F-856

IONOSPHERIC DATA IN JAPAN

FOR April 2020
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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

APR.2020

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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	39	39	43	42	51	35	43	43	44	54	53	62	59	59	58	56	53	47	44	44	44	45	40	39
2	40	41	37	34	35	37	44	43	51	59	54	59	59	61	55	51	53	50	50	53	51	40	41	43
3	44	40	38	42	33	32	39	45	47	58	48	61	59	56	56	58	55	46	45	50	50	51	47	39
4	42	42	44	41	38	36	40	42	46	51	62	63	55	60	53	57	57	51	53	59	57	51	47	42
5	49	47	43	42	46	40	42	47	48	48	52	56	58	59	60	55	54	51	48	53	53	50	46	46
6	44	46	43	42	43	43	42	48	44	59	54	59	56	54	59	57	52	53	42	42	44	49	46	43
7	43	43	43	39	37	38	N	44	59	50	55	55	57	53	51	50	55	50	40	47	48	49	49	40
8	45	51	51	50	43	45	43	44	47	54	54	54	58	54	56	54	57	53	45	58	53	54	49	45
9	43	43	49	40	37	35	37	42	49	45	53	52	53	53	60	57	55	50	47	48	42	43	41	40
10	40	36	34	35	32	39	48	46	49	63	59	52	46	55	54	55	59	52	51	49	49	44	43	40
11	37	36	37	36	35	37	45	42	47	47	49	57	52	53	60	57	57	53	48	43	43	41	39	38
12	41	37	33	30	26	33	46	42	46	49	49	49	56	55	55	54	55	48	A	46	48	43	36	32
13	37	37	35	36	35	35	36	39	A	45	A	51	55	51	47	57	52	51	44	49	49	49	43	36
14	37	37	33	32	33	35	41	42	44	53	59	55	51	47	48	53	55	54	47	52	53	54	49	44
15	41	39	38	39	44	44	47	47	55	49	55	58	53	62	66	53	57	55	49	47	41	40	40	38
16	37	38	38	39	38	39	41	47	47	52	61	60	61	57	59	59	60	55	53	54	43	42	41	38
17	37	38	38	37	35	35	43	48	55	61	66	56	58	55	58	56	58	57	47	52	49	45	42	39
18	37	38	36	34	31	35	42	47	54	49	61	64	56	51	57	59	59	50	A	A	A	50	A	37
19	35	35	33	32	31	35	43	49	55	A	58	63	59	51	59	55	56	47	43	54	53	51	42	52
20	42	42	40	38	36	41	42	43	53	57	59	53	52	55	52	56	60	49	39	46	53	53	43	45
21	37	37	34		N23	A	A	35	A	A	A	A	42	41	41	40	42	40	39	39	37	A	35	32
22	33	31	30	31	31	34	A	45	A	43	47	53	A	58	53	A	A	46	45	43	A	A	A	A
23	37	40	40	37	37	37	44	49	A	53	58	A	55	53	59	59	52	51	49	51	44	42	44	41
24	40	40	39	35	34	43	41	52	54	51	49	60	58	55	61	55	49	43	44	56	53	53	45	39
25	38	40	40	40	40	42	44	44	46	46	49	51	A	58	52	53	53	47	45	56	55	52	49	48
26	42	39	40	37	43	38	47	43	46	43	47	57	59	62	54	58	46	55	51	54	49	48	46	42
27	40	39	35	33	33	33	35	A	A	A	53	50	A	51	56	57	58	51	43	47	51	53	53	47
28	44	38	34	37	38	38	41	46	48	57	59	61	50	52	58	56	51	51	51	55	59	57	57	36
29	47	43	38	38	38	41	44	42	48	51	53	61	60	61	57	53	52	50	51	61	57	52	51	47
30	41	38	37	37	37	46	44	50	55	53	54	51	A	51	53	58	58	54	52	56	58	53	49	40
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	30	30	30	29	30	29	27	29	25	27	28	28	26	30	30	29	29	30	28	29	28	28	28	29
MED	40	39	38	37	36	37	43	44	48	51	54	56	56	55	56	56	55	51	47	51	50	50	44	40
U Q	43	42	40	40	38	41	44	47	54	57	59	60	59	58	59	57	57	53	50	54	53	52	49	44
L Q	37	37	35	34	33	35	41	42	46	48	50	52	53	52	53	53	52	48	44	46	44	43	41	38

HOURLY VALUES OF fEs AT Wakkanai

APR.2020

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	26	G	28	35	59	45	41	43	40	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	32	G	27	29	36	35	43	G	40	G	G	G	36	G	28	27	27	28	G	G	G
3	G	G	G	G	30	G	34	37	G	37	41	43	46	44	G	G	G	G	34	G	G	G	G	G
4	24	G	24	G	G	G	110	37	36	38	40	G	41	G	37	G	G	G	G	G	G	G	G	G
5	G	G	G	G	G	26	92	33	G	111	43	G	G	G	38	36	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	27	35		G	38	39	G	G	G	G	33	G	G	G	G	G	G	G
7	G	G	G	G	G	G	G	32	40	47	40	47	46	40	G	G	33	G	G	G	G	G	G	24
8	G	G	G	G	G	11	28	38	40	43	G	G	G	G	G	G	34	G	G	G	G	G	G	G
9	G	24	G	G	G	24	34	39	39	41	G	42	G	40	38	G	33	G	G	G	G	G	G	G
10	G	G	G	G	G	G	34	36	39	G	G	G		45	G	G	35	G	G	G	G	G	G	G
11	G	G	G	G	G	G	29	38	G	84	G	G	G	46	45	40	G	G	G	G	G	G	G	G
12	G	G	G	G	G	G	G	38	36	45	44	G	G	G	38	G	36	30	53	33	26	24	G	G
13	G	G	G	G	G	G	69		115	50	43	42	42	39	38	37	G	G	G	G	G	G	31	G
14	G	G	G	G	G	26	28	40	38	46	G	G	44	46	38	G	G	G	G	G	G	G	G	G
15	G	G	G	G	G	G	29	34	38	G	40	G	46	G	38	36	36	G	G	G	G	G	G	G
16	G	G	G	G	G	G	30	35	39	42	81	42	41	G	169	39	35	G	G	G	G	G	G	G
17	G	G	G	G	G		40	151	39	40	G	44	47	G	38	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G	G	G	33	46	G	40	46		G	46	G		41	59	60	90	59	52	32
19	G	G	G	G	G	28	57	48	49	55	50	48	46	41	41	36	G	36	38	38	35	26	G	G
20	G	G	G	G	G	G	32	38	40	44	146	42	41	40	39	36	G	34	G	G	G	G	G	G
21	G	G	G		G	36	36	36	40	45	45	74	G	149	G	G	41	G	28	34	G	58	G	G
22	28	G	G		G	G	41	58	64	47	G	63	95	G	44	60	72	38	G	70	80	86	40	39
23	G	26	G	G	G	161		43	128	42	48	65	44	40	45	40	39	G	33	32	26	24	26	G
24	G	G	G	G	G	31	37	41	160	G	G	69	45	G	G	36	N	33	G	G	G	G	G	G
25	G	G	G	G	G	28	35	G	38	G	41	G	40	G	110	G	G	32	33	26	G	G	23	G
26	G	G	G	G	G	28	G	G	55	G	46	47	G	G	G	G	74	G	34	33	26	G	G	G
27	G	G	G	G	G	27	35	47	58	50	51	G	44	102	G	G	159	153	35	33	G	G	30	G
28	G	G	G	G	G	G	35	41	44	115	G	48	44	39	G	38	G	44	32	G	G	27	G	G
29	G	G	G	G	162	28	32	38	160	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
30		G	G	G	G	58	34	38	36	G	45	46	46	49	40	43	45	40	32	G	G	G	24	26
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	29	30	30	28	30	29	29	29	29	30	30	30	28	30	30	30	28	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	34	38	40	42	40	42	41	G	38	G	17	G	G	G	G	G	G	G
U Q	G	G	G	G	G	28	36	40	56	47	45	47	45	41	40	36	36	33	33	32	G	G	G	G
L Q	G	G	G	G	G	G	28	35	37	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Wakkanai

APR.2020

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	15	16	14	16	15	16	15	14	14	13	15	15	16	16	16	15	15	16	15	14	14	16	14
2	14	14	15	15	16	15	15	15	15	14	14	14	15	16	14	13	14	14	16	16	16	16	14	14
3	14	14	14	14	16	16	16	15	15	15	15	15	15	15	15	15	15	15	16	14	14	14	14	15
4	16	16	16	16	17	14	15	14	14	15	15	16	15	15	14	15	15	15	15	14	14	14	15	14
5	14	14	15	14	16	16	15	16	15	13	14	15	15	17	15	17	15	15	14	15	14	15	14	14
6	14	14	15	16	16	14	16	14	13	15	15	15	15	15	15	15	13	16	14	14	14	15	14	14
7	15	14	14	14	18	15	15	15	14	14	14	14	16	16	14	14	15	14	16	15	14	15	15	16
8	16	16	15	16	15	15	16	15	14	15	15	15	16	15	15	15	14	15	16	14	16	16	14	14
9	18	16	17	16	14	17	15	15	14	14	14	15	15	15	13	16	15	15	17	14	14	14	15	14
10	14	15	15	14	14	16	15	15	13	15	15	15	14	15	15	14	15	15	15	15	14	14	14	14
11	14	15	14	14	14	14	16	16	15	17	14	17	15	15	15	14	15	15	17	17	17	15	14	14
12	14	14	14	14	14	14	15	15	15	14	15	15	15	15	14	15	16	14	15	16	16	15	15	14
13	14	15	15	18	15	15	15	17	15	14	15	14	15	15	13	13	15	16	15	14	14	16	15	14
14	16	16	14	14	14	15	15	13	14	15	15	15	17	15	15	14	16	13	15	14	14	14	15	14
15	15	14	14	15	15	14	15	14	15	14	15	15	15	15	13	15	15	15	15	14	14	14	14	14
16	15	20	14	15	14	16	15	15	14	15	14	15	15	14	13	14	13	15	15	16	14	14	14	14
17	17	14	14	16	15	15	16	16	15	14	16	14	15	15	14	17	15	15	16	14	14	14	16	14
18	15	14	14	15	15	16	15	14	13	15	15	15	15	15	15	15	17	15	15	16	16	15	15	16
19	15	14	20	14	15	16	14	14	14	14	14	15	14	15	15	13	13	14	15	15	16	16	14	14
20	14	14	14	14	14	15	16	17	14	14	15	16	15	15	15	14	15	15	15	14	15	14	15	15
21	14	14	15		14	15	16	15	17	14	13	15	15	16	15	15	14	16	15	14	15	16	15	15
22	15	15	16	15	15	15	15	15	14	15	15	15	13	15	17	15	13	16	18	15	14	15	15	15
23	15	15	15	15	15	188	15	14	5	15	15	14	16	16	14	15	13	15	16	16	16	16	17	16
24	16	15	14	14	14	15	17	15	16	15	17	16	16	15	15	13	15	14	14	17	15	14	14	14
25	14	14	14	14	14	14	15	16	14	17	14	12	15	15	15	14	15	15	14	15	15	14	16	15
26	17	14	15	15	14	15	15	14	13	15	15	14	15	15	16	15	15	15	17	16	16	15	15	14
27	14	14	16	14	15	14	15	15	14	15	14	15	17	15	15	16	15	15	14	16	17	16	17	14
28	14	16	14	16	15	14	16	17	15	15	15	14	15	14	15	14	15	13	15	14	16	15	17	14
29	14	14	14	16	5	15	14	15	14	15	15	15	17	15	15	15	15	15	16	14	14	14	15	15
30		14	14	14	14	17	15	14	15	15	14	16	16	16	15	15	15	14	15	14	14	15	16	16
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	29	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	14	14	14	15	15	15	15	15	14	15	15	15	15	15	15	15	15	15	15	15	14	15	15	14
U Q	15	15	15	16	15	16	16	15	15	15	15	15	16	15	15	15	15	15	16	16	16	15	15	15
L Q	14	14	14	14	14	14	15	14	14	14	14	14	15	15	14	14	14	14	15	14	14	14	14	14

HOURLY VALUES OF foF2 AT Kokubunji

APR.2020

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

HOURLY VALUES OF fEs AT Kokubunji

APR.2020

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	39	25	G	G	34	40	57	47	G	47	54	57	G	G	G	G	27	31	50	37	24
2	G	G	G	G		G	29	G	G	G	G	51	46	G	G	77	42	39	27	11	G	G	31	59
3	40	32	24	G	26	G	31	37	45	47	45	G	43	43	42	38	44	35	G	35	34	24	28	G
4	G	G	G	G	G	G	29	G	G	G	G	G	G	G	G	G	37	40	33	30	27	G	G	G
5	G	G	G	G		G	32	40	41	G	G	G	G	G	G	G	36	G	G	G	G	G	G	G
6	G	G	G	G	G	G	31	36	43	92	41	G	G	40	G	G	48	G	G	G	G	G	G	G
7	G	G	G	G	G	G	37	G	G	G	G		G	G	G	G	G	31	G	26	40	40	G	G
8	G	G	G	G	40	G	31	34	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
9	G	G	G	G	G	G	33	53	115	G	G	G	G	G	G	41	G	G	G	25	G	G	33	G
10	G	G	G	G	G	G	34	G	G	G	G	G	G	41	G	44	G	G	G	27	G	G	G	G
11	G	G	G	G	G	G	39	39	45	G		G	G	G	40	46	40	G	G	G	29	G	G	G
12	G	G	G	G		G	39	39	38	55	55	50	40	52	47	69	G	G	28	34	33	G	29	G
13	G	G	G	G	G	G	G	38		G	G	47	49	70	40	40	50	G	G	G	G	G	G	G
14	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	28	G	G	G	G	G
15	G	G	G	G	G	G	39	G	G	G	G	G	G	54	51	51	69	57	33	26	G	G	G	G
16	G	G	G	G	G	G	47	40	G	65	40	41	51	69	105	69	94	52	39	37	40	38	35	24
17	36	34	32	20	11	G	35	117	91	49	G	G	G	G	55	65	75	78	60	G	G	G	G	G
18	G	G	G	G	G	G	34	39	36	46	G	G	G	48	62	G	G	32	33	49	G	G	G	G
19	29	G	G	G	G	G		44	57	53	G	40	G	43	43	46	G	G	92	29	25	27	27	G
20	G	G	G	G	G	G	34	G	49	51	40	G	G	G	50	52	52	37	29	32	G	G	G	G
21	G	G	G		24	26	37	39	51	46	G	G	G	G	G	G	G	G	G	G	40	G	33	56
22	40	G	34	G	G	28	33	34	41	56	63	G	G	40	G	G	G	G	32	32	27	G	G	37
23	37	29	41	36	31	31	53	53	53	45	51	60	71	90	60	48	G	84	92	50	73	55	72	60
24	40	55	29	26	120	26	34	41	52	60	41	47	50	57	G	G	41	39	31	30	G	G	G	G
25	G	G	G	G	G	G	33	38	G	G	G	G	G	G	G	37	G	G	29	G	23	27	G	G
26	29	G	G	G	G	G	33	40	49	60	88	G	47	52	40	G	G	G	33	38	40	40	29	23
27	G	G	G	G	G	G	39	50	53	52	G	56	G	G	G	42	G	G	G	69	27	34	24	G
28	G	G	G	G	G	G	154	39	37	49	56	48	G	G	G	G	G	41	39	35	27	24	G	G
29	G	G	G	G	G	G	G	G		G	G	G	41	44	G	46	G	36	37	38	25	G	G	G
30	G	G	G	G	G	G	33	40	41	G	G	68	G	50	54	62	37	40	54	50	90	43	G	G
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	30	30	30	29	27	30	29	30	28	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	33	38	41	46	G	G	G	40	G	39	G	G	28	28	25	G	G	G
U Q	G	G	G	G	11	G	38	40	50	53	43	47	43	52	50	48	42	39	33	35	33	27	29	G
L Q	G	G	G	G	G	G	31	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF fmin AT Kokubunji

APR.2020

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	13	14	14	15	15	15	20	16	15	14	21	16	17	21	17	15	15	15	16	15	15	14	15	16
2	15	16	18	14	15	14	14	17	15	17	16	15	22	47	42	18	14	15	15	14	15	23	16	16
3	15	16	16	15	15	15	14	16	15	15	15	17	19	18	19	16	14	13	15	16	15	16	15	14
4	17	14	13	14	14	14	14	17	16	16	16	45	18	16	15	15	14	14	14	16	15	15	15	14
5	14	14	14	14		13	14	17	16	16	16	34	16	17	26	15	16	16	16	16	14	14	26	15
6	17	15	14	14	15	17	17	17	15	16	16	44	17	17	17	18	15	15	15	16	15	17	13	13
7	14	14	13	14	14	14	23	16	16	16	17	15	23	16	17	21	15	16	18	15	15	15	16	14
8	13	14	14	14	14	14	15	15	16	15	16	16	23	44	16	17	16	23	15	15	15	14	14	15
9	17	17	14	15	14	17	15	15	16	15	17	17	17	16	17	16	15	15	16	16	17	15	17	18
10	14	14	14	15	15	17	15	15	16	15	17	44	15	16	17	16	15	15	14	16	16	15	14	14
11	14	15	13	13	14	14	23	16	17	16	15	17	16	45	22	17	16	15	21	14	15	15	14	14
12	14	13	15	14		17	14	17	17	18	15	15	34	15	21	15	15	15	25	16	15	15	15	14
13	17	14	14	14	14	18	15	16	16	15	44	22	21	21	17	17	17	15	15	16	14	14	15	14
14	15	13	14	14	14	13	15	15	15	16	16	16	16	17	16	16	15	15	15	15	14	17	15	14
15	14	14	14	14	15	14	15	17	16	17	15	17	17	15	20	15	14	15	16	15	14	14	21	15
16	14	15	14	14	18	15	15	17	15	15	17	15	21	17	13	14	13	15	15	15	15	15	15	17
17	15	15	16	16	14	21	15	14	14	15	15	14	17	15	17	15	14	17	14	15	14	14	14	13
18	14	14	15	14	13	13	15	17	14	15	44	16	17	15	15	15	16	16	16	15	15	14	20	15
19	16	15	18	15	13	13	17	14	13	19	17	17	17	18	15	15	16	16	54	15	15	16	16	15
20	14	15	13	14	14	17	14	15	16	14	17	16	17	16	17	14	15	14	15	16	15	15	18	13
21	15	15	15	15	15	15	17	15	15	18	15	23	17	17	17	16	14	15	15	14	14	15	15	15
22	15	13	14	13	15	15	15	17	14	17	17	17	18	15	15	14	15	15	15	16	16	15	15	14
23	16	15	15	15	16	15	15	15	16	19	20	16	18	17	16	15	17	15	14	15	15	15	17	15
24	15	15	15	15	81	15	15	16	16	21	16	19	23	17	16	15	16	17	16	15	15	13	14	18
25	14	14	18	14	17	14	15	15	16	17	19	24	16	22	16	15	16	15	15	14	15	15	14	14
26	16	14	14	17	17	18	15	17	16	13	15	33	18	17	19	15	16	15	15	14	15	15	14	15
27	15	14	14	15	15	20	15	15	15	18	18	20	20	19	15	19	30	16	18	14	16	16	16	16
28	14	14	14	14	14	15	15	17	17	20	25	20	46	44	17	40	15	17	15	15	15	16	14	17
29	17	14	18	13	18	20	15	16	16	16	25	17	22	18	19	15	17	15	15	15	16	16	15	17
30	15	14	14	14	17	17	15	15	16	17	18	17	17	16	17	17	14	14	14	15	13	15	15	14
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	30	30	30	30	28	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	14	14	14	15	15	15	16	16	16	17	17	18	17	17	15	15	15	15	15	15	15	15	15
U Q	16	15	15	15	15	17	15	17	16	17	18	22	21	19	19	17	16	16	16	16	15	16	16	16
L Q	14	14	14	14	14	14	15	15	15	15	16	16	17	16	16	15	14	15	15	15	15	14	14	14

HOURLY VALUES OF foF2 AT Yamagawa

APR.2020

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	33	35	33	38	B 24	N 25	34	48	56	62	74	80	70	79	73	A	55	52	64	80	N 81	36	33	37
2	35	35	36	36	34	34	41	55	55	57	62	67	79	78	62	58	57	57	67	61	49	41	39	39
3	41	41	39	38	N 25	B 27	33	50	53	57	61	A	76	96	93	81	63	58	59	60	62	42	A	33
4	35	A	33	32	32	N 25	35	45	50	56	57	73	89	84	67	64	63	67	66	54	41	37	38	39
5	38	34	35	41	26	N 24	33	46	53	55	59	62	70	89	89	66	57	59	59	55	52	39	38	40
6	39	37	37	39	N 24	B 25	34	49	57	59	57	64	87	74	58	59	57	56	58	56	49	42	40	40
7	39	38	37	35	33	B 24	35	45	55	62	58	65	65	73	67	62	57	52	54	59	62	57	42	40
8	40	37	37	39	33	B 23	35	47	51	57	66	69	75	64	66	69	61	67	71	64	63	57	47	45
9	43	42	40	41	35	35	43	51	53	61	60	64	A	63	62	65	73	73	63	53	51	41	A	40
10	40	36	34	36	31	B 23	35	51	56	63	68	61	68	60	61	60	69	57	62	58	52	51	43	45
11	45	41	38	38	32	31	38	47	51	59	60	56	56	77	79	80	67	56	55	55	52	38	32	31
12	32	33	30	31	27	B 24	39	47	55	55	53	57	71	78	84	76	62	56	59	61	69	A	A	A
13	A	A	31	32	31		37	A	51	53	56	61	65	78	76	76	75	A	61	62	68	39	34	34
14	33	31	31	31	32	24	35	51	56	71	57	61	75	76	87	81	64	57	A	53	55	53	41	41
15	41	41	41	47	33	N 27	35	49	58	63	75	82	89	92	89	94	61	56	57	67	71	55	47	43
16	39	40	39	42	B 25	B 25	41	47	49	57	56	70	75	81	88	84	A	60	53	53	57	A	A	43
17	43	39	41	39	A	A	A	50	57	61	55	63	48	79	A	A		37	59	78	A	44	39	42
18	42	41	39	35	33	33	40	57	57	62	57	53	A	71	A	60	72	65	A	55	56	54	41	39
19	39	38	36	35	33	33	45	53	57	72	63	61	71	75	77	65	58	67	73	75	67	39	36	36
20	37	37	36	42	30	N 29	37	56	60	A	A	A	73	90	88	A	A	60	69	63	62	62	59	56
21	55	45	53	39	A	A	A	42	A	A	A	A	A	A	A	51	52	47	51	47	48	43	A	36
22	35	36	39	30	N 26	A	38	47	47	54	48	A	56	59	74	72	60	57	58	57	54	A	47	A
23	38	37	35	40	A	A	39	50	51	A	A	69	75	78	84	84	72	A	A	62	67	56	A	A
24	A	A	35	34	26	N 24	38	51	57	77	62	53	54	70	75	74	82	79	81	A	68	50	40	40
25	39	37	35	37	33	30	40	52	58	58	61	63	68	58	58	65	71	61	73	78	71	53	41	40
26	39	37	36	34	39	36	42	49	53	62	65	71	56	66	71	79	86	89	84	71	55	44	A	38
27	39	37	36	32	A	A	43	56	52	56	58	74	71	71	86	93	77	67	60	56	55	49	43	42
28	41	36	36	36	33	35	46	47	51	61	53	56	57	67	47	77	71	A	A	A	71	54	38	39
29	37	36	37	33	31	N 25	46	53	57	58	61	62	63	76	81	84	79	71	68	75	77	53	38	42
30	41	37	38	38	31	27	44	71	57	51	55	61	68	60	65	A	91	70	A	71	77	50	32	33
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	27	30	30	26	24	28	29	29	27	27	26	27	29	27	26	27	27	25	28	29	27	23	27
MED	39	37	36	36	32	26	38	50	55	59	59	63	70	76	75	73	64	59	61	60	62	49	40	40
U Q	41	40	39	39	33	32	41	52	57	62	62	69	75	79	86	81	73	67	68	69	68	54	43	42
L Q	37	36	35	34	26	24	35	47	51	56	56	61	63	66	65	64	58	56	58	55	52	41	38	37

HOURLY VALUES OF fEs AT Yamagawa

APR.2020

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	31	G	G	G	B	G	G	G	36	39	41	106	41	46	49	72	36	34	28	G	11	G	G	31
2	G	G	G	G	G	G	G	29	G	41	46	46	51	45	53	53	43	40	38	26	27	G	24	G
3	G	28	37	40	G	B	G	33	38	43	46	61	56	56	G	58	45	G	26	21	G	26	26	G
4	36	46	G	G	G	G	25	30	G	G	G	G	44	43	G	G	37	34	28	36	G	G	26	G
5	G	G	G	G	28	G	G	32	G	G	G	G	G	44	G	G	G	32	30	30	28	24	G	26
6	G	G	G	11	G	B	24	37	41	47	47	46	G	44	46	48	42	38	34	G	G	G	G	G
7	G	G	G	G	11	B	24	34	39	46	46	46	47	40	G	46	G	40	36	33	34	26	G	G
8	G	G	G	G	36	B	23	46	40	G	G	45	47	42	41	G	44	32	34	32	44	24	G	G
9	G	G	G	G	G	G	25	36	48	60	56	60	70	49	47	53	45	40	27	G	25	35	49	G
10	G	G	G	G	29	B	31	41	156	48	43	G	G	G	46	46	45	39	30	G	G	G	G	G
11	G	G	G	G	G	G	29	30	G	G	N	48	58	51	49	47	51	40	29	G	29	28	G	G
12	G	G	G	G	27	B	24	35	43	46	46	51	56	58	44	50	49	43	35	32	47	72	41	34
13	33	35	G	G	G	G	G	54	46	41	45	48	G	46	G	44	37	75	37	39	32	G	G	G
14	G	G	G	G	G	G	G	34	G	41	G	44	50	150	52	48	43	48	85	36	G	11	G	25
15	G	G	G	G	11	G	G	43	50	48	50	67	52	57	54	42	50	34	48	45	G	35	G	G
16	G	G	G	G	B	B	G	39	44	47	54	59	72	115	104	58	75	95	46	46	69	73	40	25
17	29	G	G	47	58	49	41	36	50	50	47	43	150	82	111	149		149	168	73	57	27	G	G
18	G	G	G	G	G	G	35	40	44	44	56	48	117	92	56	44	G	55	59	107	39	G	G	G
19	G	G	G	G	G	G	25	40	48	56	56	53	63	61	56	38	N	G	43	45	33	24	25	G
20	G	G	G	G	G	G	26	36	44	57	58	57	60	50	61	124	60	34	50	56	35	35	30	31
21	28	G	20	G	40	36	40	43	50	53	48	48	54	53	57	48	53	G	28	32	37	28	34	G
22	G	G	33	G	G	35	129	G	125	49	84	108	46	46	48	G	G	36	32	40	50	58	40	47
23	39	34	35	57	52	59	30	35	50	71	62	46	79	63	48	43	80	74	57	35	31	48	92	72
24	84	59	30	G	G	G	34	45	45	48	50	47	48	48	46	43	G	50	59	77	28	29	G	28
25	28	25	G	G	G	G	33	36	46	44	46	44	45	44	44	41	39	40	39	30	11	G	25	G
26	G	28	G	G	26	G	26	35	41	50	45	49	49	G	G	G	38	40	42	46	27	36	56	34
27	G	G	G	G	33	26	120	44	49	47	47	50	G	43	G	44	124	G	40	40	32	25	24	G
28	24	G	G	G	G	G	25	33	40	48	45	47	44	56	80	54	52	72	62	56	57	43	35	25
29	G	G	G	G	G	G	27	34	43	46	50	52	45	47	45	44	44	58	41	37	38	27	G	G
30	G	G	G	G	G	G	32	38	150	44	41	43	G	52	45	65	G	54	63	26	34	40	G	G
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	30	30	30	30	28	23	30	30	30	30	29	30	30	30	30	30	28	30	30	30	30	30	30	30
MED	G	G	G	G	G	G	25	36	44	46	46	48	48	48	46	46	44	40	38	36	32	26	12	G
U Q	28	G	G	G	27	G	32	40	49	49	52	53	58	57	54	53	50	54	50	45	38	35	34	26
L Q	G	G	G	G	G	G	G	33	39	41	44	45	44	44	41	42	36	34	30	26	11	G	G	G

HOURLY VALUES OF fmin AT Yamagawa

APR.2020

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

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

HOURLY VALUES OF foF2 AT Okinawa

APR.2020

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	25	29	31	B	A	25	46	54	62	87	79	72	73	83	A	57	60	74	95	73	35	A	31
2	26	31	27	31	B 25	A	27	51	51	62	69	73	78	80	76	66	55	61	63	63	47	39	37	36
3	36	36	38	34	B	A	23	47	55	59	58	A	72	100	110	101	74	75	85	81	66	42	30	29
4	31	31	25	41	A	B 23	25	44	49	55	58	74	96	98	83	77	90	85	61	43	38	35	33	34
5	32	34	37	41	N 22	23	24	44	53	56	59	62	79	96	112	91	72	64	64	48	47	39	A	35
6	33	31	39	34	B	B 23	N 23	45	53	56	57	65	79	87	63	54	58	58	65	63	54	43	A	39
7	37	35	33	31	26	B	25	45	55	63	58	76	82	80	77	63	59	A	51	65	78	47	29	31
8	25	N 25	25	37	B	B	25	42	55	56	59	77	85	89	98	90	75	73	85	77	68	49	41	40
9	39	38	37	37	27	N 25	31	47	56	63	54	63	82	75	69	A	81	73	77	61	48	A	A	A
10	33	31	29	31	A	B	27	53	55	63	76	76	75	78	63	60	A	A	55	62	64	45	42	44
11	47	44	48	48	25	25	32	47	47	55	67	71	67	80	94	98	62	49	56	70	61	40	30	30
12	31	30	24	N 23	24	N 23	31	47	57	56	57	61	69	84	88	89	66	62	75	85	N 63	A	A	A
13	25	N 24	N 23	27	N 23	A	A	45	55	51	A	61	74	94	104	93	82	73	77	91	A	A	A	A
14	27	30	30	31	28	B	30	45	59	63	63	78	87	101	116	91	81	56	51	A	A	A	47	51
15	50	42	43	49	24	A	31	44	55	60	73	100	97	103	113	106	88	65	65	74	A	48	53	46
16	42	42	42	44	23	B	33	44	50	55	A	66	69	A	93	A	79	63	57	56	57	52	41	39
17	40	37	37	35	27	A	32	47	54	A	A	A	48	86	83	59	61	A	65	75	A	A	A	A
18	A	A	A	37	A	A	A	A	56	A	A	A	66	83	78	71	66	69	61	63	59	57	41	32
19	31	31	31	34	N 23	B 23	35	48	54	60	A	69	89	103	95	82	69	85	93	77	A	A	A	33
20	34	34	34	38	A	A	33	51	55	52	58	49	81	103	99	89	75	69	71	68	61	67	N 62	60
21	57	55	61	A	A	A	A	47	A	55	A	51	A	52	A	A	49	A	50	A	A	A	A	A
22	34	33	36	N 23	B 22	N 23	34	43	48	A	64	53	70	82	96	91	77	67	68	72	61	A	41	41
23	A	36	37	43			33	47	53	58	57	68	85	103	105	113	87	71	71	82	80	57	A	A
24	34	A	A	31	26	B 22	32	51	69	71	55	53	53	86	99	111	121	115	105	90	A	A	A	A
25	38	34	32	33	23	N 23	33	51	59	57	59	61	75	78	73	72	75	70	74	80	67	49	39	32
26	31	31	31	31	29	25	37	47	56	63	69	62	68	85	93	101	104	108	83	76	63	41	34	35
27	33	34	A	A	A	B 24	40	55	54	A	A	72	85	89	103	114	99	96	86	64	55	51	39	36
28	32	31	31	33	31	N 23	34	48	58	A	51	A	66	81	87	97	86	66	59	61	75	A	A	A
29	31	33	31	36	N 23	N 22	38	49	61	56	52	57	81	102	121	125	123	99	105	112	A	A	A	47
30	49	50	53	41	34	A	43	57	53	56	57	65	73	84	86	95	98	88	83	95	87	A	A	29
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	27	28	19	14	27	29	29	25	23	26	29	29	29	26	29	26	30	28	22	18	16	22
MED	33	34	33	34	25	23	32	47	55	57	58	66	75	86	93	91	75	70	70	73	62	46	40	36
U Q	39	36	38	39	27	24	34	50	56	62	67	74	83	99	103	101	87	85	83	81	68	51	41	41
L Q	31	31	29	31	23	23	25	45	53	55	57	61	69	80	80	72	64	63	61	63	55	40	33	32

HOURLY VALUES OF fEs AT Okinawa

APR.2020

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	29	G	G	G	B	26		32	35	46	44	45	G	45	45	92	86	58	38	27	29	35	41	G
2	59	28	G	G	B	36	G	32	38	41	44	46	53	52	50	51	50	44	32	33	39	25	26	G
3	G	G	G	11	B	39	26	31	36	41	56	61	85	62	45	53	44	55	42	24	25	24	27	G
4	G	G	34	33	40	B	24	38	41	42	52	44	G	G	42	46	50	44	G	29	26	G	G	G
5	29	26	G	G	G	G	G	31	G	G	G	44	G	46	47	49	37	34	40	35	G	28	33	29
6	G	G	G	11	B	B	G	35	41	47	53	51	53	68	72	53	46	56	34	28	G	24	43	G
7	G	G	G	G	G	B	G	32	39	43	44	47	50	65	G	G	43	58	41	44	33	34	G	G
8	G	G	G	11	B	B	G	29	38	45	46	G	48	56	70	47	38	39	48	60	44		29	27
9	24	G	G	G	G	G	G	33	39	41	146	42	46	65	G	92	88	54	59	56	43	43	65	45
10	26	G	G	G	11	B	G	33	46	40	45	71	90	50	54	60	67	61	41	40	25	36	26	28
11	G	G	G	G	G	G	G	29	38	41	G	52	54	45	52	54	60	44	G	28	23	26	G	G
12	G	G	G	G	G	G	110	35	44	38	51	48	49	52	56	59	50	39	60	32	29	59	29	56
13	29	G	G	25	27	29	28	36	G	115	86	54	46	49	48	44	48	42	49	95	127	115	93	34
14	G	G	G	43	27	B	25	46	G	45	49	55	48	48	46	46	56	45	147	72	59	60	G	G
15	G	G	G	11	G	39	G	44	51	54	62	55	54	60	77	70	67	34	50	63	69	91	43	28
16	G	G	G	22	G	B	G	34	94	50	172	92	60	97	78	112	113	49	33	30	33	36	G	41
17	26	32	G	23	20	44	157	34	50	78	70	127	134	52	102	55	146	74	61	57	91	92	73	70
18	59	105	116	69	81	60	44	179	54	65	92	66	62	50	60	39	43	50	90	46	40	27	G	G
19	G	G	G	G	G	B	G	37	42	41	91	68	72	46	41	G	G	42	49	60	71	58	60	G
20	G	G	G	30	38	27	23	36	48	50	53	49	49	62	92	62	55	45	61	61	40	47	46	59
21	41	28	G	36	28	41	34	50	50	53	56	48	55	54	133	112	53	53	43	59	67	67	48	35
22	G	25	G	G	B	G	G	34	38	55	108	43	G	G	46	G	G	G	34	36	26	57	41	46
23	41	G	G	46	G	G	24	34	57	57	51	G	46	50	51	G	43	39	40	38	33	26	26	36
24	48	54	34	G	G	B	26	40	54	60	55	47	46	71	54	51	42	80	82	65	88	83	93	93
25	92	G	G	G	G	G	28	36	48	57	50	47	43	43	G	44	45	43	39	44	40	11	G	G
26	G	26	G	G	G	G	G	33	42	49	53	48	G	48	G	G	44	62	52	43	28	31	25	G
27	45	G	35	40	33	B	26	43	54	60	62	92	46	G	41	43	41	G	40	33	29	26	24	24
28	G	G	40	33	G	G	G	35	46	61	48	46	61	56	G	G	38	35	36	44	90	80	71	108
29	G	G	G	11	G	G	25	39	45	45	48	68	56	66	54	46	38	42	54	46	80	93	66	27
30	G	G	G	G	G	46	G	34	51	45	56	49	62	53	58	65	81	70	66	33	60	126	39	G
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	30	30	30	30	24	20	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30
MED	G	G	G	11	G	14	G	34	43	46	53	48	50	52	50	50	47	44	42	44	40	36	31	27
U Q	29	25	G	30	27	39	26	38	50	57	62	61	60	62	60	60	60	56	59	59	67	73	48	41
L Q	G	G	G	G	G	G	G	33	38	41	48	46	46	46	42	43	42	39	38	33	28	26	24	G

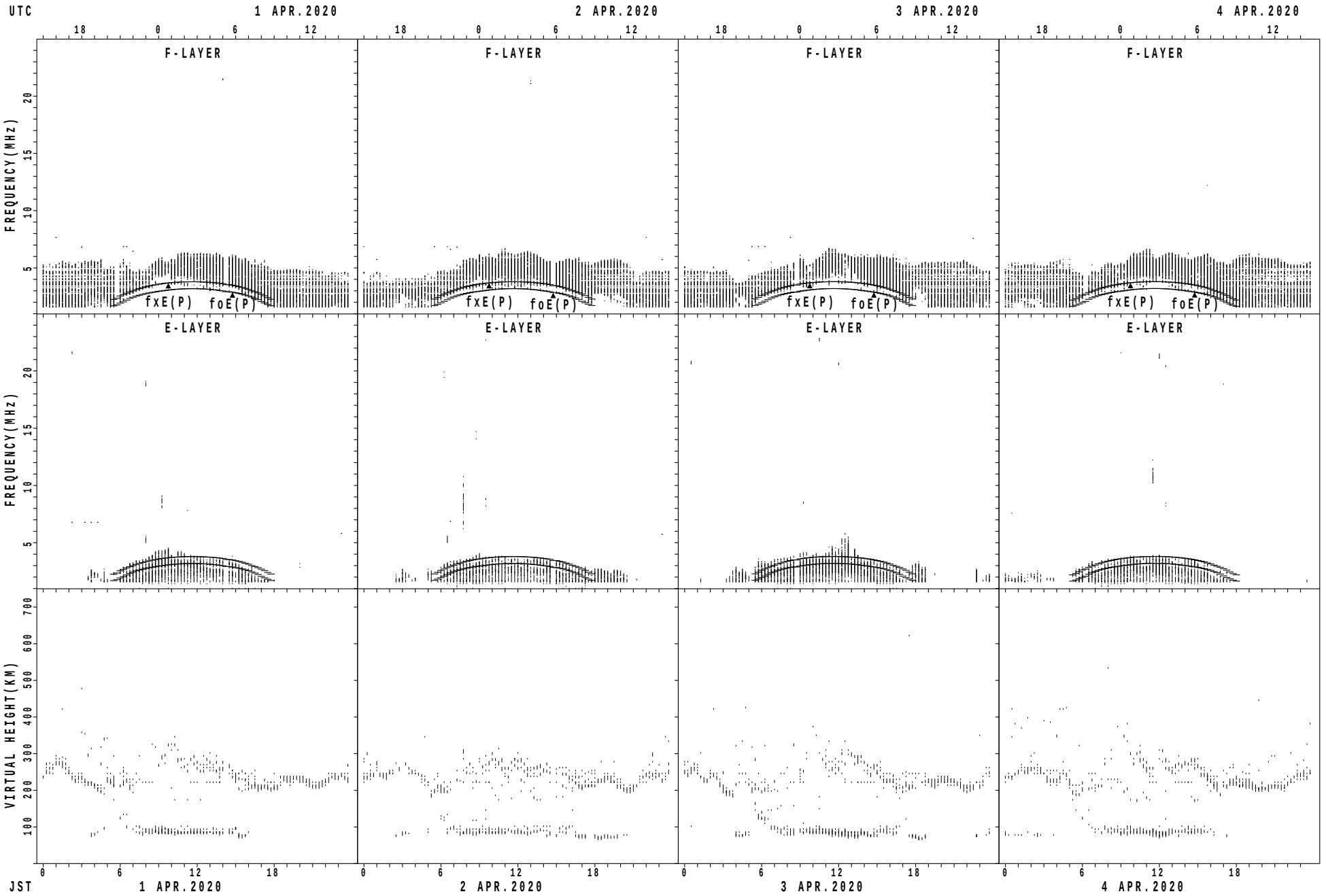
HOURLY VALUES OF fmin AT Okinawa

APR.2020

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

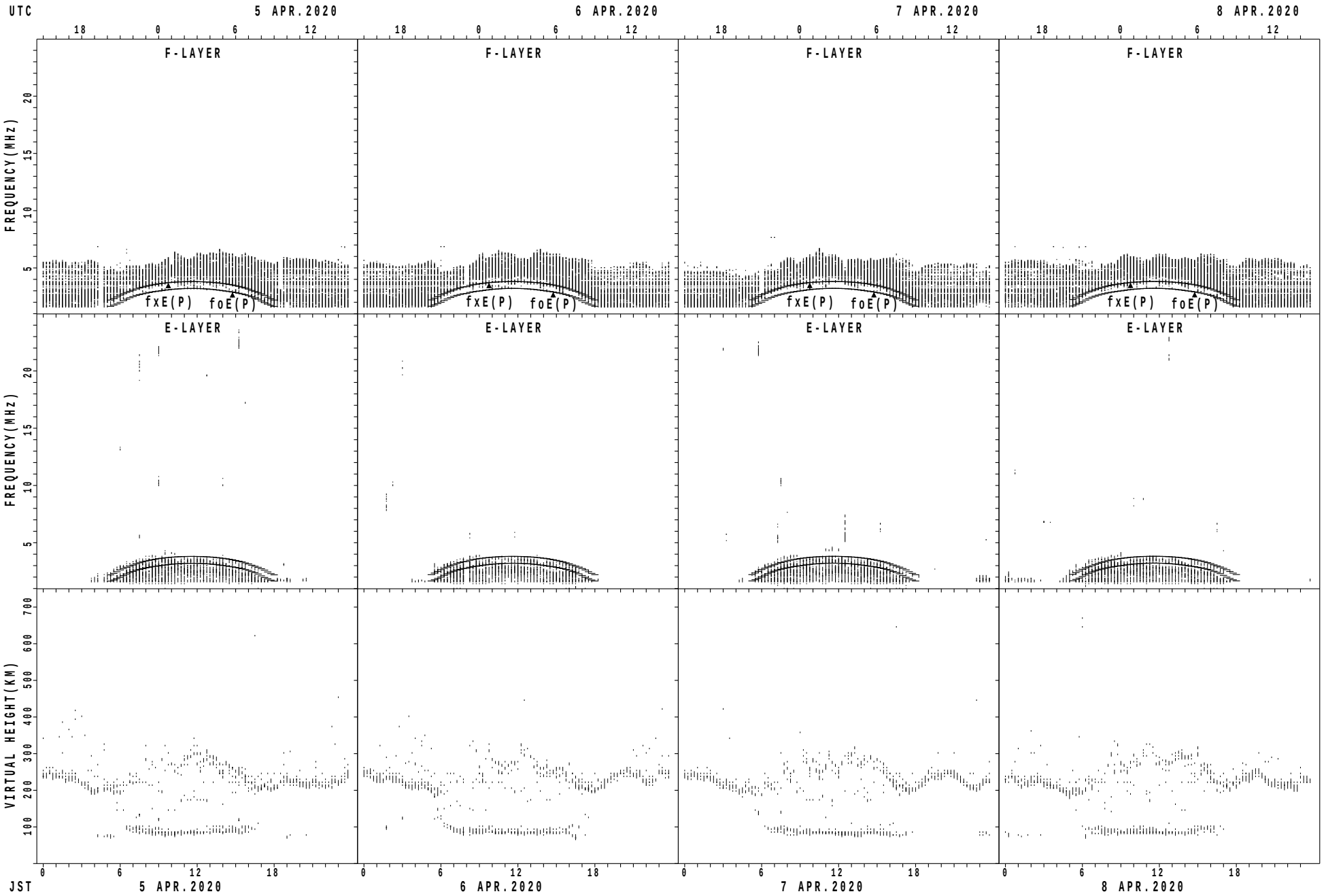
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	15	14	15	B 15	16		15	17	15	17	15	17	17	18	13	13	14	16	15	15	15	15	15
2	15	16	15	15	B	15	15	15	15	14	15	15	15	16	15	15	15	14	15	15	15	16	15	15
3	16	16	16	14	B 15	15	15	16	16	14	13	15	12	15	21	14	14	13	15	15	15	16	15	15
4	15	15	15	16	15	B 15	15	16	15	15	15	18	17	18	15	17	17	14	15	15	15	15	15	14
5	15	16	15	16	14	14	18	16	17	15	16	16	17	19	17	18	16	15	15	16	16	15	15	15
6	15	15	14	14	B	B	18	15	15	14	15	15	17	17	16	15	18	14	17	15	16	16	15	15
7	15	15	15	14	14	B	15	15	15	15	15	18	17	16	17	17	15	14	15	14	16	16	16	15
8	14	15	14	15	B	B	15	16	17	14	16	15	18	19	17	15	15	15	15	16	15	176	15	15
9	15	15	15	14	16	15	15	15	15	15	15	17	18	17	20	18	13	14	13	15	15	15	15	15
10	16	14	14	15	14	B	15	15	14	15	15	15	17	17	16	17	15	14	15	15	15	16	16	15
11	20	15	15	15	15	14	15	16	15	16	15	19	16	16	17	17	14	15	15	15	15	15	15	15
12	15	15	15	14	14	15	14	15	15	15	15	18	17	18	16	15	15	15	15	17	15	17	15	15
13	15	15	16	15	16	15	15	16	17	15	15	15	16	17	17	16	15	15	17	13	5	13	16	15
14	15	15	14	15	15	B 16	16	15	16	15	15	20	17	17	17	16	14	13	13	13	16	16	15	14
15	14	15	14	14	15	15	15	17	15	15	14	17	16	17	16	17	16	16	15	15	15	17	15	15
16	15	14	15	15	16	B 15	15	15	14	15	19	13	18	18	16	11	13	15	15	15	15	15	15	15
17	15	15	14	16	15	14	34	15	14	15	15	14	9	15	17	17	14	13	13	13	14	15	13	15
18	15	15	7	15	15	15	16	100	14	14	15	16	16	18	15	17	16	15	13	15	14	16	14	14
19	15	14	15	15	14	B	15	14	14	15	16	16	14	17	17	15	15	16	15	15	15	15	16	15
20	15	15	15	16	15	16	14	16	13	13	16	15	17	19	15	15	15	15	14	15	15	15	15	15
21	15	16	16	16	15	15	16	14	14	14	17	16	18	19	19	17	13	13	15	15	16	17	15	16
22	15	15	14	15	B	14	17	16	15	14	17	16	17	17	17	15	15	15	13	16	16	15	16	16
23	15	15	15	15	16	19	15	15	15	13	16	19	19	18	18	15	15	15	13	15	16	16	15	15
24	15	15	16	15	15	B	15	15	14	16	17	17	17	21	20	16	15	15	14	15	16	15	13	15
25	17	14	14	15	16	15	15	15	15	17	21	23	20	19	16	17	15	15	14	15	15	14	16	16
26	15	15	15	14	15	14	15	15	15	14	15	20	20	23	17	16	16	15	13	15	15	15	15	14
27	17	16	15	17	16	B 14	16	14	14	16	16	19	19	19	19	17	15	15	11	15	16	16	15	15
28	15	15	15	16	15	15	16	17	13	14	20	18	18	18	16	18	15	15	14	15	15	14	16	15
29	15	15	15	15	15	15	15	15	14	14	18	18	18	15	17	17	16	15	14	14	15	12	14	15
30	15	14	14	14	14	16	17	15	13	14	15	17	19	17	19	18	17	13	15	15	16	9	15	15
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	30	30	30	30	26	24	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	15	15	15	15	15	15	15	15	15	15	15	16	17	17	17	16	15	15	15	15	15	15	15	15
U Q	15	15	15	15	15	15	16	16	15	15	17	18	18	19	18	17	16	15	15	15	16	16	15	15
L Q	15	15	14	14	15	14	15	15	14	14	15	15	16	17	16	15	14	14	13	15	15	15	15	15

SUMMARY PLOTS AT Wakkanai



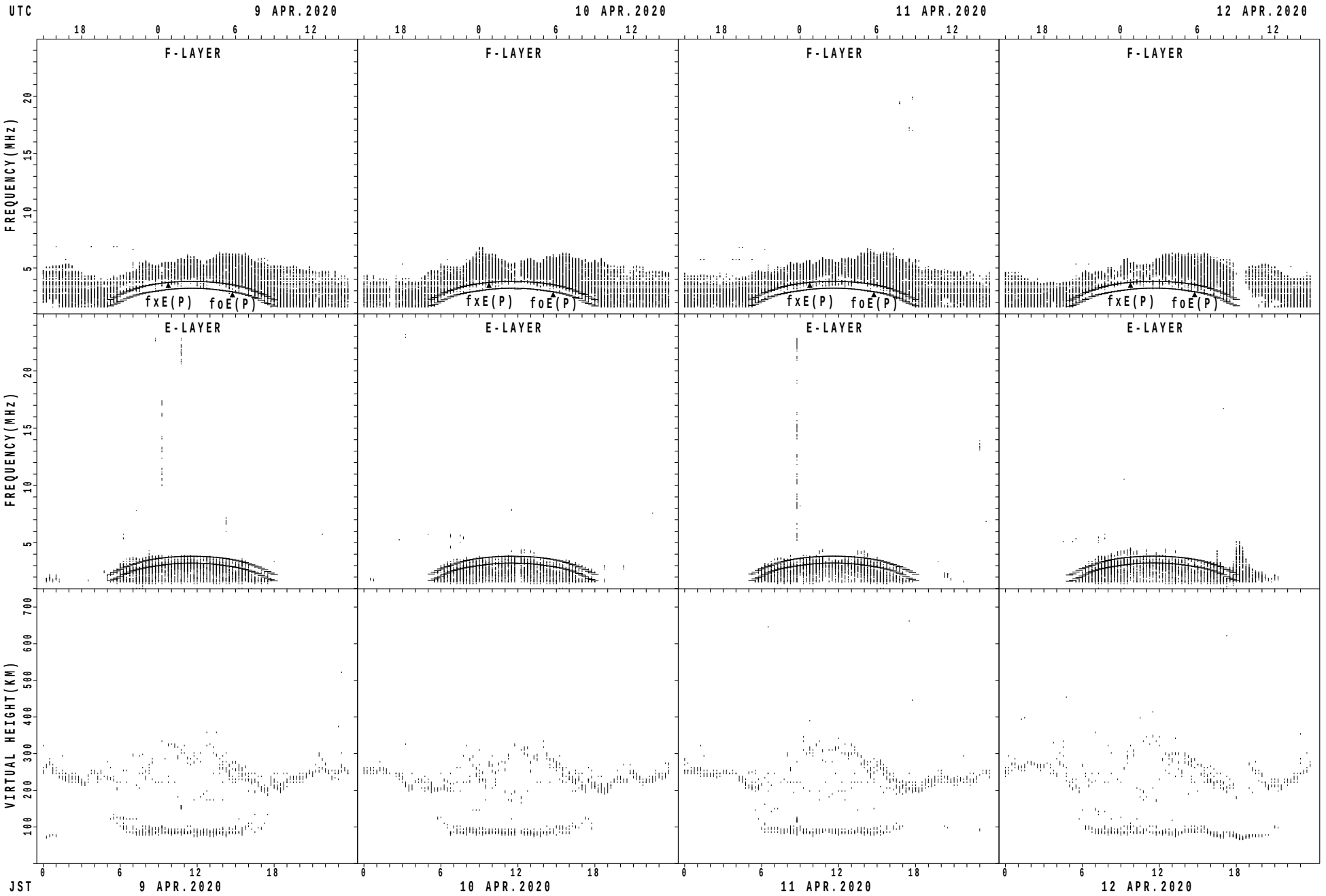
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



