F-812

IONOSPHERIC DATA IN JAPAN

FOR AUGUST 2016

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≪Real Time Ionograms on the Web ・・・・・・・・・・・・http://wdc.nict.go.jp/index_eng.html≫

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I) and solar radio emission (S) obtained at the following stations under the National Institute of Information and Communications Technology , Japan.

Stations	Geographic(WGS84)		Geomagnetic (IGRF-10(2005))		Technical Method
	Latitude	Longitude	Latitude	Longitude	
✳Wakkanai/Sarobetsu	45˚10'N	141˚45'E	36.4˚N	208.9˚	Vertical Sounding (I)
Kokubunji	35˚43'N	139˚29'E	26.8˚N	208.2˚	Vertical Sounding (I)
Yamagawa	31˚12'N	130˚37'E	21.7˚N	200.5˚	Vertical Sounding (I)
Okinawa	26˚41'N	128˚09'E	17.0˚N	198.6˚	Vertical Sounding (I)
Hiraiso	36˚22'N	140˚37'E	27.6˚N	209.1˚	Solar Radio Emission (S)

✳We moved the observation facilities at Wakkanai to Sarobetsu on February 2009. The new observatory is located at approximately 26km south from the old observatory. The observation at Sarobetsu commenced on March 6, 2009.

IONOSPHERE

Ionospheric observations are carried out at the above four stations in Japan by means of vertical sounding using ionosondes. The ionosonde produces ionograms, which are recorded digitally on a computer storage medium. The digitally-recorded ionograms are collected from each station by the central computer and reduced to numerical values and Summary Plots by the automatic processing system. The ionograms obtained at Kokubunji are manually scaled by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five characteristics of the ionospheric are listed below. The reliability of these factors has been ascertained by comparison of the automatically-scaled parameters with the manually-scaled values of large amounts of test ionograms.

The published data consist of tabulations of hourly values of three factors (*foF2, fEs*, *fmin*) and monthly medians of two factors (*h'Es* ,*h'F*), daily Summary Plots and monthly medians plot of *foF2*.

a. Characteristics of Ionosphere

foF2	Ordinary wave critical frequency for the ***F2*** layer
fEs	Highest frequency of the ***Es*** layer whether it may be ordinary or extraordinary
fmin	Lowest frequency which shows vertical iono-spheric reflections
h'Es ***h'F***	Minimum virtual height on the ordinary wave for the ***Es*** and ***F*** layers, respectively

b. Descriptive Letters

The following descriptive letters are used in the tables.

A Impossible measurement because of the presence of a lower thin layer, for example *Es* (for *foF2*).

C Impossible measurement because of any failure in observation.

G Impossible automatic scaling because of very small ionization density of the layer (for *fEs*).

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of problems occurring in the auto matic data processing system, but existence of film record.

c. Definitions of CNT, MED, UQ ,and LQ

Median count (**CNT**) is the number of numerical values from which the median has been computed. In addition to numerical values, the count may include a descriptive letter G.

Median (**MED**) is defined as the middle value when the numerical values are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (**UQ**) is the median value of the upper half of the values when they are ranked according to magnitude; the ***lower quartile*** (**LQ**) is the median value of the lower half.

If CNT is less than 10, there are blank spaces left.

d. Reliability of Automatic Scaling

The results of the comparison between automatically-scaled values and manually-scaled ones showed that hourly values of *foF2 , fEs* and *fmin* were scaled within a difference of 1 MHz from about 90, 90 and 99%, respectively of the test ionograms.

e. Summary Plot

Daily Summary Plots which are made from quarter-hourly digital ionograms are published to present general ionosphere conditions. The upper and middle parts of a Summary Plot show the diurnal variation of the frequency range of the echoes reflected from the *F* and *E* regions, respectively. The two solid arcing lines indicate the predicted values of *fxE* and *foE* calculated by the method described in the CCIR report 340. The lower part shows the diurnal variation of the virtual height where the echo traces become horizontal.

A2. Manual Scaling

The published data consist of tabulations of hourly values of the ionospheric characteristics and figures of daily *f*-plot.

All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Hand-book of Ionogram Interpretation and Reduction (Second Edition) 1972 " and its revision of chapters I-4, published in July 1978.

a. Characteristics of Ionosphere

fxI	Top frequency of spread ***F*** trace
foF2 ***foF1*** ***foE*** ***foEs***	Ordinary wave critical frequency for the ***F2***, ***F1***, ***E,*** and ***Es*** (including particle type ***E)*** layers, respectively
fbEs	Blanketing frequency of the ***Es*** layer, e.g. the lowest ordinary wave frequency visible through ***Es***
fmin	Lowest frequency that shows vertical ionospheric reflections
M(3000)F2 ***M(3000)F1***	Maximum usable frequency factor for a path of 3000 km for transmission by the ***F2*** and ***F1*** layers, respectively
h'F2 ***h'F*** ***h'E*** ***h'Es***	Minimum virtual height on the ordinary wave for the ***F2,*** whole ***F, E*** and ***Es*** layers, respectively
Types of ***Es***	See below b. (iii)

b. Symbols

(i) Descriptive Letters

The following letters are entered after, or used to replaced a numerical value on the monthly tabulation sheets, if necessary.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *Es*.

B Measurement influenced by, or impossible because of, absorption in the vicinity of *fmin*.

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range in use.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range in use.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced by, or impossible because the ionization density of the layer is too small to enable it to be made accurately.

H Measurement influenced by, or impossible because of, the presence of a stratification.

K Presence of particle *E* layer.

L Measurement influenced or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbations of the observed parameter; or spur type spread *F* present.

Q Range spread present.

R Measurement influenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabulation sheets, if necessary.

A Less than. Used only when *fbEs* is deduced from *foEs* because total blanketing of higher layer is present.

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characteristic deduced from the ordinary component. (Used for x-characteristics only.)

T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

When more than one type of *Es* trace are present on the ionogram, the type for the trace used to determine *foEs* must be written first. The number of multiple trace is indicated after the type letter.

The types are:

f An *Es* trace which shows no appreciable increase of height with frequency.

l A flat *Es* trace at or below the normal *E* layer minimum virtual height or below the part *E* layer minimum virtual height.

c An *Es* trace showing a relatively symmetrical cusp at or below *foE*. (Usually a daytime type.)

h An *Es* trace showing a discontinuity in height with the normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)

q An *Es* trace which is diffuse and non-blanketing over a wide frequency range.

r An *Es* trace showing an increase in virtual height at the high frequency end similar to group retardation.

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and diffuse traces present above it.

s A diffuse *Es* trace which rises steadily with frequency and usually emerges from another type *Es* trace.

d A weak diffuse trace at heights below 95 km as-sociated with high absorption and large *fmin.*

n The designation 'n' is used to denote an *Es* trace which cannot be classified into one of the standard types.

k The designation 'k' is used to show the presence of particle *E*. When *foEs* > *foE* (particle *E*) the *Es* type precedes k.

c. Definitions of the CNT, MED, UQ and LQ

Median count (**CND**) is the number of values from which the median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (**MED**) is the middle value when the numerical values are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (**UQ**) is the median value of the upper half of the values when they are ranked according to magnitude; the ***lower quartile*** (**LQ**) is the median value of the lower half.

HOURLY VALUES OF foF2 AT Wakkanai

AUG. 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	A	34	34	37	38	44	A	86	A	128	99	54	50		54	52	50	51	50	58	A	A	A	46
2	43	40	34	34	34	44	A	A	A	A	A	52	52	47	54	55	47	54	57	A	62	51	52	A
3	40	A	37		35	A	35	54	A		65	A	64	A	A	50	85	A	70	76	86	55	50	63
4	56	52	A	A	A	34	A	A	A	A	A	A	A	A	A			47	48	51	54	52	A	A
5	A	36	42	38	35	36		A	A	A	88	A	A	A	A	41	97	A	A	64	65	58	A	44
6	A	40	40	36	34	A	85	55	A	A	A	A	A	A	A	A	A	A	A	56	61	50	50	A
7	40	A	A	A	34	36	54	A	79	A	A	A	A	A	41	A	45	A	N	108	A	A	A	A
8	48	A	40	40	40	37	A	N	A	A	A	A	A	A	A	A		A	A	A	A	A	53	A
9	A	A	43	A	38	A	80	115	49	A	A	A	59	56	55	A	56		A	111	A	A		62
10	52	40	36	36	35	A	A	A	A	A		A	38	A		A	153	A		A	65	62	54	54
11	34	36	A	A	A	A	A	A	A	43	51	A	A	A	A		52	49	A	54	59	61	54	51
12	50	46	44	44	A	51	63	54	54	A	64	111	110	A	59	66	65	A	54	64	63	A	52	A
13	A	A		A	47	47	A	A	N	105	109	69	A	A	A	A		87	109	108	66	66	54	A
14	42	42	47	42	44	45	A	55	58	58	A	A	A	A	55	55	63	61	66	65	63	A	54	51
15	A	42	A	40	42	47	A		A	58	88	55	56	70	A	54	A	58	55	72	A	69	A	A
16	50	54	48	38	42	37	47	51	49	A	56	A	56	A	169	111	119	A	64	77	70	65	63	46
17	44	43	A	41	44	A	89	55	72	56	56	52		A	A	A	64	56	66	A	66	A	A	A
18	A	51	A	41	31	44	53	62	112	A	63	A	58	58	51	59	62	49	89	79	66	67	A	69
19	60	52	51	42	40	46	55	67	A	57	65	105	A	110	89	48	51	149	125	A	72	67	54	42
20	42	42	42	46	45	38	48	51	54		52	49	60	61	57	59	58	51	51	58	58	60	52	50
21	A	44	49	42	32	49	A	50	54	61	55	56	56	62	56	55	55	55	54	64	63	61	51	50
22	50	43	42	42	42	42	43	A	50	A	59	A	58	58	57	55	52	50	54	68	66	66	58	48
23	43	42	43	42	42	44	44	48	54	61	58	63	54	A	58	62	59	52	51	55	A	54	A	A
24	50	47	47	43	34	42	47	46	67	56	44	53	A	57	54	60	55	61	58	62	A	58	53	41
25	51	52	52	50	51	52	49	60	58	A	61	A	61	58	55	55	60	52	47	54	35	53	40	A
26	A	A	A	A	36	61	45	47	A	A	54	A	56	54	57	51	52	53	50	52	A	51	52	50
27	48	47	47	47	48	42	48	54	54	57	62	49	62	58	58	54	58	63	65	66	A	53	A	52
28	50	42	42	42	46	42	50	54	54	54	56	58	56	60	56	55	55	58	58	70	67	A	A	A
29	50	50	50	49	46	46	48	51	60	66	61	60	62		56	55	55	56	62	70	67	67	58	47
30	43	42	42	42	40	45	A	47	55	59	68	58	54	58	61	58	62	63	61	68	65	65	58	44
31	41	38	41	42	A	38	A	54	55	58	56	106	A	55		55	56	78	55	A	71	65	50	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	22	25	23	24	27	25	18	21	18	15	23	16	19	15	20	22	26	22	24	25	22	23	20	19
MED	48	42	42	42	40	44	48	54	54	58	61	57	56	58	56	55	57	56	58	65	65	61	53	50
U Q	50	48	47	42	44	46	55	57	60	61	65	66	61	61	58	59	63	61	65	74	67	66	54	52
L Q	42	40	40	39	35	38	47	50	54	56	56	52	54	56	54	54	52	51	52	57	62	53	51	44

HOURLY VALUES OF fEs AT Wakkanai

AUG. 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	31	24	25	G	G	44	47	81	96	64	92	63	G	G	G	G	132	36	32	45	43	60	93	36
2	38	26	26	25	G	32	177	72	80	80	59	63	44	94	G	44	38	51	39	59	36	G	G	32
3	33	56	30		G	116	90	71	70		79	134	46	74	66	47	74	106	61	G	G	G	G	G
4	39	56	90	26	33	104	56	59	46	105	58	129	84	66	63		G	47	50	126	126	37	58	53
5	48	G	G	G	G	31		43	52	92	60	65	110	47	50	G	80	56	53	45	65	115	95	34
6	125	33	142	G	31	156	70	59	60	71	51	44	70	51	52	52	59	64	74	32	G	27	G	35
7	G	55	60	43	G	G	87	61	62	49	62	78	104	70	43	50	54	92	83	125	47	53	151	85
8	24	46	32	36	G	G	45	90	90	87	69	110	42	59	78	170		128	113	128	149	112	45	55
9	91	43	35	40	G	40	58	79	56	107	85	71	44	41	55	66	50		93	84	91	61		41
10	24	48	G	26	30	42	156	65	61	49		49	43	42	G	147	134	117		59	46	41	G	170
11	G	G	43	40	24	39	106	85	125	G	49	51	126	51	40		85	71	90	51	109	G	25	33
12	39	39	28	26	60	40	118	42	174	113	124	166	166	68	48	169	37	65	60	125	27	92	69	69
13	107	162		57	31	38	60	94	95	94	86	62	43	45	59	57		64	69	82	45	107	45	54
14	39	G	G	G	43	36	71	40	93	175	91	91	70	64	55	44	56	51	49	32	55	108	38	38
15	93	56	44	27	G	G	132		90	50	45	63	45	66	60	39	60	40	28	28	60	69	58	92
16	48	44	24	G	G	G	38	40	46	88	92	110	G	73	98	112	51	95	56	92	126	48	36	26
17	27	25	154	G	24	43	44	57	153	53	89	45	G	100	46	71	78	52	46	133	56	52	104	115
18	95	43	132	33	36	G	71	40	107	108	G	50	G	G	G	43	48	70	38	85	51	54	117	40
19	45	40	35	26	32	34	49	130	125	44	64	93	106	95	84	48	39	86	56	149	63	56	26	28
20	35	32	25	29	30	33	43	44	60		45	48	44	G	G	39	G	33	G	G	24	G	27	41
21	36	32	28	34	33	43	105	47	50	46	48	G	47	G	40	40	39	34	30	G	32	26	25	40
22	26	24	G	G	G	G	35	46	44	44	51	79	G	46	G	G	G	43	41	36	25	24	G	G
23	G	36	G	G	G	G	32	45	51	G	50	48	54	54	51	46	50	49	G	35	76	43	58	70
24	53	38	G	G	G	35	37	39	46	G	G	52	46	G	G	38	42	50	46	42	48	40	41	32
25	32	30	33	26	24	G	34	35	G	65	45	48	45	41	48	52	126	52	40	40	28	33	40	60
26	55	56	70	56	36	31	G	G	48	46	G	49	44	43	46	45	35	G	26	32	70	48	G	G
27	25	G	24	G	G	27	34	36	153	42	40	46	44	68	125	37	45	56	53	38	74	48	70	33
28	33	25	G	G	G	G	32	41	36	40	50	53	83	41	G	G	35	40	53	43	50	92	113	132
29	34	G	G	G	25	G	40	40	46	53	58	44	G		40	41	34	32	33	43	24	35	48	34
30	28	G	G	G	G	36	54	41	40	39	G	49	49	G	G	38	G	38	40	53	53	57	50	58
31	25	32	G	59	72	34	53	47	49	64	55	81	89	48		47	46	43	32	115	56	39	43	28
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	30	31	31	30	30	31	29	30	31	31	30	30	29	29	30	30	31	31	31	30	31
MED	35	33	27	26	24	34	54	46	60	53	56	62	45	50	47	45	48	52	48	45	51	48	44	40
U Q	48	46	43	34	32	40	87	71	95	90	79	81	83	68	59	54	67	70	60	92	70	61	69	60
L Q	26	24	G	G	G	G	38	40	46	44	45	48	43	41	G	38	36	40	33	35	32	33	25	32

HOURLY VALUES OF fmin AT Wakkanai

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

HOURLY VALUES OF foF2 AT Kokubunji

AUG. 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	A	A	36	36	34	A	57	56	A	A	A	A	A	A	A	58	59	59	65	72	72	52	A	A
2	A	42	A	A	31	34	A	57	54	A	A	A	A	A	A	39	A	A	71	75	66	A	A	A
3	A	A	A	A	A	34	A	58	A	A		59	70	85	65	58	69	72	90	90	76		66	74
4	58	42	38	42	A	44	A	A	A	A	A		A					A	106	55	49	47	A	A
5	A	37	A	A	35	30	A	A	A	A	A	A	A	A	57	54		52	62	74	67	59	42	A
6	42	44	40	42	42	32	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	54	A
7	44	39	A	A	A	A	46	54	A	A	A			A	54	58	53	44	50	A	A	44	52	52
8	A	A	44	41	36	34	39	A	A	55	54	A		A	A	62	62	A	A	75	67	A	52	50
9	52	A	A	A	36	36	48	58	62	56			58		64	48	54	A	A	73	52	54	54	61
10	52	44	42	43	A	42		A	100	A	A	A	A	A	A	A	A	58	A	63	A	65	A	A
11	42	A	34	34	34	A	47	A	A	56						A	A	A	52	55	54	52	53	51
12	45	42	45	41	39	44	47	59	54	54	59	A	68	67	66	69	71	68	70	66	A	A	A	A
13	A	44	42	37	36	A	58	64	A	A		A	A	A	104	A	99	63	67	71	61	51	44	44
14	A	A	A	40	36	A	55		64	A	54	48	A	A	A	57	66	69	75	81	67	44	42	42
15	42	A	A	A	A	38	54	67	75	61	56		48		58	59	45	67	72	81	66	55	46	47
16	44	40	44	39	37	39	51	66	62	66	A		63	58	A		A	67	75	78	65	A	52	54
17	49	46	42	39	39	41	44	53	66	61	66	61	58	53		A	A	60	71	78	72	54	A	46
18	44	44	39	37	36	A	A	66	71	60	A	62	A	58	66	66	68	71	72	76	A	54	54	A
19	A	51	46	A	A	A	51	A	99	A	58		61	59	65	67	58	59	39	66	64	54	39	A
20	A	42	34	38	39	36	56	64	60	59	52	A	61	74	60	64	63	58	62	66	54	54	54	48
21	46	44	42	40	39	43	51	52	58	65	A	A	62	63	59	58	56	62	66	72	67	52	53	52
22	51	44	44	44	45	40	48	58	59	57	58	64	67	64	72	65	59	50	49	62	67	61	61	44
23		39	36	38	35	36	49	47	63	56	62	A	A	69	67	64	71	60	59	53	48	51	44	26
24	42	44	44	42	32	A	49	64	A	63	60		A	45	66	68	68	59	55	64	54	54	54	54
25	49	54	44	42	38	39	49	52	62	52	A	53		A	66	72	64	51	47	51	53	53	47	45
26	44	44	42	42	44	42	40	47	56	38	52	54	59	61	57	63	58	58	48	A	A	46	42	A
27	44	44	39	37	36	38	49	42	59	57	58	66		66	66	65	67	69	75	63	53	47	44	47
28	40	44	42	42	38	40	52	59	58	53	65	A	54	61	65	63	56	59	64	75	77	52	39	A
29	A	A	39	37	37	38	47	58	69	77	65	59	57	61	57	56	59	40	66	75	74	54	49	44
30	44	42	41	41	38	38	53	58	68	60	64	59		47	61	67	65	67	64	72	80	54	46	43
31	41	42	39	41		34	57	68	67	52	51	58	58	69	63	A	55	66	74	78	73	44	46	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	20	23	24	24	24	23	24	23	21	20	16	11	14	17	21	23	23	25	27	28	25	25	25	20
MED	44	44	42	40	36	38	49	58	62	57	58	59	60	61	65	63	62	60	66	72	66	53	49	47
U Q	49	44	44	42	39	41	53	64	68	61	63	62	63	68	66	66	68	67	72	75	72	54	54	52
L Q	42	42	39	37	35	34	47	53	58	54	54	54	58	58	58	58	56	58	55	63	54	49	44	44

HOURLY VALUES OF fEs AT Kokubunji

AUG. 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	36	37	33	G	G	42	38	52	82	84	78	59	70	50	43	G	43	47	45	35	31	29	58	59
2	49	41	59	49	G	25	79	37	43	83	50	73	72	69	75	46	82	114	35	59	114	60	80	60
3	80	86	59	58	45	27	60	52	133	120		51	53	59	50	50	46	60	77	33	G		48	28
4	33	29	39	33	70	65	93	64	58	111	116		49		G	G	G	64	95	46	G	36	81	53
5	67	34	41	33	24	31	35	87	142	121	140	61	50	48	G	G		42	31	33	30	33	26	85
6	43	34	33	30	G	29	56	81	114	152	61	75	67	47	55	82	97	119	134	91	86	107	46	80
7	27	27	35	51	38	28	40	43	53	51	50	G		71	58	45	G	42	43	68	84	58	56	49
8	78	50	32	30	G	49	G	47	124	50	89	63		48	63	51	53	95	76	53	59	92	37	38
9	34	57	59	66	46	G	G	46	50	G		G	G		51	48	45	67	59	56	29	40	43	34
10	24	G	38	24	49	29		60	81	81	81	52	78	53	47	64	67	62	62	66	78	59	92	72
11	50	50	23	32	G	38	38	58	84	42	G	G	G		G	54	113	118	44	28	G	29	G	40
12	48	G	29	27	G	G	35	138	62	51	50	71	77	49	G	45	58	45	51	75	33	80	69	68
13	55	44	33	43	49	60	65	54	72	76		162	85	125	97	115	71	50	49	51	114	60	59	49
14	80	50	73	55	64	89	33		65	70	48	53	51	52	74	50	50	46	41	40	39	38	33	42
15	46	70	48	38	39	28	46	57	78	43	48	G	43		50	44	G	G	32	27	25	26	23	34
16	58	39	43	39	26	G	33	56	69	60	48		61	55	57		83	81	41	46	84	61	39	52
17	51	29	27	27	25	25	37	40	41	67	53	44	G	G	G	45	59	45	30	24	33	G	72	28
18	29	G	G	G	36	45	84	57	43	50	62	48	42	44	46	50	G	45	114	86	60	64	45	73
19	71	50	34	86	86	79	67	82	66	87	49		51	G	G	G	G	G	40	26	G	29	33	67
20	112	32	33	G	G	30	32	34	59	53	44	45	G	G	G	G	G	31	26	G	G	35	G	G
21	29	36	29	26	G	24	29	35	G	57	64	132	G	G	G	G	G	55	30	27	G	28	48	33
22	32	G	24	34	30	G	34	43	52	45	51	G	48	G	43	G	45	50	45	34	G	28	27	34
23		G	G	G	24	G	30	37	47	46	49	94	104	52	50	G	G	40	37	34	30	26	34	27
24	45	34	34	33	29	37	40	48	82	55	52		50	G	G	G	48	43	33	G	G	53	40	28
25	29	G	G	23	23	G	G	G	54	55	52	46	G	43	50	G	G	32	G	G	G	56	44	44
26	29	G	31	40	23	23	34	G	G	G	G	50	48	G	50	55	47	42	31	39	49	33	50	51
27	37	36	G	G	G	G	G	34	G	G	G	45	G	G	G	G	G	31	G	G	25	27	G	30
28	32	24	29	26	28	33	48	41	G	46	57	50	43	42	50	G	G	33	48	33	92	29	49	60
29	55	52	28	28	31	35	40	41	46	47	48	49	G	45	45	G	42	G	G	22	24	G	36	29
30	G	G	G	G	G	G	28	46	56	G	G	G		G	G	G	G	37	G	G	G	G	30	G
31	G	G	G	30		G	31	39	55	49	46	G	52	G	50	60	60	39	35	26	38	78	36	41
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	30	31	30	30	31	31	28	27	28	27	31	30	30	31	31	31	31	30	31	31
MED	44	34	33	30	26	28	36	46	58	53	50	50	50	45	47	44	45	45	41	34	30	36	43	42
U Q	55	50	39	40	39	38	48	57	81	81	61	63	64	52	51	50	59	62	51	53	60	60	56	60
L Q	29	G	24	24	G	G	31	39	46	46	48	G	G	G	G	G	G	37	31	26	G	28	33	30

HOURLY VALUES OF fmin AT Kokubunji

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

HOURLY VALUES OF foF2 AT Yamagawa

AUG. 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	34	31	30	31	31	42	57	55	A	A	A	A	A	A	59	59	66	70	67	60	50	32	A
2	A	A	34	31	29	29	A	A	59	A	A	A	A	A	A	A	71	A	A	A	86	A	28	A
3	A	A	A	A	A	A	37	52	51	A	A	A	64	82	61	59	76	72	87	88	73	60	A	52
4	A	A	A	41	40	32	45	65	46	A	A	A	A	A	A	A	A	52	55	51	48	46	42	A
5	37	37	34	34	32	29	A	A	55	46	A		A	A	60	54	57	57	72	77	84	42	40	37
6	24	34	34	A	28	30	69	51	45			A	A	A	A	A	A	A	109	63	A	52	A	44
7	47	44	A	35	34	34	45	58	55	A	A	A	A		A	61	55	50	58	51	A	40	47	A
8	44	40	40	40	38	34	42	54	A	A	A	46	A	A	58	68	76	77	78	77	66	52	48	51
9	A	A	A	44	45	A	51	56	58	47		A	A	A	66	60	58	58	61	75	72	A	53	54
10	54	52	48	42	29	34	47	57	A	A	A	A	A	A		58	A	55	A	A	A	A	53	A
11	52	A	34	A	34	A	43	60	69	55	49	59		A		59	64	61	61	61	61	50	52	52
12	52	51	51	47	47	40	40	58	56	A	55	61	70	64	63	A	85	90	78	52	53	37	A	46
13	44	44	44	41	A	28	51	66	A	A	59	61	A	A	A	65	67	72	82	80	66	52	54	45
14	A	A	40	36	37	36	51	66	A	A	A	A	A	A	A	62	72	78	84	76	52	48	49	48
15	47	A	48	44	40	34	41	65	81	64	A	49	A	A	62	63	63	68	84	86	71	58	52	50
16	46	44	A	42	40	36	46	66	75	58	A	59	62	63	58	54	64	67	76	A	74	29	47	44
17	A	A	A	A	44	38	40	N	66	62	A	53	66	58	58	55	55	66	71	84	86	67	42	40
18	40	40	40	31	32	32	A	63	71	A	A	62	A	60	A	A	A	A	81	72	64	51	52	54
19	53	52	47	45	45	34	42	A	69	57	53	58	63	70	68	75	80	73	80	73	54	50	44	47
20	43	40	38	B	38	37	47	69	50	54	45	60	62	71	70	62	66	71	72	71	52	51	37	45
21	47	43	41	40	41	34	A	55	44	62	53	A	67	68	62	62	63	63	68	76	33	51	54	A
22	50	51	42	44	42	37	42	60	55	58	63	60	68	77	76	78	65	58	56	64	54	53	54	50
23	47	45	A	41	A	34	44	55	58	64	60		64	82	81	73	75	77	77	A	54	A	25	51
24	44	44	44	45	34	A	41	53	52	70	62	56	63	A	84	78	66	55	60	61	71	53	A	48
25	51	44	44	41	A	34	50	42	50	58	64	49		58	72	72	66	62	51	52	30	50	43	A
26	40	42	40	40	42	34	43	50	54	50	52	62	68	65	62	70	78	63	54	48	54	49	A	A
27	40	A	40	37	34	34	45	48	56	56	54	A	A	71	82	76	71	64	72	75	54	41	40	40
28	42	40	37	36	34	34	42	53	55	54	60	58	70	65	65	68	67	67	76	89	76	43	42	39
29	38	34	A	34	A	A	37	54	65	72	58	57	57	60	A	62	60	66	72	73	78	54	52	53
30	36	42	42	43	41	36	41	61	68	69	62	58		B	64	70	66	68	61	71	80	71	43	40
31	43	42	43	42	34	29	38	68	58	58	53	65	76	80	70	67	70	81	88	89	75	A	42	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	25	22	23	26	26	26	27	27	27	19	16	18	14	16	20	26	27	28	29	27	28	26	26	23
MED	44	42	40	41	38	34	43	57	56	58	56	58	65	66	64	62	66	66	72	73	65	50	46	47
U Q	48	44	44	43	41	36	47	65	66	64	61	61	68	74	71	70	72	72	80	77	74	53	52	51
L Q	40	40	37	36	34	32	41	53	52	54	53	56	63	61	61	59	63	59	61	61	54	46	42	42

HOURLY VALUES OF fEs AT Yamagawa

AUG. 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	G	G	G	G	G	G	30	34	39	46	51	73	96	63	73	G	40	44	39	40	G	G	34	58
2	51	56	35	31	G	43	40	58	52	53	69	118	89	60	51	69	47	180	138	125	70	56	25	46
3	60	59	73	52	50	51	34	32	50	81	68	66	52	62	52	G	59	54	31	G	G	G	32	49
4	50	40	40	34	G	28	55	53	45	62	64	54	68	52	71	46	102	35	36	G	G	28	G	40
5	33	G	G	G	G	G	31	40	G	49	41	G	85	48	G	G	G	G	G	27	G	23	G	G
6	G	30	55	49	29	25	G	36	40	G	G	180	85	73	55	59	65	80	132	80	70	50	70	50
7	46	37	49	30	31	30	28	63	38	60	82	66	48	G	54	56	47	42	40	35	57	70	40	58
8	40	39	36	40	G	36	35	47	60	60	101	G	63	66	G	G	48	47	49	61	71	37	39	44
9	83	54	48	52	30	50	35	40	40	G	G	47	46	52	42	46	G	G	35	31	40	59	48	29
10	30	48	43	32	50	29	51	42	85	180	112	77	56	53	G	54	72	52	67	81	59	81	51	59
11	59	59	28	34	26	38	43	52	46	44	68	44	G	47	G	41	G	G	37	34	27	G	36	33
12	25	G	G	32	G	G	G	35	55	70	50	42	48	52	58	102	82	65	55	40	44	G	36	27
13	25	28	G	36	53	58	45	53	117	92	48	56	73	80	94	57	41	65	36	49	36	40	68	59
14	59	58	58	29	30	56	53	130	114	106	69	48	58	59	52	47	54	46	46	52	43	32	26	40
15	39	69	59	40	G	29	33	54	44	46	96	58	64	85	49	56	43	46	42	36	26	G	G	G
16	78	39	55	46	32	35	G	40	68	G	50	45	52	50	49	49	54	58	69	82	43	40	38	51
17	57	58	71	56	26	30	31	36	G	47	41	46	43	G	G	G	G	45	45	35	56	54	34	24
18	G	G	G	G	24	G	31	G	G	69	63	56	64	50	66	91	79	82	53	44	27	31	28	39
19	34	50	34	48	40	64	38	70	42	54	48	44	45	G	G	G	G	G	36	30	30	32	32	32
20	29	G	24	B	G	G	G	32	57	40	G	46	48	46	G	43	49	40	36	46	25	G	G	33
21	36	29	29	G	26	G	43	35	38	40	53	55	66	G	50	47	G	42	44	40	40	23	26	42
22	34	28	G	27	G	G	G	35	40	51	44	G	G	54	44	62	55	G	45	28	36	29	51	40
23	41	G	48	34	46	24	45	36	45	49	G	G	G	G	50	G	51	61	47	73	45	57	26	G
24	G	32	36	32	26	40	29	53	G	G	52	G	49	86	G	47	48	35	34	31	G	33	55	47
25	39	35	G	G	46	32	33	G	G	G	G	G	G	44	G	G	39	47	36	G	29	27	33	67
26	46	24	43	29	25	26	G	34	G	G	G	G	G	48	47	42	G	38	32	28	G	G	48	36
27	41	49	59	28	29	24	24	32	38	46	52	70	80	51	42	41	58	51	60	40	G	G	G	25
28	G	25	G	24	G	28	36	51	40	39	G	49	58	54	G	G	G	34	34	43	40	24	G	G
29	34	G	50	28	44	39	36	38	G	G	43	44	G	55	55	56	61	46	35	49	37	36	32	29
30	G	36	G	G	G	G	G	36	43	47	48	43	G	B	50	G	G	37	29	27	23	G	34	G
31	G	G	G	G	G	G	G	36	40	G	49	53	44	45	50	46	43	40	30	34	48	39	G	28
	00	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	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31
MED	36	35	36	32	26	29	33	38	40	47	50	47	52	52	49	46	47	45	39	40	36	31	33	39
U Q	50	50	50	40	32	39	40	53	52	60	68	58	66	60	54	56	58	54	49	49	45	40	40	49
L Q	25	G	G	24	G	G	G	35	38	G	41	42	43	46	G	G	G	35	35	30	23	G	25	27

HOURLY VALUES OF fmin AT Yamagawa

AUG. 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	18	15	15	17	15	14	14	15	17	20	18	22	27	26	18	16	14	14	14	15	17	14	14
2	14	14	14	14	14	14	14	14	15	16	18	23	21	26	23	21	18	14	14	15	14	14	16	15
3	15	15	14	14	14	16	14	14	14	17	18	23	24	18	20	20	17	17	14	16	17	15	15	14
4	14	15	15	15	15	14	14	14	16	17	22	26	24	27	20	20	17	18	14	16	15	15	15	15
5	15	15	16	15	14	15	14	14	17	20	18	27	26	30	48	26	18	17	14	18	15	14	15	17
6	15	14	16	14	16	16	16	14	15	21	18	21	32	28	29	27	18	16	14	14	14	14	15	14
7	14	15	14	14	14	15	14	14	18	22	21	29	30	30	35	33	18	16	14	14	14	14	14	14
8	15	14	14	14	15	15	15	14	18	20	29	32	39	29	29	23	18	16	14	14	14	15	14	14
9	14	16	14	15	14	14	14	14	16	24	33	28	27	28	29	21	18	14	15	14	14	14	15	14
10	15	16	15	15	14	15	14	14	15	18	20	23	24	33	28	20	17	15	15	14	15	14	15	15
11	14	14	14	14	15	14	14	14	15	15	18	24	24	29	28	21	18	16	14	14	15	16	14	15
12	14	15	15	15	14	14	20	14	14	17	30	27	27	30	22	20	21	16	14	15	15	17	14	14
13	14	15	15	14	14	15	14	14	16	16	20	30	30	24	23	21	17	14	14	15	14	14	14	14
14	14	15	14	14	14	14	14	14	15	18	22	18	22	29	28	20	17	14	14	14	15	14	15	15
15	14	15	15	14	14	15	14	14	15	17	23	28	26	27	24	20	15	14	14	15	16	15	15	16
16	15	14	14	14	14	14	17	14	16	17	20	23	36	36	23	23	15	16	14	15	14	15	15	15
17	15	14	15	14	14	14	16	14	15	17	26	26	28	50	24	18	15	16	14	14	14	14	14	15
18	15	17	17	16	16	15	14	14	14	15	18	18	27	27	23	26	17	14	14	14	15	15	14	14
19	14	15	14	14	14	15	14	14	14	20	21	21	20	21	18	22	15	16	14	15	14	14	14	14
20	14	18	15	B	15	14	16	14	17	20	26	27	29	26	22	20	16	14	14	14	15	15	15	15
21	14	15	15	15	14	15	15	14	14	17	18	18	20	17	17	16	17	15	14	14	15	15	15	15
22	14	14	15	14	15	15	17	14	15	18	17	22	29	28	27	18	15	14	15	15	14	15	14	14
23	15	15	15	14	14	15	15	14	15	15	17	18	32	50	28	26	18	15	14	16	15	14	15	14
24	15	15	14	14	15	14	14	15	15	16	18	18	20	30	20	20	17	14	16	14	16	14	14	14
25	14	14	15	15	14	14	15	14	14	15	16	20	71	20	18	16	14	14	14	15	15	15	14	14
26	14	14	14	15	15	14	16	20	14	16	18	18	18	18	26	20	17	17	14	14	15	15	14	15
27	14	14	16	15	15	15	16	14	16	18	22	18	26	20	20	16	14	14	14	15	18	18	16	14
28	15	15	14	14	15	14	14	14	14	17	23	24	34	35	22	18	16	14	16	14	14	15	17	14
29	14	14	14	14	14	14	14	14	14	16	18	20	24	33	29	16	20	15	14	14	14	14	14	15
30	26	14	15	15	15	17	15	14	16	22	26	28	21	B	26	16	15	14	14	14	15	17	15	15
31	14	15	15	14	14	17	16	14	18	18	18	35	35	18	36	16	14	14	15	14	15	14	17	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	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31
MED	14	15	15	14	14	15	14	14	15	17	20	23	26	28	24	20	17	15	14	14	15	15	15	14
U Q	15	15	15	15	15	15	16	14	16	20	23	27	30	30	28	22	18	16	14	15	15	15	15	15
L Q	14	14	14	14	14	14	14	14	14	16	18	18	22	24	22	18	15	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

AUG. 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	A	A	A	A	N	A	36	47	56	61	A	A	58	A	A	A	62	73	83	80	54	40	A	A
2	A	A	36	31	A	A	32	54	58	55	55	A	A	A	64	72	72	77	A	A	63	A	A	A
3	A	A	A	A	A	A	A	54	52	46	A	A	80	80	60	68	92	78	87	102	83	54	50	51
4	48	47	40	42		41	41	50	47		A	A	B	A	58	49	55	59	56	53	54	54	43	37
5	36	36	34	29	B	29	A	54	48	50	A	50	61	A	62	67	72	77	88	97	89	44	43	34
6	34	A	41	A	36	30	B	38	44	47	B		49	A	59	A	A	A	A	58	64	64	54	46
7	A	A	A	42	39	36	44	56	52	A	A	A	B	A	56	61	57	56	58	63	61	54	47	A
8	A	A	40	36	36	38	42	48	60	A	A	62	61	B	66	74	82	85	86	87	80	54	52	42
9	42	42	42	40	42	41	46	45	54	68				61	66	66	64	66	72	86	84	66	52	54
10	52	50	51	46	42		45	A	70	A	A	A	A	A	A	64	A	A	A	85	72	51	51	52
11	52	A	A	39	36	34	A	59	64	60	66	62	63	68	60	62	75	77	77	78	67	43	52	52
12	52	51	54	50	40	37	43	51	57	66	A	A	67	76	68	81	102	106	93	54	52	52	51	47
13	46	44	47	38	34	31	48	54	44	A	A	68	68	78	86	A	85	93	98	88	85	A	54	43
14	A	44	41	40	36	39	46	67	57	A	A	A	A	A	63	68	78	92	88	88	71	66	52	52
15	52	51	52	46	41	37	39	71	77	64	58	A	62	65	A	66	73	84	89	87	72	67	55	52
16	51	44	A	40	40	40	42	72	67	57	A	62	71	66	63	65	71	74	80	80	65	60	46	40
17	41	41	A	38	A	40	41	63	76	48	49	68	80	71	62	60	56	65	85	99	88	67	36	A
18	37	38	41	31	B	A	A	64	66	51	54	64	58	64	72	75	84	97	90	72	60	51	53	50
19	50	52	52	48	46	46	50	55	59	A	61	A	66	83	97	102	106	107	108	85	51	43	43	44
20	44	40	A	A	A	38	37	60	58	A	A	61	64	77	78	71	70	93	85	72	52	44	46	45
21	44	42	44	44	42	A	32	48	60	60	54		66	74	78	78	81	77	93	85	62	52	49	50
22	47	44	44	41	40	38	42	54	55	A	A	62	78	88	91	93	81	77	72	73	54	66	54	42
23	42	A	42	A	A	32	40	56	51	57	A	A	77	102	110	101	106	107	93	81	72	52	52	52
24	51	45	45	52	32	A	36	59	56	70	66	57	66	67	92	82	75	71	71	86	82	50	A	44
25	42	40	44	37	34	B	41	47	59	67	60	68	72	76	82	84	82	78	70	72	64	53	36	37
26	37	A	A	40	A	29	37	48	52	54	56	70	74	72	74	81	91	72	67	54	66	54	46	47
27	44	42	41	37	34	30	37	54	56	53	A	A	70	84	98	91	71	74	85	88	52	37		34
28	42	42	37	A	A	A	38	39	56	60	60	56	68	77	82	82	86	105	106	89	67	44	43	44
29	41	41	42	41	36	B	39	63	70	62	60	60	64		66	75	75	84	82	88	71	64	52	47
30	46	44	44	B	40	30	34	65	66	60	61	62	62	71	71	70	70	67	72	76	85	54	43	A
31	42	41	40	37	B	B	34	67	63	57	55	71	84	81	84	81	84	88	99	104	74	42	47	44
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	22	23	24	19	20	26	30	31	22	14	16	25	21	28	28	29	29	28	30	31	29	27	26
MED	44	43	42	40	39	37	40	54	57	58	59	62	66	76	70	73	75	77	85	85	67	53	50	46
U Q	50	45	45	43	41	39	43	63	64	62	61	68	73	80	83	81	84	92	91	88	80	62	52	51
L Q	41	41	40	37	36	30	37	48	52	53	55	60	62	67	62	66	70	72	72	72	60	44	43	42

HOURLY VALUES OF fEs AT Okinawa

AUG. 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	28	49	34	40	G	26	27	37	36	40	42	58	56	82	82	66	57	48	39	35	26	29	58	54
2	48	33	43	G	34	28	30	38	52	51	46	55	102	94	65	60	54	57	116	129	162	86	54	56
3	43	71	88	88	33	28	65	48	45	46	56	70	50	60	56	59	58	50	39	G	G	G	G	G
4	G	33	23	24	G	26	29	56	44	G	51	60	B	50	G	46	50	G	G	34	34	50	G	G
5	G	G	G	G	B	G	28	32	G	43	47	G	52	58	56	42	G	G	34	29	G	G	24	24
6	28	50	37	40	28	24	B	G	G	G	B	G	44	97	50	55	63	59	79	49	49	59	42	34
7	58	70	89	32	32	35	35	42	40	41	42	42	B	49	42	51	43	42	43	42	33	58	40	58
8	58	66	39	G	G	G	25	40	50	77	56	52	G	B	52	50	44	G	49	49	50	36	58	G
9	58	28	36	35	26	34	40	52	44	44	G	G	G	48	50	48	44	40	38	G	34	43	38	27
10	32	44	40	24	G	G	44	46	51	91	136	117	96	73	60	G	64	66	81	95	30	41	56	45
11	47	49	57	43	33	27	40	38	56	43	48	G	G	G	46	G	G	41	37	35	33	29	26	32
12	36	33	40	G	G	G	G	40	47	65	77	67	G	52	57	56	77	40	48	49	41	G	G	33
13	24	G	G	G	G	26	43	36	71	72	107	73	66	58	77	120	72	45	54	45	54	53	59	41
14	57	34	34	33	28	G	G	48	44	61	81	88	70	56	55	51	50	54	64	58	45	40	80	35
15	32	37	G	38	33	G	G	36	45	47	47	102	75	52	86	57	42	45	46	52	30	26	40	G
16	G	G	58	25	28	G	24	32	G	46	41	50	52	49	G	46	46	44	37	30	34	29	60	25
17	G	36	73	29	45	36	32	G	G	G	44	G	G	44	G	47	G	G	39	28	G	22	28	34
18	25	G	G	G	B	26	46	G	50	50	49	49	G	50	56	55	55	52	58	48	44	28	G	35
19	27	34	36	33	34	29	25	32	37	68	51	49	43	G	52	48	G	G	34	28	25	G	31	34
20	40	27	33	37	31	26	G	31	39	49	48	G	48	47	46	48	40	45	59	32	27	26	G	G
21	24	31	40	G	G	32	26	G	40	47	42	G	G	58	54	52	52	49	48	48	46	34	G	28
22	26	26	27	38	25	G	G	G	40	68	108	55	61	51	47	60	61	48	G	25	G	G	G	G
23	50	50	56	48	36	G	32	34	36	52	55	58	52	60	G	54	G	G	G	30	34	34	40	39
24	67	G	G	G	G	25	32	G	G	G	G	G	G	G	55	G	G	G	G	G	G	44	49	40
25	30	36	32	31	G	B	G	G	G	39	G	G	G	G	48	49	50	G	G	25	24	G	G	32
26	29	27	43	26	28	28	24	29	G	G	46	50	G	51	52	48	45	38	G	G	G	23	G	25
27	G	G	G	26	26	28	26	34	40	40	40	50	48	56	63	53	56	49	46	36	56	36	G	G
28	28	G	G	58	35	32	32	50	46	55	48	G	43	G	G	G	G	35	31	G	48	G	G	G
29	G	G	G	G	G	B	38	48	G	G	42	44	G	G	55	59	54	52	56	46	G	58	G	28
30	28	G	G	B	G	G	G	G	41	G	40	45	G	G	G	G	G	54	39	43	34	24	28	26
31	G	G	G	G	B	B	G	33	42	49	53	G	G	50	48	G	G	G	38	66	26	33	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	28	28	30	31	31	31	30	31	29	30	31	31	31	31	31	31	31	31	31	31
MED	28	33	34	28	27	26	28	34	40	46	48	49	43	50	52	50	46	44	39	35	33	29	28	28
U Q	47	44	43	38	33	28	35	42	46	55	55	58	54	58	56	56	56	50	54	49	45	43	49	35
L Q	24	G	G	G	G	G	G	G	G	39	42	G	G	44	46	46	G	G	34	28	24	22	G	G

HOURLY VALUES OF fmin AT Okinawa

AUG. 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	15	14	15	14	66	16	14	14	17	21	22	28	29	29	24	24	21	16	14	15	14	14	14	14
2	14	15	15	17	14	16	15	14	16	20	26	28	29	29	29	26	20	18	14	14	14	15	14	15
3	14	15	14	15	14	14	14	14	17	23	23	28	42	36	34	34	21	16	14	14	15	15	15	20
4	16	15	16	17	27	14	14	16	17	20	29	33	B	35	46	42	20	17	14	14	14	14	15	14
5	18	17	14	16	B	16	14	14	15	26	28	47	38	32	29	29	21	18	14	14	15	18	15	14
6	15	14	14	14	15	15	B	16	66	22	B	71	47	33	32	28	21	17	15	14	16	15	15	14
7	14	14	15	14	17	15	15	16	18	26	35	29	B	40	29	34	21	16	14	14	14	14	15	14
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17	20	15	14	14	14	14	14	14	16	16	26	27	52	28	52	22	21	17	14	14	15	14	16	14
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27	15	20	14	14	18	14	14	14	18	20	26	27	28	29	26	27	17	15	14	14	14	16	20	18
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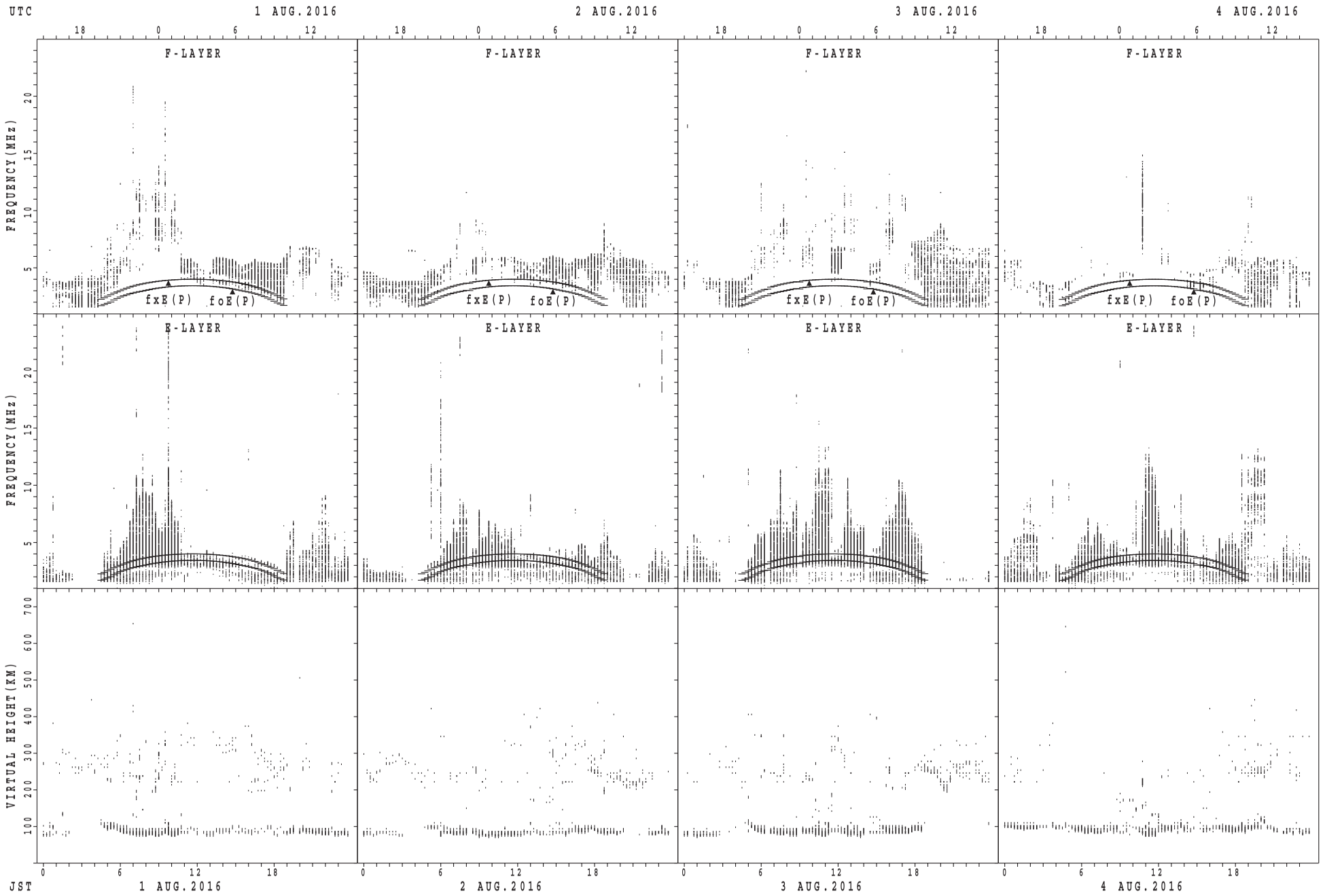
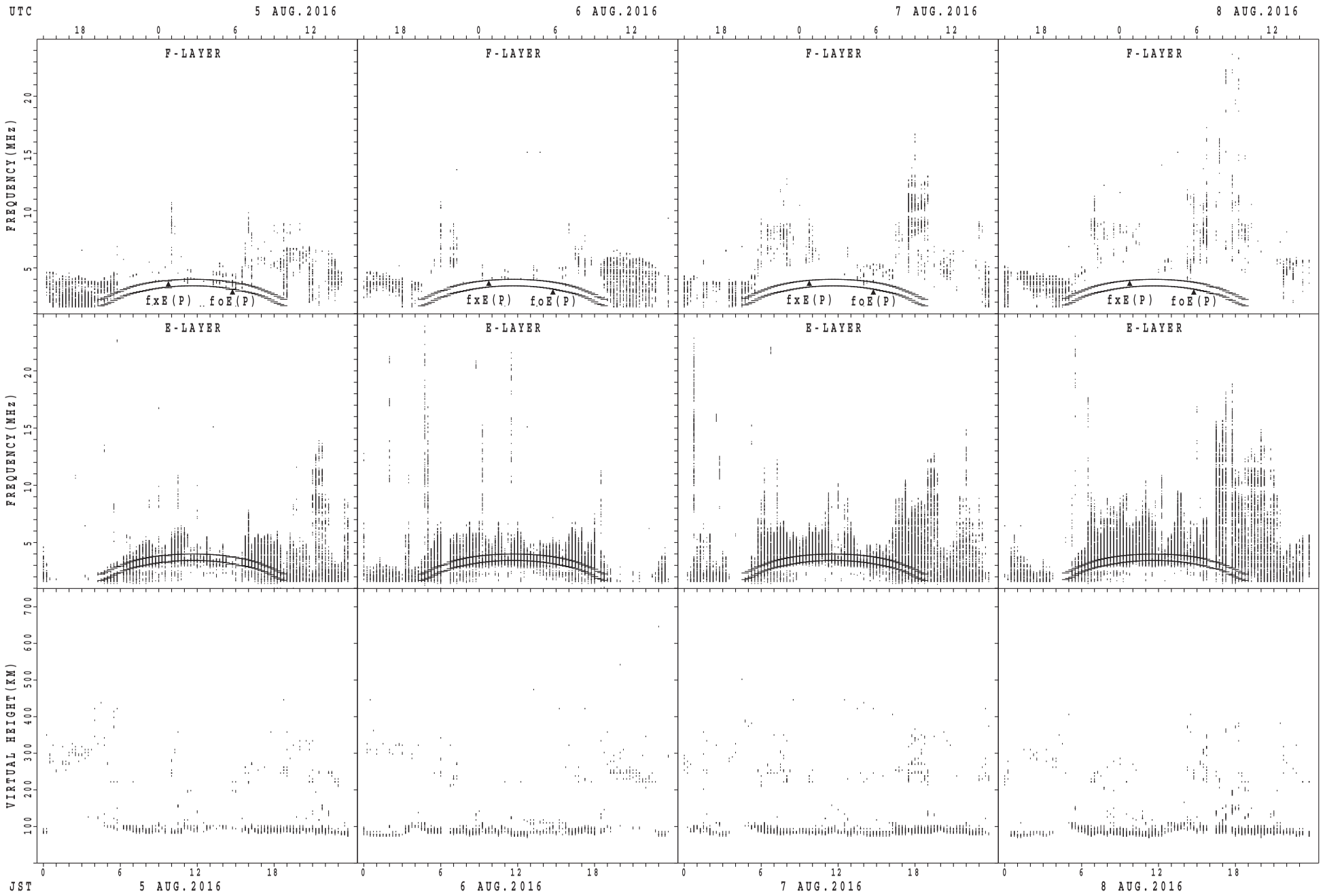
31	18	15	17	14	B	B	15	18	24	30	33	51	49	35	33	49	21	15	14	15	14	15	18	18
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	28	28	30	31	31	31	30	31	29	30	31	31	31	31	31	31	31	31	31	31
MED	15	15	15	14	14	14	14	14	17	20	27	29	38	32	32	29	20	16	14	14	14	15	15	15
U Q	15	15	16	15	15	15	15	16	18	22	33	47	49	36	38	34	21	17	14	15	15	15	15	16
L Q	14	14	14	14	14	14	14	14	15	18	23	27	29	29	29	24	18	15	14	14	14	14	14	14

SUMMARY PLOTS AT Wakkanai



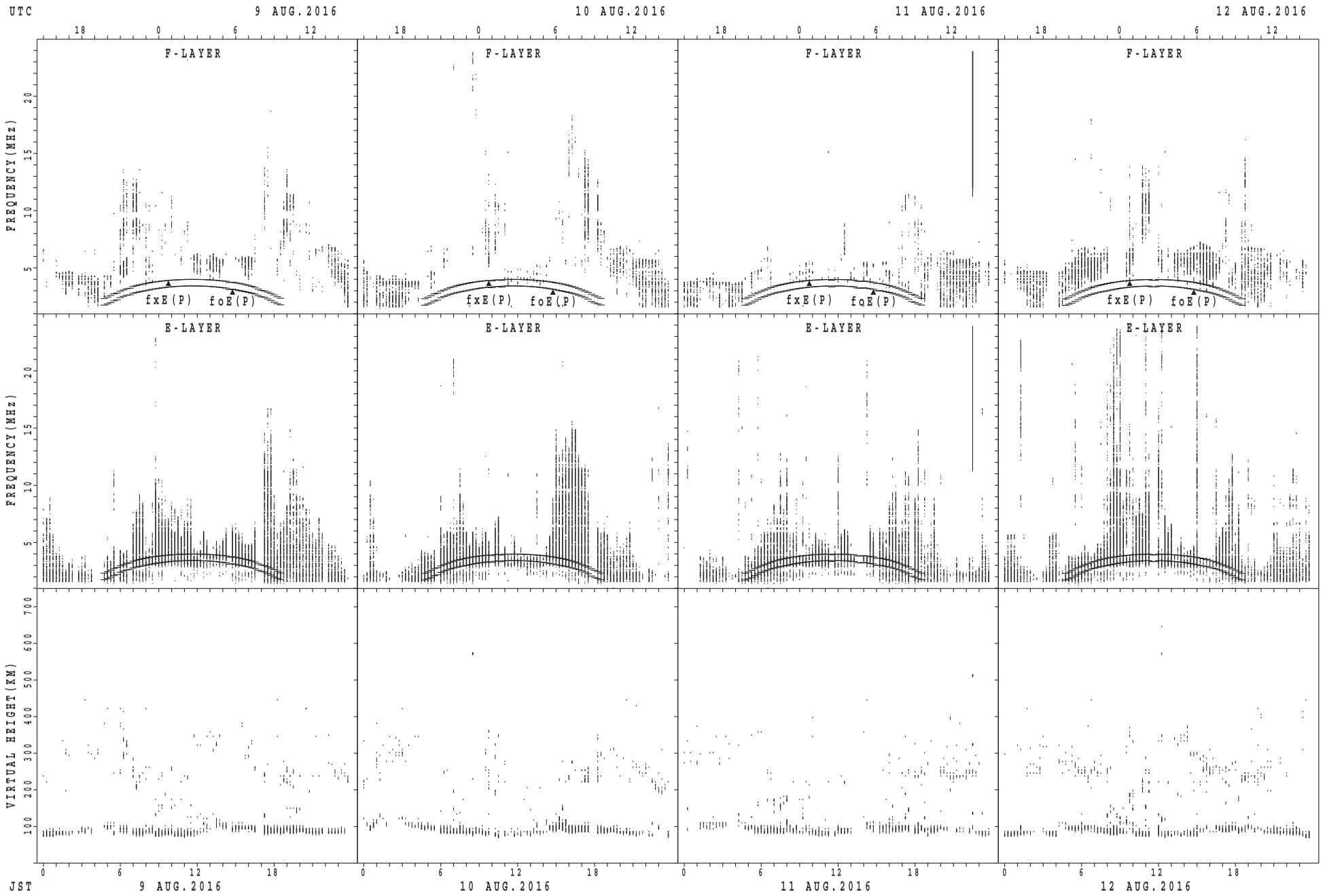
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



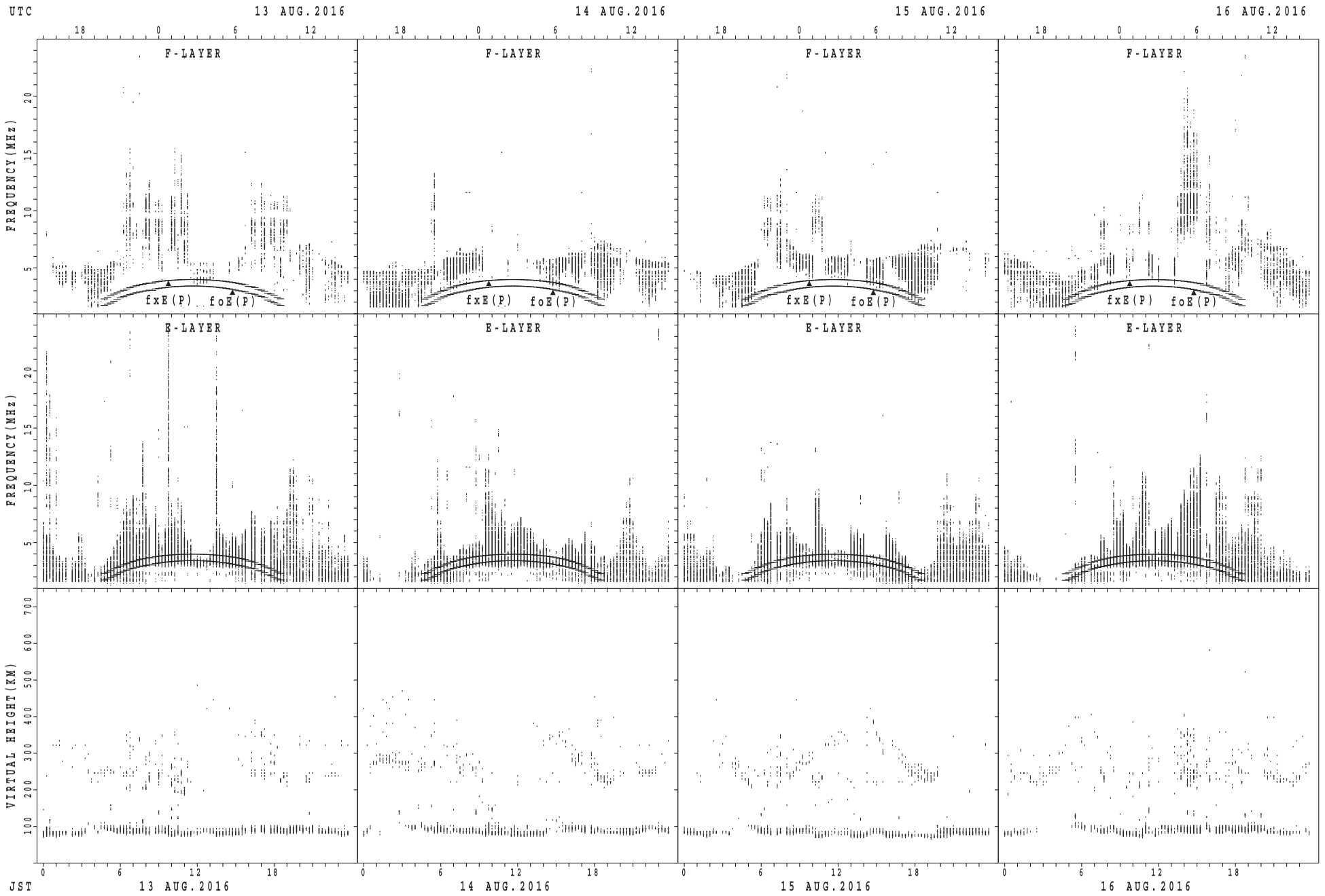
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



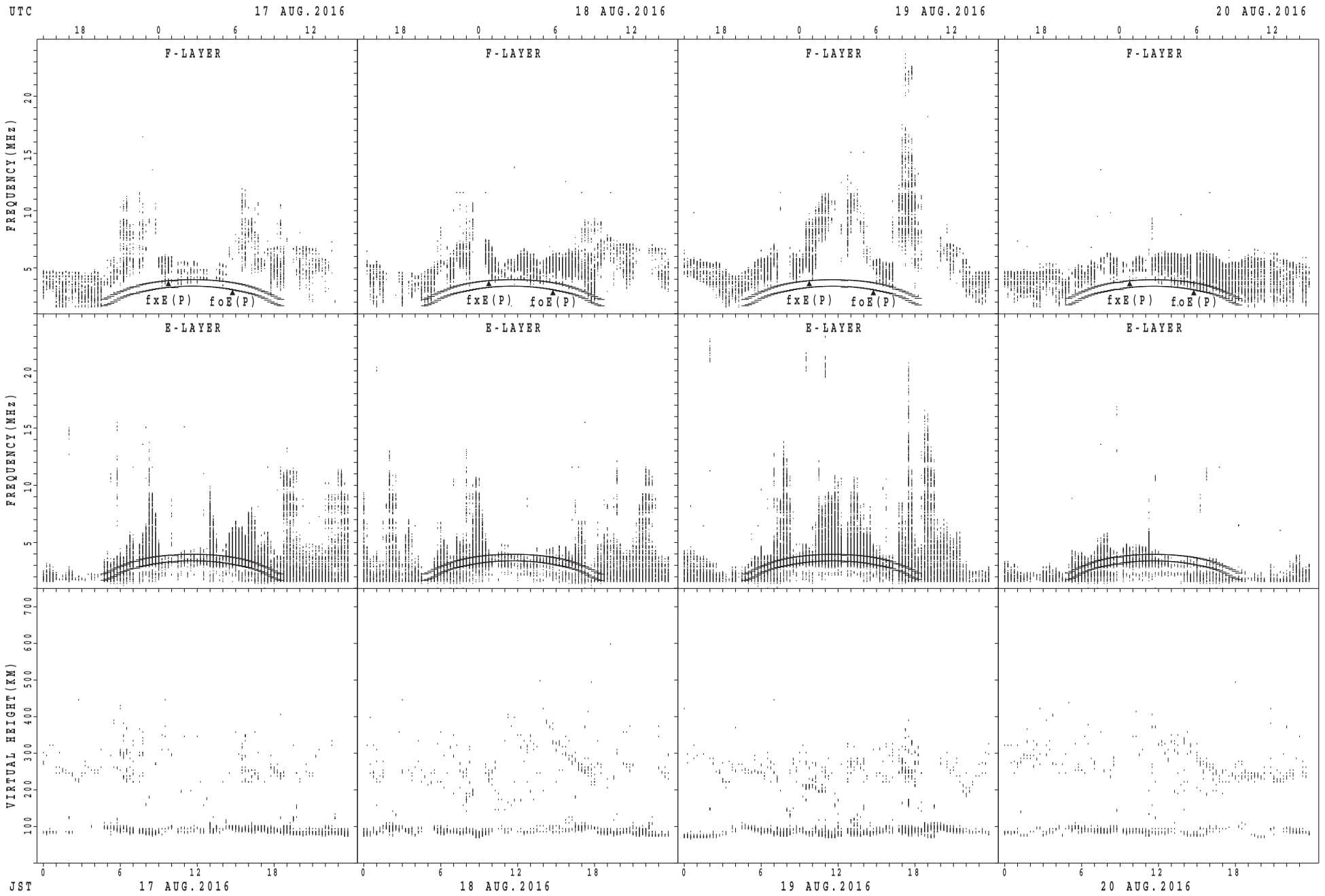
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



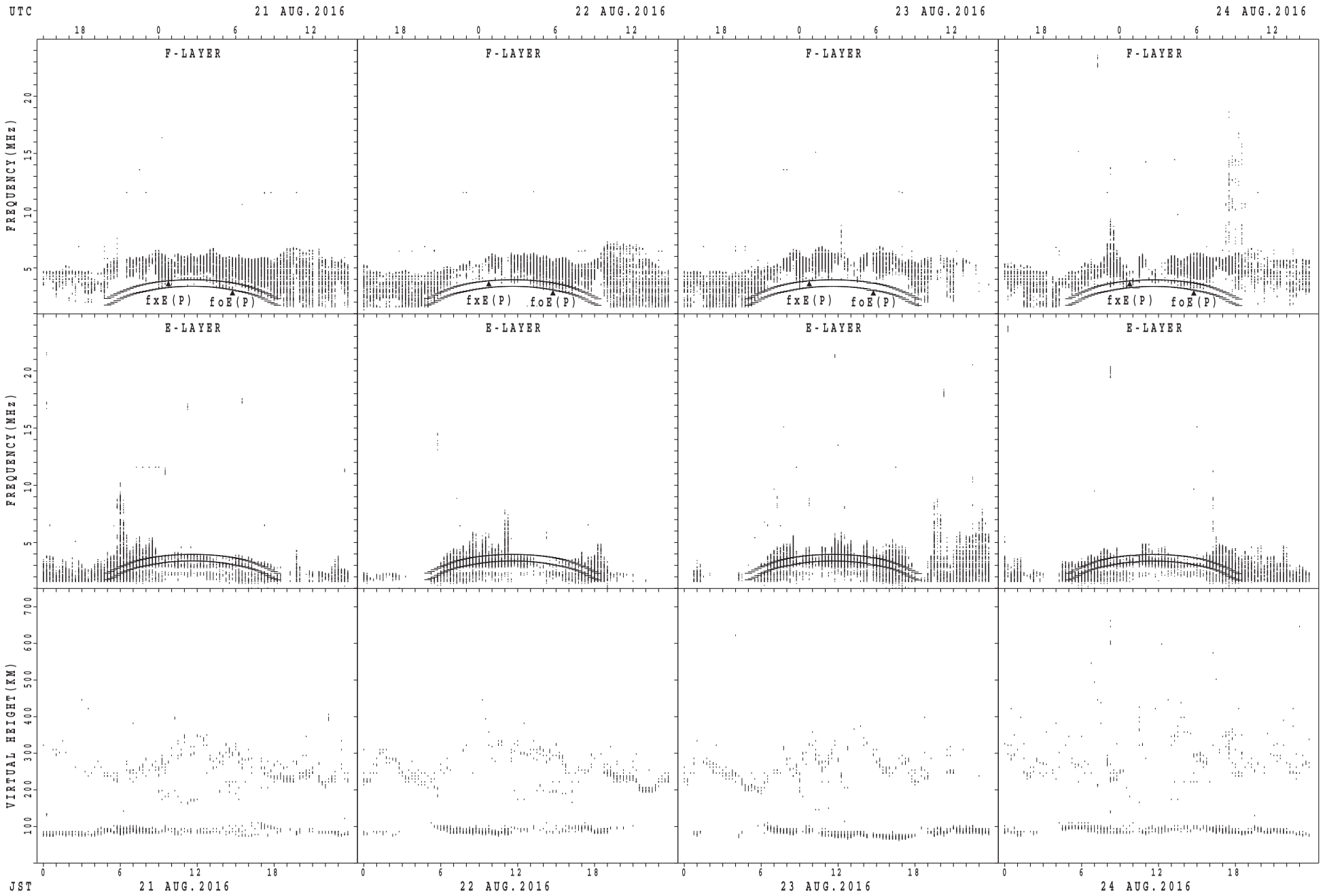
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



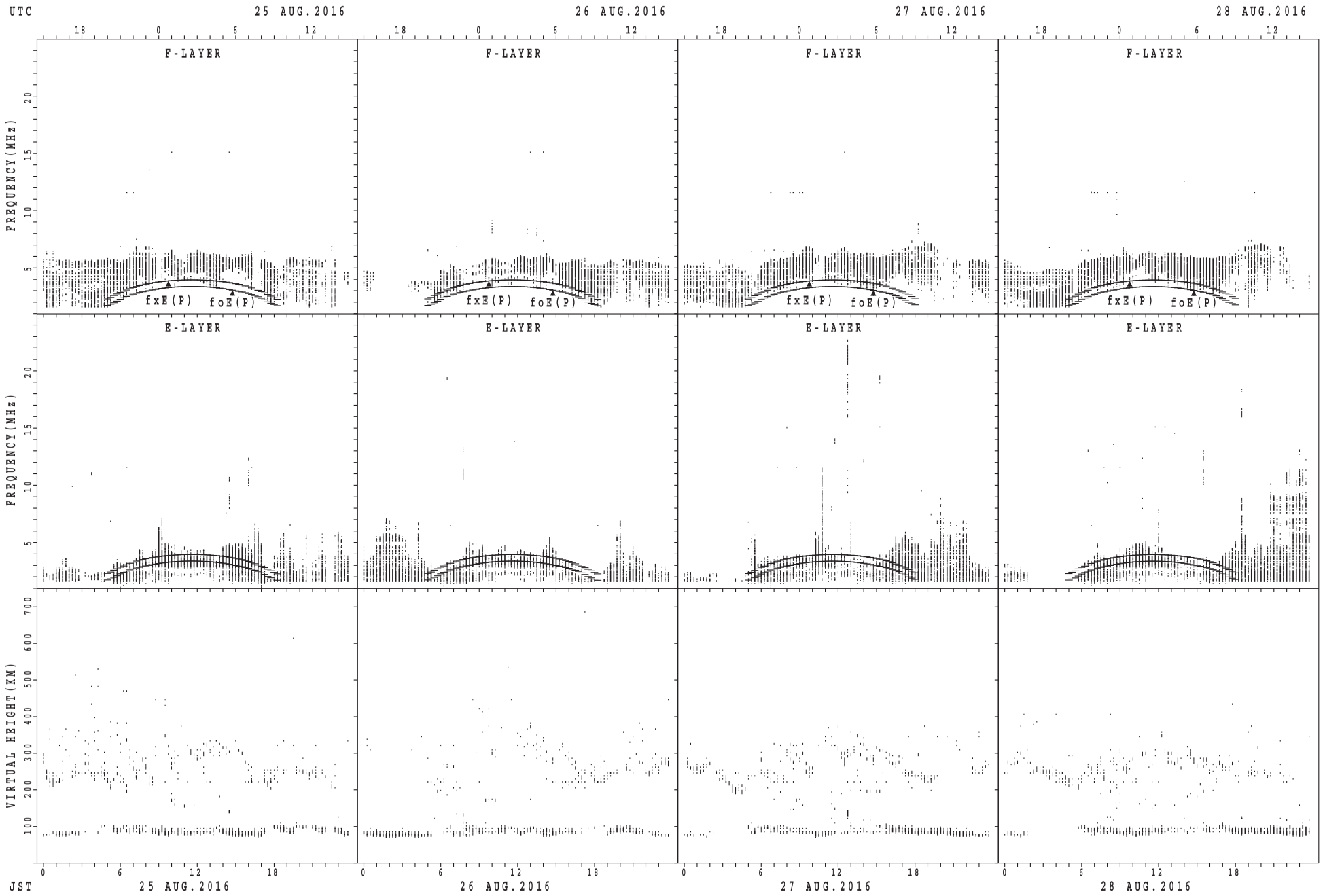
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



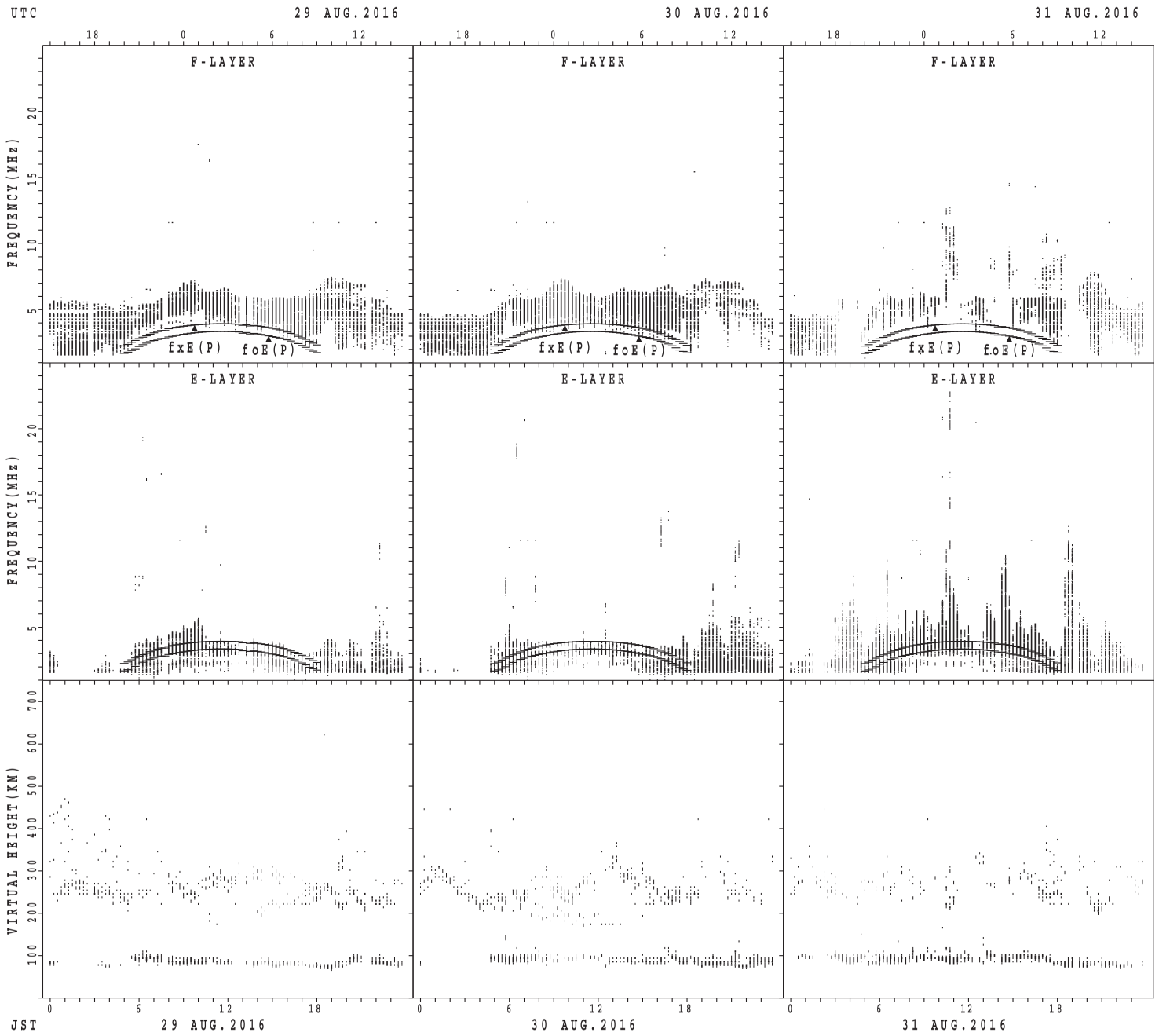
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



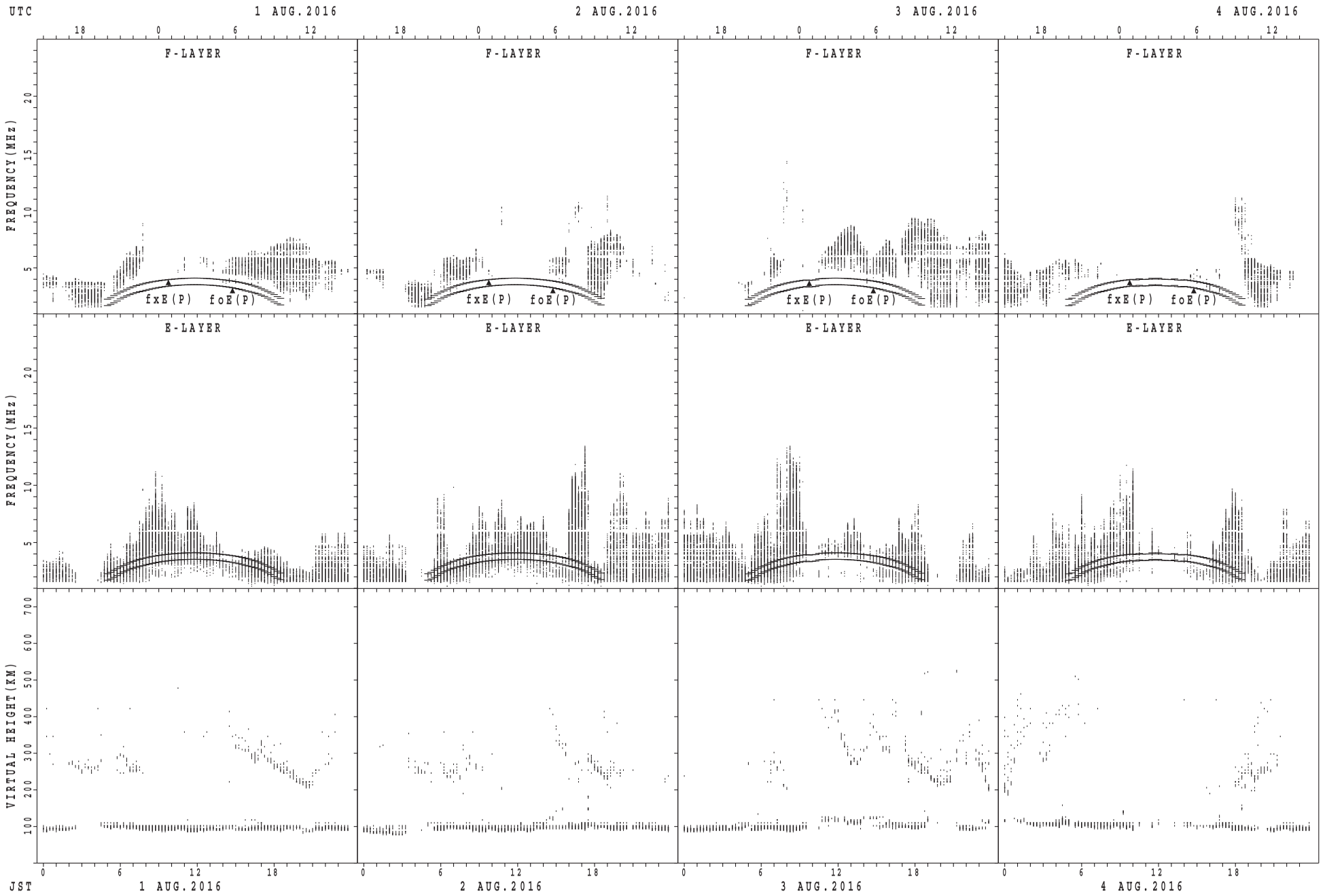
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



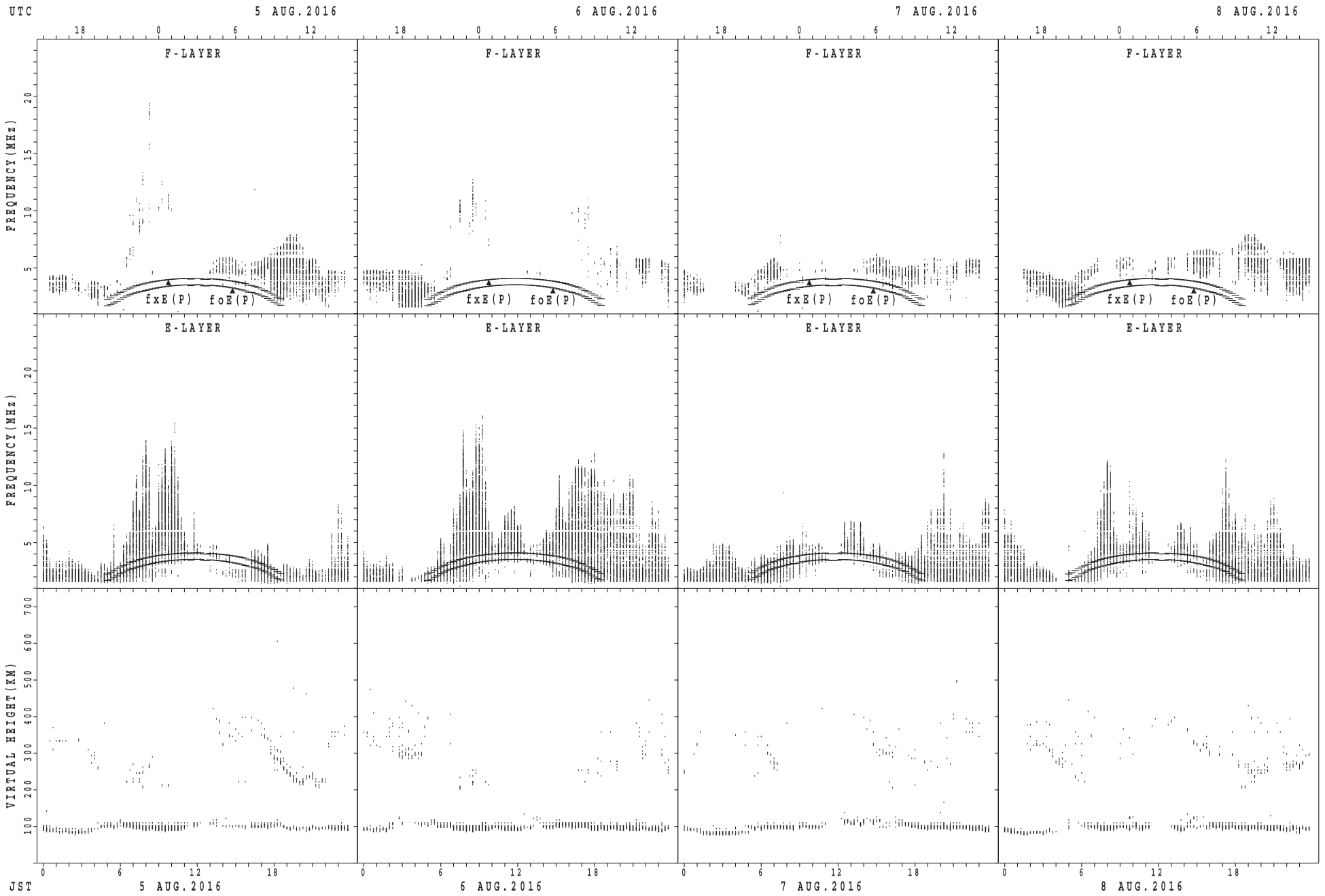
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



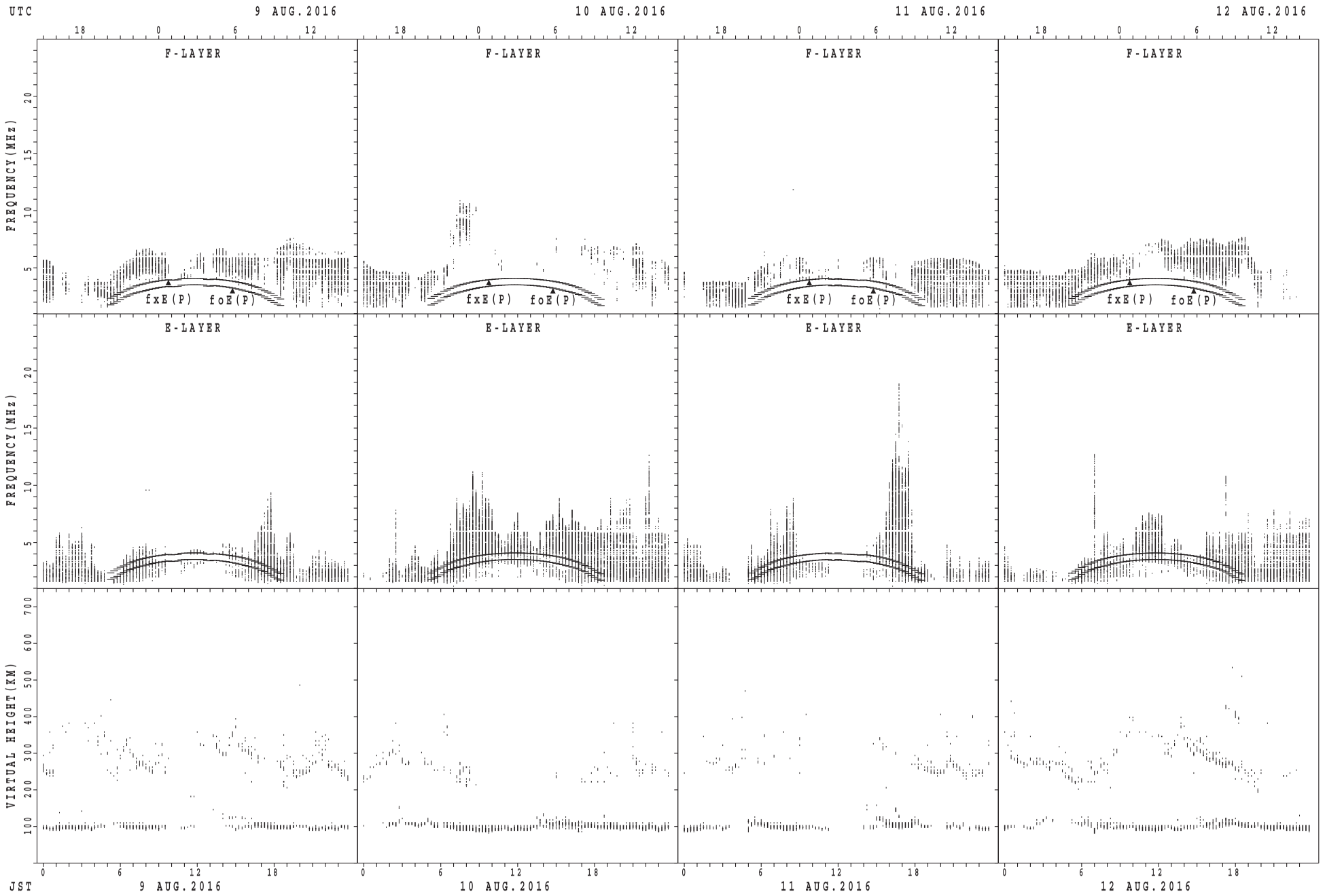
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



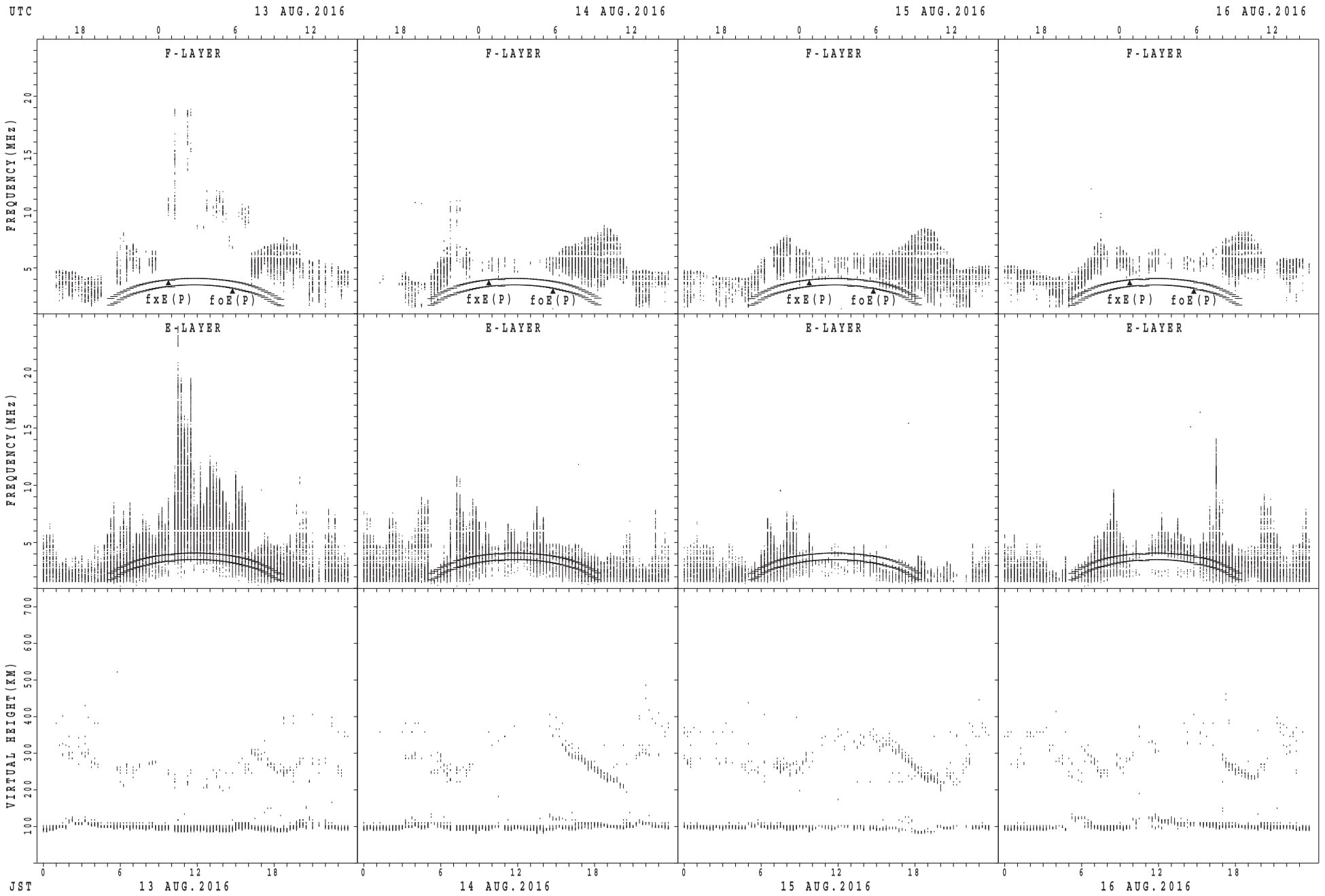
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



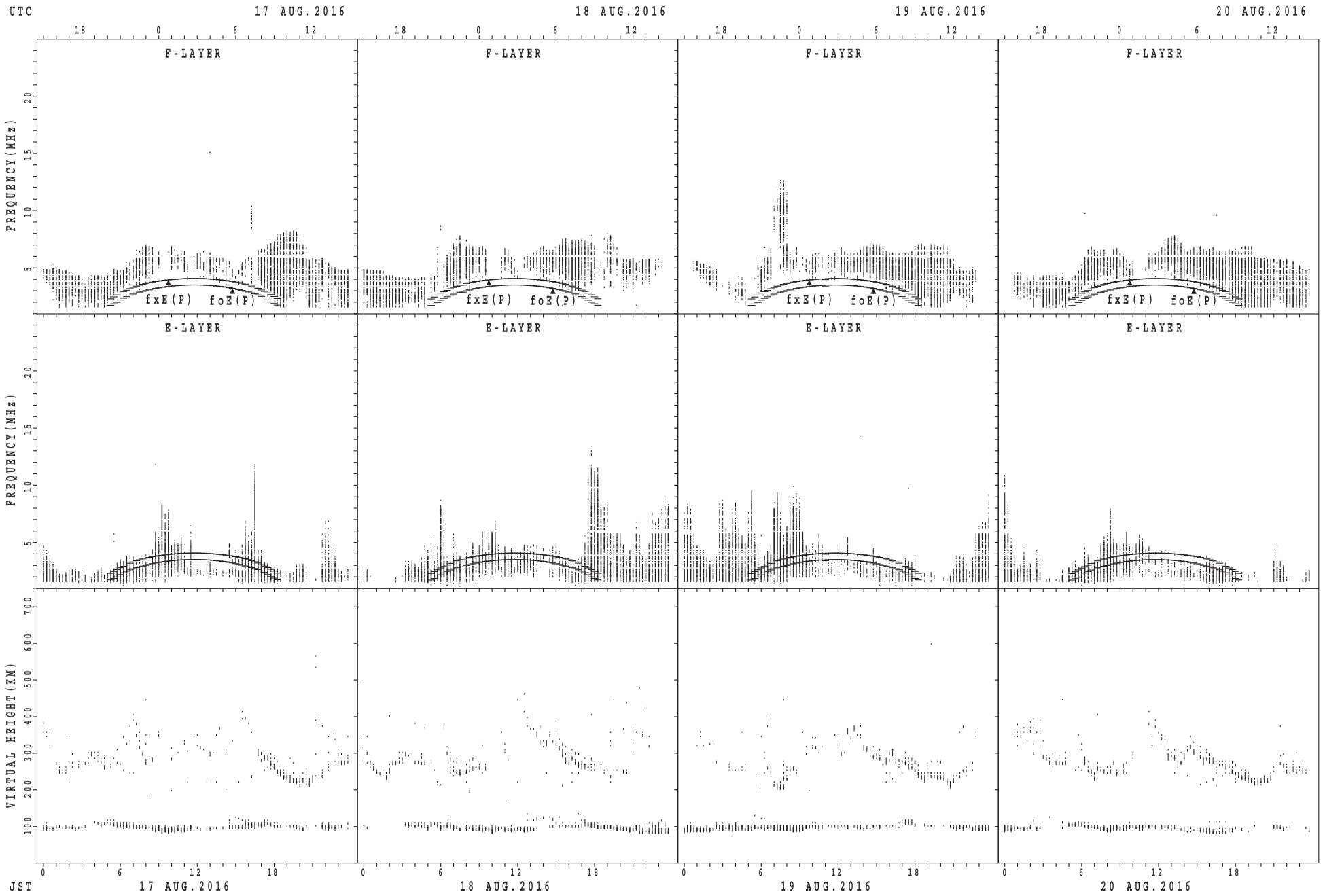
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



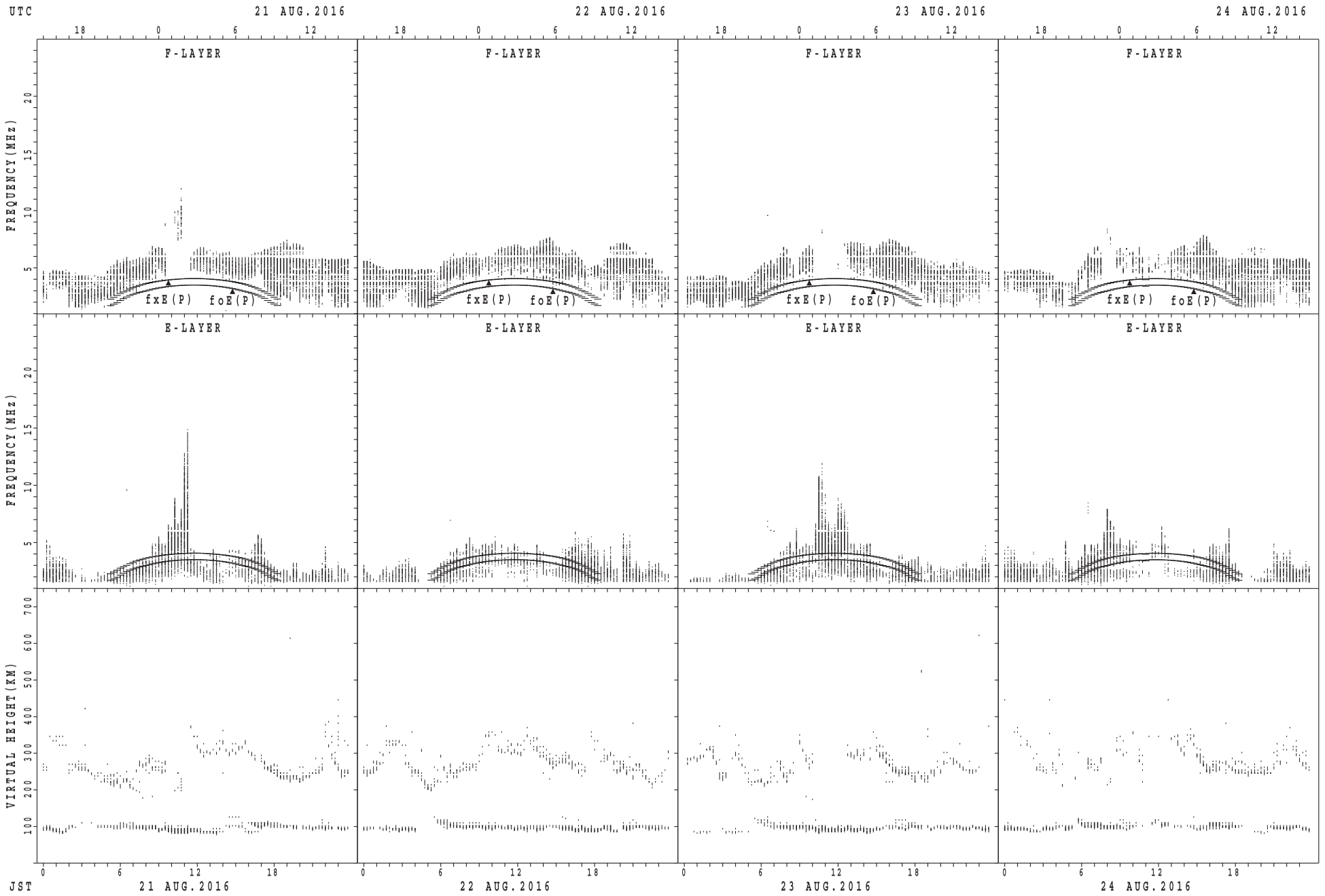
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



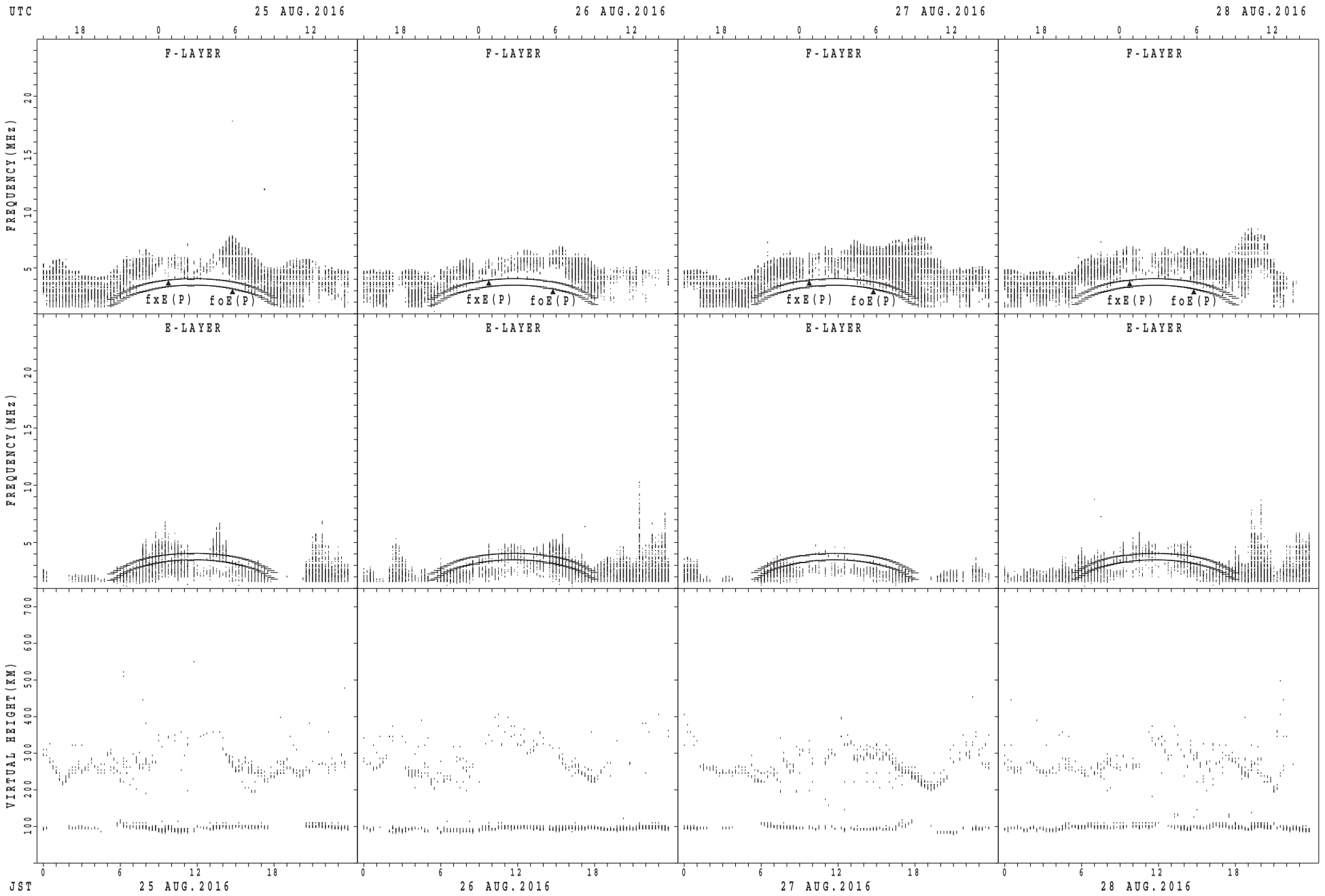
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



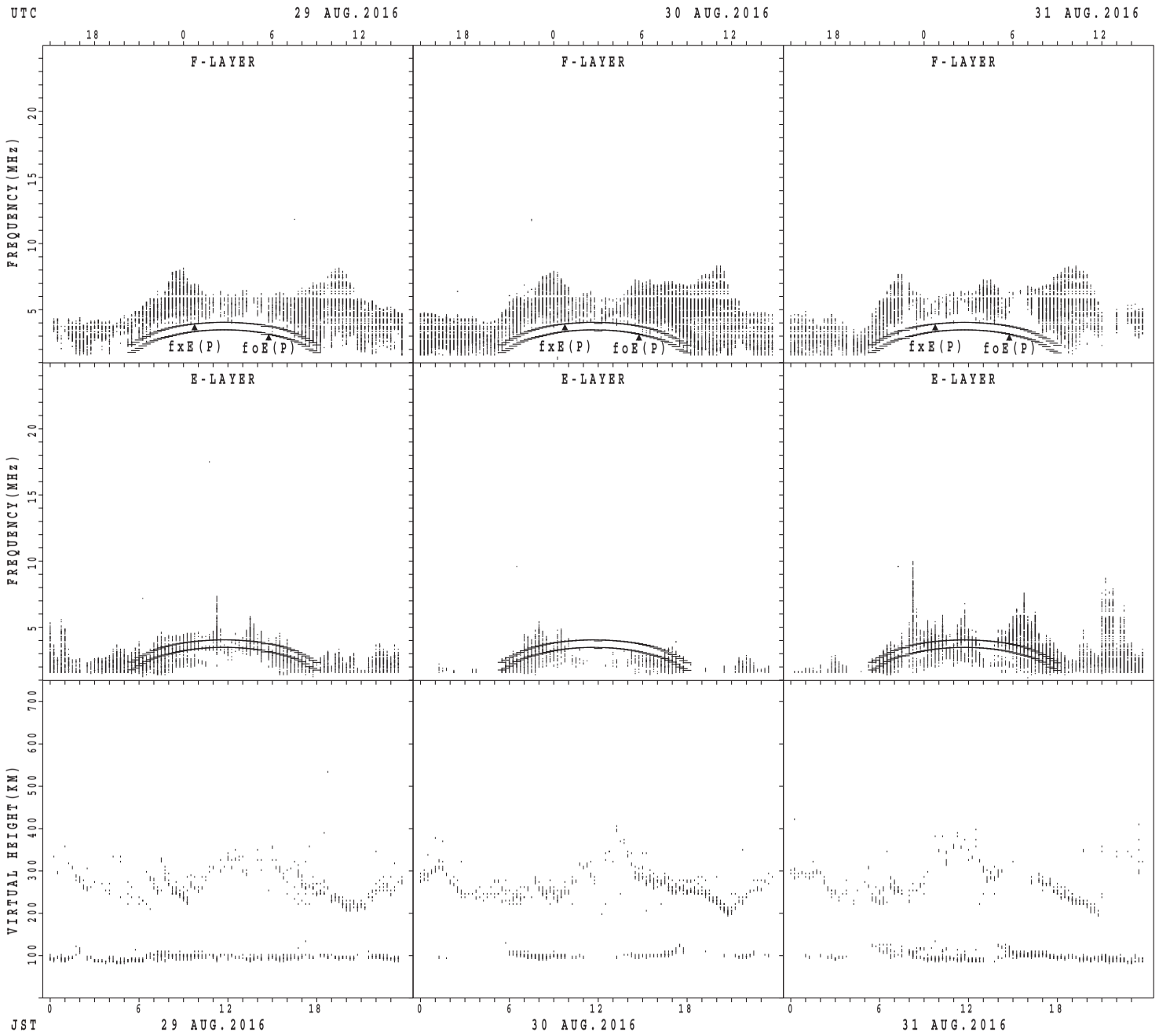
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



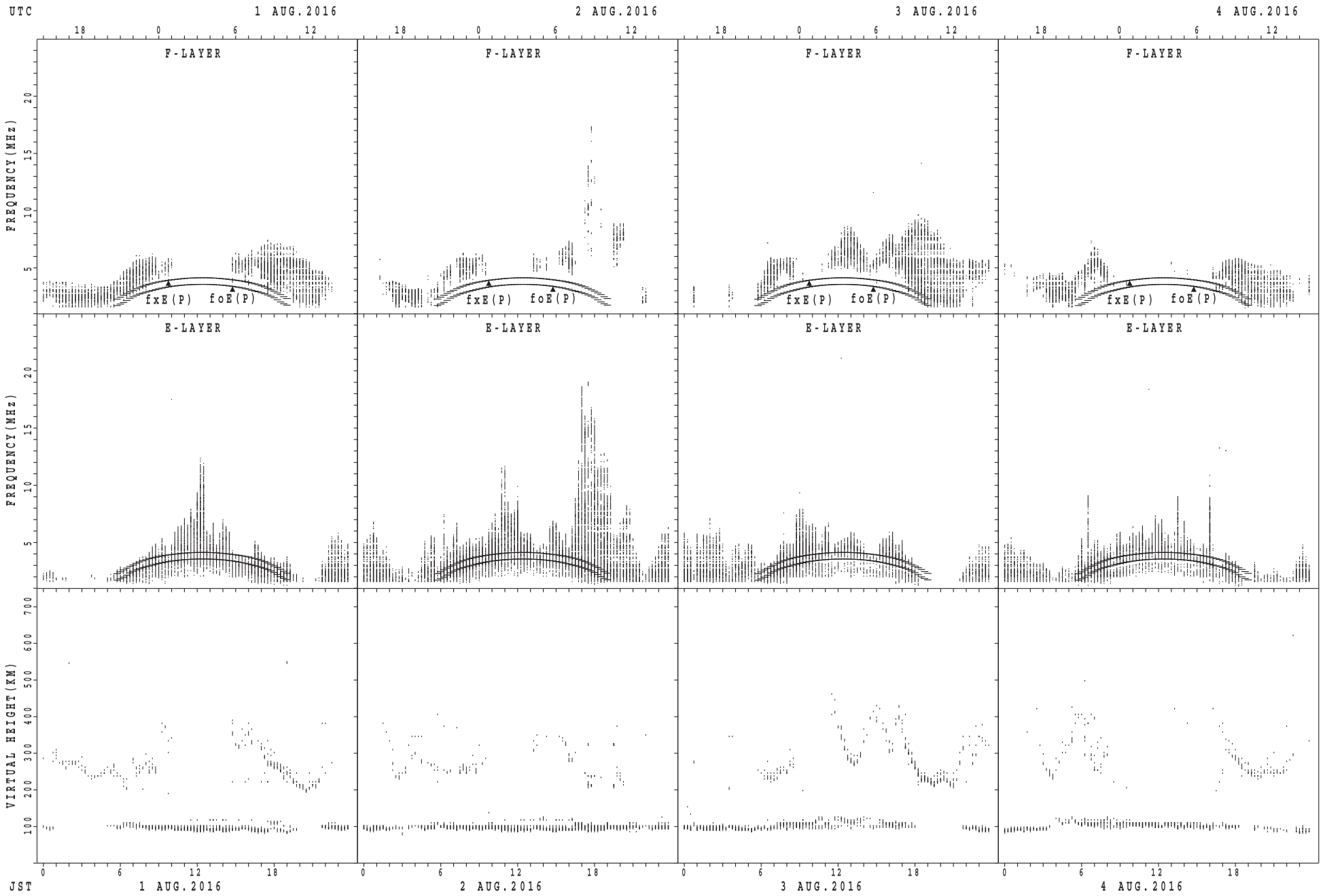
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



