	236	256	302
23	302	262	208	216	246	288	306	260	162	222	210	198	196	200	212	224	208	212	214	282	250	198	332	274
24	302	288	242	222	228	232	224	244	182	202	208	176	192	200	234	220	192	214	200	242	260	224	220	228
25	290	302	284	228	210	306	A	248	168	190	214	208	208	H 202	204	192	214	218	202	240	272	220	240	254
26	292	314	274	240	214	194	262	226	170	198	204	218	214	208	206	206	216	204	194	206	236	258	228	234
27	274	294	254	260	222	260	228	230	152	170	212	214	198	216	204	H 192	H 182	152	200	210	276	240	212	212
28	320	310	290	280	224	208	202	228	140	206	200	H 218	208	200	194	200	222	220	204	204	232	262	236	298
29	280	266	244	278	266	242	252	214	164	176	H 202	208	H 170	H 188	178	186	H 166	A	192	264	234	200	212	248
30	274	292	302	300	268	226	206	238	156	218	212	192	H 186	178	160	218	236	A	208	220	236	214	254	332
31	276	248	252	250	216	190	292	248	130	212	206	204	194	188	188	190	222	218	196	208	232	204	220	268
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	31	30	31	31	30	31	30	27	29	29	30	25	26	31	30	30	30	30	29
MED	294	286	274	256	224	226	254	236	168	192	208	208	206	200	202	200	216	212	200	214	232	226	239	268
U Q	314	304	286	268	242	264	272	244	186	206	214	218	216	208	211	212	222	218	212	240	248	236	248	299
L Q	276	264	254	240	216	202	246	224	156	174	H 200	196	194	190	191	192	208	202	194	206	216	214	222	236

JAN. 2016 h'F (KM)

IONOSPHERIC DATA STATION Yamagawa

JAN.2016 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								B	118	A	A	A	106	106	106	108	114	140						
2								A	114	108	106	122	98	106	106	108	116	A						
3								B	116	104	A	98	98	90	100	102	114	A						
4								B	114	98	94	94	104	110	110	110	110	A						
5								A	B	94	96	96	96	108	108	108	108	112						
6								B	114	102	104	104	104	106	106	110	110	134						
7								B	134	100	126	96	98	114	114	108	108	112						
8								B	128	100	96	96	96	A	A	A	A	A						
9								A	106	102	102	98	106	98	98	98	108	112						
10								B	102	102	100	100	104	100	A	108	108	96						
11								A	108	100	100	98	A	A	A	112	100	A						
12								A	118	102	102	98	A	102	A	A	106	110						
13								B	116	100	100	100	A	112	A	112	A	A						
14								102	B	102	106	100	100	A	A	A	A	A						
15								A	B	104	104	A	102	A	A	106	110	B						
16								B	A	110	102	102	100	A	A	A	A	A						
17								A	102	100	112	98	96	112	112	100	114	A						
18								B	108	106	104	102	102	A	110	102	A	A						
19								B	108	104	102	100	98	A	A	A	A	A						
20								A	112	104	104	104	100	98	A	A	98	A						
21								B	118	100	98	98	98	98	A	A	114	114						
22								B	108	102	100	A	A	98	94	114	A	110						
23								A	90	104	102	96	98	98	A	A	106	112						
24								A	112	100	104	96	96	98	98	A	S	108						
25								A	108	96	96	106	98	104	116	110	110	A						
26								A	116	104	94	94	94	94	96	98	104	112						
27								A	110	96	94	94	98	98	98	100	102	124						
28								B	106	100	98	94	96	96	98	92	A	A						
29								B	104	98	98	98	98	100	106	106	108	110						
30								A	106	100	96	96	96	100	96	A	A	A						
31								A	104	100	98	98	94	96	94	102	102	98						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	27	30	29	28	27	24	19	21	21	15						
MED								102	110	101	100	98	98	100	106	108	108	112						
U Q									116	104	104	100	102	106	110	110	112	114						
L Q									106	100	97	96	96	98	98	101	105	110						

JAN.2016 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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	100	B	96	96	98	100	134	152	140	98	96	110	136	138	G	194	G	G	B	B	84	B	B	96
2	B	B	B	B	B	B	B	90	122	G	G	176	G	96	196	92	88	112	88	90	84	86	B	86
3	B	B	B	B	B	B	B	B	156	150	98	102	160	170	88	88	88	88	90	B	B	B	B	B
4	B	B	B	B	104	B	B	B	150	174	168	108	92	92	174	100	90	94	B	B	B	B	B	B
5	B	96	B	B	B	96	96	98	104	160	154	146	174	98	160	92	92	92	88	B	B	B	102	106
6	B	B	B	B	B	B	B	B	164	170	162	168	106	190	92	92	G	128	B	B	B	104	98	98
7	98	B	B	B	B	B	88	B	138	134	98	118	174	96	90	90	118	G	B	B	B	B	106	B
8	B	106	B	92	B	B	B	B	172	118	102	100	102	122	92	92	88	90	92	B	B	B	B	B
9	86	B	94	94	98	98	90	90	134	108	108	108	108	G	G	104	96	92	88	88	B	B	86	B
10	B	B	B	B	94	112	96	B	174	158	152	122	130	104	100	G	G	106	96	90	90	B	B	B
11	92	98	98	96	90	92	92	90	110	106	154	108	100	98	94	96	G	94	94	92	90	92	86	B
12	88	90	B	96	98	B	154	98	146	110	178	102	98	104	108	94	108	112	B	B	B	106	96	104
13	100	94	94	94	94	98	98	B	G	116	110	112	96	98	92	92	88	88	90	90	90	88	82	96
14	98	98	94	92	96	90	90	92	B	G	152	108	104	98	98	98	90	94	88	90	88	88	86	84
15	102	100	120	96	96	118	118	100	B	174	114	106	150	96	96	G	200	118	94	104	90	106	B	B
16	98	90	90	B	B	92	96	B	110	122	108	104	100	98	116	104	90	92	92	92	96	88	86	88
17	92	94	90	90	122	92	92	92	118	108	132	110	104	96	98	98	96	94	90	90	88	102	90	B
18	106	100	B	B	B	B	B	B	122	160	164	114	102	100	100	92	90	90	90	84	86	B	B	100
19	98	98	100	B	B	B	B	B	128	134	G	106	102	100	98	92	96	86	86	90	88	90	84	B
20	B	B		96	98	98	100	92	128	136	G	108	100	100	96	96	168	116	90	98	102	102	102	102
21	108	96	94	96	94	100	140	136	136	128	114	114	104	100	98	100	100	120	102	94	94	92	B	B
22	90	B	B	106	B	96	98	104	130	110	106	140	104	104	102	114	94	146	94	96	110	86	86	86
23	86	B	B	94	100	94	B	88	156	150	120	106	106	102	96	94	94	110	92	90	90	88	88	88
24	88	88	B	98	98	98	98	94	124	152	184	G	G	118	106	100	B	100	84	98	106	90	B	B
25	B	B	96	B	100	94	94	98	152	154	144	122	110	106	102	94	90	90	92	104	90	90	90	B
26	86	B	B	B	B	B	B	92	162	176	144	116	108	108	110	102	88	104	106	98	B	96	B	B
27	B	B	B	B	94	96	96	92	124	138	150	128	142	118	104	212	94	142	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	116	168	176	148	138	G	112	96	90	86	102	84	84	88	B	B
29	86	104	B	120	B	B	B	96	162	180	156	156	110	92	94	184	158	128	90	84	86	B	B	B
30	B	98	92	94	112	96	B	94	152	168	152	G	G	G	124	110	86	84	84	92	90	92	B	112
31	128	102	94	94	98	94	94	94	124	124	112	106	102	102	102	102	G	108	102	102	B	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	16	13	17	18	19	19	20	28	29	28	29	28	28	29	29	25	29	25	22	20	19	15	13
MED	98	98	94	96	98	96	96	94	135	138	144	110	105	100	100	96	92	94	90	91	90	90	88	96
U Q	100	100	97	96	100	98	100	98	154	164	155	125	133	107	109	103	98	114	94	98	92	102	98	103
L Q	88	94	93	94	94	94	92	92	123	117	109	106	102	98	95	92	89	90	88	90	87	88	86	87

JAN. 2016 h'Es (KM)

IONOSPHERIC DATA STATION Yamagawa

JAN. 2016 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	F2		F2	FF11	F1	F1	F1	H1	H1	L2	L3	CHL11	HL11	HL11		H1					F1			F1
2								L1	C1			HC11		L1	HL11	L1	L2	CL12	FF21	FF12	F1	F1		F1
3									H1	H1	L1	C1	HC11	H1	L1	L1	L1	L2	F1					
4					FF11				H1	H1	H1	CH11	L1	L1	HL11	LHL11	L1	L2						
5		F1				F1	F1	L1	C2	H1	H2	HC11	HC11	L1	HL11	L2	L1	L1	F1				F1	F1
6									H1	H1	HL11	HL11	CL11	HCL11	L1	L1		C1				F1	F1	FF11
7	FF11						F1		H1	H1	L1	C1	H1	L1	L1	L2	C1						F1	
8		F1		F2					H1	CC11	C1	C2	C2	CL12	L3	LC21	L3	L3	F1					
9	F1		F2	F2	F1	F2	F1	L1	H1	C1	C1	C1	CL12			C1	L1	LC11	F1	F1			F1	
10					F1	F1	F1		H1	H1	H1	C1	CL11	C1	L1			C1	F1	F2	F3			
11	FQ31	F1	F1	FF21	F2	FF21	F1	L2	C2	C1	HC11	C1	L2	L2	L2	L1		L3	F1	F2	F2	F1	F2	
12	F1	F1		F4	FF11		F1	L1	H1	C1	HL11	C1	L2	C1	CL11	L3	C1	C1				F1	F1	F3
13	F2	FQ31	F2	F2	FQ11	F1	F1			C1	C1	CC11	L1	L1	L1	L1	L2	L2	F4	F4	F4	F2	F2	FF21
14	F3	F3	F2	FQ31	FF13	F3	FF21	L1			H1	C1	C2	L2	LC11	L2	L1	L2	F3	FQ31	F5	FQ31	FF21	F4
15	FF12	FF11	F1	F4	FFF31	FFF12	FF11	L2		H1	C1	HC11	H1	L1	L1		H1	C1	F1	FF11	F2	FF12		
16	F2	FFF11	F1			F1	F1		CC11	C1	C1	C1	C2	L3	CL12	CL33	L3	L2	F3	F3	F1	F4	F5	FF61
17	F2	F1	F1	F1	FF11	F2	F2	L1	C1	C1	HC12	C1	C1	L2	L1	LC11	L1	L2	F6	F5	F4	F1	F1	
18	F1	F1							C1	H1	HC11	C1	C1	L2	L1	L1	L2	L2	F1	FF21	F1			F1
19	F1	F1	F1						C1	H1		C2	C1	L1	L2	LQ31	L2	LQ41	FQ31	F2	F3	F1	F1	
20				F2	F2	F1	F1	L1	C1	H1		C1	C2	C2	L2	LQ21	H1	CL11	FQ21	FQ21	F1	F1	FF61	F3
21	F1	FF61	F5	F1	F2	F2	F1	H1	H2	C1	C1	C1	C2	C3	L2	L2	L1	CL12	F1	F1	F1	F1		
22	F1			F1		F2	F1	C1	C1	C3	C2	HC12	CH11	C1	C1	CL12	LQ41	H1	F1	FF11	FF12	F1	F1	F1
23	F1			F1	F1	F1		L2	H2	H1	C1	C1	C1	CL11	L3	L3	LC21	CL32	F3	F4	FQ51	FQ31	FQ21	F2
24	F1	F1		F1	FF21	F1	F2	L2	C1	H1	HL11			C1	C1	L1		LC11	FF11	F1	FF11	F1		
25			F1		F1	F3	F3	L2	H1	H1	H1	CL11	C1	CL11	L1	L1	L3	L3	F1	FF11	F1	F1	F2	
26	F1							L1	HL11	H1	H1	C1	C1	C1	C1	C1	L1	C1	F1	F1		F1		
27					F1	FF11	FF11	L1	C1	H1	H1	C1	H1	C1	C1	HL11	L1	HC11						
28									C1	H1	H1	H1	HL11		C1	L2	L4	L4	FF12	FQ21	FQ11	F1		
29	F2	FF11		F1				L1	H1	H1	H1	H1	C1	L1	L1	HL12	HL11	C1	F1	F2	F1			
30		F1	F2	FF21	F1	F1		L1	H1	H1	H1				CL11	CL12	L2	LQ41	F3	F2	F1	F2		F1
31	F1	F2	FF21	FF21	FF21	FF11	FF21	L1	C2	C1	C1	C1	C2	C2	C2	C2		C2	F1	F1				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

JAN. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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 42	X 62	X 48	X 44	X 39	X 34	X 34													X 53	X 46	X 52	X 42	X 47
2	X 43	X 44	X 43	X 46	X 54	X 41														X 61	X 59	X 52	X 39	X 30
3	X 31	X 34	X 38	X 38	X 44	X 25														X 74	X 72	X 63	X 59	X 38
4	X 34	X 34	X 40	X 33	X 37	X 31	X 30													X 47	X 47	X 47	X 32	X 31
5	X 32	X 36	X 36	X 39	X 40	X 34														X 51	X 48	X 46	X 42	X 35
6	X 32	X 35	X 35	X 37	X 45	X 30	X 30													X 67	X 52	X 46	X 39	X 37
7	X 34	X 39	X 37	X 38	X 45	X 34	X 32													X 49	X 56	X 50	X 46	X 33
8	X 36	X 36	X 39	X 40	X 44	X 29	X 30													X 50	X 53	X 56	X 42	X 36
9	X 36	X 40	X 40	X 36	X 40	X 30	X 30													X 56	X 62	X 66	X 46	X 39
10	X 42	X 44	X 41	X 38	X 42	X 29	X 28													X 46	X 56	X 55	X 55	X 42
11	X 38	X 40	X 38	X 36	X 37	X 32	X 29													X 72	X 72	X 70	X 53	X 43
12	X 42	X 45	X 45	X 41	X 44	X 33														X 48	X 49	X 42	X 39	X 37
13	39	45	47	43	60	27	27													X 86	X 57	X 61	X 47	X 41
14	X 38	X 42	X 40	X 52	X 42	X 28	X 28											92		X 51	X 47	X 47	X 46	X 32
15	X 34	X 36	39	X 46	X 48	X 32	X 32													X 52	X 58	X 66	X 50	X 44
16	X 32	X 34	X 36	X 38	X 42	X 29	X 30													X 85	X 58	X 54	51	X 40
17	X 39	X 38	X 39	X 37	X 42	X 33	X 31													X 71	X 72	82	60	X 48
18	X 38	X 40	X 42	X 46	X 49	X 33	X 29													X 58	X 51	X 53	X 42	X 34
19	35	37	39	39	38	X 35	X 33													X 91	X 63	X 68	X 54	X 39
20	X 35	X 37	X 40	X 43	X 43	A	O X 30													X 70	X 70	X 70	X 60	X 52
21	X 50	X 52	X 70	A	X 32	X 32	X 36													X 58	X 58	X 45	X 44	X 45
22	X 47	X 26	X 32	X 32	X 33	X 33	X 26													X 68	X 42	X 41	X 38	X 34
23	X 35	X 38	X 47	X 25	X 24	X 26	X 26													X 47	X 57	X 67	X 47	X 37
24	X 36	X 38	X 43	X 43	X 34	X 34	X 33													X 61	X 50	X 56	X 52	X 46
25	X 33	X 33	X 35	X 37	X 33	X 25	X 26													X 73	X 71	X 81	X 63	X 44
26	X 37	X 36	X 37	X 40	X 44	X 34	X 27													X 49	X 44	X 46	X 48	X 43
27	X 38	X 36	X 38	X 39	X 33	X 32	X 29													X 68	X 55	X 62	X 68	X 47
28	X 32	X 35	X 36	X 37	X 41	X 39	X 28													X 81	X 61	X 59	X 46	X 42
29	X 41	X 41	X 42	X 41	X 42	X 36	X 36													X 48	X 53	X 64	X 40	X 34
30	X 34	X 34	X 36	X 34	X 35	X 35	X 38													X 72	X 58	X 57	X 46	X 32
31	X 32	X 36	X 34	X 38	X 38	X 28	X 28													X 93	X 94	X 91	X 60	X 48
	00	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	30	31	30	27											1		31	31	31	31	31
MED	X 36	X 37	X 39	X 38	X 42	X 32	X 30											92		X 61	X 57	X 56	X 46	X 39
U Q	X 39	X 41	X 42	X 43	X 44	X 34	X 32													X 72	X 62	X 66	X 54	X 44
L Q	X 34	X 35	X 36	X 37	X 37	X 29	X 28													X 50	X 50	X 47	X 42	X 34

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	36	56	42	38	33	28	28	38	69	150	77	78	98	100	90	88	90	89	66	47	40	46	36	41
2	37	38	37	V 40	48	35	20	35	R 65	71	78	73	V 81	92	99	92	84	91	56	55	53	46	33	24
3	25	28	32	V 32	38	19	22	31	63	69	80	71	76	92	R 102	120	120	117	102	68	66	57	53	32
4	28	28	34	27	31	25	24	32	67	68	74	74	78	72	78	80	72	68	58	41	41	40	26	25
5	26	30	30	33	34	28	21	29	56	68	69	74	77	69	75	73	66	62	54	45	42	40	36	29
6	26	29	29	31	39	24	24	33	62	67	64	65	79	90	88	78	65	59	59	61	46	40	33	31
7	28	33	31	32	39	28	26	33	67	70	65	73	88	71	69	70	72	68	56	43	50	44	40	27
8	30	30	33	34	38	23	24	36	63	66	75	82	94	104	100	93	85	92	74	44	47	50	36	30
9	30	34	34	30	34	24	24	33	66	74	70	80	77	85	77	80	86	72	60	50	56	60	40	33
10	36	38	35	32	36	23	22	28	64	80	83	90	93	96	86	80	73	65	59	40	50	49	49	36
11	32	34	32	30	31	26	23	34	62	74	86	79	93	118	133	133	122	115	86	66	66	64	47	37
12	36	39	39	35	V 38	27	23	38	66	63	90	116	118	85	79	69	69	64	57	42	43	36	33	31
13	F 30	F 38	F 36	F 35	F 51	F 19	F 20	34	66	74	88	104	138	154	R 156	139	119	127	98	80	51	55	41	35
14	32	36	34	46	36	22	23	35	60	64	72	101	100	102	127	140	119	79	58	45	41	41	40	26
15	28	30	F 31	40	42	F 24	26	35	64	77	97	108	124	148	R 161	141	109	104	70	46	52	60	44	38
16	26	28	30	32	36	23	24	34	61	66	79	78	83	92	100	109	109	91	77	79	52	48	41	34
17	33	32	33	31	36	27	25	31	62	63	77	74	80	95	91	91	68	80	71	65	66	73	F 51	42
18	32	34	36	40	43	27	23	33	62	71	72	75	79	92	105	96	80	70	58	52	45	47	35	28
19	F 26	F 29	F 29	F 30	29	29	27	33	61	71	80	80	100	98	99	94	96	105	V 109	85	57	62	48	33
20	29	31	34	37	37	A	24	29	58	67	80	76	78	78	80	A	82	84	76	64	64	64	54	46
21	44	46	64	A	26	26	30	45	81	96	101	98	94	91	97	86	68	76	59	52	52	39	38	39
22	41	20	26	26	27	27	20	33	60	76	87	101	70	79	103	116	108	112	97	62	36	35	32	28
23	29	32	41	19	18	20	20	30	66	82	92	80	70	79	79	85	66	62	59	41	51	61	41	32
24	30	32	37	37	28	28	27	30	60	80	82	72	77	88	88	109	H 80	72	70	55	44	50	46	40
25	27	27	29	31	27	19	20	31	69	65	72	82	102	104	108	97	92	88	90	67	Z 65	75	57	38
26	31	30	31	34	38	28	21	31	60	65	67	70	82	75	79	80	70	59	56	43	38	40	42	37
27	32	30	32	33	27	26	23	32	58	74	71	77	80	112	113	115	98	79	87	62	49	56	62	41
28	26	29	30	31	35	33	22	33	53	62	79	93	86	82	H 97	98	95	85	86	75	R 55	53	40	36
29	35	35	36	35	36	30	30	37	64	67	74	82	83	106	103	H 99	93	103	63	42	47	58	34	28
30	28	28	30	28	29	30	32	34	64	76	83	78	90	118	134	136	124	119	93	H 66	52	51	40	26
31	26	30	28	32	32	22	22	31	66	75	79	82	87	92	111	114	109	127	117	87	88	84	54	42
	00	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	30	31	30	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31
MED	30	31	33	32	36	26	23	33	63	71	79	79	83	92	99	95	86	84	70	55	51	50	40	33
U Q	33	35	36	35	38	28	26	35	66	76	83	90	94	104	108	115	109	104	87	66	56	60	48	38
L Q	27	29	30	31	29	23	22	31	60	66	72	74	78	82	80	80	72	68	58	44	44	41	36	28

JAN. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L		L	L	L	L	L	L							
2									236		L	L 436	L 472	L 448	L		L							
3										L	L	L 448	L 472	476	L 468	440	L							
4										L	L	L 440	L 472	L	L 456	L 440	L							
5										L	L	L 432	U L 460	U L 448	468	L 428	L							
6									L	L	L	L	U L 484	U L 472	L 456	U L 424	L							
7											U L 396	L 444	L 472	L	L	U L 428	L							
8										L	L	L 460	L 468	L	L 512	L	A							
9										L		L	L	U L 500	L	U L 464	L							
10										L	L	U L 480	U L 484	U L 460	L 456	L								
11									228	L	U L 444	L 448	U L 492	524	L 476	L	A							
12											L	L 472	L 500	L	U L 480	L								
13										L	L	L	U L 508	U L 472	U L 516	U L 428								
14											L	L 476	U L 468	L 500	U L 504	L 456								
15										L	L	L	U L 508	L 524	L 464	L 440	L							
16											L 420	468	L 484	L 480	U L 476	L 456	L							
17											U L 452	456	U L 504	L 472	L 472	452	L							
18										L	L	L	L 476	U L 496	472	L 440	L							
19									252	L	L	U L 476	L 468	U L 472	L 468	L	L	L						
20									248	L	L	L 448	A	A	A	A	L							
21										L	L	U L 464	L 468	U L 492	A	L	L							
22									252	L	L	L 464	U L 472	L 520		L	L	L						
23										L	L	456	L 444	L 472	L 452	L 440	L							
24										L	L	L	U L 512	U L 476	L	L	A	A						
25											L	L	L 480	L 476	L 476	L 444	L							
26											L	L	U L 480	L	L 472	L 456	L							
27										L	L	L 472	U L 476	L 484	U L 488	L 464	L							
28											L	L 468	U L 456	L 484	468	L 460	L 416							
29										L	U L 456	456	U L 472	L 496	L 492	L	U L 432							
30										U L 352	444	L 468	508	484	A	436	L 428							
31										L	U L 460	L 468	U L 480	U L 468	L 476	L 448	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									5	1	7	22	27	24	23	19	3							
MED									248	U L 352	U L 444	L 462	U L 476	L 478	L 472	L 440	L 428							
U Q									252		U L 456	L 468	U L 492	L 496	U L 480	L 456	U L 432							
L Q									232		L 420	L 448	L 468	U L 472	L 464	U L 436	L 416							

JAN. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	220	252	288	R 304	A	320	312	296	264	224	A					
2							J K 132	B	200	U R 288	332	316	344	328	316	300	272	A	A					
3							J K 124	B	200	260	300	320	A	324	324	308	A	228	B					
4								B	176	256	300	324	308	332	332	A	A	208	B					
5							J K 120	B	188	260	296	320	336	336	328	308	288	216	A					
6								B	192	256	308	316	U A 332	U A 308	328	308	272	224	A					
7								B	232	248	308	U A 320	A	344	A	308	U A 284	A	B					
8								B	188	252	300	A	A	A	328	312	A	224	B					
9								B	204	272	316	332	U A 332	A	A	320	288	212	B					
10								B	196	272	304	328	328	352	340	320	288	A	A					
11								B	180	272	312	A	A	A	340	A	A	A	A					
12							J K 128	B	212	276	304	A	344	A	A	A	280	216	B					
13								B	208	280	A	A	A	344	A	A	A	A	A					
14								B	A	260	308	320	A	A	A	316	284	A	A					
15								B	208	A	304	320	A	A	332	312	272	228	B					
16								B	220	284	336	A	A	A	A	A	A	A	A					
17								B	192	268	312	A	A	352	336	316	A	A	A					
18								B	208	268	312	328	A	A	A	316	284	A	A					
19								B	204	276	316	332	A	A	A	320	A	A	A					
20								B	216	272	308	328	328	A	A	A	A	A	A					
21								B	212	260	296	328	340	332	A	A	A	U A 252	A					
22								B	204	264	300	A	340	340	332	316	288	A	A					
23								B	204	272	300	316	312	332	284	312	272	228	A					
24								A	208	264	304	320	332	352	324	296	A	A	A					
25								A	244	252	300	324	328	316	336	A	A	236	A					
26								B	208	276	316	336	340	332	324	300	A	248	B					
27								B	188	276	312	336	348	348	352	332	284	236	A					
28								B	204	272	316	332	352	352	340	316	A	240	A					
29								B	184	272	312	332	328	340	332	A	300	252	A					
30								B	208	280	308	324	A	A	A	U A 316	304	244	A					
31								B	216	280	312	332	A	A	A	A	A	252	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		30	30	30	24	17	19	19	21	16	18						
MED							J K 126		204	272	308	324	332	336	332	312	284	228						
U Q							J K 130		212	276	312	332	342	348	336	316	288	244						
L Q							J K 122		192	260	300	320	328	328	324	308	272	224						

JAN. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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 16	J A 28	J A 29	J A 35	J A 38	J A 26	J A 22	J A 18	G	28	G	G	J A 40	G	G 22	34	J A 27	J A 41	J A 17	J A 28	J A 24	E B 13	J A 15	21
2	E B 13	E B 13	19	20	E B 13	E B 13	J K 13	J A 14	22	G	G	34	G	G	G 25	G	G	J A 44	J A 41	J A 38	J A 31	J A 34	J A 18	20
3	20	18	E B 13	E B 13	E B 13	J A 25	K 13	E B 14	G	30	35	34	J A 40	J A 34	G	J A 29	J A 39	G 19	J A 20	J A 18	J A 18	E B 13	E B 13	18
4	J A 41	J A 34	J A 17	19	19	J A 16	J A 20	E B 13	24	28	33	35	36	36	J A 39	J A 33	J A 43	26	J A 19	20	J A 15	E B 13	J A 20	19
5	E B 13	E B 13	18	E B 13	E B 13	E B 13	K 12	J A 20	G	30	34	34	36	36	35	33	G	J A 42	J A 21	J A 20	J A 18	E B 13	20	18
6	E B 13	J A 16	18	19	E B 13	E B 13	E B 13	E B 14	22	28	33	35	37	36	J A 44	G 20	G	G 19	J A 23	J A 19	J A 16	18	20	J A 20
7	J A 24	J A 16	E B 13	J A 16	18	18	19	E B 13	G 23	29	33	35	36	G 31	J A 41	G	32	23	J A 30	J A 26	J A 19	J A 25	20	J A 19
8	20	J A 43	J A 18	18	18	18	20	20	J A 41	G	J A 42	J A 40	J A 39	39	G 30	33	J A 56	G	E B 14	E B 14	E B 13	E B 13	E B 13	J A 20
9	18	18	18	E B 13	J A 30	J A 28	J A 18	E B 13	25	J A 50	J A 47	J A 41	40	J A 41	J A 38	G	J A 31	24	E B 14	J A 39	J A 22	J A 20	J A 14	J A 16
10	E B 13	E B 13	J A 19	E B 13	19	J A 17	E B 13	J A 18	23	G	33	35	J A 46	39	G	G	G	J A 66	J A 20	20	18	J A 19	E B 13	J A 16
11	J A 22	J A 21	J A 34	J A 27	J A 42	J A 20	19	J A 16	21	G	G	J A 44	J A 53	J A 58	J A 52	J A 59	J A 83	J A 72	J A 39	J A 41	J A 33	J A 31	J A 20	19
12	J A 16	18	20	18	J A 20	J A 17	K 13	E B 14	24	30	J A 47	J A 45	J A 40	J A 65	J A 91	J A 36	31	24	E B 14	J A 18	J A 16	18	19	20
13	J A 52	J A 50	J A 43	J A 43	J A 19	J A 22	J A 20	17	23	G	J A 40	J A 50	J A 55	J A 34	J A 55	J A 46	J A 46	J A 45	J A 43	J A 39	J A 26	J A 20	J A 32	J A 21
14	J A 37	J A 38	J A 34	J A 38	19	J A 16	J A 20	J A 27	J A 28	32	35	36	36	J A 38	J A 45	J A 39	31	J A 69	J A 39	J A 16	J A 43	J A 22	17	E B 13
15	E B 13	19	J A 19	J A 37	J A 32	J A 44	J A 29	J A 43	23	29	34	J A 54	J A 42	J A 45	G	34	G 24	28	E B 14	J A 31	J A 24	J A 25	J A 20	J A 21
16	J A 22	J A 18	J A 18	J A 19	J A 20	E B 13	J A 22	J A 15	G	31	G	J A 42	J A 55	J A 44	J A 52	J A 55	J A 63	J A 50	J A 76	J A 52	J A 40	J A 36	J A 35	J A 47
17	J A 28	J A 36	J A 20	J A 19	20	19	E B 13	E B 14	26	31	38	41	J A 50	J A 48	J A 44	J A 37	J A 42	J A 48	J A 46	J A 43	J A 51	J A 31	J A 22	J A 17
18	J A 41	J A 22	J A 18	J A 38	J A 26	J A 28	E B 13	E B 13	24	32	36	41	J A 46	J A 82	J A 60	J A 39	31	J A 26	J A 22	J A 31	J A 35	J A 19	E B 14	18
19	E B 13	J A 26	J A 18	J A 17	19	20	E B 13	J A 53	G	31	35	40	J A 44	J A 63	J A 58	J A 38	J A 36	J A 28	J A 34	J A 49	J A 20	J A 22	J A 36	J A 20
20	E B 13	E B 13	20	J A 20	J A 44	J A 45	J A 38	J A 19	J A 42	G	33	41	J A 55	J A 72	J A 120	J A 157	J A 62	J A 66	J A 79	J A 33	J A 44	J A 47	J A 27	J A 18
21	J A 19	J A 90	J A 52	J A 44	J A 23	J A 22	J A 16	J A 18	25	35	J A 47	J A 44	G	G	J A 94	J A 60	J A 44	J A 37	J A 21	J A 24	J A 26	J A 20	18	17
22	18	19	J A 26	J A 16	J A 18	E B 13	E B 14	J A 14	23	30	34	J A 34	38	46	41	34	G 27	J A 40	J A 28	J A 21	18	J A 23	20	19
23	E B 13	J A 18	E B 13	J A 25	J A 21	19	J A 17	J A 17	23	30	32	38	39	J A 39	35	36	30	G	J A 17	J A 20	J A 20	J A 19	18	E B 13
24	E B 13	E B 13	E B 13	J A 20	E B 13	J A 26	J A 22	J A 20	24	G	34	36	G	40	40	J A 43	J A 55	J A 41	J A 46	J A 56	J A 46	J A 48	J A 20	18
25	E B 13	19	E B 13	J A 40	J A 20	J A 24	J A 22	J A 35	J A 28	J A 32	35	37	41	J A 53	G 28	J A 38	J A 44	G	J A 19	J A 21	J A 21	J A 20	J A 16	J A 26
26	J A 20	J A 20	J A 52	J A 19	20	E B 13	J A 15	J A 18	26	31	35	41	41	42	J A 46	35	J A 43	J A 48	E B 15	J A 21	E B 13	J A 17	J A 28	E B 13
27	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	J A 25	J A 19	25	31	35	39	38	42	38	35	G	G	J A 20	J A 17	E B 13	J A 16	J A 17	J A 17
28	18	19	19	E B 13	E B 13	E B 13	E B 14	E B 14	24	32	38	40	39	39	39	35	34	26	J A 38	J A 22	J A 18	J A 27	J A 30	J A 38
29	J A 20	17	20	J A 18	J A 20	E B 13	E B 13	J A 16	25	30	G	G	38	G	G 28	J A 38	34	29	20	J A 20	18	J A 27	18	E B 13
30	19	J A 15	19	19	J A 22	J A 22	J A 18	E B 14	24	G	33	36	38	37	J A 76	38	J A 29	26	J A 32	J A 28	J A 22	20	E B 13	25
31	J A 20	J A 40	J A 34	J A 50	J A 43	J A 34	J A 32	J A 19	24	G	38	42	J A 51	J A 65	J A 44	J A 46	J A 37	A 50	E B 16	E B 14	J A 19	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	18	J A 19	J A 19	J A 19	J A 20	J A 19	J A 18	J A 17	24	30	34	39	40	39	J A 41	J A 36	J A 34	J A 29	J A 21	J A 22	20	J A 20	J A 19	19
U Q	J A 22	J A 28	J A 26	J A 35	J A 23	J A 25	J A 22	J A 19	25	31	J A 38	J A 41	J A 46	J A 48	J A 52	J A 39	J A 44	J A 48	J A 39	J A 38	J A 31	J A 27	J A 20	J A 20
L Q	E B 13	E B 16	E B 18	E B 16	E B 18	E B 13	E B 13	E B 14	G	G	G 33	35	37	G 36	G	G 33	G 27	G 24	E B 17	J A 20	18	E B 17	E B 15	E B 17

JAN. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	17	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	28	G	G	37	G	G 21	31	G 23	G 20	15	18	E B 13	E B 13	E B 13	E B 13
2	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	22	G	G	34	G	G	G 22	G	G	22	21	18	18	E B 13	E B 13	E B 13	E B 13
3	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	K 13	E B 14	G	30	34	34	37	G 29	G	G 22	28	G 16	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
4	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	28	32	35	36	36	G 23	31	28	26	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
5	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	K 12	E B 13	G	30	34	34	36	36	35	32	G	G 16	15	E B 13	E B 13	E B 13	E B 13	E B 13
6	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	21	28	32	34	36	36	G 25	G 17	G	G 18	17	E B 13	E B 13	E B 13	E B 13	E B 13
7	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G 23	29	32	35	36	G 24	36	G	30	22	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
8	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 12	G	32	37	35	39	G 28	32	42	G	E B 14	E B 14	E B 13	E B 13	E B 13	E B 13
9	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	25	G 19	34	39	38	37	35	G	G 20	23	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
10	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	23	G	32	35	38	38	G	G	G	22	19	E B 13	E B 13	E B 13	E B 13	E B 13
11	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	21	G	G	35	41	42	G 30	32	60	30	24	E B 13	16	20	E B 13	E B 13
12	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	K 13	E B 14	24	30	G 26	40	36	41	40	33	30	23	E B 14	E B 13	E B 13	E B 13	E B 13	E B 13
13	E B 13	E B 13	22	17	E B 13	E B 13	E B 13	E B 14	22	G	33	36	37	G 28	36	32	38	28	20	20	16	E B 13	28	E B 13
14	23	20	16	E B 13	E B 13	E B 13	E B 13	E B 14	24	31	35	36	36	37	36	G 24	31	42	18	E B 13	E B 13	E B 13	E B 13	E B 13
15	E B 13	E B 13	E B 13	E B 13	E B 13	20	E B 13	E B 13	23	29	34	43	36	36	G	33	G 20	27	E B 14	22	E B 13	18	E B 13	17
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	G	31	G	38	45	36	36	39	33	26	52	36	21	18	E B 13	22
17	17	17	E B 13	E B 14	E B 13	E B 13	E B 13	E B 14	25	31	36	39	36	38	G 28	G 24	31	29	38	22	26	20	20	E B 13
18	E B 13	E B 13	E B 13	E B 13	19	E B 13	E B 13	E B 13	24	31	35	39	36	44	38	G 27	30	24	18	20	22	17	E B 14	E B 13
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	30	33	38	37	38	34	G 27	31	24	23	39	18	17	E B 13	E B 13
20	E B 13	E B 13	E B 13	E B 13	20	A A 45	18	E B 14	G 15	G	32	39	52	46	47	A A 157	32	34	18	22	30	24	22	E B 13
21	E B 13	28	28	A A 44	14	15	E B 13	E B 13	24	29	38	40	G	G	75	33	30	27	17	E B 13	E B 13	16	E B 13	E B 13
22	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 14	23	30	33	33	36	45	41	33	G 26	25	20	E B 13	E B 13	22	E B 13	E B 13
23	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	23	30	32	37	38	36	35	34	29	G	16	E B 14	E B 13	E B 13	E B 13	E B 13
24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	24	G	34	36	G	40	38	41	46	39	31	21	20	35	E B 13	E B 13
25	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	16	G 19	G 20	34	37	40	38	G 21	33	29	G	17	16	E B 13	E B 13	E B 13	E B 13
26	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	26	30	34	40	39	40	40	34	30	26	E B 15	16	E B 13	E B 13	E B 13	E B 13
27	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	30	34	37	36	38	38	35	G	G	17	E B 13	E B 13	E B 13	E B 13	E B 13
28	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	32	36	39	38	38	38	35	34	26	33	E B 13	E B 13	18	E B 13	19
29	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	25	30	G	G	36	G	G 27	35	33	28	17	17	E B 13	E B 13	E B 13	E B 13
30	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	G	32	36	37	36	71	37	G 20	26	18	17	E B 13	E B 13	E B 13	E B 13
31	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	E B 13	24	G	34	39	38	43	36	35	30	G 16	E B 16	E B 14	E B 13	E B 13	E B 13	E B 13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	23	29	33	37	36	37	35	32	30	24	17	E B 14	E B 13	E B 13	E B 13	E B 13
U Q	E B 13	13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	30	34	39	38	40	38	35	32	27	20	20	16	18	E B 13	E B 13
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	23	G	G 32	35	36	G 36	G 28	G	G	G	E B 15	E B 13	E B 13	E B 13	E B 13	E B 13

JAN. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	267	300	269	318	334	294	339	306	300	386	366	307	334	337	327	329	325	350	341	317	275	325	338	316
2	300	283	278	V 295	348	414	268	323	R 380	373	352	347	V 332	328	334	326	325	360	365	324	321	348	335	312
3	284	301	310	V 293	367	348	305	327	360	366	351	351	327	333	R 298	332	325	339	352	314	328	312	337	284
4	286	313	352	303	321	315	307	325	369	372	368	343	365	327	343	356	360	349	370	361	329	349	332	288
5	293	304	301	324	351	357	309	319	354	355	350	368	352	338	339	351	353	362	349	344	323	341	361	348
6	298	309	299	293	353	349	291	321	362	378	371	361	322	335	335	353	342	350	334	356	303	321	307	345
7	292	306	307	289	353	304	295	325	368	380	359	362	356	361	344	352	359	355	363	327	319	353	359	280
8	289	288	298	302	374	302	287	314	368	378	344	351	323	337	321	327	346	366	354	361	294	305	327	296
9	281	293	347	317	367	285	289	321	370	367	358	362	345	331	361	333	343	365	347	316	309	339	309	287
10	289	315	332	314	383	317	300	304	350	357	360	337	338	328	330	333	343	356	353	371	283	311	334	327
11	298	301	315	296	329	346	312	325	355	349	359	360	329	298	307	325	325	363	363	325	310	336	308	297
12	282	290	307	294	V 304	365	273	325	364	342	324	342	344	342	334	345	346	348	358	326	327	329	313	297
13	F 276	F 309	F 319	F 316	F 390	F 425	F 285	315	363	349	349	318	318	324	R 311	313	305	334	325	381	289	331	310	262
14	272	264	301	354	397	361	290	322	368	346	342	333	337	309	320	335	333	357	345	344	368	284	332	303
15	276	273	F 297	334	380	F 285	284	325	357	338	346	337	327	323	R 333	333	326	350	370	287	325	322	264	314
16	298	308	298	327	384	301	299	334	369	352	360	362	334	339	326	310	323	330	316	344	311	325	331	303
17	292	288	310	310	343	391	297	338	369	377	362	375	319	354	330	367	321	342	348	328	312	334	F 324	278
18	281	277	297	310	354	390	303	315	363	369	359	342	347	316	320	339	302	336	361	310	278	341	352	315
19	F 295	F 296	F 292	F 309	312	309	322	312	357	352	358	340	352	327	315	299	321	323	V 337	315	280	331	327	340
20	297	295	304	350	356	A	292	322	344	347	346	360	356	325	337	A	329	334	326	343	293	309	326	286
21	279	289	349	A	291	275	290	321	347	339	343	334	322	332	326	344	338	339	355	290	338	294	298	297
22	354	309	286	282	287	352	317	332	343	345	362	361	362	306	313	295	312	307	335	299	287	322	316	285
23	274	300	376	339	301	265	293	315	353	367	374	379	347	330	334	368	342	354	357	317	299	325	329	312
24	292	290	335	370	347	296	349	318	333	356	358	343	319	319	306	350	H 334	346	344	357	284	326	330	354
25	309	291	313	342	362	297	272	324	380	361	345	335	335	334	334	315	332	309	354	344	Z 272	307	371	306
26	306	288	305	319	362	382	327	321	374	362	361	350	337	348	342	355	365	382	357	346	298	302	325	359
27	317	284	303	334	325	321	313	340	359	360	351	350	318	334	334	324	281	333	356	343	275	322	348	365
28	279	286	288	309	335	375	316	337	368	338	355	340	338	318	H 315	327	341	319	353	329	R 273	252	333	293
29	272	312	328	323	346	330	297	329	371	353	338	344	306	333	321	H 279	326	364	366	353	295	351	320	336
30	298	304	304	301	314	315	353	332	353	359	368	351	309	318	335	331	331	335	343	H 330	257	339	308	263
31	288	310	331	326	360	327	284	315	359	360	351	352	320	318	325	308	320	325	341	336	249	317	335	309
	00	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	30	31	30	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31
MED	289	296	305	315	351	324	297	322	362	359	358	350	334	330	330	332	331	348	353	330	298	325	329	303
U Q	298	308	328	327	367	361	313	327	369	369	361	361	347	337	335	350	343	357	358	346	321	339	335	327
L Q	279	288	298	301	325	301	289	315	353	349	346	340	322	319	320	324	323	334	341	317	280	311	313	287

JAN. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L		L	L	L	L	L	L							
2									463		L	L 415	L	L 381	L 383	L	L							
3										L	L	L 403	L 393	377	L 366	376	L							
4										L	L	L 407	L 382	L	L 381	L 387	L							
5										L	L	L 404	U L 393	U L 395	377	L 394	L							
6									L	L	L	L	U L 370	U L 366	L 383	U L 396	L							
7											U L 411	L 401	L 375	L	L	U L 388	L							
8										L	L	L 395	L 424	L	L 381	L	A							
9										L		L	L	U L 376	L	U L 360	L							
10										L	L	U L 387	U L 383	U L 392	L 411	L								
11									416	L	U L 386	L 410	U L 364	364	L 374	L	A							
12											L	L 375	L 363	L	U L 379	L								
13										L	L	L	U L 357	U L 391	U L 359	U L 386								
14											L	L 374	U L 391	L 367	U L 358	L 376								
15										L	L	L	U L 361	L 365	L 377	L 390	L							
16											L 392	391	A 359	L 405	U L 385	L 381	L							
17											U L 388	398	U L 402	L 377	L 390	386	L							
18										L	L	L	L 393	U L 363	405	L 396	L							
19									414	L	L	U L 386	L 379	U L 395	L 388	L	L	L						
20									439	L	L	L 399	A	A	A	A	L							
21										L	L	U L 386	L 377	U L 377	A	L	L							
22									441	L	L	L 384	U L 393	L 342		L	L	L						
23										L	L	399	L 416	L 407	L 384	L 384	L							
24										L	L	L	U L 369	U L 372	L	L	A	A						
25											L	L	L 372	L 388	L 379	L 382	L							
26											L	L	U L 390	L	L 379	L 380	L							
27										L	L	L 388	U L 392	L 375	U L 367	L 390	L							
28											L	L 386	U L 420	L 389	375	L 374	L 382							
29										L	U L 380	402	U L 390	L 368	L 375	L	U L 370							
30										U L 406	392	L 389	363	388	A	393	L 378							
31										L	U L 382	L 387	U L 393	U L 396	L 370	L 383	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									5	1	7	22	27	24	23	19	3							
MED									439	U L 406	U L 388	L 393	U L 383	L 377	L 379	L 386	L 378							
U Q									452		L 392	L 402	U L 393	U L 392	L 384	L 390	L 382							
L Q									415		U L 382	L 386	U L 369	L 368	L 374	L 380	U L 370							

JAN. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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										222		250	258	260	262	236	238							
2									212		240	236	238	272	246	250	234							
3										230	240	242	252	268	262	254	228							
4										224	232	242	242	258L	260	240	232							
5										240	242	228	256	248	270	242	228							
6									222	224	228	240	300	260	252	236	228							
7											238	236	248	238	242	244	236							
8										216	238	244	262	252	268	226	242							
9										226		232	250	264	240	280	246							
10										234	238	254	264	256	232	240								
11									230	238	236	230	268	278	254	248	252							
12											264	252	250	230	270	248								
13										230	246	266	274	260	264	234								
14											246	262	240	286	270	240								
15										256	242	254	274	266	248	236	234							
16											240	238	274	248	254	242	234							
17											248	230	278	232	264	230	232							
18										234	240	256	246	266	272	218	238							
19									230	244	240	254	246	256	246	252	260	256						
20									228	246	248	240	248	254	256	A	248							
21										250	248	254	262	260	290	240	246							
22									224	236	238	240	232	328		252	250	238						
23										230	230	222	238	280	260	234	238							
24										248	234	246	298	276	266	244	224	240						
25											238	262	262	250	250	252	254							
26											238	254	270	250	260	246	222							
27										230	242	250	252	260	252	232	240							
28											238	246	256	262	256	262	238							
29										244	254	252	280	260	270	244	274							
30										240	228	252	290	278	242	246	244							
31										240	248	248	252	246	260	242	240	230						
	00	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	22	29	31	31	31	30	30	27	4						
MED									226	235	240	246	256	260	260	242	238	239						
U Q									230	244	246	254	274	268	266	248	246	248						
L Q									222	230	238	238	248	250	250	236	232	234						

JAN. 2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	346	248	204	236	224	296	230	276	252	220	224	H 204	240	216	202	214	216	226	200	220	210	238	210	248
2	234	276	292	288	230	192	352	254	178	226	226	202	222	184	222	206	220	220	194	212	226	210	226	260
3	302	278	268	262	212	E B 228	282	246	238	222	228	210	214	182	188	190	220	208	198	182	212	202	202	250
4	290	278	226	230	252	222	246	258	224	218	204	204	192	198	H 178	208	H 200	222	198	186	234	196	222	302
5	320	272	258	238	222	208	282	248	226	222	214	190	H 176	202	198	204	220	220	202	198	224	218	214	222
6	252	278	276	276	224	210	296	244	180	H 202	214	H 184	H 174	198	210	182	206	216	214	204	194	202	234	214
7	280	266	258	314	224	238	294	244	222	220	194	200	204	210	210	206	226	224	210	210	206	208	200	264
8	286	314	276	264	198	262	294	246	208	H 180	202	198	186	218	202	204	A	222	198	186	226	202	224	270
9	298	252	228	244	208	280	302	248	220	220	220	210	202	192	210	188	224	208	204	190	222	212	216	268
10	280	238	226	238	206	254	302	268	226	216	208	192	180	208	204	190	210	216	202	198	218	222	210	222
11	258	258	266	278	240	230	274	246	220	212	202	206	A 236	214	178	202	A	222	198	190	208	214	216	248
12	296	266	246	276	240	200	334	254	222	224	220	A 236	192	A 224	226	202	220	220	208	210	218	216	240	252
13	Q 320	Q 264	Q 272	260	Q 212	Q 202	Q 312	252	212	212	202	206	210	202	202	190	234	234	196	192	208	218	E A 268	260
14	A 366	A 346	280	232	198	232	322	238	212	224	222	216	186	184	190	216	224	222	202	202	214	230	212	260
15	318	Q 330	Q 280	244	214	E A 358	328	256	230	216	224	E A 252	198	190	186	206	200	220	196	E A 238	228	212	234	A 248
16	258	292	276	248	204	270	280	206	216	222	204	214	A	208	186	E A 232	220	212	A 232	218	202	222	234	E A 262
17	280	288	270	264	232	196	272	250	228	214	214	206	182	212	H 172	216	202	236	212	218	234	224	222	234
18	300	316	280	258	230	198	300	248	228	228	220	228	196	E A 246	186	186	214	216	204	202	A 248	224	198	232
19	Q 276	Q 276	Q 276	Q 256	248	258	254	252	210	216	216	204	194	200	188	174	226	246	208	222	230	210	216	212
20	268	274	272	216	A 230	A	E A 326	262	200	218	212	208	A	A	A	A	218	242	222	218	E A 262	246	242	292
21	290	A 326	238	A	A 306	A 330	300	252	246	238	230	218	H 196	200	A	226	216	248	210	246	208	222	264	264
22	208	296	310	306	300	214	296	248	204	222	218	204	196	282	266	206	206	232	216	182	244	E A 258	240	298
23	316	284	210	248	332	392	340	256	236	224	H 194	212	192	180	194	210	202	220	216	198	254	220	200	254
24	264	292	240	216	220	256	234	268	226	214	224	212	198	220	222	A	A	A	220	204	E A 266	A 266	222	212
25	246	292	264	234	216	E B 318	E B 370	264	212	218	208	212	234	212	204	196	200	218	218	188	248	228	206	246
26	264	302	280	258	214	198	254	250	218	222	216	216	194	222	224	206	208	216	210	194	228	244	238	214
27	248	290	264	234	208	246	264	240	216	222	216	208	196	200	246	210	202	232	218	194	208	232	218	200
28	296	308	310	264	232	210	E B 228	218	204	212	224	210	186	212	226	210	206	216	216	184	212	214	226	A 278
29	308	264	246	248	232	236	248	254	226	222	208	208	184	190	190	206	214	224	204	194	274	216	208	224
30	284	290	284	288	272	268	218	236	230	196	206	194	H 194	H 182	A	222	226	232	198	188	234	208	198	334
31	322	270	232	244	214	276	330	260	230	218	216	206	202	E A 226	200	210	208	218	202	194	236	210	210	228
	00	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	30	31	30	31	31	31	31	31	31	29	30	28	29	28	30	31	31	31	31	31	31
MED	286	278	268	252	224	234	288	250	222	220	216	207	196	203	202	206	215	221	204	198	224	217	217	249
U Q	308	296	280	264	240	270	322	256	228	222	222	212	203	216	216	210	220	232	216	212	236	228	234	264
L Q	264	266	240	238	212	210	254	246	212	214	206	204	186	192	188	193	206	216	198	190	210	210	210	224

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	114	106	104	104	A	102	108	106	116	E A 160	A					
2							B	B	118	110	110	110	110	110	110	110	112	A	A					
3							B	B	112	108	108	112	A	112	110	110	A	110	B					
4								B	110	108	106	110	108	108	110	A	A	112	B					
5							B	B	108	108	108	108	A	112	112	112	112	112	A					
6								B	120	106	106	106	110	110	114	110	110	116	A					
7								B	112	106	A	110	A	108	A	110	110	A	B					
8								B	112	108	106	A	A	A	122	110	A	114	B					
9								B	114	108	108	112	112	A	A	108	112	114	B					
10								B	110	108	108	112	108	108	108	108	108	A	A					
11								B	108	106	106	A	A	A	132	A	A	A	A					
12							B	B	132	130	122	A	110	A	A	A	112	112	B					
13								B	130	108	A	A	A	112	A	A	A	A	A					
14								B	A	108	110	110	A	A	A	114	114	A	A					
15								B	136	A	108	108	A	A	108	108	110	114	B					
16								B	114	110	110	A	A	A	A	A	A	A	A					
17								B	110	110	A	A	A	118	118	112	A	A	A					
18								B	112	110	110	110	A	A	A	A	112	A	A					
19								B	112	110	110	110	A	A	A	A	A	A	A					
20								B	112	108	106	106	108	A	A	A	A	A	A					
21								B	114	110	108	108	108	106	A	A	A	118	A					
22								B	108	A	118	A	114	112	112	110	116	A	A					
23								B	112	108	A	108	108	106	106	112	110	112	A					
24								A	112	108	108	112	108	108	108	108	A	A	A					
25								A	A 148	108	110	A	A	110	114	A	A	112	A					
26								B	118	112	106	106	110	110	110	110	A	A	B					
27								B	110	110	106	A	104	108	108	108	108	112	A					
28								B	112	110	108	108	108	108	108	108	A	112	A					
29								B	112	112	108	108	108	106	112	A	112	126	A					
30								B	112	108	108	108	A	A	A	108	114	114	A					
31								B	136	108	A	112	A	A	A	A	A	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									30	29	26	22	15	19	19	19	16	17						
MED									112	108	108	109	108	108	110	110	112	112						
U Q									118	110	110	110	110	112	114	110	113	115						
L Q									112	108	106	108	108	108	108	108	110	112						

JAN. 2016 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	104	100	100	100	100	96	100	122	G	178	G	G	96	G	94	106	96	92	88	106	102	B	92	92
2	B	B	98	100	B	B	B	160	162	G	G	108	G	G	102	G	G	94	94	92	92	92	92	88
3	90	94	B	B	B	108	B	B	G	160	138	140	104	98	G	96	92	96	94	94	94	B	B	112
4	126	94	94	100	100	100	92	B	148	162	164	146	158	168	96	112	94	158	100	94	110	B	102	114
5	B	B	104	B	B	B	B	96	G	176	160	158	154	158	162	148	G	92	92	92	108	B	104	102
6	B	102	102	98	B	B	B	B	166	160	170	128	114	172	108	98	G	94	94	92	106	106	106	106
7	108	116	B	94	98	98	94	B	146	154	154	122	112	104	102	G	110	112	136	104	104	104	104	104
8	102	102	102	96	96	100	102	102	94	G	128	110	110	160	102	152	96	G	B	B	B	B	B	96
9	96	92	92	B	106	100	100	B	152	98	108	114	110	108	108	G	102	140	B	122	94	90	90	94
10	B	B	96	B	88	96	B	92	174	G	158	136	112	164	G	G	G	100	96	96	114	94	B	116
11	94	92	90	100	100	98	98	98	124	G	G	110	106	104	106	100	94	94	94	94	94	94	92	92
12	92	92	88	88	102	100	B	B	196	182	100	112	116	102	108	114	142	152	B	104	106	106	112	96
13	114	106	104	104	106	106	100	102	190	G	120	110	104	104	104	98	96	94	92	92	92	92	96	96
14	98	106	102	102	102	96	138	102	94	176	142	132	112	106	104	104	188	102	102	108	108	96	96	B
15	B	94	104	104	110	100	100	92	172	104	122	108	108	112	G	180	98	180	B	108	98	98	98	90
16	90	96	96	100	100	B	100	98	G	176	G	110	110	110	106	104	100	100	96	96	96	96	100	100
17	98	96	96	94	94	94	B	B	150	162	134	106	102	124	102	100	96	112	94	94	92	92	90	92
18	114	114	106	100	100	100	B	B	164	162	138	120	108	102	104	98	166	92	96	96	90	90	B	128
19	B	112	104	100	100	100	B	92	G	186	130	112	110	108	104	98	98	96	94	94	102	102	98	98
20	B	B	98	94	98	98	98	98	100	G	142	116	108	108	104	98	102	102	100	100	96	104	102	100
21	114	114	100	100	100	98	98	126	128	118	120	116	G	G	110	106	104	102	102	100	100	100	96	96
22	96	98	98	102	102	B	B	B	166	168	166	110	140	198	162	142	104	112	94	110	92	112	96	106
23	B	102	B	96	96	154	96	96	166	150	130	114	110	110	170	126	136	G	96	104	102	102	96	B
24	B	B	B	102	B	102	100	102	182	G	182	174	G	166	110	110	106	104	104	110	104	104	96	92
25	B	94	B	98	100	104	102	96	100	100	148	132	120	112	100	112	116	G	94	94	92	92	92	92
26	88	88	88	88	86	B	104	100	158	162	138	128	116	114	114	110	110	106	B	106	B	106	104	B
27	B	B	B	B	B	B	96	96	166	176	160	138	140	114	174	184	G	G	96	92	B	100	94	92
28	92	90	90	B	B	B	B	B	160	168	154	142	148	132	178	160	112	156	94	94	98	94	112	92
29	92	96	100	100	94	B	B	98	160	176	G	G	110	G	100	96	170	142	128	116	92	92	90	B
30	98	98	94	94	94	94	92	B	164	G	158	112	106	106	102	172	94	154	94	104	104	100	B	92
31	92	104	112	106	102	100	100	100	170	G	120	114	112	102	104	108	108	92	B	B	100	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	25	25	25	24	22	19	20	26	22	26	29	28	27	28	27	26	27	25	29	28	25	25	26
MED	97	98	98	100	100	100	100	98	161	162	140	116	110	110	104	108	103	102	94	96	99	98	96	96
U Q	106	105	103	101	102	100	100	102	166	176	158	134	116	158	110	142	112	140	100	106	104	104	103	104
L Q	92	94	94	95	96	98	96	96	146	154	128	110	108	104	102	98	96	94	94	94	93	92	92	92

IONOSPHERIC DATA STATION Okinawa

JAN. 2016 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	F1	F3	FQ21	FQ31	FQ31	F3	F3	CL22		H1			LH11		L1	CL11	L1	L2	L1	F4	FQ11		F1	F1
2			F1	F1			K1	H1	H1			C1			L1			LQ21	LQ31	FQ31	FQ31	FQ31	FQ11	F1
3	F1	F1				F1	K1			H1	H2	HC11	L1	L1		L2	L2	L2	L1	F1	F1			F1
4	F1	FQ21	F1	F1	F1	F1	F1		HC11	H1	H1	HL11	HCL11	HL11	L1	CL11	LC11	H1	L1	F1	F1		F2	F1
5			F1				K1	L1		H1	H1	H1	HC11	HL11	HL11	H1		L1	L1	F1	F1		F1	F1
6		F2	F1	F1					H1	H1	H1	C1	CL11	HC11	CL11	L1		L1	L2	F1	F1	F1	F1	F1
7	FF21	F1		F1	F1	F1	F1		H1	H1	HL11	CL11	CL11	L1	L2		C1	C1	HC11	F1	F1	F3	F1	F2
8	F1	F3	F1	F1	F1	F1	F1	L1	LH11		C1	C1	C1	HC11	L1	HL11	L3							F1
9	F1	F1	F1		F1	FQ21	F2		H2	LH11	CQ11	C1	C1	C1	C1		L1	H2		FF11	F1	F2	F1	F1
10			F1		F1	F1		L1	H1		HC11	HL11	CL11	H1				L2	L1	F1	F1	F1		F1
11	F2	FF22	F2	F2	F3	F2	F1	L1	C1			CQ11	CQ21	L2	L1	LQ21	LQ51	LQ41	LQ51	FQ31	FQ41	F3	F2	F1
12	F1	F1	F1	F1	F2	F1	K1		HL11	HL11	LH11	CL21	CL11	L3	C2	C1	H1	H1		F1	F1	F1	F1	F1
13	FQ21	FQ21	FQ31	FFQ21	FQ11	FQ11	FQ21	L1	HL11		CL11	CQ11	L2	L1	L2	LQ21	LQ31	L3	L3	FQ31	FQ21	FQ11	F4	F1
14	FQ31	FF23	FQ31	FQ31	F1	F2	FF11	LQ21	LH21	HH11	H1	H1	C1	C1	L1	L1	HL11	L2	L2	F1	FQ21	F2	F1	
15		F1	F2	F3	FQ21	F6	FQ51	L2	HL11	L1	C1	C2	C1	C1		H1	L1	H1		FQ61	F2	F2	F1	F2
16	F2	F1	F1	FF11	F3		F2	L2		H1		C1	C2	C1	L1	LQ31	LQ21	LQ31	LQ81	FQ71	FQ41	FQ41	FQ31	FQ31
17	F4	FQ21	FQ11	F1	F1	F1			H2	H1	HL11	C2	L2	CLH11	L1	LH11	L2	CL13	L7	F7	F6	F4	F2	F1
18	FF11	FF11	F1	F2	F3	FQ11			H1	HL11	H1	C1	C1	L3	L2	L1	HL11	L2	L1	F2	F2	F1		F1
19		F1	F1	F1	F1	F1		L1		H1	H1	C1	C1	C2	LQ11	LQ21	L3	L4	L6	FQ41	F2	F1	F3	F3
20			F2	F3	FQ51	FQ31	FQ21	L1	L1		H1	C1	C2	C3	LQ41	LQ61	LQ31	LQ31	LQ31	F5	F4	FF12	F2	F2
21	F2	FF28	FQ71	FQ61	F5	FQ51	FQ21	C1	C2	C1	C2	C1			C6	LQ21	LQ21	L2	L2	F3	F2	F1	F1	F1
22	FF11	F1	FQ41	F1	F1			C1	H1	HC11	HL11	C1	H1	H1	H1	HL11	L1	CH11	L3	FF11	F1	FF51	F1	F1
23		F1		F2	F2	F1	F2	L1	H1	H1	HL11	C1	C1	CH11	HL11	CL11	H1		L1	F1	F1	F2	F1	
24				F3		F3	FQ21	L1	H1		H1	HL12		H1	C1	C2	C5	L6	L5	FQ31	FF32	F5	F1	F1
25		F1		F3	FQ11	FQ11	FQ31	L3	L2	LH21	H1	H1	CL11	CL11	L1	C1	CQ11		L1	FQ11	F2	F2	F2	F2
26	F2	FQ41	F1	F1	F1		F1	L1	H1	H1	H1	C1	C1	C1	C1	C1	CQ11	C1		F2		F1	F2	
27							FQ21	LQ11	H1	H1	H1	HL11	H1	C1	HC11	H1			L1	F1		F1	F1	F1
28	F1	F1	F1						H1	H1	H1	H1	H1	H1	HC11	HC11	C1	H1	L4	F1	F1	FF21	F2	FQ41
29	FQ21	F1	F2	FF31	FF11			L2	H1	H1			C1		L1	L3	HL11	HL11	CL11	FF11	F1	F1	F1	
30	F1	F2	F1	F1	FQ11	FQ11	F1		H1		H1	C1	C1	C1	L4	HC11	L2	HL11	L2	F5	FF22	F1		F2
31	F1	FQ21	FQ11	FQ31	FQ21	FQ21	FQ31	LQ21	HL12		CL11	C2	C1	L2	L2	C1	C1	L1			F1			
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

JAN. 2016 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

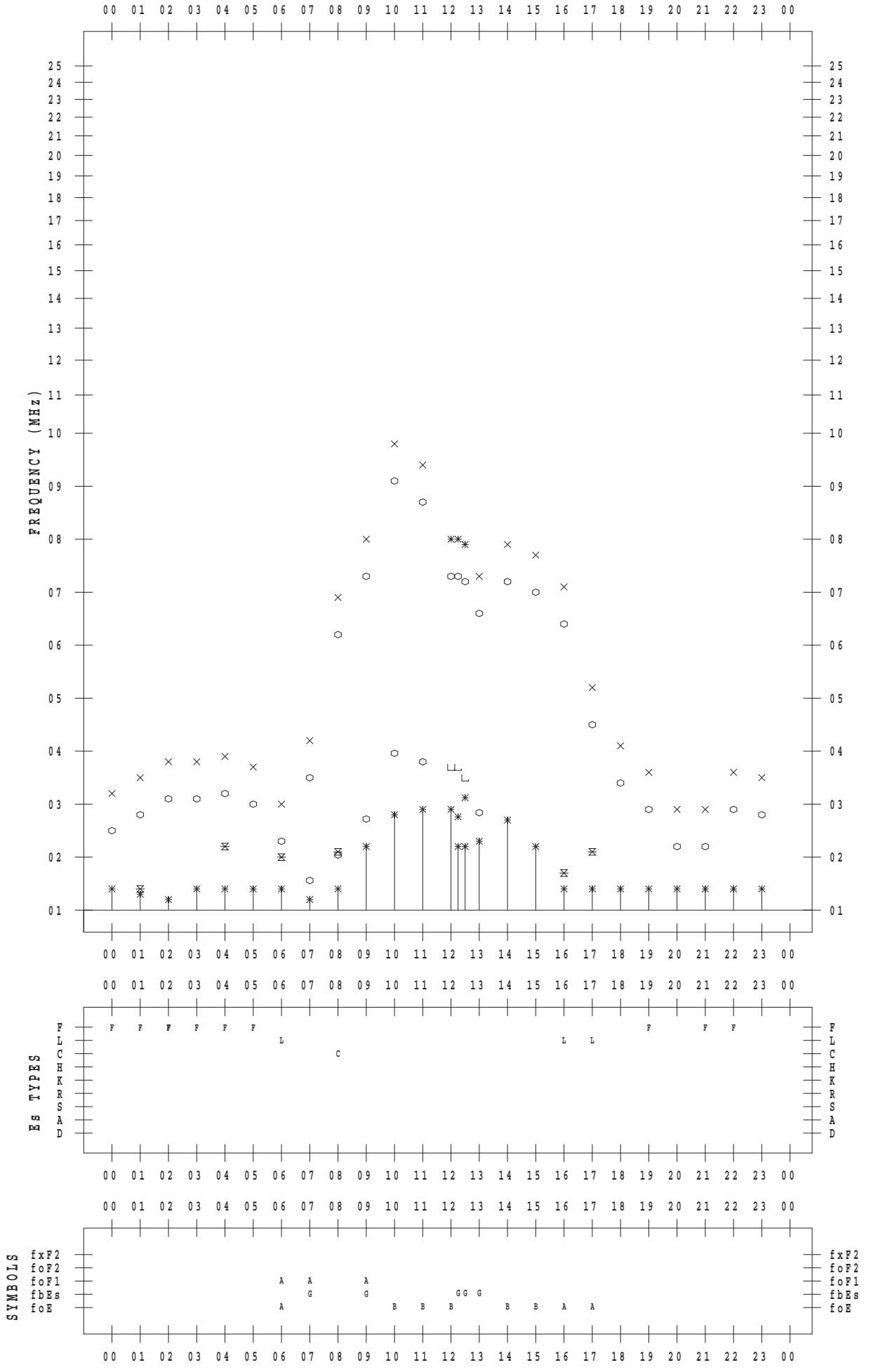
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 1

