F-800

IONOSPHERIC DATA IN JAPAN

FOR AUGUST 2015

VOL. 67 NO. 8

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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. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	58	55	51	51	56	61	66	67	A	68	62	A	62	62	A	A	67	66	68	65	64	A	62	64
2	62	60	58	55	55	57	66	67	75	62	A	64	66	65	70	67	A	60	A	A	66	66	66	A
3	52	54	54	54	56	61	A	67	68	59	A	62	A	57	66	66	66	A	A	68	44	73	A	60
4	58	58	55	54	55	52	55	A	A		68	63	64	A	64	65	67	67	A	65	66	64	63	54
5	66	60	51	52	60	60	60	65	67	68	65	67	62	61	65	65	63	65	67	65	66	66	52	66
6	54	60	54	50	61	54	62	58	68	67	68	64	65	65	66	67	65	63	62	67	64	65	A	A
7	63	52	52	48	37	36	A	A	A	A	A	A	A	A	A	A	57	A	A	62	A	A	A	A
8	A	A	A	A	51	A	A	A	A	A	A	A	A	A	A	39	54	A	56	A	67	54	A	52
9	52	50	32	A	34	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	54	A	A	53
10	52	48	47	47	42	46	49	A	A	49	A	A	A		A		A	61	64	61	A	A	58	52
11	46	47	51	56	34	32	51	60	65	66	67	A	61	60	61	A	64	65	60	62	58	66	54	A
12	54	54	46	38	29	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	58	A	A
13	A	46	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	44	56	65	66	54	A
14	44	44	A	A	43	43	50	62	A	A	A	A	A	60	A	62	57	60	A	A	A	A	A	61
15	54	A	48	47	46	54	54	A	A	A	A	A	A	59	56	60	A	57	57	67	66	54	66	52
16	55	49	38	31	42	43	47	A	A	A	A	A	A	A	A	A	A	53	A	56	53	56	43	44
17	A	34	42	38	35	A	A	A	A	A	A	A	A	A	A	56	A	56	55	52	A	54	59	A
18	37	A	A	32	37	44	A	A	A	A	A	A	A	A	A	A	A	51	53	A	53	55	48	28
19	34	34	32	A	32	30	31	50	A	57	A	A	62	57	57	57	58	57	51	57	60	59	54	48
20	34	35	34		36	36	A	A	A	A	A	A	A	A	A	A	A	A	55	34	A	50	52	42
21	37	46	35	30	35	31	A	A	A	A	A	A	A	A	A	57	57	52	48	53	A	A	52	52
22	A	44	42	37	A	39	57	A	67	61	A	A	A	61	61	56	57	50	51	62	66	67	65	53
23	47	34	A	32	41	43	60	64	A	A	61	61	A	A	61	A	61	58	57	62	63	67	53	38
24	34	34	25	A	A	42	A	A	A	A	A	A	A	A	A	39	55	56	A	A	A	A	42	47
25	45	36	46	43	38	A	46	A	55	A	A	A	A	58	58	60	60	61	60	A	61	60	27	44
26	44	43	34	43	42	44	42	49	50	A	A	A	A	58	60	64	65	62	54	62	63	63	61	37
27	48	47	47	34	36	A	A	A	A	43	A	A	A		A			46	51	46	44	29	34	34
28	34	32	A	A	A	A	A	A	34	A	A	A		A	A	A	39	48	50	52	54	42	49	47
29	38	34	34	34	A	A	31	51	58		63	61	62	69	66	61	58	62	63	A	63		62	50
30	47	42	42	34	35	A	48	54	54	57	A	64	A	58	62	62	60	58	58	61	63	A	A	52
31	47	43	42	38	36	43	56	60	58	A	64	60	A	63	57	61	58	61	61	67	67	55	55	47
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	25	23	26	21	18	13	12	11	8	9	8	15	15	18	20	24	22	22	23	22	23	24
MED	47	46	46	43	40	43	52	60	62	61	64	63	62	60	61	61	59	59	56	62	63	60	54	51
U Q	54	53	51	51	51	54	60	66	67	67	67	64	64	63	66	65	64	62	61	65	66	66	62	53
L Q	38	35	34	34	35	37	47	52	54	57	62	61	62	58	58	57	57	54	51	56	54	54	49	44

HOURLY VALUES OF fEs AT Wakkanai

AUG. 2015

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

DAY \ HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	27	G	G	34	43	52	67	65	57	69	62	51	59	51	55	54	48	47	58	69	G	39
2	28	G	26	G	G	35	47	54	48	63	74	55	49	55	49	32	61	43	71	80	72	56	49	56
3	35	32	33	27	G	37	73	61	63	57	70	68	70	49	34	34	51	73	73	38	36	40	59	27
4	29	G	29	30	32	29	40	95	69		68	41	55	51	36	54	55	60	100	69	40	32	48	26
5	24	33	24	33	29	29	38	50	50	52	59	42	40	40	34	34	35	38	32	38	51	42	44	39
6	48	44	G	26	30	32	50	55	63	60	63	57	44	45	74	54	48	39	54	42	38	72	73	82
7	G	33	49	34	32	G	39	36	53	69	62	39	40	43	79	85	45	61	75	57	72	67	69	59
8	58	38	40	37	49	40	44	83	96	103	77	75	66	61	36	35	48	65	49	56	60	58	96	33
9	35	40	28	52	28	35	41	51	37	41	42	38	50	42	50	71	53	132	74	60	49	59	59	34
10	26	23	G	24	24	G	42	70	54	62	36	41	42		58		102	71	72	40	107	80	50	37
11	38	34	34	35	30	G	32	36	57	92	64	68	56	40	35	34	33	41	43	36	44	33	53	81
12	57	40	59	40	44	50	70	120	75	70	38	49	37	68	56	65	69	180	164	152	70	59	60	58
13	59	38	68	70	73	36	70	54	62	98	96	74	81	88	69	71	60	71	72	57	62	49	70	40
14	G	32	52	40	33	38	38	46	68	73	128	70	73	58	58	68	51	43	60	69	73	92	58	43
15	38	70	44	G	29	G	41	59	61	69	74	54	70	35	42	47	62	54	36	39	G	G	G	G
16	G	G	23	24	G	28	40	40	40	38	37	35	36	36	33	34	34	41	49	40	32	46	G	24
17	36	34	23	28	30	36	50	46	50	66	40	48	34	34	40	34	72	55	44	33	72	28	73	48
18	39	40	32	32	24	29	36	40	46	48	58	64	52	56	44	48	50	39	37	60	31	46	31	29
19	40	29	26	25	30	26	26	46	56	54	58	48	66	58	40	36	40	32	27	28	35	34	26	G
20	G	G	G		33	28	36	46	51	52	48	48	70	54	51	76	80	122	73	50	44	32	40	34
21	28	34	23	G	G	G	66	67	41	66	62	80	50	40	34	45	50	41	41	38	60	44	40	40
22	39	33	34	34	29	G	44	57	59	50	74	118	68	50	55	60	41	46	46	37	32	43	54	24
23	G	23	32	G	G	G	26	51	84	53	52	52	57	60	62	67	37	G	35	27	G	G	G	G
24	28	29	G	32	50	40	39	42	84	108	97	65	66	64	69	32	37	40	80	65	54	38	45	40
25	34	33	34	29	36	58	32	54	43	64	39	43	40	34	49	31	35	35	33	71	50	41	37	24
26	39	G	24	G	G	26	36	38	38	85	59	54	37	38	35	31	37	36	35	29	24	G	40	28
27	29	32	30	27	30	39	59	46	45	33	37	39	34	G	31			34	34	31	30	35	26	G
28	G	G	40	40	58	58	70	67	34	38	135	154		34	39	36	39	37	30	G	G	G	G	G
29	G	23	24	24	32	41	36	33	36		37	40	38	40	34	70	50	58	62	74	28		29	34
30	29	31	G	22	35	41	40	51	30	35	33	34	39	48	34	30	29	36	40	35	33	71	70	52
31	35	34	G	G	G	G	24	34	34	88	54	51	35	34	36	36	38	36	26	G	G	G	38	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	31	31	31	31	31	29	31	31	30	30	31	29	30	31	31	31	31	30	31	31
MED	29	32	28	28	30	32	40	51	53	63	59	52	50	46	42	45	49	43	48	40	44	42	45	34
U Q	39	34	34	34	33	39	50	59	63	71	74	68	66	56	58	66	55	61	72	60	60	59	59	43
L Q	G	23	23	22	G	G	36	42	41	51	40	41	39	38	35	34	37	37	35	35	31	32	29	24

HOURLY VALUES OF fmin AT Wakkanai

AUG. 2015

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

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

HOURLY VALUES OF foF2 AT Kokubunji

AUG. 2015

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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	52	52	45	44	47	72	A	63	A	A	94	99	A	71	A	A	78	76	76	A	A	67	66
2	52	58	54	54	54	54	67	76	A	105	A	66	71	85	94	159	95	81	A	85	81	71	52	A
3	66	63	58	55	53	50	75	81		66	A	109	A	72	72	77	78	A	101	81	75	71	67	75
4	66	67	70	58	54	52	53	69	90	75	68	69	75	A	99	77	84	A	86	90	87	78	A	76
5	67	66	66	66	66	62	66	72	A	A	109	107	A	A	A		110	85	84	80	81	73	A	A
6	52	A	64	62	55	58	66	64	66	77	109	A	76	78	A	A	A	69	71	84	78	80	78	A
7	A	A	64	61	57	52	A	A	A	A	A	A	A	A	A	A	58	65	61	66	66	A	58	A
8	A	52	52	50	57	57	55	A	79	59	99	N	A	A	A	A	A	A	50	N	67	A	52	52
9	52	A	54	46	48	42	52	68	60	A	A	48	44	61	61	64	65	62	63	64	51	59	54	63
10		61	47	45	42	44	52	63	52	A	A	A	A	A	61	62	66	A	A	78	71	67	51	47
11	52	48	54	51	46	58	57	71	65	66	A	A	A	A	A	72	87	77	64	59	54	63	A	52
12	A	A	A	A	A	44	54	83	A	148	A	N	A	A	A	A	59	107	67	A	59	52	54	54
13	52	47	47	46	45	38	49	66	56	A	A	A			56	52	55	52	52	55	67	52	A	54
14	52	A	52	A	52	47	55	93	62	62			61	69	64	69	71	65	72	76	63	66	49	47
15	51	52	52	52	45	47	58	56	A	A	A	A	A	A	67	66	A	63	74	80	67	54		65
16	52	61	51	52	54	44	A	52	56	A		A			A	51	51	55	A	A	55	46	45	47
17	44	46	47	46	48	46	A	A	63	A	A	A	62	A	76	72	71	67	A	81	62	64	A	43
18	52	A	52	44	44	41	A	47	58	A	62	A	65	A	A	A	A	A		A	A	52	A	A
19	A	A	A	36	34	37	A	59	55	A	A	55	A	67	65	66	53	61	66	64	66	54	54	51
20	A	45	48	46	38	39	46	A	A	A	A	A	A				A	49	A	54	54	52	54	43
21	51	45	46	38	32	34	56	65	61	A	A		48	58	59	N	58	59	59	62	52	47	44	52
22	48	46	46	34	34	34	48	65	71	93	55	A	64	63	64	62	61	N	A	64	53	63	61	61
23	53	A	54	54	44	47	58	59	68	A	64	56	61	74	72	71	66	67	71	80	73	72	A	54
24	64	52	53	57	46	A	45	53	56	54			A	A		61	64	63	63	72	67	52	A	48
25	47	46	42	44	39	38	51	61	99	A	57	A	58	64	71	65	71	67	68	67	66	53	46	A
26	A	A	44	39	39	44	61	A	A	55	A	64	A	77	90	82	76	63	59	55	72	72	49	51
27	51	A	46	42	44	42	A	A	A	A	A		A	A	A	A	A	44	A	A	44	47	42	A
28	A	44	42	42	40	A	A	A	A			A		A	A	A	A	53	54	A	A	51	45	52
29	A	49	49	44	40	39	57	45	65	A	A	78	A	66	74	67	A	A	73	72	72	67	64	64
30	52	52	54	54	42	42	54	51	A	61	65	65	68	A	74	69	69	A	72	80	64	66	53	42
31	45	51	48	46	45	42	59	58	74	70	62		61	62	72	71	67	67	76	82	71	64	48	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	22	21	29	29	30	29	24	23	20	13	10	11	14	13	19	20	22	23	23	25	28	28	22	24
MED	52	52	52	46	45	44	56	64	63	66	64	66	63	67	71	68	66	65	68	76	66	63	52	52
U Q	52	59	54	54	53	51	60	71	69	85	99	94	71	75	74	72	76	69	74	80	72	69	58	62
L Q	51	46	47	44	40	40	52	56	57	60	62	56	61	62	64	63	59	59	61	64	57	52	48	47

HOURLY VALUES OF fEs AT Kokubunji

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	45	39	44	34	33	G	53	121	49	104	94	90	150	120	58	71	79	60	65	84	117	71	60	56
2	26	28	32	28	G	G	46	64	97	81	86	51	68	62	75	107	89	64	130	82	69	117	92	92
3	51	39	73	38	36	G	49	55		57	87	114	72	61	50	39	G	92	116	93	59	41	41	50
4	34	42	29	24	G	G	29	48	56	50	53	57	61	80	83	61	72	106	69	40	56	92	116	87
5	34	39	30	29	26	37	42	63	75	131	131	101	94	97	80		84	40	72	59	46	34	106	78
6	69	93	47	36	40	29	40	30	63	79	118	84	59	72	84	117	88	61	G	40	70	71	91	59
7	105	91	71	60	30	26	72	74	61	73	175	149	119	53	70	62	69	68	45	36	40	71	58	59
8	106	33	26	G	G	28	37	112	71	53	84	111	90	61	60	33	77	96	122	82	71	78	68	71
9	104	93	45	41	59	36	49	G	31	76	75	G	G	G	34	31	G	27	35	26	24	G	39	79
10		40	35	31	38	27	32	60	67	90	185	162	97	68	56	34	50	104	112	36	23	G	24	G
11	G	34	29	34	33	G	27	33	53	61	126	76	122	117	85	51	30	G	31	28	32	27	82	65
12	103	113	72	77	80	37	30	80	130	159	168	115	78	92	68	74	61	106	80	79	41	35	28	G
13	G	G	27	G	24	26	25	29	81	57	86	57			32	G	G	49	41	43	115	40	59	60
14	57	96	58	56	29	G	31	32	51	50			G	G	G	57	51	54	45	35	49	58	49	40
15	53	31	33	24	41	27	27	42	58	79	96	62	78	80	56	45	79	74	55	70	43	G		38
16	25	G	28	36	29	27	36	39	52	37		38			36	G	46	44	81	61	68	39	G	24
17	G	G	G	34	27	31	57	71	62	118	72	60	120	122	50	G	89	90	149	129	50	82	82	67
18	31	57	27	31	58	37	43	47	53	60	53	52	37	40	84	92	70	112		90	55	49	95	69
19	73	72	38	G	G	G	53	31	44	60	61	44	47	58	67	51	41	34	57	57	39	46	43	49
20	55	29	G	G	G	31	46	42	56	60	59	58	49				53	51	60	36	50	53	57	51
21	28	29	28	G	G	G	34	30	114	94	59		G	G	35	G	G	33	42	35	28	34	39	36
22	32	33	G	G	G	G	G	28	46	86	54	53	53	40	57	45	52	33	60	51	34	52	54	57
23	30	73	54	33	32	25	39	33	53	69	46	40	G	G	46	G	G	26	38	50	55	45	58	G
24	G	26	38	G	40	40	27	41	38	38		G	83	52		G	29	37	37	37	G	43	58	40
25	32	37	29	28	31	33	34	52	49	84	43	42	43	39	G	G	29	33	32	29	26	26	40	60
26	72	71	30	G	33	G	34	55	70	55	70	62	59	50	34	31	29	68	35	30	25	G	G	36
27	43	46	54	24	G	33	48	53	51	54	71		44	52	52	51	31	78	69	83	40	38	72	60
28	71	36	31	24	26	29	58	75	45			51		61	50	49	46	41	50	53	53	G	G	G
29	58	G	G	G	27	28	30	45	55	91	119	66	105	51	G	50	130	105	127	78	50	60	90	81
30	73	50	59	42	33	G	24	51	79	61	47	50	G	90	81	56	41	59	35	31	29	G	31	G
31	G	G	G	G	G	G	23	37	53	46	55		50	54	45	G	29	29	28	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	31	31	31	31	31	30	30	27	27	28	28	29	29	31	31	30	31	31	31	30	31
MED	44	39	31	28	29	27	36	47	56	65	75	58	60	60	56	45	50	59	56	50	46	41	58	56
U Q	71	71	47	36	36	31	48	63	70	86	118	90	92	80	72	59	77	90	80	79	56	60	82	67
L Q	28	29	27	G	G	G	29	33	51	55	55	50	43	45	35	G	29	34	37	35	29	26	39	36

HOURLY VALUES OF fmin AT Kokubunji

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	13	13	13	13	24	13	15	20	17	31	35	31	28	26	34	20	18	13	13	14	13	13	13
2	13	13	13	13	14	13	18	17	20	36	36	36	33	31	33	24	17	17	13	13	13	13	13	13
3	13	13	13	13	13	17	14	14		33	29	23	28	37	33	22	37	15	14	13	13	13	13	13
4	13	13	13	13	14	18	13	17	31	34	36	34	34	35	29	17	20	17	13	13	13	13	14	13
5	13	13	13	13	13	13	14	13	17	34	38	36	37	36	33		20	14	13	13	13	13	13	13
6	14	13	13	13	13	14	13	17	20	17	37	34	33	34	21	20	15	13	13	13	13	13	14	13
7	13	13	13	17	13	13	13	18	18	33	30	33	33	42	36	35	20	13	13	14	13	13	14	13
8	13	13	13	14	14	13	13	15	17	34	33	34	35	37	28	21	17	14	13	13	13	14	14	13
9	14	13	13	13	13	13	14	15	20	21	39	45	42	49	50	47	20	13	14	14	14	14	13	13
10		14	13	13	13	13	13	15	23	21	33	36	22	40	37	20	18	13	13	13	13	13	14	17
11	13	13	13	13	14	14	14	15	21	17	18	33	33	29	28	20	15	13	13	13	13	13	13	13
12	13	13	13	13	13	13	13	14	14	21	34	33	31	28	18	21	20	17	13	14	13	14	14	14
13	13	15	13	25	13	14	13	15	15	18	40	33			47	20	14	13	13	13	13	14	13	13
14	13	13	13	13	13	17	13	17	20	22			49	49	46	33	20	14	13	13	14	13	14	13
15	13	13	13	14	13	13	13	13	15	20	33	34	25	33	18	15	13	13	14	13	13	13		13
16	13	13	13	13	13	13	13	13	17	17		21			21	41	13	13	13	14	14	14	14	14
17	14	14	14	15	13	13	13	13	17	22	23	33	26	24	21	18	17	14	13	13	13	14	14	13
18	13	14	13	13	13	14	14	13	18	28	33	35	28	47	26	20	14	14		13	14	13	13	13
19	14	13	14	14	14	13	14	14	20	23	34	34	31	29	23	21	17	13	13	13	14	13	14	13
20	13	13	13	13	14	13	18	14	20	34	34	33	34				22	15	14	13	14	14	13	13
21	13	13	13	13	14	13	13	13	18	26	28		49	47	44	33	18	13	17	13	13	13	13	13
22	13	13	13	13	13	14	13	15	18	31	31	33	33	33	26	17	18	13	14	13	13	13	13	15
23	13	13	13	13	13	14	13	13	20	21	44	44	48	50	24	17	14	13	13	13	13	13	13	14
24	15	14	13	15	13	13	13	14	30	20		55	35	29		14	17	13	13	13	13	13	13	13
25	14	13	13	13	13	13	14	14	18	23	36	33	34	48	47	21	13	15	13	13	13	13	13	13
26	13	13	13	13	13	13	13	13	17	23	22	24	26	33	22	20	14	13	14	13	13	14	13	13
27	13	13	13	13	13	13	14	15	17	22	33		36	22	37	38	20	13	14	13	13	14	14	13
28	14	13	13	15	13	13	13	13	15			20		36	20	31	17	13	13	13	14	14	14	18
29	14	14	13	14	13	13	13	14	18	34	22	23	33	29	21	37	13	13	13	13	13	13	14	13
30	13	13	13	13	13	15	18	13	18	20	30	31	53	38	33	17	13	13	13	13	14	13	13	14
31	14	13	14	13	14	13	13	14	21	18	25		30	21	20	17	14	13	15	13	14	14	14	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	30	31	31	31	31	31	31	31	30	30	27	27	28	28	29	29	31	31	30	31	31	31	30	31
MED	13	13	13	13	13	13	13	14	18	22	33	33	33	34	28	21	17	13	13	13	13	13	13	13
U Q	14	13	13	14	14	14	14	15	20	33	36	35	35	41	36	33	20	14	14	13	14	14	14	13
L Q	13	13	13	13	13	13	13	13	17	20	29	33	30	29	21	17	14	13	13	13	13	13	13	13

HOURLY VALUES OF foF2 AT Yamagawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	52	54	59	52	50	51	67	73	A	A	68	67	B	67	72	76	77	77	74	76	A	A	A	A
2	A	54	50	48	45	46	55	67	85	87	68	66	81	84	88	90	93	88	85	A	74	72	52	52
3	A	53	54	54	60	56	64	71	77	73	70	65	71	75	72	82	90	87	97	72	A	72	54	54
4	76	74	72	67	65	52	53	67	87	70	A	68	71	77	83	86	92	88	86	A	77	A	A	72
5	A	52	76	A	62	57	67	80	74	A	A	80	A	82	80	A	93	86	77	88	59	A	76	46
6	67	N	67	65	59	56	51	60	65	76	72	70	78	85	75	78	82	81	78	83	80	74	77	78
7	75	72	A	51	67	62	52	57	58	A	A	A	A	B	A	54	65	67	62	66	72	54	52	53
8	54	52	52	52	57	58	39	57	68	66	62	A	A	A	A	71	70	64	66	67	A	62	54	A
9	A	A	63	A	52	50	51	67	76	A	72	A	A	66	72	70	77	72	68	66	67	52	44	52
10	58	A	52	52	45	46	55	66	56	62	64	64	67	A	A	64	70	73	76	81	74	A	60	53
11	50	45	47	46	43	37	48	73	68	62	61	A	B	B	67	84	78	71	66	66	67	67	54	54
12	50	A	A	52	44	44	54	43	A	A	A	A	A	A	65	71	A	75	71	62	54	A	54	54
13	67	66	60	57	56	51	68	69	52	A	A	61	64	60	A	71	73	72	70	61	67	52	40	A
14	38	45	45	44	44	47	52	78	68	51	A		63	66	70	76	80	73	78	85	81	64	52	A
15	51	55	54	52	37	A	46	60	A	63	74	A	A	A	A	83	76	78	A	77	67	54	54	67
16	52	A	A	44	52	46	A	70	A	A	A	A	A	A	A	49	52	A	A	66	47	A	39	A
17	A	A	44	43	42	40	42	52	56	A	A	A	A	72	A	81	72	64	A	88	67	A	A	A
18	52	52	48	50	47	36	A	A	67	71	A	A	60	A	66	72	77	78	77	66	64	54	52	50
19	52	51	45	38	36	34	42	55	47	65	60	A	A	63	A	67	61	70	76	77	76	52	50	50
20	50	42	44	43	42	41	47	48	51	A	A	A	A	A	A	56	58	66	N	58	52	53	52	54
21	51	50	47	40	A	36	47	52	52	60	A	B	68	64	58	61	69	74	65	67	58	52	54	49
22	52	53	51	50	34	30	37	62	72	69	57	64	66	49	66	A	70	62	62	72	77	73	52	54
23	51	58	50	54	53	40	43	60	70	68	69	A	72	76	73	78	81	84	90	85	76	A	52	67
24	67	64	54	54	52	37	44	65	66	65	66	66	68		72	75	75	75	75	83	80	51	52	44
25	48	48	48	47	43	A	42	58	68	62	59	63	68	68	77	82	90	81	75	77	83	54	40	42
26	47	48	44	45	A	A	46	60	63	A	57	49	68	85	97	85	72	71	65	73	78	73	47	51
27	47	53	46	43	42	43	A	48	A	A	A	A	A	A	A	A	A	55	52	A	A	43	48	47
28	46	46	45	48	38	A	53	A	A	A	A		A		B	A	A	A	54	A	A	51	50	52
29	50	48	50	54	40	40	48	51	50	68	A	A	66	66	71	72	66	70	68	75	75	A	67	66
30	52	53	50	47	45	41	45	63	A	A	A	A	77	86	82	82	85	88	93	91	72	66	48	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	24	27	28	28	26	27	28	23	17	15	12	16	18	19	26	27	28	26	26	25	21	27	23
MED	52	52	50	50	45	45	48	61	67	66	66	66	68	70	72	76	76	74	74	74	72	54	52	53
U Q	56	54	54	53	54	51	54	68	72	70	70	67	71	82	80	82	82	81	78	83	77	69	54	54
L Q	50	48	46	44	42	40	44	56	56	62	60	63	66	66	67	70	70	70	66	66	65	52	48	50

HOURLY VALUES OF fEs AT Yamagawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	34	49	52	33	G	G	48	56	80	56	40	B	54	65	43	50	54	55	G	91	71	69	69
2	59	43	30	26	G	G	33	43	54	38	51	53	68	84	66	50	54	57	52	111	34	36	31	59
3	59	54	48	60	26	29	32	57	88	50	49	65	57	57	47	52	60	29	36	34	104	68	49	33
4	38	G	G	30	34	26	24	44	59	47	51	52	64	48	56	G	33	47	54	108	50	58	73	69
5	73	56	51	57	50	49	33	55	71	161	168	128	98	74	73	94	64	78	53	57	33	36	29	29
6	27	26	G	G	G	G	55	35	49	55	60	51	43	53	70	50	36	33	43	50	44	29	30	59
7	73	70	91	34	G	32	34	39	46	141	76	58	57	B	106	40	39	47	56	49	38	G	29	40
8	49	35	34	G	G	G	G	38	44	54	50	78	60	84	54	40	57	36	40	41	59	49	32	71
9	71	73	67	70	50	44	33	50	66	70	52	69	41	G	35	34	32	G	94	G	G	G	28	34
10	49	56	57	48	38	27	G	35	45	34	49	62	46	57	59	51	46	42	45	31	33	73	57	38
11	38	36	31	34	G	G	30	39	59	46	41	44	B	B	43	34	40	46	46	36	40	40	36	35
12	44	50	85	70	46	40	28	51	76	95	72	90	77	70	76	61	79	54	59	40	36	57	34	36
13	41	33	30	G	G	G	G	28	33	47	39	53	62	47	81	46	42	54	G	38	27	G	G	34
14	40	39	29	43	35	26	34	57	37	53	47	G	41	38	40	33	51	44	41	40	25	27	33	50
15	33	G	54	G	32	45	32	46	61	48	49	50	52	71	58	53	54	84	108	74	49	G	G	25
16	43	70	69	57	53	36	43	54	51	57	62	83	58	53	44	48	52	110	152	57	43	78	40	58
17	48	40	30	G	G	G	28	37	53	82	73	82	157	64	91	39	56	49	83	35	31	70	70	60
18	40	39	27	41	G	G	42	61	50	49	61	38	49	70	63	50	40	28	32	40	G	39	G	49
19	40	45	28	G	G	G	G	34	48	36	47	79	51	56	78	52	50	56	51	50	29	25	G	34
20	54	25	58	46	34	23	G	38	46	74	79	61	113	62	34	31	36	40	48	39	39	23	50	50
21	44	39	26	32	41	26	35	49	45	66	65	B	52	53	44	43	G	G	34	28	26	G	G	G
22	27	25	G	G	G	G	G	33	33	44	44	G	36	48	58	74	55	39	36	36	36	33	44	50
23	40	68	56	G	26	26	33	52	43	51	51	50	42	G	35	32	G	37	44	36	28	58	71	33
24	30	30	G	27	27	28	32	39	38	44	49	57	G	G	G	G	30	27	36	28	27	28	24	40
25	44	29	33	34	32	38	27	36	52	52	46	49	65	48	G	G	G	33	31	33	32	30	G	G
26	41	40	31	36	49	39	33	56	52	88	46	41	54	64	43	69	46	39	34	G	26	G	G	G
27	G	G	G	26	24	G	34	40	43	51	55	88	53	60	45	70	58	40	43	61	71	34	40	G
28	52	50	41	48	G	44	40	50	58	56	52	G	50	G	B	38	54	69	39	51	51	G	40	G
29	G	26	G	G	G	G	30	50	43	51	76	87	112	G	40	45	35	53	46	76	49	108	70	46
30	36	25	G	G	26	G	G	37	61	68	75	99	75	78	50	48	56	42	53	51	24	48	32	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	29	28	28	29	30	30	30	30	30	30	30	30	29
MED	41	39	31	33	26	26	32	44	50	52	52	57	56	55	54	46	48	43	46	40	35	35	32	38
U Q	49	50	54	48	35	36	34	51	59	70	65	80	66	67	68	52	55	54	54	51	49	58	49	54
L Q	36	26	26	G	G	G	G	37	44	47	49	46	47	47	41	34	36	36	36	34	27	23	24	31

HOURLY VALUES OF fmin AT Yamagawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	15	15	14	15	14	16	15	16	17	21	29	30	B	40	38	28	20	16	15	17	15	14	15	14
2	14	16	15	14	15	15	16	15	20	24	33	33	34	33	33	28	18	15	14	14	15	15	14	14
3	15	15	14	15	15	15	15	15	18	21	26	32	29	32	34	26	20	18	15	15	15	14	14	14
4	14	15	14	15	15	15	17	14	18	23	30	29	33	32	30	51	44	18	14	15	15	15	14	14
5	14	15	14	15	15	15	15	16	18	18	26	35	36	34	34	30	18	17	14	14	15	15	15	15
6	15	15	15	14	14	15	14	15	18	28	27	35	36	34	30	34	28	17	14	14	15	15	15	15
7	15	15	15	14	17	14	14	14	17	20	24	36	38	B	28	24	20	17	14	14	15	16	15	14
8	14	15	14	20	16	15	20	14	16	18	32	29	34	34	34	30	18	15	14	14	15	15	15	14
9	15	15	14	14	14	14	14	15	20	27	33	35	33	55	52	24	18	20	15	17	15	16	14	14
10	14	15	15	14	15	15	15	15	18	18	20	32	40	28	27	34	18	16	14	14	15	15	14	14
11	14	14	15	15	16	15	14	15	16	21	21	27	B	B	27	20	18	16	14	14	15	14	14	14
12	14	15	15	14	14	15	14	14	17	20	21	33	33	42	38	34	21	17	14	14	16	14	14	14
13	15	15	15	16	14	14	18	15	16	20	22	33	33	33	29	24	20	17	26	14	15	17	16	15
14	15	14	14	15	14	15	14	15	17	21	26	91	34	30	51	23	20	15	14	14	15	14	15	15
15	15	15	15	18	14	15	14	14	14	17	20	29	27	27	27	22	18	14	14	14	14	15	14	14
16	14	14	15	14	14	14	14	14	17	17	24	32	32	33	21	23	17	14	14	14	14	15	16	15
17	14	15	14	15	16	15	14	15	16	18	22	28	30	30	27	21	17	15	14	14	14	14	14	15
18	14	14	15	17	20	17	14	18	16	17	24	28	29	30	28	22	22	17	14	14	17	15	15	14
19	14	15	15	15	14	14	18	15	18	21	30	28	28	29	28	26	18	17	14	14	15	14	15	14
20	14	14	14	15	15	15	17	15	15	18	28	30	30	33	26	51	18	15	14	14	16	14	14	14
21	14	15	15	15	14	16	14	14	17	21	24	B	33	28	27	24	18	17	18	14	15	16	15	15
22	14	14	15	14	15	15	17	14	17	21	28	50	27	28	24	24	24	15	14	14	14	14	14	14
23	14	14	14	15	15	14	14	14	14	23	26	32	52	53	26	24	20	15	15	14	15	16	15	14
24	15	14	17	15	15	14	15	14	17	18	21	27	53	49	52	22	20	17	16	14	14	14	15	14
25	14	15	14	14	14	15	14	15	17	18	18	22	33	29	50	50	20	15	14	14	15	14	15	16
26	14	14	15	14	14	14	14	14	17	22	26	27	27	26	21	26	20	14	14	15	15	15	15	15
27	15	15	15	15	15	15	14	14	18	30	21	35	38	27	36	42	20	17	15	15	15	14	15	15
28	14	14	14	15	16	14	14	16	18	17	20	66	42	35	B	21	16	14	15	14	14	15	14	18
29	14	15	18	16	18	17	16	16	20	21	20	23	49	52	50	21	16	14	14	14	15	14	14	14
30	15	14	15	15	16	14	18	15	16	18	22	30	42	39	27	21	17	14	15	15	15	15	14	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	29	28	28	29	30	30	30	30	30	30	30	30	29
MED	14	15	15	15	15	15	14	15	17	20	24	32	33	33	29	24	19	16	14	14	15	15	15	14
U Q	15	15	15	15	16	15	16	15	18	21	28	35	38	37	37	30	20	17	15	14	15	15	15	15
L Q	14	14	14	14	14	14	14	14	16	18	21	28	30	29	27	22	18	15	14	14	15	14	14	14

HOURLY VALUES OF foF2 AT Okinawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	52	57	51	51	52	61	72	58	66	68	62	64	69	78	82	84	78	78	84	80	73	A	A
2	A	66	67	56	47	45	48	67	82	82	80	86	98	107	107	107	111	110	105	88	84	72	A	58
3	51	58	58	58	60	56	55	62	84	A	A	A	72	77	82	88	98	101	86	76	76	74	66	74
4	71	66	66	65	66	56	52	67	95	62	65	71	81	91	98	108	104	102	101	97	86	72	48	A
5	A	52	52	64	66	62	64	71	A	A	A	A	80	84	96	103	102	101	107	108	88	81	87	85
6	72	72	67	64	64	47	55	55	67	77	80	68	90	96	86	90	96	96	88	88	80	76	81	78
7	66	55	A	55	62	60	50	52	A	50	A	61		72	A	A	75	A	81	78	76	67	54	52
8	58	54	56	54	57	56	52	62	77	67	72	70	83	88	97	85	78	76	81	77	54	54	54	54
9	66	67	65	A	57	A	50	67	85	90	72	72	72	77	87	85	82	80	78	78	74	67	54	61
10	52	63	61	52	52	49	52	70	48	A	70	72	70	71	71	68	75	85	96	88	74	54	65	66
11	60	A	A	47	42	42	A	67	75	65	61	66	62	70	81	85	87	85	77	80	72	71	67	51
12	51	49	47	51	45	A	54	74	67	65	60	64	A	78	77	76	77	76	86	88	74	74	66	62
13	54	63	61	68	66	67	57	60	54	52	A	A	72	A	88	85	91	98	101	88	72	52	47	47
14	47	49	52	52	A	A	48	75	60	A	56	60	71	72	71	81	86	90	96	97	84	59	52	54
15	54	60	52	54	34	A	41	62	60	A	A	74	81	76	86	96	91	100	106	87	80	75	72	74
16	66	67	67	48	A	47	39	58	45	A	49	A	A	A	61	57	60	66	83	43	A	A	A	A
17	42	42	40	40	37	34	38	57	56	54	A	74	76	85	97	90	86	153	A	106	A	A	51	54
18	54	A	51	58	61	44	38	A	A	70	A	A	A	A	78	86	94	90	83	72	67	60	47	47
19	44	45	46	40	42	39	41	52	60	66	54	A	65	78	87	78	84	86	97	100	81	58	44	43
20	44	44	45	51	40	A	44	55	67	69	57	A	68	77	69	68	76	77	74	72	67	63	52	52
21	44	51	52	49	39	37	44	62	60	54	56	68	A	72	66	73	84	86	80	75	66	52	52	52
22	52	51	55	51	34	30	32	68	81	62	67	A	67	A	72	78	76	A	78	86	88	74	48	46
23	44	51	52	49	44	35	38	58	77	92	58	76	82	78	87	88	97	108	117	87	82	82	75	66
24	67	66	60	66	45	A	42	64	74	72	70	64	64	72	83	96	95	92	88	96	87	52	52	52
25	52	51	51	57	40	A	36	64	68	61	62	72	72	76	86	107	110	93	98	111	96	53	52	53
26	54	64	67	57	29	29	40	62	66	62	A	A	72	98	105	90	75	82	94	86	85	64	52	51
27	52	52	50	45	47	N	41	54	A	A	A	A	A	A	A	B	53	A	A	52	A	A	41	46
28	42	44	44	44	40	A	41	A	A	A	A	A	B	B	B	A	A	58	57	47	A	48	46	A
29	50	45	46	45	40	34	37	51	47	76	A	98	86	72	81	80	86	77	75	A	79	73	A	66
30	66	64	62	60	50	40	48	61	61	60	68	80	102	115	113	110	111	120	118	125	A	A	A	66
31	67	67	75	74	54	47	46	81	67	64	62	66	78	96	97	97	107	116	110	108	88	54	54	54
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	30	29	22	30	29	26	23	20	20	24	25	28	28	30	28	29	30	26	27	26	27
MED	54	54	55	53	47	46	45	62	67	65	64	70	72	77	86	86	86	90	88	87	80	67	52	54
U Q	66	65	63	58	58	56	52	67	77	72	70	74	81	89	96	96	97	101	101	97	85	74	66	66
L Q	48	50	50	49	40	37	40	57	60	61	57	65	69	72	77	79	77	79	79	77	74	54	48	51

HOURLY VALUES OF fEs AT Okinawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	34	38	49	64	61	61	48	G	55	60	69	59	55	36	59	59	72	92
2	59	48	G	G	G	G	G	37	45	48	64	54	45	64	62	71	78	96	71	66	71	51	74	26
3	G	G	27	G	60	39	51	70	50	79	75	96	67	55	64	62	46	45	47	36	26	27	60	51
4	45	34	G	G	G	G	G	46	38	41	50	64	66	76	G	55	50	56	44	93	92	78	70	69
5	90	56	57	40	55	58	44	50	104	93	160	76	50	92	54	58	77	68	60	46	42	43	29	34
6	G	G	49	36	25	36	33	36	44	55	75	68	78	60	51	59	65	38	48	70	36	G	26	G
7	50	29	71	42	57	25	33	50	69	49	64	61	G	G	84	75	58	71	56	67	48	54	51	38
8	29	27	G	G	G	25	G	32	41	50	78	62	57	60	48	49	55	50	52	46	28	34	60	60
9	47	54	84	78	78	71	49	48	92	68	53	47	52	45	49	49	51	42	38	G	G	G	G	G
10	35	45	56	51	42	45	27	42	40	80	50	50	62	65	57	55	49	40	G	24	40	54	59	55
11	73	70	69	73	58	40	72	47	43	60	51	78	48	37	43	56	73	72	61	58	45	27	25	G
12	32	41	35	51	56	79	41	32	35	46	34	55	94	68	64	72	63	71	74	50	36	32	41	30
13	28	27	40	50	61	30	48	35	33	37	53	77	75	73	65	46	55	62	30	G	G	G	G	G
14	35	33	41	40	55	60	27	44	61	95	48	52	49	49	49	42	32	35	42	42	28	29	31	27
15	25	G	G	G	G	24	36	30	51	93	70	47	43	68	50	50	61	58	54	65	55	29	G	G
16	G	G	28	24	94	52	52	52	46	90	51	66	53	62	55	52	52	53	78	49	53	72	60	54
17	43	26	G	G	G	28	G	32	41	52	73	61	58	56	84	57	144	155	130	78	73	57	55	43
18	50	60	43	G	G	G	27	72	79	76	87	97	84	98	54	42	48	48	26	G	G	43	34	27
19	G	G	G	G	G	G	G	43	47	49	55	72	54	64	83	58	46	72	46	34	25	G	G	G
20	49	37	27	59	44	58	33	31	36	43	47	78	56	75	49	G	44	40	29	27	27	G	35	51
21	28	30	54	24	40	33	27	44	80	85	60	76	96	56	54	47	37	38	34	29	40	24	G	G
22	G	G	G	G	G	G	G	33	55	46	52	59	G	102	51	46	48	107	76	46	29	32	32	G
23	46	46	52	39	40	46	36	36	45	52	44	65	52	G	42	40	37	28	26	29	24	G	G	59
24	40	40	42	36	G	33	37	42	44	52	45	50	48	37	G	35	37	G	G	28	36	36	33	27
25	G	45	28	G	34	26	25	31	36	47	57	70	56	45	48	42	38	28	28	25	48	36	G	G
26	G	G	G	G	G	G	G	38	49	53	66	70	52	48	49	59	56	60	41	36	26	22	G	G
27	G	G	G	G	G	G	G	35	49	48	48	53	80	57	53	B	54	59	61	48	49	51	35	38
28	27	G	55	28	G	41	35	62	56	94	91	50	B	B	B	34	47	50	38	37	56	32	47	48
29	G	G	G	24	G	G	25	38	45	72	87	G	43	50	G	G	G	47	46	94	72	90	58	49
30	64	33	28	G	28	G	G	34	44	50	57	75	72	G	85	50	72	56	80	60	92	102	92	44
31	G	G	G	G	G	34	37	24	41	43	45	62	52	52	54	59	58	G	42	48	51	56	57	46
	00	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	30	30	30	30	31	31	31	31	31	31	31	31
MED	29	29	28	24	25	30	33	38	45	52	57	62	54	56	54	51	52	53	46	46	40	34	35	34
U Q	47	45	52	40	55	45	37	47	55	79	73	75	67	68	62	59	63	68	61	60	55	54	59	51
L Q	G	G	G	G	G	G	G	33	41	48	50	53	48	45	49	42	46	40	34	29	27	24	G	G

HOURLY VALUES OF fmin AT Okinawa

AUG. 2015

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	18	18	15	15	16	14	14	17	21	26	28	39	53	29	36	21	16	14	14	14	14	14	14
2	15	14	15	14	14	14	15	15	14	22	22	33	54	40	33	28	24	16	18	14	14	14	14	14
3	15	17	14	16	16	14	14	14	16	24	28	32	34	32	33	29	22	16	14	14	14	14	14	14
4	15	14	14	15	15	14	17	14	20	26	29	32	33	34	52	38	27	20	16	14	14	14	14	14
5	14	14	14	14	14	14	14	14	17	21	28	36	35	36	42	26	21	18	14	14	15	15	14	14
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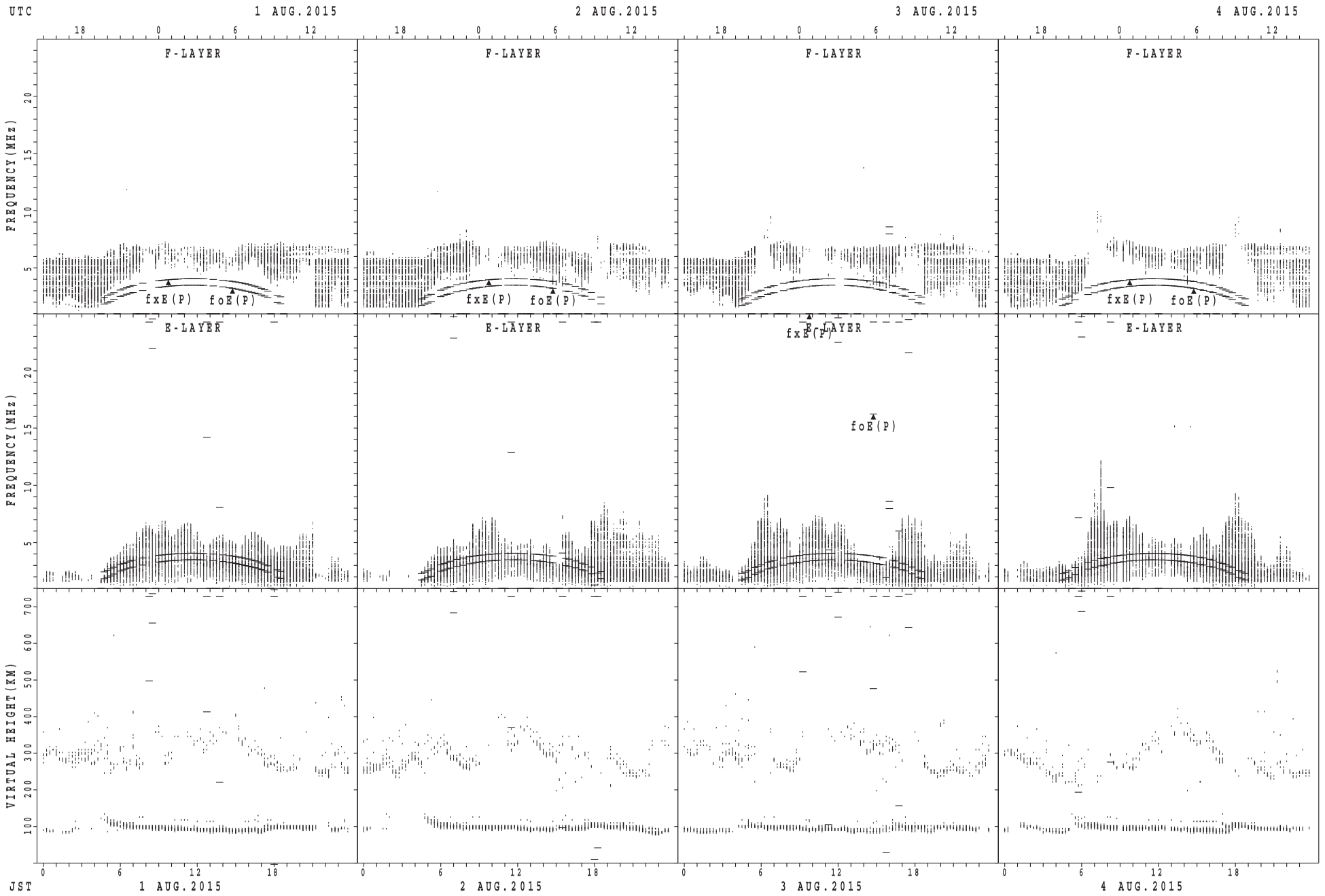
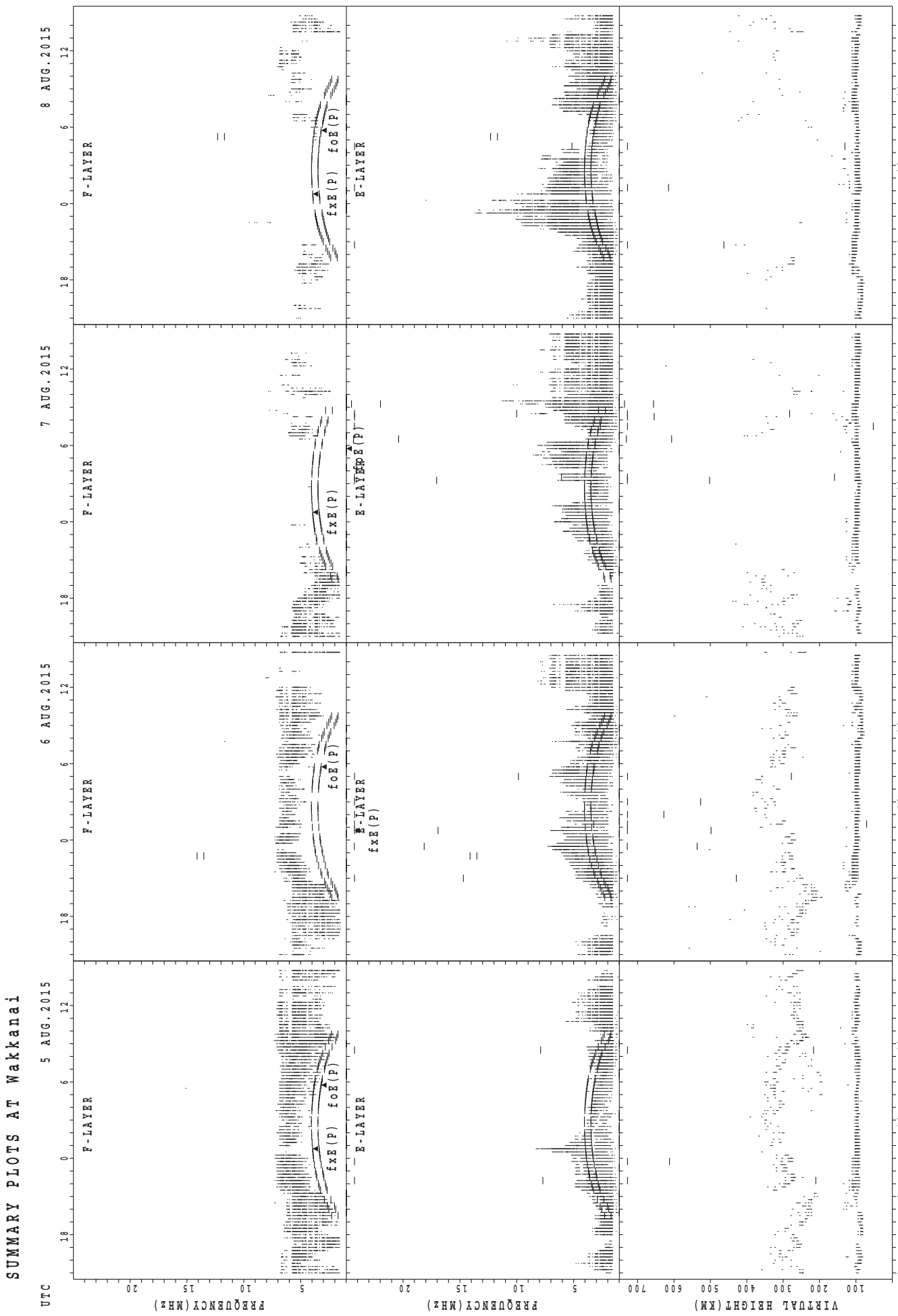
MED	14	14	14	14	14	14	14	14	16	21	27	32	34	34	30	27	20	16	14	14	14	14	14	14
U Q	15	15	15	15	15	14	15	15	17	22	29	34	39	40	38	29	22	17	14	14	14	14	15	15
L Q	14	14	14	14	14	14	14	14	15	20	23	29	32	30	28	23	18	15	14	14	14	14	14	14

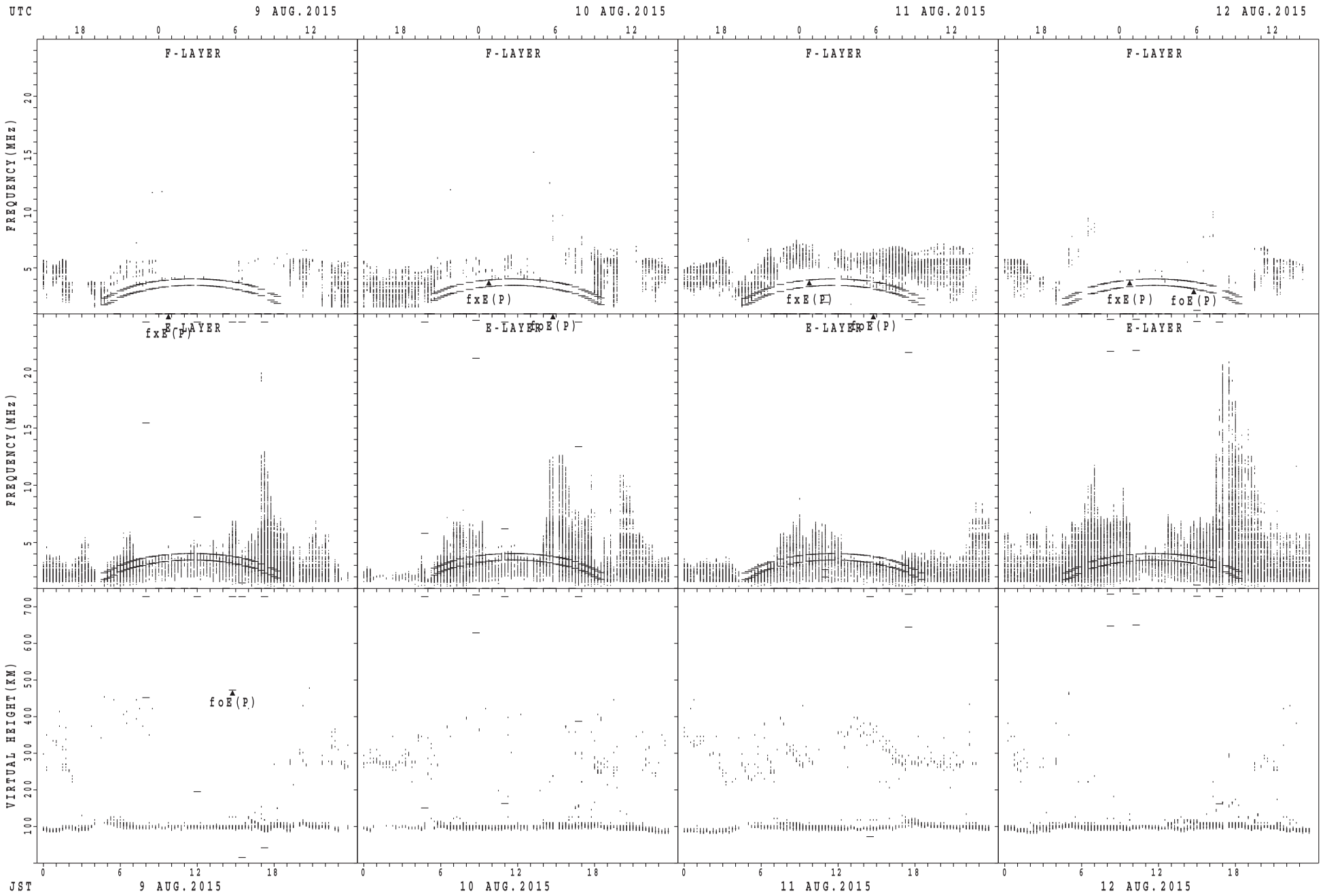
SUMMARY PLOTS AT Wakkanai



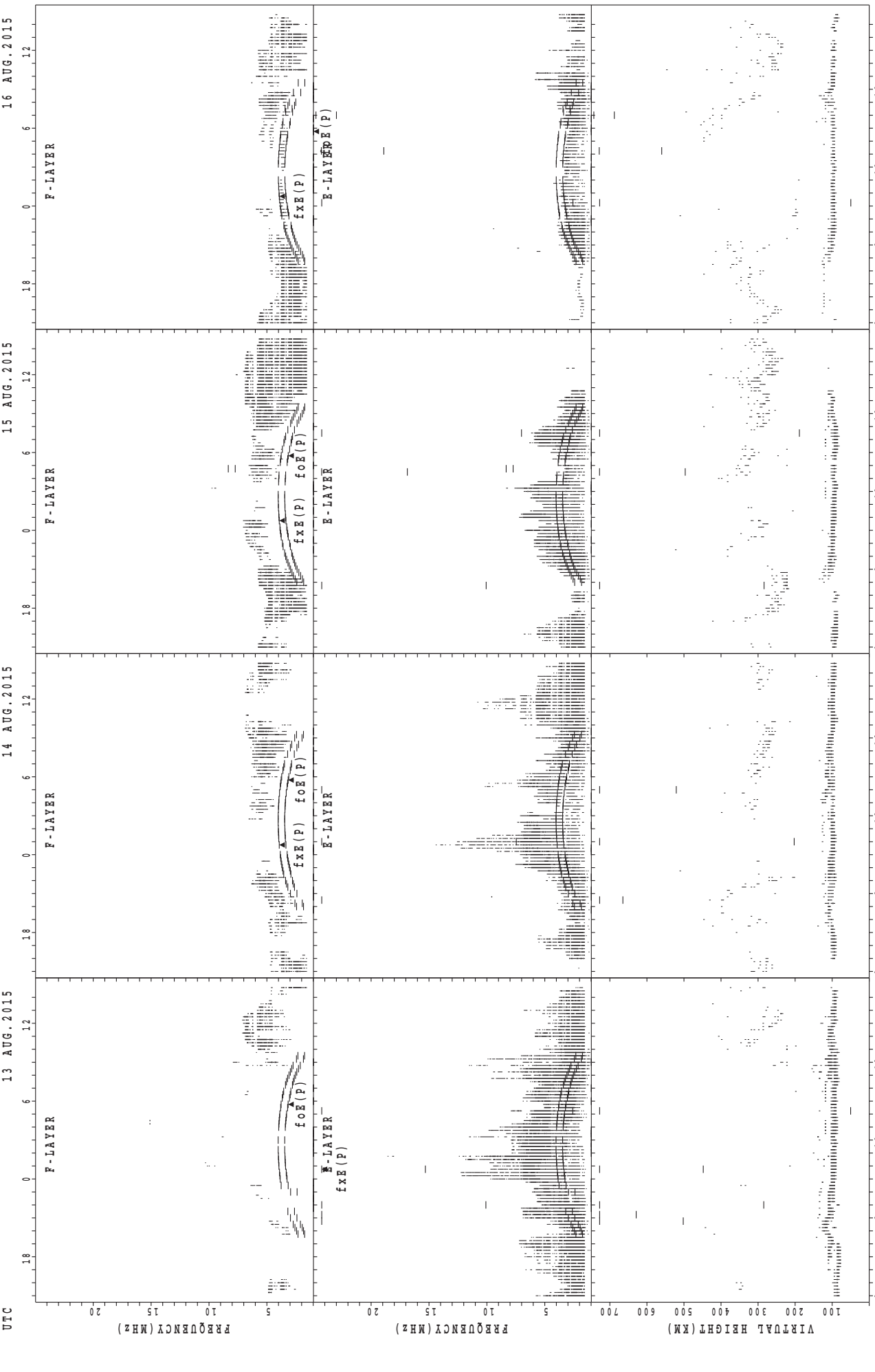
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
5 AUG.2015
6 AUG.2015
7 AUG.2015
8 AUG.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

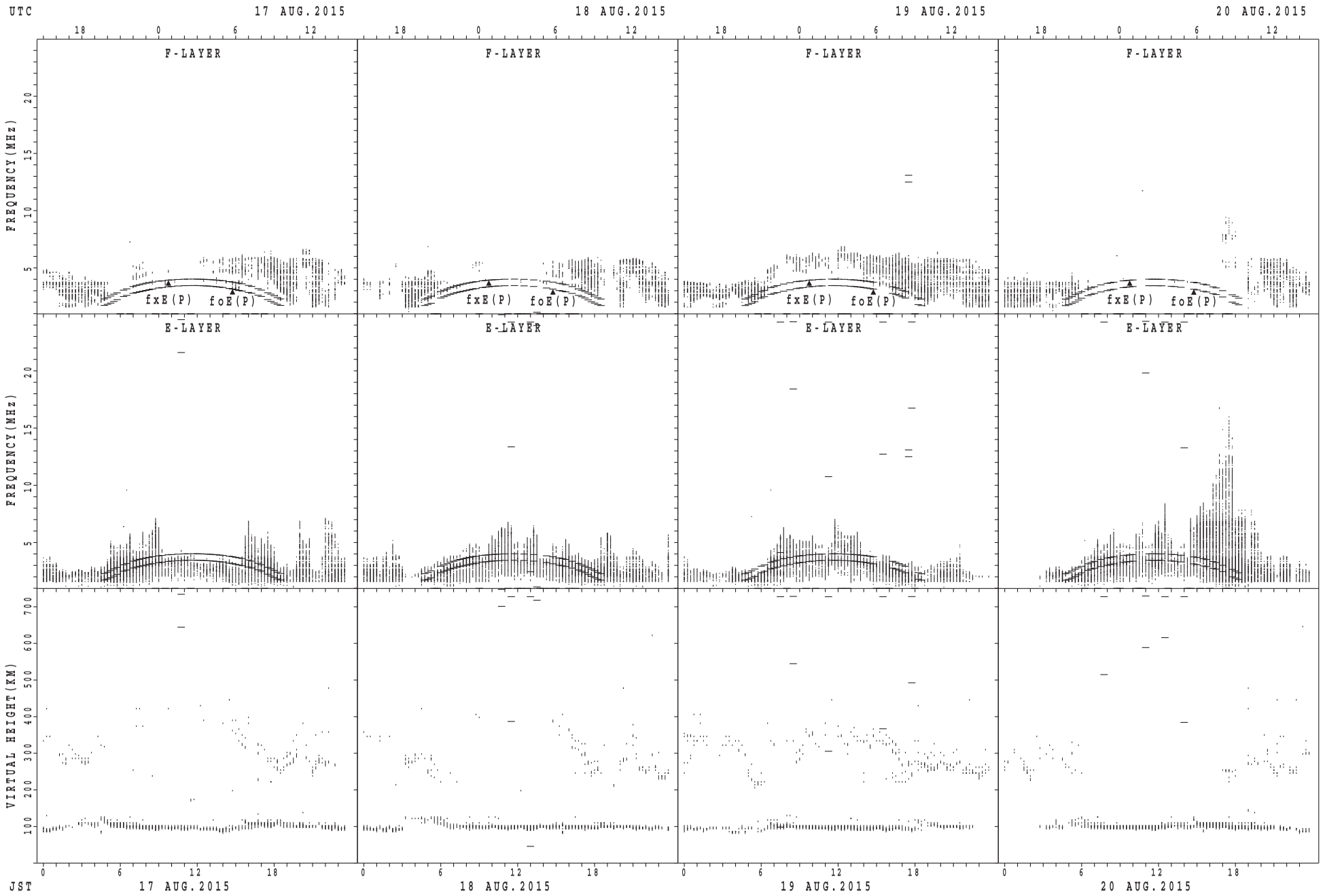
SUMMARY PLOTS AT Wakkanai



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


SUMMARY PLOTS AT Wakkanai
UTC
JST
13 AUG.2015
14 AUG.2015
15 AUG.2015
16 AUG.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



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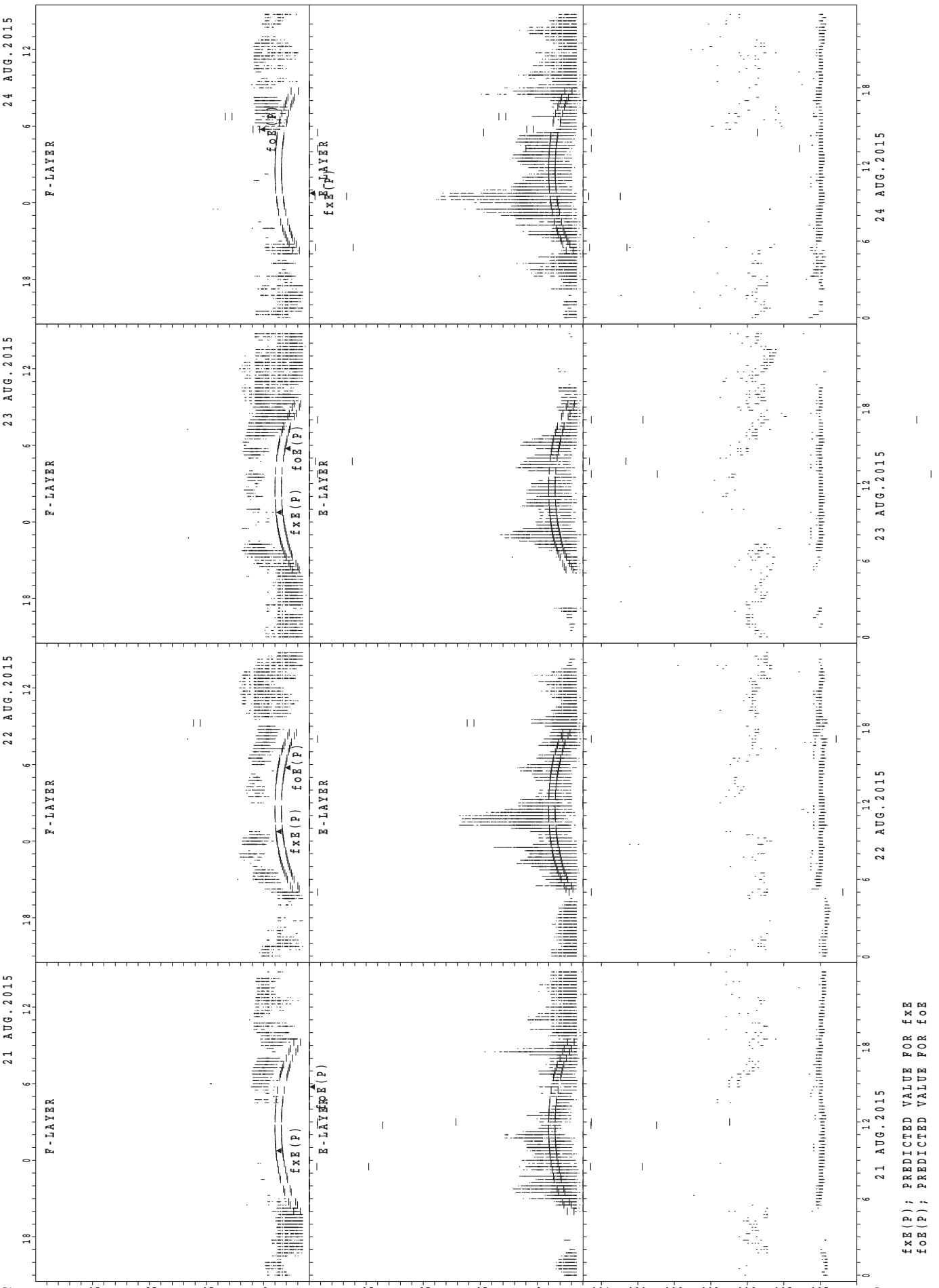
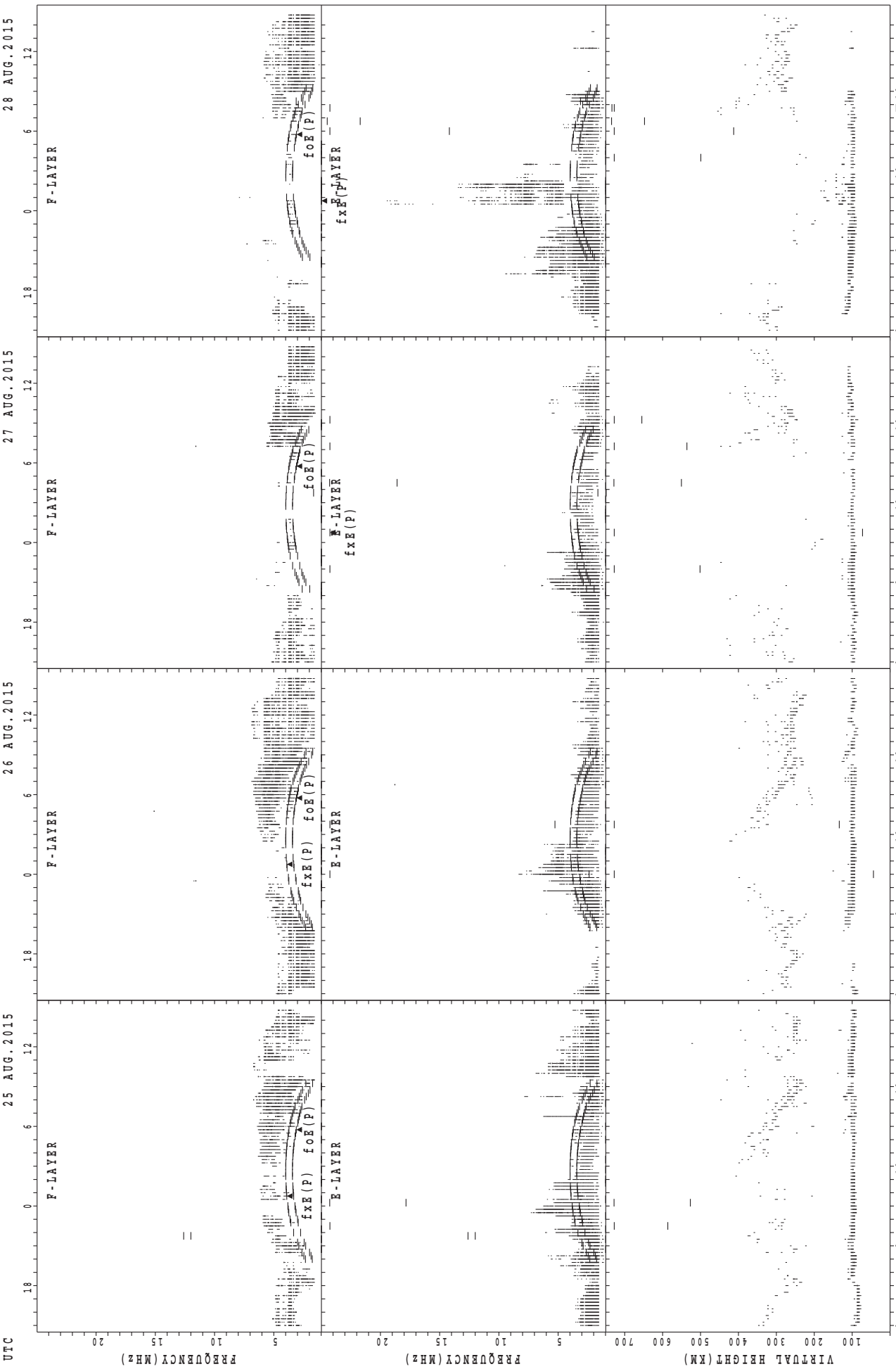
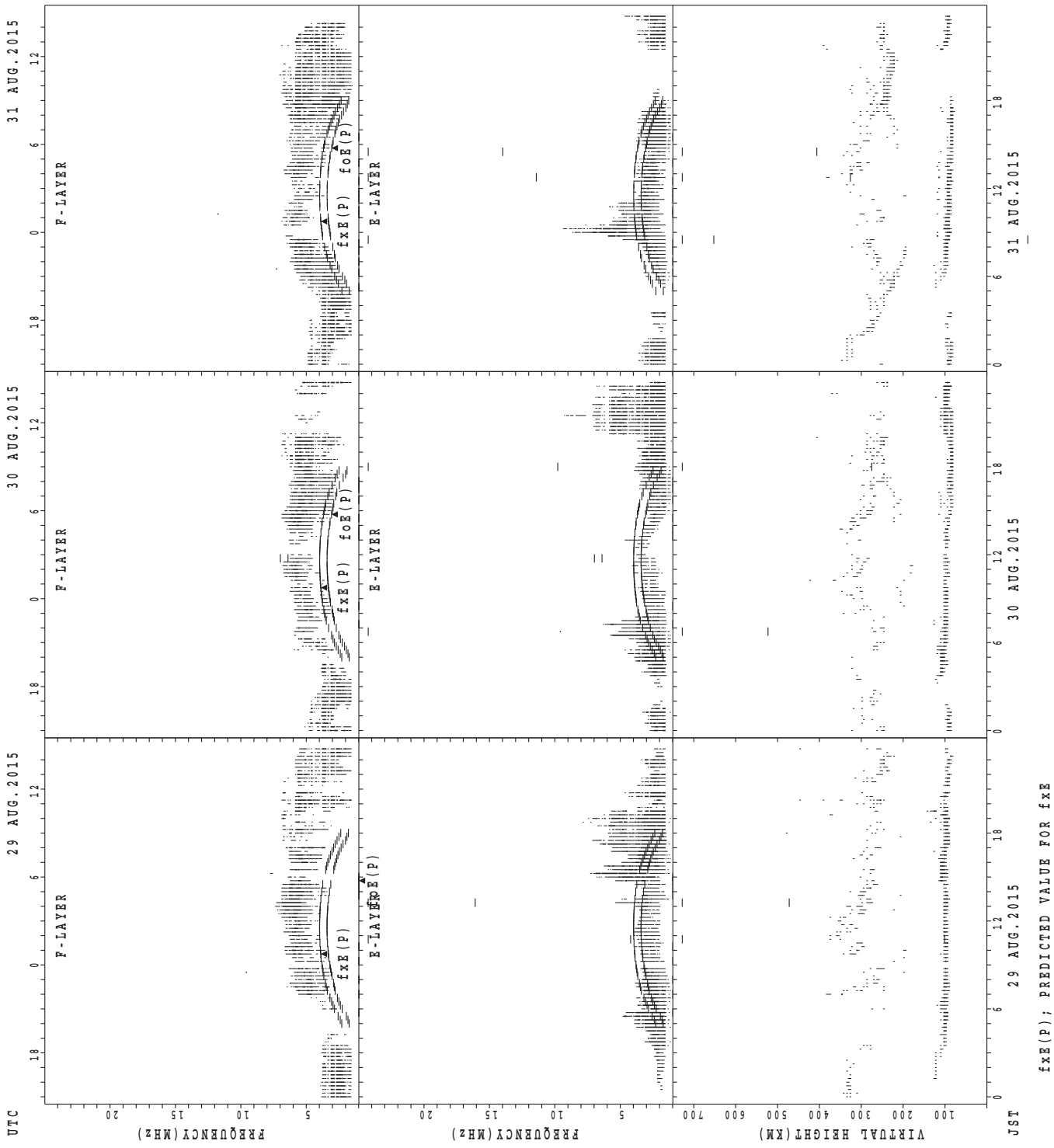
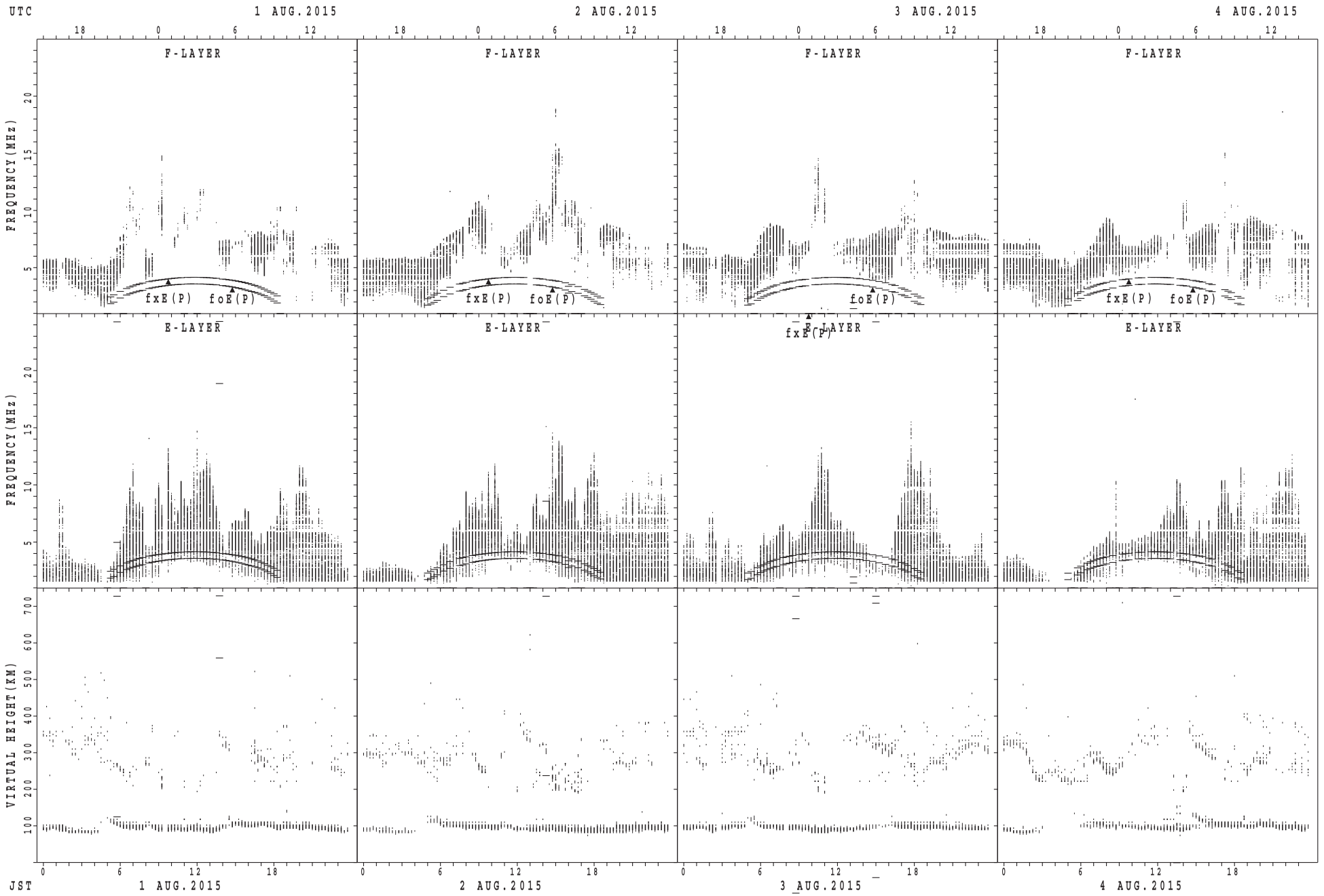
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
21 AUG.2015
22 AUG.2015
23 AUG.2015
24 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
25 AUG.2015
26 AUG.2015
27 AUG.2015
28 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
29 AUG.2015
30 AUG.2015
31 AUG.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



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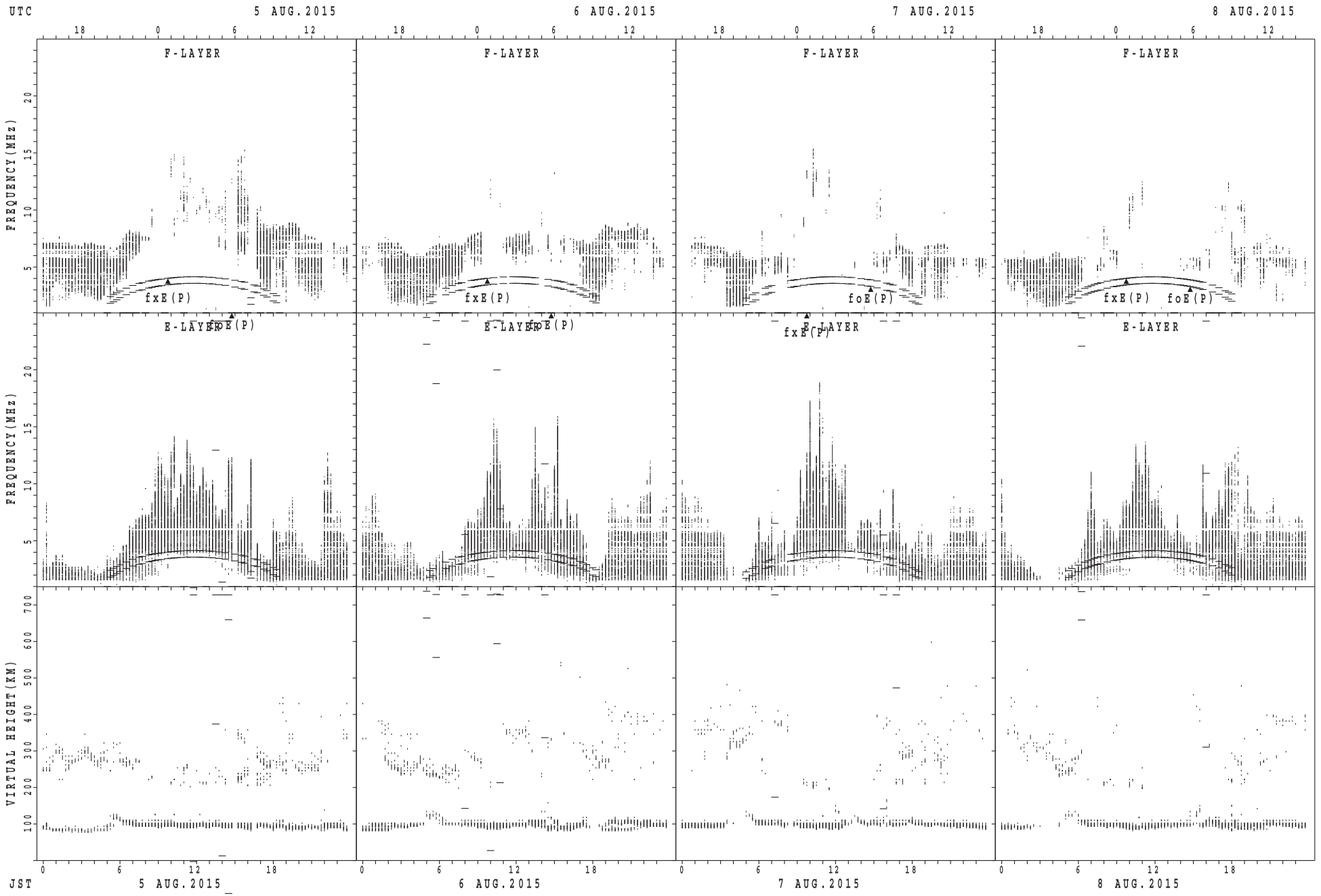
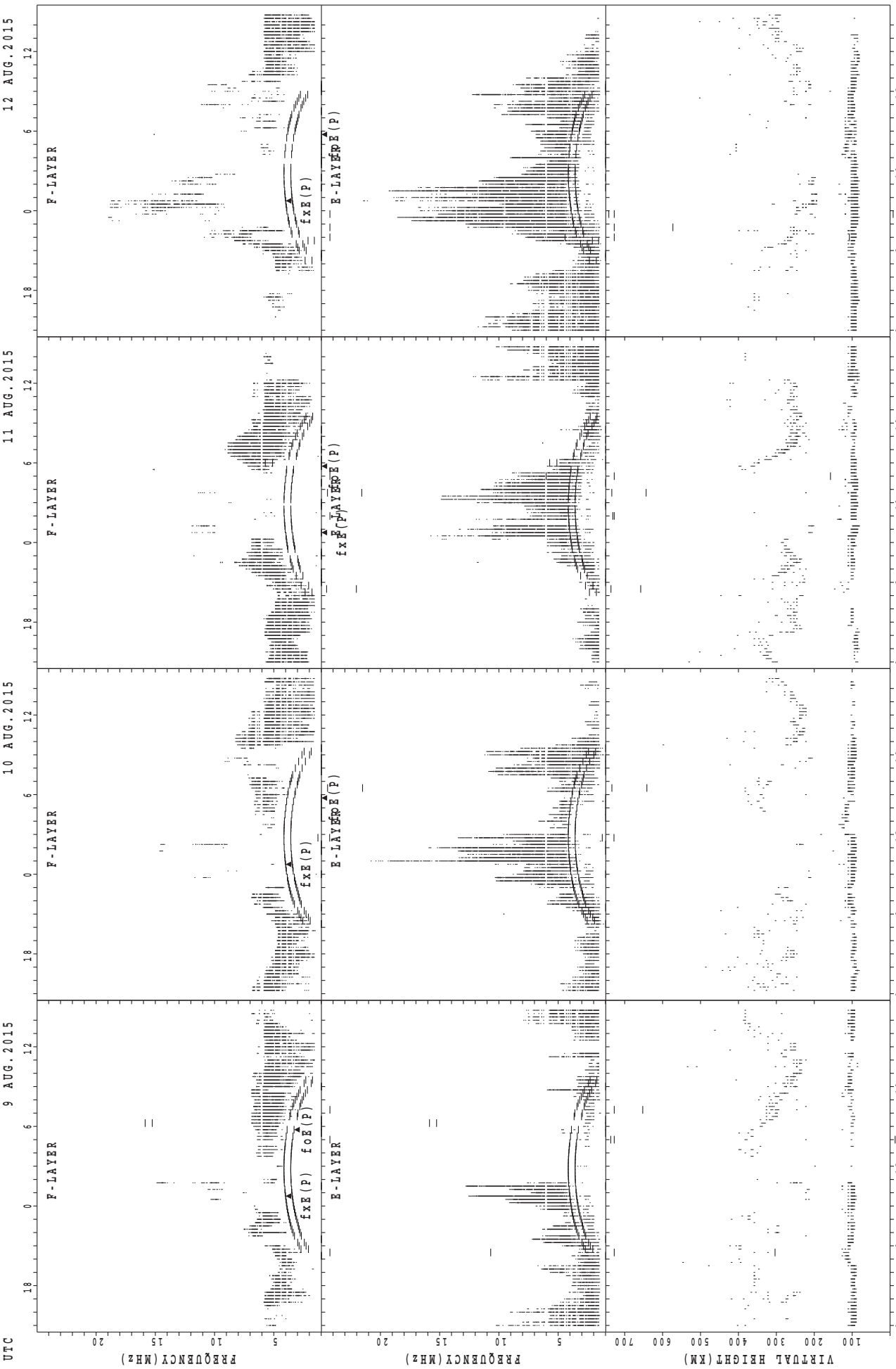
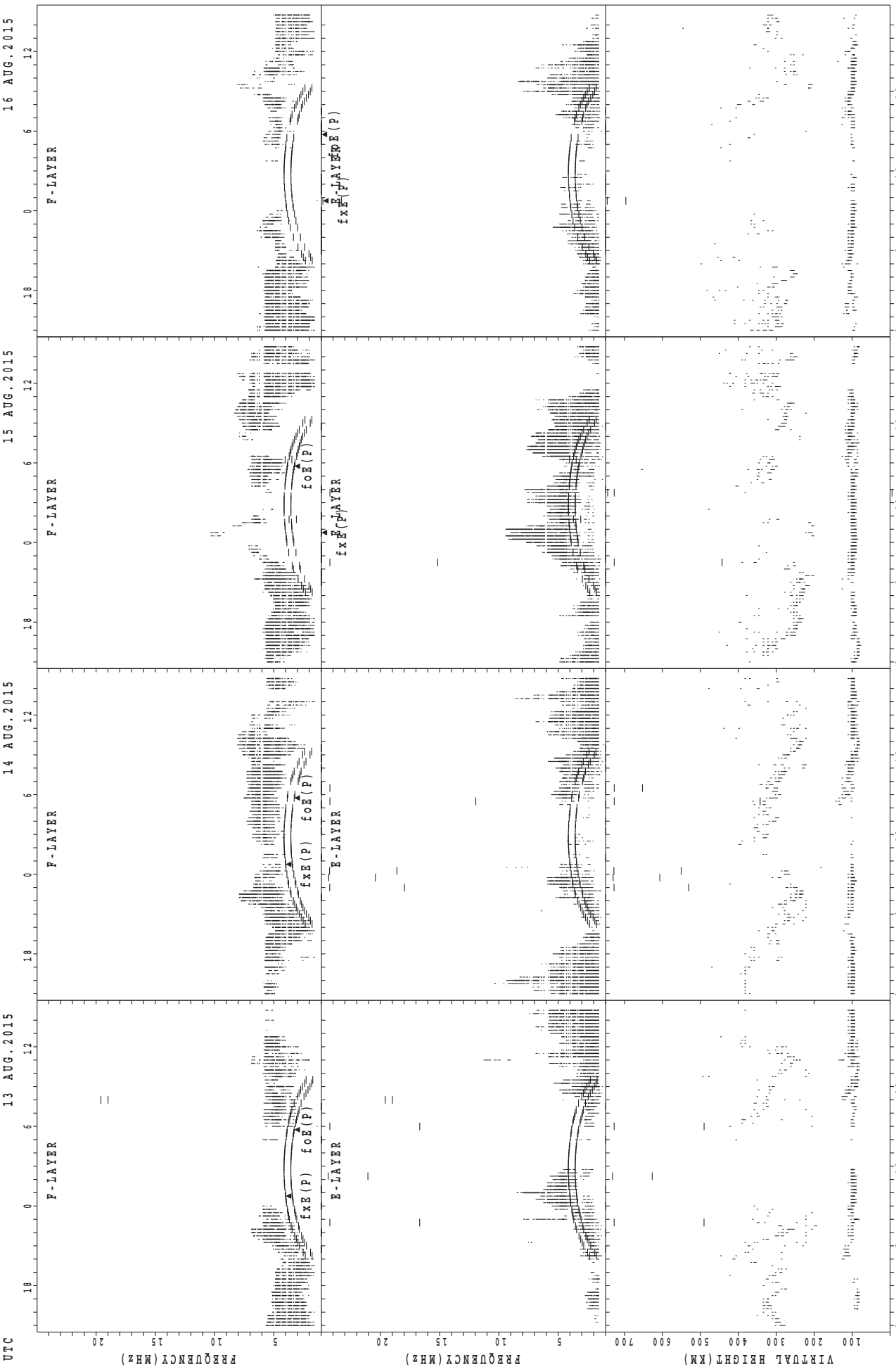
SUMMARY PLOTS AT Kokubunji



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


SUMMARY PLOTS AT Kokubunji
UTC
JST
9 AUG.2015
10 AUG.2015
11 AUG.2015
12 AUG.2015
F-LAYER
E-LAYER
fxE(P)
foE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Kokubunji
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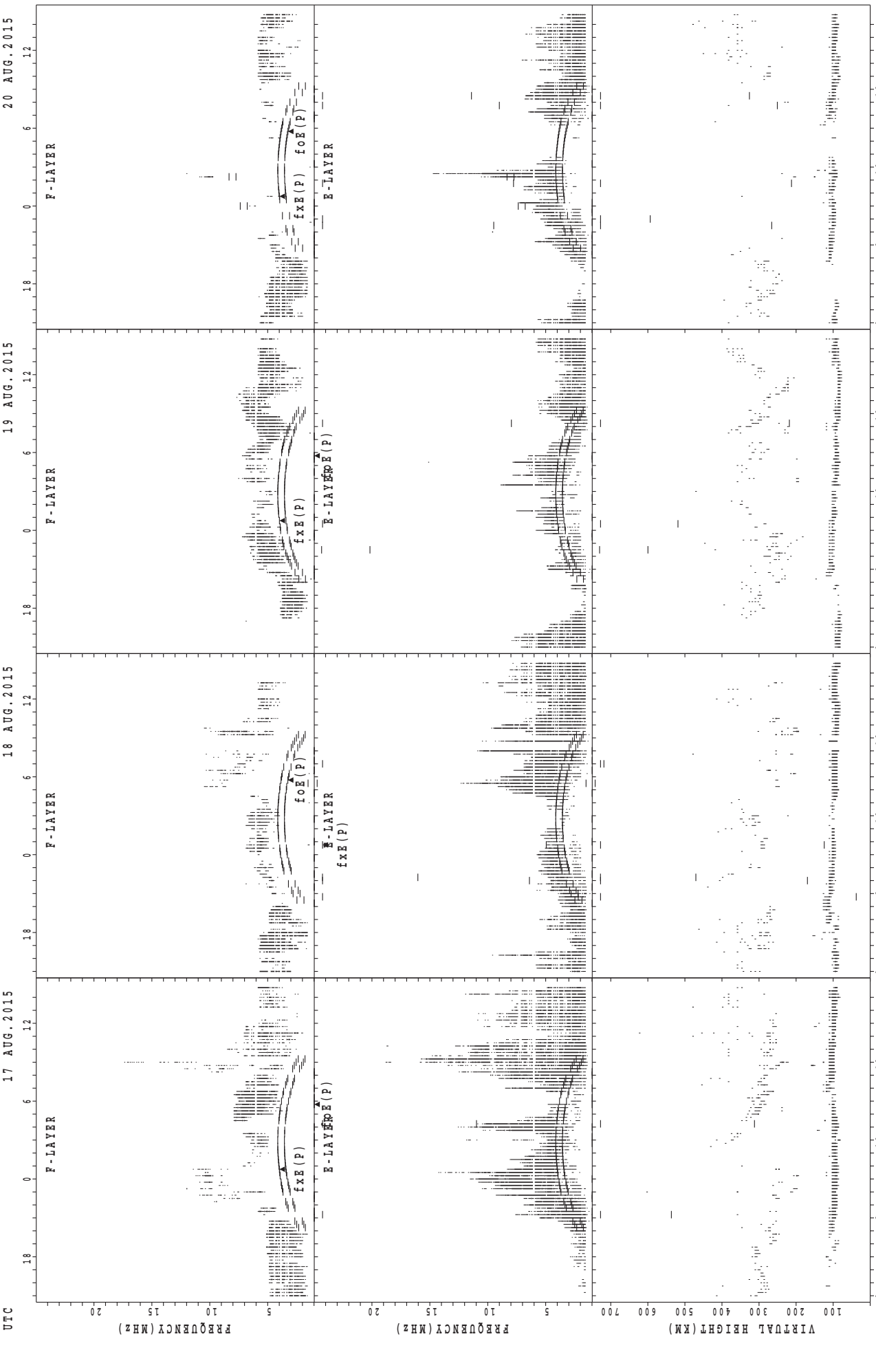
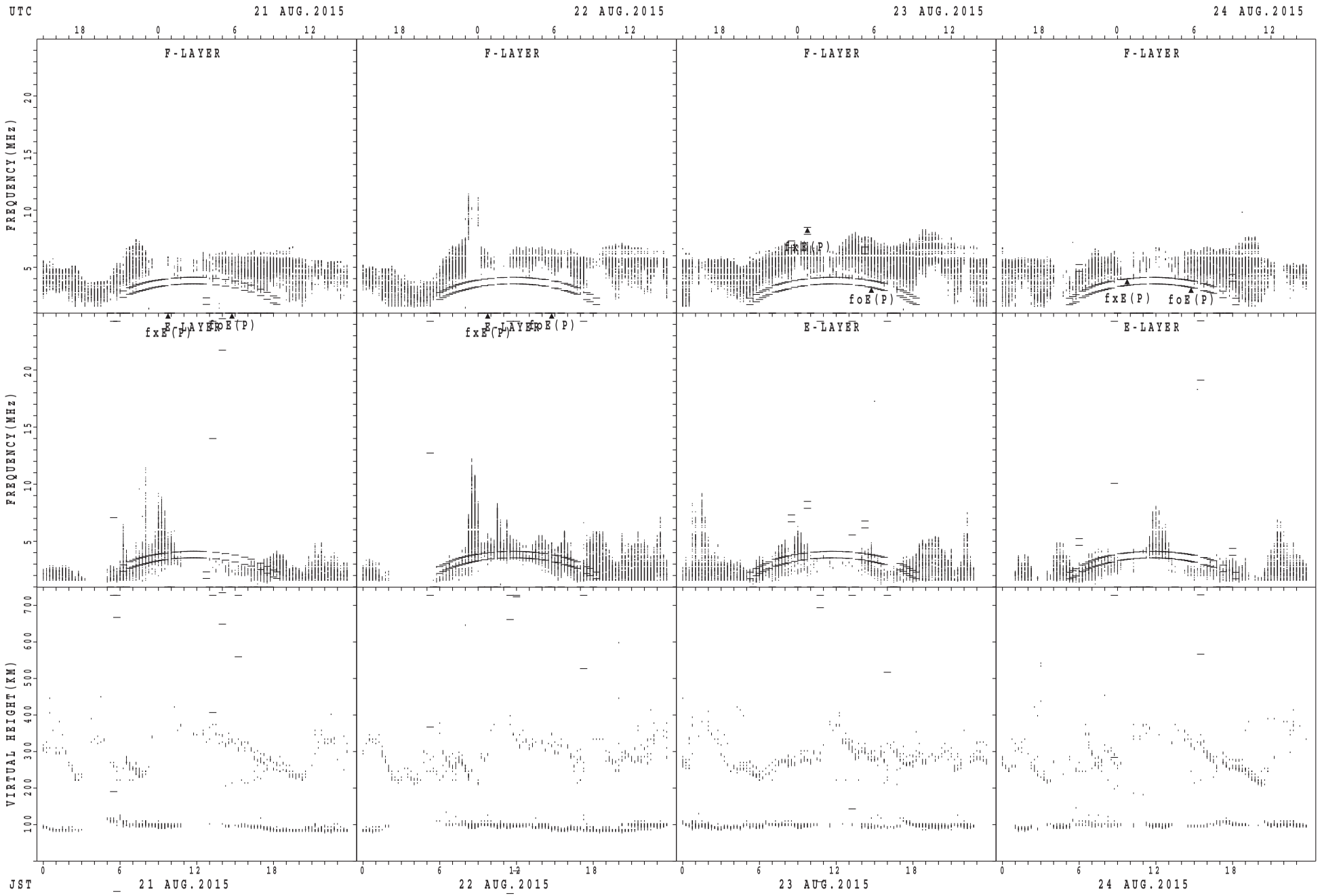
JST
13 AUG.2015
14 AUG.2015
15 AUG.2015
16 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

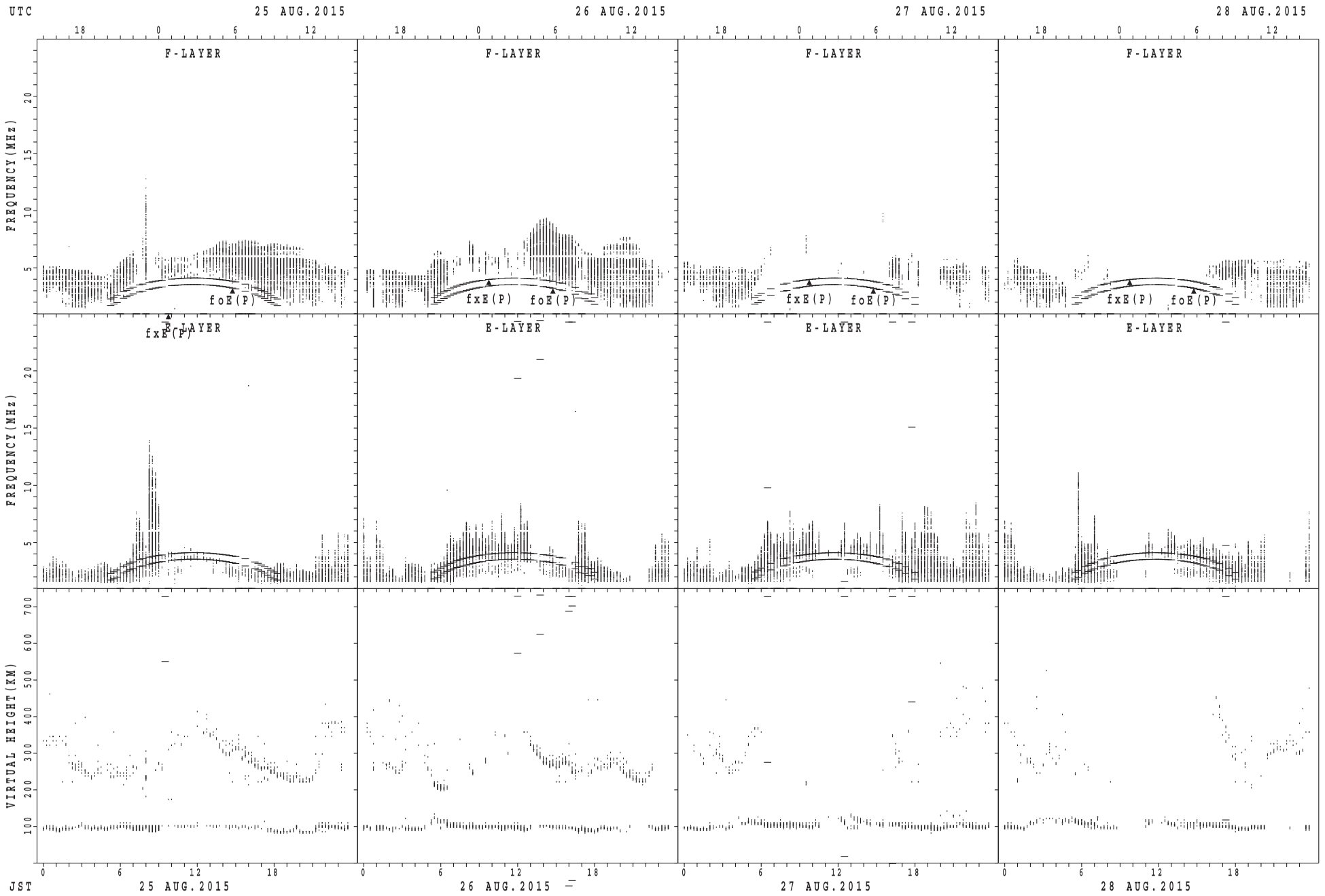

SUMMARY PLOTS AT Kokubunji
UTC
JST
17 AUG.2015
18 AUG.2015
19 AUG.2015
20 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



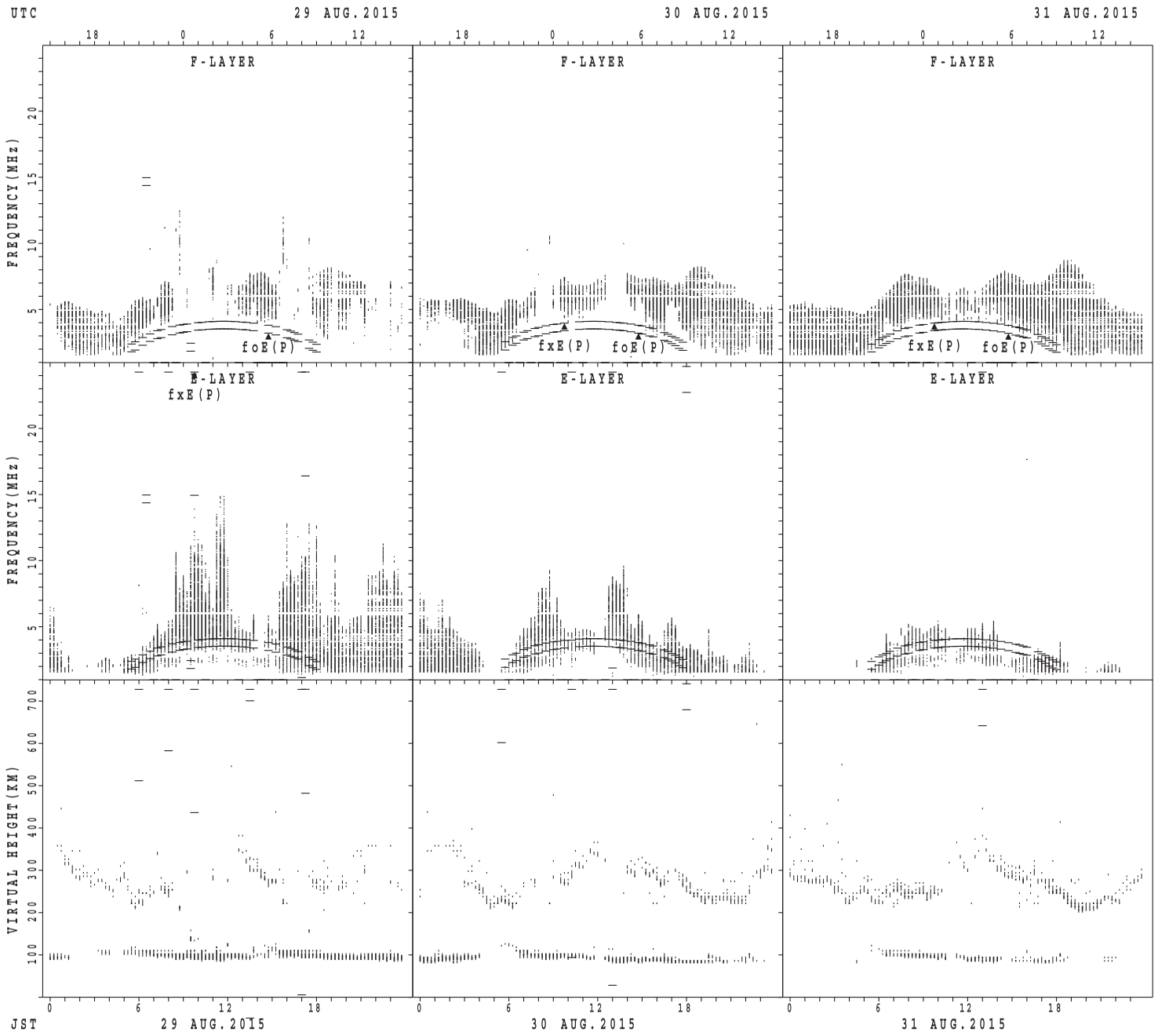
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



