F-782

IONOSPHERIC DATA IN JAPAN

FOR FEBRUARY 2014

VOL. 66 NO. 2

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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

FEB. 2014

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	34	34	32	32	31	30	A	52	67	72	71	92	90	75	70	74	68	50	37	34	34	32	32	32
2	37	37	34	44	32	36	37	53	80	59	84	N	93	73	68	74	70	61	54	53	34	44	34	32
3	37	37	37	34	38	32	32	N	70	92	92	69	59	93	92	71	74	60	44	38	32	32	37	47
4	43	34	34	34	37	37	34	60	67	59	N	59	96	70	70	91	73	64	48	51	32	32	32	34
5	34	29	32	34	34	32	30	60	66	88	82	57	50	75	71	68	68	65	34	46	32	32	32	34
6	34	34	37	31	34	34	32	52	49	69	91	74	106	70		71	70	67	63	54	34	34	32	32
7	32	A	32	34	34	32	29	59		N	69	101	92	N	70	86	70	62	54	51	42	34	32	36
8	34	37	34	32	32	32	34	64	61	N	69	59	N	79	70	87	70	67	64	55	45	34	34	38
9	A	34		37	34	32	30	64	66	59	70			60	90	82	71	68	64	63	46	47	34	37
10	31	32	41	37	37	31	32	65	65	111	59		59	89	69		N	64	52	54	52	53	52	43
11	34	34	44	43	50	53	46	65	67	90		59		N	59	70	71	66	63	64	54	54	62	53
12	52	52	52	32	38	31	38	65	70	89	90	59	69	92	69	92	70	70	62	54	44	49	34	32
13	42	34	34	47	34	32	31	63	67	67	59	63	59	79	50	59	69	69	62	31	30	46	42	34
14	44	53	53	54	54	51	53	65	67	72	87	93		59	91	59	87	66	55	48	A	A	A	46
15	A	A	32	42	46	37	37	65	84	59	55	94	N	68	59	72	68	68	52	52	37	41	37	32
16	32	36	34	34	43	34	34	62	71		48	76	117	59	79	87	75	67	63	61	54	52	40	37
17	46	43	34	38	37	36	38	N		61	67	52	N	59	59	N		68	62	55	28	53	53	53
18	53	54	54	55	55	54	60	66	N	92	67		76	69	90	91	81	67	54	53	53	37	34	42
19	42	34	34	42	52	53	53	62	61	90		N	85		59	92	91	69	67	65	54	50	42	53
20	42	38	43	50	38	A	38	65		99	99	69	59	74	92		48	59	68	48	50	A	A	A
21	42	44	32			28	32	54	94	99	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	92	66	64	66	63	54	61
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	19	20	20	20	20	20	19	17	18	17	15	14	17	19	17	18	21	21	21	20	19	19	20
MED	37	36	34	37	37	33	34	63	67	80	70	69	80	73	70	74	70	67	62	53	43	44	34	37
U Q	43	43	42	43	44	37	38	65	70	92	88	92	93	79	90	89	74	68	63	58	52	52	42	46
L Q	34	34	33	34	34	32	32	59	65	61	63	59	59	64	59	70	69	63	52	48	33	34	32	33

HOURLY VALUES OF fEs AT Wakkanai

FEB. 2014

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	G	G	G	G	39	G	27	32	G	G	G	G	G	G	38	33	G	33	G	G	G	G	G	G
2	G	G	G	G	G	G	G	38	G	G	G	N	G	G	40	44	G	G	G	G	G	G	G	G
3	G	G	G	G	G	G	G	G	48	35	G	G	G	G	G	34	G	G	G	G	G	G	G	G
4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	30	G	G	G	G	G	G
5	G	G	G	G	G	G	G	40	31	G	G	G	G	G	G	G	48	G	G	27	G	G	G	G
6	G	G	G	G	G	G	G	G	G	G	G	G	G	G		N	G	G	G	G	G	G	25	G
7	G	40	28	G	G	G	G	G		36	G	G	G	G	G	G	G	G	G	G	G	G	G	G
8	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	38	G	G	G	G	G	G	28
9	27	G		G	G	G	G	27	59	G	G			G	G	G	G	G	G	G	G	G	G	G
10	G	G	G	G	G	G	G	G	G	G	G		38	39	38		G	G	G	G	G	G	G	G
11	G	G	G	G	G	G	G	G	G	G		G		41	39	44	33	G	G	34	G	G	G	G
12	G	G	G	G	G	G	G	G	G	G	39	G	G	G	G	34	42	G	G	G	26	G	G	G
13	G	G	G	G	G	G	G	G	G	G	38	G	G	G	G	G	G	40	43	38	40	G	G	G
14	G	G	G	34	27	G	G	G	G	35	39	G		G	G	G	G	33	G	G	72	50	46	49
15	57	41	27	G	G	G	G	G	34	G	G	42	G	G	G	34	G	G	G	G	G	G	G	G
16	G	G	G	G	G	G	G	G	G		G	G	G	G	G	37	G	G	G	G	G	27	27	23
17	G	G	G	G	38	28	33	G		G	G	G	G	40	G	G		G	28	25	36	28	27	G
18	G	G	G	G	G	G	G	G	35	G	G		G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	35	G		G	G		G	35	G	G	G	G	G	G	G	G
20	G	G	G	G	27	25	G	33		40	G	G	58	68	59		46	46	40	24	39	41	38	41
21	25	G	G			G	G	G	35	38	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	G	G
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	21	20	20	20	21	21	21	18	20	18	16	17	19	19	17	19	21	21	21	21	21	21	21
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	14	35	18	G	G	G	G	38	34	33	15	G	12	13	G	13	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

FEB. 2014

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	18	15	14	14	18	15	16	15	14	15	21	17	15	15	14	14	14	14	14	14	20	16	16
2	15	14	14	15	14	16	15	18	14	14	15	14	17	17	15	14	15	15	15	14	15	14	15	14
3	15	15	15	15	14	14	15	17	18	15	15	18	16	16	16	15	22	17	15	14	15	14	14	15
4	15	15	16	15	15	15	15	18	14	21	35	45	46	28	32	16	14	14	15	14	15	16	14	16
5	15	15	14	15	14	15	15	14	14	17	18	18	20	15	20	14	23	14	15	14	15	15	14	14
6	15	17	14	15	14	15	17	20	14	15	17	18	16	18		17	14	15	14	15	14	14	15	18
7	16	14	14	15	15	15	16	20		16	15	15	15	20	45	14	14	15	15	15	15	15	15	14
8	15	16	14	15	14	14	15	18	14	15	18	21	26	18	18	15	14	16	20	14	14	15	15	15
9	17	14		15	15	15	15	20	14	15	18			34	16	15	15	16	15	15	14	15	15	15
10	15	15	15	14	14	15	15	21	14	17	20		21	20	15		15	16	14	14	15	15	14	15
11	15	14	15	15	15	14	14	20	14	15		15		17	15	15	15	16	27	14	14	14	14	14
12	14	14	14	14	15	14	14	15	28	16	22	21	21	24	22	18	18	18	15	15	15	14	15	15
13	14	14	14	14	15	14	15	14	27	17	23	44	41	22	22	18	17	15	14	14	14	14	15	14
14	14	15	14	14	15	15	15	20	17	15	16	18		18	20	16	15	14	14	14	14	14	15	14
15	14	14	15	14	14	15	15	18	14	14	16	16	14	15	15	14	14	16	14	14	15	14	15	15
16	15	15	15	15	14	14	15	18	15		16	18	21	18	17	14	14	17	14	14	15	14	15	15
17	15	16	14	14	14	15	14	20		16	15	17	16	15	14	14		17	14	15	14	14	15	14
18	14	15	14	14	14	15	15	14	14	14	14		16	18	14	15	14	17	14	14	14	14	14	15
19	15	16	15	15	15	14	14	15	14	14		14	16		15	14	14	18	15	15	15	14	15	14
20	15	15	14	14	14	15	14	15		14	15	15	15	18	14		14	14	14	15	14	14	14	14
21	14	15	14			15	14	14	14	15	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	21	14	15	14	14	14	15
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	21	20	20	20	21	21	21	18	20	18	17	17	19	19	18	19	21	21	21	21	21	21	21
MED	15	15	14	15	14	15	15	18	14	15	16	18	17	18	16	15	14	16	14	14	14	14	15	15
U Q	15	15	15	15	15	15	15	20	15	16	18	21	21	20	20	16	15	17	15	15	15	15	15	15
L Q	14	14	14	14	14	14	14	15	14	14	15	15	16	16	15	14	14	14	14	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

FEB. 2014

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	32	42		30	N		N	54	102	98	107	101	101	95	78	82	82	69	20		28		39	44
2		28		32				70	88	98	110	121	108	96	83	75	83	62	46	37	36			
3				27				66	83	87	106	120	111	107	102	94	78	73	38	38				27
4	37			28	28	48	N	64	81	98	110	122	130	125	110	111	106	83	64		46	N	28	
5					30		N	67	83	85	110	110	115	128	108	94	82	74	61	52	A	A	A	A
6				30			N	71	87	84	101	112	110	116	109	104	90	84	54	71	49			36
7	32						28	54	88	111	126	123	121	98	100	101	88	73	54	38	52	N		36
8		34		28	N	N		77	88	105	111	125	122	112	107	100	91	87	64	64		28		46
9	32					31	38	64	87	102	118	111	108	106	104	100	90	81	77	68	50			
10	38			34	N		N	63	86	102	118	127	123	125	109	105	81	81	76	66			30	30
11		36	28			34	32	62	88	85	91	100	127	110	83	90	91	81	73	74	53			38
12	N	37			44			64	101	104	110	120	121	110	108	112	100	90	77	52			38	
13							27	66	96	115	118	126	123	125	112	106	98	86	70		48	A	A	N
14							28	73	88	87	81	104	102	108	103	100	87	84	63	54		39		
15							N	64	89	93	106	126	115	102	90	95	90	66	55	46	50	N	38	42
16					39			63	N	101	103	110	124	122	115	107	86	82	73				44	
17		47	36	48	27		44	78	90	107	101	110	110	114	120	104	91	77	67	52		34		
18		44				N	N	76	98	107	104	106	118	117	110	87	97	88	73	A	A	A		25
19		28					44	78	91	116	118	121	121	117	118	111	107	108	88	77		53		52
20			52					78	105	121	127	128	125	120	122	112	98	107	88		46	N		
21	39	46	52					78	103	117	131	123	115	120	111	107	97	86	77	53	52	A	A	47
22	A	A	A			N	44	80	100	115	130	128	146	131	126	120	111	105	81	53	N	53	46	44
23	N					34	42	74	87	111	118	127	124	124	123	123	112	101	79	53	53	109		
24								69	89	107	128	118	137	123	117	111	105	88	73	53	51	27	A	
25		38		47	38	N	N	81	88	105		122	125	121	121	120	116	88	77	68	53		47	
26	N		38				46	84	115	110	108	115	111	117	118	115	108	90	79	54	52		51	
27			51	51	45		44	83	101	105	107	117	118	117	123	121	120	111	88	53	53	52	54	
28		48			44	28		64	108	130	130	134	126	127	126	111	107	103	88	64	53	67	53	46
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	11	6	10	8	5	11	28	27	28	27	28	28	28	28	28	28	28	28	22	17	9	11	13
MED	34	38	44	31	38	34	42	70	89	105	110	120	121	117	110	106	94	85	73	53	51	52	44	42
U Q	38	46	52	47	44	41	44	78	101	111	118	125	124	123	119	111	106	90	78	66	53	60	51	46
L Q	32	34	36	28	29	29	28	64	87	98	106	110	111	109	103	97	87	79	62	52	47	31	38	33

HOURLY VALUES OF fEs AT Kokubunji

FEB. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	24	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		24	29
2		G	G	G				G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	
3				G		G		G	G	G	G	G	G	G	G	G	G	G	G	G		G		G
4	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	
5		G			G		G	G	G	G	G	G	G	G	G	G	G	G	48	57	49	34	31	29
6				G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G			G
7	G		G			G	G	G	G	G	G	47	G	G	G	G	G	G	G	G	G	G		G
8		G		G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G		G		G
9	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	45	G	G			G
10	G			G	G		G	G	G	G	G	G	G	G	51	G	G	G	G	G		G	G	G
11		G	G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G			G
12	G	G	G		G			G	G	G	G	G	G	G	G	G	39	26	G	G		G	G	
13							G	G	G	G	G	G	49	G	G	G	G	G	G		G	30	29	26
14							G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
15							G	G	G	G	G	G	G	G	G	G	G	G	G	G	30	G	G	G
16				G	G			G	G	G	G	G	G	G	G	G	G	G	G		G		G	
17		G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G		33		
18		G			G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	33	34		G
19		G					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G
20		G	G				G	G	G	G	G	51	106	G	G	G	G	G	G	G	G	G		
21	G	G	G					G	G	G	G	50	G	G	G	G	G	31	G	23	G	58	33	G
22	28	32	27		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	G	G
23	G					G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		
24	G							G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	24	
25		G	G	30	G	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G		G	
26	G		G				G	G	G	G	G	G	G	G	G	46	G	G	G	G	G		G	
27			G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
28	G	G		G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	13	12	14	11	20	28	28	28	27	28	28	28	28	28	28	28	28	25	22	20	17	16
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	31	24	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

FEB. 2014

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	20	14	17	14	20		20	24	33	18	39	44	42	43	42	38	31	30	17	17	18		15	14
2		17	21	15				36	31	17	38	42	44	42	43	34	38	21	21	14	15		24	
3				14		18		18	18	39	42	42	44	43	43	39	14	23	14	20		22		15
4	18			24	20	14	21	46	36	43	43	45	53	101	45	43	36	36	14		14	18	15	
5		20			13		18	22	37	42	46	42	43	44	43	42	39	15	17	18	17	17	20	15
6				14			20	24	42	40	40	40	47	20	45	42	39	39	15	20	14			15
7	17		20			21	22	22	15	20	44	49	20	45	55	39	21	14	13	42	14	15		15
8		20		18	20	18		24	20	18	42	44	44	43	43	40	20	21	40	15		18		21
9	18	14	14		21	20	18	15	18	43	42	45	55	40	43	41	22	22	18	18	31			20
10	15			14	22		20	23	14	42	43	45	52	45	36	39	36	36	37	17		20	17	15
11		14	15			15	15	23	35	39	42	44	43	44	42	42	37	33	14	42	42			15
12	21	14	25		15			39	39	40	43	49	45	43	46	38	39	20	17	15		17	21	
13							20	34	18	43	39	56	42	55	40	43	39	26	17		15	14	14	15
14							15	39	37	40	43	43	59	43	45	40	18	22	17	17		14	22	
15							18	37	43	43	42	52	45	43	50	43	39	31	18	20	13	20	18	17
16				18	13			41	39	48	44	60	46	54	44	40	35	25	18		43		20	
17		14	17	15	20		15	35	38	40	42	40	45	44	43	39	37	35	17	18		14		
18		17			17	14	17	31	15	45	45	43	44	45	39	17	18	22	39	18	14	18		14
19		20					15	26	39	42	42	54	62	42	39	42	15	20	17	23	18	15		14
20		21	15				15	22	14	39	44	42	42	44	55	40	14	40	15	15	15	21		
21	15	22	15					39	14	38	53	39	43	44	42	21	18	14	15	14	17	18	15	20
22	14	14	14		17	20	14	24	13	41	43	43	43	43	43	36	18	24	15	15	15	14	13	14
23	14					15	15	31	33	42	42	46	44	45	40	40	36	29	15	14	15	14		
24	18							36	37	42	43	43	49	49	43	38	18	40	15	17	15	15	15	
25		20	23	17	18	17	14	36	39	44		62	55	44	45	40	23	31	26	17	17		17	
26	18		18				14	36	38	42	42	43	47	53	43	41	39	24	14	15	15		17	
27			18	15	14		14	37	40	42	45	44	50	61	45	43	20	34	15	21	18	18	34	
28	21	17		17	17	17		36	39	43	50	44	43	48	43	39	21	25	14	14	18	15	17	15
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	15	13	12	14	11	20	28	28	28	27	28	28	28	28	28	28	28	28	25	22	20	17	16
MED	18	17	17	15	18	17	16	32	36	42	43	44	44	44	43	40	27	25	17	17	15	17	17	15
U Q	19	20	20	17	20	20	20	36	39	43	44	47	49	46	45	42	37	33	18	20	18	18	20	16
L Q	15	14	15	14	15	15	15	23	18	39	42	42	43	43	42	38	18	21	15	15	15	14	15	14

HOURLY VALUES OF foF2 AT Yamagawa

FEB. 2014

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	B	B	42	32	25	B	B	38	81	89	88	81	94	113	96	90	92	88	77	53	61	50	43	29
2	44	36	34	28	59		28	40	78	89	95	88	79	95	90	88	86	88	67	50	39	51	42	59
3	B	40	42	30	42	32	B	40	75	86	93	N	96	95	90	88	92	90	77	43	52	B	42	42
4	B	28	34	30	34	34	N	40	78	C	C	C	C	C	C	C	C	89	79	44	B	26	B	B
5	B	B	B	B	40	B	B	43	78	86	87	N	69	79	N	86	90	86	77	53	44	43	36	B
6	34	B	B		32	B	B	42	72	84	85	65	79	79	74	81	86	88	78	54	44	34		B
7	34	59	36	B	29	29	29	52	86	87	N	85	84	69	B	96	88	86	76	A	52	53	53	
8	B		B	32	36	B	59	52	88	85	89	77	79	96	94	96	86	87	77		N	43	43	
9	32	47	48			B		52	88	89	69	N	79	N	92	90	90	94	85	79	76	28	32	34
10	36		59	40	32	26		52	78	85	78	N	79	69	79	86	69	87	54	57	A	49	49	43
11	45	46	36	36	B		B	44	87	86	81	92	67	97	70	86	80	86	85	52	49	50	N	39
12	47	44			38	B	B	29	N	82	69	69	79	79	77	69	79	85	86	59	52	44		B
13		B	34	47	37	B	B	44	81	79	69	82	69	79	69	69	86	86	80	75		52	A	B
14		28	B	49		32	B	43	77	86	78	N	79	96	69	80	79	84	80	A	52		B	B
15	B		37	B		B	N		78	87	69	78	89	69	96	86	88	82	78	53	53	54	B	
16	B	36	B		41	B		44	86	86	N	86	77	79	N	81	90	89	84	54	49	48	48	52
17	43	42	43	42	43		42	A	90	N	86	87	87	82	69	83	79	86	81	59	N	49	N	
18	B	34	B	41	69	B	B	44	80	78	79	94	79	N	69	79	84	86	78	47	34	A	42	34
19	B	B		38	34		B	53	80	N	69	78	79	69		86	77	84	75	76	N	B		
20		N	39	26	B	26	B	51	80	79	69	69	98	89	69	79	100	91	79	53			B	37
21	B	34	44	29	B		B	47	88	85	N	88	89	79	N	84	88	90	86	78	39		32	A
22	A	A	42	B	28	37	34	53	76	86	66	69	N	79	99	N	85	97	90	73	53	76	39	A
23	43	34	42	34		35	42	53	90	87	87	93	N	81	69	70	98	89	77	77	69	N	52	43
24	53		44	28	29	B	31		87	78	79	152	69	81	84	79	92	N	84	77	53	54	52	53
25	50	33	43	53	43	59	B	52	89	87	B	79	N	69	92	79	96	92	N	77	77	44		52
26	51	42	46	43	48	34	37	52	87	79	69	80	90	77	69	69	79	94	86	77	52		42	53
27		32	53	49	38	34	36	62	85	N	88	86	N	89	79	88	N	N	89	78	N	69	69	42
28	53	54	52	52	53	30	29	52	87	86	81	89	91	79	92	92	92	92	91	85	78	78	76	53
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	13	17	20	20	21	13	10	25	27	24	23	22	23	25	22	26	26	26	27	25	20	20	17	15
MED	44	36	42	37	38	34	35	47	81	86	79	84	79	79	79	85	87	88	79	59	52	50	43	43
U Q	50	45	45	45	43	34	42	52	87	87	87	88	89	92	92	88	92	90	85	77	57	53	52	53
L Q	35	33	36	30	32	29	29	42	78	83	69	78	79	78	69	79	80	86	77	53	46	43	40	37

HOURLY VALUES OF fEs AT Yamagawa

FEB. 2014

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	B	B	G	G	G	B	B	G	G	G	G	G	G	G	70	44	46	38	36	34	28	G	G	G
2	G	28	G	G	G	G	G	G	G	G	39	G	G	56	57	47	37	35	28	G	G	32	G	G
3	B	28	25	G	G	G	B	G	G	G	G	G	G	G	G	G	G	36	27	G	32	B	G	G
4	B	G	G	G	G	G	G	G	G	C	C	C	C	C	C	C	C	G	G	G	B	G	B	B
5	B	B	B	B	G	B	B	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	B
6	G	B	B	G	G	B	B	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G	G	B
7	G	G	G	B	G	G	G	G	G	G	G	G	G	G	B	G	39	33	28	24	36	G	G	G
8	B	G	B	G	G	B	G	G	31	G	G	G	G	G	G	47	46	36	G	G	G	G	G	G
9	G	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	36	G	G	G	G
10	G	G	G	G	G	G	G	G	G	G	G	G	48	G	49	51	G	G	G	G	78	G	G	G
11	G	G	G	G	B	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
12	G	G	G	G	G	B	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	B
13	G	B	G	G	G	B	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	29	B
14	G	G	B	G	G	G	B	G	G	G	G	G	G	65	G	G	G	G	G	35	34	G	B	B
15	B	G	G	B	G	B	G	G	G	G	G	G	G	G	G	G	43	G	G	G	G	G	B	G
16	B	G	B	G	G	B	G	G	G	G	G	G	G	G	G	G	G	37	40	26	G	G	G	G
17	G	G	G	G	G	G	G	27	G	G	G	G	56	49	G	G	G	40	39	G	32	G	G	G
18	B	G	B	G	G	B	B	G	G	G	G	G	G	G	G	G	G	G	35	G	G	28	32	G
19	B	B	G	G	G	G	B	G	G	G	G	G	G	G	G	G	G	G	G	G	G	B	G	G
20	G	G	G	G	B	G	B	G	G	G	G	G	G	G	G	46	53	50	G	29	G	G	B	G
21	B	G	G	G	B	G	B	G	G	G	G	G	46	49	51	44	G	34	G	25	G	G	24	27
22	26	34	27	B	G	G	G	G	G	G	G	G	46	G	G	47	G	32	28	G	G	G	G	31
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	G	G	G	G	G
24	G	G	G	G	G	B	G	G	G	G	G	50	G	G	G	G	G	40	36	29	G	G	G	G
25	G	G	G	G	G	G	B	G	G	G	B	G	G	G	G	G	G	34	G	G	26	G	G	G
26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	40	G	43	29	26	G	G	G	G
27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	56	44	40	41	36	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	23	22	24	25	17	15	28	28	27	26	27	27	27	26	27	27	28	28	28	27	26	24	22
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	44	37	36	28	25	26	G	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

FEB. 2014

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

HOURLY VALUES OF foF2 AT Okinawa

FEB. 2014

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B				B	B	B	37	78	110	118	130	115	109	110	109	120	118	108	104	84	84	73	52
2	60			B		B	B	42	82	102	107	118	110	120	N		109	112	N	A	A	67		B
3	B	B	B	B		B	B	37	76	102	107	130	128	109	107	111	107	108	107	78	53	59		B
4		B	B	B		B	B		80	108	111	110	109	B	N	109	109	109	49	107		80		B
5	B	B	B			B	B	42	67	87	107	119	131	N	109	130	109	131	108	49	73	82		B
6		B	B	B	B	B	B	44	80	C	C	C	C	C	C	C	C	108	107	84			B	B
7	B	B	B	B		B		53	87	114	120	119	110	130	122	127	109	119	107	80	74		73	58
8		B	B	B		B	B	B	87	108	120	109	118	108	112	116	116	112	100	82	59	76		B
9	49	B	B	B		B	B		97	107	116	118	108	107	107	106	103	108	106	84	82	78	62	
10		B	B	52	B	B	B	46	87	104	118	131	99	110	109	109	109	128	108	69	59	B	B	B
11	B	53	50	B		34	B		87	117	97	108	105	106	102	97	94	107	88	81				
12		66	52	52	B	B	B	B	86	109	128	108	121	127	169	109	112	130	109	49	85	81		
13			53	63	32	A	B	42	78	108	C	C	C	C	C	B	C	C	49	77				B
14	B	B	B	B	B	B	B	B	78	C	C	C	C	C	C	C	C	148	147	145	111	106	81	67
15	54	52	52	44	37	B	28	41	82	108	119	132	152	148	154	158	143	141	127	120	88	88	72	52
16	50	47	38	45	31	B	B	41	85	100	113	118	136	146	148	147	141	130	130	107	87	86	73	72
17	67	54	54	47	44	44	43	52	95	115	126	120	123	146	148	142	128	110	108	107	88	88	88	73
18	67	51	44	43	43	36	B	46	84	98	107	125	143	148	139	148	142	132	108	88	78	77	70	52
19	53	53	46	47	38	B	31	51	102	101	112	122	128	132	144	150	144	142	130	110	88	86	87	87
20	54	52	88	50	B	B	B	47	86	111	132	136	130	144	150	145	147	146	129	107	107	106	68	53
21	63	52	52	30		32	B	51	88	117	126	134	141	143	130	144	128	125	123	120	106	101	74	54
22	51	43		44	44	48	37	52	88	112	134	145	148	150	148	150	147	142	136	119	104	107	89	72
23	50	51	44	46	40	43	40	54	94	104	120	131	134	145	146	148	148	151	143	131	143	142	110	88
24	80	67	72	47	38	36	42	58	92	105	141	151	150	138	146	N	142	134	128	107	105	107	73	87
25	87	77	72	74	53	36	34	54	87	104	B	135	135	131	136	142	133	128	129	119	130	109	122	N
26	87	79	67	51	47	42	38	64	89	106	126	125	123	131	137	141	133	126	126	130	110	121	86	105
27	83	87	80	81	67	40	34	54	88	101	120	124	128	131	135	141	138	136	134	132	148	N	146	87
28	87	88	106	89	72	48	31	52	88	120	131	145	144	126	127	131	130	128	127	109	107	88	44	105
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	16	16	17	13	11	10	22	28	26	24	25	25	23	23	23	25	27	27	27	23	22	18	16
MED	62	53	52	47	43	40	36	49	87	108	120	125	128	131	136	141	128	128	109	107	88	87	74	72
U Q	81	72	72	57	50	44	40	53	88	111	126	133	138	145	148	147	142	136	129	119	107	106	88	87
L Q	52	51	48	44	37	36	31	42	81	102	111	118	112	110	110	109	109	112	107	81	78	80	72	53

HOURLY VALUES OF fEs AT Okinawa

FEB. 2014

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

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

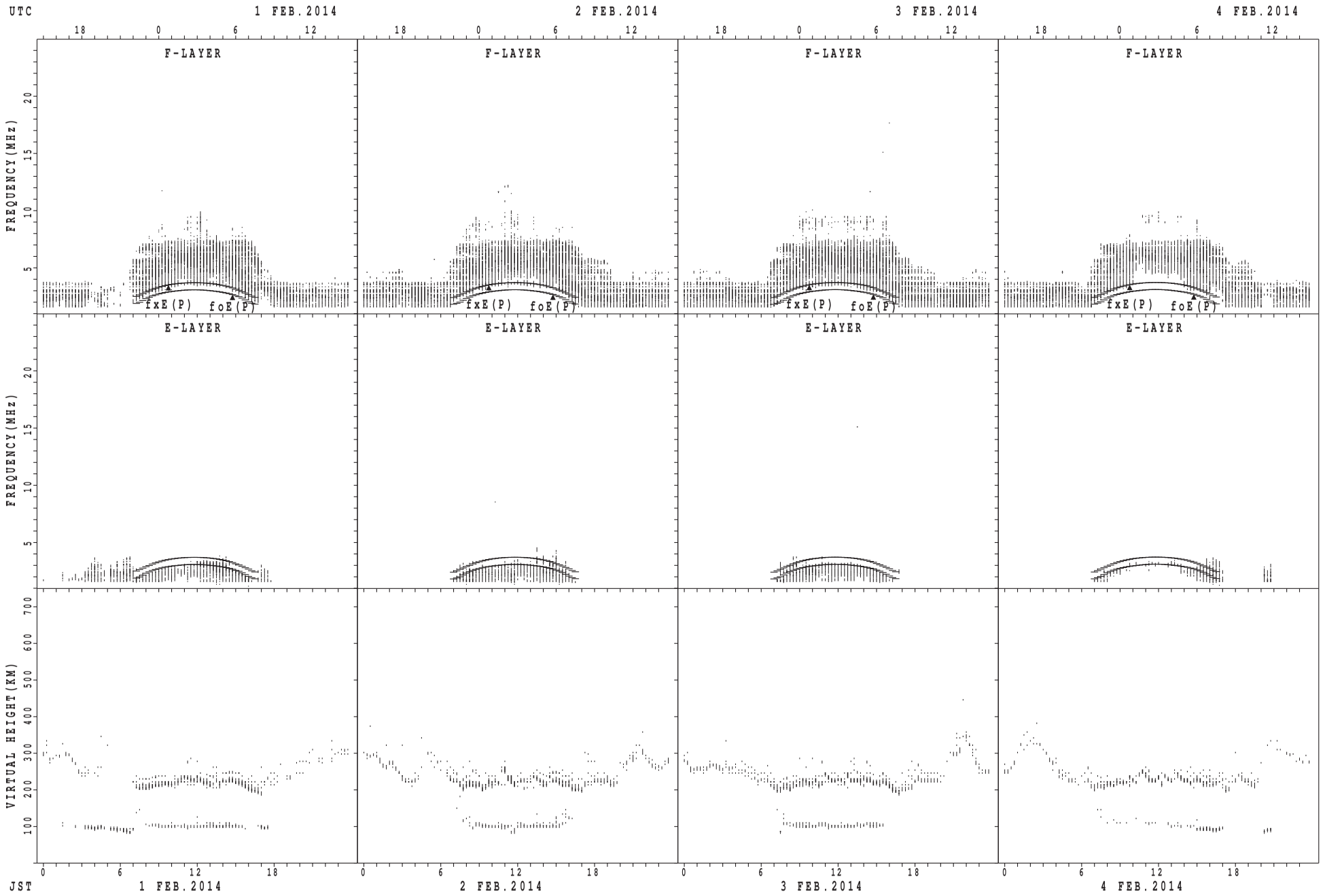
HOURLY VALUES OF fmin AT Okinawa

FEB. 2014

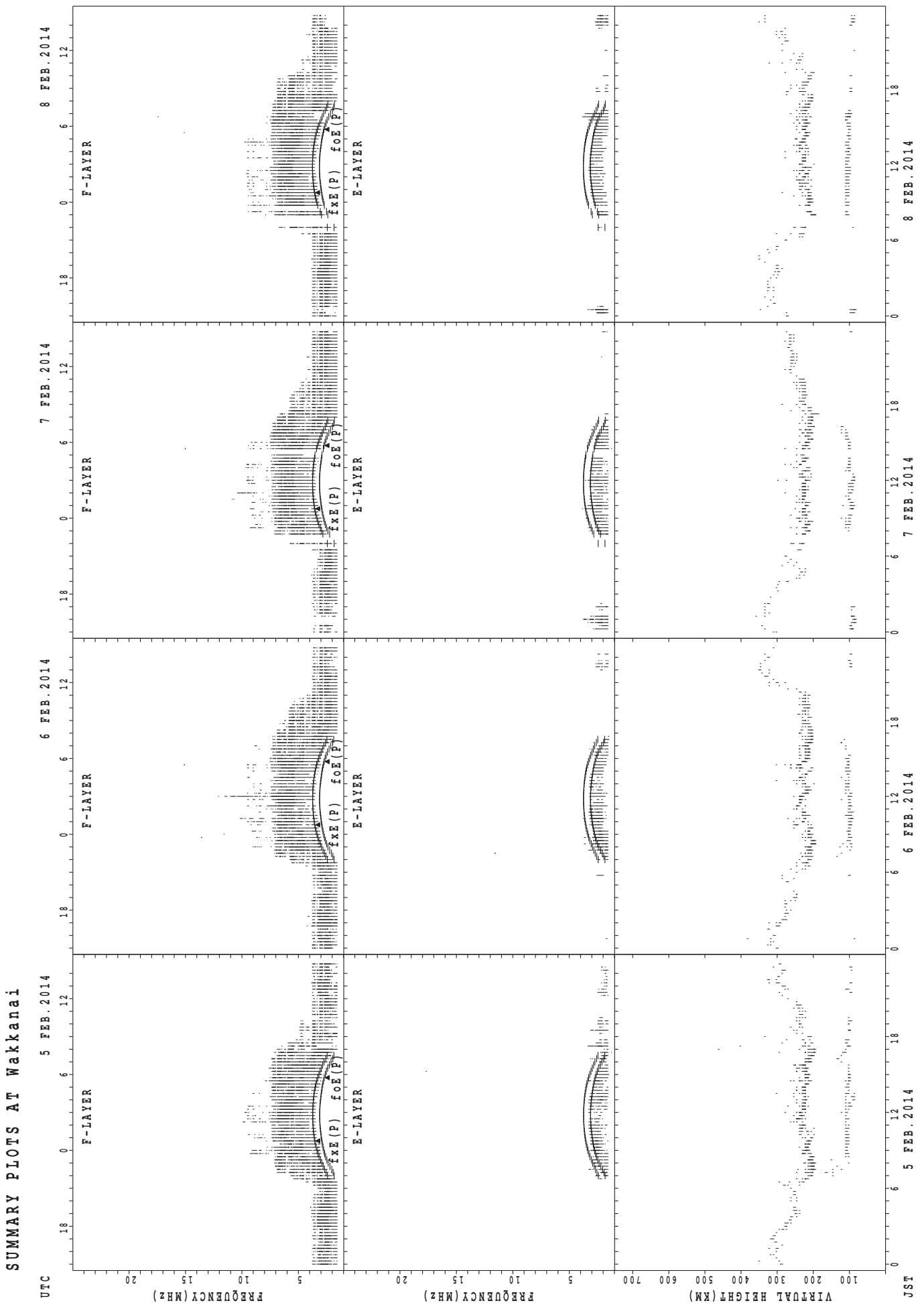
LAT. 26°41.0′N LON. 128°09.0′E SWEEP 1.0MHz TO 30.0MHz AUTOMATIC SCALING

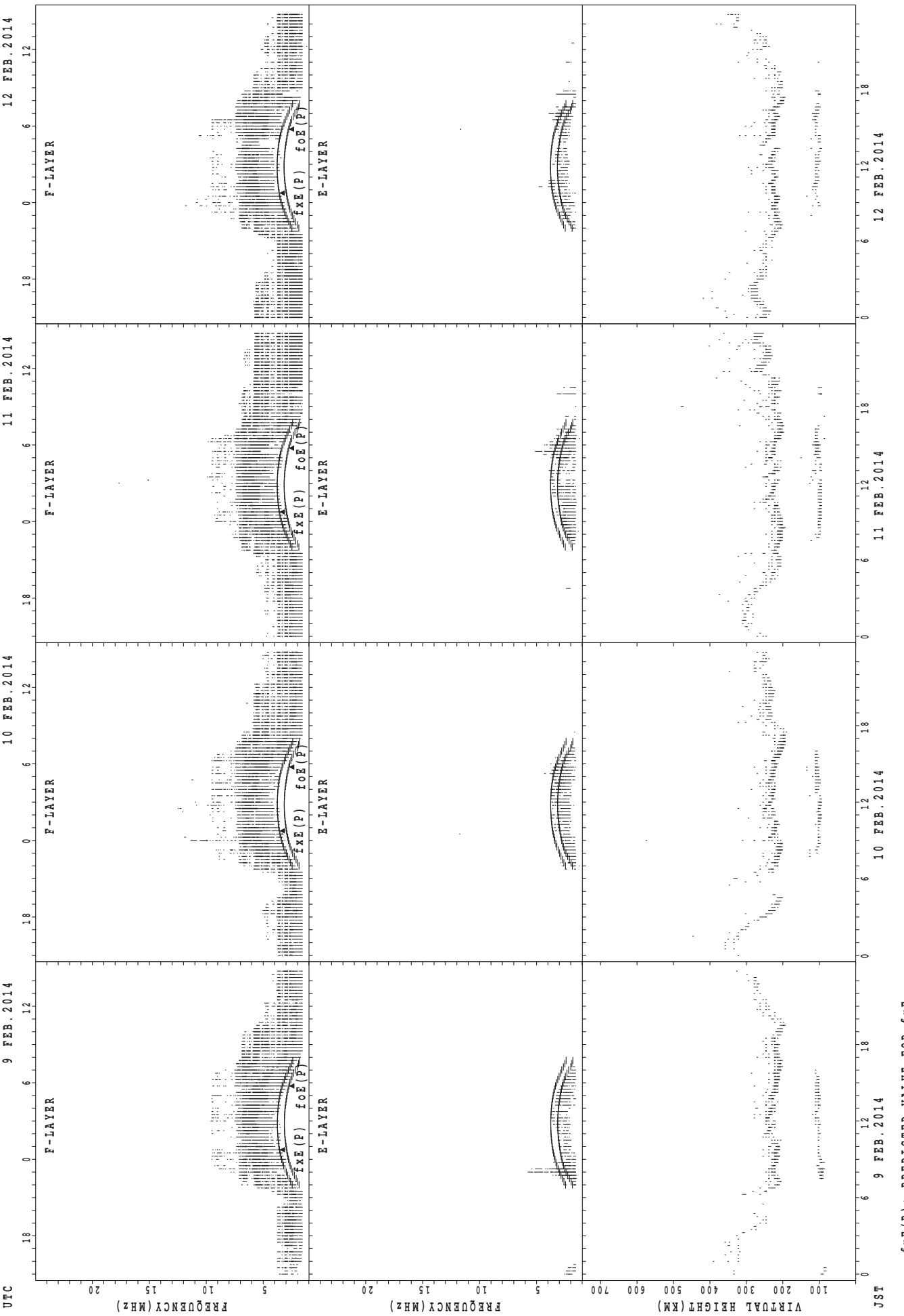
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	66	66	66	B	B	B	66	29	38	45	46	48	50	44	46	40	39	32	36	21	21	39	38
2	42	44	71	B	28	B	B	20	28	41	44	44	66	48	56	53	47	39	26	20	17	20	42	B
3	B	B	B	B	66	B	B	20	30	22	43	58	62	51	60	55	43	38	24	18	20	40	21	B
4	66	B	B	B	71	B	B	66	29	41	55	59	101	B	43	48	43	41	20	21	66	17	42	B
5	B	B	B	66	21	B	B	20	28	42	49	47	56	60	55	50	40	33	22	32	40	66	N	B
6	66	B	B	B	B	B	B	20	28	C	C	C	C	C	C	C	C	23	20	20	18	73	B	B
7	B	B	B	B	66	B	71	20	29	40	40	46	48	64	100	39	42	26	20	42	21	50	20	42
8	81	B	B	B	71	B	B	B	39	20	42	45	48	46	50	61	38	23	34	17	42	53	71	B
9	20	B	B	B	71	B	B	66	18	21	42	49	60	52	61	43	42	21	22	33	42	63	46	20
10	101	B	B	40	B	B	B	20	36	42	42	44	57	43	52	44	43	22	33	38	41	B	B	B
11	B	20	81	B	66	18	B	66	40	40	42	50	54	60	42	48	43	38	40	20	66	45	41	64
12	66	20	81	43	B	B	B	B	20	40	43	49	53	58	102	48	72	24	40	40	48	42	45	51
13	66	81	44	45	16	17	B	21	30	42	C	C	C	C	C	B	C	C	42	22	71	101	26	B
14	B	B	B	B	B	B	B	B	34	C	C	C	C	C	C	C	C	16	16	17	15	16	20	21
15	18	18	17	18	15	B	18	17	15	16	20	46	36	37	42	30	18	20	14	18	17	20	14	16
16	17	17	15	16	16	B	B	16	26	18	35	42	44	53	42	42	18	18	20	17	22	16	17	18
17	29	15	18	17	21	16	16	18	16	18	16	16	49	38	34	29	23	18	21	15	16	18	18	17
18	16	16	15	15	20	15	B	18	26	20	36	44	46	43	39	30	22	18	16	15	16	16	17	16
19	18	18	16	18	16	B	20	17	27	20	43	43	49	49	45	39	22	18	22	14	14	14	15	16
20	16	18	15	15	B	B	B	17	26	22	20	41	42	54	33	26	21	39	27	15	18	18	16	21
21	20	16	20	17	66	17	B	17	16	16	26	21	37	36	35	28	21	20	14	15	16	16	16	17
22	16	20	18	20	16	16	15	17	15	20	40	34	42	48	33	28	23	16	22	15	17	16	16	15
23	21	17	15	16	15	18	15	18	17	20	24	42	45	43	46	42	27	18	21	15	15	17	16	17
24	17	16	15	15	17	66	17	20	17	20	24	35	30	38	36	30	21	22	14	15	15	16	16	17
25	15	15	16	16	15	16	16	20	27	18	B	60	52	59	45	36	30	18	23	14	15	18	18	17
26	16	15	15	15	15	16	17	20	18	18	27	26	46	52	43	41	29	17	15	14	16	15	15	14
27	17	15	15	14	15	17	15	20	16	21	40	42	45	44	40	33	23	18	17	15	17	32	15	15
28	17	17	15	15	15	16	66	20	20	34	46	44	42	45	42	34	22	20	14	14	17	17	21	15
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	19	19	19	22	12	11	25	28	26	24	25	25	24	25	25	25	27	28	28	28	27	25	20
MED	19	17	16	17	18	16	17	20	26	21	41	44	48	48	43	41	29	21	22	17	18	18	18	17
U Q	66	20	44	40	66	17	20	20	29	40	43	48	55	53	53	48	42	33	26	21	40	45	40	21
L Q	17	16	15	15	15	16	15	17	17	20	26	41	43	43	39	30	22	18	16	15	16	16	16	16

SUMMARY PLOTS AT Wakkanai

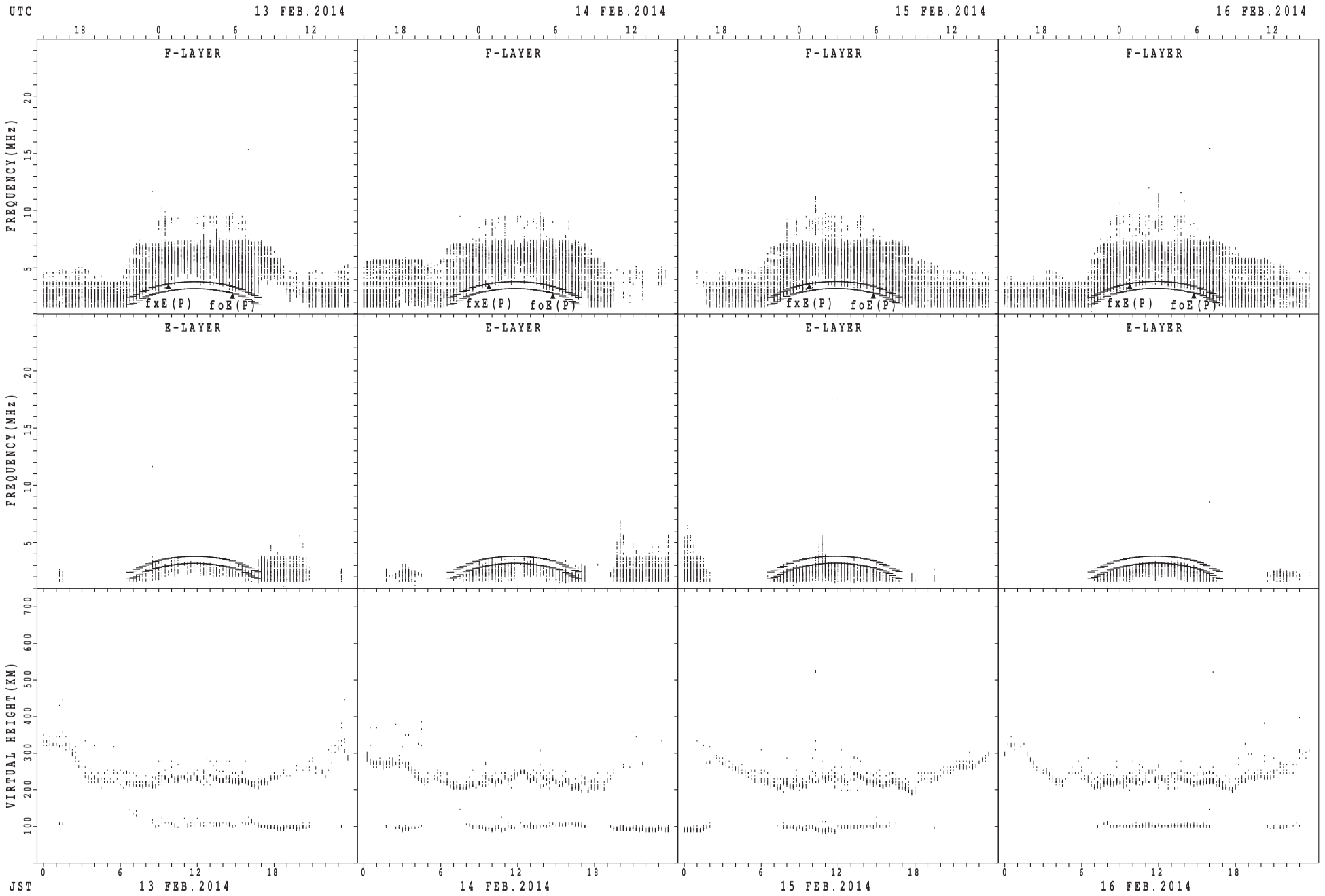


fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

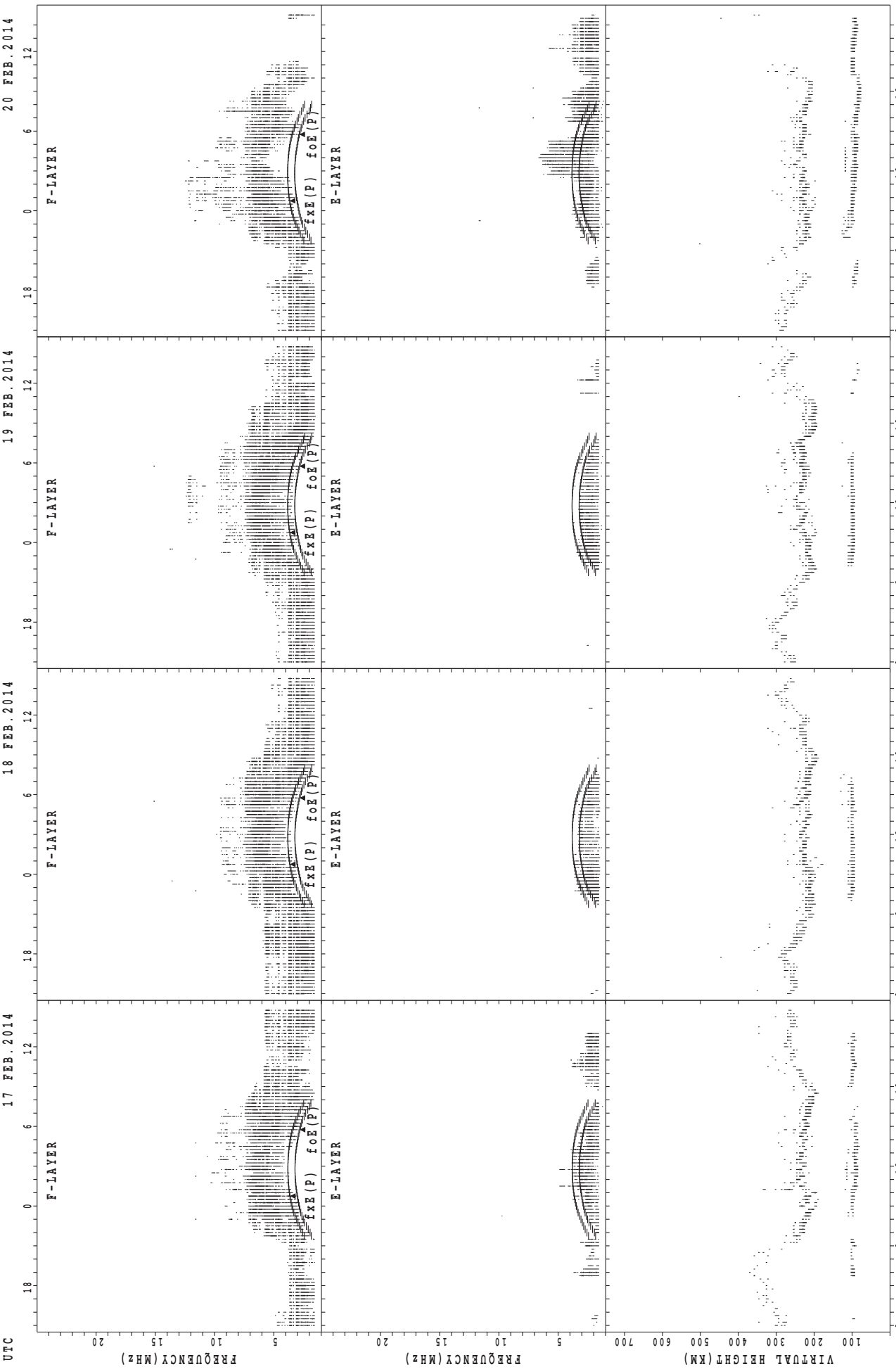

SUMMARY PLOTS AT Wakkanai
UTC
JST
5 FEB.2014
6 FEB.2014
7 FEB.2014
8 FEB.2014
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P) foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE


SUMMARY PLOTS AT Wakkanai
UTC
JST
9 FEB.2014
10 FEB.2014
11 FEB.2014
12 FEB.2014
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

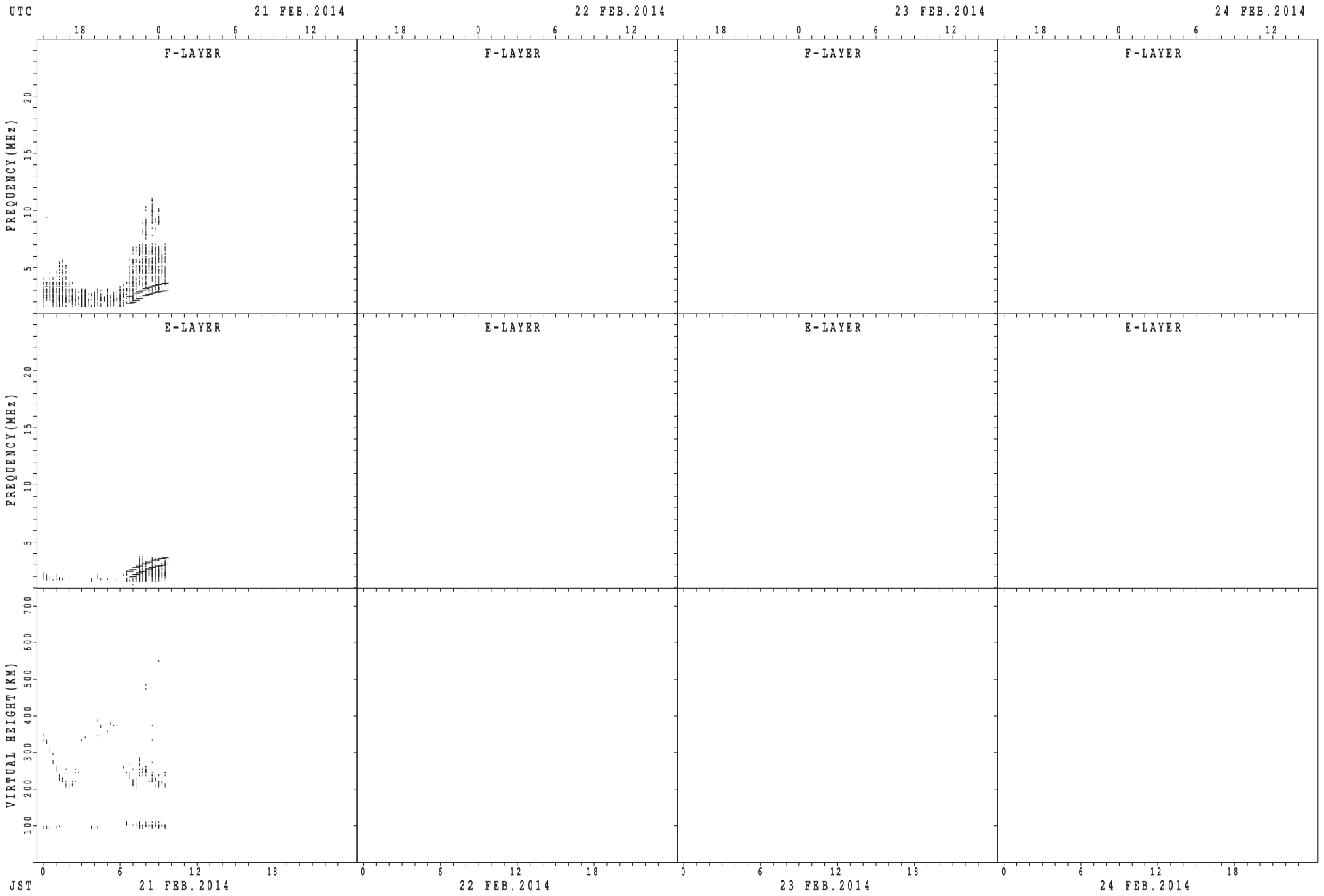
SUMMARY PLOTS AT Wakkanai



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

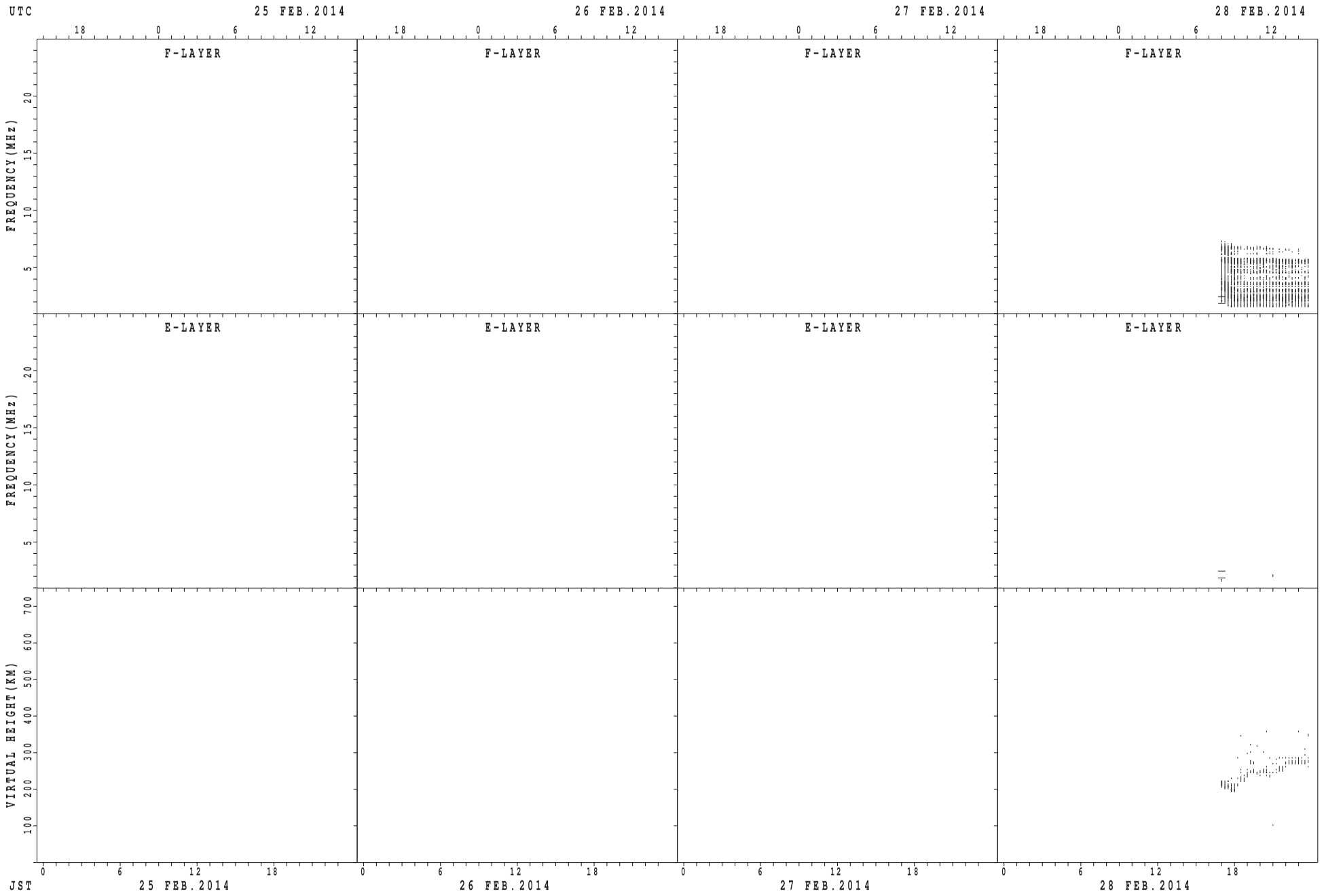

SUMMARY PLOTS AT Wakkanai
UTC
JST
17 FEB.2014
18 FEB.2014
19 FEB.2014
20 FEB.2014
F-LAYER
E-LAYER
FREQUENCY(MHz)
VIRTUAL HEIGHT(KM)
fxE(P)
foE(P)
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



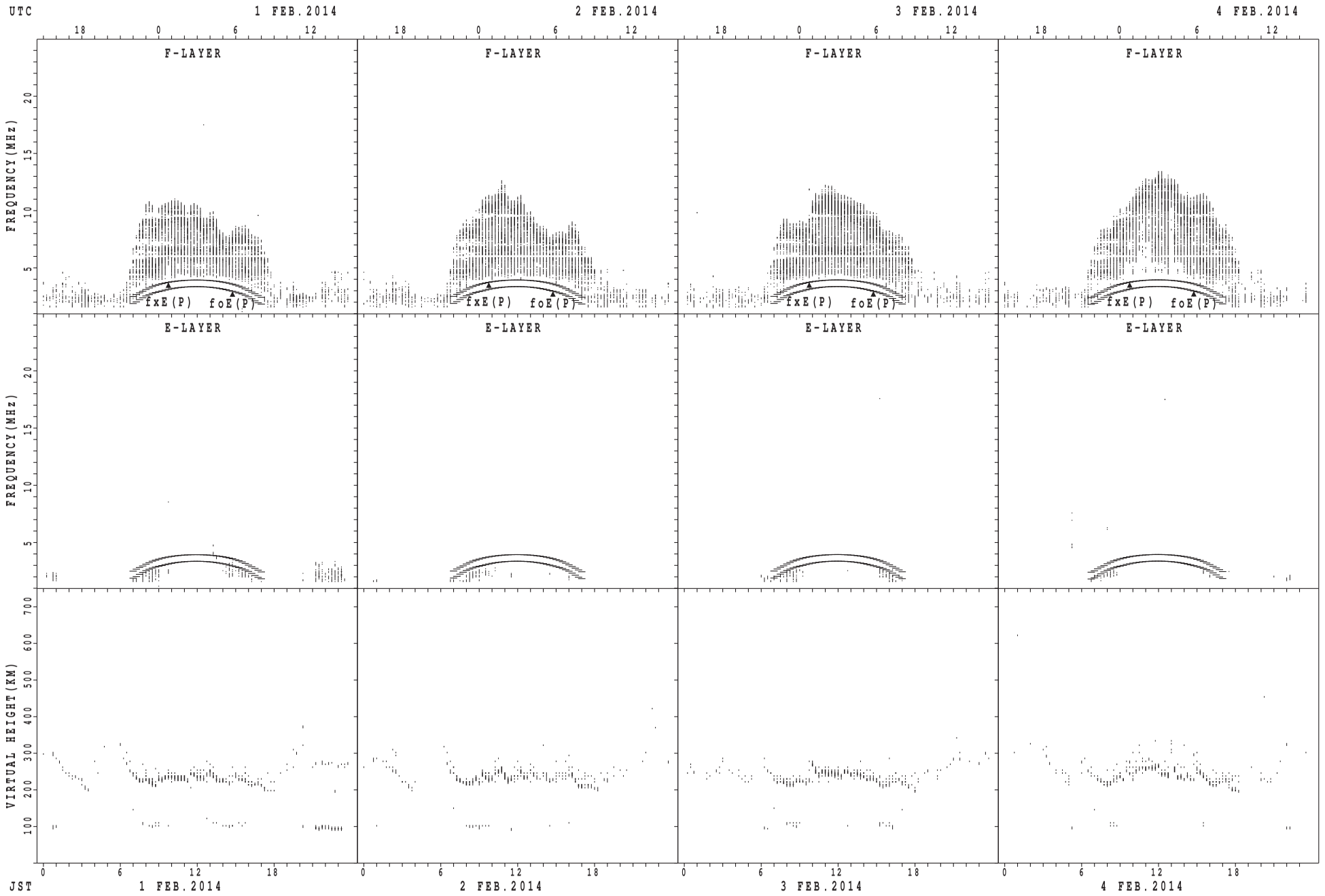
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



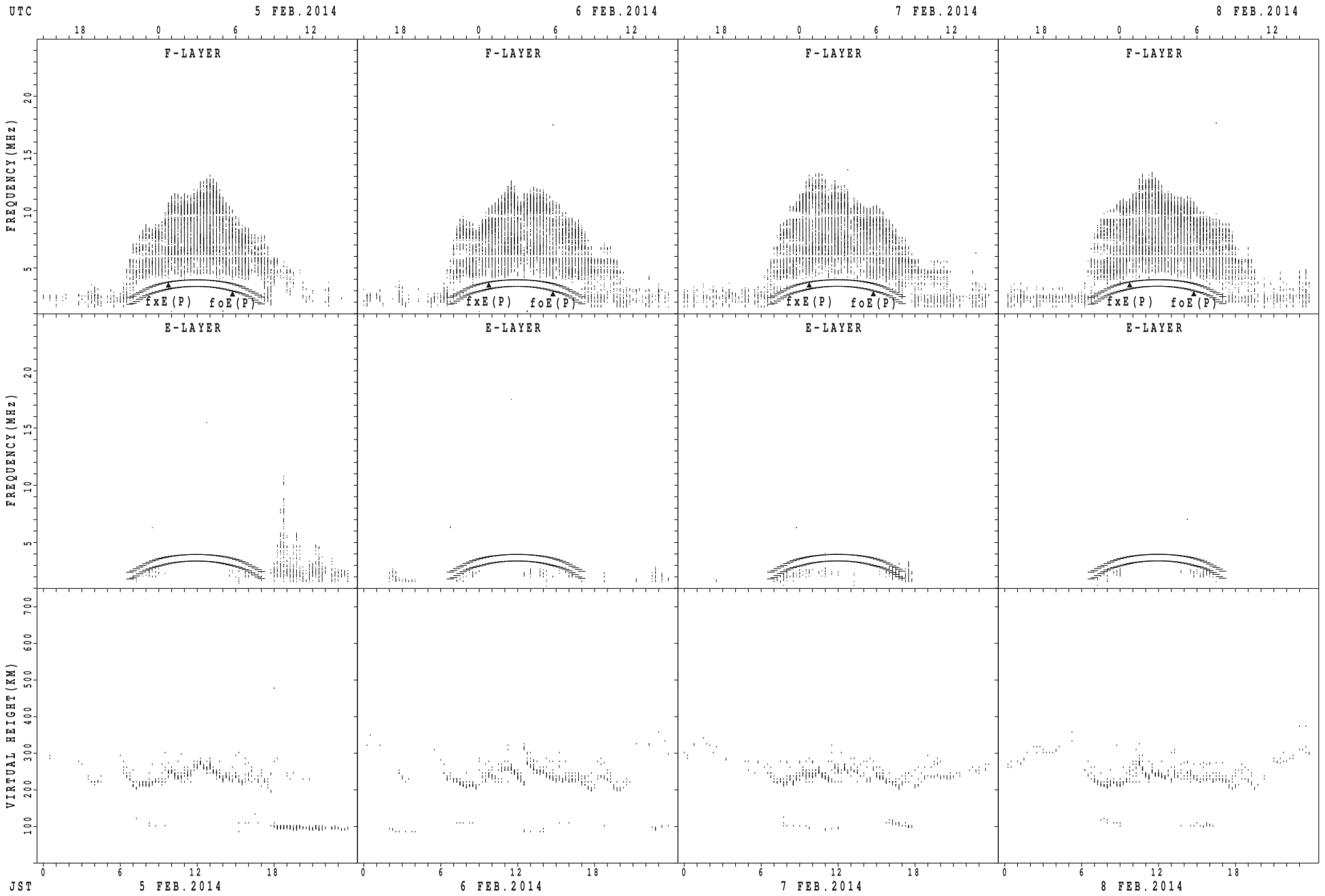
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



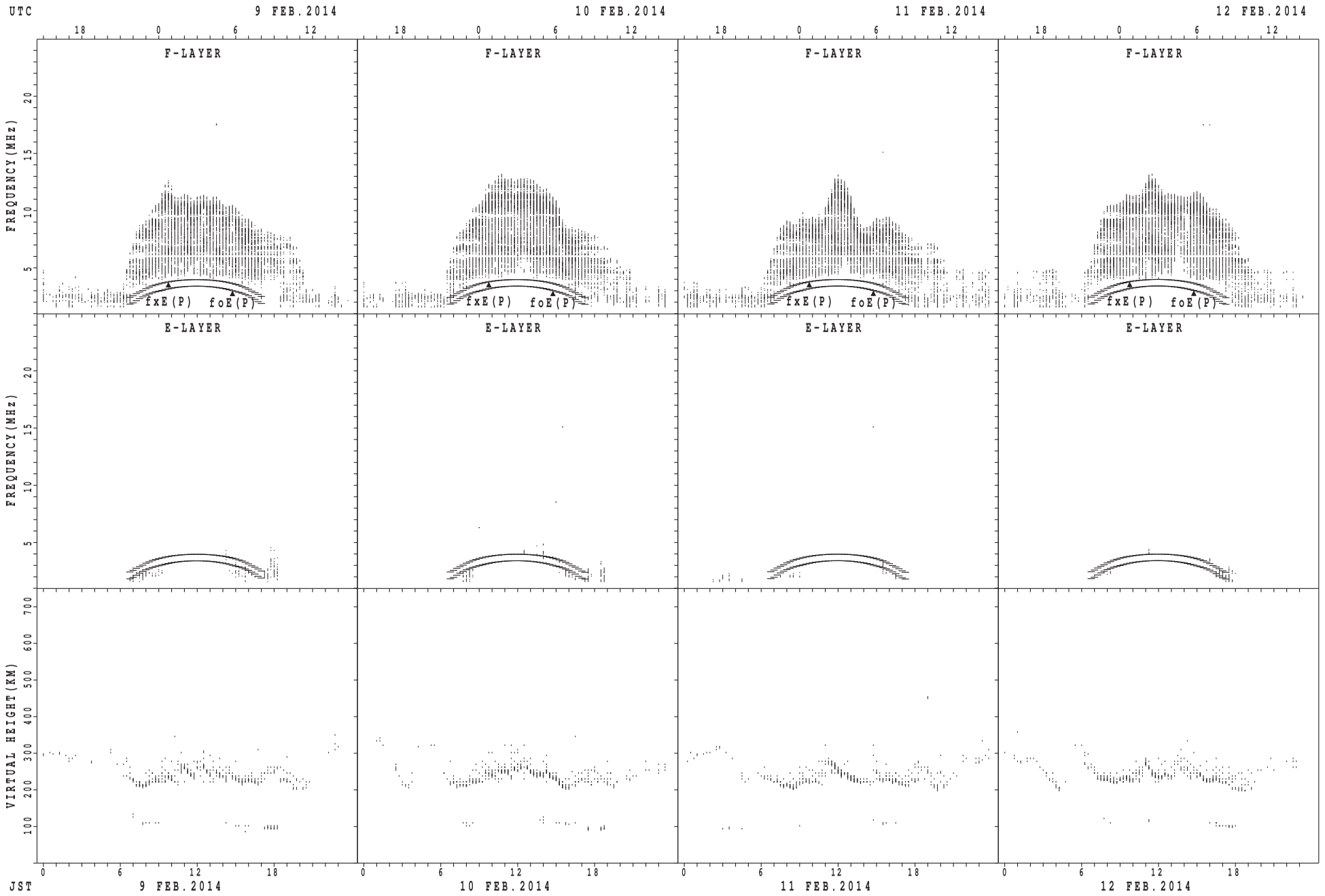
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



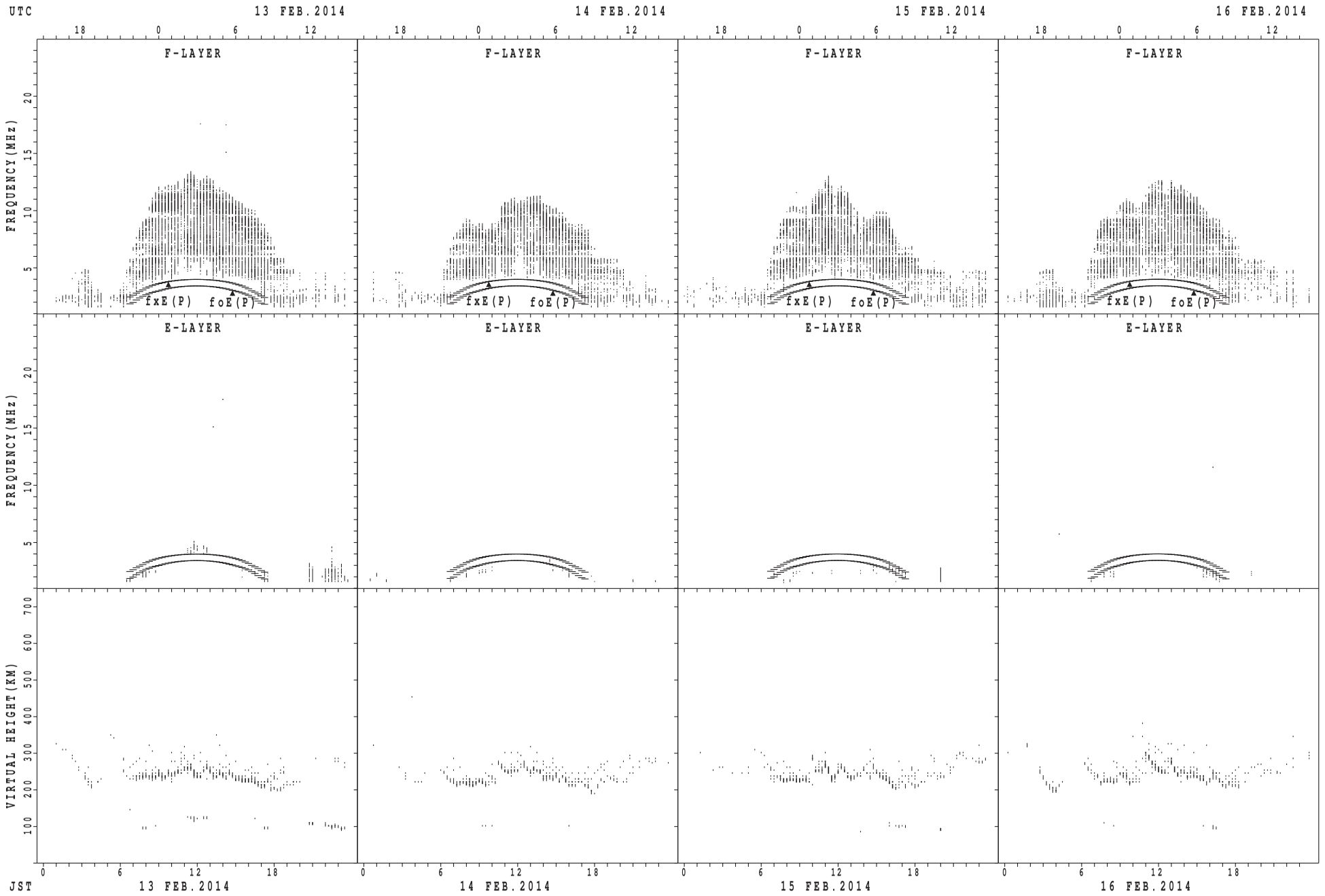
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



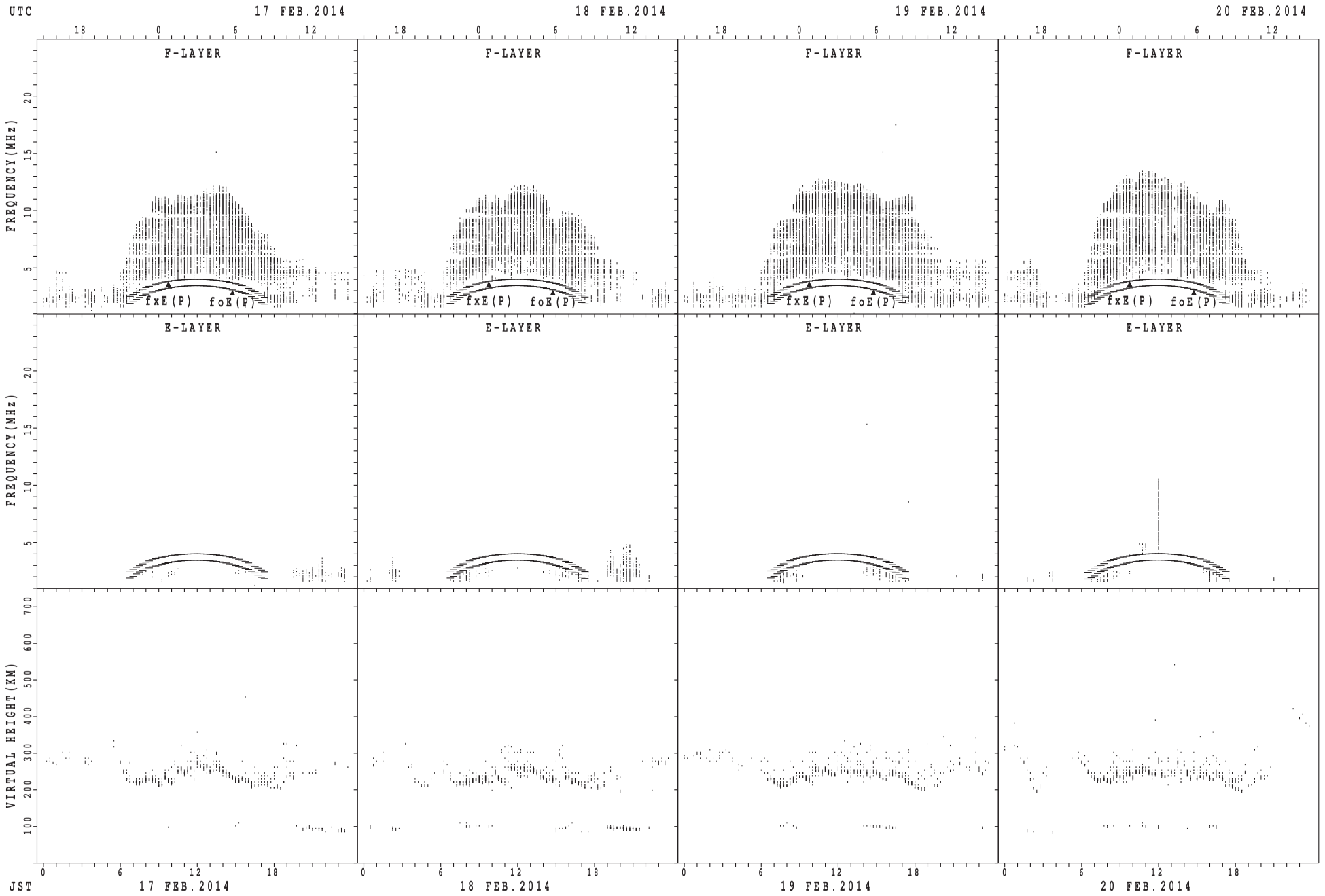
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



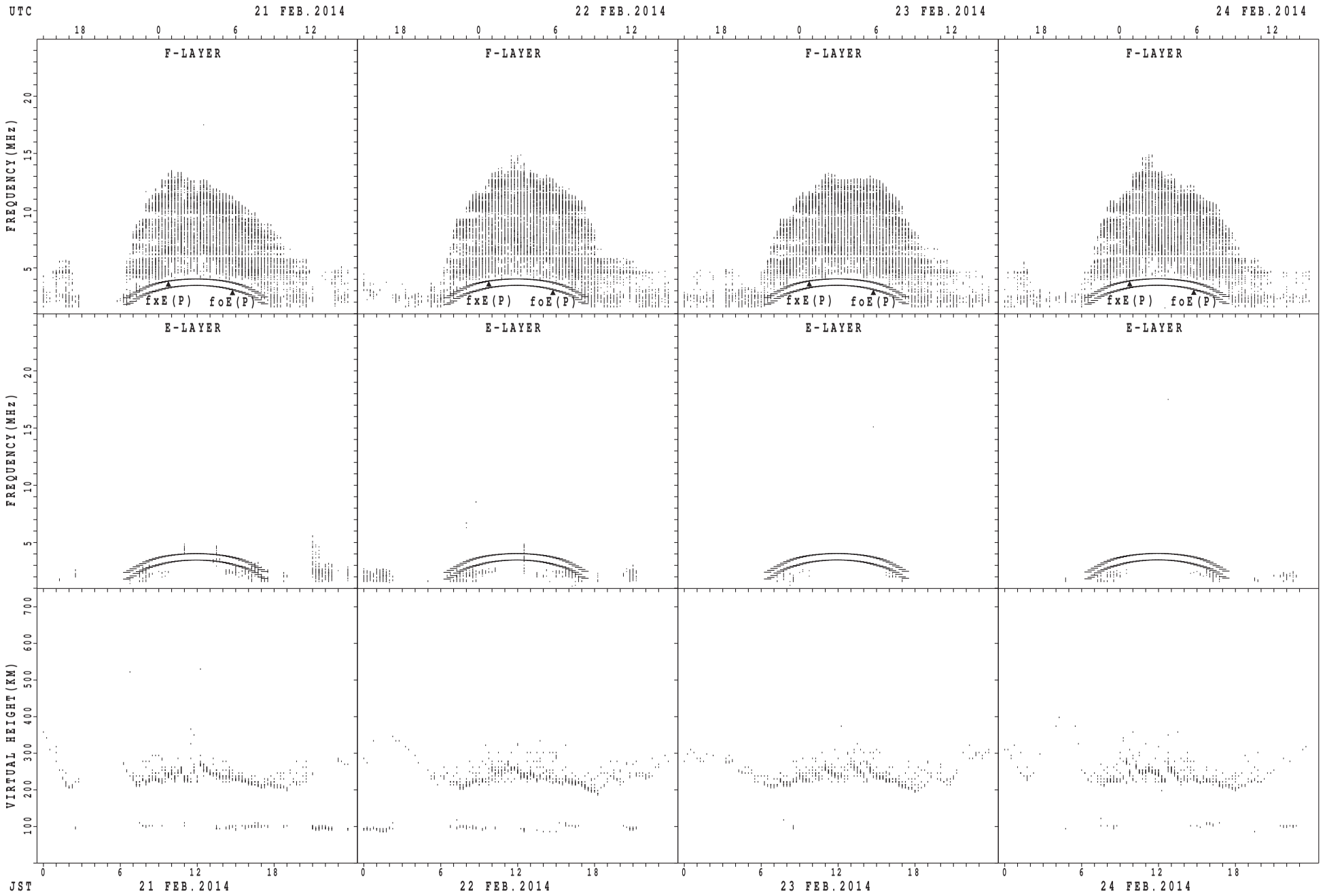
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



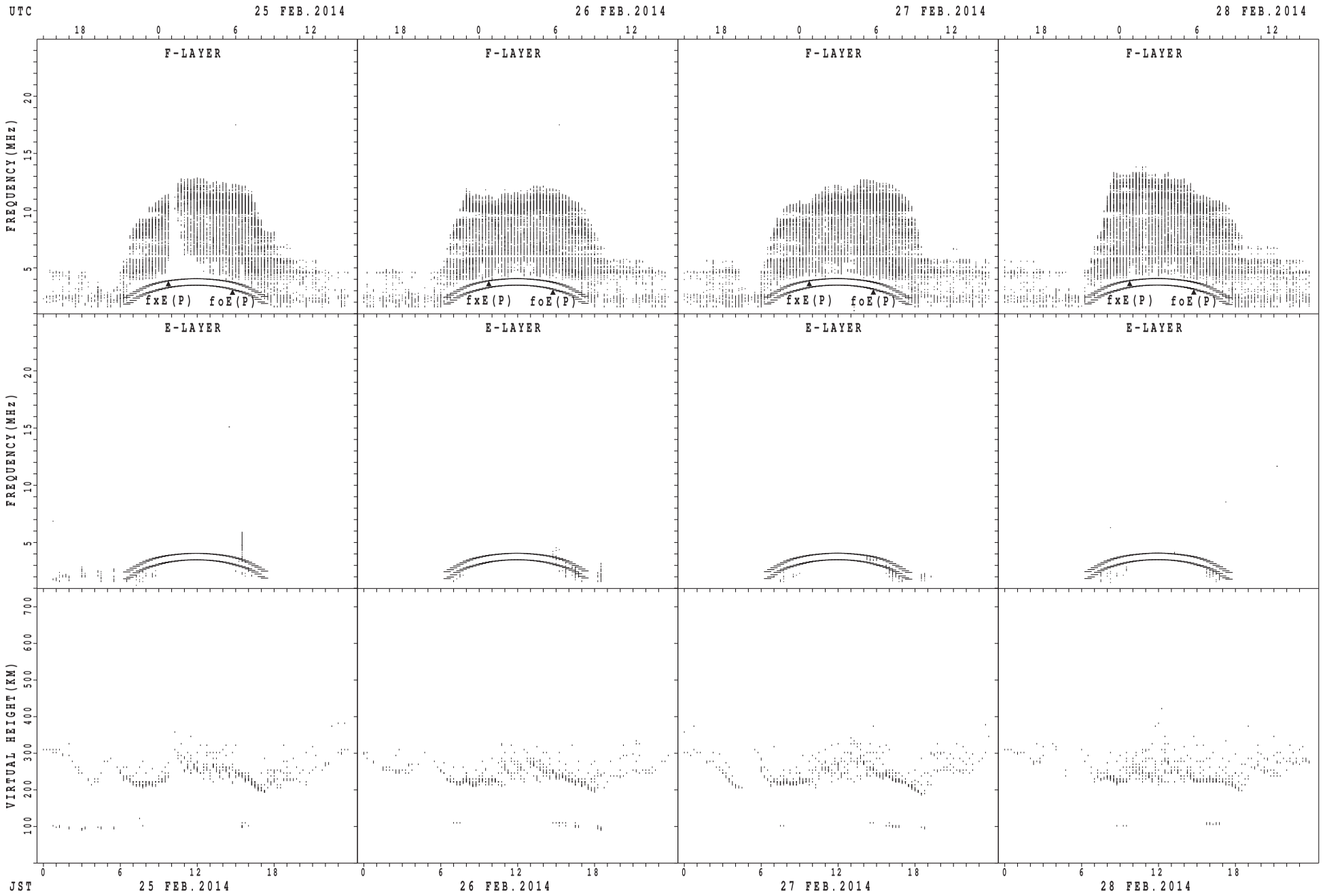
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



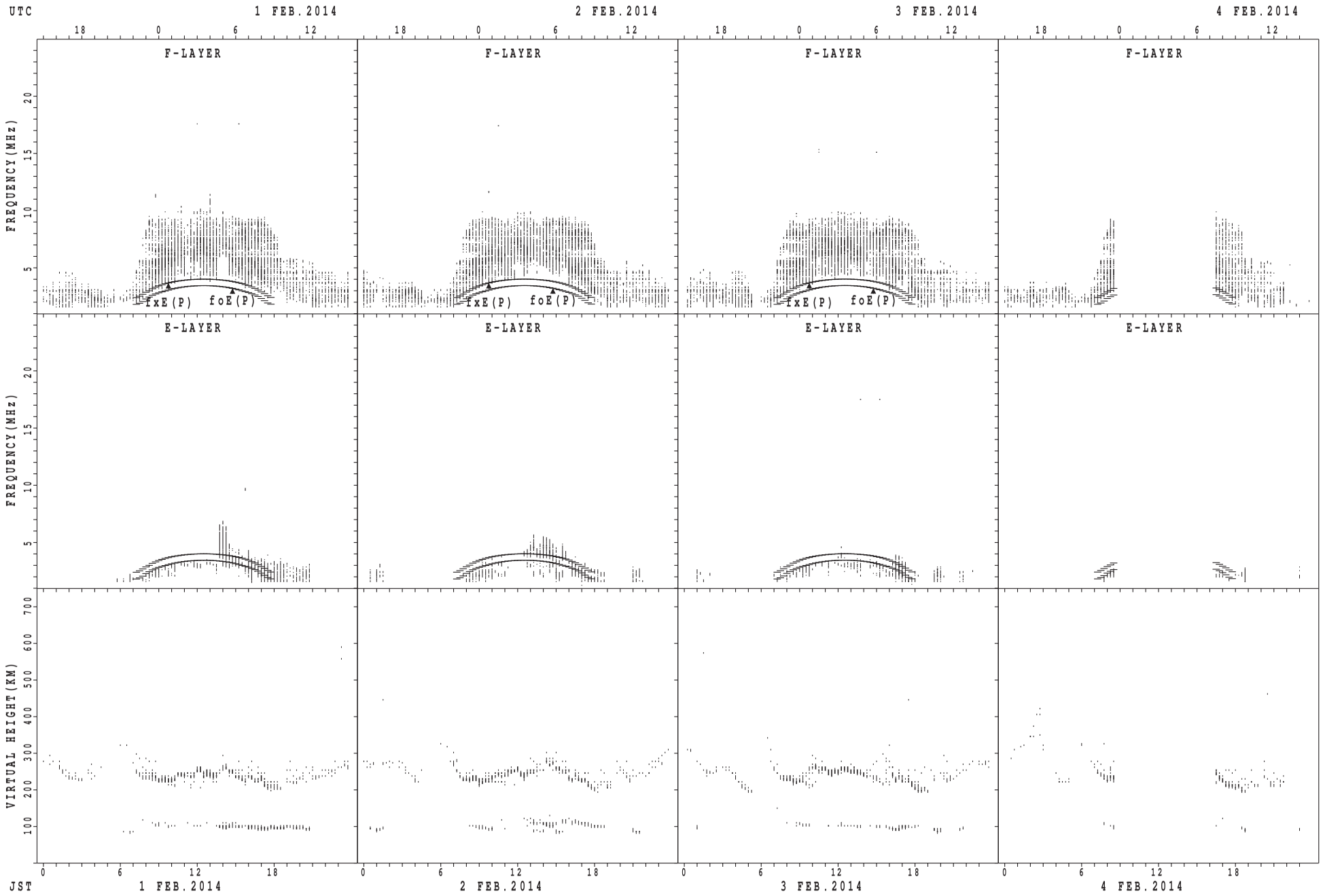
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



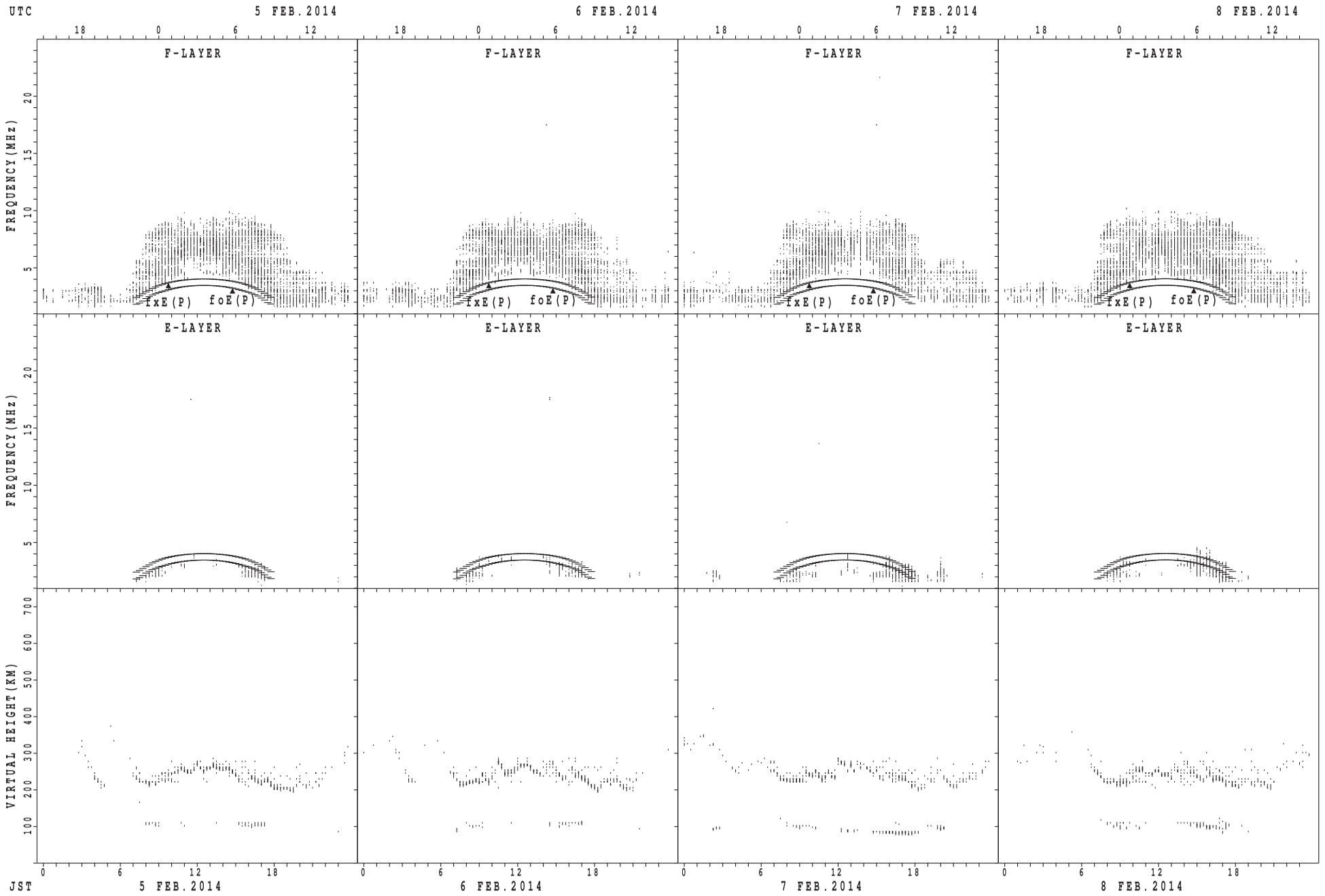
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