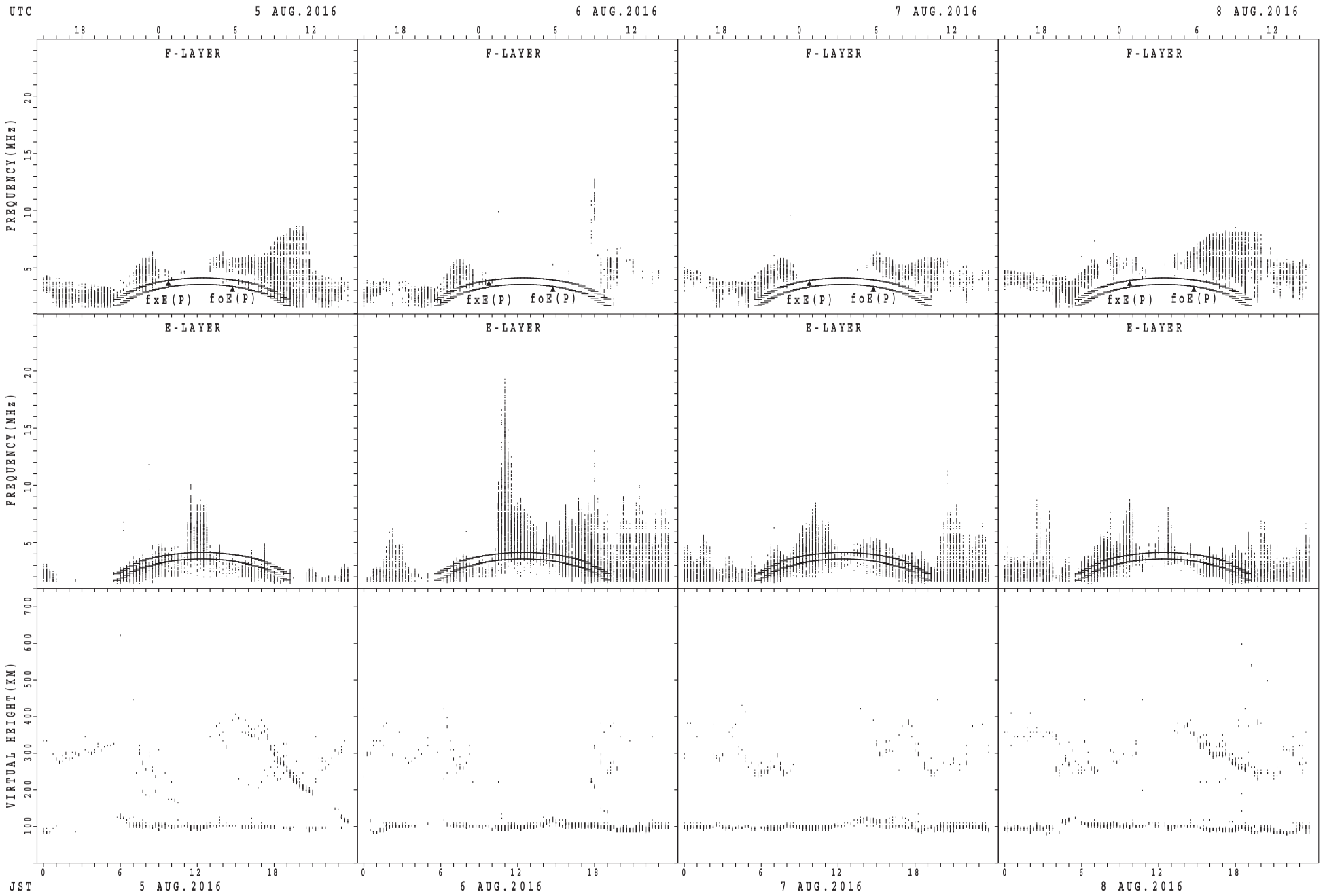
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



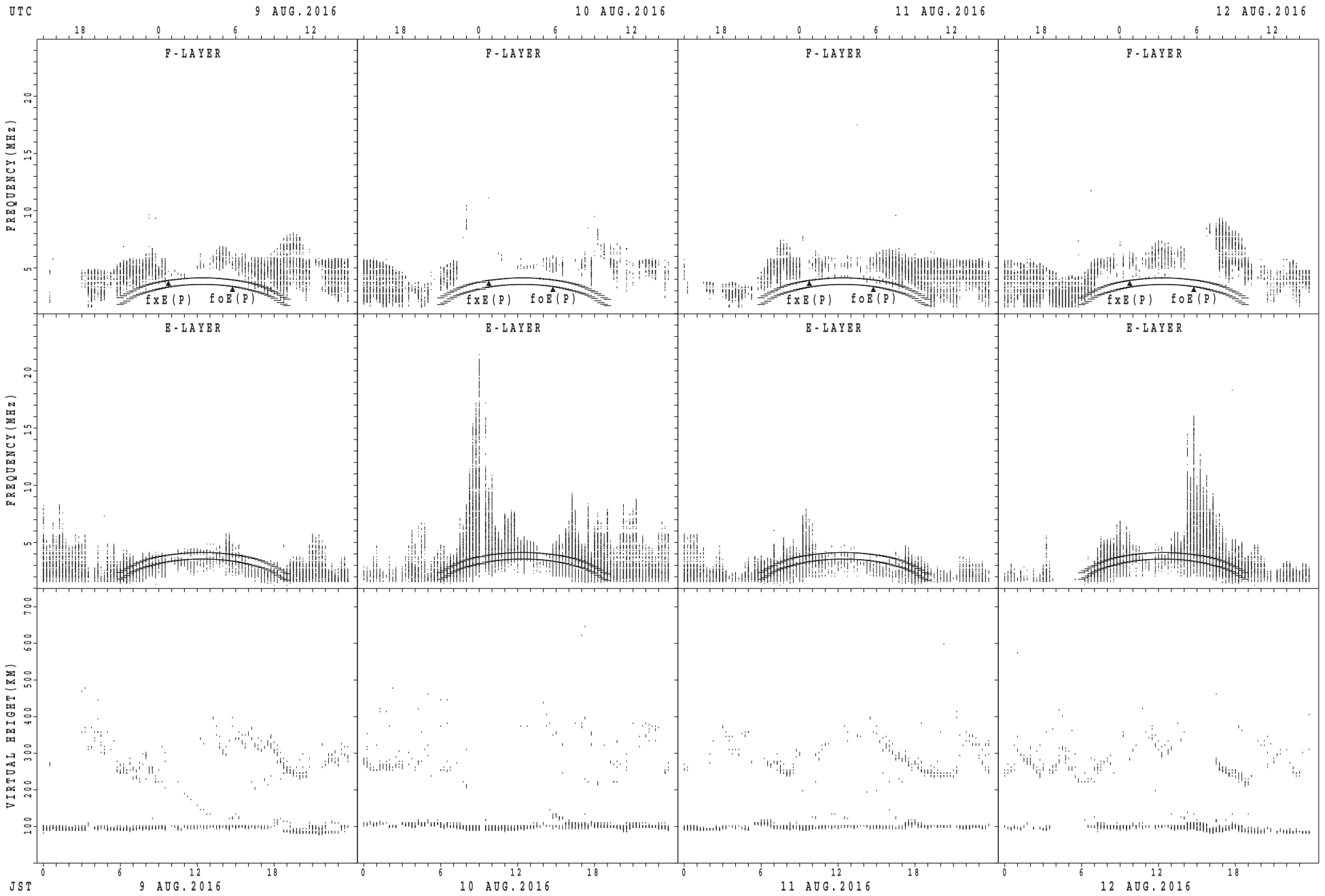
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



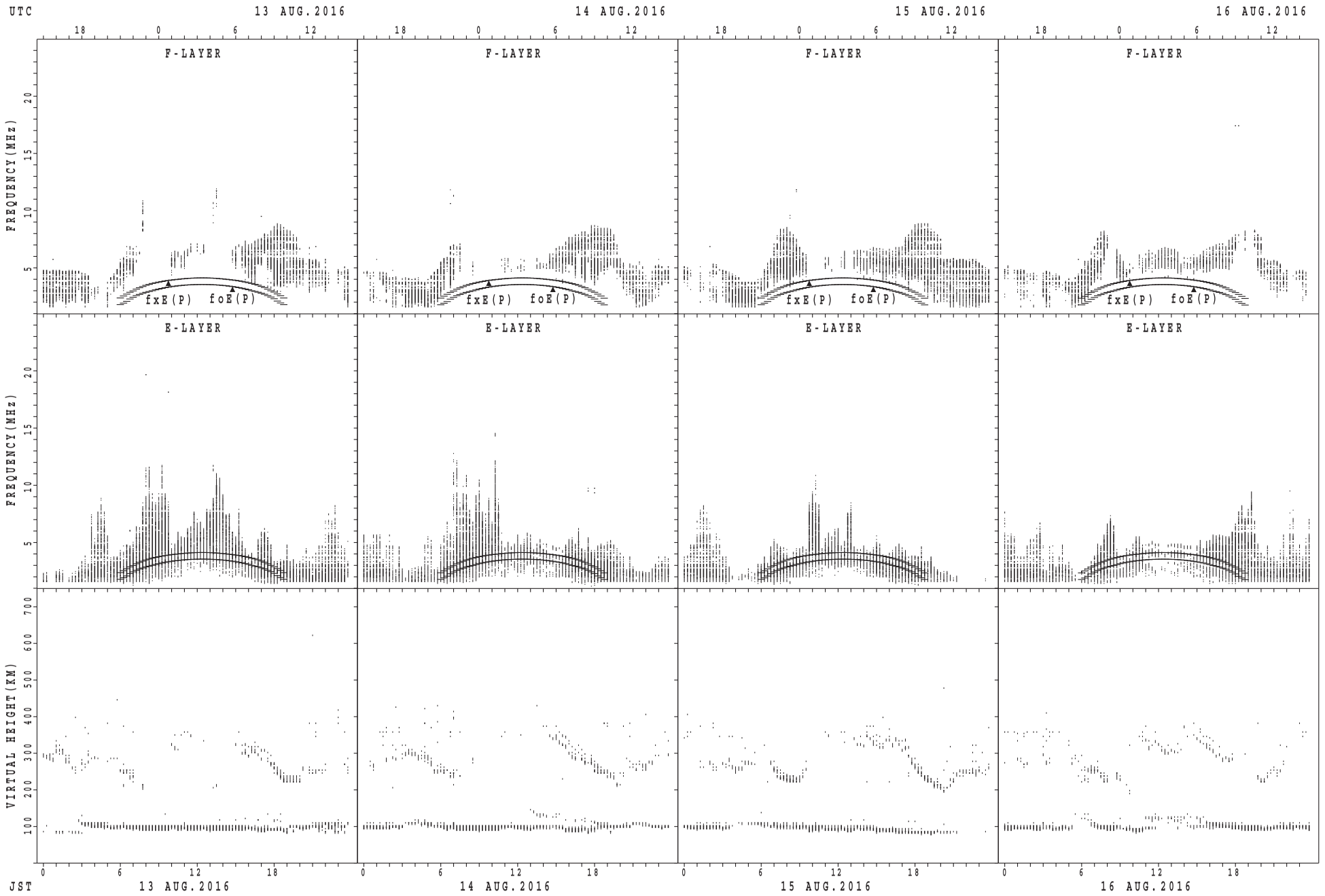
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



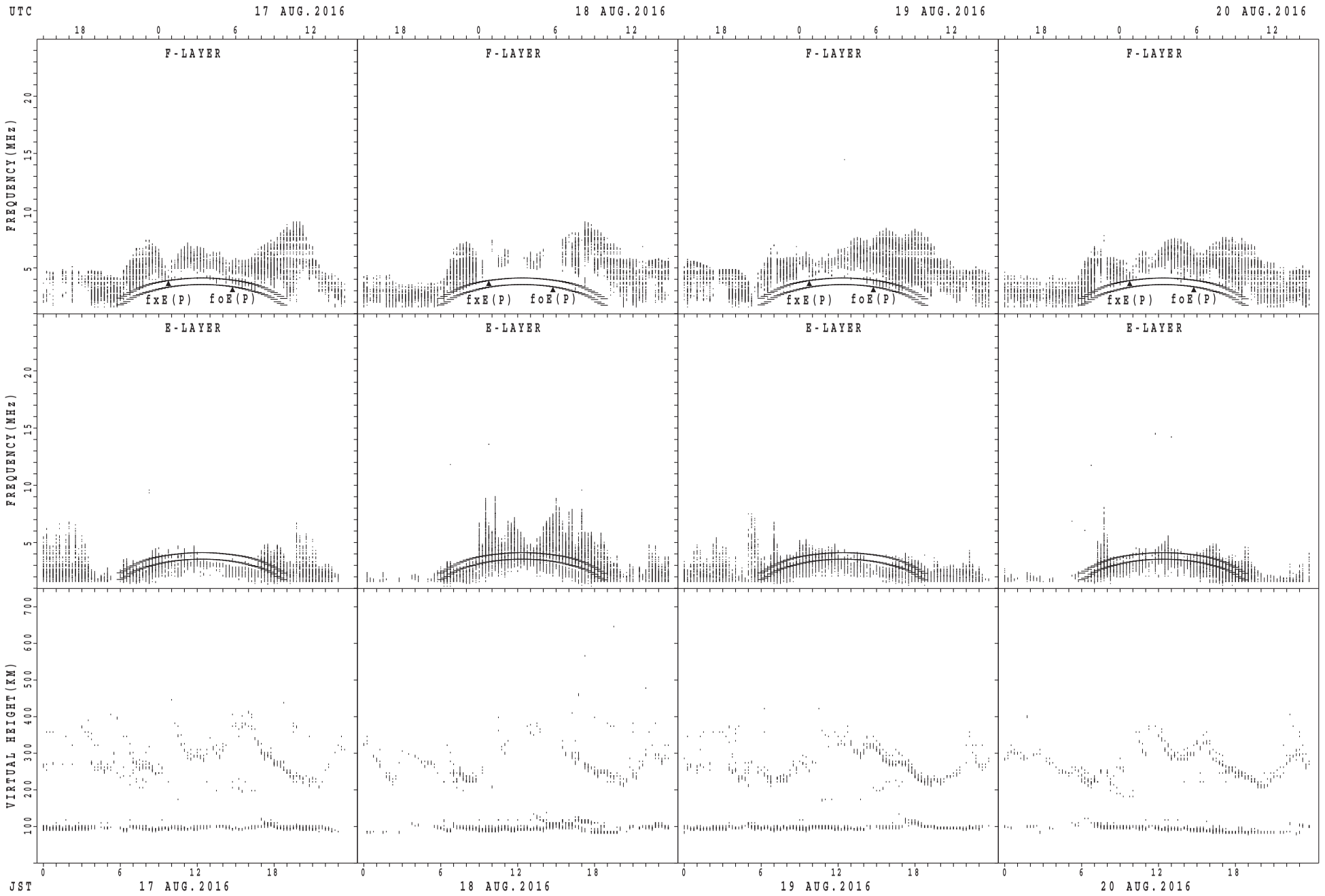
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



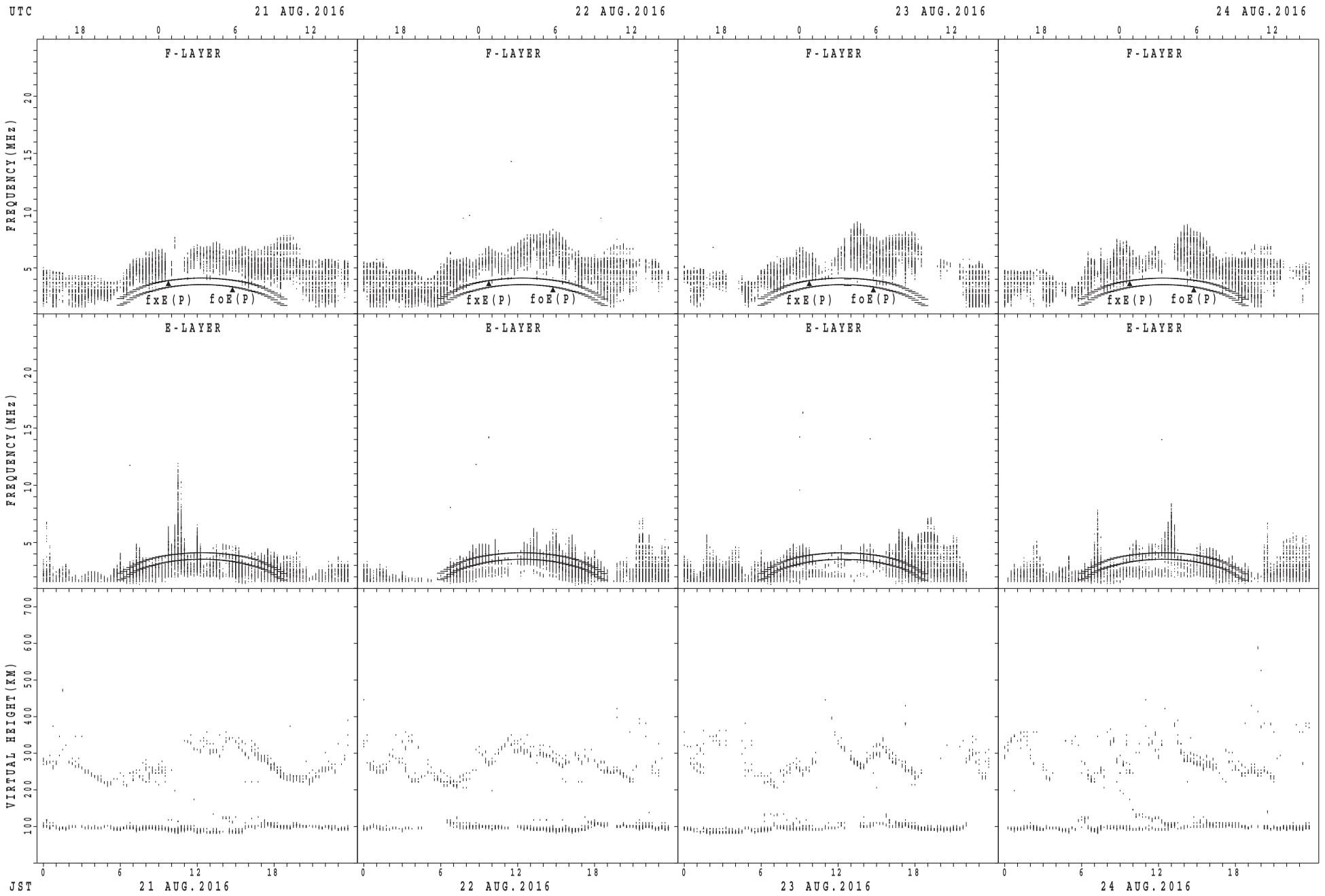
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



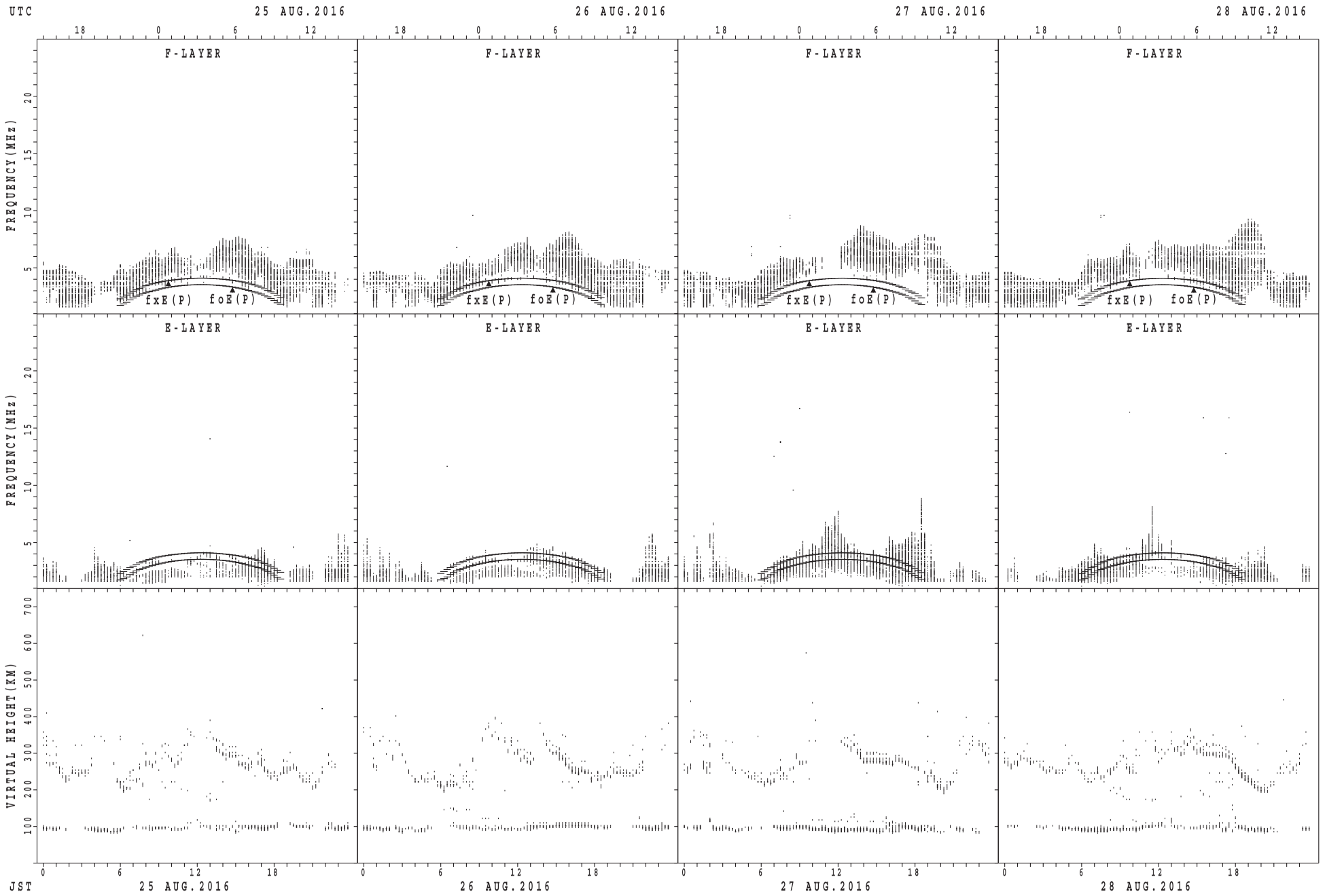
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



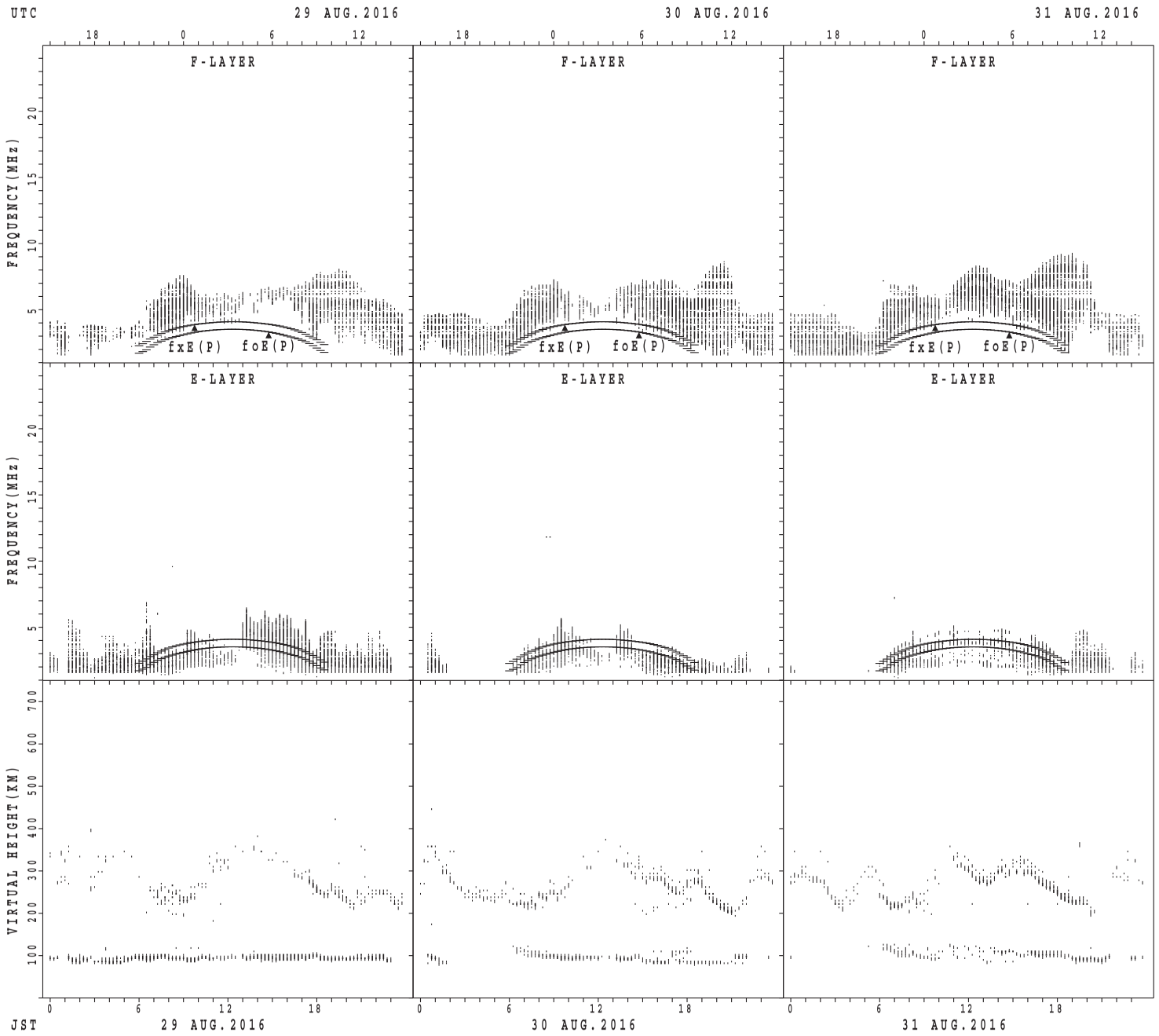
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



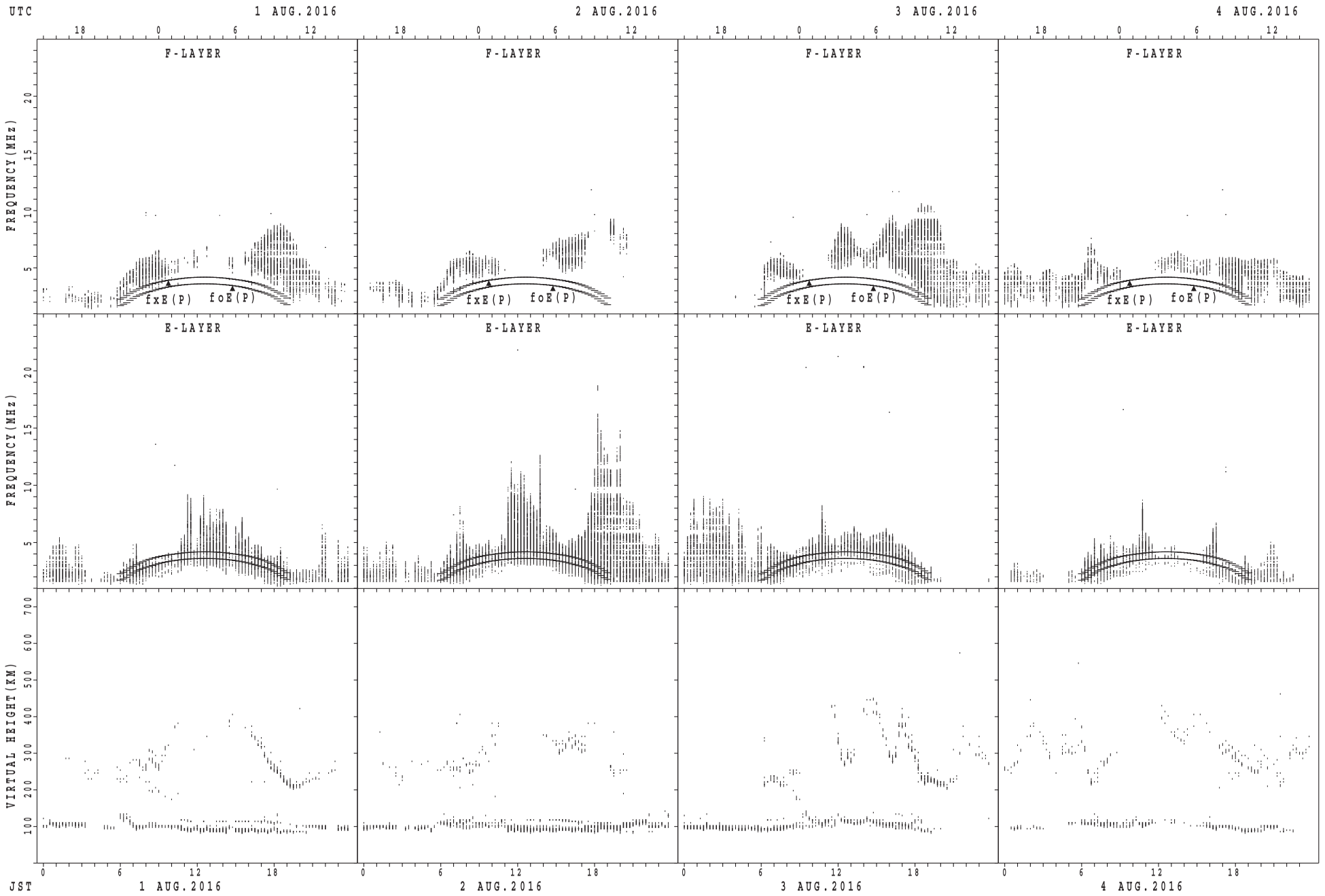
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



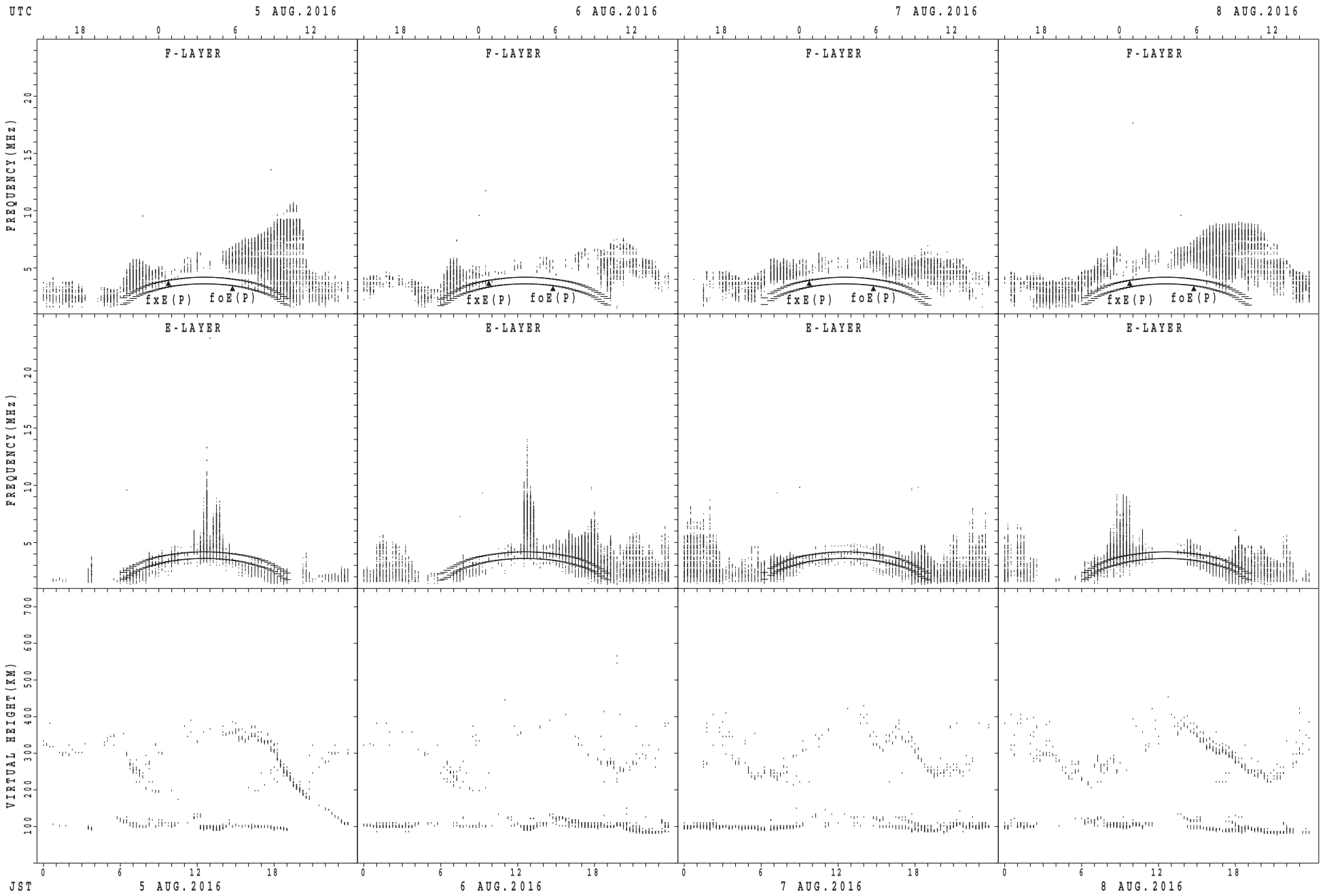
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



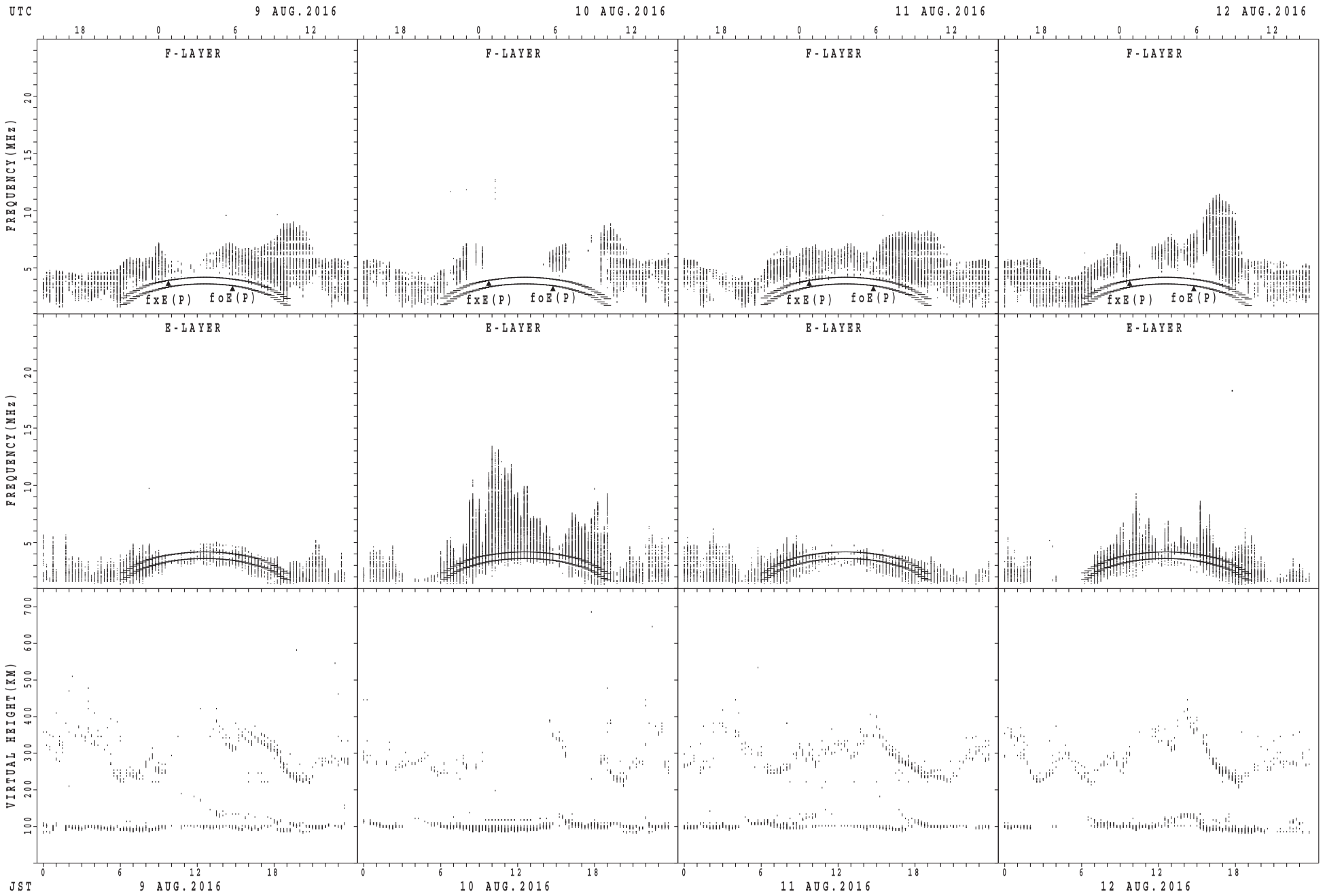
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



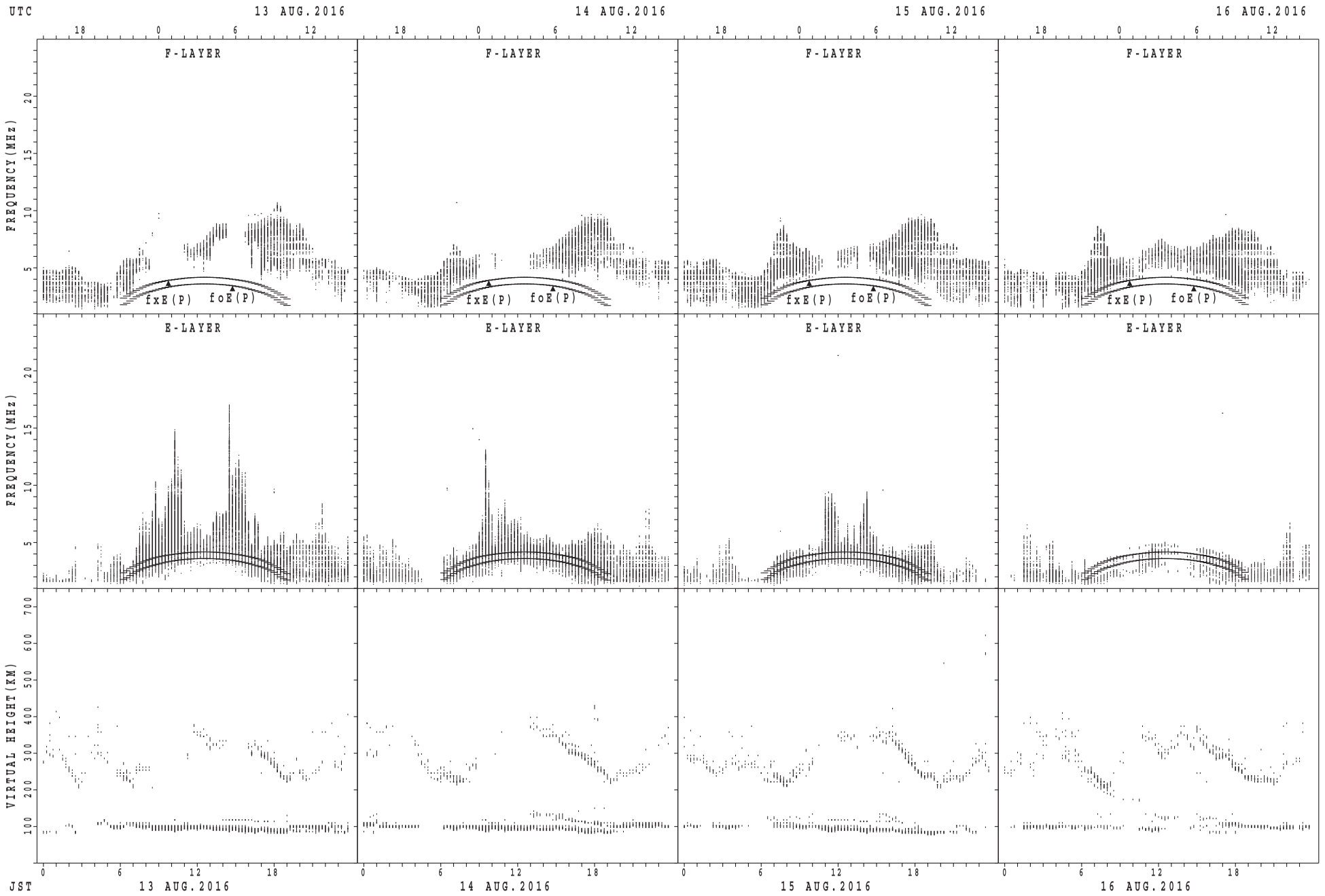
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



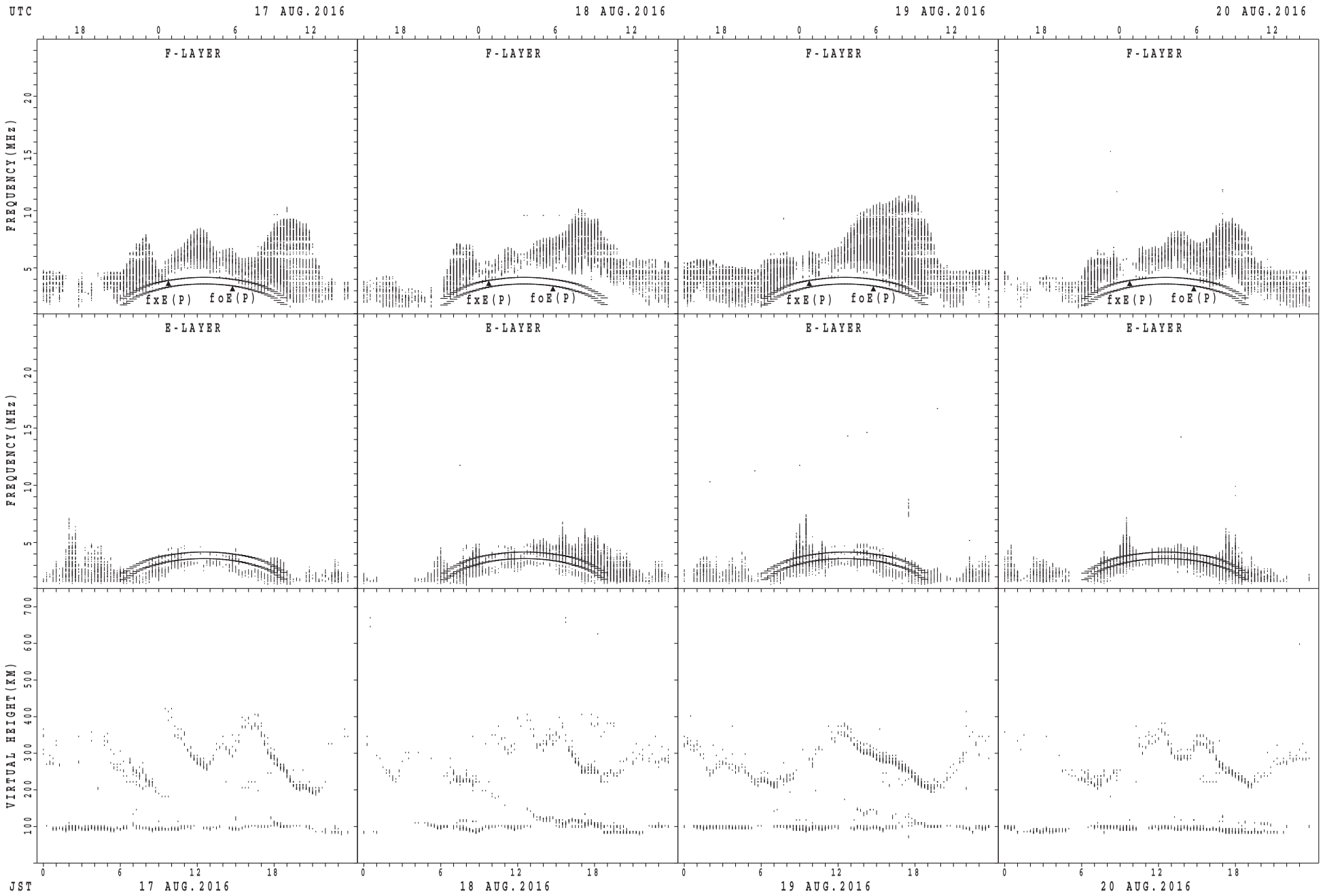
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



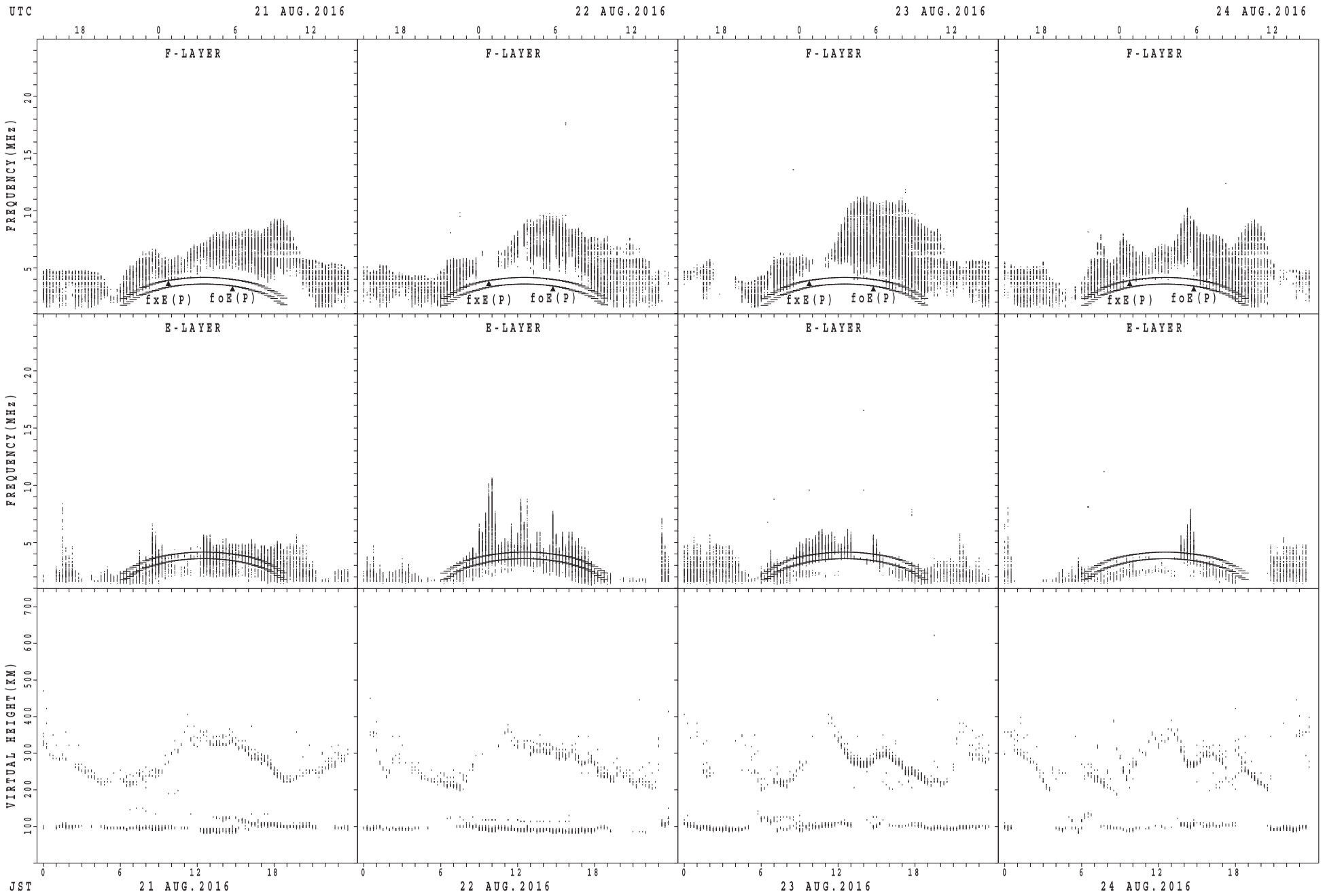
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



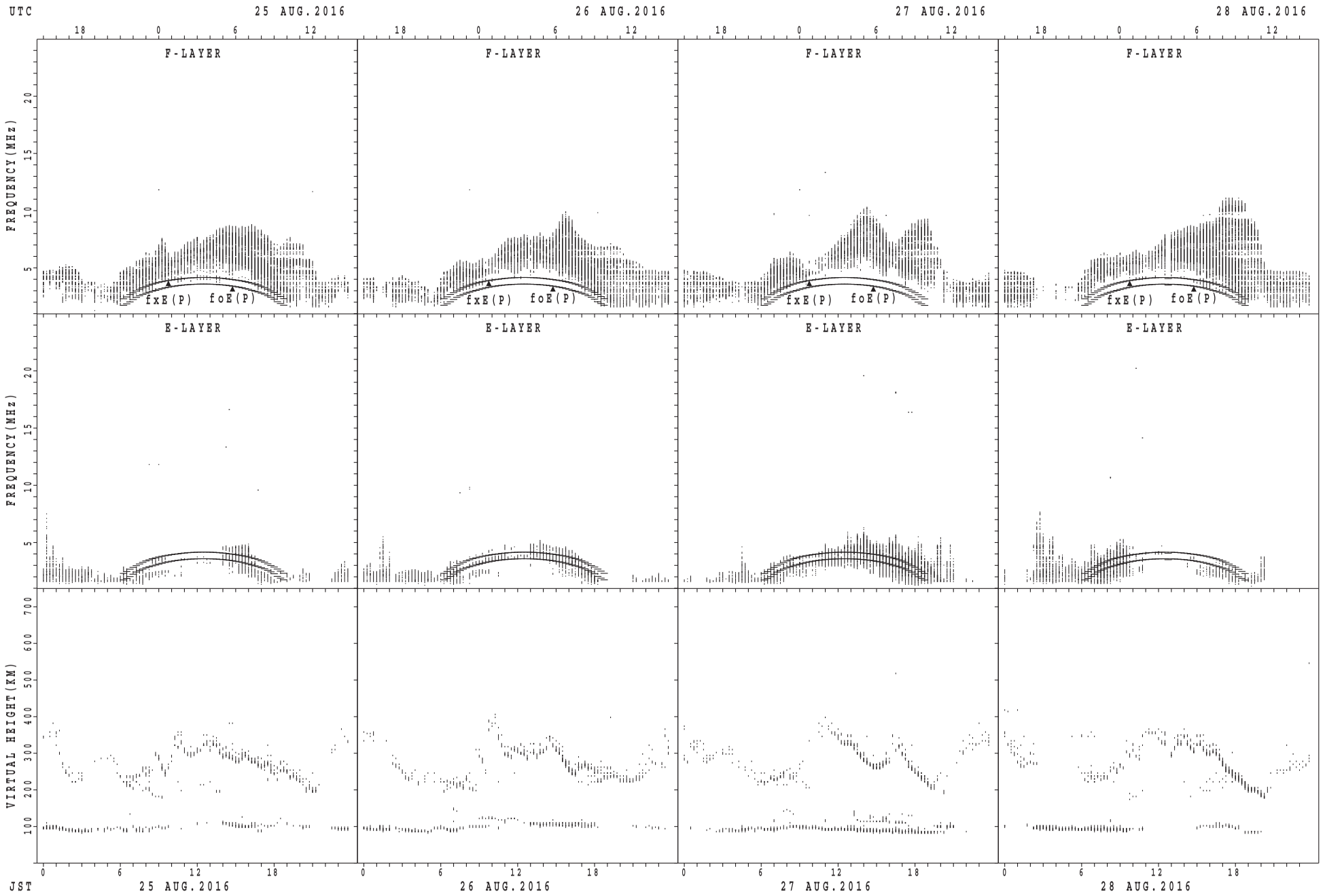
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



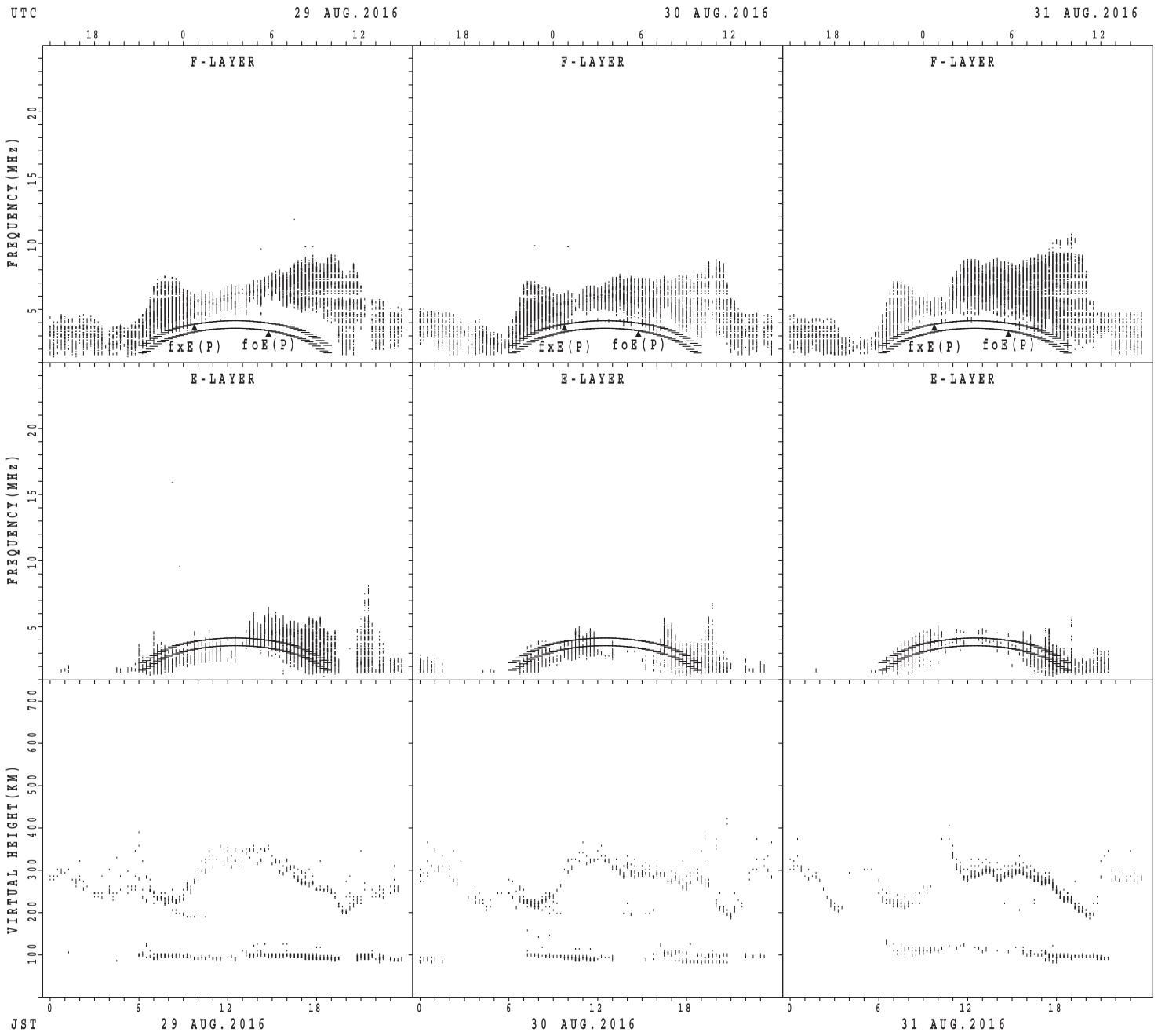
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

AUG.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						1	6	7									11	6	8	8	3	1		
MED						232	241	200									264	257	267	257	268	228		
U Q						116	304	254									278	264	282	288	278	114		
L Q						116	206	194									208	220	219	208	264	114		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	25	20	17	16	21	29	29	30	25	26	30	25	24	21	25	25	29	28	28	29	27	24	28
MED	87	83	84	89	90	97	95	89	95	89	89	94	91	100	93	95	91	93	89	90	95	89	91	87
U Q	99	89	98	101	101	98	103	95	113	115	125	113	130	111	109	103	100	97	96	98	101	97	96	90
L Q	81	82	81	82	83	91	89	87	89	86	87	87	83	87	83	83	89	89	87	88	89	89	87	81

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	5	5								9	6	10	15	10	1		
MED							224	288	270								304	288	267	264	243	334		
U Q							112	310	287								330	342	288	272	266	167		
L Q							112	255	255								271	272	252	244	234	167		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	22	25	25	20	22	26	28	27	27	24	20	20	17	20	16	18	28	27	26	21	27	28	29
MED	97	96	95	97	100	104	105	103	99	101	98	99	99	101	100	113	110	103	103	102	101	101	99	97
U Q	101	97	99	104	108	107	111	103	103	105	103	104	117	112	115	120	111	107	105	105	105	105	103	99
L Q	95	93	93	94	94	101	101	100	97	95	95	94	96	96	95	107	103	103	97	97	95	97	97	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								7	9								4	12	17	14	13	1		
MED								248	248								292	286	258	258	254	222		
U Q								264	267								308	303	273	274	268	111		
L Q								232	234								271	267	246	240	232	111		

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	24	23	21	23	19	22	23	29	24	23	24	24	24	25	21	21	22	26	30	28	24	22	24	26
MED	99	97	99	97	97	97	99	105	101	99	97	99	99	103	105	109	102	105	103	97	97	98	98	97
U Q	103	99	103	99	105	111	107	116	104	103	107	111	105	112	118	112	111	107	107	102	103	105	103	103
L Q	95	95	95	95	93	95	95	98	97	97	95	95	95	95	95	94	95	97	99	94	93	95	95	93

MONTHLY MEDIANS OF h'F AND h'Es

AUG.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								9	11	3							5	23	23	23	13	1		
MED								250	232	256							296	280	262	246	244	220		
U Q								256	252	270							302	306	286	262	252	110		
L Q								234	224	250							290	270	246	228	219	110		

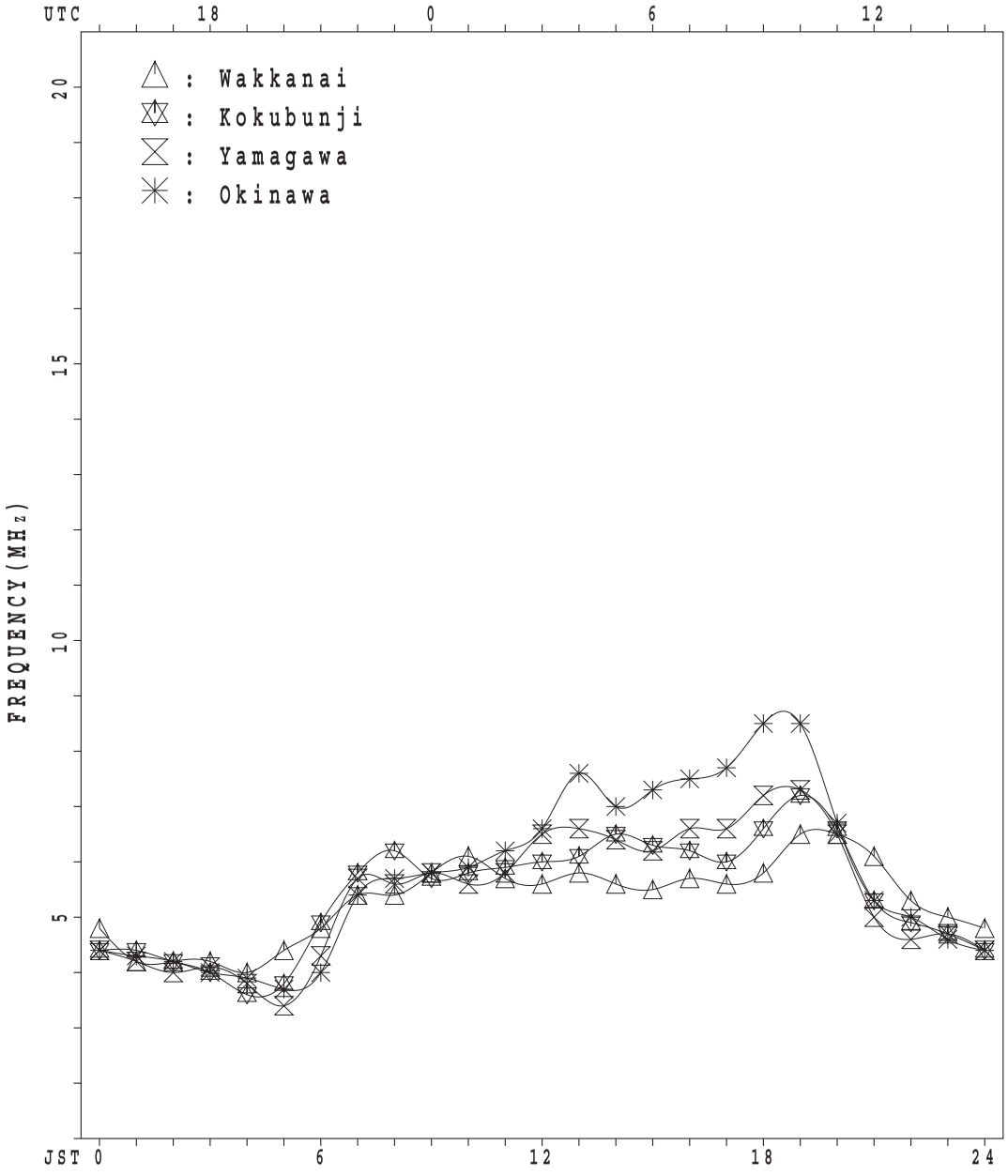
h'Es

	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	24	21	21	20	17	18	22	23	23	24	27	20	16	23	25	25	22	22	25	26	24	23	18	22
MED	103	103	99	99	97	99	103	107	105	102	105	103	101	99	107	107	105	104	101	97	96	99	100	99
U Q	105	105	103	103	101	111	113	113	117	112	117	111	129	113	119	120	113	111	108	103	104	103	107	103
L Q	97	99	97	95	95	95	95	95	101	95	97	95	97	95	95	95	97	95	95	89	91	95	97	95

MONTHLY MEDIANS PLOT OF foF2

AUG.2016

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Wakkanai

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

AUG. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	38	32	32	31	33	41	46	A	A	A	56	52	48		54	50	48	50	49	57	57	62	A	F 37
2		37	33	33	33	42	42	A	53	A	53	53	52	E G 51	52	55	48	52	59	62	60	57	50	43
3	37	34	35	33	33	38	A	52	54	58	53	59	62	59	A	50	A	64	66	72	83	64	59	60
4	48	A	39	29	25	34	38	40	42	R	49	A	R	A	A	44	44	46	45	49	54	48	47	42
5	40	38	36	36	32	36	40	R	A	R	46	E G 44	A	E G 44	46	44	A	A	50	61	J R 61	54	57	43
6	37	40	37	34	31	33	A	A	45	47	E G 42	E G 42	A	R	A	A	A	A	A	56	56	56	48	43
7	40	37	31	31	31	37	A	A	A	A	A	A	A	R 44	R 49	U R 49	45	A	A	A	51	56	50	48
8	44	41	39	37	36	36	41	A	50	52	A	A	R 52	52	54	52	A	A	54	58	A	A	53	48
9	42	38	42	38	36	37	45	A	49	A	54	50	57	54	54	53	55	53	52	A	A	63	63	55
10	46	F 33	37	33	33	39	A	E G 43	A	47	52	E G 44	E G 44	E G 43	E G 43	A	A	49	49	55	61	58	58	56
11	32	36	36	31	30	36	44	44	E G 40	E G 42	U R 51	47	E G 44	48	51	51	51	47	47	53	57	58	53	53
12	48	43	44	40	37	42	58	58	58	56	62	61	60	52	60	65	63	50	56	62	63	56	54	47
13	41	44	44	F 40	F 38	44	47	A	A	53	55	A	49	49	48	50	C	53	50	59	65	64	54	45
14	44	F 37	F 42	F 43	F 40	42	50	55	57	56	51	51	49	A	53	52	57	58	63	66	60	58	51	48
15	47	41	36	F 35	F 38	47	51	A	69	58	56	54	56	A	A	54	55	58	60	69	67	62	59	A
16	53	52	43	F 32	F 34	36	44	48	55	62	54	59	54	53	A	A	52	53	62	75	68	65	60	44
17	41	44	42	37	V 42	40	45	55	A	55	54	52	49	51	49	A	A	55	63	68	62	58	55	50
18	48	47	38	41	37	42	52	59	66	64	62	50	57	58	53	58	60	J R 63	61	72	66	63	60	60
19	F 52	52	48	43	36	44	53	65	60	56	62	A	55	56	55	53	50	52	54	A	72	63	52	40
20	41	V 42	F 40	F 40	F 43	36	45	50	58	51	52	50	58	58	56	58	56	50	49	56	57	59	51	46
21	42	44	44	40	37	47	50	52	54	60	52	55	54	60	55	55	53	53	52	62	60	58	57	50
22	47	42	40	42	40	40	42	E G 43	47	49	57	57	57	57	55	54	51	48	53	66	65	64	58	46
23	44	42	41	39	40	40	41	47	55	58	58	60	59	48	56	61	60	52	51	55	55	54	52	R 53
24	46	44	44	39	32	38	46	46	64	55	E G 43	53	46	54	52	57	52	52	57	60	57	58	54	51
25	52	F 47	F 47	F 37	F 47	F 43	48	58	64	64	60	50	60	56	56	54	56	52	45	52	52	50	44	39
26	40	38	35	31	32	36	42	46	E G 40	46	52	50	54	52	55	49	51	51	48	50	49	48	47	47
27	44	46	44	46	46	40	47	50	52	56	59	55	60	57	56	53	57	60	61	65	56	47	48	48
28	F 43	F 36	41	F 35	F 37	F 36	48	50	51	52	54	58	54	55	54	53	53	53	53	65	R 64	A	57	J R 37
29	F 46	F 43	F 43	F 38	F 39	F 38	47	49	58	64	59	59	60	56	54	54	52	55	60	69	64	62	56	44
30	41	40	40	38	38	41	51	54	54	65	66	56	54	56	60	57	61	61	59	66	59	69	59	43
31	40	36	38	38	A	38	50	51	55	56	53	A	50	53	E G 55	53	53	52	54	63	70	66	46	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	30	30	31	31	30	31	27	22	25	25	29	25	27	26	26	27	24	27	29	28	29	29	30	30
MED	44	41	40	37	36	39	46	50	54	56	54	53	54	54	54	53	53	52	54	62	60	58	54	46
U Q	47	44	43	40	39	42	50	55	58	59	58	58	58	56	55	55	56	55	60	66	65	63	58	50
L Q	40	37	36	33	33	36	42	46	50	52	52	50	49	51	52	50	51	50	50	56	56	56	50	43

AUG. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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							L 368	A	A 416	A	A	436	448		424	L	396	376	L					
2						296		A		A	L	440	L	444	U R 428	388	L	A	L	2 175				
3					A	L	A		A	A	A	A	L	A	A	L	A	A	324	L				
4						272	L	A		408	408	A	416	A	A	400	388	372	A	L				
5					L	L	336	388	A	412	A	436	A	436	L	L	A	A	A	A				
6					L	A	A	A	396	408	420	424	A	R 404	A	A	A	A	A	L				
7					L	300	A	A	A	A	A	A	A	428	L	L	L	A	A	A				
8					216	296	L	A	L	A	A	A	L	A	A 444	A	A	A	A	A	A			
9					L	A	L	A	416	A	L	A	L	464	A	A	432	A		A	A			
10					L	L	A	428	A	416	A	444	444	432	L	A	A	A	A					
11					L	A	A	400	400	416	L	440	440	412	440	428	L	L	A	L				
12							L	L	L	440	448	476	452	A	L	L	L	0 166	A					
13						A	A	A	A	A	A	A	452	452	A	A	C	A						
14						A	L	404	436	448	448	L	L	A	L	L	A	A						
15							A	A	A	L	L	L	L	A	A	L	L	392	L					
16						L	364	L	L	A	A	L	464	L	A	A	432	A	A 872					
17						L	L	A	A	A	444	L	452	436	424	A	A	A	A					
18						L	L	408	420	L	448	448	448	456	440	404	404	L	L					
19							A	412	L	L	448	A	L	L	L	L	404	L		A				
20							L	384	A	L	L	L	L	464	448	428	L	336						
21								L	428	416	456	464	456	440	424	L	408	L	L					
22							L	428	420	428	432	448	L	432	432	432	388	L						
23						188	L		L	440	444	L	452	L	L	L	376	L						
24							324	396	408	408	428	L	396	420	408	L	400	228						
25							L	368	L	A	436	444	L	444	444	L	384	348						
26					L	L	304	344	396	404	428	452	444	428	448	420	380	L						
27							340	392	432	416	444	448	448	436	L	L	404							
28							344	332	376	428	448	L	L	L	L	L	336	L						
29							L	L	420	436	A	456	456	L	440	L	L	L	A	A				
30								L	L	L	448	456	L	456	440	428	L	L						
31					A		A	A	416	A	A	A	A	L	L	L	L	A		A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	5	7	13	14	15	16	15	15	18	14	8	14	7	2	1				
MED					216	296	340	396	416	416	444	448	448	436	440	424	398	348	598	175				
U Q						298	364	410	420	436	448	456	452	452	444	428	404	376						
L Q						230	324	376	400	408	430	440	444	428	424	402	384	228						

IONOSPHERIC DATA STATION Wakkanai

AUG. 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					B	180	232	276	288	312	304	A	A		324	300	296	252	176	A	A			
2					B 256	A	232	264	U A 288	304	284	U A 284	A	348	316	312	288	240	180	A	A			
3					240	168	228	284	284	284	304	304	304	304	320	316	284	240	192	R	A			
4					A	188	228	260	288	288	320	292	320	324	324	304	256	236	184	A	A			
5					B	180	216	260	288	304	296	308	328	328	328	312	284	252	188	A	A			
6					A	176	224	264	296	288	312	316	A	340	324	312	284	280	A	188	A			
7					A	168	224	272	292	312	312	312	R	292	A	272	288	256	188	A	A			
8				156	B	A	232	280	292	320	B	292	B	348	344	324	292	U A 252	A	A	A			
9					232	176	232	288	288	296	A	A	292	340	340	324	296	296	228	A	A			
10					200	180	232	268	304	316	316	296	296	276	348	316	296	252	192	A	A			
11					184	168	232	268	284	296	296	284	308	324	332	316	300	240	168	A				
12						A	232	284	284	312	328	308	U R 264	A	A	A	A	244	204	A				
13					A	A	228	272	300	320	320	A	272	316	300	A	C	248	A	A 836				
14					232	A	232	276	292	296	296	A	A	A	A	296	296	248	A	A				
15					B	A	212	280	288	312	288	A	B	A	A	A	A	A	A	A				
16					A	172	224	264	280	280	A	A	A	336	336	304	276	260	A	A				
17					A	A	220	272	284	308	308	316	316	U R 292	328	320	288	236	A	A				
18					A	184	204	280	304	A	328	336	R 328	332	316	304	288	240	A	A				
19					204		208	248	252	296	A	A	A	A	A	A	288	A	A	A				
20					A	228	224	256	292	A	268	284	304	328	316	A	280	224	196	A				
21					A	A	A	248	292	A	324	2 163	340	A	312	292	260	232	A	B				
22					196	176	220	252	288	288	A	A	A	320	312	288	280	228	A	A				
23					B	A	224	A	276	296	A	A	A	A	316	A	A	A	160	A				
24					B	A	196	220	272	304	324	292	296	308	296	296	272	220	A	A				
25					184		200	256	A	272	A	R 328	304	A	U R 292	A	A	A	A	A				
26					220	200	220	248	288	296	296	280	A	316	A	A	A	220	180	208				
27					B	208	176	216	276	A	A	A	316	344	304	304	272	212	A	A				
28					B	B	208	244	296	324	A	A	336	352	316	304	272	212	A	A				
29							208	268	292	320	320	312	312	296	336	A	A	232	A	A				
30					B	A	192	256	308	280	356	352	352	340	292	300	284	208	A	A				
31					A	8 126	240	284	296	320	320	348	340	320	324	300	284	232	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT				1	10	16	30	30	30	27	22	20	19	23	25	22	24	27	13	3				
MED				156	212	178	224	266	288	304	312	306	312	324	320	304	284	240	188	208				
U Q					232	186	232	276	292	312	320	316	328	340	330	316	290	252	194	A 836				
L Q					196	170	208	256	284	288	296	288	296	308	312	300	278	228	178	188				

AUG. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	30	27	26	24	E B 15	60	J A 38	J A 74	95	65	J A 86	J A 58	42		36	38	32	30	25	47	J A 50	J A 57	J A 102	39
2		J A 24	J A 24	J A 27	J A 18	J A 24	J A 211	73	J A 73	80	49	J A 55	42	J A 86	38	38	38	J A 45	J A 32	J A 57	J A 31	23	23	J A 35
3	J A 36	J A 51	34	25	J A 27	J A 29	56	63	70	70	52	116	J A 41	59	65	38	75	107	J A 55	G 12	E B 15	E B 16	24	20
4	40	57	57	26	34	J A 98	J A 50	57	39	34	J A 52	J A 121	J A 77	64	64	J A 57	36	39	49	J A 134	J A 126	37	64	J A 49
5	50	20	E B 16	E B 16	E B 16	J A 23	J A 32	J A 36	J A 43	J A 107	56	J A 58	J A 46	J A 40	41	37	79	58	J A 52	J A 37	J A 65	J A 107	J A 99	J A 29
6	J A 63	34	J A 209	25	30	J A 167	J A 63	J A 52	J A 52	J A 65	J A 44	J A 39	J A 64	45	45	41	57	J A 58	J A 70	32	32	26	23	34
7	27	J A 49	59	J A 41	J A 52	24	J A 82	60	60	J A 41	J A 55	62	J A 97	64	J A 37	43	43	J A 85	81	107	51	53	J A 145	J A 103
8	J A 29	J A 50	33	J A 31	E B 15	21	45	J A 85	73	J A 84	J A 61	J A 104	J A 43	J A 52	64	J A 163	J A 128	J A 149	106	J A 139	J A 142	J A 118	46	J A 53
9	J A 86	43	38	J A 36	33	J A 33	J A 51	70	56	95	63	J A 67	45	41	48	J A 62	J A 43	J A 101	88	85	84	62	J A 55	47
10	26	J A 50	25	27	30	J A 35	J A 108	J A 52	59	J A 45	61	48	J A 37	J A 35	39	J A 143	J A 159	116	75	58	J A 49	J A 48	E B 15	J A 180
11	34	24	J A 88	J A 31	28	39	J A 51	60	J A 119	35	J A 42	58	J A 118	J A 45	40	J A 57	86	J A 65	87	68	J A 123	J A 32	25	45
12	J A 39	J A 51	27	J A 52	J A 109	39	J A 110	46	J A 196	J A 253	J A 117	J A 256	J A 158	68	J A 41	J A 248	37	64	J A 57	J A 134	J A 42	J A 102	J A 62	68
13	72	J A 162	J A 41	J A 50	32	J A 30	J A 52	93	J A 111	J A 55	70	62	43	J A 39	59	56	C	J A 57	J A 63	G 82	47	J A 101	67	J A 51
14	41	20	25	47	J A 40	36	J A 64	34	J A 87	52	78	J A 83	70	64	55	39	56	51	48	31	J A 75	J A 77	42	42
15	J A 102	J A 50	45	27	24	20	J A 57	J A 81	J A 73	J A 44	J A 45	J A 55	44	J A 61	59	J A 32	63	39	31	30	J A 86	J A 64	J A 56	70
16	48	J A 41	27	25	23	27	J A 32	J A 33	39	71	56	J A 105	J A 94	J A 68	95	J A 110	J A 44	J A 89	J A 49	J A 106	J A 120	48	42	32
17	35	26	29	24	24	38	J A 36	59	J A 61	51	J A 82	40	38	95	39	71	77	58	47	115	58	69	J A 100	64
18	94	43	J A 127	38	38	19	81	34	J A 51	J A 103	J A 51	39	G 37	37	37	38	47	71	58	J A 77	J A 47	58	J A 121	41
19	J A 42	40	J A 28	J A 30	J A 30	J A 28	48	J A 121	J A 118	J A 44	J A 59	J A 89	J A 106	95	64	51	40	J A 79	J A 50	J A 168	66	55	27	28
20	J A 28	33	30	30	30	J A 30	42	J A 39	61	J A 41	45	J A 41	J A 38	G 40	G 39	J A 31	34	J A 28	G	22	25	38	30	47
21	36	32	J A 30	J A 30	31	J A 37	J A 98	50	J A 43	41	36	G 41	J A 56	38	39	J A 35	33	J A 27	30	E B 16	34	26	26	42
22	26	24	26	39	E B 15	24	27	J A 39	J A 39	49	J A 46	J A 71	45	37	35	38	35	42	44	J A 33	26	32	E B 16	E B 16
23	22	40	J A 104	23	E B 15	38	34	46	50	G 34	57	J A 40	56	53	53	44	J A 51	56	25	42	77	58	58	J A 64
24	J A 49	38	24	26	E B 15	J A 31	28	J A 33	J A 38	38	G	J A 45	J A 40	G 40	40	G 36	J A 59	50	52	42	50	45	J A 46	32
25	32	30	36	27	25	E B 16	J A 27	35	38	64	49	45	46	40	J A 42	51	116	51	41	J A 50	30	33	J A 50	J A 53
26	56	59	70	57	40	32	26	J A 37	40	J A 42	35	41	J A 37	43	45	45	34	28	24	32	J A 74	J A 41	23	34
27	24	24	25	E B 15	E B 15	27	J A 29	J A 29	36	44	J A 37	J A 39	37	J A 62	36	36	J A 44	55	55	38	J A 79	J A 50	J A 65	33
28	38	27	25	E B 16	E B 16	E B 15	25	J A 35	36	48	50	56	J A 76	41	37	38	34	40	53	55	50	J A 107	J A 107	J A 107
29	39	E B 16	E B 16	J A 18	32	20	40	41	J A 39	53	59	J A 36	43	34	41	41	35	32	J A 25	42	58	J A 32	48	36
30	32	26	24	E B 15	E B 16	J A 32	J A 47	42	J A 35	J A 35	G	G 40	G 40	G 40	44	41	G 36	30	41	J A 49	56	J A 84	J A 64	58
31	J A 50	36	23	59	J A 68	G 33	52	48	44	J A 58	J A 47	J A 75	J A 46	42	J A 100	J A 42	J A 43	J A 37	J A 28	J A 124	J A 52	J A 49	44	28
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	30	31	31	31	31	31	31	31
MED	38	36	29	27	28	30	J A 48	48	J A 52	51	52	J A 56	J A 45	44	41	41	44	55	49	50	52	50	48	42
U Q	50	J A 50	45	38	33	37	J A 63	63	J A 73	70	61	J A 75	J A 70	64	59	J A 57	63	J A 71	58	J A 106	J A 77	J A 69	J A 65	58
L Q	30	26	25	24	E B 16	24	32	J A 36	39	41	45	41	40	40	39	38	36	39	31	33	42	33	26	33

AUG. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG.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	20	16	E B 16	E B 16	E B 15	24	31	A A 74	A A 95	A A 65	44	36	36		34	34	31	28	22	22	18	29	A A 102	20
2		E B 15	E B 16	E B 16	E B 15	22	25	A A 73	35	A A 80	36	36	35	36	34	33	30	42	29	30	22	16	E B 16	24
3	21	28	19	16	G 16	26	A A 56	E A 45	43	44	44	48	34	45	A A 65	35	A A 75	E B 58	29	G 11	E B 15	E B 16	E B 15	E B 15
4	29	A A 57	32	15	18	G 18	24	36	34	32	36	A A 121	36	A A 64	A A 64	32	29	34	A	22	54	21	24	16
5	29	16	E B 16	E B 16	E B 16	G 16	28	31	A A 43	36	42	36	A A 46	36	36	G 31	A A 79	A A 58	31	22	21	E B 17	16	E B 16
6	22	20	17	E B 16	16	29	A A 63	A A 52	33	33	36	36	A A 64	36	A A 45	A A 41	A A 57	A A 58	A A 70	G 19	E B 16	E B 16	16	21
7	15	20	E B 17	E B 15	E B 16	20	A A 82	A A 60	A A 60	A A 41	A A 55	A A 62	A A 97	38	35	35	32	A A 85	A A 81	A A 107	37	32	29	24
8	15	28	16	16	E B 15	20	33	A A 85	44	45	A A 61	A A 104	35	45	40	42	A A 128	A A 149	44	41	A A 142	A A 118	32	31
9	E A 38	29	22	16	E B 16	30	35	A A 70	34	A A 95	45	46	41	40	45	45	38	48	29	A A 85	A A 84	E A 50	36	20
10	E B 16	16	E B 16	E B 16	G 20	23	A A 108	31	A A 59	37	44	34	35	34	37	A A 143	A A 159	A 42	37	30	22	30	E B 15	E B 16
11	16	E B 16	19	24	E B 15	E A 29	30	29	32	34	38	37	37	36	37	35	31	28	30	22	E B 15	E B 15	15	17
12	E B 57	19	E B 16	E B 15	16	29	31	34	36	37	41	41	32	49	36	37	31	44	28	29	E B 16	20	24	19
13	29	29	22	17	16	27	35	A A 93	A A 111	48	47	A A 62	36	36	45	42	C	41	35	G 33	17	16	20	19
14	19	15	E B 16	E B 15	G 17	28	28	G 28	36	40	39	35	41	A A 64	40	34	46	41	36	28	28	27	23	21
15	19	19	23	17	14	E B 88	38	A A 81	44	41	35	40	40	A A 61	A A 59	32	31	28	20	20	31	29	22	A A 70
16	22	16	E B 16	16	E B 16	G 17	28	30	35	56	44	38	38	38	A A 95	A A 110	40	33	40	39	20	E B 16	22	E B 16
17	16	E B 16	16	E B 16	E B 15	27	33	40	A A 61	44	37	37	35	35	35	A A 71	A A 77	A	30	30	18	18	22	28
18	E B 17	16	17	16	18	G 18	29	32	36	48	37	34	G 35	35	35	32	33	31	20	28	29	23	23	17
19	20	20	20	E B 15	G 18	23	30	30	31	34	36	A A 89	40	35	35	30	G 28	35	27	A A 168	18	30	E B 17	17
20	20	16	E B 15	19	E B 15	G 22	28	31	42	38	37	37	36	G 34	G 34	30	29	26	G	E B 16	E B 16	E B 16	16	18
21	21	16	16	20	16	18	22	35	34	31	35	G 33	G 34	34	33	32	29	24	18	E B 16	18	E B 14	E B 15	20
22	E B 16	E B 16	E B 16	E B 16	E B 15	G 16	25	36	33	33	35	35	35	35	G 30	30	G 28	28	31	16	E B 16	E B 16	E B 16	E B 16
23	E B 16	16	15	16	E B 15	E B 15	27	34	35	G 32	34	36	40	38	33	30	30	30	21	18	18	20	22	44
24	20	19	15	15	E B 15	17	24	28	34	34	G	36	34	G 32	32	G 32	28	G 15	20	22	16	20	22	21
25	E B 16	16	16	16	G 16	E B 16	22	26	29	52	34	37	G 30	34	36	35	27	24	16	17	E B 16	E B 16	16	16
26	20	29	17	17	G 18	G 19	G 21	29	34	34	34	39	34	33	33	31	28	25	G 17	G 20	29	16	16	15
27	E B 15	E B 15	E B 15	E B 15	E B 15	21	22	26	29	32	34	34	35	35	33	32	34	30	28	24	22	17	31	19
28	16	E B 16	16	E B 16	E B 16	E B 15	22	28	31	35	34	36	38	40	34	G 30	34	30	28	22	22	A A 107	22	20
29	20	E B 16	E B 16	16	16	18	28	28	36	37	A	35	37	32	G 33	30	28	24	23	34	20	20	15	22
30	16	16	E B 16	E B 15	E B 16	27	42	29	33	33	G	G 36	G 35	G 34	34	31	G 28	26	22	19	30	19	18	18
31	16	16	E B 16	16	A A 68	G 16	30	36	37	43	41	A A 75	42	40	51	35	35	28	22	52	16	25	19	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	31	31	31	31	31	31	31	30	31	31	30	31	31	30	30	30	31	31	31	31	31
MED	19	16	16	16	E B 16	20	29	33	35	37	37	37	36	36	35	33	31	30	28	22	20	20	20	19
U Q	21	20	17	16	16	27	35	A A 52	A A 43	45	44	A A 46	40	40	A A 45	37	A A 40	A 42	31	33	29	29	23	21
L Q	E B 16	E B 16	E B 16	E B 15	E B 15	17	25	29	33	34	35	36	35	34	34	31	29	28	21	19	E B 16	E B 16	E B 16	E B 16

AUG.2016 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Wakkanai

AUG. 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	16	15	16	14	15	15	15	15	15	16	17	16	16		18	21	16	14	10	16	16	15	16	16
2		15	16	16	15	15	15	15	15	15	15	17	18	15	16	15	15	15	14	15	15	15	15	15
3	15	15	15	15	15	11	11	15	14	18	18	16	23	17	16	16	14	14	11	10	15	16	16	14
4	15	15	15	15	14	13	16	11	14	17	17	17	22	22	17	17	13	15	11	15	16	16	16	16
5	16	16	16	16	16	14	16	14	14	16	14	21	28	20	21	16	16	14	10	15	13	17	16	16
6	14	16	15	16	15	13	14	14	14	16	17	30	28	27	22	18	16	14	14	16	16	15	16	16
7	15	16	16	15	15	13	14	14	14	22	22	22	22	16	18	21	17	14	12	13	12	15	15	15
8	14	15	10	16	15	16	16	16	17	20	30	21	29	22	23	18	16	14	12	16	16	16	15	16
9	16	16	16	16	15	15	15	14	16	19	29	21	18	23	17	14	18	14	15	15	16	16	16	16
10	16	15	16	16	15	14	15	15	16	17	28	17	19	17	23	21	16	14	11	16	15	15	15	16
11	16	16	15	15	15	14	16	14	16	15	21	21	20	20	20	16	15	16	12	14	16	16	15	15
12	57	15	16	15	15	15	16	17	15	21	18	19	22	29	21	18	16	12	12	15	16	16	15	13
13	15	16	16	16	15	16	15	15	15	28	20	30	22	22	22	15	C	16	16	15	14	16	16	14
14	15	15	16	15	15	15	16	16	14	16	22	28	28	29	19	16	15	15	15	10	16	16	14	14
15	15	15	16	16	14	88	15	15	15	17	16	20	29	18	18	15	13	13	10	13	16	16	16	16
16	16	16	16	16	15	10	16	15	16	16	28	19	18	17	17	16	16	16	17	16	16	16	16	16
17	16	16	16	16	15	15	16	14	14	16	22	17	21	16	16	15	15	14	16	16	17	16	16	16
18	17	16	16	16	15	15	15	15	15	15	16	21	16	18	17	17	13	13	16	17	17	15	16	15
19	10	15	16	15	15	16	16	14	16	16	14	18	20	19	16	16	16	14	16	16	15	15	16	16
20	15	15	15	14	15	16	13	14	15	14	16	15	17	18	16	16	10	15	15	16	15	16	16	16
21	14	14	16	16	16	16	16	15	15	15	21	21	17	17	20	16	14	14	14	16	16	15	15	14
22	14	15	16	16	15	10	12	15	15	16	16	16	16	27	21	16	14	11	16	10	16	16	16	16
23	14	14	14	16	15	15	15	16	17	17	18	21	16	16	16	15	14	10	10	14	16	11	16	15
24	16	16	12	15	15	12	10	11	16	16	16	14	17	21	15	18	14	14	13	16	15	16	16	16
25	16	15	15	16	12	16	11	14	18	16	16	16	21	14	15	15	15	11	14	16	16	16	15	15
26	16	14	16	16	15	15	11	10	13	16	16	16	21	21	16	15	16	10	10	15	15	15	16	15
27	15	15	15	15	15	16	11	10	14	16	12	18	16	20	16	16	11	14	14	14	16	16	16	16
28	16	16	16	16	16	15	15	15	15	16	16	16	20	19	16	16	15	10	15	15	15	15	17	17
29	16	16	16	16	15	15	11	12	10	15	16	19	17	21	16	16	15	15	15	15	16	16	15	15
30	16	16	14	15	16	16	14	16	16	16	16	20	21	22	22	16	14	15	15	11	16	16	16	16
31	16	16	16	16	11	16	16	14	17	17	20	20	28	16	16	16	15	15	15	16	15	16	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	30	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	30	31	31	31	31	31	31	31
MED	16	15	16	16	15	15	15	15	15	16	17	19	20	20	17	16	15	14	14	15	16	16	16	16
U Q	16	16	16	16	15	16	16	15	16	17	21	21	22	22	21	17	16	15	15	16	16	16	16	16
L Q	15	15	15	15	15	14	13	14	14	16	16	16	17	17	16	15	14	13	11	14	15	15	15	15

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	339	318	326	335	311	318	327	A	A	A	359	322	380		323	331	313	312	316	316	346	322	A	F 332
2		315	315	296	320	349	302	A	368	A	320	344	308	G	306	326	343	314	329	341	340	324	327	311
3	314	321	311	290	311	284	A	301	304	332	261	271	290	327	A	284	A	296	315	296	316	284	295	300
4	336	A	310	324	272	254	241	272	391	R	309	A	R	A	A	281	280	302	308	323	306	302	291	317
5	295	311	297	273	283	294	281	R	A	R	295	G	A	G	293	301	A	A	301	312	R	334	278	338
6	303	306	271	294	296	278	A	A	300	305	G	G	A	R	A	A	A	A	A	286	328	298	322	336
7	299	300	306	280	284	285	A	A	A	A	A	A	A	R 245	R 280	U R 278	305	A	A	A	297	299	281	289
8	315	305	302	319	308	271	292	A	315	347	A	A	R 294	291	312	314	A	A	208	242	A	A	310	249
9	325	304	278	275	283	280	299	A	306	A	311	290	336	294	292	295	317	315	323	A	A	297	319	327
10	344	F 299	255	290	290	327	A	G	A	256	301	G	G	G	G	A	A	222	284	298	294	311	299	356
11	301	311	289	303	289	322	311	326	G	G	U R 307	285	G	265	316	306	350	317	315	302	293	308	294	292
12	280	302	285	296	275	342	333	333	344	306	319	312	300	305	303	324	335	226	325	326	313	313	327	292
13	301	309	296	F 271	F 326	322	219	A	A	307	341	A	262	266	297	311	C	323	277	314	274	337	298	311
14	307	F 262	F 271	F 283	F 302	301	325	296	322	345	338	294	301	A	326	301	307	321	330	329	326	313	306	302
15	290	334	321	F 284	F 302	338	331	A	355	338	336	327	305	A	A	305	314	316	320	322	318	318	315	A
16	309	307	320	F 306	F 295	284	323	311	314	358	312	338	346	308	A	A	305	308	320	325	315	308	333	312
17	307	311	308	309	V 304	271	288	313	A	302	341	305	323	317	284	A	A	305	319	330	315	299	312	276
18	304	304	294	296	316	331	306	312	348	359	357	310	296	296	278	312	322	R	316	314	298	325	320	320
19	F 311	308	299	330	313	330	342	356	238	333	343	A	291	344	332	320	314	327	321	A	331	337	358	302
20	293	V 304	F 267	F 260	F 282	307	309	351	346	338	299	293	320	301	312	336	337	332	326	315	308	310	324	309
21	301	289	289	315	326	361	355	345	321	357	328	307	313	336	343	302	326	339	315	313	310	299	330	315
22	316	288	297	311	330	340	324	G	323	285	334	315	315	324	335	317	335	325	312	318	304	323	341	323
23	321	300	303	313	312	350	375	342	345	369	306	349	349	329	319	335	340	337	333	309	302	325	311	R 221
24	294	305	306	305	325	307	281	282	320	362	G	359	310	314	293	334	320	311	329	314	309	281	302	294
25	315	F 336	F 288	F 290	F 258	F 340	313	343	341	329	348	240	328	325	316	318	344	341	351	305	321	312	292	309
26	300	308	306	316	304	325	328	342	G	279	326	314	320	296	313	341	321	347	331	317	293	298	308	310
27	311	305	311	317	331	333	333	340	323	346	367	310	320	324	316	311	323	342	335	331	313	330	304	305
28	F 301	F 296	293	F 291	F 306	F 330	327	326	346	335	362	323	328	332	312	337	326	334	313	304	R 312	A	349	J R 203
29	F 273	F 288	F 290	F 300	F 294	F 329	330	330	328	357	356	339	353	332	343	319	321	319	317	307	322	332	340	329
30	283	277	303	312	315	357	366	321	309	355	366	346	316	323	319	323	333	345	313	311	313	325	332	334
31	297	289	295	310	A	335	313	340	341	382	323	A	289	316	G	315	330	326	316	291	314	313	305	290
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	31	30	31	27	22	25	25	29	25	27	26	26	27	24	26	29	28	28	29	30	30
MED	304	305	297	300	304	325	323	326	323	338	326	310	313	311	312	315	322	320	317	314	313	313	312	310
U Q	315	311	308	313	315	338	331	342	346	357	346	332	328	325	319	326	335	334	328	322	320	325	327	323
L Q	297	299	289	290	289	285	299	301	308	306	306	288	294	291	293	302	314	311	313	304	303	299	299	292

AUG. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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							L	A	A	A	A	427	392		394	L	385	372	L					
2						388	359	A	407	A	L	420	L	408	U R 413	408	L	A	L					
3					A	L	A		A	A	A	A	L	A	A	L	A	A	351	L				
4						335	L	A		441	415	A	409	A	A	406	381	394	A	L				
5					L	L	388	414	A	431	A	408	A	379	L	L	A	A	A	A				
6					L	A	A	A	421	401	416	434	A	R 357	A	A	A	A	A	L				
7					L	340	A	A	A	A	A	A	A	378	L	L	L	A	A	A				
8					380	355	L	A	L	A	A	A	L	A	A 311	A	A	A	A	A	A			
9					L	A	L	A	329	A	L	A	L	394	A	A	346	A		A	A			
10					L	L	A	346	A	392	A	390	402	398	L	A	A	A	A					
11					L	A	A	362	406	423	L	425	426	431	358	391	L	L	A	L				
12							L	L	L	408	410	385	400	A	L	L	L	A	A					
13						A	A	A	A	A	A	A	378	378	A	A	C	A						
14						A	L	374	383	395	394	L	L	A	L	L	A	A						
15							A	A	A	L	L	L	L	A	A	L	L	354	L					
16						L	359	L	L	A	A	L	373	L	A	A	329	A	A					
17						L	L	A	A	A	386	L	380	402	393	A	A	A	A					
18						L	L	386	387	L	392	436	400	365	379	385	372	L	L					
19							A	368	L	L	416	A	L	L	L	L	372	L		A				
20							L	368	A	L	L	L	L	362	376	365	L	396						
21								L	377	392	379	391	399	406	385	L	364	L	L					
22							L	345	380	396	393	378	L	393	370	367	378	L						
23						367	L		L	390	392	L	385	L	L	L	392	L						
24							377	367	357	397	381	L	423	401	375	L	379	359						
25							L	358	L	A	431	423	L	383	370	L	363	398						
26					L	L	413	411	415	407	408	405	390	423	361	379	384	L						
27							370	395	358	409	399	427	412	419	L	L	356							
28							359	392	430	413	384	L	L	L	L	L	410	L						
29							L	L	366	397	A	400	402	L	370	L	L	L	A	A				
30								L	L	L	408	401	L	383	377	371	L	L						
31					A		A	A	355	A	A	A	A	L	L	L	L	A		A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	5	7	13	14	15	16	15	15	18	14	8	14	6	1					
MED					380	355	370	368	382	401	396	408	400	394	376	382	375	383	351					
U Q						378	388	394	407	413	412	427	409	406	385	398	384	396						
L Q						338	359	360	358	395	389	391	385	378	370	369	363	359						

IONOSPHERIC DATA STATION Wakkanai

AUG. 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							290	A	A	A	274	316	316		316	316	342	296	296					
2						268	334	A	238	A	314	300	344	G 374	336	300	252	296	258	A 258				
3					252	372	A		334	296	460	386	348	298	A	384	A	A	272	272				
4						456	428	458		R 342		A	R	A	A	436	420	328	306	240				
5					344	318	388	R	A	R 388		G	A	G	392	376	A	A	A	242				
6					332	338	A	A	392	376	G	G	A	376	A	A	A	A	A	290				
7					326	370	A	A	A	A	A	A	A	580	400	392	326	A	A	A				
8					282	420	392	A	346	A	A	A	354	384	330	320	A	A	E A 584	E A 424	A			
9					308	362	352	A	352	A	340	398	296	356	350	324	308	A 324		A	A			
10					336	296	A	G	A	482	346	G	G	G	G	A	A	A 576	A 372					
11					336		278	390	G	G	348	374	G	356	344	344	288	276	258	276				
12							258	266	262	344	306	302	310	362	334	286	246	A	A					
13						A	A	A	A	348	296	A	484	472	400	338	C	296						
14						262	306	334	302	270	296	382	358	A	308	340	320	274						
15							274	A	242	264	292	312	330	A	A	342	308	294	262					
16						340	326	344	314	A	348	284	284	342	A	A	338	274	260					
17						398	382	286	A	334	296	344	344	338	378	A	A	304	A					
18						260	310	294	258	258	240	322	354	338	410	314	290	258	266					
19							242	254	506	286	268	A	380	288	284	294	288	288		A				
20							252	268	268	286	354	384	306	338	336	286	272	252						
21								252	286	256	306	342	336	296	276	328	294	272	254					
22							294	G	334	392	300	334	326	310	300	304	264	282						
23						220	220	218	270	230	328	272	272	280	326	284	252	262						
24							352	412	286	260	G	260	248	328	364	280	280	246						
25							260	264	270	284	268		288	310	314	314	264	244						
26					284	272	318	256	G	414	318	370	328	374	336	290	300	252						
27							296	266	308	288	252	328	324	298	328	318	290							
28							280	232	220	284	270	302	302	280	290	270	270	278						
29							278	278	278	246	250	280	270	296	296	306	268	270	238	242				
30								238	316	252	248	282	294	316	300	304	268	254						
31					A		A	270	282	244	308	A	396	322	G	300	300	246		302				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					9	15	23	21	24	23	29	24	27	27	26	27	24	24	12	9				
MED					326	338	296	270	294	286	306	331	328	338	335	314	289	275	262	265				
U Q					336	372	352	367	340	348	347	383	354	374	378	340	308	296	301	296				
L Q					283	268	274	255	269	258	272	301	296	298	308	294	268	256	258	242				

AUG. 2016 h'F2 (KM)

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	210	242	272	272	252	256	248	A	A	A	A	176	182		168	200	200	200	218	232	214	214	A	236
2		230	246	258	226	202	214	A	196	A	H 170	178	186	182	174	186	186	A	A		222	222	222	252
3	220	A	262	206	A	240	A	A	A	A	A	A	196	A	A	210	A	A	A 226	A	226	238	258	258
4	228	A	A	256	242	226	218	A	212	182	188	A	194	A	A	182	202	230	A	230	252	Q 270	270	250
5	300	256	268	268	284	224	198	182	A	182	A	196	A	200	210	196	A	A	A	A	252	216	Q 248	202
6	272	278	278	286	274	A	A	A	204	380	188	184	A	204	A	A	A	A	A	212	260	260	224	244
7	276	256	266	282	A 276	218	A	A	A	A	A	A	A	224	208	208	194	A	A	A	312	312	306	268
8	220	268	256	256	254	218	216	A	A	A	A	A	E A 216	A	A	A	A	A	A	A	A	A	264	A
9	A	A	E A 264	E A 264	268	A	A	A	214	A	A	A	214	220	A	A	232	A	248	A	A	A	E A 248	218
10	214	Q 246	282	270	282	242	A	216	A	216	A	190	190	184	E A 214	A	A	A	A	A	232	A	238	202
11	254	254	288	A 268	A 284	A	A	198	200	186	186	186	186	196	E A 236	204	196	196	A	234	244	236	Q 238	238
12	264	258	260	254	290	254	210	220	212	186	204	204	192	A	198	222	196	A 632	A	230	246	246	242	278
13	A	272	Q 262	Q 290	226	A	A	A	A	A	A	A	204	204	A	A	C	A	362	242	266	222	240	252
14	268	Q 282	Q 282	Q 270	270	A	222	192	194	202	202	170	E A 248	A	E A 242	200	A	A	246	220	220	246	234	266
15	270	236	252	Q 252	Q 252	234	A	A	A	188	182	174	176	A	A	198	198	220	214	228	234	250	226	A
16	244	244	220	Q 230	Q 268	230	214	200	214	A	A	182	202	200	A	A	234	A	A	234	236	236	218	238
17	276	272	250	236	238	A	E A 324	A	A	A	200	176	200	184	196	A	A	A	A	234	232	240	256	290
18	280	242	238	248	228	208	216	196	206	208	198	H 168	190	194	194	194	200	214	214	224	242	236	254	242
19	244	248	248	222	262	242	A	210	210	190	176	A	184	200	198	198	202	214	256	A	238	238	192	238
20	268	Q 256	Q 280	Q 262	240	240	A	200	A	188	174	196	202	192	198	198	216	182	224	238	238	238	238	238
21	272	Q 274	248	248	236	208	208	220	186	180	186	172	172	172	190	190	190	202	202	238	238	250	214	246
22	230	260	278	250	238	234	196	236	186	186	186	186	172	172	198	198	184	224	250	250	234	234	202	214
23	226	254	254	232	242	194	184		A	198	164	176	208	174	174	190	174	A	218	240	258	246	246	A
24	286	Q 274	Q 238	246	228	246	216	200	A	200	188	202	184	174	208	210	210	202	234	230	246	246	266	238
25	254	222	Q 234	Q 234	Q 218	228	198	190	182	A	170	170	164	190	202	212	188	208	208	242	250	250	218	246
26	272	A	214	258	202	A	196	184	184	176	176	204	198	190	200	184	196	206	238	238	298	232	256	256
27	260	260	264	238	196	204	204	184	200	186	220	176	188	196	196	196	212	228	222	222	222	222	294	238
28	266	270	Q 254	Q 242	Q 224	224	212	190	184	190	H 162	H 168	196	174	192	192	194	224	240	260	206	A	206	236
29	252	Q 242	250	248	234	240	212	196	212	200	A	196	172	184	196	188	212	212	A	A	230	230	218	224
30	258	Q 280	280	242	218	234	234	200	200	188	188	178	178	176	196	196	202	212	238	244	272	214	220	232
31	266	280	280	242	A	208	A	A	236	A	A	A	A	264	A	236	236	A	248	A	240	218	236	274
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	30	31	29	24	20	18	19	20	20	23	27	24	22	24	23	17	19	21	29	27	30	28
MED	262	256	260	251	242	229	212	199	200	188	186	178	189	191	197	198	200	212	234	234	238	238	238	240
U Q	272	Q 272	278	268	269	240	217	210	212	200	193	196	202	200	208	206	212	224	248	241	252	246	256	254
L Q	237	244	248	242	227	213	201	190	186	186	175	174	182	179	194	191	194	202	218	229	231	222	220	236

AUG. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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					B	104	104	102	100	100	100	A	A		100	100	100	100	94	A	A			
2					B	A	102	102	92	92	92	92	A	102	98	98	98	98	98	A	A			
3					106	96	100	100	100	100	100	100	100	100	100	100	100	102	102	118	A			
4					A	108	108	100	100	100	100	100	100	100	100	100	100	100	100	A	A			
5					B	116	116	114	108	108	108	108	108	98	106	106	106	98	106	A	A			
6					A	104	104	104	104	104	104	104	A	88	98	98	98	106	A	106	A			
7					A	106	98	98	98	98	98	86	100	100	A	100	100	100	100	A	A			
8					B	A	110	110	110	102	B	96	B	106	106	106	106	106	A	A	A			
9					118	118	108	100	100	100	A	A	100	100	100	96	102	102	108	A	A			
10					120	106	106	106	106	106	100	86	94	94	94	102	102	104	104	A	A			
11					118	106	100	100	100	100	100	82	92	102	102	102	102	96	96	A				
12						A	96	96	96	120	102	90	102	A	A	A	A	102	102	A				
13					A	A	108	96	102	98	98	A	92	92	92	A	C	98	A	A				
14					114	A	114	106	106	96	96	A	A	A	A	96	100	100	A	A				
15					B	A	100	100	100	100	96	A	B	A	A	A	A	A	A	A				
16					A	102	102	102	102	102	A	A	A	96	100	100	100	100	A	A				
17					A	A	100	100	100	100	100	100	100	92	98	98	102	102	A	A				
18					A	118	92	94	94	A	100	100	100	100	100	100	100	110	A	A				
19					112		110	100	100	100	A	A	A	A	A	A	100	A	A	A				
20					A	114	108	108	108	A	102	102	92	104	104	A	100	112	112	A				
21					A	A	A	112	102	A	102	A	102	A	102	102	102	102	A	B				
22					G	120	102	102	102	102	A	A	A	102	102	102	102	102	A	A				
23					B	A	112	A	102	102	A	A	A	A	102	A	A	A	94	A				
24					B	A	104	104	104	104	104	102	102	110	110	104	104	96	A	A				
25					96		96	104	A	104	A	104	96	A	96	A	A	A	A	A				
26					98	98	98	98	98	98	98	98	A	98	A	A	A	98	106	100				
27					B	106	106	94	104	A	A	A	98	102	102	102	102	102	A	A				
28					B	B	102	102	112	112	A	A	112	112	112	112	112	108	A	A				
29							108	108	98	98	102	102	102	102	102	A	A	108	A	A				
30					B	A	108	108	108	102	102	102	104	104	98	104	104	104	A	A				
31					A	A	104	104	104	104	104	104	98	100	100	100	104	98	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					8	15	30	30	30	27	22	19	20	23	25	22	24	27	13	3				
MED					113	106	104	102	102	100	100	100	100	100	100	100	102	102	102	106				
U Q					118	116	108	106	104	104	102	102	102	102	102	102	103	104	106	118				
L Q					102	104	100	100	100	100	98	92	97	98	98	100	100	98	97	100				