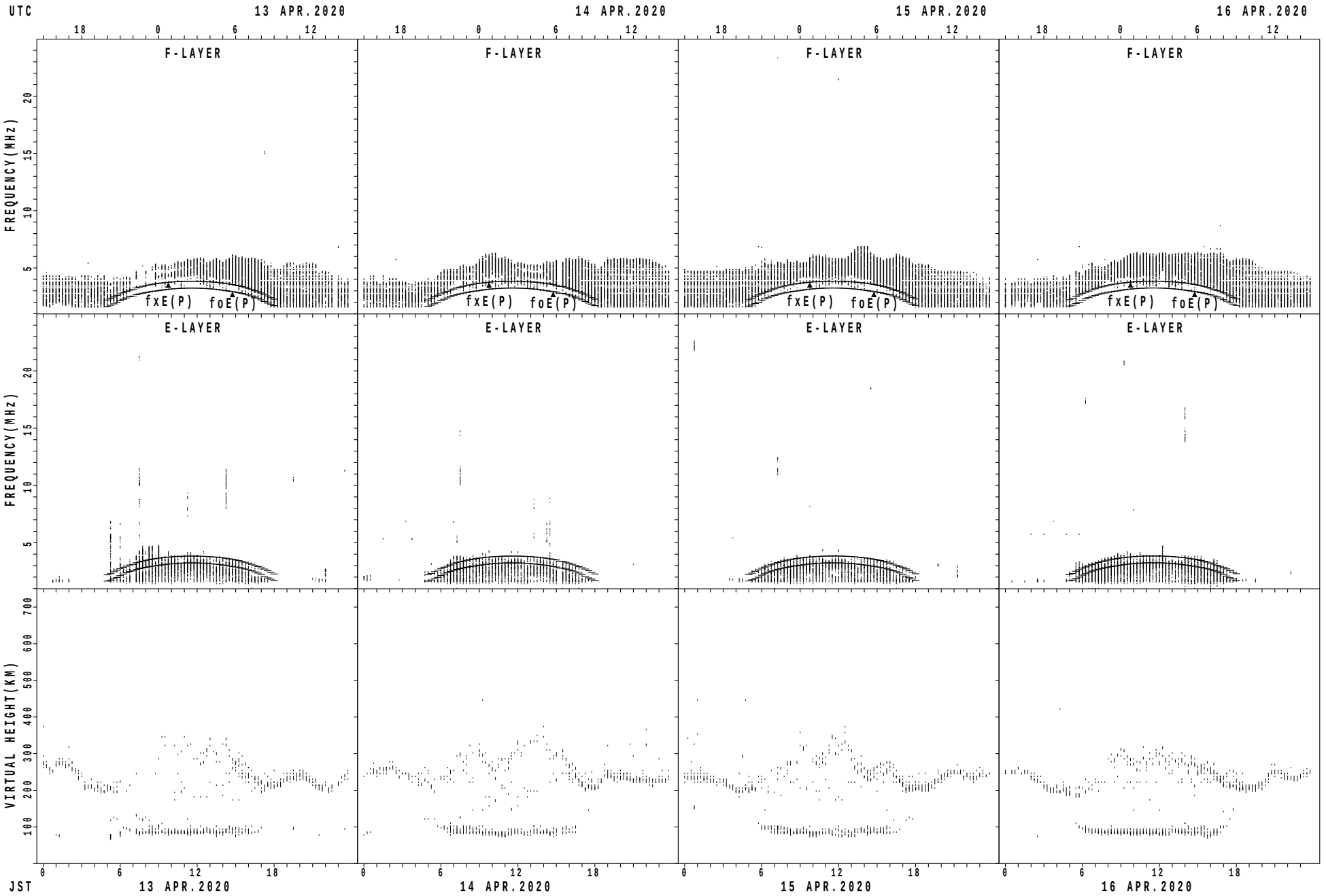
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



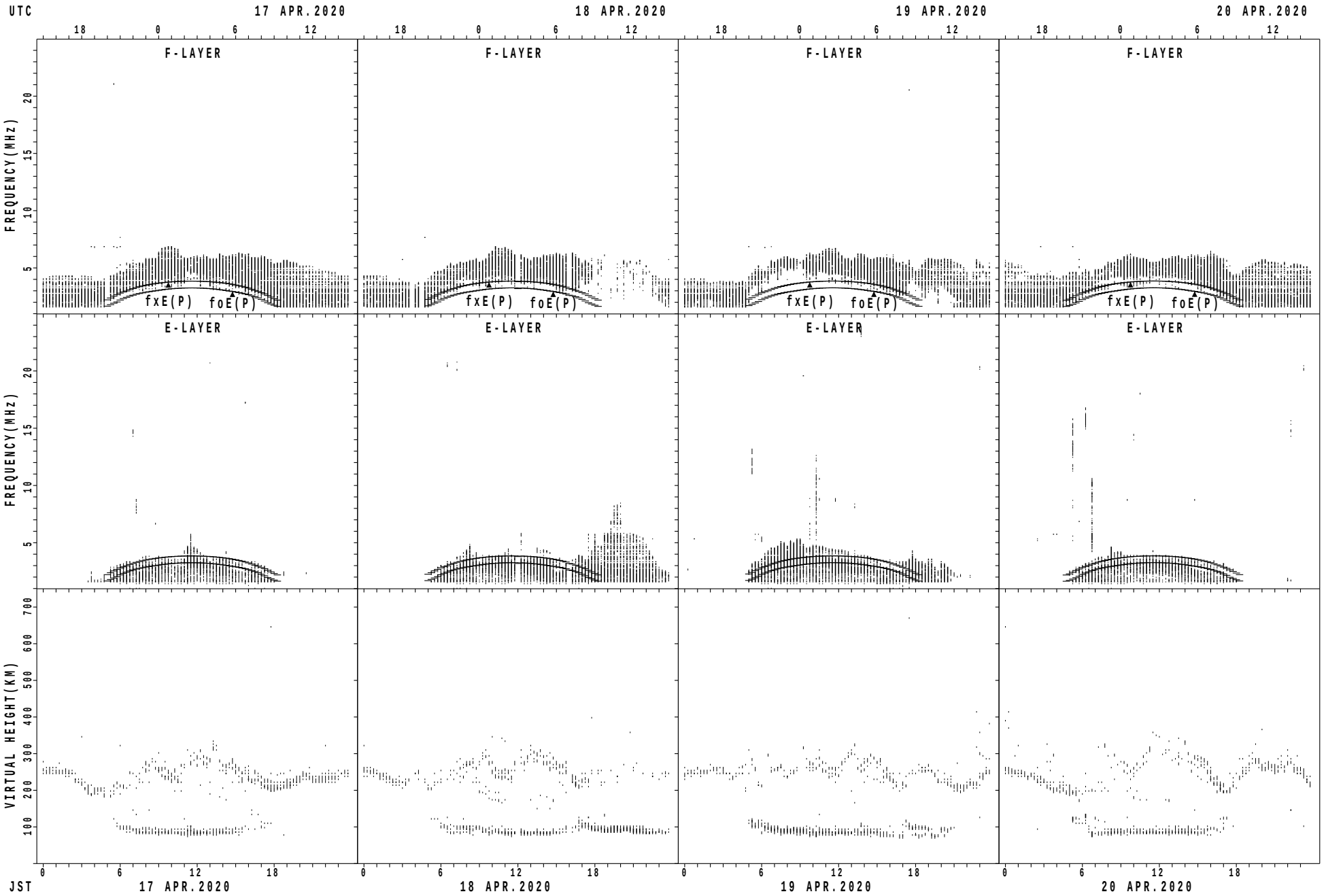
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



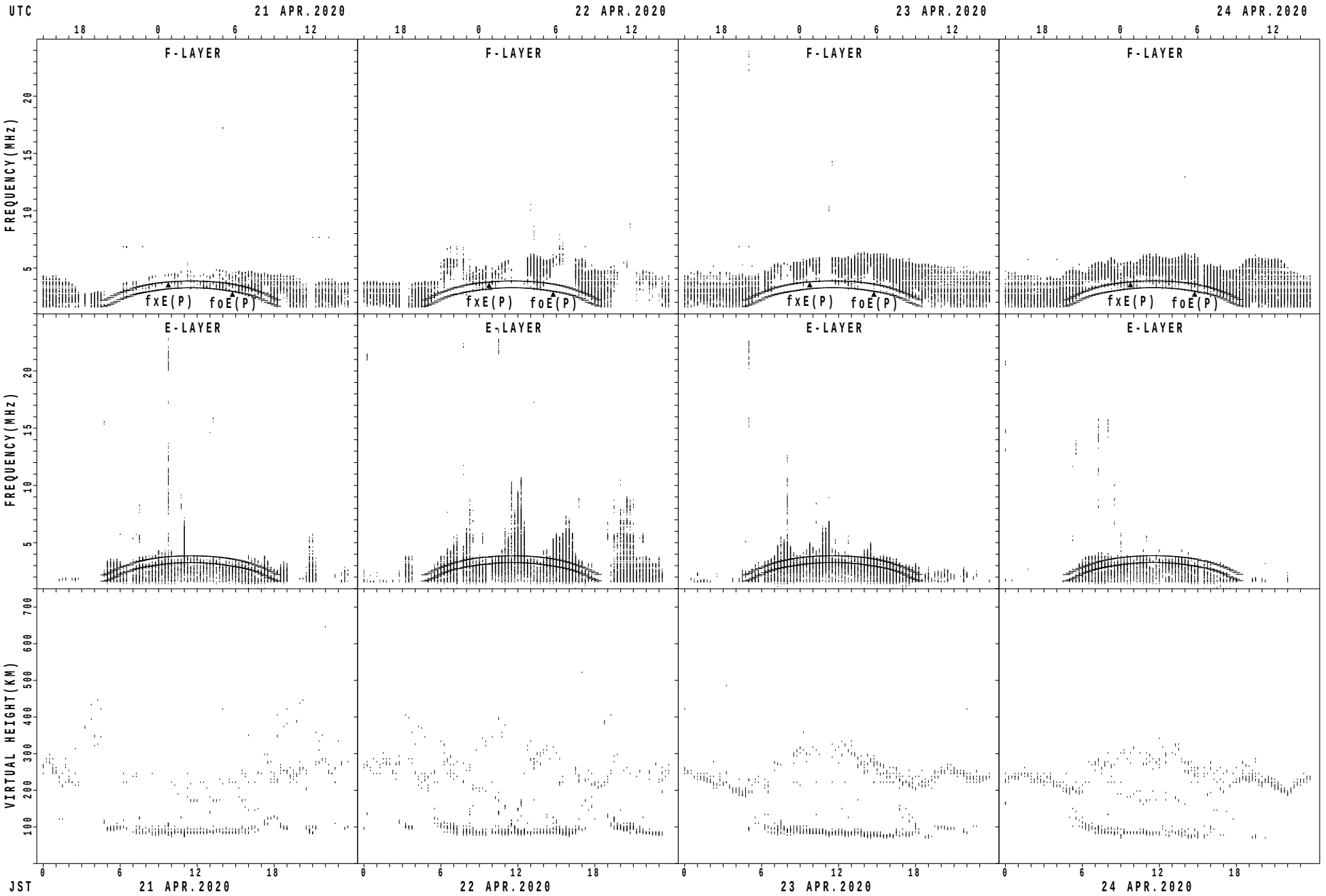
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



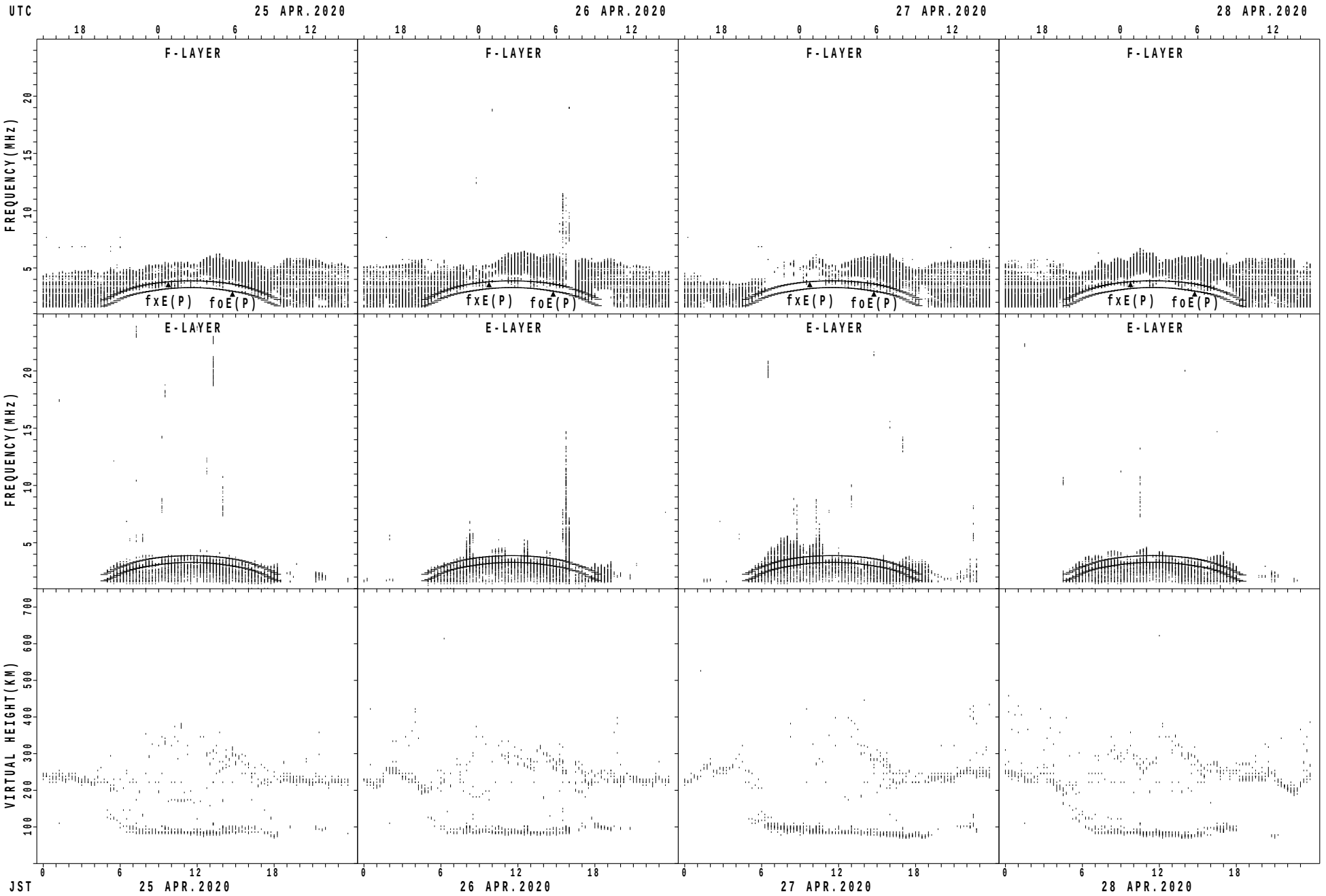
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



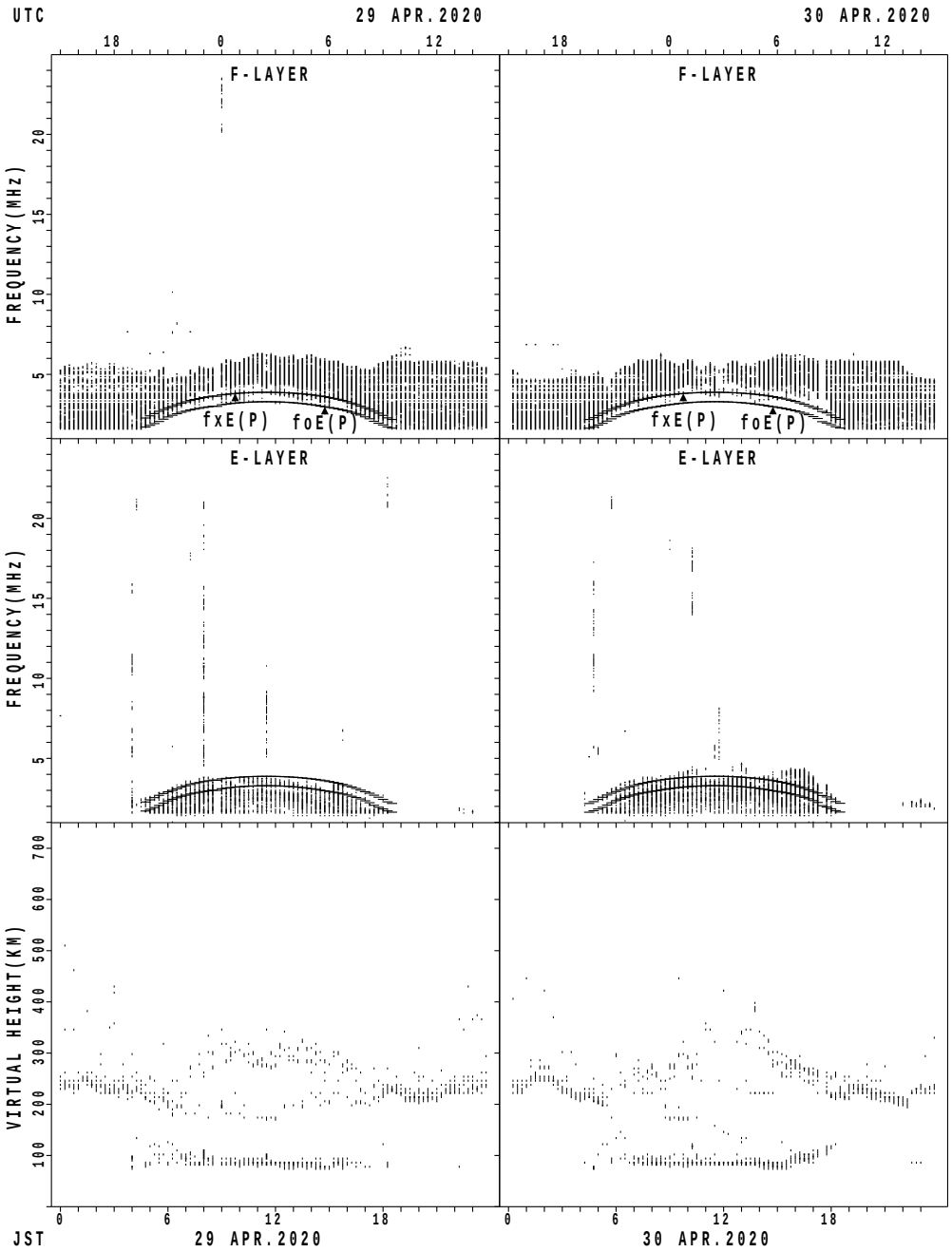
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



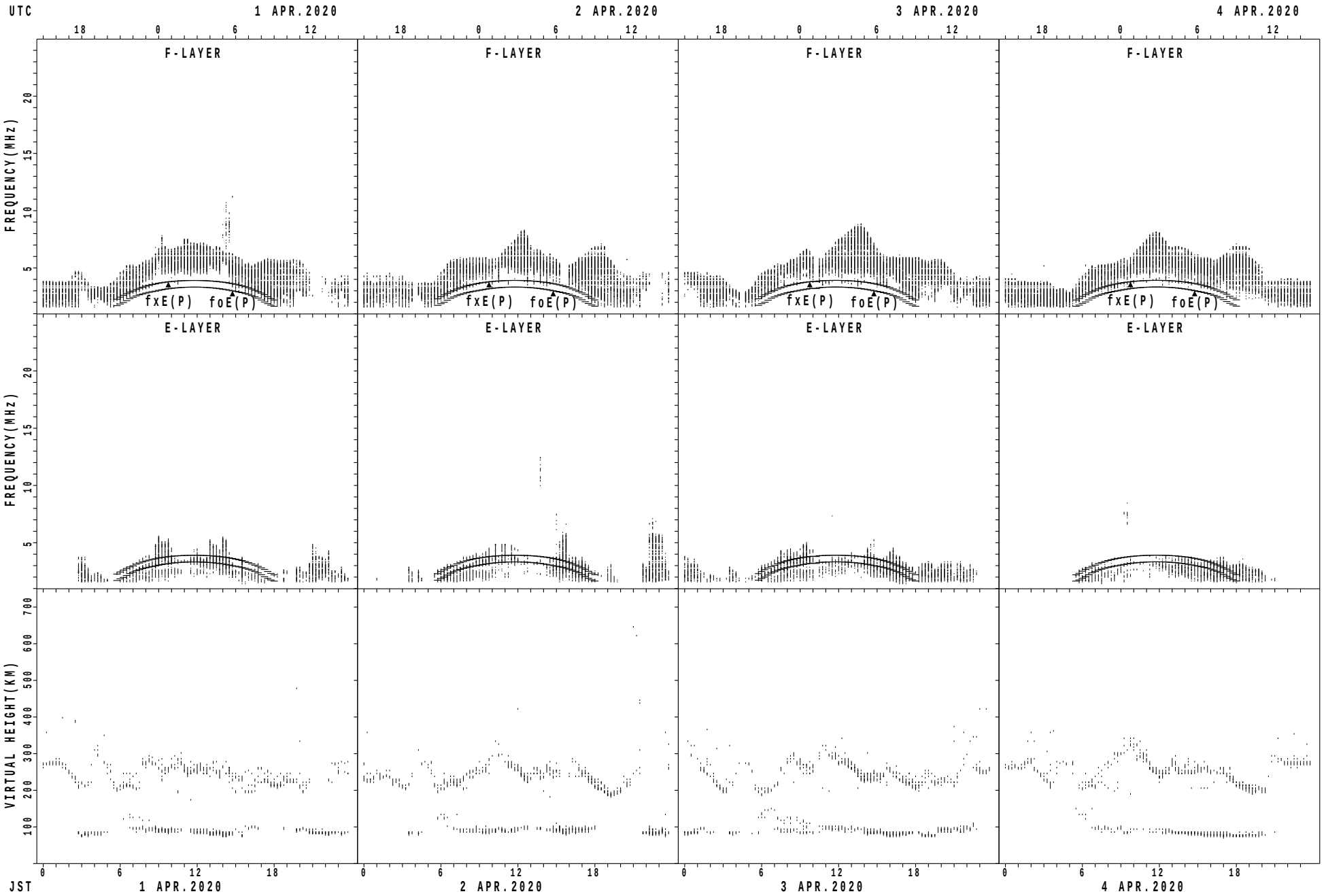
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



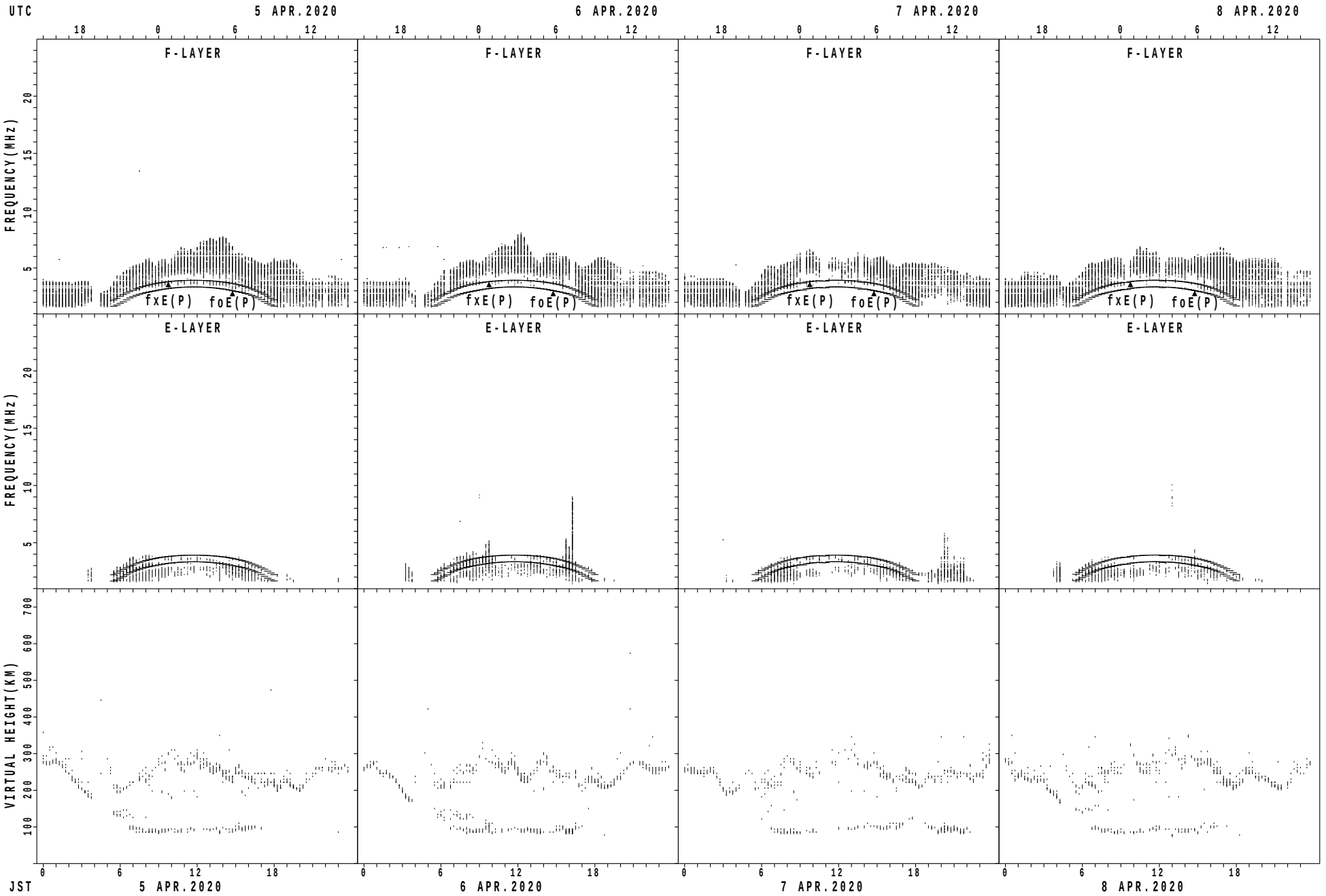
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



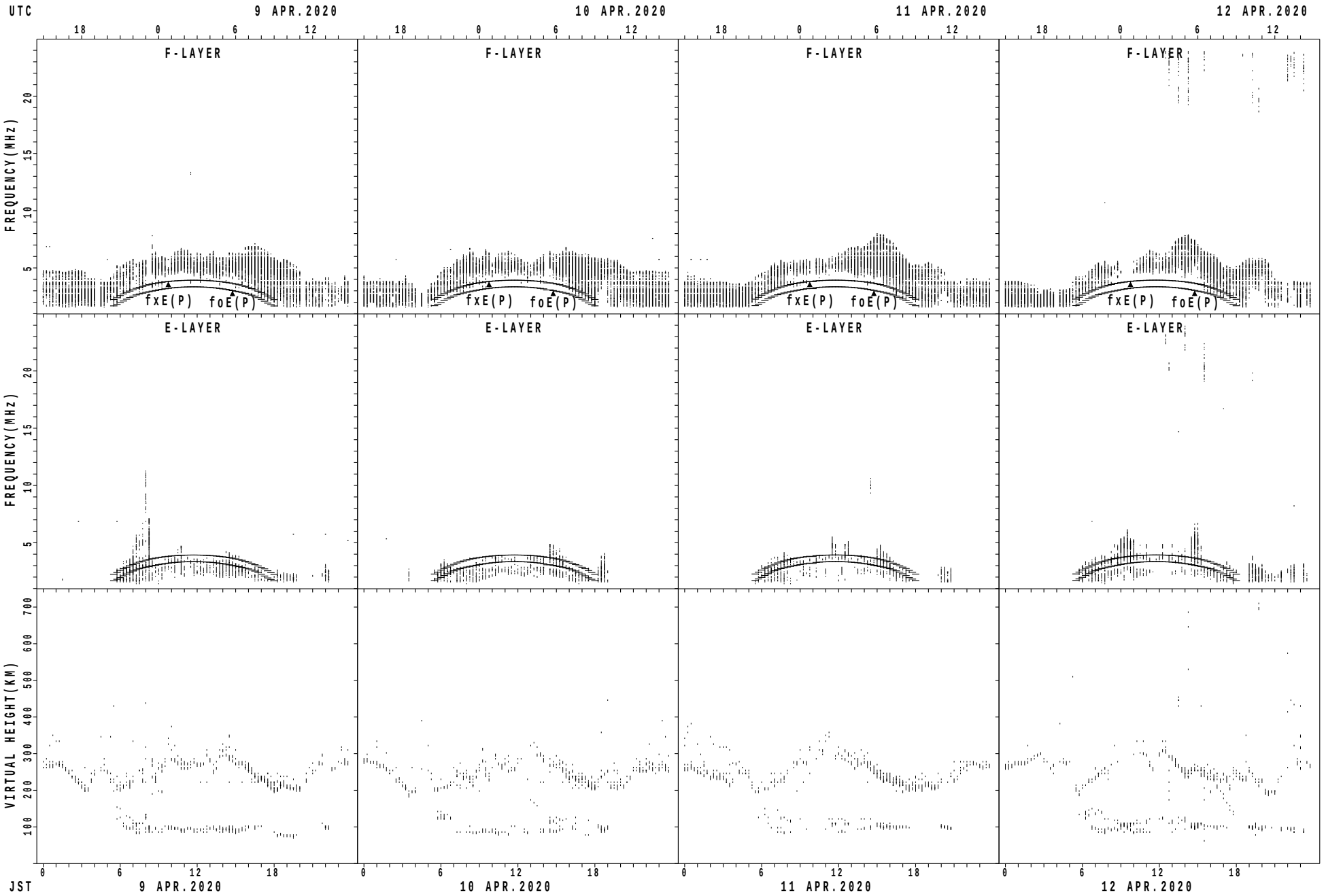
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



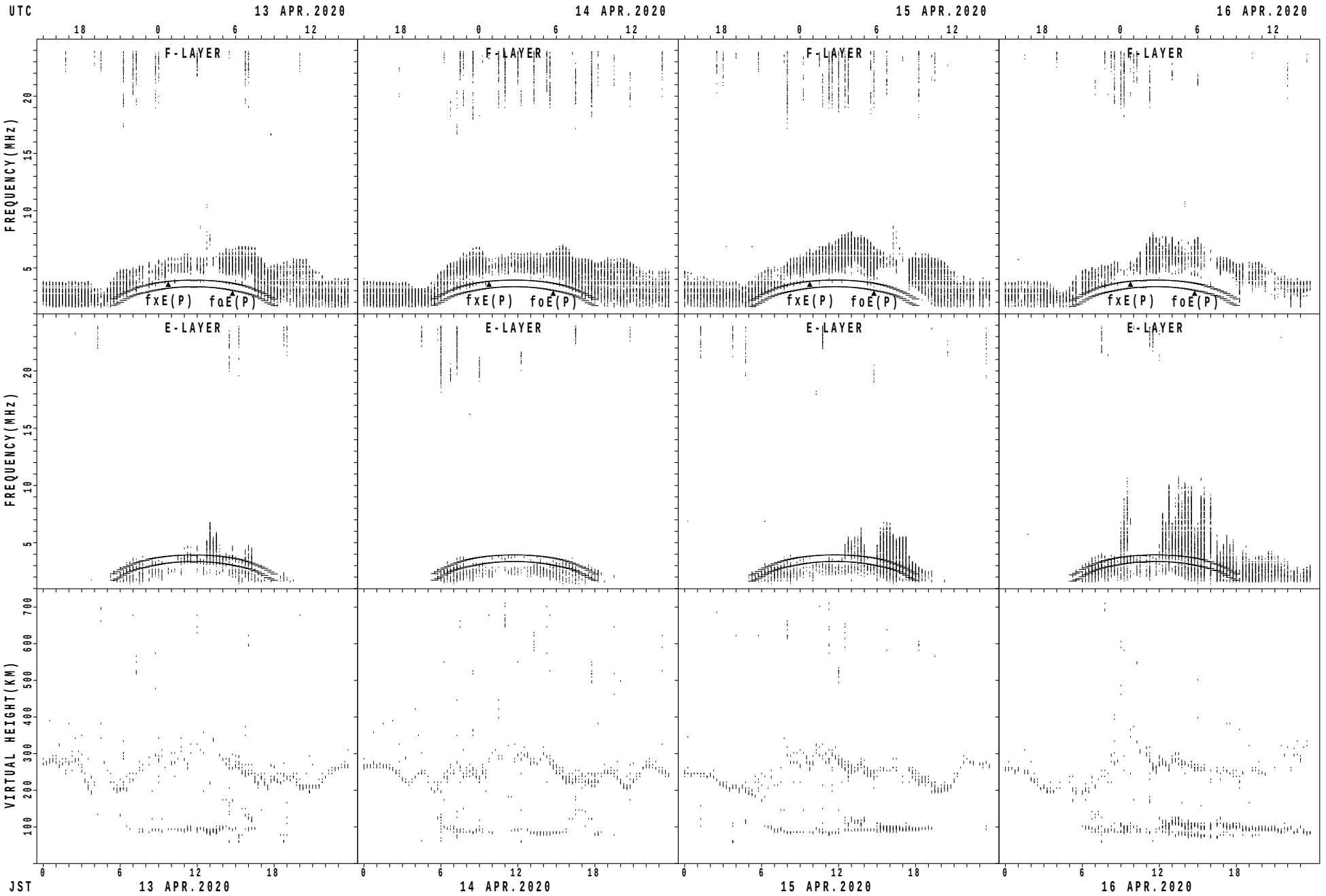
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



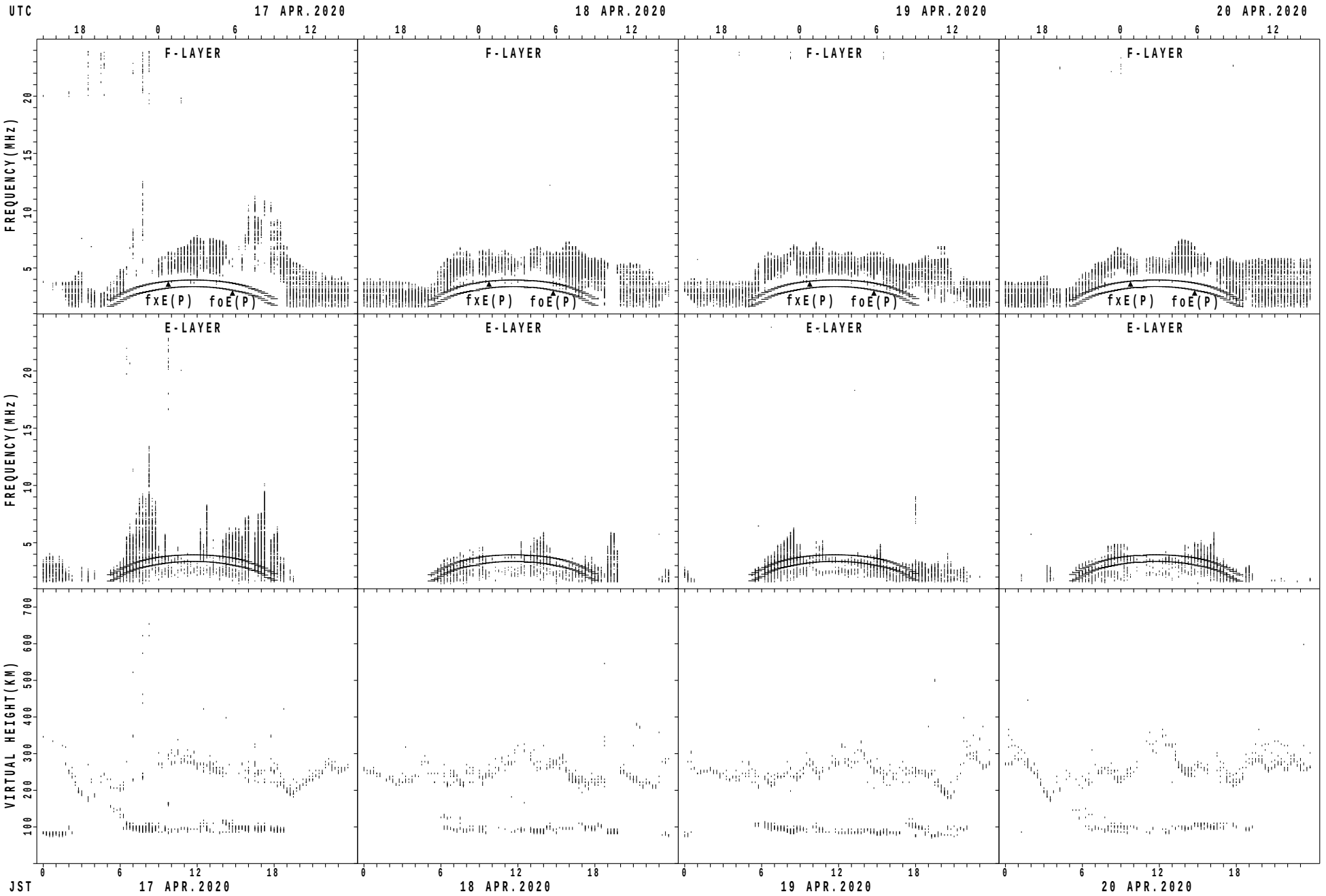
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



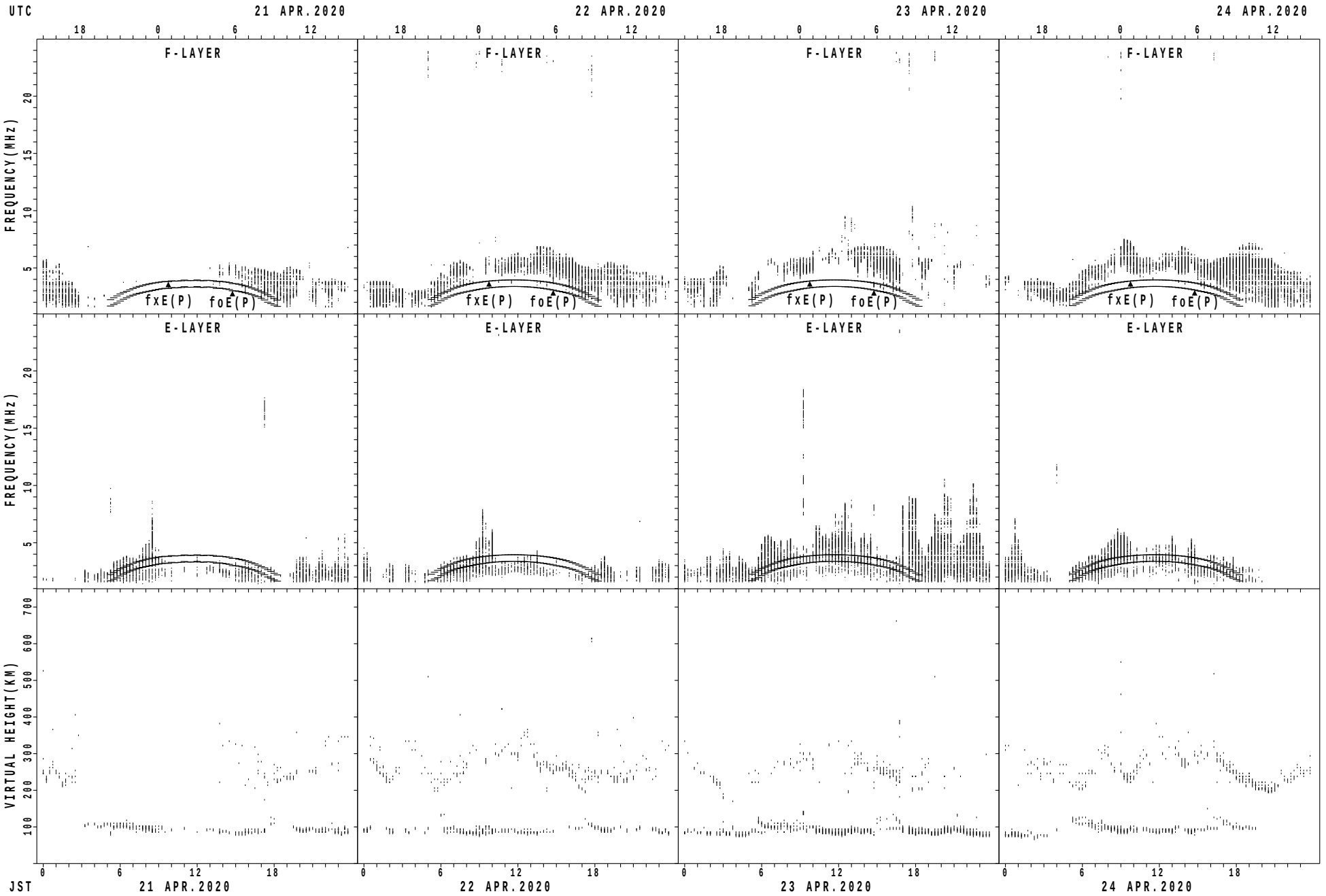
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



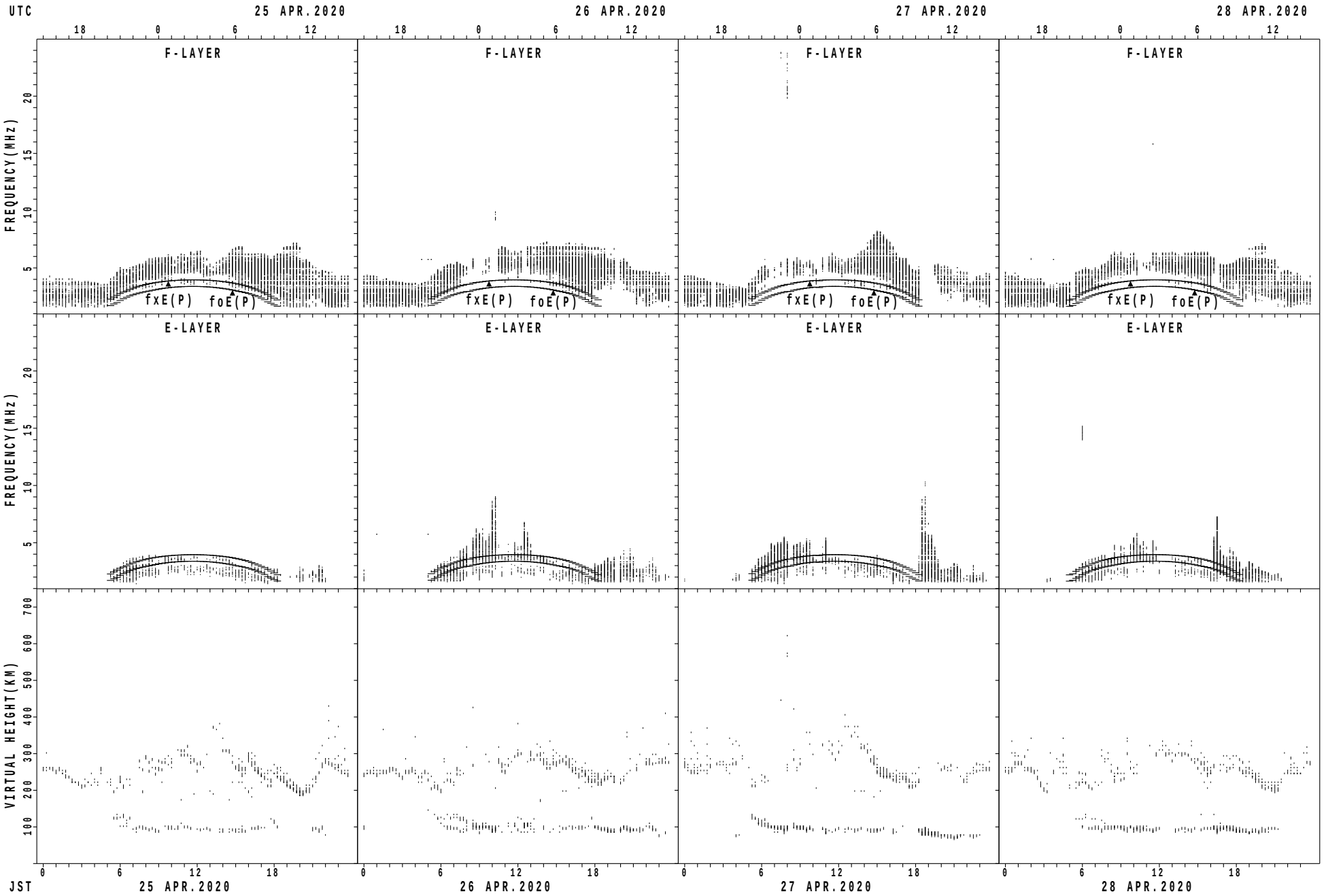
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



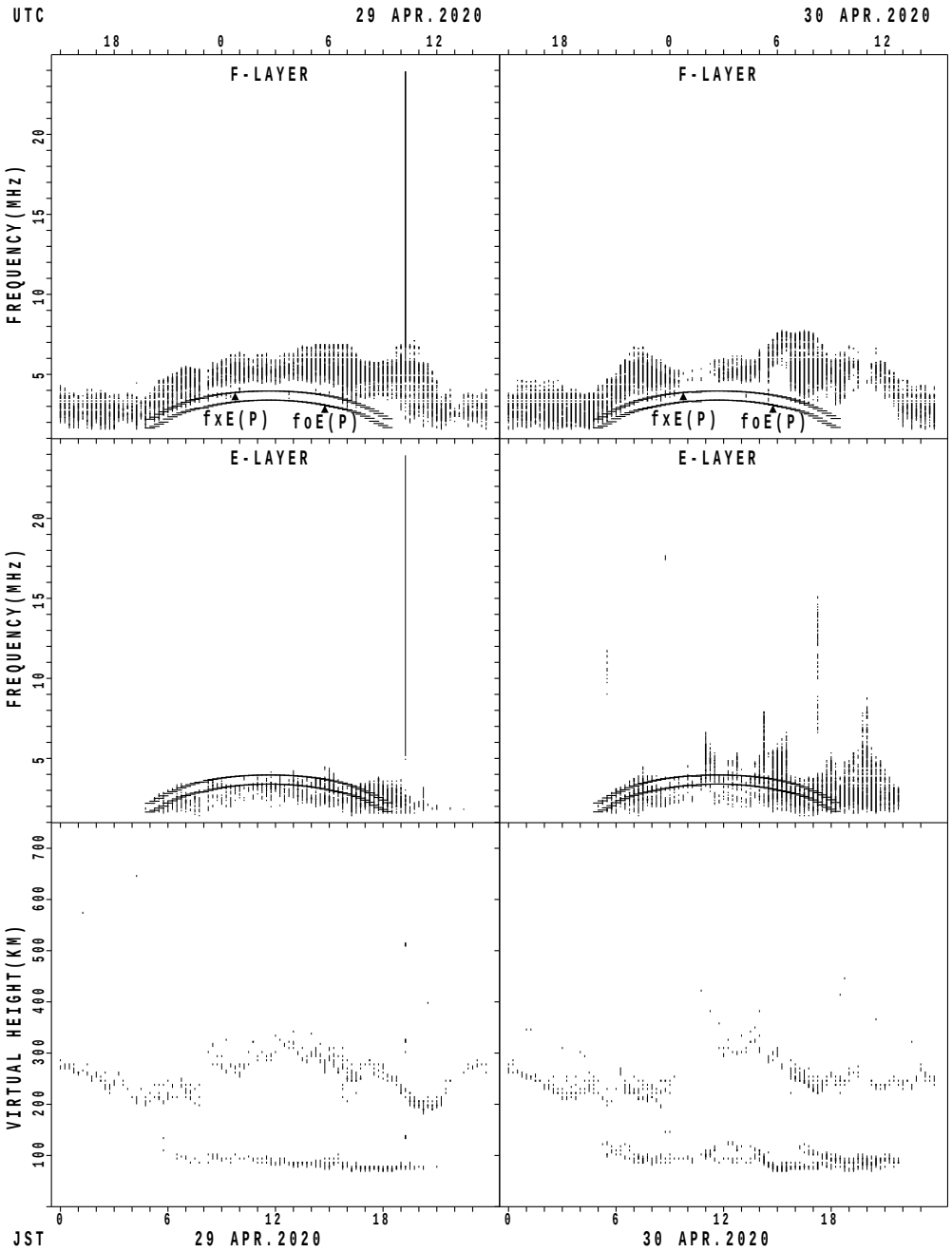
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



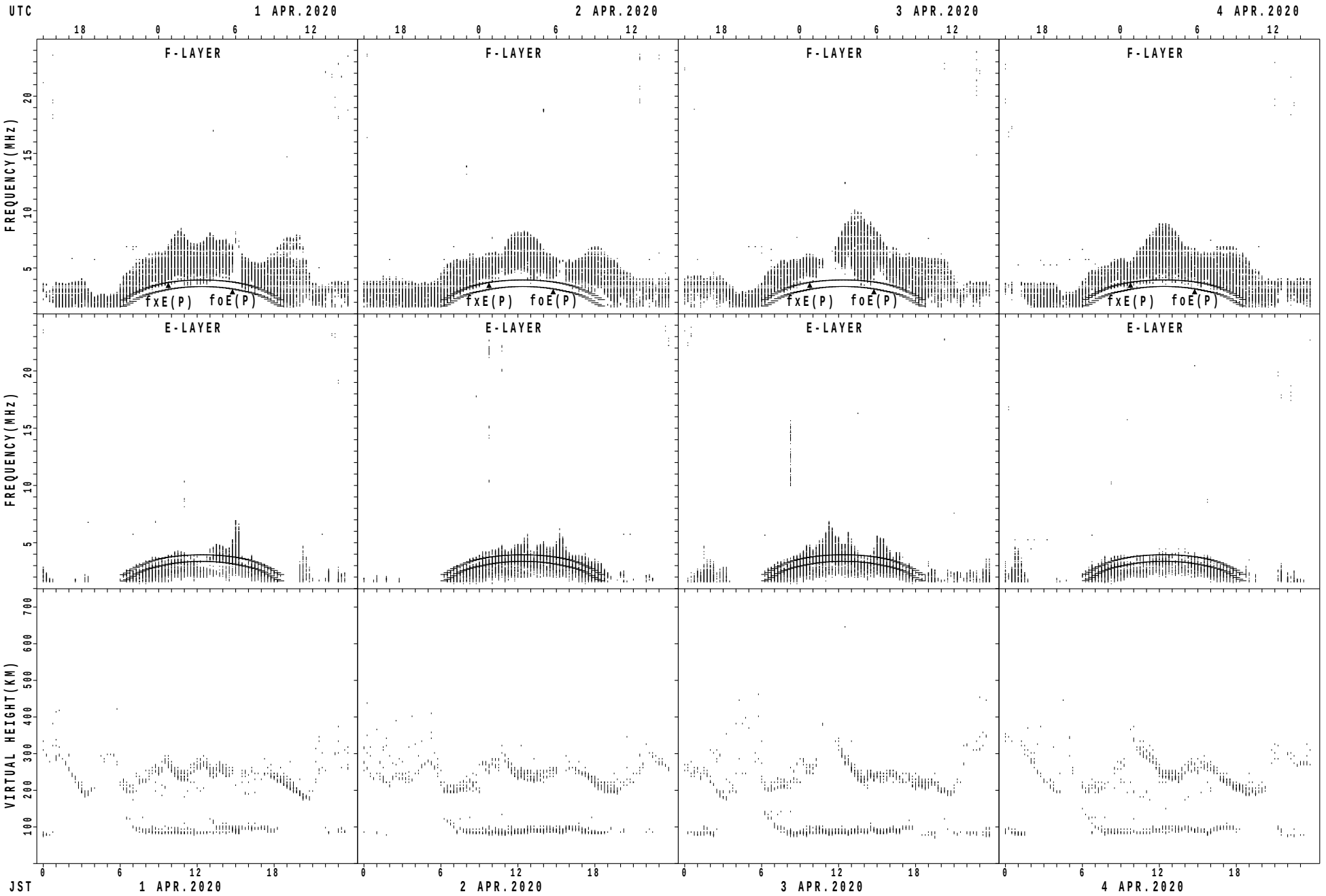
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



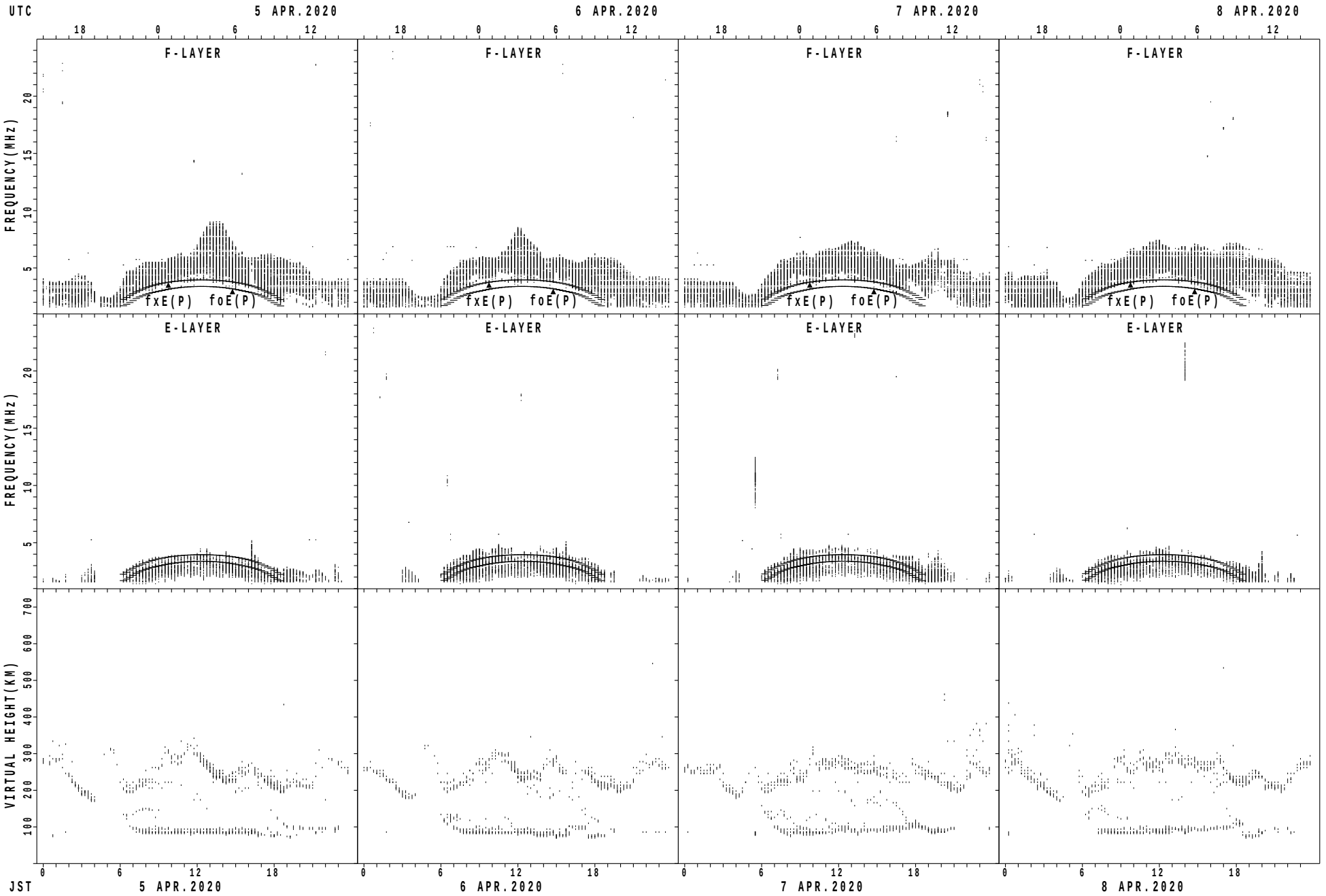
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