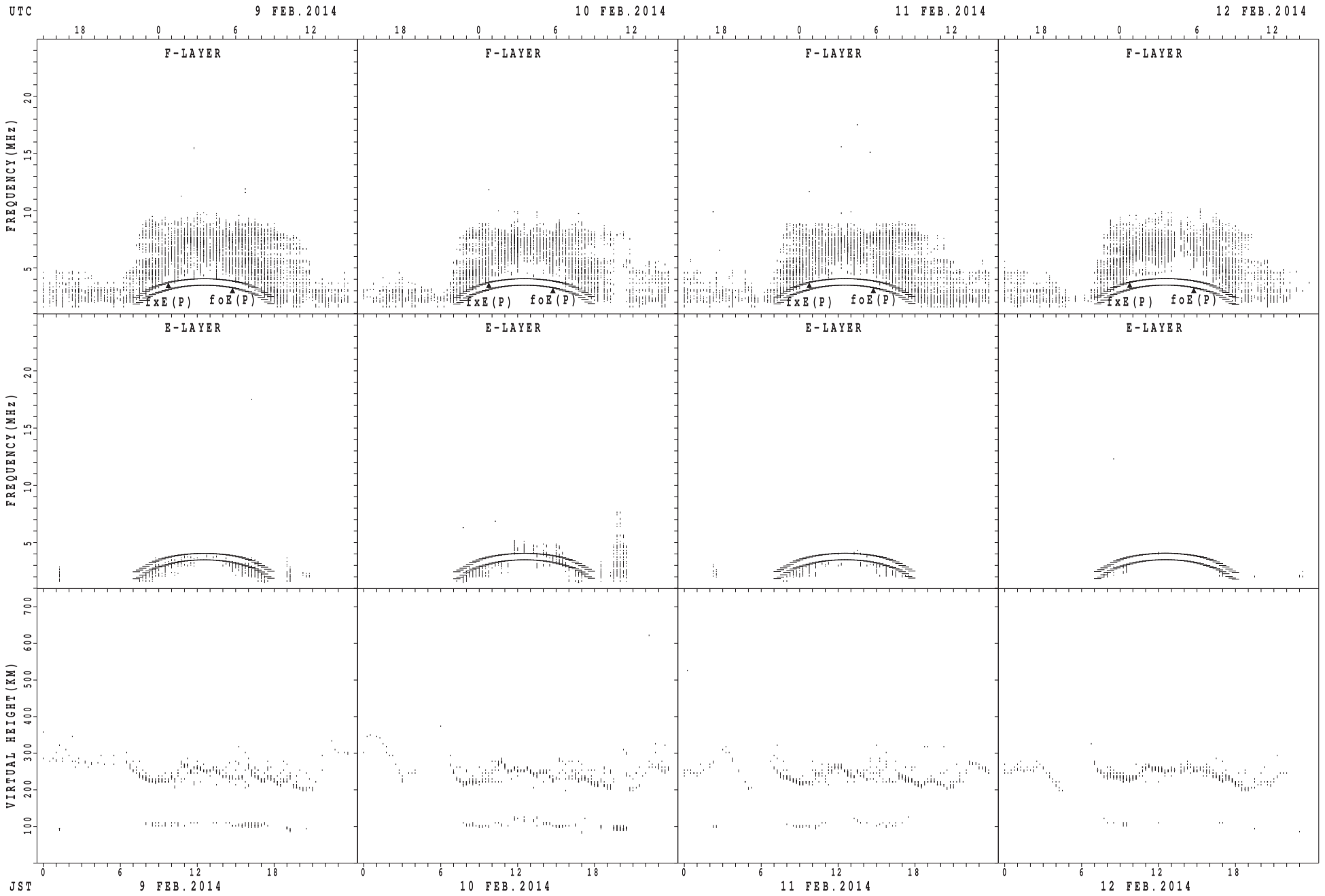
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



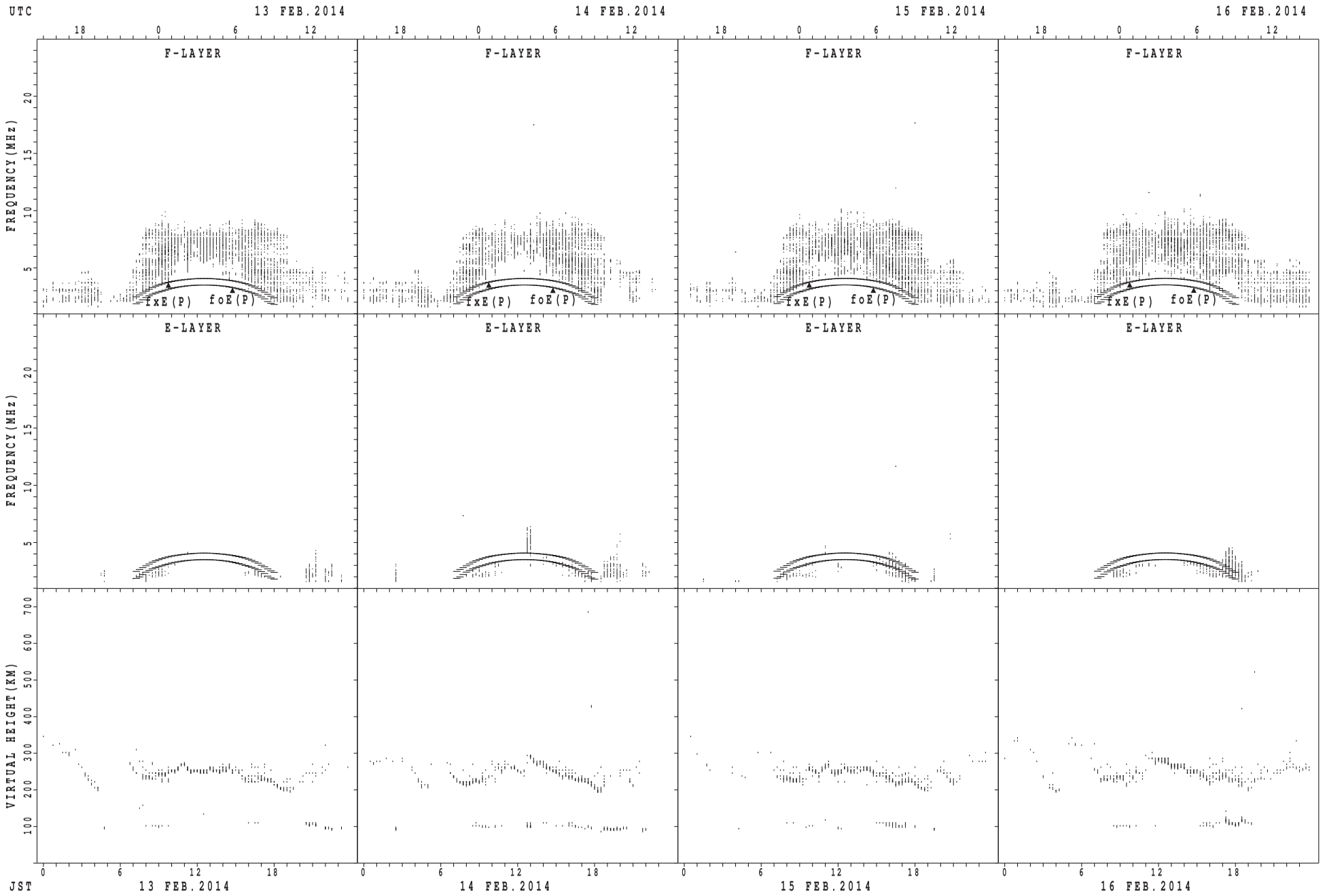
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



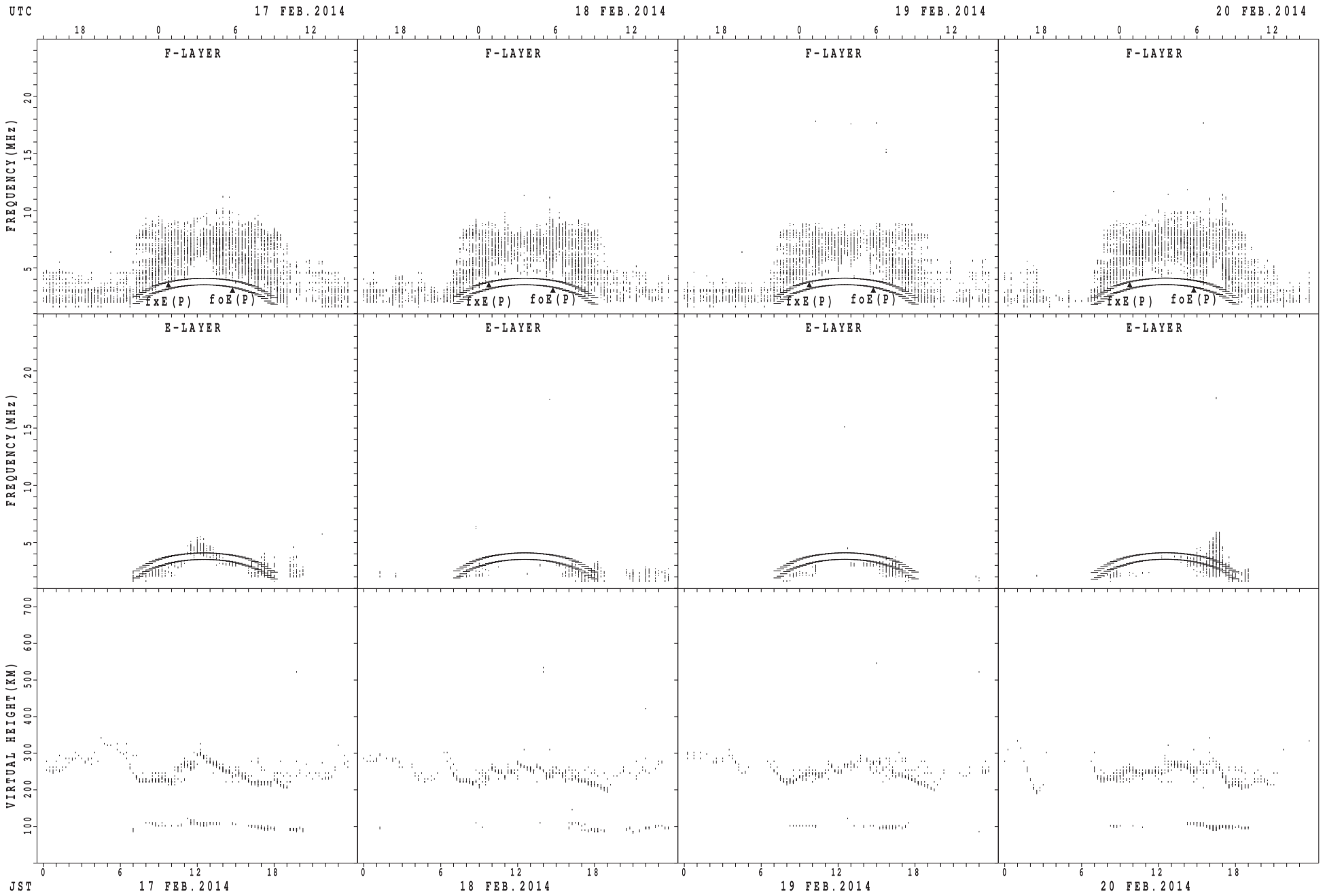
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



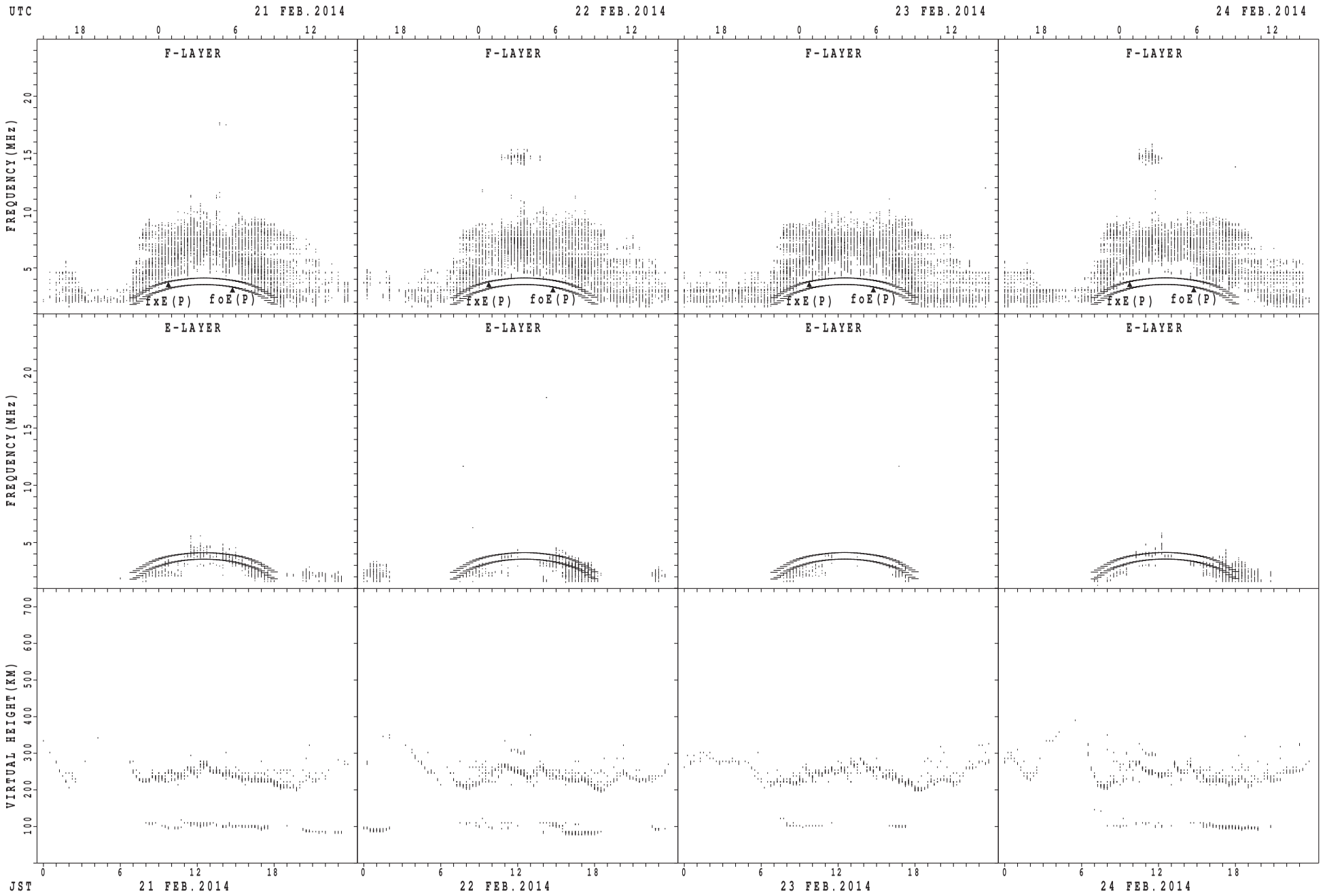
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



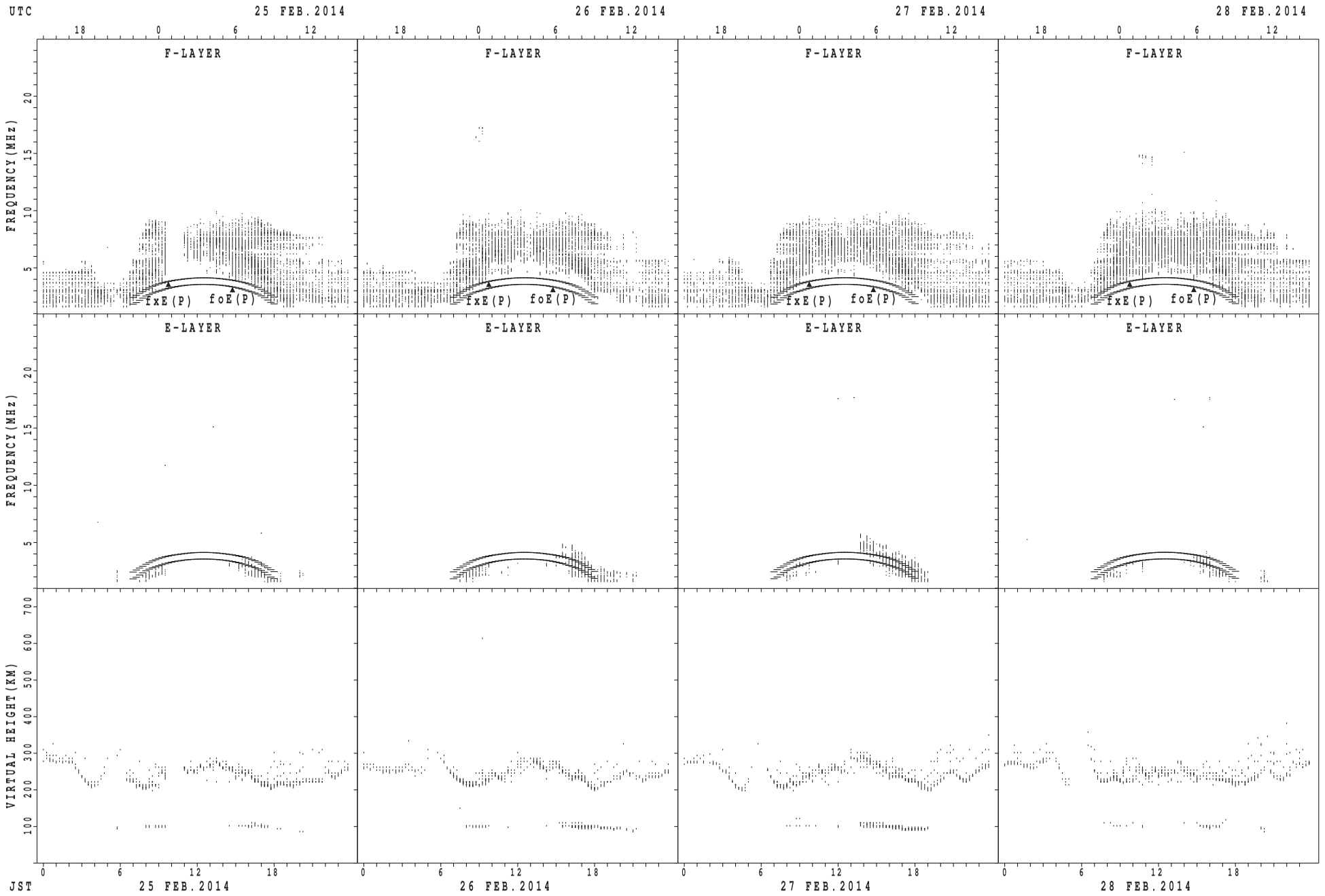
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



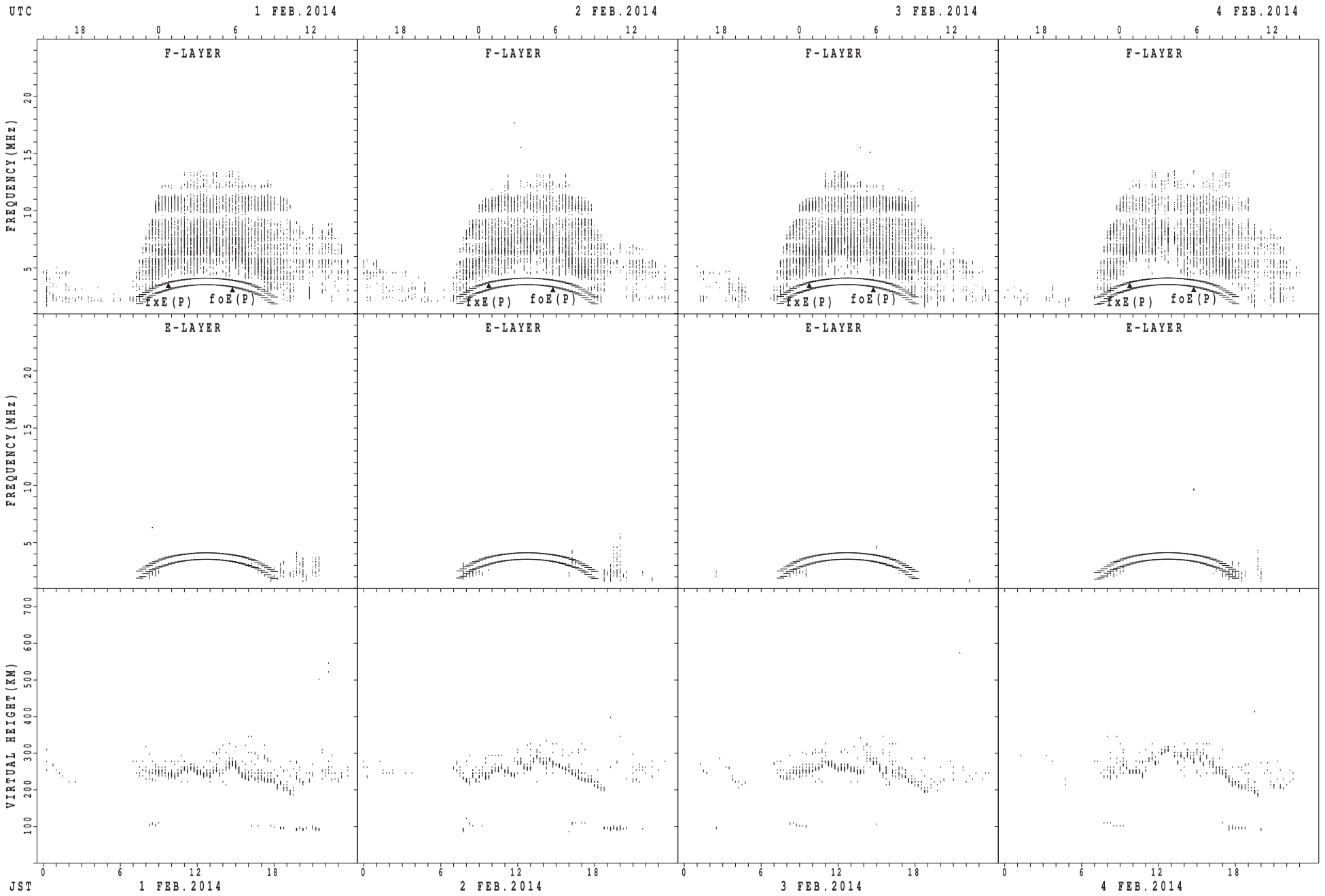
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



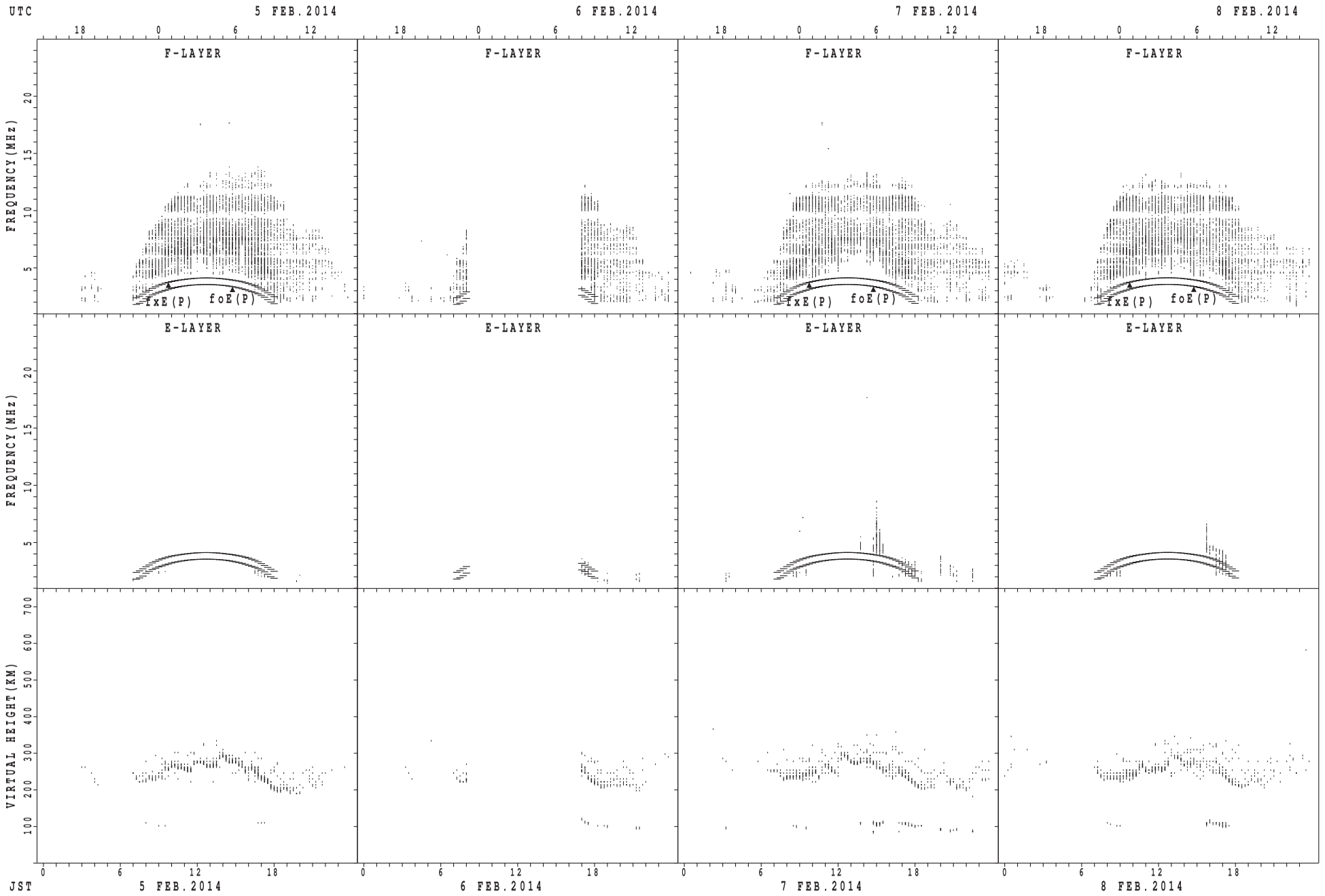
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



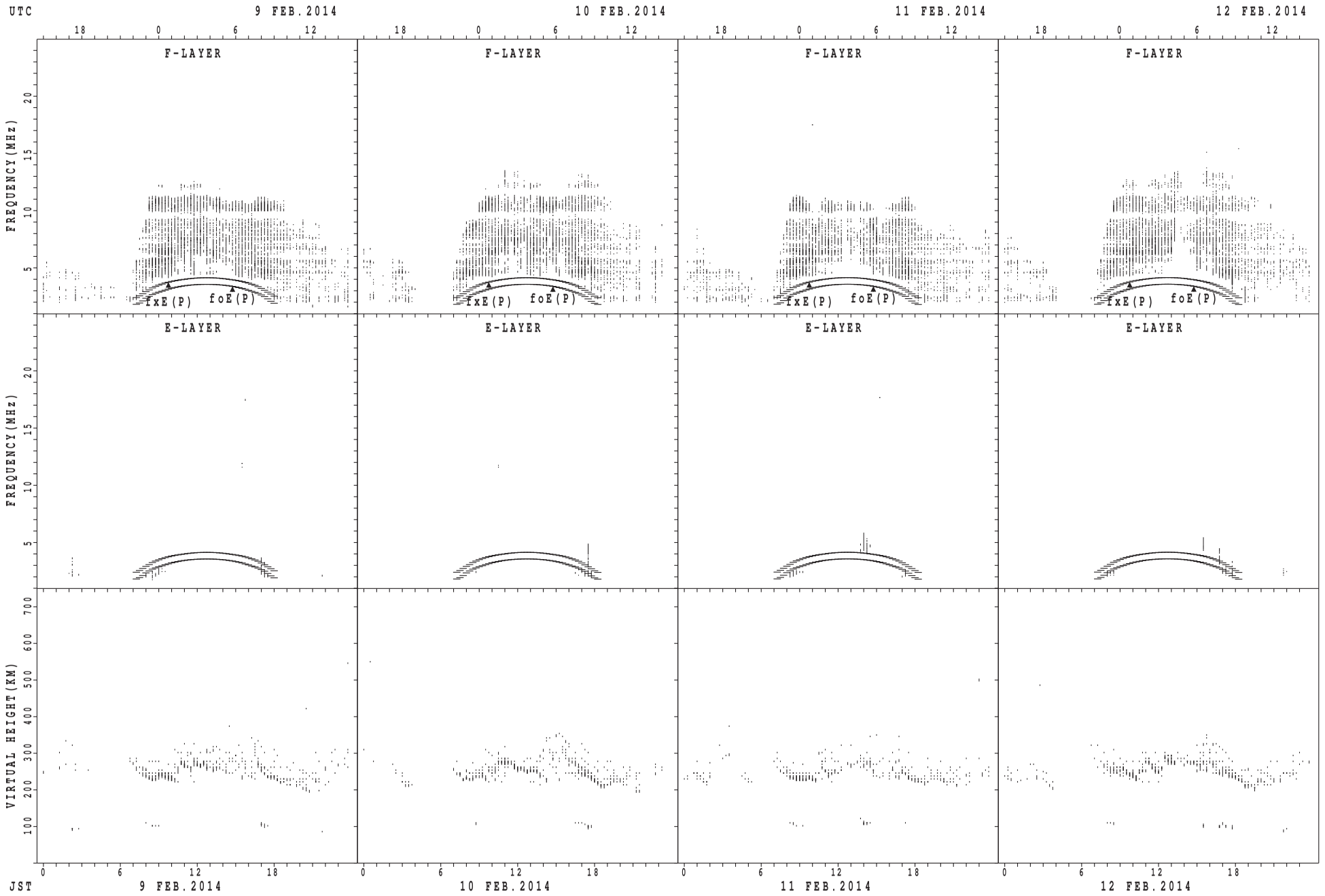
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



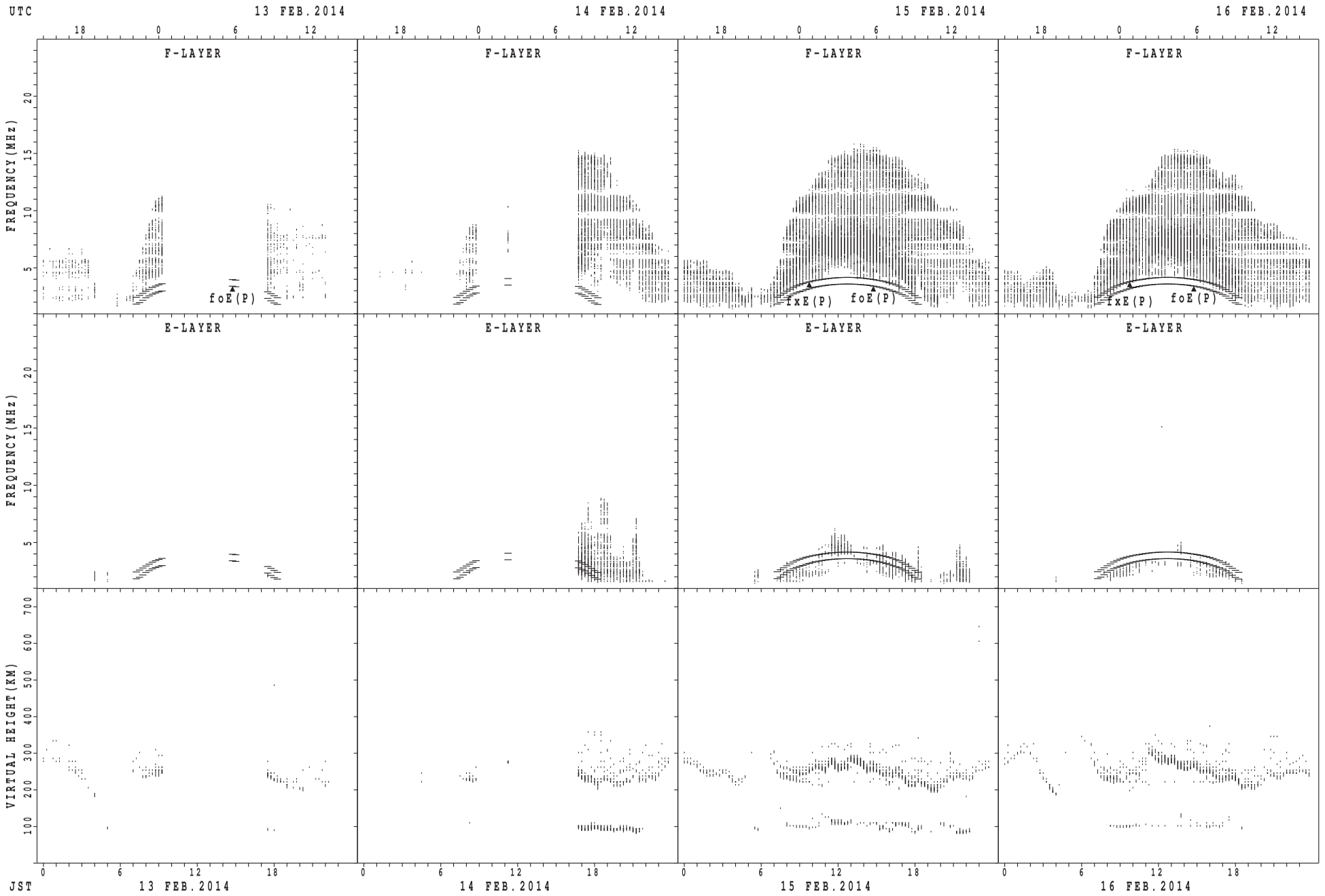
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



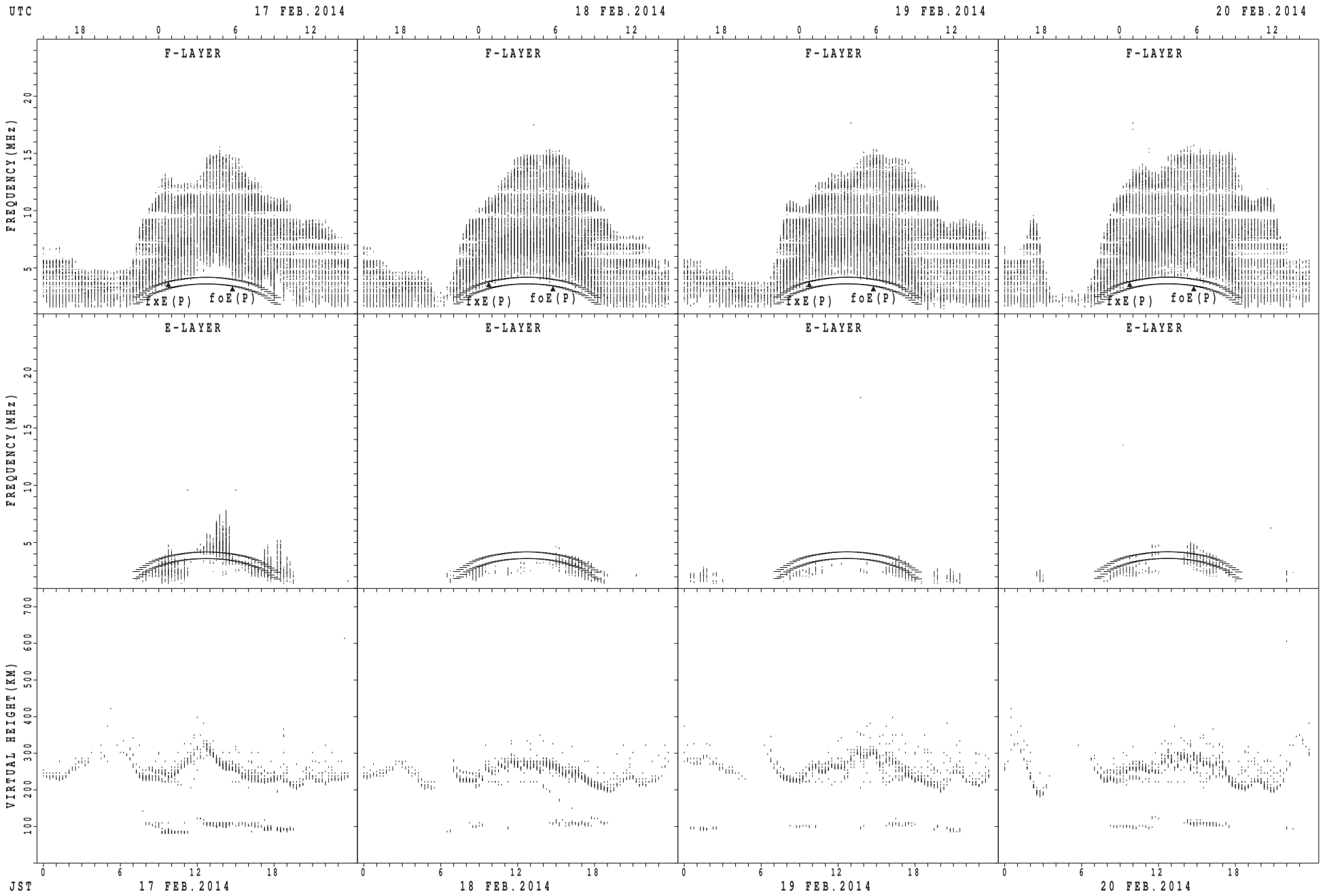
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



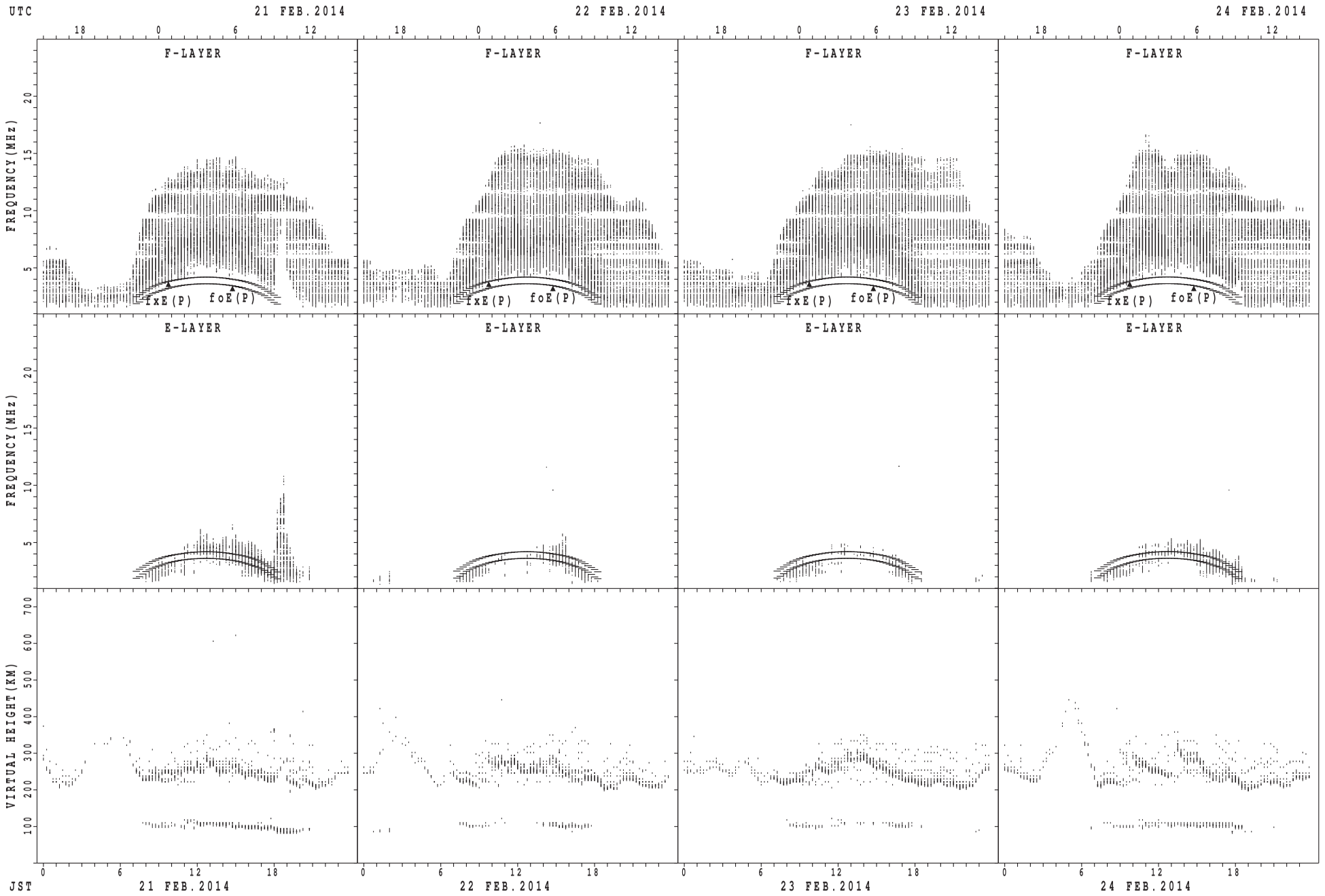
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



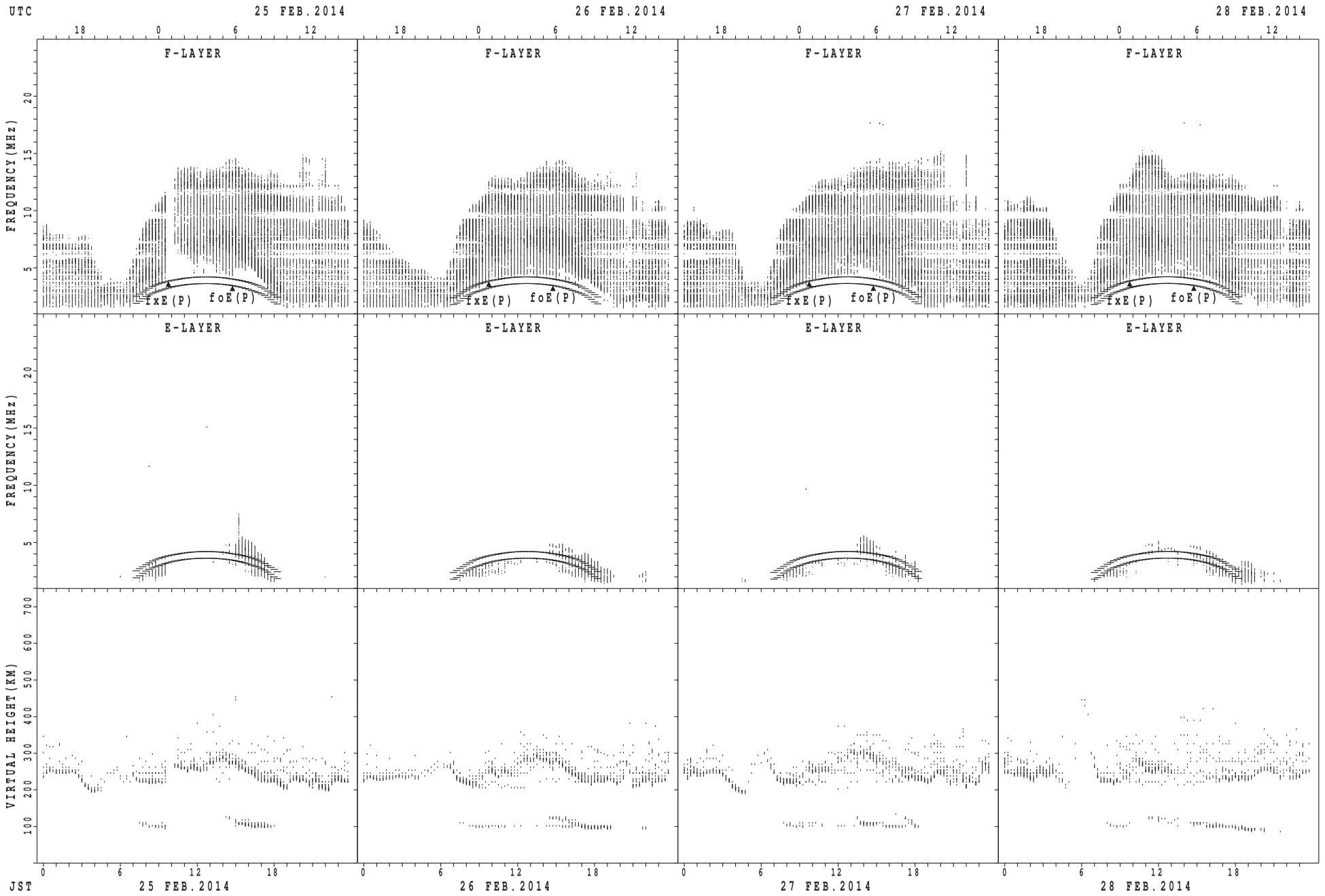
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h′F AND h′Es

FEB.2014 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								7	18	20	18	13	10	18	19	18	19	11	4	1				
MED								240	222	224	230	238	235	234	234	225	230	230	259	240				
U Q								256	232	235	232	243	238	244	238	236	240	232	279	120				
L Q								226	214	218	222	230	230	226	230	222	224	228	236	120				

h′Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	2	2	1	4	2	2	5	7	5	2	1	2	4	5	8	6	5	3	5	5	4	5	4
MED	95	90	98	93	97	97	96	137	101	105	103	89	110	107	107	105	104	101	99	101	99	97	97	98
U Q	99	91	105	46	98	103	97	164	131	138	113	44	125	113	119	111	109	103	105	106	102	98	103	102
L Q	95	89	91	46	96	91	95	104	97	102	93	44	95	98	99	103	95	92	83	94	97	97	93	94

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								12	28	28	18			1	21	28	27	27	17	3				
MED								242	225	230	238			254	244	240	232	238	250	266				
U Q								254	230	239	242			127	250	248	248	248	262	284				
L Q								234	222	229	232			127	235	232	230	230	236	262				

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	1	2	1	1								3	2		1	1	1	2	2	3	3	6	5	3
MED	95	97	95	97								101	112		115	111	113	105	101	105	97	97	101	97
U Q	47	99	47	48								105	123		57	55	56	105	105	105	99	99	106	103
L Q	47	95	47	48								93	101		57	55	56	105	97	99	95	95	97	95

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									22	27	26	3			2	27	26	28	24	6	5	1	1	
MED									241	238	244	242			280	254	250	240	240	263	284	312	276	
U Q									254	242	256	256			296	262	264	249	252	288	324	156	138	
L Q									234	230	240	238			264	240	240	234	234	240	261	156	138	

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	1	3	2					1	1		1	1	4	4	5	9	7	17	11	9	7	3	3	2
MED	99	95	98					95	113		99	113	111	112	105	105	99	101	97	101	97	91	97	91
U Q	49	97	101					47	56		49	56	117	114	111	107	109	107	103	105	97	111	97	95
L Q	49	93	95					47	56		49	56	109	108	102	105	97	96	89	98	93	89	89	87

MONTHLY MEDIANS OF h′F AND h′Es

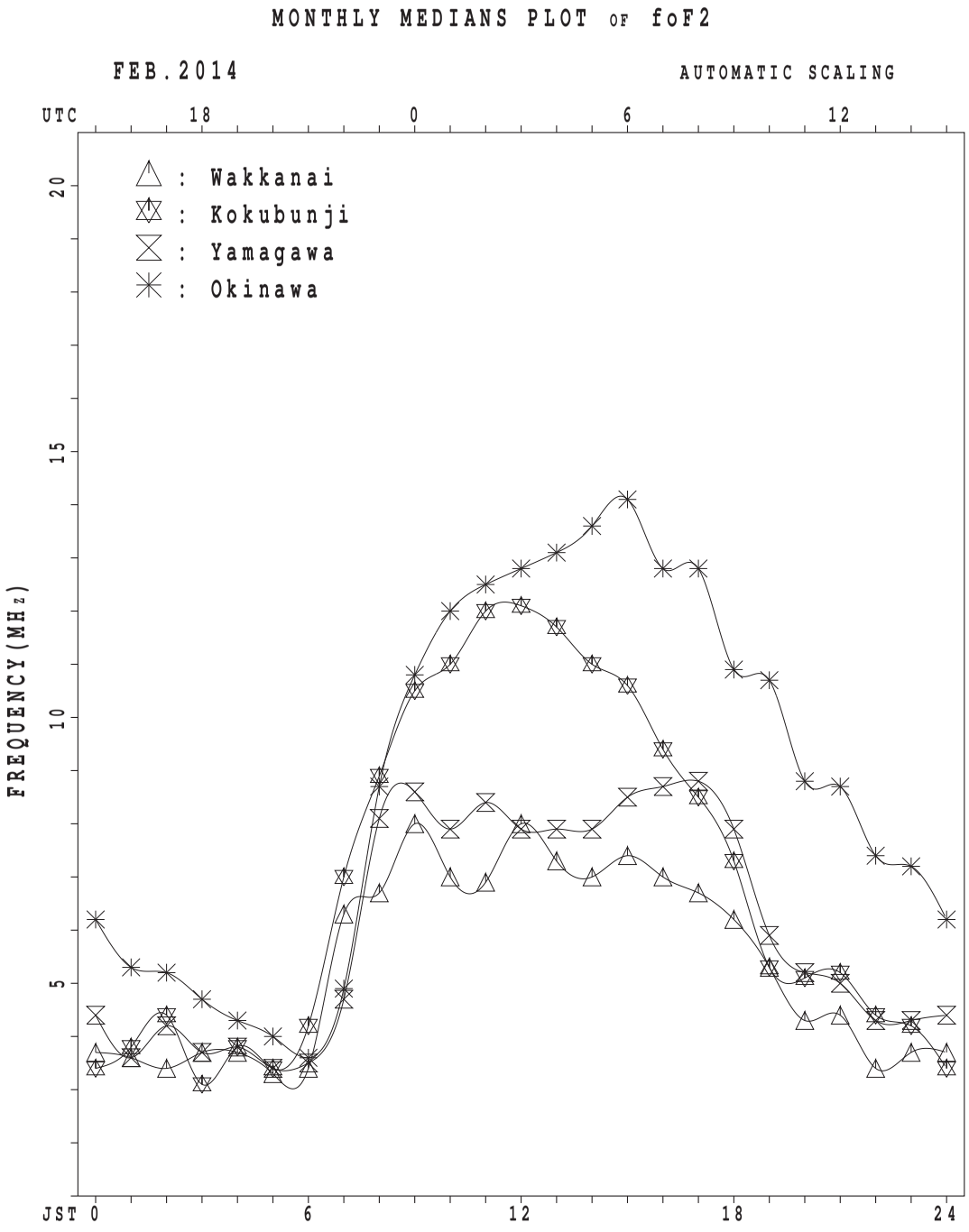
FEB.2014 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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	4	5	3	2					26	26	24					15	25	27	27	25	18	20	12	7
MED	280	270	270	275					247	245	246					264	254	246	234	234	250	249	252	266
U Q	288	288	294	296					266	254	256					278	271	262	238	245	262	272	259	272
L Q	273	260	254	254					238	238	244					258	246	238	224	231	238	237	232	248

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					1	1			1		2	4	6	5	8	12	9	14	9	6	6	4	3	
MED					187	97			107		94	111	116	113	109	112	107	105	99	96	96	95	97	
U Q					93	48			53		99	122	123	115	113	113	112	107	104	99	101	101	97	
L Q					93	48			53		89	109	111	105	108	107	105	103	97	91	95	92	89	


MONTHLY MEDIANS PLOT OF foF2
FEB.2014
AUTOMATIC SCALING
UTC
18
0
6
12
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
FREQUENCY(MHz)
20
15
10
5
JST 0
6
12
18
24

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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 42	X 43	X 43	X 43	X 37	X 35	X 37												X 44	X 44	X 40	X 43	X 45	X 46
2	X 47	X 48	X 49	X 51	X 46	X 45	X 46												X 60	X 57	X 48	X 48	X 48	X 50
3	X 51	X 50	X 49	X 49	X 49	X 47	X 39												X 54	X 53	X 43	X 44		X 48
4	X 49	X 45	X 45	X 45	X 46	X 46	X 37												X 55	X 57	X 42	X 42	X 43	X 43
5	X 44	X 43	X 43	X 43	X 43	X 41	X 37												X 53	X 53	X 48	X 41	X 42	X 42
6	X 42	X 43	X 45	X 44	X 44	X 40	X 42												X 70	X 61	X 48	X 43	X 43	X 45
7	X 42	X 43	X 43	X 41	X 43	X 38	X 36												X 59	X 57	X 49	X 47	X 47	X 47
8	X 43	X 44	X 44	X 45	X 43	X 42	X 43												X 81	X 64	X 54	X 46	X 47	X 47
9	X 47	X 47	X 45	X 45	X 45	X 44	X 36												X 76	X 71	X 53	X 52	X 50	X 51
10	X 48	X 49	X 52	X 52	X 52	X 39	X 41												X 65	X 65	X 67	X 60	X 56	X 56
11	X 52	X 51	X 51	X 52	X 58	X 61	X 53												X 77	X 72	65	68	69	66
12	67	64	65	64	X 45	50	49	71											X 67	X 60	X 51	X 54	X 47	X 46
13	51	X 47	X 49	X 56	X 47	X 46	X 44												X 71	X 53	X 49	X 49	X 49	53
14	62	62	62	X 59	X 61	X 57	X 57												X 68	X 55	X 53	X 50	X 51	X 52
15	A	X 52	X 52	X 52	X 53	X 53	X 52												X 61	X 58	X 53	X 51	X 51	X 50
16	X 50	X 49	X 49	X 49	X 49	X 41	X 42												X 73	X 69	X 65	X 58	X 55	X 53
17	X 53	X 51	X 47	X 47	X 46	X 45													X 69	X 61	X 57	X 57	X 58	X 59
18	X 61	X 59	X 57	X 58	X 57	X 59	X 60												X 70	X 59	X 59	X 49	X 50	X 54
19	X 55	X 52	X 52	X 55	X 57	X 60	X 60												X 97	O X 81	X 61	X 56	X 57	X 57
20	X 57	X 57	X 57	X 57	X 49	X 41	X 46											X 103	X 81	X 57	X 55	X 47	X 43	X 46
21	X 49	X 54	X 47	X 33	X 33	X 33	X 38				C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		X 80	X 74	X 73	X 69	X 66	X 67
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	21	21	21	21	21	20	1										1	21	21	21	21	20	21
MED	X 50	X 49	X 49	X 49	X 46	X 45	X 42	71										X 103	X 69	X 59	X 53	X 49	X 50	X 50
U Q	X 54	X 53	X 52	X 56	X 52	X 52	X 50												X 76	X 67	X 60	X 56	X 56	X 55
L Q	X 46	X 44	X 45	X 44	X 44	X 40	X 38												X 60	X 56	X 48	X 45	X 46	X 46

FEB. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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	35	36	36	36	31	28	30	52	75	R 82	U R 82	R 93	J R 90	R 78	80	82	76	54	37	37	33	36	38	39
2	40	42	42	44	39	38	39	58	R 85	U Y 97	90	121	95	Y 90	78	R 85	78	60	53	50	41	41	41	43
3	44	43	42	42	42	40	32	60	R 79	R 92	J R 103	J R 102	U R 96	98	98	R 88	J R 87	60	47	46	36	37	39	41
4	42	38	38	38	40	39	31	52	74	Y 74	Y 97	J R 116	R 102	92	R 92	R 91	R 80	64	48	50	35	35	36	36
5	37	36	36	36	36	34	29	57	74	J R 89	U Y 91	Y 75	R 111	J R 90	J R 84	R 75	76	67	46	46	41	34	35	35
6	35	36	38	37	37	33	35	58	91	U R 84	Y	110	115	96	Y	J R 93	85	71	63	54	41	36	36	38
7	35	36	36	34	36	V 31	29	57	Y	U R 100	J R 91	J R 114	R 102	R 98	J R 91	90	R 78	69	53	50	42	40	40	40
8	36	38	37	38	36	35	37	63	J R 80	R 91	J R 91	R 98	U R 100	U Y 99	R 97	J R 89	78	76	74	58	47	39	40	40
9	40	40	38	38	38	37	29	60	J R 89	Y	R 92	R 100	J R 109	J R 109	R 101	95	87	77	69	64	46	45	43	44
10	41	42	45	45	45	32	34	64	J R 88	110	Y 98	116	117	J R 104	103	R 93	92	72	58	58	60	53	49	49
11	45	44	44	45	51	54	46	68	J R 81	J R 88	J R 91	J R 107	R 100	U Y 91	U Y 97	R 94	84	70	70	65	52	F 52	F 52	F 55
12	F 54	F 50	F 51	F 40	38	F 36	F 36	62	U R 85	J R 105	J R 105	104	J R 104	98	J R 101	98	86	76	60	53	44	47	40	39
13	39	40	42	48	40	V 39	37	63	R 75	U R 98	U R 102	Y 98	J R 114	Y 96	R 99	U R 100	91	80	64	46	42	42	42	F 44
14	F 49	F 48	52	52	54	50	50	71	R 78	R 83	96	93	R 100	97	92	J R 85	J R 87	72	61	48	46	43	44	45
15	A	45	R 45	45	46	46	45	71	90	J R 85	U R 92	R 97	96	U R 97	97	80	75	76	54	51	46	44	44	43
16	43	42	42	42	42	34	36	62	88	R 104	J R 109	J R 113	R 114	J R 103	J R 105	91	R 86	78	66	62	58	51	48	45
17	46	44	40	40	39	38	40	64	82	J R 90	78	J R 87	104	Y	Y	J R 89	J R 89	J R 82	62	54	51	51	51	53
18	54	53	51	52	51	53	54	73	U R 75	R 94	R 95	R 99	J R 101	R 97	94	88	89	J R 83	64	53	53	43	44	48
19	49	46	46	49	51	54	54	70	J R 85	97	R 114	R 114	121	122	120	U R 110	R 101	J R 104	89	74	54	49	50	50
20	50	50	50	50	42	34	39	71	U R 98	J R 111	120	R 122	J R 116	113	R 102	J R 88	R 91	96	74	50	48	40	36	39
21	42	47	40	26	26	26	31	66	98	U R 109	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	92	73	67	66	62	59	V 61
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	21	21	21	21	21	21	21	20	20	19	20	20	19	18	20	20	21	21	21	21	21	21	21
MED	42	42	42	42	40	37	36	63	R 84	R 93	R 95	R 103	R 103	97	97	R 90	86	76	62	53	46	43	42	43
U Q	48	46	46	46	46	43	42	69	88	R 102	J R 103	R 114	114	J R 103	R 101	R 94	89	81	70	60	52	50	48	48
L Q	38	38	38	38	36	34	31	58	76	R 86	91	R 98	R 100	92	92	86	78	68	53	49	41	38	38	39

FEB. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1												L	L	L	L									
2												U L 472	L											
3								204	296	316		L	L		L		224							
4												L			L	332								
5												L	L											
6											L	L	L	L		436								
7										L		L	L											
8												L	L											
9												L	L	L	L									
10										L		L			L		248							
11												L			L									
12										L		L	L											
13										L		L	L	L		L								
14											L	L		L	L	U L 324								
15								216		L	L	L	L	L	L									
16										L	L	L	L	L										
17										L		L		L										
18									L	L	L	L	L											
19											L	L	L	L	L	L								
20										L	544													
21									L		C	C	C	C	C	C	C	C						
22							C	C	C	C	C	C	C	C	C	C	C	C	C					
23	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C						
24							C	C	C	C	C	C	C	C	C	C	C							
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	C	C	C	C	C	C	C	C						
28							C	C	C	C	C	C	C	C	C	C	C							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	1	1	1	1				3	2							
MED								210	296	316	544	U L 472				332	236							
U Q																436								
L Q																U L 324								

FEB. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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								176	224	256	300	312	312	304	304	272	212	A						
2								200	232	284	308	320	336	320	308	272	224	B						
3								B	228	276	312	340	324	UA 320	308	272	196	B					144	
4								196	248	R 292	UA 308	R 332	A	A	316	A	224	A						
5								192	244	304	328	336	340	340	316	284	216	A						
6								188	248	284	312	320	324	328	312	268	204	B						
7								184	236	276	320	324	332	324	316	264	216	B						
8								184	256	304	336	332	328	324	304	268	A	B						
9								196	252	284	320	332	340	328	300	272	216	B						
10								188	252	284	324	336	A 328	332	312	288	A	B						
11								B	244	284	308	R 328	328	332	316	280	A	A						
12								204	240	300	328	324	336	328	324	280	244	176						
13								204	244	288	324	340	340	328	312	284	236	A						
14								196	260	292	328	336	B	A	304	276	228	A						
15								184	248	296	320	340	336	332	312	268	224	B						
16								180	264	292	312	328	348	336	324	A	224	B						
17							JA 304	192	248	288	324	324	352	336	320	288	220	A						
18								192	264	296	316	336	340	340	324	272	224	172						
19								188	252	288	308	320	332	320	312	264	224	B						
20								A	UA 232	A	324	332	A	A	A	284	A							
21								204	256	UR 280	C	C	C	C	C	C	C	C						
22							C	C	C	C	C	C	C	C	C	C	C	C	C					
23	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C						
24							C	C	C	C	C	C	C	C	C	C	C							
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	C	C	C	C	C	C	C	C						
28							C	C	C	C	C	C	C	C	C	C	C	192						
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	18	21	20	20	20	17	17	19	18	16	3					1	
MED							JA 304	192	248	288	320	332	336	328	312	272	224	176					144	
U Q								196	254	294	324	336	340	334	316	284	224	192						
L Q								184	238	284	310	324	328	322	308	268	216	172						

FEB. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 16	E B 14	20	22	J A 35	J A 20	28	J A 26	25	27	33	35	36	35	37	G 26	G 18	J A 27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
2	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	27	G	34	34	36	35	39	J A 37	26	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	E B 14
3	E B 14	20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	28	31	G 30	G	G	34	G	G	22	E B 14	E B 15	E B 15	E B 14	E B 14	E B 15	E B 15
4	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	G	28	30	34	G	34	36	J A 24	29	J A 31	J A 27	E B 14	E B 14	J A 17	J A 21	E B 14	E B 14
5	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	J A 21	30	33	G	G	G 20	G 24	G 18	G 24	24	J A 21	E B 14	J A 20	J A 20	J A 15	J A 17	22
6	19	19	E B 14	19	E B 14	E B 14	E B 14	G	28	30	G 28	G 28	G 23	G	G	G	25	E B 15	E B 14	E B 15	E B 14	E B 14	26	26
7	J A 15	J A 35	J A 20	E B 14	E B 14	E B 14	E B 14	G	26	33	G 27	36	36	G	G	29	24	E B 14	18	E B 14	E B 14	E B 14	E B 15	E B 14
8	J A 17	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	J A 25	G 23	G	G	G	G	G	G	G	J A 31	E B 15	J A 20	J A 23	E B 14	E B 17	J A 14	J A 22
9	J A 26	J A 18	E B 14	E B 14	E B 14	E B 14	E B 14	G	J A 51	G 22	G 22	G 27	38	37	34	28	G	E B 16	E B 15	E B 14	E B 14	E B 15	E B 15	E B 15
10	E B 14	E B 15	E B 14	E B 15	E B 15	E B 14	J A 15	21	28	G 25	35	38	38	39	38	33	23	E B 16	E B 14	E B 14	E B 14	E B 15	E B 14	E B 14
11	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	19	G 21	G 26	35	36	38	42	36	36	26	18	J A 21	J A 27	E B 14	E B 14	E B 15	E B 14
12	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	E B 15	G 20	28	33	38	34	37	35	G 28	34	34	G	E B 14	J A 16	J A 19	E B 14	J A 16	20
13	20	20	23	E B 14	E B 14	E B 14	J A 19	G 20	27	34	36	G	38	G	33	31	26	J A 32	J A 38	J A 30	J A 50	J A 24	E B 14	J A 16
14	E B 14	E B 14	J A 19	J A 29	J A 20	A E 14	E B 15	G	G 21	34	36	37	E B 52	37	G	G 19	25	J A 25	E B 14	E B 14	J A 85	J A 51	J A 41	J A 50
15	J A 52	J A 32	J A 21	E B 15	E B 15	E B 15	J A 18	19	29	31	34	J A 40	G 29	G 26	34	G 25	G	E B 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	G	G 25	34	33	G 32	G 32	G 32	30	G 22	E B 14	E B 14	E B 12	E B 11	J A 19	J A 19	J A 18
17	26	J A 22	E B 14	E B 14	J A 33	J A 21	J A 31	G	G	35	G	37	37	38	34	G 25	G 19	19	J A 21	J A 19	J A 31	J A 25	29	E B 14
18	J A 17	23	E B 14	18	E B 14	E B 14	E B 14	G 17	G 24	G 26	37	G	38	G	34	G	25	G	E B 13	E B 14	E B 14	E B 14	E B 14	18
19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 18	27	G 29	G 30	G 30	G	35	G	G	G	E B 17	E B 14	E B 14	E B 14	J A 20	20	19
20	18	18	E B 14	24	J A 23	J A 18	A E 14	B 24	28	34	36	G 28	J A 54	J A 60	J A 54	G	J A 39	J A 41	J A 33	J A 20	J A 34	J A 38	J A 33	J A 33
21	J A 17	J A 16	20	E B 14	J A 13	J A 13	J A 15	G 19	30	J A 31	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	E B 14	E B 14	E B 14	J A 18	E B 14	E B 14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	21	21	21	21	21	21	21
MED	15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	G	27	30	34	G	36	35	G	G	24	G	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15
U Q	18	20	20	16	J A 15	14	J A 15	G	28	33	36	36	38	37	35	30	26	J A 23	J A 19	J A 20	J A 20	J A 20	20	21
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 19	G	G 26	G	G	G	G	G	G	G	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14

FEB. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

FEB. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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	14	15	14	14	16	20	16	15	14	14	14	14	14	14	14	14	14	14
2	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	16	15	14	14	14	14	15	14
3	14	14	14	14	14	14	14	14	14	14	16	16	16	16	17	14	14	14	15	15	14	14	15	15
4	14	15	14	14	14	14	14	14	15	21	26	28	29	26	23	16	14	15	14	14	14	14	14	14
5	14	14	14	14	14	14	14	14	16	16	16	16	18	16	15	15	16	15	14	14	15	14	15	14
6	14	14	14	14	14	14	14	14	15	16	18	16	16	16	16	17	14	15	14	15	14	14	14	14
7	14	14	14	14	14	14	14	15	15	16	15	15	15	15	24	12	14	14	14	14	14	15	15	14
8	14	14	14	14	14	14	14	15	15	16	16	16	22	15	15	15	15	15	14	15	14	14	14	14
9	14	14	14	14	14	14	14	14	15	16	16	14	16	16	16	16	15	16	15	14	14	15	15	15
10	14	15	14	15	15	14	14	14	14	16	16	20	17	17	16	16	15	16	14	14	14	15	14	14
11	14	14	14	14	14	14	14	16	14	15	15	16	15	13	14	14	14	14	15	14	14	14	15	14
12	14	14	15	15	14	14	15	15	16	16	17	20	21	23	20	20	18	14	14	14	14	14	14	14
13	14	14	14	14	14	14	14	14	15	17	22	24	25	22	22	20	16	14	14	14	14	14	14	14
14	14	14	15	15	14	14	15	14	14	15	15	16	52	15	20	15	16	14	14	14	15	15	14	15
15	15	15	15	15	15	15	15	15	15	15	15	16	14	15	15	15	14	16	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14	14	14	12	11	11	11	11
17	14	14	14	14	14	14	15	15	13	16	16	18	16	16	15	14	15	14	14	14	14	14	14	14
18	14	14	14	14	14	14	14	14	14	13	14	13	14	14	12	15	15	14	13	14	14	14	14	14
19	14	14	14	14	14	14	14	14	14	13	13	14	14	13	13	14	14	17	14	14	14	14	14	14
20	14	14	14	14	14	14	14	14	13	14	14	14	15	16	12	14	12	14	14	14	15	14	14	14
21	14	14	14	14	14	14	14	14	16	16	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	14	14	14	14	14	14	14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	21	21	21	21	21	21	21
MED	14	14	14	14	14	14	14	14	14	16	16	16	16	16	15	15	14	14	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	15	15	16	16	19	20	16	18	16	16	15	14	14	14	14	15	14
L Q	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	289	282	282	308	315	288	297	361	362	R 347	U R 357	R 339	R	R 362	342	349	359	334	331	323	311	278	284	274
2	289	282	297	323	312	276	294	332	R 337	U Y 381	331	331	335	Y 360	374	R 341	343	316	321	323	309	288	289	301
3	290	311	310	306	295	303	326	359	R 357	R 352	R	R	R	331	334	R 344	R	319	313	324	318	281	269	325
4	314	275	276	281	310	322	335	355	359	Y	Y	R	R 353	327	R 335	R 330	R 336	328	312	342	295	287	284	295
5	289	287	275	313	312	294	313	344	359	J R 338	U Y 344	Y	R 333	R	J R 258	R 365	358	338	327	335	320	299	284	294
6	272	282	275	285	317	289	304	347	376	U R 360	Y	321	336	332	Y	R	346	328	319	327	334	290	267	270
7	288	262	273	278	299	V 302	296	329	Y	R	R	R	R 342	R 343	R	344	R 344	336	312	316	318	313	300	301
8	302	271	275	266	271	277	299	332	R	R 375	R	R 367	R		R 353	J R 305	329	323	311	330	305	301	293	283
9	276	261	265	263	294	293	282	337	R	Y	R 339	R	R	R	R 366	R	332	330	306	332	306	308	304	286
10	270	264	275	326	315	258	281	330	J R 510	330	Y	318	332	R	341	R 347	343	325	303	297	313	314	287	308
11	288	291	287	282	281	306	326	342	R	5 J 198	R	R	R 317	U Y 345	U Y 359	R 338	331	325	301	324	308	F 297	F 312	F 283
12	F 285	F 271	F 268	F 306	314	F 290	F 296	334	U R 341	R	R	332	R	334	J R 346	329	325	335	311	322	290	285	290	265
13	266	276	273	296	308	V 320	315	350	R 378	U R 336	U R 355	Y	R	Y	R 335	U R 333	346	340	328	300	320	310	308	F 267
14	F 274	F 281	275	281	296	272	309	350	R 368	R 354	354	339	R 319	332	336	R	R	324	321	308	308	277	301	277
15	A	291	R 292	278	285	308	321	353	361	R	R	R 351	354	U R 343	344	355	325	342	294	314	317	309	304	292
16	286	267	287	308	337	314	327	338	341	R 330	R	R	R 327	R	J R 316	333	R 323	350	304	305	307	305	301	286
17	281	278	267	269	258	269	296	335	342	R	331	R	324	Y	Y	R	R	R	324	318	305	304	302	285
18	291	286	297	273	302	314	316	349	U R 417	R	R	R	R	R 346	321	346	337	R	327	331	303	302	297	285
19	292	278	282	280	281	276	298	346	R	335	R 328	R 320	309	326	311	U R 308	R 320	R	322	343	270	276	289	317
20	275	266	280	296	351	283	297	334	U R 362	R	337	R 326	R	326	R 341	R	R 335	336	335	294	316	265	251	244
21	265	303	347	263	262	257	289	343	356	R	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	324	310	278	279	279	265	V 270
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	21	21	21	21	21	21	21	16	12	9	10	12	13	17	15	17	18	21	21	21	21	21	21
MED	287	278	276	282	302	290	299	343	360	R 342	339	332	332	334	341	R 341	336	329	313	323	308	297	290	285
U Q	290	286	290	307	314	307	318	350	R 372	R 357	U R 354	R 339	339	346	R 350	347	345	336	326	330	318	306	302	298
L Q	274	269	274	276	283	276	296	334	349	332	331	321	322	329	328	R 330	327	324	308	306	304	280	284	272

FEB. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

FEB. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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												244	244	232	236									
2												266	228											
3								220	210	212		240	234		238		224							
4												242			238	240								
5												238	238											
6											240	250	240	244		222								
7										242		244	226											
8												228	236											
9												256	254	240	240									
10										252		256			232		226							
11												238			234									
12										228		226	250											
13										240		240	236	244		232								
14											234	246		246	240	232								
15								228		228	238	238	234	236	236									
16										240	240	248	270	268										
17										234		246		236										
18									224	228	234	234	240											
19											252	234	248	244	230	242								
20										250	244													
21									246			C	C	C	C	C	C	C	C					
22							C	C	C	C	C	C	C	C	C	C	C	C	C					
23	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C						
24							C	C	C	C	C	C	C	C	C	C	C							
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	C	C	C	C	C	C	C	C						
28							C	C	C	C	C	C	C	C	C	C	C							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2	3	10	7	19	14	9	9	5	2							
MED								224	224	237	240	242	239	244	236	232	225							
U Q									246	242	244	248	248	245	239	241								
L Q									210	228	234	238	234	236	233	227								

FEB. 2014 h′F2 (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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	292	284	290	246	236	274	270	214	210	212	214	214	218	218	216	228	208	198	218	234	244	274	276	284
2	284	284	270	230	224	274	256	224	222	218	H 198	260	212	216	214	220	214	202	216	222	226	268	278	252
3	274	262	262	256	262	250	218	206	196	172	210	208	212	222	216	222	186	202	220	220	222	278	330	254
4	250	286	320	300	258	222	212	202	210	220	224	238	236	228	224	210	214	206	220	220	246	284	284	278
5	288	294	302	254	250	252	236	214	210	218	210	206	218	222	224	214	216	202	202	228	224	236	260	268
6	278	292	276	266	246	274	236	218	222	218	212	212	232	202	216	214	218	212	216	216	216	280	320	300
7	288	A	310	294	268	210	248	236	216	204	210	220	210	210	218	218	210	206	220	220	228	250	250	254
8	264	288	308	296	282	304	238	232	202	208	216	214	206	214	228	222	218	212	228	220	232	250	268	286
9	306	306	306	296	244	244	288	222	228	228	216	216	216	216	222	222	212	212	212	212	212	236	256	260
10	314	326	292	240	208	252	268	222	212	212	224	220	236	230	226	226	A 222	210	208	232	232	234	240	248
11	240	278	276	276	242	218	210	214	212	218	228	228	232	222	214	220	208	216	236	216	214	Q 258	248	Q 248
12	Q 248	Q 248	Q 266	254	246	252	230	220	226	216	226	212	212	224	232	228	228	222	206	216	232	250	244	Q 306
13	310	310	300	260	238	220	230	226	226	232	240	228	226	220	230	218	224	208	228	224	232	244	232	Q 302
14	282	258	278	282	248	228	224	210	214	222	204	212	238	226	218	218	230	214	204	220	250	258	282	282
15	A	268	270	270	256	236	224	224	222	204	218	204	204	198	230	226	220	218	202	234	236	256	268	276
16	290	304	288	244	230	230	230	226	226	H 222	222	218	H 218	218	218	218	218	214	214	226	238	238	242	264
17	274	274	296	296	A 340	304	276	240	214	208	202	202	228	216	216	218	218	218	214	216	238	246	254	254
18	254	248	248	268	238	230	206	206	212	202	192	222	208	224	H 200	212	218	208	194	218	230	224	256	264
19	258	284	268	290	254	254	226	206	220	220	208	208	214	226	214	216	230	218	200	200	220	232	266	252
20	282	272	254	242	208	268	250	224	228	218	230	220	230	230	238	228	238	214	198	200	258	354	378	E 444 A
21	320	254	206	308	336	336	286	220	226	222	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	222	198	232	240	234	256	274
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	20	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	21	21	21	21	21	21	21
MED	282	284	278	268	246	252	236	220	216	218	215	215	218	221	218	219	218	212	214	220	232	250	260	266
U Q	291	293	301	295	260	274	262	225	226	221	224	221	231	225	227	224	223	217	220	227	239	271	280	285
L Q	261	265	267	250	237	229	224	212	211	208	209	210	212	216	216	217	213	206	202	216	223	236	249	254

IONOSPHERIC DATA STATION Wakkanai

FEB.2014 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								E A 144	122	118	116	118	118	118	118	124	118	A						
2								154	128	126	116	118	116	118	118	118	126	B						
3								B	116	120	118	116	116	112	112	G	116	B						
4								144	124	122	120	116	A	A	120	A	122	A						
5								154	126	126	118	114	116	114	114	130	114	A						
6								148	132	124	116	112	116	110	114	112	112	B						
7								E B 188	124	114	114	108	108	106	106	106	116	B						
8								E A 204	128	114	114	112	122	114	114	114	A	B						
9								130	124	106	112	116	116	116	118	112	116	B						
10								132	126	126	118	116		124	120	120	A	B						
11								B	120	120	122	122	120	114	120	120	A	A						
12								A	118	118	118	118	118	122	122	122	122	S						
13								E A 164	128	122	118	122	122	124	122	114	122	A						
14								162	124	124	116	114	B	116	114	114	114	A						
15								136	122	120	114	120	116	116	116	118	112	B						
16								B 154	136	116	116	124	124	124	124	A	130	B						
17							106	140	98	98	118	110	114	114	114	104	106	A						
18								128	120	124	114	114	114	114	114	114	116	164						
19								136	126	118	120	112	112	112	112	112	116	B						
20								A	114	A	120	110	A	A	A	110	A							
21								E A 146	126	120	C	C	C	C	C	C	C	C						
22							C	C	C	C	C	C	C	C	C	C	C	C	C					
23	C	C	C	C	C		C	C	C	C	C	C	C	C	C	C	C	C						
24							C	C	C	C	C	C	C	C	C	C	C							
25							C	C	C	C	C	C	C	C	C	C	C	C						
26							C	C	C	C	C	C	C	C	C	C	C	C						
27							C	C	C	C	C	C	C	C	C	C	C	C						
28							C	C	C	C	C	C	C	C	C	C	C	126						
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	17	21	20	20	20	16	18	19	17	16	2						
MED							106	143	124	120	117	116	116	115	116	114	116	145						
U Q								E 158	127	124	118	118	119	118	120	120	122							
L Q								136	120	117	115	112	115	114	114	112	114							

IONOSPHERIC DATA STATION Wakkanai

FEB.2014 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	100	B	104	104	104	106	102	102	170	124	164	148	138	124	118	112	98	104	B	B	B	B	B	B
2	B	B	B	B	B	B	B	G	164	G	178	180	146	144	122	122	124	B	B	B	B	B	B	B
3	B	92	B	B	B	B	B	B	162	162	118	G	G	120	G	G	140	B	B	B	B	B	B	B
4	B	B	B	B	B	B	B	G	164	158	122	G	116	112	110	106	102	102	B	B	102	106	B	B
5	B	B	B	B	B	B	B	166	146	146	G	G	102	100	100	106	152	122	B	110	110	108	106	106
6	100	100	B	100	B	B	B	G	136	124	104	104	102	G	G	G	144	B	B	B	B	B	106	106
7	102	102	102	B	B	B	B	G	132	196	104	202	98	G	G	150	132	B	96	B	B	B	B	B
8	102	B	B	B	B	B	B	96	116	G	G	G	G	G	G	G	112	B	100	100	B	96	B	98
9	92	96	B	B	B	B	B	G	94	96	104	100	116	114	114	114	G	B	B	B	B	B	B	B
10	B	B	B	B	B	B	166	166	176	112	148	148	132	126	124	118	122	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	188	114	108	148	146	122	126	136	112	120	98	108	108	B	B	B	B
12	B	B	B	B	B	B	B	132	162	154	126	136	122	134	106	124	118	G	B	112	112	B	102	102
13	102	154	114	B	B	B	114	136	148	186	174	G	216	G	146	152	130	112	100	108	112	120	B	112
14	B	B	126	100	110	B	B	G	110	156	192	146	B	116	G	100	112	114	B	B	104	108	108	110
15	110	118	118	B	B	B	114	114	186	176	192	102	104	108	194	116	G	B	B	B	B	B	B	B
16	B	B	B	B	B	B	B	120	G	118	184	116	116	116	116	118	118	B	B	B	B	118	118	118
17	108	104	B	B	108	108	108	G	G	190	G	130	130	120	126	100	98	96	108	108	108	108	108	B
18	108	94	B	94	B	B	B	108	108	106	174	G	202	G	186	G	146	G	B	B	B	B	B	104
19	B	B	B	B	B	B	B	108	108	106	106	106	G	192	G	G	G	B	B	B	B	114	92	96
20	96	96	B	98	108	98	B	118	118	118	192	108	100	100	100	G	100	102	96	98	110	110	110	100
21	102	102	102	B	96	104	110	110	200	108	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
24	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
25	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
27	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	G	B	B	B	108	B	B
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	10	6	5	5	4	6	13	19	19	17	14	16	15	14	14	17	8	6	7	7	10	8	10
MED	102	101	109	100	108	105	112	118	146	124	148	133	119	120	120	115	120	103	100	108	110	108	107	105
U Q	108	104	118	102	109	107	114	151	164	162	181	148	135	126	136	122	136	113	108	110	112	114	109	110
L Q	100	96	102	96	100	101	108	108	114	108	112	106	103	112	110	106	107	100	96	100	104	108	104	100

IONOSPHERIC DATA STATION Wakkanai

FEB. 2014 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		F1	F1	F2	F2	F3	L2	H1	C1	H1	HL11	HL11	CL11	CL11	CL11	L1	L3						
2									H1		H1	H1	H1	H1	CL11	CL31	C1							
3		F1							H1	H1	L1			C1			H1							
4									H1	H1	C1		L1	L1	C1	C2	L2	L3			F1	F1		
5								H1	HL11	HL11			L1	L1	L1	L1	H1	C1		F1	FQ11	F1	FF11	F1
6	F1	F1		F1					HL11	CL11	L1	L1	L1				C1						F1	F1
7	F1	F5	F2						H1	HL11	L2	HL11	L2			HL11	CL21		F1					
8	F1							L1	L1								L2		F2	F2		F1		FQ11
9	FQ11	F1							L1	L1	L1	L1	C1	C1	C1	C1								
10							F1	H1	H2	L1	HL11	HL11	HL12	CL11	C2	C1	C1							
11								H1	L1	L1	HL11	HL11	HL11	CL11	CL11	C3	C3	L2	F2	F3				
12								L1	HH11	H1	C1	HL11	CL11	HL11	L1	C1	C2			F1	F1		F1	F1
13	F1	F1	F1				F1	H1	H1	H1	H1		H1		H1	H1	C1	C3	F5	F2	F3	F1		F1
14			FF11	F5	FF21				L1	HL11	HL11	HL11		CL11		L1	C2	C2			FQ31	FQ31	FQ41	FQ21
15	F3	F2	F1				F1	L1	HL11	HL11	H1	L2	L1	L1	H1	L2								
16								L1		L1	H1	L1	L1	L1	L1	L1	L1					F1	F1	F1
17	F1	F1			F4	F2	F3			C1		CL11	CL11	CL11	CL11	CL11	L1	L1	F3	F1	FQ21	FQ11	FQ11	
18	FF11	F1		F1				L1	L2	L2	HL11		HL11		HL11		HL21							F1
19								L1	L2	L1	L1	L1		HL11								F1	F2	F1
20	F1	F1		F1	F1	F2		C1	C1	C1	HL11	L1	L2	L2	L2		L3	L3	L4	F1	F3	F4	F3	F6
21	F2	F2	F1		F1	F1	F1	L2	HL12	L1														
22																								
23																								
24																								
25																								
26																								
27																								
28																						F1		
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

FEB. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 44	X 47	X 51	X 47	X 37	X 37	X 36												X 48	X 42	X 43	50	X 47	X 49
2	X 49	X 46	X 50	X 46	X 31	X 32	X 36												X 57	X 51	X 47	X 42	X 44	X 48
3	X 50	X 47	X 48	X 45	X 43	X 42	X 43												X 58	X 51	X 52	X 46	X 48	X 49
4	X 52	X 49	X 46	X 46	X 45	X 43	X 39												X 73	X 50	X 53	X 46	X 40	X 43
5	X 42	X 42	X 42	X 45	X 40	X 38	X 38												X 68	X 59	X 53	X 41	X 42	X 40
6	X 41	X 41	X 40	X 47	X 36	X 40	X 42												X 68	X 78	X 57	X 42	X 42	X 46
7	X 48	X 47	X 46	X 46	X 43	X 42	X 44												X 66	X 58	X 60	X 53	X 51	X 50
8	X 48	X 46	X 44	X 44	X 44	X 42	X 46												X 78	X 72	X 52	X 51	X 51	X 52
9	X 52	X 51	X 50	X 48	X 47	X 45	X 45												X 83	X 81	X 64	X 42	X 43	X 43
10	X 46	X 45	X 47	X 48	X 37	X 39	X 40												X 83	X 72	X 58	X 57	X 52	X 47
11	X 47	X 46	X 46	X 45	X 44	X 42	X 42												X 80	X 80	X 67	X 54	X 54	X 55
12	X 53	X 53	X 52	X 54	X 51	X 36	X 46												X 86	X 65	X 54	X 50	X 52	X 50
13	X 46	X 46	X 49	X 53	X 41	X 35	X 37												X 78	X 62	X 52	X 48	X 51	X 50
14	X 48	X 49	X 50	X 51	X 49	X 44	X 45												X 71	X 68	X 60	X 48	X 49	X 49
15	X 48	X 47	O X 47	X 47	X 44	X 40	X 40												X 68	X 58	X 60	X 53	X 52	X 53
16	X 52	X 46	X 49	X 57	X 46	X 34	X 37												X 80	X 64	X 66	X 59	X 55	X 53
17	X 52	X 55	X 50	X 49	X 45	X 47	X 51												X 74	X 63	X 62	X 58	X 58	X 56
18	X 52	X 52	X 51	X 51	X 56	X 46	X 46												X 79	X 63	X 57	X 53	X 49	X 48
19	X 50	X 48	X 48	X 47	X 48	X 47	X 52												X 108	X 86	X 64	X 64	X 62	X 67
20	X 55	X 59	X 65	X 46	X 47	X 42	X 45												X 97	X 62	X 55	X 49	X 45	X 45
21	X 46	X 57	X 59	X 30	O X 32	X 34	X 40												X 88	X 70	X 66	X 58	X 52	X 53
22	X 50	X 46	X 47	X 49	X 49	X 50	X 50												X 88	X 70	X 68	X 64	X 60	X 51
23	X 51	X 51	X 51	X 50	X 51	X 49	X 51												X 87	X 71	X 70	X 58	X 56	X 56
24	X 56	X 59	X 53	X 44	X 46	X 44	X 51												X 80	X 70	X 61	X 54	X 55	X 52
25	X 54	X 56	X 56	X 60	X 47	X 44	X 52												X 85	X 74	X 67	X 59	O X 56	X 54
26	X 55	X 57	X 57	X 53	X 51	X 48	X 56												X 86	X 72	X 69	X 66	X 63	X 60
27	X 58	X 58	X 60	X 64	X 58	X 44	X 52												X 100	X 72	X 72	X 74	X 73	X 66
28	X 65	X 64	X 64	X 59	X 57	X 51	X 51												X 98	X 76	X 77	X 76	X 67	X 68
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28												28	28	28	28	28	28
MED	X 50	X 48	X 50	X 48	X 46	X 42	X 45												X 80	X 69	X 60	X 53	X 52	X 50
U Q	X 52	X 56	X 52	X 52	X 49	X 46	X 51												X 86	X 72	X 66	X 58	X 56	X 54
L Q	X 48	X 46	X 47	X 46	X 42	X 38	X 40												X 70	X 60	X 54	X 48	X 48	X 48