135 °E MEAN TIME



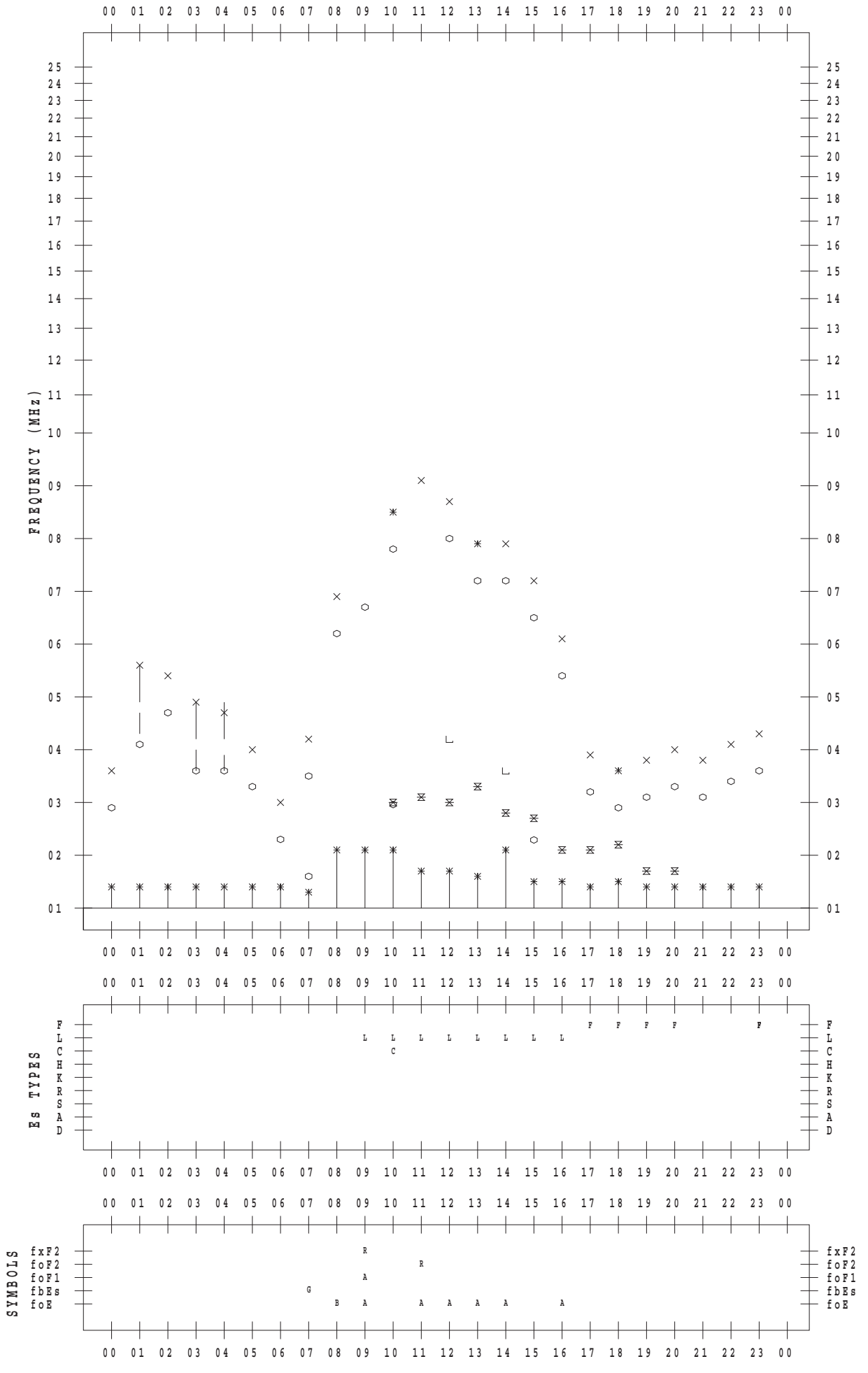
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 2

135 °E MEAN TIME



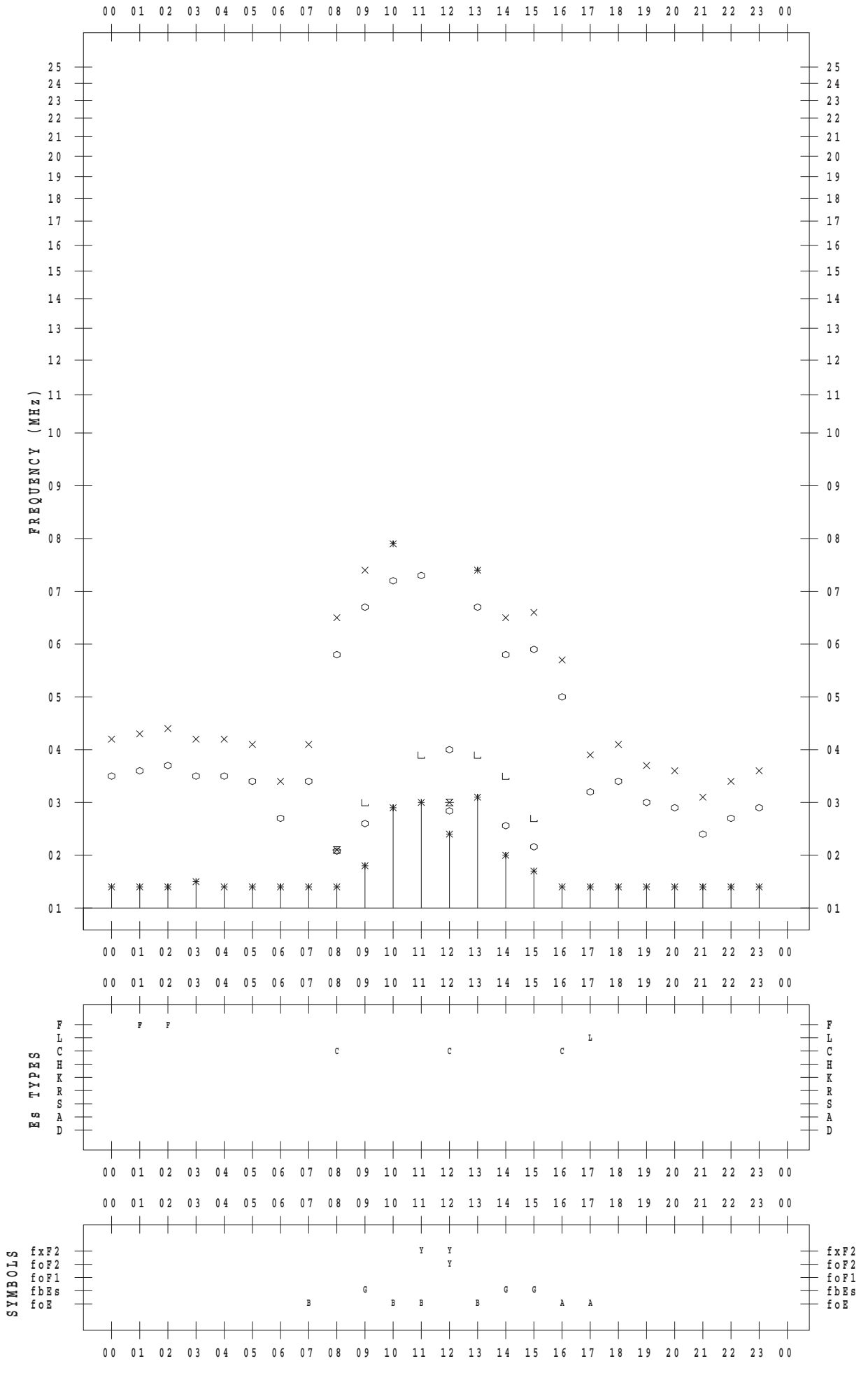
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 3

135 °E MEAN TIME



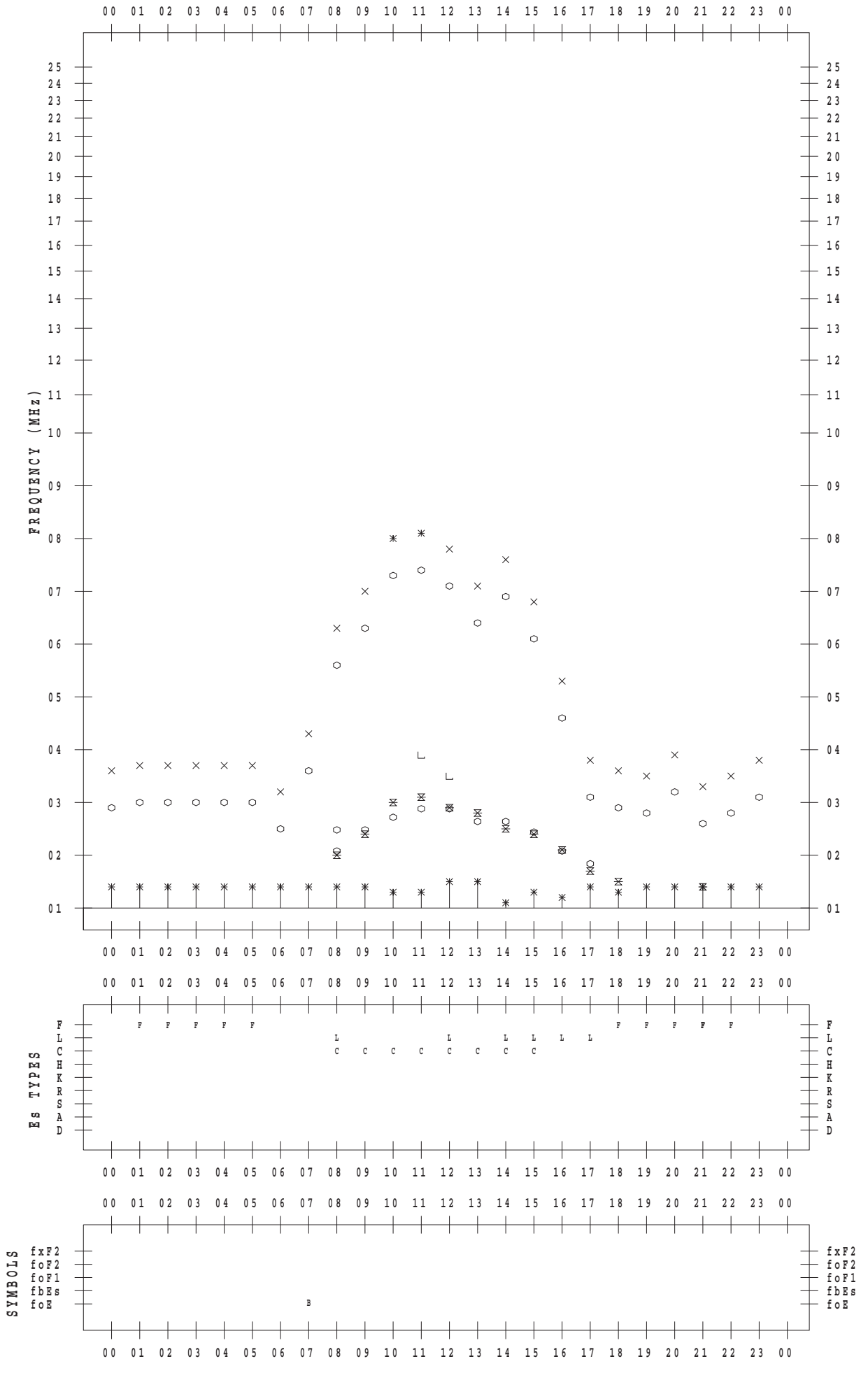
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 4

135 °E MEAN TIME



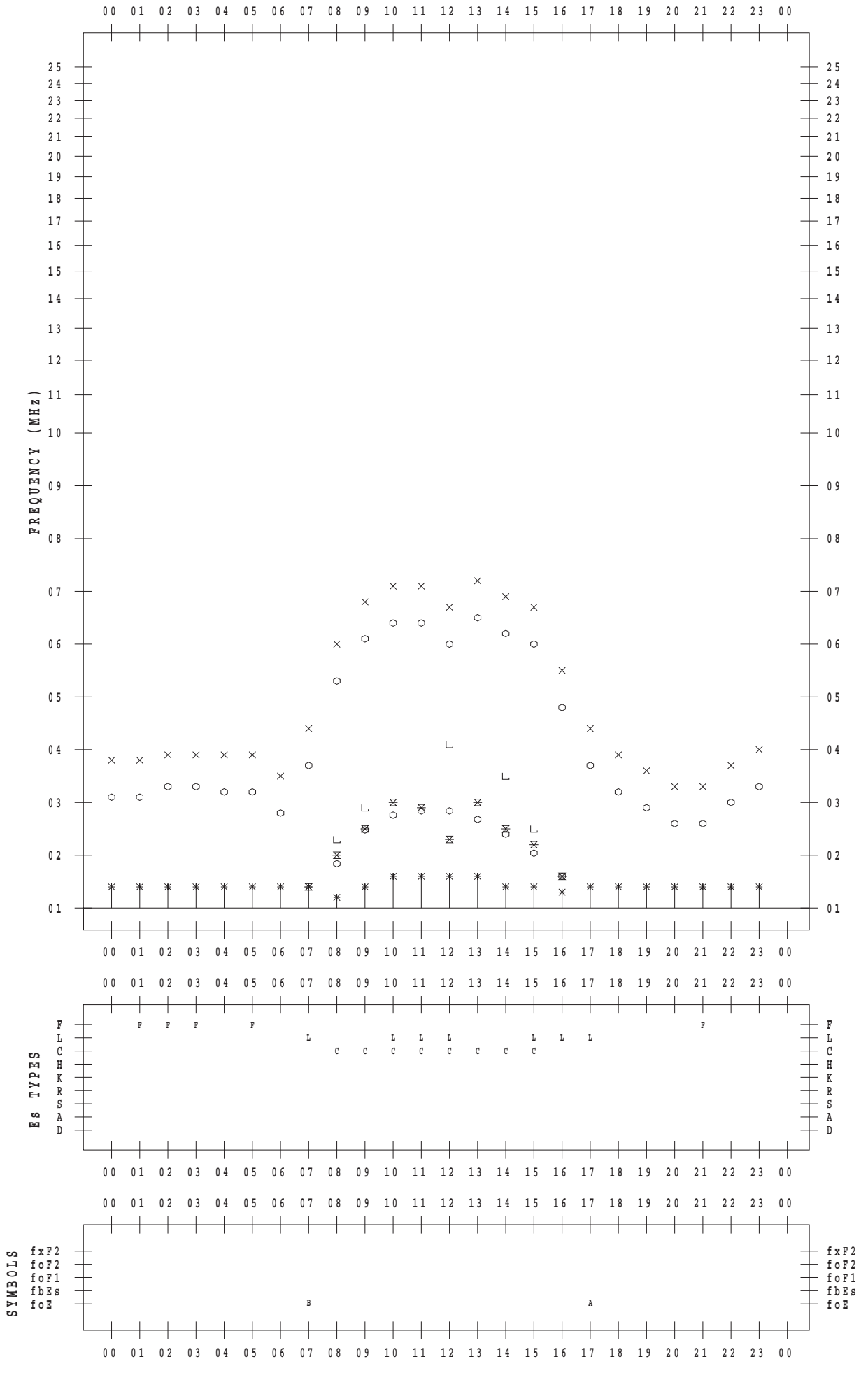
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 5

135 °E MEAN TIME



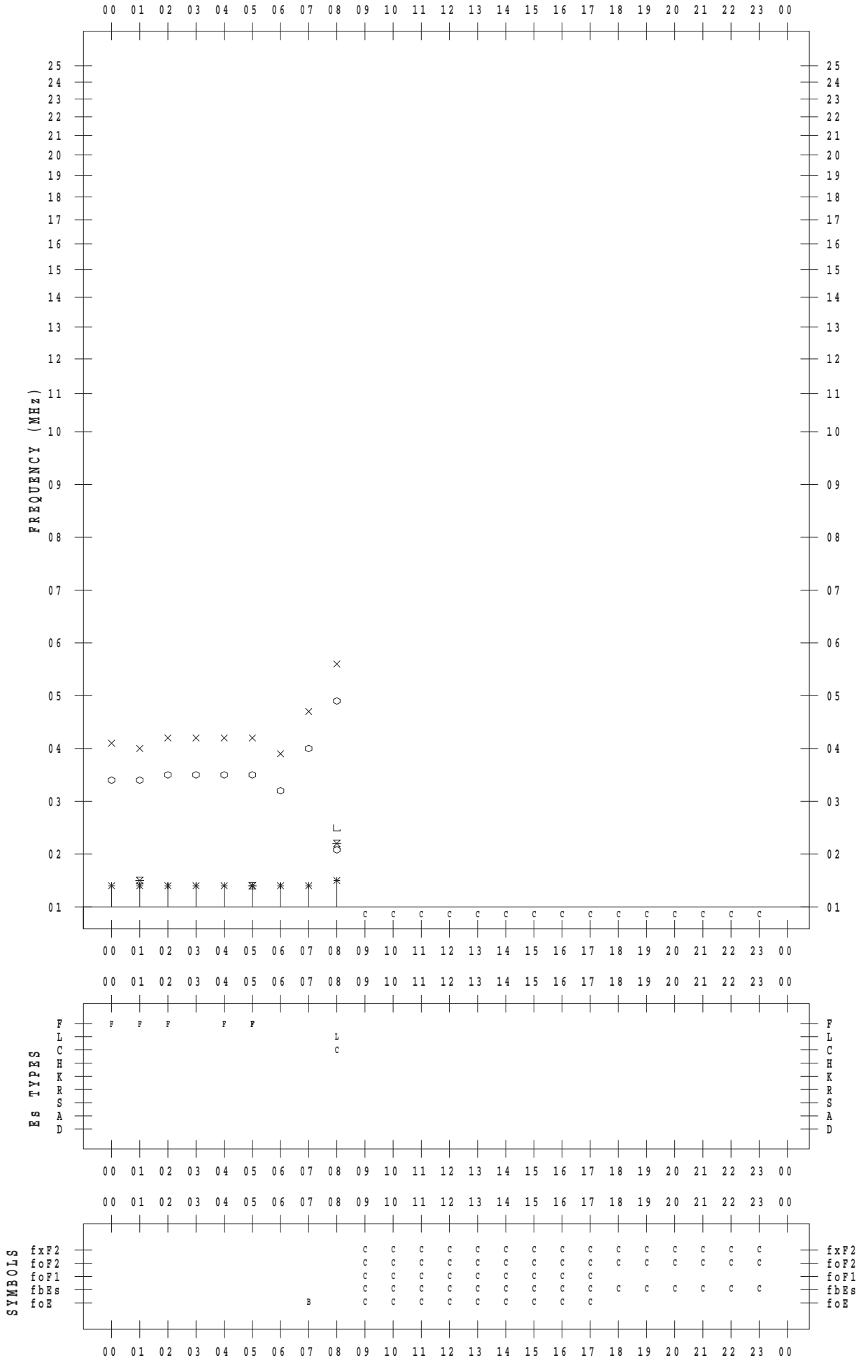
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 6

135 °E MEAN TIME



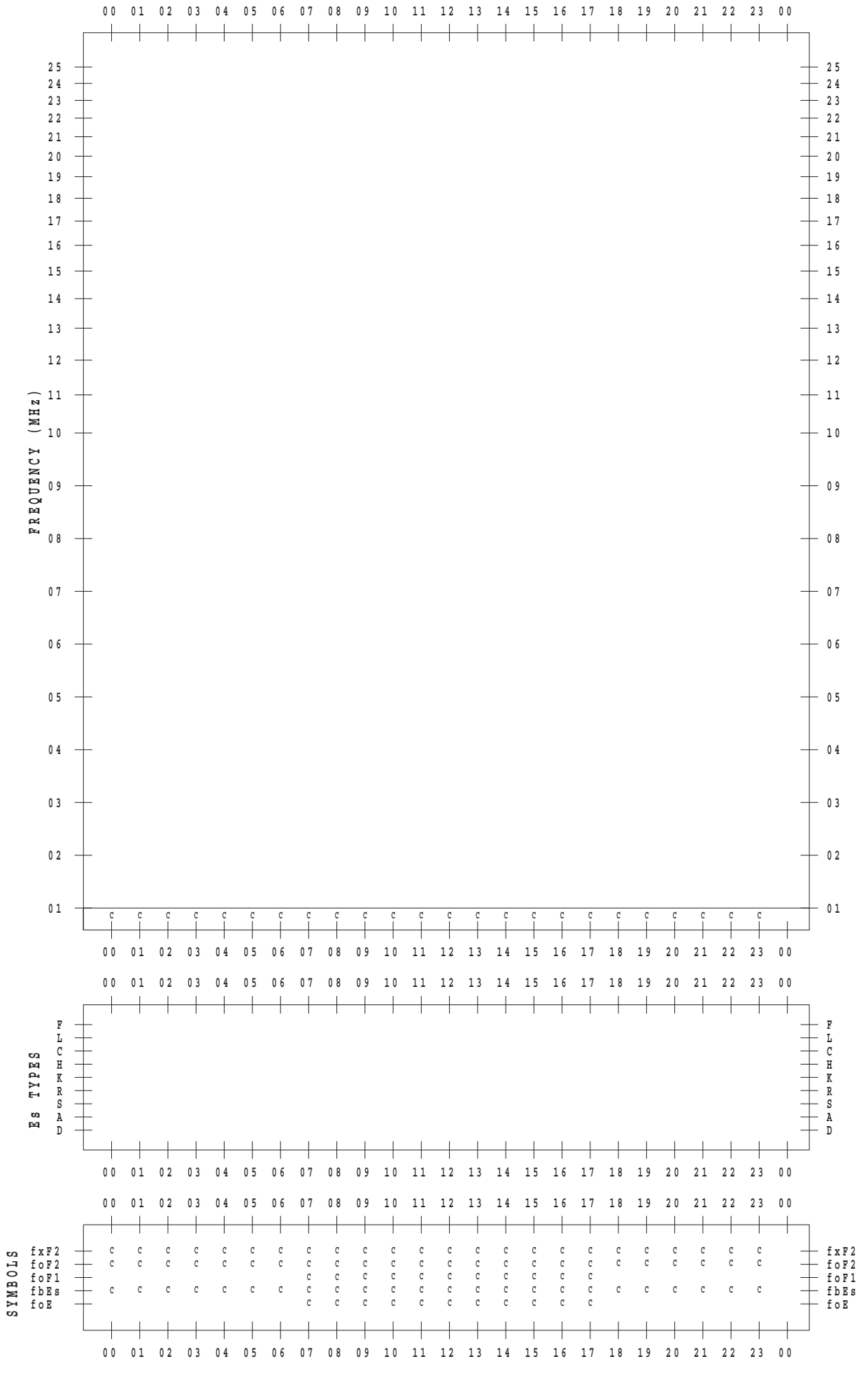
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 7

135 °E MEAN TIME



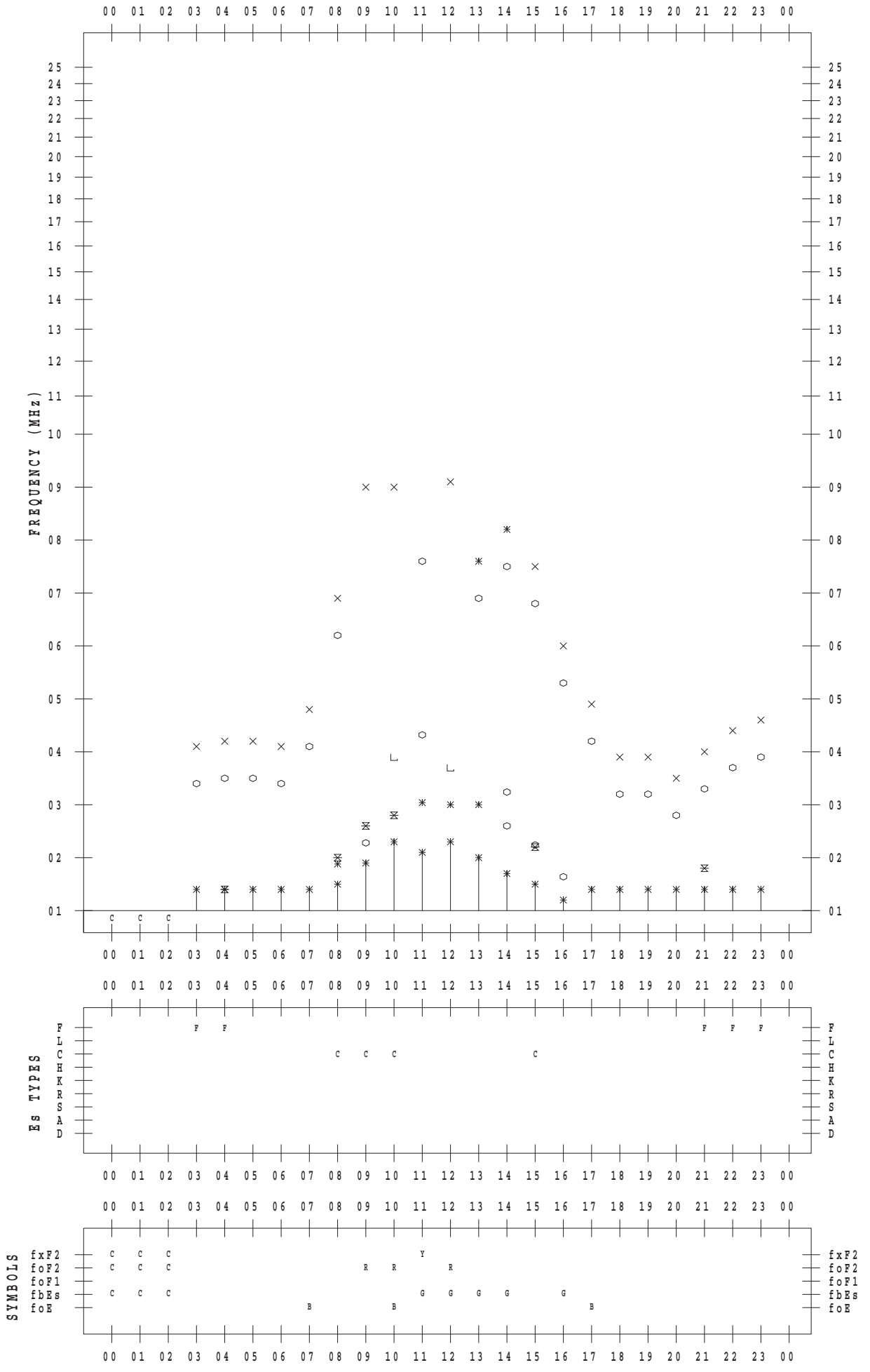
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 8

135 °E MEAN TIME



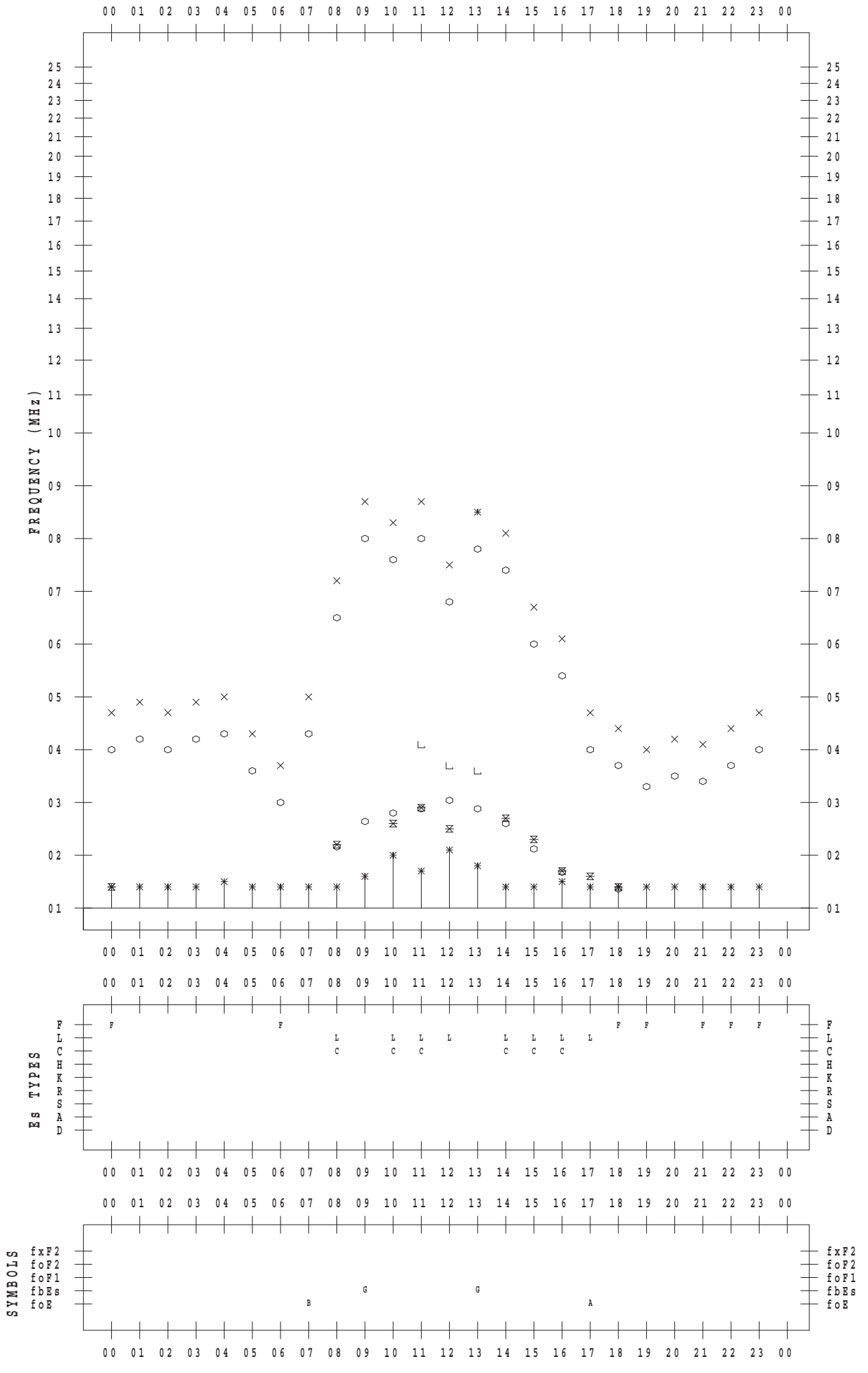
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/ 9

135 °E MEAN TIME



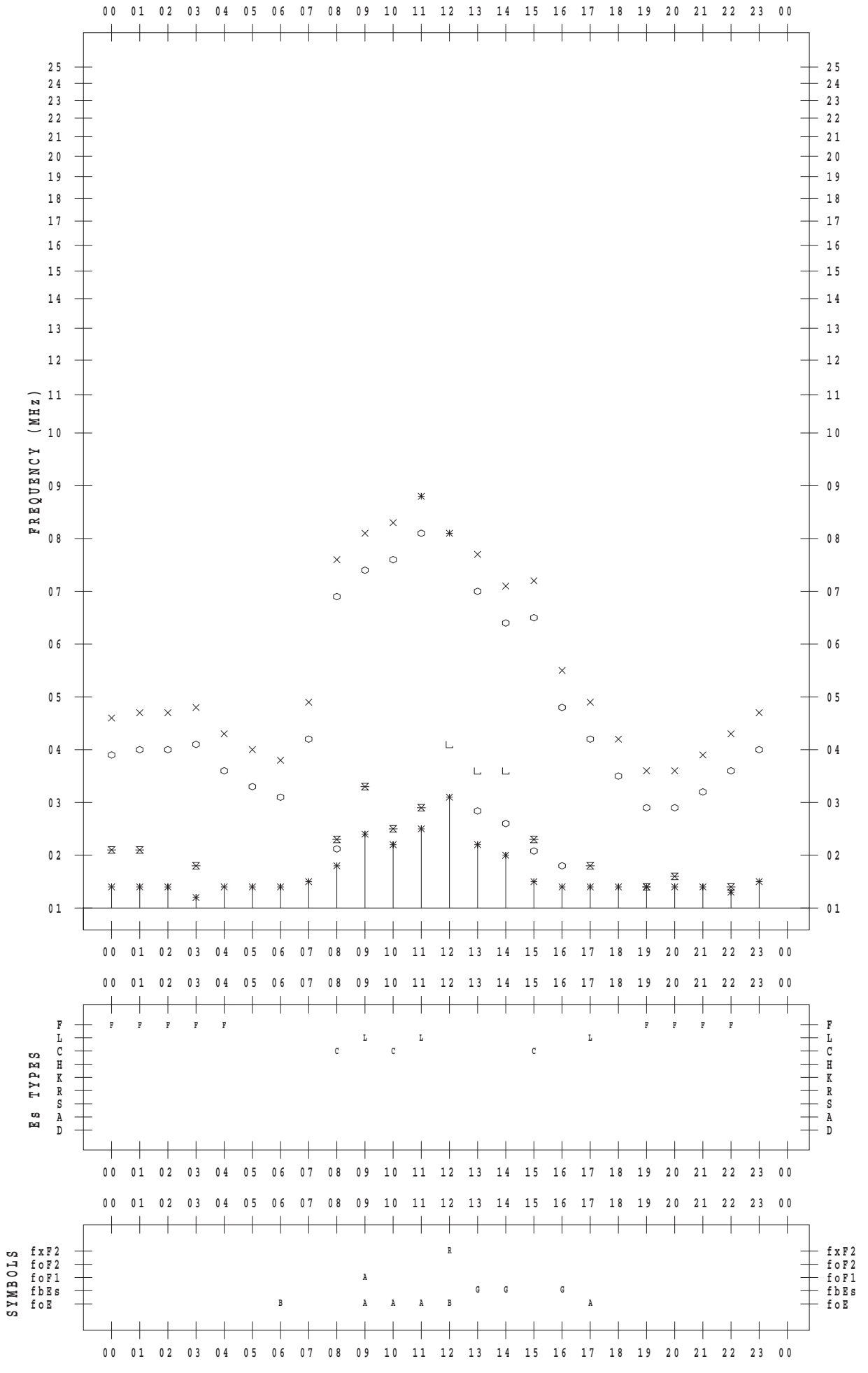
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/10

135 °E MEAN TIME



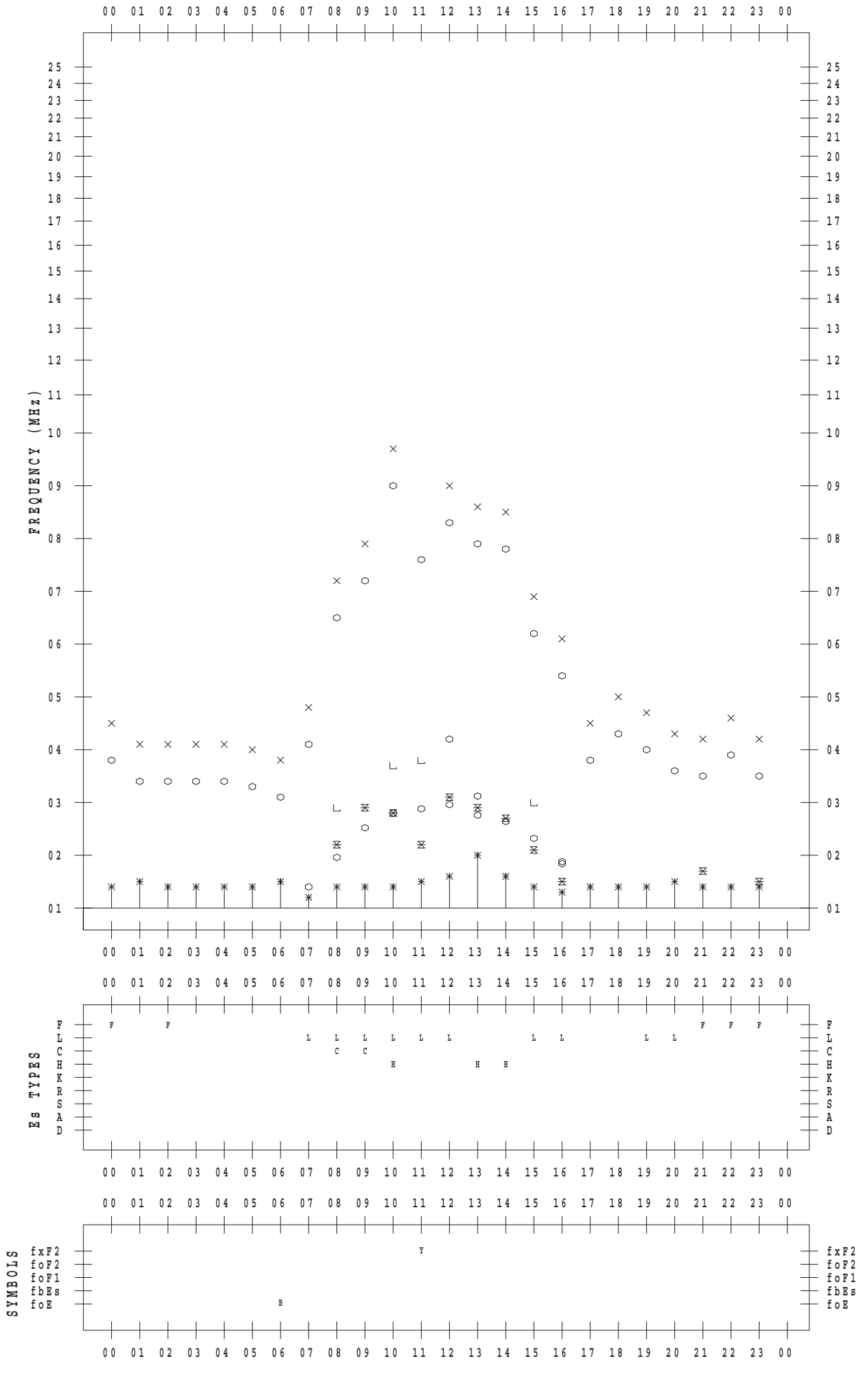
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/11

135 °E MEAN TIME



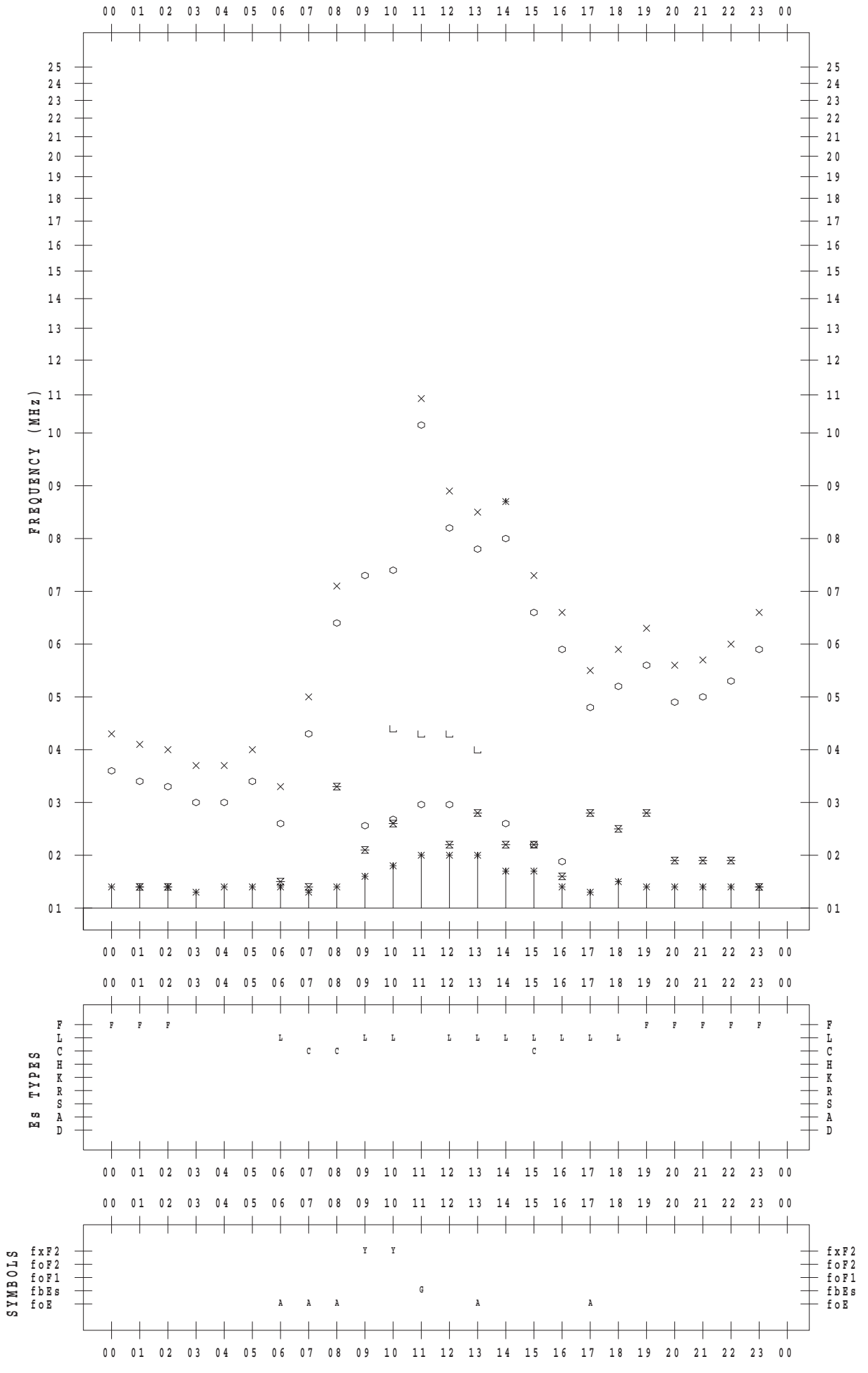
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/12

135 °E MEAN TIME



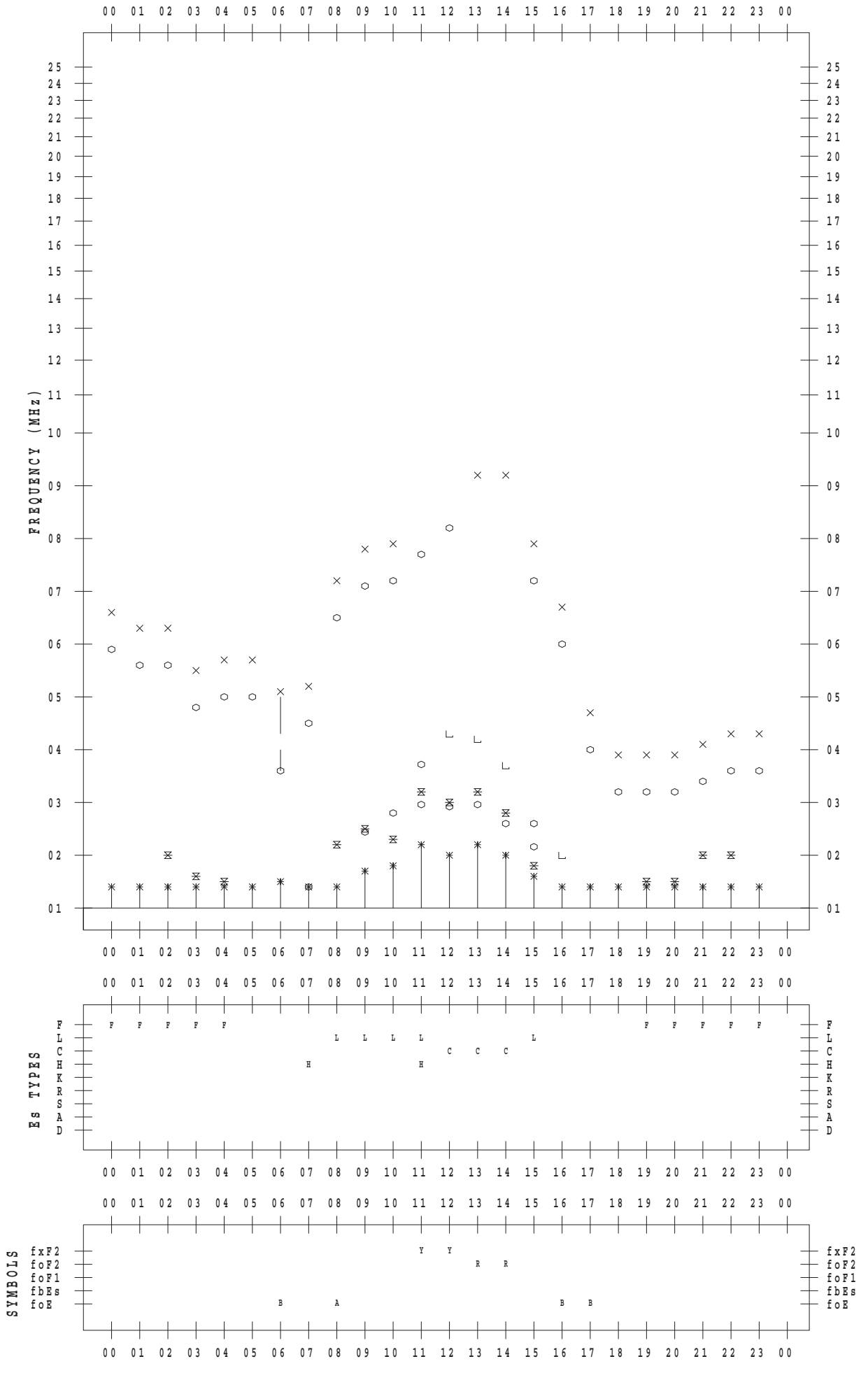
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/13

135 °E MEAN TIME



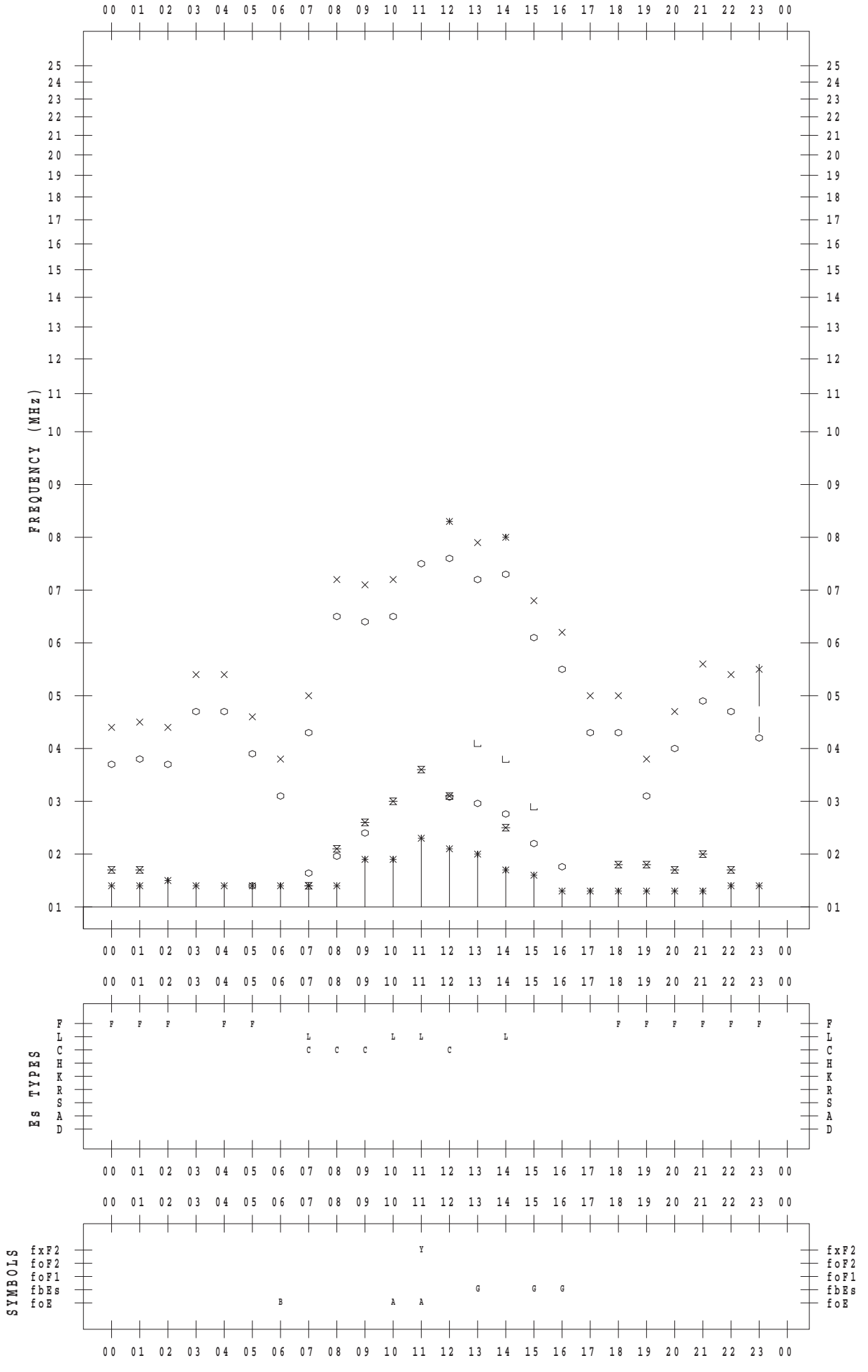
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/14

135 °E MEAN TIME



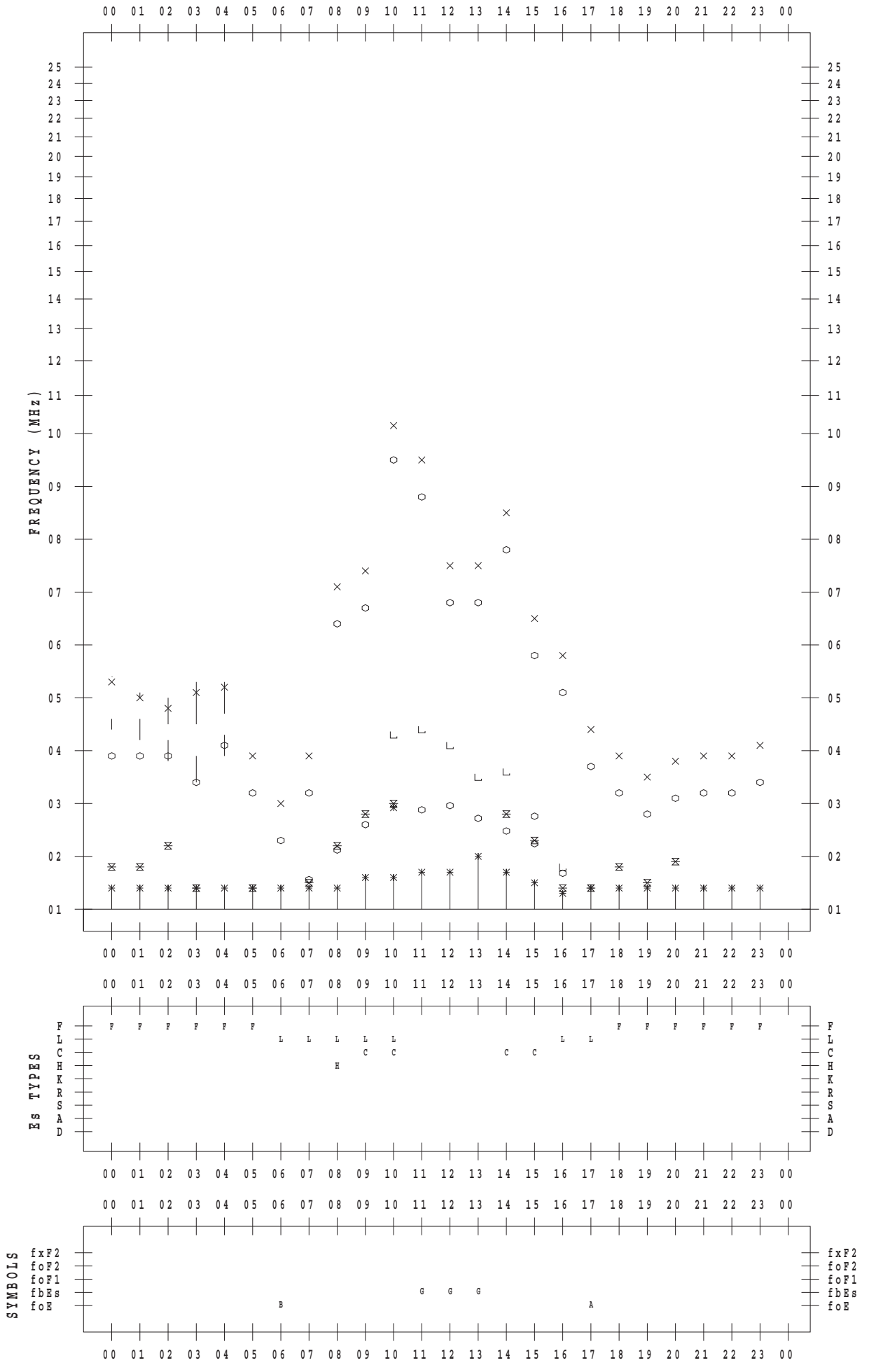
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/15

135 °E MEAN TIME



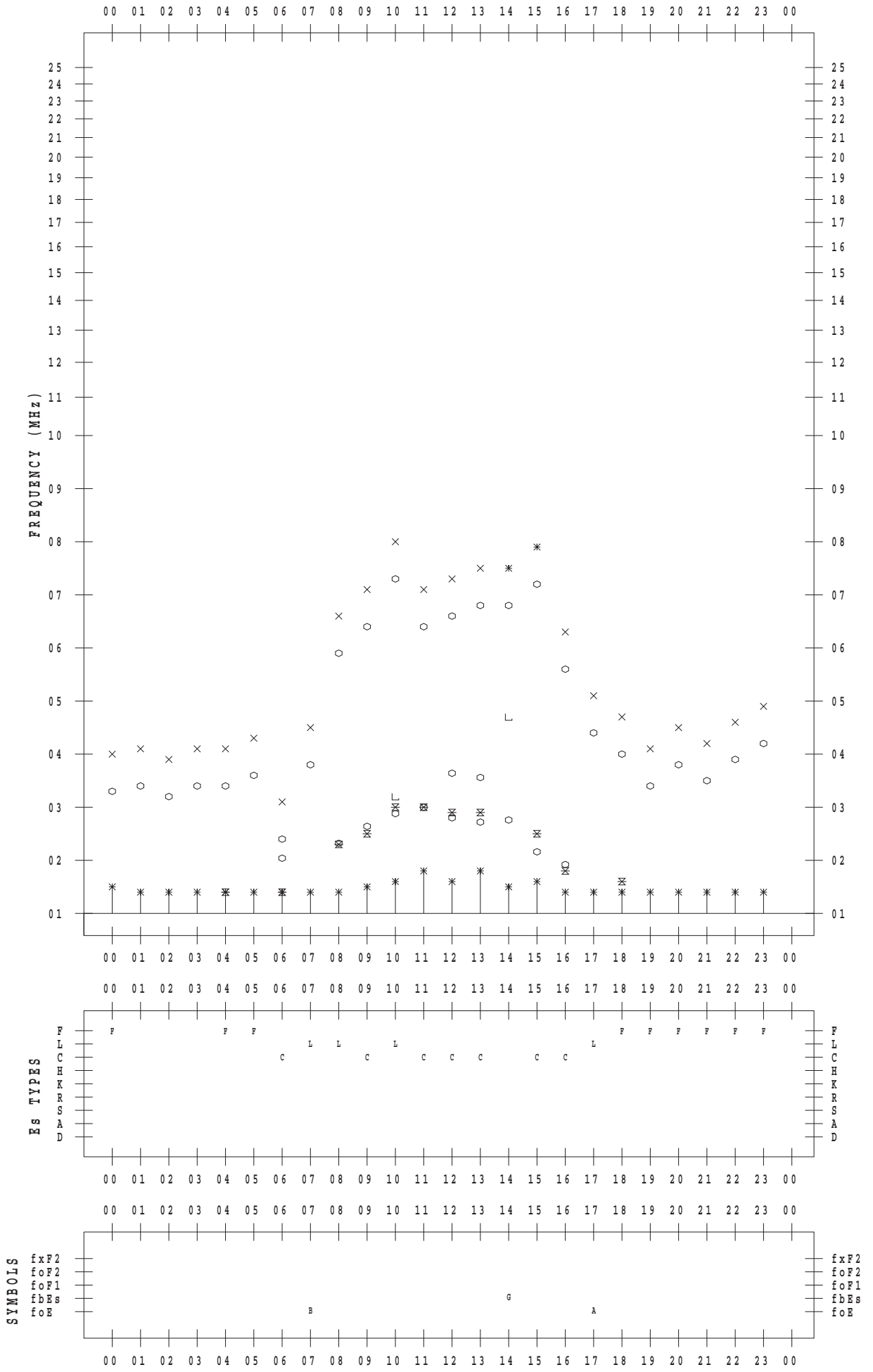
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/16

135 °E MEAN TIME



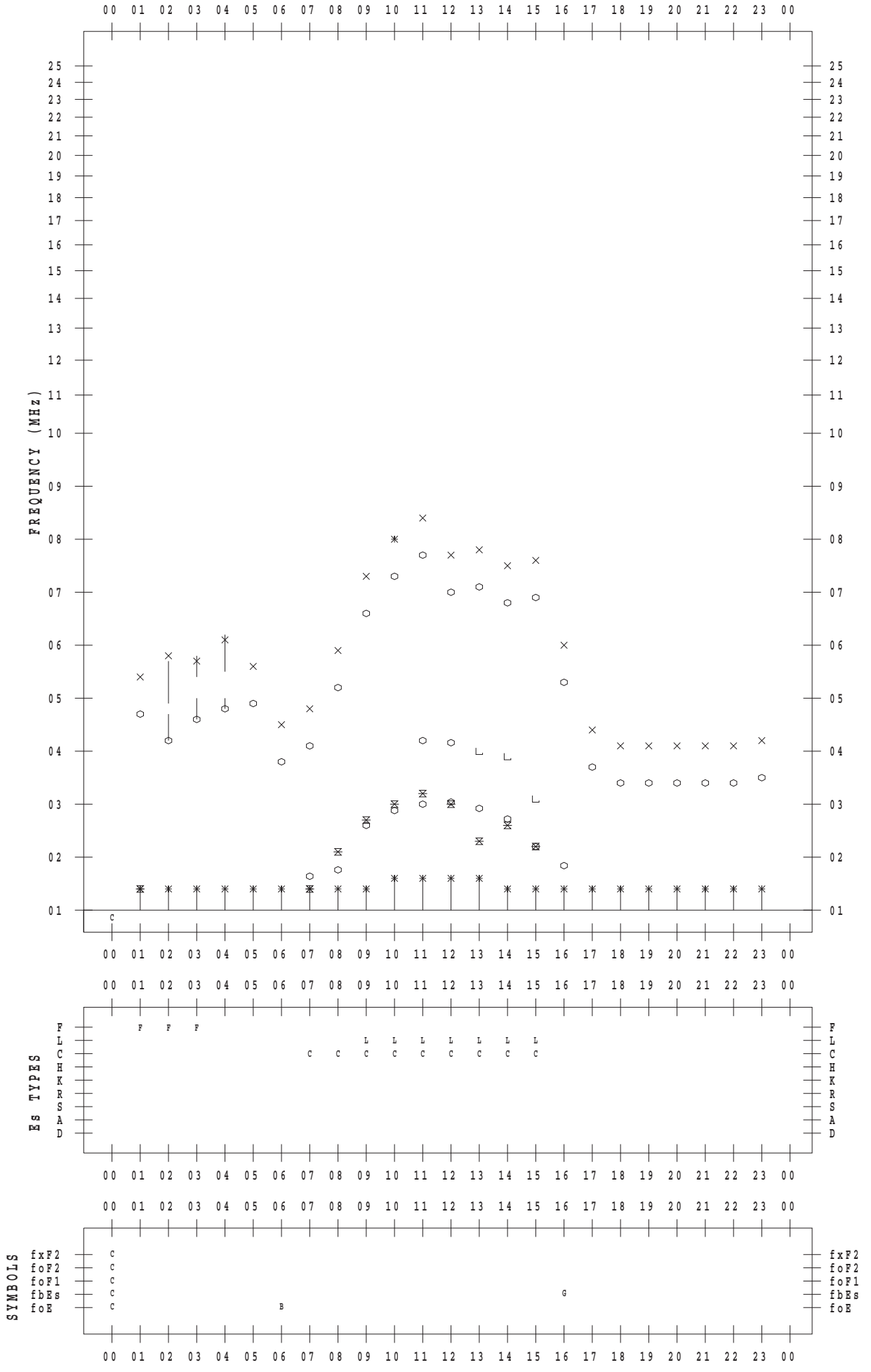
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/17

135 °E MEAN TIME



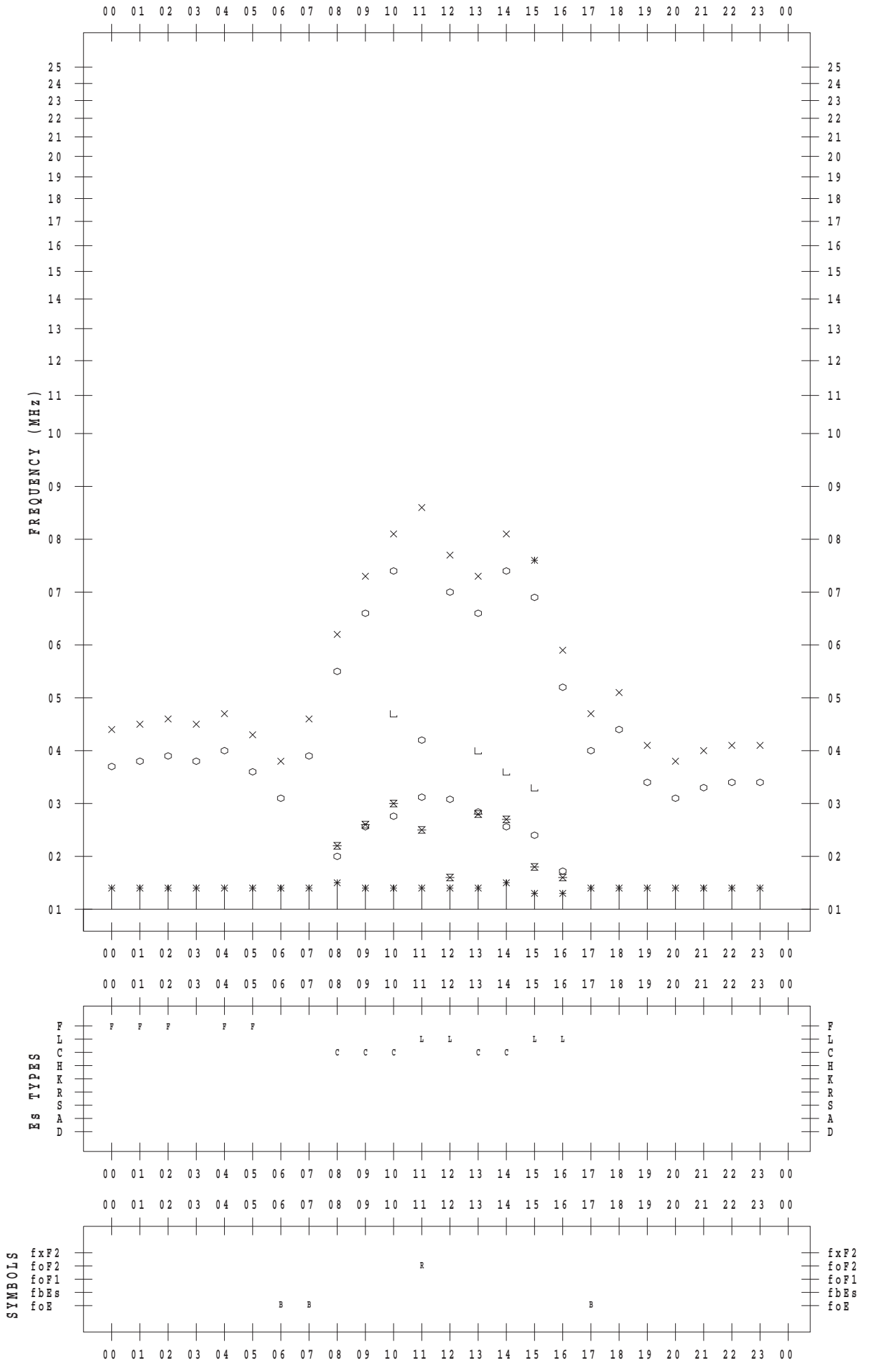
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/18

135 °E MEAN TIME



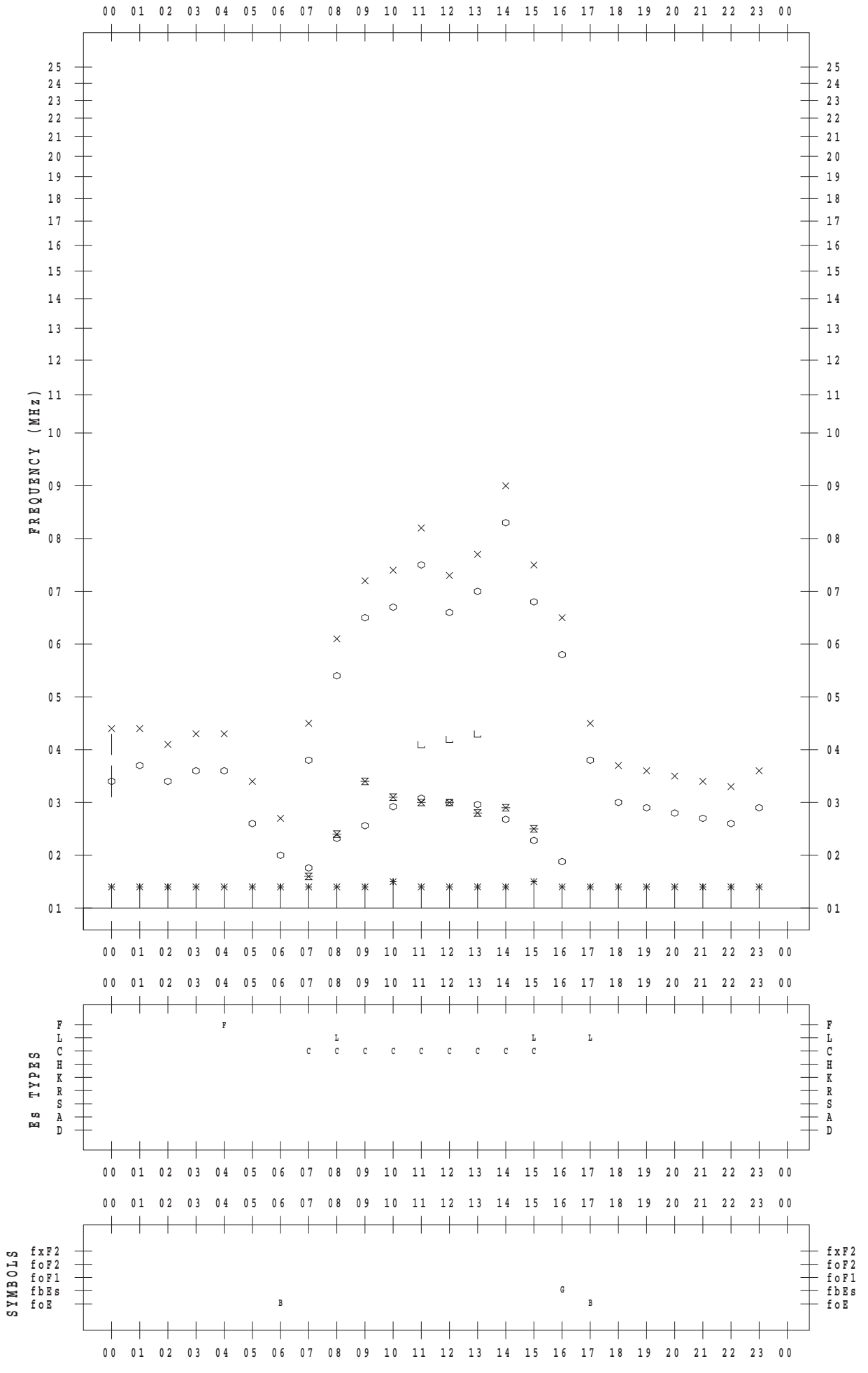
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/19