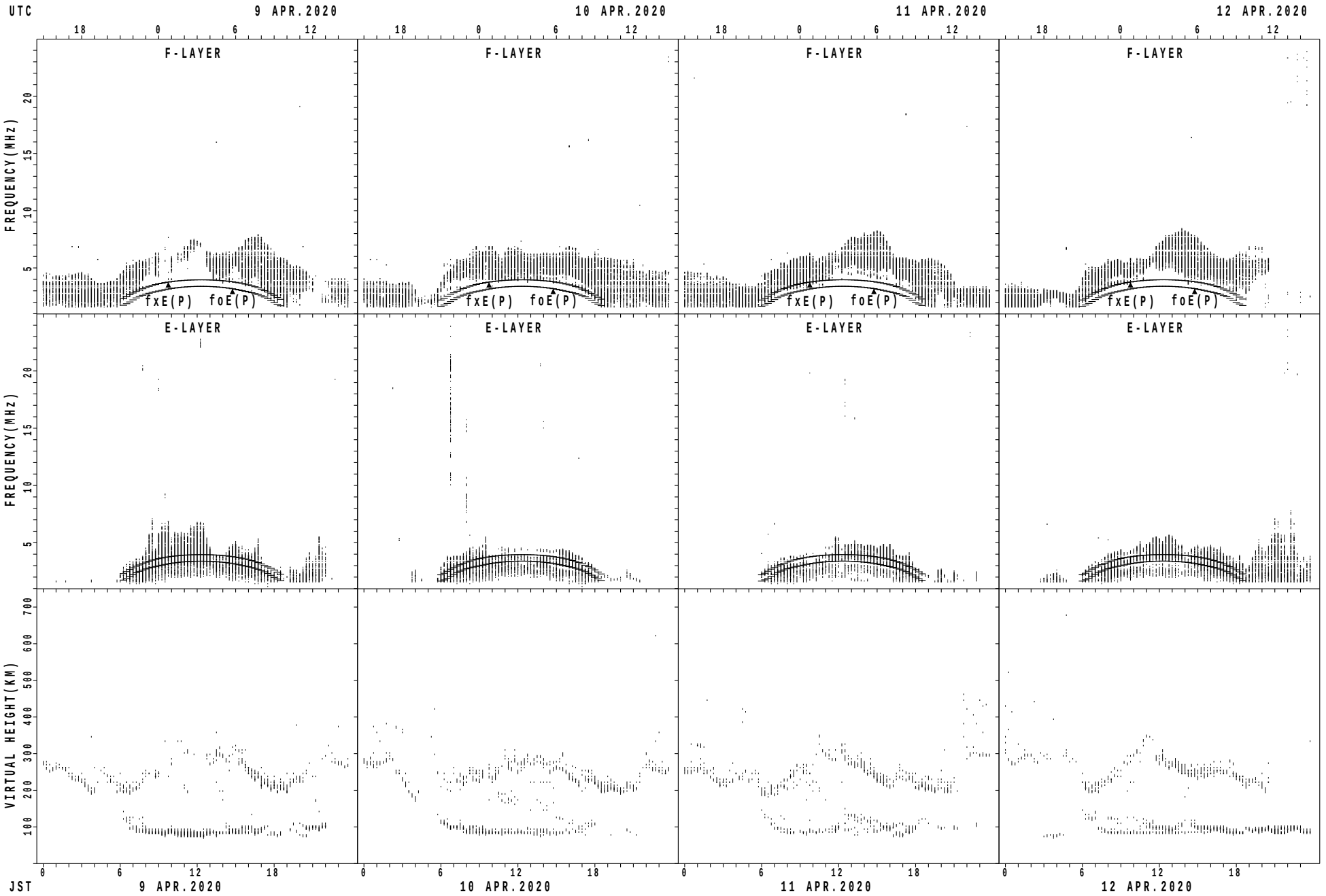
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



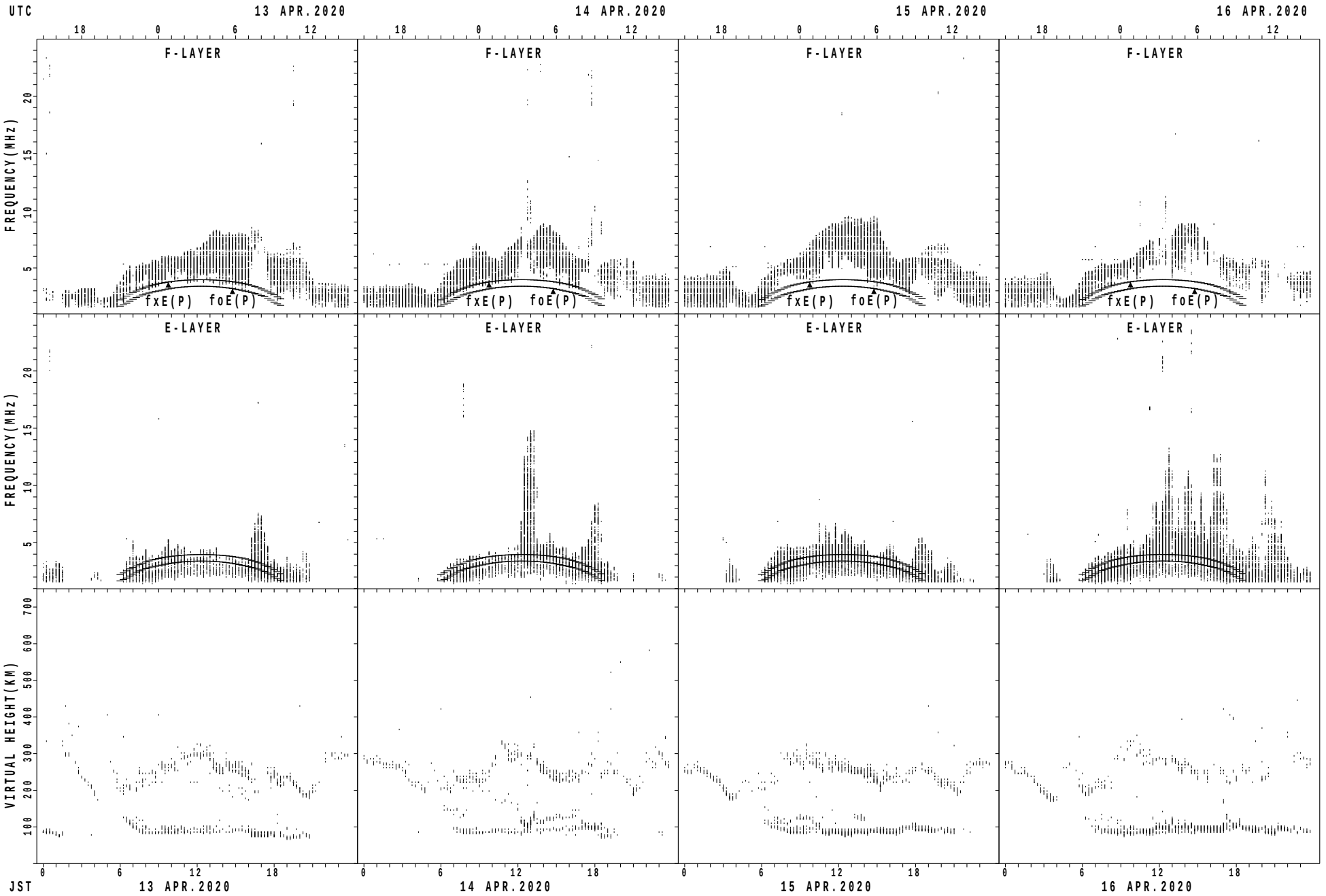
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



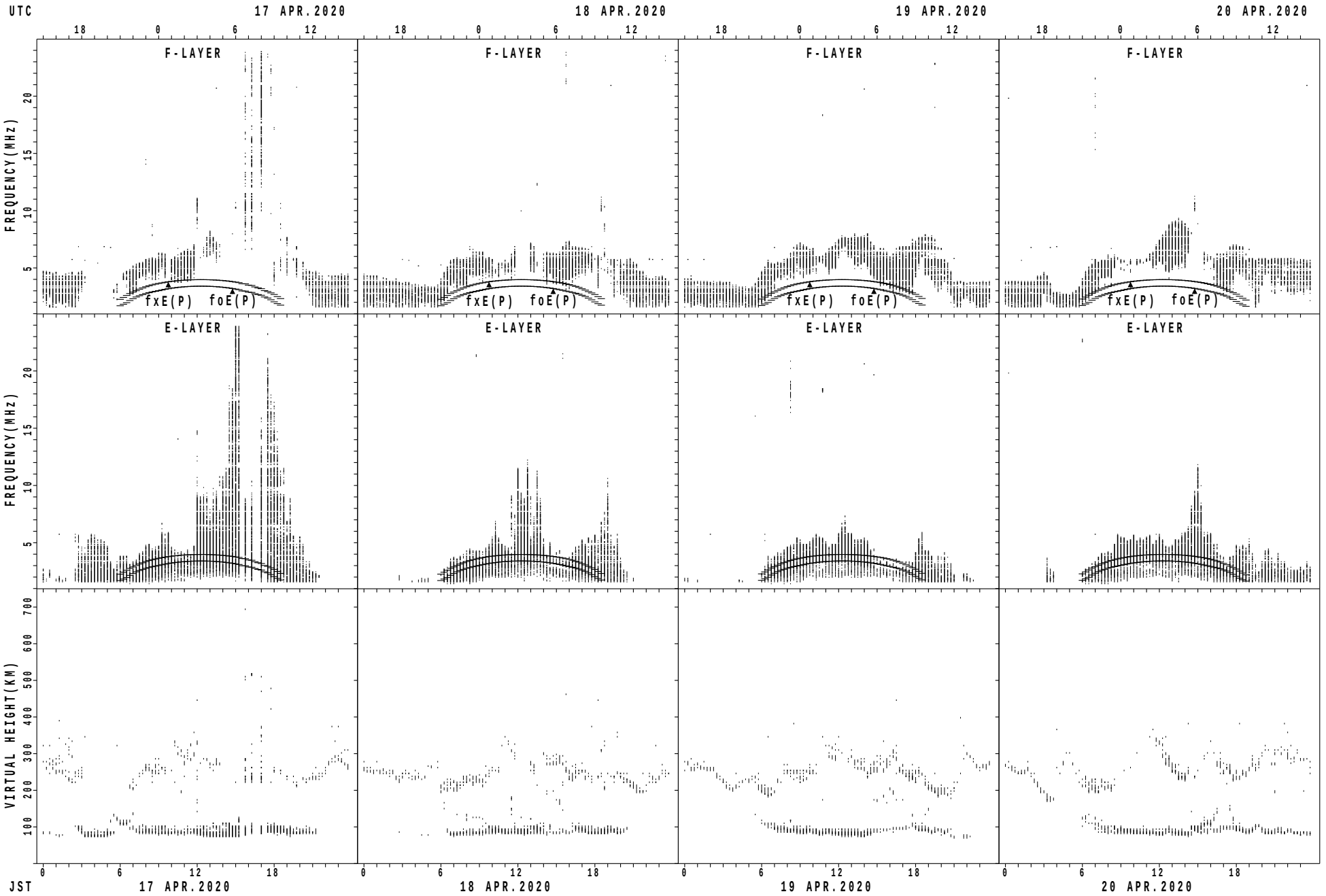
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



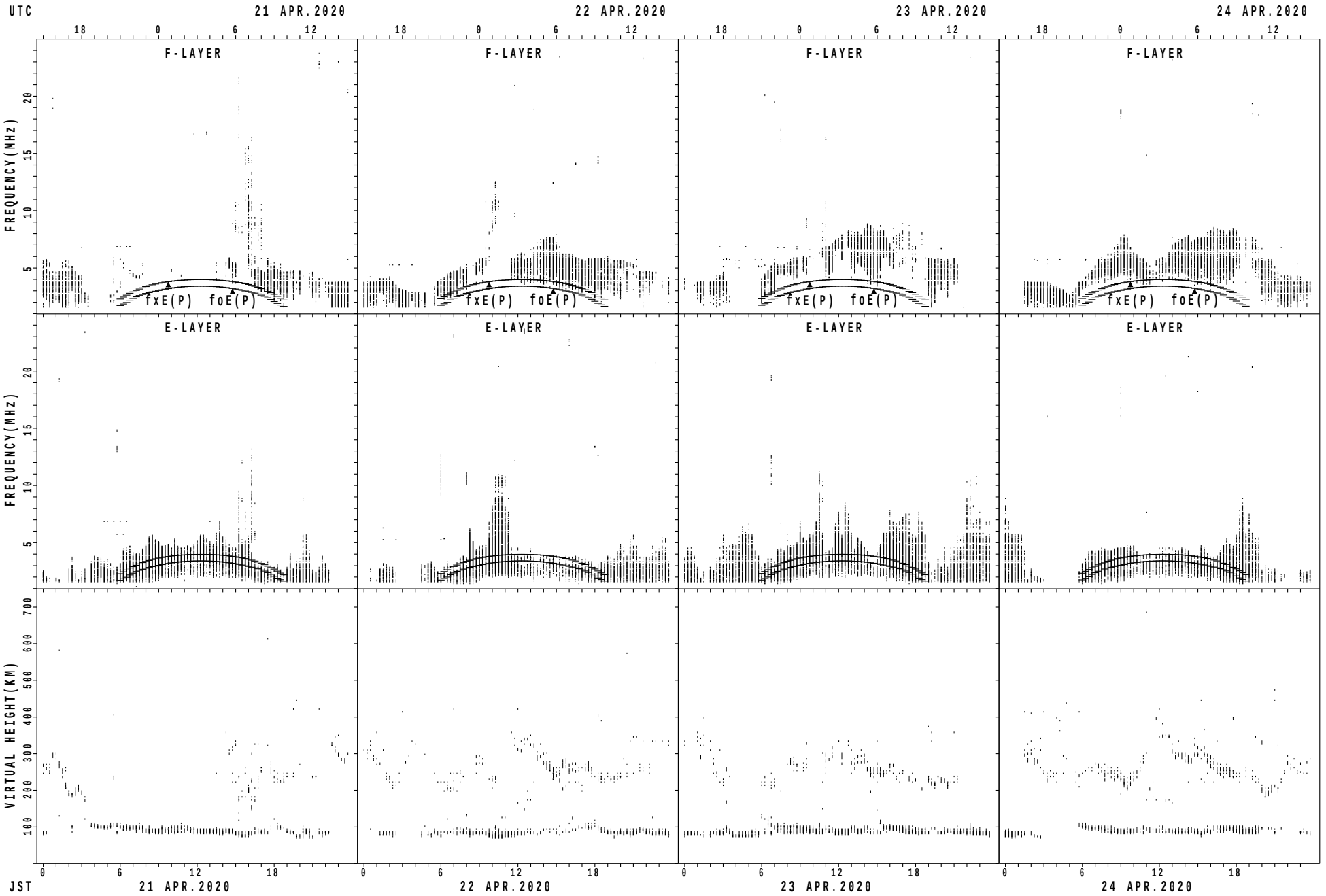
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



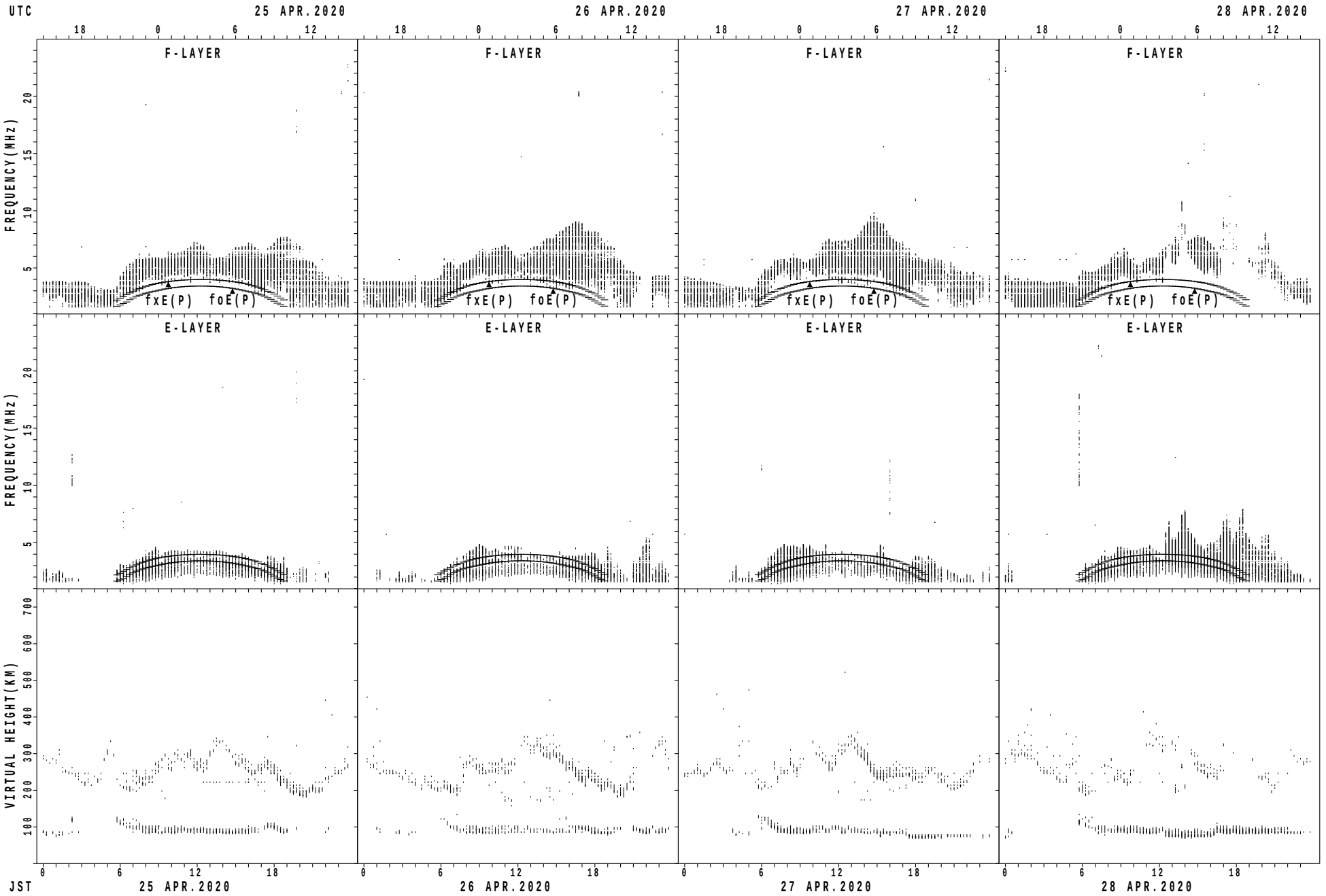
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



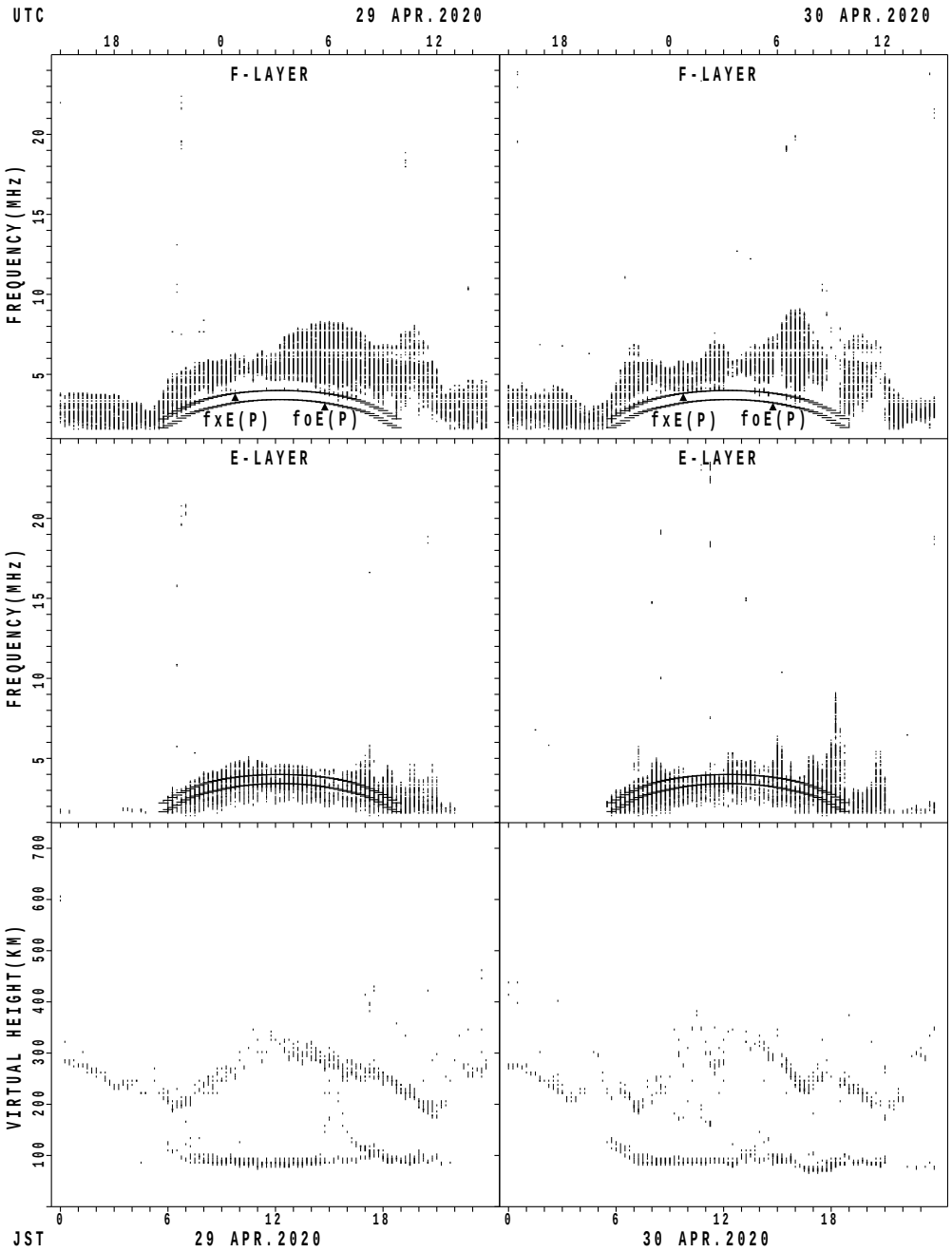
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



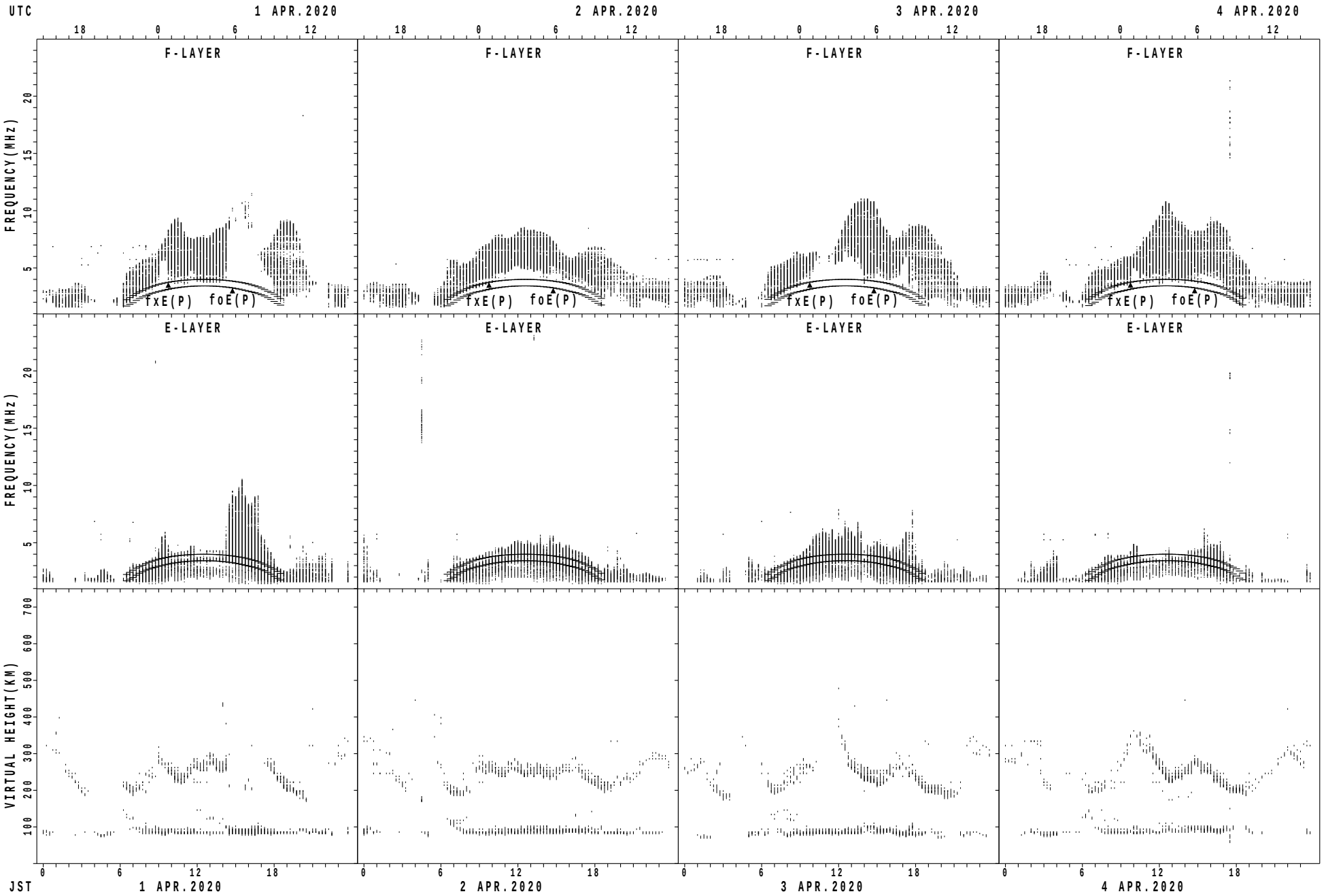
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



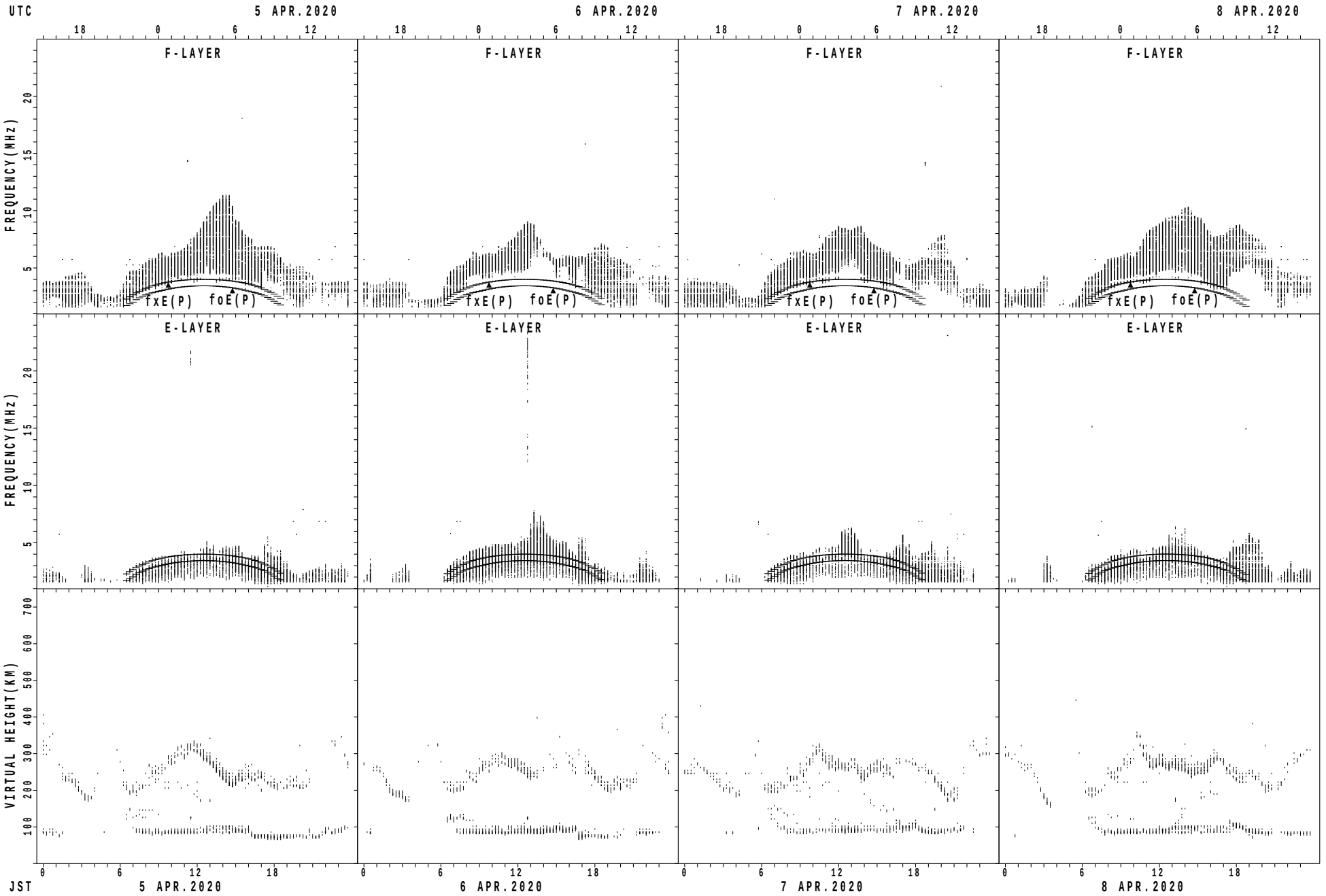
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



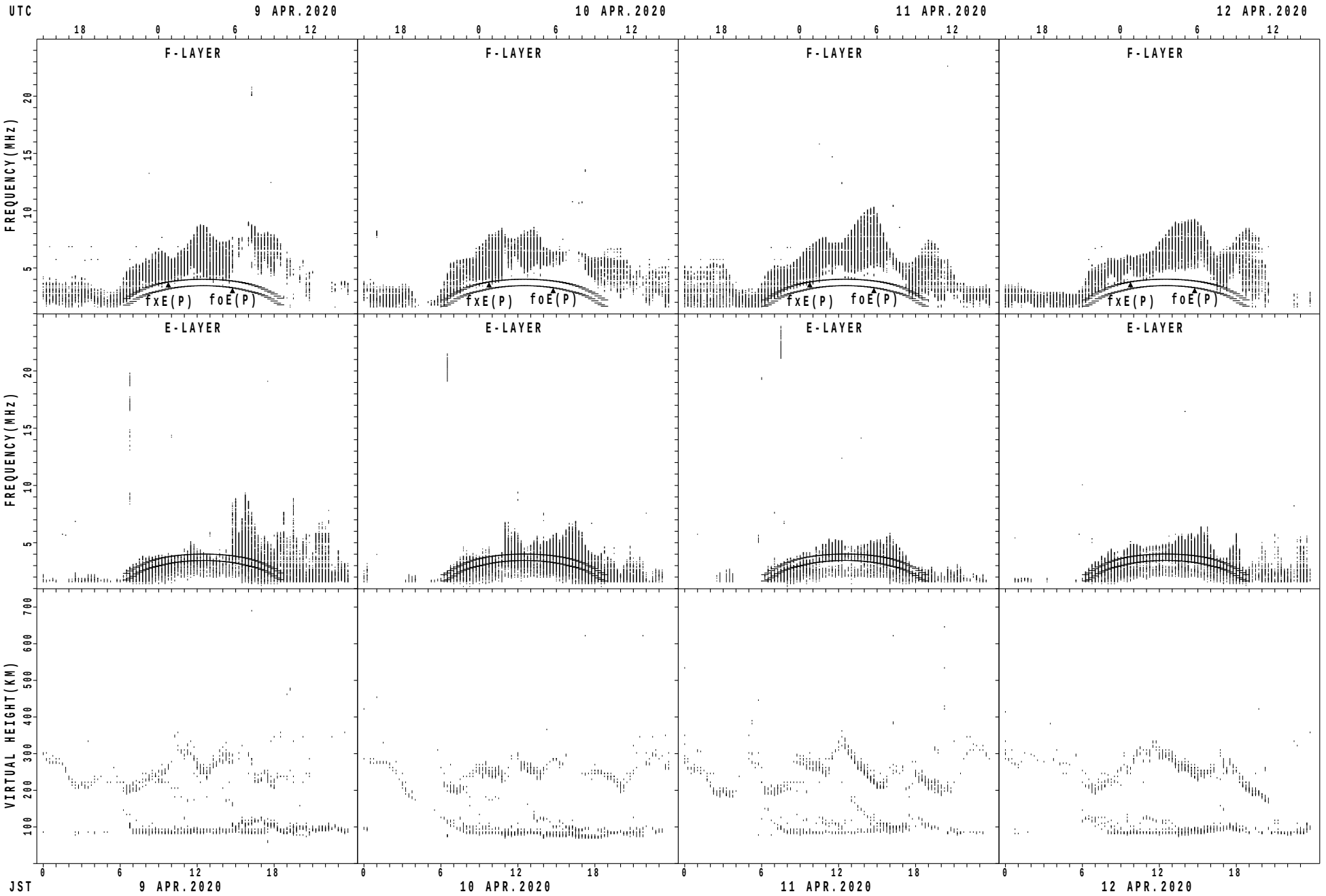
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



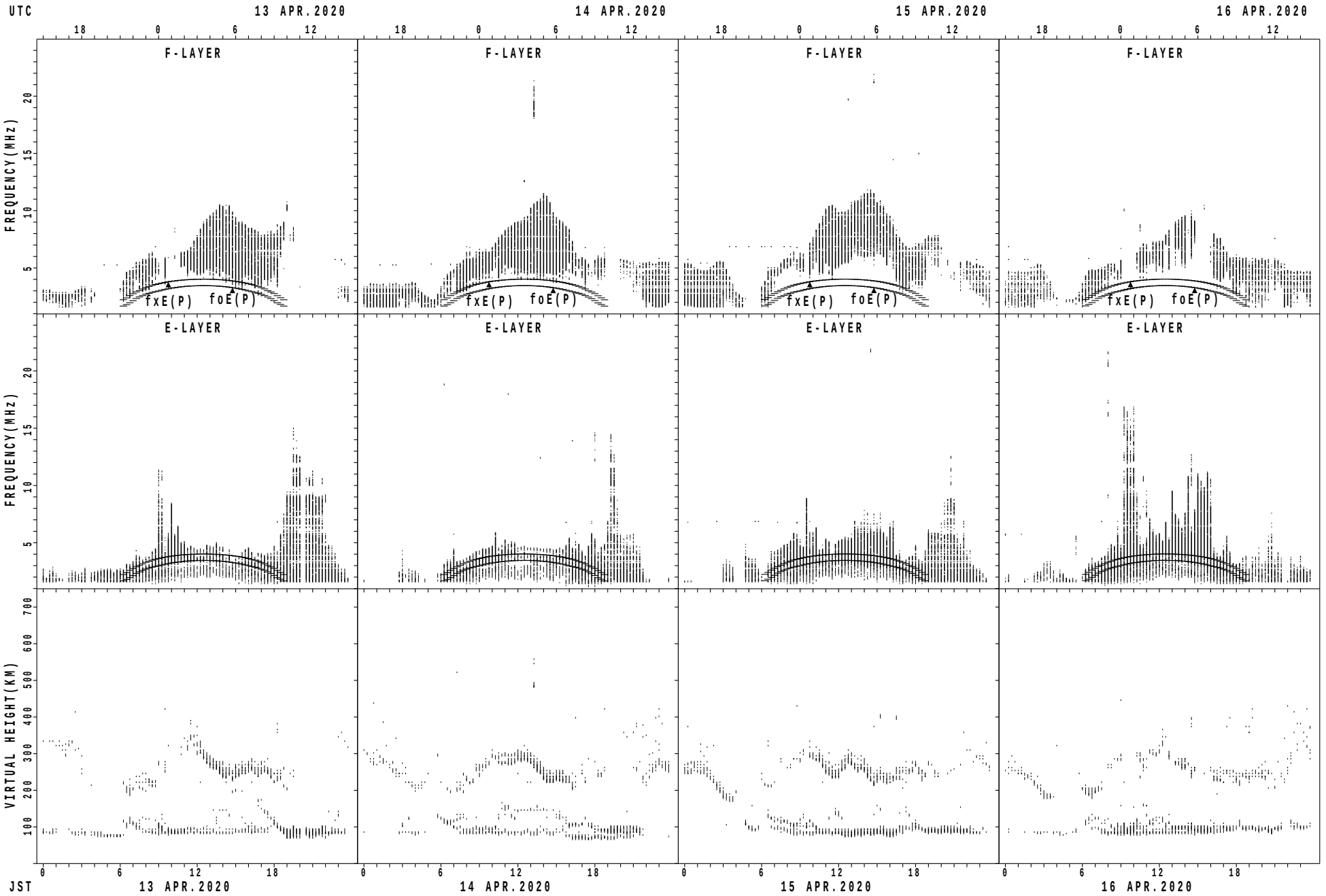
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



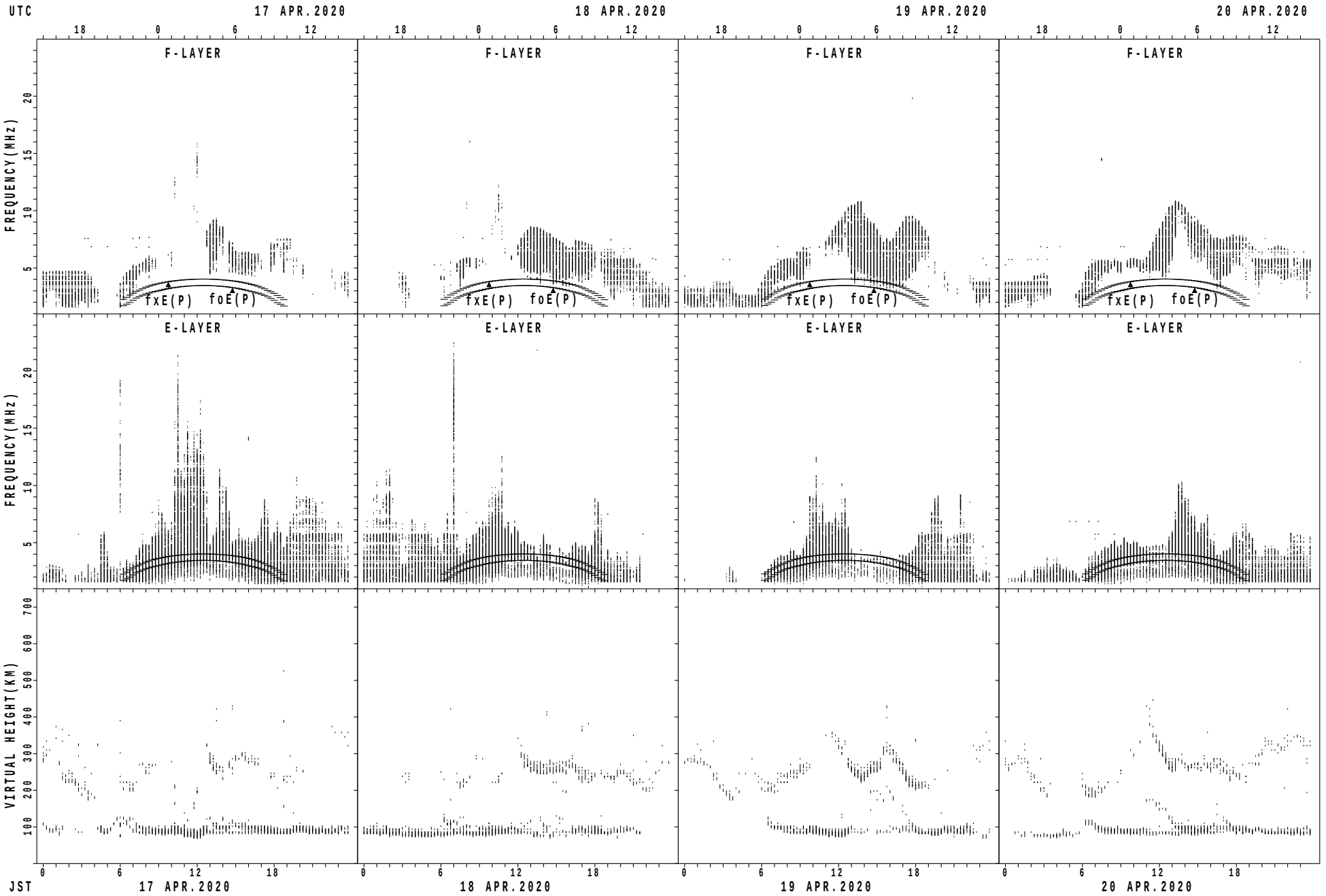
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



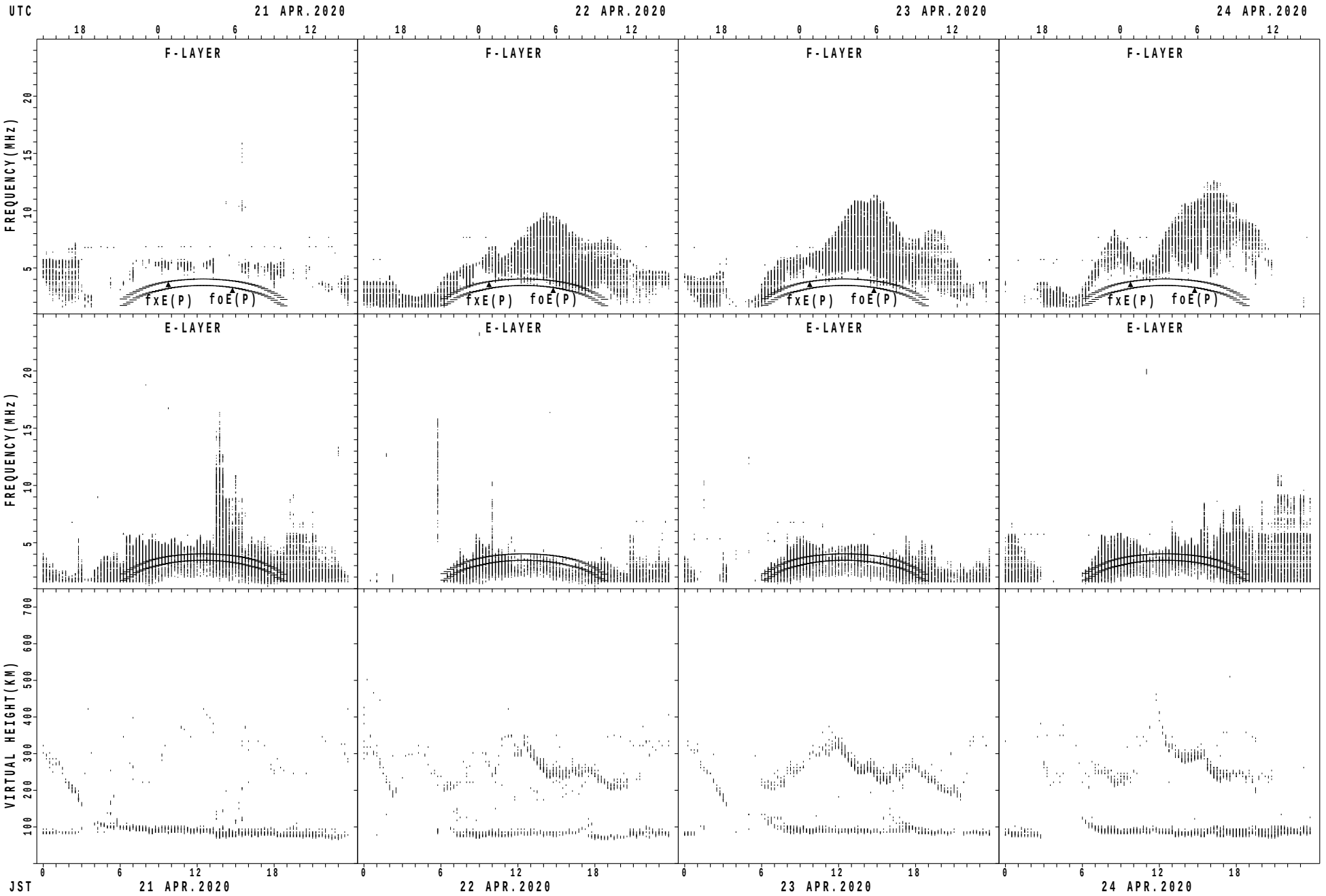
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



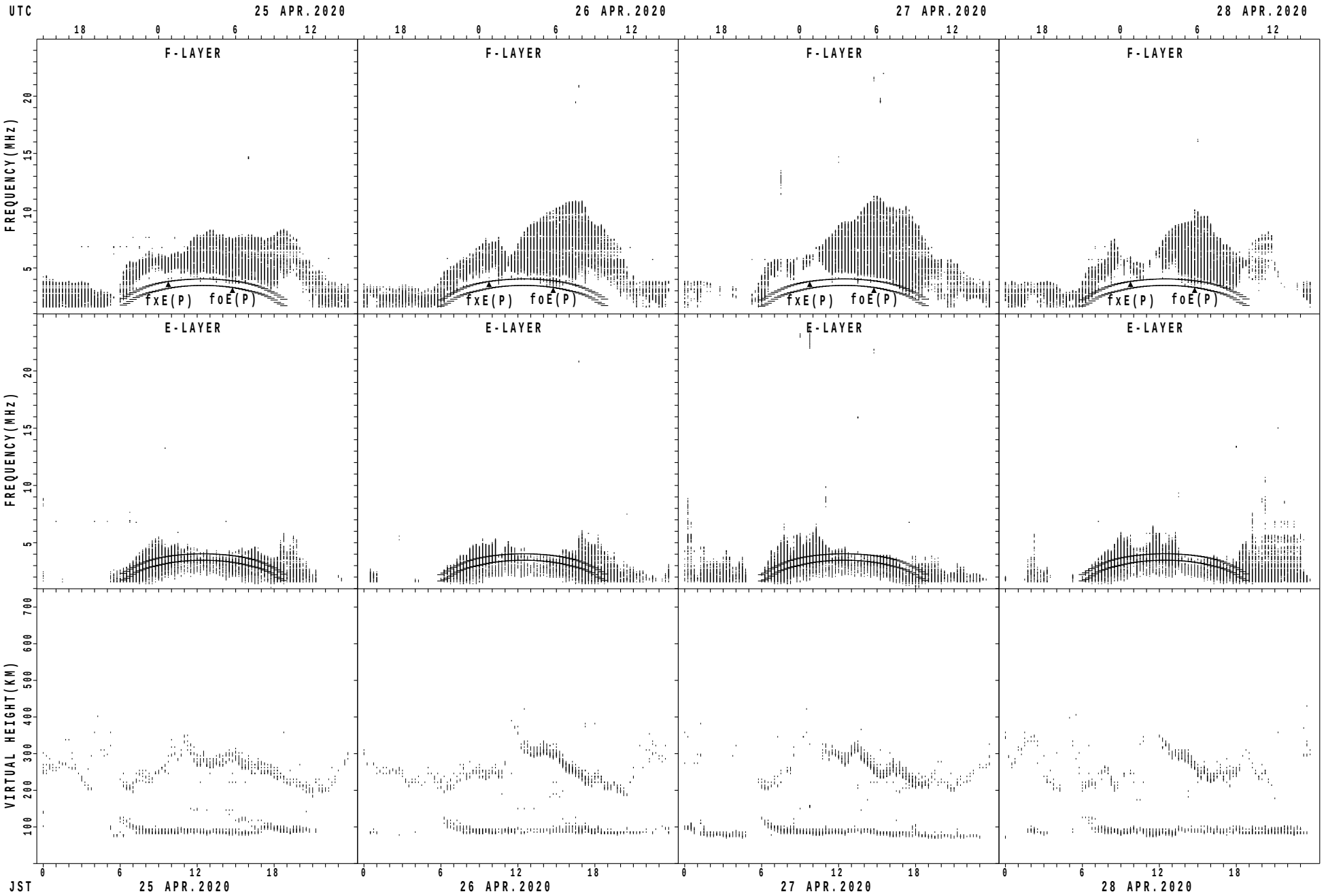
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



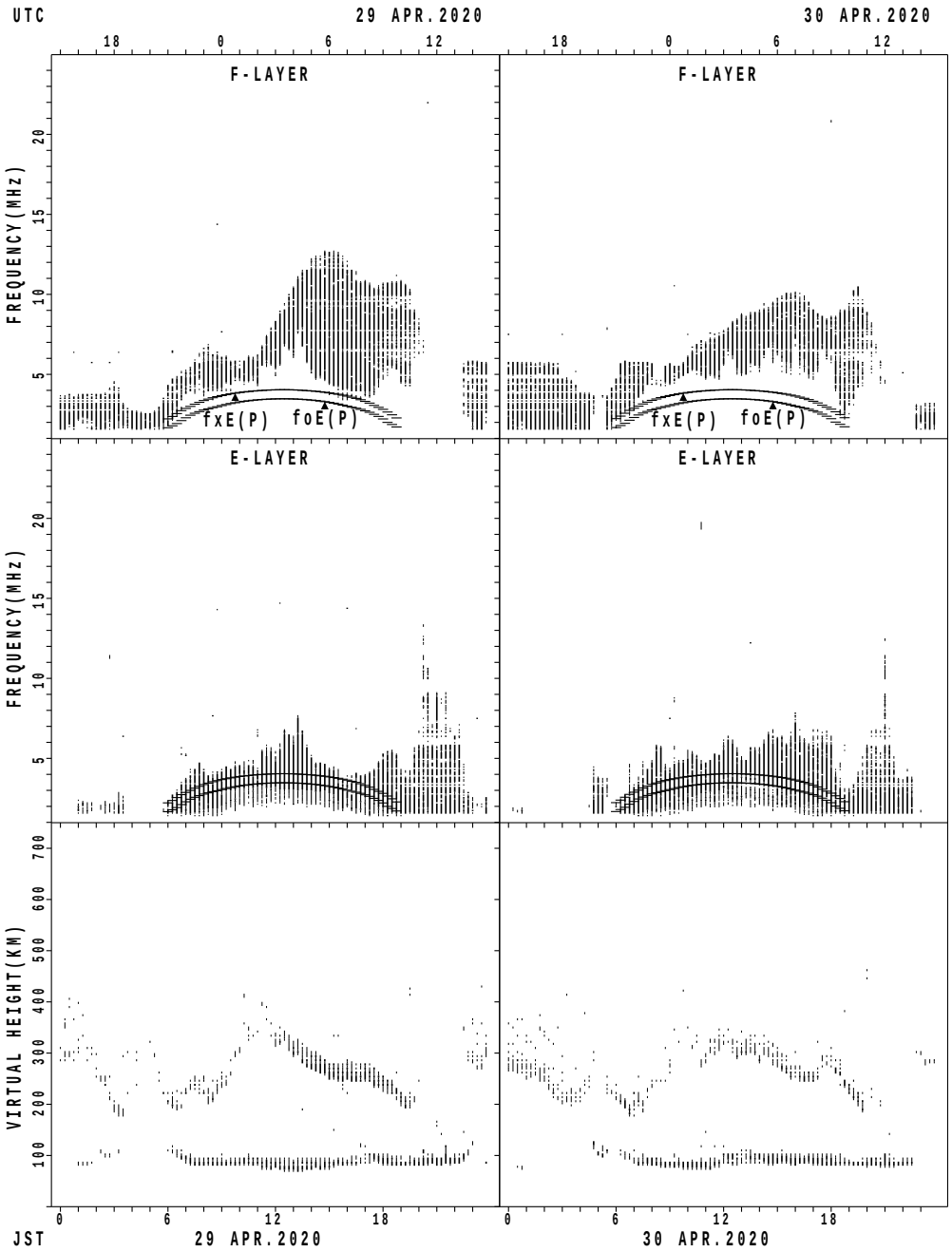
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

APR.2020 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1									6							
MED								250									258							
U Q								125									264							
L Q								125									254							

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	11	12	12	13	14	20	29	30	30	30	30	30	30	30	30	30	30	30	22	17	14	15	13	8
MED	98	98	98	98	97	98	98	100	98	98	98	98	98	98	98	98	98	98	97	96	97	96	98	98
U Q	98	98	98	98	98	98	100	100	98	100	100	100	100	98	98	98	98	100	98	98	98	98	98	98
L Q	94	96	96	97	96	97	98	98	98	98	98	96	98	98	98	96	98	98	96	96	96	96	97	96

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								2									13	3	2	1				
MED								243									254	232	258	226				
U Q								256									260	242	280	113				
L Q								230									229	216	236	113				

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	11	8	5	7	9	7	29	30	30	30	27	23	27	25	28	28	29	29	25	25	23	19	15	11
MED	98	98	98	98	98	98	98	99	98	96	98	96	98	96	98	98	96	98	98	98	98	98	98	98
U Q	98	98	98	98	98	100	135	100	98	98	98	98	98	98	99	98	98	98	99	98	98	98	98	98
L Q	96	96	96	96	97	98	98	98	96	96	96	96	94	96	96	96	96	96	96	96	96	98	96	94

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									2									6	8	5	1			
MED									246									244	247	242	218			
U Q									270									266	254	262	109			
L Q									222									220	230	212	109			