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 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	38	41	45	41	31	30	30	64	102	98	106	100	101	95	79	82	80	71	42	36	36	F	41	43
2	43	40	44	40	25	26	30	65	87	99	110	121	109	96	83	78	84	71	51	45	41	36	38	42
3	44	41	42	39	39	36	36	67	90	88	106	119	114	108	102	95	79	74	52	45	45	40	42	43
4	45	43	40	40	39	37	32	64	82	97	109	125	137	127	110	111	106	84	67	44	47	40	34	36
5	36	36	36	39	35	32	32	70	85	86	109	112	114	128	109	93	82	74	62	53	47	35	36	34
6	35	35	34	41	30	34	36	72	87	87	100	116	113	117	115	104	93	85	62	72	51	36	36	40
7	42	41	40	40	37	36	38	68	94	113	127	126	120	112	100	100	89	74	60	52	54	47	45	44
8	42	40	38	38	38	36	40	77	96	106	113	130	123	113	108	99	92	89	72	66	46	45	45	46
9	46	45	44	42	41	39	39	71	87	102	120	112	108	106	102	100	91	82	76	75	57	36	37	37
10	40	39	41	42	31	33	34	68	86	102	121	129	124	124	115	106	82	81	77	66	52	51	46	41
11	41	40	40	39	38	36	36	68	89	91	90	99	128	110	84	91	91	81	74	74	61	48	47	49
12	47	46	46	48	45	30	40	70	99	104	110	124	120	111	110	113	99	93	80	58	48	44	46	43
13	40	40	43	47	35	28	31	66	96	118	120	127	128	126	116	106	98	87	72	56	46	42	45	44
14	42	43	44	45	42	38	39	73	90	87	85	102	107	109	105	99	88	84	65	62	54	42	43	43
15	42	41	41	41	37	34	34	64	96	98	106	127	115	105	91	96	91	68	62	52	54	45	46	47
16	46	40	42	51	40	28	31	70	96	100	104	112	125	123	116	108	93	84	73	58	60	53	49	47
17	46	49	44	43	38	41	45	79	92	108	102	110	113	116	118	104	93	77	68	56	56	52	51	50
18	46	46	45	45	50	40	40	75	98	106	107	105	120	118	110	88	98	88	73	57	51	47	43	42
19	44	42	42	41	42	41	46	82	91	116	119	124	122	118	119	112	106	108	102	80	58	58	56	61
20	49	53	59	40	40	36	38	79	104	121	127	137	137	121	123	108	98	107	91	56	49	43	39	39
21	40	51	53	24	26	28	34	80	102	118	134	126	122	120	113	107	96	86	82	64	59	51	46	47
22	44	40	41	43	43	44	44	82	98	117	131	138	154	147	129	121	112	106	82	64	62	57	54	45
23	45	45	45	43	45	43	45	74	93	113	119	130	126	126	123	124	113	99	81	65	64	52	50	50
24	50	53	47	38	40	37	45	66	100	107	131	152	147	131	118	113	104	89	74	64	55	48	49	46
25	48	50	50	54	40	37	46	82	94	104	R 64	126	127	122	120	120	116	89	79	68	61	53	50	48
26	49	51	51	47	45	42	50	85	116	110	110	114	114	116	118	115	108	100	80	66	63	60	57	54
27	52	51	54	58	52	37	46	84	101	105	106	116	119	118	124	122	120	111	94	66	66	68	67	60
28	59	58	58	53	51	45	45	70	109	130	134	139	129	129	126	111	108	102	91	70	71	70	61	63
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28
MED	44	42	44	42	40	36	38	70	95	104	110	124	121	118	114	106	94	86	74	63	54	47	46	44
U Q	46	50	46	46	42	40	45	79	100	113	120	128	128	125	118	112	106	96	80	66	60	53	50	48
L Q	42	40	41	40	36	32	34	68	90	98	106	112	114	110	104	98	90	79	64	54	48	42	42	42

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1												A		L										
2											L			L										
3											L	L	L	L	A									
4												L	L											
5											L	L	L	L	A									
6												L	U 488 L	L	A									
7											L		L											
8											L	A												
9												L	L											
10												L	L	A	A	A								
11												L	L	L										
12												L	L	L	L									
13											L	L	A	A	L									
14												L	L	L	L									
15											L	L	L	L	L	A								
16												L	A	L	L									
17												A	L		L									
18														L	L									
19										L	L	L	L			A								
20												A	A	L	L	A								
21											L			A										
22											L	L	L	L										
23										L	L	L	L	L	A									
24											L	L	L	L										
25												L	L	L	L	A								
26											L	L	L	L	A									
27											L	L	L	L	L									
28											L	L												
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT													1											
MED													U L 488											
U Q																								
L Q																								

FEB. 2014 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 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	R	A	R	A	A	A	A	A	UR 248	B						
2								B	R	R	R	R	A	A	A	A	R	UR 192						
3								B	R	R	R	R	R	R	A	A	UR 252	B						
4								A	R	R	A	R	R	R	R	A	R	R						
5								176	R	A	R	A	R	R	A	R	R	B						
6								B	R	A	A	A	R	R	A	A	R	B						
7								UR 212	UR 300	R	R	A	A	R	A	A	A	A						
8								UR 200	A	A	R	A	A	A	R	R	A	B						
9								A	A	A	A	A	R	A	A	A	A	UR 176						
10								UA 172	R	R	R	A	R	A	A	A	R	UR 196						
11								UR 192	A	A	R	A	R	R	A	A	A	A						
12								180	R	R	R	A	R	R	R	R	A	B						
13								B	R	R	R	R	A	A	R	R	R	R						
14								188	R	A	R	R	R	R	R	R	A	B						
15								212	260	R	R	R	R	R	A	A	A	B						
16								B	A	A	A	R	A	R	R	R	R	B						
17								B	A	R	A	A	R	A	A	A	A	R						
18								B	R	R	A	A	R	A	R	A	A	R						
19								UR 204	R	A	A	A	A	A	A	A	R	A						
20								UR 216	R	A	A	A	A	R	A	A	A	A						
21								UR 208	A	A	R	A	A	A	A	A	A	A						
22								UR 216	R 300	R	A	R	R	R	A	A	A	UR 180						
23								UR 228	R	A	R	R	A	R	A	R	R	UR 204						
24								UR 208	R	A	R	A	A	R	R	R	A	UR 200						
25								R	R	A	R	R	R	R	R	A	A	B						
26								R	R	A	R	R	R	R	A	A	A	B						
27								UR 244	R	A	R	A	R	R	A	A	A	B						
28								R	R	R	A	R	R	R	R	A	R	R						
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								15	3								2	6						
MED								UR 208	R 300								UR 250	UR 194						
U Q								UR 216	UR 300									UR 200						
L Q								188	260									UR 180						

FEB. 2014 foE (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	24	J A 22	E B 15	E B 15	E B 14	E B 16	E B 14	22	G	38	G	46	42	42	41	38	G	22	E B 15	E B 15	22	E B 16	J A 23	J A 24
2	19	20	E B 14	E B 15	E B 14	E B 14	E B 14	24	G	G	G	G	42	42	40	36	G	G	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14
3	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	22	22	G	G	G	G	G	G	42	42	G	22	E B 16	E B 14	E B 14	E B 14	E B 16	E B 14
4	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	E B 15	23	G	G	41	G	G	G	G	41	G	G	E B 15	J A 20	22	22	20	E B 14
5	E B 15	E B 15	E B 14	E B 13	E B 14	E B 14	E B 14	23	G	G	G	J A 42	G	G	39	G	G	27	J A 48	J A 84	J A 61	J A 32	J A 30	J A 31
6	J A 30	22	J A 26	J A 21	21	21	E B 15	E B 16	G	42	43	43	G	G	41	40	G	21	E B 15	J A 20	E B 14	24	E B 15	J A 22
7	20	E B 14	E B 16	E B 15	E B 15	E B 14	E B 15	G	G	G	G 30	J A 45	45	G	46	42	35	J A 28	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14
8	E B 16	E B 15	E B 15	E B 15	E B 15	E B 16	20	G	34	42	G	47	48	45	G	G	35	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14
9	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	24	36	40	42	44	G	42	42	40	32	G	J A 46	23	23	E B 14	E B 15	E B 15
10	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	22	G	G	G	44	G	45	J A 46	40	G	G	E B 14	J A 23	E B 15	E B 15	E B 15	22
11	E B 14	22	E B 15	21	E B 15	E B 15	E B 15	G	38	40	G	42	G	G	42	J A 42	38	J A 36	E B 12	E B 16	E B 12	E B 15	E B 15	E B 15
12	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	24	G	G	G	42	G	G	G	G	41	29	J A E 21	B 15	E B 15	E B 15	E B 15	E B 15
13	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	24	G 27	G	G	G	55	46	G	G	G	G	E B 15	E B 15	E B 15	J A 26	J A 26	J A 35
14	J A 24	J A 24	20	E B 15	E B 16	E B 16	E B 14	23	G	41	G	G	G	G	G	G	31	E B 15	E B 14	E B 15	22	20	E B 15	20
15	E B 15	E B 15	E B 14	E B 15	E B 13	E B 15	E B 15	26	34	G	G	G	G	G	43	42	37	32	E B 16	E B 15	J A 25	E B 15	E B 15	E B 15
16	E B 14	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	25	41	43	43	G	44	G	G	G	G 28	22	E B 14	J A 26	J A 26	J A 21	E B 15	E B 15
17	E B 15	E B 14	E B 15	E B 15	E B 14	E B 14	E B 14	23	40	G	42	41	G	44	42	42	40	G	E B 15	E B 14	J A 24	J A 31	J A 34	J A 34
18	J A 29	J A 26	J A 21	J A 22	J A E 14	E B 15	E B 15	22	G	G	42	46	G	45	G	38	36	24	E B 15	J A 40	J A 29	J A 33	22	21
19	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	39	44	43	42	41	40	42	G	26	E B 13	26	E B 15	E B 15	J A 19	J A 16
20	19	E B 16	22	E B 14	J A 22	E B 15	E B 15	G	G	42	43	J A 55	J A 102	G	44	43	39	29	E B 14	E B 14	E B 15	21	E B 15	23
21	E B 16	20	20	E B 15	21	E B 14	22	G	35	41	G J	A 47	42	41	43	42	37	J A 32	E B 14	J A 19	E B 15	J A 61	J A 44	J A 20
22	J A 26	J A 30	J A 28	20	E B 15	22	E B 14	G	J A 36	G 30	42	G	G	G	40	36	36	G	E B 14	E B 15	E B 16	J A 28	E B 15	E B 15
23	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	36	G	G	45	G	40	G	G	G	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14
24	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	27	G	39	G	46	41	G	G	G	37	G	E B 15	22	E B 15	22	J A 20	21
25	E B 14	22	22	J A 29	22	19	E B 15	G	G	J A 42	G	G	G	G	G	41	36	E B 18	E B 14	E B 14	E B 14	20	E B 15	E B 15
26	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	E B 15	G	G	41	G	G	G	G	42	J A 44	38	25	E B 15	E B 16	E B 15	20	E B 15	E B 15
27	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	41	G	40	G	G	42	43	32	E B 14	E B 15	J A 17	J A 19	E B 15	E B 15	E B 15
28	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15	E B 15	G	G	G	G	G	G	G	G	36	G 28	G	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	G	37	G	42	G	G	40	40	32	G	E B 15	E B 15	E B 15	18	E B 15	E B 15
U Q	19	21	18	15	15	E B 15	E B 15	24	34	41	42	44	42	42	42	42	37	26	E B 15	J A 21	J A 22	A J 23	A J 20	A J 22
L Q	E B 15	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G	G	G	G	G	G	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14

FEB. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 15	E B 15	E B 15	E B 14	E B 16	E B 14	20	G	34	G	40	40	39	37	34	G	19	E B 15	E B 15	E B 15	E B 16	E B 15	20
2	E B 15	E B 14	E B 14	E B 15	E B 14	E B 14	E B 14	21	G	G	G	G	41	39	39	34	G	G	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14
3	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	E B 15	21	G	G	G	G	G	G	38	37	G	20	E B 16	E B 14	E B 14	E B 14	E B 16	E B 14
4	E B 15	E B 16	E B 14	E B 15	E B 15	E B 14	E B 15	22	G	G	35	G	G	G	G	38	G	G	E B 15	E B 14	17	16	E B 15	E B 14
5	E B 15	E B 15	E B 14	E B 13	E B 14	E B 14	E B 14	22	G	G	G	37	G	G	34	G	G	20	37	20	28	17	E B 15	E B 15
6	E B 15	E B 15	E B 18	16	E B 15	E B 15	E B 15	E B 16	G	35	39	39	G	G	39	38	G	19	E B 15	E B 15	E B 14	20	E B 15	E B 15
7	E B 14	E B 14	E B 16	E B 15	E B 15	E B 14	E B 15	G	G	G	G 28	36	37	G	41	40	32	21	E B 16	E B 15	E B 15	E B 15	E B 15	E B 14
8	E B 16	E B 15	E B 15	E B 15	E B 15	E B 16	E B 14	G	32	34	G	42	39	42	G	G	34	E B 16	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14
9	E B 15	E B 15	E B 15	E B 16	E B 15	E B 15	E B 14	20	32	36	39	39	G	38	40	36	30	G	37	18	E B 15	E B 14	E B 15	E B 15
10	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	20	G	G	G	42	G	44	42	38	G	G	E B 14	E B 16	E B 15	E B 15	E B 15	E B 15
11	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	G	34	36	G	39	G	G	40	37	32	22	E B 12	E B 16	E B 12	E B 15	E B 15	E B 15
12	E B 15	E B 14	E B 15	E B 15	E B 15	E B 14	E B 15	22	G	G	G	39	G	G	G	G	38	26	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15
13	E B 14	E B 15	E B 15	E B 15	E B 14	E B 14	E B 15	23	G 22	G	G	G	51	44	G	G	G	G	E B 15	E B 15	E B 15	22	21	E B 15
14	17	17	18	E B 15	E B 16	E B 16	E B 14	21	G	36	G	G	G	G	G	G	29	E B 15	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15
15	E B 15	E B 15	E B 14	E B 15	E B 13	E B 15	E B 15	24	30	G	G	G	G	G	37	37	35	29	E B 16	E B 15	20	E B 15	E B 15	E B 15
16	E B 14	E B 14	E B 14	E B 15	E B 15	E B 14	E B 14	22	35	40	38	G	40	G	G	G	G 23	19	E B 14	E B 15	18	17	E B 15	E B 15
17	E B 15	E B 14	E B 15	E B 15	E B 14	E B 14	E B 14	20	30	G	40	39	G	39	36	36	34	G	E B 15	E B 14	18	19	26	24
18	18	E B 15	18	E B 15	E B 14	E B 15	E B 15	20	G	G	39	44	G	45	G	32	33	18	E B 15	22	20	25	E B 15	E B 15
19	E B 15	E B 15	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	34	40	39	40	40	39	40	G	19	E B 13	20	E B 15	E B 15	E B 16	E B 15
20	E B 15	E B 16	E B 15	E B E B 14	17	E B 15	E B 15	G	G	37	40	45	81	G	40	39	38	24	E B 14	E B 14	E B 15	E B 14	E B 15	E B 15
21	E B 16	E B 14	E B 15	E B 15	18	E B 14	E B 15	G	33	36	G	42	41	40	40	37	34	22	E B 14	E B 15	E B 15	E B 15	26	E B 15
22	18	20	E B 15	E B 15	E B 15	E B 15	E B 14	G	G 21	G 26	36	G	G	G	37	34	31	G	E B 14	E B 15	E B 16	22	E B 15	E B 15
23	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	32	G	G	42	G	39	G	G	G	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14
24	E B 15	E B 15	E B 15	E B 15	E B 14	E B 15	E B 14	24	G	36	G	40	39	G	G	G	34	G	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15
25	E B 14	E B 15	E B E B 15	19	E B 15	E B 16	E B 15	G	G	36	G	G	G	G	G	37	34	E B 18	E B 14	E B 14	E B 14	E B 15	E B 15	E B 15
26	E B 15	E B 14	E B 15	E B 14	E B 14	E B 15	E B 15	G	G	37	G	G	G	G	38	39	32	22	E B 15	E B 16	E B 15	E B 15	E B 15	E B 15
27	E B 15	E B 15	E B 15	E B 14	E B 15	E B 15	E B 15	G	G	38	G	39	G	G	39	39	32	E B 14	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
28	E B 15	E B 15	E B 15	E B 14	E B 16	E B 15	E B 15	G	G	G	G	G	G	G	G	34	G 27	G	E B 15	E B 15	E B 15	E B 15	E B 14	E B 14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	20	G	33	G	38	G	G	37	36	30	G	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15
U Q	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	22	G	36	37	40	40	39	39	38	34	20	E B 15	16	16	16	E B 15	E B 15
L Q	E B 15	E B 14	E B 15	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	G	G	G	G	G	G	E B 14	E B 15	E B 15	E B 15	E B 15	E B 14

FEB. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 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	301	303	322	356	316	305	300	333	359	348	342	342	336	341	350	342	354	355	371	313	274	F	314	307
2	302	311	314	348	337	288	303	346	368	326	323	347	316	328	328	324	327	347	365	309	321	316	303	281
3	314	326	322	312	312	337	313	355	374	348	322	333	328	323	334	335	330	336	352	311	317	310	295	301
4	285	283	275	297	298	339	317	344	360	346	318	325	319	316	311	312	323	324	341	296	341	301	295	279
5	305	297	293	310	353	286	325	374	363	337	338	325	305	320	323	333	337	327	329	334	323	300	312	283
6	277	291	319	329	297	286	311	343	364	330	331	317	326	307	315	310	319	335	312	339	345	294	297	275
7	291	274	290	296	298	330	315	354	329	316	330	320	321	315	312	324	335	326	334	321	320	325	321	314
8	305	295	284	289	285	270	301	358	354	332	314	323	322	314	308	323	322	327	323	328	317	302	297	279
9	294	284	299	255	285	283	318	354	351	324	334	326	317	315	326	327	324	322	320	345	347	302	294	300
10	269	250	290	330	306	292	313	352	337	318	320	321	305	317	311	334	323	329	324	329	308	305	307	298
11	296	289	276	282	315	325	320	349	357	341	346	312	334	350	334	325	332	337	314	336	318	307	289	298
12	282	295	288	313	362	306	299	336	352	336	321	316	325	316	307	317	321	327	328	324	291	304	300	289
13	279	284	291	322	351	301	313	330	332	336	321	314	324	321	322	319	325	334	328	322	316	281	286	303
14	295	285	284	328	346	291	309	368	369	359	336	335	318	312	322	330	330	338	317	320	331	296	299	296
15	296	310	326	321	315	302	321	346	349	338	320	323	320	336	332	329	353	335	342	314	319	300	298	308
16	287	284	299	329	374	294	304	350	350	331	314	302	318	313	321	326	327	332	329	311	332	305	292	297
17	298	295	300	294	290	274	296	344	340	337	329	320	311	309	320	326	347	338	321	319	321	317	306	298
18	294	314	312	287	341	348	313	355	351	358	327	316	315	327	321	324	335	341	343	323	334	319	307	297
19	286	301	317	284	300	288	305	353	344	330	318	329	312	308	303	305	303	316	324	308	293	277	290	315
20	278	281	332	312	310	311	314	330	338	326	321	324	315	318	316	314	316	333	334	322	313	287	243	249
21	283	307	362	351	281	275	280	342	333	328	333	344	309	326	321	332	335	339	333	315	311	318	299	304
22	305	274	275	276	293	323	319	345	348	324	316	311	321	314	309	319	323	336	341	307	330	323	318	299
23	296	305	291	297	306	306	323	352	351	339	329	319	315	310	302	315	327	343	318	309	320	306	279	288
24	272	309	324	271	260	254	305	317	331	314	306	310	318	322	306	325	327	342	326	315	323	290	296	290
25	282	285	297	313	336	300	315	355	345	334	232 R	315	308	308	311	314	330	334	323	319	313	312	294	284
26	283	297	317	318	294	295	316	344	349	341	332	317	311	306	310	308	328	331	321	298	302	301	302	291
27	278	280	298	317	353	294	318	340	344	347	319	314	309	295	304	297	312	322	333	295	293	299	304	282
28	269	271	276	276	279	271	266	317	310	314	308	315	295	301	302	309	312	323	312	291	290	302	287	290
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28
MED	289	293	298	312	308	294	313	346	350	335	322	320	318	316	316	324	327	334	328	317	318	302	298	296
U Q	297	304	318	325	339	308	318	354	358	341	332	326	322	322	322	328	334	338	338	324	326	312	305	300
L Q	280	284	289	288	294	286	304	341	339	326	318	315	311	310	308	314	322	327	321	309	310	299	293	284

IONOSPHERIC DATA STATION Kokubunji

FEB.2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

FEB.2014 M(3000)F1 (0.01)

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 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												236		256										
2											244			256										
3											280	256	248	254	246									
4												266	270											
5											260	256	272	268	242									
6												262	234	274	256									
7											256		264											
8											270	248												
9												270	268											
10												268	274	258	248	242								
11												282	266	244										
12												276	244	248	254									
13											250	264	248	252	256									
14												264	256	268	246									
15											278	266	256	242	258	258								
16												302	262	280	262									
17												254	284		264									
18														274	254									
19										252	254	260	258			254								
20												260	E A 270	262	276	240								
21											258			252										
22											274	262	256	254										
23										252	254	268	254	276	244									
24											300	266	248	266										
25												256	268	264	272	262								
26											246	272	268	292	260									
27											272	280	272	294	278									
28											264	260												
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	15	24	22	21	16	5								
MED										252	260	264	262	262	256	254								
U Q											274	269	270	274	263	260								
L Q											254	258	254	253	247	241								

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 h′F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 272	E B 276	E B 230	216	E B 240	E B 262	E B 288	238	228	224	222	A	224	216	222	220	218	210	200	232	E B 282	E B 246	E B 250	E A 258
2	E B 258	E B 264	E B 252	222	198	E B 318	E B 296	E A 240	222	216	210	232	228	200	226	222	226	212	208	220	E B 226	224	E B 250	E B 296
3	E B 254	E B 242	E B 232	E B 242	230	214	E B 250	224	216	222	216	218	198	204	A	222	212	218	200	226	228	E B 250	E B 268	E B 268
4	E B 268	E B 280	E B 294	E B 292	224	216	E B 240	234	218	216	230	220	224	226	228	E A 240	222	216	202	220	224	220	E B 286	E B 308
5	E B 274	E B 270	E B 274	E B 262	218	E B 270	E B 260	212	212	218	202	200	206	216	A	234	220	218	E A 240	228	E A 246	228	E B 268	E B 302
6	E B 278	E B 304	E A 288	228	E B 232	E B 288	E B 254	226	212	212	222	210	202	210	A	226	228	216	200	222	196	E A 252	E B 284	E B 320
7	E B 292	E B 310	E B 310	E B 280	E B 250	E B 244	E B 244	224	216	220	206	214	214	222	230	E A 240	224	214	204	224	226	226	E B 238	E B 248
8	E B 254	E B 254	E B 288	E B 288	E B 282	E B 324	E B 272	226	212	214	210	A	224	216	218	218	222	222	208	218	E B 206	E B 250	E B 256	E B 288
9	E B 282	E B 282	E B 278	E B 284	E B 256	E B 278	E B 230	224	214	216	232	212	220	222	224	228	226	222	E A 246	218	200	210	E B 274	E B 302
10	E B 318	E B 328	E B 290	216	228	E B 272	E B 262	216	212	220	226	212	224	A	A	A	214	220	214	216	210	220	E B 250	E B 246
11	E B 266	E B 278	E B 286	E B 294	E B 258	222	E B 232	222	212	212	218	212	214	206	222	226	228	222	218	220	206	212	E B 268	E B 266
12	E B 276	E B 272	E B 266	E B 250	206	E B 314	E B 286	236	228	224	222	208	202	196	212	218	220	214	210	206	E B 232	E B 244	E B 256	E B 258
13	E B 304	E B 304	E B 288	E B 242	212	208	E B 264	226	232	228	210	210	A	A	216	228	226	210	206	200	216	E A 308	E A 284	E B 270
14	E A 282	E A 304	E A 278	E B 240	214	E B 238	E B 256	220	220	218	214	212	216	208	204	222	214	222	194	224	216	228	E B 262	E B 262
15	E B 268	E B 278	E B 260	E B 254	E B 236	232	E B 262	222	222	226	214	204	206	198	198	A	220	214	206	230	226	E B 236	E B 272	E B 268
16	E B 276	E B 304	E B 292	E B 240	202	E B 242	E B 286	232	220	226	224	230	A	226	214	232	224	216	212	E B 236	E A 238	E A 234	E B 248	E B 264
17	E B 270	E B 258	E B 278	E B 280	E B 282	E B 324	E B 274	216	220	216	222	A	198	228	206	224	224	212	210	220	E B 230	E A 238	E A 272	E A 276
18	E A 258	E B 268	E A 264	E B 270	222	208	E B 246	222	214	222	204	216	232	220	218	222	232	218	206	224	232	E A 250	E B 250	E B 262
19	E B 270	E B 276	E B 272	E B 280	E B 254	E B 270	E B 254	222	218	210	208	222	212	230	220	A	228	236	208	208	E B 214	E B 246	E B 258	E B 254
20	E B 294	E B 312	228	216	E A 250	E B 250	E B 264	228	224	224	222	A	A	222	218	A	232	230	202	210	224	E B 244	E B 342	E B 370
21	E B 334	E B 266	208	218	E A 356	E B 348	E B 302	226	220	228	208	226	222	A	228	226	222	206	206	200	208	226	E A 296	E B 270
22	E A 250	E A 340	E B 312	E B 308	E B 274	E B 236	E B 236	214	210	212	216	206	198	220	216	218	220	218	200	214	214	E A 242	E B 232	E B 252
23	E B 266	E B 276	E B 272	E B 268	E B 262	E B 238	214	206	216	206	206	204	208	218	A	230	226	212	198	214	222	222	E B 282	E B 282
24	E B 290	E B 246	226	E B 280	E B 348	E B 376	E B 252	232	218	218	226	208	212	202	226	222	222	212	206	214	220	E B 232	E B 270	E B 282
25	E B 292	E B 292	E B 282	E A 242	216	E B 246	E B 242	214	214	214	226	228	212	216	224	A	228	206	214	218	218	236	E B 254	E B 266
26	E B 290	E B 266	E B 252	E B 242	E B 242	E B 266	E B 248	218	220	210	198	206	212	222	A	E A 236	226	218	198	212	E B 224	E B 244	E B 240	E B 254
27	E B 280	E B 284	E B 274	E B 238	210	E B 242	E B 254	218	218	214	214	210	212	222	216	228	E A 234	224	206	192	E B 238	E B 244	244	E B 260
28	E B 296	E B 286	E B 286	E B 266	E B 300	E B 232	E B 306	220	226	226	210	204	220	222	220	220	226	220	212	E B 226	E B 254	E B 234	E B 234	E B 260
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	24	25	25	22	23	28	28	28	28	28	28	28	28
MED	E B 276	E B 278	E B 276	E B 252	E B 238	E B 248	E B 255	222	218	218	215	212	212	218	219	224	224	217	206	218	218	E 236	E B 260	E B 267
U Q	E B 291	E B 304	E B 288	E B 280	E B 260	E B 283	E B 273	227	221	224	222	219	223	222	224	230	227	221	211	224	E B 231	E B 245	E B 273	E B 285
L Q	E B 267	E B 267	E B 256	239	217	234	E B 245	218	214	214	209	207	206	207	216	222	220	212	201	213	214	226	E B 250	E B 259

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FEB.2014 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	120	110	112	A	A	114	A	A	116	B						
2								B	112	116	116	114	112	116	120	118	118	128						
3								B	120	116	126	128	124	118	118	130	118	B						
4								120	118	118	A	118	118	118	124	124	120	122						
5								120	122	112	116	A	120	118	A	114	118	B						
6								B	122	A	A	A	122	114	A	112	118	B						
7								124	116	110	116	A	A	124	A	A	120	A						
8								120	120	A	124	A	A	A	122	120	A	B						
9								122	118	A	A	A	120	126	116	A	A	120						
10								124	118	116	116	112	112	122	124	122	118	122						
11								124	120	114	112	116	120	122	122	122	114	116						
12								116	116	116	116	118	120	128	128	124	118	B						
13								B	116	116	116	126	126	126	126	124	122	122						
14								120	114	A	114	116	116	120	126	126	A	B						
15								122	114	118	114	114	112	114	A	114	116	B						
16								B	118	118	118	118	A	118	118	118	118	B						
17								B	118	118	114	A	124	A	A	A	A	116						
18								B	116	116	114	120	122	126	124	A	118	118						
19								116	116	A	A	A	A	A	A	A	116	A						
20								128	110	A	112	A	A	120	A	A	A	A						
21								126	A	114	116	A	A	A	A	A	A	A						
22								120	120	118	A	120	122	126	112	A	A	116						
23								116	120	A	120	122	A	120	A	122	120	122						
24								126	116	A	114	114	A	118	118	112	A	112						
25								120	118	A	122	128	124	124	124	A	A	B						
26								122	116	A	116	118	118	122	A	A	A	B						
27								124	120	A	118	118	118	126	A	A	A	B						
28								126	114	114	114	118	118	120	120	A	124	116						
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	27	17	23	18	19	24	16	15	17	12						
MED								122	118	116	116	118	120	120	122	122	118	119						
U Q								124	120	118	118	120	122	125	124	124	120	122						
L Q								120	116	114	114	116	118	118	118	114	117	116						

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IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 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	100	102	B	B	B	B	B	148	G	120	G	104	108	118	102	102	G	98	B	B	102	B	98	98
2	104	104	B	B	B	B	B	152	G	G	G	G	126	128	124	114	G	G	B	B	B	B	B	B
3	B	B	B	B	B	B	96	150	G	G	G	G	G	G	120	124	G	146	B	B	B	B	B	B
4	B	B	B	B	B	B	B	138	G	G	108	G	G	G	G	112	G	G	B	102	94	94	94	B
5	B	B	B	B	B	B	B	154	G	G	G	110	G	G	102	G	G	116	104	104	102	100	100	100
6	100	98	98	96	94	96	B	B	G	110	108	110	G	G	94	126	G	124	B	108	B	104	B	96
7	102	B	B	B	B	B	B	G	G	G	102	96	96	G	104	108	122	108	B	B	B	B	B	B
8	B	B	B	B	B	B	96	G	110	108	G	108	110	110	G	G	106	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	122	126	110	108	110	G	126	112	104	102	G	98	104	104	B	B	B
10	B	B	B	B	B	B	B	132	G	G	G	112	G	132	116	116	G	G	B	100	B	B	B	96
11	B	104	B	94	B	B	B	G	120	122	G	110	G	G	122	116	118	122	B	B	B	B	B	B
12	B	B	B	B	B	B	B	158	G	G	G	112	G	G	G	G	114	104	104	B	B	B	B	B
13	B	B	B	B	B	B	B	156	98	G	G	G	120	120	G	G	G	G	B	B	B	110	110	104
14	98	88	86	B	B	B	B	164	G	106	G	G	G	G	G	G	106	B	B	B	90	90	B	86
15	B	B	B	B	B	B	B	158	158	G	G	G	G	G	98	120	114	106	B	B	96	B	B	B
16	B	B	B	B	B	B	B	152	128	126	112	G	106	G	G	G	106	112	B	96	98	102	B	B
17	B	B	B	B	B	B	B	146	122	G	120	108	G	102	108	108	106	G	B	B	96	94	92	94
18	96	106	98	96	B	B	B	112	G	G	118	126	G	128	G	96	122	104	B	96	96	98	96	96
19	B	B	B	B	B	B	B	G	G	108	104	106	106	108	102	102	G	106	B	102	B	B	96	96
20	96	B	94	B	94	B	B	G	G	104	118	104	104	G	104	106	108	106	B	B	B	100	B	106
21	B	102	96	B	96	B	98	G	102	110	G	106	104	104	100	100	102	102	B	104	B	102	102	102
22	92	92	94	92	B	96	B	G	104	96	100	G	G	G	116	106	104	G	B	B	B	98	B	B
23	B	B	B	B	B	B	B	G	G	104	G	G	106	G	108	G	G	G	B	B	B	B	B	B
24	B	B	B	B	B	B	B	162	G	100	G	126	108	G	G	G	106	G	B	94	B	98	98	100
25	B	100	100	98	96	98	B	G	G	108	G	G	G	G	G	108	106	B	B	B	B	92	B	B
26	B	B	B	B	B	B	B	G	G	104	G	G	G	G	106	108	106	102	B	B	B	90	B	B
27	B	B	B	B	B	B	B	G	G	106	G	106	G	G	108	108	104	B	B	98	96	B	B	B
28	B	B	B	B	B	B	B	G	G	G	G	G	G	G	G	104	106	G	B	B	B	B	B	B
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	9	7	5	4	3	3	15	9	16	10	16	11	10	18	20	18	14	3	11	10	14	9	12
MED	99	102	96	96	95	96	96	152	120	108	108	109	106	119	107	108	106	106	104	102	96	98	98	97
U Q	101	104	98	97	96	98	98	158	127	110	118	111	110	128	116	115	114	116	104	104	102	102	101	101
L Q	96	95	94	93	94	96	96	138	103	104	104	106	104	108	102	104	106	104	98	96	96	94	95	96

IONOSPHERIC DATA STATION Kokubunji

FEB. 2014 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

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

FEB. 2014 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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

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

FEB. 2014 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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	42	43	42	36	31	28	30	40	86	J R 112	R 104	R	J R 118	118	U R 104	R 110	R 99	R 99	83	65	59	53	52	45
2	44	40	36	37	34	28	27	41	81	102	R 104	R 105	J R 118	U R 108	96	96	92	89	71	52	52	53	49	40
3	40	43	44	38	45	32	25	40	82	86	100	J R 123	116	J R 112	R 104	92	94	92	78	52	52	47	43	42
4	39	37	35	37	40	34	27	42	84	C	C	C	C	C	C	C	C	U R 113	R 94	63	53	53	30	29
5	33	33	34	36	41	26	28	44	78	86	94	R 111	J R 112	R	R	U R 105	R 104	92	86	70	57	52	40	37
6	36	35	35	40	35	32	33	51	78	91	90	R 110	J R 112	J R 114	R	U R 102	95	94	86	76	78	51	38	33
7	42	42	43	46	40	40	40	R 58	88	J R 94	R	R	R	U R 116	R	R 107	96	R 94	84	62	64	65	54	45
8	40	40	38	38	38	35	36	54	91	95	R 97	R	R	U R 110	U R 112	U R 110	102	94	92	81	76	54	53	50
9	51	48	49	45	43	42	43	58	R 99	R 107	U R 107	R 118	R	R	102	96	96	91	94	92	81	47	43	43
10	44	42	42	41	34	33	31	52	80	91	98	J R 130	R	R	R	R	R	U R 110	R 107	U R 96	83	80	64	62
11	58	57	48	44	46	42	30	45	92	94	88	R 92	J R 112	U R 110	92	88	90	97	91	80	77	64	52	56
12	57	50	45	44	40	28	27	44	85	U R 110	R 108	R	R	J R 118	U R 124	R	R	R	U R 113	92	72	57	49	43
13	43	43	43	45	38	26	26	48	82	J R 108	R	R	R	R	R	R	U R 104	R 94	U R 94	78	63	59	52	49
14	43	42	42	42	46	33	30	49	76	88	90	101	R	R	R	U R 107	U R 98	U R 96	R 92	R 76	66	55	51	41
15	40	40	41	40	38	31	31	45	82	93	J R 112	J R 112	U R 118	U R 118	J R 118	R 110	R 99	86	86	63	62	56	43	43
16	40	40	40	J R 40	40	28	30	47	86	93	98	R 101	R	R	R	R	R 102	96	94	74	66	60	57	57
17	54	54	51	49	46	46	48	66	91	J R 112	U R 104	R	R	R	119	R	U R 104	89	83	72	64	60	54	49
18	45	43	43	43	43	39	32	51	88	92	R	U R 106	U R 118	R	R	123	U R 98	94	90	63	52	53	48	42
19	42	43	42	40	42	38	39	58	R 92	R	U R 110	R	U R 104	R	R	R	R	R	99	90	66	64	60	64
20	52	50	V 66	31	31	30	29	52	89	R 103	R	R	R 118	U R 119	J R 140	J R 118	U R 115	118	R 104	74	66	54	43	42
21	43	50	49	31	32	33	33	53	89	U R 113	R	J R 118	R	J R 118	R	R	U R 105	R 102	98	91	76	68	54	50
22	48	42	44	46	45	50	41	60	84	R 101	J R 115	150	160	150	J R 143	R	J R 114	116	99	82	73	77	67	52
23	48	45	46	46	44	44	43	58	91	94	R	J R 113	R	R	J R 138	R	U R 120	R 116	101	88	83	80	60	57
24	53	56	52	40	40	40	42	56	88	93	R	162	150	R	R	U R 113	R 113	103	95	86	66	66	64	62
25	57	56	54	56	45	39	38	59	88	R 98	B	R	R	J R 118	R	J R 115	J R 115	U R 104	94	93	84	84	89	69
26	59	53	52	48	44	42	41	66	R 97	U R 110	R	R	U R 104	J R 111	J R 118	R	R 115	115	97	89	82	87	80	R 71
27	60	58	57	61	58	38	38	64	86	95	U R 110	R	R	R	R	J R 114	J R 112	J R 114	U R 112	R 94	U R 94	94	U R 92	83
28	76	74	66	62	52	42	39	59	94	J R 115	R	146	144	135	R	R	U R 115	114	R 98	R 93	86	86	77	73
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	17	16	14	15	13	16	24	26	28	28	28	28	28	28
MED	44	43	44	42	40	34	32	52	87	95	R 104	R 112	R 118	R 118	R 118	R 108	R 103	96	94	79	66	60	52	49
U Q	54	52	50	46	45	41	40	58	91	J R 108	R 109	126	118	118	J R 131	J R 114	R 114	113	R 98	90	80	72	62	60
L Q	41	41	42	38	38	30	30	45	82	93	96	R 106	R 112	U R 111	103	99	97	94	86	68	62	53	46	42

FEB. 2014 foF2 (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	A	L	U L 384							
2									264		L	L	L	L	L	L								
3									268	L	L	U L 512	L	L	L	L	L							
4										C	C	C	C	C	C	C	C	272						
5										L	L	L	L	L	L	L	L							
6											L	L	L	L	L	L								
7										L	L	L	L	U L 520	B	L	L							
8										L	L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L	L							
10									264	L	L	L	L	L	L	L								
11									264		L	L	L	L	L	L	L							
12									L	L	L	L	L	L	L	L		U L 336						
13									276	L	L	L	L	L	L	L	L	U L 328						
14									260	L		L	B	L	L	L	L							
15										L	L	L	L	L	L	L	L	U L 292						
16										L	L	L	L	L	U L 532	L								
17									268	L	L	L		L	L	L	L							
18										L	L	L	L	L		L	L							
19										L	L	L	L	L	L	L	L	L	R 192					
20									U L 328	L	L	L	L	L	L	L								
21										L	L	L	L	L	L	L	L		188					
22										L	L	L	L	L	L	L	L	L						
23										L	L	L	L	L	L	L	L		196					
24										L	L	L	L	L	L	L	L	L						
25										L	B		L	L	L	L	L	L	208					
26											L	L	L	L	L	L	L							
27										L	L	L	L	L	L	L	L							
28									296		L	L	L	L	L	L	L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									9			1		1	1		1	4	4					
MED									268			U L 512		U L 520	U L 532		U L 384	U L 310	194					
U Q									286									U L 332	202					
L Q									264									282	190					

FEB. 2014 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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 236	296	328	352	R 360	R 368	R 356	324	U A	A 312	A 248						
2								B 232	304	R 340	364		B 372	364	320		312	A 248						
3								B 236	300	332	U R 356	364	360	344	U A 316		R 280	244						
4								B 244	C	C	C	C	C	C	C		C	236						
5								J R 168	232	296	324	U R 360	U R 360	R	R 340	R 332	304	U A 236						
6								A 240	A 300	U A 328	U A 332	U R 348	B	R	U A 324		A 312	A 248						
7								B 244	R 308	R 320	R	R	A	B	R 320		320	248						
8								B 252	296	U A 328	340	U A 352	U A 348	U A 356	U A 340		A	U A 244						
9								B 244	304	A 336	U A 348	U A 356	U A 360	U R 368	U A 348		A 304	244						
10								B 236	304	U R 352	U R 380	R 408	B	368	A 320		U A 252	248	B					
11								B 240	296	R 332	U R 360	R 380	R	A 364	R 340		308	244	176					
12								B 256	U A 308	R	R	U R 380	B	B	B		R	256	B					
13								220	232	300	336	B	B	B	U R 340	R	316	236	B					
14								B 240	R 304	R 316	R 336	B	U A 380	U A 368	U A 324		A	244	A					
15								J R 168	260	300	R 348	R 368	R	U R 376	R 368	R 348	312	R 256	A					
16								B 236	284	324	R 348	U R 360	R 364	R 372	348		304	248	B					
17								A 248	292	R 336	R 352	U R 384	U A 400	U A 364	U A 320		312	A	A					
18								184	248	312	R 332	R 324	R	R	R	U R 364	R 316	252	A					
19								176	236	R 276	U R 284	B	U R 292	R	A	A	308	244	B					
20								B 240	U R 312	R 320	R	U R 356	A 364		U A 336		A	A	A					
21								176	240	296	328	R 360	U A 364	U A 368	U A 356	U A 316	324	A	A					
22								176	U R 264	308	R 340	R 360	U A 368	U R 356	R 360	U A 328	U A 280	A	A					
23								176	260	316	R 336	U R 364	R 364	R 364	A 360	A	324	A	B					
24								188	260	316	R 344	372	U A 380	U A 368	B	R	A 300	A	A					
25								R 188	248	R 308	B	B	B	B	B	340	308	U A 228	200					
26								180	256	312	R 332	R 336	U R 360	B	U R 364	R 360	A 316	U A 236	A					
27								192	268	U A 320	B	U R 360	R 392	R	U A 380	R 356	U A 308	A	A					
28								200	256	308	R 344	R	U R 392	R	368	336	U A 292	264	A					
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								13	28	27	24	20	20	14	19	22	22	20	2					
MED								180	244	304	R 332	R 358	U R 364	U R 366	364	334	308	244	188					
U Q								190	256	308	R 338	R 362	U R 380	U R 372	U A 368	R 348	316	248						
L Q								176	236	296	R 326	R 344	U R 358	U R 360	356	A 320	A 304	240						

FEB. 2014 foE (0.01MHz)

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 16	E B 16	E B 16	18	22	J A 16	31	G 17	G 18	G	G	G	J A 63	38	J A 40	J A 32	J A 33	J A 45	J A 32	J A 26	E B 16	E B 16
2	19	J A 22	20	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	37	39	E B 41	49	J A 50	40	37	28	J A 22	21	E B 16	J A 27	J A 18	E B 16
3	E B 16	J A 22	J A 20	E B 16	E B 16	E B 16	E B 16	J A 17	26	32	G	G	39	37	36	34	G 26	J A 32	J A 20	E B 16	J A 26	22	22	E B 21
4	E B 16	E B 16	E B 16	E B 16	E B 16	18	18	E B 16	G 23	C	C	C	C	C	C	C	C	26	18	J A 20	22	21	J A 18	J A 27
5	E B 16	E B 16	E B 16	E B 16	E B 16	J A 17	E B 16	G	G	G	G	G	40	G	36	G	32	26	E B 16	E B 16	E B 16	J A 16	E B 16	22
6	J A 17	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16	J A 17	G	34	36	35	G	E B 41	39	36	33	29	E B 16	E B 16	E B 16	J A 20	22	E B 16
7	22	E B 16	J A 20	E B 16	E B 16	19	E B 16	E B 16	26	G	G	G	24	25	E B 59	G 27	38	33	J A 27	J A 23	J A 33	A E 16	B 20	J A 24
8	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	32	34	37	37	36	38	40	J A 40	29	J A 18	J A 17	J A 16	E B 16	E B 16	E B 19
9	E B 16	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	33	38	40	38	38	38	G	33	G	J A 17	J A 36	J A 20	J A 19	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	25	G	38	42	47	E B 46	44	J A 44	30	J A 21	E B 17	J A 28	J A 75	A E 16	B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 16	E B 17	25	G	G	G	42	G	40	37	G	G	G	E B 16	E B 16	E B 16	E B 16	E B 16
12	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 18	G	33	E B 23	G	43	E B 45	E B 45	E B 43	G	G	19	J A 23	E B 16	18	E B 16	J A 24
13	E B 16	E B 16	E B 16	E B 16	22	J A 20	E B 16	G	26	33	G	E B 56	E B 54	E B 44	G	G	G	26	E B 18	E B 16	E B 16	B J 25	A J 23	25
14	22	E B 17	E B 16	J A 20	20	E B 16	22	E B 16	25	G	G	G	E B 60	J A 66	47	38	G	25	J A 26	J A 31	J A 31	24	J A 32	24
15	22	21	E B 16	E B 16	J A 20	E B 16	E B 16	G	G	G	G 26	44	34	G 26	G 22	38	37	G 24	20	J A 18	E B 16	20	20	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 19	G	G	G	G	G	G	G	G	G	30	J A 34	J A 28	22	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 24	26	G	G	38	J A 53	J A 51	40	34	G	J A 36	J A 33	E B 16	J A 30	E B 16	E B 16	19
18	E B 16	J A 16	18	J A 19	J A 19	E B 16	E B 16	G	27	34	G 26	G 30	G	27	26	G 23	G 24	G 20	J A 28	24	J A 17	J A 25	J A 25	J A 27
19	J A 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	30	E B 40	33	34	34	38	33	28	E B 16	E B 16	J A 16	20	E B 16	J A 19
20	E B 16	E B 16	E B 16	E B 16	E B 16	20	E B 16	E B 20	G	34	G	G	40	38	39	40	J A 46	J A 44	J A 25	J A 22	21	18	18	E B 16
21	E B 19	E B 16	E B 16	E B 16	E B 16	E B 16	21	G	G 18	G 23	36	39	J A 44	J A 44	J A 45	J A 43	G 30	26	18	J A 18	J A 16	J A 26	J A 20	J A 20
22	J A 26	J A 32	J A 27	E B 20	E B 16	E B 16	E B 16	G	G 19	33	37	40	46	G	G 22	40	35	J A 29	J A 26	E B 16	E B 16	E B 16	E B 16	J A 28
23	J A 22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	40	40	39	40	36	G 32	27	E B 17	E B 16	19	E B 16	E B 16	E B 16
24	E B 16	18	E B 16	E B 16	E B 16	20	E B 16	G	G 19	G 26	39	44	45	40	E B 46	G	33	J A 33	J A 30	J A 23	J A 22	22	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	J A 18	J A 16	G	G	33	B	E B 56	E B 49	E B 43	E B 44	G 24	35	27	G	E B J A 16	20	21	E B J A 16	17
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	G	G	E B 55	G	40	36	J A 37	J A 23	J A 20	J A 19	33	E B 16	E B 16
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	34	E B 44	G	44	G	J A 52	45	J A 39	J A 36	J A 32	J A 20	E B 16	E B 16	E B 16	E B 16
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	G	G	G	39	39	35	G	J A 21	E B 16	J A 22	21	J A 16	19
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	27	26	27	27	27	27	27	27	28	28	28	28	28	28	28
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	E G 35	38	E G 38	38	38	33	28	J A 20	J A 19	J A 19	20	E B 16	E B 18
U Q	18	18	16	E B 16	16	18	16	E B 17	25	33	36	40	45	44	J A 45	40	J A 37	J A 32	J A 26	J A 23	J A 22	J A 23	20	J A 23
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	G	G	G	G 24	G	G 34	G	G	G	G	E B 16	E B 16	E B 16	E B 16	E B 16

FEB. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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	14	16	24	21	31	28	23	16	16	16	16	16	16	16	16
2	16	16	16	16	16	16	16	16	16	16	16	20	41	21	19	16	16	16	16	16	16	16	16	16
3	16	16	16	16	16	16	16	16	16	16	20	20	22	22	28	18	16	16	16	16	16	16	16	21
4	16	16	16	16	16	16	16	16	16	C	C	C	C	C	C	C	C	16	16	16	16	16	16	16
5	16	16	16	16	16	16	16	16	16	16	17	20	30	30	24	24	18	17	16	16	16	16	16	16
6	16	18	16	16	16	16	16	16	16	16	17	23	22	41	29	22	17	16	16	16	16	16	16	16
7	16	16	16	16	16	16	16	16	16	16	20	20	20	19	59	16	16	16	16	16	16	16	16	16
8	16	16	16	16	16	16	16	16	17	16	16	21	19	23	18	17	19	16	16	16	16	16	16	19
9	16	16	16	16	16	16	16	16	16	16	20	19	24	22	22	20	20	16	16	16	16	16	16	16
10	16	16	16	16	16	16	16	17	16	16	22	18	24	46	26	16	15	16	17	16	16	16	16	16
11	16	16	16	16	16	16	16	17	16	16	21	23	27	30	26	17	19	16	16	16	16	16	16	16
12	16	16	16	16	16	16	16	18	20	18	23	26	28	45	45	43	28	18	16	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	18	22	56	54	44	23	30	17	17	18	16	16	16	16	16
14	16	17	16	16	16	16	17	16	16	17	20	26	60	26	30	22	21	16	16	16	16	16	16	21
15	16	16	16	16	16	16	16	17	16	20	18	21	23	23	20	21	20	16	16	16	16	16	16	16
16	16	16	16	16	16	16	16	19	20	19	20	26	27	20	24	22	16	16	16	16	16	16	16	16
17	16	16	16	16	16	16	16	16	16	16	18	17	30	28	22	27	20	18	16	16	16	16	16	16
18	16	16	16	16	16	16	16	16	16	20	20	21	24	21	20	18	18	16	16	16	16	16	16	16
19	16	16	16	16	16	16	16	16	16	19	19	40	18	20	20	21	19	18	16	16	16	16	16	16
20	16	16	16	16	16	16	16	20	16	20	19	20	21	26	23	20	18	19	16	16	16	16	16	16
21	19	16	16	16	16	16	16	16	16	17	19	26	24	23	21	21	19	17	16	16	16	16	16	16
22	16	16	16	20	16	16	16	16	16	17	16	22	28	20	16	16	16	14	16	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	17	20	30	30	22	24	21	16	17	16	16	16	16	16
24	16	16	16	16	16	16	16	16	16	16	21	20	21	26	46	27	21	16	16	16	16	17	16	16
25	16	16	16	16	16	16	16	16	16	16	B	56	49	43	44	18	18	16	16	16	16	16	16	16
26	16	16	16	16	16	16	16	16	16	17	23	30	29	55	28	28	20	20	16	16	16	16	16	16
27	16	16	16	16	16	16	16	16	16	19	44	24	31	28	25	28	20	16	16	16	16	16	16	16
28	16	16	16	16	16	16	16	16	16	18	24	24	25	29	21	25	20	19	16	16	16	16	16	16
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	28	28	28	28	28	28	28
MED	16	16	16	16	16	16	16	16	16	16	20	22	25	26	24	21	19	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	18	22	26	30	31	28	25	20	17	16	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	16	16	17	20	22	22	21	18	16	16	16	16	16	16	16	16

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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	301	299	334	341	323	302	294	309	338	R	R 361	R	R	335	U R 330	R 315	R 336	R 350	340	320	311	320	310	316
2	303	308	322	313	343	284	300	316	355	369	R 353	R 330	R	U R 323	316	330	332	332	348	335	318	315	306	292
3	294	311	324	311	340	395	286	330	358	352	325	R	326	R	R 338	333	329	335	348	319	322	324	308	315
4	306	288	275	288	334	346	301	315	339	C	C	C	C	C	C	C	C	R	R 356	324	313	351	327	295
5	264	314	303	298	345	H 307	302	332	360	345	349	R 343	R	R	R	U R 351	R 334	321	339	347	324	315	323	303
6	291	278	280	327	349	289	288	340	354	348	327	R 350	R	R	R	U R 348	312	344	342	330	350	330	312	315
7	273	274	276	291	307	310	303	R 318	344	R	R	R	R	U R 341	R	R 328	332	R 345	346	322	334	345	330	323
8	303	305	298	291	296	277	276	331	372	370	R 354	R	R	U R 322	U R 313	U R 312	328	350	331	325	331	312	306	313
9	285	292	291	293	300	287	285	316	R 355	R 343	U R 349	R 324	R	R	314	316	324	320	336	327	340	343	274	295
10	288	258	297	339	318	280	272	334	345	339	347	R	R	R	R	R	R	U R 321	R 335	U R 352	326	313	304	305
11	313	307	302	283	306	359	301	322	350	379	339	R 348	R	U R 336	340	314	321	332	336	319	325	318	296	307
12	314	313	318	322	365	312	289	312	351	U R 354	R 359	R	R	R	U R 320	R	R	R	U R 339	333	313	307	303	310
13	281	282	299	318	371	283	297	320	336	R	R	R	R	R	R	R	U R 325	R 345	U R 355	335	316	326	294	310
14	317	303	306	304	346	356	315	346	366	352	331	332	R	R	R	U R 348	U R 355	U R 355	R 366	R 314	319	337	305	296
15	293	293	322	327	337	306	304	318	349	362	R	R	U R 347	U R 336	R	R 316	R 345	332	343	327	306	346	307	315
16	306	272	286	R	389	290	299	312	354	355	342	R 317	R	R	R	R	R 324	331	337	326	319	314	303	310
17	312	320	297	299	278	275	283	325	341	R	U R 346	R	R	R	351	R	U R 352	340	327	331	318	330	339	303
18	297	297	294	306	336	345	294	332	361	345	R	U R 350	U R 327	R	R	317	U R 338	351	353	337	311	328	325	307
19	295	301	303	301	313	311	286	320	R 363	R	U R 346	R	U R 349	R	R	R	R	R	348	334	308	295	301	303
20	287	284	V 337	347	285	312	302	315	338	R 351	R	R	R 343	U R 334	R	R	U R 301	327	R 345	320	311	325	279	268
21	279	306	343	319	285	277	284	319	345	U R 350	R	R	R	R	R	R	U R 339	R 334	343	342	317	337	317	302
22	301	286	274	278	303	321	315	340	338	R 335	R	320	323	306	R	R	J R 251	328	356	323	305	332	330	343
23	294	296	289	301	298	305	342	326	363	360	R	R	R	R	R	R	U R 332	R 335	332	317	316	323	297	293
24	285	301	335	285	268	257	270	323	H 329	331	R	330	320	R	R	R	R 325	335	337	336	312	316	301	304
25	288	290	295	327	332	296	319	337	336	R 338	B	R	R	R	R	R	R	U R 332	330	324	317	314	315	304
26	302	312	310	311	310	289	297	335	R 363	U R 327	R	R	U R 334	R	R	R	R 325	326	339	318	299	315	299	R 309
27	306	288	303	318	365	313	293	347	352	348	U R 325	R	R	R	R	R	R	R	U R 329	R 335	U R 305	328	U R 329	300
28	295	291	308	294	286	281	244	314	320	R	R	R 308	R 300	R 308	R	R	R	309	R 336	R 316	289	307	293	294
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	27	28	28	28	28	28	21	15	11	9	9	8	12	21	24	28	28	28	28	28	28
MED	295	296	302	306	320	304	296	322	350	350	R 346	R 330	R 327	U R 334	325	R 322	R 329	333	340	326	316	324	306	304
U Q	304	306	320	322	344	312	302	333	359	358	R 353	R 348	U R 345	U R 336	339	U R 340	U R 337	R 344	348	335	323	331	320	312
L Q	288	287	292	293	299	284	286	316	338	R 341	331	R 320	322	R 315	315	316	324	328	336	320	311	314	300	298

FEB. 2014 M(3000)F2 (0.01)

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FEB. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	L	L	L	A	L	U L 413							
2									433		L	L	L	L	L	L								
3									468	L	L	U L 376	L	L	L	L	L							
4										C	C	C	C	C	C	C	C	449						
5										L	L	L	L	L	L	L	L							
6											L	L	L	L	L	L								
7										L	L	L	L	U L 371	B	L	L							
8										L	L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L	L							
10									475	L	L	L	L	L	L	L								
11									431		L	L	L	L	L	L	L							
12									L	L	L	L	L	L	L	L		U L 412						
13									489	L	L	L	L	L	L	L	L	U L 416						
14									461	L		L	B	L	L	L	L							
15										L	L	L	L	L	L	L	L	U L 414						
16										L	L	L	L	L	U L 364	L								
17									484	L	L	L		L	L	L	L							
18										L	L	L	L	L		L	L							
19										L	L	L	L	L	L	L	L	L	R 432					
20									U L 395	L	L	L	L	L	L	L								
21										L	L	L	L	L	L	L	L		424					
22										L	L	L	L	L	L	L	L	L						
23										L	L	L	L	L	L	L	L		401					
24										L	L	L	L	L	L	L	L	L						
25										L	B		L	L	L	L	L	L	454					
26											L	L	L	L	L	L	L							
27										L	L	L	L	L	L	L	L							
28									417		L	L	L	L	L	L	L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									9			1		1	1		1	4	4					
MED									461			U L 376		U L 371	U L 364		U L 413	U L 415	428					
U Q									480									432	443					
L Q									424									U L 413	412					

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FEB. 2014 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									250	224	224	240	256	242	258	236	240							
2									228		232	242	256	A	290	262								
3									228	228	262	256	246	250	240	232	264							
4										C	C	C	C	C	C	C	C							
5										240	246	254	270	262	258	242	248	224						
6											240	244	268	268	276	256								
7										232	242	238	284	268	268	254	248							
8										224	238	246	254	236	274	240	254							
9										230	236	268	264	258	240	254	270							
10									216	226	250	266	252	250	248	232								
11									234		250	248	264	240	240	276	226							
12									248	236	232	260	256	256	254	254		224						
13									232	244	254	270	254	260	256	254	238	228						
14									216	222		264	254	292	266	250	240							
15										236	256	266	248	256	256	240	236	220						
16										236	236	254	284	264	262	244								
17									220	228	226	268		278	254	240	224							
18										216	258	236	252	256		250	250							
19										240	244	246	246	268	284	262	274	242	220					
20									234	240	258	246	246	270	264	256								
21										240	244	240	236	254	242	238	236		216					
22										240	248	268	252	236	258	246	228	228						
23										232	236	250	266	274	272	258	244		200					
24										256	278	254	240	240	244	240	240	220						
25										240	B		268	268	262	254	248	216	210					
26											240	254	262	284	264	270	244							
27										242	252	246	258	294	290	270	246							
28									222		266	246	238	244	256	236	244							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									11	22	25	26	26	26	26	27	21	8	4					
MED									228	236	244	252	255	259	258	250	244	224	213					
U Q									234	240	255	264	264	268	268	256	249	228	218					
L Q									220	228	236	246	248	250	254	240	237	220	205					

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FEB.2014 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	262	270	228	216	218	266	284	268	230	224	216	212	204	204	A	224	198	228	200	208	222	230	236	244
2	258	272	256	256	216	282	294	266	208	216	222	216	228	A	244	224	230	222	200	204	242	228	236	262
3	286	274	242	244	228	194	318	256	186	222	212	226	224	208	214	206	206	224	202	192	230	218	250	266
4	256	290	322	304	238	216	292	262	224	C	C	C	C	C	C	C	C	196	206	194	228	210	224	344
5	364	286	272	292	226	216	286	238	220	220	226	210	198	214	224	220	210	218	206	200	214	198	226	270
6	280	324	318	254	216	284	300	238	216	220	208	212	212	218	214	212	216	232	206	216	212	196	248	292
7	314	322	314	284	236	252	262	252	226	220	214	212	200	Y 236	B	246	236	228	210	210	248	206	218	244
8	258	264	264	290	266	328	332	254	220	212	222	218	214	208	212	222	238	228	210	220	210	200	260	262
9	278	278	268	256	248	260	288	248	230	220	210	212	222	226	226	206	212	222	222	224	202	190	258	278
10	294	326	280	220	222	278	336	248	172	218	216	254	238	244	220	228	228	232	212	206	270	192	240	256
11	236	232	250	288	256	200	260	260	214	216	216	216	H 210	220	224	204	216	234	214	220	212	204	228	256
12	238	250	242	246	208	250	314	268	234	228	224	222	218	232	232	236	242	218	214	196	208	220	238	280
13	296	302	280	248	202	332	292	256	162	228	224	B	B	220	220	230	218	214	214	198	210	234	252	270
14	266	270	264	270	234	200	262	234	190	218	218	210	B	224	252	214	230	226	204	206	226	210	260	282
15	304	294	246	242	242	222	272	250	226	220	216	216	216	242	214	214	220	214	216	190	248	216	254	268
16	276	316	296	230	194	284	290	256	226	200	202	202	242	234	222	212	218	232	222	200	230	238	254	246
17	248	248	262	276	266	310	290	246	172	218	212	220	250	240	214	204	216	216	222	204	244	228	228	244
18	254	266	274	262	234	212	248	240	224	204	196	226	228	242	254	246	226	222	212	196	238	238	248	262
19	278	276	276	268	256	240	288	250	218	224	222	222	B	254	262	230	224	230	190	208	226	246	226	258
20	266	312	222	198	282	258	278	252	206	220	228	220	228	212	210	214	234	238	214	200	220	208	282	350
21	328	258	202	242	314	334	320	246	222	226	228	228	224	250	218	214	216	224	210	206	206	218	230	258
22	260	340	332	332	274	244	204	226	202	212	214	208	240	210	200	226	210	A	206	202	232	224	224	230
23	254	264	278	262	260	258	214	216	220	212	226	208	238	220	210	226	210	220	226	204	224	210	250	264
24	266	266	224	286	322	376	322	236	H 204	216	228	216	226	212	230	228	214	A	212	206	218	220	244	248
25	270	270	268	234	206	256	246	218	206	208	B	258	236	216	230	224	214	A	182	210	214	218	Q 232	234
26	252	248	246	248	232	260	264	238	216	212	210	216	202	254	228	228	228	230	200	206	226	244	218	230
27	260	272	272	248	208	216	284	220	210	218	226	220	224	224	262	238	230	234	218	196	222	244	220	248
28	262	264	254	268	272	206	398	250	B	226	224	228	210	222	206	218	216	226	212	216	244	234	234	262
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	27	27	26	26	24	26	25	27	27	25	28	28	28	28	28	28
MED	266	272	266	256	235	257	288	249	216	218	217	216	224	223	222	224	218	226	211	205	225	218	237	262
U Q	283	298	279	280	263	283	307	256	224	222	224	222	232	240	231	228	230	231	214	209	235	232	251	270
L Q	257	264	246	243	217	216	263	238	204	212	212	212	211	214	214	214	214	219	205	199	213	207	227	247

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FEB. 2014 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 108	104	104	104	102	110	104	106		A	A						
2								B 104	98	108	106	B	104	104	102	106	108							
3								B 110	106	102	102	102	102	106	98	114	132							
4								B 116	C	C	C	C	C	C	C	C	100							
5								B 106	104	100	100	114	112	106	106	106	106							
6								A 106	100	100	100	102	B	108	106	100	108							
7								B 102	98	94	96	102	A	B	A	110	112							
8								B 108	98	98	100	98	98	102	100	A	A							
9								B 106	102	102	102	102	102	102	104	104	104							
10								B 106	102	102	100	102	B	104	90	104	110	B						
11								B 104	100	100	102	104	106	102	102	102	102	E B 160						
12								B 112	108	104	110	108	B	B	B	108	106	B						
13								142	104	102	102	B	B	B	102	116	100	104	B						
14								B 106	104	104	106	B	102	104	100	102	120	A						
15								B 102	102	114	102	108	112	110	104	102	114	A						
16								B 110	102	102	104	106	100	102	102	102	106	B						
17								A 152	102	100	100	104	104	102	104	104	A	A						
18								E B 172	100	100	106	108	96	108	112	112	108	104	A					
19								E B 154	100	104	100	B	96	96	A	A	114	A	B					
20								B 102	102	98	98	98	104	104	102	A	A	A						
21								E B 166	106	106	100	104	102	102	100	100	116	A	A					
22								E B 182	110	100	110	108	106	98	104	104	102	A	A					
23								E B 164	104	102	98	98	104	104	100	A	112	A	B					
24								144	108	110	100	98	98	98	B	112	102	A	A					
25								162	98	100	B	B	B	B	B	104	102	102	98					
26								E B 146	102	100	100	106	104	B	102	104	102	104	A					
27								150	104	104	B	104	104	102	102	104	104	A	A					
28								E B 154	104	100	100	100	100	104	100	104	98	102	A					
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								11	28	27	25	24	23	20	22	23	24	18	2					
MED								E B 154	106	102	100	102	102	103	103	104	104	106	129					
U Q								E B 166	108	104	104	105	104	105	104	106	108	110						
L Q								146	103	100	100	100	100	101	102	102	102	104						

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FEB. 2014 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	B	B	B	B	B	96	88	88	88	90	90	G	G	G	100	102	98	96	96	100	96	94	B	B
2	90	90	94	B	B	B	B	B	196	208	148	136	B	112	108	106	118	108	102	102	B	88	90	B
3	B	96	96	B	B	B	B	B	170	174	G	G	112	114	116	102	100	100	98	B	90	92	94	B
4	B	B	B	B	B	92	90	B	104	C	C	C	C	C	C	C	C	150	98	96	96	94	94	92
5	B	B	B	B	B	92	B	G	G	G	G	G	110	G	112	G	130	106	B	B	B	90	B	86
6	90	B	B	B	B	B	B	92	G	112	112	112	G	B	106	114	124	108	B	B	B	98	94	B
7	94	B	96	B	B	98	B	B	176	G	G	G	94	92	B	88	86	84	84	100	96	B	92	88
8	88	B	B	B	B	B	B	B	G	110	112	112	112	114	112	104	98	108	88	86	86	B	B	B
9	B	106	B	B	B	B	B	B	G	114	110	106	108	114	116	G	108	G	104	96	104	92	B	B
10	B	B	B	B	B	B	B	B	118	G	160	158	120	B	110	102	102	86	B	106	94	B	B	B
11	B	B	B	B	B	B	94	B	206	G	G	G	126	G	116	114	G	G	G	B	B	B	B	B
12	B	B	B	B	B	B	B	B	G	116	B	G	112	B	B	B	G	G	96	96	B	92	B	88
13	B	B	B	B	104	104	B	G	160	194	G	B	B	B	G	G	G	164	B	B	B	106	96	88
14	88	B	B	96	96	B	96	B	182	G	G	G	B	104	104	106	G	98	100	92	92	92	92	88
15	88	92	B	B	94	B	B	G	G	G	96	114	94	94	94	114	108	98	98	106	B	86	90	B
16	B	B	B	B	B	B	B	B	G	G	G	G	G	G	G	G	G	124	106	108	98	B	B	B
17	B	B	B	B	B	B	B	90	164	G	G	140	108	108	108	108	G	96	94	B	94	B	B	84
18	B	106	96	96	92	B	B	G	134	144	98	96	G	94	96	96	94	92	88	90	90	86	94	98
19	94	B	B	B	B	B	B	G	G	G	104	B	102	100	100	98	122	112	B	B	94	94	B	88
20	B	B	B	B	B	88	B	B	G	212	G	G	112	110	112	104	98	100	98	98	98	94	94	B
21	B	B	B	B	B	B	94	G	94	98	120	114	108	108	104	104	100	96	98	100	96	90	84	84
22	94	90	90	B	B	B	B	G	100	114	114	106	104	G	86	102	102	104	84	B	B	B	B	92
23	94	B	B	B	B	B	B	G	G	G	G	112	112	110	106	108	102	100	B	B	98	B	B	B
24	B	88	B	B	B	94	B	G	100	100	120	110	108	106	B	G	104	100	98	98	98	100	B	B
25	B	B	B	B	B	100	96	G	G	208	B	B	B	B	B	94	104	102	G	B	88	90	B	88
26	B	B	B	B	B	B	B	G	G	G	G	G	G	B	G	108	106	102	98	96	94	90	B	B
27	B	B	B	B	B	B	B	G	G	118	B	G	142	G	104	106	102	98	94	94	B	B	B	B
28	B	B	B	B	B	B	B	G	G	G	G	G	G	G	116	106	100	G	98	B	92	90	88	84
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	7	5	2	4	8	6	3	14	15	12	12	17	14	20	21	21	24	20	17	19	19	12	13
MED	90	92	96	96	95	95	94	90	147	116	112	112	110	108	107	104	102	100	98	98	94	92	93	88
U Q	94	106	96		100	99	96	92	176	194	120	125	112	112	112	108	108	108	98	101	98	94	94	90
L Q	88	90	92		93	92	90	88	100	110	101	108	106	100	102	102	99	97	94	95	92	90	90	85

IONOSPHERIC DATA STATION Yamagawa

FEB. 2014 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						F1	F2	L1	L1	L1	L1				C2	C1	L3	L2	F4	F3	F2	F2		
2	F1	F4	F1						HH11	H1	HL11	HL11		CL11	CL21	CL11	CL11	C1	F4	F1		F2	F1	
3		F3	F2					H1	H1	H1			C1	C1	C1	C1	L1	LH21	F1		F2	F1	F1	
4						F1	F1		L1									H1	F2	F1	F1	F1	F1	F3
5						F1							C1		C1		C1	C2				F1		F1
6	F1							L1		C1	C1	C1			C1	C1	C1	C1				F2	F1	
7	F1		F1			F1			H1				L1	L1		L1	L2	L21	F2	F1	F6		F1	F1
8	F1									C1	C1	C1	CL11	CL11	CL11	C1	L1	CL21	FF11	F1	F1			
9		F1								C1	C1	C1	C1	C1	C1		C1		F1	F3	F1	F1		
10									C1		H1	H1	C1		C1	C1	CL11	L1		FF31	F3			
11							F2		H1				C1		C1	C1								
12										C1			C1						L1	F3		F1		F1
13					F1	F1			H1	H1								H1				F4	F4	F2
14	F1			F1	F1		F1		H1					C1	C1	C1		L2	LL12	F3	F3	F1	F1	F1
15	F1	F1			F2						L1	C1	L1	L1	L1	C1	C1	L1	L2	FF11		FF11	F1	
16																		C1	C4	FF21	F1			
17								L1	HL11			H1	C1	C1	C1	C1		L1	L2		F2			F1
18		F1	F1	F1	F1				H1	H1	L1	L1		L1	L1	L1	L1	L1	L3	F2	F1	FF31	F3	F2
19	F1										C1		C1	C1	L1	L1	CL11	CL11			F1	F1		F2
20						F1				H1			C1	C1	C1	C1	L3	L1	L2	F1	F1	F1	F1	
21							F1		L1	L1	C1	C1	C1	C1	C1	C1	L1	L1	L1	F1	F1	F2	F2	F2
22	F2	F4	F2						L1	C1	CL11	CL11	C1		L1	CL11	CL12	LL12	L2					F2
23	F1											C1	C1	C1	C1	L1	L1	L1			F1			
24		F1				F1			L1	L1	C1	C1	C1	C1			C1	L2	LL51	F3	FF21	F2		
25						F1	F1			H1						L1	C1	C1			F1	F1		F1
26																C1	C1	C2	L1	F1	F2	F2		
27										C1			H1		C1	C1	C1	L2	L3	F2				
28															C1	C1	C1		L1		F2	F1	F1	F1
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 54	X 56	X 50	X 40	X 38	X 34	X 35													X 130	X 114	X 99	X 95	X 86
2	X 69	X 62	X 56	X 54	X 50	X 37	X 36													X 77	X 76	X 85	X 73	X 62
3	X 54	X 59	X 53	X 48	X 50	X 34														X 90	X 70	X 77	X 65	X 56
4	X 44	X 43	X 42	X 42	X 45	X 36	X 31													X 133	X 97	X 95	X 70	X 58
5	X 50	X 50	X 49	X 50	X 49	X 32	X 32													X 124	X 100	X 112	X 92	X 63
6	X 46	X 42	X 41	X 46	X 37	X 36	X 36			C	C	C	C	C	C	C	C			X 116	X 103	X 99	X 68	X 59
7	X 56	X 53	X 52	X 55	X 50	X 46	X 49													X 110	X 101	X 121	X 96	X 79
8	X 73	X 64	X 56	X 50	X 46	X 39	X 38													X 107	X 107	X 98	X 86	X 76
9	X 69	X 63	X 57	X 53	X 43	X 45	X 45													X 111	X 108	X 101	X 92	X 84
10	X 79	X 62	X 60	X 66	X 39	X 37	X 36													X 140	O X 148	O X 150	82	X 105
11	102	101	X 66	X 54	X 55	X 50	X 35													X 103	X 108	X 105	X 95	X 98
12	X 98	X 77	X 66	X 62	X 39	X 34	X 32													O X 150	X 143	X 118	X 108	X 95
13	X 82	X 77	X 76	X 73	X 41	X 34	X 34				C	C	C	C	C	C	C	C		X 136	X 120	X 118	X 95	X 74
14	X 73	X 72	X 59	X 58	X 60	X 39	X 31			C	C	C	C	C	C	C	C		X 162		X 138	X 118	X 96	X 80
15	X 70	X 73	X 60	X 50	X 44	X 37	X 37														X 112	X 109	X 94	X 72
16	X 60	X 52	X 46	X 52	X 40	X 33	X 36														X 102	X 92	X 81	X 81
17	X 72	X 69	X 63	X 53	X 52	X 51	X 51														X 103	X 106	X 100	X 86
18	X 78	X 68	X 52	X 49	X 49	X 43	X 34														X 88	X 84	X 78	X 60
19	X 60	X 58	X 52	X 54	X 46	X 42	X 43														X 116	X 95	X 99	X 38
20	X 73	X 67	X 94	X 59	X 33	X 34	X 34														X 134	X 119	X 85	X 64
21	X 69	X 72	X 58	X 39	X 38	X 38	X 39														X 121	X 112	X 84	X 70
22	X 65	X 55	X 52	X 51	X 53	X 56	X 44														X 116	X 119	X 107	X 76
23	X 62	X 60	X 53	X 55	X 47	X 49	X 48														X 164	X 162	X 138	X 106
24	X 93	X 80	X 79	X 54	X 46	X 45	X 51													X 126	X 125	X 129	X 115	X 118
25	X 96	X 86	X 80	X 81	X 61	X 44	X 43														X 160	O X 194	O X 196	X 160
26	X 106	X 87	X 72	X 65	X 53	X 49	X 46														X 154	X 196	170	125
27	118	108	X 86	X 86	X 73	X 47	X 42														X 181	201	197	171
28	131	X 125	117	113	88	X 55	X 46														X 122	X 134	157	123
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	27												1	14	28	28	28	28
MED	X 71	X 66	X 58	X 54	X 46	X 39	X 37												X 162	X 120	X 115	X 112	X 95	X 80
U Q	X 88	X 77	X 69	X 60	X 52	X 46	X 45													X 133	X 136	X 125	X 108	X 102
L Q	X 60	X 57	X 52	X 50	X 40	X 35	X 34													X 107	X 102	X 98	X 83	X 64

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 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	48	50	R 44	34	33	28	29	38	78	114	124	137	U R 148	U R 142	R 139	U R 146	R 130	130	133	124	J R 108	93	89	80
2	63	56	50	48	44	31	30	41	84	102	115	128	R 130	134	139	136	128	110	94	71	70	79	67	56
3	48	53	47	42	R 44	28	21	37	76	102	113	130	140	136	R 128	R 132	115	114	110	84	64	71	59	50
4	38	37	36	36	39	30	25	37	79	110	132	131	U R 138	Y	U Y 148	Y	U R 137	Y	U R 134	127	91	89	64	52
5	44	44	43	44	43	26	26	42	72	92	109	124	128	U R 141	U R 146	R 156	U R 150	U R 150	R 127	118	94	106	86	57
6	40	36	35	40	31	30	30	44	80	C	C	C	C	C	C	C	C	127	124	110	97	93	62	53
7	50	J R 47	46	49	44	40	43	54	90	116	126	R 131	128	R 140	R 140	138	126	130	120	J R 104	95	115	90	73
8	67	58	50	44	40	33	32	51	89	116	127	136	R 132	J R 131	137	134	U R 123	J R 127	112	101	R 101	92	80	70
9	63	57	51	47	37	39	39	51	102	J R 119	115	125	130	125	113	108	104	112	116	105	102	95	R 86	R 78
10	R 73	56	R 54	R 60	33	31	30	J R 47	88	104	R 122	R 140	R 138	136	R 122	J R 120	J R 131	R 138	U R 142	U R 134	U R 142	U R 144	U F 72	U R 99
11	U F 92	U F 95	60	J R 48	49	44	29	R 43	96	114	96	110	106	109	105	98	R 102	109	105	97	R 102	99	89	92
12	92	71	60	J R 56	33	28	26	41	87	R 122	136	U R 128	139	U R 154	U R 158	U R 144	D Y 140	D Y 139	U R 152	U R 144	U R 137	112	J R 102	89
13	76	71	70	67	35	28	28	42	79	114	C	C	C	C	C	C	C	C	U R 131	U R 130	R 114	R 112	89	68
14	67	66	53	52	54	33	25	44	79	C	C	C	C	C	C	C	C	R 159	R 156	148	132	112	90	74
15	64	67	54	44	38	31	31	41	82	109	120	134	150	R 153	J R 169	R 162	147	142	129	126	106	R 103	J R 88	J R 66
16	54	46	40	46	34	27	30	42	85	100	114	119	140	152	156	154	143	131	133	116	96	86	75	75
17	66	63	57	47	46	45	45	59	95	118	126	121	125	152	R 152	147	132	118	112	110	97	100	94	R 80
18	72	62	46	43	43	37	28	46	85	98	110	126	144	152	153	158	R 144	132	110	93	R 82	78	72	54
19	54	52	46	48	40	36	37	51	102	100	114	124	131	133	146	158	R 146	144	135	125	110	89	93	92
20	67	61	88	52	27	28	28	48	86	114	132	137	132	148	R 162	165	156	158	145	120	128	113	79	58
21	63	66	52	33	32	32	33	51	96	117	126	135	142	146	141	144	132	128	126	128	115	106	78	64
22	59	49	46	45	47	50	38	54	92	108	136	152	R 168	160	156	R 159	152	142	143	130	110	113	101	70
23	56	54	47	49	41	43	42	57	89	104	120	133	137	148	156	155	154	152	147	R 148	U R 158	R 156	U R 132	100
24	87	74	73	48	40	39	45	59	86	106	141	R 168	158	140	151	154	143	135	133	120	119	123	R 109	R 112
25	90	80	74	75	55	38	37	54	87	104	U R 129	136	136	135	141	142	135	128	132	129	U R 154	U R 188	U R 190	J R 154
26	100	81	66	59	47	43	40	64	96	106	126	126	125	132	138	141	140	128	128	139	148	190	F 158	F 108
27	U F 100	F 98	80	80	67	41	36	60	92	102	119	125	129	133	138	142	139	138	142	150	U R 175	U F 163	F 182	U F 142
28	F 120	119	F 109	F 103	F 79	49	40	61	96	120	134	153	146	129	130	131	131	129	129	124	116	128	F	F 106
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	25	25	25	24	25	24	25	26	28	28	28	28	27	28
MED	65	60	52	48	40	33	30	48	87	108	124	131	137	140	141	144	137	130	130	124	109	106	89	74
U Q	82	71	63	54	46	40	38	54	94	116	130	136	143	150	154	156	145	142	138	130	U R 130	119	R 101	96
L Q	54	51	46	44	34	29	28	42	81	102	114	125	130	133	138	135	129	127	118	108	96	92	75	61

FEB. 2014 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	U L 528	L 504	L									
2										L	L	L	L	L	L	L	L							
3										L	L	L	U L 516	U L 528		L	L							
4										L	L	L	L	B	L	L	L	L						
5											L	L	L	L	L	L	L							
6										C	C	C	C	C	C	C	C	L						
7										L	L	L	L	L		A	L							
8											L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L		L						
10											L	L	L	L	L	L	L							
11											L	L	L	L	A	L		L						
12										L	L	L	L	L		L	L	L						
13										L	C	C	C	C	C	C	C	C						
14										C	C	C	C	C	C	C	C							
15										L	L	L	L	U L 584	U L 516	L	L							
16										L	L	L	U L 560	U L 560		L	L	L						
17										L	L	L	L	L	L	L	L		208					
18										L	L	L	U L 524	L	L	L	L							
19										L	L	L	U L 528	L	L	L	L	L						
20										L	L	L	L	L	L	L	L	L						
21									272	L	L	L	L	L	L	L	L	L						
22										L	L	U L 532	U L 548	L	L	L	L		212					
23											L	L	L	L	L	L	L	L						
24										L	L	L	L	L	L	L	L							
25									L	L	B	L	U L 532	L	L	L			228					
26											L	L	L	L	L	L	L	L						
27											L	L	L	L	L	L	L	L						
28										L		L	L	U L 492	L		L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1			1	7	5	1				3					
MED									272			U L 532	U L 528	U L 528	U L 516				212					
U Q													U L 548	U L 572					228					
L Q													U L 524	L 498					208					

FEB. 2014 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	240	296	B	B	B	B	B	UR 384	A	A	A					
2								B	240	UR 308	R 348	R	B	B	R	A	UR 328	UA 256	B					
3							JK 128	B	236	R 296	R	B	B	B	B	A	B	UR 280	A					
4								B	244	300	B	B	B	B	B	B	R 308	260	A					
5								B	244	UR 288	B	R	B	B	B	B	324	276	B					
6								B	240	C	C	C	C	C	C	C	C	272	A					
7								B	244	R 280	UR 304	B	B	B	B	A	UA 332	UA 276	A					
8								B	244	R 292	356	B	B	B	B	B	332	UA 268	B					
9								B	244	304	A	B	B	B	B	A	A	A	B					
10								B	252	UR 292	B	B	B	B	B	B	R	A	B					
11								B	UR 248	R 296	B	B	B	B	B	B	R 284	276	B					
12								B	260	B	B	B	B	B	B	B	B	A	B					
13								172	236	B	C	C	C	C	C	C	C	C	B					
14								B	R	C	C	C	C	C	C	C	C	A	A					
15								JA 160	236	296	328	380	376	376	380	A	A	A	A	B				
16								B	240	292	R 340	UR 372	UR 376	392	R 376	R 360	320	260	A	B				
17								B	UA 232	R 288	UA 340	UR 376	UR 404	UA 380	A	A	324	276	A	A				
18								B	244	304	348	R 360	352	R 384	372	372	328	A	A	A				
19								168	244	292	344	368	B	R 392	372	344	316	272	A	B				
20								B	236	312	352	352	372	B	A	A	A	A	200	B				
21								168	236	304	344	360	A	A	A	A	A	A	A	A				
22								B	256	300	344	364	UA 380	376	UA 356	A	A	276	172	B				
23								B	256	304	348	R 368	372	UA 372	UA 384	B	A	A	204	B				
24								B	256	312	360	372	UA 384	UA 372	R 356	UA 340	A	A	A					
25								176	244	308	B	B	B	R 388	R 388	368	336	A	A	B				
26								180	256	316	344	372	388	UR 408	392	364	328	A	A	A				
27								188	260	316	372	384	408	396	392	368	A	R 276	A	B				
28								192	268	312	352	388	396	R 400	384	348	312	A	A	A				
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	8	27	24	16	13	11	12	11	9	13	13	3					
MED							JK 128	174	244	300	346	372	380	386	380	364	324	276	200					
U Q								184	256	308	352	378	396	R 394	388	370	330	276	204					
L Q								168	240	R 292	342	362	372	376	372	346	314	264	172					

FEB. 2014 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E B 41	E B 43	E B 44	E B 43	E B 43	43	36	34	J A 24	E B 14	J A 44	J A 45	J A 28	20
2	E B 18	E B 15	E B 14	18	E B 14	E B 14	E B 14	E B 14	G 20	G	G	G 30	E B 44	E B 44	G 29	35	37	31	E B 20	J A 28	J A 61	E B 14	J A 21	18
3	E B 17	E B 14	E B 14	J A 22	J A 17	E B 14	J A 13	J A 16	27	G	G	E B 43	E B 45	E B 44	E B 54	48	E B 39	G	E B 19	E B 14	E B 14	E B 14	17	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	36	E B 43	E B 46	E B 52	E B 106	E B 43	E B 47	G	G	J A 32	J A 30	J A 24	J A 21	18	19
5	E B 14	E B 14	E B 14	E B 14	E B 14	J A 14	18	20	26	G	E B 44	G	E B 44	E B 46	E B 44	E B 44	G	G	E B 20	J A 15	J A 16	E B 14	23	E B 18
6	E B 14	E B 20	J A 20	J A 20	E B 14	E B 17	E B 14	E B 14	G	C	C	C	C	C	C	C	C	32	20	J A 20	20	J A 19	J A 18	J A 16
7	E B 16	E B 21	J A 17	J A 20	18	19	E B 14	E B 14	G	G	G	E B 44	E B 44	E B 47	50	J A 82	36	J A 35	J A 31	E B 14	J A 38	J A 29	E B 14	J A 17
8	20	J A 26	20	23	E B 14	E B 20	E B 14	E B 14	G	G	G	E B 41	E B 44	E B 44	39	E B 44	J A 48	J A 40	E B 22	E B 14	E B 14	23	E B 14	E B 18
9	E B 14	E B 14	J A 46	J A 22	E B 14	E B 14	E B 14	E B 14	G	G	38	44	47	E B 45	E B 48	36	32	32	E B 21	E B 14	E B 14	E B 14	19	E B 14
10	21	E B 20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E B 42	E B 43	E B 43	E B 44	E B 43	E B 45	G	31	E B 21	24	E B 14	E B 14	E B 14	E B 14
11	E B 14	E B 14	E B 14	E B 14	J A 18	J A 18	E B 14	E B 14	G	G	E B 41	E B 44	E B 44	E B 47	54	44	32	G	E B 19	E B 14	E B 14	E B 14	E B 14	E B 14
12	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 18	G	E B 40	E B 43	E B 44	E B 44	E B 44	E B 65	E B 44	E B 48	J A 32	E B 22	J A 18	26	E B 22	J A 32	E B 14
13	E B 14	E B 14	E B 14	E B 14	E B 14	J A 20	E B 14	G	27	E B 42	C	C	C	C	C	C	C	C	J A 30	18	19	26	J A 20	E B 14
14	E B 14	E B 22	E B 18	E B 18	E B 18	E B 17	E B 18	E B 20	G	C	C	C	C	C	C	C	C	J A 63	J A 72	J A 86	J A 38	J A 53	J A 22	20
15	18	E B 14	E B 14	E B 14	E B 14	E B 14	J A 21	G	G	32	37	44	J A 52	J A 52	42	41	36	34	J A 28	J A 20	J A 20	J A 18	J A 33	18
16	J A 18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 17	E B 14	26	G	G	40	G	44	40	39	G	29	J A 21	J A 16	J A 18	18	E B 14	E B J A 20
17	J A 16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	G	J A 44	G 37	46	J A 52	J A 71	39	J A 32	G 26	18	J A 35	J A 21	J A 21	E B 14	18
18	18	E B 14	E B 14	E B 14	J A 46	E B 14	J A 19	J A 21	G	G	G	G 28	G	41	G 28	43	37	J A 31	23	J A 18	E B 14	E B 19	E B 14	J A 17
19	20	J A 18	21	20	E B 14	J A 21	18	G	26	G	37	41	E B 40	43	G	G	G	30	22	J A 20	J A 17	J A 22	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	J A 18	J A 17	J A 16	E B 14	25	35	39	G	43	43	43	J A 43	J A 36	35	23	E B 14	J A 20	20	J A 22	E B 14
21	18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	25	G	38	42	J A 48	J A 56	J A 52	J A 54	J A 48	J A 41	J A 52	J A 86	J A 25	J A 21	E B 14	E B 14
22	19	J A 18	J A 28	J A 21	J A 17	E B 14	18	E B 14	G	G	G	42	41	42	44	J A 45	J A 44	G 25	G	E B 14	J A 18	E B 14	E B 14	E B 14
23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 18	G	G	G	G 30	42	44	43	42	38	30	G	E B 14	E B 14	19	E B 14	J A 18
24	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	28	G	G	45	43	J A 50	J A 45	J A 46	J A 37	J A 35	J A 31	19	E B 14	21	E B 14	E B 14
25	E B 13	J A 18	E B 14	E B 14	E B 14	E B 14	J A 19	G	G	G 28	E B 101	E B 45	E B 43	G	44	46	47	J A 36	20	J A 17	E B 14	21	J A 20	E B 14
26	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	43	G	42	43	40	J A 35	J A 29	J A 23	E B 14	E B 14	J A 22	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	40	42	G	43	51	43	37	G	J A 29	E B 14	E B 14	E B 20	J A 14	E B 14
28	E B 13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	44	48	48	42	42	38	31	J A 25	J A 30	J A 23	J A 22	J A 18	E B 14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	25	25	25	25	25	25	25	27	28	28	28	28	28	28
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 15	G	G	E G 37	E G 42	44	44	43	42	36	31	22	J A 18	18	20	18	E B 14
U Q	18	18	16	J A 19	J A 16	17	18	G	26	G	E B 42	44	46	J A 48	50	J A 46	40	J A 35	J A 29	J A 24	J A 24	J A 22	J A 22	18
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	42	43	42	42	G 32	G	20	E B 14	E B 14	E B 14	E B 14	E B 14