135 °E MEAN TIME



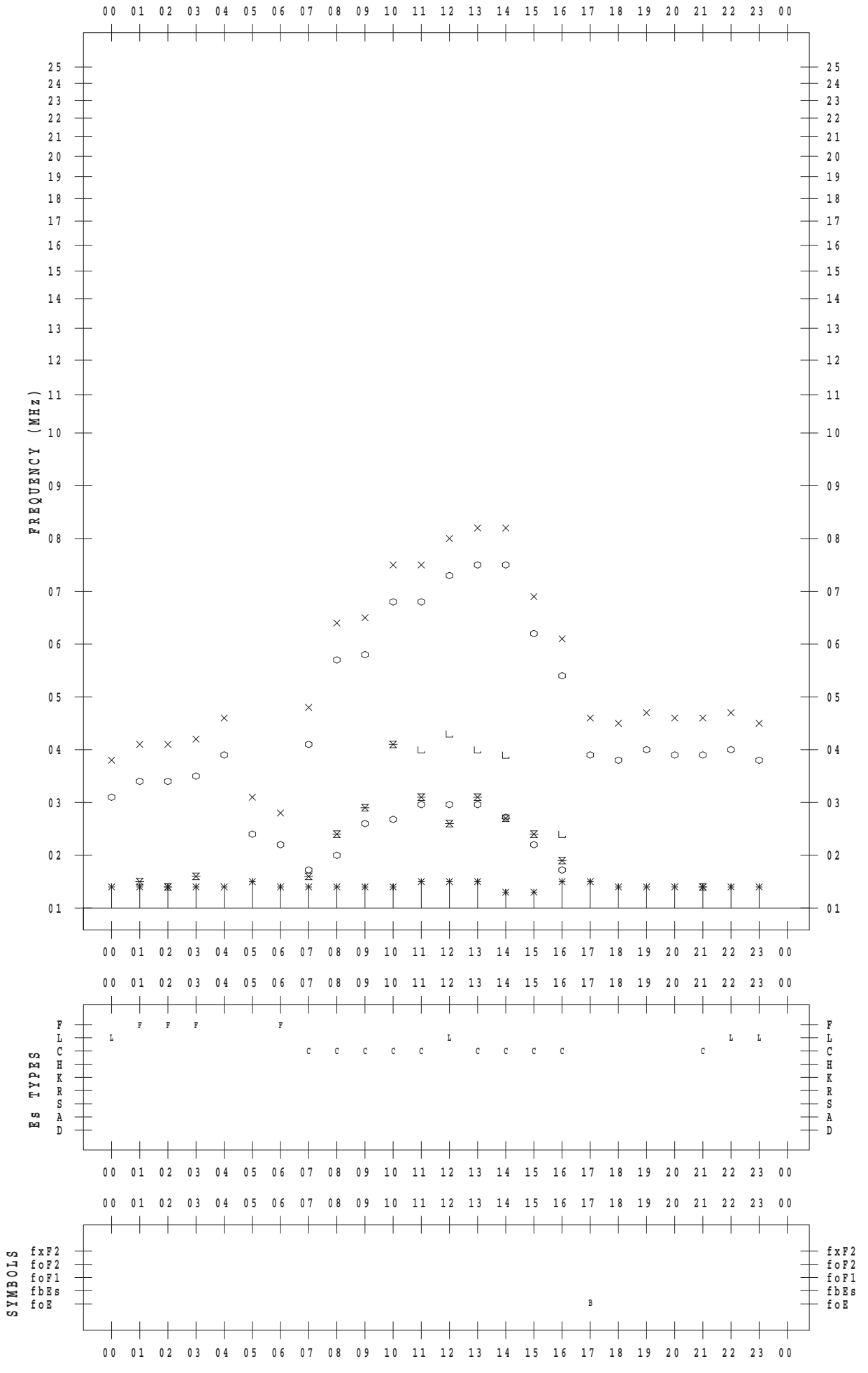
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/20

135 °E MEAN TIME



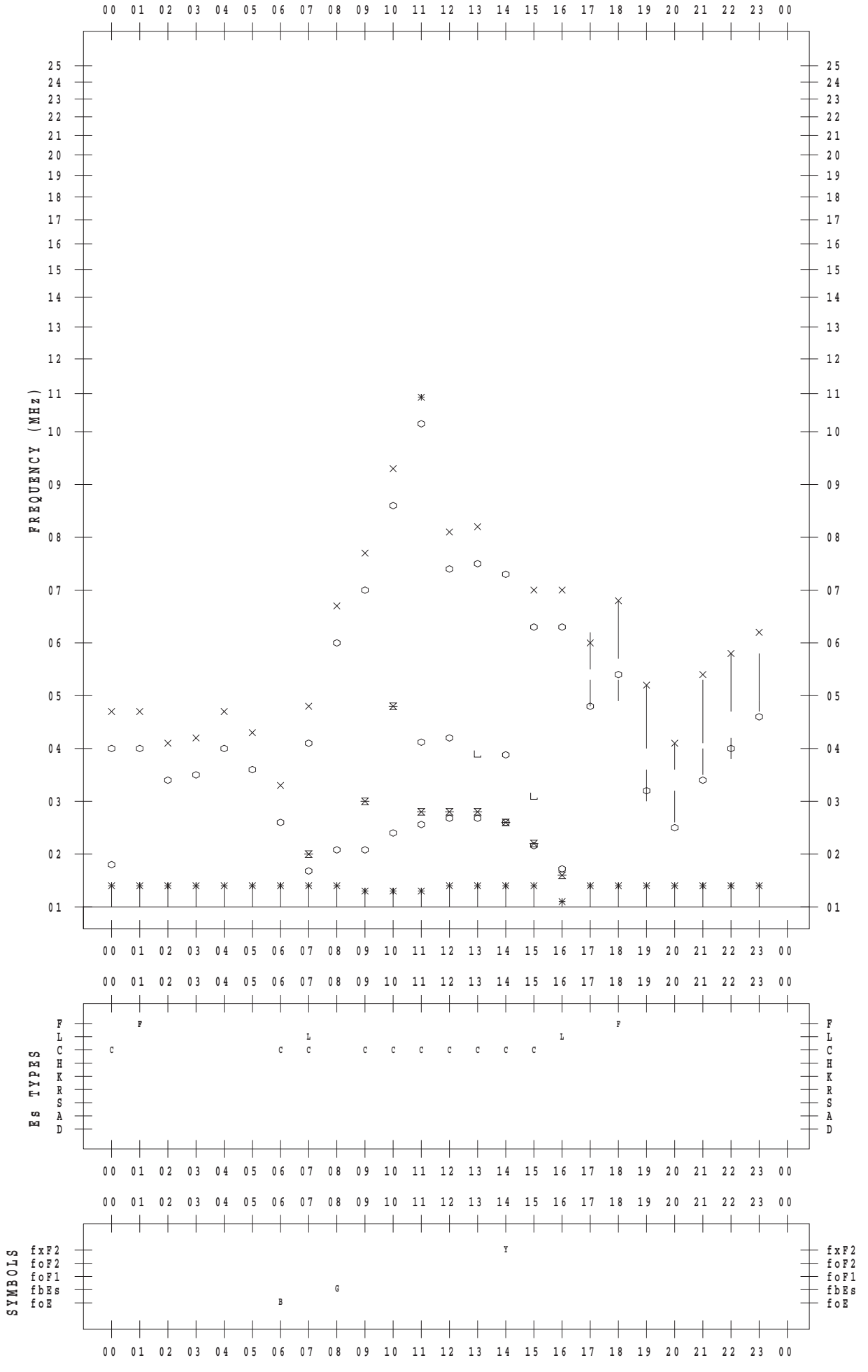
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/21

135 °E MEAN TIME



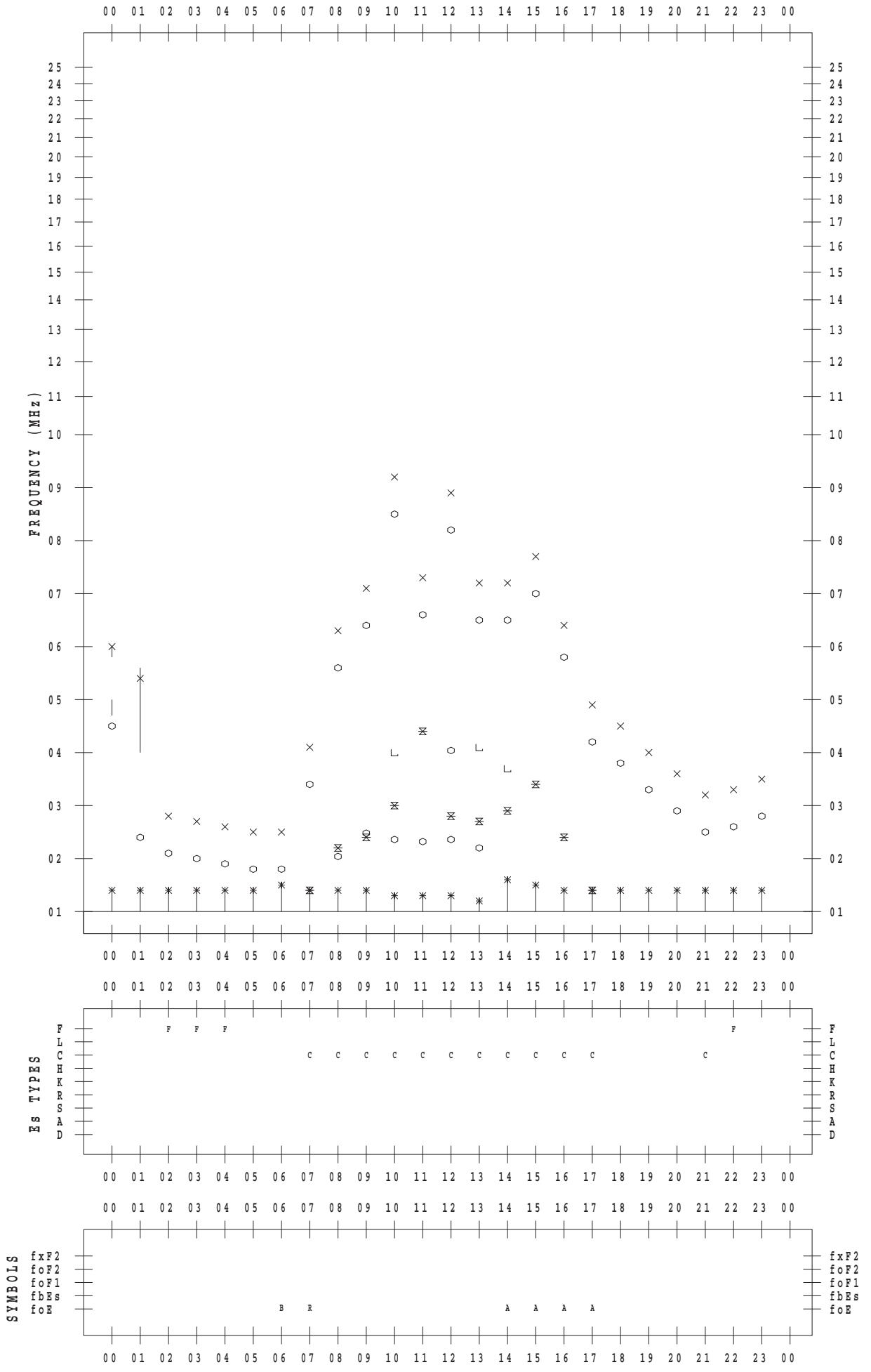
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/22

135 °E MEAN TIME



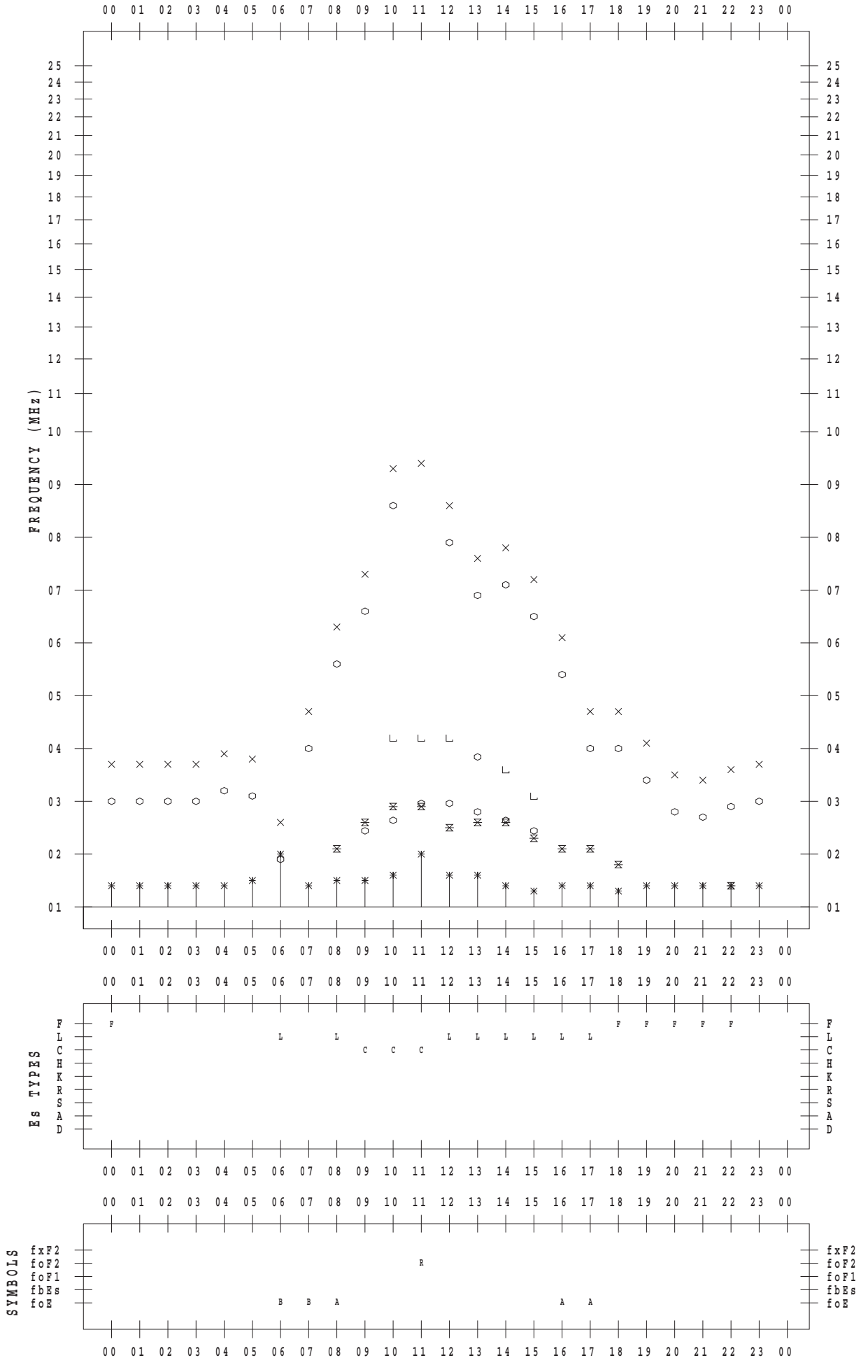
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/23

135 °E MEAN TIME



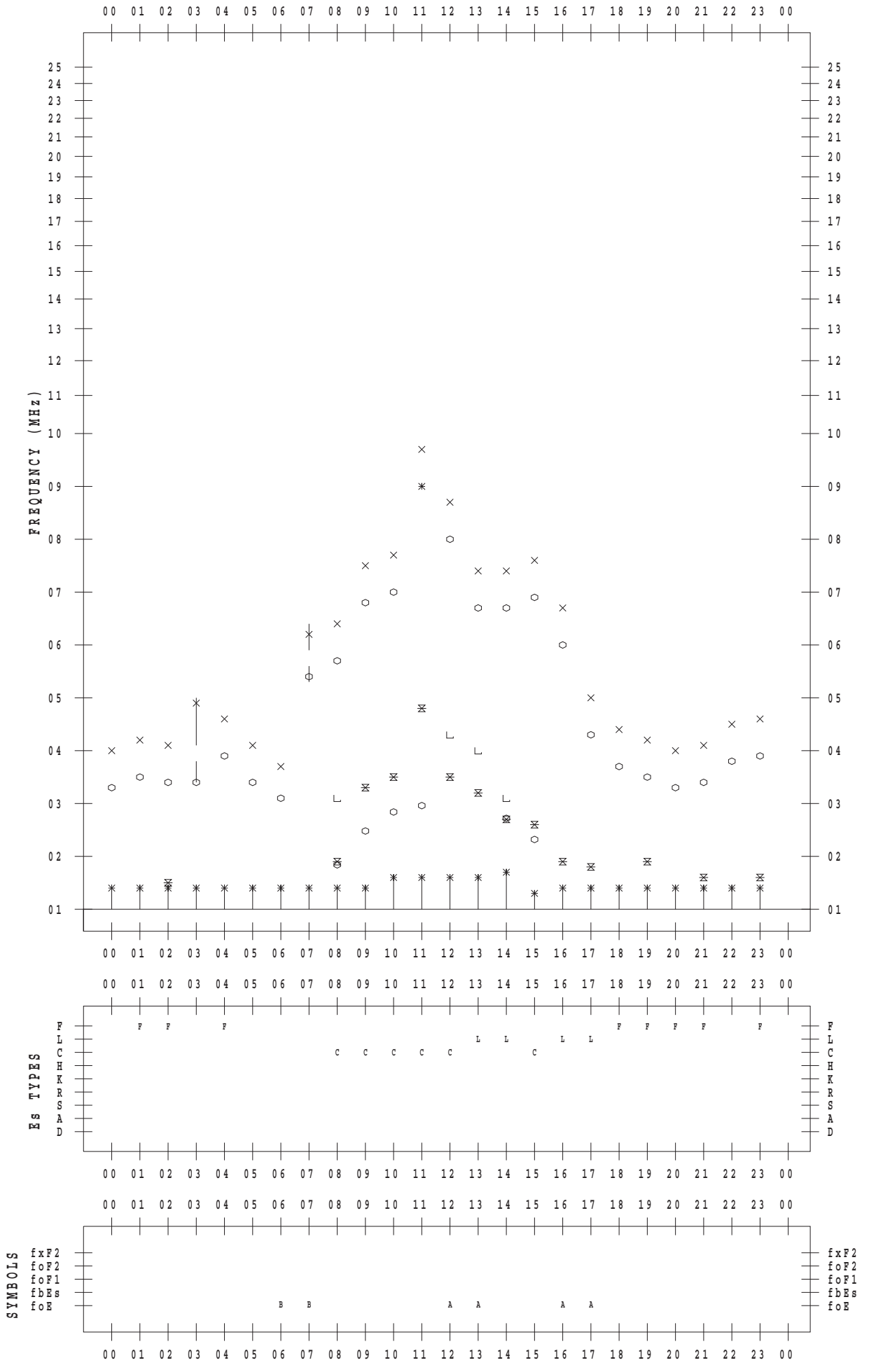
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/24

135 °E MEAN TIME



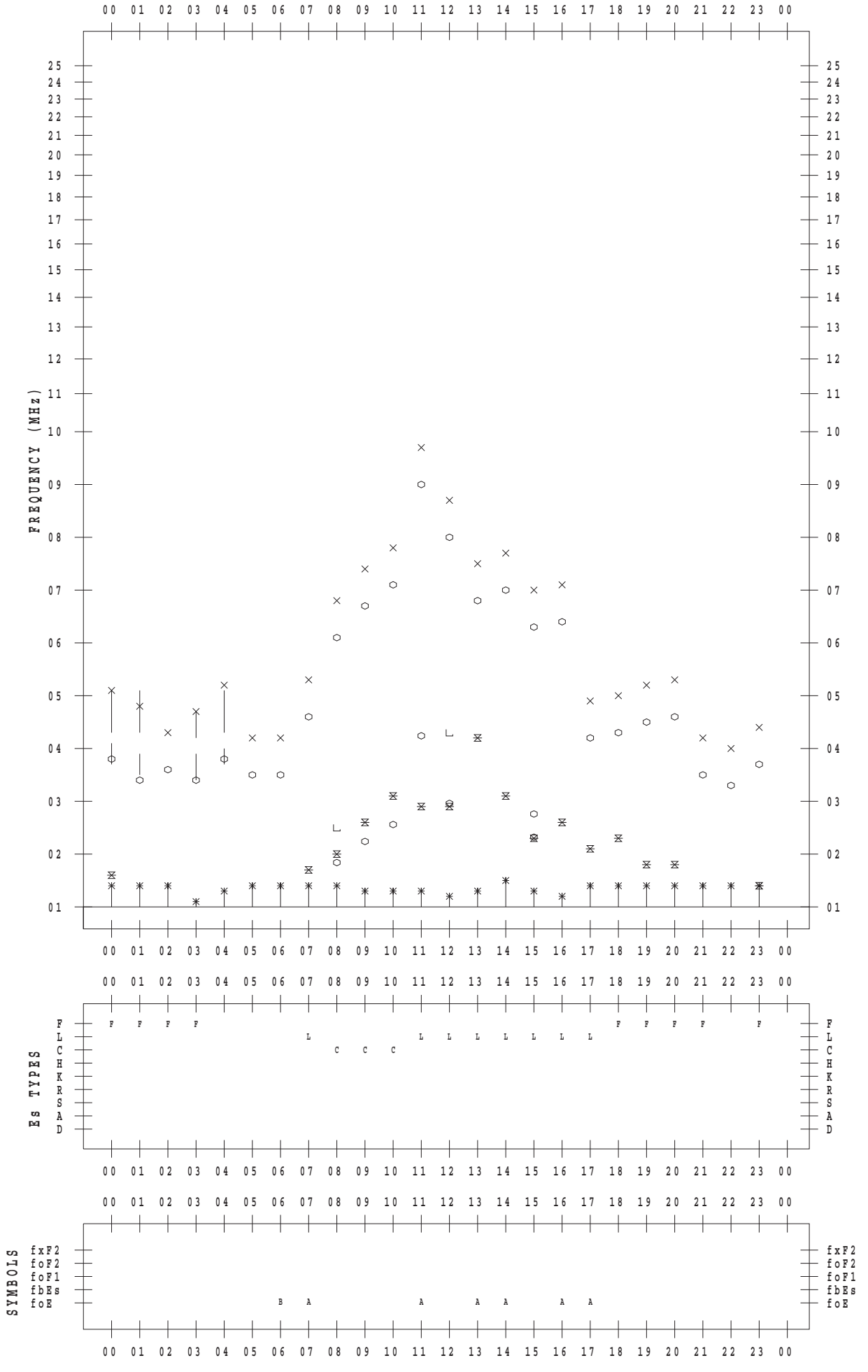
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/25

135 °E MEAN TIME



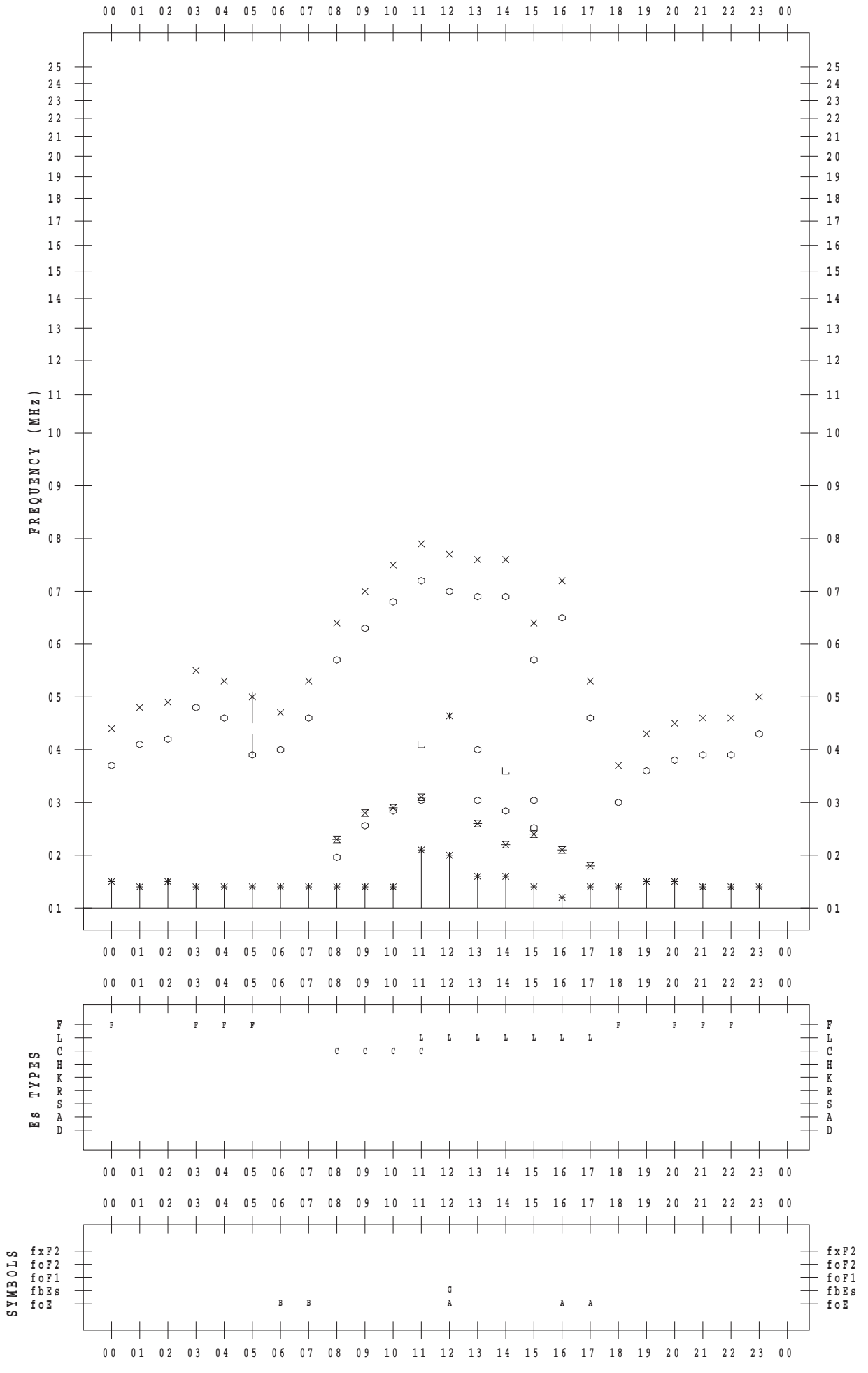
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/26

135 °E MEAN TIME



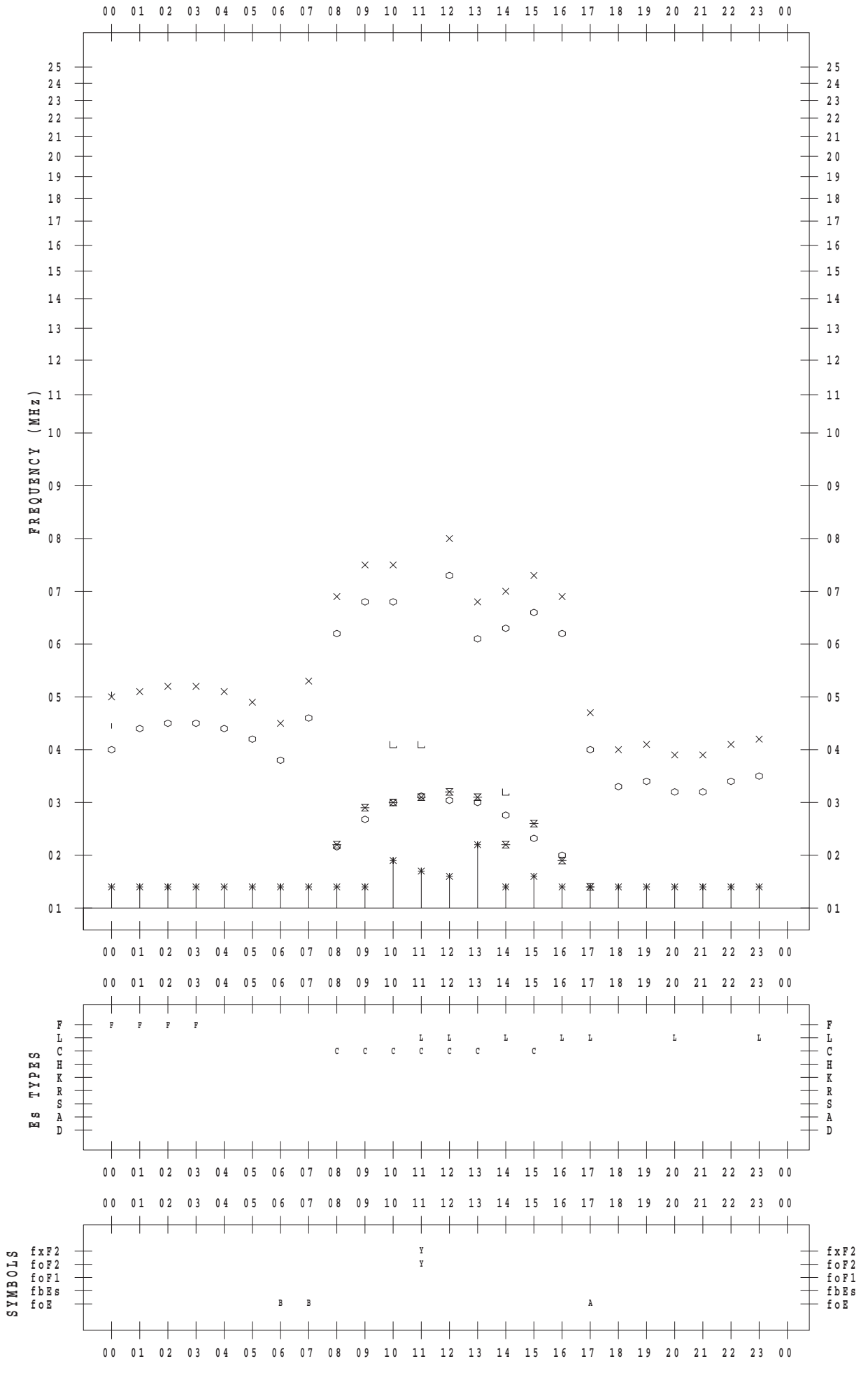
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/27

135 °E MEAN TIME



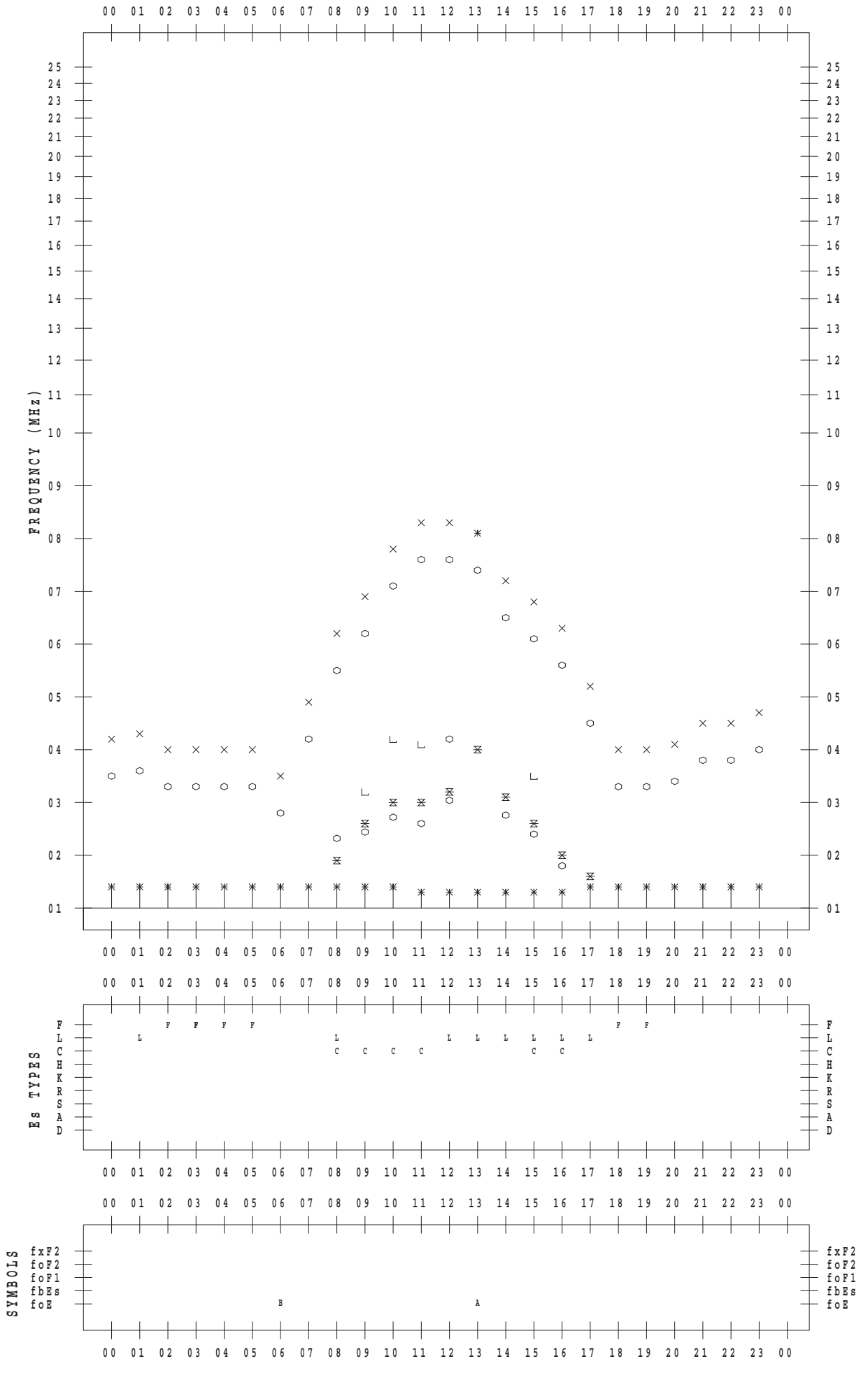
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/28

135 °E MEAN TIME



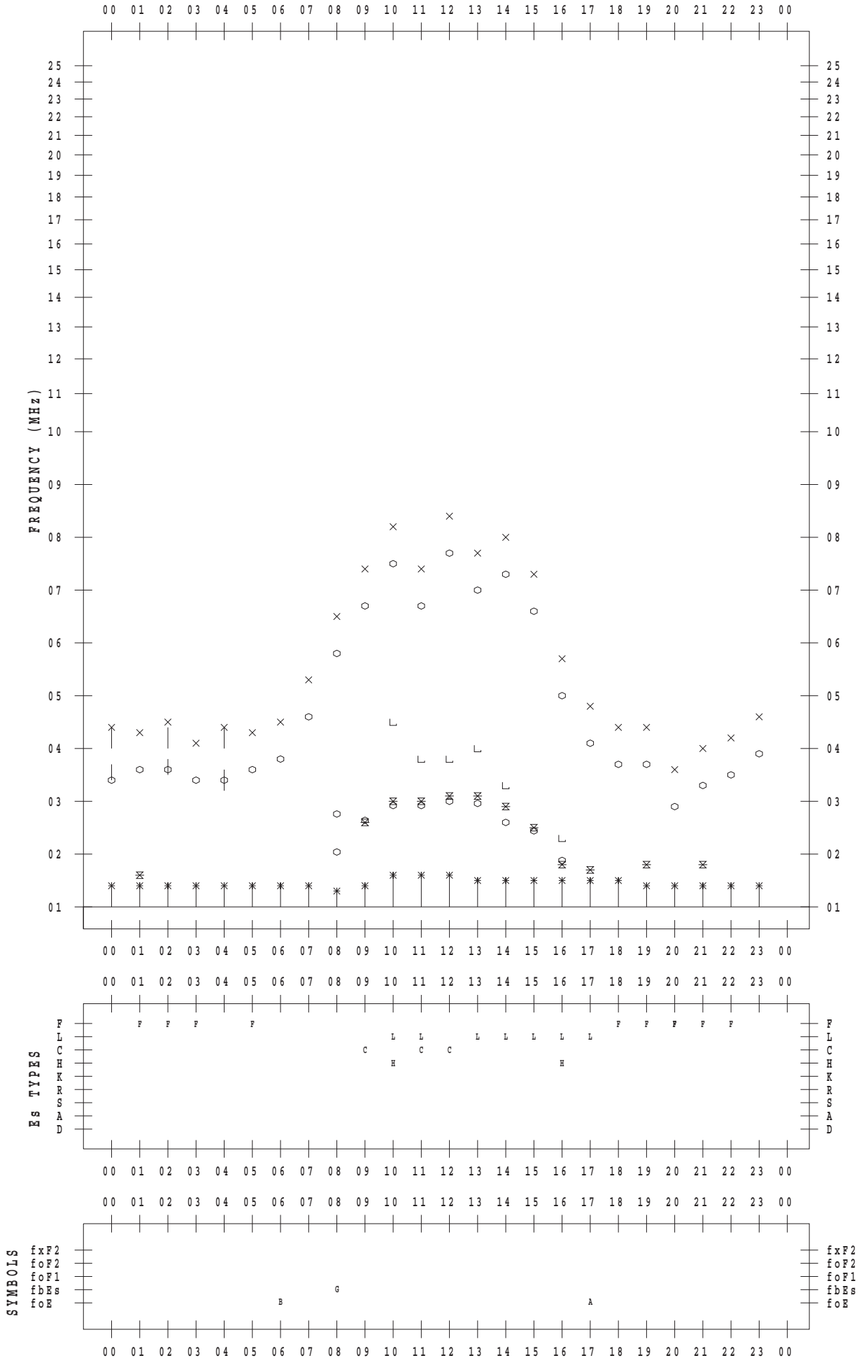
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/29

135 °E MEAN TIME



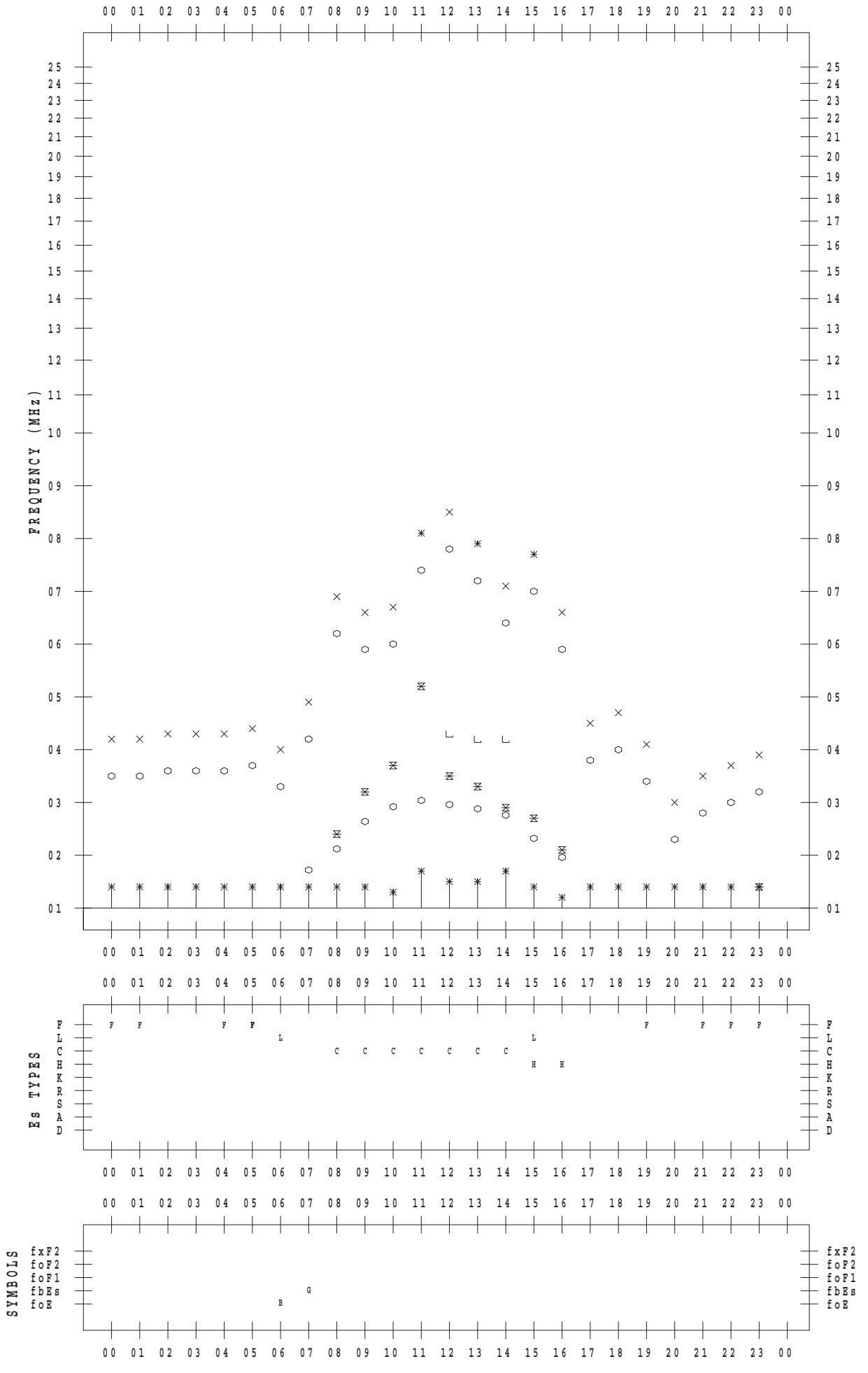
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/30

135 °E MEAN TIME



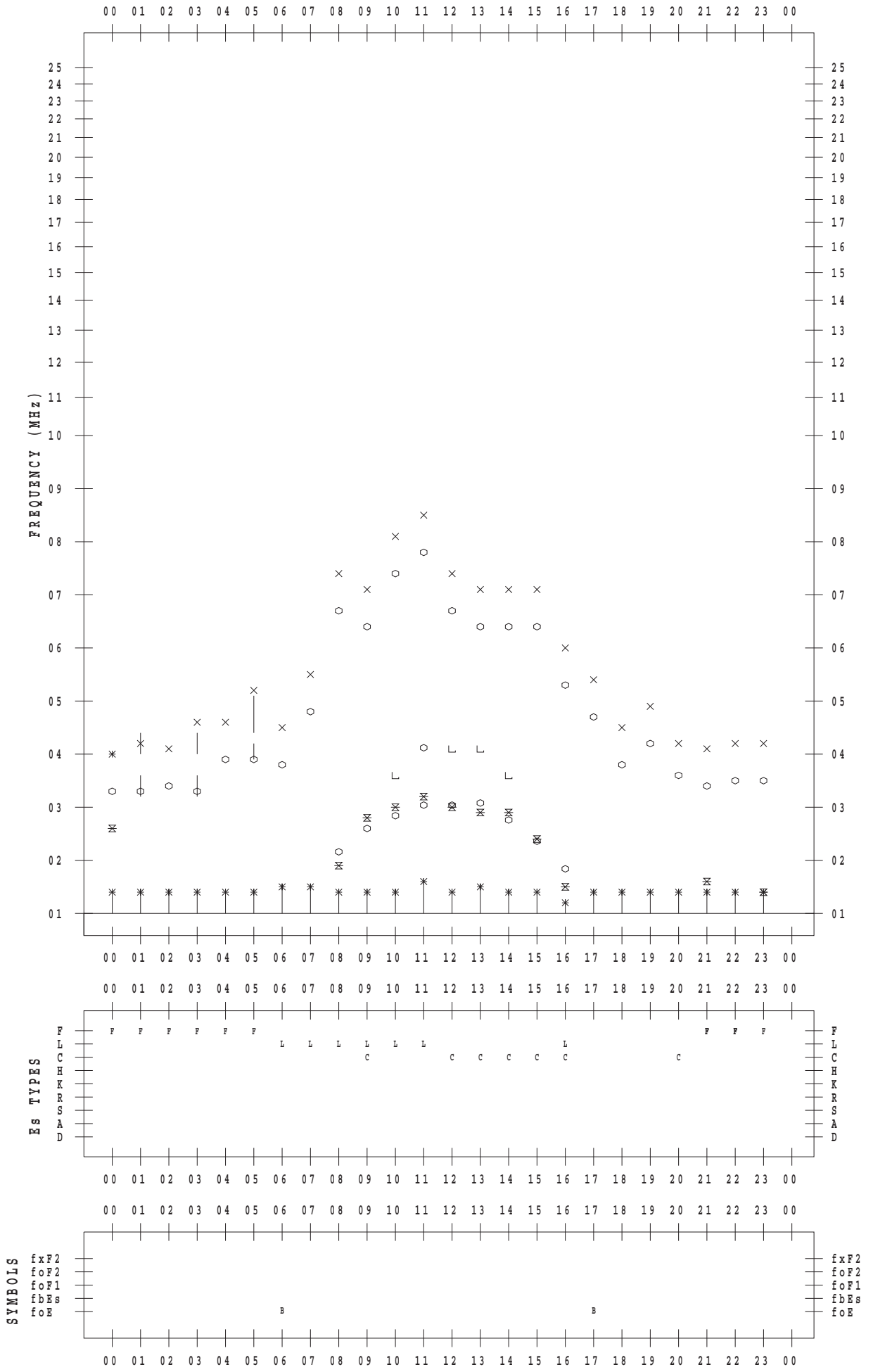
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 1/31

135 °E MEAN TIME



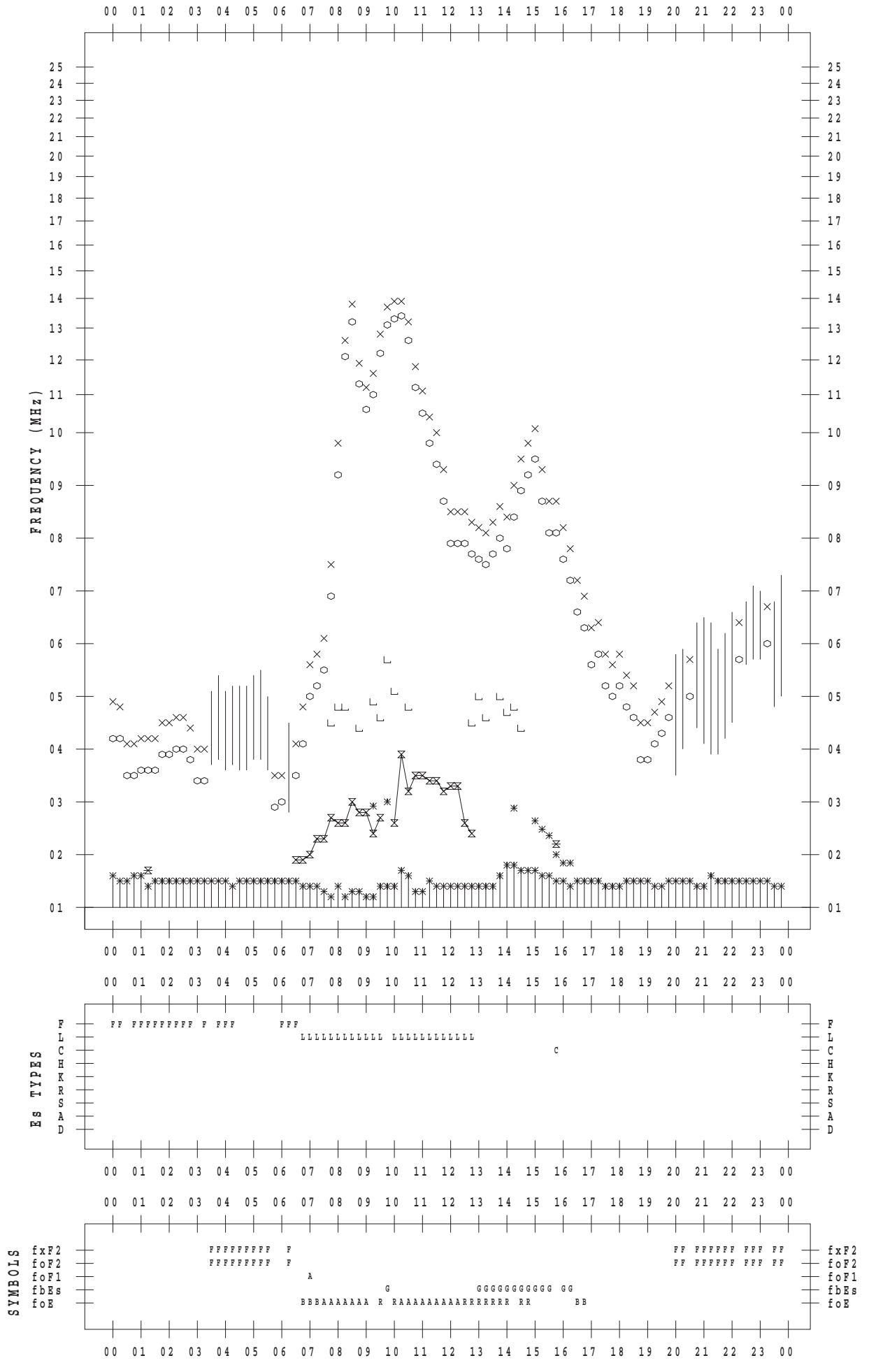
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 1

135 °E MEAN TIME



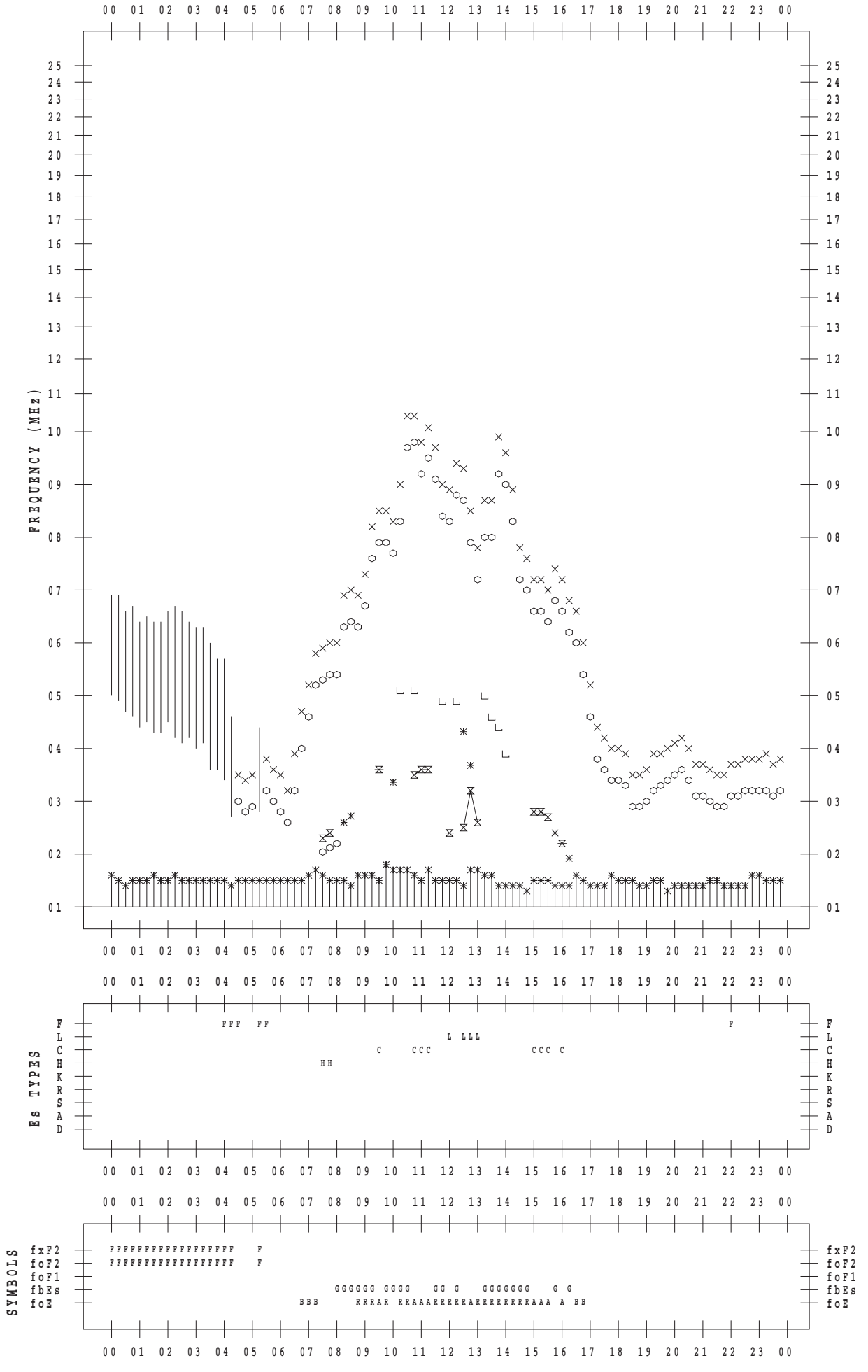
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 2

135 °E MEAN TIME



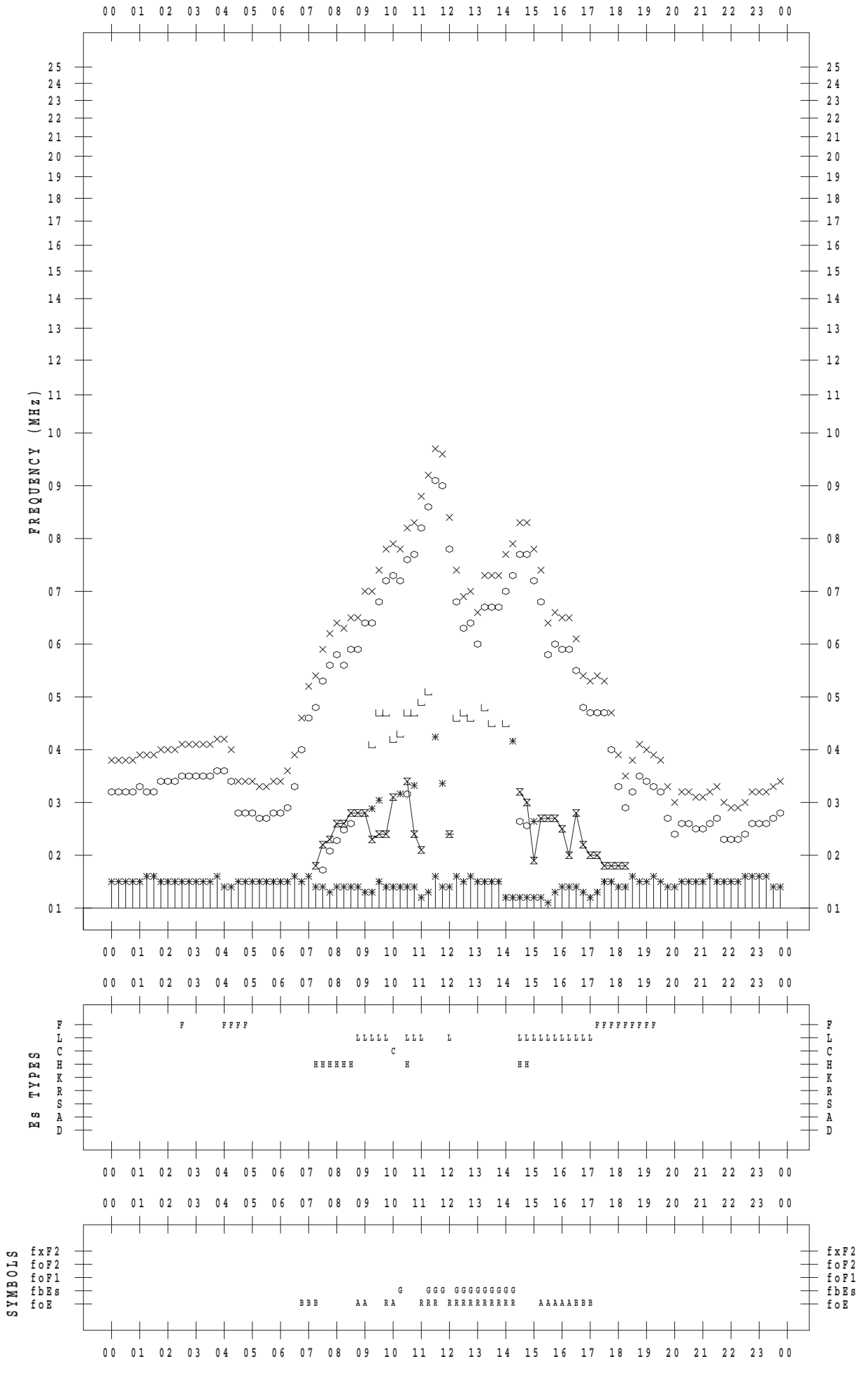
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 3

135 °E MEAN TIME



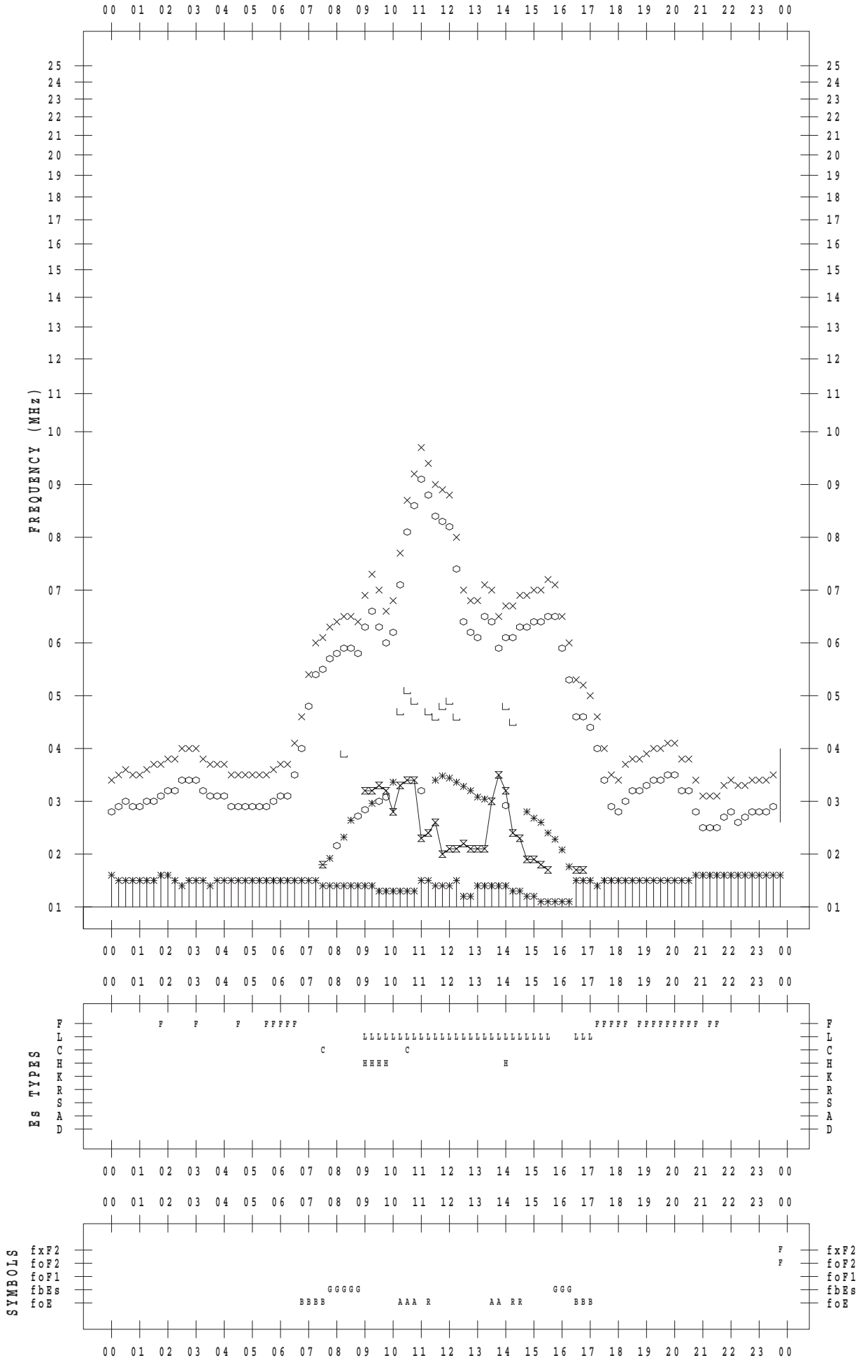
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 4

135 °E MEAN TIME



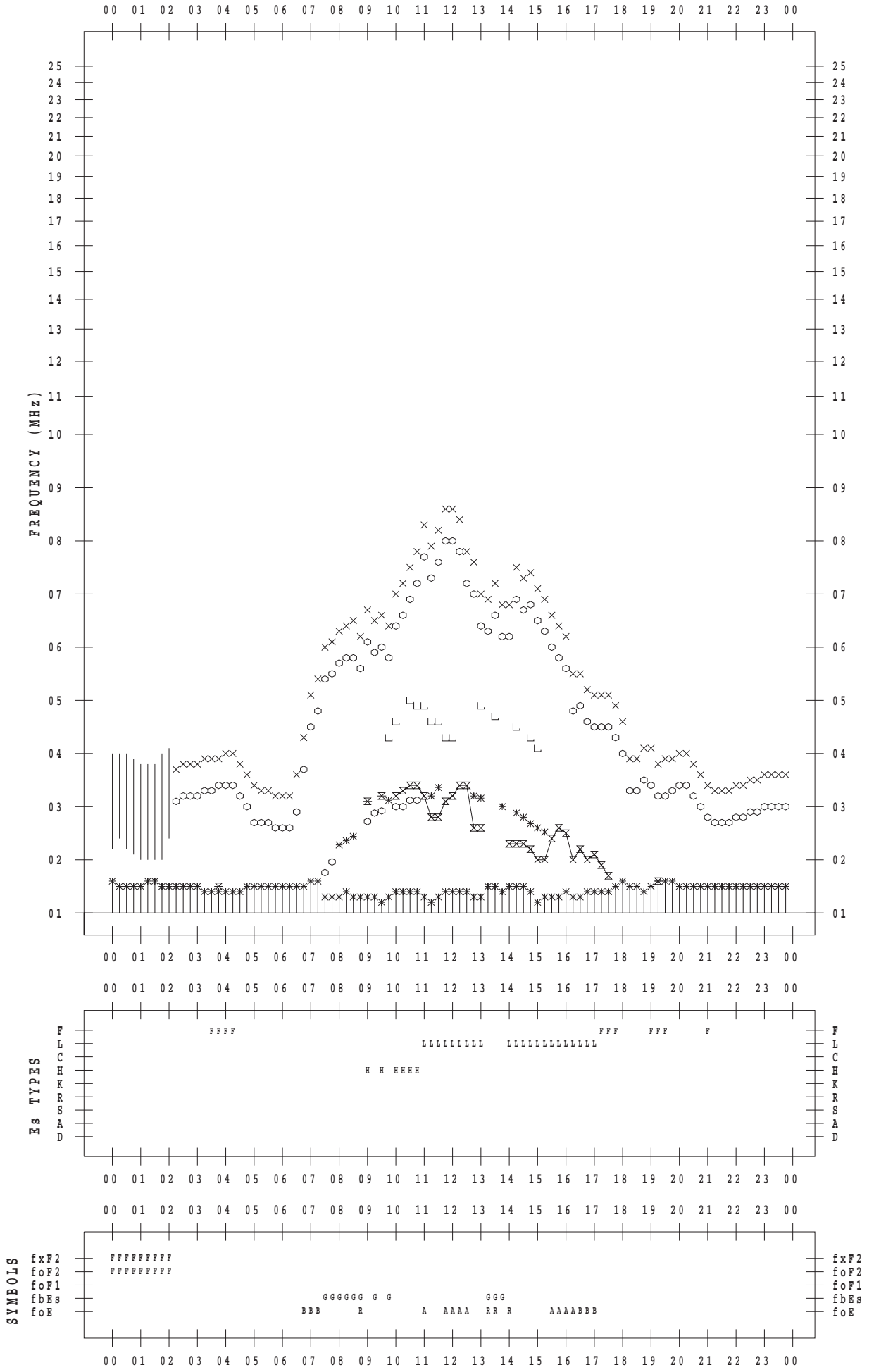
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 5