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	16	15	13	13	17	7	22	30	30	30	30	30	30	30	30	30	30	30	30	30	29	26	23	19
MED	96	96	96	98	98	98	98	98	98	98	98	98	98	96	98	98	98	98	98	97	96	98	98	96
U Q	98	98	98	98	98	98	147	100	98	98	98	98	98	98	98	98	100	100	98	98	98	98	98	98
L Q	96	96	95	96	96	94	98	98	98	96	94	96	96	94	92	94	96	96	96	94	94	96	96	96

MONTHLY MEDIANS OF h'F AND h'Es

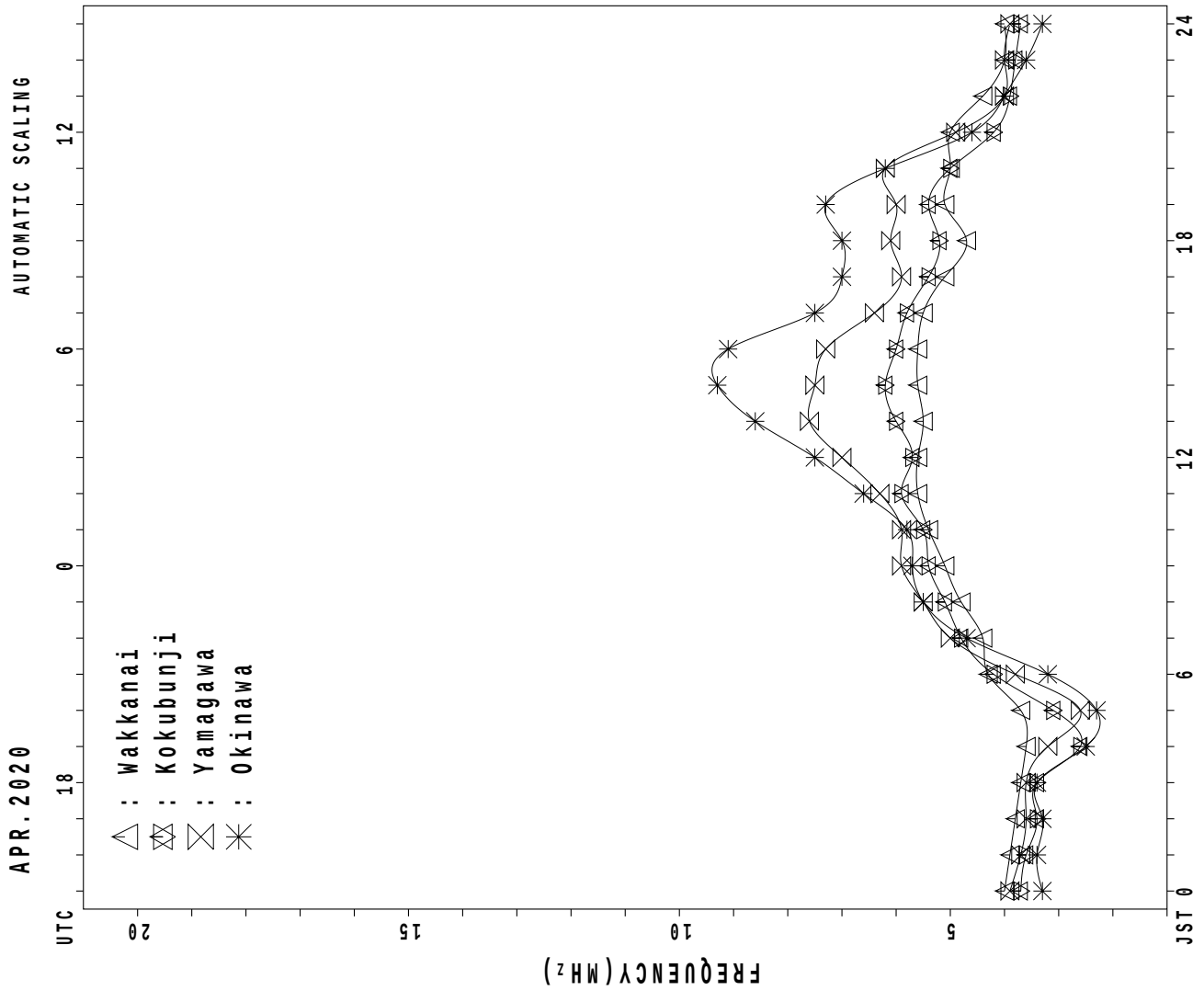
APR.2020 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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									3									15	16	15	3			
MED									240									250	236	224	222			
U Q									240									258	253	242	288			
L Q									224									240	226	208	220			

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	20	16	17	17	18	18	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	26
MED	96	96	98	98	98	96	98	98	98	97	96	96	96	96	96	96	98	96	96	96	98	96	96	98
U Q	98	98	98	98	98	98	119	98	100	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98
L Q	96	96	97	95	96	90	98	98	96	96	96	94	94	94	94	96	96	94	94	94	96	93	96	96


MONTHLY MEDIANS PLOT OF foF2
APR.2020
AUTOMATIC SCALING
: Wakkanai
: Kokubunji
: Yamagawa
: Okinawa
FREQUENCY(MHz)
UTC
JST
0
6
12
18
24
5
10
15
20

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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	55	55	55	56	X 55	51															X 51	X 51	X 49	X 47
2	X 46	X 47	X 45	X 43	X 42																X 59	X 49	X 49	X 49
3	X 51	X 48	X 45	X 47	X 36	44															X 57	X 57	X 55	51
4	X 51	56	56	56	59	55															X 65	X 59	X 53	X 53
5	X 54	X 54	57	57	57																X 59	X 56	57	57
6	X 51	X 55	56	54	54	57															X 52	X 52	55	X 51
7	55	55	54	55		X 45															X 55	X 54	X 54	X 49
8	X 54	58	X 55	X 54	57																X 61	X 61	X 55	X 54
9	X 49	X 51	X 54	X 47																	X 52	X 51	X 49	X 48
10	X 47	X 45	X 43	X 43																	X 54	X 53	X 51	X 49
11	X 46	X 46	X 45	X 44																	X 52	X 48	X 48	X 45
12	X 46	X 45	X 39	X 38																	X 55	X 52	X 44	X 41
13	X 45	X 44	X 44	X 45																	X 55	X 55	X 51	X 46
14	X 44	X 45	X 42	X 41																	X 60	X 60	X 58	X 54
15	X 50	X 48	48	X 48																	X 48	X 48	X 48	X 46
16	X 46	X 45	X 45	X 45																	X 53	X 49	X 49	X 45
17	X 45	X 45	X 46	X 44																	X 54	X 54	X 50	X 46
18	X 46	X 46	X 44	X 41																	X 59	X 57	X 54	X 45
19	X 43	X 43	X 41	X 39															X 51		X 60	X 59	X 52	57
20	57	55	X 46	X 45																	X 58	X 57	X 51	X 51
21	X 44	X 45	X 38	X 29																	X 45	X 44	X 42	X 39
22	X 39	X 39	X 35	38	38																X 51	X 50	X 50	X 43
23	X 45	X 46	X 47	X 44																	X 54	X 52	X 52	X 49
24	X 48	X 46	X 45	X 43																	X 61	X 61	X 53	X 47
25	X 46	X 48	X 48	X 47																	X 62	X 60	X 55	X 54
26	55	54	58	56	57																X 57	X 54	X 53	X 51
27	X 48	X 46	X 41	X 41																	X 57	X 54	57	57
28	57	56	56	56	56																X 65	X 64	X 63	51
29	X 54	58	58	58	55	55															X 65	X 59	60	60
30	55	53	52	52	52																X 64	X 61	X 55	X 49
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	30	30	30	30	12	6													1		30	30	30	30
MED	X 48	X 48	X 46	X 45	55	53													X 51		X 57	X 54	X 52	X 49
U Q	54	55	55	54	57	55															X 60	X 59	X 55	53
L Q	X 46	X 45	X 44	X 43	47	45															X 53	X 51	X 49	X 46

APR.2020 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

APR. 2020 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	F 41	F 38	F 44	F 42	48	F	42	43	43	52	52	58	58	57	54	55	50	45	43	44	44	44	42	40
2	39	40	38	36	35	38	40	44	50	56	53	59	57	60	52	49	52	49	48	52	52	42	42	42
3	44	41	38	40	29	F 32	39	44	46	56	48	59	58	54	55	56	53	46	46	50	50	50	48	F 40
4	44	F 41	F 44	F	F 41	F 36	38	40	47	48	57	60	54	58	54	54	55	50	52	58	58	52	46	46
5	47	47	F 43	F 44	F 44	42	42	46	47	48	54	54	57	57	58	53	54	50	46	52	52	49	F 47	F 43
6	44	48	42	F 41	F 41	F 39	40	45	45	56	56	57	53	54	57	56	51	51	43	44	45	45	F 44	44
7	43	43	F 43	39	38	38	C	42	53	50	54	52	54	52	49	51	53	49	40	47	48	47	47	42
8	47	F 46	48	47	44	44	43	44	48	55	56	52	56	52	54	54	56	50	46	55	54	54	48	47
9	42	44	47	40	37	35	37	42	51	46	50	53	52	52	58	57	55	49	46	46	45	44	42	41
10	40	38	36	36	32	39	45	45	49	60	56	51	49	53	53	54	57	51	52	48	47	46	44	42
11	39	39	38	37	35	37	42	43	47	46	50	52	52	52	58	57	58	53	48	45	45	41	41	38
12	39	38	32	31	27	32	R 40	41	44	47	48	48	54	56	56	56	55	49	41	46	48	45	37	34
13	38	37	37	38	36	35	36	38	41	46	46	50	53	51	50	55	53	50	44	48	48	48	44	39
14	37	38	35	34	32	34	41	44	46	51	58	54	50	47	48	51	52	53	46	50	53	53	51	47
15	V 43	V 41	F 37	42	44	44	47	47	51	49	56	56	53	58	63	54	53	56	48	47	41	41	41	39
16	39	38	38	38	38	39	41	46	47	51	58	58	58	56	58	59	59	55	53	53	46	42	42	38
17	38	38	39	37	34	37	41	48	53	60	64	54	56	53	56	57	57	56	48	52	47	47	43	39
18	39	39	37	34	30	36	44	46	50	50	61	63	55	52	55	58	58	51	J R 45	51	52	50	47	38
19	36	36	34	32	31	36	45	50	55	50	56	61	59	52	56	54	54	48	44	53	53	52	45	F 47
20	F 41	F 40	39	38	37	39	42	42	48	53	54	52	52	55	52	54	60	47	39	47	51	50	44	44
21	37	38	31	22	22	A	30	33	A	R	U R 42	A	A	A	42	41	42	40	39	38	38	37	35	32
22	32	32	28	F	F 25	34	37	44	48	44	46	50	A	56	52	55	51	44	43	42	44	43	43	36
23	38	39	40	38	37	38	42	48	48	50	53	52	54	54	59	57	54	51	48	48	47	45	45	42
24	41	39	38	36	36	42	42	49	50	48	48	56	56	54	58	54	48	42	44	55	54	54	46	40
25	39	41	41	40	41	44	41	43	46	46	49	50	48	55	54	51	51	46	44	55	55	53	48	47
26	F 41	F 38	F 39	F 38	F 40	39	46	44	46	46	47	54	58	59	56	55	52	52	49	52	50	47	46	44
27	41	39	34	34	30	33	R 38	42	46	46	55	48	A	51	55	55	56	48	44	47	50	47	F 47	F
28	F	F 38	F 34	F	F	38	40	46	48	52	57	57	51	53	54	56	51	50	48	55	58	57	56	F 36
29	47	F 46	F 36	F	F 33	F 39	43	42	49	50	52	58	56	57	57	53	50	48	50	59	58	52	F 46	F
30	F 42	38	F 36	F 38	F 38	45	44	49	53	50	53	50	48	50	53	56	56	54	52	56	57	54	48	42
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	29	30	30	26	29	28	29	30	29	29	30	29	27	29	30	30	30	30	30	30	30	30	30	28
MED	41	39	38	38	36	38	41	44	48	50	54	54	54	54	55	55	54	50	46	50	50	47	45	42
U Q	43	41	41	40	40	39	43	46	50	52	56	58	57	56	57	56	56	51	48	53	53	52	47	44
L Q	38	38	36	36	32	36	40	42	46	46	49	52	52	52	53	54	51	48	44	47	46	44	42	38

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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	392	392	412	L	420	L	L	L	L	L						
2								L	L	L	L	420	L	428	H 404	368	L	L						
3									388	L	L	L	L	L	L	L	368	L						
4								L	H 396	L	404	412	L	L	L	384	L	L						
5								L	L	L	L	L	L	L	416	392	356	L						
6								L	L	L	L	L	L	L	L	400	L							
7							C		L	L	L	L	L	L	L	388	L	L						
8							L		400	L	L	L	L	L	L	408	L	L						
9								L	384	L	L	L	424	L	L	400	380	L						
10									L	412	420	L	L	L	420	388	L	L						
11							L	L	400	L	L	L	432	L	L	408	372	L						
12						L	L	L	L	L	L	L	L	L	L	L	372	L	A					
13							L		376	L	L	L	L	L	L	L	364	L						
14							L	L	L	L	L	L	L	L	L	L	L	L						
15								L	404	L	L	L	L	L	L	L	L	L						
16									L	L	L	L	L	L	L	L	L	L						
17							L	L	L	L	L	L	432	L	L	L	364	L						
18							L	368	L	L	L	L	436	L	L	L	L							
19										A	L	L	L	L	L	L	L							
20							L	L	L	L	L	L	L	L	416	L	L							
21						A			A	368	400	A	A	A	L	L	L	L	L					
22									L	L	412	L	A	L	L	A	A							
23								L	A	424	L	A	L	L	L	L	L	L						
24						L	L	L	L	L	L	L	L	L	L	L	L	L						
25							L	L	L	L	L	L	L	L	L	L	376	L						
26							L		L	416	416	L	L	L	L	L	A	L						
27							332	A	A	A	L	L	428	L	L	L	L	L						
28						L	L	L	396	412	L	L	432	L	L	400	L							
29							L		L	L	L	L	424	L	L	L	L	L	L					
30							L	L	L	L	416	L	L	424	L	L	L	L						
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	9	6	7	2	8	2	4	10	8							
MED							332	368	396	412	412	416	430	426	416	396	370							
U Q									400	416	416		432		418	400	374							
L Q									386	392	404		424		410	388	364							

APR.2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

APR. 2020 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	188	232	268	288	292	292	304	300	276	252	224	200	B	B				
2						B	188	224	264	288	300	280	A	296	288	276	236	208	A	A				
3						B	184	232	276	296	296	284	284	284	292	284	248	192	A	B				
4						B	184	240	268	284	284	284	A	308	304	280	244	204	B	B				
5					B	A	236	232	276	292	292	308	320	312	296	292	252	204	B	A				
6					B	B	188	236	264	292	304	316	316	312	296	260	256	200	B	B				
7					B		204	248	268	280	312	332	320	312	304	280	252	208	B	B				
8					B	B	204	252	276	304	320	332	332	316	304	280	256	204	B	B				
9					B	224	208	232	284	304	308	320	304	272	300	280	232	208	B	B				
10					B	A	204	244	272	292	296	304	320	292	296	272	248	212	A	B				
11					B	B	196	252	272	300	316	312	312	320	292	280	256	212	232	B				
12					B	B	216	252	272	292	312	320	316	320	304	252	248	A	A	A				
13					B	B	208	248	284	284	312	312	284	320	A	A	A	212	B	B				
14					B	224	224	240	280	256	312	328	320	312	296	276	244	208	B	B				
15					188	A	216	244	272	296	316	328	312	308	300	280	252	224	B	B				
16					B	228	224	252	284	300	312	288	288	316	304	288	252	224	240	A				
17					B	172	216	252	284	288	312	320	324	312	300	272	248	220	A	B				
18					B	B	224	268	292	304	324	328	328	304	316	284	252	216	A	A				
19					B	188	204	260	284	300	312	328	328	316	288	288	252	216		A				
20					B	B	248	272	284	296	296	308	324	312	A	288	240	220	A	B				
21					B	A	204	240	260	292	308	292	320	312	288	280	256	204	180	A				
22					B	188	200	240	284	288	316	316	316	300	300	300	252	216	196	236				
23					B	192	216	256	284	300	312	308	308	A	288	288	256	224	160	A				
24					B	200	228	252	276	304	304	276	316	316	292	280	244	216	200	A				
25					B	204	240	260	280	300	300	300	A	320	316	284	248	220	196	244				
26					B	216	216	264	292	308	328	328	328	316	300	292	264	224	A	A				
27					B	176	232	268	288	312	312	312	312	312	300	276	264	220	176	A				
28					B	176	228	264	292	300	312	296	284	A	296	288	256	216	164	B				
29					A	A	232	264	276	A	A	A	312	312	312	276	264	244	208	B				
30					B	188	224	268	292	304	304	304	320	320	312	288	260	228	168	B				
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	13	30	30	30	29	29	29	27	28	28	29	29	29	11	2				
MED					188	192	216	252	278	296	312	312	316	312	300	280	252	216	196	240				
U Q						220	224	260	284	302	312	324	320	316	304	288	256	220	208					
L Q						182	204	240	272	288	300	294	308	306	292	276	246	206	168					

APR. 2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

APR. 2020 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	E B 16	20	J A 50	E B 17	26	J A 27	21	27	J A 51	37	35	35	33	33	30	28	25	J A 27	J A 30	28	E B 16	E B 16	E B 16	E B 16
2	E B 16	E B 16	27	J A 31	22	28	22	28	30	35	32	32	37	38	34	40	26	J A 26	J A 27	J A 26	J A 27	20	E B 16	E B 16
3	E B 16	E B 16	E B 17	E B 16	30	J A 23	27	29	31	36	34	J A 37	J A 41	J A 43	34	29	G 25	G	J A 26	E B 16	E B 16	E B 16	E B 16	E B 16
4	J A 23	J A 25	25	22	23	E B 16	25	28	30	J A 52	J A 33	J A 33	J A 33	32	G 18	G	G	J A 24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
5	E B 16	E B 16	E B 16	E B 16	J A 26	E B 16	G 26	29	31	G	37	G 34	G 33	G	J A 63	30	30	G	E B 16	22	E B 16	J A 20	E B 16	E B 16
6	E B 16	E B 16	J A 19	E B 16	20	20	37	28	31	34	J A 32	J A 33	J A 33	J A 31	31	J A 27	J A 27	23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	J A 85	E B 16	23	29	32	32	36	39	38	G	G 20	30	27	28	24	E B 16	E B 16	E B 16	E B 16	26
8	26	22	22	21	18	19	G	30	32	35	37	G	39	36	34	30	G	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
9	E B 19	24	19	20	E B 16	G 20	25	31	31	J A 35	37	J A 36	35	J A 32	40	G 28	27	21	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16
10	E B 16	18	E B 16	18	E B 16	J A 21	24	28	31	32	36	J A 29	39	36	33	31	28	25	26	22	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 30	29	31	33	36	36	36	J A 47	36	32	G	G 21	J A 34	22	23	20	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	22	30	35	37	37	36	35	J A 33	38	G 33	J A 28	J A 25	47	32	26	26	E B 16	E B 16
13	19	21	20	E B 16	E B 16	E B 16	J A 61	32	35	42	44	J A 37	34	J A 33	J A 31	J A 29	J A 26	22	E B 16	E B 16	E B 16	20	19	E B 16
14	23	23	18	18	E B 16	J A 21	24	32	J A 32	J A 32	38	38	G 34	G	38	35	J A 27	J A 28	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16
15	29	E B 16	E B 16	19	G 17	J A 21	21	28	31	33	40	36	35	32	32	J A 29	28	J A 28	22	E B 16	E B 16	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	20	E B 15	E B 16	26	28	32	35	37	34	34	36	47	37	29	G 22	24	28	E B 16	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 16	18	E B 16	18	25	28	30	32	34	38	J A 40	35	J A 33	G 26	29	26	34	E B 16	E B 16	E B 16	25	E B 16
18	E B 16	E B 16	E B 16	E B 16	27	E B 16	25	30	40	35	35	38	40	38	38	35	31	J A 35	J A 57	59	J A 86	59	J A 46	32
19	J A 20	E B 16	E B 16	E B 16	E B 16	J A 24	30	J A 41	J A 42	J A 48	J A 43	J A 43	39	36	34	31	28	28	36	J A 29	J A 29	24	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 39	30	34	37	J A 33	35	J A 34	J A 34	J A 33	32	27	26	J A 20	E B 16	E B 16	E B 16	21	E B 16
21	E B 16	22	20	20	E B 16	J A 29	29	28	34	37	37	J A 67	37	37	J A 30	31	34	27	23	J A 31	20	J A 52	20	J A 19
22	J A 30	J A 27	J A 24	J A 37	J A 27	21	J A 37	J A 52	J A 59	35	36	48	74	34	37	59	J A 65	28	27	J A 64	J A 75	J A 86	40	40
23	20	27	J A 20	E B 16	20	J A 50	28	36	J A 123	36	40	J A 59	36	J A 33	45	J A 43	J A 33	24	25	J A 27	28	24	J A 25	25
24	21	22	E B 16	E B 16	E B 16	G 20	30	34	35	34	34	J A 76	36	36	37	G 24	29	26	J A 21	21	22	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	G 20	30	32	34	35	35	J A 33	J A 33	38	J A 103	32	28	26	J A 32	J A 34	E B 16	E B 16	23	E B 16
26	20	E B 16	24	21	E B 16	J A 21	J A 76	29	J A 49	36	38	J A 53	J A 37	38	36	33	73	G	J A 27	J A 27	26	20	E B 16	E B 16
27	E B 16	E B 16	21	E B 16	E B 16	J A 20	28	40	58	J A 45	J A 45	38	J A 47	J A 95	42	29	J A 27	J A 33	J A 33	J A 27	J A 19	21	34	30
28	E B 16	J A 51	19	27	E B 16	19	28	33	36	36	36	J A 41	J A 37	J A 33	36	J A 31	31	J A 38	J A 24	E B 14	23	28	J A 28	E B 16
29	E B 16	E B 16	E B 16	20	J A 175	J A 25	25	J A 30	J A 203	38	J A 40	J A 33	36	G 31	32	31	33	J A 30	J A 32	E B 16	E B 16	E B 16	J A 18	19
30	E B 16	E B 16	E B 16	E B 16	E B 16	J A 51	28	32	34	34	36	36	39	40	34	34	38	34	25	E B 15	E B 16	E B 16	24	26
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	20	26	30	34	35	36	36	36	34	34	31	28	26	25	22	E B 16	E B 16	E B 16	E B 16
U Q	20	22	20	20	23	J A 23	J A 30	32	J A 40	37	38	J A 39	39	38	38	33	31	J A 28	J A 32	28	23	21	23	19
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	28	31	34	35	G	34	32	32	29	27	G 22	E B 20	E B 16	E B 16	E B 16	E B 16	E B 16

APR. 2020 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Wakkanai

APR. 2020 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 16	E B 16	E B 16	E B 17	E B 16	E B 16	20	25	29	35	32	32	G 30	32	29	27	23	G 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	20	E B 22	27	28	33	31	30	31	32	G 28	G 27	24	G 19	17	E B 17	E B 16	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 17	E B 16	20	E B 16	25	28	29	34	32	32	34	32	30	G 27	G 23	G	23	E B 16	E B 16	E B 16	E B 16	E B 16
4	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	26	28	29	30	30	32	G 30	G 18	G	G	G 19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
5	E B 16	E B 16	E B 16	E B 16	E B 17	E B 16	G 22	27	29	G	34	G 32	G 32	G	34	G 28	G 24	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	26	30	32	32	G 30	G 30	G 30	31	27	G 24	21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	27	30	30	32	34	38	G	G	G 27	G 23	G 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	29	30	34	32	G	G 31	32	32	G 28	G	G	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
9	E B 19	E B 17	E B 16	E B 16	E B 16	G 16	23	29	30	32	32	34	32	30	31	G 27	25	G 20	E B 18	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	22	26	30	31	32	G 29	G 30	30	32	30	26	24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	29	29	32	34	35	34	35	34	30	G	G 20	E B 17	E B 17	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	G 21	28	32	35	35	34	32	G 31	G 30	G 29	G 25	21	19	22	E B 16	E B 16	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	33	31	32	33	33	G 30	28	26	24	G 20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 21	29	28	31	G 31	33	G 31	G	30	G 27	25	22	E B 18	E B 16	E B 16	E B 16	E B 16	E B 16
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	G 21	26	30	31	G 31	34	33	G 30	G 29	G 27	27	G 21	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16	26	26	30	30	33	33	32	32	32	30	26	G 21	E B 17	E B 17	E B 16	E B 16	E B 16	E B 16
17	E B 16	E B 16	E B 15	E B 16	E B 16	G 16	24	27	29	30	33	36	34	33	32	G 24	27	24	16	E B 16	E B 16	E B 16	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	27	34	34	34	34	G 31	31	36	34	29	29	22	22	22	21	21	16
19	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	28	34	41	E A 44	39	38	35	33	32	30	27	26	E B 16	24	19	E B 16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G 24	28	32	34	32	32	G 29	G 29	29	29	26	25	18	E B 16	E B 16	E B 16	E B 17	E B 16
21	E B 16	E B 16	E B 16	E A 18	E B 16	A A 29	25	26	A A 34	31	34	A A 67	A A 37	A A 37	G 29	30	30	24	19	20	16	21	E B 16	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	28	A	30	30	33	36	A A 74	32	33	34	A A 65	26	G E B 19 16		16	23	18	17
23	E B 16	E B 16	E B 16	E B 16	E B 16	G 18	24	32	41	34	34	34	34	32	32	G 27	26	23	22	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	G 18	28	31	32	32	32	32	G 32	G 32	G 29	G 22	26	23	G E B 19 16		E B 16	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 16	E B 16	G 19	26	29	32	34	32	32	30	G 30	G 30	30	26	24	20	G 23	E B 16	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	G 18	25	27	32	32	35	36	34	34	34	32	E A 29	G	21	18	E B 17	E B 17	E B 16	E B 16
27	E B 16	E B 16	E B 17	E B 16	E B 16	19	24	A	A	A	32	33	33	32	32	28	G 26	G 22	18	E B 17	E B 17	E B 17	E B 17	E B 17
28	E B 16	E B 16	E B 16	E B 16	E B 16	18	26	31	34	34	34	38	34	31	G 30	30	30	29	20	E B 14	E B 16	E B 16	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 19	G 23	G 26	31	31	34	33	G 30	G 30	G 30	28	G 24	G 23	G E B 19 16		E B 16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	20	26	29	31	31	34	34	36	36	32	32	34	29	24	E B 15	E B 16	E B 16	E B 16	E B 16
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	30	30	30	30	30	30	30	28	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	28	30	32	32	33	32	G	30	28	G	G	18	E B 16	E B 16	E B 16	E B 16	E B 16
U Q	E B 16	E B 16	E B 16	E B 16	E B 16	18	25	29	32	34	34	34	34	32	32	30	27	24	19	17	16	E B 16	E B 16	E B 16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	26	29	31	32	32	G 31	G 30	G 29	G 27	G 24	G 21	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16

APR. 2020 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Wakkanai

APR.2020 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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	F 286	F 302	F 293	F 318	337	F	360	350	335	351	336	343	340	347	345	359	367	354	341	330	325	333	318	334
2	333	315	330	293	320	346	382	346	348	339	328	368	338	352	364	339	347	357	336	310	345	340	314	315
3	301	318	325	361	372	F 314	378	351	342	360	294	338	347	335	337	349	356	355	346	317	318	325	336	F 307
4	299	F	F 299	F	F	F	393	358	325	331	349	345	336	361	346	344	356	356	333	312	320	330	314	312
5	299	300	F 324	F	F 351	324	366	365	349	311	342	342	340	338	354	365	360	358	334	296	319	315	F 315	F 313
6	305	313	330	F 329	F 329	F	390	359	340	362	333	349	350	333	351	361	341	359	345	311	317	309	F 315	298
7	319	304	F 307	334	355	352	C	384	358	330	321	374	367	341	348	331	355	368	360	315	309	311	330	349
8	301	F 311	315	323	330	342	369	352	350	353	319	334	344	338	345	318	349	352	331	310	308	319	334	303
9	299	302	328	337	313	335	353	316	371	312	335	322	357	317	351	336	361	359	357	325	314	310	309	312
10	318	307	317	318	324	359	359	359	331	372	358	355	308	355	313	335	355	359	352	333	309	309	320	314
11	283	305	315	312	321	348	382	360	336	345	315	342	308	324	344	342	362	361	360	323	321	345	315	317
12	310	303	285	297	294	375	R 364	327	330	316	343	313	310	324	336	342	356	349	335	301	323	323	327	291
13	284	290	292	325	340	352	380	348	284	335	307	321	338	315	306	350	350	353	341	311	306	337	350	318
14	312	320	300	311	321	354	344	344	339	334	348	352	323	316	312	343	362	357	344	309	313	323	303	312
15	V 316	V 320	F 306	326	367	349	361	349	359	302	350	341	326	331	348	342	335	352	349	337	323	312	312	313
16	310	317	317	355	339	355	363	359	338	322	338	349	345	328	339	357	348	359	353	341	320	317	317	325
17	301	310	310	340	368	344	380	349	352	350	368	352	347	341	349	344	358	355	346	323	304	320	321	325
18	303	315	328	333	304	359	362	360	360	329	354	356	351	314	340	339	361	349	R 392	331	301	324	322	332
19	311	312	323	312	308	323	349	366	357	316	349	346	358	316	339	347	352	343	333	311	345	337	330	F 317
20	F 305	F	318	328	339	388	347	339	343	352	370	338	306	334	320	334	350	381	329	299	290	296	290	305
21	293	324	357	360	246	A	361	392	A	R	U R 348	A	A	A	299	319	322	325	338	340	307	303	301	304
22	322	322	300	F	F	374	313	336	347	326	315	316	A	343	324	358	233	360	348	332	296	304	307	311
23	310	319	327	355	342	370	363	342	344	333	329	334	335	310	351	342	344	361	339	337	302	312	315	333
24	326	327	333	321	321	351	351	353	345	333	318	352	334	321	344	350	338	344	324	323	317	320	334	315
25	325	315	315	318	335	331	369	358	312	330	323	327	284	345	347	325	340	338	345	317	317	315	326	302
26	F 340	F	F	F	F	346	349	336	340	R	302	326	337	335	327	344	217	338	341	331	330	323	329	327
27	329	323	326	308	296	336	R	304	312	290	328	322	A	306	319	317	338	368	327	309	305	324	F	278
28	F	F 292	F	F	F	369	353	326	326	352	328	352	295	315	336	339	339	334	321	306	325	304	327	F 297
29	301	F 296	F	F	F	F 338	381	357	366	322	320	339	339	332	333	322	336	345	327	317	300	313	F 304	F
30	F 290	316	F 303	F	F 303	352	344	352	342	362	346	309	287	314	310	329	329	341	338	316	320	326	333	312
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	29	27	27	23	25	26	28	30	29	28	30	29	27	29	30	30	30	30	30	30	30	30	29	29
MED	305	313	317	325	329	350	362	352	342	333	334	342	338	332	340	342	350	355	341	317	317	320	318	313
U Q	318	319	327	337	341	359	379	359	351	352	348	352	347	341	348	349	356	359	348	331	321	325	330	322
L Q	299	303	303	312	310	338	352	342	333	322	320	326	310	316	324	334	338	345	333	310	306	311	313	304

APR.2020 M(3000)F2 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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	362	380	385	L	383	L	L	L	L	L						
2								L	L	L	L	364	L	366	H 385	411	L	L						
3									384	L	L	L	L	L	L	L	388	L						
4								L	H 376	L	418	409	L	L	L	375	L	L						
5								L	L	L	L	L	L	L	359	383	381	L						
6								L	L	L	L	L	L	L	L	361	L							
7							C		L	L	L	L	L	L	L	397	L	L						
8							L		383	L	L	L	L	L	L	352	L	L						
9								L	371	L	L	L	377	L	L	354	356	L						
10									L	358	399	L	L	L	369	374	L	L						
11							L	L	368	L	L	L	384	L	L	379	369	L						
12						L	L	L	L	L	L	L	L	L	L	L	374	L	A					
13							L		397	L	L	L	L	L	L	L	380	L						
14							L	L	L	L	L	L	L	L	L	L	L	L						
15								L	373	L	L	L	L	L	L	L	L	L						
16									L	L	L	L	L	L	L	L	L	L						
17							L	L	L	L	L	L	390	L	L	L	370	L						
18							L	385	L	L	L	L	374	L	L	L	L							
19										A	L	L	L	L	L	L	L							
20							L	L	L	L	L	L	L	L	370	L	L							
21						A			A	411	399	A	A	A	L	L	L	L	L					
22									L	L	410	L	A	L	L	A	A							
23								L	A	376	L	A	L	L	L	L	L	L						
24						L	L	L	L	L	L	L	L	L	L	L	L	L						
25							L	L	L	L	L	L	L	L	L	L	369	L						
26							L		L	408	409	L	L	L	L	L	A	L						
27							386	A	A	A	L	L	388	L	L	L	L	L						
28						L	L	L	390	375	L	L	376	L	L	379	L							
29							L		L	L	L	L	403	L	L	L	L	L	L					
30							L	L	L	L	421	L	L	399	L	L	L	L						
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	9	6	7	2	8	2	4	10	8							
MED							386	385	376	378	409	386	384	382	370	377	372							
U Q									387	408	418		389		378	383	380							
L Q									370	375	399		376		364	361	369							

APR.2020 M(3000)F1 (0.01)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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								234	304	292	310	286	284	274	274	248	248	242						
2								248	266	302	302	260	278	258	262	272	256	232						
3									270	256	382	284	276	290	280	266	246	244						
4								240	296	328	290	278	304	266	272	274	236	242						
5								236	252	310	290	284	296	286	266	262	244	242						
6								248	282	262	278	278	278	318	264	262	276							
7							C		274	332	282	270	254	294	282	286	248	240						
8							216		276	272	298	318	288	296	284	314	248	256						
9								288	252	314	324	318	286	328	278	280	246	246						
10									310	250	270	270	298	278	328	276	250	242						
11							222	242	308	298	298	306	336	320	280	266	242	234						
12						242	252	328	342	354	302	336	350	306	298	268	244	232	244					
13							242		392	310	372	336	306	332	332	278	260	246						
14							260	274	284	314	276	280	332	346	366	292	258	242						
15								278	270	336	290	290	316	306	258	266	280	240						
16									298	310	284	276	294	306	296	266	266	240						
17							216	250	270	274	236	258	286	282	264	268	250	238						
18							248	254	266	286	274	260	286	322	296	284	254							
19										A	276	272	262	318	282	274	244							
20							242	298	288	276	258	294	358	306	330	284	248							
21						A			A	R	300	A	A	A	406	298	332	292	270					
22									278	292	336	354	A	306	306	260	A 538							
23								282	290	312	300	300	300	318	268	268	254	244						
24						236		264	298	316	316	286	280	322	280	262	268	234						
25							244	238	294	336	336	322	398	292	272	286	274	274						
26							260		280	414	390	308	284	280	320	268	516	264						
27							334	376	314	370	318	318	A	376	324	306	276	246						
28						238	254	312	298	286	318	282	334	322	302	272	274							
29							216		258	336	318	296	304	304	284	290	296	272	272					
30							302	280	274	274	296	350	404	340	332	296	286	262						
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						3	14	19	28	28	30	29	27	29	30	30	30	24	3					
MED						238	246	264	283	310	299	286	296	306	283	273	255	242	270					
U Q						242	260	288	298	330	318	318	332	322	320	286	276	251	272					
L Q						236	222	242	270	281	282	277	284	288	272	266	248	240	244					

IONOSPHERIC DATA STATION Wakkanai

APR.2020 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	246Q	270	252Q	234	226	234Q	238	196	202	228	194	200	200	204	194	192	210	210	234	246	230	220	236	236
2	242	252	252	276	246	224	224	200	194	208	208	196	196	196	194	198	192	172	232	232	210	210	248	248Q
3	260Q	254Q	254	204Q	194	230Q	214	224	216	206	196	198	200	206	192	196	196	196	232	240	236	236	218	218
4	246Q	248	258	252Q	228Q	232	216	196	190	206	190	194	200	190	214	190	208	208	242	222	212	228	228	250
5	242Q	242	234Q	224Q	202	228	214	204	186	210	204	202	180	180	238	212	200	200	232	250	222	222	216	224Q
6	250Q	234Q	250Q	232Q	216Q	210Q	218	202	202	216	202	202	194	188	200	200	200	238	220	238	252	252	228Q	248Q
7	244Q	248Q	236Q	210Q	216	220	204	220	216	196	196	178	A	192	198	200	208	194	224	254	252	252	220	212
8	236	236	232Q	222Q	226	208	186	220	198	212	200	200	196	196	214	214	210	202	230	252	248	234	230	250
9	246	256	238	224	258	264	242	222	222	212	194	194	198	200	196	222	200	216	230	234	234	254	260Q	250
10	264	256	256	232	228	232	232	236	210	206	194	194	184	172	196	210	206	212	240	212	240	258	224	242
11	274Q	262Q	244Q	254	252	238	190	202	210	206	194	220	206	202	194	204	202	198	222	232	236	236	234	246
12	252	268Q	284	264Q	240	218	214	220	208	212	196	170	210	196	202	204	204	206	A	266	234	218	232	240Q
13	276Q	270	270Q	240	218	218	188	222	208	228	196	202	196	212	198	204	198	196	238	250	250	234	224	224
14	264	256	262	248	244	238	200	200	196	196	198	184	184	198	194	224	206	208	236	276	250	238	238	248
15	256	248Q	224Q	234	218	212	226	200	220	212	192	216	182	200	202	202	196	208	222	222	248	256	246	254
16	250	260	242	216	210	208	208	230	202	220	200	194	198	240	200	204	218	210	220	216	220	258	242	242
17	258	258	248	228	202	206	186	202	202	194	188	212	202	202	194	198	198	204	226	240	238	246	238	238
18	260	244	232	230	246	240	212	200	234	210	194	192	190	184	230	242	222	234	A	238	256	246	230	216
19	254	260	258	250Q	250	240	236	254	248	A	258	204	190	190	206	196	220	224	234	260	220	228	228	238
20	256	250	250	220	212	210	190	204	198	208	198	186	200	182	188	232	202	220	232	282	272	272	302	270
21	270	254	234	200	328	A	232	230	A	200	208	A	A	A	200	204	212	232	218	242	254	280	276	276
22	264	264	264	244Q	248	230	256	A	226	194	194	186	A	188	206	A	A	220	244	246	232	254	238	230
23	260	244	230	220	214	218	238	238	A	206	210	A	206	200	194	198	198	198	228	230	252	258	244	244
24	240	240	240	232	222	200	218	218	208	208	208	188	182	198	182	192	224	202	258	242	230	224	206	222
25	242	236	250	220	228	244	202	202	196	210	188	180	200	182	198	202	226	210	250	268	236	236	234	240
26	230	218	270Q	240Q	244	226	206	216	212	202	194	192	206	192	190	196	A	204	246	236	236	236	226	242
27	228	248	276	256	282	246	210	A	A	A	A	206	188	188	198	208	208	204	250	236	246	246	260	248Q
28	250Q	240Q	230Q	246Q	210Q	182	192	212	220	212	194	206	200	182	194	194	206	246	264	268	242	244	226	224Q
29	246Q	242	242Q	234Q	240Q	242	198	202	192	202	202	194	188	182	190	202	202	208	222	240	226	226Q	228Q	230Q
30	238Q	242Q	252Q	236Q	220	228	202	212	212	190	190	190	220	220	198	212	232	224	236	236	228	222	222	228Q
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	30	30	30	30	30	29	30	28	27	28	29	28	27	29	30	29	28	30	28	30	30	30	30	30
MED	250	249	250	233	227	228	213	212	208	208	196	194	198	196	198	202	206	208	232	240	236	237	231	241
U Q	260	258	258	246	246	238	226	222	216	212	202	202	200	201	202	211	211	220	241	252	250	254	242	248
L Q	242	242	236Q	222	216	211	200	202	198	202	194	189	188	186	194	197	200	202	225	234	230	228	226	228

APR.2020 h'F (KM)

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IONOSPHERIC DATA STATION Wakkanai

APR.2020 h'E (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	108	96	96	104	96	96	108	102	102	104	104	88	B	B				
2						B	116	116	116	112	96	96	A	98	98	98	112	94	A	A				
3						B	146	116	102	102	102	102	102	102	102	102	106	106	A	B				
4						B	110	110	110	102	102	102	A	104	104	94	100	110	B	B				
5					B	A	128	110	110	104	104	104	104	110	102	102	106	102	B	A				
6					B	B	110	110	106	96	98	98	100	108	104	104	104	88	B	B				
7					B		112	112	100	100	102	104	104	96	102	98	100	102	B	B				
8					B	B	96	108	100	100	112	96	112	102	102	102	100	104	B	B				
9					B	94	108	106	106	106	106	106	104	92	106	106	110	118	B	B				
10					B	A	110	110	106	106	104	104	104	104	104	104	104	104	A	B				
11					B	B	126	114	114	100	100	108	108	108	108	108	106	106	98	B				
12					B	B	112	104	102	102	98	98	98	104	104	110	110	A	A	A				
13					B	B	104	104	104	104	104	104	102	102	A	A	A	108	B	B				
14					B	112	112	106	106	106	106	106	106	94	106	106	106	102	B	B				
15					104	A	116	100	100	102	102	102	102	102	96	98	102	100	B	B				
16					B	G	112	112	112	104	104	94	94	106	106	106	96	114	94	A				
17					B	B	118	106	100	100	100	104	104	104	104	104	108	108	A	B				
18					B	B	108	108	96	102	100	100	100	100	100	100	102	102	A	A				
19					BE	B 98	100	100	100	100	100	100	100	100	100	100	100	100		A				
20					B	B	120	104	104	100	102	102	108	108	A	108	108	108	A	B				
21					B	A	108	102	104	104	104	104	104	104	104	98	108	108	128	A				
22					BE	B 142	94	108	100	100	100	100	100	100	110	102	102	102	E A 146	B				
23					B	A	98	104	104	104	104	104	104	A	104	104	104	104	102	A				
24					B	96	116	108	108	106	106	102	102	102	102	102	102	102	120	A				
25					B	136	98	98	98	98	98	98	A	112	108	108	108	108	108	108				
26					B	120	116	108	108	108	108	108	108	108	108	108	108	110	A	A				
27					B	108	102	100	100	100	100	100	100	100	100	100	100	100	100	A				
28					B	A	120	108	108	110	106	106	90	A	90	102	102	102	102	B				
29					A	A	102	108	108	A	A	A	102	102	102	92	100	100	108	B				
30					B	B 114	100	108	108	98	98	98	98	104	104	104	104	104	104	B				
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	9	30	30	30	29	29	29	27	28	28	29	29	29	11	1				
MED					104	110	110	108	104	102	102	102	102	102	104	102	104	104	103	108				
U Q						128	116	110	108	105	104	104	104	105	105	106	108	108	120					
L Q						97	102	104	100	100	100	98	100	100	102	100	101	101	100					

APR.2020 h'E (KM)

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APR.2020 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	B	98	90	B	90	90	128	108	100	108	108	100	170	170	162	152	128	90	90	80	B	B	B	B
2	B	B	100	94	86	98	148	124	124	114	162	102	102	H 194	188	92	166	88	94	92	94	92	B	B
3	B	B	B	B	92	92	138	142	152	128	98	102	98	98	96	90	98	G	82	B	B	B	B	B
4	92	94	94	94	94	B	142	142	122	92	104	98	92	92	88	G	G	86	B	B	B	B	B	B
5	B	B	B	B	96	B	116	148	148	G	142	96	96	G	96	158	100	G	B	82	B	84	B	B
6	B	B	98	B	90	90	96	146	146	140	100	100	106	94	150	114	114	168	B	B	B	B	B	B
7	B	B	B	B	96	B	154	162	140	128	150	126	168	G		118	110	92	92	B	B	B	B	92
8	98	90	90	92	92	90	G	148	146	124	100	G	100	96	144	156	G	G	B	B	B	B	B	B
9	B	90	94	94	B	94	130	120	120	112	102	104	102	102	102	104	140	128	B	B	B	B	B	B
10	B	92	B	106	B	100	140	144	138	142	102	94	114	98	158	164	138	124	112	112	B	B	B	B
11	B	B	B	B	B	B	102	142	142	142	134	134	134	96	120	140	G	112	94	94	124	116	B	B
12	B	B	B	B	B	B	160	136	126	124	108	116	102	94	98	106	92	92	92	92	90	100	B	B
13	92	88	94	B	B	B	94	134	124	116	104	104	100	100	100	104	100	126	B	B	B	92	92	B
14	92	92	92	88	B	128	142	106	106	106	100	94	94	G	102	102	102	90	B	B	B	B	B	B
15	90	B	B	94	94	98	110	134	96	142	98	146	116	108	162	102	126	90	90	B	B	B	B	B
16	B	B	B	84	B	B	164	132	100	100	100	98	98	110	104	104	114	138	122	86	B	B	B	B
17	B	B	B	92	B	92	160	148	154	106	130	110	102	170	102	196	152	120	108	B	B	B	102	B
18	B	B	B	B	92	B	136	118	118	112	126	108	98	98	176	192	172	118	110	110	110	110	100	100
19	100	B	B	B	B	88	108	108	108	108	114	108	108	102	102	164	150	120	114	114	108	108	B	B
20	B	B	B	B	B	B	94	114	110	98	104	104	102	102	102	164	162	128	112	B	B	B	106	B
21	B	100	118	118	B	108	108	122	122	112	104	100	162	100	100	172	154	144	140	110	110	102	94	120
22	94	94	92	120	118	170	120	116	108	112	100	100	102	132	156	126	102	146	148	144	116	116	98	98
23	94	94	86	B	86	90	118	116	98	112	104	104	90	100	98	94	94	144	118	88	110	102	102	98
24	90	92	B	B	B	140	124	112	112	104	104	92	110	110	102	88	170	138	122	92	86	B	B	B
25	B	B	B	B	B	146	126	126	126	126	102	102	102	92	106	164	150	150	92	88	B	B	100	B
26	94	B	94	86	B	128	108	152	116	112	112	112	104	114	132	172	110	G	122	108	100	100	B	B
27	B	B	90	B	B	120	124	114	114	114	108	108	100	100	100	100	98	88	94	94	94	94	112	112
28	B	86	96	96	B	170	138	126	126	116	108	96	98	90	90	90	128	104	108	B	88	88	88	B
29	B	B	B	90	102	94	116	102	114	104	98	98	98	92	92	112	104	94	94	B	B	B	88	88
30	B	B	B	B	B	112	144	128	116	116	100	100	140	130	148	128	110	110	114	B	B	B	102	102
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	10	12	14	14	13	21	29	30	30	29	30	29	30	27	29	29	27	26	23	16	12	13	12	8
MED	93	92	94	94	92	98	126	127	121	112	104	102	102	100	102	118	114	119	108	93	104	100	100	99
U Q	94	94	96	96	96	128	142	142	138	125	112	108	110	110	149	164	150	138	118	110	110	109	102	107
L Q	92	90	90	90	90	91	109	116	110	107	100	98	98	96	99	102	102	92	92	88	92	92	93	95

APR.2020 h'Es (KM)

IONOSPHERIC DATA STATION Wakkanai

APR. 2020 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	L1	C2	C2	LC11	C3	C3	C3	HL11	HL11	HL11	HL11	C2	LC11	L1	L1				
2			F1	F3	F1	L3	C2	C3	C2	C2	C2	C2	L1	C1	C2	LC11	C2	LC31	LL21	LL21	F4	F1		
3					F3	L2	C2	C2	C2	C2	C2	C2	C3	C3	C2	LC21	C2		L2					
4	FQ21	FQ11	FQ11	F1	F1		C2	CL21	C2	LC21	C2	C2	L2	LC11	LC21			LC11						
5					L1		LC11	H2	C2		H2	LC11	LC11		LH11	H1	C2			L1		F1		
6			F1		L1	L1	L1	C2	CL21	C2	LC11	L1	CL21	CL21	CL11	CL11	C2	CL21						
7					L1		C2	C2	C2	C2	C1	C1	CL11		CL11	C2	C2	LC11	L1					L1
8	F1	F2	F2	F1	L1	L1		CL11	CL21	CL21	LC11		LC11	LC21	CL11	H1								
9		F2	F1	F1		L1	C2	CL21	CL21	C2	C2	C2	C2	C2	C2	C2	H2	C2						
10		F1		F1		L1	H2	H2	H2	HL21	L2	L2	C1	L2	HL11	HL11	H2	C2	L3	L1				
11							LC11	HL21	H2	HL11	CL11	H2	H2	LC11	CL21	CL21		C2	L1	L1	F1	F1		
12							H2	HL21	CL21	CL21	CL21	C1	C1	LC21	CL21	LC11	LC21	L2	L5	L4	FF11	F1		
13	F1	F2	F2				LC11	CL21	CL21	CL21	CL21	LC21	C2	L2	L2	LL21	L1	C2				F1	F1	
14	F2	F1	F1	F1		C1	H2	C4	C2	C2	LH21	LC21	LC11		LC21	CL21	L2	LC11						
15	F1			F1	C1	L1	LC21	CL21	C3	CL21	LC21	HL11	CL11	CL11	HL11	L2	C2	LC11	L1					
16				F1			H2	C2	C2	C2	C2	C2	C2	C1	C1	C2	C2	C2	C1	L1				
17				F1		L1	HL21	HL21	HL21	CL21	CL11	CL21	LC11	H1	LC11	LC11	H1	C2	L1				F1	
18					F1		C2	C2	C2	C1	C2	C2	C1	C1	HL21	HL21	H1	C3	L5	L5	F5	F6	F6	F2
19	F1					LC11	C3	C4	C3	C3	C3	C2	C2	C2	C2	HL21	HL21	CL22	LL11	L2	F4	F1		
20							LC11	CL22	C2	C2	C1	C1	L1	L1	L1	C1	H1	C2	L1				F2	
21		F1	F1	F1		L4	C3	C2	C2	C2	C2	C3	H2	C2	L1	HL11	H2	H2	H2	L3	F1	F4	F1	FF11
22	F1	F1	F1	F2	L1	H2	C6	C4	C3	C1	C1	C2	C3	C1	H2	C2	C4	C2	H2	H1	F7	F7	F5	F4
23	F1	F2	F1		L1	LC11	C2	C3	LC14	C2	C2	C2	C2	L2	LC31	LC21	LC21	HL22	C3	LL21	F1	F1	F2	F1
24	F2	F1				HL21	C3	C3	C2	LC11	CC11	C1	CL11	C2	CL11	LC21	CC11	CL21	CL21	L1	F2			
25						C2	C2	C2	C2	C1	C1	C1	L2	C2	C1	H1	H2	H2	LC21	LC11			FC21	
26	F1		F1	F1		C2	C2	C1	C2	C1	C2	C1	C2	C2	C2	C1	C3		C3	L3	F1	F1		
27			F2			C2	C2	C5	C3	C3	C2	C2	C1	C1	C1	C2	C2	C2	C2	L2	F1	F1	F2	F1
28		F1	F1	F1		C1	C2	CL21	C3	C2	C2	C3	C2	L2	LC21	LC11	CL21	C3	C5		F1	F2	F1	
29				F1	L2	LL11	CL21	LC11	C2	L1	L2	L1	C2	CL21	LC11	CL21	LC11	LC11	LC11				F1	F1
30						LC11	H2	CL21	CL21	C1	C2	C2	CL11	CL11	HL11	CL22	CL31	C4	C3				F1	F2
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 Kokubunji

APR.2020 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 40	X 40	X 40	X 45	40	X 34														X 58	X 59	X 46	X 44	X 44
2	X 46	X 46	X 48	X 46	X 40	X 39														X 66	X 50	X 46	X 45	X 48
3	X 48	48	48	X 42	X 31	X 31														X 58	X 59	X 46	46	X 44
4	X 44	X 42	42	40	36	X 30														X 68	X 50	X 42	X 44	X 43
5	44	43	41	45	34	35														X 59	X 52	X 46	X 46	X 45
6	X 44	X 43	X 40	X 46	X 28	X 29														X 59	X 52	X 50	X 50	X 48
7	X 47	X 46	X 42	X 42	X 35	X 33														X 55	X 53	X 50	X 46	X 46
8	44	46	X 44	48	49	X 38														X 61	X 61	X 61	X 50	X 50
9	X 52	X 48	X 48	X 49	46	42														X 59	X 51	X 46	X 46	X 46
10	X 43	41	42	X 41	X 34	X 32														X 60	X 56	X 48	51	X 46
11	X 44	X 44	X 42	38	X 34	X 37														X 57	X 52	X 44	X 44	X 43
12	44	X 40	38	35	36	34														X 62	X 63	X 46	X 39	42
13	X 42	40	40	39	32	X 31														X 58	X 61	X 52	X 44	X 44
14	X 43	X 40	X 37	X 37	X 32	X 34													X 57	X 61	X 64	X 55	X 52	X 51
15	X 50	X 47	X 43	X 43	X 40	X 40														X 64	X 60	X 49	X 46	X 45
16	X 45	X 45	X 43	X 41	X 34	X 37														X 58	X 56	X 47	X 44	X 38
17	42	40	X 39	X 45	X 33	X 36														X 69	X 55	X 50	X 47	X 46
18	X 46	X 45	X 44	X 41	X 38	X 38														X 57	X 56	X 55	X 53	X 44
19	X 43	X 44	X 44	X 42	X 43	X 43						C								X 64	X 72	X 44	43	43
20	43	X 36	X 38	X 44	X 34	X 34														X 60	X 62	X 64	X 64	X 61
21	X 62	X 55	X 39	X 28	X 26	X 28														X 52	X 48	X 46	43	43
22	X 39	X 39	X 38	X 33	X 31	X 38														X 57	X 56	X 50	X 48	X 45
23	X 43	X 42	X 42	57	X 28	X 36														X 60	A	X 54	X 49	
24	X 44	A	X 42	41	X 35	X 38														X 75	X 68	X 58	X 50	X 48
25	X 44	X 43	X 42	X 42	X 39	X 39														X 71	X 69	X 54	50	44
26	X 44	X 43	X 39	X 38	X 38	X 41														X 66	X 65	X 50	50	49
27	X 44	X 44	40	X 36	38	X 36														X 54	X 54	X 54	X 49	X 46
28	X 46	X 44	X 42	X 40	38	X 39														X 68	X 73	X 59	X 50	X 48
29	X 46	X 44	X 42	X 40	X 39	X 41														X 71	X 70	X 50	X 44	X 44
30	X 44	49	55	49	41	X 43														X 69	X 68	X 59	X 50	X 45
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	30	30	30													1	30	29	30	30	29
MED	X 44	X 44	X 42	X 42	X 36	X 36													X 57	X 60	X 59	X 50	X 46	X 45
U Q	X 46	X 46	X 43	X 45	39	X 39														X 66	X 64	X 54	X 50	X 48
L Q	X 43	X 40	X 40	X 39	X 33	X 34														X 58	X 52	X 46	X 44	44