FEB. 2014 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E B 41	E B 43	E B 44	E B 43	E B 43	U Y 43	34	31	21	E B 14	29	30	25	20
2	E B 18	E B 15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G 17	G	G	U G 30	E B 44	E B 44	U G 29	U Y 35	U Y 37	31	E B 20	26	30	E B 14	E B 14	E B 14
3	E B 17	E B 14	E B 14	E B 14	E B 14	E B 14	K E 13	E B 14	26	G	G	E B 43	E B 45	E B 44	E B 54	44	E B 39	G	19	E B 14	E B 14	E B 14	E B 14	E B 14
4	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	36	E B 43	E B 46	E B 52	E B 106	E B 43	E B 47	G	G	26	E B 14	21	18	18	18
5	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	G	E B 44	G	E B 44	E B 46	E B 44	E B 44	G	G	E B 20	E B 14	E B 14	E B 14	20	E B 18
6	E B 14	E B 20	E B 20	18	E B 14	E B 17	E B 14	E B 14	G	C	C	C	C	C	C	C	C	31	20	E B 14	E B 14	19	17	E B 14
7	E B 16	E B 21	E B 14	E B 14	E B 14	18	E B 14	E B 14	G	G	G	E B 44	E B 44	E B 47	U Y 50	65	36	32	31	E B 14	22	25	E B 14	E B 14
8	18	23	20	20	E B 14	E B 20	E B 14	E B 14	G	G	G	E B 41	E B 44	E B 44	U Y 39	E B 44	42	38	E B 22	E B 14	E B 14	19	E B 14	E B 18
9	E B 14	E B 14	23	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	37	43	47	E B 45	E B 48	U Y 36	U Y 32	32	E B 21	E B 14	E B 14	E B 14	E B 14	E B 14
10	20	E B 20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E B 42	E B 43	E B 43	E B 44	E B 43	E B 45	G	30	E B 21	20	E B 14	E B 14	E B 14	E B 14
11	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E B 41	E B 44	E B 44	E B 47	54	43	U Y 32	G	E B 19	E B 14	E B 14	E B 14	E B 14	E B 14
12	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 18	G	E B 40	E B 43	E B 44	E B 44	E B 44	E B 65	E B 44	E B 48	32	E B 22	E B 14	22	E B 22	29	E B 14
13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	E B 27	42	C	C	C	C	C	C	C	C	E B 21	16	17	23	18	E B 14
14	E B 14	E B 22	E B 18	E B 18	E B 18	E B 17	E B 18	E B 20	G	C	C	C	C	C	C	C	C	33	19	21	21	45	E B 14	E B 14
15	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	32	36	40	44	42	40	40	33	33	21	E B 14	E B 14	E B 14	30	E B 14
16	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	G	G	40	G	44	40	38	G	28	20	E B 14	E B 14	E B 14	E B 14	E B 14
17	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	G	G 20	G 31	46	51	41	36	G 25	G 21	18	29	E B 14	E B 14	E B 14	E B 14
18	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G 28	G	40	G 26	41	36	29	22	E B 13	E B 14	E B 14	E B 14	E B 14
19	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	26	G	36	40	E B 40	42	G	G	G	29	21	E B 14	E B 14	17	E B 14	E B 14
20	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	25	35	38	G	43	42	40	39	34	34	22	E B 14	18	E B 14	18	E B 14
21	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	25	G	37	41	44	46	39	43	38	30	30	44	20	E B 14	E B 14	E B 14
22	E B 14	E B 14	19	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	42	40	41	42	37	33	G 22	G	E B 14	E B 14	E B 14	E B 14	E B 14
23	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 18	G	G	G	G 26	42	43	41	41	37	28	G	E B 14	E B 14	E B 14	E B 14	E B 14
24	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	28	G	G	43	43	48	44	45	34	34	29	E B 14	E B 14	E B 14	E B 14	E B 14
25	E B 13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G E 22	B E 101	B E 45	B E 43	G	43	44	45	33	19	E B 14	E B 14	E B 14	E B 14	E B 14
26	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	42	G	41	41	40	33	27	20	E B 14	E B 14	19	E B 14
27	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	40	42	G	42	49	41	36	G	27	E B 14	E B 14	E B 14	E B 14	E B 14
28	E B 13	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	42	46	45	41	41	36	30	24	26	20	17	E B 14	E B 14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	25	25	25	25	25	25	25	27	28	28	28	28	28	28
MED	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	E G 36	E G 42	44	43	41	40	34	30	21	E B 14	E B 14	E B 14	E B 14	E B 14
U Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	26	G	E B 41	E B 43	44	E B 46	46	44	38	33	23	18	20	18	18	E B 14
L Q	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	E B 14	G	G	G	G	G	42	42	40	38	G	G	20	E B 14	E B 14	E B 14	E B 14	E B 14

FEB. 2014 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	14	14	14	14	14	14	14	14	20	41	43	44	43	43	32	28	18	14	14	14	14	15	14
2	18	15	14	14	14	14	14	14	14	20	24	26	44	44	25	22	20	22	20	14	14	14	14	14
3	17	14	14	14	14	14	14	14	16	20	28	43	45	44	54	40	39	22	17	14	14	14	14	14
4	14	14	14	14	14	14	14	14	16	21	43	46	52	106	43	47	22	20	14	14	14	14	14	14
5	14	14	14	14	14	14	14	14	17	18	44	31	44	46	44	44	24	17	20	14	14	14	14	18
6	14	20	20	14	14	17	14	14	18	C	C	C	C	C	C	C	C	20	14	14	14	14	14	14
7	16	21	14	14	14	14	14	14	22	19	22	44	44	47	46	40	18	16	16	14	14	14	14	14
8	14	14	14	17	14	20	14	14	16	16	24	41	44	44	38	44	24	17	22	14	14	14	14	18
9	14	14	14	14	14	14	14	14	15	21	22	40	45	45	48	32	22	21	21	14	14	14	14	14
10	14	20	14	14	14	14	14	14	15	22	42	43	43	44	43	45	22	21	21	14	14	14	14	14
11	14	14	14	14	14	14	14	14	21	21	41	44	44	47	42	42	22	20	19	14	14	14	14	14
12	14	14	14	14	14	14	14	18	20	40	43	44	44	44	65	44	48	22	22	14	14	22	14	14
13	14	14	14	14	14	14	14	14	22	42	C	C	C	C	C	C	C	C	21	14	14	14	14	14
14	14	22	18	18	18	17	18	20	21	C	C	C	C	C	C	C	C	16	14	14	14	14	14	14
15	14	14	14	14	14	14	14	14	14	14	17	21	24	30	30	22	18	18	14	14	14	14	14	14
16	14	14	14	14	14	14	14	14	19	19	20	20	28	22	22	20	20	18	14	14	14	14	14	14
17	14	14	14	14	14	14	14	14	14	14	14	14	32	24	20	21	20	19	14	14	14	14	14	14
18	14	14	14	14	14	14	14	14	14	18	21	23	22	22	21	22	21	17	14	13	14	14	14	14
19	14	14	14	14	14	14	14	14	14	14	17	31	40	27	20	24	20	16	14	14	14	14	14	14
20	14	14	14	14	14	14	14	14	14	20	20	21	20	38	23	22	20	24	14	14	14	14	14	14
21	14	14	14	14	14	14	14	14	14	15	20	20	32	24	22	26	19	14	14	14	14	14	14	14
22	14	14	14	14	14	14	14	14	15	18	20	21	31	24	20	23	14	16	14	14	14	14	14	14
23	14	14	14	14	14	14	14	18	15	16	21	21	24	24	22	38	24	17	15	14	14	14	14	14
24	14	14	14	14	14	14	14	14	14	18	20	24	24	30	23	21	20	14	14	14	14	14	14	14
25	13	14	14	14	14	14	14	14	14	16	101	45	43	31	30	20	19	17	14	14	14	14	14	14
26	14	14	14	14	14	14	14	14	14	16	20	20	22	24	24	22	20	15	14	14	14	14	14	14
27	14	14	14	14	14	14	14	14	15	19	20	21	25	23	24	20	20	15	14	14	14	14	14	14
28	13	14	14	14	14	14	14	14	14	16	22	24	26	25	21	25	20	20	14	14	E S 14	14	14	14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	25	25	25	25	25	25	25	27	28	28	28	28	28	28
MED	14	14	14	14	14	14	14	14	15	18	22	26	40	31	25	25	20	18	14	14	14	14	14	14
U Q	14	14	14	14	14	14	14	14	18	20	41	43	44	44	43	41	23	20	20	14	14	14	14	14
L Q	14	14	14	14	14	14	14	14	14	16	20	21	24	24	22	22	20	16	14	14	14	14	14	14

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 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	308	314	R 336	319	330	306	318	316	323	333	335	323	R	U R 344	R 317	U R 324	R 307	313	335	346	J R 323	329	314	334
2	319	317	314	298	309	329	303	322	347	340	330	332	R 304	312	316	318	316	318	352	321	303	303	328	298
3	282	281	326	311	R 346	365	290	325	343	333	327	320	331	329	R 297	R 314	308	317	333	339	310	329	324	326
4	319	296	281	298	333	336	296	315	330	318	331	313	R	Y	Y	Y	U R 320	Y	R	334	319	326	319	296
5	283	269	313	319	365	312	315	337	338	333	321	329	320	U R 317	U R 317	R 321	U R 320	U R 328	R 337	343	306	327	328	312
6	306	283	276	320	340	290	287	318	339	C	C	C	C	C	C	C	C	312	330	322	329	359	289	281
7	293	J R 281	268	300	304	289	313	312	338	332	328	R 318	305	R 317	R 309	304	302	314	334	J R 321	317	342	325	318
8	287	288	298	302	311	266	274	325	336	329	336	331	R 327	J R 304	308	305	U R 305	J R 308	317	307	R 316	307	292	303
9	307	301	303	304	327	287	291	307	338	J R 341	344	323	315	314	304	302	299	314	319	326	327	322	R 298	R 293
10	R 301	289	R 283	R 317	320	287	255	J R 316	348	330	R 320	R 321	R 341	326	R 302	J R 288	J R 297	R 323	U R 341	U R 324	U R 329	R	U F 341	U R 322
11	U F 335	U F 342	331	J R 297	289	350	279	R 299	338	358	355	342	322	316	315	308	R 305	314	323	317	R 320	318	300	307
12	321	332	314	J R 345	337	298	294	298	326	R 331	345	U R 319	314	R	U R 322	R	Y	Y	R	R	U R 311	317	J R 308	289
13	288	278	314	341	404	290	313	330	325	331	C	C	C	C	C	C	C	C	U R 339	U R 336	R 342	R 334	327	297
14	304	307	315	311	358	347	326	325	341	C	C	C	C	C	C	C	C	R 323	R 333	317	321	313	303	273
15	274	272	288	321	356	281	291	308	339	339	323	320	322	R 317	J R 316	R 309	306	318	320	333	310	R 308	J R 278	J R 264
16	281	277	287	333	362	283	279	302	334	316	311	297	306	314	309	314	309	305	323	318	279	301	294	292
17	316	330	322	294	277	279	277	301	329	322	332	307	289	302	R 321	309	308	312	319	327	308	306	285	R 286
18	283	295	301	306	334	366	279	317	344	337	315	312	314	313	315	316	R 312	322	336	327	R 271	310	301	309
19	282	301	302	313	307	275	282	313	350	345	316	314	310	296	294	299	R 296	289	302	309	300	285	308	315
20	287	261	329	345	272	295	289	304	322	322	324	330	303	305	R 307	300	297	316	315	303	314	325	254	246
21	271	295	340	323	274	278	281	304	338	335	331	321	321	314	307	310	316	317	322	318	313	319	317	294
22	309	283	265	271	293	322	319	314	334	306	310	316	R 315	311	301	R 310	306	301	314	321	292	315	329	335
23	296	292	293	308	292	308	325	331	344	327	317	322	304	300	308	312	310	310	310	R 319	U R 320	R 330	U R 317	287
24	274	294	332	298	266	242	259	296	331	290	304	R 327	320	291	298	301	305	303	323	311	284	301	R 311	R 319
25	288	295	289	330	349	299	331	324	336	320	U R 314	321	313	301	299	303	304	307	315	299	U R 318	U R 322	R	R
26	285	304	309	320	313	309	293	323	347	325	326	320	302	298	301	299	309	300	300	301	302	282	F 315	F 310
27	F	F 313	302	320	369	303	295	326	342	327	319	310	296	288	292	295	293	293	296	303	U R 307	F	F 309	F
28	F 303	315	F 314	F 302	F 291	278	241	296	314	309	297	313	308	289	283	282	285	298	299	300	281	288	F	F 288
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	28	28	28	28	28	28	28	26	25	25	23	23	24	23	24	25	26	27	28	26	26	26
MED	293	295	306	312	324	296	291	316	338	330	324	320	314	312	308	308	306	313	322	321	312	318	310	298
U Q	308	310	318	320	348	317	313	324	342	335	332	325	321	R 317	R 316	314	310	318	334	327	R 320	327	324	315
L Q	283	282	288	301	292	282	279	304	330	322	316	314	304	300	300	300	300	304	315	309	302	306	298	288

FEB. 2014 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	U L 373	L 394	L									
2										L	L	L	L	L	L	L	L							
3										L	L	L	U L 381	U L 376		L	L							
4										L	L	L	L	B	L	L	L	L						
5											L	L	L	L	L	L	L							
6										C	C	C	C	C	C	C	C	L						
7										L	L	L	L	L		A	L							
8											L	L	L	L	L	L	L							
9										L	L	L	L	L	L	L		L						
10											L	L	L	L	L	L	L							
11											L	L	L	L	A	L		L						
12										L	L	L	L	L		L	L	L						
13										L	C	C	C	C	C	C	C	C						
14										C	C	C	C	C	C	C	C							
15										L	L	L	L	U L 338	U L 369	L	L							
16										L	L	L	U L 353	U L 350	L	L	L							
17										L	L	L	L	L	L	L	L		419					
18										L	L	L	U L 374	L	L	L	L							
19										L	L	L	U L 373	L	L	L	L	L						
20										L	L	L	L	L	L	L	L	L						
21									430	L	L	L	L	L	L	L	L	L						
22										L	L	U L 375	U L 368	L	L	L	L		423					
23											L	L	L	L	L	L	L	L						
24										L	L	L	L	L	L	L	L							
25									L	L	B	L	U L 377	L	L	L			416					
26											L	L	L	L	L	L	L	L						
27											L	L	L	L	L	L	L	L						
28										L		L	L	U L 409	L		L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1			1	7	5	1				3					
MED									430			U L 375	U L 373	U L 376	U L 369				419					
U Q													U L 377	L 402					423					
L Q													U L 368	U L 344					416					

FEB. 2014 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 h′F2 (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										256	246	264	248	240	L 262									
2										244	254	254	272	270	276	270	260							
3										260	258	280	258	256		280	L 304							
4										268	250	258	274	B 320	298	308	278	252						
5											274	260	280	270	300	284	266							
6										C	C	C	C	C	C	C	C	260						
7										244	254	272	L 284	282		268	262							
8											248	258	266	246	274	276	278							
9										250	234	274	276	272	260	294		264						
10											254	276	258	258	240	266	278							
11											232	256	248	266	270	242		258						
12										260	242	284	250	286		280	294	256						
13										258	C	C	C	C	C	C	C	C						
14										C	C	C	C	C	C	C	C							
15										248	264	260	262	286	262	256	254							
16										262	252	L 266	286	284	260	264	258							
17										260	244	274	320	310	268	260	244		230					
18										248	254	266	272	266	278	264	254							
19										238	268	256	266	292	306	296	290	264						
20										256	266	258	254	282	298	280	274	268						
21									234	246	252	266	274	278	268	272	256	242						
22										L 260	L 286	270	264	262	258	278	250		230					
23											250	260	274	290	294	266	256	236						
24										L 288	296	268	256	L 252	284	290	254							
25									226	234	E 298	B 264	262	284	296	278			228					
26											262	256	L 256	286	292	290	268	232						
27											256	262	294	310	298	284	280	254						
28										264		260	266	254	L 260		L 300							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2	19	24	25	25	25	22	23	21	11	3					
MED									230	256	254	264	266	278	275	278	266	256	230					
U Q										260	265	271	275	286	296	284	279	264	230					
L Q										246	249	258	257	260	262	266	255	242	228					

FEB. 2014 h′F2 (KM)

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FEB. 2014 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	234	248	220	246	232	264	264	272	232	232	228	B 220	B 206	B 222	B 218	268	226	226	222	200	216	234	236	220
2	234	236	232	244	236	228	258	264	226	220	Y 226	Y 238	222	220	E Y 250	E Y 252	Y 244	230	216	218	246	222	226	240
3	288	272	230	256	214	200	320	270	234	238	Y 224	B 220	B 228	B 220	248	234	216	242	214	198	210	224	214	224
4	244	272	306	288	232	212	294	270	236	214	B 236	B 236	B	B	B 236	B 244	228	232	216	198	190	210	206	240
5	284	300	258	256	222	248	268	246	228	230	B 236	Y 232	B 214	B 228	224	B 244	222	238	206	204	188	214	206	232
6	256	E B 308	E B 348	262	212	B 282	306	248	228	C	C	C	C	C	C	C	C	240	222	212	212	200	210	262
7	278	B 314	322	272	238	288	258	250	234	222	218	B 218	B 214	E B 248	282	A	212	240	214	206	224	216	202	220
8	232	A 266	254	268	248	E B 342	352	260	232	226	228	210	224	B 218	E Y 224	B 226	230	242	214	212	212	214	238	244
9	244	248	A 274	248	226	286	278	274	242	226	222	226	242	B 224	E B 240	Y 220	Y 236	240	234	216	208	198	208	260
10	266	284	272	216	200	278	362	256	234	236	B 224	226	226	222	214	B 234	220	238	228	206	218	222	Q 210	Q 246
11	Q 224	Q 228	222	268	260	212	264	276	244	232	224	228	B 214	230	A	B 222	Y 230	224	224	218	224	216	208	236
12	232	220	226	226	200	254	280	280	242	238	222	B 212	218	214	266	234	246	224	236	208	214	214	232	234
13	264	270	252	226	182	300	270	252	236	240	C	C	C	C	C	C	C	C	228	212	194	218	212	248
14	252	252	244	262	232	208	B 248	238	228	C	C	C	C	C	C	C	C	238	222	208	202	232	224	228
15	266	256	236	238	212	246	276	268	234	224	216	214	234	206	204	A 222	220	240	216	210	208	226	232	248
16	264	286	290	228	188	264	308	268	228	H 196	208	216	Y 226	A 226	224	222	224	230	234	212	208	240	242	248
17	236	228	240	262	276	268	296	266	232	230	H 188	210	248	A 276	228	212	208	224	204	222	214	232	214	228
18	232	236	252	258	230	208	264	254	230	216	208	208	212	214	210	236	222	236	214	202	218	234	212	226
19	268	268	264	248	232	238	286	262	232	220	220	212	210	226	206	202	220	234	226	218	196	240	220	214
20	254	314	234	192	288	284	272	256	222	224	234	228	216	214	218	218	212	236	214	210	222	192	250	334
21	268	218	204	236	280	302	304	272	200	228	228	226	230	242	224	230	218	224	232	226	210	216	210	242
22	242	256	A 328	316	272	248	202	242	226	208	222	226	224	214	E A 234	212	204	218	220	204	216	230	212	208
23	242	248	254	248	242	256	210	236	222	218	220	214	206	226	216	228	228	226	224	216	224	218	208	238
24	256	242	224	258	286	390	344	232	220	220	230	216	208	A 232	216	234	222	226	228	202	214	220	212	Q 234
25	238	244	248	224	196	230	230	242	H 202	210	B	B 238	220	222	220	A 230	240	220	208	208	226	Q 210	204	Q 228
26	222	228	230	234	232	232	264	252	224	212	214	210	210	210	218	226	232	222	226	228	222	Q 210	Q 218	Q 226
27	Q 240	Q 240	250	242	202	202	258	246	222	216	222	218	204	204	E A 256	222	218	216	232	224	244	Q 230	Q 208	Q 220
28	Q 244	Q 244	Q 228	Q 242	234	200	374	266	226	224	226	212	216	A 216	208	220	208	228	242	234	254	250	Q 236	Q 234
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	26	24	25	24	24	24	24	25	27	28	28	28	28	28	28
MED	244	249	248	248	232	250	274	258	229	224	223	218	217	222	221	226	222	230	222	211	214	219	212	234
U Q	265	272	268	262	245	283	305	269	234	230	228	227	226	227	238	234	230	238	228	218	223	231	229	245
L Q	235	238	230	235	212	220	261	247	225	216	219	212	211	214	216	221	217	224	214	205	208	214	208	226

FEB. 2014 h′F (KM)

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FEB. 2014 h′E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								B	114	110	B	B	B	B	B	A	A	A	A					
2								B	120	112	108	A	B	B	A	A	A	112	B					
3							B	B	112	110	110	B	B	B	B	A	B	122	A					
4								B	112	110	B	B	B	B	B	B	108	112	A					
5								B	112	108	B	112	B	B	B	B	112	112	B					
6								B	112	C	C	C	C	C	C	C	C	112	B					
7								B	126	104	104	B	B	B	B	A	108	108	A					
8								B	112	106	106	B	B	B	B	B	106	110	B					
9								B	110	108	A	B	B	B	B	A	A	A	B					
10								B	114	110	B	B	B	B	B	B	112	A	B					
11								B	116	110	B	B	B	B	B	B	110	110	B					
12								B	112	B	B	B	B	B	B	B	B	A	B					
13								152	116	B	C	C	C	C	C	C	C	C	B					
14								B	114	C	C	C	C	C	C	C	C	A		A				
15								B	110	106	106	106	106	110	114	A	A	A	A	B				
16								B	110	110	110	110	110	108	108	106	106	106	A	B				
17								B	112	106	106	114	112	110	A	A	112	110	A	A				
18								B	106	108	108	116	104	112	110	112	112	A	A	A				
19								154	110	108	108	112	B	112	106	108	108	110	A	B				
20								B	120	110	108	108	106	B	A	A	A	A	112	B				
21								174	112	108	108	108	A	A	A	A	A	A	A	A				
22								B	110	108	106	106	108	108	108	A	A	112	116	B				
23								B	112	108	108	108	108	108	108	B	A	A	114	B				
24								B	110	108	106	106	106	108	108	106	A	A	A					
25								166	114	110	B	B	B	110	110	110	110	A	A	B				
26								142	110	108	106	106	106	108	108	108	114	A	A	A				
27								152	108	102	106	108	108	108	108	108	A	108	A	B				
28								150	110	108	108	108	108	110	110	110	110	A	A	A				
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								7	28	24	17	14	11	12	11	8	13	13	3					
MED								152	112	108	108	108	108	109	108	108	110	110	114					
U Q								166	114	110	108	112	108	110	110	110	112	112	116					
L Q								150	110	108	106	106	106	108	108	107	108	109	112					

FEB. 2014 h′E (KM)

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FEB. 2014 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	G	G	B	B	B	B	B	208	106	104	102	B	98	100	94	98
2	B	B	B	94	B	B	B	B	96	G	G	102	B	B	98	96	118	114	B	100	98	B	98	88
3	B	B	B	100	96	B	B	160	162	G	G	B	B	B	B	108	B	G	154	B	B	B	90	B
4	B	B	B	B	B	B	B	B	G	110	B	B	B	B	B	B	G	G	102	98	96	96	96	92
5	B	B	B	B	B	96	98	98	182	G	B	G	B	B	B	B	G	G	B	104	98	B	92	B
6	B	B	98	96	B	B	B	B	G	C	C	C	C	C	C	C	C	118	88	102	102	98	96	96
7	B	B	104	108	104	104	B	B	G	G	G	B	B	B	118	112	128	112	106	B	98	94	B	92
8	92	92	88	92	B	B	B	B	G	G	G	B	B	B	110	B	114	106	B	B	B	94	B	B
9	B	B	98	102	B	B	B	B	G	G	114	114	112	B	B	112	110	104	B	B	B	B	90	B
10	98	B	B	B	B	B	B	B	G	G	B	B	B	B	B	B	G	106	B	104	B	B	B	B
11	B	B	B	B	100	98	B	B	G	G	B	B	B	B	110	112	110	G	B	B	B	B	B	B
12	B	B	B	B	B	B	B	B	G	B	B	B	B	B	B	B	B	106	B	100	96	B	96	B
13	B	B	B	B	B	100	B	G	166	B	C	C	C	C	C	C	C	C	94	92	92	102	100	B
14	B	B	B	B	B	B	B	B	G	C	C	C	C	C	C	C	C	104	104	100	98	96	94	86
15	86	B	B	B	B	B	94	G	G	188	120	126	114	116	114	112	94	106	106	94	116	104	92	92
16	92	B	B	B	B	B	98	B	190	G	G	146	G	150	162	146	G	130	118	94	94	92	B	98
17	92	B	B	B	B	B	B	B	144	G	94	94	118	110	110	114	106	102	102	96	98	94	B	94
18	88	B	B	B	88	B	108	98	G	G	G	102	G	184	102	176	150	114	114	106	B	106	B	92
19	100	100	100	88	B	98	98	G	184	G	164	144	B	188	G	G	G	118	110	108	108	94	B	B
20	B	B	B	B	94	100	96	B	182	200	166	G	120	118	118	110	108	106	180	B	96	96	96	B
21	124	B	B	B	B	B	B	G	178	G	160	116	108	114	110	108	102	104	100	94	92	94	B	B
22	94	94	94	96	106	B	94	B	G	G	G	112	118	112	106	108	108	102	G	B	106	B	B	B
23	B	B	B	B	B	B	B	B	G	G	G	100	116	116	108	110	110	104	G	B	B	94	B	92
24	B	B	B	B	B	B	B	B	186	G	G	112	112	106	108	104	104	104	102	92	B	100	B	B
25	B	94	B	B	B	B	98	G	G	102	B	B	B	G	126	112	110	106	104	102	B	92	100	B
26	B	B	B	B	B	B	B	G	G	G	G	G	178	G	140	120	112	104	104	102	B	B	96	B
27	B	B	B	B	B	B	B	G	G	G	178	150	G	154	110	110	108	G	104	B	B	178	B	B
28	B	B	B	B	B	B	B	G	G	G	G	128	114	114	118	110	106	102	100	98	96	96	96	B
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	4	6	8	6	6	8	3	10	4	7	13	10	12	17	19	18	22	19	18	17	19	15	11
MED	92	94	98	96	98	99	98	98	180	149	160	114	115	116	110	112	109	106	104	100	98	96	96	92
U Q	99	97	100	101	104	100	98	160	184	194	166	136	118	152	118	114	112	112	110	102	100	100	96	96
L Q	90	93	94	93	94	98	95	98	162	106	114	102	112	113	108	108	106	104	102	94	96	94	92	92

IONOSPHERIC DATA STATION Okinawa

FEB. 2014 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																HL 1 1	L 1	L 1	L 2		F 3	F 2	F 1	F 1
2				F 1					L 1			L 1			L 1	L 1	CL 1 1	C 1		F 1	F 2		F 1	F 1
3				F 1	F 1		K 1	H 1	H 1							C 1			H 1				F 1	
4										C 1									L 1	F 1	F 2	F 1	F 1	F 1
5						F 1	F 1	L 1	H 1											F 1	F 1		F 1	
6			F 1	F 1														C 1	LC 1 1	F 1	F 1	F 2	F 1	F 1
7			F 1	F 1	F 1	F 1									C 1	C 1	HL 1 1	C 1	CL 2 1		F 2	F 2		F 1
8	F 1	F 1	F 1	F 1											C 1		C 1	C 1				F 2		
9			F 1	F 1							C 1	C 1	C 1			C 1	C 1	C 1					F 1	
10	F 1																	C 1		F 1				
11					F 1	F 1									C 1	C 1	C 1							
12																		C 1		F 1	F 1		F 1	
13						F 2			H 1										L 1	F 1	F 1	F 1	F 1	
14																		L 2	LQ 2 1	L 4	F 3	F 5	F 1	F 1
15	F 1						F 1			H 1	CL 1 1	C 1	C 1	C 1	C 1	C 1	L 1	C 1	CL 1 2	LC 1 1	FF 1 1	F 1	F 6	F 1
16	F 1						F 1		H 1			H 1		H 1	HC 1 1	HC 1 1		H 1	C 1	L 1	F 1	F 1		F 1
17	F 1								H 1		L 1	L 1	C 1	C 2	CQ 1 1	C 1	L 1	L 1	LCH 1 1	L 7	F 1	F 1		F 1
18	F 1				F 1		F 1	L 1				L 1		HL 1 1	L 1	H 1	H 1	C 1	C 1	C 1		F 2		F 1
19	F 1	F 1	F 1	F 1		F 1	F 1		H 1		H 1	H 1		H 1				C 1	C 1	C 1	F 1	F 3		
20					F 1	F 1	F 1		HL 1 1	H 1	H 1		C 1	C 1	C 1	C 1	C 1	C 1	H 1		FF 2 1	F 1	F 2	
21	FF 1 1								H 1		H 1	C 1	C 1	C 1	C 1	C 2	L 3	L 2	L 4	L 8	F 2	F 1		
22	F 1	F 1	F 2	F 1	F 1		F 1					C 1	C 1	C 1	C 1	C 1	CL 1 1	L 1			F 1			
23												L 1	CL 1 1	C 1	C 1	C 1	C 1	L 1				F 1		F 1
24									H 1			C 1	C 1	C 1	C 1	C 1	C 1	C 2	L 2	L 1		F 1		
25		F 1					F 1			L 1					C 1	CL 1 1	C 2	C 1	L 1	L 1		F 1	F 1	
26												H 1			H 1	C 1	CL 1 1	C 2	C 2	L 2			F 2	
27											H 1	H 1		H 1	C 1	CL 1 1	C 1		C 2			F 1		
28												C 1	C 1	C 1	C 1	C 1	C 1	C 1	L 2	L 4	F 2	F 2	F 1	
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

FEB. 2014 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

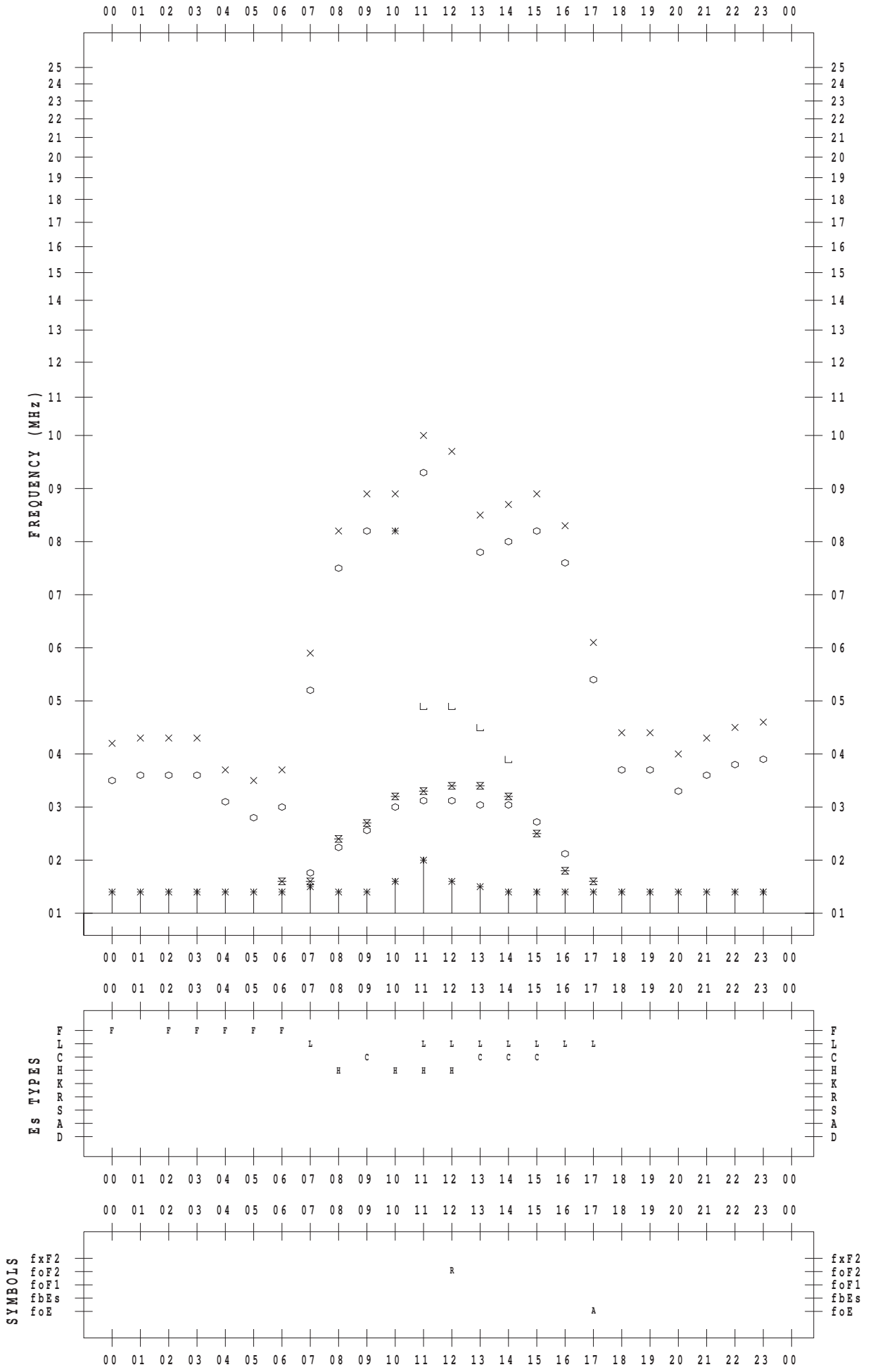
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 1

135 °E MEAN TIME



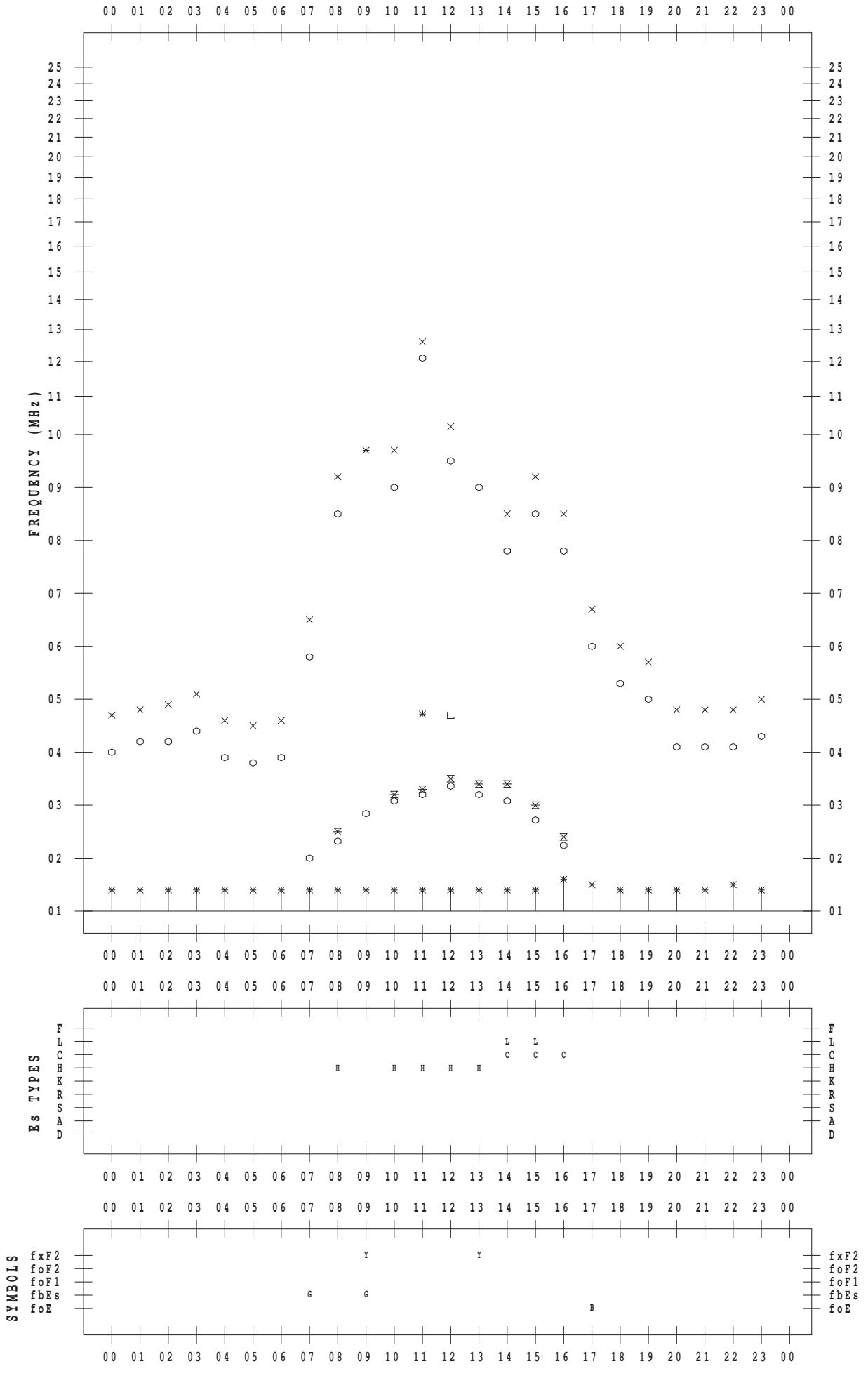
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 2

135 °E MEAN TIME



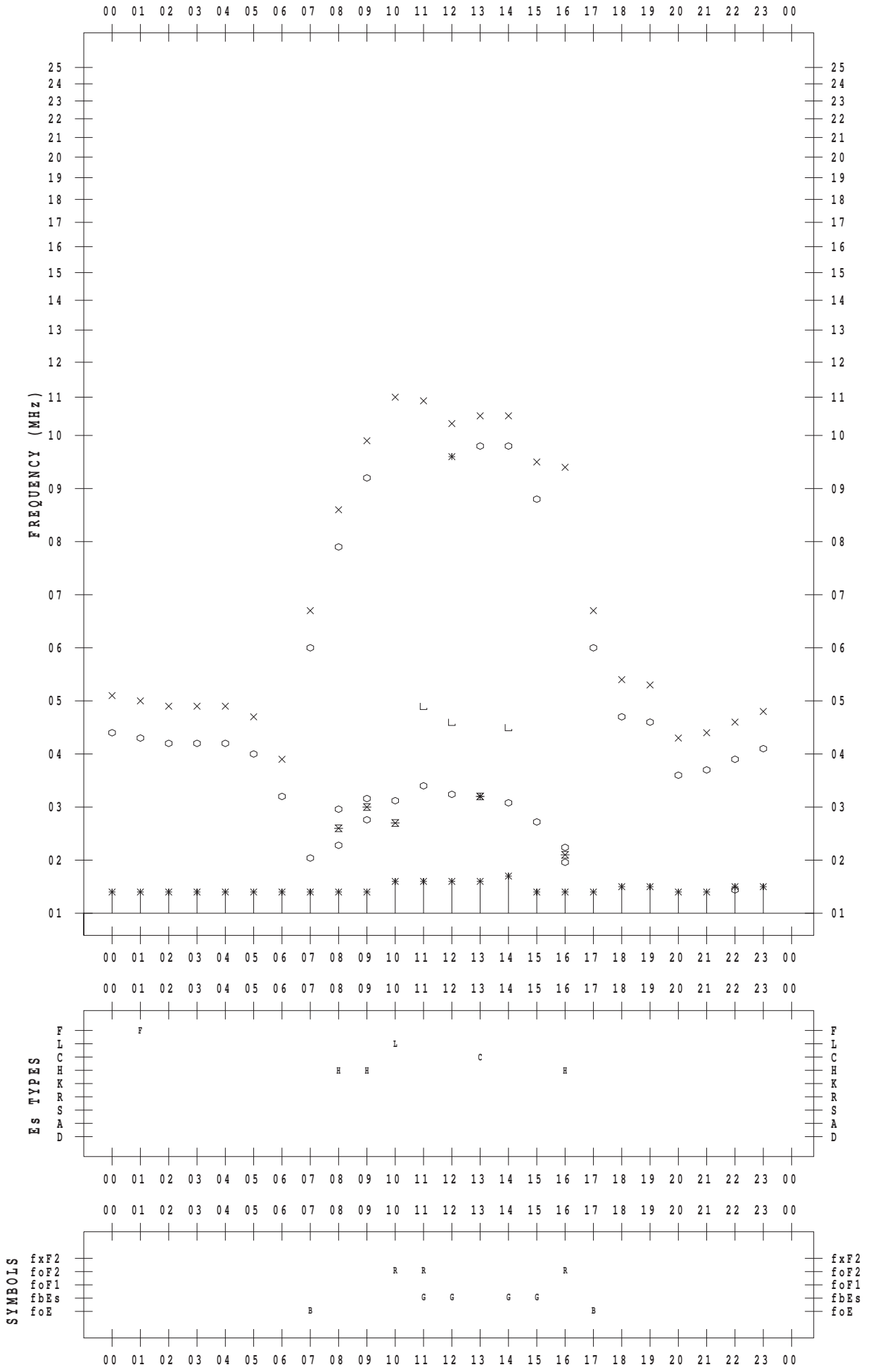
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 3

135 °E MEAN TIME



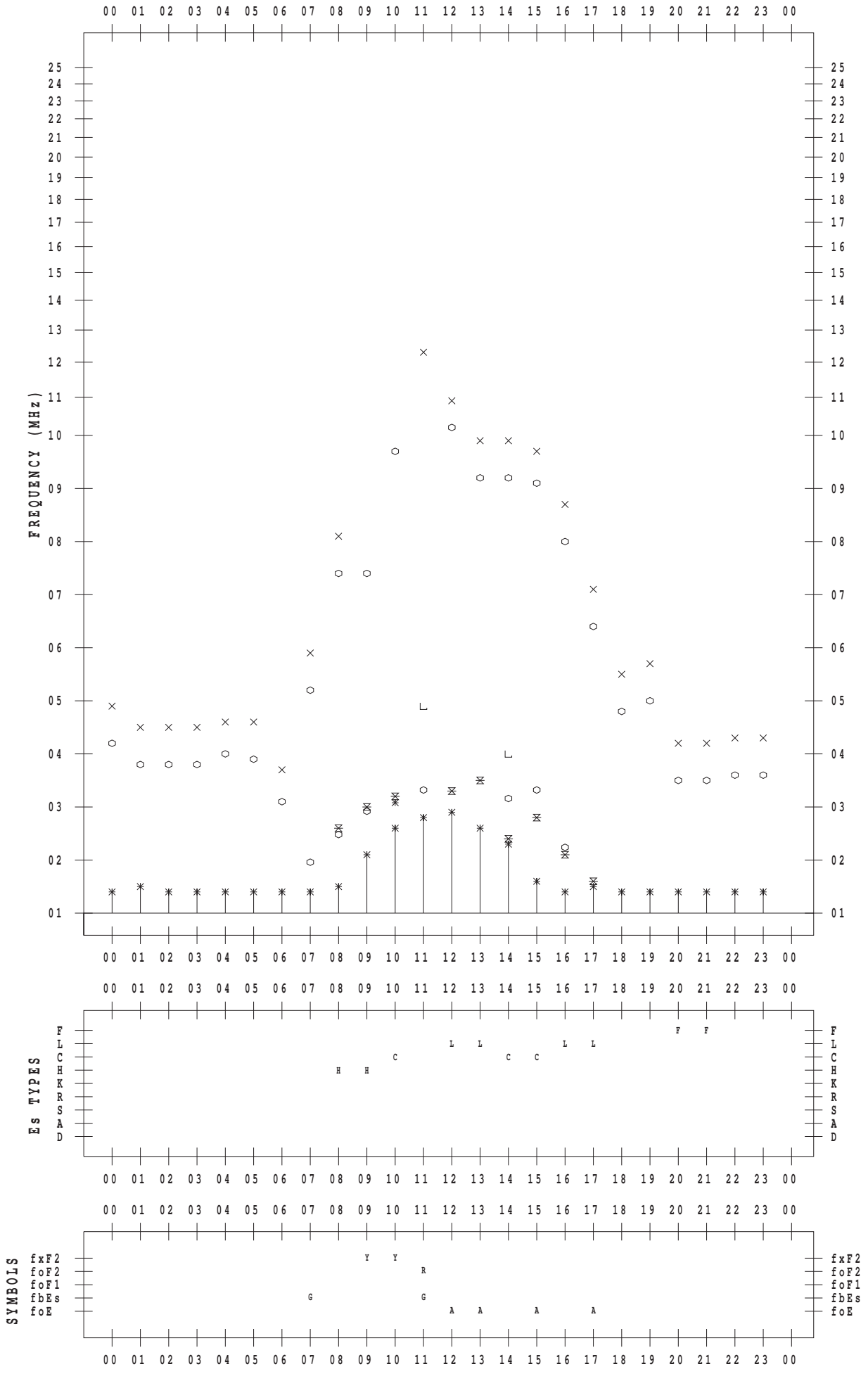
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 4

135 °E MEAN TIME



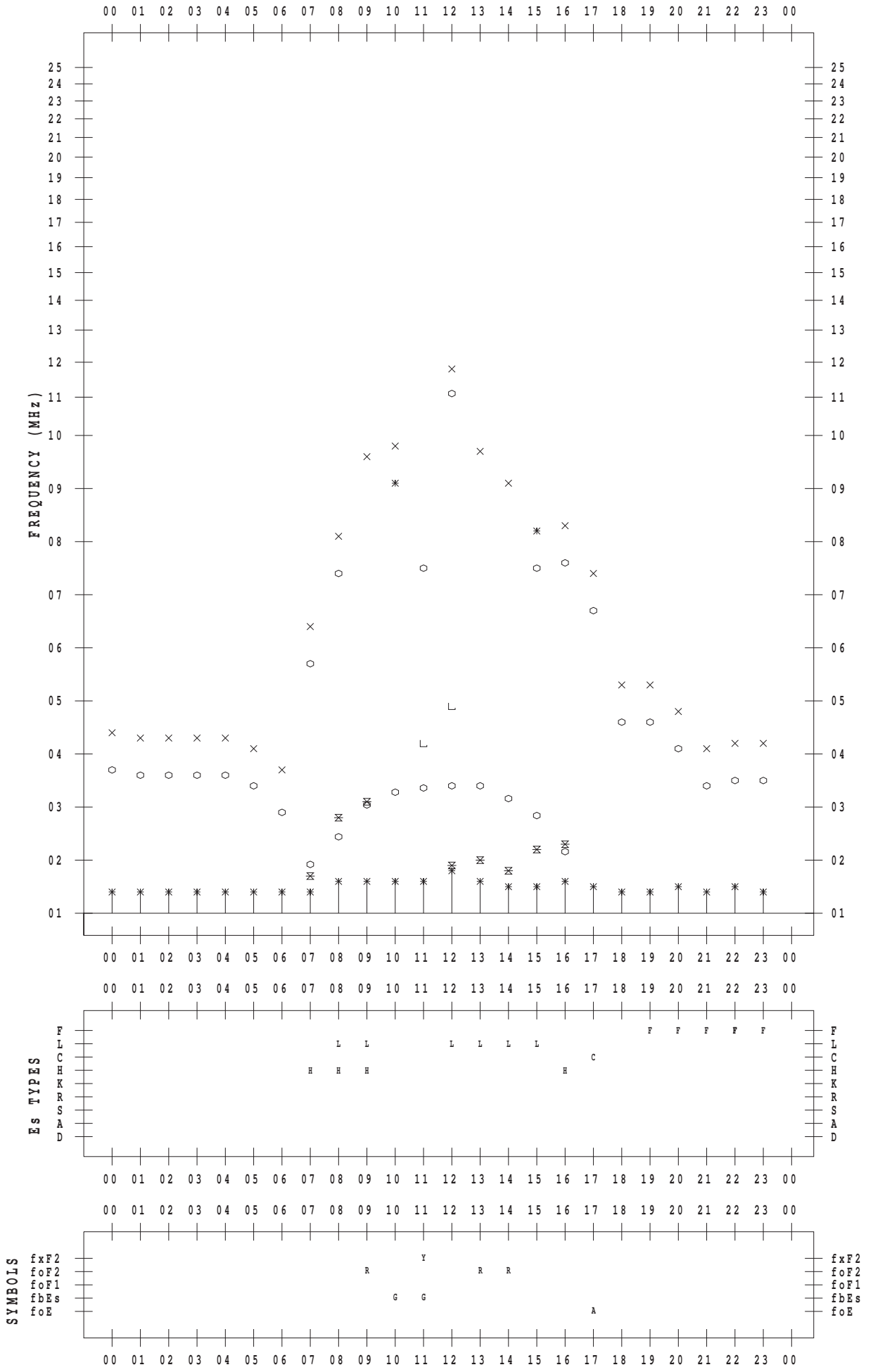
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 5

135 °E MEAN TIME



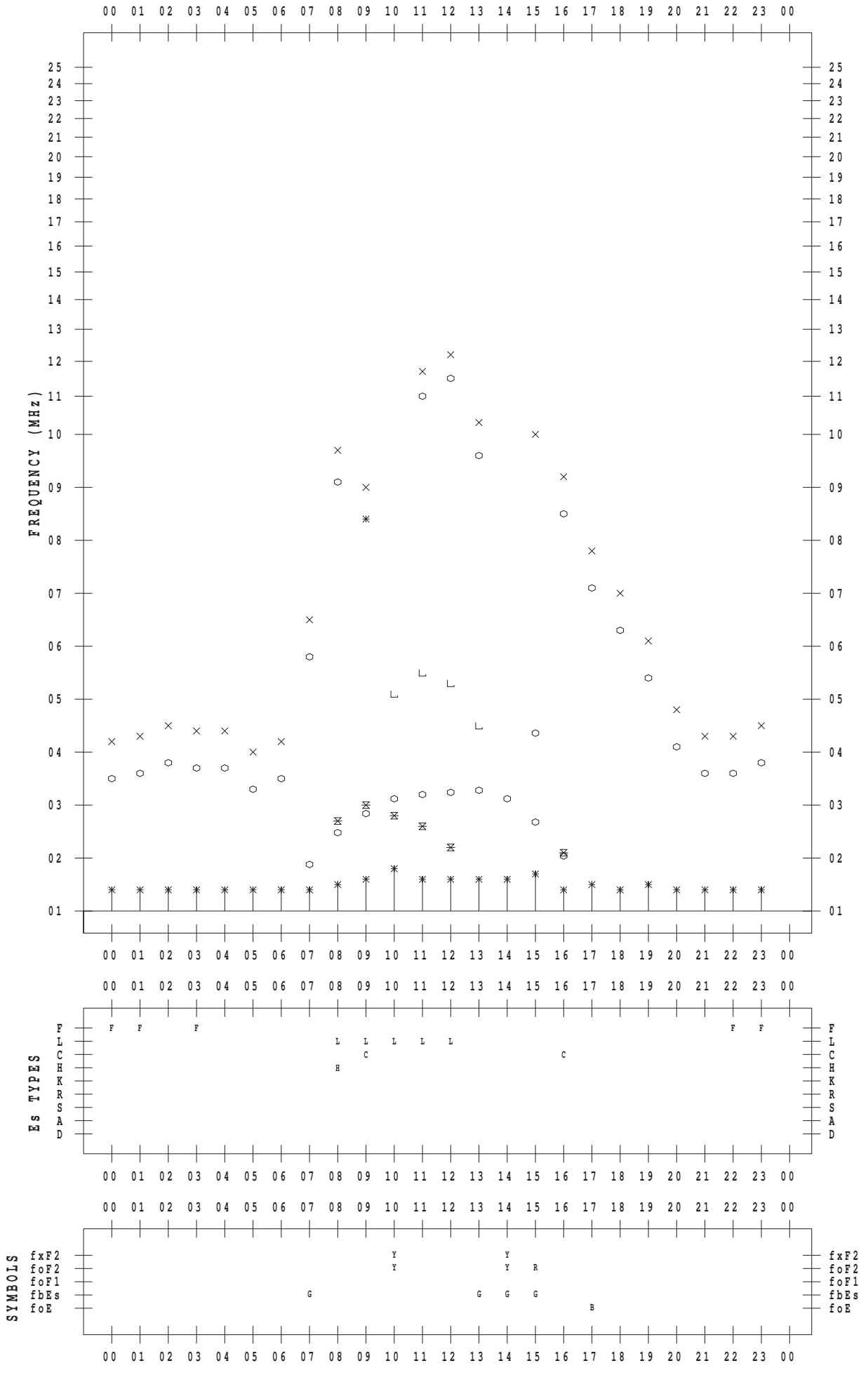
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 6

135 °E MEAN TIME



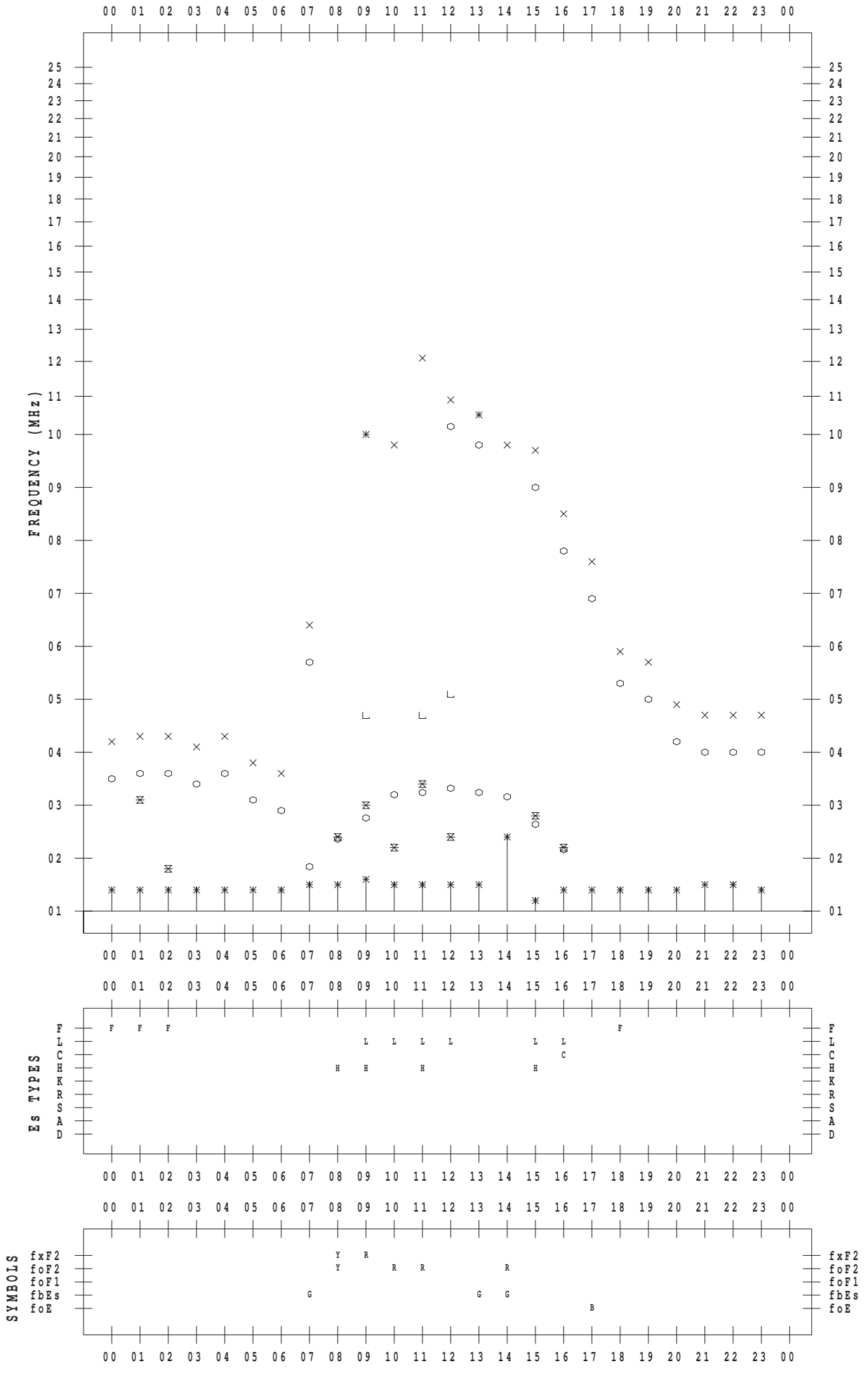
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 7

135 °E MEAN TIME



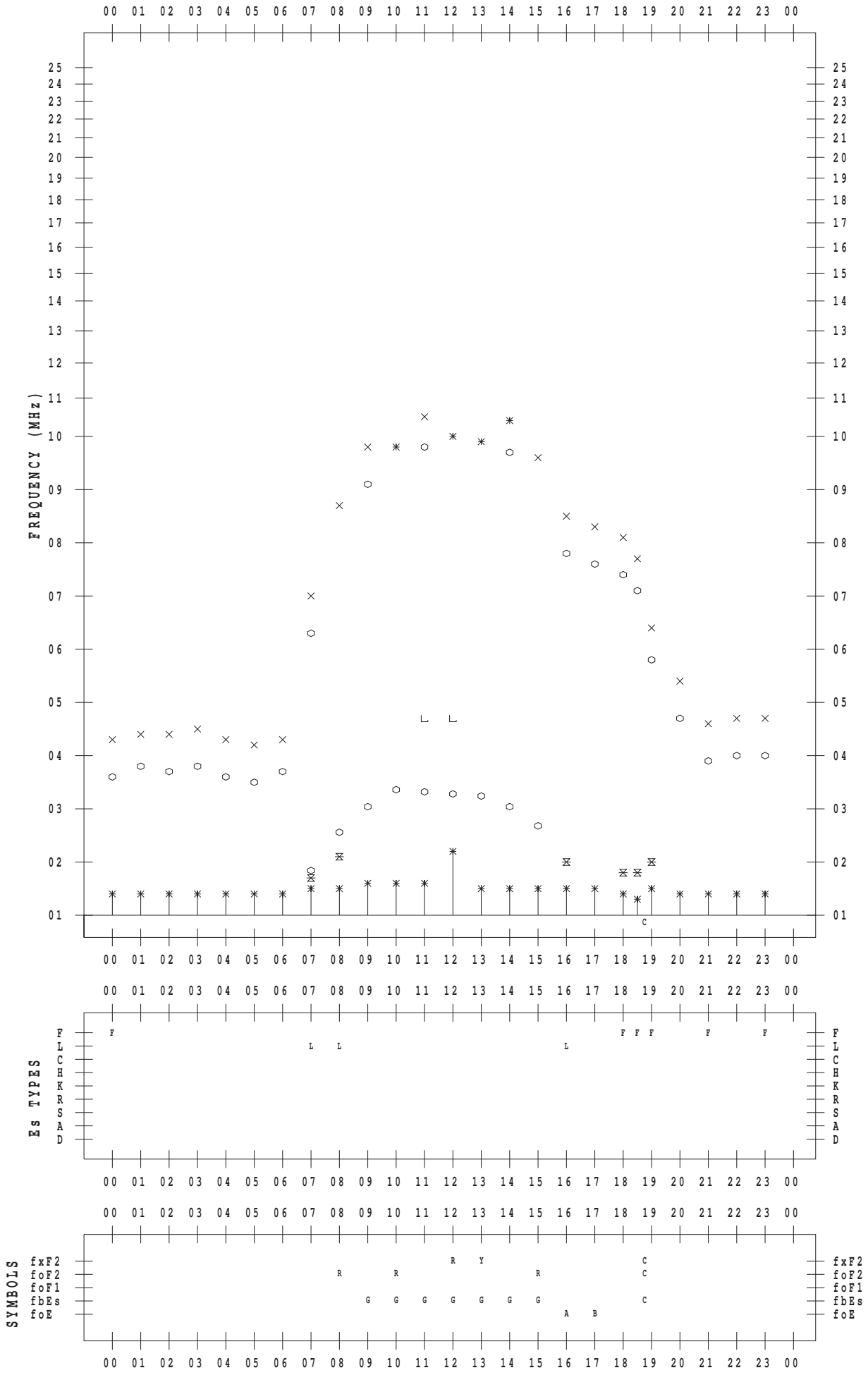
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 8

135 °E MEAN TIME



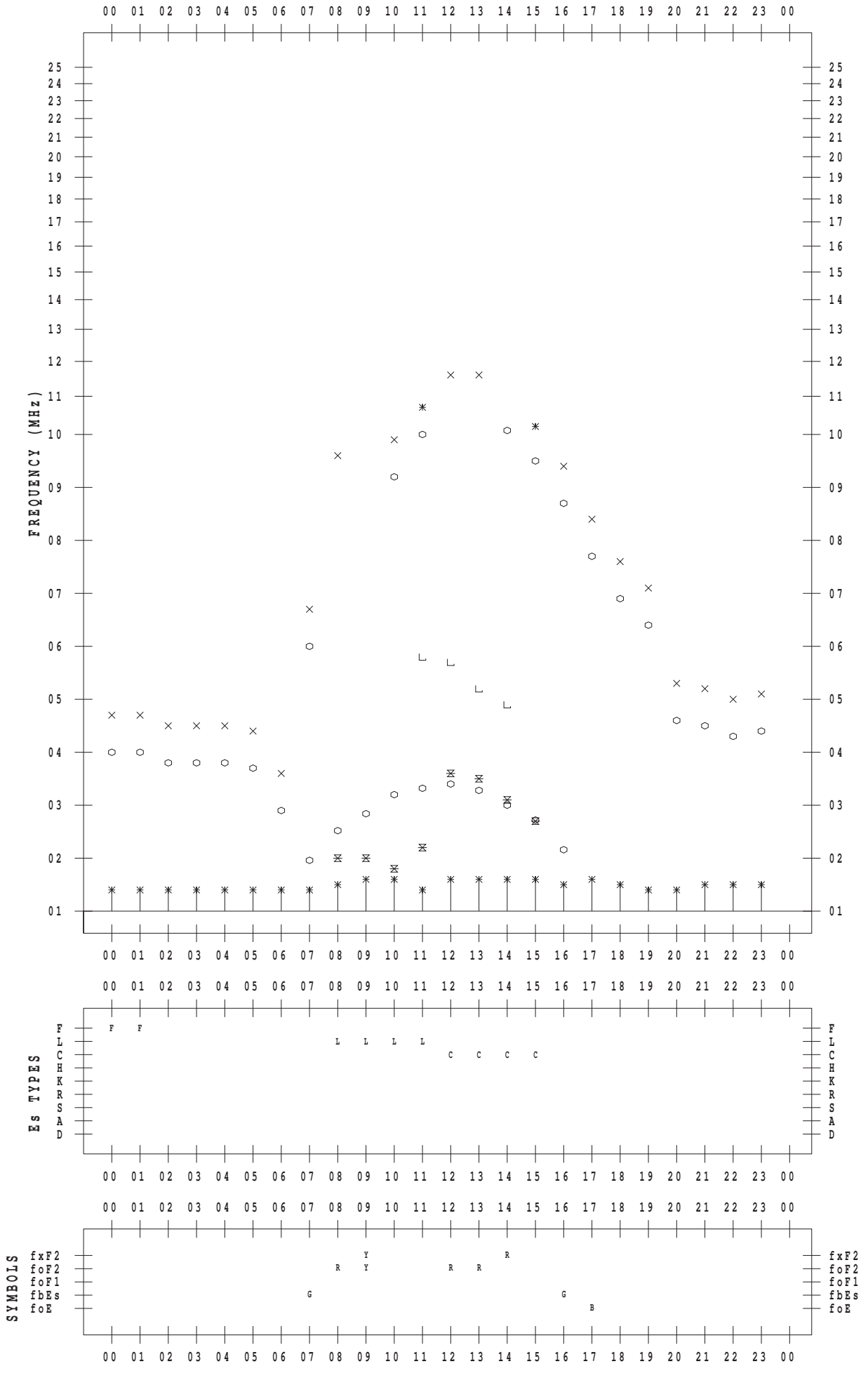
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/ 9

135 °E MEAN TIME



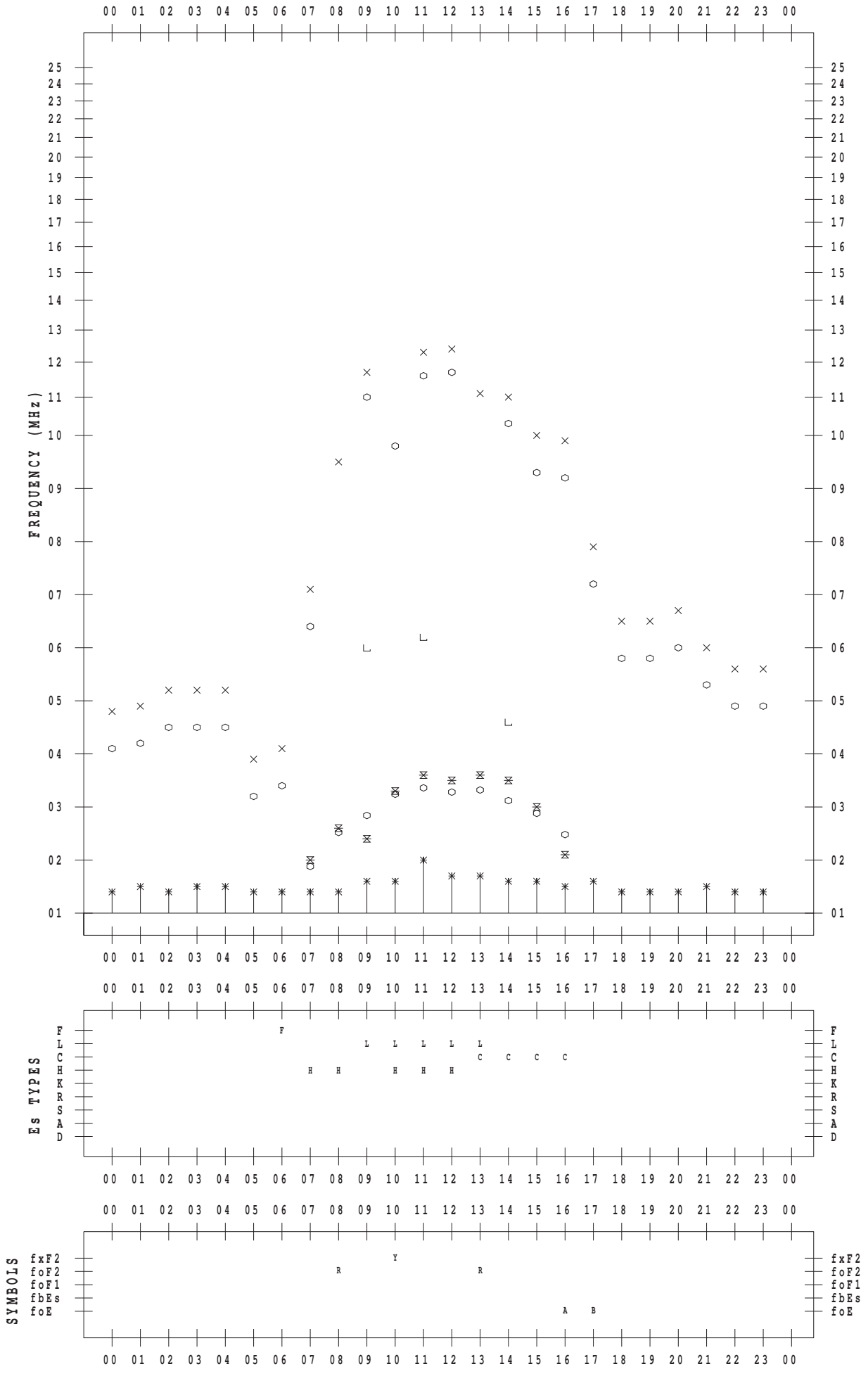
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/10

135 °E MEAN TIME



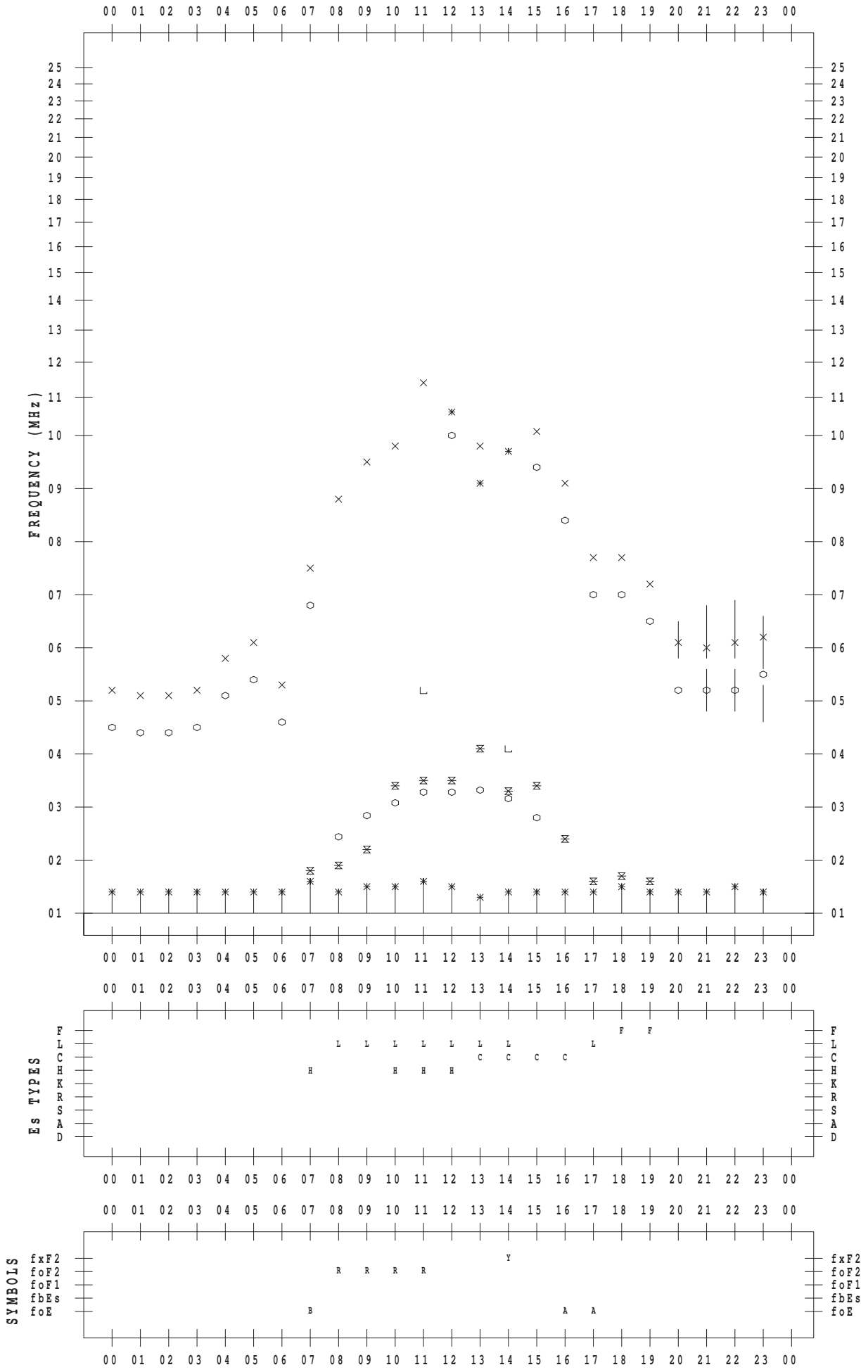
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/11

135 °E MEAN TIME



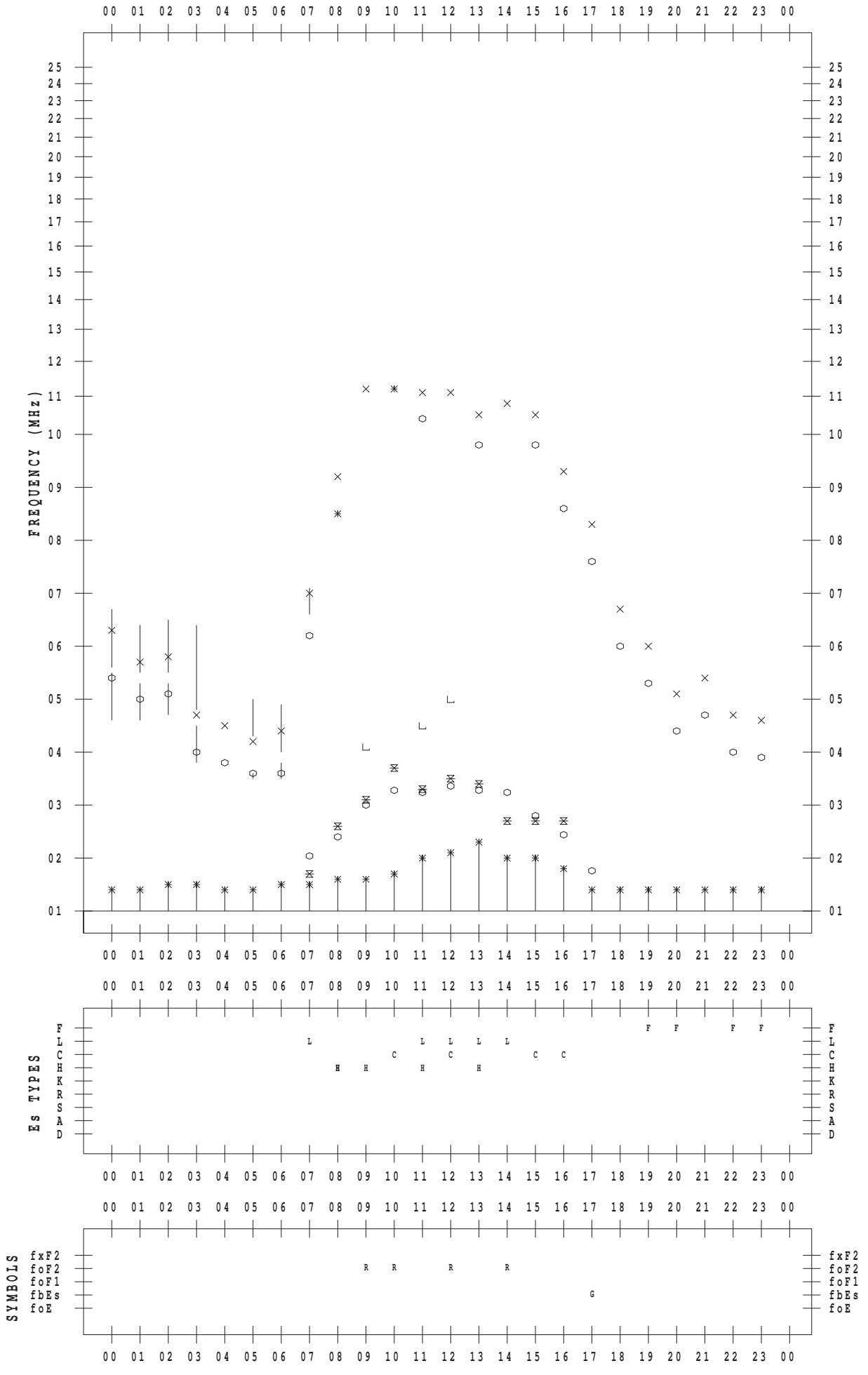
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/12

135 °E MEAN TIME



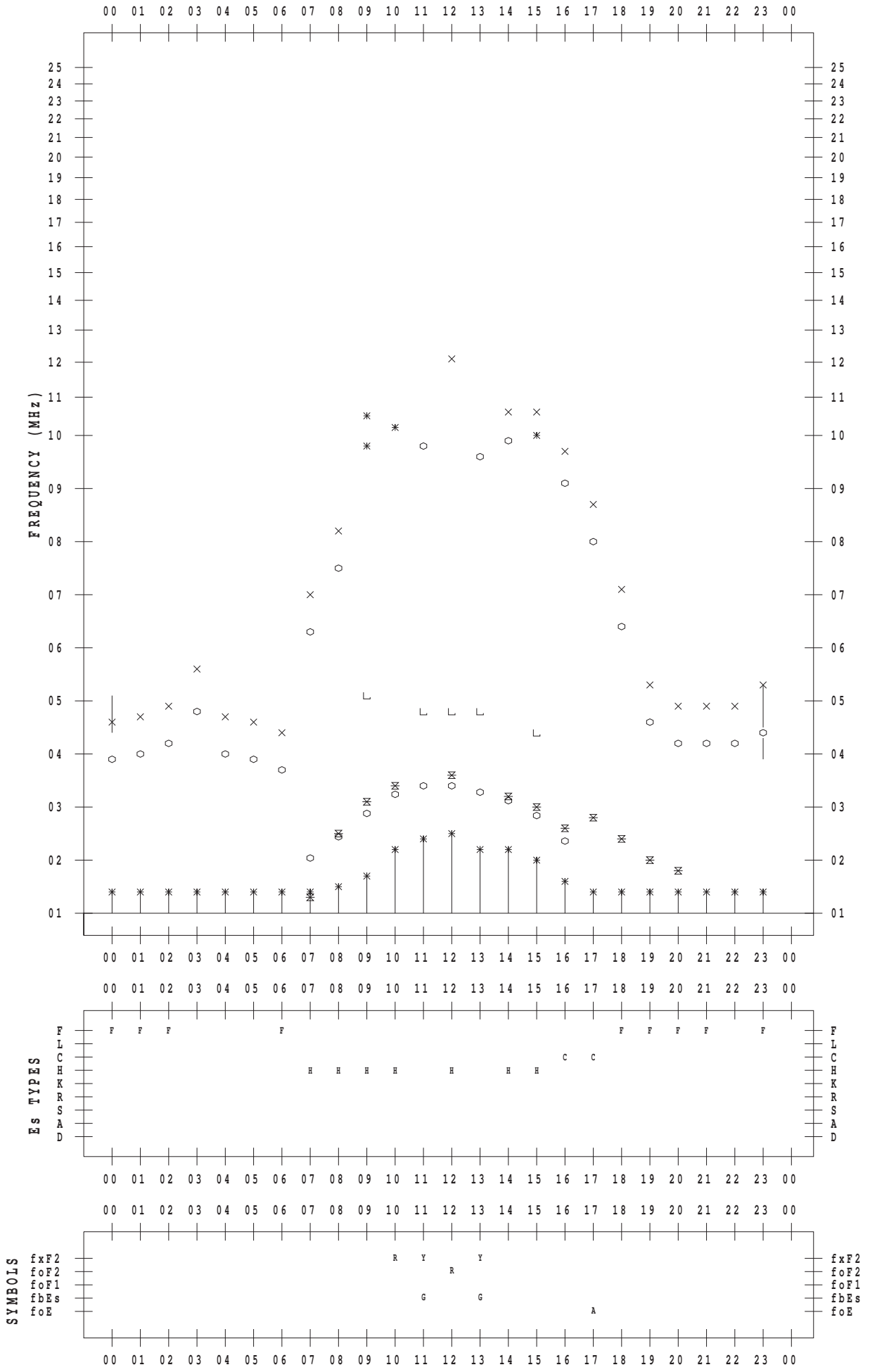
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/13

135 °E MEAN TIME



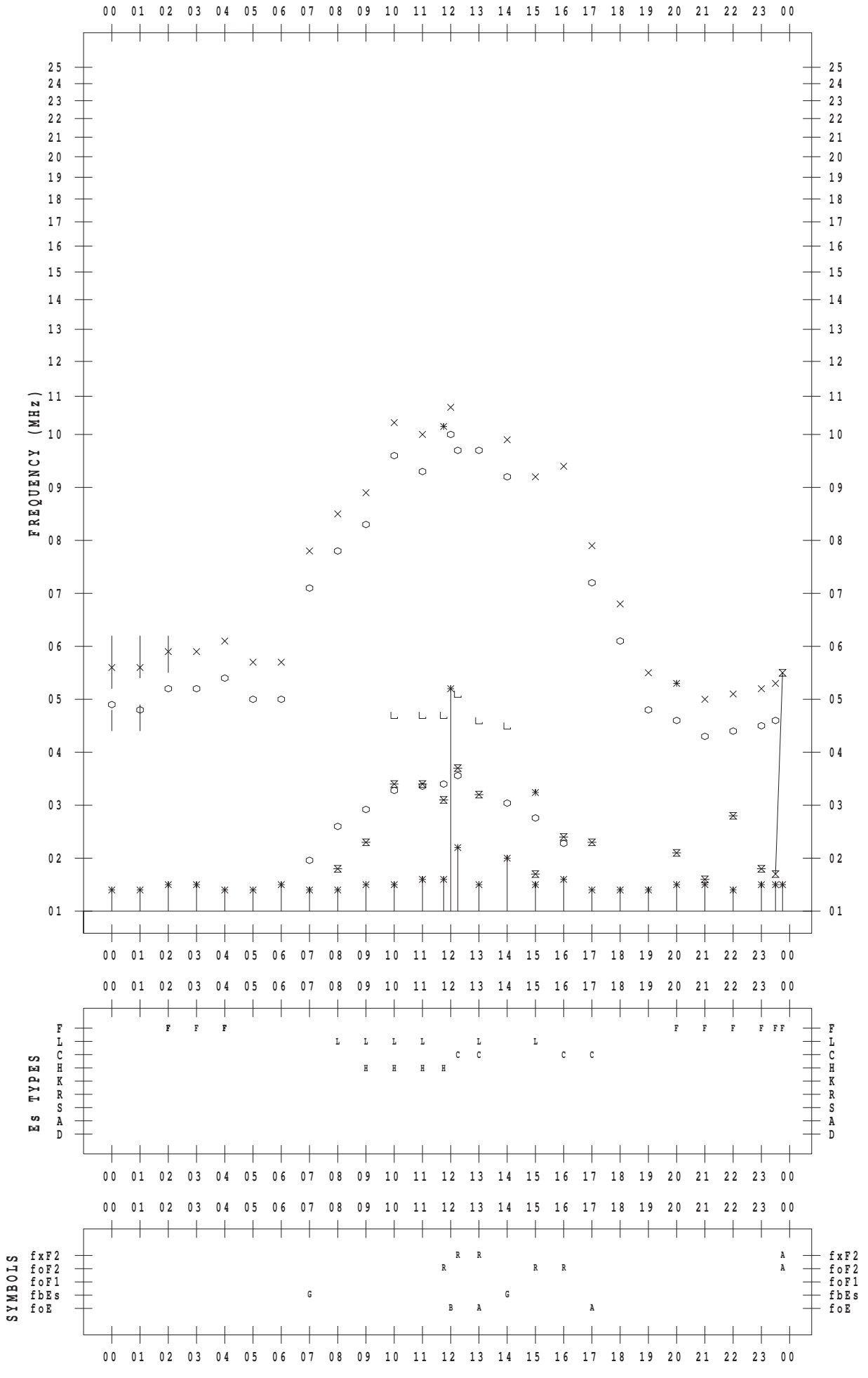
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/14

135 °E MEAN TIME



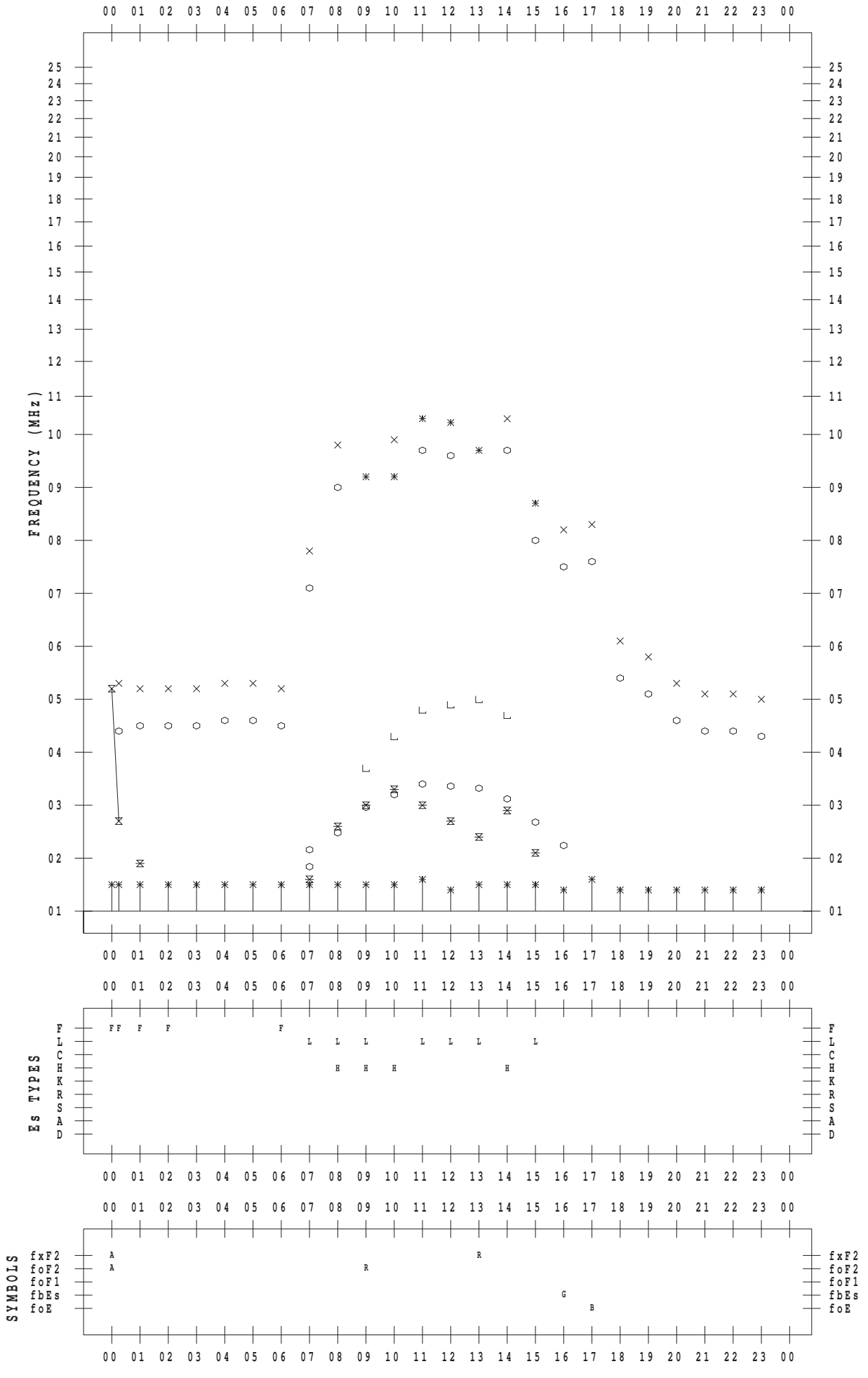
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/15

135 °E MEAN TIME



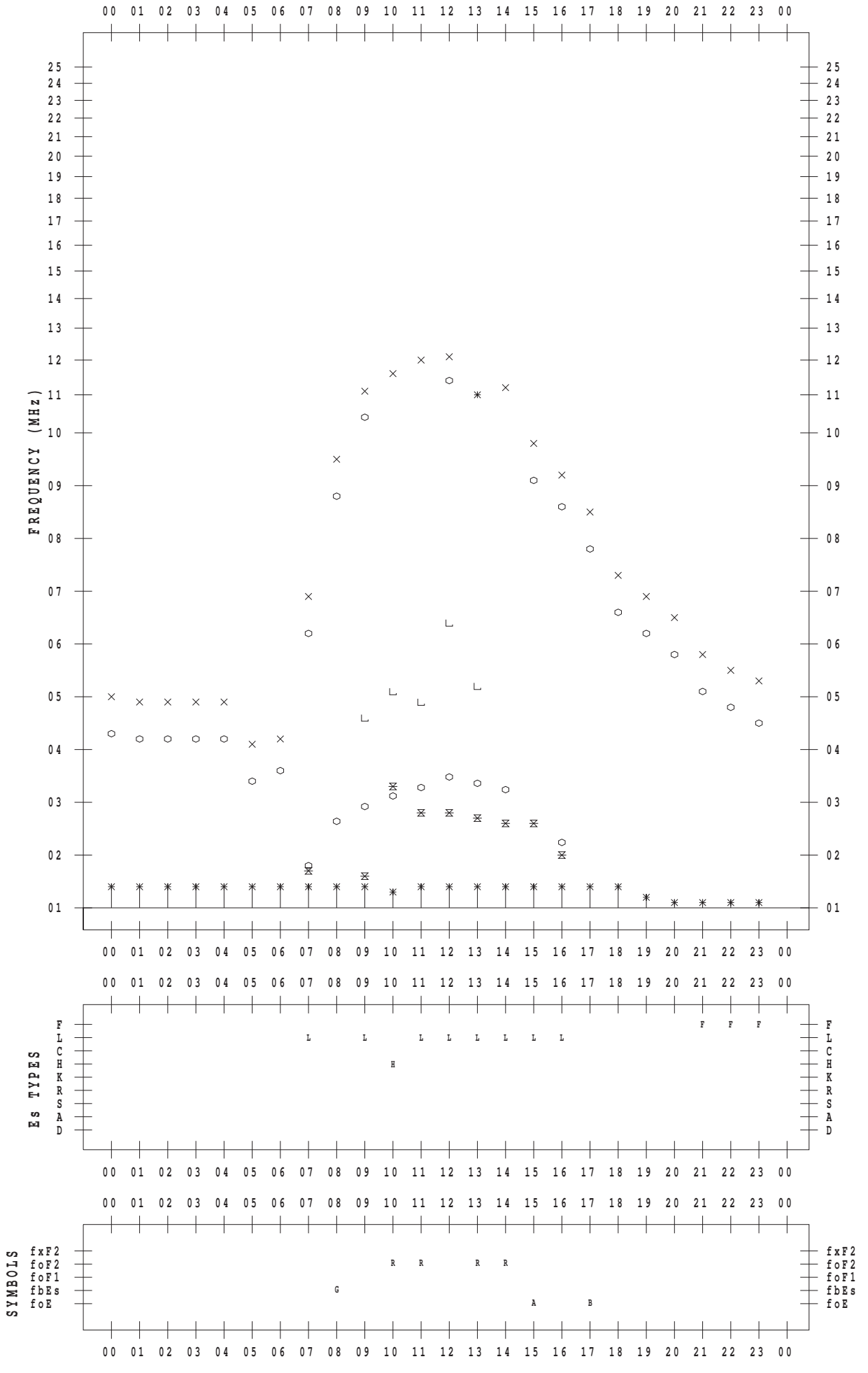
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/16