135 °E MEAN TIME



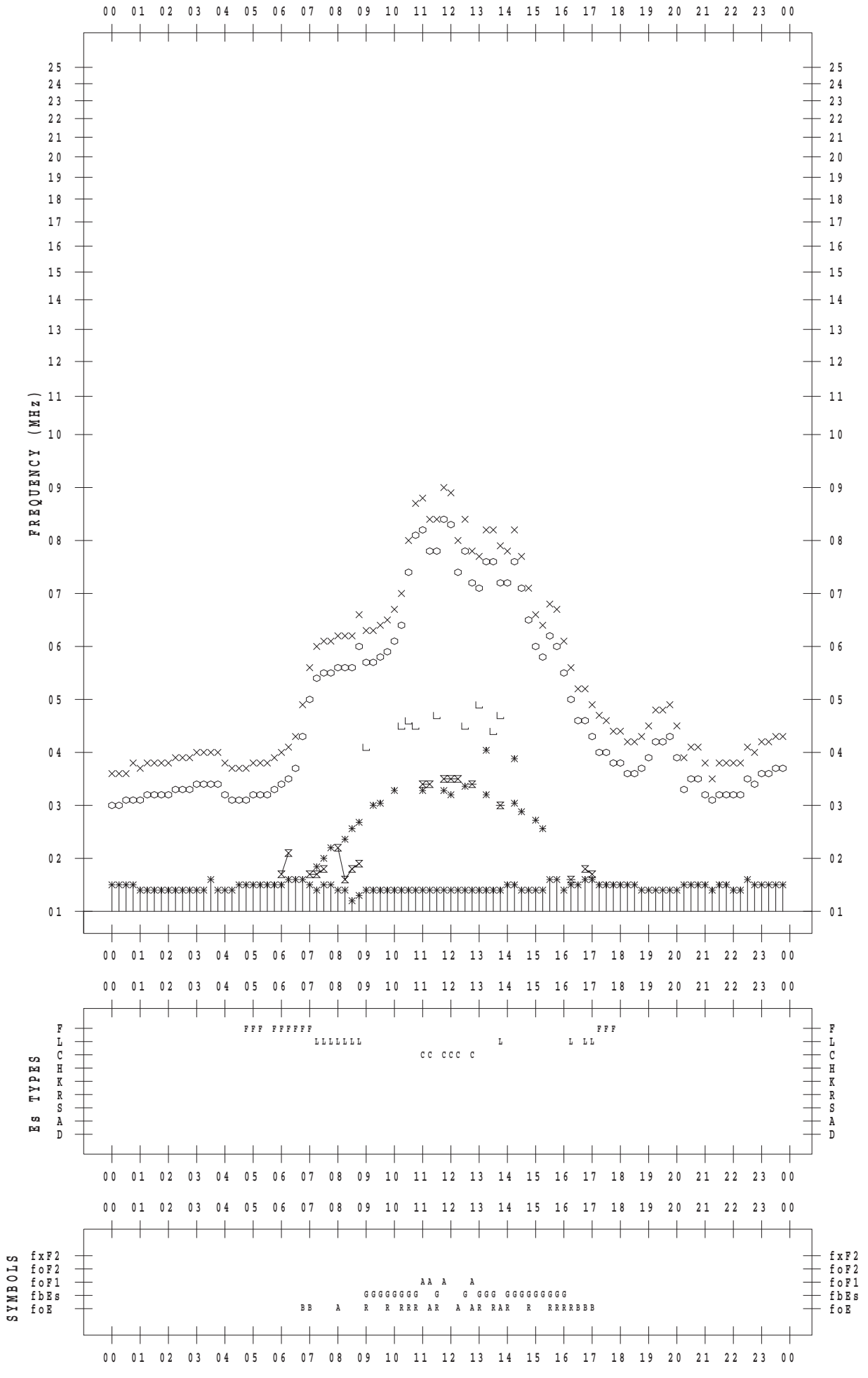
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 6

135 °E MEAN TIME



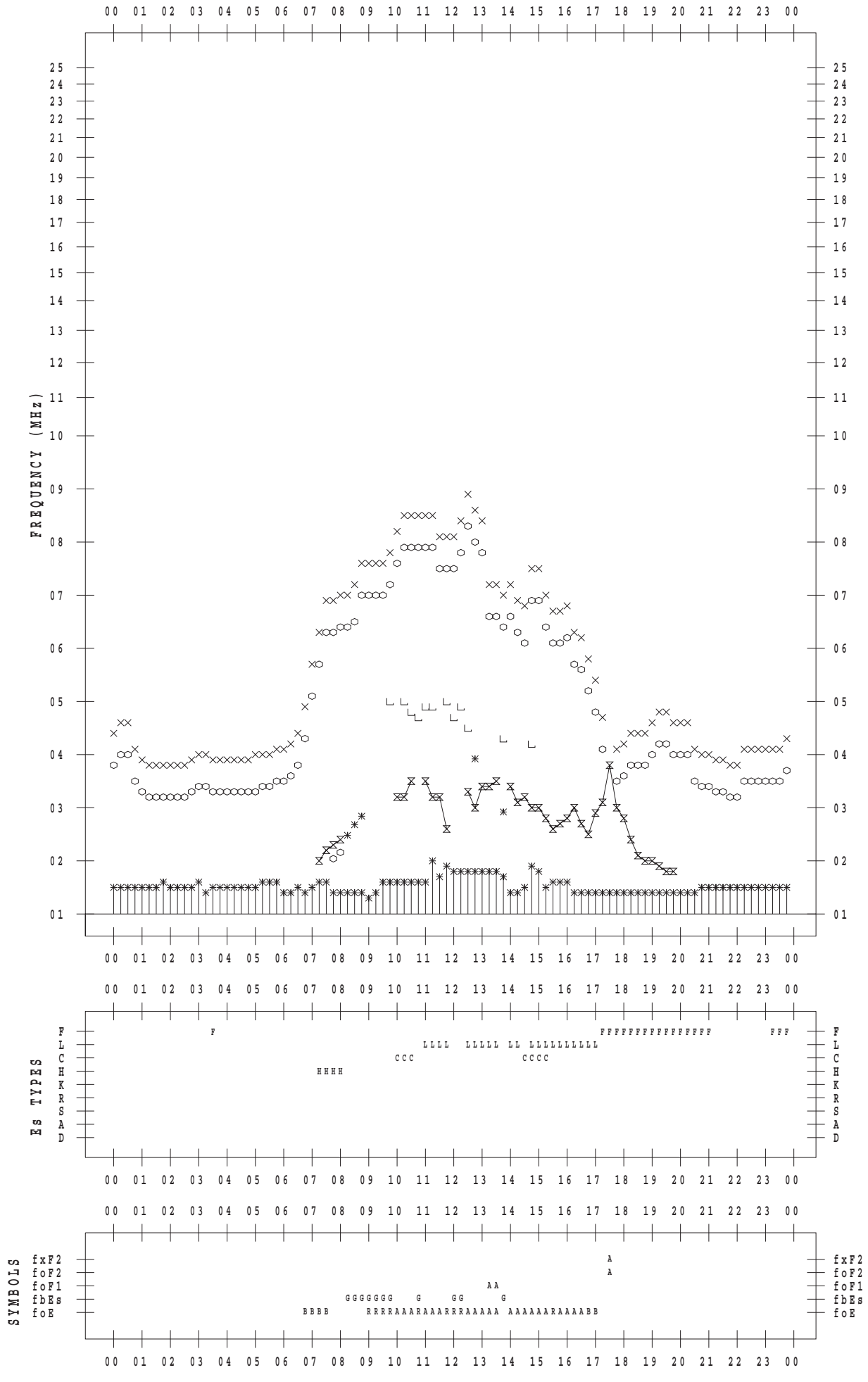
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 7

135 °E MEAN TIME



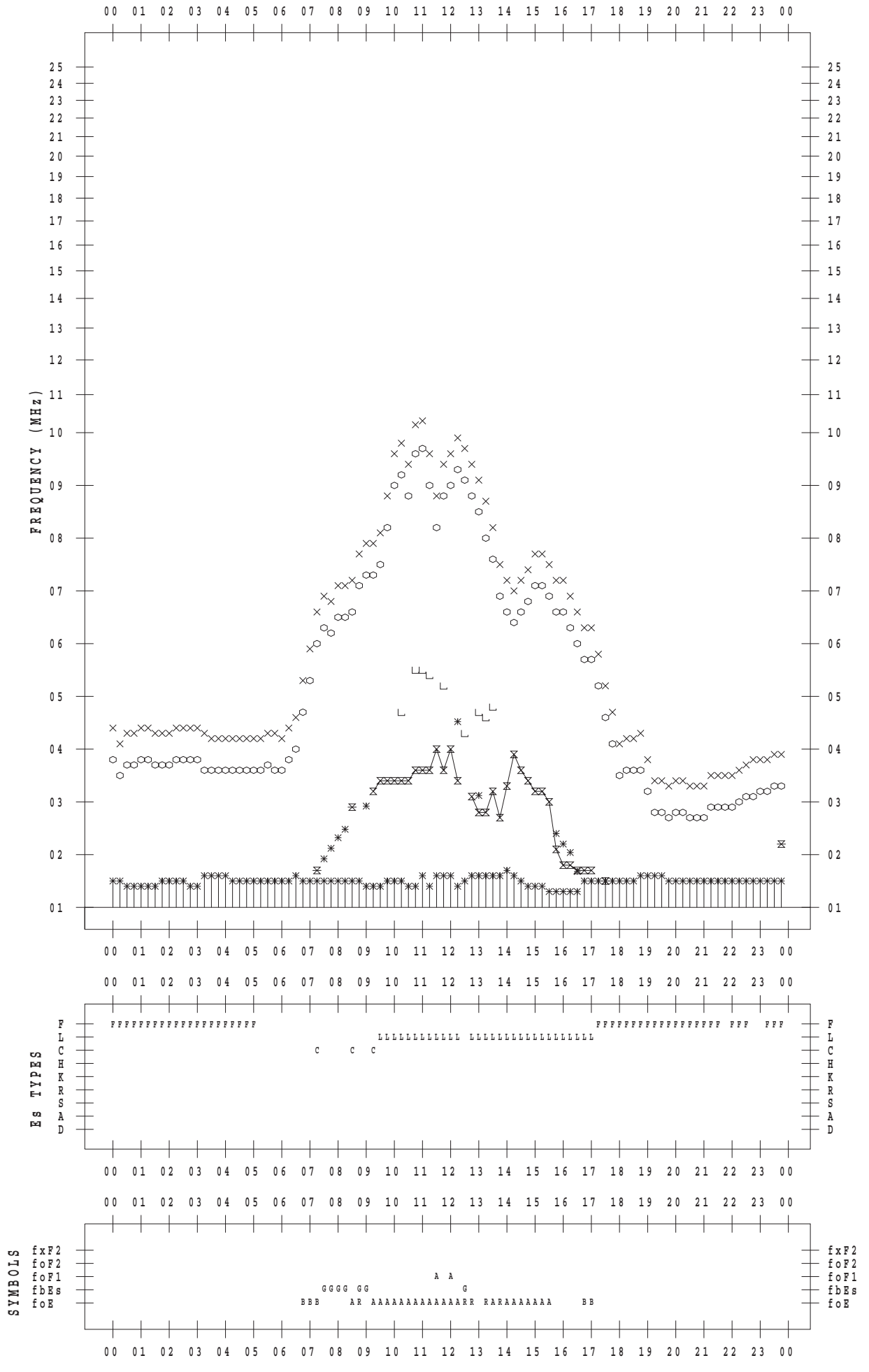
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 8

135 °E MEAN TIME



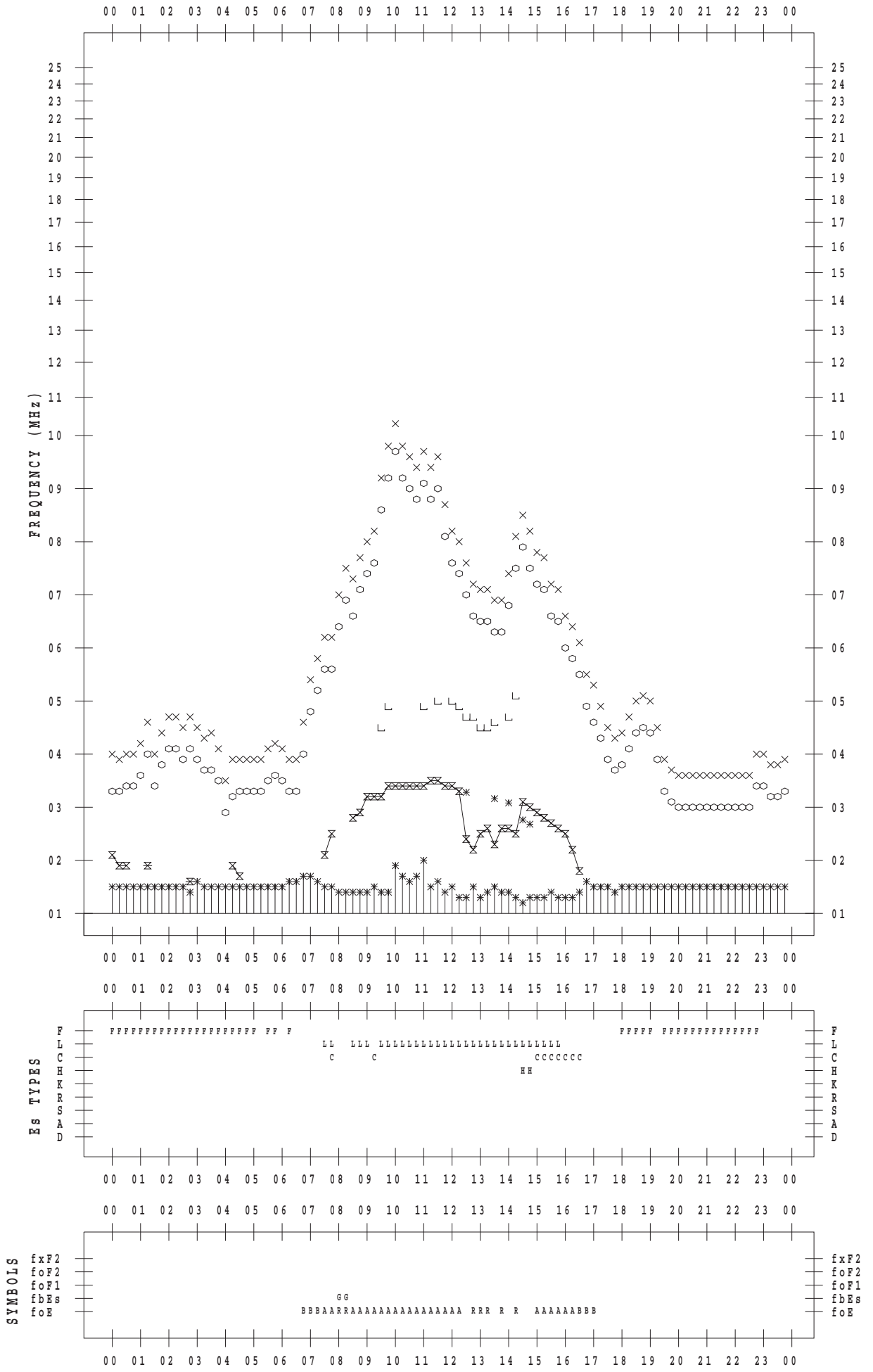
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/ 9

135 °E MEAN TIME



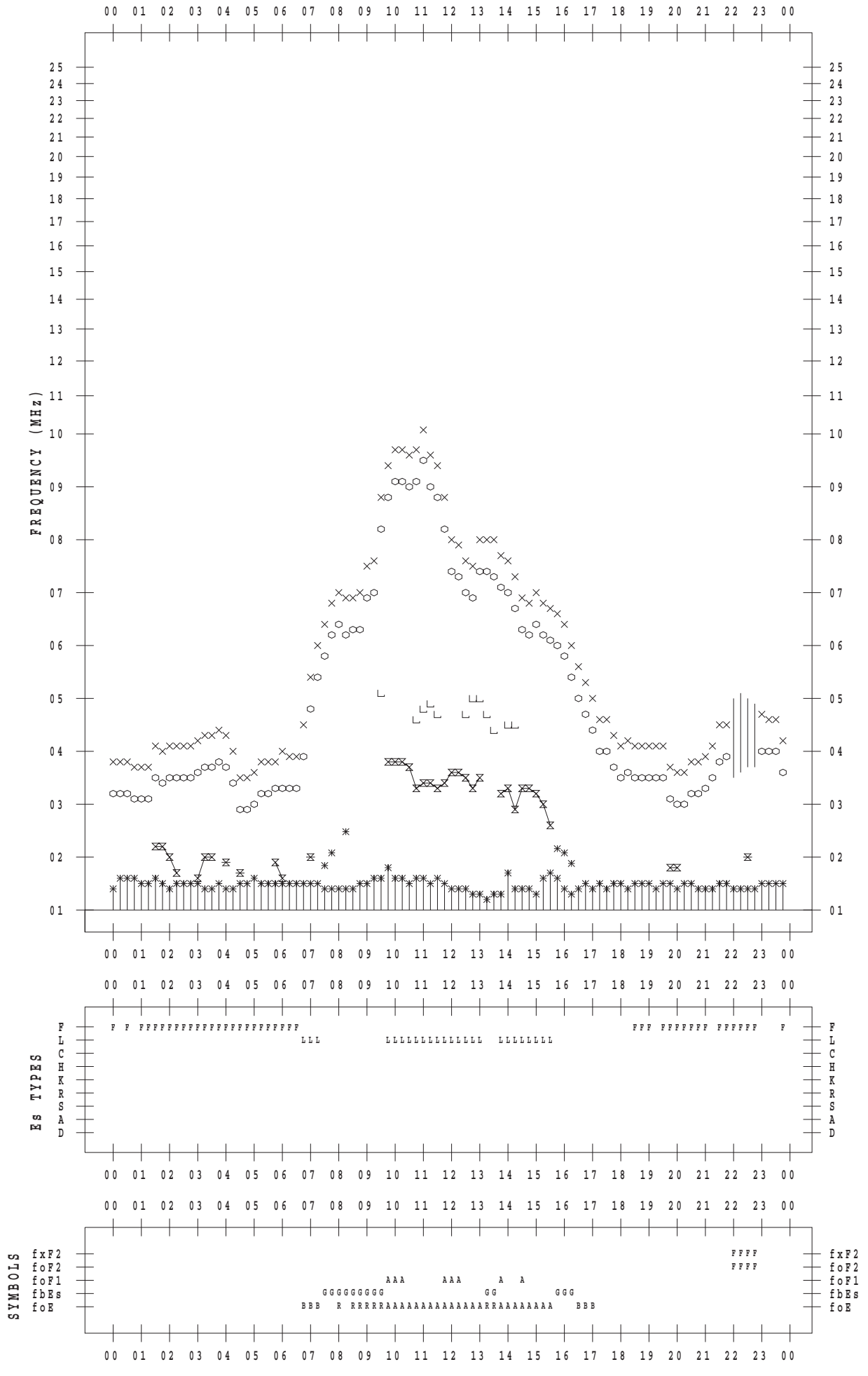
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/10

135 °E MEAN TIME



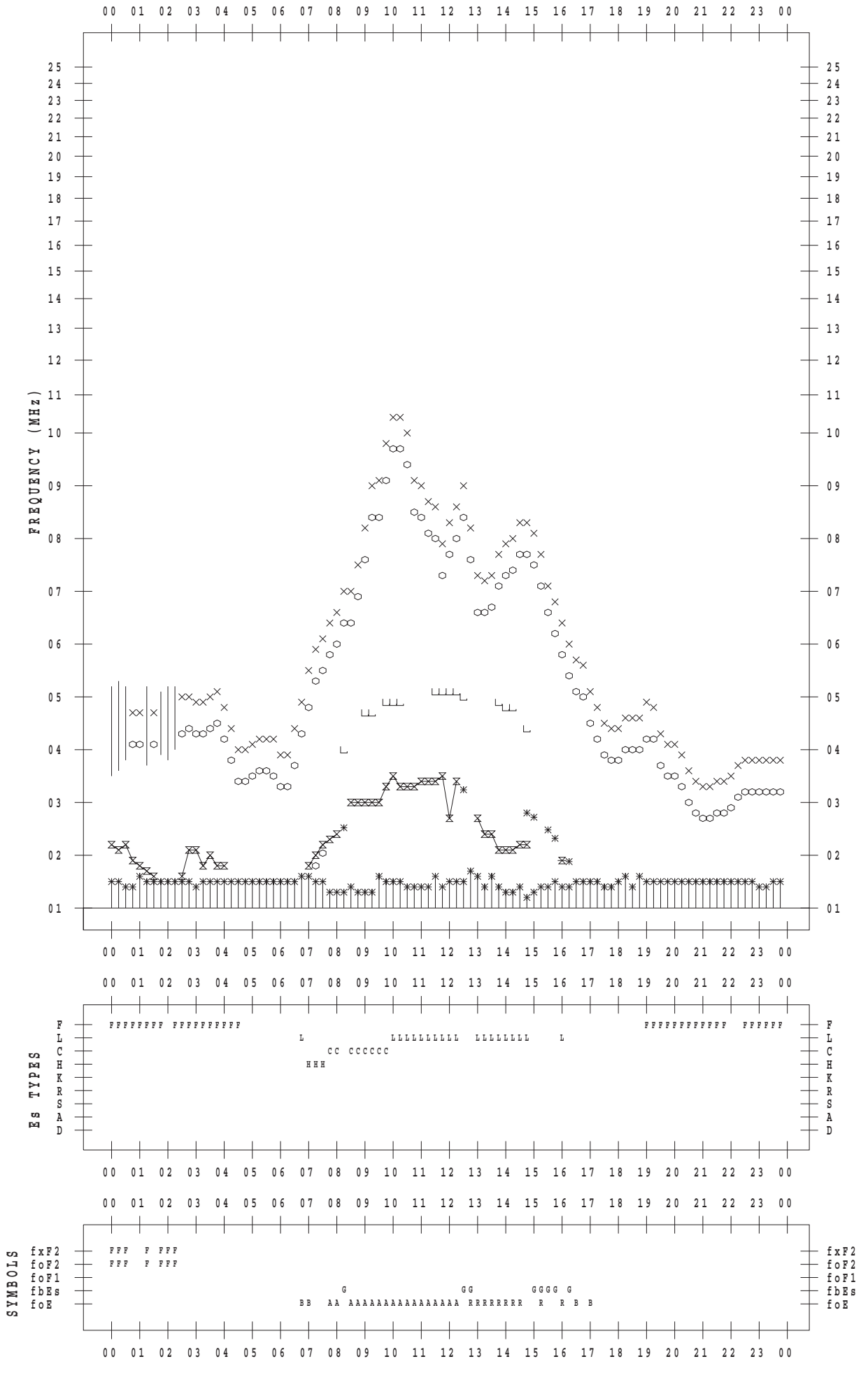
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/11

135 °E MEAN TIME



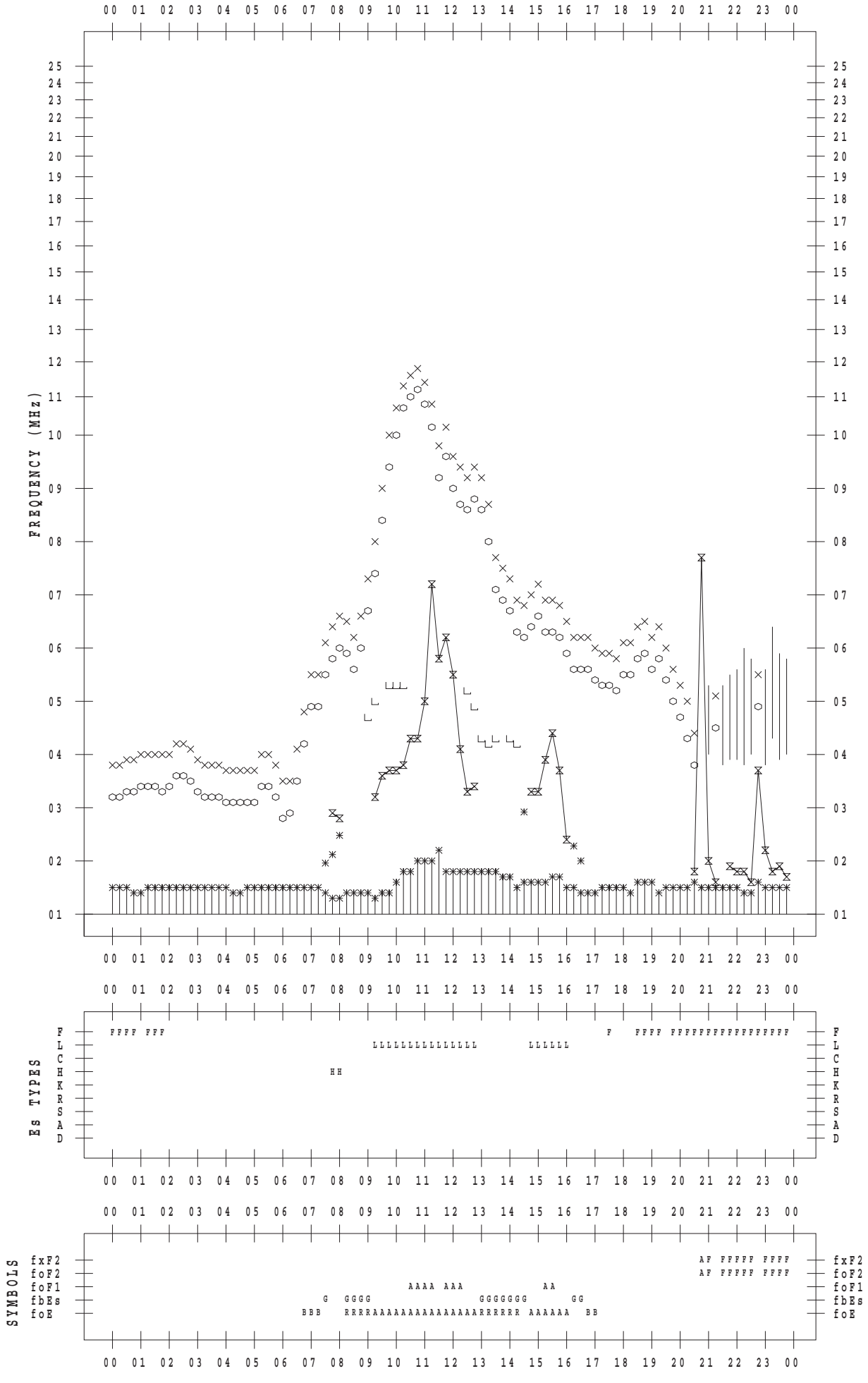
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/12

135 °E MEAN TIME



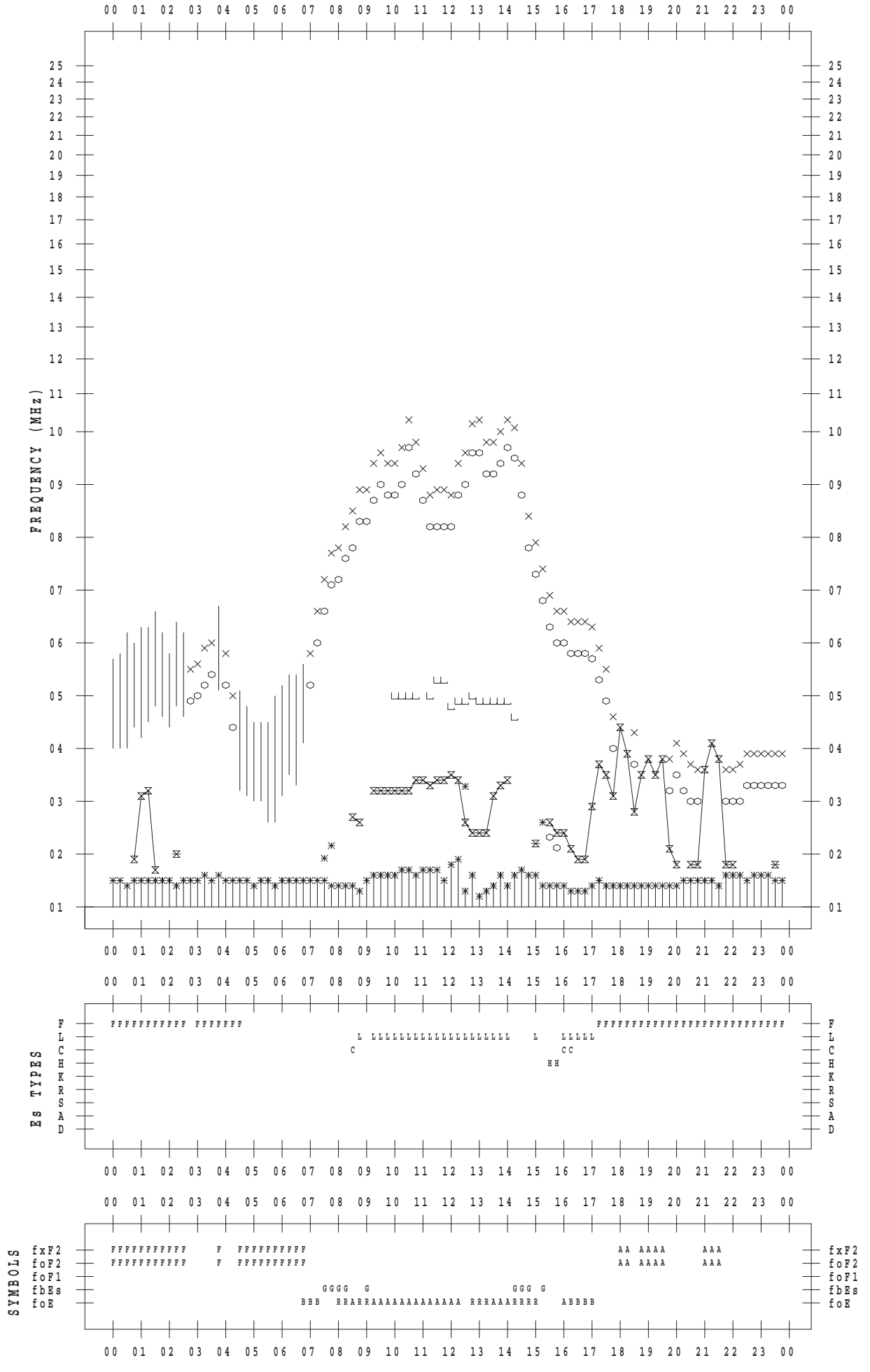
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/13

135 °E MEAN TIME



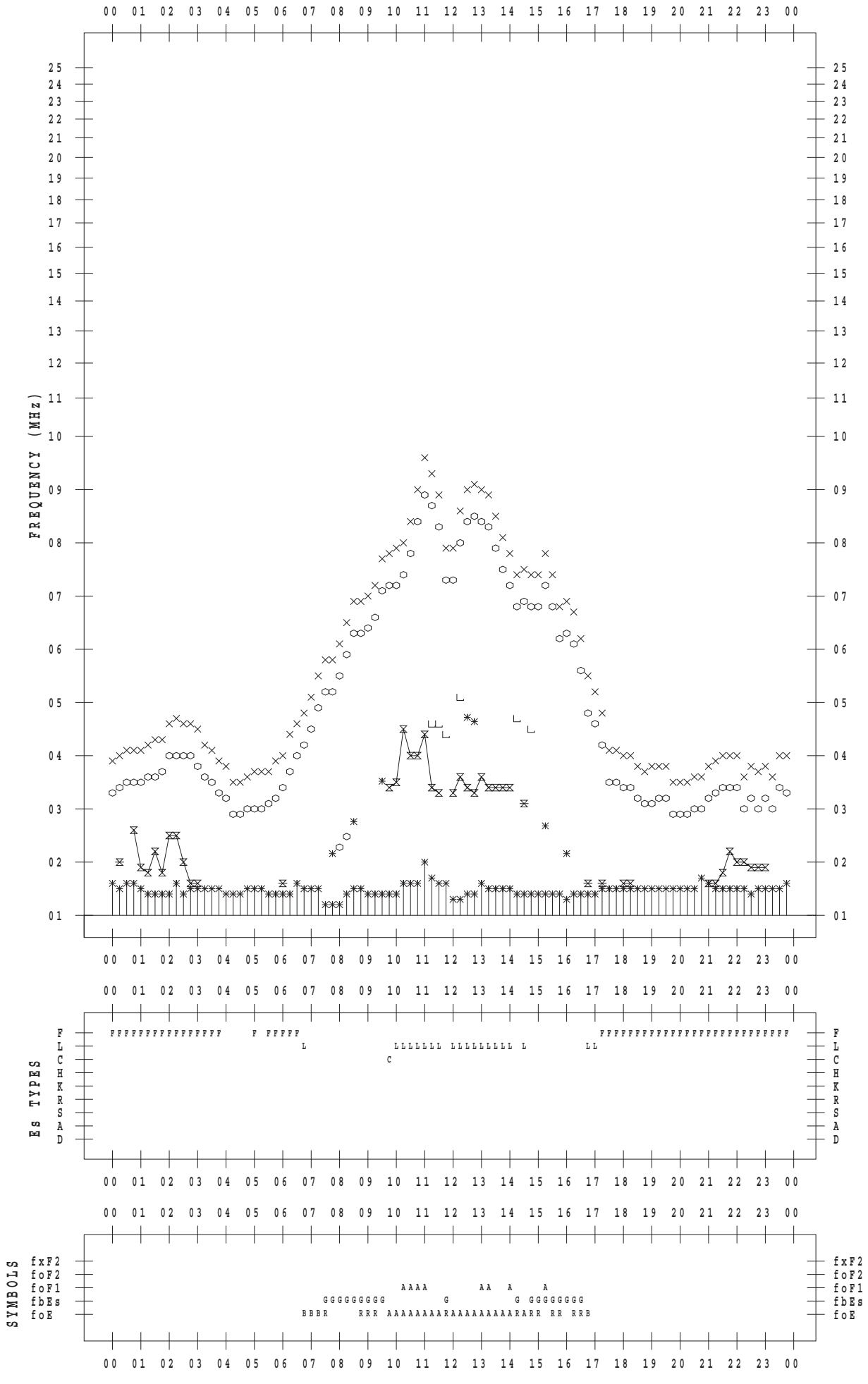
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/14

135 °E MEAN TIME



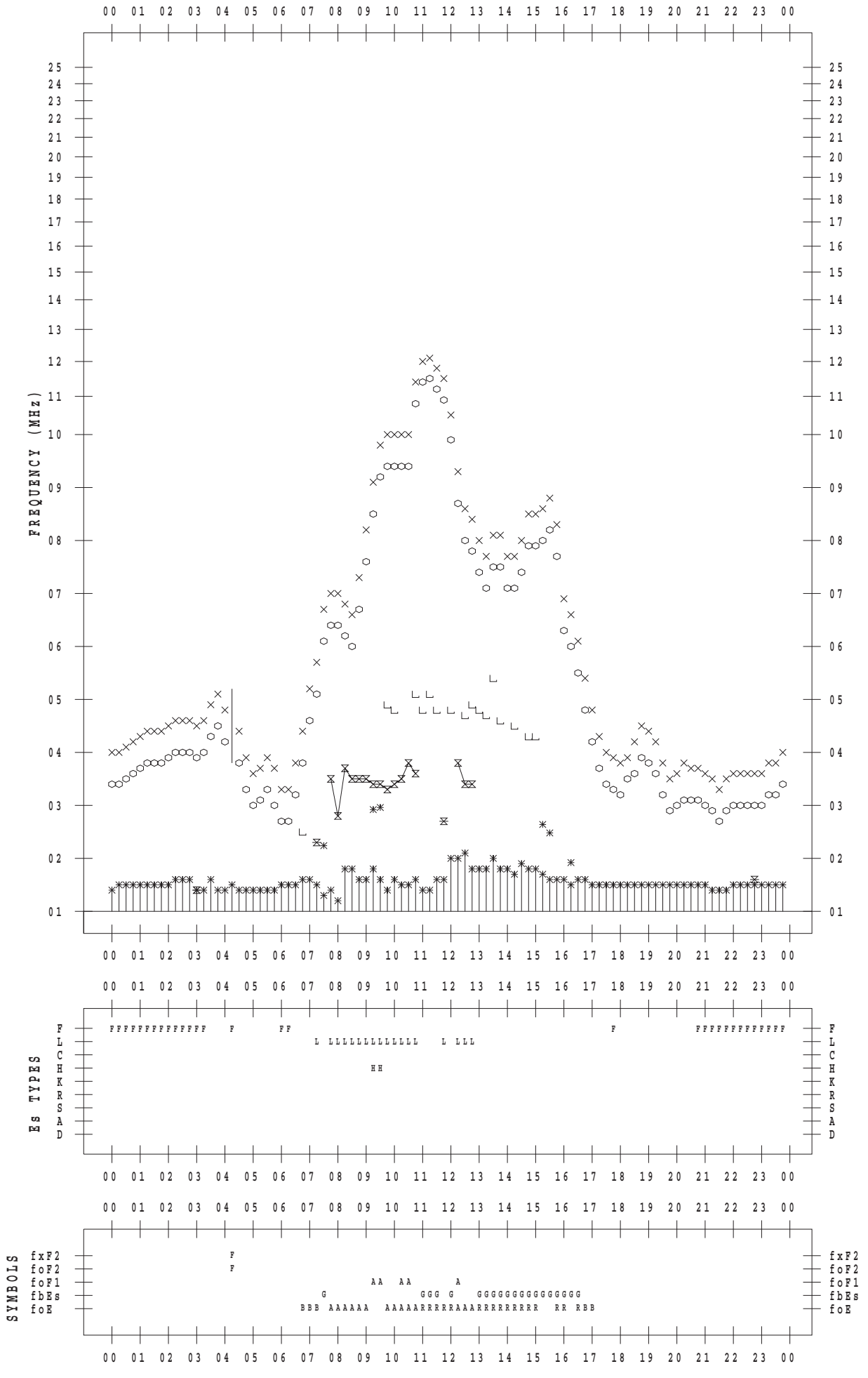
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/15

135 °E MEAN TIME



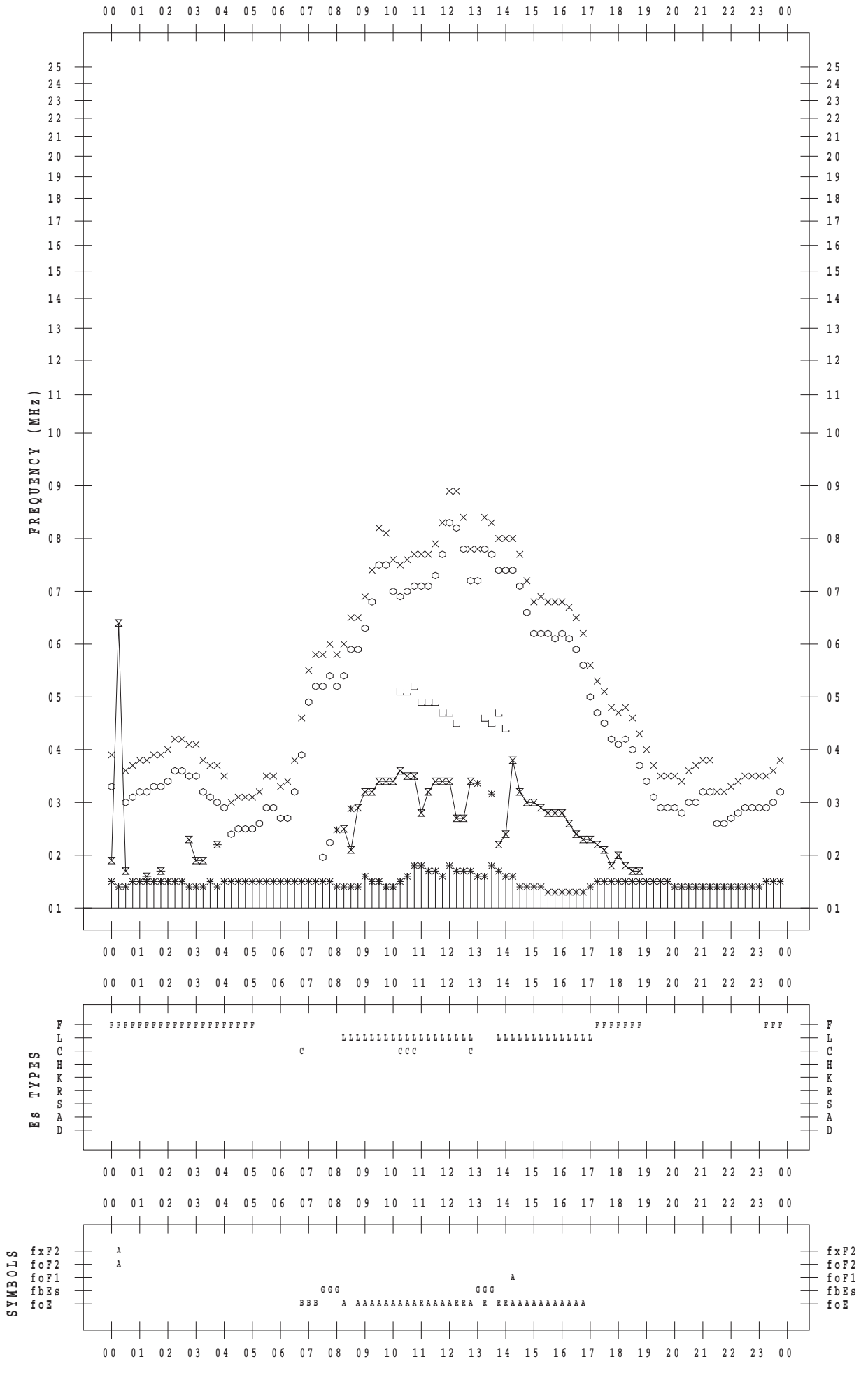
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/16

135 °E MEAN TIME



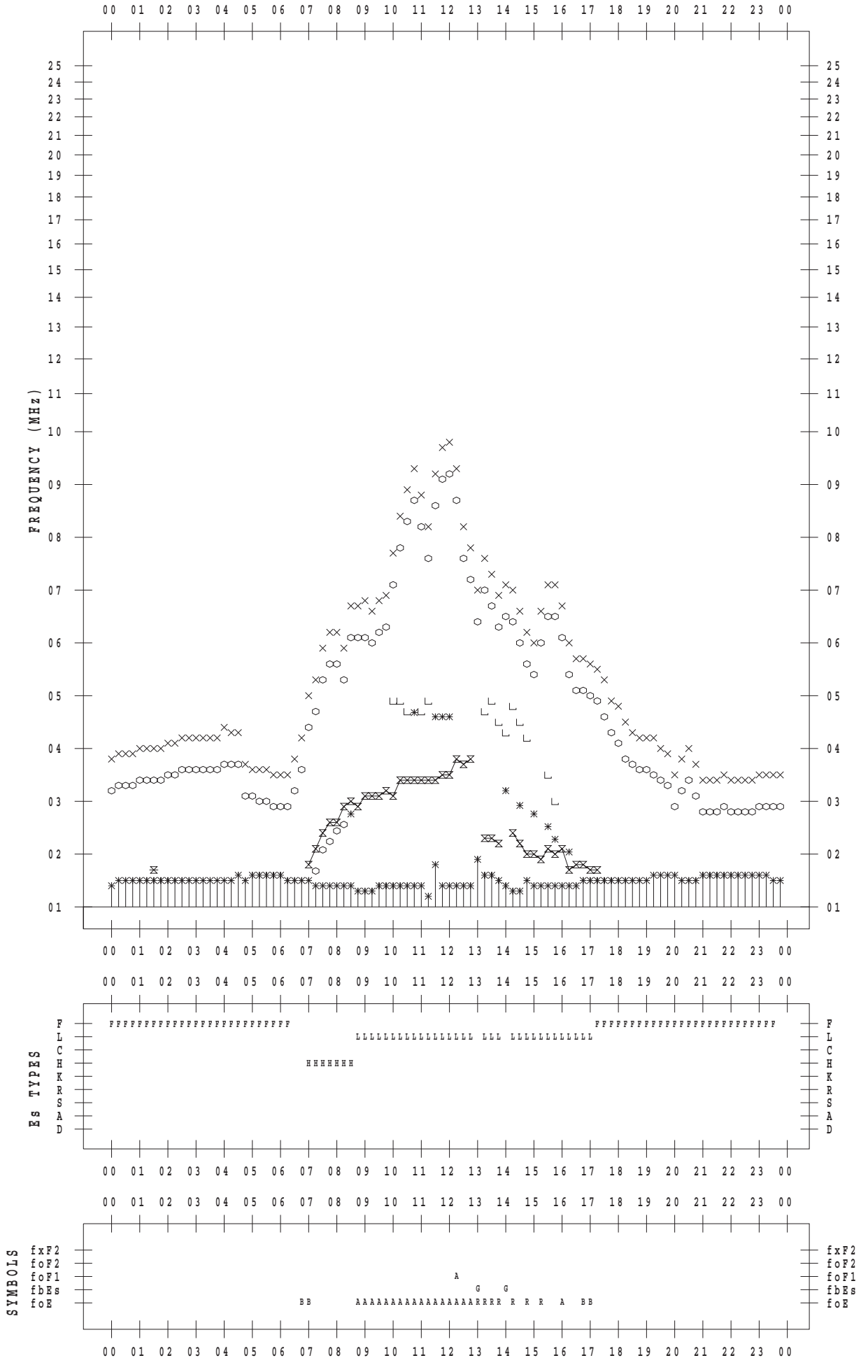
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/17

135 °E MEAN TIME



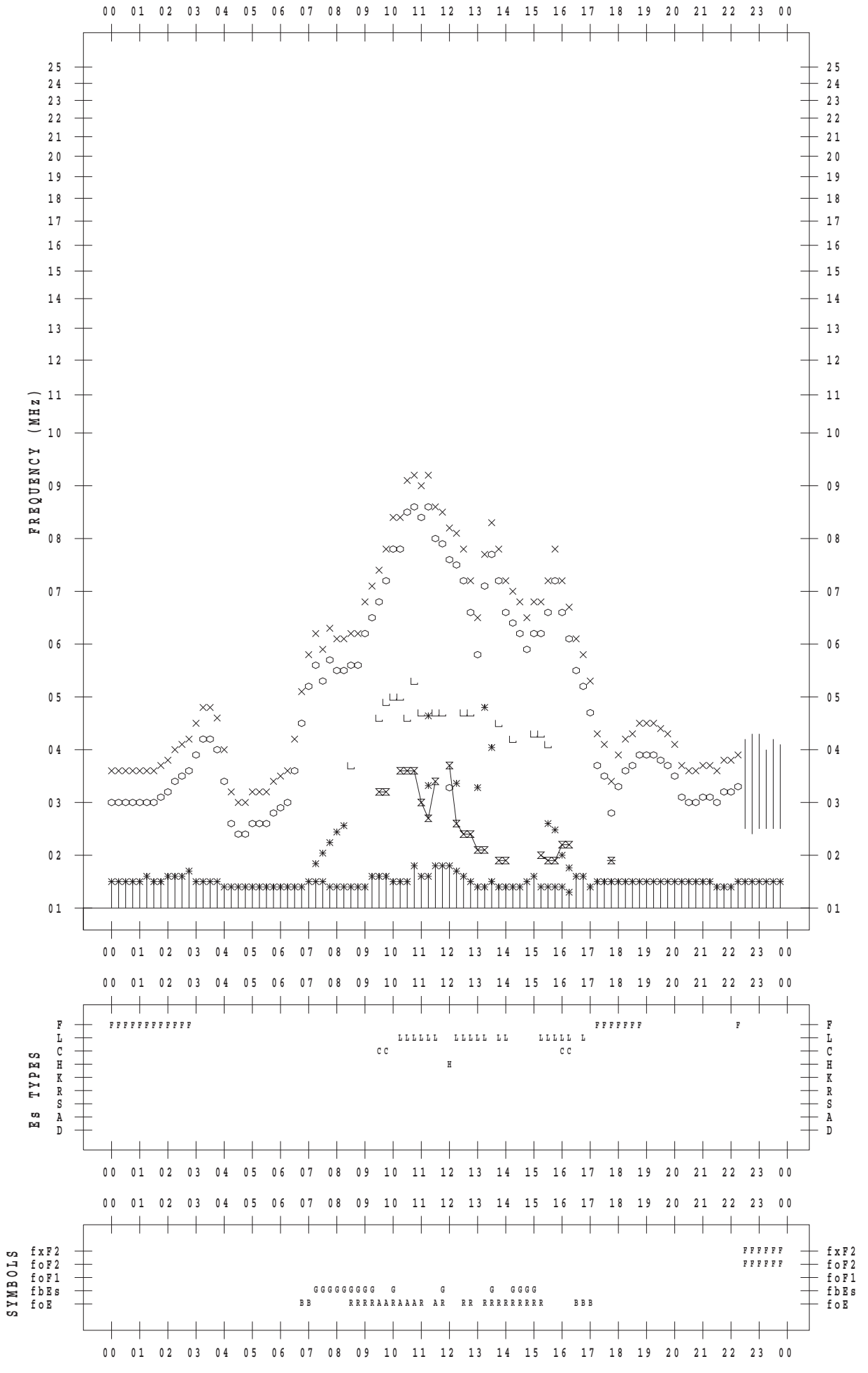
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/18

135 °E MEAN TIME



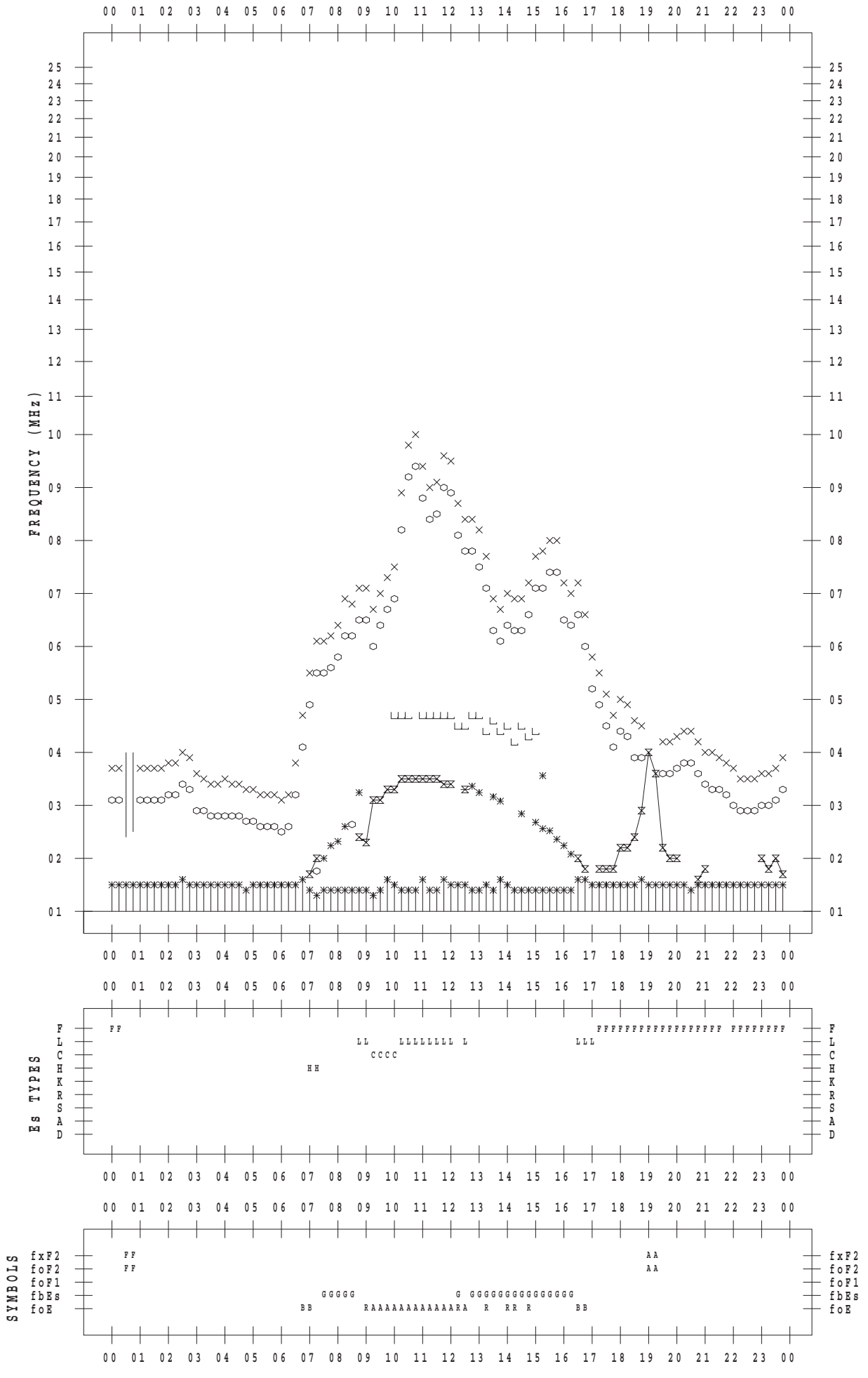
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/19

135 °E MEAN TIME



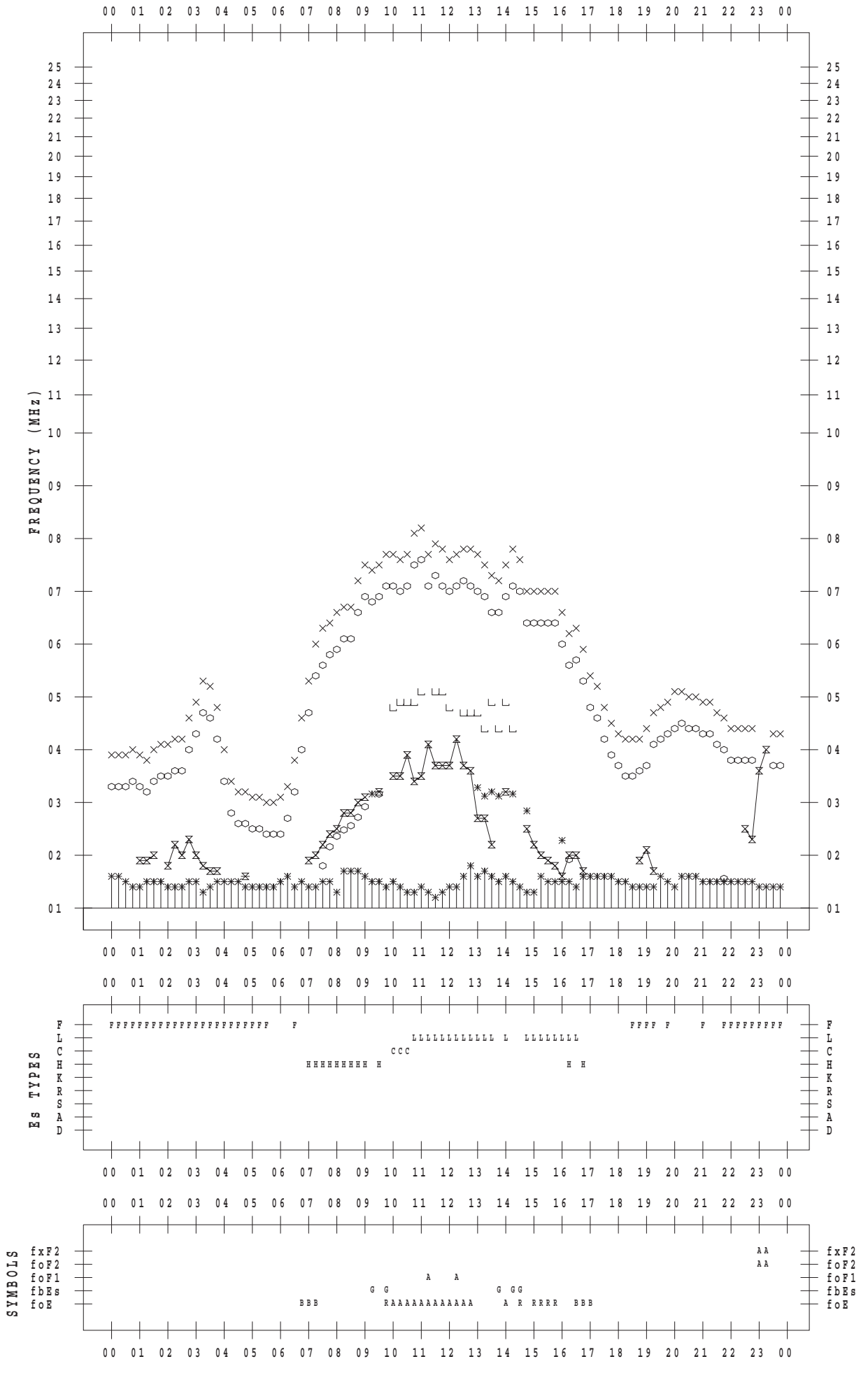
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/20

135 °E MEAN TIME



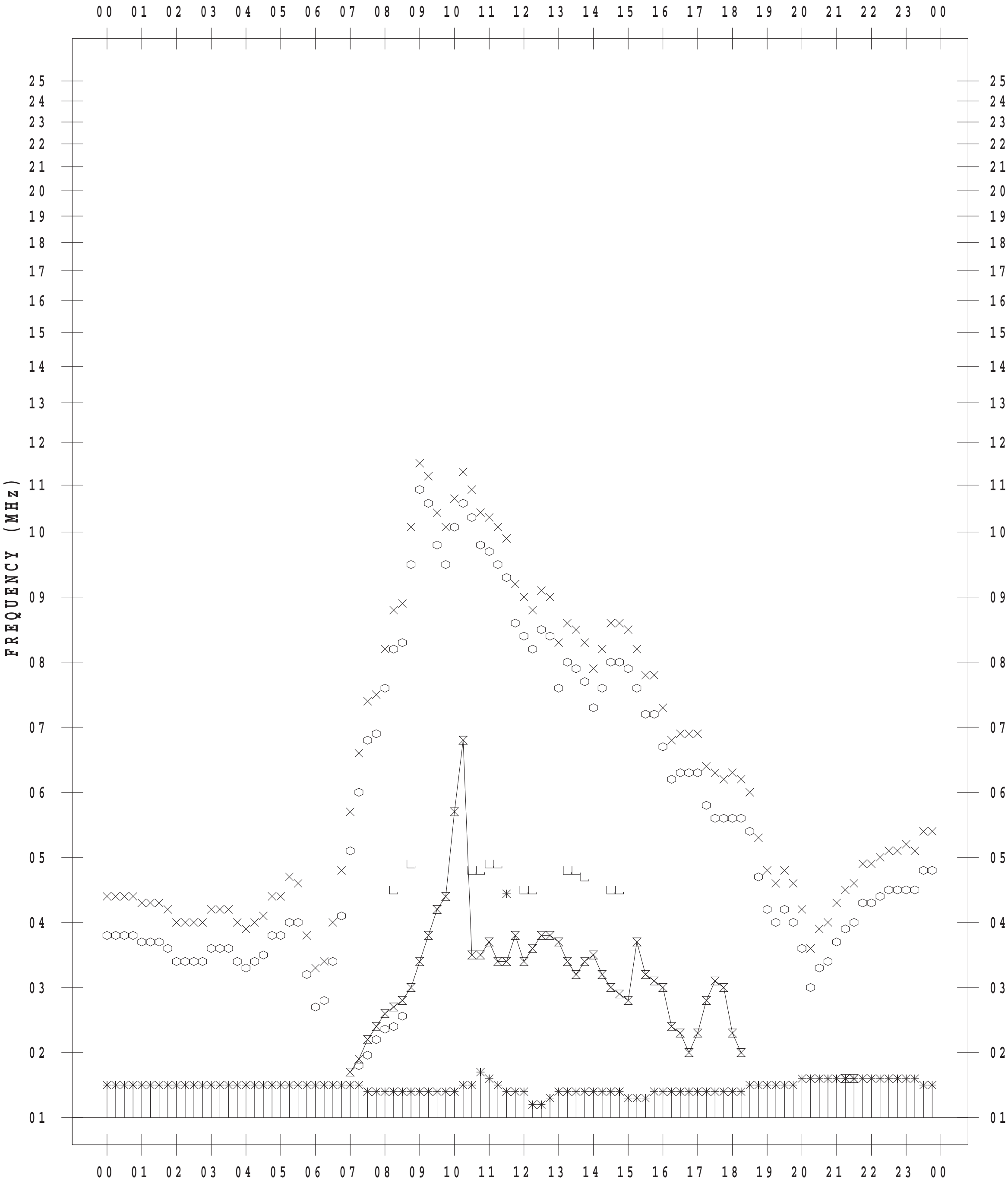
f-PLOT DATA

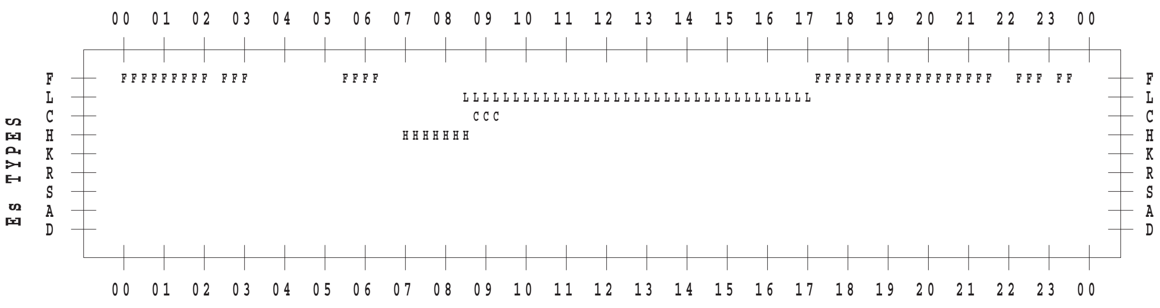
SCALER : I.NISHIMUTA

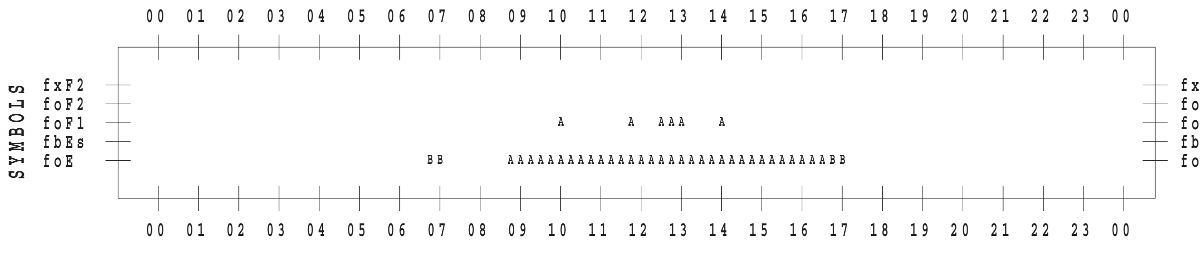
STATION : Kokubunji

DATE : 2016/ 1/21

135 °E MEAN TIME







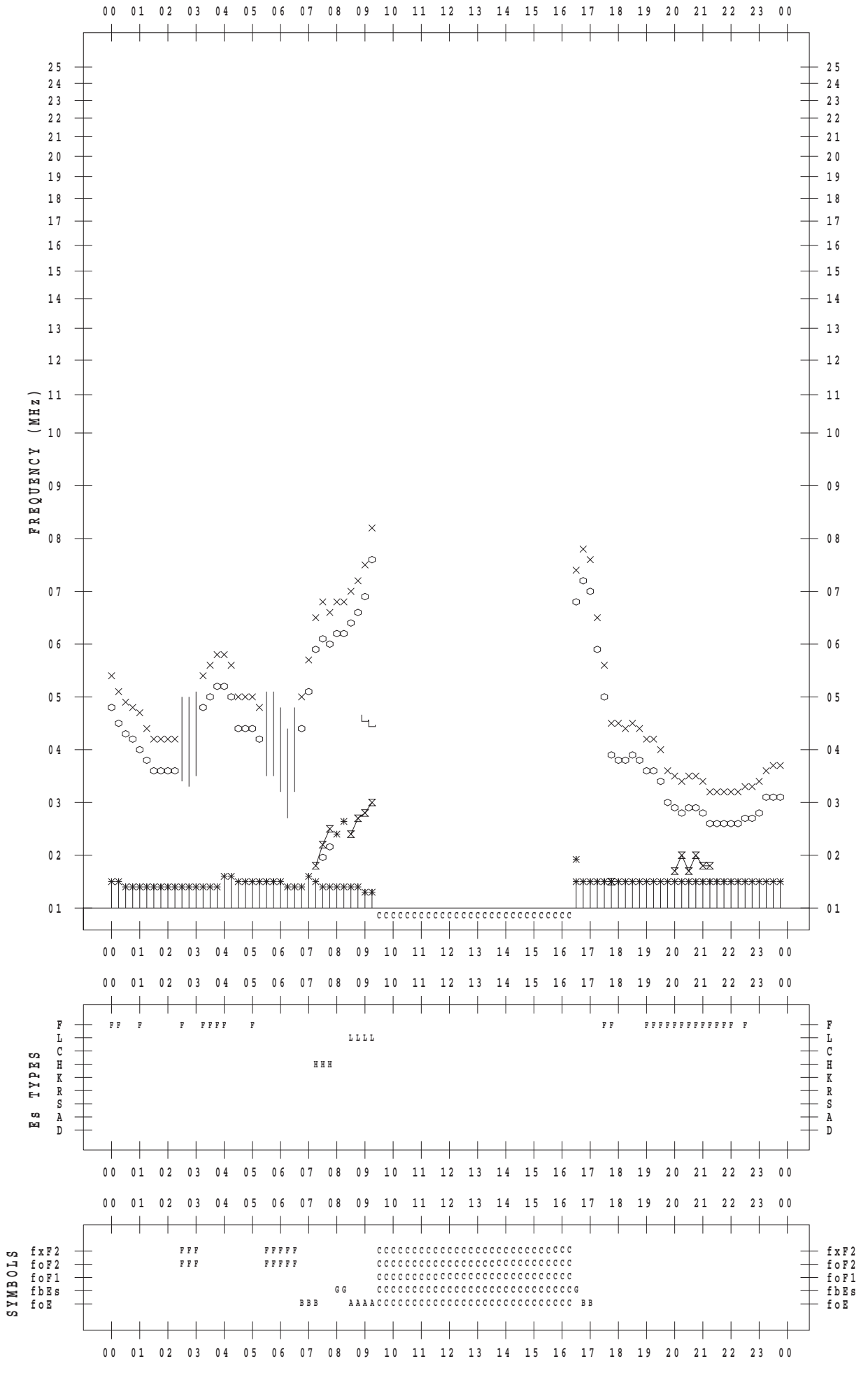
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/22