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

SUMMARY PLOTS AT Kokubunji



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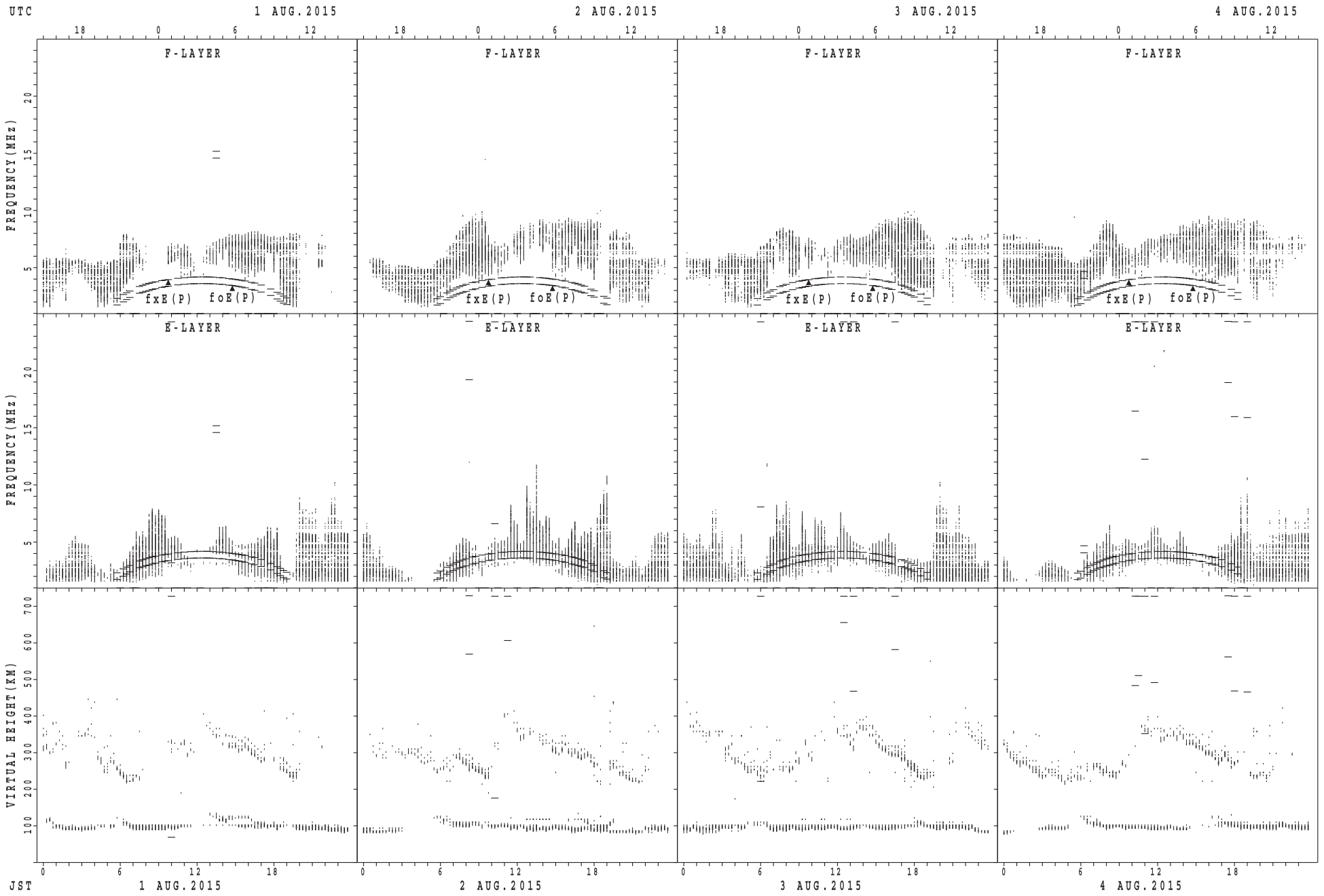
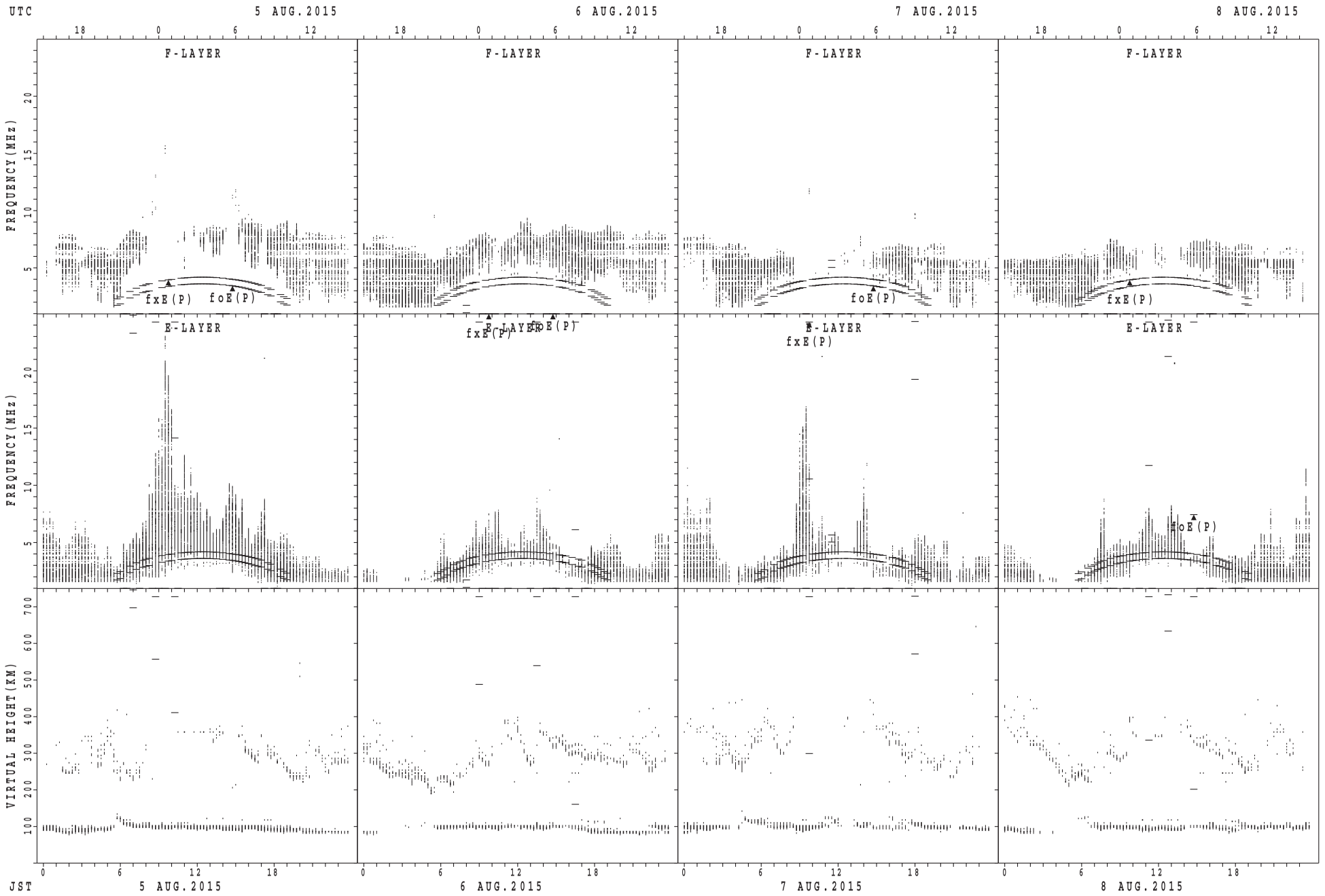
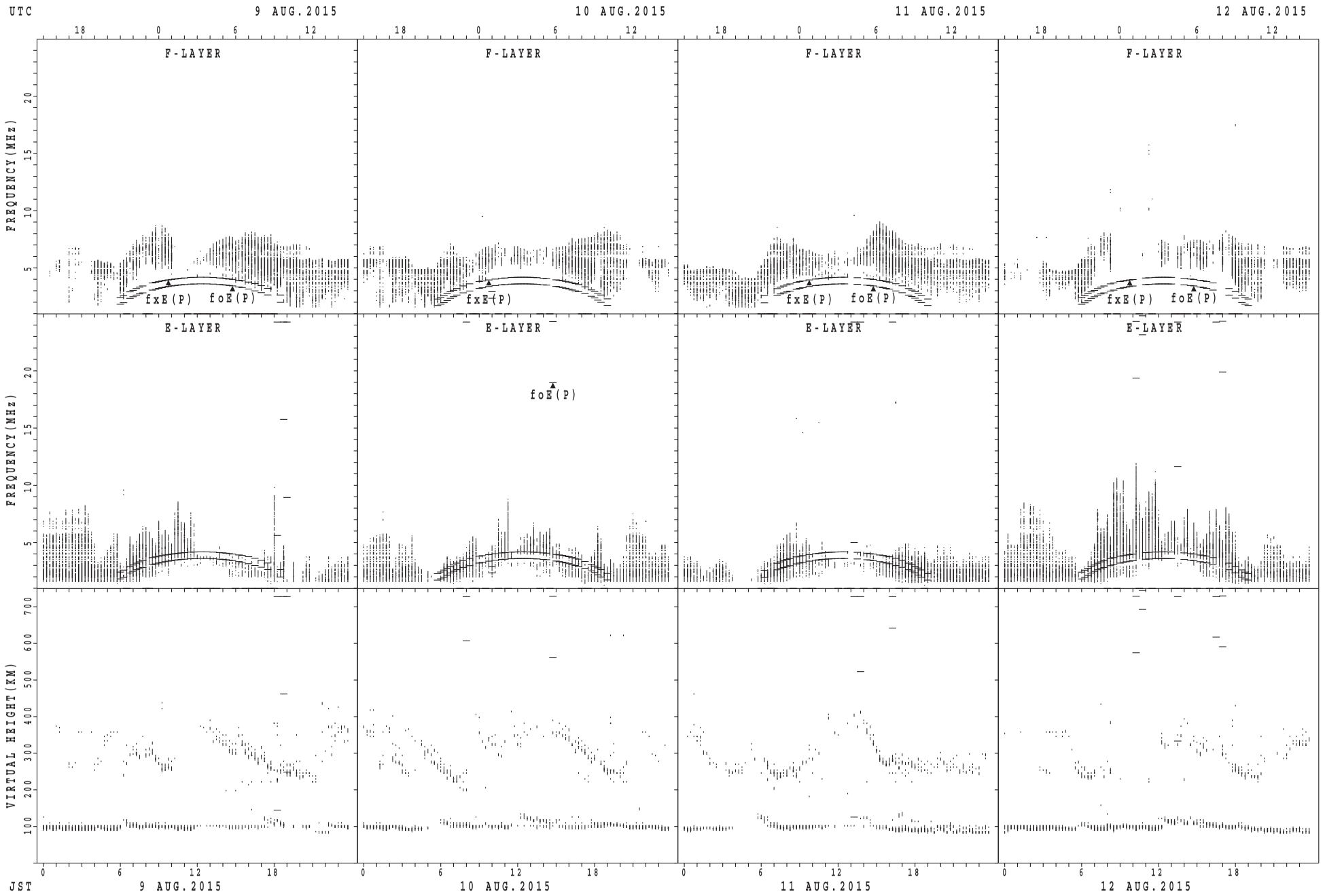
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Yamagawa
UTC
1 AUG.2015
2 AUG.2015
3 AUG.2015
4 AUG.2015
F-LAYER
fxE(P) foE(P)
FREQUENCY(MHz)
E-LAYER
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Yamagawa
UTC
5 AUG.2015
6 AUG.2015
7 AUG.2015
8 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



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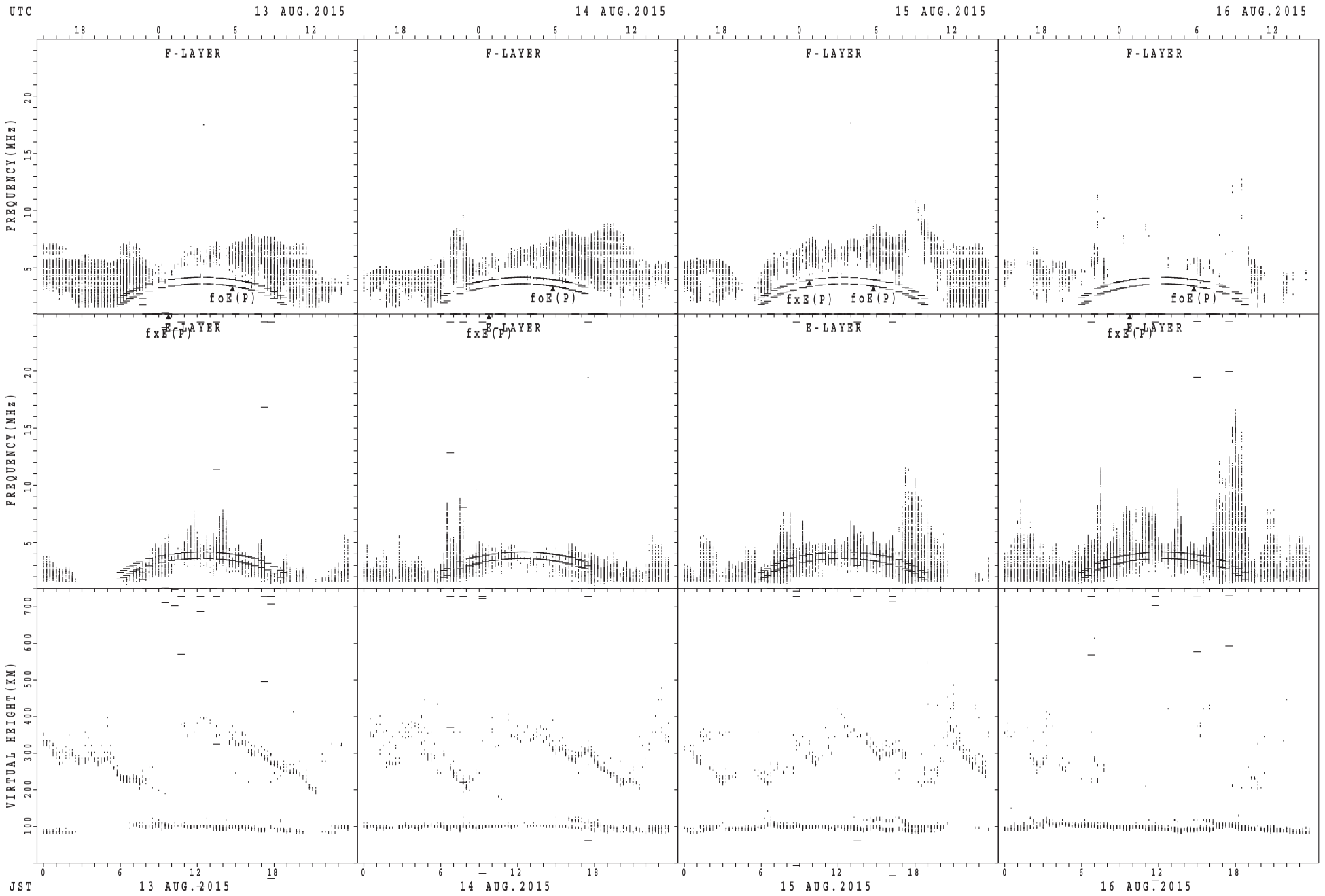
SUMMARY PLOTS AT Yamagawa



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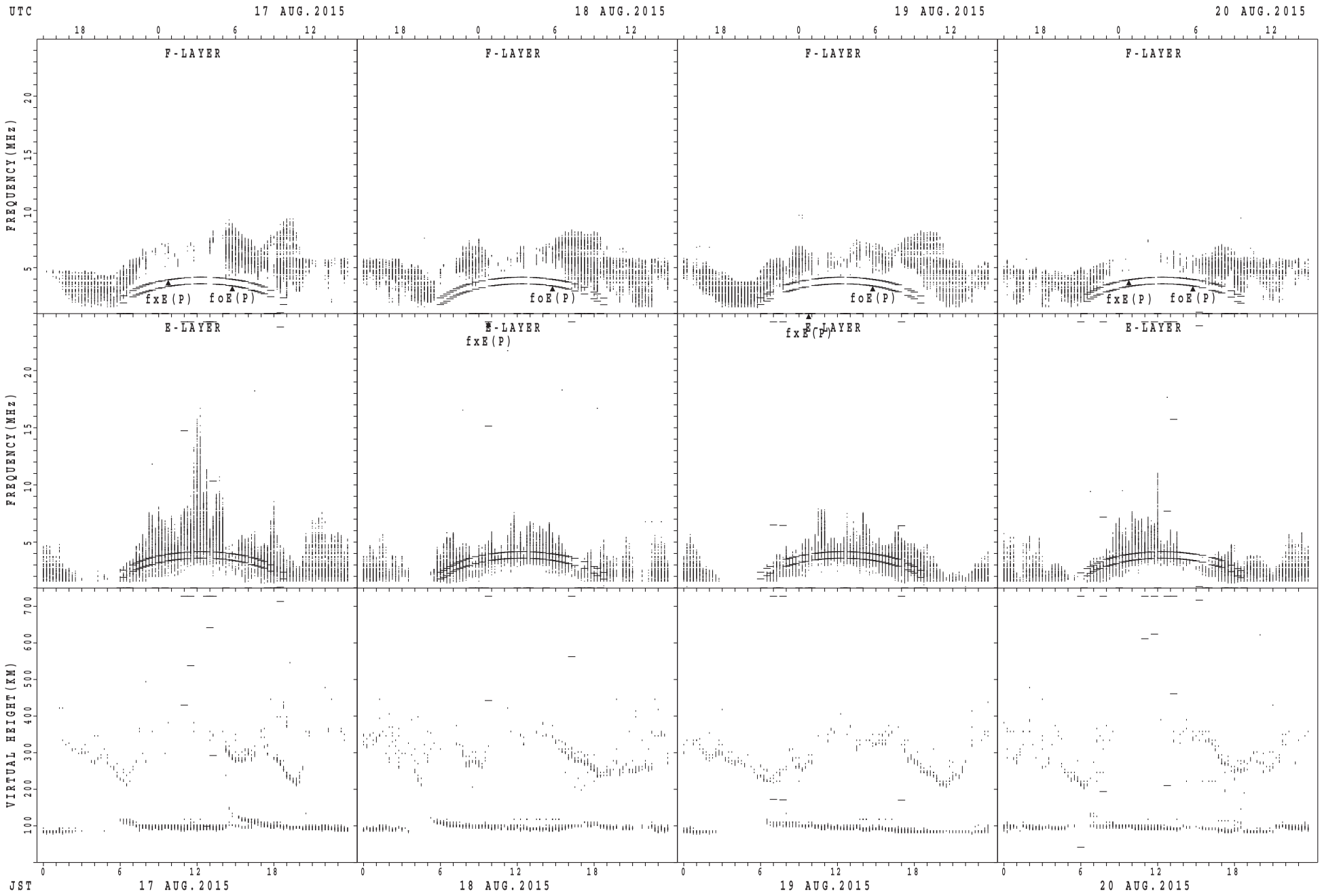
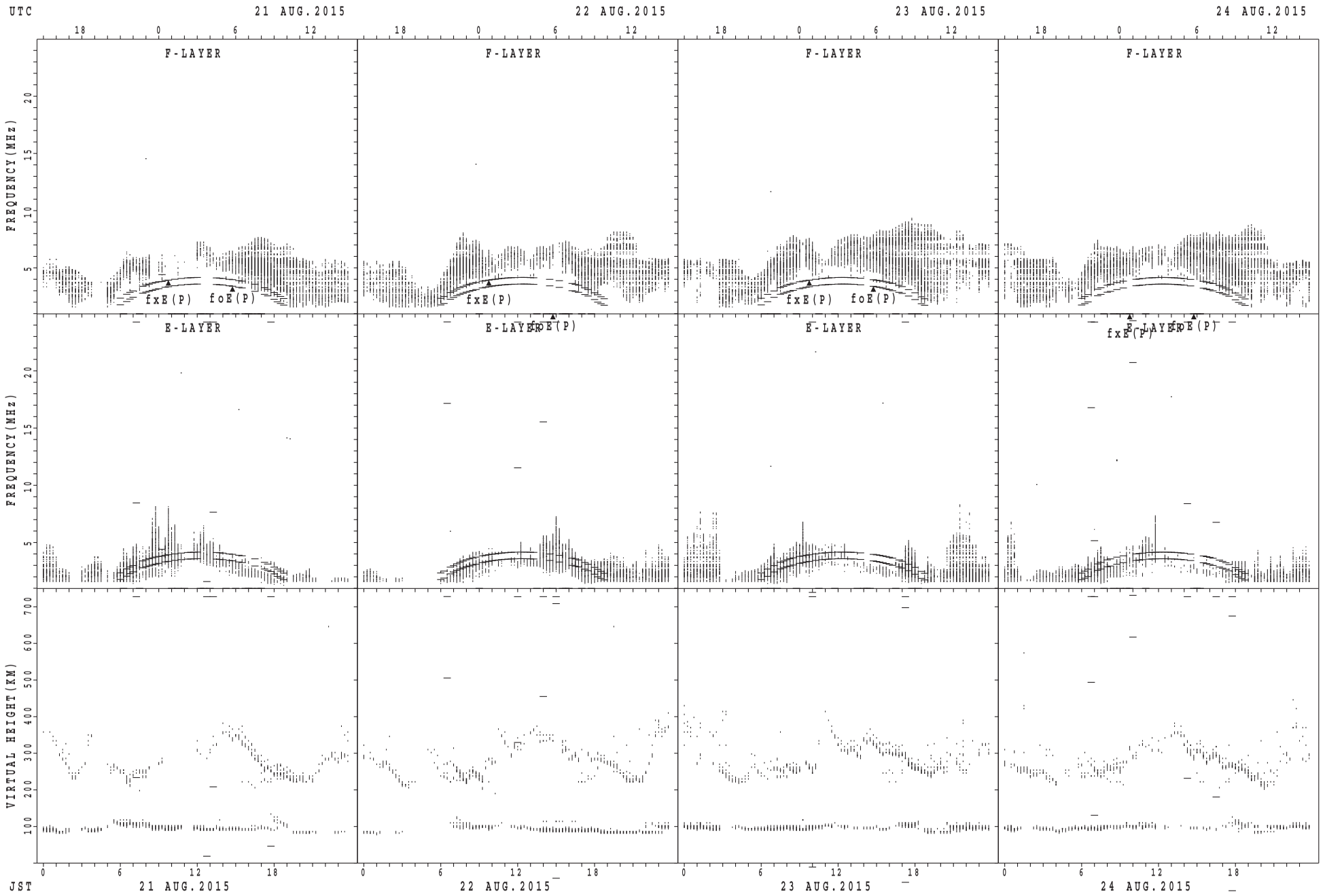
foE(P); PREDICTED VALUE FOR foE

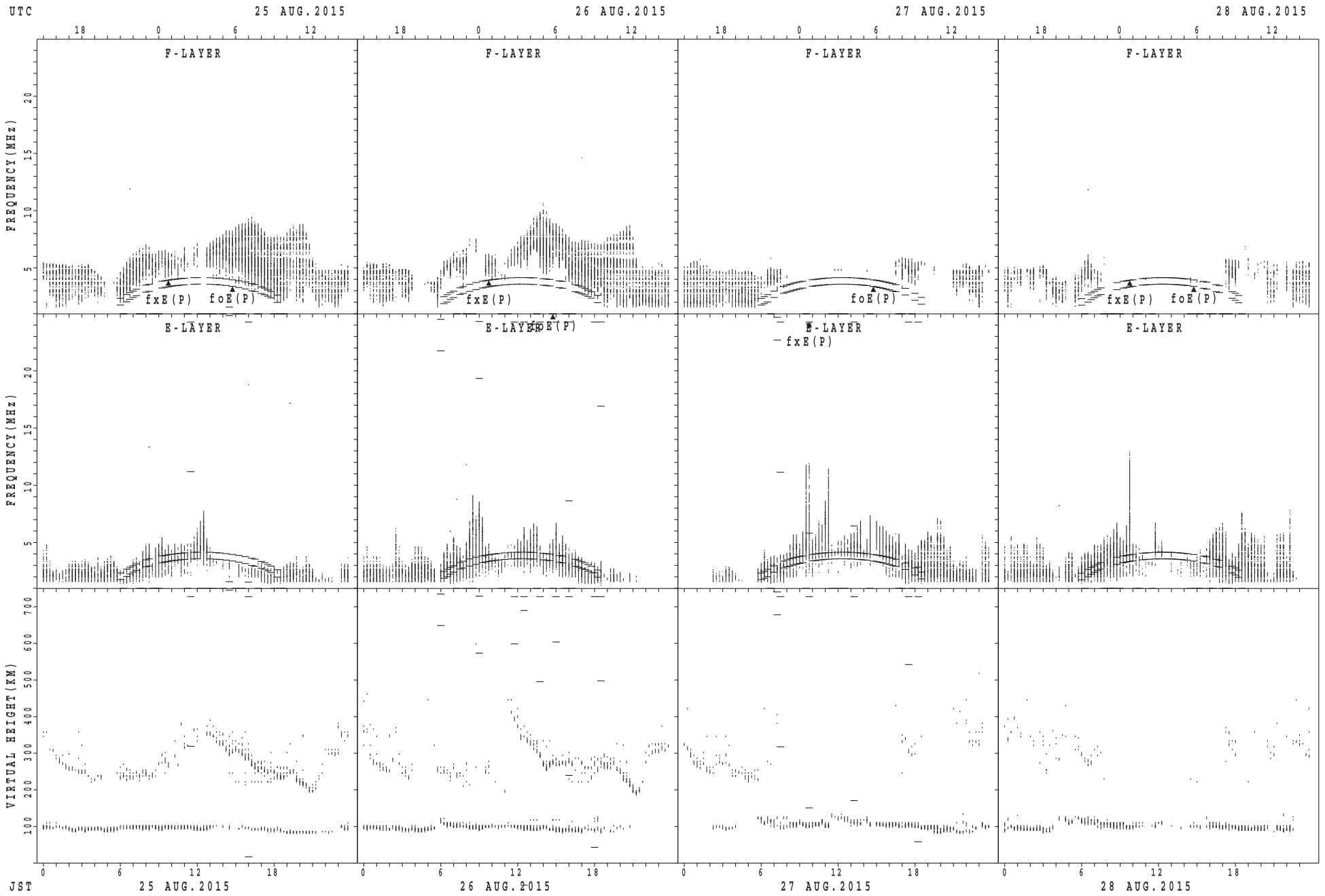

SUMMARY PLOTS AT Yamagawa
UTC
17 AUG.2015
18 AUG.2015
19 AUG.2015
20 AUG.2015
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa

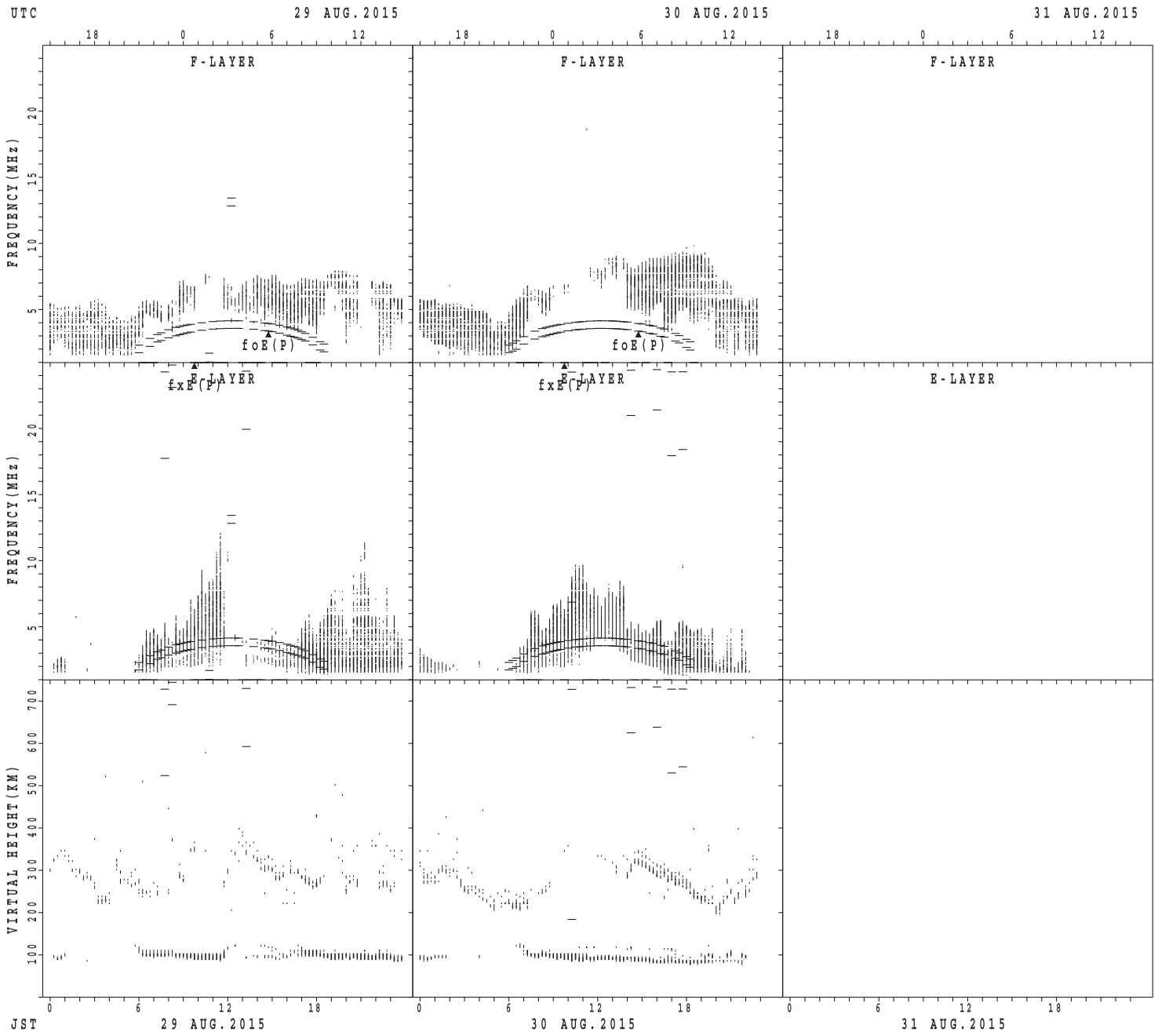


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

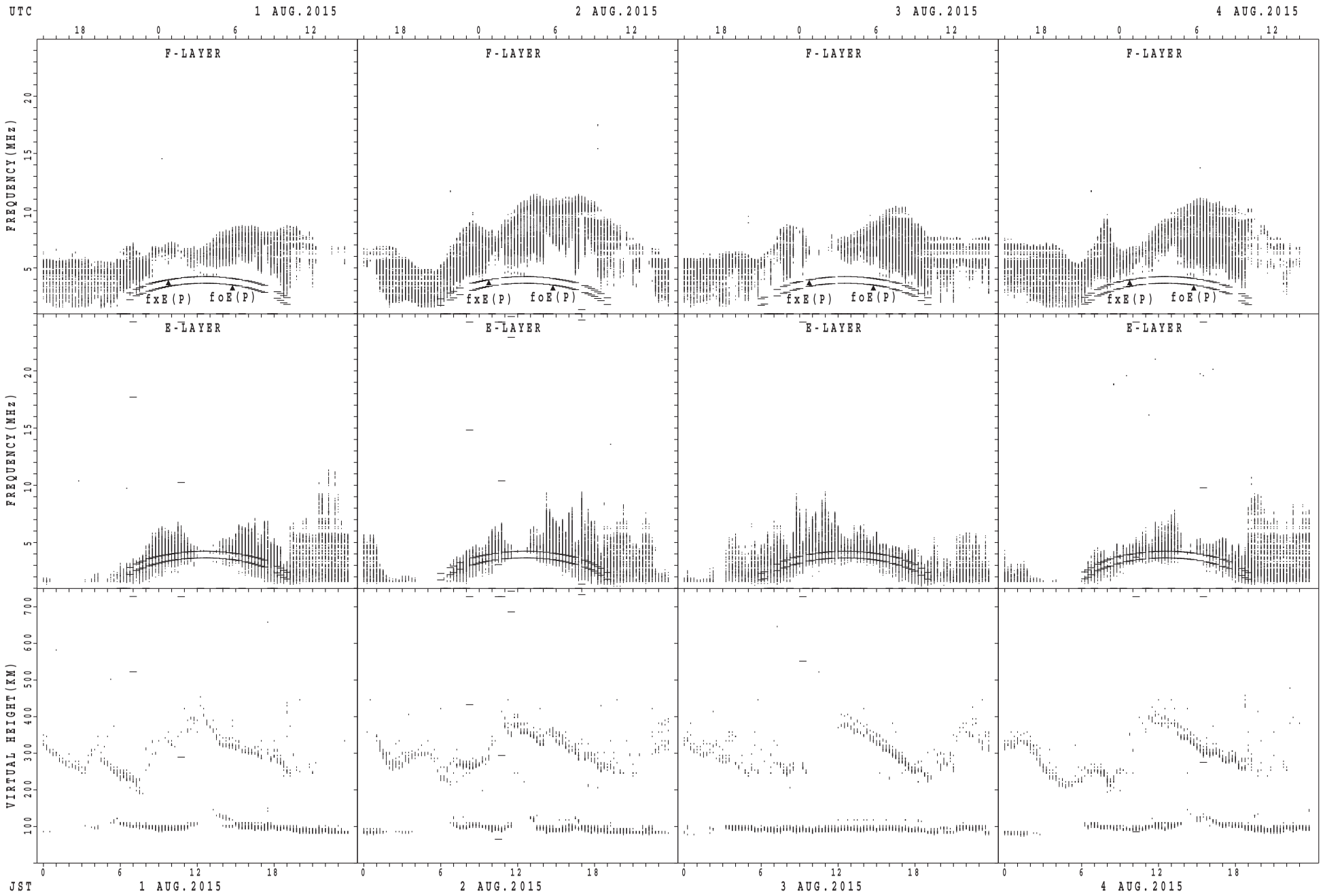
SUMMARY PLOTS AT Yamagawa



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

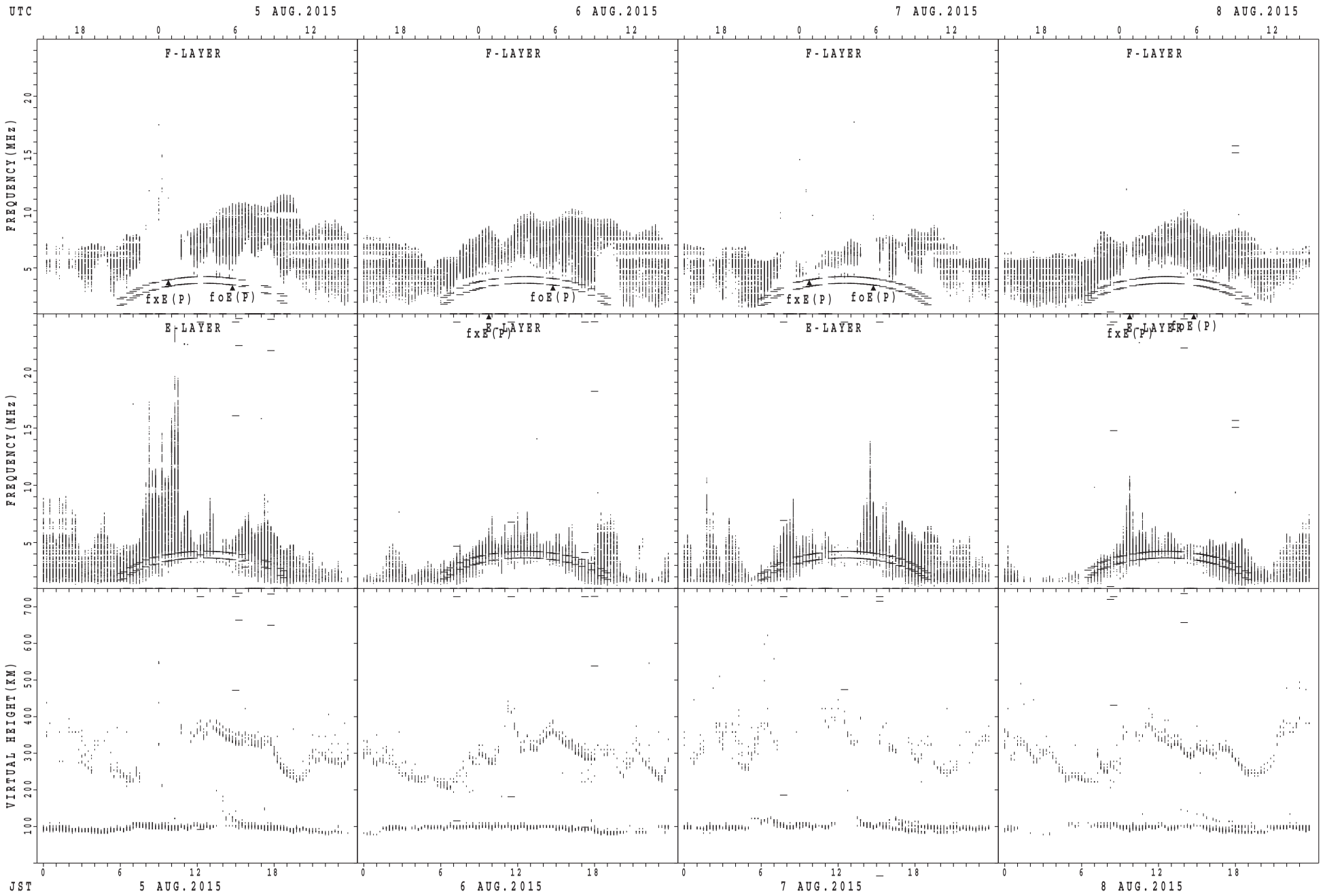

SUMMARY PLOTS AT Yamagawa
UTC
29 AUG.2015
30 AUG.2015
31 AUG.2015
F-LAYER
foE(P)
E-LAYER
fxE(P)
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
JST
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



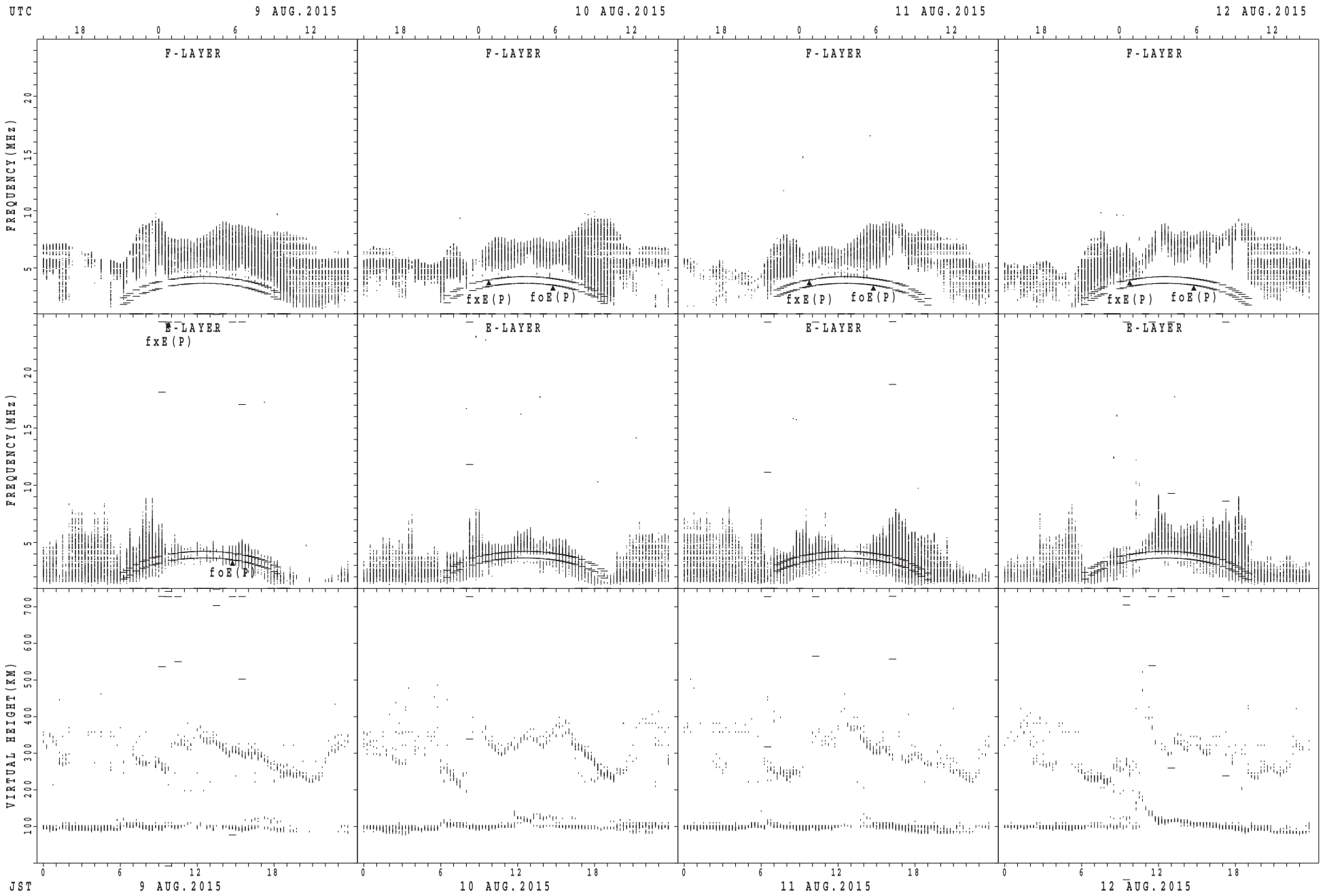
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



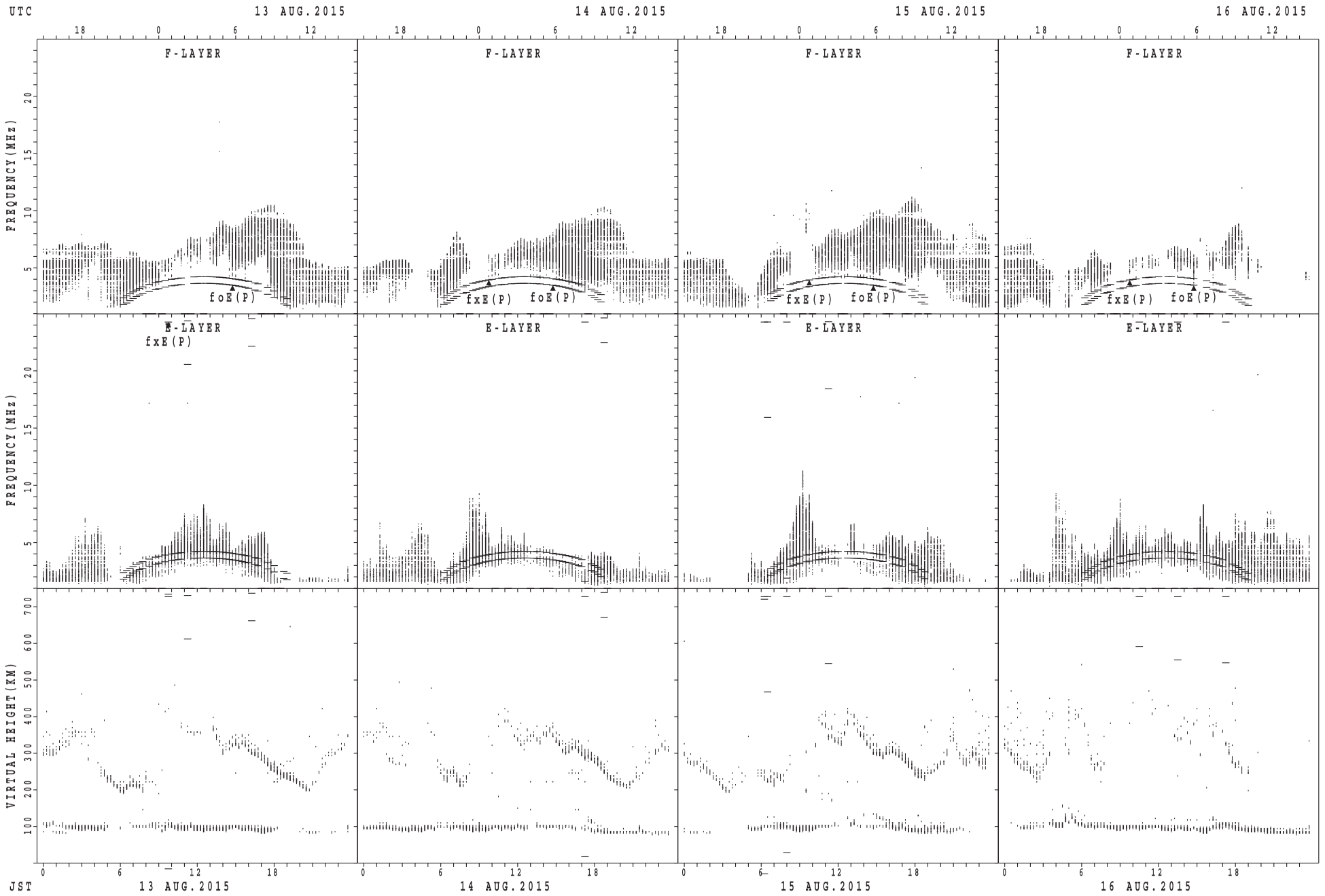
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

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
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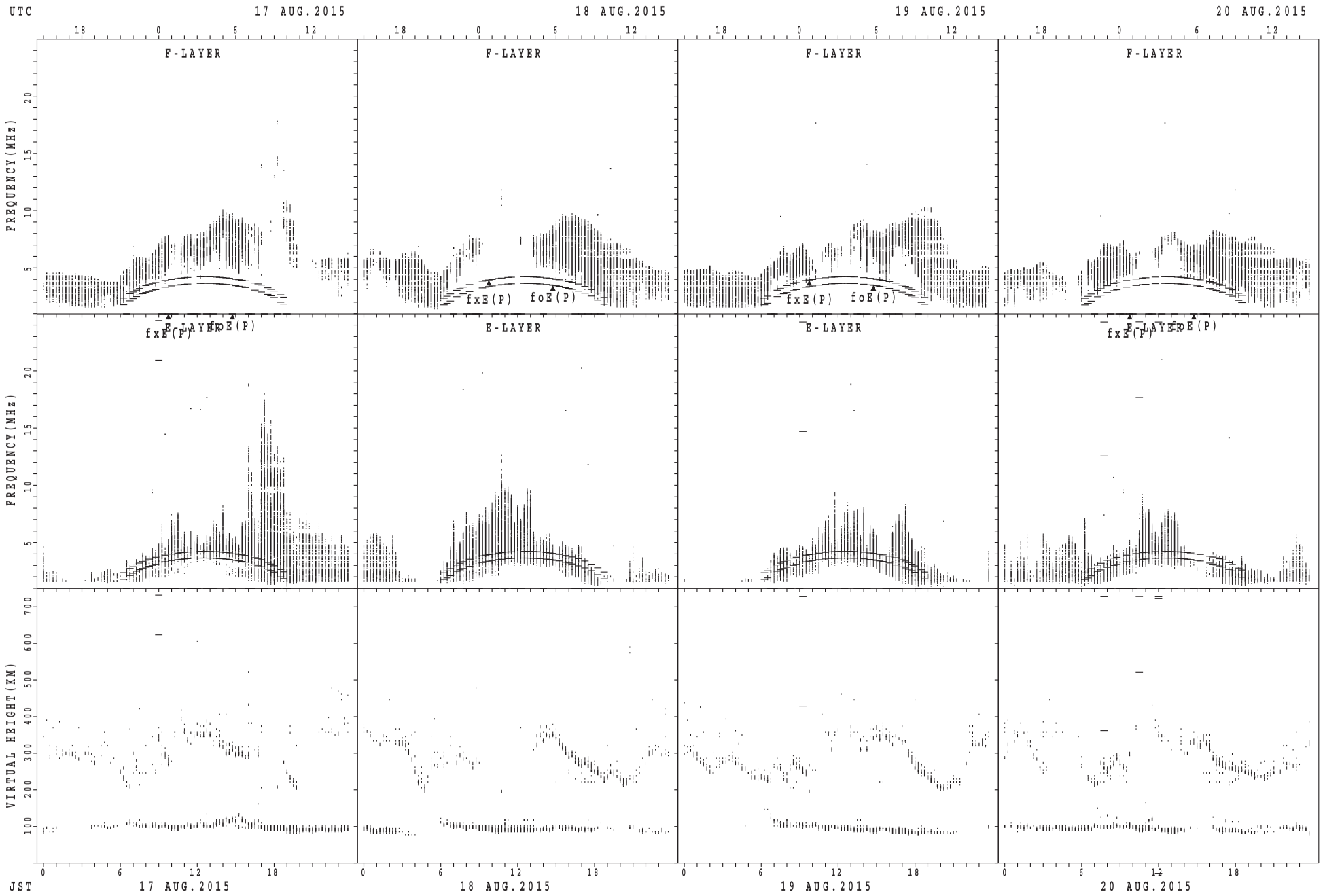
SUMMARY PLOTS AT Okinawa



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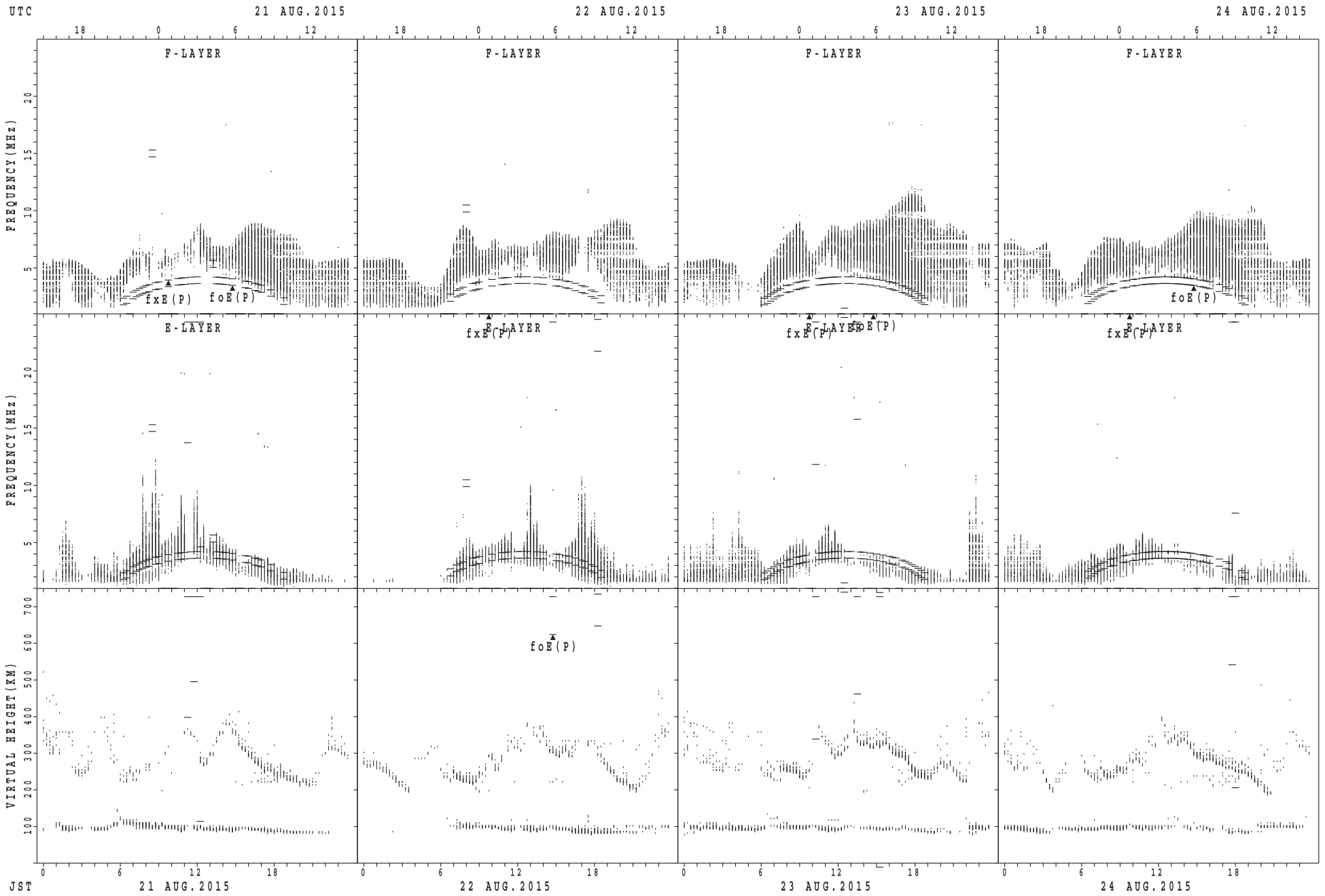
SUMMARY PLOTS AT Okinawa



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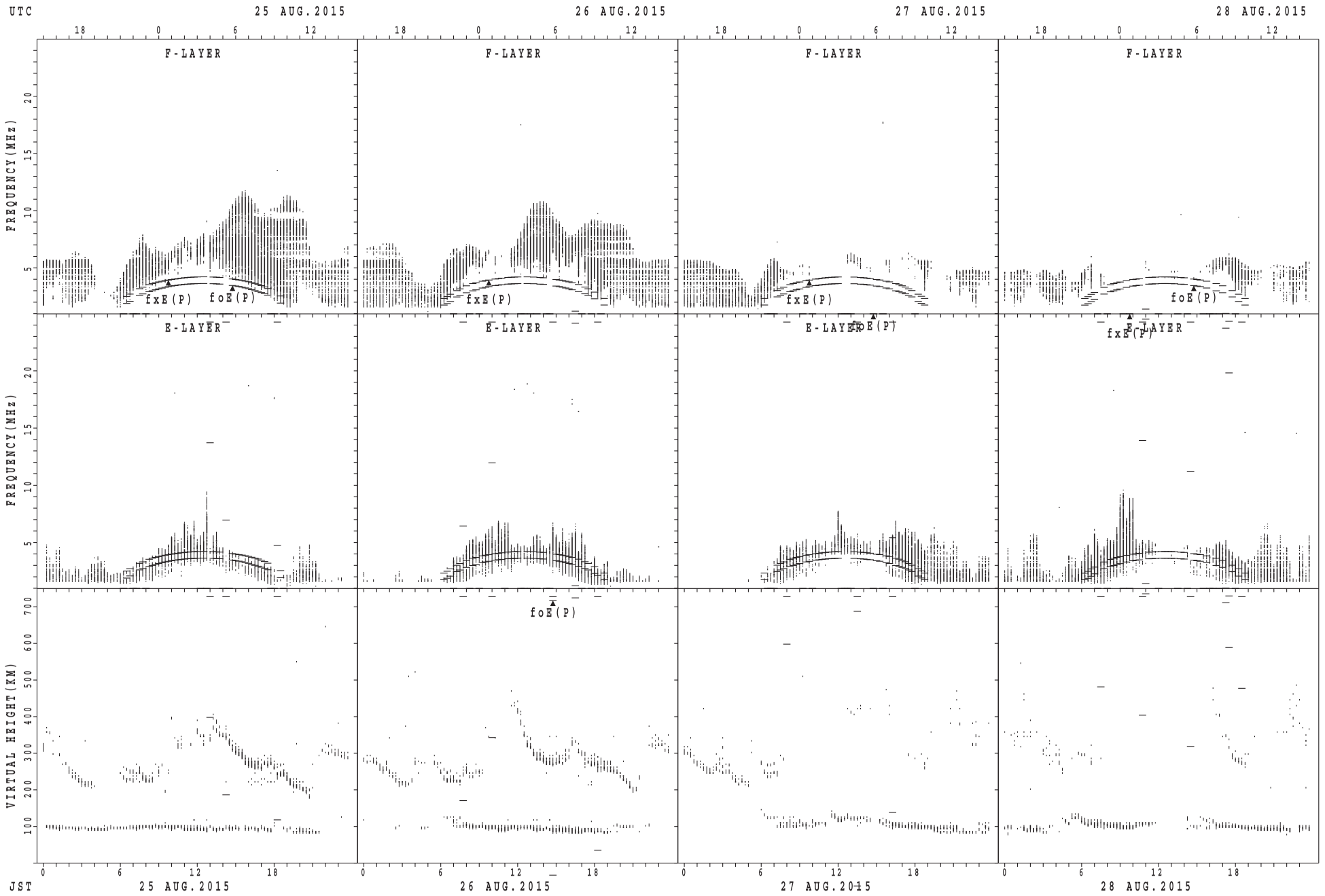
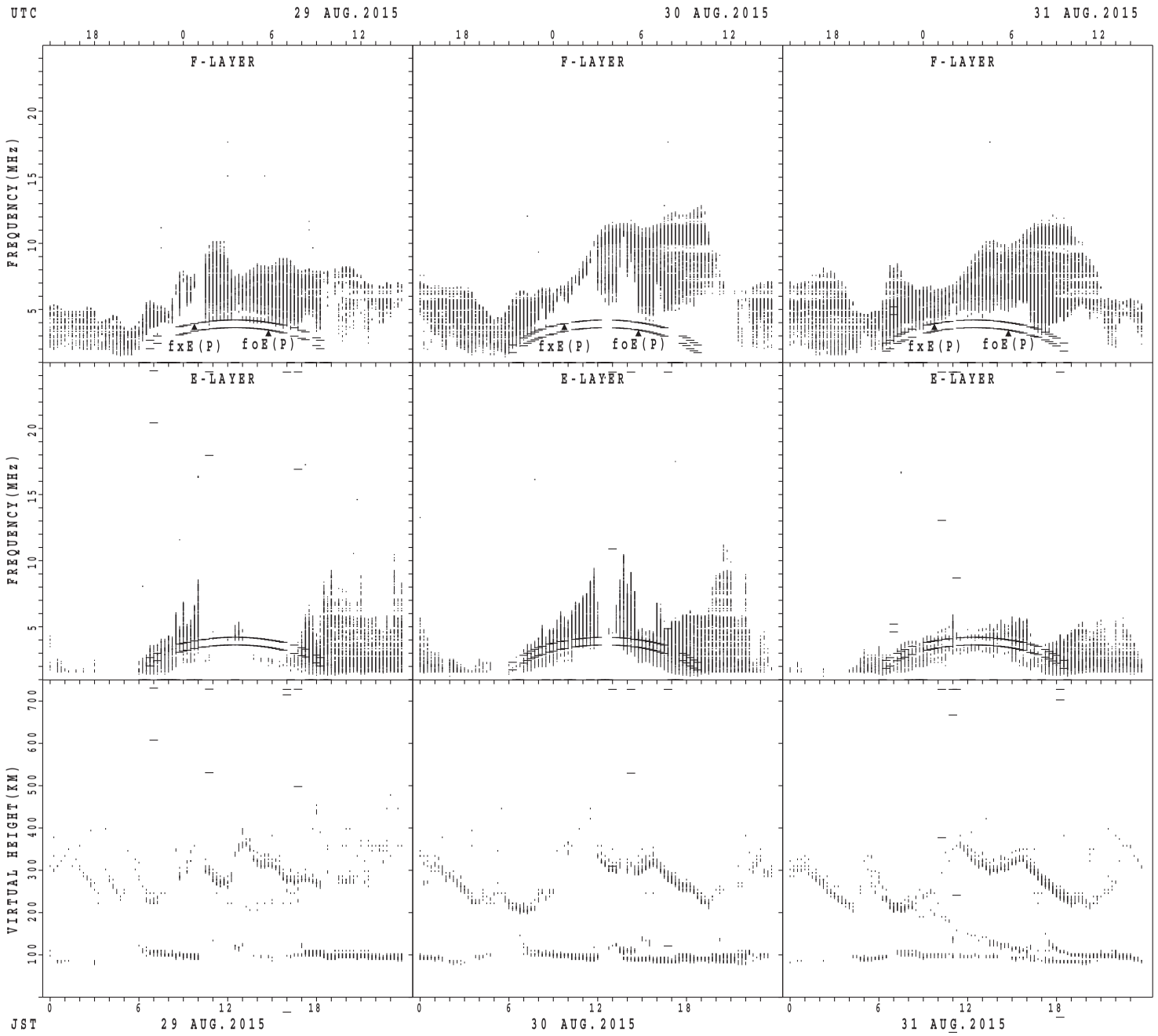
foE(P); PREDICTED VALUE FOR foE

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	9									7	5	2	5	6	2	1	
MED							346	282									320	314	266	290	283	296	330	
U Q							173	307									330	358	292	298	292	306	165	
L Q							173	267									294	258	240	252	272	286	165	

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	23	24	25	23	23	23	31	31	31	29	31	31	30	29	31	29	30	30	31	29	27	25	26	26
MED	95	93	99	97	103	111	107	103	103	101	99	99	97	99	101	101	107	107	103	103	103	99	99	96
U Q	97	97	111	107	105	113	113	107	105	103	101	101	101	106	107	113	113	111	105	105	105	104	103	99
L Q	91	89	90	89	95	103	105	103	99	99	95	97	95	96	95	97	95	101	99	98	99	97	97	91

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		1	1	1		2	11	8								12	11	13	12	7	2		2
MED	316		402	354	408		285	276	248								275	246	280	278	278	282		285
U Q	158		201	177	204		322	290	285								295	282	316	292	280	350		362
L Q	158		201	177	204		248	246	236								228	222	241	266	264	214		208

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	25	26	26	21	22	19	30	30	30	30	27	25	23	24	26	21	26	30	29	30	29	24	26	25
MED	97	95	95	97	99	107	109	103	102	99	97	97	97	98	102	105	104	103	101	97	97	101	101	99
U Q	100	99	101	103	105	115	113	107	105	101	103	103	107	107	107	112	111	107	104	101	102	103	105	101
L Q	94	89	89	91	95	97	103	103	99	97	95	97	95	95	95	95	97	97	92	91	91	95	97	96

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	2	2	1	1				10	13								10	21	16	12	10	2		1
MED	348	369	354	340				246	270								289	288	274	267	269	236		354
U Q	380	384	177	170				254	300								298	302	305	276	288	258		177
L Q	316	354	177	170				240	235								286	279	264	240	240	214		177

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	27	27	23	20	18	17	22	30	30	30	30	26	27	23	27	27	27	28	29	27	28	23	23	24
MED	95	95	95	96	95	99	110	105	103	101	99	100	99	95	97	101	101	105	103	97	94	95	95	97
U Q	99	101	97	99	99	105	117	111	105	103	103	103	107	103	107	107	107	109	107	103	98	99	99	102
L Q	89	89	89	94	95	95	103	101	99	97	97	95	95	95	95	95	95	94	97	89	89	89	89	89

MONTHLY MEDIANS OF h'F AND h'Es

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

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1		1	1			11	16	15							12	26	28	23	11	3	2	4
MED	412	356		276	362			248	247	268							294	278	271	256	238	296	301	327
U Q	206	178		138	181			266	255	278							310	294	287	272	260	312	304	411
L Q	206	178		138	181			240	231	250							280	262	255	246	232	224	298	310

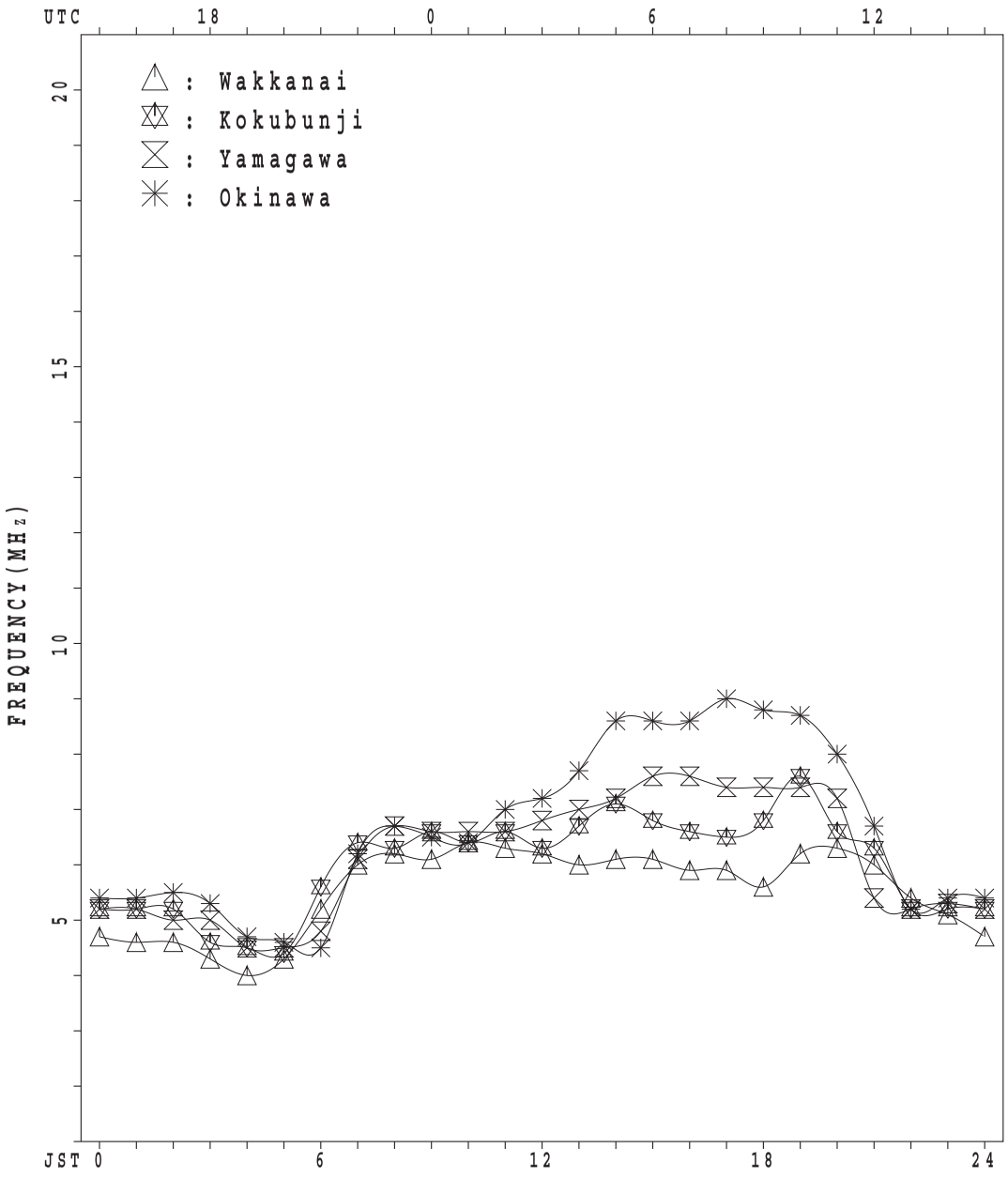
h'Es

	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	20	19	19	16	16	21	22	31	31	31	31	30	28	26	27	28	30	29	28	28	28	25	23	21
MED	97	97	97	97	98	97	100	107	103	101	99	97	102	103	105	103	99	101	101	95	95	95	97	97
U Q	101	97	101	98	101	102	111	113	107	105	103	103	111	117	119	114	111	106	103	97	99	103	101	102
L Q	89	91	95	91	97	95	97	103	103	97	97	95	97	95	95	95	95	94	92	89	89	89	89	88

MONTHLY MEDIANS PLOT OF foF2

AUG.2015

AUTOMATIC SCALING



IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 63	X 63	X 63	X 63																	X 77	X 75	X 75	X 71
2	X 66	X 64	X 64	X 61																		X 79	X 71	X 63
3	X 64	X 61	X 60	X 59	65																	X 84	X 75	X 65
4	X 65	X 63	X 61	X 60																		O X 85	X 80	X 75
5	X 73	X 71	X 65	X 65																		X 78	X 71	X 74
6	X 72	X 66	X 65	X 65																		X 78	X 80	A
7	X 70	X 67	X 56	56																		X 66	X 64	70
8	65	X 60	X 47	X 50																X 65		X 71	X 64	X 54
9	60	X 55	X 43	A																		X 61	X 54	X 57
10	X 58	X 55	X 53	X 52																		A	66	X 57
11	X 52	X 54	X 55																			X 71	X 69	A
12	X 60	X 60	X 50	X 44																		X 64	X 57	X 57
13	X 52	X 52	X 52																			X 77	X 67	X 50
14	X 53	X 50	X 51	X 49																		A	X 69	68
15	X 62	X 55	55	X 55																	74	X 77	X 72	X 63
16	X 58	X 55	X 44	X 43																	X 67	X 62	X 49	X 50
17	X 50	X 47	X 47	X 47																	X 62	X 62	X 55	X 50
18	X 45	X 41	X 43	X 45																	X 59	X 60	X 55	X 51
19	X 41	X 39	X 38	X 36																	X 68	X 65	X 58	X 55
20	X 50	X 47	X 47	X 45																X 59	X 64	X 63	X 57	X 50
21	X 48	X 50	X 46	X 42																	X 64	X 62	X 56	X 62
22	X 55	X 50	X 46	X 42																	X 72	X 74	X 71	X 57
23	X 53	X 51	X 47	X 49																	X 68	X 74	X 71	X 57
24	X 60	X 49	X 51	X 48																	X 63	X 64	X 55	X 54
25	X 50	X 51	X 51	X 49																	X 67	X 65	X 60	X 47
26	X 50	X 48	X 50	X 47																	X 71	X 71	X 65	X 51
27	X 54	X 51	X 53	X 47												Y					X 54	X 51	X 44	X 43
28	X 43	54	X 47	X 44																	X 61	X 59	X 56	X 52
29	X 46	X 42	X 40	X 41															X 68		X 71	X 69	X 69	X 64
30	X 52	X 49	X 47	X 41																	X 70	X 70	A	65
31	X 54	X 47	X 47	X 48																	X 73	X 65	X 61	X 53
	00	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	28	1														1	2	18	29	30	29
MED	X 54	X 52	X 50	X 48	65														X 68	X 62	X 68	X 69	X 64	X 57
U Q	X 63	X 60	X 55	X 56																	X 71	X 76	X 71	X 64
L Q	X 50	X 49	X 47	X 44																	X 63	X 62	X 56	X 51

AUG. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	56	56	56	56	53	58	64	71	64	67	63	64	64	62	59	60	68	66	68	70	70	68	68	64
2	59	58	57	54	53	55	64	72	77	67	62	65	65	68	69	66	60	59	59	70	72	72	64	56
3	V 57	54	53	52	50	59	A	R 74	R 76	R 64	65	63	62	64	68	66	64	66	66	78	J R 79	J R 77	68	58
4	58	56	54	53	53	51	54	A	R 74	J R 83	R 79	66	64	62	62	64	66	66	A	R 75	Y 73	R 78	R 73	68
5	66	64	58	58	59	59	58	70	70	70	66	67	64	69	67	64	61	62	69	73	73	71	J R 64	67
6	J R 65	59	58	58	59	53	60	62	69	71	68	65	65	65	65	68	66	62	64	72	71	71	73	A
7	63	60	49	F 42	37	40	R 44	46	A	A	A	R	A	A	A	A	56	56	50	60	A	59	57	F 54
8	F 52	53	40	43	48	43	A	A	A	A	A	A	A	R	R	R 50	52	58	55	58	66	64	57	48
9	F 48	48	36	A	33	38	46	51	R 51	R	R	Y	A	A	A	A	51	R 56	A	56	R 59	54	47	50
10	51	48	46	45	40	46	50	A	53	51	52	53	R 53	53	A	A	63	62	61	60	65	A	F 57	50
11	45	47	48	53	40	R	49	58	63	70	66	A	61	57	61	61	62	65	58	61	67	64	62	A
12	53	53	43	37	34	A	A	A	A	U R 51	R	R 57	A	A	U R 54	54	54	A	53	A	63	57	50	50
13	45	45	45	37	A	38	A	48	58	A	A	A	A	A	51	50	A	47	46	53	63	70	R 60	43
14	46	43	44	42	42	40	49	59	59	R 56	A	63	A	59	58	61	59	58	60	70	A	A	62	F 57
15	55	48	F 44	48	44	51	51	51	62	63	A	53	R 57	60	62	58	57	55	55	67	F 62	70	65	V 56
16	52	48	37	36	42	43	45	E G 37	E G 40	57	R	E G 43	E G 44	R	49	50	48	52	46	55	60	55	42	43
17	43	40	40	40	34	35	A	46	50	A	E G 45	E G 44	R 52	52	53	54	54	56	55	52	55	55	48	43
18	38	34	36	38	37	42	37	38	E G 43	51	A	A	A	A	49	49	52	52	51	A	52	53	48	44
19	34	32	31	29	31	37	38	J R 49	55	56	56	57	61	58	57	55	57	56	50	57	61	58	51	48
20	43	40	40	38	36	36	J R 36	A	A	A	R 44	E G 44	E G 44	A	A	A	A	A	44	J R 52	57	56	50	43
21	41	43	39	35	33	36	A	A	R	A	A	A	A	R 58	R 56	56	56	52	49	51	57	55	49	55
22	48	43	39	35	32	41	54	56	66	66	56	A	58	60	58	54	55	51	51	60	65	67	64	50
23	46	44	40	42	40	40	54	62	A	51	60	59	57	58	60	62	60	57	57	67	61	67	64	50
24	53	42	44	41	38	40	40	49	A	A	A	A	A	A	A	51	61	54	54	56	56	57	48	47
25	44	44	44	42	35	38	45	50	54	55	55	R 53	R 56	57	55	59	59	61	55	61	60	58	53	40
26	43	41	43	40	40	42	47	48	48	R 51	A	R 50	56	59	58	60	62	59	54	61	64	64	58	44
27	47	44	46	40	36	36	A	A	R 43	R	R	R	A	43	R	Y	48	46	48	44	47	44	37	36
28	36	F 39	40	37	32	A	A	A	R	A	A	A	A	R	R	R	46	46	49	50	54	52	49	45
29	39	35	33	34	28	A	U R 40	50	54	59	63	61	63	71	66	60	58	61	61	64	64	62	62	57
30	45	42	40	34	34	36	55	52	J R 53	56	52	64	59	61	61	61	58	58	59	66	63	63	A	F 55
31	47	40	40	41	35	41	51	59	59	A	64	58	57	62	56	60	57	59	61	67	66	58	54	46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	30	27	23	23	23	20	17	20	20	21	23	25	29	29	29	29	29	29	30	29
MED	47	44	43	41	38	41	49	51	58	58	62	58	58	60	58	60	58	58	55	61	63	62	57	50
U Q	55	53	48	48	44	51	54	62	66	67	66	64	64	63	62	62	62	62	60	68	66	69	64	56
L Q	43	41	40	37	34	38	44	48	51	53	54	53	56	58	55	54	54	53	50	56	58	56	49	44

AUG. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						348	U L 420	424	A	A	L	A	L	L	L	A	A	A	A					
2						U L 348	L	A	460	A	A	L	L	L	L	R 440	A	U L 444	A					
3						U L 344	A	A	A	L	L	U L 492	U L 504	480	L	464	L	A	A					
4						L		A	A	A	A	496	L	L	L	L	A	A	A	A				
5								L	468	484	L	L	L	L	L 484	472	L 452	452	272	A				
6							A	A	A	A	A	A	L 492	U L 488	A	456	U R 452	L 428	A	A	A			
7						312	364	U R 412	A	A	A	R 472	A	A	A	A	L	A	A		A			
8					A	L	A	A	A	A	A	A	A	U R 452	U R 468	L	432	L	A		A			
9						304	L	A	R 416	R 444	R 472	R 456	A	A	A	A	A	A	A	A	A			
10						336	392	A	428	448	L	L	L	L	A	A	436	A	324	A	A			
11					332	L 372	L 360	432	416	A	A	A	A	468	L	L	436	380	A	A				
12					A	A	A	A	A	L	U R 464	L	A	A	L	A	A	A	320	A				
13					A		A	A	A	A	A	A	A	A	A	A	A	L		A	A			
14						296	356	416	L	A	A	A	A	A	A	L	A	L	A	A	A			
15							L	A	A	A	A	L	A	U L 464	448	U L 448	A	424	L					
16						268	352	372	400	L	424	L 428	444	440	L	376	L	L	A	A				
17						A	A	388	R 408	A	R 452	U R 440	R 416	U R 444	L	L 380	400	A	A					
18							A	A 388	428	A	A	A	A	A	424	L	A	L		A				
19						180		L 416	A	A	A	464	L	A	456	U R 436	428	368						
20								A	A	A		L	L	A	A	A	A	A	A					
21							L 344	A	L	A	A	A	A	U L 468	464	U R 440	A	L	A	A				
22							A	A	A	A	A	A	A	A	A	A	A							
23						L	L	A	A	L	U A 452	476	A	A	A	A	U A 408	U L 316	L					
24								400	A	A	A	A	A	A	A	U L 460	U L 408	384		A				
25						A	L	A	L 420	A	L	L	L	468	L	440	L	L		A				
26							376	L	L	R 396	A	U L 452	U Y 464	L	L	436	U L 408	364						
27						A	A	A	L	L	U R 416	U R 412	A	A	L	Y	L	L						
28					A	A	A	A	U R 396	A	A	L	A	U R 416	L	404	392	356	A					
29					A	A	U L 356	L	L	L	464	L	L	480	464	A	U R 468	A						
30							L	A	U L 444	460	L	L	U R 468	A	L	440	U L 392	352	A	A				
31								U L 416	L	A	464	L	476	L	U L 448	448	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	10	9	10	11	5	8	10	7	11	8	15	13	11	3					
MED					332	324	360	414	420	448	458	460	468	U 468	460	440	428	380	320					
U Q						L 348	384	416	444	472	R 464	476	L 492	480	466	456	444	L 428	324					
L Q						296	354	388	R 408	R 420	R U 438	R 440	444	U R 444	448	436	404	356	272					

AUG. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					B	200	256	304	324	324	324	324	A	A	A	A	A	A	204	A				
2					B	192	248	288	316	332	332	A	A	A	A	332	A	284	216	A	A			
3					180	208	252	292	308	316	300	A	A	A	A	R 344	312	256	204	220	A			
4					B	180	240	304	320	332	324	324	284	A	A	A	A	A 284	208	A	A			
5					212	192	248	300	320	336	336	336	U R 304	A	A	344	312	232	A	A	A			
6					A	172	252	276	324	336	U A 324	A	A	A	A	R 280	A	A	A	A	A			
7				288	B	196	244	292	320	340	340	U A 288	A	8 102	A 308	U A 356	304	256	208	A	A			
8					B	188	240	292	312	336	340	304	A	U A 280	A	A	312	264	192		A			
9					B	216	236	284	308	336	352	332	344	344	324	324	304	A	192	A	A			
10					160	180	240	268	284	308	308	336	336	324	344	324	296	248	184	A	A			
11				B	B	180	244	284	316	336	312	A	R 312	276	A	316	308	240	188	A	A			
12					B	172	236	292	292	304	304	R 332	A	U R 368	340	328	292	232	188	A	A			
13				B	A	168	244	268	296	316	316	316	316	320	A	A	A	A	216	200	A			
14					B	A 232	268	304	324	324	332	332	332	360	U R 340	320	296	248	180	A	A			
15					180	180	232	288	304	332	324	316	292	352	A	A	A	252	196	A	B			
16					B	180	224	260	288	300	304	304	304	288	332	A	280	220	A	A				
17					A	172	224	276	284	296	296	300	344	304	328	304	268	232	196	A				
18					B	144	224	260	284	308	320	320	308	292	292	292	276	208	A	A				
19					B	180	236	272	304	304	316	308	320	304	304	308	A	244	172	A				
20					212	160	228	260	304	304	320	320	A	320	328	328	288	240	188					
21					B	180	212	272	280	280	296	A	A	A	344	304	288	244	A	A				
22					A	176	244	280	308	320	304	304	292	316	312	284	A	256	176	A				
23					B	180	232	284	300	316	316	316	340	316	336	316	304	232	A	A				
24					A	184	232	272	312	340	324	336	320	316	316	316	280	240	A	A				
25					A	A 228	260	300	320	308	328	352	324	324	312	288	252	A	A					
26					B	172	224	280	296	312	312	288	288	308	336	312	292	220	160	A				
27					A	A 208	248	268	280	328	328	356	340	336	336	288	224	A	A					
28					A	164	212	260	296	296	316	320	352	340	332	308	272	224	A	A				
29					A	164	216	264	308	312	328	328	328	A	332	320	276	224		A				
30					A	172	216	264	300	300	300	A	A	A	348	316	292	A	A	A				
31					B	156	224	268	296	264	A	A	A	A	344	316	296	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				1	5	28	31	31	31	31	30	24	20	21	21	25	23	25	18	2				
MED				288	180	180	232	276	304	316	318	320	320	316	332	316	292	240	192	210				
U Q					212	186	244	288	312	332	324	330	342	340	340	328	304	254	204					
L Q					170	172	224	264	296	304	308	306	304	298	320	308	280	228	184					

AUG. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	22	22	26	19	20	27	34	J A 42	65	J A 62	J A 49	J A 62	J A 57	51	J A 53	50	J A 47	54	J A 41	J A 41	J A 52	J A 66	21	39
2	32	22	32	19	E B 14	27	40	J A 47	40	J A 55	J A 67	J A 47	49	J A 47	J A 42	G 32	J A 54	J A 35	J A 63	J A 90	J A 85	J A 63	J A 51	J A 51
3	J A 28	33	34	28	26	29	J A 66	60	J A 56	J A 49	J A 63	J A 60	J A 62	J A 43	36	36	36	72	J A 67	J A 30	J A 30	J A 44	J A 54	J A 27
4	30	23	J A 25	J A 25	J A 26	J A 25	32	J A 87	68	J A 63	J A 61	40	J A 47	J A 44	36	J A 46	54	59	J A 96	J A 61	J A 32	32	J A 42	25
5	23	34	26	J A 27	32	26	31	J A 42	J A 42	J A 45	J A 53	42	40	39	36	36	36	J A 29	J A 25	J A 31	J A 49	J A 50	J A 42	J A 35
6	J A 45	J A 51	J A 30	J A 21	30	25	J A 43	J A 48	62	J A 53	J A 57	56	43	J A 44	J A 66	J A 50	J A 40	40	J A 72	42	J A 32	J A 83	J A 82	J A 88
7	20	34	49	G 29	32	J A 20	32	35	J A 46	J A 61	J A 55	40	J A 45	J A 49	J A 72	J A 79	38	63	J A 68	J A 51	74	J A 78	J A 70	J A 74
8	59	J A 47	38	39	J A 41	J A 33	J A 37	J A 77	95	J A 97	J A 72	73	J A 60	J A 59	35	35	40	J A 61	J A 42	J A 50	J A 57	58	J A 97	33
9	38	J A 35	31	J A 49	28	J A 30	34	J A 44	36	41	38	37	42	42	42	J A 65	46	J A 193	J A 85	J A 57	J A 48	J A 51	59	34
10	24	23	23	23	23	27	36	J A 63	J A 53	J A 55	37	42	42	39	50	J A 121	J A 95	72	28	J A 44	J A 110	J A 85	J A 50	38
11	38	35	35	36	J A 24	21	34	35	J A 57	76	64	J A 60	55	40	34	38	34	34	40	36	J A 38	J A 30	J A 72	J A 87
12	J A 73	J A 49	J A 85	J A 48	J A 39	48	J A 62	J A 117	J A 66	J A 63	38	44	38	J A 62	J A 49	66	72	J A 200	J A 168	J A 149	J A 107	J A 78	J A 83	J A 51
13	54	38	J A 64	J A 67	74	J A 31	71	54	62	J A 92	J A 91	J A 72	J A 81	J A 83	J A 66	J A 72	J A 57	J A 63	74	J A 53	66	J A 43	69	J A 58
14	33	J A 24	J A 48	J A 47	34	J A 31	30	39	63	72	J A 120	J A 63	J A 66	51	J A 52	J A 61	44	37	J A 52	J A 63	J A 75	J A 87	J A 62	J A 47
15	J A 35	J A 65	J A 49	24	J A 24	20	33	J A 52	60	J A 61	72	J A 46	J A 64	J A 35	37	J A 40	64	J A 50	J A 33	38	E B 14	E B 14	E B 14	E B 14
16	18	20	J A 27	23	20	28	J A 34	J A 33	34	38	38	35	35	37	G 27	33	34	34	J A 41	39	32	49	21	25
17	J A 35	35	25	28	J A 23	J A 28	J A 42	J A 39	J A 43	66	J A 39	J A 40	G 34	37	42	33	J A 65	J A 47	J A 43	31	J A 66	28	73	J A 52
18	38	40	J A 32	32	22	21	28	33	39	41	J A 51	J A 57	44	55	38	40	J A 43	J A 32	J A 30	60	30	46	32	32
19	J A 32	28	25	28	J A 29	27	G 24	J A 39	J A 49	J A 47	J A 50	42	J A 61	J A 52	40	38	J A 33	32	J A 25	J A 21	J A 29	J A 27	27	23
20	23	E B 14	E B 14	28	33	20	28	39	44	44	41	J A 50	J A 62	56	43	J A 68	75	J A 119	J A 68	J A 63	42	33	J A 37	35
21	28	J A 31	26	J A 27	22	24	J A 58	69	J A 36	J A 57	J A 54	J A 73	J A 42	J A 37	40	38	J A 43	34	J A 34	J A 34	J A 53	J A 40	J A 33	J A 33
22	J A 32	J A 29	J A 29	J A 29	J A 27	19	J A 37	56	58	42	J A 67	J A 112	J A 61	50	J A 48	J A 53	43	J A 39	J A 39	J A 30	32	43	J A 54	24
23	20	22	31	19	E B 14	25	28	J A 43	J A 76	J A 46	J A 46	J A 48	J A 50	J A 53	J A 59	68	37	32	J A 28	J A 20	E B 14	E B 14	E B 14	E B 14
24	J A 21	29	J A 25	35	51	J A 36	34	35	J A 77	J A 103	J A 94	J A 57	J A 59	66	69	36	36	34	J A 59	J A 61	J A 51	36	J A 40	J A 50
25	J A 30	37	34	29	J A 33	J A 49	33	53	36	64	44	40	G	37	J A 42	34	34	J A 27	J A 27	J A 64	J A 44	42	J A 38	24
26	J A 33	22	24	E B 14	J A 23	26	28	34	39	J A 85	J A 52	J A 47	38	38	G 34	33	J A 31	28	27	J A 24	24	26	42	28
27	30	32	32	27	31	J A 33	J A 54	J A 39	J A 38	33	38	39	39	G	G 32	37	G 31	26	J A 27	J A 59	J A 25	36	J A 19	E B 14
28	J A 20	24	40	41	J A 88	59	J A 62	J A 62	G 35	37	J A 114	J A 151	39	G	40	36	34	30	33	22	E B 14	27	26	E B 14
29	24	24	23	24	31	J A 33	28	33	38	34	36	36	36	40	G	J A 65	J A 43	J A 49	J A 53	J A 86	27	31	28	37
30	28	32	21	22	J A 28	J A 34	J A 34	J A 43	31	36	G 34	34	38	49	G 31	G 24	G 29	J A 30	40	35	34	70	J A 64	J A 47
31	34	J A 31	24	23	23	G	25	30	35	J A 81	J A 49	J A 49	35	35	36	38	38	J A 29	J A 23	26	31	E B 14	J A 45	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	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	30	31	30	28	28	27	34	J A 43	46	J A 55	J A 52	J A 47	44	44	40	38	40	37	J A 41	J A 42	J A 38	43	J A 42	34
U Q	35	J A 35	35	35	33	J A 33	J A 42	J A 56	62	J A 66	J A 67	J A 60	J A 60	J A 52	J A 50	J A 65	54	J A 61	J A 67	J A 61	J A 57	J A 63	J A 64	J A 50
L Q	23	23	25	23	23	24	30	35	38	42	39	40	38	37	G 36	36	34	32	J A 28	J A 31	30	30	28	25

AUG. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 14	E B 14	E B 14	E B 14	23	31	34	E A 54	E A 48	42	E A 55	E A 45	44	40	44	46	E A 47	E A 38	39	44	44	20	20
2	E B 14	E B 14	E B 14	E B 14	E B 14	24	37	45	38	53	54	37	42	A	38	G 32	44	33	51	E A 39	37	21	23	30
3	16	E B 14	18	E B 14	G 15	26	A A 66	48	54	41	45	42	44	A 40	33	G 32	32	46	47	23	16	25	30	E B 14
4	E B 16	E B 14	E B 14	17	19	20	30	A A 87	54	60	52	39	45	44	34	E A 42	44	44	A A 96	46	28	16	28	E B 14
5	15	21	E B 14	E B 14	E B 14	20	28	A 41	40	42	47	39	38	38	33	35	G 31	27	15	26	19	19	18	24
6	36	18	14	E B 14	E B 14	22	38	E A 46	54	51	50	48	42	39	46	31	38	34	44	29	29	38	58	A A 88
7	E B 14	16	23	E B 14	E B 14	G 18	26	34	A A 46	A A 61	A A 55	38	A A 45	A A 49	A A 72	A A 79	38	41	39	26	A A 74	46	39	E A 43
8	E A 42	22	22	18	21	29	A A 37	A A 77	A A 95	A A 97	A A 72	A A 73	A A 60	39	34	34	35	38	40	A 46	37	20	A 45	18
9	18	16	E B 14	A A 49	E B 14	G 20	30	41	35	37	36	36	A A 42	A A 42	A A 42	A A 65	42	44	A A 85	43	30	38	31	14
10	E B 14	E B 14	E B 14	E B 14	E B 14	20	32	A A 63	33	34	34	40	40	A 36	A A 50	A A 121	40	45	25	21	39	A A 85	22	22
11	19	20	20	21	18	G 17	G 21	34	42	49	49	A 60	46	38	33	33	G 31	31	31	25	25	18	19	A A 87
12	28	27	28	22	18	A A 48	A A 62	A A 117	A A 66	37	37	40	A A 38	A A 62	41	44	44	44	24	A A 149	16	27	26	40
13	34	18	32	22	A A 74	21	A A 71	44	53	A A 92	A A 91	A A 72	A A 81	A A 83	44	44	A A 57	34	30	43	44	31	21	30
14	E B 14	E B 14	32	19	19	27	27	33	46	53	A A 120	57	A A 66	49	49	40	40	33	48	54	A A 75	A A 87	23	20
15	19	26	22	E B 14	G 18	G 18	30	43	50	56	A A 72	44	52	G 34	33	37	45	28	25	28	E B 14	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	19	24	30	30	32	35	33	32	34	G 25	32	32	33	39	20	18	28	E B 14	E B 14
17	18	15	E B 14	18	17	25	A A 42	28	34	A A 66	33	38	G 33	32	34	31	36	47	34	17	38	16	16	22
18	20	24	E B 14	E B 14	E B 14	E B 14	24	29	37	40	A A 51	A A 57	A A 44	A A 55	34	38	41	29	26	A A 60	15	30	19	17
19	E B 14	16	14	14	14	16	G 23	36	46	36	48	38	38	46	36	34	32	26	21	17	22	17	15	14
20	E B 14	E B 14	E B 14	E B 14	G 14	18	27	A A 39	A A 44	A A 44	34	38	38	A A 56	A A 43	A A 68	A A 75	A A 119	39	21	25	15	22	22
21	17	17	E B 14	E B 14	E B 14	G 16	27	A A 69	34	A A 57	A A 54	A A 73	A A 42	37	37	34	39	30	30	26	39	31	20	17
22	20	19	17	21	16	G 15	36	48	48	40	50	A A 112	49	47	48	47	40	36	36	24	18	29	22	14
23	E B 14	E B 14	22	E B 14	E B 14	G 16	25	40	A A 76	41	U A 45	40	E A 46	49	A	E A 54	36	28	20	18	E B 14	E B 14	E B 14	E B 14
24	17	19	14	E B 14	22	G 18	29	31	A A 77	A A 103	A A 94	A A 57	A A 59	A A 66	A A 69	32	32	30	21	44	40	18	33	16
25	E B 14	19	19	15	18	31	G 22	42	33	50	39	37	G	35	39	G 31	30	26	20	A 53	33	22	16	14
26	19	E B 14	E B 14	E B 14	E B 14	G 16	25	28	34	35	A A 52	36	37	34	G 32	G 31	G 28	25	23	20	E B 14	E B 14	21	18
27	16	E B 14	14	15	E B 14	25	A A 54	A A 39	35	31	34	36	A A 39	G	G 31	35	G 22	25	20	E B 14	14	15	E B 14	E B 14
28	E B 14	14	28	29	24	A A 59	A A 62	A A 62	G 30	A A 37	A A 114	35	A A 39	G	35	G 30	30	28	19	13	E B 14	E B 14	E B 14	E B 14
29	E B 14	E B 14	14	E B 14	21	A A 33	26	30	G 30	32	35	35	35	35	G	50	42	36	44	55	18	18	18	20
30	16	19	E B 14	14	20	32	G 22	41	G 30	33	G 30	34	U Y 38	48	G 30	G 21	G 28	24	28	24	22	46	A A 64	21
31	16	16	E B 14	E B 14	15	G	G 22	27	31	A A 81	37	42	U Y 34	32	G 34	33	G 28	24	17	14	E B 14	E B 14	14	19
	00	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	30	30	31	31	31	31	31	31	31	31	31
MED	16	16	14	E B 14	15	20	29	40	41	43	48	40	41	40	36	34	38	33	30	26	25	21	21	18
U Q	19	19	22	18	19	26	A A 37	A A 48	A A 54	A A 57	A A 54	A A 57	A A 46	A A 49	43	A 44	42	44	40	44	38	31	28	22
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G 25	33	34	37	36	37	38	35	33	G 32	G 31	28	21	20	E B 16	E B 16	E B 16	E B 14

AUG.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

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

IONOSPHERIC DATA STATION Wakkanai

AUG. 2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	276	267	281	280	277	303	287	306	276	292	327	297	314	307	305	291	321	321	309	302	301	283	289	287
2	291	287	281	284	275	283	280	312	329	339	312	275	301	301	318	332	308	301	285	300	340	317	311	284
3	V 280	282	274	278	273	293	A	R 325	R 345	R 295	340	301	303	297	294	295	300	318	303	299	R	R	318	286
4	283	270	276	283	324	316	321	A	R 309	R	R 335	312	305	285	301	305	313	320	A	R 323	Y	R 339	R 320	293
5	287	289	295	295	304	305	311	318	303	335	315	322	295	311	296	304	298	293	315	316	300	296	J R 269	287
6	R	285	278	302	321	345	346	314	327	339	303	294	314	322	307	312	319	302	295	294	R 307	309	309	A
7	269	269	276	F 278	259	287	R 225	274	A	A	A	R	A	A	A	A	303	303	224	298	A	282	269	F 276
8	F 262	280	284	290	302	279	A	A	A	A	A	A	A	R	R	R 241	291	289	307	275	285	309	279	290
9	F 280	278	314	A	277	253	241	279	R 281	R	R	Y	A	A	A	A	280	R 304	A	305	R	305	279	276
10	287	285	292	290	279	286	285	A	310	314	294	263	R 262	298	A	A	299	306	327	285	281	A	F 297	283
11	264	272	294	337	274	R	304	333	323	337	344	A	299	297	293	293	315	318	313	300	306	301	265	A
12	274	299	299	313	287	A	A	A	A	R	R	R	A	A	R	306	281	A	236	A	313	312	281	277
13	281	269	278	281	A	246	A	257	312	A	A	A	A	A	272	295	A	295	285	279	275	322	R 307	301
14	274	288	287	277	280	288	279	357	231	R 244	A	296	A	320	302	323	318	315	309	311	A	A	289	F 288
15	307	265	F 275	280	300	339	339	313	309	312	A	276	R 286	279	310	310	313	310	303	284	F 262	293	280	V 253
16	271	285	272	248	269	261	301	G	G	307	R	G	G	R	273	293	286	292	272	284	305	314	286	282
17	265	282	282	281	276	284	A	280	298	A	G	G	R 258	254	347	332	307	319	318	284	270	301	287	277
18	290	292	280	282	272	312	337	360	G	308	A	A	A	A	274	286	312	315	322	A	286	281	318	316
19	295	283	291	299	277	325	350	R	329	339	336	306	304	302	300	309	300	330	283	293	292	303	317	310
20	303	297	330	285	275	281	J R 336	A	A	A	R 383	G	G	A	A	A	A	A	225	R	285	305	296	298
21	282	317	331	283	288	306	A	A	R	A	A	A	A	R 294	R 325	310	330	316	314	297	295	309	290	257
22	269	299	304	313	293	339	325	304	350	368	346	A	301	318	320	311	318	315	300	290	279	305	303	299
23	298	281	291	302	293	317	320	363	A	350	328	306	310	334	301	321	326	327	290	300	277	293	306	284
24	304	304	308	299	325	322	349	297	A	A	A	A	A	A	A	285	300	317	318	293	294	300	268	261
25	269	301	299	310	293	304	307	314	353	306	338	R 292	R 283	327	330	327	304	319	320	291	285	292	321	294
26	289	297	292	311	283	306	313	326	304	R 317	A	R 279	283	300	303	331	337	334	301	293	288	288	316	268
27	299	296	273	297	286	258	A	A	R 272	R	R	R	A	281	R	Y	253	265	315	289	250	274	270	264
28	272	F 253	292	283	254	A	A	A	R	A	A	A	A	R	R	R	253	286	287	290	277	275	270	294
29	258	267	281	277	295	A	U R 231	314	358	360	313	297	290	320	317	318	304	312	324	303	303	289	308	299
30	315	278	293	285	285	334	353	371	R	339	320	321	320	326	315	328	333	327	309	312	316	311	A	F 254
31	280	285	279	296	296	331	344	342	322	A	358	326	289	315	322	314	315	318	321	310	315	316	312	310
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	30	30	27	23	22	22	18	17	19	20	21	22	25	29	29	29	28	26	28	30	29
MED	280	285	287	285	284	304	313	314	310	326	328	296	297	302	304	310	307	315	307	296	290	302	293	286
U Q	291	296	295	299	295	322	339	333	329	339	342	306	304	320	318	322	318	319	316	302	305	310	311	296
L Q	271	272	278	281	275	283	285	297	281	307	312	G 275	283	296	296	294	298	302	286	290	279	290	279	276

AUG. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						330	U L 338	376	A	A	L	A	L	L	L	A	A	A	A					
2						U L 326	L	A	353	A	A	L	L	L	L	R 393	A	U L 355	A					
3						U L 339	A	A	A	L	L	U L 388	U L 372	376	L	367	L	A	A					
4						L		A	A	A	A	373	L	L	L	L	A	A	A	A				
5								L	362	355	L	L	L	L	L 366	376	L 346	339	364	A				
6							A	A	A	A	A	A	L 364	U L 365	A	389	U R 363	L 348	A	A	A			
7						319	368	U R 356	A	A	A	R 392	A	A	A	A	L	A	A		A			
8					A	L	A	A	A	A	A	A	A	U R 394	U R 382	L	362	L	A		A			
9						311	L	A	R 381	R 422	R 390	R 402	A	A	A	A	A	A	A	A	A			
10						325	349	A	375	385	L	L	L	L	A	A	316	A	364	A	A			
11					351	L 343	L 355	364	376	A	A	A	A	369	L	L	351	360	A	A				
12					A	A	A	A	A	L	U R 381	L	A	A	L	A	A	A	281	A				
13					A		A	A	A	A	A	A	A	A	A	A	A	L		A	A			
14						333	364	365	L	A	A	A	A	A	A	L	A	L	A	A	A			
15							L	A	A	A	A	L	A	U L 364	378	U L 356	A	356	L					
16						308	346	389	386	L	395	L 397	366	369	L	376	L	L	A	A				
17						A	A	334	R 362	A	R 368	U R 432	R 422	U R 363	L	L 397	375	A	A					
18							A	A	359	A	A	A	A	A	395	L	A	L		A				
19						394		L 346	A	A	A	379	L	A	358	U R 356	338	366						
20								A	A	A		L	L	A	A	A	A	A	A					
21							L 356	A	L	A	A	A	A	U L 356	359	U R 313	A	L	A	A				
22							A	A	A	A	A	A	A	A	A	A	A							
23						L	L	A	A	L	A	381	A	A	A	A	U A 357	U L 388	L					
24								367	A	A	A	A	A	A	A	U L 339	U L 351	358		A				
25						A	L	A	L 373	A	L	L	L	352	L	367	L	L		A				
26							356	L	L	R 409	A	U L 369	U Y 342	L	L	360	U L 366	371						
27						A	A	A	L	L	U R 412	U R 410	A	A	L	Y	L	L						
28					A	A	A	A	U R 401	A	A	L	A	U R 377	L	355	325	329		A				
29					A	A	U L 329	L	L	L	376	L	L	346	359	A	U R 357	A						
30							L	A	U L 356	358	L	L	U R 352	A	L	359	U L 370	365		A	A			
31								U L 371	L	A	392	L	344	L	U L 365	356	L	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	10	9	9	11	5	7	10	7	11	8	15	13	11	3					
MED					351	328	355	365	373	385	R 390	390	364	U 365	366	360	357	358	364					
U Q						L 339	360	374	R 381	R 416	395	U R 402	372	U R 376	380	376	U 364	366	364					
L Q						319	U L 342	351	359	356	376	379	344	356	359	356	342	348	281					

AUG. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						312	338	336	E A 376	356	296	354	320	342	350	360	306	292	278					
2						356	336	294	284	272	A	390	336	344	310	288	308	308	E A 372					
3						306	A	294	262	302	286	356	310	350	338	328	328	284	284					
4						304		A	308	264	A	324	324	358	358	328	316	280	A	256				
5								298	298	286	316	304	342	316	324	324	326	326	276	258				
6							246	284	284	A	336	326	324	320	334	310	306	322	292	270	294			
7						408	472	456	A	A	A	R	A	A	A	A	334	314	A		A			
8					274	364	A	A	A	A	A	A	A	R	R	520	364	388	304		304			
9						468	E A 476	386	414	R	R	Y	A	A	A	A	392	A	A	284	290			
10						356	392	A	350	350	396	470	468	384	A	A	320	298	274	234	314			
11					412	412	270	256	312	274	278	A	366	376	356	340	314	302	260	256				
12					256	A	A	A	A	388	388	A	A	A	504	338	E A 384	A	440	A				
13					A		A	E A 474	E A 334	A	A	A	A	A	428	392	A	344		344	354			
14						366	378	262	570	E A 540	A	E A 366	A	314	352	304	304	310	290	290	A			
15							264	348	336	312	A	416	410	370	352	310	310	302	304					
16						368	358	G	G	352	336	G	G	R	336	388	400	348	E A 382	266				
17						A	A	402	376	A	G	G	456	412	348	354	334	300	268					
18							226	234	G	346	A	A	A	A	E A 452	378	A	314		A				
19						250		336	322	288	A	354	354	336	344	344	344	288						
20								A	A	A		G	G	A	A	A	A	A	E A 582					
21							A	A	A	A	A	A	A	312	242	332	292	284	250	258				
22							272	E A 320	268	246	A	A	348	A	320	E A 332	266							
23						322	290	248	A	294	308	366	334	312	E A 346	302	286	258	312					
24								352	A	A	A	A	A	A	A	398	354	318		318				
25						E A 318	274	326	292	A	312	276	412	324	324	302	312	278		E A 348				
26							314	330	374	352	A	396	396	350	344	306	278	278						
27						400	A	A	470	R	R	R	A	446	R 402	Y	442	380						
28					A	A	A	A	R	A	A	A	A	R	R	R	484	388	274					
29					300	A	438	358	272	260	314	360	360	310	304	306	306	278						
30							272	A	318	308	308	300	316	304	304	294	276	272	254	252				
31								266	290	A	248	294	354	326	300	318	288	288						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					4	15	17	22	23	18	14	19	20	20	24	25	28	27	18	13	5			
MED					287	356	U 302	326	317	302	313	358	354	339	340	328	314	302	281	262	304			
U Q					356	400	385	358	376	352	336	G 416	411	364	354	357	349	322	E A 312	304	334			
L Q					265	312	271	284	290	274	296	324	329	315	322	306	305	284	274	256	292			

AUG. 2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	282	294	280	294	290	242	228	220	A	A	220	A	A	A	220	A	A	A	A	250	276	A 348	248	274
2	260	270	270	270	304	246	E A 270	A	220	A	A	210	216	A	208	194	A	228	A	284	264	214	234	288
3	290	290	270	272	302	252	A	A	A	188	A	208	248	208	214	194	210	A	A	266	248	246	224	246
4	284	308	284	274	242	222	218	A	A	A	A	200	A	214	202	A	A	A	A	A	260	234	226	248
5	256	264	270	270	246	254	208	A	A 228	248	204	188	196	204	202	200	200	224	210	A	254	254	262	282
6	272	262	272	266	242	222	A	A	A	A	A	A	204	204	A	206	256	236	A	A	A	270	300	A
7	258	Q 280	310	280	328	266	220	A 226	A	A	A	204	A	A	A	A	268	A	A	256	A	A	338	A
8	E A 332	E A 268	E A 332	308	A	A	A	A	A	A	A	A	A	204	206	222	252	A	A	E A 356	A	270	A	284
9	Q 284	290	254	A	300	254	264	A	A 214	200	188	198	A	A	A	A	A	A	A	A	A	E A 280	A 346	296
10	284	284	284	284	296	252	236	A	208	204	204	196	A	A	A	A	A	A	242	A	A	A	246	264
11	304	272	272	226	208	232	232	228	236	A	A	A	A	210	210	204	204	220	A	A	238	254	254	A
12	288	250	252	234	A	A	A	A	A	234	186	208	A	A	226	A	A	A	A	A	232	240	A 300	A
13	E A 340	306	A 292	296	A	258	A	A	A	A	A	A	A	A	A	A	A	E A 284	334	A	A	240	228	280
14	290	298	A 324	296	296	A 312	232	258	A	A	A	A	A	A	A	A	A	244	A	A	A	A	258	240
15	238	E A 320	284	Q 258	258	240	220	A	A	A	A	A	A	208	208	242	A	230	242	284	Q 310	266	258	276
16	300	250	298	330	282	282	236	212	218	226	208	192	200	202	202	226	226	A	A	A	270	270	268	310
17	284	294	294	282	282	A	A	228	220	A	216	190	190	414	200	200	A 248	A	A	270	332	252	270	262
18	324	A 324	310	302	270	256	A	A	240	A	A	A	A	A	196	A	A	E A 230	244	A	270	A 294	250	244
19	Q 244	296	286	260	262	210	210	E A 258	A	A	A	202	198	A	210	210	232	218	218	278	278	252	256	246
20	248	262	234	274	286	260	232	A	A	A	198	198	208	A	A	A	A	A	A	A	272	252	278	266
21	278	268	258	286	286	248	248	A	214	A	A	A	A	214	214	Q 260	A	A 228	A	A	292	272	272	276
22	296	266	266	A 244	268	248	A	A	A	A	A	A	A	A	A	A	A	258	270	270	268	268	258	258
23	264	290	314	264	270	256	232	A	A	222	A	226	A	A	A	A	E A 254	210	224	286	288	258	242	280
24	276	262	290	244	264	264	230	210	A	A	A	A	A	A	A	208	218	236	236	A	E A 274	258	E A 320	306
25	306	286	266	260	258	A	222	A	214	A	200	188	180	230	E A 270	212	H 218	222	236	A	290	246	230	244
26	274	288	268	240	294	268	218	192	210	210	A	196	226	216	216	214	226	226	240	252	264	264	226	290
27	278	286	280	278	300	A	A	A	A	198	194	204	A	A	208	Y	208	236	278	290	Q 294	294	300	320
28	314	312	312	A 360	A	A	A	A	208	A	A	206	A	228	228	230	244	256	A	272	288	282	308	264
29	318	318	318	318	A	A	238	230	210	202	202	182	188	210	204	A	A	A	A	A	260	276	272	252
30	250	272	272	272	300	302	224	A	194	198	198	184	A	A	196	H 202	222	214	A	A	238	E A 262	A	254
31	254	276	292	282	252	242	224	210	194	A	202	192	192	182	200	206	218	228	250	252	238	238	238	248
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	26	24	21	11	15	11	13	20	12	15	21	17	17	19	13	14	24	28	29	27
MED	281	285	282	274	282	253	229	223	214	204	202	198	199	210	208	208	224	228	242	270	270	258	258	266
U Q	300	296	298	294	296	262	236	230	220	226	206	205	212	216	215	224	250	236	260	284	288	271	289	284
L Q	260	268	270	260	258	242	220	210	208	198	196	191	191	204	202	201	214	222	230	256	257	249	240	248

AUG. 2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					B	118	118	112	112	112	112	106	A	A	A	A	A	A	106	A				
2					B	130	116	116	116	116	108	A	A	A	A	108	A	120	120	A	A			
3					112	118	114	114	102	104	104	A	A	A	A	104	122	112	112	112	A			
4					B	124	124	104	110	110	108	108	100	A	A	A	A	112	120	A	A			
5					98	132	118	114	114	104	104	104	104	A 104	A	114	114	114	A	A	A			
6					A	114	104	110	110	110	110	A	A	A	A	102	A	A	A	A	A			
7				104	B	130	126	112	112	112	112	112	A	A	112	114	126	116	116	A	A			
8					B	116	116	116	116	116	116	104	A	104	A	A	126	116	116		A			
9					B	126	116	116	116	114	114	110	110	110	110	110	116	A	128	A	A			
10					110	132	118	118	118	110	110	110	110	110	110	110	110	116	116	A	A			
11				B	B	116	116	116	116	116	106	A	106	100	A	110	116	116	122	A	A			
12					B	122	114	114	114	110	110	110	A	110	110	110	114	114	114	A	A			
13				B	A	116	116	104	106	106	106	106	106	106	A	A	A	A	106	106	A			
14					B	A 114	114	100	106	106	106	106	106	112	112	112	112	112	112	A	A			
15					118	126	110	112	112	112	108	108	108	108	A	A	A	120	108	A	B			
16					B	124	112	112	106	112	108	108	108	108	108	A	116	116	A	A				
17					A	120	108	114	114	110	110	110	112	112	114	114	114	116	124	A				
18					B	124	122	122	112	112	112	112	112	112	112	112	112	112	A	A				
19					B	116	116	116	116	116	110	110	110	110	110	110	A	110	110	A				
20					126	118	116	116	116	116	116	106	A 114	114	114	114	114	114	114					
21					B	130	112	112	112	112	112	A	A	A	112	112	120	120	A	A				
22					A	140	118	118	106	112	112	112	106	106	106	106	A	118	118	A				
23					B	136	124	114	114	114	112	110	106	106	112	112	124	120	A	A				
24					A	124	114	114	114	114	114	114	114	114	114	114	114	114	A	A				
25					A	A 120	118	118	118	110	110	110	110	110	110	110	114	116	A	A				
26					B	128	120	120	116	104	112	114	114	114	114	114	124	110	106	A				
27					A	A 114	114	114	114	114	114	114	114	114	114	114	114	108	A	A				
28					A	108	108	118	118	108	110	110	108	118	112	118	118	118	A	A				
29					A	118	104	112	112	112	112	112	112	A	112	112	112	112		A				
30					A	100	112	112	112	112	112	A	A	A	108	108	108	A	A	A				
31					B	134	122	110	118	118	A	A	A	A	110	110	116	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				1	5	28	31	31	31	31	30	24	20	21	21	25	23	25	18	2				
MED				104	112	124	116	114	114	112	110	110	109	110	112	112	114	116	115	109				
U Q					122	130	118	116	116	114	112	112	112	113	113	114	120	117	120					
L Q					104	117	112	112	112	110	108	107	106	106	110	110	114	112	110					

AUG. 2015 h'E (KM)