135 °E MEAN TIME



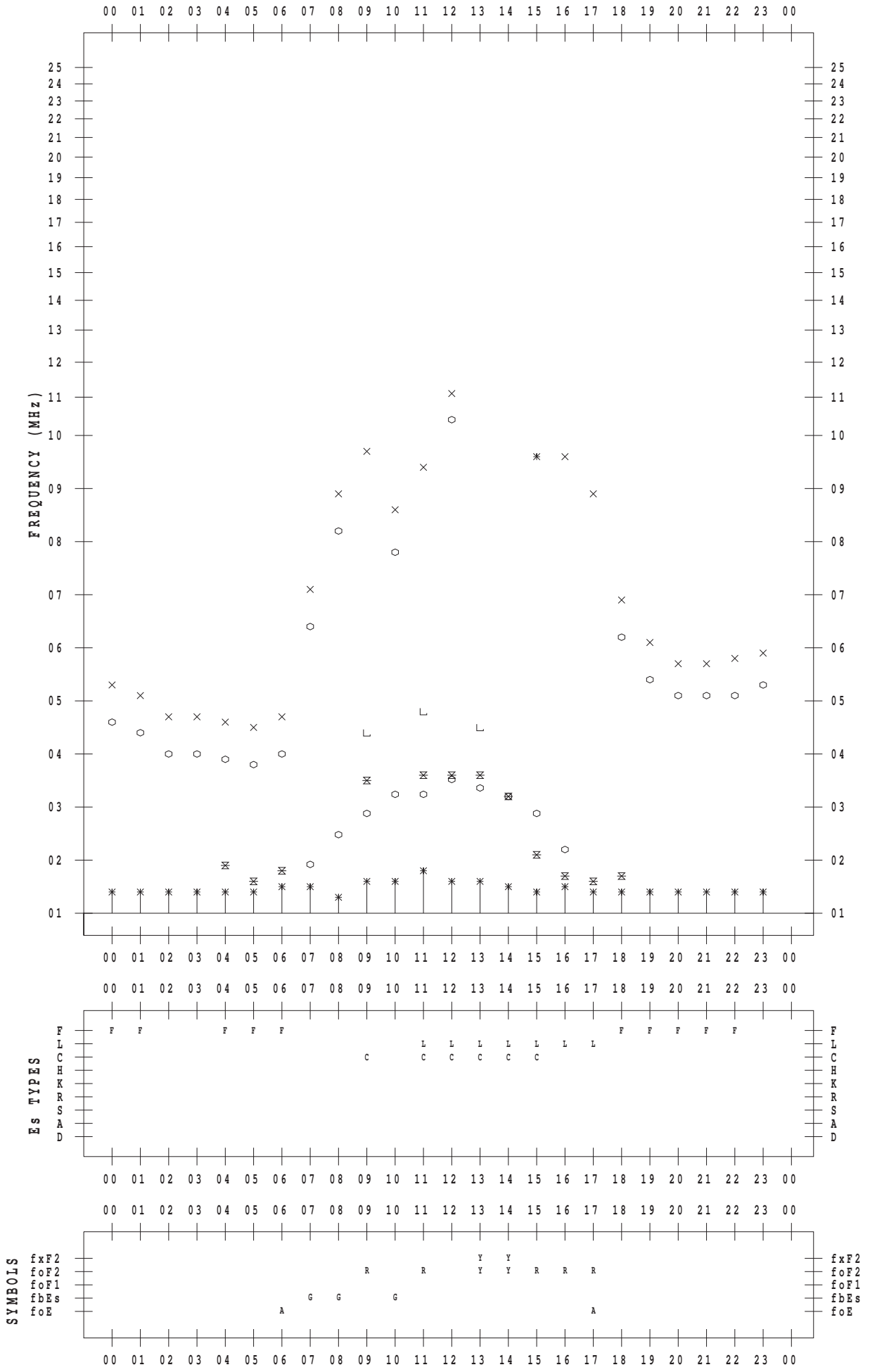
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/17

135 °E MEAN TIME



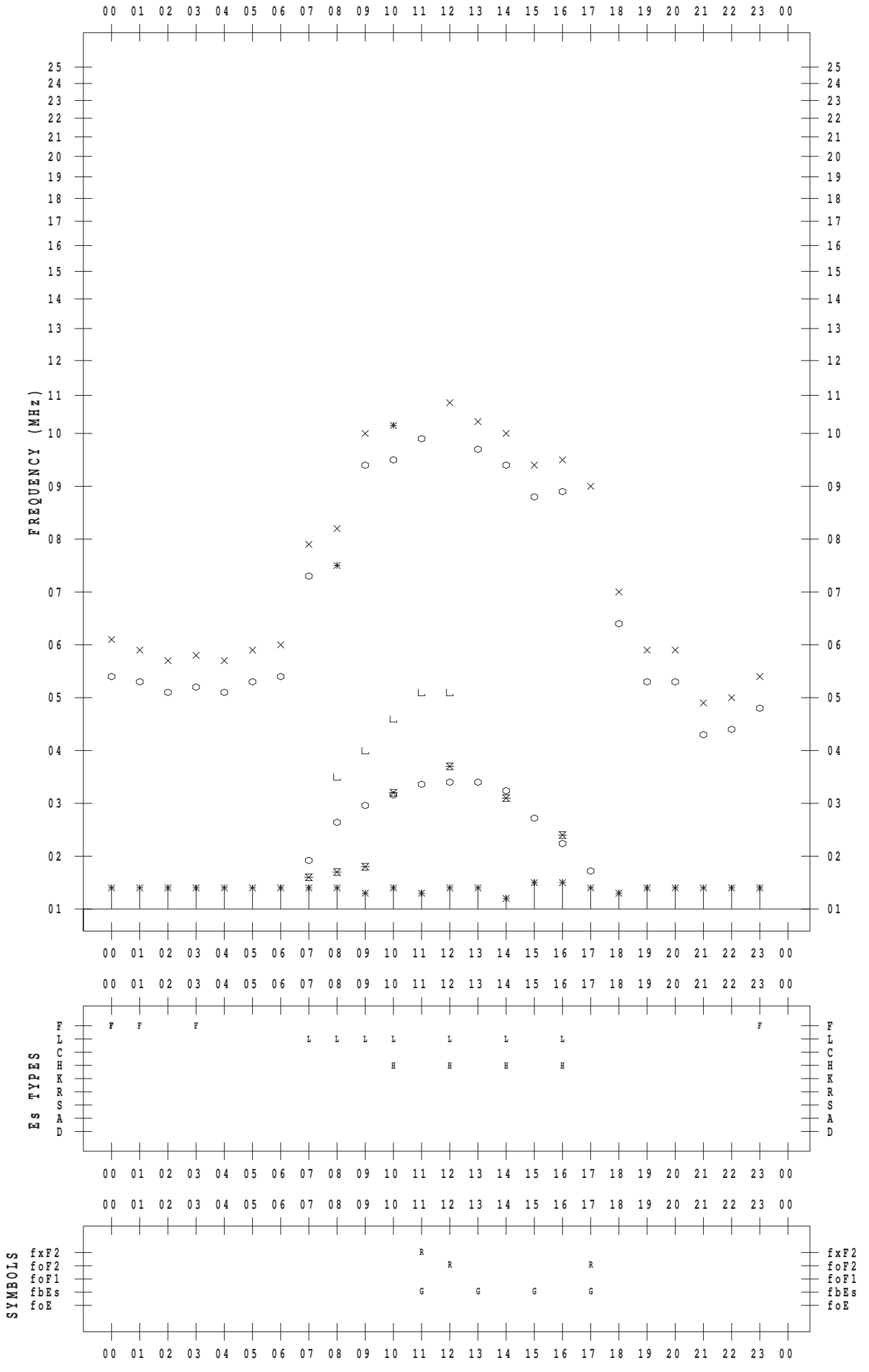
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/18

135 °E MEAN TIME



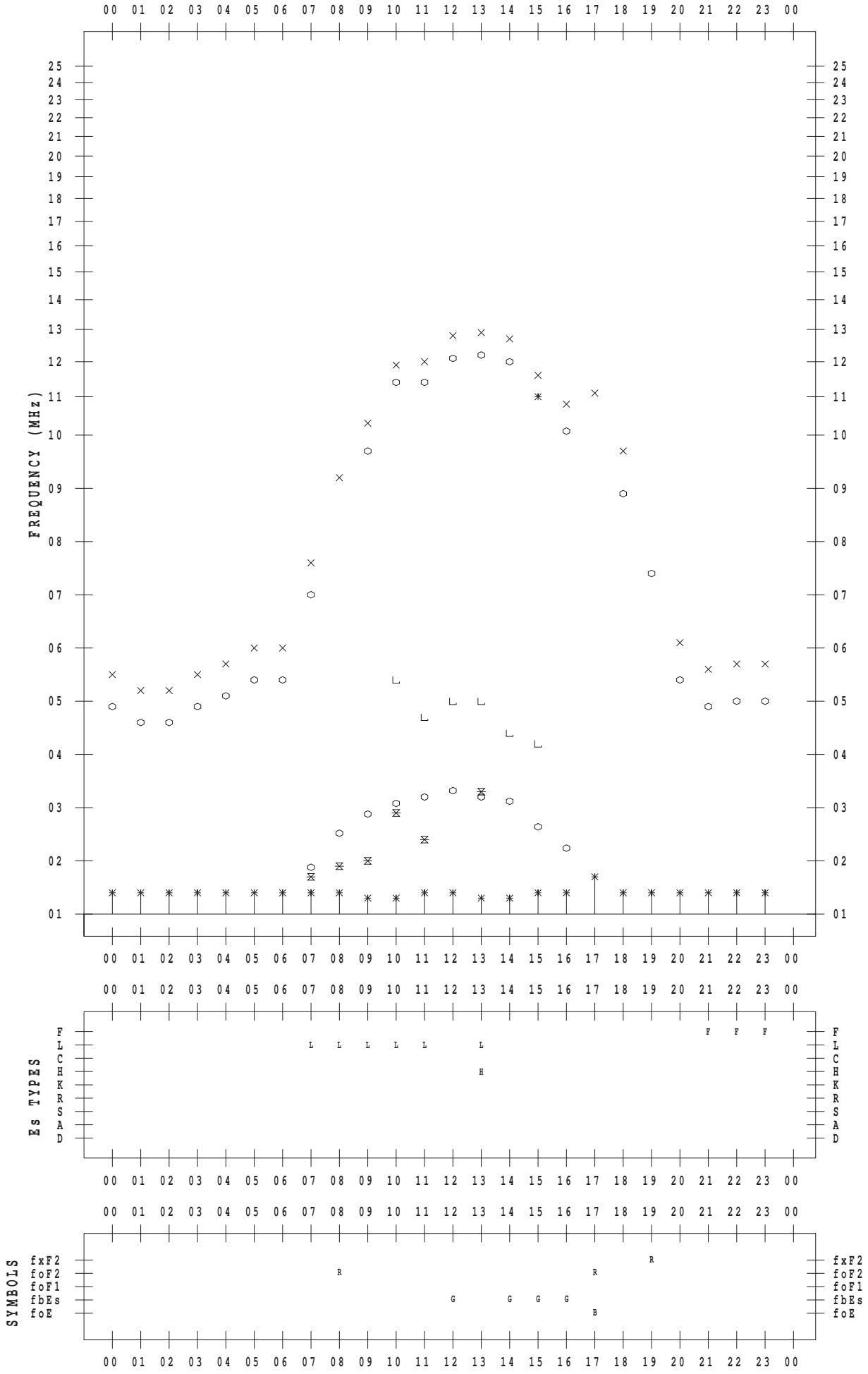
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/19

135 °E MEAN TIME



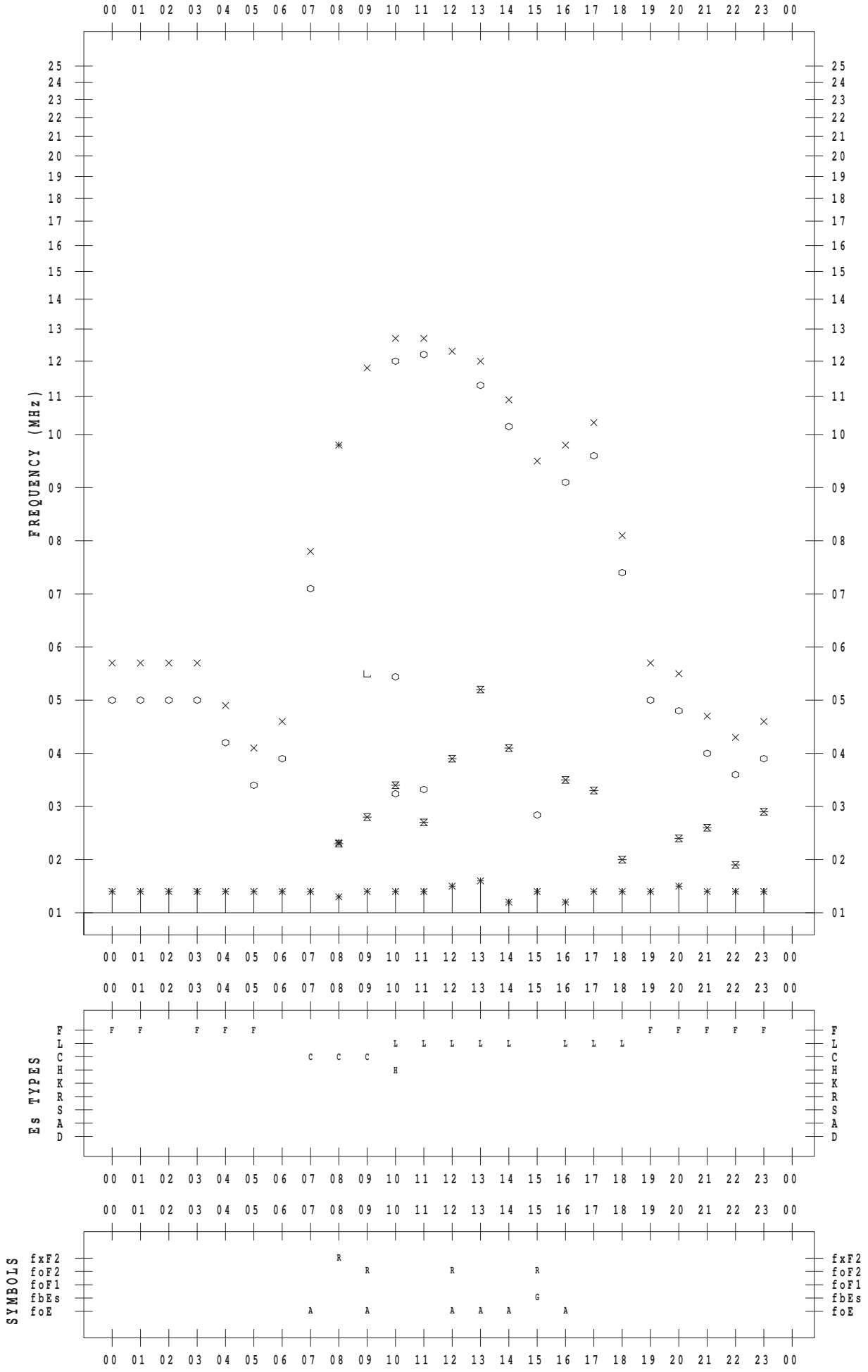
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/20

135 °E MEAN TIME



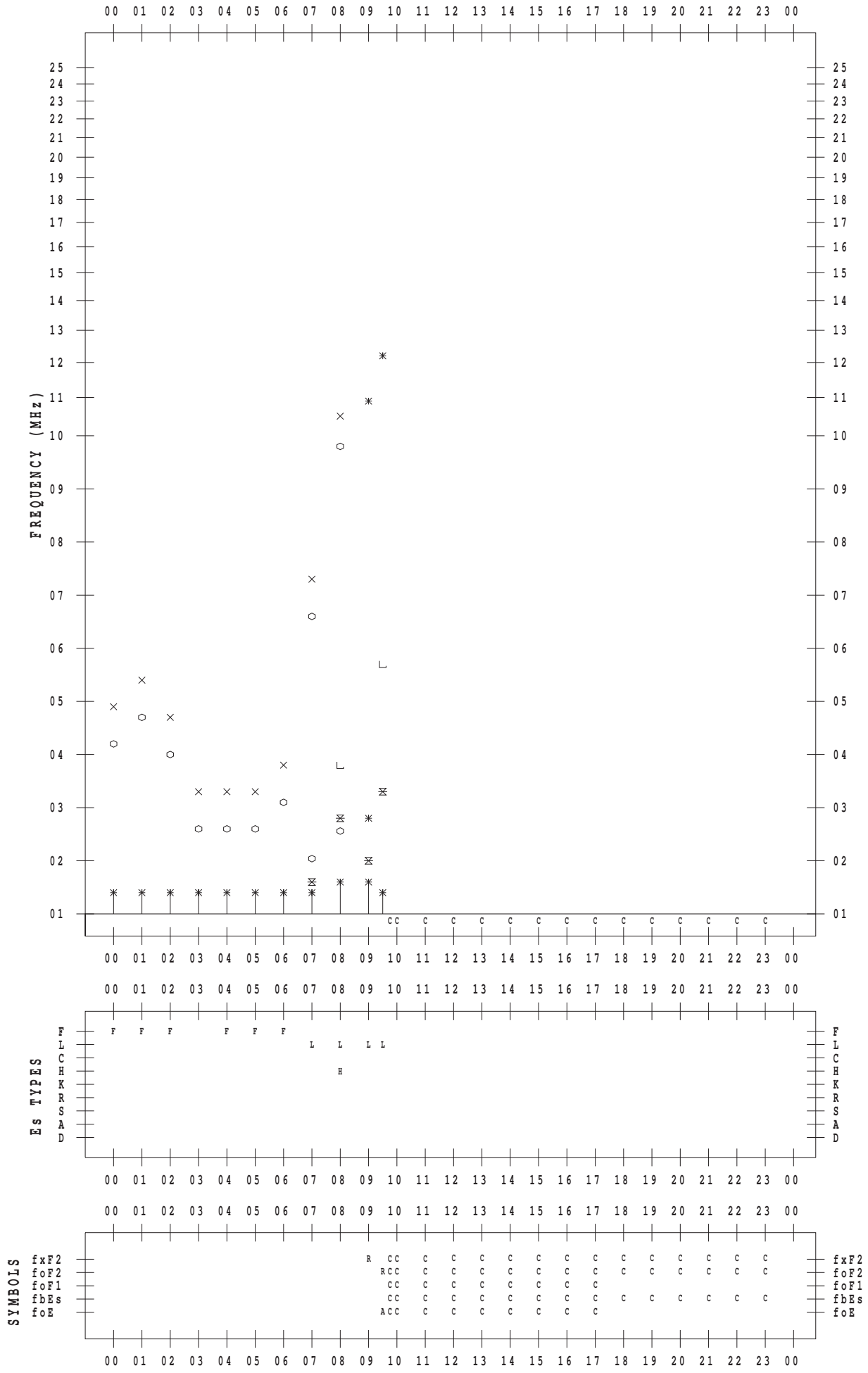
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/21

135 °E MEAN TIME



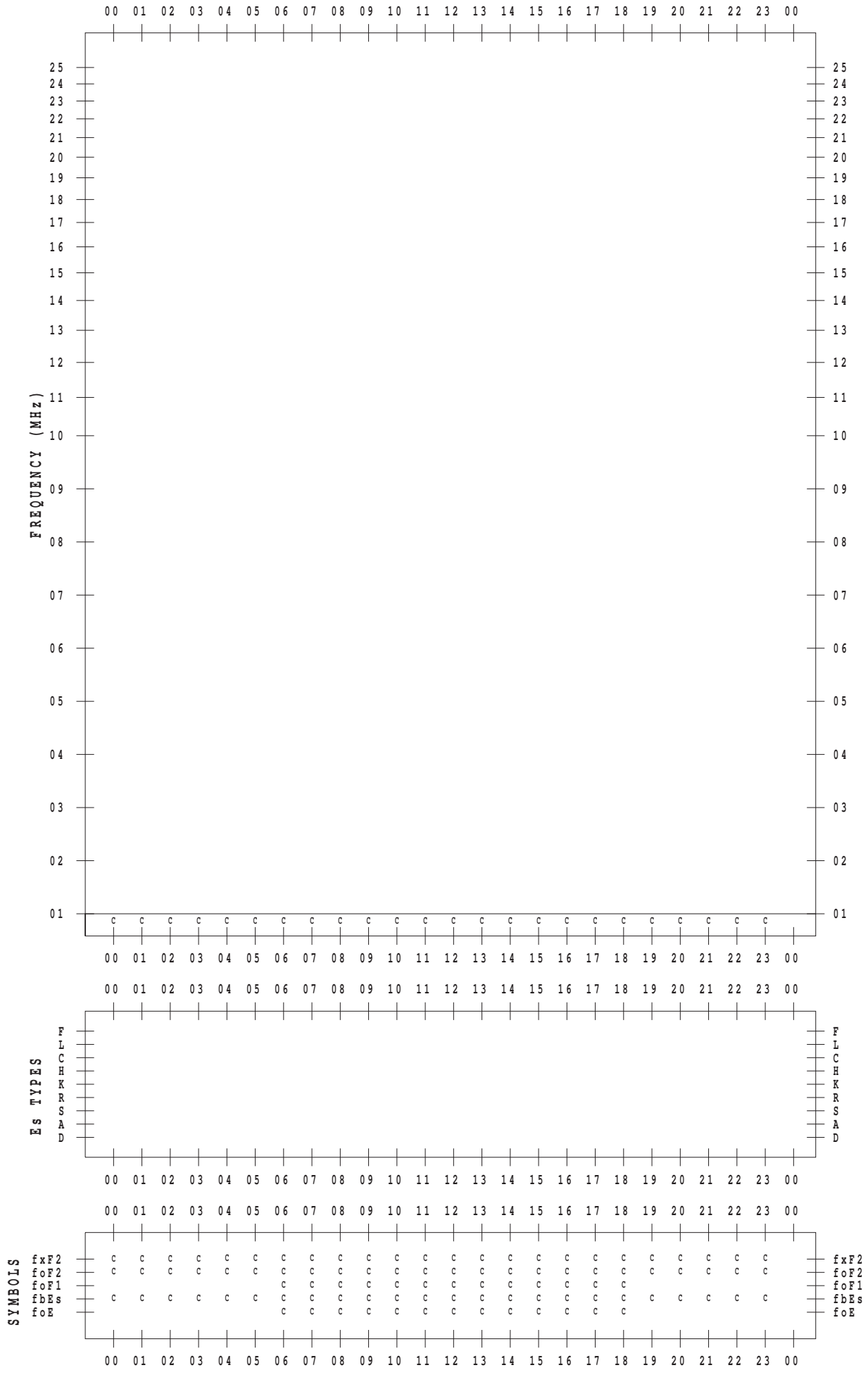
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/22

135 °E MEAN TIME



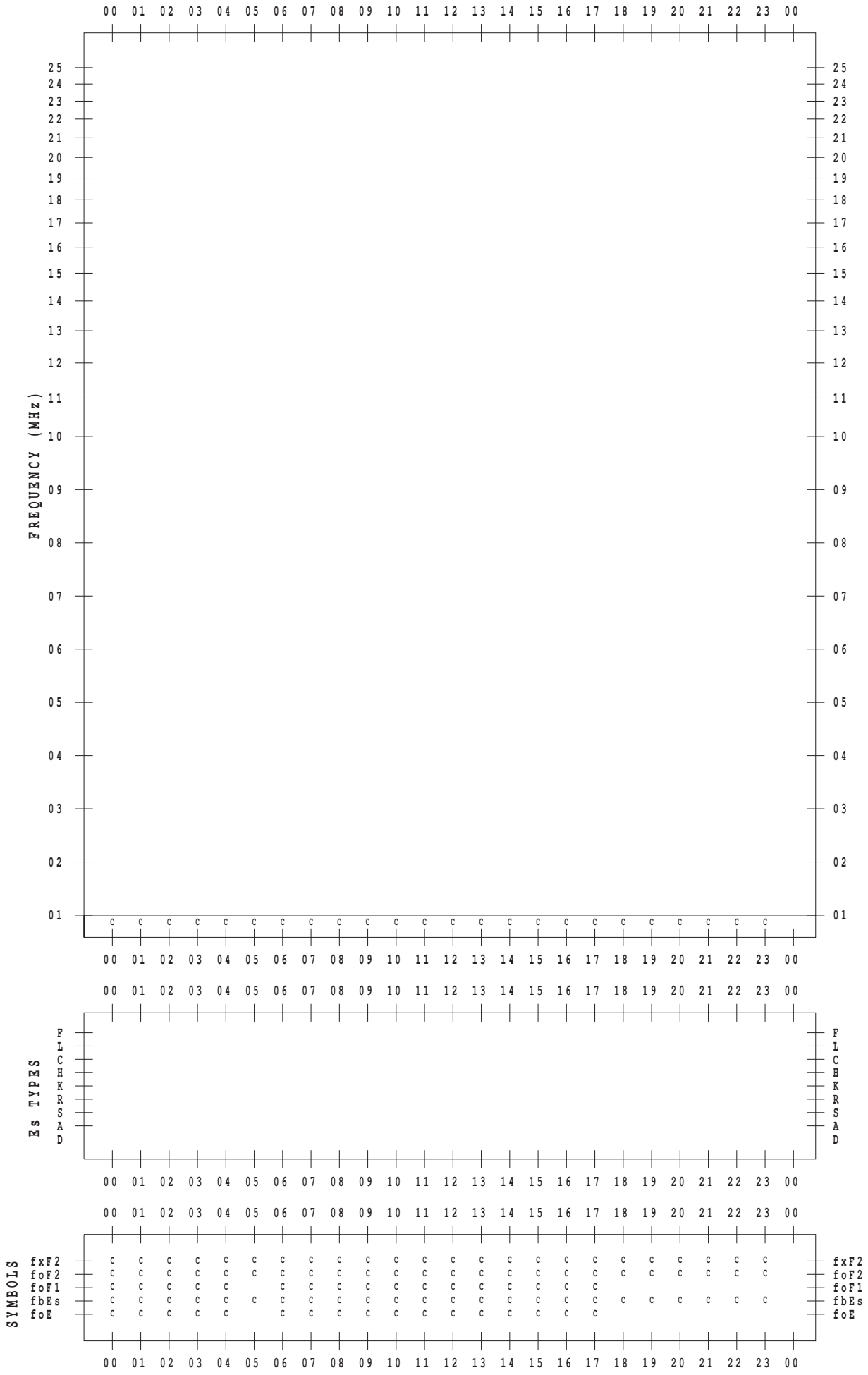
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/23

135 °E MEAN TIME



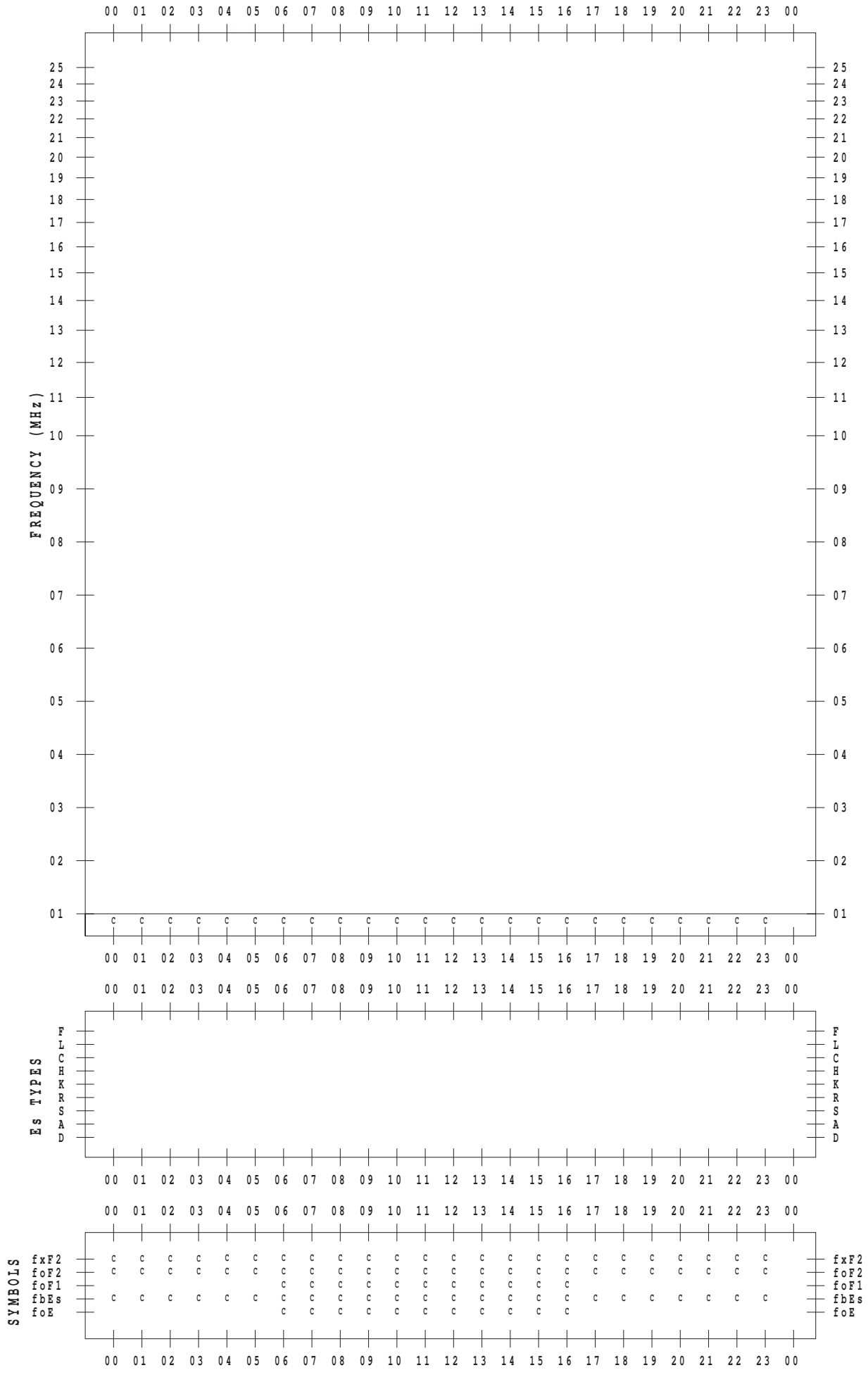
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/24

135 °E MEAN TIME



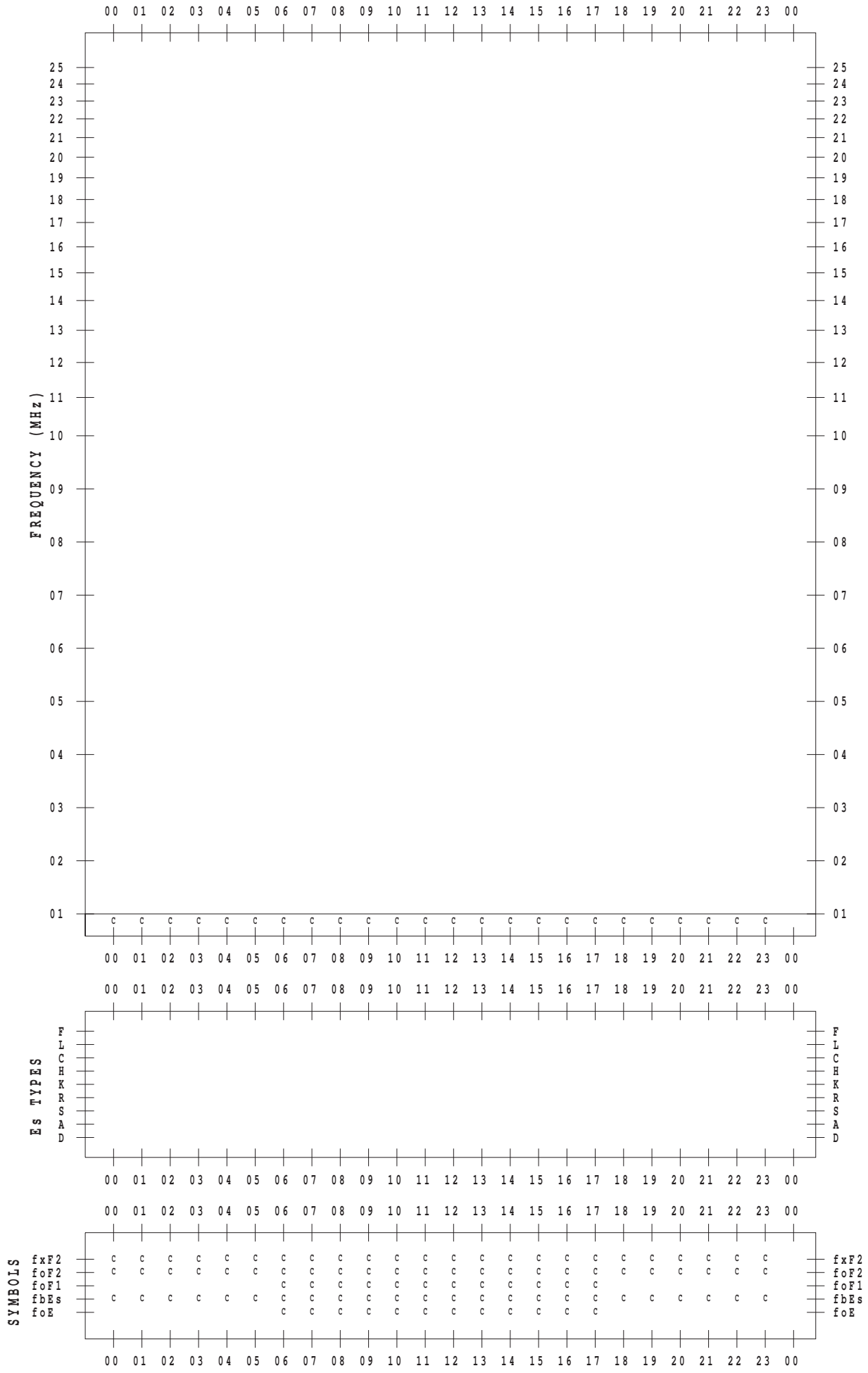
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/25

135 °E MEAN TIME



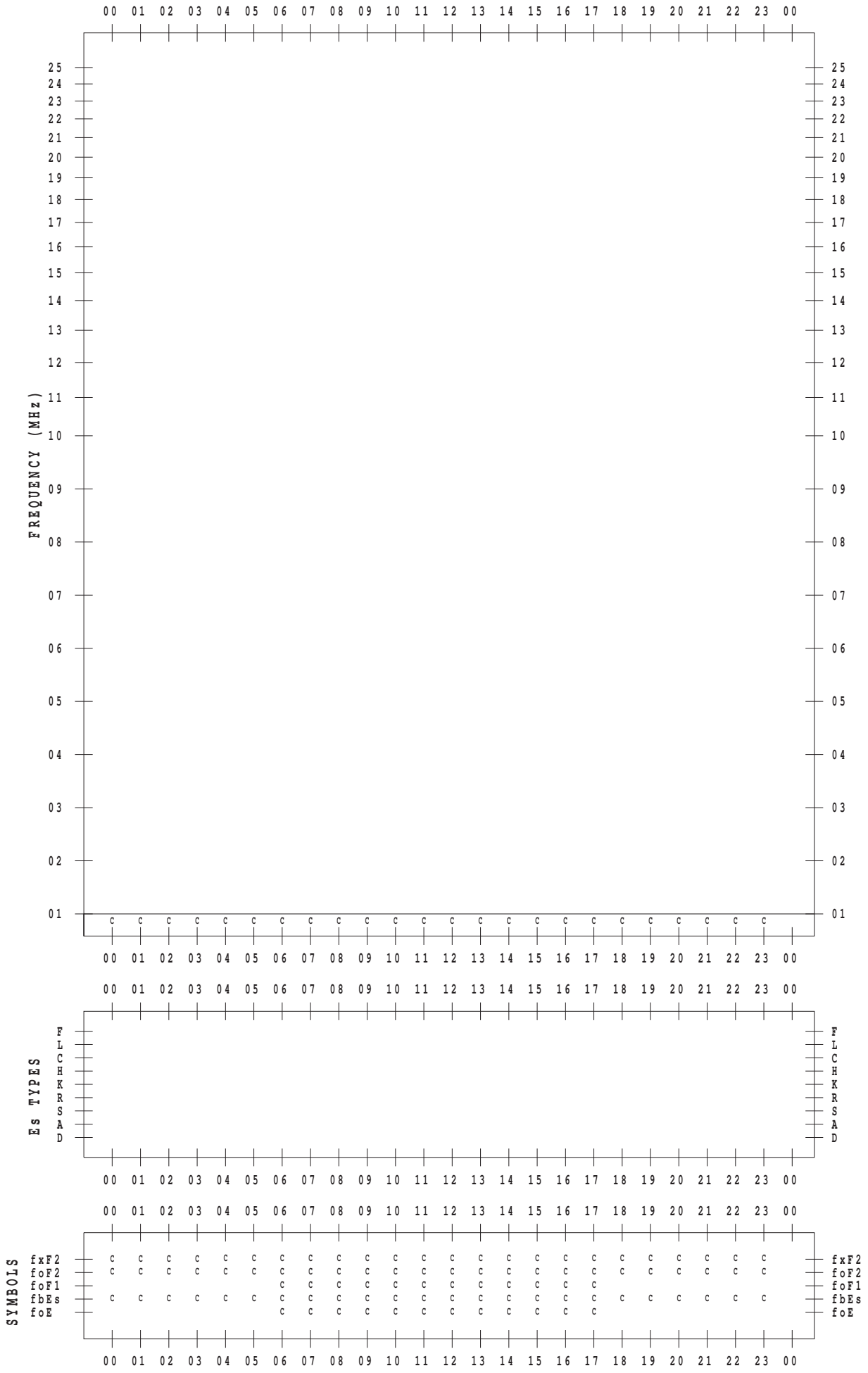
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/26

135 °E MEAN TIME



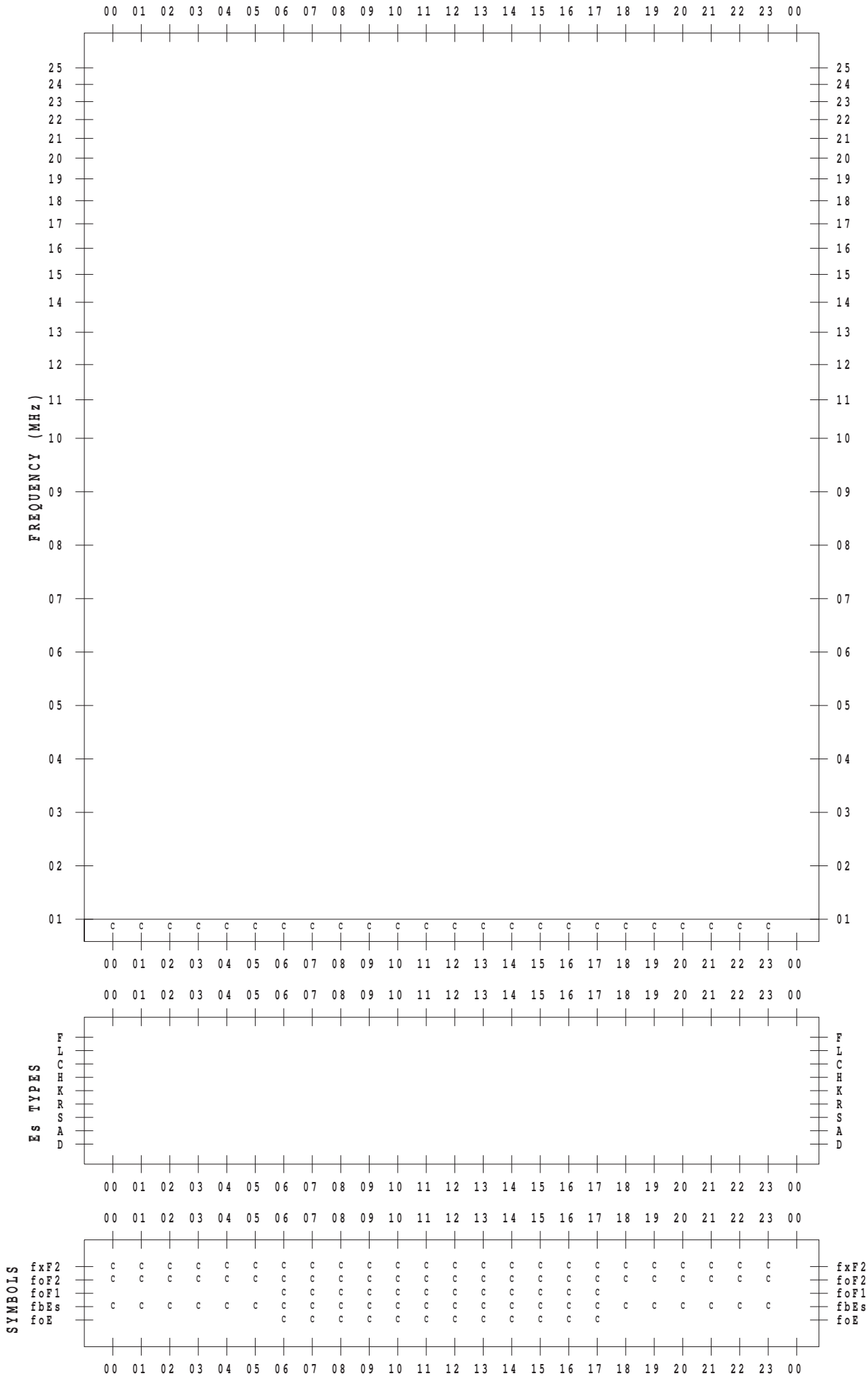
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/27

135 °E MEAN TIME



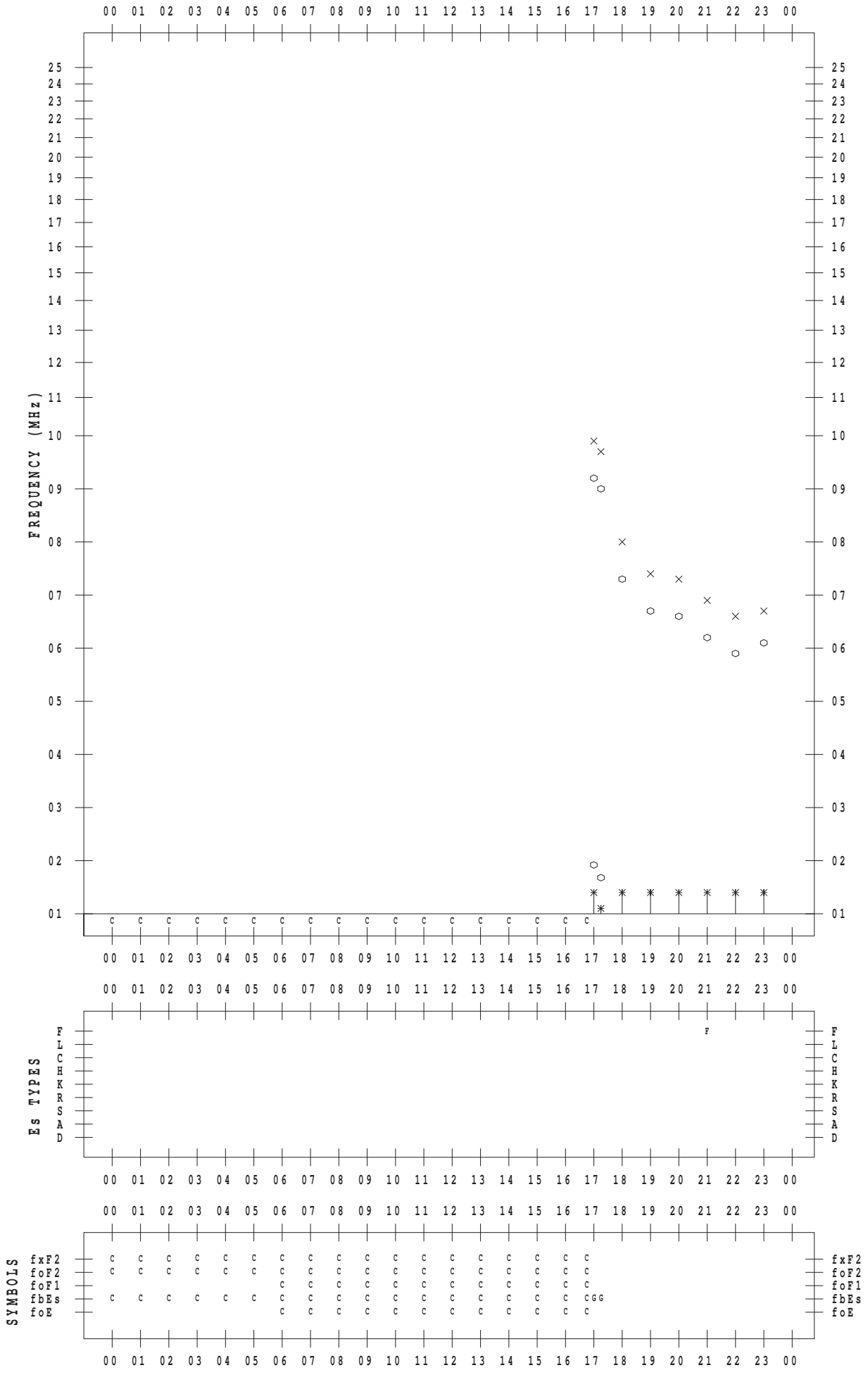
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2014/ 2/28

135 °E MEAN TIME



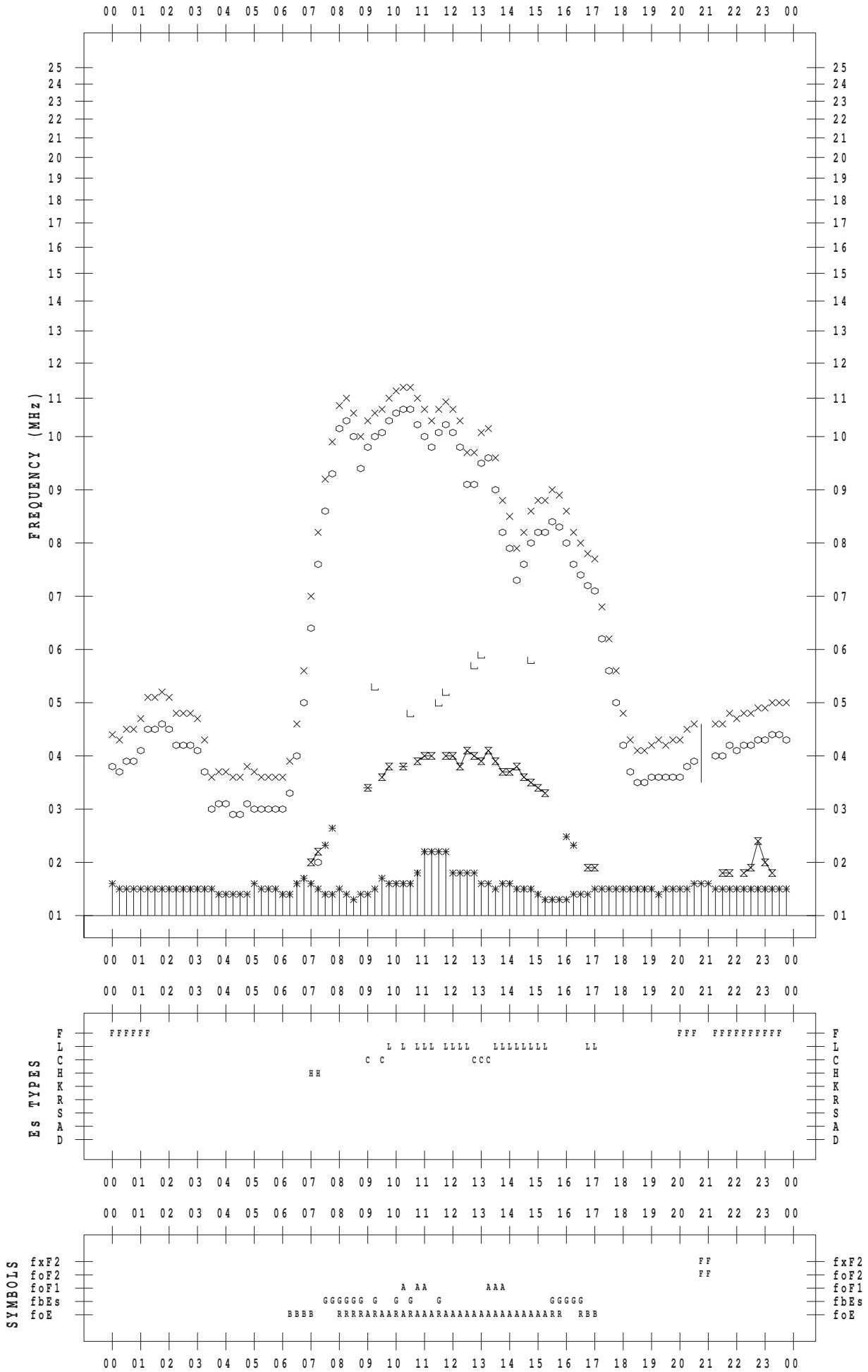
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 1

135 °E MEAN TIME



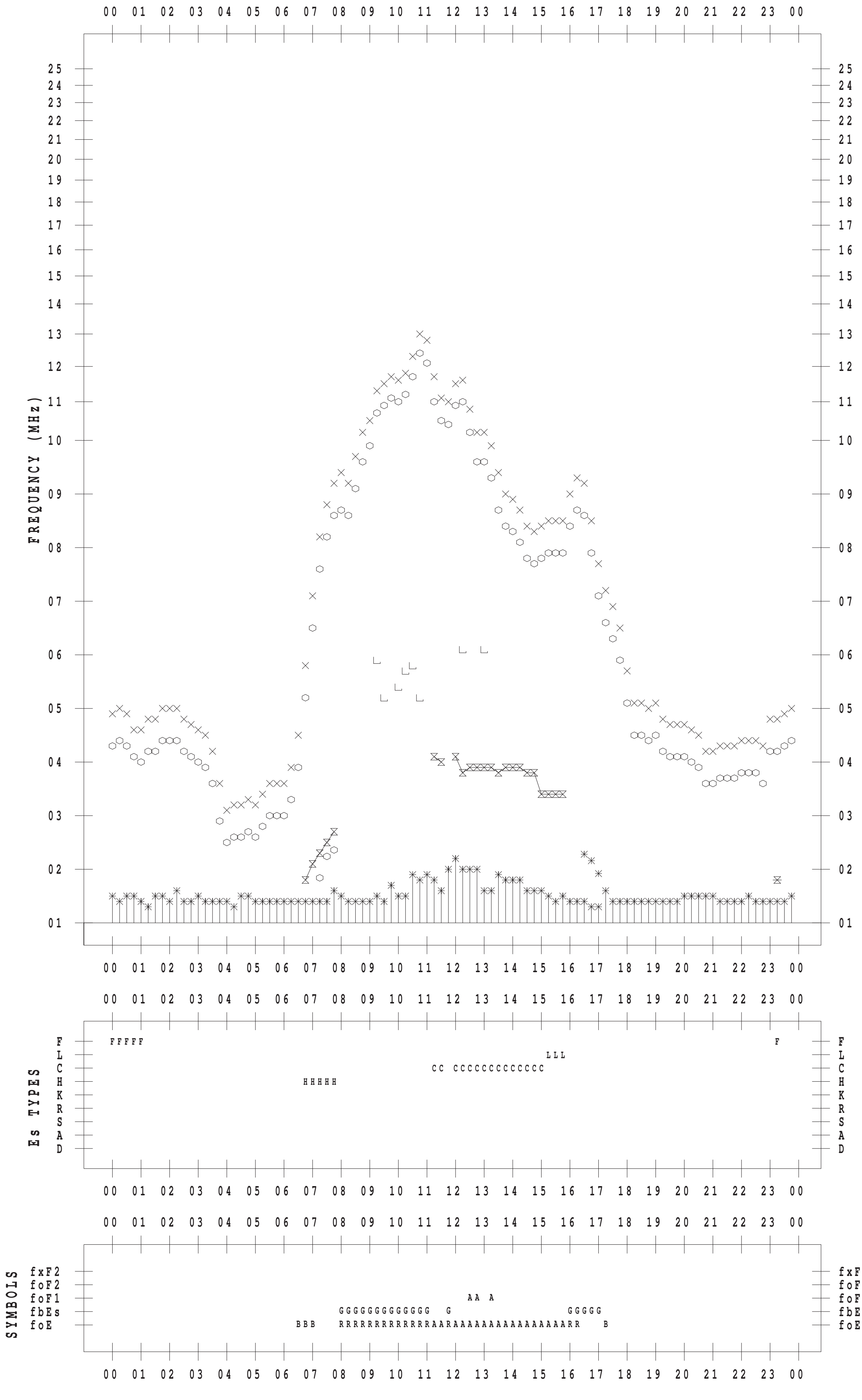
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 2

135 °E MEAN TIME



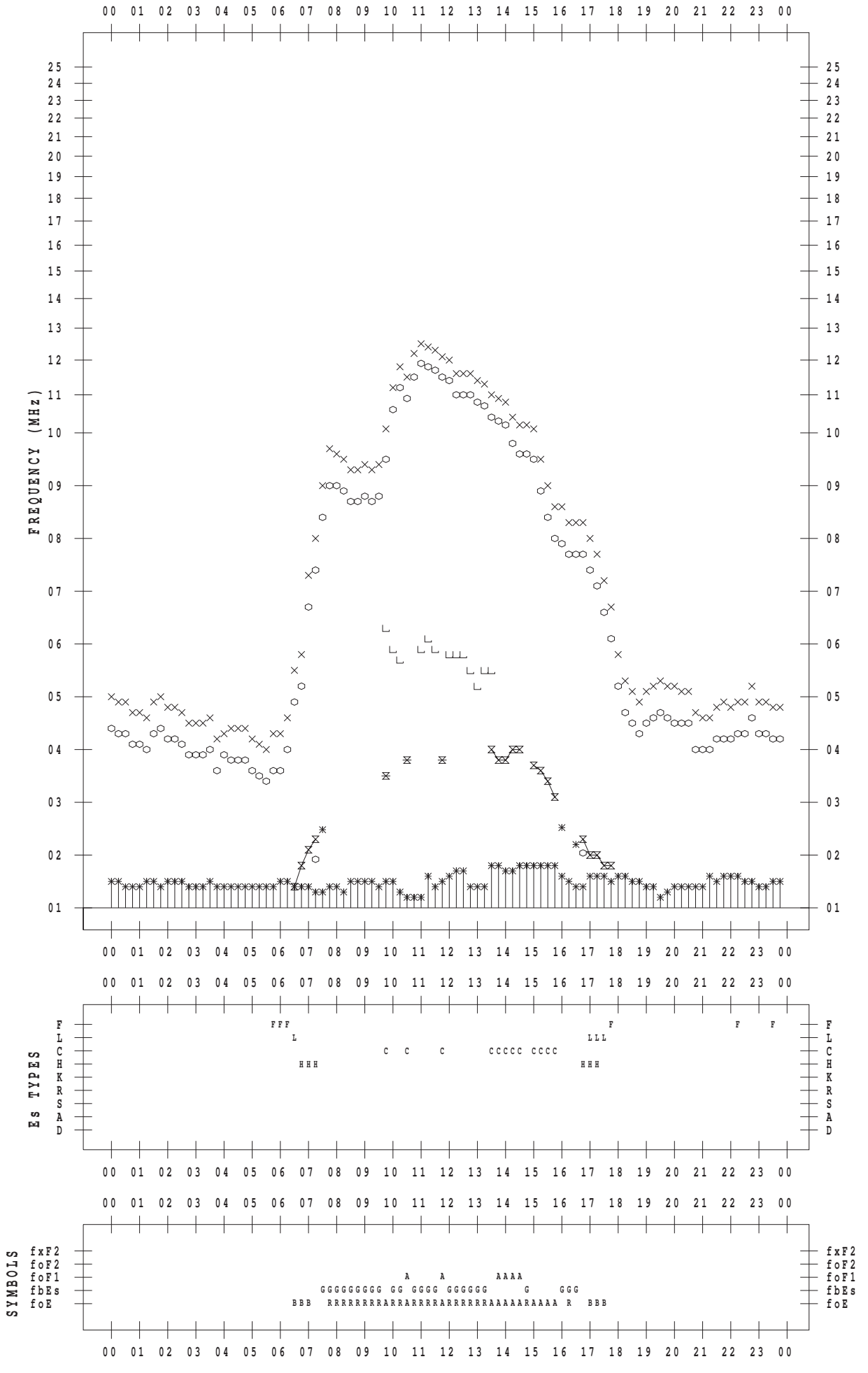
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 3

135 °E MEAN TIME



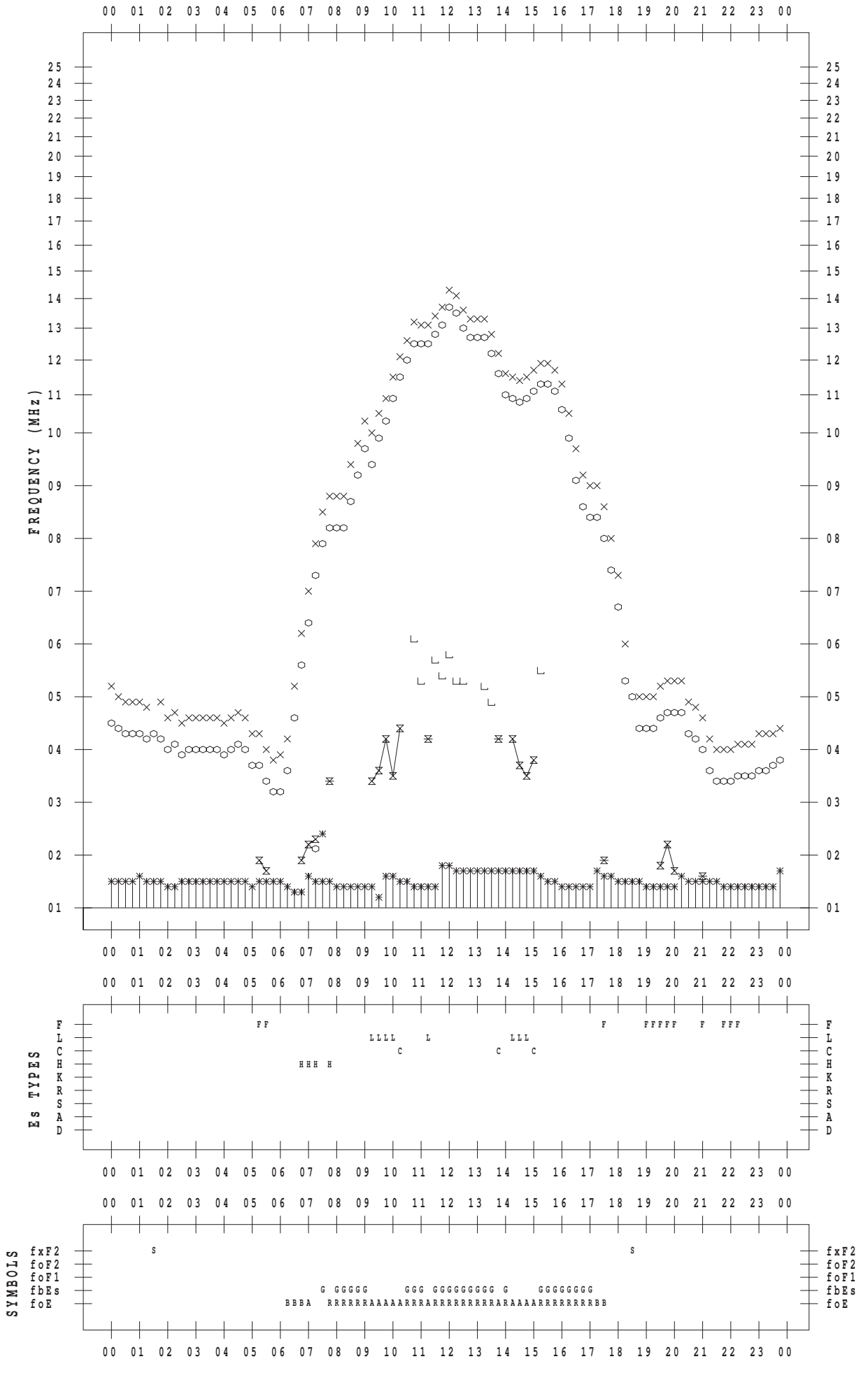
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 4

135 °E MEAN TIME



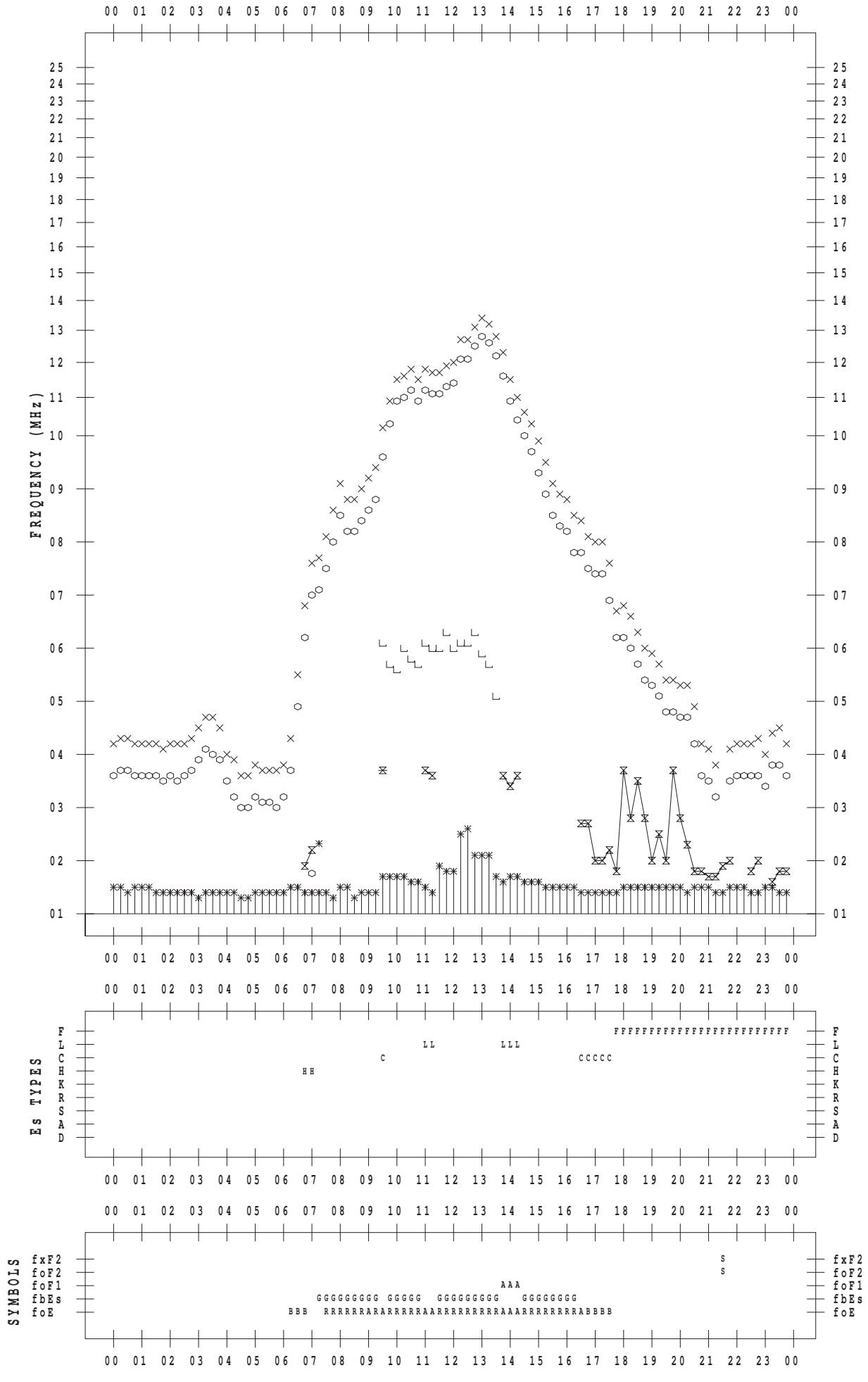
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 5

135 °E MEAN TIME



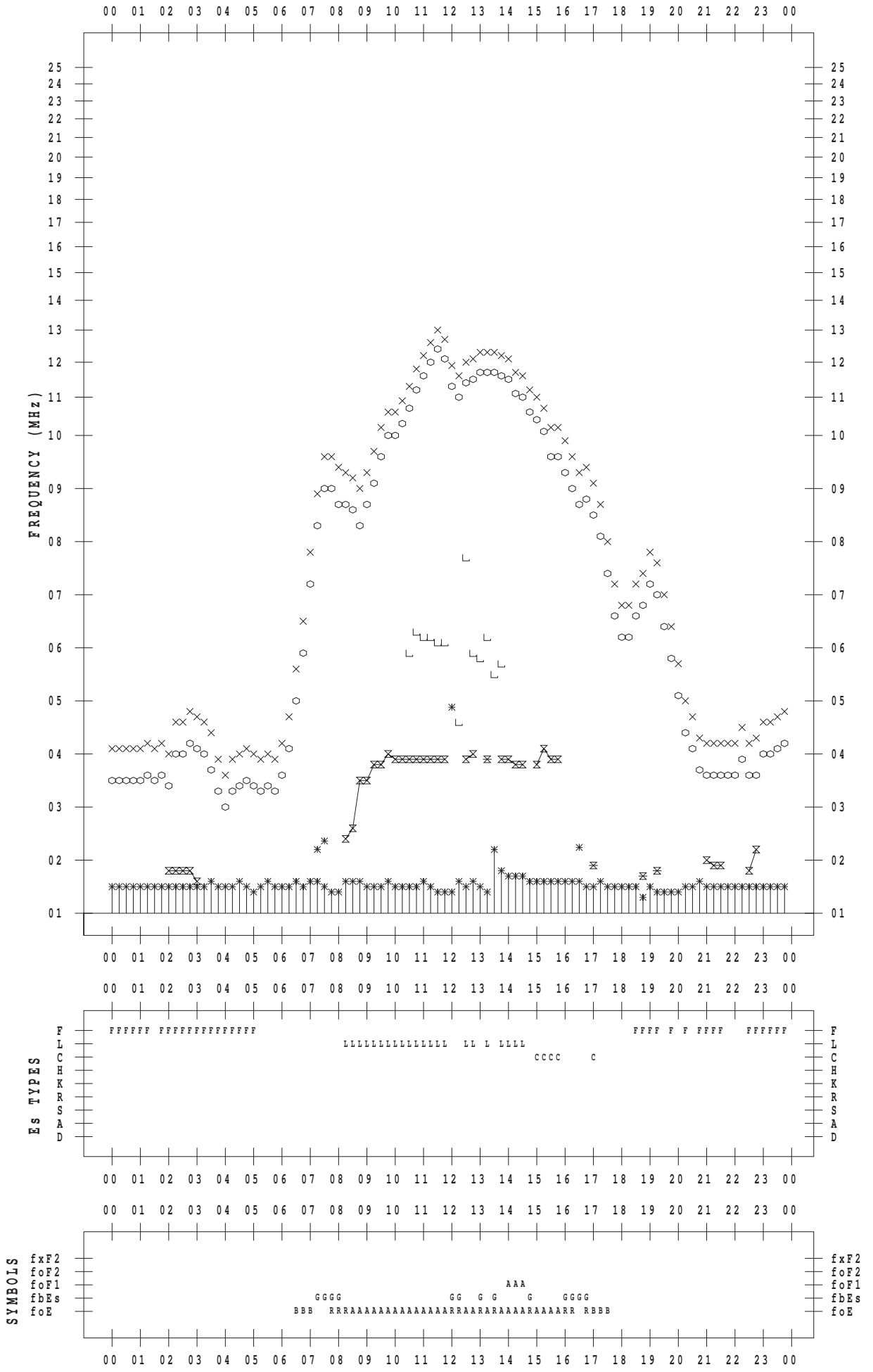
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 6

135 °E MEAN TIME



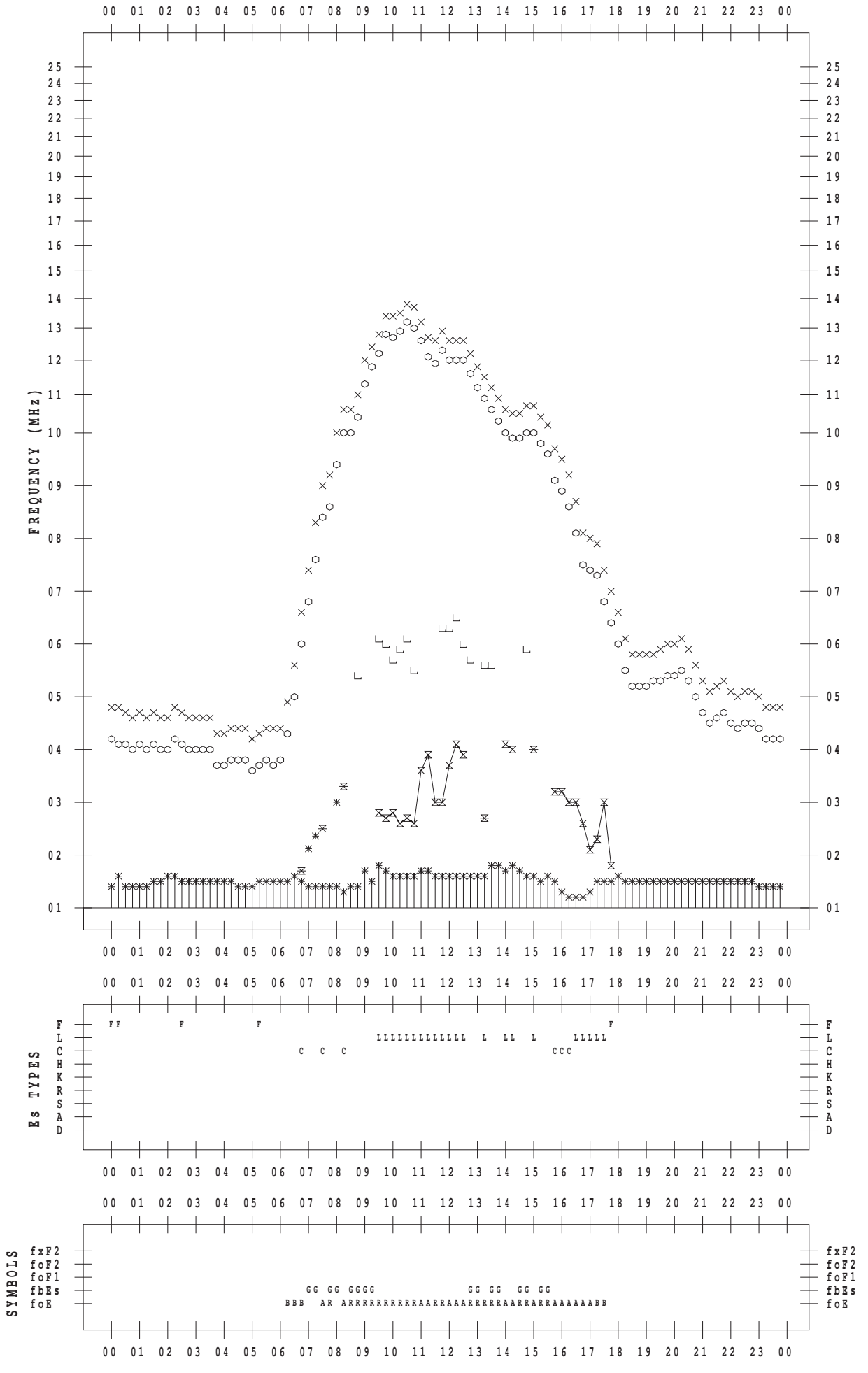
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 7

135 °E MEAN TIME



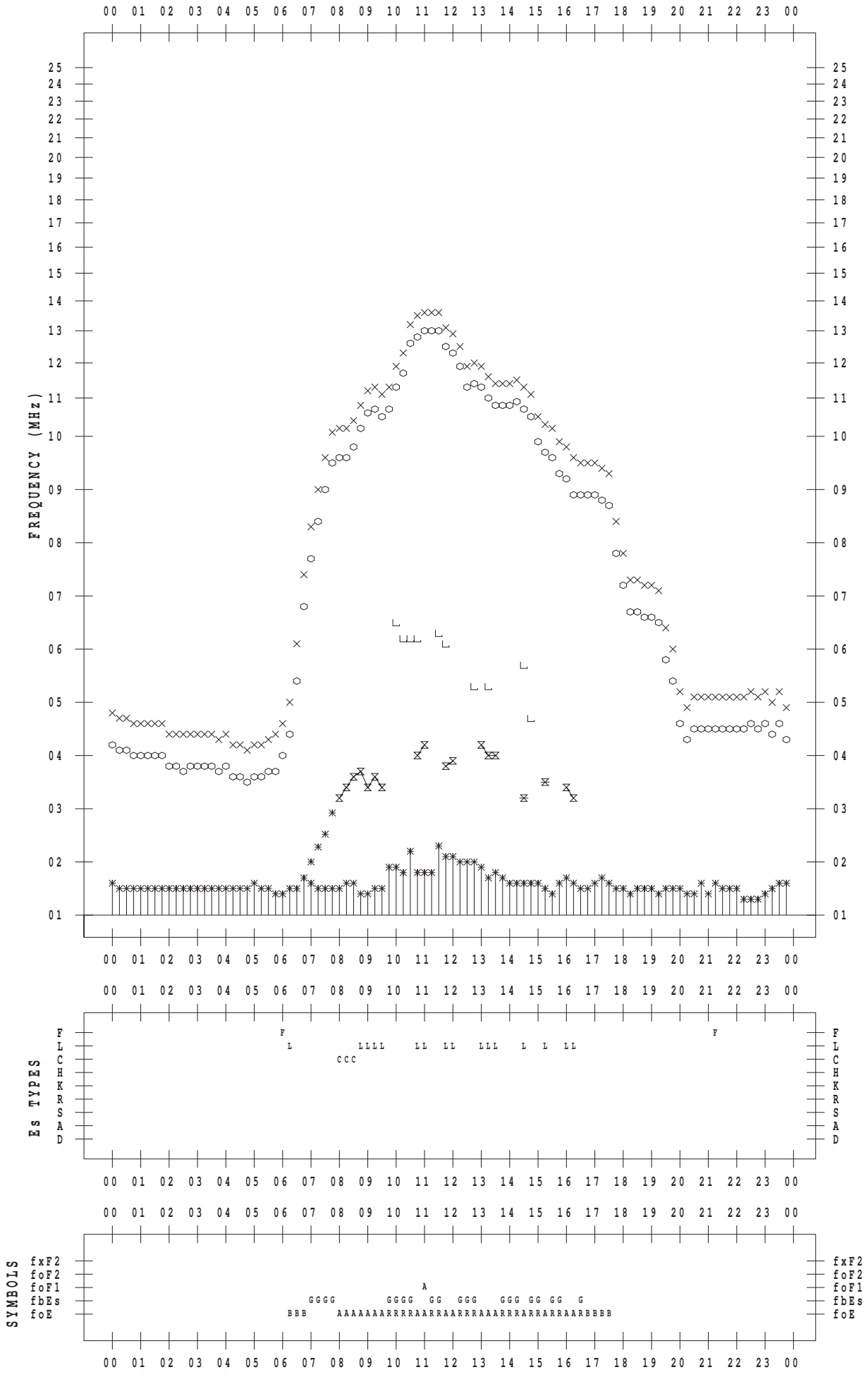
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 8

135 °E MEAN TIME



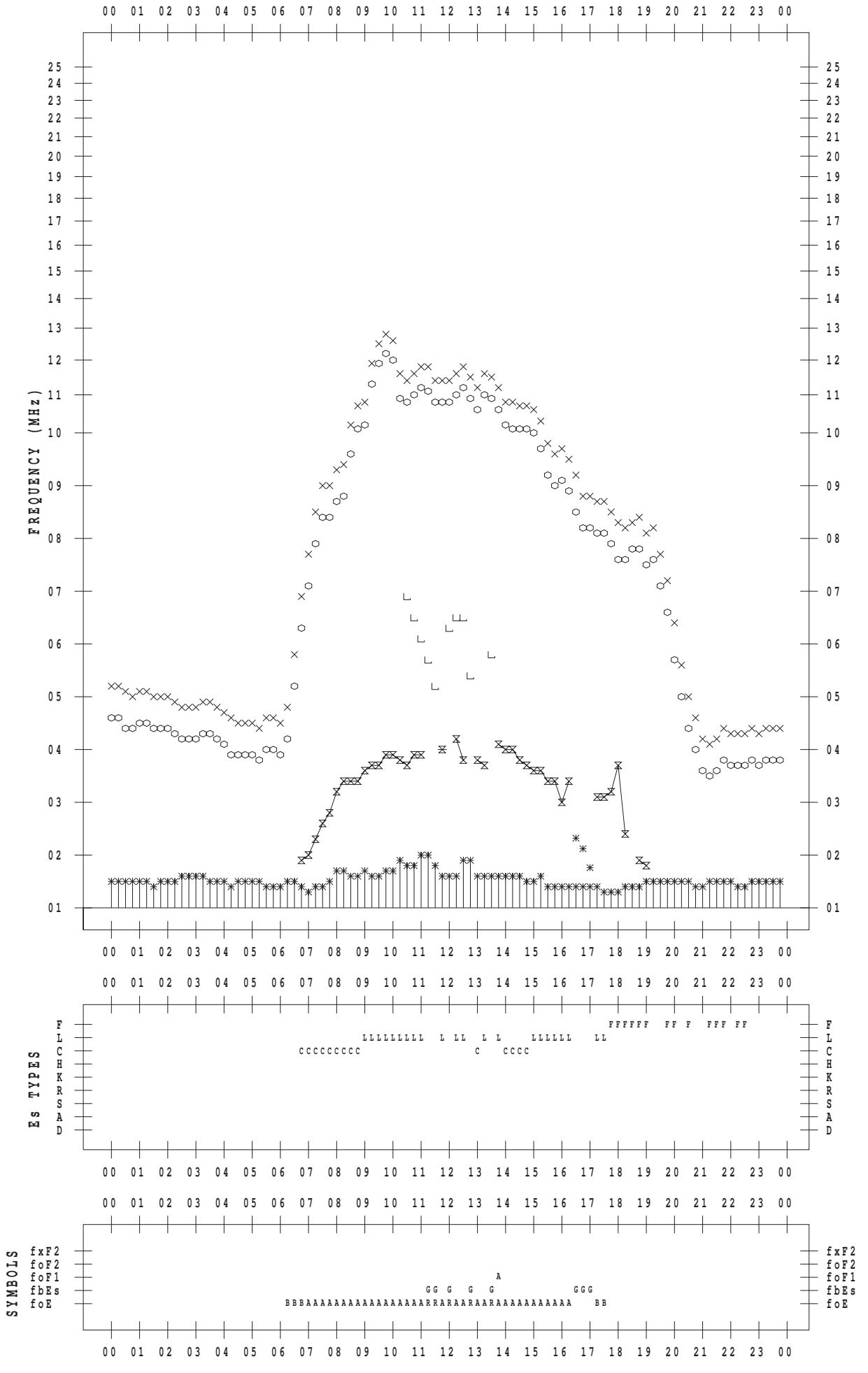
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/ 9

135 °E MEAN TIME



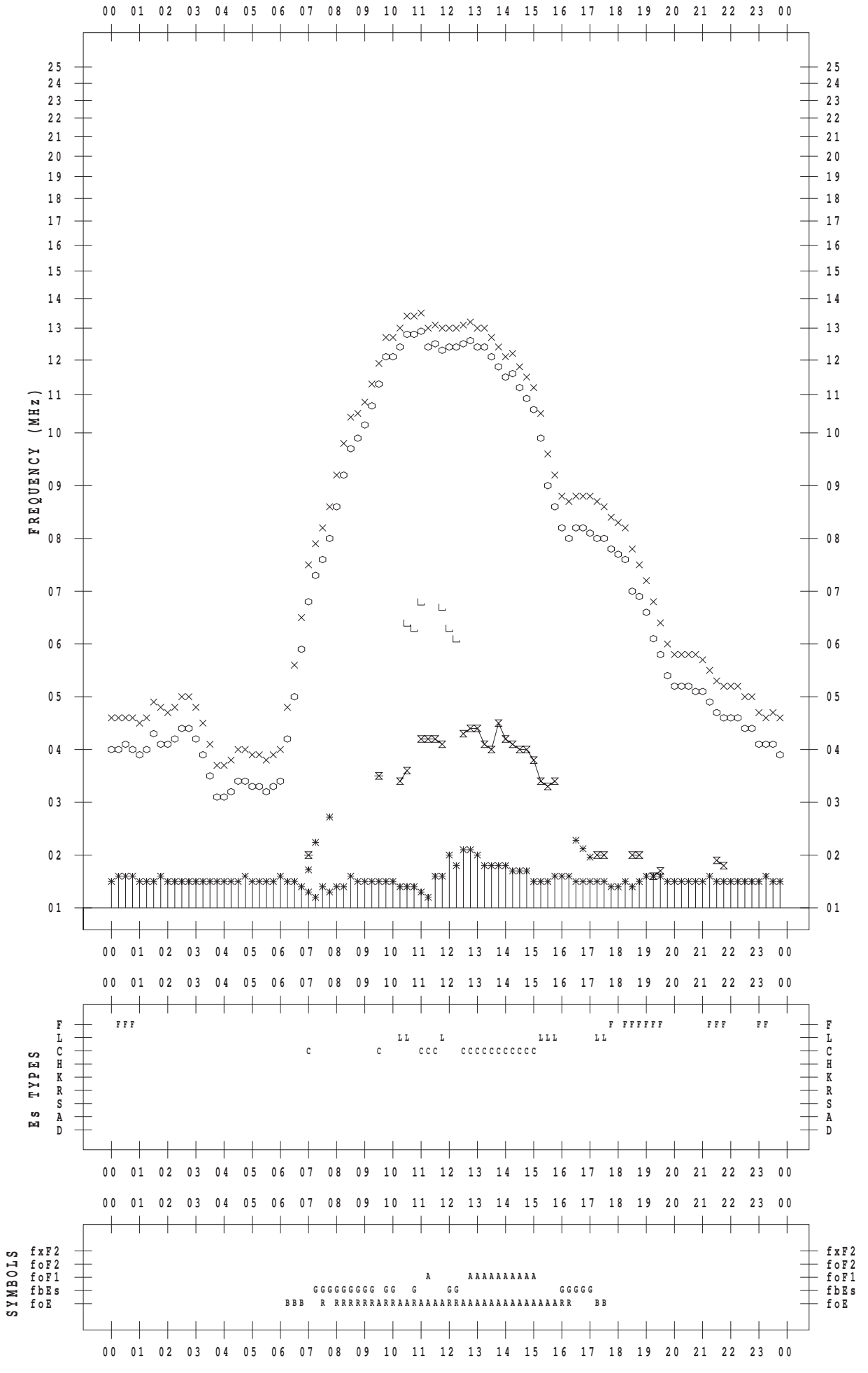
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/10

135 °E MEAN TIME



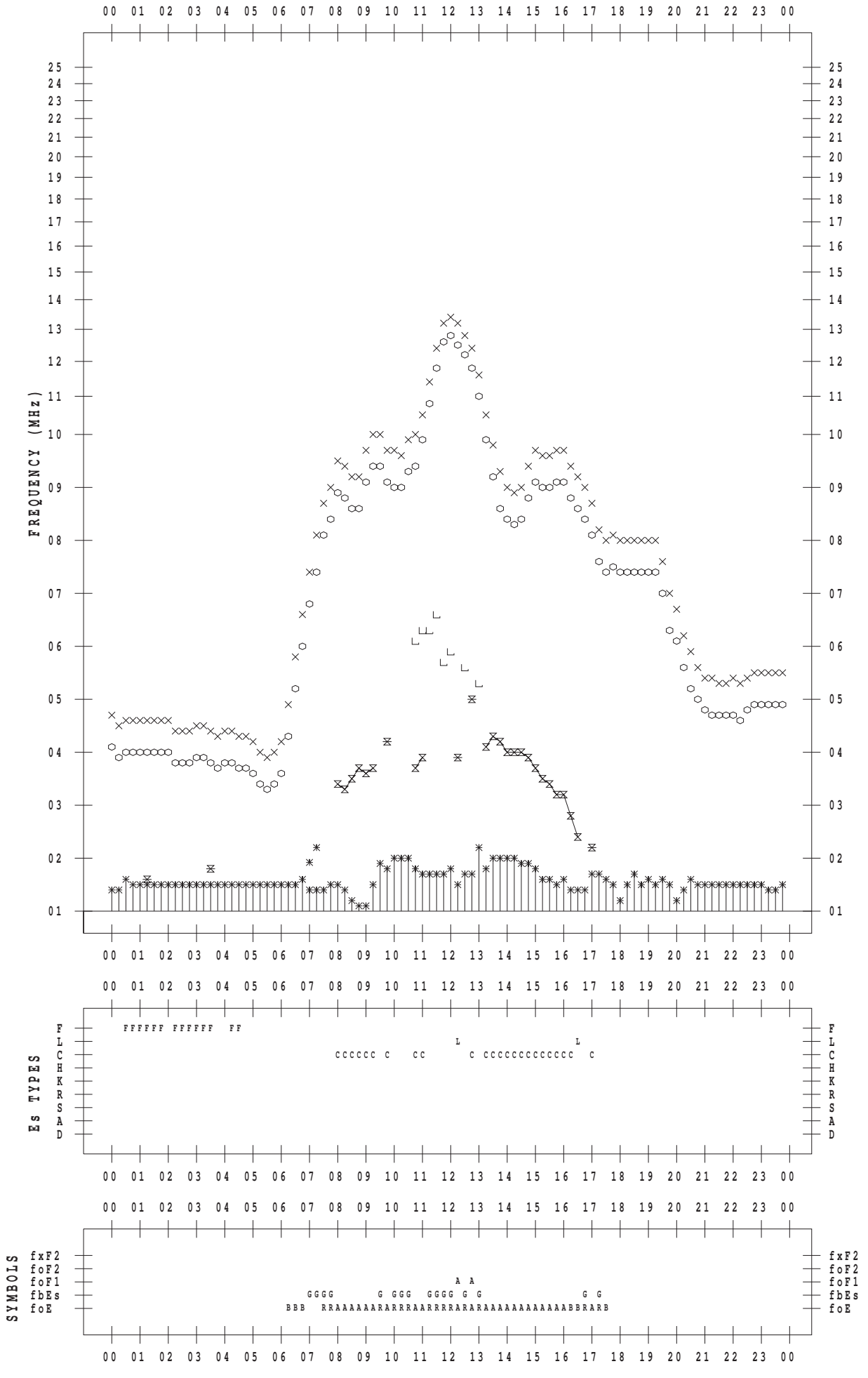
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/11

135 °E MEAN TIME



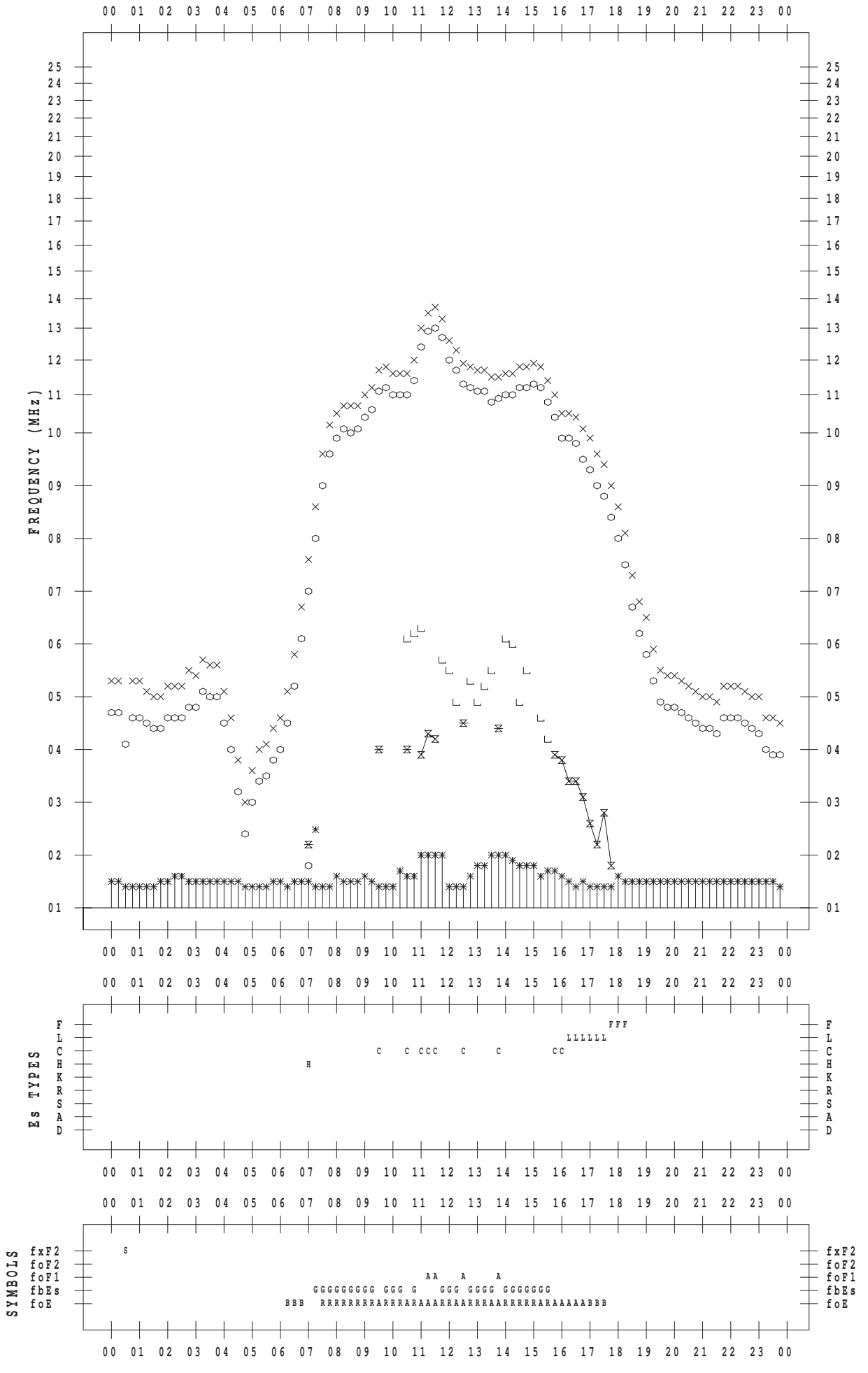
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/12