135 °E MEAN TIME



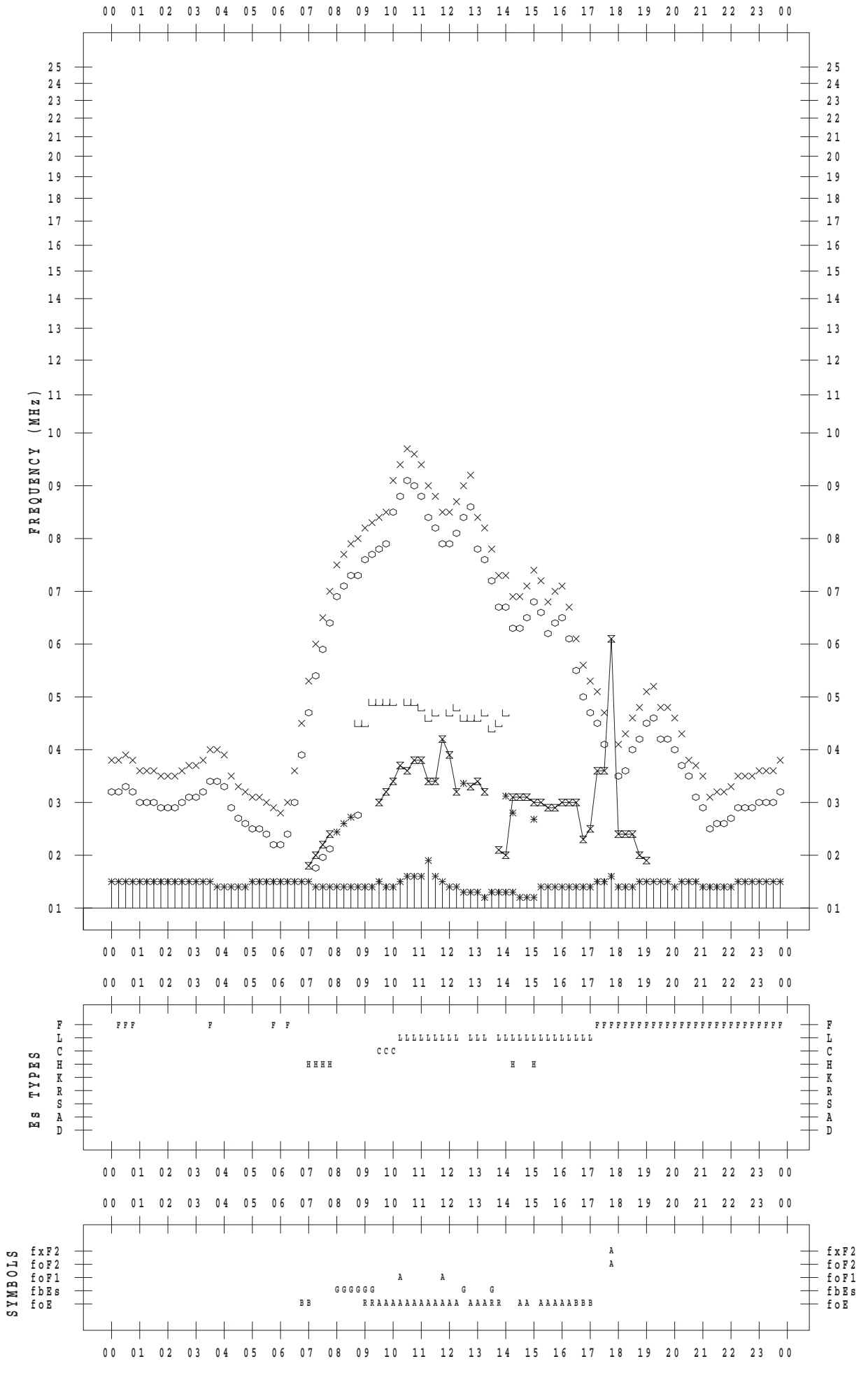
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/23

135 °E MEAN TIME

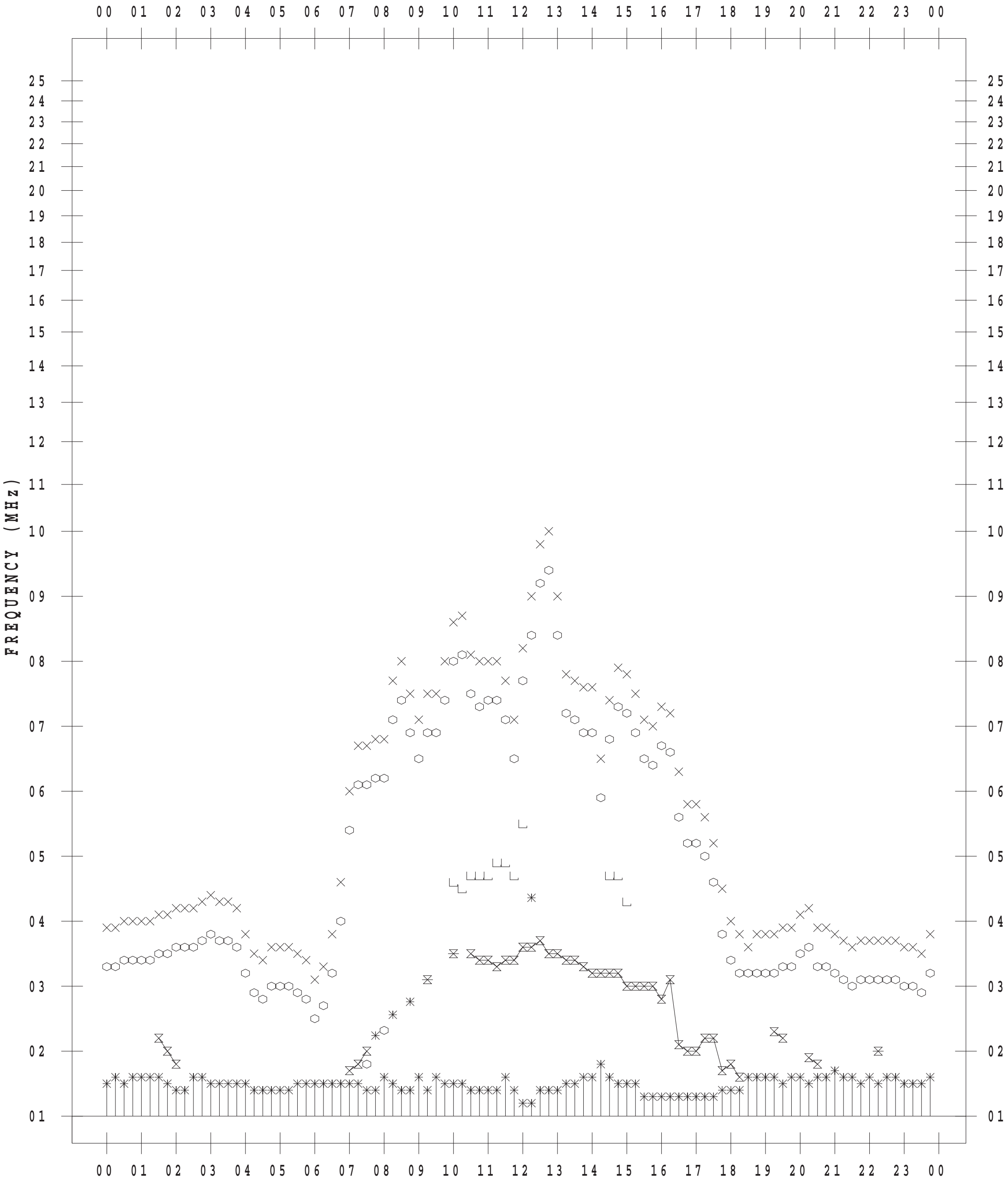


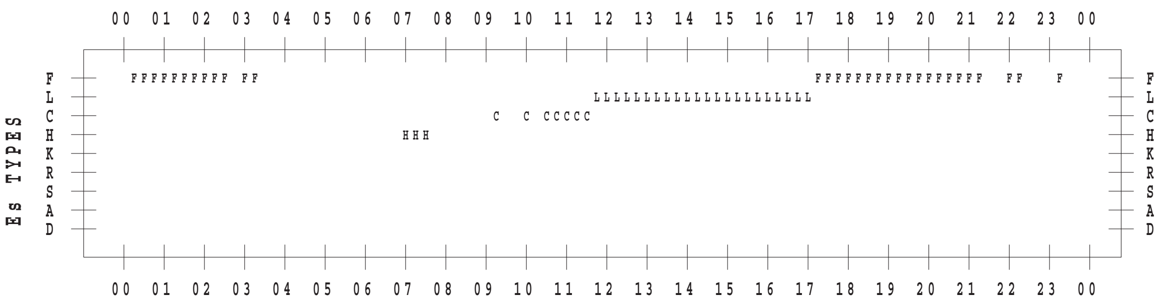
f-PLOT DATA

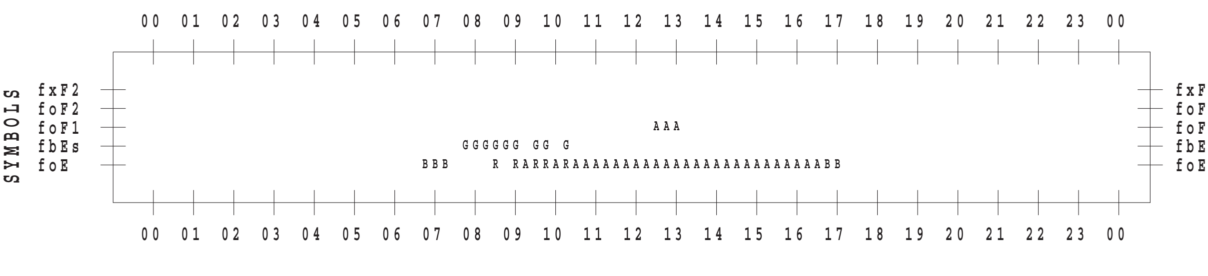
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2016/ 1/24

135 °E MEAN TIME



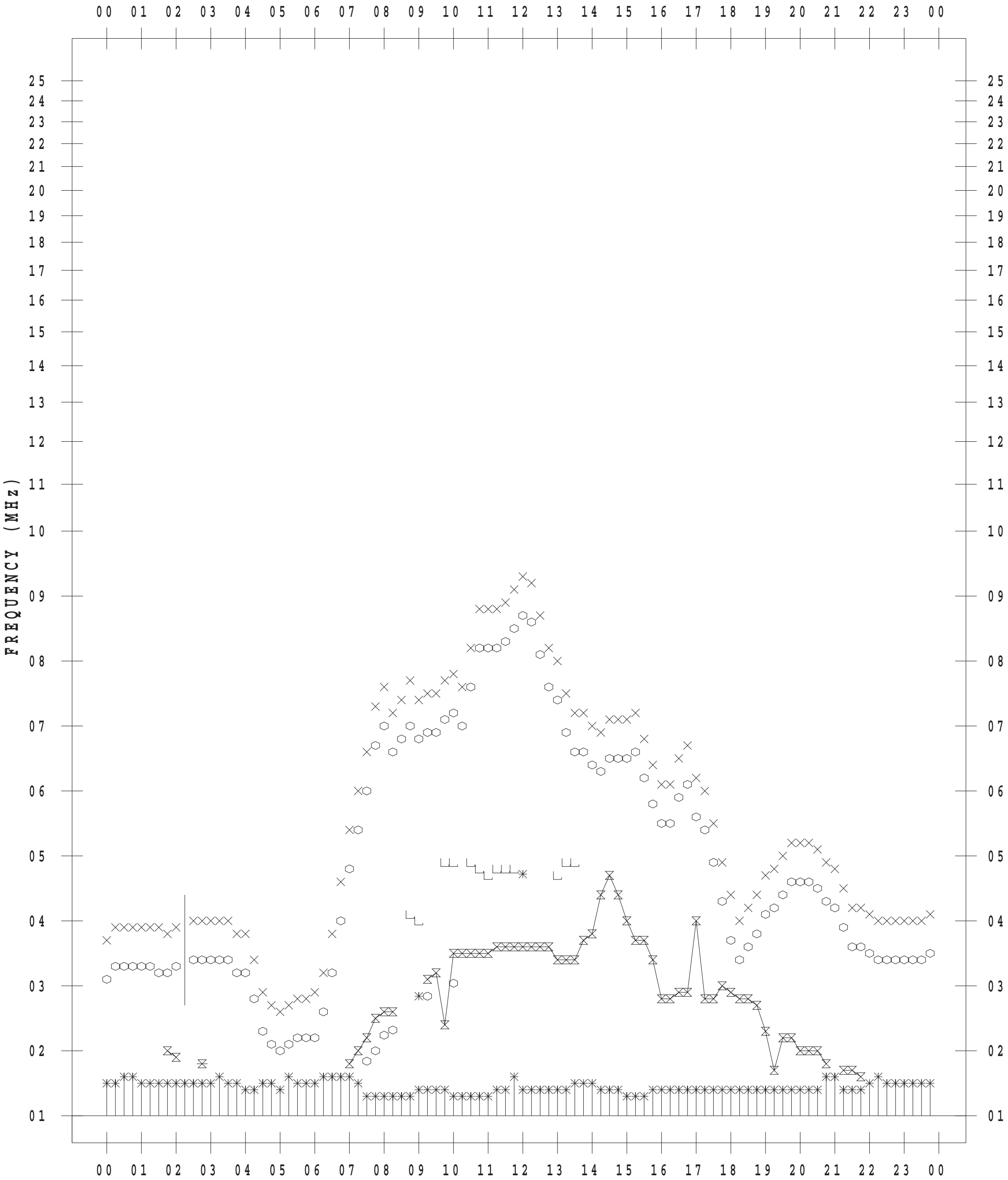


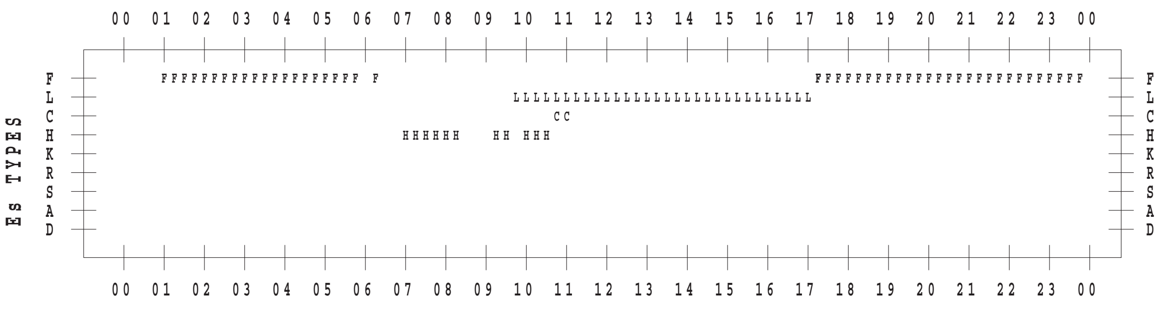


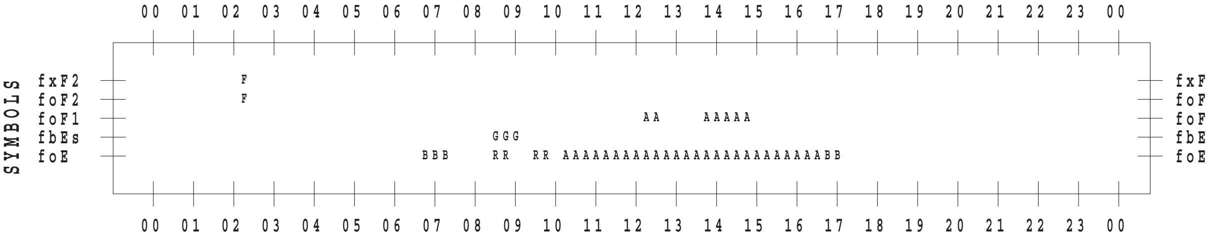
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji　　　　DATE : 2016/ 1/25







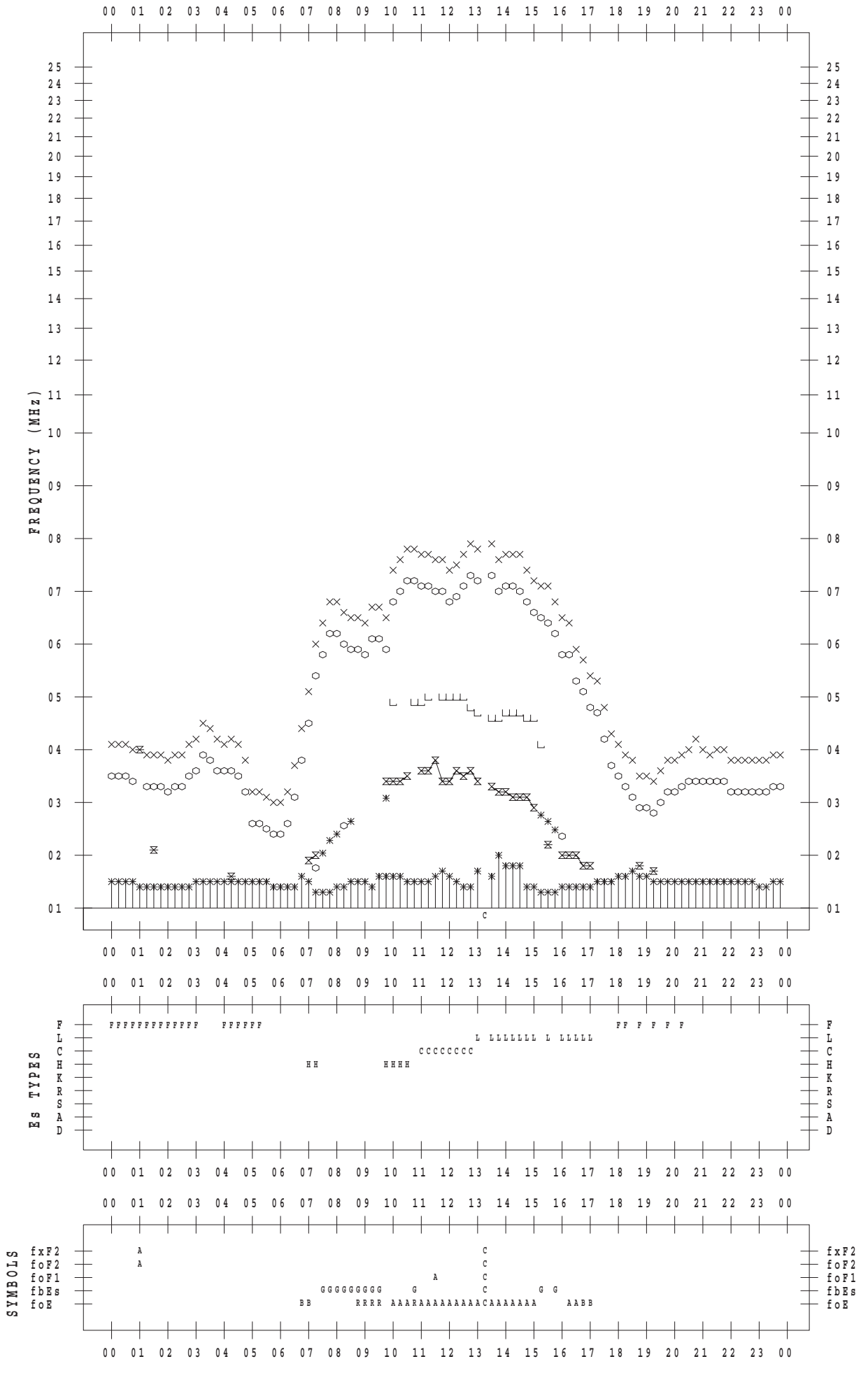
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/26

135 °E MEAN TIME



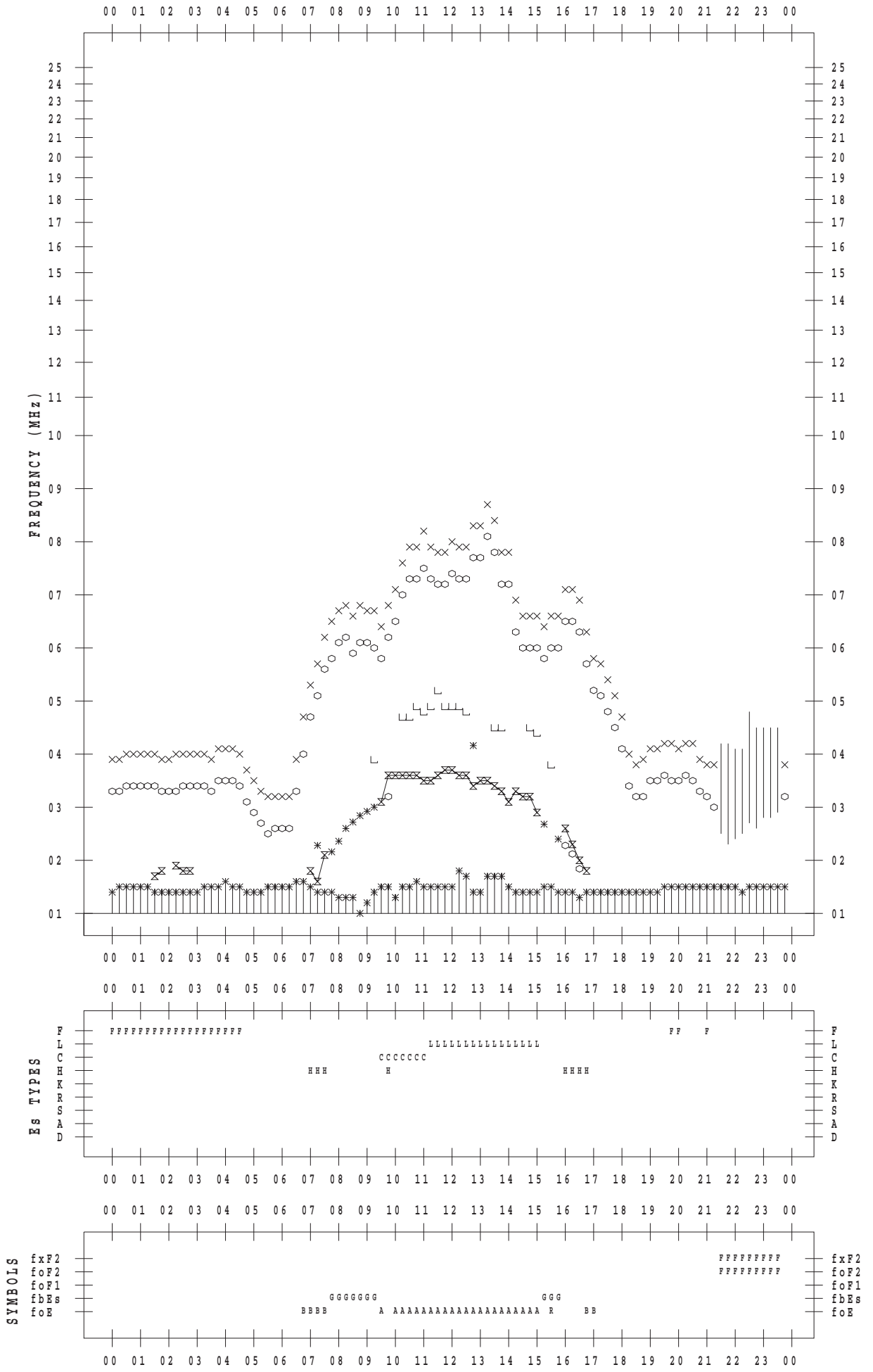
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/27

135 °E MEAN TIME



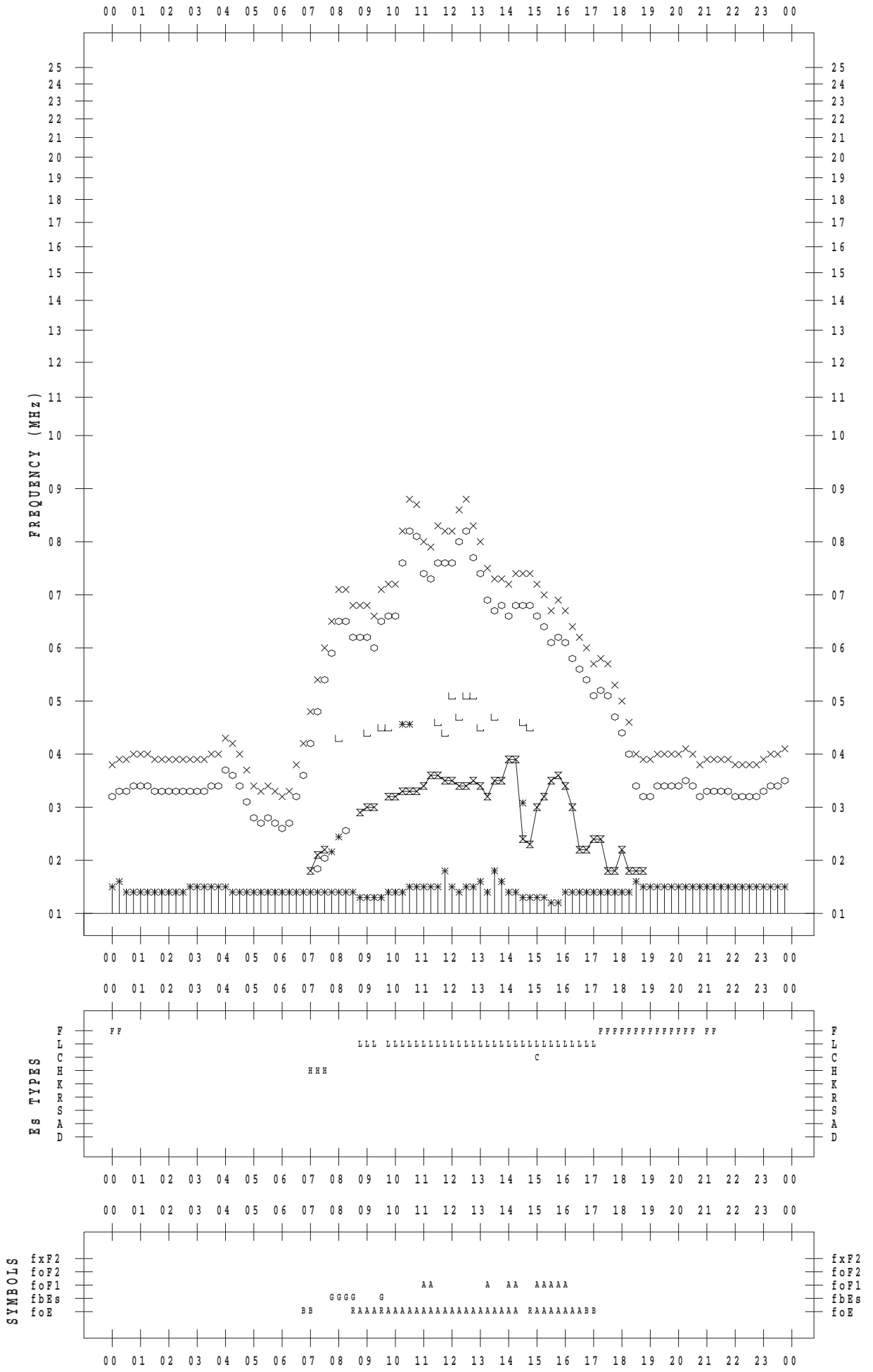
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/28

135 °E MEAN TIME



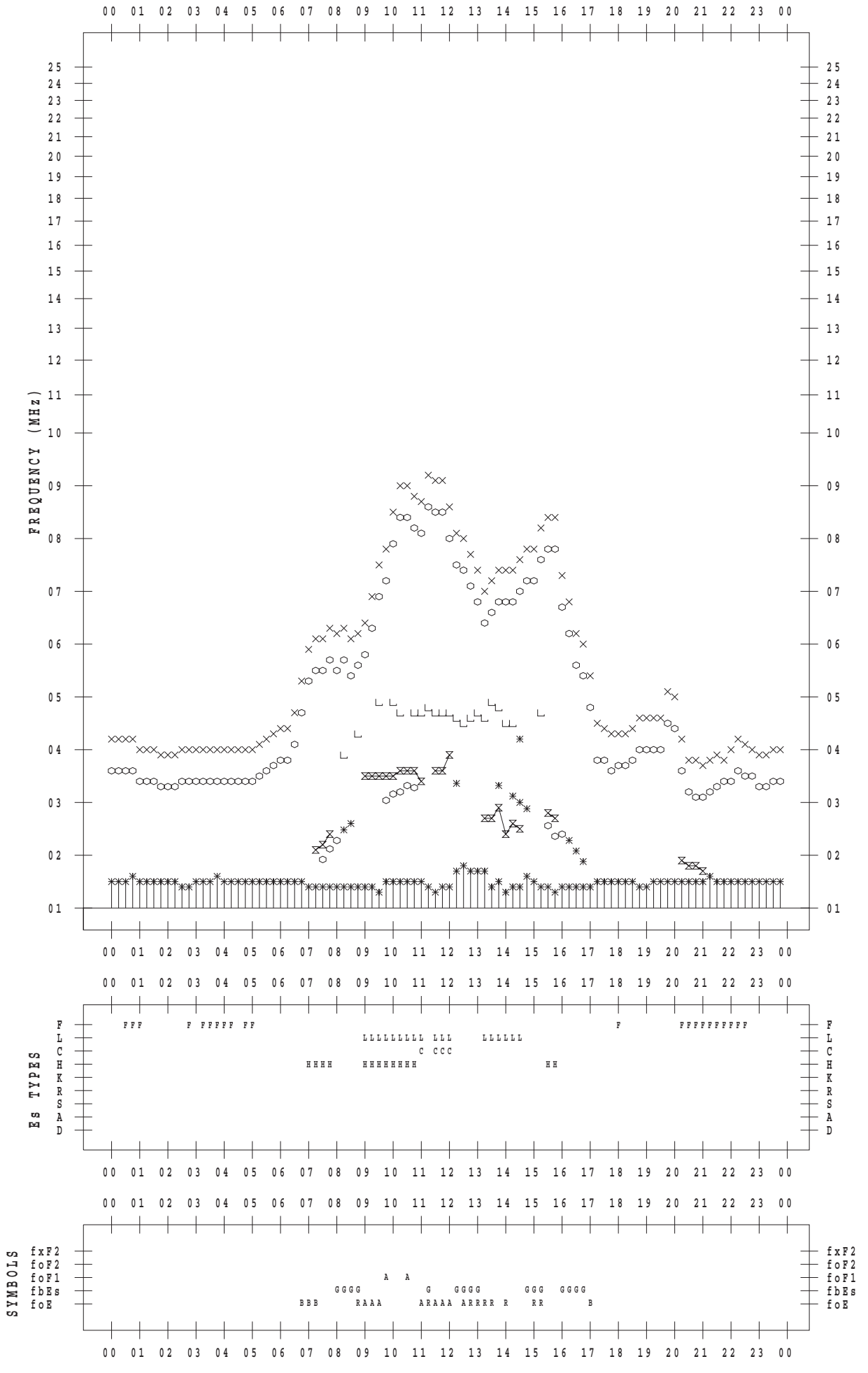
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/29

135 °E MEAN TIME



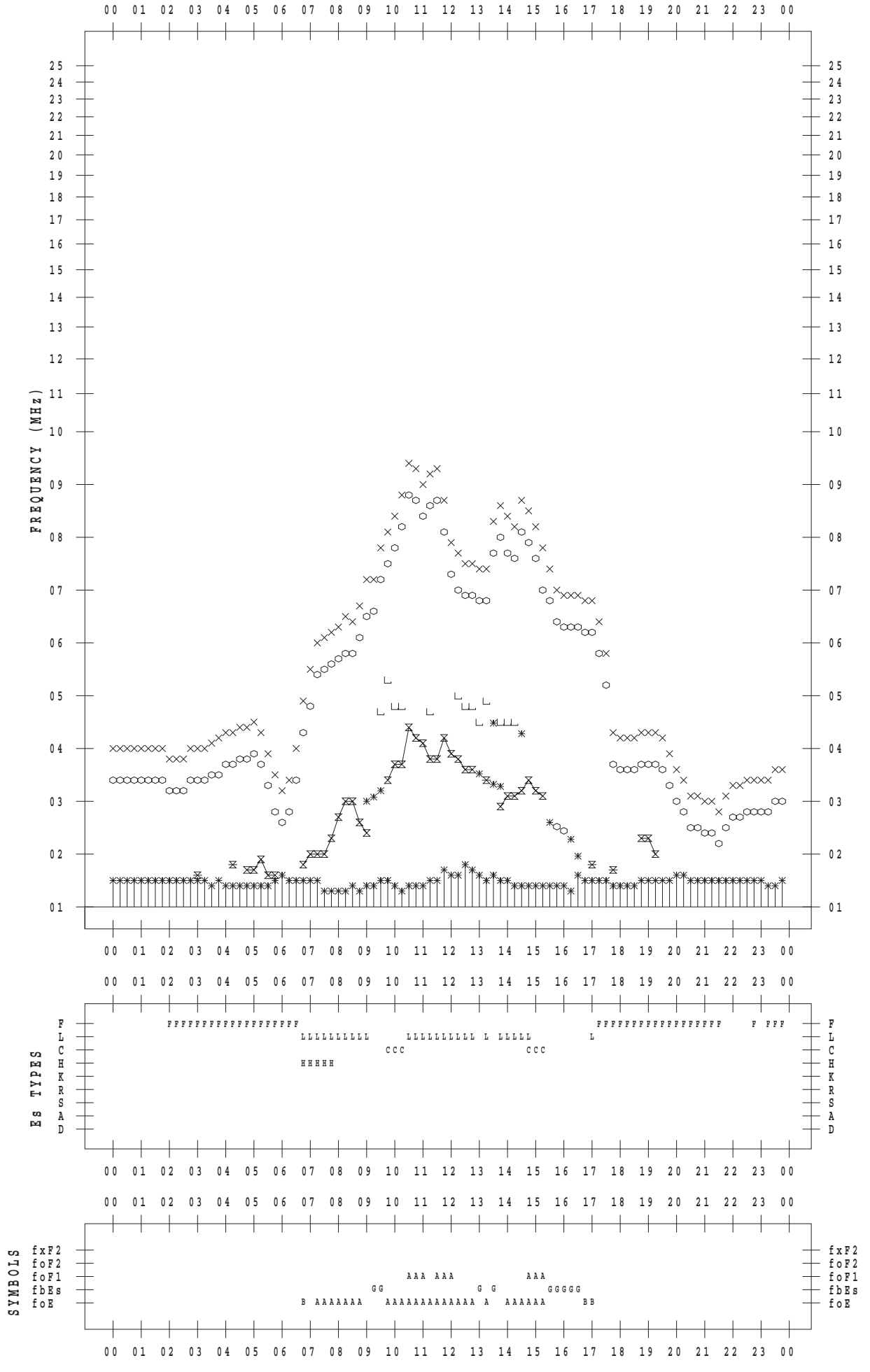
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/30

135 °E MEAN TIME



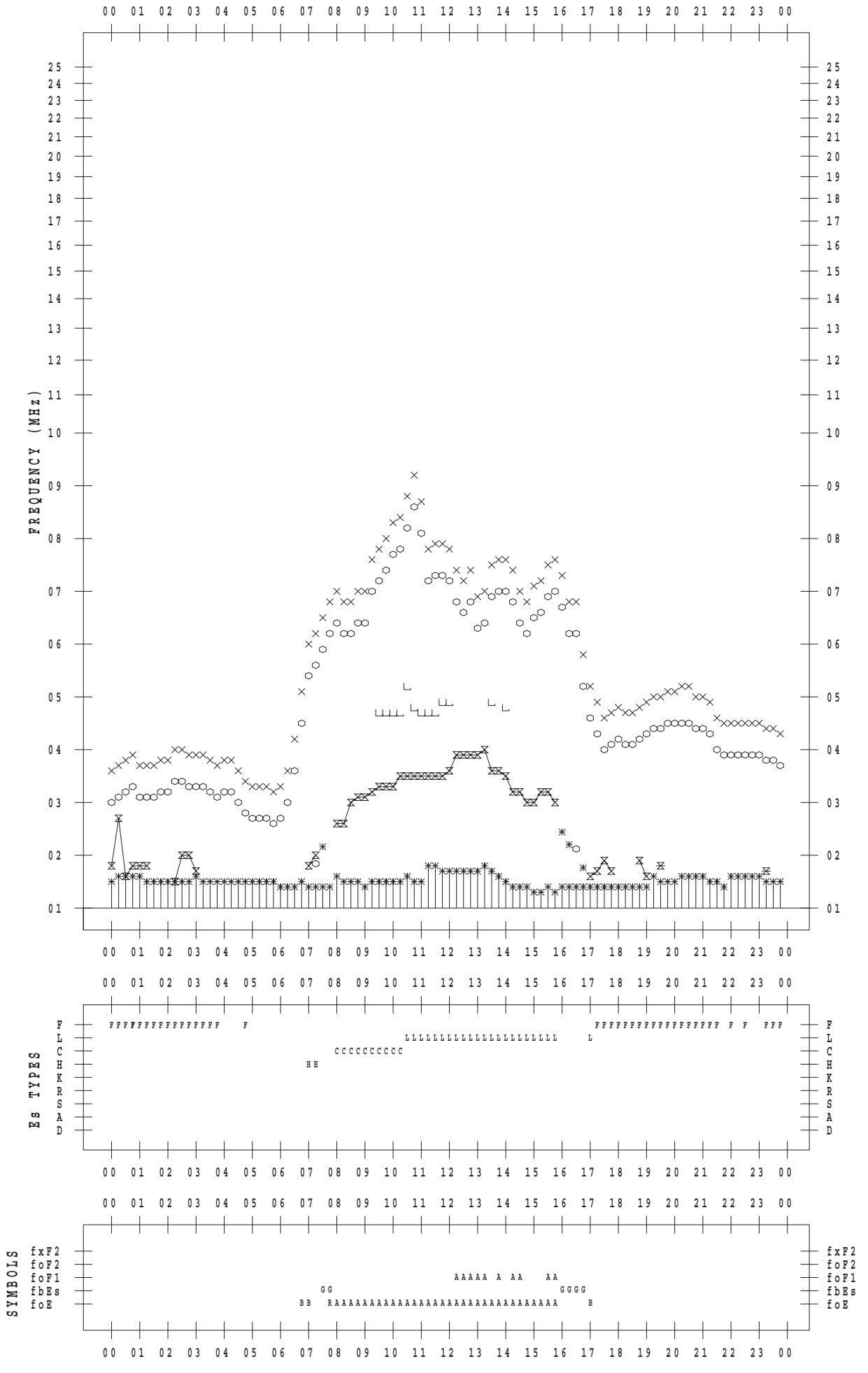
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 1/31

135 °E MEAN TIME



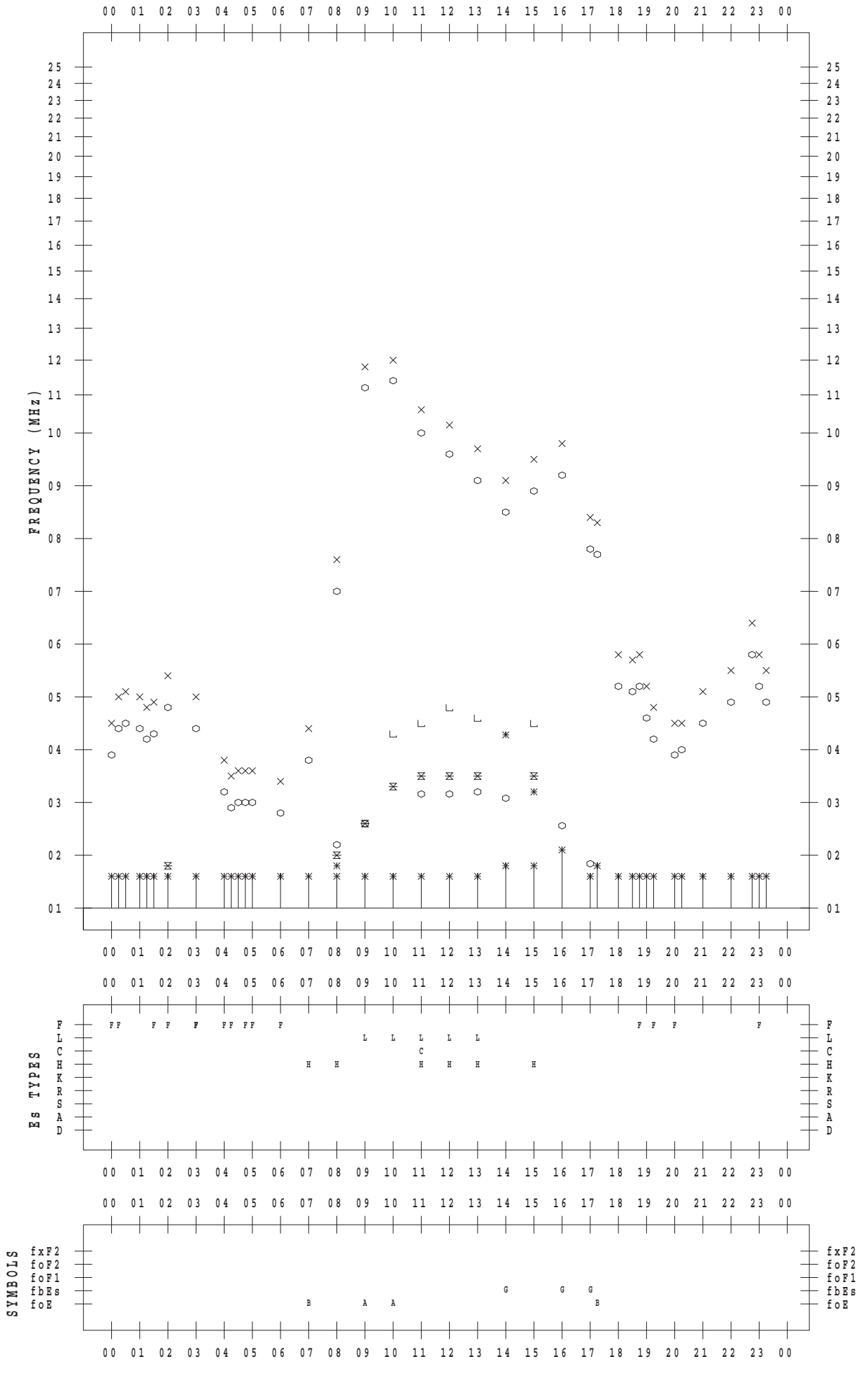
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 1

135 °E MEAN TIME



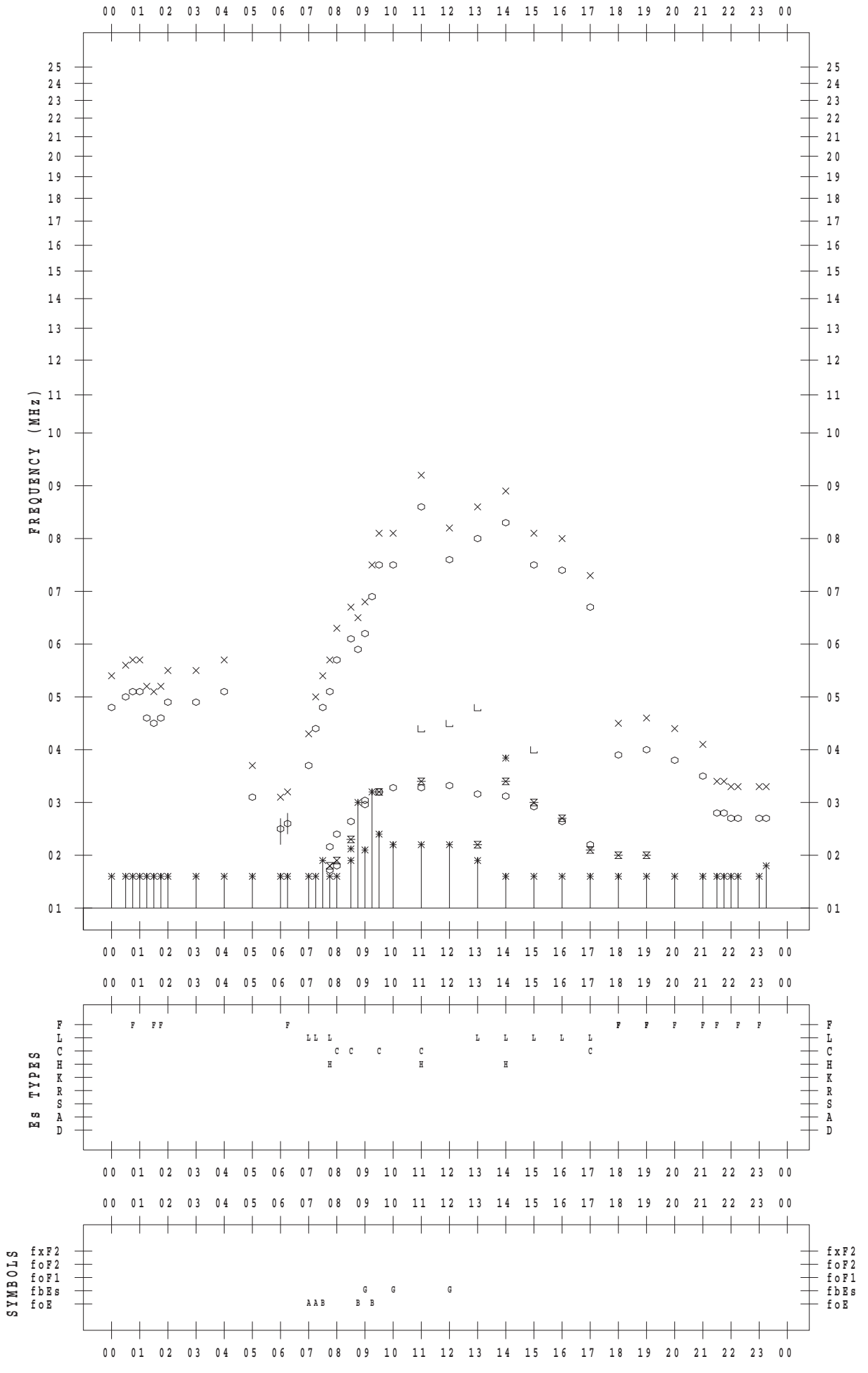
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 2

135 °E MEAN TIME



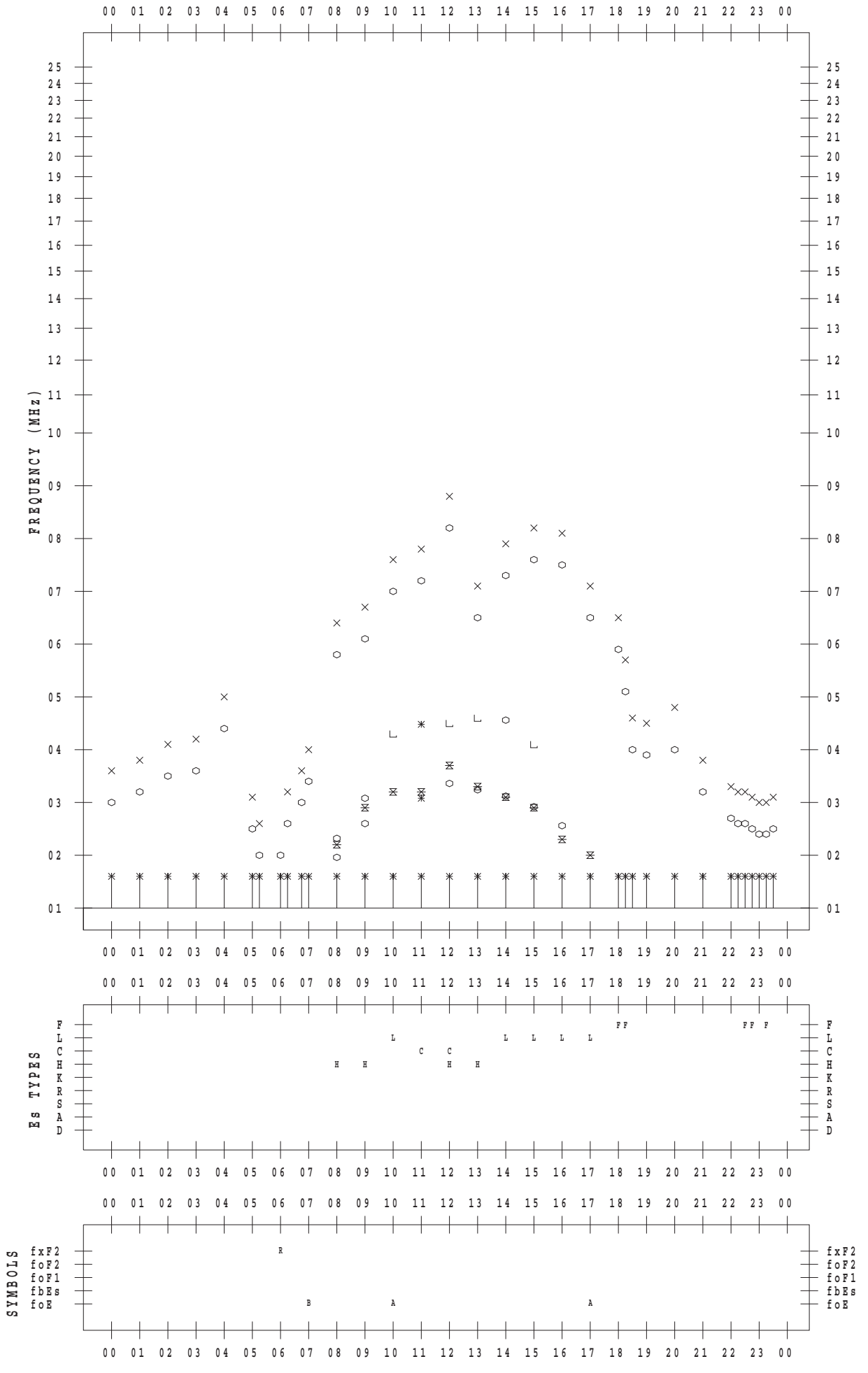
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 3

135 °E MEAN TIME



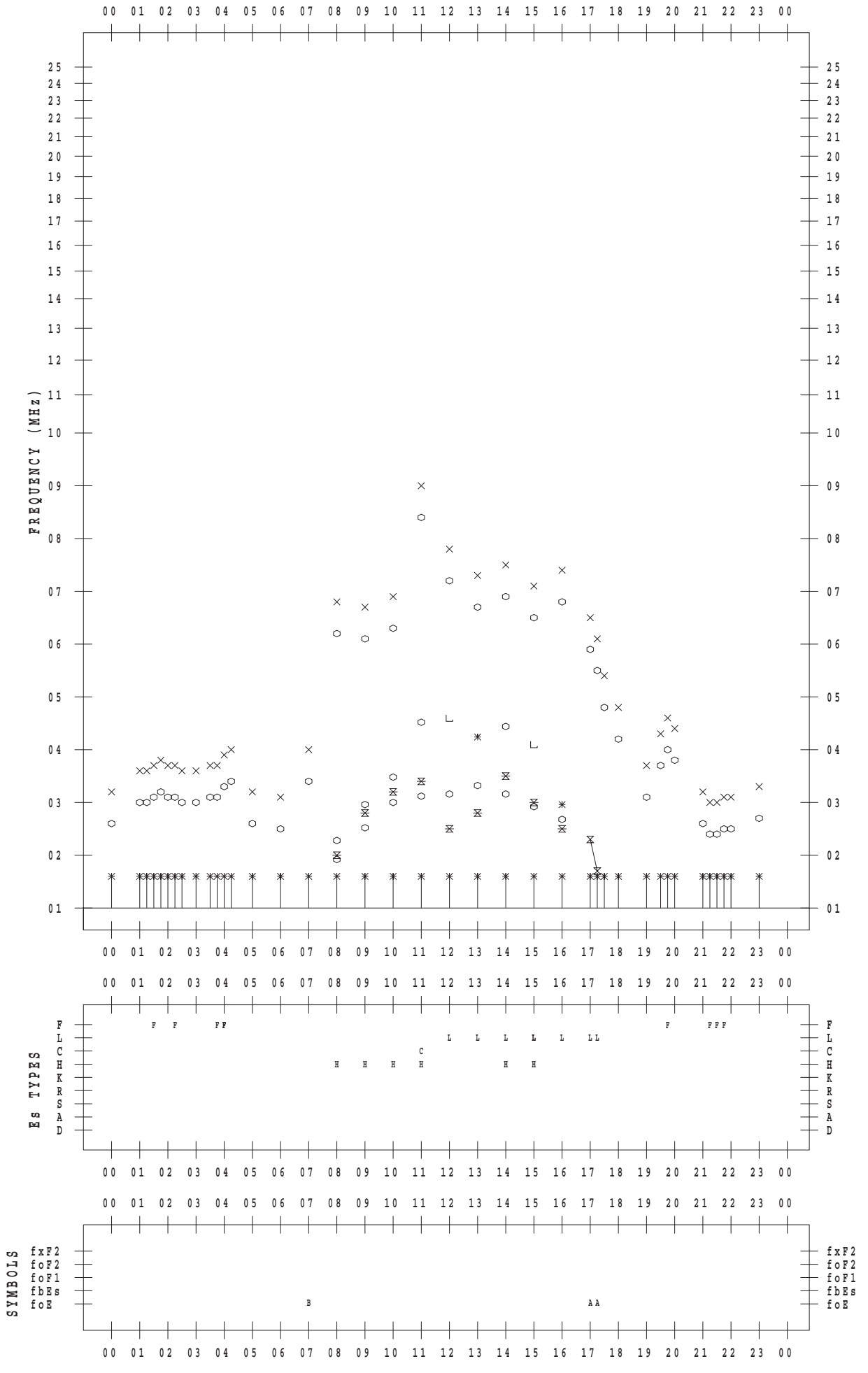
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 4

135 °E MEAN TIME



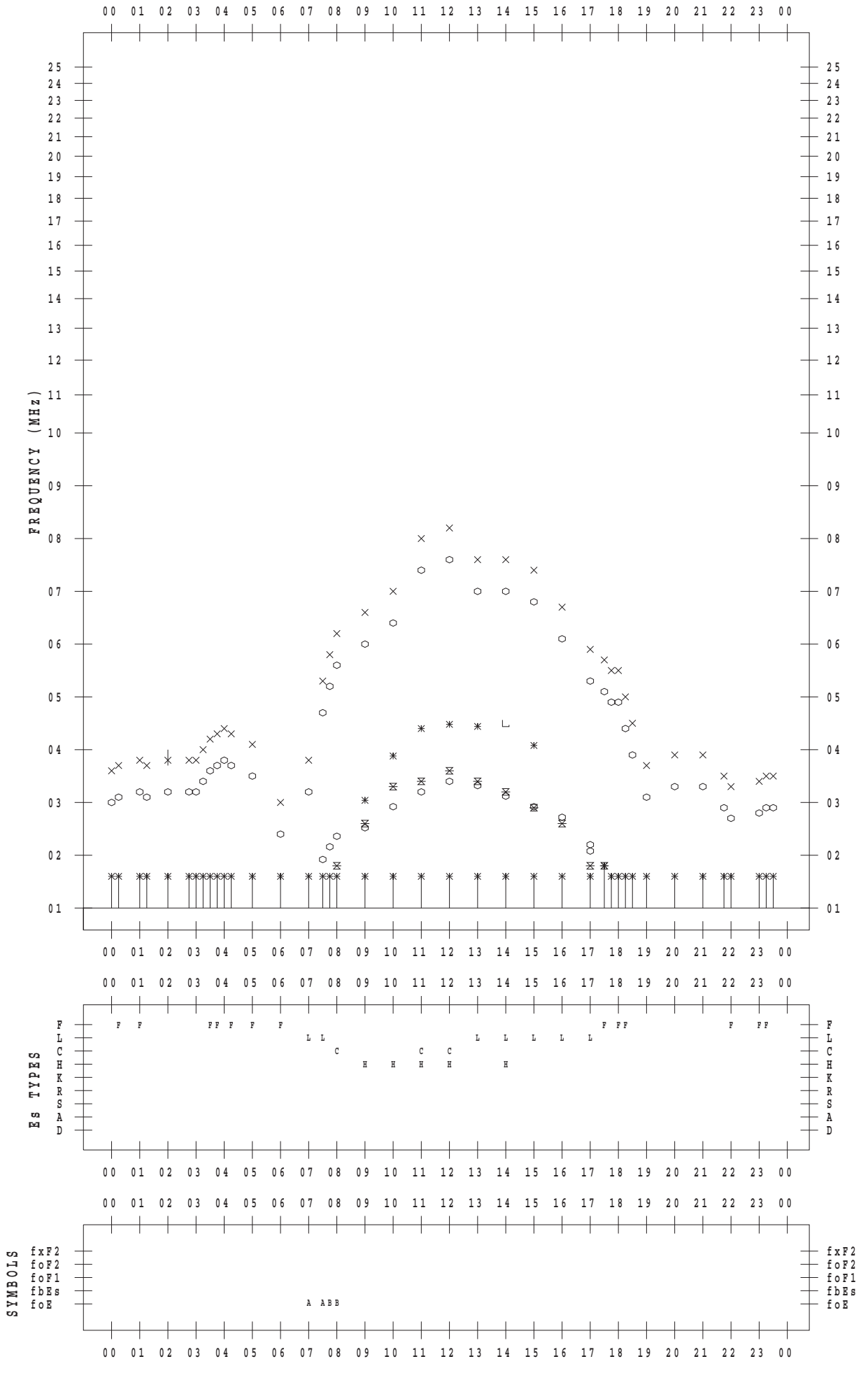
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 5

135 °E MEAN TIME



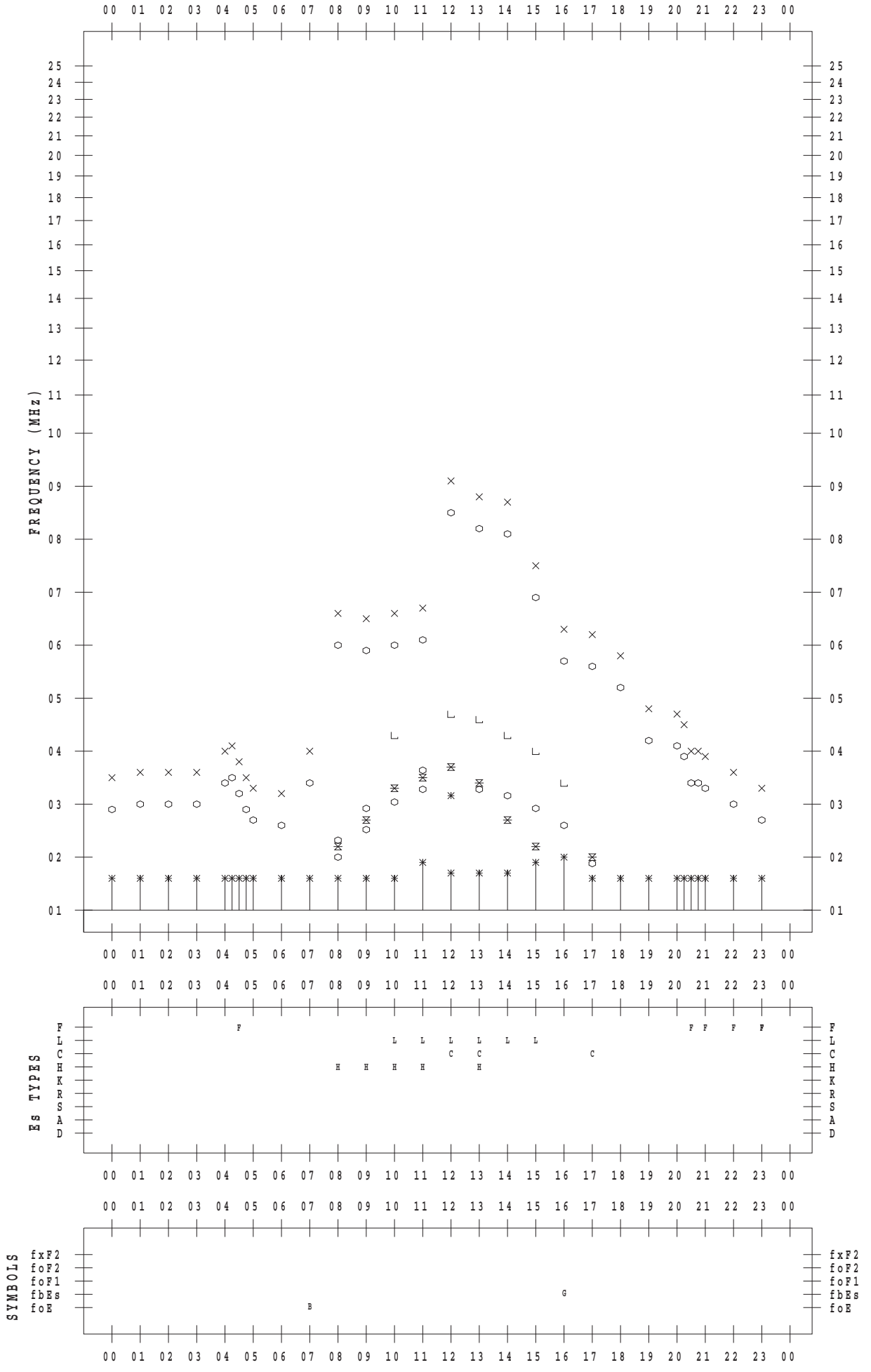
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 6

135 °E MEAN TIME



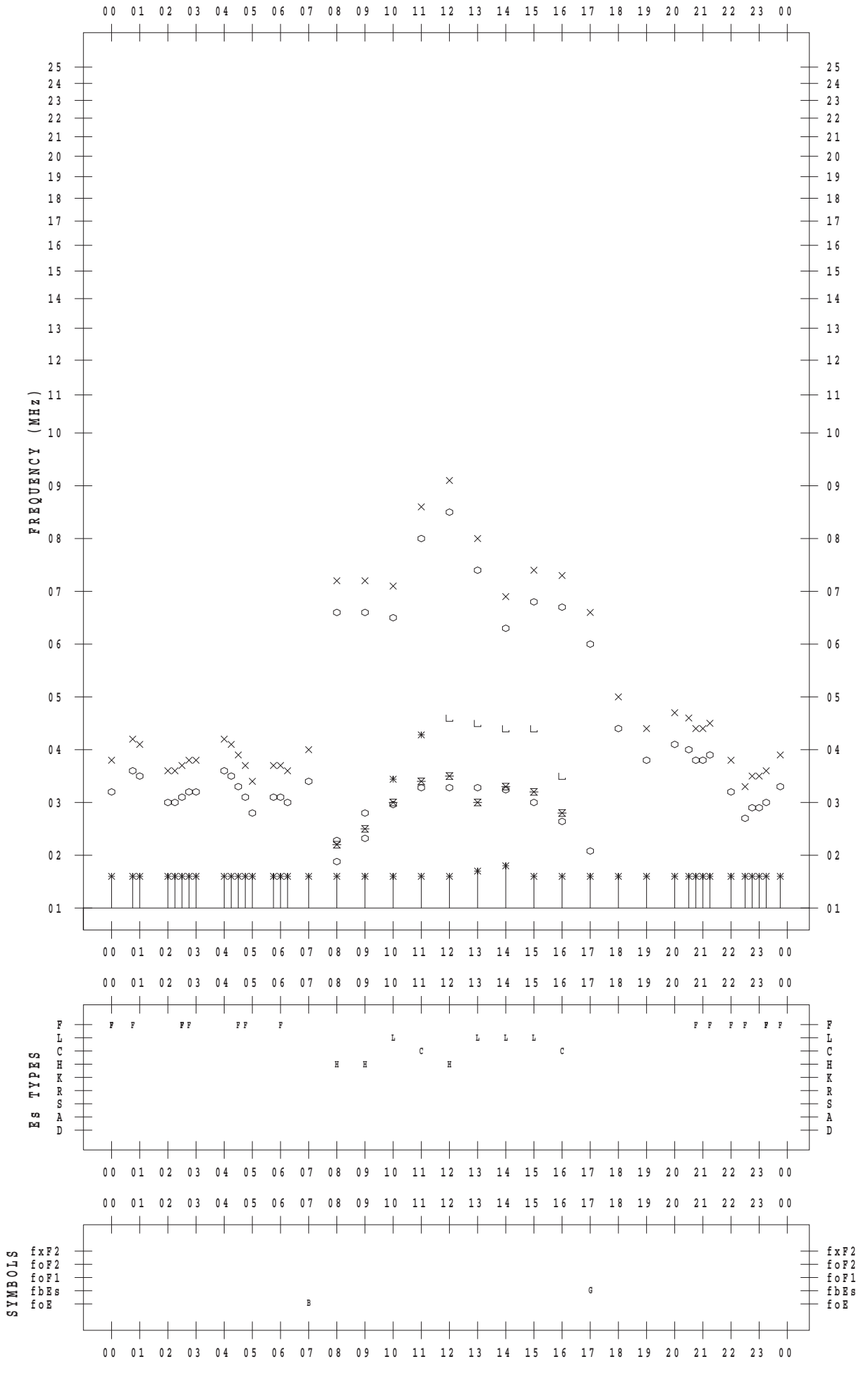
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 7

135 °E MEAN TIME



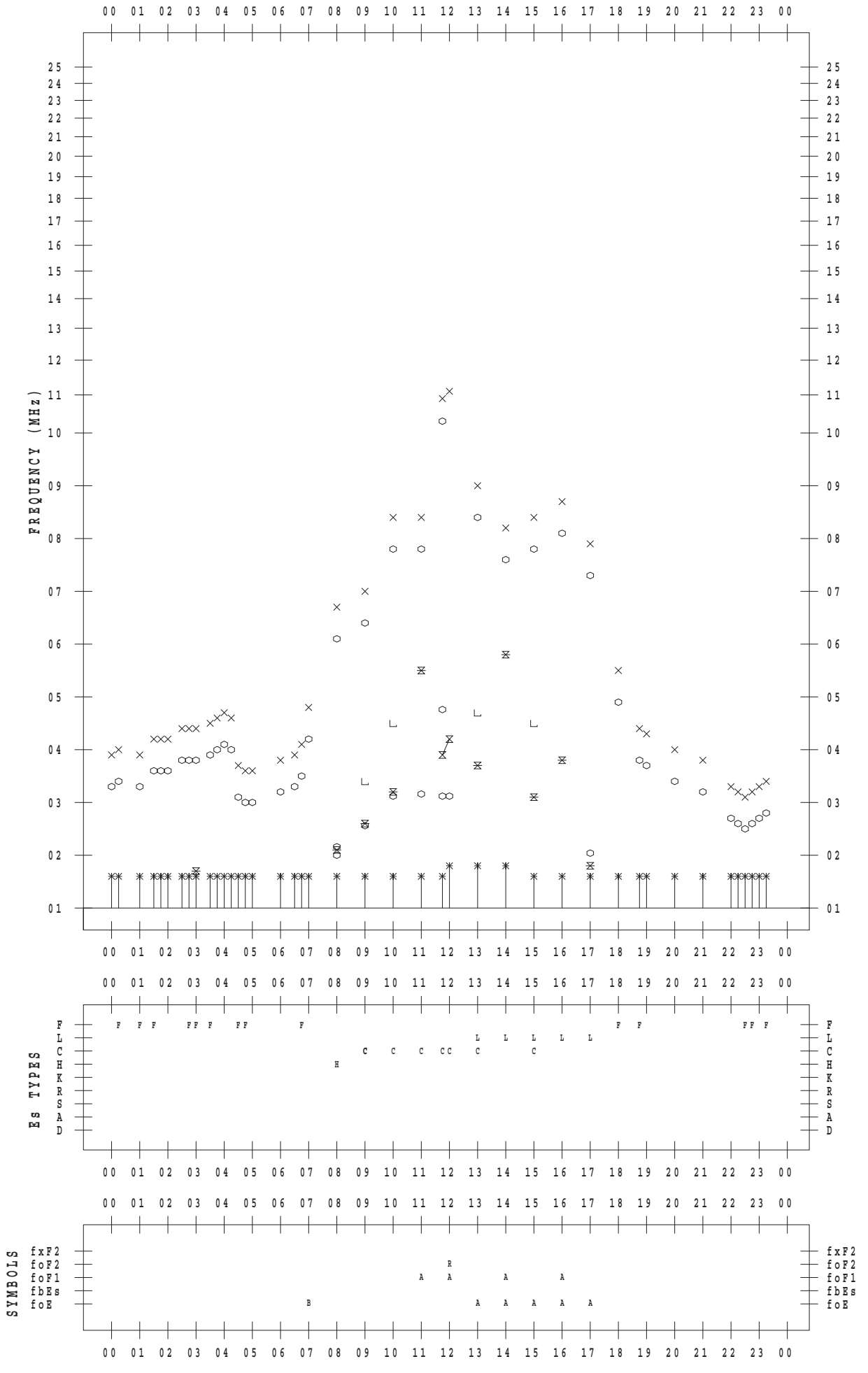
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 8