APR.2020 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR.2020 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

HD	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	34	34	34	39	F	28	42	48	52	62	62	71	67	64	62	57	50	52	53	52	53	40	38	38
2	39	40	42	40	34	33	44	54	54	57	54	62	74	63	58	52	48	57	63	60	44	40	39	42
3	42	F	F	36	25	25	42	48	50	59	56	59	70	80	81	62	56	57	56	52	53	40	F	38
4	38	36	F	F	F	24	39	46	49	53	60	71	77	63	62	58	54	57	67	62	44	36	38	37
5	F	F	F	F	F	F	40	48	54	52	54	62	64	71	72	58	56	50	53	53	46	40	40	39
6	38	37	34	40	22	23	40	45	52	50	59	65	74	60	55	58	53	45	52	53	46	44	44	42
7	41	40	36	36	29	27	40	48	50	60	60	55	53	52	57	56	51	49	50	49	47	44	40	40
8	F	F	38	F	F	32	42	47	54	54	57	63	56	55	53	57	58	64	52	55	55	55	44	44
9	46	42	42	43	F	F	46	52	51	56	58	60	60	58	56	60	66	62	55	53	45	40	40	40
10	37	F	F	35	28	26	44	50	58	54	55	59	54	49	58	58	61	58	55	54	50	42	F	40
11	38	38	36	F	28	31	41	49	50	53	53	53	59	63	64	74	70	57	48	51	46	38	38	37
12	F	34	F	F	F	F	40	47	50	50	52	58	58	65	74	66	59	47	45	56	57	40	33	F
13	36	F	F	F	F	25	46	46	47	52	57	57	56	A	60	62	63	54	49	52	55	46	38	38
14	37	34	31	31	26	28	43	52	58	63	56	56	58	61	57	62	62	54	51	55	58	49	46	45
15	44	41	37	37	34	34	42	45	52	58	59	66	70	77	72	62	59	A	58	58	54	43	40	39
16	39	39	37	35	28	31	46	45	47	50	52	66	73	72	69	72	62	55	50	52	50	41	38	32
17	F	F	33	39	27	30	46	A	A	55	60	65	74	71	68	54	A	A	64	63	49	44	41	40
18	40	39	38	35	32	32	46	59	56	60	60	61	54	62	60	60	68	60	55	51	50	49	47	38
19	37	38	38	36	37	37	54	58	58	61	63	C	59	60	57	62	56	49	50	58	66	38	F	F
20	F	30	32	38	28	28	40	48	53	62	54	54	55	60	70	60	52	54	51	54	56	58	58	55
21	56	48	33	23	20	22	32	33	A	A	A	48	44	44	48	49	50	45	43	46	42	40	F	F
22	33	33	32	27	25	32	41	51	49	49	53	53	58	58	64	58	58	48	44	51	50	44	42	39
23	37	36	36	F	22	30	42	A	52	55	60	56	58	62	66	65	63	A	A	54	A	48	43	A
24	38	A	37	F	29	32	45	47	52	64	61	56	56	59	64	55	51	56	62	69	62	52	44	42
25	38	37	36	36	33	33	46	47	51	56	54	58	61	51	55	64	58	60	56	65	63	48	F	F
26	38	37	33	32	32	35	44	49	51	A	A	64	60	64	68	64	68	66	62	60	59	44	F	F
27	38	38	F	30	F	30	47	46	54	52	52	55	55	55	62	78	69	55	44	48	48	48	43	40
28	40	38	36	34	F	33	44	44	52	62	60	54	58	59	59	60	57	48	52	62	67	53	44	42
29	40	38	36	34	33	35	44	51	49	56	60	58	56	60	62	64	65	54	56	65	64	44	38	38
30	38	F	F	F	F	37	44	61	58	49	46	54	57	57	60	71	72	71	58	63	62	53	44	39
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	25	22	22	21	20	27	30	28	28	28	28	29	30	29	30	30	29	27	29	30	29	30	24	24
MED	38	38	36	36	28	31	44	48	52	56	57	58	58	60	62	60	58	55	53	54	53	44	40	40
U Q	40	39	37	38	32	33	46	51	54	60	60	64	67	64	68	64	64	58	57	60	58	48	44	42
L Q	37	36	33	33	26	27	41	46	50	52	54	55	56	58	57	58	54	49	50	52	46	40	38	38

IONOSPHERIC DATA STATION Kokubunji

APR. 2020 foF1 (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	A	432	U L 428	A	A	A	L	L	L						
2									L	408	U L 444	A	436	U L 412	428	U L 408	A	L						
3									A	A	L	U L 436	440	440	432	L	A	A						
4									L	U L 412	440	440	440	U L 440	428	U L 416	L	A						
5									L	L	432	440	448	U L 424	412	L	L	L						
6									L	U L 424	428	U L 444	424	U L 428	424	404	A							
7									L	U L 416	U L 404	U L 428	U L 436	444	U L 420	408	L	L						
8									L	420	424	432	444	436	U L 424	396	L							
9										416	A	L	440	432	U L 432	U L 416	L	L						
10								L	L	L	L	440	440	432	420	404	L	L						
11									A	U L 432		U L 452	A	A	U L 428	A	L	L						
12								A	A	A	A	A	A	A		A	L	A						
13								A	L	U L 420	424	A	U L 428	A	U L 412	A	A	L						
14									396	U L 428	U L 432	U L 428	U L 448	U L 440	428	A	A	L						
15									U L 408	420	416	U L 444	440	A	A	A	A	A	A					
16										A	U L 456	U L 444	A	A	U L 412	A	A	A						
17								A	A	A	U L 432	U L 412	448	428	A	A	A	A	A					
18								L	L	A	L	U L 440		U L 444	A	U L 400	U L 368	L						
19									A	U L 420	U L 428	C	440	U L 428	428	U L 404		L						
20								L	A	A	A	U L 448	444	424	A	A	A	L						
21							A	A	A	A	A	U L 408	408		U L 396	U L 400	L	L						
22								L	L	A	A	U L 432	U L 436	U L 444	416	404	U L 388							
23							A	A	A	416	A	A	A	A	A	A	L	A	A					A
24									A	A	416	A	448	U L 420	424	404	L	A	A					
25								L	U L 424	L	436	440	436	440	U L 424	404	420	L						
26									A	A	A	A	436	U L 432	412	U L 404	392	L						
27							A	A	A	A	440	A	U L 440	U L 420	U L 420	404	384	L						
28									404	A	A	A	U L 440	U L 432	424	A	L	A	A					
29									L	420	U L 436	428	444	U L 444	420	420	380	L						
30								L	L	L		A	A	U L 448	436	A	384		A					
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									4	13	17	19	23	22	23	16	7							
MED									406	U L 420	432	U L 440	440	U L 432	424	404	384							
U Q									U L 416	U L 422	U L 438	U L 444	444	U L 440	428	U L 408	392							
L Q									400	416	424	U L 428	436	U L 428	416	404	380							

APR. 2020 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR.2020 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							U R 196	A	A	A	A	A	A	A	A	U A 284	U R 260	U A 216	B					
2							A	A	A	A	A	A	A	R	R	A	A	A	B					
3							B	U A 236	U A 280	A	A	A	A	A	A	A	A	A	B					
4							U A 184	U A 244	A	A	A	A	A	A	A	A	A	A	A					
5							B	236	U A 280	U A 308	U R 328	U A 336	U R 356	R	U R 344	U R 312	U R 272	U R 216	B					
6							B	U A 240	A	U A 316	A	R	R	A	U R 312	A	A	U A 220	B					
7							U A 192	U A 236	U A 292	U A 312	U A 328	U A 332	U R 364	U R 344	A	U R 308	R	U R 260	B					
8							U A 192	U A 248	U A 284	R	U A 344	R	R	R	A	A	R	U A 228	B					
9							U A 204	A	A	R 336	A	A	A	A	A	A	U R 268	U A 212	B					
10							A	U A 260	A	U R 336	A	R	R	R	U A 320	U A 296	A	A	B					
11							U A 216	U A 256	U A 280	A	U A 320	U A 340	A	A	A	A	A	A	B					
12							B	A	A	A	A	A	U A 324	A	A	A	U R 276	U A 220	B					
13							U A 196	U A 244	A	A	R	A	A	A	A	U A 332	A	U A 220	B					
14							U A 196	U A 260	U A 288	A	R	U R 332	U R 360	A	A	U A 308	A	U A 212						
15							U A 216	U R 264	U A 300	328	R	U A 352	340	A	U A 320	A	A	A	A					
16							U A 220	U A 264	A	A	A	A	A	A	A	A	A	A	B					
17							U A 208	A	A	A	A	A	A	A	A	A	A	A	B					
18							U A 216	A	A	A	A	A	U R 352	A	A	U A 292	R	A	B					
19							A	A	A	A	A	C	A	A	A	A	U A 280	U A 232	B					
20							A	U A 276	A	A	A	A	A	A	A	A	A	A	B					
21							A	A	A	A	A	R	A	R 376	R	U R 300	A	U A 216	B					
22							U A 204	A	A	A	A	R	A	A	U A 324	U A 284	U A 256	A	B					
23							B	256	A	A	A	A	A	A	A	U A 284	U A 256	A	B					A
24							A	A	A	A	A	A	A	A	A	U R 308	U A 280	A	B					
25							A	A	A	A	A	A	U A 332	R	R	U A 292	U R 284	U A 228	B					
26							A	A	A	A	A	A	A	A	A	R	A	U A 236	B					
27							A	A	A	A	A	A	A	A	U R 324	A	R	R	B					
28							U A 220	U A 268	A	A	A	A	A	R	A	U A 288	U A 264	A	B					
29							A	A	A	A	A	A	A	A	R	A	U R 272	A	B					
30							A	A	A	A	A	A	U A 348	A	A	A	U A 272	A	B					
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							14	15	7	6	4	5	8	2	6	13	12	13						
MED							U A 204	U A 256	U A 284	U A 322	U A 328	U A 336	U 350	R 360	U 322	U A 296	U 272	U A 220						
U Q							U A 216	U A 264	U A 292	R 336	U 336	U A 346	U R 358		U R 324	U R 308	U 278	U A 230						
L Q							U A 196	U A 240	U A 280	U A 312	U A 324	U 332	U A 336		U 320	U A 286	U A 262	U A 216						

APR.2020 foE (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR. 2020 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 16	J A 34	24	20	G	27	33	J A 56	J A 42	38	J A 43	J A 51	J A 55	32	G	27	23	J A 22	J A 26	J A 49	J A 33	24
2	21	20	E B 15	E B 16	24	20	22	30	32	36	36	J A 48	J A 42	G	G	J A 38	J A 36	J A 35	J A 24	E B 16	20	E B 16	J A 26	J A 55
3	J A 44	J A 30	23	19	25	23	24	30	39	40	39	37	J A 40	J A 40	J A 39	J A 36	J A 39	J A 30	J A 23	J A 30	J A 31	J A 26	J A 29	23
4	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	23	28	32	34	35	34	38	37	38	34	J A 33	J A 36	J A 28	J A 29	J A 26	22	E B 15	E B 15
5	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15	25	33	35	34	G	36	G	G	G	G	G	G	E B 16	J A 26	E B 16	E B 15	E B 16	21
6	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	26	29	37	38	40	G	G	J A 38	G	34	J A 43	26	18	22	E B 16	E B 16	E B 16	E B 16
7	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	25	28	32	38	36	37	G	G	37	G	G	G	J A 22	J A 21	J A 36	J A 43	22	E B 16
8	E B 16	E B 16	16	E B 16	E B 16	E B 16	25	29	33	G	40	G	G	G	34	33	G	25	23	20	20	E B 16	E B 16	E B 17
9	E B 16	E B 16	23	E B 16	E B 16	E B 16	25	J A 51	35	G	38	39	39	37	37	34	G	24	23	25	22	23	J A 30	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 14	28	31	33	G	34	G	G	G	40	39	32	24	18	J A 23	23	E B 17	E B 17	E B 17
11	E B 17	E B 16	18	E B 16	E B 16	E B 16	25	32	38	36	36	39	40	38	40	J A 43	J A 36	J A 26	E B 20	E B 16	J A 25	22	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	24	33	38	J A 50	J A 50	45	44	J A 49	43	J A 64	G	33	20	J A 29	J A 28	22	J A 24	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	35	36	G	J A 44	J A 44	J A 66	40	40	42	25	E B 16	23	E B 16	E B 16	E B 16	E B 16
14	E B 17	E B 16	E B 16	E B 15	E B 16	E B 16	23	30	33	33	G	G	G	37	37	35	34	25	J A 23	E B 16	E B 15	E B 16	E B 16	E B 15
15	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	25	30	34	36	G	37	37	J A 51	J A 46	J A 46	J A 62	J A 52	J A 29	J A 25	E B 16	E B 16	E B 15	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	38	J A 64	39	38	J A 50	J A 65	J A 98	J A 65	J A 88	J A 47	J A 34	J A 32	J A 34	J A 37	J A 36	J A 33
17	J A 33	J A 35	J A 28	22	E B 16	E B 16	29	J A 54	J A 86	J A 48	40	38	39	J A 45	J A 49	J A 62	J A 71	J A 72	J A 55	E B 16	E B 16	E B 16	E B 16	E B 15
18	20	E B 16	E B 16	E B 16	E B 16	E B 16	29	33	37	J A 45	39	38	G	J A 44	J A 59	35	G	J A 30	J A 27	J A 45	23	20	E B 16	22
19	J A 27	23	E B 16	E B 16	E B 16	E B 16	J A 32	J A 39	J A 53	J A 52	37	C	38	38	J A 40	J A 40	30	28	J A 31	J A 24	J A 23	J A 30	J A 30	24
20	E B 16	23	E B 16	21	E B 18	E B 16	28	30	J A 45	J A 46	40	38	38	39	J A 44	J A 46	J A 49	30	22	J A 26	E B 16	20	20	21
21	21	21	E B 16	23	23	J A 22	29	32	J A 46	41	42	G	38	G	G	G	J A 30	25	21	E B 16	J A 42	J A 27	J A 28	J A 50
22	J A 44	22	J A 30	E B 16	J A 22	J A 23	27	32	J A 37	J A 50	J A 59	G	J A 49	J A 43	37	37	32	28	J A 26	J A 26	J A 26	22	E B 16	J A 31
23	J A 33	J A 28	J A 38	J A 48	J A 27	J A 27	J A 48	J A 49	J A 51	J A 43	J A 49	A 56	J A 66	J A 66	J A 55	J A 44	33	J A 79	J A 86	J A 50	J A 68	J A 53	J A 75	J A 54
24	J A 40	J A 49	J A 31	26	19	20	28	35	J A 47	J A 56	J A 47	J A 44	J A 44	J A 54	J A 37	G	35	32	J A 27	J A 27	J A 23	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	26	32	34	37	38	38	38	G	G	34	G	27	22	E B 16	24	22	22	E B 16
26	J A 27	E B 16	E B 16	E B 16	E B 16	E B 17	28	33	44	J A 56	J A 84	J A 52	40	J A 47	40	G	30	27	33	J A 33	J A 41	J A 38	J A 34	23
27	20	E B 16	E B 16	E B 16	23	23	32	J A 45	J A 48	J A 47	J A 42	J A 52	40	38	G	J A 38	G	G	18	J A 65	J A 25	J A 31	22	23
28	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16	28	33	37	J A 45	J A 52	J A 45	37	G	36	36	31	J A 36	J A 36	J A 31	26	22	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	24	26	31	34	38	36	38	38	J A 41	G	J A 41	G	J A 34	J A 34	J A 34	26	22	E B 17	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 17	J A 25	26	32	36	37	36	J A 62	44	J A 49	J A 50	J A 59	34	J A 38	J A 51	J A 50	J A 88	J A 42	J A 26	E B 17
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	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	37	39	39	38	38	38	38	36	32	28	J A 23	J A 26	24	22	18	E B 17
U Q	J A 21	21	16	16	19	20	28	J A 33	J A 44	J A 48	J A 42	J A 44	J A 43	J A 49	J A 44	J A 43	J A 36	J A 35	J A 31	J A 31	J A 28	J A 30	J A 28	J A 23
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	30	34	36	36	G 35	G 37	G	G 34	G 34	G	25	E B 21	E B 21	E B 20	E B 16	E B 16	E B 16

APR. 2020 foEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR.2020 fbEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 16	E B 16	E B 16	20	E B 16	E B 16	G	26	31	49	38	37	37	44	49	31	G	25	E B 16	E B 16	E B 16	24	22	E B 16
2	E B 16	E B 16	E B 15	E B 16	E B 15	E B 16	22	28	29	33	33	43	36	G	G	32	34	24	18	E B 16	E B 16	E B 16	19	35
3	E B 16	18	E B 16	E B 16	E B 16	E B 16	22	29	35	38	36	34	36	35	35	31	34	25	18	22	20	E B 16	E B 16	E B 16
4	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	22	27	30	32	34	33	35	36	35	31	27	28	23	19	15	E B 16	E B 15	E B 15
5	E B 15	E B 15	E B 16	E B 16	E B 15	E B 15	24	31	33	33	G	36	G	G	G	G	G	G	E B 16	16	E B 16	E B 15	E B 16	E B 16
6	E B 16	E B 16	E B 15	E B 15	E B 15	E B 16	24	29	35	36	36	G	G	36	G	33	39	24	17	16	E B 16	E B 16	E B 16	E B 16
7	E B 15	E B 15	E B 15	E B 15	E B 15	E B 15	23	27	32	36	36	35	G	G	35	G	G	G	19	E B 16	21	20	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	27	32	G	39	G	G	G	31	31	G	24	22	E B 16	E B 16	E B 16	E B 16	E B 17
9	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	23	29	32	G	37	38	37	36	35	31	G	23	E B 16	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 14	27	28	30	G	34	G	G	G	37	36	30	23	17	18	E B 17	E B 17	E B 17	E B 17
11	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16	24	31	36	36	36	38	40	38	37	37	30	22	E B 20	E B 16	22	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	23	30	36	44	45	43	42	42	40	36	G	30	18	25	25	E B 16	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	29	34	34	G	40	40	A A 66	37	38	41	24	E B 16	E B 17	E B 16	E B 16	E B 16	E B 16
14	E B 17	E B 16	E B 16	E B 15	E B 16	E B 16	21	29	32	33	G	G	G	35	36	34	32	24	19	E B 16	E B 15	E B 16	E B 16	E B 15
15	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	25	29	33	36	G	37	37	42	42	39	50	A A 52	23	20	E B 16	E B 16	E B 15	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	36	43	36	36	43	43	37	38	51	42	30	21	22	19	E B 16	E B 16
17	19	19	E B 16	E B 16	E B 16	E B 16	25	A A 54	A A 86	40	36	36	38	36	41	50	A A 71	A A 72	52	E B 16	E B 16	E B 16	E B 16	E B 15
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	34	40	36	36	G	37	50	34	G	24	20	39	E B 16	E B 16	E B 16	E B 16
19	17	E B 16	E B 16	E B 16	E B 16	E B 16	26	34	46	38	36	C	37	36	36	34	29	27	25	E B 16	16	16	E B 16	E B 16
20	E B 16	E B 16	E B 16	E B 16	E B 18	E B 16	26	29	40	42	40	38	36	35	41	44	44	27	19	23	E B 16	E B 16	E B 16	E B 16
21	16	E B 16	E B 16	E B 16	E B 16	E B 16	28	30	A A 46	A A 41	A A 42	G	36	G	G	G	22	24	18	E B 16	28	E B 16	E B 16	20
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	30	34	44	48	G	37	37	36	34	32	23	21	24	22	E B 16	E B 16	26
23	22	E B 16	E B 16	E B 16	E B 16	18	39	A A 49	44	36	43	47	45	44	47	42	32	A A 79	A A 86	42	A A 68	28	33	A A 54
24	20	A A 49	20	20	E B 16	E B 17	25	32	38	50	36	40	39	37	34	G	32	29	22	E B 16	E B 16	E B 16	E B 16	E B 16
25	E B 16	E B 16	E B 16	E B 15	E B 15	E B 16	24	31	32	34	36	36	36	G	G	33	G	26	20	E B 16	E B 16	19	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	25	30	41	A A 56	A A 84	40	39	37	38	G	29	25	28	23	32	28	E B 16	E B 15
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 18	30	41	41	40	37	46	36	36	G	32	G	G	16	34	20	25	E B 16	E B 16
28	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	35	39	48	42	34	G	34	36	28	33	30	27	19	E B 16	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	24	29	32	36	34	34	37	39	G	37	G	28	26	23	23	17	E B 17	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 17	18	25	30	34	36	35	44	42	40	38	46	31	30	32	42	42	34	E B 16	E B 17
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	30	30	30	30	30	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	36	36	36	36	36	36	34	30	25	20	18	16	E B 16	E B 16	E B 16
U Q	16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	38	41	39	40	39	39	38	37	34	29	25	23	22	19	E B 16	16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	32	34	34	G 34	G 34	G	G 31	G 31	G	24	18	E B 16	E B 16	E B 16	E B 16	E B 16

APR.2020 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

APR.2020 fmin (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Kokubunji

APR.2020 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	313	313	312	378	F	326	367	377	346	348	343	349	355	369	360	358	352	340	350	344	352	331	318	309
2	311	319	332	359	309	315	363	372	358	357	336	341	343	363	368	376	352	344	355	371	331	317	321	302
3	313	F	F	368	336	337	386	368	353	346	345	324	336	326	361	366	347	361	356	332	357	359	F	313
4	316	311	F	F	F	329	383	368	355	331	323	324	360	341	355	350	346	352	353	373	367	314	305	296
5	F	F	F	F	F	F	369	367	361	350	324	360	320	344	361	360	369	357	366	336	351	311	315	318
6	331	310	340	388	366	336	364	363	371	334	346	352	354	376	335	372	350	345	357	344	324	292	309	317
7	322	311	325	374	385	336	359	369	353	359	365	355	321	329	353	350	349	342	358	331	346	328	319	321
8	F	F	332	F	F	334	366	385	356	375	341	359	369	338	342	352	340	357	348	308	321	338	336	312
9	311	309	310	329	F	F	406	383	342	360	337	350	353	334	329	341	342	357	365	348	338	306	305	311
10	304	F	F	331	377	332	345	358	359	357	337	344	347	347	339	344	354	349	362	345	326	306	F	298
11	295	323	320	F	295	345	385	388	369	343	375	324	333	341	340	350	368	368	362	346	344	314	304	315
12	F	312	F	F	F	F	385	368	369	363	345	330	336	334	351	356	355	354	329	328	363	363	319	F
13	307	F	F	F	F	351	382	369	339	354	348	357	329	A	338	337	360	360	333	319	346	336	305	307
14	310	305	302	300	336	339	343	358	372	389	323	341	336	347	321	349	361	350	346	309	338	325	299	307
15	313	321	325	345	372	381	362	358	344	349	353	326	336	343	346	351	370	A	342	333	344	321	296	307
16	310	309	335	355	358	350	383	373	326	327	298	311	331	329	331	353	367	351	355	321	331	308	306	312
17	F	F	315	388	359	356	377	A	A	355	338	331	326	340	359	348	A	A	345	350	326	317	300	309
18	313	324	332	333	328	307	344	362	361	367	369	361	320	343	344	339	367	372	344	330	308	331	323	320
19	323	328	332	319	326	326	375	367	354	373	356	C	338	351	329	355	340	333	347	328	373	354	F	F
20	F	300	323	387	364	345	353	341	369	393	364	327	315	316	357	353	321	337	342	306	288	290	296	293
21	326	279	309	312	322	339	353	390	A	A	A	296	294	279	328	323	327	333	338	322	315	319	F	F
22	283	312	340	308	317	355	356	361	351	318	308	326	341	314	351	336	354	332	340	325	326	316	311	316
23	312	318	325	F	299	344	289	A	349	360	369	324	319	330	350	335	355	A	A	344	A	318	299	A
24	308	A	332	F	345	344	364	357	331	357	376	341	312	342	338	340	321	334	334	330	346	342	318	315
25	314	321	335	345	333	321	379	371	356	357	372	332	362	360	335	339	327	355	325	339	366	324	F	F
26	329	322	318	326	319	357	372	354	320	A	A	352	324	321	335	326	311	319	341	342	353	296	F	F
27	298	300	F	286	F	356	382	349	347	358	338	320	331	306	306	332	339	353	344	319	316	319	322	312
28	315	301	318	346	F	363	369	338	335	380	363	302	328	340	322	344	352	333	315	319	353	362	302	315
29	301	311	314	330	343	368	383	382	378	354	353	337	318	319	315	320	347	334	319	340	372	346	302	311
30	310	F	F	F	F	349	340	365	387	378	426	311	334	336	318	322	343	351	331	327	336	349	310	326
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	25	22	22	21	20	27	30	28	28	28	28	29	30	29	30	30	29	27	29	30	29	30	24	24
MED	312	312	325	345	336	344	368	368	354	357	346	332	334	340	340	348	350	350	345	332	344	320	308	312
U Q	316	321	332	371	362	355	382	372	365	365	364	351	343	346	353	353	358	357	356	344	353	338	318	316
L Q	308	309	315	322	320	332	356	358	345	348	337	324	321	328	329	337	340	334	336	322	326	314	302	307

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APR.2020 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	A	404	UL427	A	A	A	L	L	L						
2									L	422	UL404	A	387	UL412	396	UL393	A	L						
3									A	A	L	UL406	403	390	398	L	A	A						
4									L	UL399	388	389	413	UL401	388	UL383	L	A						
5									L	L	416	399	394	UL413	399	L	L	L						
6									L	UL405	402	UL374	410	UL423	426	404	A							
7									L	UL409	UL456	UL414	UL415	408	UL416	407	L	L						
8									L	400	394	409	400	406	UL413	396	L							
9										405	A	L	399	408	UL381	UL365	L	L						
10								L	L	L	L	378	400	421	403	391	L	L						
11									A	UL394		UL377	A	A	UL395	A	L	L						
12								A	A	A	A	A	A	A		A	L	A						
13								A	L	UL408	404	A	UL397	A	UL436	A	A	L						
14									394	UL390	UL426	UL430	UL405	UL408	407	A	A	L						
15									UL391	398	401	UL398	394	A	A	A	A	A	A					
16										A	UL397	UL408	A	A	UL421	A	A	A						
17								A	A	A	UL396	UL422	383	399	A	A	A	A	A					
18								L	L	A	L	UL412		UL402	A	UL391	UL421	L						
19									A	UL420	UL404	C	414	UL428	368	UL393		L						
20								L	A	A	A	UL410	413	410	A	A	A	L						
21							A	A	A	A	A	UL432	451		UL406	UL384	L	L						
22								L	L	A	A	UL369	UL403	UL403	402	412	UL392							
23							A	A	A	400	A	A	A	A	A	A	L	A	A					A
24									A	A	424	A	427	UL427	403	419	L	A	A					
25								L	UL373	L	396	395	418	415	UL402	384	374	L						
26									A	A	A	A	427	UL395	415	UL404	384	L						
27							A	A	A	A	393	A	UL393	UL432	UL405	385	404	L						
28									402	A	A	A	UL400	UL408	417	A	L	A	A					
29									L	418	UL402	416	401	UL404	402	381	375	L						
30								L	L	L		A	A	UL404	386	A	399		A					
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									4	13	17	19	23	22	23	16	7							
MED									392	UL405	402	UL408	403	UL408	403	392	392							
U Q									398	414	UL410	UL416	414	UL415	415	404	404							
L Q									UL382	UL398	396	UL389	397	UL403	396	UL384	375							

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APR.2020 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									262	270	270	260	258	242	242	242	252	262						
2									250	250	284	282	262	236	238	240	240	254						
3									268	262	262	310	282	262	236	236	256	234						
4									280	294	310	286	248	272	252	252	252	256						
5									268	266	314	252	292	252	248	256	236	256						
6									260	306	278	248	248	244	284	242	252							
7									264	252	238	270	288	316	264	264	248	276						
8									252	252	292	254	250	292	280	276	274							
9										262	280	266	266	276	294	278	258	240						
10								266	244	264	264	270	272	298	276	264	256	244						
11									252	288		338	292	272	272	248	238	238						
12								236	228	E A 276	298	294	294	288		234	248	234						
13								234	292	280	272	284	296	A	284	262	244	244						
14									244	232	294	292	292	280	298	254	228	256						
15									294	268	268	282	276	256	250	236	E A 252	A	232					
16										E A 314	356	302	268	266	264	250	E A 250	244						
17								A	A	266	272	280	262	264	244	E A 304	A	A	E A 264					
18								242	254	240	236	260		284	E A 282	280	242	234						
19									E A 246	234	260	C	272	266	288	254		288						
20								278	244	222	256	306	312	318	254	262	E A 294	272						
21							E A 282	E A 258	A	A	A	E A 370	370		318	308	298	280						
22								256	270	E A 344	E A 344	322	288	328	264	264	246							
23							E A 422	A	E A 272	262	262	318	306	292	268	260	238	A	A					A
24									292	248	236	286	332	272	272	276	292	278	244					
25								254	274	256	260	288	254	284	306	268	284	252						
26									E A 302	A	A	254	292	292	280	266	268	268						
27							230	E A 274	252	272	290	E A 322	304	346	322	254	234	252						
28									280	230	246	362	310	288	302	258	268	270	268					
29									256	270	262	290	306	312	296	296	250	280						
30								240	218	254		332	292	300	304	286	264		E A 248					
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							3	10	26	28	26	29	29	28	29	30	28	23	5					
MED							E A 282	248	258	261	270	285	288	282	274	260	252	256	246					
U Q							E A 422	266	274	274	292	314	300	295	295	276	266	272	266					
L Q							230	240	250	251	260	268	264	265	253	250	243	244	238					

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APR.2020 h'F (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E B 266	E B 268	E B 250	208	E B 240	E B 240	206	206	206	A	206	202	A	A	A	202	190	216	216	222	210	E A 230	E A 254	E B 246
2	234	E B 234	E B 236	214	214	E B 254	208	208	200	190	190	A	196	196	196	188	A	214	214	192	192	210	E A 258	E A 320
3	E B 250	E A 266	E B 234	204	220	E B 238	198	208	A	A	208	204	200	200	198	192	A	A	208	224	208	208	E B 280	E B 248
4	E B 258	E B 258	E B 266	222	E B 236	E B 248	204	210	204	204	204	188	204	198	200	186	190	A	214	196	196	E B 264	E B 266	E B 266
5	E B 276	E B 276	E B 242	202	196	E B 256	196	218	218	194	188	188	184	170	210	202	180	206	208	216	204	E B 236	E B 254	E B 254
6	E B 254	E B 254	E B 240	198	216	E B 258	208	218	214	204	196	204	198	194	194	180	A	200	220	212	226	E B 268	E B 260	E B 254
7	E B 254	E B 246	E B 254	204	200	E B 228	204	210	192	196	182	182	182	182	190	186	190	212	216	218	220	228	E B 228	E B 240
8	E B 276	E B 238	220	E B 220	186	220	212	204	204	192	220	202	194	194	194	186	194	216	210	E B 246	236	218	210	E B 244
9	E B 262	E B 262	E B 242	214	E B 238	E B 230	206	218	218	196	A	204	204	204	214	208	208	194	202	206	196	E B 238	E B 270	E B 258
10	E B 274	E B 264	E B 244	212	196	222	210	210	204	196	196	188	194	182	196	214	214	210	210	210	210	E B 240	E B 240	E B 240
11	E B 248	E B 244	E B 228	E B 232	E B 240	E B 230	206	206	A	200	200	210	A	A	198	A	198	192	208	216	220	220	E B 256	E B 258
12	E B 260	E B 268	E B 278	E B 278	E B 256	E B 256	202	A	A	A	A	A	A	A	238	A	186	A	230	E B 240	214	194	E B 256	E B 250
13	E B 260	E B 268	E B 260	E B 246	212	E B 226	210	A	208	186	190	A	202	A	202	A	A	190	224	226	212	210	226	E B 250
14	E B 258	E B 256	E B 256	226	E B 226	E B 216	200	222	206	196	196	180	180	180	180	A	A	200	214	240	220	214	E B 252	E B 250
15	E B 242	E B 242	E B 236	216	210	196	218	214	210	210	194	192	202	A	A	A	A	A	A	212	208	214	260	E B 260
16	E B 252	E B 248	224	204	200	E B 216	194	208	208	A	190	190	A	A	194	A	A	A	214	E B 234	228	E B 250	E B 274	E B 268
17	E A 288	E A 286	E B 244	190	190	206	206	A	A	A	204	194	224	196	A	A	A	A	A	196	200	224	E B 250	E B 246
18	E B 246	E B 238	E B 230	218	E B 220	E B 236	220	212	198	A	194	204	204	202	A	200	186	194	208	E A 252	E B 246	224	212	212
19	E A 262	E B 248	E B 248	E B 240	E B 230	E B 238	202	216	A	202	198	C	194	192	212	202	210	212	220	E B 238	196	198	E B 284	E B 264
20	E B 268	E B 284	E B 254	200	214	E B 232	206	222	A	A	A	192	192	188	A	A	A	208	218	E A 268	E B 268	E B 266	E B 260	E B 252
21	236	238	E B 216	E B 264	E B 264	E B 226	A	A	A	A	A	196	196	214	192	192	200	194	222	E B 226	E A 264	E B 240	E B 272	E A 248
22	E B 306	E B 252	218	E B 246	E B 274	218	222	212	212	A	A	214	200	200	198	198	202	202	212	E A 238	238	E B 230	E B 246	E A 286
23	E A 286	E B 252	E B 232	186	E B 284	E A 232	A	A	A	212	A	A	A	A	A	A	212	A	A	E A 262	A	E A 254	E A 302	A
24	E A 264	A	E A 248	E A 248	206	E B 220	208	208	A	A	176	A	184	182	186	184	220	A	A	216	208	206	E B 214	E B 238
25	E B 246	E B 246	E B 230	208	204	210	220	202	202	202	198	196	196	188	186	204	198	212	240	210	194	206	E B 264	E B 256
26	E B 226	E B 238	E B 254	E B 230	E B 230	216	194	216	A	A	A	A	202	202	204	196	196	214	224	214	214	E A 274	E B 274	E B 274
27	E B 254	E B 244	E B 254	E B 256	E B 252	E B 224	A	A	A	A	218	A	202	198	192	198	198	196	212	E A 278	E A 248	E A 248	226	E B 244
28	E B 244	E B 266	E B 250	200	E B 246	210	210	204	204	A	A	A	204	200	200	A	214	A	A	E B 240	208	200	E B 238	E B 238
29	E B 264	E B 258	E B 250	E B 230	216	212	214	214	196	198	198	198	198	208	208	228	208	224	E A 246	222	204	196	212	E B 264
30	E B 264	E B 246	E B 232	218	202	214	210	210	196	196	186	A	A	196	210	A	210	E A 232	A	E A 258	E A 238	E A 230	232	E B 248
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	30	29	30	30	30	30	27	24	19	17	22	20	24	23	24	19	21	21	24	30	29	30	30	29
MED	E B 259	E B 252	E B 243	208	U 203	E B 226	206	210	204	196	196	196	198	196	198	198	198	207	214	U 212	210	U 210	E B 255	E B 250
U Q	E B 266	E B 266	E B 254	E B 232	E B 240	E B 238	210	216	210	203	204	204	202	200	206	202	210	214	221	E A 240	E 232	E B 240	E B 266	E B 262
L Q	E B 248	E B 244	E B 232	204	204	216	202	208	200	195	190	189	194	188	193	186	190	195	210	212	204	210	232	E B 245

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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							120	114	114	A	A	A	A	A	A	110	108	108	B					
2							114	114	104	108	108	A	A	108	108	A	A	A	B					
3							B	108	108	108	110	A	A	A	A	A	A	A	B					
4							114	116	110	110	A	A	A	A	A	A	A	A	A					
5							B	108	112	116	110	108	112	118	118	118	118	116	B					
6							B	110	110	110	110	110	110	A	110	112	A	112	B					
7							112	112	112	108	108	114	116	118	112	108	110	110	B					
8							120	110	108	108	112	110	112	114	A	114	114	114	B					
9							112	114	112	112	A	A	A	A	A	A	110	110	B					
10							120	118	118	112	108	108	108	108	108	108	108	108	B					
11							110	110	110	112	112	110	112	112	112	A	A	A	B					
12							B	110	116	A	A	114	114	110	110	A	110	116	B					
13							108	108	108	108	108	A	A	A	A	108	108	108	B					
14							108	108	108	108	108	110	110	110	A	110	110	110						
15							114	114	116	112	112	112	106	106	110	112	A	A	A					
16							114	114	112	A	A	A	110	110	112	110	110	110	B					
17							116	108	A	A	A	A	110	110	112	A	A	A	B					
18							114	118	108	A	110	110	110	A	A	108	108	110	B					
19							110	A	A	A	A	C	A	A	A	A	112	112	B					
20							122	118	114	A	108	108	A	A	A	A	A	114	B					
21							114	114	A	A	A	110	A	116	114	108	A	108	B					
22							108	116	A	A	A	110	A	A	108	108	108	108	B					
23							B	108	A	108	A	A	A	A	A	116	116	A	B					A
24							116	110	A	A	A	A	A	A	A	110	108	108	B					
25							110	110	112	114	114	114	114	114	110	108	108	108	B					
26							116	116	112	A	A	A	114	110	110	110	110	110	B					
27							114	108	A	A	A	A	A	A	108	A	108	108	B					
28							108	108	A	A	A	A	A	108	A	108	108	A	B					
29							110	110	110	110	A	A	A	A	110	A	114	A	B					
30							114	114	A	114	A	A	114	114	A	A	114	110	B					
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							25	29	21	17	14	14	15	16	16	18	21	21						
MED							114	110	112	110	110	110	112	110	110	110	110	110						
U Q							116	114	113	112	112	112	114	114	112	112	113	112						
L Q							110	108	108	108	108	110	110	109	109	108	108	108						

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APR. 2020 h'Es (KM) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	90	90	90	G	110	110	94	94	94	94	92	92	120	G	140	84	100	100	100	94	94
2	94	94	B	B	94	94	114	124	116	110	110	96	96	G	G	98	98	98	98	B	94	B	94	94
3	96	96	94	92	92	92	132	140	130	124	118	106	106	102	100	98	88	88	88	88	96	96	98	126
4	B	B	B	B	B	B	132	130	120	116	98	94	96	92	90	86	86	86	84	92	92	92	B	B
5	B	B	B	B	B	B	132	120	120	130	G	144	G	G	G	G	G	G	B	88	B	B	B	88
6	B	B	B	B	B	B	136	136	118	118	118	G	G	96	G	112	100	158	144	88	B	B	B	B
7	B	B	B	B	B	B	160	142	142	132	132	136	G	G	116	G	G	G	120	98	100	100	96	B
8	B	B	B	B	B	B	150	146	142	G	162	G	G	G	96	110	G	140	92	90	88	B	B	B
9	B	B	114	B	B	B	128	112	126	G	104	98	98	98	98	96	G	140	86	84	92	108	108	B
10	B	B	B	B	B	B	126	132	120	G	122	G	G	G	140	130	120	118	118	98	94	B	B	B
11	B	B	108	B	B	B	144	132	122	116	126	132	130	118	122	104	104	104	B	B	108	108	B	B
12	B	B	B	B	B	B	136	124	124	106	106	118	116	116	114	106	G	170	150	108	102	102	100	B
13	B	B	B	B	B	B	134	124	122	122	G	102	102	92	98	152	130	130	B	82	B	B	B	B
14	B	B	B	B	B	B	140	138	138	110	G	G	G	154	92	146	124	134	90	B	B	B	B	B
15	B	B	B	B	B	B	170	168	126	156	G	140	132	124	124	116	100	100	100	92	B	B	B	B
16	B	B	B	B	B	B	158	132	116	102	102	98	116	116	112	112	108	108	108	98	98	98	98	104
17	94	90	100	100	B	B	126	114	104	104	98	98	130	118	120	106	102	102	102	B	B	B	B	B
18	92	B	B	B	B	B	128	126	116	102	102	116	G	98	96	134	G	126	100	92	92	110	B	96
19	84	88	B	B	B	B	114	104	96	96	96	C	96	96	96	96	124	122	110	96	96	96	96	102
20	B	94	B	94	B	B	134	134	112	108	106	106	100	98	98	108	108	112	106	92	B	102	102	102
21	98	98	B	112	112	112	112	112	100	98	98	G	98	G	G	G	98	132	120	B	102	102	102	96
22	96	126	92	B	92	96	126	124	90	92	92	G	92	92	134	134	148	120	104	98	100	100	B	96
23	92	90	92	92	88	88	114	110	102	110	102	96	96	94	94	112	110	98	92	92	94	98	92	92
24	88	88	86	86	86	124	122	118	106	104	102	102	96	92	92	G	126	120	112	102	100	B	B	B
25	B	B	B	B	B	B	128	118	114	114	114	114	150	G	G	162	G	146	118	B	100	100	84	B
26	100	B	B	B	B	B	128	126	118	100	100	108	118	118	118	G	118	160	110	100	100	100	104	86
27	84	B	B	B	84	142	114	114	104	104	104	100	100	100	G	100	G	G	110	94	86	80	84	82
28	B	B	B	B	B	B	124	120	104	104	104	104	104	G	102	144	132	98	98	94	94	94	B	B
29	B	B	B	B	B	116	116	128	114	108	106	100	100	88	G	92	G	86	86	84	84	84	B	B
30	B	B	B	B	B	88	110	110	94	134	100	100	132	122	104	92	120	120	100	92	92	94	108	B
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	9	7	7	8	10	29	30	30	27	26	23	23	22	23	25	20	27	27	24	23	20	15	13
MED	94	94	94	92	91	95	128	124	116	108	104	102	100	98	100	110	109	120	102	92	96	100	98	96
U Q	96	97	108	100	93	116	136	132	122	118	114	116	118	118	118	132	124	140	112	98	100	102	102	102
L Q	88	89	92	90	87	90	119	114	104	102	100	98	96	92	96	98	100	100	92	89	92	95	94	90

IONOSPHERIC DATA STATION Kokubunji

APR. 2020 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				F4	F2	F2		C1	C1	L3	L3	L1	L2	L2	L3	C1		H1	L2	F1	F1	F6	F5	F3
2	F2	F1			F2	F1	C2	C1	C1	C2	C1	L2	L1			L2	L3	L3	L2		F1		F4	F6
3	F3	F3	F2	F1	F3	F2	H2	H2	C1	C2	C1	L2	L2	L1	L2	L2	L3	L3	L1	F6	F3	F2	F2	F1
4							H2	H1	C1	C1	L1	L1	L1	L1	L2	L2	L2	L2	L3	F2	F1	F1		
5							H2	C2	C2	C1		H1								F2				F2
6							H2	H2	C2	C1	C1			L1		C1	L3	H1	H1	F1				
7							H2	H1	H1	H1	H1	H1			C1				L2	F1	F5	F3	F2	
8							H2	H1	H1		H1				L2	C2		H2	L1	F1	F2			
9			F1				C2	C2	C2		L1	L1	L2	L2	L2	L2		H1	L1	F2	F1	F1	F2	
10							C2	C1	C1		C1				H1	C1	C1	C1	C1	F2	F1			
11			F1				H2	C2	C2	C1	C1	H1	C1	C1	C1	L2	L2	L1			F5	F1		
12							H2	C2	C2	L2	L2	C1	C1	C1	C1	L1		H2	H1	F5	F6	F3	F3	
13							H1	C2	C1	C1		L2	L2	L3	L2	H1	C2	C1		F2				
14							H2	H1	H1	C1				H1	L2	H1	C1	H1	F2					
15							H2	H1	C1	H2		H1	H1	C1	C2	C2	L4	L4	L4	F2				
16							H2	H2	C1	L1	L1	L2	C2	C2	C2	C2	C L 3 2	C L 3 1	L4	F4	F6	F6	F2	F2
17	F6	F5	F2	F2			C2	C5	L3	L2	L2	L1	C1	C1	C2	L3	L5	L6	L5					
18	F1						C2	C2	C1	L2	C2	C1		L2	L2	H2		C2	L2	F5	F1	F1		F2
19	F2	F1					C3	L2	L3	L3	L2		L2	L1	L2	L2	C L 1 2	C2	L4	F3	F3	F3	F3	F2
20		F1		F1			C3	C2	C2	L1	C1	C1	L1	L2	L2	L2	L2	C2	L3	F3		F2	F1	F1
21	F2	F2		F2	F2	F2	C3	C2	L3	L3	L2		L2				L2	C1	C1		F6	F3	F2	F2
22	F2	F1	F2		F1	F2	C2	C2	L2	L2	L2		L1	L1	H1	H1	H1	C1	L2	F4	F2	F1		F4
23	F6	F2	F3	F3	F4	F3	C L 2 2	C3	L2	C2	L1	L2	L2	L2	L2	C2	C2	L2	L5	F6	F6	F4	F5	F5
24	F5	F7	F2	F2	F1	F2	C3	C2	L2	L4	L1	L1	L2	L3	L1		C2	C2	C1	F1	F1			
25							C2	C1	C1	C1	C2	C2	H2			H1		H1	C1		F2	F3	F1	
26	F2						C2	C2	C2	L2	L2	L1	C1	C1	C2		C1	H1	L3	F6	F3	F4	F2	F2
27	F1				F2	F1	C2	C3	L3	L2	L1	L3	L2	L1		L2			C1	F3	F4	F4	F2	F2
28							C2	C2	L1	L2	L2	L2	L1		L1	H2	H1	L2	L3	F5	F3	F1		
29						F1	C1	C1	C1	C1	L1	L1	L2	L2		L2		L3	L3	F4	F3	F2		
30						F1	C3	C1	L2	H1	L1	L2	H1	C1	L1	L3	C L 1 2	C2	L3	F F 3 3	F3	F5	F1	
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 Yamagawa

APR.2020 fxI (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

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

IONOSPHERIC DATA STATION Yamagawa

APR. 2020 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	32	F	F	36	21	21	30	46	56	61	72	75	67	76	70	A	54	50	62	72	76	32	30	34
2	F	F	F	F	F	F	F	53	55	54	58	65	78	75	61	55	52	56	66	60	47	40	39	39
3	39	39	39	38	F	F	F	47	50	53	58	56	73	93	90	78	63	57	56	59	59	40	33	31
4	31	31	F	F	F	F	33	44	47	54	56	69	84	82	64	62	61	65	64	53	41	35	37	37
5	F	32	34	40	25	20	30	44	50	51	55	57	66	86	85	63	58	58	57	54	51	39	37	36
6	36	36	36	37	23	21	32	46	52	55	54	60	81	68	55	56	53	52	60	58	48	40	39	39
7	38	37	35	34	31	24	32	45	52	58	55	62	64	68	64	59	54	49	49	58	61	55	42	F
8	F	F	F	F	F	18	33	44	48	54	63	65	70	62	64	66	60	64	68	62	64	57	47	42
9	42	40	40	40	33	32	41	50	52	60	56	63	70	60	60	61	72	72	60	53	48	40	38	38
10	38	37	F	31	27	18	33	48	56	60	64	60	64	59	58	58	64	55	60	58	55	51	42	46
11	44	41	38	37	31	27	37	46	50	56	55	58	59	73	75	79	65	54	52	54	51	36	31	F
12	F	F	25	24	24	23	36	46	52	53	52	53	68	74	79	72	60	54	58	64	64	A	27	27
13	F	F	23	25	25	18	35	A	48	52	56	59	63	75	76	74	72	A	59	62	67	38	33	32
14	30	29	31	29	28	23	34	47	55	65	54	60	69	74	84	77	61	53	A	51	57	52	40	38
15	39	38	39	45	30	24	35	46	54	61	70	80	87	93	87	90	60	53	56	64	68	55	44	41
16	39	38	38	42	23	22	38	46	46	50	56	68	72	78	84	81	62	58	52	52	56	54	42	41
17	F	F	F	F	A	A	A	46	54	60	53	61	A	77	62	55	A	A	61	72	A	46	42	39
18	41	40	37	34	32	30	38	55	57	59	53	53	65	67	58	58	70	63	56	58	56	53	42	38
19	37	38	34	34	32	30	43	50	56	69	62	60	70	73	74	60	58	65	70	74	61	38	34	34
20	35	36	36	38	25	23	36	53	58	53	53	54	70	85	85	A	56	58	66	62	61	60	58	55
21	54	46	56	37	A	A	30	A	44	A	A	47	A	47	A	49	48	44	48	43	45	42	35	35
22	32	F	36	25	F	24	36	43	48	55	A	55	57	59	70	66	59	53	53	57	53	48	44	39
23	36	32	33	38	A	A	37	48	50	A	54	65	72	76	81	79	66	A	55	61	63	54	A	A
24	A	F	F	F	F	F	37	48	57	73	60	50	54	66	73	71	78	78	78	A	64	48	38	38
25	38	36	34	34	30	26	37	52	57	55	59	61	67	58	55	64	68	60	69	74	66	52	42	39
26	37	35	34	33	38	35	41	47	50	60	62	66	56	62	70	76	82	85	77	70	55	42	A	38
27	38	35	34	30	28	27	39	52	53	53	55	70	68	70	84	91	74	65	58	53	56	49	43	40
28	38	F	F	F	32	F	43	43	50	60	50	55	60	66	A	74	67	A	A	60	69	52	37	37
29	36	34	33	32	28	24	45	49	53	57	58	59	62	70	76	79	76	70	65	71	73	50	37	41
30	38	36	35	35	28	24	40	65	58	49	52	60	63	58	62	73	88	70	63	66	72	52	32	32
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	23	21	22	24	21	22	27	28	30	28	28	30	28	30	28	28	29	26	28	29	29	29	28	27
MED	38	36	35	34	28	24	36	47	52	56	56	60	68	72	72	68	62	58	60	60	59	48	38	38
U Q	39	38	38	38	32	27	39	50	56	60	60	65	71	76	82	78	71	65	66	65	65	52	42	40
L Q	36	34	34	32	25	21	33	46	50	53	54	56	63	62	62	60	58	53	56	54	52	40	34	35

IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	424	436	440	440	436	A	L		L					
2										L	432	440	432	440	436	A	L							
3										L	L	A	A	U L 436	436	A	A	L						
4										L	U L 428	440	440	436	U L 436	424	404	L						
5										L	432	U L 424	440	428	436	424	L	L						
6										A	432	432	420	440	U L 428	A	L	L						
7									L	U L 404	U L 456	U L 444	452	444	416	416	L							
8										U L 416	U L 428	432	440	428	436	420	416	L						
9									L	392	U L 420	A	A	448	428	A	U L 412	L						
10									L	L	436	444	444	440	432	424	A	L						
11									A	U L 432	436	444	A	A	A	404								
12									A	L	U L 448	A	A	A	432	416	A	L						
13								A	A	L	420	440	440	U L 440	432	424	388	A	A					
14								L	L	U L 416	U L 472	452	A	A	A	424	L	A	A					
15									A	A	A	A	A	A	A	420	A		A					
16								A		432	416	A	A	A	A		A	A	A					
17							A		L	404	U L 440	432	A	A	A	A	A							
18									A	416	L	436	A	436	436	424	404	A	A					
19									A	A	A	A	A	A	A	U L 420	U L 416	L						
20									A	A	A	A	A	A	A	A	A	L						
21							A	A	A	A	A	U L 420	A	420	A	412	A		L					
22									U L 412	408	A	440	428	440	U L 436	412	L	L						
23									A	A	A	432	A	U L 440	436	U L 408	A	A	A					
24								L	L	A	A	460	U L 444	U L 432	428	416	404	A						
25								L	L	L	428	428	444	444	428	U L 416	404	L	L					
26									L	A	428	440	452	440	U L 428	416	408	372	L					
27								L	A	428	428	A	U L 444	444	420	U L 416	404	L						
28									L	A	U L 440	428	452	A	A	A	A	A	A					
29									A	416	A	A	436	448	428	424	420	A	A					
30									A	U L 428	440	436	440	U L 448	428	A	396	A	A					
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	12	20	21	17	21	21	20	12	1						
MED									U L 412	416	432	436	440	440	432	418	404	372						
U Q										428	U L 440	442	444	444	436	424	414							
L Q										406	428	432	438	436	428	416	404							

APR.2020 foF1 (0.01MHz)