135 °E MEAN TIME



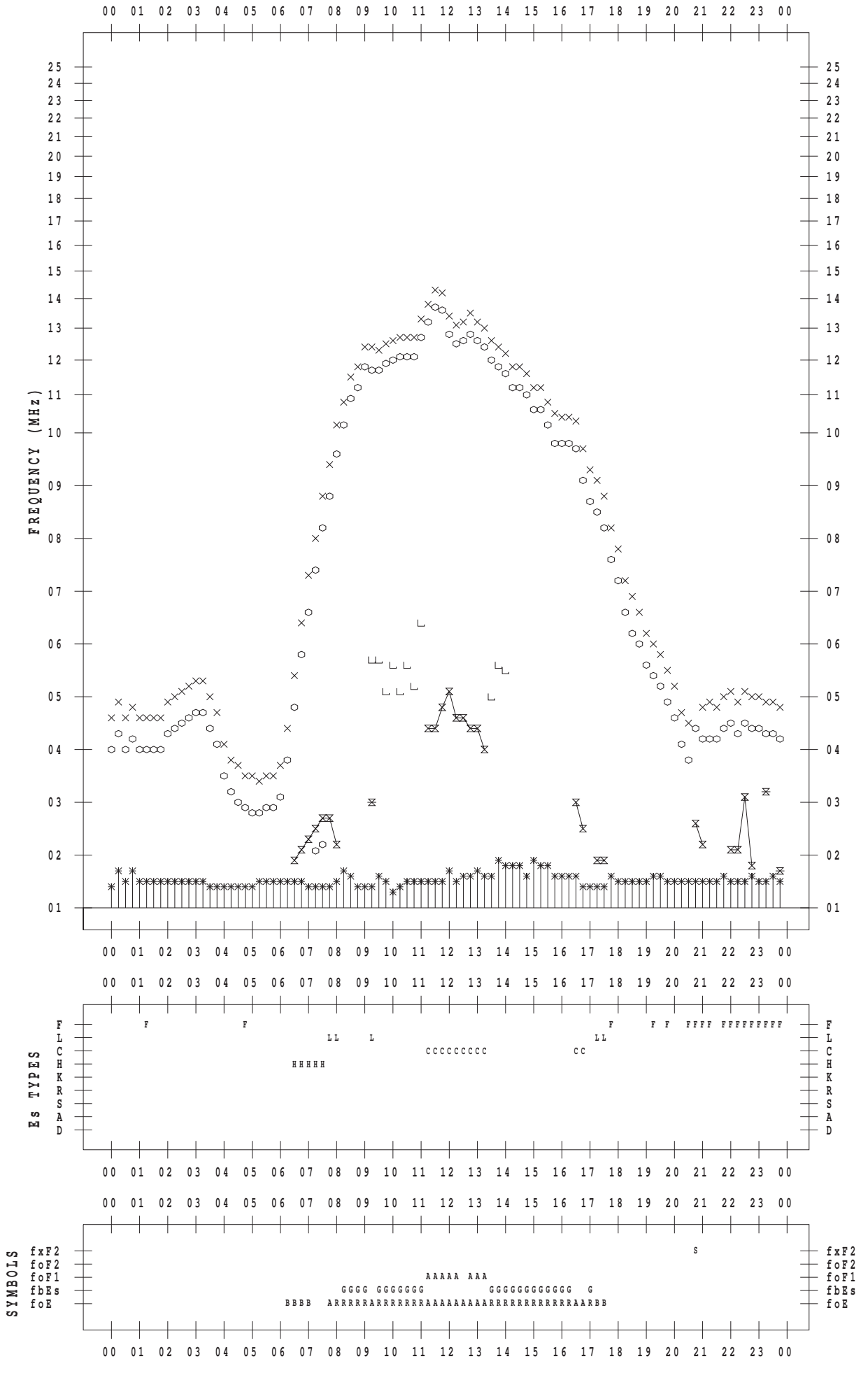
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/13

135 °E MEAN TIME



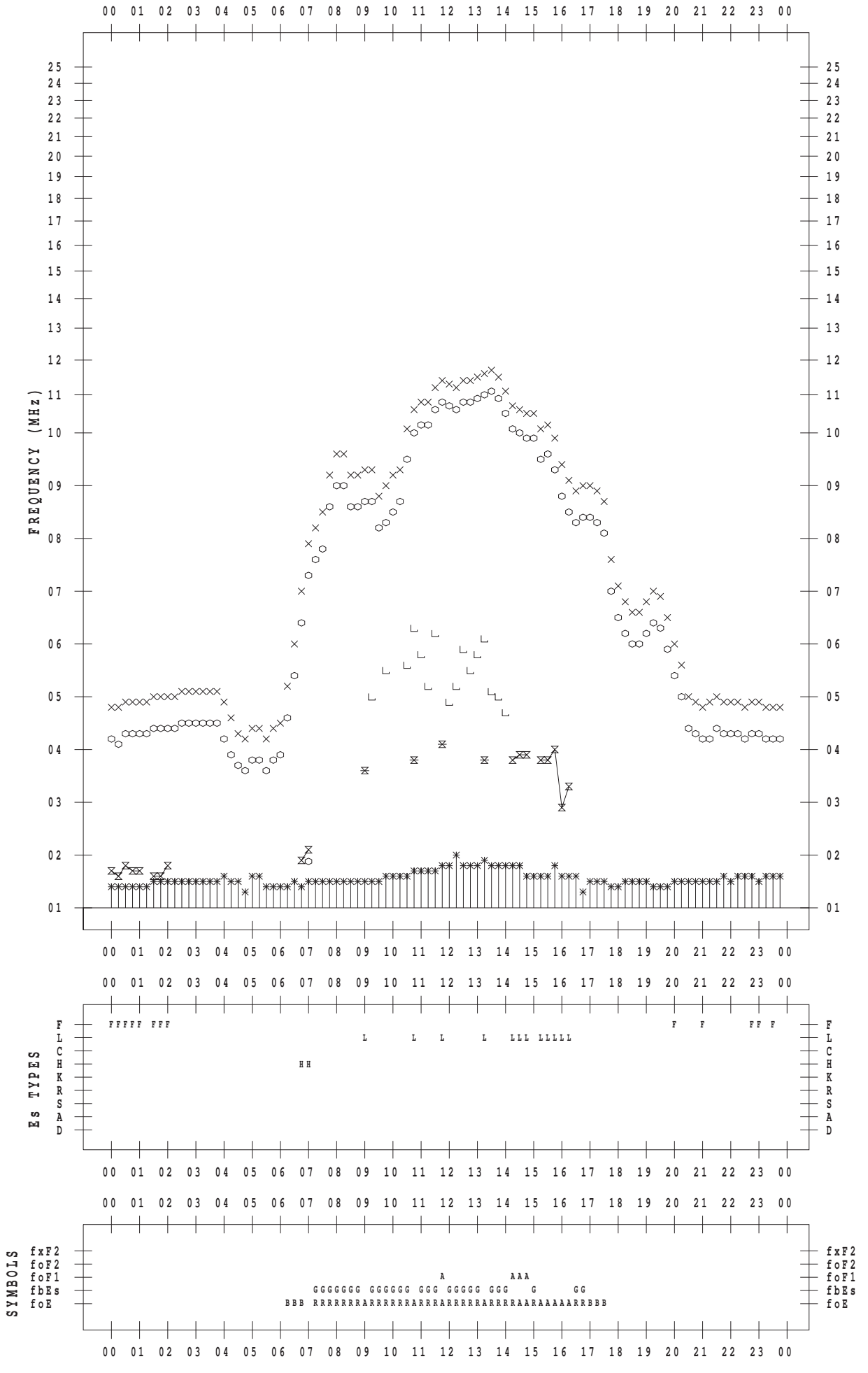
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/14

135 °E MEAN TIME



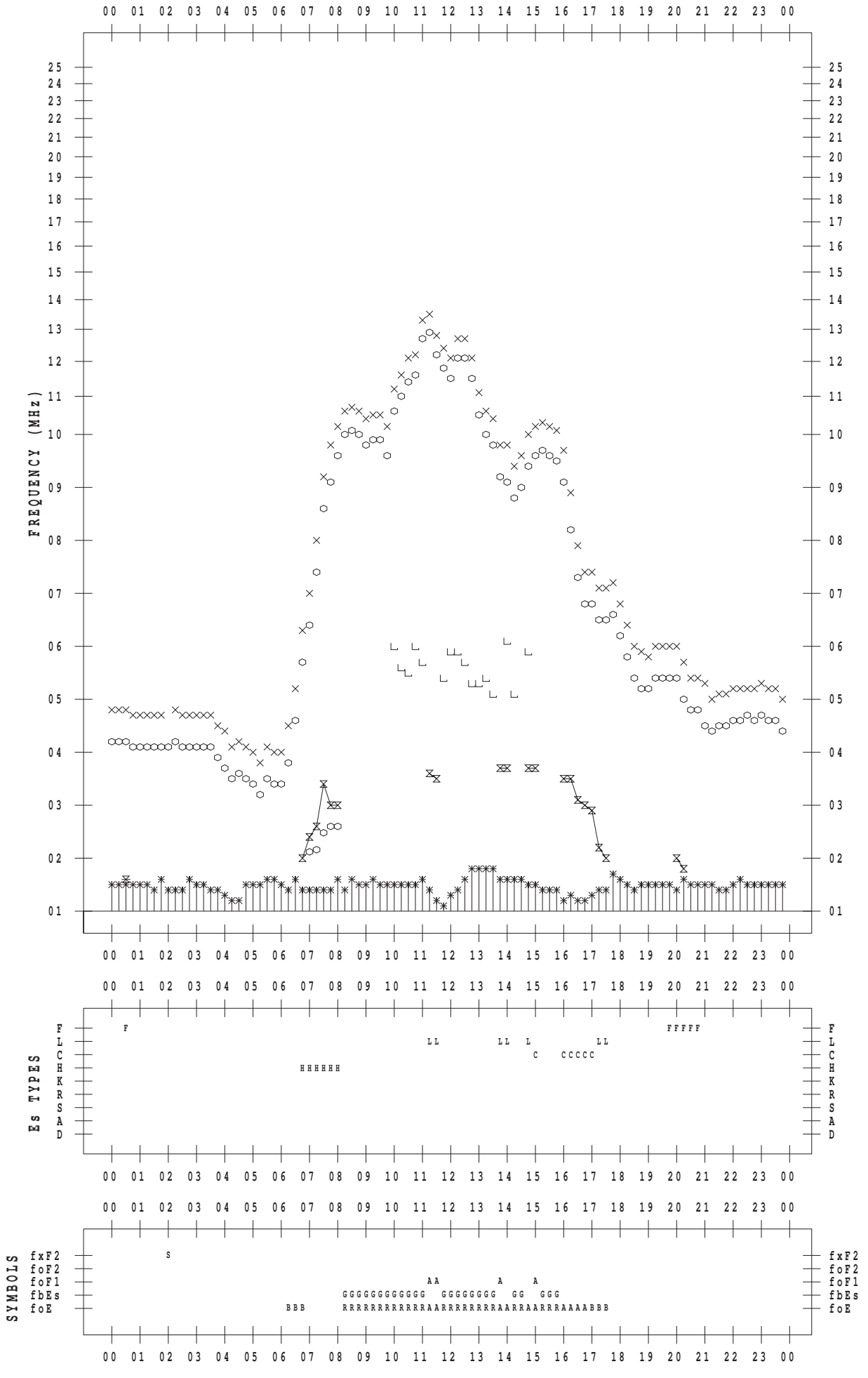
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/15

135 °E MEAN TIME



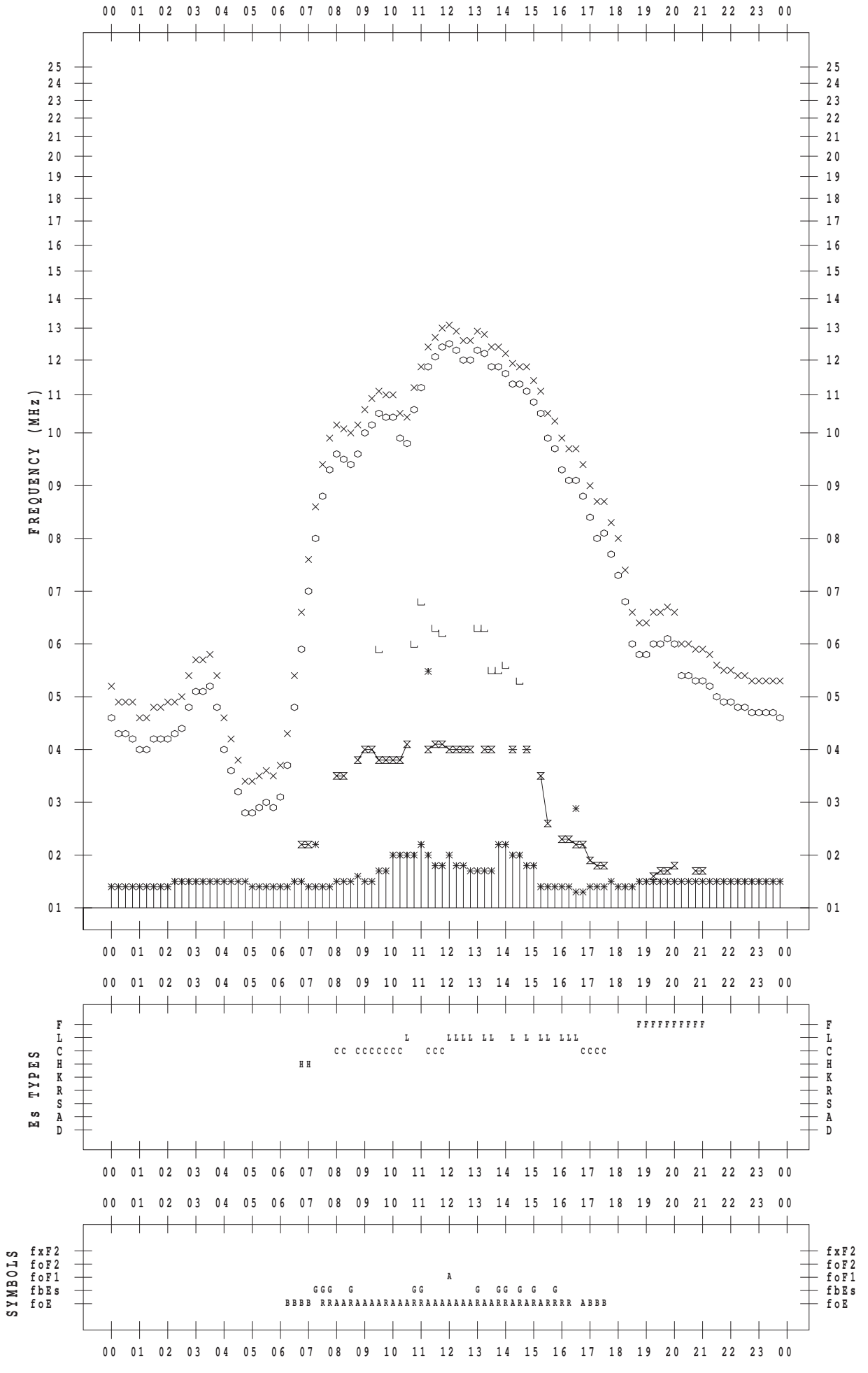
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/16

135 °E MEAN TIME



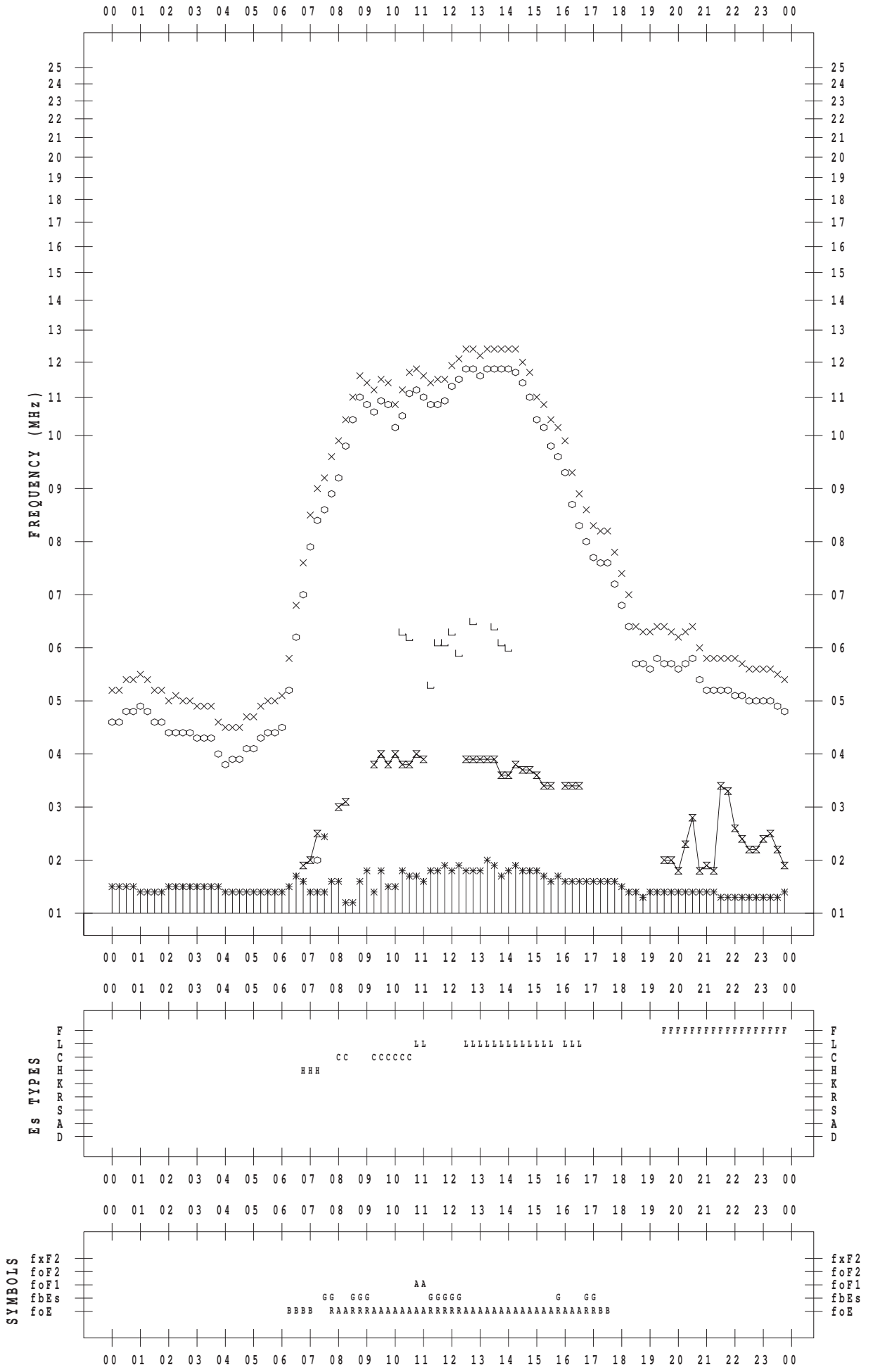
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/17

135 °E MEAN TIME



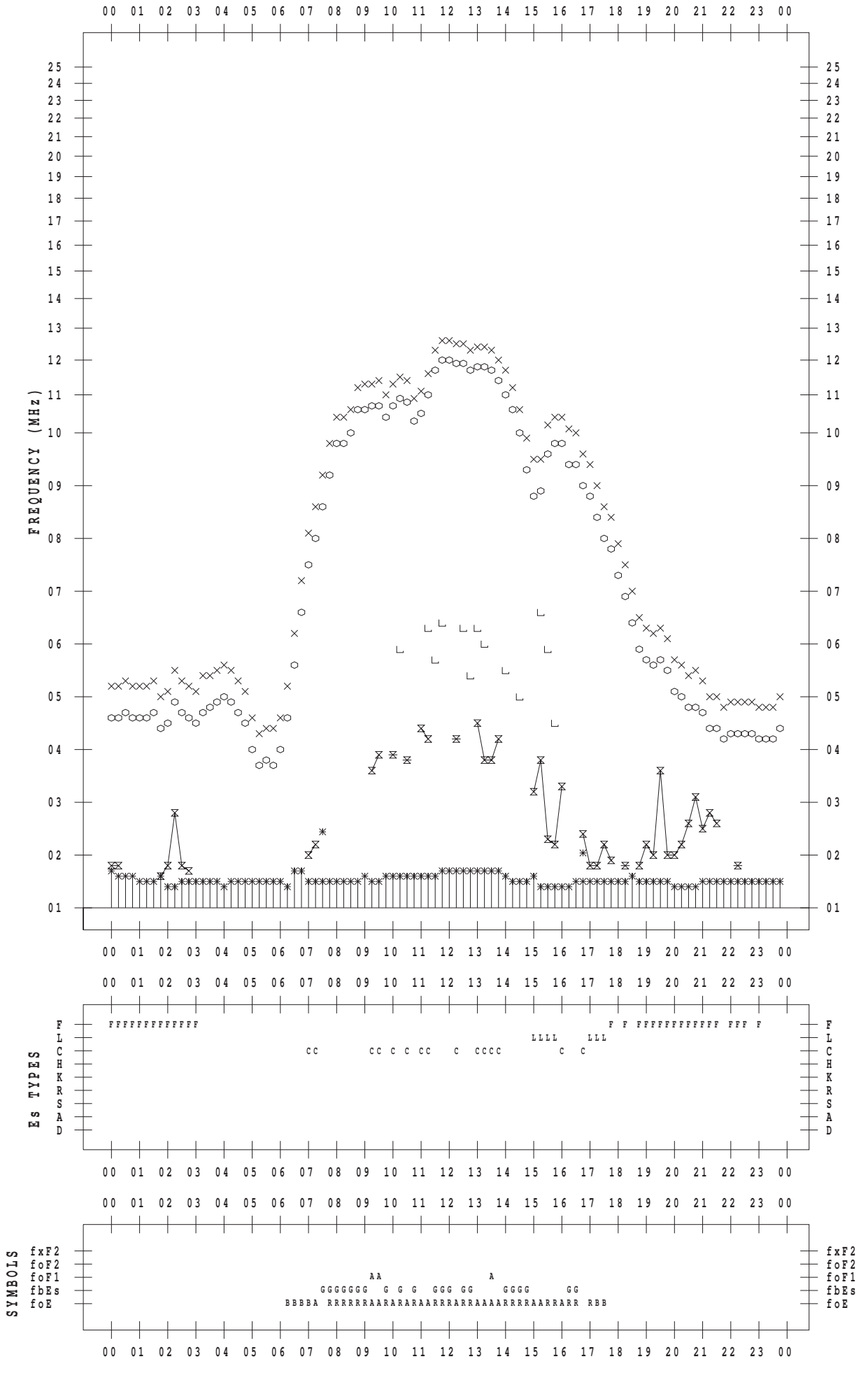
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/18

135 °E MEAN TIME



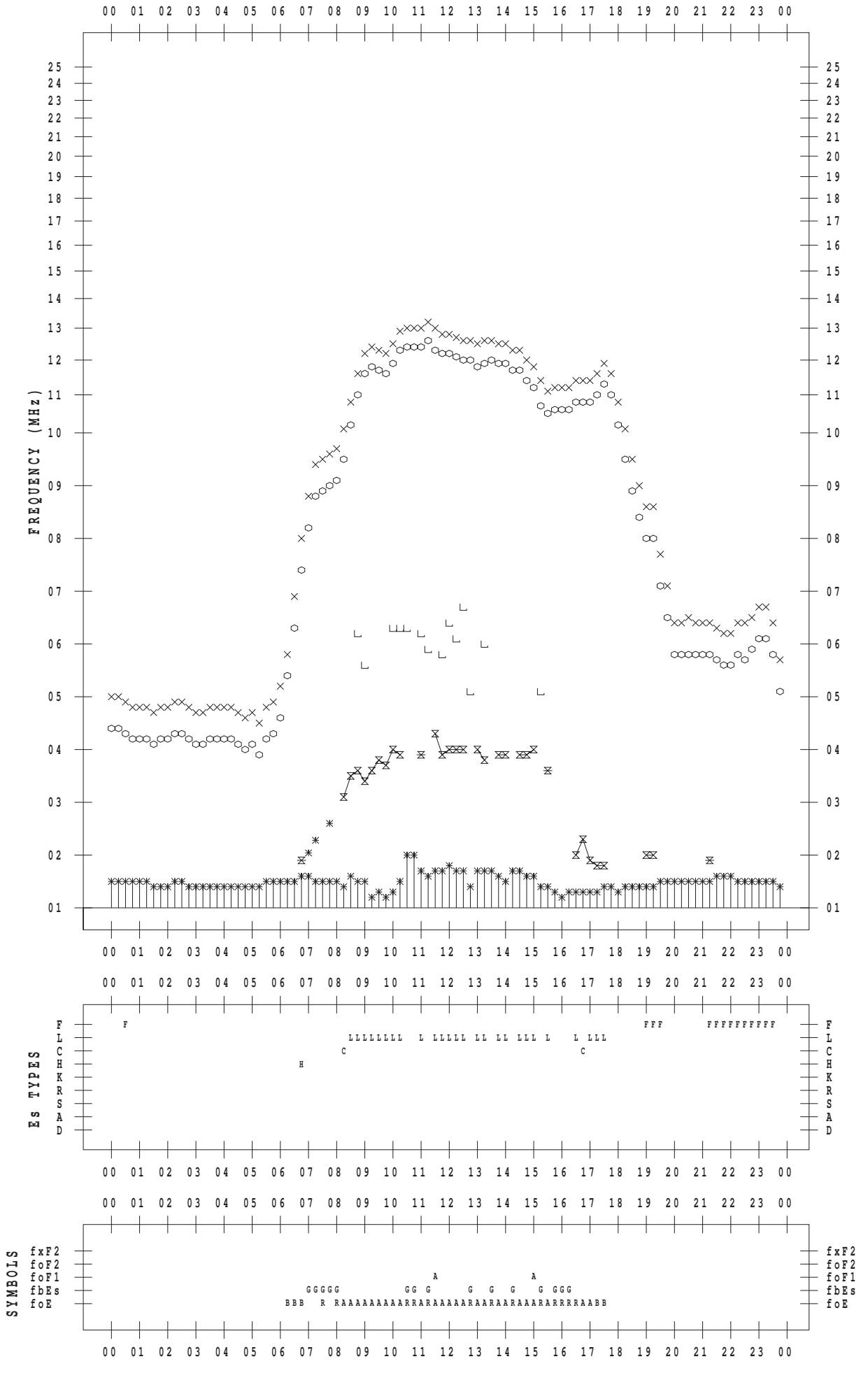
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/19

135 °E MEAN TIME



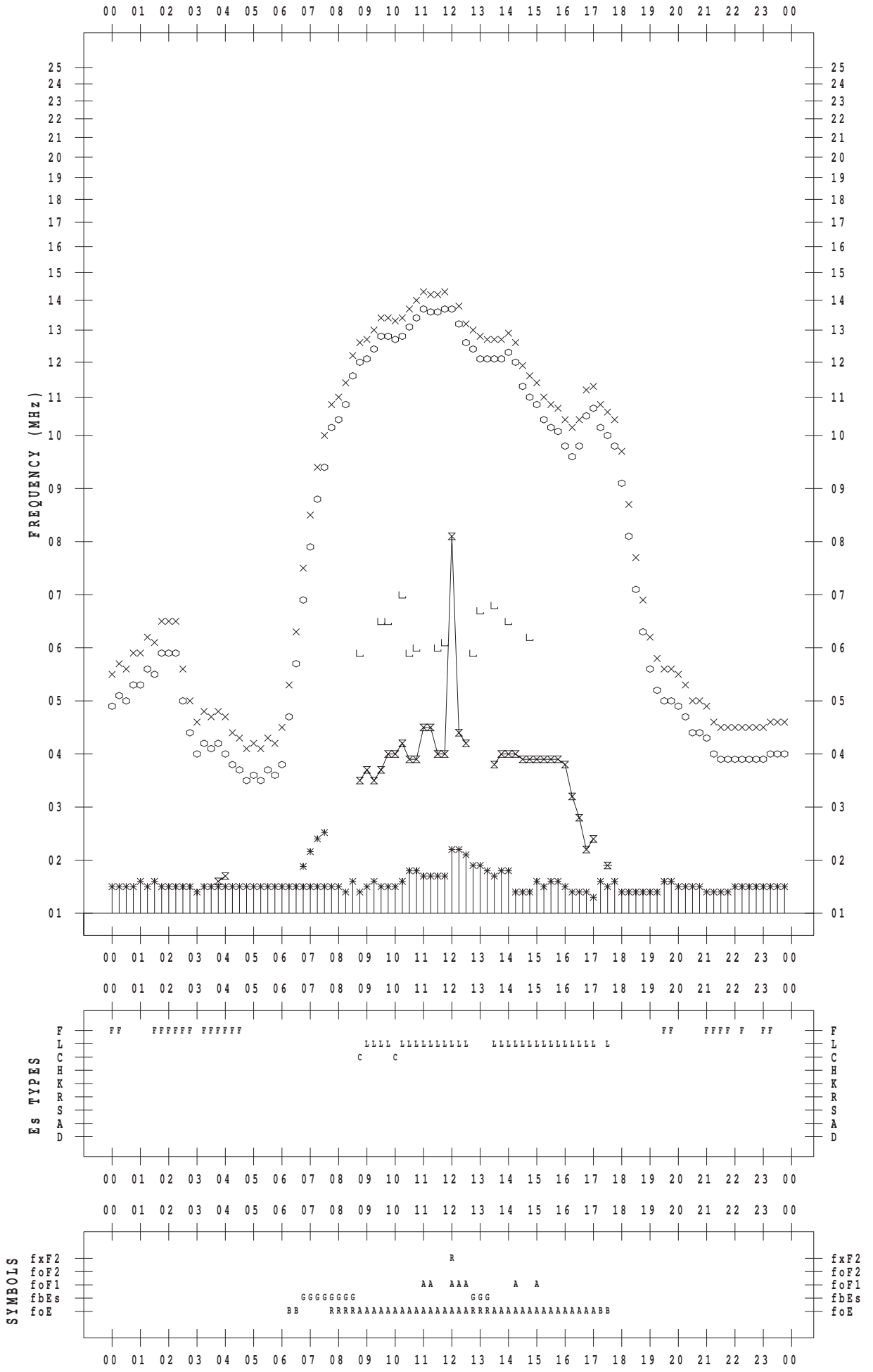
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/20

135 °E MEAN TIME



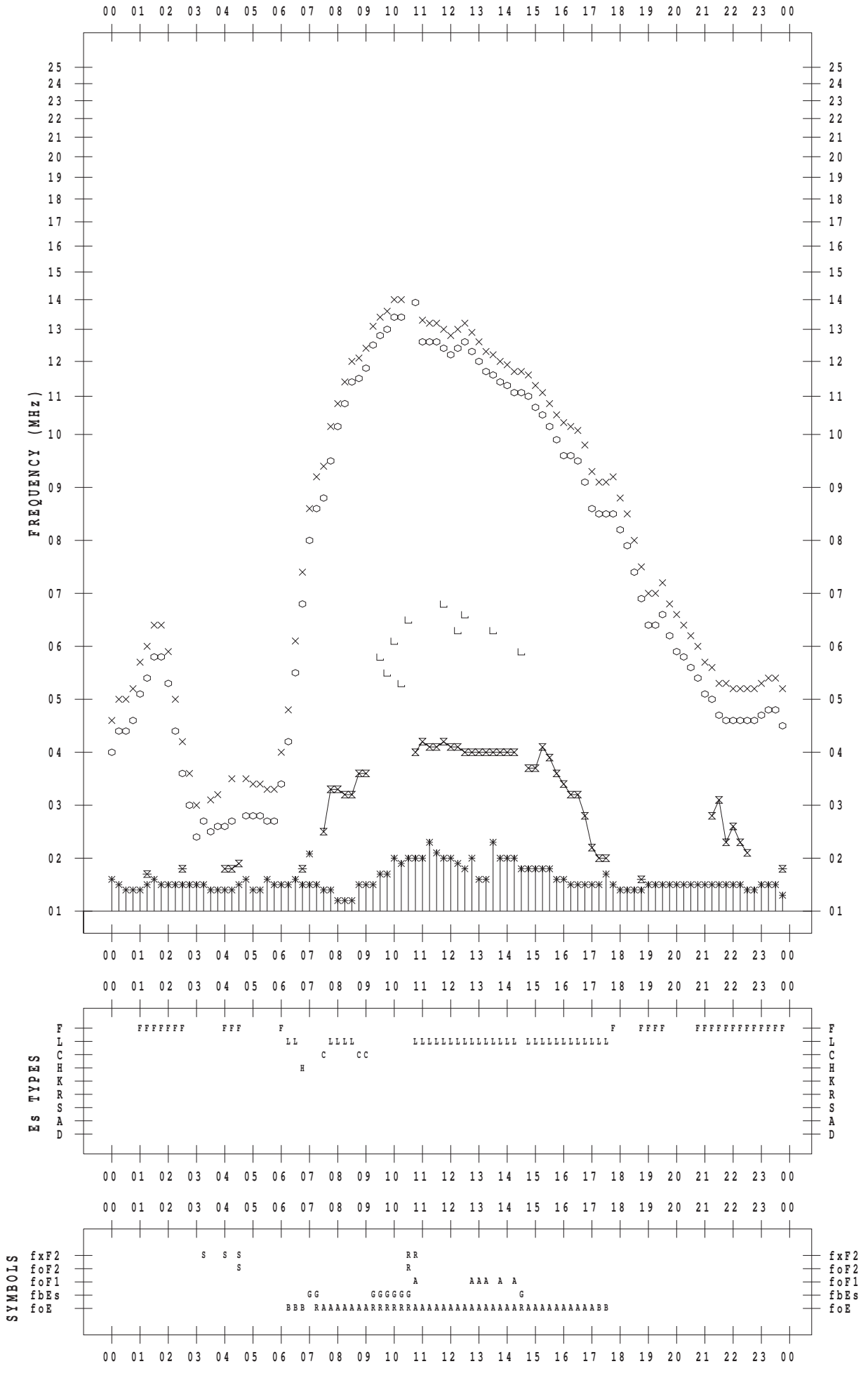
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/21

135 °E MEAN TIME



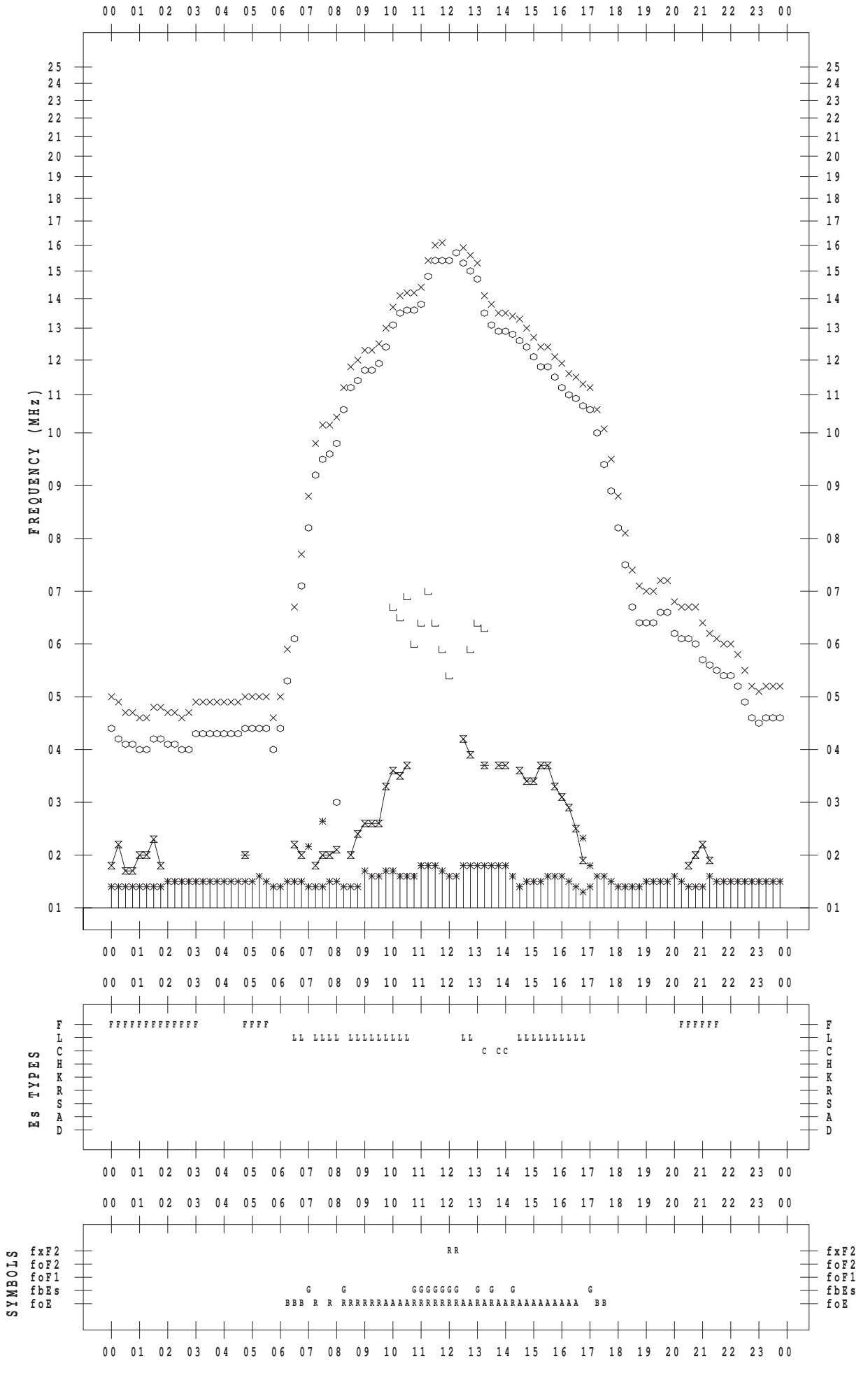
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/22

135 °E MEAN TIME



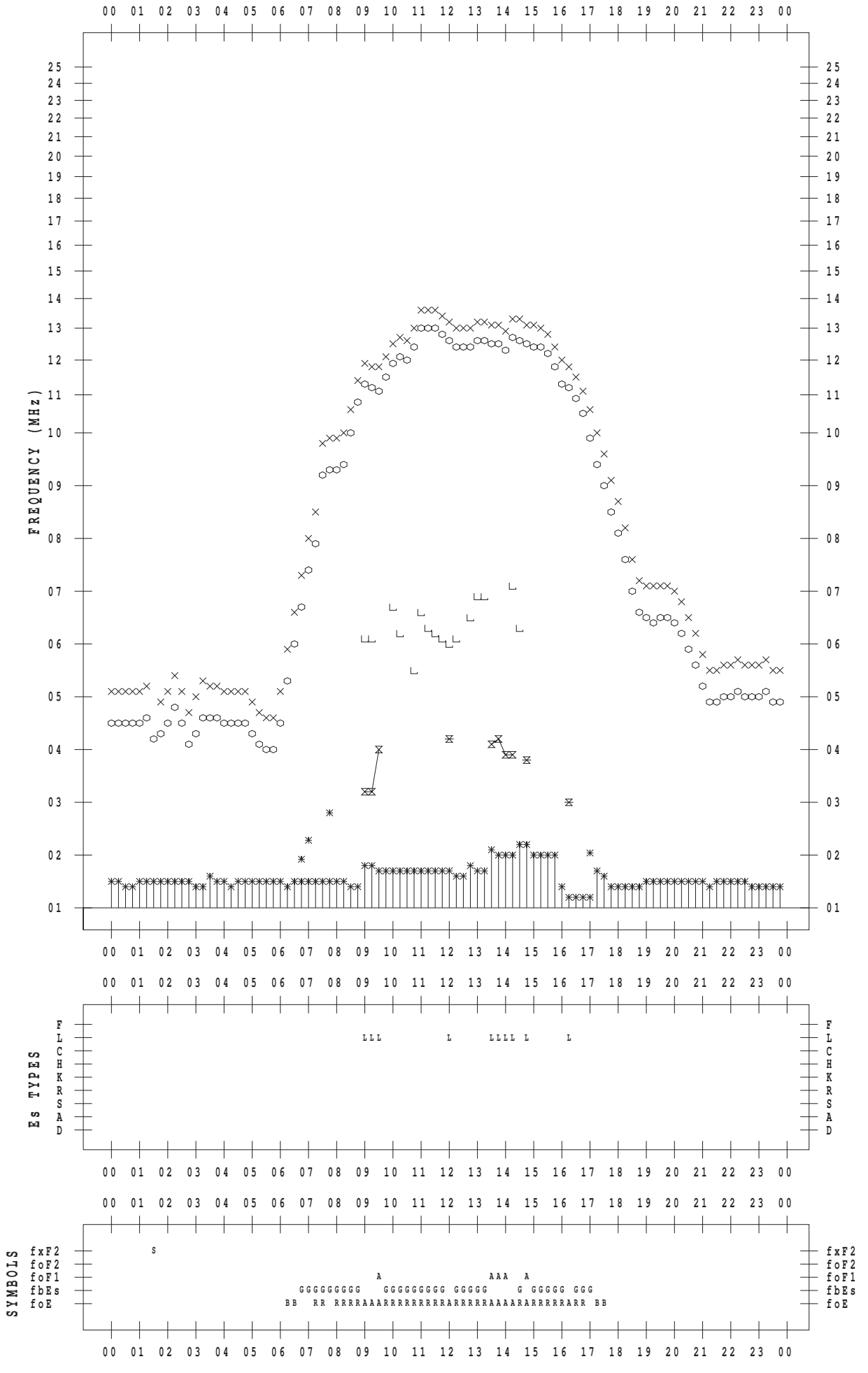
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/23

135 °E MEAN TIME



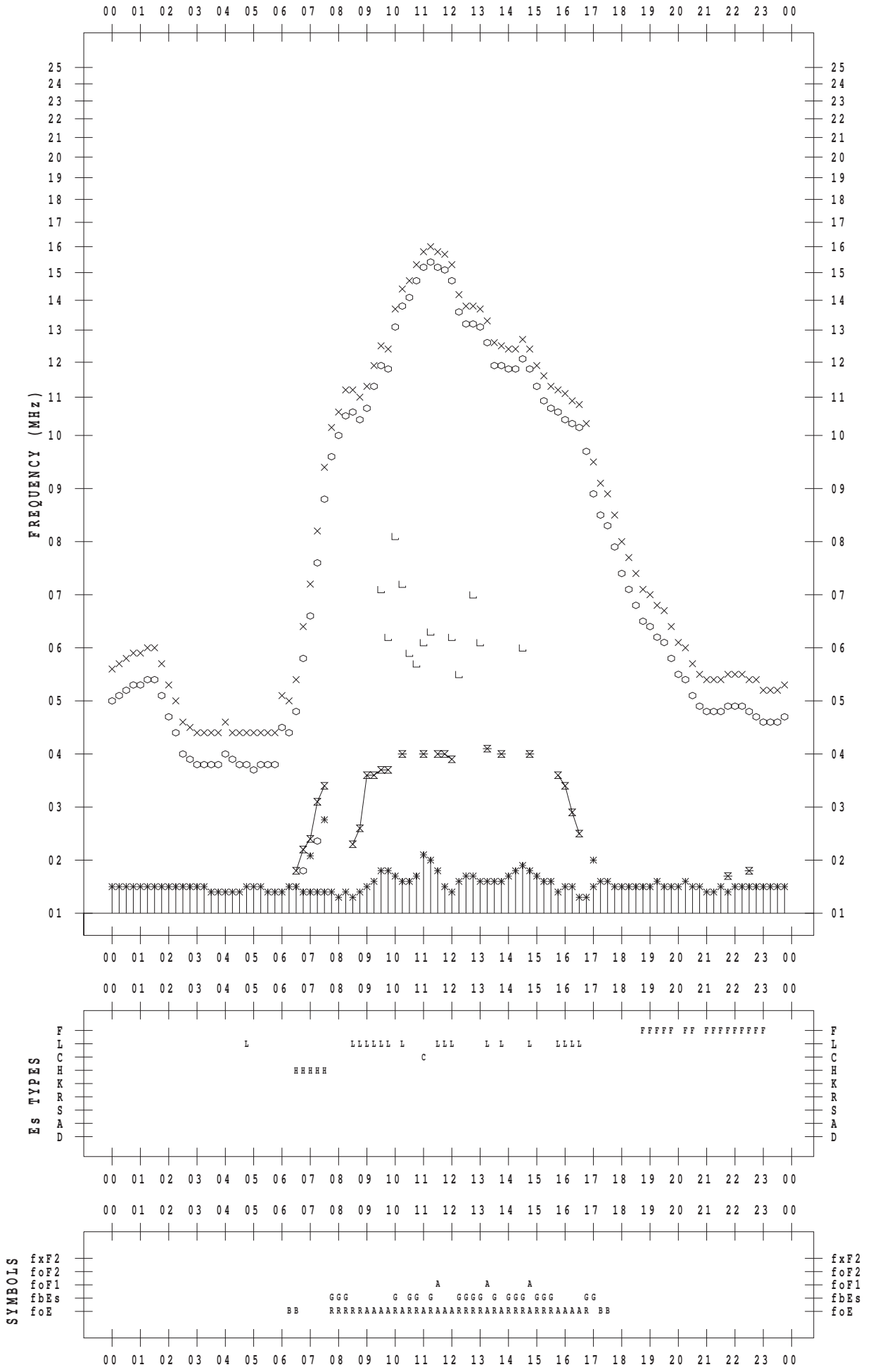
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/24

135 °E MEAN TIME



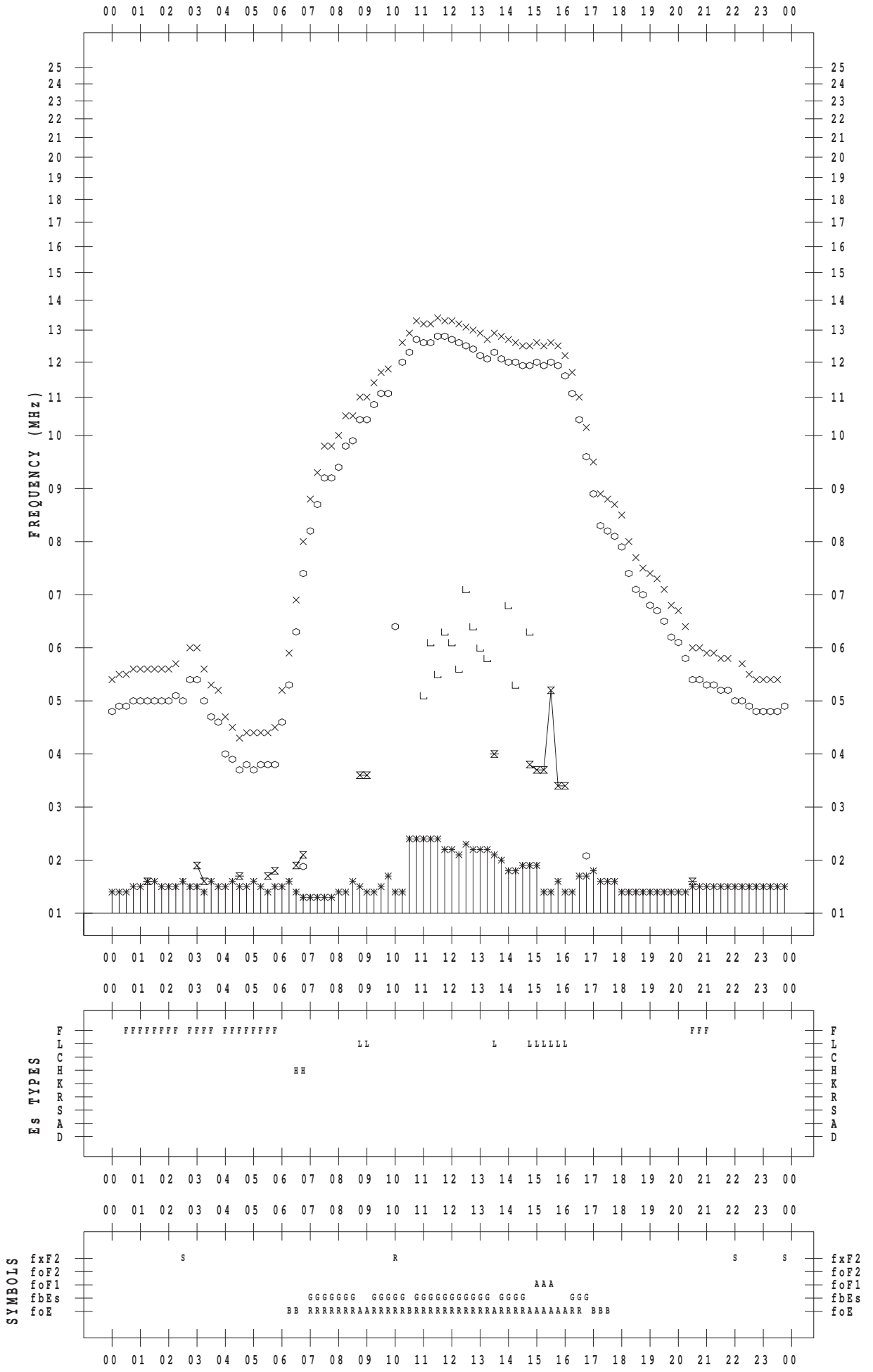
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/25

135 °E MEAN TIME



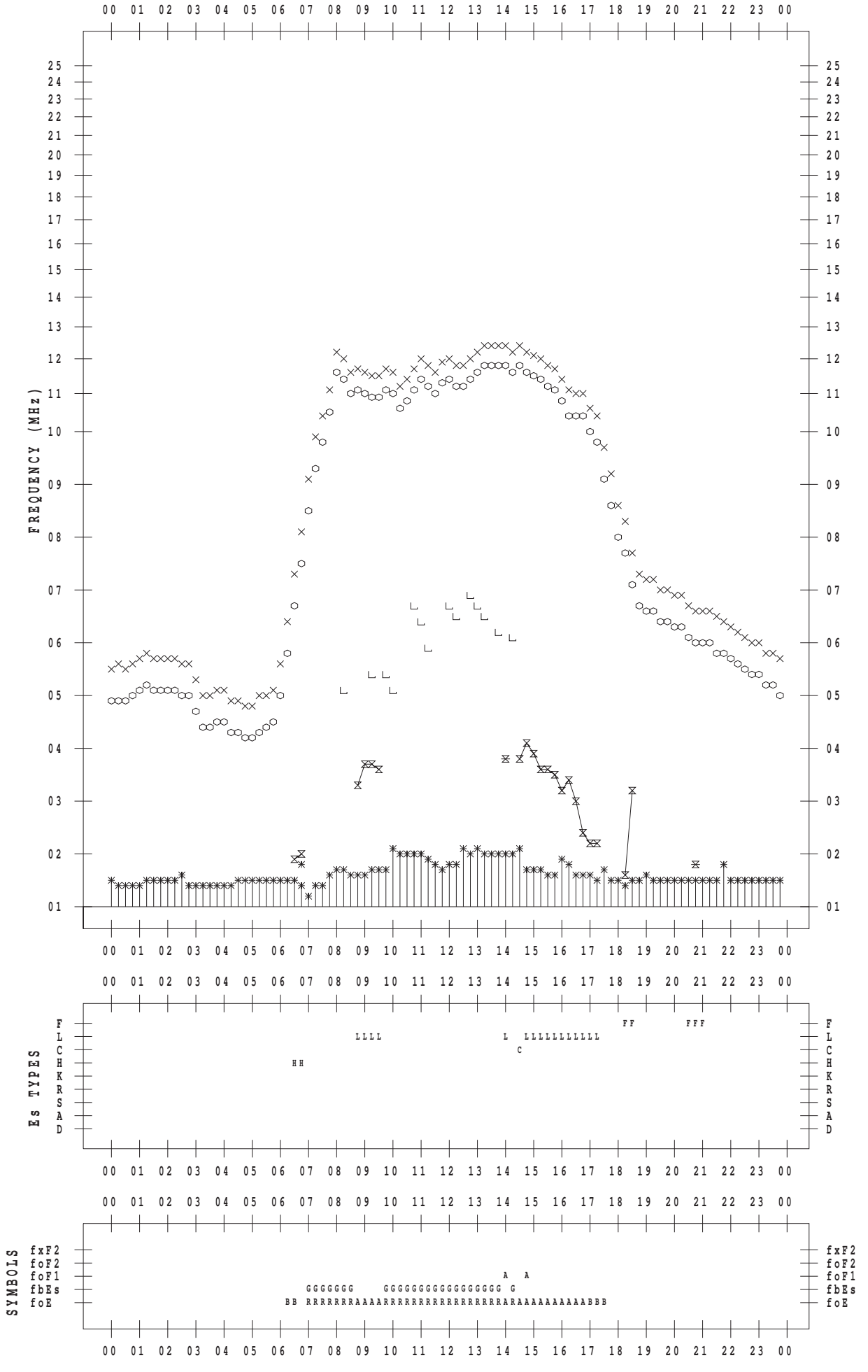
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/26

135 °E MEAN TIME



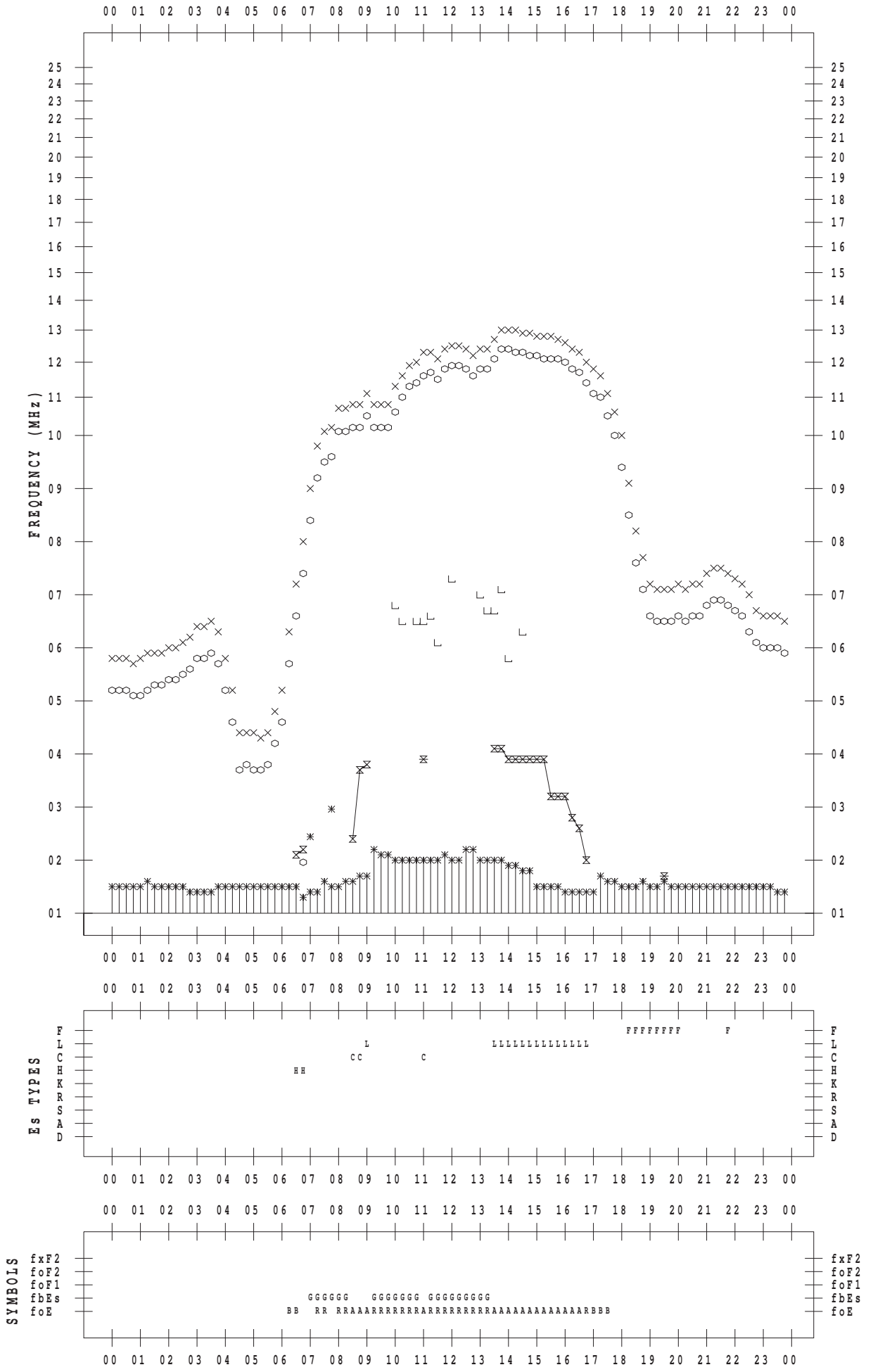
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/27

135 °E MEAN TIME



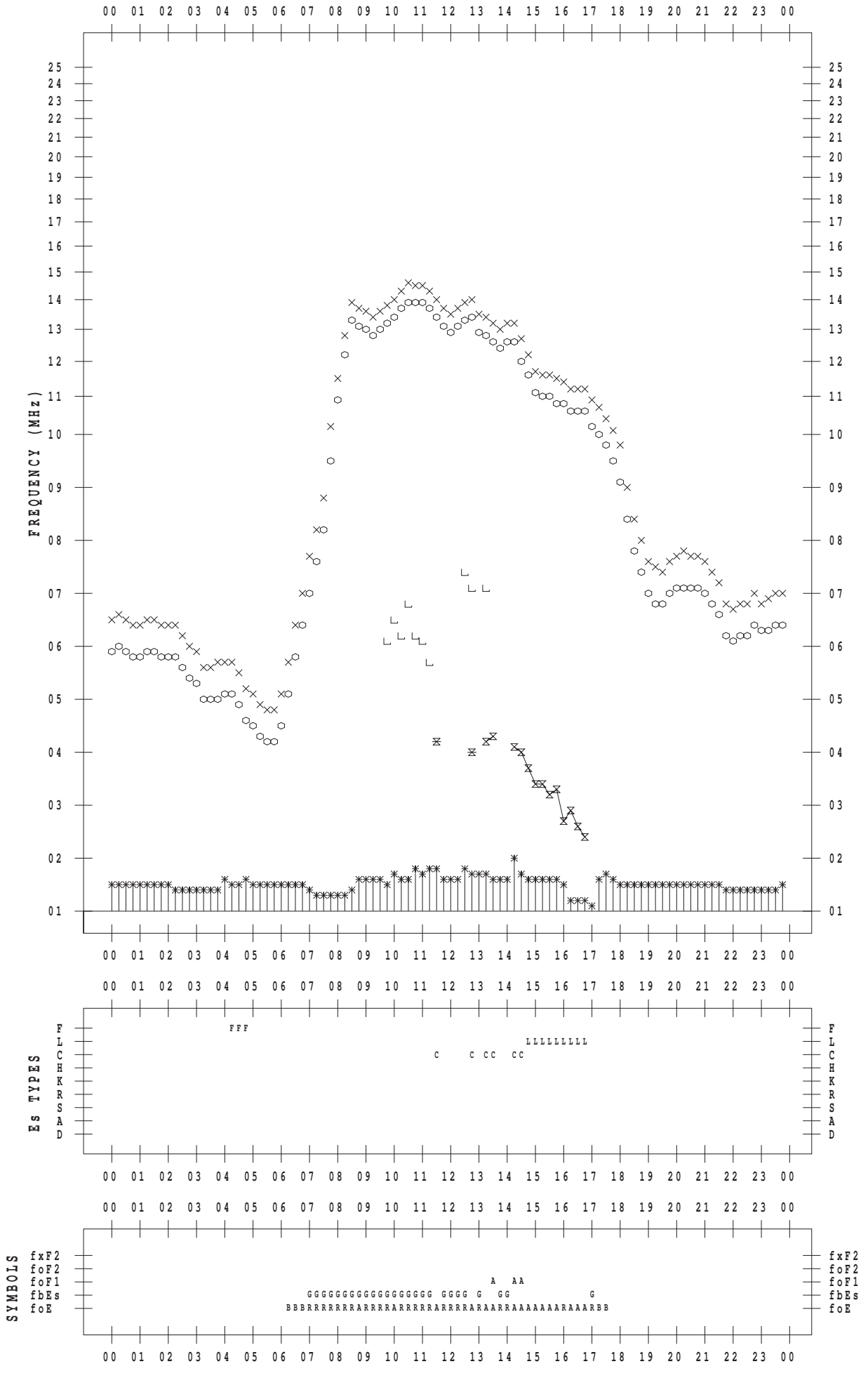
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2014/ 2/28

135 °E MEAN TIME



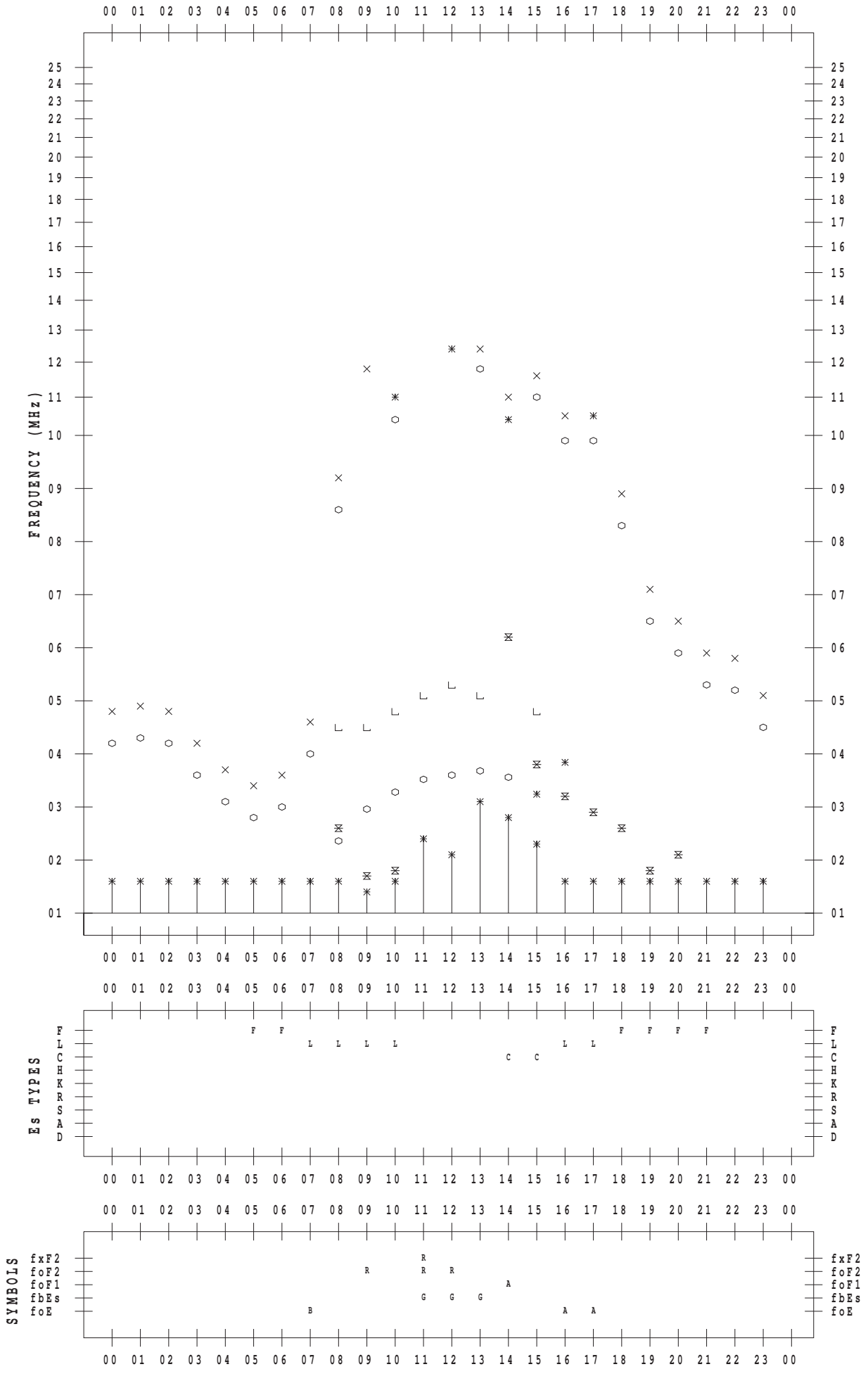
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 1

135 °E MEAN TIME



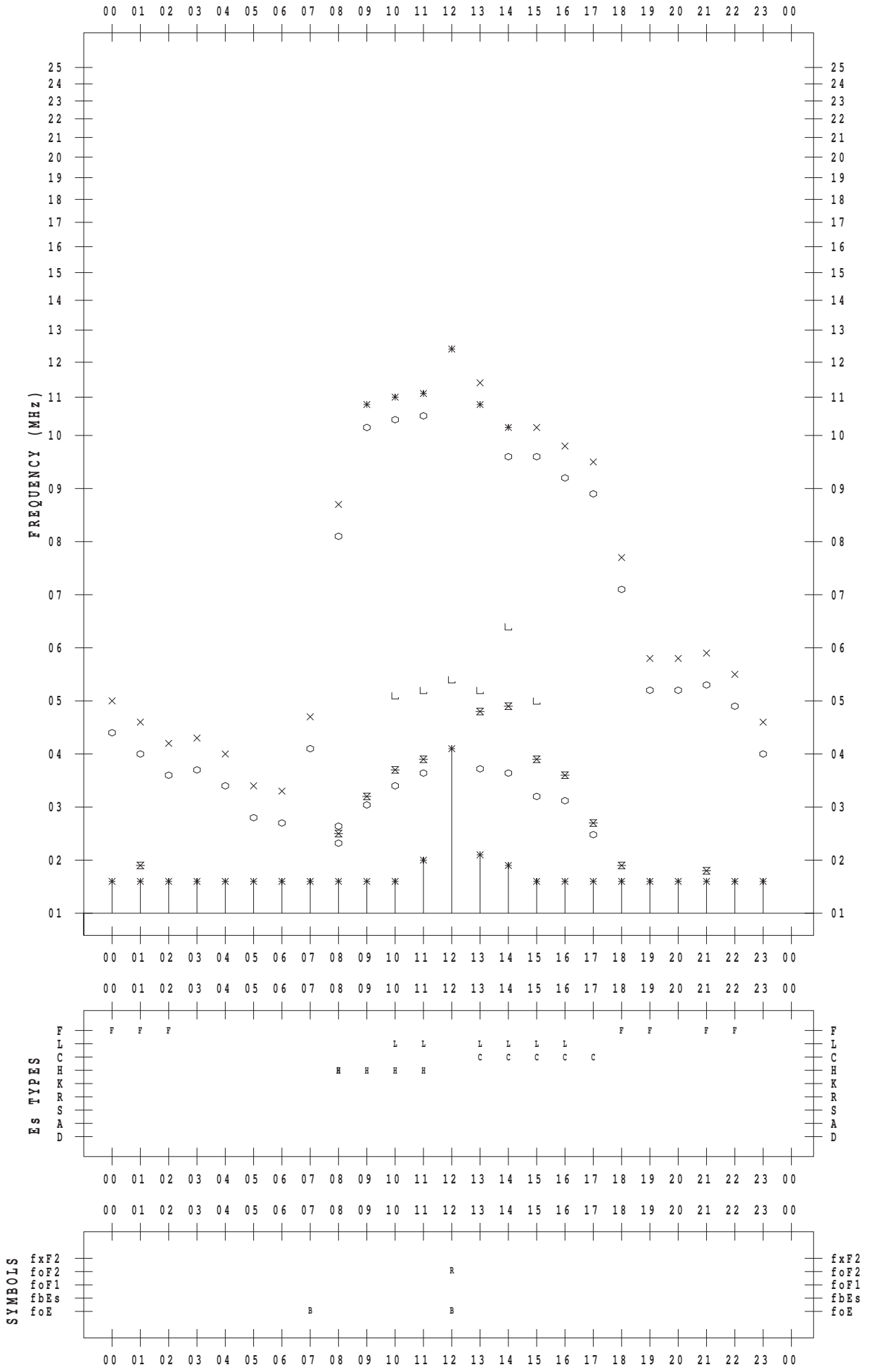
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 2

135 °E MEAN TIME



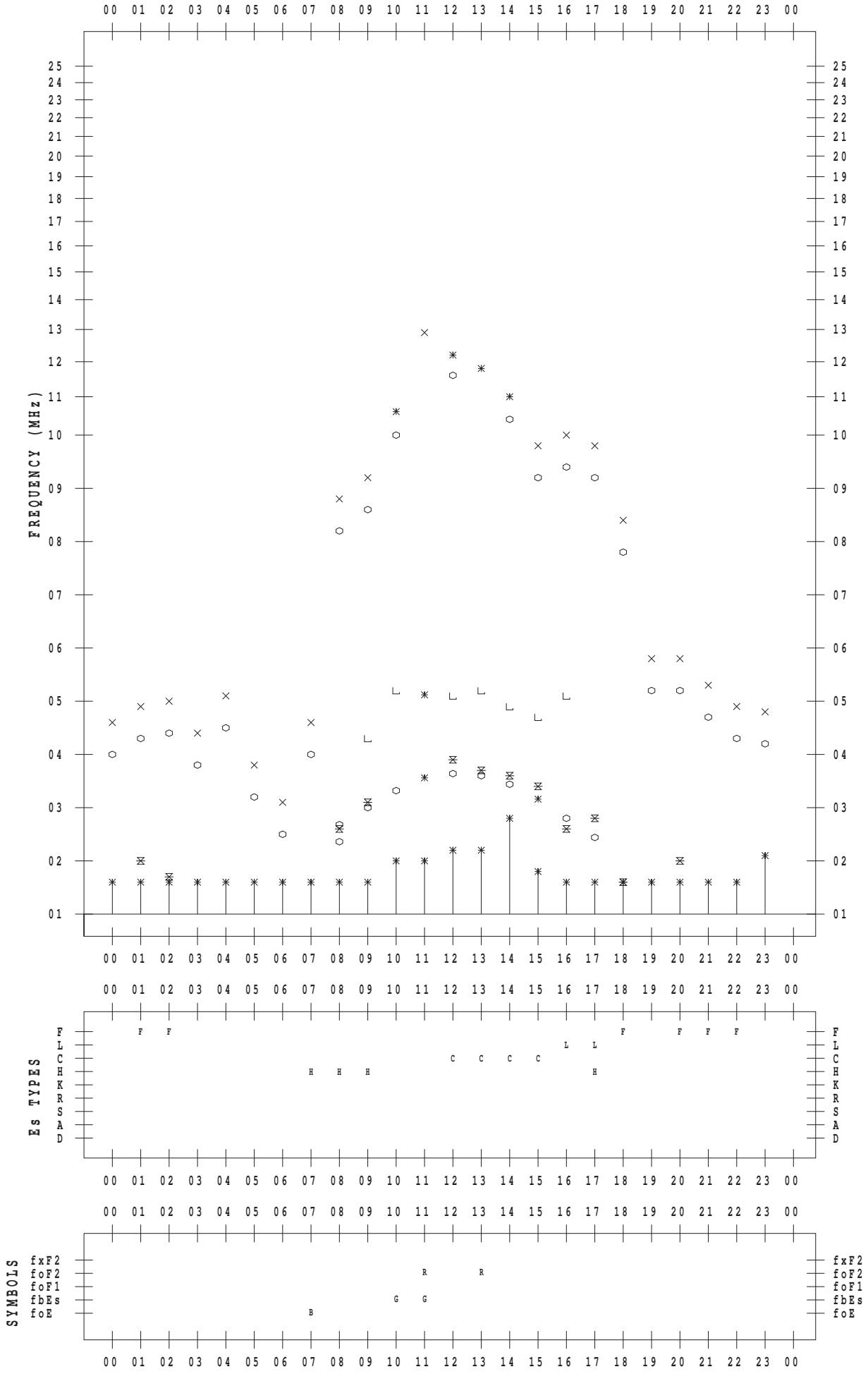
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 3

135 °E MEAN TIME



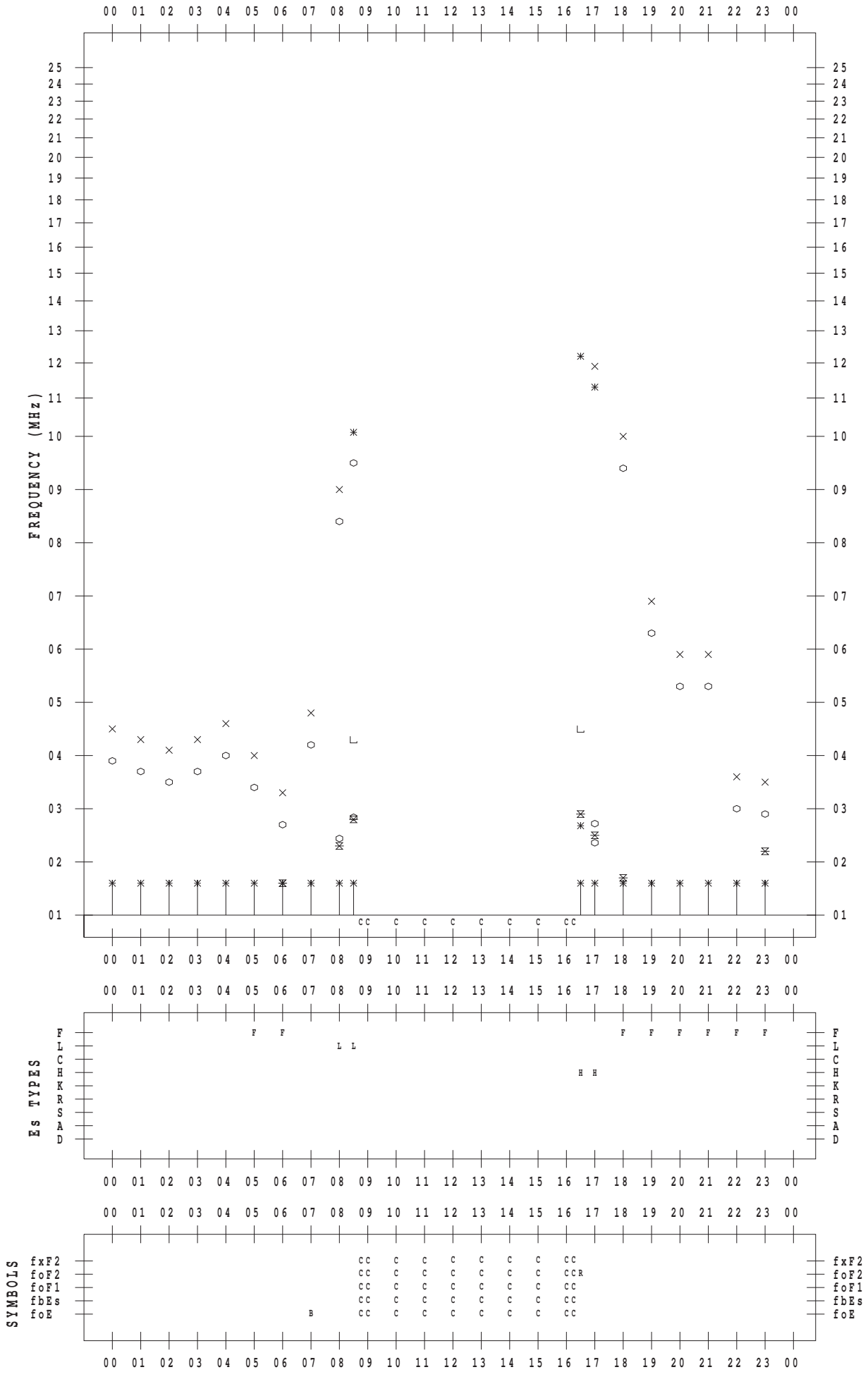
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 4

135 °E MEAN TIME



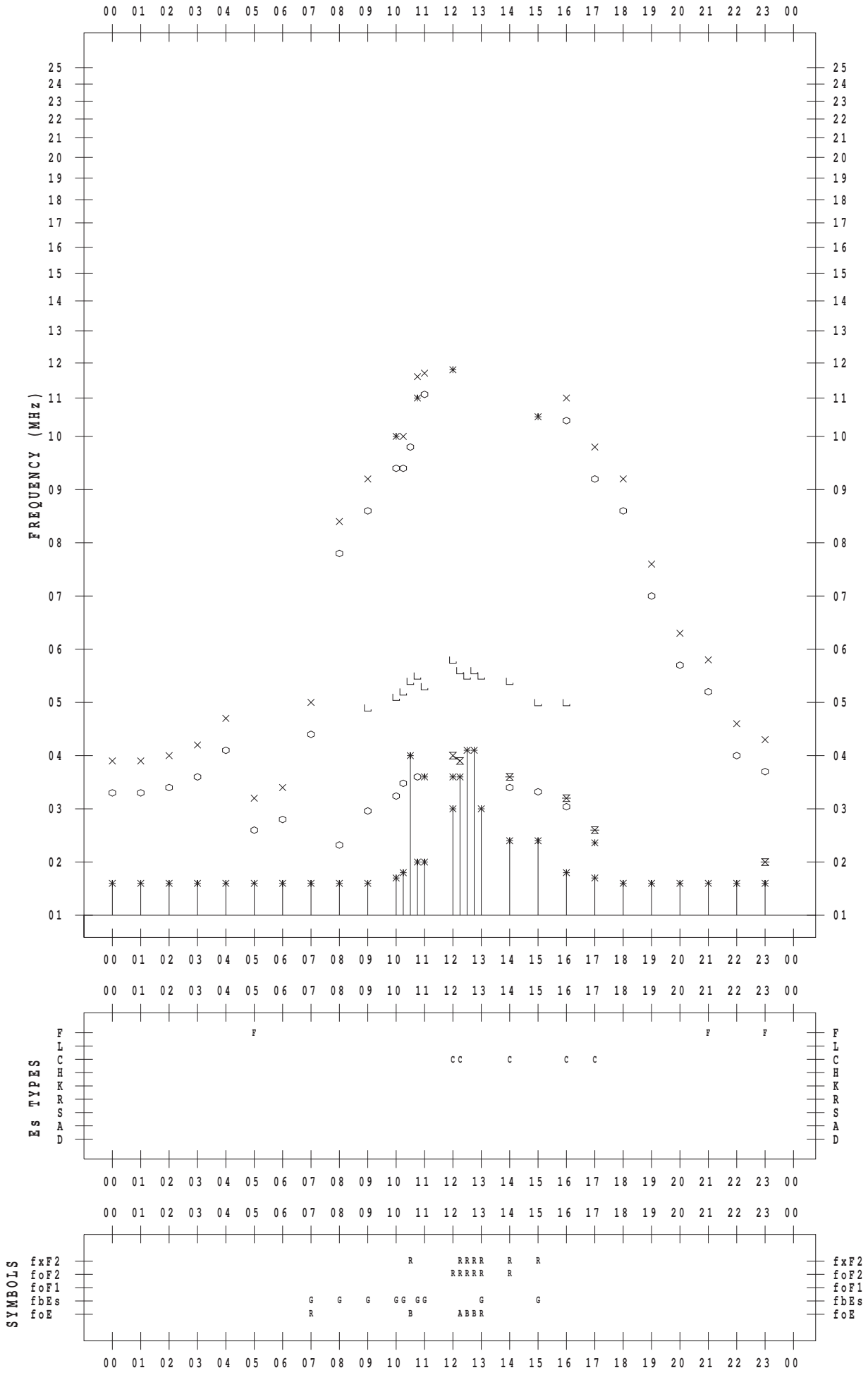
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 5

135 °E MEAN TIME



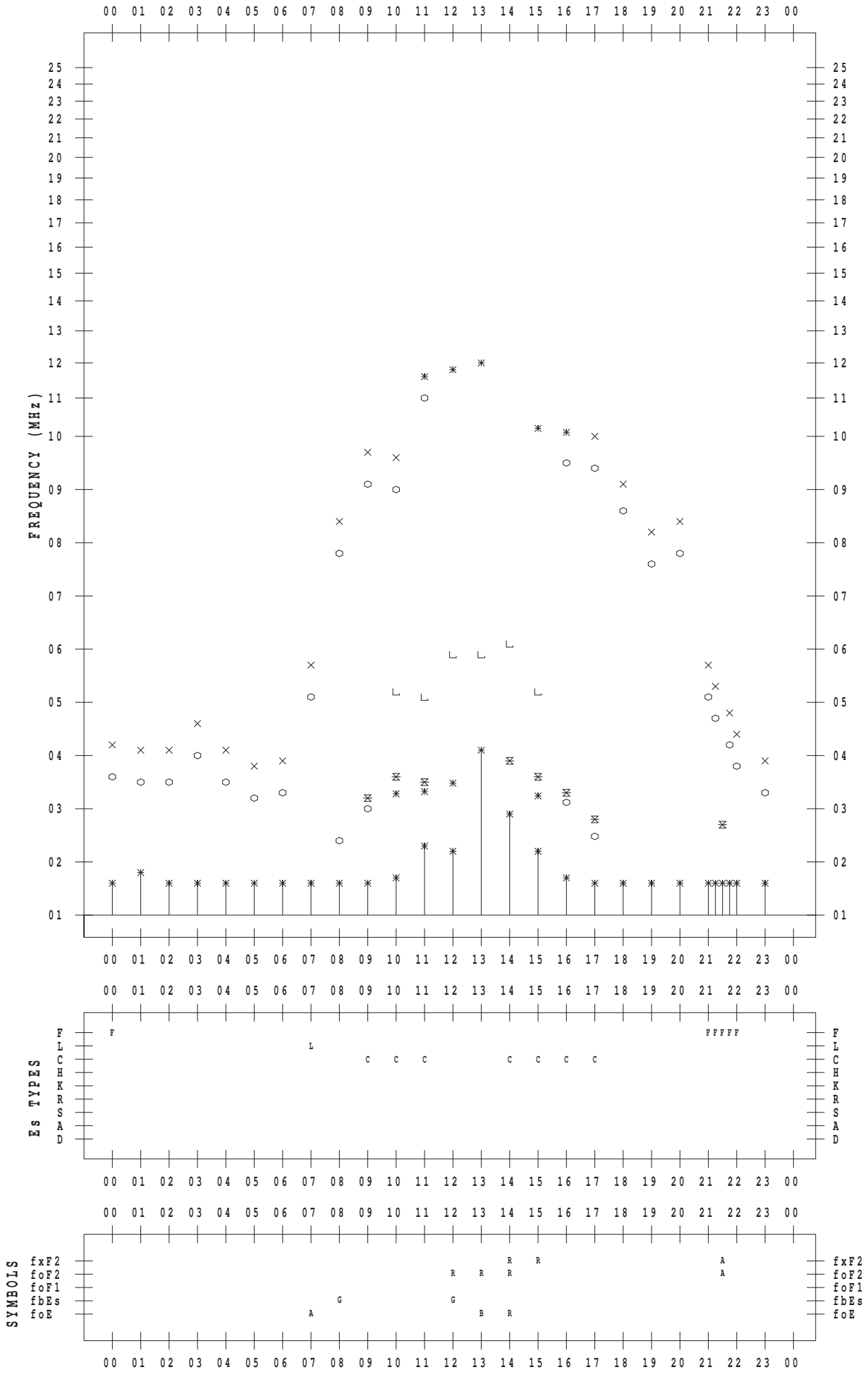
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 6

135 °E MEAN TIME



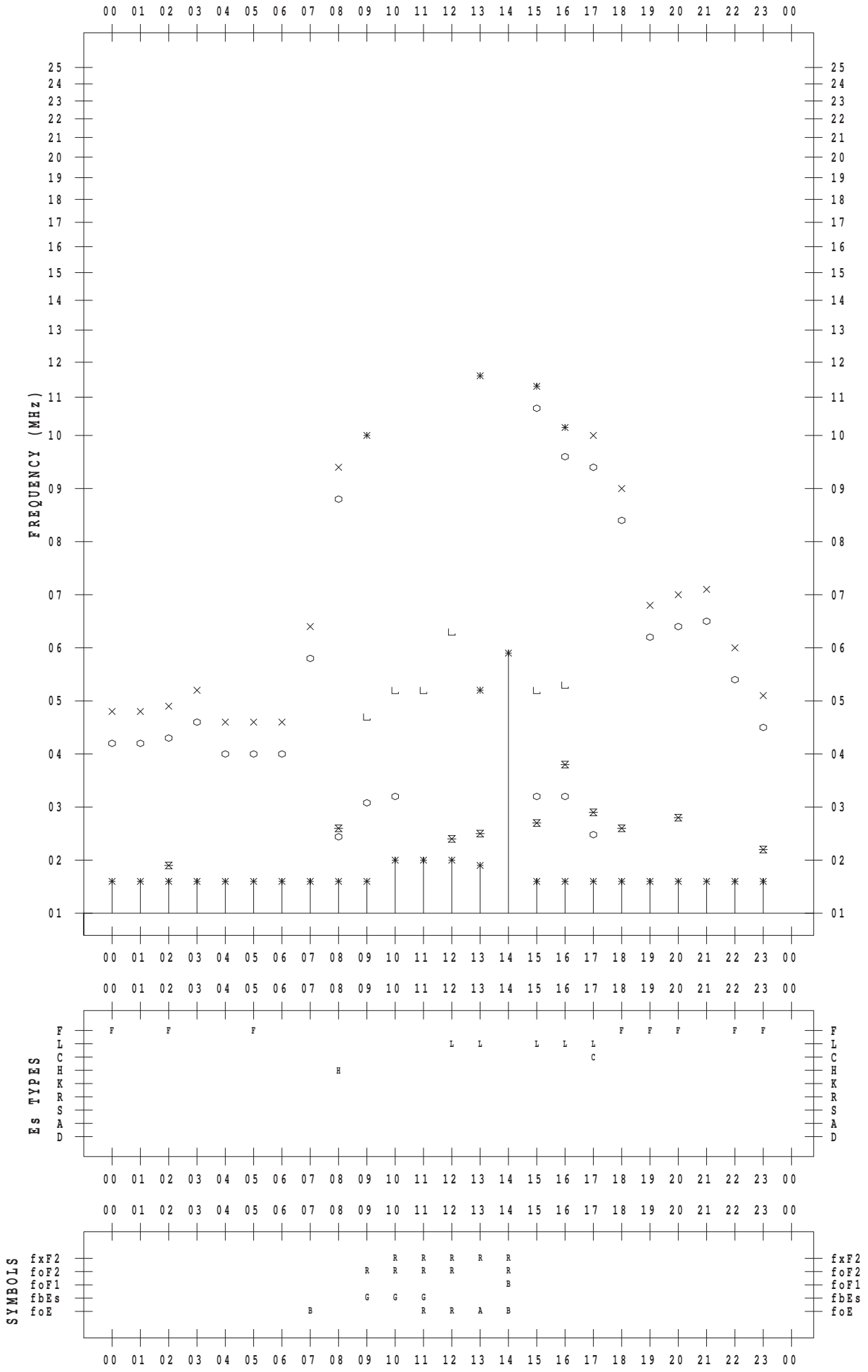
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 7

135 °E MEAN TIME



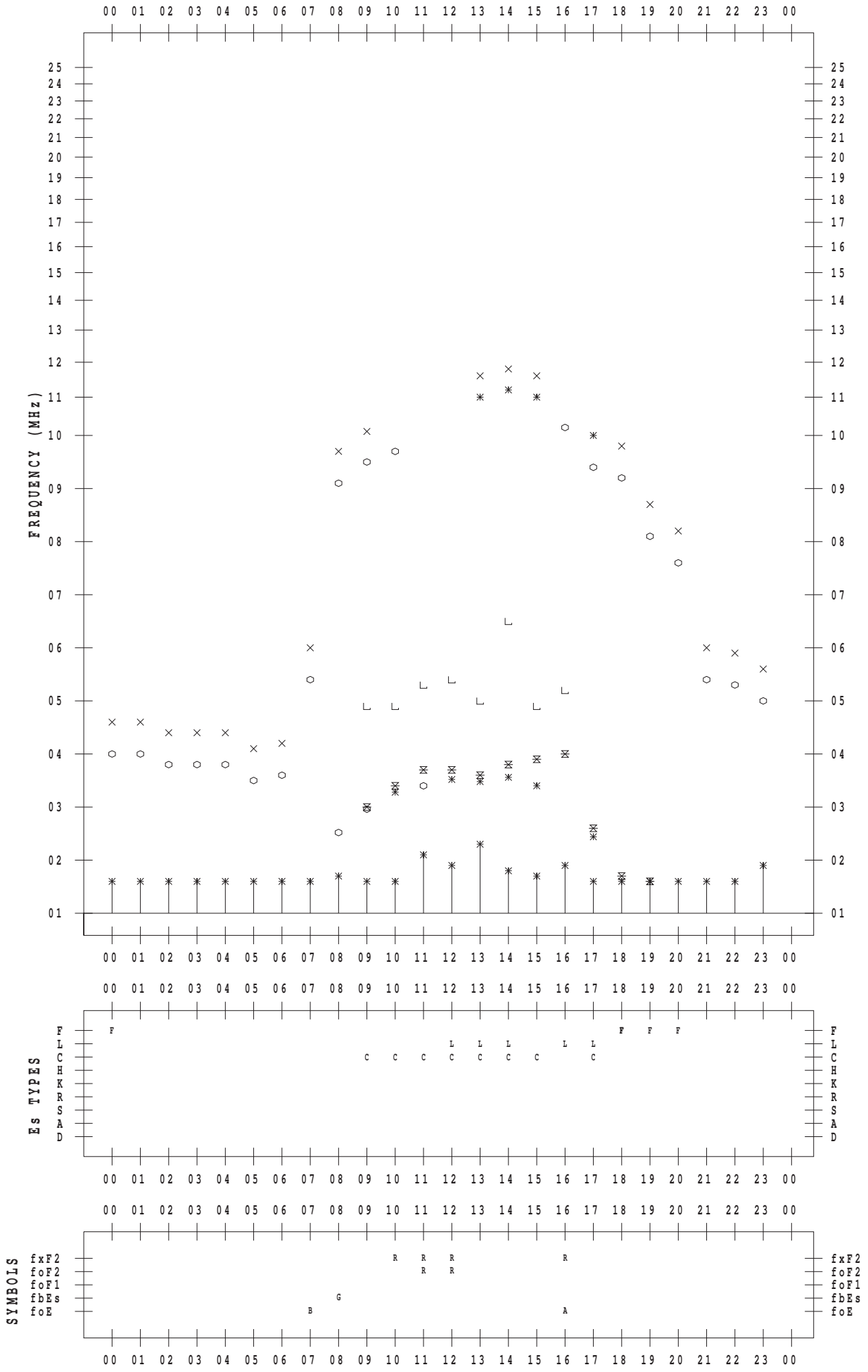
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 8