AUG. 2016 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	94	94	94	94	B	110	106	92	94	94	94	94	94		96	96	100	106	100	100	100	100	100	94
2		94	Q 88	86	92	106	90	90	96	96	88	102	96	110	116	110	98	98	98	98	92	100	90	98
3	98	88	92	92	106	112	100	100	100	92	100	92	104	96	104	126	96	102	102	110	B	B	92	92
4	114	114	106	106	106	96	104	104	108	108	130	100	130	102	100	108	102	108	104	118	120	96	96	96
5	96	130	B	B	B	112	112	100	100	112	100	126	108	108	108	114	102	102	102	102	102	120	102	98
6	98	86	110	96	112	98	98	98	104	104	104	96	96	114	114	106	106	106	100	110	102	102	92	92
7	98	100	100	90	108	114	102	100	94	94	94	94	94	94	94	90	102	102	102	102	102	102	108	108
8	100	92	86	86	B	114	102	92	92	98	98	108	94	122	122	120	126	114	96	136	112	134	102	96
9	100	100	90	98	108	108	108	98	98	98	98	92	128	114	114	114	108	96	104	104	104	94	94	94
10	118	118	104	126	114	104	96	100	94	94	84	90	96	86	114	110	110	104	104	104	104	94	B	102
11	96	96	104	116	112	104	104	104	114	102	98	98	98	98	128	112	120	106	100	100	138	118	98	98
12	88	88	88	92	108	108	108	96	130	130	106	152	126	88	88	108	100	100	100	120	106	106	106	92
13	92	92	96	96	112	102	102	100	100	106	90	90	90	90	90	96	C	106	106	98	98	104	98	94
14	94	94	98	98	104	104	104	94	94	96	102	108	100	94	94	134	104	104	100	100	100	100	98	98
15	108	98	98	98	128	110	102	92	92	102	96	94	94	94	86	94	94	94	88	82	110	100	100	100
16	92	92	92	96	100	118	104	110	102	96	96	114	114	114	102	102	102	96	96	104	106	102	98	88
17	98	94	94	98	112	108	100	96	96	96	106	102	102	108	140	106	102	106	102	102	94	102	102	102
18	90	88	92	102	92	98	98	96	106	86	96	90	98	G	102	102	122	102	102	96	96	104	104	Q 92
19	80	80	80	88	98	102	92	90	90	98	98	98	108	108	98	98	98	98	106	108	108	94	94	94
20	94	94	94	94	94	112	100	100	92	92	100	90	92	92	102	88	104	120	G	82	82	98	98	98
21	88	88	88	88	88	102	102	102	92	100	146	96	96	94	98	110	110	112	112	B	96	96	96	96
22	90	90	90	80	B	134	102	96	96	96	96	96	96	158	178	96	98	98	98	98	98	106	B	B
23	94	94	98	98	B	90	126	98	98	104	104	80	80	84	84	84	84	84	84	96	96	100	100	100
24	100	90	90	90	B	110	104	104	104	92	G	98	98	168	96	114	114	100	100	98	102	102	102	94
25	86	86	86	86	86	B	100	100	100	86	102	98	94	94	94	94	88	88	110	104	104	104	104	92
26	92	96	92	92	88	88	88	88	100	100	100	100	100	94	94	94	94	94	100	90	98	98	102	92
27	78	82	86	B	B	98	98	98	98	98	98	92	136	100	108	108	108	98	98	98	98	98	90	90
28	100	86	86	B	B	B	98	98	98	98	98	98	98	98	132	120	182	104	104	104	104	104	104	90
29	90	B	B	90	90	90	100	100	100	100	98	98	98	98	92	92	92	92	92	88	106	102	102	90
30	90	90	90	B	B	102	100	100	100	104	G	112	184	184	100	100	126	100	100	94	94	104	106	106
31	114	106	100	106	102	112	102	106	108	108	108	100	106	120	112	112	122	106	96	96	96	96	90	90
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	27	22	29	31	31	31	31	29	31	31	29	31	31	30	31	30	30	30	30	29	30
MED	94	93	92	94	105	106	102	98	98	98	98	98	98	98	102	106	102	102	100	100	102	102	100	94
U Q	100	96	98	98	112	112	104	100	102	104	103	102	108	114	114	112	110	106	104	104	106	104	102	98
L Q	90	88	88	90	92	100	98	96	94	94	96	92	94	94	94	96	98	98	98	96	96	98	95	92

AUG. 2016 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 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	F3	FF21	F1	FF11		C4	C3	C3	C5	C3	C2	L1	L2		C2	C1	C2	C2	C2	L3	L3	L4	L4	L4
2		F1	F1	F1	L1	C2	C2	C3	C2	C4	C2	C2	L1	C1	C1	C1	C1	C2	C2	C5	L4	F1	F1	F4
3	F4	F3	F2	F1	C2	C2	C4	C3	C3	C2	C2	CQ31	C1	CL22	C2	C2	C3	C6	C4	L1			F1	F1
4	F7	F7	FF42	F3	L3	L2	C4	C3	C2	C1	C1	C3	C2	C3	C2	C1	C1	C5	C7	L3	L2	F3	F4	F3
5	F3	F1				C1	C1	C1	C3	C2	C3	C1	C2	C1	C1	C1	C3	C3	C5	L4	L7	L6	F3	F2
6	F5	F4	FF13	F2	L3	L3	C4	C2	C2	C2	C1	C1	L2	C1	C1	C2	C2	C3	L3	L2	L1	F1	F1	F5
7	F1	F4	F3	F3	L1	C2	C5	C3	C3	C2	C2	C2	LC11	CQ21	C2	C2	CL22	C5	C6	CL62	C6	F9	F6	F4
8	FF12	F4	F2	F3		L1	C3	C3	C3	C2	C3	LC13	L1	C2	C1	LC12	LC24	LC26	L5	LL26	L6	FF13	F6	F5
9	F7	F3	F5	F2	C1	C3	C3	C3	LC12	C3	L2	L2	CL11	C1	C2	C2	C2	C4	C3	L8	L7	F6	F8	F4
10	F1	F2	F1	F1	C3	C3	C3	C3	C3	C2	C3	C2	C2	C2	C1	C2	C3	C6	CQ42	CQ72	C4	F4		F1
11	F1	F1	F2	F4	C1	C2	C4	C2	C1	C1	C1	C2	C1	C1	C2	C2	C2	C2	C5	L3	FF12	FF11	F2	F3
12	F3	F2	F3	F1	LL13	L3	LC12	C2	LC12	LC12	CL21	LLL12	LL22	L3	L2	L3	L1	C4	C2	LL21	F3	F5	F3	F3
13	F3	F4	F3	F2	L3	L2	C4	C6	C3	LC22	C3	C3	C2	C2	C3	C3		C5	C6	L4	F4	F3	F3	F3
14	F3	F1	F1	F1	C5	L2	C2	C2	C2	C2	C2	L2	L2	L2	L2	C1	C2	C3	C4	C3	F3	F3	F2	F4
15	FF13	F2	F3	F2	L1	C2	C4	C6	C4	C2	C2	C2	C2	C2	C2	LC11	L2	L3	L2	L2	L7	F6	F5	F9
16	F6	F2	F1	F1	C1	C3	C2	C2	C2	C2	C2	C2	L2	C2	C3	C3	C2	C6	F3	L7	FF16	F3	F4	F2
17	F2	F2	F2	FF11	C1	L2	C3	C6	C3	C2	C1	C2	C1	C1	C1	C4	C5	C3	C6	F4	F4	F4	F3	F3
18	F2	F3	F2	F2	L4	L1	C3	C2	C3	L2	LC11	C1	C1	C1	C1	C1	C2	C2	L3	L6	F2	F2	F2	F2
19	F5	F3	F2	F1	L2	L2	C3	C2	C2	C2	L2	L3	L2	L2	L2	L2	C2	L3	L5	L8	F4	F8	F1	F3
20	F4	F2	F1	F3	L2	L3	C2	C2	C3	C2	C2	C2	C1	C1	C1	L1	C1	C2		L1	FF11	FF11	F2	F4
21	F5	F4	F4	F4	L2	L3	L3	C2	C2	L1	C1	L1	C1	L1	C1	C2	C1	C2	L3		F3	F2	F2	F3
22	F3	F2	F2	F1		C1	C3	C2	C3	C1	L2	L2	L1	C1	C1	C1	C1	C2	L4	L3	F1	F1		
23	F1	F2	F1	F1		L1	C1	L3	C3	C2	L1	L2	L3	L3	L2	L2	L2	L2	C1	L2	F2	F2	F7	F7
24	F3	F3	F2	F1		L2	C2	C2	C2	C2		C2	C1	C1	C1	C1	C1	C6	C5	L5	F4	F3	F4	F3
25	F3	F3	F3	F2	C1		C2	C1	L1	C2	C1	C2	C2	C2	C2	L3	L2	L5	L2	L2	F2	F2	F3	F3
26	F3	F4	F3	F2	L3	L2	C2	C1	C2	C2	C1	C2	C1	C2	L2	L2	L1	C1	C2	C2	F4	F3	F1	F1
27	F1	F1	F1			C2	C3	C1	C1	L2	L2	L2	C1	C1	C1	C1	C2	C3	L4	L5	F3	F4	F5	F5
28	F2	F2	F1				C2	C2	C2	C2	L2	L2	C2	C2	C1	C1	C2	C2	L5	L3	F5	F5	F7	F4
29	F3			F1	L1	L1	C3	C1	C3	C2	C2	C2	C2	C1	C1	L2	L2	L3	L2	L3	FF12	F2	F2	F2
30	F2	F2	F1			L3	C8	C1	C2	C1		C1	C1	C1	C1	C1	C1	C2	L4	L3	F2	F3	F3	F1
31	F1	F1	F1	F3	L5	L3	C5	C3	C3	C2	C2	C2	C3	C2	C2	C2	C4	C2	C2	L6	F3	F3	F2	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																								

AUG. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 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 46	X 44	X 40	X 41	X 39															X 78	X 78	X 66	X 58	64
2	61	52	50	45	45															X 82	X 78	X 58	A	A
3	A	A	A	A	A															X 95	X 83	X 73	X 72	X 80
4	69	51	X 48	54	X 58	60														X 60	X 55	X 54	X 49	50
5	A	53	50	46	X 40															X 80	X 75	X 68	X 45	52
6	54	53	51	51	51															X 68	X 70	A	68	63
7	X 49	X 42	X 39	A	X 39	X 38														X 58	X 61	59	65	65
8	X 51	X 48	X 48	50	X 42															X 82	X 75	X 67	68	X 62
9	X 62	X 48	51	A	47															X 78	X 73	X 69	X 68	X 67
10	X 59	X 49	X 48	X 46	X 42															X 69	X 70	X 70	X 60	X 60
11	X 46	X 38	X 40	X 42	X 40															X 60	X 64	X 61	X 60	X 56
12	53	53	X 49	X 46	X 45															X 73	X 52	X 48	A	A
13	54	53	X 48	49	46															X 78	69	X 57	57	56
14	51	49	X 46	51	47															X 88	X 75	X 49	51	52
15	52	50	X 45	X 43	X 42															X 86	X 73	X 60	X 52	56
16	56	56	50	51	X 44															X 85	X 71	X 58	66	66
17	58	58	X 46	X 46	X 45															X 87	X 79	X 63	X 57	55
18	X 51	X 51	X 45	X 43	X 42															X 82	X 68	66	X 59	X 60
19	A	65	56	54	X 46															X 72	X 72	X 62	X 51	A
20	A	52	52	50	X 44															X 72	X 67	X 60	X 60	X 55
21	X 51	X 49	X 47	X 46	X 45															X 77	X 74	X 66	64	66
22	X 60	X 54	X 50	X 50	X 49															X 68	X 73	X 66	X 67	X 51
23	X 45	X 45	X 42	X 45	X 41															X 59	X 56	X 57	X 57	X 54
24	X 48	54	X 50	X 47	45															X 68	X 71	X 65	X 61	X 60
25	X 55	X 59	X 50	X 48	X 45															X 60	X 61	X 59	X 55	X 51
26	X 50	X 48	53	X 47	52															X 54	X 54	X 54	54	54
27	53	X 52	X 46	X 42	X 40															X 74	X 60	X 53	X 50	X 52
28	X 51	X 49	X 48	X 48	48	50													X 70	X 87	X 85	X 59	X 45	49
29	49	46	X 44	X 42	49	48														X 81	X 80	X 64	X 57	X 54
30	X 49	X 47	X 47	X 46	X 44															X 79	X 87	X 67	X 54	X 51
31	X 49	X 48	X 46	X 48	X 43															X 85	X 81	X 52	58	65
	00	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	30	30	28	30	4													1	31	31	30	29	28
MED	X 51	X 50	X 48	X 46	X 45	49													X 70	X 78	X 72	X 60	X 58	56
U Q	56	53	50	50	47	55														X 82	X 78	X 66	64	64
L Q	X 49	X 48	X 46	X 45	X 42	43														X 68	X 64	X 57	X 53	52

AUG. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	UL 360	392	A	A	A	A	A	A	UL 440	UL 416	A	A	A					
2							A	L 416		A	UL 448	A	A	A	A	A	A	A	A					
3						UL 300	A	A	A	A	UL 424	A	A	A	A	428	A	A	A					
4							A	A	A	A	A	UL 432	A	UL 408	UL 424	UL 448	UL 404	A	A					
5							UL 388	A	A	A	A	A	A	UL 444	UL 440	UL 420	A	UL 376	L					
6						UL 252	A	UL 388	A	A	A	A	A	UL 440	A	A	A	A	A					
7							A	UL 400	420	UL 428	UL 452	UL 460	UL 448	A	A	444	UL 416	A	A					
8							UL 368	A	A	UL 436	456	464	A	UL 452	A	A	A	A	A					
9						UL 272	L	392	428	444	UL 476	UL 468	A	468	A	UL 456	A	A	A					
10								A	A	A	A	A	A	A	A	A	A	A	A					
11							L	A	A	UL 436	UL 452	UL 448	UL 460	UL 452	UL 436	A	A	A	L					
12								L	L	456	476	A	A	A	468	432	L	A	A					
13						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
14						A	L	UL 404	UL 416	UL 460	A	A	464	UL 464	A	A	A	A	A					
15							A	A	A	UL 460	UL 464	UL 472	464	480	A	444	UL 432	UL 384	L					
16							L	A	A	A	UL 460	476	A	A	A	UL 440	A	A	A					
17							L	UL 396	432	A	A	UL 468	UL 460	UL 448	UL 452	UL 484	A	L	L					
18							A	404	UL 428	UL 448	A	460	UL 464	UL 464	UL 452	432	UL 420	A	A					
19						A	L	A	A	A	452	480	A	464	UL 428	UL 432	UL 412	L						
20							L	L	A	UL 440	UL 456	UL 464	UL 468	UL 456	UL 444	428	L	L	L					
21								L	UL 424	A	A	A	460	UL 456	UL 456	428	UL 428	A	L					
22								A	A	UL 468	A	UL 448	A	UL 456	UL 452	UL 420	UL 412	A	A					
23									A	UL 452	UL 440	A	UL 468	444	452	432	400	A						
24							A	A	A	A	A	UL 496	A	UL 456	A	A	A	A						
25							L	396	A	UL 452	UL 452	UL 448	460	UL 452	A	424	UL 392	L						
26							L	UL 400	UL 388	UL 452	UL 436	UL 464	UL 444	UL 456	A	A	A	A						
27								L	416	UL 452	444	UL 448	UL 508	456	452	UL 440	UL 412	L						
28							A	L	UL 424	L	UL 436	A	UL 464	A	436	UL 448	L	L						
29								L	428	444	UL 452	UL 464	UL 472	UL 464	464	UL 456	L	L						
30								L	A	444	UL 464	UL 476	UL 480	UL 484	UL 452	436	L	L						
31								L	A	UL 456	UL 480	UL 480	A	UL 460	A	A	A	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	3	9	11	17	19	19	15	22	16	21	10	2						
MED						UL 272	UL 368	UL 396	424	UL 452	UL 452	UL 464	UL 464	UL 456	UL 452	UL 432	UL 412	UL 380						
U Q						UL 300	UL 388	UL 402	428	UL 456	UL 464	UL 476	UL 468	UL 464	UL 452	UL 446	UL 420							
L Q						UL 252	UL 360	392	416	UL 442	UL 444	UL 448	460	UL 452	UL 438	428	UL 404							

AUG. 2016 foF1 (0.01MHz)

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	U R 308	A	A	B					
2						A	A	A	A	A	A	A	A	A	A	U R 328	A	A	A					
3						B	A	A	A	A	R	A	A	A	A	A	A	A	A					
4						B	A	A	A	A	A	A	A	R	A	R	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	R	A	A	B					
6						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
7							A	A	A	A	A	A	A	A	A	A	U A 292	A	A					
8						B	U R 236	A	A	A	A	A	A	A	A	A	A	A	B					
9						B	U R 244	A	A	A	R	A	U A 404	372	A	A	A	A	A					
10						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
11						B	A	A	A	A	R	R	R	R	R	A	A	A	U R 220					
12						B	A	A	A	A	A	A	A	A	A	A	A	A	U A 176					
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
14						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
15						B	A	A	A	A	A	A	R	A	A	A	U A 292	A	A					
16						B	U A 216	A	A	A	A	A	A	A	A	A	A	A	B					
17						B	A	A	A	A	A	A	R	A	U A 336	A	A	A	B					
18						B	A	A	A	A	A	A	A	U R 408	A	A	A	A	B					
19						B	A	A	A	A	A	A	A	A	A	A	A	U A 236	B					
20						B	A	A	A	A	A	A	A	A	A	R	A	A	B					
21						B	R	R	A	A	A	A	A	A	A	A	A	A	B					
22						B	A	A	A	A	A	A	A	A	A	R	A	A	B					
23						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
24						B	A	A	A	A	A	R	A	A	A	A	A	A	B					
25						B	U A 200	R	A	A	A	A	A	A	A	A	A	A	B					
26						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
27						B	188	A	A	A	R	R	344	R	U R 328	A	A	A	B					
28						B	A	A	A	A	A	A	A	336	A	A	A	U R 260						
29						B	A	A	A	A	A	A	A	A	A	A	A	U R 244	B					
30						B	U A 208	A	A	A	R	R	A	A	U R 368	R	U R 288	A	B					
31						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							6						2	3	3	2	3	3	2					
MED							U 212						374	372	U R 336	U R 318	U A 292	U R 244	U 198					
U Q							U R 236							U R 408	U R 368		U A 292	U R 260						
L Q							200							336	U R 328		U R 288	U A 236						

AUG. 2016 foE (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	J A 31	J A 47	J A 28	E B 15	E B 15	J A 36	J A 35	J A 47	J A 77	J A 84	J A 78	J A 58	J A 78	J A 45	J A 40	36	37	J A 43	J A 42	J A 29	J A 26	J A 26	J A 63	J A 72
2	J A 52	J A 44	J A 54	J A 59	20	24	J A 75	J A 38	J A 47	J A 77	J A 54	J A 76	J A 74	J A 65	J A 71	40	J A 80	J A 123	J A 30	J A 80	J A 128	J A 60	J A 74	J A 65
3	J A 98	J A 80	J A 70	J A 66	J A 46	J A 26	J A 63	J A 64	J A 130	J A 122	G	45	48	J A 57	45	J A 47	41	J A 56	J A 74	J A 28	20	21	J A 49	J A 24
4	J A 29	J A 24	J A 37	J A 36	J A 67	J A 75	J A 90	J A 62	J A 59	J A 116	J A 112	42	J A 48	G	39	G	35	J A 64	J A 89	J A 40	21	J A 35	J A 94	J A 53
5	J A 64	J A 30	J A 43	J A 29	J A 23	J A 27	31	J A 83	J A 142	J A 117	J A 143	J A 56	J A 51	43	37	G	J A 46	J A 40	24	J A 28	J A 27	J A 31	J A 25	J A 84
6	J A 42	J A 31	J A 30	J A 25	20	J A 25	J A 52	J A 77	J A 123	J A 152	J A 60	J A 70	J A 64	J A 44	J A 51	J A 77	J A 96	J A 116	J A 133	J A 88	J A 82	J A 107	J A 45	J A 75
7	J A 28	J A 24	J A 32	J A 48	J A 39	J A 24	J A 38	J A 40	J A 54	J A 44	J A 45	J A 45	41	J A 66	J A 59	42	35	36	J A 38	J A 67	J A 88	J A 59	J A 54	J A 61
8	J A 76	J A 49	J A 27	J A 25	21	20	G	J A 42	J A 119	J A 51	J A 52	J A 61	45	J A 50	J A 60	46	J A 48	J A 100	J A 71	J A 48	J A 77	J A 89	J A 42	J A 32
9	J A 30	J A 55	J A 62	J A 63	J A 32	22	G	J A 40	J A 46	J A 46	G	J A 41	45	43	45	J A 44	J A 43	J A 61	J A 55	J A 51	J A 30	J A 36	J A 44	J A 30
10	J A 21	22	J A 33	21	J A 43	J A 26	J A 38	J A 59	J A 77	J A 77	J A 78	J A 48	J A 72	J A 48	J A 46	J A 64	J A 62	J A 60	J A 57	J A 62	J A 77	J A 61	J A 108	J A 76
11	J A 48	J A 50	J A 22	J A 32	E B 14	J A 37	J A 38	J A 57	J A 80	J A 42	G	G	G	G	G	J A 52	J A 118	J A 123	G	J A 25	J A 42	J A 30	E B 15	J A 38
12	J A 51	J A 21	J A 64	J A 23	21	20	30	34	J A 58	J A 47	J A 47	J A 65	J A 71	J A 47	J A 44	40	J A 53	J A 42	J A 54	J A 69	J A 30	J A 88	J A 64	J A 65
13	J A 69	J A 42	J A 28	J A 38	J A 44	J A 61	J A 62	J A 52	J A 67	J A 70	J A 105	J A 162	J A 90	J A 125	J A 94	J A 110	J A 56	J A 44	J A 44	J A 49	J A 135	J A 60	J A 81	J A 50
14	J A 100	J A 62	J A 82	J A 57	J A 90	J A 114	28	J A 56	J A 71	J A 67	J A 46	J A 50	J A 45	J A 48	J A 68	J A 47	J A 45	J A 41	J A 37	J A 35	J A 35	J A 44	J A 28	J A 59
15	J A 48	J A 81	J A 44	J A 33	J A 38	J A 29	J A 46	J A 54	J A 73	J A 46	J A 44	G	G	39	J A 45	J A 39	34	29	J A 35	J A 24	J A 24	J A 25	J A 20	J A 30
16	J A 56	J A 42	J A 40	J A 40	J A 24	J A 22	28	J A 53	J A 64	J A 58	J A 48	42	J A 57	J A 54	J A 53	40	J A 80	J A 46	J A 37	J A 44	J A 122	J A 95	J A 41	J A 52
17	J A 52	J A 29	J A 23	J A 23	J A 22	J A 21	J A 33	J A 36	35	J A 86	J A 50	J A 45	G	41	40	39	J A 56	J A 41	23	J A 23	J A 29	E B 15	J A 72	J A 30
18	J A 23	E B 16	E B 16	J A 21	J A 35	J A 42	J A 81	J A 72	J A 44	J A 48	J A 59	J A 44	42	G 38	42	52	36	J A 42	J A 108	J A 90	J A 68	J A 76	J A 42	J A 86
19	J A 82	J A 52	J A 29	J A 101	J A 94	J A 98	J A 31	J A 77	J A 61	J A 87	J A 46	J A 44	J A 46	38	36	34	34	32	J A 38	J A 20	21	J A 23	J A 35	J A 64
20	J A 117	J A 31	J A 32	20	19	J A 24	27	35	J A 56	J A 52	38	J A 43	41	J A 40	37	G 25	34	30	J A 25	22	19	J A 37	22	E B 15
21	J A 26	J A 34	J A 27	J A 22	J A 20	J A 25	J A 25	G	J A 36	J A 52	J A 60	J A 131	J A 39	42	40	38	37	J A 49	J A 26	J A 23	22	J A 23	J A 43	J A 29
22	J A 29	18	J A 26	J A 32	J A 25	E B 16	J A 31	J A 38	J A 47	J A 41	J A 49	J A 42	J A 43	J A 41	38	G 29	36	J A 38	J A 40	J A 32	J A 43	J A 26	J A 25	J A 27
23	J A 22	22	21	J A 20	J A 22	21	J A 28	32	J A 44	J A 41	J A 44	J A 105	J A 103	J A 51	J A 45	J A 34	32	32	J A 32	J A 31	J A 25	J A 26	J A 29	J A 21
24	J A 40	J A 32	J A 30	J A 30	J A 27	J A 34	J A 37	J A 44	J A 76	J A 51	J A 48	G	J A 46	41	41	42	J A 44	J A 39	J A 28	19	21	J A 57	J A 36	J A 24
25	J A 23	E B 16	J A 22	22	J A 18	20	25	G	J A 49	J A 50	J A 50	J A 45	40	J A 42	J A 46	36	29	26	E B 16	J A 23	20	J A 52	J A 74	J A 44
26	J A 40	21	J A 26	J A 44	J A 22	22	J A 43	27	35	38	40	J A 46	J A 45	44	J A 45	J A 49	J A 43	J A 38	J A 26	J A 32	J A 48	J A 28	J A 43	J A 58
27	J A 34	J A 32	20	22	20	E B 25	26	34	J A 37	38	G 31	G 30	42	G 30	38	J A 37	32	24	E B 16	20	22	J A 22	E B 14	J A 25
28	J A 26	J A 20	J A 25	J A 22	J A 23	J A 29	J A 44	J A 37	34	J A 43	J A 58	J A 46	40	42	J A 46	36	36	G 24	J A 42	J A 28	J A 98	J A 31	J A 52	J A 62
29	J A 57	J A 48	J A 24	J A 22	J A 26	J A 31	J A 36	J A 38	J A 43	J A 42	J A 45	J A 45	41	J A 40	J A 44	36	J A 38	G J A 21	J A 19	22	J A 21	19	J A 35	J A 26
30	J A 19	20	18	E B 15	E B 15	E B 15	25	J A 41	J A 51	39	G	G 27	39	39	39	G	G	32	20	20	20	20	J A 25	22
31	E B 16	20	J A 20	J A 28	20	E B 15	27	J A 35	J A 51	42	J A 43	41	J A 48	42	44	J A 54	J A 57	J A 35	J A 31	J A 21	J A 46	76	J A 38	J A 40
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 40	J A 31	J A 28	J A 28	J A 23	J A 25	J A 33	J A 41	J A 56	J A 51	J A 48	J A 45	J A 45	J A 42	J A 44	40	J A 41	J A 41	J A 37	J A 29	J A 30	J A 35	J A 42	J A 44
U Q	J A 57	J A 48	J A 40	J A 40	J A 38	J A 34	J A 44	J A 57	J A 76	J A 77	J A 59	J A 58	J A 57	J A 48	J A 46	J A 47	J A 56	J A 56	J A 54	J A 49	J A 77	J A 60	J A 63	J A 64
L Q	J A 26	21	23	22	20	21	27	35	J A 44	J A 42	G 43	G 42	41	40	39	G 36	35	32	25	23	21	25	J A 28	J A 27

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	25	24	22	E B 15	E B 15	25	26	34	A A 77	44	A A 78	44	A A 78	42	35	35	35	37	34	23	E B 15	21	17	34
2	29	25	29	22	E B 15	19	32	28	32	52	38	A A 76	48	A A 65	A A 71	38	54	A A 123	24	22	32	36	A A 74	A A 65
3	A A 98	A A 80	A A 70	A A 66	A A 46	17	40	36	A A 130	A A 122	G	43	45	48	44	39	39	51	55	23	E B 15	E B 15	21	E B 15
4	E B 15	E B 14	17	E B 15	20	30	39	A A 62	37	A A 116	A A 112	38	A A 48	G	38	G	31	A A 64	A A 89	26	E B 15	22	19	24
5	A A 64	20	22	20	E B 16	19	28	A A 83	A A 142	A A 117	A A 143	A A 56	A A 51	40	36	G	38	33	23	24	20	17	E B 15	E B 15
6	24	18	E B 14	E B 15	E B 14	19	33	34	A A 123	A A 152	A A 60	A A 70	A A 64	38	A A 51	A A 77	A A 96	A A 116	44	46	39	A A 107	30	25
7	E B 15	E B 16	23	A A 48	19	19	32	32	36	38	38	39	40	A A 66	44	39	32	34	34	37	22	22	40	30
8	30	30	21	21	E B 15	20	G	38	A A 119	38	41	40	41	36	A A 60	44	42	48	A A 71	42	18	36	18	20
9	20	25	22	A A 63	E B 14	E B 14	G	30	38	37	G	37	45	41	42	39	36	A A 61	48	44	24	28	18	E B 15
10	E B 15	E B 16	23	E B 15	31	19	34	40	A A 77	A A 77	A A 78	44	A A 72	44	43	A A 64	A A 62	A A 60	49	55	42	20	22	28
11	19	18	E B 15	17	E B 14	21	26	37	52	36	G	G	G	G	G	40	42	A A 123	G	18	E B 16	E B 15	E B 15	E B 15
12	E B 15	E B 15	E B 15	18	E B 15	17	25	32	35	38	38	57	47	40	38	36	34	34	44	38	20	E B 15	A A 64	A A 65
13	28	20	18	19	18	A A 61	32	38	54	51	A A 105	A A 162	A A 90	A A 125	A A 94	A A 110	54	38	35	37	30	E B 15	E B 15	E B 15
14	18	19	23	22	16	24	24	34	36	40	40	44	42	40	A A 68	41	40	33	32	28	30	16	20	E B 15
15	E B 15	20	27	17	E B 15	E B 16	38	50	60	36	40	G	G	38	38	35	32	28	21	18	E B 15	E B 15	E B 15	24
16	28	E B 14	26	22	E B 16	E B 15	24	44	50	40	42	39	52	47	48	36	54	40	26	31	32	38	22	34
17	20	E B 15	18	19	E B 16	E B 15	28	30	32	41	41	38	G	37	36	36	40	29	20	E B 15	18	E B 15	20	17
18	E B 15	E B 16	E B 16	E B 16	18	18	A A 81	28	34	36	A A 59	41	40	G 36	38	38	33	37	22	40	49	19	25	35
19	A A 82	32	22	E B 14	E B 15	26	21	A A 77	46	44	36	40	42	37	32	31	32	29	20	18	E B 16	E B 15	E B 15	A A 64
20	A A 117	E B 16	E B 15	E B 15	E B 15	18	24	30	40	37	37	36	37	35	34	G 24	29	26	18	E B 15	E B 16	20	E B 15	E B 15
21	18	18	E B 14	E B 14	E B 15	E B 15	20	G	30	45	A A 60	A A 131	37	39	38	36	34	43	20	18	E B 15	18	E B 15	E B 15
22	19	E B 16	E B 15	22	17	E B 16	26	32	42	38	44	35	42	36	35	G 28	36	27	32	22	21	E B 16	E B 16	17
23	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	24	30	34	37	38	42	41	38	36	31	31	30	24	16	E B 14	E B 16	21	20
24	E B 15	18	18	17	E B 16	24	33	38	A A 76	46	45	G	40	40	38	40	37	31	18	E B 15	E B 16	E B 16	20	E B 15
25	18	E B 16	E B 15	E B 15	E B 14	E B 14	22	G	38	39	38	37	34	37	42	33	28	23	E B 16	E B 15	E B 15	20	18	E B 15
26	E B 15	E B 15	E B 16	E B 15	E B 16	E B 16	21	27	32	38	38	39	40	40	41	42	40	30	20	29	30	20	33	25
27	23	24	E B 16	E B 15	E B 16	E B 25	22	30	33	34	G 28	G 28	40	G 28	35	32	31	24	E B 16	E B 15	E B 15	18	E B 14	E B 15
28	E B 15	E B 15	16	16	17	E B 16	34	30	32	38	36	43	36	42	37	35	32	G 23	37	20	44	E B 16	18	26
29	22	E B 15	E B 16	19	17	18	24	32	36	36	38	38	38	38	39	33	33	G 20	18	E B 15	E B 14	E B 15	E B 15	E B 15
30	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	30	40	36	G	G 26	38	38	G 36	G	G	29	18	E B 14	E B 15	E B 15	20	E B 16
31	E B 16	E B 16	E B 16	E B 16	E B 15	E B 15	24	34	45	40	42	40	45	41	41	50	54	30	28	E B 15	30	20	21	22
	00	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	19	E B 16	17	17	E B 16	18	26	32	40	39	40	40	41	39	38	36	36	33	24	22	18	18	19	20
U Q	28	20	22	21	17	21	33	38	A A 60	A A 46	A A 59	A A 44	A A 48	42	A A 44	40	42	A A 48	37	37	30	21	22	28
L Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	30	34	37	G 37	G 37	38	37	36	G 32	32	29	20	E B 15	E B 15	E B 15	E B 15	E B 15

AUG. 2016 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	303	311	329	317	318	295	337	346	A	365	A	309	A	298	278	319	322	313	322	311	339	353	304	F
2	F	F	F	F	F	320	340	354	356	367	343	A	302	A	A	314	331	A	319	329	359	359	A	A
3	A	A	A	A	A	298	325	334	A	A	306	273	263	325	313	289	291	281	331	314	300	280	287	296
4	F	F	269	F	288	F	302	A	317	A	A	277	A	R 257	279	267	283	A	A	316	306	306	305	F
5	A	F	F	F	314	263	274	A	A	A	A	A	A	283	318	313	295	295	302	322	348	323	286	F
6	F	F	F	F	F	279	262	325	A	A	A	A	A	288	A	A	A	A	300	315	327	A	F	F
7	294	295	288	A	304	285	314	343	289	345	281	311	284	A	303	334	324	320	320	313	307	F	F	F
8	292	315	304	F	302	297	319	313	A	350	345	323	316	292	A	315	325	314	A	324	324	279	F	300
9	298	296	F	A	F	293	334	335	350	349	345	242	299	294	334	302	323	A	312	304	310	298	282	313
10	309	297	289	316	305	335	307	302	A	A	A	293	A	272	300	A	A	A	307	304	302	281	306	303
11	333	290	322	301	293	315	313	335	331	331	293	R 251	317	255	289	306	320	A	329	309	305	292	318	314
12	F	F	311	312	300	345	323	349	343	299	289	312	317	318	304	299	313	331	334	349	291	275	A	A
13	F	F	288	F	F	A	337	346	321	330	A	A	A	A	A	A	307	325	337	325	F	298	F	F
14	F	F	283	F	F	299	338	366	369	333	329	318	322	302	A	301	314	322	328	347	360	282	F	F
15	F	F	308	295	315	314	325	331	361	356	337	309	309	290	319	310	307	314	315	328	326	326	299	F
16	F	F	F	F	275	322	316	340	376	355	340	300	336	325	302	303	312	317	330	337	329	293	F	F
17	F	F	300	303	296	304	303	279	328	304	342	313	328	336	330	272	306	317	307	319	342	305	329	F
18	292	310	295	291	304	324	A	344	340	353	A	337	278	292	317	307	321	325	325	328	334	F	280	282
19	A	F	F	F	326	320	315	A	347	358	321	295	322	308	315	331	326	323	330	324	324	332	317	A
20	A	F	F	F	304	303	326	354	354	368	353	259	303	318	322	327	329	331	340	330	315	300	299	312
21	309	288	314	312	328	356	360	317	343	360	A	A	320	329	318	330	320	329	329	325	333	311	F	F
22	303	294	279	292	314	365	340	369	357	325	300	321	332	308	332	341	330	349	301	306	312	315	331	319
23	302	301	280	338	310	327	370	356	383	318	342	333	297	327	314	313	339	338	360	327	304	302	319	317
24	282	F	297	320	F	297	288	336	A	306	302	332	317	311	321	327	351	321	308	307	303	305	290	292
25	292	319	317	311	304	308	323	328	346	303	327	332	302	291	325	351	357	372	341	288	312	310	312	295
26	300	299	F	298	F	343	329	322	362	265	318	308	318	330	322	332	348	350	349	309	299	311	F	F
27	F	294	305	320	324	331	368	380	348	339	348	342	277	315	334	328	327	330	339	350	332	299	288	288
28	305	306	306	325	F	F	360	358	346	364	348	321	316	331	338	345	358	319	307	324	373	346	298	F
29	F	F	307	319	F	F	331	351	339	368	368	326	312	340	320	316	321	330	317	322	352	339	300	318
30	291	292	287	312	325	326	339	354	349	362	364	337	R 311	303	306	327	328	334	306	304	329	331	305	307
31	292	298	305	310	330	299	333	343	377	355	300	303	313	320	333	323	335	331	314	330	354	330	F	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	16	22	18	21	27	30	28	24	26	23	26	25	28	26	28	29	25	29	31	30	28	20	14
MED	299	298	302	312	305	314	326	343	348	350	337	312	313	308	318	316	323	325	322	322	325	306	302	305
U Q	304	308	308	319	321	327	338	354	359	360	345	326	319	325	325	329	330	331	332	328	339	328	314	314
L Q	292	294	288	301	301	297	314	330	340	325	302	295	300	292	304	304	312	317	308	309	306	296	289	295

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NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	UL 374	394	A	A	A	A	A	A	UL 406	UL 390	A	A	A					
2							A	L	408	A	UL 414	A	A	A	A	A	A	A	A					
3						UL 321	A	A	A	A	UL 406	A	A	A	A	377	A	A	A					
4							A	A	A	A	A	UL 415	A	UL 360	UL 412	UL 347	UL 405	A	A					
5							UL 363	A	A	A	A	A	A	UL 386	UL 384	UL 387	A	UL 338	L					
6						UL 312	A	UL 366	A	A	A	A	A	UL 391	A	A	A	A	A					
7							A	UL 368	382	UL 390	UL 408	UL 408	UL 424	A	A	368	UL 372	A	A					
8							UL 351	A	A	UL 379	391	387	A	UL 412	A	A	A	A	A					
9						UL 330	L	380	396	431	UL 389	UL 427	A	384	A	UL 366	A	A	A					
10								A	A	A	A	A	A	A	A	A	A	A	A					
11							L	A	A	UL 389	UL 407	UL 427	UL 410	UL 427	UL 425	A	A	A	L					
12								L	L	392	393	A	A	A	374	408	L	A	A					
13						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
14						A	L	UL 389	UL 417	UL 395	A	A	386	UL 366	A	A	A	A	A					
15							A	A	A	UL 377	UL 403	UL 408	418	383	A	378	UL 351	UL 367	L					
16							L	A	A	A	UL 418	421	A	A	A	UL 393	A	A	A					
17							L	UL 381	395	A	A	UL 401	UL 400	UL 403	UL 385	UL 352	A	L	L					
18							A	368	UL 399	UL 409	A	413	UL 391	UL 394	UL 393	361	UL 373	A	A					
19						A	L	A	A	A	430	404	A	375	UL 425	UL 385	UL 391	L						
20							L	L	A	UL 396	UL 423	UL 424	UL 409	UL 355	UL 385	375	L	L	L					
21								L	UL 394	A	A	A	403	UL 392	UL 382	378	UL 355	A	L					
22								A	A	UL 385	A	UL 408	A	UL 386	UL 379	UL 386	UL 373	A	A					
23									A	UL 417	UL 449	A	UL 386	390	359	385	369	A						
24							A	A	A	A	A	UL 357	A	UL 356	A	A	A	A						
25							L	381	A	UL 389	UL 395	UL 412	392	UL 369	A	372	UL 382	L						
26							L	UL 375	UL 418	UL 392	UL 408	UL 410	UL 395	UL 403	A	A	A	A						
27								L	412	UL 375	402	UL 458	UL 328	392	362	UL 372	UL 370	L						
28							A	L	UL 399	L	UL 443	A	UL 440	A	407	UL 373	L	L						
29								L	383	397	UL 400	UL 405	UL 404	UL 371	366	UL 370	L	L						
30								L	A	401	UL 427	UL 411	UL 385	UL 381	UL 387	369	L	L						
31								L	A	UL 397	UL 361	UL 375	A	UL 391	A	A	A	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	3	9	11	17	19	19	15	22	16	21	10	2						
MED						UL 321	UL 363	UL 380	399	UL 392	UL 407	UL 410	UL 400	UL 386	UL 385	UL 375	UL 372	UL 352						
U Q						UL 330	UL 374	UL 385	UL 412	UL 399	UL 423	UL 421	UL 410	UL 392	UL 406	UL 386	UL 382							
L Q						UL 312	UL 351	UL 368	394	UL 387	UL 395	UL 404	UL 386	UL 371	376	368	UL 369							

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NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 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						E A 326	298	260	A	266	A	354	A	380	426	320	310	308	258					
2							280	250	268	256	296	A	E A 368	A	A	334	E A 296	A	264					
3						368	E A 334	276	A	A	R 408	382	386	272	308	362	302	E A 332	E A 256					
4							E A 342	A	340	A	A	376	A	R 468	432	456	450	A	A					
5							494	A	A	A	A	A	A	430	328	336	368	350	284					
6						392	E A 456	312	A	A	A	A	A	400	A	A	A	A	E A 332					
7							322	264	372	298	442	368	446	A	376	308	302	E A 280	E A 286					
8							324	340	A	288	304	332	346	384	A	320	298	E A 310	A					
9						360	296	296	264	274	292	580	354	390	294	364	304	A	E A 320					
10								E A 290	A	A	A	402	A	456	390	A	A	A	E A 344					
11							298	290	E A 318	316	392	514	350	502	428	354	324	A	282					
12								252	274	354	388	E A 334	308	292	342	308	286	270	254					
13						A	248	244	E A 316	E A 276	A	A	A	A	A	A	E A 356	288	258					
14						E A 304	288	246	244	308	316	332	328	386	A	360	292	286	254					
15							E A 278	E A 264	E A 250	258		342	338	384	318	338	324	298	258					
16							322	270	242	256	290	390	302	324	E A 356	348	E A 344	282	242					
17							316	382	278	318	282	326	320	302	318	452	334	288	266					
18							A	260	244	260	A	306	420	360	316	322	272	264	248					
19						E A 280	294	A	252	250	320	376	322	336	314	296	286	278						
20							320	238	252	248	290	468	360	288	286	292	286	280	256					
21								332	272	260	A	A	324	304	324	302	308	E A 278	258					
22								236	252	278	336	302	296	326	292	268	278	236	E A 278					
23									226	330	276	294	372	296	298	308	272	250						
24							E A 308	258	A	E A 320	346	310	332	338	298	292	254	260						
25							250	272	272	324	316	288	352	376	312	256	252	248						
26							276	318	250	458	332	354	316	302	324	288	242	244						
27								246	264	288	276	276	402	332	290	298	286	254						
28							244	238	274	250	274	E A 282	340	286	294	290	262	292						
29								266	272	244	256	306	332	304	330	322	300	276						
30								248	262	242	252	310	312	344	336	288	286	264						
31								264	232	282	350	354	326	306	286	E A 324	E A 292	276						
	00	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	21	27	24	26	22	26	25	28	26	28	29	25	19					
MED						343	293	264	260	276	310	338	335	337	318	317	294	277	257					
U Q						368	323	290	274	316	346	376	364	385	342	343	317	290	E A 284					
L Q						E A 304	279	248	250	256	282	306	321	303	298	294	282	262	256					

AUG. 2016 h'F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

AUG. 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 A 274	E A 282	E A 270	E B 244	E B 246	A	222	222	A	A	A	A	A	A	192	212	A	A	A	E A 242	210	206	E A 248	E A 320
2	E A 312	E A 270	E A 276	E A 276	E B 242	E A 238	A	200	188	A	200	A	A	A	A	A	A	A	A	232	218	E A 232	A	A
3	A	A	A	A	A	230	A	A	A	A	208	A	A	A	A	E A 248	A	A	A	E A 246	216	E B 238	E A 272	E B 258
4	E B 196	E B 308	E A 324	E B 250	E A 292	E A 346	A	A	A	A	A	194	A	226	220	216	200	A	A	E A 258	E B 244	E A 254	E A 290	E A 356
5	A	E A 294	E A 294	E A 302	E B 266	E A 314	E A 248	A	A	A	A	A	A	208	196	218	A	214	E A 238	E A 246	216	222	218	E B 280
6	E A 322	E A 290	E B 300	E B 274	E B 284	E A 286	A	E A 252	A	A	A	A	A	230	A	A	A	A	A	E A 290	E A 258	A	E A 282	E A 288
7	228	E B 266	E A 322	A	E A 276	E A 270	A	E A 236	194	E A 236	194	202	200	A	A	E A 246	214	A	A	E A 286	E A 244	E A 326	E A 340	E A 300
8	E A 270	E A 298	E A 296	E A 294	E B 270	E A 248	220	A	A	E A 244	224	224	A	204	A	A	A	A	A	E A 252	224	E A 320	E A 244	E A 262
9	E A 256	E A 284	E A 360	A	E B 316	E B 250	226	204	218	198	198	192	A	216	A	E A 242	A	A	A	E A 280	E A 238	E A 268	E A 286	E B 248
10	218	E B 252	E A 290	E B 270	E A 370	E A 248	E A 252	A	A	A	A	A	A	A	A	A	A	A	A	E A 348	E A 282	E A 268	E A 250	E A 250
11	220	E A 312	E B 262	E A 272	E B 244	E A 276	214	A	A	214	206	194	194	192	196	A	A	A	226	E A 248	E B 236	E B 266	E B 232	E B 238
12	E B 274	E B 276	E B 262	E A 258	E B 262	230	216	212	210	202	204	A	A	A	204	198	226	A	A	224	218	E B 290	A	A
13	E A 312	E A 306	E A 278	E A 292	E A 260	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 244	E A 238	E B 260	E B 248	222
14	E A 300	E A 310	E A 318	E A 300	E A 286	A	226	216	204	202	A	A	E A 244	E A 258	A	A	A	A	A	226	208	E A 286	E A 298	E B 292
15	E B 274	E A 268	E A 308	E A 272	E B 246	E A 238	A	A	A	194	206	200	186	192	A	202	212	216	E A 236	228	200	208	E B 252	E A 312
16	E A 284	E B 238	E B 304	E A 314	E A 280	E B 236	224	A	A	A	206	190	A	A	A	212	A	A	A	234	230	E A 344	E A 294	E A 296
17	E A 284	E B 266	E A 260	E A 264	E B 278	E B 244	222	214	204	A	A	190	200	208	206	206	A	E A 234	E A 236	226	212	218	222	E A 270
18	E B 270	E B 248	E B 236	E B 268	E A 270	E A 258	A	216	198	186	A	204	222	214	220	E A 260	206	A	A	E A 236	E A 262	E A 296	E A 314	E A 302
19	A	E A 286	E A 266	E B 240	234	A	204	A	A	A	186	186	A	214	188	180	210	210	236	224	230	206	228	A
20	A	E B 300	E B 292	E B 280	E B 258	E A 278	224	208	A	208	188	202	190	226	192	210	208	206	218	222	218	E A 244	E B 248	E B 246
21	E A 242	E A 284	E B 248	E B 250	226	216	214	200	186	A	A	A	194	194	202	216	226	A	222	226	218	E A 234	E B 282	E B 240
22	E A 250	E B 252	E B 286	E A 272	E A 242	206	228	A	A	202	A	184	A	206	228	192	230	A	A	E A	E A 250	218	224	206
23	E B 266	E B 266	E B 296	228	E B 272	224	220	216	A	198	170	A	192	198	228	200	216	A	220	222	E B 246	E B 270	E A 248	E A 250
24	E B 292	E A 320	E A 296	E A 246	E B 236	E A 310	A	A	A	A	A	208	A	E A 246	A	A	A	A	E A 240	E B 238	E B 238	E B 256	E A 270	E B 286
25	E A 282	E B 240	232	E B 238	E B 256	E B 260	200	230	A	208	190	216	196	216	A	206	204	196	234	E B 254	E B 230	230	E A 234	E B 248
26	E B 264	E B 254	E B 280	E B 256	230	E B 236	208	194	198	218	196	190	228	214	A	A	A	A	222	E A 264	E A 298	E A 264	E A 316	E A 296
27	E A 302	E A 288	E B 248	E B 242	E B 240	E B 236	220	212	198	198	194	172	E A 260	194	198	218	206	206	234	206	204	E A 262	E B 278	E B 266
28	E B 266	E B 250	E A 262	E A 244	E A 246	E A 256	A	218	188	196	184	A	176	A	202	198	202	232	E A 274	232	220	198	E A 284	E A 364
29	E A 308	E B 290	E B 278	E B 254	E A 238	E A 244	216	210	228	208	198	208	194	208	216	208	E A 246	212	234	220	210	206	234	E B 234
30	E B 266	E B 288	E B 264	E B 236	222	228	220	210	A	200	182	190	210	196	202	200	204	226	E A 242	E B 244	220	E B 200	220	E B 244
31	E B 276	E B 276	E B 284	E B 234	228	E B 262	228	230	A	208	E A 248	218	A	230	A	A	A	A	246	220	220	204	E A 298	E A 298
	00	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	30	30	28	30	27	21	19	12	18	19	19	15	22	16	21	15	10	16	30	31	30	29	28
MED	E A 274	E B 283	E A 282	E 261	E B 257	E A 248	220	213	198	202	197	194	195	210	202	206	209	212	228	E 237	216	E 249	E A 252	E 268
U Q	E A 292	E A 294	E A 296	E A 275	E A 276	E A 270	226	222	207	208	206	208	222	226	218	E A 218	226	226	E A 239	E A 252	E A 244	E A 268	E A 288	E A 297
L Q	E 256	E B 266	E B 262	E B 244	240	236	215	208	191	198	188	190	192	198	196	200	204	206	224	226	216	218	234	E B 247

AUG. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG.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	A	A	A	A	A	A	A	A	116	A	A	B					
2						110	A	A	A	A	A	A	A	A	A	122	A	A	A					
3						B	A	A	A	A	118	118	118	114	110	110	110	A	A					
4						B	A	A	A	A	A	108	A	110	110	112	114	A	A					
5						B	116	A	A	A	A	A	A	112	108	110	A	A	B					
6						B	A	A	A	A	A	A	A	A	A	112	A	A	A					
7							A	A	A	A	A	A	114	A	116	116	116	116	A					
8						B	114	A	A	A	A	A	A	A	A	114	114	A	B					
9						B	114		A	A	116	A	110	110	110	112	112	A	A					
10						B	A	A	A	A	A	A	A	A	112	112	112	112	A					
11						B	114	A	A	A	112	112	112	112	112	114	114	A	122					
12						B	122	114	A	A	A	A	A	A	A	112	110	110	110					
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
14						B	112	A	A	A	A	A	A	A	A	116	116	116	116					
15						B	A	A	A	A	A	110	110	A	A	A	116	108	A					
16						B	126	A	A	A	120	118	120	112	112	110	A	A	B					
17						B	114	A	A	A	A	A	114	A	110	112	112	A	B					
18						B	A	A	A	A	A	A	112	112	112	110	112	112	B					
19						B	A	A	A	A	A	A	A	A	A	A	112	110	B					
20						B	110	110	A	A	A	A	A	A	A	110	A	112	B					
21						B	120	110	A	A	A	A	A	118	108	108	110	A	B					
22						B	108	A	A	A	A	A	A	A	A	112	114	110	B					
23						B	118	114	A	A	A	A	A	A	A	A	114	114	B					
24						B	112	A	A	A	112	112	112	112	112	112	114	A	B					
25						B	110	112	A	A	A	A	A	112	A	A	A	A	B					
26						B	A	116	112	112	A	A	A	A	A	A	A	A	B					
27						B	114	120	A	A	114	112	110	116	116	A	112	112	B					
28						B	A	A	A	A	A	A	A	114	A	114	112	116						
29						B	A	110	110	A	A	A	A	A	A	A	A	114	B					
30						B	116	A	A	A	116	116	A	112	112	112	112	112	B					
31						B	112	114	A	112	A	112	A	112	110	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	17	9	2	2	7	9	10	14	15	22	20	14	3					
MED						110	114	114	111	112	116	112	112	112	112	112	112	112	116					
U Q							117	115			118	117	114	114	112	114	114	114	122					
L Q							112	110			112	111	110	112	110	110	112	110	110					

IONOSPHERIC DATA STATION Kokubunji

AUG.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	92	94	94	B	B	104	102	104	102	100	100	100	94	98	96	144	118	106	104	102	98	94	100	100
2	96	90	88	88	94	112	100	102	102	96	100	94	94	112	114	132	104	102	110	104	102	102	102	100
3	96	96	96	96	96	106	102	102	98	98	G	124	116	120	118	124	120	102	100	120	112	108	94	98
4	120	120	112	110	110	114	104	102	102	106	100	114	108	G	114	G	112	106	102	96	98	96	100	98
5	98	92	92	90	90	106	118	102	98	98	96	102	112	114	114	G	104	102	102	100	98	96	98	100
6	100	98	98	116	108	112	102	100	100	98	98	100	100	100	102	114	106	104	100	96	100	100	98	96
7	96	96	92	84	84	94	96	98	98	100	102	106	124	106	114	118	124	116	102	100	100	102	102	100
8	96	92	84	84	92	110	G	102	98	100	100	100	106	98	98	120	116	104	102	102	100	100	98	98
9	98	98	98	98	98	122	G	98	100	98	G	100	168	142	122	118	118	102	102	102	102	102	98	98
10	100	102	112	118	108	116	104	102	100	96	96	98	98	98	130	114	116	112	104	104	98	102	102	94
11	96	94	98	102	B	116	116	100	100	102	G	G	G	G	G	116	110	102	G	106	118	106	B	100
12	98	102	96	112	128	124	118	114	104	104	104	100	98	102	98	122	114	114	114	106	108	102	102	98
13	94	96	108	114	110	106	104	102	102	102	100	98	102	98	98	102	104	100	100	96	112	114	104	100
14	98	98	98	98	106	106	116	98	98	98	100	104	102	98	90	124	116	118	116	108	106	106	114	108
15	100	100	98	98	102	108	106	102	100	102	98	G	G	98	98	96	126	120	92	92	100	100	102	100
16	100	102	98	102	104	114	118	104	98	100	118	132	120	120	110	114	104	102	106	104	106	102	102	100
17	100	100	100	100	116	110	114	102	102	96	94	94	G	96	126	122	114	104	106	104	100	B	102	102
18	102	B	B	118	108	102	104	104	100	96	92	94	126	96	120	118	122	122	104	102	100	94	90	90
19	90	94	96	100	96	96	102	100	98	100	100	100	104	102	102	102	132	128	112	104	102	102	102	100
20	100	98	98	112	132	108	112	102	98	100	102	102	102	100	96	92	92	110	110	96	96	96	102	B
21	100	96	98	110	112	110	106	G	104	102	96	92	90	120	114	120	118	102	102	98	104	98	98	102
22	98	92	94	96	98	B	114	102	104	98	96	98	96	100	98	94	118	110	92	100	120	100	100	94
23	96	94	92	92	90	90	122	116	104	102	100	96	96	96	92	98	116	112	108	100	98	104	96	102
24	94	98	98	94	98	102	114	104	104	104	110	G	120	114	122	124	118	106	106	100	92	100	100	102
25	98	B	100	100	102	118	138	G	102	96	96	96	106	110	102	106	100	104	B	100	104	106	104	100
26	102	100	96	96	96	90	90	126	116	106	104	102	100	100	98	94	92	92	100	100	92	98	104	102
27	100	96	96	98	96	B	150	116	108	102	98	98	154	98	136	98	130	124	B	100	94	88	B	96
28	90	100	98	100	94	114	102	100	102	108	108	106	104	136	100	126	128	104	106	96	102	104	102	98
29	98	98	114	96	96	92	90	112	112	102	102	102	98	98	96	96	96	96	96	104	102	102	102	102
30	96	96	96	B	B	B	130	106	100	100	G	100	100	114	124	G	G	110	112	112	110	106	102	104
31	B	104	104	104	100	B	126	122	108	114	92	116	92	124	122	104	102	102	100	100	96	96	96	92
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	29	28	27	29	29	31	31	27	28	28	29	30	28	30	31	28	31	31	30	29	30
MED	98	98	98	100	99	108	106	102	102	100	100	100	102	100	106	115	116	104	103	100	100	102	102	100
U Q	100	100	98	110	108	114	118	105	104	102	102	103	114	114	120	122	118	112	107	104	106	104	102	102
L Q	96	94	96	96	96	102	102	101	98	98	96	98	98	98	98	100	104	102	100	100	98	98	98	98

AUG.2016 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	F4	F4	F5			L4	L3	L2	L3	L2	L2	L2	L3	L2	L2	HL22	CL12	L3	LL23	F6	F3	F2	F3	F3
2	F4	F3	F3	F3	F1	C1	L3	L2	L2	L3	L2	L3	L3	CL23	CL22	CL22	L4	L4	C3	F3	F3	F6	F5	F7
3	F6	F5	F5	F5	F5	L2	L3	L2	L3	L3		C2	C2	C2	C3	C2	C2	L4	L4	F4	F1	F1	F3	F2
4	F2	F2	F2	F4	F4	C4	L2	L3	L2	L2	L2	C2	L2		C1		C1	L2	L4	F3	F2	F3	F4	F5
5	F4	F4	F4	F2	F1	L4	C2	L4	L4	L3	L3	L3	L3	C2	C2		L2	L3	L3	F4	F5	F2	F2	F2
6	F4	F4	F2	F2	F2	C2	L3	L2	L4	L3	L3	L2	L2	L2	LC22	C3	L3	L4	L4	F5	F4	F5	F6	F4
7	F2	F2	F4	F4	F3	L2	L3	L2	L2	L2	L2	L2	C1	L2	C2	C2	C1	C2	L3	F4	F4	F4	F6	F4
8	F4	F3	F4	F4	F2	C2		L3	L3	L2	L2	L3	L2	L2	L2	CL22	C3	L3	L3	F4	F4	F4	F3	F3
9	F3	F4	F6	F4	F2	C1		L2	L2	L2		L2	H1	H1	C1	C2	C1	L3	L3	F5	F3	F4	F3	F2
10	F1	F1	F3	F2	F7	C4	L3	L3	L4	L3	L3	L2	L3	L3	C2	C4	CL42	CL42	L4	F5	F5	F4	F4	F4
11	F5	F3	F3	F3		C4	C3	L3	L3	L2						C2	C2	L4		F4	F2	F2		F2
12	F3	F2	F2	F2	F2	C2	C3	C2	L2	L2	L2	L2	L2	L2	L2	CL21	CL21	C2	C4	F3	F5	F3	F6	F5
13	F5	F5	F2	F4	F6	L6	L3	L2	L3	L3	L3	L3	L3	L3	L3	L3	L4	LC22	L4	F3	F3	F2	F3	F4
14	F3	F3	F4	F5	F2	L4	C2	L3	L2	L2	L2	L2	L2	L2	L3	CL22	CL22	CL32	CL42	F6	F7	F4	F5	F5
15	F2	F4	F4	F6	F3	L5	L5	L3	L3	L2	L2			L2	L2	L2	CL12	CL13	L3	F4	F1	F1	F1	F7
16	F4	F2	F5	F4	F2	C1	C3	L3	L3	L2	CL22	CL22	CL22	CL22	C2	C1	L3	L3	L4	F5	F3	F4	F6	F6
17	F3	F2	F3	F3	F2	C2	C3	L2	L2	L2	L3	L2		L2	C1	CL12	C2	L2	L2	F2	F3		F3	F2
18	F1			F3	F4	L3	L3	L3	L2	L2	L3	L2	CL12	L2	C1	C2	C1	C3	L4	F5	F5	F3	F3	F3
19	F3	F4	F5	F3	F3	L3	L2	L3	L3	L3	L2	L2	L2	L2	L1	L1	C1	C2	C2	F2	F2	F1	F3	F5
20	F5	F5	F2	F1	F1	L4	C2	L3	L2	L2	L2	L2	L2	L2	L2	L2	L3	CL13	CL12	F1	F1	F4	F2	
21	F3	F2	F2	F1	F1	L2	L2		L2	L2	L3	L3	L2	CL12	C1	C1	CL11	L4	L3	F3	F1	F3	F3	F2
22	F5	F2	F2	F4	F3		C3	L2	L3	L2	L2	L2	L2	L2	L2	L2	CL22	CL23	L3	F2	F1	F1	F2	F2
23	F2	F2	F1	F2	F2	L2	C2	C2	L2	L2	L2	L2	L2	L2	L2	L2	C1	CL22	L5	F2	F2	F3	F4	F3
24	F4	F3	F3	F3	F4	L4	C3	L5	L5	L3	C2		C2	C1	C1	C2	C2	L4	L4	F1	F2	F2	F3	F2
25	F4		F1	F2	F2	C1	C2		L2	L3	L2	L2	L1	C1	L3	L2	L2	L3		F1	F1	F4	F3	F3
26	F2	F2	F2	F3	F2	L2	L3	CL11	CL12	CL22	L2	L2	L2	L3	L2	L2	L3	L3	L3	F4	F5	F4	F5	F3
27	F4	F5	F2	F2	F2		H1	C2	L2	L1	L1	L2	H1	L2	HL11	L2	CL12	C1		F1	F3	F5		F4
28	F2	F2	F4	F3	F3	L2	L4	L2	L1	L1	L2	L2	L1	H1	L2	CL12	C1	L3	F3	F7	F4	F2	F3	F4
29	F4	F3	F3	F4	F2	L6	L2	C2	C2	L3	L2	L2	L3	L2	L2	L2	L3	L2	L1	F4	F1	F1	F3	F3
30	F1	F1	F1				H2	L2	L2	L2		L2	L2	C1	C2			C2	C1	F1	F1	F3	F4	F2
31		F2	F2	F3	F3		C2	C2	L2	C2	L2	CL12	L2	CL22	CL22	L2	L4	L3	L4	F3	F4	F4	F5	F3
	00	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																								

AUG. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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 41	X 40	X 38	X 37	X 37	X 36															X 68	X 56	X 46	X 40
2	X 44	A	X 41	X 36	X 33	X 33															X 94	A	X 34	X 33
3	X 35	X 32	A	X 32	X 34	O X 36															X 80	X 65	X 60	X 58
4	X 59	X 46	X 44	X 46	45	X 40															X 56	X 54	X 48	X 44
5	X 43	X 42	X 41	X 38	X 37	X 34															X 92	X 54	X 46	X 42
6	X 44	X 43	X 40	X 40	X 37	X 36															X 71	X 61	X 58	X 55
7	X 53	X 49	X 46	X 39	X 40	X 41															X 61	X 59	X 54	X 53
8	X 51	48	X 46	X 42	X 44	X 41															X 83	X 64	X 57	X 57
9	X 55	X 54	X 50	X 51	X 51	X 45															X 79	X 67	X 64	X 64
10	X 60	X 58	X 53	X 51	X 41	X 40															X 76	X 56	X 63	X 65
11	X 57	X 44	X 40	X 37	X 37	X 36															X 68	X 62	X 60	X 64
12	X 61	X 56	X 57	X 52	X 48	X 42															X 55	X 54	X 56	X 54
13	X 51	X 49	X 49	X 47	X 42	X 42															X 72	X 68	X 58	X 49
14	X 54	X 49	X 45	X 43	X 42	X 45															X 64	X 57	X 55	X 54
15	X 52	X 60	X 54	X 50	46	X 39															X 77	X 63	X 58	X 55
16	X 53	X 51	X 47	49	X 44	X 42															X 79	X 59	X 51	X 50
17	X 47	X 45	X 40	X 48	X 48	X 44														X 90	X 93	X 71	X 47	X 45
18	X 44	X 46	X 45	X 37	X 38	X 38														X 78	X 70	X 64	X 60	X 64
19	X 57	X 57	X 52	X 50	X 51	X 45														X 79	X 65	X 56	X 52	X 52
20	X 49	X 47	X 44	X 43	X 44	X 43														X 76	X 64	X 58	X 52	X 52
21	X 52	X 48	X 46	X 45	X 45	X 40														X 81	X 72	X 63	X 60	X 60
22	X 55	X 56	X 49	X 49	X 47	X 42														X 70	X 78	X 69	62	X 59
23	X 53	X 51	X 49	X 48	X 38	X 40														A	X 62	X 55	X 54	X 54
24	X 50	X 49	X 48	X 50	X 44	X 37														X 68	X 75	X 63	X 56	X 54
25	X 56	X 50	X 50	X 45	X 38	X 40														X 57	X 70	X 62	X 50	X 48
26	X 45	X 49	X 46	X 44	X 49	X 40														X 55	X 61	X 58	X 54	X 49
27	X 51	X 50	X 46	X 43	X 40	X 40														X 80	X 72	X 46	X 44	X 45
28	X 48	X 45	X 42	X 42	X 41	X 38														X 95	X 83	X 48	X 47	X 45
29	X 44	X 42	X 42	X 38	X 37	X 37														X 80	X 85	X 69	X 61	X 56
30	X 48	X 48	X 47	X 49	X 46	X 42														X 76	X 87	X 77	X 48	X 50
31	X 50	X 49	X 48	X 48	X 41	X 35														X 97	X 87	X 52	X 49	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	30	30	31	31	31														14	31	30	31	31
MED	X 51	X 49	X 46	X 45	X 42	X 40														X 78	X 72	X 60	X 54	X 53
U Q	X 55	X 51	X 49	X 49	X 46	X 42														X 81	X 83	X 64	X 60	X 57
L Q	X 45	X 45	X 42	X 39	X 38	X 37														X 70	X 65	X 56	X 48	X 48

AUG.2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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	35	34	32	31	31	30	41	51	56	48	54	A	A	58	A	59	59	66	70	67	62	50	40	34
2	38	A	35	30	27	27	39	51	58	55	56	A	A	56	53	A	70	A	A	A	R 88	A	28	27
3	29	26	A	26	U R 28	U R 30	37	55	55	A	A	58	72	83	63	61	76	74	94	88	74	59	54	52
4	53	40	38	40	F 38	34	46	63	47	A	A	A	A	51	A	46	A	52	54	51	U R 50	48	42	38
5	37	36	35	32	31	28	28	42	54	48	44	48	A	56	60	56	58	57	70	78	86	48	40	36
6	38	37	34	34	31	30	29	50	49	E G 42	U R 46	A	A	J R 52	53	A	49	A	A	62	65	V 55	52	49
7	47	43	40	33	V 34	35	45	49	55	A	A	54	R	R	54	61	55	49	51	58	55	53	V 48	47
8	45	40	40	36	38	35	42	54	52	56	56	52	R	57	60	68	77	78	78	78	77	58	51	52
9	49	48	44	45	45	39	50	54	58	52	54	R 50	55	57	66	60	58	58	61	76	73	61	V 58	V 58
10	54	52	47	45	35	F 32	42	53	A	A	A	A	55	54	54	58	56	55	A	71	70	50	57	59
11	51	38	34	31	31	30	42	60	67	55	56	56	55	56	53	59	63	59	60	60	62	56	54	58
12	55	50	51	46	42	36	38	56	57	56	60	61	70	64	65	A	85	90	79	58	49	48	50	46
13	V 45	43	43	41	37	36	50	65	A	A	61	61	68	A	A	66	68	73	83	82	66	62	52	43
14	48	43	39	37	36	39	V 49	64	58	A	54	54	54	52	57	64	73	77	83	83	58	51	49	48
15	46	54	48	44	38	33	40	67	81	64	A	55	57	A	62	63	63	68	84	85	71	V 57	52	49
16	47	45	41	41	38	36	45	63	74	58	53	60	62	63	58	59	64	68	75	79	73	53	45	44
17	41	38	34	42	42	38	39	60	67	60	54	65	65	58	57	54	55	66	70	84	87	65	41	39
18	38	40	39	31	32	32	36	63	70	A E G 49		62	56	60	64	68	76	82	81	72	64	58	54	58
19	51	51	46	44	45	39	46	64	57	56	53	58	63	70	71	75	80	75	80	73	59	50	46	46
20	43	41	38	37	38	37	46	65	58	53	54	60	62	72	70	62	66	72	70	70	58	52	46	46
21	46	42	40	39	39	34	38	54	60	62	52	59	67	69	64	62	63	62	69	75	66	57	54	V 54
22	49	50	43	43	41	36	46	59	56	58	64	59	68	78	77	79	65	57	56	64	72	63	54	53
23	47	45	43	42	U R 32	34	43	52	56	64	59	52	64	84	81	73	76	77	77	A	56	49	48	V 48
24	44	43	42	44	38	31	38	59	54	71	61	57	60	A	84	78	67	54	60	62	69	57	50	48
25	50	44	44	39	32	34	48	48	56	58	64	57	56	60	72	73	66	60	51	51	64	56	44	R 42
26	39	V 43	40	38	43	34	45	50	54	50	54	63	68	65	62	70	78	62	54	49	55	52	48	43
27	45	44	40	37	34	34	43	49	54	57	56	62	65	72	R 83	76	70	66	72	74	R 66	40	38	39
28	42	39	36	36	35	32	42	53	55	56	60	59	70	65	64	67	67	66	77	89	77	42	41	39
29	38	36	36	32	31	31	37	54	63	72	58	58	58	60	60	62	62	65	73	74	79	63	55	50
30	42	42	41	43	40	36	41	60	65	69	60	60	55	59	65	69	67	68	61	70	81	71	42	44
31	44	43	42	42	35	29	41	65	63	58	54	66	76	80	69	68	70	80	88	91	81	46	43	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	30	30	31	31	31	31	31	29	24	26	26	24	27	28	28	30	29	28	29	31	30	31	31
MED	45	43	40	39	36	34	42	55	57	56	55	58	62	60	64	64	66	66	71	73	66	54	48	46
U Q	49	45	43	43	39	36	46	63	63	61	60	61	68	70	70	70	73	74	80	80	77	58	54	52
L Q	39	39	36	33	32	31	38	51	54	54	54	55	56	56	58	60	62	58	60	62	59	50	42	42

AUG. 2016 foF2 (0.1MHz)

IONOSPHERIC DATA STATION Yamagawa

AUG. 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							L	L	U L 416	L	436	A	A	A	A	R 432	436	396	L 364					
2								A	L 416	432	A	A	A	A	R 448	A	412	A	A	A				
3							U L 308	U L 364	U L 400	A	A	A	448	A	444	R 440	A	396	U L 372	L				
4								344	388	A	A	A	A	A	A	U R 416	A	376	340	L				
5								352	376	L	L	436	A	436	436	436	416	400	360	L				
6								364	L 396	416	428	A	A	A	A	A	A	A	A					
7							L	U L 380	L 404	A	A	A	460	448	A	A	U L 432	L	L					
8							L	L	A	A	436	U L 468	R 468	U R 464	456	452	436	420	A					
9							L	U L 384	L 436	L 440	464	464	476	R 464	464	448	U L 464	U L 412	L					
10								L	A	A	A	A	A	A	U R 456	452	A	428	A	A				
11							L	A	U L 416	444	460	472	472	472	464	452	L 436	L 408	L	A				
12							204	L	U L 436	U L 460	A 464	468	468	476	A	A	A	A	A	A				
13							A	A	A	A	476	A	A	A	A	A	440	U L 424	L					
14							L	L	A	A	A	476	472	L 484	464	440	436	U L 420	A	A				
15								L	U L 420	A 448	A	U R 472	476	A	468	452	436	408	U L 368					
16							L	L	A	U L 436	L	476	472	468	488	448	A	A	A	A				
17								U L 384	L 420	440	472	456	464	476	464	460	436	U L 412	L					
18								L	L 404	A	492	460	A	L 468	A	A	A	A	A					
19								A	U L 408	A	U L 472	472	460	456	464	444	416	404	L					
20							L	L	U L 416	L 436	U R 488	468	464	444	460	U L 480	432	U L 404	L					
21								U L 304	L 416	436	L 456	456	464	460	464	440	436	400	A					
22								L	L	L	L 460	L 456	468	U R 452	452	A	424	U L 400	A					
23							A	A	U L 412	L 424	L 452	480	448	452	452	448	420	A	A					
24								A	L 428	420	A	R 464	448	A	444	436	L 428	L	L					
25								L	396	428	444	L 456	488	U R 452	R 444	436	424	U L 404	L					
26								264	400	L	448	452	452	452	456	452	436	L	L					
27								L	L	L 436	R 512	460	A	464	460	448	A	A						
28								A	U L 408	L 456	U L 452	456	A	A	460	L 448	436	L 404	U L 324					
29								L	L	436	U L 464	L 460	476	A	468	A	A	L	L					
30								L	U L 424	U L 444	L 464	L 484	484	U R 468	468	R 440	L 432	L	L					
31								L	L	U L 448	U L 456	484	476	472	L 480	U L 464	L 440	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	9	22	18	21	23	21	20	24	23	22	18	6					
MED							256	U L 364	L 414	436	460	464	468	464	460	448	436	404	L 362					
U Q								U L 382	L 420	U L 444	472	472	476	470	464	452	436	U L 412	U L 368					
L Q								324	400	432	450	456	460	452	452	440	424	400	340					

AUG. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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							A	U A 212	U A 264	U A 288	U A 308	A	A	A	A	A	A	A	220	A				
2							B	A 228	U A 256	A	A	A	A	A	352	A	A	268	220	A				
3							A	U A 252	A 284	A 316	A 340	360	368	360	352	344	316	272	216	B				
4							U A 172	232	280	304	328	344	348	348	336	320	A	264	A	160				
5							A 180	A 240	284	A	A 324	344	A	A	300	336	308	A 272	220	A 272				
6							B	A 244	280	312	332	A	A	A	A	344	312	A 288	220	A				
7							A	A	A	A	A	A	R 344	372	364	340	312	280	232	A				
8							B	A 236	288	324	U A 336	U A 352	U R 340	A	R 360	R 344	A	A	224	A				
9							A	A	A	A 312	U A 352	A	U A 328	384	U R 376	352	320	284	232	A				
10							A 160	228	A	A	A	A	A	A	360	348	320	272	220	B				
11							U A 172	A 236	A 280	A 304	336	364	372	U A 332	356	A	R 308	276	U A 232	A				
12							168	A 244	A 284	A 316	A 336	336	U A 356	A	A	A	A	A	U A 224	A				
13							B	U A 232	A	A	U A 320	A	A	A	A	A	324	A	A 224	A				
14							U A 140	A 232	A	A	A	U A 352	U A 352	A	376	344	A	280	A 224	B				
15							268	A 228	U A 276	U A 336	A	A	A	A	A	A	308	J A	A	A				
16							180	220	264	300	A	372	372	364	R 352	336	304	272	U A 204	A				
17							A	220	280	A	U A 292	A	A	A	A	U R 332	300	276	U A 208					
18							A	A 232	288	A	A	A	A	A	368	332	300	260	A					
19							A	A	A	A	U A 324	A	A	U R 356	R 356	328	308	264	212					
20							B	248	U A 268	324	A	A	A	A	A	A	A	A	A 220					
21							A	U A 224	U A 240	312	A	A	A	U R 360	R 364	336	304	264	A 204					
22							A	U A 228	272	296	308	R 328	R 300	A	U A 360	A	A	264	212					
23							A	A 248	284	296	U A 376	336	336	A 272	A 308	A 324	308	268	196					
24							B	A	276	296	332	344	U R 340	A 352	344	336	308	264	A 184					
25							A	216	260	316	332	304	R 352	348	U A 328	324	A 296	A	A 168					
26							A	208	276	312	324	R 332	R 320	A 320	U A 304	U A 320	U A 300	A 264	U A 168					
27							A	240	296	U A 304	A	A	A	372	344	332	300	260	A					
28							A	A	A	324	332	336	R 344	352	340	328	340	272	U A 204					
29							A	A	288	A 312	A	332	328	U A 336	U A 324	A	U A 276	U A 232	U A 180					
30							B	252	280	U A 300	A	A 360	A	328	A	328	300	264	A 208					
31							B	224	284	R 312	R 328	R 356	356	364	R 356	336	312	260	U A 172					
	00	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	25	24	22	19	17	17	17	23	22	23	24	27	2				
MED							A 172	A 232	280	312	A 332	344	344	352	352	336	308	268	A 216	216				
U Q							180	A 242	284	316	U A 336	358	356	364	360	344	312	274	A 224					
L Q							A 164	224	U A 270	300	U A 324	334	332	A 334	A 336	328	300	264	A 204					

AUG. 2016 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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	JA 21	21	JA 16	EB 16	21	21	JA 28	JA 28	JA 34	JA 44	JA 46	JA 67	JA 110	JA 62	JA 70	JA 36	JA 34	JA 38	31	JA 33	20	19	JA 52	JA 60
2	JA 49	JA 51	JA 44	JA 24	27	JA 41	JA 35	JA 52	JA 49	JA 50	JA 66	JA 121	JA 100	JA 54	44	JA 62	JA 54	JA 182	JA 158	JA 126	JA 108	JA 70	JA 20	JA 53
3	JA 72	JA 65	JA 80	JA 50	JA 48	JA 47	JA 31	31	JA 48	JA 81	JA 64	JA 60	JA 48	JA 57	44	39	JA 54	JA 48	26	JA 17	EB 16	EB 16	JA 28	JA 46
4	JA 51	JA 47	JA 34	JA 28	21	JA 26	JA 50	JA 48	JA 44	JA 60	JA 62	JA 52	JA 62	JA 48	JA 66	40	JA 109	JA 32	JA 32	JA 20	JA 18	JA 23	JA 17	JA 35
5	JA 27	JA 18	EB 16	17	EB 16	EB 16	23	JA 34	JA 32	JA 50	34	38	JA 81	JA 60	34	G	34	31	28	JA 22	EB 16	JA 18	22	21
6	JA 20	JA 28	JA 50	JA 45	JA 23	JA 19	19	JA 30	34	35	39	JA 198	JA 83	JA 73	JA 51	JA 52	JA 60	JA 77	JA 142	JA 98	JA 79	JA 70	JA 79	JA 52
7	JA 45	JA 35	JA 51	JA 27	JA 24	JA 27	JA 27	JA 42	JA 34	JA 55	JA 76	JA 62	JA 42	43	48	48	40	34	JA 33	JA 38	JA 50	JA 78	JA 38	JA 53
8	JA 60	JA 33	JA 32	JA 68	JA 19	JA 34	JA 28	JA 42	JA 64	JA 54	JA 126	42	JA 81	JA 72	39	39	JA 42	JA 42	JA 42	JA 54	JA 66	JA 66	JA 34	JA 44
9	JA 79	JA 54	JA 46	JA 66	JA 26	JA 46	JA 33	JA 34	JA 32	JA 36	39	JA 37	JA 38	45	42	43	34	G	27	JA 27	JA 40	JA 61	JA 44	JA 24
10	JA 26	JA 42	JA 36	JA 25	JA 58	JA 70	JA 58	JA 36	JA 100	JA 231	JA 108	JA 71	JA 50	JA 47	40	JA 47	JA 67	JA 46	JA 62	JA 76	JA 57	JA 134	JA 47	JA 54
11	JA 54	JA 60	JA 24	JA 38	JA 20	JA 35	JA 38	JA 45	JA 40	JA 44	JA 95	41	40	JA 42	38	40	36	34	JA 37	JA 33	JA 28	21	JA 37	JA 29
12	JA 20	JA 17	JA 22	JA 52	20	EB 16	18	JA 32	JA 49	JA 70	JA 48	39	JA 46	JA 62	JA 58	JA 143	JA 76	JA 62	JA 48	JA 33	JA 40	16	JA 33	JA 24
13	JA 21	JA 28	JA 16	JA 51	JA 51	JA 64	JA 50	JA 51	JA 110	JA 106	JA 44	JA 59	JA 70	JA 81	JA 87	JA 51	35	JA 70	29	JA 53	JA 30	JA 39	JA 84	JA 64
14	JA 66	JA 77	JA 59	JA 27	JA 28	JA 51	JA 48	JA 154	JA 109	JA 107	JA 70	40	JA 53	JA 54	46	40	JA 49	JA 41	JA 38	JA 46	JA 40	JA 28	JA 20	JA 38
15	JA 38	JA 65	JA 70	49	20	JA 22	30	JA 49	JA 51	JA 41	JA 96	JA 52	JA 58	JA 87	JA 44	JA 54	36	JA 42	JA 36	JA 32	JA 20	JA 18	18	JA 16
16	JA 80	JA 44	JA 52	JA 46	JA 34	JA 28	20	32	JA 62	34	JA 47	45	45	44	44	42	JA 48	JA 51	JA 64	JA 77	JA 38	JA 36	JA 45	JA 52
17	JA 64	JA 65	75	JA 60	JA 20	JA 24	JA 63	29	34	JA 41	35	JA 42	JA 38	34	33	36	33	38	JA 39	JA 29	JA 53	JA 52	JA 30	JA 18
18	20	JA 23	18	18	JA 17	20	JA 28	27	30	JA 64	JA 61	JA 62	JA 58	44	JA 59	JA 86	JA 74	JA 76	JA 48	JA 42	JA 43	JA 24	JA 21	JA 51
19	JA 32	JA 46	JA 52	JA 45	JA 40	JA 74	JA 33	JA 65	JA 35	JA 48	JA 52	JA 44	JA 39	39	38	34	33	33	30	JA 24	JA 24	JA 29	JA 26	JA 26
20	JA 24	21	JA 23	JA 18	JA 16	EB 16	17	27	JA 52	34	38	JA 40	JA 42	JA 40	41	JA 37	JA 42	JA 42	JA 38	JA 42	JA 19	JA 19	JA 20	JA 27
21	JA 34	JA 28	27	JA 17	JA 22	JA 20	JA 38	JA 29	JA 33	33	JA 48	JA 61	JA 64	39	44	JA 47	34	35	JA 38	JA 39	JA 36	JA 16	JA 21	JA 40
22	JA 31	JA 27	JA 18	JA 20	20	20	JA 25	JA 31	33	JA 45	37	34	37	JA 52	44	JA 61	JA 51	31	JA 39	JA 25	JA 31	JA 24	JA 51	JA 36
23	JA 40	JA 19	JA 49	JA 30	JA 50	JA 18	JA 38	30	JA 41	JA 49	41	38	39	32	JA 44	35	JA 45	JA 54	JA 41	JA 66	JA 47	JA 52	JA 20	EB 16
24	JA 24	JA 29	JA 52	JA 42	JA 20	JA 39	JA 25	JA 51	31	32	46	42	42	JA 82	36	40	JA 43	33	26	JA 25	JA 27	JA 31	JA 51	JA 46
25	JA 35	JA 28	JA 17	19	JA 41	JA 27	JA 32	24	27	35	37	34	40	37	34	35	JA 33	JA 43	JA 31	21	JA 37	JA 22	JA 28	JA 64
26	JA 82	JA 21	JA 41	JA 24	JA 18	JA 20	18	22	32	35	37	36	37	41	JA 41	JA 37	35	JA 32	JA 26	JA 22	18	21	JA 42	JA 38
27	JA 42	JA 51	75	JA 30	JA 22	JA 18	JA 18	28	34	JA 39	JA 46	JA 66	JA 78	44	36	36	JA 51	JA 45	JA 54	JA 44	JA 19	JA 23	JA 19	JA 22
28	EB 16	JA 24	20	JA 20	JA 16	JA 22	JA 32	JA 44	JA 36	37	39	41	JA 53	47	35	G 26	37	33	27	JA 40	JA 45	JA 22	19	JA 20
29	JA 30	JA 28	JA 50	JA 22	JA 41	JA 46	JA 31	JA 33	31	33	JA 36	38	34	JA 49	JA 49	JA 49	JA 54	JA 40	JA 30	JA 44	JA 32	JA 32	JA 30	JA 23
30	JA 16	JA 32	20	18	EB 16	EB 16	EB 16	29	JA 37	JA 40	JA 43	40	39	GJ 32	JA 45	GJ 32	JA 39	30	22	JA 22	JA 16	JA 16	28	18
31	22	18	EB 16	EB 16	EB 16	19	JA 24	28	33	36	42	47	43	44	43	39	37	34	23	JA 27	JA 42	JA 34	20	JA 27
	00	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	JA 34	JA 29	JA 36	JA 27	JA 21	JA 24	JA 30	JA 32	JA 35	JA 44	JA 46	JA 42	JA 46	JA 47	44	40	JA 42	JA 40	JA 36	JA 33	JA 36	JA 24	JA 28	JA 36
U Q	JA 54	JA 51	JA 52	JA 46	JA 34	JA 41	JA 38	JA 45	JA 49	JA 55	JA 64	JA 61	JA 64	JA 60	JA 48	JA 49	JA 54	JA 48	JA 42	JA 46	JA 45	JA 52	JA 44	JA 52
L Q	JA 22	JA 23	20	19	JA 19	19	23	29	33	35	39	39	39	41	38	36	35	33	28	JA 25	20	JA 19	JA 20	JA 23

AUG. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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	E B 16	E B 16	E B 16	E B 16	21	26	31	36	38	A A 67	A A 110	56	A A 70	35	32	31	29	26	E B 16	E B 16	E B 16	16
2	32	A A 51	19	18	E B 16	18	33	44	31	40	44	A A 121	A A 100	46	40	A A 62	36	A A 182	A A 158	A A 126	52	A A 70	E B 16	20
3	E B 16	E B 16	A A 80	17	24	26	18	28	34	A A 81	A A 64	50	45	52	43	36	50	34	23	16	E B 16	E B 16	26	29
4	35	34	29	22	E B 16	E B 16	29	30	36	A A 60	A A 62	A A 52	A A 62	44	A A 66	38	A A 109	30	26	18	E B 16	E B 16	16	25
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	27	29	35	34	36	A A 81	38	U Y 34	G	31	30	23	G 19	E B 16	E B 16	E B 16	E B 16
6	E B 16	20	16	E B 16	16	E B 16	17	27	32	35	37	A A 198	A A 83	50	44	A A 52	43	A A 77	A A 142	30	51	28	36	27
7	19	23	17	19	19	E B 16	20	33	31	A A 55	A A 76	45	41	42	46	47	38	33	32	24	46	E B 16	16	24
8	23	19	19	17	E B 16	E B 16	23	34	46	47	36	38	43	44	39	38	39	34	38	23	37	27	25	17
9	46	30	31	19	E B 16	16	21	29	30	34	38	36	37	44	41	42	33	G	27	24	22	37	21	20
10	E B 16	16	19	E B 16	E B 16	E B 16	23	32	A A 100	A A 231	A A 108	A A 71	48	47	39	42	45	40	A A 62	66	54	E B 16	40	35
11	32	34	19	E B 16	17	24	30	44	37	36	35	40	39	39	38	35	35	29	G 23	20	16	E B 16	17	20
12	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	26	41	40	35	36	38	44	48	A A 143	71	44	45	29	33	E B 16	24	E B 16
13	E B 16	E B 16	E B 16	E B 16	20	E B 16	34	37	A A 110	A A 106	40	49	58	A A 81	A A 87	46	34	41	27	23	24	19	20	26
14	24	19	E B 16	E B 16	E B 16	E B 16	23	32	49	A A 107	47	39	41	42	44	40	39	36	36	42	35	17	17	24
15	28	39	20	21	E B 16	E B 16	G 24	28	32	35	A A 96	44	43	A A 87	40	38	35	31	28	24	18	E B 16	E B 16	E B 16
16	E B 16	19	E B 16	E B 16	E B 16	20	18	31	58	33	39	43	44	43	42	41	46	49	58	68	34	23	23	18
17	E B 16	27	18	20	E B 16	17	19	26	32	35	35	38	37	U Y 34	U Y 33	36	33	36	31	24	24	20	19	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	26	30	A A 64	46	39	53	40	56	65	62	74	37	29	E B 16	E B 16	E B 16	21
19	20	17	20	17	E B 16	E B 16	31	56	33	46	36	36	38	39	38	34	32	31	30	20	20	23	20	16
20	E B 16	E B 16	E B 16	17	E B 16	E B 16	E B 16	25	36	33	35	38	40	38	38	36	39	26	23	24	E B 16	E B 16	E B 16	E B 16
21	E B 16	E B 16	16	E B 16	E B 16	E B 16	31	G 21	31	32	41	37	42	38	42	39	33	35	36	32	E B 16	E B 16	E B 16	20
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	16	28	31	43	36	U Y 34	37	40	G 36	54	39	29	35	20	20	E B 16	28	20
23	19	E B 16	26	21	24	E B 16	32	28	34	35	G 37	36	38	U Y 32	42	35	32	53	38	A A 66	36	44	E B 16	E B 16
24	E B 16	21	E B 16	20	18	26	20	36	30	32	44	40	40	A A 82	36	38	38	28	23	21	E B 16	24	28	32
25	21	16	E B 16	E B 16	19	20	19	24	27	35	37	U Y 34	39	36	U Y 34	34	31	39	22	E B 16	19	E B 16	22	35
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	31	34	36	36	36	41	38	35	34	30	24	18	E B 16	E B 16	19	24
27	E B 16	20	E B 16	E B 16	E B 16	E B 16	16	27	33	38	44	40	52	43	36	36	46	43	48	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	D 16	17	24	41	30	35	37	39	48	U Y 47	U Y 35	G 26	36	30	24	20	24	E B 16	E B 16	E B 16
29	17	E B 16	24	E B 16	21	16	23	29	30	33	35	37	U Y 34	48	45	47	52	37	27	42	30	19	18	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	28	36	38	39	38	38	G 32	41	G 32	31	30	22	20	E B 16	E B 16	E B 16	E B 16
31	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	31	34	41	45	41	43	43	38	36	31	21	23	39	24	E B 16	20
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E B 16	16	E B 16	E B 16	E B 16	E B 16	21	28	32	36	38	39	41	43	41	38	36	34	29	24	20	E B 16	17	20
U Q	21	21	19	18	17	17	24	33	36	A A 47	A A 44	A A 45	A A 52	47	44	46	45	41	38	30	35	23	23	24
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	26	31	34	36	36	38	39	38	35	33	30	23	20	E B 16	E B 16	E B 16	E B 16

IONOSPHERIC DATA STATION Yamagawa

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

AUG. 2016 fmin (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

AUG. 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	316	305	327	323	346	334	361	350	342	350	338	A	A	321	A	323	300	302	329	334	346	340	332	314
2	292	A	F 314	F 334	F 315	336	333	348	370	325	344	A	A	320	305	A	332	A	A	A	R 372	A	313	302
3	324	306	A	307	U R 319	U R 321	324	369	377	A	A	262	275	328	311	280	305	274	322	345	325	322	282	287
4	318	293	281	321	F 309	F 280	282	345	344	A	A	A	A	288	A	276	A	299	332	328	U R 308	325	298	294
5	288	310	311	297	296	F 301	343	278	365	332	413	276	A	312	316	291	303	293	305	318	357	344	304	313
6	308	300	306	313	310	288	348	342	358	G	U R 259	A	A	R	308	A	306	A	A	330	322	V 318	305	F 304
7	F 321	297	296	F 304	F 310	317	353	357	366	A	A	328	R	R	291	321	332	305	317	327	323	308	V 295	F 288
8	F 298	F 314	F 298	F 288	F 320	F 314	363	369	328	353	339	330	R	295	294	303	313	303	315	316	326	319	303	307
9	324	297	285	F 281	F 278	304	344	355	350	374	381	R 257	292	298	333	316	306	316	304	326	317	308	V 321	V 295
10	300	311	F 318	F 291	345	F 312	365	332	A	A	A	A	313	299	289	309	314	302	A	293	334	F 325	F 289	F 299
11	343	330	305	F 276	F 300	316	333	337	371	350	313	328	321	318	306	306	323	337	334	332	321	310	F 276	F 289
12	313	298	303	313	F 301	297	337	354	347	335	336	303	319	323	312	A	321	342	356	348	300	303	300	318
13	V 297	F 290	305	312	322	301	356	369	A	A	324	308	335	A	A	317	328	322	325	340	338	318	315	F 280
14	F 314	323	293	289	291	F 312	V 342	365	369	A	331	329	303	258	304	307	318	319	337	349	347	311	298	299
15	301	281	329	324	314	312	308	349	379	382	A	317	299	A	319	317	303	306	319	343	351	V 304	307	F 316
16	299	F 310	F 314	F 311	F 304	302	329	353	398	385	H 310	313	324	326	302	315	316	329	320	336	351	323	314	F 288
17	313	302	299	F 291	323	310	295	335	343	382	278	334	334	317	332	309	293	321	318	330	356	363	321	289
18	283	307	343	304	312	316	302	364	376	A	G	342	302	307	298	297	313	320	337	334	330	312	292	276
19	287	321	311	298	342	F 315	340	375	384	358	370	315	320	313	306	310	336	319	347	351	353	311	304	311
20	299	298	299	306	324	334	359	384	375	367	289	331	310	335	326	315	329	341	349	354	339	311	306	287
21	F 307	320	307	316	342	363	359	368	361	369	381	320	332	324	315	314	329	327	333	340	345	317	310	V 316
22	F 287	320	303	F 299	342	330	365	388	380	319	345	305	318	322	319	334	342	325	323	317	334	343	F 299	F 338
23	F 307	F 314	298	F 302	U R 291	330	372	375	364	367	357	282	313	324	332	311	317	342	359	A	314	314	309	V 307
24	292	F 295	310	326	327	305	328	369	304	355	339	302	345	A	330	337	344	311	326	313	327	344	305	F 293
25	308	F 318	328	332	299	316	393	364	345	368	344	327	286	301	326	326	355	346	339	314	341	360	300	R 296
26	F 303	F 308	304	312	356	360	383	377	381	333	311	312	322	345	303	327	337	358	338	319	315	318	313	302
27	316	F 292	324	307	335	335	363	379	373	348	309	321	304	309	R 333	322	336	323	337	340	R 363	336	300	F 278
28	305	311	315	319	322	F 309	359	375	362	343	371	313	349	316	324	329	321	313	325	351	390	314	308	F 299
29	301	F 305	F 309	F 329	308	324	333	358	349	385	350	331	337	327	309	326	330	317	334	318	342	344	321	335
30	314	F 302	305	325	330	338	341	372	369	369	360	319	317	303	324	338	327	345	320	305	342	372	302	291
31	301	299	302	345	322	304	336	380	363	357	349	317	325	333	320	321	320	328	337	349	372	302	296	299
	00	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	30	31	31	31	31	31	29	24	26	26	24	26	28	28	30	29	28	29	31	30	31	31
MED	305	306	306	311	319	315	343	364	365	356	339	317	318	318	314	316	321	320	330	332	339	318	304	299
U Q	314	314	314	323	330	330	361	375	376	369	357	328	328	324	325	324	332	333	337	344	351	340	313	311
L Q	298	298	299	F 298	304	304	333	349	348	339	311	305	304	303	304	308	313	306	320	318	323	311	298	289

AUG. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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							L	L	U L 386	L	414	A	A	A	A	R 398	368	385	L 369					
2								A	L 393	394	A	A	A	A	R 400	A	389	A	A	A				
3							U L 349	U L 413	U L 409	A	A	A	A	A	A	R 372	A	356	U L 361	L				
4								361	371	A	A	A	A	A	A	U R 418	A	376	363	L				
5								376	439	L	L	454	A	454	401	379	384	364	353	L				
6								366	L 392	418	403	A	A	A	A	A	A	A	A					
7							L	U L 381	L 396	A	A	A	405	377	A	A	U L 372	L	L					
8							L	L	A	A	431	U L 415	R 394	U R 367	396	364	371	343	A					
9							L	U L 386	L 373	L 409	404	438	435	R 402	373	363	U L 356	U L 362	L					
10								L	A	A	A	A	A	A	U R 405	354	A	332	A	A				
11							L	A	U L 380	379	407	387	400	400	403	400	L 373	L 371	L	A				
12							450	L	U L 373	U L 382	A 396	414	424	371	A	A	A	A	A	A				
13							A	A	A	A		A	A	A	A	A	370	A	L					
14							L	L	A	A	A	444	448	L 385	357	383	361	U L 356	A	A				
15								L	U L 387	A 396	A	U R 391	388	A	383	395	373	358	U L 360					
16							L	L	A	U L 412	L	367	370	390	373	382	A	A	A	A				
17								U L 366	L 400	395	398	426	401	397	381	384	387	U L 345	L					
18								L	L 397	A	338	408	A	L 351	A	A	A	A	A					
19								A	U L 405	A	U L 398	423	431	410	380	395	375	368	L					
20							L	L	U L 404	L 404	U R 401	407	423	400	386	U L 357	361	U L 363	L					
21								U L 415	L 381	H 397	L 396	418	375	407	373	396	371	376	A					
22								L	L	L	L 393	L 416	415	U R 411	408	A	394	U L 367	A					
23							A	A	U L 394	L 402	L 419	H 392	439	399	E A 366	385	377	A	A					
24								A	L 348	413	A	R 405	367	A	377	377	L 380	L	L					
25								L	H 422	385	387	L 405	374	U R 445	R 420	410	371	A	L					
26								522	404	L	395	410	410	397	392	373	367	L	L					
27								L	L	L 404	R 342	445	A	350	412	375	A	A						
28								A	U L 407	L 408	U L 423	452	A	A	387	L 394	360	L 359	U L 366					
29								L	L	403	U L 403	L 432	408	A	352	A	A	L	L					
30								L	U L 394	U L 387	L 392	L 401	410	U R 412	382	R 408	L 375	L	L					
31								L	L	U L 395	U L 404	343	383	364	L 364	U L 376	L 377	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	9	22	18	20	23	20	20	23	23	22	16	6					
MED							400	U L 381	L 394	400	400	414	406	398	383	383	372	362	L 362					
U Q								U L 414	U L 404	L 408	406	432	424	408	401	396	377	370	L 366					
L Q								366	L 381	394	394	401	386	374	373	373	368	356	360					

AUG. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							224	280	274	282	306	A	A	358	A	320	354	312	260					
2								278	244	294	298	A	A	340	368	A	282	A	A	A				
3							316	226	236	A	A	446	372	278	330	386	306	354	262	222				
4								248	292	A	A	A	A	402	A	476	A	356	284	246				
5								436	254	308	224	470	A	346	334	388	350	354	294	254				
6								286	274	G	520	A	A	A	358	A	386	A	A					
7							250	266	246	A	A	338	524	478	396	322	310	354	308					
8							232	238	308	280	286	330	436	386	368	336	302	294	268					
9							248	258	288	254	254	528	410	384	302	336	354	306	306					
10								290	A	A	A	A	352	398	408	354	336	360	A	398				
11							288	276	240	286	344	318	338	336	362	354	308	278	274	242				
12							220	258	276	316	304	356	310	312	320	A	308	252	236	210				
13							250	232	A	A	312	354	296	A	A	322	290	286	262					
14							256	236	246	A	308	334	380	506	370	340	302	284	250	232				
15								256	228	224	A	360	374	A	318	316	336	308	262					
16							256	254	212	226	H 326	336	326	306	366	340	314	280	290	290				
17								274	262	242	444	310	294	338	308	362	374	302	268					
18								242	222	A	G	300	388	356	362	408	316	328	240					
19								232	226	262	272	350	322	324	302	308	270	270	238					
20							244	220	228	258	422	296	350	282	282	328	302	266	238					
21								H 222	256	244	254	330	290	300	312	332	290	282	260					
22								212	228	304	272	318	306	290	292	276	276	272	274					
23							230	210	246	250	272	430	326	284	262	296	290	254	232					
24								220	358	244	246	376	286	A	282	270	264	318	260					
25								238	270	254	280	316	410	356	296	292	258	266	230					
26								214	236	290	348	334	304	272	350	300	260	252	226					
27								224	240	270	368	316	346	310	274	278	274	274						
28								222	254	274	248	336	278	328	300	302	296	290	260					
29								250	252	226	268	300	304	320	352	306	296	284	256					
30								224	242	244	262	332	344	362	312	284	280	254	272					
31								216	226	248	272	328	302	278	296	304	298	268	244					
	00	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	31	29	24	26	26	26	27	28	28	30	29	27	8				
MED							249	238	246	260	292	334	332	336	319	322	302	284	260	244				
U Q							256	266	272	288	344	356	374	362	362	347	316	315	274	272				
L Q							231	222	232	244	268	318	304	300	298	301	282	269	240	227				

AUG. 2016 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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	270	274	260	242	230	238	210	194	202	188	202	A	A	A	A	208	214	218	216	242	208	210	214	278
2	384	A	272	234	274	266	292	A	188	228	A	A	A	A	214	A	226	A	A	A	222	A	228	340
3	296	338	A	320	344	336	212	202	H 204	A	A	A	H	A	A	224	A	250	224	E B 224	224	206	304	322
4	272	372	370	268	250	310	346	E A 258	264	A	A	A	A	A	A	214	A	246	230	242	236	238	252	316
5	294	278	278	284	292	302	262	222	186	186	162	H 148	A	176	206	226	206	214	238	250	210	182	252	278
6	284	306	294	270	276	308	230	210	210	194	212	A	A	A	A	A	A	A	A	248	276	262	306	278
7	260	292	278	284	292	252	226	242	202	A	A	A	212	272	A	A	242	224	248	248	310	236	260	310
8	290	292	308	308	248	232	220	236	A	A	166	170	226	278	200	236	244	254	A	248	242	232	276	256
9	338	294	360	324	306	284	236	210	208	196	206	H 176	160	238	238	282	208	202	230	250	226	274	254	270
10	272	240	254	256	228	260	234	242	A	A	A	A	A	A	204	A 294	A	324	A	A	268	244	326	304
11	242	328	266	306	290	320	272	A	E A 258	206	182	214	204	186	194	190	214	216	220	A	230	230	276	286
12	234	270	270	242	254	252	200	212	E A 278	230	184	176	H 168	260	A	A	A	A	A	A	308	264	282	230
13	280	294	262	240	270	256	A	A	A	A	194	A	A	A	A	A	214	A	232	222	210	216	236	354
14	292	262	286	284	284	270	240	218	A	A	A	H 164	H 170	228	296	236	264	262	A	A	208	246	256	286
15	310	338	234	256	244	260	246	206	216	206	A	248	232	A	222	208	214	228	238	224	202	218	242	248
16	268	272	260	276	292	280	222	218	A	184	166	262	266	236	228	242	A	A	A	A	218	236	248	296
17	252	328	328	316	250	260	234	216	202	186	H 174	168	H 170	204	206	198	H 202	292	260	246	222	204	226	288
18	314	262	224	272	270	262	228	220	200	A	318	206	A	280	A	A	A	A	A	234	208	228	274	280
19	276	240	254	282	242	230	252	A	198	A	190	170	168	194	200	200	212	218	232	216	208	230	266	260
20	278	282	286	280	250	234	220	208	206	192	182	H 182	172	200	218	H 206	270	216	226	230	206	226	256	278
21	260	266	274	254	224	200	230	150	194	H 178	222	182	242	210	250	214	212	238	A	222	204	214	250	256
22	296	246	266	260	218	248	222	212	208	284	192	H 158	172	194	H 180	A	228	204	A	250	242	204	300	218
23	268	250	266	252	348	252	A	A	218	198	170	H 170	180	216	E A 274	206	204	A	A	A	268	334	272	238
24	282	316	282	254	254	334	248	A	198	188	A	200	258	A	214	226	244	200	218	240	236	226	262	324
25	290	262	224	238	308	272	206	196	H 176	224	H 216	202	228	170	H 160	H 174	194	A	226	248	230	202	282	344
26	292	250	282	268	224	212	210	148	200	192	192	200	192	228	206	202	208	208	210	238	242	234	260	274
27	250	310	240	268	244	234	216	214	214	208	H 262	H 166	A	A 294	180	210	A	A	260	214	200	206	292	314
28	262	264	270	244	240	270	230	A	192	190	176	176	A	A	182	186	244	214	236	218	192	198	258	254
29	278	266	298	252	304	244	246	218	208	H 192	186	178	188	A	310	A	A	258	A 258	256	222	206	234	228
30	236	300	274	234	234	222	226	214	214	220	212	188	172	172	226	202	196	236	234	264	220	198	212	276
31	264	286	268	218	222	270	238	A 218	204	206	210	298	222	262	252	214	214	242	226	224	216	224	280	286
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	30	31	31	31	29	24	26	22	23	23	20	20	23	23	22	22	20	24	31	30	31	31
MED	278	280	271	268	254	260	230	214	203	195	192	178	190	222	210	210	214	226	231	241	222	226	260	278
U Q	292	306	286	284	292	280	246	219	214	208	212	202	227	261	238	226	242	250	238	248	242	236	280	310
L Q	262	262	260	244	240	238	220	207	198	188	176	H 170	171	194	200	202	208	214	225	224	208	206	248	256

AUG. 2016 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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							A 100		98	96	94	A	A	A	A	A	A	A	108	A				
2							B	98	94	94	A	A	A	A	A	A	A	A	A	A				
3							A 100		96	98	96	98	98	94	98	96	96	96	100	B				
4							110	110	110	96	102	100	98	98	96	100	A	96	A	B				
5							116	96	96	A	98	98	A	A	98	104	98	98	96	A				
6							B	96	96	96	94	A	A	A	A	102	98	98	98	A				
7							A	A 98		A	A	A	96	102	102	98	98	98	104	A				
8							B	96	98	98	102	A	A 110	A	100	100	A	A	A	A				
9							A	A	A	98	100	100	98	A	A	A	A	98	104	A				
10							E B 110	100	A	A	A	A	A	A	100	98	98	98	102	B				
11							108	98	96	94	A	A	A	98	98	A	98	98	104	A				
12							120	120	94	94	94	100	100	A	A	A	A	A	A	A				
13							B	96	A	A	98	98	A	A	A	A	116	A	A	A				
14							B	100	A	A	A	98	98	A	A	A	A	114	114	B				
15							A	102	98	A	A	A	A	A	A	A	108	A	A	A				
16							122	98	98	98	A	A	110	108	96	96	94	98	104	A				
17							A	98	98	A	96	A	A	A	A	96	96	98	102					
18							A	96	114	A	A	A	A	A	106	98	96	100	A					
19							A	A	A	A	98	96	A	A	A	104	96	96	104					
20							B	104	98	102	A	A	A	A	A	A	A	A	A					
21							A	A 94		A	A	A	A	A	108	A	98	98	102					
22							A	106	98	98	96	96	96	A	A	A	A	A	96					
23							A	98	H 110	110	A	102	104	88	92	98	98	100	100					
24							B	A 100		114	114	104	96	94	100	100	100	100	100					
25							A	112	98	A	A	94	98	98	104	104	94	A	B					
26							A	102	94	94	102	94	94	100	94	98	100	102	B					
27							A	118	120	96	A	A	A	A	A 106	106	90	104	A					
28							A	A	A	104	108	100	100	98	98	106	A	106	106					
29							A	A	102	102	A	102	106	94	92	A	96	98	100					
30							B	A	98	98	A	114	A	A	A	108	106	104	104					
31							B	104	98	100	94	96	96	102	102	102	100	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							6	23	25	20	16	17	16	12	18	19	21	22	19					
MED							113	100	98	98	98	98	98	98	99	100	98	98	102					
U Q							120	104	99	101	102	101	102	101	102	104	100	100	104					
L Q							110	98	96	96	95	96	96	94	96	98	96	98	100					

AUG.2016 h'E (KM)

IONOSPHERIC DATA STATION Yamagawa

AUG. 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	122	98	100	B	100	100	104	110	102	102	100	94	122	92	94	96	96	94	106	104	92	92	110	98
2	98	98	96	98	104	98	102	98	98	98	110	98	114	92	118	92	120	102	102	100	126	118	104	108
3	108	96	104	102	94	94	94	122	110	108	110	108	118	110	116	136	106	106	128	130	B	B	96	90
4	90	94	92	94	118	114	108	108	116	106	106	108	104	106	102	106	98	108	98	116	120	92	90	86
5	90	100	B	92	B	B	118	128	118	92	114	114	116	128	110	G	126	110	102	96	B	92	92	142
6	148	102	104	104	104	112	118	116	106	130	130	96	100	98	100	116	112	106	104	102	94	112	118	100
7	100	100	104	98	98	102	114	122	112	98	98	98	104	122	116	110	114	118	106	96	102	108	104	98
8	108	98	100	110	102	120	110	106	104	104	108	110	104	96	132	116	92	92	102	98	98	116	86	104
9	96	96	96	116	96	96	96	94	96	102	102	102	102	130	130	128	140	G	118	110	88	100	102	110
10	108	108	104	110	104	116	106	104	96	96	96	96	96	100	184	128	112	108	104	102	100	120	100	100
11	98	96	94	100	100	94	106	102	102	102	114	128	134	102	154	100	134	118	112	100	102	102	98	100
12	100	98	106	118	110	B	134	98	102	100	104	104	104	122	122	110	88	90	104	92	88	92	88	88
13	104	88	88	108	104	104	102	102	98	98	102	100	98	98	96	120	130	116	116	92	98	106	114	110
14	102	102	102	102	112	106	100	102	98	98	98	102	102	98	130	126	94	120	112	104	102	108	106	102
15	100	98	98	108	118	118	136	106	106	106	92	96	94	94	92	92	122	88	88	86	86	86	90	90
16	102	102	98	110	100	96	138	104	98	120	96	122	118	118	120	120	110	102	100	96	96	98	112	104
17	104	104	96	98	98	98	98	98	98	96	96	96	96	98	98	128	128	114	104	100	100	100	96	88
18	88	90	90	90	106	108	98	102	166	90	94	98	92	92	114	108	108	112	112	106	106	104	98	120
19	102	98	124	100	96	106	98	94	96	94	102	102	96	178	178	176	150	120	108	102	96	96	94	96
20	102	88	100	90	94	B	112	106	104	142	98	94	96	94	94	90	90	90	102	86	86	86	88	104
21	104	102	100	100	98	102	92	104	100	154	92	132	86	132	122	106	128	112	102	102	104	100	100	94
22	96	100	94	92	92	94	90	112	104	104	104	116	102	96	122	90	92	134	114	108	102	102	102	96
23	96	92	88	88	88	92	92	124	114	110	116	122	106	108	102	114	116	104	102	96	94	94	106	B
24	112	94	100	94	94	92	118	92	124	150	142	126	118	104	128	122	110	112	104	98	104	110	96	96
25	96	92	96	94	94	90	90	150	146	164	164	110	112	128	112	112	102	98	102	134	94	104	94	94
26	116	116	94	90	90	94	98	140	132	116	112	112	102	102	104	106	106	104	102	100	110	100	96	96
27	102	112	118	106	90	92	94	140	130	100	92	94	92	128	144	128	106	106	96	102	86	120	102	90
28	B	102	108	110	102	94	94	90	90	114	114	108	104	114	134	96	174	116	108	94	102	92	92	106
29	94	130	92	88	88	120	96	100	172	110	94	94	118	98	98	96	96	98	102	92	92	94	112	90
30	94	94	86	84	B	B	B	120	102	100	98	118	94	96	92	92	88	108	112	102	82	100	100	100
31	94	92	B	B	B	128	98	112	112	112	108	110	114	110	108	112	112	104	102	94	94	90	98	96
	00	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	29	29	28	27	30	31	31	31	31	31	31	31	31	30	31	30	31	31	29	30	31	30
MED	101	98	98	100	99	100	101	106	104	104	102	104	104	102	116	111	110	107	104	100	98	100	98	98
U Q	104	102	104	108	104	112	112	120	116	114	112	114	114	122	130	122	126	114	112	104	102	108	104	104
L Q	96	94	94	92	94	94	96	100	98	98	96	96	96	96	100	96	96	102	102	96	92	92	94	94