IONOSPHERIC DATA STATION Wakkanai

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	102	100	100	100	106	122	118	116	108	108	108	102	102	102	102	102	102	102	114	114	114	108	108	108
2	108	104	138	108	B	120	118	112	112	112	110	106	106	96	104	104	104	104	116	116	116	112	108	94
3	100	100	100	100	100	122	112	110	106	106	106	112	102	96	122	96	136	112	112	110	110	110	110	110
4	104	104	112	98	100	100	124	114	114	106	104	102	102	102	102	102	98	118	110	110	110	110	108	108
5	108	100	104	104	96	134	134	116	116	116	106	110	102	102	102	102	102	102	108	112	114	114	108	108
6	110	110	102	102	102	134	116	116	116	106	104	104	108	108	108	108	108	100	120	116	100	116	116	106
7	106	106	106	102	102	116	116	116	116	110	110	110	100	108	108	112	140	126	112	112	112	112	112	106
8	106	106	Q 106	100	118	118	118	114	108	108	108	108	108	116	98	104	134	116	116	116	116	116	110	102
9	108	102	108	108	120	120	120	118	118	118	118	108	108	108	114	110	128	106	112	112	122	114	114	108
10	106	106	108	108	108	136	116	106	110	110	110	110	110	110	118	118	124	112	112	108	108	116	108	100
11	110	106	106	106	106	114	112	128	128	110	110	106	106	100	100	110	114	132	122	114	114	114	114	114
12	112	104	132	120	114	114	114	114	108	108	104	108	106	118	124	124	116	112	112	110	146	124	134	108
13	102	108	114	116	116	128	124	124	116	110	108	108	108	102	102	102	104	116	116	116	116	104	104	104
14	104	104	104	116	116	116	122	122	122	112	112	112	112	130	120	120	120	120	110	110	110	118	114	114
15	106	106	106	106	100	136	124	114	114	106	106	106	106	104	104	104	104	112	118	110	B	B	B	B
16	110	128	108	122	124	124	108	116	110	110	106	102	102	102	102	148	134	122	114	114	106	110	110	106
17	106	106	116	122	116	124	120	114	114	108	104	104	102	138	100	146	120	118	118	118	118	112	112	110
18	110	110	110	110	130	130	118	118	116	116	108	108	108	104	110	110	110	108	114	114	114	114	114	102
19	102	102	102	106	104	104	100	116	114	112	106	106	108	106	104	108	108	128	116	116	116	116	110	110
20	102	B	B	110	120	124	124	110	110	110	104	104	104	104	110	120	118	114	114	114	110	110	112	94
21	100	100	122	98	126	126	112	112	112	104	104	106	106	106	120	122	114	114	114	104	112	112	112	112
22	108	108	102	94	90	146	116	116	112	108	108	102	106	110	110	104	104	122	122	116	122	116	112	110
23	110	108	112	112	B	142	130	116	110	110	110	112	106	108	108	108	124	126	108	108	B	B	B	B
24	136	114	116	112	122	122	114	118	112	112	112	108	106	106	106	140	120	120	114	114	114	114	108	112
25	102	102	102	100	110	110	110	112	104	104	104	104	G	162	126	126	104	122	110	110	112	112	112	106
26	106	110	102	B	120	120	108	108	108	108	108	108	108	108	108	G 120	108	108	120	108	96	110	104	104
27	104	104	114	100	112	122	112	112	112	102	106	112	124	G	G	114	104	128	114	120	120	114	116	B
28	100	130	124	120	130	112	112	112	110	110	118	118	124	G	120	120	120	132	112	122	B	122	144	B
29	112	138	128	128	120	114	114	114	116	116	108	108	108	108	G	118	118	112	112	124	108	108	108	108
30	102	102	112	118	118	118	118	110		108	104	104	104	104	196	98	98	100	100	100	100	114	114	112
31	104	104	104	104	114	G	114	114	106	106	106	106	100	100	100	96	96	96	96	96	96	B	122	108
	00	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	30	29	30	31	31	30	31	31	31	30	29	29	31	31	31	31	31	28	28	29	27
MED	106	106	108	107	114	122	116	114	112	110	108	108	106	106	108	110	114	114	114	114	113	114	112	108
U Q	110	108	114	116	120	128	120	116	116	112	110	110	108	109	119	120	120	122	116	116	116	116	114	110
L Q	102	102	104	100	103	116	112	112	110	106	104	104	102	102	102	104	104	108	112	110	109	110	108	104

AUG. 2015 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F1	F2	F2	F1	L1	CL21	C2	C3	C2	C2	C2	C2	C2	L2	L2	L2	L3	L3	L3	L3	F4	F4	F2	F3
2	F2	F1	F1	F1		C3	C2	C2	C2	C3	C2	C1	C2	L2	L2	CL11	L2	LC22	C5	L4	L4	F3	F5	F3
3	F2	F4	F2	F2	L1	L2	C5	C2	C2	C2	C2	C2	L1	L2	CL12	C2	C2	C3	C4	C2	L2	F4	F5	F2
4	F4	F1	F2	F2	L4	LC11	C2	C3	C2	C2	C2	C1	C2	L2	L2	L2	L2	CL22	C4	L6	L3	F2	F5	F2
5	F2	F4	F1	F4	C2	C2	C2	C3	C1	C1	C1	C2	C1	C1	L1	L1	L1	C2	CL21	L2	L4	L4	L3	L4
6	F4	F3	FF11	FF11	L2	C2	C3	C2	C2	C2	C2	C1	C1	C1	C2	C1	C2	C2	LL23	LL33	L3	F4	F5	F8
7	F1	F3	FFF22	FF21	L1	C2	C2	C2	C2	C2	C1	L1	L1	L1	C2	C3	C2	CL31	C4	L6	L3	F5	F6	F5
8	F5	F4	FQ42	FQ21	LQ41	CQ31	C3	C4	C3	C2	C2	C2	C1	C1	L1	L2	C1	C2	C3	C6	L6	F4	F4	F3
9	F3	F3	F2	FQ31	LQ11	C2	C3	C3	C1	C2	C2	C1	C1	C1	C1	C2	C2	LC23	L4	L4	L5	F6	F4	F3
10	F2	F1	F1	F2	L2	CL21	C2	C2	C2	C1	C1	C1	C1	C1	C2	C2	CC21	C3	C3	L4	L4	FQ31	FQ31	F4
11	F4	F2	F4	L3	L3	CL11	C2	C2	C2	C1	C2	C1	C1	C2	L2	CL21	C2	C2	C5	L5	L6	F3	F8	F7
12	F3	F4	FF15	F3	L4	C5	C3	C3	C2	C2	C1	C1	L1	C2	C1	C2	C2	C2	C3	L5	LLQ22	LQ31	LL18	F4
13	F6	F3	FF26	FF23	F3	C3	C2	CL21	C2	C4	C2	C2	C2	C2	C2	C2	L3	CL22	CL23	C6	L6	F6	F3	F5
14	F1	F2	F5	F3	L3	C3	C2	C2	C3	C2	C3	C2	C2	C1	C1	C2	C2	C2	C3	L5	L5	F8	F3	FQ31
15	FQ31	FQ41	FQ41	F1	L2	C1	C3	C3	C2	C2	C3	C2	C2	CL21	L2	L3	L3	CL22	C3	L5				
16	L1	F1	FF12	F2	C1	CL21	CL21	C2	C2	C1	C1	C1	C1	C2	CL11	C2	C2	C2	C3	L4	F3	F4	F1	FF21
17	F3	FQ31	F1	F4	L4	C3	C3	C2	C2	C2	C1	C1	CL11	CL11	C2	C1	C2	C2	C4	L3	F3	F2	F3	F5
18	F5	F3	F2	F2	C2	C1	C1	C1	C2	C2	C2	C2	C2	C2	C1	C2	C2	C2	LL22	L6	F2	F5	F2	F4
19	F2	F2	F2	F1	L2	C1	LC11	C2	C2	C2	C2	C2	C1	C2	C2	C2	L3	CL23	CL22	L2	F5	F4	F2	F1
20	F1			FF21	CL12	C2	C3	C3	C2	C1	C1	C1	C1	C1	C1	C1	C2	C3	C3	L4	F5	F2	F4	F3
21	F3	F3	FF11	FF11	L1	C1	C3	C3	C2	C2	C2	L1	L1	L2	C1	C2	C2	C3	C3	L5	F5	F4	F4	F3
22	F4	F2	F2	F4	L2	C1	C3	C2	C2	C1	C2	C2	C2	C1	C1	C2	L2	CL23	CL21	L4	FQ31	F6	F6	F2
23	F1	F1	F4	F1		C1	C1	C2	C3	C2	C2	C1	C1	C2	C2	C2	CL21	CL21	L3	L3				
24	F3	F3	F2	FF21	CL22	CL21	C3	C2	C3	C3	C2	C2	C2	C2	C2	C2	C2	C2	L4	L3	F6	F4	F6	F2
25	F2	F3	F2	F2	L4	L3	C2	C2	C2	C2	C2	C1		C1	C1	C1	LC21	CL22	LL22	L6	F5	F4	F3	F1
26	F4	FF11	F2		L1	C2	C3	C2	C2	C1	C1	C1	C1	C1	C1	C1	CL22	CL23	C3	L2	F2	FF11	F3	F2
27	F2	F3	FQ21	F3	L2	LL33	C3	C2	C2	C1	C2	C1	C1		C1	C1	C1	C2	L3	L2	F2	F4	F1	
28	F1	F1	F7	F8	L3	C4	C2	C2	L1	C1	C1	C1	C1		C1	C1	C2	C2	L3	L1		F1	F1	
29	F2	F2	F2	F2	L5	C3	C2	C1	C1	C1	C1	C1	C1	L1		C2	C2	C3	L3	LL13	F3	F3	F3	F4
30	F2	F5	F1	FF11	L4	C2	C2	C2	C1	C1	C1	C1	C1	L1	L1	LC11	LC21	L3	L4	L6	F4	F4	F4	F4
31	F3	F2	F1	F1	L1		C1	C1	C1	C2	L2	L2	L2	L2	L2	L1	L1	L1	L1	L1	F1		FF13	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. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	65	66	X 58	63	61															X 84	A	X 72	77	X 70
2	X 63	X 64	X 60	X 60	X 60															X 90	X 86	X 78	76	70
3	75	72	69	71	66															X 88	X 86	80	81	82
4	X 73	X 73	X 75	X 64	X 59															X 98	X 94	94	A	86
5	78	X 72	X 74	X 70	75															X 87	X 86	X 80	X 70	76
6	76	78	78	72	X 59															X 89	X 84	X 86	X 87	X 69
7	X 63	78	73	X 67	X 62															X 71	X 71	X 67	X 65	70
8	X 63	64	X 59	X 58	X 63															X 70	X 72	X 69	72	72
9	X 63	X 58	64	55	54															X 70	X 65	X 66	X 64	X 68
10	71	X 67	60	X 50	X 48															X 85	X 77	X 75	X 65	X 60
11	X 58	X 53	X 59	X 57	X 51															X 67	X 72	X 68	X 68	69
12	A	X 54	X 55	X 54	X 51															X 73	X 68	X 65	X 61	X 61
13	X 58	X 56	X 54	X 51	X 50															X 66	X 74	68	67	70
14	67	65	64	X 60	X 58															X 83	X 75	X 71	X 56	60
15	57	65	65	60	55															X 86	X 75	X 77	X 84	X 71
16	73	69	X 64	66	X 62															X 71	X 62	X 51	X 52	X 53
17	X 52	X 52	X 53	X 53	X 54															X 87	X 74	X 68	X 60	68
18	X 58	X 54	X 57	63	55												X 76			A	X 65	70	68	51
19	A	A	X 40	46	46															X 79	X 72	X 63	X 61	X 63
20	64	X 52	X 54	X 52	X 45															X 63	X 62	69	67	60
21	X 59	X 53	X 51	X 44	X 40															X 70	X 66	X 59	X 56	X 58
22	X 54	X 52	X 52	X 46	X 41															X 70	X 72	X 70	X 68	X 67
23	69	X 60	X 59	X 59	X 55															X 86	X 82	X 79	X 72	X 70
24	X 69	X 65	X 61	X 62	X 54															X 79	X 75	X 60	X 55	X 54
25	X 53	X 53	54	X 49	X 46															X 73	X 72	X 62	56	55
26	53	53	52	X 45	X 44	X 48														X 73	X 77	X 77	X 63	X 57
27	X 57	X 55	X 53	X 54	X 51															X 52	X 55	56	X 56	X 53
28	X 53	X 55	X 52	X 48	X 44															X 61	X 60	X 61	X 58	X 58
29	X 55	X 57	X 54	X 50	X 49															X 85	X 78	X 74	X 70	76
30	69	70	67	63	54															X 86	X 76	X 72	X 60	X 54
31	X 58	X 55	57	X 53	X 51															X 89	X 77	X 63	X 56	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	29	30	31	31	31	1											1			30	30	31	30	31
MED	X 63	X 59	X 59	X 57	X 54	X 48											X 76			X 79	X 74	X 69	X 65	X 67
U Q	69	67	64	63	X 59															X 86	X 77	X 77	70	70
L Q	X 57	X 54	X 54	X 50	X 48															X 70	X 68	X 63	X 58	X 57

AUG. 2015 fxI (0.1MHz)

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AUG. 2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	52	F	F	48	71	A	64	A	78	A	A	A	70	69	A	78	74	78	A	66	F	64
2	57	58	54	54	54	54	68	75	84	104	80	64	70	86	94	A	A	73	A	84	80	72	F	F
3	F	F	F	F	F	49	69	80	73	66	A	A	69	71	72	77	79	87	100	82	80	F	F	F
4	67	67	69	57	52	50	55	70	90	75	67	70	75	80	A	78	84	84	86	92	88	F	A	F
5	F	66	68	64	F	61	66	78	74	A	A	A	A	77	A	74	81	85	84	81	80	74	64	F
6	F	F	F	F	52	56	64	68	68	76	A	73	74	78	76	A	72	70	70	83	78	80	80	E 63
7	56	F	F	61	56	51	A	54	56	56	A	A	A	56	A	57	58	64	59	64	65	61	59	F
8	57	F	53	52	57	56	54	A	57	60	A	A	A	A	54	54	62	A	62	64	66	63	F	F
9	57	52	F	F	F	40	55	68	59	62	A	56	50	61	61	64	65	62	62	64	59	60	58	62
10	F	61	F	44	42	43	51	64	60	A	A	A	60	A	62	62	65	73	71	79	71	70	59	54
11	51	47	53	50	45	40	54	70	70	67	A	59	60	A	65	72	86	77	64	60	66	62	62	F
12	A	48	49	48	45	43	54	81	A	A	A	A	A	A	58	62	61	A	68	66	62	58	55	55
13	52	50	48	45	44	37	49	65	56	55	A	A	55	58	56	54	55	53	52	60	67	F	F	F
14	F	F	F	54	51	46	57	73	64	62	56	56	63	70	66	70	70	66	73	77	69	65	50	F
15	F	F	F	F	F	46	58	54	63	69	A	63	58	63	67	66	A	A	73	80	69	70	78	65
16	F	F	58	F	56	42	44	52	58	49	R 46	R	R 50	54	54	52	51	54	A	65	56	45	46	47
17	46	46	47	47	48	46	A	A	61	A	69	61	62	A	76	71	70	66	62	81	68	62	54	F
18	52	48	51	F	F	40	41	48	57	54	64	60	64	58	A	A	70	A	71	A	59	F	F	F
19	A	A	34	F	F	37	48	60	56	57	61	59	55	68	64	66	55	60	66	73	66	57	54	57
20	F	46	48	46	39	39	44	42	A	A	52	A	A	R 52	51	48	49	49	53	57	56	F	F	F
21	53	47	45	38	34	36	52	64	60	A	50	53	59	58	59	58	58	60	60	63	60	52	50	52
22	48	46	46	40	34	34	47	65	71	A	57	54	64	64	64	62	61	58	56	64	66	64	61	61
23	F	54	53	52	48	46	59	60	67	67	66	56	62	73	72		65	66	72	80	76	73	66	64
24	62	59	55	56	48	36	46	60	60	58	59	59	62	59	59	61	63	62	62	73	69	54	48	48
25	48	47	F	43	40	37	51	60	64	61	56	55	60	63	70	68	71	66	69	67	66	55	F	F
26	F	F	F	39	38	42	60	49	66	60	57	62	61	77	88	82	75	63	60	67	71	71	57	51
27	51	49	47	48	45	41	49	51	A	A	A	48	50	A	49	A	52	49	A	46	49	F	50	47
28	46	49	46	42	38	30	A	43	46	A	45	A	A	A	A	A	50	52	54	55	54	55	52	52
29	49	51	48	44	43	39	60	50	66	A	64	78	67	66	74	68	58	A	74	79	72	67	64	F
30	F	F	F	F	F	41	56	53	68	65	67	64	69	A	74	70	70	64	72	80	70	66	54	47
31	51	49	F	46	45	42	53	65	73	71	62	58	60	63	72	73	67	65	77	83	71	57	50	46
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	20	20	22	23	31	28	28	28	20	19	20	24	22	26	25	28	26	28	30	30	25	22	17
MED	52	49	50	48	45	42	54	62	64	62	61	59	62	64	66	66	65	64	68	73	68	63	56	54
U Q	57	56	54	54	52	48	60	69	69	68	67	64	66	73	72	72	70	73	73	80	71	70	62	62
L Q	48	47	47	44	40	39	49	52	58	58	56	56	58	58	59	60	58	60	61	64	62	57	50	48

IONOSPHERIC DATA STATION Kokubunji

AUG. 2015 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						L	A	A	L	A	A	A	A	A	A	A	A	A	A					
2							A	A	A	A	A	U L 516	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	496	480	460	A	A					
4								A	A	L	A	A	A	A	A	A	A	A	A					
5							L	A	A	A	A	A	A	A	A	A	A	L	A					
6								L	A	A	A	A	A	A	A	A	A	A	L					
7						U L 256	A	A	A	A	A	A	A	480	A	A	U L 444	A	A					
8							L	A	A	A	A	A	A	A	A	460	A	A	A					
9							A	412	U L 436	A	A	484	U L 468	484	472	452	444	L	A					
10							U L 404	A	U L 448	A	A	A	484	A	A	464	U L 448	A	A					
11								L	U L 452	472	A	U L 488	A	A	A	480	U L 432	L	L					
12							U L 412	A	A	A	A	A	A	A	A	A	A	A	A					
13						U L 260	368	U L 408	428	A	A	A	U L 460	472	452	448	U L 432	396	A					
14						L	L	L	A	U L 464	U L 492	500	476	464	468	A	A	A	A					
15								L	A	A	A	A	A	A	A	464	A	A	A					
16						U L 260	U L 348	392	A	U L 420	U L 420	U L 444	U L 428	U L 468	448	428	A	A	A					
17							A	A	A	A	A	U L 496	U L 476	A	A	444	A	A	A					
18						A	A	A	A	A	A	484	480	U L 484	A	A		A	A					
19							A	L	L	A	A	U L 464	U L 480	464	A	A	U L 440	U L 416						
20						A	A	A	A	A	452	A	A	U L 456	U L 440	U L 424	A	A	A					
21							L	396	A	A	U L 468	U L 492	488	472	464	L	U L 456	L	A					
22							U L 384	L	U L 436	A	A	A	A	468	A	448	A	L	A					
23								L	A	A	U L 476	U L 480	U L 504	484	464		L	L	A					
24						A		412	452	436	492	476	A	U L 492	480	452	L	A	A					
25						A	L	L	440	U L 460	460	U L 500	484	480	472	L	428	L						
26								U L 452	A	A	U L 472	476	488	476	468	U L 464	L	A						
27							A	A	A	A	A	U L 444	U L 444	A	A	A	U L 412	A	A					
28							A	A	408	A	U L 404	A	A	A	A	A	A	376	A					
29								A	L	A	A	484	U L 504	484	476	A	A	A						
30									A	A	U L 468	U L 488	U L 504	A	A	A	L	A	A					
31								L	A	460	U L 468	U L 504	U L 496	U L 516	472	452	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						3	5	6	8	6	11	17	16	16	13	14	10	3						
MED						U L 260	U L 384	410	438	460	U L 468	U L 484	U L 482	478	468	452	U L 442	396						
U Q						U L 260	U L 408	412	U L 450	464	U L 476	U L 498	U L 492	U L 484	474	464	U L 448	U L 416						
L Q						U L 256	358	396	432	436	U L 452	U L 476	U L 472	468	458	448	U L 432	376						

AUG. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG.2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
3						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
4						B	U A 244	A	A	A	A	A	A	A	A	A	A	A	A					
5						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
6						B	A	A	A	A	A	A	A	A	A	A	A	A	U R 212					
7						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
8						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
9						A	A	A	A	A	A	A	R	R	A	A	R	U A 272	A					
10						B	R	A	A	A	A	A	A	A	A	A	A	A	A					
11						B	A	A	A	A	A	A	A	A	A	A	A	256	A					
12						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
13						B	A	A	A	A	A	A	A	R	A	R	R	U A 252	B					
14						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
15						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
16						B	A	A	A	A	A	A	A	A	A	U R 324	A	A	A					
17						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
18						B	A	A	A	A	A	A	A	A	A	A		A	A					
19						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
20						B	A	A	A	A	A	A	A	R	R	A	A	A	A					
21						B	A	A	A	A	A	A	R	R	A	R	R	A	A					
22						B	A	A	A	A	A	A	A	A	A	A 208	A	A	A					
23						B	A	A	A	A	A	A	R	R	A		R	A	A					
24						B	A	A	A	A	R	R	A	A	A	A	A	A	B					
25						B	A	A	A	A	A	A	A	A	A	R	R	A	B					
26							A	A	A	A	A	A	A	A	A	356	A	A	A					
27						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
28						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
29						B	A	A	A	A	A	A	A	A	A	A	A	A	B					
30						B	U A 212	A	A	A	A	A	R	A	A	A	A	A	B					
31						B	U R 232	A	A	A	A	R	A	A	A	R	R	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3									3		3	1					
MED							U A 232									324		U A 256	U R 212					
U Q							U A 244									356		U A 272						
L Q							U A 212									A 208		U A 252						

AUG.2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 40	J A 42	J A 42	J A 30	J A 26	J A 22	J A 48	J A 116	J A 44	J A 99	J A 105	J A 84	J A 156	J A 116	J A 58	J A 66	J A 72	J A 55	J A 62	J A 90	J A 139	J A 86	J A 62	J A 54
2	J A 23	J A 22	J A 30	J A 30	21	20	J A 42	J A 58	J A 91	J A 80	J A 84	J A 46	J A 62	J A 58	J A 70	J A 102	J A 82	J A 61	J A 131	J A 86	J A 71	J A 125	J A 105	J A 123
3	J A 56	J A 50	J A 76	J A 44	J A 34	20	J A 45	J A 52	J A 61	J A 53	J A 82	J A 124	J A 68	J A 58	J A 50	39	37	J A 89	J A 113	J A 113	J A 64	J A 45	J A 42	J A 46
4	J A 32	J A 38	J A 28	J A 28	20	22	28	J A 43	J A 50	J A 46	J A 49	J A 53	J A 56	J A 76	J A 96	J A 61	J A 67	J A 99	J A 65	J A 36	J A 49	J A 99	J A 116	J A 98
5	J A 31	J A 35	J A 32	J A 29	J A 24	J A 32	36	J A 57	J A 68	J A 158	J A 130	J A 95	J A 94	J A 101	J A 78	J A 101	J A 89	J A 44	J A 76	J A 60	J A 43	J A 30	J A 112	J A 80
6	J A 68	J A 102	J A 56	J A 35	J A 40	22	33	34	J A 60	J A 72	J A 112	J A 80	J A 53	J A 70	J A 78	J A 112	J A 83	J A 60	G	J A 35	J A 68	J A 71	J A 90	J A 65
7	J A 107	J A 97	J A 76	J A 69	J A 28	20	J A 67	J A 71	J A 55	J A 66	J A 170	J A 98	J A 109	J A 58	J A 64	J A 60	38	J A 64	J A 40	J A 31	J A 36	J A 101	J A 70	J A 58
8	J A 108	J A 29	J A 22	20	20	20	29	J A 108	J A 73	J A 51	J A 80	J A 111	J A 98	J A 58	J A 56	42	J A 70	J A 92	J A 112	J A 107	J A 72	J A 89	J A 68	J A 69
9	J A 99	J A 105	J A 42	J A 39	J A 54	J A 29	J A 45	34	38	J A 73	J A 70	J A 44	G	G	42	40	G	33	29	J A 20	J A 21	E B 14	J A 45	J A 82
10	J A 34	J A 43	J A 30	J A 30	J A 31	J A 21	J A 28	J A 62	J A 63	J A 96	J A 235	J A 157	J A 98	J A 63	J A 51	J A 38	J A 47	J A 98	J A 114	J A 32	22	21	22	J A 31
11	23	J A 30	J A 27	J A 31	J A 30	E B 15	28	35	J A 48	J A 59	J A 121	J A 76	J A 118	J A 118	J A 85	J A 46	34	32	23	J A 23	J A 32	J A 27	J A 78	J A 60
12	J A 100	J A 108	J A 80	J A 77	J A 77	J A 32	28	J A 72	J A 126	J A 234	J A 208	J A 123	J A 73	J A 86	J A 62	J A 70	J A 56	J A 100	J A 74	J A 72	J A 43	J A 37	J A 25	20
13	J A 23	20	J A 23	21	J A 20	J A 22	26	33	38	J A 52	J A 82	J A 53	43	G	40	G 28	G	33	J A 41	J A 38	J A 39	J A 44	J A 60	J A 58
14	J A 53	J A 106	J A 56	J A 50	J A 24	18	28	35	J A 48	J A 49	J A 42	43	41	42	43	J A 53	J A 46	J A 50	J A 40	J A 30	J A 55	J A 68	J A 64	J A 44
15	J A 56	J A 29	J A 30	J A 24	J A 36	J A 22	28	J A 38	J A 54	J A 73	J A 93	J A 60	J A 74	J A 73	J A 51	41	J A 73	J A 68	J A 49	J A 70	J A 39	E B 14	19	J A 33
16	J A 21	21	J A 24	J A 31	J A 23	J A 23	J A 32	J A 38	J A 47	38	38	J A 42	43	40	38	G	40	J A 40	J A 76	J A 56	J A 73	J A 46	22	J A 21
17	19	20	19	J A 29	J A 23	J A 26	J A 52	J A 66	J A 58	J A 115	J A 68	J A 57	J A 59	J A 102	J A 45	J A 34	J A 84	J A 89	J A 188	J A 138	J A 49	J A 88	J A 81	J A 69
18	J A 28	J A 70	J A 21	J A 47	J A 62	J A 32	J A 40	44	48	J A 54	J A 48	J A 48	42	J A 43	J A 81	J A 89	J A 65	J A 107	J A 95	J A 84	J A 55	J A 47	J A 97	J A 72
19	J A 74	J A 79	J A 43	J A 25	20	E B 15	J A 47	33	38	J A 57	J A 57	J A 46	J A 44	J A 62	J A 70	J A 45	J A 38	28	J A 54	J A 58	J A 37	J A 44	J A 37	J A 51
20	J A 56	J A 24	J A 24	J A 20	19	J A 26	J A 43	J A 37	J A 50	J A 55	J A 58	J A 52	J A 52	G	G	40	J A 46	J A 45	J A 58	J A 32	J A 54	J A 48	J A 60	J A 60
21	J A 24	J A 26	J A 26	J A 24	J A 19	J A 21	29	32	J A 113	J A 100	J A 56	45	G	G	35	G 27	G 26	29	J A 36	J A 28	J A 27	J A 29	J A 36	J A 40
22	J A 33	J A 30	J A 22	E B 16	19	E B 14	25	35	J A 41	J A 89	J A 48	J A 47	J A 48	44	J A 51	J A 40	J A 49	J A 32	J A 57	J A 46	J A 33	J A 49	J A 56	J A 58
23	J A 27	J A 82	J A 57	J A 30	J A 30	J A 22	J A 33	34	J A 48	J A 66	38	41	G 31	G	J A 43		G 25	31	J A 34	J A 46	J A 50	J A 40	J A 55	20
24	E B 14	J A 21	J A 37	20	J A 40	J A 36	29	34	39	40	G	G	J A 79	J A 48	39	37	32	30	J A 33	J A 32	21	J A 39	J A 66	J A 40
25	J A 30	J A 36	J A 27	J A 29	J A 27	J A 28	J A 29	J A 46	J A 44	J A 85	39	42	J A 43	40	38	G 28	G	30	J A 27	J A 27	J A 22	J A 20	J A 37	J A 64
26	J A 72	J A 79	J A 26	J A 24	J A 28	20	28	J A 49	J A 65	J A 50	J A 69	J A 56	J A 57	J A 46	35	G 34	33	J A 66	J A 31	J A 29	J A 20	E B 16	E B 15	J A 32
27	J A 42	J A 42	J A 53	J A 23	J A 19	J A 28	J A 46	J A 48	J A 56	J A 54	J A 68	G	45	47	J A 45	J A 45	J A 42	J A 73	J A 63	J A 80	J A 39	J A 32	J A 70	J A 62
28	J A 65	J A 30	J A 27	J A 20	J A 22	J A 26	J A 61	J A 68	38	42	G	J A 49	J A 42	J A 56	J A 46	J A 46	J A 43	J A 37	J A 31	J A 47	J A 50	21	21	E B 15
29	J A 64	22	22	E B 16	J A 21	J A 23	J A 30	J A 39	J A 51	J A 86	J A 120	J A 74	J A 111	J A 45	40	J A 46	J A 130	J A 99	J A 131	J A 90	J A 47	J A 56	J A 102	J A 108
30	J A 76	J A 46	J A 57	J A 39	J A 29	E B 15	26	J A 45	J A 73	J A 56	J A 44	J A 44	G	J A 84	J A 88	J A 50	J A 37	J A 52	J A 32	J A 24	J A 26	21	J A 28	21
31	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	G	32	J A 47	J A 41	J A 50	G	J A 44	J A 48	J A 40	G 26	G	28	J A 24	E B 15	22	21	J A 22	19
	00	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	30	31	31	31	31	31	31	31	31
MED	J A 40	J A 36	J A 30	J A 29	J A 24	J A 22	J A 30	J A 43	J A 50	J A 59	J A 68	J A 52	J A 53	J A 56	J A 50	J A 44	J A 43	J A 52	J A 54	J A 46	J A 43	J A 44	J A 60	J A 58
U Q	J A 68	J A 79	J A 53	J A 35	J A 31	J A 26	J A 45	J A 58	J A 63	J A 86	J A 105	J A 80	J A 79	J A 73	J A 70	J A 60	J A 70	J A 89	J A 76	J A 80	J A 55	J A 68	J A 78	J A 69
L Q	24	24	J A 24	21	20	E B 20	28	34	44	J A 51	48	44	43	G 42	40	G 37	G 33	32	J A 32	J A 30	J A 27	21	28	32

AUG. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2015 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	19	22	25	21	17	18	38	A A 116	38	A A 99	64	A A 84	A A 156	A A 116	45	62	A A 72	53	55	50	A A 139	21	36	23
2	E B 15	E B 15	18	19	E B 15	18	35	55	78	69	74	41	56	48	66	A A 102	A A 82	58	A A 131	39	32	26	21	24
3	21	E B 16	27	21	18	18	34	40	54	44	A A 82	A A 124	52	53	40	38	36	46	35	39	20	21	20	31
4	20	21	19	E B 15	E B 16	17	27	38	46	40	46	48	51	73	A A 96	49	49	54	62	25	28	53	A A 116	18
5	E B 15	18	18	19	16	25	32	55	66	A A 158	A A 130	A A 95	A A 94	75	A A 78	56	63	32	29	19	29	18	E B 15	35
6	19	34	20	16	E B 16	18	30	32	53	49	A A 112	59	47	56	60	A A 112	61	46	G	27	46	43	52	38
7	38	34	24	36	E B 15	17	A A 67	44	50	52	A A 170	A A 98	A A 109	44	A A 64	51	35	45	33	26	20	26	32	34
8	E B 16	19	E B 14	E B 16	E B 15	18	26	A A 108	48	45	A A 80	A A 111	A A 98	A A 58	46	42	52	A A 92	38	33	30	48	34	36
9	16	19	18	27	19	22	40	32	35	55	A A 70	40	G	G	40	38	G	30	27	17	E B 15	E B 14	E B 15	18
10	E B 16	21	20	E B 15	16	18	18	40	36	A A 96	A A 235	A A 157	40	A A 63	46	36	35	62	58	17	E B 15	E B 15	16	E B 15
11	E B 15	E B 15	17	17	20	E B 15	26	32	36	39	A A 121	42	54	A A 118	48	42	30	29	21	17	17	E B 15	40	39
12	A A 100	34	33	36	19	19	27	66	A A 126	A A 234	A A 208	A A 123	A A 73	A A 86	45	58	52	A A 100	63	37	22	E B 15	E B 15	E B 15
13	E B 15	E B 15	E B 15	E B 16	E B 16	16	24	30	34	44	A A 82	A A 53	40	G	35	G 28	G	31	33	23	16	24	38	44
14	28	33	23	26	E B 15	16	24	32	38	39	39	42	39	41	40	49	41	48	35	26	37	28	E B 16	19
15	27	E B 16	E B 15	E B 16	26	18	22	33	44	64	A A 93	53	51	54	46	38	A A 73	A A 68	46	42	31	E B 14	E B 15	20
16	E B 16	E B 15	19	23	19	17	28	31	42	35	34	38	38	38	34	G	39	35	A A 76	48	28	E B 16	E B 15	E B 15
17	E B 15	E B 15	E B 15	17	18	21	A A 52	A A 66	43	A A 115	46	44	40	A A 102	42	33	57	43	25	16	18	22	26	20
18	20	24	16	E B 15	17	27	35	40	43	48	44	42	38	40	A A 81	A A 89	57	A A 107	36	A A 84	45	28	27	20
19	A A 74	A A 79	24	E B 15	E B 15	E B 15	42	30	36	52	52	40	39	44	46	42	33	26	34	42	18	31	19	38
20	35	18	16	E B 15	E B 15	22	36	34	A A 50	A A 55	40	A A 52	A A 52	G	G	38	45	42	44	28	29	40	33	20
21	E B 15	19	16	E B 15	E B 15	18	28	29	38	A A 100	39	42	G	G	35	G 26	G 25	28	32	25	19	23	18	19
22	19	18	E B 14	E B 16	16	E B 14	23	30	37	A A 89	46	45	44	40	48	36	42	25	36	28	20	24	16	38
23	E B 15	26	E B 15	20	20	E B 15	24	30	41	51	38	40	G 30	G	38		G 23	28	28	40	46	35	33	E B 15
24	E B 14	E B 15	20	16	19	24	24	33	36	38	G	G	46	43	37	36	31	29	30	19	15	34	28	16
25	E B 15	E B 15	18	E B 15	17	23	20	33	35	36	35	41	41	38	36	G 28	G	27	24	19	17	17	20	23
26	16	17	17	E B 16	20	E B 15	25	40	59	46	40	42	40	40	34	G 32	32	32	27	17	E B 16	E B 16	E B 15	24
27	E B 16	38	19	E B 15	E B 15	24	37	42	A A 56	A A 54	A A 68	G	40	A A 47	41	A A 45	32	30	A A 63	37	31	25	E B 14	30
28	20	25	E B 16	E B 16	E B 14	20	A A 61	38	35	A A 42	G	A A 49	A A 42	A A 56	A A 46	A A 46	38	32	29	38	43	E B 16	E B 16	E B 15
29	37	E B 15	E B 16	E B 16	19	18	20	34	35	A A 86	49	42	42	41	37	40	44	A A 99	26	42	32	26	35	19
30	18	19	34	20	E B 16	E B 15	23	40	62	49	40	40	G	A A 84	51	48	31	46	26	20	17	E B 15	18	E B 15
31	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	G	30	40	38	41	G	38	42	38	G 25	G	26	E B 19	15	E B 16	E B 16	E B 16	E B 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31
MED	16	19	18	E B 16	16	18	27	34	42	51	49	42	42	44	45	41	38	42	33	27	22	23	20	20
U Q	21	25	20	20	19	21	36	42	53	A A 86	A A 82	A A 59	A A 52	A A 63	48	49	52	A A 54	46	39	32	28	33	34
L Q	E B 15	E B 15	E B 16	E B 15	E B 15	E B 16	24	32	36	42	40	40	39	G 40	37	G 36	G 31	29	27	19	17	E B 16	E B 16	E B 16

AUG. 2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2015 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	13	14	14	15	16	14	14	15	15	16	22	22	19	16	17	17	14	14	12	15	14	15	14
2	15	15	15	16	15	14	15	14	17	17	18	17	17	18	16	16	14	14	14	15	14	15	15	14
3	16	16	14	14	13	14	14	14	14	18	16	17	20	18	16	16	18	16	13	15	15	15	15	14
4	15	14	14	15	16	16	14	14	13	18	20	19	24	23	16	16	18	15	15	14	14	14	14	16
5	15	15	15	14	16	14	14	14	13	18	17	29	15	20	19	18	17	15	16	15	16	15	15	15
6	15	15	14	15	16	15	14	14	19	18	17	20	18	20	18	17	15	16	12	16	13	15	15	15
7	15	15	14	14	15	13	11	15	16	15	18	18	19	18	19	16	18	14	13	15	14	15	15	14
8	16	14	14	16	15	14	13	14	12	18	18	23	20	18	17	16	14	15	16	16	15	16	15	14
9	16	16	15	14	15	15	15	12	16	16	16	16	17	18	19	17	17	13	13	16	15	14	15	15
10	16	15	14	15	15	14	14	13	13	16	17	20	18	19	18	20	14	14	12	15	15	15	16	15
11	15	15	15	16	15	15	14	16	13	15	13	16	16	17	15	16	13	13	13	14	14	15	15	15
12	15	14	15	15	14	15	13	14	14	16	17	16	17	14	19	18	19	13	14	13	15	15	15	15
13	15	15	15	16	16	14	14	15	12	19	17	16	16	17	15	13	14	14	12	15	15	15	14	14
14	16	15	15	15	15	15	15	14	13	15	16	16	17	18	18	18	14	14	14	15	15	16	16	15
15	15	16	15	16	14	14	14	15	15	18	16	16	18	21	16	15	13	13	14	15	14	14	15	13
16	16	15	15	14	15	14	14	14	14	14	18	13	14	19	15	15	14	13	14	15	14	16	15	15
17	15	14	15	15	16	15	15	13	13	20	14	16	17	19	17	16	14	14	14	14	14	14	15	15
18	15	15	15	15	14	16	14	14	13	16	16	20	18	21	18	16	16	16	13	15	14	14	16	15
19	15	15	15	15	15	15	13	14	14	19	18	17	15	17	24	16	14	13	14	16	15	15	15	15
20	16	15	15	15	15	14	14	14	15	16	18	21	22	18	17	17	15	15	14	15	15	15	14	15
21	16	16	15	15	15	15	14	14	12	12	18	22	28	20	18	17	16	14	15	12	14	15	14	15
22	14	15	14	16	16	14	15	14	14	20	16	20	20	20	20	15	18	14	14	15	15	15	14	16
23	15	14	15	15	15	15	13	12	15	17	17	16	18	18	15		14	13	13	14	16	15	15	15
24	14	15	15	16	15	15	13	14	15	15	20	20	21	18	16	14	14	14	14	15	15	16	15	15
25	15	15	15	15	14	14	14	14	13	18	17	17	17	19	17	18	16	14	13	15	16	15	15	15
26	16	14	15	16	14	15	14	14	16	16	17	16	18	16	18	15	13	15	15	14	16	16	15	15
27	16	14	15	15	15	15	15	12	13	17	16	15	14	13	19	18	13	14	14	16	15	15	16	16
28	15	15	16	16	14	14	13	14	12	15	17	15	17	16	16	15	12	12	13	15	14	16	16	15
29	16	15	16	16	15	15	14	14	14	19	17	21	19	18	17	16	13	13	13	14	15	15	15	15
30	15	15	15	14	16	15	14	14	14	17	15	18	18	23	20	15	14	14	13	14	14	15	14	15
31	15	14	15	15	15	14	14	14	13	15	16	17	16	16	17	14	15	13	13	15	16	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	30	31	31	31	31	31	31	31	31
MED	15	15	15	15	15	15	14	14	14	17	17	17	18	18	17	16	14	14	14	15	15	15	15	15
U Q	16	15	15	16	15	15	14	14	15	18	18	20	20	20	19	17	17	15	14	15	15	15	15	15
L Q	15	14	14	15	15	14	14	14	13	15	16	16	17	17	16	15	14	13	13	14	14	15	15	15

AUG. 2015 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F	F	287	F	F	287	331	A	342	A	316	A	A	A	314	308	A	320	313	293	A	B 281	F	312
2	287	283	274	284	286	275	298	306	292	341	338	292	289	290	300	A	A	300	A	300	305	302	F	F
3	F	F	F	F	F	306	327	337	344	324	A	A	311	309	296	304	303	285	321	300	298	F	F	F
4	280	277	297	334	309	333	334	328	348	337	321	297	311	291	A	301	316	313	297	311	300	F	A	F
5	F	289	295	285	F	296	317	347	334	A	A	A	A	291	A	299	292	312	310	298	307	299	284	F
6	F	F	F	F	297	326	361	348	315	343	A	291	297	308	307	A	317	303	294	305	284	275	282	E 286
7	263	F	F	276	263	277	A	282	291	281	A	A	A	264	A	299	290	322	314	302	287	283	278	F
8	282	F	266	269	298	316	324	A	291	289	A	A	A	A	267	283	299	A	300	288	285	280	F	F
9	271	266	F	F	F	274	264	323	290	286	A	320	329	306	289	306	323	317	326	332	289	300	274	270
10	F	279	F	306	278	296	290	348	316	A	A	A	310	A	301	303	310	304	299	306	292	298	284	290
11	278	287	279	308	307	323	311	332	336	327	A	331	281	A	288	292	330	347	327	305	295	298	271	F
12	A	285	302	305	297	302	293	361	A	A	A	A	A	A	298	322	305	A	322	319	306	313	282	261
13	282	277	274	291	285	273	292	331	295	317	A	A	265	293	300	278	305	306	300	289	322	F	F	F
14	F	F	F	282	278	296	327	328	346	348	312	266	318	324	319	314	321	327	317	321	314	325	284	F
15	F	F	F	F	F	334	353	338	296	329	A	340	295	294	304	305	A	A	313	310	279	265	263	283
16	F	F	278	F	298	266	243	278	314	301	R 272	R	R 242	292	284	303	284	292	A	317	295	280	284	280
17	266	287	285	279	310	314	A	A	307	A	321	268	291	A	310	313	323	325	293	312	290	316	271	F
18	282	277	284	F	F	360	277	295	322	291	320	297	331	292	A	A	326	A	325	A	301	F	F	F
19	A	A	293	F	F	331	341	340	330	355	321	301	267	318	308	327	300	301	307	303	328	296	282	292
20	F	274	294	301	293	291	320	339	A	A	325	A	A	R 302	295	291	305	295	321	307	290	F	F	F
21	268	283	320	319	278	297	331	354	387	A	345	298	312	319	314	315	309	328	322	319	314	298	285	301
22	304	296	313	317	335	316	307	339	362	A	307	333	312	318	322	330	322	320	311	311	307	293	281	278
23	F	300	275	291	304	317	361	343	342	325	345	326	286	318	312		318	321	295	311	298	289	284	283
24	298	298	307	308	313	339	317	332	308	363	294	298	328	293	298	307	328	310	313	321	345	288	294	283
25	274	282	F	309	331	328	348	336	343	336	326	301	297	304	319	309	325	328	334	317	327	310	F	F
26	F	F	F	300	293	316	393	306	308	313	319	326	278	309	321	333	331	343	309	296	302	332	295	271
27	277	277	291	293	293	283	311	328	A	A	A	266	261	A	262	A	277	316	A	291	268	F	258	252
28	269	289	299	281	301	288	A	271	292	A	R 287	A	A	A	A	A	273	301	292	289	262	258	273	268
29	273	279	280	280	314	316	357	346	366	A	299	320	292	305	321	334	320	A	322	314	308	291	279	F
30	F	F	F	F	F	335	370	344	334	326	343	323	310	A	323	311	333	324	314	322	328	318	309	302
31	277	292	F	301	320	305	338	345	365	359	368	318	336	296	319	330	327	322	320	328	335	323	307	297
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	20	20	22	23	31	28	28	28	20	19	20	24	22	26	25	28	26	28	30	30	25	22	17
MED	277	283	289	296	298	306	326	336	326	326	321	301	297	303	306	307	316	316	313	308	300	298	282	283
U Q	282	289	298	308	310	326	344	344	344	342	338	324	312	309	319	318	324	324	322	317	314	312	284	294
L Q	270	277	278	282	286	288	302	326	302	307	307	294	284	292	296	300	302	303	300	300	290	282	274	270

AUG. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						L	A	A	L	A	A	A	A	A	A	A	A	A	A					
2							A	A	A	A	A	U L 396	A	A	A	A	A	A	A					
3							A	A	A	A	A	A	A	A	355	376	356	A	A					
4								A	A	L	A	A	A	A	A	A	A	A	A					
5							L	A	A	A	A	A	A	A	A	A	A	L	A					
6								L	A	A	A	A	A	A	A	A	A	A	L					
7						U L 324	A	A	A	A	A	A	A	370	A	A	U L 360	A	A					
8							L	A	A	A	A	A	A	A	A	359	A	A	A					
9							A	374	U L 383	A	A	402	U L 409	387	395	391	355	L	A					
10							U L 340	A	U L 400	A	A	A	388	A	A	371	U L 381	A	A					
11								L	U L 392	401	A	U L 384	A	A	A	368	U L 374	L	L					
12							U L 348	A	A	A	A	A	A	A	A	A	A	A	A					
13						U L 303	348	U L 377	406		A	A	A	U L 380	378	389	372	U L 342	377	A				
14						L	L	L	A	U L 419	U L 392	365	402	395	360	A	A	A	A					
15								L	A	A	A	A	A	A	A	363	A	A	A					
16						U L 297	U L 343	370	A	U L 398	U L 384	U L 401	U L 424	U L 377	368	362	A	A	A					
17							A	A	A	A	A	U L 366	U L 403	A	A	386	A	A	A					
18						A	A	A	A	A	A	374	376	U L 375	A	A		A	A					
19							A	L	L	A	A	U L 416	U L 383	368	A	A	U L 362	U L 326						
20						A	A	A	A	A	402	A	A	U L 392	U L 415	U L 383	A	A	A					
21							L	388	A	A	U L 406	U L 389	383	390	379	L	U L 351	L	A					
22							U L 345	L	U L 380	A	A	A	A	397	A	386	A	L	A					
23								L	A	A	U L 383	U L 395	U L 361	383	385		L	L	A					
24						A		355	381	421	380	422	A	U L 370	360	375	L	A	A					
25						A	L	L	405	U L 396	427	U L 373	390	386	361	L	369	L						
26								U L 405	A	A	U L 415	380	382	382	359	U L 365	L	A						
27							A	A	A	A	A	U L 404	U L 389	A	A	A	U L 335	A	A					
28							A	A	359	A	U L 381	A	A	A	A	A	A	335	A					
29								A	L	A	A	368	U L 377	393	369	A	A	A						
30									A	A	U L 404	U L 391	U L 389	A	A	A	L	A	A					
31								L	A	394	U L 415	U L 400	U L 360	U L 365	373	361	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						3	5	6	8	6	11	17	16	16	13	14	10	3						
MED						U L 303	U L 345	376	388	400	U L 402	U L 391	U L 386	382	369	372	U L 358	335						
U Q						U L 324	348	388	402	419	U L 415	U L 402	U L 396	391	387	383	U L 369	377						
L Q						U L 297	U L 342	370	380	396	U L 383	374	U L 378	U L 372	360	363	U L 351	U L 326						

AUG. 2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						354	252	A	278	A	E A 296	A	A	A	316	E A 352	A	282	E A 282					
2							E A 276	E A 298	E A 408	258	E A 290	310	E A 370	332	E A 308	A	A	E A 314	A					
3							268	248	242	276	A	A	342	326	354	316	292	290	250					
4								280	250	262	324	320	314	E A 398	A	312	292	282	E A 304					
5							292	244	E A 302	A	A	A	A	E A 424	A	E A 342	E A 324	272	264					
6								254	E A 304	274	A	E A 342	336	324	E A 312	A	322	E A 304	292					
7						332	A	E A 392	E A 368	E A 428	A	A	A	432	A	E A 368	366	292	284					
8							298	A	E A 368	356	A	A	A	A	454	418	E A 326	A	E A 290					
9							382	294	370	E A 384	A	324	340	352	378	342	304	290	258					
10							316	262	278	A	A	A	346	A	336	338	326	E A 324	E A 320					
11								272	252	280	A	310	E A 422	A	368	352	276	250	258					
12							342	E A 254	A	A	A	A	A	A	368	E A 358	330	A	E A 344					
13						378	370	288	362	324	A	A	454	382	372	420	332	330	306					
14						314	276	260	242	276	340	454	328	304	324	290	294	264	270					
15								272	E A 298	E A 328	A	E A 292	E A 392	E A 356	318	330	A	A	276					
16						370	506	386	322	356	406	390	438	396	412	352	386	360	A					
17							A	A	330	A	300	362	376	A	302	286	E A 284	280	E A 282					
18						E A 244	E A 426	378	294	E A 388	288	370	312	368	A	A		A	262					
19							E A 282	270	278	E A 278	E A 316	348	460	312	332	282	302	334						
20						E A 306	E A 316	248	A	A	334	A	A	E A 366	394	384	E A 354	E A 354	E A 312					
21							274	256	230	A	308	398	340	332	330	318	328	282	256					
22							350	264	254	A	E A 316	328	334	310	312	304	292	292	E A 282					
23								262	270	282	272	310	364	310	300		276	290	266					
24						E A 236		294	298	258	374	364	314	346	370	310	290	254	256					
25						E A 252	262	268	280	272	320	354	372	354	306	310	280	270						
26								378	E A 344	E A 278	326	324	410	320	280	268	270	242						
27							E A 336	E A 302	A	A	A	446	468	A	472	A	416	248	A					
28							A	E A 454	406	A	308	A	A	A	A	A	430	344	E A 286					
29								238	254	A	360	280	292	344	298	270	E A 278	A						
30									E A 330	284	266	314	338	A	286	304	284	E A 258	254					
31								256	242	244	246	298	294	382	306	290	286	294						
	00	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	18	27	28	20	19	21	24	22	26	25	27	26	23					
MED						314	U 293	266	U 274	277	316	326	342	339	327	314	297	286	U 270					
U Q						362	350	E A 298	337	E A 342	334	367	401	382	370	352	330	314	E A 292					
L Q						E A 248	276	256	254	273	290	310	331	324	306	297	284	270	258					

AUG. 2015 h'F2 (KM)

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E A 316	E A 304	E A 270	E A 280	E A 286	E A 248	A	A	E A 240	A	A	A	A	A	A	A	A	A	A	E A 276	A	E A 270	E A 316	E A 240
2	E B 270	E B 280	E A 260	E A 284	E B 280	E A 238	A	A	A	A	A	188	A	A	A	A	A	A	A	E A 270	E A 252	230	E A 292	E A 336
3	286	E B 286	E A 290	E A 268	E A 282	E A 238	A	A	A	A	A	A	A	A	200	218	214	A	A	E A 242	E B 254	E A 258	E A 288	E A 298
4	E A 296	E A 302	E A 266	216	E B 236	218	222	A	A	202	A	A	A	A	A	A	A	A	A	E A 238	E A 254	E A 306	A	226
5	E B 234	E A 256	E A 252	E A 268	E A 258	E A 252	E A 238	A	A	A	A	A	A	A	A	A	A	218	A	234	E A 244	E A 242	E B 266	E A 308
6	E A 288	E A 336	E A 254	232	E B 248	E A 238	226	210	A	A	A	A	A	A	A	A	A	A	224	E A 254	E A 298	E A 346	E A 332	E A 320
7	E A 330	E A 320	E A 270	E A 324	E B 312	E B 254	A	A	A	A	A	A	A	212	A	A	214	A	A	E A 266	E A 264	E A 246	E A 318	E A 334
8	E B 266	E A 324	E B 262	E B 284	E B 280	236	240	A	A	A	A	A	A	A	A	212	A	A	A	E A 280	E A 278	E A 334	E A 296	E A 330
9	E A 290	E A 306	E A 256	E A 296	E A 292	E A 306	A	216	222	A	A	212	202	202	212	214	208	220	A	226	E B 232	E B 244	E B 284	E A 284
10	E B 288	E A 278	E A 298	242	E A 296	E A 268	228	A	186	A	A	A	E A 186	A	A	204	188	A	A	236	220	E B 230	224	E B 256
11	E B 288	E B 300	E A 280	E A 248	E A 242	226	226	212	208	204	A	204	A	A	A	E A 246	188	208	222	E A 238	E A 242	232	E A 346	E A 308
12	A	E A 340	E A 310	E A 304	E A 258	E A 260	220	A	A	A	A	A	A	A	A	A	A	A	A	E A 270	234	228	E B 266	E B 284
13	E B 284	E B 290	E B 304	E B 260	E B 282	E B 278	230	220	216	A	A	A	E A 242	212	204	202	228	234	A	E A 274	E A 236	E A 280	E A 354	E A 374
14	E A 302	E A 312	E A 316	E A 322	E A 290	E B 262	214	212	A	190	188	200	206	208	E A 238	A	A	A	A	224	E A 242	E A 240	E B 240	E A 316
15	E A 320	E B 276	E B 250	E B 232	E A 246	232	224	210	A	A	A	A	A	A	A	218	A	A	A	E A 260	E A 294	E B 310	E B 284	E A 250
16	E B 286	E B 280	E A 280	E A 316	E A 250	E A 308	E A 262	E A 236	A	202	202	206	210	204	204	210	A	A	A	E A 290	E A 248	E B 264	E B 276	E B 294
17	E B 290	E B 272	E B 280	E A 310	E A 264	E A 260	A	A	A	A	A	212	198	A	A	202	A	A	A	E A 244	E A 254	E A 234	E A 324	E A 306
18	E A 298	E A 328	E A 282	E B 272	E A 244	A	A	A	A	A	A	220	212	198	A	A	E A 284	A	A	A	E A 286	E A 312	E A 260	E A 272
19	A	A	E A 322	E B 270	E B 286	E B 244	A	214	198	A	A	194	202	E A 284	A	A	232	212	E A 270	E A 274	222	E A 280	E A 294	E A 308
20	E A 336	E A 280	E A 272	E A 248	E B 244	A	A	A	A	A	196	A	A	202	200	226	A	A	A	E A 268	E A 284	E A 316	E A 288	E A 296
21	E B 288	E A 282	E A 254	214	E B 306	E A 272	220	216	A	A	198	202	192	200	202	210	212	222	A	E A 240	228	E A 248	E A 288	E A 260
22	E A 268	E A 296	E B 244	214	212	E B 232	216	220	218	A	A	A	A	216	A	206	A	208	A	E A 260	E A 246	E A 268	E A 266	E A 312
23	E B 258	E A 278	E A 278	E A 280	E A 246	E B 236	222	216	A	A	210	202	194	210	212	A	214	212	A	E A 268	E A 276	E A 284	E A 286	E B 276
24	E B 260	E B 254	E A 268	222	220	A	232	E A 250	210	202	198	184	A	218	198	208	206	A	A	E A 242	214	E A 280	E A 296	E A 304
25	E B 304	E B 296	E A 268	E B 252	222	A	208	214	186	196	176	218	206	204	206	212	216	210	244	230	216	222	E A 310	E A 336
26	E A 334	E A 272	E A 260	E B 250	E A 302	E B 260	206	210	A	A	188	230	214	214	204	220	214	A	E A 270	E A 262	E B 258	228	220	E A 288
27	E B 308	E A 344	E A 286	E B 278	E B 248	E A 318	A	A	A	A	A	194	228	A	A	A	234	A	A	E A 338	E A 322	E A 330	E B 296	E A 384
28	E A 340	E A 294	E B 262	226	E B 238	E A 296	A	A	E A 246	A	216	A	A	A	A	A	A	E A 276	A	E A 296	E A 366	E B 292	E B 302	E B 294
29	E A 374	E B 310	E B 276	E B 266	E A 250	E A 284	226	A	214	A	A	216	212	200	200	A	A	A	E A 254	E A 280	E A 266	E A 272	E A 306	E A 262
30	230	E A 302	E A 312	E A 256	E B 246	218	224	E A 238	A	A	202	202	216	A	A	A	214	A	A	232	214	222	222	E B 278
31	E B 282	E B 274	E B 262	E B 252	220	E B 252	222	210	A	192	196	186	196	206	192	204	226	222	242	216	206	218	218	E B 252
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	31	31	31	27	20	16	11	7	11	17	16	16	13	16	16	11	7	30	30	31	30	31
MED	E 288	E A 295	E A 270	E 266	E 250	E A 252	223	214	211	202	198	202	205	206	203	210	214	215	U 233	E A 260	E A 250	E A 264	E A 288	E A 296
U Q	E A 312	E A 310	E A 286	E A 284	E A 286	E A 272	229	E A 220	E A 222	202	202	214	213	213	209	218	227	222	E A 270	E A 274	E A 276	E A 292	E A 306	E A 316
L Q	E B 276	E 278	E A 260	242	244	236	220	211	198	192	188	194	197	202	200	205	210	210	224	238	232	232	266	E A 272

AUG. 2015 h'F (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	114	A	A	A					
2						B	A	A	A	A	A	A	A	A	A	A	A	A	A					
3						B	A	A	A	A	A	A	A	A	A	114	114	A	B					
4						B	114	A	A	A	A	A	A	A	A	112	110	A	A					
5						B	114	A	A	A	A	A	A	A	A	A	A	A	A					
6						B	114	112	A	A	A	A	A	A	A	A	A	A	110					
7						B	112	A	A	A	A	A	A	A	110	A	110	A	A					
8						B	112	A	A	A	A	A	A	A	A	A	112	112	A					
9						A	116	114	116	A	A	A	112	118	A	110	114	112	118					
10						B	118	116	A	A	A	A	A	116	118	110	A	A	A					
11						B	118	112	A	A	A	A	A	A	A	A	A	112	114					
12						B	114	A	A	A	A	A	A	A	A	A	A	A	A					
13						B	118	116	112	A	A	A	110	114	112	112	108	114	B					
14						B	110	A	A	A	A	A	A	116	112	110	110	112	A					
15						B	114	A	A	A	A	A	A	A	A	112	112	112	A					
16						B	110	A	A	A	A	A	A	A	A	112	110	114	A					
17						116	A	A	A	A	A	A	A	A	A	A	110	A	A					
18						B	118	112	A	A	A	A	A	A	A	A		A	A					
19						B	110	110	A	A	A	A	A	A	A	A	A	A	A					
20						B	A	A	A	A	A	A	A	116	110	126	110	A	A					
21						B	118	108	A	A	A	A	112	112	A	116	112	112	A					
22						B	112	118	A	A	A	A	A	A	A	A	A	A	A					
23						B	A	116	A	A	A	A	112	112	A		114	114	A					
24						B	124	112	112	112	112	112	A	A	110	114	114	114	B					
25						B	A	A	A	A	A	A	A	A	A	110	110	114	B					
26							126	A	A	A	A	A	A	A	A	106	112	A	A					
27						B	A	112		A	A	A	112	112	108	114	114	A	B					
28						B	118	110	118	112	108	114	114	114	114	112		A	A	B				
29						B	A	A	A	A	A	A	A	A	A	112	112	A	A	B				
30						B	114	A	A	A	A	A	114	A	A	A	A	A	B					
31						B	116	A	A	A	A	116	A	A	A	116	112	112	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	22	13	4	2	2	4	7	9	9	18	18	12	3					
MED						116	114	112	114	112	110	113	112	114	112	112	112	112	114					
U Q							118	116	117			115	114	116	114	114	114	114	118					
L Q							112	111	112			112	112	112	110	110	110	112	110					

AUG.2015 h'E (KM)

IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	96	96	92	90	88	118	104	102	102	100	96	98	96	98	100	118	106	106	104	100	104	100	96	92
2	96	98	94	90	88	118	106	106	102	98	100	102	100	94	94	96	96	96	92	92	92	100	100	98
3	98	100	94	98	106	122	102	102	98	100	90	90	92	94	94	122	122	100	98	98	104	100	100	100
4	96	86	90	94	92	94	124	110	106	106	102	100	100	94	92	126	112	104	102	106	108	104	98	104
5	94	84	88	88	88	94	114	104	102	98	104	102	102	102	100	96	94	96	92	90	90	96	96	96
6	90	100	96	98	98	122	120	116	106	98	96	94	102	106	106	106	112	102	G	112	110	110	106	96
7	100	96	102	96	104	126	108	104	102	104	98	96	90	106	110	104	116	106	108	102	102	102	100	94
8	94	94	92	92	96	116	118	102	102	100	100	94	94	102	104	132	114	108	102	100	98	104	100	100
9	98	94	96	100	102	106	118	112	128	104	106	104	G	G	104	120	G	120	114	108	102	B	110	106
10	102	102	94	98	96	98	102	112	104	98	96	96	108	118	118	116	106	102	100	100	100	100	100	100
11	90	90	96	100	102	B	124	116	104	104	98	98	98	98	96	96	98	140	120	112	96	96	106	98
12	98	96	96	92	94	104	108	98	102	90	94	94	96	108	118	104	104	104	102	100	98	90	92	96
13	96	98	94	94	100	130	116	124	116	106	100	100	120	G	110	98	G	126	108	96	98	102	102	102
14	102	102	102	100	104	112	116	106	104	104	106	106	104	128	124	118	118	110	98	92	100	102	104	100
15	98	92	94	94	98	100	122	106	106	96	96	100	100	96	100	108	108	112	106	102	102	B	104	98
16	100	124	116	108	108	108	112	106	102	100	100	98	98	98	100	G	120	114	102	102	102	114	102	94
17	94	114	90	114	94	110	102	100	100	98	98	98	98	98	100	102	114	104	104	104	104	100	98	98
18	98	94	94	110	114	116	110	110	104	102	102	102	104	104	96	96	96	96	98	98	98	98	98	98
19	94	92	90	90	90	B	112	116	106	102	102	98	100	102	96	94	94	96	92	92	88	88	92	98
20	98	94	92	98	88	108	106	106	102	102	106	106	102	G	G	126	118	106	104	92	94	100	100	100
21	96	88	92	94	96	122	118	112	104	100	98	98	G	G	104	100	100	122	96	88	88	90	88	86
22	90	88	96	B	112	B	130	120	104	96	102	100	100	102	100	98	90	92	92	90	90	94	100	102
23	106	96	96	96	96	102	100	120	102	102	102	98	100	G	102		100	114	106	100	100	100	100	100
24	B	98	94	94	102	96	130	124	118	114	G	G	100	100	116	116	116	114	108	106	102	104	104	102
25	98	92	94	100	100	98	104	104	100	96	102	102	102	102	102	100	G	122	94	94	96	94	100	100
26	98	98	100	100	102	100	114	106	100	104	100	98	102	104	104	102	118	96	92	100	98	B	B	100
27	100	100	100	98	104	114	108	112	110	108	104	G	122	128	118	114	110	100	98	102	96	102	104	104
28	98	102	114	114	118	116	114	110	122	118	G	120	112	112	114	114	104	104	102	98	98	104	104	B
29	94	96	112	B	112	112	106	102	102	98	98	98	122	98	114	118	104	102	100	100	102	98	98	98
30	98	94	94	94	100	B	120	104	102	102	100	100	G	90	90	88	90	90	90	90	94	90	92	94
31	B	B	B	B	B	B	G	104	102	102	102	G	96	96	96	96	G	120	114	B	102	102	96	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	29	30	30	28	30	26	30	31	31	31	29	28	28	26	30	29	27	31	30	30	31	28	30	30
MED	98	96	94	97	100	111	113	106	102	102	100	98	100	102	102	104	106	104	102	100	98	100	100	98
U Q	98	100	96	100	104	118	118	112	106	104	102	102	103	106	110	118	116	114	106	102	102	102	104	100
L Q	94	92	92	94	94	100	106	104	102	98	98	98	98	98	96	97	98	100	96	92	96	96	98	96

AUG.2015 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F5	F5	F4	F4	F3	C1	L3	L4	L2	L3	L3	L3	L3	L3	L3	C3	L3	L2	L5	F7	F6	F3	F5	F4
2	F3	F2	F2	F2	F1	C2	L4	L3	L3	L3	L3	L3	L2	L3	L3	L4	L4	L4	L4	F3	F3	F3	F3	F3
3	F2	F2	F3	F4	F6	L3	L3	L3	L3	L3	L3	L3	L2	L2	L2	C1	C1	L3	L3	F4	F3	F2	F3	F4
4	F2	F3	F2	F1	F1	L2	C2	L2	L2	L2	L2	L2	L2	L3	L3	C3	C3	L2	L4	F7	F6	F5	F5	F5
5	F3	F4	F2	F3	F2	L3	C2	L4	L4	L3	L3	L3	L3	L3	L3	L4	L3	L3	L4	F3	F4	F3	F3	F4
6	F4	FF23	F3	F4	F3	C2	C2	C1	L3	L2	L3	L3	L3	L2	L2	LL23	CL22	L5		FF23	FF44	FF63	F4	F4
7	F4	F6	F3	F5	F1	C2	C5	L3	L2	L2	L3	L3	L3	L2	C3	L3	C2	L5	L3	F5	F3	F4	F4	F5
8	F3	F4	F2	F2	F2	C1	C2	L4	L2	L2	L3	L3	L3	L3	L3	CL22	CL52	CL42	LL43	F4	F4	F6	F4	F5
9	F4	F4	F3	F6	F5	L3	C4	C1	CL22	L2	L2	L2			L2	C2		C1	C2	F3	F2		F3	F4
10	F3	F5	F4	F2	F5	L2	L3	C2	L2	L3	L3	L3	L2	C2	C2	C2	L2	L3	L5	F6	F3	F2	F1	F2
11	F1	F2	F2	F2	F4		C2	C2	L2	L2	L3	L2	L2	L3	L2	L2	L1	HL12	CL22	F3	F3	F2	F5	F5
12	F5	F5	F6	F3	F5	L4	C2	L4	L3	L4	L4	L3	L4	LL32	CL22	L3	L3	L3	L4	F4	F3	F3	F2	F1
13	F1	F1	F2	F1	F1	C2	C2	C1	C1	L2	L3	L3	CL12		C2	L1		CL22	L2	F3	F2	F4	F3	F6
14	F3	F3	F4	F4	F2	C1	C2	L1	L2	L2	L2	L2	L2	C2	C1	C2	C2	C3	L3	F6	F5	F3	F2	F2
15	F5	F4	F2	F2	F3	L3	C2	L2	L3	L3	L3	L2	L2	L2	L2	CL22	CL22	CL42	L3	F4	F7		F2	F6
16	F2	F2	FF32	F4	F5	L3	C2	L4	L2	L2	L2	L2	L2	L2	L2		CL21	CL32	L4	F4	F4	F2	F1	F2
17	F1	F2	F1	F2	F1	C3	L4	L3	L3	L4	L2	L2	L2	L3	L2	L2	C2	L3	L3	F3	F5	F4	F4	F4
18	F6	F4	F2	F2	F2	C3	C3	C3	L3	L3	L3	L3	L2	L2	L3	L3	L4	L5	L4	F5	F3	F4	F6	F5
19	F5	F4	F2	F1	F1		C3	C2	L2	L2	L2	L2	L2	L3	L2	L2	L2	L2	L3	F4	F4	F4	F3	F4
20	F5	F3	F2	F1	F1	L5	L3	L2	L3	L3	L2	L2	L2			C1	C2	L3	L4	F4	F4	F6	F4	F3
21	F2	F3	F2	F2	F1	C2	C2	C1	L3	L3	L2	L2			L2	L1	L2	CL12	L3	F3	F4	F3	F3	F2
22	F2	F2	F2		F1		C1	C2	L1	L3	L2	L2	L2	L2	L2	L2	L2	L2	L3	F3	F4	F3	F3	F5
23	F2	F4	F2	F5	F5	L2	L3	C2	L2	L2	L2	L2	L2		L2		L2	CL11	L3	F6	F5	F5	F4	F1
24		F3	F3	F1	F4	L4	CL22	C2	C1	C1			L2	L2	CL22	CL12	CL12	C2	C3	F3	F2	F5	F5	F2
25	F2	F2	F3	F2	F4	L5	L2	L3	L3	L2	L2	L2	L2	L2	L2	L2		C1	L2	F3	F4	F4	FF23	F4
26	F4	F4	F5	F2	F6	L1	C2	L3	L2	L2	L2	L2	L2	L3	L2	L2	CL11	L3	L3	F3	F3			F7
27	F2	F5	F5	F2	F1	C7	L3	C3	L3	L3	L2		C2	C2	C2	C2	C2	L2	L3	F5	F5	F4	F2	F5
28	F4	F6	F6	F2	F3	C3	C4	C2	C2	C1		C2	C2	C3	C2	C2	L3	L4	L3	F6	F5	F2	F2	
29	F5	F2	F2		F5	C4	L2	L3	L2	L3	L2	L3	CL13	L2	C3	C2	L3	L4	L3	F4	F4	F5	F5	F4
30	F4	F3	F2	F3	F2		C1	L2	L3	L3	L2	L2		L3	L2	L3	L2	L3	L4	F4	F3	F2	F3	F2
31								L2	L2	L2	L2		L2	L2	L2	L2		CL22	CL12		F1	F2	F3	F1
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 64	X 65	X 67	X 58	X 56	X 56															X 82	X 70	75	O X 60
2	X 64	X 62	X 55	X 54	X 53	X 52															X 86	X 78	X 64	X 63
3	X 58	X 60	X 61	X 63	X 66	X 62															X 80	X 78		X 72
4	83	82	X 80	X 73	X 70	X 58															X 92	X 77	X 81	X 87
5	X 84	X 82	X 86	X 70	X 74	X 70															X 92	X 84	X 85	X 82
6	X 77	X 82	X 75	X 74	X 68	X 64															X 88	X 81	X 86	X 83
7	X 81	X 81	X 76	X 73	72	X 67															X 74	X 66	X 64	X 62
8	X 58	X 58	X 64	X 60	X 64	X 64															X 70	X 68	X 69	X 68
9	X 63	X 68	X 70	X 69	X 58	X 56															X 76	X 66	X 66	X 64
10	X 67	X 69	X 66	X 72	X 50	X 51															X 82	X 67	X 68	X 66
11	X 56	X 52	X 52	X 52	X 48	X 43															X 75	X 72	X 70	X 63
12	X 57	X 58	O X 66	X 64	X 48	X 49															X 74	X 72	X 72	X 69
13	X 72	X 75	X 67	X 65	X 62	X 56															X 75	X 59	X 47	X 47
14	47	X 52	X 52	X 49	X 48	X 53															X 86	X 70	X 58	X 55
15	X 57	X 59	X 58	X 57	X 43	A															X 76	X 80	X 72	75
16	X 64	X 60	X 68	X 57	X 59	X 54															X 56	A	X 48	A
17	X 50	X 49	X 49	X 48	X 48	X 46														X 99	X 73	X 68	X 63	X 66
18	X 66	X 64	X 62	X 57	X 55	X 45														X 72	X 70	X 64	X 58	X 60
19	X 60	X 57	X 54	X 50	X 41	X 39														X 84	X 81	X 64	X 56	X 56
20	X 56	X 80	X 50	X 47	X 46	X 45														X 64	X 68	X 63	X 64	X 62
21	X 57	X 55	X 52	X 45	X 40	X 41														X 72	X 67	X 58	X 58	X 59
22	X 59	X 58	X 56	X 54	X 40	X 36														X 80	X 85	X 78	X 64	X 63
23	X 60	X 63	X 57	60	X 58	X 43														X 92	X 88	X 84	X 74	X 72
24	X 73	X 68	X 64	X 60	X 57	X 42														X 90	X 88	X 61	X 57	62
25	X 57	X 54	X 53	X 52	X 48	X 38														X 84	X 90	62	X 52	X 52
26	X 54	X 56	X 54	X 48	X 44	X 38														X 79	X 86	X 80	X 54	X 56
27	X 54	X 58	X 52	X 49	X 50	X 49														A	A	X 52	X 55	X 54
28	X 52	X 52	X 52	X 54	X 44	A														X 55	X 53	X 58	X 59	X 58
29	X 56	X 55	X 56	X 60	X 47	X 45														X 80	X 81	X 77	X 74	X 72
30	X 62	X 58	X 54	X 52	X 49															X 100	X 80	X 72	X 63	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	27														13	29	29	29	28
MED	X 60	X 60	X 58	X 57	X 50	X 49														X 80	X 80	X 70	X 64	X 63
U Q	X 66	X 68	X 67	X 64	X 59	X 56														X 91	X 86	X 78	X 72	X 70
L Q	X 56	X 56	X 53	X 52	X 47	X 43														X 72	X 74	X 64	X 58	X 58

AUG. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	58	R 59	61	52	50	50	V 66	73	58	A	68	67	58	67	72	76	77	77	74	76	76	64	68	54
2	58	56	49	48	47	46	56	68	88	96	71	71	83	90	92	95	R 93	R 90	91	A	80	72	58	57
3	52	54	55	57	60	56	63	71	81	72	71	64	71	76	73	82	90	92	97	77	74	72	F	F 75
4	75	75	74	67	64	V 52	52	66	88	71	64	71	76	80	84	90	94	88	88	R	R 86	71	75	81
5	78	76	80	64	68	64	66	78	75	A	A	80	A	R 84	87	87	93	R 86	82	92	86	78	79	76
6	71	76	69	68	62	58	56	59	66	76	71	72	80	84	76	80	84	82	78	83	82	75	80	77
7	75	75	70	67	64	61	54	58	59	A	53	A	55	61	61	62	65	68	62	65	68	60	58	56
8	52	52	58	54	V 58	58	63	57	67	68	63	R 64	67	A	66	71	70	64	66	67	64	62	63	62
9	57	62	64	63	52	50	49	66	76	85	73	58	62	66	72	71	77	73	70	66	70	60	60	58
10	61	63	60	F 60	44	45	54	66	54	62	64	64	66	61	64	64	69	73	76	81	76	61	62	60
11	50	46	46	46	42	37	48	72	67	62	60	58	62	61	68	85	79	71	66	65	69	66	64	57
12	51	52	60	58	42	43	53	66	74	63	A	A	R 71	68	67	71	70	75	74	70	68	66	66	63
13	66	69	61	59	56	50	66	66	53	48	52	64	64	66	70	71	73	73	74	67	69	53	41	41
14	40	46	46	43	42	47	51	78	68	55	59	58	64	66	69	76	80	73	76	84	80	64	52	49
15	51	53	52	51	37	A	44	56	61	64	75	68	64	72	74	84	76	79	A	84	70	F 73	66	68
16	58	R 54	62	51	V 51	48	39	65	46	A	E G 44	A	A	56	54	56	53	57	A	66	50	A	V 42	A
17	44	43	43	42	42	40	44	56	62	A	R 64	U R 73	R 71	79	85	82	72	64	76	93	67	62	V 57	60
18	60	58	56	51	49	39	44	52	66	71	57	56	61	62	66	73	77	77	78	66	64	58	52	54
19	54	51	48	44	36	33	43	53	49	64	59	58	58	64	A	68	60	70	76	78	75	58	50	50
20	50	F 46	44	41	40	39	46	47	51	A	A	A	A	R 58	55	58	59	66	60	58	62	57	58	56
21	51	49	46	39	34	35	47	57	58	60	55	59	68	64	59	62	69	74	66	66	61	52	52	53
22	R 53	52	50	48	34	30	38	62	72	69	60	64	66	61	66	69	70	61	62	74	79	72	58	57
23	54	57	51	53	52	37	42	60	70	70	68	60	71	76	74	79	81	86	91	86	82	78	68	66
24	67	62	58	54	51	36	45	66	66	62	H 64	66	68	64	73	75	74	76	75	84	82	55	51	55
25	V 51	48	47	46	42	32	42	58	66	61	59	63	69	69	77	82	90	81	74	78	84	55	46	46
26	48	50	48	42	38	32	45	59	64	A	58	57	72	87	R 104	85	73	70	68	73	80	74	48	50
27	48	52	46	43	44	43	40	47	40	A	48	R	52	A	52	A	48	55	52	A	A	46	V 49	V 48
28	46	46	46	48	38	A	46	45	A	A	A	R	A	R	R	R	49	A	53	R 49	R 47	52	53	52
29	50	49	50	54	41	39	49	52	55	68	A	81	66	66	72	72	65	70	70	74	75	71	68	66
30	56	52	V 48	46	43		44	62	60	64	66	A	84	94	83	82	86	88	94	94	74	66	57	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	27	30	30	29	21	25	23	26	27	28	28	30	29	28	27	29	29	29	28
MED	54	52	52	51	44	43	48	61	66	64	63	64	66	66	72	76	74	73	74	74	74	64	58	57
U Q	60	62	61	58	52	50	54	66	71	71	68	71	71	79	76	82	81	82	78	84	80	72	66	64
L Q	50	49	47	46	41	37	44	56	56	62	58	58	62	62	66	70	69	69	66	66	68	58	52	52

AUG.2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							208	A	A	A	UL 492	L 512	R 524	500	A	484	L 476	A	A					
2							L	L	UL 464	480	UL 504	L 560	A	A	A	L 484	UL 476	A	L	A				
3							L	L	A	L 484	L 484	UL 520	R 508	496	516	484	A	L 452	L					
4								UL 432	A	UL 472	UL 528	L 524	A	R 512	504	488	L 468	L	A					
5								A	A	A	A	496	A	A	A	A	A	A						
6								L	L	UL 500	L 500	544	R 532	496	A	496	UL 476	460	L					
7							308	L 376	424	A	A	A	A	UR 488	UR 480	468	468	436	A					
8							L	L	460	464	496	500	A	A	504	UL 460	A	L 448	UL 408					
9								L	L 448	A	L 480	L	512	512	496	UL 492	468	L	L					
10							L	L	L	476	480	A	R 488	A	A	R 472	L 464	L 440	L					
11							L	L	L	UL 456	UL 488	520	492	UL 520	R 488	476	UL 468	UL 432	L					
12							L	A	A	A	A	A	A	A	A	476	A	A	L					
13								UL 372	L	L	L	480	A	492	A	460	R 424	A	UL 376					
14							L	UL 392	L	UL 440	484	496	484	480	464	L 472	460	UL 440	L					
15								L	UL 424	L 464	464	500	520	A	A	456	A	A	A					
16									A	A	444	A	A	452	R 468	448	440	A	A					
17								L	A	A	UL 480	A	A	A	A	464	A	UL 444	A					
18							A		424	448	A	480	R 488	A	A	464	452	404	UL 344					
19							180	L	L	444	460	L 480	R 484	484	A	464	L 464	A	A					
20								L	412	A	A	A	A	A	L 480	L 468	L 456	UL 416	L					
21							L	L	L 408	UL 452	480	UR 480	488	480	UL 488	UL 480	L 456	L 416	L					
22								L	UL 432	L 460	L 480	480	476	L 504	A	A	A	L	L					
23								A	UL 456	UL 464	L 468	516	484	484	L 508	468	L 464	UL 440	L					
24								L	420	452	UL 480	A	488	L 492	476	UL 492	UL 464	L	L					
25								L	UL 428	L 456	L	480	A	492	476	484	L 456	UL 420	L					
26							UL 176	A	A	A	L	500	492	A	464	A	UL 452	UL 424	L					
27									A	A	A	444	A	A	A	A	A	400	A					
28								A	A	A	A	436	A	R 448	R 440	416	A	A	L					
29								A	A	L	A	A	UR 464	504	L 492	476	L	L	L					
30							184		A	A	A	A	A	A	A	L 492	A	UL 436						
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	4	12	16	18	20	16	18	16	26	19	16	3					
MED							184	UL 384	L 426	L 462	L 480	498	488	492	484	474	L 464	L 436	UL 376					
U Q							258	UL 412	L 452	L 474	UL 492	518	R 510	504	500	L 484	UL 468	L 442	UL 408					
L Q							178	L 374	422	452	480	480	484	484	472	464	456	L 418	UL 344					

AUG. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	UA 248	A	A	A	R 352	396	400	384	364	336	292	A 240	B				
2							172	256	304	UA 324	A	A	A	A	A	A	A	A	A	A				
3							A 232	A	A	A	A	A	A	A	A	A	A	296	252	A				
4							176	A 256	UA 292	A	A	A	A	A	A	368	344	308	244	A				
5							176	248	A 312	A	360	UA 372	A	A	A	A	A	A	A	A				
6							A	A	UA 328	A	A	A	364	A 364	A	A	336	304	240	A				
7							A 208	256	A 300	A	A	R 416	388	B	364	UA 352	332	292	A 244	B				
8							180	252	A 300	UA 324	A	A	A	A	A	A	A 376	300	240	B				
9							B	UA 256	300	UA 336	A	A	A	UA 372	372	A 336	328	288	A 244	B				
10							B	UA 256	A 316	A 324	356	A	R 384	388	372	352	328	288	224	B				
11							UA 180	UA 220	A	A 308	A	A	376	R 376	364	348	A	292	A	A				
12							B	A	A	A 316	336	A	A	376	368	352	A 340	280	UA 208	A				
13							B	248	292	UA 332	336	R 344	A	A	A	A	A	A	224	A				
14							A	UA 224	A	UA 316	A	A	A	A	R 344	348	320	280	A 228	A				
15							A	A 252	A 288	UA 312	A	A	A	A	A	R 356	UA 324	284	A	A				
16							B	232	UA 292	A	A	A	A	A	A	A	A	272	A 208	A				
17							A 164	A 240	A 276	A	A	A	A	A	A	UR 348	320	280	UA 208					
18							UA 184	232	UA 272	UA 284	A	A	A	A	A	A	A	R 296	A 212					
19							B	A 232	A 284	320	328	A	A	A	A	A	A	A	A					
20							B	228	288	UA 320	A	A	A	A	360	R 324	320	300	A					
21							B	UA 220	A 288	A	A	A	A	A	A	A	312	272	208					
22							B	252	A 300	UA 300	A	A	A	A	A	A	A	A	A					
23							A	A	A	A	A	A	R 372	A	R 376	A	316	UA 300	UA 216					
24							A	A	A 316	320	UA 324	UA 360	UA 340	UA 348	A	340	312	280	216					
25							A	A	A	A	A	A	A	A	352	336	312	276	A					
26							UA 180	A 232	A 292	328	A	UA 368	A	A	364	A	A	A	216					
27							B	A 232	296	324	R 344	UA 364	376	372	368	A	320	272	A 208					
28							184	252	288	A 324	A 332	UA 332	B	372	R	336	312	268	B					
29							176	UA 228	UA 272	A 312	UA 324	A	A	372	368	352	328	UA 296	UA 208					
30							B	240	276	312	332	A	A	A	UA 444	A	A	272	A					
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							12	24	23	19	10	8	8	10	14	15	19	24	20					
MED							180	A 244	A 292	A 320	334	UA 362	376	372	368	348	324	288	A 220					
U Q							A 184	A 252	A 300	UA 324	344	UA 370	386	376	372	352	336	296	240					
L Q							176	UA 232	A 288	A 312	UA 328	R 348	368	A 372	364	336	316	278	A 208					

AUG. 2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 30	J A 30	J A 46	J A 46	J A 29	J A 26	J A 22	J A 44	J A 50	J A 73	J A 49	40	45	47	J A 59	43	42	J A 48	J A 48	19	J A 98	J A 105	J A 66	J A 72
2	J A 61	J A 39	J A 31	J A 25	J A 20	18	26	35	J A 48	J A 37	44	46	J A 61	J A 83	J A 61	J A 44	J A 48	J A 50	J A 46	J A 109	J A 30	J A 33	J A 28	J A 64
3	J A 65	J A 61	J A 52	J A 58	J A 34	J A 28	26	J A 51	J A 84	J A 43	J A 43	J A 59	J A 62	J A 51	40	J A 46	J A 53	32	30	J A 28	J A 110	J A 86	J A 53	J A 36
4	J A 32	21	18	J A 27	J A 31	J A 20	24	J A 37	J A 52	J A 41	J A 45	J A 46	J A 58	J A 45	J A 57	41	38	J A 40	J A 47	J A 110	J A 45	74	J A 66	J A 71
5	J A 79	J A 61	J A 49	J A 64	J A 44	J A 44	26	J A 49	J A 65	J A 157	J A 163	J A 122	J A 94	74	J A 66	J A 87	J A 58	J A 73	J A 46	J A 53	J A 42	J A 37	J A 28	J A 23
6	27	J A 20	22	20	20	20	J A 65	J A 29	J A 56	J A 52	J A 60	J A 47	48	52	J A 67	J A 43	37	36	J A 37	J A 53	J A 38	J A 22	J A 24	J A 52
7	J A 77	J A 70	J A 113	J A 28	19	J A 28	J A 28	33	J A 40	J A 139	J A 88	51	J A 52	E B 43	J A 115	39	39	40	J A 49	J A 42	J A 32	21	J A 22	J A 38
8	J A 44	J A 44	J A 34	J A 20	21	19	22	32	J A 39	J A 48	J A 44	J A 74	J A 54	J A 77	J A 47	J A 40	J A 51	33	J A 34	J A 35	J A 61	J A 45	26	J A 74
9	J A 75	J A 72	J A 68	J A 73	J A 44	J A 40	J A 28	J A 44	J A 64	J A 65	J A 45	J A 62	41	40	40	35	35	G	J A 88	19	20	18	J A 27	J A 35
10	J A 53	J A 61	J A 53	J A 47	J A 35	J A 20	J A 21	34	J A 42	34	42	J A 72	45	50	J A 52	44	39	36	J A 39	J A 25	J A 28	J A 73	J A 51	J A 33
11	J A 36	J A 31	J A 26	J A 30	20	20	24	J A 33	J A 65	J A 40	37	40	39	40	42	38	35	36	J A 44	J A 33	J A 38	J A 39	J A 38	J A 39
12	J A 40	J A 45	J A 80	J A 66	J A 51	J A 38	J A 22	J A 51	J A 70	J A 88	J A 80	J A 86	J A 93	J A 64	J A 70	J A 55	J A 73	J A 48	J A 63	39	J A 33	J A 52	J A 30	J A 37
13	J A 37	J A 27	J A 24	21	E B 16	E B 16	E B 18	27	34	J A 42	38	J A 46	J A 60	J A 46	J A 74	J A 40	J A 36	J A 48	25	J A 32	J A 21	19	J A 19	33
14	J A 49	J A 34	J A 24	J A 46	J A 32	J A 21	J A 29	51	J A 37	J A 47	J A 42	44	46	J A 40	39	40	43	38	J A 35	J A 32	J A 23	J A 21	28	J A 50
15	J A 29	J A 28	J A 50	J A 23	J A 28	J A 39	J A 27	J A 44	J A 56	J A 41	J A 42	J A 45	46	J A 65	J A 53	48	J A 49	J A 89	J A 102	J A 85	J A 49	E B 16	21	J A 20
16	J A 40	J A 73	J A 66	J A 61	J A 48	J A 31	J A 42	J A 48	J A 46	J A 54	J A 63	J A 76	J A 53	J A 46	45	J A 41	J A 47	J A 107	J A 163	J A 52	J A 60	J A 84	J A 51	J A 51
17	J A 46	J A 38	J A 27	J A 20	J A 20	J A 16	21	J A 33	J A 51	J A 76	J A 68	J A 75	J A 158	J A 58	J A 87	39	J A 49	J A 43	J A 76	J A 31	J A 25	J A 65	J A 78	J A 62
18	J A 41	J A 37	J A 26	J A 38	19	21	J A 36	J A 54	J A 44	J A 43	J A 54	J A 42	J A 42	J A 64	J A 58	J A 44	34	G 24	J A 28	J A 35	J A 19	J A 34	E B 16	J A 49
19	J A 41	J A 44	J A 24	J A 16	E B 16	E B 16	18	29	J A 41	35	40	J A 75	J A 49	J A 60	J A 71	J A 45	J A 43	55	J A 45	J A 46	J A 27	J A 19	J A 18	J A 33
20	J A 49	J A 20	J A 53	J A 42	J A 30	J A 18	18	31	38	J A 68	J A 73	J A 54	J A 109	J A 56	38	G	36	37	J A 52	J A 35	J A 38	J A 18	J A 43	J A 45
21	J A 44	J A 35	J A 22	J A 28	J A 36	J A 20	J A 28	J A 45	J A 44	60	J A 66	39	J A 52	J A 48	J A 38	J A 36	35	31	27	20	J A 19	20	17	23
22	J A 20	J A 21	J A 18	J A 20	19	E B 16	19	28	34	38	J A 40	34	35	41	J A 52	J A 68	J A 49	J A 33	J A 30	J A 32	J A 29	J A 27	J A 41	J A 44
23	J A 51	J A 98	J A 52	J A 27	J A 23	J A 21	J A 32	J A 45	J A 38	J A 48	J A 45	J A 44	41	37	41	31	34	J A 32	J A 39	J A 35	J A 26	J A 74	J A 77	J A 30
24	J A 24	J A 25	19	J A 21	J A 21	J A 22	J A 26	J A 32	32	38	J A 42	56	36	36	32	G 29	33	32	28	J A 22	J A 24	J A 22	J A 18	J A 36
25	J A 44	J A 36	J A 28	J A 31	J A 27	J A 32	J A 22	36	J A 48	J A 46	J A 44	J A 48	J A 61	J A 41	G 33	36	G 28	32	J A 24	J A 26	J A 30	J A 27	E B 16	E B 16
26	J A 51	J A 37	J A 30	J A 30	J A 47	J A 34	J A 27	J A 50	J A 48	J A 82	J A 40	40	J A 48	J A 57	J A 40	J A 64	J A 42	J A 32	26	21	J A 19	18	18	E B 16
27	E B 16	E B 16	21	J A 28	J A 20	19	J A 28	34	37	44	J A 48	J A 82	47	J A 53	51	J A 64	J A 52	33	J A 36	J A 54	J A 66	J A 29	J A 36	J A 20
28	J A 46	J A 44	J A 36	J A 44	J A 20	J A 40	J A 33	J A 43	J A 58	J A 52	J A 48	34	J A 48	42	G	40	J A 48	J A 62	J A 33	J A 44	J A 54	J A 25	J A 38	J A 17
29	J A 17	J A 28	19	21	J A 18	19	J A 25	44	J A 39	J A 48	J A 69	J A 81	J A 128	40	40	44	37	J A 50	J A 48	J A 70	J A 52	J A 125	J A 76	J A 50
30	J A 30	J A 19	22	J A 18	J A 20		E B 17	31	J A 55	J A 65	J A 83	J A 95	J A 68	J A 72	49	J A 41	J A 50	35	J A 48	J A 45	J A 28	J A 50	29	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29
MED	J A 42	J A 36	J A 29	J A 28	J A 22	J A 21	J A 26	J A 36	J A 47	J A 48	J A 45	J A 50	J A 50	J A 49	J A 50	41	42	36	J A 42	J A 35	J A 31	J A 31	J A 28	J A 37
U Q	J A 51	J A 45	J A 52	J A 46	J A 34	J A 32	J A 28	J A 45	J A 56	J A 65	J A 66	J A 75	J A 61	J A 60	J A 61	J A 45	J A 49	J A 48	J A 48	J A 52	J A 49	J A 65	J A 51	J A 50
L Q	J A 30	J A 27	22	J A 21	20	19	22	32	39	41	42	44	45	41	40	39	36	32	30	28	J A 25	21	21	J A 26

AUG. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	16	17	37	20	E B 16	18	39	43	A A 73	48	39	44	47	57	42	41	48	46	18	20	63	42	48
2	52	34	20	18	E B 16	E B 16	25	34	44	37	43	45	59	66	60	42	46	48	38	A A 109	20	22	19	42
3	41	36	22	20	E B 16	E B 16	G 22	40	64	43	41	49	46	47	40	45	52	31	28	24	56	17	21	23
4	26	E B 16	E B 16	E B 16	E B 16	E B 16	23	36	50	36	42	41	53	44	48	40	37	39	43	46	39	22	58	36
5	47	37	29	38	20	19	24	44	62	A A 157	A A 163	43	A A 94	71	64	84	56	70	40	22	16	25	22	20
6	24	16	E B 16	E B 16	E B 16	E B 16	21	27	34	39	44	45	44	48	54	39	36	34	34	34	33	19	20	38
7	39	21	38	16	E B 16	20	26	31	36	A A 139	49	A A 51	52	E B 43	44	38	36	38	40	39	30	E B 16	17	19
8	36	19	20	17	E B 16	E B 16	20	30	36	39	43	50	52	A A 77	46	37	48	32	32	29	45	21	E B 16	51
9	28	35	17	30	19	24	22	38	38	50	44	46	41	U Y 40	40	U Y 35	35	G	28	17	E B 16	E B 16	E B 16	E B 16
10	21	32	E B 16	20	E B 16	E B 16	20	32	G 31	U Y 34	41	53	45	U Y 50	50	43	38	36	37	23	20	56	36	28
11	23	E B 16	E B 16	25	E B 16	E B 16	23	26	37	38	36	40	U Y 39	40	42	38	35	36	30	24	29	20	17	19
12	19	38	46	E B 16	21	29	20	41	63	54	A A 80	A A 86	56	63	58	48	46	45	31	35	22	42	21	20
13	24	17	18	16	E B 16	E B 16	E B 18	25	31	37	36	44	51	42	56	39	35	45	24	27	E B 16	E B 16	E B 16	28
14	19	20	17	20	23	E B 16	21	30	29	35	37	44	41	40	39	39	42	36	31	30	E B 16	E B 16	17	25
15	19	E B 16	16	E B 16	22	A A 39	21	32	41	38	42	43	44	61	53	43	48	39	A A 102	64	33	E B 16	E B 16	E B 16
16	20	42	20	18	36	29	32	38	42	A A 54	41	A A 76	A A 53	44	42	38	42	44	A A 163	50	37	A A 84	22	A A 51
17	27	28	18	E B 16	E B 16	E B 16	20	30	44	A A 76	45	66	52	54	68	U Y 39	45	40	42	25	20	38	26	52
18	21	29	E B 16	28	18	E B 16	31	49	39	36	50	37	42	54	55	43	31	G 24	24	30	E B 16	17	E B 16	30
19	21	32	19	E B 16	E B 16	E B 16	E B 16	28	38	U Y 35	39	45	43	43	A A 71	44	41	50	39	28	18	E B 16	16	20
20	19	E B 16	E B 16	E B 16	25	E B 16	17	30	37	A A 68	A A 73	A A 54	A A 109	51	38	G	35	32	28	32	21	17	26	20
21	24	21	17	20	19	E B 16	23	29	31	42	43	U Y 39	45	44	37	36	35	30	25	18	E B 16	E B 16	E B 16	18
22	18	E B 16	E B 16	E B 16	E B 16	E B 16	18	27	32	36	36	U Y 34	U Y 35	41	50	66	47	30	24	28	27	24	20	34
23	18	E B 16	20	E B 16	18	16	22	39	32	42	43	44	41	U Y 37	41	U Y 31	34	G 30	28	21	20	32	17	17
24	24	18	E B 16	E B 16	19	19	22	30	G 32	36	41	52	U Y 36	U Y 36	U Y 32	G 29	32	31	27	19	E B 16	E B 16	E B 16	22
25	18	E B 16	19	E B 16	20	29	18	31	38	42	37	39	50	40	G 33	36	G 28	29	22	23	21	19	E B 16	E B 16
26	E B 16	E B 16	21	21	17	26	E B 16	47	44	A A 82	38	40	46	56	38	51	33	30	26	E B 16	17	E B 16	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	34	A A 44	45	43	47	A A 53	46	A A 64	46	32	34	A A 54	A A 66	23	E B 16	E B 16
28	18	22	25	20	E B 16	A A 40	29	37	A A 58	A A 52	A A 48	U Y 34	A A 48	42	G	36	42	A A 62	29	32	42	E B 16	16	16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	43	35	43	A A 69	52	40	40	40	U Y 44	35	35	32	66	23	21	19	16
30	25	E B 16	E B 16	E B 16	E B 16		E B 17	28	52	59	58	A A 95	67	72	U Y 49	39	47	34	43	36	E B 16	E B 16	E B 16	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29
MED	21	18	17	16	E B 16	E B 16	21	32	38	42	43	44	46	46	46	39	40	36	32	28	20	19	17	20
U Q	26	32	20	20	20	22	23	39	44	A A 54	A A 48	52	52	54	55	44	46	44	40	36	33	24	21	35
L Q	18	E B 16	E B 16	E B 16	E B 16	E B 16	18	29	34	37	41	40	42	41	40	37	35	31	28	23	E B 16	E B 16	E B 16	E B 16

AUG.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

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

AUG. 2015 fmin (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG. 2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	272	R 282	F 322	303	281	318	V 347	369	H 317	A	324	323	267	293	309	312	310	323	307	307	310	322	316	307
2	285	F 320	290	301	288	296	318	314	331	345	321	269	281	285	287	298	R 304	R 307	315	A	309	322	304	293
3	273	275	279	F 289	F 302	F 302	329	333	344	332	327	329	297	313	282	299	310	315	327	318	300	F 286	F	F 284
4	F 292	F 292	300	F 323	321	V 327	326	343	347	330	319	288	288	291	290	296	310	307	299	R	R 331	288	F 293	F 296
5	F 317	F 320	F 328	293	F 300	F 287	300	354	321	A	A	309	A	R 289	289	272	308	R 291	299	315	324	291	298	292
6	288	307	F 326	F 308	F 321	349	364	350	327	332	319	280	283	332	291	300	308	309	296	292	298	279	296	299
7	F 294	F 289	F 304	F 276	F 307	287	289	301	315	A	267	A	261	285	309	300	311	322	303	307	306	309	280	297
8	286	F 297	F 288	F 276	F 311	325	339	331	328	332	306	R 308	314	A	288	311	319	323	308	321	292	276	277	305
9	275	284	288	304	291	301	288	309	316	R 334	352	336	305	302	313	316	324	313	346	312	308	308	261	F 265
10	F 276	F 282	275	F 308	302	F 300	329	376	H 331	309	316	327	326	311	305	304	301	302	310	318	323	296	286	298
11	289	276	303	311	313	291	318	355	359	350	345	270	305	278	286	309	323	329	323	302	302	302	306	308
12	280	F 271	304	F 320	F 309	F 299	342	351	351	356	A	A	R 305	314	302	320	312	315	333	316	306	306	288	F 285
13	F 286	F 290	F 286	297	293	289	356	365	381	367	294	291	303	288	312	305	317	314	313	323	320	361	298	288
14	F 269	F 278	F 306	F 280	F 286	F 291	308	356	414	342	309	276	314	313	308	318	323	307	315	321	344	341	297	267
15	279	285	F 318	351	345	A	343	350	333	306	332	300	277	305	290	315	313	317	A	344	303	F 276	281	295
16	F 280	R 274	F 250	F 325	V 302	296	256	333	370	A	G	A	A	288	290	302	288	290	A	344	290	A	V 266	A
17	292	282	284	287	300	306	341	322	333	A	R 316	U R 303	R 309	301	307	331	321	297	312	338	327	290	V 274	282
18	F 287	F 283	281	330	319	F 283	310	305	348	338	333	291	288	324	303	302	322	324	335	314	309	313	307	290
19	F 308	297	F 309	F 277	F 305	312	361	360	356	359	362	311	295	296	A	314	299	301	317	317	346	312	286	289
20	290	F 307	F 276	F 303	296	333	374	344	315	A	A	A	A	R 304	310	316	310	337	341	322	311	304	F 302	283
21	F 276	F 301	324	322	284	315	356	378	364	359	294	294	330	333	305	298	311	337	349	335	317	313	292	298
22	R 295	308	308	343	339	300	325	335	382	388	357	319	326	299	317	316	333	311	308	300	321	337	318	282
23	F 289	305	F 305	F 325	344	326	334	343	340	349	367	288	317	314	299	304	307	298	317	317	304	289	313	287
24	309	310	307	312	359	344	326	353	340	369	H 333	323	327	H 286	317	311	311	332	319	326	347	329	291	272
25	F 292	298	F 324	F 329	351	317	343	353	371	339	309	330	314	298	304	308	313	327	329	314	344	365	287	280
26	F 283	F 316	332	F 324	331	309	340	355	333	A	328	257	282	295	R 339	336	326	323	315	304	313	377	283	282
27	274	308	315	300	320	332	336	299	391	A	229	R	266	A	281	A	216	309	307	A	A	260	F 276	F 266
28	264	274	281	324	291	A	324	350	A	A	A	R	A	R	R	R	262	A	303	R 303	R 289	271	261	272
29	278	269	287	309	329	302	342	338	H 319	341	A	334	328	302	315	328	314	329	328	306	309	298	F 296	F 310
30	295	299	V 286	F 327	324		358	374	374	359	321	A	310	318	307	303	312	312	326	352	339	329	R 311	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	27	30	30	29	21	25	23	26	27	28	28	30	29	28	27	29	29	29	28
MED	286	291	304	308	308	302	335	350	340	342	321	303	305	301	304	308	311	314	315	317	310	306	292	288
U Q	F 292	307	F 315	F 324	324	325	343	355	367	359	333	323	314	313	310	316	319	324	328	323	326	326	303	298
L Q	276	282	286	F 297	296	296	318	333	328	332	308	288	283	289	290	301	308	307	308	307	304	288	280	282

AUG. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							530	A	A	A	A	L 394	R 382	E A 318	A	377	L 352	A	A					
2							L	L	A	H 378	U L 388	L 357	A	A	A	L 370	A	A	L	A				
3							L	L	A	L 395	L 427	A	R 399	E A 350	364	369	A	H 362	L					
4								U L 379	A	H 399	U L 376	L 391	A	392	A 347	375	L 377	L	A					
5								A	A	A	A	388	A	A	A	A	A	A						
6								L	L	U L 377	L 384	370	R 381	A	A	373	U L 371	359	L					
7							333	L 372	374	A	A	A	A	U R 376	U R 390	390	367	367	A					
8							L	L	358	389	386	A	A	A	357	U L 403	A	H 354	U L 346					
9								L	L 365	A	A 380	L	388	381	389	H 377	373	L	L					
10							L	L	L	379	413	A	R 366	A	A	R 369	L 366	L 351	L					
11							L	L	L	U L 411	U L 394	376	406	U L 385	R 377	384	U L 355	U L 369	L					
12							L	A	A	A	A	A	A	A	A	A	A	A	L					
13								U L 394	L	L	L	367	A	371	A	378	R 401	A	U L 373					
14							L	U L 387	L	U L 421	396	370	404	407	401	L 352	350	U L 351	L					
15								L	A	L 408	413	397	363	A	A	289	A	A	A					
16									A	A	392	A	A	E A 306	R 357	368	A	A	A					
17								L	A	A	E A 343	A	A	A	A	359	A	U L 330	A					
18							A		369	375	A	396	R 384	A	A	338	H 359	378	U L 373					
19							388	L	L	393	413	A 362	R 378	383	A	A 345	L 348	A	A					
20								L	360	A	A	A	A	A	L 374	L 358	L 363	U L 366	L					
21							L	L	L 409	U L 364	398	U R 410	370	377	U L 386	U L 361	L 362	L 365	L					
22								L	U L 403	L 379	L 398	424	412	L 374	A	A	A	L	L					
23								A	U L 377	U L 373	L 384	364	397	389	L 356	380	L 349	U L 355	L					
24								L	394	378	U L 361	A	381	L 376	381	U L 353	U L 360	L	L					
25								L	U L 384	L 403	L	415	A	378	381	357	L 361	U L 377	L					
26							A	A	A	A	L	391	A 307	A	386	A	U L 369	U L 372	L					
27									A	A	A	347	A	A	A	A	A	353	A					
28								A	A	A	A	390	A	R 365	R 371	405	A	A	L					
29								A	A	L	A	A	U R 417	381	L 380	A	L	L	L					
30							434		A	A	A	A	A	A	A	L 364	A	U L 358						
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							4	4	10	16	17	18	16	17	16	24	17	16	3					
MED							411	U L 383	376	L 384	392	389	383	377	378	369	L 362	L 360	U L 373					
U Q							482	U L 390	L 394	L 401	406	396	402	384	386	378	L 370	U L 368	U L 373					
L Q							360	L 376	365	U L 378	L 382	367	374	E A 368	360	358	L 354	L 354	U L 346					

AUG.2015 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							244	230	250	A	304	324	472	366	328	316	310	278	280					
2							268	278	268	248	262	400	360	350	322	302	302	284	264	A				
3							240	252	252	272	280	306	360	320	364	332	296	282	256					
4								262	248	250	306	362	364	344	342	316	294	282	264					
5								226	300	A	A	314	A	354	340	E A 468	300	336						
6								218	266	290	294	384	362	270	348	318	296	294	286					
7							336	340	322	A	490	A	496	412	350	366	328	294	312					
8							246	290	298	280	356	358	338	A	374	324	308	288	304					
9								310	294	272	256	306	364	368	326	302	288	292	242					
10							268	222	H 250	354	324	314	322	362	348	348	336	308	284					
11							288	248	244	256	282	464	350	418	384	306	270	272	266					
12							236	238	264	262	A	A	316	346	356	306	320	296	256					
13								228	228	260	354	376	358	382	326	326	304	294	270					
14							302	238	204	248	358	438	340	336	332	300	286	292	280					
15								238	246	322	278	364	418	332	344	296	294	288	A					
16					306				268	A	G	A	A	406	410	372	400	366	A					
17								256	276	A	310	368	332	330	322	276	296	334	284					
18							284		266	266	314	382	402	322	346	330	288	280	254					
19							234	236	260	260	270	354	388	372	A	322	350	320	270					
20								280	340	A	A	A	A	364	358	346	334	268	248					
21							232	222	238	270	408	392	308	302	356	352	314	270	242					
22								272	222	230	270	328	310	354	326	A 366	286	296	284					
23								258	268	252	250	408	320	308	338	316	304	296	258					
24								256	256	250	290	316	310	350	322	304	286	260	260					
25								240	240	272	354	318	334	352	324	310	286	260	250					
26							238	242	254	A	268	500	374	328	268	268	276	274	270					
27									208	A	618	R	478	A	424	A	E A 684	330	294					
28								292	A	A	A	R	A	R	R	R	478	A	302					
29								258	212	274	A	290	294	360	322	300	288	284	266					
30							220		238	278	320	A	312	294	284	312	288	280						
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1		14	26	29	21	25	23	26	27	28	28	30	29	26					
MED					306		245	250	254	266	306	362	354	350	341	316	297	288	268					
U Q							284	272	268	276	355	392	374	366	356	339	320	296	284					
L Q							236	236	239	251	274	316	320	328	325	303	288	279	256					

AUG.2015 h'F2 (KM)

IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	304	304	266	318	306	242	146	A	A	A	A	184	210	E A 358	A	226	A 258	A	A	248	240	366	290	366
2	376	284	280	276	284	270	228	234	A	H 198	220	216	A	A	A	234	A	A	A	A	240	220	248	338
3	372	338	304	278	262	242	220	A	A	214	172	A	216	E A 302	188	A 268	A	H 210	222	232	334	266	276	278
4	312	266	254	224	234	206	226	234	A	H 174	204	194	A	204	A 308	H 236	212	252	A	260	240	248	362	312
5	290	284	242	292	268	318	228	A	A	A	A	218	A	A	A	A	A	A	284	254	224	256	250	264
6	276	264	234	234	234	208	218	196	198	192	220	220	202	A	A	214	220	232	244	270	266	294	264	292
7	292	280	296	278	258	276	300	228	234	A	A	A	A	230	232	208	H 208	A 238	A	276	262	230	290	272
8	332	306	306	304	256	208	240	222	208	204	218	A	A	A	A 266	198	A	H 204	244	250	314	284	300	332
9	338	328	258	300	250	276	246	A 270	238	A	A 248	A 248	194	216	210	H 198	212	218	224	238	232	218	294	314
10	314	296	276	244	248	288	250	216	198	184	184	A	A 262	A	A	258	220	230	A	242	228	388	306	274
11	282	318	264	264	242	276	248	204	214	202	H 172	H 210	192	H 188	226	H 196	H 200	238	238	234	272	244	244	242
12	286	376	346	224	276	306	228	A	A	A	A	A	A	A	A	A	A	A	246	250	242	278	268	302
13	312	274	274	268	274	274	228	206	214	196	174	A 268	A	224	A	246	224	A	H 224	248	236	200	252	332
14	358	310	272	314	330	278	238	230	H 196	196	192	A 240	194	190	192	A 242	E A 286	238	260	246	212	210	254	358
15	290	266	256	212	226	A	216	216	A	188	206	H 208	232	A	A	A	A	A	A	268	268	316	282	248
16	334	388	264	228	306	270	464	280	A	A	A 236	A	A	E A 400	272	232	A	A	A	256	308	A	336	A
17	338	328	302	294	266	266	226	220	A	A	E A 306	A	A	A	A	256	A	A 306	A	234	212	338	344	386
18	312	296	266	260	244	264	A	376	A 262	206	A	190	224	A	A	308	204	202	210	232	240	240	256	316
19	256	312	268	280	262	266	246	218	214	196	182	A 286	234	230	A	E A 308	A 268	A	A	240	210	222	262	304
20	306	266	304	244	312	220	214	226	A 262	A	A	A	A	A	210	224	220	228	228	252	252	252	292	268
21	324	290	246	258	338	254	228	206	200	A 270	212	190	A 262	254	188	210	220	218	226	234	222	222	280	276
22	274	258	254	214	208	274	236	230	222	202	194	182	182	208	A	A	A	214	236	260	242	220	234	344
23	304	264	298	236	220	226	240	A	216	A 250	A 244	238	196	220	228	202	214	220	248	242	256	294	212	290
24	266	254	234	234	214	234	234	234	204	218	240	A	224	206	204	H 214	212	224	248	238	208	204	274	314
25	292	282	254	234	222	344	230	222	238	224	H 180	184	A	208	192	218	218	212	230	240	216	188	270	292
26	308	260	250	244	232	330	B	A	A	A	190	194	E A 372	A	216	A	208	208	242	262	246	196	260	300
27	318	260	248	264	232	224	230	232	A	A	A	316	A	A	A	A	A	244	A	A	A	354	322	312
28	318	312	312	262	282	A	294	A	A	A	A	224	A	274	268	216	A	A	268	290	388	284	306	320
29	296	312	286	256	218	262	244	A	A	A	A	A	196	208	204	A	222	268	266	346	242	256	286	244
30	282	268	278	248	238		202	224	A	A	A	A	A	A	A	212	A	232	258	222	198	220	238	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	27	28	22	16	17	20	19	16	17	16	23	18	21	20	28	29	29	30	28
MED	307	287	267	259	253	266	230	225	214	202	202	216	210	214	213	221	218	228	243	248	240	248	275	303
U Q	324	312	296	278	276	276	245	234	236	216	A 228	A 240	A 233	E A 264	249	246	A 222	238	253	260	264	289	294	326
L Q	290	266	254	234	232	234	226	216	202	194	183	190	195	207	198	210	212	213	227	238	223	220	254	275