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APR.2020 foE (0.01MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	U A 204	A	A	A	A	R	A	A	A	R	R	U R 204					
2							B	U R 228	U A 260	A	A	A	A	A	A	A	A	A	B					
3							B	A	U A 256	A	A	A	A	A	U A 336	A	A	U R 244	B					
4							B	U A 228	U A 272	U A 288	A	A	A	R	U A 320	U R 308	A	U R 252	U R 196					
5							B	U A 196	A	U A 272	U R 340	A	R	A	U A 324	U R 316	U R 292	U R 248	B					
6							B	U A 208	U A 256	U A 292	U A 320	A	R	372	U R 336	A	A	U A 244	B					
7							B	U A 208	U A 256	U A 308	A	A	A	A	U R 336	U R 312	U A 304	U A 252	A					
8							B	U A 208	U A 264	U A 300	A	A	A	U R 348	R	U R 312	U A 284	U A 248	U A 192					
9							B	U A 232	A	A	A	A	A	A	R	A	A	A	B					
10							B	A	A	A	A	U R 340	U R 340	U A 340	U A 324	U A 304	U A 284	A	B					
11							B	232	U A 276	U A 308	R	A	U A 336	A	U A 324	U A 308	A	A	B					
12							B	U A 240	U A 268	U A 300	A	332	A	A	A	A	A	A	B					
13							B	A	A	A	A	A	A	A	R	U R 324	A	A	B					
14							U R 176	216	A	U A 296	U A 316	R	U A 352	A	U A 336	U A 324	A	A	B					
15							B	U A 240	A	A	A	A	A	A	A	A	A	U R 272	A					
16							B	A	A	A	A	A	U A 332	A	A	A	A	A	A					
17							B	U A 212	A	A	A	A	A	A	A	A	A		B					
18							B	A	A	A	A	A	A	A	A	U R 312	284	A	B					
19							B	A	A	A	A	A	A	A	A	U R 312	R	264	U A 188					
20							U A 172	U A 252	A	A	A	A	A	A	A	A	U A 300	U A 256	A					
21							B	A	A	A	A	A	A	A	A	A	A	A	U A 192					
22							B	U R 244	A	A	A	A	U R 352	U R 340	U R 332	A	U A 284	A	A					
23							B	U A 240	A	A	A	A	A	A	A	308	U A 296	A	B					
24							B	A	A	A	A	A	A	A	A	A	U R 304	A	A					
25							A	U A 244	A	A	A	A	A	A	A	A	A	U R 276	A					
26							U R 196	U A 228	A	A	A	A	A	U R 360	U A 340	U R 316	U A 292	A	A					
27							B	U A 240	A	A	A	A	A	U R 360	U R 340	A	R	U R 248	A					
28							U R 188	U A 240	A	A	A	A	A	A	A	A	A	A	A					
29							U R 204	U A 244	A	A	A	A	A	A	A	U A 316	292	U A 252	A					
30							U A 196	A	A	A	A	U R 360	A	A	U A 332	A	U A 300	A	A					
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	21	8	8	3	3	5	6	12	13	12	12	5				
MED							U R 192	U A 232	U A 262	U A 298	U A 320	U R 340	U A 340	U R 354	U A 334	U R 312	U A 292	U 252	U A 192					
U Q							U R 196	U A 240	U A 270	U A 304	U R 340	U R 360	U 352	360	U R 336	U R 316	U A 300	U 260	U R 200					
L Q							U 176	U A 210	U A 256	U A 290	U A 316	332	U A 334	U 340	U A 324	U 308	U A 284	U 248	U A 190					

APR.2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

APR.2020 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	33	35	37	G	40	42	J A 67	G	G	G	E B 16	E B 16	E B 16	23	J A 25
2	22	22	E B 16	22	E B 16	E B 16	E B 16	G	30	35	J A 42	J A 42	J A 46	J A 40	J A 50	J A 50	J A 38	J A 33	J A 32	J A 22	26	20	23	20
3	21	J A 26	J A 34	20	J A 28	E B 16	E B 16	26	34	36	39	J A 56	J A 57	J A 56	37	J A 54	J A 43	G	J A 23	J A 23	22	25	23	23
4	J A 34	J A 44	20	E B 16	E B 16	20	J A 22	26	32	33	35	36	J A 43	G	39	G	J A 34	G	G	J A 25	E B 15	E B 15	25	20
5	20	20	23	E B 16	E B 16	E B 15	E B 16	26	30	34	G	40	G	J A 42	36	G	G	G	24	J A 26	J A 23	J A 22	22	J A 27
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	30	34	40	40	40	G	G	G 31	J A 44	34	32	28	J A 26	20	E B 15	20	20
7	19	E B 15	E B 15	19	19	E B 15	E B 16	28	33	39	38	40	40	37	G	G	35	33	J A 33	J A 28	J A 28	J A 22	22	21
8	22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	33	34	35	38	J A 42	G	G	G	34	28	27	J A 30	39	23	21	E B 16
9	E B 16	20	E B 16	E B 16	E B 16	E B 16	E B 15	30	J A 45	J A 56	J A 52	J A 56	J A 64	J A 46	G	J A 49	36	J A 38	J A 28	21	24	J A 32	J A 51	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	J A 25	J A 38	J A 40	J A 42	J A 40	G	G	40	39	38	38	32	24	22	21	23	E B 16	19
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	34	G	37	J A 54	44	43	40	J A 46	J A 36	24	22	22	J A 24	E B 16	20
12	E B 17	E B 16	E B 16	21	J A 26	E B 16	19	29	36	38	40	J A 47	J A 51	J A 53	37	J A 45	J A 46	J A 42	J A 30	32	J A 48	J A 66	J A 39	J A 30
13	J A 34	J A 31	22	19	18	E B 15	E B 20	J A 48	J A 42	36	37	J A 44	39	J A 42	G	G	J A 33	J A 70	J A 33	J A 35	J A 32	21	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	20	E B 16	G	27	31	36	36	G	42	J A 146	J A 50	42	39	J A 45	J A 80	J A 30	31	E B 16	E B 16	23
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	34	J A 46	42	J A 46	J A 61	J A 48	J A 52	45	36	J A 46	G	J A 44	J A 46	27	J A 32	E B 16	E B 16
16	E B 16	E B 16	E B 17	E B 16	E B 16	E B 16	E B 16	22	32	36	40	J A 47	J A 54	J A 68	J A 109	J A 99	J A 58	J A 71	J A 89	J A 42	J A 42	J A 36	J A 70	J A 33
17	J A 28	21	E B 16	J A 42	J A 51	J A 46	J A 36	26	J A 45	J A 48	J A 42	J A 42	J A 93	J A 84	J A 82	J A 260	J A 86	J A 162	J A 168	J A 70	J A 56	J A 22	E B 16	E B 16
18	E B 16	E B 16	19	19	E B 16	J A 24	E B 17	J A 34	36	38	J A 56	J A 45	J A 112	J A 53	J A 52	G	35	J A 50	J A 54	J A 108	J A 37	22	E B 16	E B 17
19	20	20	E B 16	E B 16	E B 16	E B 16	18	33	J A 44	J A 54	J A 51	J A 48	J A 60	J A 58	J A 51	G	G	30	J A 39	J A 41	J A 28	24	24	E B 16
20	E B 16	E B 16	E B 16	E B 26	19	E B 16	21	30	J A 38	J A 52	J A 53	J A 52	J A 56	J A 44	J A 56	J A 118	J A 54	33	J A 44	J A 54	J A 32	J A 38	J A 24	J A 26
21	J A 25	J A 33	20	22	J A 35	J A 31	J A 36	J A 40	J A 46	J A 48	J A 48	42	J A 48	J A 48	J A 53	J A 44	J A 47	31	25	J A 26	J A 34	J A 30	28	19
22	E B 16	J A 23	J A 34	E B 16	22	J A 30	21	G	31	J A 43	J A 78	J A 80	G	G	38	34	34	37	25	J A 34	J A 54	J A 54	J A 39	J A 42
23	J A 35	J A 32	J A 33	J A 52	J A 52	J A 57	24	29	J A 45	J A 65	J A 57	J A 46	J A 74	J A 62	42	37	J A 74	J A 70	J A 54	J A 28	J A 27	J A 46	J A 86	J A 85
24	J A 87	J A 53	J A 36	20	24	E B 16	J A 29	J A 40	J A 39	J A 43	J A 45	36	38	J A 39	J A 42	J A 38	G	J A 45	J A 55	J A 71	J A 25	J A 28	22	J A 28
25	J A 27	24	20	20	E B 16	E B 16	J A 28	29	J A 40	J A 41	J A 40	39	J A 40	J A 40	J A 40	35	J A 37	G	J A 33	J A 24	E B 16	E B 16	24	E B 17
26	E B 16	J A 24	21	22	24	E B 16	G	29	35	J A 46	38	38	41	G	38	G	35	34	J A 36	J A 44	J A 24	J A 38	J A 55	J A 32
27	E B 16	E B 16	E B 16	E B 16	J A 27	J A 27	E B 16	J A 40	45	39	J A 42	J A 45	40	G	G	J A 41	G	G	J A 35	J A 37	J A 30	24	23	24
28	23	23	E B 16	E B 16	E B 16	E B 16	G	G	J A 33	J A 42	38	J A 43	37	J A 51	J A 76	J A 48	J A 47	J A 67	J A 57	J A 52	J A 52	J A 42	J A 32	24
29	20	20	E B 16	20	20	E B 16	G	28	J A 40	J A 41	J A 46	J A 47	J A 41	J A 42	J A 40	37	37	J A 56	J A 35	J A 31	J A 33	26	23	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	20	25	30	J A 42	J A 40	J A 38	G	41	45	38	J A 60	35	J A 49	J A 63	21	J A 29	J A 40	20	20
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	20	20	E B 16	E B 16	E B 16	E B 16	G	29	36	40	J A 40	J A 42	J A 42	J A 43	40	39	36	34	J A 33	J A 30	J A 28	J A 24	23	20
U Q	J A 25	J A 24	20	20	J A 24	J A 20	J A 22	J A 33	J A 42	J A 43	J A 47	J A 47	J A 56	J A 53	J A 50	J A 49	J A 46	J A 49	J A 44	J A 42	J A 34	J A 38	J A 28	J A 25
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	33	36	38	38	G 39	G 39	G 37	G	G 34	G 28	25	24	23	E B 22	E B 20	E B 17

APR.2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	21	29	31	34	36	G	37	38	A A 67	G	G	G	E B 16	E B 16	E B 16	E B 16	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	28	33	36	36	37	36	38	41	32	31	27	E B 16	E B 16	E B 16	E B 16	E B 16
3	E B 16	19	E B 16	16	E B 16	E B 16	E B 16	24	30	34	37	44	41	36	35	49	36	G	19	16	E B 16	E B 16	19	E B 16
4	E B 16	20	E B 16	E B 16	E B 16	E B 16	E B 16	24	29	32	34	34	36	G	36	G	29	G	G	E B 16	E B 15	E B 15	E B 16	E B 16
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	E B 16	24	28	32	G	36	G	36	35	G	G	G	21	22	20	E B 16	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	29	33	38	38	38	G	G	G 26	40	32	30	26	E B 16	E B 16	E B 15	E B 15	E B 16
7	E B 16	E B 15	E B 15	E B 15	E B 15	E B 15	E B 16	26	31	35	36	38	38	36	G	G	34	32	26	20	18	16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	32	32	33	35	38	G	G	G	32	27	24	19	36	E B 16	E B 16	E B 16
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 15	28	31	32	36	47	56	37	G	42	35	28	21	E B 16	16	28	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	21	30	32	34	33	G	G	37	37	37	36	30	21	E B 16	E B 15	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	26	30	33	G	37	43	43	42	37	42	24	24	E B 16	21	E B 16	E B 16	E B 16
12	E B 17	E B 16	E B 16	E B 16	E B 16	E B 16	18	27	34	37	38	42	46	49	36	35	37	28	21	29	27	A A 66	E B 16	18
13	E B 16	21	E B 16	E B 16	E B 16	E B 15	E B 20	A A 48	38	32	36	36	39	37	G	G	29	A A 70	28	20	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	29	34	35	G	41	43	41	37	32	41	A A 80	28	30	E B 16	E B 16	E B 16
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	31	40	38	40	42	44	46	42	34	36	G	38	23	24	22	E B 16	E B 16
16	E B 16	E B 16	E B 17	E B 16	E B 16	E B 16	17	30	35	37	37	46	52	42	44	49	54	36	31	31	E B 16	35	28	18
17	E B 16	E B 16	E B 16	E B 16	A A 51	A A 46	A A 36	26	28	36	37	36	A A 93	42	42	47	A A 86	A A 162	29	23	A A 56	E B 15	E B 16	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	29	34	36	38	38	47	40	38	G	32	36	48	40	20	E B 16	E B 16	E B 17
19	E B 16	E B 15	E B 16	E B 16	E B 16	E B 16	18	31	38	44	43	43	43	48	44	G	G	29	32	33	23	E B 15	20	E B 16
20	E B 16	E B 16	E B 16	E B 26	E B 16	E B 16	19	26	35	47	50	47	48	42	45	A A 118	48	30	40	32	24	26	20	19
21	E B 16	E B 15	E B 15	E B 16	A A 35	A A 31	26	A A 40	38	A A 48	A A 48	38	A A 48	39	A A 53	34	34	25	22	20	22	E B 16	23	E B 16
22	E B 16	E B 16	E B 16	E B 16	E B 16	18	20	G	29	37	A A 78	40	G	G	36	33	32	28	23	29	22	22	28	26
23	18	E B 16	E B 17	E B 16	A A 52	A A 57	19	27	39	A A 65	45	38	49	38	39	35	45	A A 70	42	22	21	16	A A 86	A A 85
24	A A 87	20	E B 16	E B 16	E B 16	E B 16	23	31	35	39	41	35	35	36	36	35	G	35	43	A A 71	16	E B 16	E B 16	E B 16
25	E B 15	E B 15	E B 16	E B 16	E B 16	E B 16	24	27	32	32	36	36	38	37	36	34	30	G	26	20	E B 16	E B 16	20	E B 17
26	E B 16	E B 16	E B 16	16	E B 16	E B 16	G	26	34	41	37	36	40	G	36	G	32	32	24	29	E B 15	19	A A 55	19
27	E B 16	E B 16	E B 16	E B 16	19	E B 16	E B 16	32	38	37	37	41	37	G	G	34	G	G	30	20	22	E B 16	E B 16	17
28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	G	31	39	35	38	36	45	A A 76	41	41	A A 67	A A 57	42	36	36	E B 16	E B 16
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	35	36	40	44	37	39	38	36	35	35	30	19	16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	28	36	36	36	G	38	40	36	41	32	37	52	17	15	16	E B 16	E B 16
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	G	26	32	36	37	38	38	37	36	35	32	30	26	20	19	E B 16	E B 16	E B 16
U Q	E B 16	16	E B 16	E B E B 16	16	16	20	30	35	38	40	42	46	42	42	41	36	36	38	29	23	19	20	17
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	33	35	36	G 36	G 36	G 35	G	G 30	G 24	22	E B 16	E B 16	E B 16	E B 16	E B 16

APR.2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	14	16	17	19	19	21	19	18	20	16	16	16	16	16	16	16
2	16	16	16	16	16	16	16	16	16	16	14	17	20	16	19	19	17	14	16	16	16	16	16	16
3	16	16	16	16	16	16	16	16	16	19	17	17	19	19	20	19	19	16	16	16	16	16	16	16
4	16	16	16	16	16	16	16	16	14	16	18	20	19	22	22	20	15	15	16	16	15	15	16	16
5	16	16	16	16	16	15	16	16	15	15	17	19	23	21	17	18	18	16	15	16	15	16	16	16
6	16	16	16	16	16	16	16	15	16	16	17	19	20	20	20	20	20	19	16	16	16	15	15	16
7	16	15	15	15	15	15	16	16	16	16	15	19	22	22	23	19	18	15	15	16	16	16	16	16
8	16	16	16	16	16	16	16	17	16	16	16	19	17	17	21	21	21	17	15	16	16	16	16	16
9	16	16	16	16	16	16	15	16	14	16	19	19	19	19	19	17	16	15	16	16	16	16	16	16
10	16	16	16	16	16	16	16	16	16	16	17	17	20	23	23	15	15	15	16	15	15	16	16	16
11	16	16	16	16	16	16	16	16	15	20	19	22	22	20	22	17	19	15	16	16	15	16	16	16
12	17	16	16	16	16	16	15	16	17	19	21	21	21	20	20	20	17	17	14	16	16	15	16	16
13	16	16	16	16	16	15	20	15	16	16	17	17	19	18	22	16	16	16	17	16	16	16	16	16
14	16	16	16	16	16	16	15	16	15	16	16	20	23	22	19	19	19	16	16	17	17	16	16	16
15	16	16	16	16	16	16	16	16	16	16	21	20	20	20	22	15	16	16	15	16	16	16	16	16
16	16	16	17	16	16	16	16	15	17	17	17	18	21	21	21	16	16	16	15	16	16	16	15	16
17	16	16	16	16	16	15	16	16	16	16	15	16	16	16	17	19	17	16	15	16	16	15	16	16
18	16	16	16	16	16	16	17	14	16	16	20	18	18	19	23	20	16	15	16	16	16	16	16	17
19	16	15	16	16	16	16	15	15	15	15	19	18	18	20	20	20	16	15	15	17	15	15	16	16
20	16	16	16	26	16	16	15	16	14	16	18	18	17	16	16	16	18	15	15	16	16	16	16	15
21	16	15	15	16	16	16	16	16	16	15	16	15	16	20	18	18	18	16	16	16	16	16	16	16
22	16	16	16	16	16	16	16	16	16	16	18	19	19	21	21	18	17	16	16	17	16	16	16	16
23	16	16	17	16	16	16	16	16	16	17	20	20	22	22	22	20	18	18	16	16	16	16	16	15
24	16	16	16	16	16	16	15	16	16	16	19	21	21	21	22	19	18	16	16	16	16	16	16	16
25	15	16	16	16	16	16	14	14	15	19	19	20	23	22	20	18	18	20	15	16	16	16	17	17
26	16	16	16	16	16	16	16	15	15	17	20	20	20	21	21	22	18	16	16	15	15	16	15	16
27	16	16	16	16	16	16	16	16	16	19	19	20	22	21	21	21	20	16	16	16	16	16	16	16
28	16	16	16	16	16	16	15	15	16	16	18	20	21	21	22	22	19	16	16	16	16	16	16	16
29	16	16	16	16	16	16	16	16	16	16	19	21	21	21	22	18	19	16	16	16	16	16	16	16
30	16	16	16	16	16	16	16	16	14	16	18	20	20	19	20	20	16	16	16	16	15	16	16	16
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	16	16	16	16	16	16	16	16	18	19	20	20	21	19	18	16	16	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	17	19	20	21	21	22	20	19	16	16	16	16	16	16	16
L Q	16	16	16	16	16	16	15	15	15	16	17	18	19	19	19	18	16	15	15	16	16	16	16	16

IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	298	F	F	382	339	293	335	359	369	363	347	367	343	355	355	A	350	319	336	337	378	350	310	312
2	F	F	F	F	F	F	F	393	366	346	345	331	357	368	365	354	343	340	351	356	339	322	294	295
3	320	330	355	382	F	F	F	380	371	338	352	306	306	336	353	341	338	354	351	349	369	342	284	306
4	302	308	F	F	F	F	377	369	356	345	306	319	349	357	344	361	350	370	377	359	340	288	293	310
5	F	305	333	367	377	333	335	386	370	362	346	332	322	347	367	364	340	338	368	339	342	334	296	307
6	311	320	349	382	382	299	341	376	361	353	347	340	361	362	359	340	332	335	359	341	354	316	308	305
7	313	327	321	344	375	301	364	360	375	377	340	347	334	335	358	367	345	342	342	325	349	357	316	F
8	F	F	F	F	F	335	367	380	369	351	349	352	347	334	336	356	345	328	337	336	338	328	325	308
9	311	307	323	342	343	329	364	362	356	368	351	333	350	345	330	330	347	372	373	353	342	314	297	302
10	308	316	F	347	386	298	359	364	367	368	373	336	372	338	350	351	362	354	365	342	358	339	305	309
11	304	296	323	324	298	325	389	376	347	352	354	333	319	328	339	361	374	350	363	355	360	331	297	F
12	F	F	288	306	307	317	342	382	362	368	336	313	338	335	338	348	359	347	342	340	371	A	297	297
13	F	F	323	335	405	361	364	A	369	345	360	342	325	313	344	336	360	A	344	333	377	365	294	302
14	298	321	306	328	332	320	348	356	363	392	348	315	316	321	339	361	361	369	A	327	326	367	294	303
15	318	325	336	364	386	376	370	370	326	343	339	317	330	338	338	368	362	331	336	327	339	364	313	303
16	319	324	332	367	365	325	377	385	377	335	316	329	316	329	340	351	352	349	360	317	342	346	303	308
17	F	F	F	F	A	A	A	377	347	360	322	333	A	342	345	342	A	A	334	347	A	317	303	305
18	311	322	329	340	332	325	359	383	373	372	359	309	334	348	331	332	354	347	355	348	337	350	325	317
19	305	321	324	353	343	325	356	370	358	371	354	314	312	318	336	347	317	328	343	368	386	338	305	314
20	313	312	306	388	337	318	350	395	382	379	354	300	301	337	350	A	317	345	354	325	301	302	296	287
21	305	295	368	358	A	A	289	A	300	A	A	316	A	293	A	343	340	337	358	333	320	336	304	292
22	273	F	341	319	F	296	355	360	314	345	A	314	321	310	326	348	349	336	337	325	331	323	320	320
23	311	311	282	402	A	A	358	379	367	A	318	330	318	318	321	342	356	A	356	328	346	368	A	A
24	A	F	F	F	F	F	354	337	342	370	376	340	308	315	319	299	308	342	342	A	363	359	305	320
25	307	310	319	353	324	307	362	358	375	360	354	343	332	331	314	327	336	339	335	343	366	352	326	306
26	302	306	306	317	345	330	336	389	356	361	355	355	319	328	310	300	320	356	348	358	357	322	A	275
27	317	311	326	324	319	320	363	349	345	345	323	332	294	288	310	348	337	320	354	331	352	339	324	308
28	301	F	F	F	318	F	378	343	335	363	363	325	307	305	A	323	331	A	A	313	338	359	304	311
29	301	326	311	323	309	310	370	392	377	373	358	332	307	312	304	317	314	342	333	348	369	380	294	309
30	301	293	312	332	340	316	358	404	391	345	330	334	340	303	322	312	332	348	313	324	362	344	336	308
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	23	21	22	24	21	22	27	28	30	28	28	30	28	30	28	28	29	26	28	29	29	29	28	27
MED	307	312	323	346	340	320	359	376	364	360	348	332	324	332	338	345	345	342	350	339	349	339	304	307
U Q	313	323	333	367	376	329	367	384	371	369	354	340	342	342	350	355	355	350	358	348	364	358	314	310
L Q	301	306	311	326	322	307	348	360	347	345	338	316	314	315	324	331	332	336	337	327	338	322	296	302

IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	385	408	406	404	396	A	L		L					
2										L	400	422	400	404	409	A	L							
3										L	L	A	A	U L 400	408	A	A	L						
4										L	U L 403	394	402	410	U L 411	393	388	L						
5										L	403	U L 430	424	420	374	403	L	L						
6										A	397	415	418	401	U L 414	A	L	L						
7									L	U L 397	U L 388	U L 408	418	426	454	435	L							
8										U L 377	U L 386	398	411	424	416	396	372	L						
9									L	409	U L 413	A	A	412	411	A	U L 374	L						
10									L	L	395	430	409	404	411	389	A	L						
11									A	U L 388	410	431	A	A	A	430								
12									A	L	U L 390	A	A	A	416	398	A	L						
13								A	A	L	426	406	407	U L 407	392	401	414	A	A					
14								L	L	U L 403	U L 370	406	A	A	A	379	L	A	A					
15									A	A	A	A	A	A	A	393	A		A					
16								A		391	432	A	A	A	A		A	A	A					
17							A		L	398	U L 399	427	A	A	A	A	A							
18									A	411	L	436	A	425	403	398	401	A	A					
19									A	A	A	A	A	A	A	U L 398	U L 386	L						
20									A	A	A	A	A	A	A	A	A	L						
21							A	A	A	A	A	U L 402	A	403	A	401	A		L					
22									U L 354	369	A	345	425	415	U L 428	397	L	L						
23									A	A	A	403	A	U L 401	404	U L 423	A	A	A					
24								L	L	A	A	402	U L 442	U L 428	407	399	382	A						
25								L	L	L	418	421	428	408	424	U L 408	386	L	L					
26									L	A	409	436	424	437	U L 409	400	384	393	L					
27								L	A	373	422	A	U L 405	406	430	U L 409	395	L						
28									L	A	U L 407	436	409	A	A	A	A	A	A					
29									A	403	A	A	438	389	388	390	354	A	A					
30									A	U L 417	401	437	418	U L 402	421	A	388	A	A					
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	12	20	21	17	21	21	20	12	1						
MED									U L 354	398	402	415	418	407	411	398	386	393						
U Q										406	412	430	424	422	418	406	392							
L Q										382	U L 392	402	406	402	404	394	378							

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APR.2020 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									258	258	258	240	268	254	250	A	262		262					
2										272	272	286	244	236	236	252	274							
3										288	266	E A 346	314	264	226	244	250	244						
4										274	344	292	246	242	250	250	266	230						
5										268	274	282	294	260	246	246	256	256						
6										262	278	278	244	232	266	286	274	294						
7									248	242	302	268	282	272	250	250	264							
8										280	254	266	266	284	274	258	264	280						
9									260	240	272	290	262	272	298	298	256	230						
10									232	232	228	292	252	274	264	264	240	250						
11									214	266	254	298	304	274	258	228								
12									240	244	294	326	282	272	252	242	254	268						
13								A	232	262	262	296	300	286	254	258	240	A	238					
14								262	238	224	274	322	294	270	248	240	250	236	A					
15									E A 280	272	272	272	262	256	246	222	236		E A 256					
16								210		322	316	264	E A 288	276	258		E A 274	230	224					
17							A		272	250	294	278		A 260	262	E A 280	A							
18									230	230	252	348	282	262	306	280	236	252	E A 272					
19									246	228	250	312	286	276	260	260	280	260						
20									218	E A 236	E A 310	E A 374	318	256	234	A	E A 310	270						
21							E A 352	A	364	A	A	358	A	404	A	300	306		256					
22									318	274	A 342	312	318	276	250	250	278							
23									254	A	E A 306	280	286	280	280	254	246	A	246					
24								304	258	236	236	310	342	310	290	294	268	246						
25								246	236	260	260	264	260	292	328	278	264	264	262					
26									276	254	258	246	314	306	306	296	270	230	244					
27								276	246	270	330	278	312	328	290	242	242	248						
28									284	242	262	326	326	306	A	268	252	A	A					
29									234	246	266	304	326	298	298	282	268	248	250					
30									214	280	302	302	290	344	318	300	242	230	E A 308					
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	5	23	28	28	30	28	30	28	27	28	20	11					
MED							E A 352	262	246	259	269	290	286	274	261	258	257	249	251					
U Q								290	272	272	298	322	312	298	290	282	269	266	E A 262					
L Q								228	232	241	258	278	264	260	250	246	248	233	244					

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APR.2020 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	E A 288	E B 272	E B 250	204	204	E B 258	212	202	210	198	184	184	194	194	220	A	202	222	222	212	194	194	E B 250	E B 254
2	E B 254	E B 234	206	E B 224	E B 232	E B 252	222	204	204	204	202	194	194	198	198	A	186	226	226	194	194	E B 214	E B 276	E B 274
3	E B 254	E A 246	208	186	186	E B 256	224	206	212	212	212	A	A	202	186	A	A	198	202	202	202	196	E A 272	E B 290
4	E B 282	E A 280	E B 272	224	194	E B 250	212	208	208	214	190	188	188	188	192	180	180	202	202	200	200	E B 274	E B 274	E B 270
5	E B 264	E B 264	232	196	184	E B 268	218	202	218	196	196	188	184	184	214	194	194	194	212	208	208	208	E B 262	E B 262
6	E B 256	E B 248	E B 222	192	190	E B 282	212	208	216	A	210	200	200	196	174	A	188	224	224	208	200	E B 216	E B 260	E B 258
7	E B 238	E B 238	E B 246	222	198	E B 234	208	208	214	210	198	190	190	190	190	188	206	228	228	E A 234	204	204	E B 232	E B 252
8	E B 244	E B 268	E B 222	210	188	174	200	200	210	210	208	196	196	196	192	192	208	214	226	218	228	206	216	E B 254
9	E B 268	E B 254	E B 244	E B 226	196	E B 230	204	204	204	204	194	A	A	184	184	A	208	200	208	198	212	E A 270	E B 270	E B 270
10	E B 270	E B 262	E B 278	230	174	E B 332	210	208	200	200	198	184	184	214	206	206	A	196	214	202	200	200	E B 246	E B 246
11	E B 246	E B 246	228	216	E B 228	E B 228	190	190	A	200	200	192	A	A	A	208	208	224	208	206	204	204	E B 278	E B 278
12	E B 278	E B 272	E B 272	E B 272	E B 246	E B 274	218	208	A	208	206	A	A	A	192	192	A	198	232	216	206	A	E B 308	E A 318
13	E B 302	E A 318	E B 282	E B 230	194	E B 260	196	A	A	196	196	196	196	194	196	184	184	A	A	214	204	204	E B 274	E B 274
14	E B 276	E B 268	E B 254	E B 252	216	202	206	198	210	196	192	192	A	A	A	216	202	A	A	E A 242	E A 258	194	E B 248	E B 280
15	E B 252	E B 252	E B 236	204	188	204	202	214	A	A	A	A	A	A	A	194	A	194	A	E A 242	218	206	E B 232	E B 276
16	E B 262	E B 240	E B 240	200	184	E B 254	194	A	206	224	194	A	A	A	A	E A 232	A	A	A	E B 254	220	E A 232	E A 290	E A 284
17	E B 260	E B 248	226	196	A	A	A	206	220	206	200	190	A	A	A	A	A	A	E A 244	206	A	E B 228	E B 240	E B 274
18	E B 250	E B 250	E B 236	E B 236	E B 232	E B 246	202	202	A	208	208	190	A	204	204	184	196	A	A	E A 242	E B 236	210	204	228
19	246	E B 258	E B 252	220	208	E B 216	206	204	A	A	A	A	A	A	A	194	186	214	222	212	192	192	E A 288	E B 256
20	E B 268	E B 240	E B 238	198	E B 226	E B 252	208	198	A	A	A	A	A	A	A	A	A	222	222	E A 252	E A 288	E A 264	E A 274	E A 274
21	E B 238	E B 282	198	196	A	A	A	A	A	A	A	214	A	214	A	184	A	208	210	222	E B 246	228	E A 284	E B 284
22	E B 296	E B 270	208	E B 252	E B 288	E B 288	210	210	206	E A 236	A	E A 296	180	180	190	210	210	200	212	230	228	228	E A 272	E A 282
23	E A 266	E B 266	E B 266	190	A	A	212	218	A	A	A	204	A	202	202	200	A	A	A	220	218	202	A	A
24	A	E A 284	E B 272	E B 238	E B 220	E B 242	212	208	206	A	A	192	178	184	196	196	196	A	228	A	192	198	E B 262	E B 248
25	E B 270	E B 260	E B 248	220	E B 220	E B 288	214	206	208	204	186	186	168	180	184	194	192	200	220	210	194	E B 204	E A 226	E B 236
26	E B 264	E B 256	E B 248	E B 230	220	E B 208	204	200	212	A	204	182	190	190	190	190	198	198	208	216	190	228	A	E B 296
27	E B 234	E B 244	E B 244	E B 258	E A 260	E B 248	206	244	A	226	200	A	198	198	198	190	186	186	224	E A 232	E A 220	212	E B 222	E A 264
28	E B 264	E B 284	E B 284	E B 246	E B 234	E B 246	208	198	208	A	196	190	182	A	A	A	A	A	A	E A 278	E A 232	206	E B 232	E B 266
29	E B 278	E B 276	E B 260	E B 236	E B 236	E B 258	208	206	A	206	A	A	184	224	196	210	228	A	A	216	208	190	E B 262	E B 250
30	E B 262	E B 262	E B 244	E B 220	E B 218	E B 256	228	196	A	196	196	170	178	204	200	A	200	A	A	224	204	180	208	E B 270
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	29	30	30	30	27	27	28	27	18	21	22	21	17	21	21	21	20	20	21	29	29	29	28	29
MED	E B 264	E B 261	E B 244	U 208	U 200	E B 252	208	206	209	205	198	190	188	196	196	194	197	201	221	211	203	203	E B 262	E B 270
U Q	E B 273	E B 272	E B 260	E B 236	E B 232	E B 260	212	208	212	211	204	196	195	203	201	207	207	222	226	E A 233	E 224	E 228	E B 274	E B 279
L Q	E B 251	E B 248	228	200	190	E B 230	204	200	206	199	194	187	181	186	190	189	187	198	209	207	200	199	E 232	E B 254

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APR.2020 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	110	110	110	108	A	112	112	112	A	112	112	118					
2							B	118	118	112	A	A	A	A	A	A	A	A	B					
3							B	110	110	110	110	A	A	A	110	A	A	110	B					
4							B	112	112	112	112	112	A	112	112	112	A	110	110					
5							B	110	110	110	110	A	110	A	110	110	110	110	B					
6							B	110	110	110	114	114	114	114	114	A	116	116	B					
7							B	116	116	116	116	116	112	112	112	112	112	112	114					
8							B	114	118	120	120	114	A	108	108	108	108	108	108					
9							B	108	A	A	A	A	A	A	108	A	108	A	B					
10							B	A	112	A	A	110	108	110	108	108	110	110	B					
11							B	112	112	112	112	112	110	110	110	106	A	A	B					
12							B	110	110	110	110	110	110	A	108	A	A	A	B					
13							B	110	110	110	108	A	A	A	108	108	A	A	B					
14							126	108	108	112	110	110	110	112	112	112	112	112	B					
15							B	112	112	112	112	A	A	A	A	A	A	112	A					
16							B	112	112	112	110	A	110	110	A	A	A	A	A					
17							B	110	A	A	A	A	A	A	A	A	A		B					
18							B	A	110	110	A	A	A	A	110	110	108	A	B					
19							B	108	108	A	A	A	A	A	A	108	112	112	112					
20							126	114	108	A	A	A	A	A	A	A	108	108	A					
21							B	A	A	A	A	A	A	A	A	A	A	A	106					
22							B	114	A	A	A	A	114	114	114	A	112	112	112					
23							B	112	112	A	A	A	A	A	A	112	116	A	B					
24							B	A	A	A	A	A	A	A	A	A	116	A	A					
25							A	116	116	A	A	A	A	A	A	A	A	108	A					
26							118	114	110	A	A	A	110	110	110	110	110	110	A					
27							B	110	A	A	A	A	A	108	108	A	110	110	A					
28							112	112	112	A	A	A	A	A	A	A	A	A	A					
29							112	112	A	A	A	A	A	A	A	112	110	110	A					
30							120	120	A	A	A	110	110	108	108	A	108	108	A					
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	26	22	15	13	9	12	13	18	13	18	18	7					
MED							119	112	111	112	110	112	110	110	110	110	110	110	112					
U Q							126	114	112	112	113	114	112	112	112	112	112	112	114					
L Q							112	110	110	110	110	110	110	109	108	108	108	110	108					

APR.2020 h'E (KM)

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IONOSPHERIC DATA STATION Yamagawa

APR.2020 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	86	B	B	B	B	B	B	146	126	114	108	94	G	112	110	98	G	G	G	B	B	B	94	94
2	94	88	B	88	B	B	B	G	128	114	96	92	94	94	94	94	104	100	100	88	88	88	88	90
3	94	94	94	86	104	B	B	128	128	128	110	94	94	94	156	92	94	G	94	94	94	94	94	94
4	96	92	90	B	B	90	144	138	122	122	122	108	96	G	154	G	90	G	G	90	B	B	90	90
5	82	82	82	B	B	B	B	126	138	134	G	98	G	98	150	G	G	G	142	106	106	106	104	104
6	B	B	B	B	B	B	B	126	120	108	114	112	G	G	92	86	110	152	118	104	106	B	100	88
7	92	B	B	92	92	B	B	118	118	114	120	118	112	112	G	G	166	146	118	92	92	92	92	98
8	88	B	B	B	B	B	B	148	128	128	120	112	98	G	G	G	160	152	118	86	86	98	98	B
9	B	112	B	B	B	B	B	118	102	100	100	94	88	88	G	92	132	106	96	96	96	96	106	B
10	B	B	B	B	B	B	116	104	114	100	94	G	G	152	152	138	120	114	106	84	84	84	B	94
11	B	B	B	B	B	B	B	144	132	152	G	112	112	120	116	116	102	100	126	104	102	102	B	118
12	B	B	B	82	82	B	146	130	122	114	114	110	110	100	122	102	102	100	98	98	98	98	98	96
13	96	90	90	90	90	B	B	110	110	112	108	100	100	100	G	G	100	88	88	98	88	88	B	B
14	B	B	B	B	88	B	G	120	130	122	120	G	150	126	126	126	126	126	100	90	90	B	B	90
15	B	B	B	B	B	B	B	124	124	118	118	94	94	94	126	126	100	G	98	98	98	98	B	B
16	B	B	B	B	B	B	122	114	114	114	108	98	108	112	104	104	98	98	104	98	96	92	94	94
17	94	88	B	88	88	88	112	132	104	104	98	94	92	92	86	88	90	88	92	90	90	90	B	B
18	B	B	90	90	B	88	B	92	124	122	96	96	96	96	110	G	120	98	92	96	98	98	B	B
19	90	90	B	B	B	B	116	116	110	98	94	94	94	94	94	G	G	160	114	98	98	84	84	B
20	B	B	B	B	84	B	130	130	120	96	96	96	90	90	90	100	114	160	100	90	100	100	98	94
21	94	88	100	92	108	110	106	106	104	98	98	98	94	94	92	92	92	92	132	96	88	88	88	88
22	B	88	86	B	86	86	132	G	94	94	82	84	G	G	152	96	118	118	118	90	90	90	90	90
23	90	90	90	90	90	86	128	128	114	100	100	100	92	92	92	128	108	98	98	92	92	92	92	92
24	90	90	90	84	84	B	112	104	104	98	96	96	96	96	96	94	G	98	96	94	94	94	94	94
25	88	88	88	88	B	B	112	110	110	104	100	98	98	94	94	94	94	G	106	92	B	B	92	B
26	B	94	94	94	92	B	G	118	114	102	102	100	110	G	154	G	128	112	98	92	92	94	94	94
27	B	B	B	B	90	90	B	110	96	96	96	96	96	G	G	96	G	G	88	84	84	84	84	84
28	84	84	B	B	B	B	G	G	114	102	102	102	102	94	88	88	88	92	98	92	92	92	92	92
29	92	90	B	90	90	B	G	136	96	96	96	94	92	92	92	160	134	122	104	92	98	98	98	B
30	B	B	B	B	B	156	126	122	102	100	98	G	124	114	128	94	130	114	94	98	98	98	88	88
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	11	13	14	8	13	27	30	30	28	27	25	24	25	22	25	23	28	29	27	25	23	21
MED	91	90	90	90	90	89	122	122	114	106	100	98	96	95	110	96	108	106	100	92	94	94	94	94
U Q	94	91	94	91	92	100	131	130	124	118	112	102	109	112	139	116	127	126	116	98	98	98	98	94
L Q	88	88	88	87	86	87	112	110	104	100	96	94	94	94	92	92	96	98	96	90	90	89	90	90

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APR. 2020 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2							H2	C1	C2	C1	L1		C1	C2	L4							F4	F2
2	F2	F2		F2					H2	C3	L3	L2	L2	L1	L2	L3	L2	L3	L4	F1	F1	F1	F2	F1
3	F1	F2	F2	F1	F1			C2	C2	C2	C1	L3	L3	L2	H1	L4	L3		L2	F3	F3	F3	F2	F2
4	F2	F3	F1			F1	H2	H3	C2	C1	C1	C1	L1		H1		L1			F1			F2	F2
5	F1	F1	F2					C2	H1	H1		L1		L1	H1				HL23	F5	F3	F2	F2	F4
6								C3	C3	C3	C2	C2			L2	L2	C2	H2	CH22	F1	F1		F2	F3
7	F1			F1	F1			C2	C2	C2	C2	C2	C2	C1			H1	H2	C3	F7	F4	F1	F2	F1
8	F2							H2	C3	C1	C1	C1	L2				H1	H2	C3	F2	F8	F1	F1	
9		F1						C4	L3	L2	L4	L4	L3	L2		L3	CL22	L3	L2	F1	F2	F7	F4	
10							L5	L6	C3	L2	L2			H1	H1	H2	C3	C2	L2	F1	F1	F2		F1
11								H4	H2	H2		C1	C2	H2	C2	C1	L3	L3	CL22	F1	F6	F2		F1
12				F2	F2		H2	H3	C3	C3	C2	C2	C2	L3	C1	L2	L3	L3	L4	F3	F2	F7	F3	F6
13	F2	F6	F1	F1	F1			C8	C2	C1	C2	L2	L2	L1			L2	L9	L6	FF42	F3	F1		
14					F1			C3	H1	C2	C1		H1	C3	C2	C2	C1	C3	L8	FF43	F2			F2
15								C3	C3	C3	C2	L3	L3	L4	CL12	CL12	L3		L8	F7	F3	F3		
16							C3	C4	C2	C3	C2	L2	C3	C2	L3	L4	L4	L3	L6	F8	F4	F5	F8	F4
17	F2	F1		F2	F6	F6	C3	C2	L2	L2	L3	L1	L5	L2	L3	L4	L7	L7	L8	F4	F5	F5		
18			F1	F3		F3		L5	CL32	CL22	L2	L2	L3	L2	C1		C1	L4	L8	F6	F4	F1		
19	F2	F1					C2	C3	C4	L4	L3	L2	L3	L3	L3			H1	C4	F8	F8	F2	F2	
20					F1		C3	C2	C3	L4	L4	L3	L3	L2	L4	L4	C3	H2	L7	F8	F5	F6	F6	F5
21	F4	F2	F1	F1	F7	F8	L7	L5	L3	L4	L3	L1	L2	L2	L4	L2	L3	L2	C2	F5	F3	F3	F4	F1
22		F2	F2		F1	F4	C2		L2	L2	L5	L2			H1	L1	C2	C2	C3	F7	F4	F3	F7	F7
23	F3	F2	F2	F2	F6	F8	C4	C3	C4	L3	L3	L2	L3	L2	L2	C1	C2	L7	L9	F7	F7	F2	F7	F5
24	F6	F4	F1	F1	F1		L3	L6	L4	L2	L2	L1	L1	L2	L2	L2		L3	L6	F8	F1	F1	F2	F3
25	F2	F2	F2	F2			C3	C4	C2	L2	L2	L1	L3	L1	L2	L2	L2		L5	F3			F2	
26		F1	F2	F2	F5			C2	C1	L2	L1	L1	C1		H1		C1	C2	L5	F4	F2	F5	F8	F6
27					F4	F3		C4	L3	L2	L2	L2	L1			L2			L5	F5	F8	F4	F3	F2
28	F2	F2							C1	L3	L2	L2	L1	L5	L5	L3	L5	L5	L8	F8	F7	F3	F3	F3
29	F1	F2		F1	F1			H1	L2	L2	L3	L3	L2	L2	L2	H2	H1	C3	L6	F3	F2	F1	F2	
30						F1	C3	C4	L4	L2	L2		C1	C2	C2	L2	H1	CL34	L9	F3	F2	F3	F1	F1
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																								

APR. 2020 TYPES OF Es

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IONOSPHERIC DATA STATION Okinawa

APR.2020 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 32	X 33	X 34	X 37	X 25	X 24															X 77	X 42	X 38	X 36
2	38	39	35	X 37	30	A	36														X 53	X 45	X 43	X 42
3	X 42	X 42	X 44	X 39	X 24	X 26															X 71	X 49	X 34	X 35
4	X 36	X 36	X 33	54	A	X 26															X 44	X 42	X 39	41
5	41	42	X 44	X 46	X 30	X 26															X 54	X 45	X 40	X 40
6	X 40	X 37	X 44	X 39	X 26	X 24															X 61	X 51	X 45	X 45
7	X 44	X 42	X 39	X 37	X 33	X 26															X 82	X 53	X 34	X 38
8	38	36	36	X 44	X 20	X 19															X 76	X 56	X 48	X 45
9	X 45	X 44	X 44	X 43	X 34	X 32															X 53	X 48	A	42
10	X 40	X 39	X 35	X 36	X 24	X 23															X 69	X 54	X 51	X 52
11	X 53	X 53	X 54	X 54	X 34	X 32															X 64	X 45	X 37	X 36
12	X 36	X 36	X 32	X 31	X 32	X 30															X 69	X 32	X 30	X 31
13	X 32	X 29	X 29	X 34	X 30	A															X 64	A	X 33	X 34
14	36	38	38	X 36	38	26															X 58	X 53	59	57
15	X 54	X 50	X 51	X 56	X 31	X 25															X 76	X 58	X 58	X 54
16	X 50	X 49	X 50	X 52	X 25	X 24															X 62	X 60	X 50	53
17	54	57	53	50	X 37	A															X 58	A	60	54
18	53	53	X 46	X 44	X 36	A															X 64	X 62	X 48	X 39
19	X 37	X 37	X 37	X 41	X 30	X 30															A	X 44	X 40	X 36
20	45	X 40	X 42	47	X 27	X 27															X 68	X 71	X 68	X 64
21	X 61	X 58	X 70	X 37	A	A															X 55	X 50	X 42	X 41
22	X 39	X 38	X 44	X 29	X 27	X 28															X 68	X 56	X 48	X 50
23	X 45	X 43	X 43	X 47	X 24	X 24															X 84	X 63	X 38	X 38
24	X 40	40	X 33	X 34	X 30	X 28															X 82	A	X 38	X 49
25	48	X 40	40	X 38	X 32	X 30															X 72	X 55	X 45	X 38
26	X 37	X 37	X 36	X 36	X 35	X 33															X 69	X 45	X 41	X 41
27	X 39	X 40	X 38	X 34	X 33	X 30															X 61	X 56	X 47	X 42
28	X 38	X 36	45	X 39	X 36	X 31															X 82	X 62	X 39	X 38
29	44	X 37	43	48	31	X 27															X 90	A	X 58	60
30	66	65	58	X 48	X 41	X 38															X 91	X 54	X 36	X 33
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	30	30	30	30	28	25	1														29	26	29	30
MED	X 40	X 40	X 42	X 39	X 30	X 27	36														X 68	X 53	X 42	X 41
U Q	48	X 44	X 45	X 47	X 34	X 30															X 76	X 56	X 49	50
L Q	X 38	X 37	X 36	X 36	X 26	X 24															X 60	X 45	X 38	X 38

APR.2020 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

APR.2020 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	26	27	28	31	19	18	24	46	53	61	84	77	73	73	80	88	A	61	75	90	71	36	32	30
2	F 29	F 33	F 27	31	21	A	F 28	52	50	62	70	72	77	78	75	66	54	59	64	60	47	39	37	36
3	36	36	38	33	18	20	24	47	53	58	59	55	71	97	106	96	76	77	82	80	65	43	28	29
4	30	30	27	F	A	20	25	44	48	53	58	74	92	94	81	78	86	80	59	45	38	36	33	F 34
5	F 31	F 33	38	40	24	20	25	44	50	58	58	63	76	95	109	88	71	65	62	48	48	39	34	34
6	34	31	38	33	20	18	24	44	52	56	58	64	77	85	64	54	56	56	63	64	55	45	39	39
7	38	36	32	31	27	20	25	44	54	61	58	72	82	78	76	64	59	A	50	64	76	47	28	31
8	F 25	25	F 27	37	J B 14	J B 13	26	40	54	55	58	76	84	91	97	90	76	75	83	77	70	50	42	39
9	39	38	38	37	28	26	31	46	55	63	52	62	81	76	69	72	80	76	74	60	47	42	A	F 34
10	34	33	29	30	18	17	26	51	54	65	75	76	72	78	65	61	62	58	55	62	63	48	45	46
11	47	47	48	47	28	26	31	48	47	56	67	73	68	79	96	93	62	50	55	70	58	39	31	30
12	30	30	26	25	26	24	30	47	54	54	55	59	68	81	86	86	65	61	73	81	63	26	24	25
13	26	23	23	28	24	A	28	46	54	51	A	60	74	92	99	91	80	75	76	82	58	A	27	28
14	F 26	F 30	F 30	30	F 32	19	28	44	58	62	64	78	87	98	110	91	80	54	53	62	52	47	F 49	F 48
15	48	44	45	50	25	19	29	46	56	59	73	97	94	101	111	103	91	68	65	74	70	52	52	48
16	44	43	44	46	19	18	32	43	48	53	60	66	68	84	91	A	78	66	57	56	56	54	44	F 39
17	F 43	F 43	F 41	F 36	31	A	31	47	54	A	59	64	A	84	81	61	59	61	66	71	52	A	F	F 38
18	F 32	F	40	38	30	A	34	51	56	56	A	A	66	81	79	70	64	69	64	61	58	56	42	33
19	31	31	31	35	25	24	34	47	53	60	62	70	87	101	94	80	70	84	89	73	A	38	33	30
20	F 34	34	36	F 39	21	20	33	50	53	50	54	54	80	101	98	87	74	71	74	69	62	65	62	58
21	55	52	63	31	A	A	28	46	44	51	50	52	48	52	A	56	50	48	48	52	48	44	36	35
22	32	32	38	23	21	23	33	42	47	52	65	56	71	82	94	90	78	66	68	72	62	50	42	44
23	39	37	37	41	18	18	32	47	53	58	59	68	82	101	104	109	90	72	70	79	78	57	32	32
24	34	F 32	27	28	24	22	30	50	68	69	55	53	64	85	100	107	R 120	H 109	100	88	76	A	32	U R 43
25	F 39	34	F 32	32	26	24	32	49	59	57	58	60	75	79	74	72	75	72	74	78	67	49	39	32
26	31	31	30	30	29	27	37	47	58	65	68	62	68	83	91	97	103	103	83	74	63	39	35	35
27	33	34	32	28	27	24	39	52	52	53	59	71	83	88	99	109	98	97	84	65	55	50	42	37
28	32	30	F 31	33	30	25	35	48	59	58	50	49	65	80	85	95	84	67	59	64	76	56	33	32
29	F 33	31	F 31	F 38	F 25	21	38	48	61	56	52	60	80	101	119	122	118	104	104	106	84	A	52	F 48
30	F 48	F 53	F 46	41	35	32	42	54	51	53	58	66	73	84	85	94	97	87	83	92	84	48	30	27
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	30	29	30	29	28	25	30	30	30	29	28	29	29	30	29	29	29	29	30	30	29	26	28	30
MED	34	33	32	33	25	20	30	47	54	57	58	64	75	84	91	88	76	69	69	70	62	47	36	34
U Q	39	38	38	38	28	24	33	49	56	61	64	72	82	95	100	96	88	78	82	79	70	50	42	39
L Q	31	30	29	30	20	18	26	44	51	53	56	60	68	79	80	71	63	61	59	62	54	39	32	31

IONOSPHERIC DATA STATION Okinawa

APR.2020 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

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									L	L 432	440	436	448	452	444	A	A	U L 396	L					
2									L	L 432	436	432	A	436	436	436	U L 408	L 376	L					
3									L	L	A	A	A	A	428	424	U L 420	L	A					
4										U L 412	L 436	440	436	444	436	432	412	L 380						
5										420	428	432	436	432	432	428	416	L 380						
6									L	L 428	432	A	440	A	A	L 424	U L 420	L	L					
7									U L 392	420	448	436	440	A	432	428	404	A						
8								244	L	L 412	U L 456	440	440	432	432	424	392	L						
9										L 424	U L 436	424	448	448	436	A	A	A						
10										L 428	440	448	452	436	A	A	A	A						
11										424	428	A	A	440	A	A	A	U L 368						
12										L 416	A	440	424	U A 436	A	A	L 416	384						
13									L	A	A	452	440	436	440	428	432							
14									L 392	L 424	448	A	444	444	432	428	400	U L 376						
15									A	428	424	A	A	A	428	A	A	L	L					
16									L	L 432	424	420	A	A	A	A	A	372	L					
17									A	A	A	A	A	432	A	A	A	A	A					
18									A	A	A	A	A	436	432	412	U L 424	A						
19									L	428	436	444	A	440	436	420	416	380						
20										A	440	448	436	A	A	A	404	A						
21									A	A	A	416	A	432	A	A	404	368						
22							L		L	U L 420	424	424	440	428	432	420	412	L	L					
23									A	A	440	436	432	432	A	428	L 416	U L 364	L 336					
24								L	392	A	436	448	440	436	436	420	404							
25									L	U A 404	440	444	444	440	428	428	404	384	L					
26									392	420	A	424	444	444	428	420	408	A						
27									A	A	A	440	436	436	428	424	412	384						
28									A	A	432	U L 448	436	440	428	424	400	L 376	L					
29									380	420	U L 432	U L 452	436	A	U A 440	424	408	396						
30								L	U L 428	L 424	440	436	A	U A 444	A	A	A	A						
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	6	20	22	23	20	23	20	19	22	15	1					
MED								244	392	L 424	436	440	440	436	432	424	410	L 380	L 336					
U Q									U L 392	L 428	440	448	444	444	436	428	L 416	384						
L Q									392	420	432	432	436	432	428	420	404	372						