AUG. 2016 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 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	FF 11	FF 22	FF 11		F 2	F 2	C 3	CH 21	C 3	C 2	C 2	L 2	CL 15	L 3	L 3	L 2	L 2	L 3	CL 21	CCL 31	F 1	F 1	FF 13	FQ 31
2	FQ 41	FQ 41	FF 32	FF 32	F 1	FF 33	CC 52	L 4	L 2	L 3	CL 22	LC 42	CL 13	LCH 22	CL 11	L 3	CL 13	CL 32	CL 83	CH 61	FFF 18	FFF 34	FF 22	FFF 21
3	FFF 11	FF 31	FFF 14	FF 51	F 7	F 8	LH 31	CL 22	C 2	C 2	C 2	C 3	C 2	C 3	C 1	H 1	C 3	C 2	C 2	H 1			FF 23	F 4
4	F 8	F 9	F 6	F 6	FF 11	F 2	C 4	CL 41	CL 31	C 4	C 2	C 2	C 2	C 2	C 2	C 1	L 4	C 2	L 2	CC 21	FF 11	F 2	F 4	FF 32
5	F 3	FF 21		F 1			C 2	C 2	C 1	LC 12	C 1	C 1	CL 14	CL 11	C 1		C 1	C 2	C 1	L 3		F 1	F 2	F 1
6	FFF 12	FFF 23	FF 32	FF 32	F 3	F 1	C 1	C 2	C 2	H 1	H 1	L 4	L 2	L 2	CC 21	C 3	C 4	C 3	C 4	CH 51	F 4	FF 14	FF 13	FQ 31
7	FQ 21	FQ 21	FQ 21	F 6	F 7	F 2	CL 13	CL 23	C 1	L 2	L 4	L 2	C 1	C 1	C 2	C 2	C 1	C 2	CL 32	LC 43	FF 72	FFF 23	FFF 31	FQ 21
8	FF 13	FQ 21	FF 22	FFF 14	FF 21	FF 11	C 4	C 3	C 2	C 3	C 1	CC 11	C 1	L 1	H 1	C 1	L 3	L 2	CL 33	LC 36	FF 54	FF 15	F 4	FF 32
9	FF 51	FF 51	F 5	FF 14	F 2	F 5	LQ 31	LC 41	L 3	C 1	C 1	C 1	C 1	CL 11	CL 11	CL 11	HL 12		C 2	CL 43	FQ 31	FF 33	FF 23	FF 34
10	FF 41	FF 21	F 3	F 2	FF 11	FF 32	C 5	C 3	L 8	L 3	L 6	L 5	L 2	L 2	H 1	C 2	C 2	C 3	C 5	CL 81	FF 71	FF 13	F 8	F 8
11	FFQ 51	F 6	F 4	FQ 21	F 5	F 3	C 7	C 4	C 3	C 2	CL 11	CL 11	HL 11	CH 11	H 1	L 1	H 1	C 1	C 3	L 4	F 4	F 2	F 2	F 8
12	FF 21	FF 21	F 1	FFF 14	F 1		HL 11	LC 22	C 3	C 4	C 1	C 1	C 1	CL 11	CLH 22	CL 32	L 4	LQ 41	CL 32	LH 62	FF 61	FF 21	F 3	FF 32
13	FF 12	FF 21	F 1	FFF 12	FF 32	F 3	C 5	C 5	L 5	L 4	C 2	C 2	L 3	L 3	L 3	CL 22	HL 12	CL 12	CLH 32	LC 33	FF 42	FF 21	FFF 32	FFF 41
14	F 3	F 5	F 5	F 5	F 4	FF 21	CH 41	C 4	L 5	L 4	L 3	C 2	C 2	LH 21	CL 11	CC 11	LC 21	CL 22	CL 72	CL 81	F 7	FQ 31	F 3	F 8
15	F 7	F 7	FQ 31	FF 15	FFF 12	FF 21	HC 15	C 3	C 2	CC 12	LQ 41	L 2	L 2	L 4	L 2	L 2	CL 13	LQ 31	L 4	LC 41	F 4	FF 11	F 1	FF 11
16	F 3	FQ 31	F 2	FFF 21	FF 42	FF 52	HL 21	C 3	L 5	C 1	L 2	CL 11	CL 11	CL 11	C 1	C 1	C 2	C 4	CC 51	LC 91	FF 81	F 5	FFF 13	F 3
17	F 4	FF 41	FF 31	FQ 41	FF 21	FQ 31	L 2	L 3	L 2	L 3	L 2	L 2	L 1	L 1	L 1	C 1	C 1	C 2	C 4	F 4	F 4	FFF 21	FQ 21	FF 21
18	F 2	F 1	F 1	F 1	F 2	F 2	LC 22	CH 11	HL 12	L 3	L 4	LH 21	L 4	L 2	CL 22	C 3	C 4	CL 41	CL 35	FF 45	FFF 12	FF 21	FF 31	FFF 43
19	FF 31	FF 42	FF 16	F 4	F 3	F 4	L 6	L 4	L 2	L 4	C 2	C 1	L 2	HL 11	HL 12	HL 11	H 1	C 2	C 5	F 3	F 5	F 8	F 6	FF 71
20	F 2	F 1	F 3	F 1	F 1		C 1	C 2	C 3	HC 11	L 1	L 2	L 3	L 2	L 2	L 3	L 4	LQ 21	CL 33	F 3	FF 31	FF 21	FF 21	FF 22
21	FF 21	FF 31	F 4	F 3	F 3	F 1	L 5	CL 22	C 2	HL 11	L 3	HL 12	L 2	HLC 12	CL 11	CCL 11	C 1	C 2	C 4	F 4	FF 11	F 1	F 2	FQ 31
22	FQ 21	FFF 21	F 2	F 2	F 2	F 1	LC 11	CL 22	C 1	C 3	C 1	C 1	C 1	L 2	CL 12	L 3	L 3	HLQ 12	C 4	F 3	F 3	FF 11	FQ 31	FQ 31
23	FQ 21	F 2	F 4	F 4	FQ 31	FF 31	L 6	C 2	CL 22	CL 12	CCL 11	CL 11	CL 11	C 1	C 2	C 1	C 2	C 3	C 8	F 5	F 9	F 3	F 4	
24	F 1	FF 42	F 4	F 5	FF 32	FF 83	CL 41	L 4	CL 12	HL 11	HL 21	CL 11	C 2	C 3	CL 11	CL 11	C 2	C 2	C 4	F 5	FF 41	FF 37	F 5	FQ 61
25	FF 41	F 5	F 2	F 2	F 7	F 7	L 5	HL 11	HL 22	HH 21	HC 11	C 1	C 1	CL 11	CL 11	CL 13	C 1	L 4	C 3	F 1	FF 14	F 1	F 4	F 4
26	FF 14	FF 12	FF 21	FF 31	F 2	FQ 21	L 1	H 1	H 1	C 1	CL 11	C 1	C 1	CL 21	C 2	C 1	C 2	C 4	C 3	F 3	F 1	F 2	F 6	FF 41
27	FF 32	FQ 41	FF 12	FF 12	F 5	F 4	L 2	HL 22	HL 22	C 2	L 3	L 2	L 3	CL 12	HL 11	CL 13	C 3	CL 61	L 9	FF 41	F 1	FFF 11	FF 11	FFF 21
28		F 1	FF 11	FF 12	F 2	FF 41	LQ 51	L 6	L 3	CL 12	CL 12	C 2	C 2	C 1	H 1	L 1	H 1	CL 31	CH 21	F 3	FFQ 14	FF 11	F 1	FF 31
29	F 3	FFF 12	FQ 41	FFF 21	F 5	FF 14	L 4	LL 33	HL 12	CL 12	L 2	L 1	CL 11	L 1	L 2	LL 21	L 4	L 3	C 8	F 3	F 7	FF 51	FF 16	FF 31
30	FF 11	F 3	F 2	F 1				CC 22	C 2	C 2	L 2	CL 12	L 1	L 1	L 2	L 1	L 3	CL 22	CL 22	FF 23	F 2	FF 12	FF 22	F 1
31	F 2	F 1				F 1	LC 11	C 3	C 2	CL 11	C 1	C 1	C 1	CL 21	CL 11	CL 11	CL 21	CL 21	C 3	F 7	F 4	F 4	F 1	FF 21
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG. 2016 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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 37	X 36	X 37	X 34	X 32	X 30															X 68	X 56	X 46	X 41
2	46	50	45	38	34	34															X 89	A	X 32	A
3	A	A	A	A	X 30	O X 29															X 90	X 66	X 56	X 57
4	X 55	X 53	X 46	X 48	X 49	X 46															X 63	X 62	X 49	X 46
5	X 42	X 43	44	40	X 36	X 34															X 101	X 51	X 49	X 46
6	X 46	X 47	48	45	43	38															X 76	76	X 60	X 53
7	X 47	53	52	51	48	45															X 68	X 62	X 53	X 48
8	49	50	50	46	44	X 44															X 90	X 76	X 59	51
9	51	54	50	50	50	50	56														X 89	X 71	X 64	X 61
10	X 59	X 61	X 56	X 52	X 48	X 46															X 79	X 63	65	65
11	66	X 57	53	50	50	48															X 76	X 60	X 59	X 59
12	61	61	X 61	X 54	X 45	44															X 60	X 58	X 56	X 53
13	X 52	52	55	46	X 40	38															X 90	X 70	64	X 56
14	57	55	51	47	44	48															X 75	X 71	X 63	X 58
15	60	59	65	X 55	X 48	48	46														X 77	X 72	X 61	X 58
16	X 57	52	52	51	51	51	50														X 76	X 67	X 52	51
17	54	53	A	50	50	53	50														X 94	X 74	X 43	X 43
18	X 43	X 46	X 46	X 36	X 35	X 34															X 67	X 63	X 60	X 58
19	56	60	X 58	X 54	54	X 53															X 57	X 50	X 50	X 51
20	X 49	X 46	X 44	X 44	X 45	X 43															X 60	X 54	X 52	X 51
21	X 49	X 50	51	X 49	X 46	X 38															X 68	X 59	57	X 55
22	X 54	56	X 52	48	46	X 44															X 75	X 74	X 63	54
23	55	59	66	51	48	50	46														X 80	X 58	66	65
24	64	56	54	X 56	X 41	X 35															X 90	X 55	X 52	52
25	52	54	X 54	54	X 41	X 40	X 47														X 76	X 59	X 43	X 44
26	45	47	48	48	44	X 33	44														X 71	X 61	X 55	X 52
27	X 51	50	50	46	45	X 40															X 64	X 43	X 42	47
28	52	51	46	47	38	X 36															X 75	X 50	X 51	X 52
29	X 47	X 47	X 49	X 46	X 42	39	45														X 80	X 69	X 61	X 55
30	X 53	X 51	X 50	X 47	X 45	X 38															X 91	X 66	X 50	X 50
31	X 49	X 48	X 47	X 43	X 32	X 33															X 84	X 54	X 53	X 51
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	31	31	8														31	30	31	30
MED	X 52	52	50	48	X 45	X 40	46														X 76	X 62	X 55	X 52
U Q	56	56	54	X 51	48	48	50														X 89	X 70	X 61	X 57
L Q	X 47	X 48	X 46	46	X 40	X 35	46														X 68	X 56	X 50	X 50

AUG. 2016 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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	31	30	31	28	26	24	35	48	56	61	51	55	60	59	A	A	62	73	83	78	62	50	40	35
2	F	F	F 37	30	F 25	F 24	34	53	59	55	55	52	60	A	64	71	73	77	81	89	83	A	26	A
3	A	A	A	A	24	23	40	55	52	47	A	56	79	80	63	71	92	80	93	102	84	60	50	51
4	49	47	40	42	43	40	41	64	47	43	E G 43	A	54	59	58	53	54	58	57	53	V 57	56	43	40
5	36	37	36	F 33	30	28	32	54	48	49	E G 45	54	60	58	62	68	72	79	86	98	95	45	43	40
6	40	41	F 39	F 37	F 35	F 30	32	57	48	47	E G 44	50	55	A	54	53	A	60	62	65	69	65	54	47
7	41	F 43	F 42	F 44	F 38	F 36	42	54	52	52	55	56	55	52	56	61	56	55	58	63	62	56	47	42
8	F 41	F 41	F 38	F 36	F 36	38	42	48	59	61	53	62	62	60	66	74	84	85	87	86	83	70	53	F 42
9	F	F 45	F 42	F 41	F 41	F 42	F 48	56	58	V 67	54	E G 50	53	61	66	65	64	66	74	87	83	65	58	55
10	53	55	50	46	42	40	44	50	69	A	A	A	A	A	58	64	64	A	A	86	73	57	F 52	F 56
11	F 54	51	F 45	F 38	F 34	F 35	40	59	63	59	66	61	62	68	60	64	75	78	77	79	70	54	53	53
12	F 52	F 52	55	48	39	F 37	42	51	56	66	57	58	67	76	69	82	102	106	87	54	54	52	50	47
13	46	F 42	F 46	F 38	34	F 31	49	56	58	62	A	67	69	79	86	A	85	88	99	90	84	64	F 56	50
14	F 46	F 44	F 43	F 39	F 34	F 36	44	66	54	57	57	A	56	58	62	68	79	88	93	93	69	65	57	52
15	F 52	F 50	F 58	49	41	F 36	F 37	69	80	64	58	55	62	65	A	67	73	84	96	89	71	66	55	52
16	50	F 40	F 42	F 39	F 40	F 40	F 40	72	68	56	54	62	70	66	64	64	71	73	81	78	69	61	46	42
17	F 44	F 42	A	F 37	F 40	F 42	F 40	62	76	50	58	68	80	70	62	60	57	65	84	100	88	68	37	37
18	37	40	40	30	29	28	R 40	63	66	51	53	63	58	64	73	74	84	97	92	72	61	57	54	52
19	F 50	F 53	52	48	F 47	47	49	59	59	53	61	57	66	83	98	J R 102	105	107	109	85	51	44	44	45
20	43	40	38	38	39	37	42	59	58	52	51	62	65	78	78	70	72	89	86	72	54	48	46	45
21	43	44	F 42	43	40	32	33	48	60	58	55	56	66	74	77	78	81	77	90	84	62	53	F 49	49
22	48	F 46	46	F 40	39	38	42	57	56	A	A	62	79	88	92	92	82	77	72	73	69	68	57	F 42
23	F 44	F 50	F 55	F 39	F 38	F	F 39	54	57	56	55	57	79	102	110	105	106	108	93	81	74	52	F 54	F 52
24	F 51	F 48	F 44	50	35	29	36	60	55	70	66	58	66	68	93	83	75	72	71	85	84	49	46	F 46
25	F 43	F 45	48	F 40	35	34	41	48	60	66	61	68	72	75	82	83	83	77	70	72	70	53	37	38
26	F 38	F 37	F 38	F 40	F 36	27	36	48	52	53	56	70	74	71	74	82	94	72	66	66	65	55	49	46
27	45	F 42	F 41	F 37	F 34	34	37	53	56	53	52	59	71	84	98	89	72	74	85	88	58	37	36	F 39
28	F 39	F 41	F 36	F 37	F 32	30	38	54	57	58	60	59	69	78	82	83	87	105	105	96	69	44	45	46
29	41	41	43	40	36	F 33	F 38	63	70	63	60	60	64	66	68	75	76	83	84	87	74	63	55	49
30	47	45	45	41	39	32	34	64	66	60	60	62	64	70	71	70	69	68	72	76	85	60	44	44
31	43	42	41	37	26	27	35	67	63	58	56	70	84	82	85	82	84	88	99	104	78	48	47	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	28	29	29	30	31	30	31	31	31	29	27	28	30	28	29	29	30	30	30	31	31	30	31	30
MED	44	F 43	F 42	F 39	36	34	40	56	58	57	55	59	66	70	69	71	76	78	84	85	70	56	49	46
U Q	F 50	F 48	46	42	40	38	42	63	63	62	60	62	71	78	84	82	84	88	93	89	83	64	54	51
L Q	41	41	F 38	37	34	29	36	53	55	52	53	56	60	62	62	64	71	72	72	72	62	50	44	42

AUG. 2016 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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								U L 384	L 412	428	452	452	444	A	A	A	A	L 420	L 372					
2								L	408	L 424	U L 456	452	A	A	U A 460	A	A	A	A					
3								L	L	L	A	A	444	A	A	A	A	A	L					
4							U L 268		372	U L 412	428	A	432	444	428	424	U A 420	H 380	L 360					
5								L 356	U L 400	L 408	448	432	448	U A 456	A	432	424	400	L 376					
6								352	436	L 412	444	L 444	R 448	A	452	L 444	A	A	A					
7								U L 352	U L 408	U L 460	452	456	460	460	456	448	L 440	412	L 368					
8								U L 392	A	A	L 472	468	B	468	456	444	444	428	A					
9								L	L 416	L 432	460	R 496	476	452	460	456	440	428	L 400					
10									U L 424	A	A	A	A	A	A	456	A	A	A					
11								L	L	U L 472	460	476	484	484	464	472	444	L 424	L					
12								A	L	A	A	A	472	476	U A 488	A	U A 432	L 404	L					
13									L	A	A	L 484	A	A	A	A	A	L 432	A					
14								L	424	A	L 456	A	L 476	472	464	452	L 440	A						
15								L	L	L	464	A	472	468	A	472	456	416	L 368					
16								L	L 400	U L 436		472	U A 464	476	464	U L 488	432	420	L 356					
17								L	L 412	U L 488	472	464	460	468	468	460	L 456	L 416	U L 380					
18								L	L 416		L 460	460	U L 476	464	A	A	432	A	A					
19								L	L	L	L 452	492	452	460	464	460	436	408	L					
20									L		L	L 468	464	U A 464	464	456	L 440	L 404						
21								260	L	U L 428	U L 452	U L 460	460	L 468	A	A	A	A	A					
22									L	A	A	L 484	A	460	448	A	A	400	L					
23									L	A	L	A	456	A	460	L 460	436	412	L					
24									L	L 436	U L 464	L 448	468	464	A	L 440	L 436	404	L					
25								L	L 388	L 424	U L 456	456	464	456	448	448	432	L 404						
26								L	L	L 428	468	448	460	456	464	448	420	L	L					
27									L	U L 440	L	U L 476	460	456	R 456	U A 452	A	A	A					
28									L	L 448	U L 452	L 472	452	468	472	448	432	400	L 336					
29								L	L 408	L 440	L 460	460	480	R 472	U A 468	A	A	A						
30								L	L	L	U L 484	484	476	472	468	456	U L 448	A	L					
31									L	U L 432		480	480	L 484	L 476	472	444	L 416	L					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	6	14	18	21	24	26	24	22	22	21	20	9					
MED							U L 268	L 354	L 410	L 432	L 456	466	462	466	464	454	436	412	L 368					
U Q								U L 384	416	U L 440	464	478	476	472	468	460	444	420	L 378					
L Q								352	L 400	L 424	452	454	452	458	456	448	432	404	L 358					

AUG. 2016 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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							A	A 280		A	A	A	A	A	A	A	A	A	224	A				
2							A	264	284	312	336	360	A	A	A	A	A	A	A	A				
3							A	A	A	332	344	360	368	368	356	336	312	276	216	A				
4							A	208	268	300	336	344	352	356	344	336	308	A	220	A				
5							A	228	284	A	324	352	364	A	A	A	308	A	A	A				
6							168	224	280	316	348	364	352	A	A	356	320	296	A	A				
7							A	A	A	340	352	376	384	376	368	344	320	288	232	A				
8							A	U A 224	292	A	A	352	B	A	380	356	A	292	236	A				
9							A	A	A 340		A	A	A	A	376	364	320	280	232	A				
10							A	A	A	A	A	A	A	A	A	348	316	276	212	A				
11							A	A	A	320	344	372	372	376	A	352	316	284	228	A				
12							B	A	A	U A 308	A	A	384	380	380	352	A	A	A	A				
13							A	216	A	A	A	A	A	A	A	A	A	A	A	A				
14							B	A	A	A	A	A	A	A	A	356	320	A	216	A				
15							B	224	276	316	348	A	A	A	A	A	324	A	A	A				
16							A	204	268	300	U R 364	364	A	376	364	340	312	280	224	A				
17							A	200	264	A	A	R 364	380	A	368	336	312	284	216	A				
18							A	A	276	A	324	368	368	376	360	336	324	268	216	A				
19							B	208	A	A	A	A	A	A	A	A	312	268	216	A				
20							B	A	A	A	A	A	A	A	A	A	A	A	A	A				
21							A	224	268	316	332	356	364	A	360	A	312	276	212	A				
22							B	224	268	292	R 292	A	A	A	A	A	A	A	A	A				
23							A	U A 204	256	A	316	332	R 344	348	348	328	304	276	208	A				
24							A	188	264	A	A	348	R 348	R 328	A	332	A	272	208	B				
25								188	264	304	324	336	A	352	348	332	304	268	196	A				
26							A	228	284	308	332	340	R 344	344	A	328	308	A	A	B				
27							A	A	284	A	A	A	A	A	A	A	A	A	A	A				
28							A	A	A	A	A	R 356	A	R 356	364	332	308	A	A	A				
29							A	A	288	320	A	A	R	U R 352	340	324	304	A	A	A				
30							B	200	292	304	A	A	A	A	352	344	292	280	A	A				
31							B	228	280	316	340	356	372	372	356	332	316	276	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	18	20	17	16	18	14	14	16	21	22	17	17					
MED							168	220	278	316	336	356	366	362	360	336	312	276	216					
U Q								224	284	320	346	364	372	376	368	352	320	284	226					
L Q								204	268	304	324	348	R 352	352	350	332	308	274	212					

AUG. 2016 foE (0.01MHz)

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IONOSPHERIC DATA STATION Okinawa

AUG. 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	JA 31	JA 52	JA 43	JA 48	EB 13	JA 20	JA 21	33	32	JA 34	JA 36	JA 55	JA 58	JA 76	JA 76	JA 60	JA 50	JA 50	JA 33	JA 37	JA 20	JA 24	JA 72	JA 48
2	JA 49	JA 32	JA 44	JA 30	JA 42	JA 28	JA 25	JA 32	JA 50	JA 46	JA 41	JA 51	JA 104	JA 89	JA 62	JA 53	JA 47	JA 50	JA 118	JA 139	JA 158	JA 110	JA 58	JA 51
3	JA 44	JA 71	JA 83	JA 86	JA 63	JA 46	JA 60	JA 42	JA 43	36	JA 50	JA 63	JA 53	JA 54	JA 50	JA 52	JA 51	JA 44	32	JA 18	20	EB 13	EB 13	EB 13
4	JA 16	JA 29	JA 28	JA 19	JA 15	JA 20	JA 29	51	JA 41	34	JA 47	JA 56	42	JA 45	G	38	JA 44	JA 30	25	JA 40	JA 28	JA 48	JA 19	JA 15
5	19	JA 16	JA 19	JA 16	JA 32	EB 13	JA 23	28	33	JA 40	JA 41	40	47	JA 52	JA 52	39	G	30	JA 27	JA 24	19	20	JA 19	JA 18
6	JA 24	JA 50	JA 46	JA 38	JA 32	JA 17	G	26	32	34	38	42	JA 44	JA 93	JA 43	49	JA 57	JA 52	JA 74	JA 46	JA 47	JA 62	JA 46	JA 30
7	JA 62	JA 72	JA 88	JA 30	JA 32	JA 70	JA 37	JA 40	JA 34	37	42	42	43	44	42	44	36	36	JA 37	JA 42	JA 28	JA 54	JA 45	JA 64
8	JA 52	JA 67	JA 34	19	20	EB 13	20	34	JA 45	JA 77	JA 52	JA 45	EB 49	40	46	44	JA 37	33	JA 43	JA 32	JA 50	JA 32	JA 54	JA 20
9	JA 88	JA 29	JA 39	JA 31	JA 20	JA 38	JA 44	JA 45	JA 46	JA 41	39	40	45	44	45	42	38	33	31	JA 22	JA 28	JA 38	JA 32	JA 21
10	JA 29	JA 41	JA 44	JA 19	19	JA 18	JA 38	JA 42	JA 47	JA 86	JA 140	JA 112	JA 88	JA 69	JA 54	38	JA 59	JA 59	JA 74	JA 89	JA 24	JA 38	JA 67	JA 46
11	JA 49	JA 52	JA 64	JA 50	JA 28	JA 24	JA 35	JA 32	JA 50	JA 37	43	41	42	42	JA 40	40	37	JA 38	30	JA 32	JA 27	JA 24	JA 20	JA 30
12	JA 51	JA 31	JA 37	EB 13	JA 21	18	EB 14	JA 34	JA 41	JA 59	JA 71	JA 61	JA 44	JA 47	JA 52	JA 59	JA 77	JA 38	JA 43	JA 49	JA 42	JA 19	JA 22	JA 29
13	JA 21	JA 19	JA 21	18	JA 44	JA 23	JA 41	JA 31	JA 66	JA 67	JA 104	JA 71	JA 62	JA 52	JA 71	JA 115	JA 74	JA 39	JA 47	JA 42	JA 50	JA 50	JA 67	JA 40
14	JA 64	JA 38	JA 48	JA 30	JA 22	18	JA 17	JA 42	JA 37	JA 56	JA 80	JA 86	JA 64	JA 55	JA 50	46	JA 44	JA 49	JA 58	JA 52	JA 40	JA 48	JA 78	JA 37
15	JA 29	JA 32	JA 22	JA 46	JA 29	JA 15	JA 16	29	37	42	42	JA 101	JA 70	JA 46	JA 81	JA 52	38	JA 39	JA 44	JA 54	JA 64	JA 25	JA 40	JA 21
16	EB 13	EB 13	JA 82	JA 44	JA 31	JA 19	JA 22	25	32	34	40	43	47	42	40	40	38	JA 37	JA 31	JA 25	JA 33	JA 23	JA 77	JA 32
17	JA 26	JA 36	JA 88	JA 25	JA 44	JA 30	JA 28	G	G 24	34	43	42	42	41	41	40	34	G	32	21	JA 14	JA 17	JA 28	JA 34
18	JA 20	JA 17	EB 13	EB 13	20	JA 20	JA 43	25	JA 48	JA 48	G 30	42	41	45	49	JA 49	JA 50	JA 49	JA 52	JA 45	JA 43	JA 28	JA 21	JA 31
19	JA 25	JA 36	JA 34	JA 35	JA 33	JA 28	JA 18	25	JA 31	JA 63	JA 55	JA 43	JA 38	43	45	41	36	31	28	JA 22	JA 18	JA 14	JA 27	JA 37
20	JA 45	JA 28	JA 31	JA 33	JA 28	JA 22	20	25	JA 36	JA 44	JA 45	40	JA 41	46	JA 42	JA 45	JA 33	JA 39	JA 61	JA 34	JA 23	JA 21	JA 16	EB 13
21	JA 21	JA 28	JA 45	JA 18	20	JA 28	JA 20	25	33	JA 42	37	38	40	JA 59	JA 48	JA 46	JA 44	JA 42	JA 42	JA 46	JA 48	JA 38	19	JA 28
22	JA 23	JA 21	JA 21	JA 39	JA 19	JA 20	19	G 19	34	JA 62	JA 102	JA 50	JA 57	JA 45	46	JA 54	JA 55	JA 44	JA 27	JA 21	JA 18	JA 15	JA 17	JA 34
23	JA 78	JA 53	JA 55	JA 43	JA 34	JA 18	JA 26	27	32	JA 46	JA 50	JA 51	JA 46	JA 55	GJA 48	33	G	26	JA 23	JA 30	JA 32	JA 48	JA 48	
24	JA 76	JA 21	EB 13	19	JA 14	JA 19	JA 28	25	30	32	JA 39	39	G 34	G	JA 52	37	36	G	GEB 14		JA 18	JA 44	JA 48	JA 46
25	JA 50	JA 39	JA 25	JA 25	JA 20	JA 17	23	21	G 20	32	35	37	39	G	42	42	JA 45	G 23	26	18	JA 17	JAEB 13	EB 13	JA 31
26	JA 29	JA 28	JA 41	JA 21	JA 22	JA 22	JA 20	28	32	36	39	42	41	JA 45	JA 45	41	JA 39	JA 33	JA 23	EB 13	EB 13	JA 16	20	JA 21
27	20	EB 13	JA 20	JA 22	JA 21	JA 22	JA 20	JA 28	34	35	JA 36	JA 44	42	JA 53	JA 61	JA 48	JA 50	JA 44	JA 43	JA 35	JA 52	JA 37	18	18
28	JA 30	JA 24	JA 20	JA 75	JA 34	JA 26	JA 28	JA 45	JA 42	JA 49	37	38	39	G 39	G	G	29	JA 24	JA 19	JA 16	18	EB 13	EB 13	
29	18	JA 16	EB 13	EB 13	18	JA 21	JA 32	JA 44	G	G 28	40	42	28	45	JA 48	JA 52	JA 48	JA 46	JA 50	EB 40	BJ 13	JA 58	JA 47	JA 28
30	JA 26	JA 28	19	EB 13	18	18	EB 13	27	34	35	39	JA 40	40	41	G 29	G 24	GJA 20	JA 50	JA 40	JA 38	JA 36	JA 21	JA 76	JA 30
31	EB 13	EB 13	18	EB 13	EB 13	18	EB 14	27	36	JA 43	46	40	42	44	41	38	35	30	JA 32	JA 32	JA 20	JA 31	18	EB 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	JA 29	JA 29	JA 34	JA 25	JA 22	JA 20	JA 23	28	34	JA 41	JA 42	42	42	JA 45	JA 46	44	JA 39	JA 38	JA 33	JA 34	JA 28	JA 28	JA 28	JA 30
U Q	JA 50	JA 41	JA 46	JA 39	JA 32	JA 26	JA 32	JA 40	JA 43	JA 49	JA 50	JA 55	JA 53	JA 54	JA 52	JA 52	JA 50	JA 46	JA 47	JA 45	JA 43	JA 44	JA 54	JA 37
L Q	21	JA 21	20	EB 18	19	18	19	25	32	34	39	40	41	42	41	40	36	30	27	22	JA 18	JA 19	19	20

AUG. 2016 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG.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	E B 13	E B 13	18	E B 13	17	19	28	30	33	34	41	40	51	A A 76	A A 60	49	30	25	24	17	E B 13	20	16
2	22	20	21	E B 13	18	E B 13	21	29	34	36	38	41	51	A A 89	46	50	45	49	60	55	E B 13	A A 110	19	A A 51
3	A A 44	A A 71	A A 83	A A 86	E B 13	E B 13	22	28	33	36	A A 50	46	39	52	48	50	50	42	31	17	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	19	34	31	32	40	A A 56	38	40	G	38	42	29	24	24	E B 13	30	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	19	27	31	33	37	40	42	46	47	39	G	29	25	22	E B 13	E B 13	E B 13	E B 13
6	19	E B 13	18	22	E B 13	E B 13	G	24	30	33	37	40	43	A A 93	42	42	A A 57	50	46	34	32	33	24	22
7	27	33	17	18	15	17	24	28	32	36	38	40	41	43	42	42	35	34	33	30	20	E B 13	E B 13	E B 13
8	27	E B 13	16	E B 13	E B 13	E B 13	19	30	40	44	37	40	E B 49	40	45	44	37	32	40	30	38	22	31	E B 13
9	E B 13	E B 13	17	20	16	E B 13	16	29	30	35	39	38	44	44	44	41	37	32	30	20	21	34	30	19
10	23	29	30	E B 13	E B 13	E B 13	22	33	36	A A 86	A A 140	A A 112	A A 88	A A 69	52	38	56	A A 59	A A 74	52	18	32	E B 13	27
11	23	17	E B 13	E B 13	17	E B 13	31	28	32	36	40	40	42	42	38	40	36	32	29	28	18	20	E B 13	E B 13
12	E B 13	20	E B 13	E B 13	E B 13	E B 13	E B 14	30	32	46	54	49	42	44	49	48	43	31	25	23	21	E B 13	E B 13	16
13	E B 13	E B 13	19	E B 13	E B 13	E B 13	26	29	31	59	A A 104	43	51	50	69	A A 115	59	36	45	31	46	35	30	21
14	24	16	22	21	18	E B 13	E B 14	32	32	50	42	A A 86	44	44	45	43	41	42	42	30	31	19	20	20
15	22	19	E B 13	E B 13	20	E B 13	E B 14	28	34	38	40	51	46	42	A A 81	40	37	35	26	37	21	18	19	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	24	31	34	40	42	46	42	39	39	37	36	28	21	20	20	21	20
17	E B 13	22	A A 88	17	30	23	20	G	G 21	34	42	41	41	40	40	39	33	G	30	20	E B 13	E B 13	17	18
18	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	21	25	33	36	G 28	41	40	43	47	48	42	43	50	35	30	19	16	17
19	E B 13	21	E B 13	E B 13	E B 13	19	E B 12	24	30	44	35	39	38	42	44	40	34	30	27	20	E B 13	E B 13	23	E B 13
20	E B 13	20	22	22	22	18	E B 14	24	29	32	37	38	40	46	37	37	33	31	31	21	16	18	E B 13	E B 13
21	E B 13	E B 13	19	E B 13	E B 13	19	18	24	32	35	36	37	40	40	47	45	43	42	38	32	26	E B 13	E B 13	E B 13
22	E B 13	17	17	20	E B 13	E B 14	E B 14	G 18	32	A A 62	A A 102	47	50	43	41	50	52	28	22	15	17	E B 13	E B 13	E B 13
23	20	29	21	30	24	E B 13	20	26	31	43	46	51	43	52	G	44	32	G	23	20	19	22	23	E B 13
24	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	17	24	29	31	37	38	G 30	G	44	36	32	G	G	E B 14	E B 14	37	30	28
25	22	16	22	18	E B 13	E B 13	20	21	G 19	32	35	36	38	G	39	41	39	G 19	25	18	E B 13	E B 13	E B 13	20
26	20	20	27	17	19	19	15	27	31	34	38	41	40	42	43	39	36	29	21	E B 13	E B 13	E B 13	E B 13	16
27	E B 13	E B 13	E B 13	E B 13	17	17	16	27	32	34	35	41	42	40	43	45	48	41	35	26	40	E B 13	E B 13	E B 13
28	E B 13	E B 13	E B 13	20	21	21	23	30	36	34	36	38	38	G	38	G	G	28	22	15	E B 13	E B 13	E B 13	E B 13
29	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	17	25	G	G 28	39	39	U G 28	43	47	50	45	42	47	37	E B 13	21	E B 13	18
30	17	19	E B 13	E B 13	E B 13	E B 13	E B 13	26	33	34	36	39	40	40	G 26	G 22	G 17	42	29	27	19	16	16	19
31	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	26	34	39	45	40	41	42	39	38	34	30	27	26	17	20	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	16	16	E B 13	E B 13	E B 13	18	27	32	35	38	41	41	43	44	41	37	32	29	24	18	18	E B 13	16
U Q	22	20	21	20	18	17	21	29	33	43	42	46	44	46	47	48	45	42	40	31	21	22	21	20
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	24	30	33	36	39	40	40	39	39	34	29	25	20	E B 13	E B 13	E B 13	E B 13

IONOSPHERIC DATA STATION Okinawa

AUG. 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	14	14	15	17	21	20	29	24	24	20	20	17	14	13	13	13	13	13
2	13	13	13	13	13	13	14	14	15	16	21	22	23	26	31	24	19	14	13	13	13	13	13	13
3	13	13	13	13	13	13	14	14	18	20	20	24	21	22	22	19	19	15	12	12	13	13	13	13
4	13	13	13	13	13	13	13	14	16	17	19	24	25	24	23	21	18	14	13	12	13	13	13	13
5	13	13	13	13	13	13	14	14	14	21	22	23	24	29	25	21	20	15	13	12	13	13	13	13
6	13	13	13	13	13	13	15	14	20	22	24	20	31	32	24	22	20	16	13	13	13	13	13	13
7	13	13	13	13	13	13	14	14	16	20	28	29	26	30	24	20	19	15	13	13	13	13	13	13
8	13	13	13	13	13	13	13	14	18	20	21	30	49	34	31	27	20	16	14	14	13	13	13	13
9	13	13	13	13	13	13	13	13	16	21	31	30	30	30	29	23	20	18	14	13	13	13	13	13
10	13	13	13	13	13	13	14	14	14	18	20	29	28	29	23	24	17	14	14	14	13	13	13	13
11	13	13	13	13	13	13	13	13	14	16	21	21	33	24	24	22	19	14	14	14	13	13	13	13
12	13	13	13	13	13	13	14	14	14	21	20	26	24	23	23	23	20	14	13	14	13	13	13	13
13	13	13	13	13	13	13	14	17	14	16	20	24	27	24	24	22	20	14	14	12	13	13	13	13
14	13	13	13	13	13	13	14	14	16	16	21	23	26	25	22	23	17	14	12	14	13	13	13	13
15	13	13	13	13	13	13	14	13	14	16	20	30	22	30	23	21	19	13	14	13	13	13	13	13
16	13	13	13	13	13	13	14	14	14	16	21	22	23	24	22	21	14	13	12	14	13	13	13	13
17	13	13	13	13	13	13	14	14	14	16	25	21	22	28	25	20	20	15	14	14	13	13	13	13
18	13	13	13	13	13	13	14	14	12	17	20	24	24	28	26	22	22	14	13	13	13	13	13	13
19	13	13	13	13	13	13	12	14	14	20	21	20	24	25	24	20	16	15	14	13	13	13	13	13
20	13	13	13	13	13	14	14	14	15	16	20	29	24	32	22	20	20	16	14	13	13	13	13	13
21	13	13	13	13	13	14	13	13	14	14	16	21	21	18	16	14	15	14	14	14	13	13	13	13
22	13	13	13	13	13	14	14	14	16	18	20	22	30	22	23	21	18	13	14	14	13	13	13	13
23	13	13	13	13	13	13	14	14	13	16	20	20	20	22	30	20	15	15	12	13	13	13	13	13
24	13	13	13	13	13	13	14	14	14	14	16	22	22	19	22	20	16	17	14	14	14	13	13	13
25	13	13	13	13	13	13	13	13	14	15	19	22	20	23	24	29	19	13	14	14	13	13	13	13
26	13	13	13	13	13	13	13	14	14	17	20	21	24	22	32	22	20	15	13	13	13	13	13	13
27	13	13	13	13	13	13	14	14	15	16	20	22	28	28	26	25	18	16	12	13	14	13	13	13
28	13	13	13	13	13	13	13	14	14	16	21	21	36	25	25	20	15	15	14	14	13	13	13	13
29	13	13	13	13	13	13	14	14	14	19	20	24	21	24	25	23	14	18	14	13	13	13	13	13
30	13	13	13	13	13	13	13	14	14	21	21	27	25	25	22	20	14	14	13	13	13	13	13	13
31	13	13	13	13	13	13	14	14	14	15	20	24	30	23	20	18	14	13	14	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	14	14	14	17	20	23	24	25	24	21	19	15	14	13	13	13	13	13
U Q	13	13	13	13	13	13	14	14	16	20	21	26	29	29	25	23	20	16	14	14	13	13	13	13
L Q	13	13	13	13	13	13	13	14	14	16	20	21	22	23	22	20	16	14	13	13	13	13	13	13

AUG. 2016 fmin (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

AUG. 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	304	306	320	340	359	339	357	334	357	362	276	296	318	340	A	A	292	302	327	351	353	333	335	330
2	F	F	F 345	366	F 325	F 339	345	345	357	344	314	290	322	A	312	310	291	299	305	338	351	A	303	A
3	A	A	A	A	337	332	351	382	383	356	A	253	296	323	273	264	309	262	298	336	348	311	270	280
4	303	293	281	283	324	290	289	375	346	345	G	A 280	305	315	303	303	325	329	313	V 304	331	293	287
5	292	292	293	F 289	291	286	305	358	349	346	G	303	317	302	301	289	285	273	296	321	371	298	298	290
6	300	279	F 303	F 286	F 293	F 302	323	372	227	322	G	279	319	A	319	301	A	322	322	309	320	315	322	307
7	286	F 281	F 296	F 276	F 311	F 336	360	370	361	292	301	329	314	288	291	320	310	304	316	324	315	317	322	297
8	F 289	F 284	F 302	F 298	F 295	349	349	340	353	361	297	337	325	284	286	290	292	294	304	319	331	326	314	F 285
9	F	F 287	F 284	F 269	F 283	F 304	F 340	369	341	V 370	350	G	267	311	309	322	306	298	283	325	340	324	297	294
10	305	320	304	306	301	303	341	311	343	A	A	A	A	A	287	310	315	A	A	332	333	302	F 274	F 287
11	F 319	324	F 305	F 297	F 279	F 297	327	353	351	325	343	338	325	338	319	294	318	321	323	331	334	307	285	286
12	F 289	F 299	323	334	303	F 295	320	335	340	362	317	290	309	312	261	271	315	347	365	322	294	291	302	291
13	294	F 291	F 326	F 324	300	F 304	356	349	357	355	A	317	308	309	307	A	310	304	320	343	337	323	F 291	315
14	F 290	F 287	F 287	F 290	F 301	F 314	343	379	359	358	339	A	322	303	303	300	305	307	332	351	327	314	311	287
15	F 288	F 305	F 308	306	305	F 310	F 315	355	366	363	353	298	310	308	A	295	289	298	324	325	318	316	319	307
16	312	F 301	F 307	F 300	F	F 305	F 325	360	389	332	328	316	330	319	295	301	318	318	325	322	329	343	309	286
17	F 306	F 296	A	F 304	F 284	F 317	F 308	353	375	250	284	313	343	338	322	325	286	291	304	336	348	374	322	279
18	276	301	324	316	303	314	R 319	354	380	351	302	328	286	296	308	292	304	345	348	333	324	291	290	297
19	F 278	F 292	319	304	F 314	319	360	390	383	343	346	287	290	289	298	J R 312	310	329	355	357	343	309	302	294
20	299	283	288	289	322	342	342	369	378	363	330	320	301	316	323	296	309	336	351	363	311	306	296	292
21	277	305	F 299	326	344	374	346	359	355	367	323	297	310	300	298	299	314	319	341	355	349	307	F 295	297
22	301	F 302	321	F 305	319	332	369	383	369	A	A	293	303	306	304	312	307	323	318	335	302	339	348	F 296
23	F 300	F 309	F 354	F 309	F 303	F	F 368	375	368	354	320	286	282	327	332	299	307	333	335	342	358	305	F 279	F 314
24	F 300	F 297	F 308	347	342	325	333	347	365	331	342	331	316	286	321	322	312	317	278	319	344	324	292	F 287
25	F 297	F 282	343	F 345	312	303	352	361	355	339	315	318	305	298	311	321	308	322	309	319	331	368	296	295
26	F 286	F 289	F 296	F 340	F 345	367	355	379	384	344	298	325	311	305	308	303	339	326	341	301	326	336	302	304
27	299	F 301	F 304	F 292	F 320	339	355	371	362	370	314	281	295	300	325	339	309	293	336	365	358	292	291	F 272
28	F 274	F 314	F 305	F 327	F 329	325	340	371	355	363	332	298	303	309	285	282	302	326	347	364	375	299	299	309
29	306	300	307	332	324	F 326	F 331	352	379	369	338	331	318	316	311	308	300	314	323	323	335	352	313	326
30	297	290	289	316	341	320	326	368	386	369	336	311	313	320	314	328	324	318	309	296	346	357	296	283
31	291	294	309	370	310	301	331	381	390	353	325	311	324	313	328	316	314	319	333	346	365	295	293	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	28	29	29	30	30	30	31	31	31	29	27	28	30	28	29	29	30	30	30	31	31	30	31	30
MED	297	F 296	F 305	F 306	312	318	341	361	361	354	320	307	310	308	308	303	308	318	324	332	335	316	298	293
U Q	302	304	320	332	325	336	355	375	379	363	338	322	319	318	319	318	314	325	336	346	349	333	313	304
L Q	F 288	F 288	296	F 292	F 301	303	325	352	353	341	298	290	301	300	296	294	302	299	309	321	324	305	292	287

AUG. 2016 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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								U L 368	L 388	393	405	401	417	A	A	A	A	L 344	L 374					
2								L	388	L 413	U L 408	401	A	A	A	A	A	A	A					
3								L	L	L	A	A	381	A	A	A	A	A	L					
4							U L 336		393	U L 386	A 397	A	416	405	409	379	A	379	L 354					
5								L 371	U L 389	L 422	412	455	A 336	A	A	386	371	349	L 342					
6								384	350	L 416	405	L 393	A	A	A 382	A	A	A	A					
7								U L 404	U L 389	U L 370	408	397	405	A	390	A	L 369	363	L 358					
8								U L 380	A	A	L 409	415	B	392	A	A	362	342	A					
9								L	L 392	L 399	412	R 398	381	A 412	A 379	A 357	381	352	L 341					
10									U L 374	A	A	A	A	A	A	393	A	A	A					
11								L	L	U L 362	390	395	378	388	421	382	365	L 360	L					
12								A	L	A	A	A	414	A	A	A	A	L 369	L					
13									L	A	A	A	A	A	A	A	A	L 349	A					
14								L	405	A	L 391	A	A 389	397	A	A 381	A	A						
15								L	L	L	402	A	A	408	A	369	354	359	L 364					
16								L	L 414	U L 414		393	A	384	396	U L 345	379	363	L 371					
17								L	L 380	U L 381	372	381	405	376	383	378	L 368	L 358	U L 354					
18								L	L 388		L 421	419	U L 392	A 372	A	A	A	A	A					
19								L	L	L	L 417	391	429	400	A	A 358	376	365	L					
20									L		L	L 403	409	A	407	386	L 355	L 357						
21								450	L	U L 408	U L 410	U L 410	434	L 403	A	A	A	A	A					
22									L	A	A	A	A	371	388	A	A	373	L					
23									L	A	L	A	A 383	A	377	A	381	351	L					
24									L	L 376	U L 395	L 410	381	374	A	L 385	L 360	360	L					
25								L	L 390	L 415	U L 394	406	391	404	422	A	A 356	L 368						
26								L	L	L 405	381	399	395	A 404	A 368	393	383	L	L					
27									L	U L 387	L	U L 380	436	385	A 362	A	A	A	A					
28									L	L 398	U L 430	L 416	438	H 408	391	375	378	360	L 382					
29								L	L 387	L 401	L 412	424	415	R 393	A	A	A	A						
30								L	L	L	U L 380	394	403	394	395	382	U L 368	A	L					
31									L	U L 405		382	363	L 373	L 377	370	366	L 357	L					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	6	14	18	21	22	23	20	16	16	17	20	9					
MED							U L 336	L 382	L 388	L 400	L 405	400	403	394	389	380	368	360	L 358					
U Q								404	392	L 413	L 412	410	416	404	402	386	378	364	L 372					
L Q								L 371	L 387	U L 386	392	393	381	380	A 378	370	361	352	L 348					

AUG. 2016 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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								290	258	260	450	398	324	298	A	A	354	324	260					
2								264	262	270	352	422	328	A	332	314	338	308	A 312					
3								218	220	240	A	452	334	282	418	412	298	372	294					
4							336		272	L 326	G	A	420	362	332	362	356	300	292					
5								254	276	290	G	378	336	366	350	360	340	336	312					
6								240	L 608	334	G	438	354	A	354	378	A	316	302					
7								238	254	L 370	382	326	360	418	398	324	338	342	304					
8								272	264	250	398	308	328	406	376	352	320	308	282					
9								238	266	252	292	G	480	344	344	314	332	326	316					
10									262	A	A	A	A	A	396	342	E A 322	A	A					
11								250	260	318	286	302	324	288	330	370	300	278	254					
12								224	L 266	256	E A 344	394	332	310	414	368	288	246	222					
13									242	E A 298	A	324	334	316	310	A	302	298	268					
14								226	250	E A 266	290	A	334	368	346	346	304	294						
15								238	220	246	270	E A 386	342	342	A	344	342	310	264					
16								240	210	L 276		330	302	314	352	364	306	292	260					
17								256	232	548	398	326	276	272	328	312	384	350	290					
18								246	234		352	314	400	368	310	334	310	254	252					
19								214	234	276	276	414	354	340	300	288	284	258	234					
20									232		L 304	316	338	304	292	328	308	262						
21								220	242	244	304	L 324	320	330	326	326	298	276	248					
22									228	A	A	358	314	298	306	292	286	274	276					
23									230	266	332	396	336	282	268	294	292	264	242					
24									250	290	272	300	316	366	286	272	296	278	L 312					
25								244	246	286	300	304	310	310	294	282	286	264						
26								220	232	296	372	298	304	300	306	312	254	262	250					
27									250	262	L 320	396	342	326	284	264	276	300	250					
28									234	266	310	356	342	296	344	326	300	272	236					
29								244	228	234	284	308	330	320	322	318	302	276						
30								234	218	244	300	344	330	306	312	294	294	278	270					
31									222	254		334	278	296	280	286	286	270	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	21	31	27	25	28	30	28	29	29	30	30	26					
MED							336	240	242	266	315	336	333	315	328	326	302	285	266					
U Q								252	262	296	390	396	342	353	351	356	332	310	294					
L Q								225	230	252	291	315	320	298	303	294	292	270	250					

AUG. 2016 h'F2 (KM)

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IONOSPHERIC DATA STATION Okinawa

AUG. 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	284	286	258	262	230	250	222	212	198	196	178	210	204	A	A	A	A	212	220	220	208	208	230	244
2	Q 318	A 276	246	Q 222	A 270	246	228	208	216	202	184	224	A	A	A	A	A	A	A	262	210	A	E A 304	A
3	A	A	A	A	272	272	224	208	196	176	A	A	226	A	A	A	A	A	254	226	214	224	314	284
4	254	280	334	312	220	298	270	218	214	210	E A 238	A	198	218	196	238	A	212	H 210	258	248	254	272	Q 292
5	300	290	Q 280	Q 288	290	318	252	228	206	196	188	176	E A 312	A	A	236	208	194	228	244	200	236	272	288
6	292	306	286	A 304	298	278	246	214	190	192	198	220	E A 328	A	E A 254	E A 332	A	A	A	268	A 244	254	262	264
7	A 342	E A 374	268	E A 298	266	242	236	214	192	206	198	214	212	E A 268	228	A	214	238	E A 262	250	236	218	218	270
8	A 338	292	284	Q 284	Q 272	226	230	218	A	A	176	170	B	220	A	A	232	222	A	250	246	212	A 268	280
9	308	Q 274	344	328	300	268	228	230	194	204	192	182	A 254	A 228	E A 266	E A 274	222	218	256	252	226	232	A 276	A 256
10	278	260	A 288	256	264	254	240	236	228	A	A	A	A	A	A	192	A	A	A	260	222	A 264	Q 276	A 344
11	258	246	254	288	306	270	E A 278	224	210	214	216	200	A 234	208	192	216	212	222	234	238	228	234	272	290
12	Q 270	282	242	226	256	Q 278	232	A	202	A	A	A	204	E A 266	A	A	A	216	216	224	A 262	252	254	260
13	252	286	252	206	272	Q 268	234	212	206	A	A	E A 234	A	A	A	A	A	244	A	224	244	228	A 256	252
14	Q 308	284	A 294	E A 294	E A 304	244	226	224	200	A	232	A	A 238	232	A	E A 258	A	A	266	230	240	234	238	296
15	A 302	Q 272	254	234	A 266	252	242	222	206	222	208	A	A	212	A	224	228	E A 236	224	234	204	226	238	274
16	238	260	248	Q 280	Q 318	Q 274	238	212	194	176	216	A 224	A	226	202	236	224	E A 242	232	232	218	210	268	A 276
17	296	Q 274	A	266	E A 352	Q 266	Q 250	218	210	196	242	234	206	224	216	218	206	204	246	244	204	194	210	302
18	320	274	238	258	280	294	A 250	208	216	200	184	194	204	E A 260	A	A	A	A	A	234	234	254	276	262
19	294	Q 296	234	264	244	240	228	214	202	E A 258	192	186	174	A 220	A	E A 254	212	212	226	208	202	238	A 290	288
20	290	A 316	E A 326	A 318	A 264	240	230	214	194	180	204	194	200	A	180	190	220	234	240	214	222	248	262	282
21	298	268	288	248	224	206	230	198	206	188	172	184	168	194	A	A	A	A	A	216	216	234	254	270
22	270	Q 298	246	270	250	218	222	210	206	A	A	A	A	A 270	A 228	A	A	210	206	236	242	214	208	230
23	Q 304	Q 298	226	E A 282	E A 286	Q 238	202	226	210	A	E A 302	A	E A 256	A	198	A	208	216	224	218	210	246	Q 306	278
24	Q 290	Q 290	272	220	218	246	246	226	208	182	194	196	184	210	A	218	204	210	206	244	214	A 248	E A 314	Q 310
25	A 268	Q 290	234	228	258	264	238	206	204	186	H 176	190	H 184	200	190	A	E A 270	226	244	252	220	198	276	A 314
26	Q 322	314	314	248	230	228	210	200	202	196	206	A 230	214	A 228	E A 272	212	220	210	220	236	228	220	240	274
27	274	284	272	270	250	234	226	230	218	188	200	222	192	224	E A 280	A	A	A	A	212	224	234	296	Q 306
28	Q 316	Q 266	260	248	A 254	A 254	238	220	210	202	172	186	174	H 176	206	200	200	206	212	204	186	222	248	246
29	276	278	262	230	242	236	260	222	206	196	188	182	180	A 240	A	A	A	A	252	246	200	210	232	240
30	264	280	274	238	220	226	242	226	212	204	200	190	200	202	214	202	202	A	242	274	220	194	254	304
31	286	284	264	204	258	274	244	222	214	224	E A 264	200	240	A 240	214	214	204	226	244	226	196	A 252	270	276
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	30	31	31	31	30	30	24	26	23	24	22	16	17	17	21	23	31	31	30	31	30
MED	291	284	263	258	261	252	235	218	206	196	195	195	202	222	206	215	212	214	230	236	220	233	265	277
U Q	308	292	287	288	286	272	246	224	210	205	216	222	A 236	A 240	E A 241	E A 246	223	230	246	250	236	248	276	292
L Q	270	274	247	234	244	238	228	212	200	188	184	186	188	210	197	207	205	210	220	224	208	214	240	262

AUG. 2016 h'F (KM)

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AUG. 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							A	A	112	A	A	A	A	A	A	A	A	A	112	A				
2							A	112	108	108	108	110	A	A	A	A	A	A	A	A				
3							A	A	A	112	110	110	110	110	110	108	108	108	108	A				
4							A	112	110	110	110	110	110	110	110	110	110	A	A	A				
5							A	110	108	A	108	110	110	A	A	A	110	A	A	A				
6							118	110	110	110	110	108	110	A	A	108	108	108	A	A				
7							A	A	A	108	108	A	108	108	108	108	108	108	112	A				
8							A	108	110	A	A	110	B	A	110	A	A	110	110	A				
9							A	A	A	114	A	A	A	A	114	112	110	110	114	A				
10							A	A	A	A	A	A	A	A	A	110	110	112	112	A				
11							A	A	A	108	108	110	110	110	A	110	112	112	112	A				
12							B	A	A	108	A	A	110	110	110	110	A	A	A	A				
13							A	110	A	A	A	A	A	A	A	A	A	A	A	A				
14							B	A	A	A	A	A	A	A	A	108	108	A	108	A				
15							B	108	110	110	112	A	A	A	A	A	110	A	A	A				
16							A	110	110	108	112	A	A	112	110	110	110	110	110	A				
17							A	108	108	A	A	110	110	A	110	110	106	106	106	A				
18							A	A	112	A	116	114	112	112	112	110	110	110	114	A				
19							B	A	A	A	A	A	A	A	A	A	112	110	110	A				
20							B	A	A	A	A	A	A	A	A	A	A	A	A	A				
21							A	130	116	112	112	110	110	A	110	A	110	110	110	A				
22							B	122	108	106	106	A	A	A	A	A	A	A	A	A				
23							A	116	110	A	108	108	108	114	114	110	110	110	110	A				
24							A	110	110	A	A	114	108	108	A	114	A	110	110	B				
25								106	106	106	106	106	A	106	108	112	108	110	110	A				
26							A	142	108	108	106	108	106	110	A	110	110	A	A	B				
27							A	A	110	A	A	A	A	A	A	A	A	A	A	A				
28							A	A	A	A	A	A	A	110	110	110	110	A	A	A				
29							A	A	108	110	A	A	A	110	108	108	108	A	A	A				
30							B	108	112	108	A	A	A	A	108	108	108	108	A	A				
31							B	114	114	108	108	108	108	106	108	108	106	104	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	17	20	17	16	15	14	14	16	20	22	17	16					
MED							118	110	110	108	108	110	110	110	110	110	110	110	110					
U Q								115	111	110	111	110	110	110	110	110	110	110	112					
L Q								108	108	108	108	108	108	108	108	108	108	108	110					

AUG. 2016 h'E (KM)

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AUG. 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	106	112	112	108	B	102	128	108	132	100	102	102	102	98	98	98	98	116	112	94	94	104	104	104
2	104	104	104	104	104	104	118	116	120	116	118	120	102	98	102	100	120	116	110	104	106	134	120	110
3	136	106	106	104	118	112	100	100	102	138	120	120	132	120	118	116	114	110	118	98	98	B	B	B
4	118	102	102	100	118	112	116	116	116	124	120	116	118	116	G	136	108	104	128	106	100	104	96	106
5	138	110	108	108	108	B	118	110	140	118	106	138	132	106	104	154	G	104	100	96	98	96	154	132
6	110	110	110	106	110	112	G	136	138	146	142	130	106	104	110	120	118	116	108	108	108	108	94	94
7	106	106	106	106	106	106	102	100	102	144	122	138	132	126	126	118	132	118	114	96	108	108	108	108
8	108	108	106	102	104	B	122	114	114	112	112	112	B	110	122	120	100	132	110	104	92	92	102	92
9	122	110	106	102	102	102	98	98	102	102	104	104	180	142	130	134	130	126	112	96	110	106	106	106
10	120	112	108	108	126	112	108	108	104	102	102	100	100	102	104	140	118	114	112	108	110	106	122	108
11	102	104	114	110	102	120	116	116	112	130	126	140	134	134	102	182	160	98	114	108	106	106	106	102
12	108	108	104	B	104	104	B	118	112	110	106	108	108	122	130	124	102	98	100	96	96	108	94	110
13	92	90	106	112	122	114	106	114	110	102	102	104	104	104	102	102	100	100	96	96	104	104	106	106
14	114	114	104	106	106	108	112	102	104	102	102	102	102	102	102	122	122	122	116	110	110	122	110	108
15	108	108	108	108	104	104	132	118	114	116	122	100	100	100	98	98	124	92	96	92	92	90	102	102
16	B	B	108	106	106	106	106	126	120	156	170	132	128	128	140	128	116	114	110	106	104	104	104	102
17	110	98	106	102	102	102	102	G	102	162	188	164	150	148	134	120	160	G	116	104	102	96	96	96
18	88	88	B	B	116	112	104	124	120	98	102	148	138	138	118	118	118	118	114	110	106	92	92	108
19	102	104	104	102	102	102	102	142	104	102	100	102	102	150	134	136	140	128	114	110	110	108	102	102
20	102	104	94	94	94	96	98	104	104	102	102	102	102	124	104	102	100	126	96	94	94	92	102	B
21	102	106	106	106	106	102	100	142	136	100	138	140	130	96	116	126	118	118	114	110	108	106	104	104
22	98	104	96	98	98	112	104	104	114	104	102	102	100	98	96	98	96	100	98	98	94	94	92	122
23	118	104	104	100	100	100	126	122	142	114	110	110	112	112	G	110	152	G	130	104	102	102	102	102
24	106	124	B	98	98	128	98	152	150	108	100	128	102	G	114	118	110	G	G	B	104	100	100	102
25	122	104	98	94	94	100	100	136	96	140	128	110	112	G	112	106	106	94	200	112	104	B	B	100
26	100	100	100	96	96	94	100	142	132	122	120	114	116	112	110	110	110	112	112	B	B	108	106	106
27	100	B	96	96	96	96	96	98	140	162	100	100	126	102	100	122	116	116	96	108	108	108	88	88
28	106	106	102	102	102	98	100	100	100	100	100	130	122	G	144	G	G	108	102	92	90	90	B	B
29	114	112	B	B	104	104	104	110	G	102	100	100	98	110	106	106	106	104	102	100	B	100	118	98
30	92	92	92	B	114	96	B	152	130	156	100	100	98	98	100	98	96	110	94	106	104	102	118	104
31	B	B	98	B	B	142	B	118	114	114	110	118	122	112	112	110	126	138	104	102	102	102	86	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	29	28	28	26	29	29	27	30	30	31	31	31	30	28	29	30	29	28	30	29	29	29	28	27
MED	106	106	105	103	104	104	104	116	114	114	106	112	112	111	110	118	116	114	111	104	104	104	103	104
U Q	116	110	107	106	109	112	116	126	132	138	122	130	130	125	124	126	125	118	114	108	108	108	107	108
L Q	102	104	101	100	101	101	100	104	104	102	102	102	102	102	102	106	104	104	100	96	97	96	96	102

AUG. 2016 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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	FFQ 21	FQ 31	FQ 21	FQ 31		F 2	C 1	CLH 22	HL 11	L 1	L 1	L 2	L 2	L 2	L 3	L 2	L 2	CL 22	CL 21	L 2	F 3	FF 32	F 3	F 2
2	FQ 21	FQ 31	FQ 41	FQ 21	F 2	FQ 21	C 2	C 2	C 2	C 1	C 1	CL 11	LQ 21	LQ 41	L 2	L 3	CL 21	CL 61	CL 82	L 7	FF 31	FFF 14	FQ 41	F 8
3	FFQ 28	FQ 41	F 6	FQ 71	FF 25	FF 12	L 3	L 2	L 2	H 2	C 2	C 2	HC 11	C 2	C 2	C 2	C 3	CL 21	CL 21	L 2	F 1			
4	F 1	FQ 21	FQ 11	F 1	F 1	F 2	C 3	C 4	C 2	C 1	C 1	C 2	C 1	C 1		H 1	C 1	L 1	CL 11	HL 13	F 1	F 4	F 2	F 1
5	F 1	F 1	F 1	F 1	F 2		C 2	C 2	H 1	C 1	C 1	H 1	H 1	C 2	L 2	HL 11		LL 11	L 2	L 3	F 1	F 1	FF 11	F 3
6	F 8	FF 51	FF 61	FF 71	FF 31	F 1		H 1	H 1	H 1	H 1	H 1	C 1	LQ 31	C 1	C 1	C 3	C 4	C 6	C 5	F 7	FF 33	F 6	F 5
7	FFQ 42	FQ 51	FQ 31	FQ 41	F 3	F 3	L 3	LQ 21	LQ 11	HL 11	C 1	HL 11	H 1	C 1	C 1	C 1	H 1	C 1	C 2	LC 34	FFQ 62	FQ 41	FQ 31	FQ 31
8	FQ 51	FQ 21	FQ 41	F 1	F 1		C 2	C 2	C 2	C 2	C 1	C 2		C 1	C 1	CL 11	L 1	HL 11	CL 61	L 4	F 5	F 3	FF 22	F 2
9	FFF 12	FQ 21	FQ 91	F 5	F 3	FQ 31	L 3	L 3	LQ 11	LH 11	L 1	L 1	HL 11	HL 11	HL 11	HL 11	HL 11	CL 11	CL 21	LL 21	FF 62	FF 92	F 4	FF 51
10	FF 32	F 5	F 7	F 3	F 2	F 1	C 2	C 2	L 2	L 5	L 5	L 6	L 4	L 3	L 2	HL 11	C 4	CL 51	CL 41	C 6	F 1	FF 72	FF 11	FQ 81
11	FQ 41	FQ 41	FF 15	FQ 61	F 6	FF 61	C 5	C 2	C 2	H 1	C 1	HL 11	H 1	H 1	L 1	H 1	HL 11	LH 21	C 2	C 4	FF 62	FF 32	F 2	F 3
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13	FQ 21	F 2	FF 22	F 1	FF 31	FQ 21	L 3	C 2	C 3	L 4	L 5	LQ 21	L 2	L 2	L 3	L 5	L 3	L 2	L 4	LQ 51	FF 84	FFQ 81	FFQ 25	FFQ 22
14	FQ 41	FQ 21	F 4	F 5	F 5	F 1	C 1	L 2	L 2	L 3	LH 21	L 2	LQ 21	LHQ 11	LC 21	CL 11	CL 22	CLH 24	CHL 61	CHL 52	F 8	FF 23	F 3	F 5
15	F 8	F 6	F 1	F 3	F 3	F 1	H 1	C 1	C 2	C 1	C 1	LQ 31	L 2	LH 11	L 4	LH 21	CL 11	L 2	LQ 21	LQ 61	FQ 31	F 2	FQ 31	F 1
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17	FQ 11	FQ 51	FQ 31	F 4	F 9	F 4	LQ 31		L 1	HL 11	HL 11	HL 11	HL 11	HL 11	HL 11	CL 11	HL 11		CL 41	L 1	F 1	F 1	F 4	F 4
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19	F 3	F 6	F 3	F 3	F 3	F 4	L 1	HL 11	L 1	L 2	LQ 11	LQ 11	L 1	HL 11	HL 11	HL 11	H 1	C 1	C 2	C 1	F 2	FF 11	F 5	F 3
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22	F 3	FQ 22	F 4	F 4	F 3	FF 13	L 1	L 1	C 1	L 3	L 4	L 2	L 2	L 2	L 1	L 3	LQ 31	LQ 21	LQ 11	LQ 11	FQ 21	FQ 21	F 2	FQ 11
23	FQ 21	FQ 31	F 7	FQ 41	FQ 81	F 2	C 2	C 1	HCL 11	CL 21	CL 31	C 1	C 1	C 2		C 1	H 1		HC 11	L 2	F 2	F 4	FQ 61	F 3
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25	FF 13	F 2	F 7	F 3	F 2	F 2	F 3	H 1	L 1	H 1	H 1	C 1	C 1		C 1	C 1	C 2	L 1	H 1	C 2	F 1			F 4
26	F 8	F 5	F 6	F 3	F 6	F 5	L 2	HL 11	HL 11	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 1	C 2			F 3	F 1	F 4
27	F 2		F 5	F 5	F 4	F 3	L 2	L 5	H 1	HL 11	L 1	L 2	CL 11	LC 11	LC 31	CL 12	CL 13	CL 12	L 3	CL 14	FF 61	F 3	F 1	F 1
28	F 2	F 2	F 1	FQ 31	FQ 51	F 7	L 6	L 4	LQ 21	LH 21	L 1	HL 11	C 1		H 1			C 1	L 2	L 2	F 3	F 1		
29	F 1	F 2			F 1	F 1	L 2	CL 12		L 1	L 1	L 1	L 1	CL 11	C 2	C 2	CL 21	L 3	L 5	L 9		F 4	FF 12	F 4
30	F 3	F 2	F 1		F 1	F 2		HC 11	H 1	H 1	L 1	L 1	L 1	L 1	L 1	L 1	L 1	C 4	LC 22	CL 34	FF 33	F 3	FF 12	F 4
31			F 1			F 1		C 1	C 1	C 1	C 2	C 1	C 1	C 1	CL 11	CL 11	C 1	H 1	L 3	L 3	F 3	F 6	F 1	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG. 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

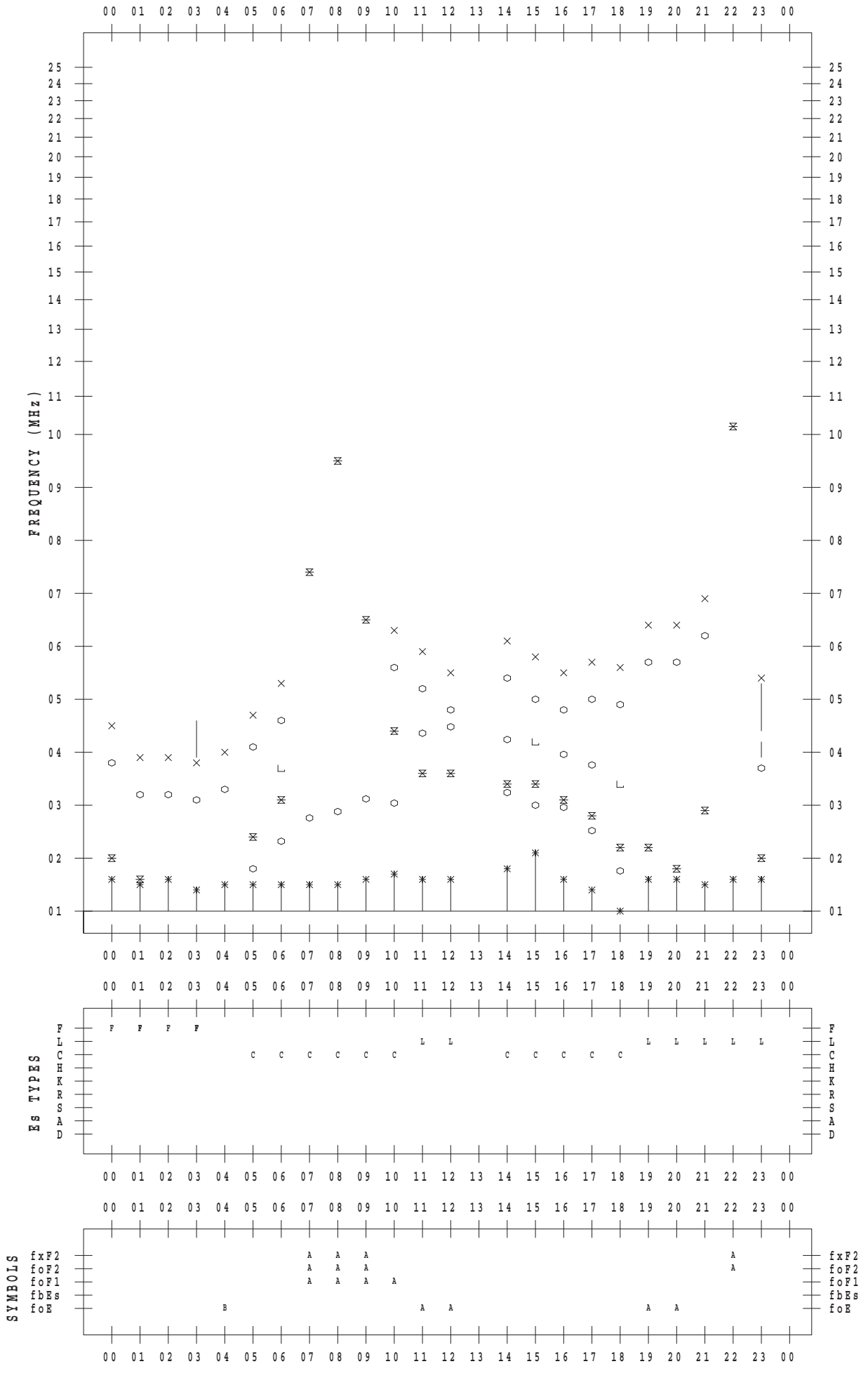
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 1

135 °E MEAN TIME



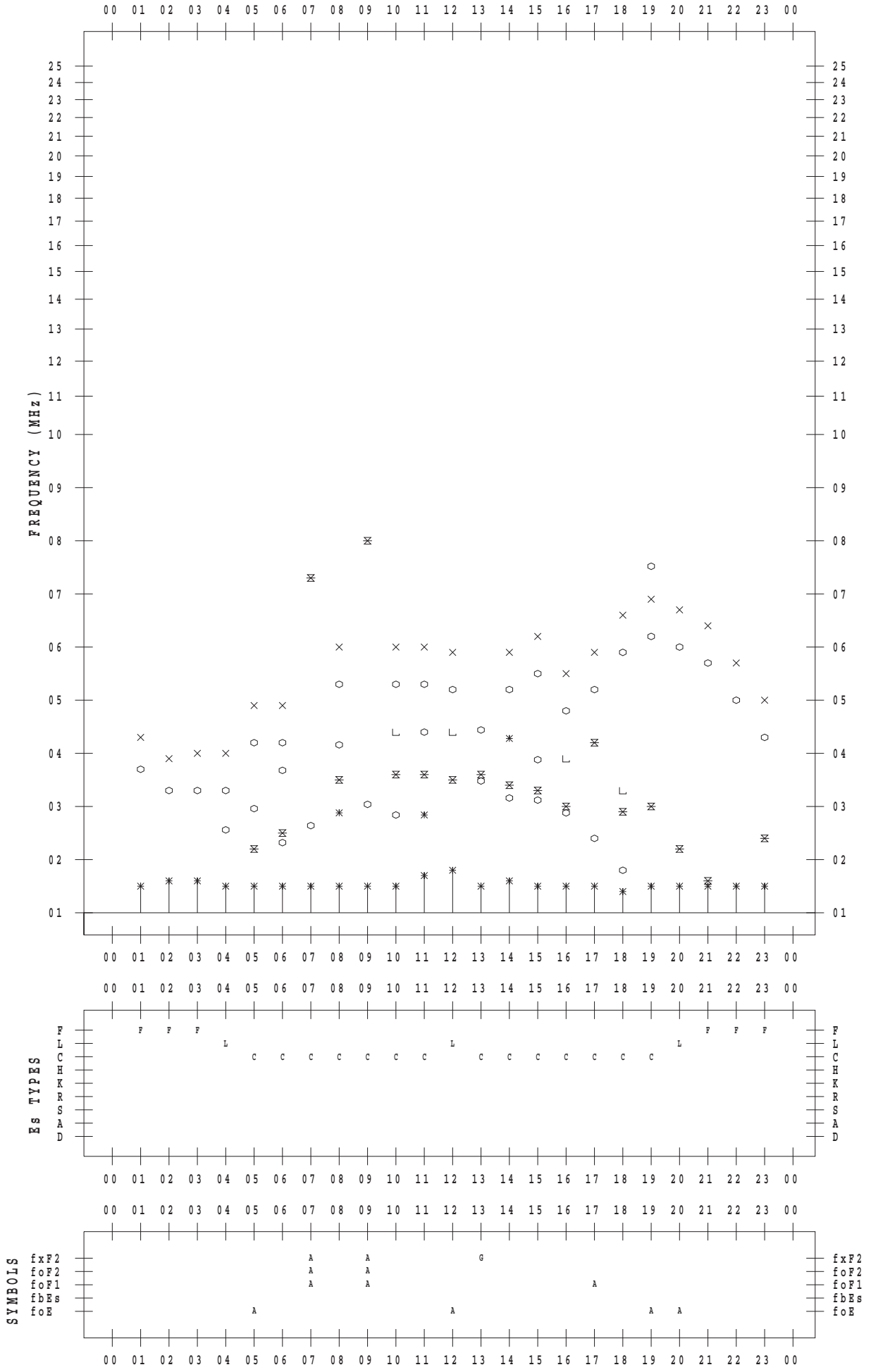
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 2

135 °E MEAN TIME



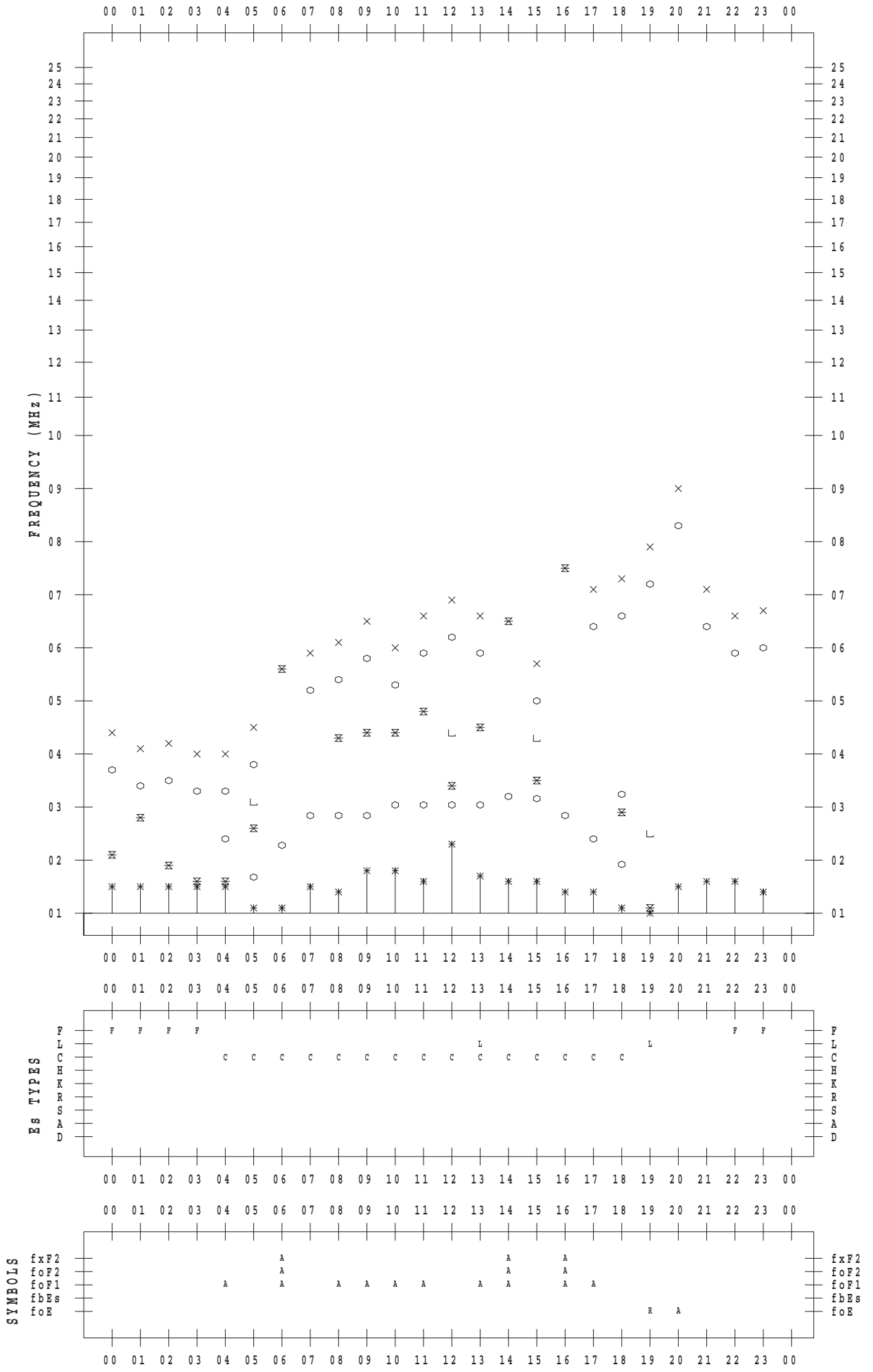
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 3

135 °E MEAN TIME



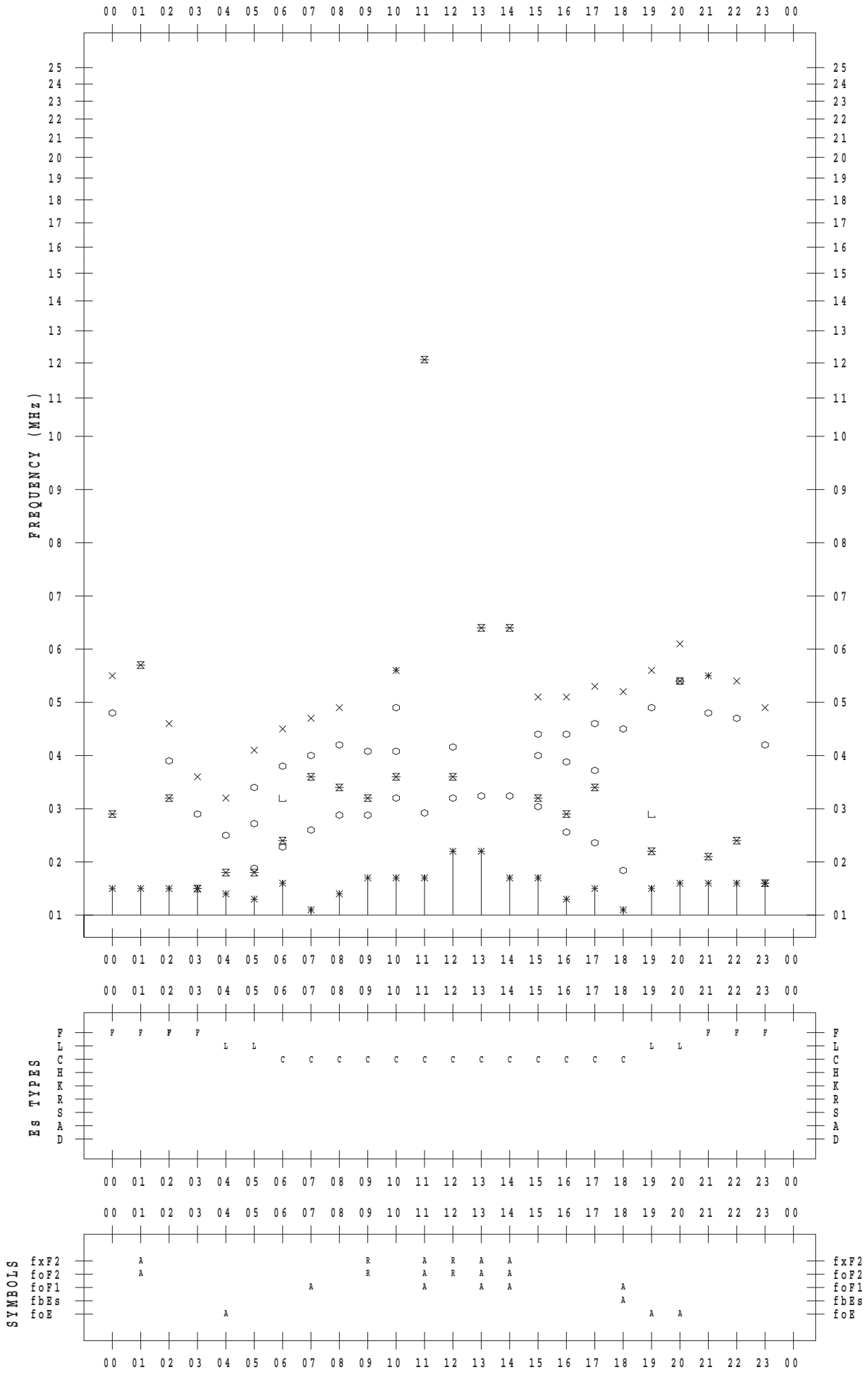
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 4

135 °E MEAN TIME



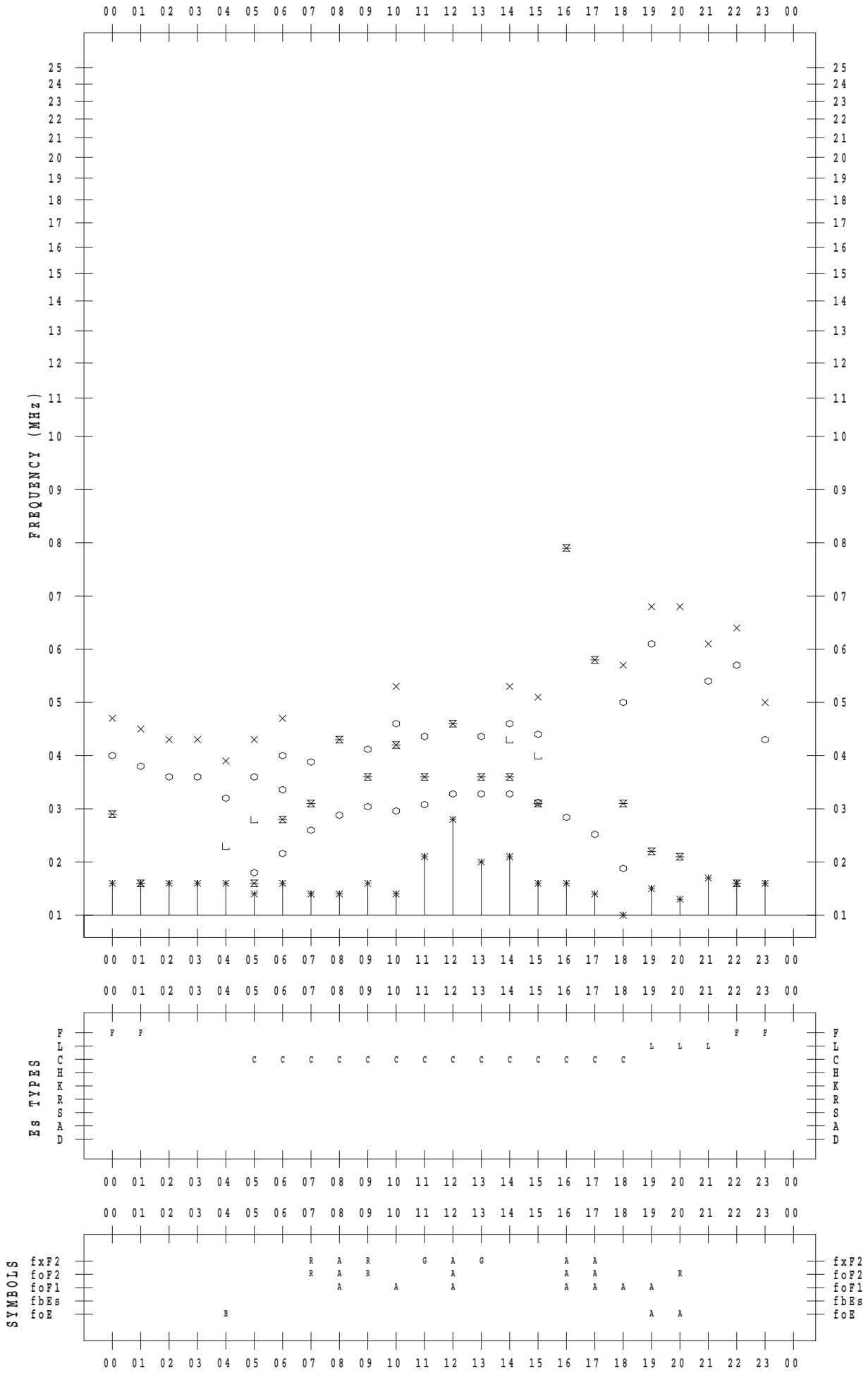
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 5

135 °E MEAN TIME



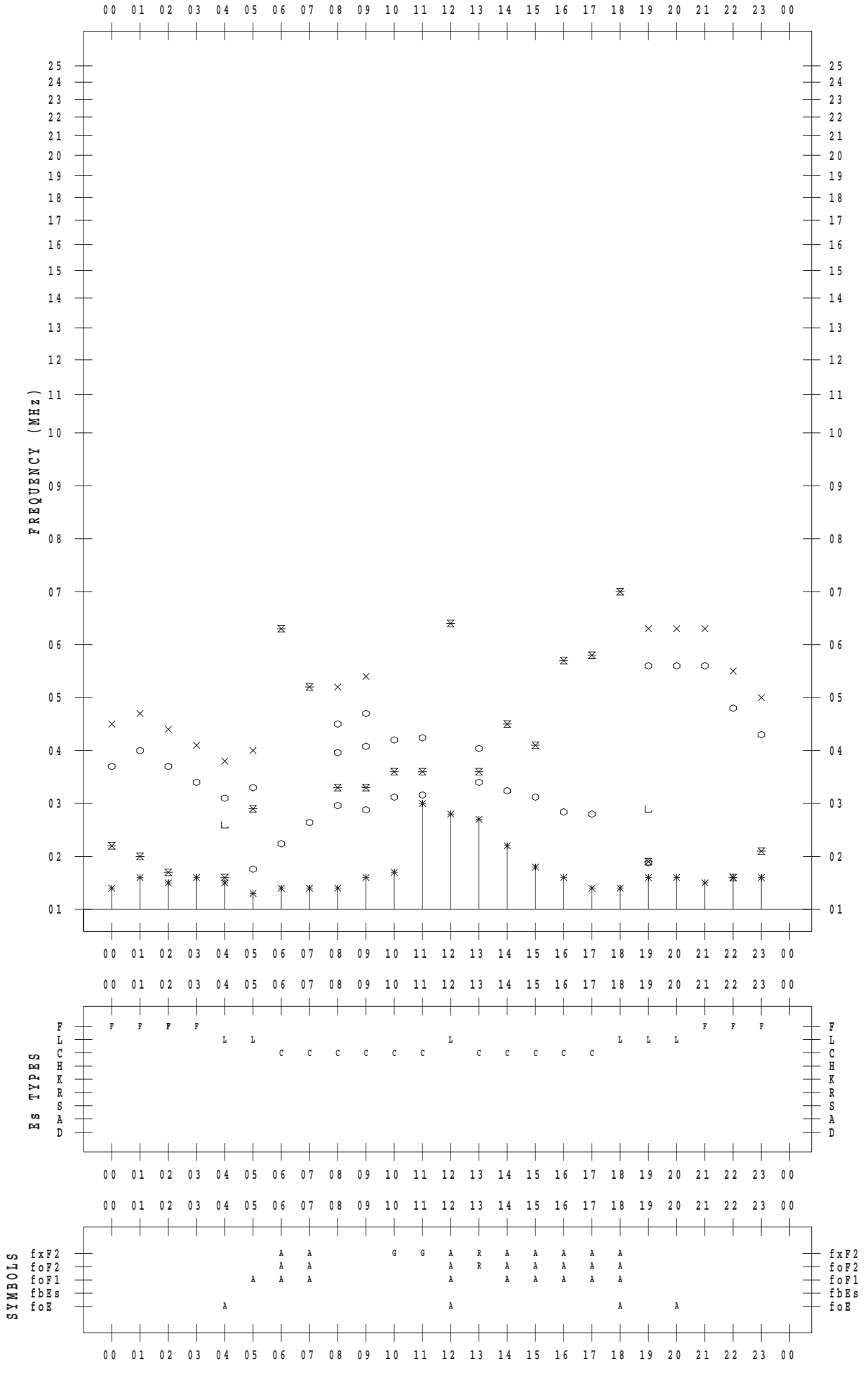
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 6

135 °E MEAN TIME



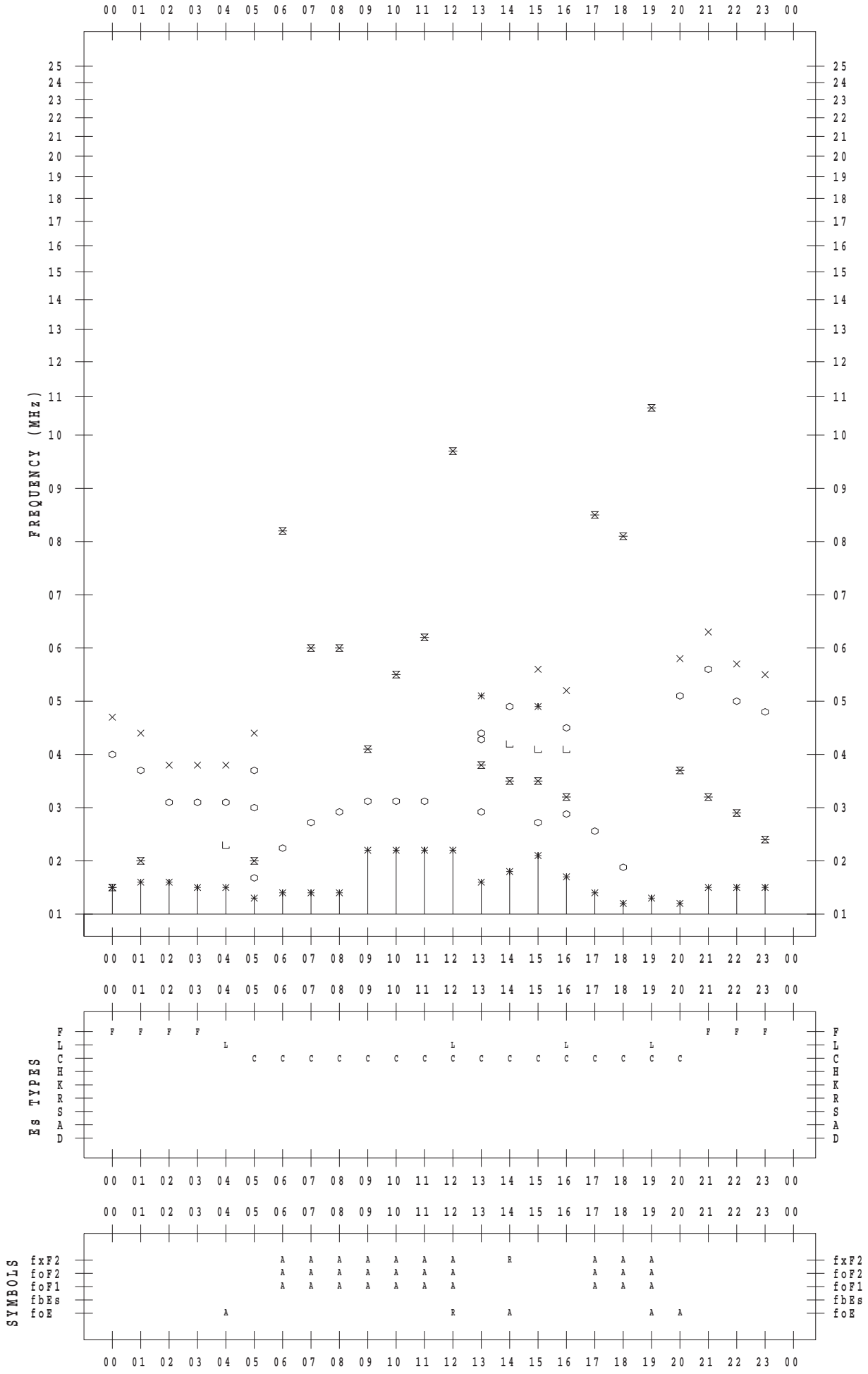
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 7

135 °E MEAN TIME



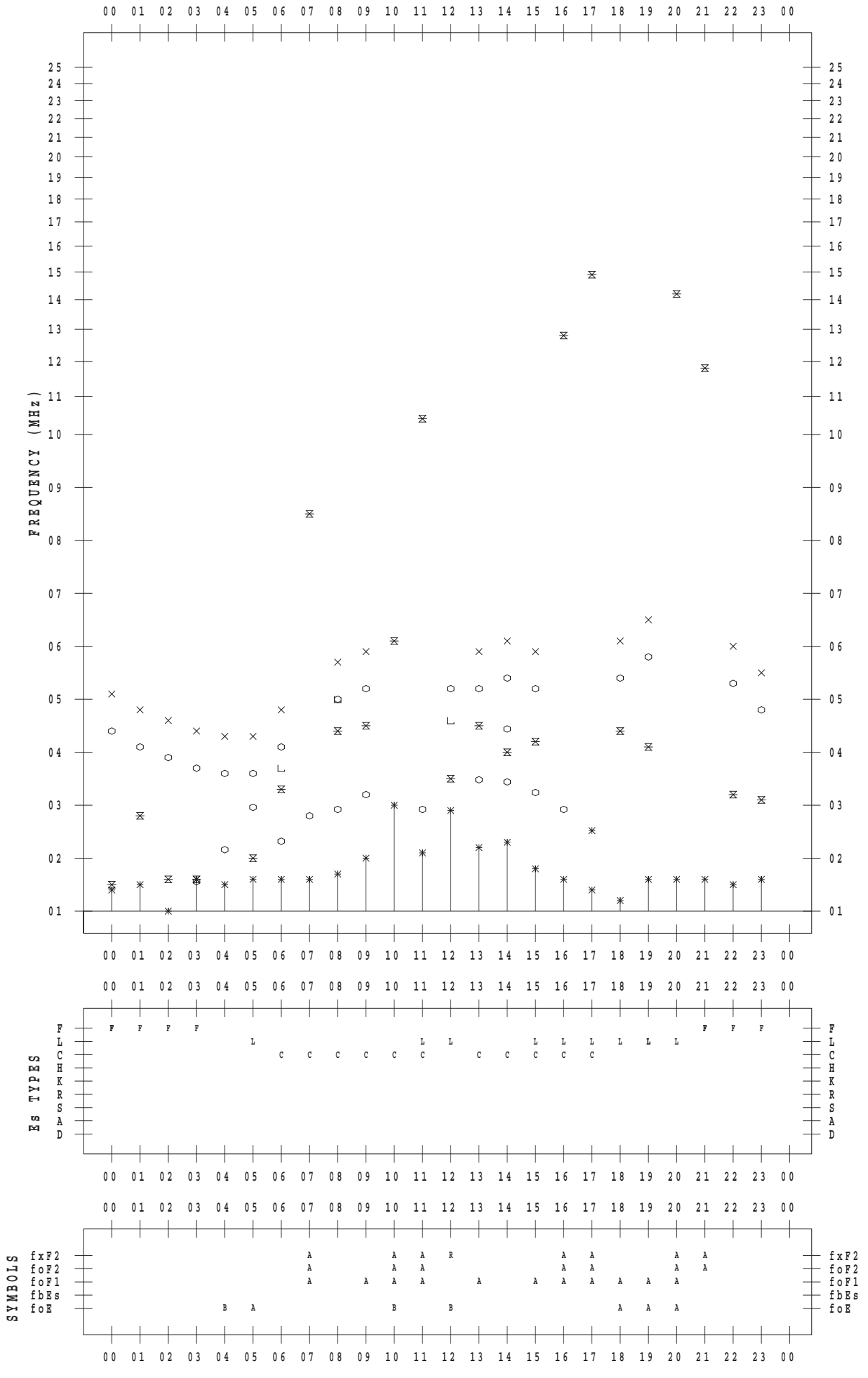
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 8

135 °E MEAN TIME



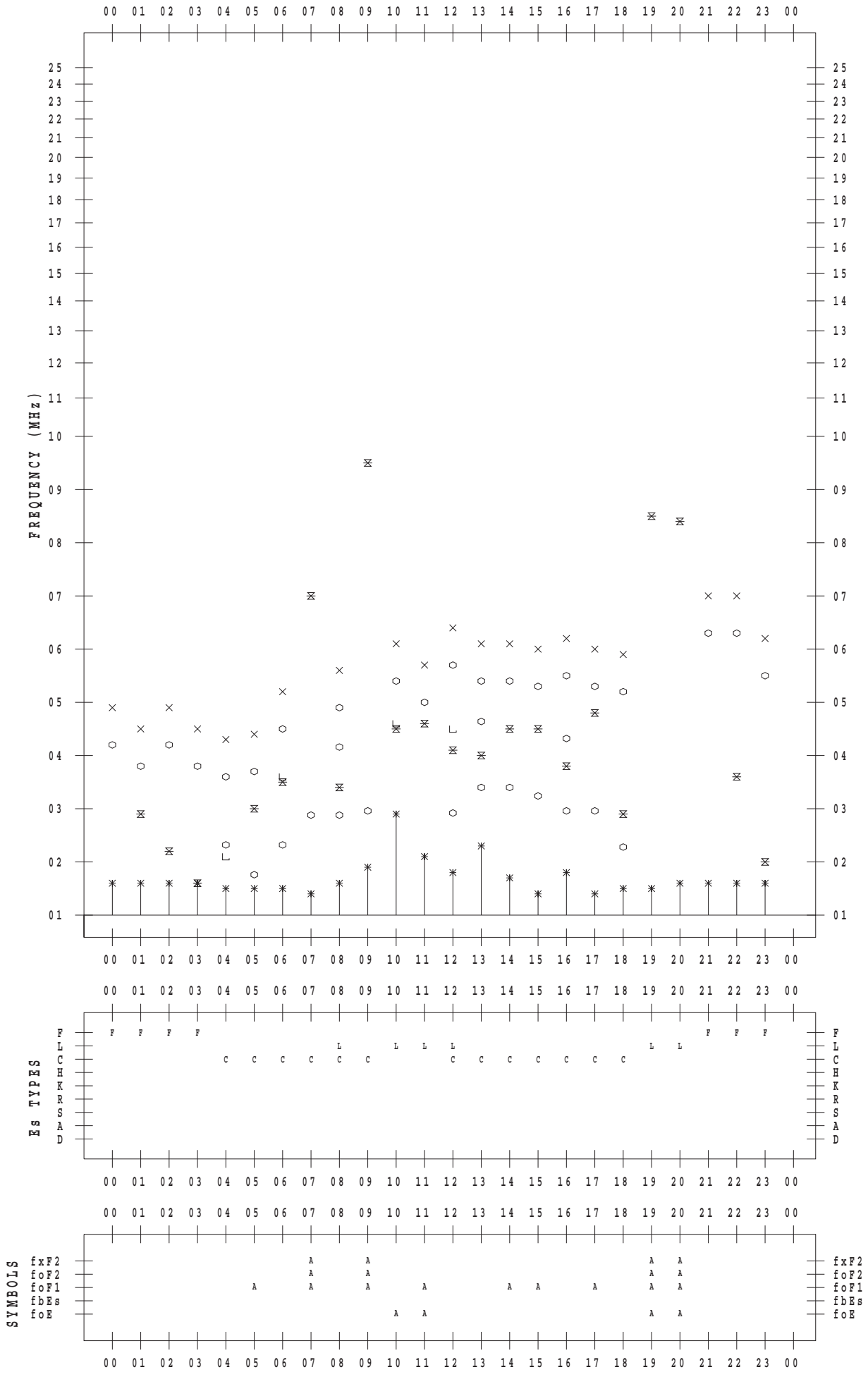
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/ 9

135 °E MEAN TIME



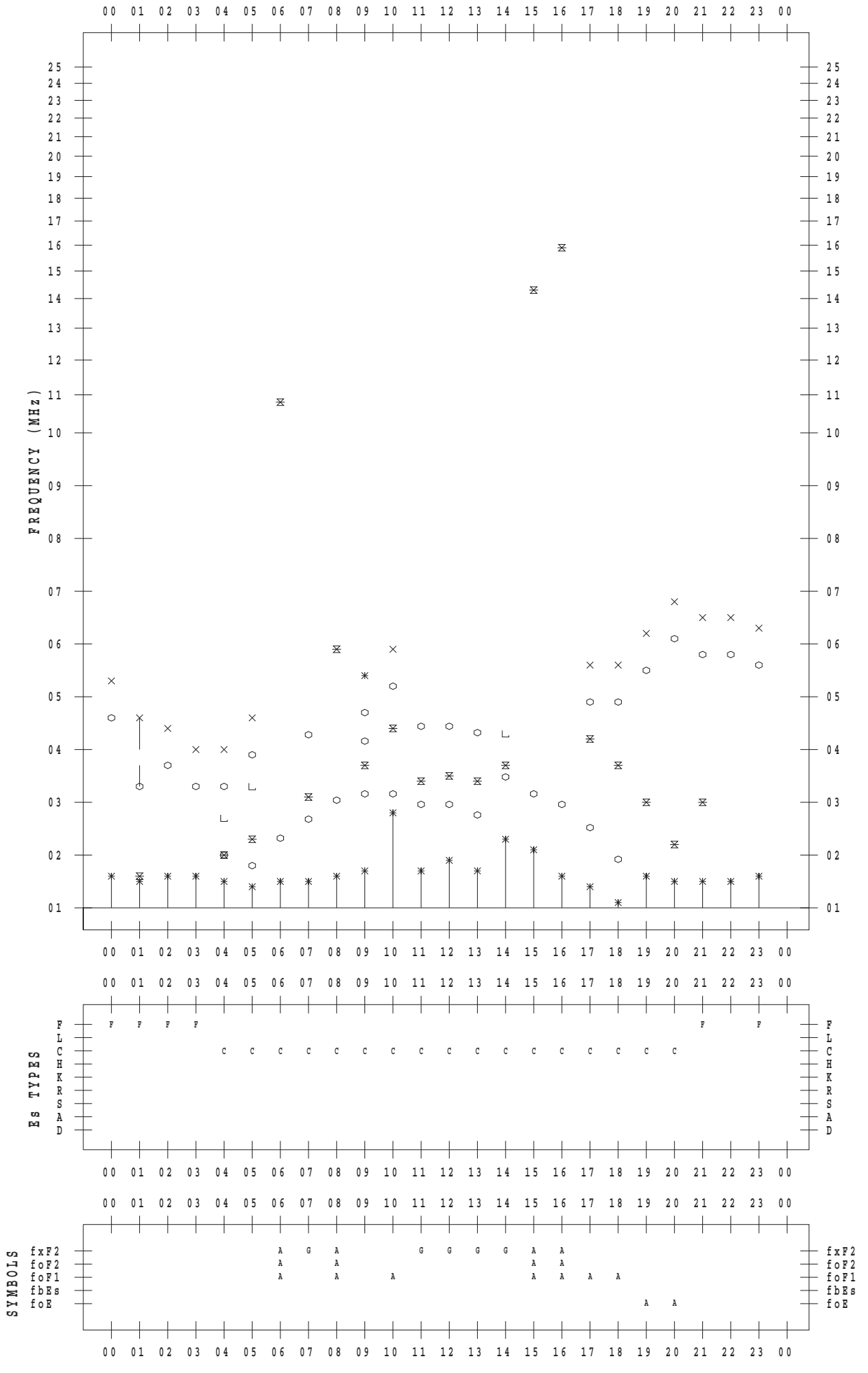
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/10

135 °E MEAN TIME



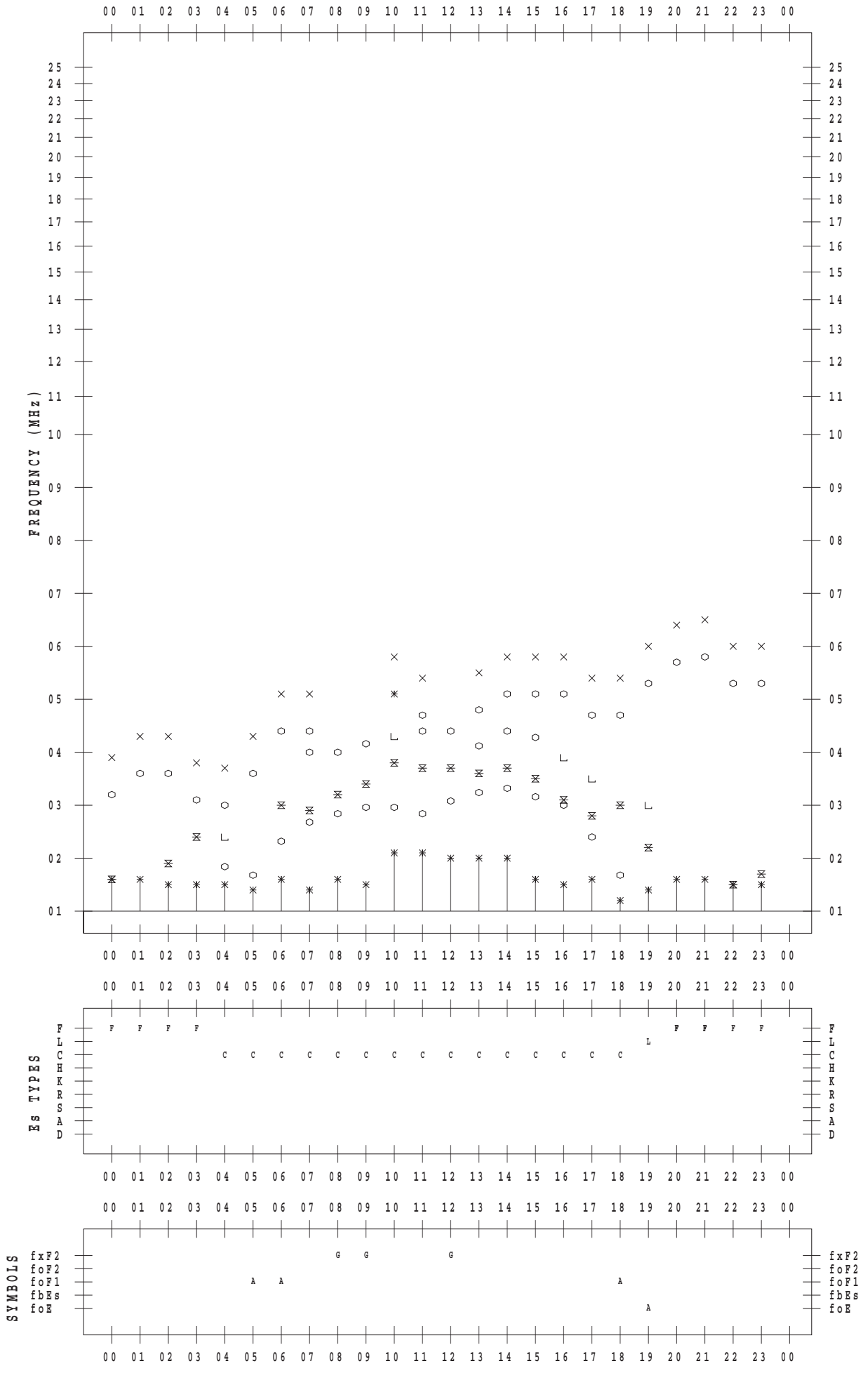
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/11