AUG.2015 h'F (KM)

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IONOSPHERIC DATA STATION Yamagawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	A	A	A		98	100	100	98	100	100	100	100	B				
								100																
2							B		A	A	A	A	A	A	A	A	A	A	A	A				
								100	100	100														
3								A	A	A	A	A	A	A	A	A	A			A				
							128											112	100					
4							E B				A	A	A	A	A					A				
							134	100	100							100	100	100	104					
5										A			A	A	A	A	A	A	A	A				
							120	100	100		102	102												
6							A	A			A	A			A	A				A				
									112	98			102	102			100	98	96					
7										A	A	A		B						B				
							112	100	100				98		98	110	96	96	106					
8											A	A	A	A	A	A				B				
							116	98	98	98							98	98	106					
9							B				A	A	A		A		A			B				
								102	100	100				100		98		98	106					
10							B					A								B				
								102	98	98	96		102	100	98	98	104	98	102					
11									A			A					A	A	A	A				
							112	100		100			100	100	98	96								
12							B	A	A			A	A							A				
										96	96			104	104	104	98	98	102					
13							B						A	A	A	A	A	A	A	A				
								104	100	100	100	100							118					
14							A		A		A	A	A	A						A				
								100		98					102	100	98	102	106					
15							A				A	A	A	A	A	A	A		A	A				
								104	96	98								108						
16							B				A	A	A	A	A	A	A			A				
								106	100									98	102					
17							B				A	A	A	A	A	A								
								102	98							98	98	98	102					
18											A	A	A	A	A	A	A							
							114	102	100	96								118	104					
19							B			A		A	A	A	A	A	A	A	A					
								104	100		100													
20							B				A	A	A	A	A				A					
								102	98	98						100	112							
21							B	A		A	A	A	A	A	A	A								
									98								110	106	106					
22							B				A	A	A	A	A	A	A	A	A					
								102	102	98														
23							A	A	A	A	A		A	A	A	A								
												98					122	118	108					
24							A	A							A									
									100	98	98	98	98	98		112	110	100	110					
25							A	A	A	A	A	A	A	A										
															114	112	112	112						
26													A	A	A	A	A	A						
							116	102	100	98	98	100							118					
27							B									A								
								100	98	100	98	100	98	98	110		100	100	104					
28													B						B					
							118	106	100	96	96	96		100	100	96	96	96						
29												A	A	A										
							106	102	100	98	96				110	110	110	98	104					
30							B					A	A	A		A			A					
								118	98	96	96				110		A	106						
31							C	C	C	C	C	C	C	C	C	C	C	C	C					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							10	23	23	19	11	8	7	9	11	14	17	22	20					
MED							116	102	100	98	98	99	100	100	102	100	100	100	104					
U Q							120	104	100	100	100	100	102	101	110	110	110	106	106					
L Q							112	100	98	98	96	98	98	99	98	98	98	98	102					

AUG.2015 h'E (KM)

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AUG.2015 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	120	104	96	94	96	110	114	100	98	96	96	104	130	130	116	122	116	106	102	102	96	96	96	92
2	92	88	88	90	90	90	110	108	104	108	98	100	98	94	92	96	112	120	104	100	86	86	92	92
3	98	98	98	98	104	108	132	90	90	94	94	94	94	94	98	96	96	140	114	100	98	98	116	88
4	82	86	100	96	96	98	128	108	100	102	98	98	96	96	92	144	128	112	102	98	98	98	104	98
5	94	94	84	90	90	92	114	106	104	98	100	102	96	98	96	96	96	96	94	94	94	88	88	88
6	86	86	106	100	108	102	98	100	110	104	100	100	104	100	98	100	122	118	114	106	84	84	84	98
7	98	98	98	98	114	118	112	106	106	96	116	118	114	B	102	110	124	112	106	102	98	104	98	94
8	92	92	90	86	84	94	126	104	104	100	98	96	96	96	96	100	108	130	108	100	96	98	102	98
9	98	98	96	96	96	96	102	104	104	100	98	96	100	106	164	108	146	G	108	106	94	90	104	102
10	100	100	98	94	94	98	114	110	106	110	102	124	132	116	116	116	118	110	108	108	104	118	98	98
11	94	94	94	94	100	116	118	106	98	100	98	162	146	144	118	122	130	128	92	88	92	100	90	98
12	98	96	94	98	96	96	102	94	106	100	100	98	96	112	110	110	106	104	102	96	92	92	88	88
13	88	86	86	92	B	B	B	132	120	112	110	100	98	100	96	100	96	90	134	88	88	114	86	96
14	102	98	98	102	98	102	100	102	104	100	96	156	102	102	108	120	118	114	108	102	110	108	98	96
15	114	114	96	102	94	96	96	110	100	102	98	98	98	98	92	118	112	112	104	100	100	B	114	96
16	94	94	122	116	104	106	104	104	102	98	98	96	96	94	94	94	112	108	100	96	96	92	90	86
17	86	86	88	88	110	90	110	110	100	94	96	92	92	96	94	144	114	110	100	100	96	94	94	92
18	92	92	92	92	86	132	108	104	104	100	94	94	96	94	94	94	96	100	104	98	104	96	B	88
19	88	84	84	90	B	B	120	108	106	112	102	96	114	94	94	94	90	90	88	88	88	88	88	104
20	98	98	100	100	94	100	132	120	108	102	98	96	94	94	162	G	132	132	102	86	88	100	100	98
21	94	90	94	94	90	98	108	108	108	96	96	100	98	94	94	96	124	126	116	102	86	86	90	88
22	86	80	90	84	88	B	136	146	114	100	98	98	98	96	90	90	90	90	90	86	86	86	104	102
23	102	104	106	116	106	94	94	94	96	94	96	106	116	112	184	96	96	126	104	88	86	98	104	100
24	96	94	94	94	90	98	98	98	124	108	100	100	104	104	100	98	148	202	110	106	88	100	98	104
25	98	108	94	94	94	90	98	98	98	96	98	98	98	98	100	96	98	94	92	88	88	88	90	B
26	106	96	94	92	92	92	114	102	104	98	106	106	98	96	98	92	94	92	114	92	104	106	88	B
27	B	B	96	98	100	132	116	112	114	108	104	102	118	112	118	108	106	112	102	98	98	96	108	128
28	108	98	94	90	104	112	116	112	110	106	106	110	110	112	G	120	106	102	100	94	96	96	104	96
29	94	118	90	122	118	122	108	100	104	100	96	94	116	132	128	112	118	112	106	96	100	96	96	96
30	92	92	92	92	106		B	110	102	100	96	92	92	92	112	90	88	112	84	102	114	104	96	C
31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	30	28	26	28	30	30	30	30	30	30	29	29	29	30	29	30	30	30	29	29	27
MED	94	94	94	94	96	98	111	106	104	100	98	99	98	98	98	100	112	112	104	98	96	96	96	96
U Q	99	98	98	98	104	110	117	110	108	104	100	104	114	112	116	117	122	123	108	102	98	100	104	98
L Q	92	89	90	92	91	94	102	100	100	98	96	96	96	94	94	96	96	101	100	92	88	89	90	92

AUG.2015 h'Es (KM)

IONOSPHERIC DATA STATION Yamagawa

AUG. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	FF 11	FF 22	FQ 31	F 5	F 5	FF 12	C 2	C 3	L 3	L 2	L 2	C 1	C 1	C 1	C 3	C 1	C 2	C 2	C 6	C 2	F 4	F 4	F 5	FQ 31
2	FQ 41	F 5	FQ 11	FQ 21	F 1	F 1	C 4	C 2	C 3	C 1	L 1	L 1	L 2	L 3	L 2	L 2	CL 13	CL 42	CL 44	CL 84	F 3	F 5	F 3	F 4
3	FF 31	FF 31	FFF 21	FF 21	FF 12	FFF 11	HC 11	L 4	L 4	L 2	L 3	L 3	L 2	L 2	L 1	L 2	L 2	HL 11	C 2	L 5	FQ 41	FQ 21	FFQ 12	FQ 21
4	F 6	F 1	F 1	F 2	FQ 21	FF 21	CL 21	C 2	C 3	C 1	L 2	L 1	L 2	L 1	L 2	H 1	C 1	C 2	C 3	L 3	FF 41	F 3	F 8	F 6
5	F 5	F 5	F 3	F 3	F 2	F 7	C 3	C 6	C 4	L 3	C 4	C 3	L 4	L 2	L 3	L 3	L 2	L 6	L 5	LQ 21	F 3	F 6	F 6	F 3
6	F 3	F 2	F 1	F 1	FF 11	F 1	LC 21	LC 21	CL 21	C 1	L 2	L 1	C 1	C 1	L 2	L 1	C 1	CL 21	CL 23	CL 16	FFF 42	FF 32	FF 31	FF 42
7	FF 42	FFF 31	F 5	F 5	F 1	F 4	C 3	C 3	C 2	L 3	CL 12	CC 11	C 1		C 2	CL 11	C 1	C 1	C 3	CL 51	FF 41	FF 11	F 4	F 4
8	F 5	F 4	F 3	F 1	F 1	F 1	C 1	C 2	C 2	C 2	L 1	L 2	L 2	L 5	L 2	L 1	CL 21	CL 11	CL 22	C 6	F 3	F 3	FFF 21	F 4
9	FQ 31	F 4	F 4	FQ 41	FQ 31	F 6	CC 21	C 3	C 3	C 3	L 1	L 2	L 1	C 1	HC 11	C 1	HC 11		CL 31	C 1	F 1	F 1	FF 12	F 2
10	F 6	F 6	F 3	F 3	F 2	F 2	C 1	CL 21	C 1	C 1	C 1	CL 21	H 1	C 1	C 1	C 1	CL 21	C 2	C 4	C 6	F 3	FF 15	F 7	F 8
11	F 6	F 4	F 2	F 4	F 2	F 1	C 2	C 3	L 3	C 2	L 1	HL 11	H 1	H 1	C 1	C 1	HL 12	CL 23	LC 32	L 4	F 4	FF 33	F 2	FF 24
12	FF 22	F 8	F 6	F 3	F 4	F 5	C 3	L 5	CL 25	C 3	C 2	L 3	LC 21	C 1	C 4	C 1	C 2	C 5	C 3	L 6	FF 51	F 7	F 6	FF 31
13	FF 42	F 4	F 4	F 2				H 1	C 1	C 2	C 1	C 1	L 1	L 1	L 3	L 1	L 1	L 3	HL 11	L 4	F 3	F 1	F 2	F 3
14	FQ 21	F 3	FQ 31	FQ 31	F 6	F 2	L 4	C 3	C 1	C 1	L 1	HC 11	C 1	C 1	C 1	C 1	C 2	CL 21	CL 42	CL 64	FF 11	FF 12	FF 22	FFF 33
15	FFF 12	FF 12	F 3	FF 11	F 4	F 7	LC 21	C 3	C 3	C 2	L 2	L 2	L 1	L 3	L 3	CL 11	CL 12	CL 31	CL 46	CL 92	FF 43		F 1	F 2
16	F 6	FQ 31	FF 23	FF 41	FF 61	F 8	C 4	C 4	C 2	L 2	L 2	L 2	L 2	L 1	L 1	L 2	CLH 23	C 5	C 6	L 7	F 4	F 5	FF 51	F 6
17	F 4	F 3	F 2	F 1	FF 11	FF 11	C 1	C 2	C 4	L 3	L 2	L 3	L 2	L 2	L 4	H 1	C 2	C 2	C 3	F 5	F 6	F 6	F 4	F 6
18	F 4	FQ 41	F 3	F 2	F 1	F 1	C 4	C 3	C 2	C 2	L 2	L 1	L 2	L 3	L 3	L 2	L 1	L 1	C 2	F 4	F 2	F 3		F 4
19	FQ 21	F 3	F 2	F 2			CL 11	C 2	C 2	CC 11	C 1	L 2	CL 11	L 2	L 3	L 1	L 2	L 3	L 4	F 5	F 3	F 3	F 2	FF 32
20	FF 22	FF 11	FF 22	F 2	F 4	FF 21	H 1	C 2	C 3	C 4	L 2	L 2	L 2	L 2	HL 11		HL 11	HL 14	CCL 12	F 6	F 4	FF 23	FF 42	F 4
21	F 4	F 3	FF 21	F 3	F 5	FF 31	C 3	CC 31	C 2	L 2	L 3	L 1	L 1	L 2	L 1	L 1	CL 11	CL 11	CL 21	FF 21	F 2	F 1	F 1	FF 22
22	FF 21	FF 21	FF 11	F 1	F 1		H 1	H 1	CH 21	C 1	L 1	L 1	L 1	L 1	L 4	L 5	L 2	L 2	L 3	F 5	F 7	F 5	FF 24	FF 42
23	FQ 21	FF 21	FF 23	FF 11	FFF 21	F 4	L 3	L 4	L 2	L 2	L 2	C 1	CC 11	CL 11	HL 11	L 1	L 1	CC 11	C 3	F 3	FF 31	FF 32	FF 13	FF 21
24	F 3	F 3	F 1	FF 21	F 2	FFF 21	L 2	L 3	CC 22	C 1	C 1	C 2	C 1	CL 11	L 1	L 1	HL 11	HL 11	CL 31	FF 31	FF 31	FF 11	F 3	F 6
25	FQ 21	FF 12	FQ 31	F 3	F 5	F 8	LL 21	L 3	L 3	L 3	L 1	L 1	L 2	L 1	L 1	L 1	L 1	L 2	L 2	F 5	FF 32	F 3	F 2	
26	FF 23	FQ 21	F 4	F 4	FQ 31	FQ 61	C 1	C 3	C 3	L 3	C 1	C 1	L 1	L 2	LH 11	L 3	L 2	L 2	CL 23	F 1	FF 21	F 1	F 2	
27			F 1	F 3	F 1	F 1	C 4	C 1	C 3	C 2	C 2	C 2	C 1	C 2	C 1	C 1	C 2	C 2	C 3	F 4	FF 34	FF 51	FFF 24	FF 11
28	FF 32	FF 31	F 6	FF 31	FF 11	F 7	C 4	C 3	C 4	C 2	C 1	C 1	C 1	C 1		C 1	C 3	C 3	C 3	F 4	FF 41	FF 21	FF 41	F 1
29	F 1	FF 11	FF 11	F 1	F 1	F 1	C 2	C 4	C 3	C 2	L 2	L 2	C 1	HL 11	CL 11	CL 11	CL 21	C 2	C 3	F 6	F 5	FQ 41	FQ 31	FQ 31
30	F 9	F 2	F 1	F 1	FF 11			CC 21	C 3	C 3	L 3	L 4	L 1	L 1	CL 11	L 3	L 4	CL 22	L 5	FF 44	FF 22	FF 23	FFF 31	
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 68	X 69	X 66	X 64	X 57	X 58															X 85	X 78	A	74
2	76	78	76	66	56	53															X 89	X 78	A	69
3	68	66	X 64	66	X 66	X 63																X 80	X 74	X 81
4	79	77	74	74	76	X 62															X 93	X 76	X 72	76
5	80	80	78	74	76	72	72	80													X 97	X 89	X 92	X 92
6	X 80	X 78	X 74	X 71	X 68	X 53															X 87	X 83	X 88	X 86
7	X 74	X 70	66	71	70	67	61														X 83	X 74	X 65	X 65
8	66	65	66	65	67	X 62															X 70	X 70	X 66	70
9	74	76	76	71	66	64	56														X 80	X 73	X 66	X 67
10	X 67	72	73	66	62	57	58														X 82	X 68	X 70	76
11	X 66	59	57	59	52	49															X 79	X 77	X 73	X 57
12	X 57	X 55	56	58	51	48															X 80	X 80	X 76	X 69
13	X 69	X 69	72	76	X 71	X 72															X 78	X 57	X 55	X 53
14	X 53	X 57	60	60	X 49	53	54														X 90	X 69	X 61	X 61
15	X 65	X 66	X 63	X 60	X 39	X 30															X 86	81	90	89
16	77	77	78	57	53	54	53	66	55												X 57	A	X 46	X 46
17	50	51	47	46	X 43	X 40															A	X 61	X 62	64
18	70	71	63	66	X 66	55															X 74	X 66	X 52	X 53
19	52	54	54	50	51	47															X 88	X 65	X 51	X 50
20	X 51	54	53	58	47	X 44															X 75	X 68	X 64	X 60
21	58	66	63	55	47	45	52														X 72	X 60	X 58	X 62
22	X 64	X 62	X 62	X 56	X 40	X 37															X 97	X 80	X 57	X 52
23	X 56	61	63	57	55	X 40															X 89	X 88	X 81	77
24	74	77	X 65	76	X 51	X 40															X 100	X 59	X 57	X 58
25	64	64	66	66	X 46	X 31															X 107	X 60	X 60	X 67
26	X 74	X 75	X 78	X 64	X 48	X 39															X 90	X 71	X 58	X 59
27	X 59	X 62	X 58	X 51	X 52	X 38															X 51	X 50	X 51	X 52
28	X 48	X 49	X 50	50	X 45	A															X 53	X 56	X 54	X 54
29	X 58	X 52	X 52	X 51	X 44	X 39															X 84	X 78	X 71	76
30	76	74	71	69	56	X 44															X 102	X 72	X 70	X 77
31	X 72	X 77	X 82	X 82	X 62	X 48															X 95	X 70	X 59	X 61
	00	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	30	7	2	1												29	30	29	31
MED	X 67	66	65	64	X 53	X 48	56	73	55												X 85	X 72	X 64	X 65
U Q	74	76	74	71	66	X 58	61														X 92	X 78	X 72	76
L Q	X 58	59	58	57	X 47	X 40	53														X 76	X 65	X 57	X 57

AUG. 2015 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 2015 foF2 (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	63	60	58	51	52	60	66	58	65	69	64	63	70	79	82	83	78	79	83	79	72	A	F 66
2	F 67	F 68	F 65	F 58	F 46	F 41	48	68	82	84	79	89	101	110	107	108	110	109	104	94	83	72	A	F 58
3	F 57	F 58	58	59	60	57	56	68	84	80	64	R 68	73	77	82	90	98	100	85	76	75	76	68	75
4	F 70	F 65	F 66	F 65	F 65	56	50	68	94	64	65	71	85	94	100	108	104	101	101	98	87	70	66	F 66
5	F 71	F 74	F 62	F 64	F 66	F 63	F 64	F 71	A	A	A	79	83	90	100	103	102	101	106	113	91	83	86	86
6	74	72	68	65	62	47	56	56	68	76	78	70	90	97	87	91	96	96	89	91	81	77	82	80
7	68	64	F 59	F 59	F 62	F 60	F 49	56	R 62	50	A	61	60	72	67	74	74	68	80	78	77	68	59	59
8	F 58	F 58	F 60	F 55	F 58	56	54	62	76	67	72	V 74	82	88	96	85	78	76	80	77	64	64	60	F 61
9	F 65	F 66	F 64	F 62	F 55	F 54	F 48	68	83	90	71	72	72	78	87	84	82	79	78	78	74	67	60	61
10	61	F 64	F 63	F 55	F 52	F 48	F 52	64	51	60	70	72	69	71	71	69	75	85	94	92	76	62	64	F 67
11	60	F 50	F 48	F 46	F 44	F 41	J R 41	68	75	64	60	66	63	70	81	85	87	85	77	80	73	71	67	51
12	51	49	F 45	F 51	F 44	F 40	52	73	69	65	58	64	A	78	79	76	77	77	85	87	74	74	70	63
13	63	63	F 65	F 66	65	66	57	60	54	52	55	68	72	76	88	84	93	98	101	88	72	50	49	47
14	47	F 48	F 52	F 52	43	F 43	F 46	74	59	52	57	60	71	69	72	81	86	90	94	97	84	63	55	55
15	59	60	57	54	33	24	40	61	59	A	67	75	81	80	88	96	91	100	106	88	80	F 74	F 83	F 78
16	F 67	F 68	F 67	F 48	F 42	F 44	F 44	F 56	F 46	A	53	56	58	64	62	58	60	63	83	65	51	A	40	40
17	F 41	F 40	40	F 37	37	34	38	54	57	68	68	74	77	84	96	91	84	80	A	106	A	55	56	F 57
18	F 60	F 63	F 54	F 58	60	F 43	38	58	69	72	A	A	A	78	78	86	93	89	81	70	68	60	46	47
19	F 43	F 45	F 44	F 40	F 38	F 40	40	51	59	65	54	65	64	79	88	80	84	86	97	99	82	59	45	44
20	45	F 46	F 46	F 50	F 37	38	42	52	67	68	57	59	67	77	69	68	76	76	72	71	69	62	59	54
21	F 52	F 52	F 52	F 47	F 38	F 36	F 43	62	58	54	57	68	82	72	64	72	84	86	78	75	66	54	52	56
22	58	56	56	50	34	31	33	68	81	62	69	64	66	68	70	78	76	72	77	87	91	74	51	46
23	50	F 52	F 53	F 49	F 46	34	37	58	76	86	60	75	84	81	87	90	98	108	117	94	83	82	75	F 67
24	F 68	F 66	59	65	V 45	34	42	62	74	72	69	63	67	73	83	95	94	90	88	96	94	53	51	52
25	F 51	F 52	F 56	F 56	40	25	36	58	68	62	62	72	72	77	88	106	109	93	100	112	101	54	54	61
26	68	69	72	58	42	33	40	63	67	61	60	60	73	98	104	91	75	83	92	86	84	65	52	53
27	53	56	52	45	46	32	37	56	44	48	E G 45	A	A	60	54	R 50	54	56	54	53	R 45	44	45	46
28	42	43	44	42	39	A	40	A	A	A	A	51	B	48	47	E G 42	50	57	56	48	47	50	48	48
29	52	46	46	45	38	33	37	51	50	76	A	99	87	74	81	80	85	76	75	A	78	72	65	F 64
30	F 66	F 61	F 61	F 62	F 48	38	47	60	61	60	68	83	103	114	112	110	114	120	119	126	96	66	64	J R 71
31	66	71	76	76	56	42	44	78	66	63	62	66	80	96	98	97	108	115	115	108	89	64	53	55
	00	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	30	31	30	29	27	26	29	27	31	31	31	31	31	30	30	30	30	29	31
MED	60	F 60	F 58	F 55	46	41	44	62	67	65	63	68	73	77	83	85	85	86	86	88	78	66	59	58
U Q	F 67	F 66	F 64	F 62	58	52	52	68	76	72	69	74	83	88	96	95	98	100	101	97	84	72	66	66
L Q	51	F 50	52	F 48	39	34	40	56	58	60	57	64	67	71	71	76	76	76	78	77	72	59	51	51

AUG. 2015 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 2015 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	U L 496	A	A	L 540	504	492	492	U A 508	A	L	A				
2								L	L	U L 484	A	520	524	U A 536	508	A	A	A	A				
3								A	L	A	A	A	A	504	U A 512	A	456	L 444	A	A			
4								L	L 436	L 464	U L 496	U L 532	U A 520	A	504	496	476	A	L				
5									A	A	A	A	540	A	U A 496	U A 504	A	A	A				
6										L 492	L 496	U L 576	508	512	512	U A 512	488	L 452	L				
7								388	A	U L 456	A	484	U L 508	R 488	A	A	460	A	A				
8								U L 460	L	U L 464	L	A	508	U A 512	492	504	484	472	A				
9								A	L	U L 480	L	516	528	504	500	504	L 480	L	L				
10								L		U L 488	488	492	A	A	U A 500	L	472	L 452	L				
11								L	L 424	A	U L 492	500	L	488	484	480	A	A	A				
12								L	L	L	U L 468	492	A	A	A	A	A	A	A				
13									L	L		A	488	488	U A 496	472	444	U A 440	L				
14								L	L		U L 476	L 500	488	488	480	452	472	432	L 400				
15								L		A	A	524	496	A	476	484	U A 484	A	L				
16								L 352		A	464	468	468	A	U A 464	456	440	L 420	A				
17								L		460	A	476	488	500	A	472	L	L 436	A				
18								A	A	A	A	A	A	A	476	452	448	424	L				
19									L	440	U L 472	A	488	U A 508	A	A	452	A	A				
20									L	456	L	A	480	A	484	476	464	L 428	L				
21								L	L	L	L	U A 484	A	492	U L 500	476	460	L 428	L				
22								L	L	L 448	L 488	L	L 508	U A 492	500	476	464	A	L				
23									L	456	U L 472	A	484	L	488	484	460	L 440	L				
24									L	L	L 488	U L 488	L	U L 488	504	480	468	L 444	L				
25									L	L	U L 520	A	500	L 500	476	472	448	L 428	L				
26									L	A	A	A	488	496	488	A	U L 468	U L 436	L				
27								L		420	448	A	A	A	U A 452	A	A	A	A				
28								A	A	A	A	A	B	448	444	420	416	U A 408	L				
29										A	A	492	492	504	488	468	L 472	L	L	A			
30									L	U L 448	U L 512	A	A	L 516	A	L 496	A	A	A				
31									L	L 440	L	A	L 516	508	496	A	A	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	3	15	14	16	21	21	26	22	22	16	1					
MED								L 388	L 436	L 456	U L 488	496	500	500	492	478	464	L 436	L 400					
U Q								U L 460	U L 496	U L 480	U L 496	L 522	512	508	500	496	472	L 444						
L Q								L 352	L 424	448	472	486	488	488	480	472	452	L 428						

AUG. 2015 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG.2015 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	U R 400	400	368	A	A	244	A				
2							B	232	296	A	A	A	R 396	404	A	A	A	308	A	A				
3							A	A	U A 292	A	A	A	A	A	A	A	A	A	A	A	A			
4							A	A	A	A	A	A	A	A	U R 384	376	344	304	252	A				
5							A	248	304	336	360	A	A	A	396	400	336	A	A	A				
6							A	A	A	A	A	A	A	A	A	A	A	300	A	A				
7							A	244	292	A	A	A	U A 404	B	388	360	320	304	232	A				
8							A	264	A	A	A	A	A	A	A	376	A	A	A	A				
9							A	236	A	A	A	A	A	A	A	A	A	304	240	A				
10							A	228	288	U A 316	A	A	404	392	384	372	356	288	224	A				
11							A	U A 224	A	A	A	A	A	364	380	352	A	284	A	A				
12							A	A	292	344	336	U R 392	B	400	380	356	332	284	216	A				
13							B	216	280	336	A	A	A	A	A	A	A	A	A	B				
14							A	A	A	A	A	A	U A 392	R 392	R 384	A	332	288	A	A				
15							A	232	U A 280	A	A	A	380	388	368	352	328	284	A	A				
16							A	A	276	A	A	A	A	A	A	A	A	284	A	A				
17							A	200	264	A	A	A	A	A	364	352	328	288	A	A				
18							A	U A 212	260	A	A	A	A	A	A	A	A	A	A	A				
19							B	232	U A 288	A	A	A	A	A	A	A	A	A	A	A				
20							A	228	284	A	A	A	400	A	A	A	328	A	232	A				
21							A	228	276	U A 312	A	A	A	A	A	A	316	A	A	A				
22							A	A 228	288	A	A	A	A	A	A	360	A	A	A	A				
23							B	228	296	A	A	A	A	R	A	364	328	284	224	A				
24							A	A	A	A	U A 340	A	A	A	R 356	R 356	316	280	220	A				
25							B	A	A	A	A	A	A	396	A	A	324	284	212	A				
26							B	232	280	328	A	A	A	A	A	A	A	A	A	A				
27							B	232	288	A	344	364	B	384	R 388	B	332	280	A	A				
28							172	U A 196	U A 288	A	328	352	B	R 376	R 372	352	316	272	U A 208	A				
29							180	228	272	316	324	U R 356	U R 380	376	R 364	356	R 324	284	A	A				
30							A	208	280	312	328	A	A	B	A	372	A	A	196	A				
31							A	224	276	308	A	412	R 396	400	A	352	328	280	220	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							2	22	22	9	7	5	8	12	14	17	17	19	13					
MED							176	228	286	316	336	364	396	392	382	360	328	284	224					
U Q								232	292	336	344	402	402	400	388	372	332	300	236					
L Q								224	276	312	328	354	U 386	380	368	352	322	284	214					

AUG.2015 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 21	E B 13	18	18	J A 21	21	J A 29	J A 33	J A 46	J A 58	J A 56	J A 56	J A 42	44	48	J A 53	J A 63	J A 53	J A 49	J A 32	J A 71	J A 64	J A 81	J A 98
2	J A 58	J A 49	21	J A 19	J A 20	E B 13	E B 14	29	39	J A 42	J A 58	J A 49	45	J A 57	J A 59	J A 65	J A 72	J A 92	J A 68	J A 64	J A 76	J A 48	J A 88	J A 20
3	21	J A 16	J A 25	E B 13	J A 68	J A 42	J A 46	J A 65	J A 44	J A 75	J A 68	J A 91	J A 61	J A 49	J A 60	J A 55	J A 40	J A 40	J A 44	J A 31	J A 20	J A 26	J A 64	J A 60
4	J A 46	J A 34	J A 20	22	19	18	18	J A 43	J A 35	J A 37	J A 45	J A 59	J A 60	J A 70	42	49	43	J A 50	J A 39	J A 108	J A 96	J A 87	J A 66	J A 88
5	J A 88	J A 58	J A 58	J A 42	J A 56	J A 56	J A 42	J A 46	J A 98	J A 95	J A 154	75	J A 44	J A 86	48	J A 51	J A 75	J A 66	J A 60	J A 41	J A 39	J A 40	J A 24	J A 30
6	J A 18	J A 25	J A 46	J A 34	J A 20	J A 32	J A 28	J A 31	J A 40	J A 50	J A 70	J A 64	J A 74	J A 53	J A 45	J A 53	J A 59	33	J A 54	J A 67	J A 34	18	J A 22	J A 17
7	J A 52	J A 26	J A 81	J A 44	J A 56	J A 24	J A 27	J A 48	J A 64	J A 43	J A 57	J A 61	43	E B 42	J A 77	J A 68	J A 54	J A 65	J A 52	J A 61	J A 49	J A 52	J A 52	J A 39
8	J A 30	J A 37	J A 17	J A 17	18	J A 19	J A 21	G	J A 36	J A 47	J A 96	J A 56	J A 51	J A 54	44	42	J A 48	44	J A 45	J A 38	J A 24	J A 28	J A 61	J A 86
9	J A 54	J A 49	J A 82	J A 85	J A 88	J A 78	J A 48	J A 47	J A 87	J A 70	J A 47	J A 41	J A 47	44	J A 43	J A 43	J A 45	36	J A 35	J A 21	J A 18	18	20	J A 19
10	J A 32	J A 42	J A 54	J A 51	J A 41	J A 46	J A 26	J A 36	J A 40	J A 74	J A 44	J A 43	57	J A 60	51	48	43	J A 34	G 18	18	J A 43	J A 53	J A 66	J A 51
11	J A 74	J A 72	J A 66	J A 68	J A 65	J A 43	J A 69	J A 45	36	57	46	73	J A 44	G	43	J A 54	J A 66	J A 66	J A 56	J A 56	J A 44	J A 22	J A 20	J A 16
12	J A 28	J A 37	J A 33	J A 60	J A 61	J A 75	J A 60	J A 30	34	42	39	48	J A 88	J A 61	J A 60	J A 66	J A 56	J A 65	J A 70	J A 45	30	28	38	J A 27
13	J A 29	J A 34	J A 48	J A 54	J A 60	J A 24	J A 87	28	35	J A 41	J A 51	J A 71	J A 68	J A 66	J A 60	J A 40	J A 58	J A 65	J A 24	20	20	J A 16	20	J A 18
14	J A 32	J A 35	J A 38	J A 38	J A 62	J A 60	J A 21	J A 44	J A 57	J A 94	J A 42	J A 48	44	J A 43	43	J A 38	36	34	J A 38	J A 43	J A 23	J A 26	J A 27	J A 21
15	J A 22	J A 20	J A 16	E B 13	J A 62	J A 20	J A 32	29	J A 45	J A 86	J A 64	J A 41	G 35	J A 62	46	43	J A 56	J A 51	J A 49	J A 62	J A 52	J A 27	19	19
16	E B 13	J A 16	J A 30	J A 22	J A 91	J A 52	J A 46	J A 66	J A 41	J A 85	J A 44	J A 60	J A 49	J A 56	J A 48	J A 45	J A 49	J A 46	J A 75	J A 47	J A 54	J A 66	J A 59	J A 54
17	J A 45	J A 24	19	E B 13	J A 25	J A 23	J A 18	J A 27	J A 41	J A 46	J A 70	J A 59	J A 52	J A 50	J A 80	J A 50	J A 184	J A 154	J A 139	J A 93	J A 71	J A 55	J A 62	J A 46
18	J A 48	J A 62	J A 46	J A 21	J A 20	E B 13	J A 21	J A 66	J A 72	J A 72	J A 80	J A 92	J A 78	J A 100	J A 48	36	J A 42	J A 43	J A 24	J A 18	E B 12	J A 50	J A 34	J A 26
19	19	21	E B 13	17	18	19	E B 14	J A 36	J A 43	J A 45	J A 52	J A 65	J A 48	J A 61	J A 76	J A 52	J A 44	J A 70	J A 61	J A 36	J A 20	17	18	J A 16
20	J A 46	J A 44	J A 20	J A 60	J A 42	J A 53	J A 30	26	33	J A 36	J A 40	J A 75	J A 52	J A 70	J A 43	33	37	J A 34	25	J A 27	J A 21	20	J A 30	J A 55
21	J A 23	J A 30	J A 52	J A 18	J A 38	J A 32	J A 33	J A 46	J A 74	J A 80	J A 58	J A 74	J A 98	J A 50	J A 50	J A 40	G 30	J A 31	J A 28	J A 23	J A 22	J A 19	20	19
22	E B 13	18	19	E B 13	E B 13	E B 13	17	27	J A 50	J A 39	J A 46	J A 54	40	J A 116	J A 49	40	J A 42	J A 106	J A 72	J A 44	J A 24	J A 31	J A 26	17
23	J A 42	J A 51	J A 71	J A 43	J A 89	J A 45	J A 32	29	J A 39	J A 49	J A 38	J A 61	J A 46	43	44	40	36	G 24	G J A 21	J A 28	J A 21	J A 20	J A 125	J A 88
24	J A 52	J A 41	J A 41	J A 53	J A 19	J A 29	J A 31	J A 36	J A 39	J A 46	40	J A 45	43	39	G	G 31	G 30	G 22	J A 37	J A 23	J A 32	J A 32	J A 29	J A 29
25	J A 19	J A 40	J A 24	J A 18	J A 37	J A 20	J A 19	J A 26	31	J A 40	J A 50	J A 63	J A 50	43	J A 41	37	J A 32	G 24	G J A 16	J A 26	J A 48	J A 32	20	20
26	J A 22	20	E B 13	J A 17	E B 13	20	J A 15	32	J A 46	J A 48	J A 59	J A 64	J A 46	J A 42	J A 43	J A 54	J A 53	J A 55	J A 36	J A 30	J A 20	16	20	18
27	17	E B 13	E B 13	E B 13	E B 13	19	J A 19	29	40	J A 43	J A 43	J A 47	J A 73	J A 51	J A 47	47	J A 48	J A 53	J A 54	J A 49	J A 54	J A 48	J A 31	J A 40
28	J A 28	J A 19	J A 56	J A 28	J A 18	J A 37	J A 35	J A 58	J A 50	J A 87	J A 85	J A 44	B	40	41	40	41	J A 45	J A 32	J A 31	J A 54	J A 37	J A 46	J A 52
29	J A 51	J A 25	20	J A 47	J A 16	E B 13	G	32	J A 39	J A 66	J A 81	42	42	44	40	G 33	G	J A 45	J A 51	J A 92	J A 95	J A 90	J A 61	J A 95
30	J A 65	J A 31	J A 32	J A 19	J A 21	18	18	28	37	J A 44	J A 50	69	J A 71	47	J A 79	44	J A 66	J A 49	J A 56	J A 57	J A 97	J A 108	J A 106	J A 43
31	22	J A 21	J A 21	E B 13	21	J A 28	J A 32	26	34	36	J A 39	56	46	44	48	J A 53	J A 52	G 24	J A 35	J A 46	J A 50	J A 65	J A 54	J A 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	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31
MED	J A 30	J A 31	J A 30	J A 22	J A 25	J A 24	J A 28	J A 32	J A 40	J A 48	J A 51	J A 59	J A 48	J A 50	J A 48	J A 45	J A 48	J A 46	J A 45	J A 41	J A 39	J A 32	J A 34	J A 30
U Q	J A 51	J A 42	J A 52	J A 47	J A 61	J A 45	J A 35	J A 46	J A 50	J A 74	J A 68	J A 69	J A 61	J A 61	J A 59	J A 53	J A 58	J A 65	J A 56	J A 57	J A 54	J A 53	J A 62	J A 54
L Q	21	20	19	E B 17	19	19	18	28	36	J A 42	J A 44	J A 48	44	43	43	40	40	34	32	J A 27	J A 21	J A 20	20	19

AUG. 2015 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	23	29	34	55	49	42	42	44	48	51	53	40	44	26	36	28	A A 81	40
2	42	20	E B 13	E B 13	E B 13	E B 13	E B 14	28	36	38	55	45	44	54	49	63	64	84	55	29	28	31	A A 88	16
3	E B 13	E B 13	E B 13	E B 13	E B 13	18	30	41	33	57	60	64	58	47	51	53	38	36	40	26	18	E B 13	30	25
4	23	21	E B 13	E B 13	E B 13	E B 13	18	26	32	36	40	42	52	62	42	48	42	48	33	30	43	33	E B 13	32
5	40	28	32	28	30	36	29	28	A A 98	A A 95	A A 154	73	42	69	48	50	65	57	54	38	31	25	20	20
6	E B 13	E B 13	E B 13	21	E B 13	E B 13	19	26	32	39	42	43	47	49	42	51	46	33	31	58	23	E B 13	E B 13	E B 13
7	22	21	22	E B 13	E B 13	E B 13	20	28	52	38	A A 57	45	43	E B 42	64	66	36	62	47	58	30	20	15	19
8	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	17	G	32	36	46	50	44	51	42	41	44	42	41	35	21	24	28	E B 13
9	17	31	20	45	E B 13	30	23	40	39	40	38	40	44	44	40	42	40	35	25	18	E B 13	E B 13	E B 13	E B 13
10	E B 13	20	30	20	20	26	17	32	32	42	39	42	54	57	50	47	42	33	G 16	17	20	17	19	32
11	E B 12	29	E B 13	E B 13	19	19	26	32	34	46	38	43	41	G	41	46	54	63	53	44	32	17	E B 13	E B 13
12	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	15	27	32	36	39	48	A A 88	60	54	56	55	64	68	40	22	23	23	E B 13
13	E B 13	16	19	26	21	E B 13	E B 14	28	32	35	41	56	44	43	50	40	36	44	24	E B 15	E B 13	E B 13	E B 13	E B 13
14	E B 13	E B 13	E B 13	29	30	20	15	25	32	40	39	42	42	42	42	36	36	33	33	29	17	17	21	19
15	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	20	27	38	A A 86	55	40	G 34	57	41	41	48	50	35	52	40	20	E B 13	E B 13
16	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	29	31	36	A A 85	41	41	45	55	46	40	39	39	40	38	36	A A 66	25	32
17	E B 13	E B 13	E B 13	E B 13	E B 13	19	16	25	32	39	49	40	46	47	76	45	44	36	A A 139	38	A A 71	44	31	22
18	19	37	31	20	E B 13	E B 13	21	54	55	61	A A 80	A A 92	A A 78	64	44	36	36	30	23	18	E B 12	E B 13	19	19
19	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	35	32	39	38	57	42	51	72	50	34	47	38	22	E B 13	E B 13	E B 13	E B 14
20	E B 13	E B 13	E B 13	E B 13	20	31	20	26	32	35	37	51	45	62	41	U Y 33	36	32	24	19	19	E B 13	15	E B 13
21	18	E B 13	27	E B 13	18	E B 13	19	28	36	36	38	48	55	42	40	38	G 28	30	24	21	16	E B 13	E B 13	E B 13
22	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	16	26	32	36	43	48	40	49	40	39	40	44	33	23	18	E B 13	17	E B 13
23	E B 13	E B 13	E B 13	E B 13	16	24	E B 13	25	34	38	38	52	44	43	44	39	36	G 20	G 18	20	E B 13	E B 13	E B 13	32
24	E B 13	E B 13	28	22	E B 13	20	25	33	33	44	40	40	42	39	G	G 30	G 28	G 19	G 19	19	28	16	E B 13	E B 13
25	E B 13	30	E B 13	E B 13	E B 13	E B 13	E B 13	24	31	38	48	60	43	41	40	37	G 28	G 20	G 14	15	19	21	E B 13	E B 13
26	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	30	39	44	55	54	42	40	42	48	40	38	30	24	17	E B 13	E B 13	E B 13
27	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	E B 14	28	39	37	41	A A 47	A A 73	49	45	46	46	48	39	36	29	28	20	21
28	E B 13	E B 13	22	E B 13	E B 13	A A 37	26	A A 58	A A 50	A A 87	A A 85	44	B	39	40	39	36	41	28	26	31	E B 13	E B 13	21
29	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	28	37	62	A A 81	40	40	42	39	G 30	G	33	31	A A 92	E B 13	33	19	19
30	16	21	24	E B 13	18	E B 13	16	27	35	40	48	66	64	U Y 47	72	43	62	48	52	49	44	42	34	17
31	18	18	E B 14	E B 13	E B 13	20	20	24	33	35	38	54	44	44	45	51	50	G 22	34	39	22	21	17	23
	00	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	30	31	31	31	31	31	31	31	31	31	31	31
MED	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	18	28	34	39	42	47	44	47	44	43	40	39	33	29	22	17	17	17
U Q	17	21	22	20	18	20	23	32	38	55	A A 55	54	52	55	50	50	48	48	44	39	31	28	23	22
L Q	E B 13	E B 13	E B 13	E B 13	E B 13	E B 13	G	26	32	36	39	42	42	42	41	39	36	33	24	20	E B 17	E B 13	E B 13	E B 13

AUG.2015 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

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

AUG. 2015 fmin (0.1MHz)

IONOSPHERIC DATA STATION Okinawa

AUG. 2015 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	275	284	293	301	279	306	352	360	315	312	319	279	301	293	304	303	303	298	298	308	310	324	A	F 284
2	F 269	F 266	F 302	F 278	F 293	F 283	308	325	333	321	297	267	268	275	282	284	295	309	305	309	324	311	A	F 275
3	F 263	F 277	280	284	302	317	314	316	337	335	335	R 284	283	280	281	284	300	318	320	300	293	290	270	283
4	F 278	F 275	F 273	F 305	F 324	343	320	333	372	345	307	279	264	268	279	293	299	306	309	309	310	289	313	F 263
5	F 279	F 299	F 297	F 297	F 311	F 319	F 330	F 343	A	A	A	A 289	275	262	273	283	287	287	297	315	322	283	285	294
6	286	299	300	326	334	329	366	352	315	317	337	274	288	293	280	277	288	298	296	302	296	276	295	320
7	278	282	F 297	F 283	F 282	F 301	F 255	301	R 303	333	A	290	267	315	A 279	293	312	299	308	293	313	301	281	272
8	F 274	F 282	F 270	F 268	F 285	314	337	303	340	296	289	V 274	293	294	306	297	313	309	305	321	302	279	266	F 252
9	F 283	F 291	F 285	F 292	F 300	F 288	F 287	306	324	323	308	311	289	295	306	303	313	309	300	310	308	305	277	274
10	280	F 286	F 296	F 281	F 298	F 290	F 311	368	373	296	310	323	315	299	314	295	285	294	312	316	318	284	283	F 271
11	296	F 273	F 282	F 321	F 297	F 272	J R 295	350	372	373	311	310	283	286	296	301	308	314	301	311	298	309	332	276
12	280	286	F 280	F 306	F 303	F 284	340	359	380	349	339	284	A	313	310	307	312	290	318	317	300	306	308	275
13	279	281	F 274	F 294	299	340	371	375	368	263	304	292	298	277	310	295	297	306	323	331	332	291	286	274
14	277	F 279	F 297	F 310	294	F 272	F 325	347	384	346	309	287	307	300	292	295	302	302	309	331	338	302	298	287
15	287	306	319	353	338	310	345	363	331	A	294	273	293	264	280	305	307	307	342	337	318	F 262	F 301	F 285
16	F 264	F 291	F 318	F 318	F 263	F 276	F 258	F 343	F 335	A	279	266	273	291	287	287	283	298	335	335	291	A	268	258
17	F 285	F 296	282	F 303	300	295	320	312	301	308	317	288	286	283	306	312	304	295	A	353	A	276	275	F 258
18	F 269	F 286	F 281	F 273	323	F 288	312	323	339	355	A	A	A	312	291	285	306	325	322	301	329	325	296	293
19	F 283	F 287	F 320	F 276	F 304	F 322	347	349	371	351	365	311	291	282	295	281	282	290	311	333	347	328	287	274
20	279	F 279	F 281	F 330	F 291	292	326	353	355	345	312	318	305	334	329	322	311	334	330	317	312	300	304	285
21	F 272	F 268	F 303	F 321	F 287	F 285	F 341	345	361	352	301	301	329	325	292	293	307	329	337	331	323	315	276	277
22	295	300	313	350	307	286	312	356	375	368	338	304	320	307	300	319	320	314	291	309	340	360	299	267
23	292	F 284	F 295	F 307	F 325	312	312	321	345	368	334	303	305	264	285	288	294	297	322	312	288	295	316	F 268
24	F 287	F 293	296	322	V 302	323	320	349	356	354	334	329	280	298	286	315	314	313	309	320	360	295	282	276
25	F 278	F 295	F 323	F 359	379	302	323	347	371	357	287	324	292	279	277	306	324	309	307	332	344	310	270	272
26	271	283	299	322	322	323	334	365	353	365	332	279	263	297	322	319	303	308	304	309	324	333	271	272
27	279	305	312	322	343	307	303	341	351	264	G	A	A	294	283	R 271	282	307	320	323	R 270	252	261	279
28	267	272	278	280	292	A	309	A	A	A	A	273	B	244	238	G	256	299	315	294	263	269	257	261
29	278	271	280	315	308	311	305	367	313	326	A	314	329	280	308	308	328	321	321	A	309	299	280	F 284
30	F 294	F 289	F 302	F 310	F 320	306	361	385	357	346	303	272	288	302	304	288	295	309	318	344	329	292	287	J R 268
31	290	280	296	316	327	298	325	386	383	355	330	298	292	290	295	288	296	319	332	354	347	345	284	285
	00	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	30	31	30	29	27	26	29	27	31	31	31	31	31	30	30	30	30	29	31
MED	279	F 284	F 296	F 307	302	304	320	348	353	345	310	289	291	293	292	295	303	307	312	316	316	300	284	275
U Q	286	293	F 302	322	323	317	340	360	372	355	334	310	305	300	306	306	312	314	322	331	329	311	298	284
L Q	F 274	F 279	F 281	F 284	F 293	F 288	309	325	332	317	301	276	280	279	281	285	294	298	305	309	300	284	273	268

AUG. 2015 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	U L 351	A	A	L 355	387	387	A	A	A	L	A					
2								L	L	U L 376	A	361	359	A	A	A	A	A	A					
3								A	L	A	A	A	A	A 390	A	A	387	L 364	A	A				
4								L	L 397	L 410	U L 393	U L 372	A	A	375	A	A 368	A	L					
5									A	A	A	A	369	A	A	A	A	A	A					
6										L 371	L 376	U L 336	389	A	393	A	A	L 360	L					
7								343	A	U L 375	A	388	U L 387	R 401	A	A	369	A	A					
8								U L 348	L	U L 390	L	A	410	A	384	354	343	340	A					
9								A	L	U L 365	L	387	363	389	380	363	L 356	L	L					
10								L		U L 369	402	415	A	A	A	L	371	L 343	L					
11								L	L 388	A	U L 399	A 376	L	398	392	A	A	A	A					
12								L	L	L	U L 427	A	A	A	A	A	A	A	A					
13									L	L		A	383	396	A	376	380	A	L					
14								L	L		U L 391	L 369	385	379	392	409	334	355	L 349					
15								L		A	A	383	413	A	399	362	A	A	L					
16								L 373		A	378	382	A	A	A	373	363	A	A					
17								L		368	A	389	A 339	A	A	A	L	L 344	A					
18								A	A	A	A	A	A	A	A 381	397	377	364	L					
19									L	399	U L 401	A	384	A	A	A	365	A	A					
20									L	367	L	A	379	A	381	369	354	L 368	L					
21								L	L	L	L	A	A	376	U L 377	378	352	L 360	L					
22								L	L	L 409	A 396	L	L 392	A	372	373	351	A	L					
23									L	374	U L 391	A	393	L	372	357	356	L 349	L					
24									L	L	L 365	U L 383	L	U L 395	361	363	364	L 361	L					
25									L	L	A	A	392	L 356	389	366	369	L 371	L					
26									L	A	A	A	399	H 391	363	A	U L 358	U L 357	L					
27								L		385	378	A	A	A	A	A	A	A	A					
28								A	A	A	A	A	B	395	384	399	365	A	L					
29										A	A	362	379	378	385	386	L 362	L	L	A				
30									L	U L 405	A 334	A	A	G	A	L 354	A	A	A					
31									L	L 414	L	A	L 367	355	A	A	A	L						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	3	15	13	14	19	14	17	16	20	13	1					
MED								L 348	L 388	L 376	L 391	379	385	390	381	371	364	L 360	L 349					
U Q								L 373	L 397	L 405	U L 400	387	392	395	390	382	369	L 364						
L Q								343	U L 351	369	377	362	369	378	374	362	355	L 346						

AUG. 2015 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								230	320	A 322	312	416	362	370	324	316	308	292	292					
2								282	270	274	324	374	376	350	330	338	312	308	282					
3								274	248	268	E A 320	E A 414	358	370	354	332	306	280	254	230				
4								260	228	252	310	360	374	374	340	320	296	284	280					
5									A	A	A	E A 402	362	A 380	354	330	A 322	320	304					
6										302	274	388	336	314	338	352	320	296	288					
7								332	A 338	L 314	A	392	428	332	E A 440	E A 364	314	E A 376	292					
8								328	254	278	318	L 310	338	322	304	318	306	314	284					
9								296	274	280	L 300	326	368	332	314	306	298	296	286					
10								236		370	320	304	322	348	318	350	360	314	272					
11								246	232	240	334	330	L 346	366	334	304	300	284	296					
12								234	220	260	256	402	A	300	314	324	304	E A 344	A 296					
13									240	L 472		370	348	366	304	328	312	288	260					
14								250	220		L 322	388	336	336	352	334	308	302	282					
15								232		A	A 330	374	332	390	344	302	304	288	248					
16								260		A	426	452	426	A 376	376	390	378	362	266					
17								306		338	284	356	356	352	318	296	294	308	A					
18								E A 340	274	268	A	A	A	316	336	344	294	270	254					
19									232	268	266	A 344	366	348	A 330	346	340	314	268					
20									254	274	L 298	334	350	294	302	322	312	270	274					
21								232	256	258	L 318	338	294	294	360	354	296	266	246					
22								252	224	240	288	302	318	340	352	298	296	296	306					
23									260	240	278	328	296	L 328	324	328	318	298	248					
24									240	258	280	284	286	336	340	292	286	272	260					
25									228	256	372	306	360	336	346	308	268	262	264					
26									254	242	E A 314	E A 412	416	318	284	278	294	292	274					
27								252		488	G	A	A	396	422	A 436	408	A 338	292					
28								A	A	A	A	456	B	576	586	G	492	350	290					
29										A 294	A	282	264	356	318	316	278	284	270	A				
30									234	248	342	E A 376	332	304	304	300	310	280	260					
31									218	246	L 284	352	338	318	300	318	314	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								18	22	26	25	29	27	31	31	31	31	31	29	1				
MED								254	244	268	313	U 349	348	340	332	323	308	294	274	230				
U Q								296	260	302	327	397	366	370	352	346	318	314	291					
L Q								236	228	252	284	327	332	318	314	306	296	280	260					

AUG. 2015 h'F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 2015 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	310	290	254	244	294	264	232	210	H 188	A	A	216	204	228	A	A	A	A 268	A	252	248	240	A	A 318
2	A 328	314	258	Q 252	Q 274	Q 290	232	204	212	208	A	E A 244	242	A	A	A	A	A	A	264	240	240	A	302
3	318	296	296	270	258	238	260	A	210	A	A	A	A	E A 232	A	A	216	220	A	A	256	256	A 312	310
4	A 304	322	302	254	232	212	224	218	196	190	188	202	A	A	A 212	A	E A 240	A	248	256	242	A 250	234	A 356
5	A 326	A 282	A 286	E A 270	A 254	A 254	232	224	A	A	A	A	200	A	A	A	A	A	A	244	226	270	276	270
6	288	266	264	234	224	208	212	204	198	202	A 216	216	A 234	A	198	A	A	228	238	A 284	238	276	264	230
7	292	A 284	A 288	Q 298	266	250	A 278	242	A	H 210	A	A 246	208	200	A	A	216	A	A	A 312	240	240	254	A 294
8	310	Q 286	286	286	270	218	232	226	210	204	A	A	194	A	214	234	E A 292	E A 284	A	240	246	A 282	E A 322	324
9	294	A 294	276	E A 312	256	A 280	A 272	A	A 248	220	198	188	226	216	208	226	E A 242	228	226	246	240	220	256	300
10	298	284	A 274	256	276	A 294	244	230	198	A 226	184	H 174	A	A	A	A	A 236	216	226	246	234	236	286	A 298
11	274	A 332	292	230	A 240	A 308	E A 286	234	204	A	188	E A 228	202	192	206	A	A	A	A	266	A 258	244	226	236
12	298	294	314	258	258	278	246	224	212	194	202	E A 374	A	A	A	A	A	A	A	248	244	252	246	302
13	290	296	310	A 286	270	222	198	218	200	188	A 228	A	A 222	A 212	A	236	222	A	222	236	210	206	258	298
14	326	310	278	270	E A 296	A 316	240	218	214	A 216	198	218	208	218	212	194	238	226	E A 262	238	214	210	256	298
15	276	258	240	206	208	254	234	214	A 226	A	A	192	166	A	206	A 218	A	A	A	242	270	324	272	Q 270
16	Q 314	Q 272	Q 240	Q 216	314	Q 302	Q 394	E A 244	E A 240	A	A 222	A E A 226	E A 340	A	A	A 232	A 252	E A 322	A	246	E A 296	A	E A 354	E A 424
17	294	274	292	270	266	A 282	250	212	208	A 222	A	206	E A 308	A	A	A	A	E A 254	A	244	A	E A 378	A 334	A 346
18	318	E A 288	E A 312	298	Q 248	228	280	A	A	A	A	A	A	A	E A 244	194	218	214	220	236	228	220	260	282
19	286	280	248	264	Q 266	238	234	A 248	212	A 210	194	A	A 214	A	A	A	206	A	A	236	202	220	252	312
20	280	318	300	246	A 284	E A 372	262	216	218	222	H 190	A	A 258	A	A 218	208	224	230	228	246	234	244	254	244
21	330	Q 308	A 278	236	A 318	300	234	216	230	200	200	A	A	A 220	204	198	198	222	232	236	216	216	286	302
22	270	260	238	210	256	270	258	234	220	198	A 210	A	196	A	204	208	E A 248	A	A 270	264	226	204	220	318
23	288	278	264	252	242	E A 284	256	230	226	220	200	A	A 226	224	252	222	232	216	238	238	266	252	222	A 354
24	Q 288	254	A 264	244	208	E A 240	262	228	240	A	210	214	214	206	204	220	208	214	222	244	218	190	270	302
25	Q 302	A 302	252	214	200	248	242	218	214	214	E A 274	A	210	A 240	208	218	208	212	222	234	202	188	292	292
26	278	266	242	210	242	260	244	228	E A 244	A	A	A	202	H 194	E A 234	A	E A 250	E A 250	250	258	238	198	266	316
27	298	264	242	244	216	208	274	242	A 274	230	A 242	A	A	A	A	A	A	A	A	A 264	E A 320	E A 392	E A 346	320
28	310	304	312	276	292	A	A 274	A	A	A	A	A	B	216	236	236	240	A	266	A 278	E A 356	294	326	E A 356
29	290	306	296	248	268	242	282	224	A 232	A	A	A 226	224	220	202	214	H 202	250	264	A	252	278	A 278	A 272
30	264	A 284	A 274	Q 244	216	216	218	210	212	220	E A 322	A	A	G	A	A 258	A	A	A	226	226	A 276	E A 298	292
31	276	294	268	236	208	272	250	210	200	194	178	A	222	252	E A 278	A	A	226	246	224	216	200	260	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	31	31	31	31	31	30	31	27	27	20	19	15	22	15	18	16	20	18	17	29	30	30	29	31
MED	294	288	275	249	257	254	245	221	212	210	199	211	212	217	208	219	220	222	235	246	236	241	262	300
U Q	310	304	296	270	274	A 284	272	230	A 230	220	A 222	E A 228	A 226	228	E A 234	233	E A 241	E A 250	256	261	252	276	A 295	A 318
L Q	286	274	254	236	232	238	232	214	204	199	190	202	202	206	204	208	212	216	224	237	226	216	254	292

AUG. 2015 h'F (KM)

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IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	A	A	A	A	110	110	112	A	A	A	A				
2							B	106	108	A	A	A	108	108	A	A	A	112	A	A				
3							A	A	112	A	A	A	A	A	A	A	A	A	A	A	A			
4							A	A	A	A	A	A	A	A	112	118	112	112	110	A				
5							A	114	110	110	110	A	A	A	110	110	110	A	A	A				
6							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
7							A	110	110	A	A	A	110	B	110	108	108	122	110	A				
8							A	110	A	A	A	A	A	A	A	A	A	A	A	A				
9							A	110	A	A	A	A	A	A	A	A	A	110	110	A				
10							A	110	108	108	A	A	114	110	110	110	110	112	112	A				
11							A	108	A	A	A	A	A	108	108	108	A	110	A	A				
12							A	A	108	108	106	106	B	110	110	108	108	108	108	A				
13							B	108	108	110	A	A	A	A	A	A	A	A	A	B				
14							A	A	A	A	A	A	A	110	110	A	106	110	A	A				
15							A	110	108	A	A	A	112	112	108	108	108	114	A	A				
16							A	A	108	A	A	A	A	A	A	A	A	108	A	A				
17							A	108	108	A	A	A	A	A	106	110	106	108	A	A				
18							A	108	108	A	A	A	A	A	A	A	A	A	A	A				
19							B	108	108	A	A	A	A	A	A	A	A	A	A	A				
20							A	110	110	A	A	A	A	A	A	A	110	A	110	A				
21							A	110	106	106	A	A	A	A	A	A	108	A	A	A				
22							A	108	108	A	A	A	A	A	A	A	A	A	A	A				
23							B	108	108	A	A	A	A	A	A	110	112	110	112	A				
24							A	A	A	A	108	A	A	A	106	112	112	108	116	A				
25							B	A	A	A	A	A	A	A	A	A	110	110	110	A				
26							B	110	110	110	A	A	A	A	A	A	A	A	A	A				
27							B	110	108	A	108	108	B	108	108	B	106	106	A	A				
28							124	116	110	A	108	112	B	110	108	108	108	106	106	A				
29							118	110	108	108	108	108	108	108	108	116	106	106	A	A				
30							A	110	110	108	108	A	A	B	A	A	A	A	A	A				
31							A	108	108	108	A	A	A	A	A	A	116	116	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	22	22	9	7	4	5	10	14	13	17	18	10					
MED							121	110	108	108	108	108	110	110	109	110	108	110	110					
U Q								110	110	110	108	110	113	110	110	112	111	112	112					
L Q								108	108	108	108	107	108	108	108	108	107	108	110					

AUG. 2015 h'E (KM)

IONOSPHERIC DATA STATION Okinawa

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	92	B	92	98	98	126	114	106	106	102	102	102	112	144	124	114	120	120	112	104	98	96	98	98
2	96	96	94	92	92	B	B	118	112	112	102	102	154	126	100	100	118	110	108	106	98	96	96	90
3	90	88	102	B	102	102	102	98	102	100	98	100	100	102	102	102	102	102	102	96	100	102	104	106
4	92	92	90	88	88	88	130	106	106	104	100	100	114	114	164	120	120	112	110	106	100	106	102	116
5	100	104	100	98	98	96	100	114	112	110	108	108	108	108	172	144	112	108	108	104	104	96	92	106
6	90	102	102	102	102	106	104	132	104	104	104	106	106	106	106	102	100	158	96	92	92	108	92	104
7	108	104	104	104	104	102	116	116	110	112	104	104	134	B	112	110	116	116	116	110	106	104	104	102
8	100	100	90	88	86	110	112	G	112	106	108	110	108	102	144	136	100	116	114	112	108	104	104	120
9	104	104	104	104	104	104	104	108	106	106	104	106	104	186	100	100	100	126	122	98	98	94	94	94
10	106	100	106	106	98	102	112	112	112	102	102	102	128	122	122	122	114	120	100	100	120	108	114	106
11	106	104	104	104	106	106	108	112	106	104	104	104	106	G	126	114	112	112	114	110	94	94	106	106
12	106	106	106	106	106	104	104	110	124	116	182	148	122	122	120	116	112	110	106	98	108	96	106	90
13	112	112	110	102	102	106	98	152	128	112	108	106	104	104	102	102	102	100	100	100	98	92	92	88
14	104	104	104	102	100	104	104	104	104	104	104	104	148	146	138	104	198	128	112	94	94	92	92	90
15	98	88	88	B	98	102	102	128	106	102	102	104	104	114	132	122	116	114	98	108	110	98	98	116
16	B	106	106	108	108	156	116	100	106	104	104	104	122	102	102	100	100	118	108	102	100	96	96	96
17	94	94	94	B	108	102	106	112	104	106	106	106	108	120	114	120	112	106	106	106	100	102	102	100
18	102	96	96	92	86	B	118	110	108	108	102	116	102	100	98	98	98	100	118	96	B	102	94	90
19	90	96	B	106	106	106	B	120	120	114	110	104	104	104	102	100	100	96	98	92	92	92	92	94
20	108	108	100	102	102	102	102	138	128	102	102	102	102	100	96	112	130	98	124	96	104	104	104	104
21	100	106	102	102	100	100	126	114	110	108	104	102	102	102	102	98	100	100	96	96	92	92	90	90
22	B	90	88	B	B	B	172	116	110	112	106	102	102	100	100	138	100	98	98	94	92	104	104	92
23	110	106	116	100	120	102	104	122	114	102	106	102	102	176	186	166	194	98	98	96	96	96	122	110
24	104	102	100	98	98	100	100	100	104	102	110	104	102	102	G	100	98	96	96	94	108	108	106	106
25	150	104	102	100	100	102	102	102	108	106	104	104	102	140	100	100	98	98	98	98	98	92	90	138
26	122	102	B	100	B	100	160	120	114	110	104	100	102	102	102	100	100	98	96	94	106	108	112	110
27	100	B	B	B	B	136	136	124	116	118	116	112	124	124	124	120	118	112	110	104	106	104	92	114
28	104	104	110	102	92	122	122	114	114	108	108	112	B	130	132	124	118	114	110	108	104	100	100	108
29	114	92	92	90	90	B	G	112	110	106	106	132	130	122	132	96	G	120	114	102	106	106	104	104
30	102	100	94	88	102	96	152	120	112	112	106	102	102	122	118	142	92	114	108	102	102	104	106	106
31	88	92	92	B	98	98	98	120	114	112	108	140	146	138	130	116	114	96	122	112	108	108	114	102
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	28	25	28	27	28	30	31	31	31	31	30	29	30	31	30	31	31	31	30	31	31	31
MED	102	102	101	102	100	102	107	114	110	106	104	104	106	114	116	112	112	110	108	100	100	102	102	104
U Q	107	104	104	104	104	106	120	120	114	112	108	108	122	128	132	122	118	116	114	106	106	104	106	108
L Q	95	95	93	95	98	100	102	108	106	104	102	102	102	102	102	100	100	98	98	96	98	96	92	94

AUG. 2015 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 2015 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F3		F1	F1	F2	F1	C3	C1	C2	L3	L3	L2	C1	H1	C1	C2	CL31	CHL41	CL31	L5	F9	F6	F7	F6
2	F6	FQ31	F1	F2	F1			C1	C2	C1	L3	L2	H1	C2	L2	L3	CL44	CL31	CL83	CL33	FF35	F6	FF24	F3
3	F2	F1	F2		F2	F4	L3	LQ51	L2	L4	L2	L3	L2	L2	L2	L3	L1	L3	L2	L4	L2	FF22	FQ41	FQ31
4	F5	FQ51	F2	F1	F1	F1	H1	C1	C1	L1	L2	L1	CL11	CL21	H1	C1	C1	C2	C1	L4	FQ81	FFQ25	F3	FF16
5	FQ51	FQ51	FQ61	F4	F3	F4	L4	CL11	C6	C7	C5	C2	C1	C3	HC11	HC12	C3	C4	C9	L6	F9	F4	F3	FF23
6	F2	FF22	F3	F4	F3	F3	L4	HL11	L1	L2	L2	C1	C1	C2	C1	L2	L4	HL11	L2	L7	F4	F1	F4	F1
7	FQ41	F4	FQ31	F2	F3	F2	C2	C2	C4	C1	L2	L2	HC11		C2	C3	C1	CL31	CL42	C8	FF43	FF32	F4	F3
8	F6	FQ11	F2	F2	F1	F1	C1		C1	C1	C2	C2	C1	L1	HL11	HC11	L2	CL22	CL42	CL43	FF13	F5	FQ41	FF23
9	FQ21	F3	F4	FQ61	FQ31	FQ51	L3	C2	C3	CQ21	L1	C1	LH11	HL11	L1	L1	L2	C1	CL12	L2	F1	F1	F1	F2
10	FF22	FQ31	FF34	FF27	F3	F7	C1	C2	C1	L3	L2	L1	C1	C1	C1	CL21	CL11	CL11	L1	L1	FF12	FF43	FF22	F9
11	F4	FQ51	FQ41	FQ41	FQ81	F4	CQ51	C2	C2	L3	L1	L2	L1		C1	C2	C2	CL71	CL42	CL63	FF62	F3	FF12	F2
12	F3	F2	F7	F3	FQ41	F3	L3	CH11	C1	C1	HC11	H1	C3	C1	C2	C3	C2	C3	C9	L5	FF33	F5	FF26	FQ51
13	FF32	FF22	FF42	FQ41	FQ41	F2	L1	HC11	CC11	CH11	C2	C3	L2	L2	L3	LH11	LQ21	L3	L1	L1	F1	F3	F2	F3
14	F4	FQ41	FQ41	F4	FQ51	FQ31	L1	L2	L2	LQ21	L1	LH11	HL11	HL11	HL11	L1	H1	CL11	CL23	LC33	F4	F4	F2	F4
15	F2	F1	F1		F1	F3	LQ31	CL11	C3	L6	L3	L1	L1	C2	H1	C1	C3	C5	LC33	CL55	FF62	FQ31	F1	F1
16		F1	FQ21	FQ11	F4	FFF22	C6	LC13	C2	L4	L1	LC21	CL11	L2	L2	L2	L2	C2	C4	L7	FF91	FQ91	F6	F6
17	FQ21	FQ21	F1		F2	F3	C1	C1	C1	C2	C2	C2	C1	CL11	C4	C2	CH23	C5	C6	CL62	FF53	F9	F5	F5
18	F3	FQ61	F1	FQ11	F1		C2	C6	C4	C4	L5	CL13	L3	L2	L1	L1	L2	L3	CL12	L1		F2	F4	FQ11
19	F1	F1		F1	F1	F1		C1	C1	C2	C1	L2	L1	L2	L2	L2	L1	L5	L5	L6	F2	F2	F1	F1
20	FF21	FQ31	FQ21	F3	F4	F8	L4	HL11	CL11	L1	L1	LCH22	LHH11	L4	L1	CL11	HL11	L3	CL12	L2	FF22	FF22	F5	FQ31
21	FF22	F2	F4	F2	F3	F6	CQ31	C2	C3	CQ21	L2	L2	L2	L2	L1	L1	L1	L1	L4	L2	F6	F3	F1	F1
22		F1	F1				H1	C1	C2	C1	C1	L2	L1	LQ21	L1	HL11	L1	L3	LQ21	L4	F4	FF32	F2	F1
23	FF22	F4	FF13	F3	FF14	F6	L2	C1	C1	L2	C1	L2	L1	HL11	HL11	HL11	HL11	L1	L1	L2	F2	F1	FF11	F7
24	F4	FQ51	F8	F3	F1	F5	LQ81	L4	L3	L2	C1	L1	L1	L1		L1	L1	L1	L2	L2	FF21	F2	F2	FFQ21
25	FF11	F8	F4	F4	F4	F3	L2	L1	C1	C1	L3	L2	L1	HL11	L1	L1	L1	L1	L1	L1	F3	F6	F2	F1
26	FF21	F1		F1		F1	H1	C2	C2	C2	L3	L3	L1	L1	L1	L3	L3	L3	L2	L3	F2	F1	F2	F1
27	F1					F1	H1	C1	C2	C1	C1	C1	C2	C1	C1	C1	C2	C4	CQ41	L6	FF66	FQ71	FQ51	FF33
28	FF32	F2	FF35	FF12	F1	F8	C6	C5	C2	C7	C4	C1		H1	H1	C1	C1	C2	C4	C9	F7	FQ21	FF43	FF31
29	FF11	F1	F1	F1	F1			C1	C2	C2	C2	H1	HL11	C1	HL11	L1		C1	C3	L9	FQ31	FQ51	FQ41	FQ41
30	FQ41	F6	F2	F2	F3	F1	H1	C1	C1	C1	C2	L2	L1	C1	CL21	HL11	L2	CL42	CL71	L9	FF24	FF35	FF33	FF21
31	F1	F1	F1		F1	F6	L4	C1	C2	CL11	CL11	HL21	HL11	HL11	HL11	CL11	CL21	L1	CL31	CL82	FF73	F3	FF23	F7
	00	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. 2015 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

f-PLOTS OF IONOSPHERIC DATA

KEY OF f-PLOT	
	SPREAD
	foF2,foF1,foE
	fxF2
	DOUBTFUL foF2,foF1,foE
	fbEs
	ESTIMATED foF1
	fmin
	GREATER THAN
	LESS THAN

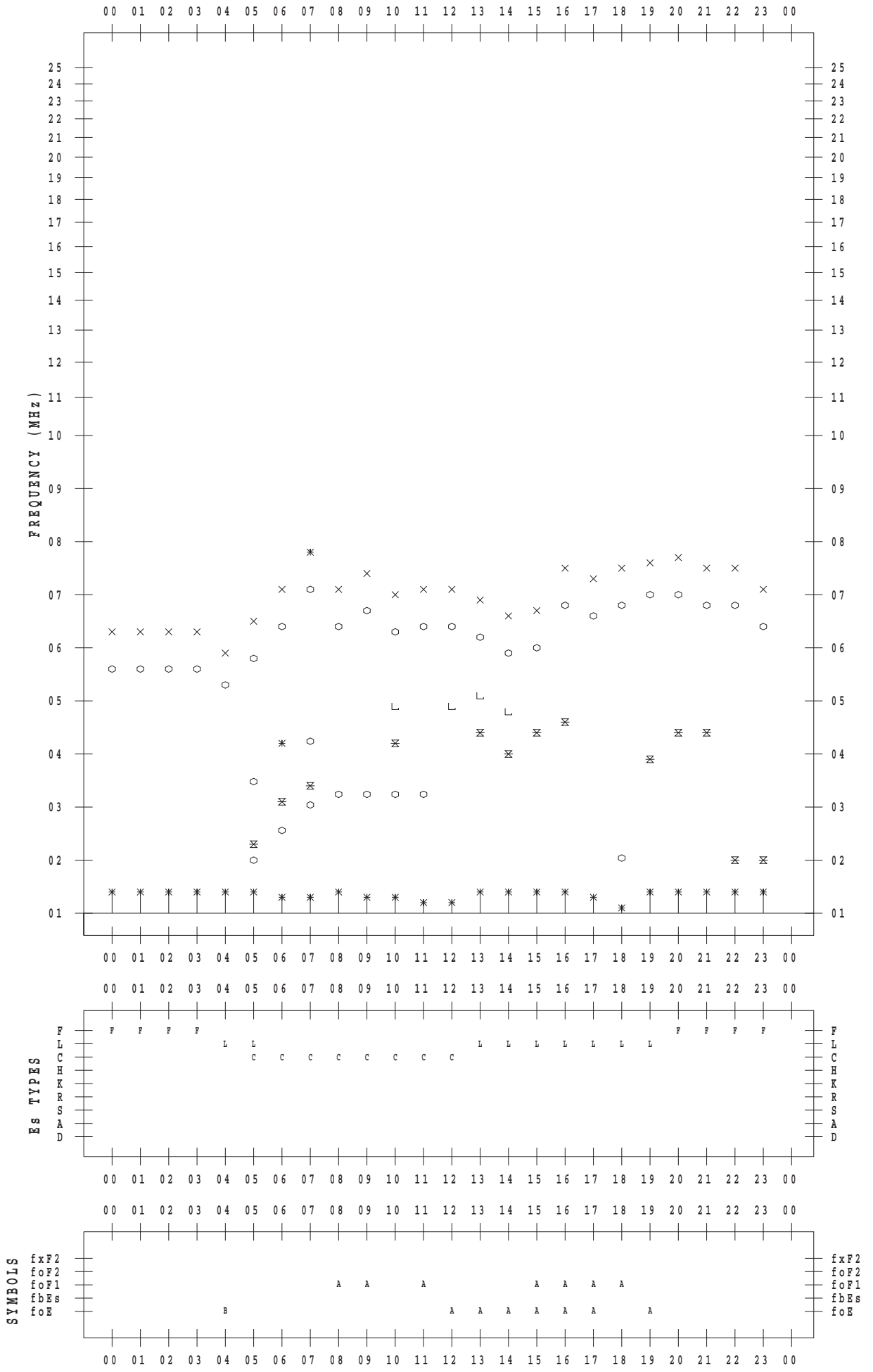
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 1

135 °E MEAN TIME



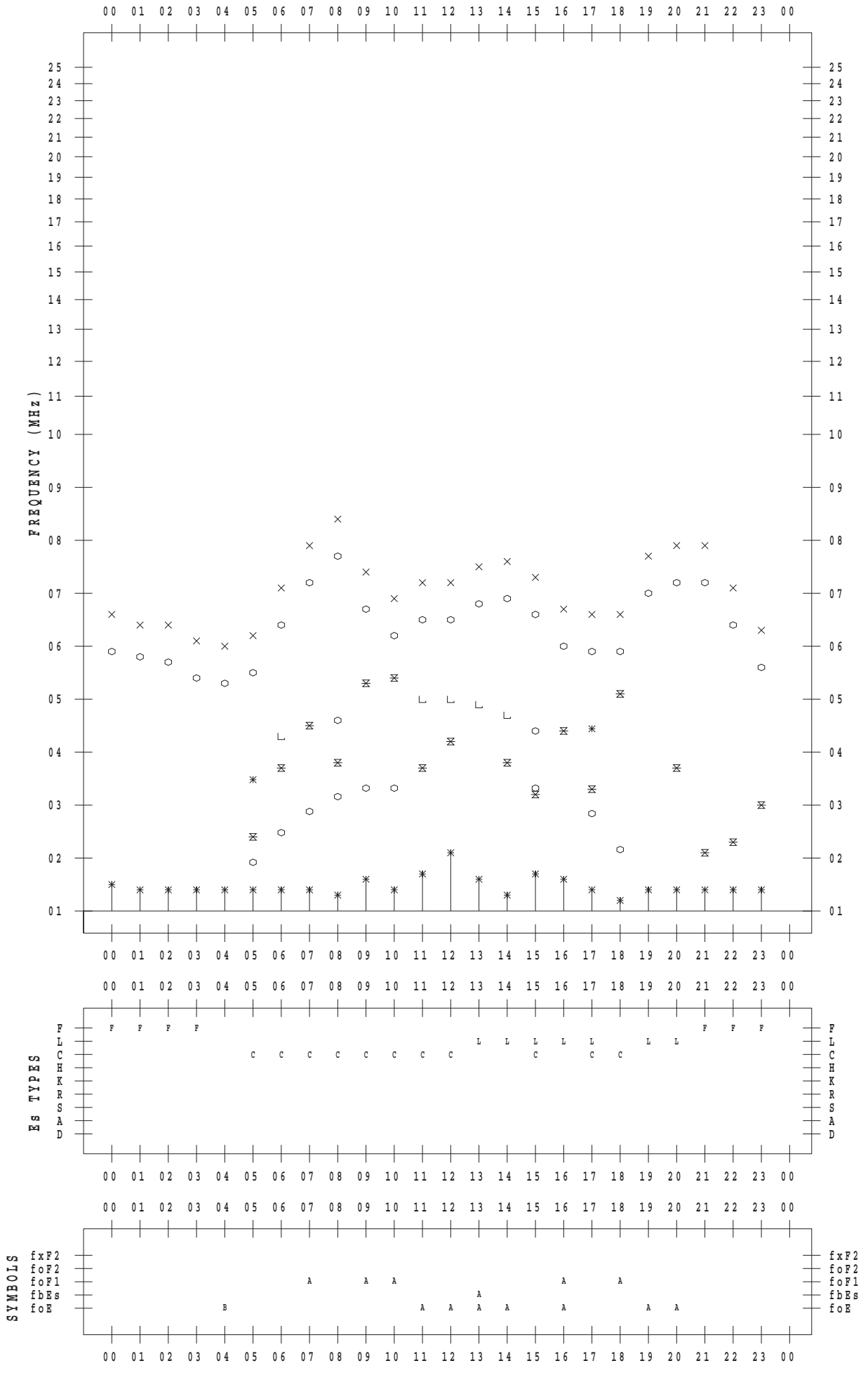
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 2

135 °E MEAN TIME



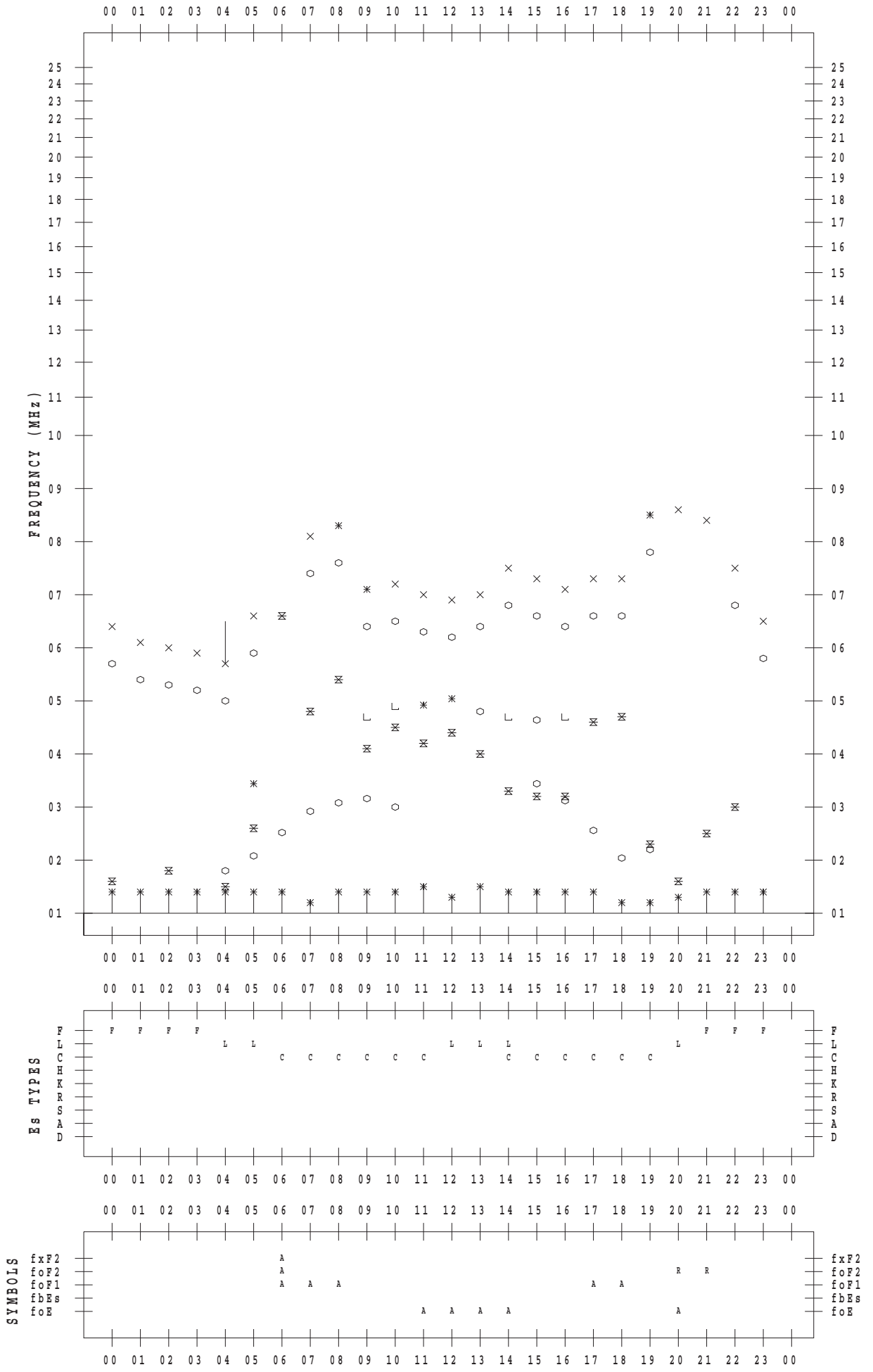
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 3

135 °E MEAN TIME



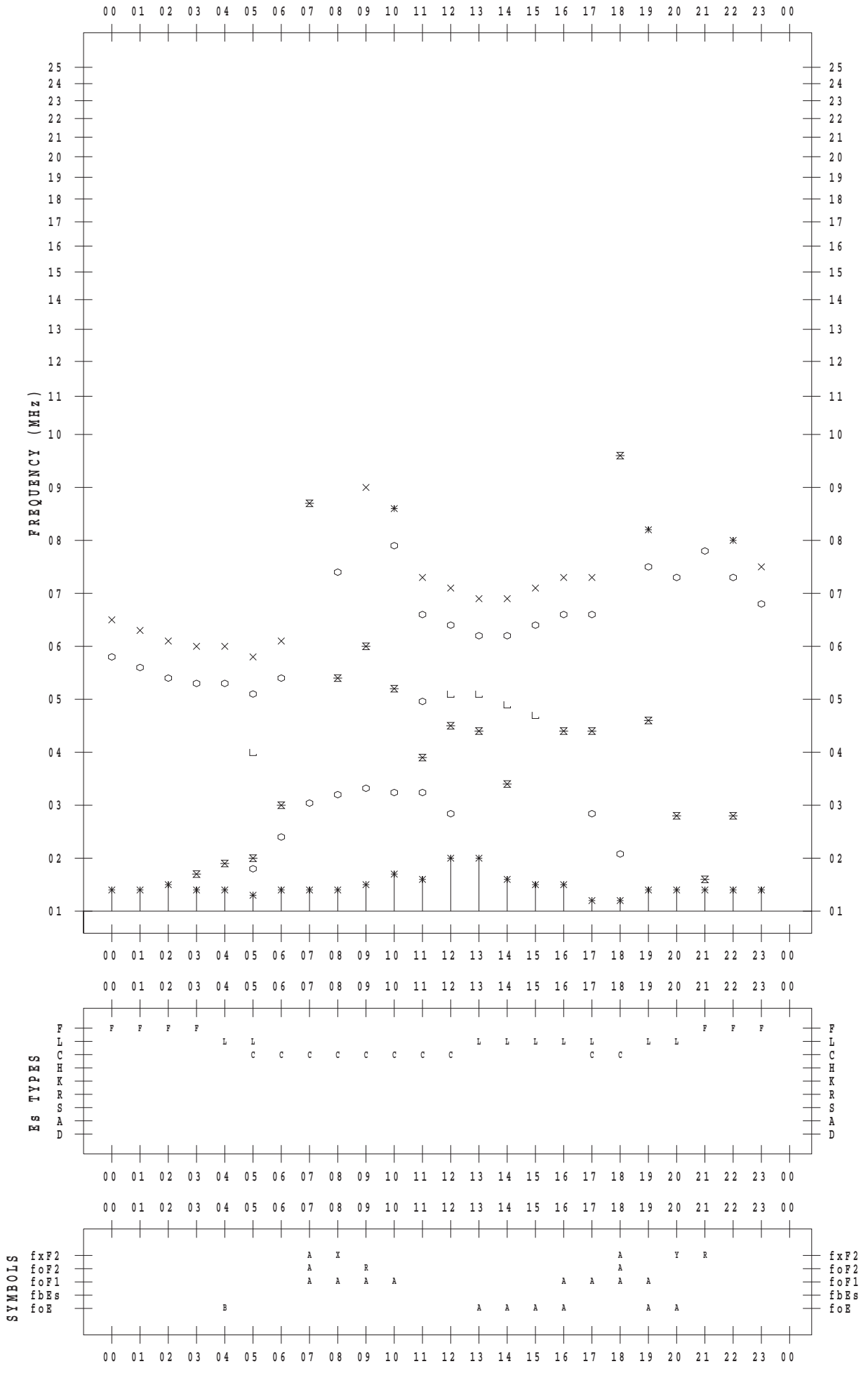
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 4

135 °E MEAN TIME



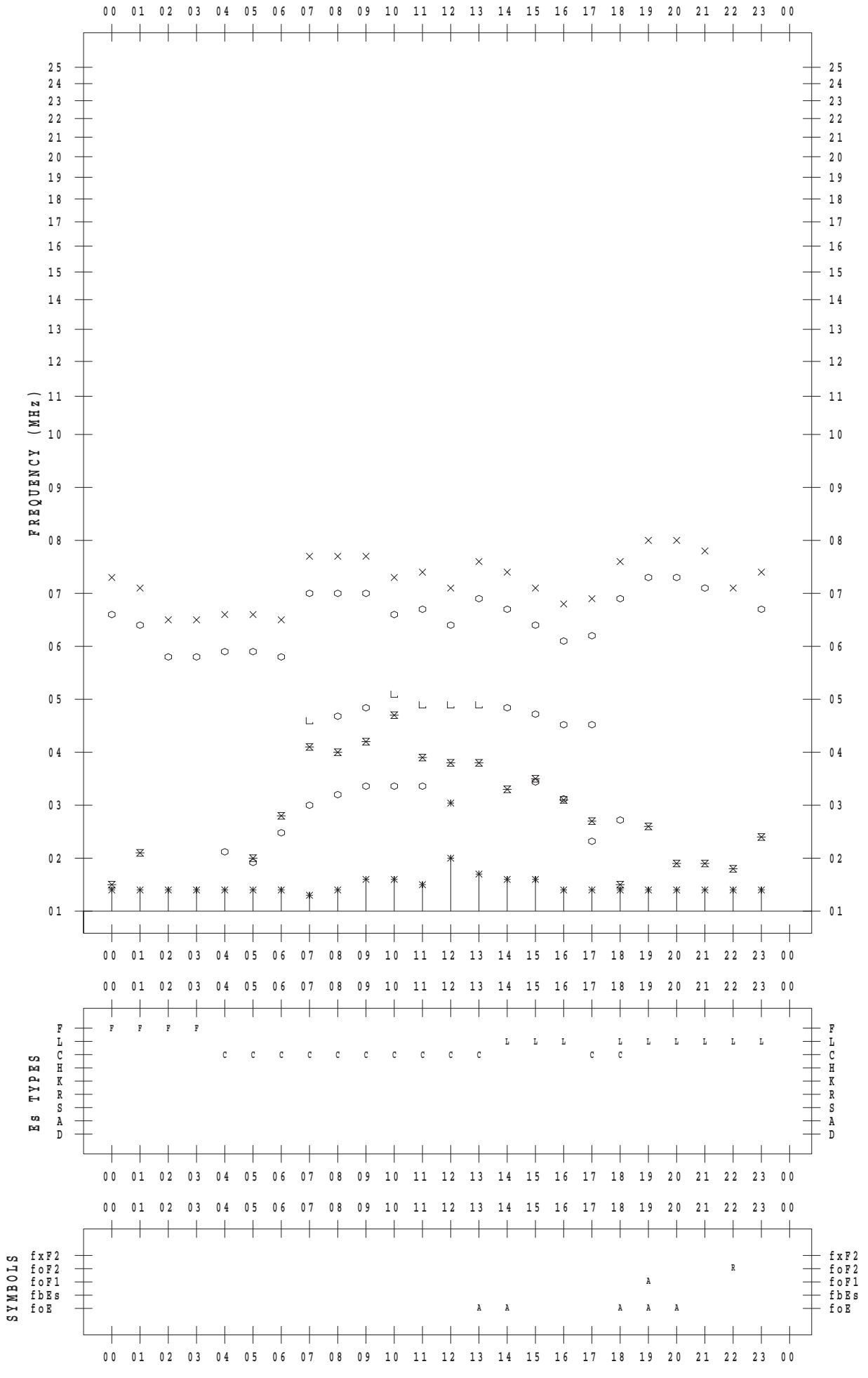
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 5

135 °E MEAN TIME



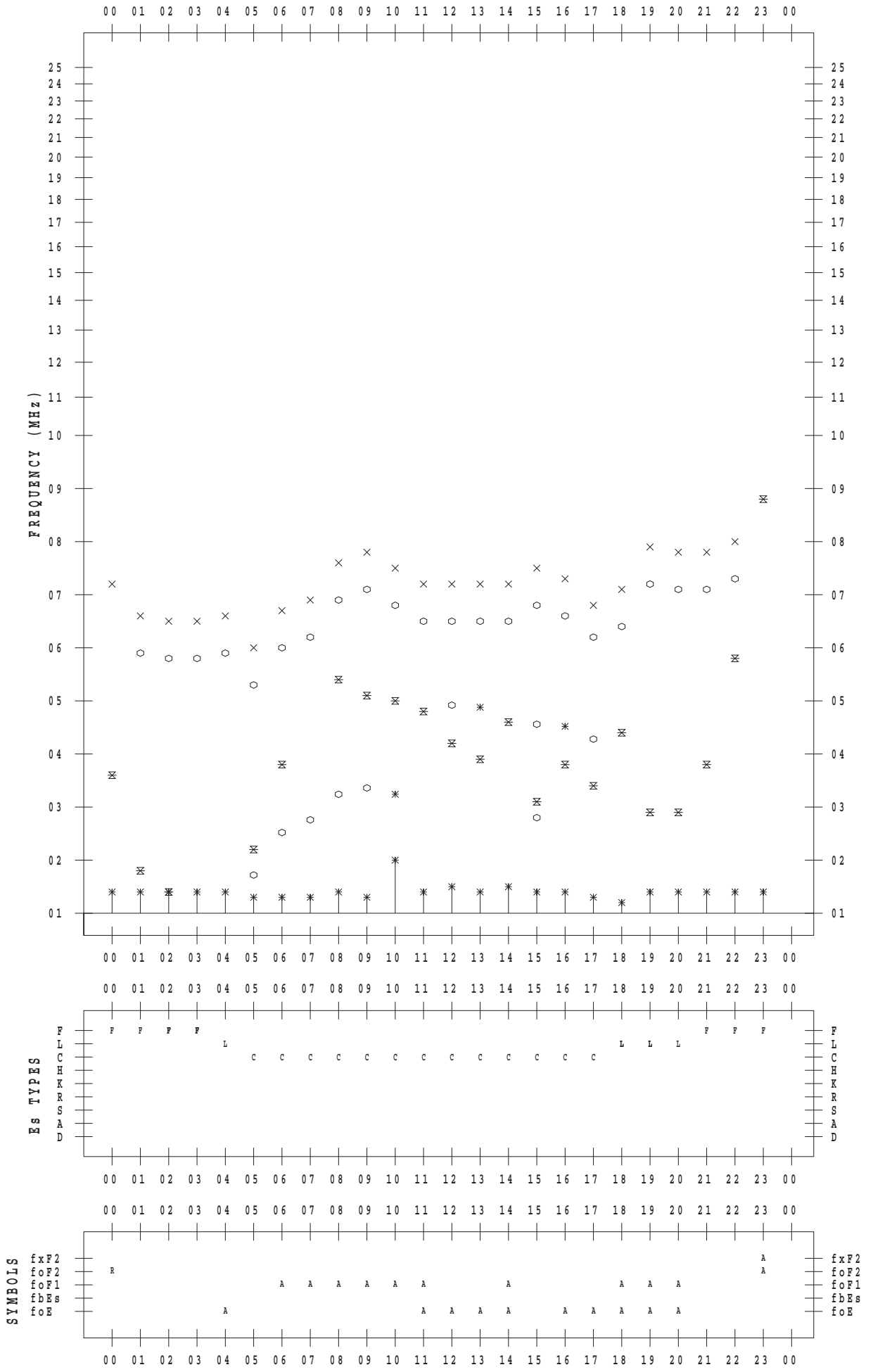
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 6

135 °E MEAN TIME



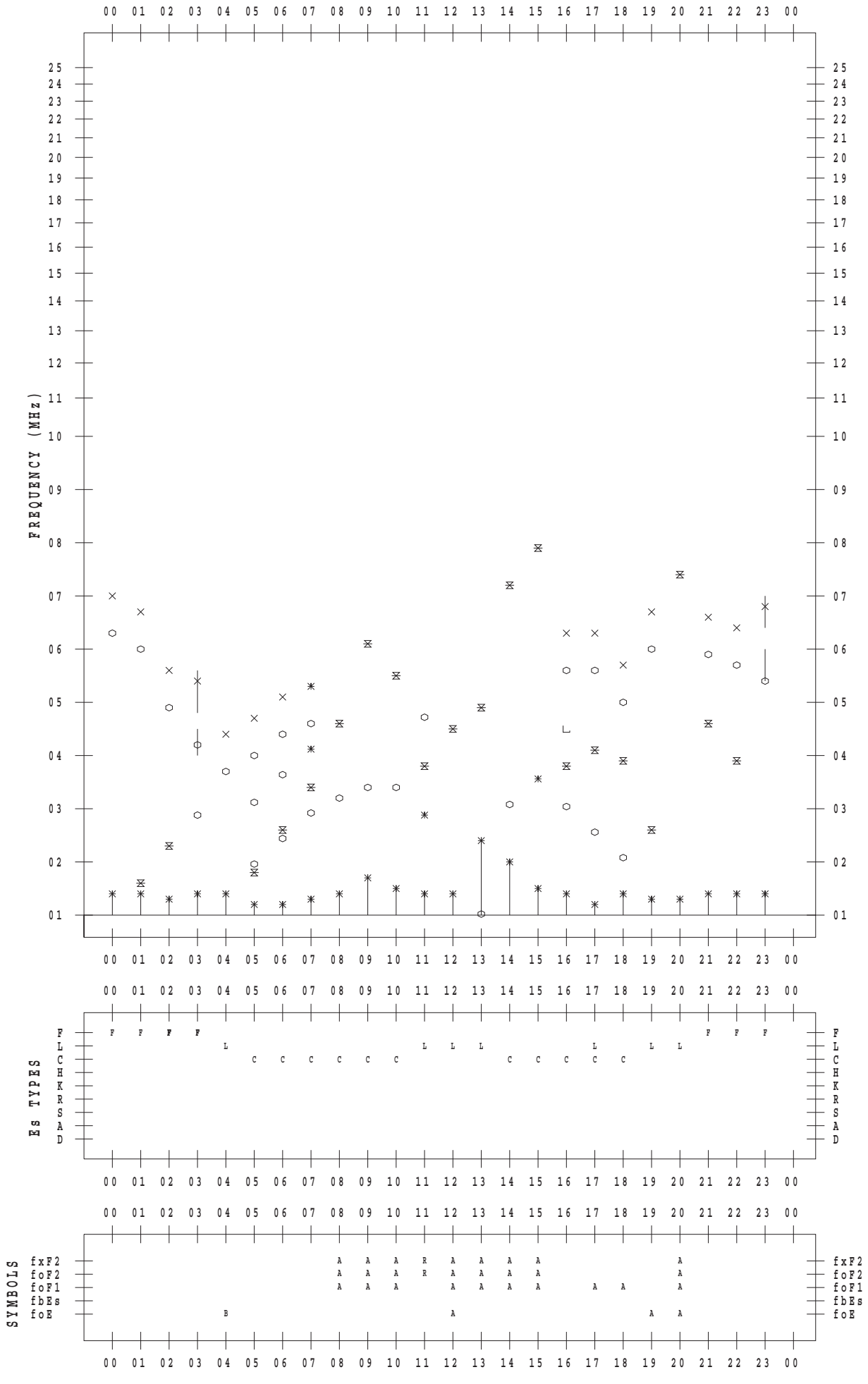
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 7

135 °E MEAN TIME



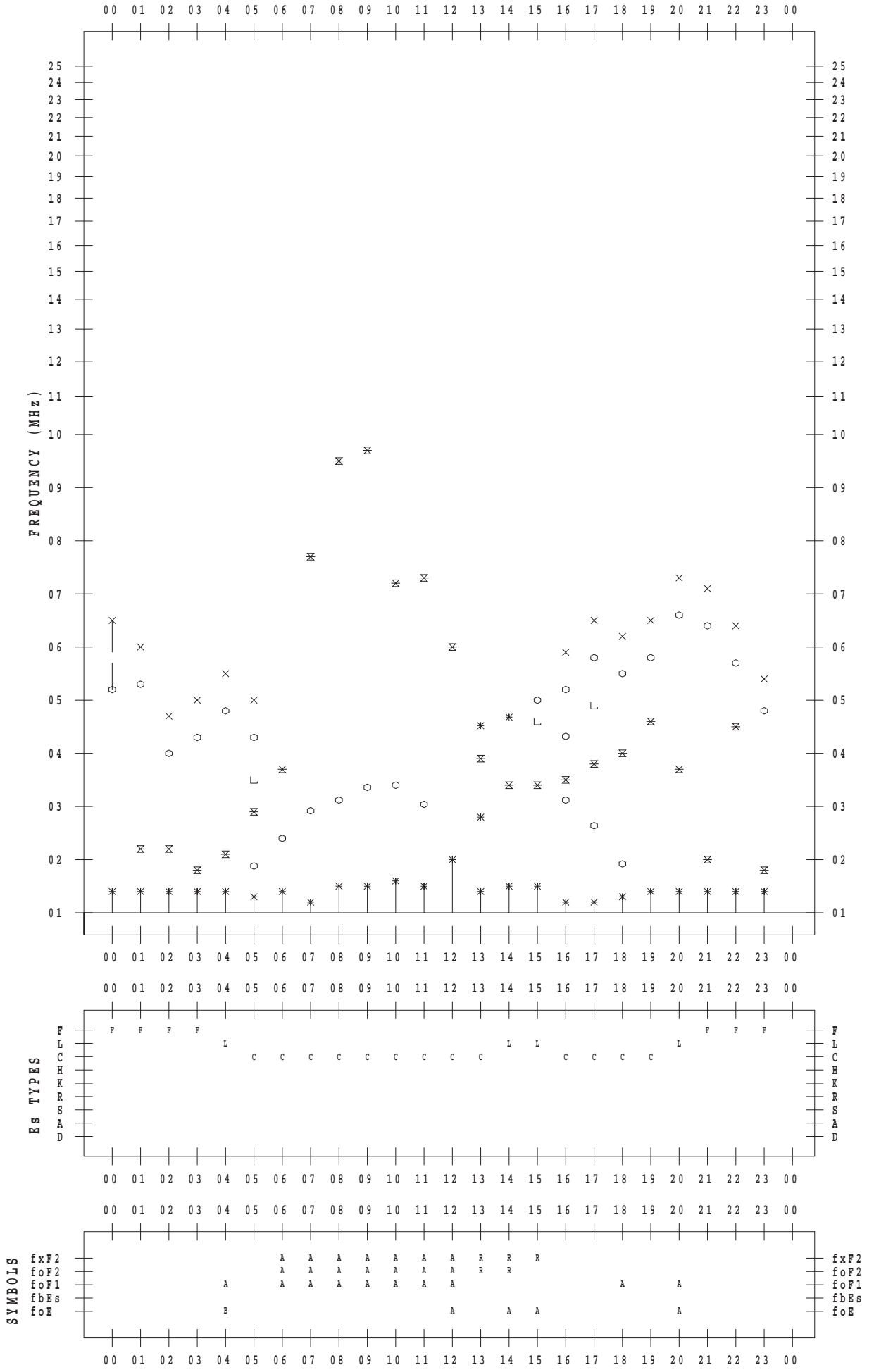
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 8

135 °E MEAN TIME



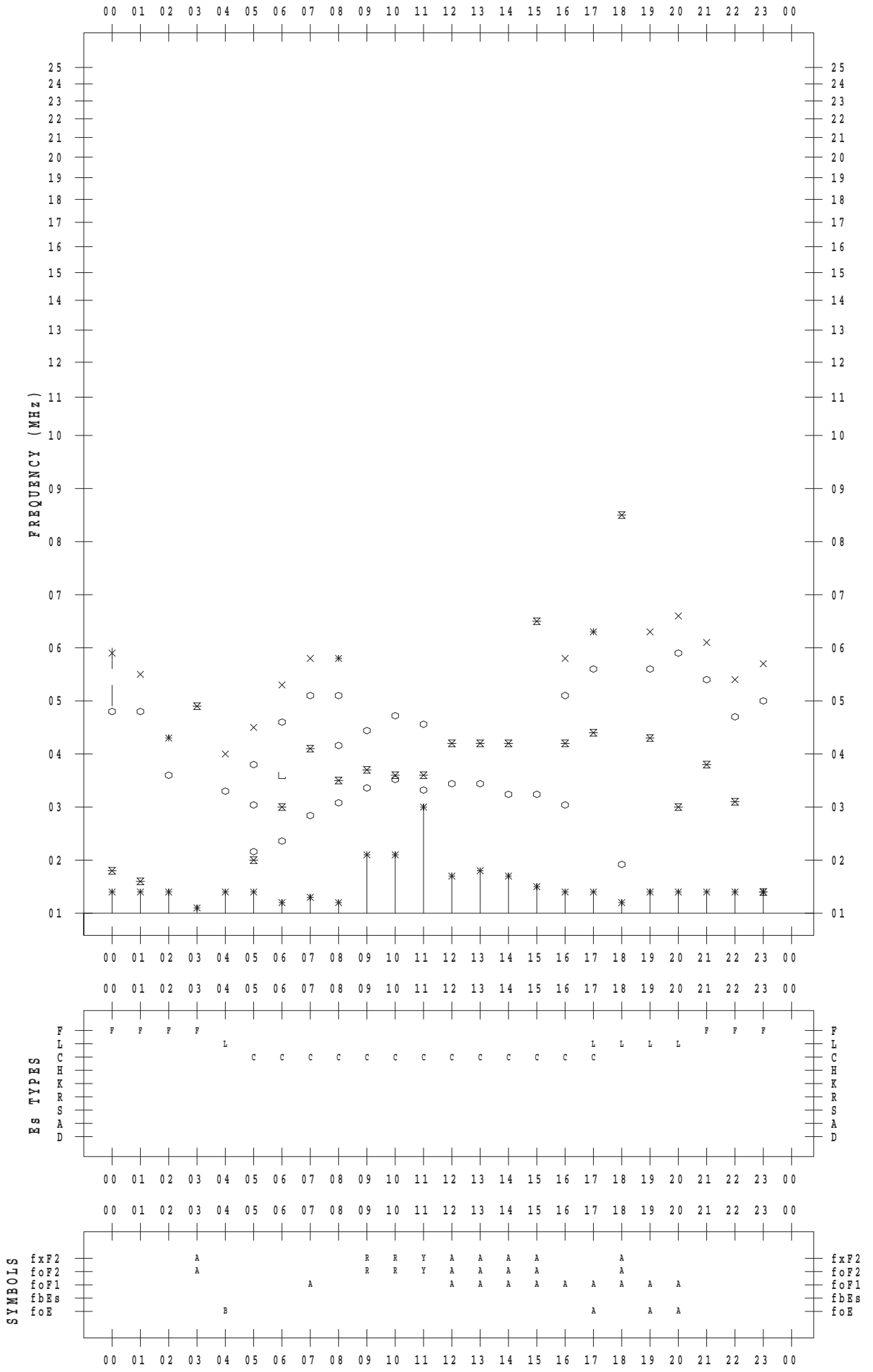
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/ 9

135 °E MEAN TIME



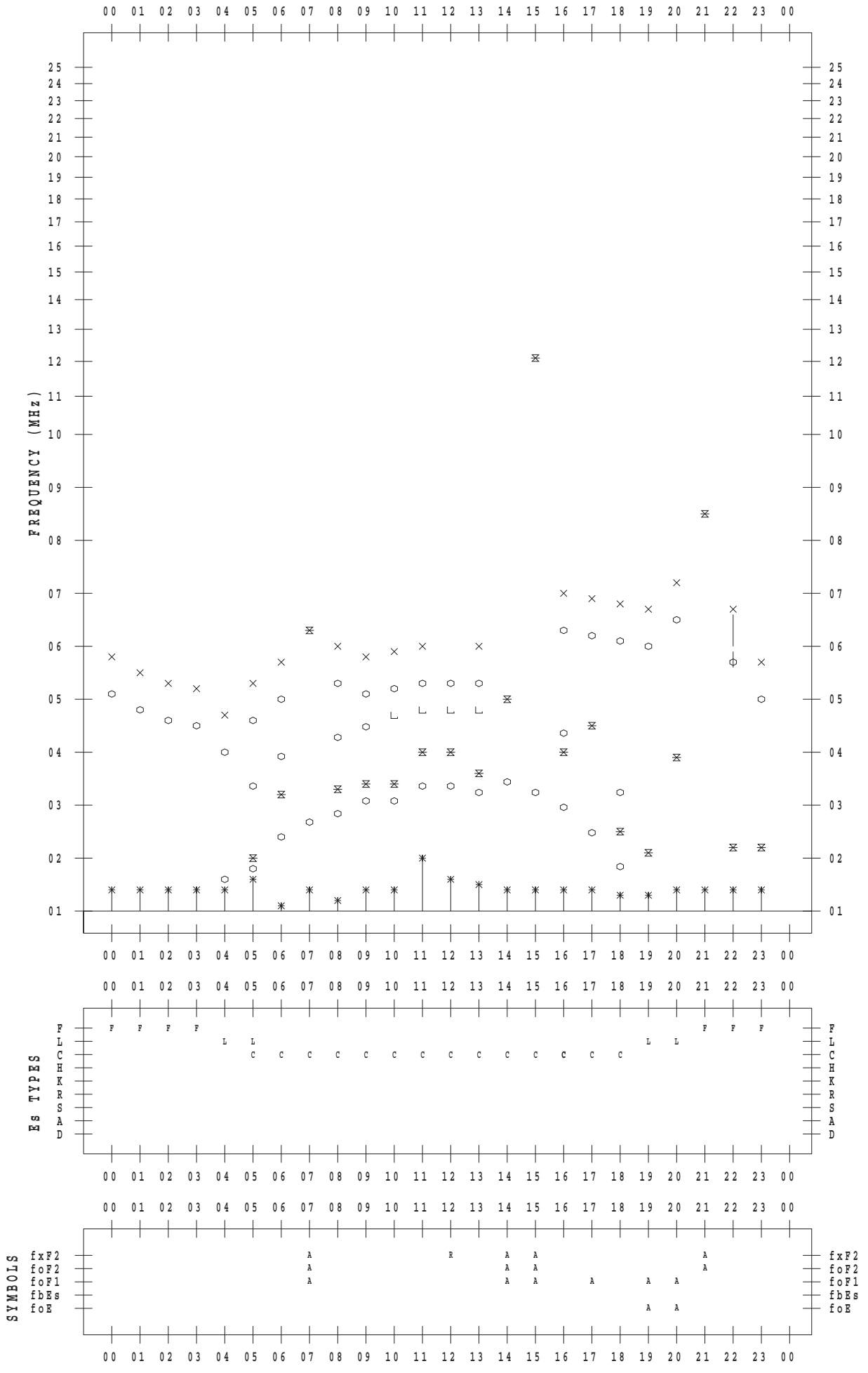
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/10