APR.2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

APR.2020 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	A	236	UA 280	304	312	332	332	328	316	288	252	A	A				
2							B	A	232	284	308	316	332	332	A	316	284	UA 256	A	A				
3							B	A	A	284	308	320	328	324	324	308	A	A	A	B				
4							B	200	256	288	312	328	340	UA 324	324	308	A	A	192	B				
5							B	172	244	280	316	320	352	324	A	312	284	A	A	A				
6							B	188	260	288	332	A	340	A	A	316	A	A	A	A				
7							B	196	252	296	316	332	344	344	340	324	292	256	A	A				
8							B	172	256	296	312	328	336	332	308	300	284	232	192	A				
9							B	A	264	296	320	320	A	A	A	320	288	252	200	A				
10							B	168	248	288	A	A	A	344	A	A	A	A	A	A				
11							B	220	268	292	316	336	340	344	328	324	300	264	204	A				
12							B	204	264	296	312	332	340	336	332	316	292	252	200	A				
13							A	192	256	288	312	324	336	332	336	324	300	256	200	A				
14							B	184	268	A	316	344	340	320	328	320	296	256	A	A				
15							B	200	264	312	324	A	A	A	A	A	A	256	212	A				
16							B	196	268	296	328	328	344	336	332	320	304	256	212	A				
17							A	200	256	300	320	324	A	340	320	320	292	256	192	A				
18							B	216	252	300	328	332	344	336	324	316	292	248	200	A				
19							B	224	272	292	320	328	320	A	332	316	292	256	192	A				
20							B	204	256	288	308	312	A	348	336	308	296	268	204	A				
21							A	204	244	292	324	336	340	328	A	A	A	A	A	A				
22							B	208	256	A	A	A	344	A	A	312	288	248	A	A				
23							B	208	268	308	316	336	332	332	324	324	300	268	208	A				
24							A	240	276	304	A	328	A	A	A	A	296	A	A	A				
25							A	UA 228	268	292	UA 316	320	312	A	A	A	284	248	192	A				
26							A	208	272	292	312	324	332	336	336	316	288	264	A	A				
27							180	224	280	296	316	316	308	A	A	A	A	252	204	A				
28							B	204	272	296	316	A	A	A	A	316	A	248	204	A				
29							A	208	264	288	316	A	A	A	A	A	A	252	208	A				
30							B	224	A	A	A	A	368	348	340	312	300	272	A	A				
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	26	28	27	26	23	22	20	17	23	21	23	17					
MED							180	204	262	292	316	328	340	334	328	316	292	256	200					
U Q								216	268	296	320	332	344	342	336	320	298	256	206					
L Q								196	254	288	312	320	332	330	324	312	288	252	192					

APR.2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

APR. 2020 foEs (0.1MHz) 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 27	17	E B 16	20	J A 17	J A 22	E B 16	24	28	J A 40	37	J A 41	39	38	38	J A 88	J A 79	J A 52	J A 31	J A 20	J A 22	J A 30	J A 35	J A 19
2	J A 53	J A 28	19	19	E B 16	J A 32	19	25	30	34	38	40	J A 47	J A 45	J A 44	J A 46	J A 43	J A 35	J A 26	J A 26	J A 33	J A 20	J A 19	J A 16
3	18	J A 17	J A 17	E B 16	20	J A 32	J A 24	24	30	35	J A 50	J A 54	J A 51	J A 56	38	J A 46	J A 39	J A 51	J A 34	J A 17	J A 18	J A 17	J A 22	J A 21
4	20	J A 17	J A 30	J A 28	J A 34	J A 15	J A 17	24	34	35	J A 45	37	G	37	37	38	J A 50	J A 40	G	J A 24	J A 21	19	20	E B 16
5	J A 24	J A 20	20	E B 16	18	J A 18	E B 16	24	28	32	36	J A 38	G	40	J A 40	J A 42	31	33	J A 33	J A 29	22	J A 26	J A 26	J A 25
6	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	34	40	42	44	44	J A 63	J A 66	J A 47	J A 39	J A 49	J A 27	J A 22	J A 19	J A 18	J A 38	J A 18
7	J A 16	J A 17	E B 16	20	E B 16	E B 16	E B 16	24	32	36	37	38	43	J A 58	38	39	37	J A 52	J A 36	J A 39	J A 28	J A 28	J A 21	E B 16
8	E B 16	18	E B 16	E B 16	E B 16	E B 16	E B 16	23	32	35	39	39	41	J A 53	J A 67	J A 42	34	32	J A 42	J A 54	J A 39	20	J A 22	J A 21
9	J A 18	19	20	J A 18	J A 18	20	18	26	33	37	37	38	39	J A 62	35	J A 85	J A 82	J A 49	J A 55	J A 52	J A 51	J A 36	J A 62	J A 38
10	J A 36	E B 16	E B 16	E B 16	E B 16	18	J A 15	26	J A 40	33	J A 40	J A 70	J A 53	42	46	J A 54	J A 62	J A 55	J A 36	J A 32	J A 18	J A 38	J A 22	J A 25
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	31	34	38	44	47	39	43	J A 52	J A 56	36	25	J A 22	J A 16	J A 22	J A 16	22
12	E B 16	20	J A 20	E B 16	E B 16	E B 16	E B 16	28	36	36	45	40	42	44	J A 52	J A 52	J A 45	33	J A 53	J A 25	J A 24	J A 21	J A 24	J A 50
13	J A 26	J A 20	J A 20	J A 20	J A 20	J A 22	J A 23	J A 29	33	J A 109	J A 79	J A 51	38	41	40	G	42	36	J A 42	J A 99	J A 121	J A 109	J A 62	J A 32
14	J A 21	E B 16	E B 16	J A 45	J A 22	18	J A 18	J A 40	31	38	42	48	41	40	40	39	J A 50	J A 38	J A 49	J A 66	J A 52	J A 62	J A 26	E B 16
15	18	E B 16	E B 16	E B 16	E B 16	J A 33	J A 16	38	J A 45	J A 50	J A 56	49	46	J A 54	J A 73	J A 65	J A 61	29	J A 42	J A 61	J A 64	J A 84	J A 41	J A 26
16	J A 17	E B 16	J A 16	J A 16	J A 23	J A 15	J A 16	27	37	J A 51	J A 166	J A 72	J A 54	J A 91	J A 73	J A 105	J A 78	J A 44	26	J A 29	J A 32	J A 31	20	J A 40
17	J A 28	J A 27	E B 16	J A 18	20	J A 38	J A 29	29	J A 46	J A 64	J A 63	J A 122	J A 127	44	J A 94	J A 51	J A 51	J A 70	J A 59	J A 52	J A 86	J A 88	J A 66	J A 78
18	J A 53	J A 101	J A 112	J A 30	J A 80	J A 62	J A 38	J A 88	J A 50	J A 58	J A 94	J A 59	J A 56	44	J A 53	38	38	J A 44	J A 84	J A 39	J A 38	E B 22	E B 16	E B 16
19	19	E B 16	E B 16	E B 16	18	E B 16	J A 16	30	35	35	J A 84	J A 62	J A 65	40	36	G	G	36	J A 43	J A 57	J A 76	J A 52	J A 61	J A 29
20	J A 16	J A 22	J A 19	J A 28	J A 32	J A 22	J A 16	30	J A 42	J A 45	J A 47	38	42	53	J A 96	J A 60	J A 48	38	J A 60	J A 60	J A 35	J A 53	J A 40	J A 52
21	J A 38	J A 28	J A 20	J A 18	J A 22	J A 33	J A 28	J A 50	J A 50	J A 46	J A 49	41	J A 48	J A 47	J A 109	J A 60	J A 52	J A 49	J A 38	J A 53	J A 66	J A 64	J A 29	J A 25
22	J A 20	J A 19	E B 16	20	E B 16	E B 16	E B 16	27	31	J A 49	J A 112	J A 40	38	36	34	34	G	28	29	J A 30	J A 22	J A 51	J A 41	J A 48
23	J A 42	J A 18	20	19	J A 55	J A 61	J A 22	27	J A 51	J A 50	J A 45	39	39	43	44	35	38	35	J A 38	J A 34	J A 28	J A 31	J A 20	J A 32
24	J A 41	J A 48	J A 30	J A 26	18	E B 16	20	J A 34	J A 53	J A 55	J A 50	40	39	J A 64	J A 47	J A 42	37	J A 74	J A 84	J A 63	J A 85	J A 79	J A 105	J A 88
25	J A 29	E B 16	E B 16	19	E B 16	E B 16	J A 22	J A 31	J A 40	J A 44	J A 44	J A 42	37	38	38	38	38	36	J A 32	J A 38	J A 45	19	21	J A 17
26	20	J A 20	E B 16	E B 16	20	E B 16	21	28	34	J A 45	J A 47	J A 42	40	G	37	G	38	J A 64	J A 45	J A 40	J A 24	J A 25	J A 20	J A 17
27	J A 51	J A 22	J A 30	J A 29	J A 28	J A 19	G	J A 38	J A 47	J A 53	J A 60	J A 49	J A 41	37	35	J A 37	J A 34	G 23	J A 43	J A 27	J A 22	J A 22	J A 18	J A 18
28	22	E B 16	J A 34	J A 27	18	J A 20	J A 16	28	39	J A 55	41	J A 41	J A 56	J A 50	35	34	J A 34	30	28	J A 38	J A 63	J A 82	J A 71	J A 62
29	20	J A 21	J A 16	J A 19	19	E B 16	19	32	J A 38	36	40	J A 39	J A 50	J A 62	J A 49	J A 40	35	35	J A 53	J A 41	J A 85	J A 87	J A 60	J A 28
30	18	17	E B 16	E B 16	E B 16	J A 42	J A 17	28	J A 47	J A 39	J A 45	42	J A 56	46	J A 53	J A 59	J A 77	J A 68	J A 59	J A 27	J A 61	J A 127	J A 33	20
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	J A 20	J A 18	16	18	18	J A 18	J A 16	28	36	J A 40	J A 45	42	42	44	44	J A 42	J A 40	J A 38	J A 40	J A 38	J A 34	J A 31	J A 26	J A 25
U Q	J A 29	J A 21	J A 20	J A 20	J A 22	J A 32	J A 21	J A 31	J A 45	J A 50	J A 56	J A 49	J A 51	J A 54	J A 53	J A 54	J A 52	J A 51	J A 53	J A 53	J A 63	J A 64	J A 41	J A 38
L Q	18	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	32	35	40	39	39	40	38	38	37	35	31	J A 27	J A 22	J A 22	J A 20	18

APR. 2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

APR.2020 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 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	27	35	35	36	38	38	37	84	A A 79	36	27	18	21	21	20	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	A A 32	E B 16	24	29	32	36	38	45	41	36	40	37	32	23	20	E B 16	E B 16	E B 16	E B 16
3	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	23	28	33	44	51	49	46	36	38	32	27	33	E B 16	E B 16	E B 16	E B 16	E B 16
4	E B 16	E B 16	E B 16	E B 16	A A 34	E B 16	E B 16	23	33	34	42	36	G	36	36	36	32	28	G	E B 16	E B 16	E B 16	E B 16	E B 16
5	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	28	32	34	36	G	36	36	35	31	32	28	22	E B 16	E B 16	E B 16	E B 16
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	33	38	40	43	44	45	46	40	37	31	24	19	E B 16	E B 16	22	E B 16
7	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	36	37	40	54	38	38	33	A A 52	25	36	18	E B 16	E B 16	E B 16
8	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	22	30	35	37	38	40	37	38	36	34	32	39	42	37	E B 16	18	18
9	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	31	33	35	38	38	35	35	62	68	38	42	21	24	32	A A 62	20
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	30	32	33	40	40	42	45	50	58	51	33	31	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	33	36	44	46	38	42	44	51	32	25	20	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	27	35	32	43	40	40	43	47	50	37	30	50	24	22	17	E B 16	E B 16
13	E B 16	E B 16	E B 16	E B 16	E B 16	A A 22	17	28	30	43	A A 79	41	38	40	40	G	38	35	30	79	22	A A 109	E B 16	E B 16
14	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	30	37	40	46	40	40	39	37	37	28	40	57	23	22	E B 16	E B 16
15	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	33	41	38	39	48	44	46	37	42	50	28	31	56	50	E B 16	E B 16	E B 16
16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	38	36	39	49	72	47	A A 105	43	30	24	21	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	A A 38	20	25	40	A A 64	43	53	A A 127	40	52	43	41	40	49	49	33	A A 88	36	E B 16
18	E B 16	E B 16	E B 16	E B 16	E B 16	A A 62	E B 16	35	38	42	A A 94	A A 59	53	38	38	37	34	38	49	31	26	E B 16	E B 16	E B 16
19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	33	34	36	41	48	39	35	G	G	32	27	22	A A 76	30	E B 16	E B 16
20	E B 16	E B 16	E B 16	19	E B 16	E B 16	E B 16	29	38	41	42	37	41	50	78	52	35	37	45	59	32	26	24	21
21	E B 16	E B 16	18	E B 16	A A 22	A A 33	23	30	39	44	47	40	45	40	A A 109	42	32	27	22	22	38	20	E B 16	22
22	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	35	33	36	38	36	34	34	G	26	23	24	17	E B 16	E B 16	18
23	28	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	27	36	41	42	36	38	41	44	34	35	30	29	20	E B 16	E B 16	E B 16	22
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	17	28	34	46	37	40	38	37	43	40	37	57	66	44	52	A A 79	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	20	28	37	40	40	37	36	38	38	36	36	34	27	31	E B 16	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	20	26	34	40	44	40	40	G	37	G	34	37	31	20	18	E B 16	E B 16	E B 16
27	E B 16	E B 16	22	18	E B 16	E B 16	G	33	40	48	47	42	38	36	35	32	31	G 20	G 16	21	17	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	28	38	49	38	38	41	38	34	34	29	28	27	27	20	23	21	19
29	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	18	30	34	35	39	37	42	51	44	37	34	34	46	34	64	A A 87	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	27	E B 16	27	39	34	39	40	50	44	46	53	57	42	43	24	56	17	E B 16	E B 16
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	27	33	36	39	40	40	40	38	38	36	32	30	24	20	E B 16	E B 16	E B 16
U Q	E B 16	E B 16	E B 16	E B 16	E B 16	A A 16	G	28	38	41	43	42	45	44	45	44	41	37	42	36	33	23	16	16
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	36	37	38	37	36	35	32	28	25	20	E B 16	E B 16	E B 16	E B 16

APR.2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

APR.2020 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	16	16	16	16	16	16	16	16	16	16	16	16	17	18	19	15	15	15	14	16	16	16	16	16
2	16	16	16	16	16	16	16	16	15	14	16	18	19	18	16	16	16	14	16	16	16	16	16	16
3	16	16	16	16	16	16	16	16	16	14	15	19	18	18	22	16	16	14	14	16	16	16	16	16
4	16	16	16	16	16	16	16	16	16	16	18	20	20	22	21	18	19	15	16	16	16	16	16	16
5	16	16	16	16	16	16	16	16	16	15	17	17	21	22	20	18	16	15	14	16	16	16	16	16
6	16	16	16	16	16	16	16	16	17	16	16	18	20	20	18	17	18	12	14	16	16	16	16	16
7	16	16	16	16	16	16	16	16	14	14	16	20	20	21	22	20	16	15	15	14	16	16	16	16
8	16	16	16	16	16	16	16	16	16	14	17	17	22	20	19	16	16	14	15	16	16	16	16	16
9	16	16	16	16	16	16	16	16	14	15	17	19	22	20	23	20	16	13	14	14	16	16	16	16
10	16	16	16	16	16	16	16	16	14	15	16	18	19	19	20	17	17	14	14	16	16	16	16	16
11	16	16	16	16	16	16	16	16	12	16	16	20	18	17	19	18	15	15	15	16	16	16	16	16
12	16	16	16	16	16	16	16	16	16	18	18	18	20	20	18	18	17	15	15	16	16	16	16	16
13	16	16	16	16	16	16	16	16	16	16	16	18	18	19	19	17	14	14	14	16	16	16	16	16
14	16	16	16	16	16	16	16	16	14	16	18	18	18	18	19	17	14	12	12	16	16	16	16	16
15	16	16	16	16	16	16	16	16	14	16	15	19	19	20	18	16	18	14	14	16	16	16	16	16
16	16	16	16	16	16	16	16	16	14	14	15	16	20	16	21	17	15	15	12	16	16	16	16	16
17	16	16	16	16	16	16	16	16	14	16	18	18	18	17	20	18	15	14	13	14	16	16	16	16
18	16	16	16	16	16	16	16	16	14	15	16	20	18	21	18	18	15	12	16	16	16	16	16	16
19	16	16	16	16	16	16	16	16	14	16	20	19	18	21	21	16	17	15	15	16	16	16	16	16
20	16	16	16	16	16	16	16	16	14	14	16	16	19	20	19	16	14	14	14	16	16	16	16	16
21	16	16	16	16	16	16	16	16	15	16	18	20	20	22	20	20	15	13	14	16	16	16	16	16
22	16	16	16	16	16	16	16	16	14	14	17	20	20	18	18	18	16	14	10	16	16	16	16	16
23	16	16	16	16	16	16	16	16	16	16	17	20	20	23	21	19	17	14	14	14	16	16	16	16
24	16	16	16	16	16	16	16	16	16	17	18	19	21	25	21	18	18	15	14	16	16	16	16	16
25	16	16	16	16	16	16	16	16	14	17	22	24	23	22	20	18	16	16	14	15	16	16	16	16
26	16	16	16	16	16	16	16	16	16	16	18	21	23	23	18	19	16	14	14	16	16	16	16	16
27	16	16	16	16	16	16	16	14	14	15	16	22	20	22	21	18	16	14	10	16	15	16	16	16
28	16	16	16	16	16	16	16	15	14	16	21	22	21	20	20	20	17	15	14	14	16	16	16	16
29	16	16	16	16	16	16	16	14	14	16	18	20	21	18	21	20	19	14	14	14	16	16	16	16
30	16	16	16	16	16	16	16	16	14	15	17	19	21	21	22	19	17	15	14	15	16	16	16	16
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	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	16	16	16	16	16	16	16	16	14	16	17	19	20	20	20	18	16	14	14	16	16	16	16	16
U Q	16	16	16	16	16	16	16	16	16	16	18	20	21	22	21	19	17	15	15	16	16	16	16	16
L Q	16	16	16	16	16	16	16	16	14	15	16	18	18	18	19	17	15	14	14	15	16	16	16	16

IONOSPHERIC DATA STATION Okinawa

APR.2020 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	285	298	340	390	318	323	350	376	357	339	351	363	330	324	334	355	A	321	329	364	381	323	315	312
2	F 309	F 325	F 342	352	341	A	F 314	389	361	348	346	348	343	350	351	362	349	352	361	361	340	321	312	303
3	318	322	350	398	345	296	343	390	364	352	357	299	281	331	352	364	319	320	340	360	353	373	300	293
4	293	308	301	F	A	341	335	382	355	345	296	293	330	363	341	324	337	380	379	356	320	310	283	F 311
5	F 322	F 325	342	383	363	317	332	385	350	364	344	325	304	328	348	357	340	355	370	348	331	337	309	307
6	317	328	380	408	311	320	325	390	357	362	342	342	340	359	368	348	336	341	349	362	347	330	313	301
7	323	308	338	357	393	333	350	383	358	360	336	326	315	328	355	333	363	A	332	338	374	398	308	293
8	F 307	322	F 324	414	B	B	358	385	363	358	310	321	321	319	329	336	303	296	343	338	351	347	310	305
9	298	305	341	358	341	361	349	384	364	372	332	318	334	328	322	323	330	344	373	359	342	321	A	F 278
10	314	305	331	357	423	295	347	383	375	356	355	353	323	340	352	352	351	351	337	337	359	320	300	308
11	304	307	356	373	323	301	358	396	370	349	349	331	300	316	332	380	376	349	340	359	361	355	299	289
12	294	312	296	300	297	325	328	390	379	366	347	329	322	316	330	352	336	332	346	370	403	303	298	276
13	311	317	323	316	399	A	349	367	370	356	A	311	294	326	337	338	328	320	351	274	306	A	291	299
14	F 309	F 317	F 317	331	F 382	354	356	374	373	361	320	321	304	310	351	345	361	364	340	355	326	313	F 317	F 307
15	318	316	320	384	386	333	355	369	362	333	319	342	331	320	334	343	334	312	317	341	362	334	301	301
16	311	326	330	397	338	332	380	403	366	341	335	330	308	326	333	A	346	361	353	344	322	357	317	F 293
17	F 305	F 288	F 330	F 364	395	A	359	382	360	A	339	337	A	327	359	330	339	339	359	379	352	A	F	F 299
18	F 276	F	320	354	354	A	366	383	395	362	A	A	312	337	337	343	330	363	348	337	320	348	335	317
19	312	304	323	376	366	308	358	388	374	348	332	287	306	329	330	334	308	332	377	388	A	299	313	319
20	F 305	305	335	F 389	310	337	353	399	395	379	347	273	304	327	349	313	337	327	353	353	293	298	281	290
21	314	305	369	438	A	A	311	361	329	335	304	309	291	298	A	347	333	336	339	329	331	349	299	295
22	309	295	365	347	304	329	372	378	359	337	361	301	300	301	334	330	336	335	331	348	347	332	307	310
23	308	309	324	426	308	333	352	362	367	361	330	310	302	324	328	352	324	327	319	338	366	369	313	302
24	319	F 282	304	312	318	314	338	362	368	384	370	307	260	301	301	302	R 324	H 324	345	347	350	A	322	R
25	F 303	308	F 322	337	283	307	340	375	374	372	321	306	326	318	310	309	327	337	337	358	368	344	349	323
26	304	326	327	330	344	334	361	366	362	365	356	327	278	308	301	304	325	349	347	357	367	324	296	294
27	316	320	318	324	335	325	376	389	367	355	304	307	315	298	314	339	319	325	352	340	330	350	340	314
28	289	304	F 291	349	374	324	363	362	361	364	394	287	300	308	311	339	357	349	340	301	327	408	299	315
29	F 288	302	F 320	F 364	F 296	310	369	381	370	374	326	273	287	297	309	323	310	310	329	351	374	A	287	F 313
30	F 318	F 307	F 323	342	347	322	361	384	370	362	313	322	296	287	306	315	327	335	308	342	370	378	312	311
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	30	29	30	29	27	24	30	30	30	29	28	29	29	30	29	29	29	29	30	30	29	26	28	29
MED	309	308	326	358	341	324	352	383	365	360	338	321	306	324	334	339	334	336	344	350	350	336	308	303
U Q	316	321	341	390	374	333	361	389	370	364	350	330	324	328	350	352	343	350	353	359	366	355	314	312
L Q	303	304	320	340	311	312	340	374	360	348	320	304	298	308	318	324	324	324	337	338	328	321	299	294

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APR.2020 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 374	373	387	400	392	408	A	A	A 366	L					
2									L	L 371	388	410	A	A	393	A 379	U L 390	L 378	L					
3									L	L	A	A	A	A	403	402	U L 391	L	A					
4										U L 392	A	399	410	406	411	407	382	L 389						
5										375	394	406	426	434	399	384	377	L 380						
6									L	L 387	399	A	A	A	A	A	A 365	L	L					
7									U L 393	400	392	416	423	A	422	380	388	A						
8								451	L	L 382	U L 377	412	405	405	414	422	433	L						
9										L 382	U L 395	435	393	410	419	A	A	A						
10										L 372	395	406	426	A	A	A	A	A						
11										384	389	A	A	432	A	A	A	U L 411						
12										L 393	A	414	439	A	A	A	L 382	360						
13									L	A	A	382	416	A 373	A	390	362							
14									L 376	L 407	A	A	395	391	388	397	A	U L 400						
15									A	373	418	A	A	A	418	A	A	L	L					
16									L	L 372	421	458	A	A	A	A	A	388	L					
17									A	A	A	A	A	U A 377	A	A	A	A	A					
18									A	A	A	A	A	391	409	406	U L 368	A						
19									L	394	409	419	A	421	422	411	402	368						
20										A	A	443	U A 410	A	A	A	385	A						
21									A	A	A	A	A	U A 387	A	A	394	393						
22							L		L	U L 366	387	427	391	422	428	390	384	L	L					
23									A	A	A	415	457	A	A	396	L 382	U L 396	L 365					
24								L	398	A	401	399	427	423	A	425	A							
25									L	A	409	440	445	399	403	388	397	384	L					
26									391	A	A	477	421	417	430	406	375	A						
27									A	A	A	A	415	416	419	394	389	377						
28									A	A	429	U L 433	A	401	409	394	387	L 378	L					
29									402	390	U L 413	U L 421	A	A	A	379	381	360						
30								L	U L 424	L 426	405	392	A	A	A	A	A	A						
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	6	18	18	21	17	18	17	18	20	15	1					
MED								451	396	L 383	397	415	416	406	411	395	384	380	L 365					
U Q									402	L 393	409	434	426	421	420	406	390	U L 393						
L Q									391	L 373	389	402	402	A 391	403	388	379	368						

APR.2020 M(3000)F1 (0.01)

IONOSPHERIC DATA STATION Okinawa

APR.2020 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									244	292	254	238	272	286	270	300	A	284	260					
2									214	272	264	252	268	256	250	250	264	250	230					
3									250	262	264	E A 378	370	276	242	230	260	264	242					
4										280	354	318	274	236	256	278	260	224						
5										256	284	302	318	284	244	230	250	246						
6									256	262	282	286	272	246	254	270	286	272	246					
7									260	260	294	288	274	278	244	266	254	A						
8								200	256	262	328	296	282	278	264	258	278	292						
9										240	294	300	274	260	290	302	292	240						
10										260	248	242	296	260	254	268	294	270						
11										282	268	256	326	302	256	222	238	242						
12										256	280	308	302	294	270	244	248	276						
13									244	260	A	332	316	280	254	250	264							
14									242	256	306	288	302	288	246	244	232	254						
15									262	292	300	264	252	286	264	232	232	268	266					
16									256	298	284	278	312	314	270	A	256	230	244					
17									240	A	290	286	A	286	246	290	286	270	244					
18									218	248	A	A	328	266	256	268	282	238						
19									232	262	284	336	318	262	244	268	316	262						
20										242	292	442	320	266	258	270	264	268						
21									316	316	E A 378	356	420	382	A	282	312	286						
22							224		260	288	256	346	310	306	266	256	250	254	252					
23									238	260	300	314	330	280	260	242	238	252	272					
24								264	248	228	250	348	404	312	292	300	260							
25									236	248	308	342	280	274	284	300	274	260	250					
26									242	252	262	284	368	306	314	306	262	238						
27									250	274	342	316	300	310	292	250	256	248						
28									258	238	240	L 396	338	300	294	252	236	242	258					
29									234	252	300	356	332	308	286	268	266	264						
30								218	242	276	338	296	326	316	300	292	268	256						
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	3	23	29	28	29	29	30	29	29	29	27	11					
MED							224	218	244	260	286	301	312	285	260	268	262	256	250					
U Q								264	256	278	303	344	329	306	285	286	280	270	260					
L Q								200	238	252	264	285	277	266	252	247	250	242	244					

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APR.2020 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	326	296	246	198	268	354	238	202	204	212	194	200	204	208	188	A	A	E A 262	242	210	190	226	E A 274	282
2	262	254	254	214	254	A	254	200	198	208	204	202	A	A	218	E A 238	E A 238	222	220	202	206	234	268	280
3	262	254	214	186	E B 300	328	240	204	204	210	A	A	A	A	208	224	196	188	A	206	196	186	272	284
4	282	278	286	214	A	240	230	210	224	212	E A 334	190	212	178	186	200	194	218	206	196	222	248	302	266
5	270	258	232	194	186	282	248	208	212	212	200	202	188	178	188	216	196	226	218	208	212	226	262	286
6	268	256	206	188	E B 294	320	242	212	224	E A 234	E A 232	A	A	A	A	E A 240	E A 250	238	236	210	214	218	A 274	266
7	246	256	234	198	190	280	230	212	226	200	186	192	196	A	202	240	214	A	234	246	202	184	288	298
8	296	262	258	184	B	B 216	170	214	220	202	194	220	188	202	186	204	254	240	232	212	204	258	284
9	286	272	236	216	212	210	214	212	226	214	200	192	228	176	198	A	A	A	222	216	224	E A 282	A	346
10	280	274	264	212	194	424	226	208	202	188	182	A 212	194	A	A	A	A	A	242	232	202	212	260	274
11	266	256	216	196	204	290	224	204	216	208	212	A	A	178	A	A	A	204	240	214	200	198	276	300
12	286	260	282	280	280	262	230	204	232	204	A	208	206	A	A	A	A	216	252	210	188	270	298	338
13	320	298	264	248	188	A	226	216	212	A	A	E A 242	192	E A 256	A	196	256	258	236	E A 466	274	A	312	308
14	298	266	260	230	196	220	218	212	208	A 204	E A 258	A	E A 230	A 220	A 228	210	A	210	E A 264	E A 278	248	A 256	226	272
15	256	256	240	192	198	294	228	222	A	E A 254	208	A	A	A	182	A	A	236	236	266	230	214	258	272
16	260	248	230	186	282	288	208	204	212	E A 242	186	182	A	A	A	A	A	198	232	238	240	204	246	310
17	282	262	228	188	182	A	220	212	A	A	A	A	A	E A 266	A	A	A	A	A	214	224	A	E A 336	294
18	288	266	260	206	212	A	206	218	A	A	A	A	A	220	196	232	214	A	240	236	242	214	204	236
19	268	282	254	206	190	244	210	208	208	194	192	200	A	190	198	176	192	244	220	210	A	E A 328	286	278
20	272	274	236	202	292	278	218	196	220	A	A	170	E A 228	A	A	A	222	A	238	264	A 282	276	290	304
21	268	266	214	164	A	A	E A 300	E A 246	A	A	A	E A 280	A	E A 236	A	A	180	210	222	228	E A 280	210	278	E A 316
22	284	286	210	226	300	254	186	220	226	226	210	186	224	198	172	216	206	192	220	212	212	224	266	260
23	E A 302	276	244	178	E B 366	306	228	214	A	A	A	192	174	E A 264	A	196	218	212	A 244	224	202	202	232	E A 308
24	270	314	286	272	248	264	230	232	228	A	206	212	190	194	A	216	A	236	240	226	238	A	290	266
25	250	262	256	234	228	286	230	210	A	A	214	170	154	206	218	212	A 214	E A 238	228	222	202	190	200	238
26	282	252	246	236	212	226	212	212	212	A	A	180	210	174	182	198	220	A	230	208	194	208	274	288
27	280	262	E A 276	270	258	256	220	222	A	A	A	E A 244	202	190	182	194	184	184	220	214	224	202	220	242
28	314	286	272	236	194	256	214	218	A	A	194	170	E A 268	208	202	202	190	198	228	256	226	184	270	E A 292
29	290	286	Q 254	198	244	282	216	216	218	204	206	182	E A 264	A	A	238	232	A 234	246	216	210	A	296	274
30	266	Q 254	Q 250	212	222	E A 310	222	190	210	174	226	240	A	A	A	A	A	A	276	228	214	186	244	280
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	30	30	30	30	27	24	30	30	22	19	20	23	19	19	17	19	19	22	28	30	29	26	29	30
MED	278	264	247	206	217	280	224	212	213	207	202	193	200	193	198	207	209	217	236	217	213	211	270	281
U Q	288	278	260	230	280	300	230	216	224	E A 220	213	A 212	E A 228	E A 220	205	232	222	238	241	236	234	234	289	300
L Q	266	256	232	192	194	255	216	204	208	204	194	182	192	178	184	196	194	204	222	210	202	202	252	272

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APR. 2020 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	A	102	102	100	100	100	100	100	102	102	102	A	A				
2							B	A	102	102	100	100	100	100	A	102	102	102	A	A				
3							B	A	A	102	102	100	100	100	100	106	A	A	A	B				
4							B	122	106	104	104	100	100	100	102	102	A	A	104	B				
5							B	104	100	100	100	100	104	100	A	104	104	A	A	A				
6							B	112	102	106	102	A	104	A	A	104	A	A	A	A				
7							B	112	104	104	104	104	102	102	102	102	102	102	A	A				
8							B	98	102	102	102	102	100	100	100	100	102	104	104	A				
9							B	A	102	102	102	102	A	A	A	102	102	102	108	A				
10							B	104	102	106	A	A	A	100	A	A	A	A	A	A				
11							B	116	98	104	102	100	100	104	106	104	100	100	110	A				
12							B	112	104	104	104	104	104	102	100	100	100	104	104	A				
13							A	106	106	106	106	100	102	102	102	102	102	104	104	A				
14							B	102	104	A	102	100	100	100	100	100	102	102	A	A				
15							B	104	102	102	100	A	A	A	A	A	A	108	108	A				
16							B	100	100	100	100	100	100	100	100	98	104	104	106	A				
17							A	102	102	102	102	100	A	100	100	100	100	102	102	A				
18							B	100	104	102	102	102	100	100	100	100	98	102	102	A				
19							B	102	102	102	102	102	100	A	100	100	100	106	106	A				
20							B	104	104	102	98	98	A	108	108	106	106	106	106	A				
21							A	104	104	100	100	100	100	100	A	A	A	A	A	A				
22							B	106	106	A	A	A	104	A	A	104	100	100	A	A				
23							B	104	104	102	102	102	100	100	100	100	102	102	104	A				
24							A	104	104	102	A	100	A	A	A	A	100	A	A	A				
25							A	100	100	100	100	100	100	A	A	A	102	102	104	A				
26							A	104	104	102	100	100	100	100	100	104	104	104	A	A				
27							126	104	102	102	102	100	100	A	A	A	A	106	110	A				
28							B	104	100	100	100	A	A	A	A	100	A	108	104	A				
29							A	102	102	100	98	A	A	A	A	A	A	104	104	A				
30							B	100	A	A	A	A	102	102	102	102	102	102	A	A				
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	26	28	27	26	23	22	20	17	23	21	23	17					
MED							126	104	102	102	102	100	100	100	100	102	102	102	104					
U Q								106	104	104	102	102	102	102	102	104	102	104	107					
L Q								102	102	102	100	100	100	100	100	100	100	102	104					

APR. 2020 h'E (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

APR.2020 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	94	94	B	96	94	94	B	132	126	104	102	100	152	130	116	102	100	102	100	96	104	100	96	96
2	94	94	94	92	B	92	92	116	116	116	110	108	102	106	108	102	104	102	102	94	94	98	96	96
3	96	88	82	B	92	90	96	134	136	120	104	100	100	100	112	106	106	96	94	94	94	94	94	90
4	100	88	92	92	92	96	140	146	118	120	112	114	G	112	116	106	106	104	G	98	92	84	108	B
5	90	90	90	B	90	104	B	142	140	132	116	114	G	106	110	104	146	192	86	86	86	84	96	100
6	82	B	B	B	B	B	B	128	124	114	114	116	110	106	102	106	104	88	104	84	100	98	94	94
7	96	96	B	96	B	B	B	146	138	124	124	144	118	104	152	182	132	112	120	102	100	100	100	B
8	B	82	B	B	B	B	B	142	134	122	120	116	106	106	104	112	114	184	116	100	96	96	96	94
9	94	84	90	90	92	94	96	138	122	130	112	126	162	94	154	110	124	128	118	98	106	100	104	104
10	104	B	B	B	B	118	B	136	112	104	106	90	100	146	128	116	112	110	110	102	96	96	108	98
11	B	B	B	B	B	B	B	154	122	126	126	118	112	124	142	124	114	114	162	114	100	96	96	94
12	B	94	98	B	B	B	B	130	116	138	114	122	126	114	110	104	108	148	106	98	98	98	92	96
13	96	96	94	92	92	86	86	122	128	114	100	104	112	154	144	G	112	164	122	98	100	100	100	98
14	94	B	B	108	92	96	128	118	126	110	108	150	142	142	142	138	116	116	110	100	100	104	108	B
15	82	B	B	B	B	106	B	126	126	122	116	122	144	94	100	98	94	144	114	100	100	102	100	94
16	96	B	96	94	94	94	B	130	118	114	108	108	120	110	110	104	104	114	142	106	102	106	84	106
17	112	102	B	100	98	100	130	118	110	104	104	102	90	126	114	120	116	106	98	98	104	102	98	100
18	98	98	96	90	90	92	92	120	114	112	110	108	110	118	112	138	116	106	100	98	102	102	B	B
19	86	B	B	B	118	B	B	108	104	110	104	102	98	106	162	G	G	150	104	98	98	102	108	120
20	94	90	94	86	86	92	B	114	108	108	100	102	156	122	112	110	110	128	100	102	100	98	96	96
21	96	96	94	100	118	112	110	112	108	106	104	104	104	100	96	92	96	98	98	92	90	90	86	80
22	82	82	B	82	B	B	B	148	156	88	92	90	154	156	90	154	G	128	104	84	84	92	98	94
23	94	94	94	92	92	96	B	124	112	104	104	112	104	102	100	156	144	120	106	98	98	98	96	96
24	96	90	92	92	92	B	128	114	108	100	100	100	98	98	94	94	122	106	104	100	98	98	100	96
25	108	B	B	86	B	B	124	114	106	100	100	100	100	148	144	126	120	110	106	100	100	106	84	98
26	98	96	B	B	94	B	122	126	112	104	100	102	156	G	138	G	116	102	98	96	96	96	96	100
27	100	96	92	90	90	90	G	114	104	100	98	98	98	152	98	94	92	88	106	88	86	84	84	84
28	84	B	96	92	98	94	132	122	102	100	102	98	98	92	98	170	104	122	106	98	98	98	100	98
29	98	94	92	102	112	B	118	106	100	100	98	100	94	92	94	94	154	118	106	102	100	100	100	132
30	82	82	B	B	B	118	116	104	102	96	94	142	116	114	112	104	102	102	102	98	98	102	96	96
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	21	16	19	19	19	15	30	30	30	30	30	28	29	30	27	28	30	29	30	30	30	29	26
MED	96	94	94	92	92	94	118	125	116	110	104	106	110	110	112	106	112	113	106	98	98	98	96	96
U Q	98	96	95	96	98	104	128	136	126	120	112	116	134	128	138	126	118	128	112	100	100	102	100	100
L Q	90	88	92	90	92	92	96	114	108	104	100	100	100	101	100	102	104	102	100	96	96	96	95	94

APR.2020 h'Es (KM)

IONOSPHERIC DATA STATION Okinawa

APR. 2020 TYPES OF Es 135°E MEAN TIME (G.M.T. + 9 H)

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F3	F1		F1	F1	F3		HC21	C1	C2	C1	C1	H1	H1	C1	C8	C4	C3	C3	L5	FF51	F8	F6	F4
2	F2	F2	F1	F1		F9	L1	C2	C1	C1	C1	C1	C2	C2	C1	C2	C2	C3	C2	L4	F2	F2	F2	F2
3	F1	F2	F3		F1	F3	L1	H2	HL12	CL12	C3	C4	C2	C3	C1	C2	C2	L3	L3	LL11	FF13	FF11	F2	F1
4	F1	F1	F2	F3	F4	F2	HL11	HL21	C2	C1	C2	C1		C1	C1	C1	C1	C3		L3	F1	F1	FF12	
5	F2	F2	F1		F1	F1		H1	H1	H1	C1	C1		C1	C1	C1	HC11	HL11	L3	L6	F1	F2	F2	F4
6	F1							C3	C1	CL41	CL11	CL11	C1	C2	C2	C2	C2	L3	C2	L2	FF32	FF11	F5	F2
7	F1	F1		F1				H1	H2	C1	C1	HC11	C1	C2	H1	HH11	H1	C4	C3	C8	F4	F3	F1	
8		F1						HC11	H1	C1	C2	C1	C1	C1	CH11	C1	C1	HHC21	C7	C7	F3	F1	F4	F4
9	F1	F1	F1	F2	F2	F1	L1	HC22	C1	H1	C1	CL11	HL11	L1	HL11	C4	C5	C4	C6	L6	FF32	FF72	F3	F5
10	F1					F1	H1	HC11	C2	C1	C1	L3	C2	HL11	CL21	CL31	CL22	CL44	CL42	CL92	F3	F3	FF11	F2
11								H1	C1	C2	C1	C1	C1	C1	H1	C2	C4	C2	H2	C6	F3	F1	F1	F2
12		F3	F1					H2	C2	HL11	C2	C1	CL11	C1	C2	C2	C2	H1	C4	L2	F3	F3	F3	F3
13	F4	F2	F2	F2	F1	F5	L5	C2	C1	C2	C3	C2	C1	HC11	H1		C2	H2	C3	LL57	FF33	F4	F3	FF22
14	F1			FF11	F4	F1	C1	C2	C2	C2	C1	H1	H1	HC11	H1	H2	CL21	CL23	CL64	CL64	FF33	FF32	FF11	
15	F1					F3	H1	C6	C4	C2	C2	CL21	HL12	L2	L2	LQ21	L4	HC11	C3	L8	F8	F3	FQ41	F4
16	F1		F2	F5	F4	F2	H1	H2	C3	C3	CQ21	C1	C2	C2	C3	C6	C4	C2	H2	C4	F3	F3	F1	F3
17	F2	F4		F3	F2	F5	H3	C2	C3	C4	C3	C4	L5	C1	C3	C2	C3	C6	C8	L9	F4	F6	F7	F3
18	F6	F5	F4	F3	F3	FQ41	LQ51	C4	CL21	CL42	C5	C4	C3	C1	C2	H1	C1	C4	C5	L6	FF81	F3		
19	F1				F1		H1	C3	C2	C1	C2	C2	L3	C1	H1			H2	C4	L8	F4	FF92	FF42	FF12
20	F1	F1	F1	F4	F3	F2	H1	C3	C4	C3	C2	C1	HC11	CL31	C7	CL41	C1	C2	C3	C8	F8	F9	F6	F5
21	F4	F3	F2	F2	F7	F8	C5	C5	C3	C3	C2	C1	C3	C2	L4	L3	L2	L2	L2	LQ31	FQ51	F6	F3	F2
22	F1	F1		F1				H1	HCL11	L3	LH11	L1	HL11	HL11	L1	H1		C1	CL13	L6	L4	F3	FF22	F3
23	F6	F1	F1	F1	F1	F1	H1	C2	C2	C2	C2	C1	C1	C1	C1	H1	H1	C1	C5	L5	F5	F3	FF21	F5
24	F3	F3	F2	F1	F1		C1	CQ31	CQ31	C2	L1	C2	L1	L2	L2	L3	CL21	CL62	CL73	L7	FF53	FF22	F5	F9
25	F1			F1			CL21	C2	C4	C2	C2	C1	C1	HL11	HL11	CL11	CL11	C2	C4	C8	FQ31	F1	F1	F1
26	F1	F2			F1		C2	C1	C2	C2	C2	C1	HC11		H1		C1	C3	C5	L6	F3	F3	F4	F1
27	F2	F3	F4	F2	F2	F1		C3	C3	C4	L3	L1	L2	HL11	L1	L1	L1	L1	CL11	L5	F5	F3	F3	F1
28	F1		F2	F2	F1	F1	H1	C4	C3	C4	C2	L1	L2	L2	L1	H1	C1	C1	C3	L6	F3	F3	F3	F3
29	F1	F2	F1	F1	F1		C1	C2	C2	C1	L1	C1	L2	L2	L2	L2	HL21	C2	C8	L7	F8	F6	F8	FF11
30	F1	F1				F6	C1	C2	C3	L2	L2	HL11	C2	C1	C2	C3	C4	C6	C6	L5	F4	F4	F3	F1
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																								

APR. 2020 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

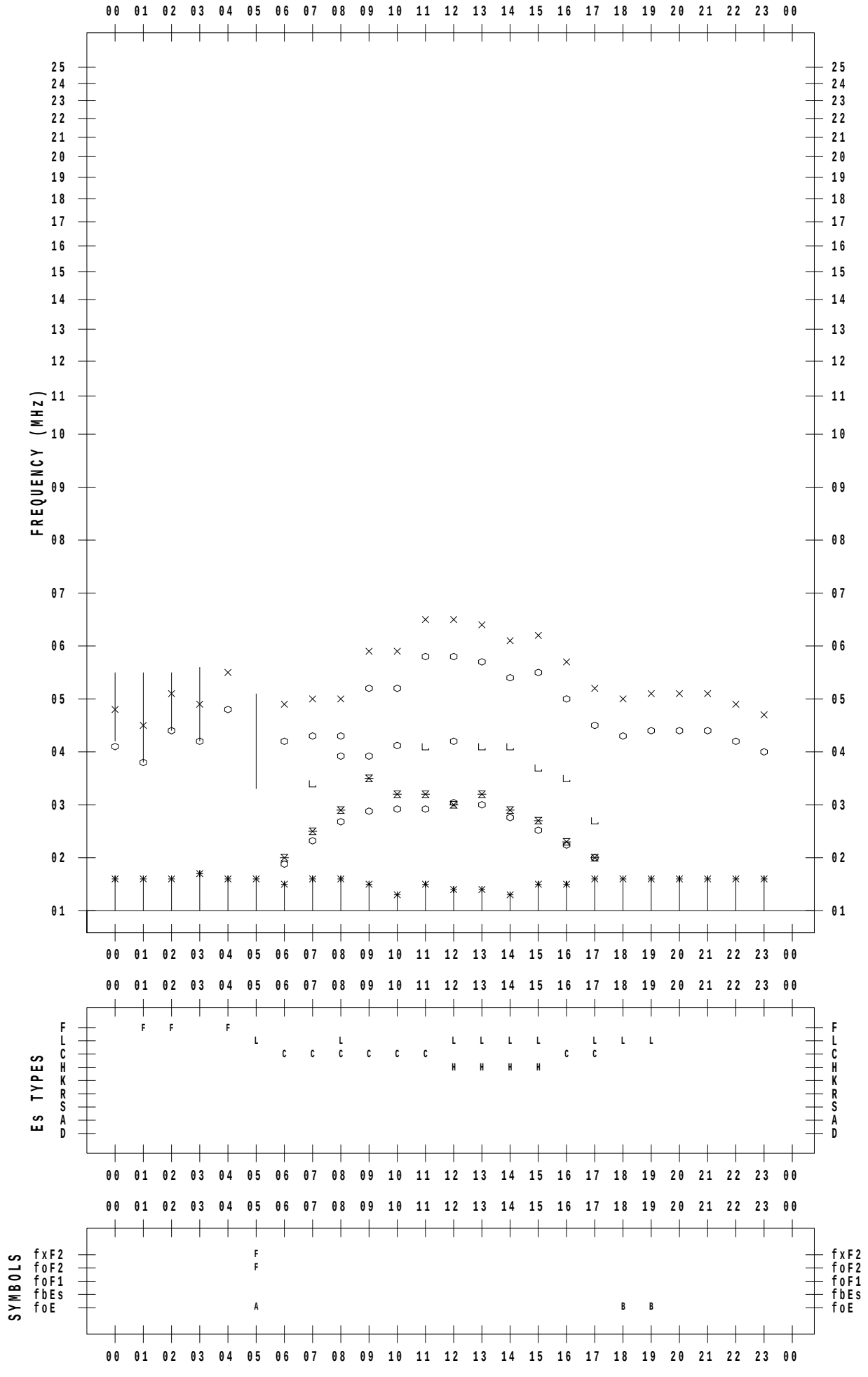
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 1

135 °E MEAN TIME



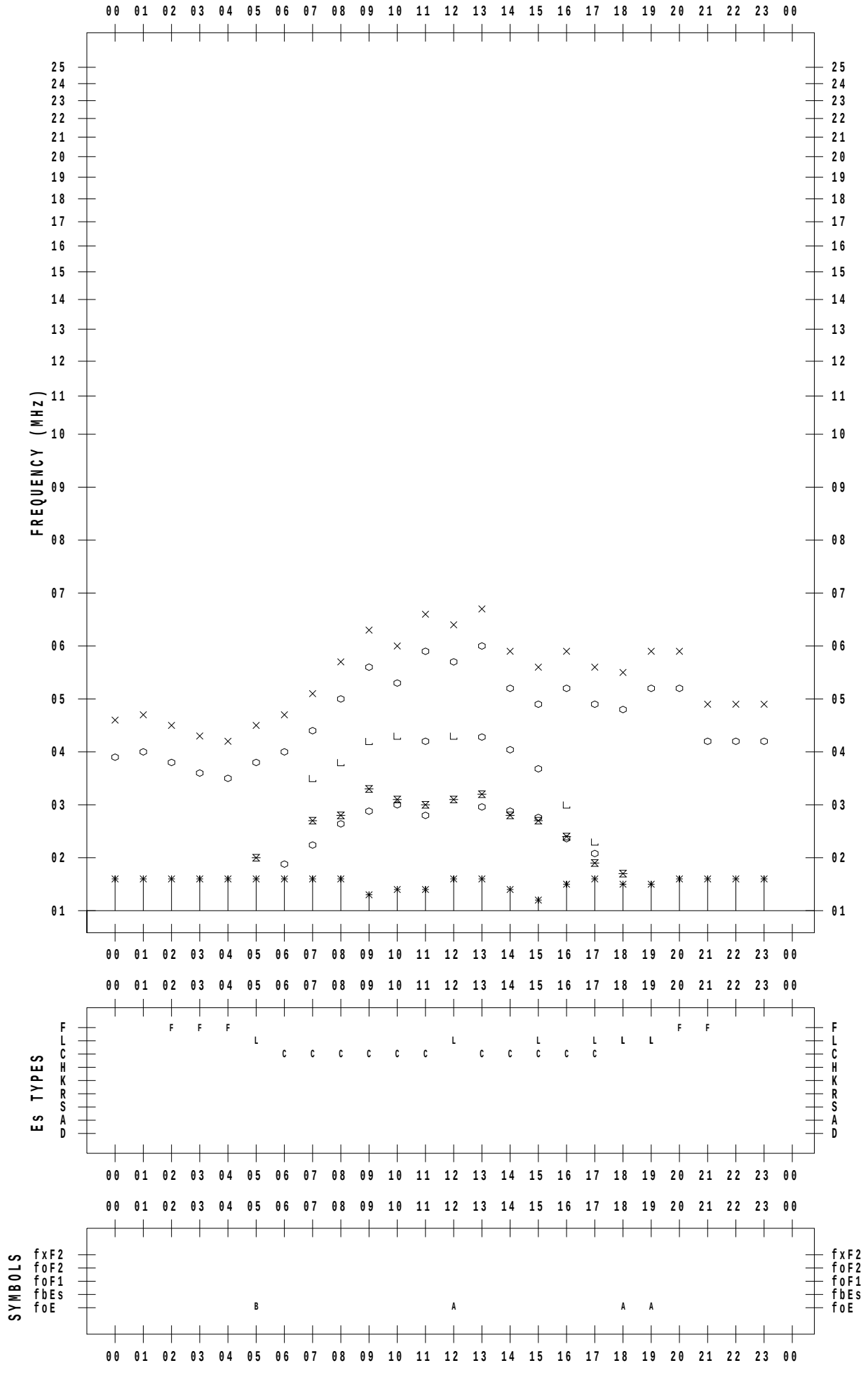
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 2

135 °E MEAN TIME



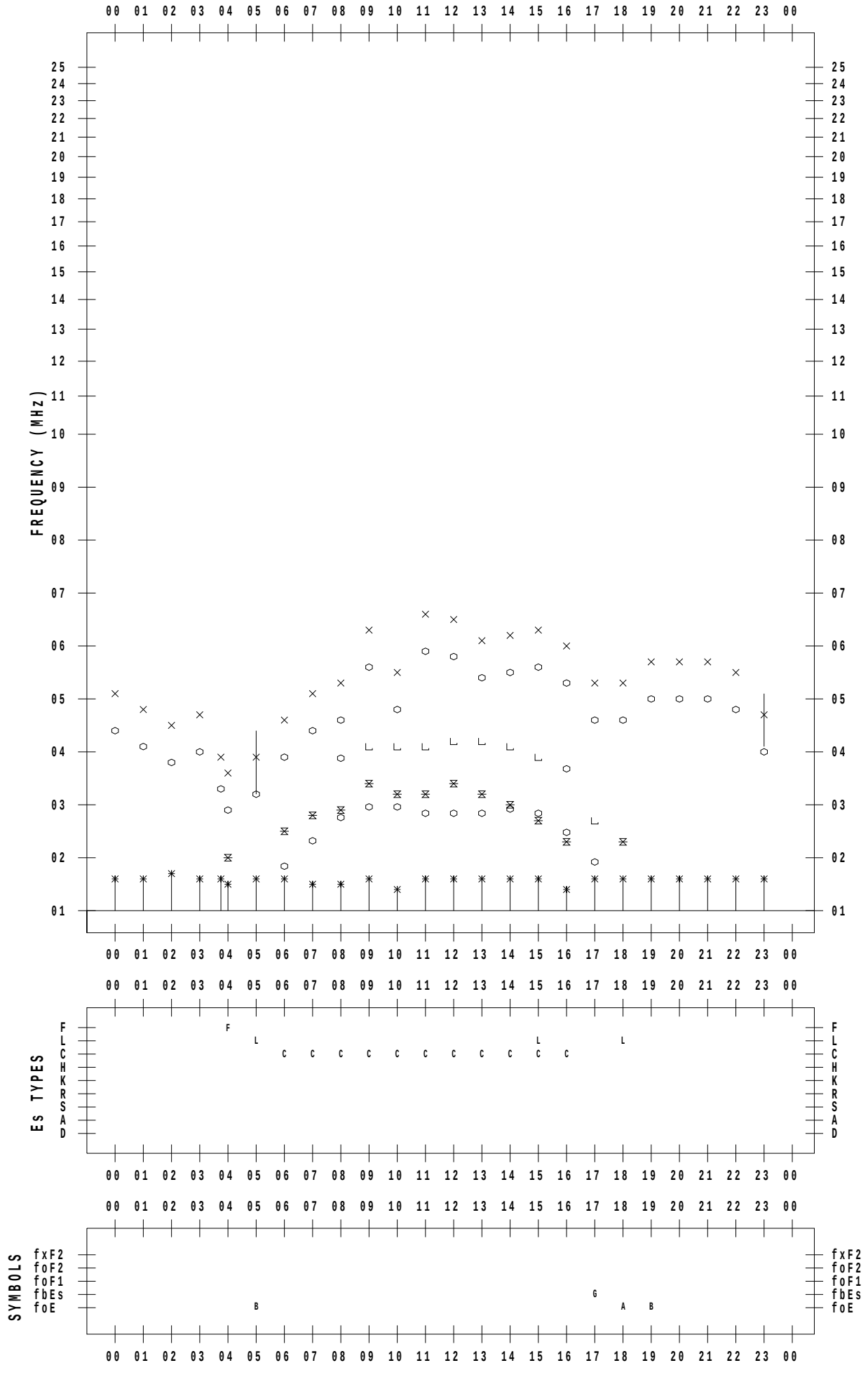
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 3