135 °E MEAN TIME



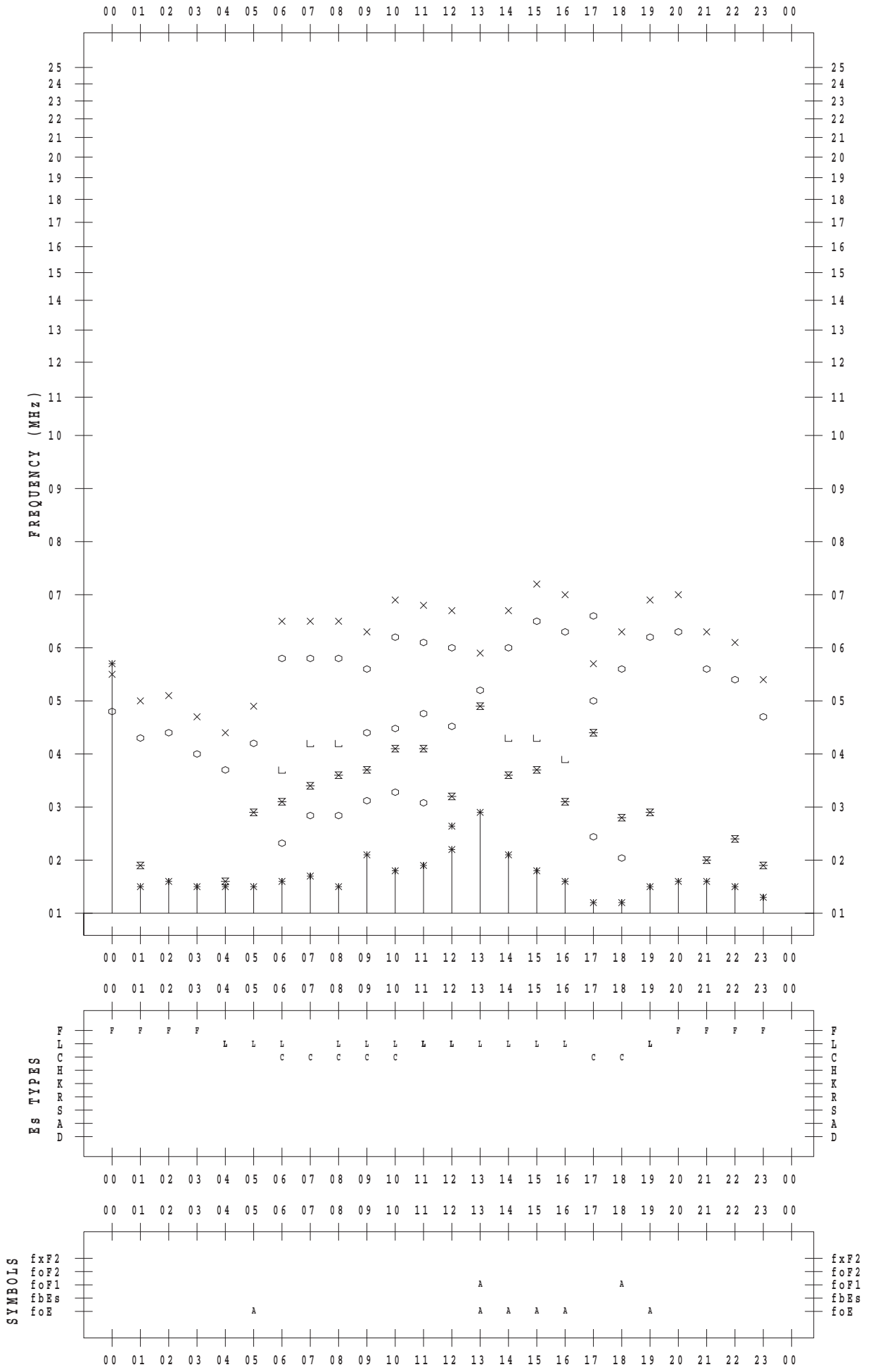
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/12

135 °E MEAN TIME



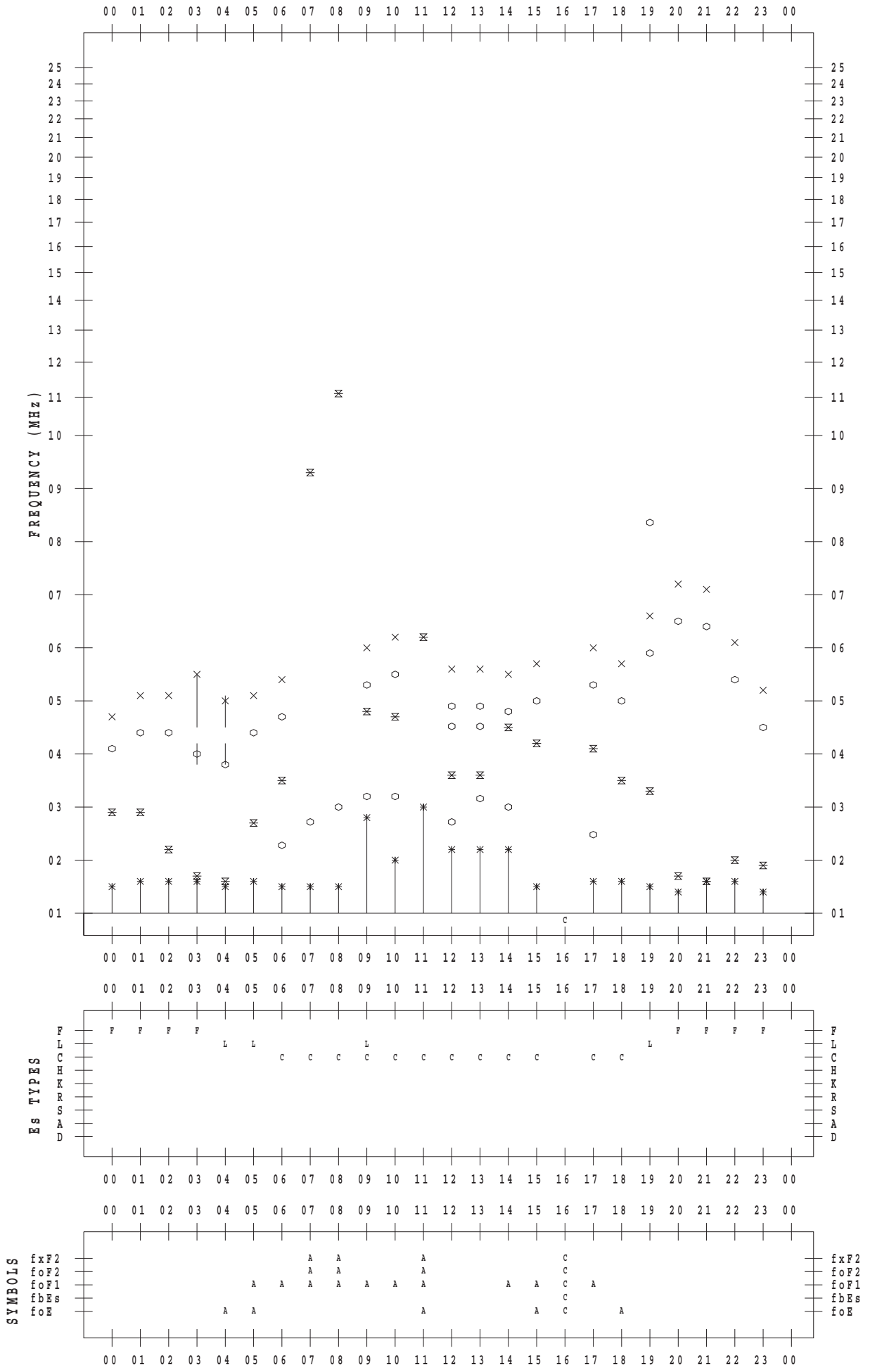
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/13

135 °E MEAN TIME



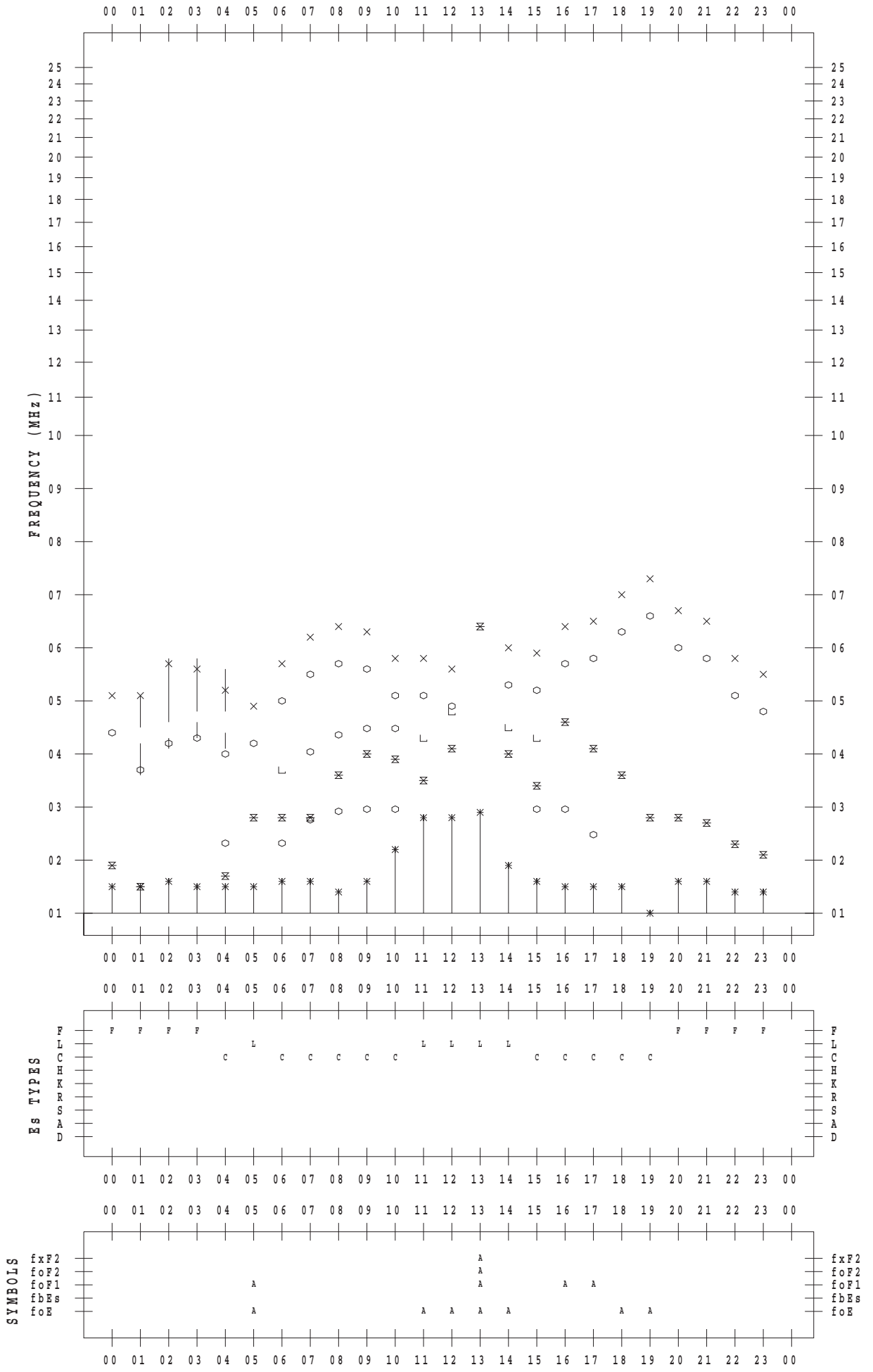
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/14

135 °E MEAN TIME



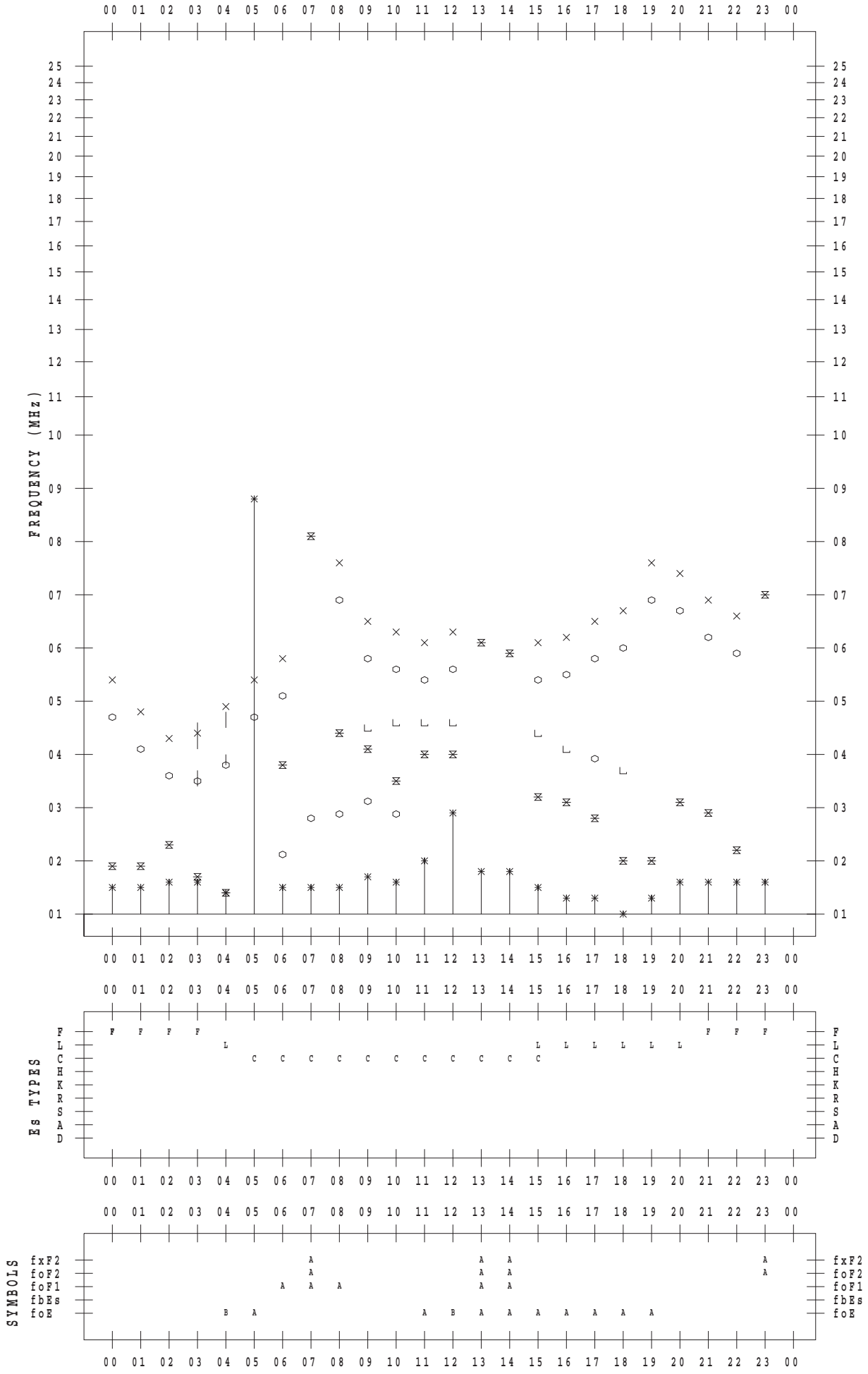
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/15

135 °E MEAN TIME



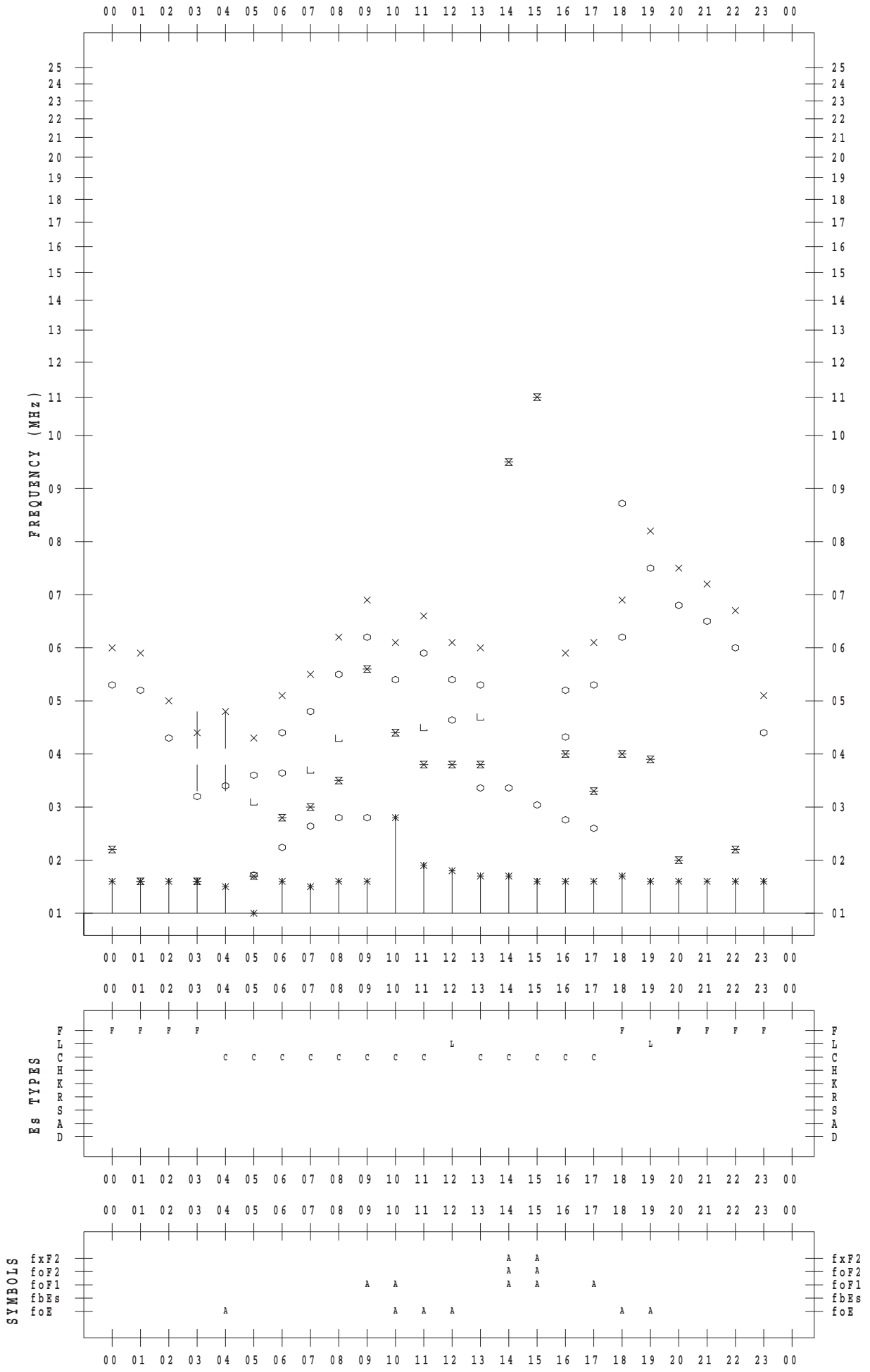
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/16

135 °E MEAN TIME



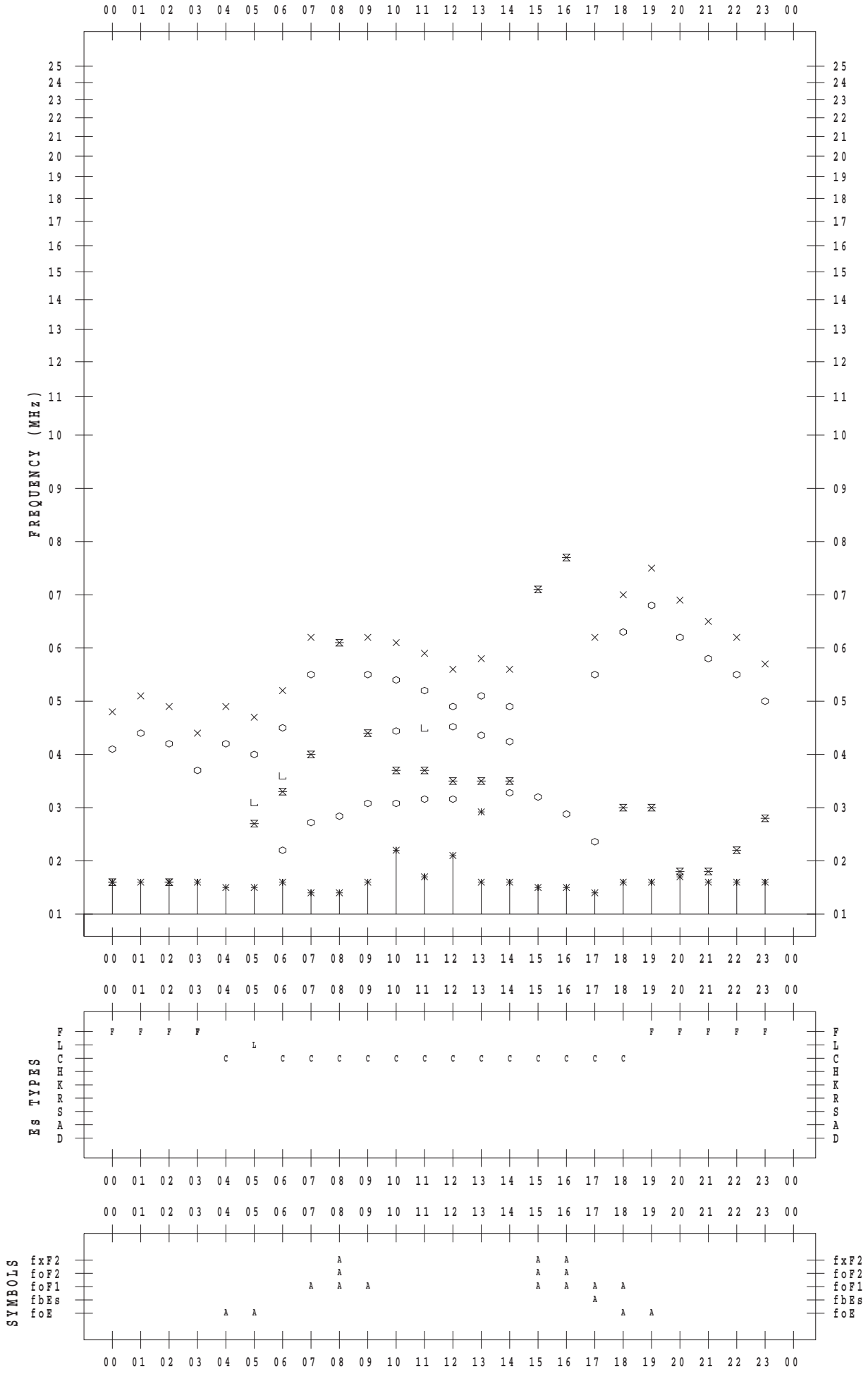
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/17

135 °E MEAN TIME



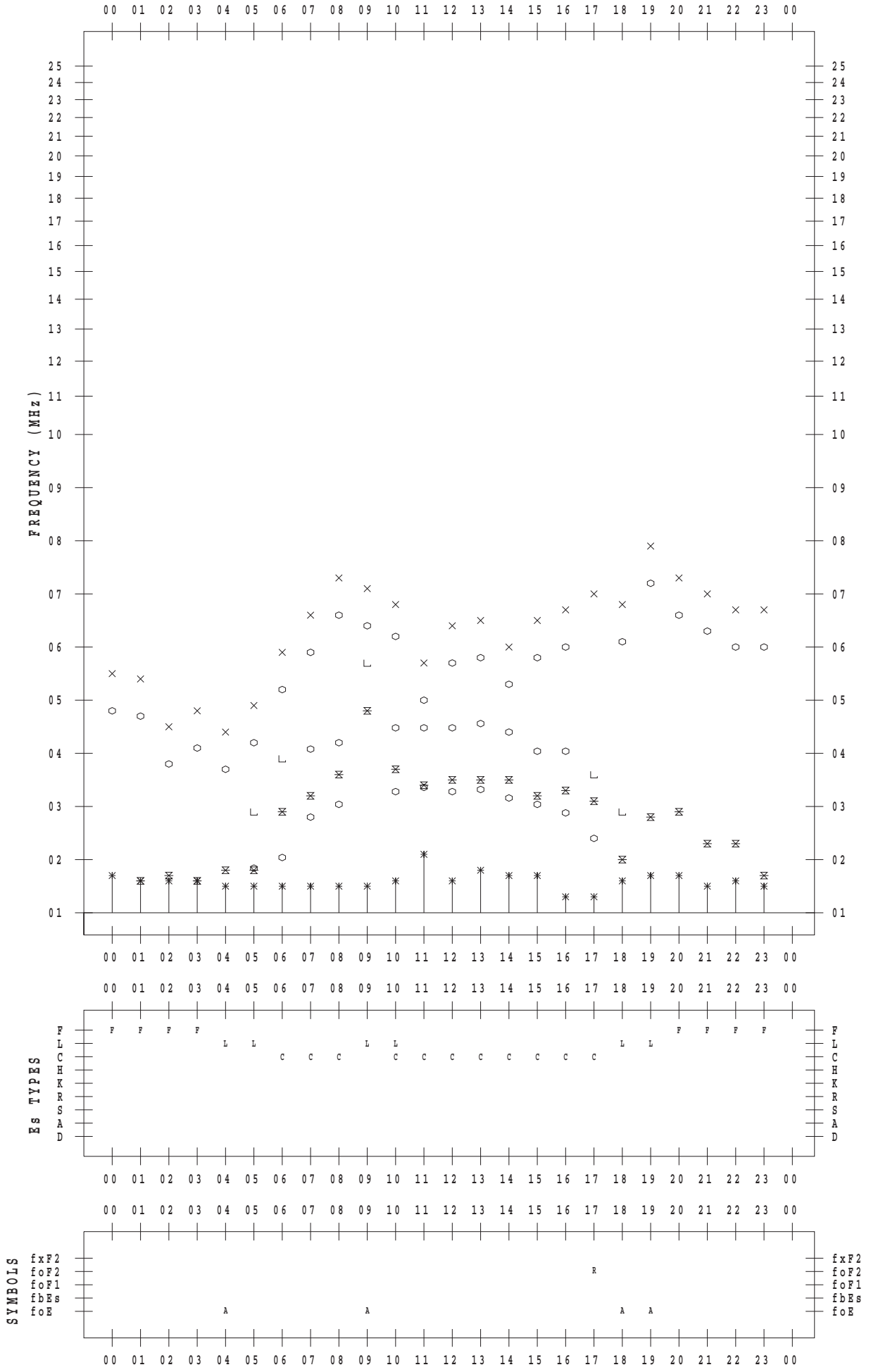
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/18

135 °E MEAN TIME



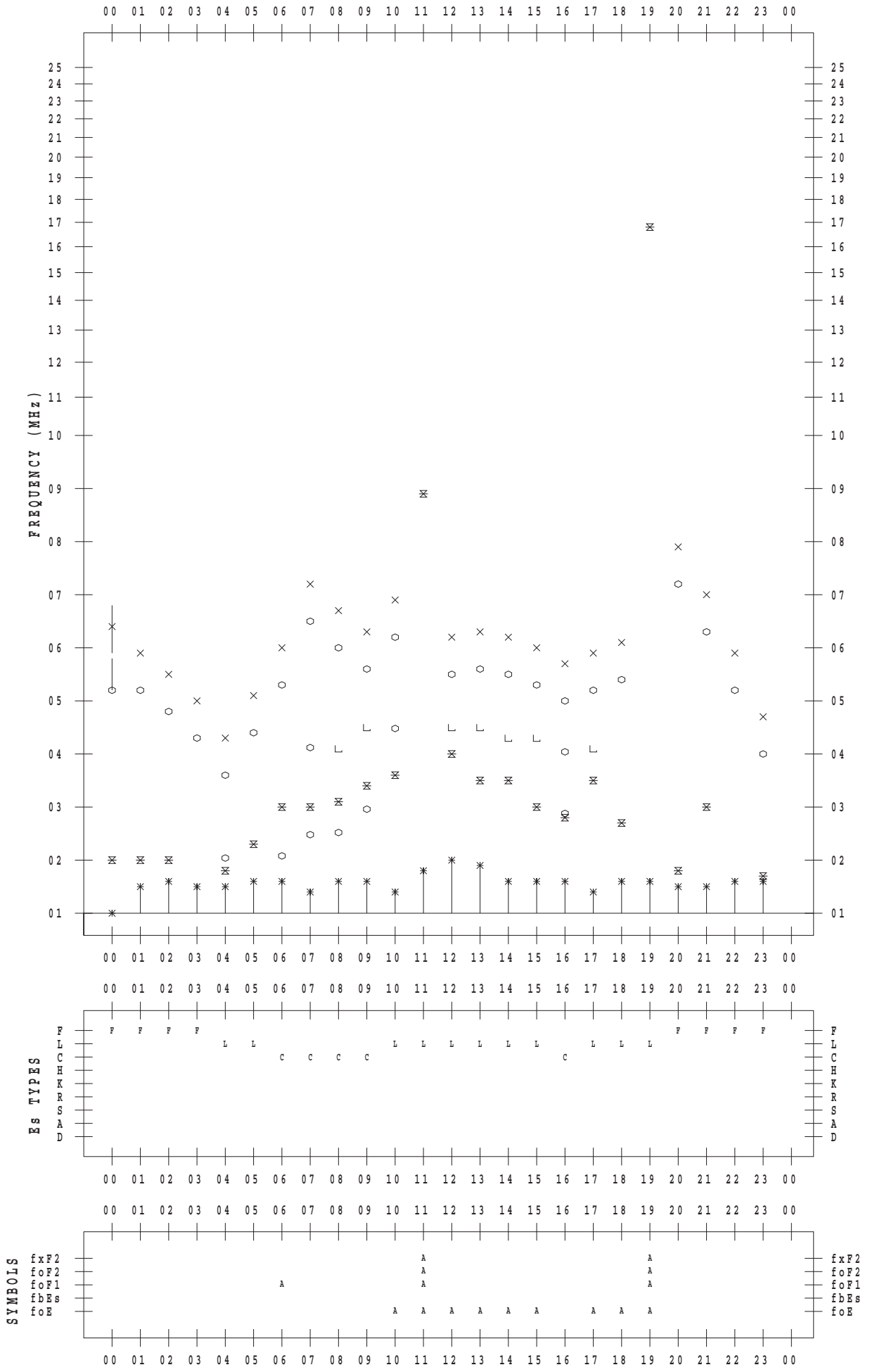
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/19

135 °E MEAN TIME



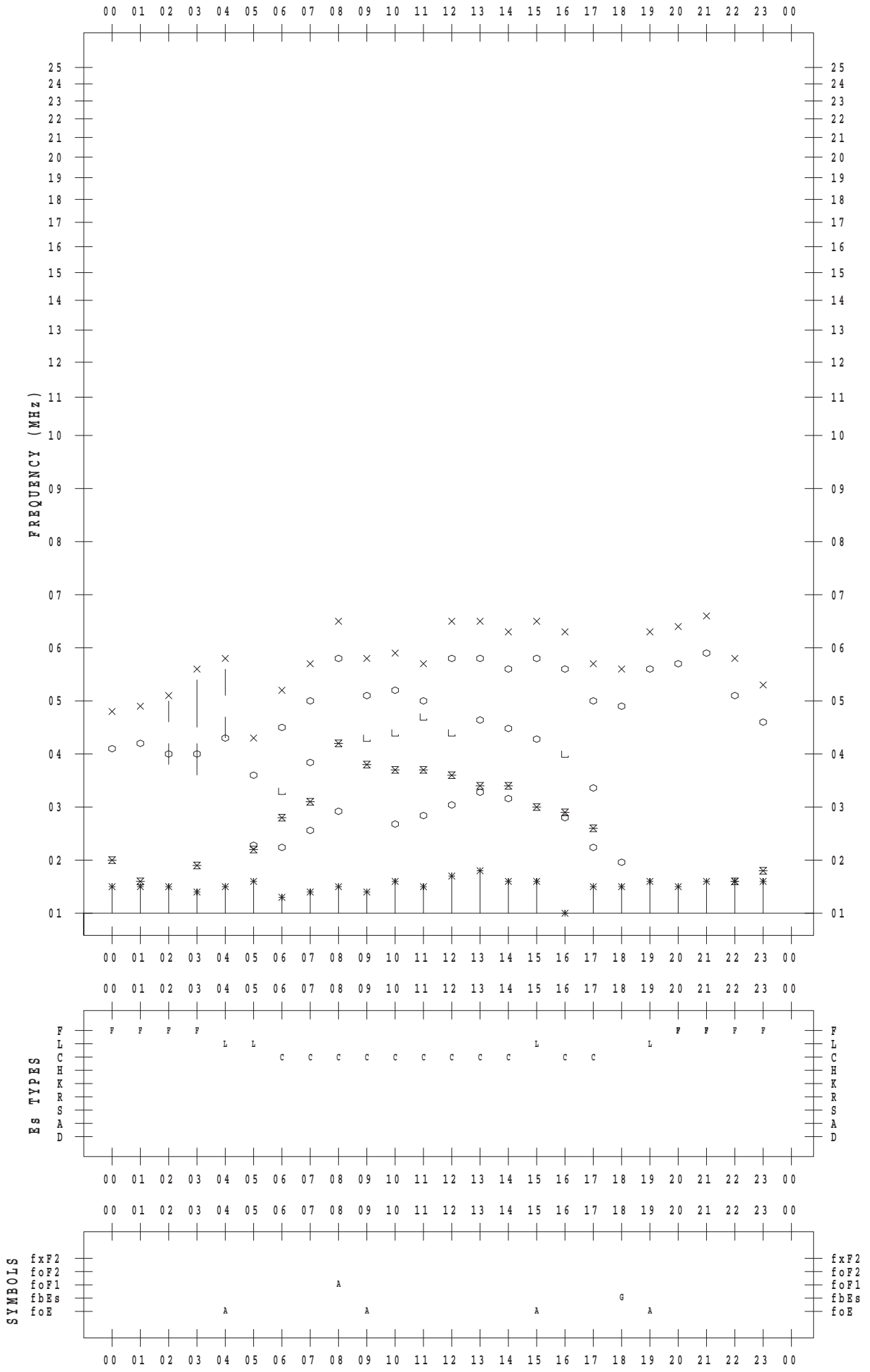
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/20

135 °E MEAN TIME



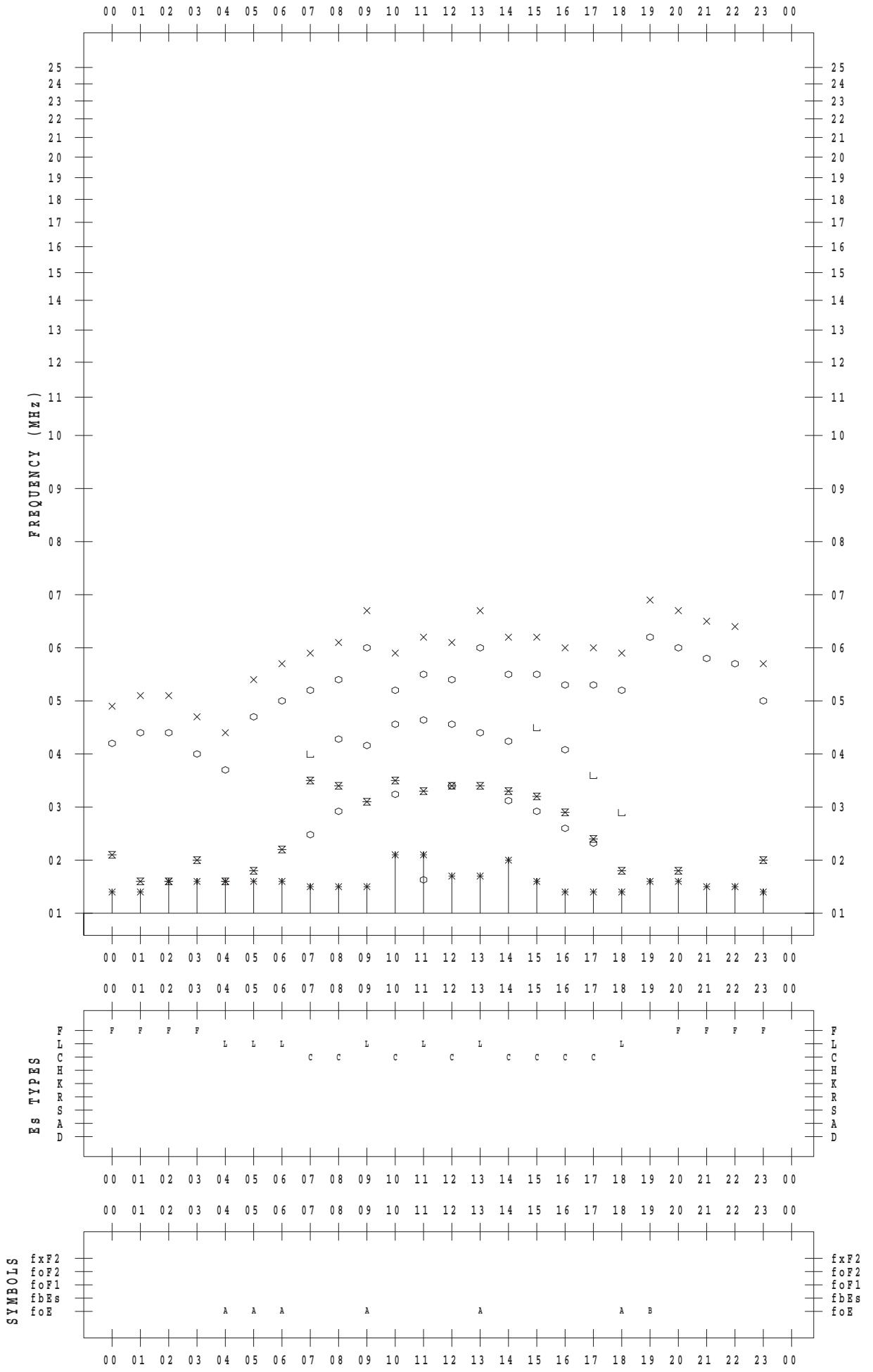
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/21

135 °E MEAN TIME



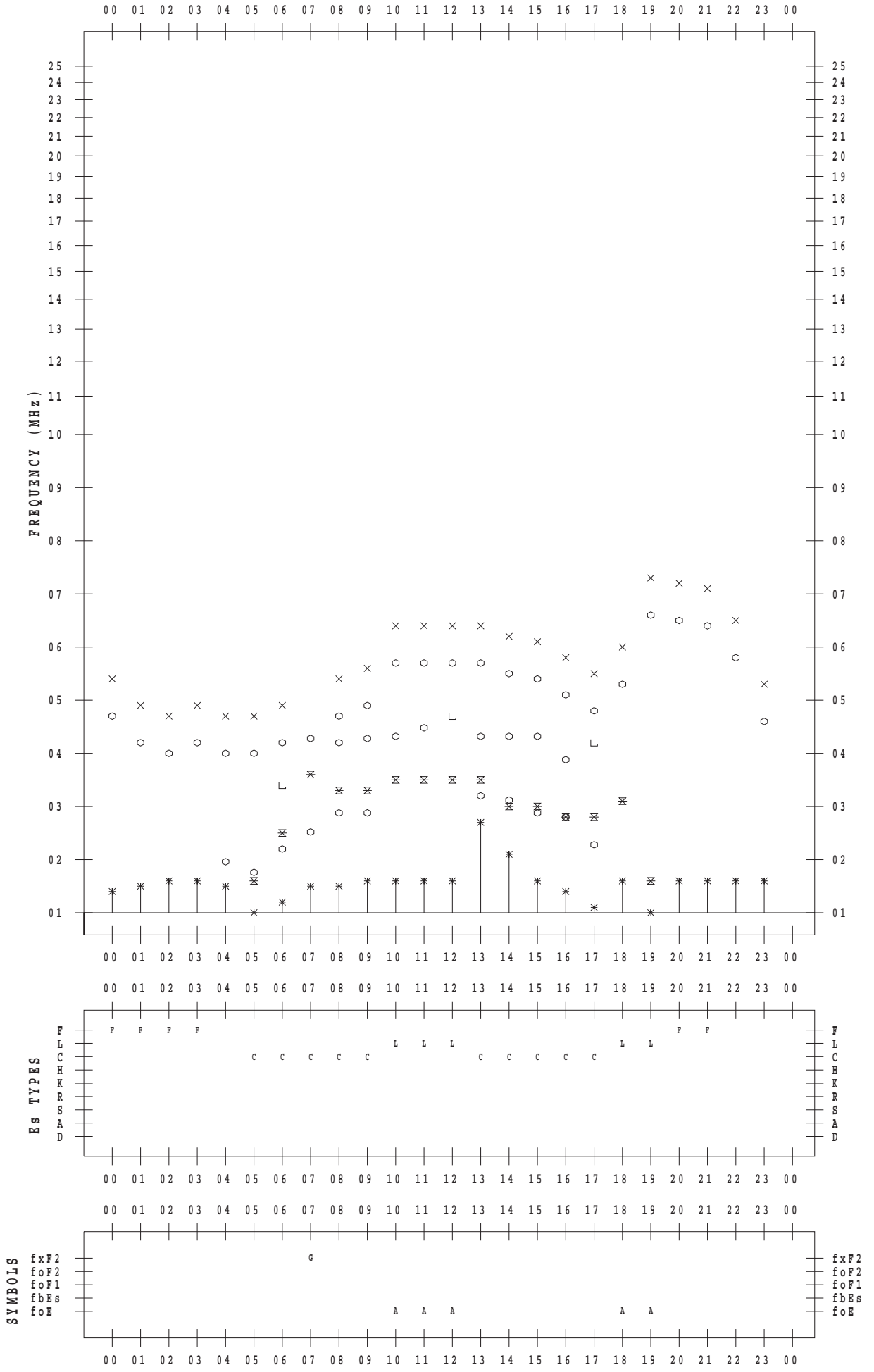
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/22

135 °E MEAN TIME



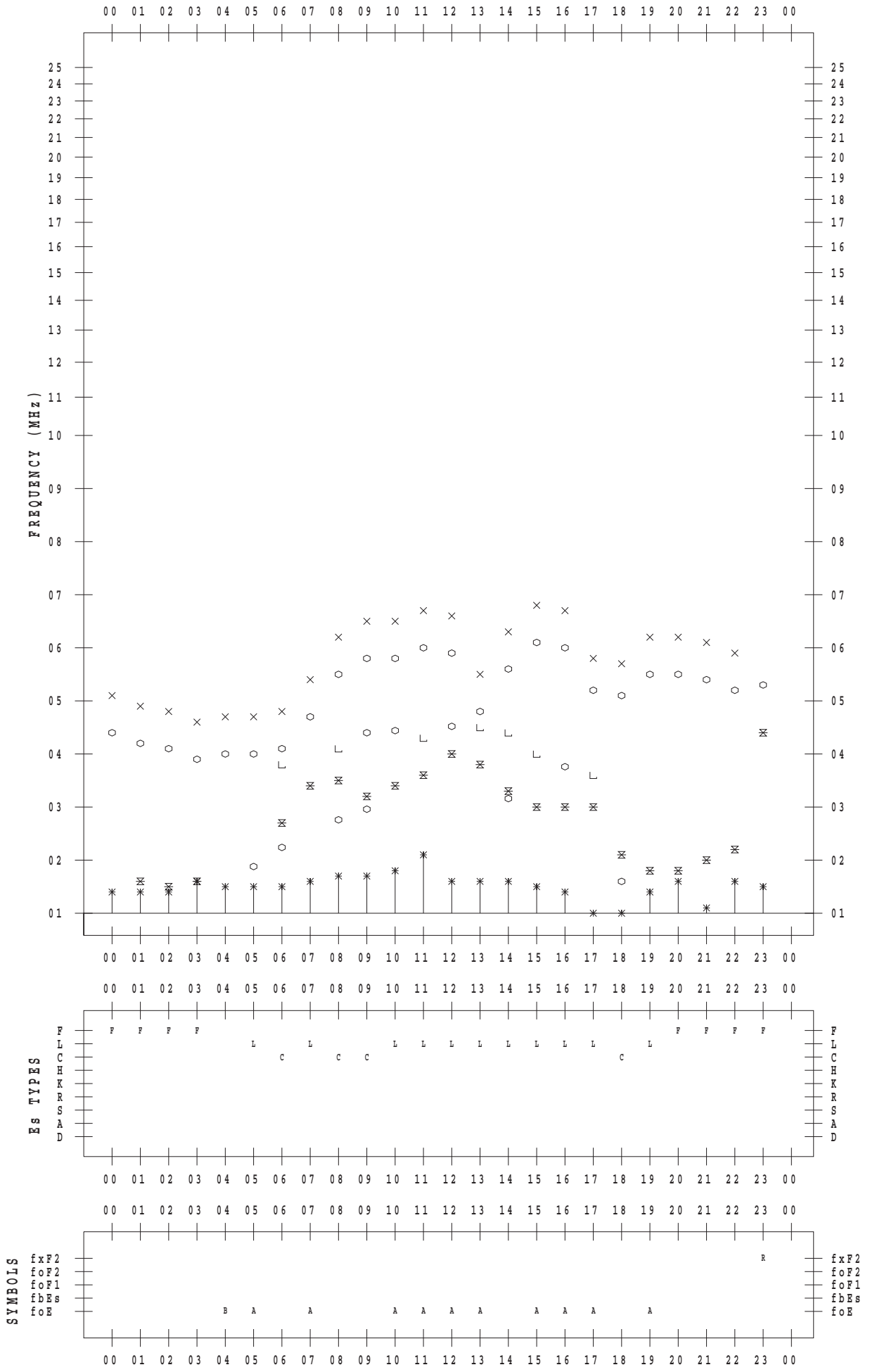
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/23

135 °E MEAN TIME



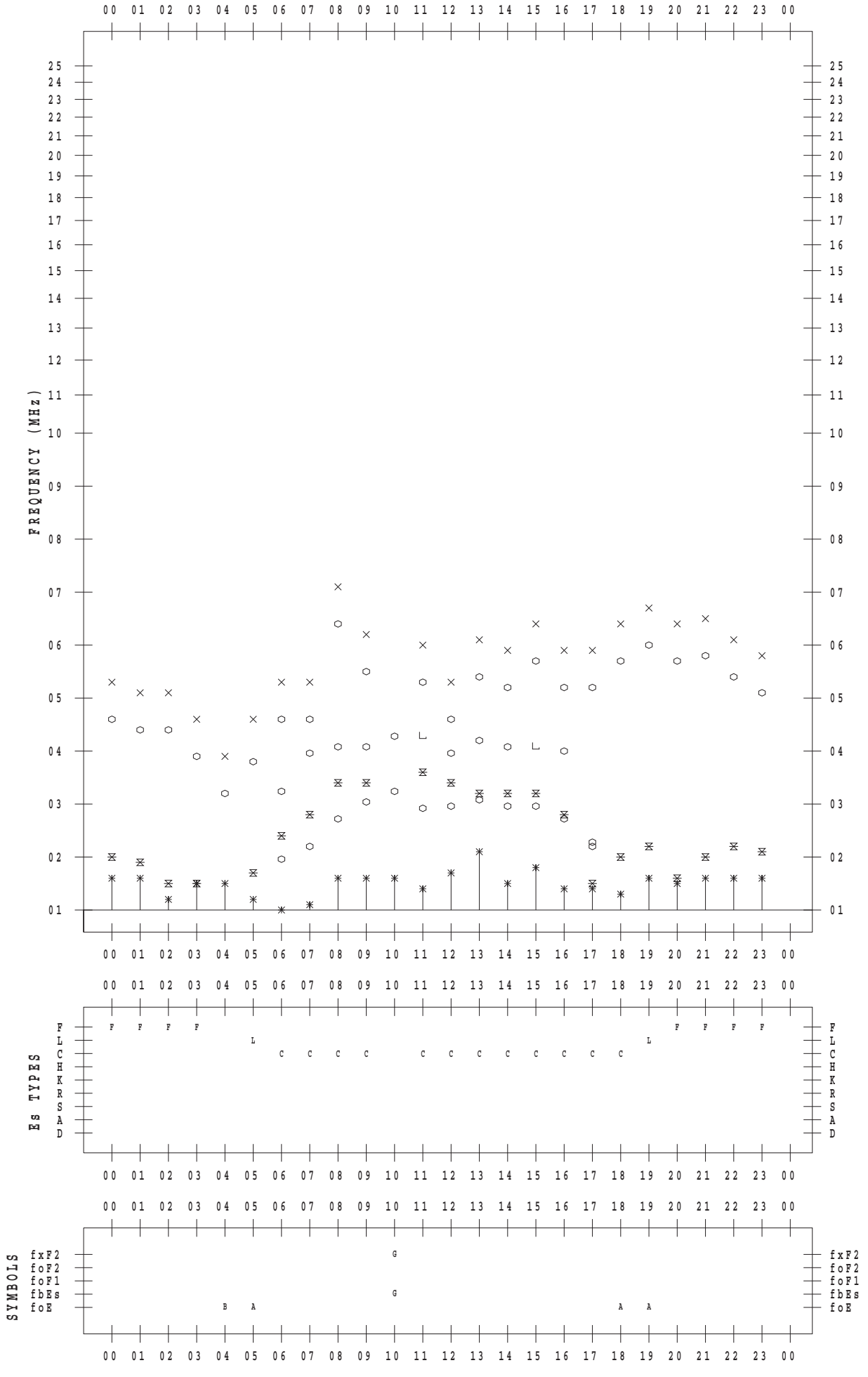
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/24

135 °E MEAN TIME



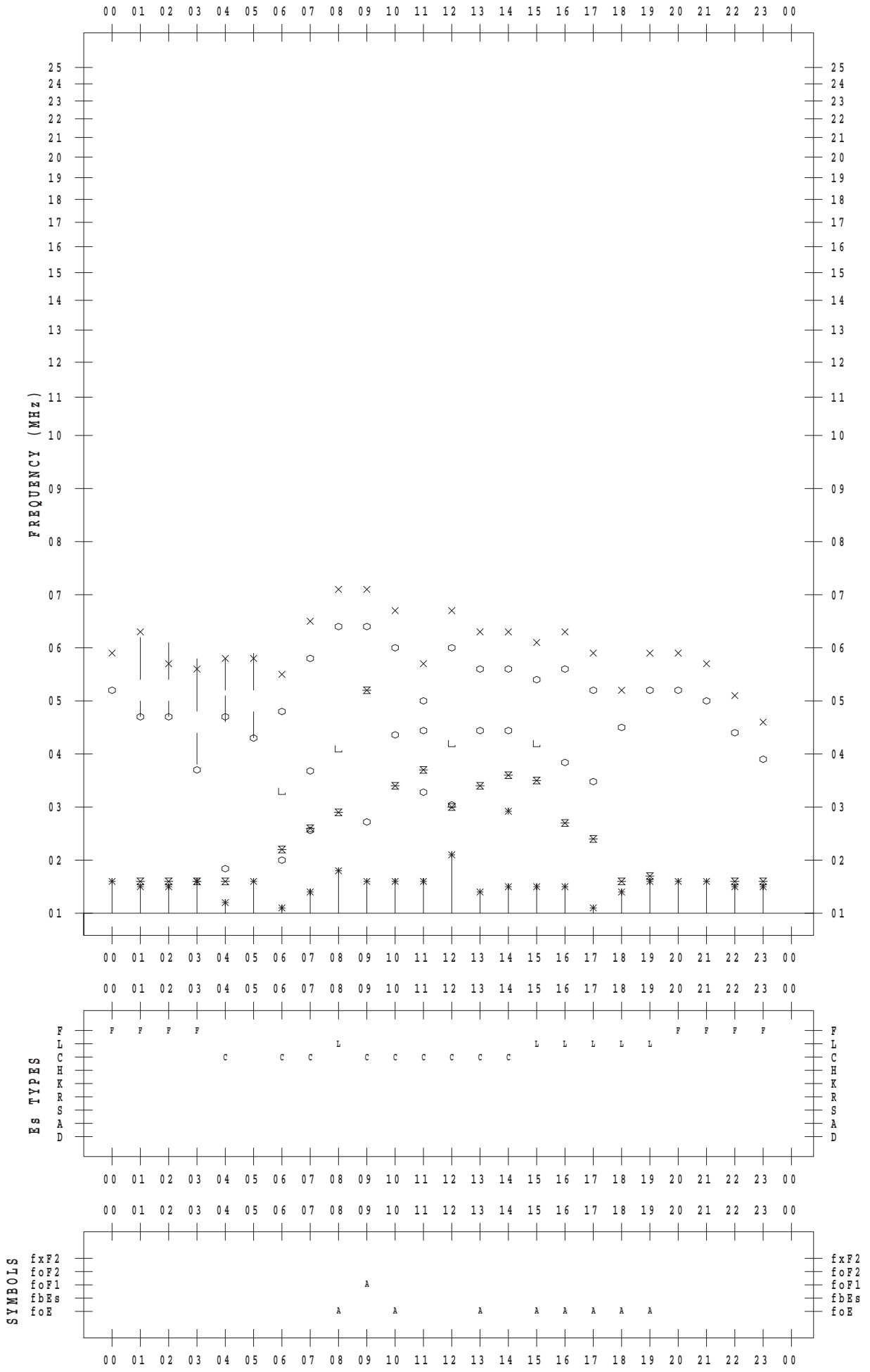
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/25

135 °E MEAN TIME



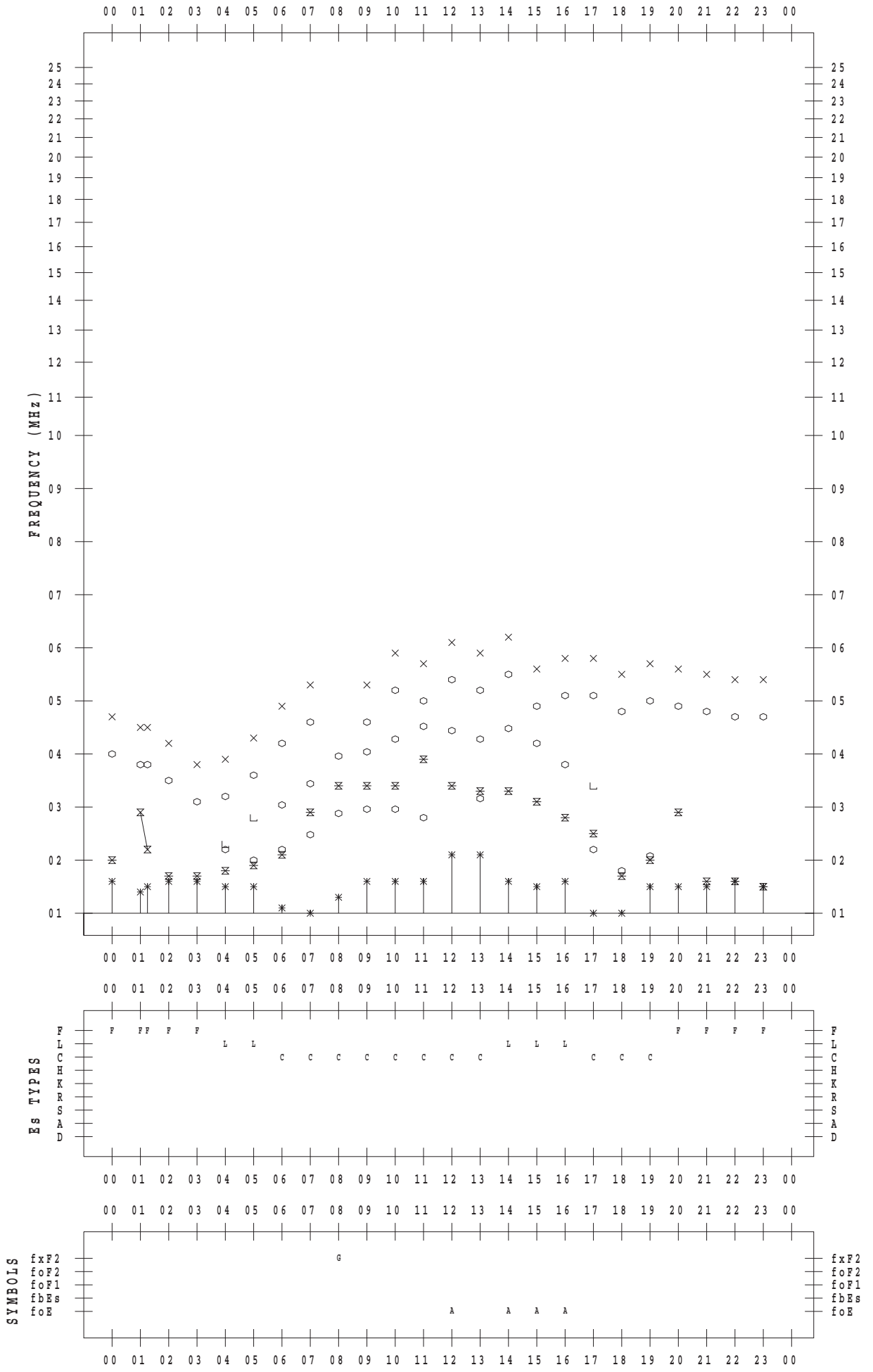
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/26

135 °E MEAN TIME



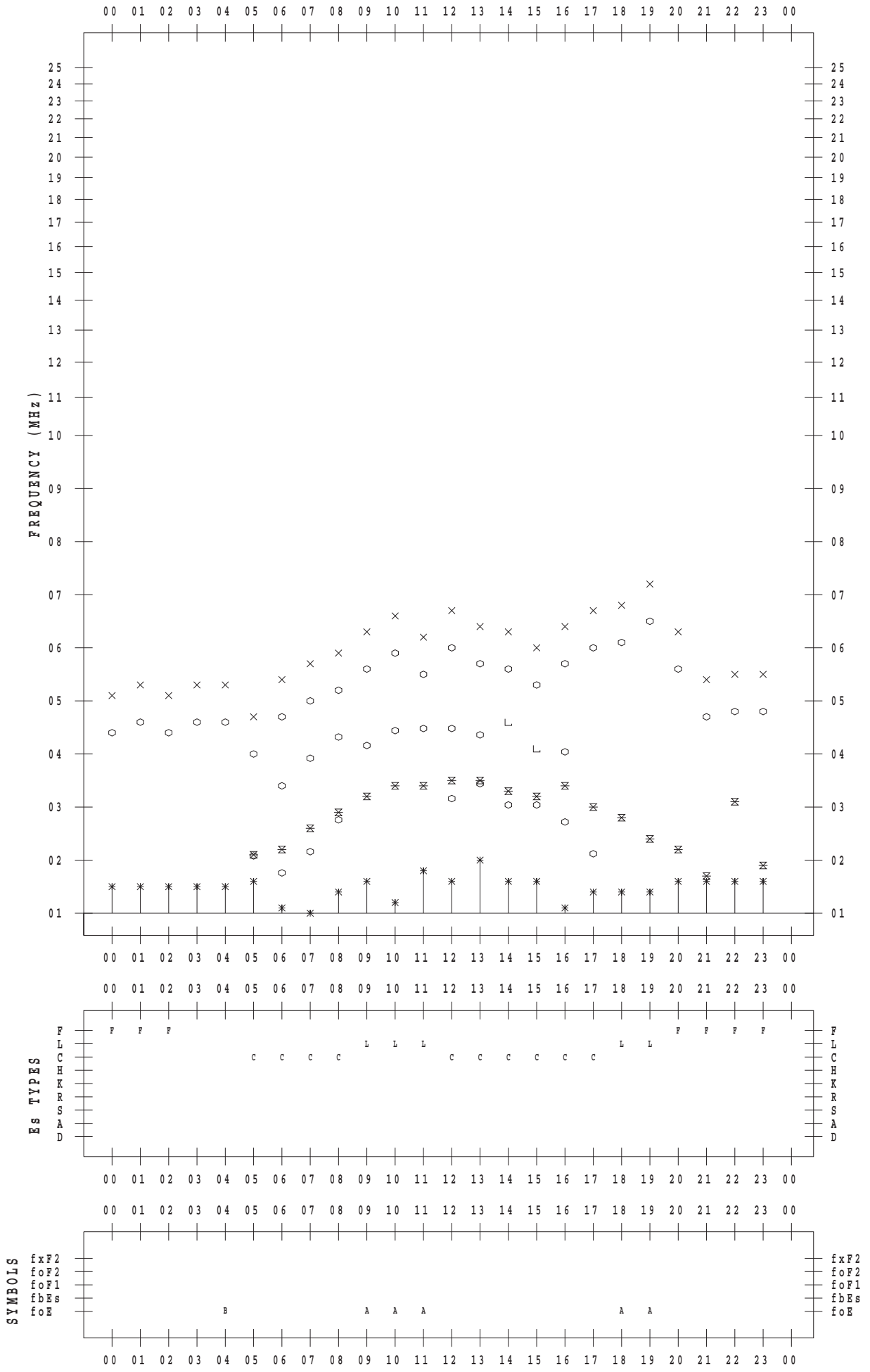
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/27

135 °E MEAN TIME



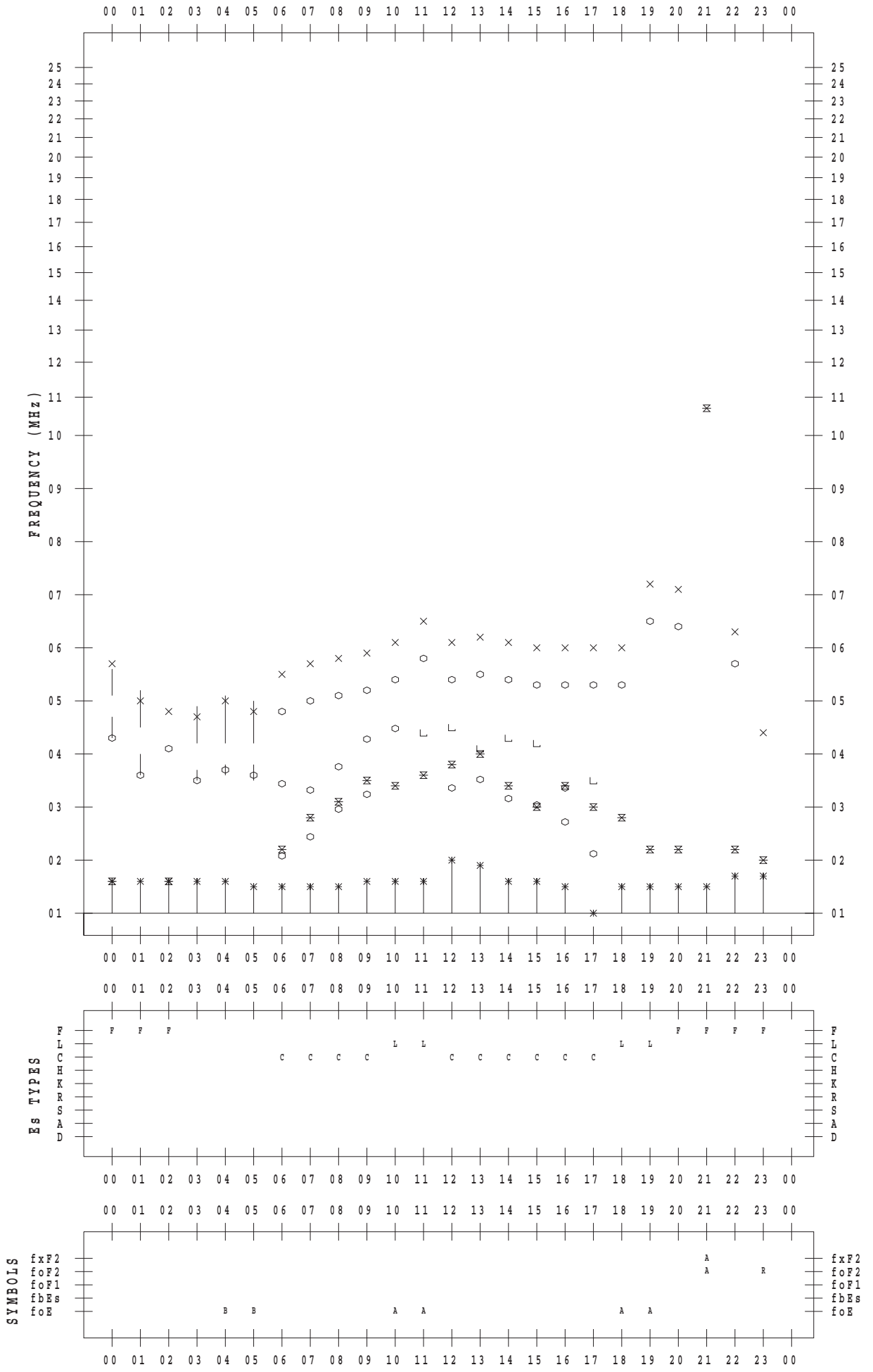
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/28

135 °E MEAN TIME



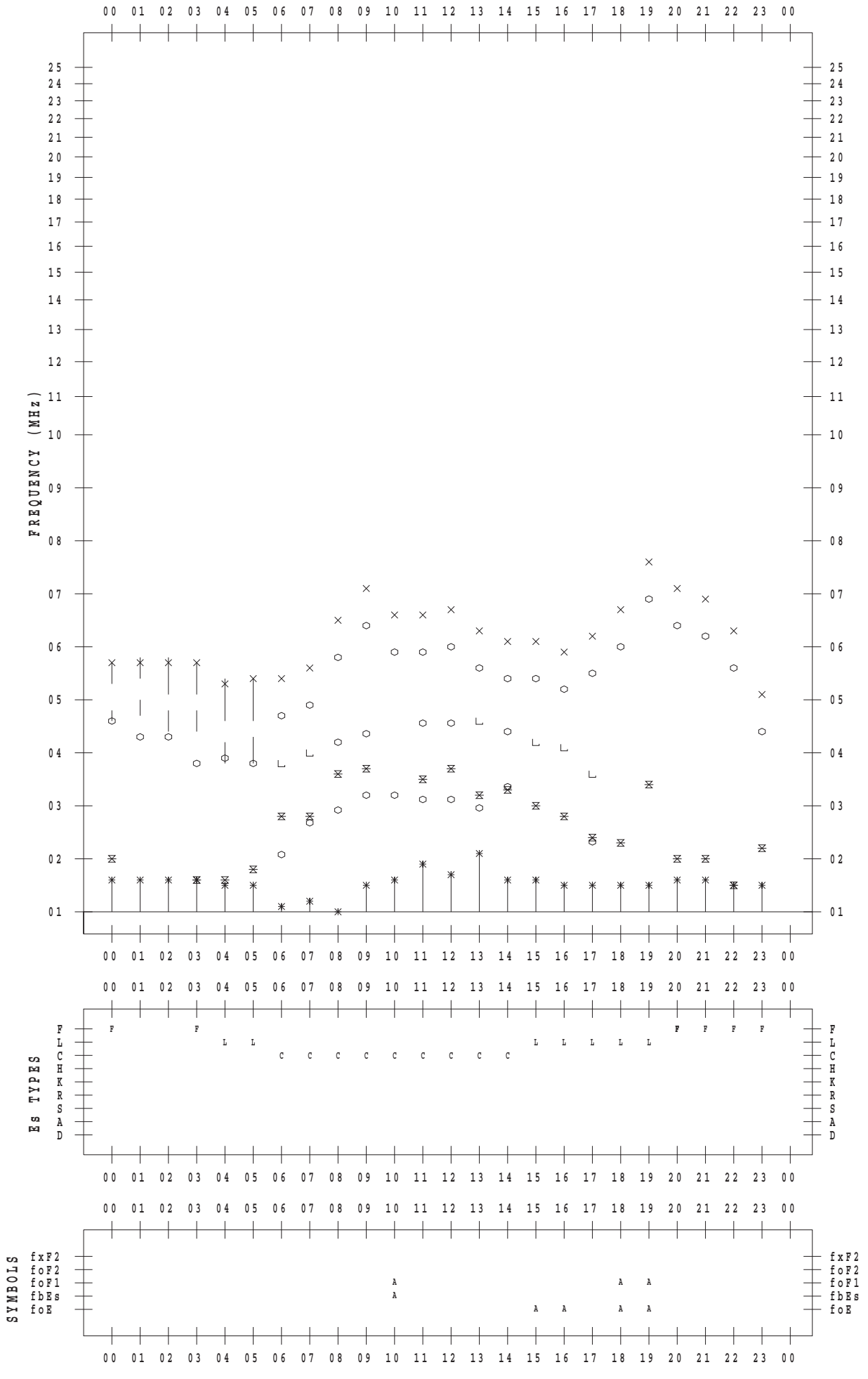
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/29

135 °E MEAN TIME



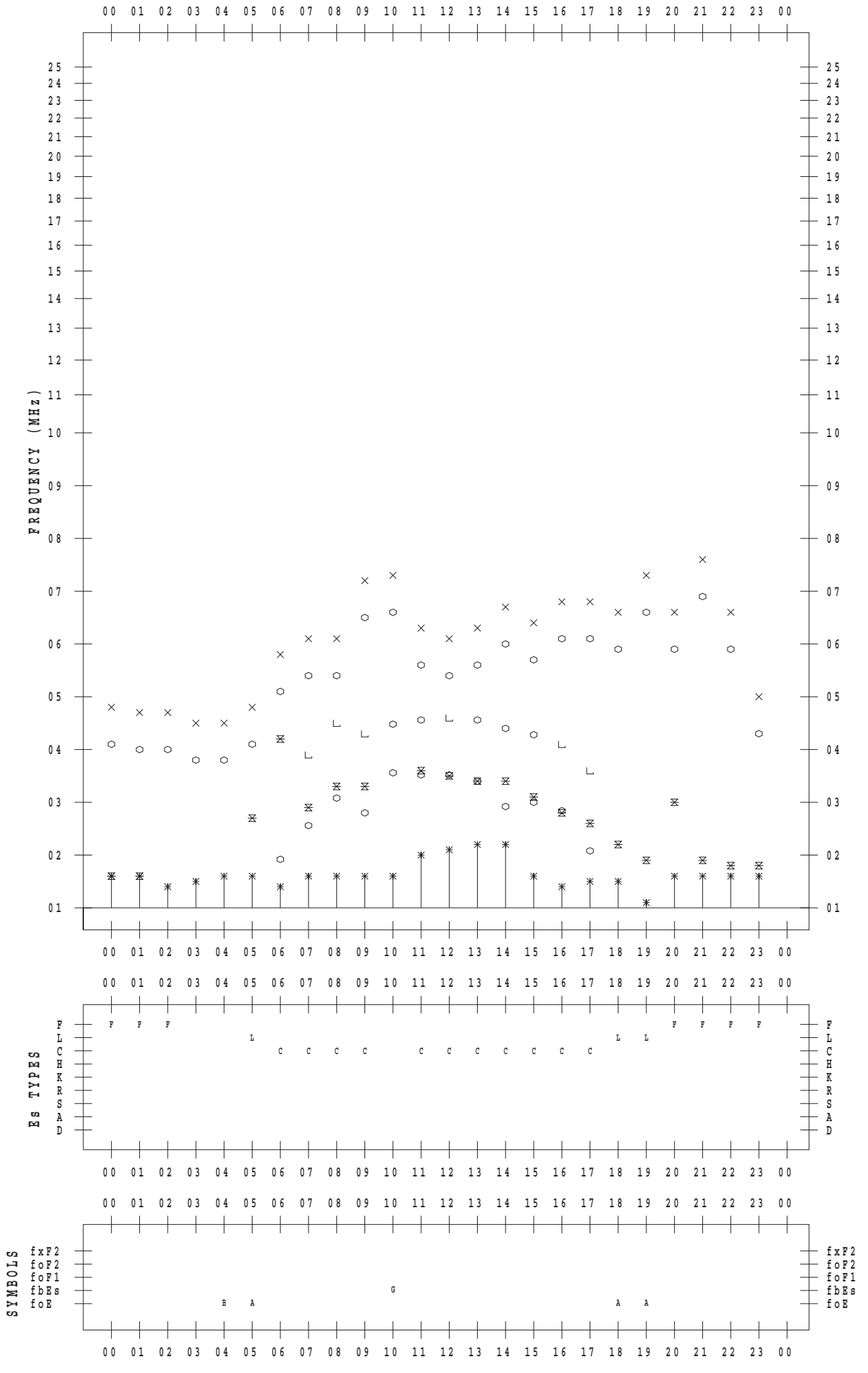
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/30

135 °E MEAN TIME



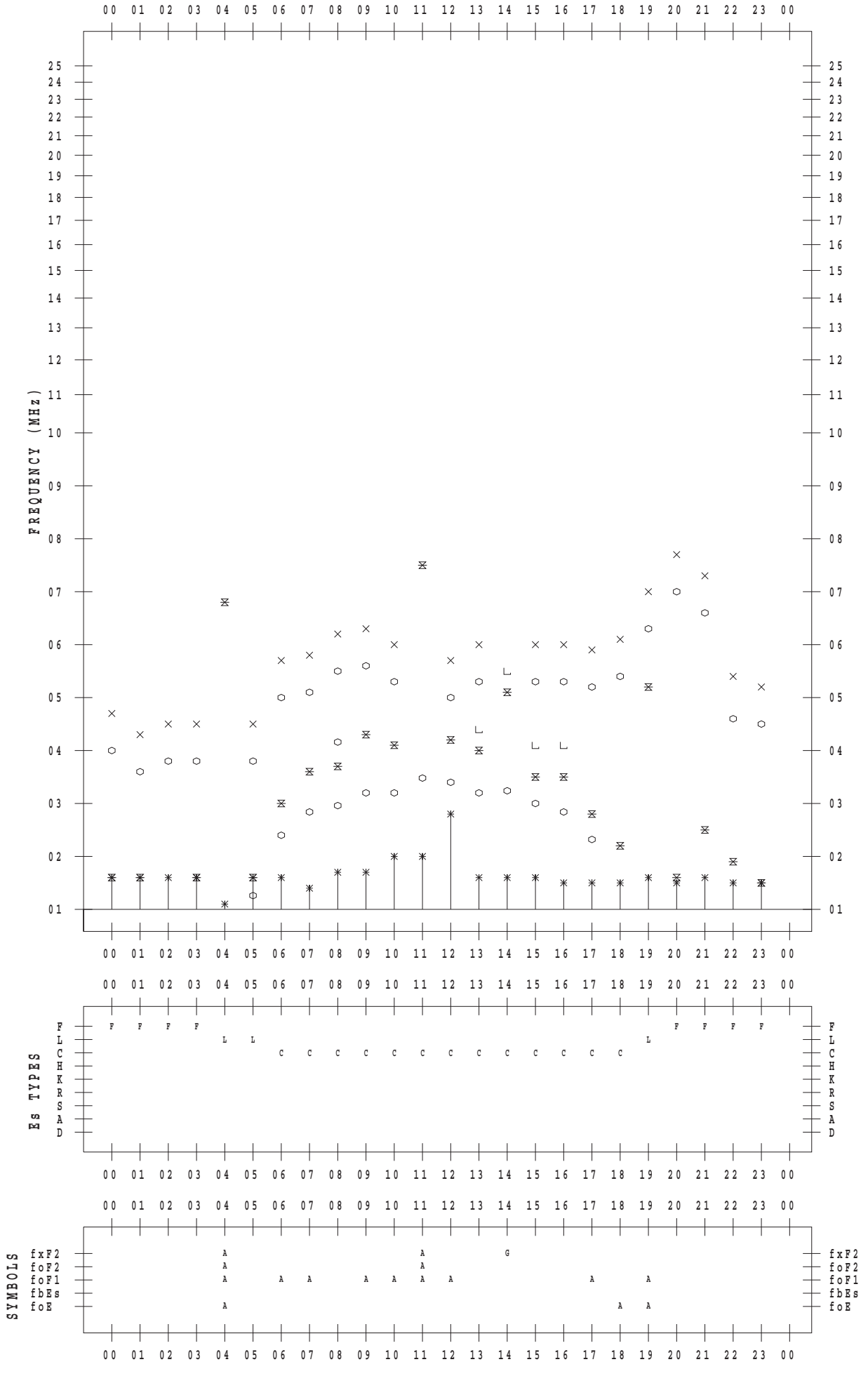
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2016/ 8/31

135 °E MEAN TIME



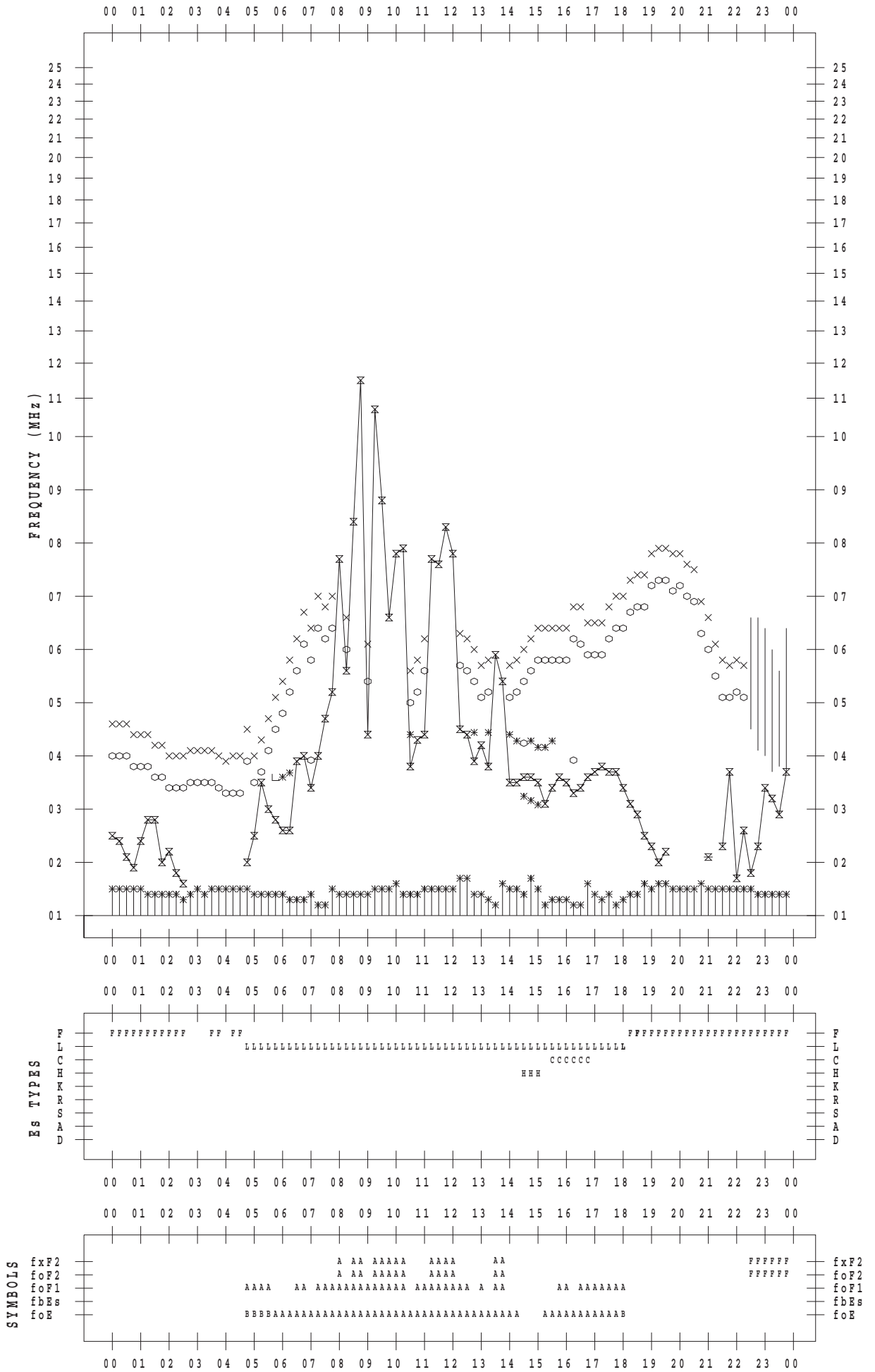
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 1

135 °E MEAN TIME



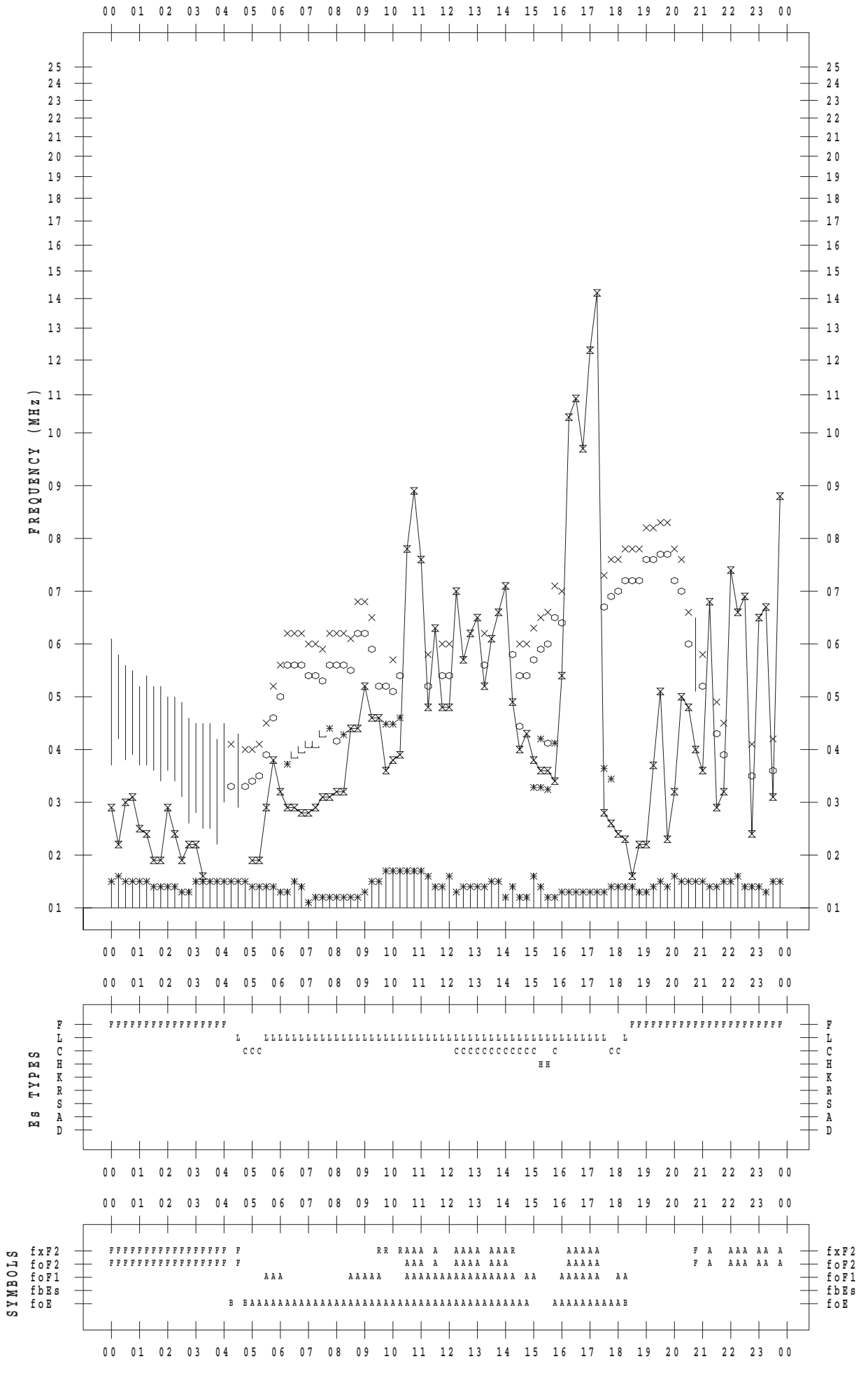
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 2

135 °E MEAN TIME



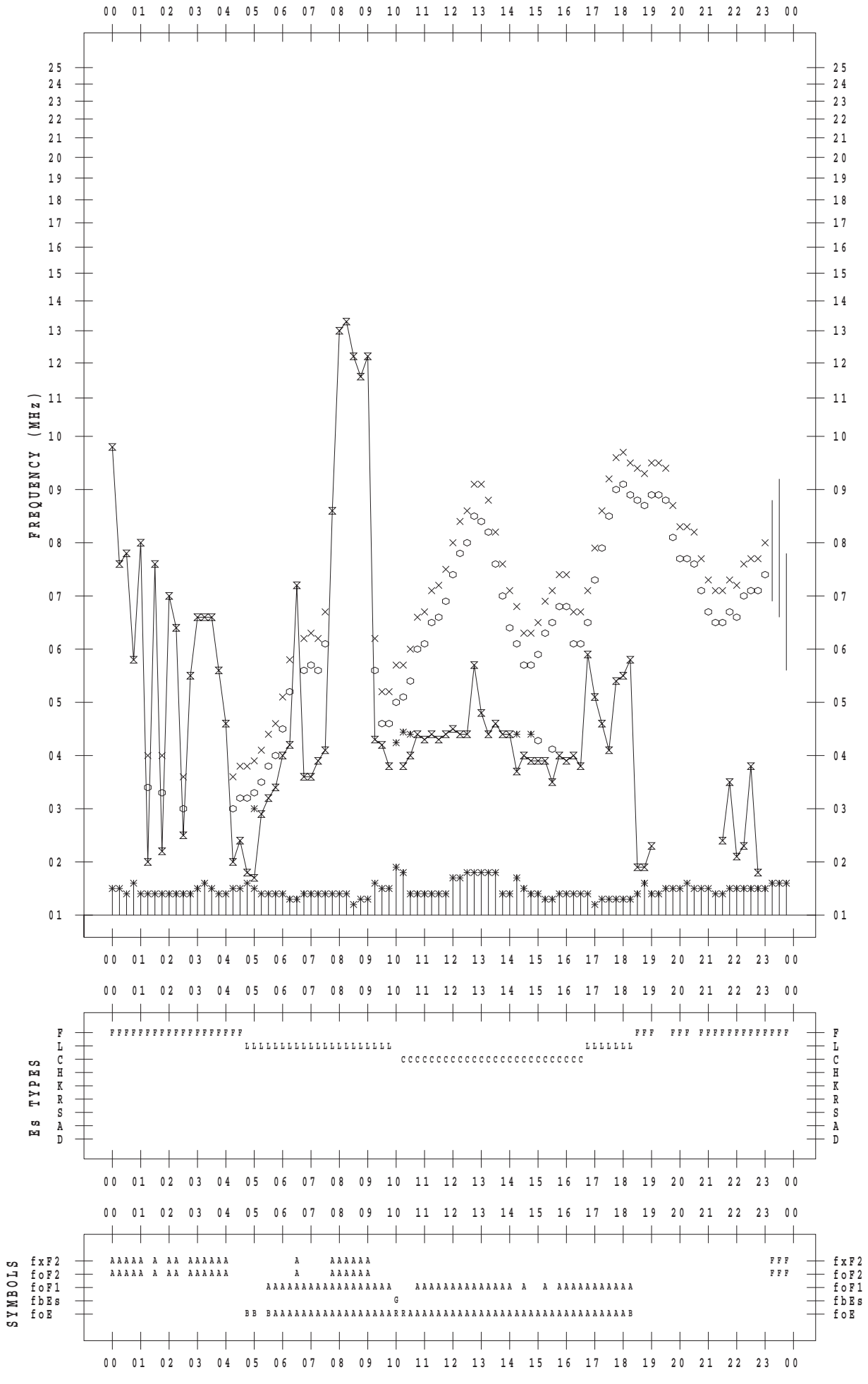
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 3

135 °E MEAN TIME



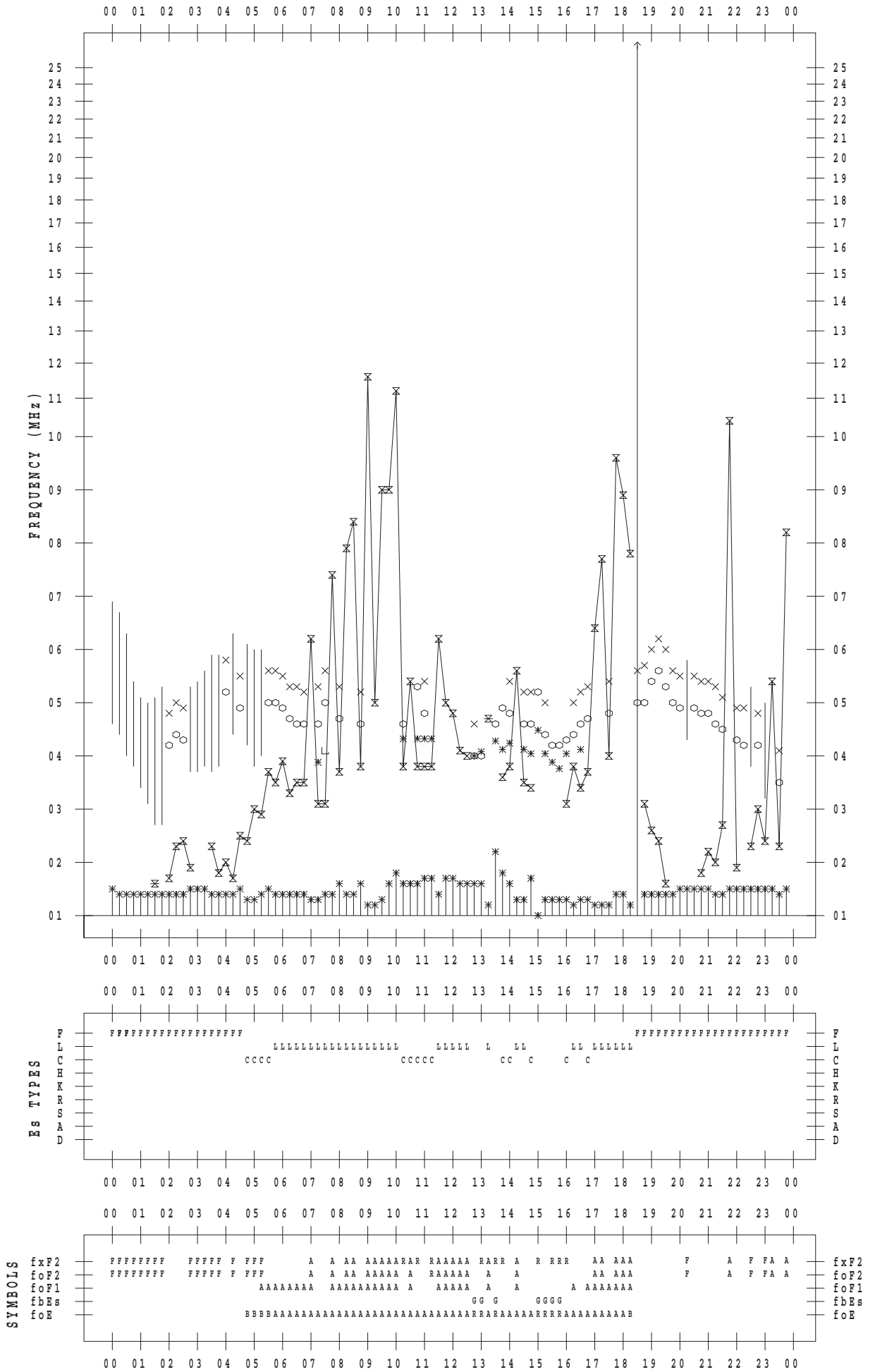
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 4

135 °E MEAN TIME



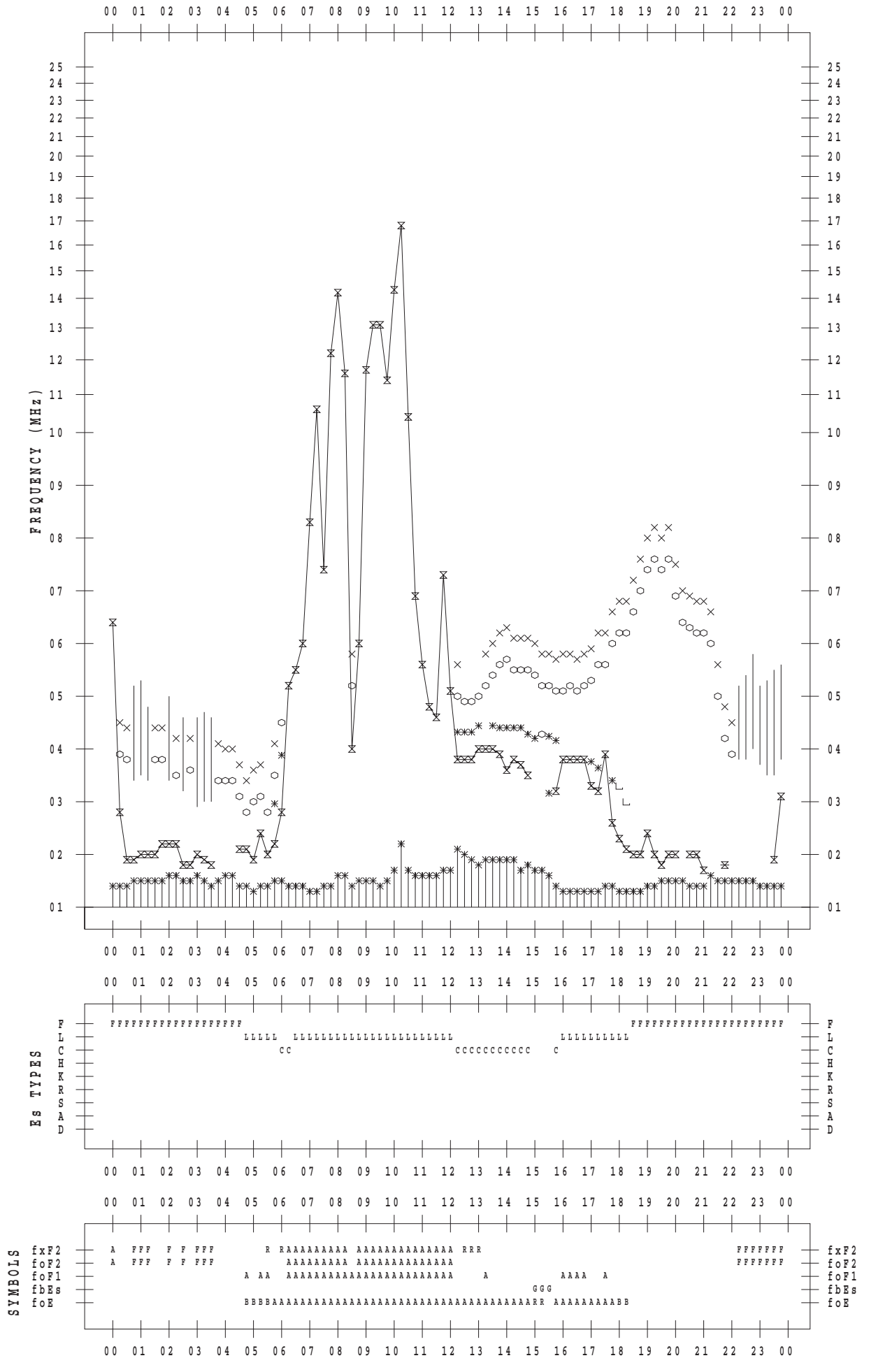
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 5

135 °E MEAN TIME



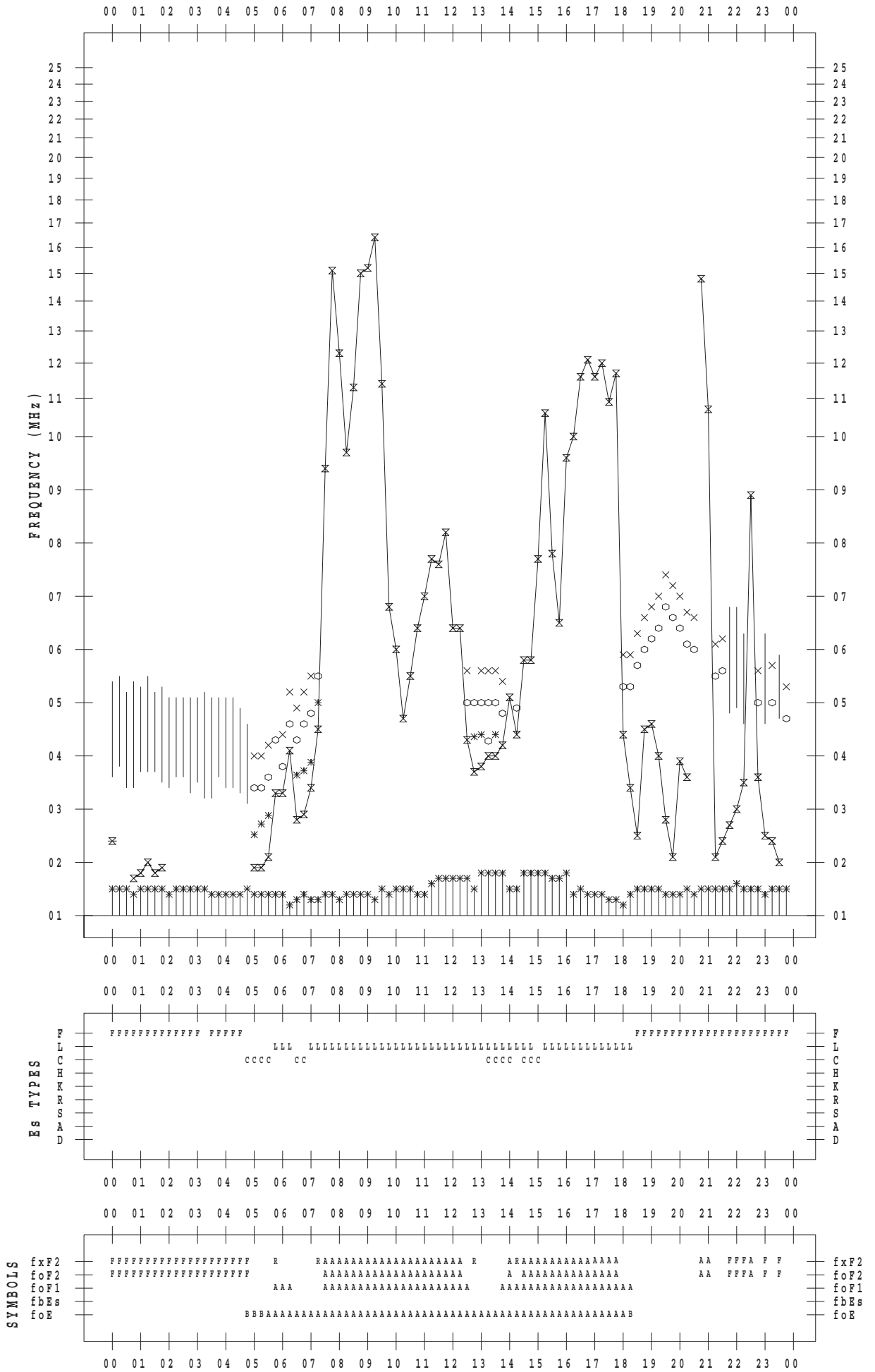
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 6

135 °E MEAN TIME



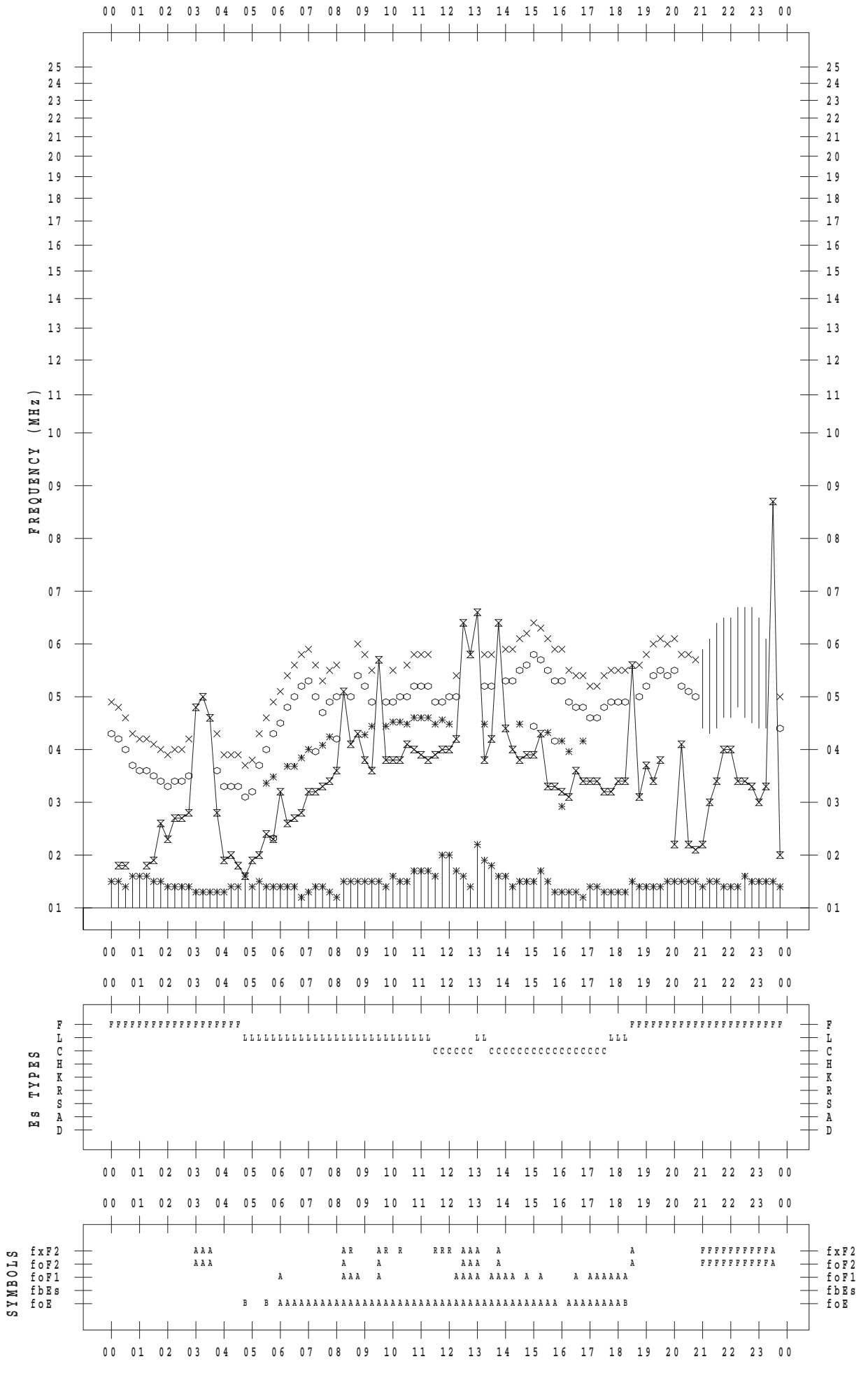
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 7

135 °E MEAN TIME



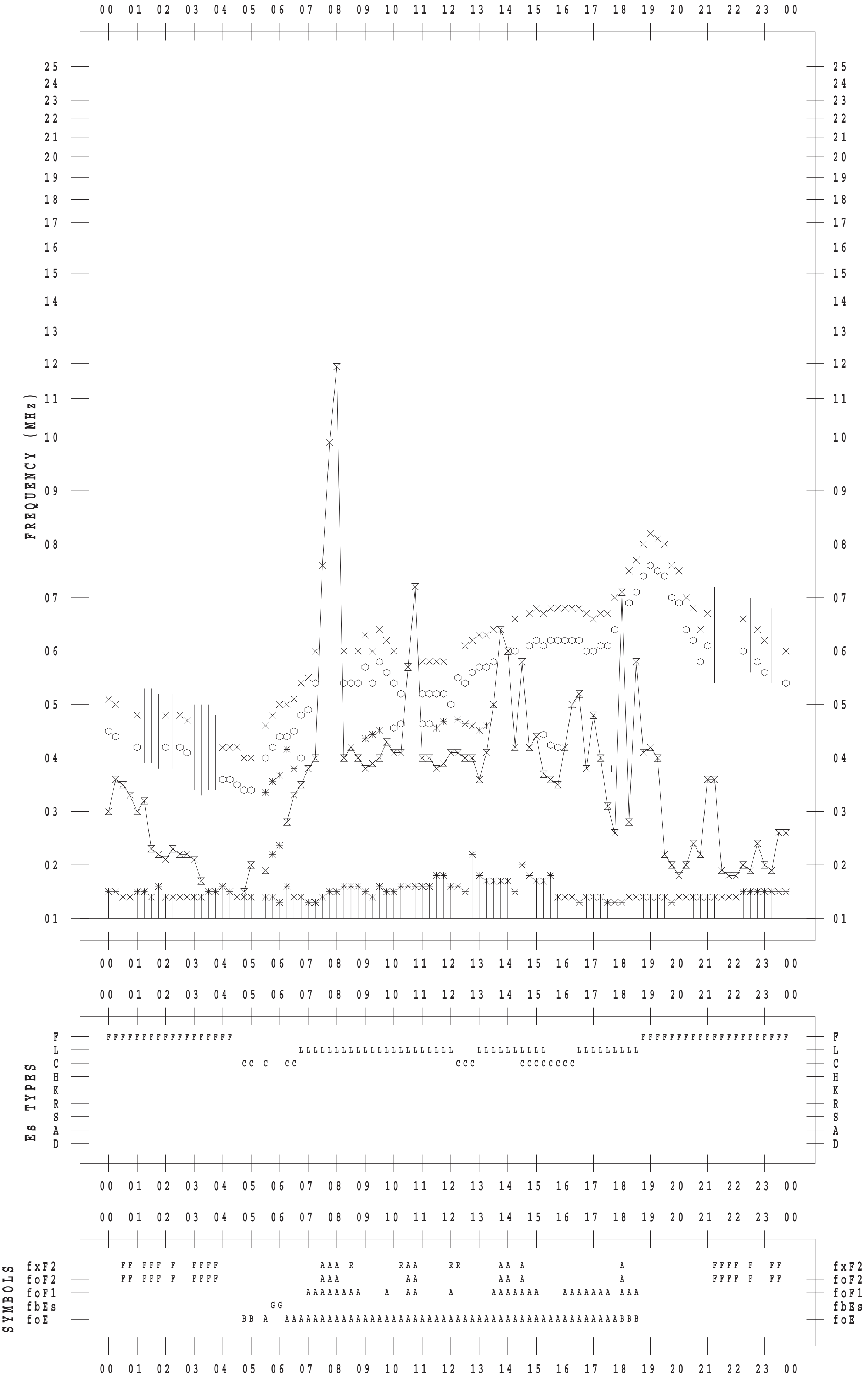
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 8

135 °E MEAN TIME



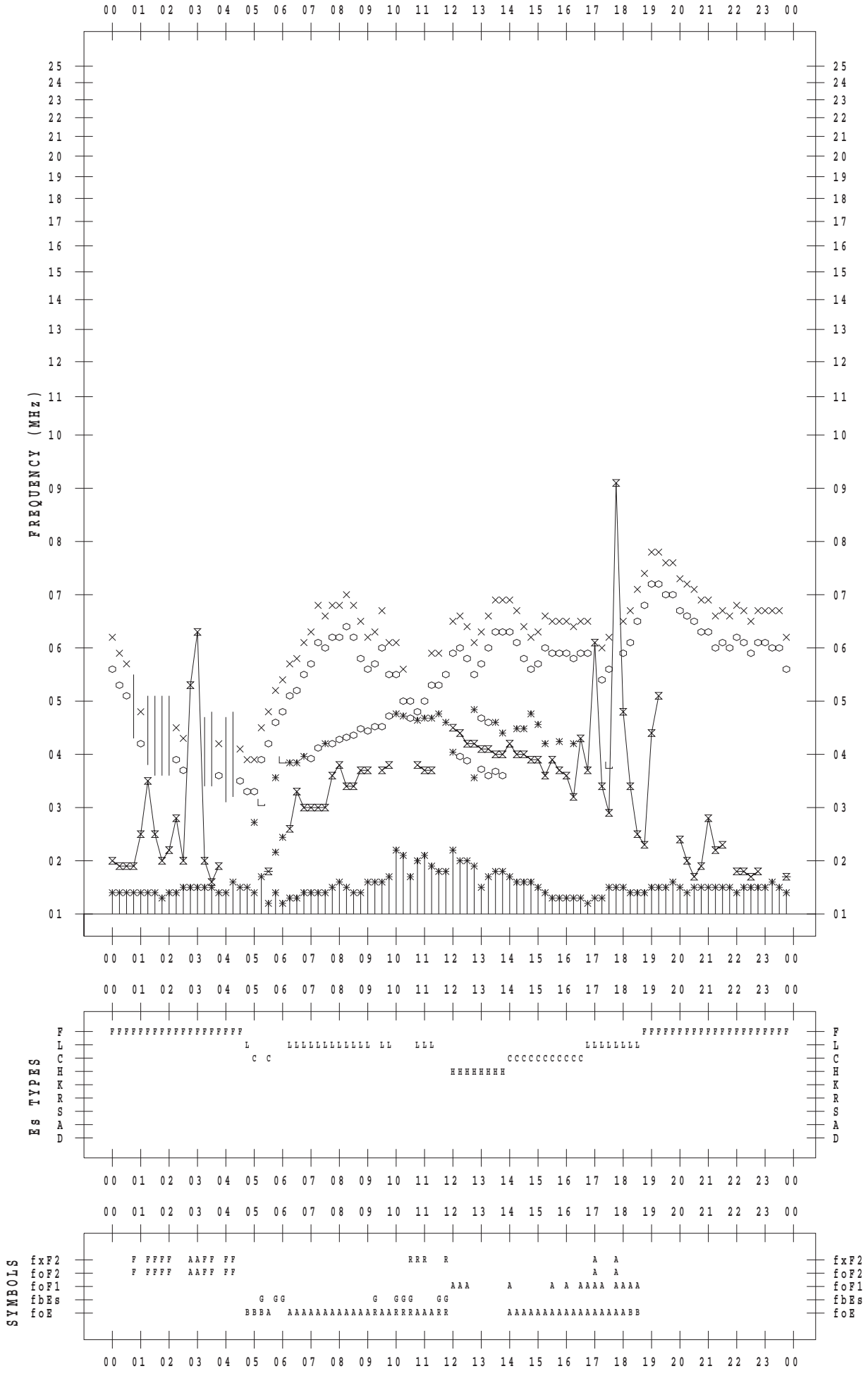
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/ 9