135 °E MEAN TIME



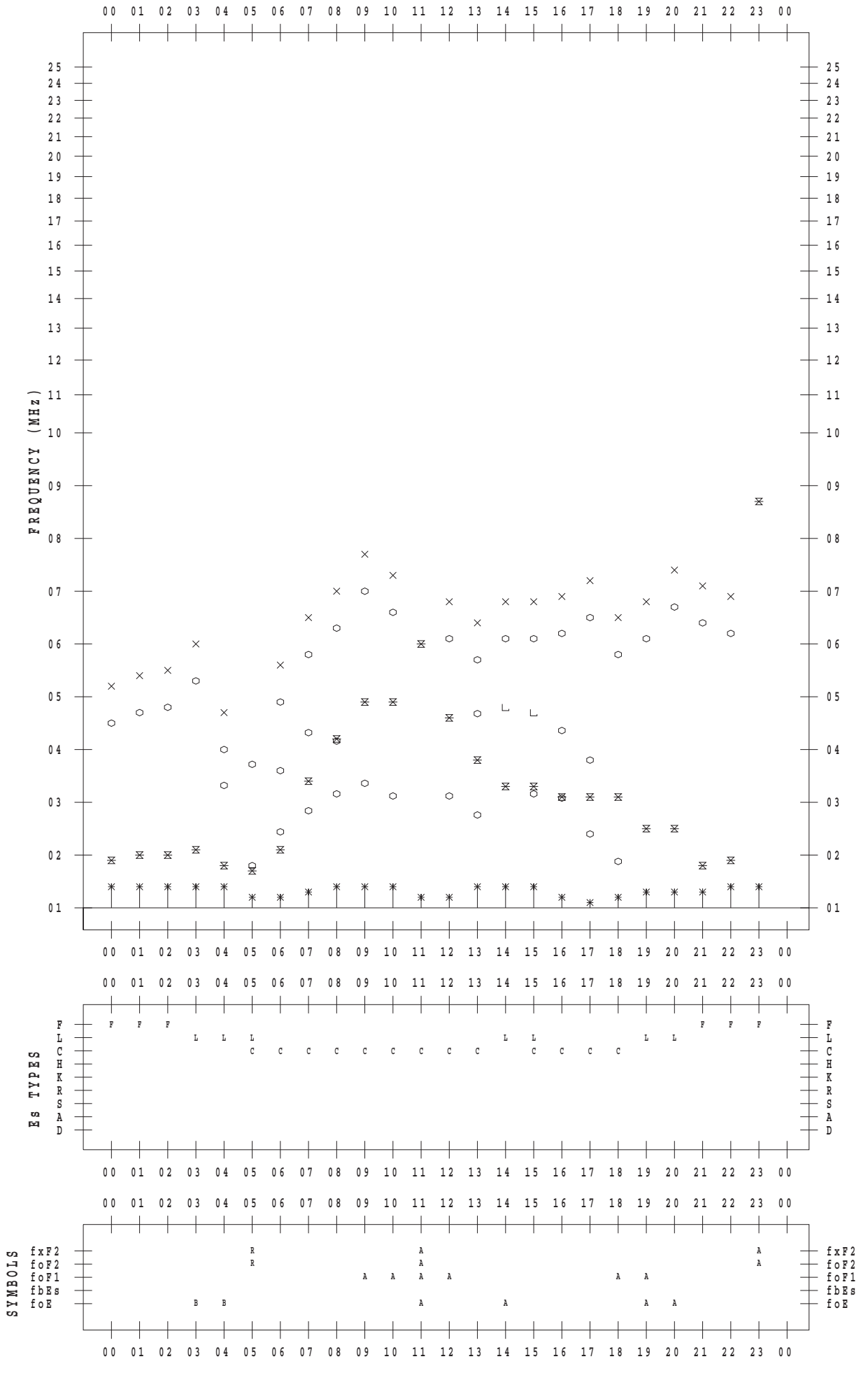
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/11

135 °E MEAN TIME



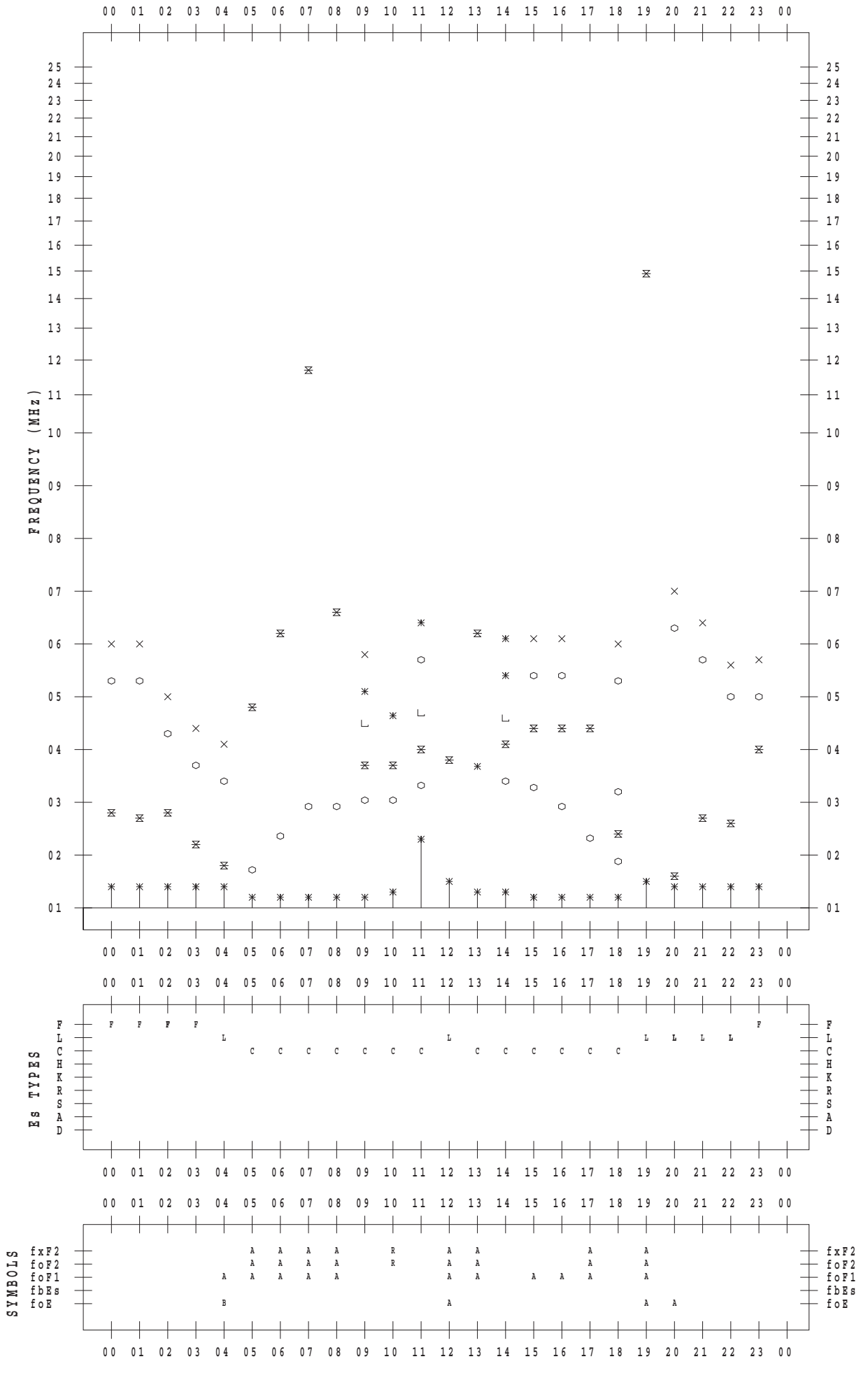
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/12

135 °E MEAN TIME



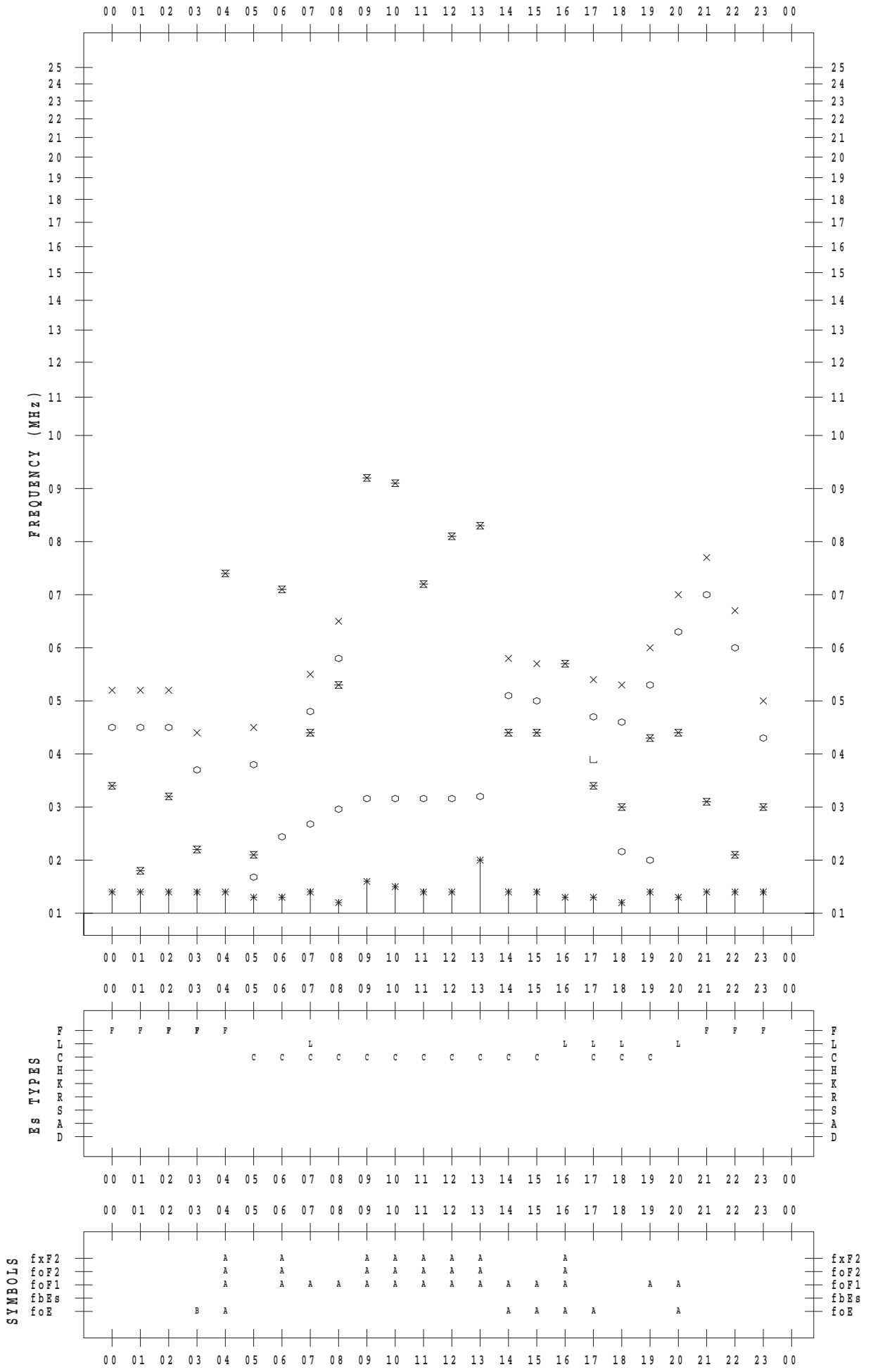
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/13

135 °E MEAN TIME



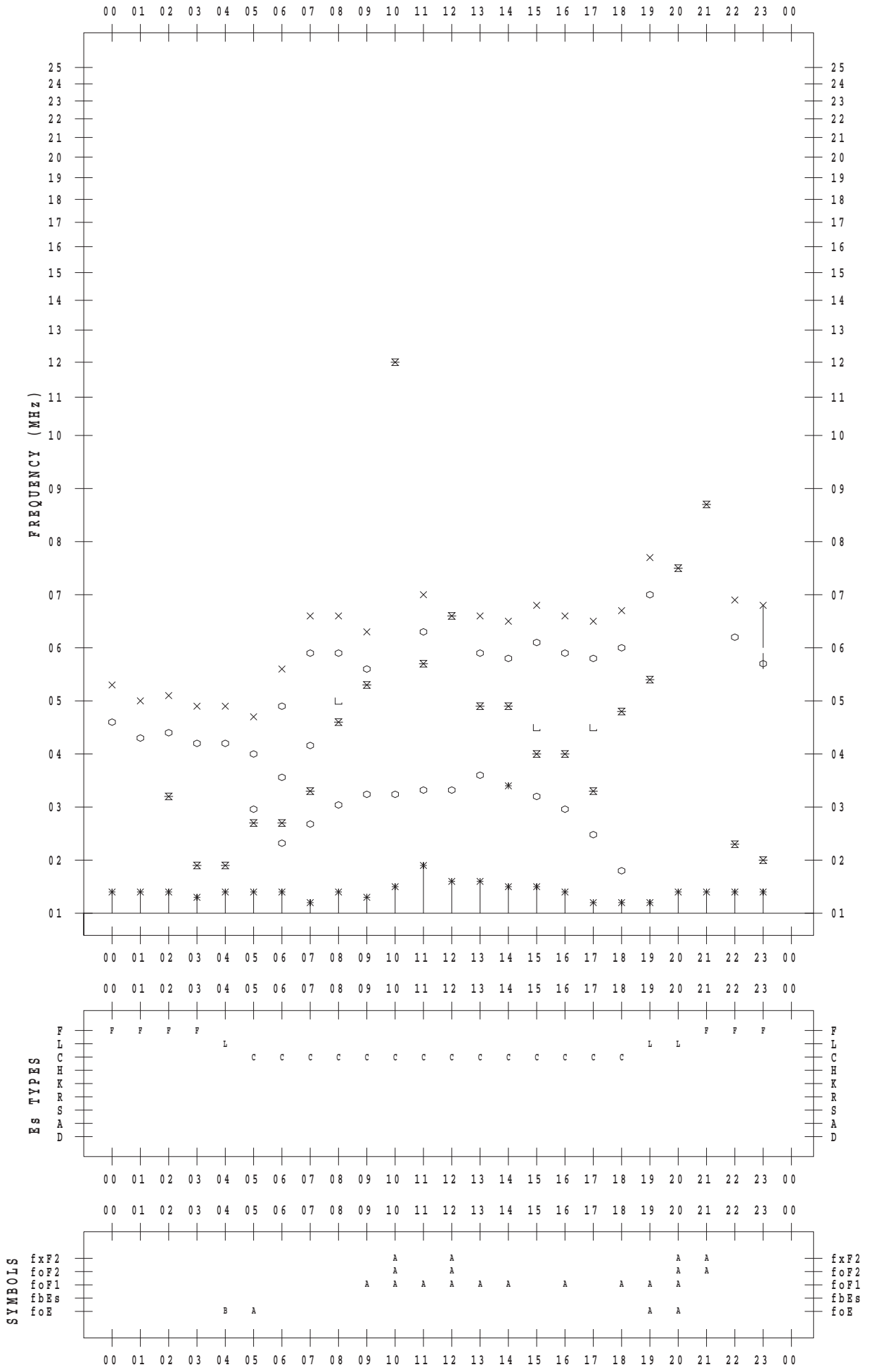
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/14

135 °E MEAN TIME



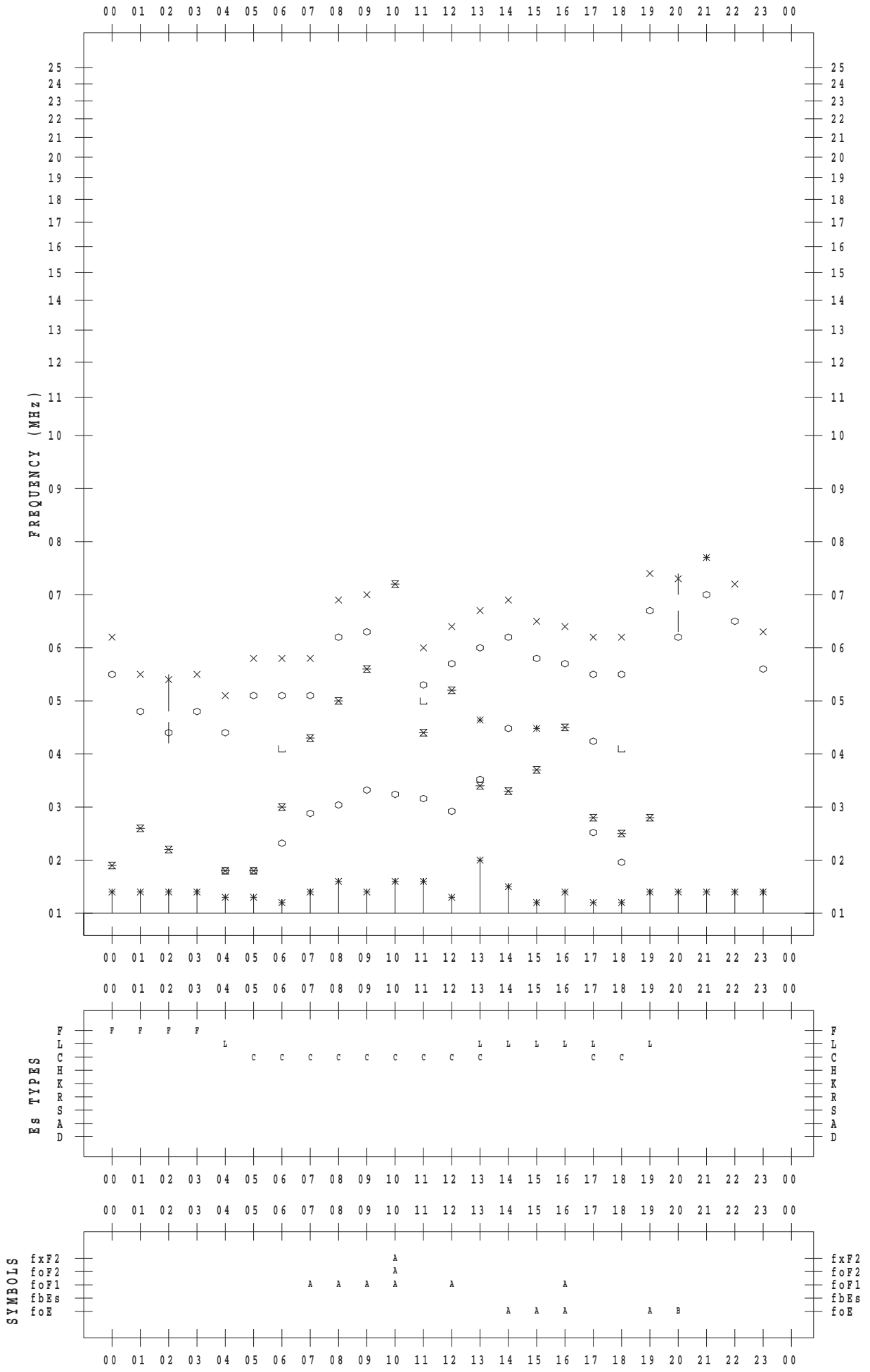
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/15

135 °E MEAN TIME



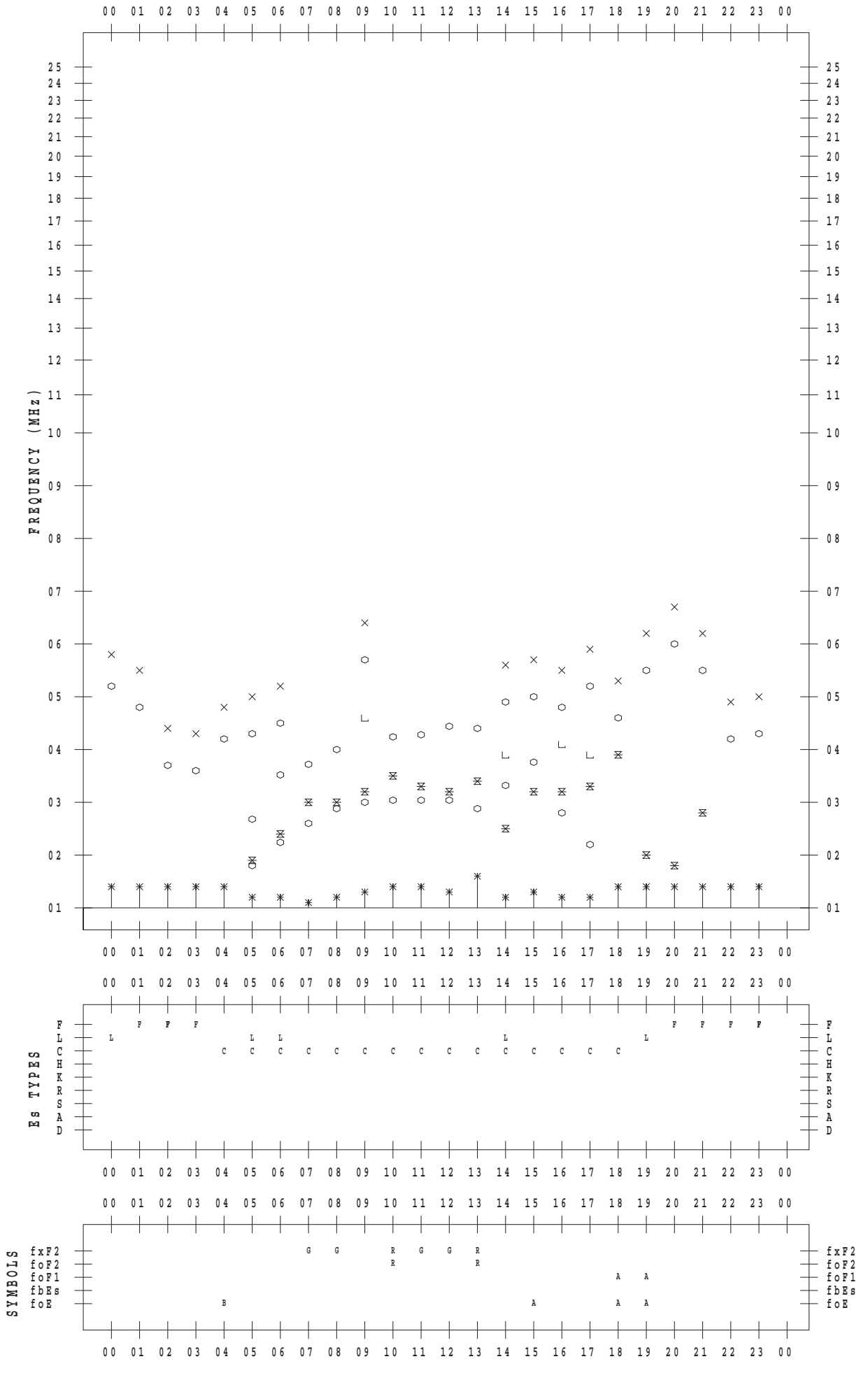
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/16

135 °E MEAN TIME



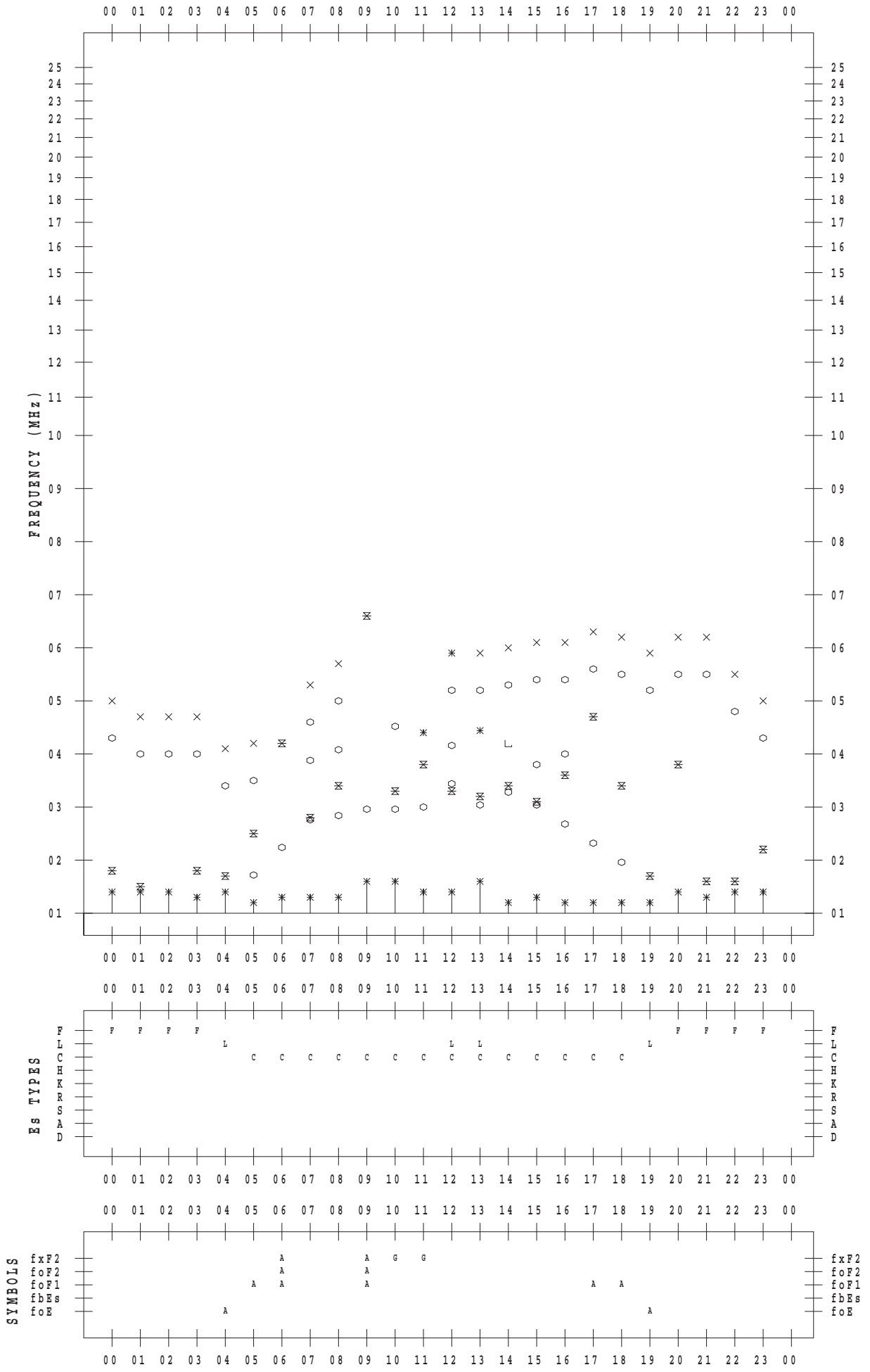
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/17

135 °E MEAN TIME



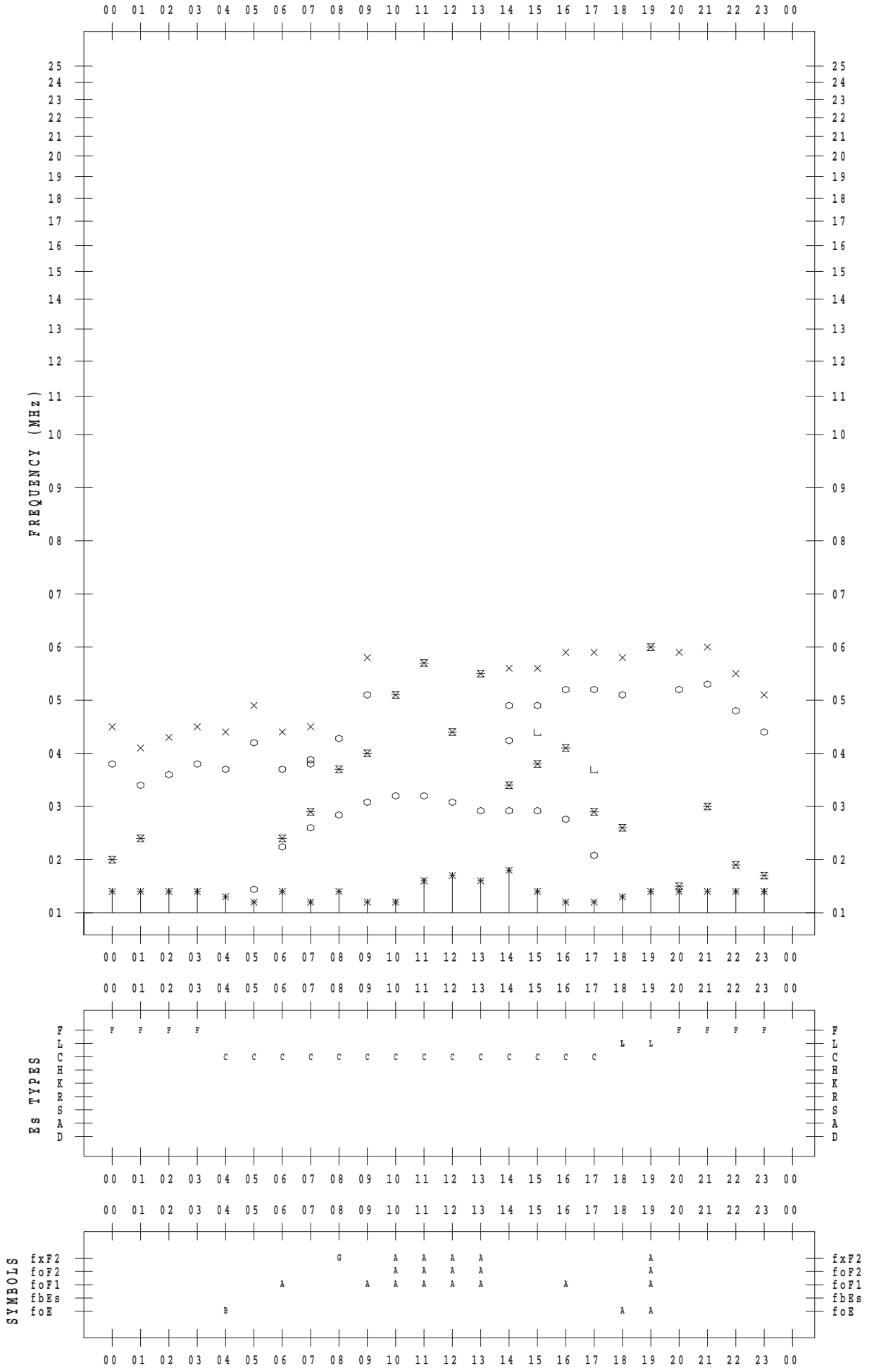
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/18

135 °E MEAN TIME



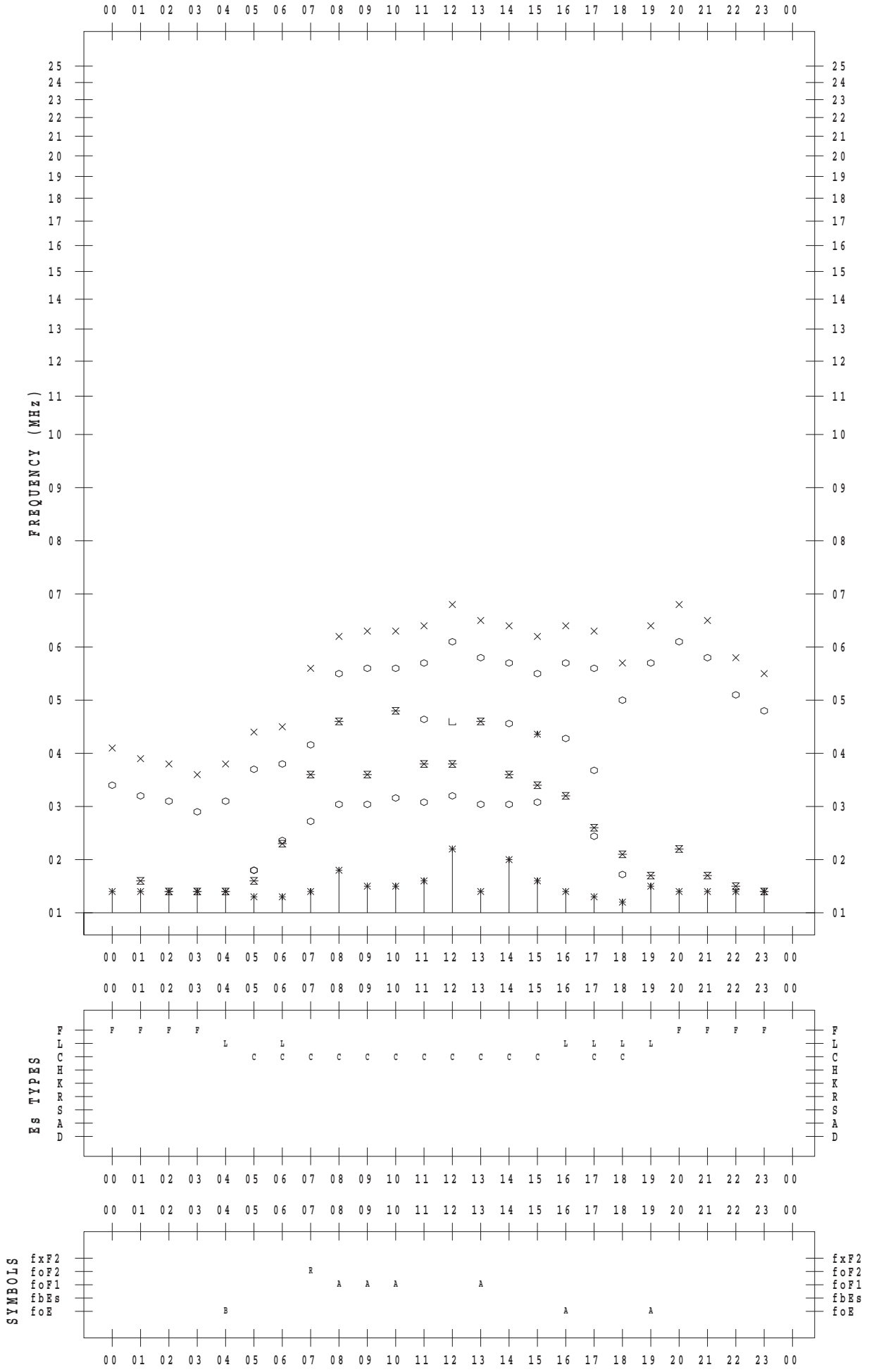
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/19

135 °E MEAN TIME



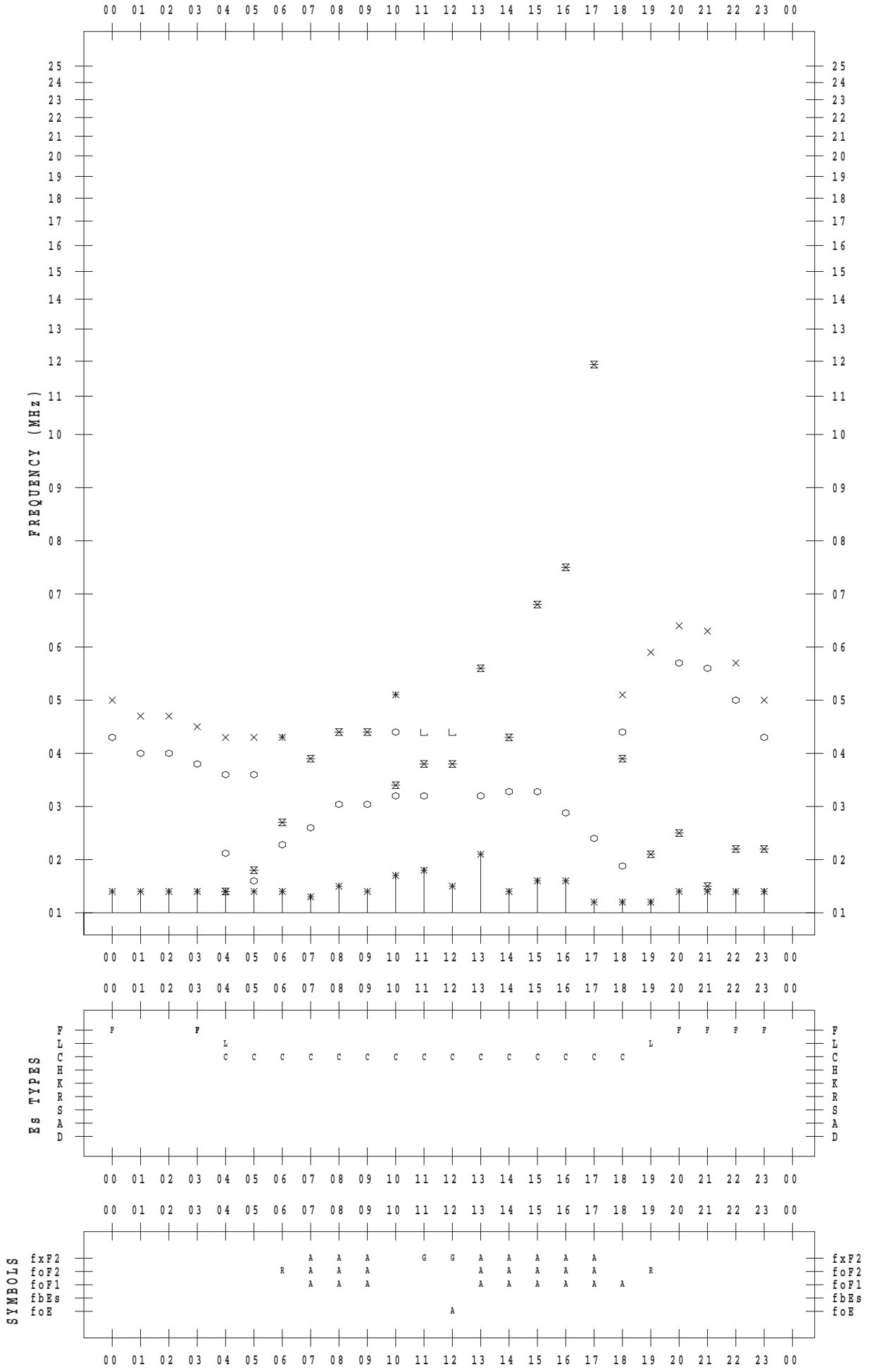
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/20

135 °E MEAN TIME



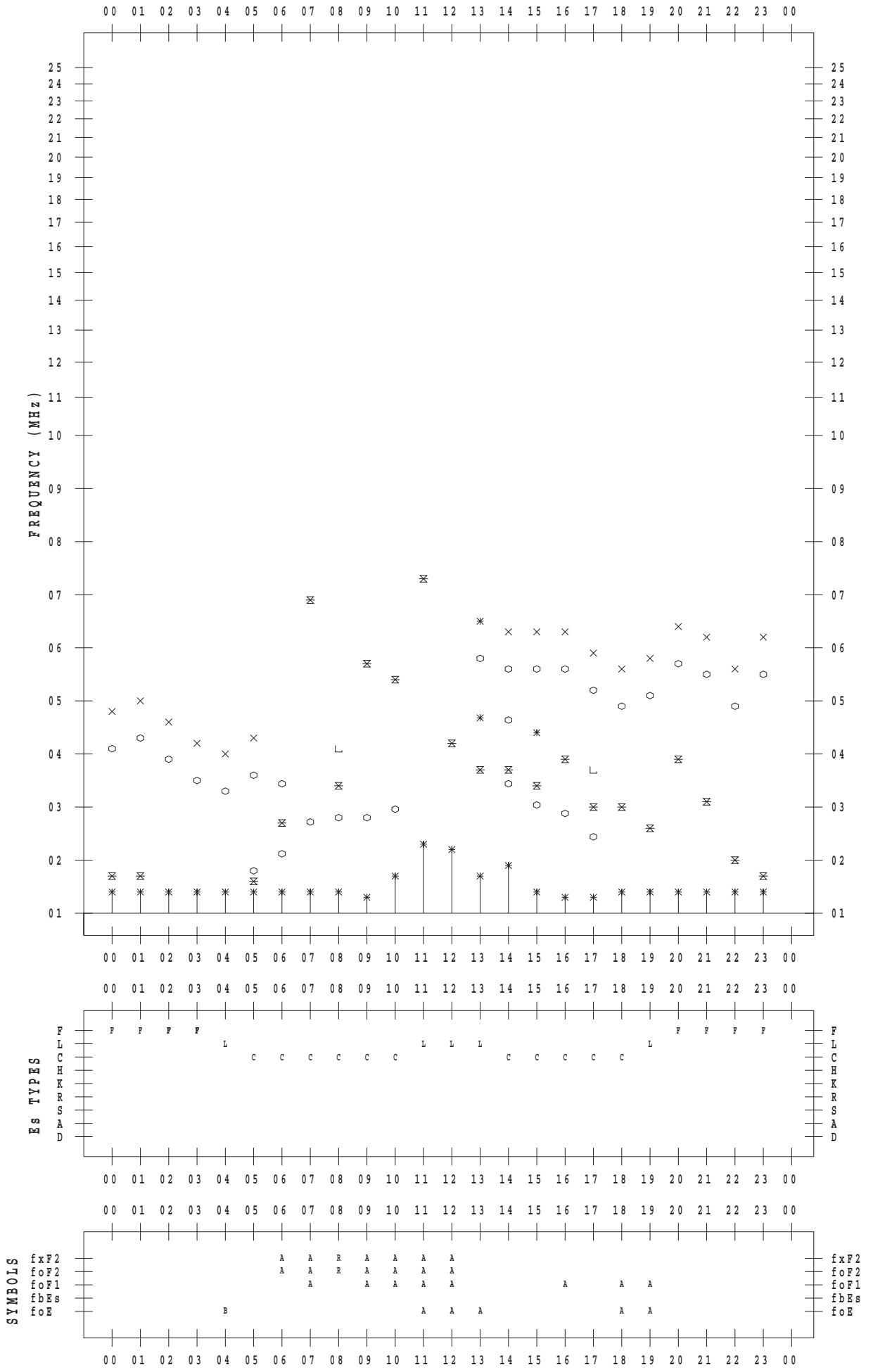
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/21

135 °E MEAN TIME



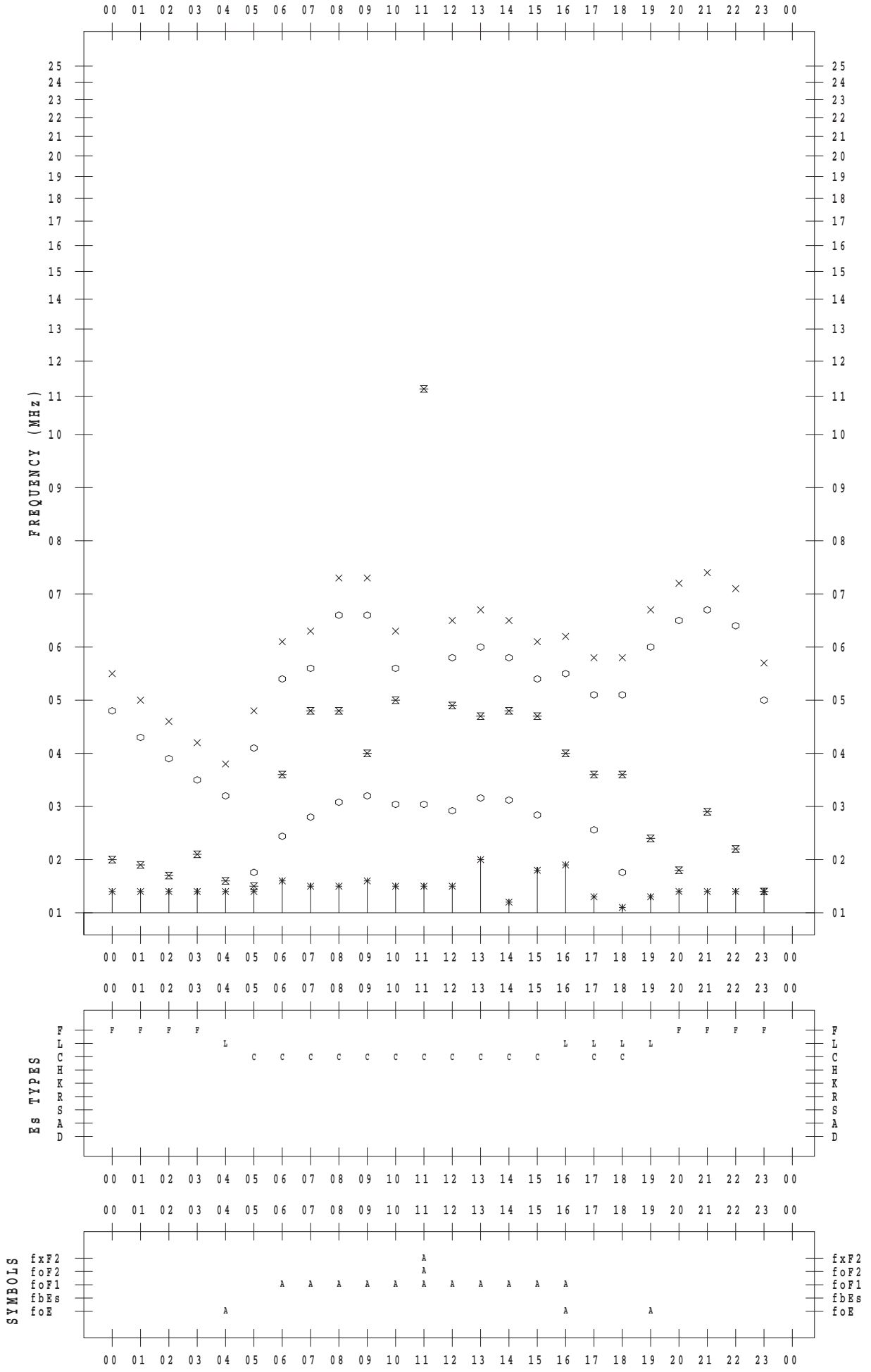
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/22

135 °E MEAN TIME



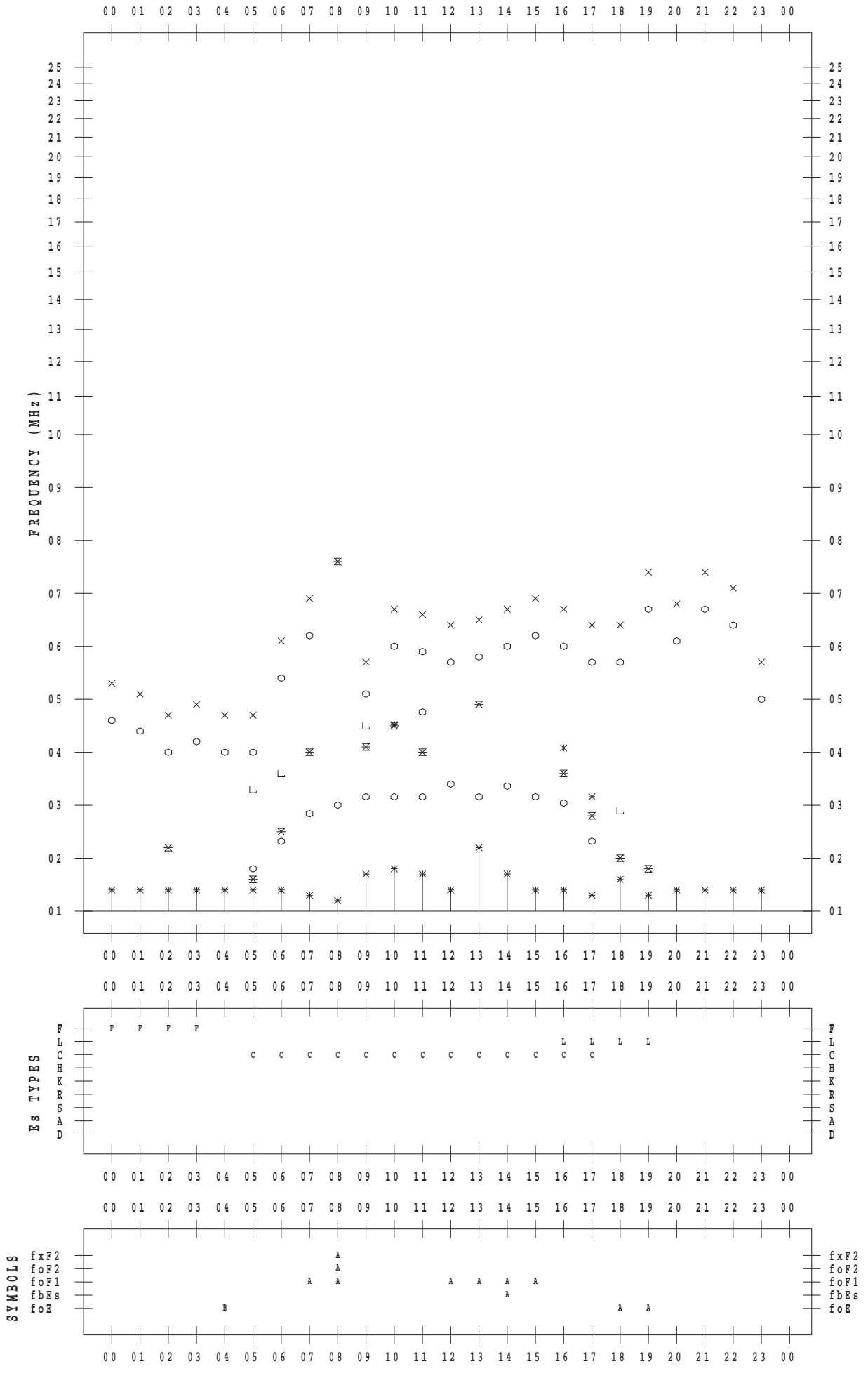
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/23

135 °E MEAN TIME



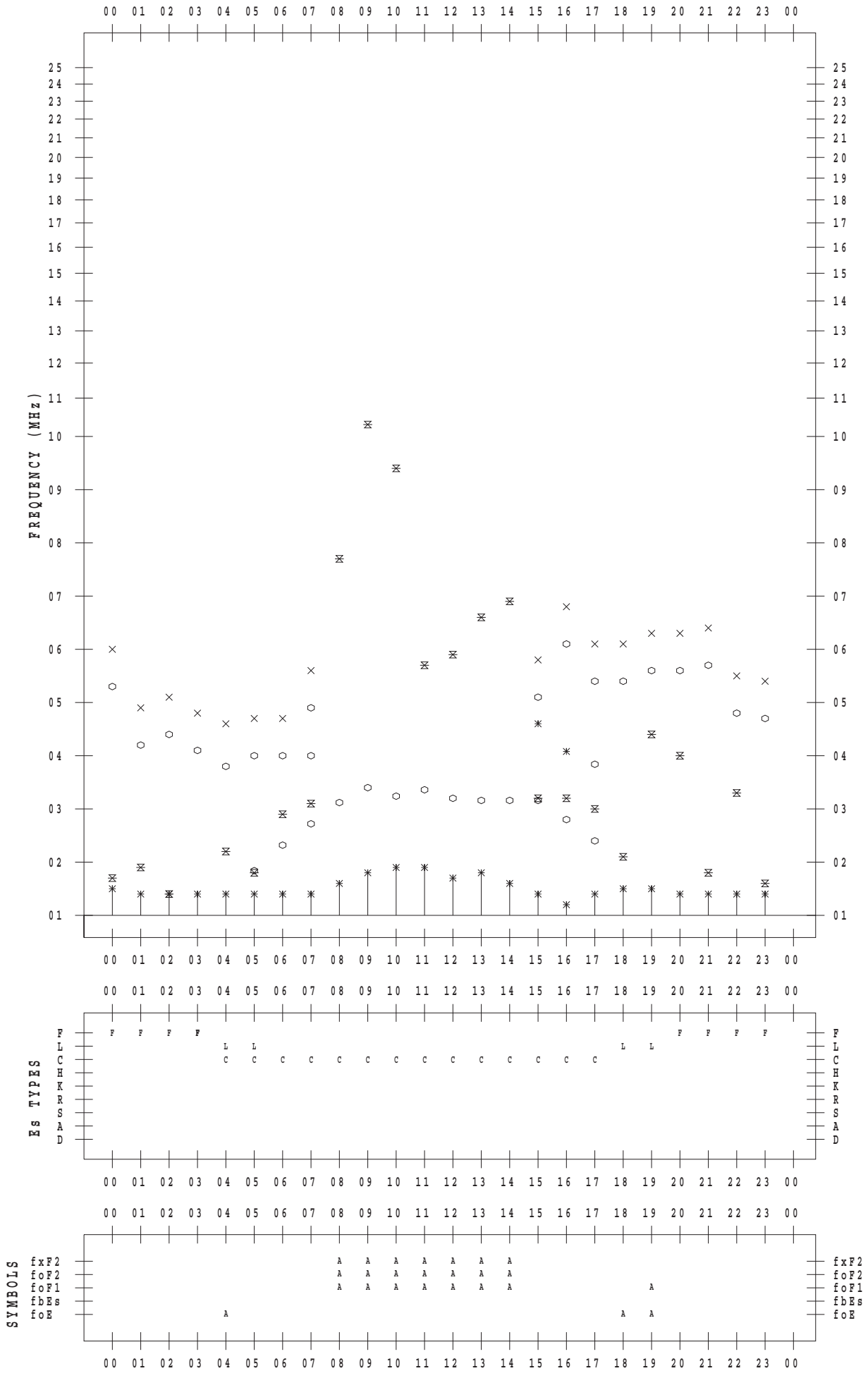
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/24

135 °E MEAN TIME



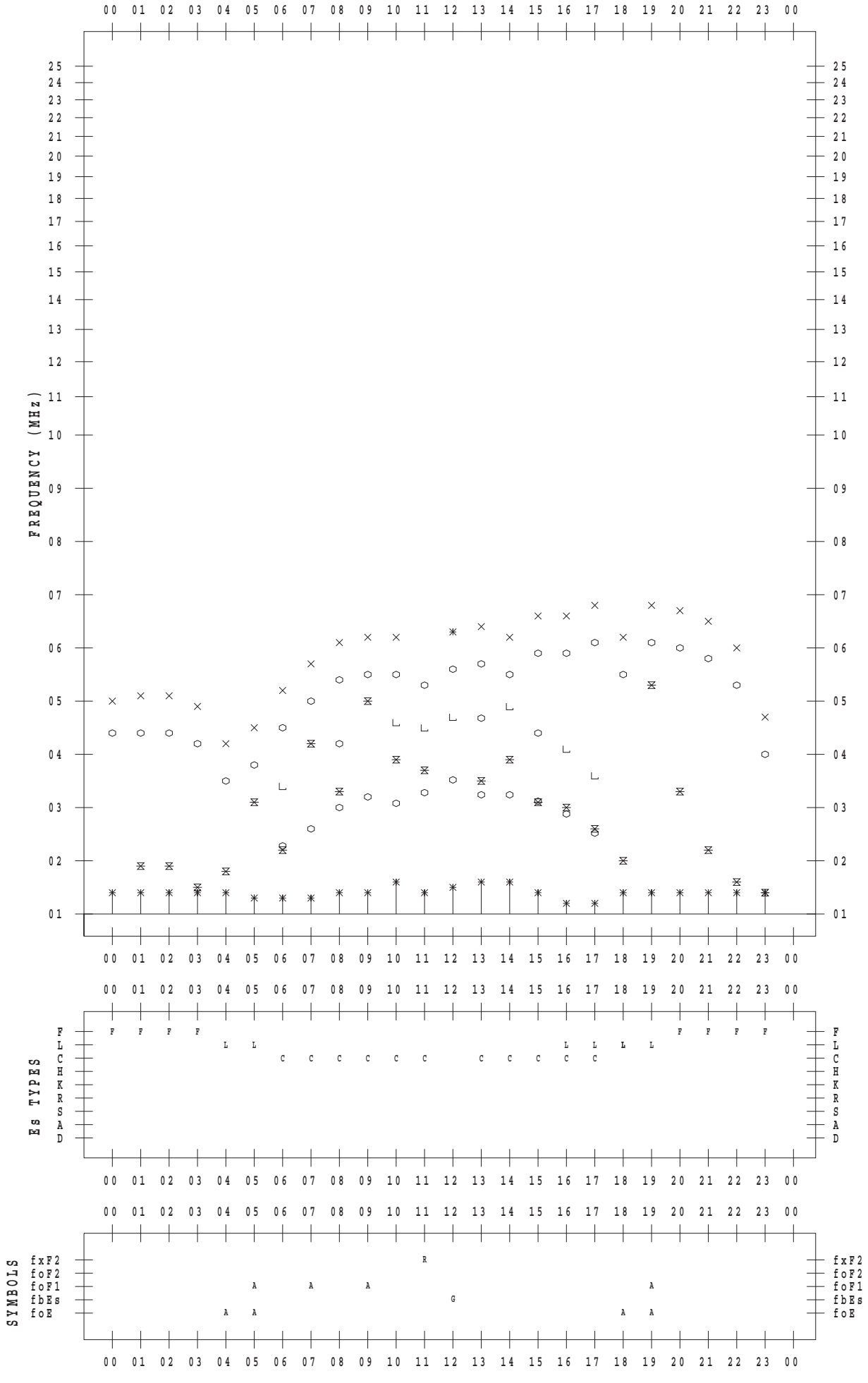
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/25

135 °E MEAN TIME



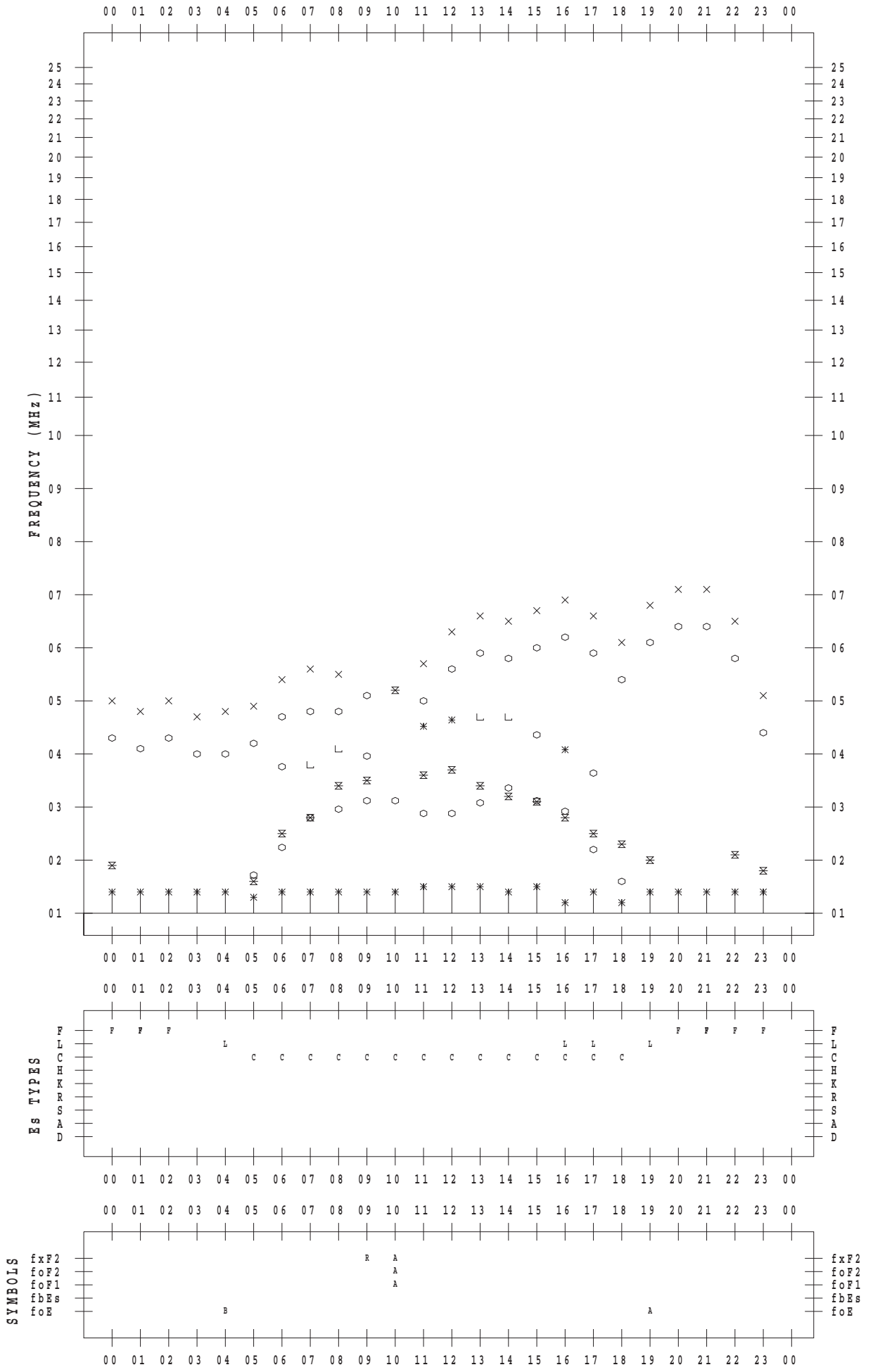
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/26

135 °E MEAN TIME



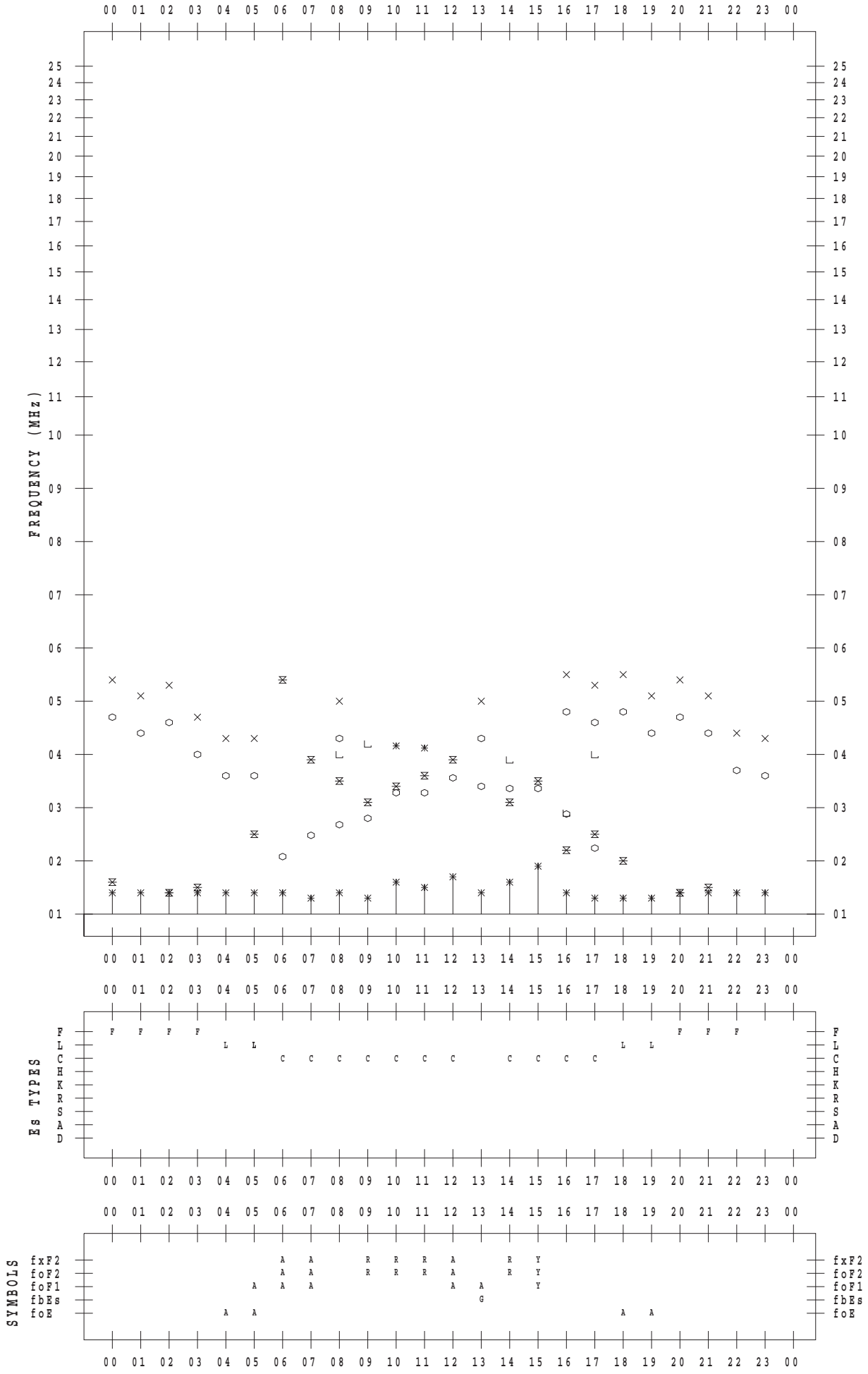
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/27

135 °E MEAN TIME



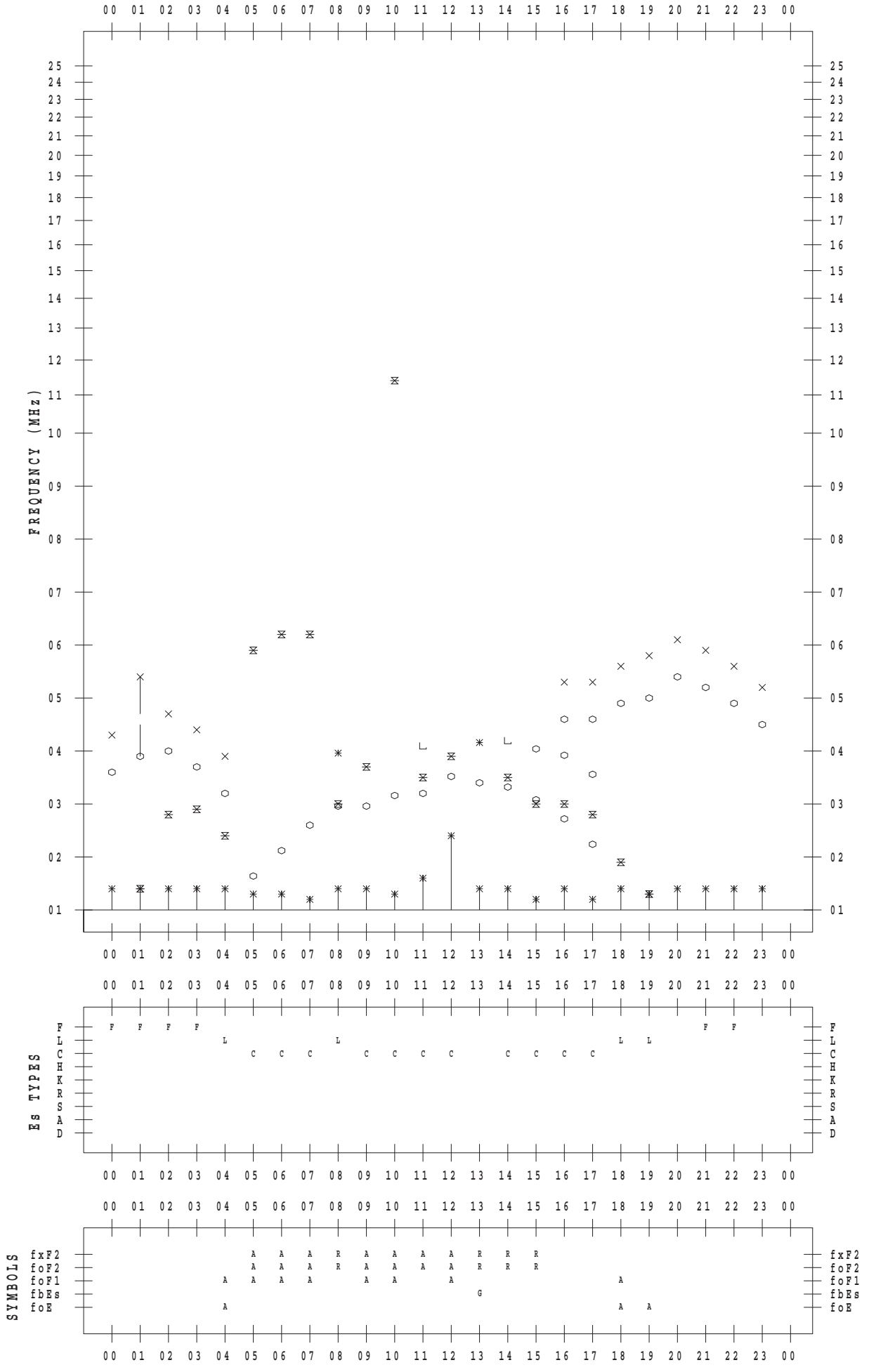
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/28

135 °E MEAN TIME



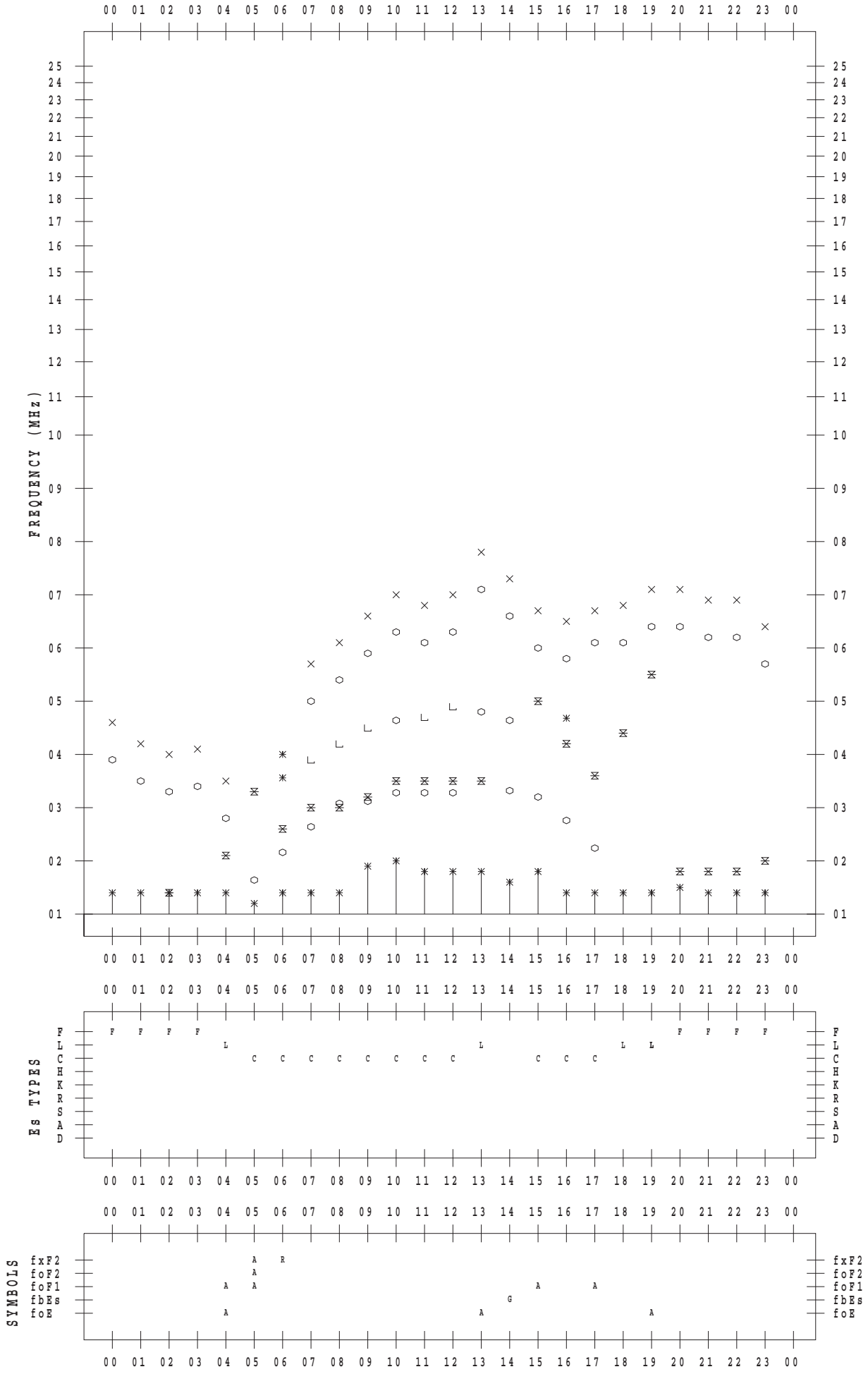
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/29

135 °E MEAN TIME



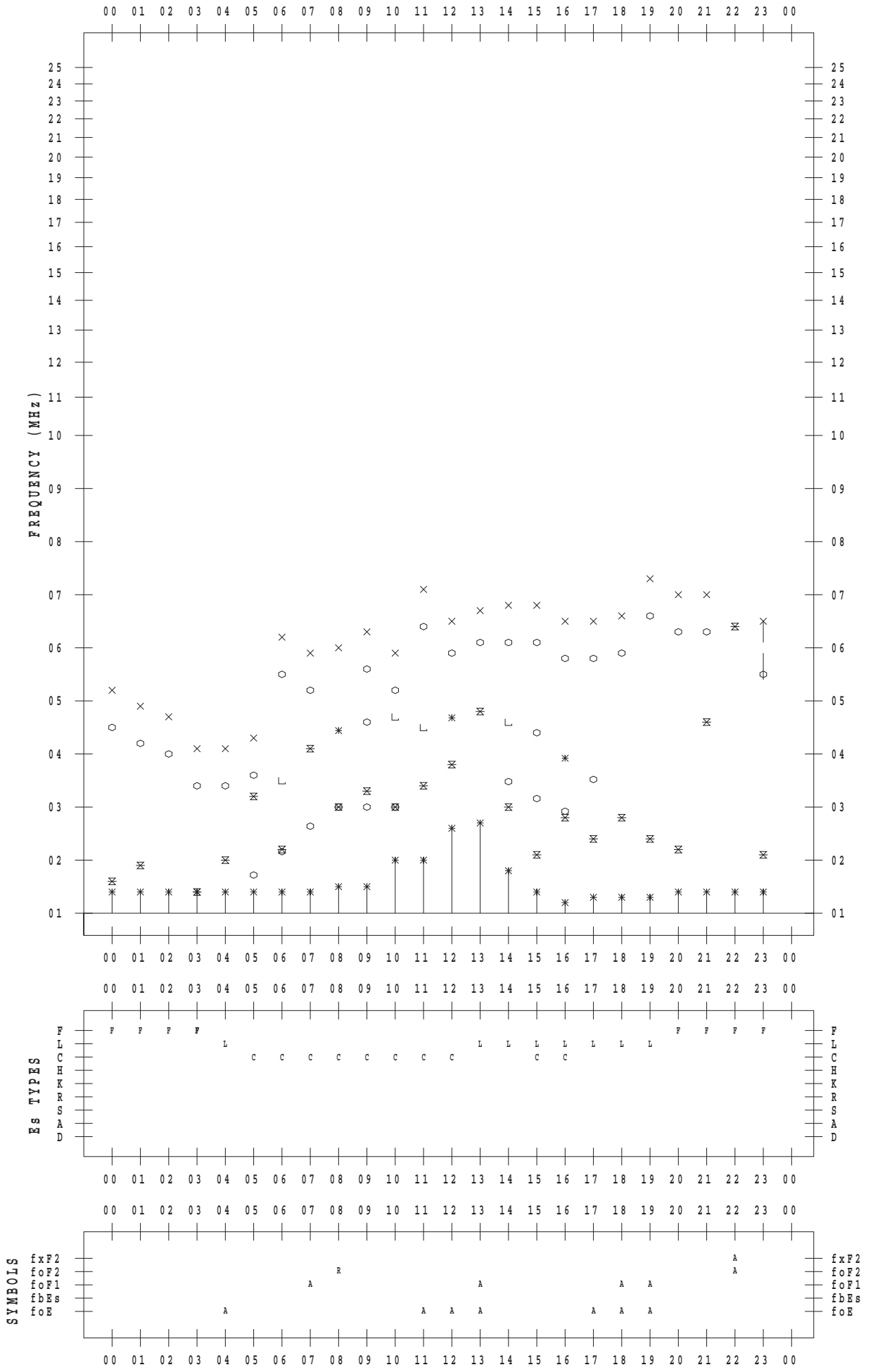
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/30

135 °E MEAN TIME



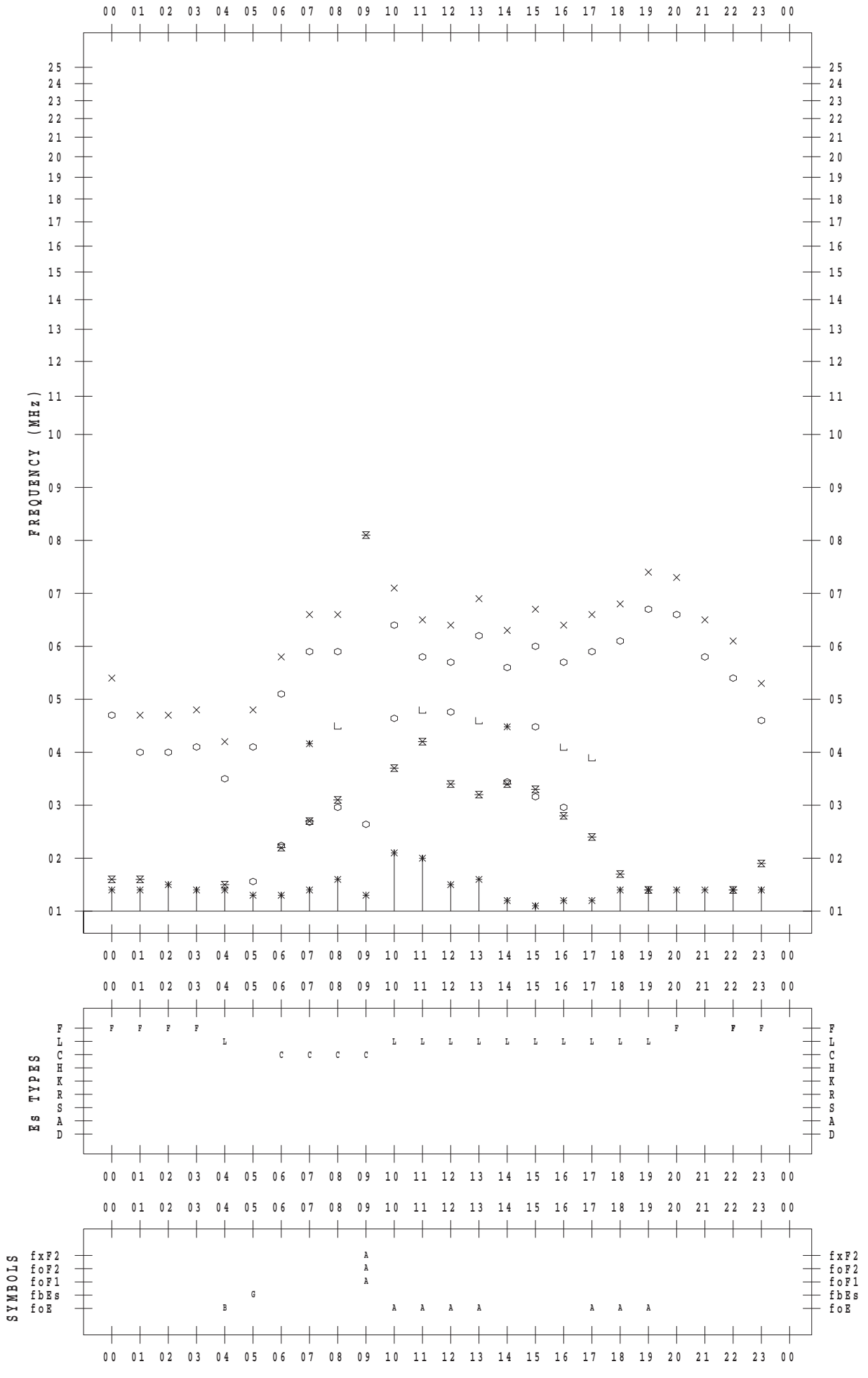
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2015/ 8/31

135 °E MEAN TIME



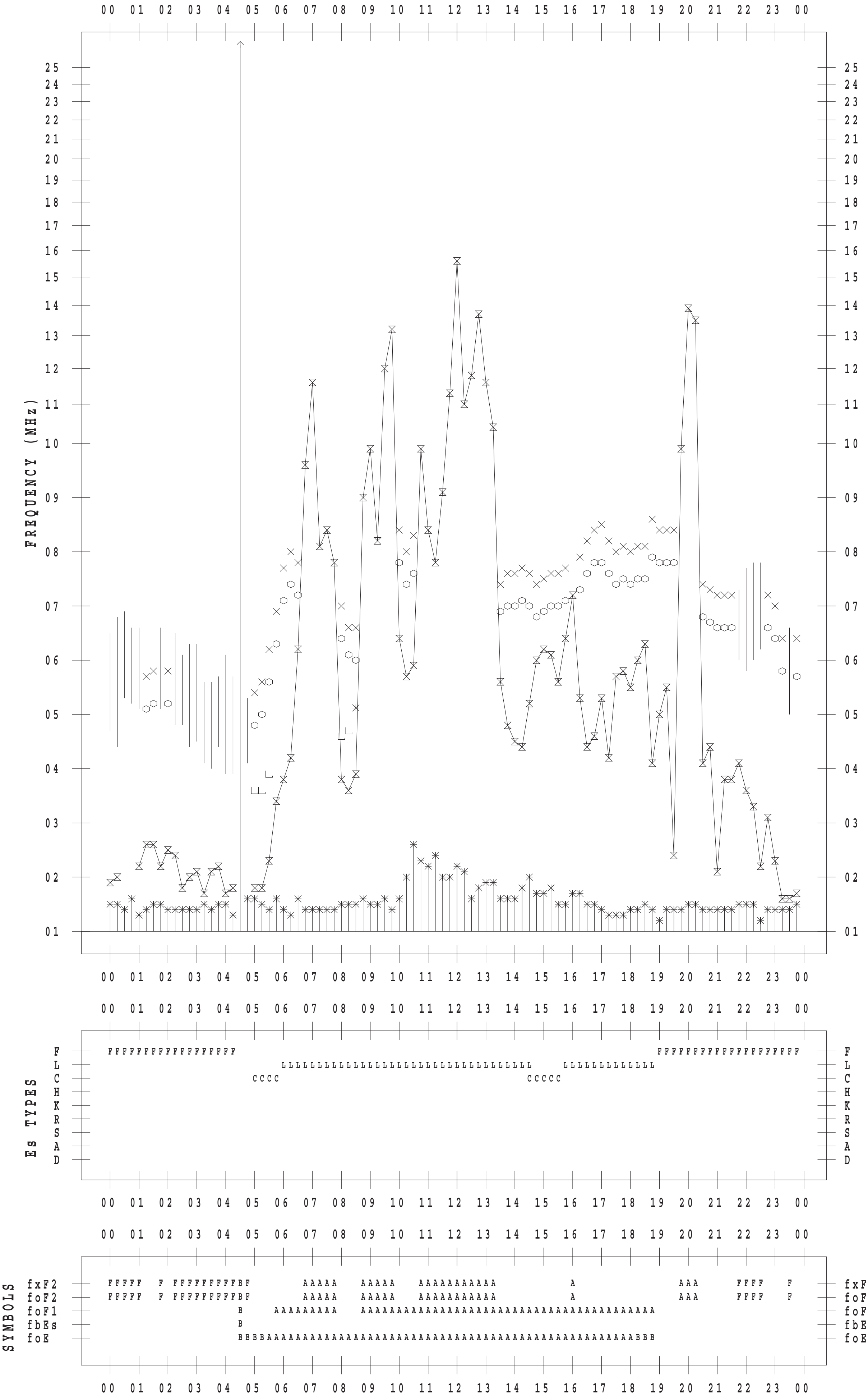
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 1

135 °E MEAN TIME



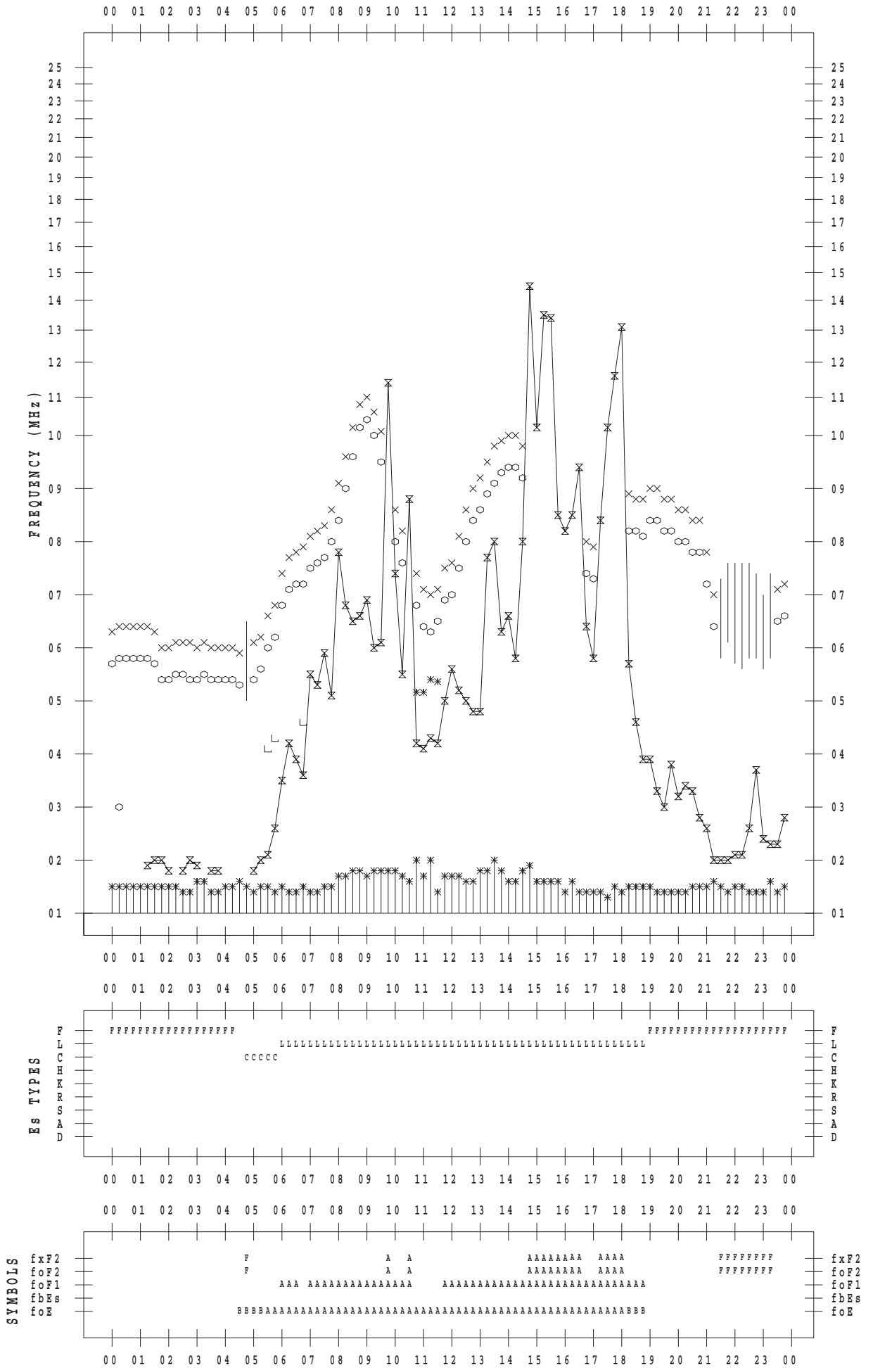
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 2

135 °E MEAN TIME



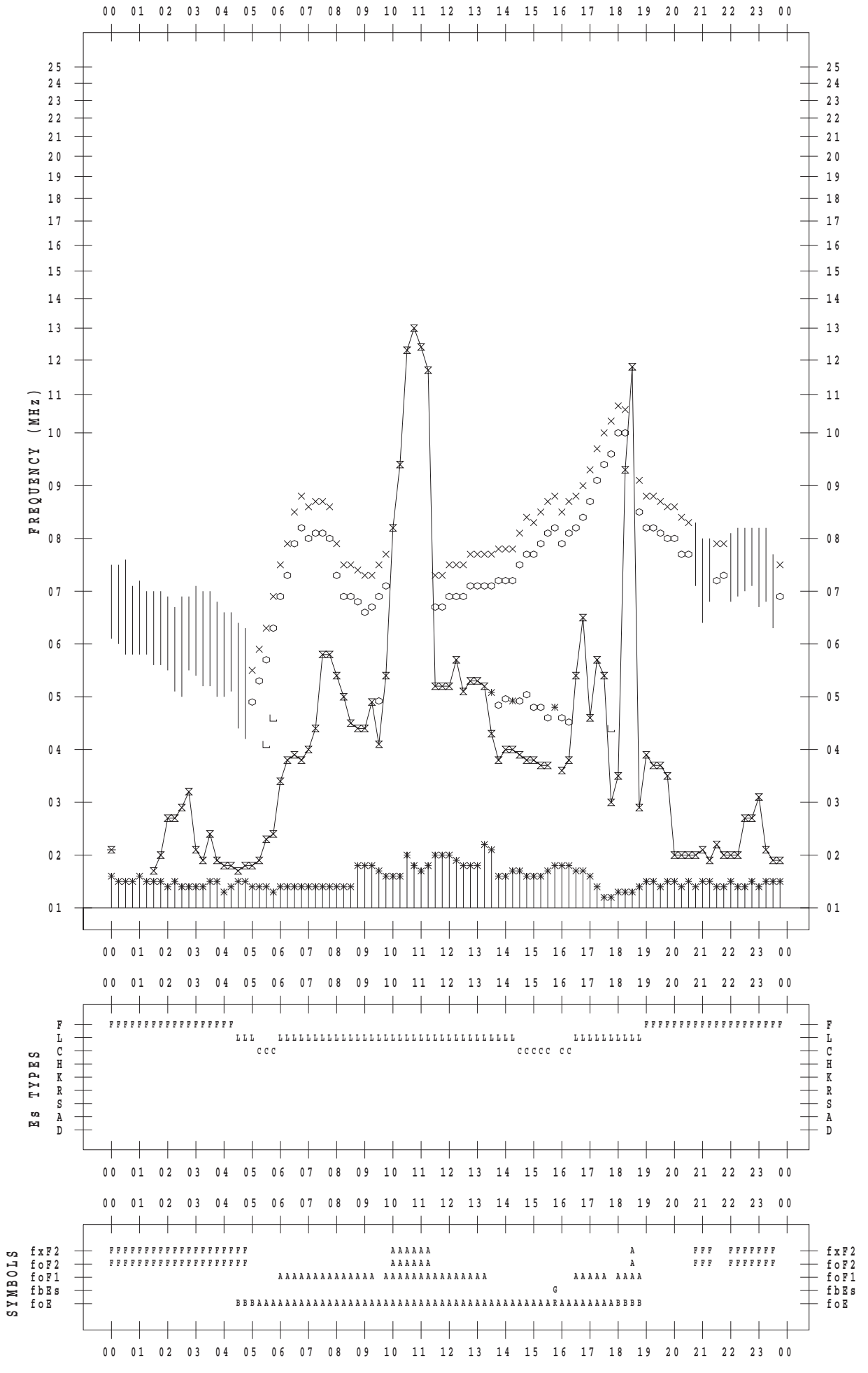
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 3

135 °E MEAN TIME



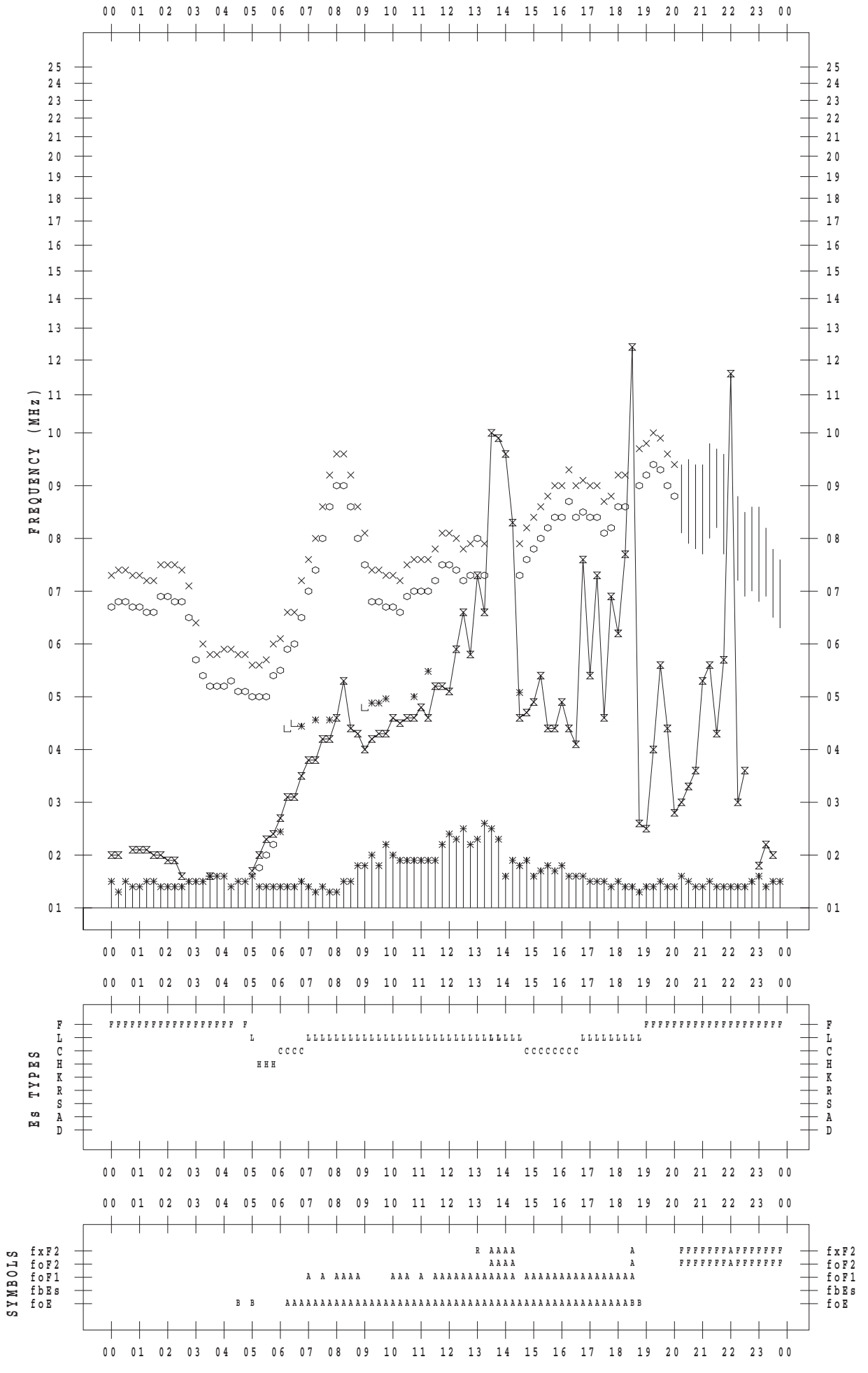
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 4

135 °E MEAN TIME



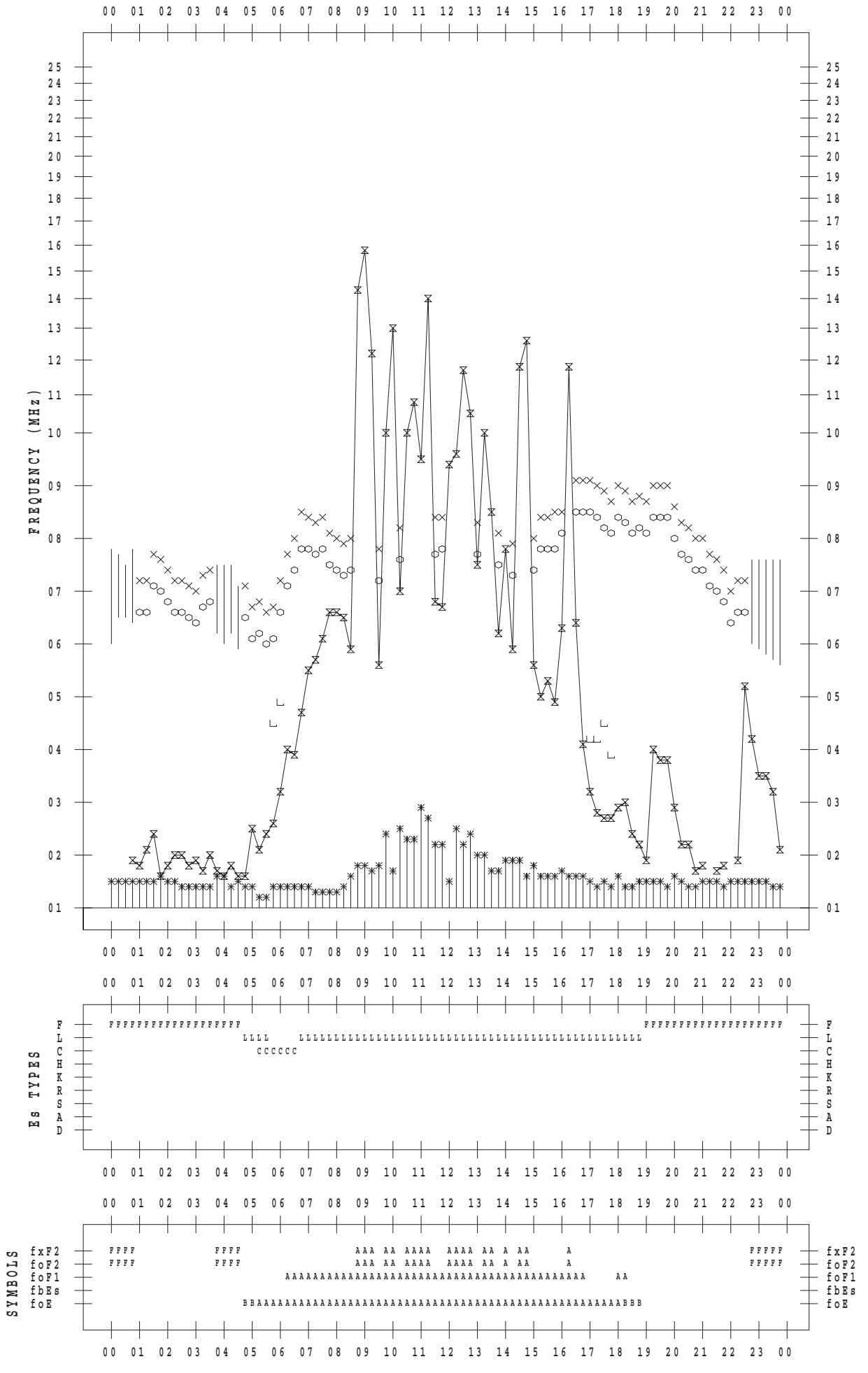
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 5

135 °E MEAN TIME



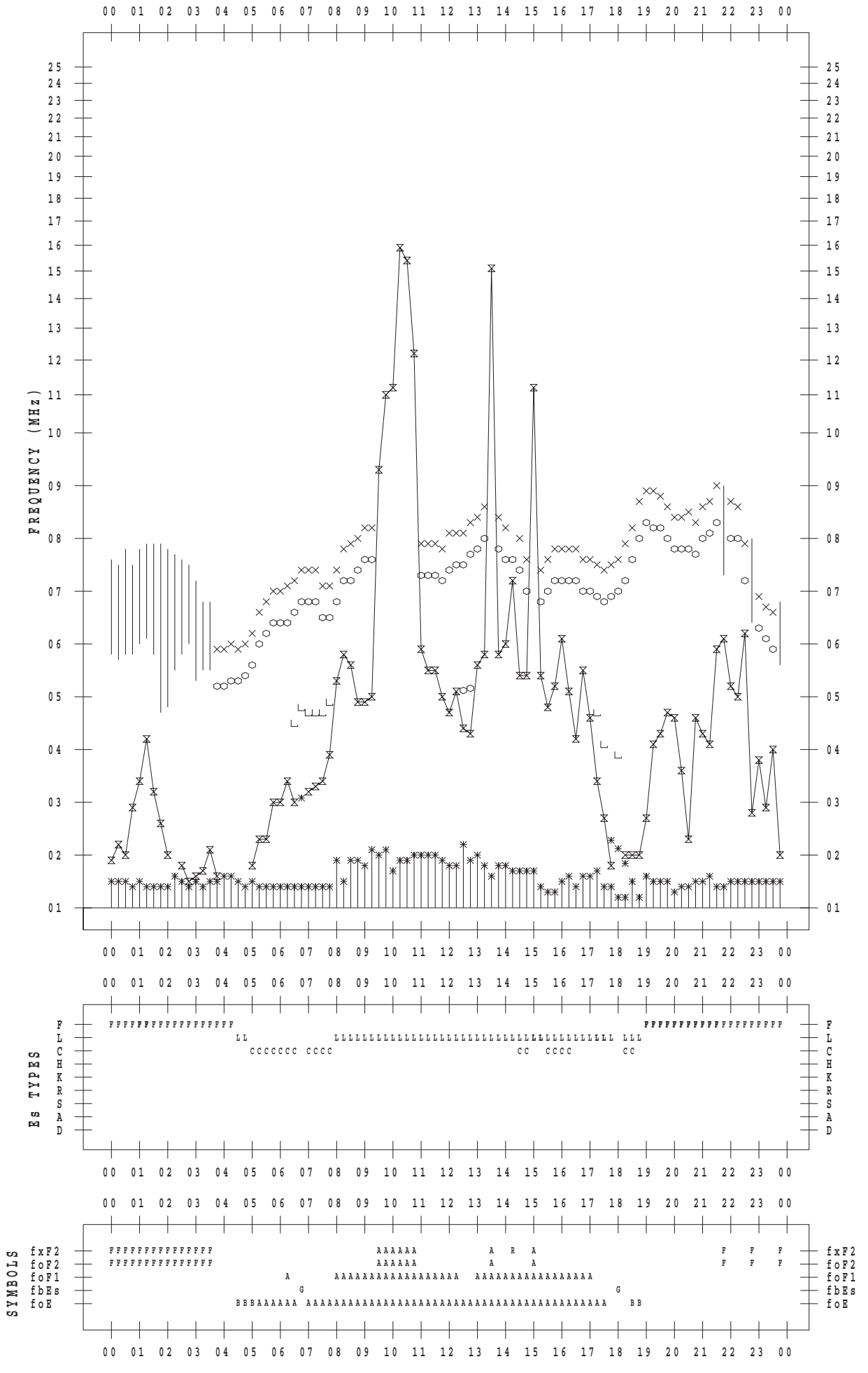
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 6

135 °E MEAN TIME



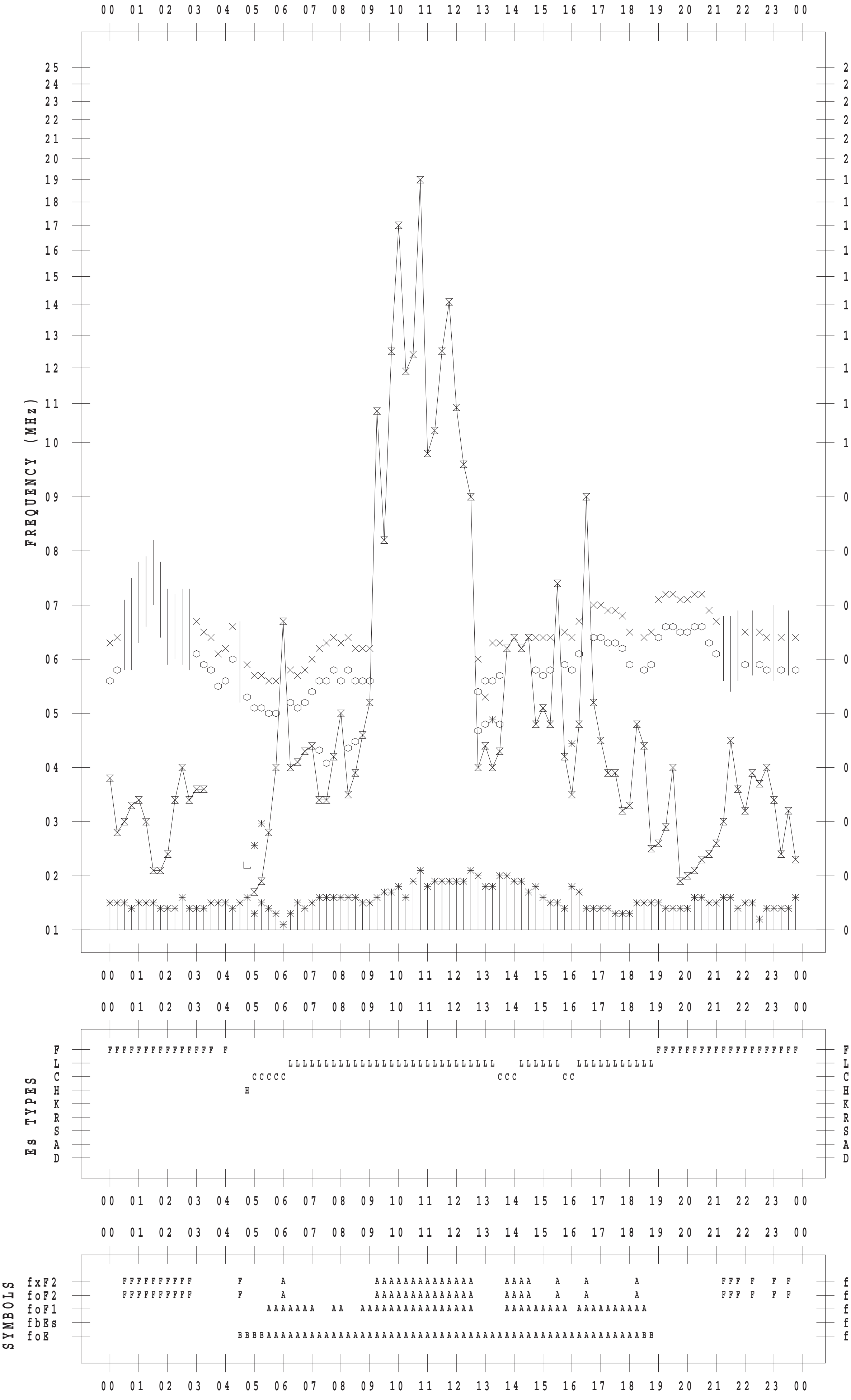
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 7