135 °E MEAN TIME



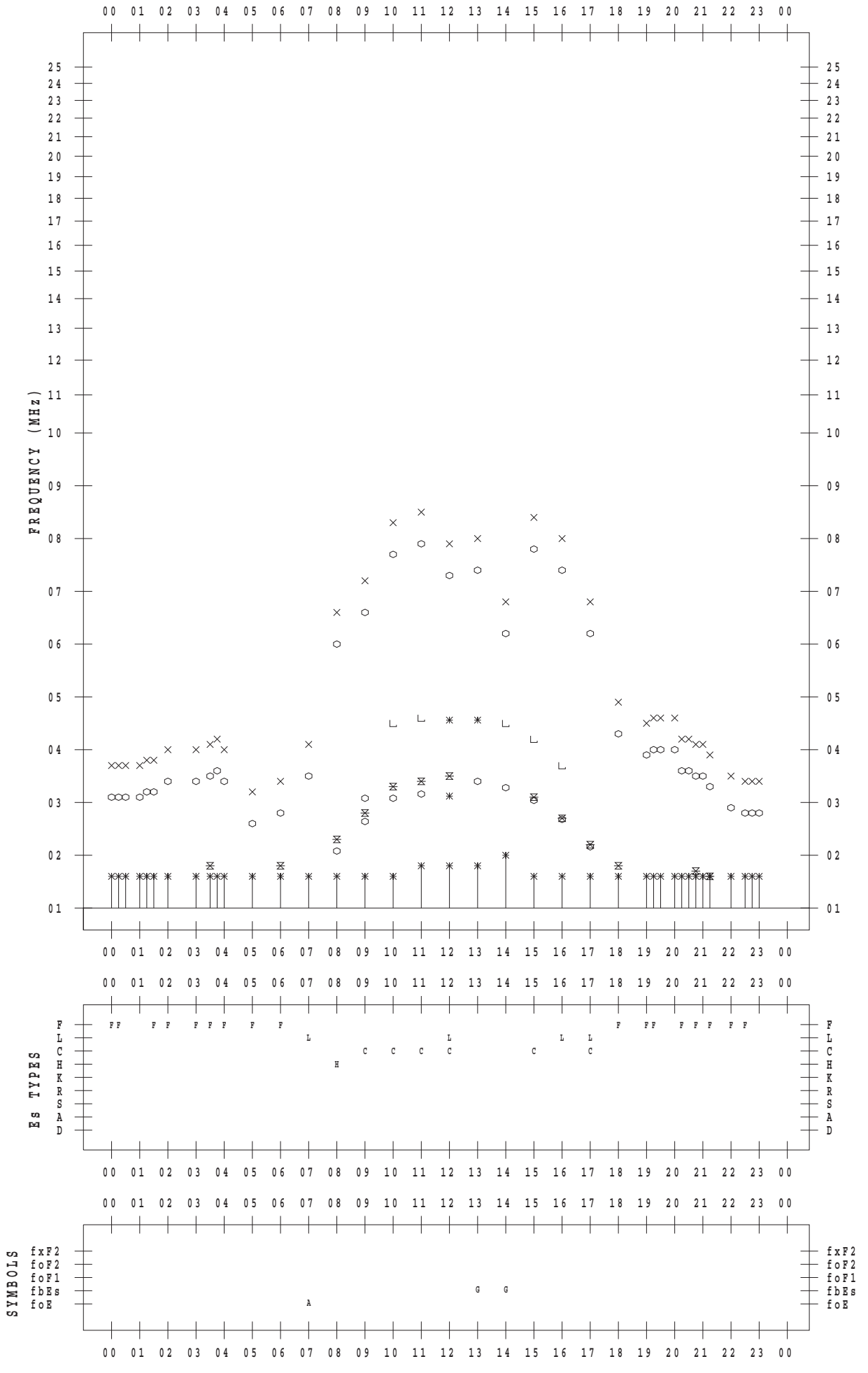
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/ 9

135 °E MEAN TIME



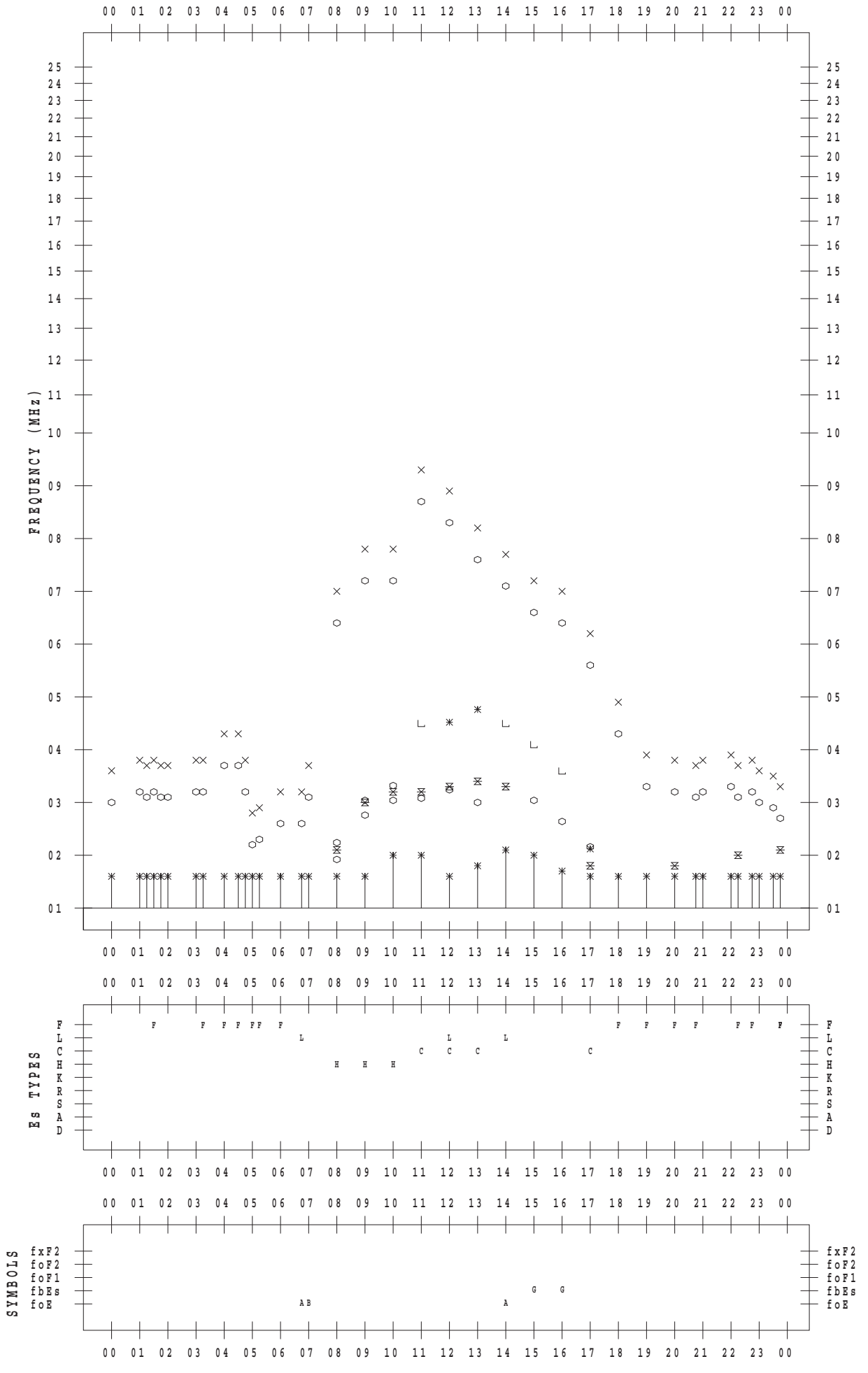
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/10

135 °E MEAN TIME



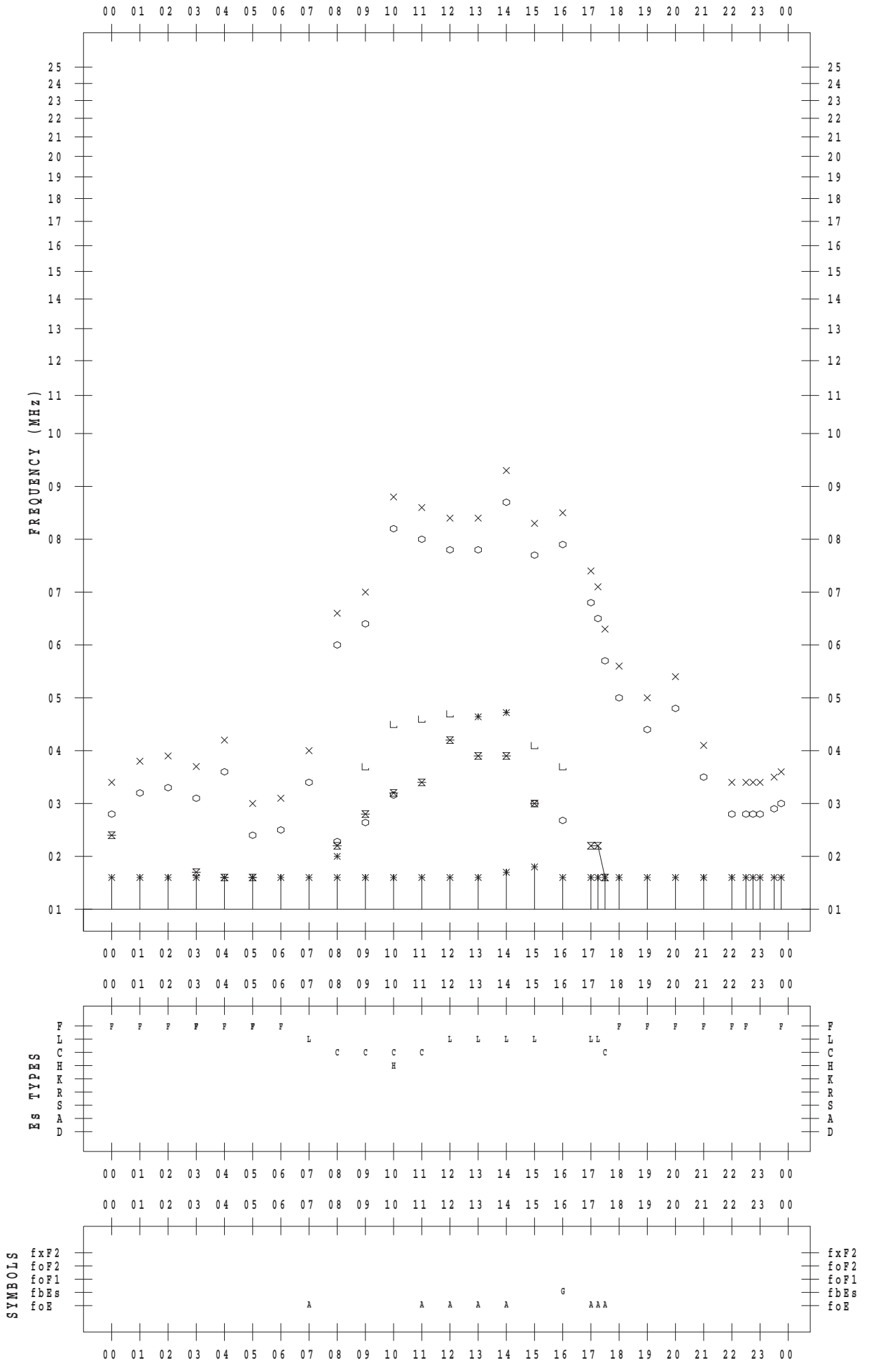
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/11

135 °E MEAN TIME



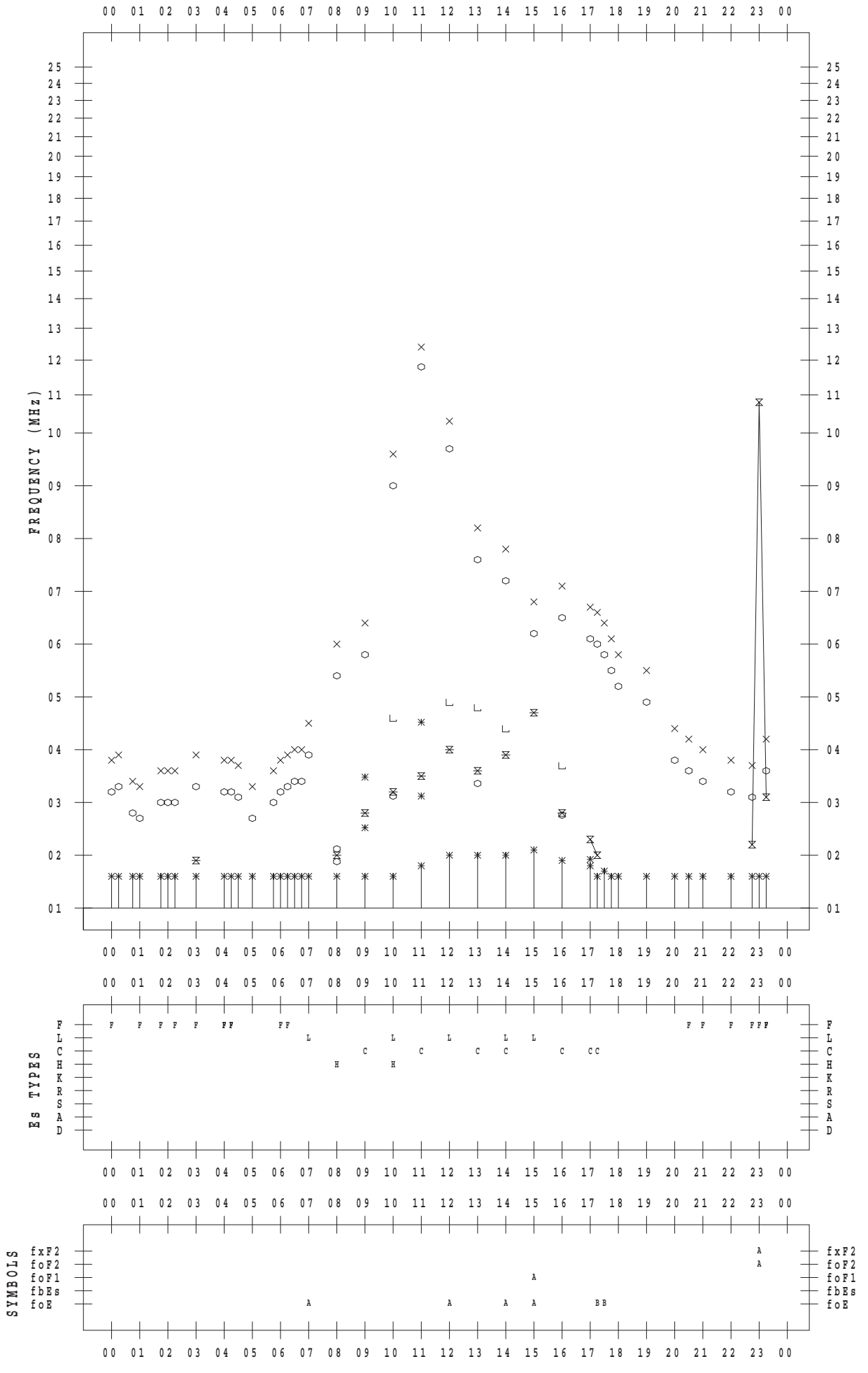
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/12

135 °E MEAN TIME



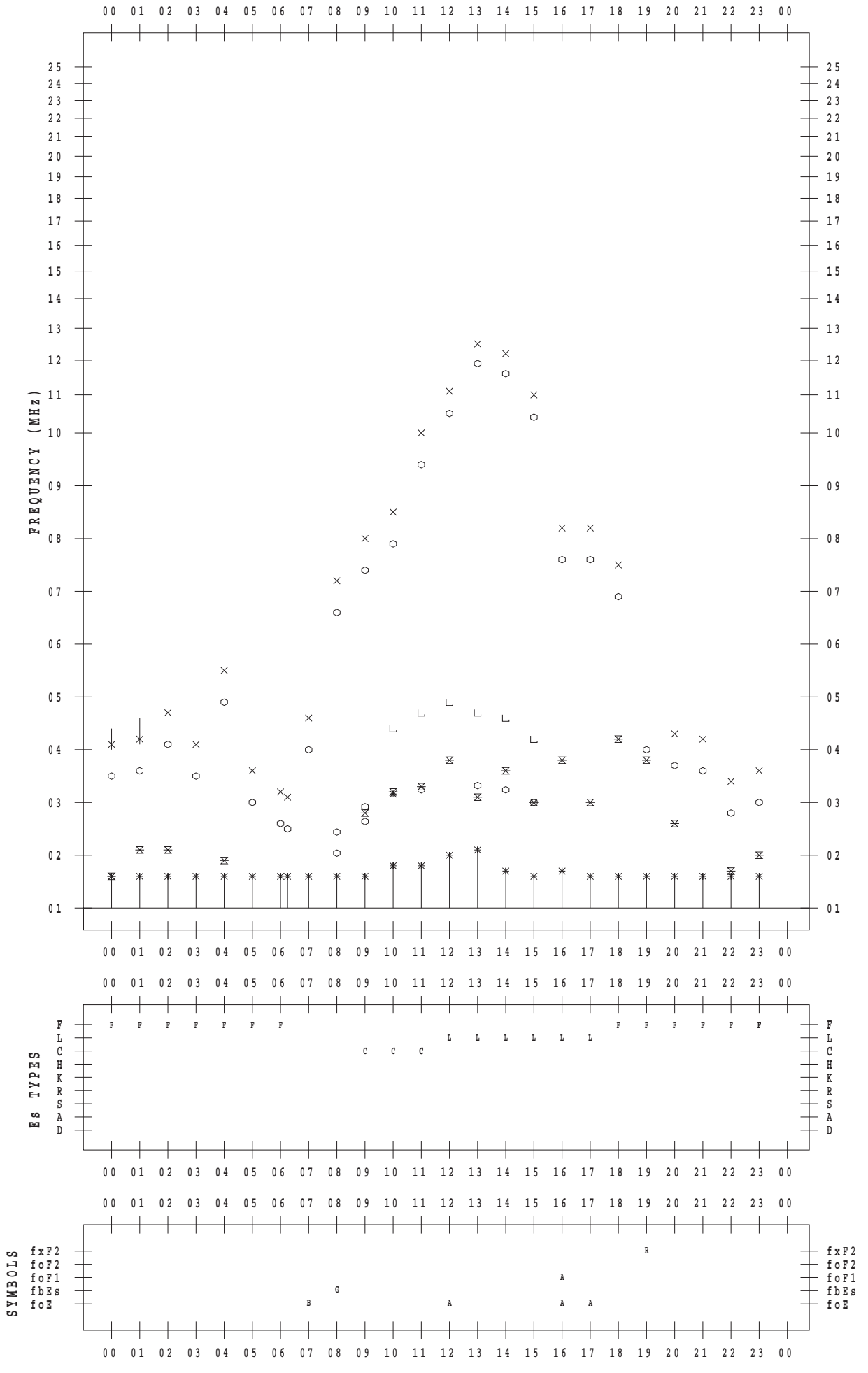
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/13

135 °E MEAN TIME



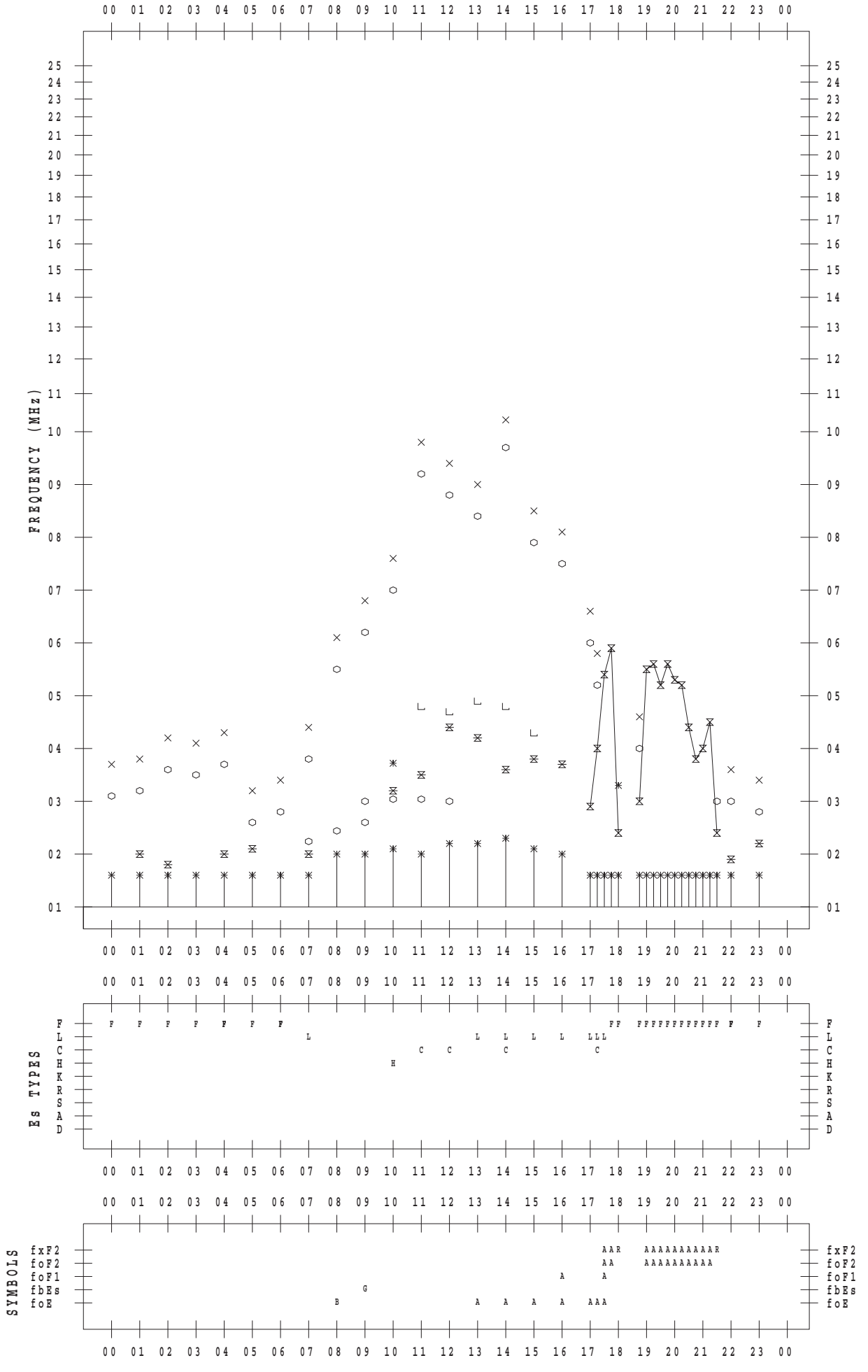
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/14

135 °E MEAN TIME



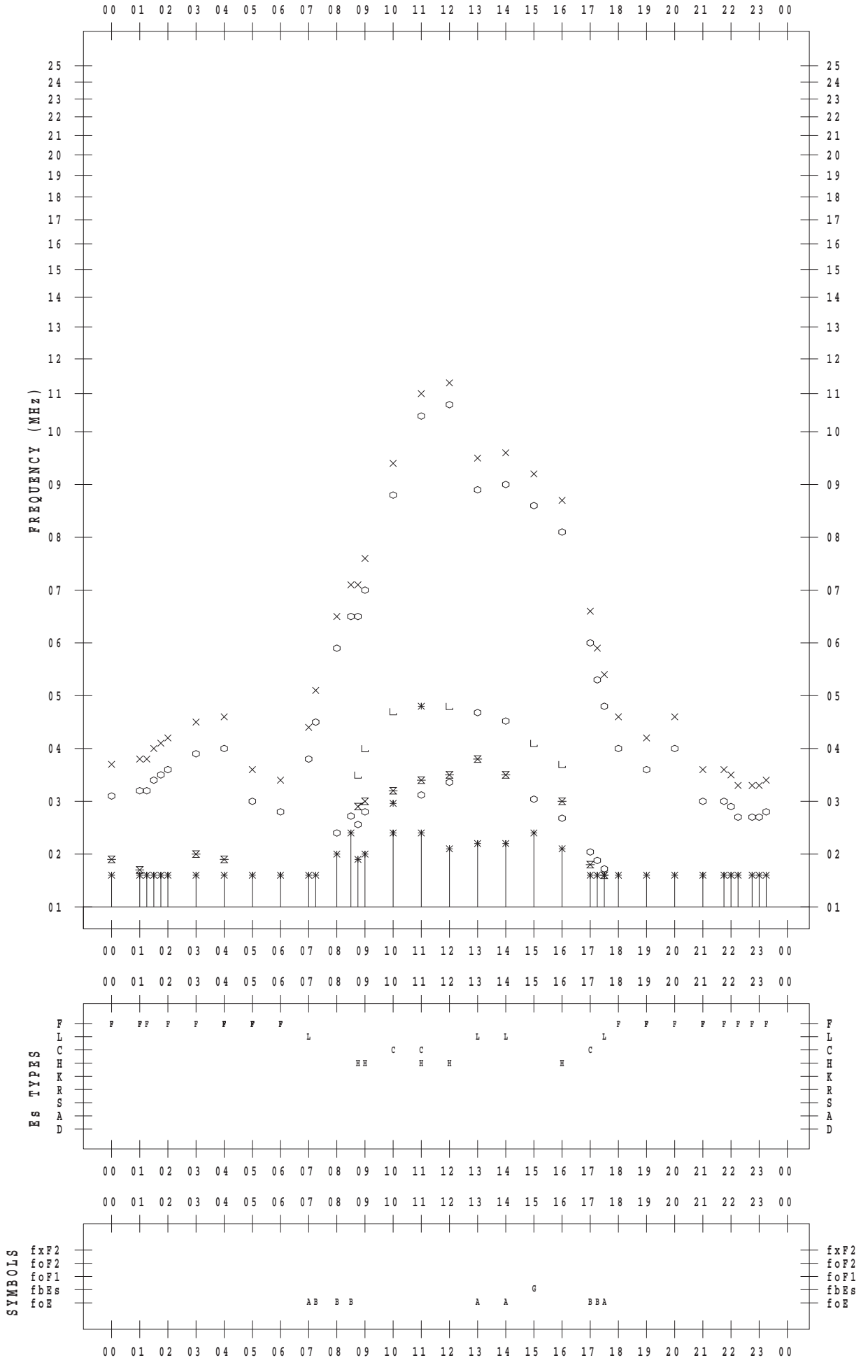
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/15

135 °E MEAN TIME



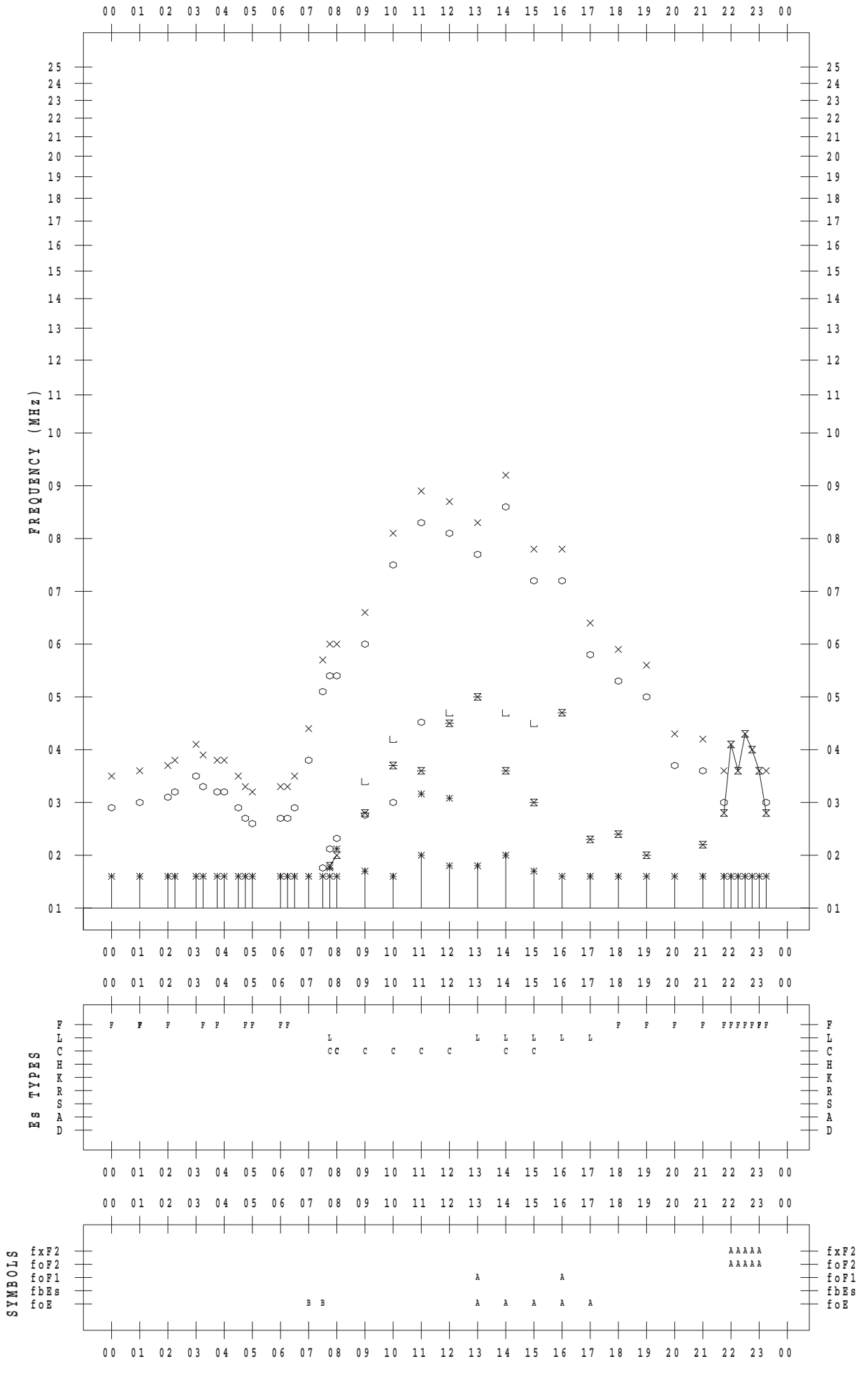
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/16

135 °E MEAN TIME



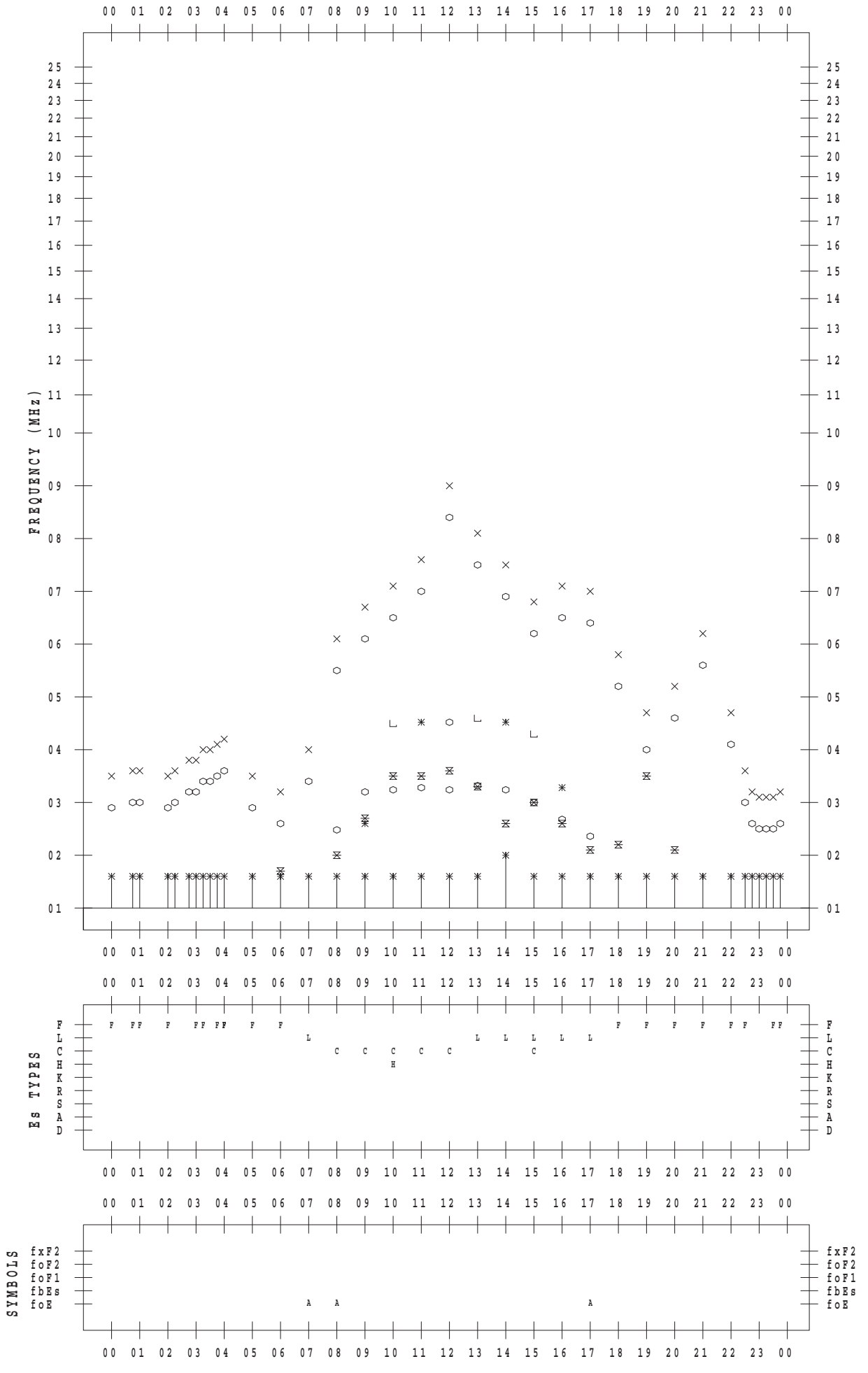
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/17

135 °E MEAN TIME



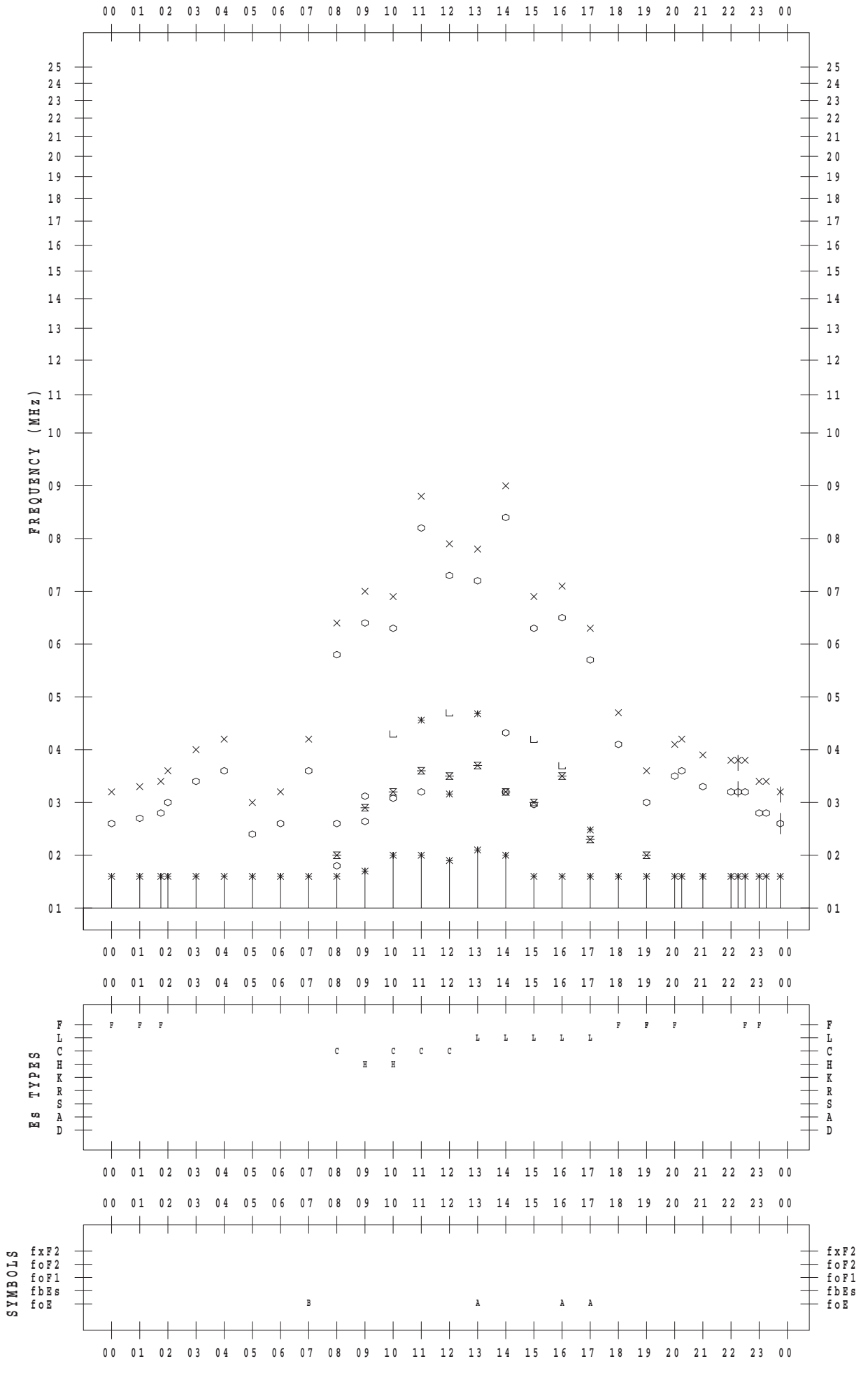
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/18

135 °E MEAN TIME



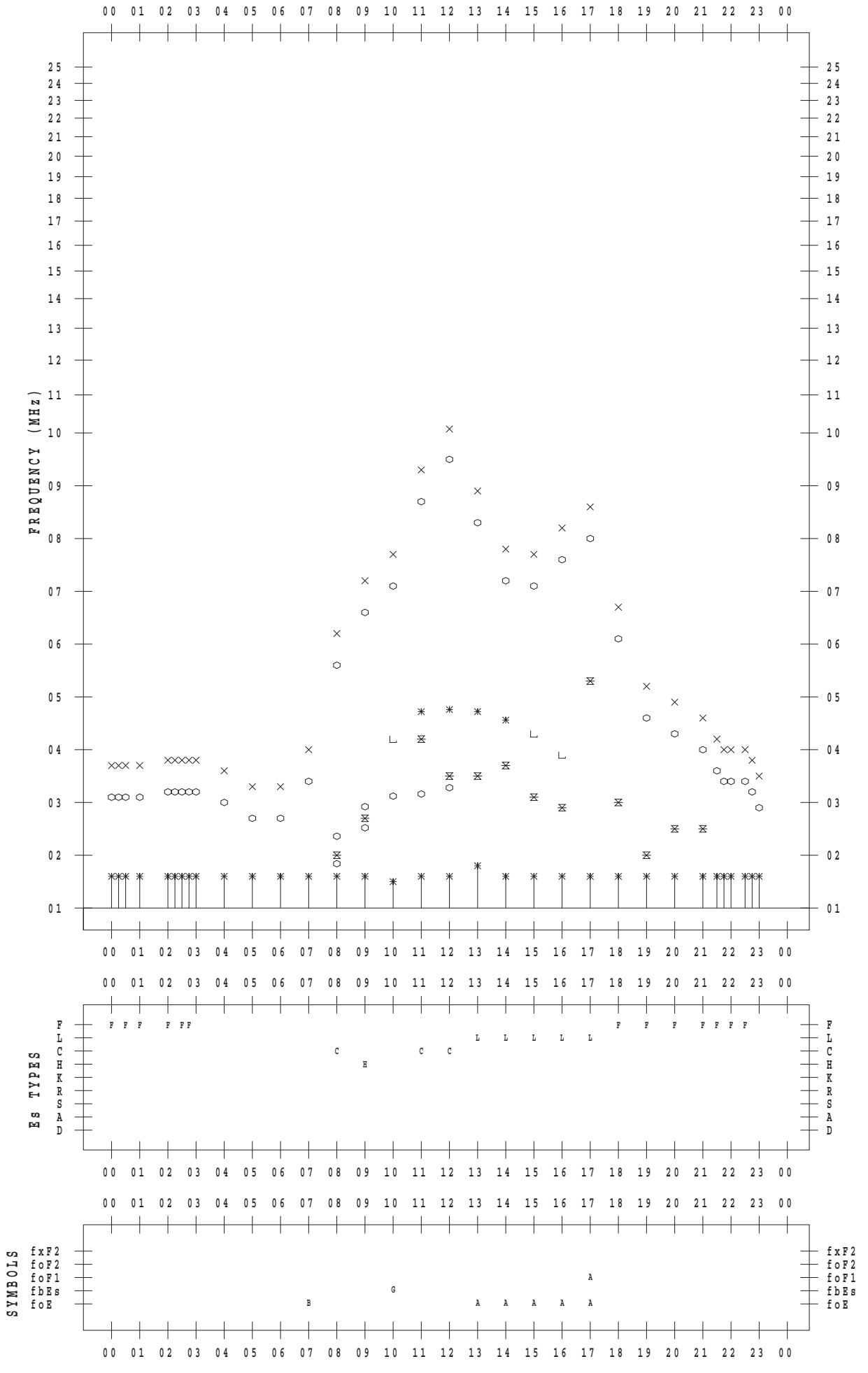
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/19

135 °E MEAN TIME



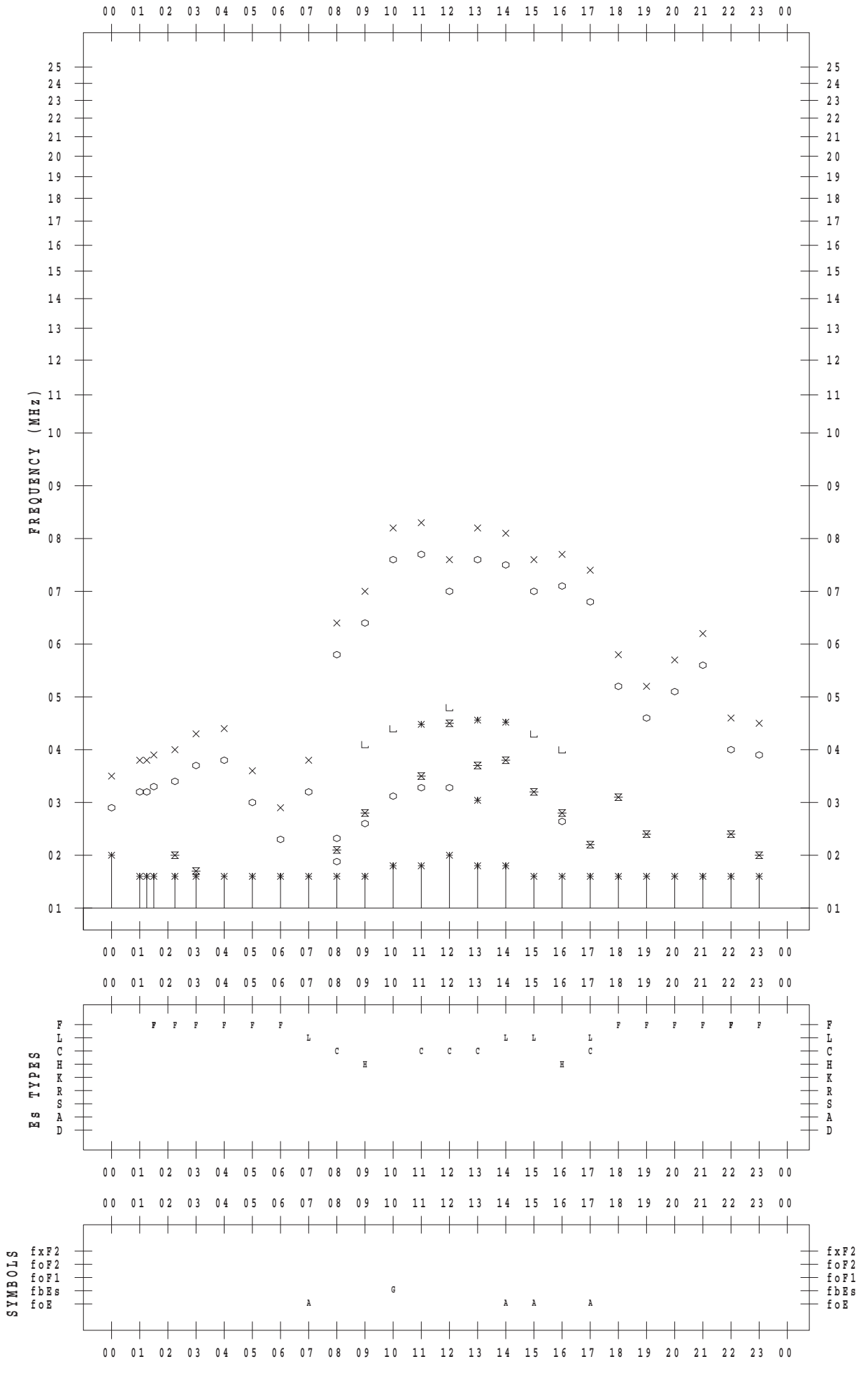
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/20

135 °E MEAN TIME



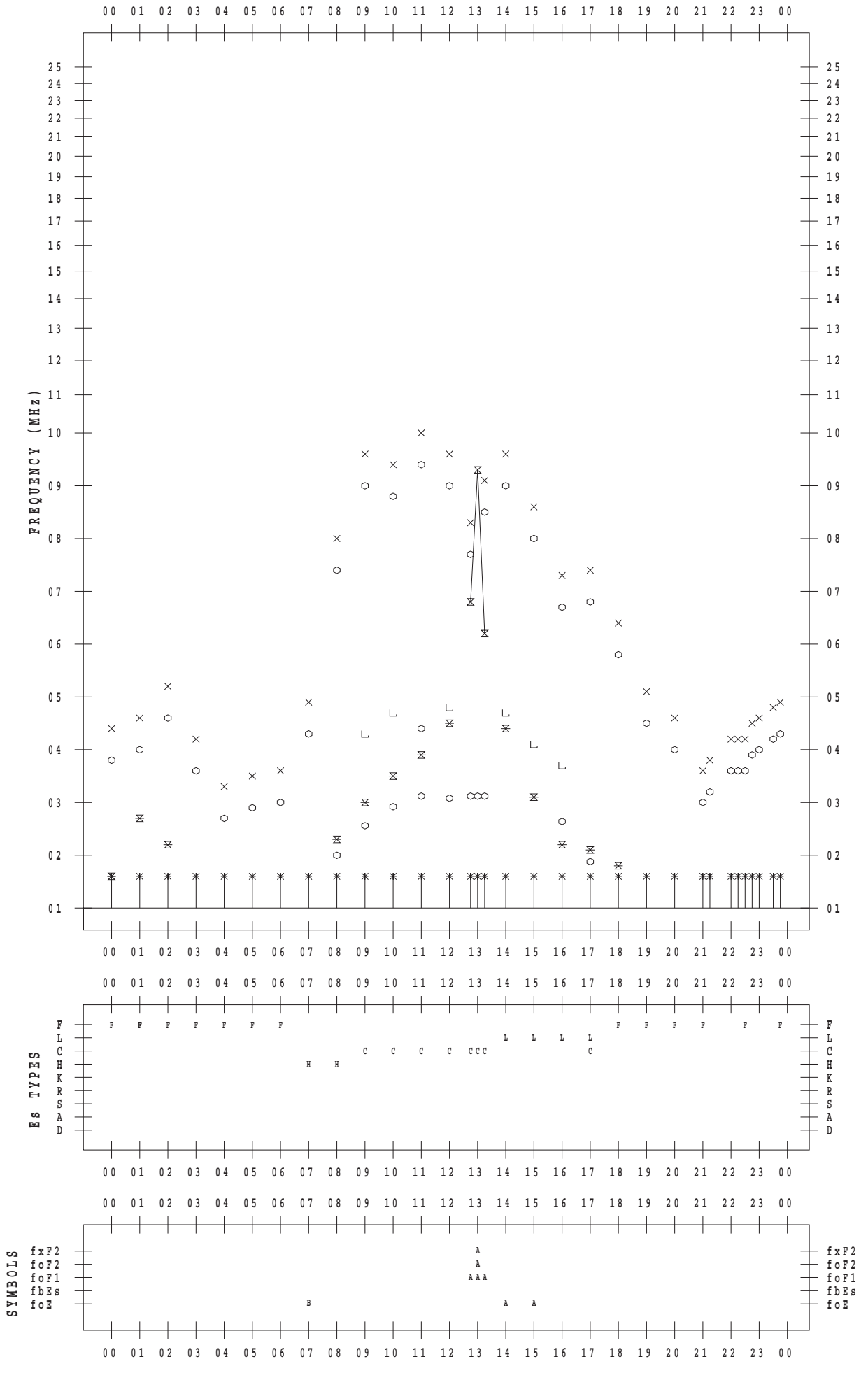
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/21

135 °E MEAN TIME



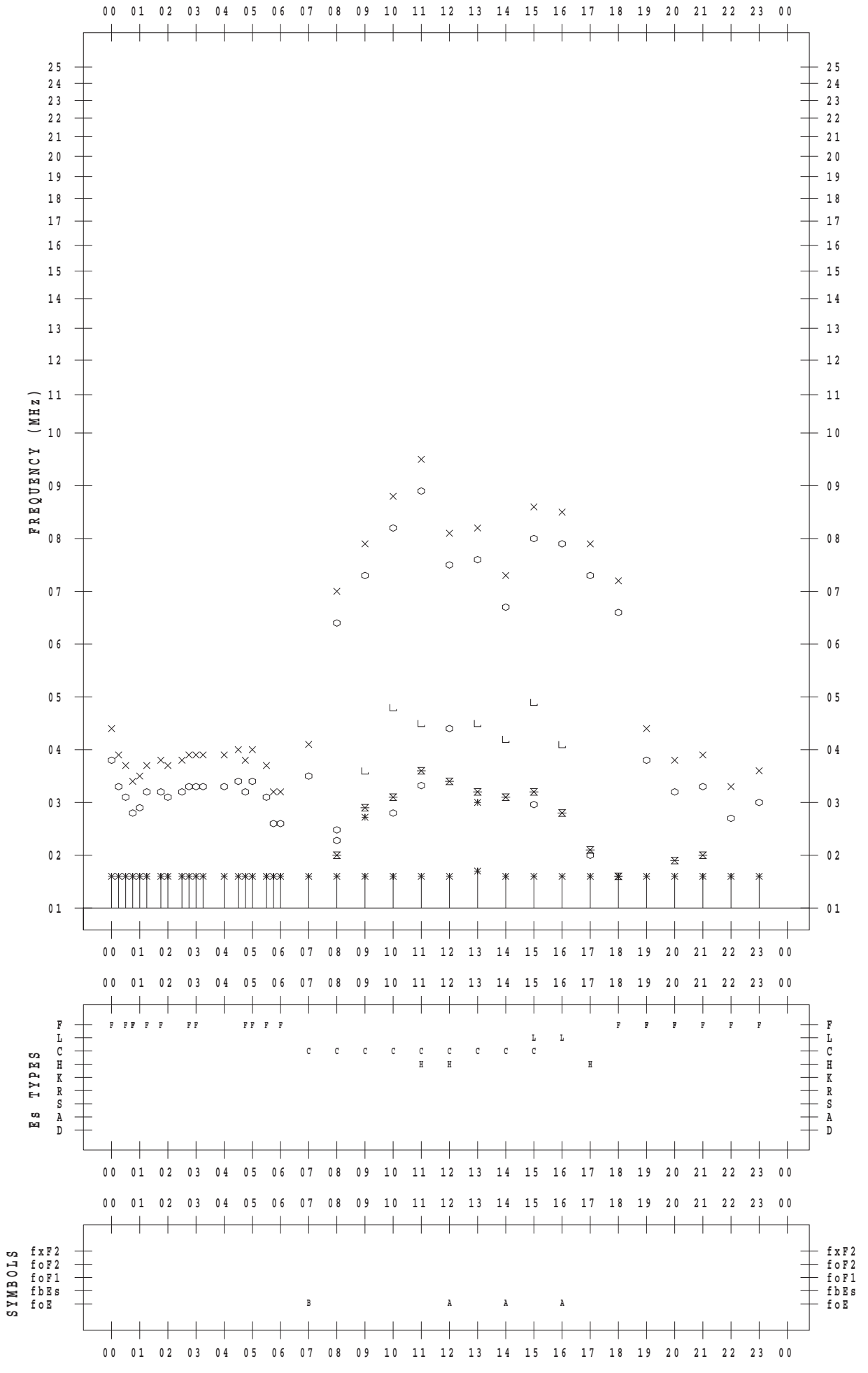
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/22

135 °E MEAN TIME



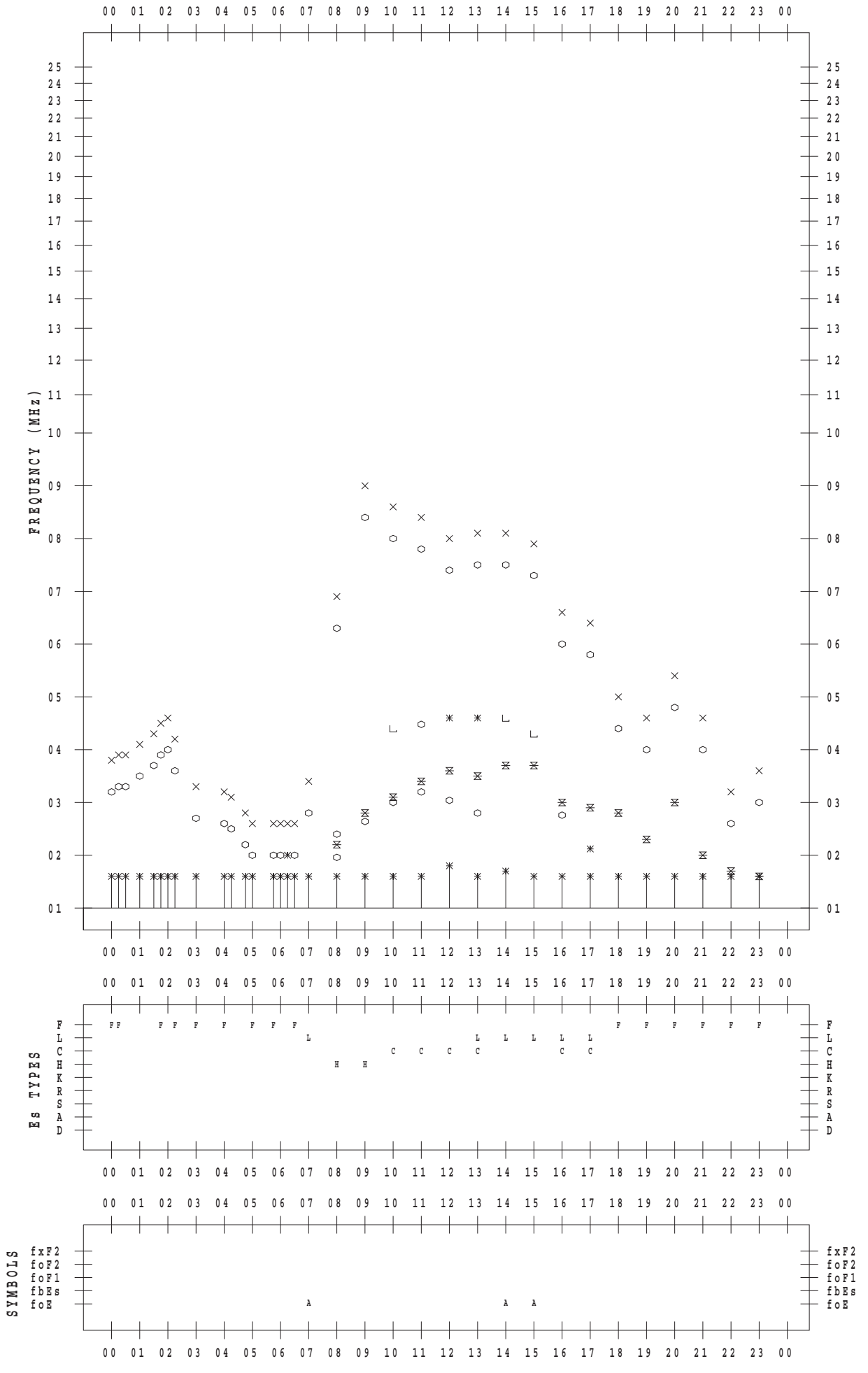
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/23

135 °E MEAN TIME



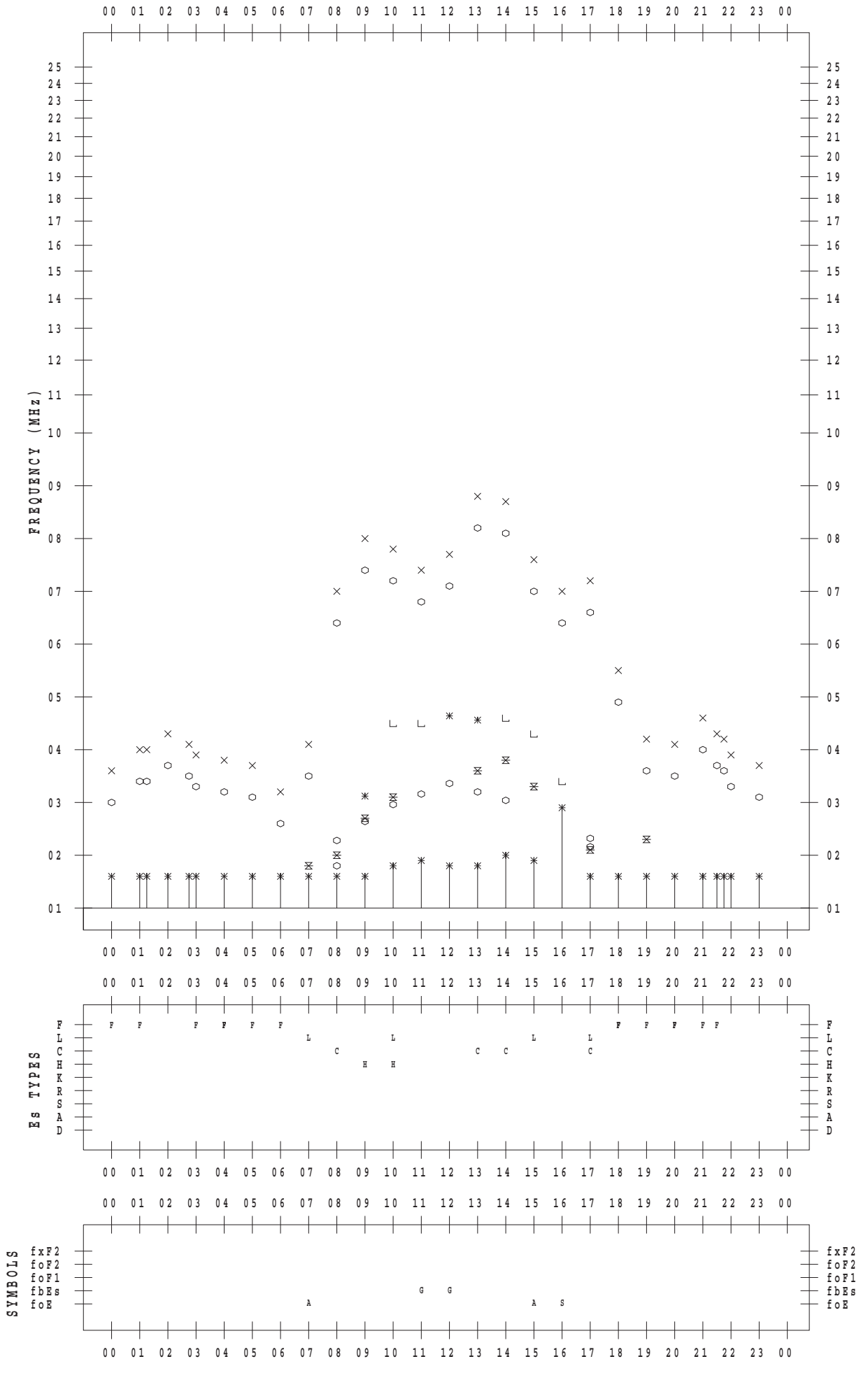
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/24

135 °E MEAN TIME



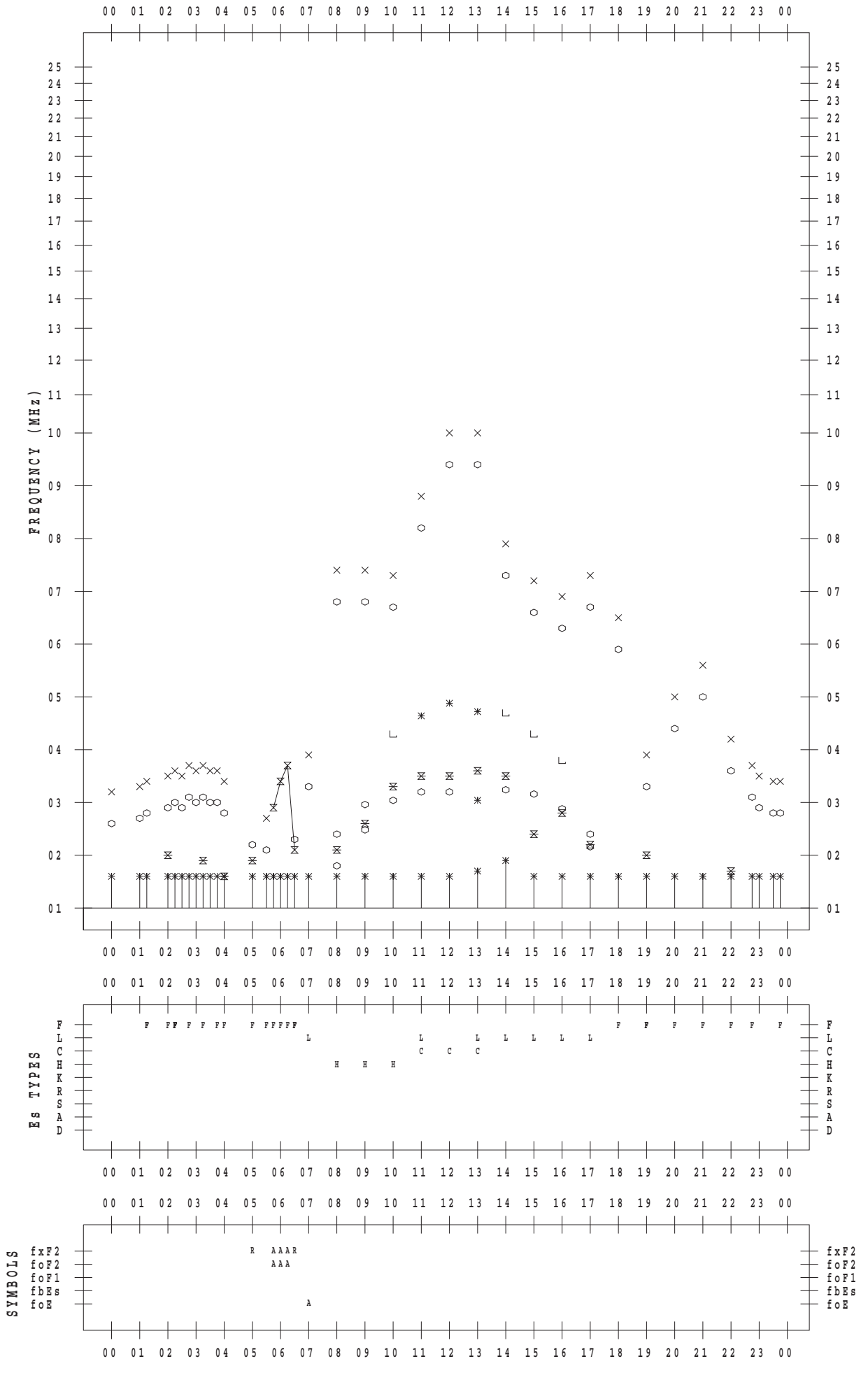
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/25

135 °E MEAN TIME



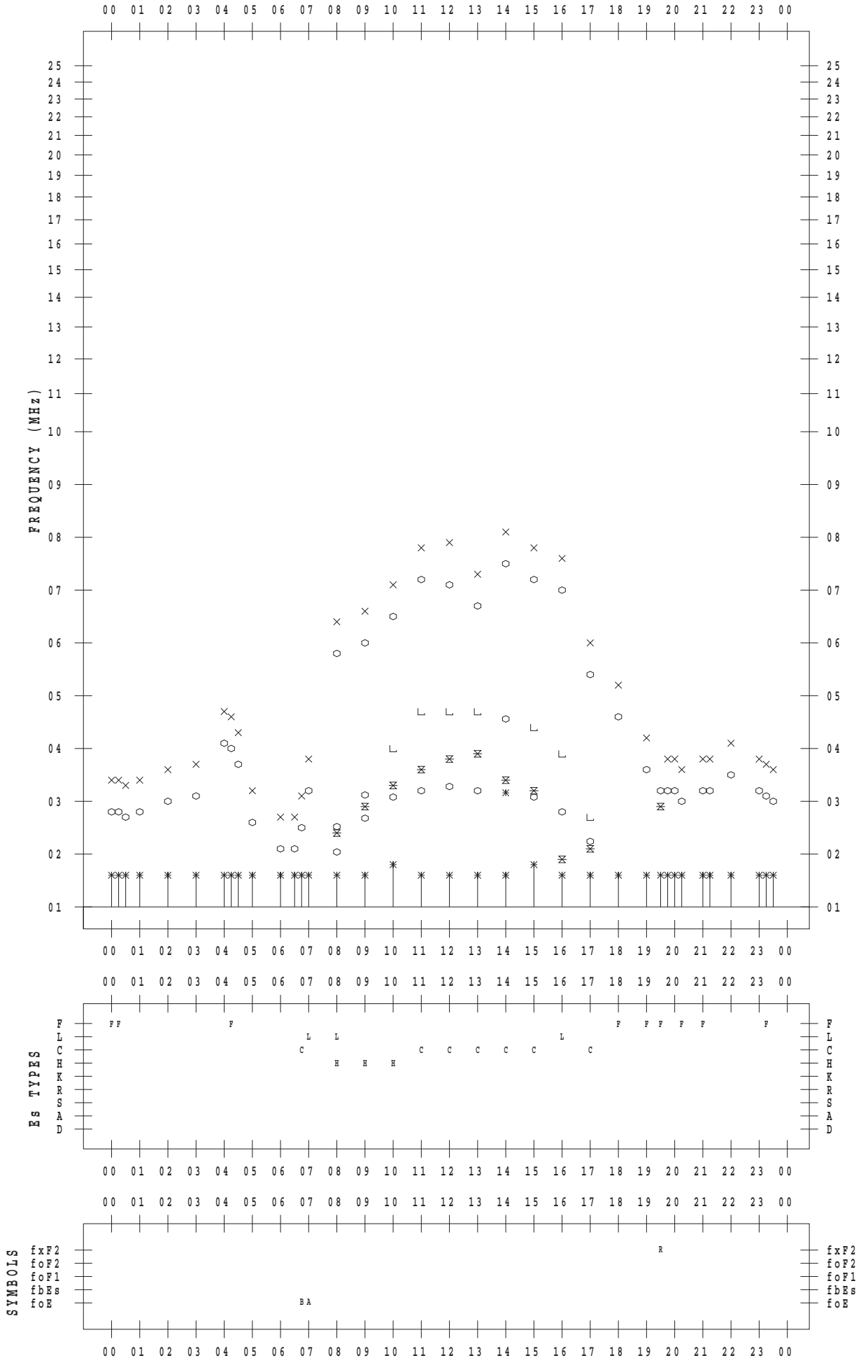
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/26