135 °E MEAN TIME



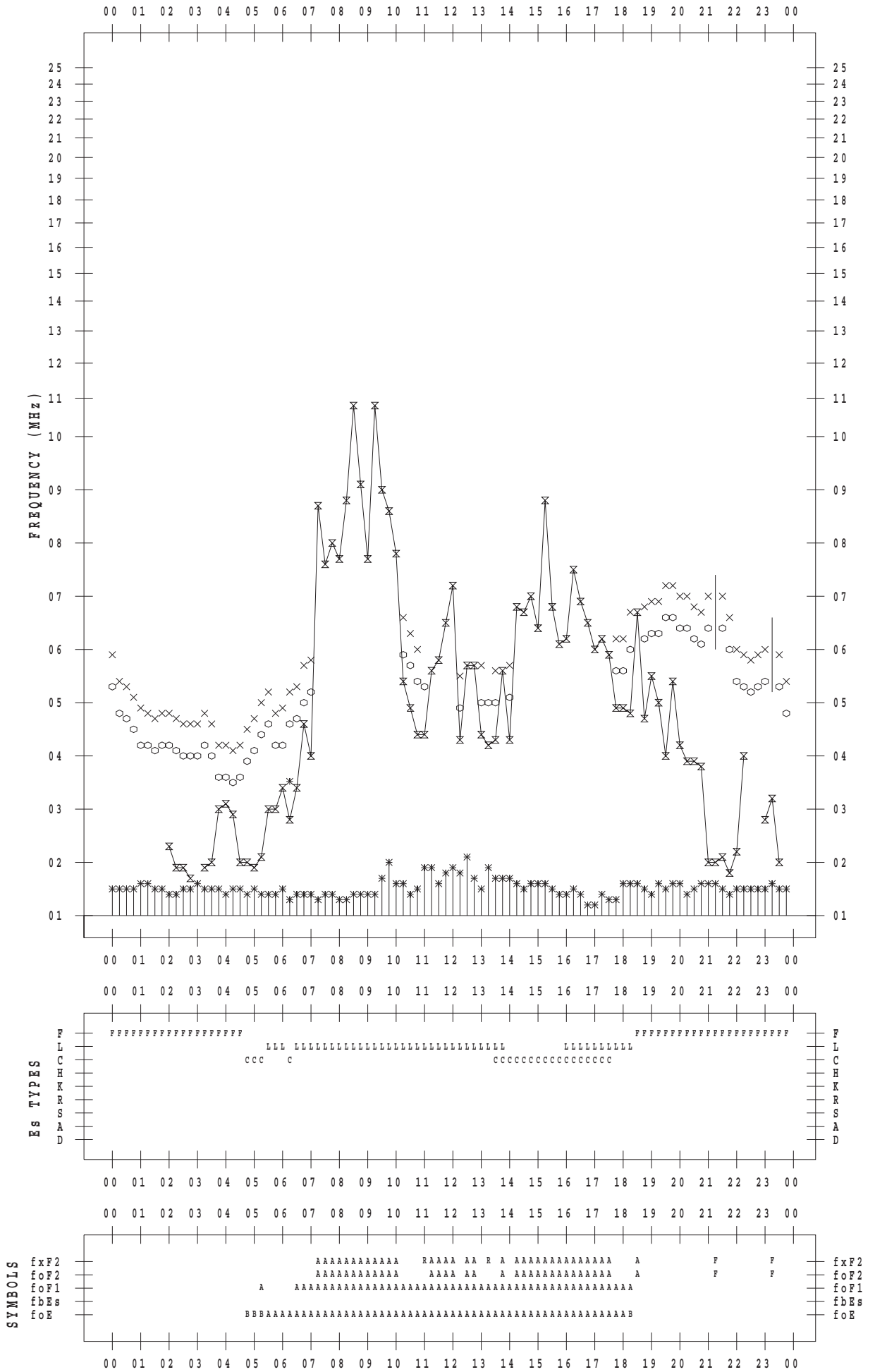
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/10

135 °E MEAN TIME



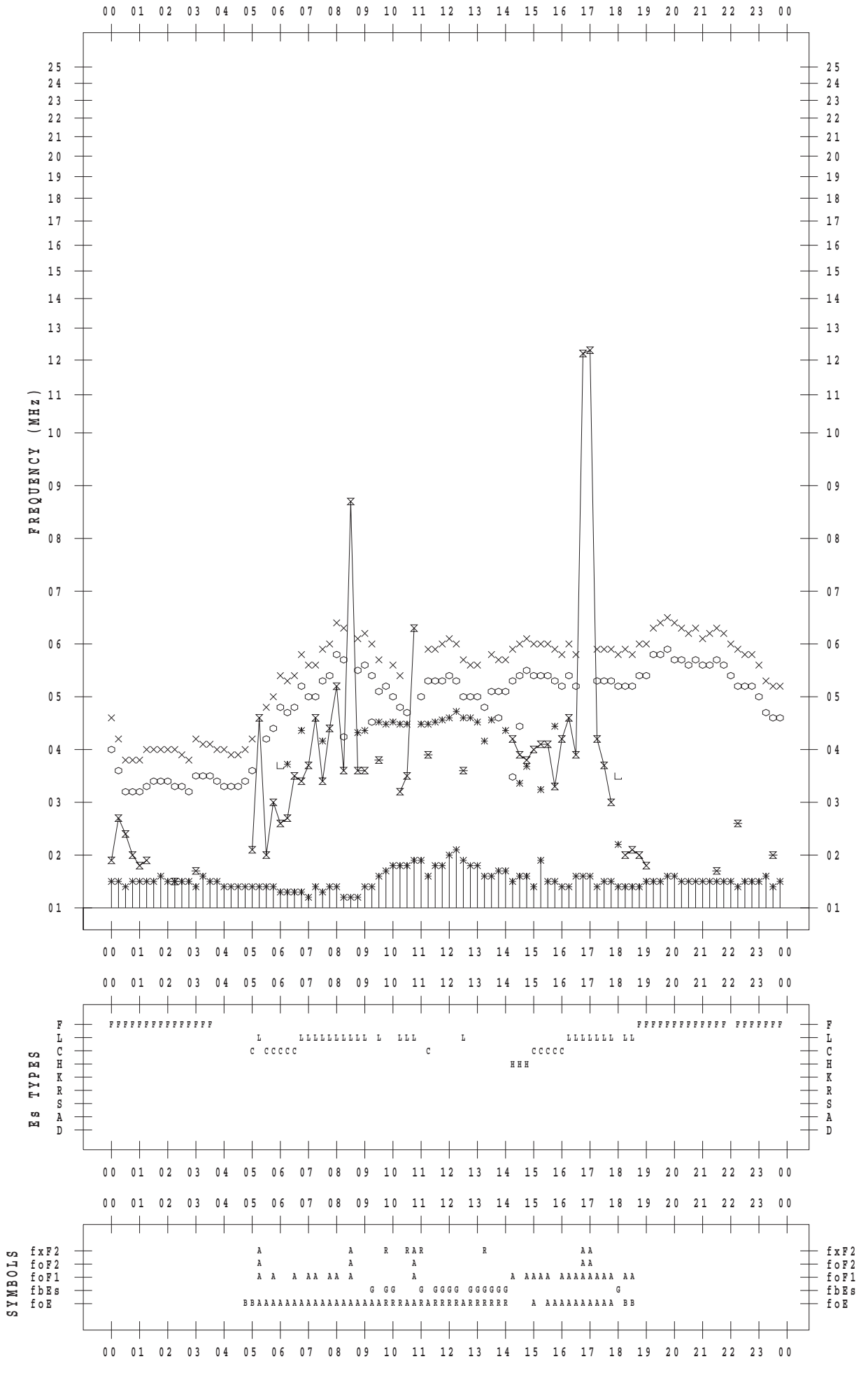
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/11

135 °E MEAN TIME



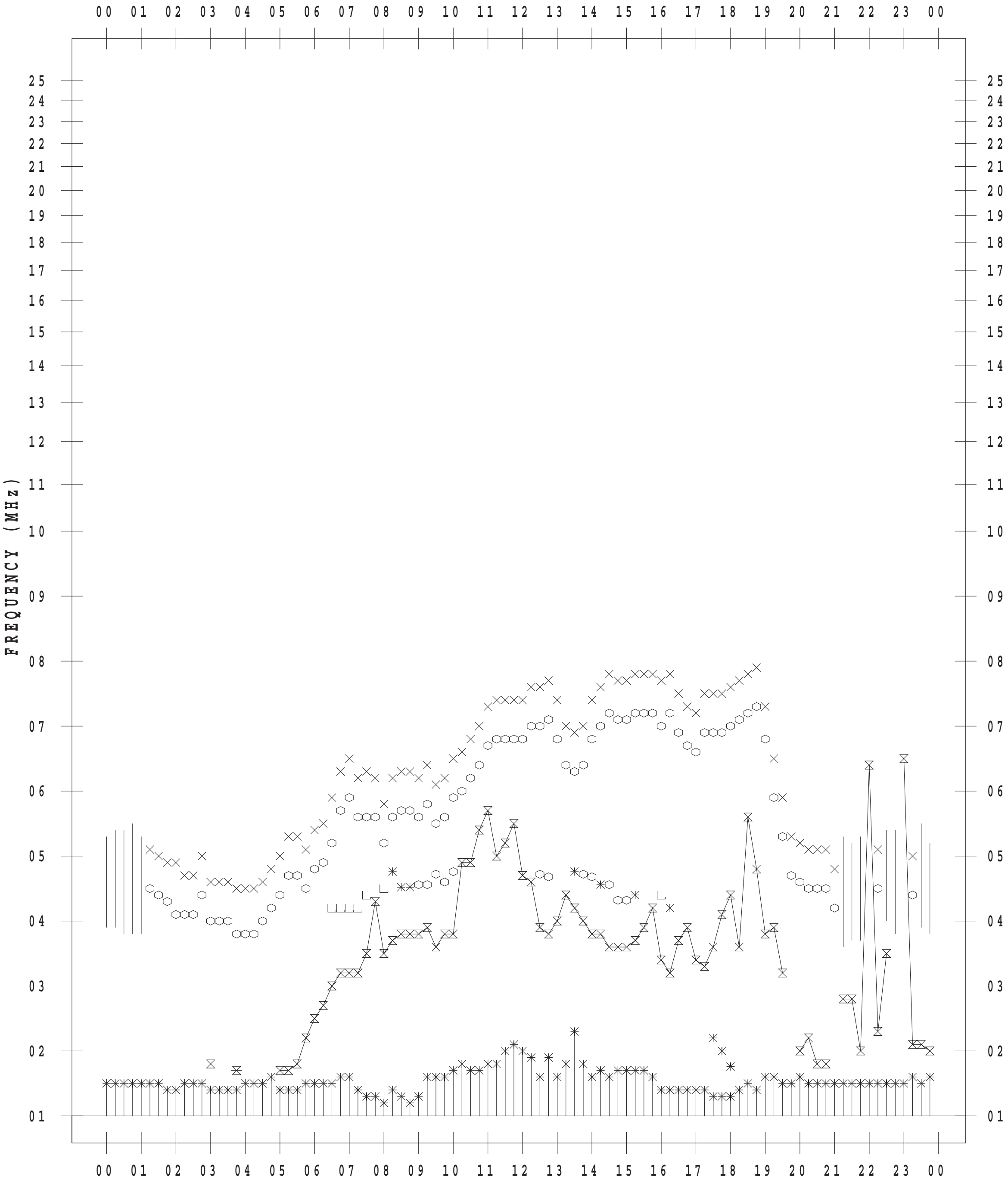
f-PLOT DATA

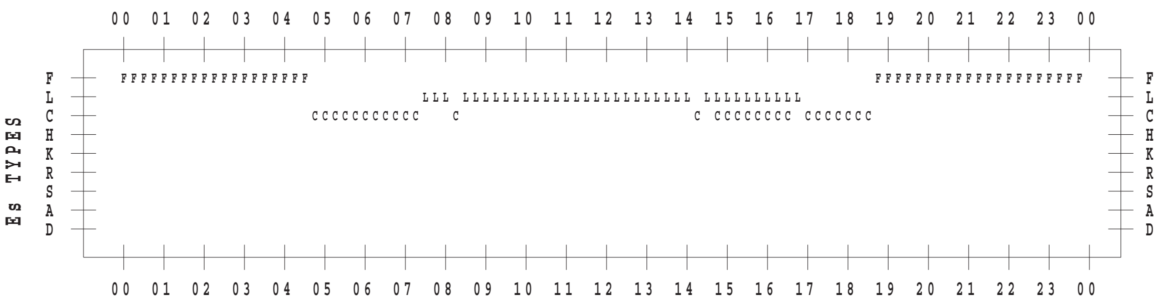
SCALER : I.NISHIMUTA

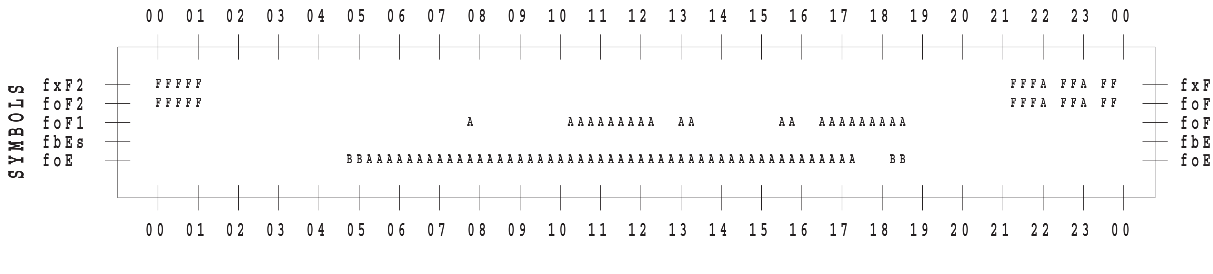
STATION : Kokubunji

DATE : 2016/ 8/12

135 °E MEAN TIME







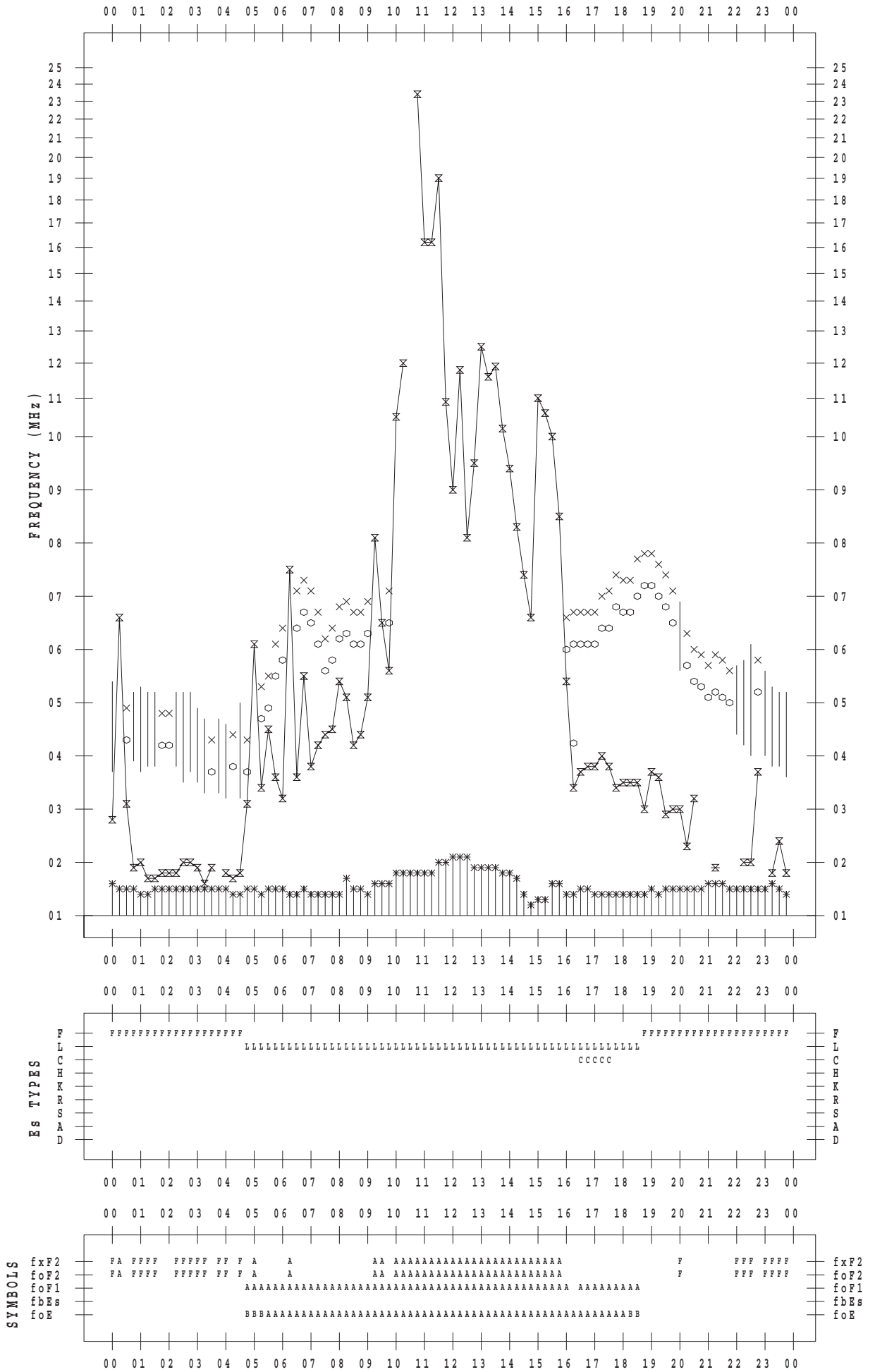
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/13

135 °E MEAN TIME



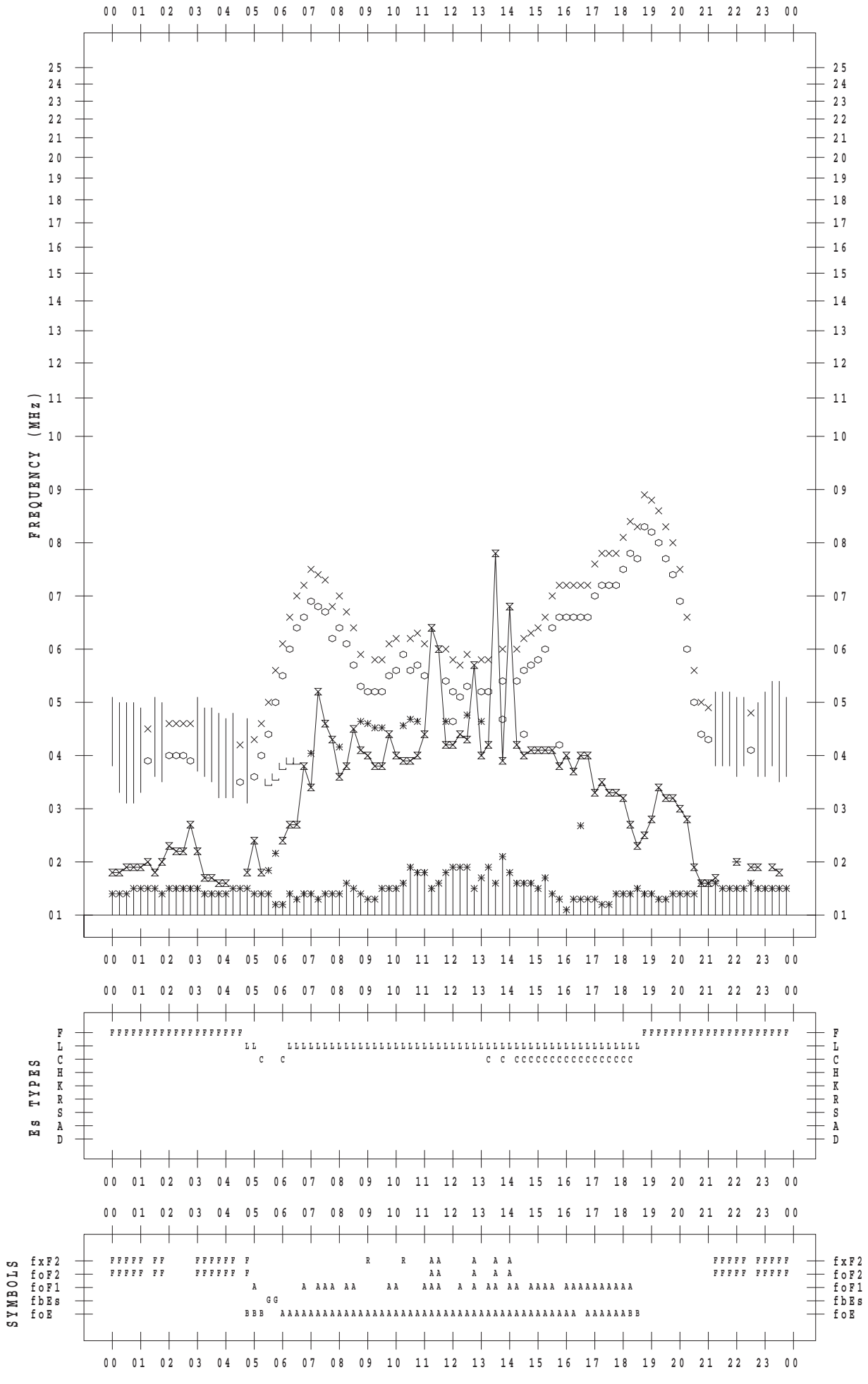
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/14

135 °E MEAN TIME



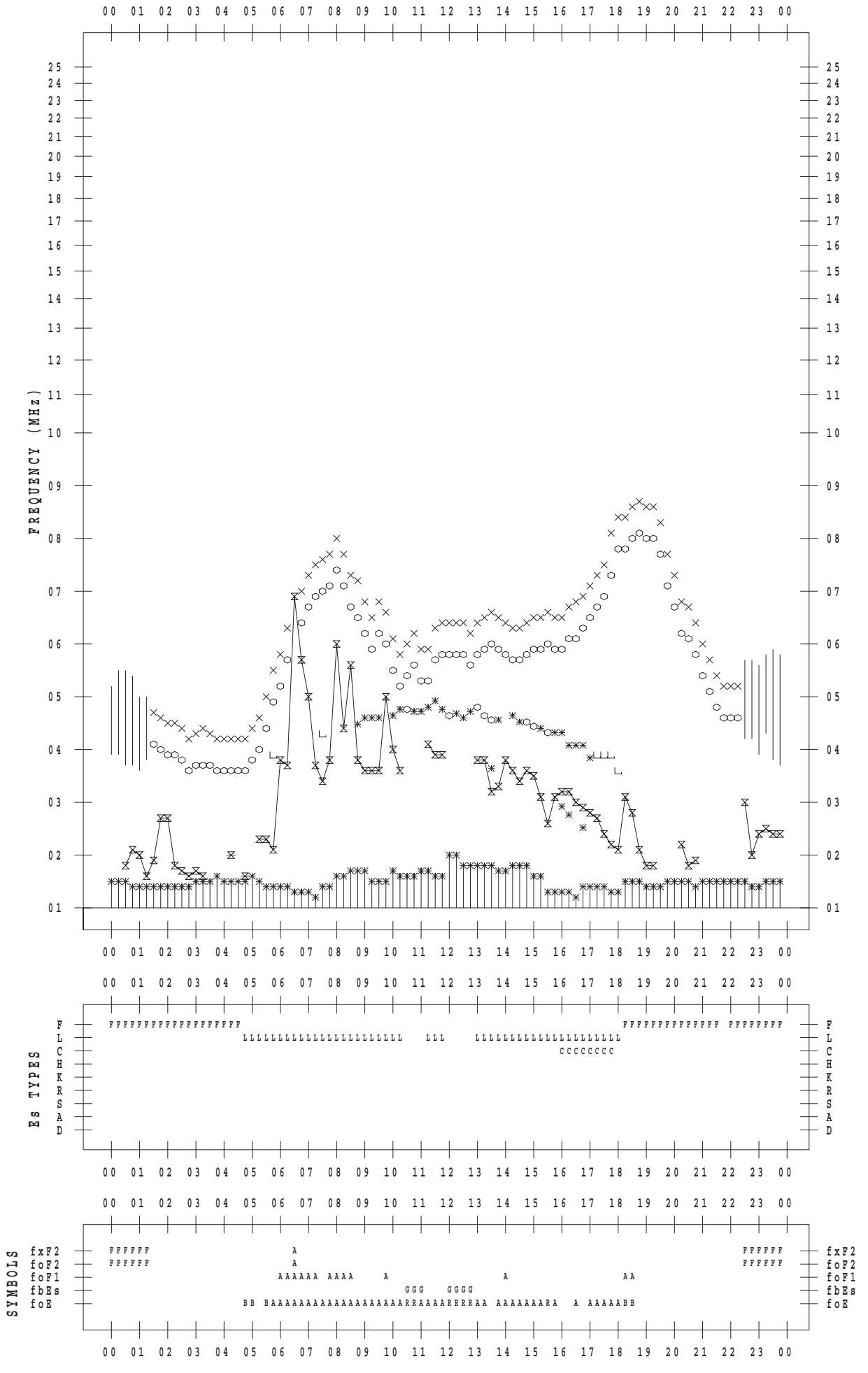
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/15

135 °E MEAN TIME



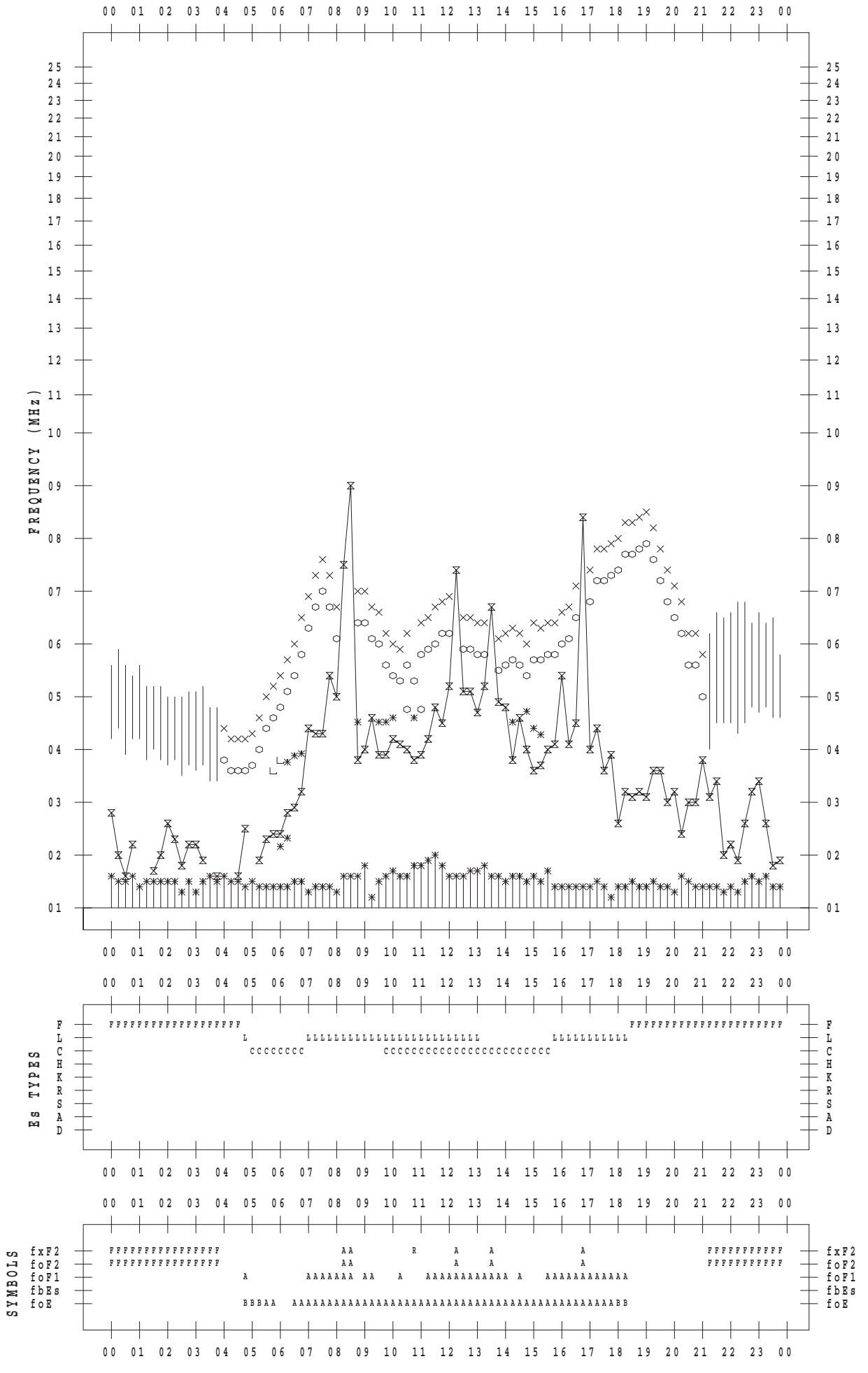
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/16

135 °E MEAN TIME



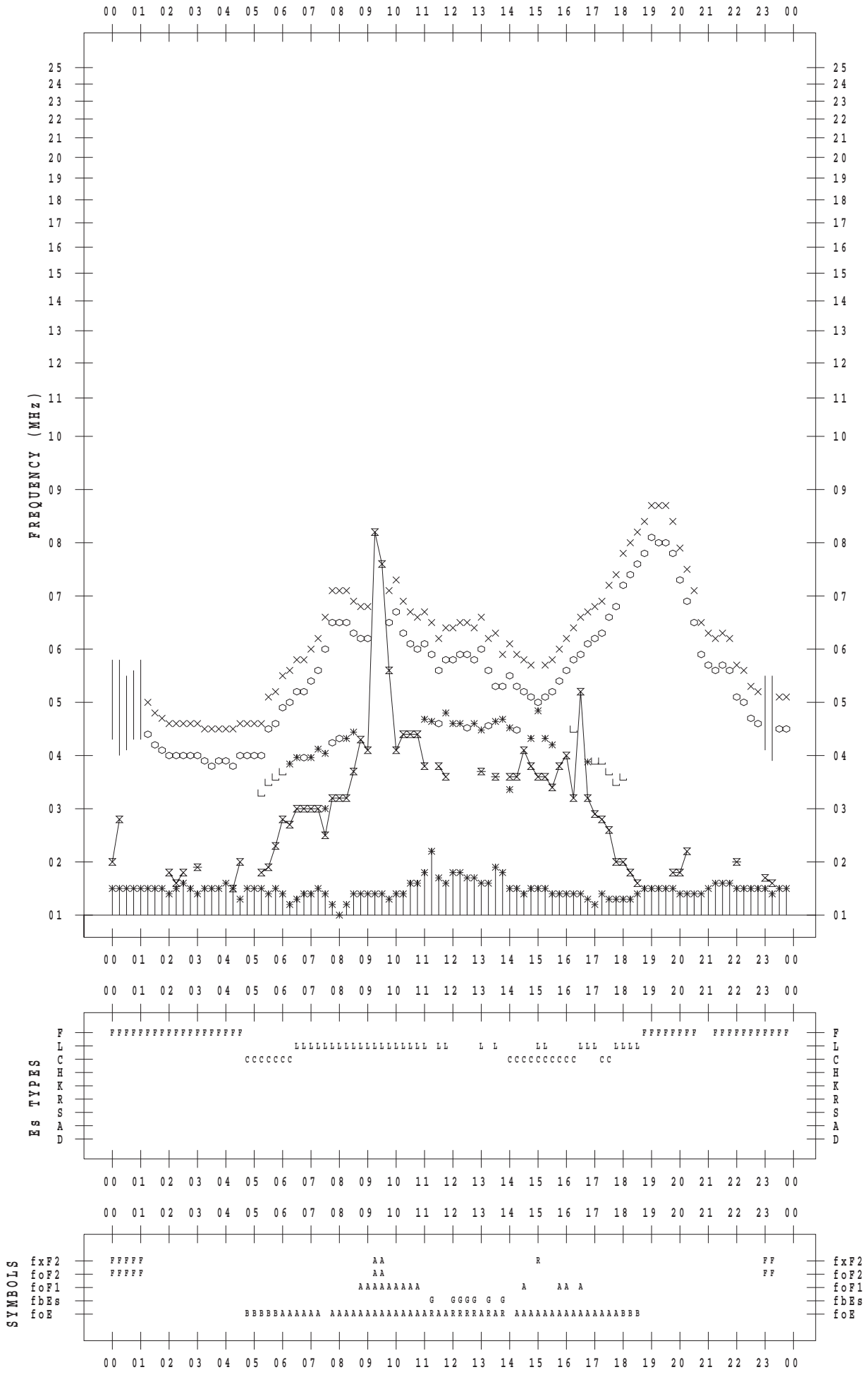
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/17

135 °E MEAN TIME



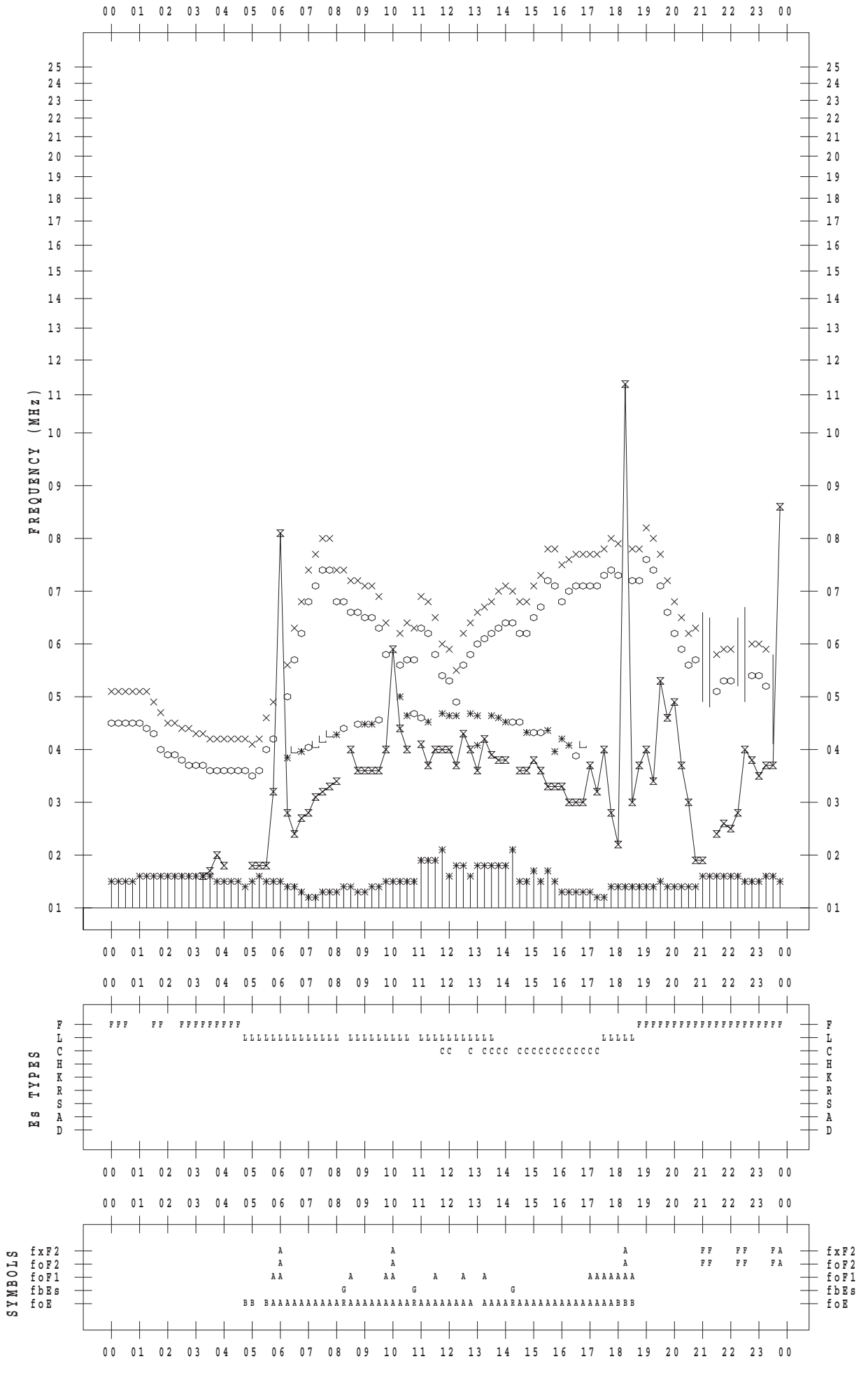
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/18

135 °E MEAN TIME



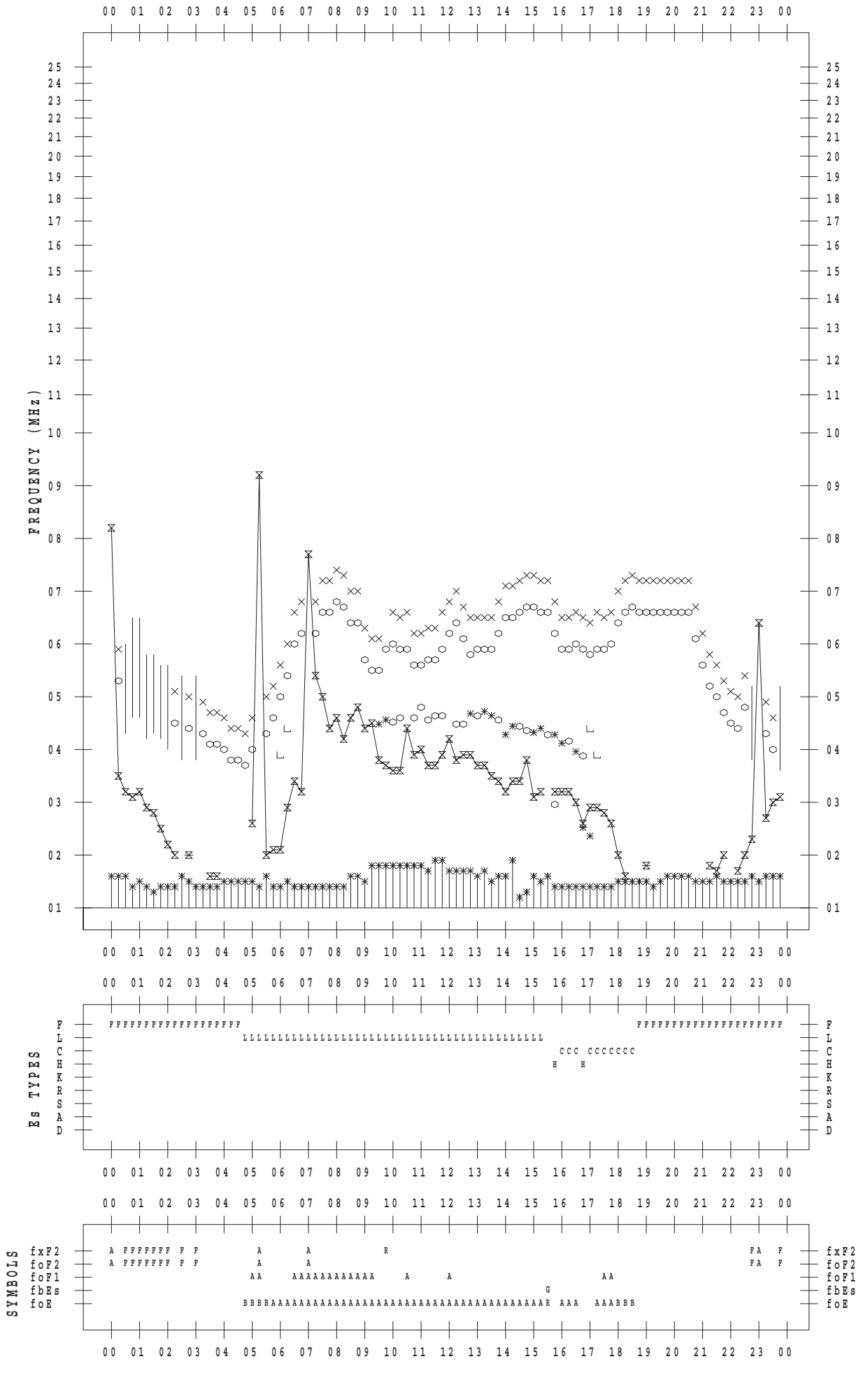
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/19

135 °E MEAN TIME



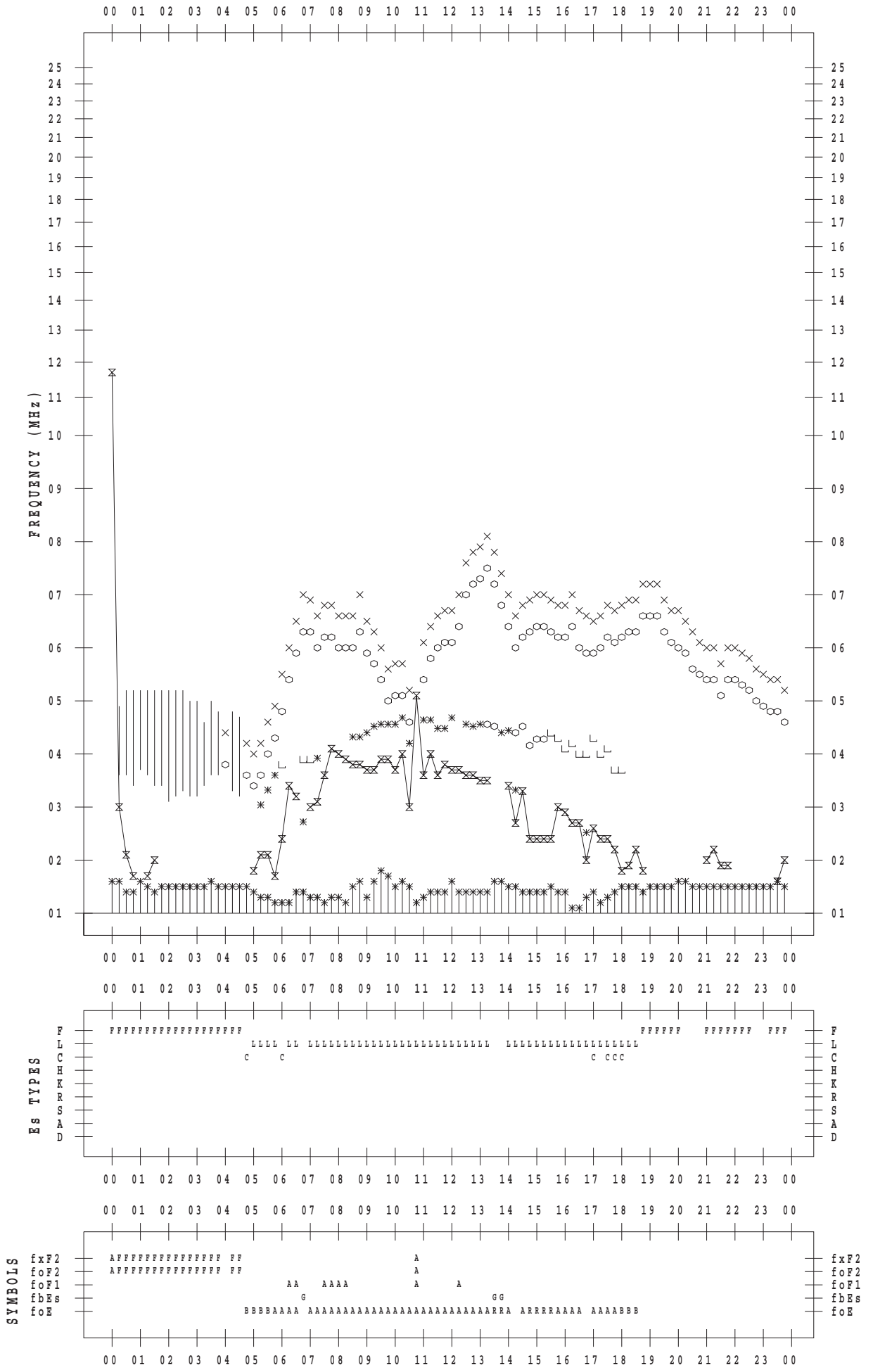
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/20

135 °E MEAN TIME

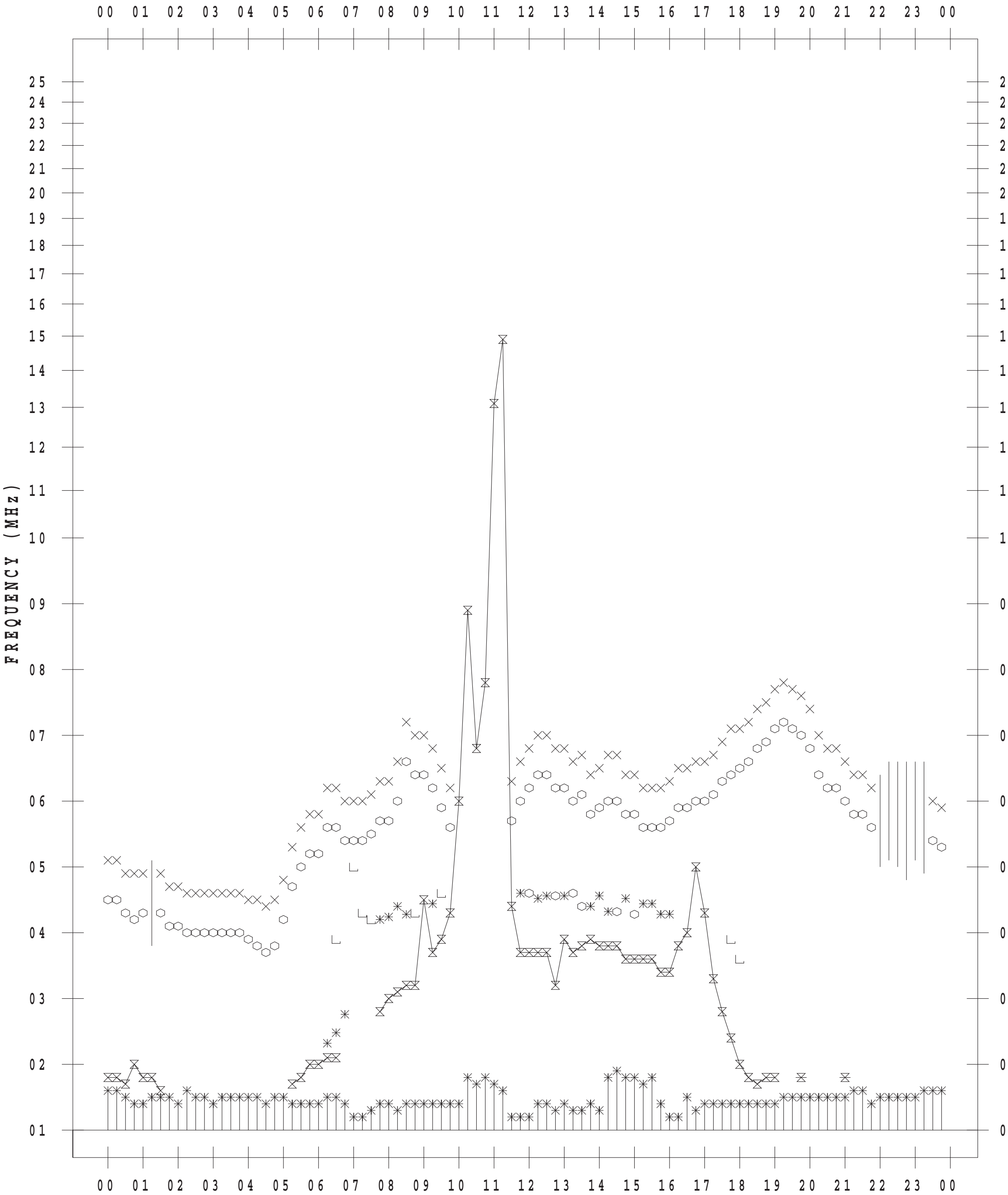


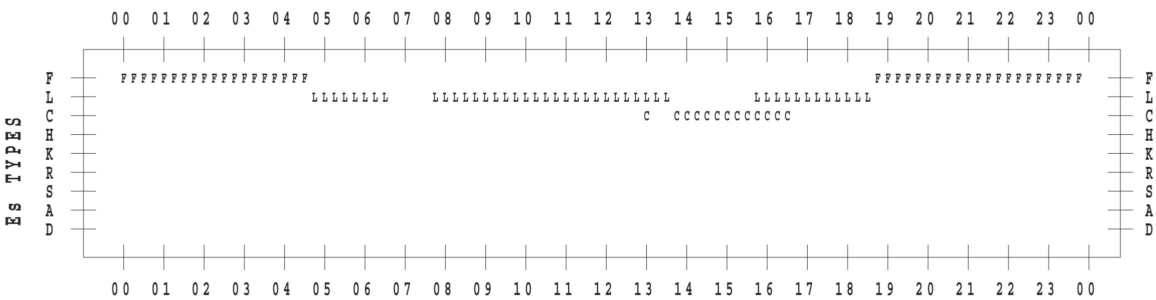
f-PLOT DATA

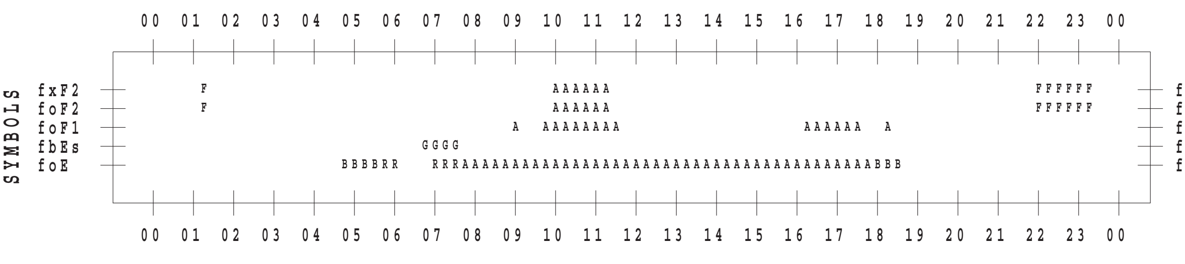
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2016/ 8/21

135 °E MEAN TIME







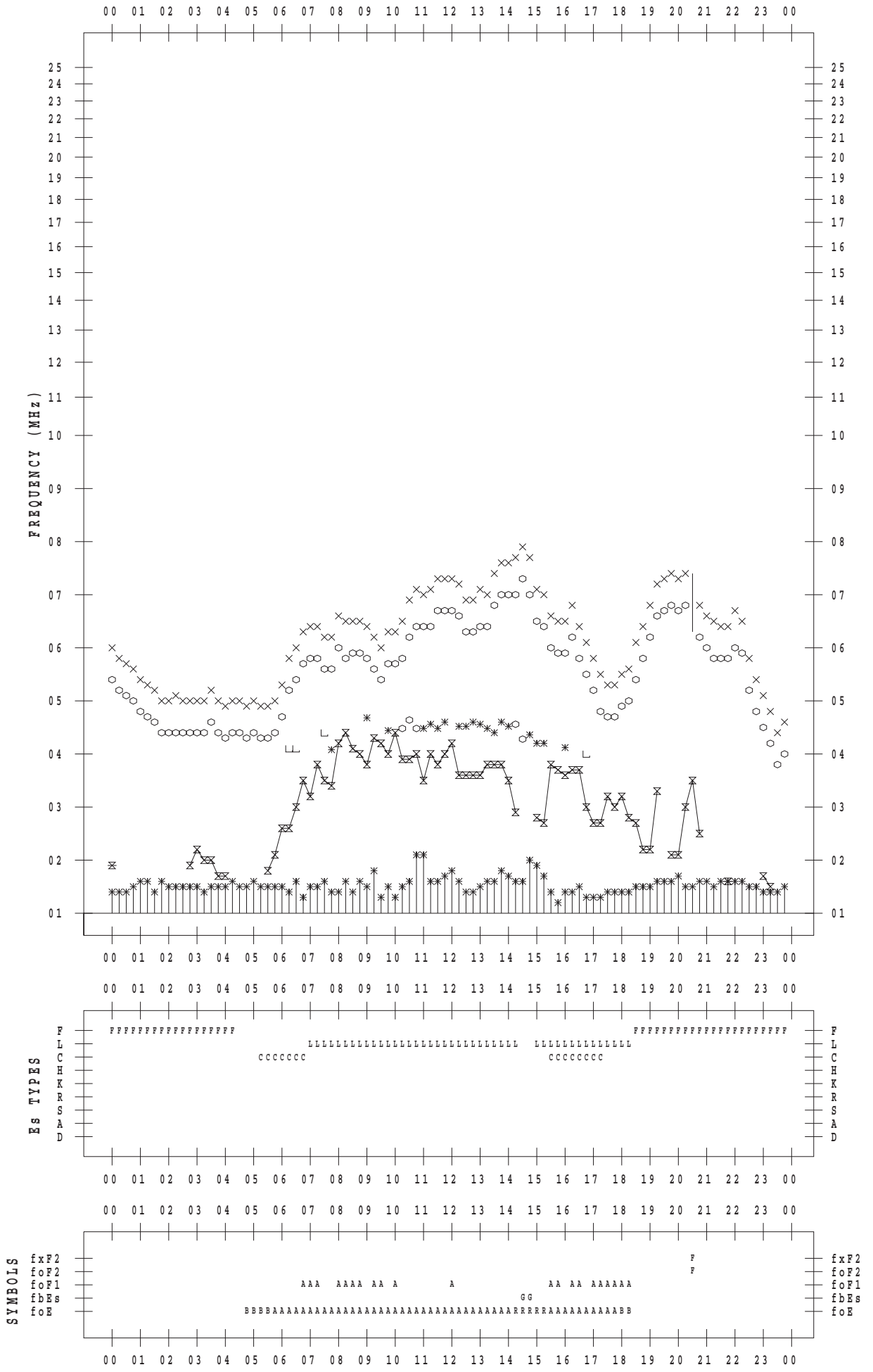
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/22

135 °E MEAN TIME



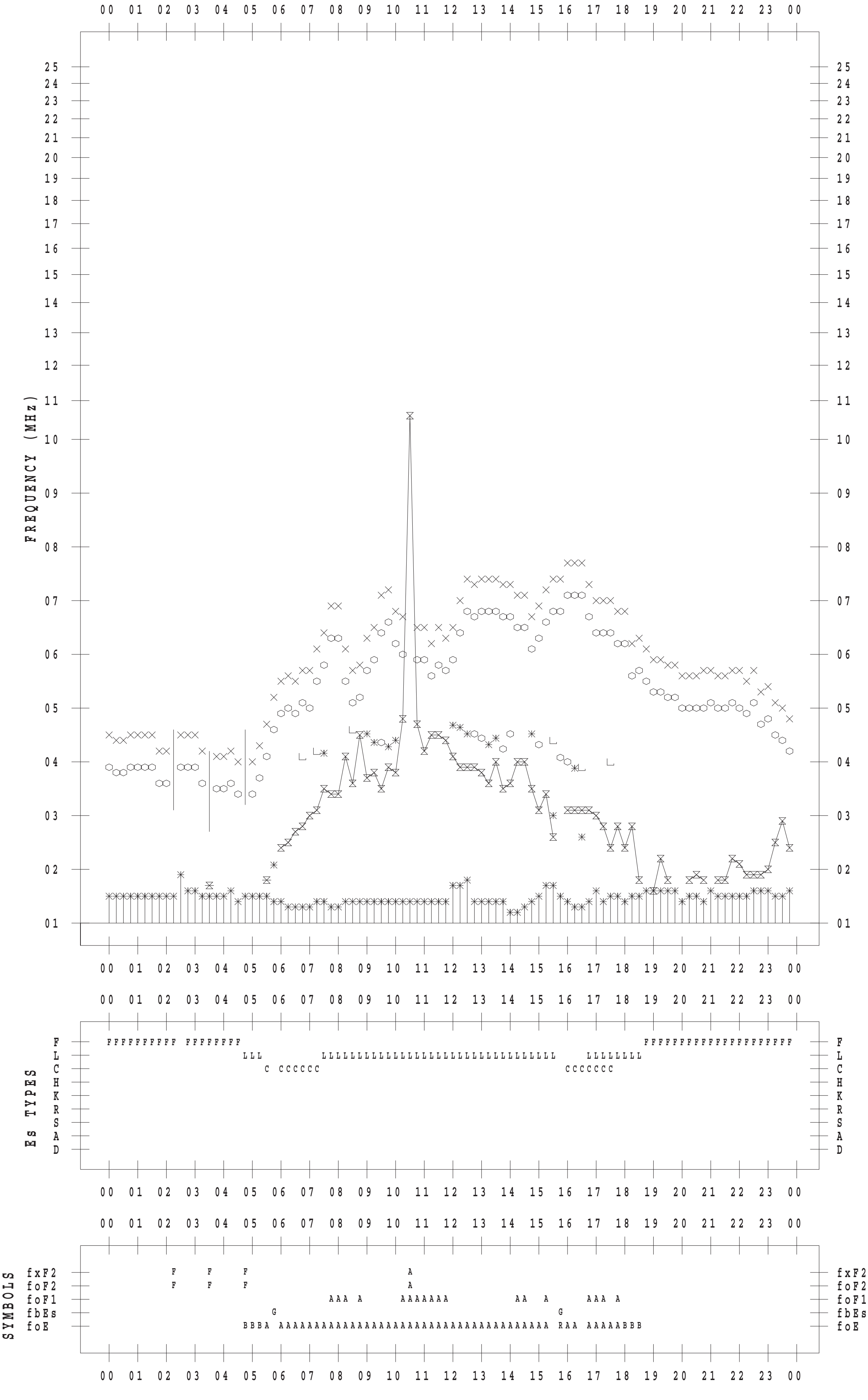
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/23

135 °E MEAN TIME



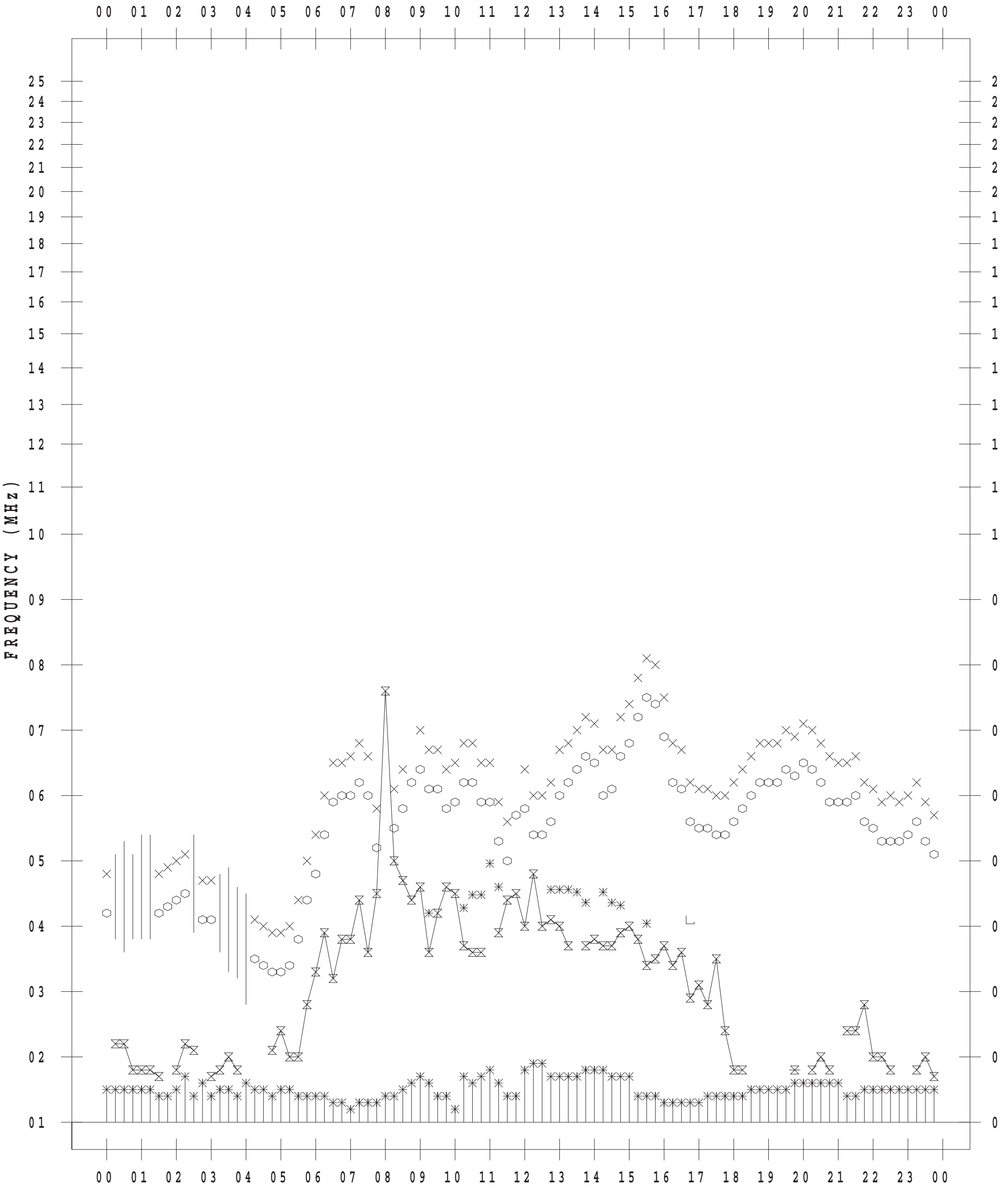
f-PLOT DATA

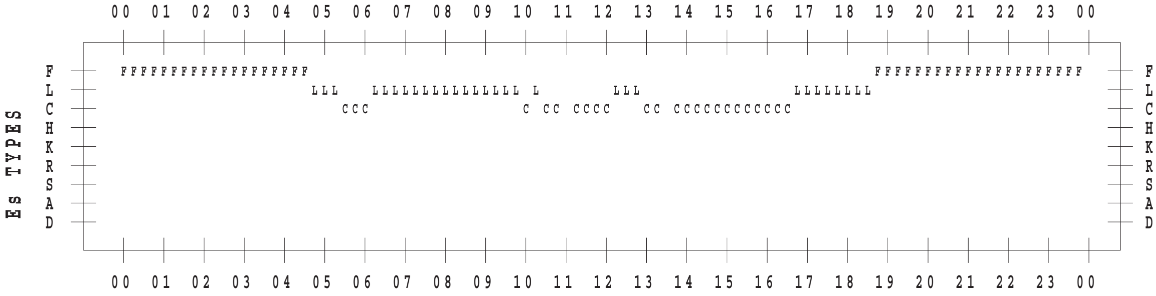
SCALER : I.NISHIMUTA

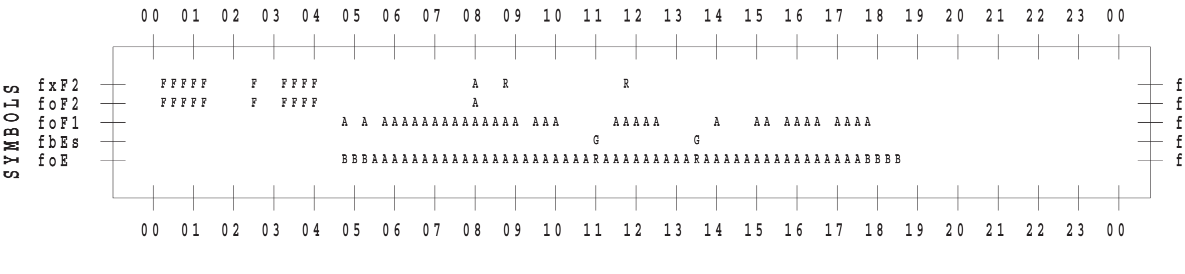
STATION : Kokubunji

DATE : 2016/ 8/24

135 °E MEAN TIME







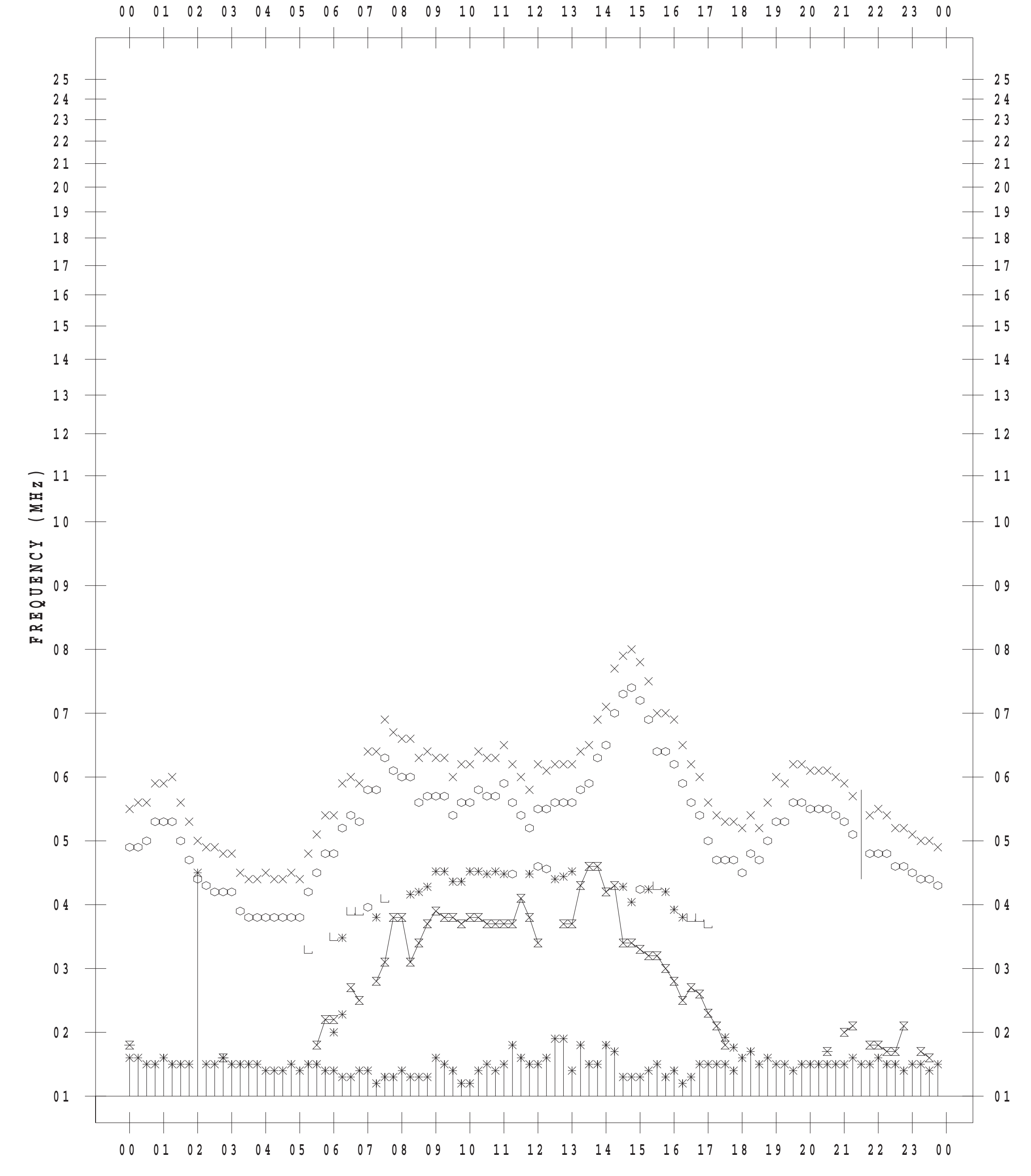
f-PLOT DATA

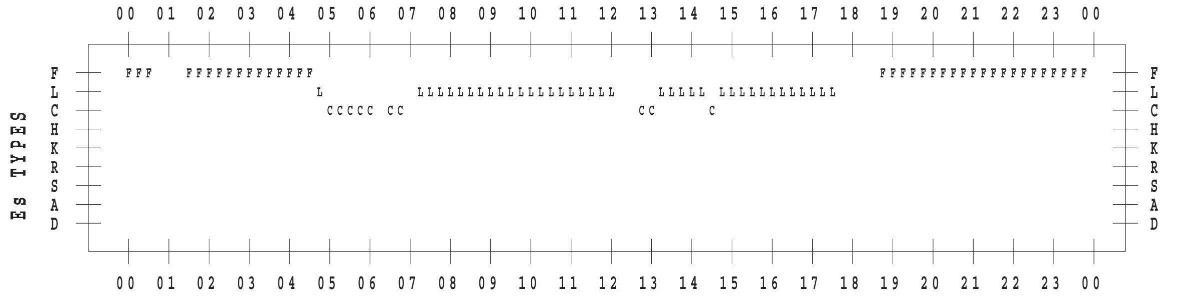
SCALER : I.NISHIMUTA

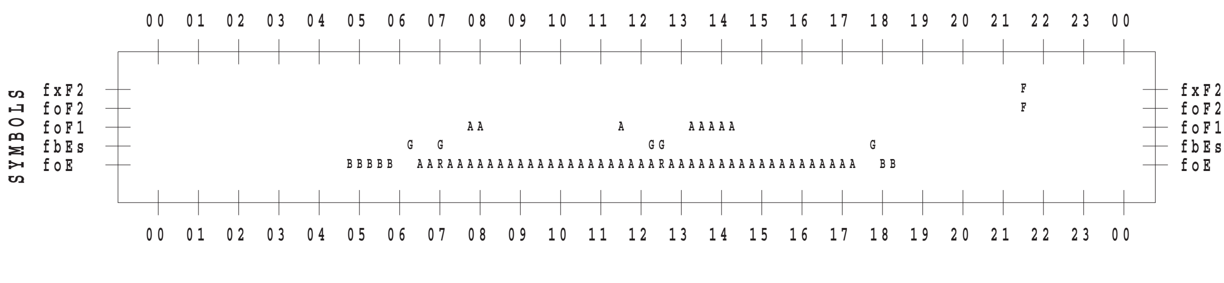
STATION : Kokubunji

DATE : 2016/ 8/25

135 °E MEAN TIME







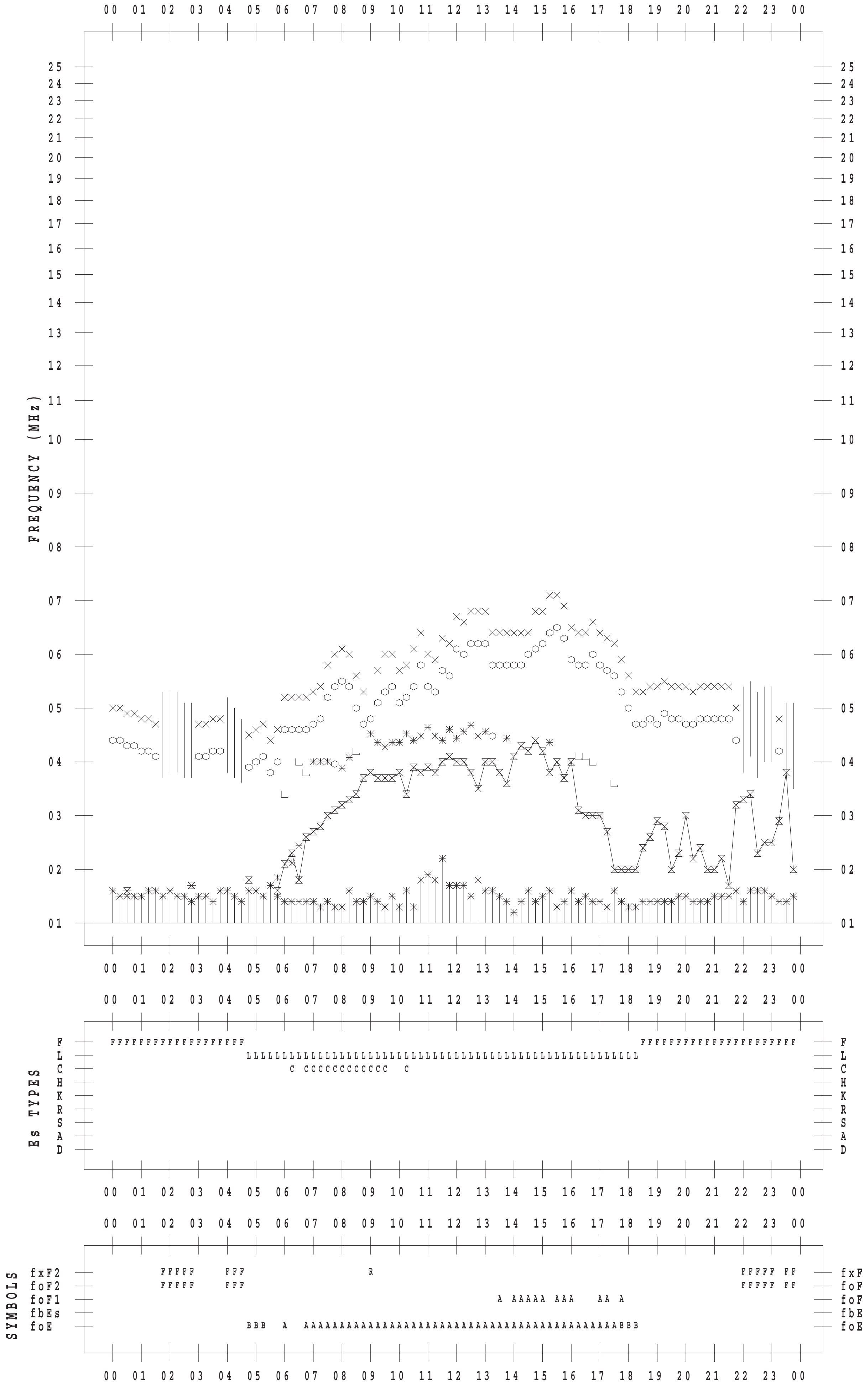
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/26

135 °E MEAN TIME



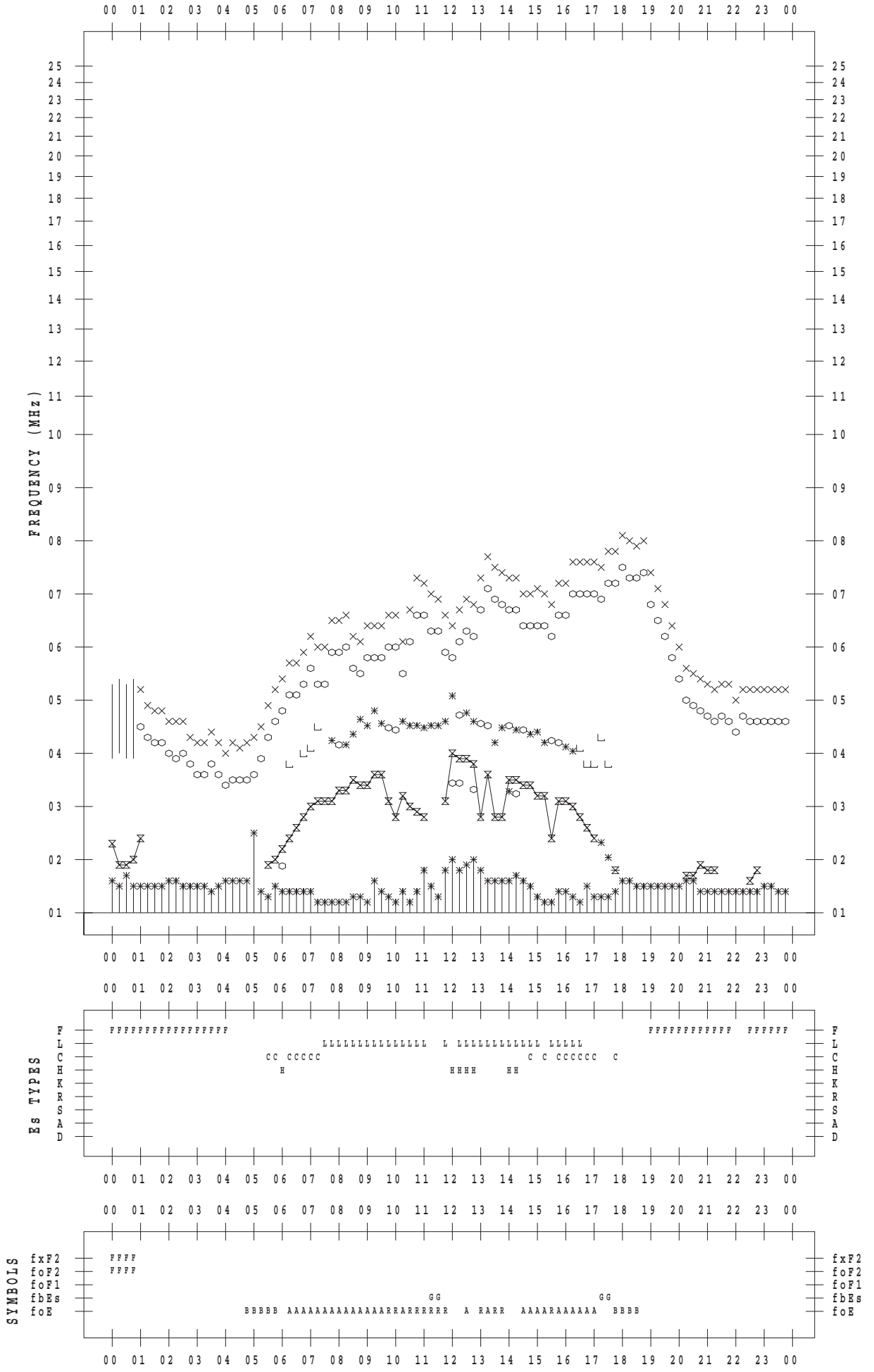
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/27

135 °E MEAN TIME



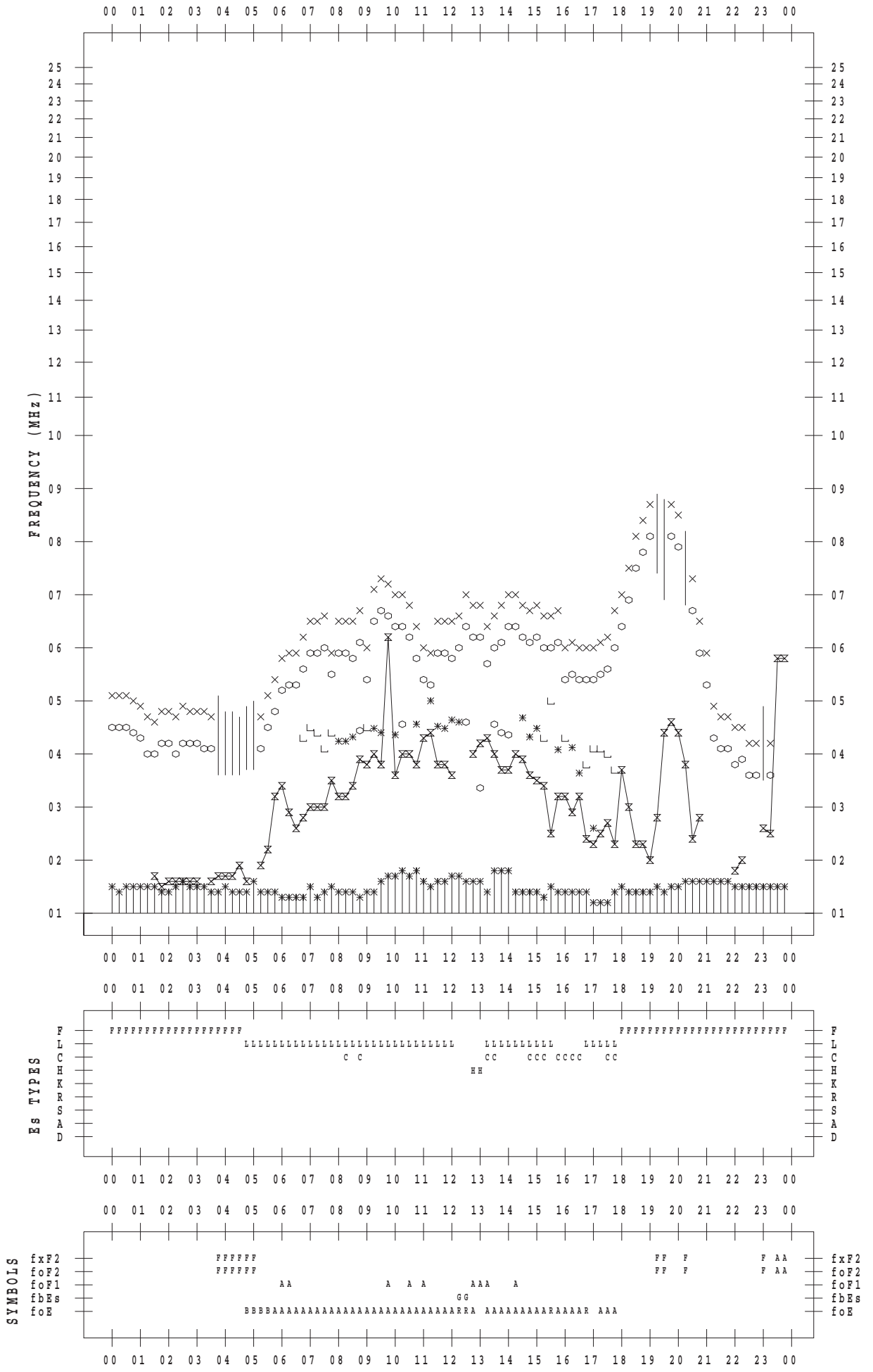
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/28

135 °E MEAN TIME



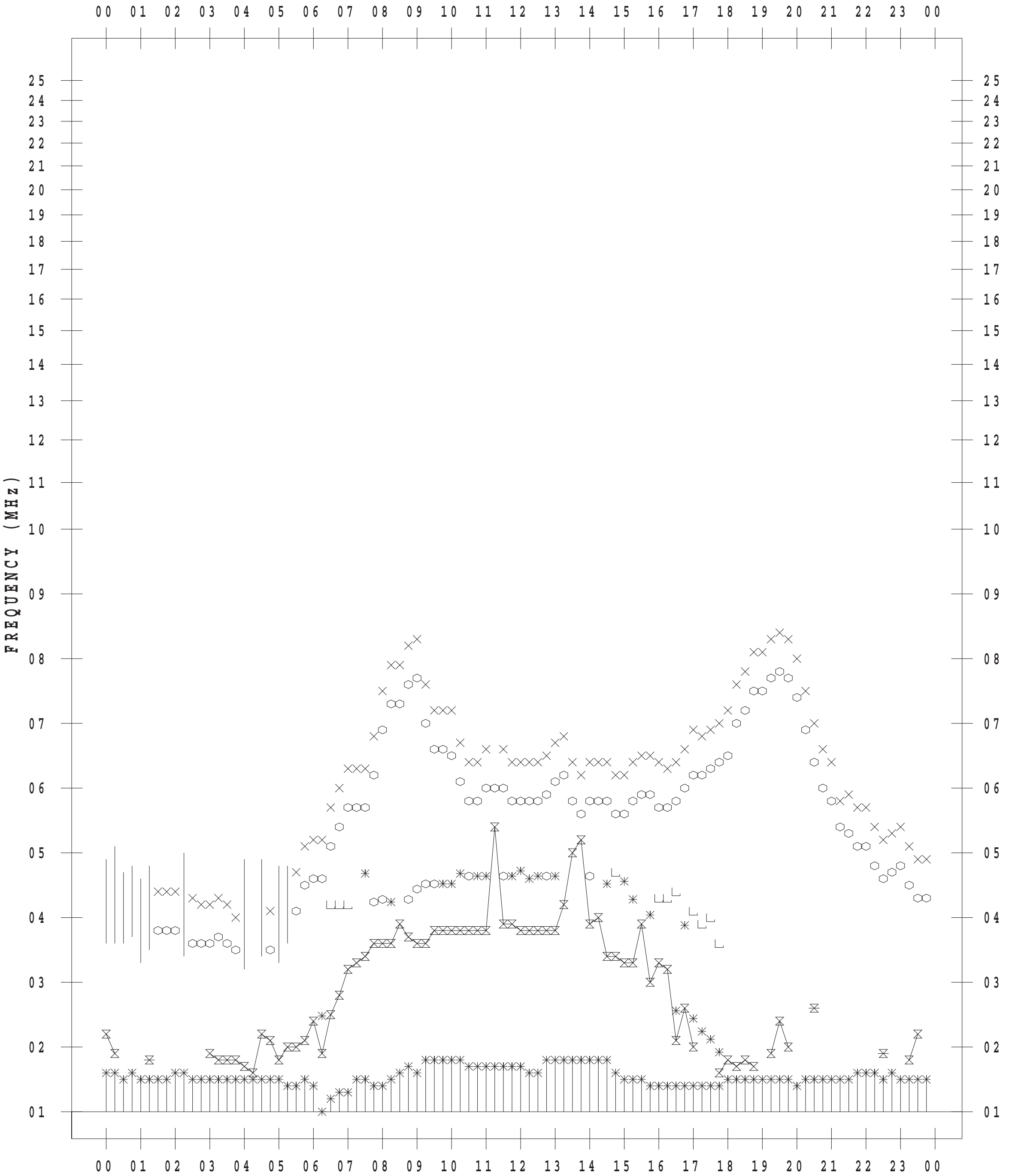
f-PLOT DATA

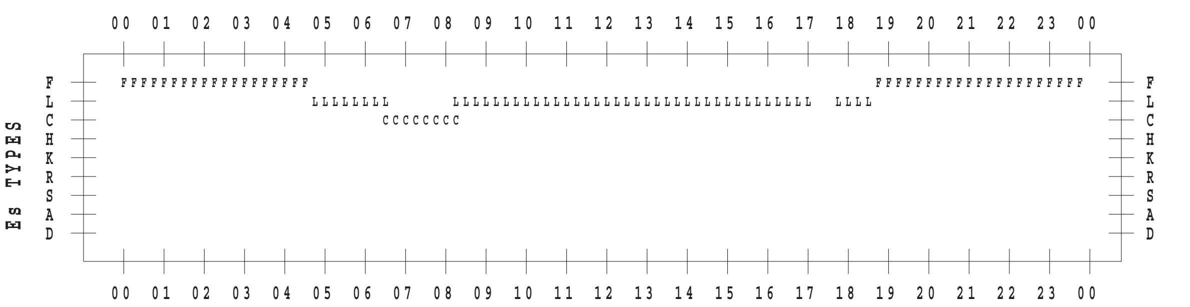
SCALER : I.NISHIMUTA

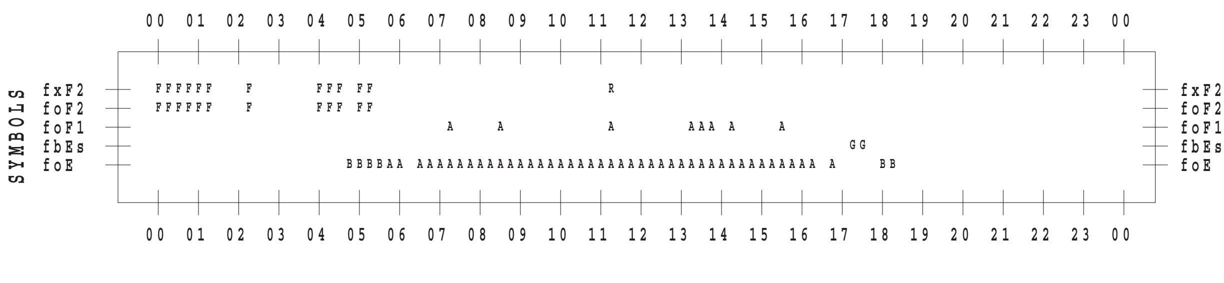
STATION : Kokubunji

DATE : 2016/ 8/29

135 °E MEAN TIME







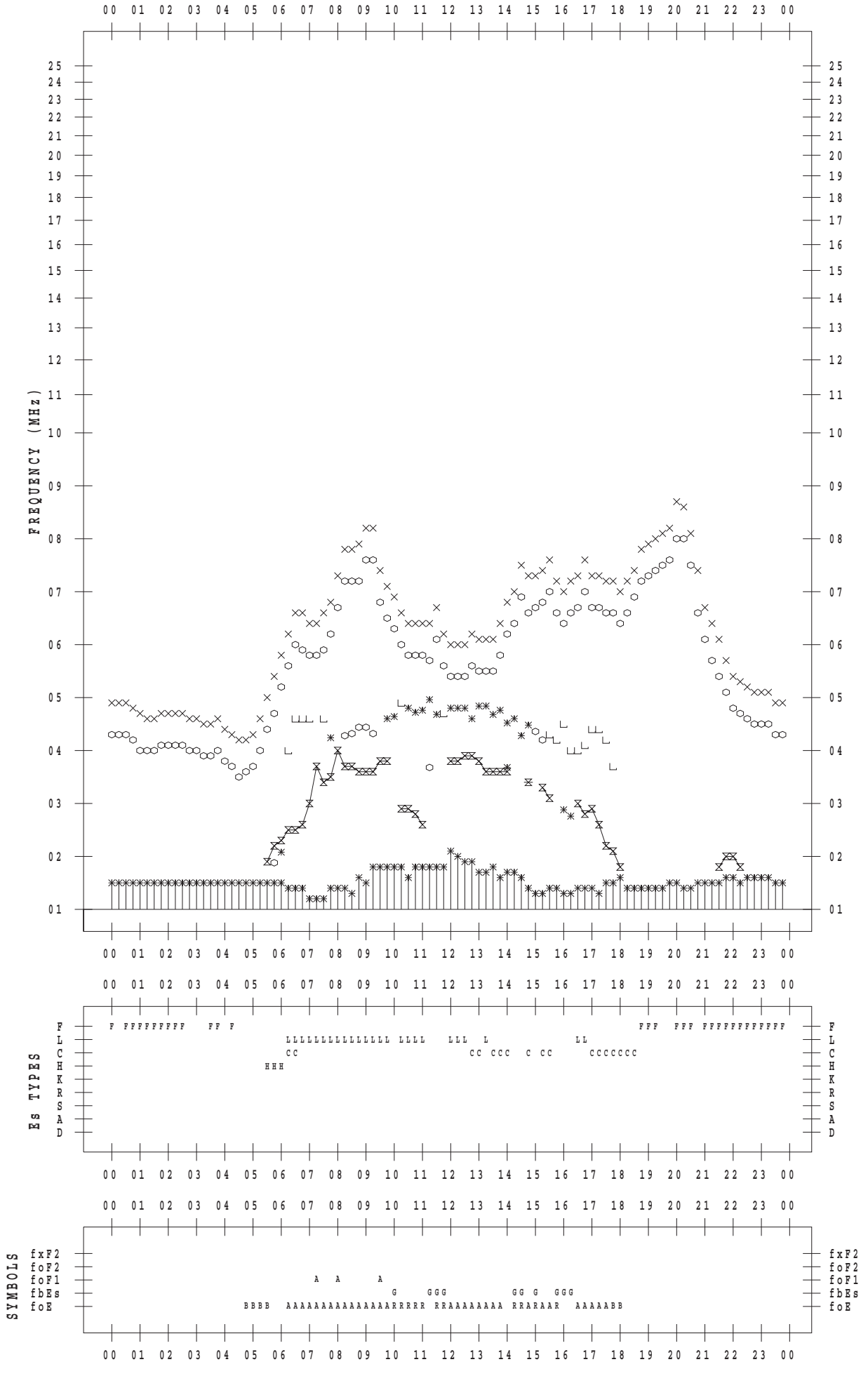
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/30

135 °E MEAN TIME



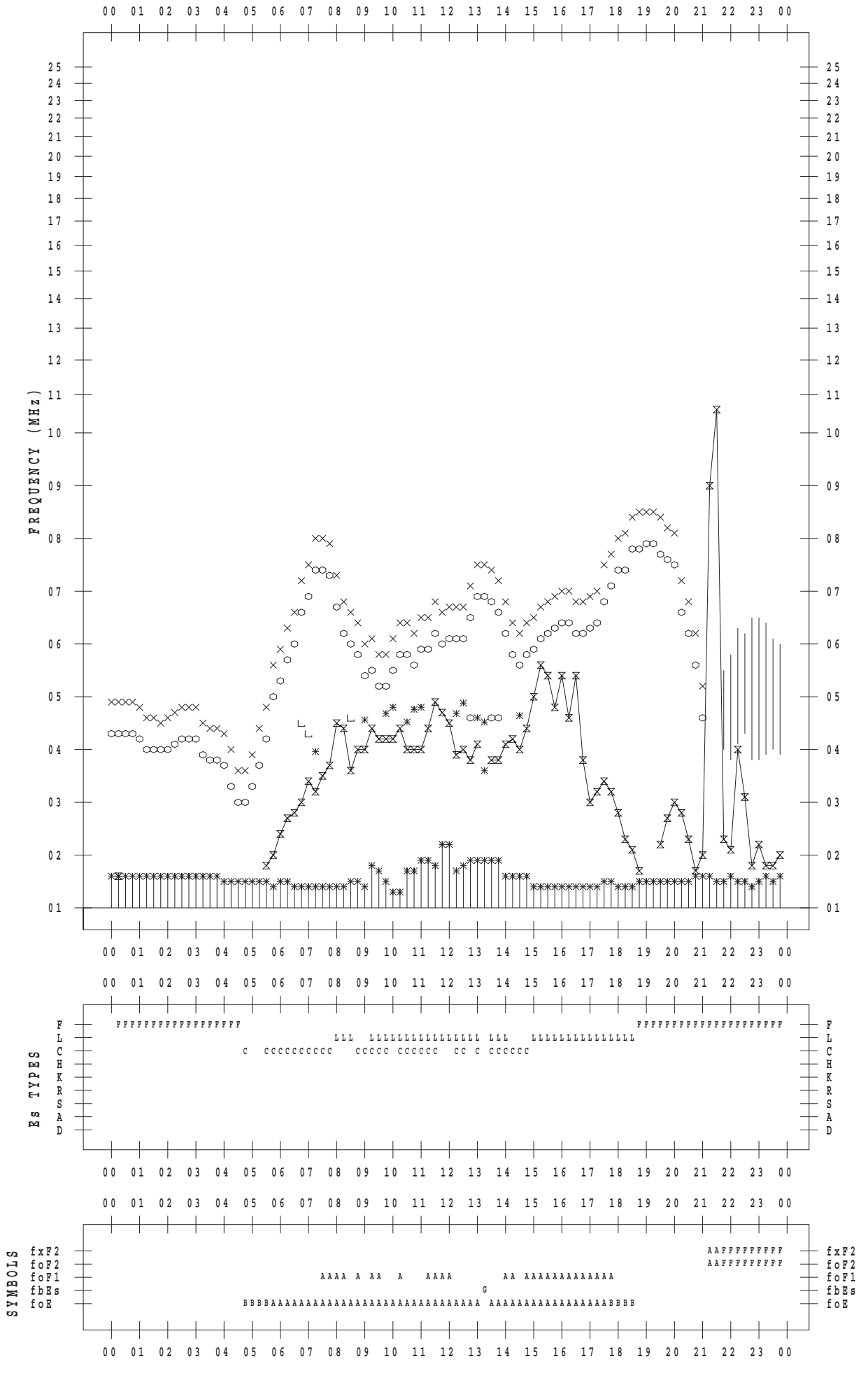
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2016/ 8/31

135 °E MEAN TIME



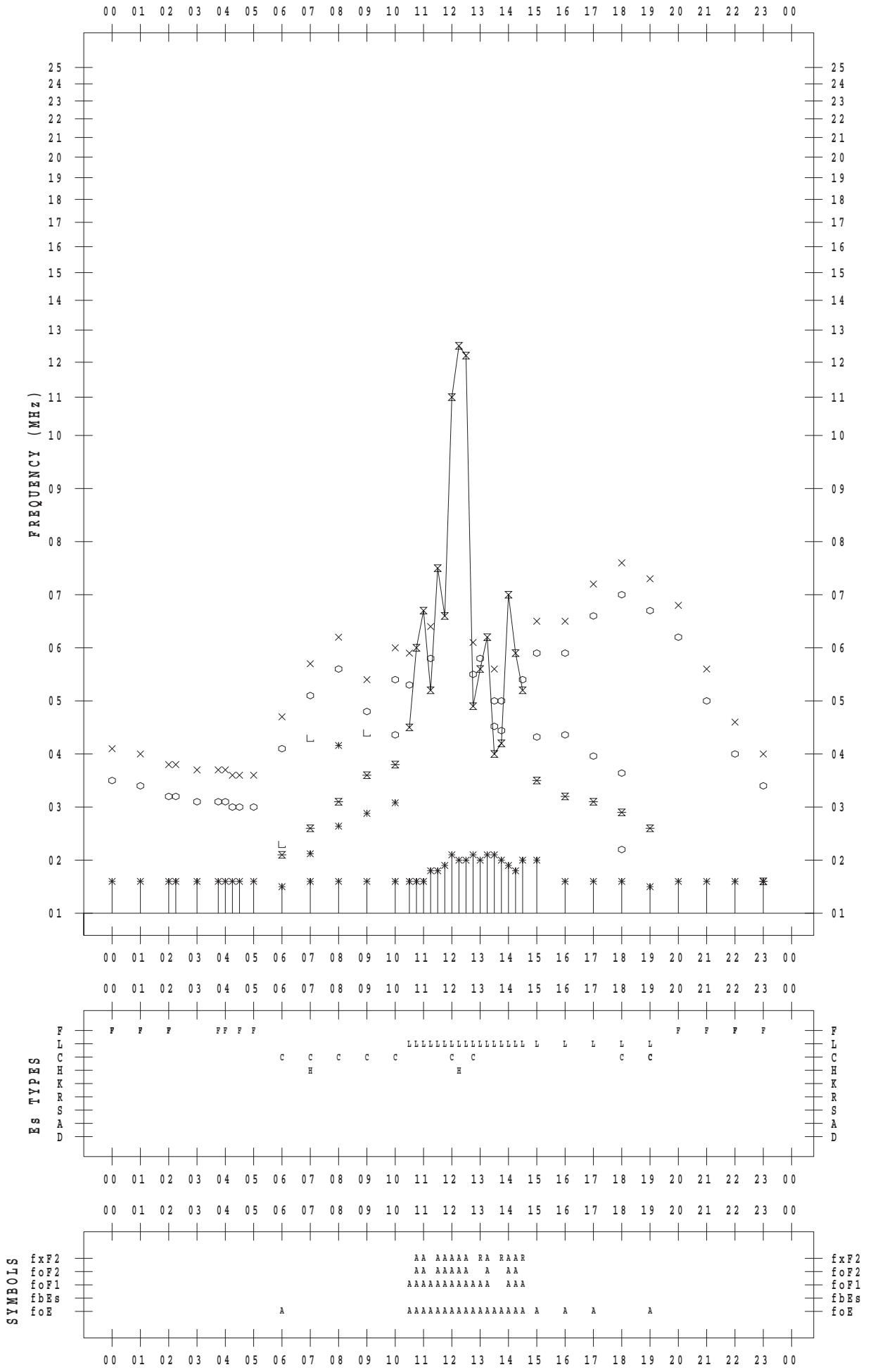
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 1

135 °E MEAN TIME



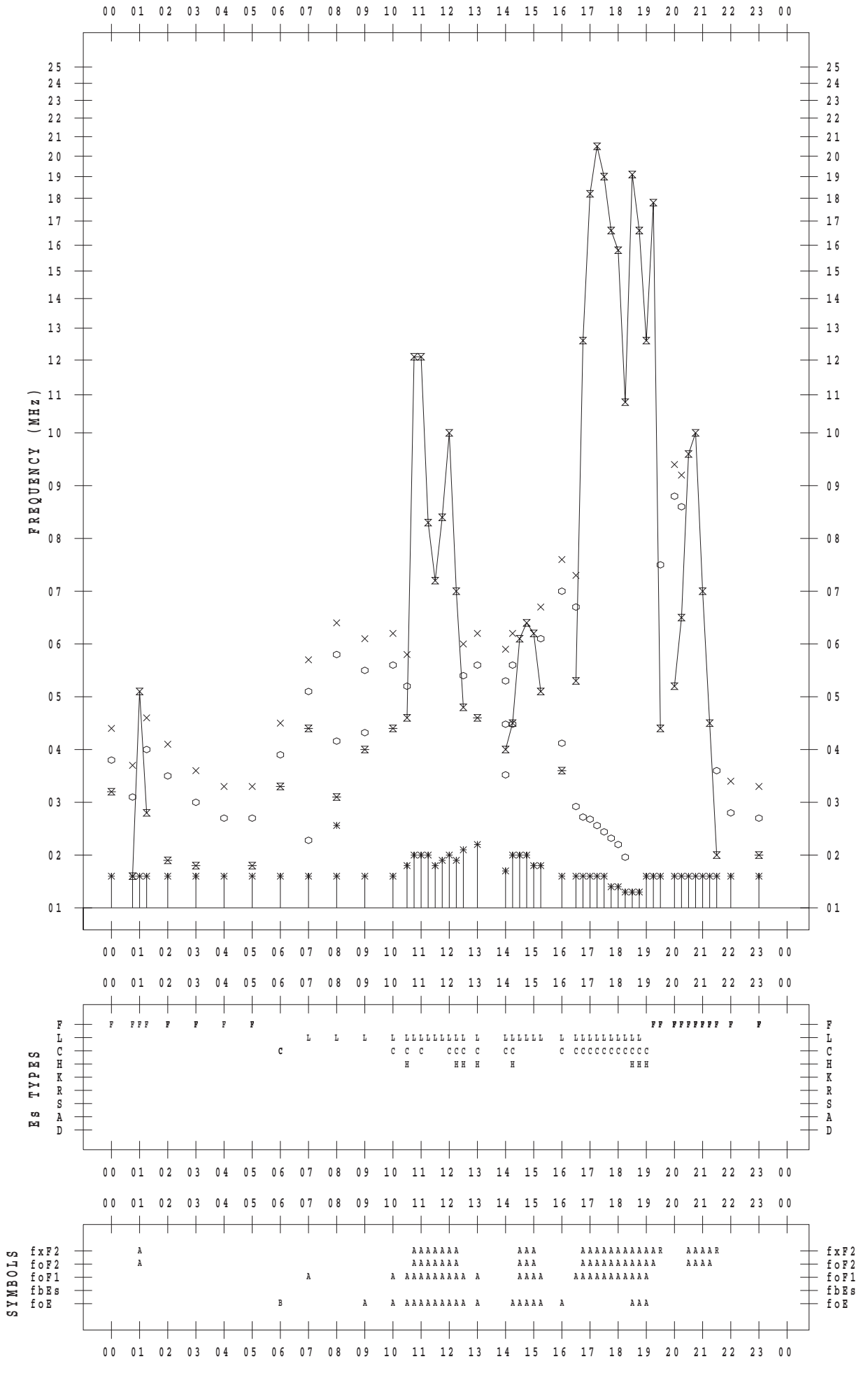
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 2

135 °E MEAN TIME



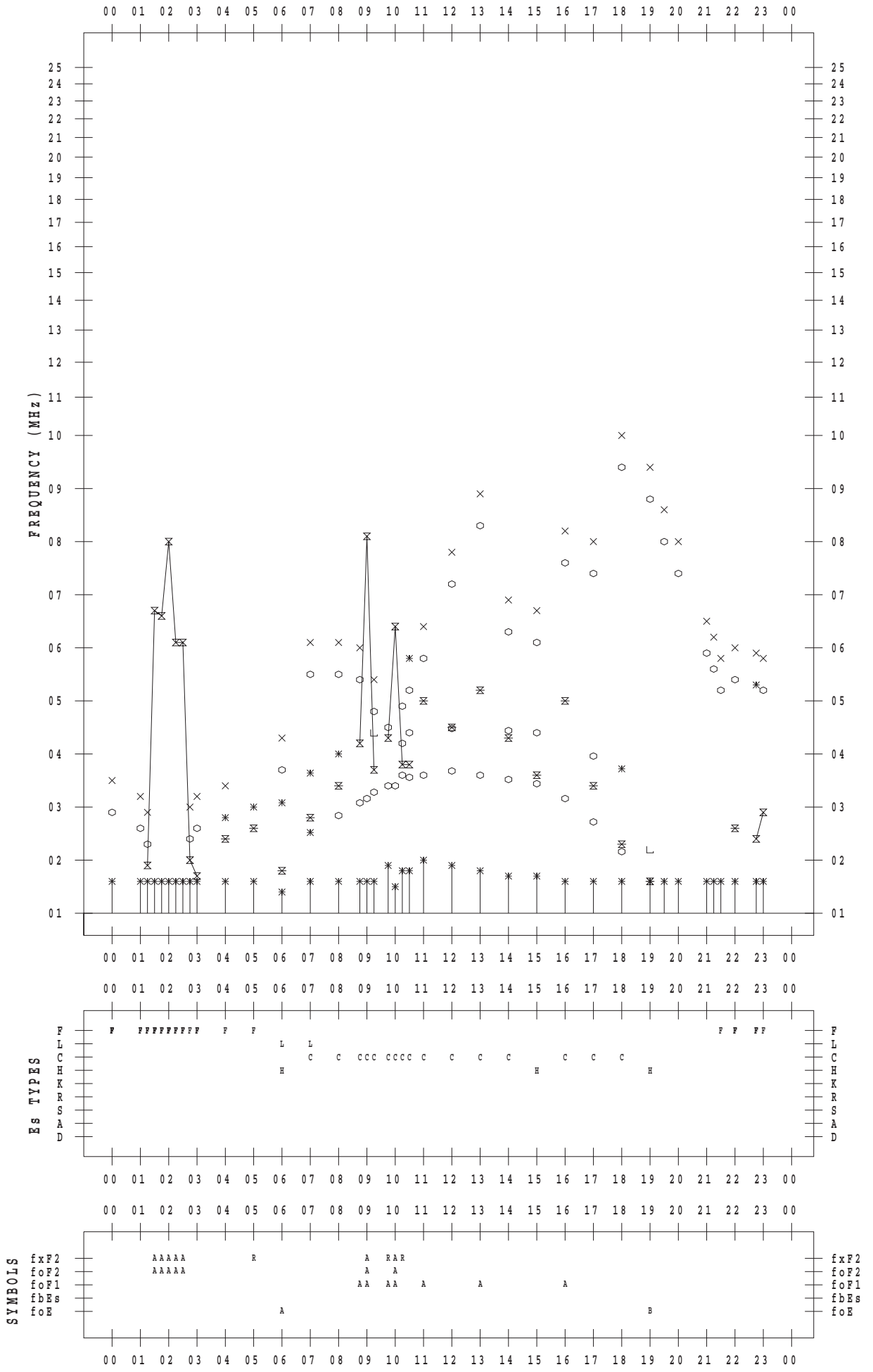
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 3