135 °E MEAN TIME



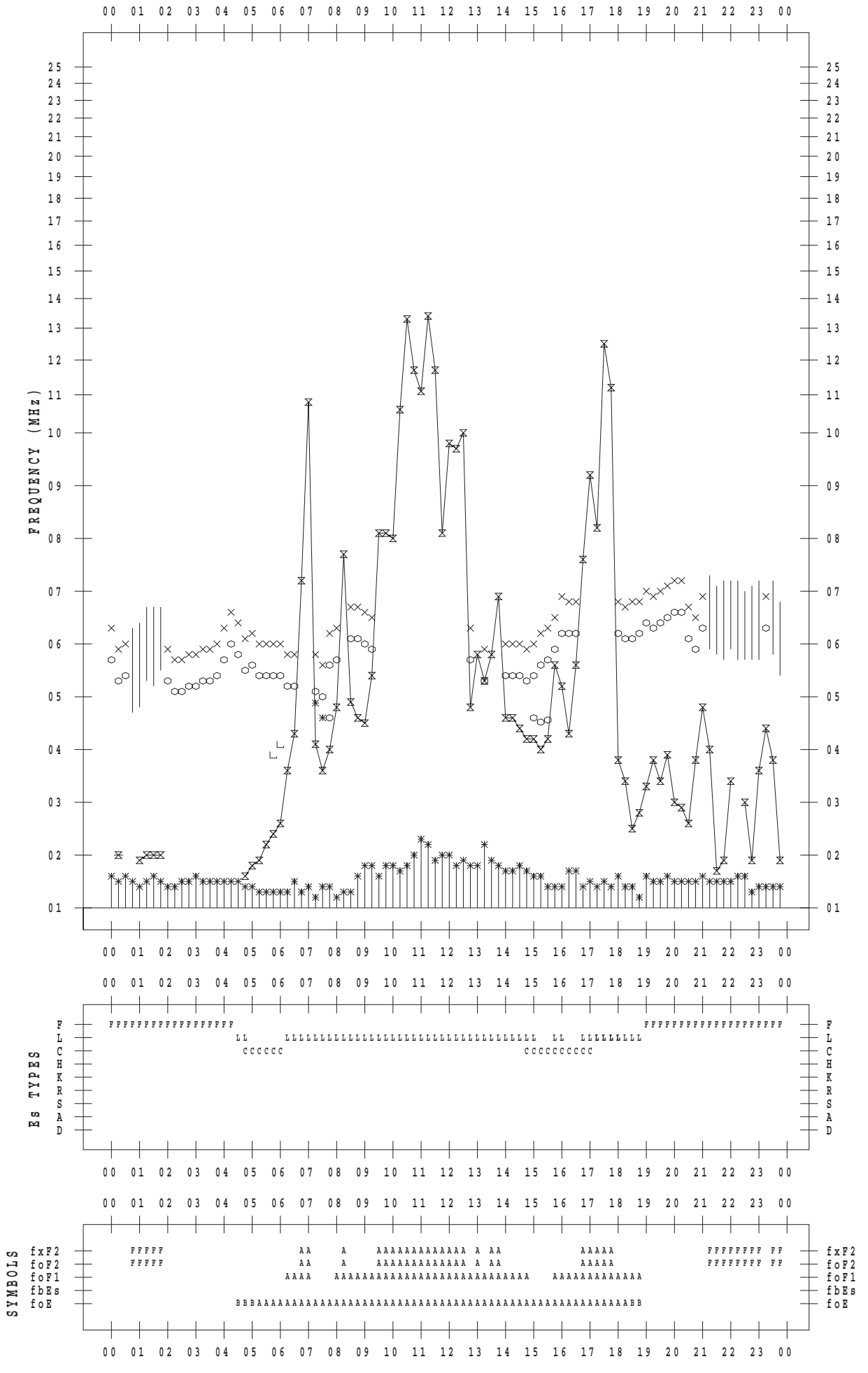
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 8

135 °E MEAN TIME



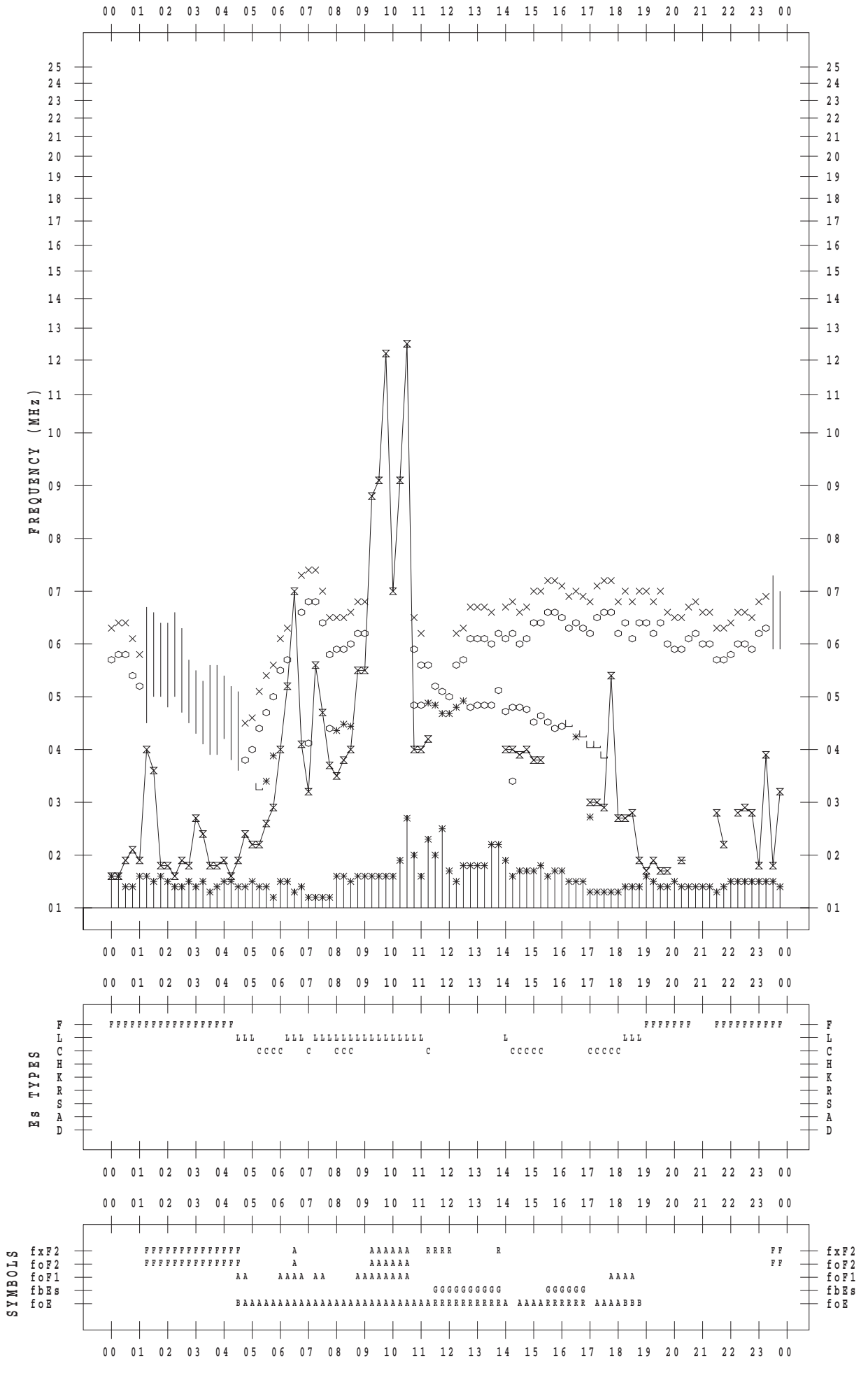
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/ 9

135 °E MEAN TIME



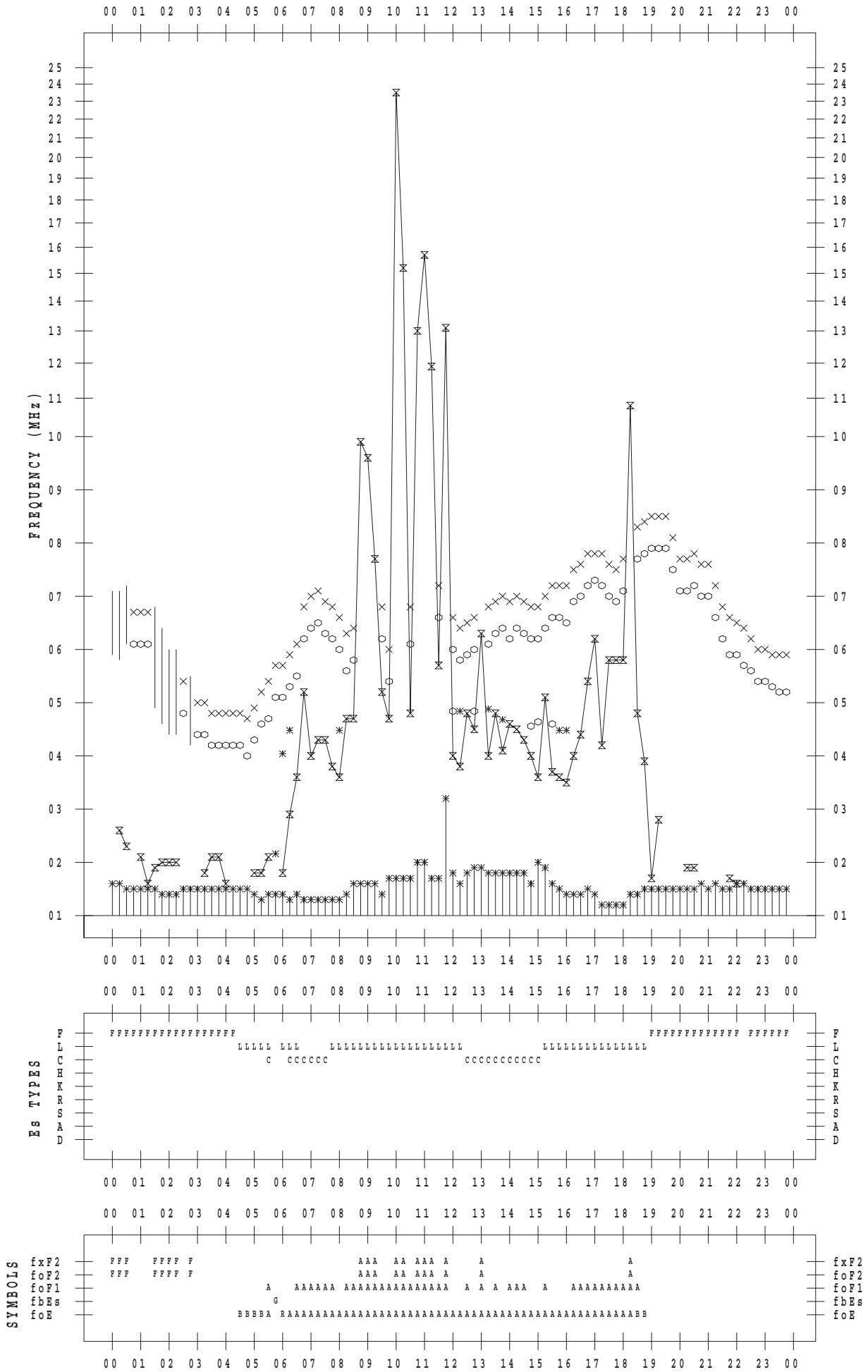
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/10

135 °E MEAN TIME



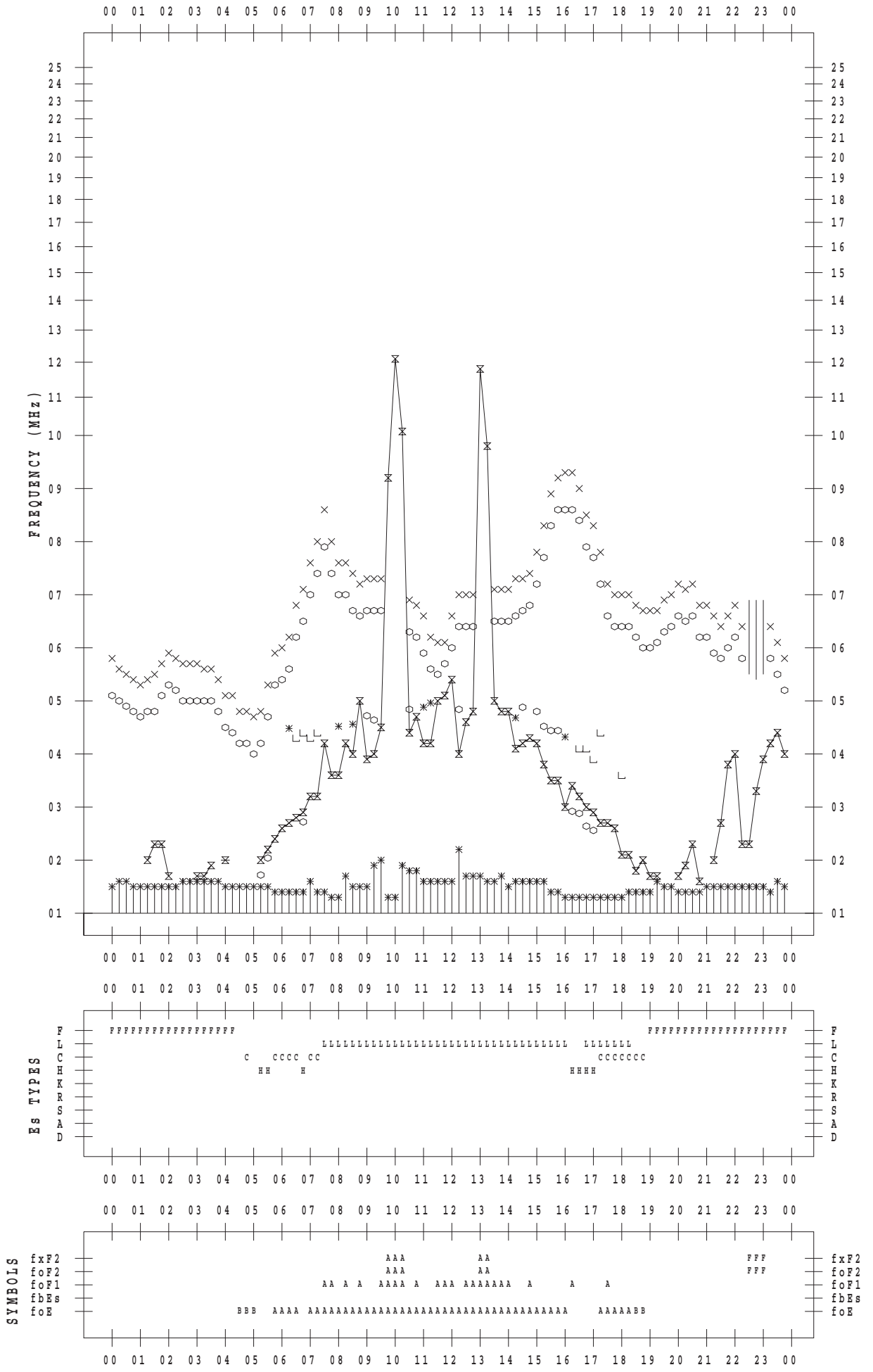
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/11

135 °E MEAN TIME



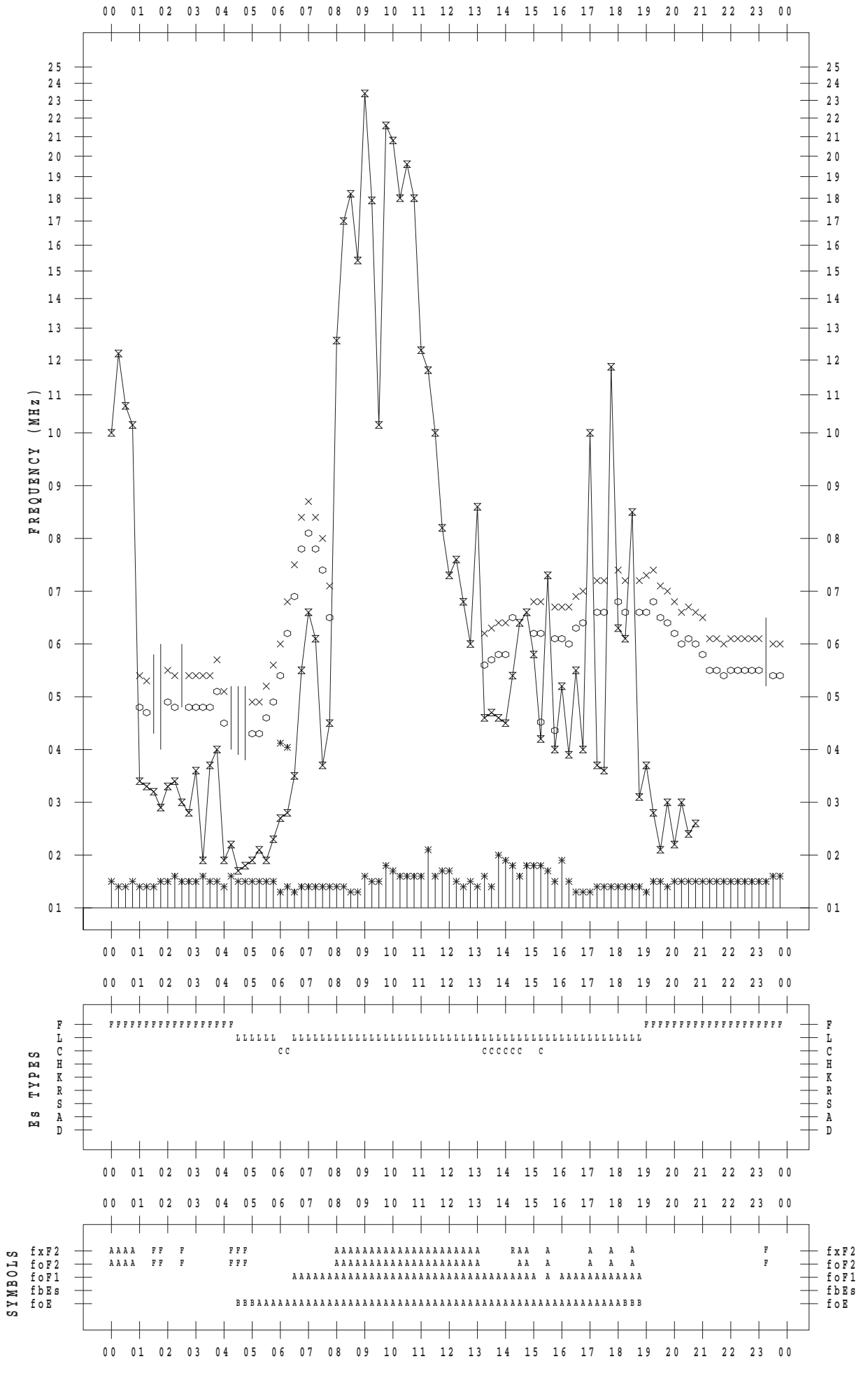
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/12

135 °E MEAN TIME



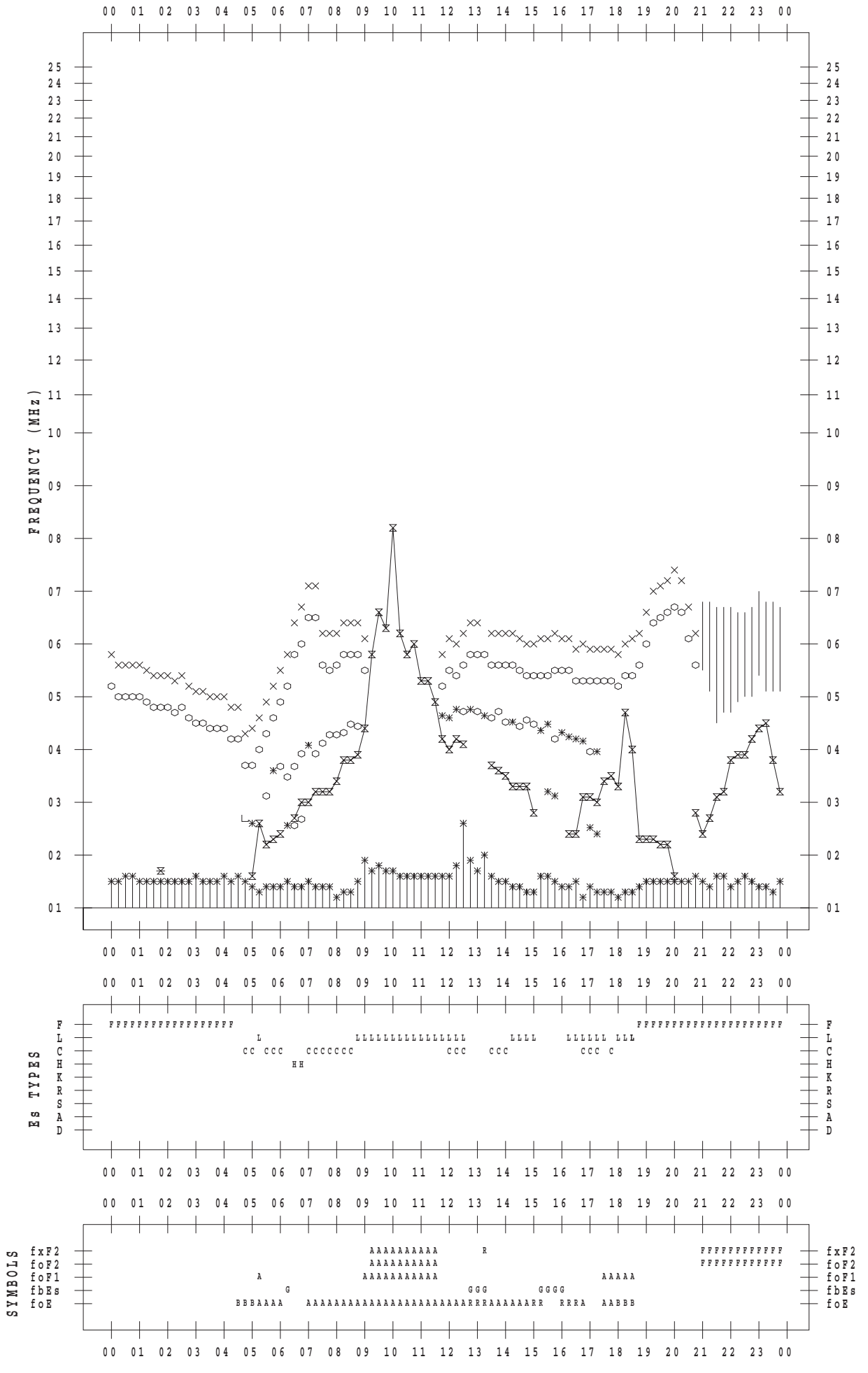
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/13

135 °E MEAN TIME



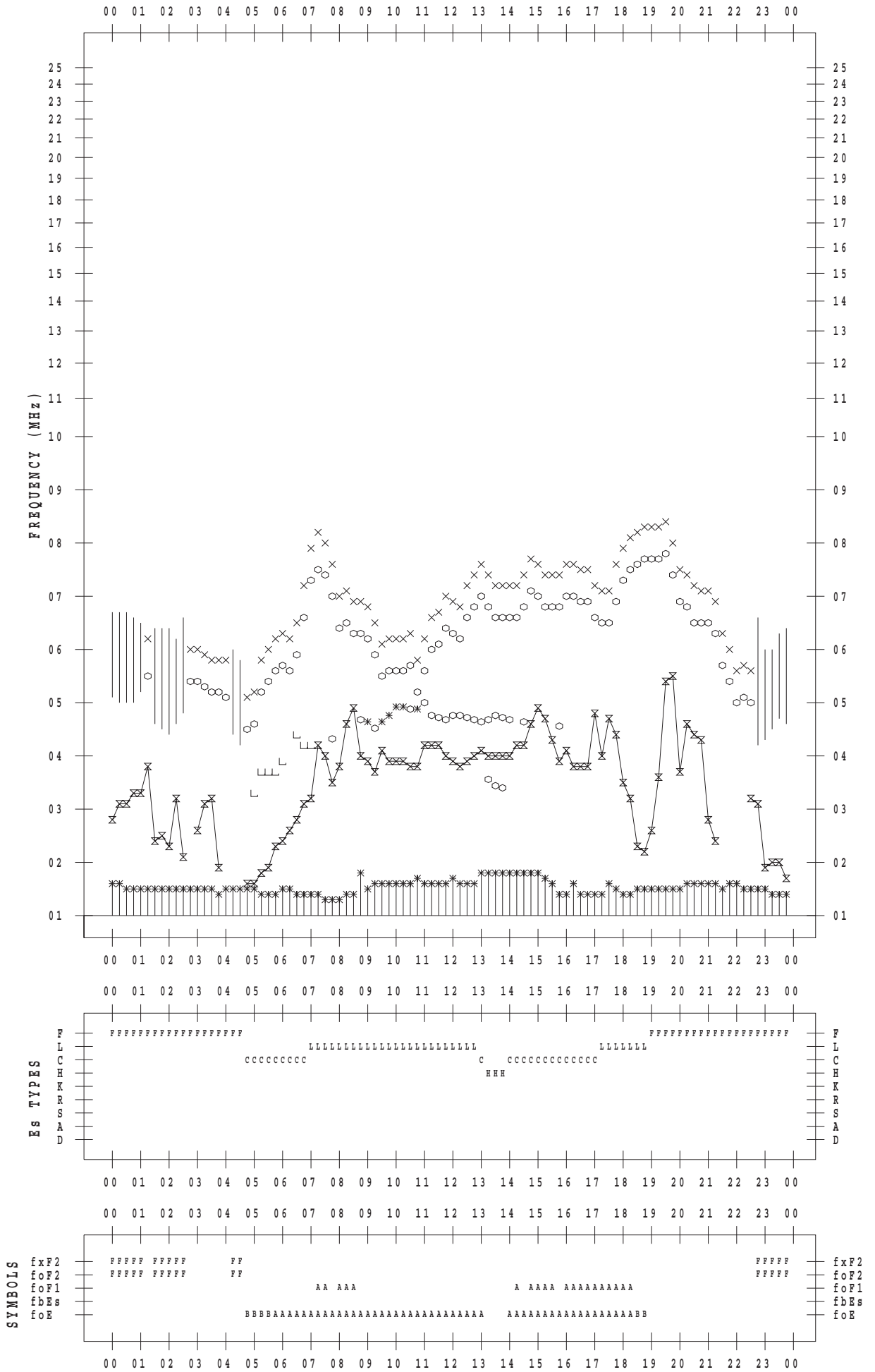
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/14

135 °E MEAN TIME



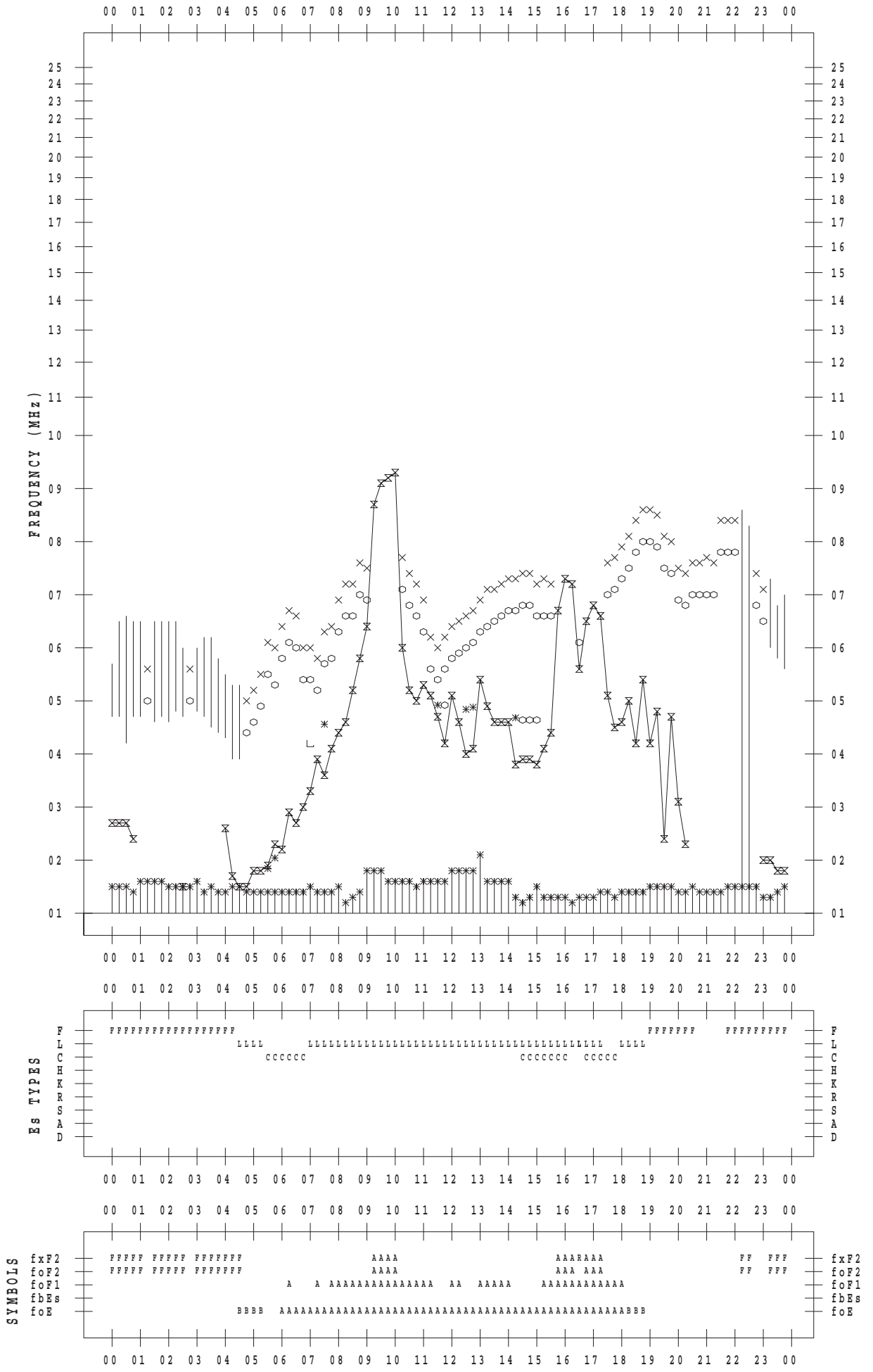
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/15

135 °E MEAN TIME



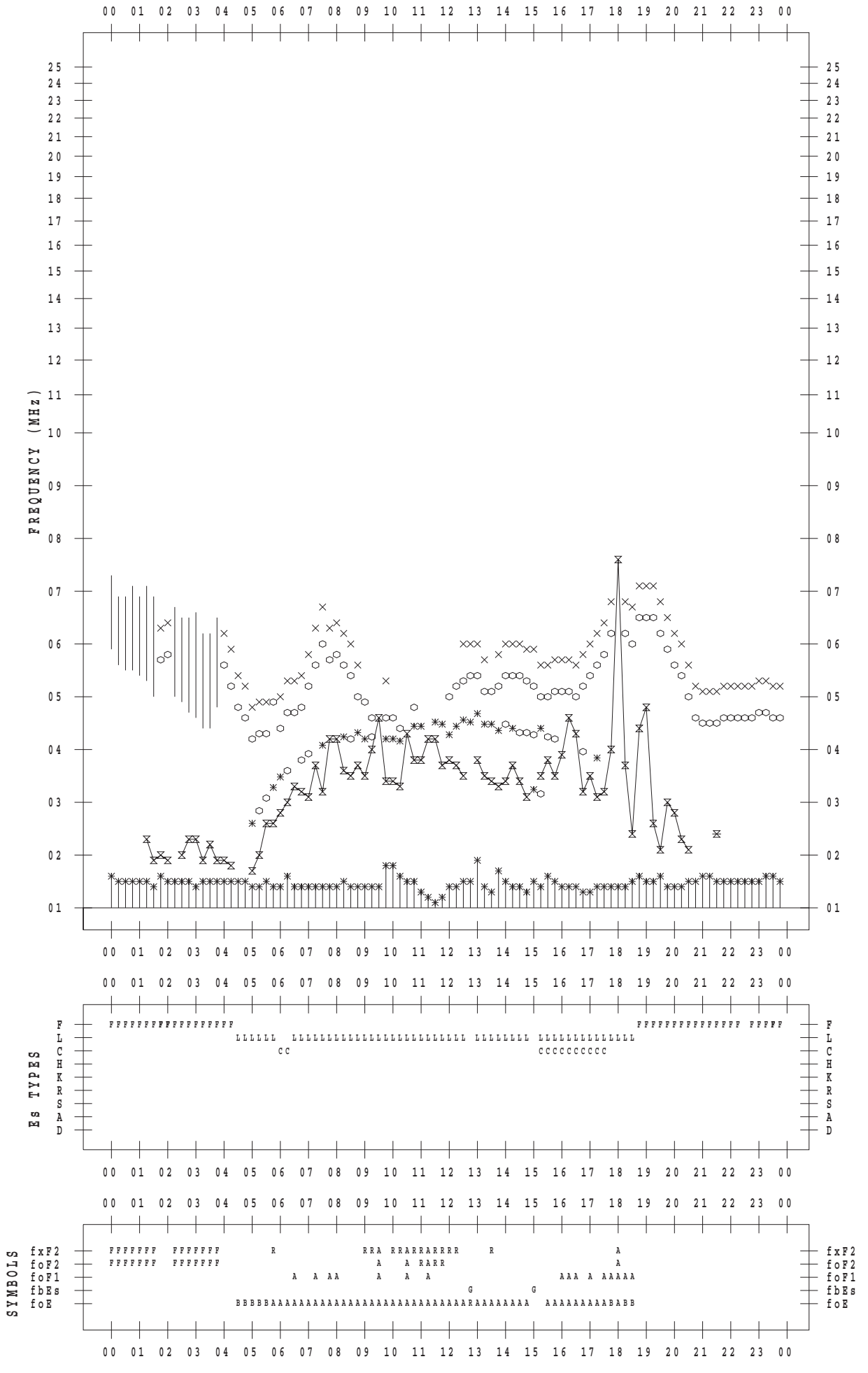
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/16

135 °E MEAN TIME



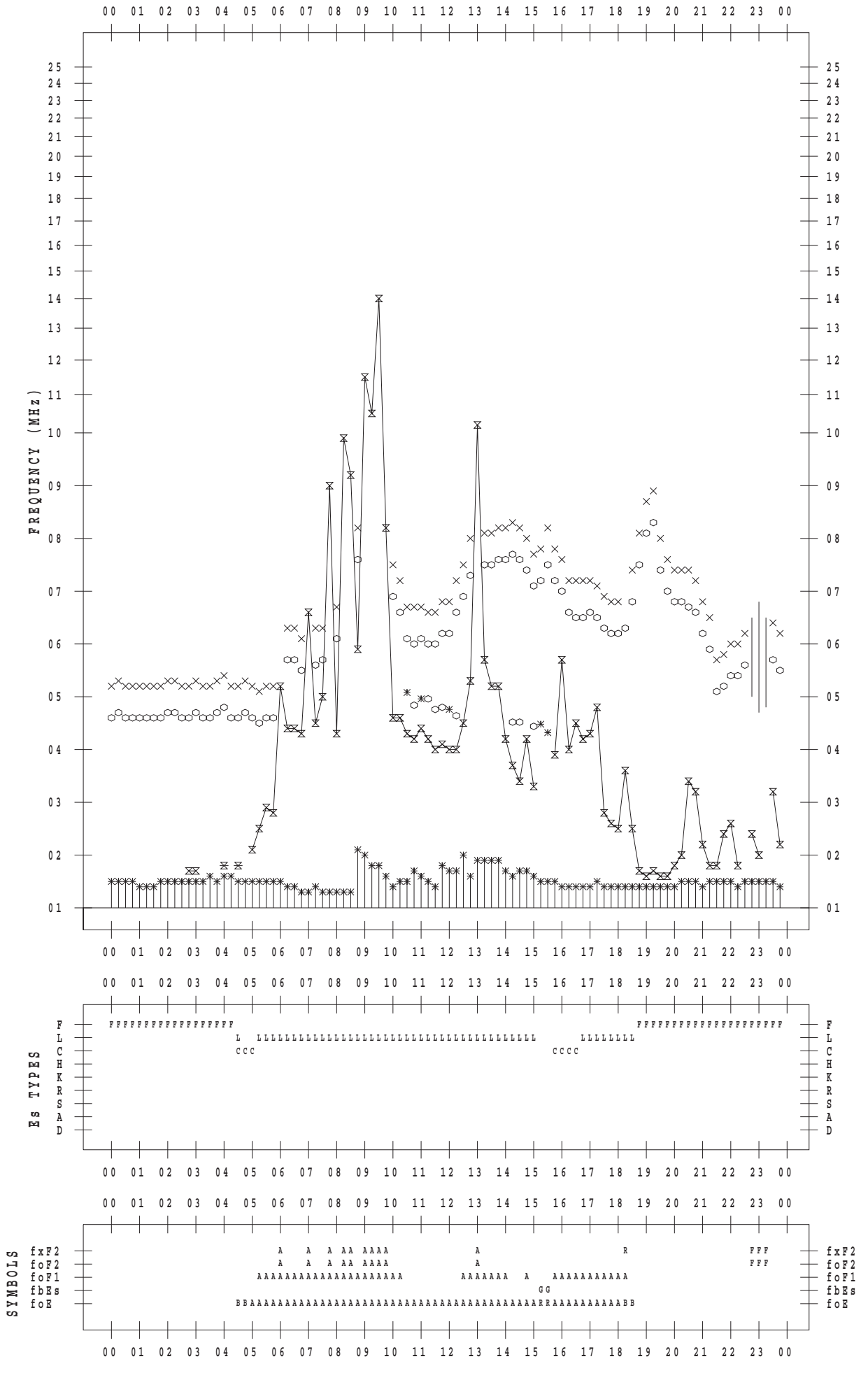
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/17

135 °E MEAN TIME



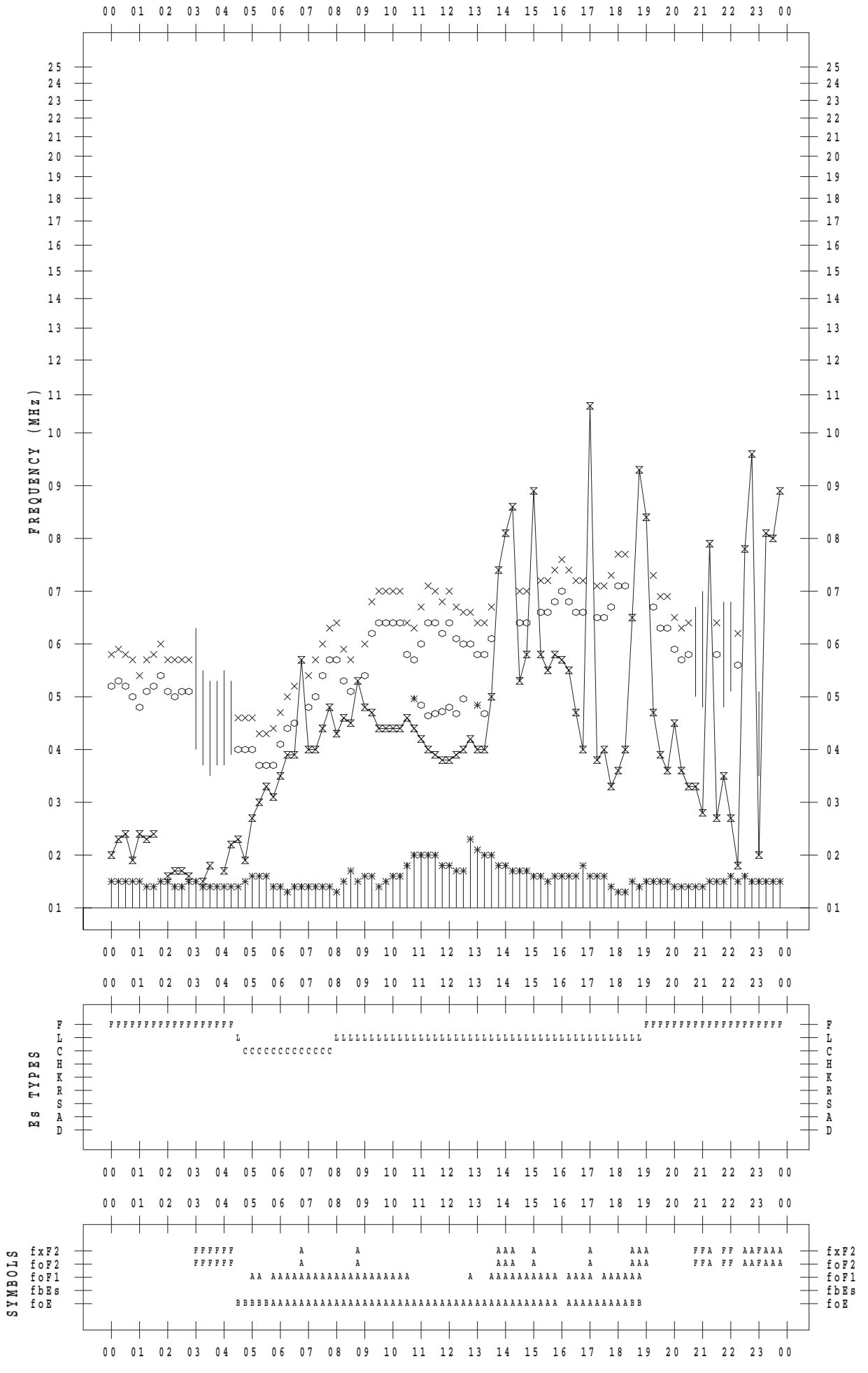
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/18

135 °E MEAN TIME

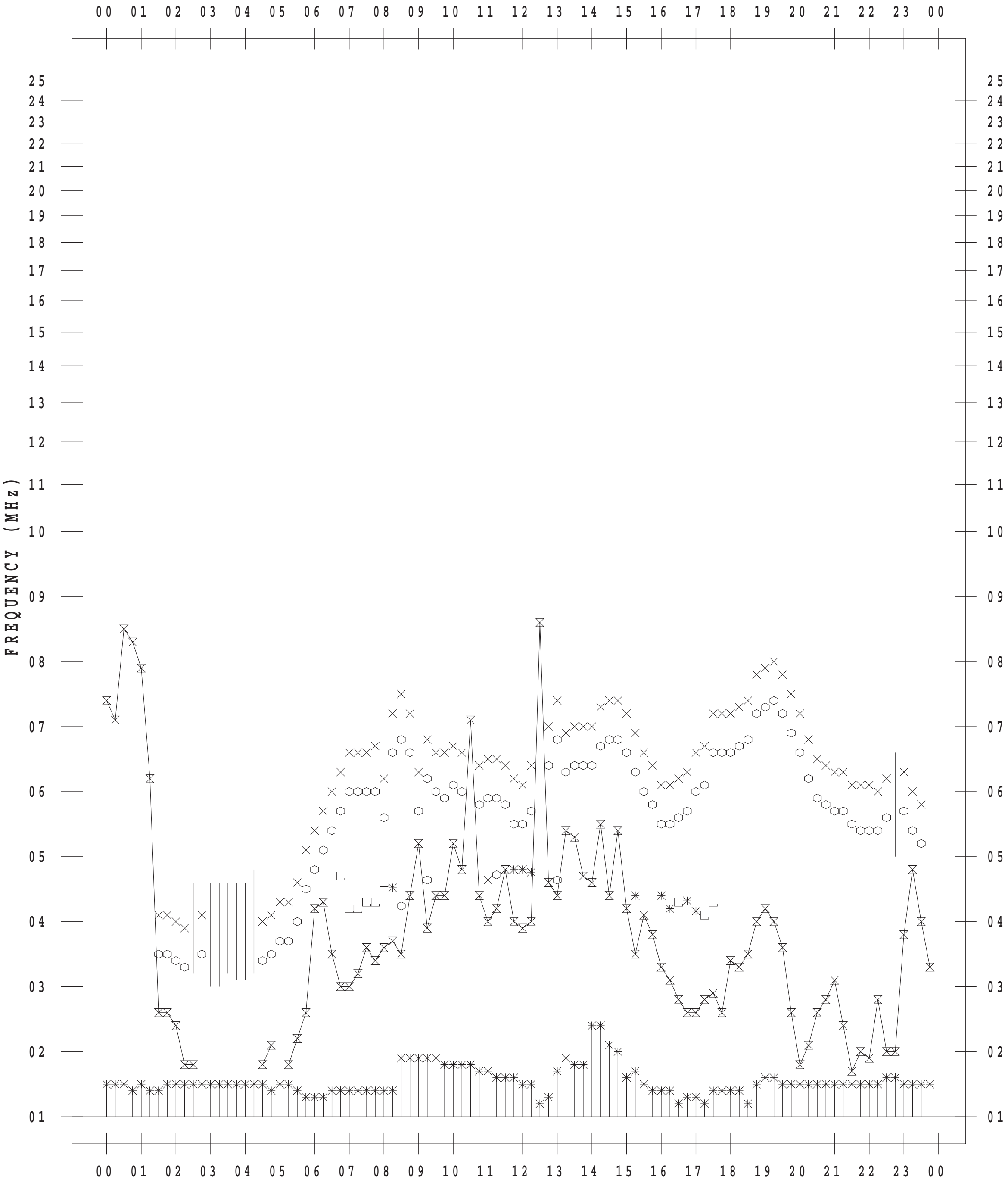


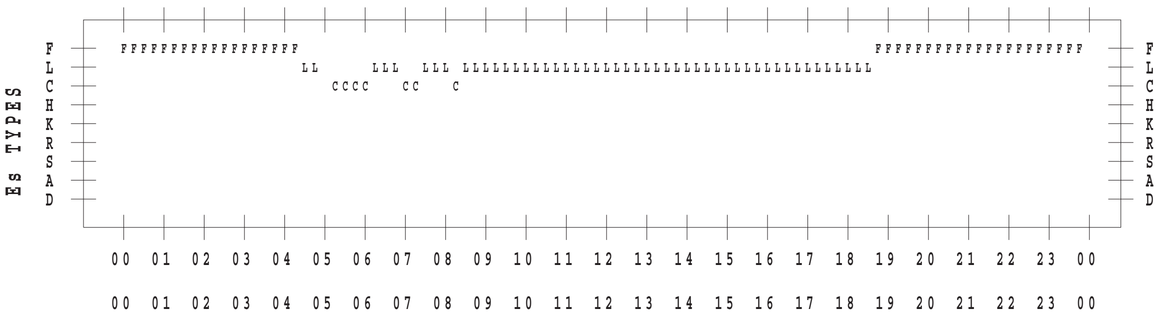
f-PLOT DATA

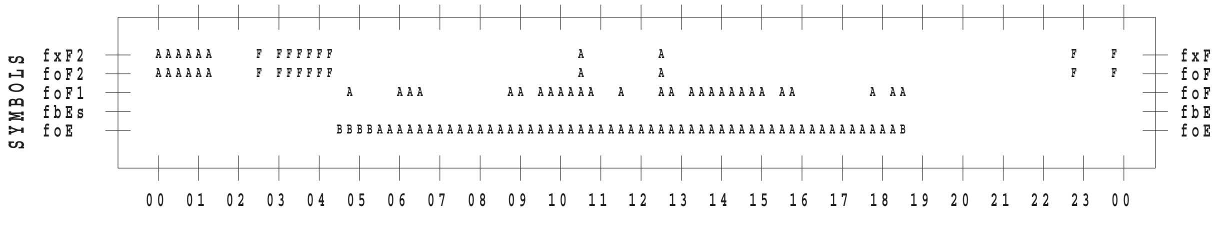
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 8/19

135 °E MEAN TIME







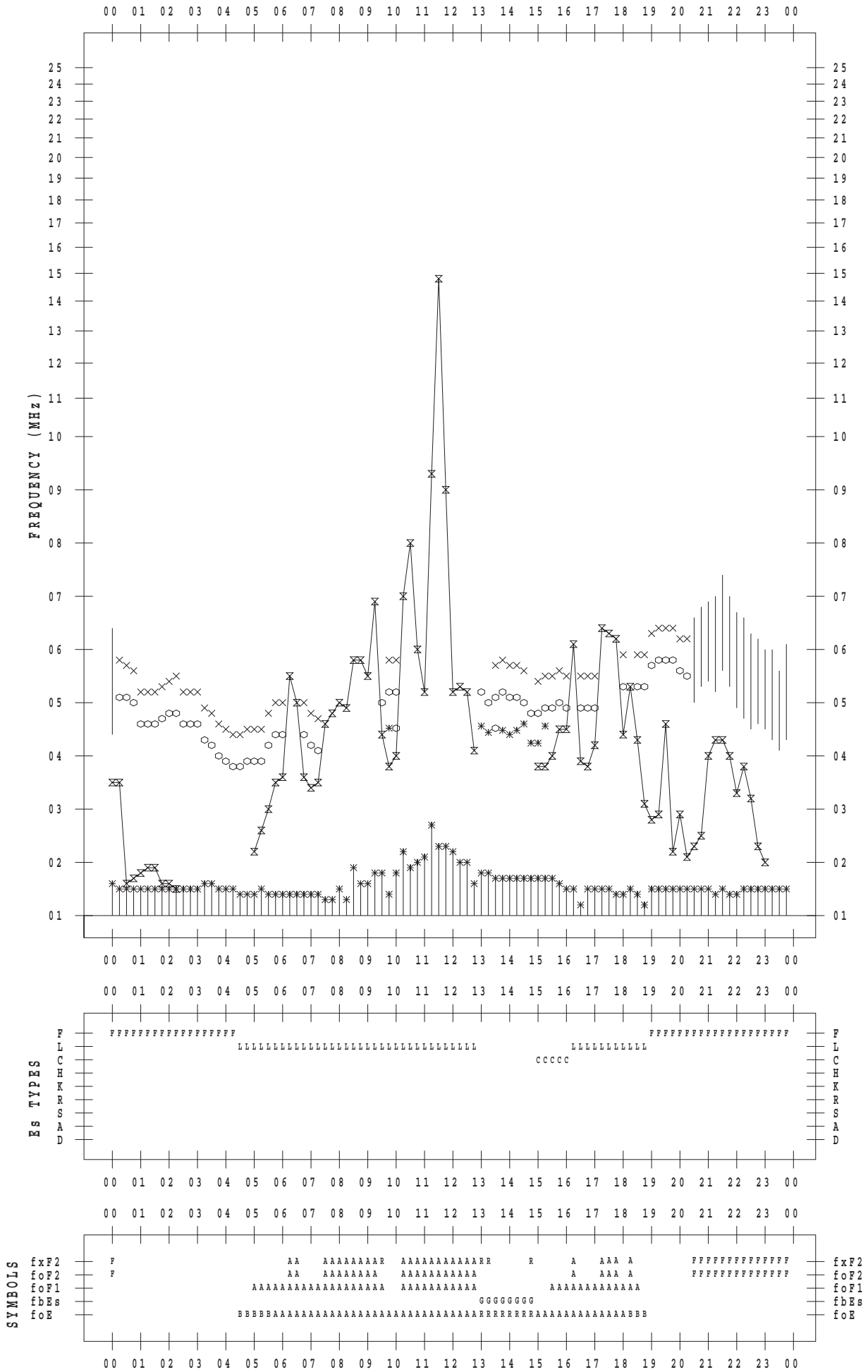
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/20

135 °E MEAN TIME



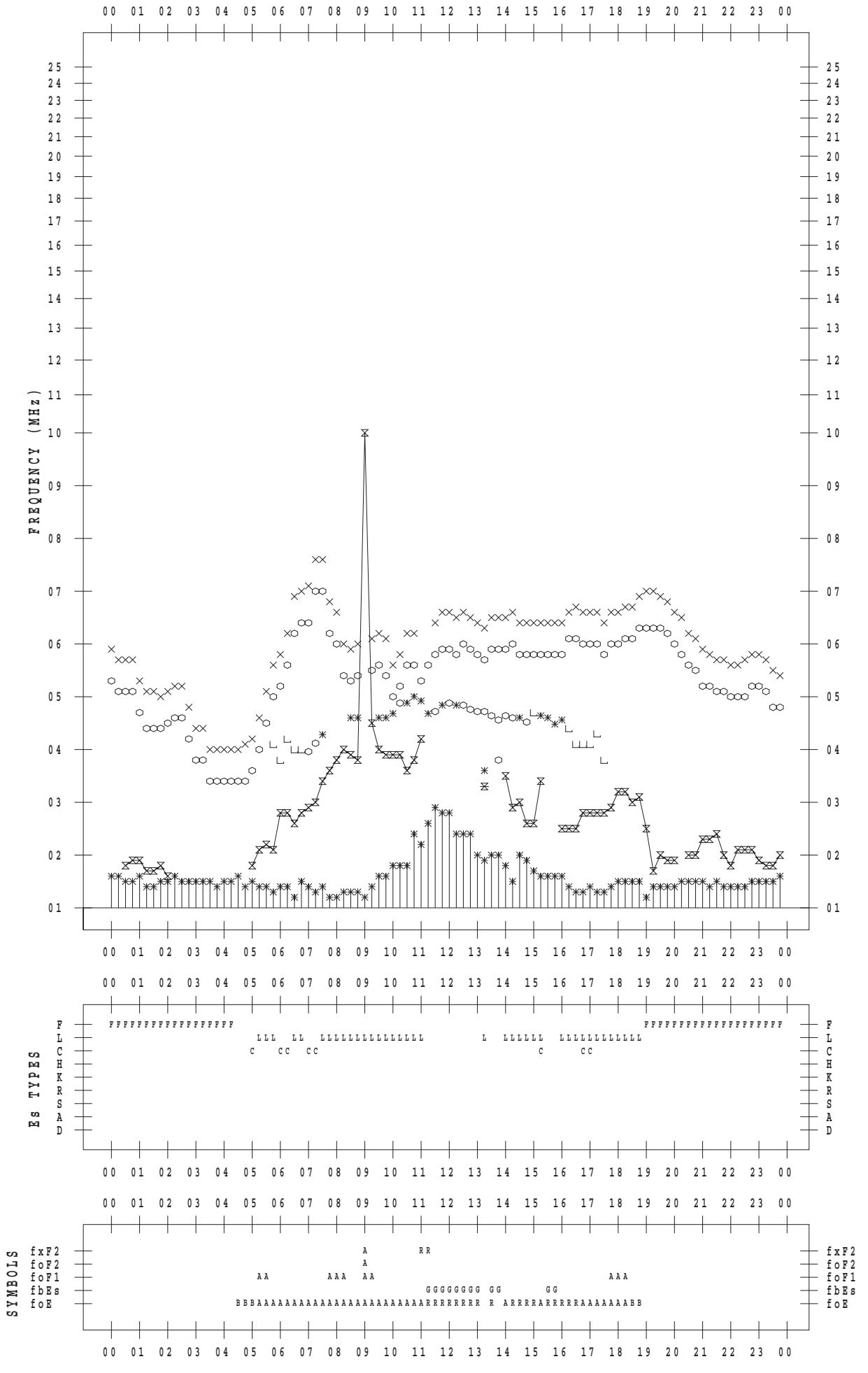
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/21

135 °E MEAN TIME



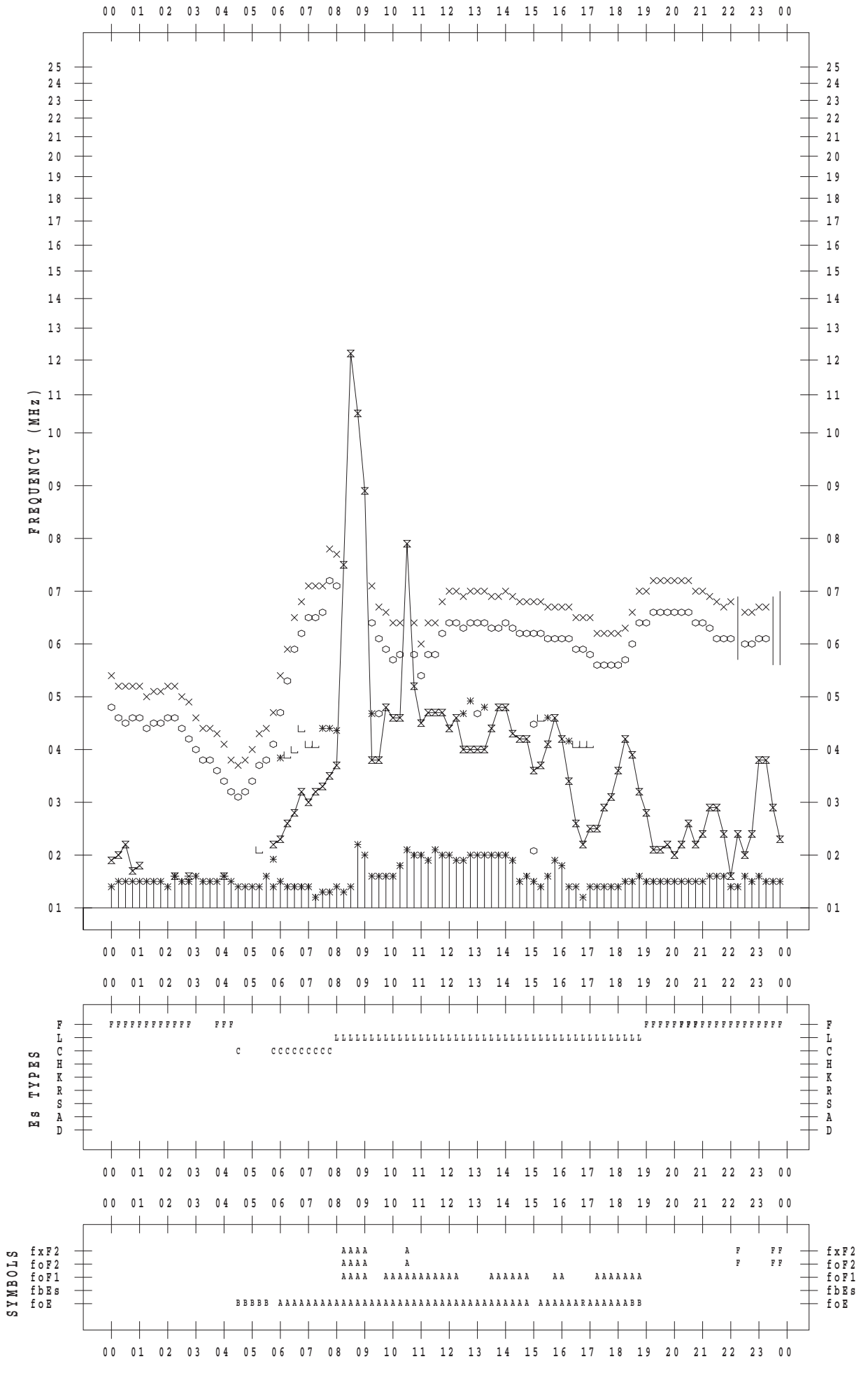
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/22

135 °E MEAN TIME



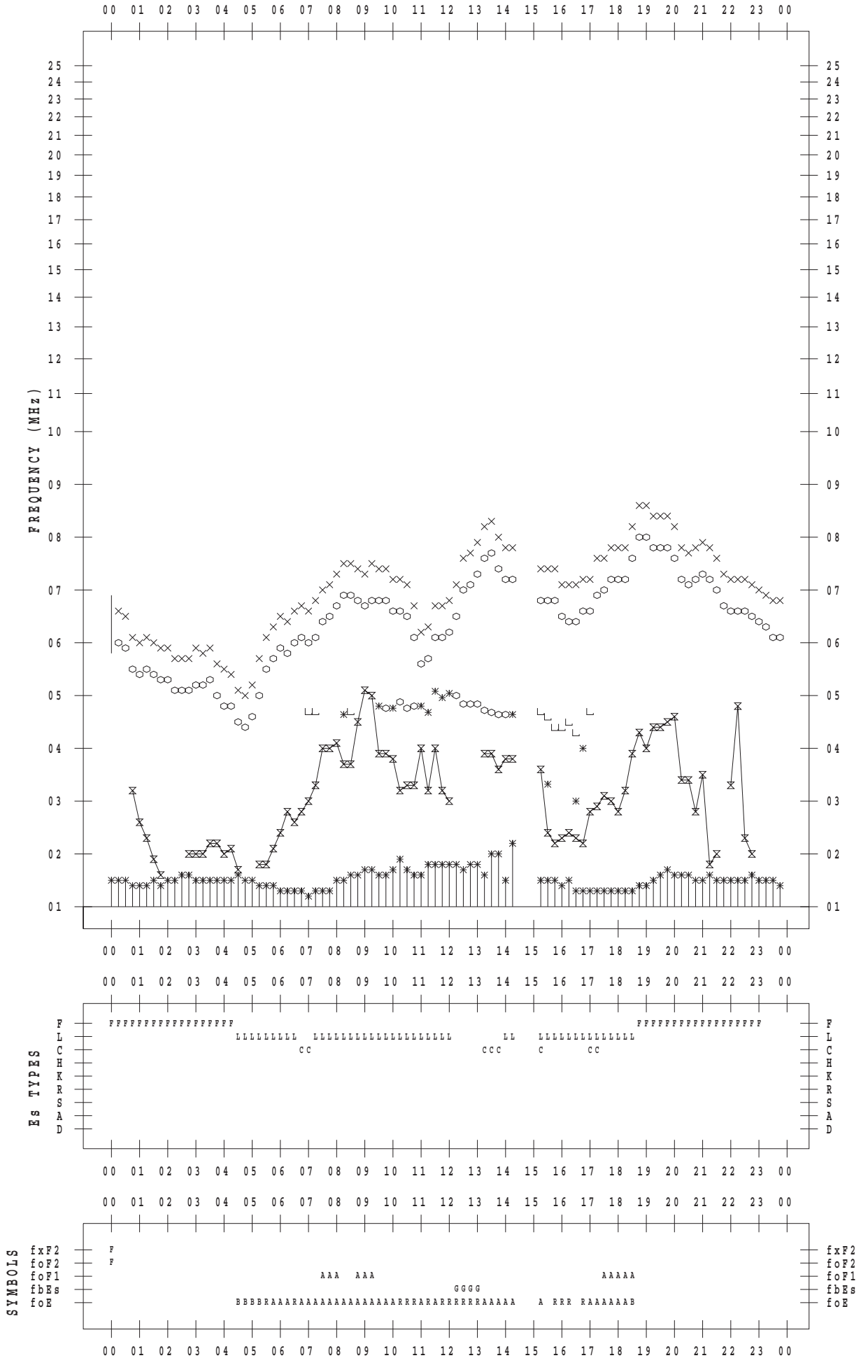
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/23

135 °E MEAN TIME



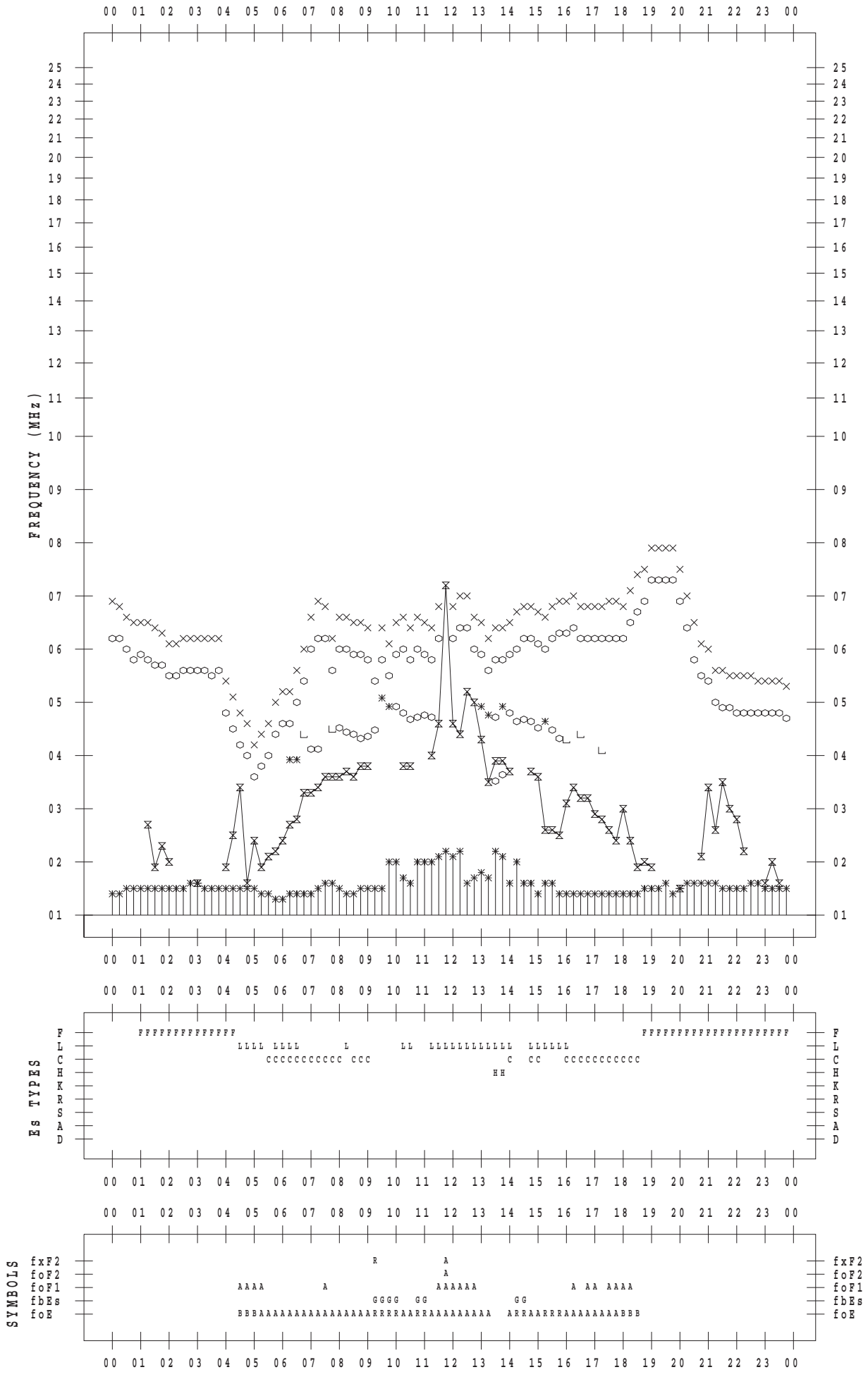
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/24

135 °E MEAN TIME



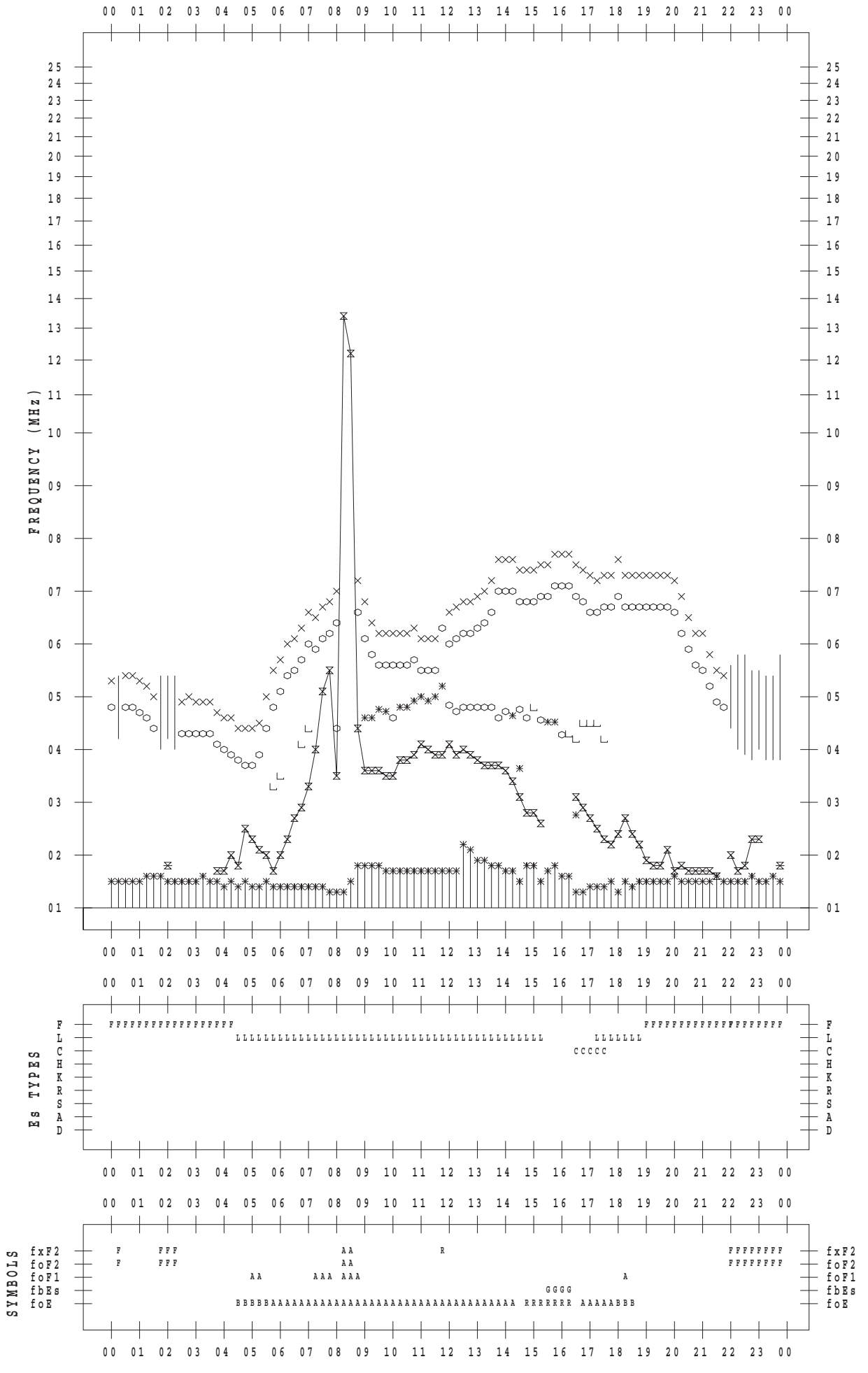
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/25

135 °E MEAN TIME

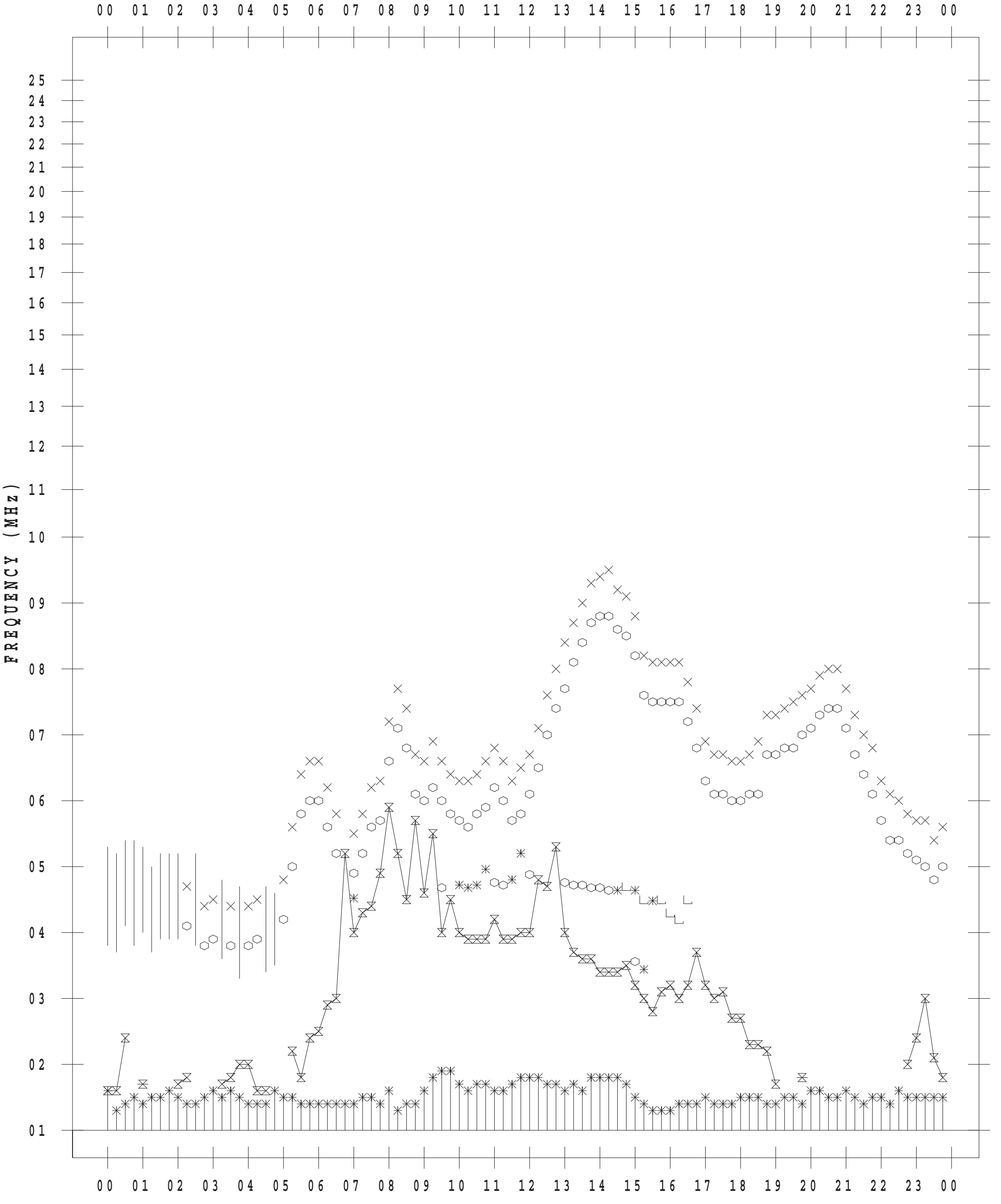


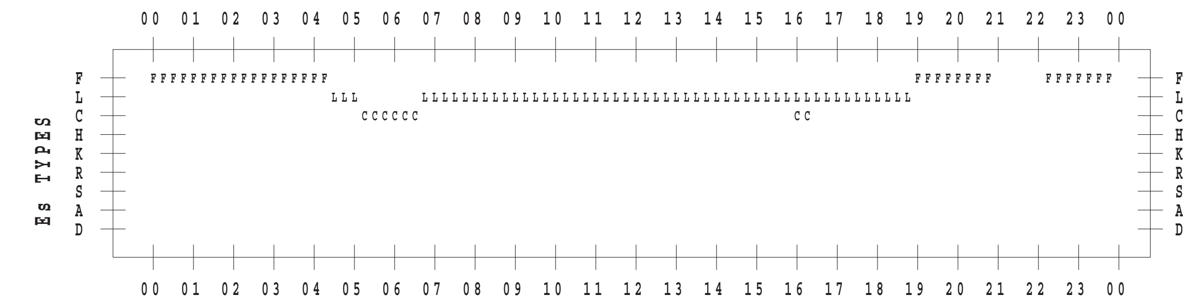
f-PLOT DATA

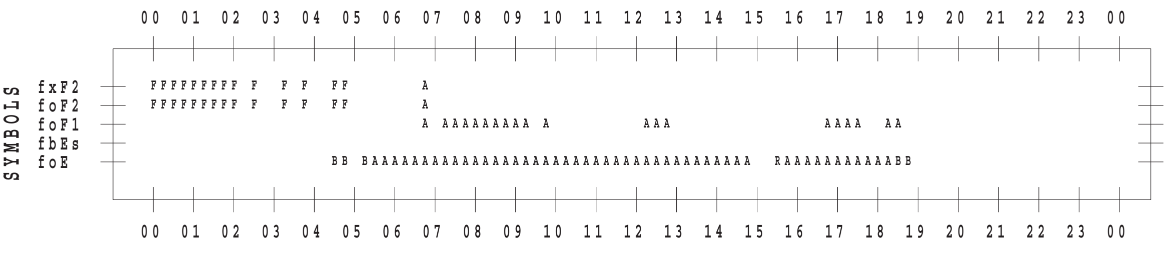
SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 8/26

135 °E MEAN TIME







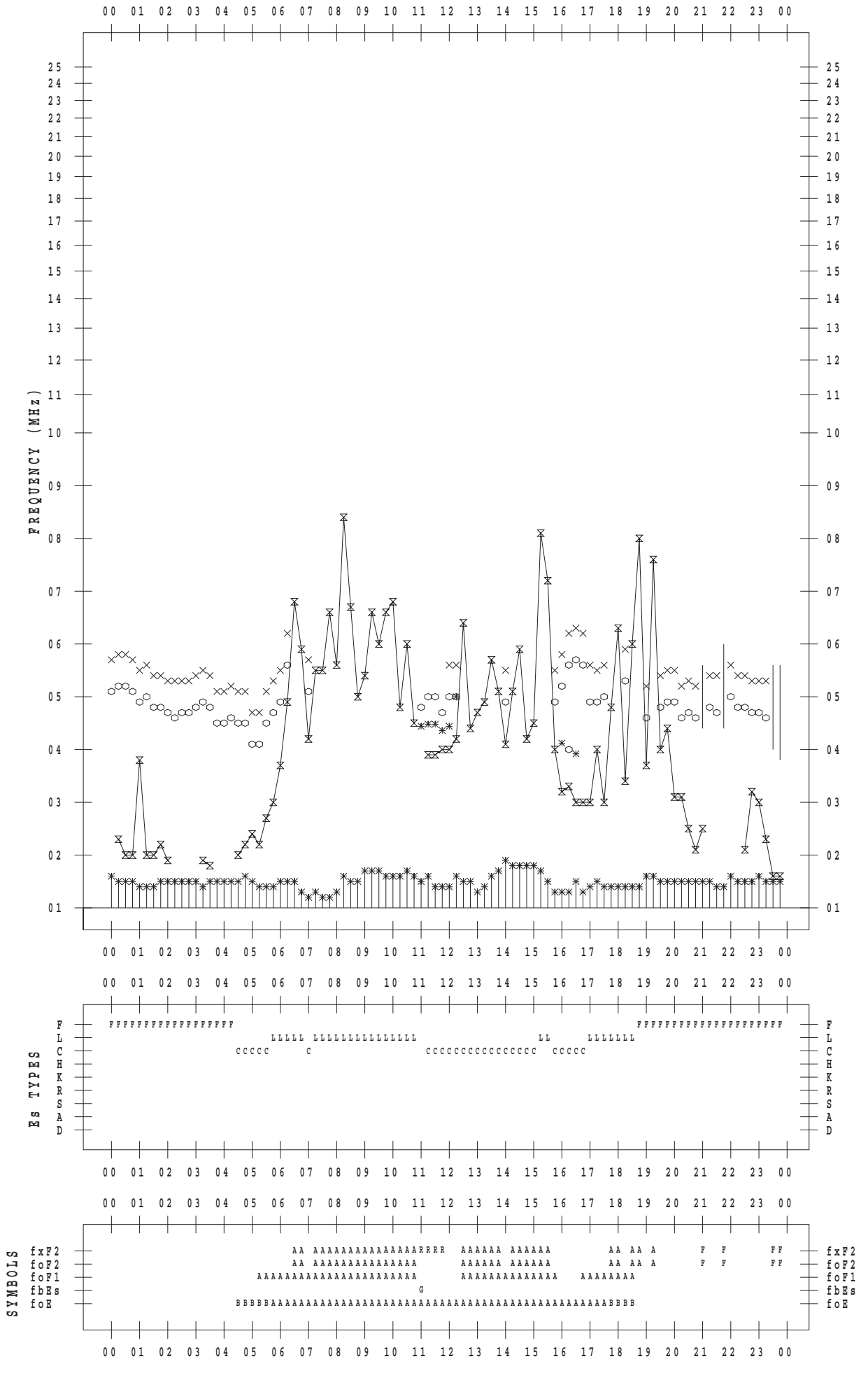
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/27

135 °E MEAN TIME



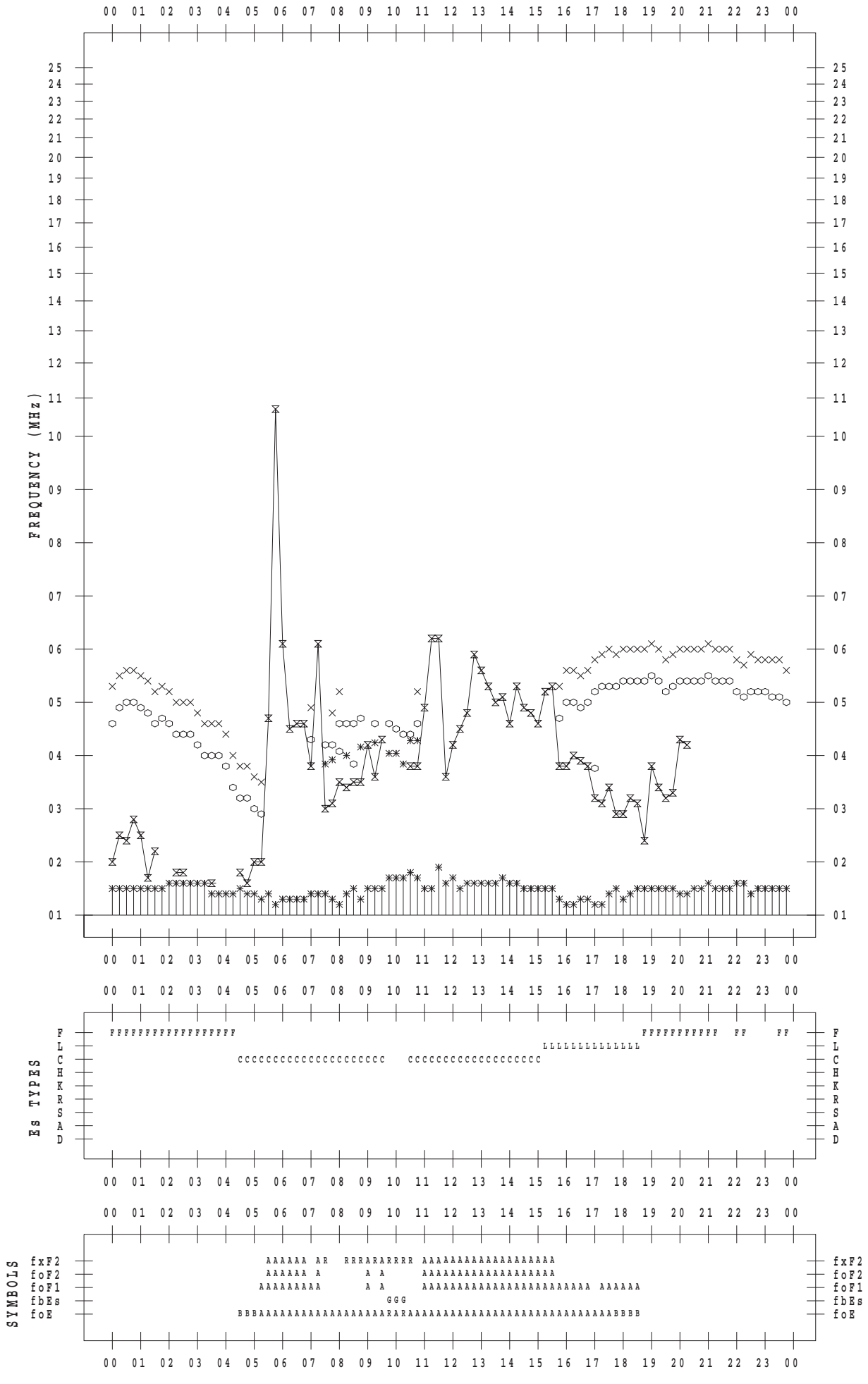
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/28

135 °E MEAN TIME

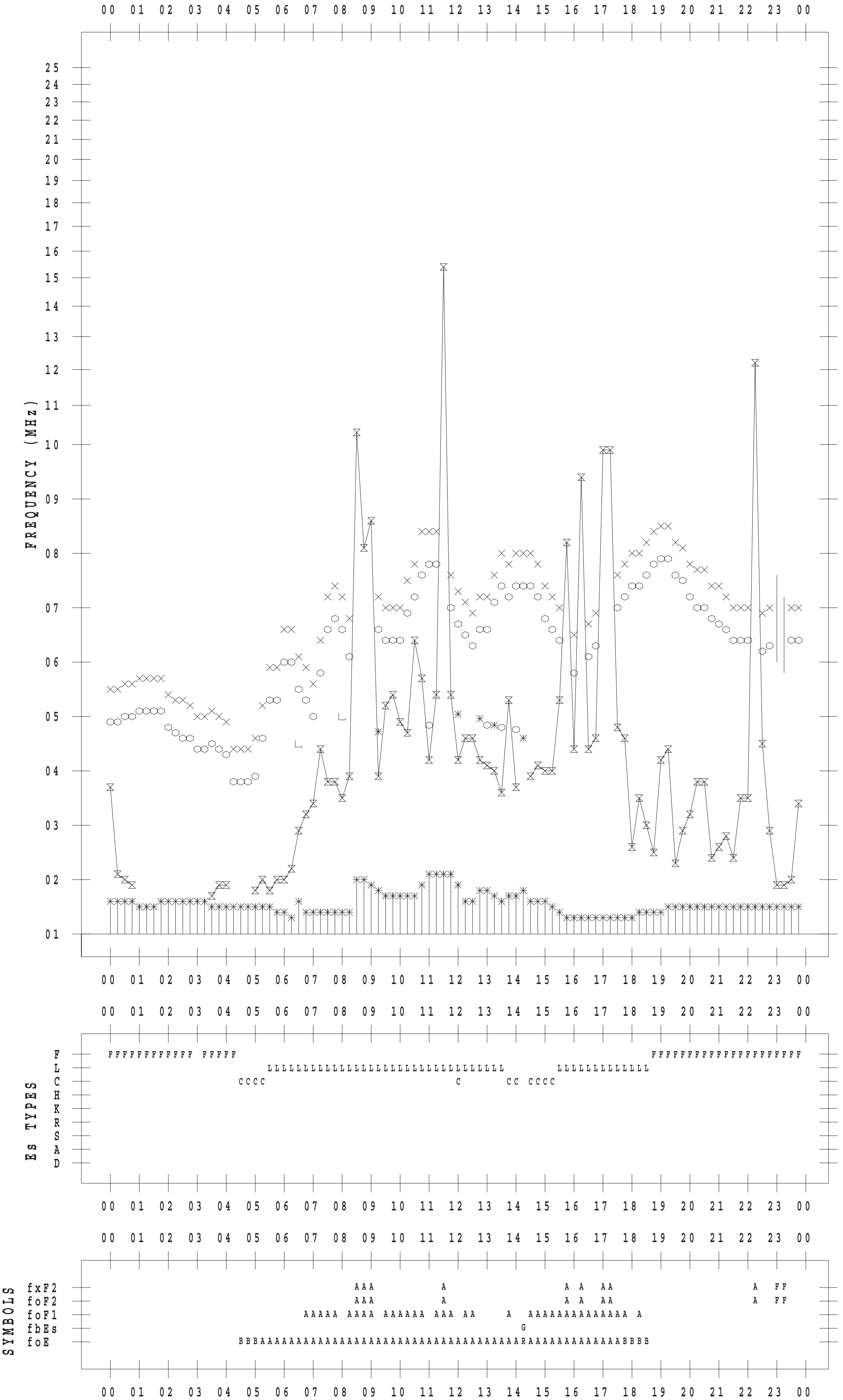


f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji DATE : 2015/ 8/29

135 °E MEAN TIME



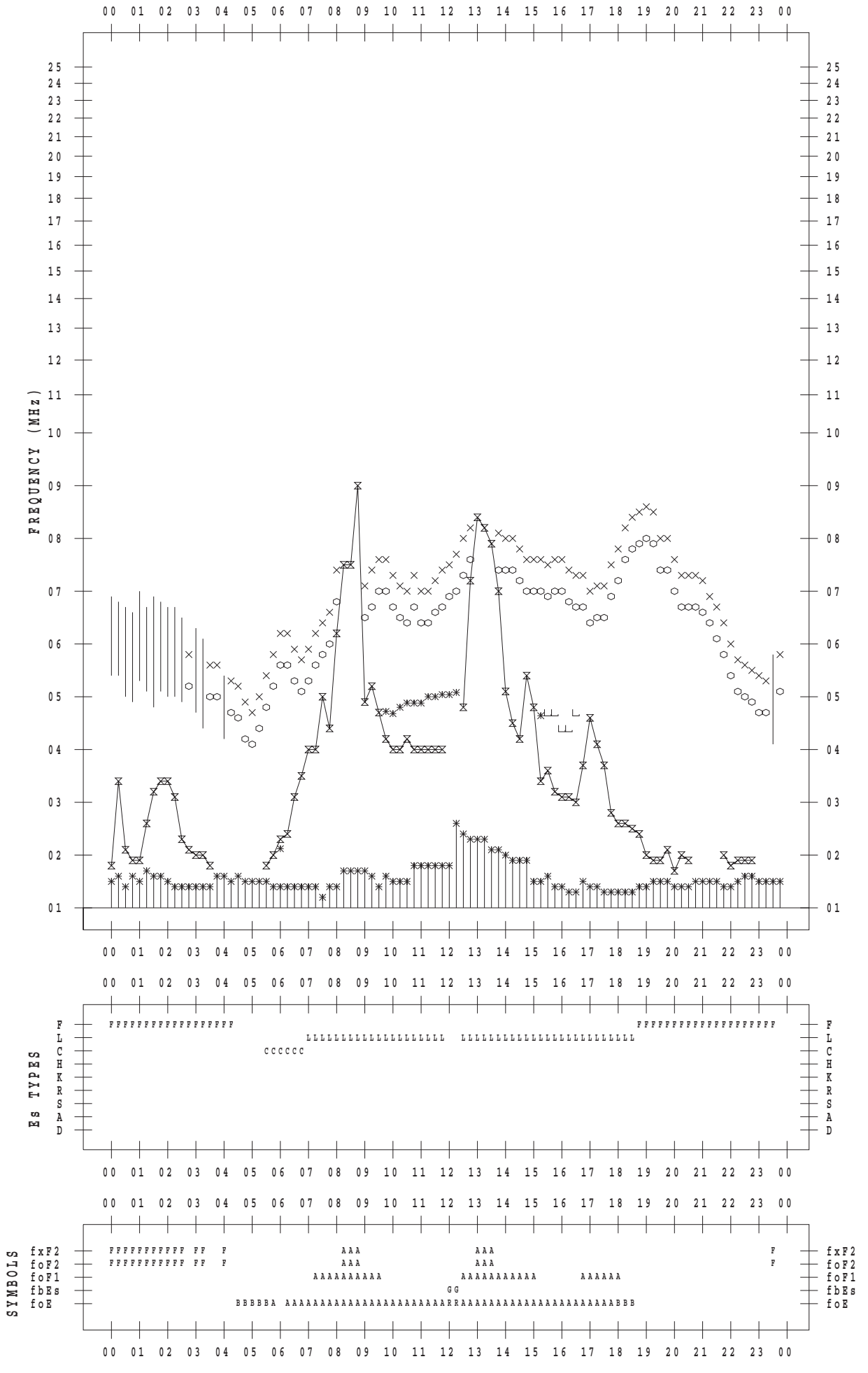
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/30

135 °E MEAN TIME



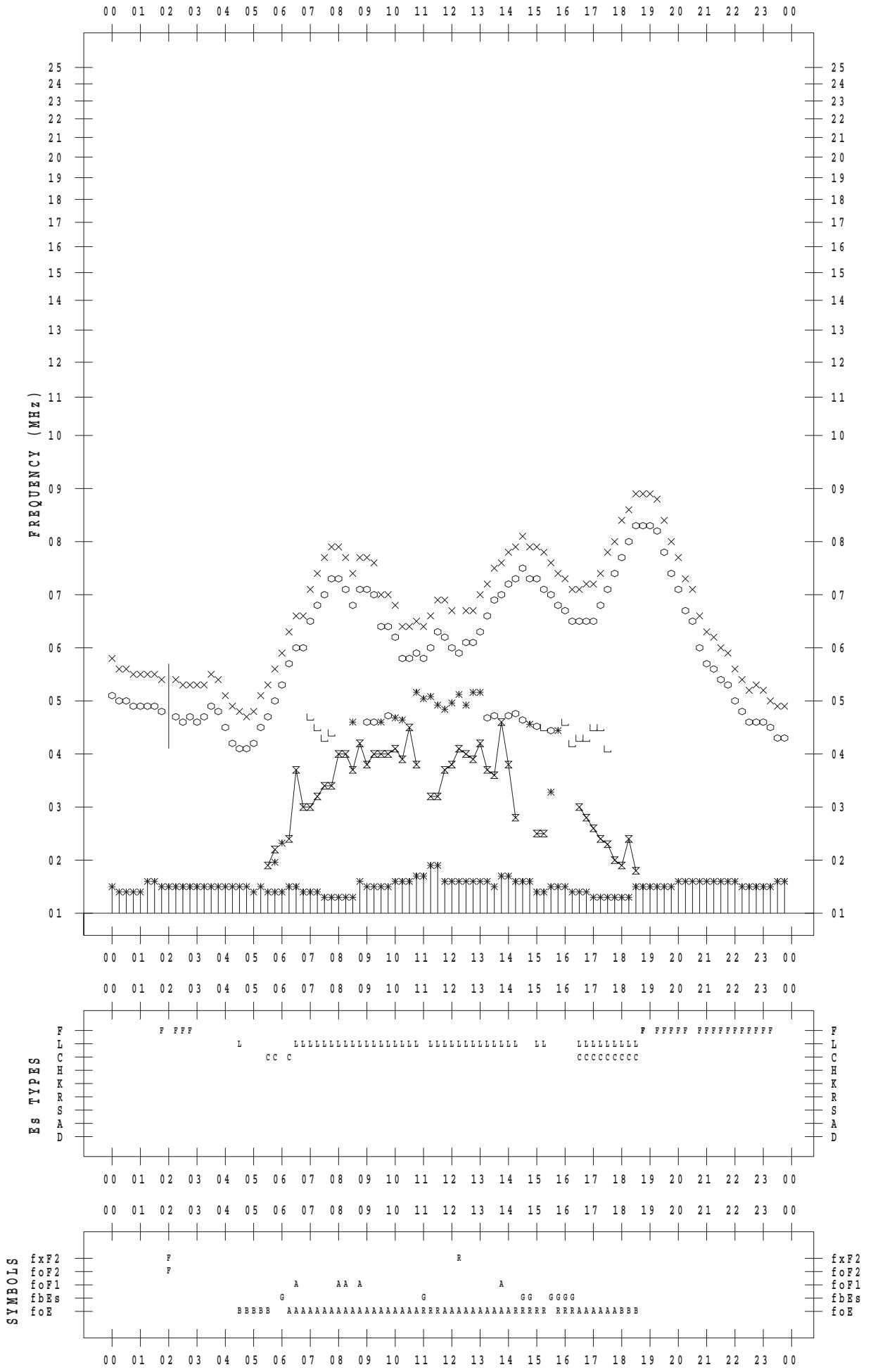
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2015/ 8/31

135 °E MEAN TIME



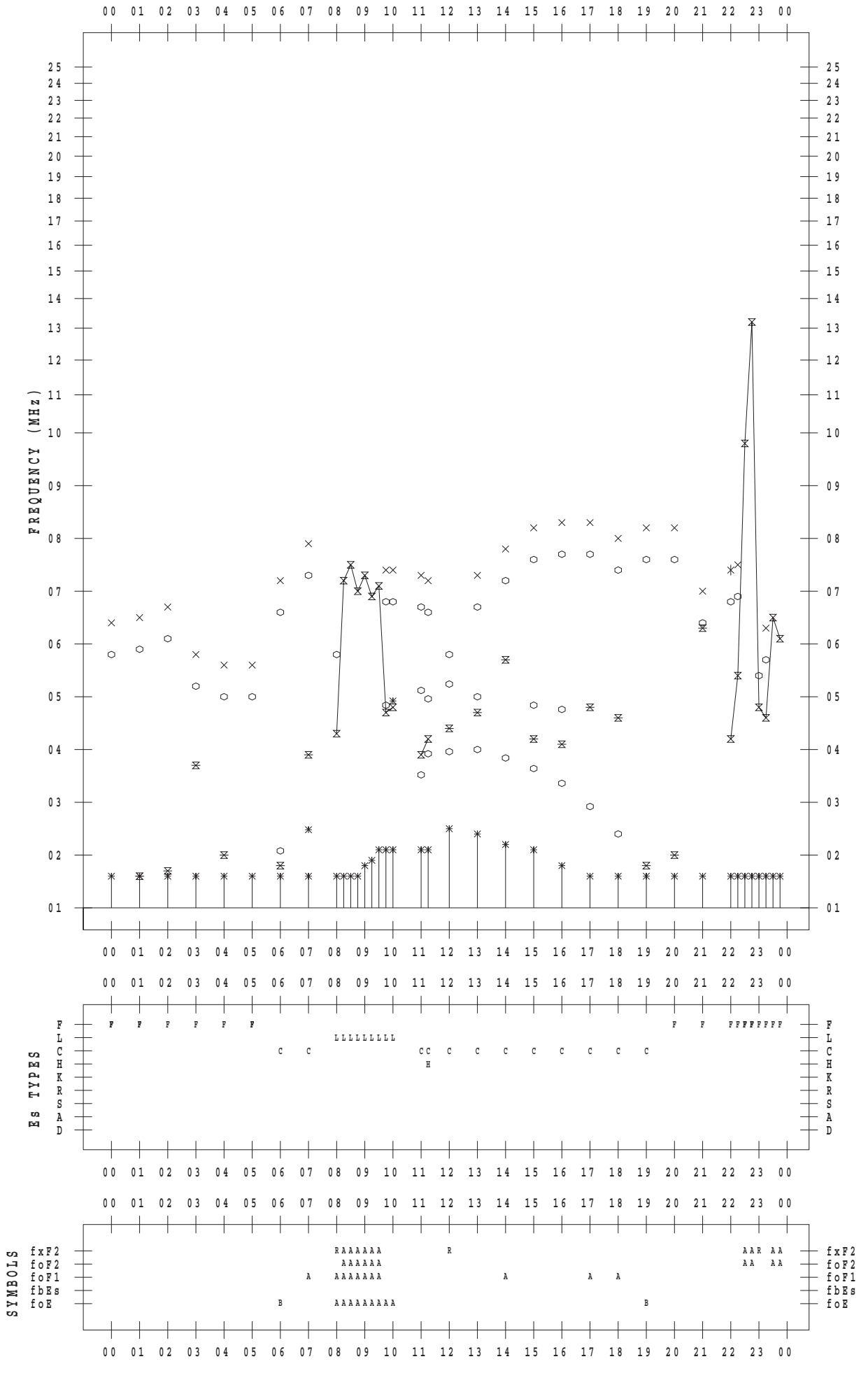
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 1

135 °E MEAN TIME



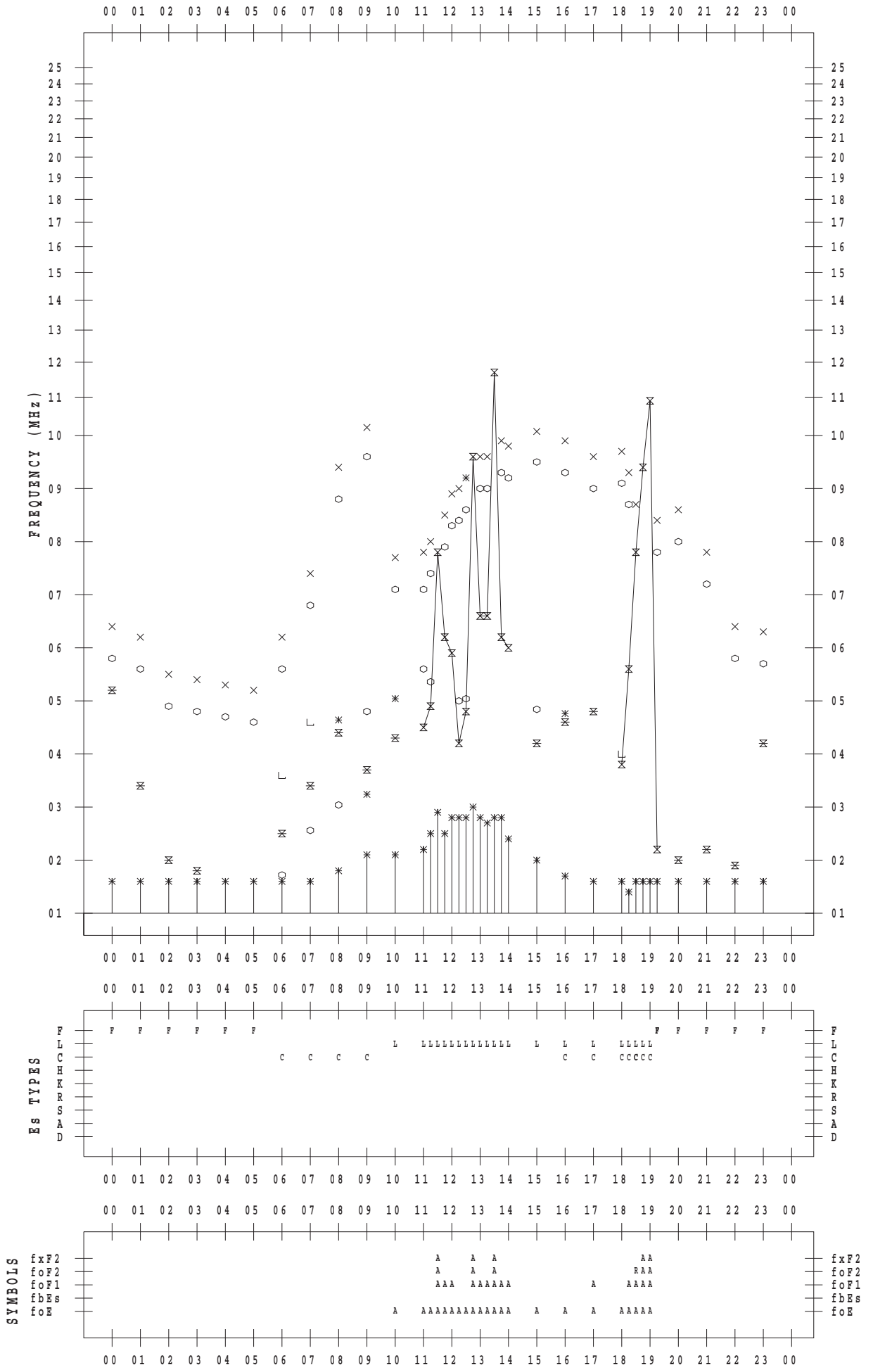
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 2

135 °E MEAN TIME



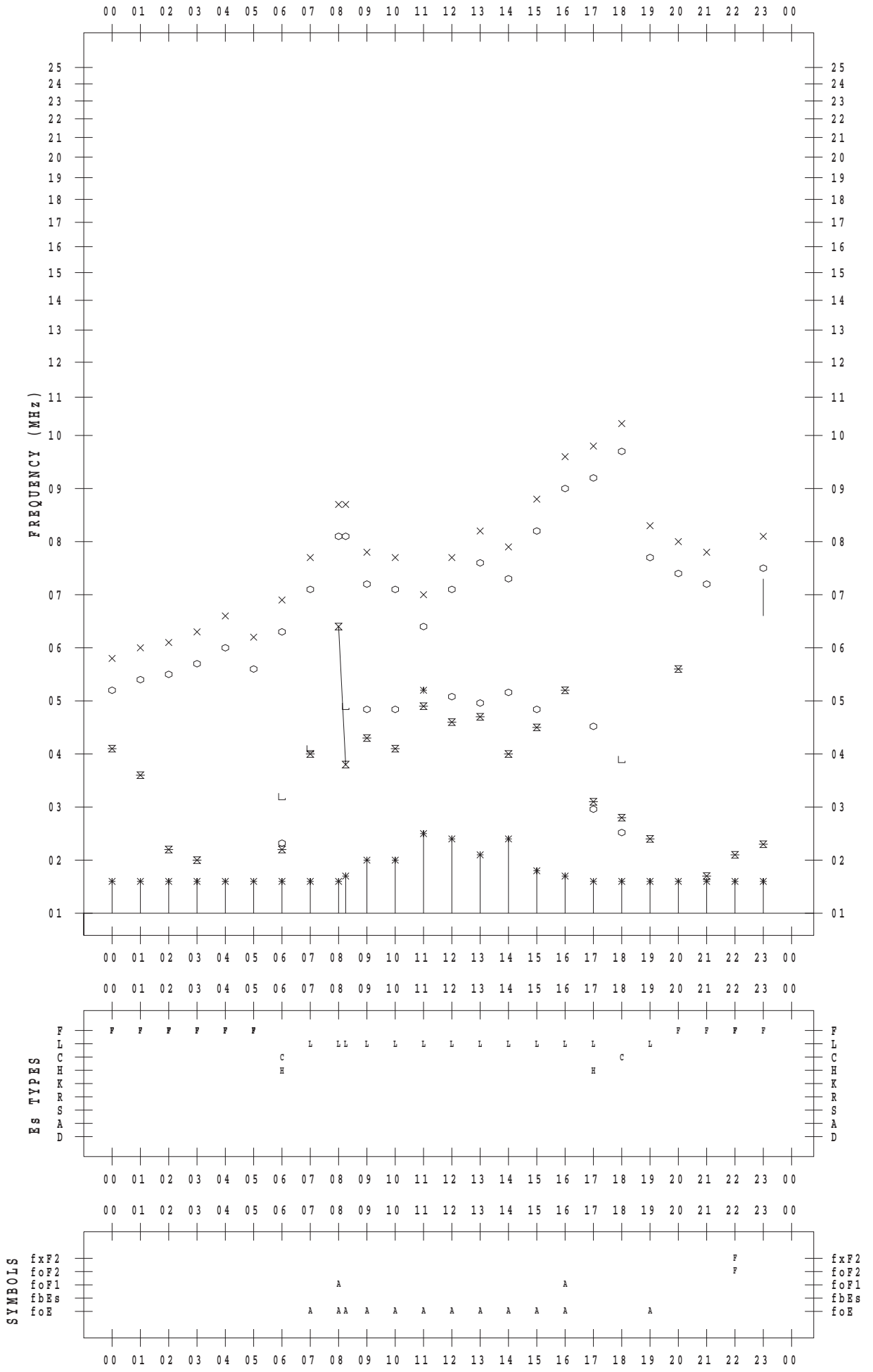
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 3

135 °E MEAN TIME



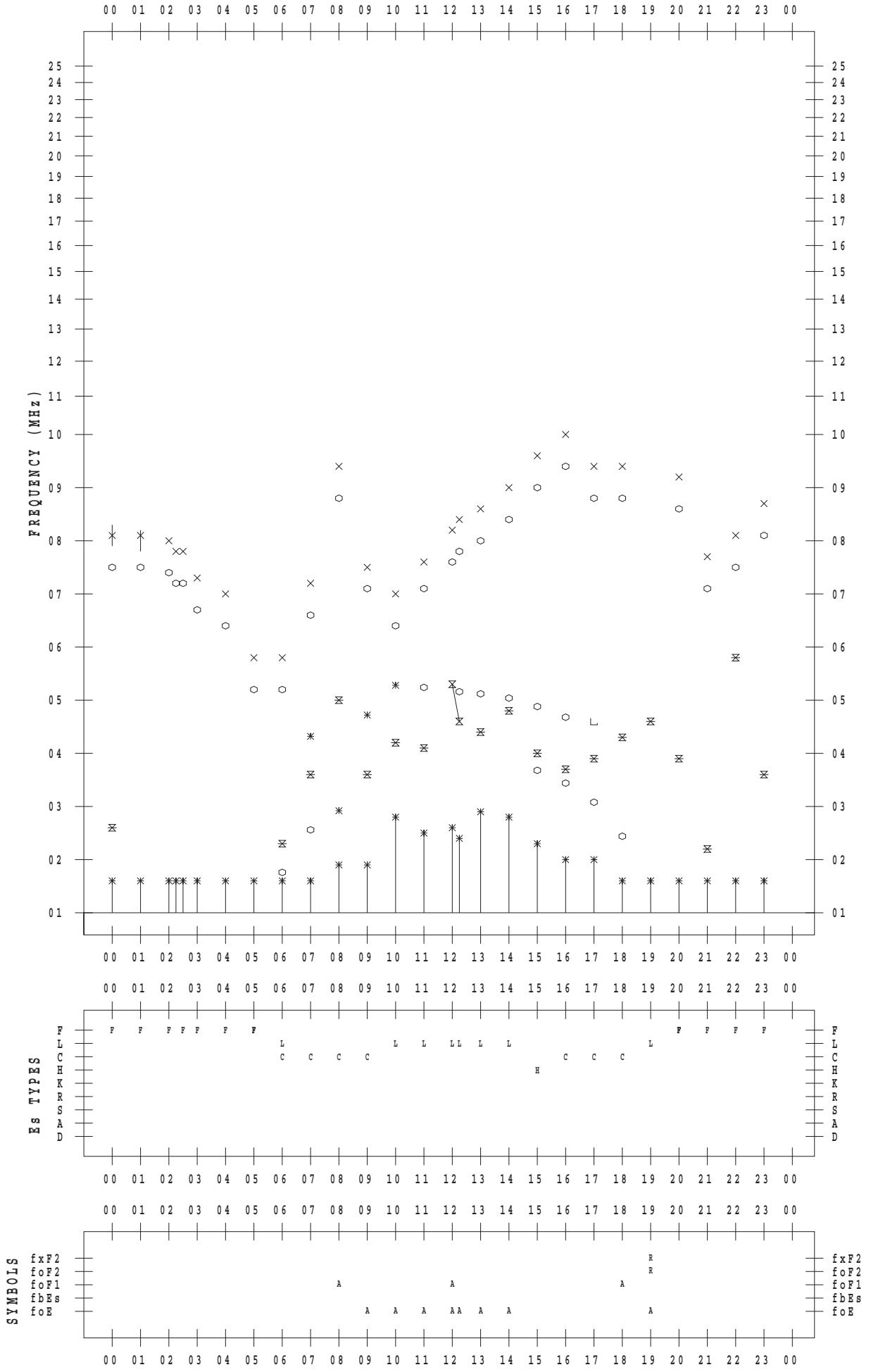
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 4