135 °E MEAN TIME



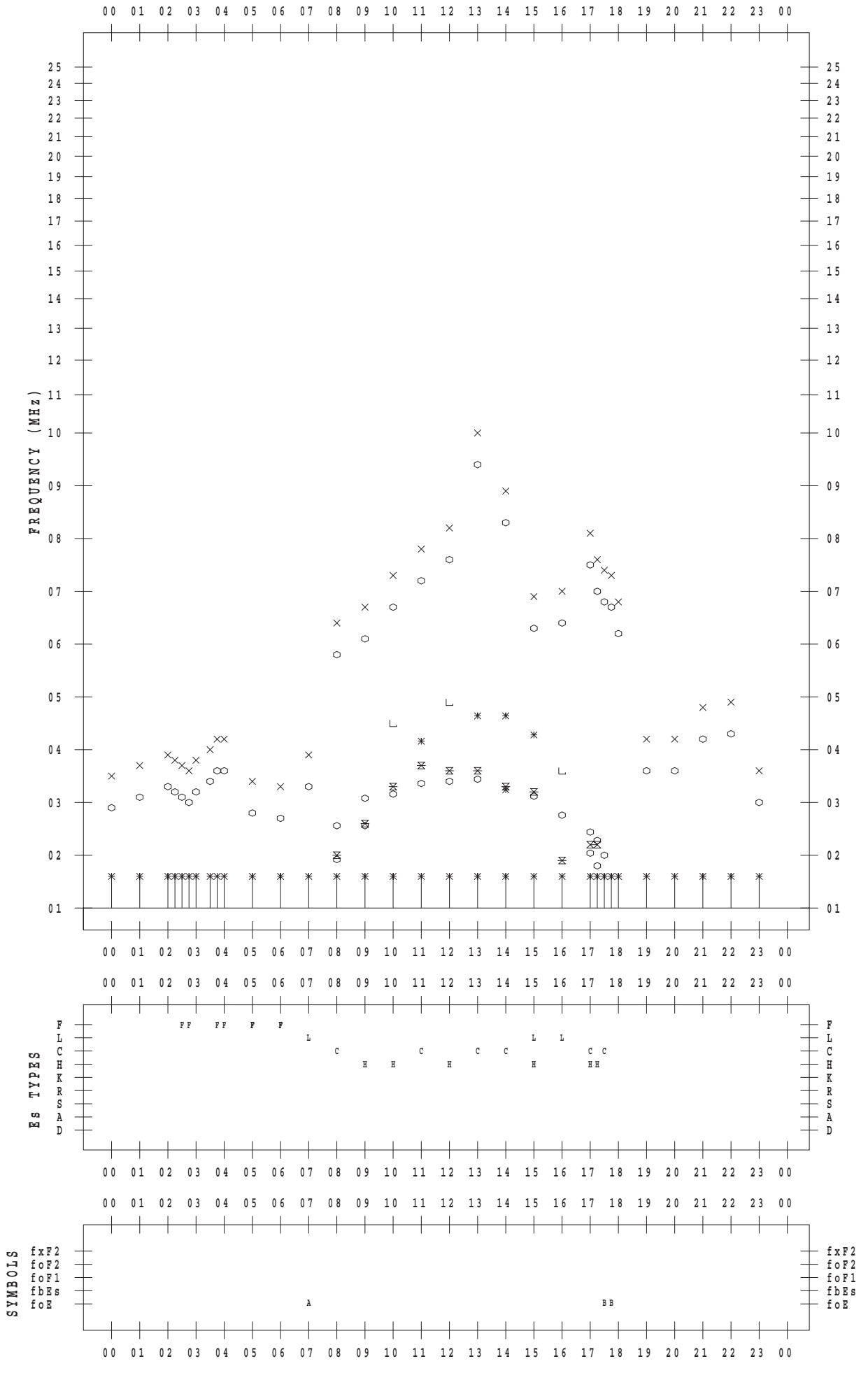
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/27

135 °E MEAN TIME



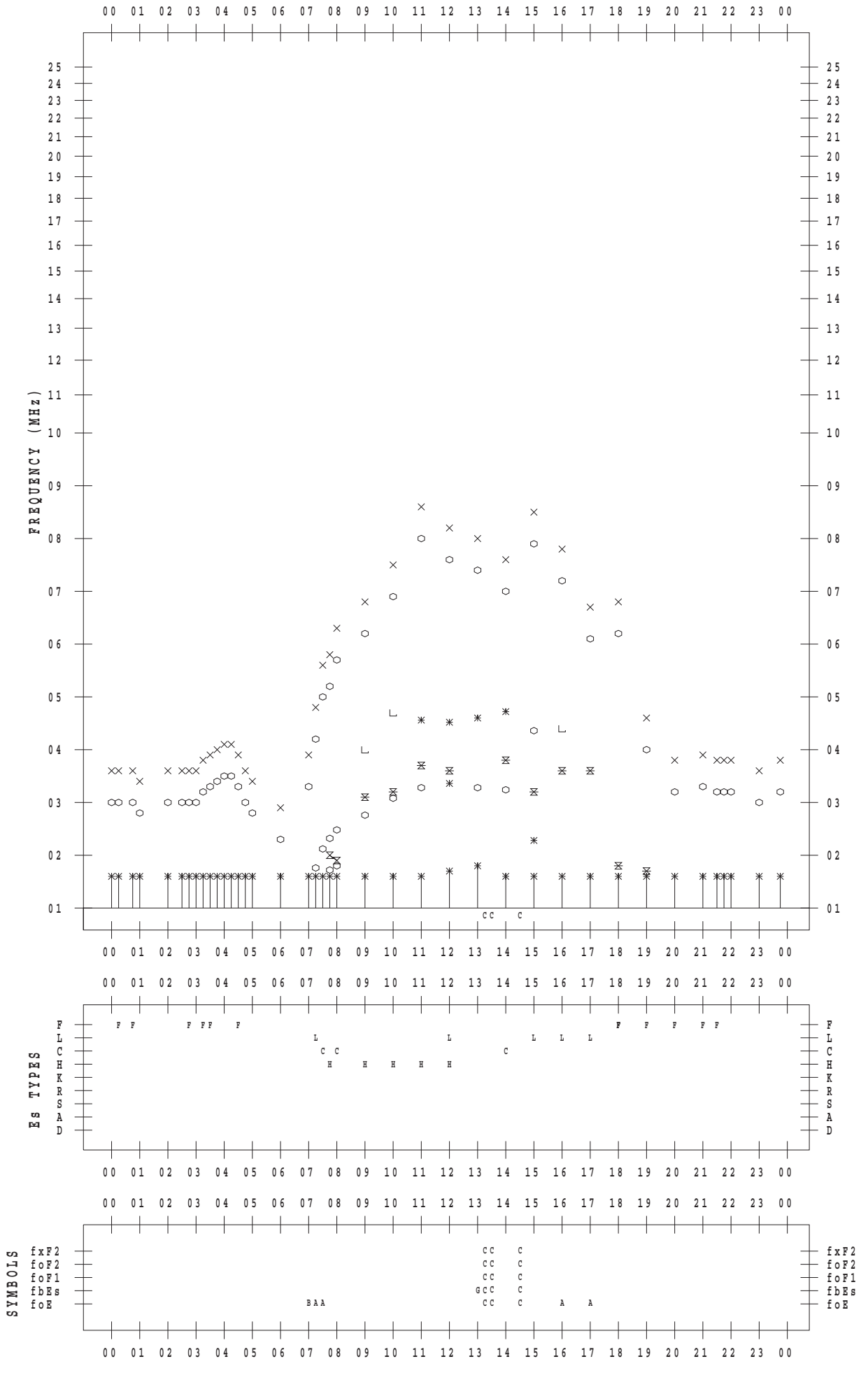
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/28

135 °E MEAN TIME



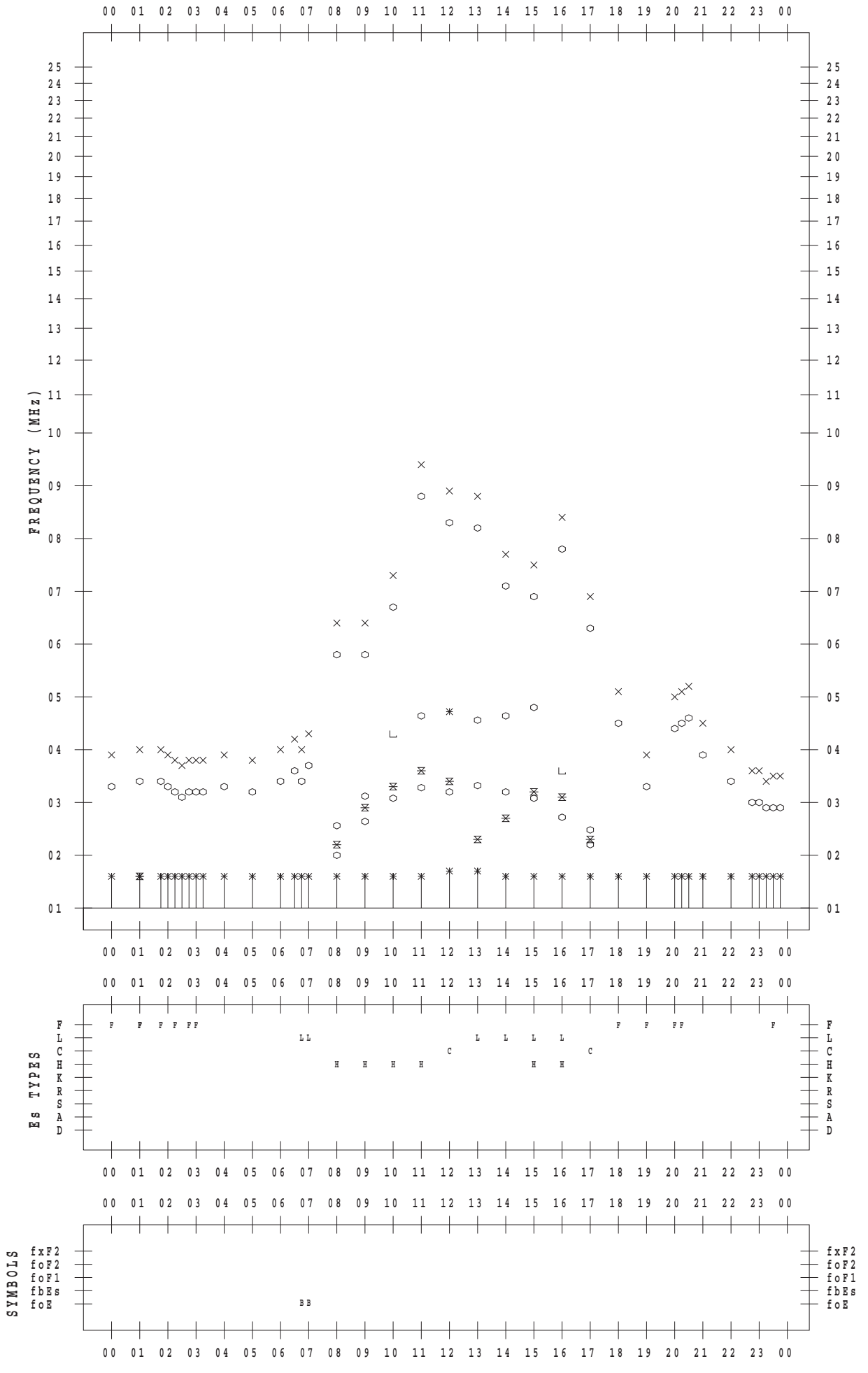
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/29

135 °E MEAN TIME



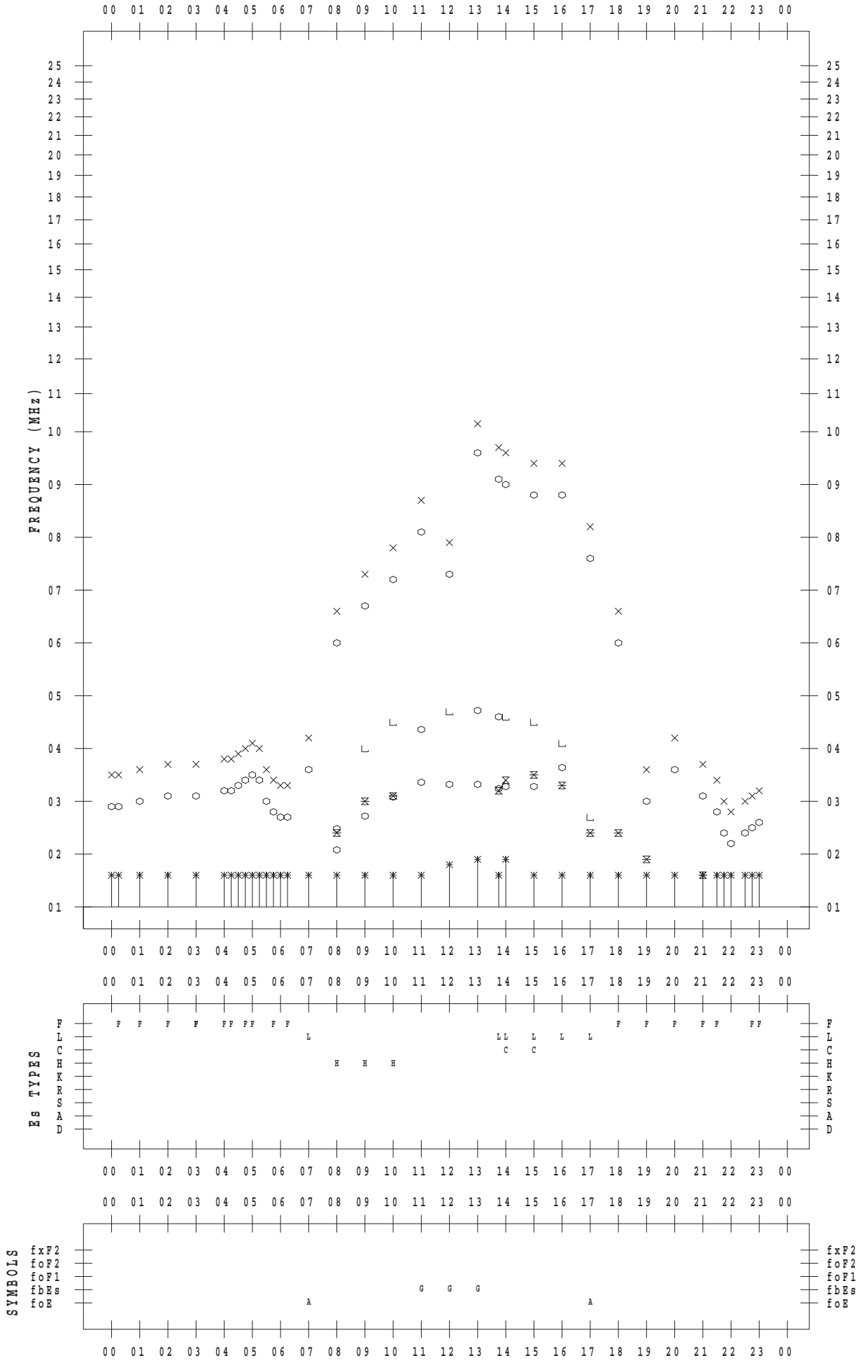
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/30

135 °E MEAN TIME



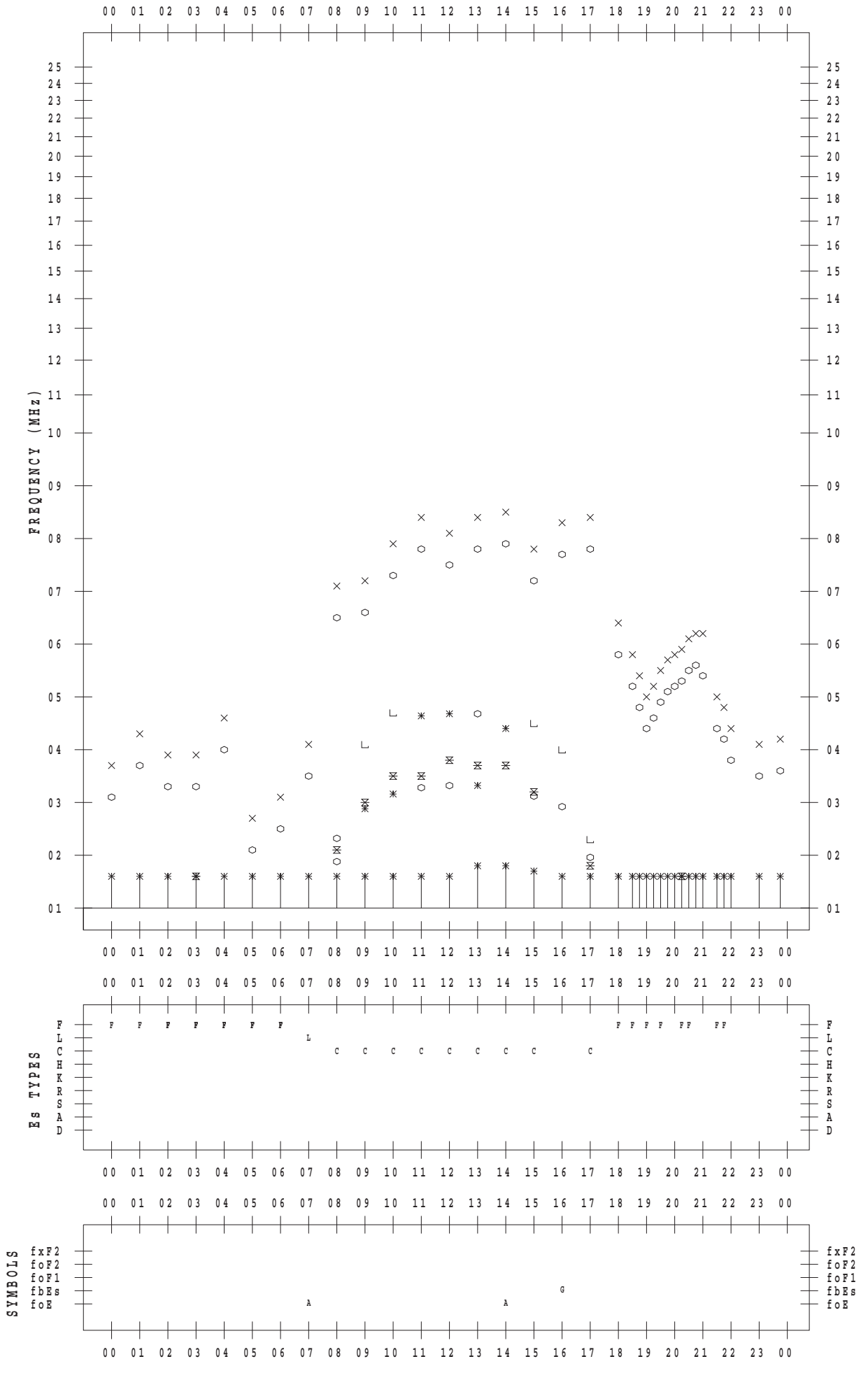
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 1/31

135 °E MEAN TIME



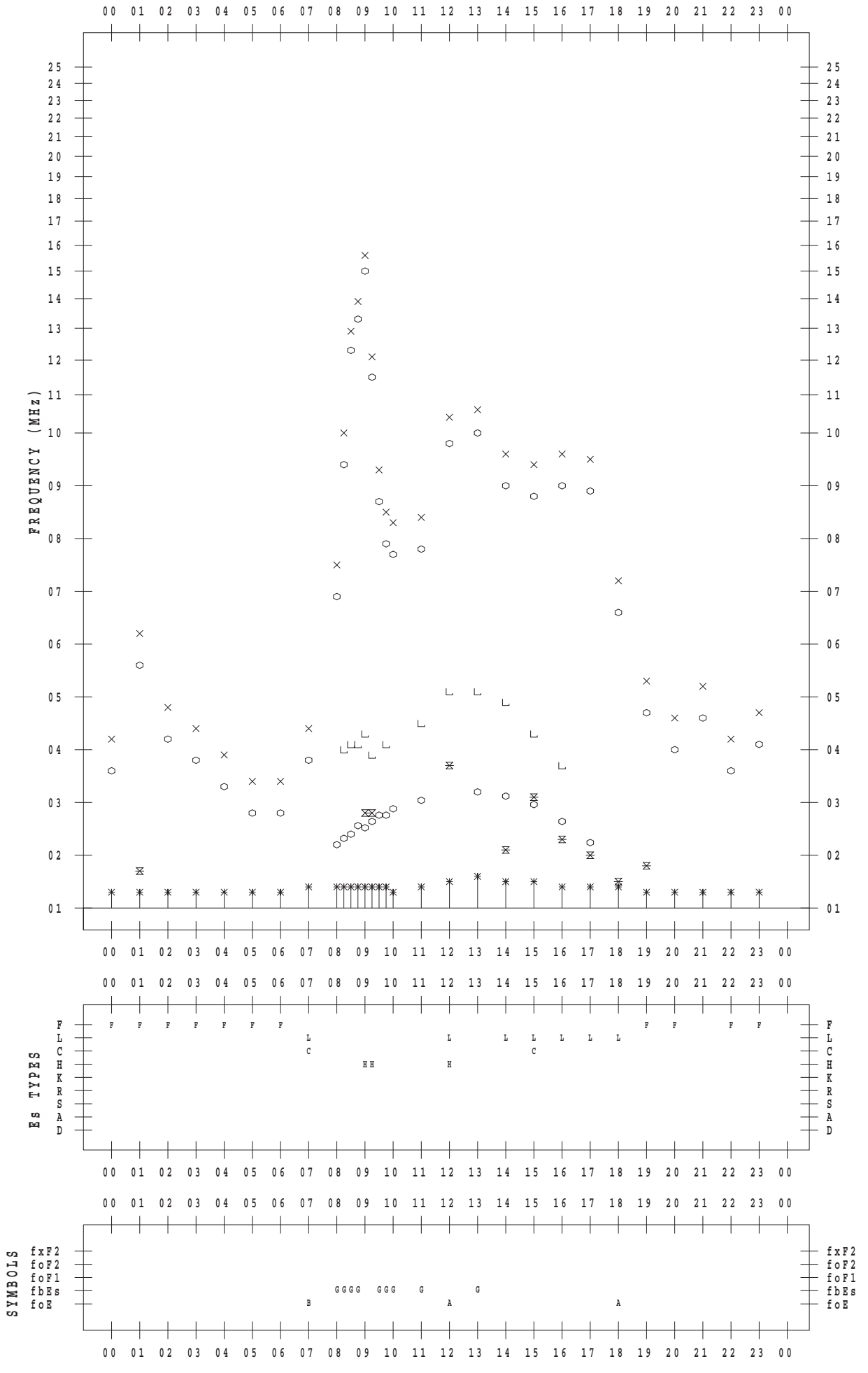
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 1

135 °E MEAN TIME



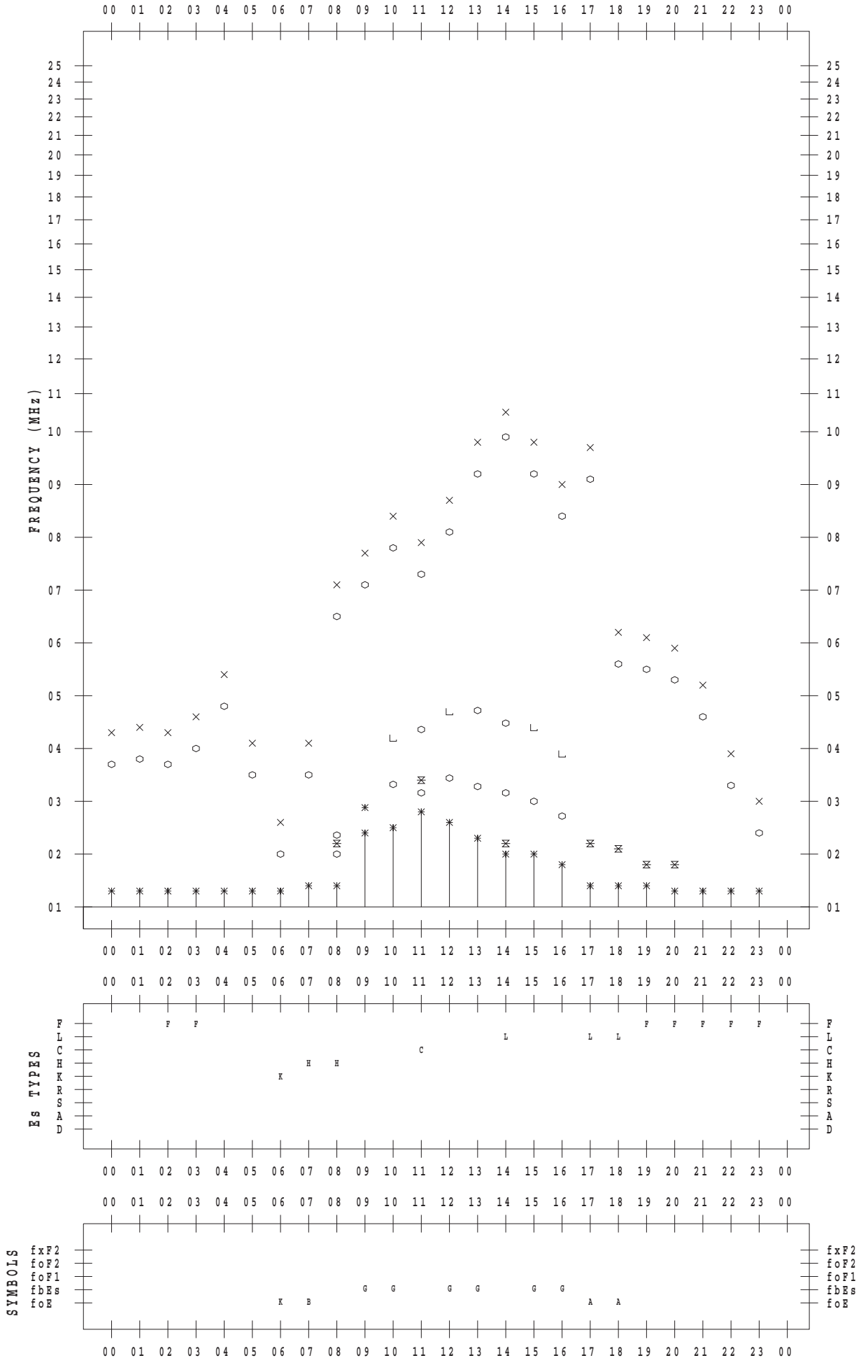
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 2

135 °E MEAN TIME



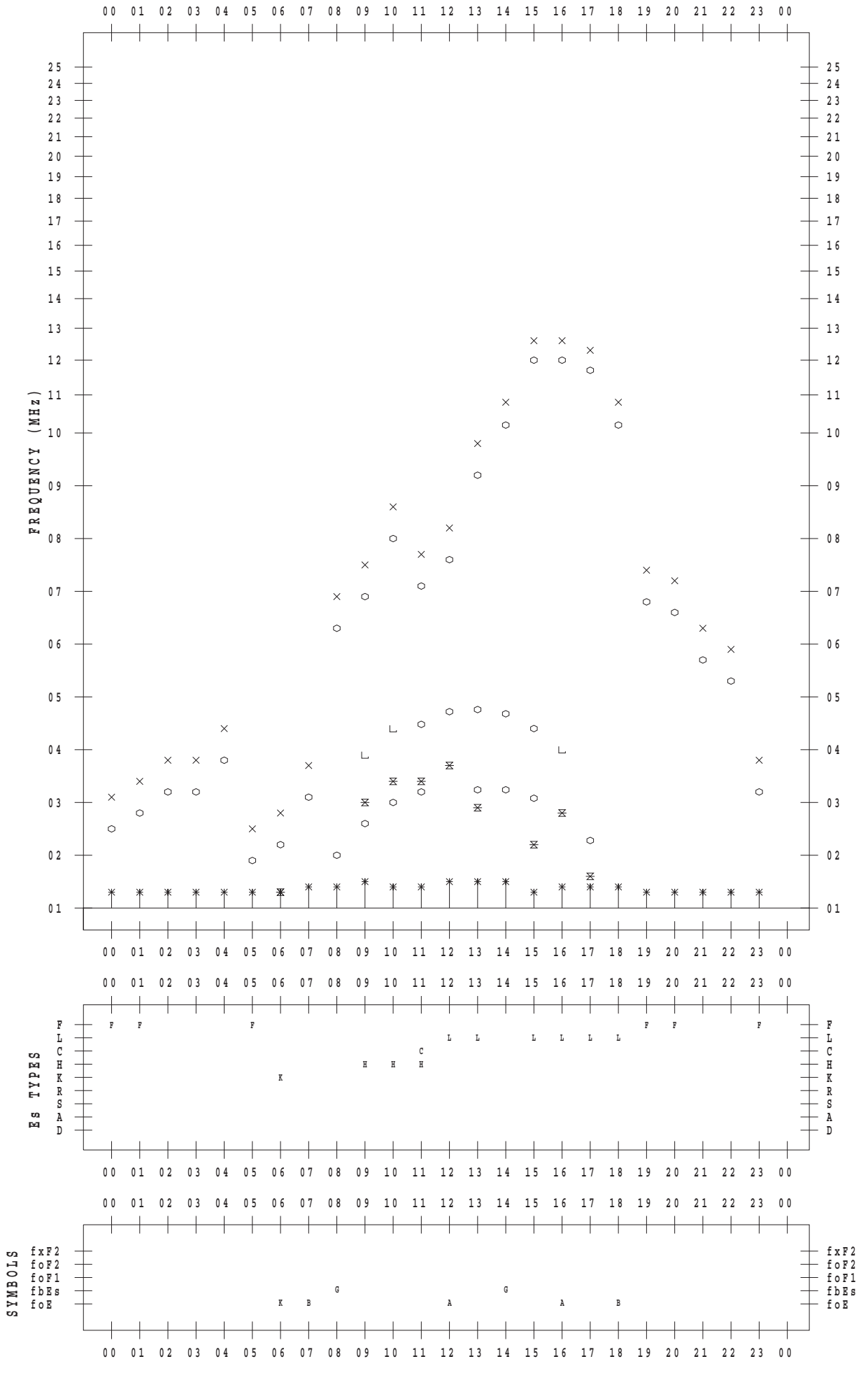
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 3

135 °E MEAN TIME



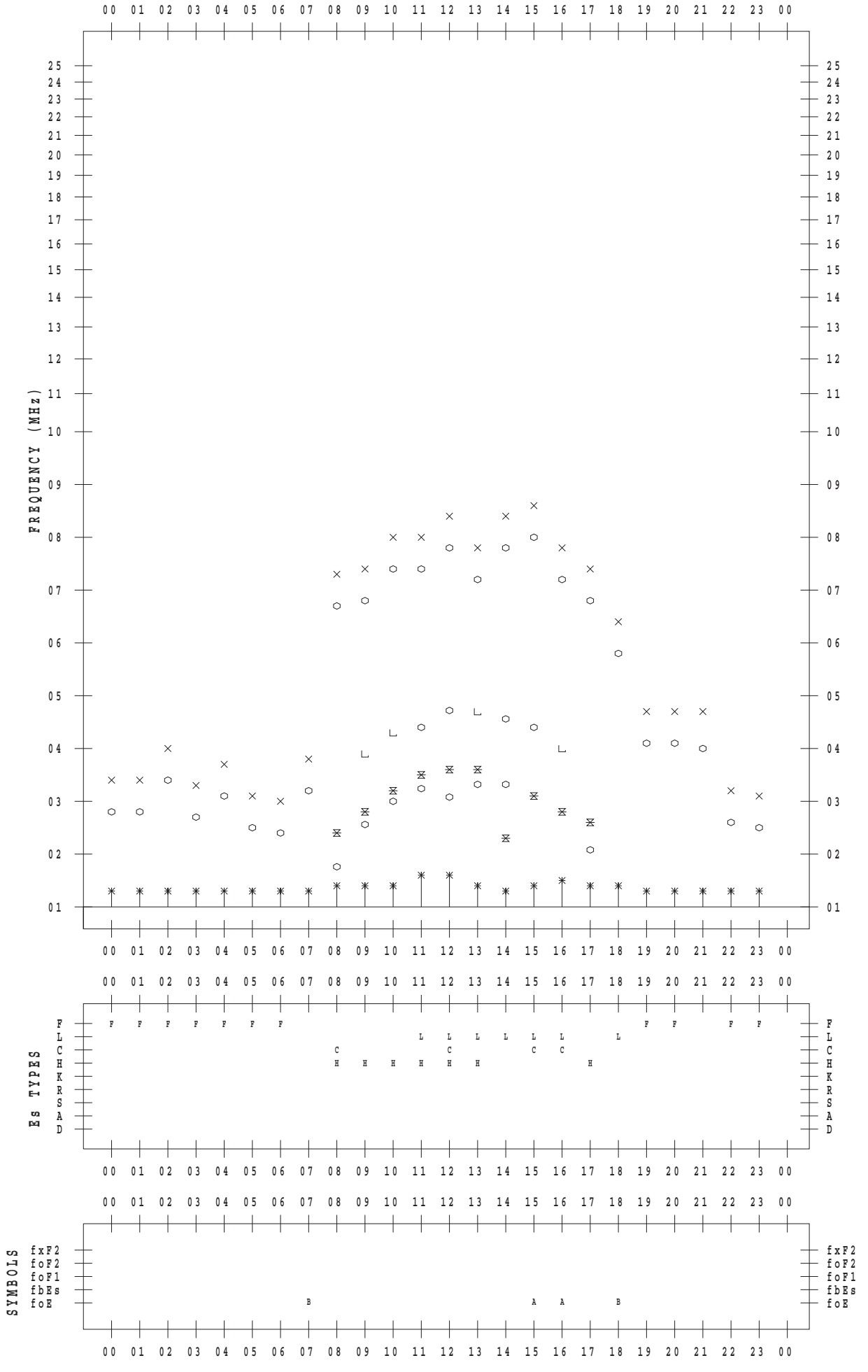
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 4

135 °E MEAN TIME



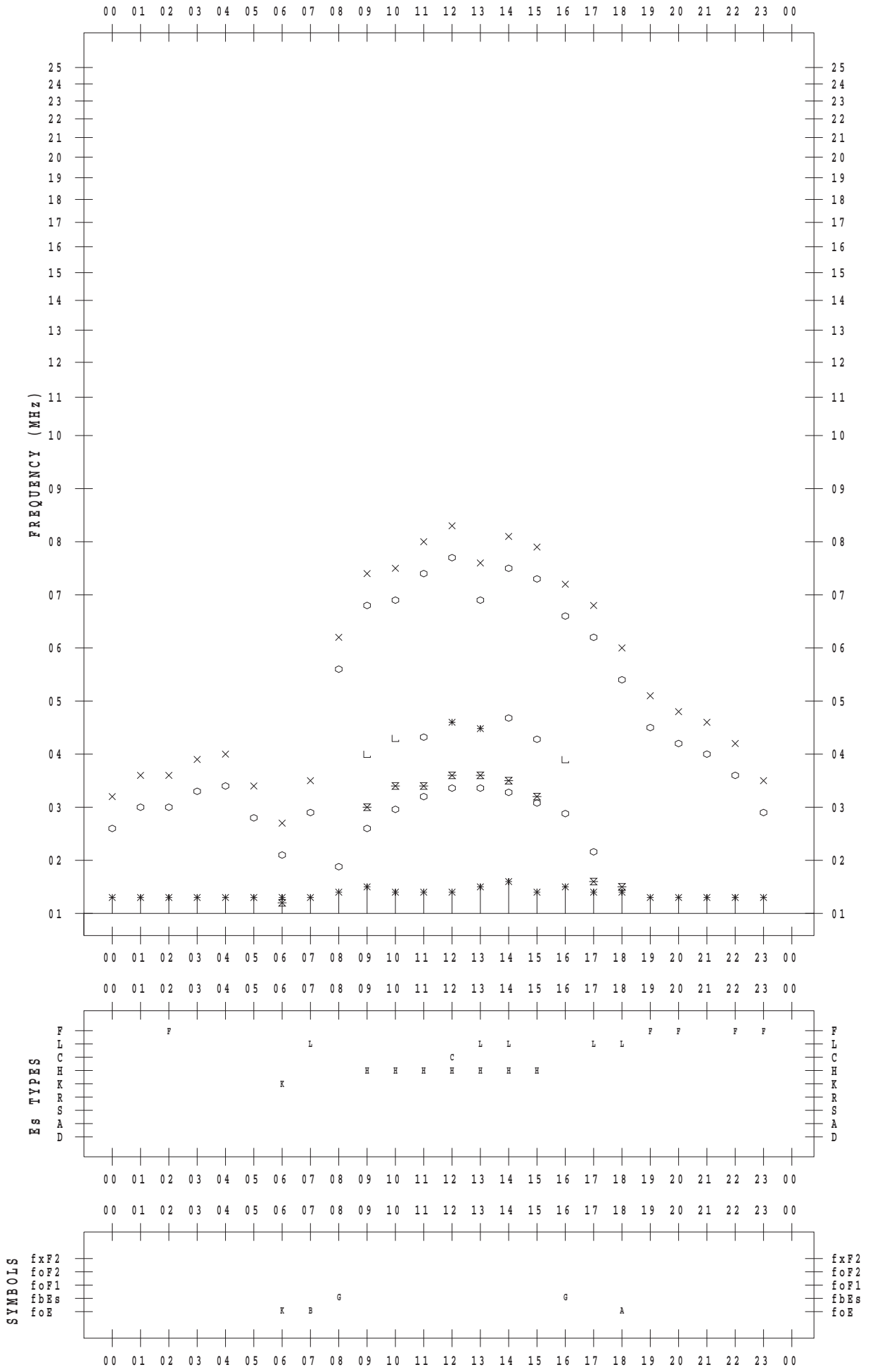
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 5

135 °E MEAN TIME



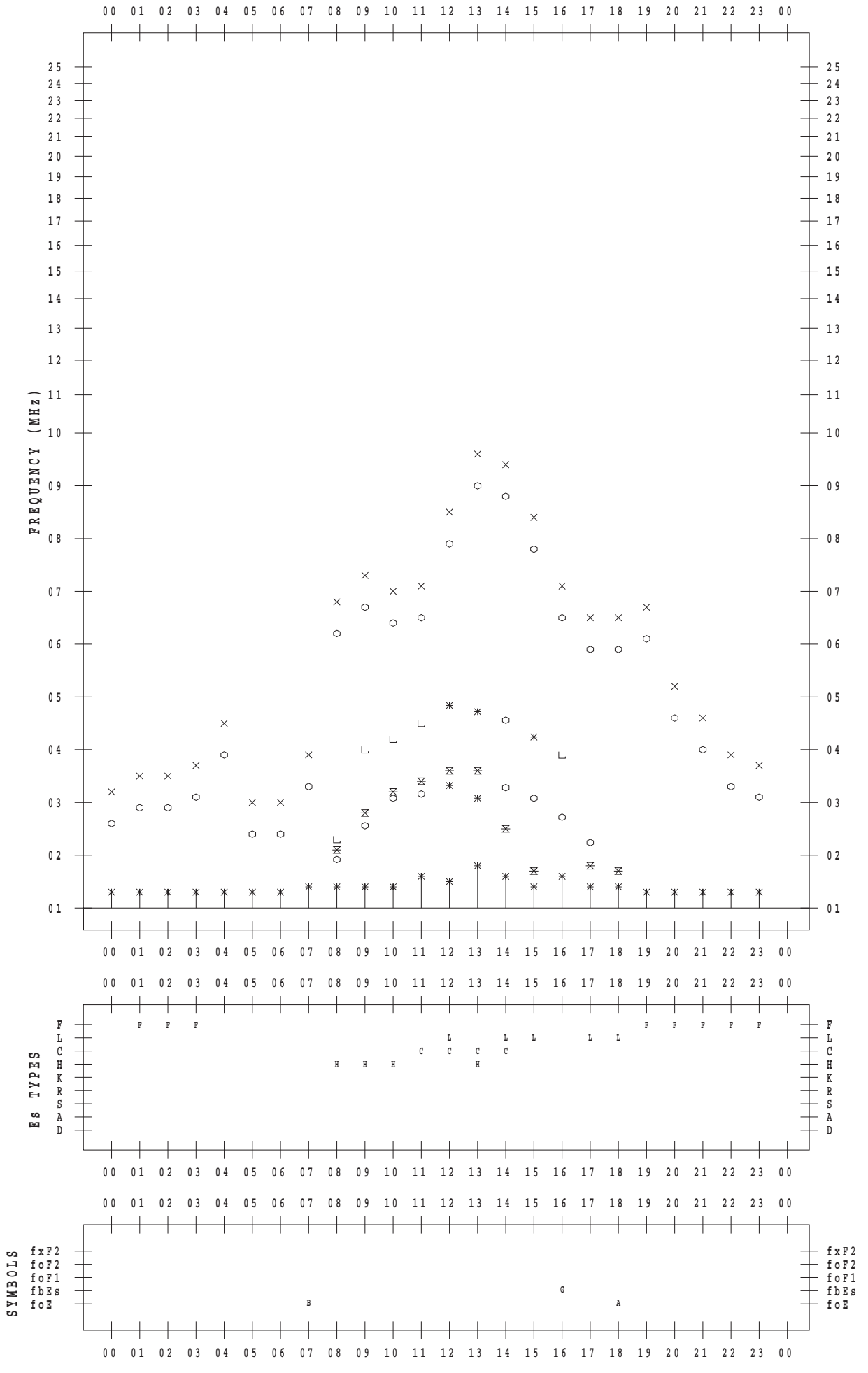
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 6

135 °E MEAN TIME



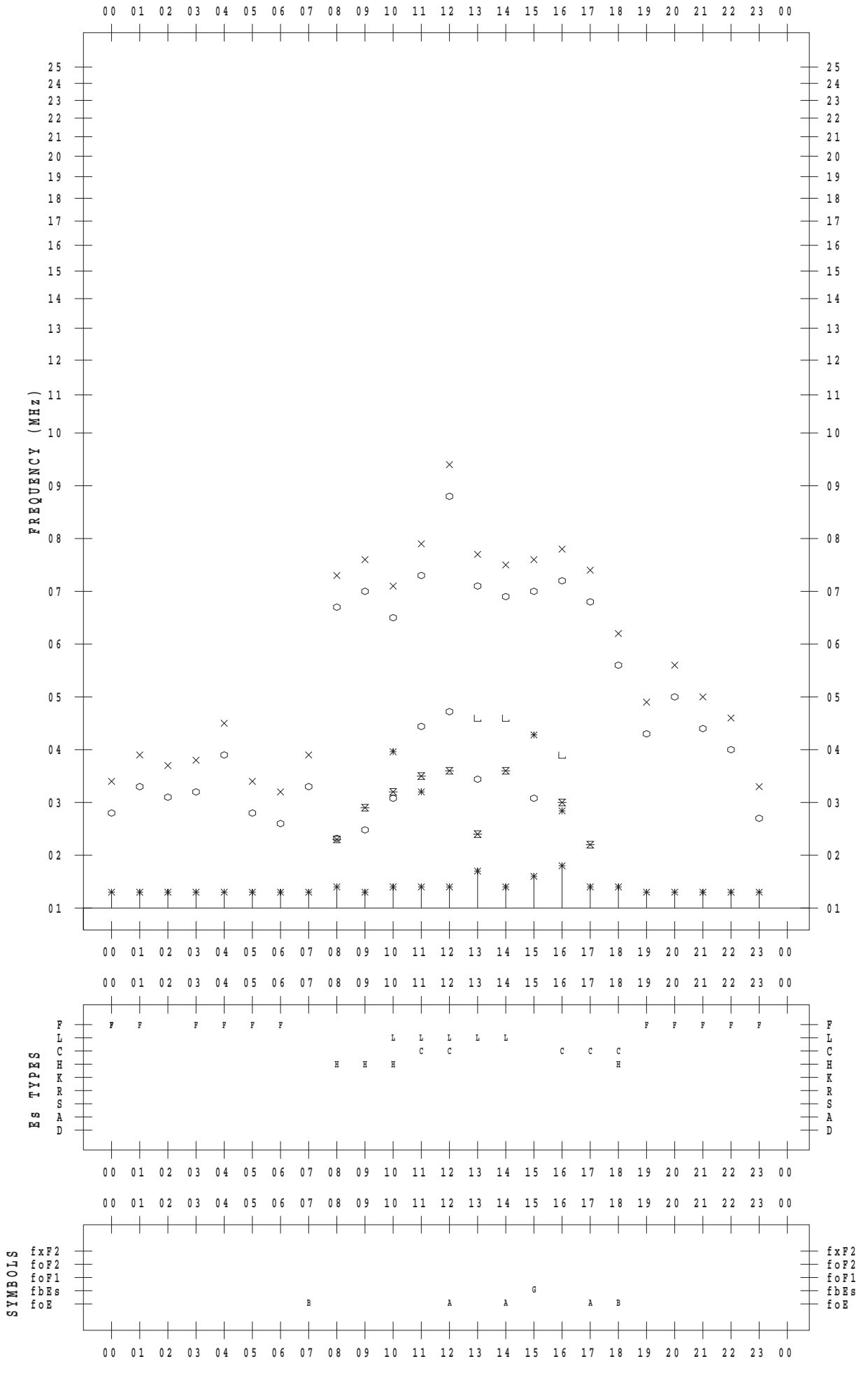
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 7

135 °E MEAN TIME



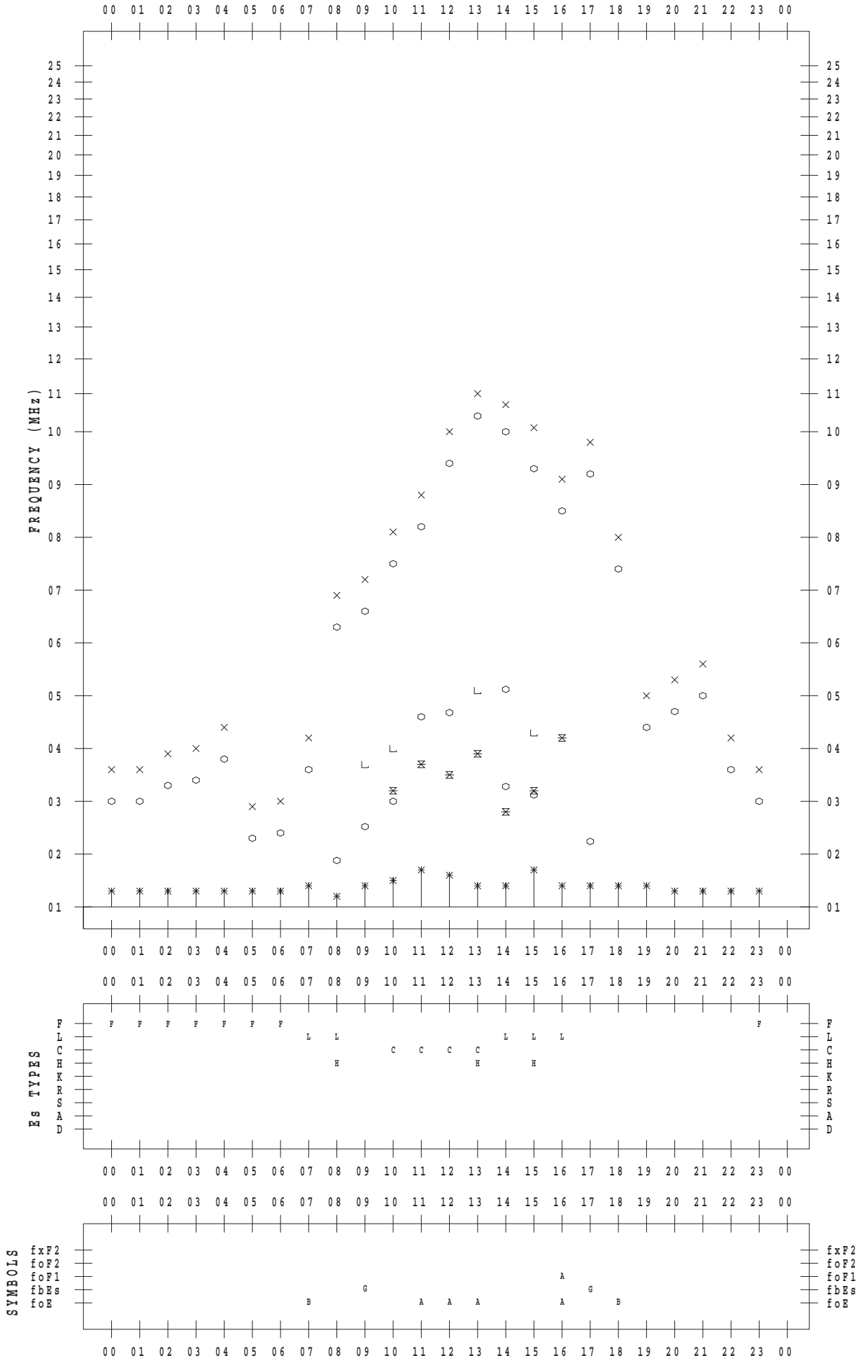
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 8

135 °E MEAN TIME



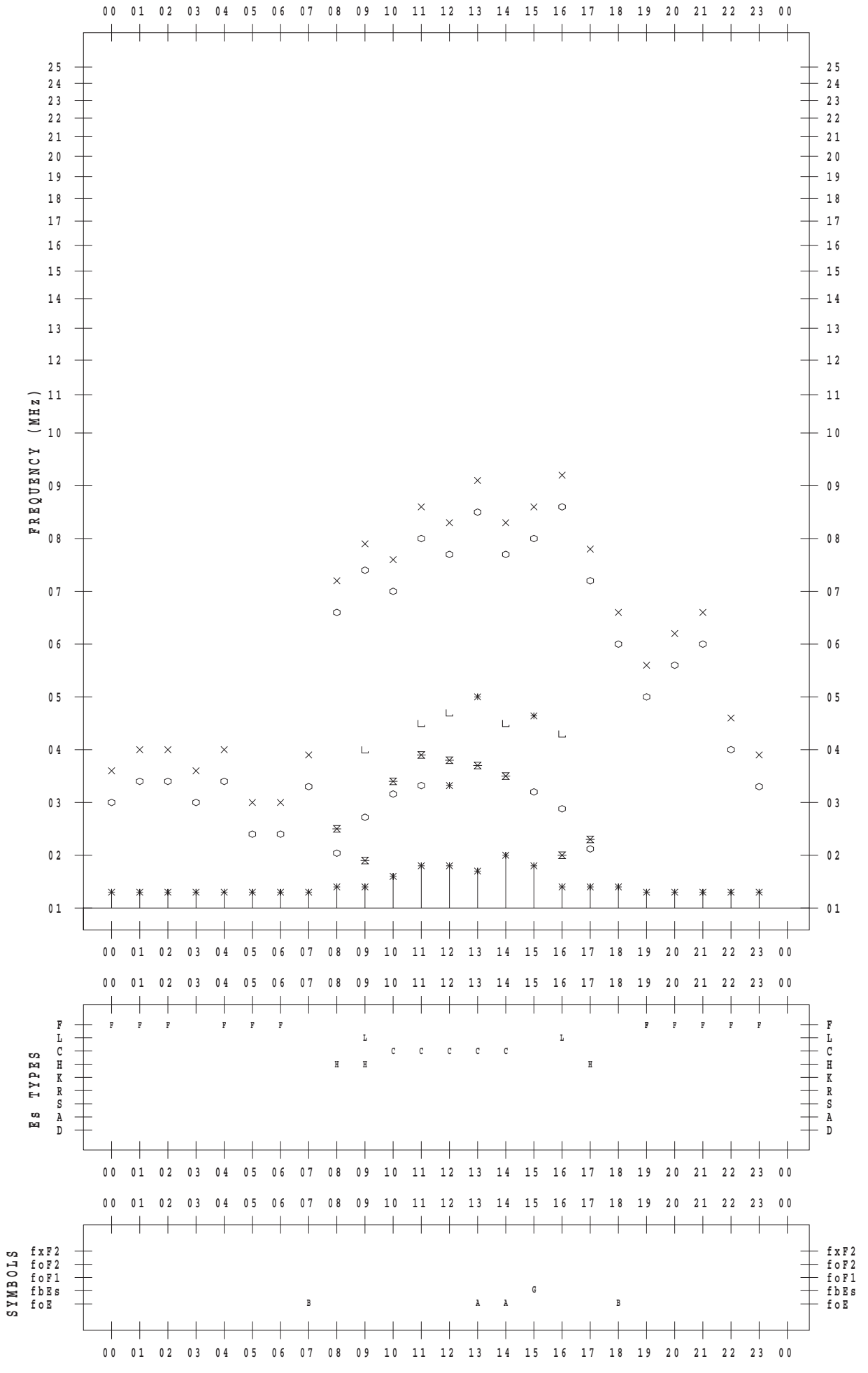
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/ 9

135 °E MEAN TIME



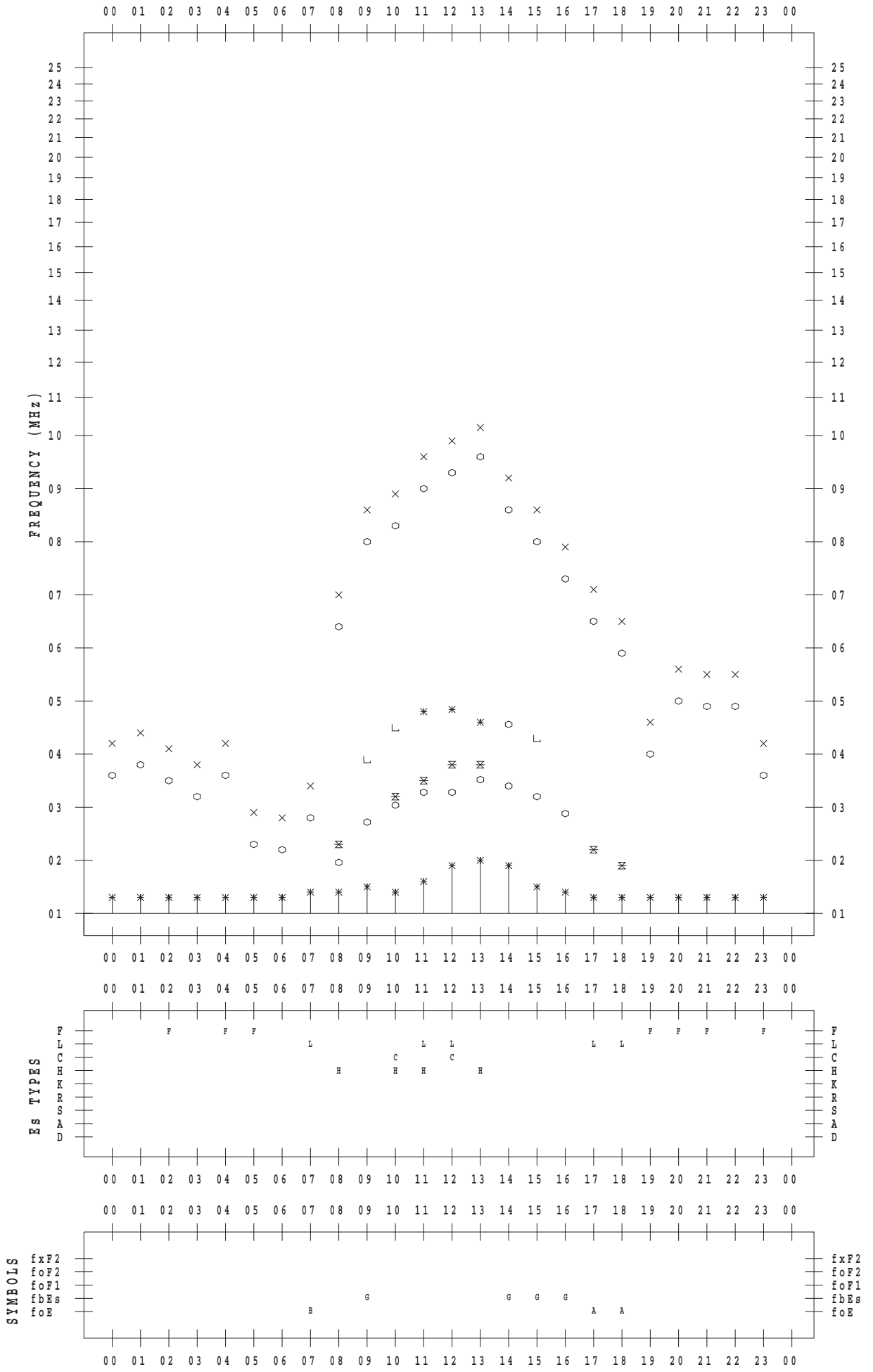
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/10

135 °E MEAN TIME



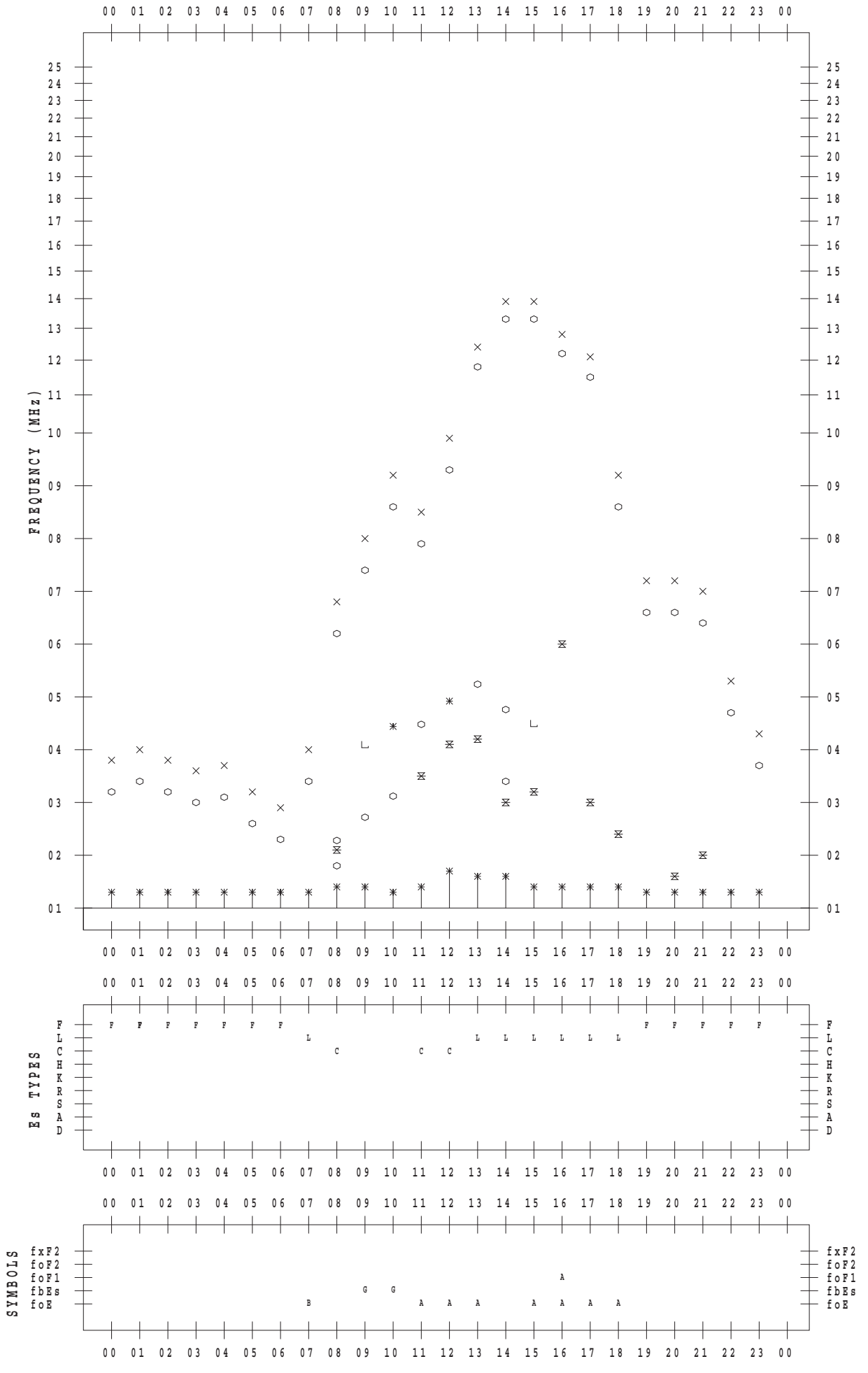
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/11

135 °E MEAN TIME



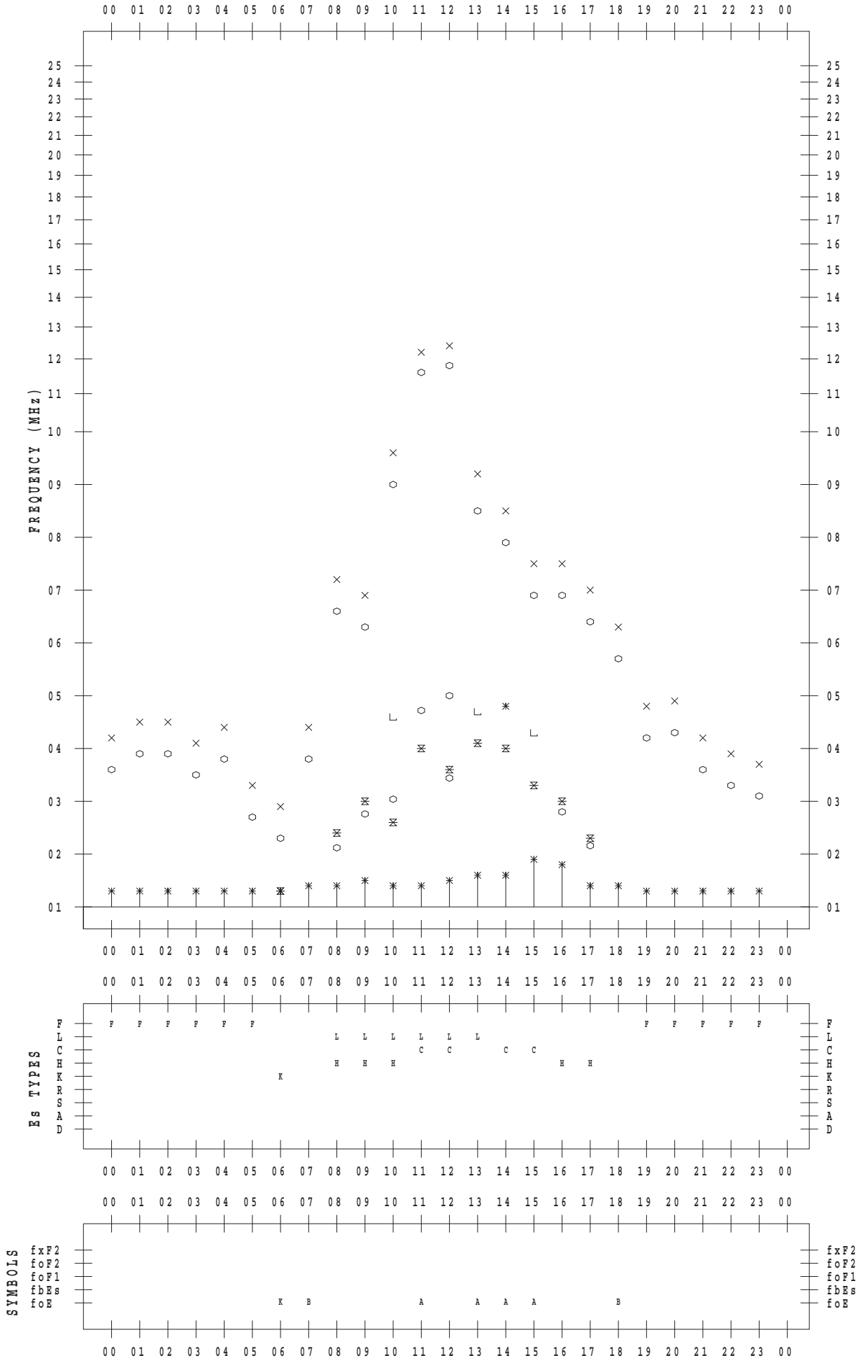
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/12