135 °E MEAN TIME



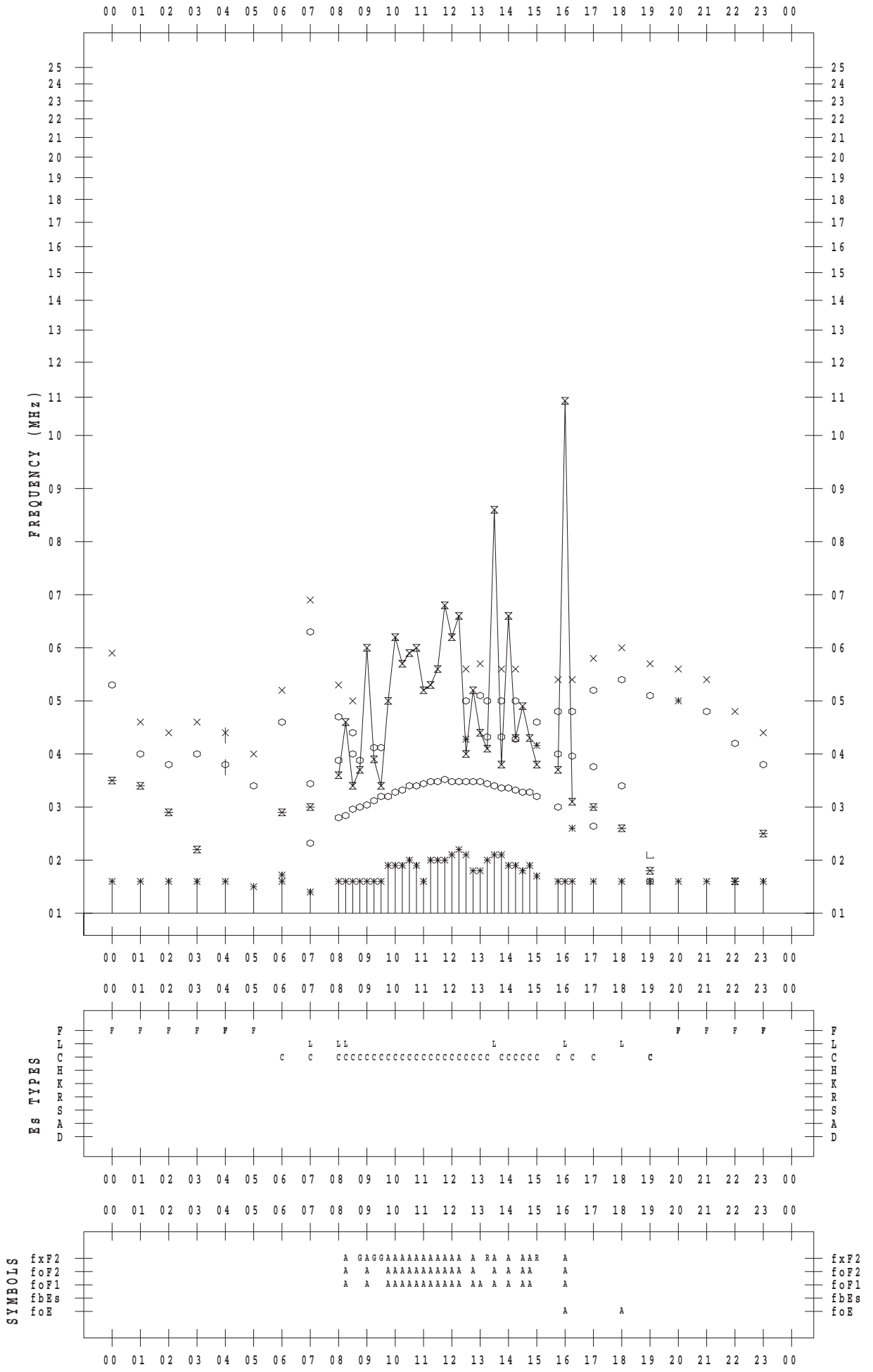
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 4

135 °E MEAN TIME



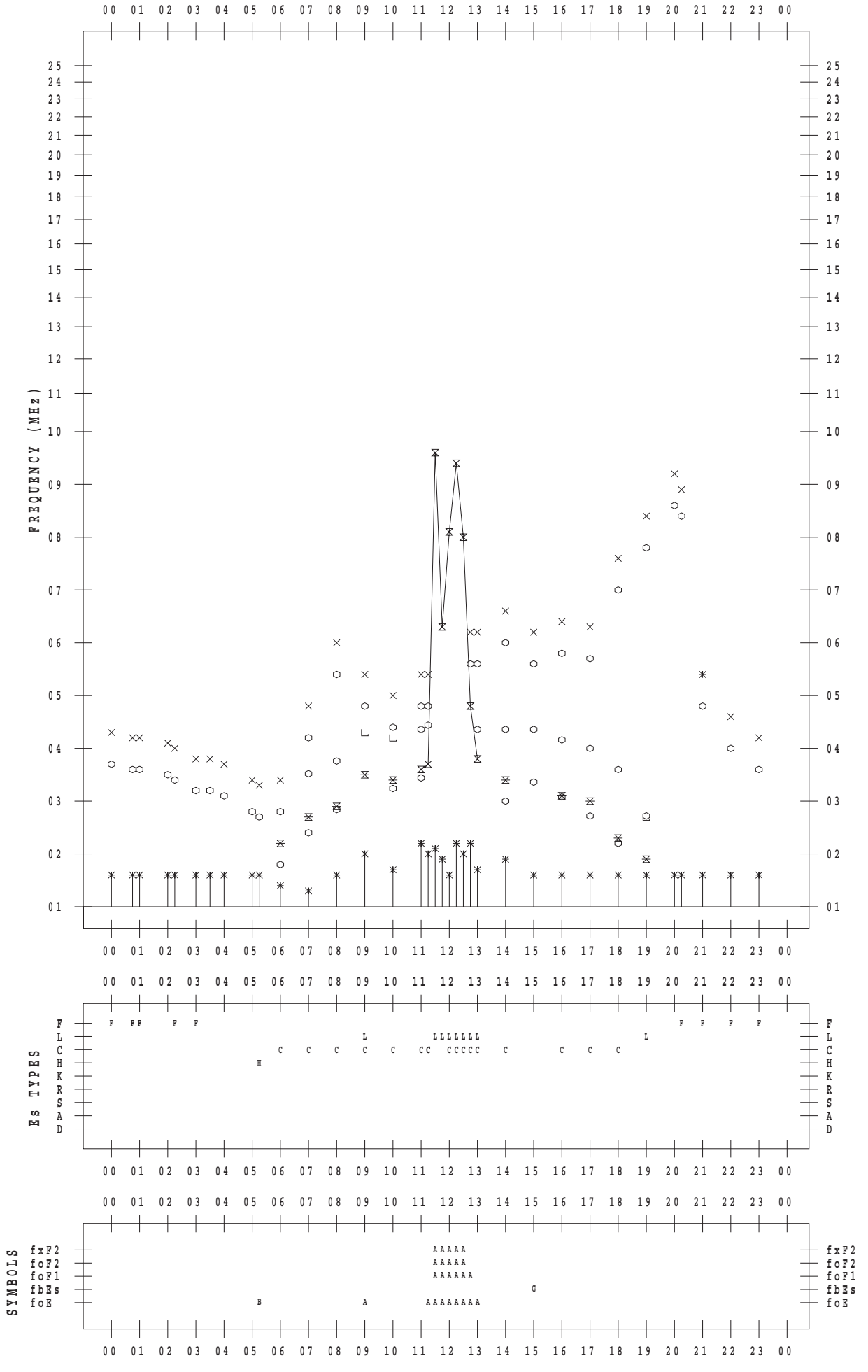
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 5

135 °E MEAN TIME



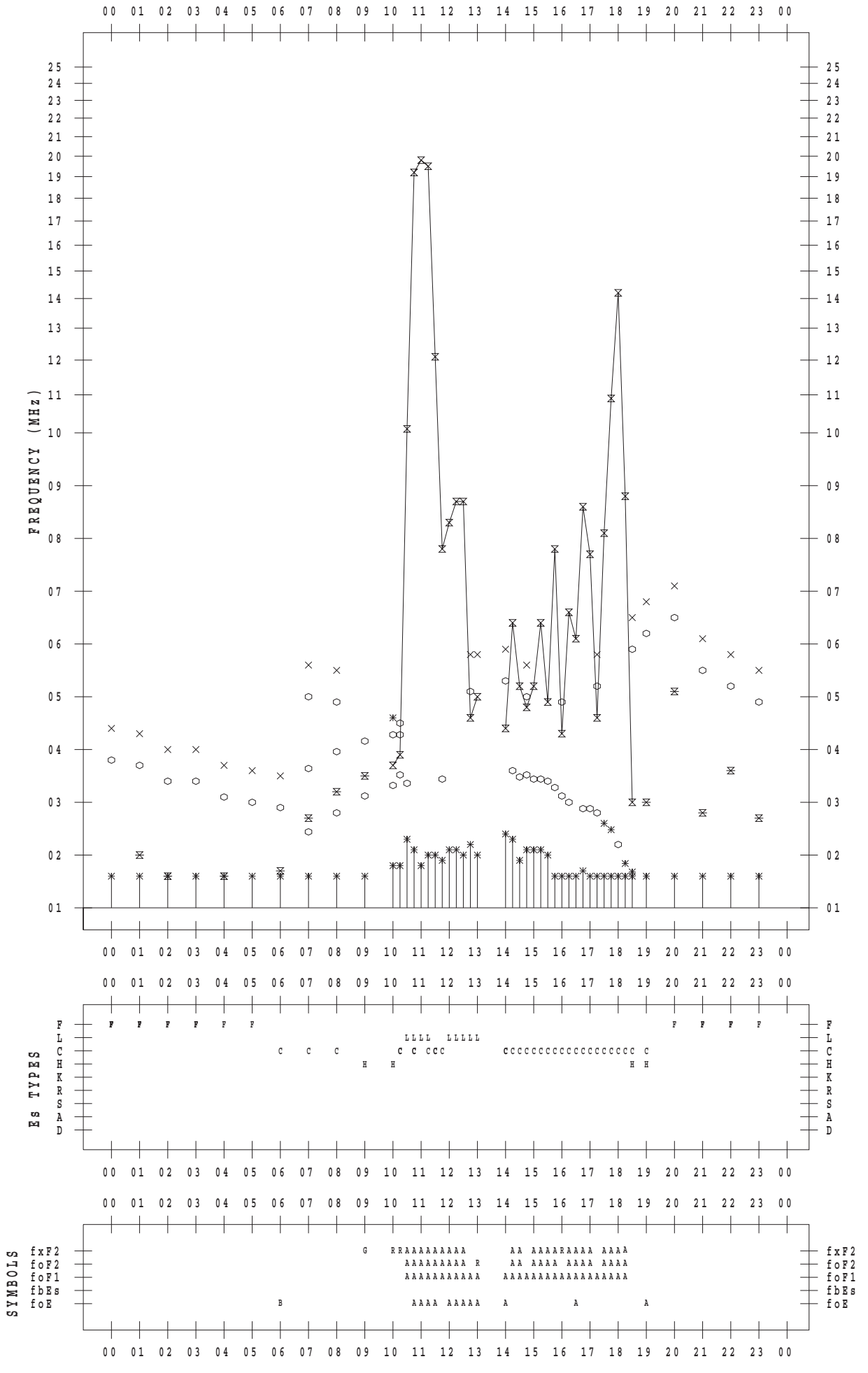
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 6

135 °E MEAN TIME



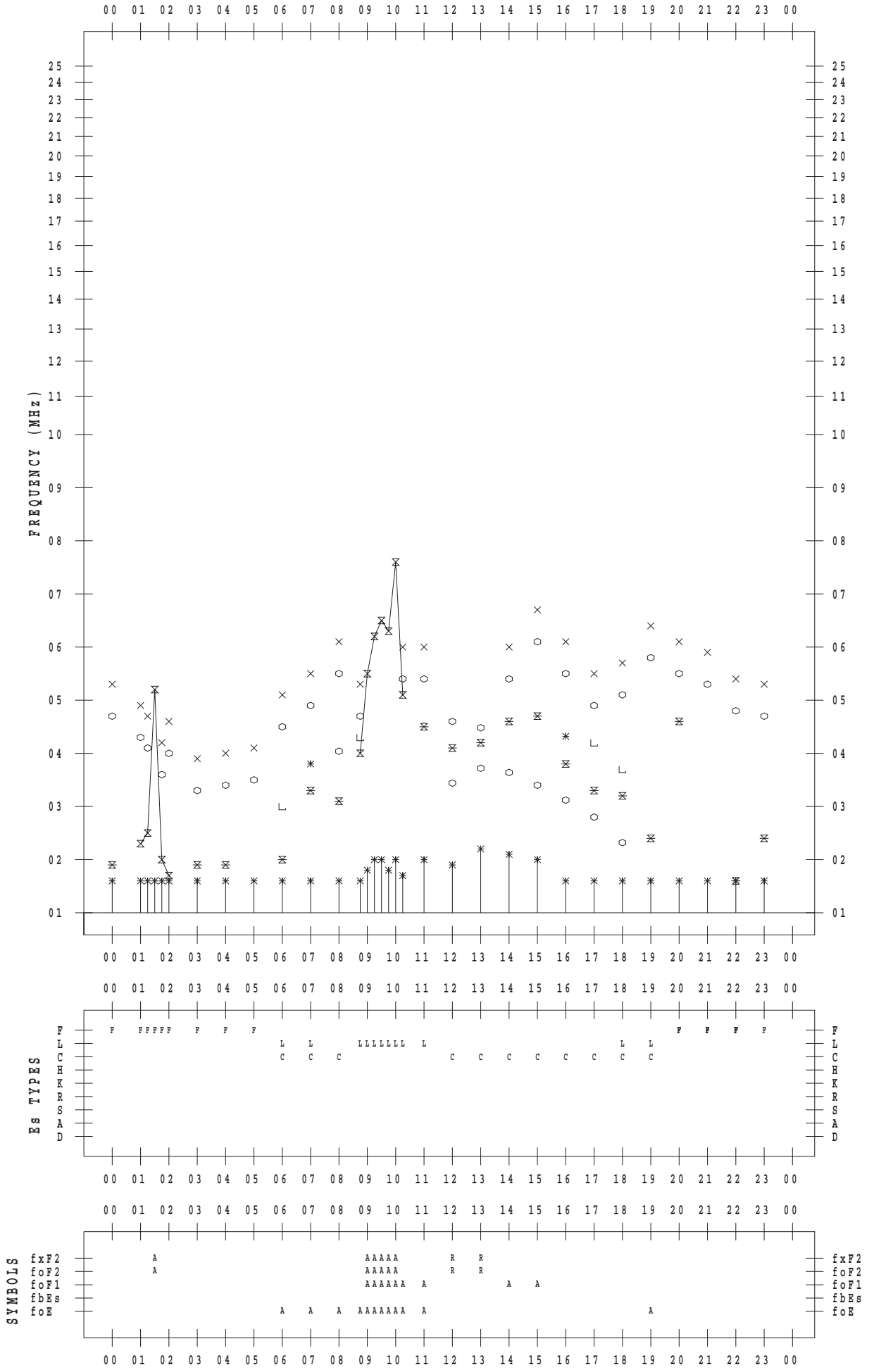
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 7

135 °E MEAN TIME



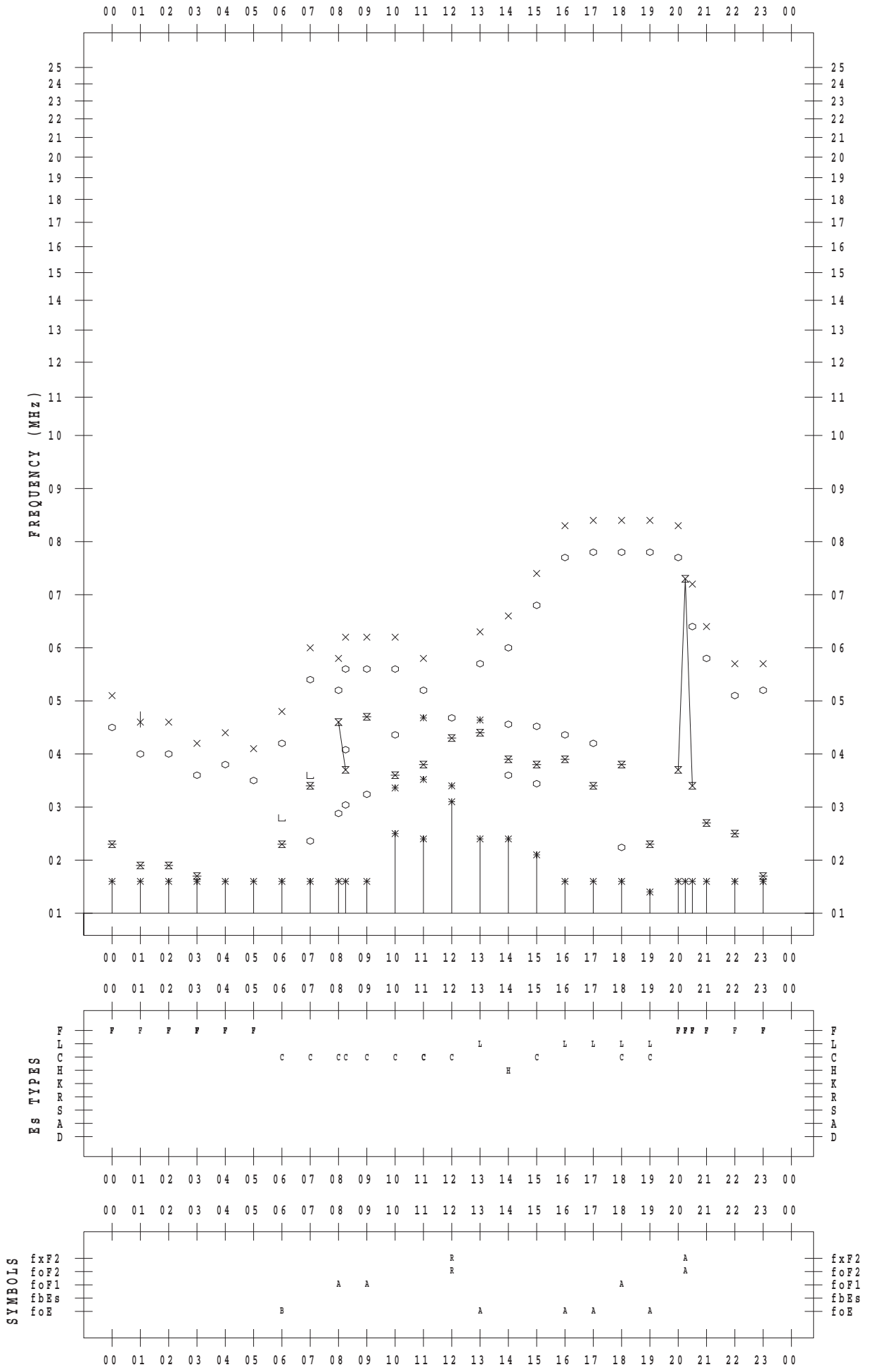
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 8

135 °E MEAN TIME



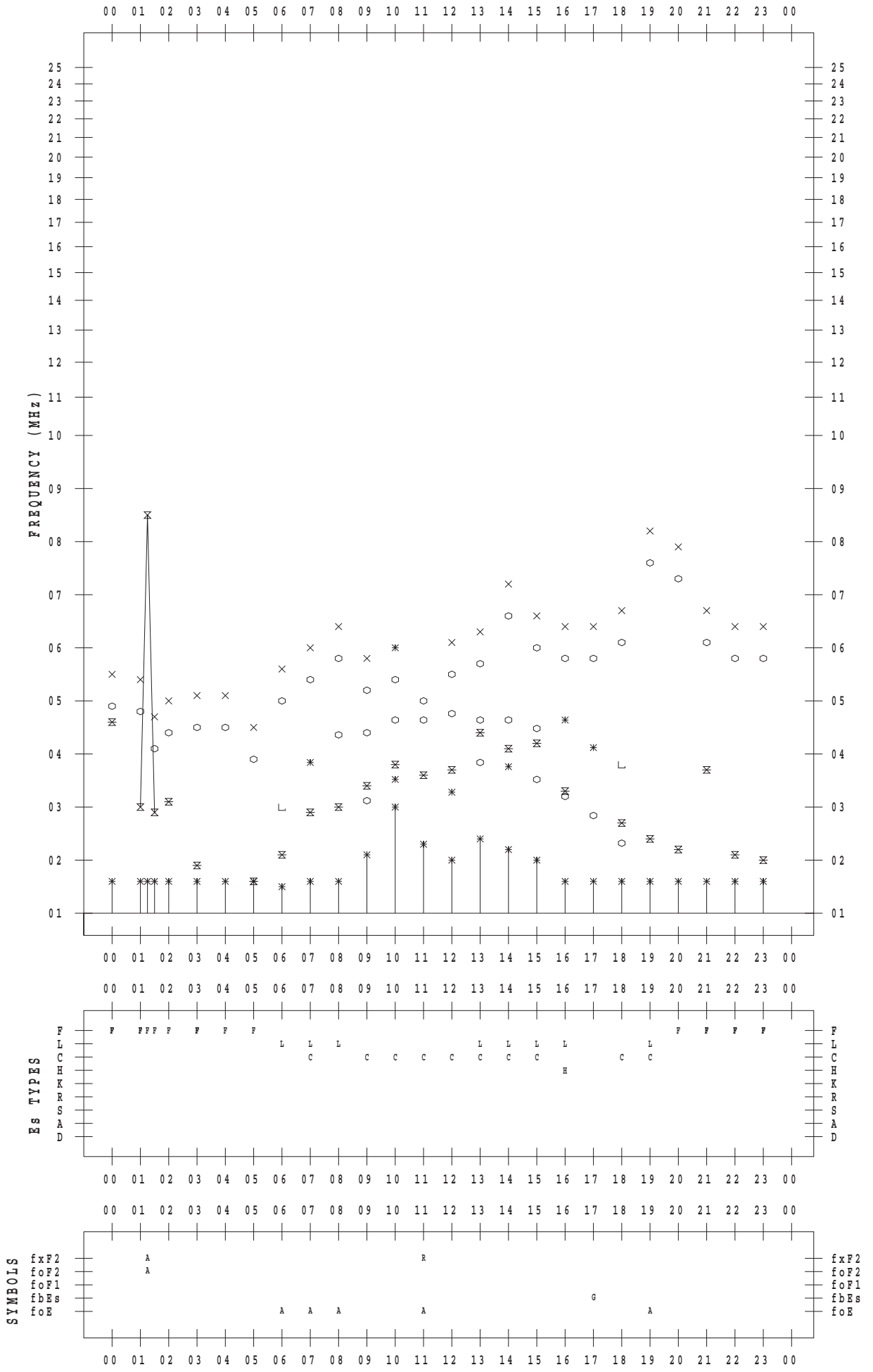
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/ 9

135 °E MEAN TIME



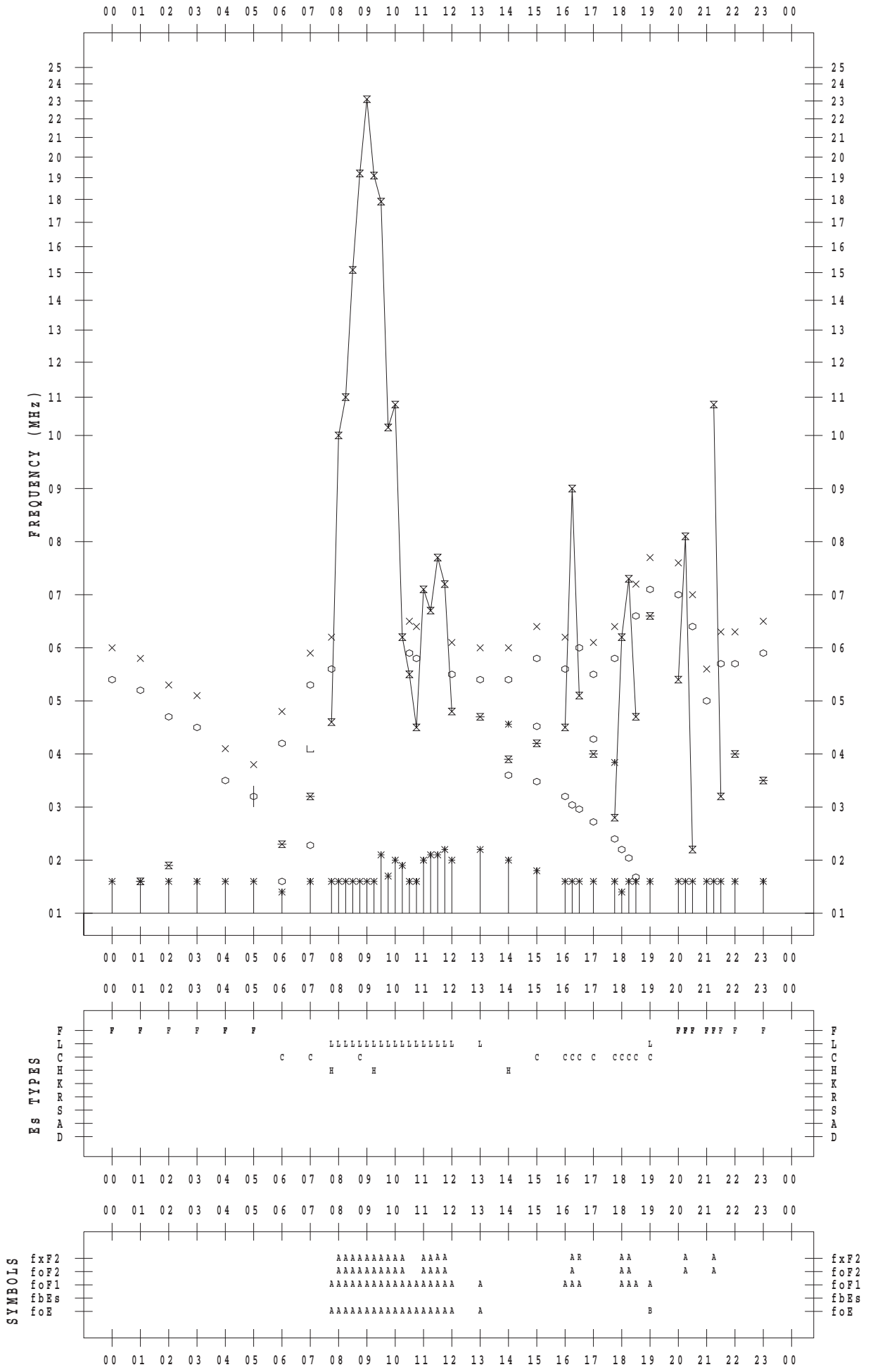
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/10

135 °E MEAN TIME



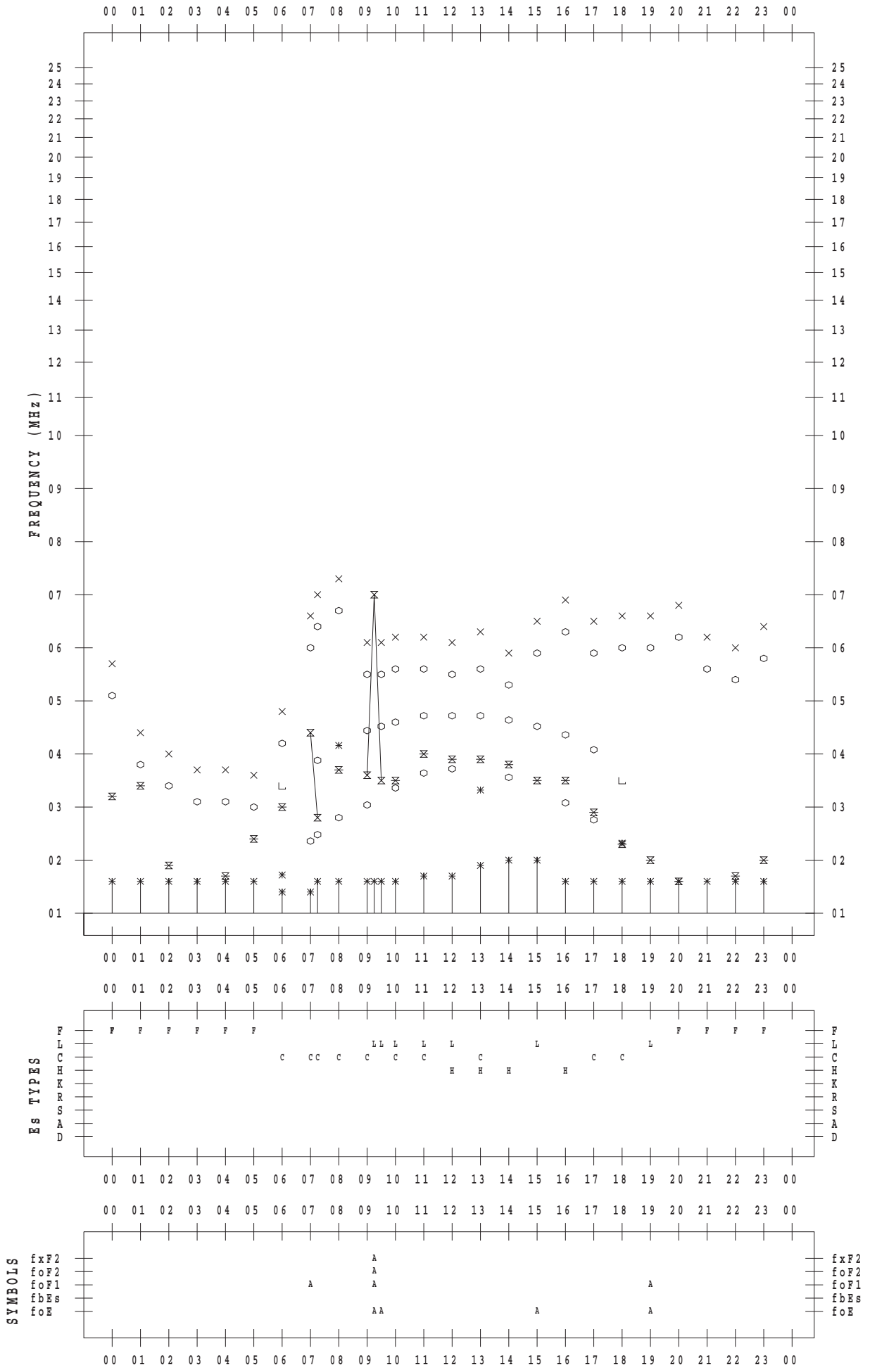
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/11

135 °E MEAN TIME



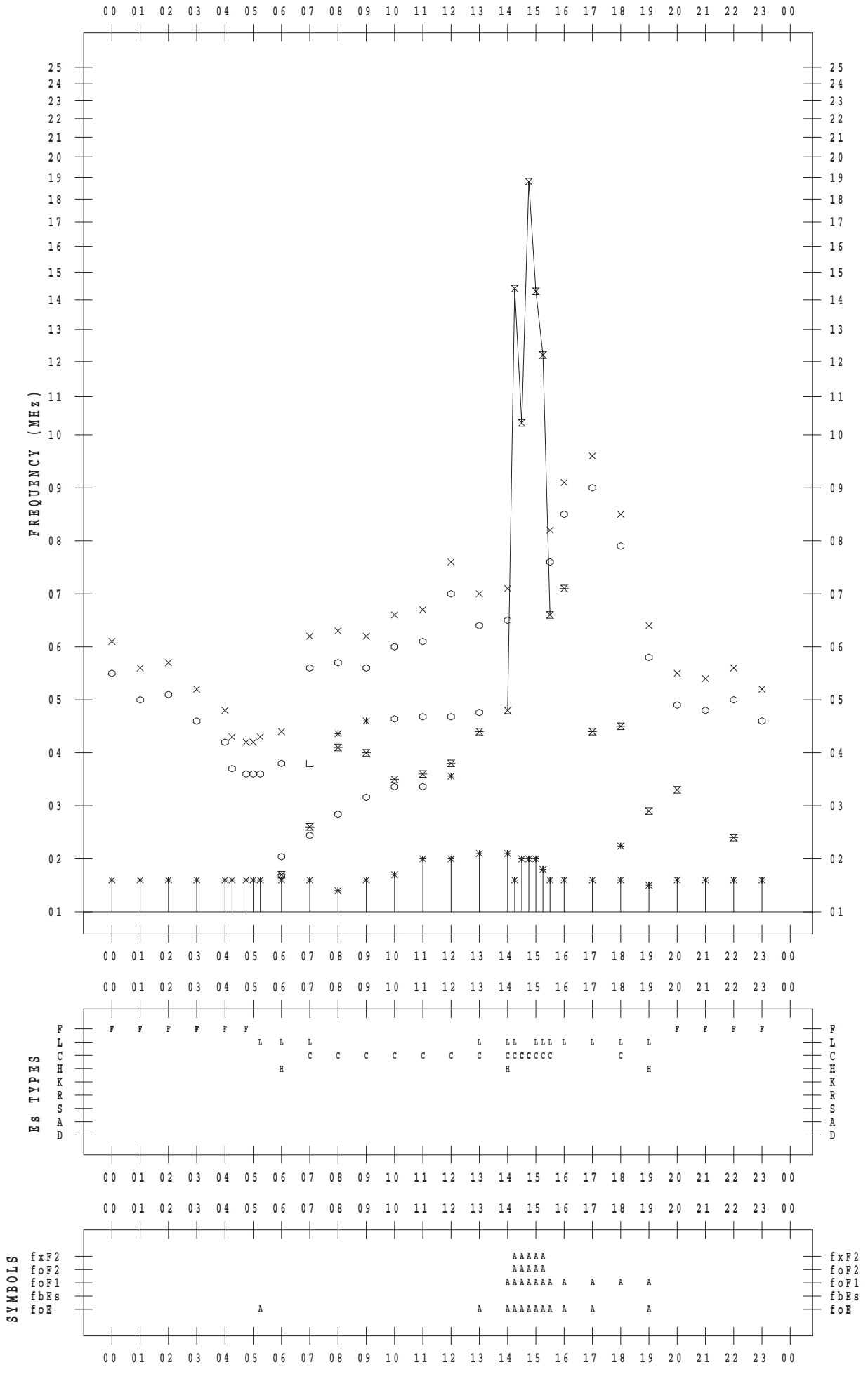
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/12

135 °E MEAN TIME



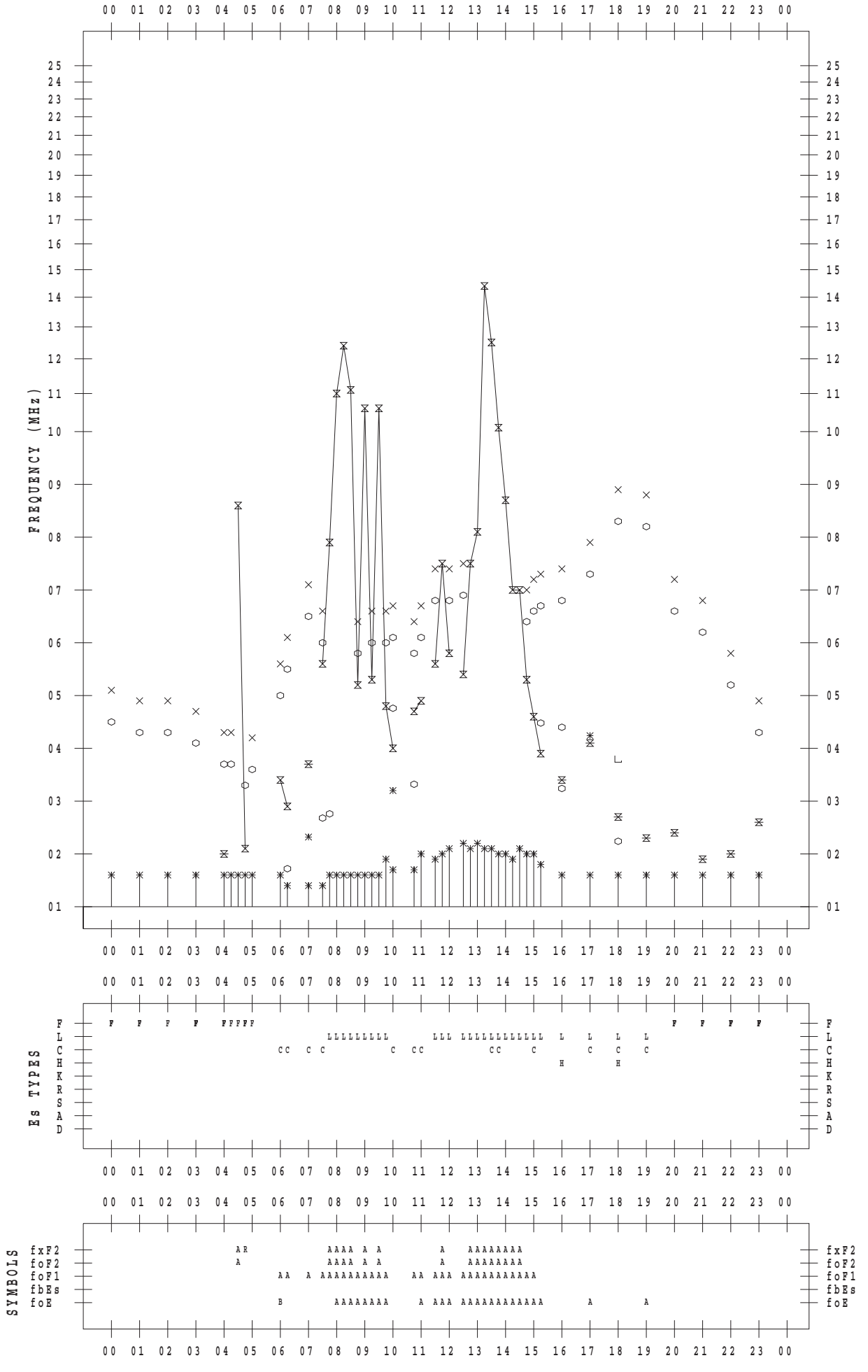
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/13

135 °E MEAN TIME



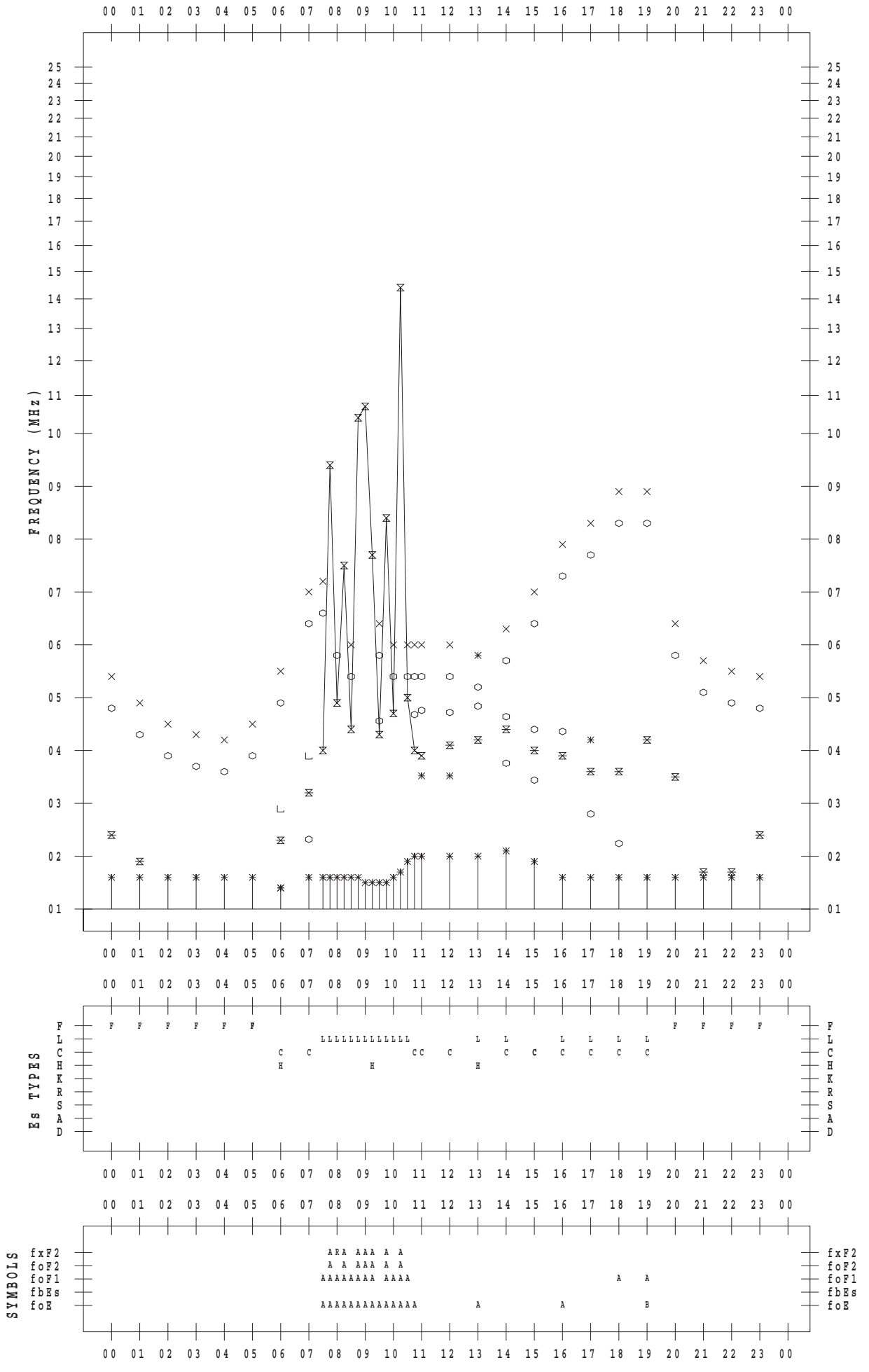
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/14

135 °E MEAN TIME



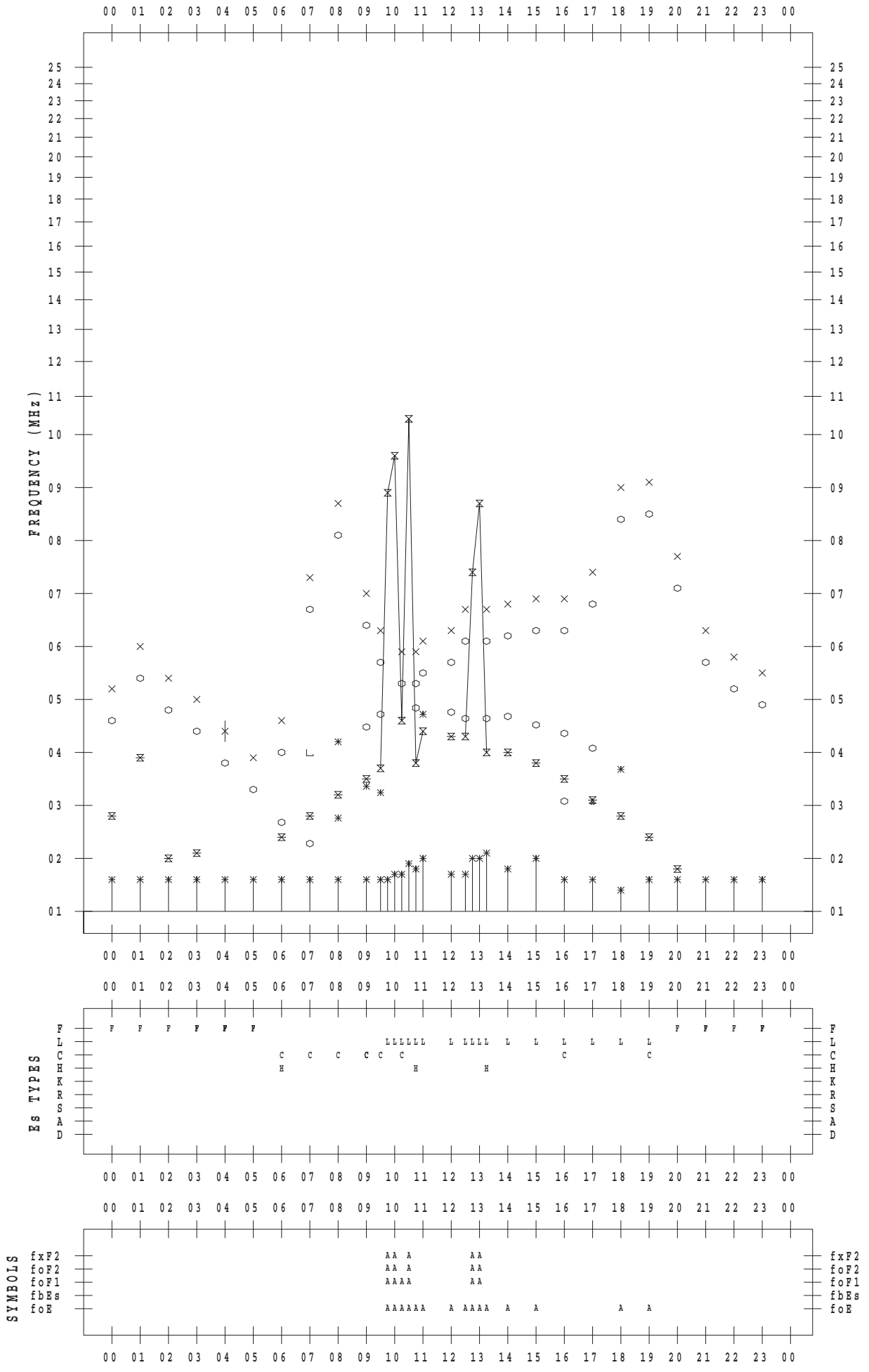
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/15

135 °E MEAN TIME



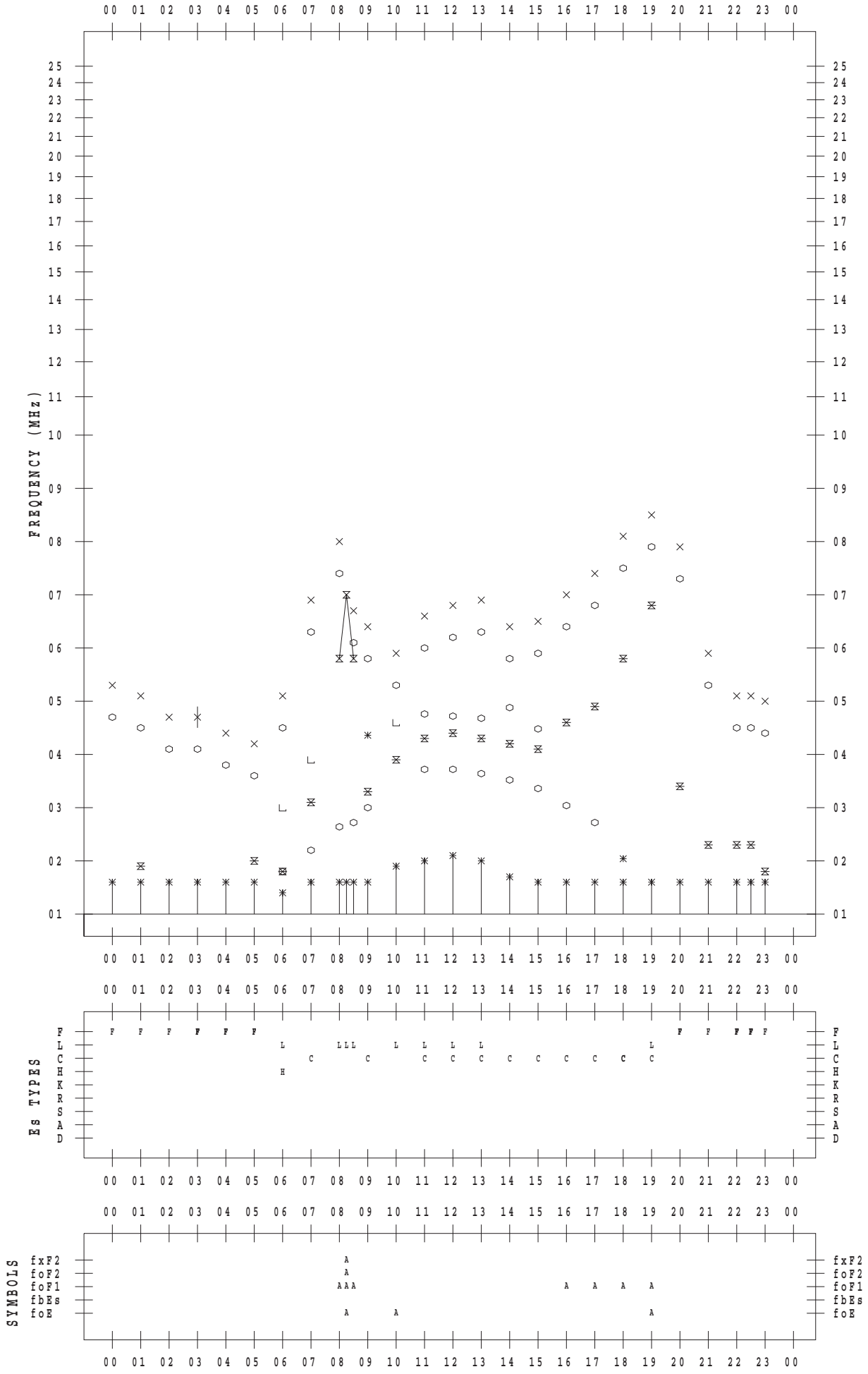
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/16

135 °E MEAN TIME



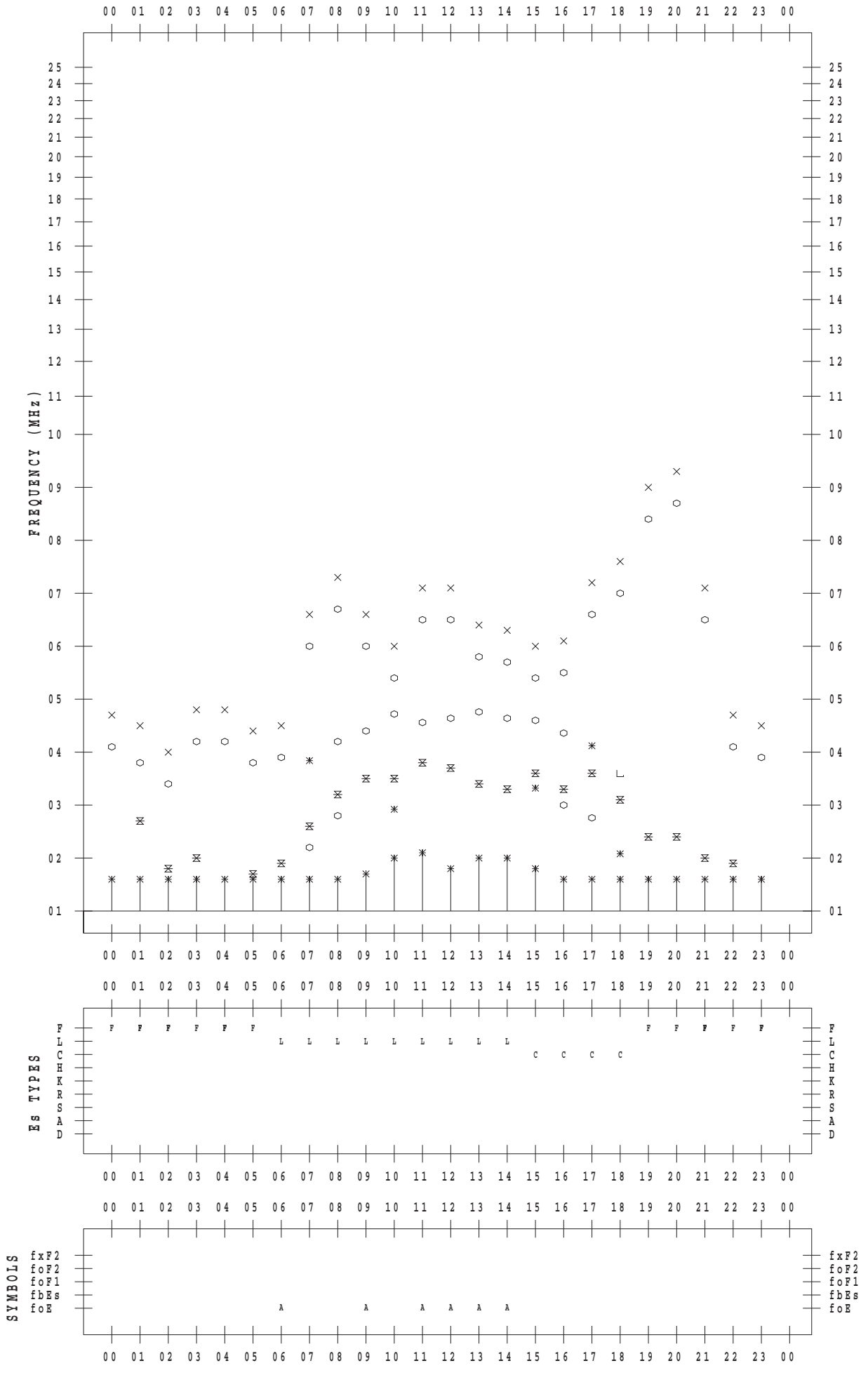
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/17

135 °E MEAN TIME



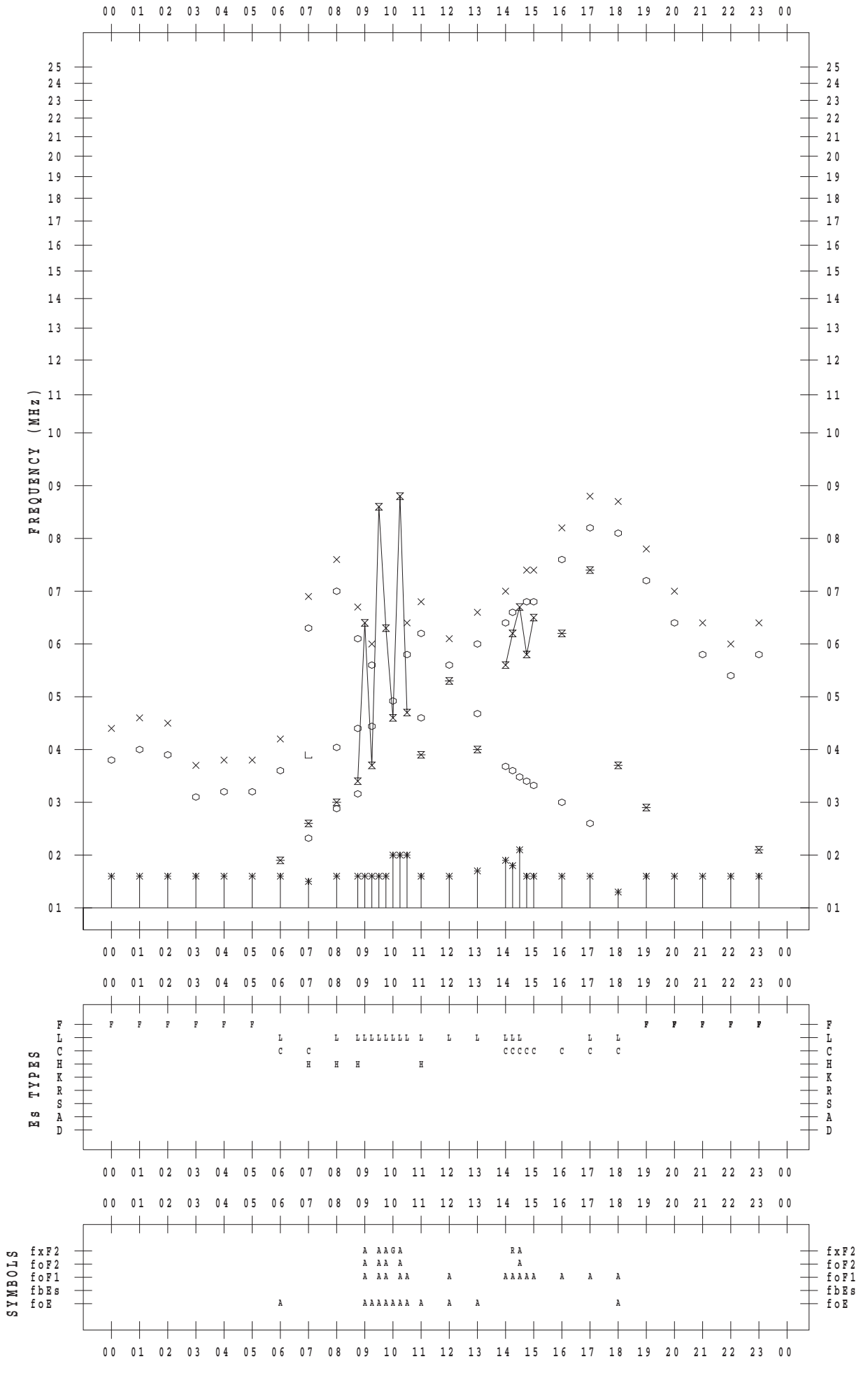
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/18

135 °E MEAN TIME



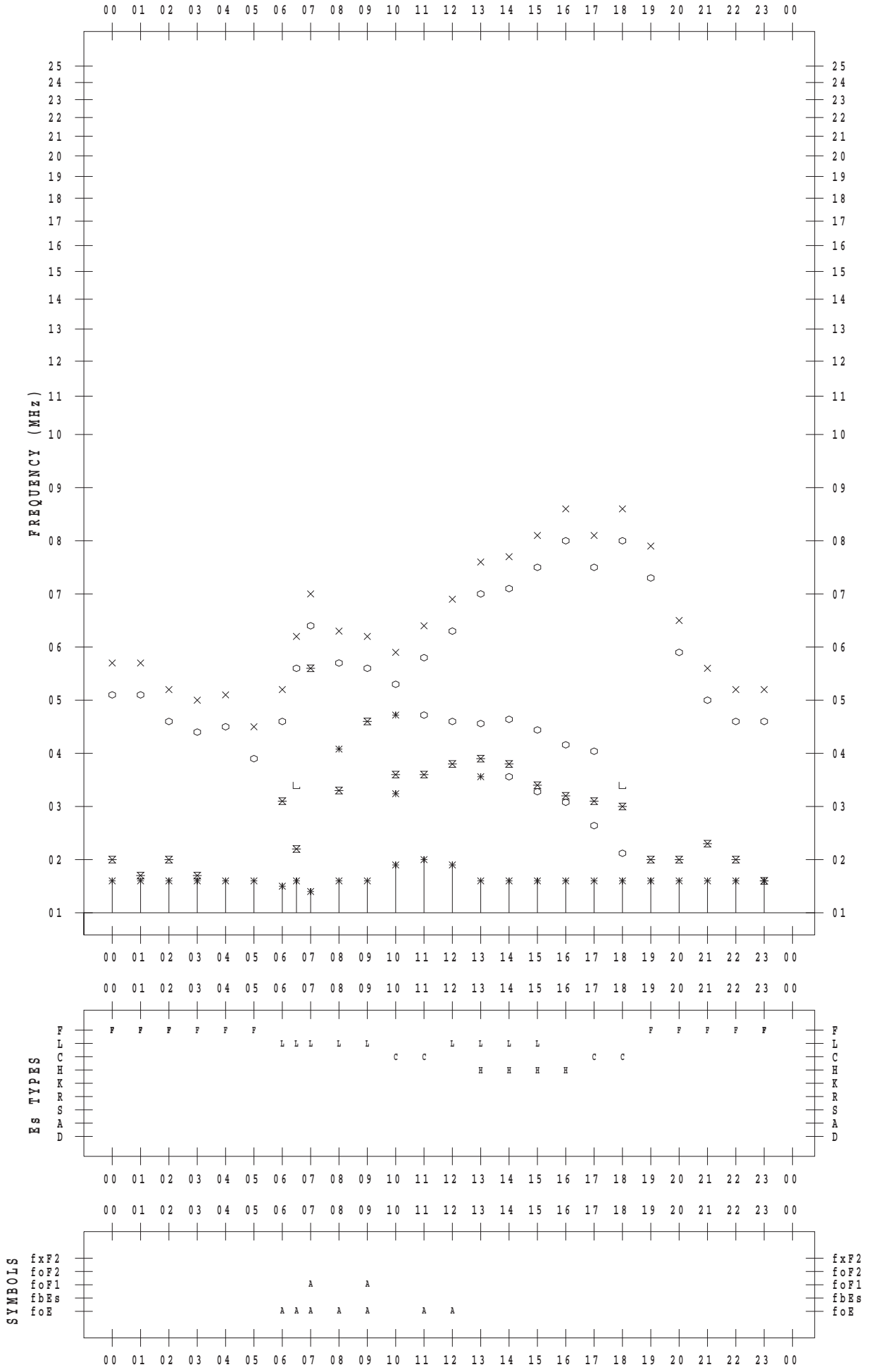
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/19

135 °E MEAN TIME



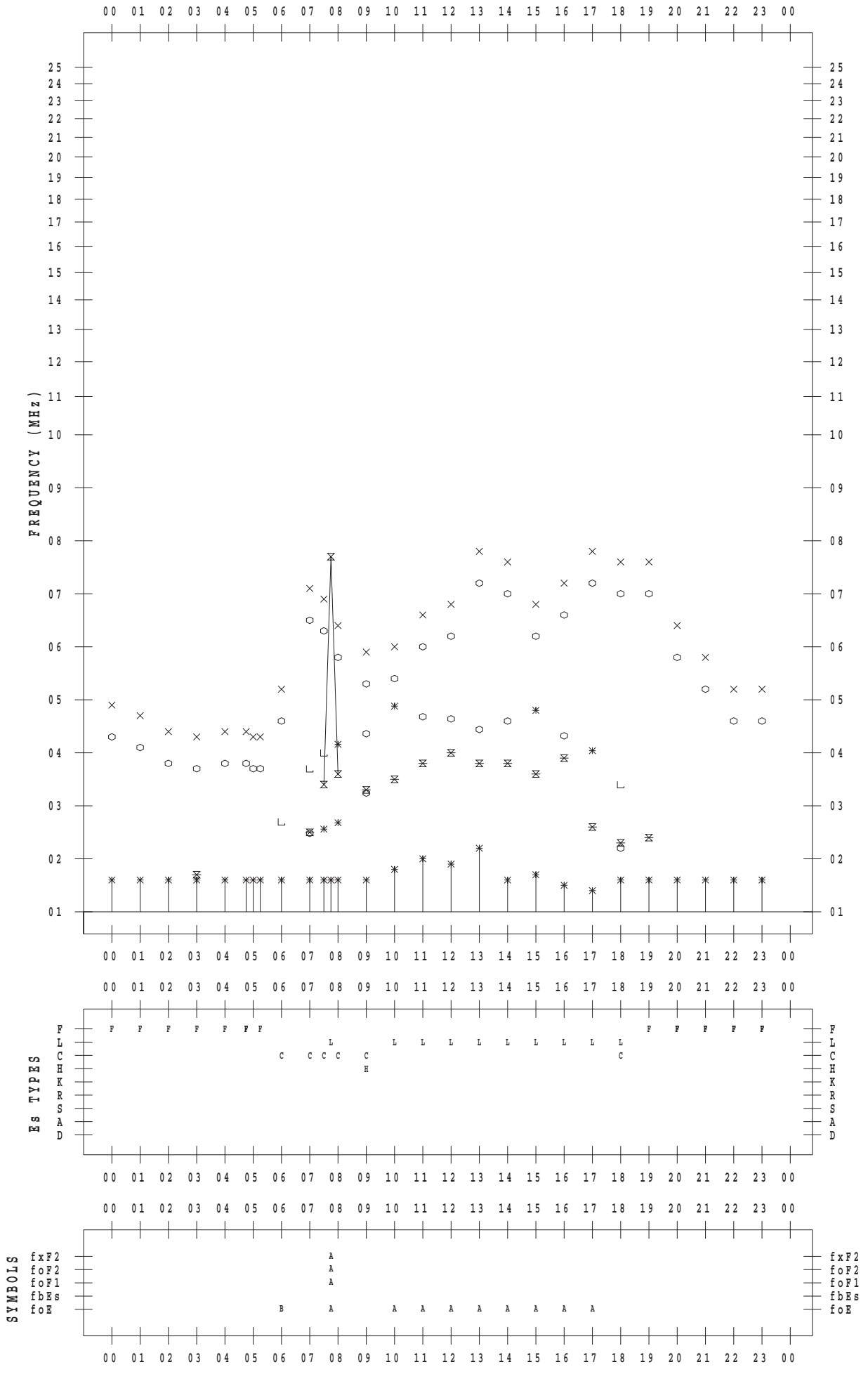
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/20

135 °E MEAN TIME



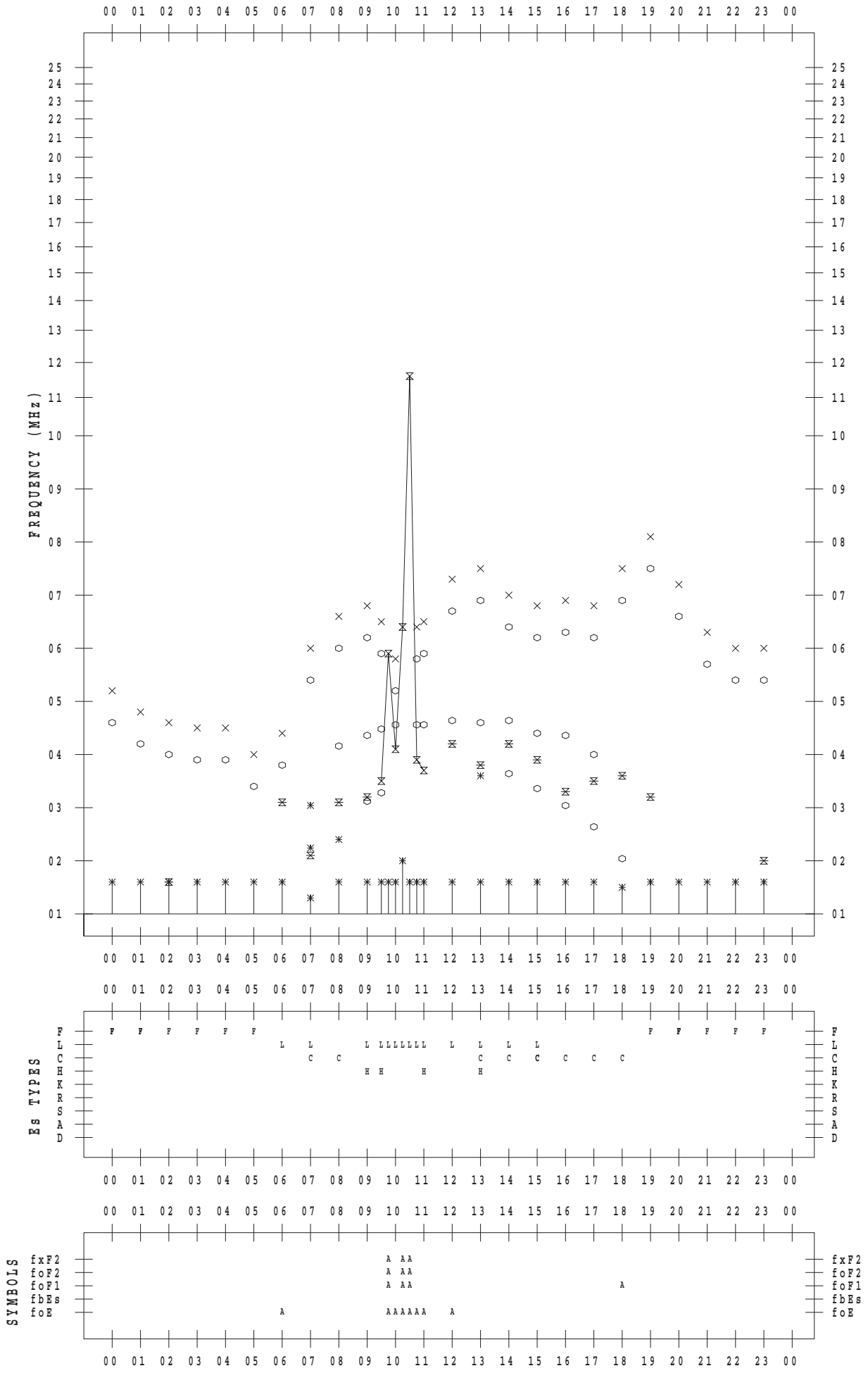
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/21

135 °E MEAN TIME



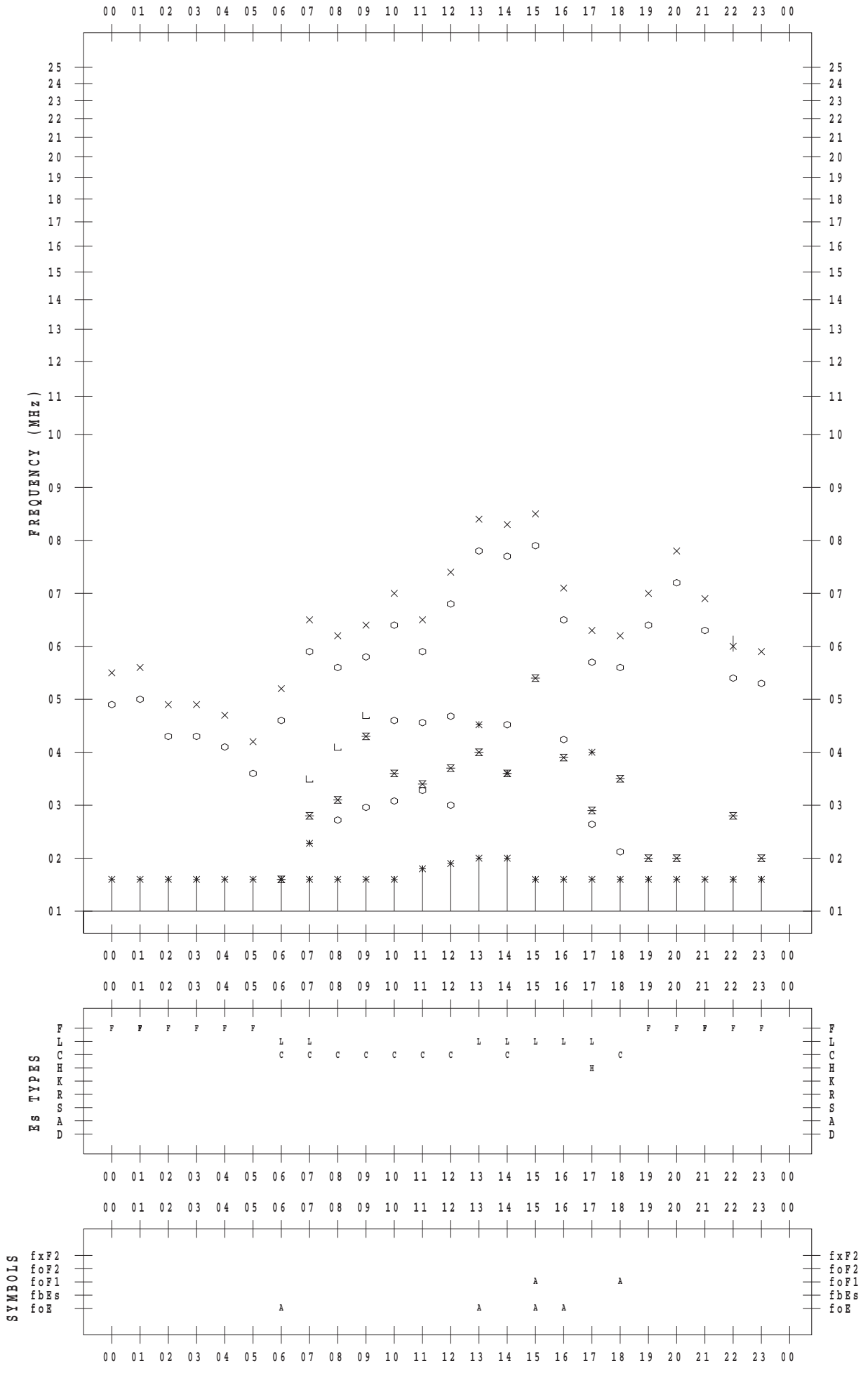
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/22

135 °E MEAN TIME



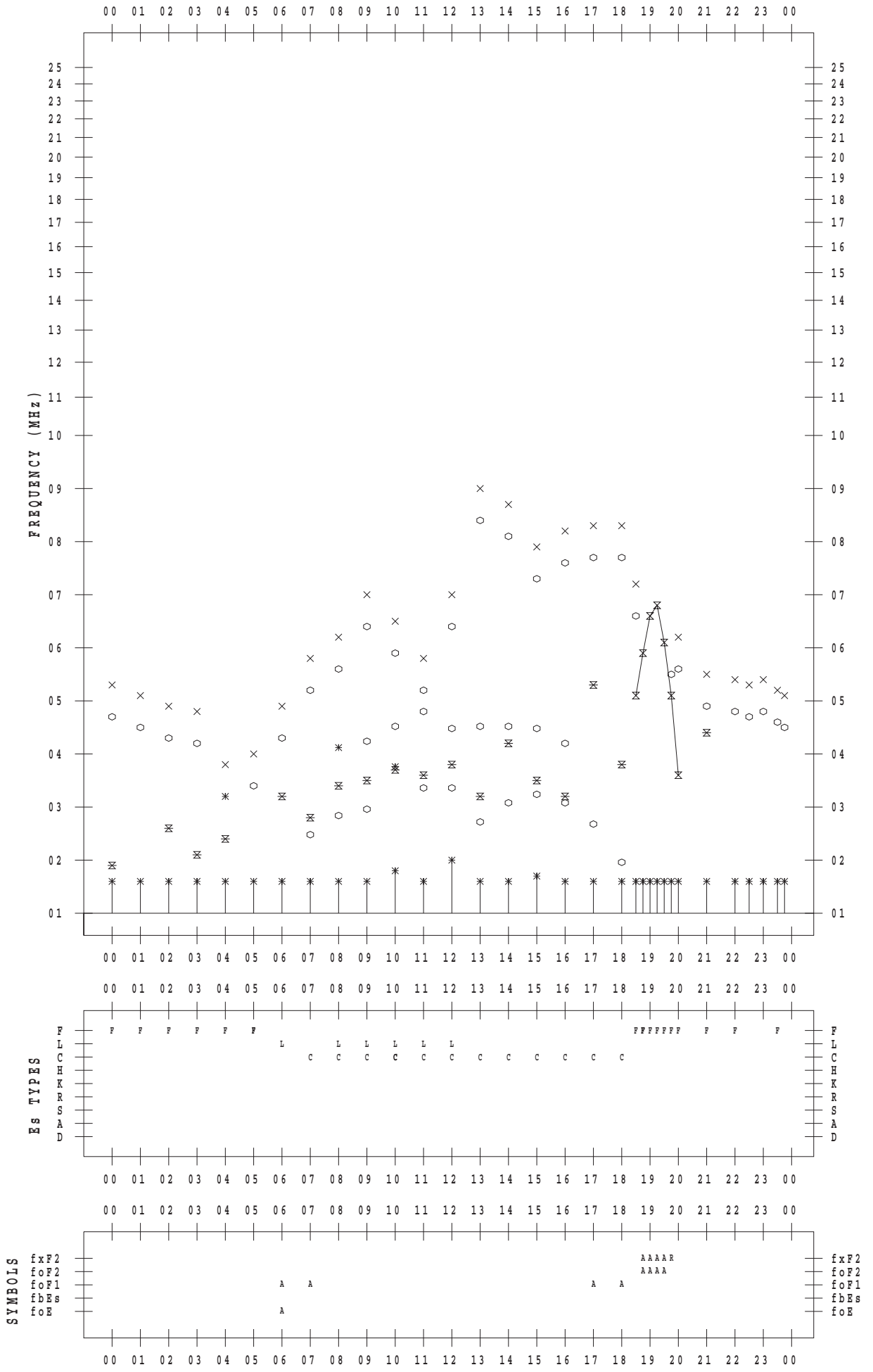
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/23

135 °E MEAN TIME



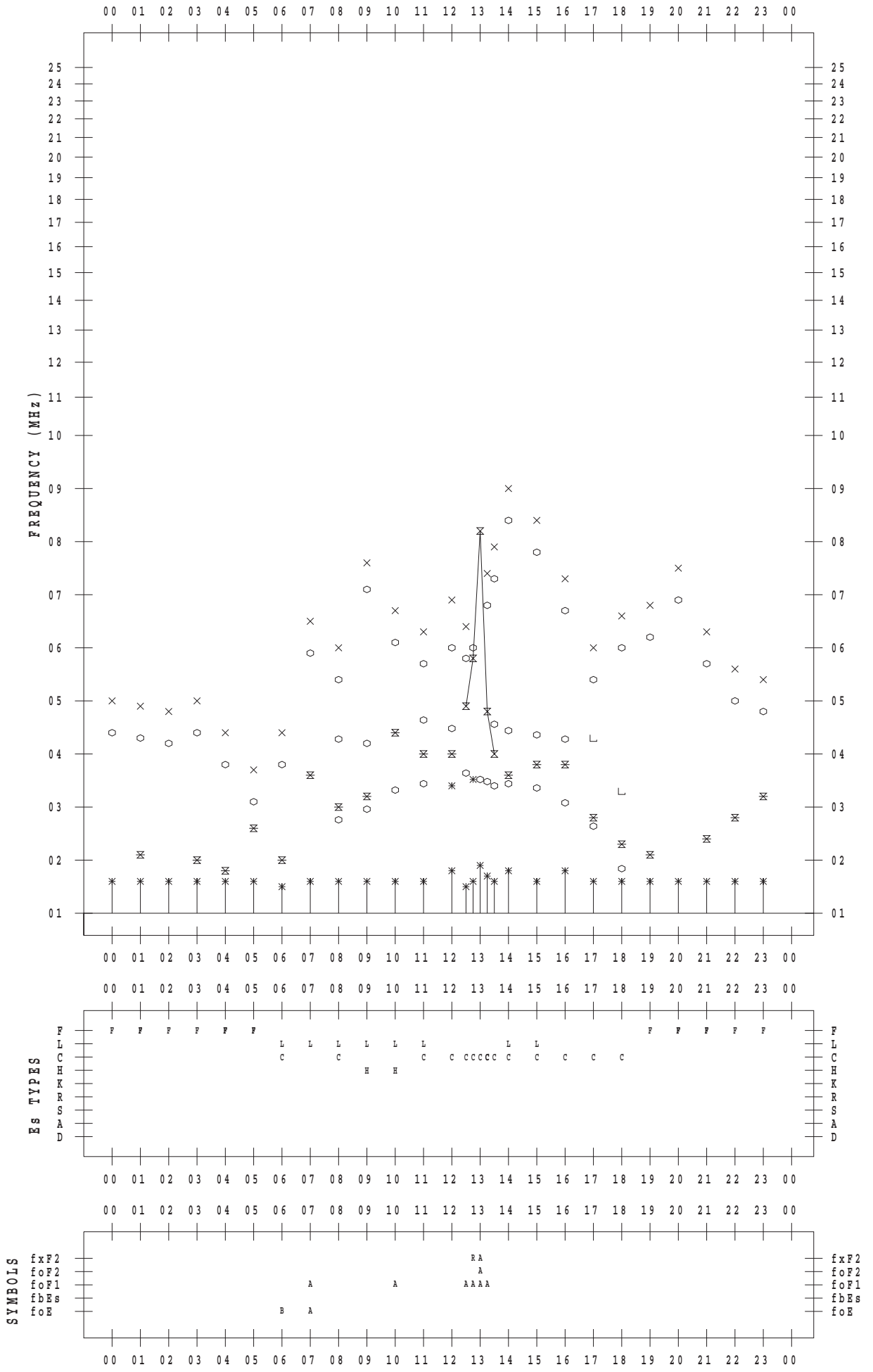
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/24

135 °E MEAN TIME



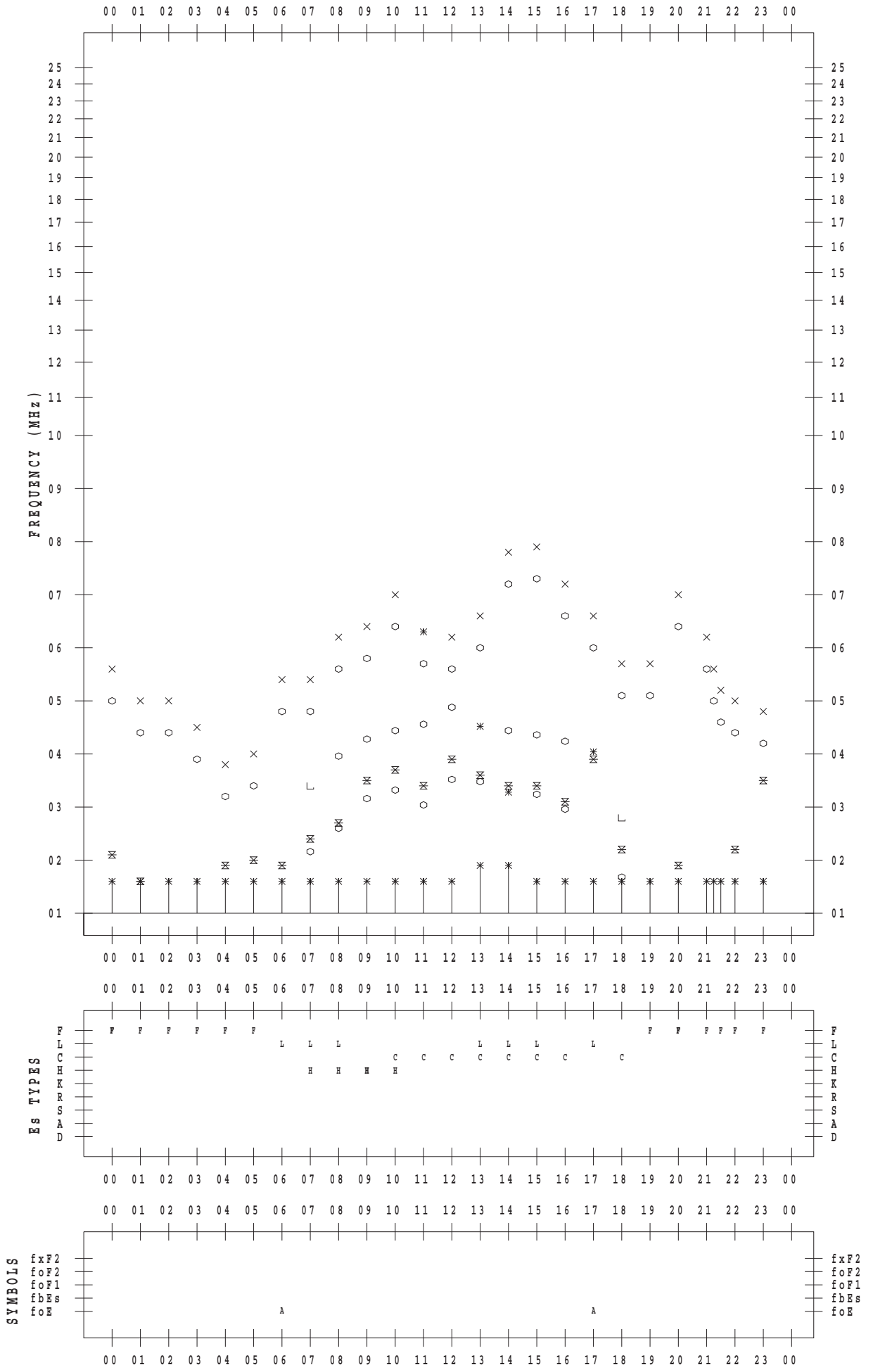
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/25

135 °E MEAN TIME



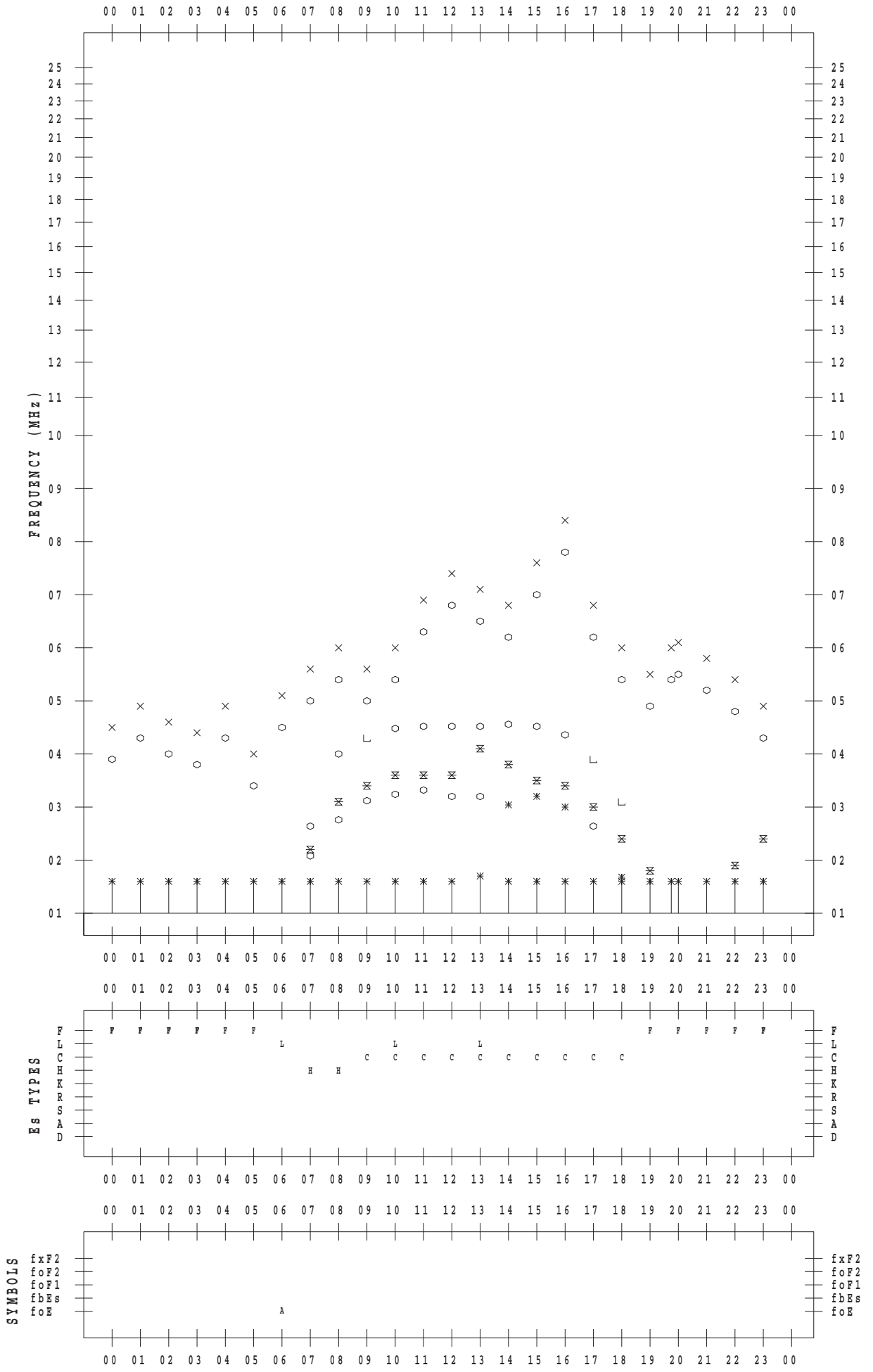
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/26

135 °E MEAN TIME



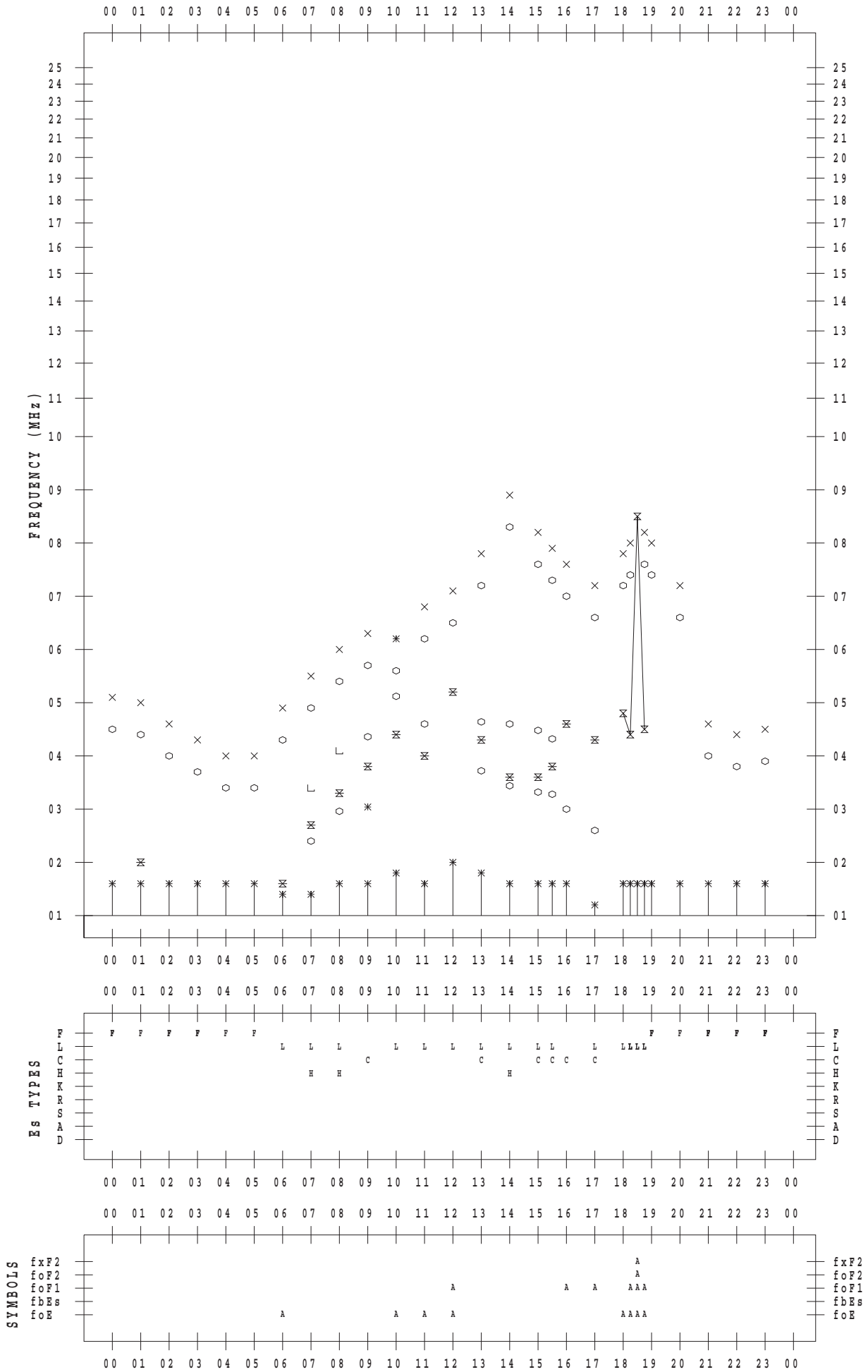
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/27

135 °E MEAN TIME



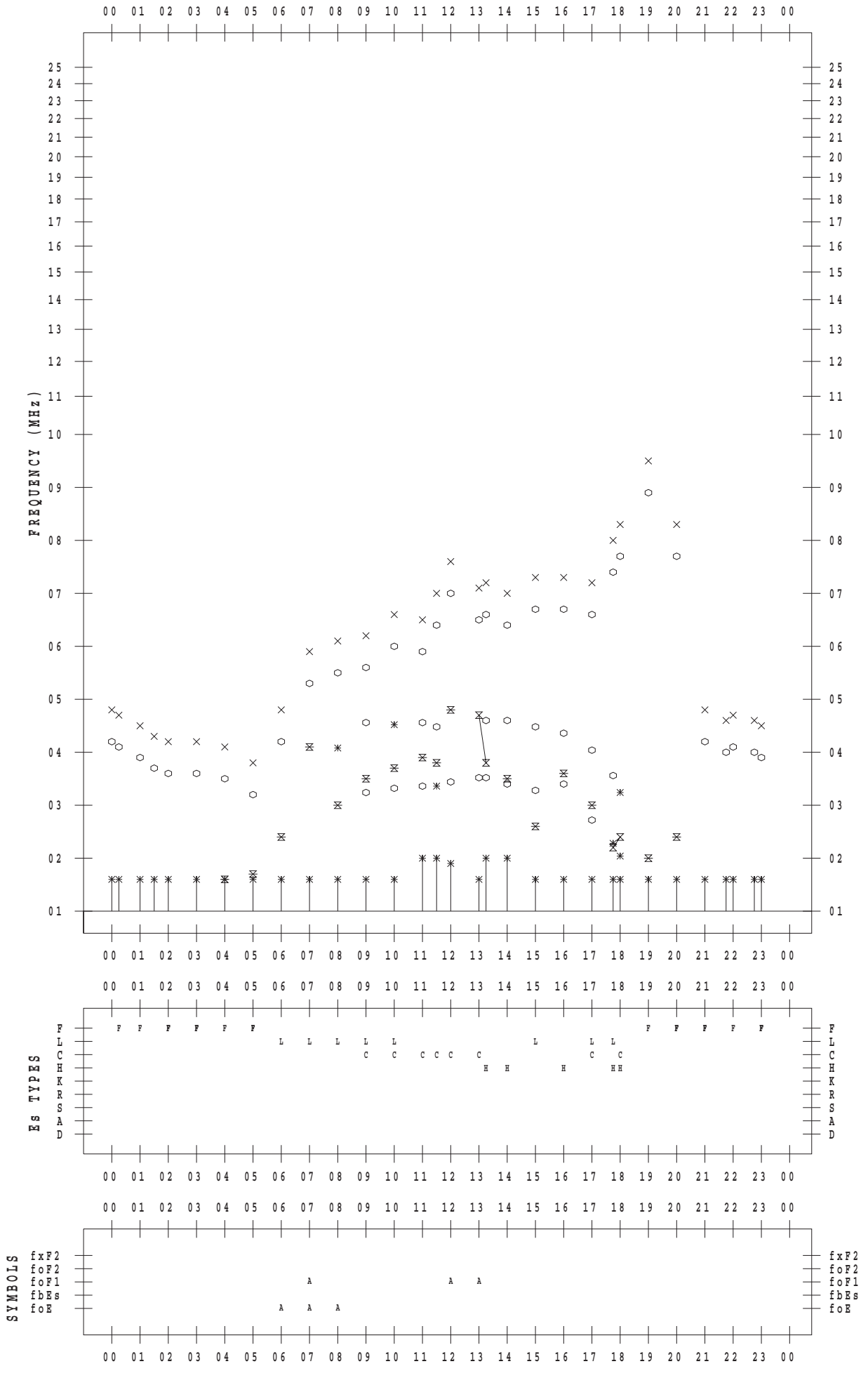
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/28

135 °E MEAN TIME



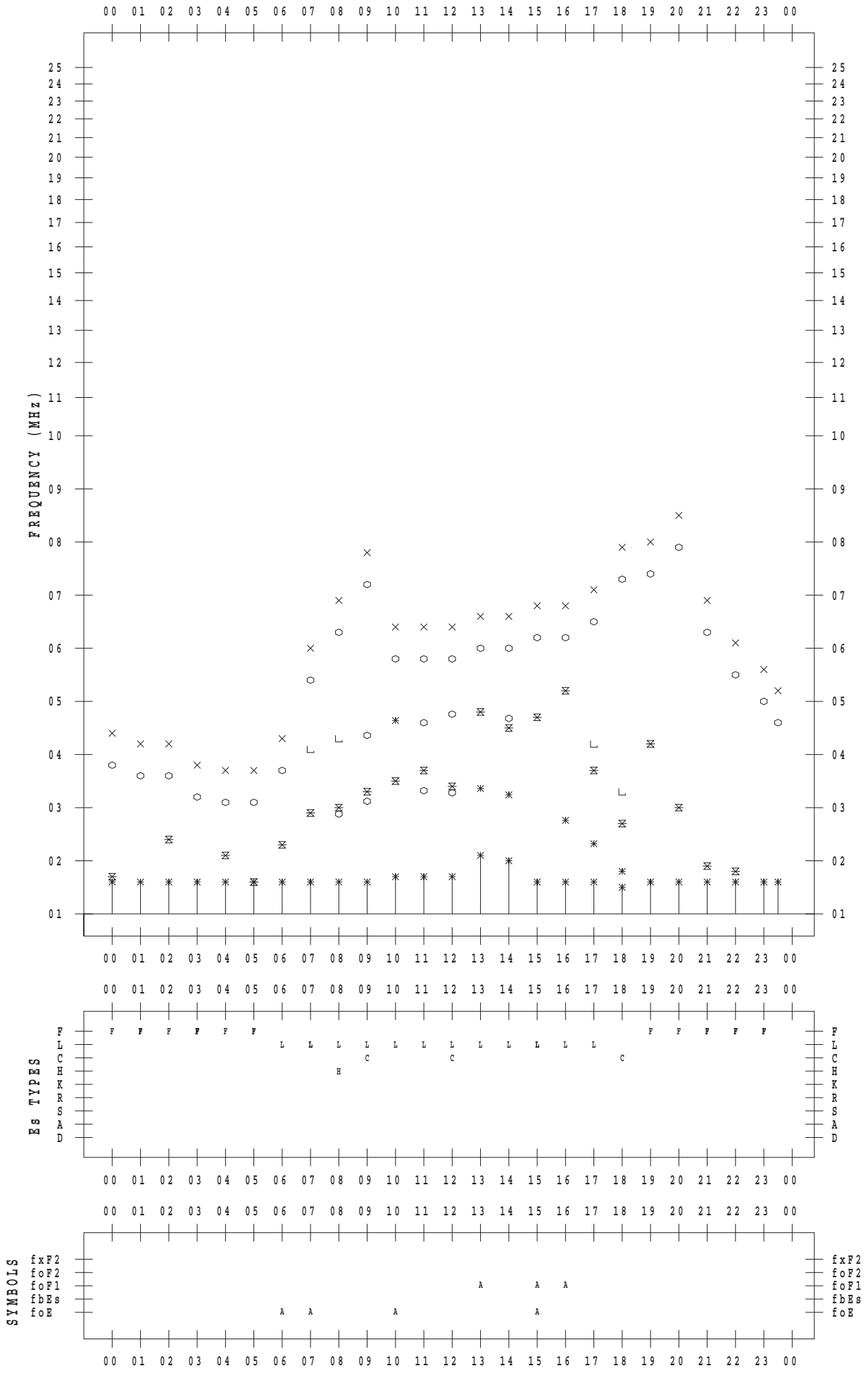
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/29

135 °E MEAN TIME



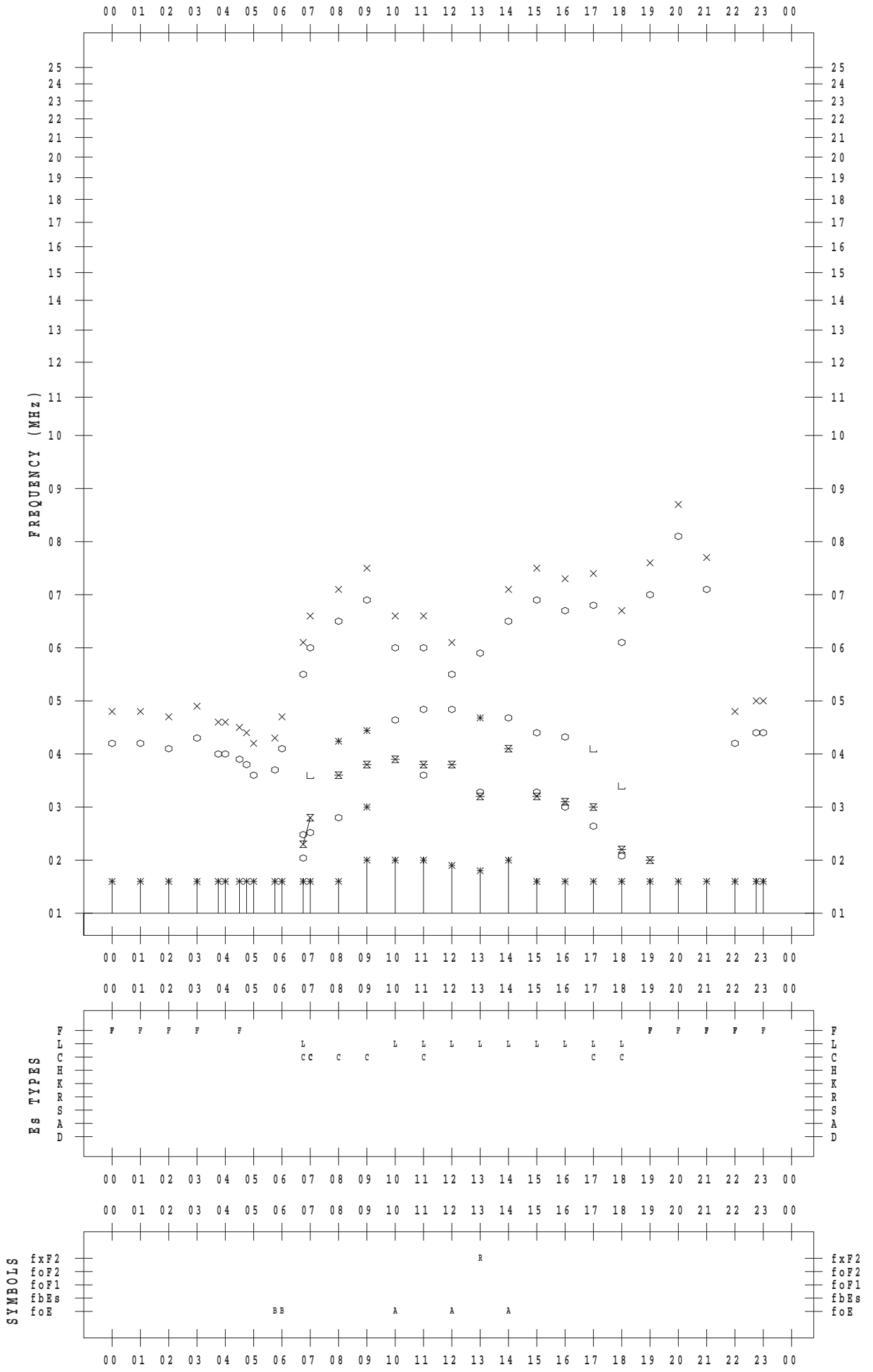
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/30

135 °E MEAN TIME



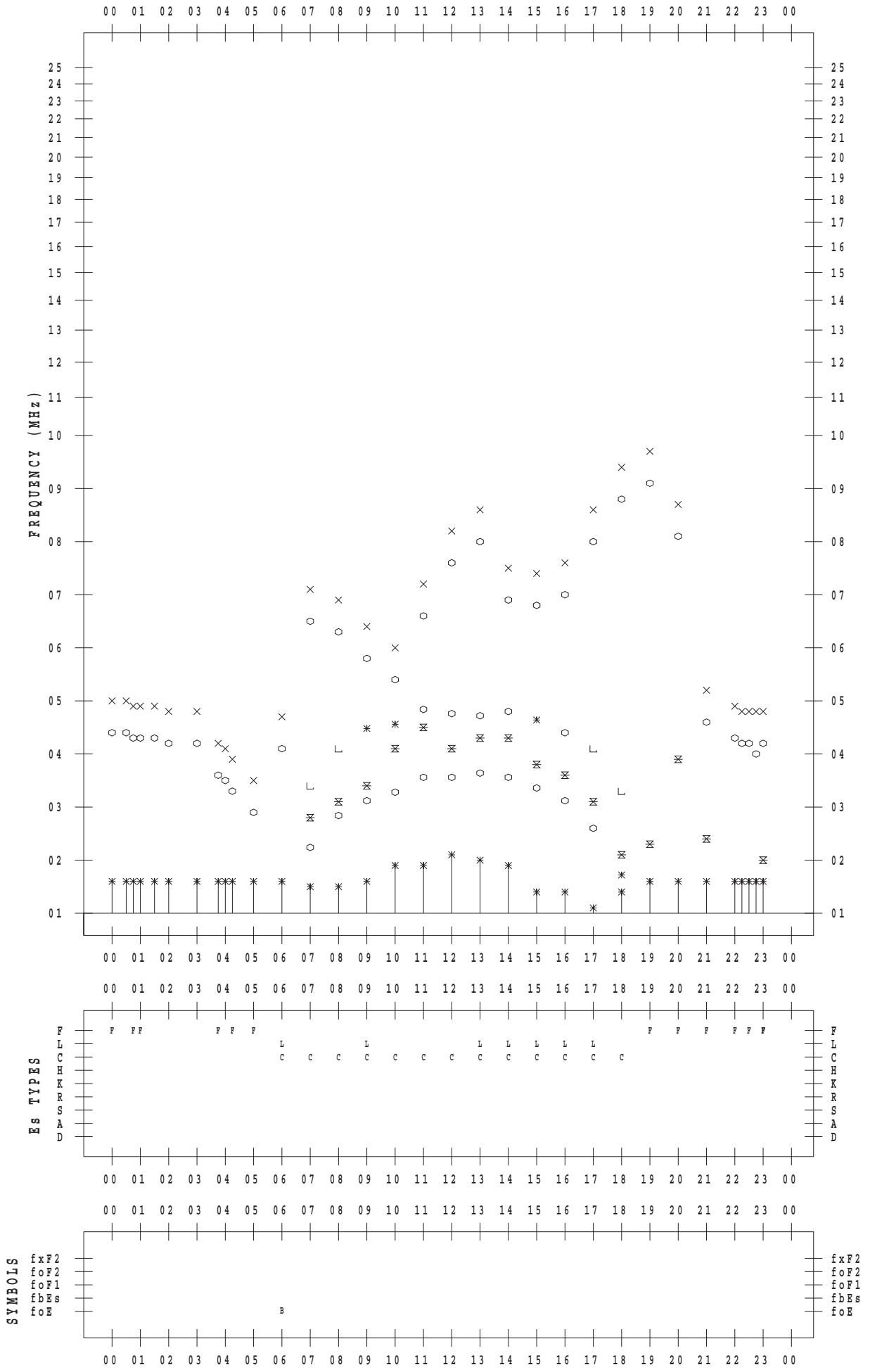
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2016/ 8/31

135 °E MEAN TIME



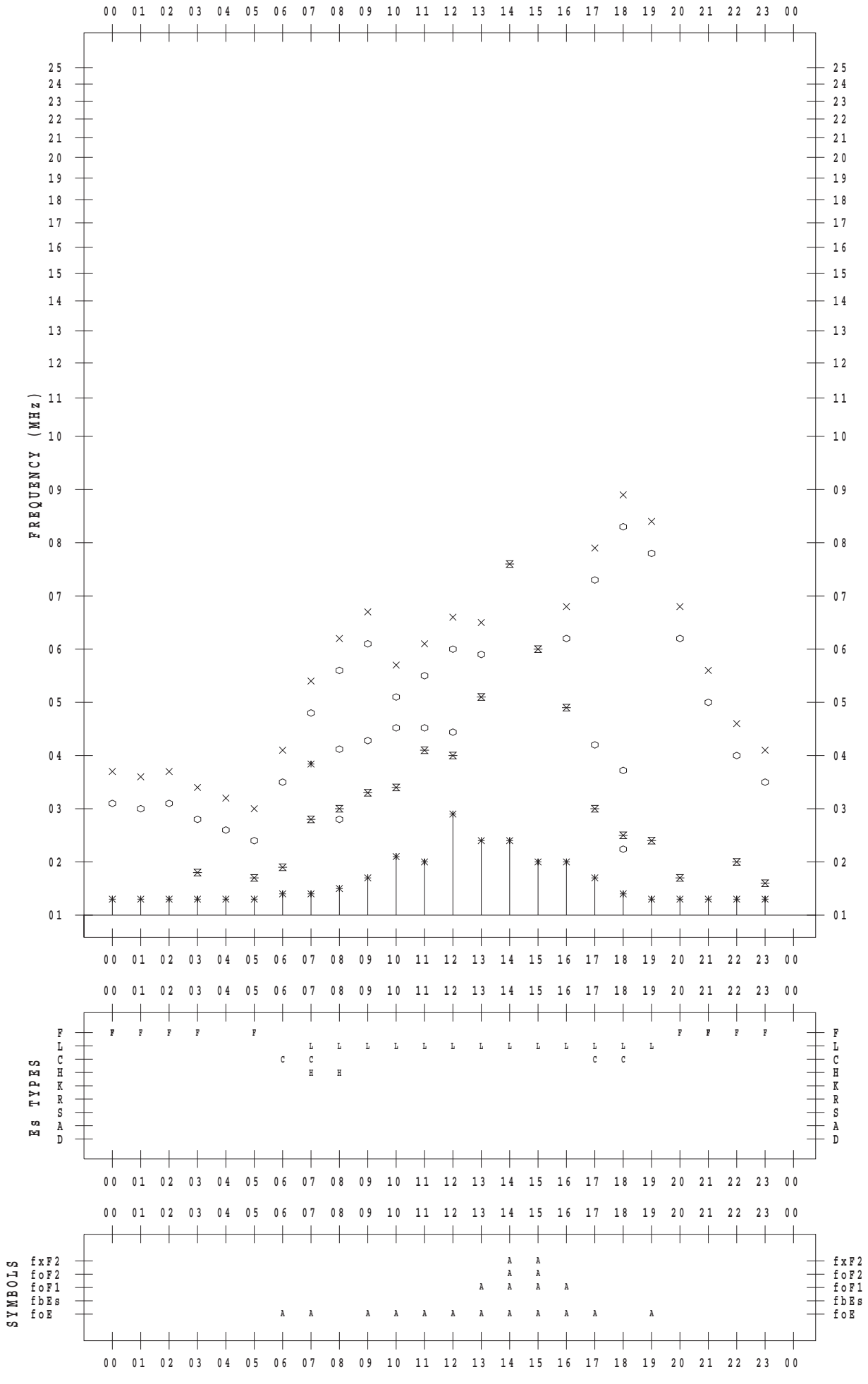
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 1