135 °E MEAN TIME



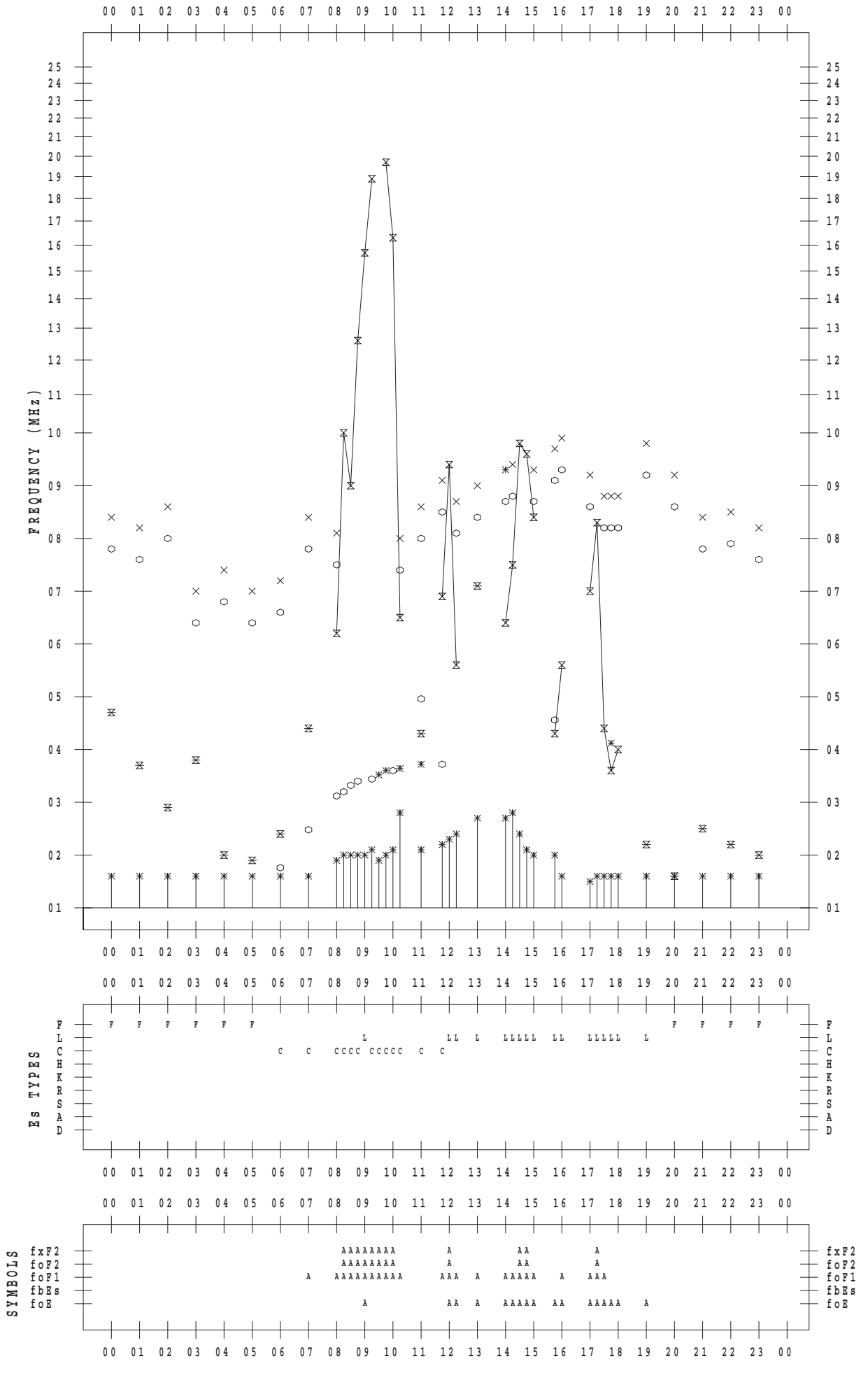
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 5

135 °E MEAN TIME



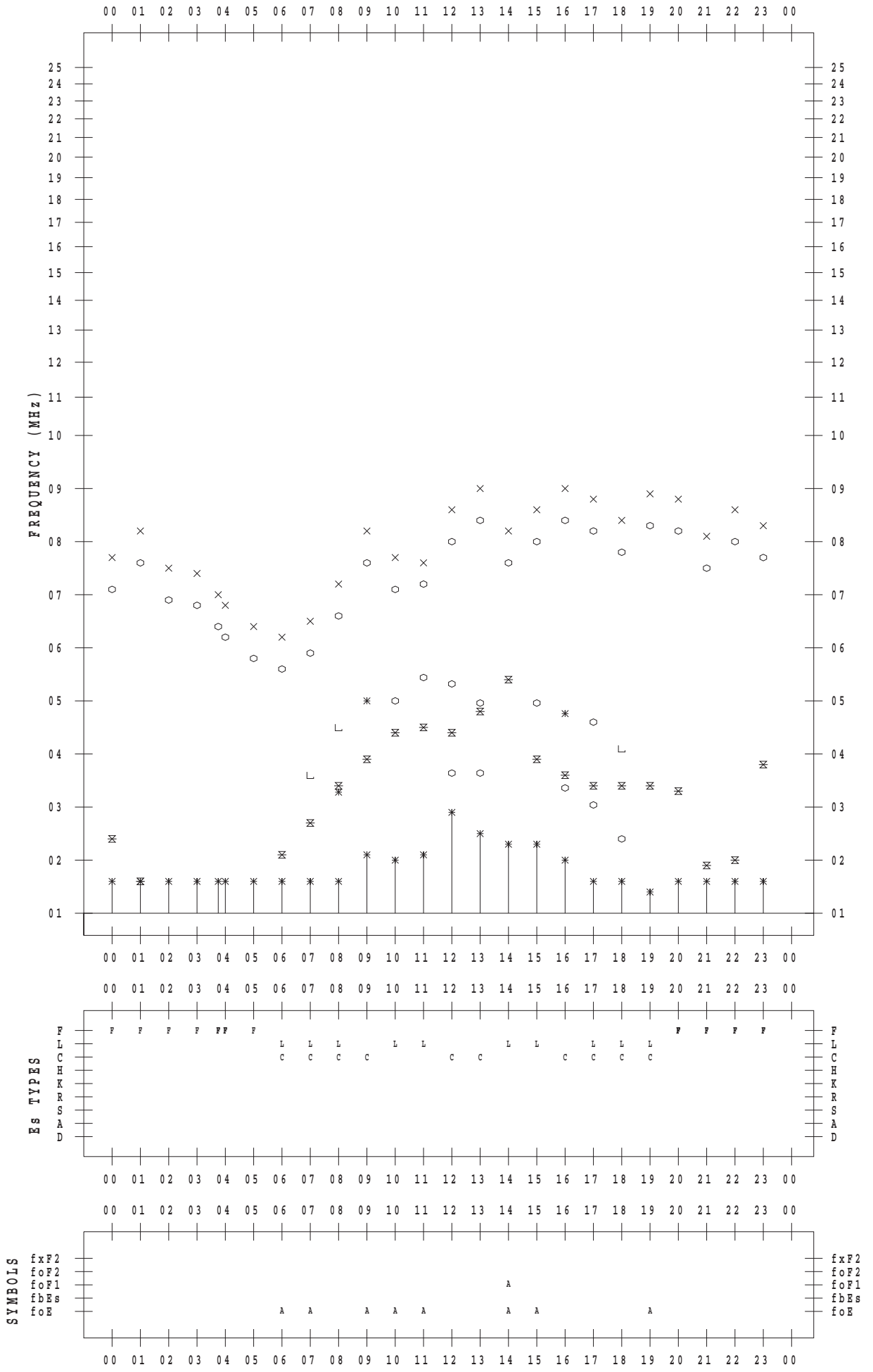
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 6

135 °E MEAN TIME



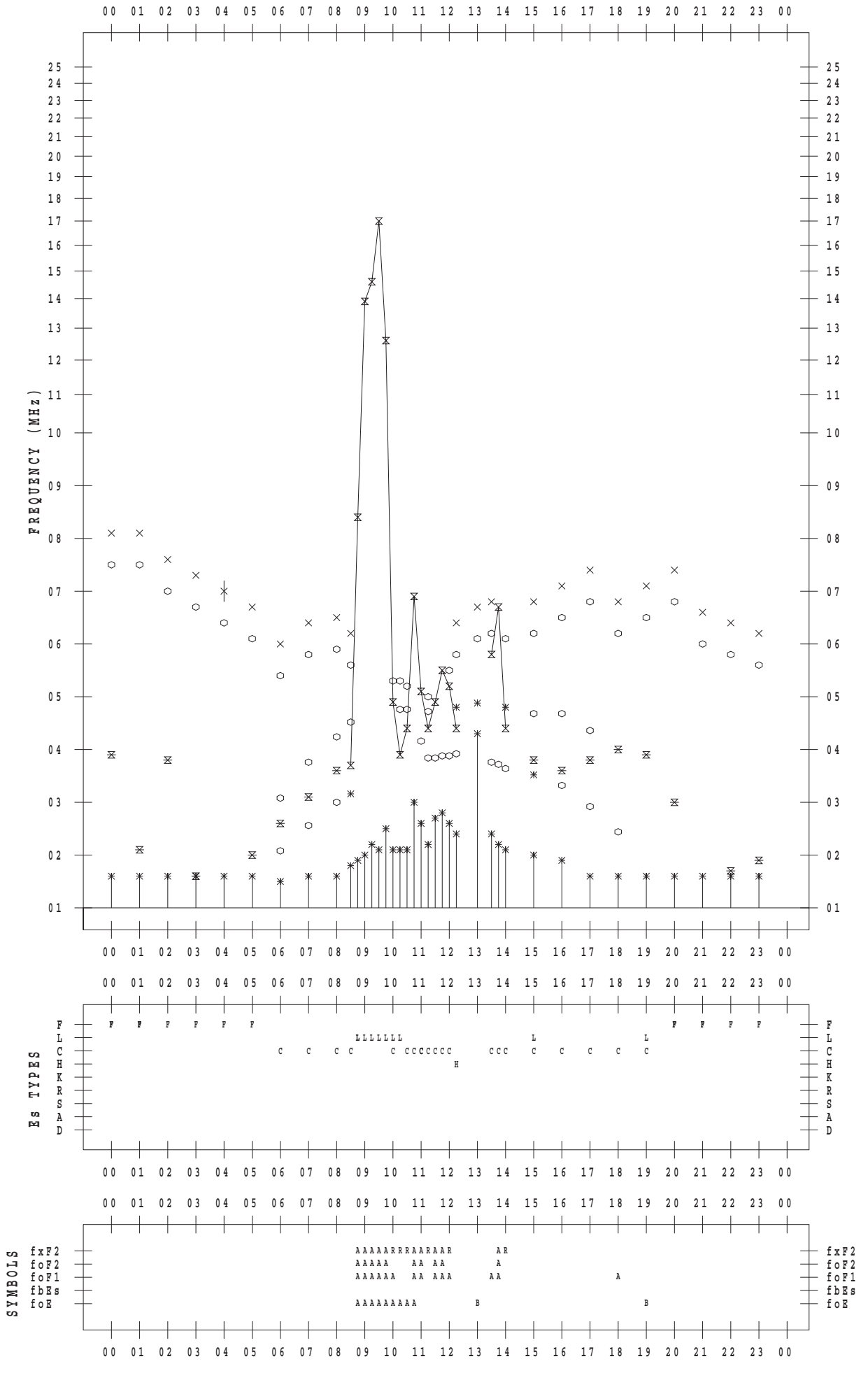
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 7

135 °E MEAN TIME



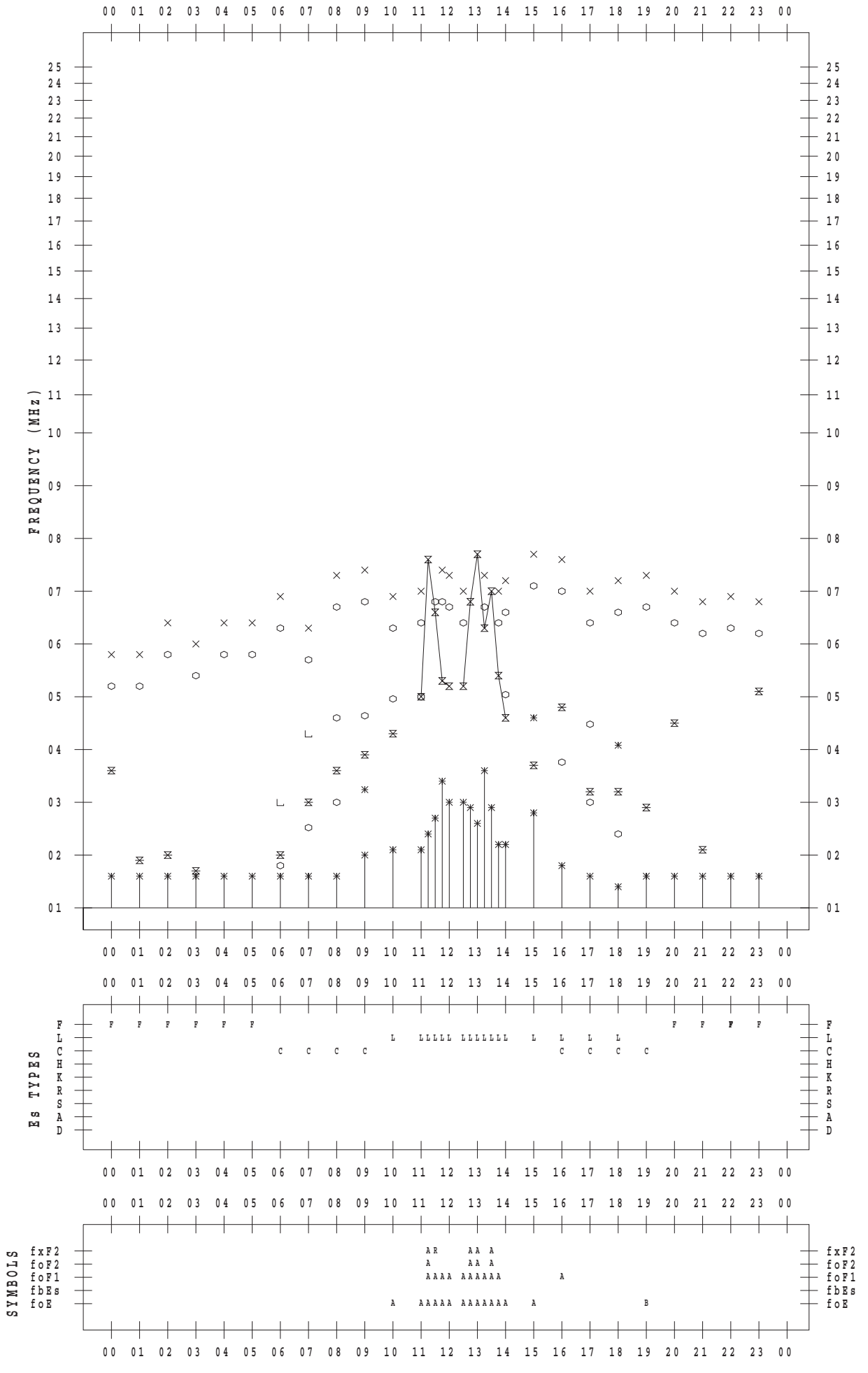
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 8

135 °E MEAN TIME



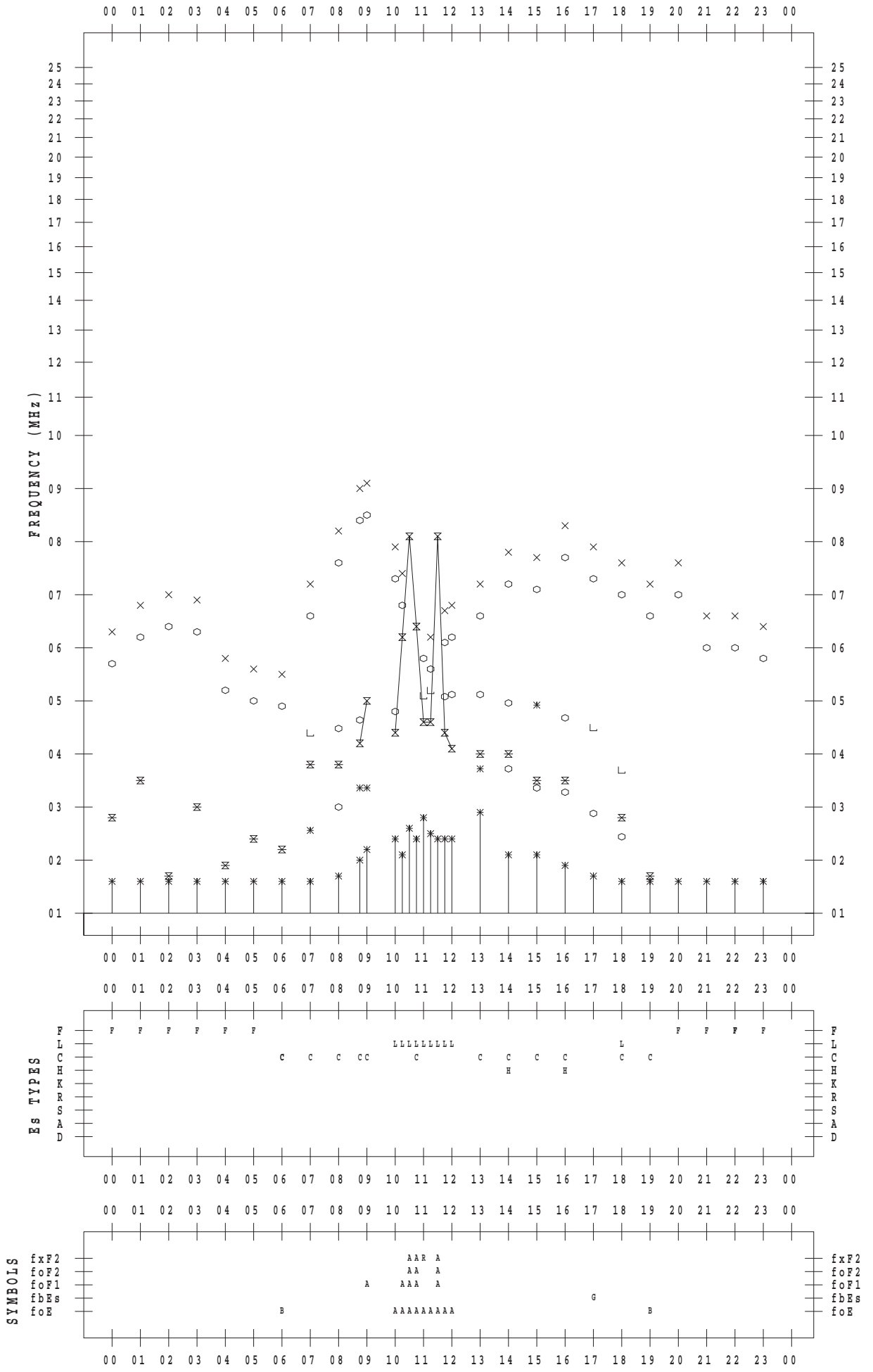
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/ 9

135 °E MEAN TIME



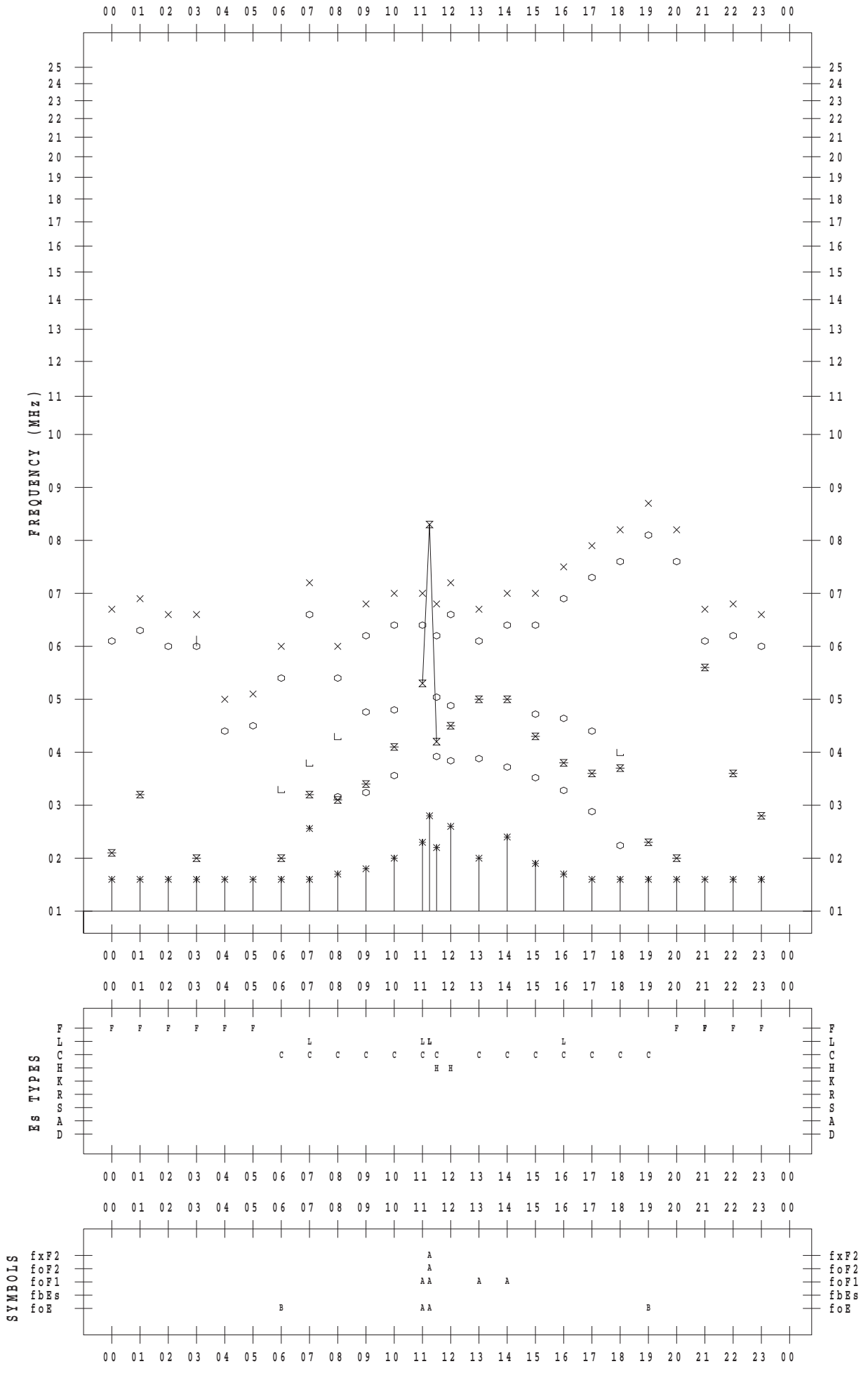
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/10

135 °E MEAN TIME



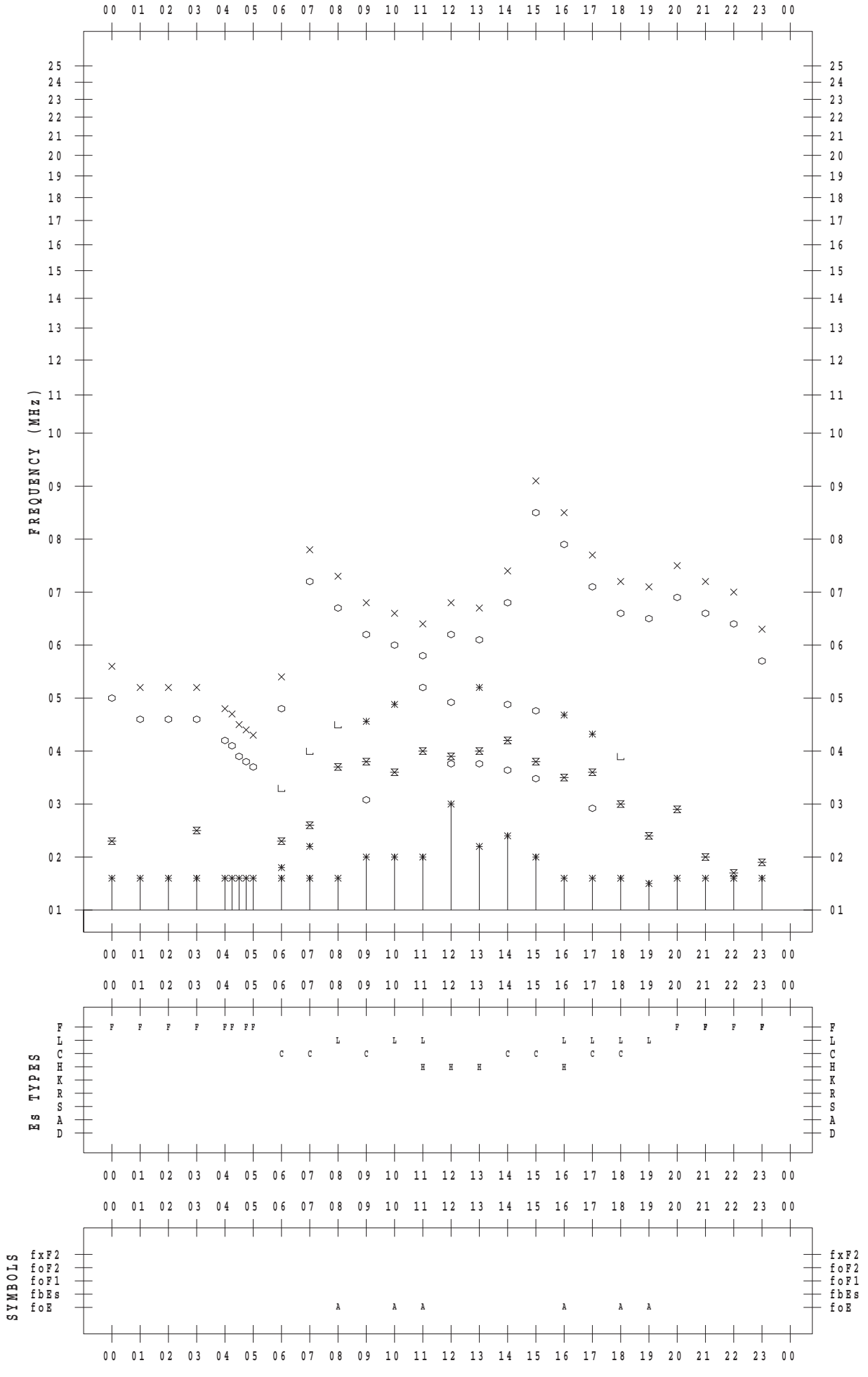
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/11

135 °E MEAN TIME



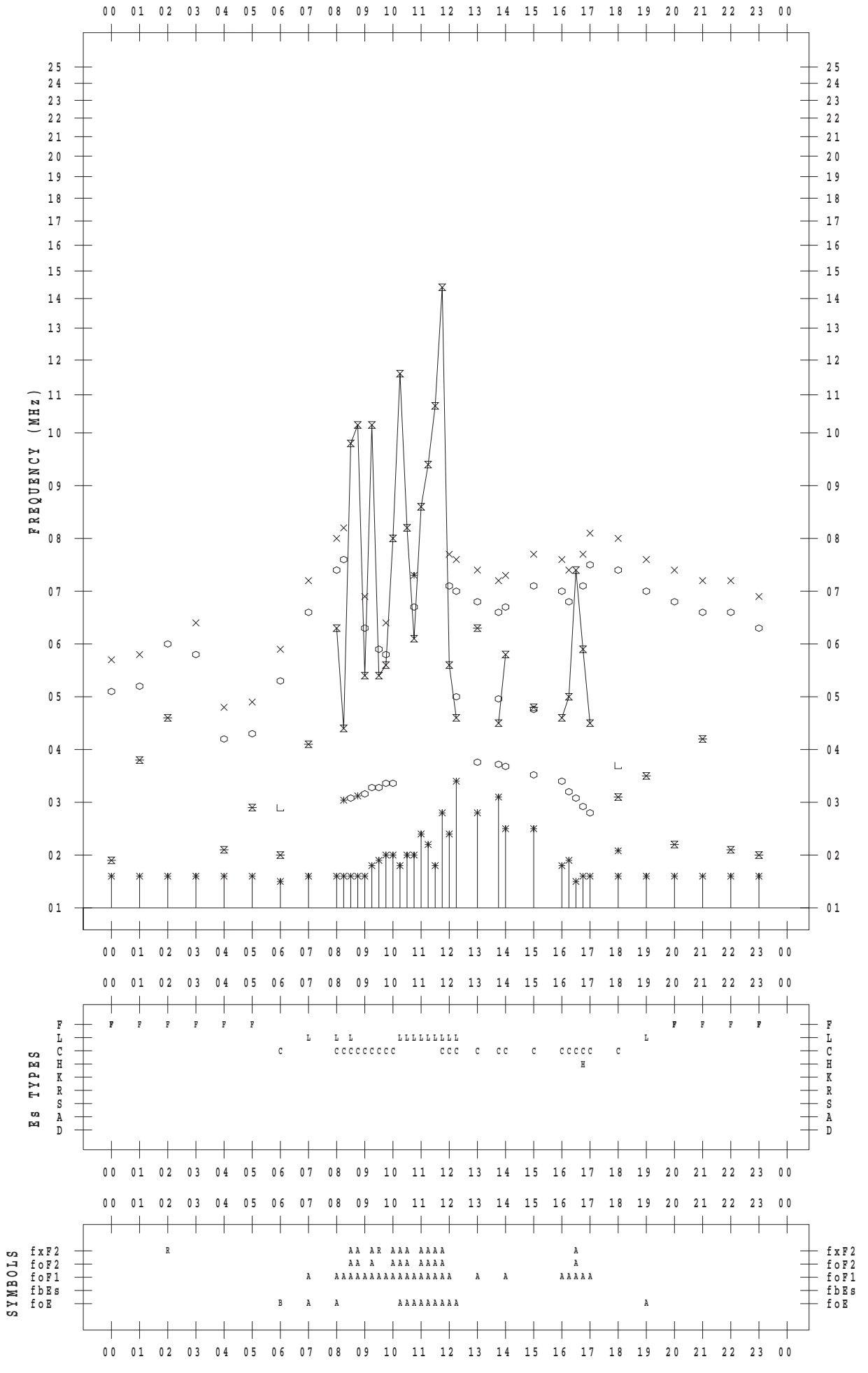
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/12

135 °E MEAN TIME



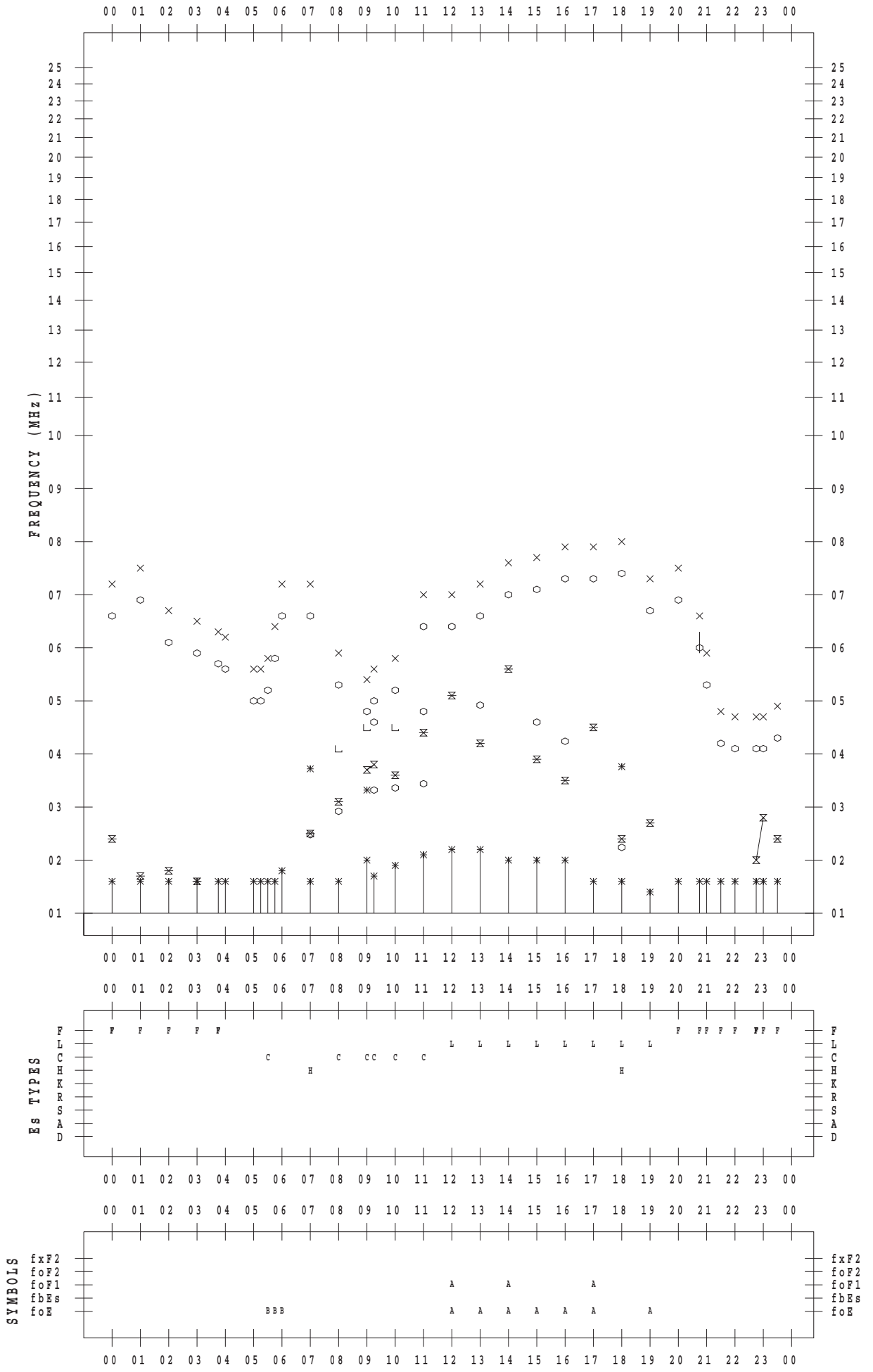
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/13

135 °E MEAN TIME



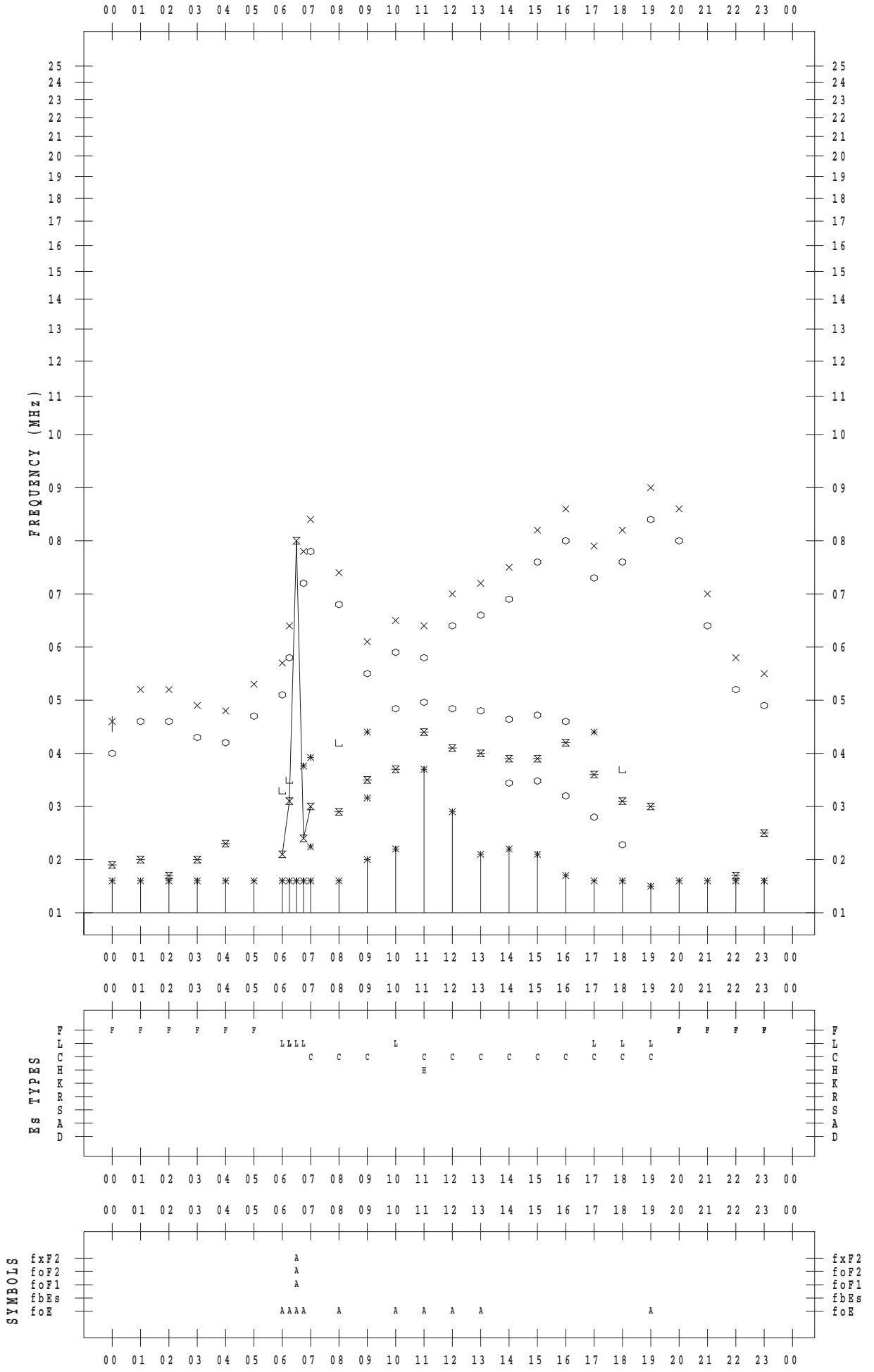
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/14

135 °E MEAN TIME



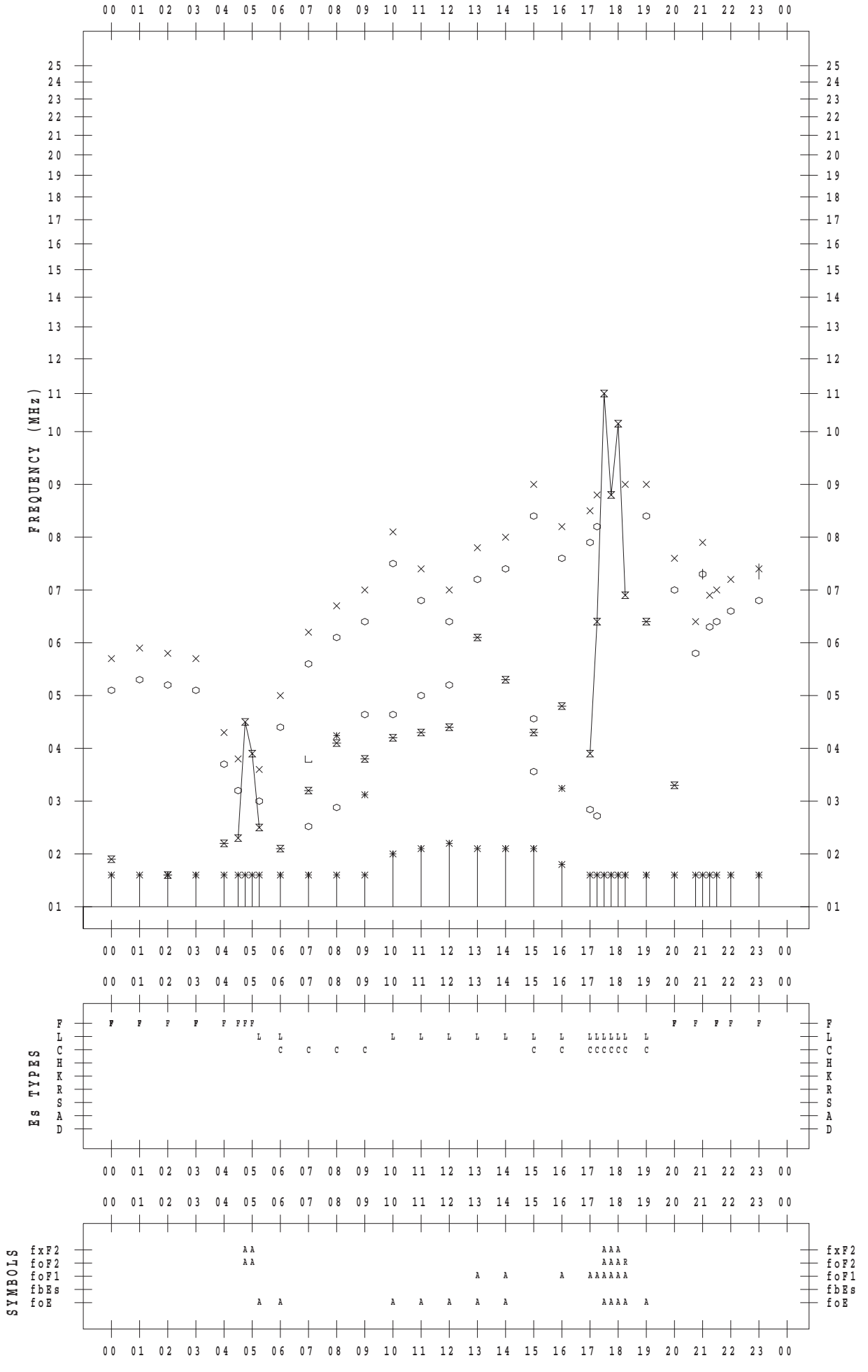
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/15

135 °E MEAN TIME



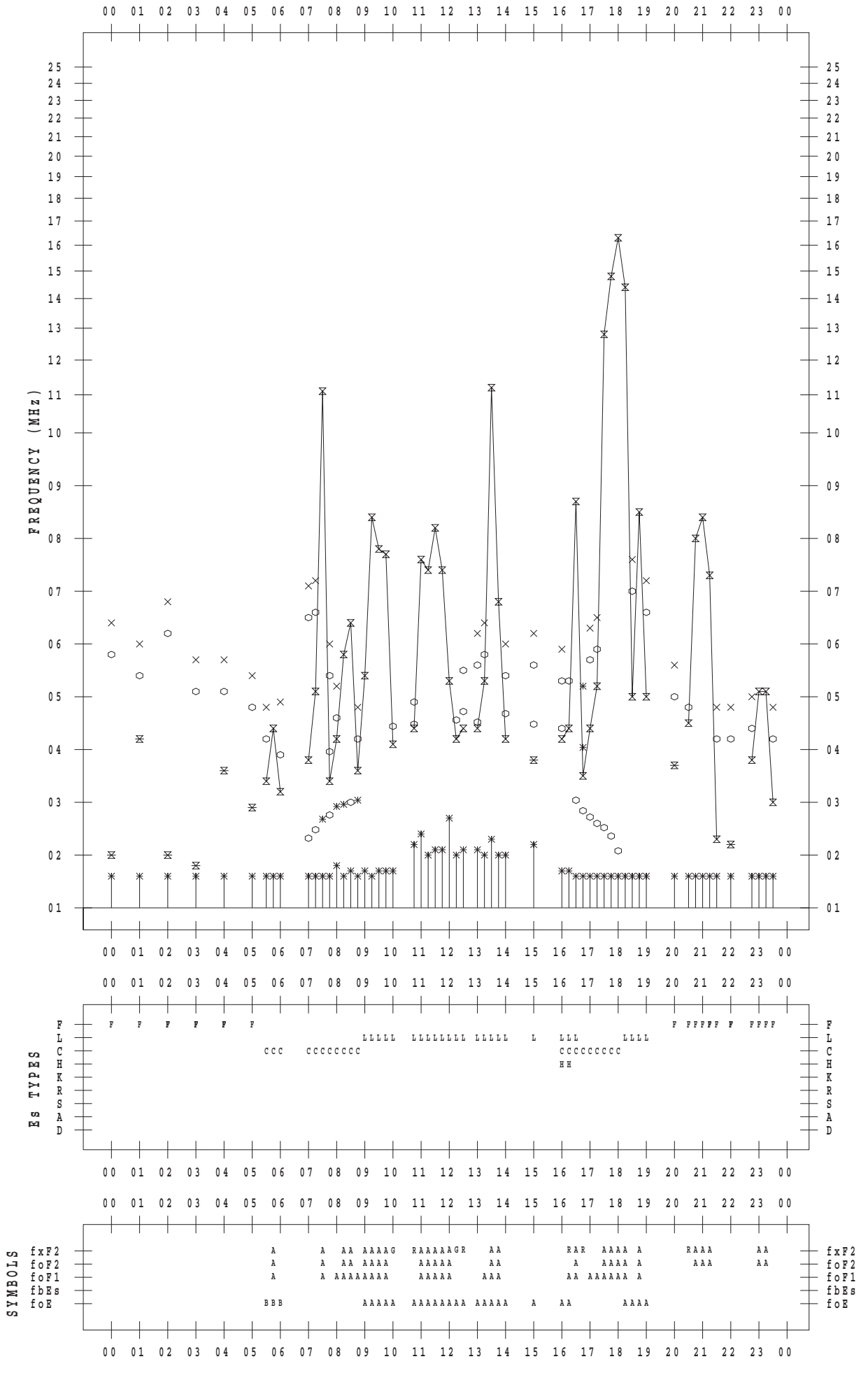
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/16

135 °E MEAN TIME



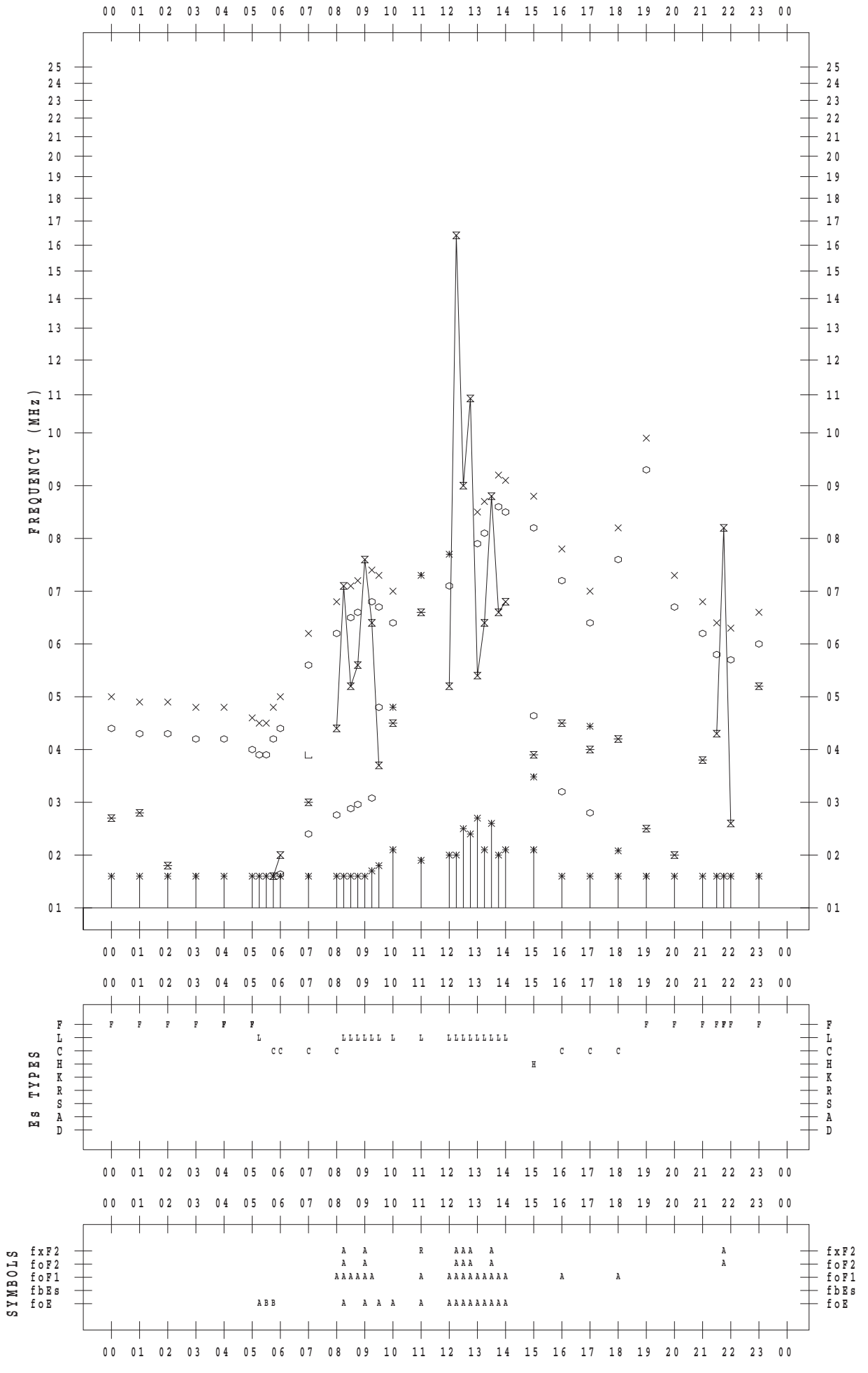
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/17

135 °E MEAN TIME



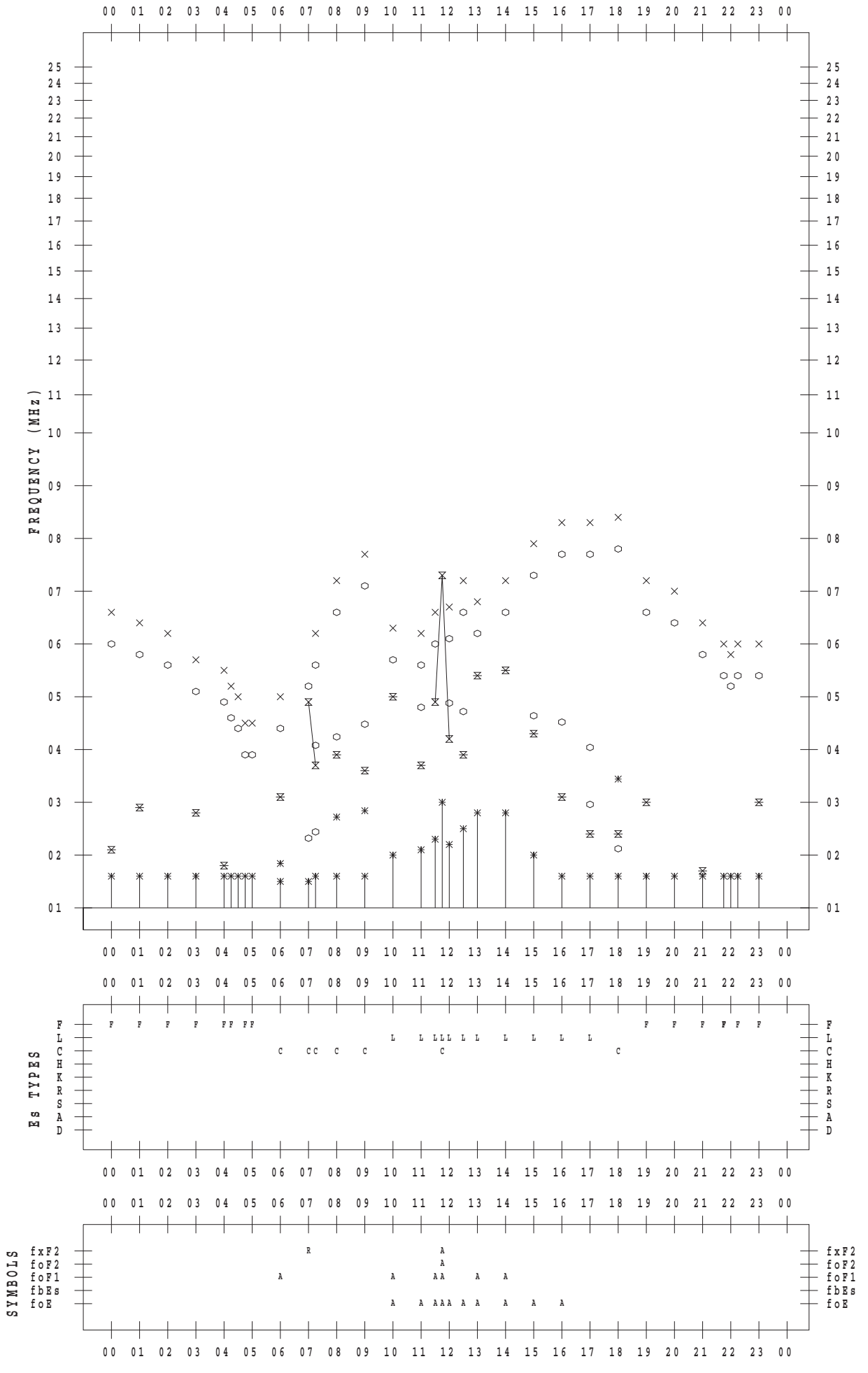
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/18

135 °E MEAN TIME



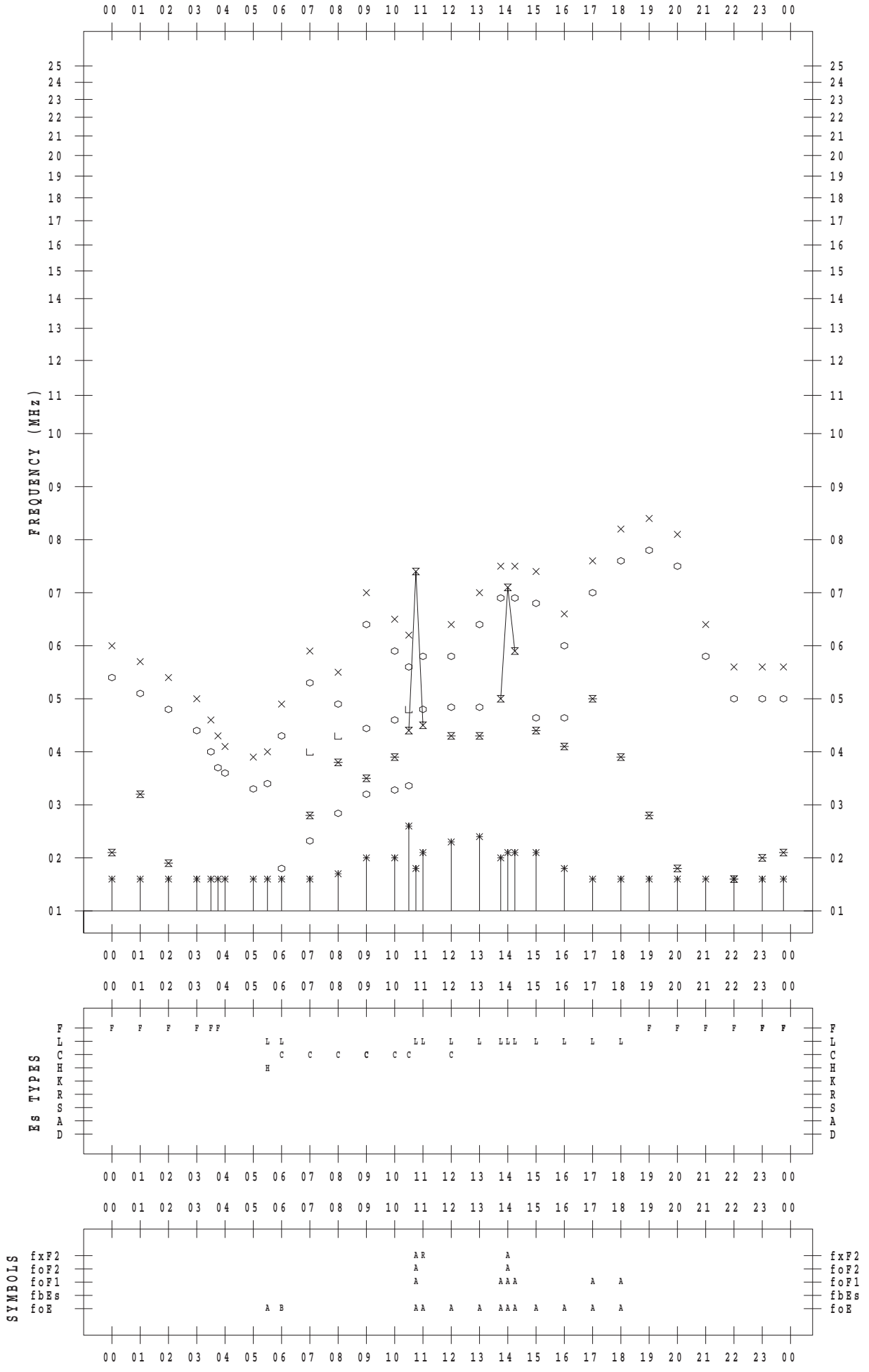
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/19

135 °E MEAN TIME



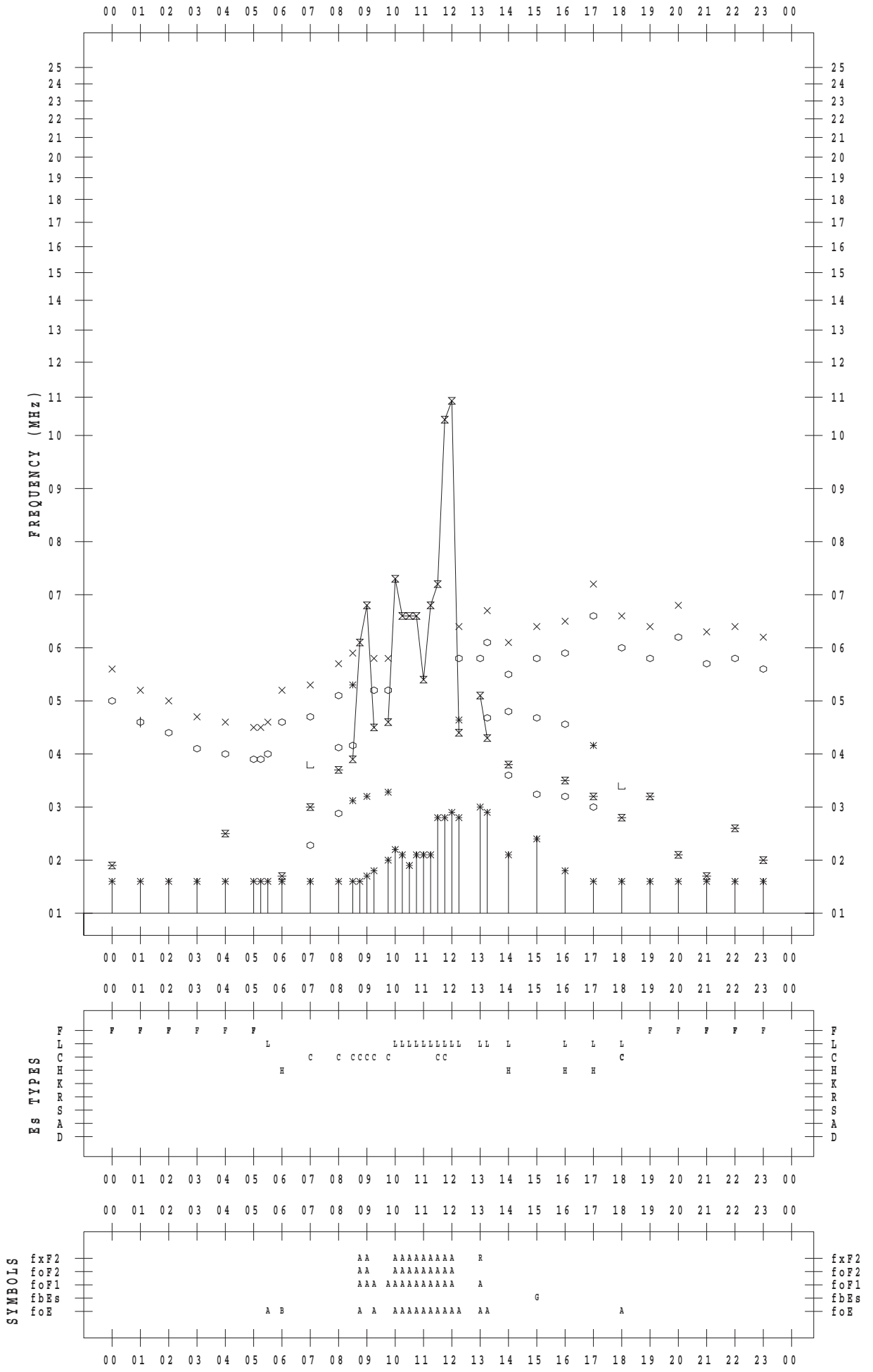
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/20

135 °E MEAN TIME



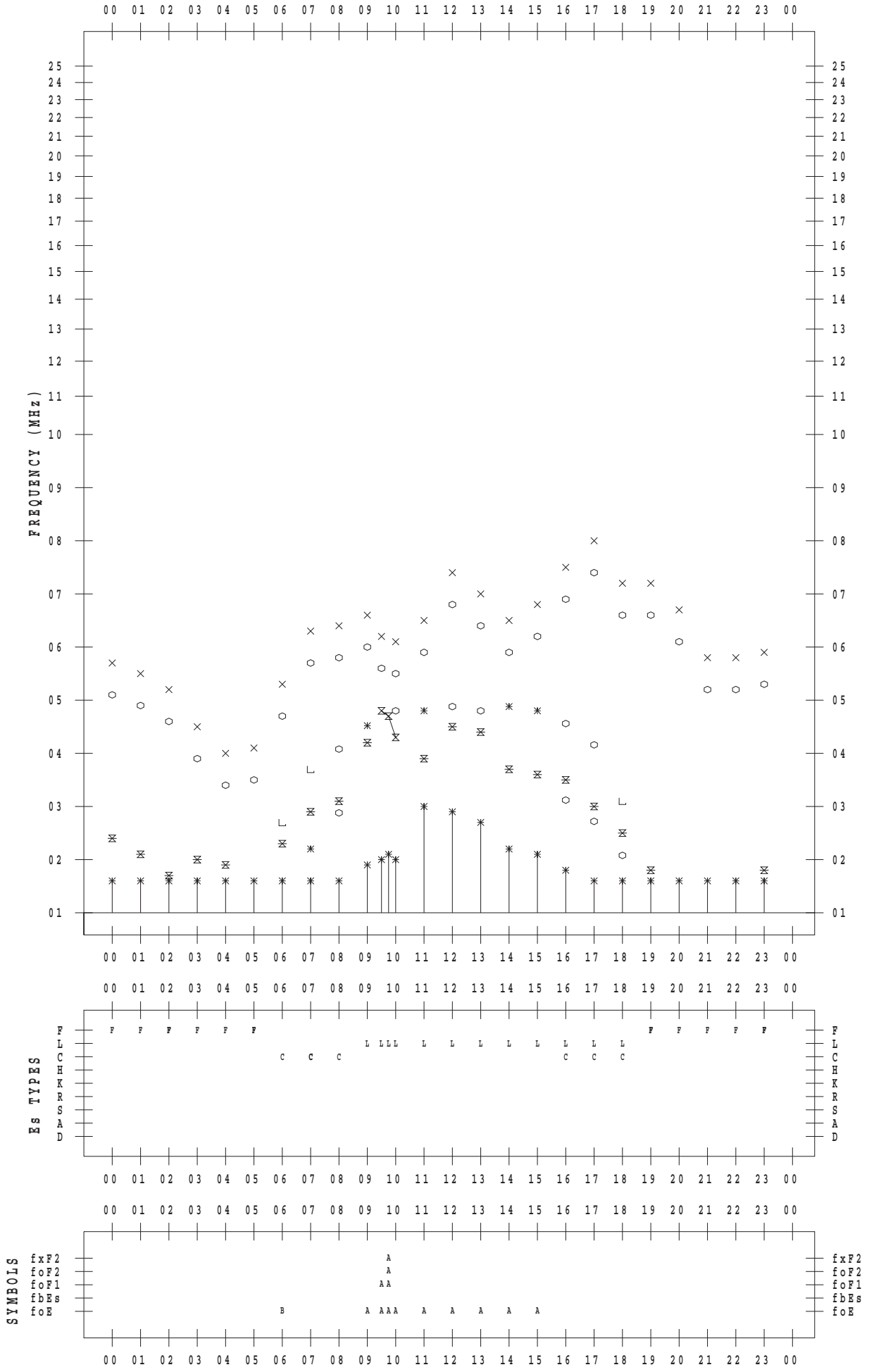
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/21

135 °E MEAN TIME



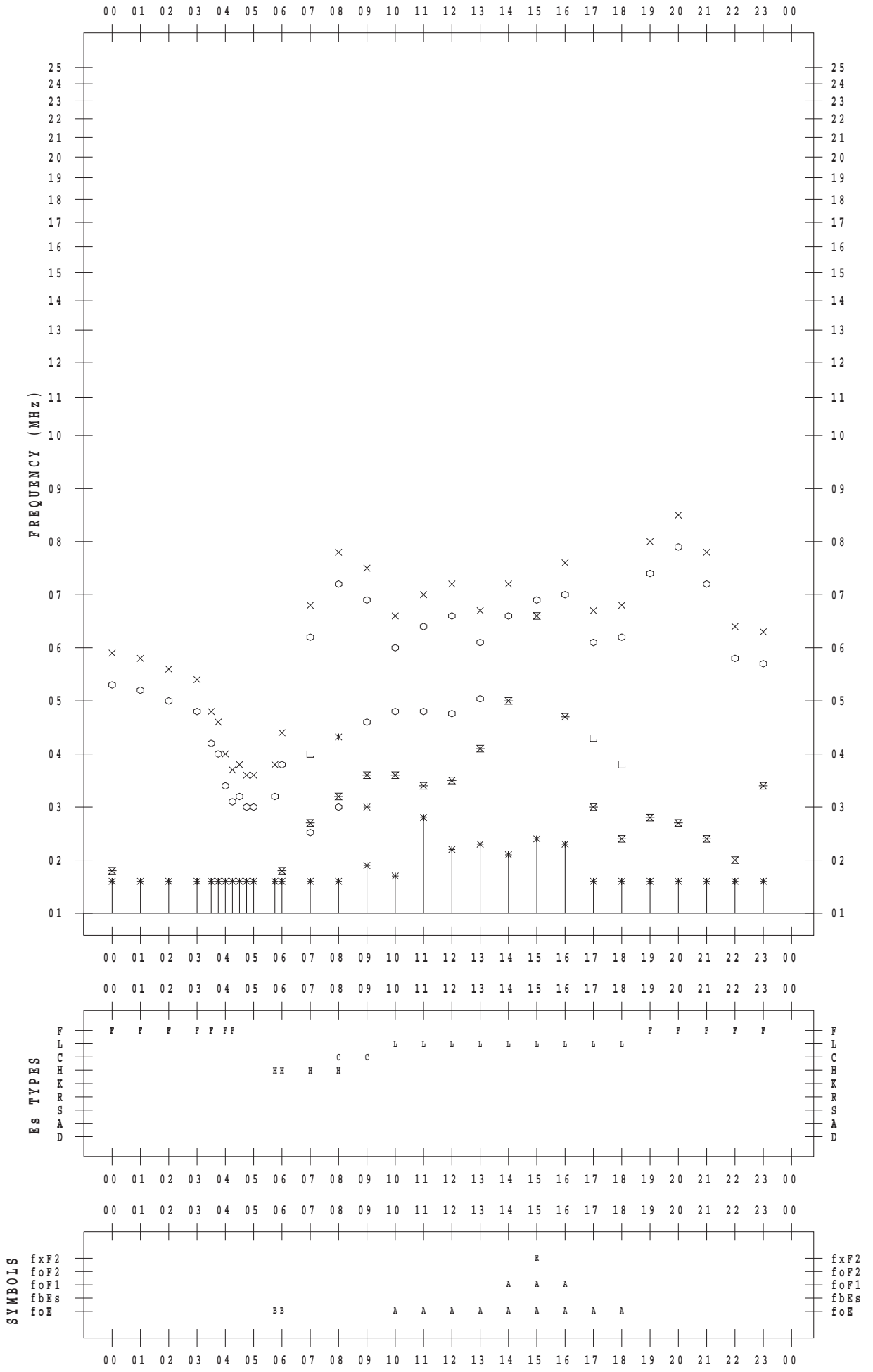
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/22

135 °E MEAN TIME



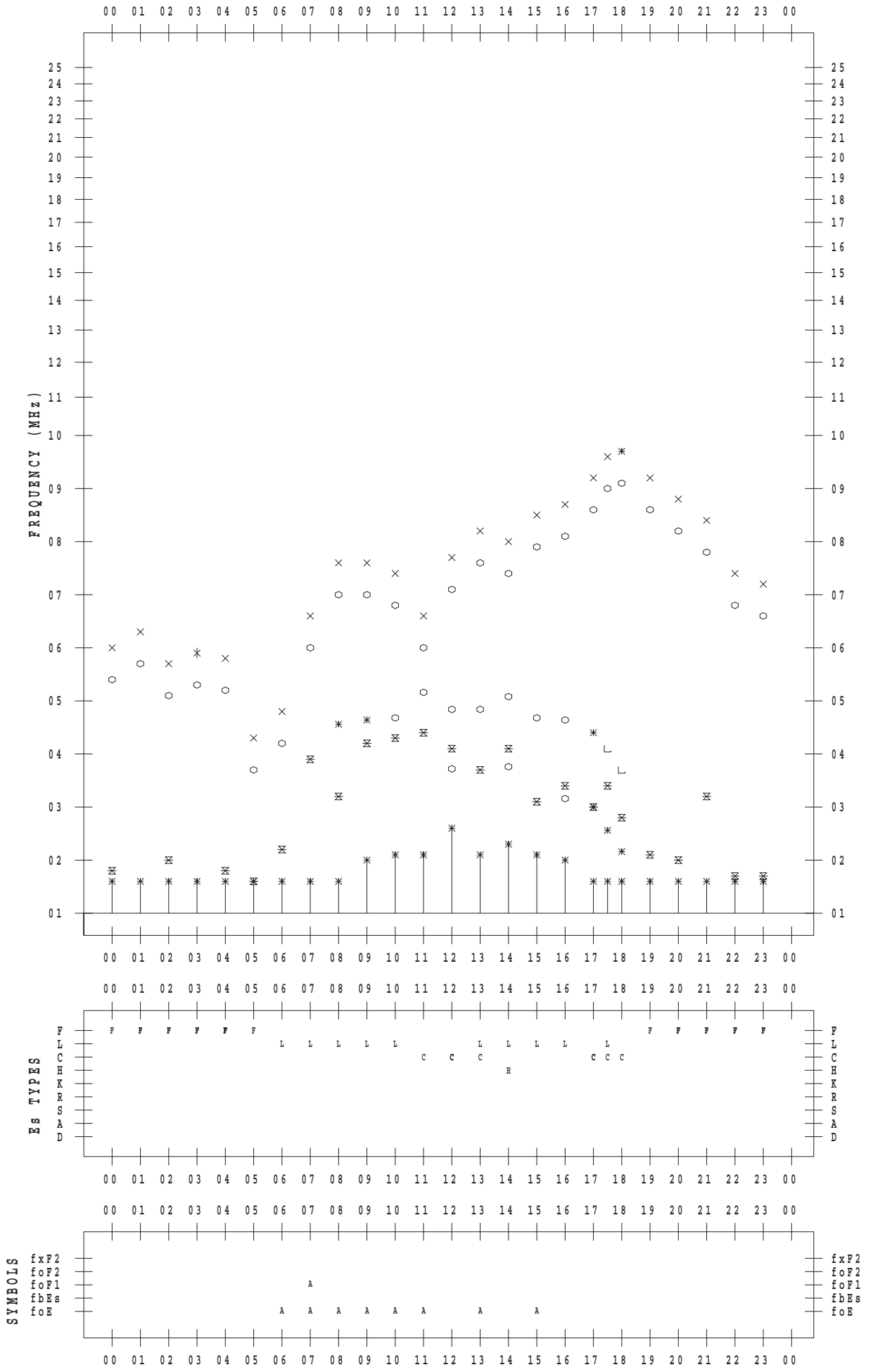
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/23

135 °E MEAN TIME



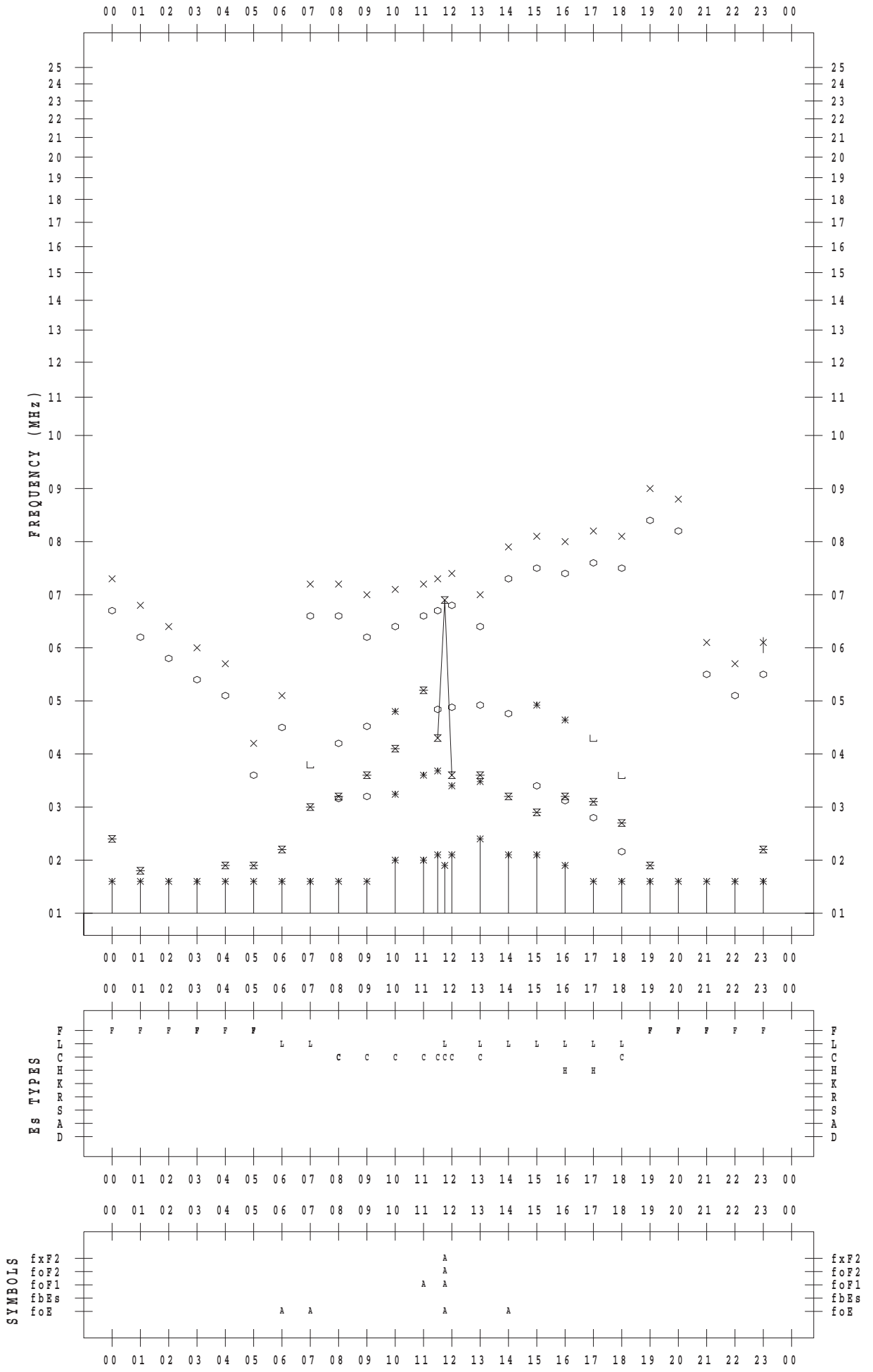
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/24

135 °E MEAN TIME



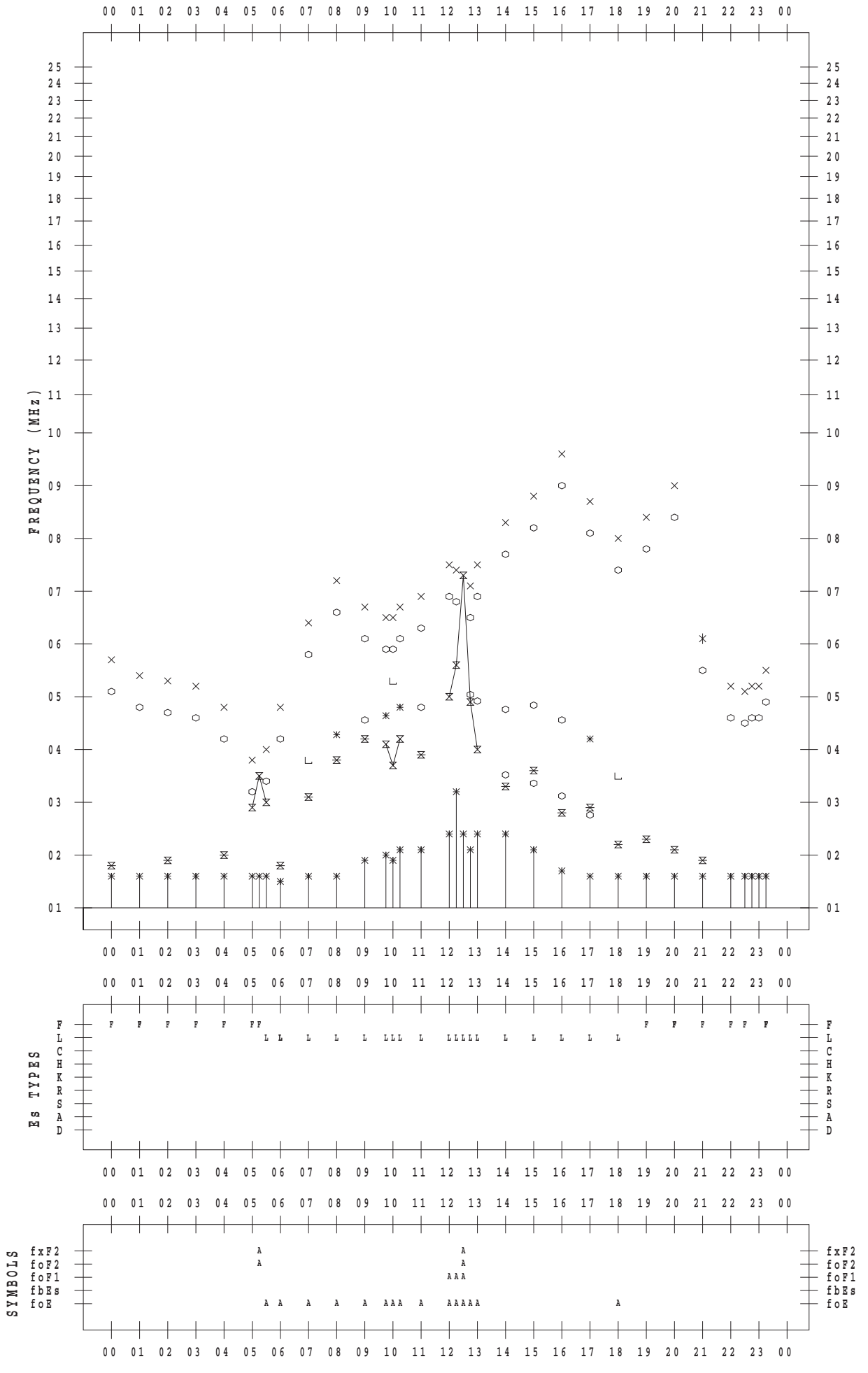
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/25

135 °E MEAN TIME



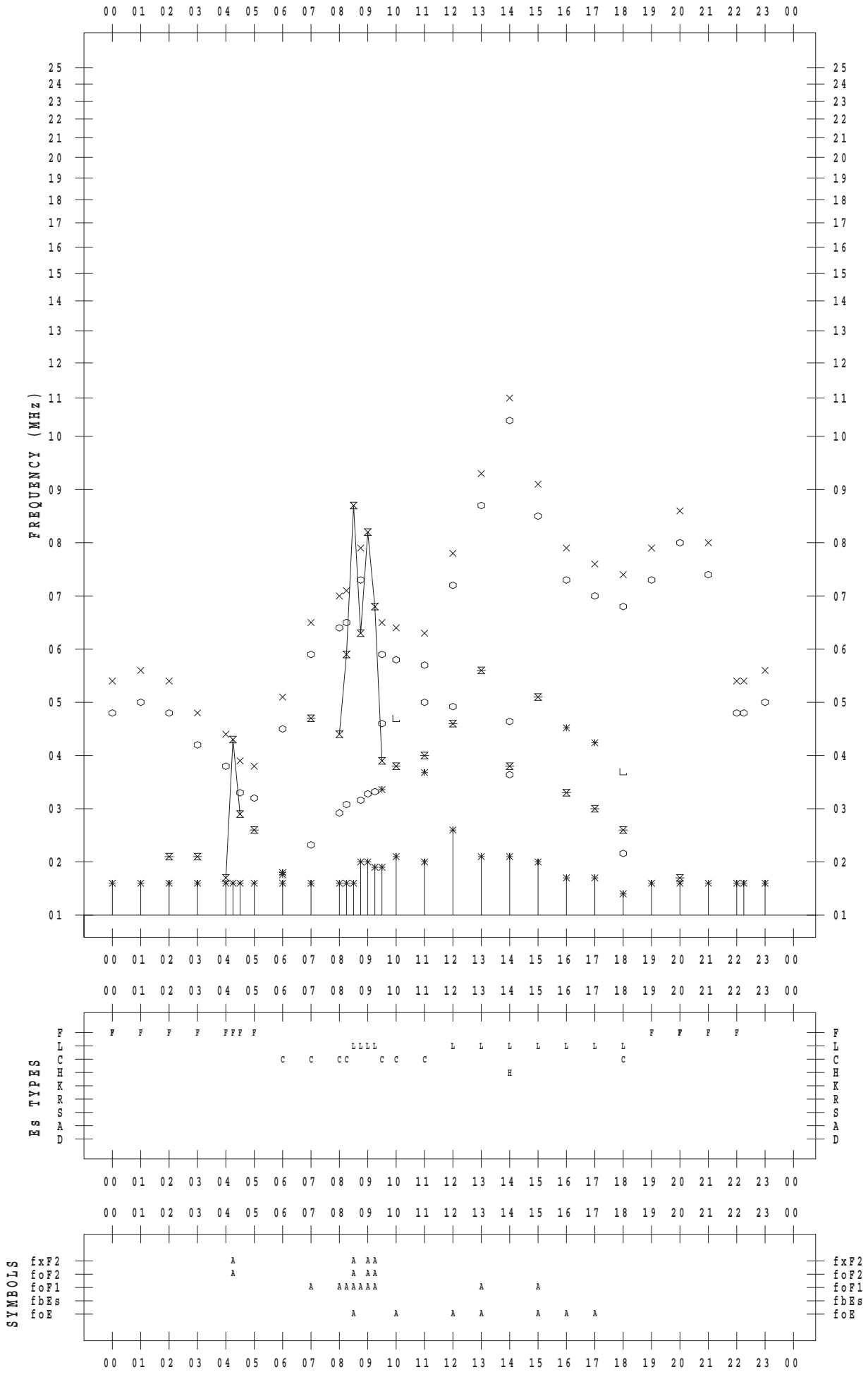
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/26

135 °E MEAN TIME



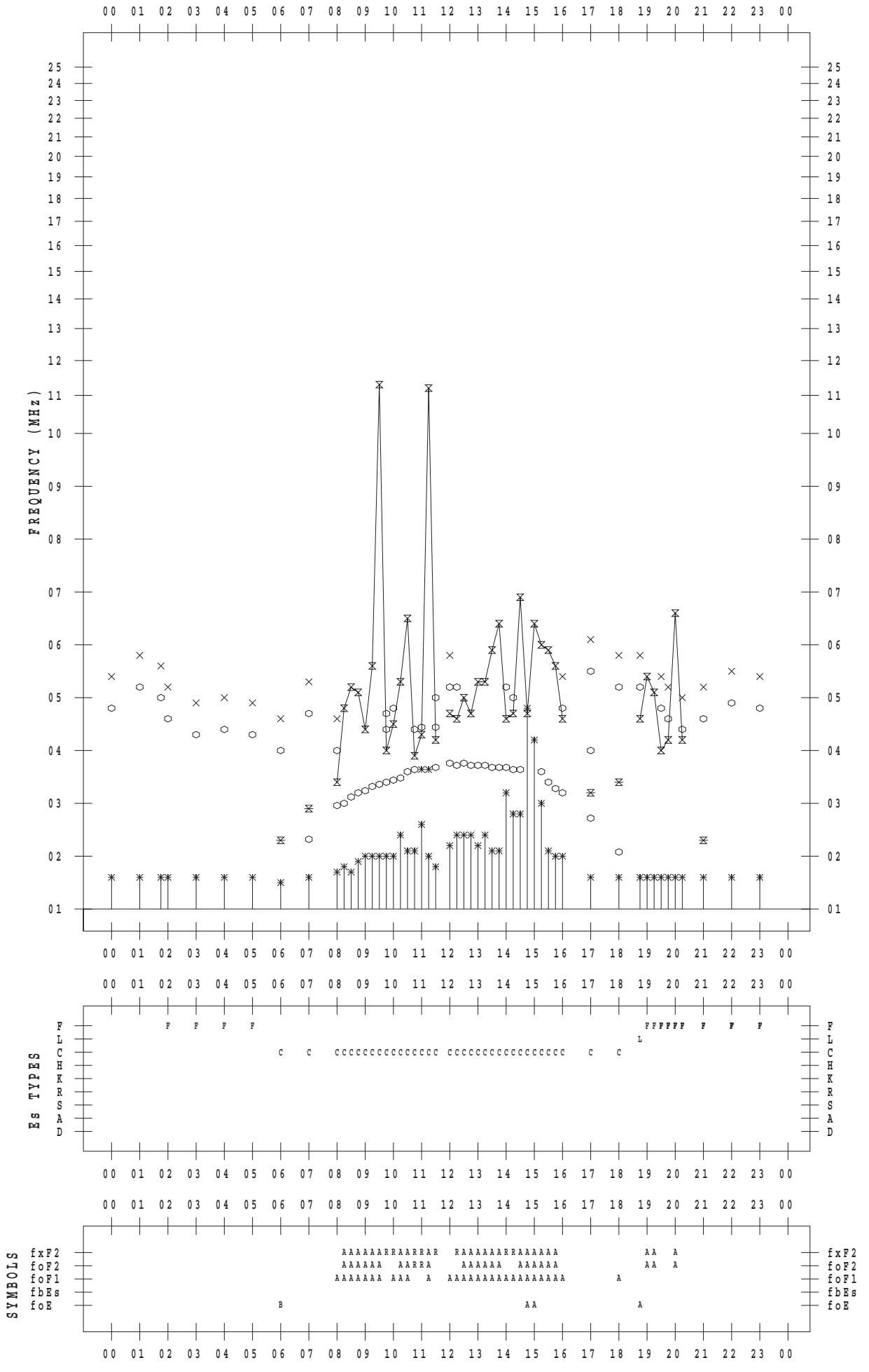
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/27

135 °E MEAN TIME



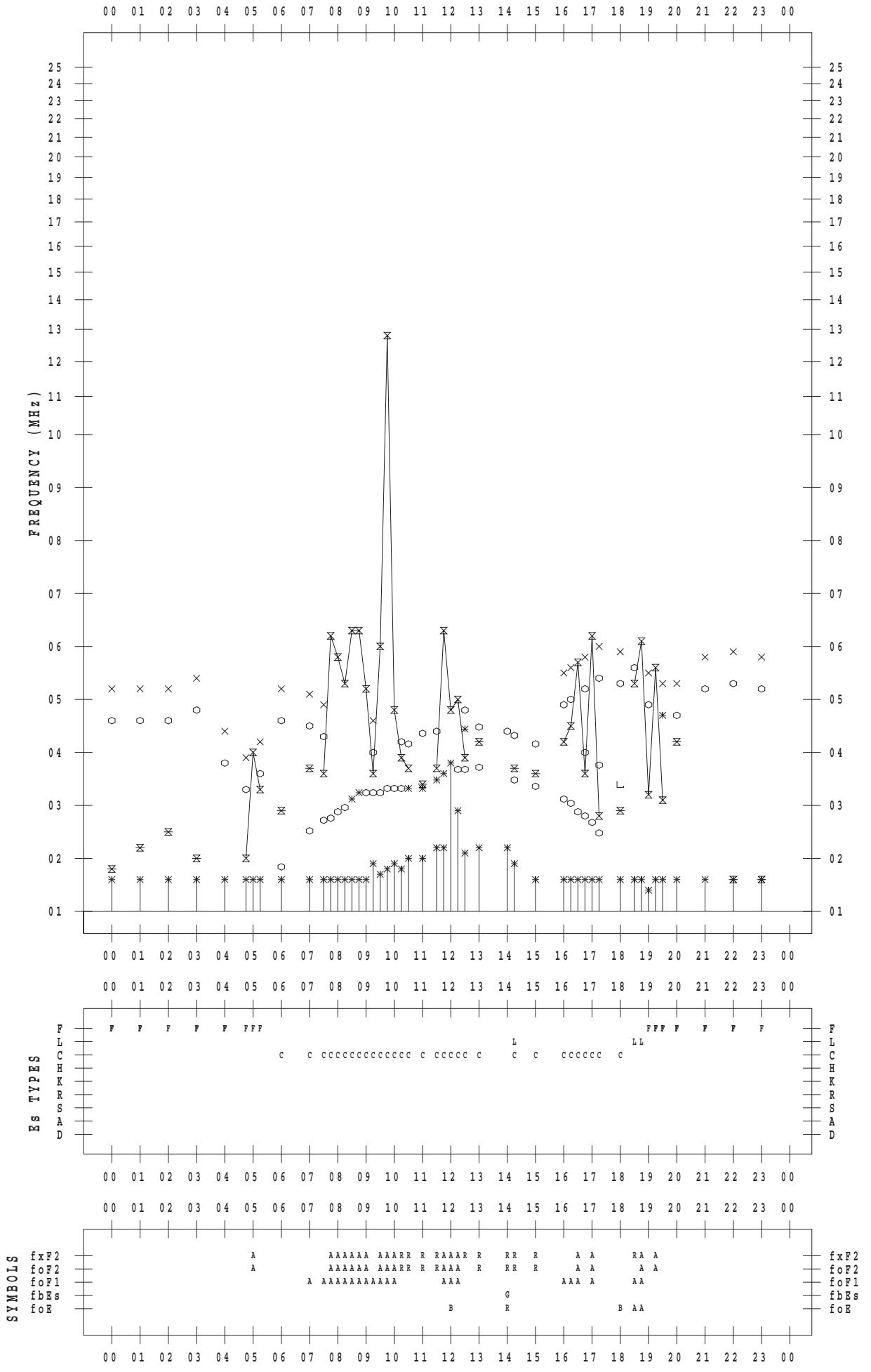
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/28

135 °E MEAN TIME



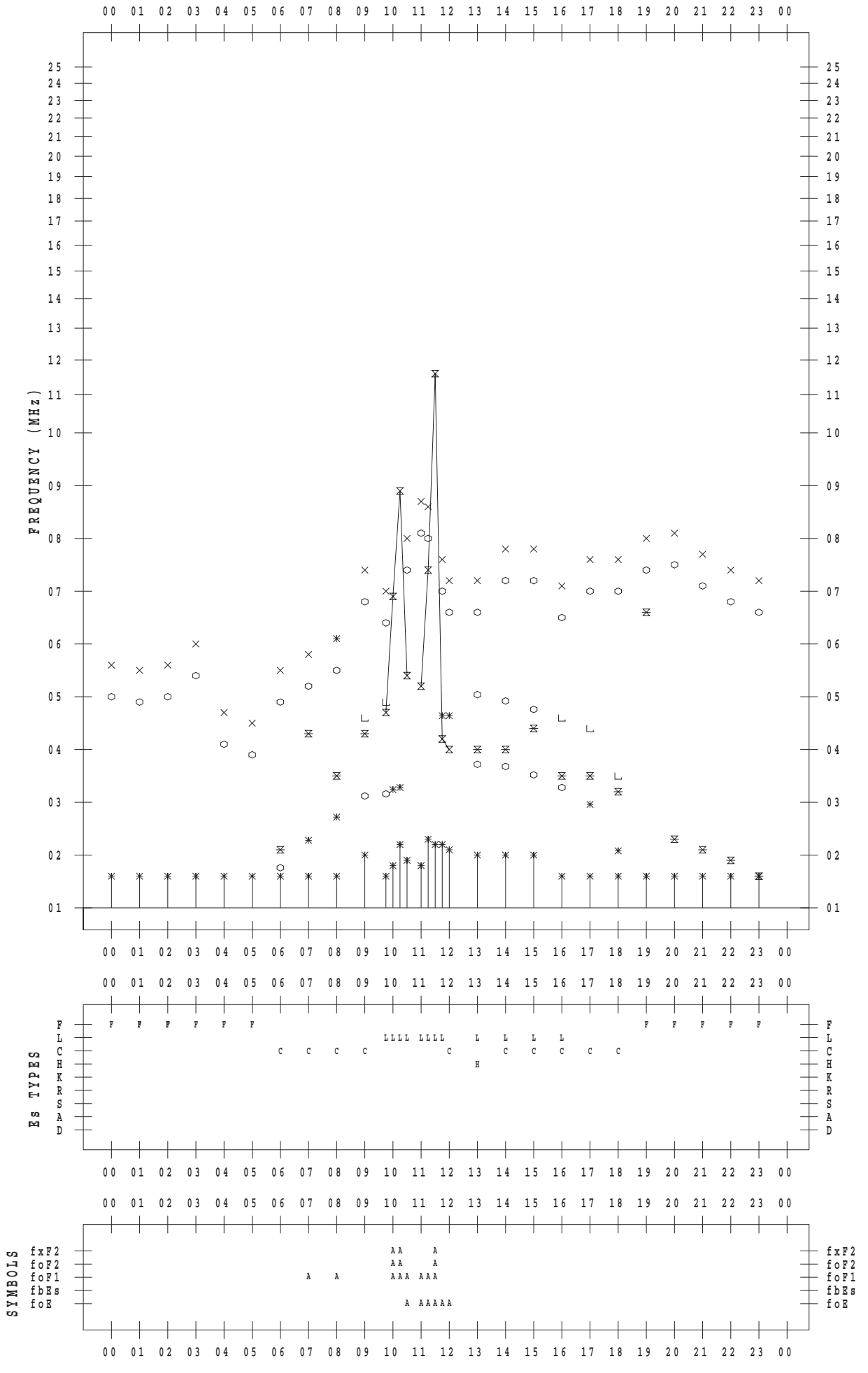
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/29

135 °E MEAN TIME



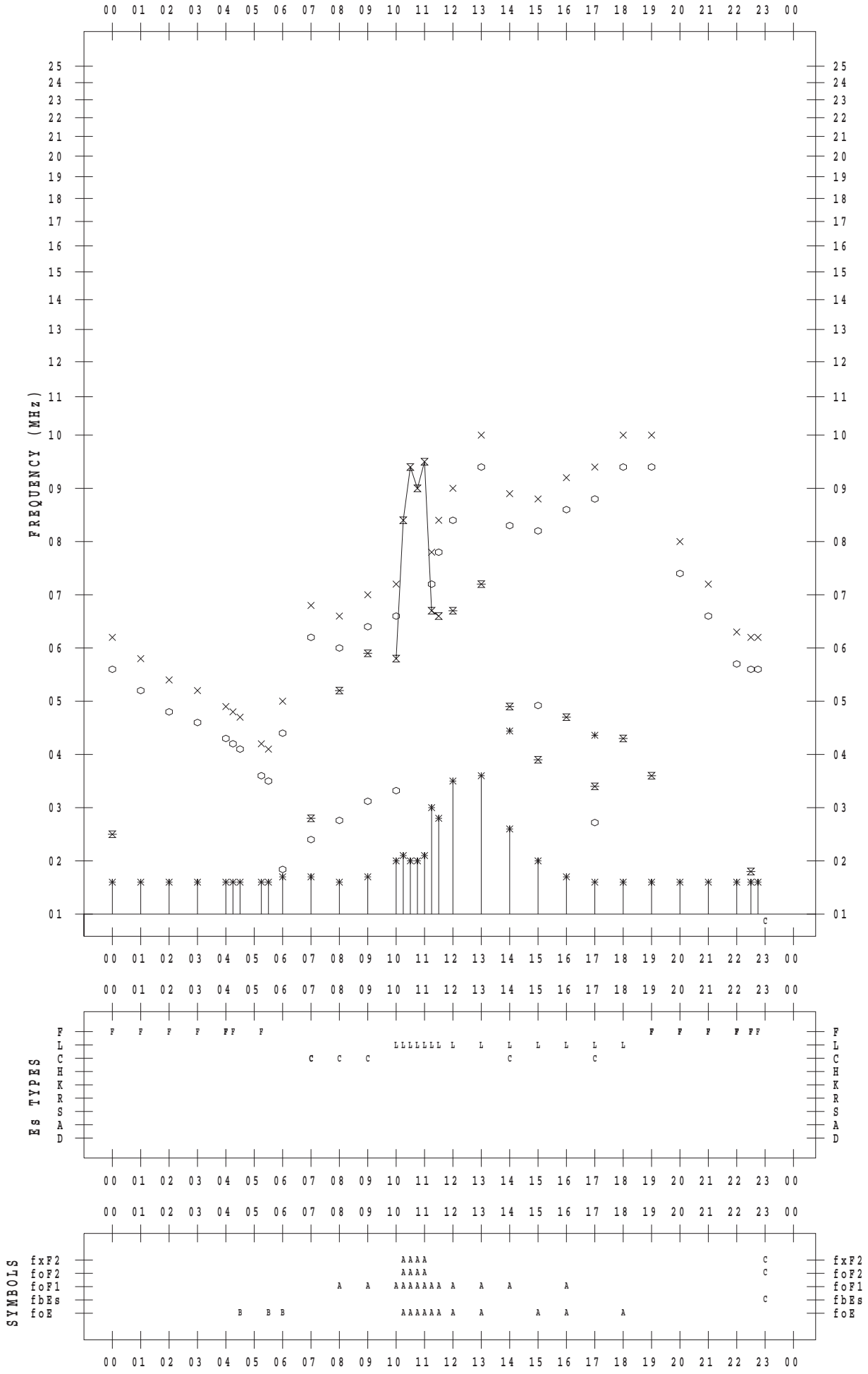
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/30

135 °E MEAN TIME



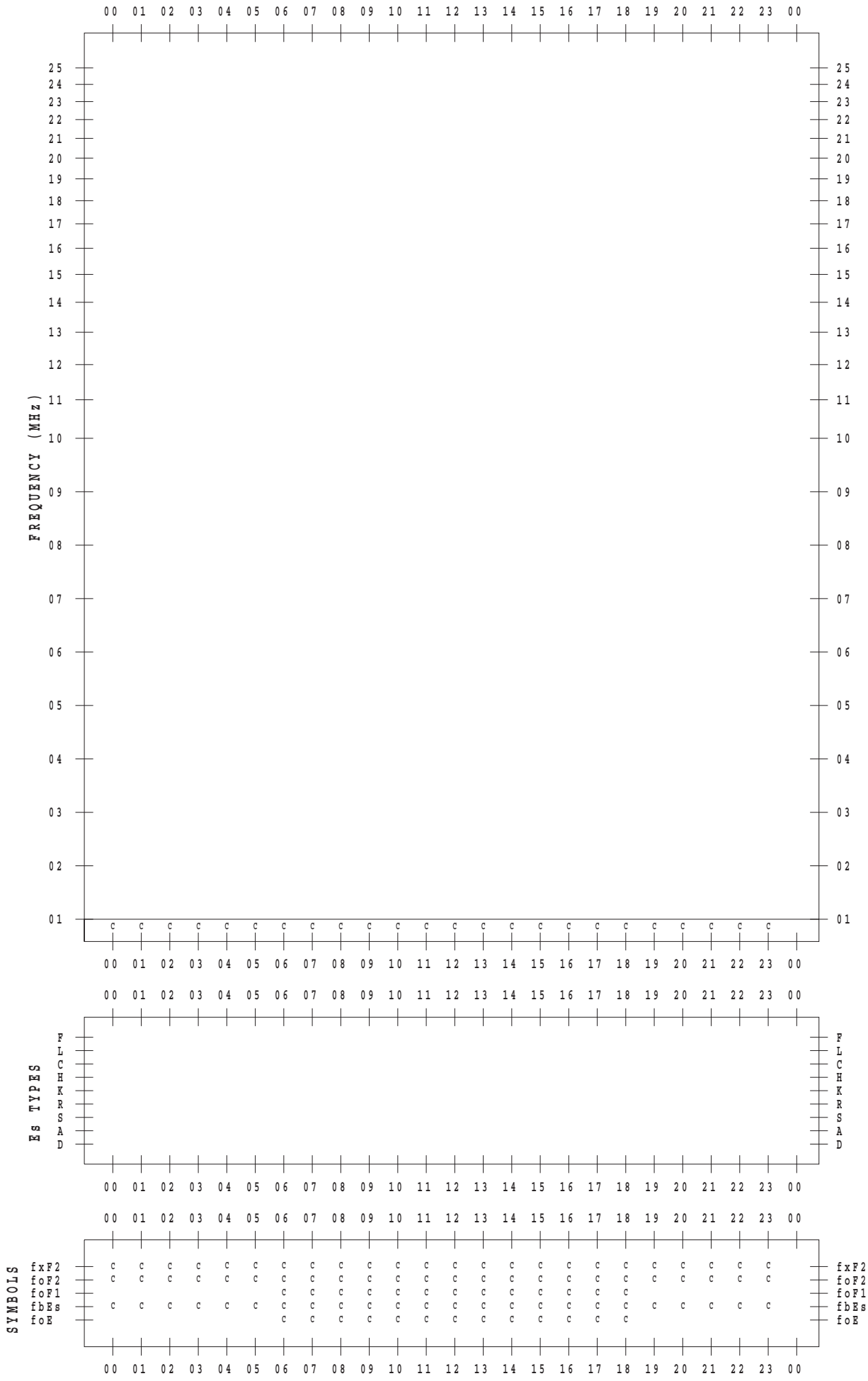
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2015/ 8/31

135 °E MEAN TIME



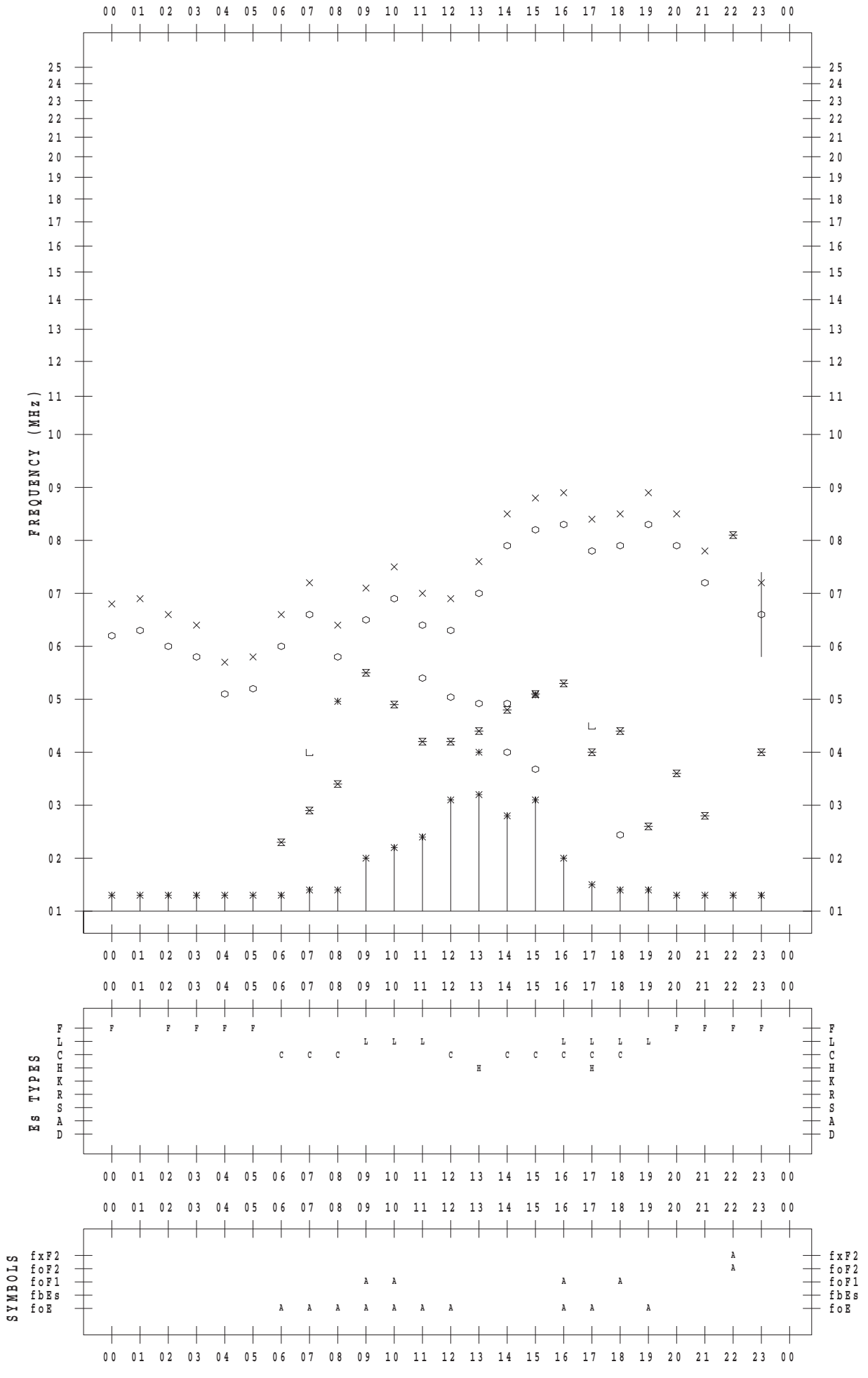
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 1