135 °E MEAN TIME



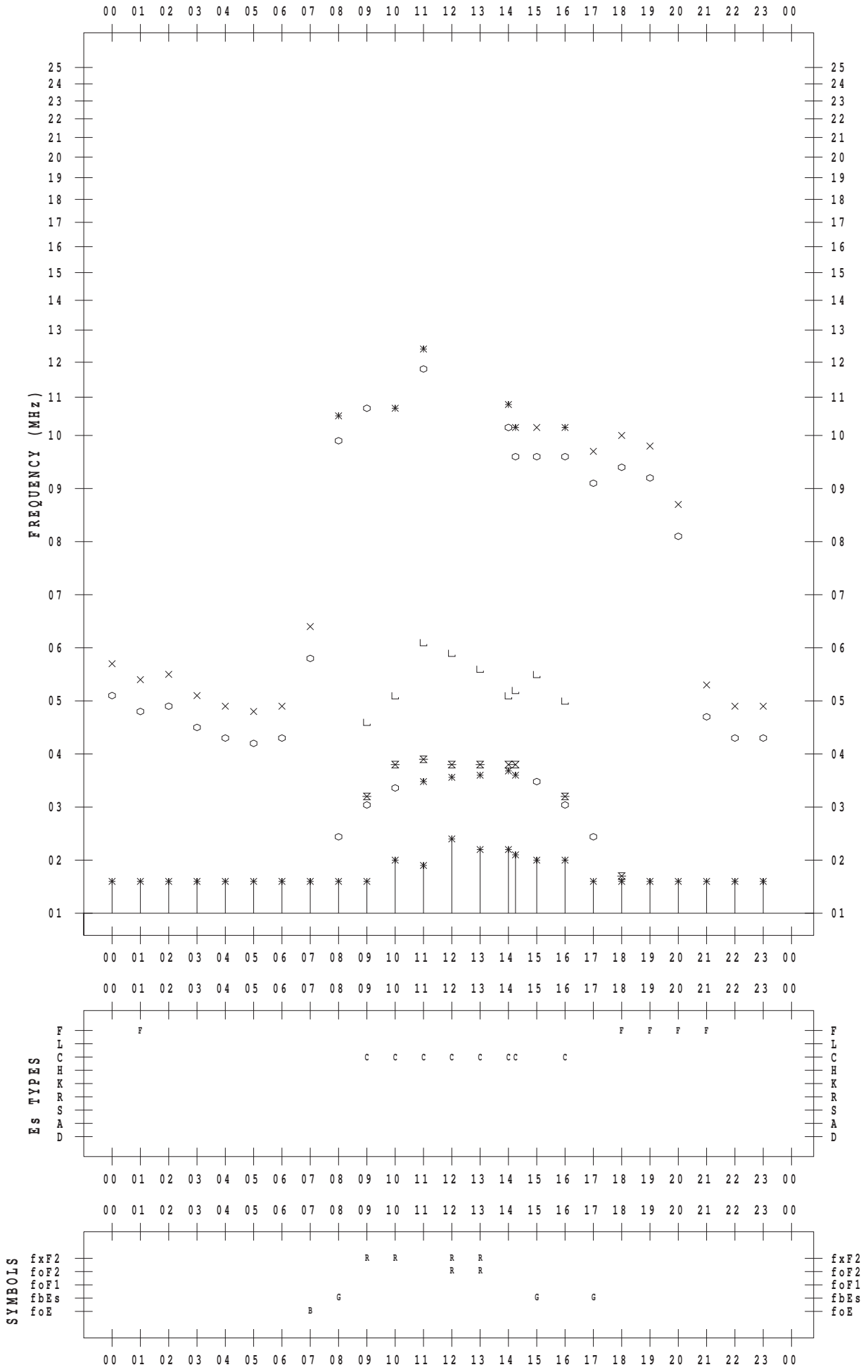
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/ 9

135 °E MEAN TIME



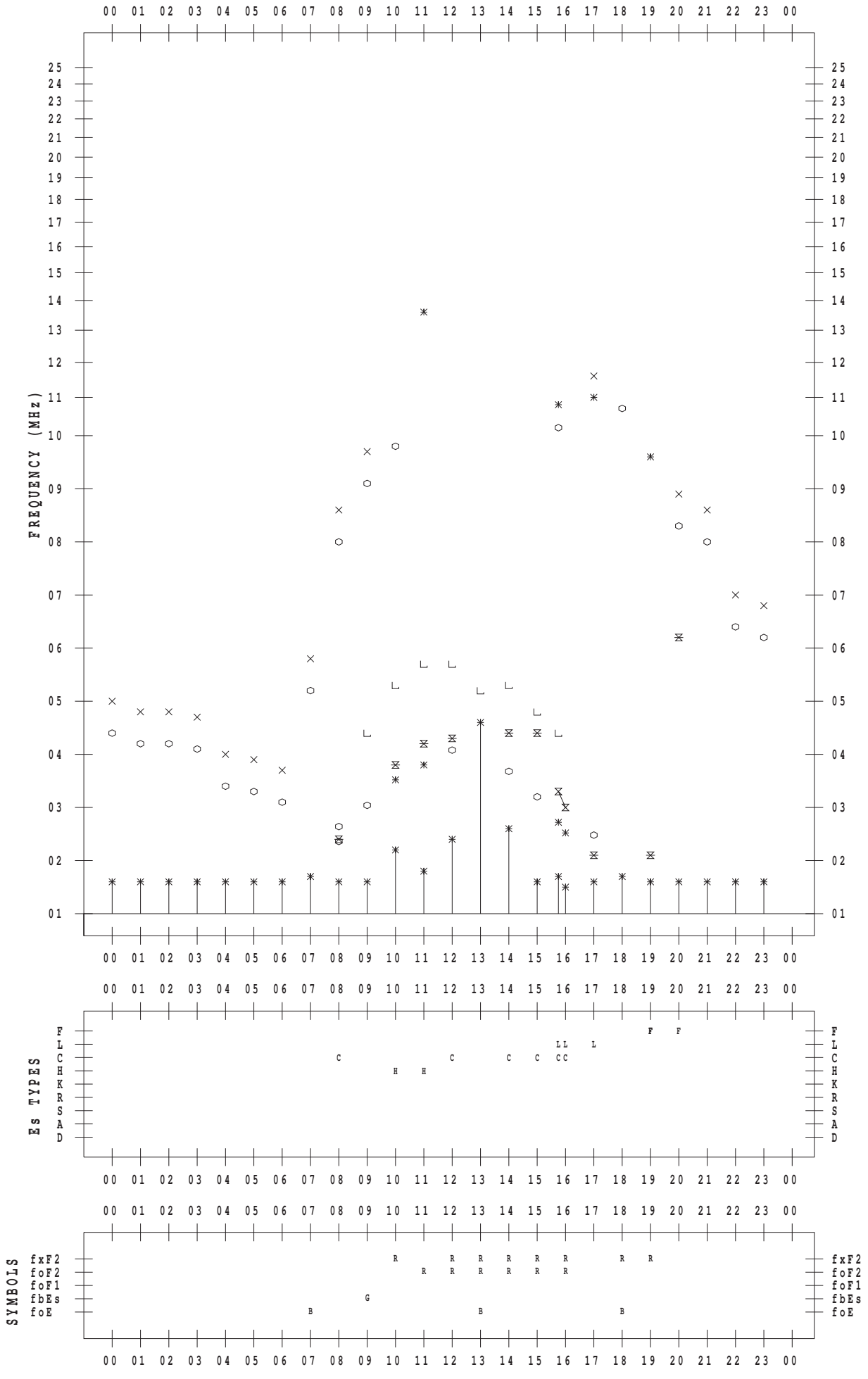
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/10

135 °E MEAN TIME



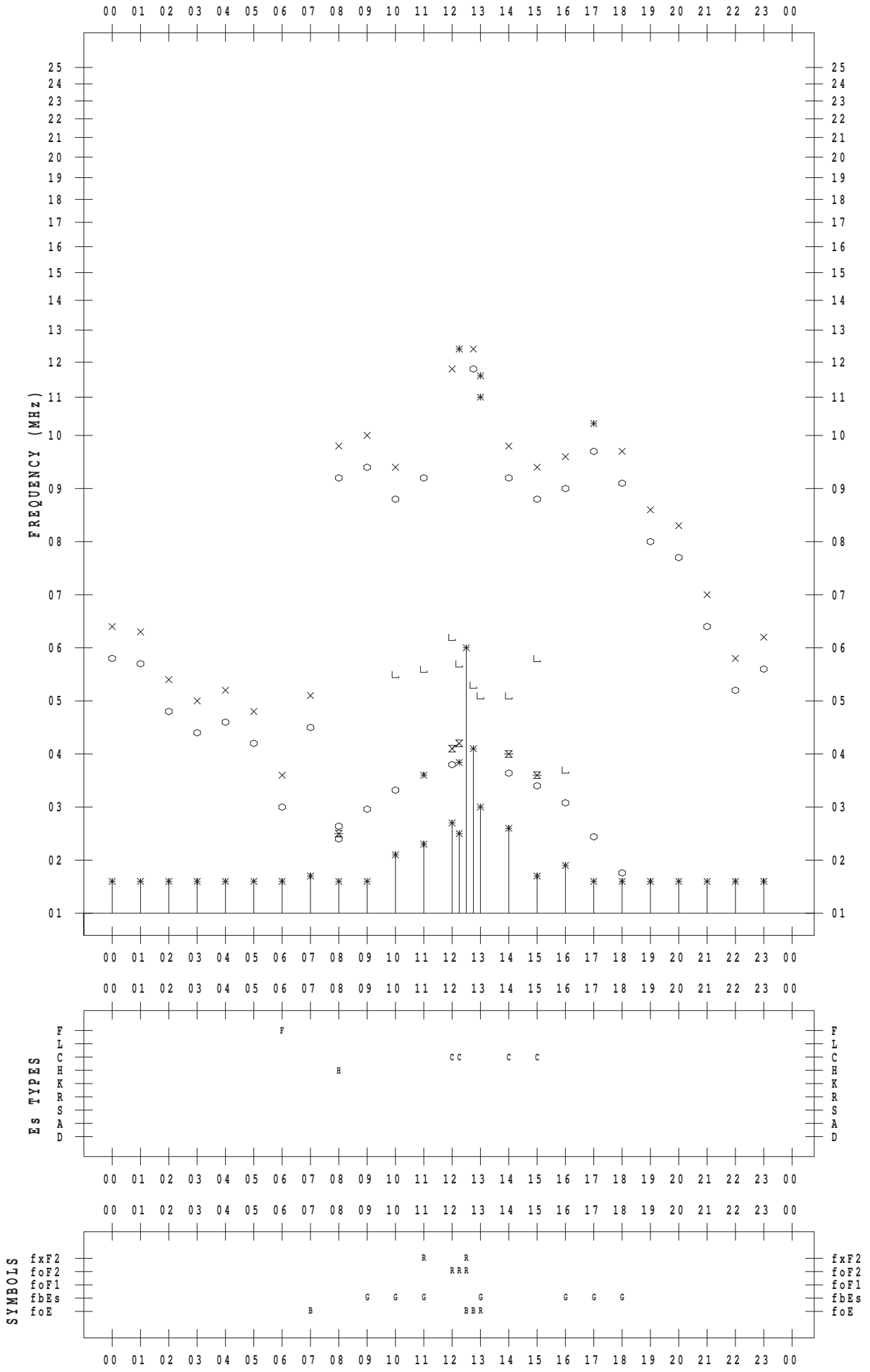
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/11

135 °E MEAN TIME



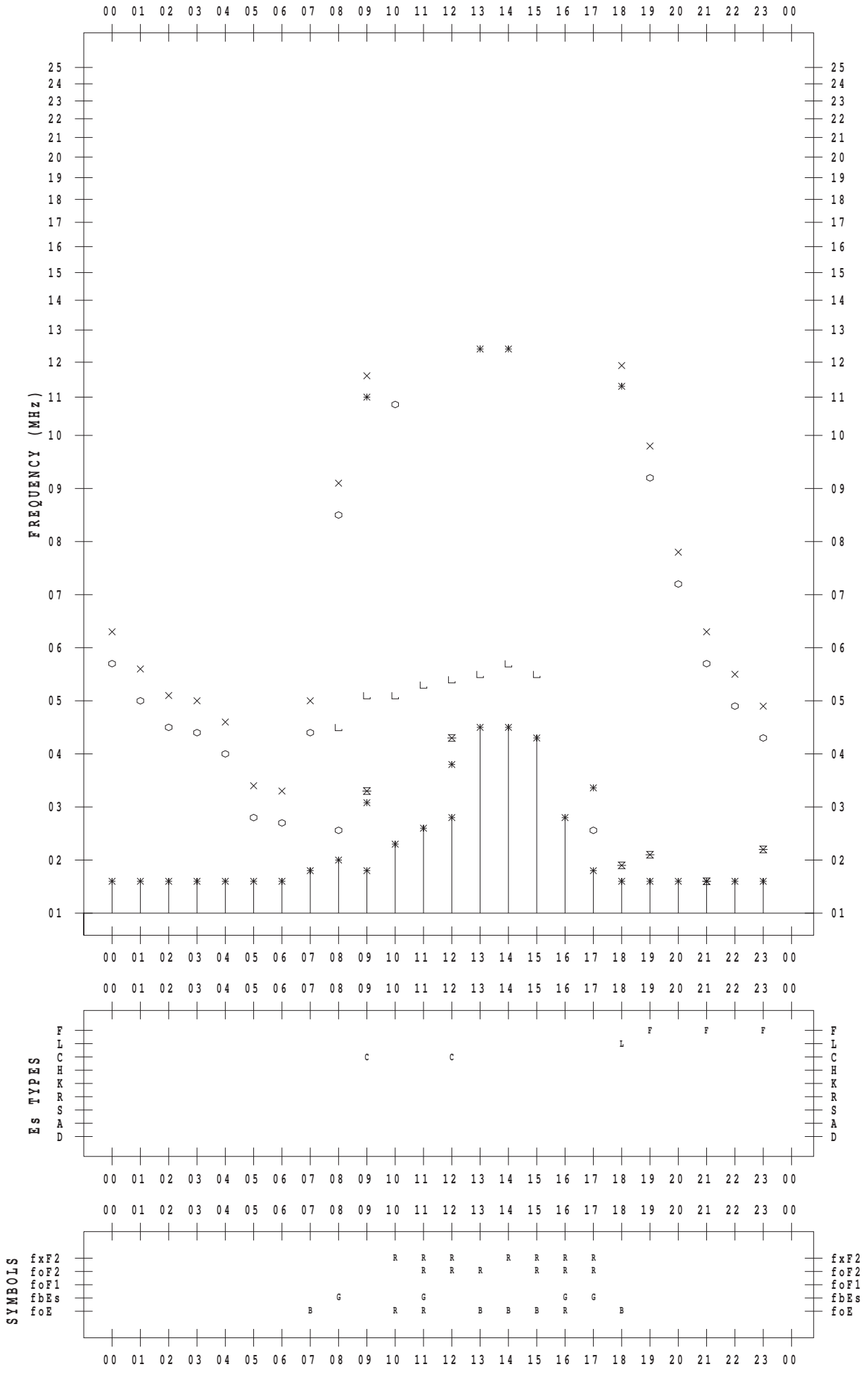
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/12

135 °E MEAN TIME



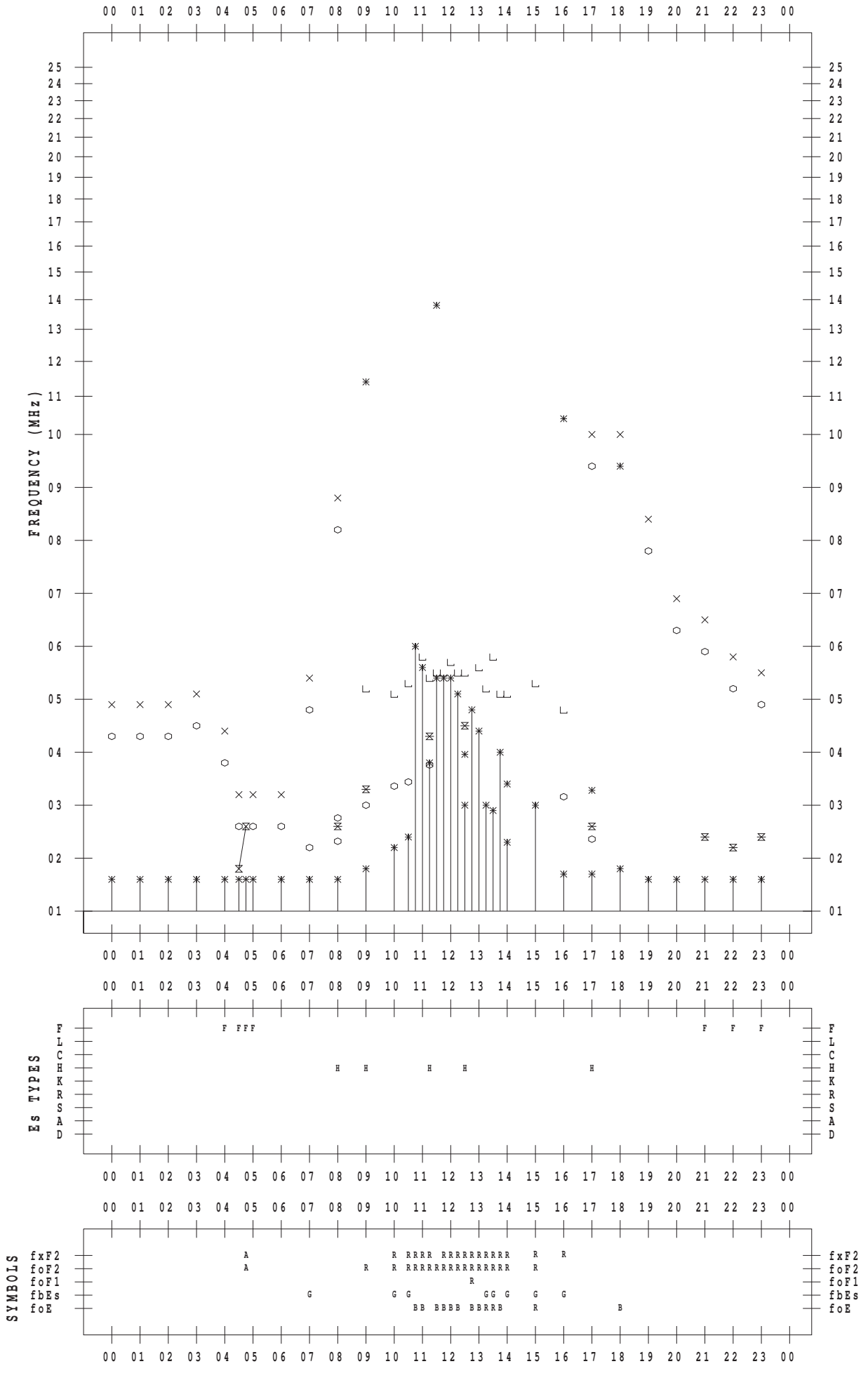
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/13

135 °E MEAN TIME



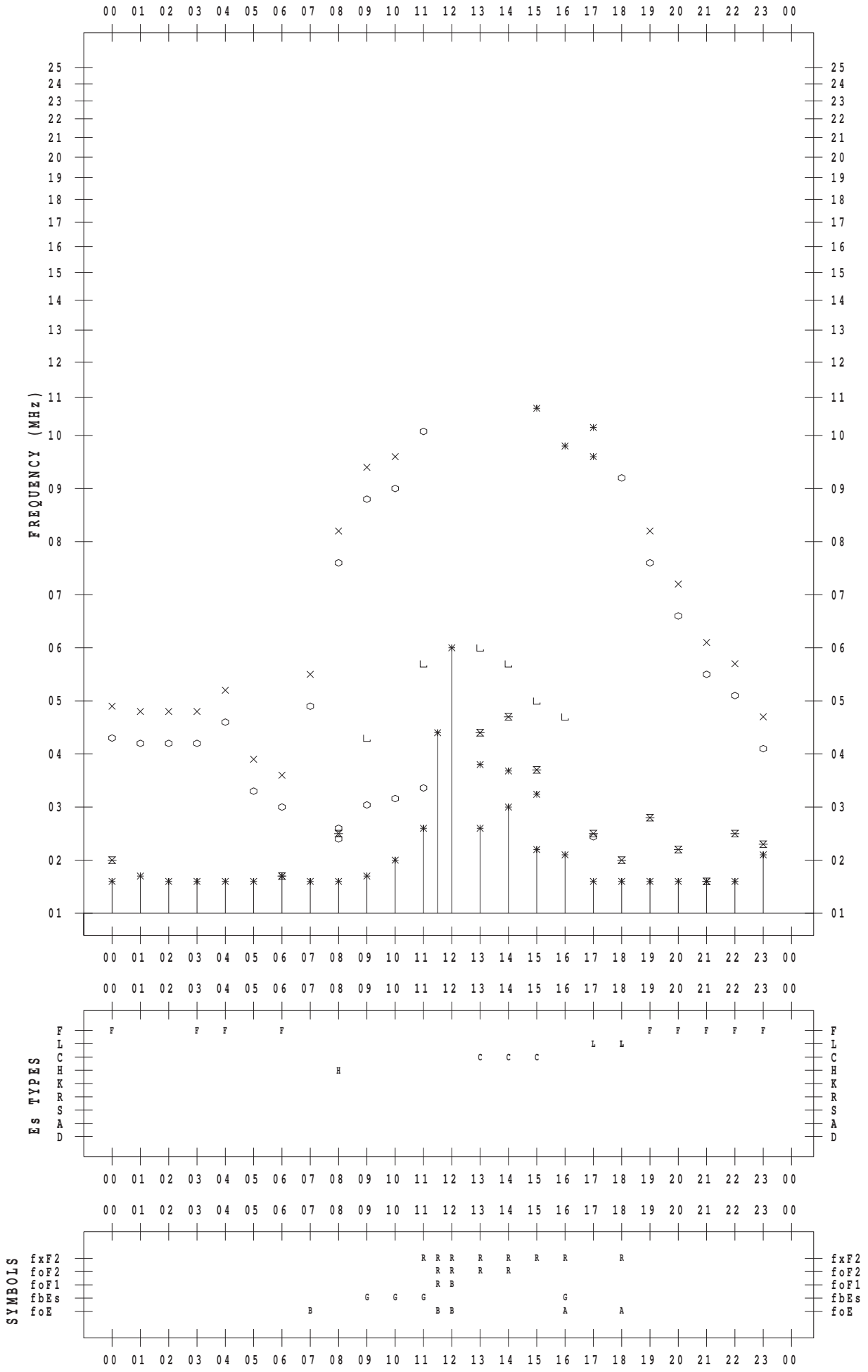
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/14

135 °E MEAN TIME



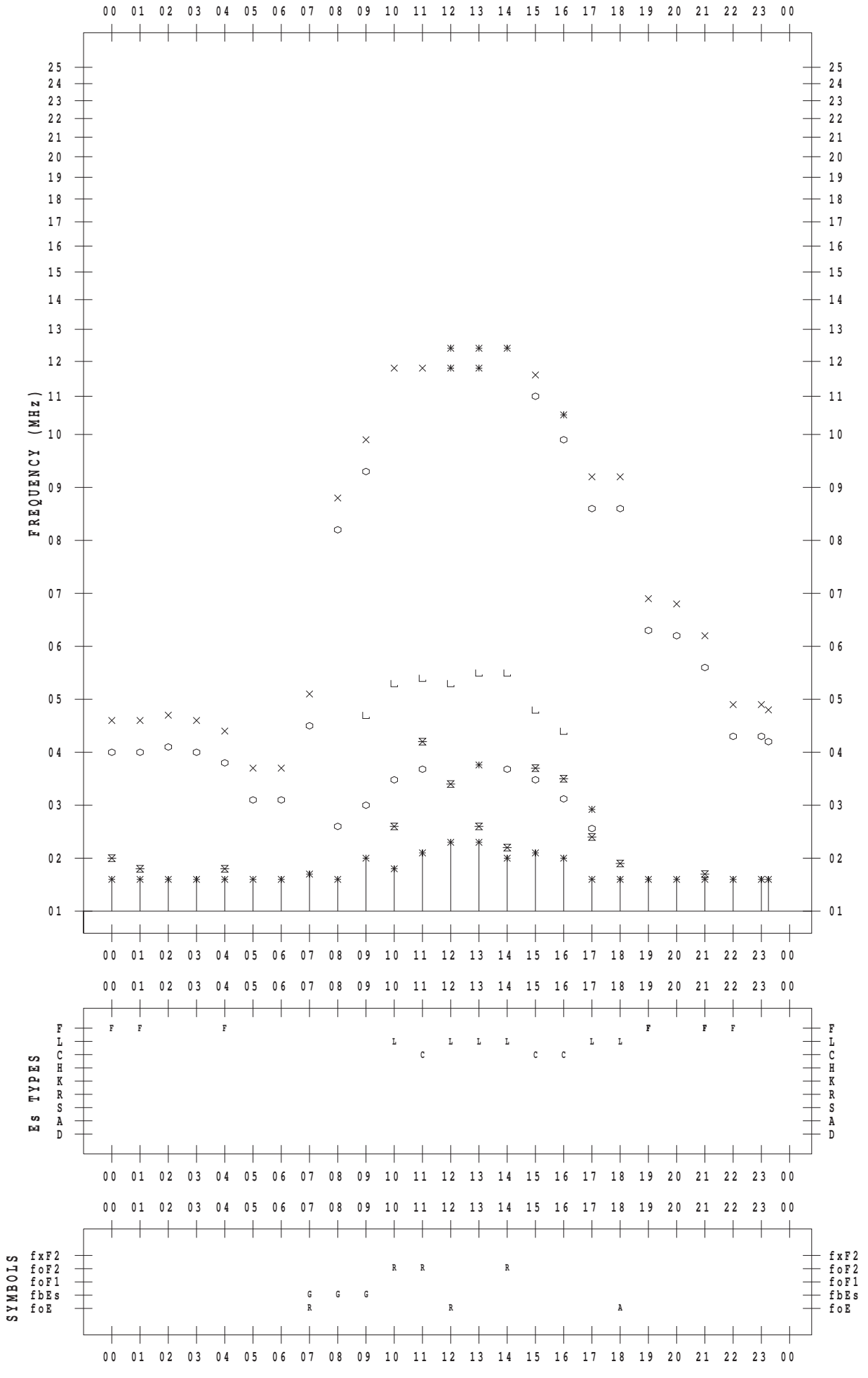
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/15

135 °E MEAN TIME



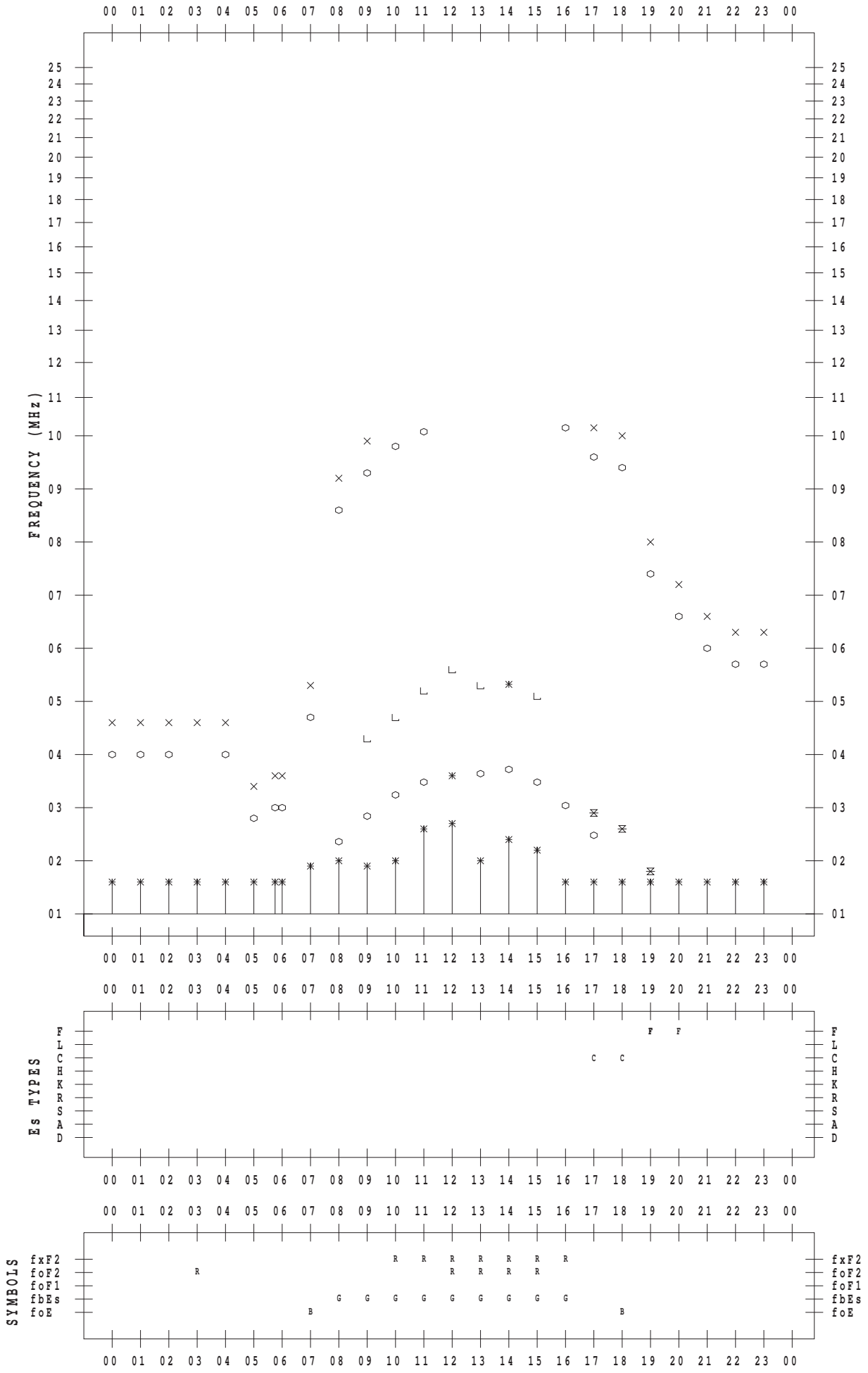
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/16

135 °E MEAN TIME



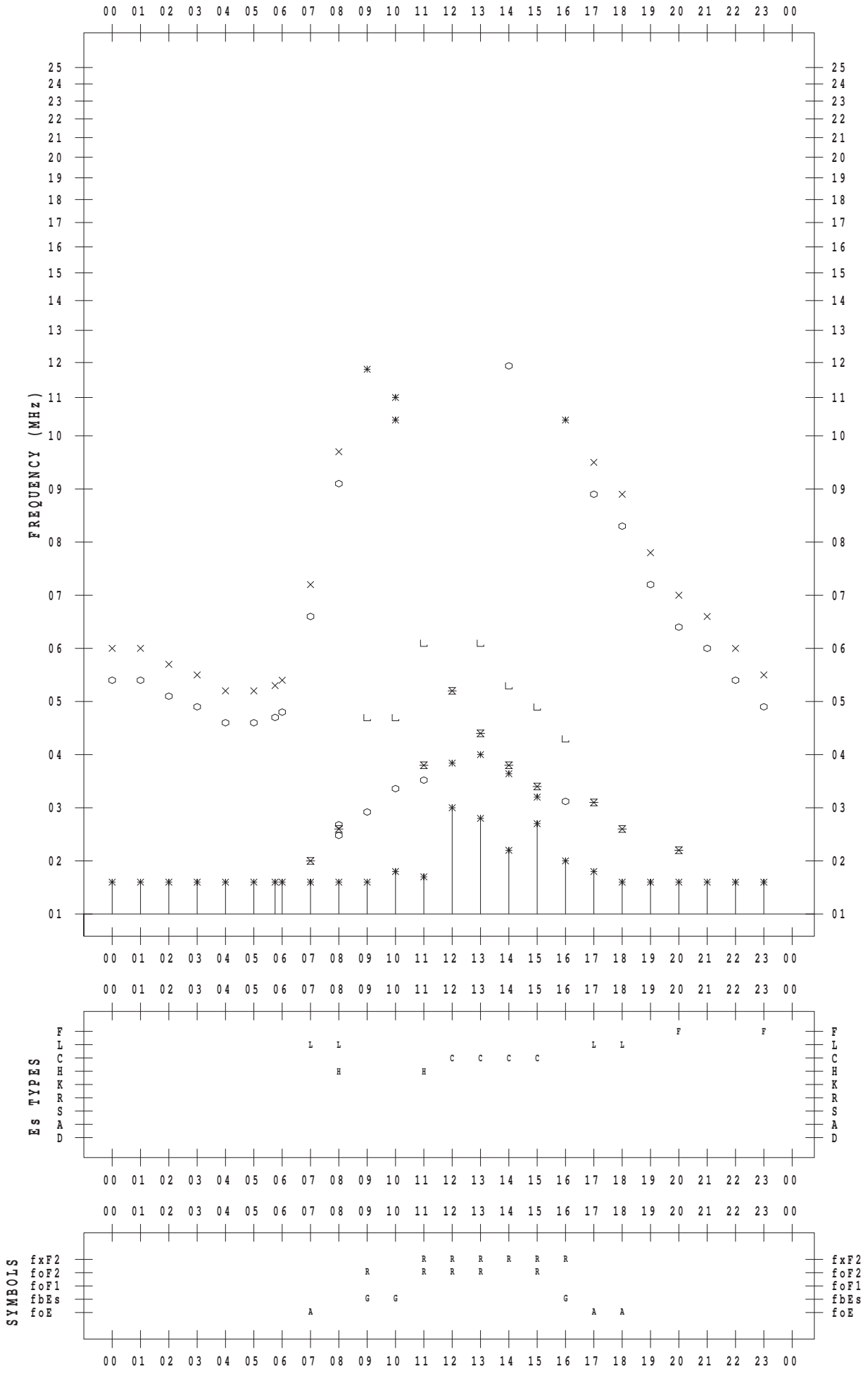
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/17

135 °E MEAN TIME



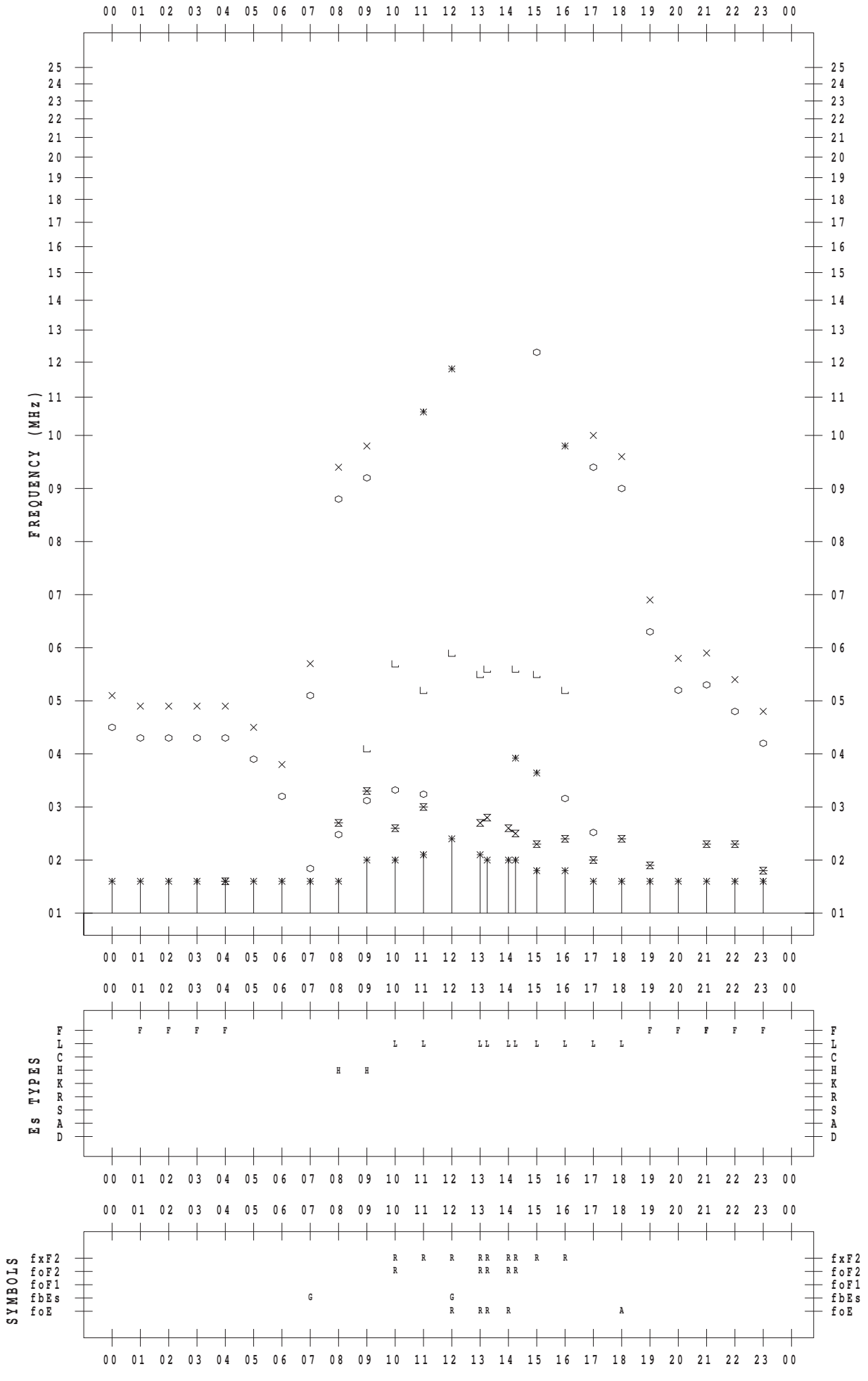
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/18

135 °E MEAN TIME



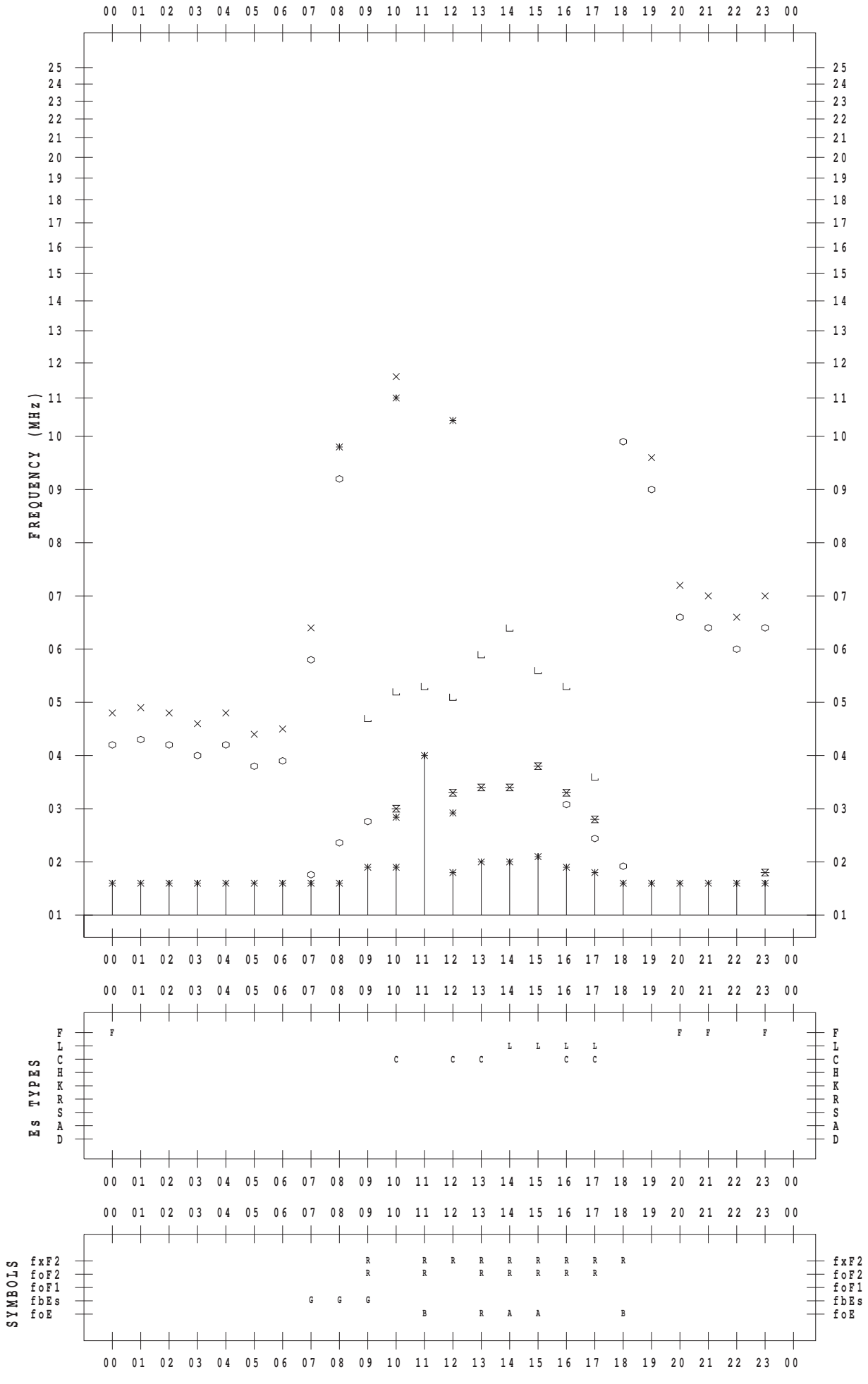
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/19

135 °E MEAN TIME



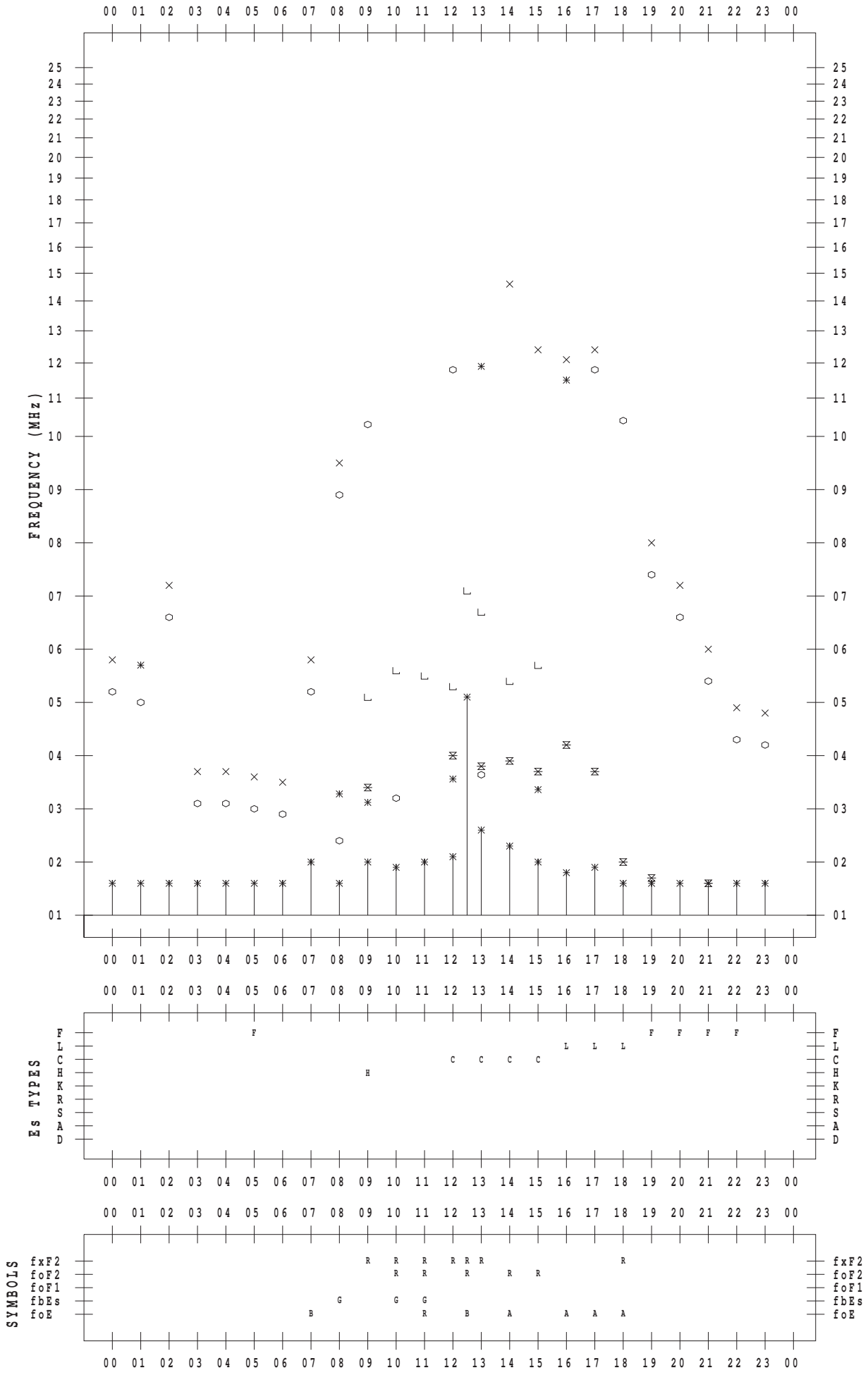
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/20

135 °E MEAN TIME



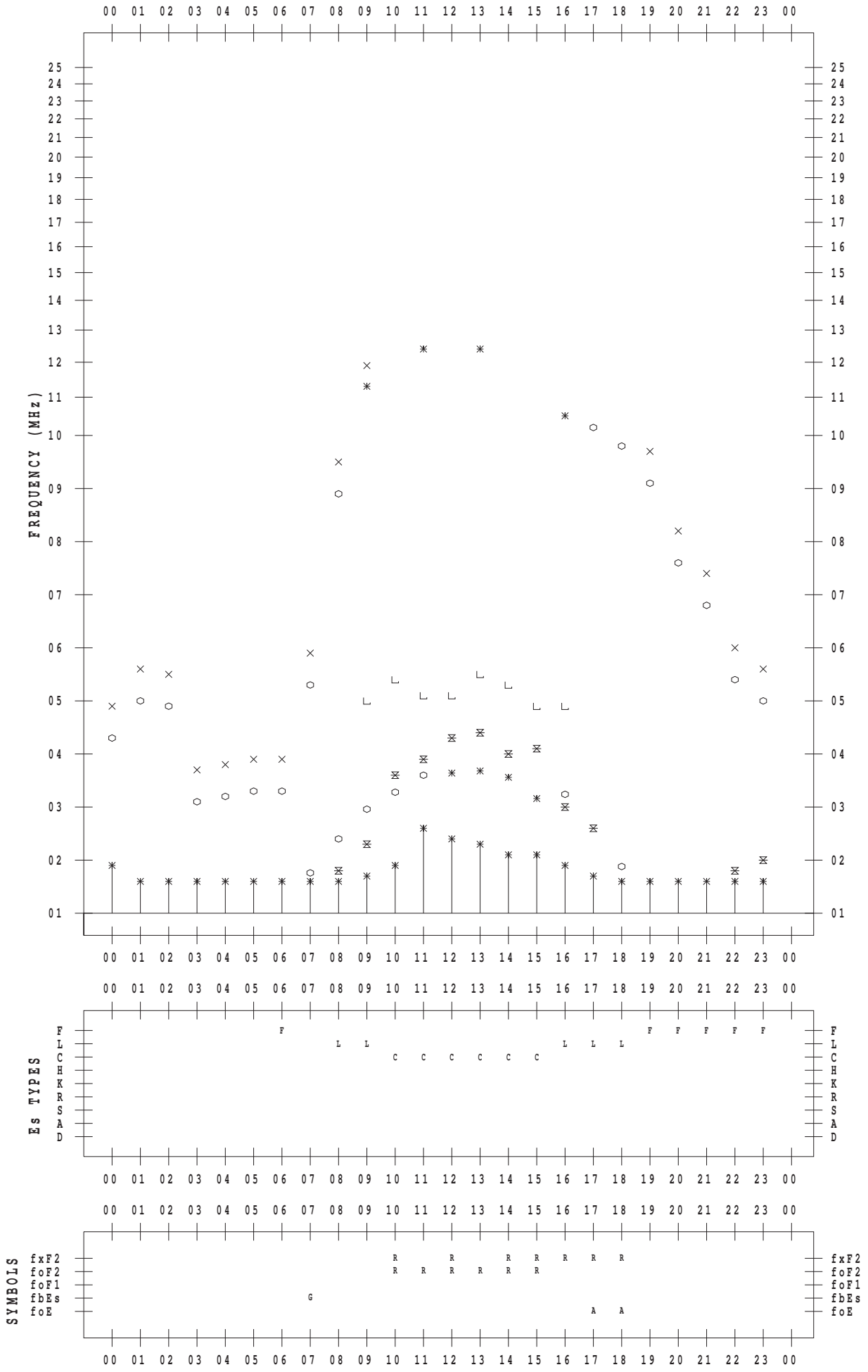
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/21

135 °E MEAN TIME



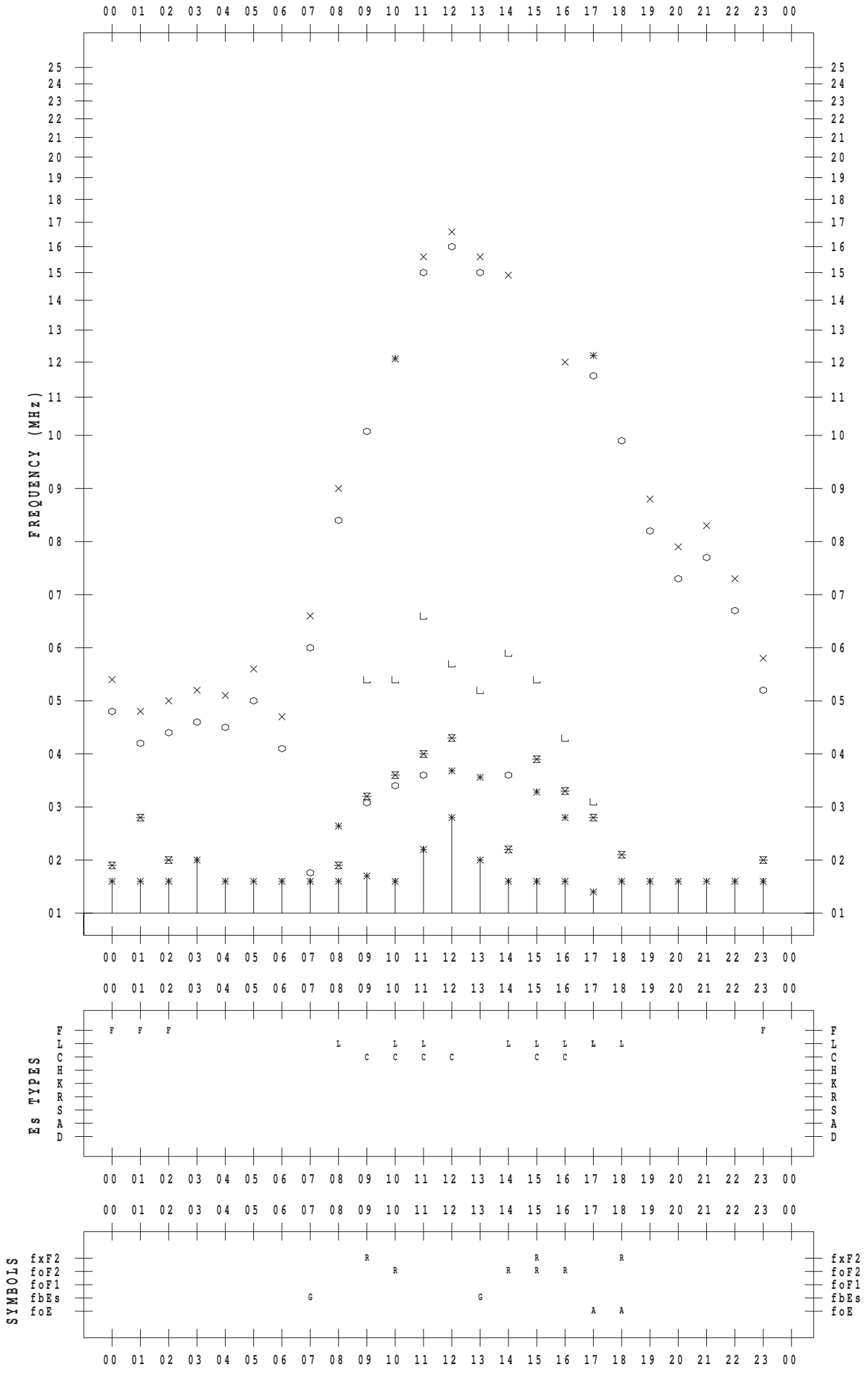
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/22

135 °E MEAN TIME



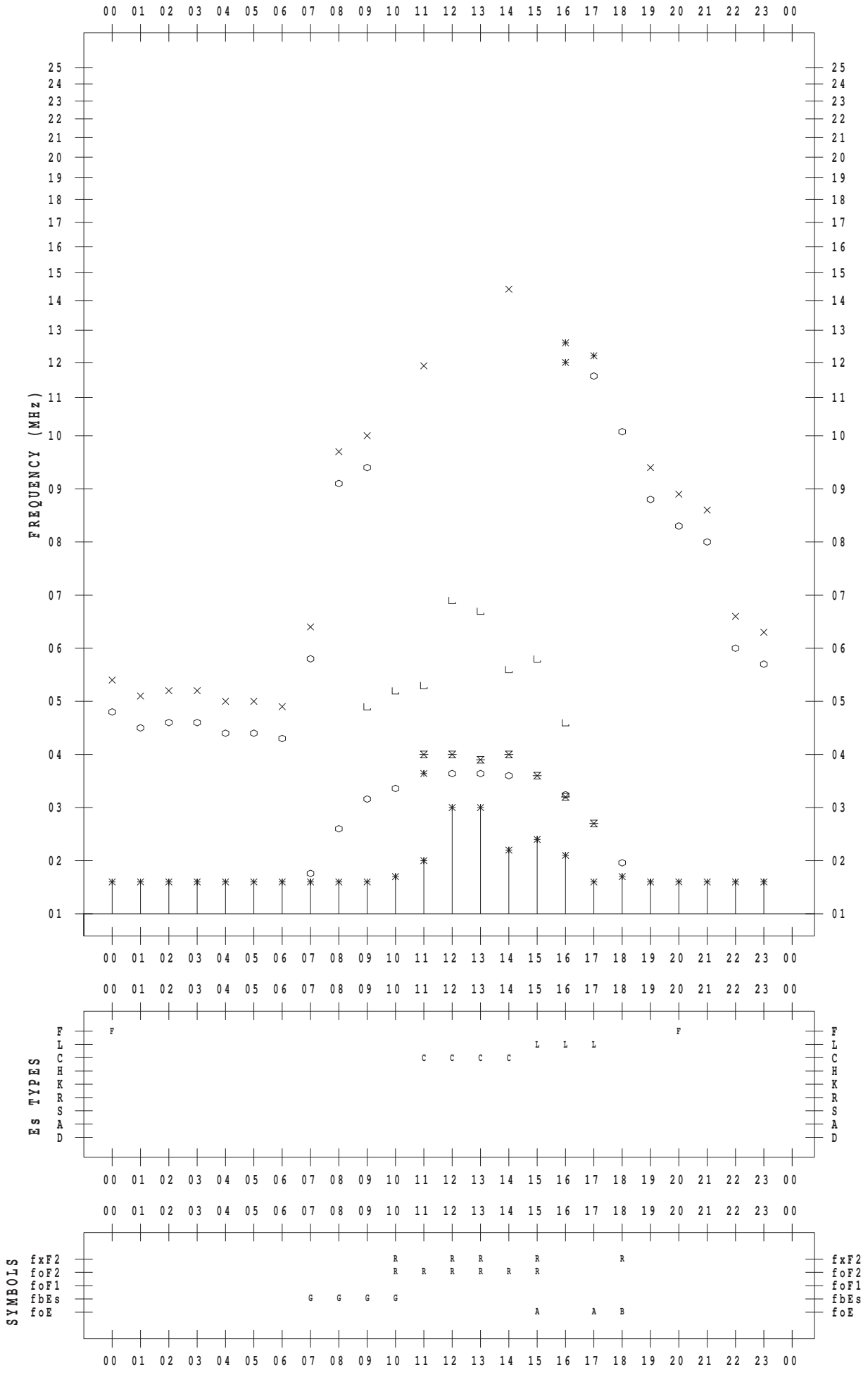
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/23

135 °E MEAN TIME



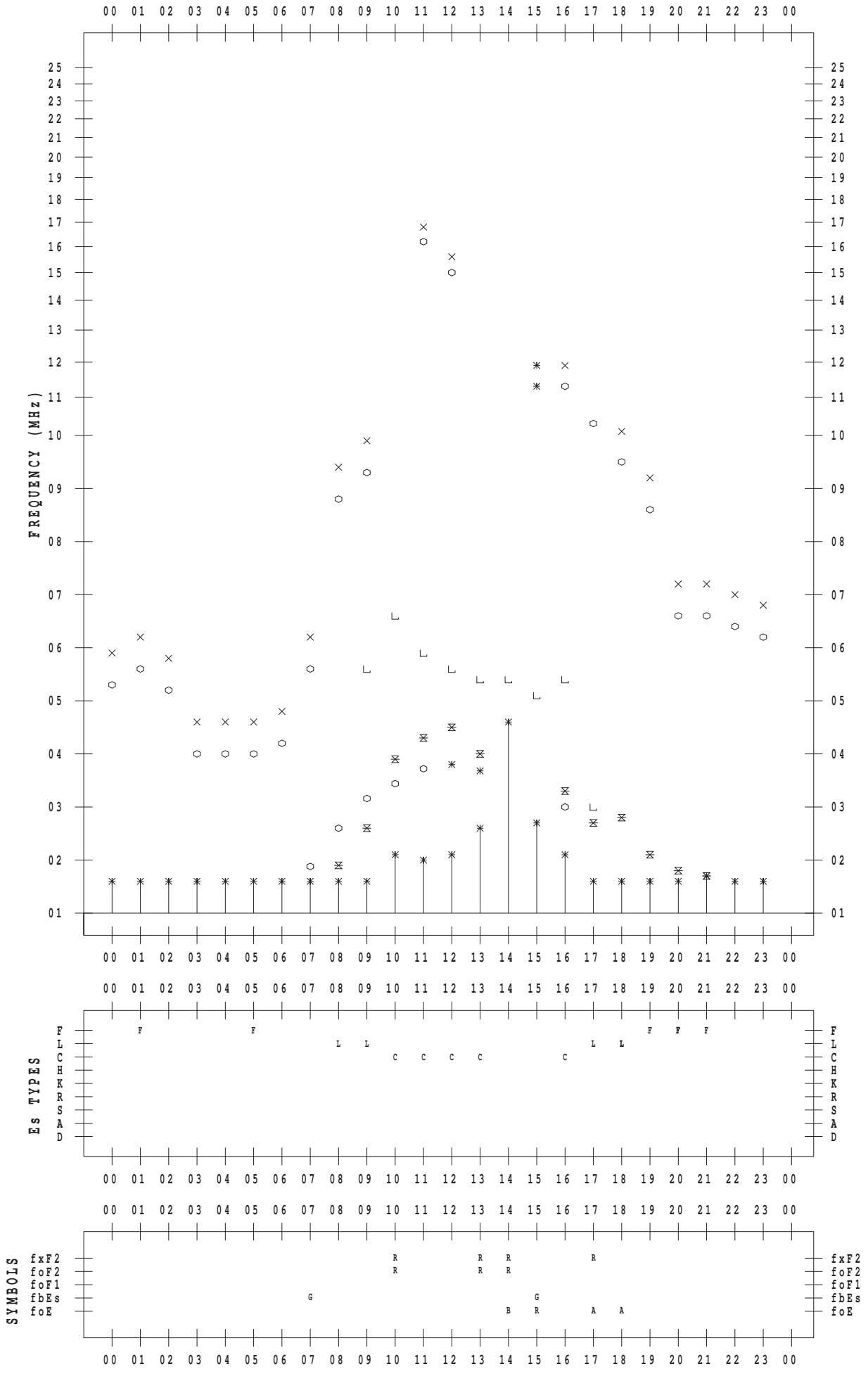
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/24

135 °E MEAN TIME



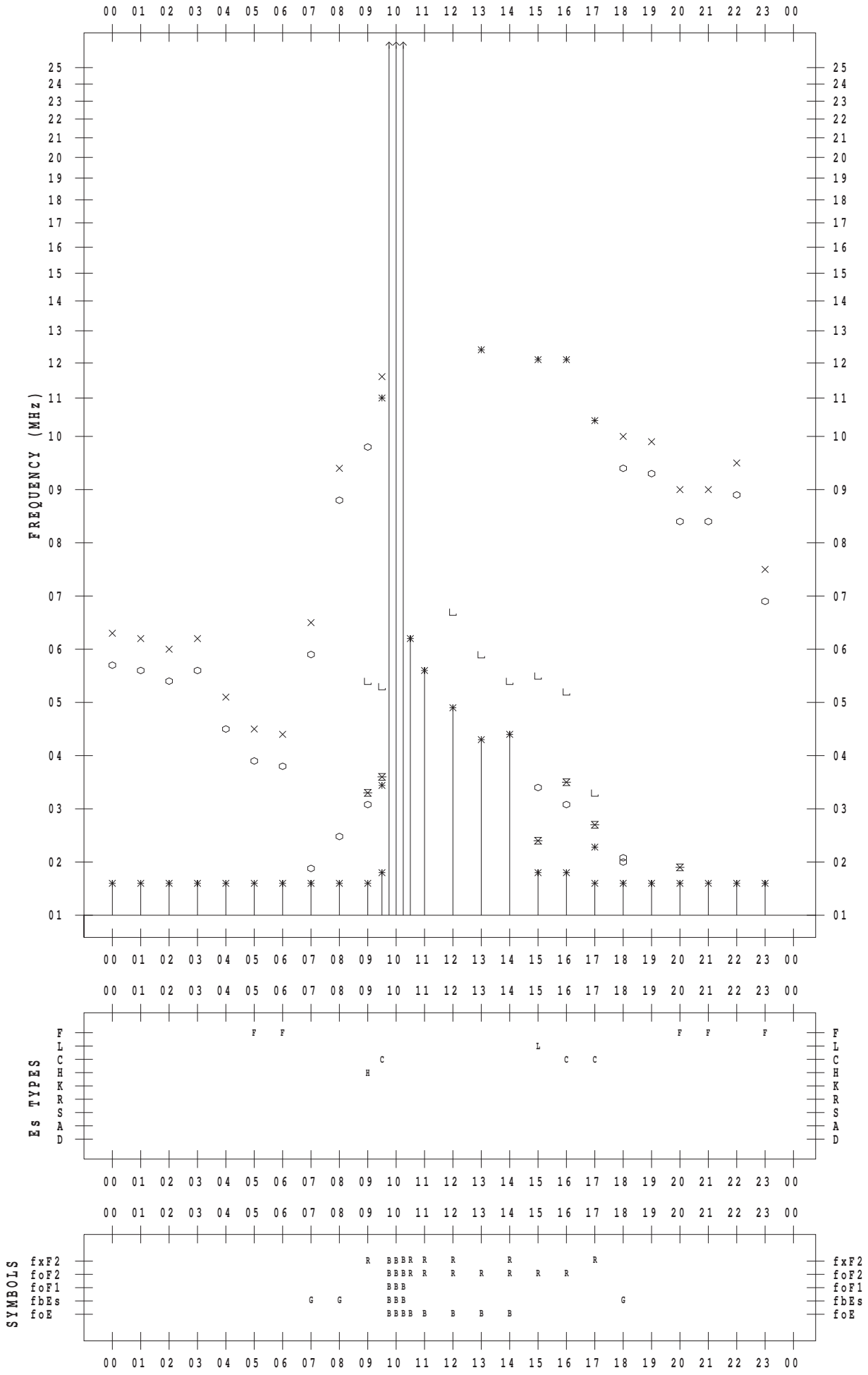
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/25

135 °E MEAN TIME



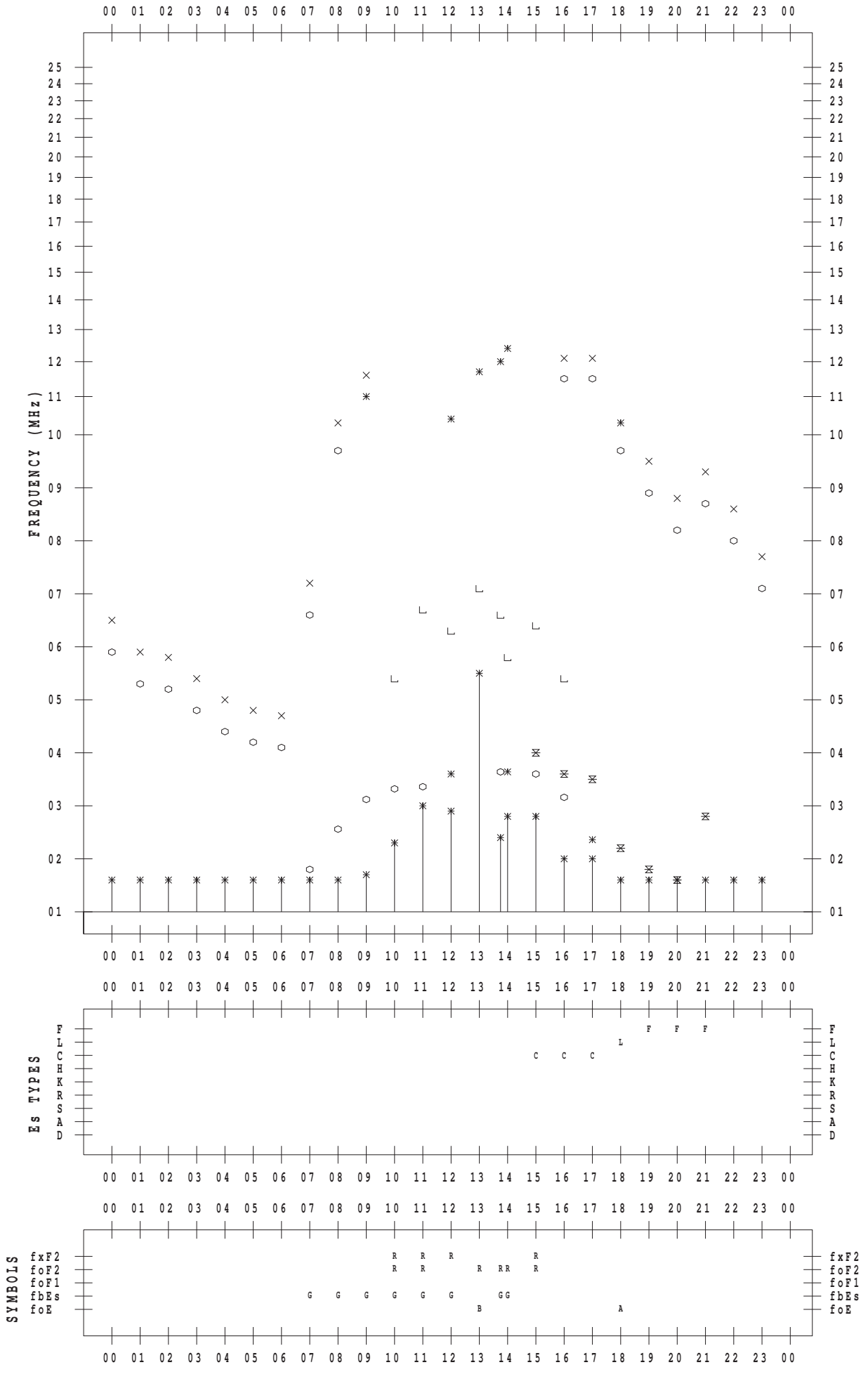
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/26

135 °E MEAN TIME



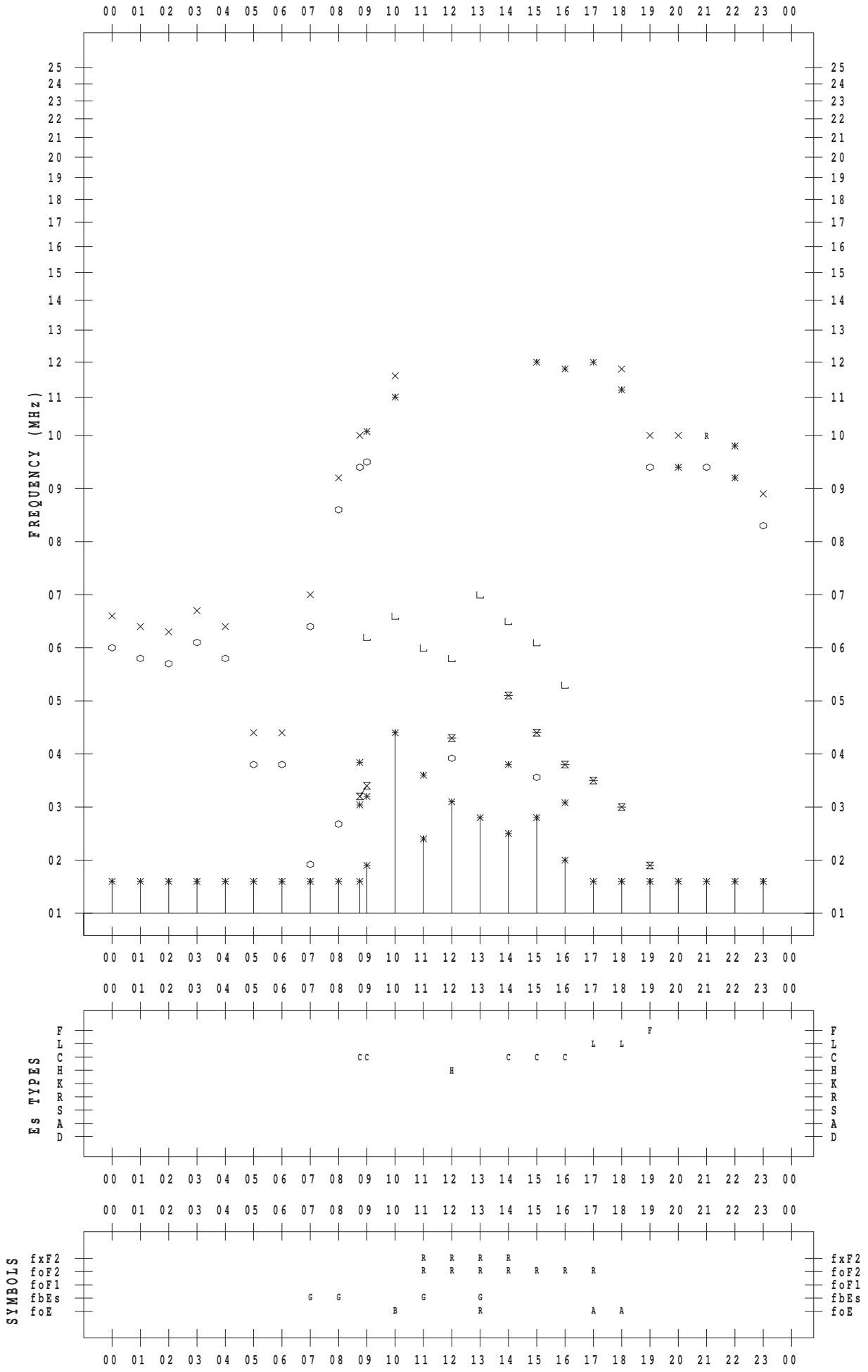
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/27

135 °E MEAN TIME



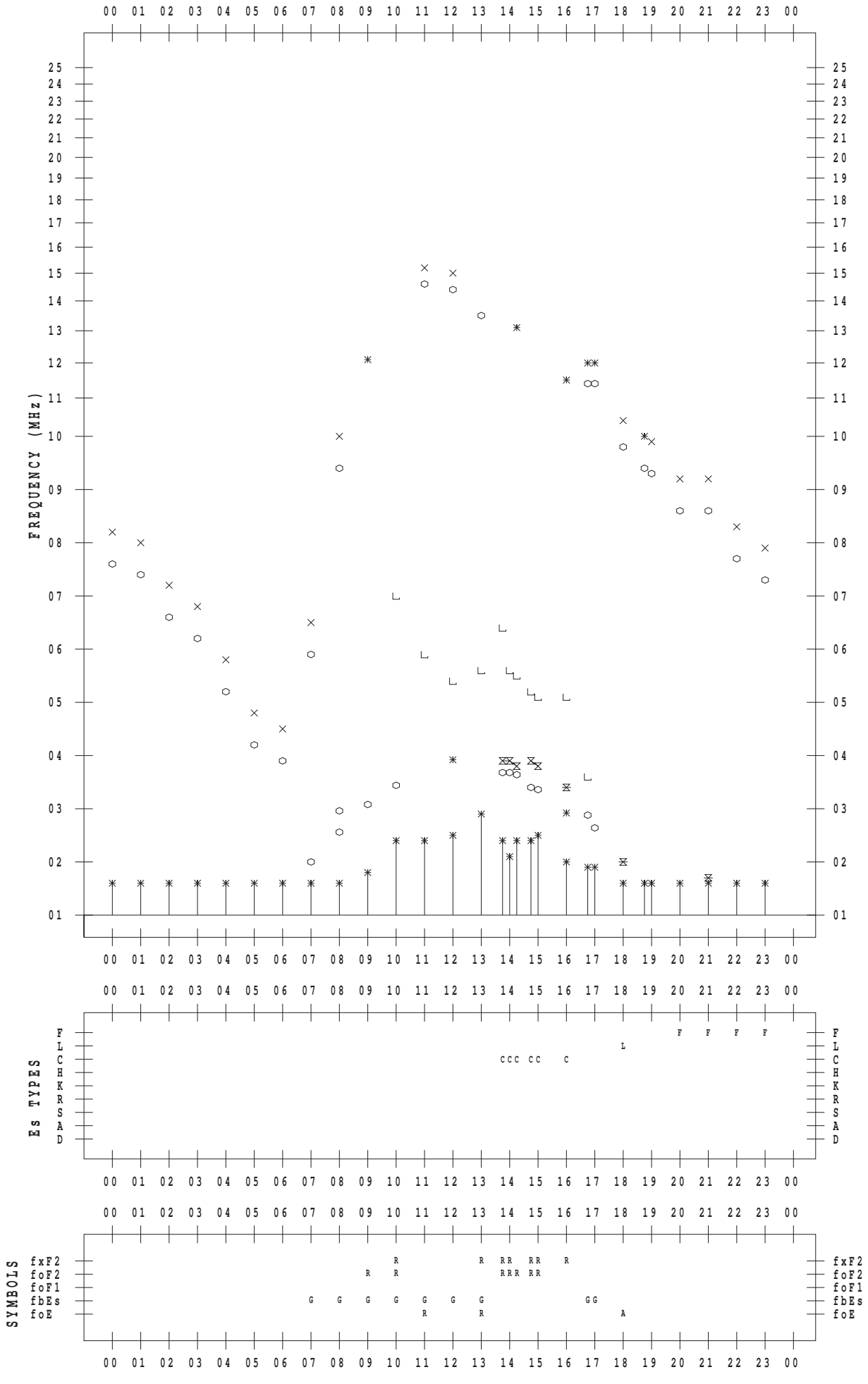
f-PLOT DATA

SCALER : M.NISHIDA

STATION : Yamagawa

DATE : 2014/ 2/28

135 °E MEAN TIME



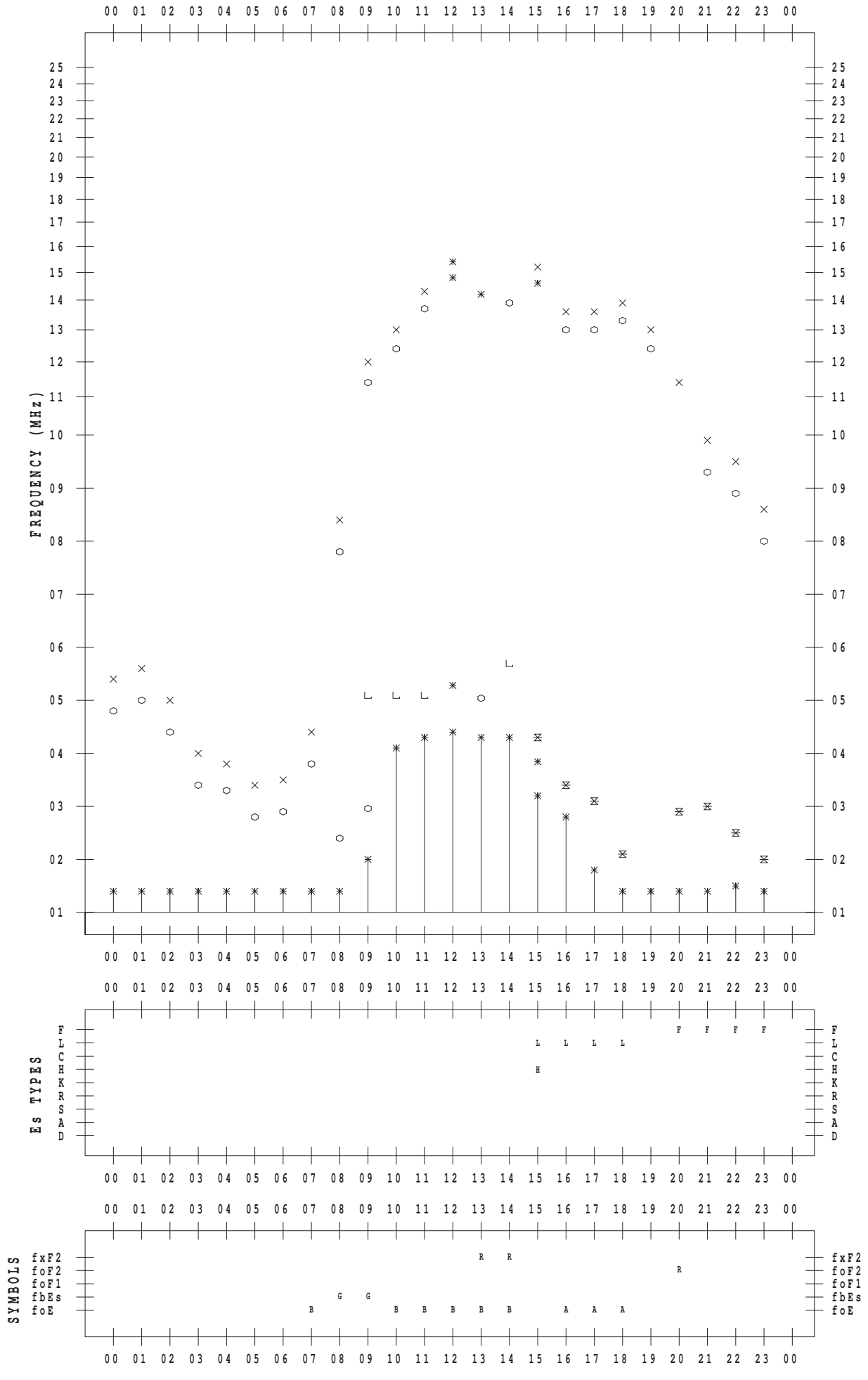
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 1

135 °E MEAN TIME



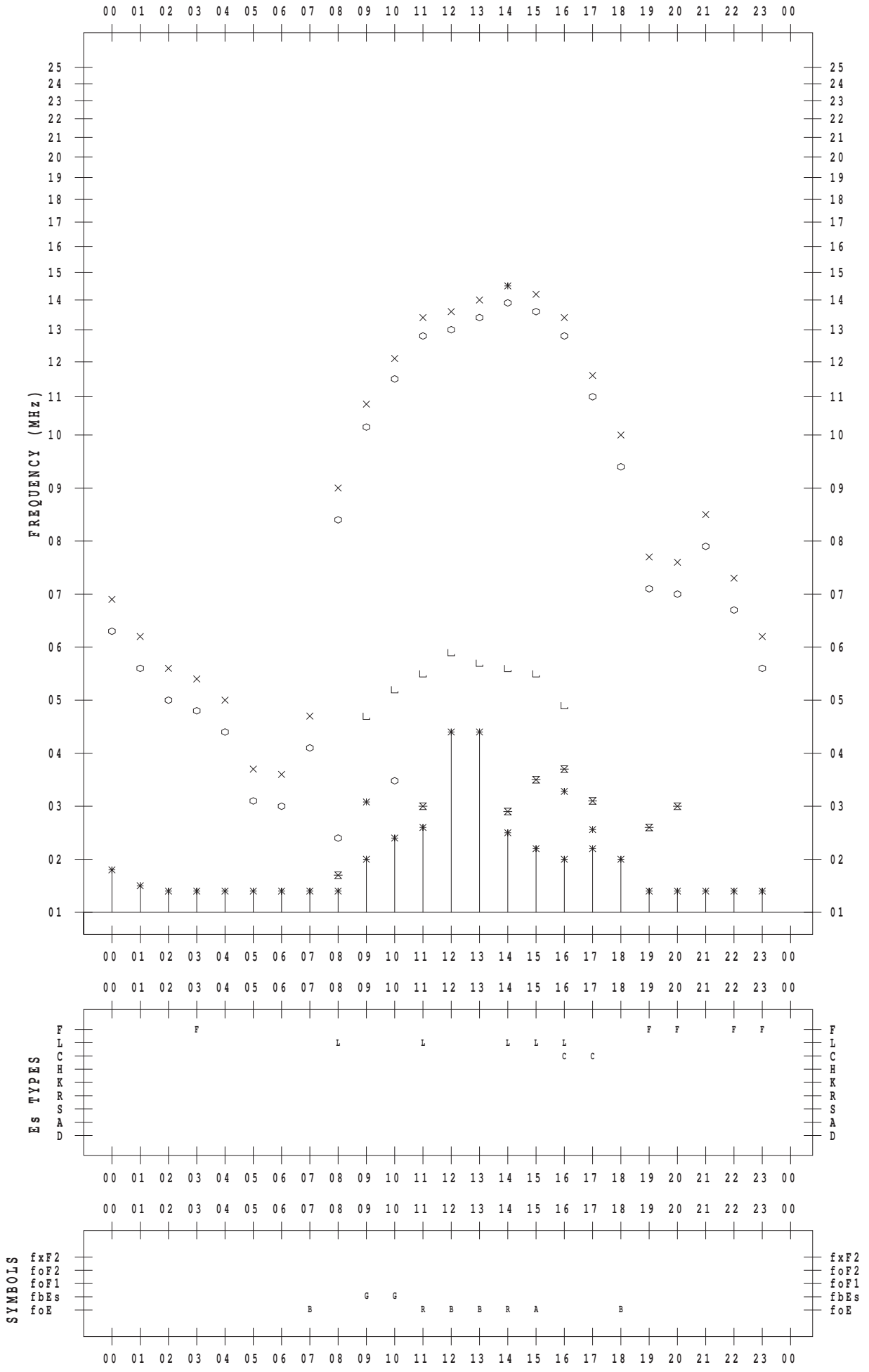
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 2

135 °E MEAN TIME



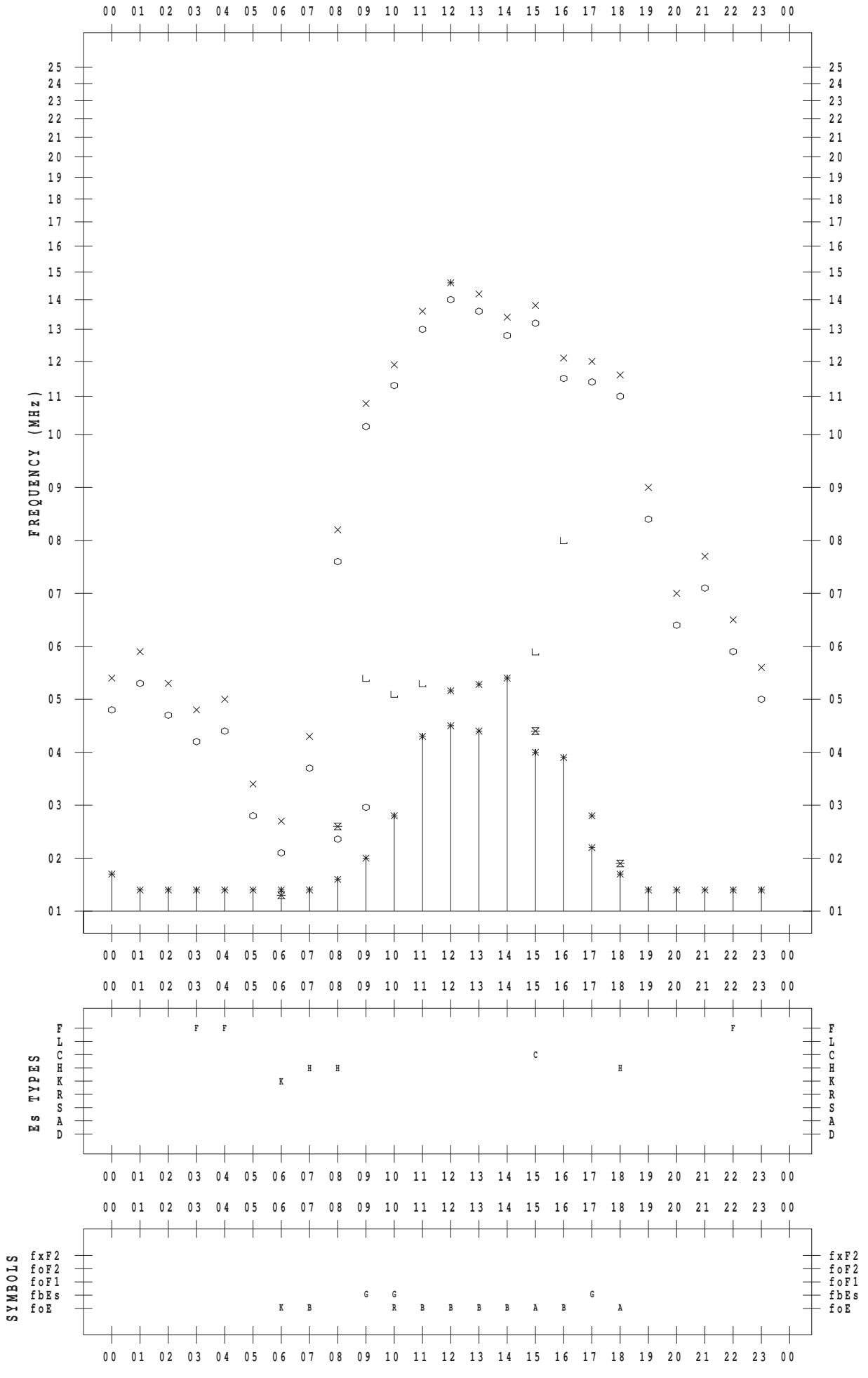
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 3