135 °E MEAN TIME



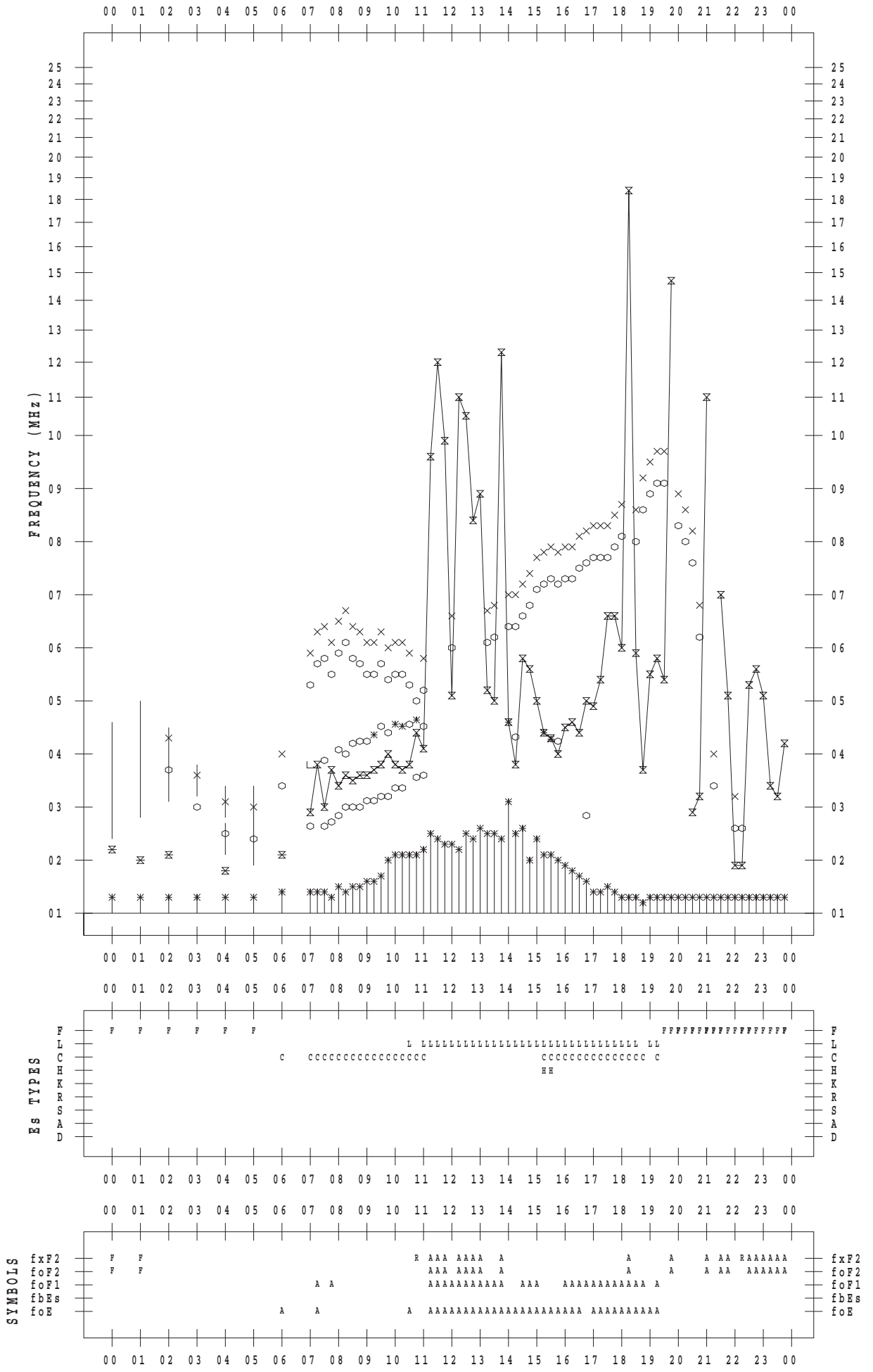
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 2

135 °E MEAN TIME



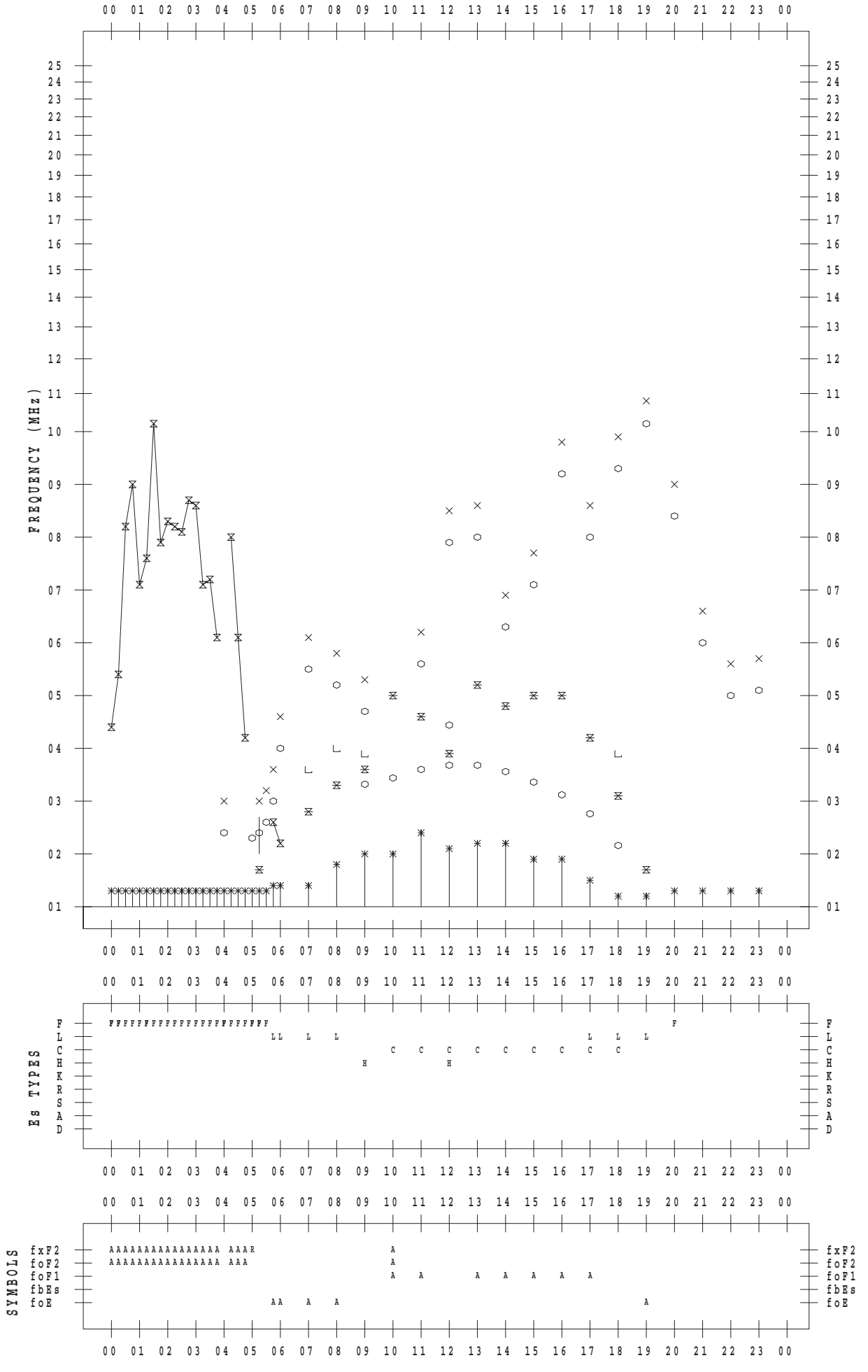
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 3

135 °E MEAN TIME



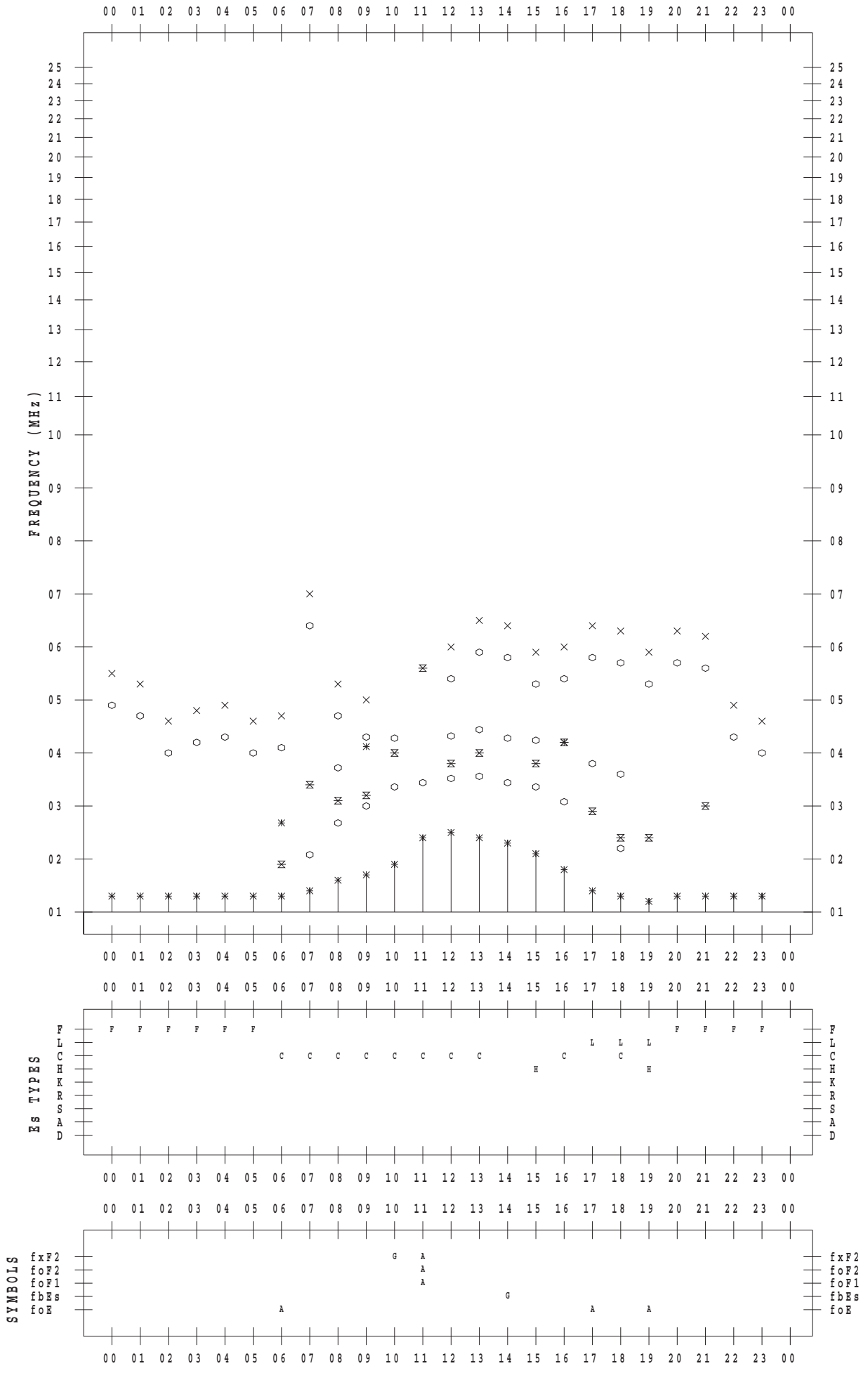
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 4

135 °E MEAN TIME



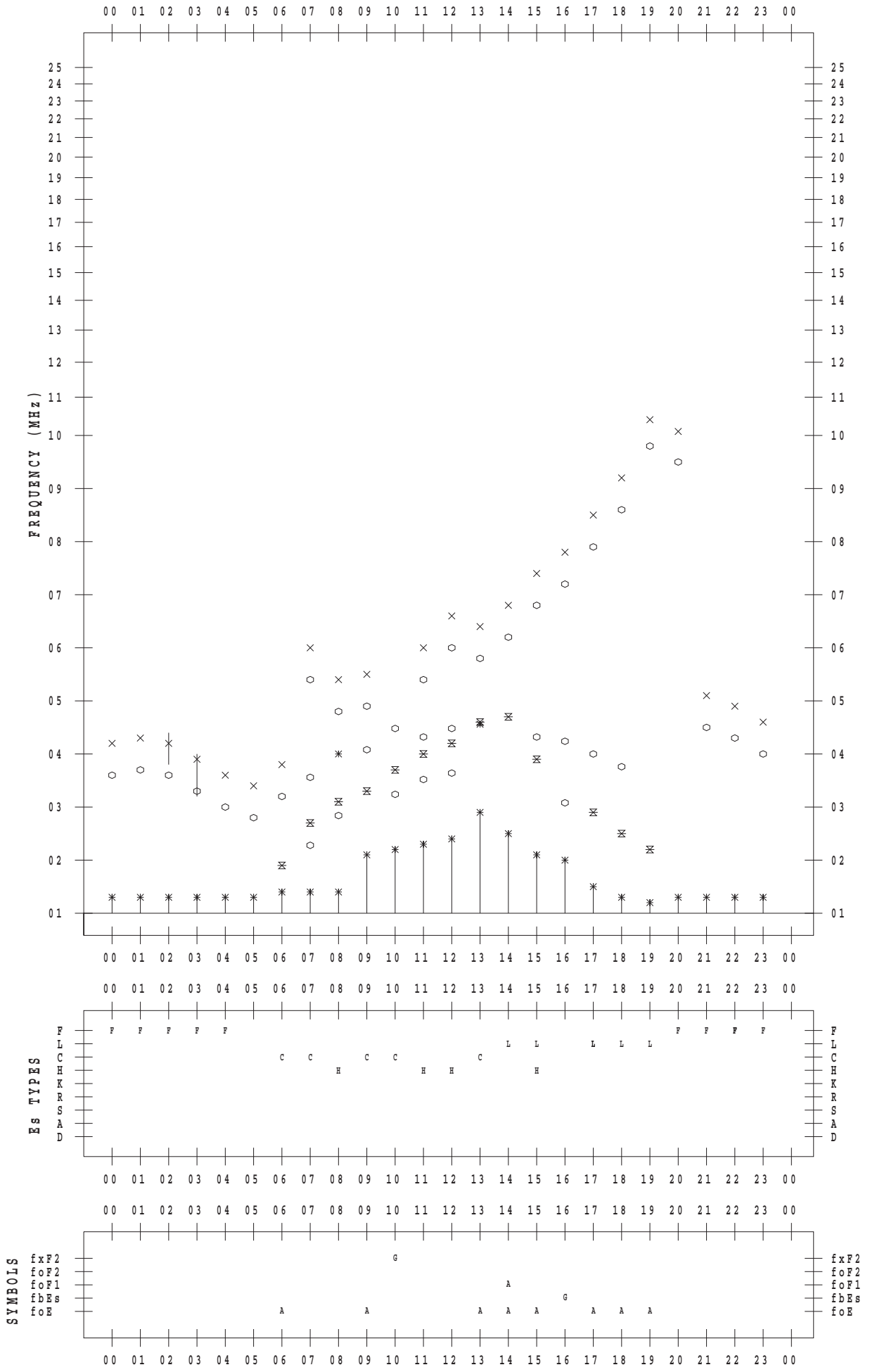
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 5

135 °E MEAN TIME



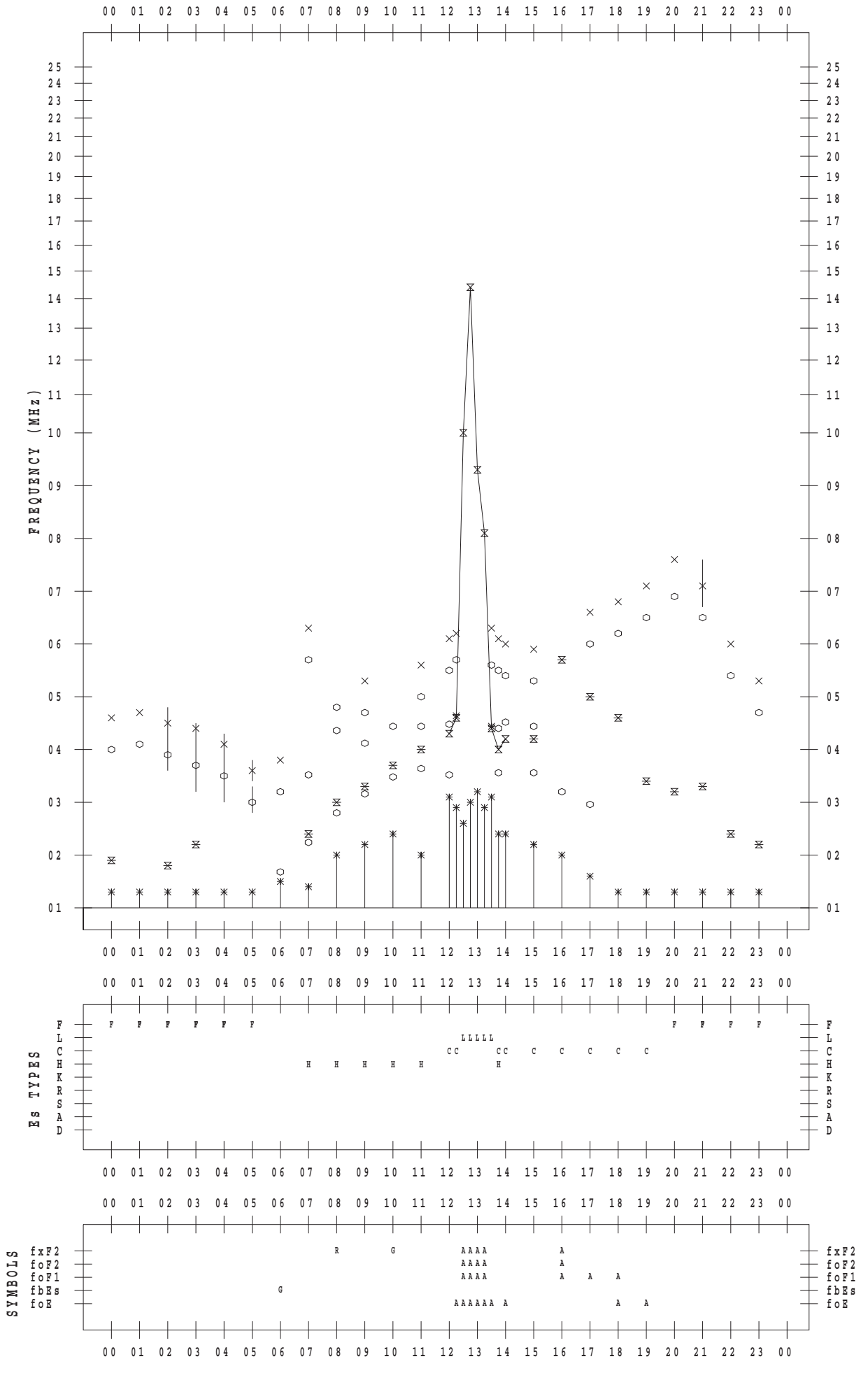
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 6

135 °E MEAN TIME



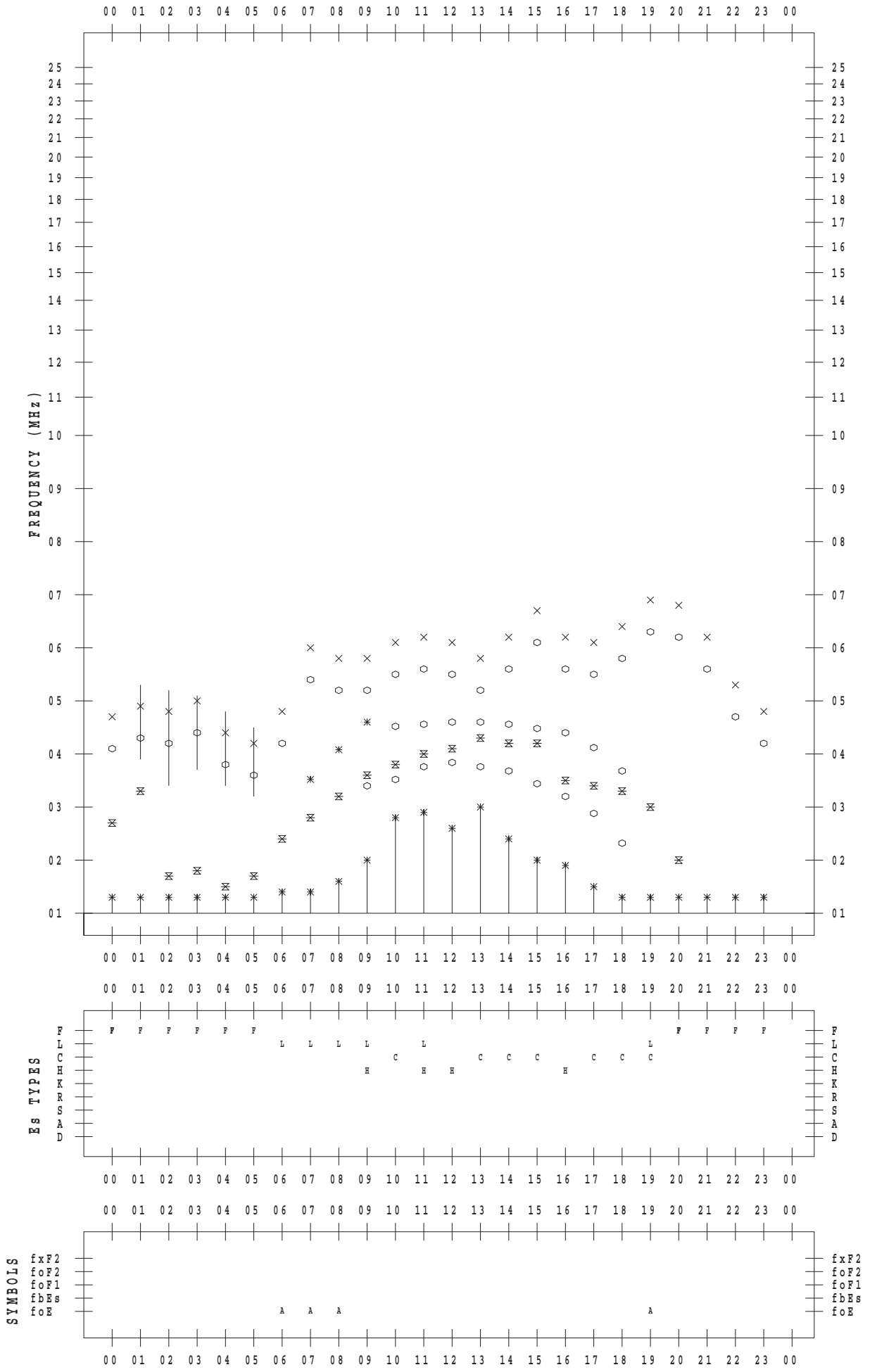
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 7

135 °E MEAN TIME



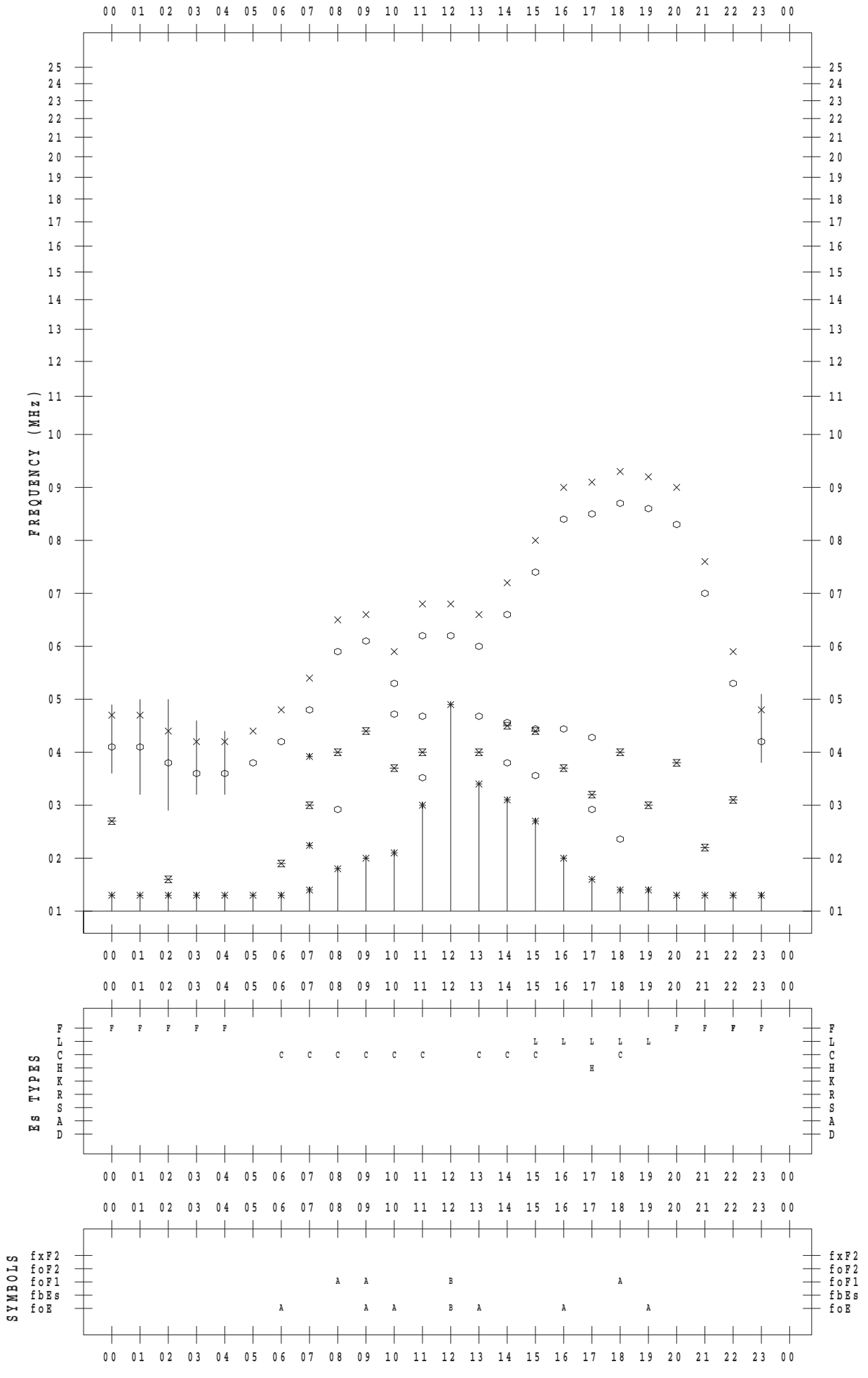
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 8

135 °E MEAN TIME



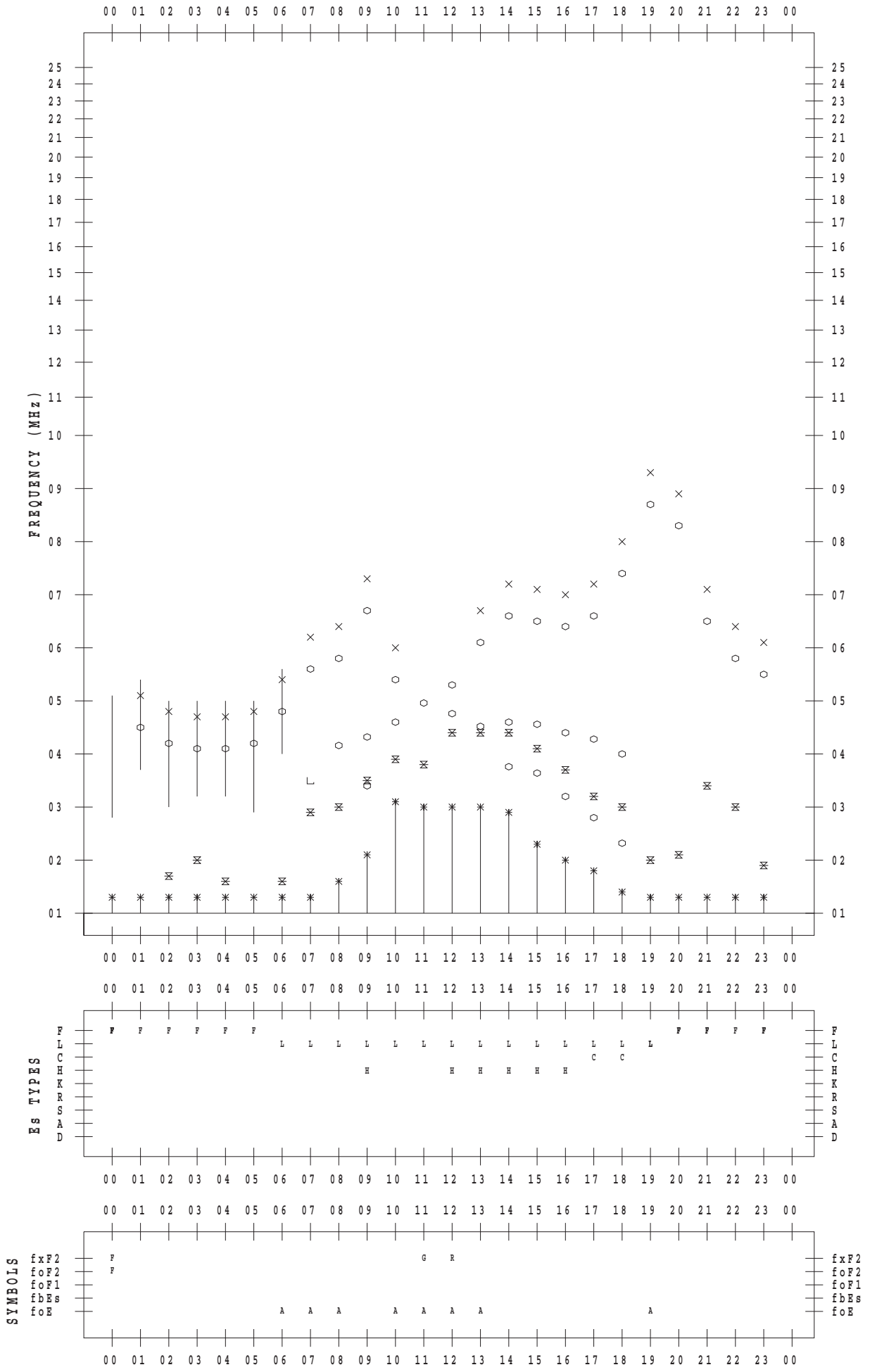
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/ 9

135 °E MEAN TIME



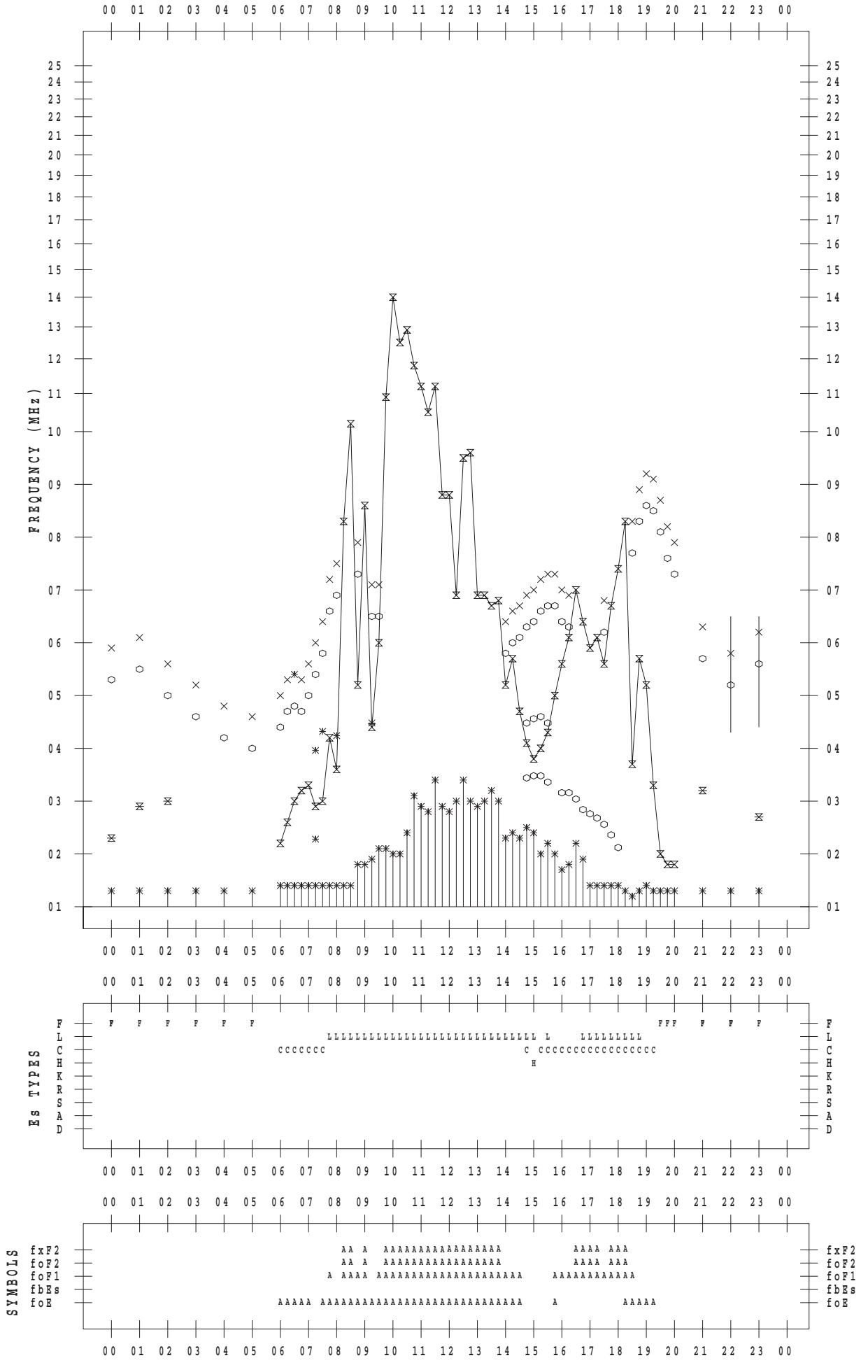
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/10

135 °E MEAN TIME



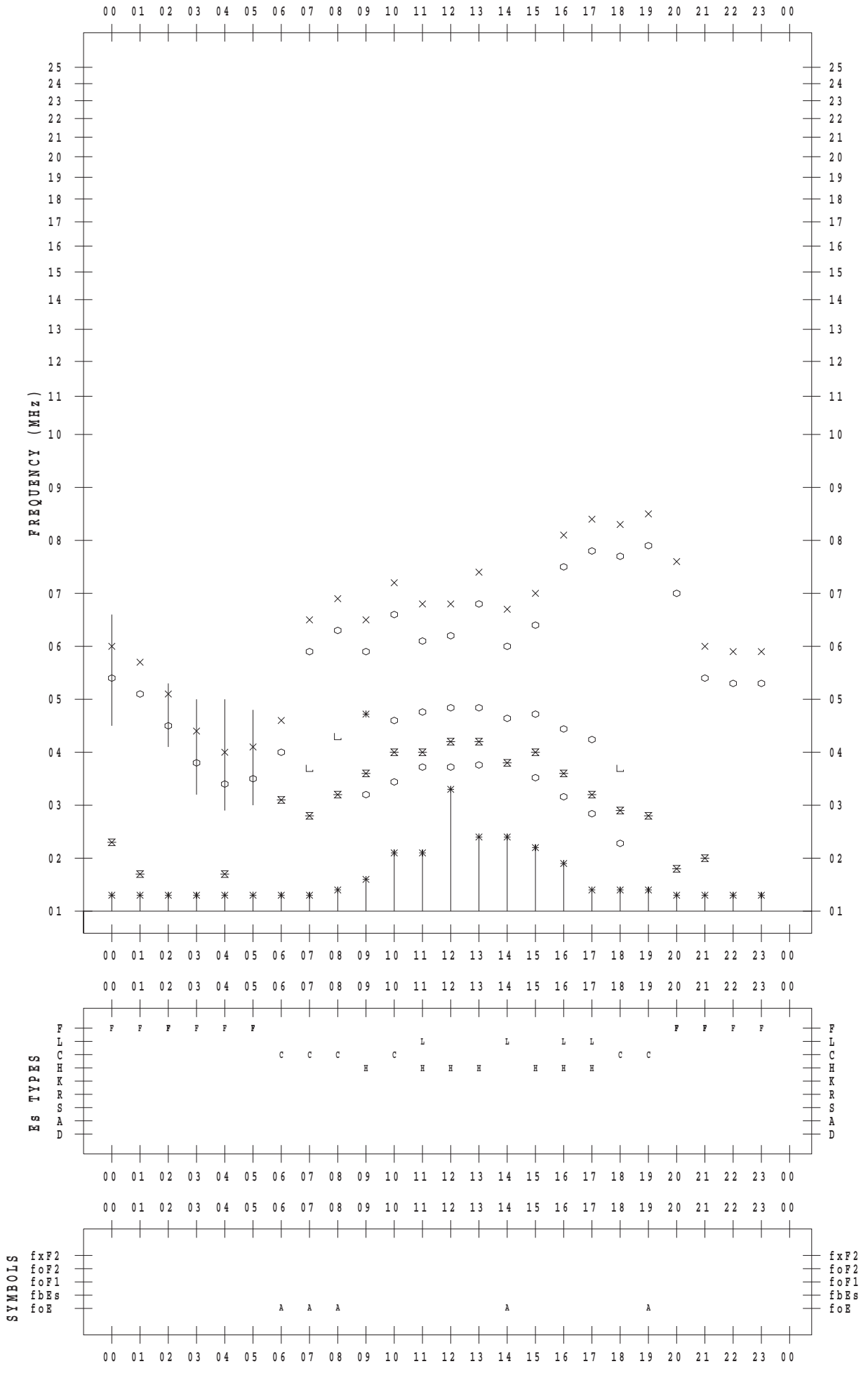
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/11

135 °E MEAN TIME



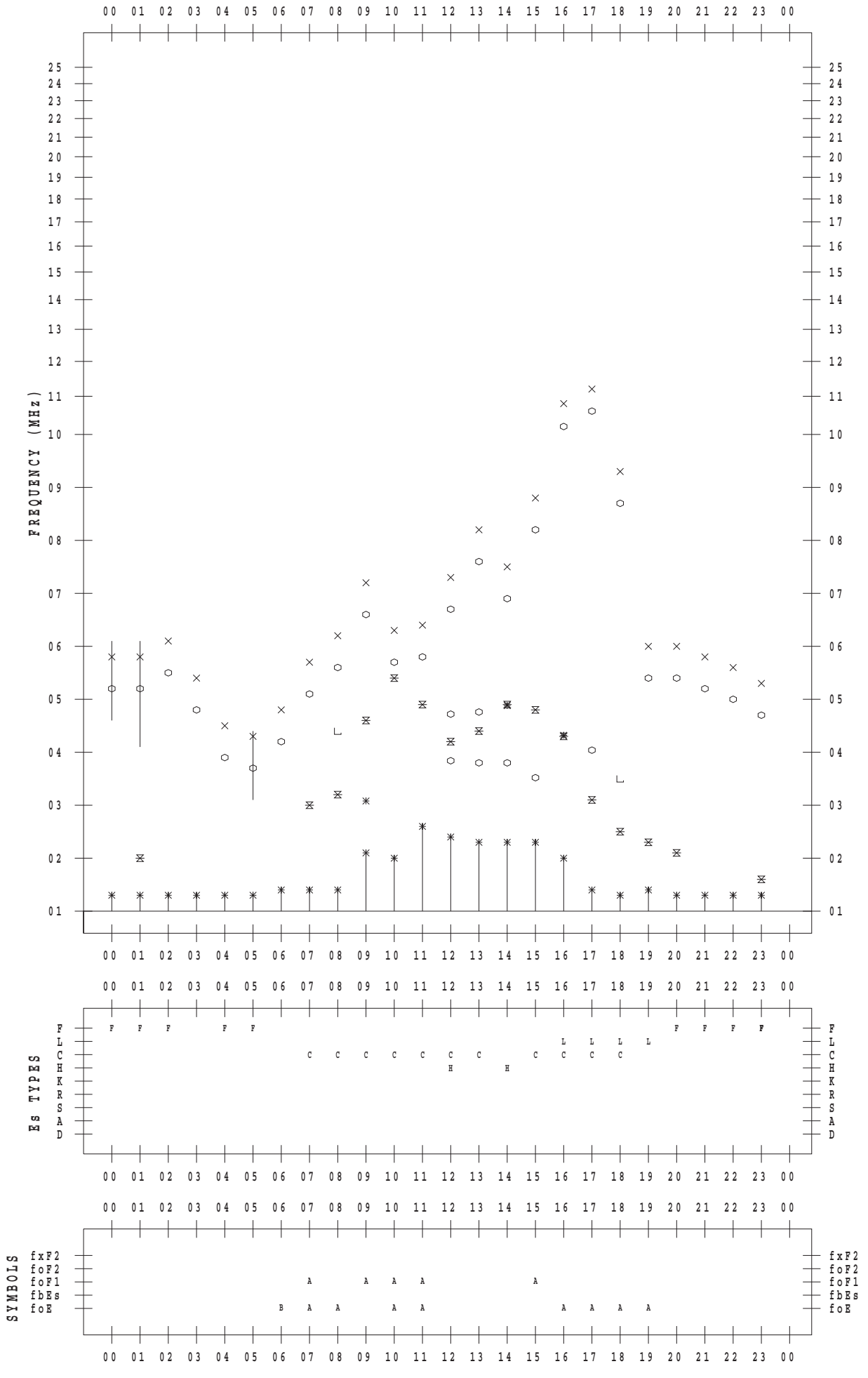
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/12

135 °E MEAN TIME



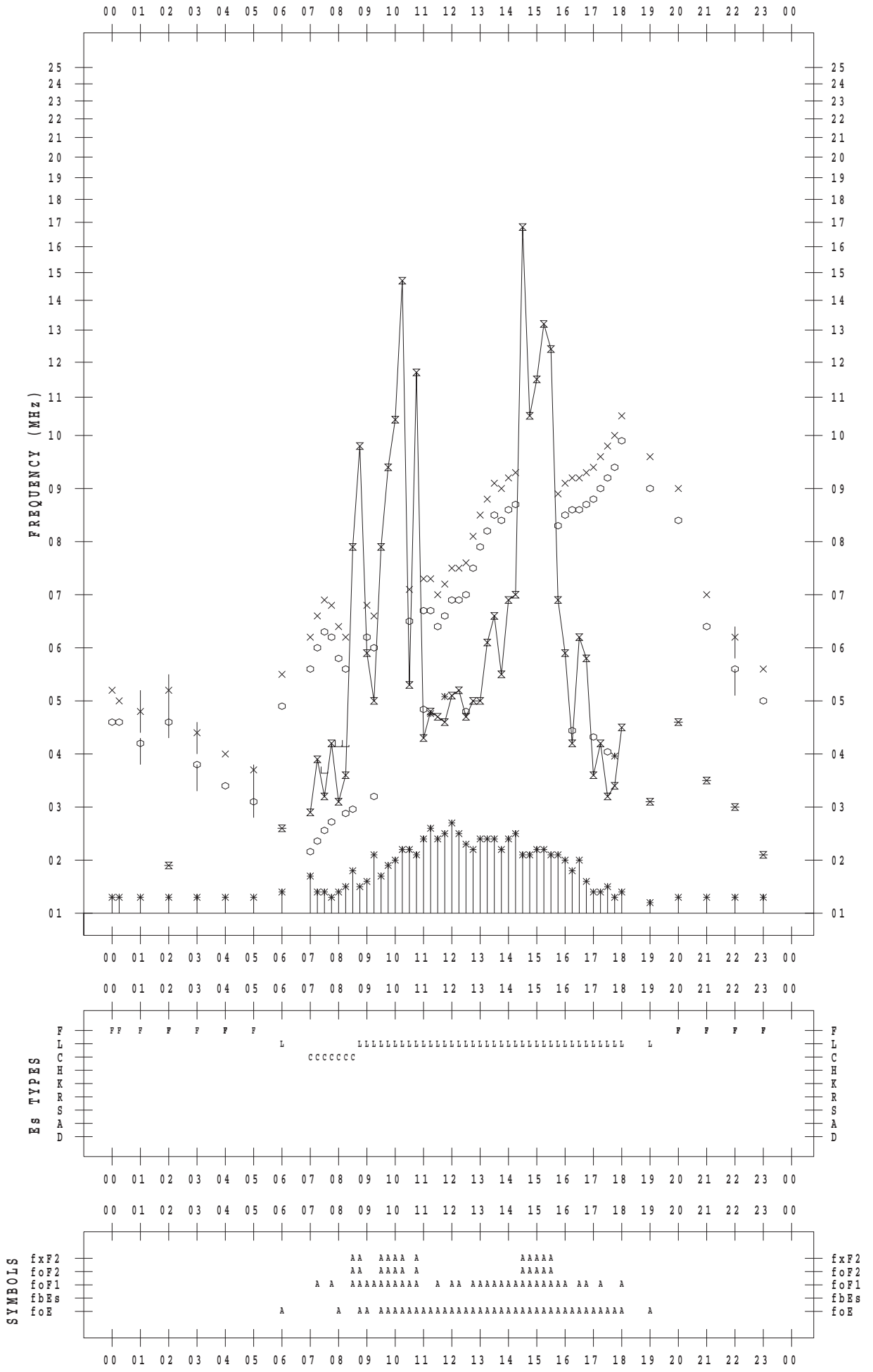
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/13

135 °E MEAN TIME



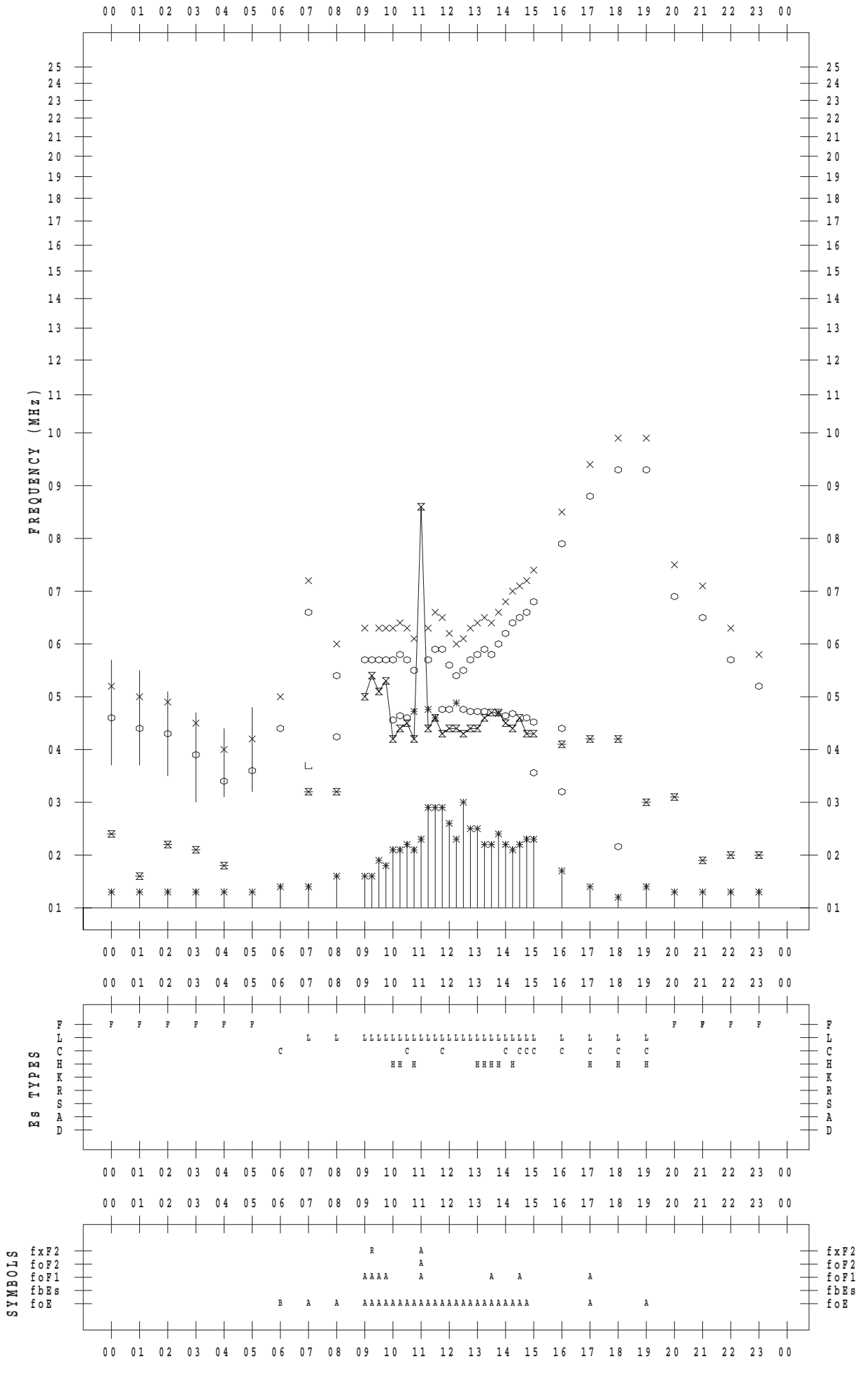
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/14

135 °E MEAN TIME



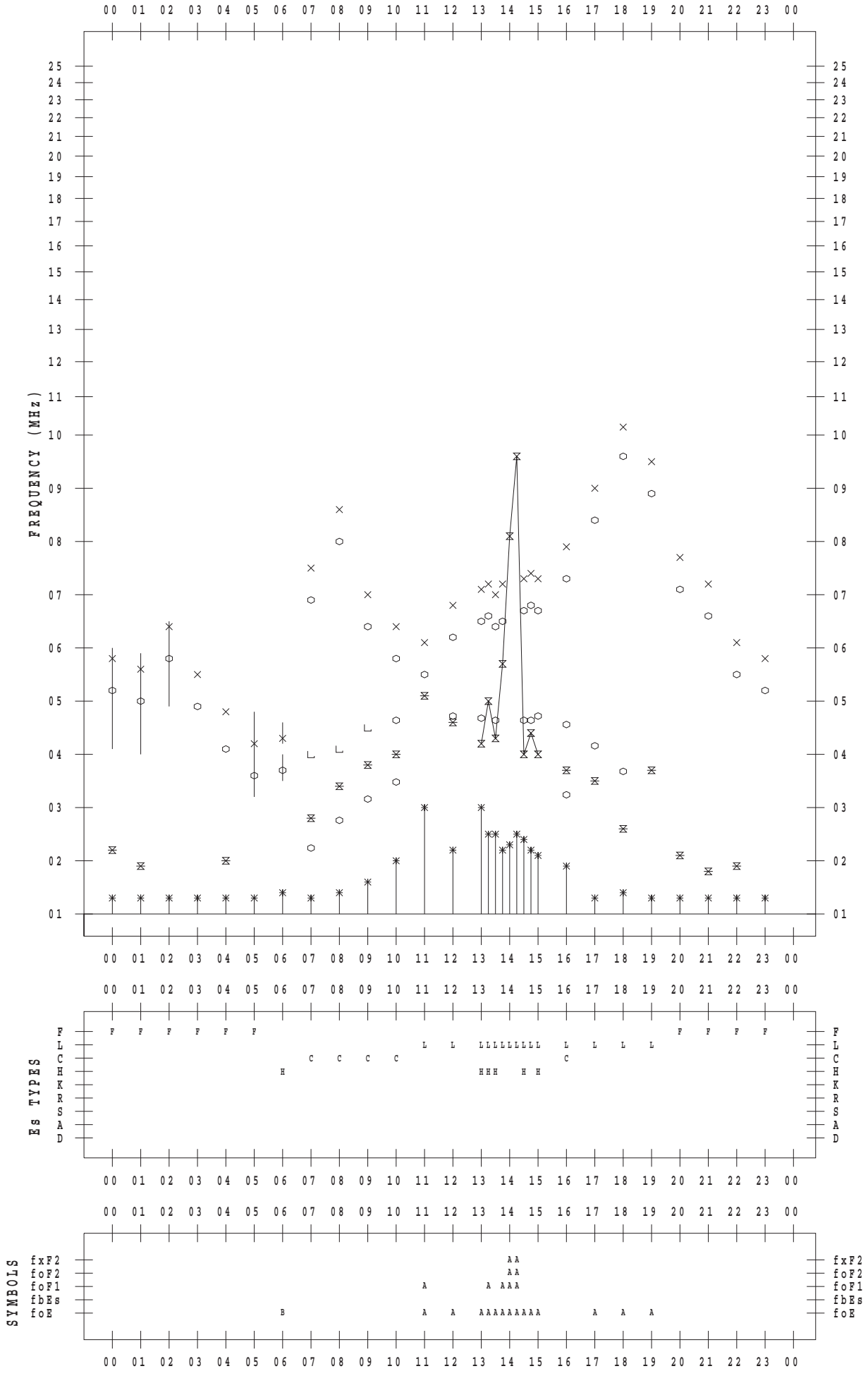
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/15

135 °E MEAN TIME



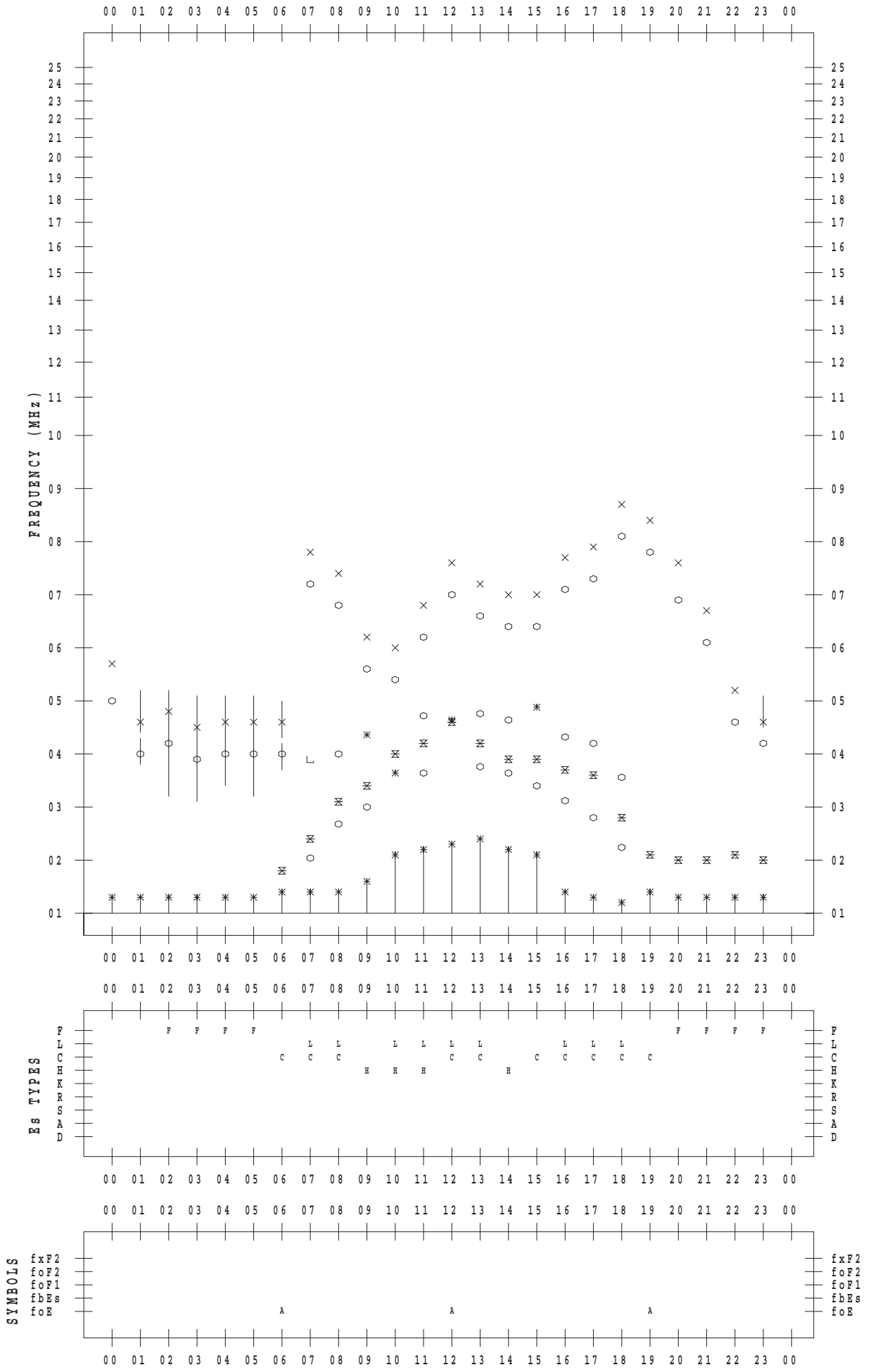
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/16

135 °E MEAN TIME



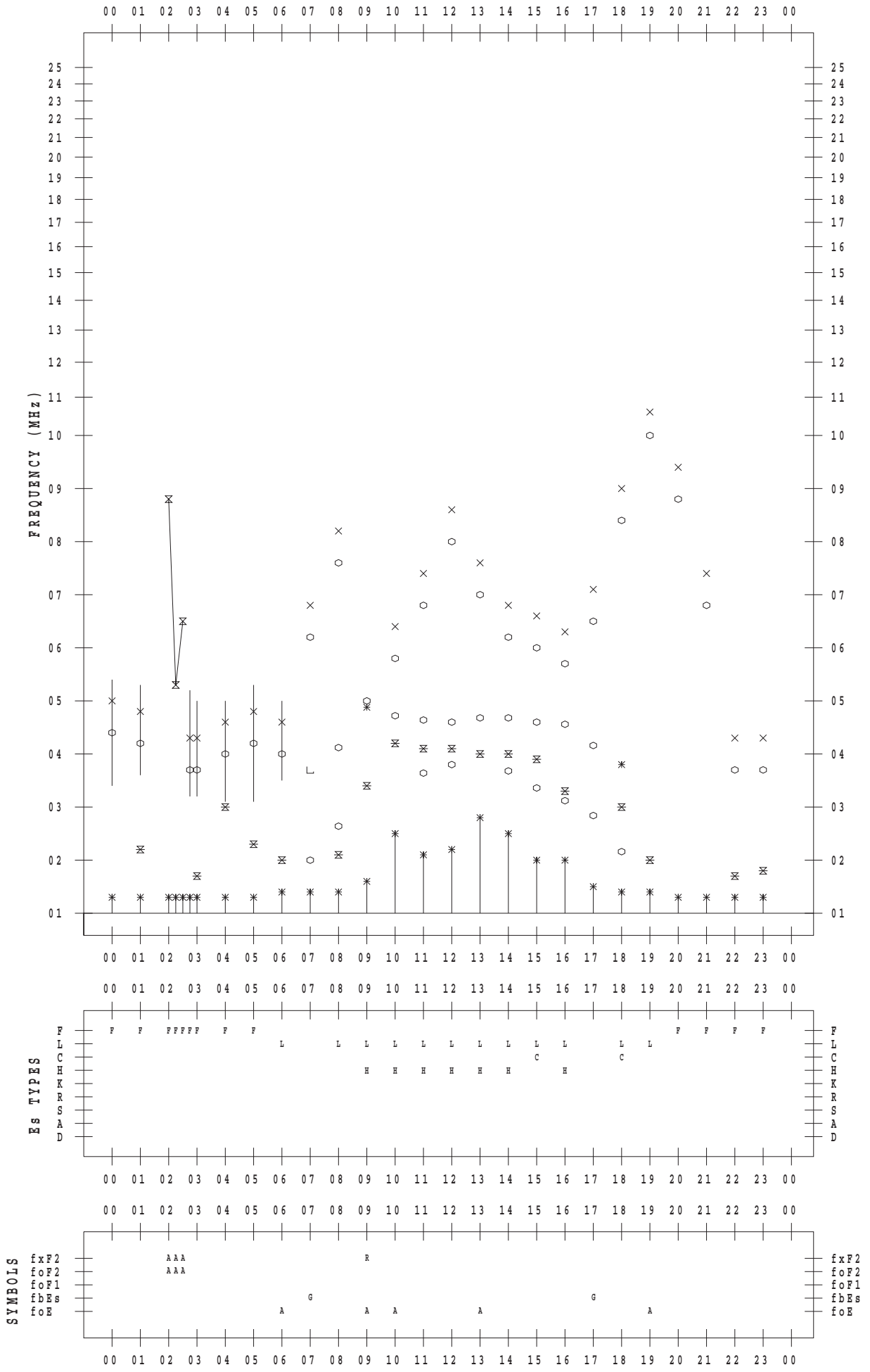
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/17

135 °E MEAN TIME



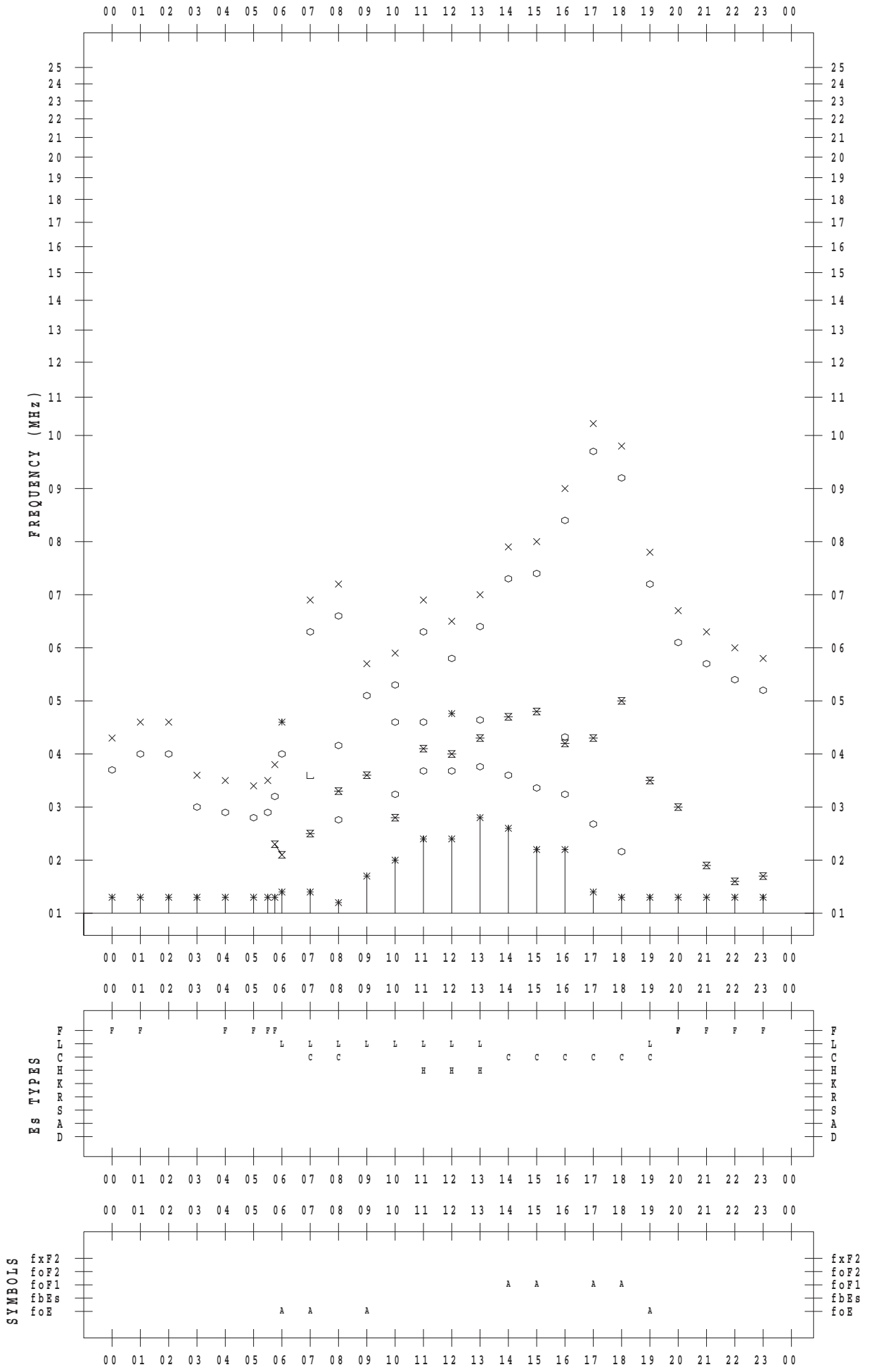
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/18

135 °E MEAN TIME



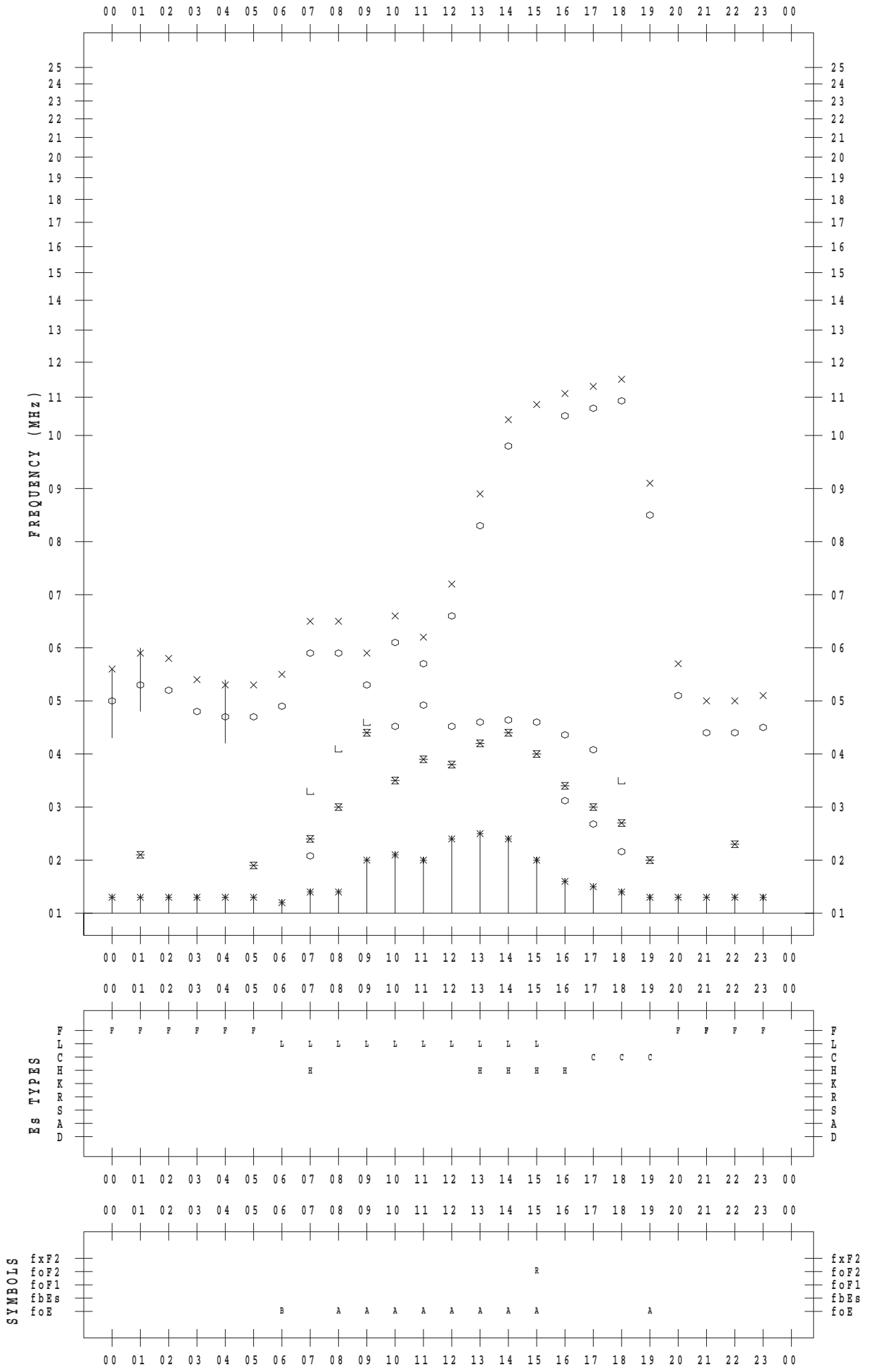
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/19

135 °E MEAN TIME



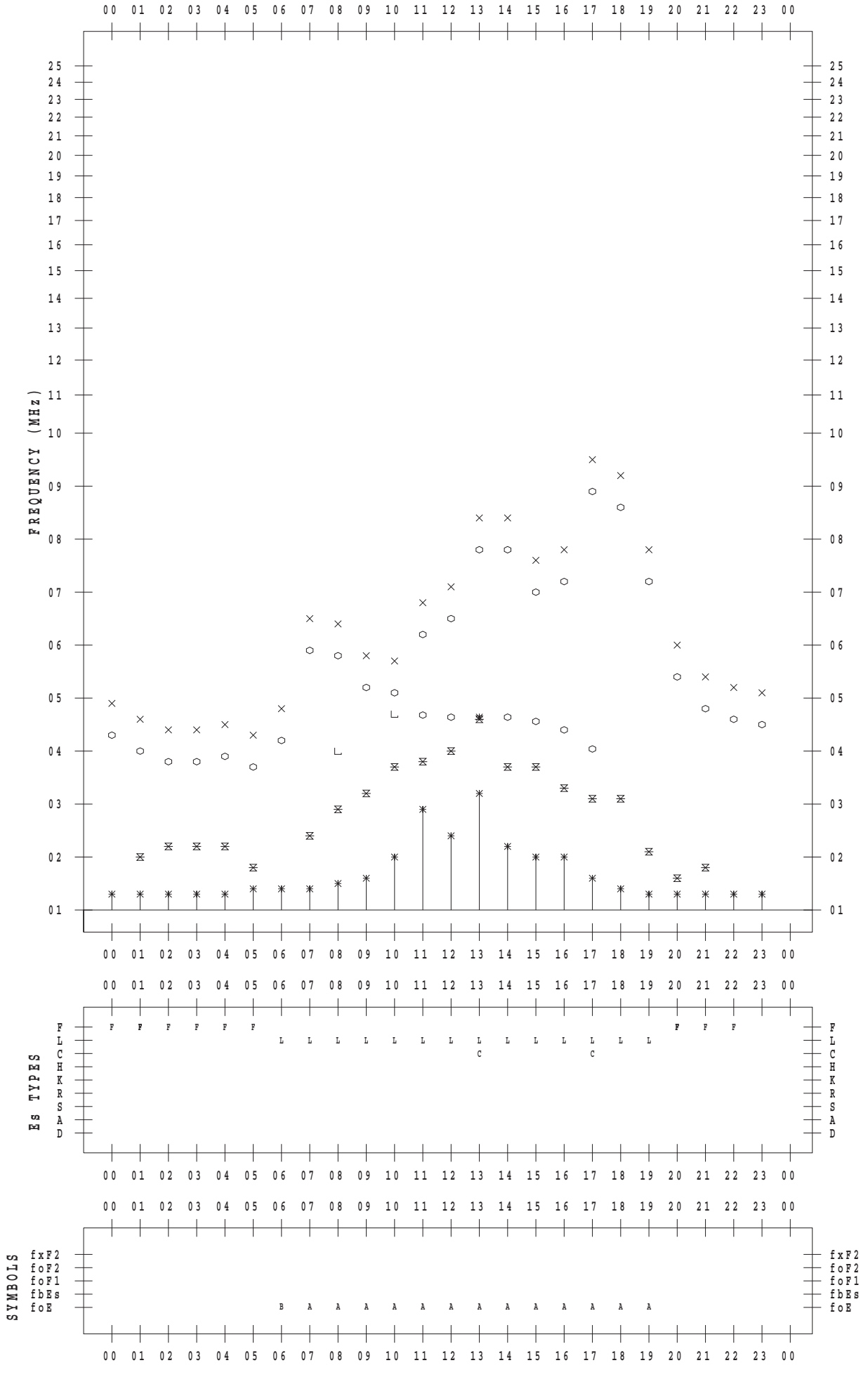
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/20

135 °E MEAN TIME



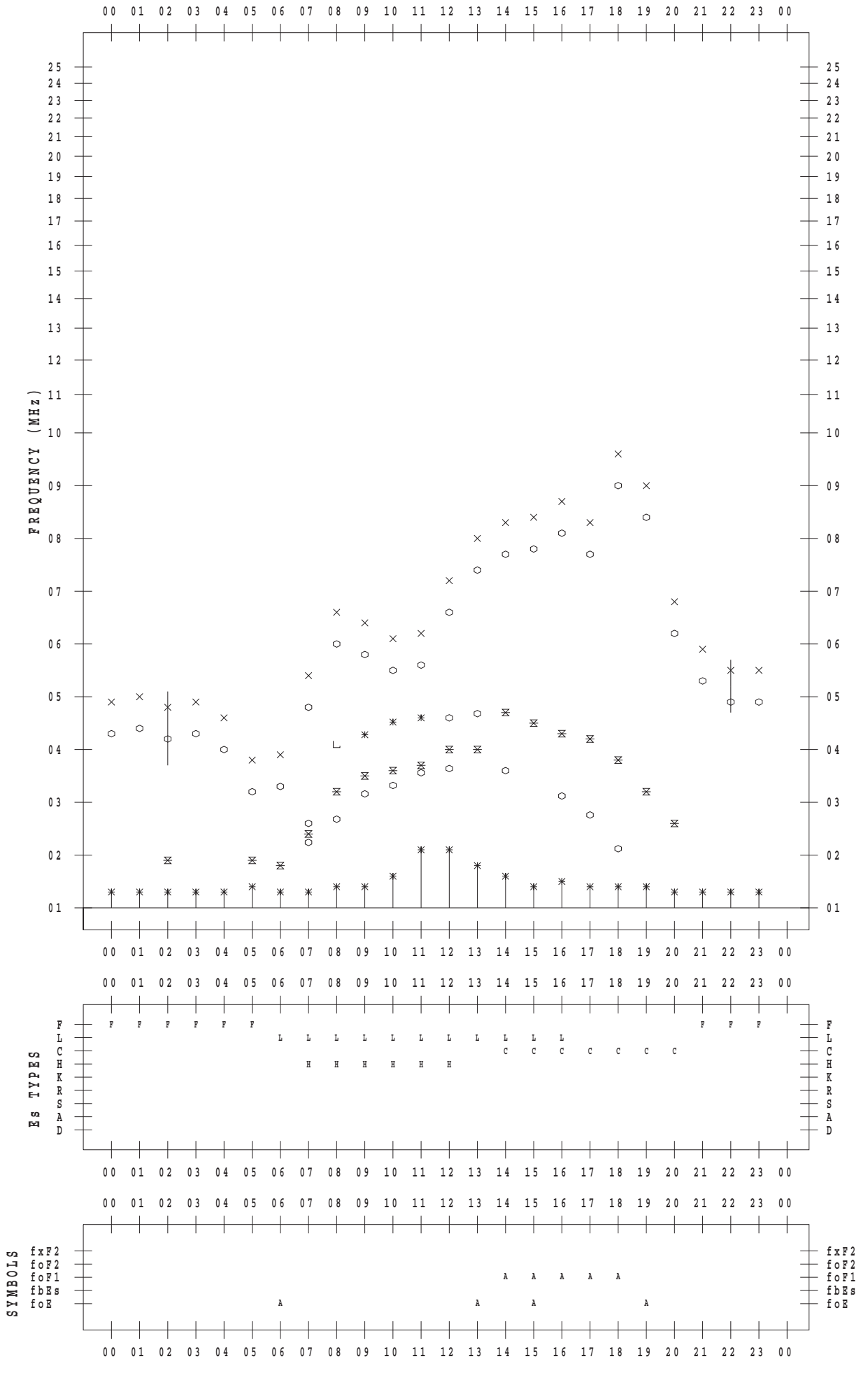
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/21

135 °E MEAN TIME



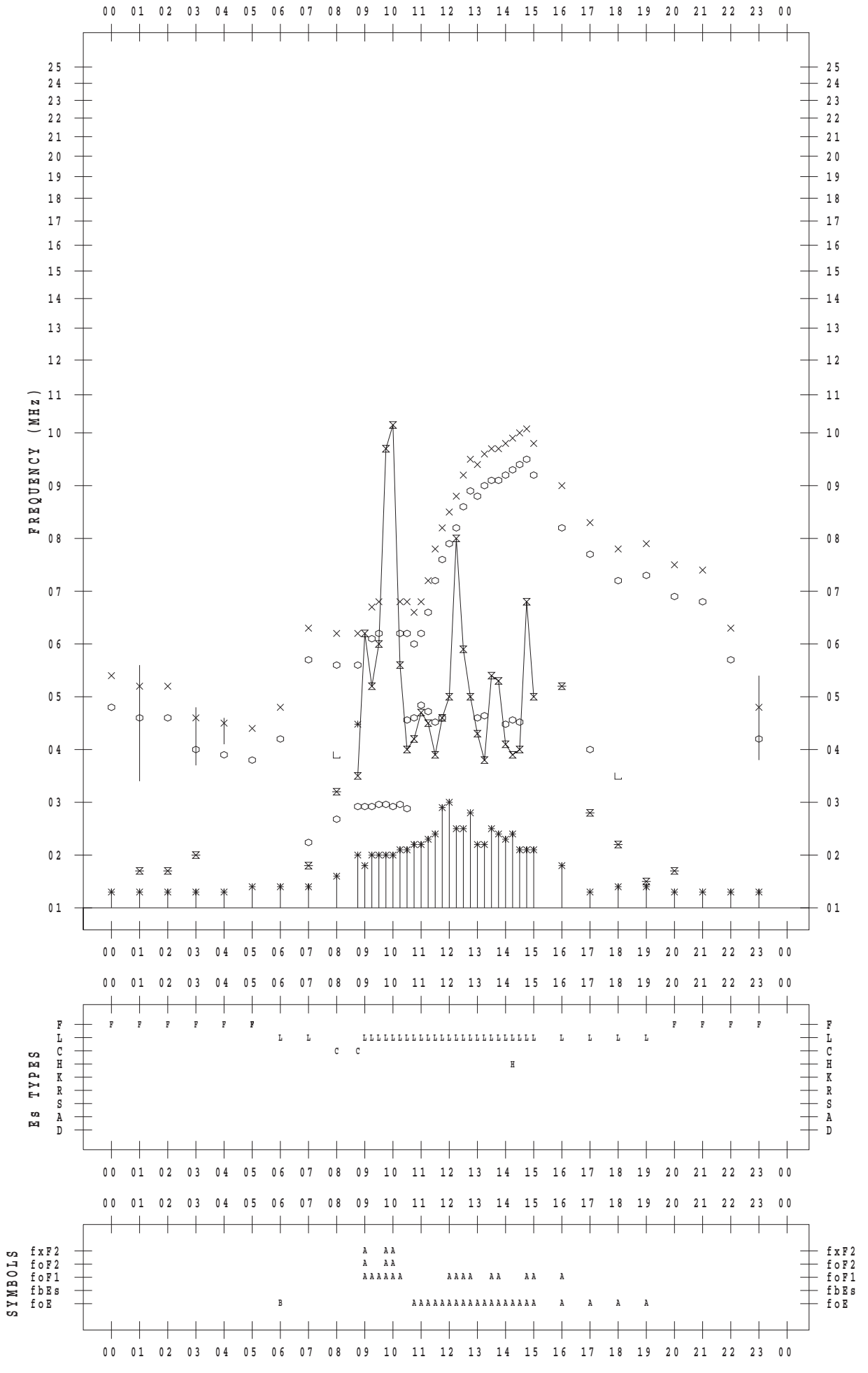
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/22

135 °E MEAN TIME



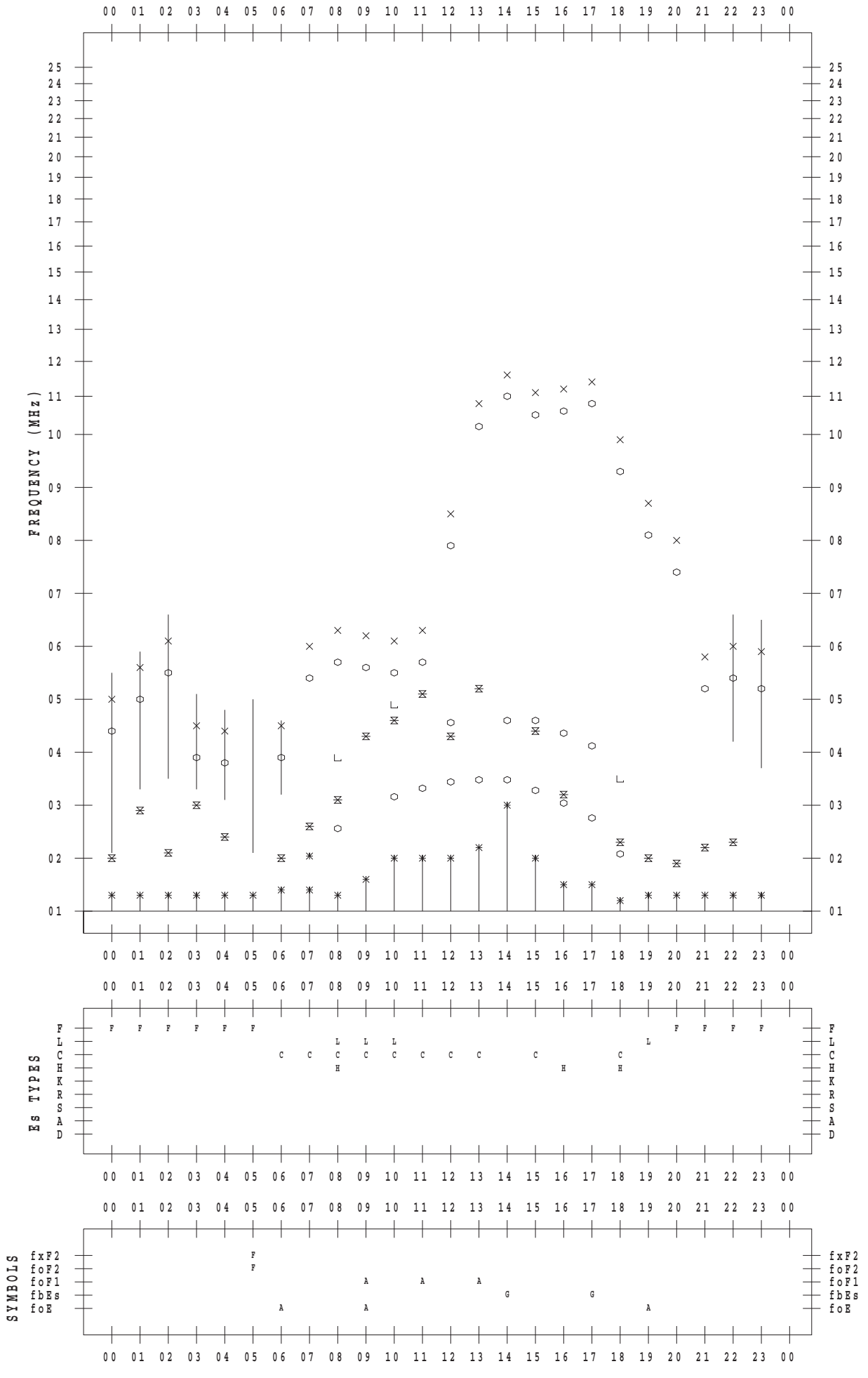
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/23

135 °E MEAN TIME



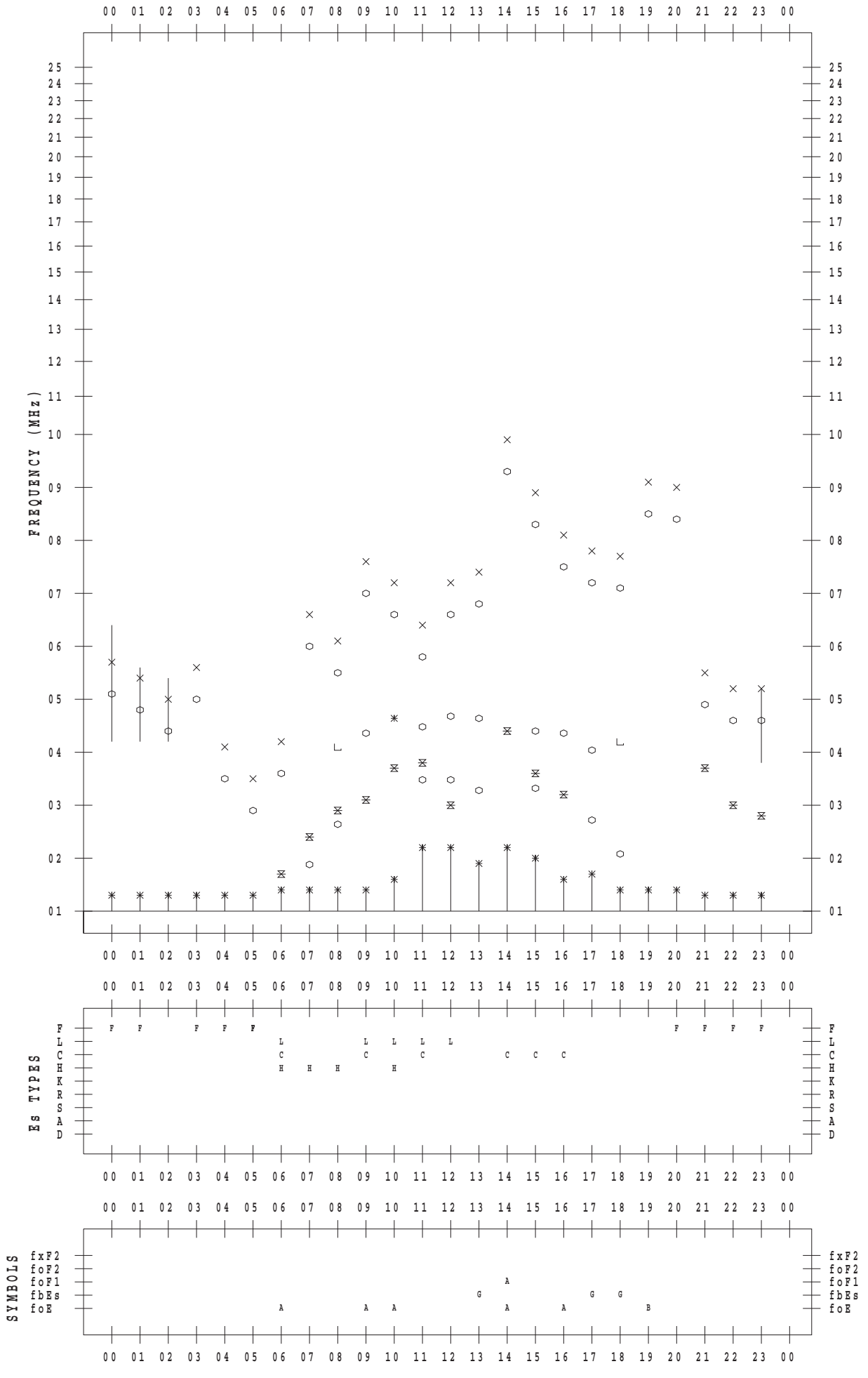
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/24

135 °E MEAN TIME



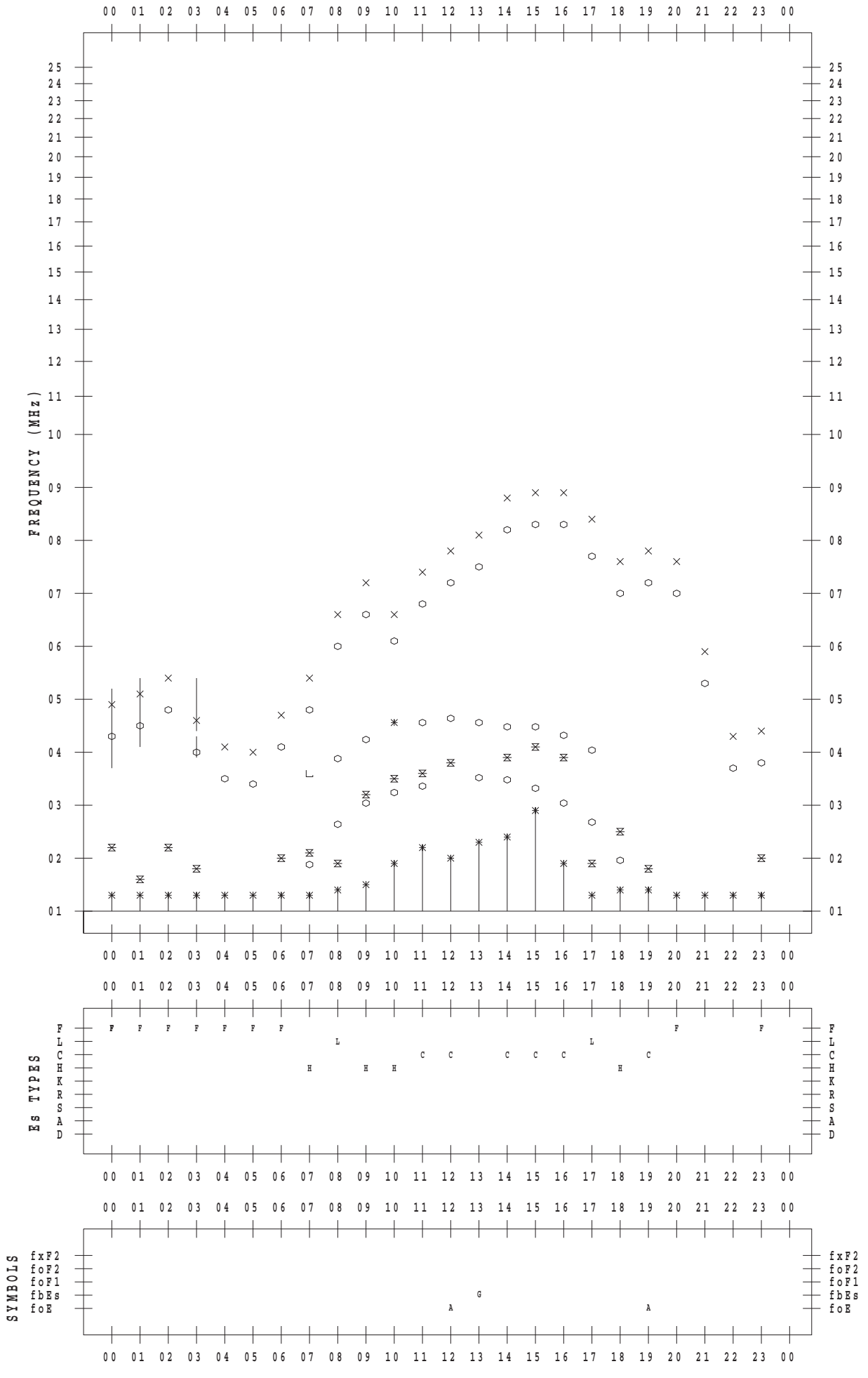
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/25

135 °E MEAN TIME



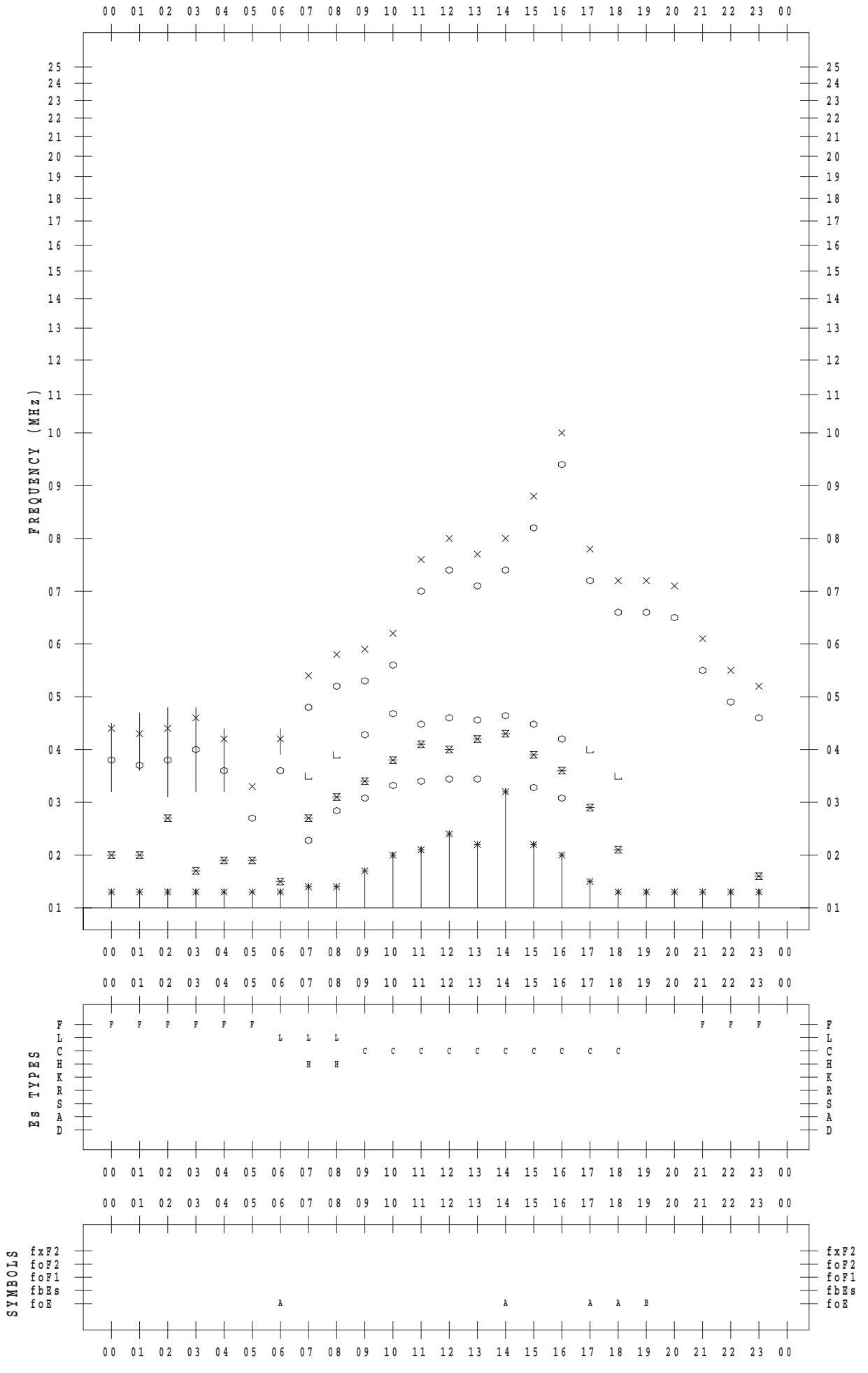
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/26

135 °E MEAN TIME



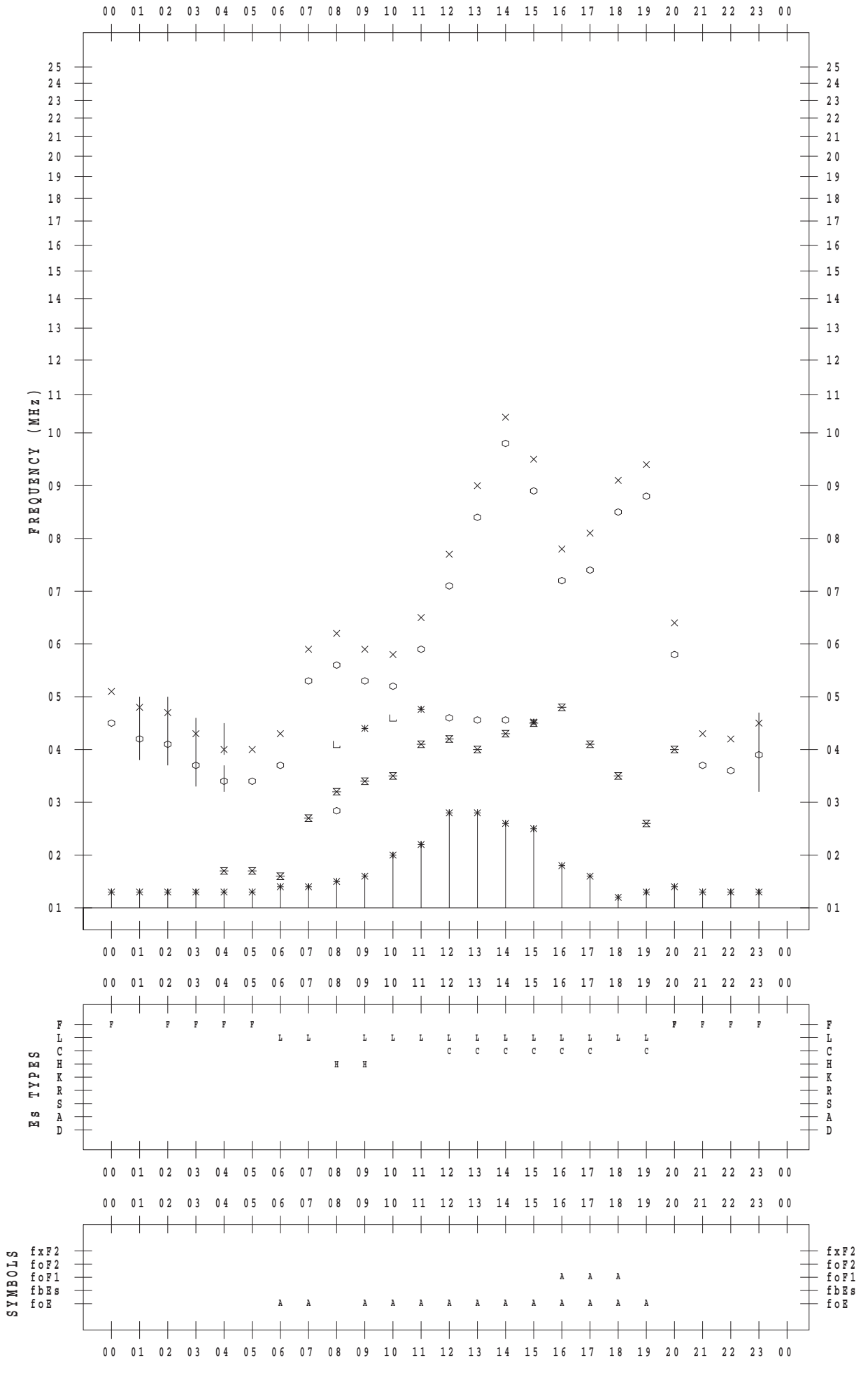
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/27

135 °E MEAN TIME



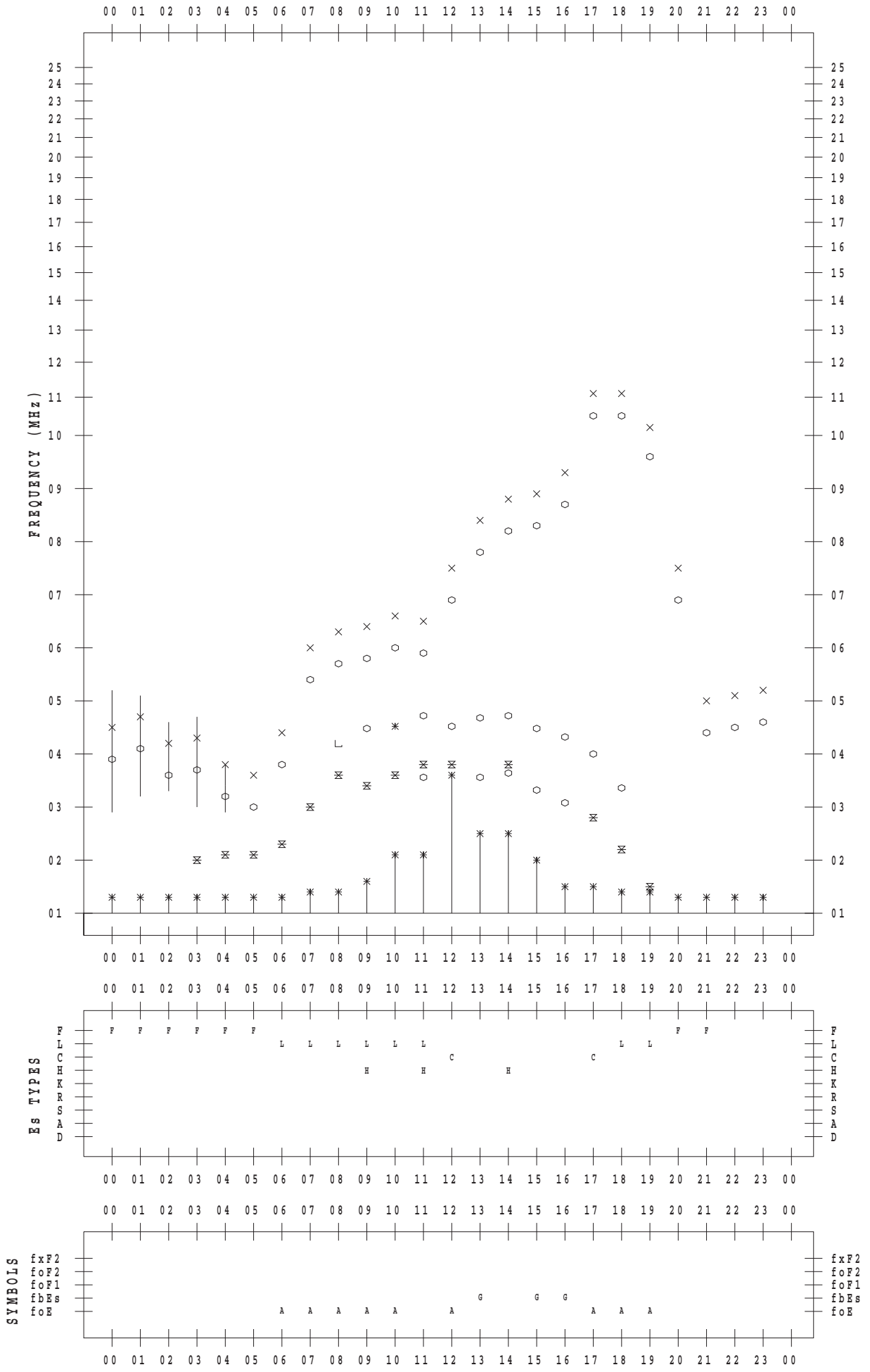
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/28

135 °E MEAN TIME



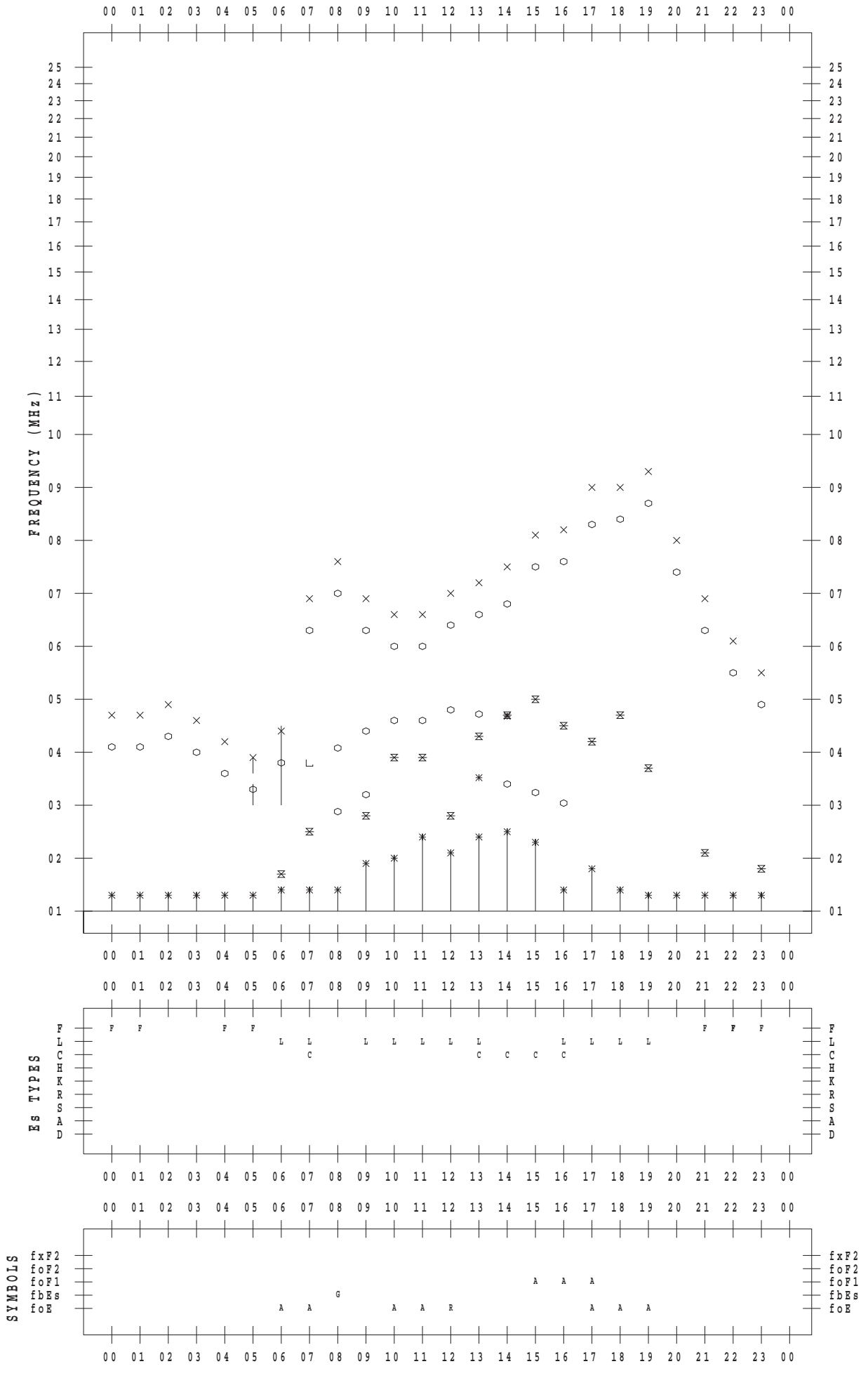
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/29

135 °E MEAN TIME



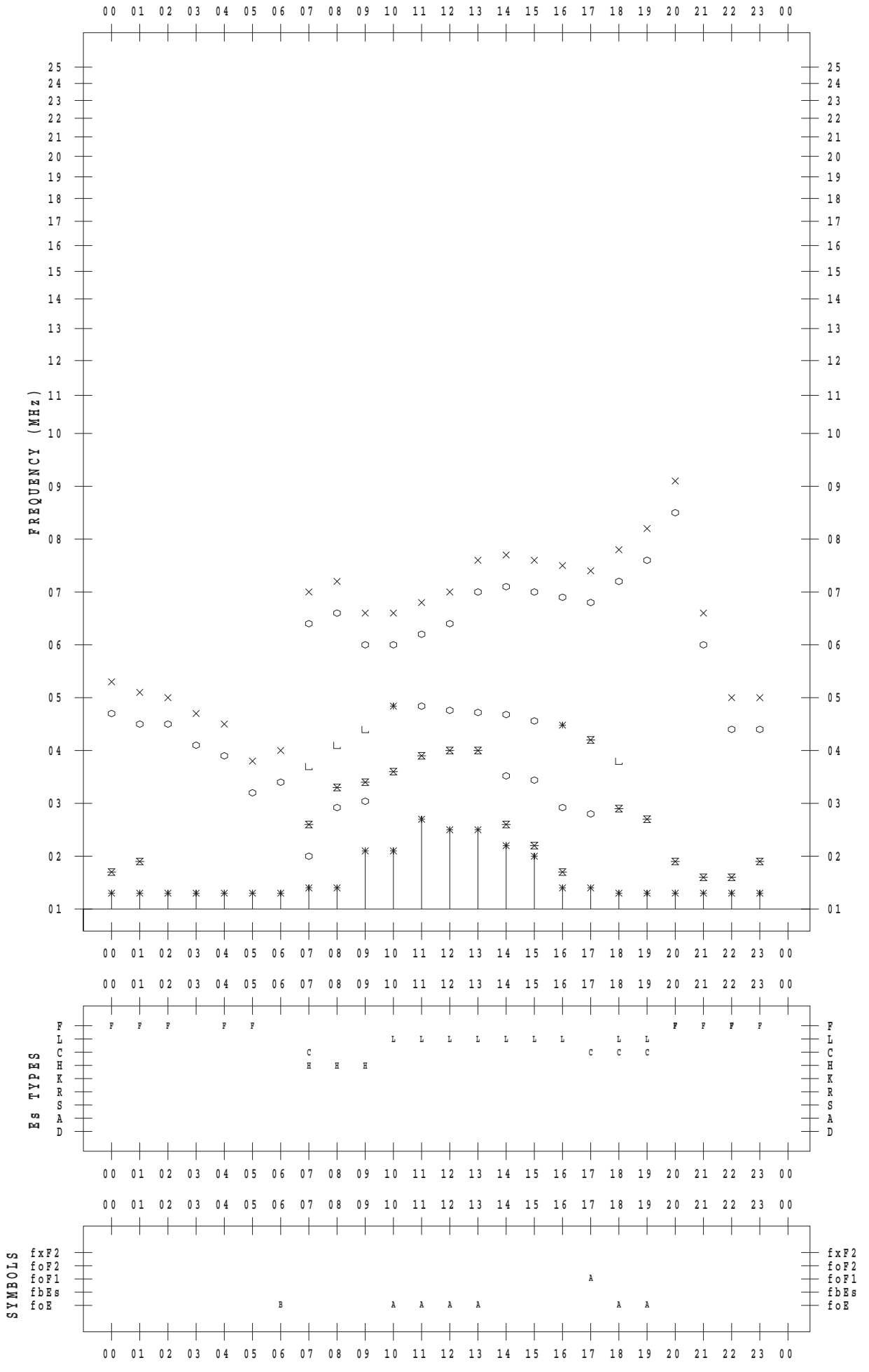
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2016/ 8/31

135 °E MEAN TIME