135 °E MEAN TIME



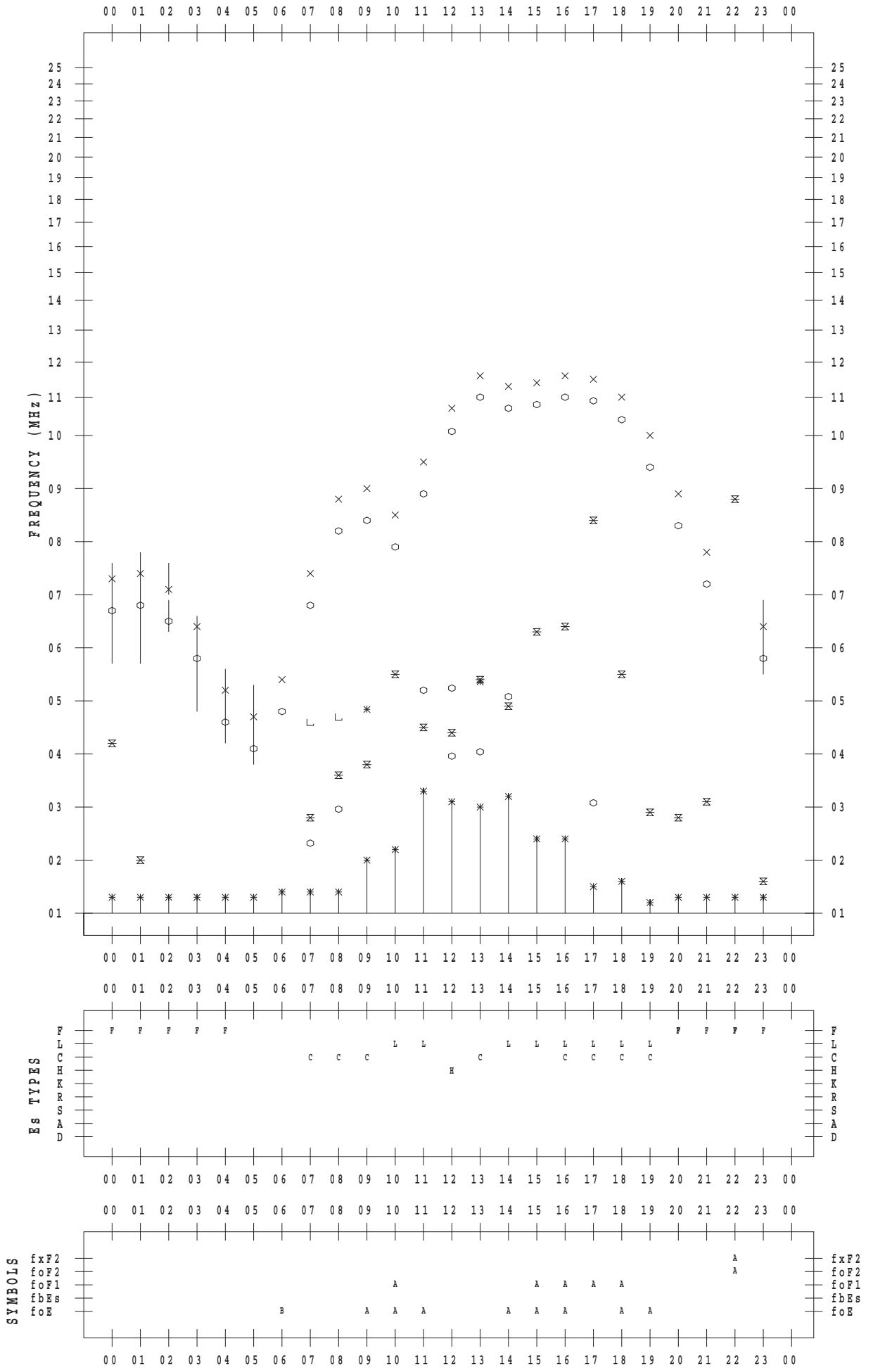
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 2

135 °E MEAN TIME



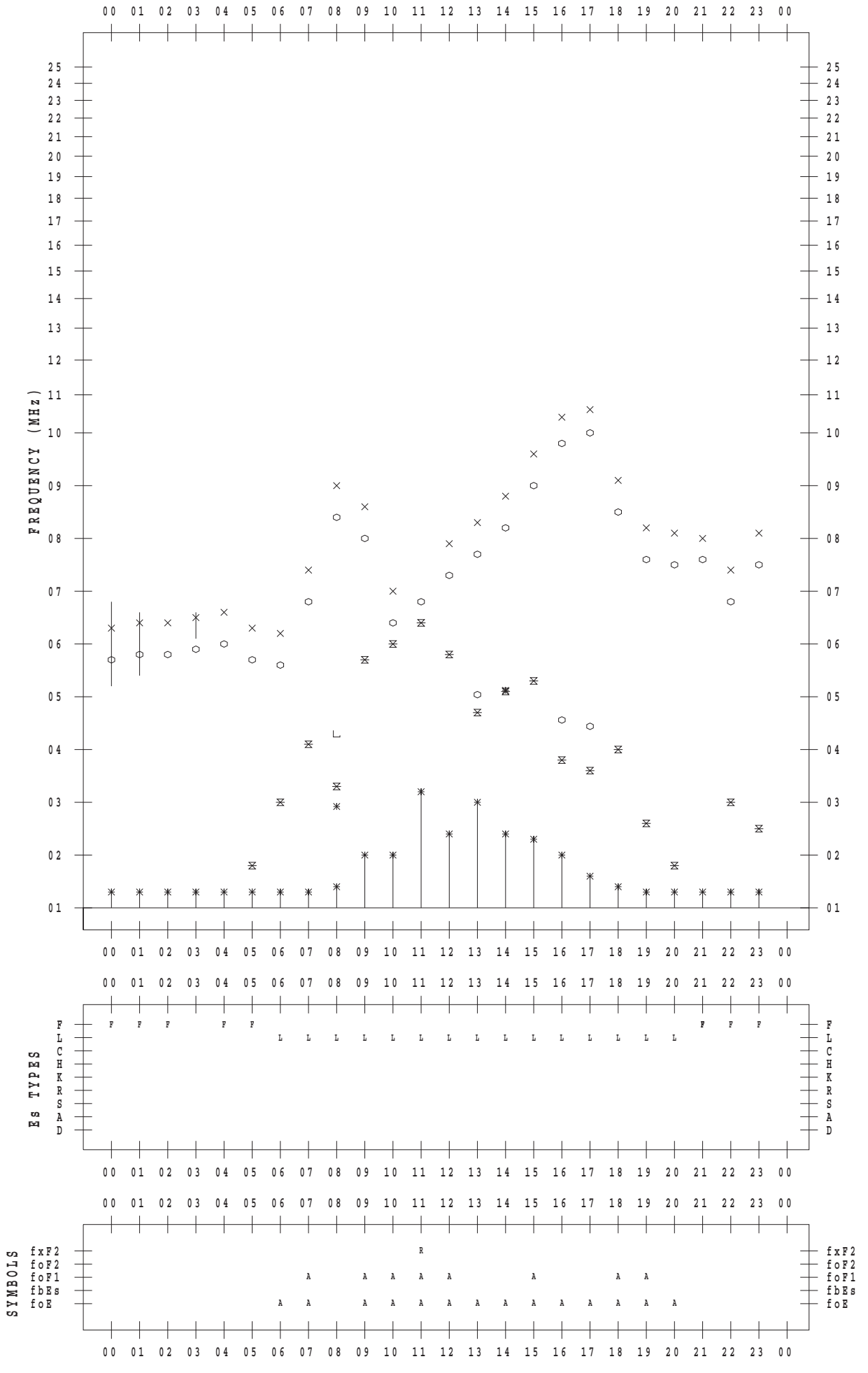
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 3

135 °E MEAN TIME



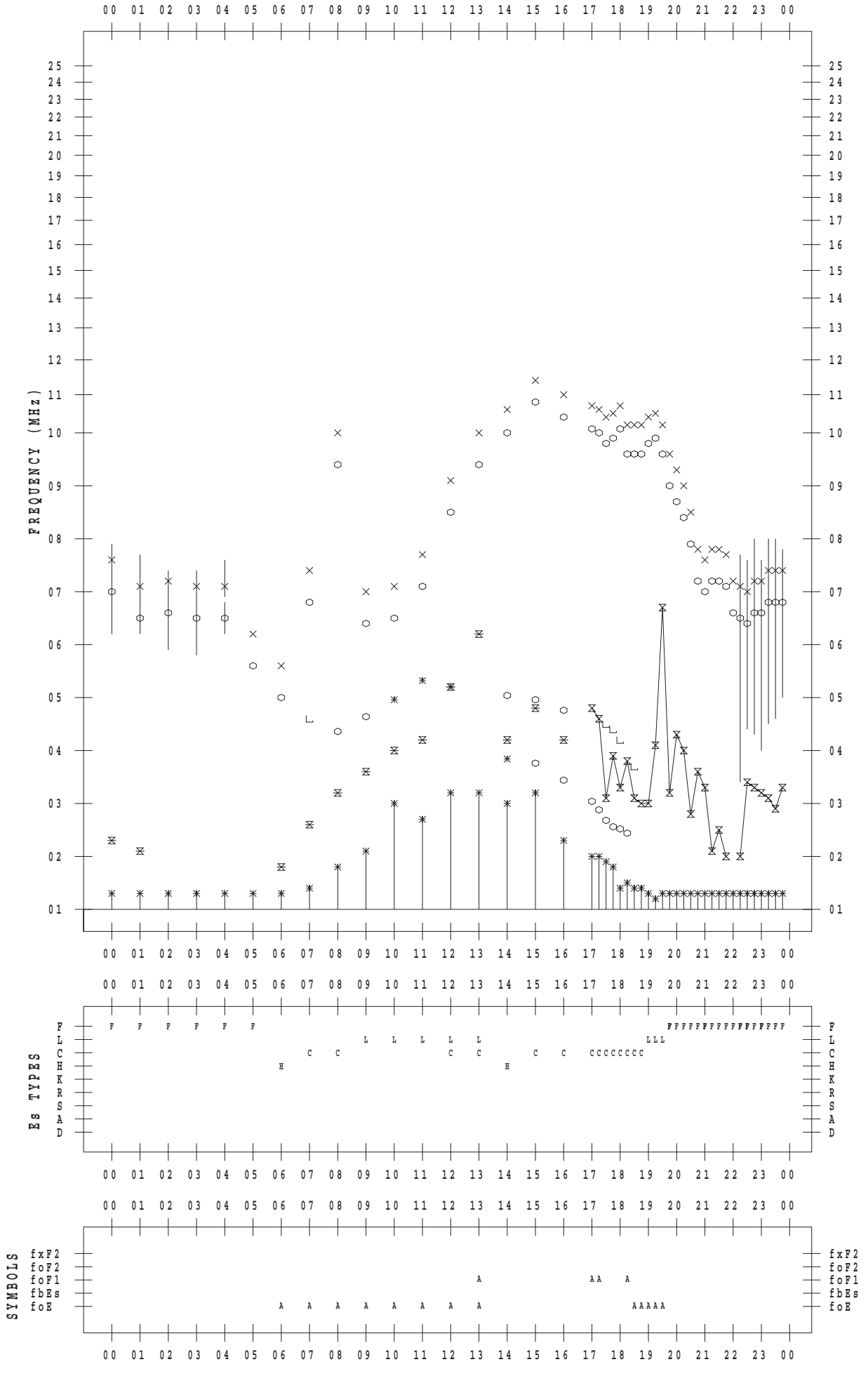
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 4

135 °E MEAN TIME



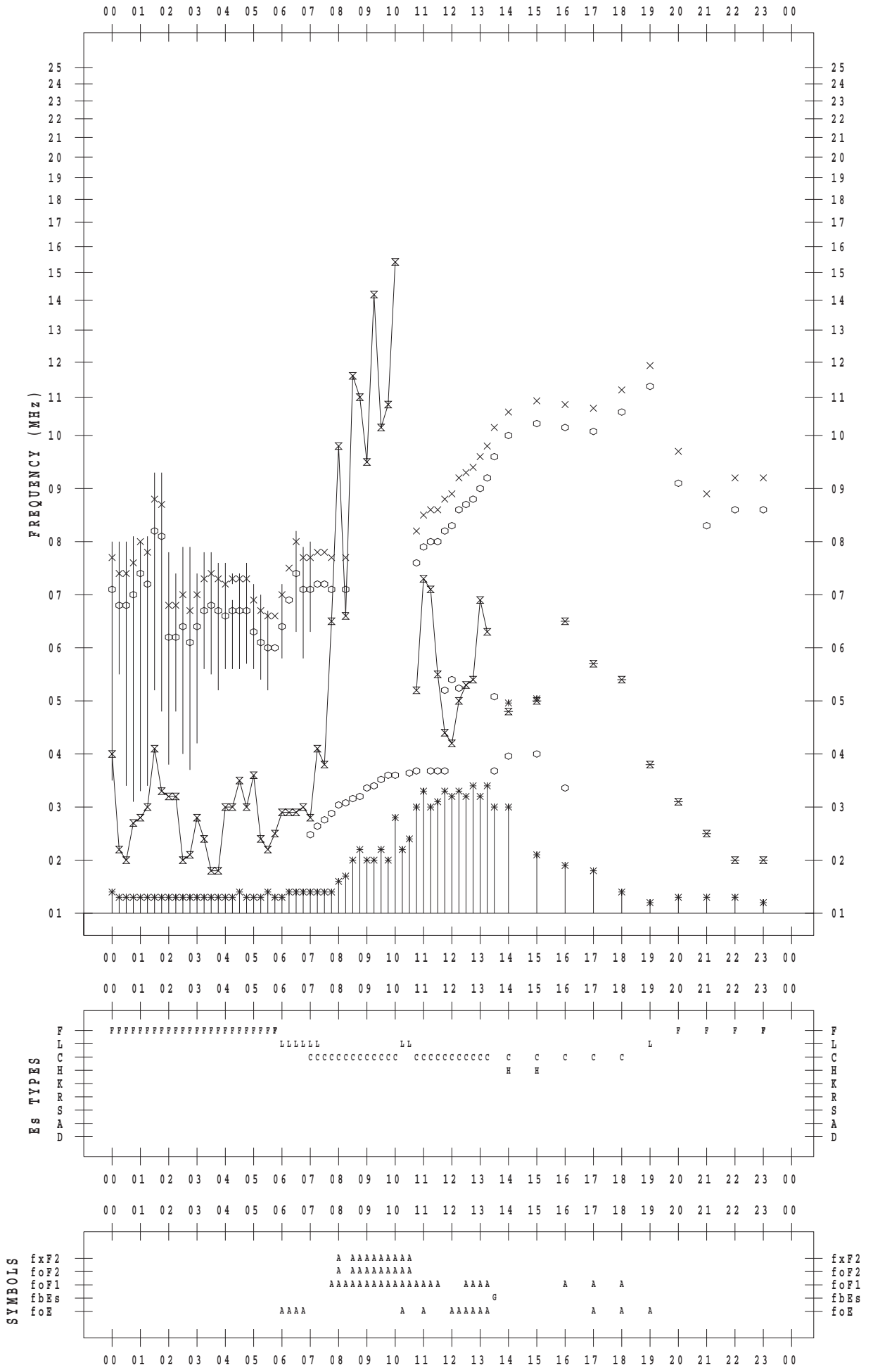
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 5

135 °E MEAN TIME



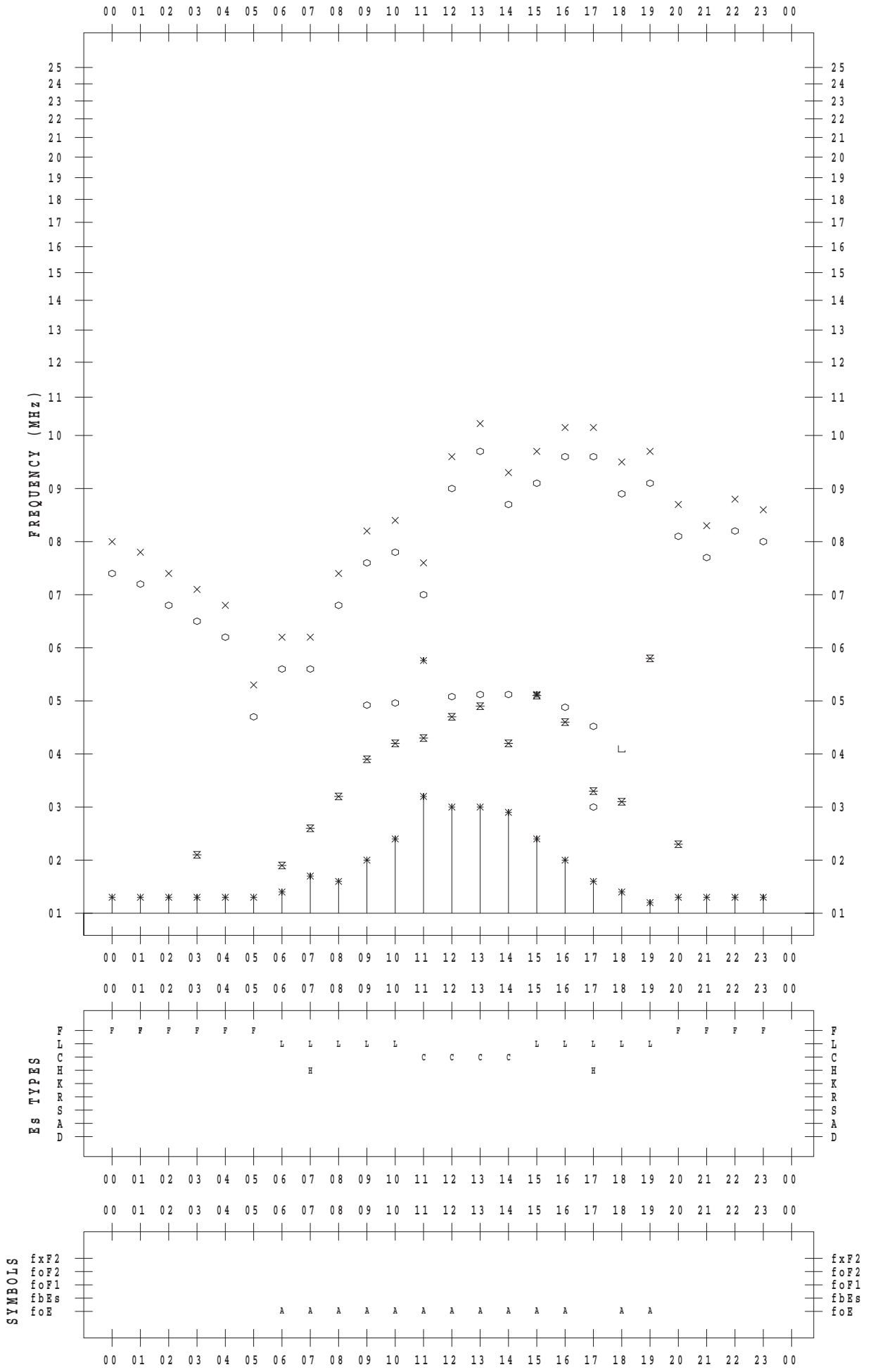
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 6

135 °E MEAN TIME



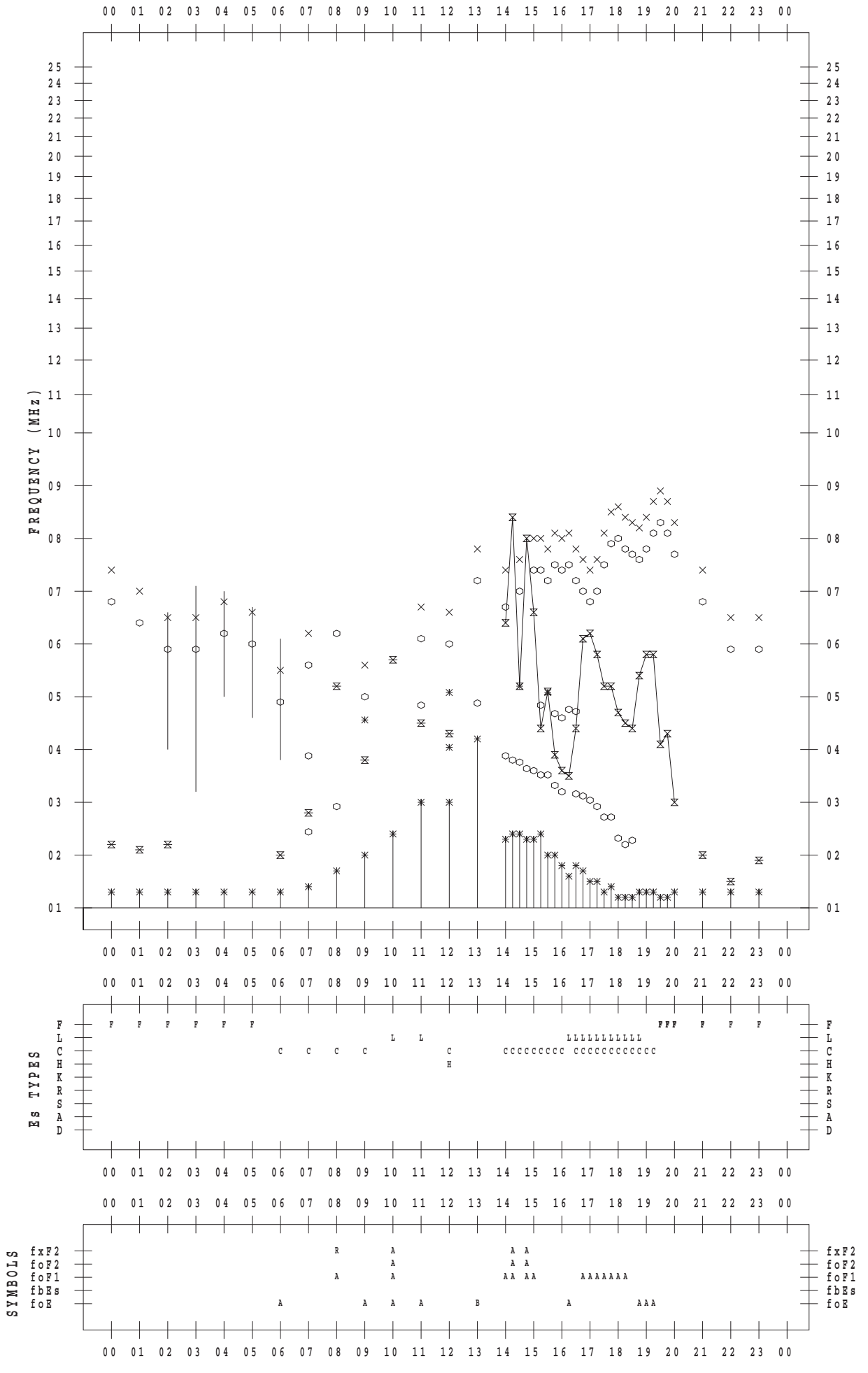
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 7

135 °E MEAN TIME



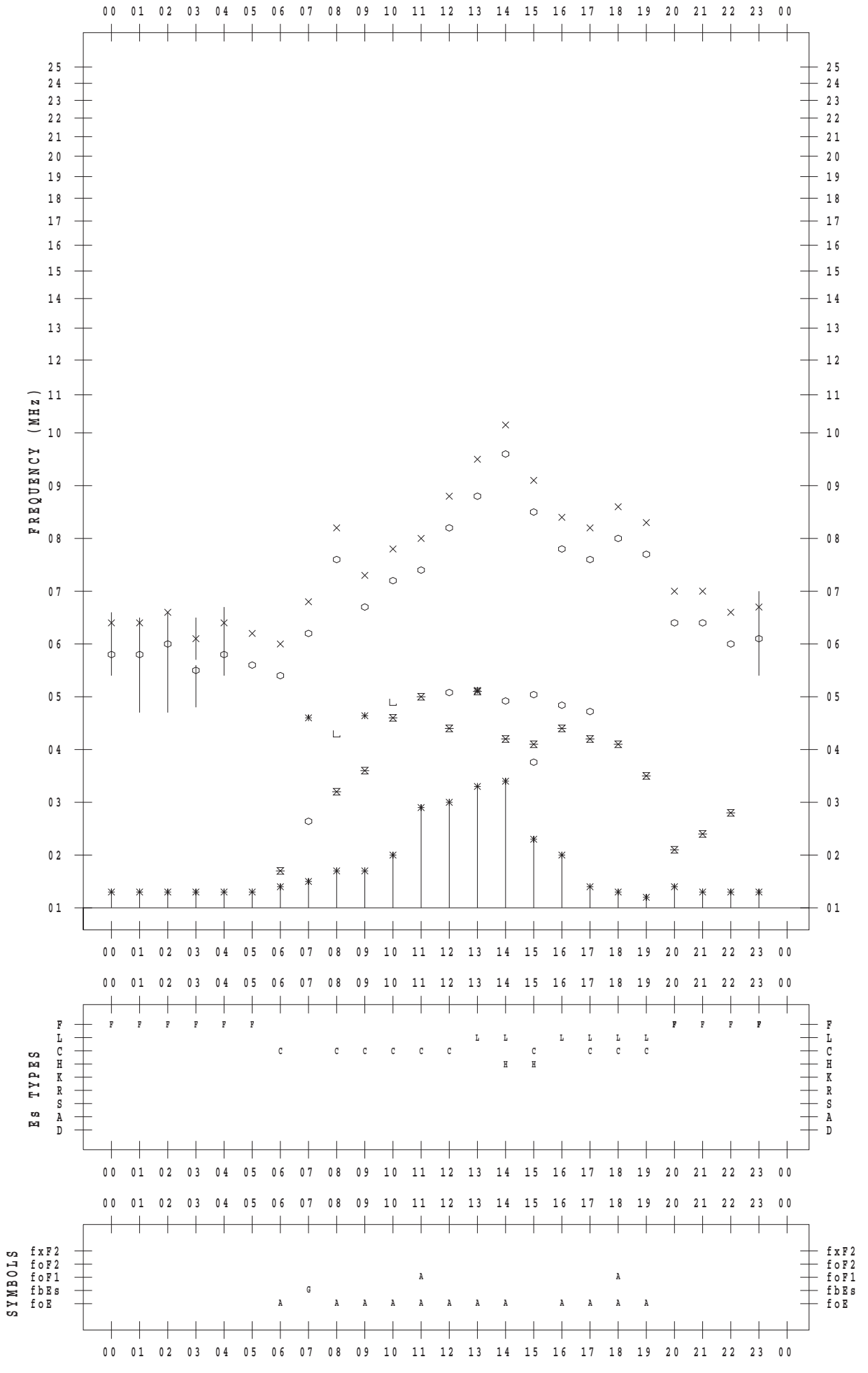
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 8

135 °E MEAN TIME



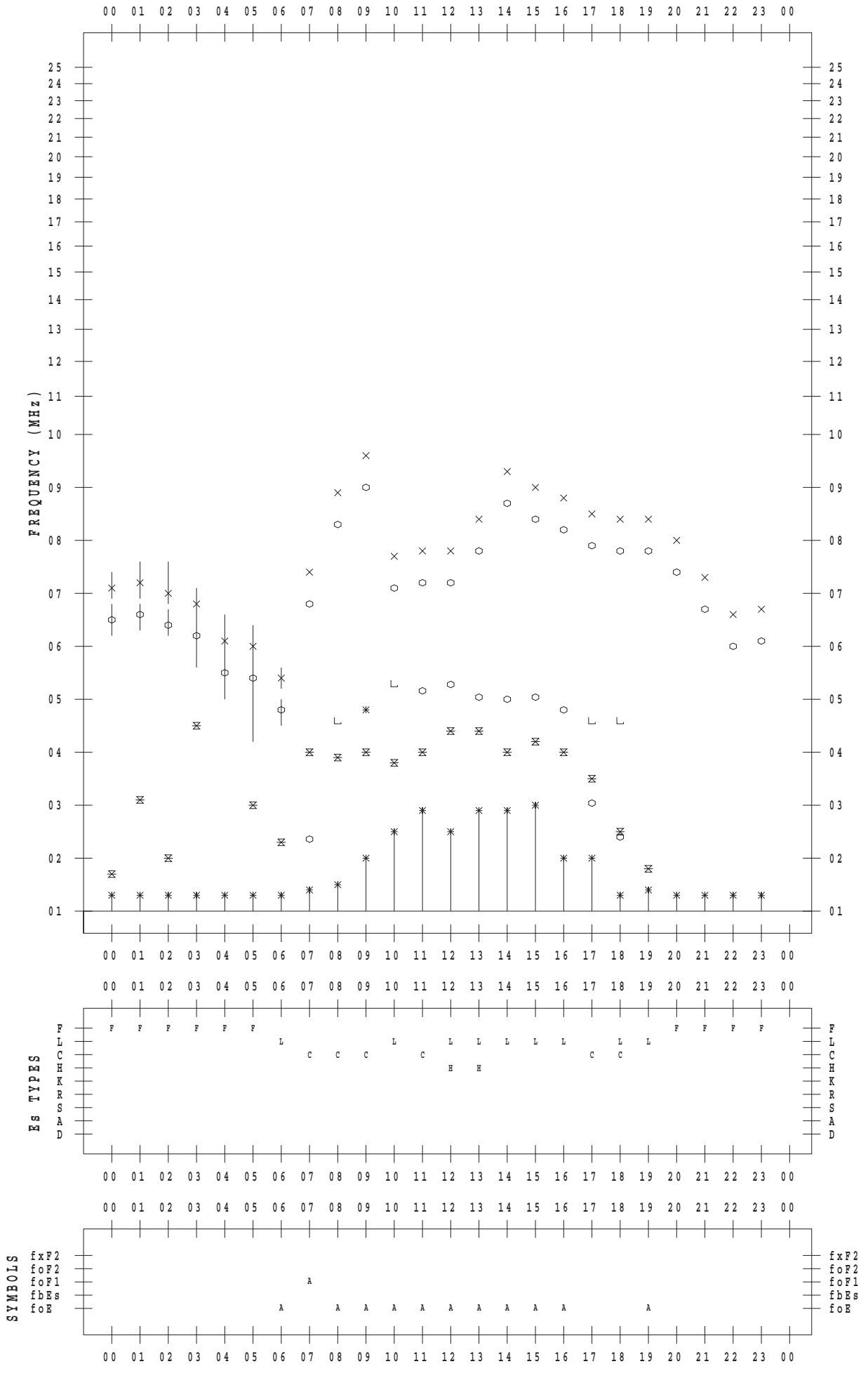
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/ 9

135 °E MEAN TIME



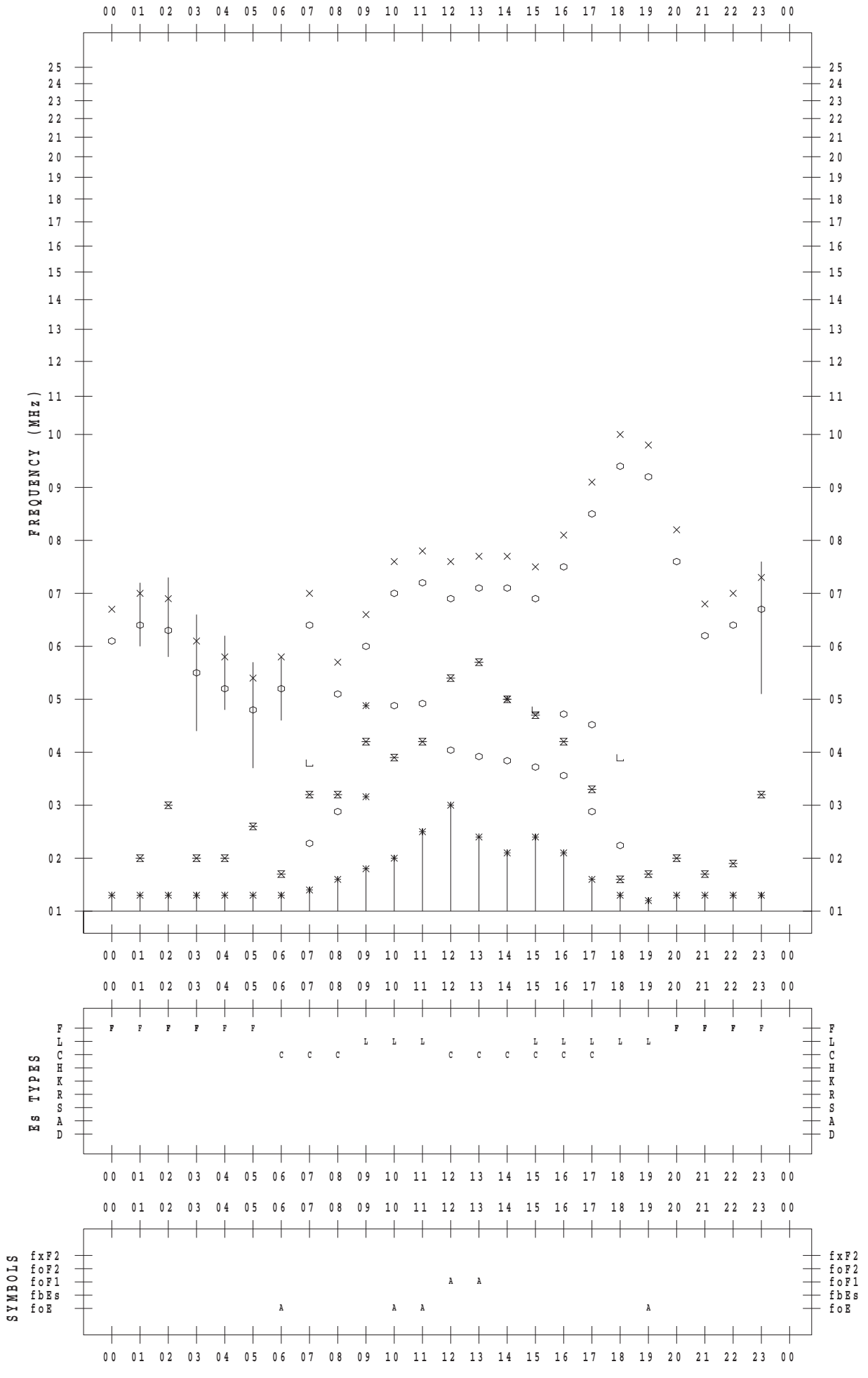
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/10

135 °E MEAN TIME



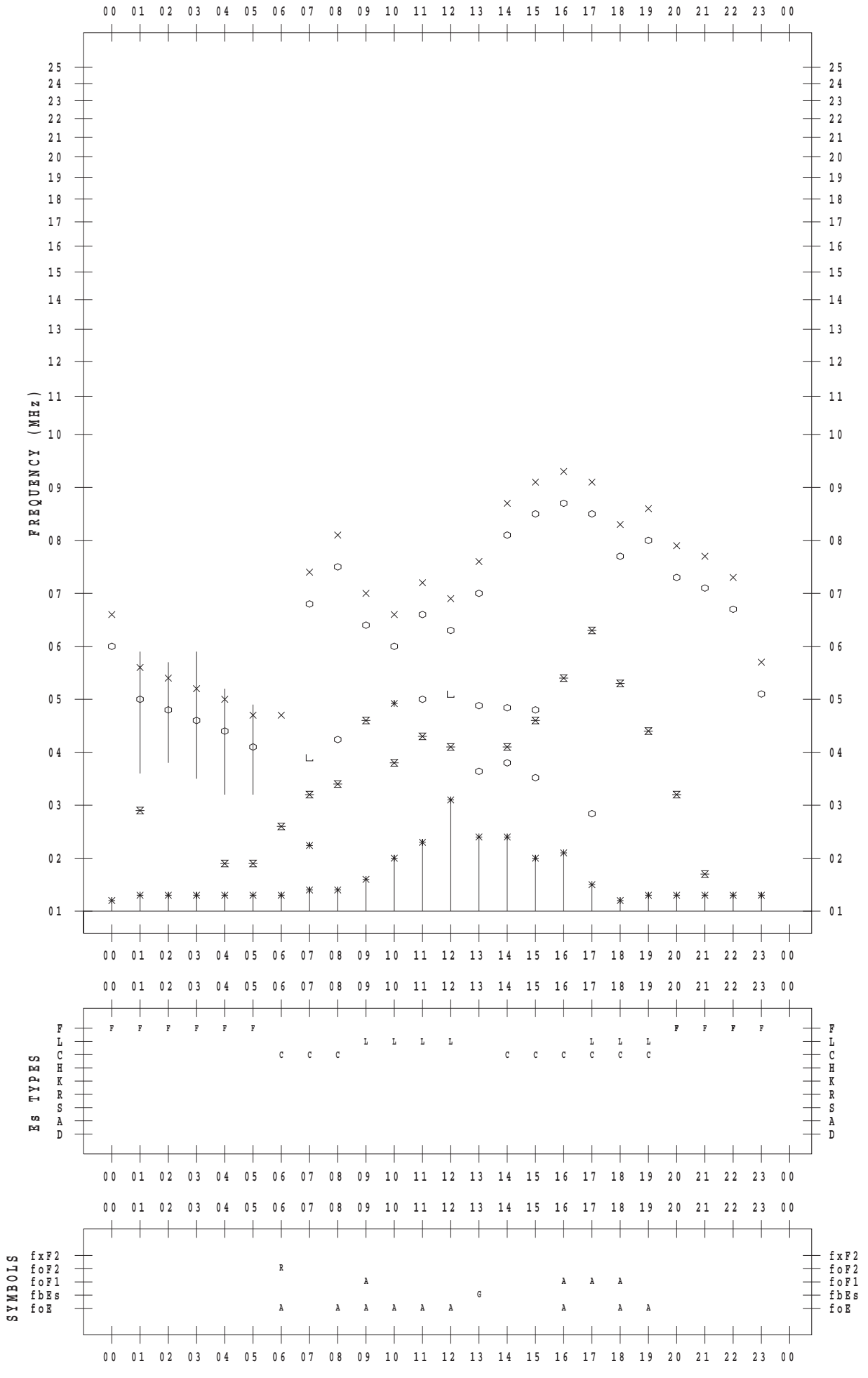
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/11

135 °E MEAN TIME



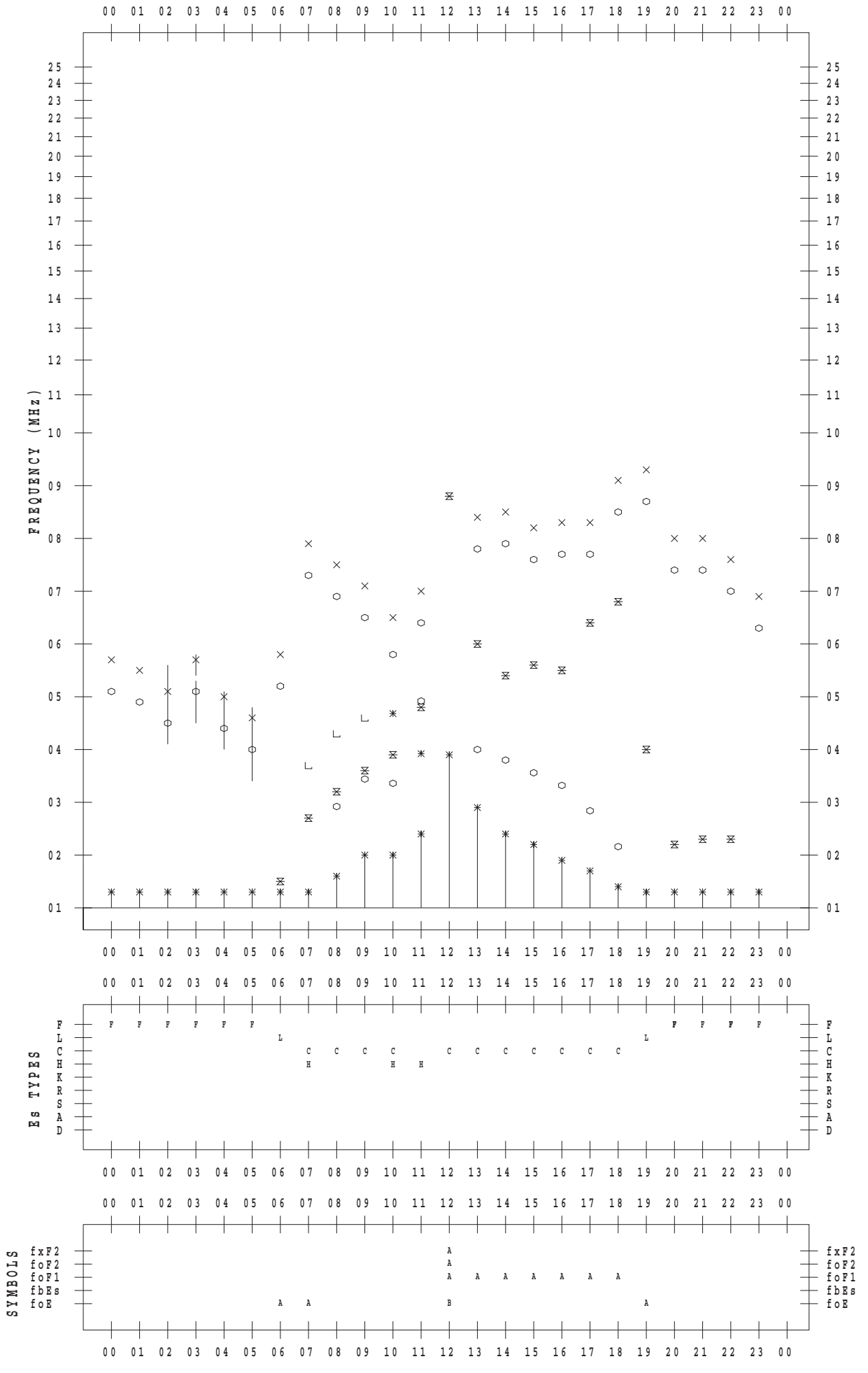
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/12

135 °E MEAN TIME



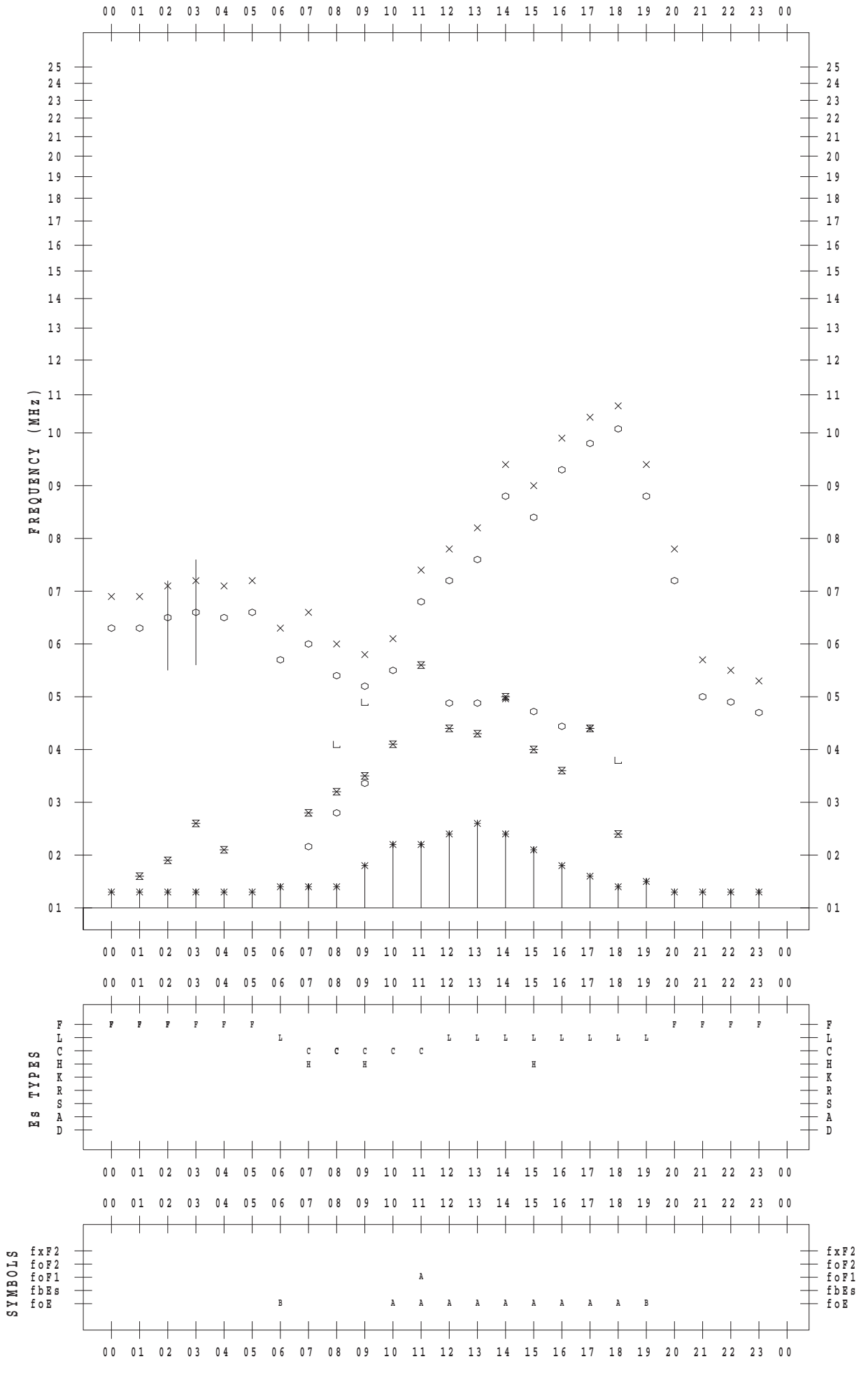
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/13

135 °E MEAN TIME



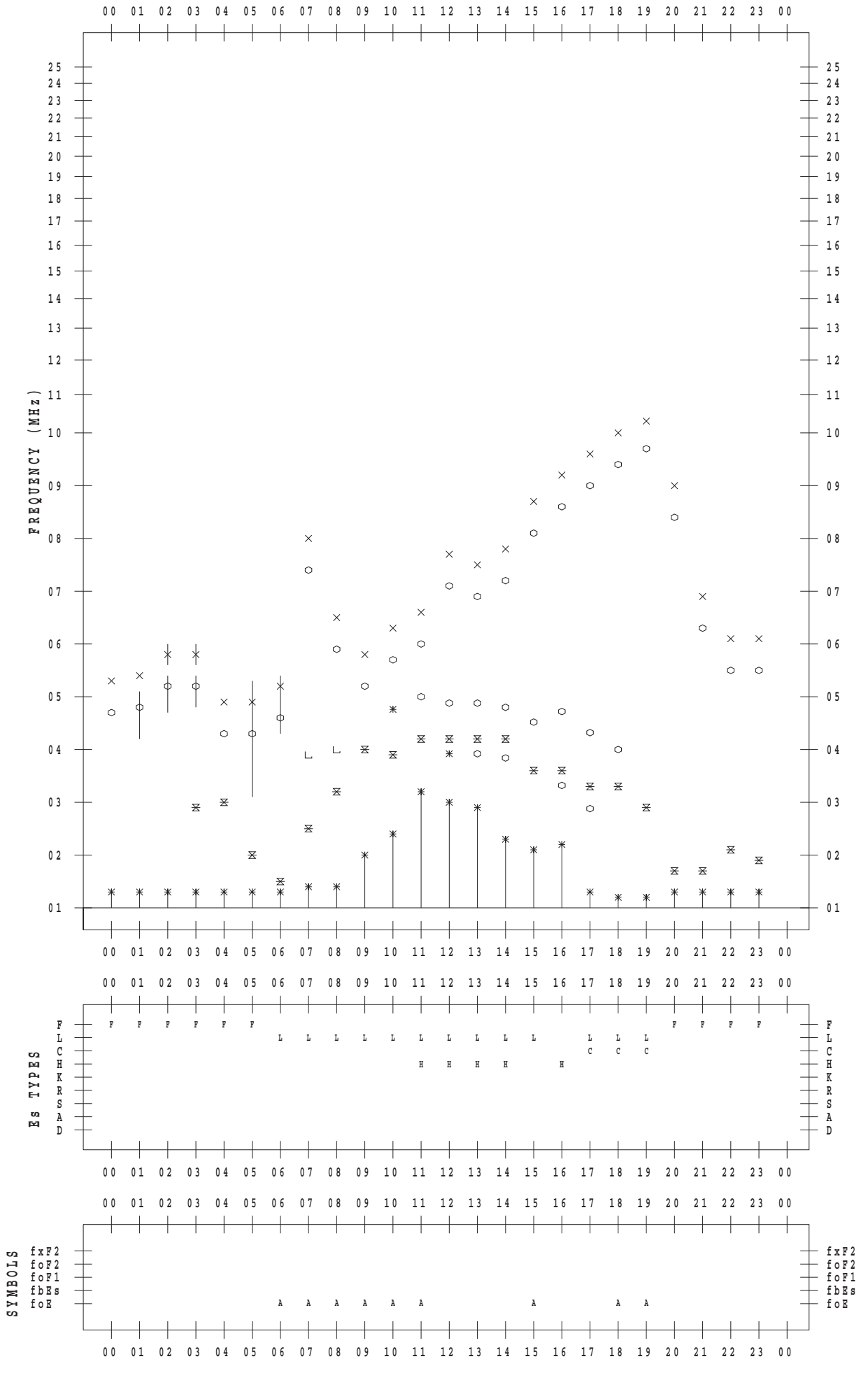
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/14

135 °E MEAN TIME



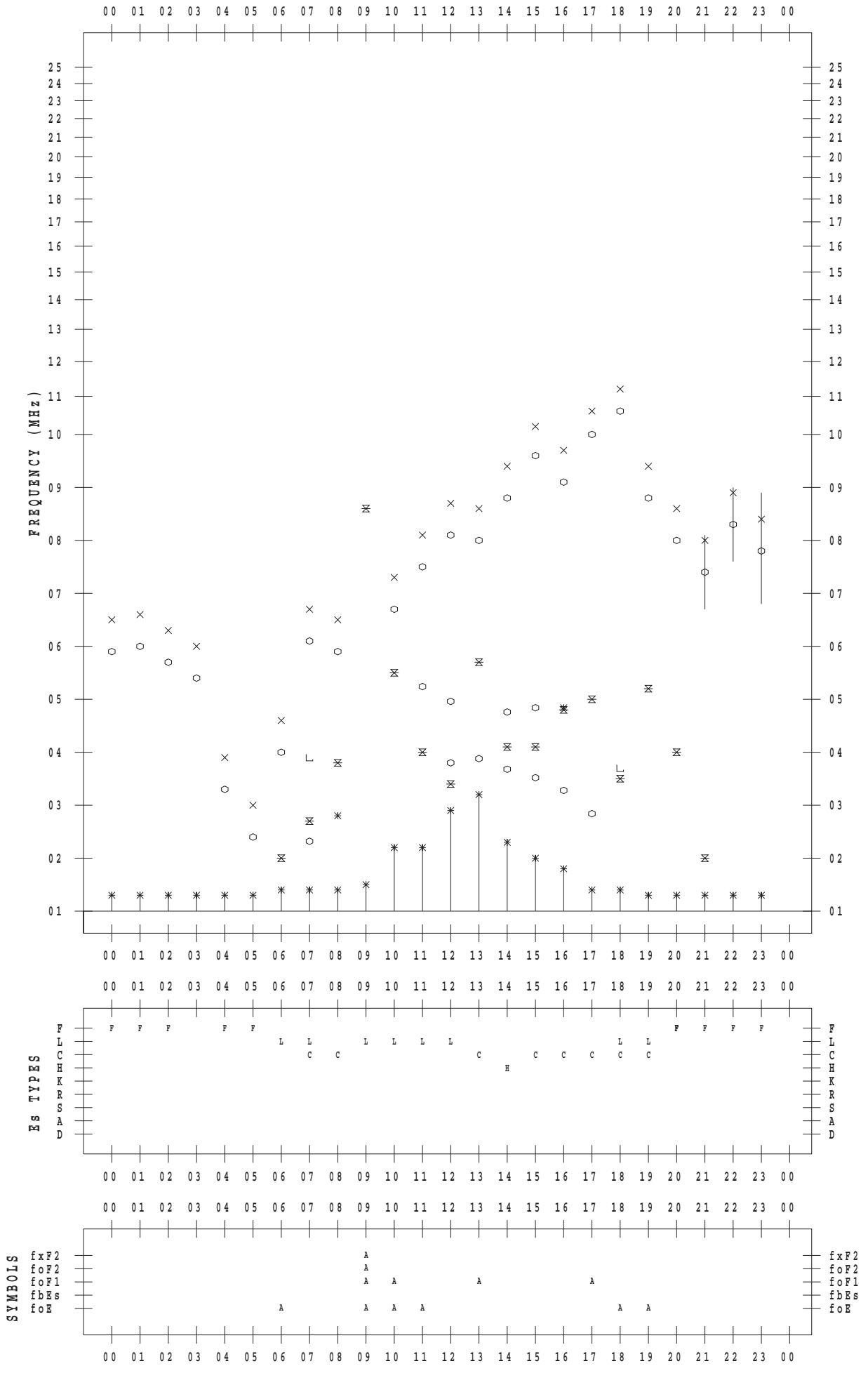
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/15

135 °E MEAN TIME



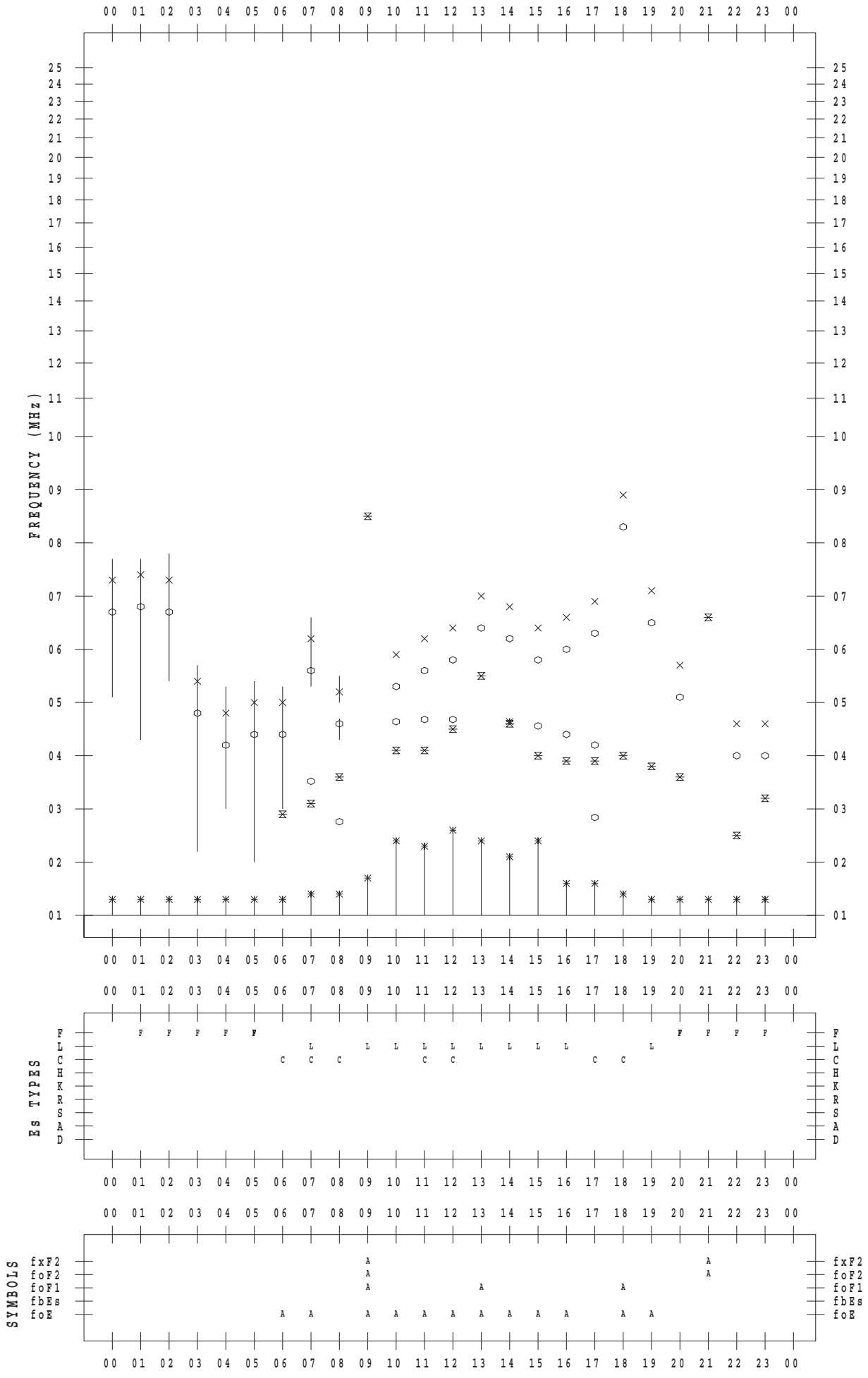
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/16

135 °E MEAN TIME



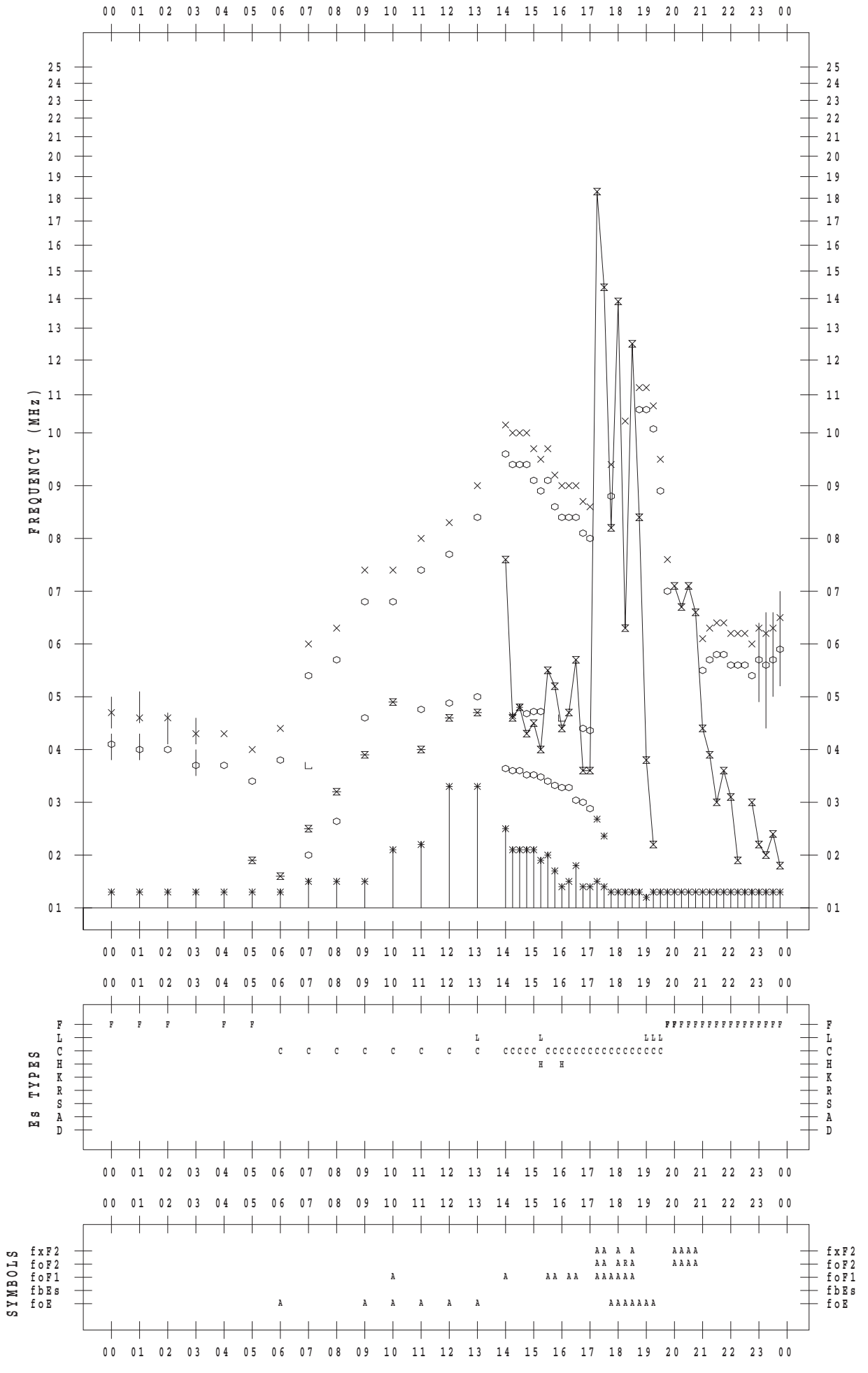
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/17

135 °E MEAN TIME



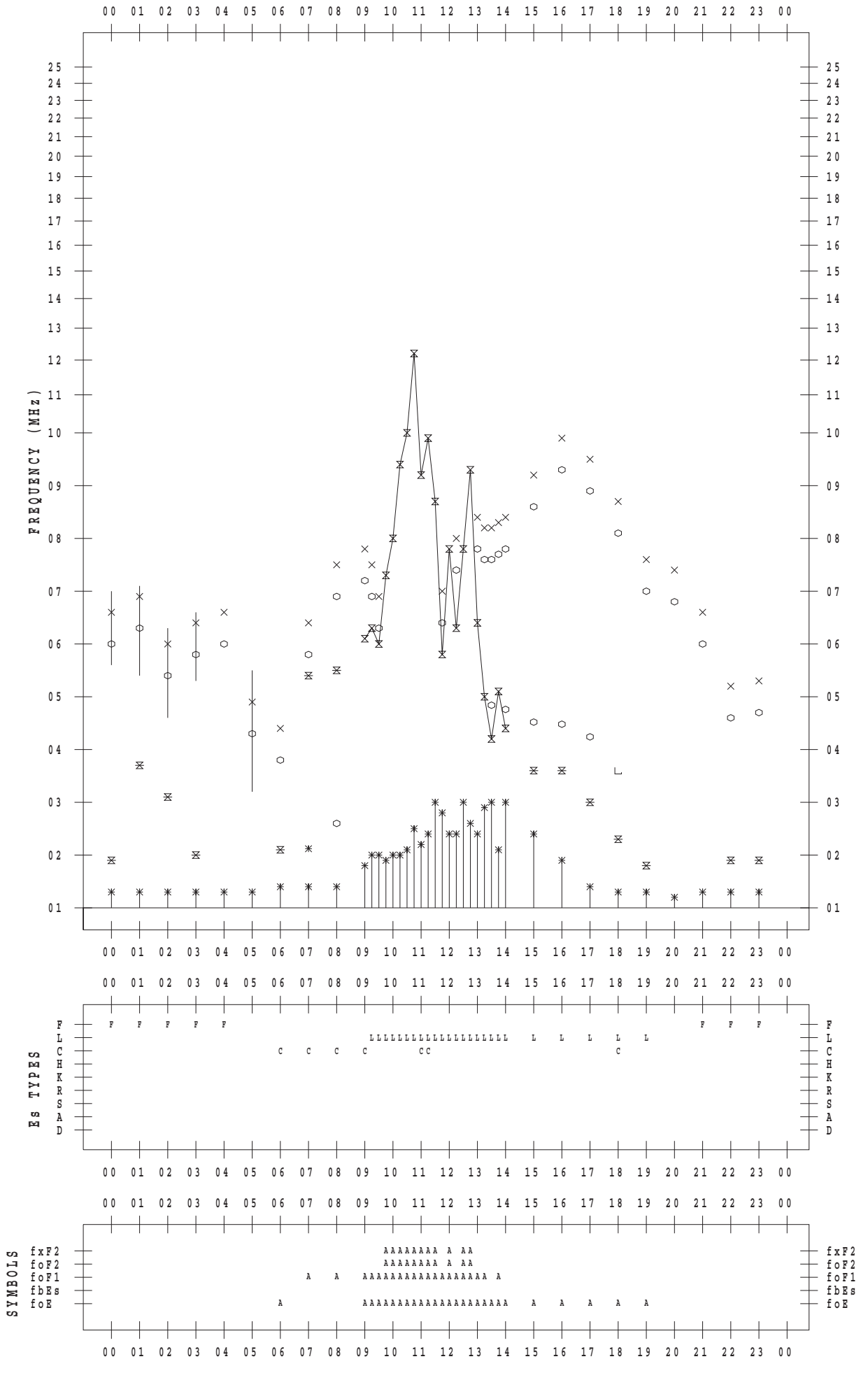
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/18

135 °E MEAN TIME



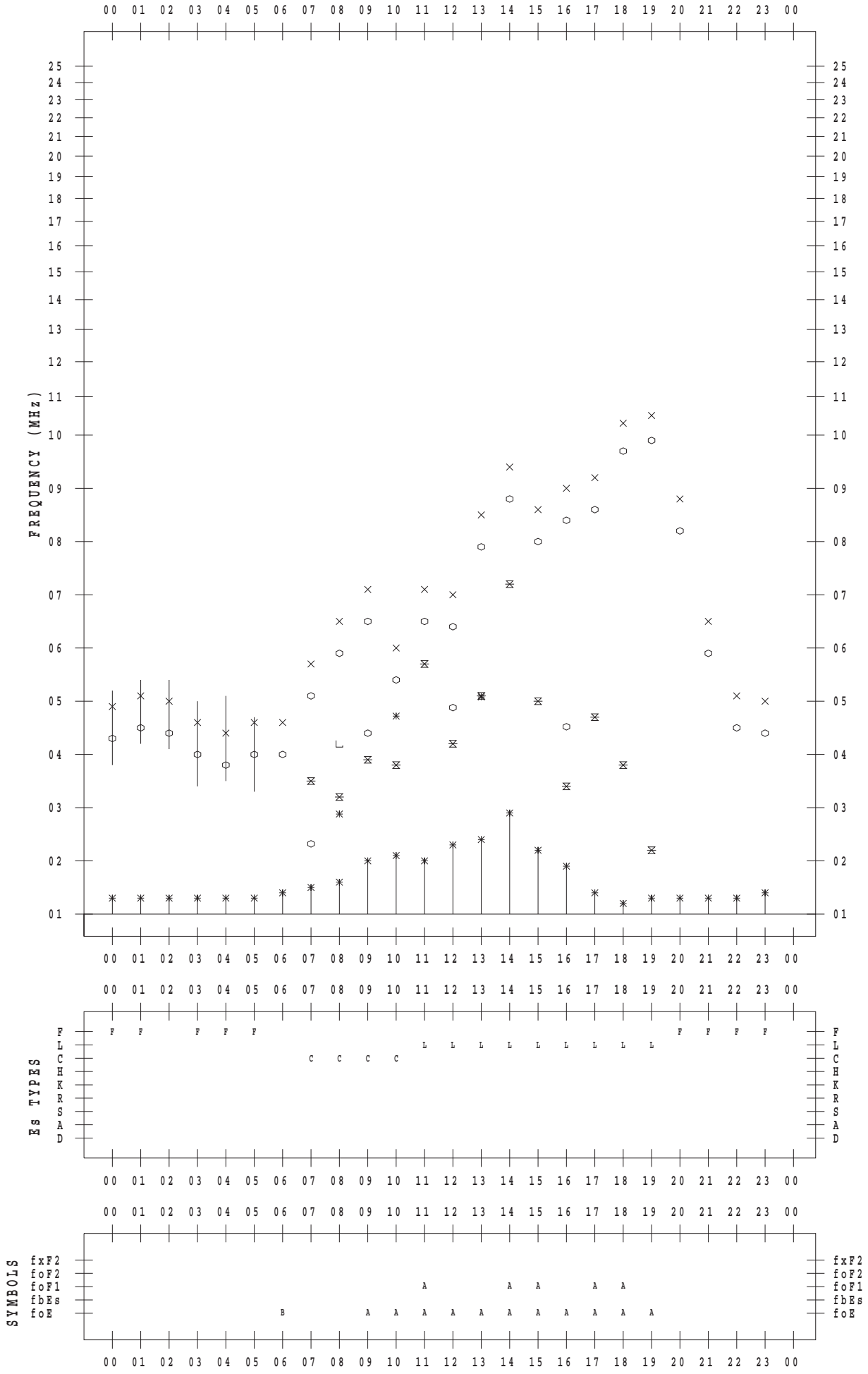
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/19

135 °E MEAN TIME



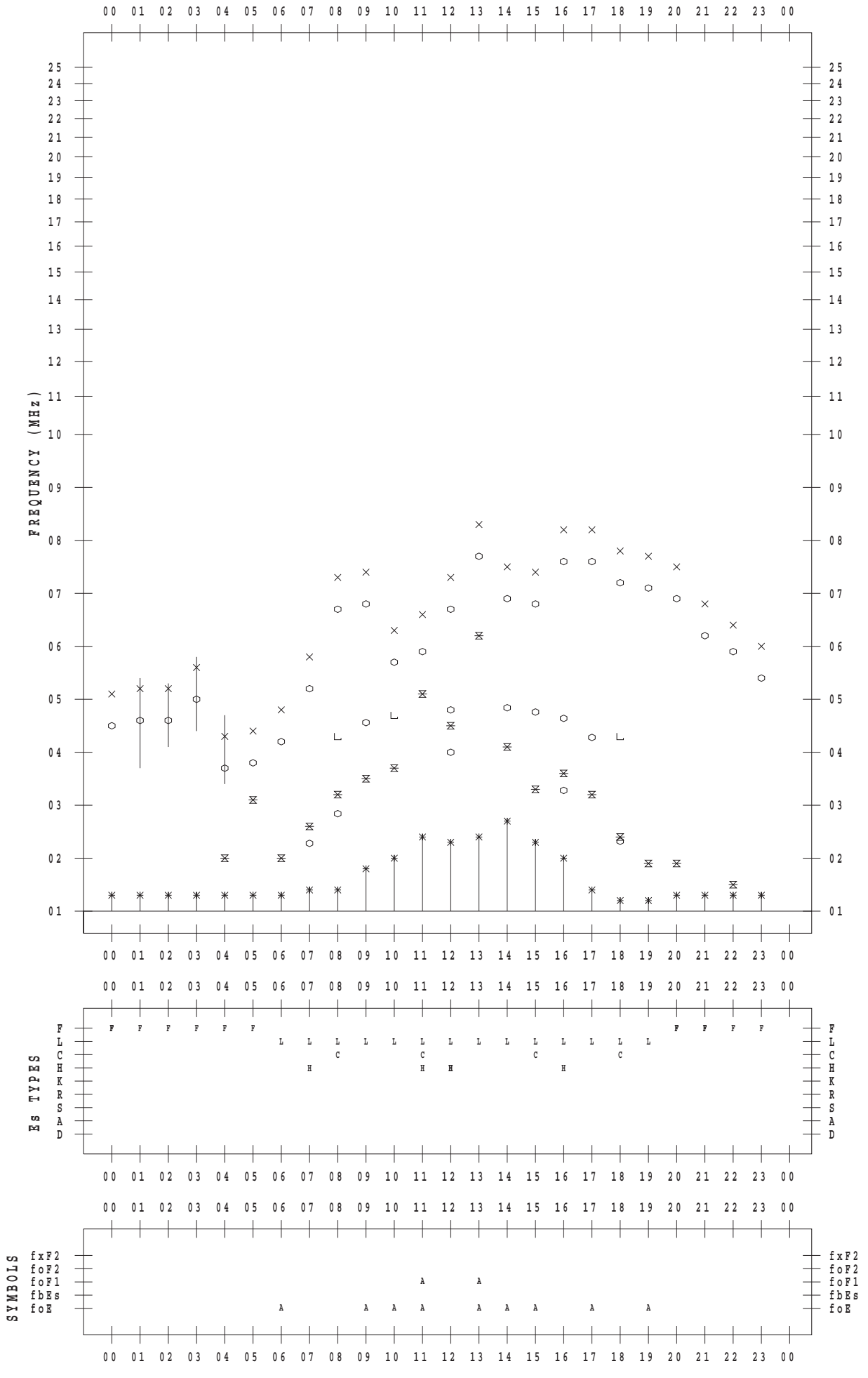
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/20

135 °E MEAN TIME



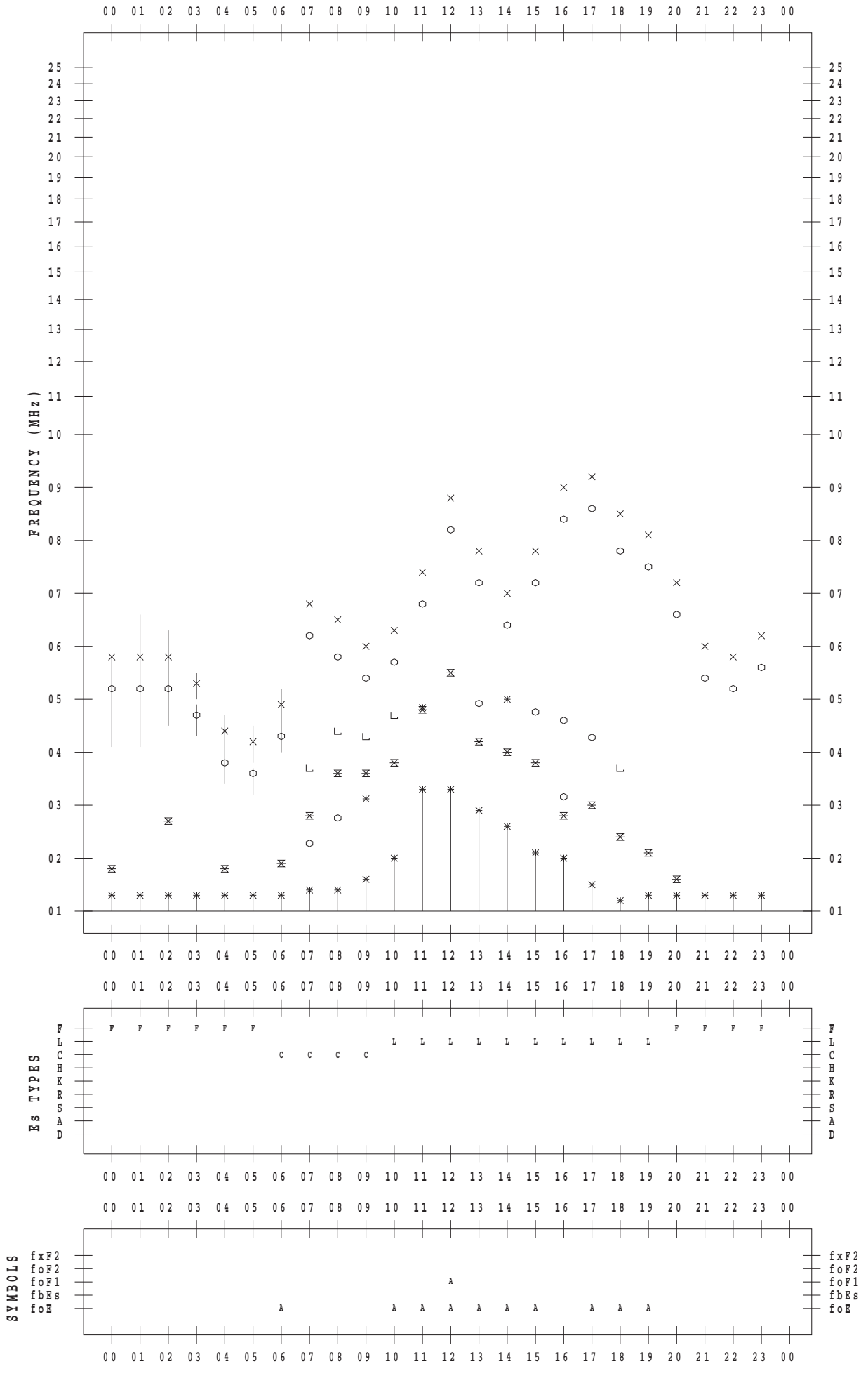
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/21

135 °E MEAN TIME



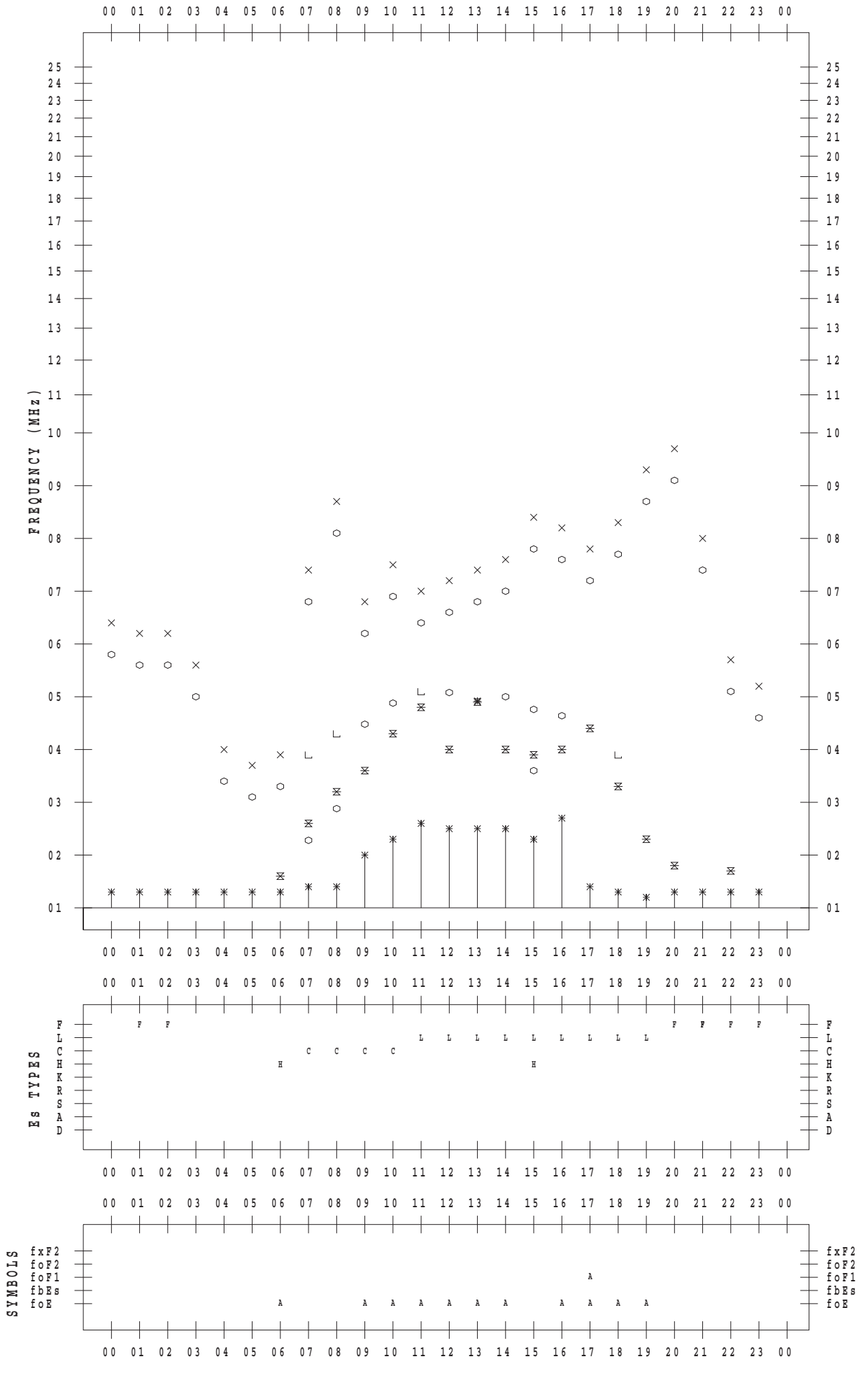
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/22

135 °E MEAN TIME



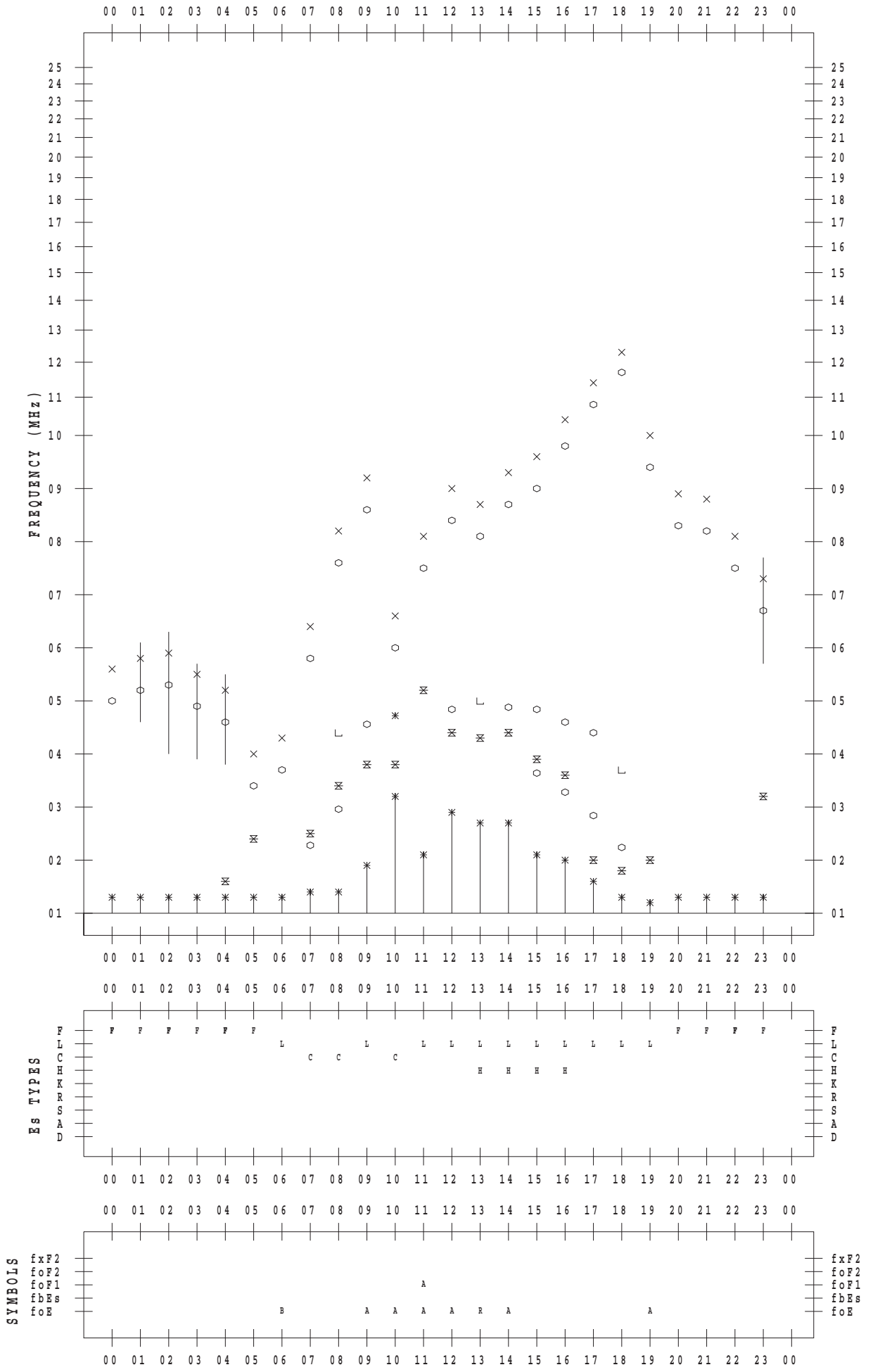
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/23

135 °E MEAN TIME



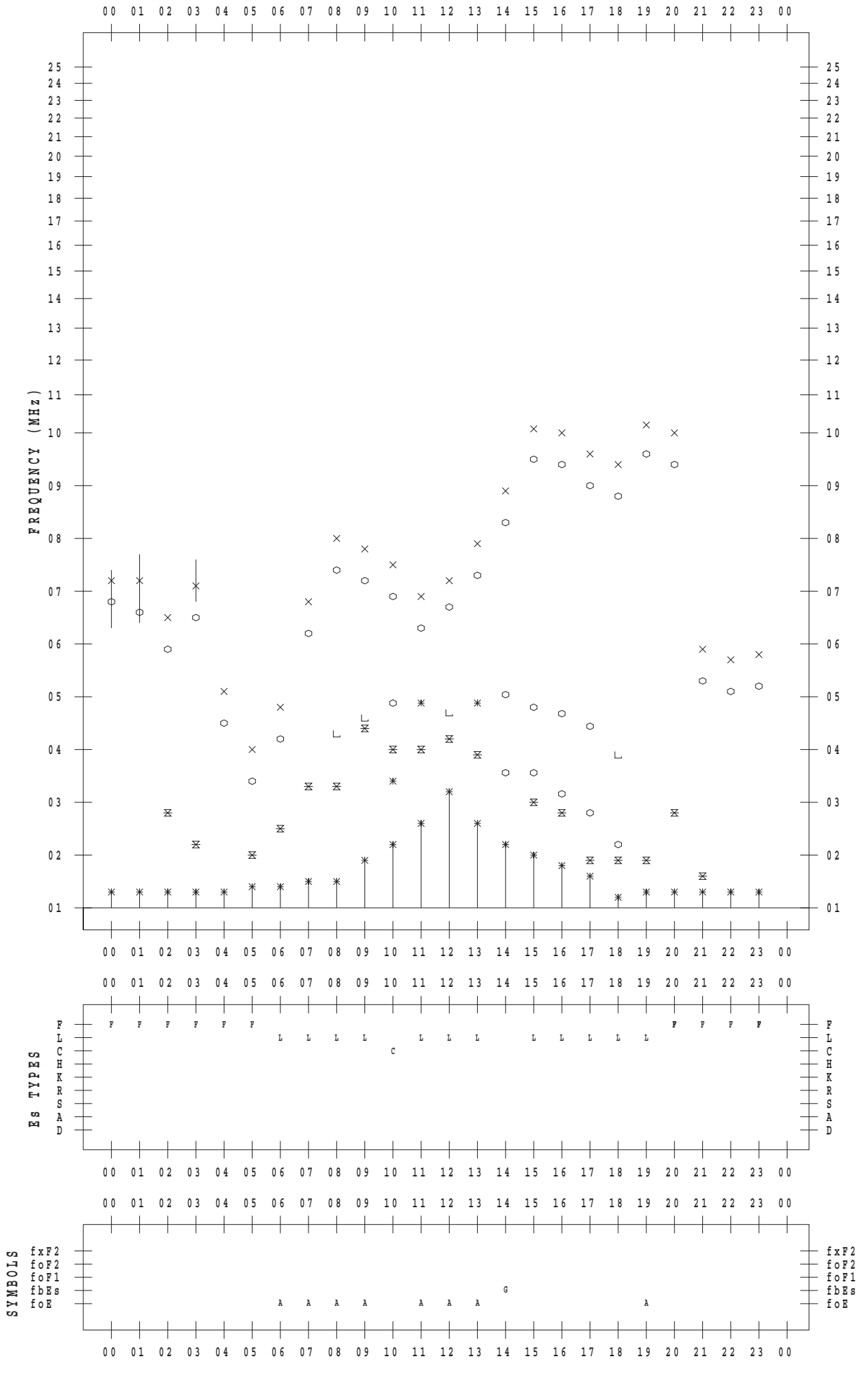
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/24

135 °E MEAN TIME



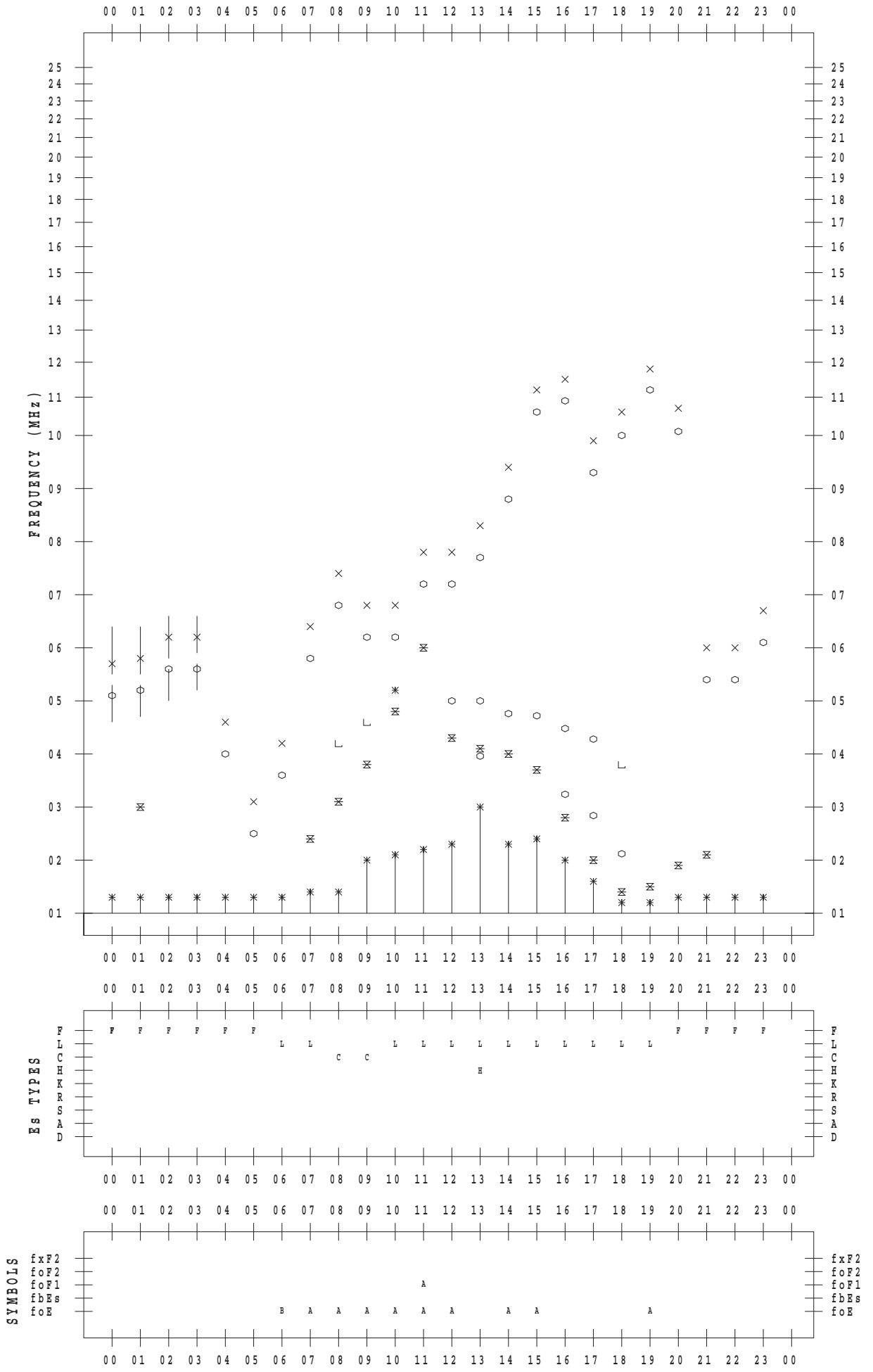
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/25

135 °E MEAN TIME



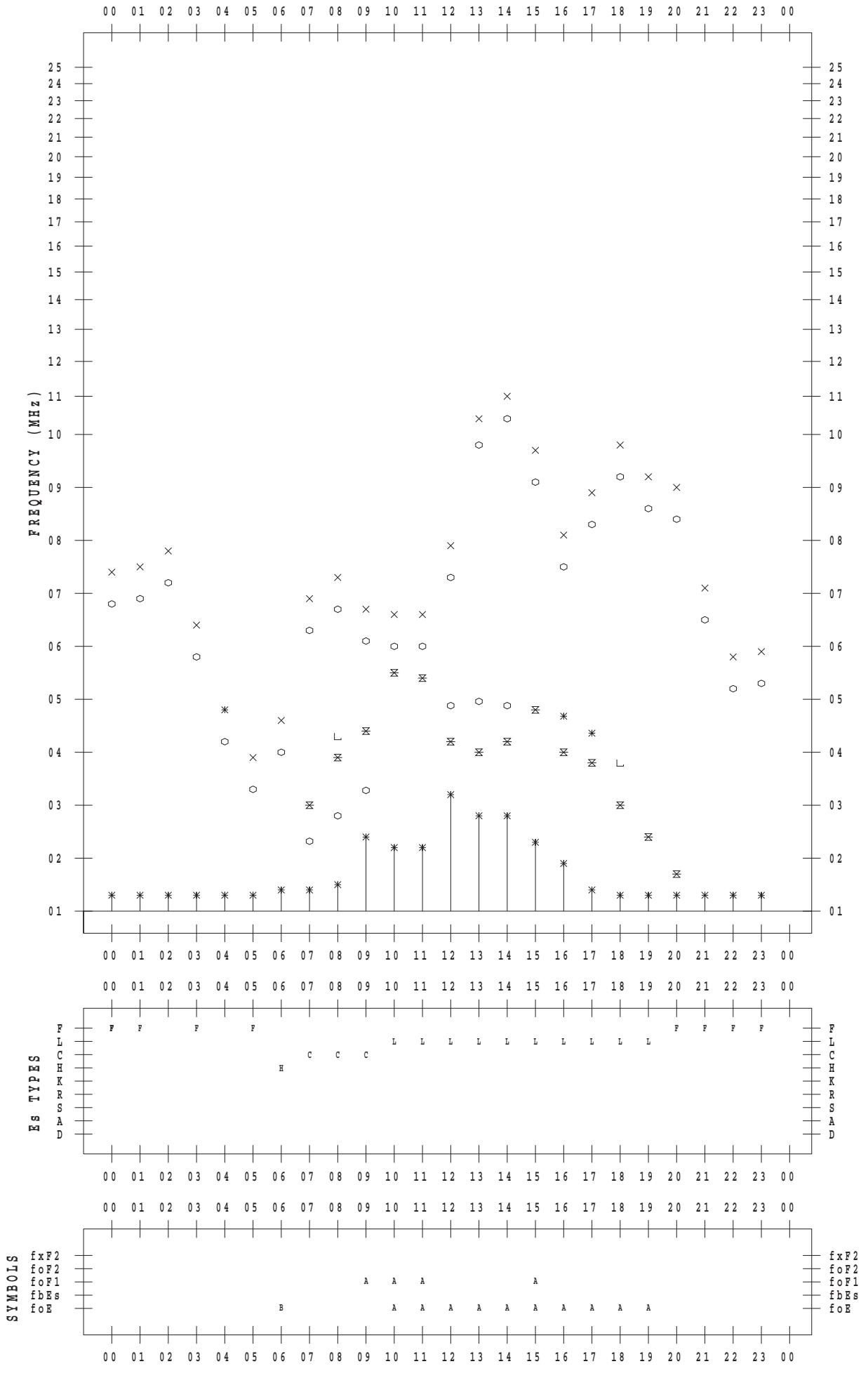
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/26

135 °E MEAN TIME



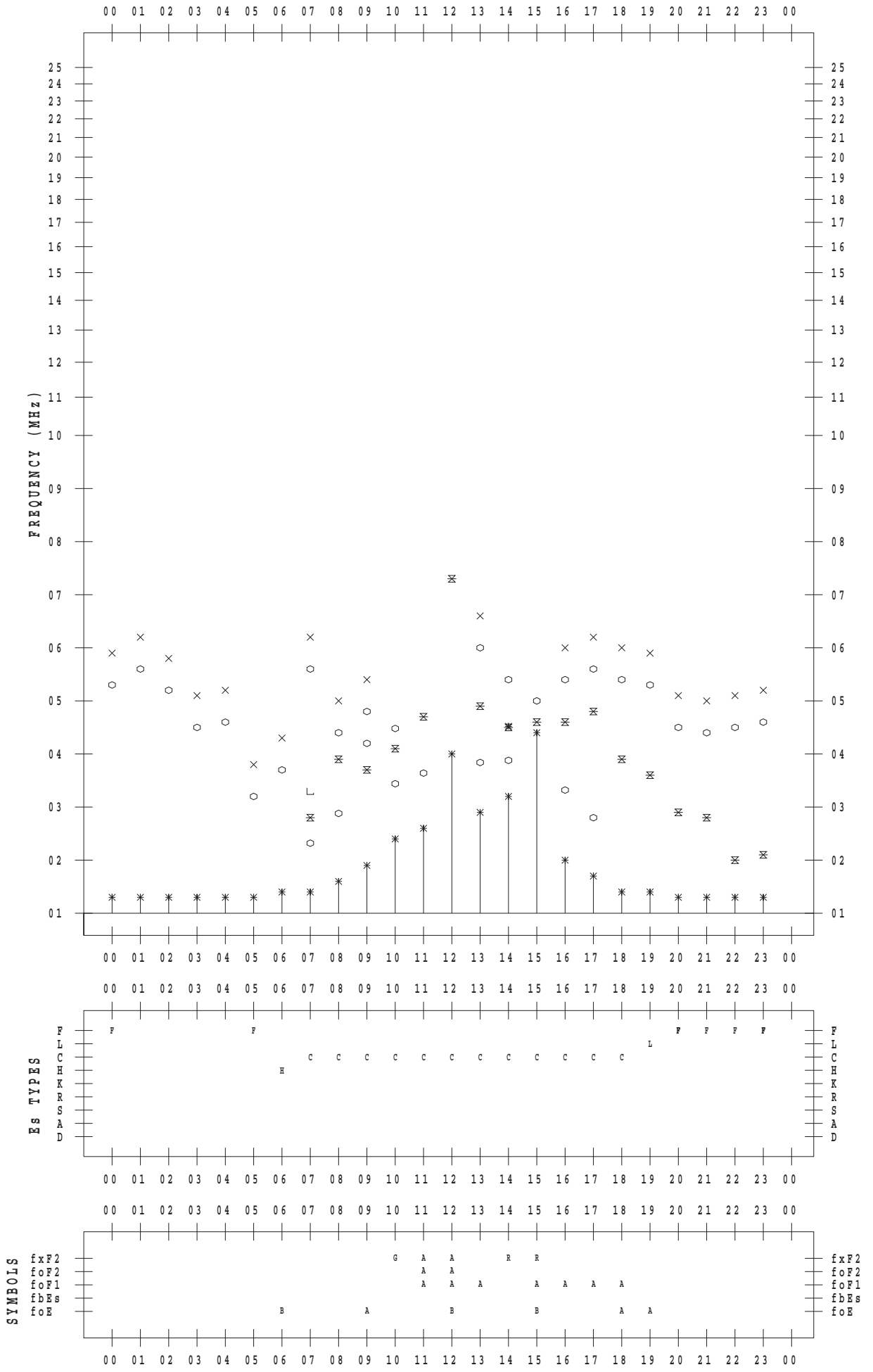
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/27

135 °E MEAN TIME



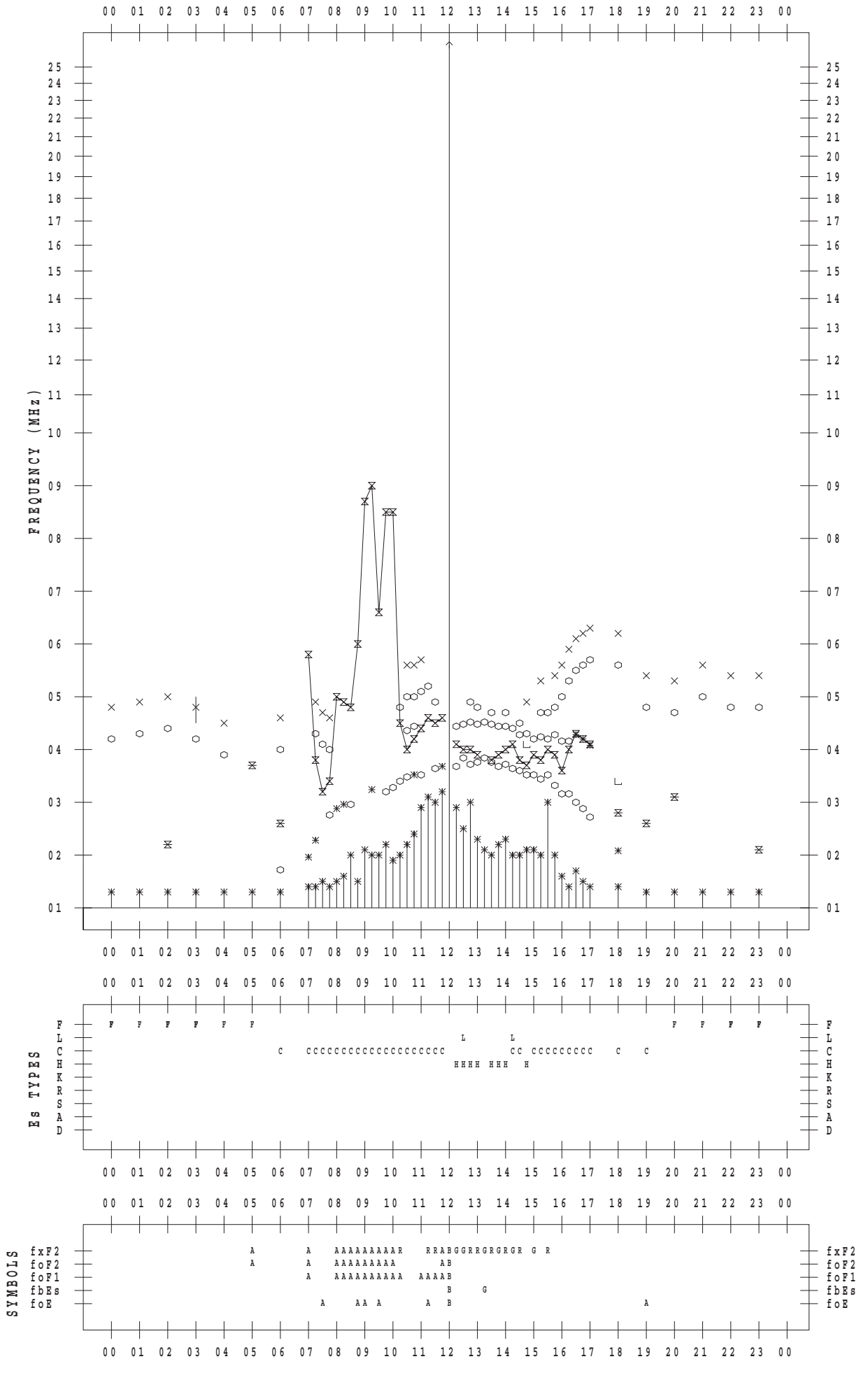
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/28

135 °E MEAN TIME



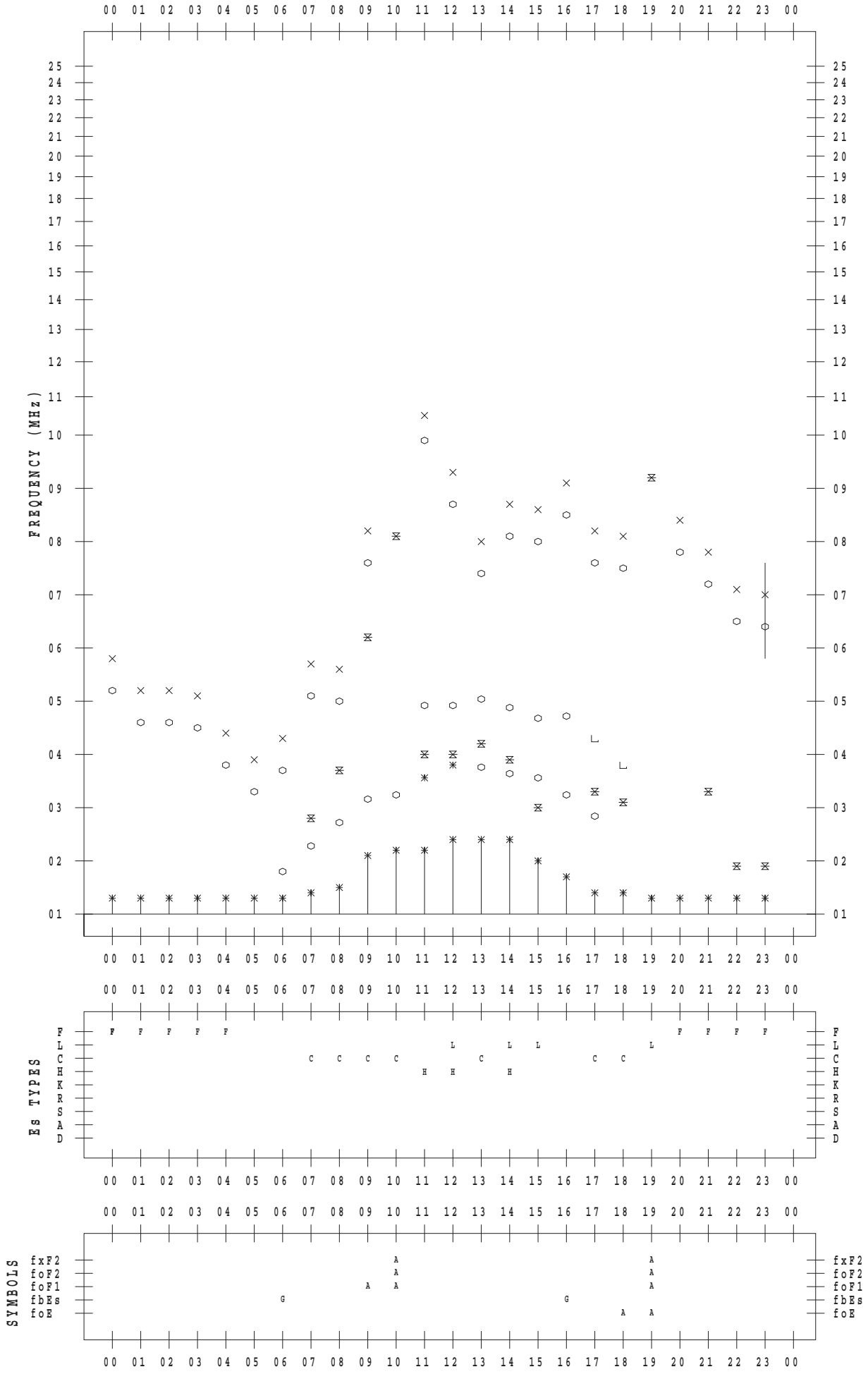
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/29

135 °E MEAN TIME



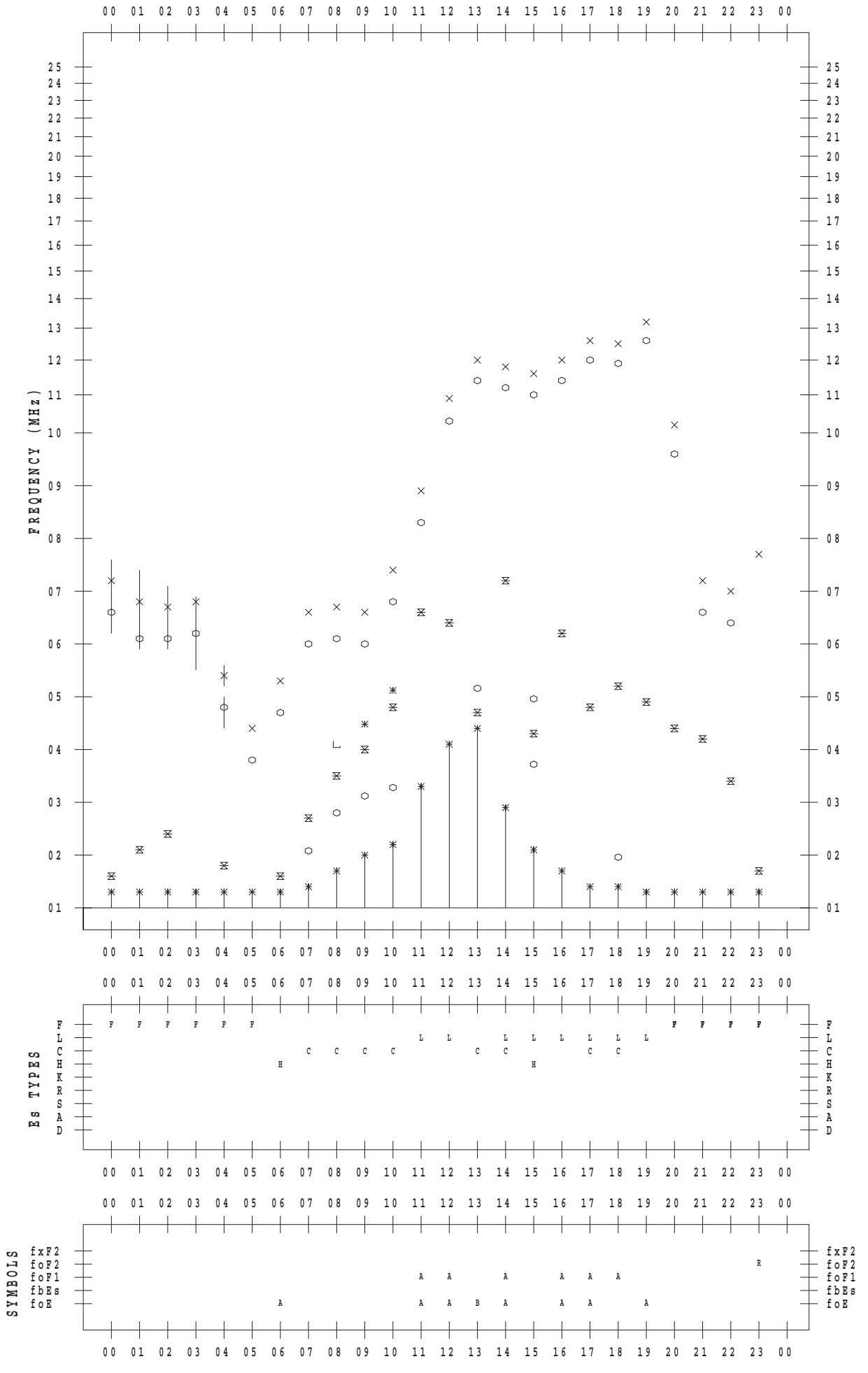
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2015/ 8/31

135 °E MEAN TIME