135 °E MEAN TIME



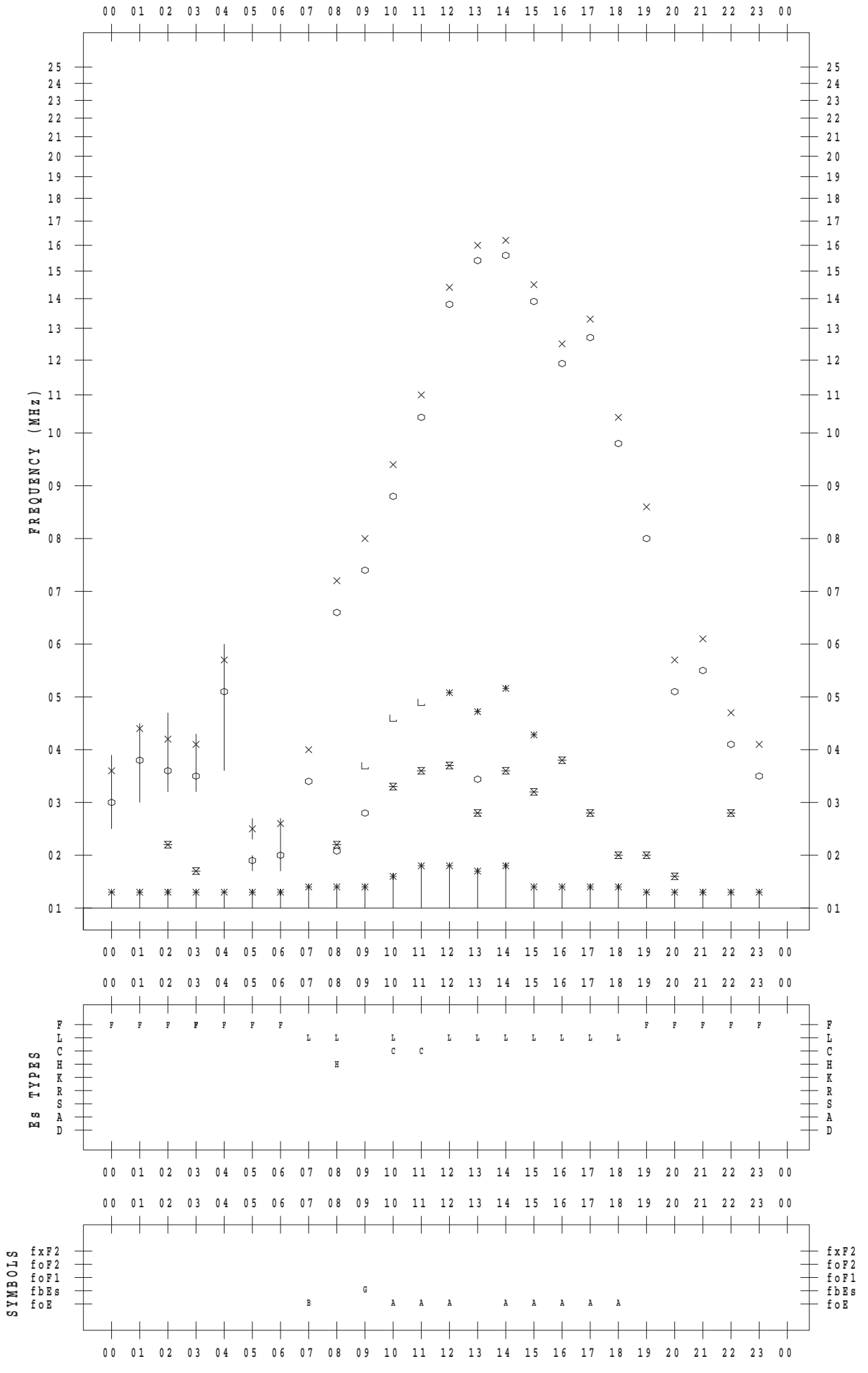
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/13

135 °E MEAN TIME



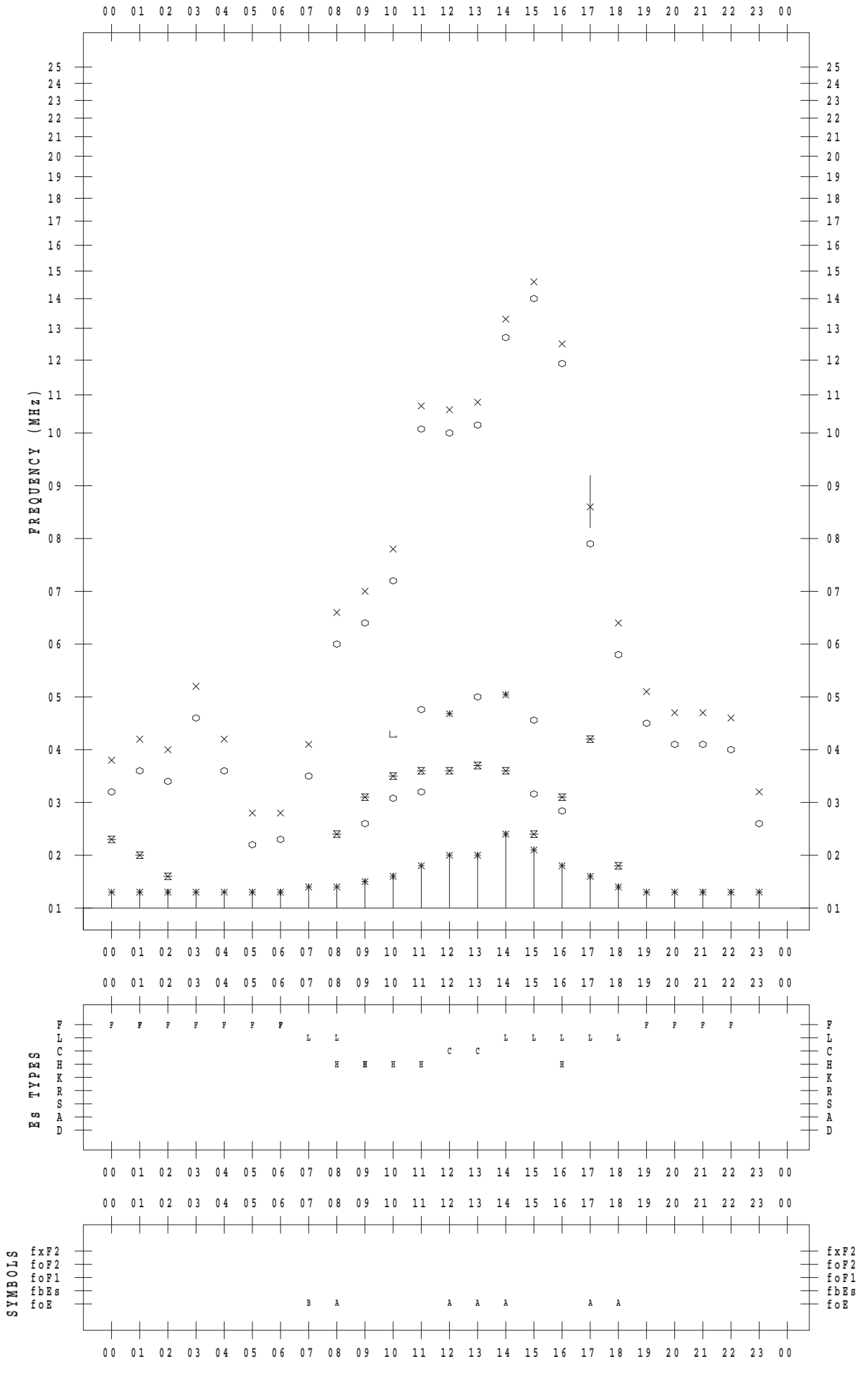
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/14

135 °E MEAN TIME



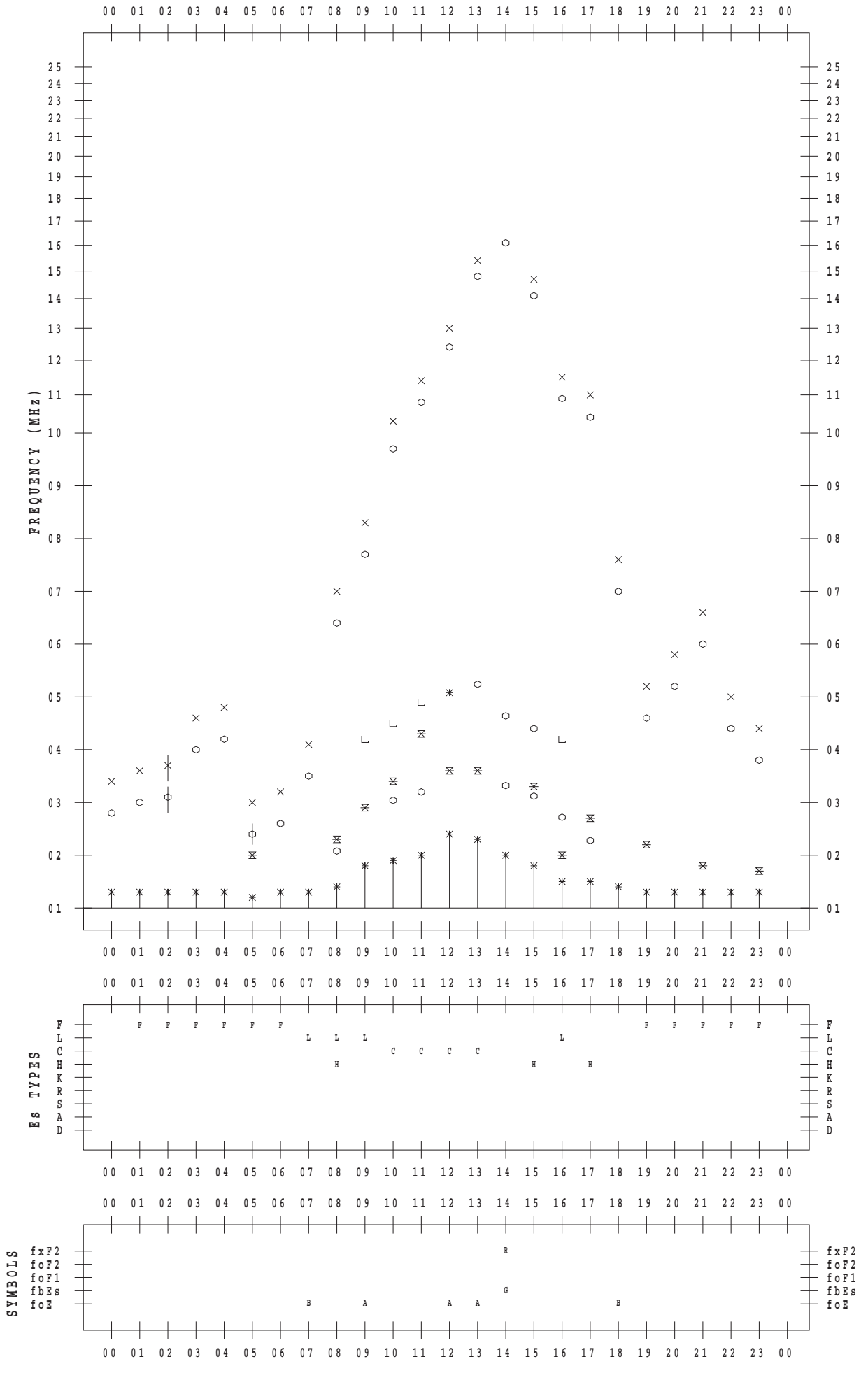
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/15

135 °E MEAN TIME



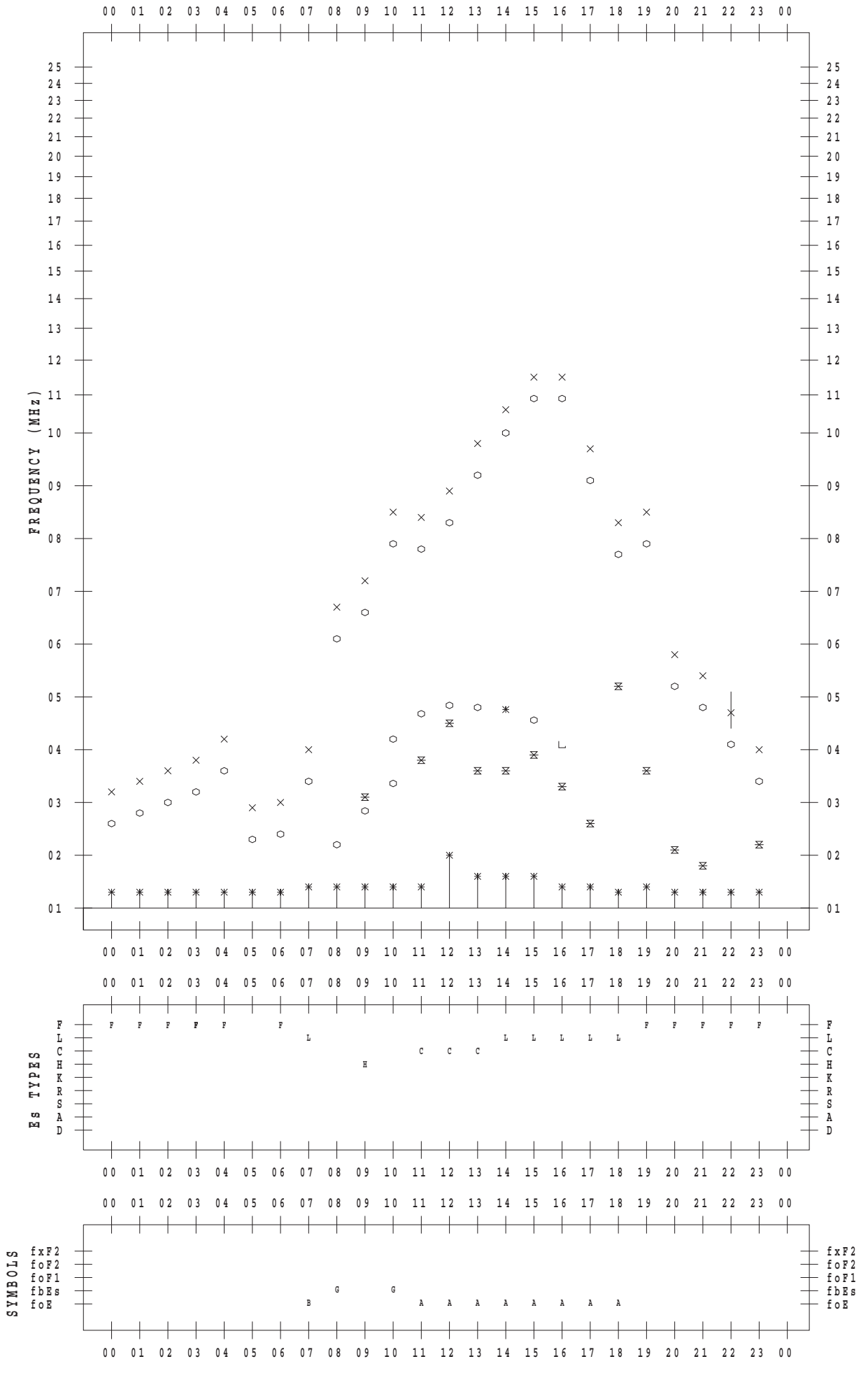
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/16

135 °E MEAN TIME



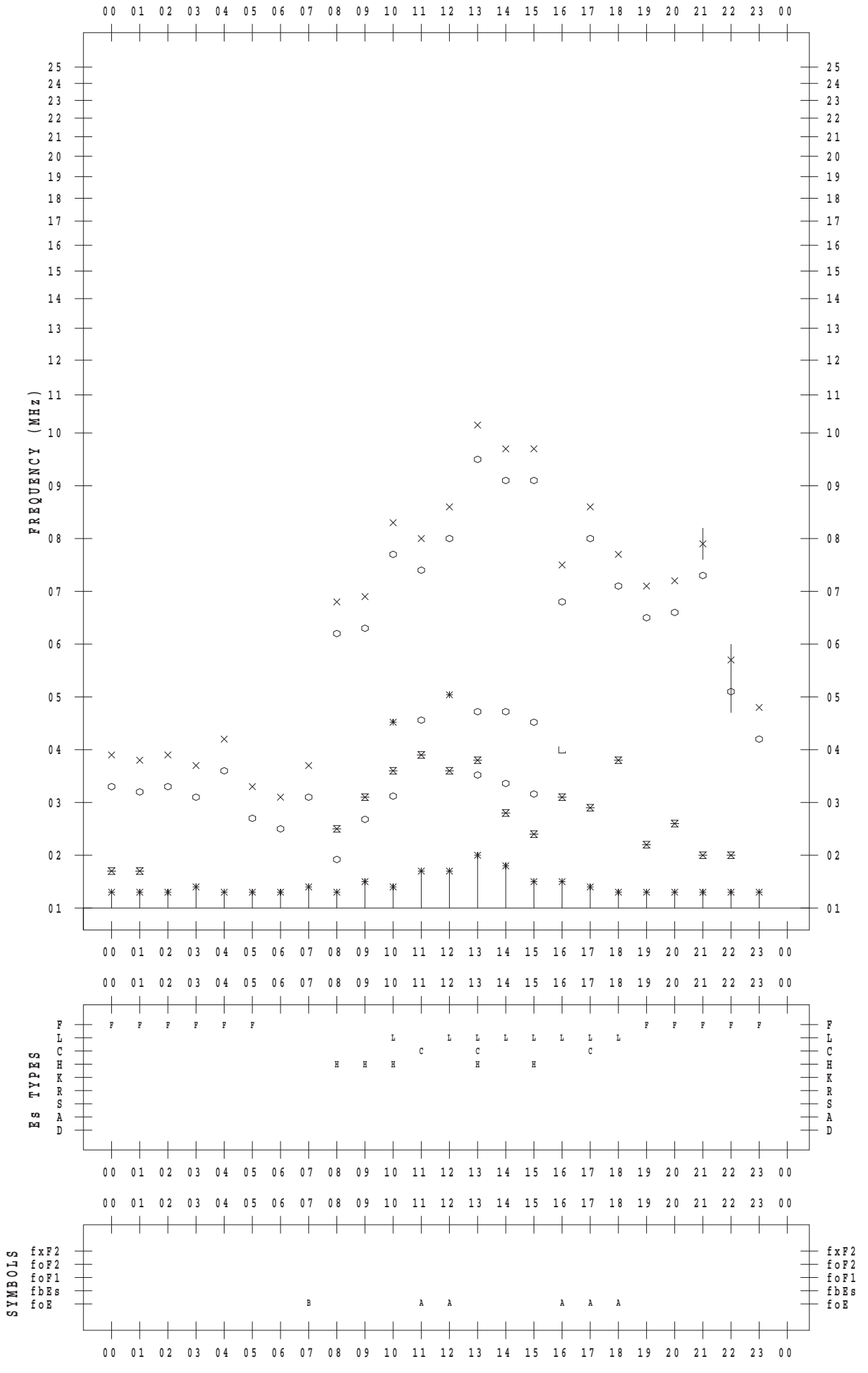
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/17

135 °E MEAN TIME



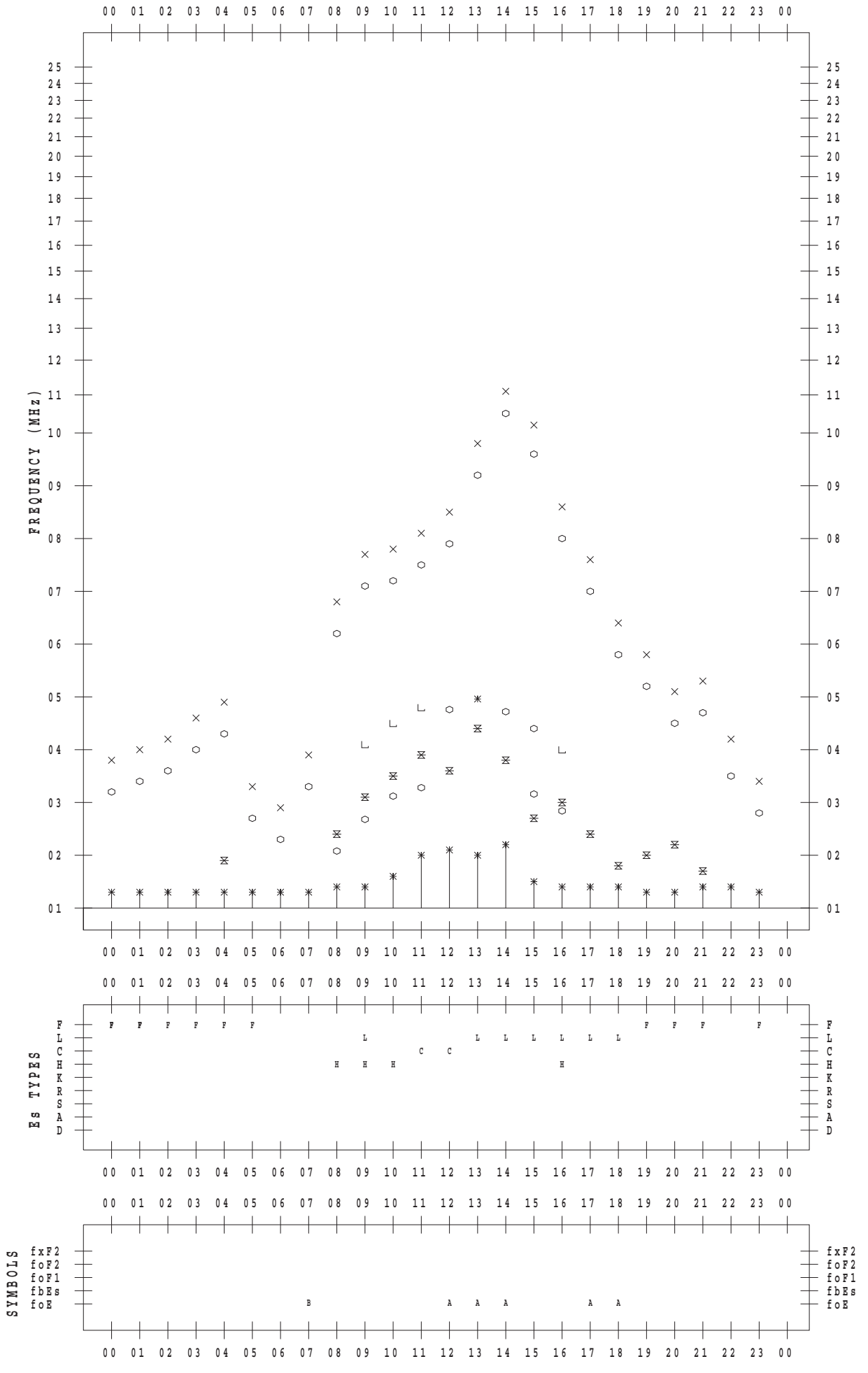
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/18

135 °E MEAN TIME



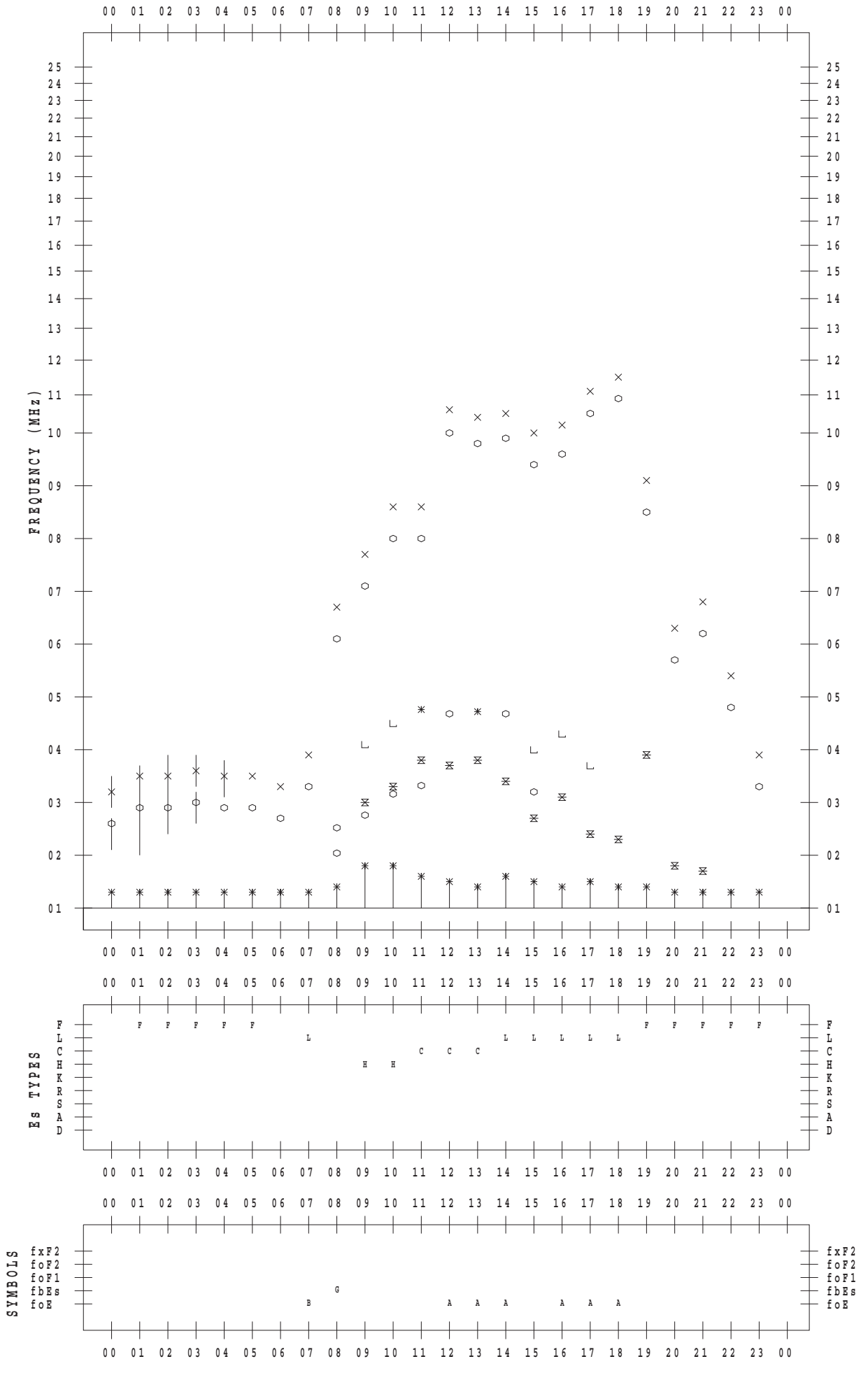
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/19

135 °E MEAN TIME



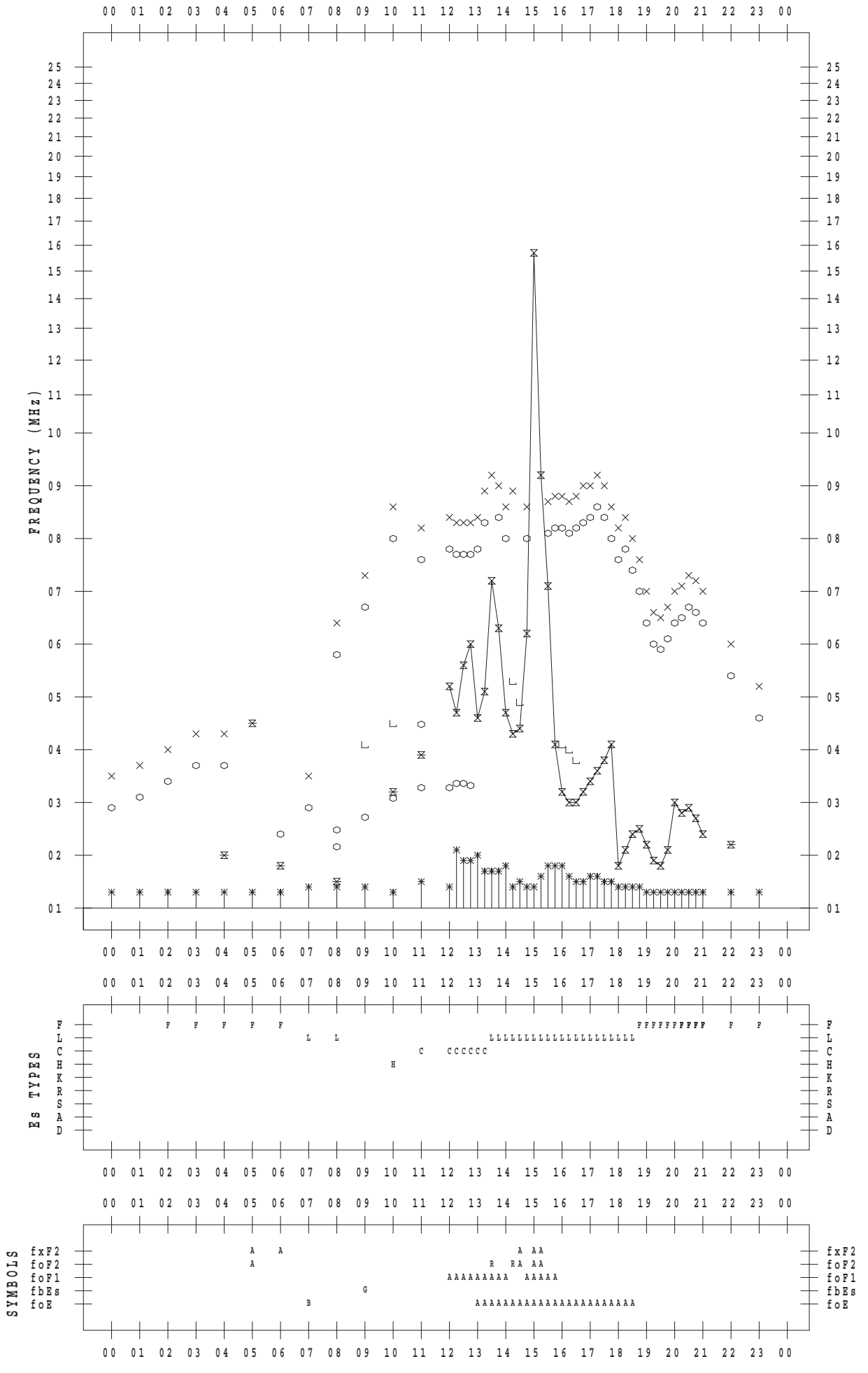
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/20

135 °E MEAN TIME



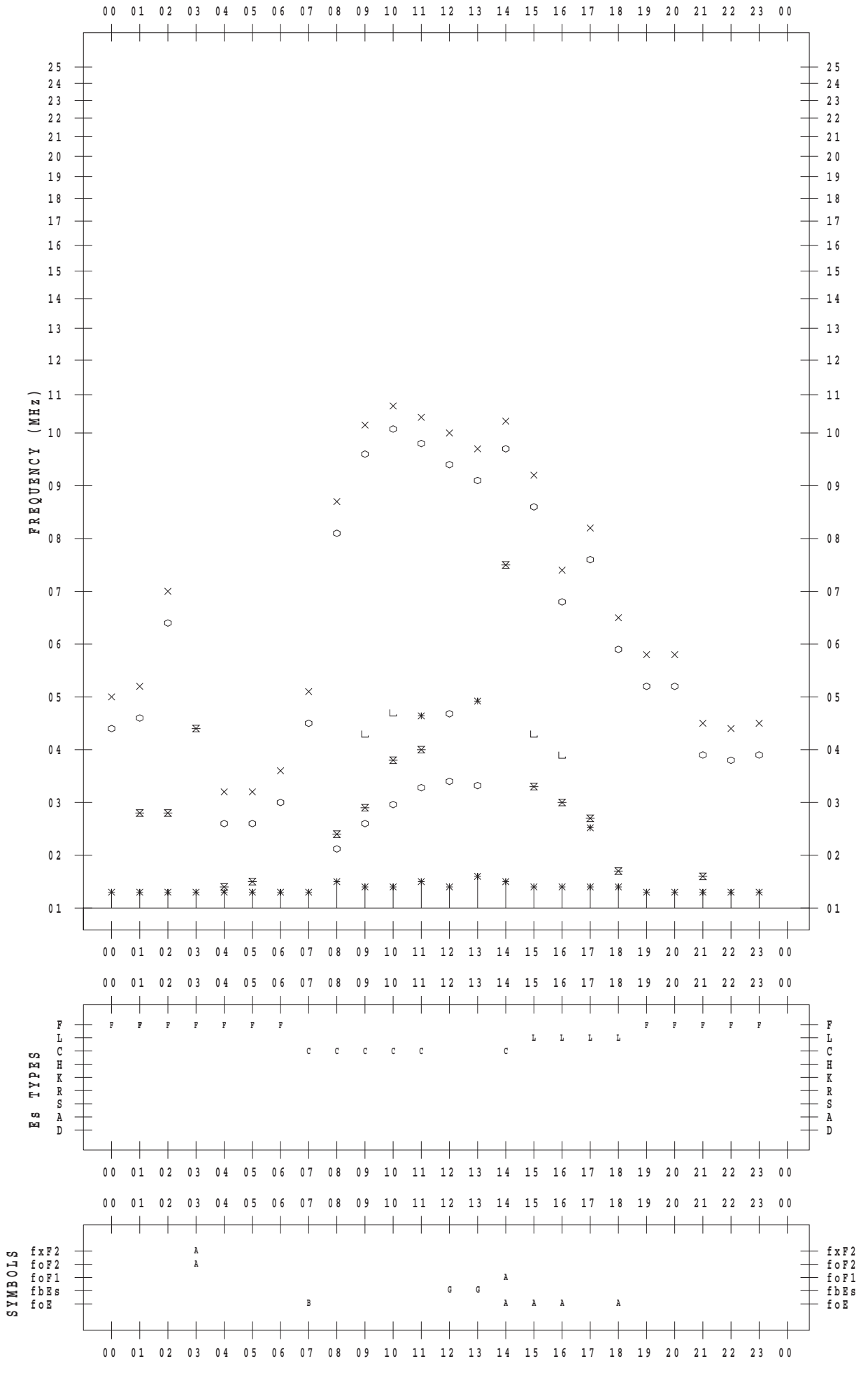
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/21

135 °E MEAN TIME



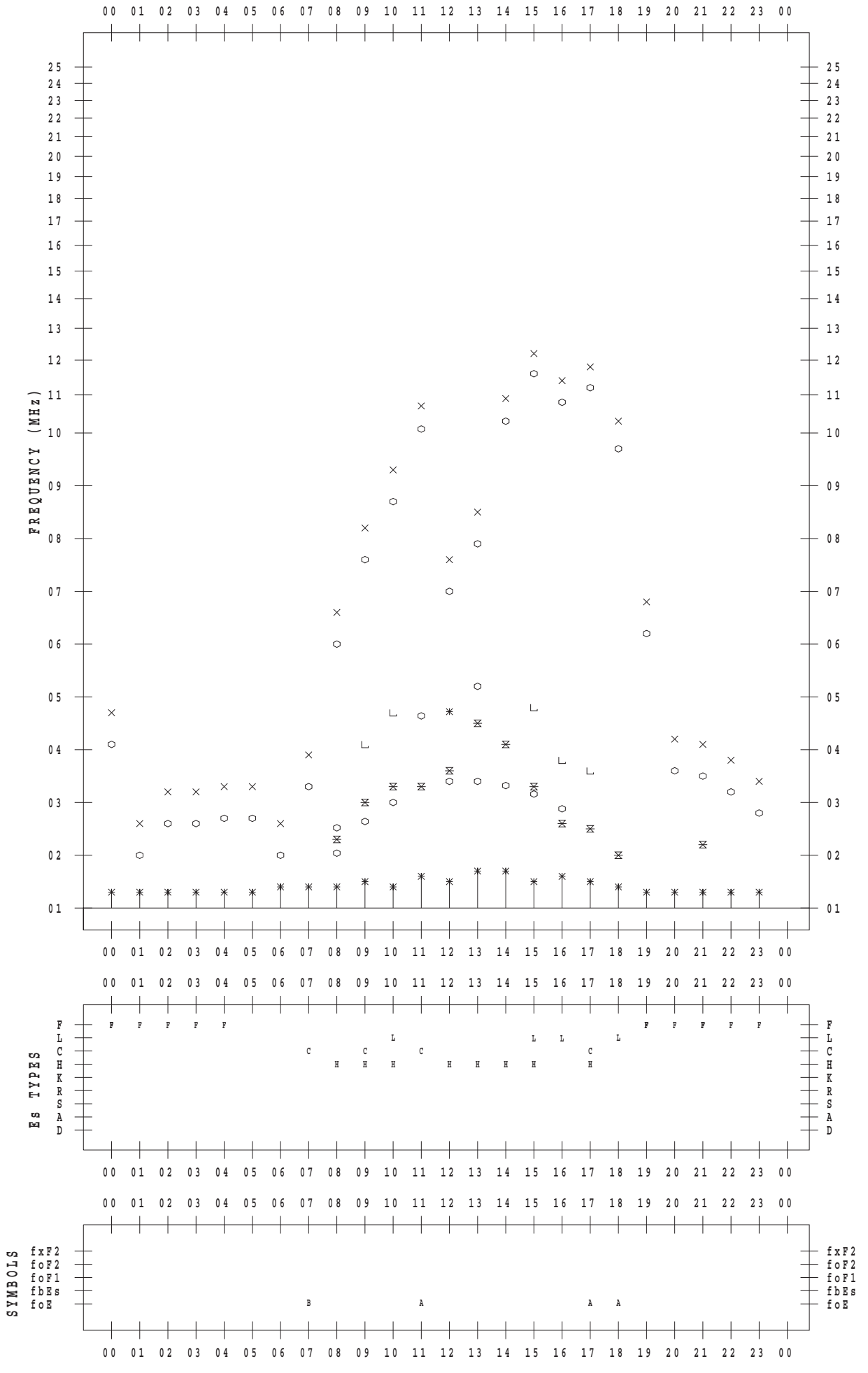
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/22

135 °E MEAN TIME



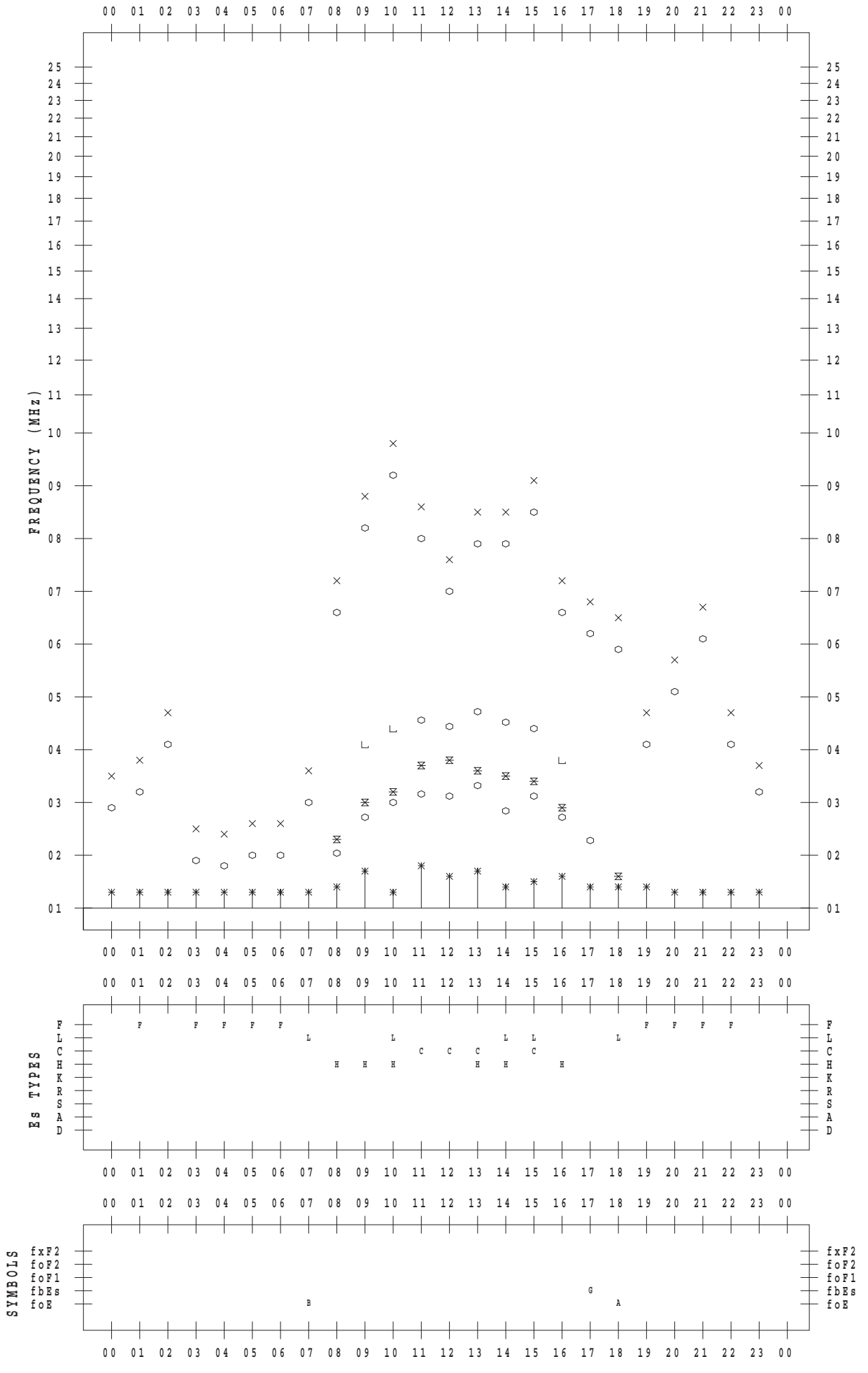
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/23

135 °E MEAN TIME



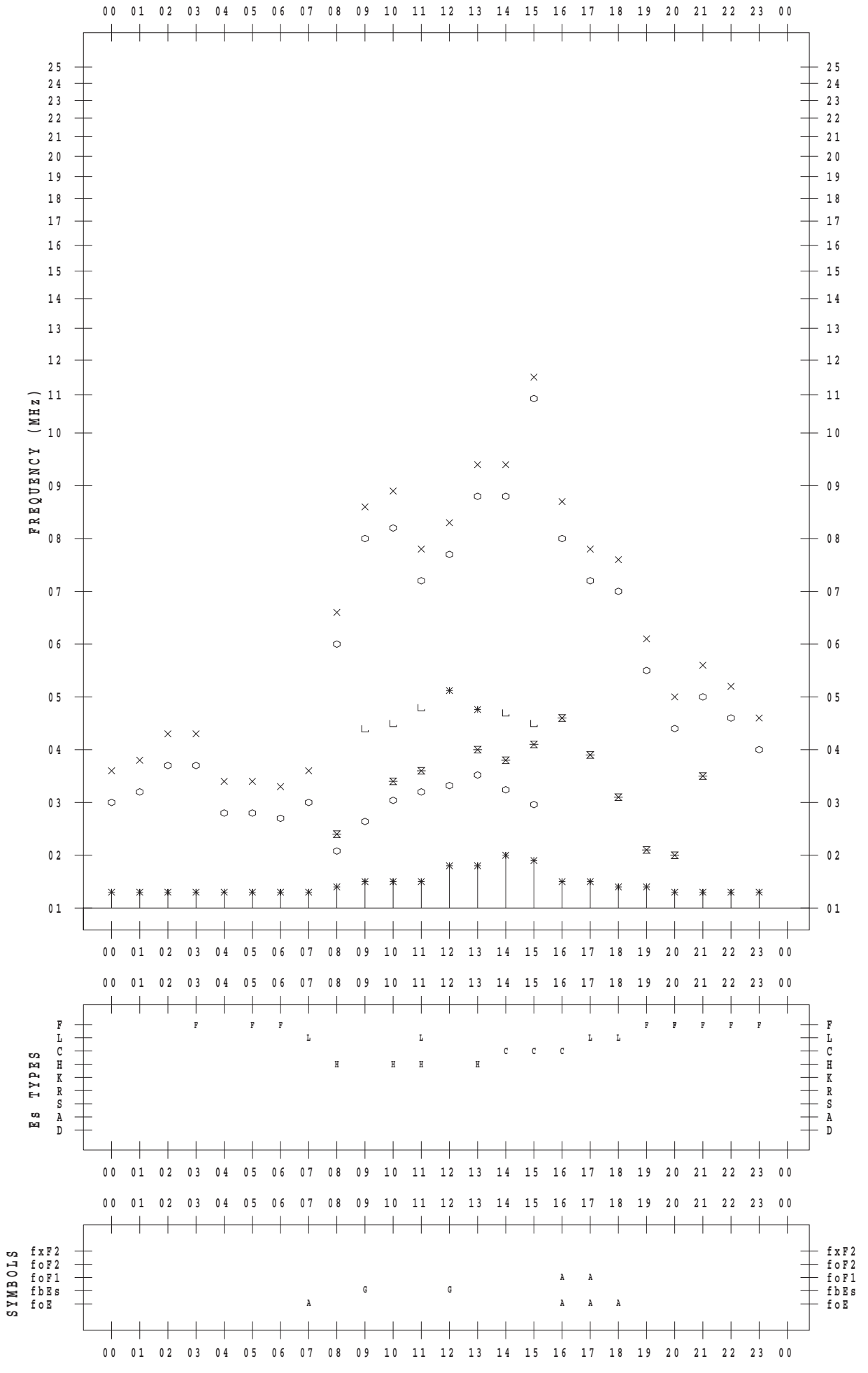
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/24

135 °E MEAN TIME



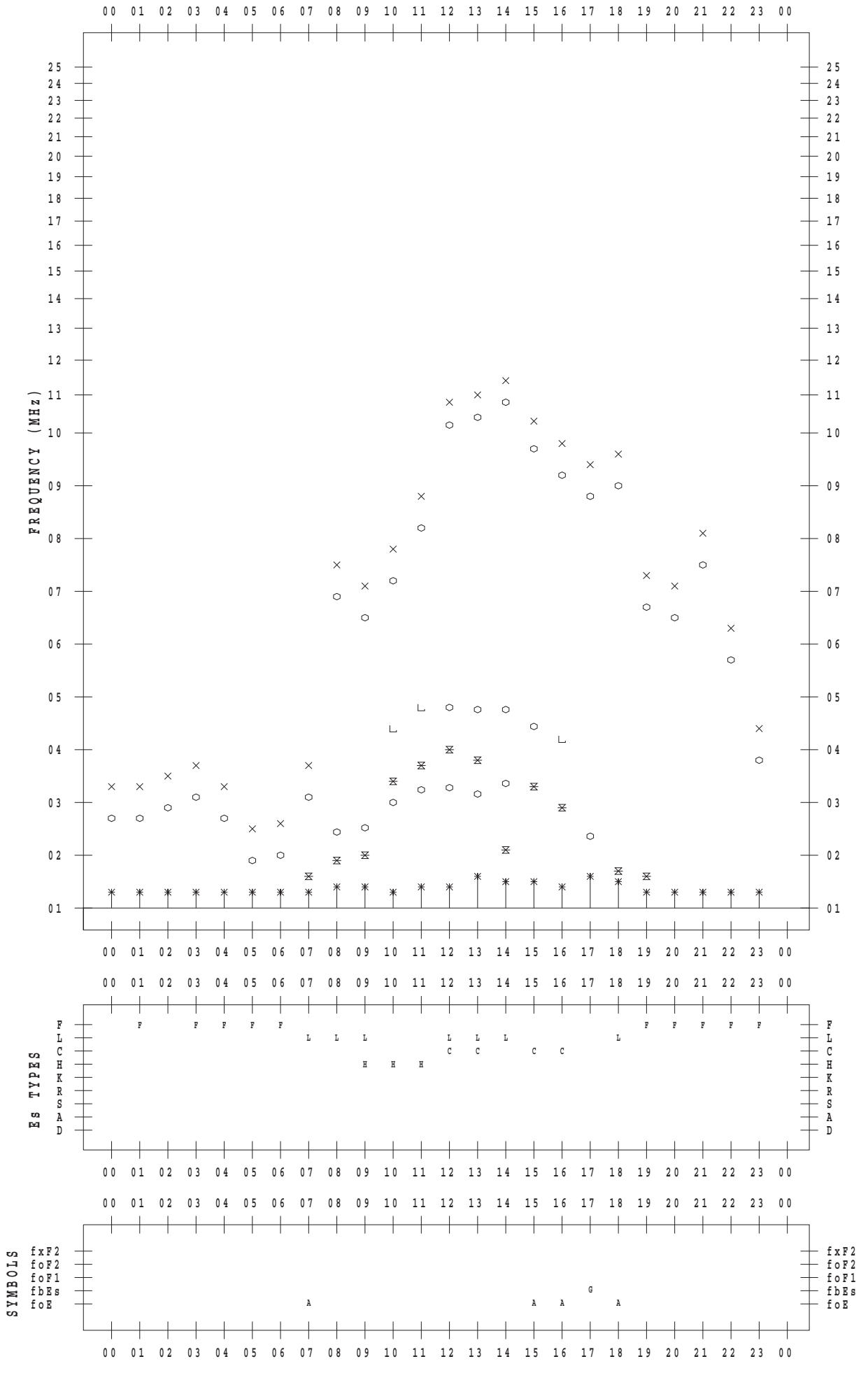
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/25

135 °E MEAN TIME



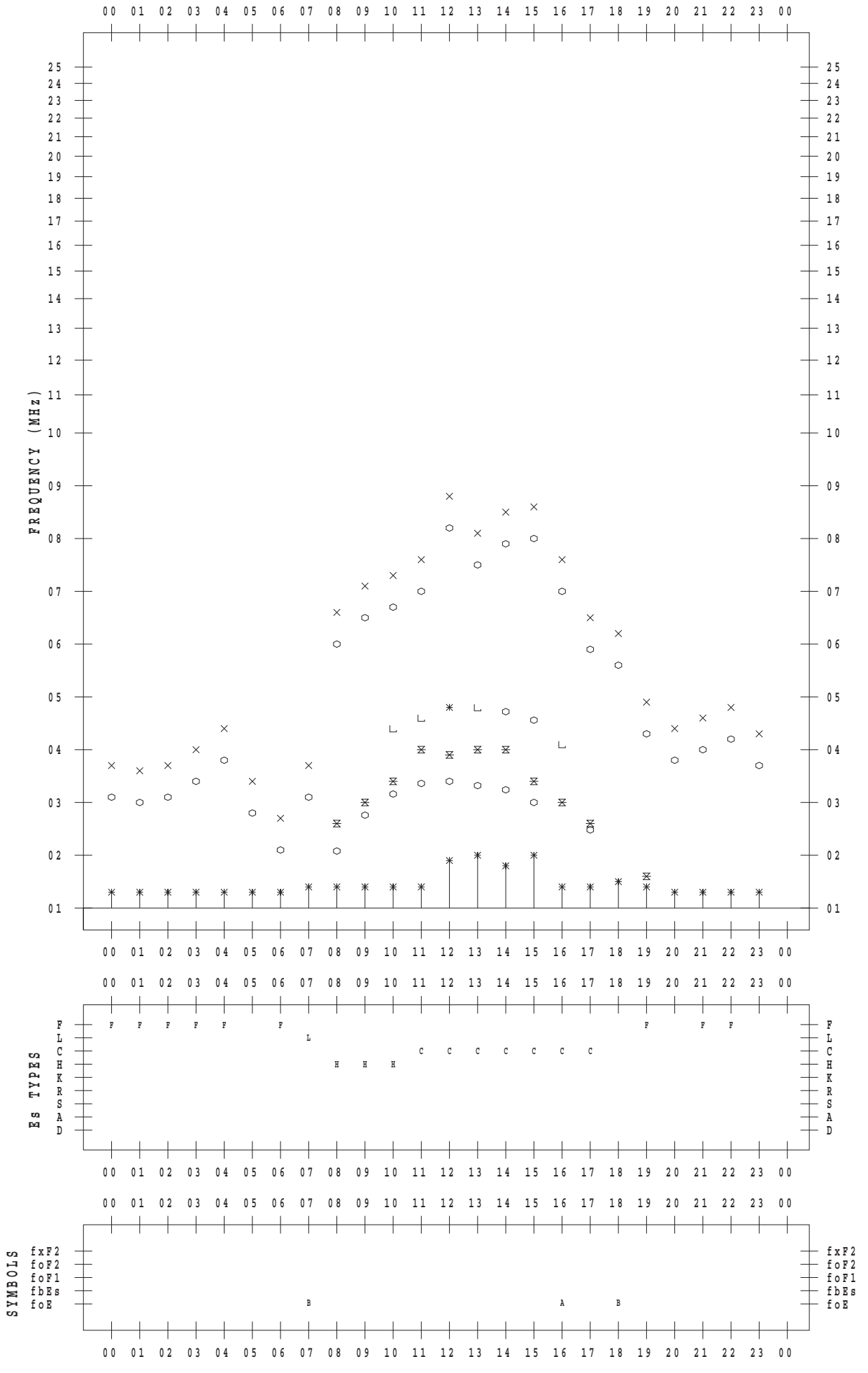
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/26

135 °E MEAN TIME



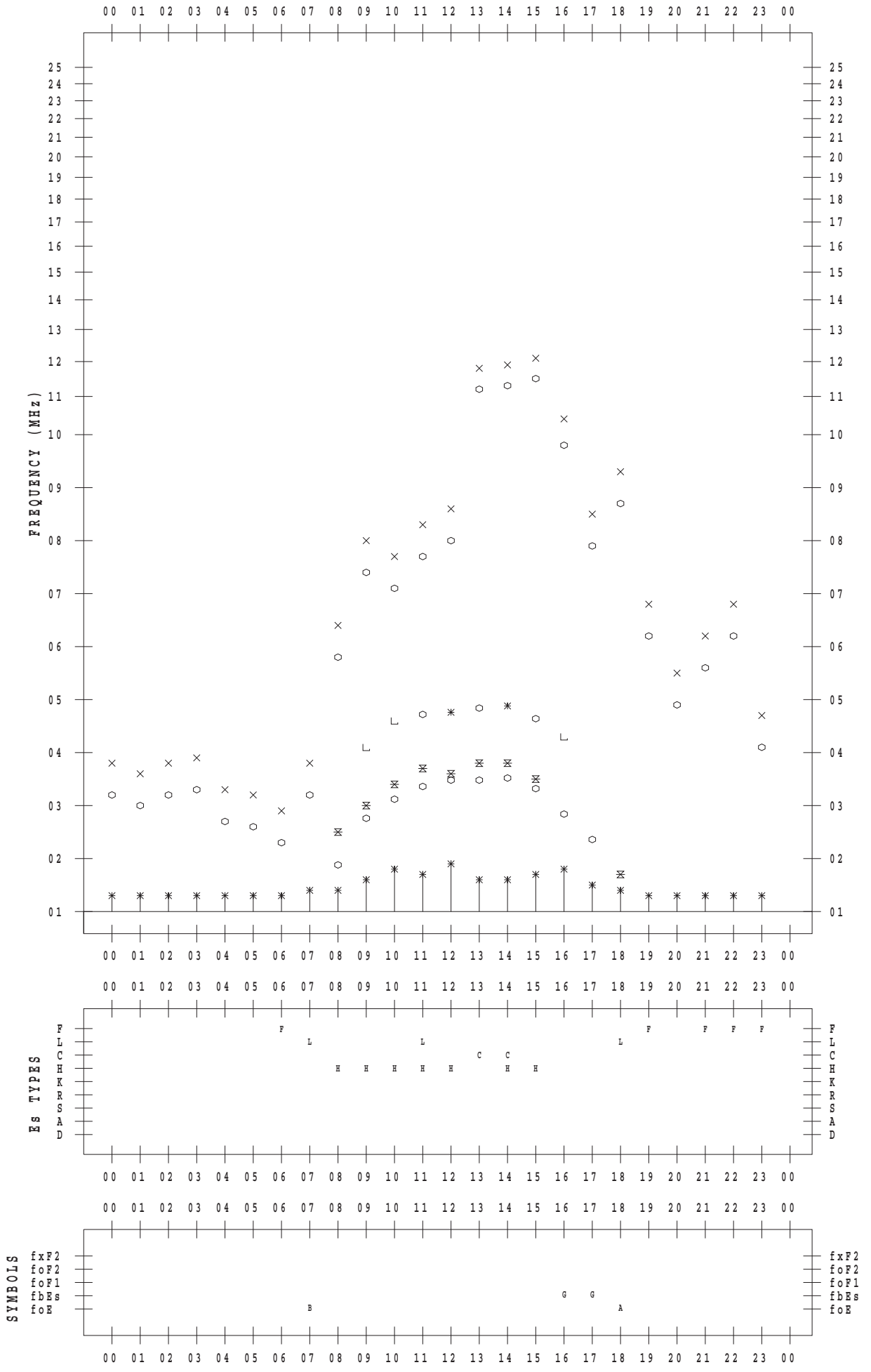
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/27

135 °E MEAN TIME



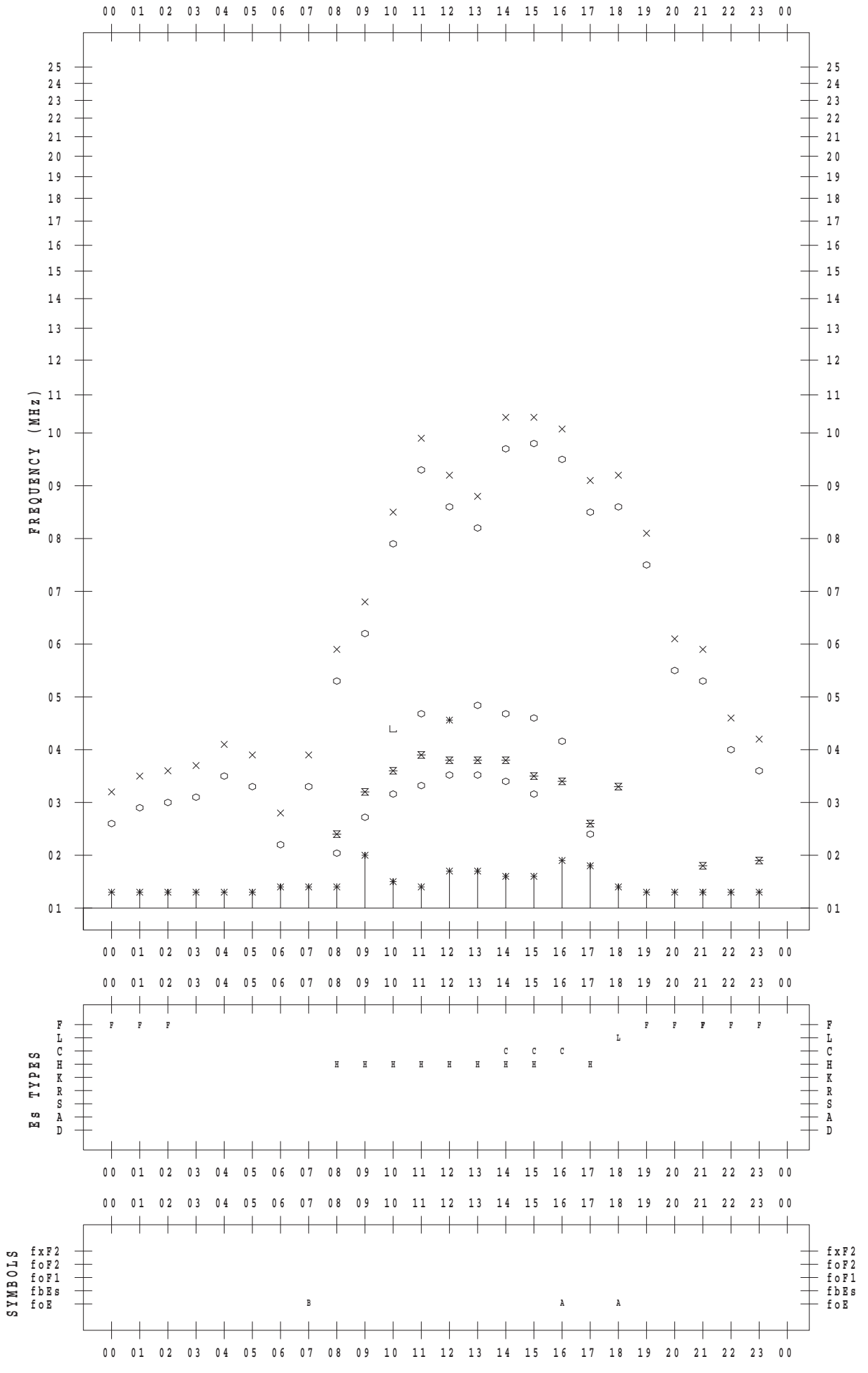
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/28

135 °E MEAN TIME



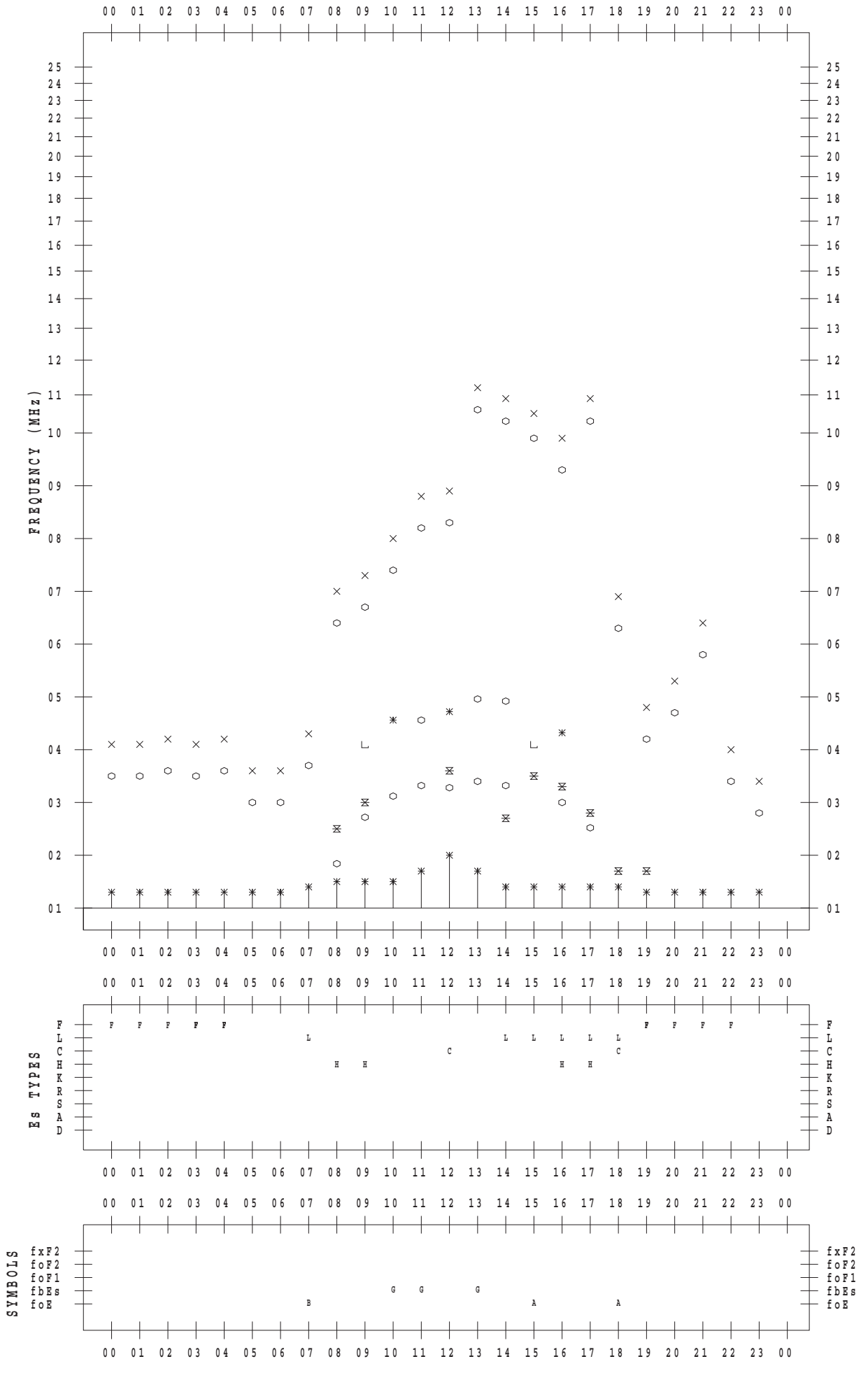
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/29

135 °E MEAN TIME



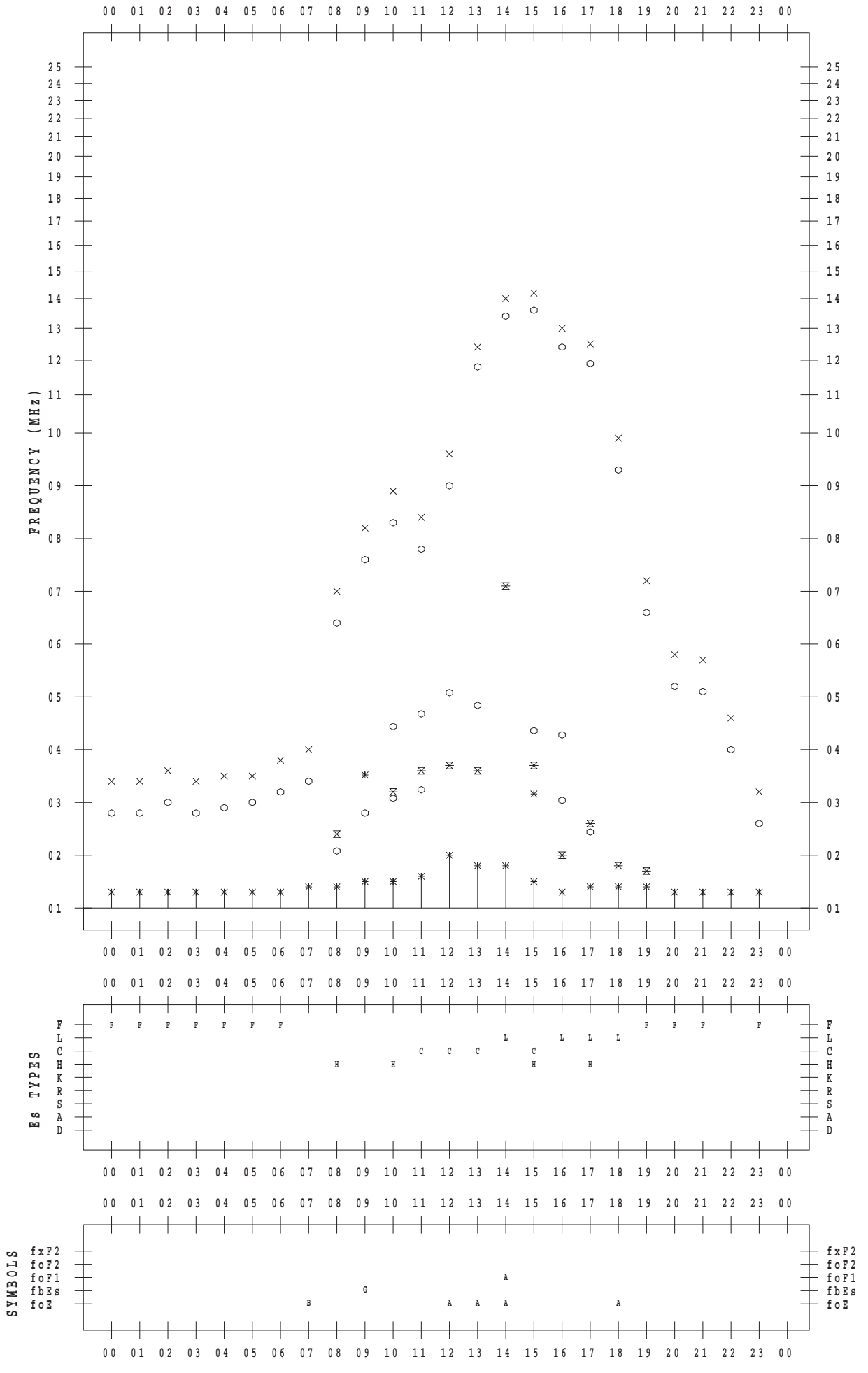
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 1/31

135 °E MEAN TIME