135 °E MEAN TIME



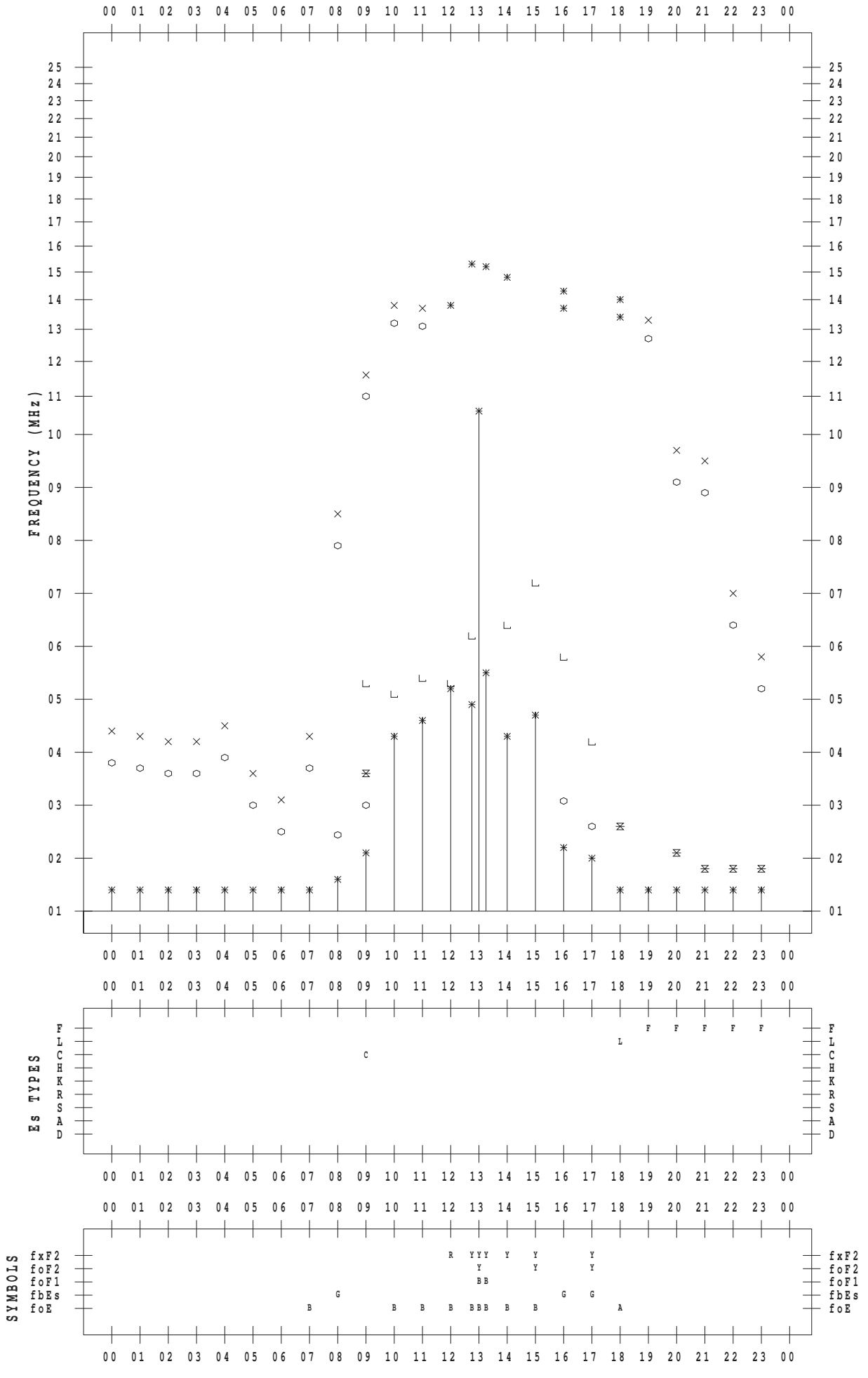
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 4

135 °E MEAN TIME



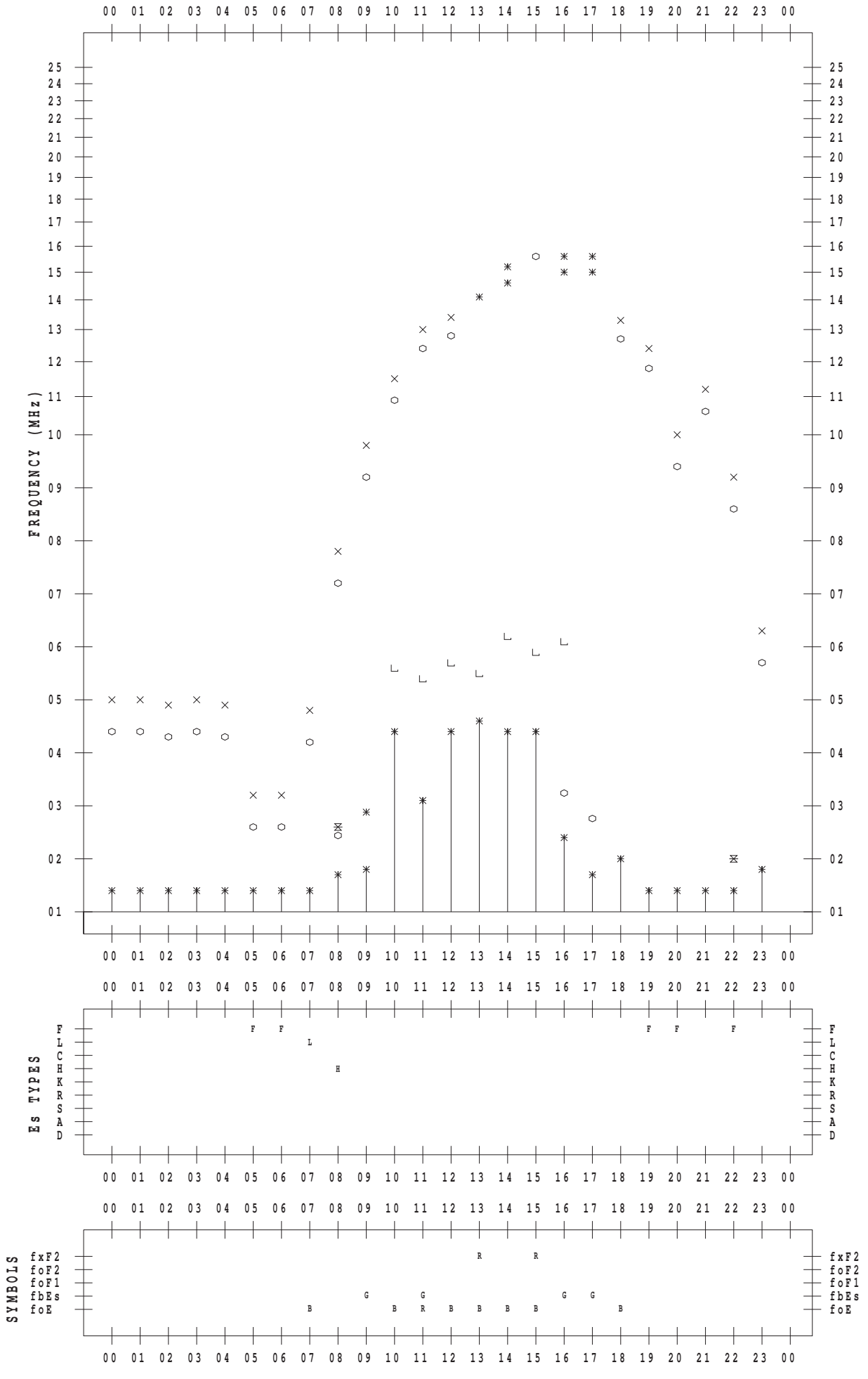
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 5

135 °E MEAN TIME



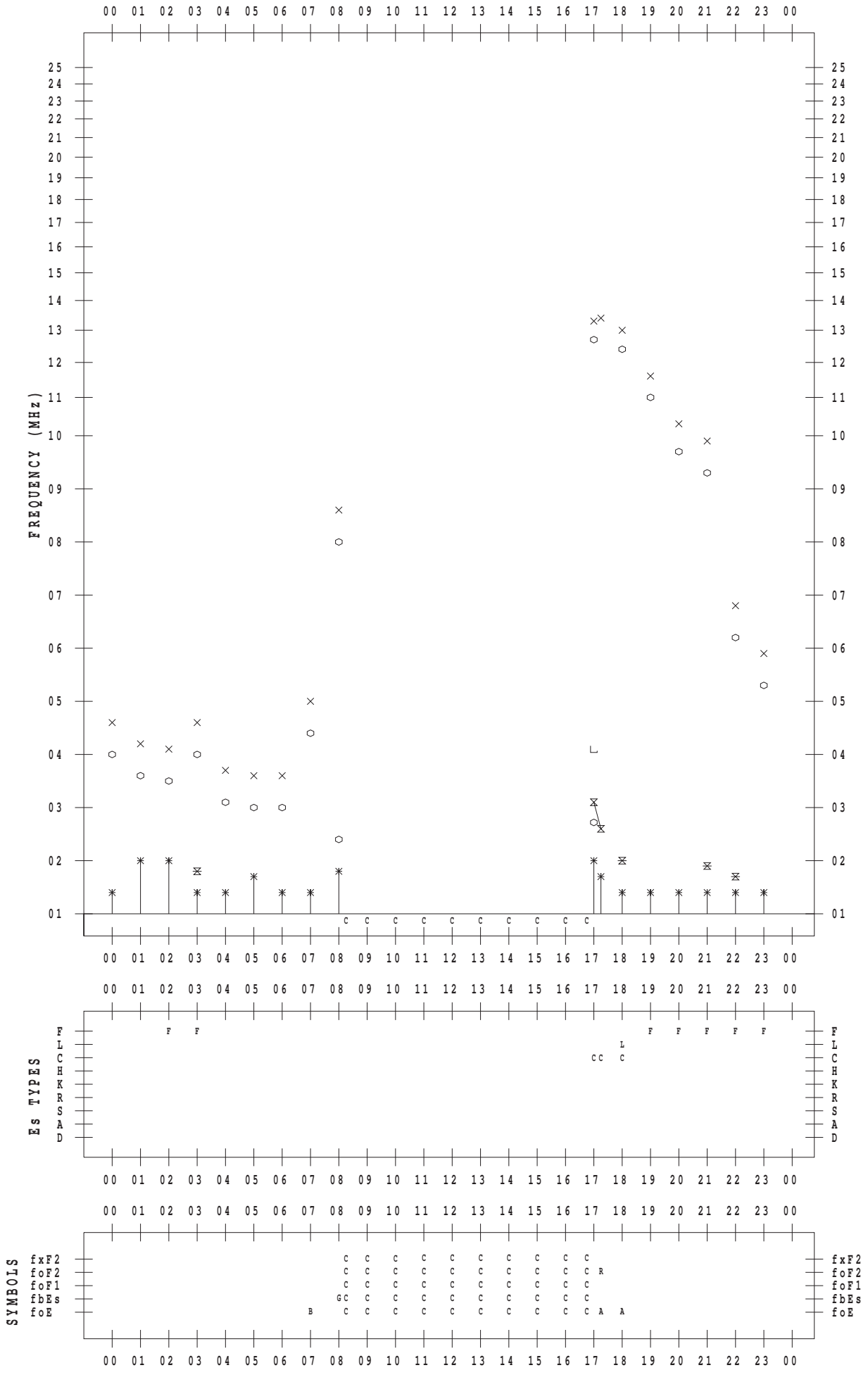
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 6

135 °E MEAN TIME



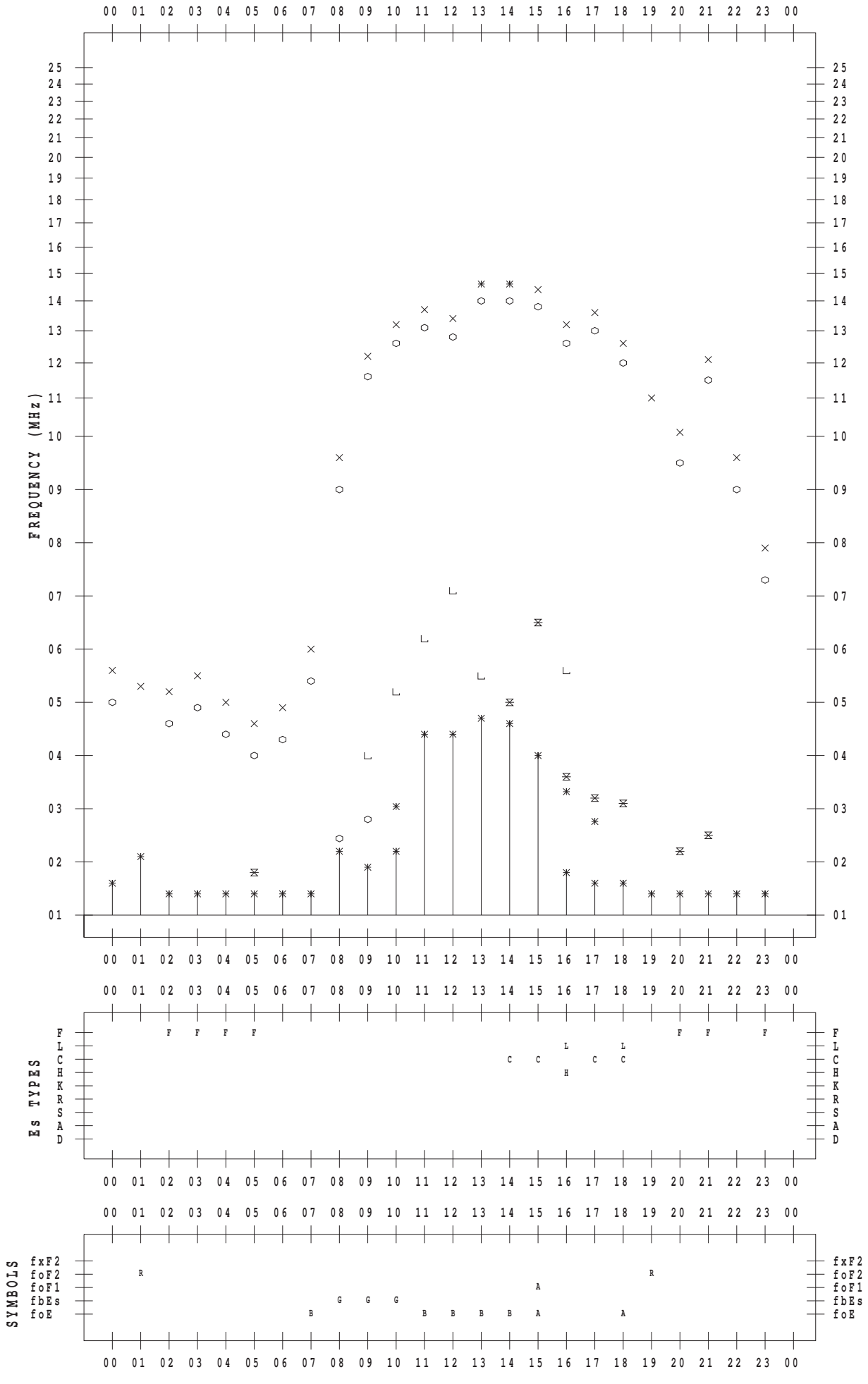
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 7

135 °E MEAN TIME



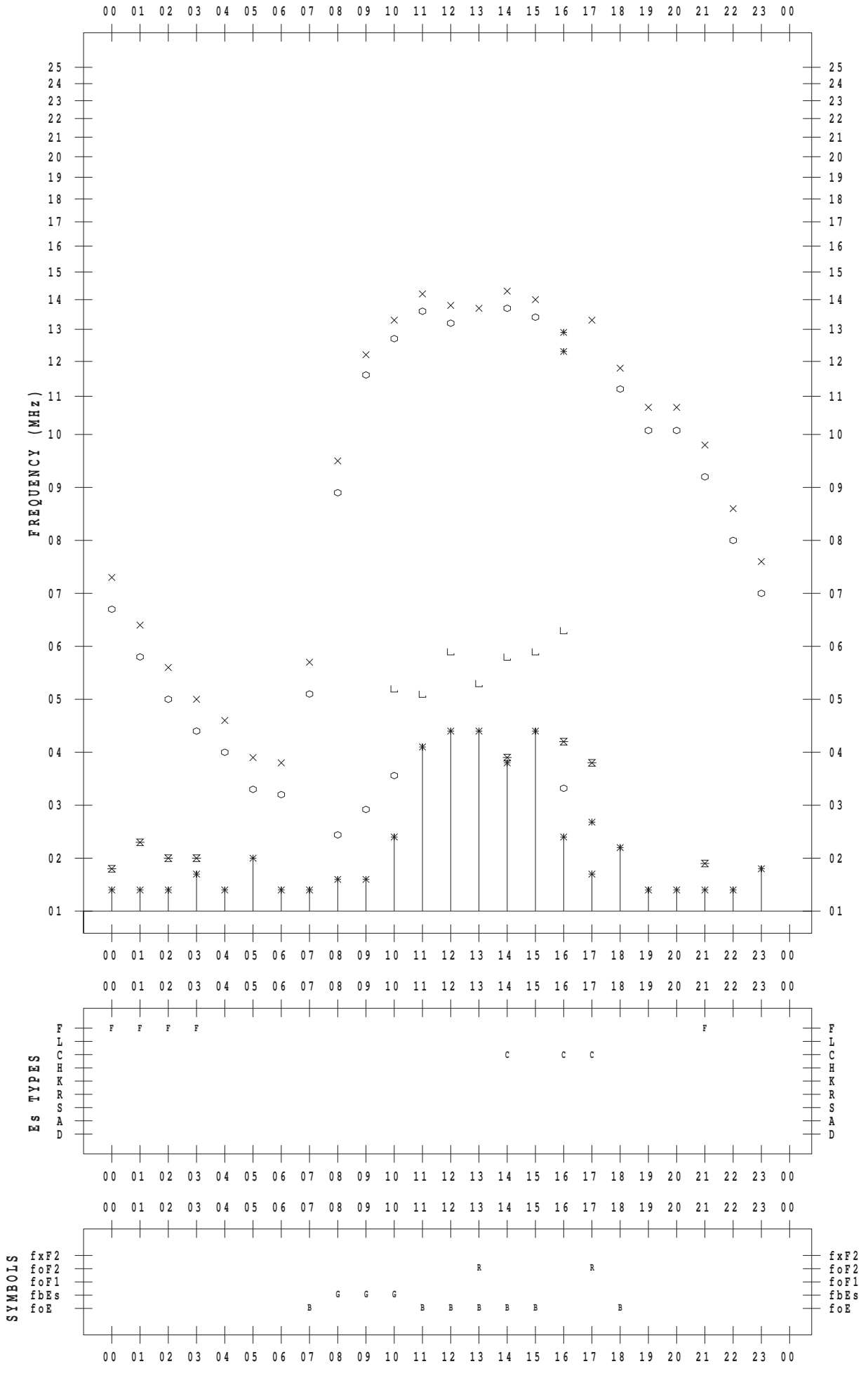
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 8

135 °E MEAN TIME



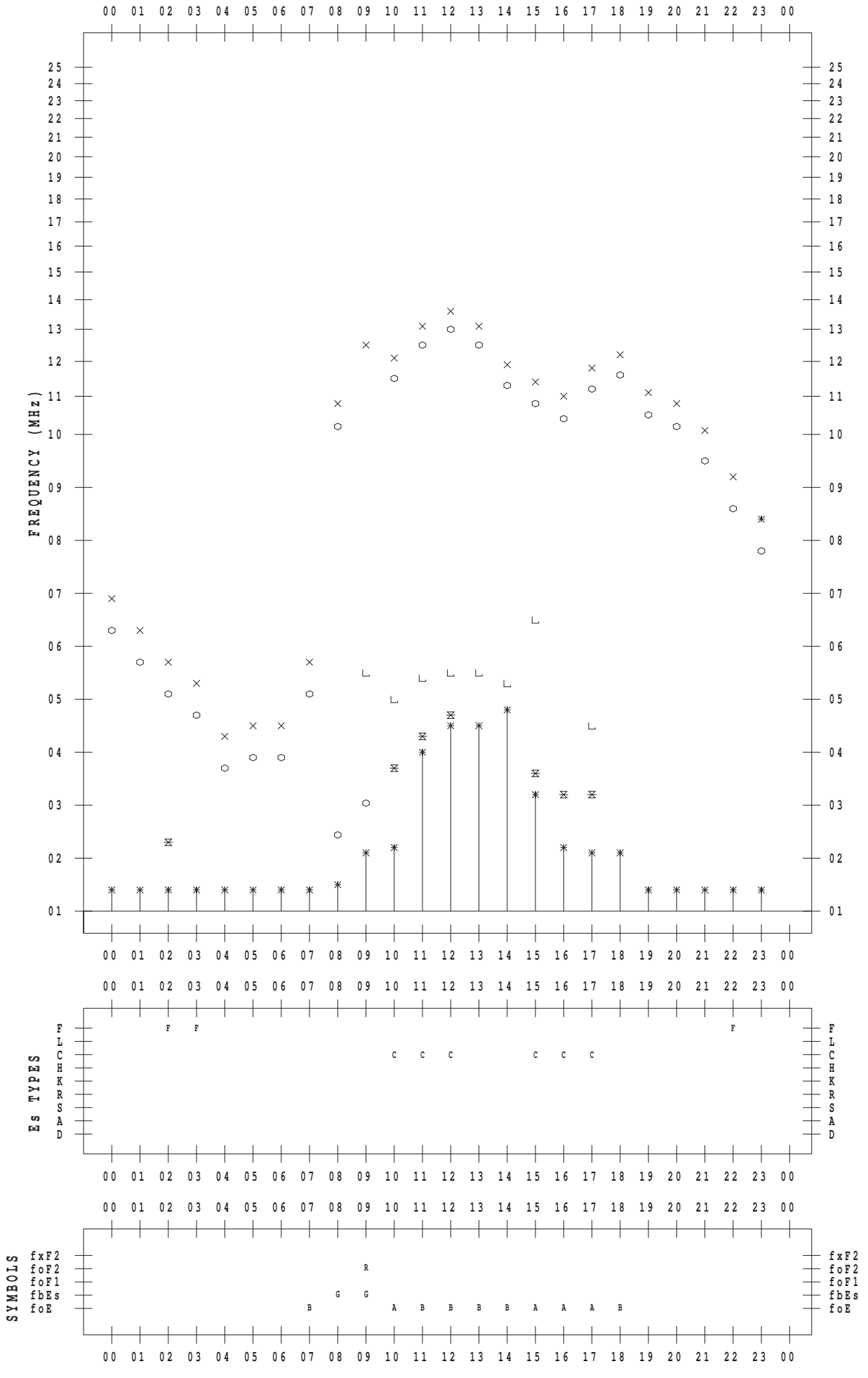
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/ 9

135 °E MEAN TIME



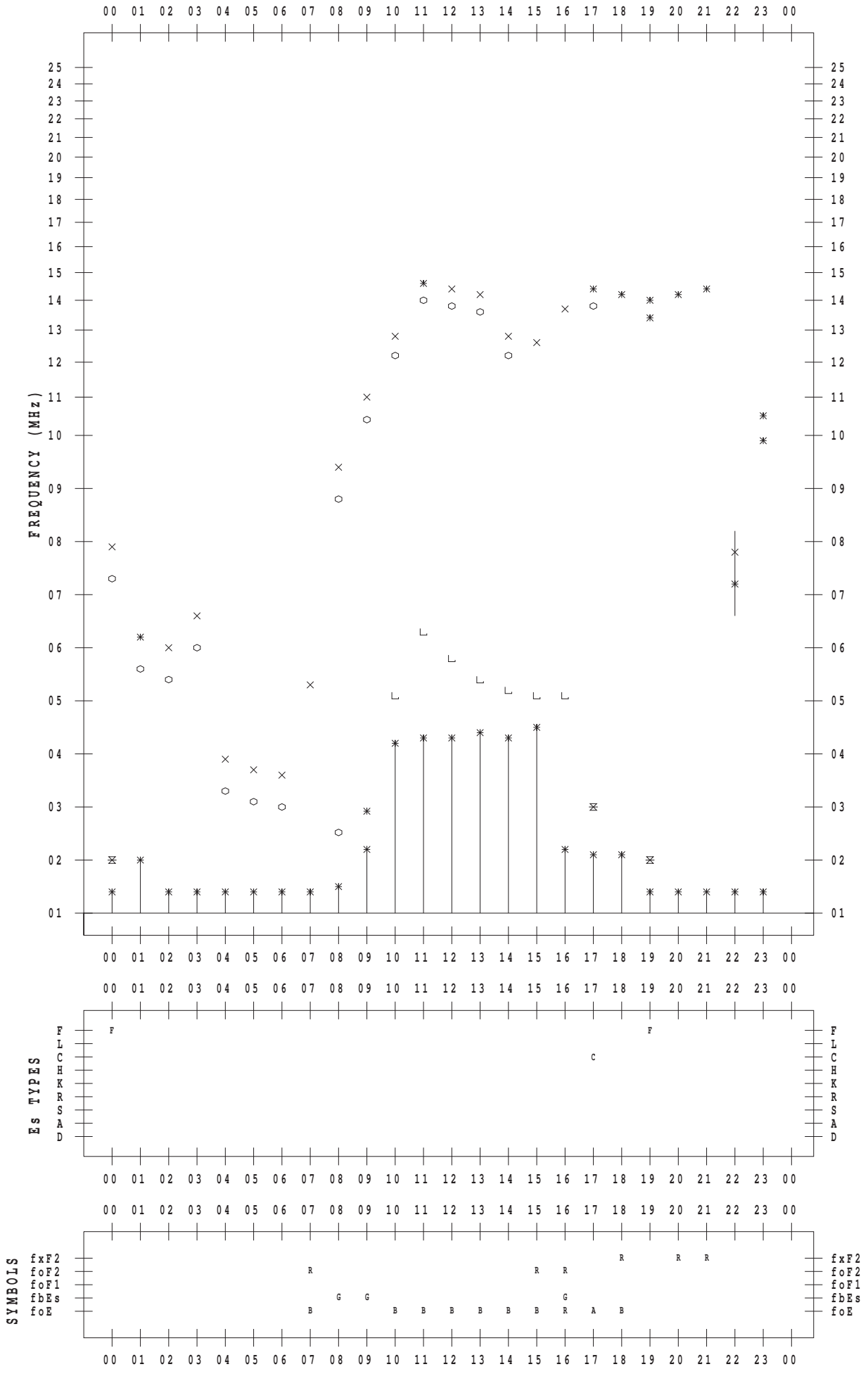
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/10

135 °E MEAN TIME



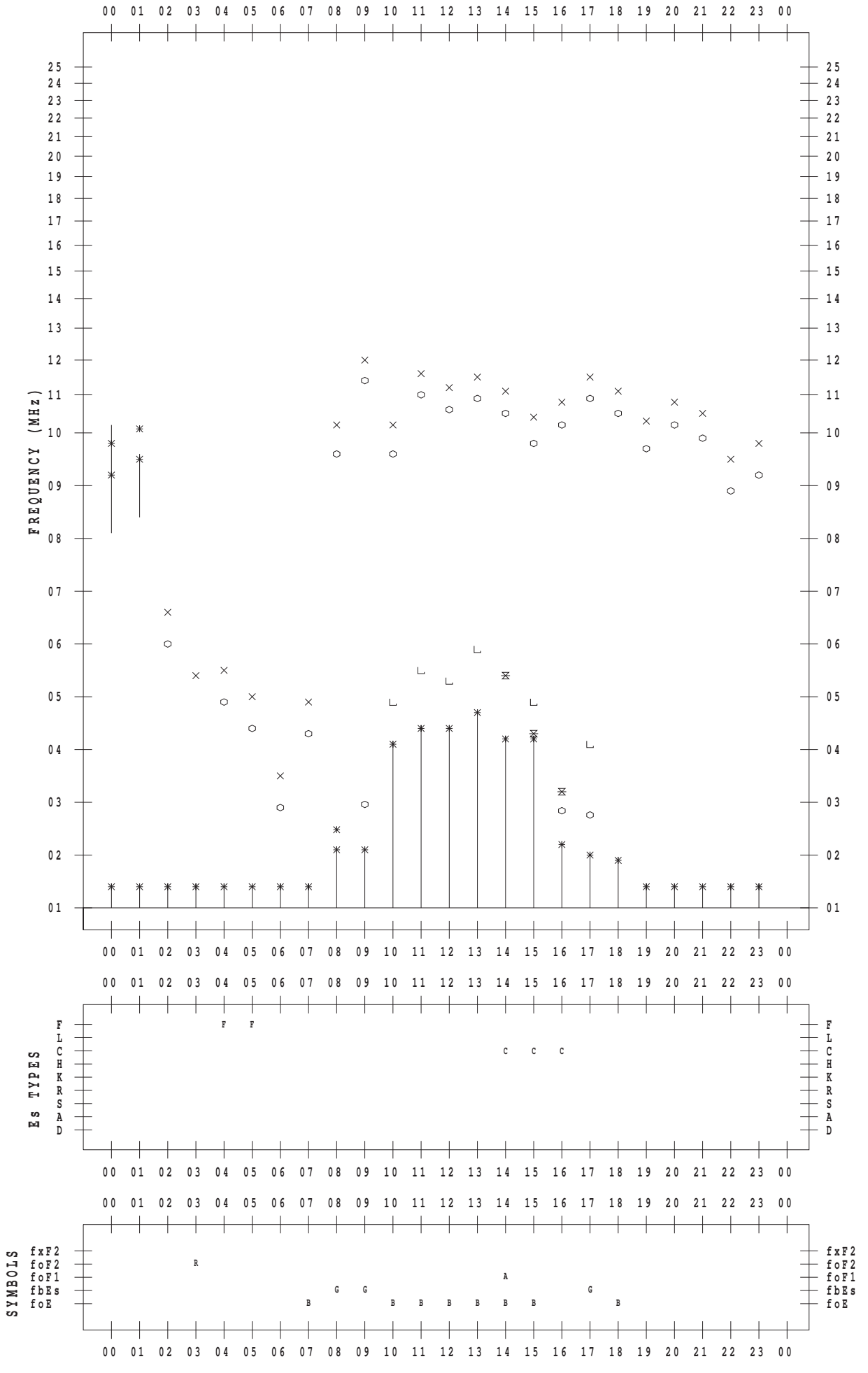
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/11

135 °E MEAN TIME



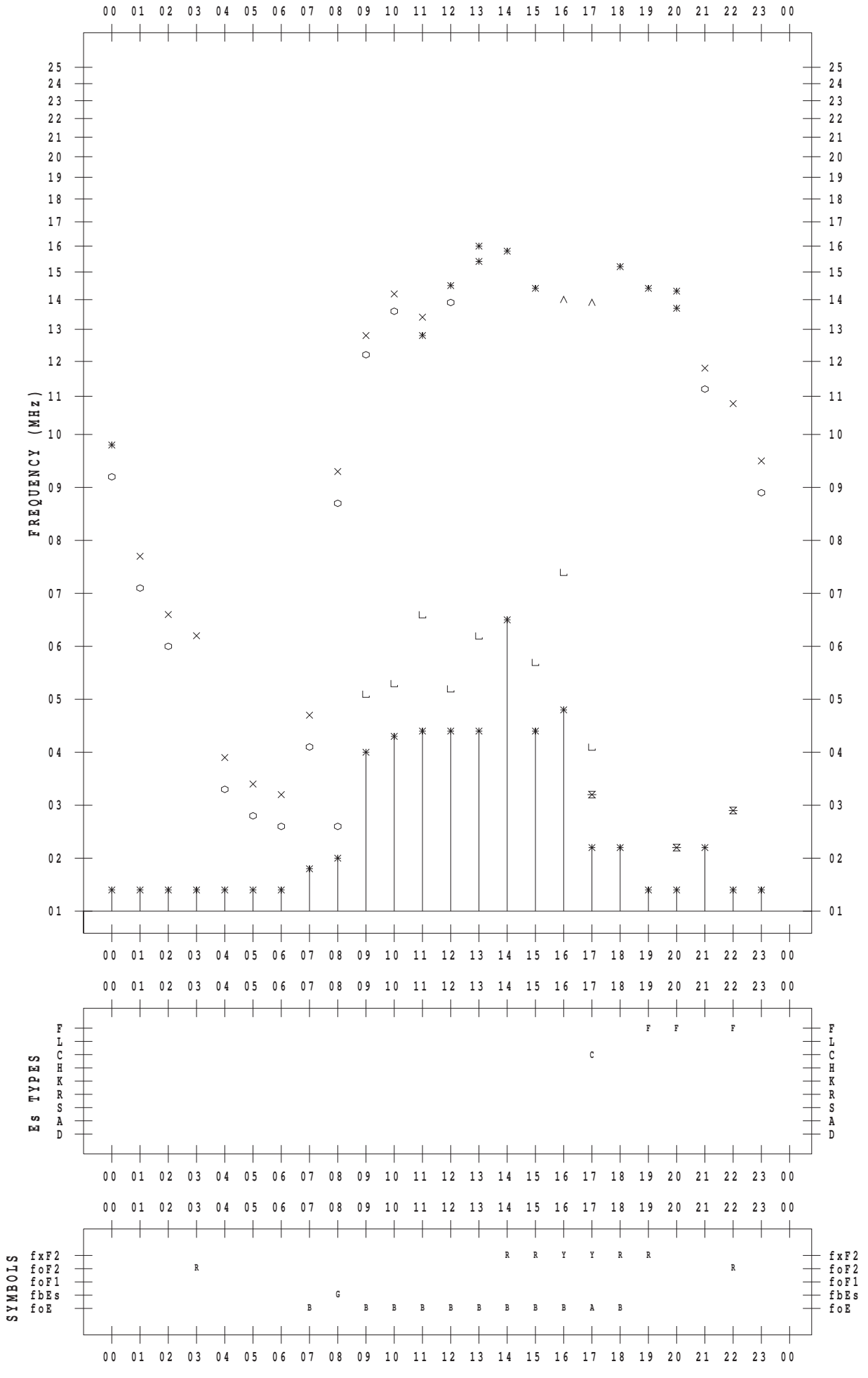
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/12

135 °E MEAN TIME



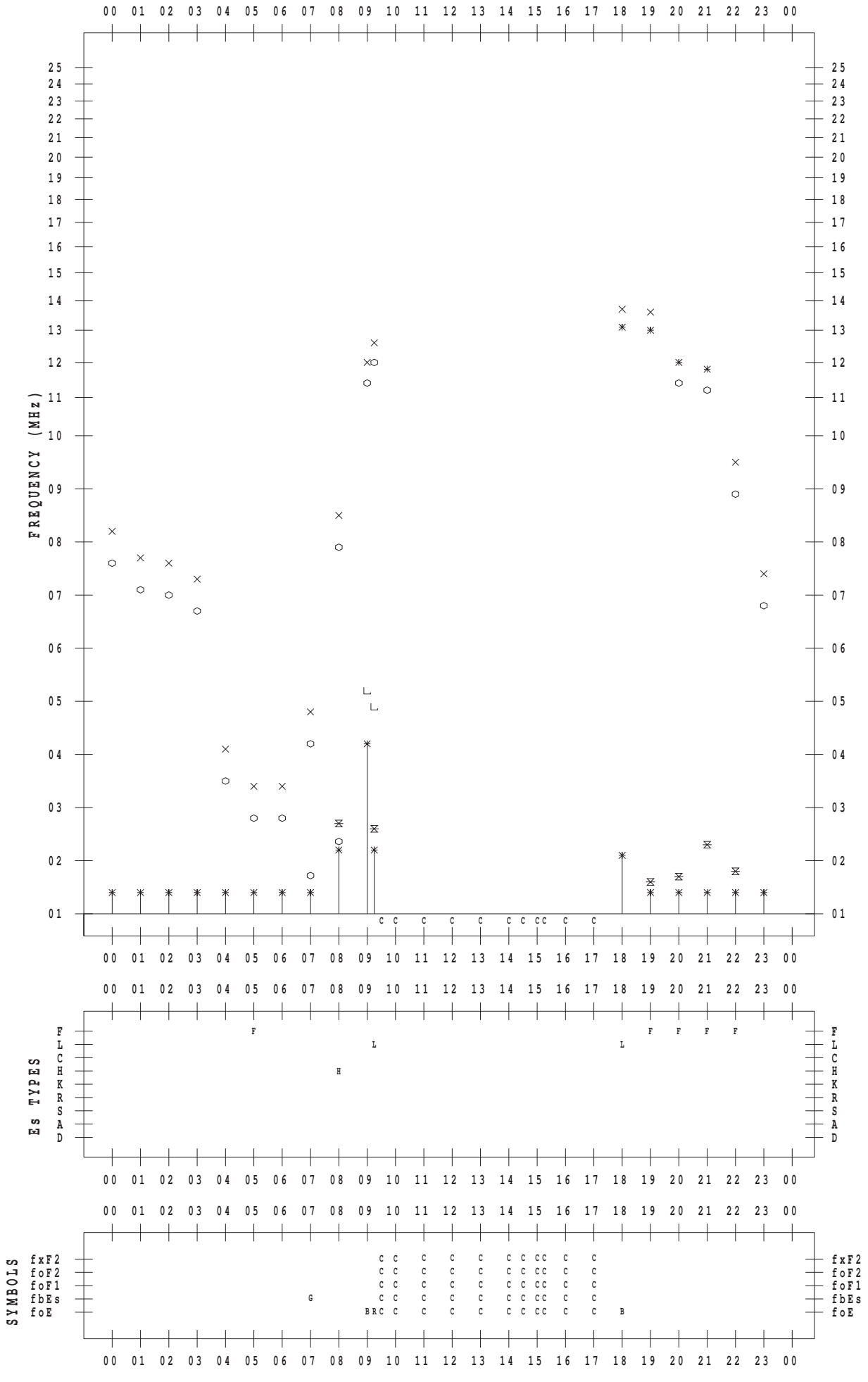
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/13

135 °E MEAN TIME



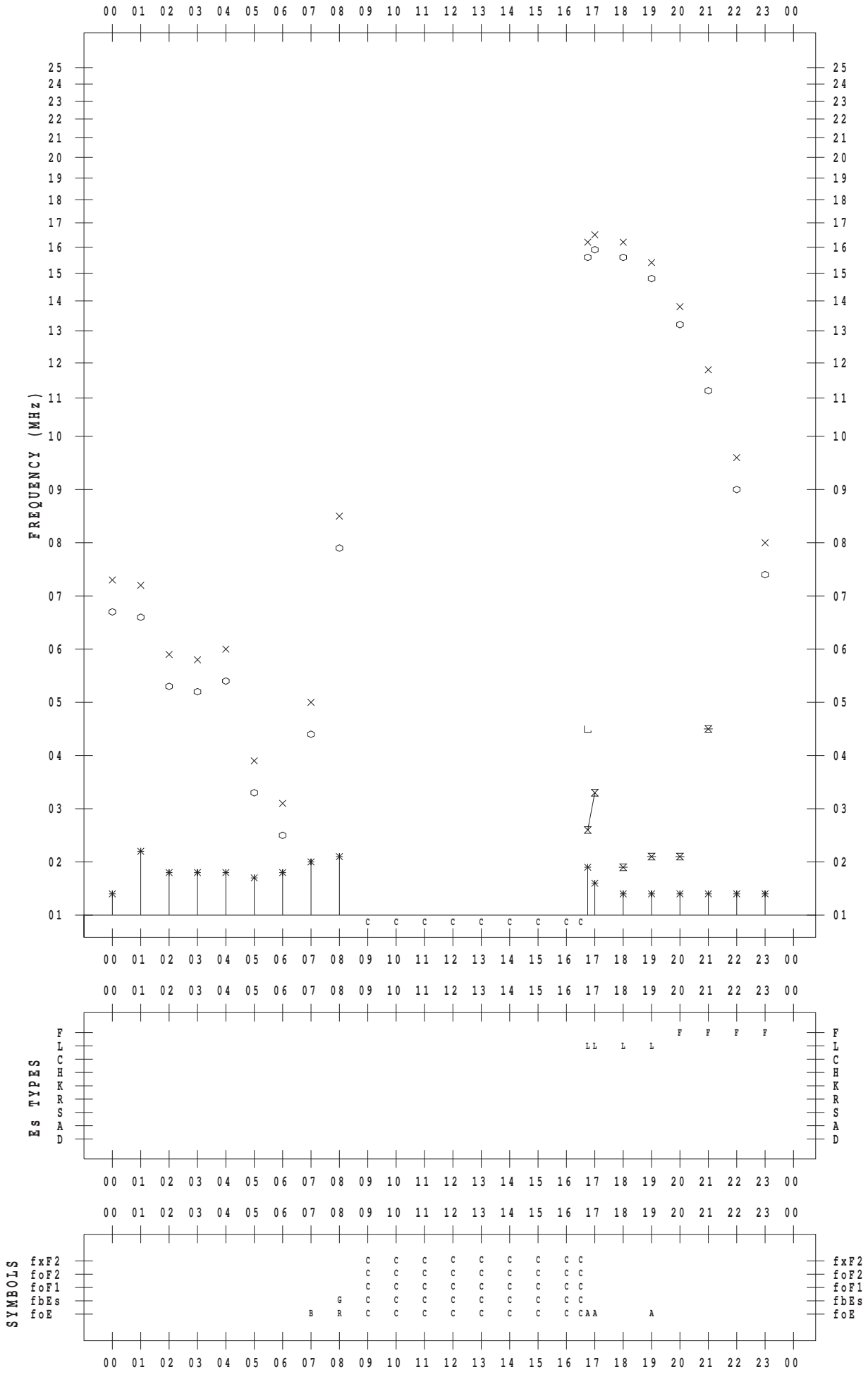
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/14

135 °E MEAN TIME



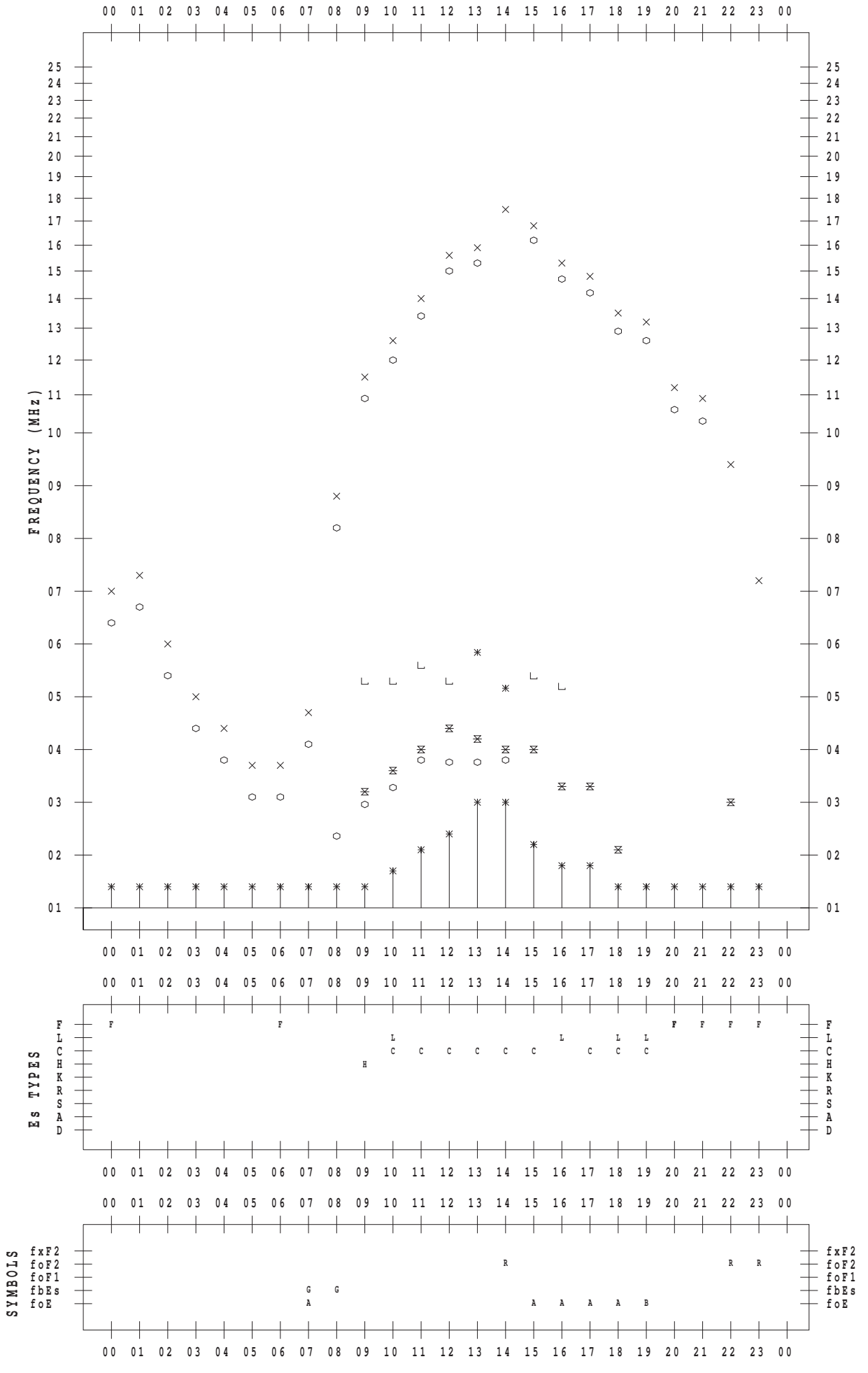
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/15

135 °E MEAN TIME



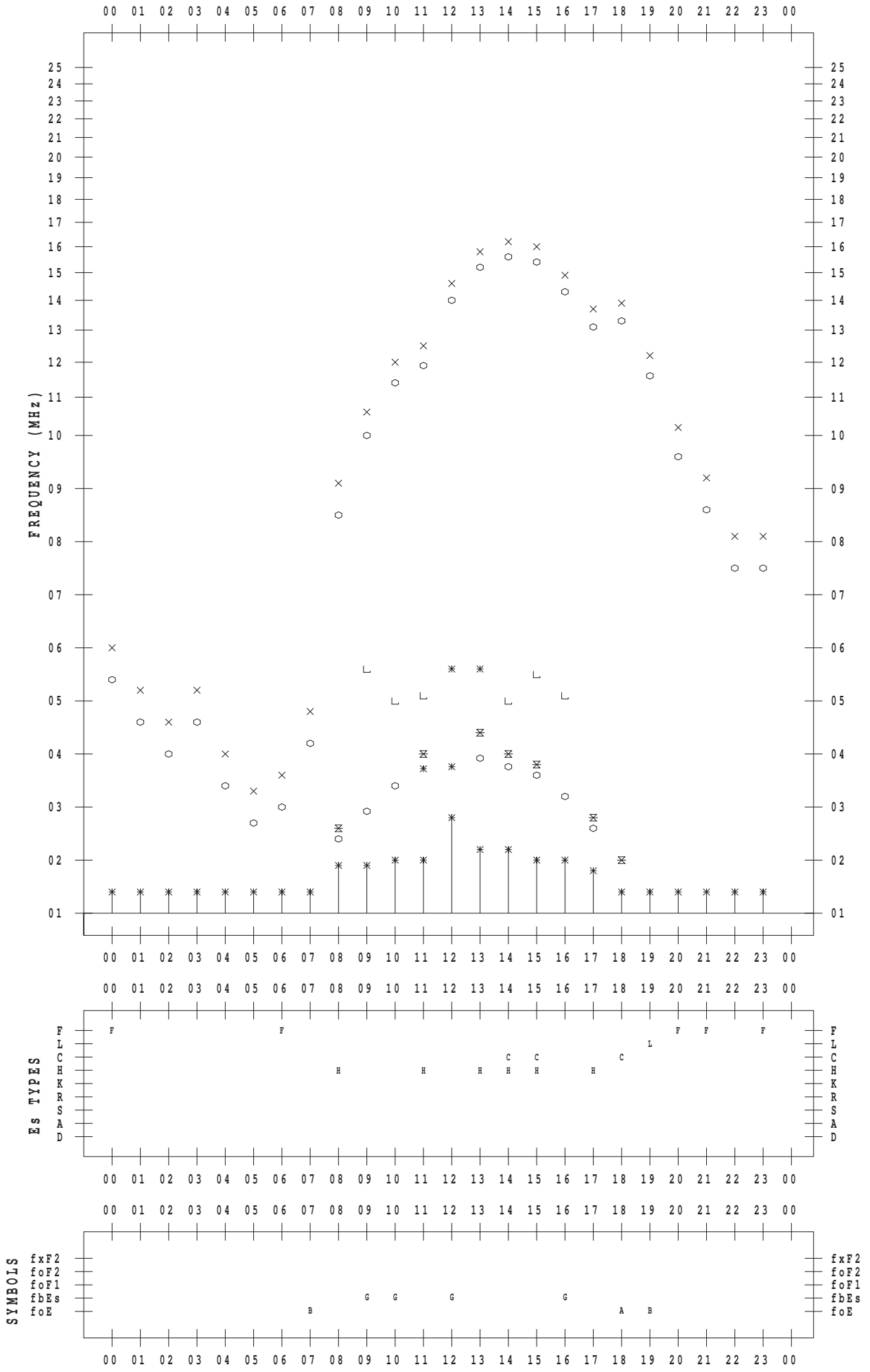
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/16

135 °E MEAN TIME



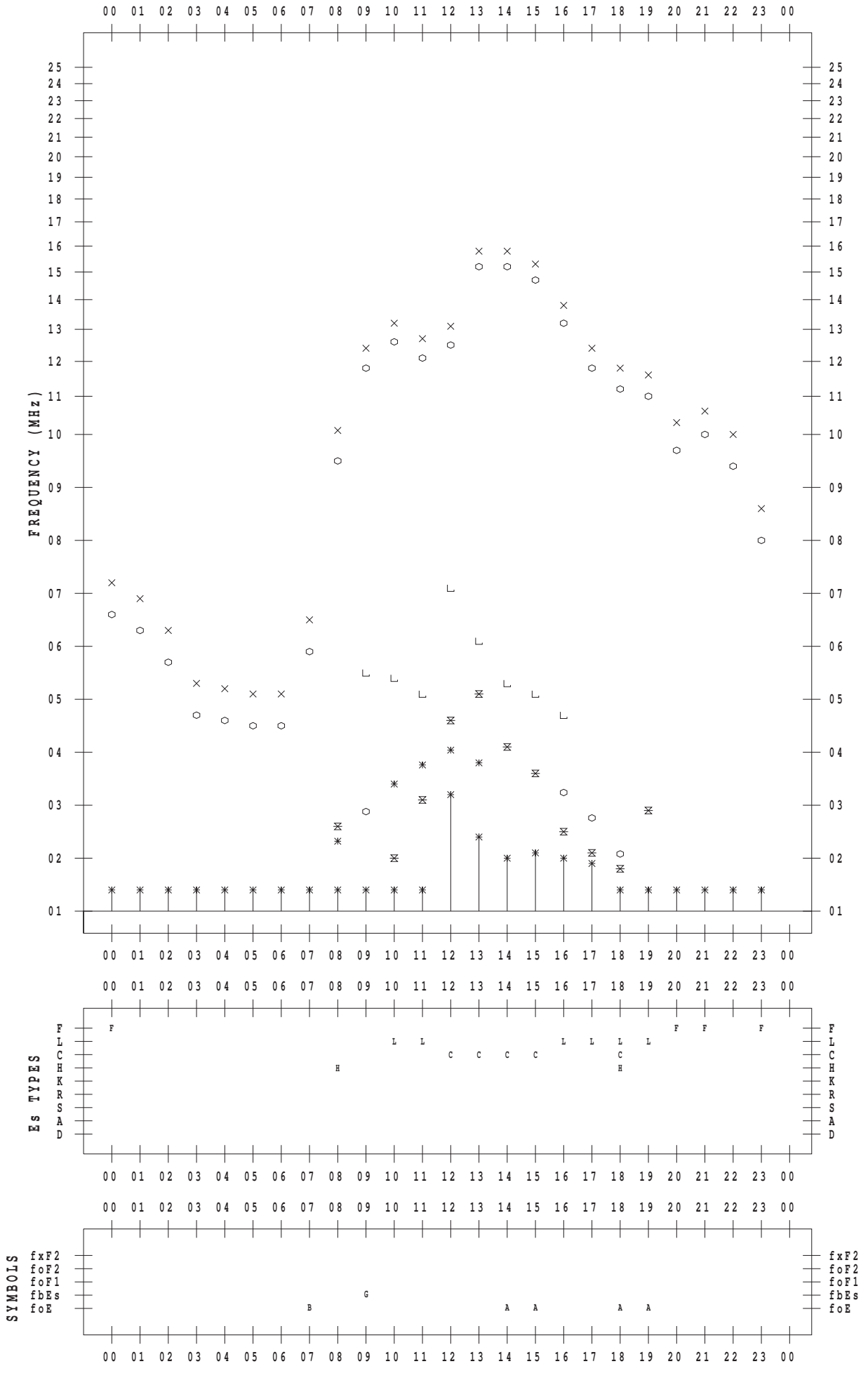
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/17

135 °E MEAN TIME



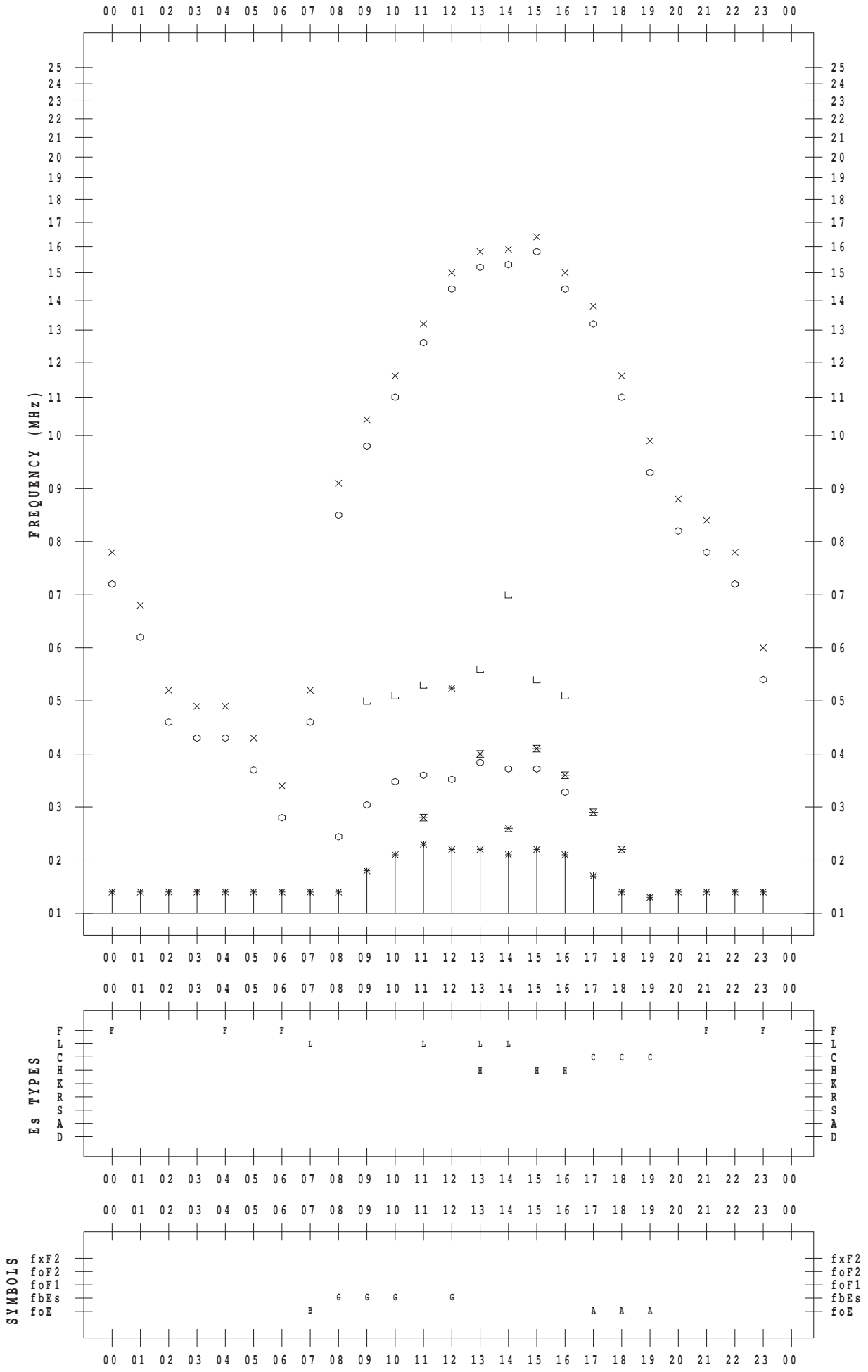
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/18

135 °E MEAN TIME



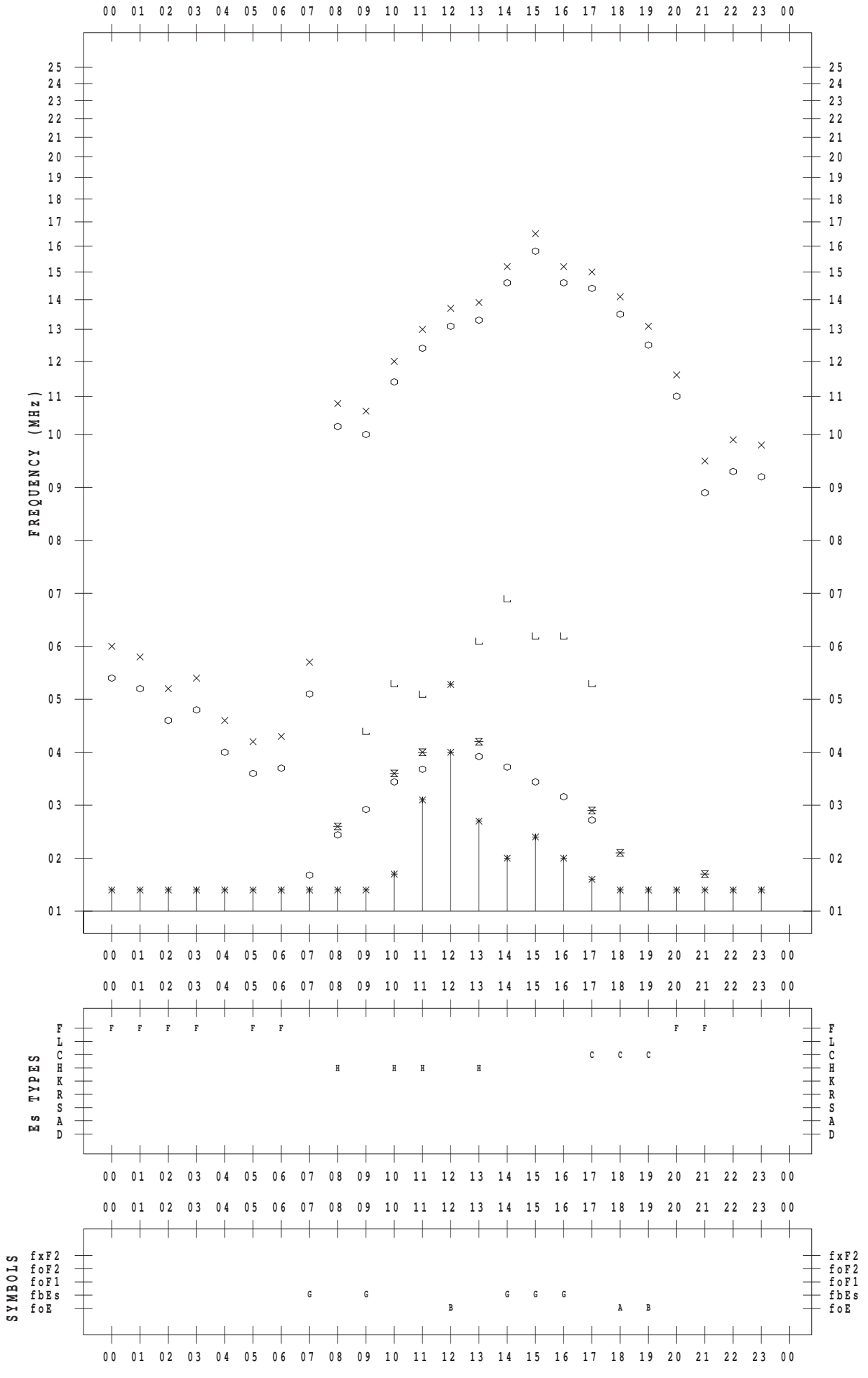
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/19

135 °E MEAN TIME



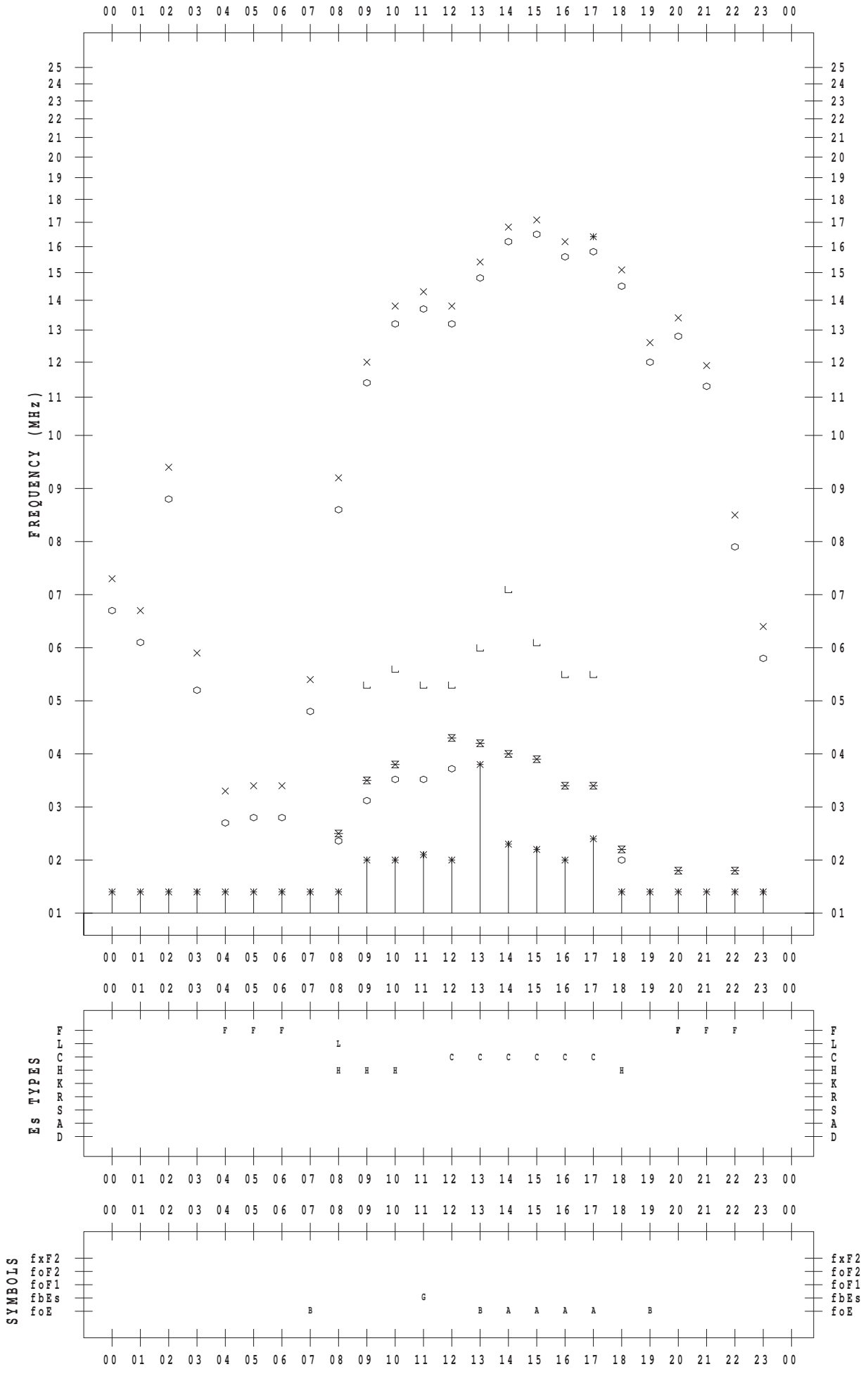
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/20

135 °E MEAN TIME



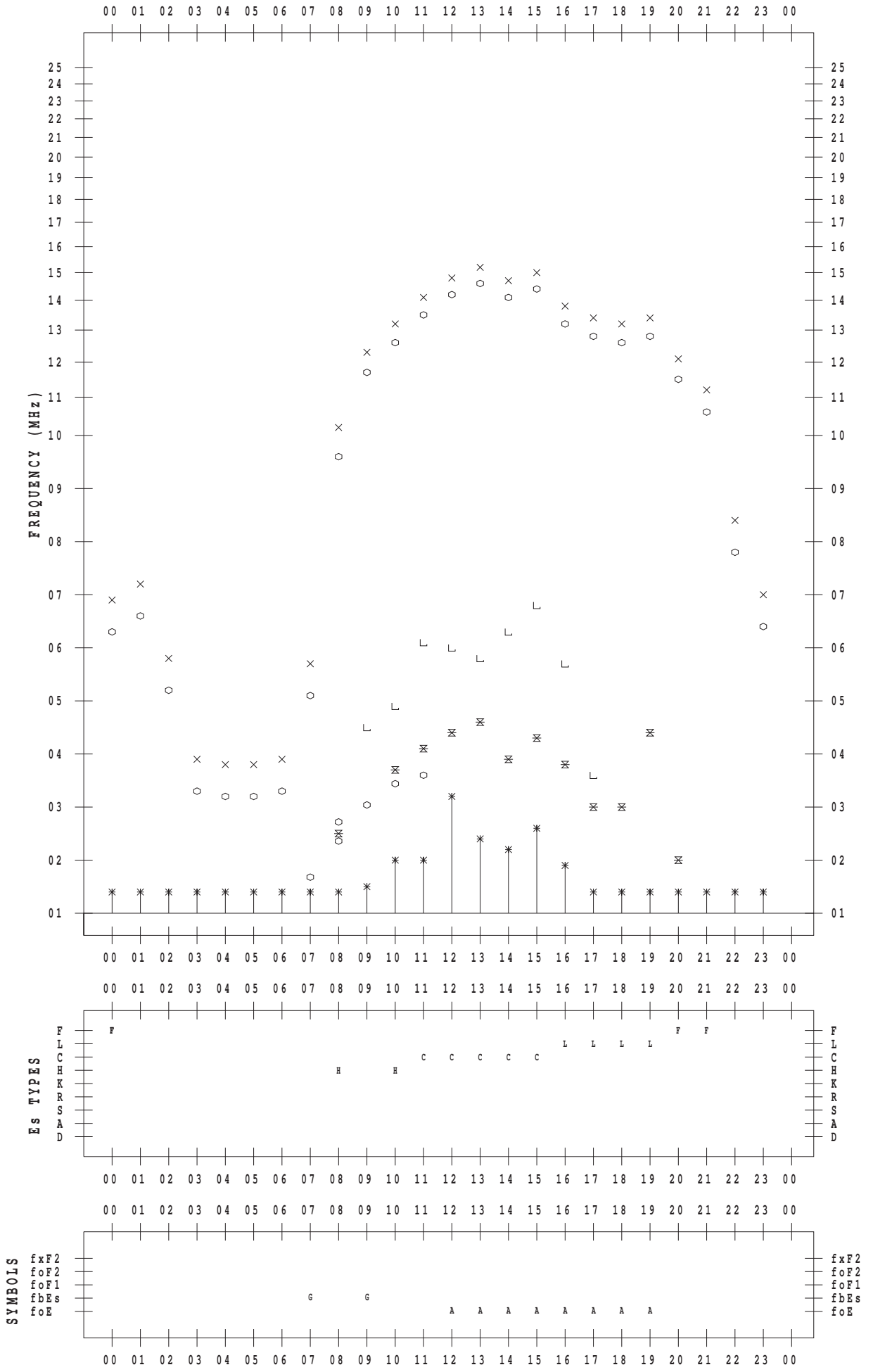
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/21

135 °E MEAN TIME



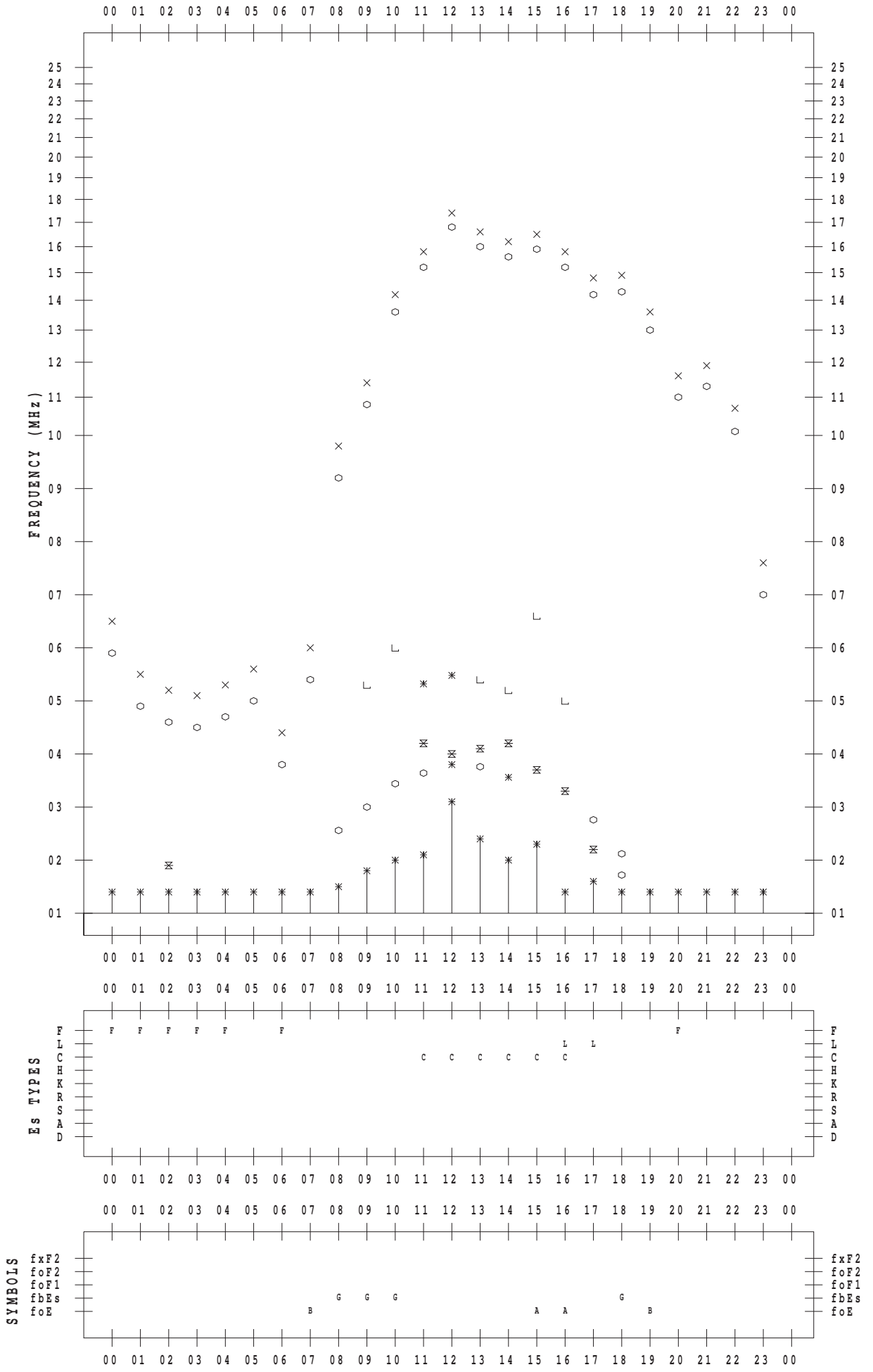
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/22

135 °E MEAN TIME



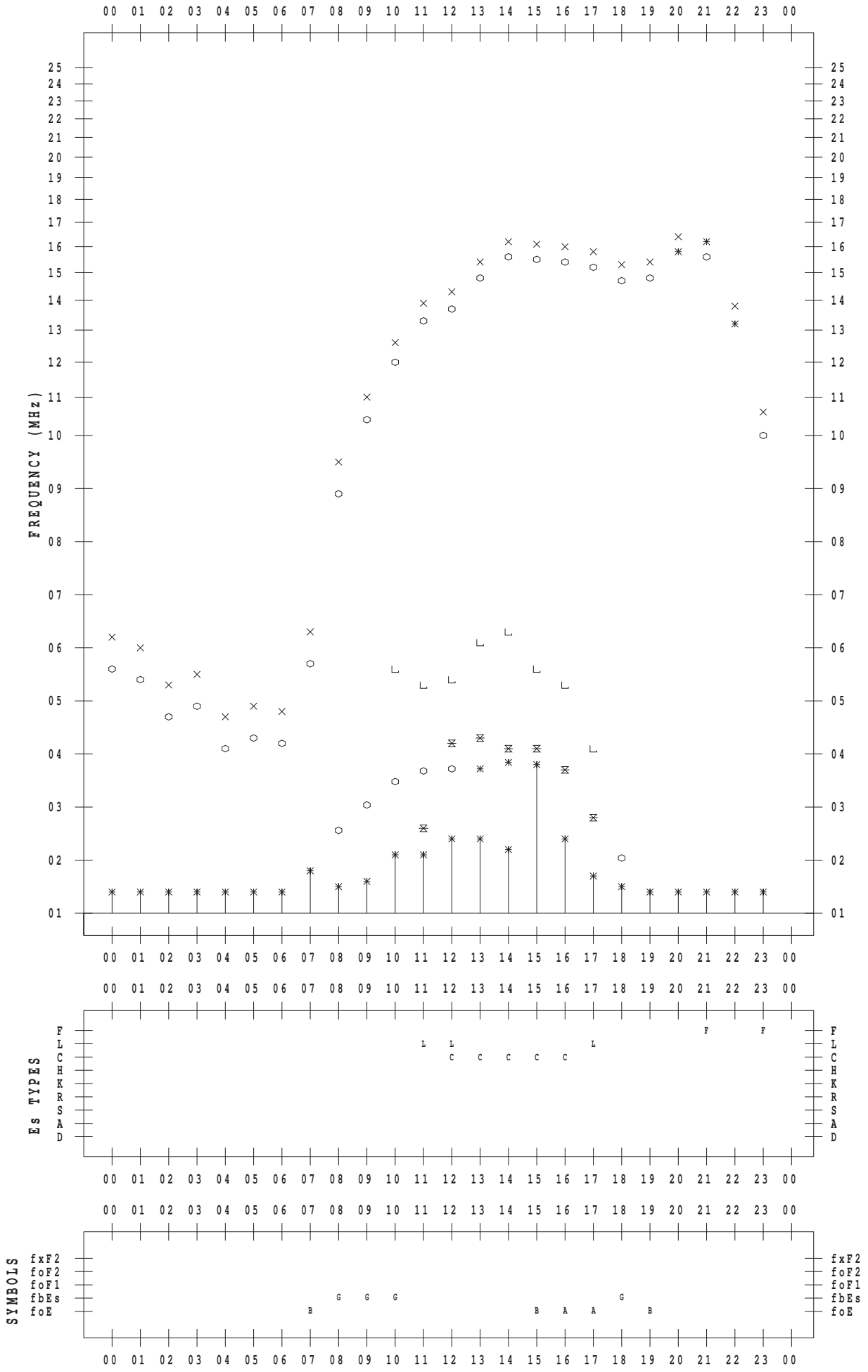
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/23

135 °E MEAN TIME



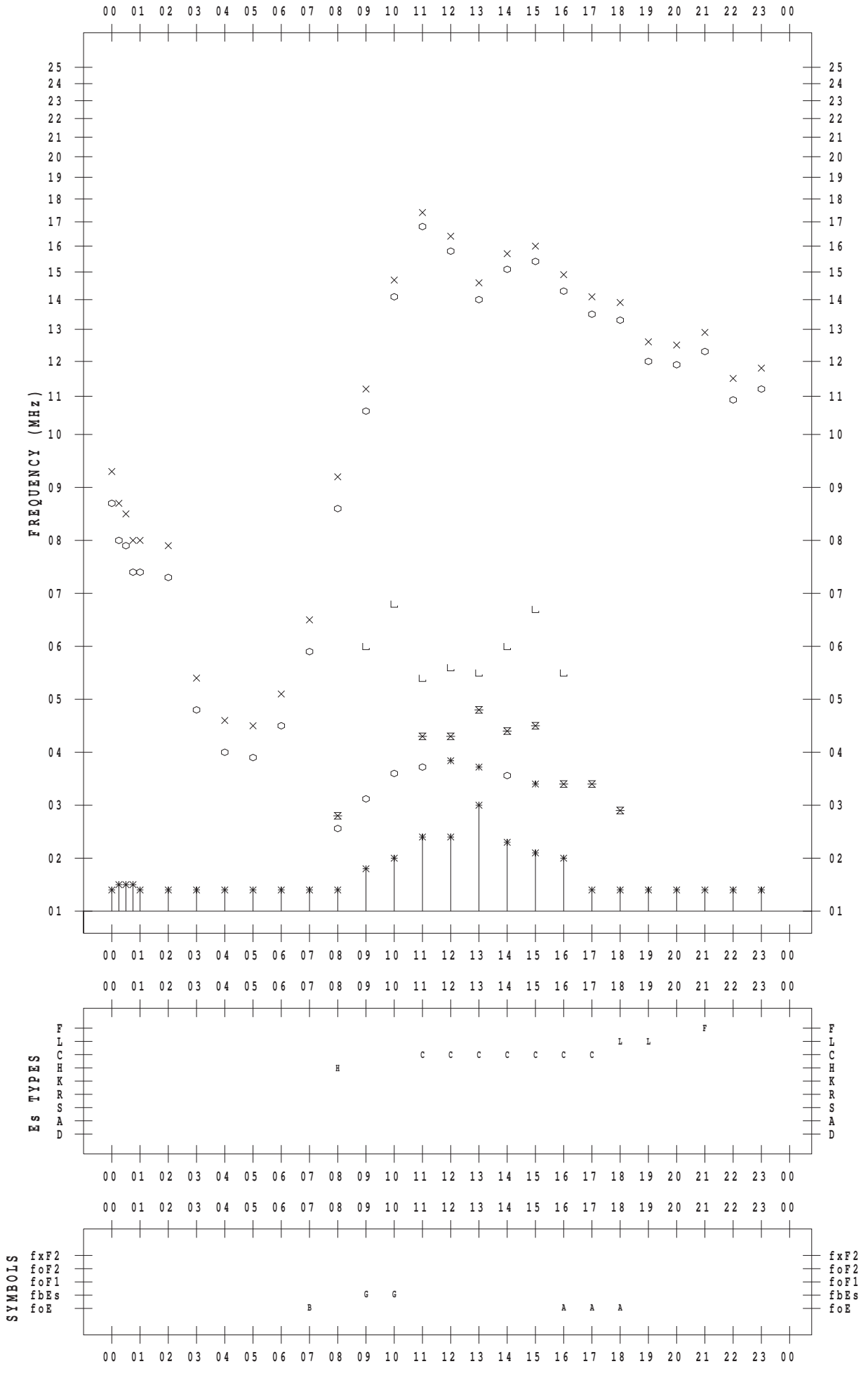
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/24

135 °E MEAN TIME



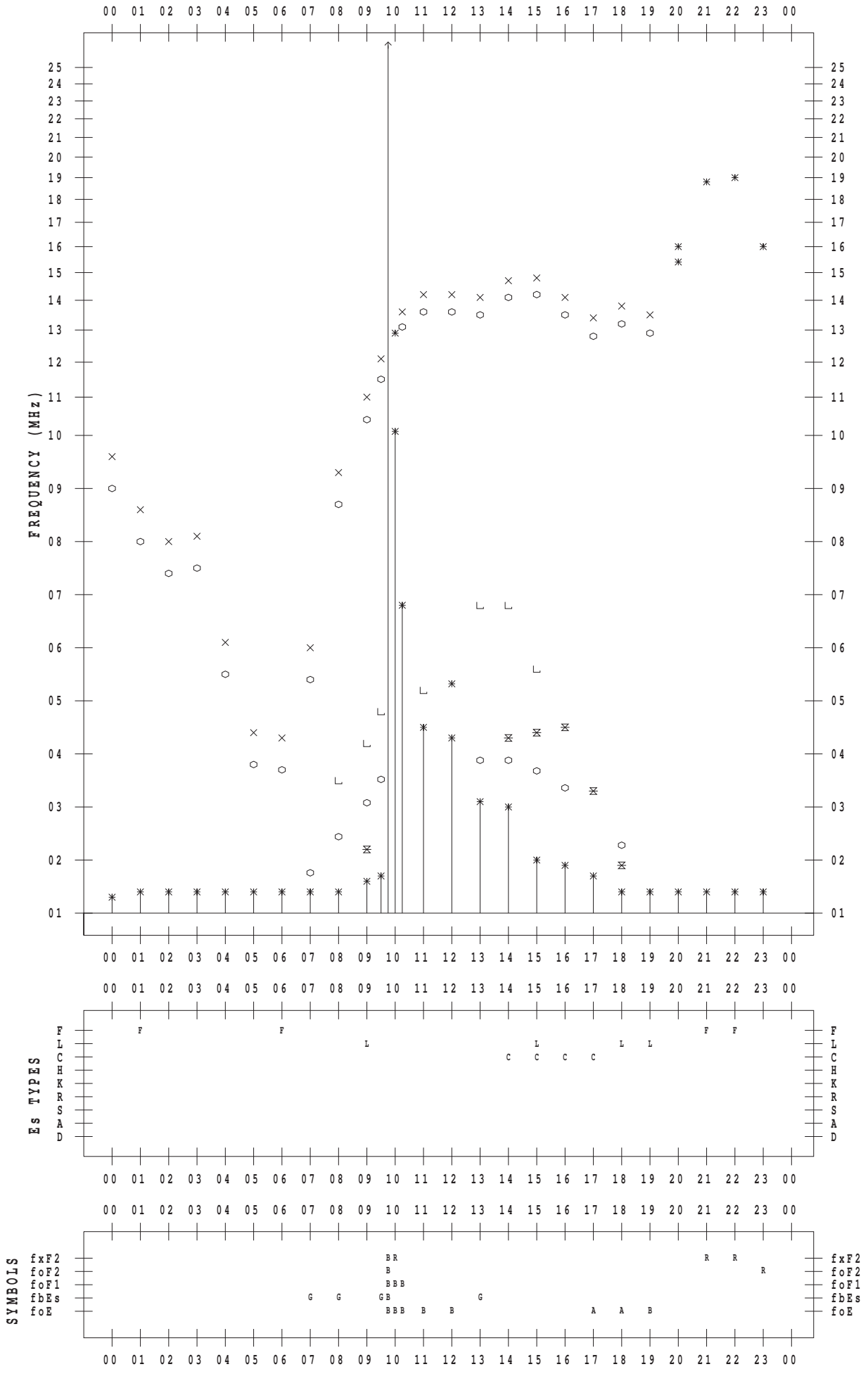
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/25

135 °E MEAN TIME



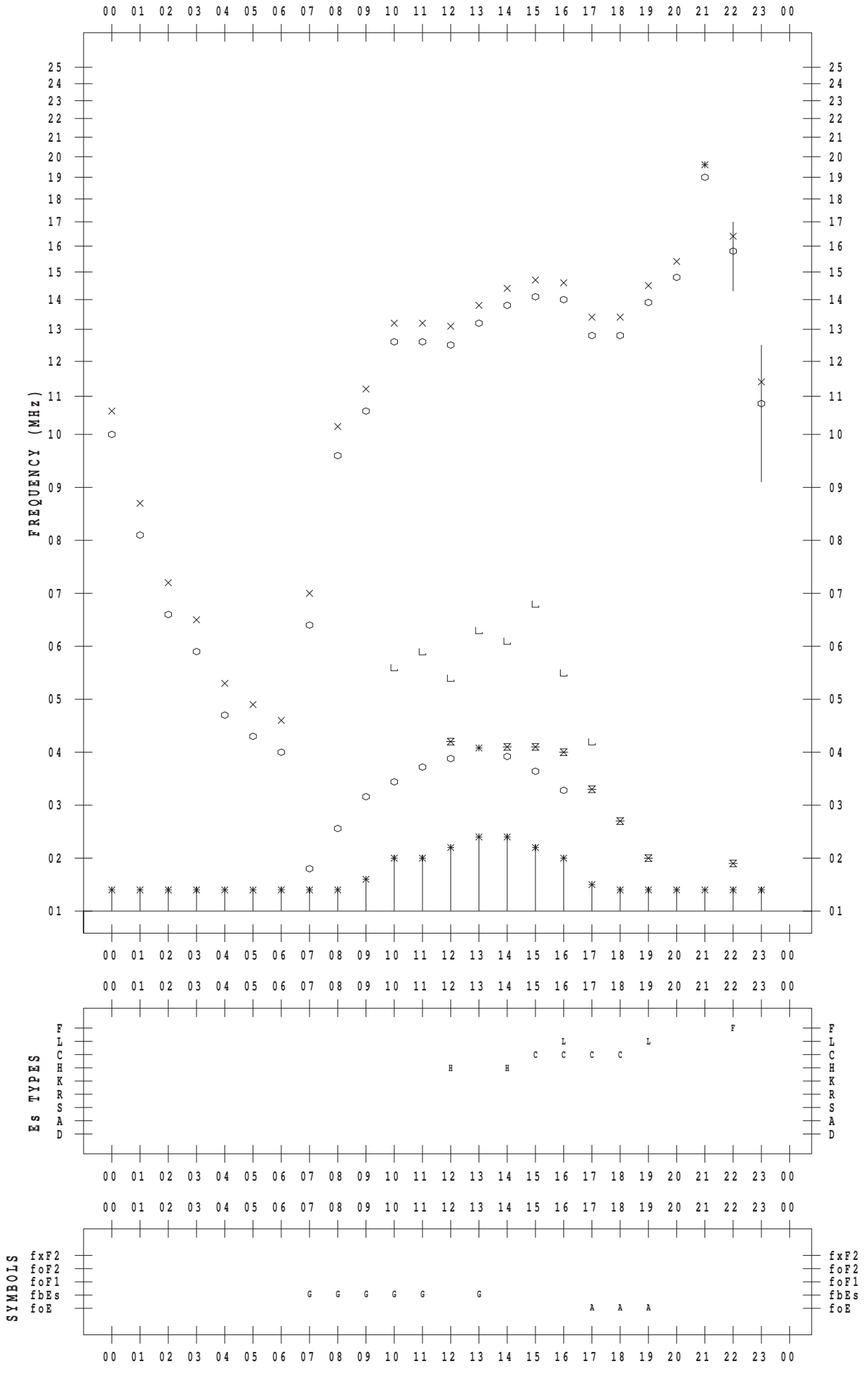
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/26

135 °E MEAN TIME



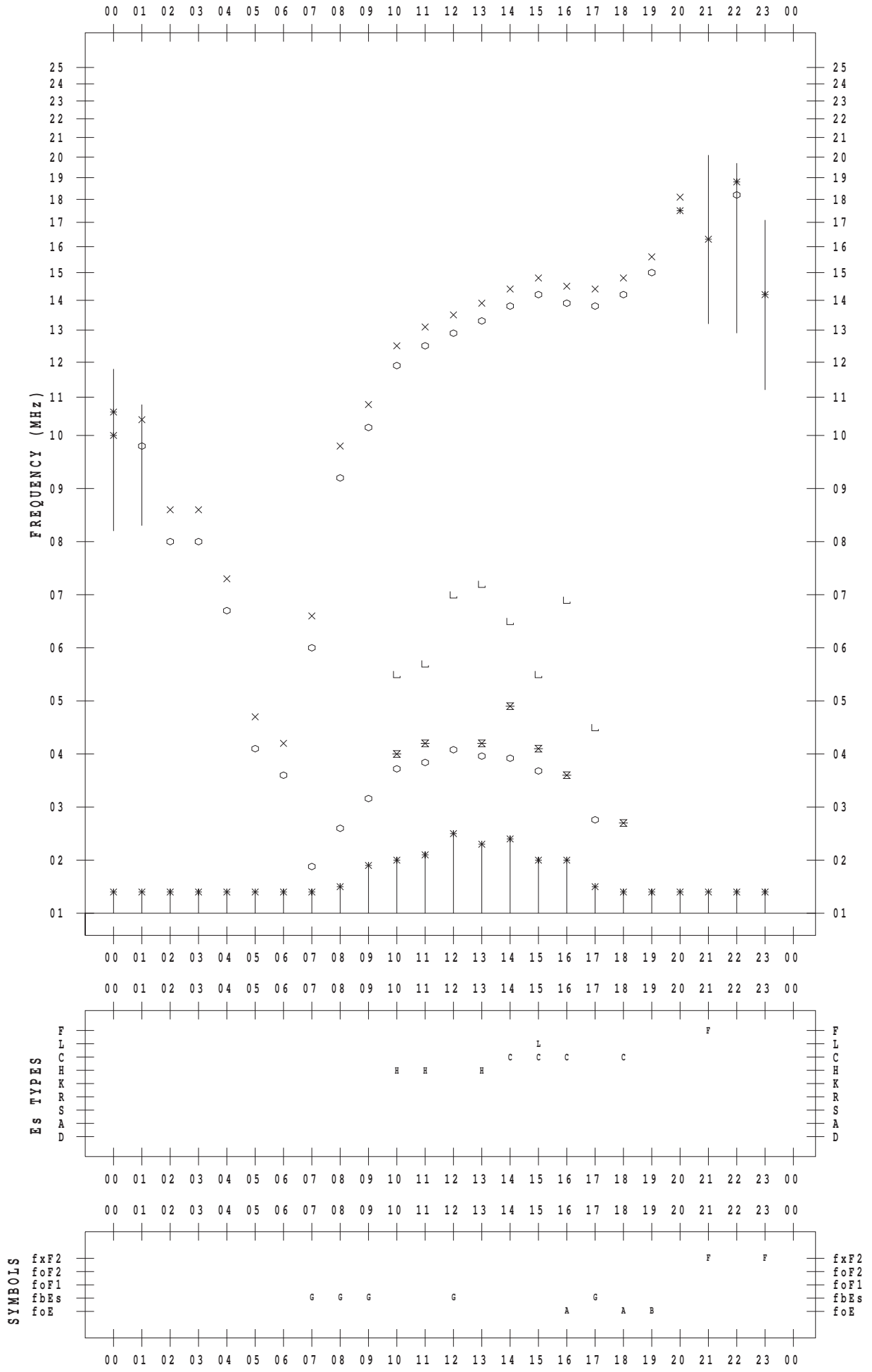
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/27

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2014/ 2/28

135 °E MEAN TIME