135 °E MEAN TIME



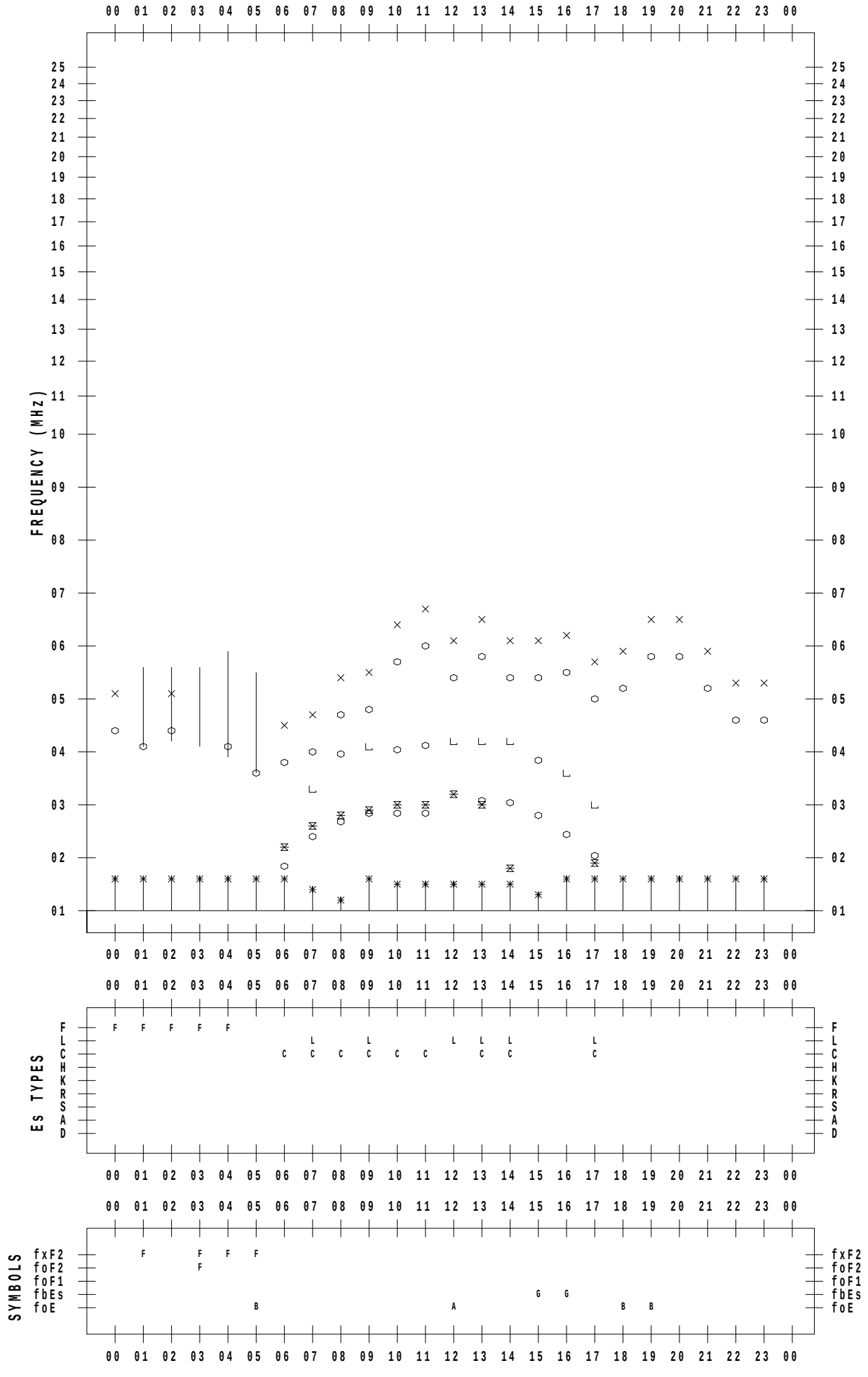
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 4

135 °E MEAN TIME



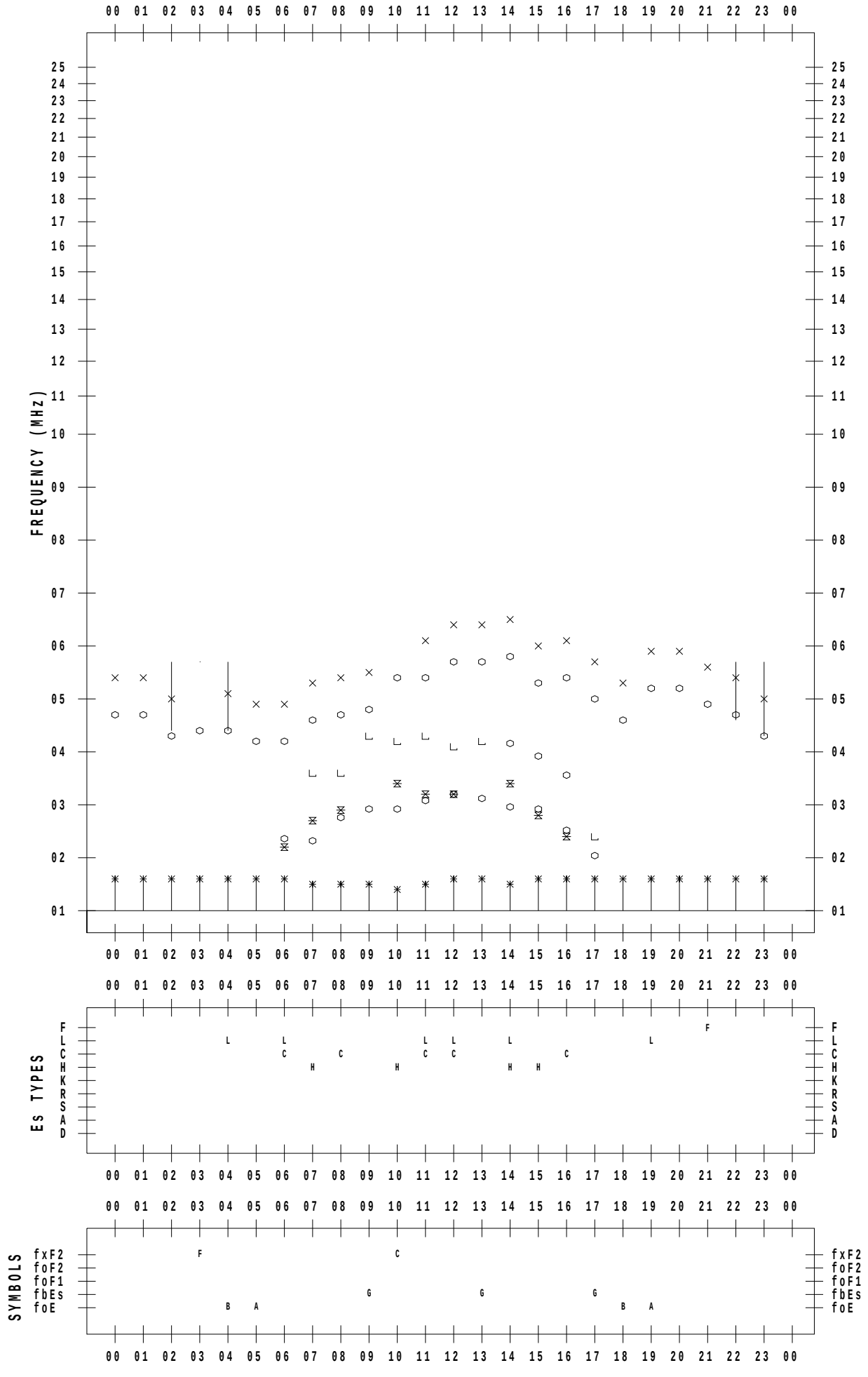
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 5

135 °E MEAN TIME



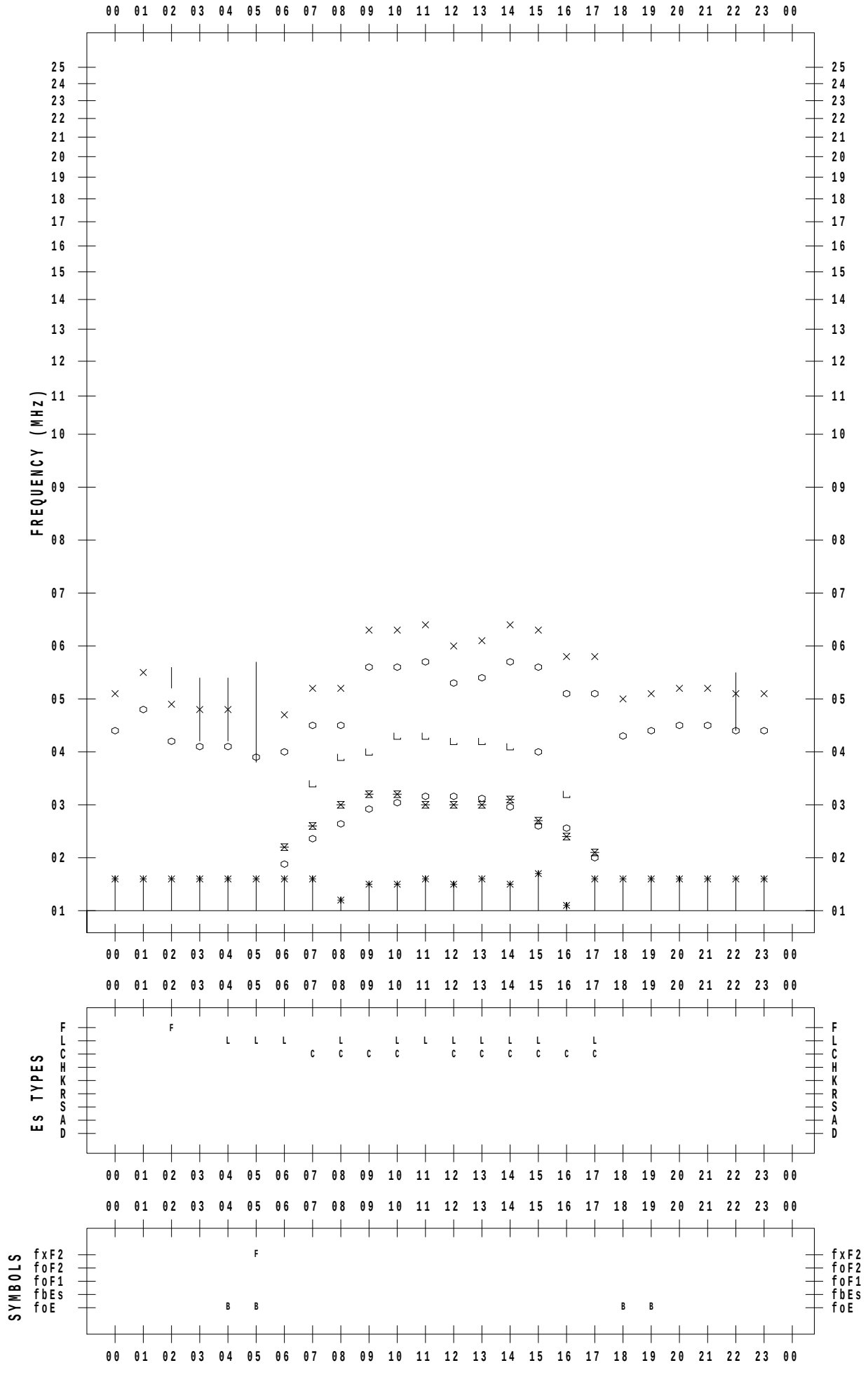
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 6

135 °E MEAN TIME



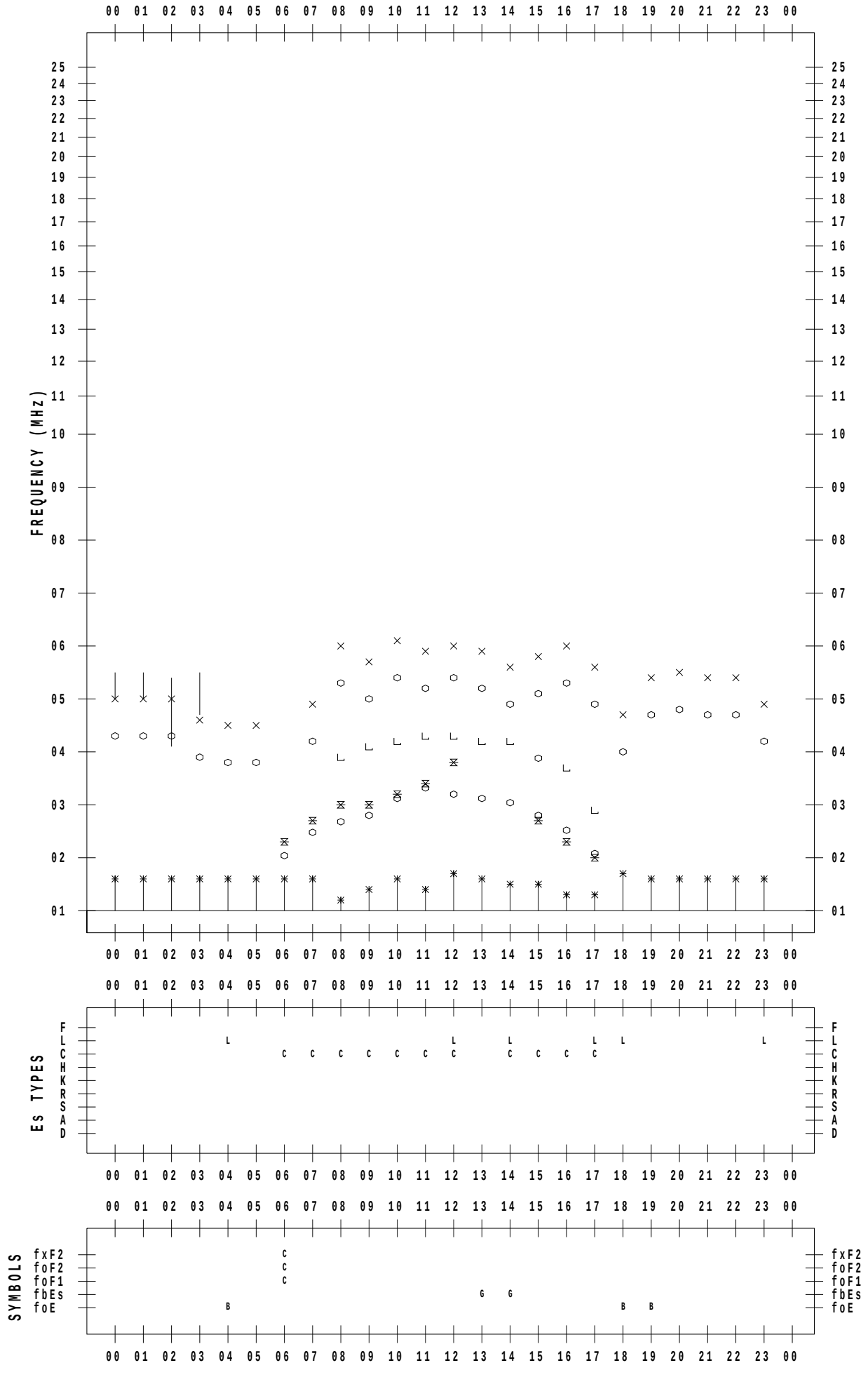
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 7

135 °E MEAN TIME



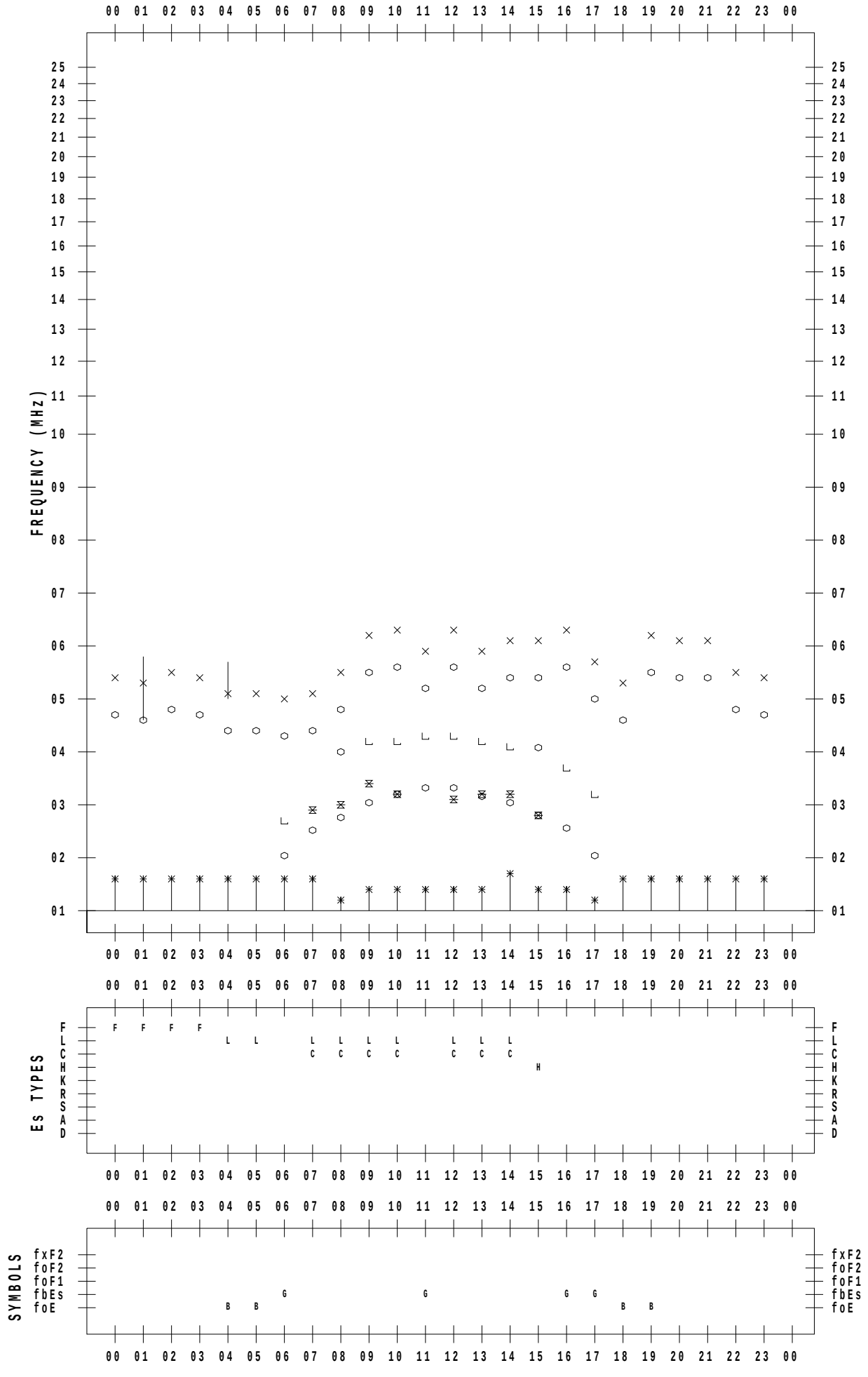
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 8

135 °E MEAN TIME



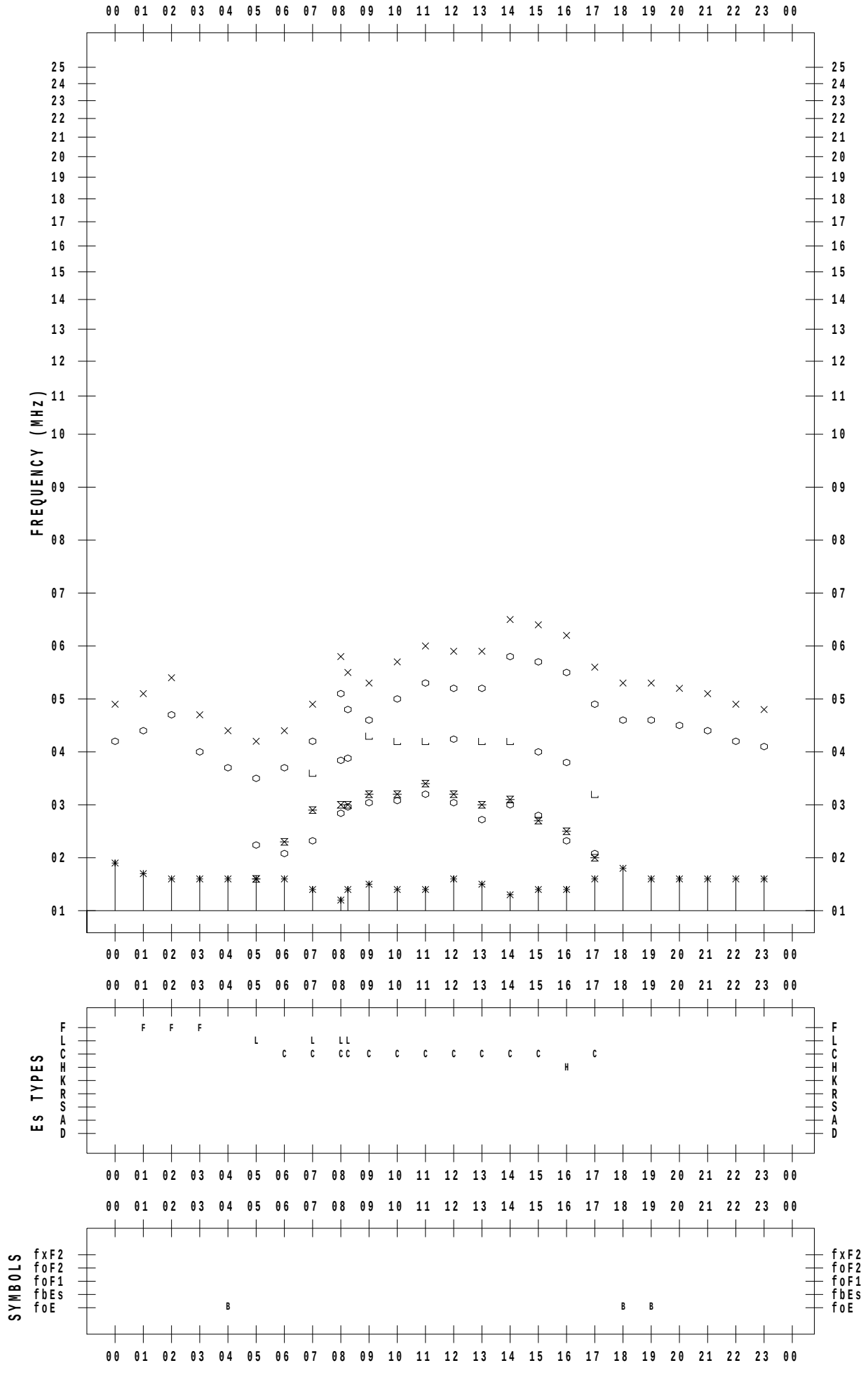
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/ 9

135 °E MEAN TIME



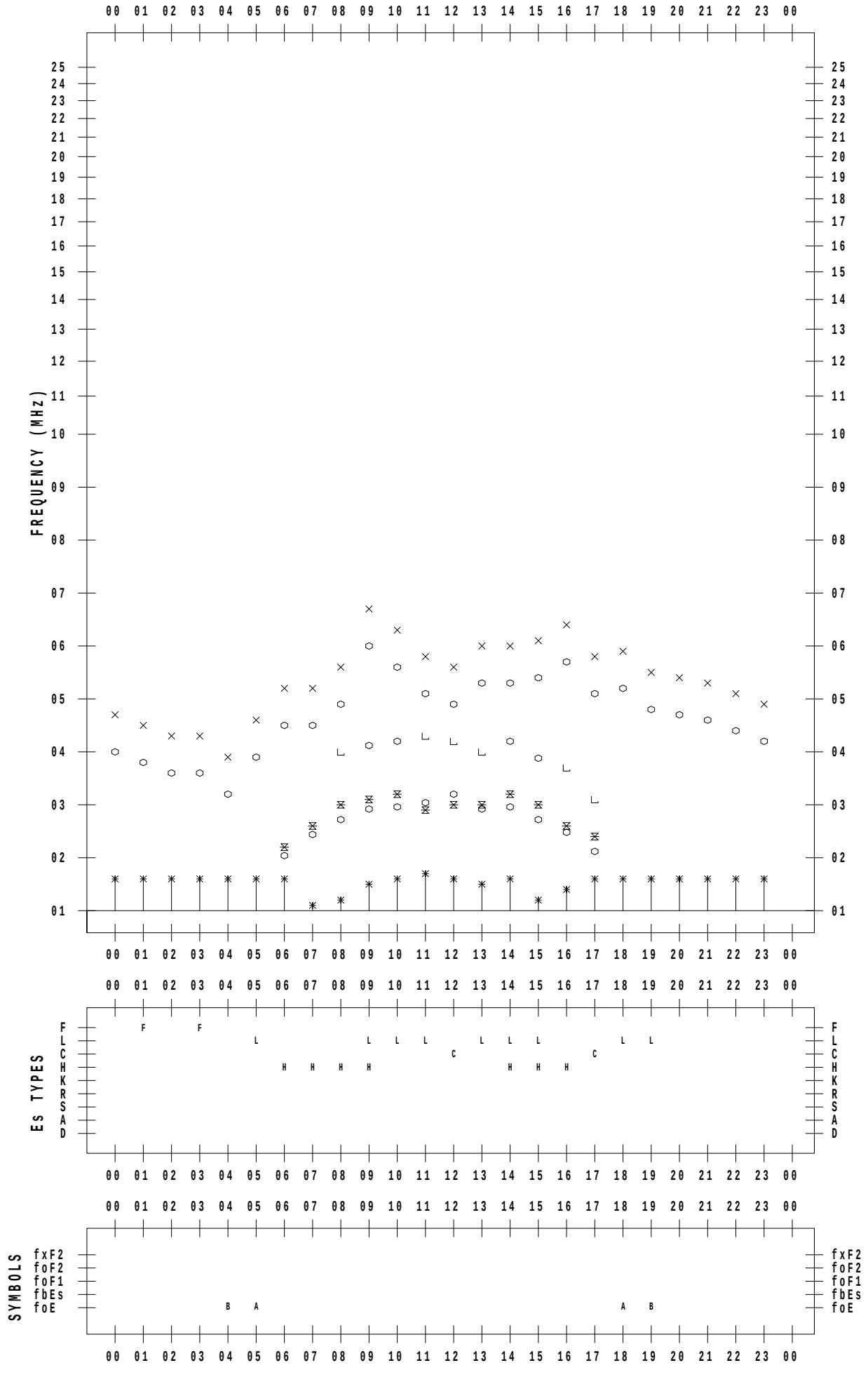
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/10

135 °E MEAN TIME



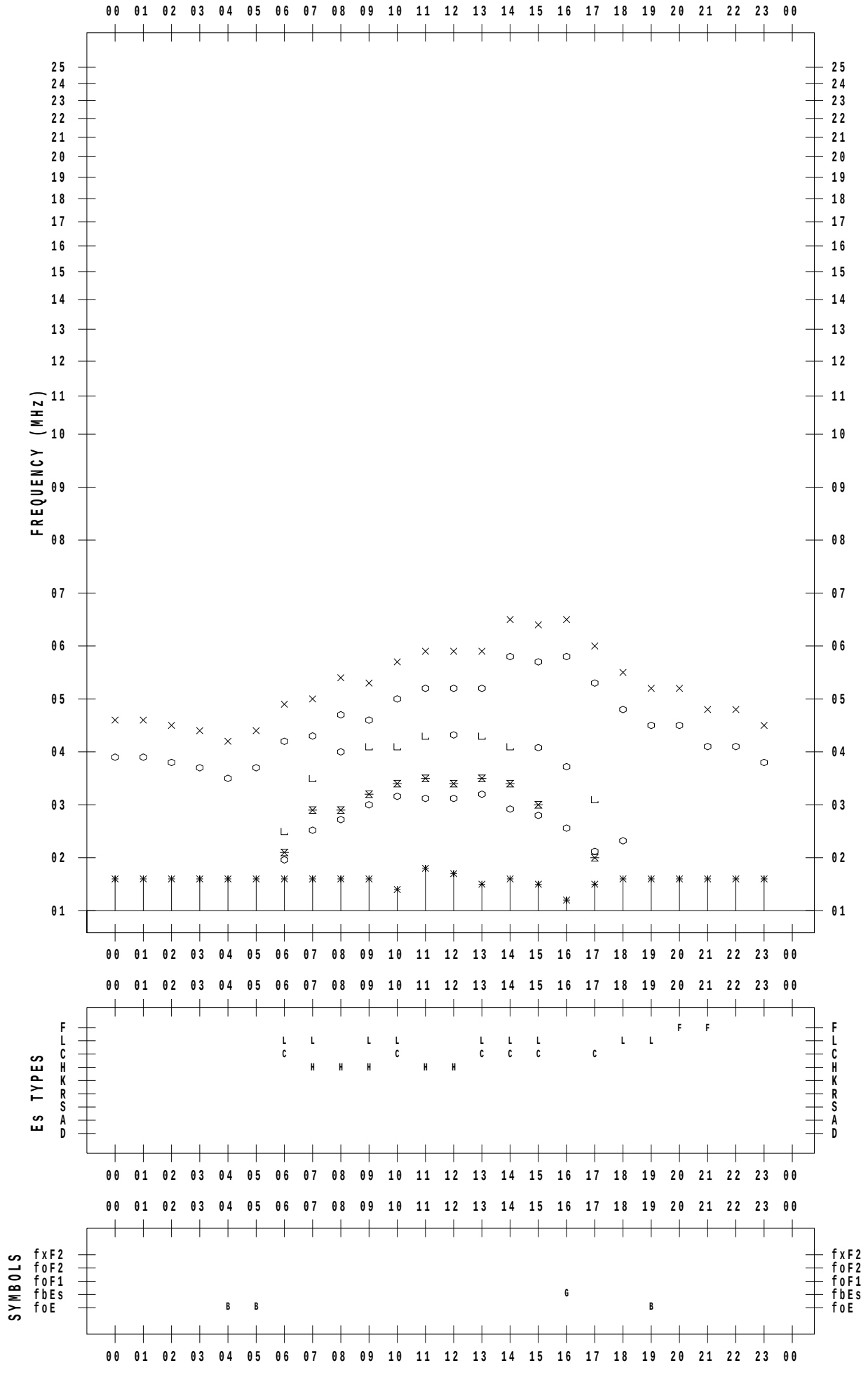
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/11

135 °E MEAN TIME



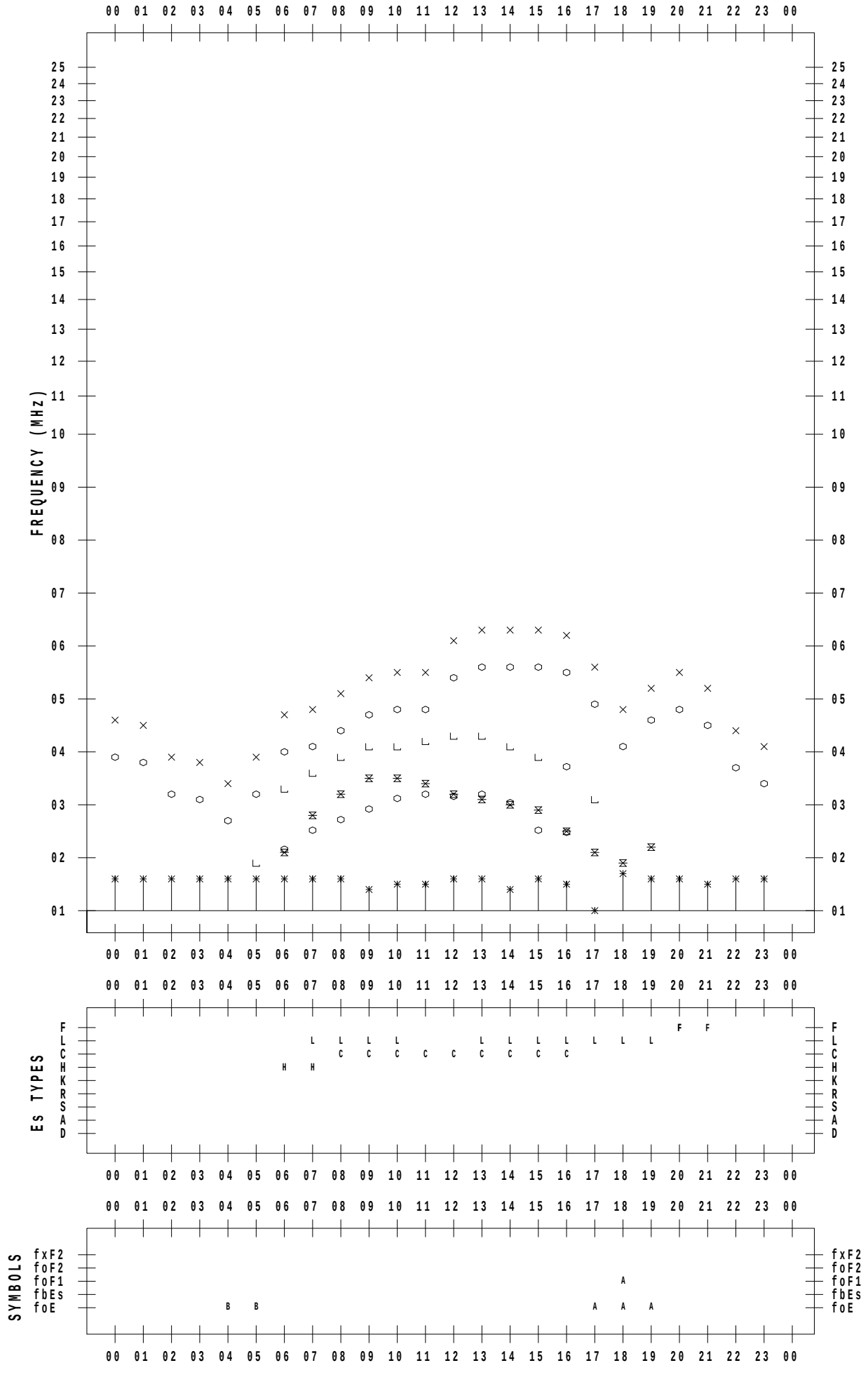
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/12

135 °E MEAN TIME



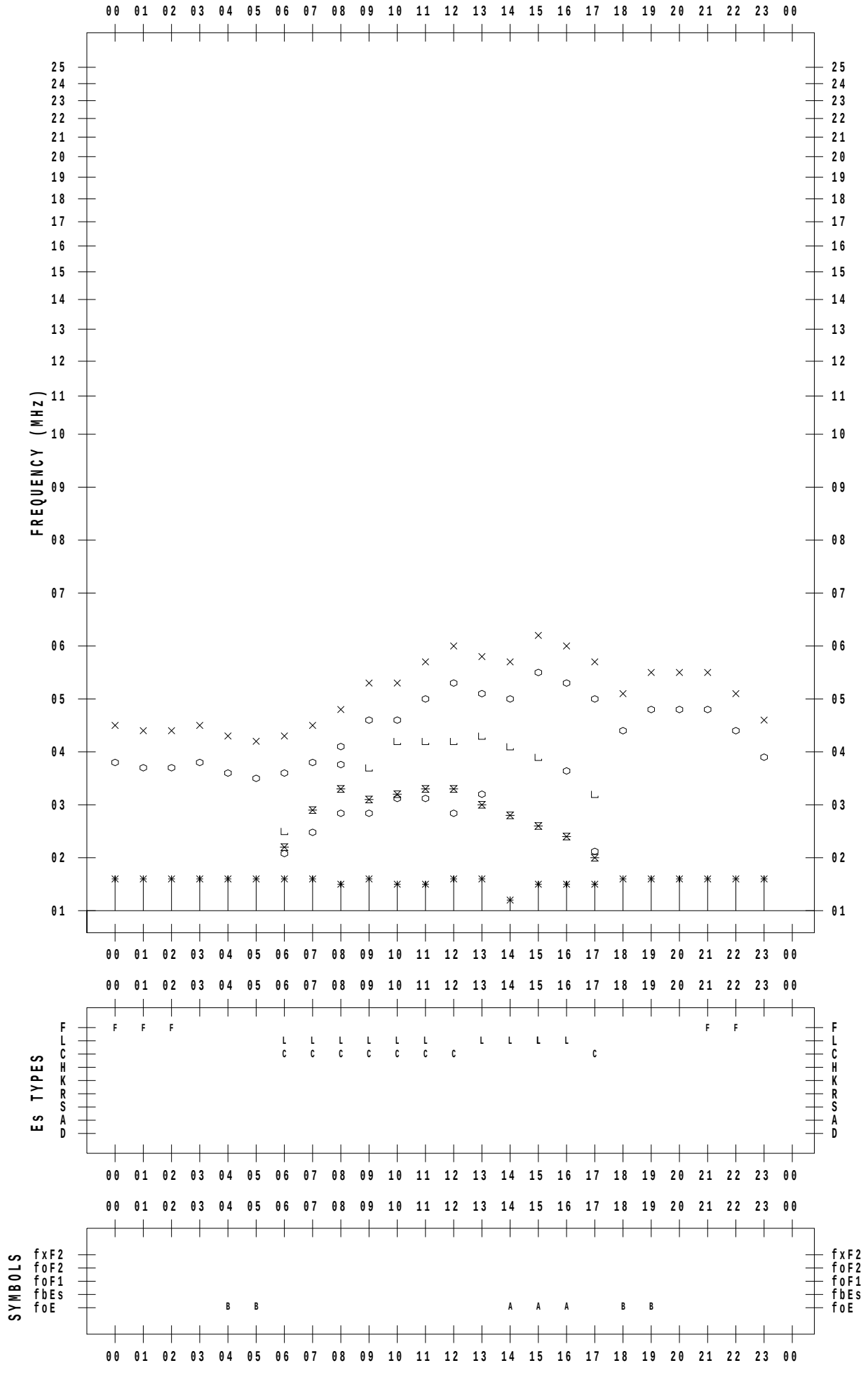
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/13

135 °E MEAN TIME



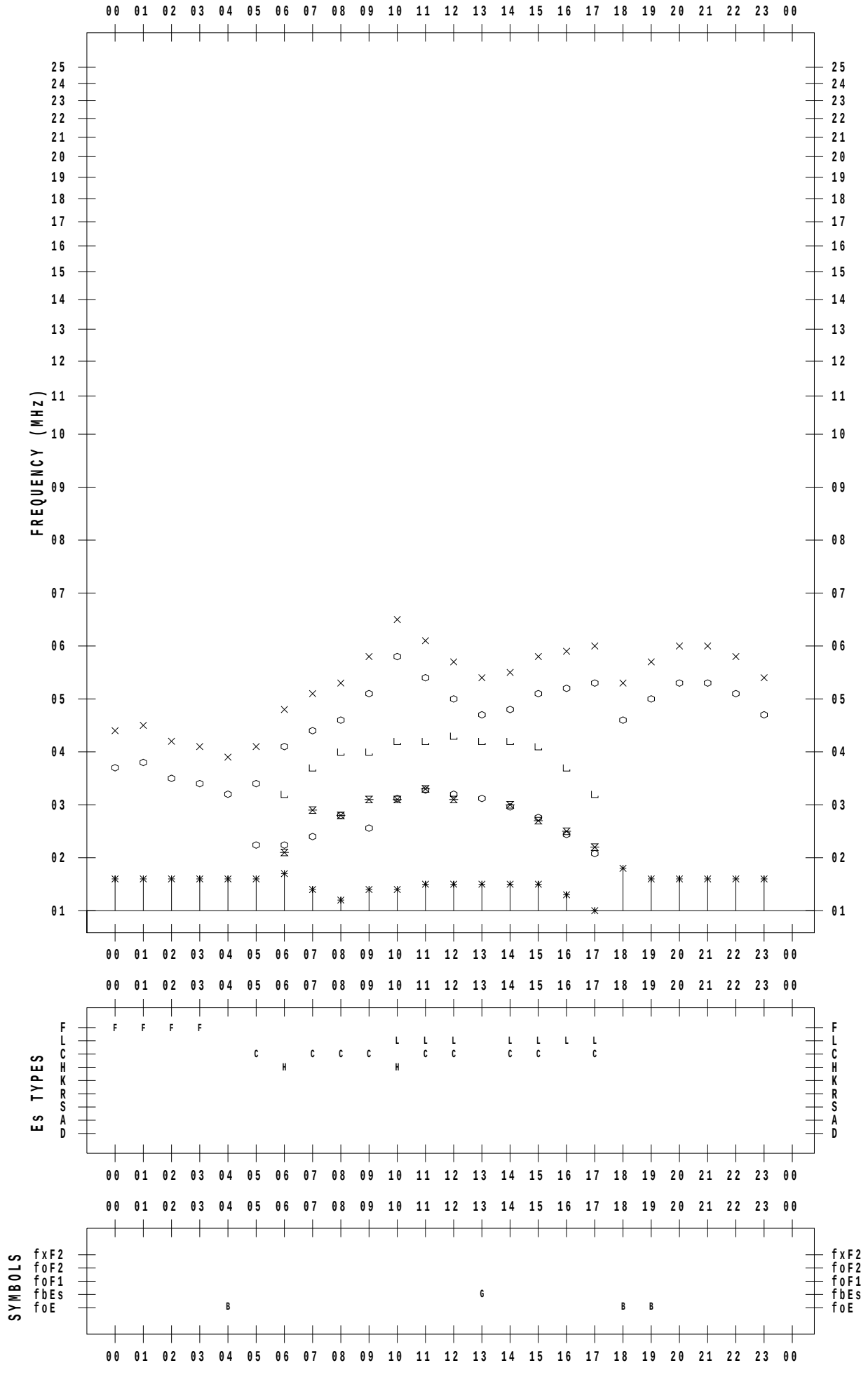
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/14

135 °E MEAN TIME



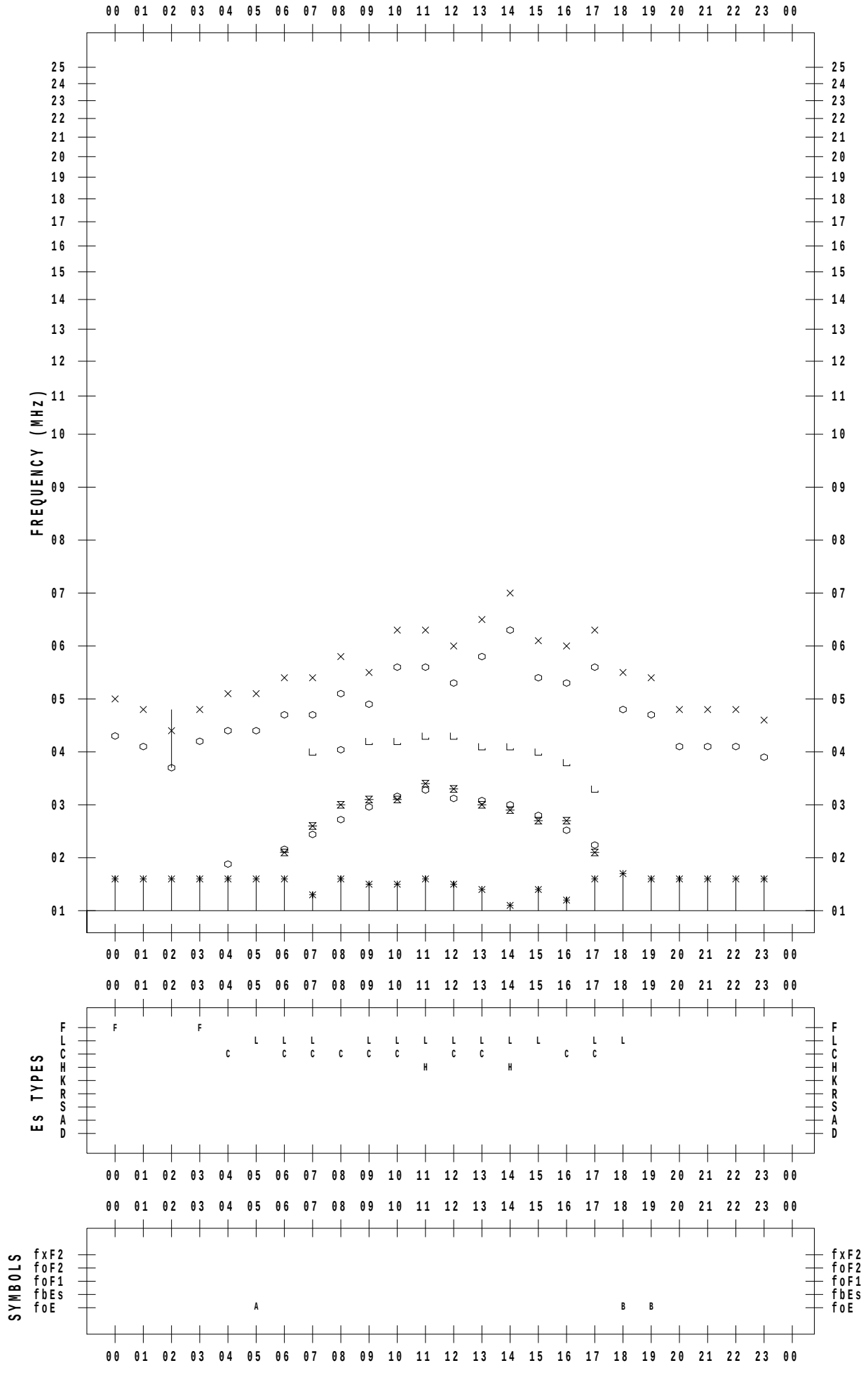
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/15

135 °E MEAN TIME



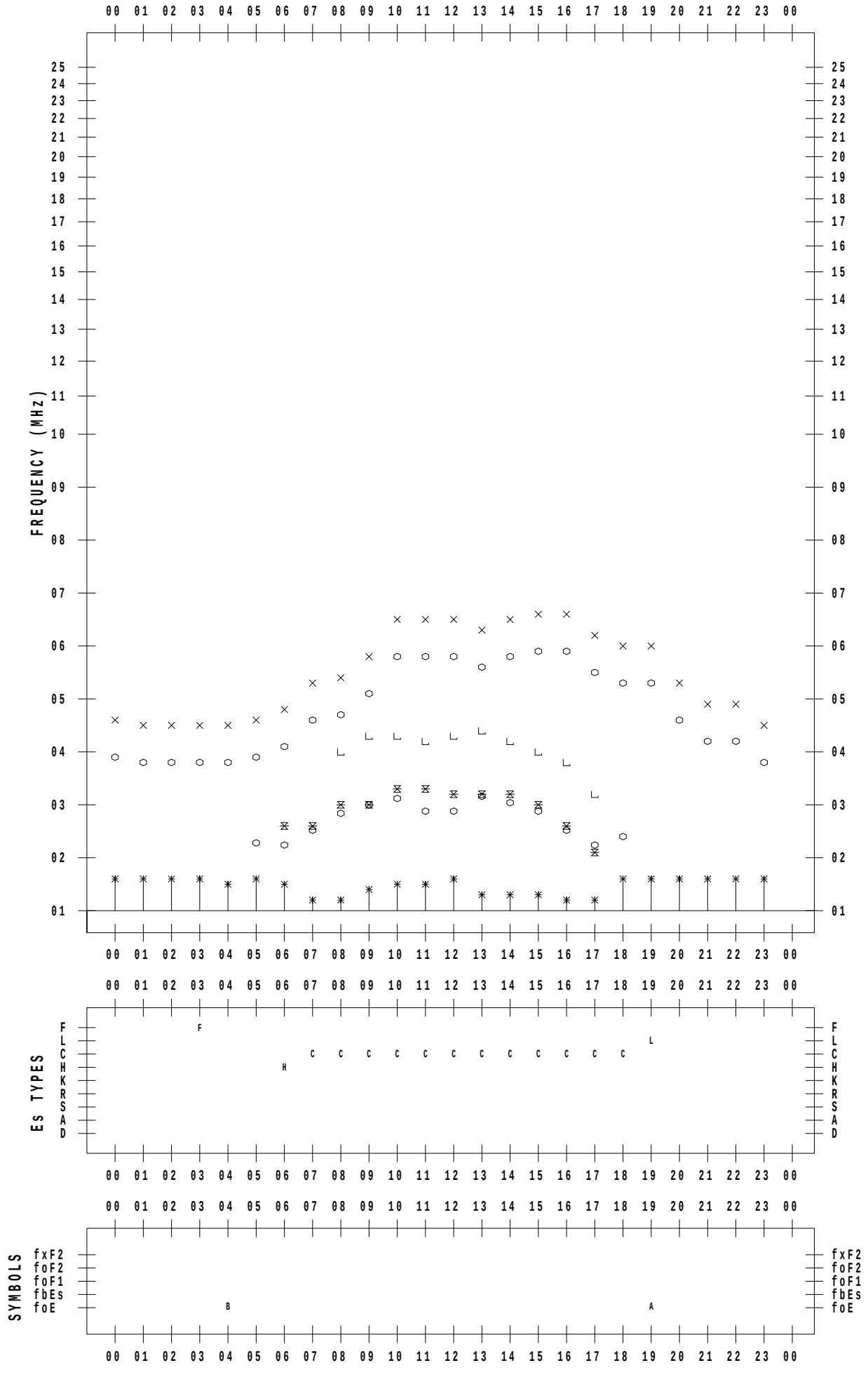
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/16

135 °E MEAN TIME



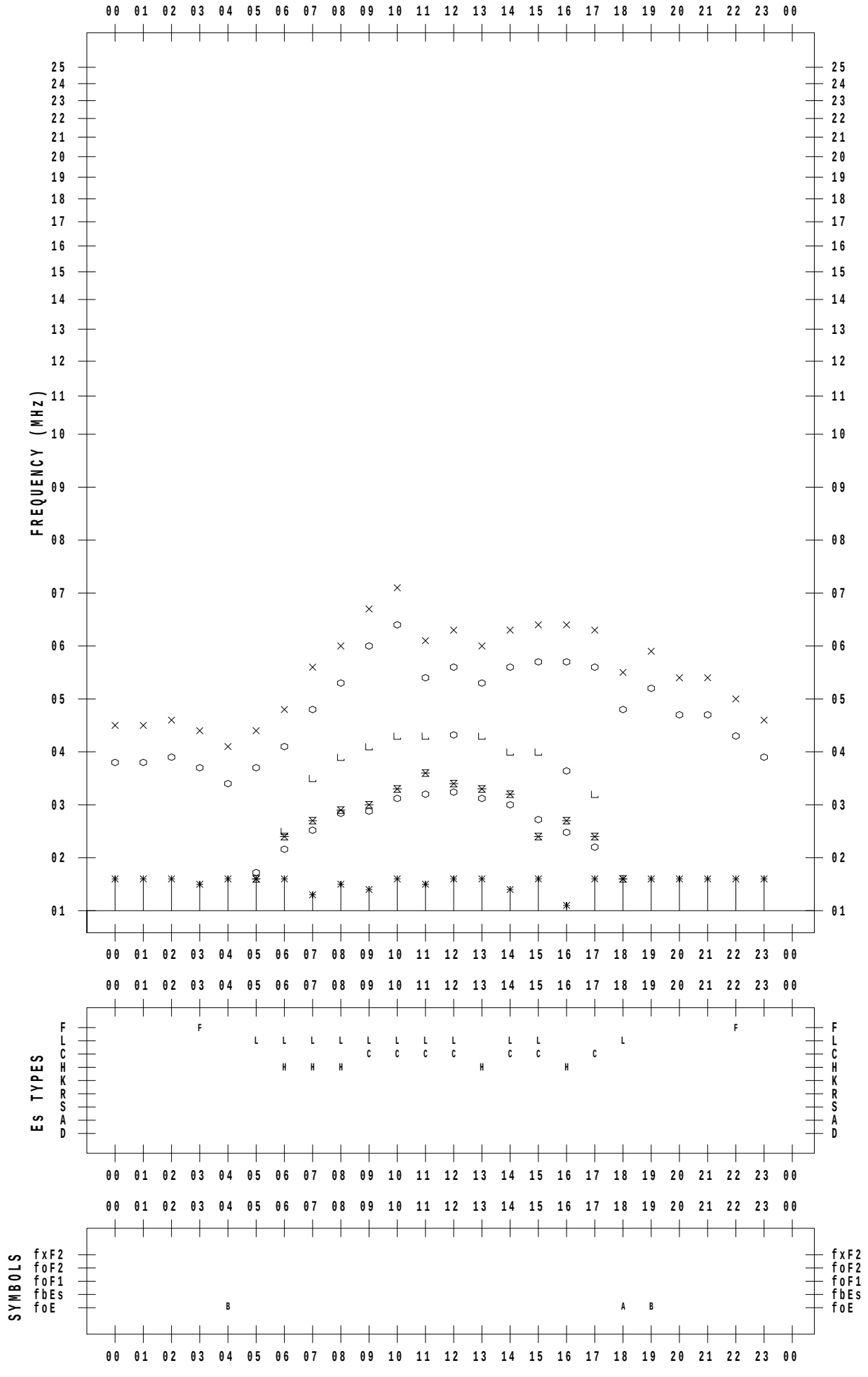
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/17

135 °E MEAN TIME



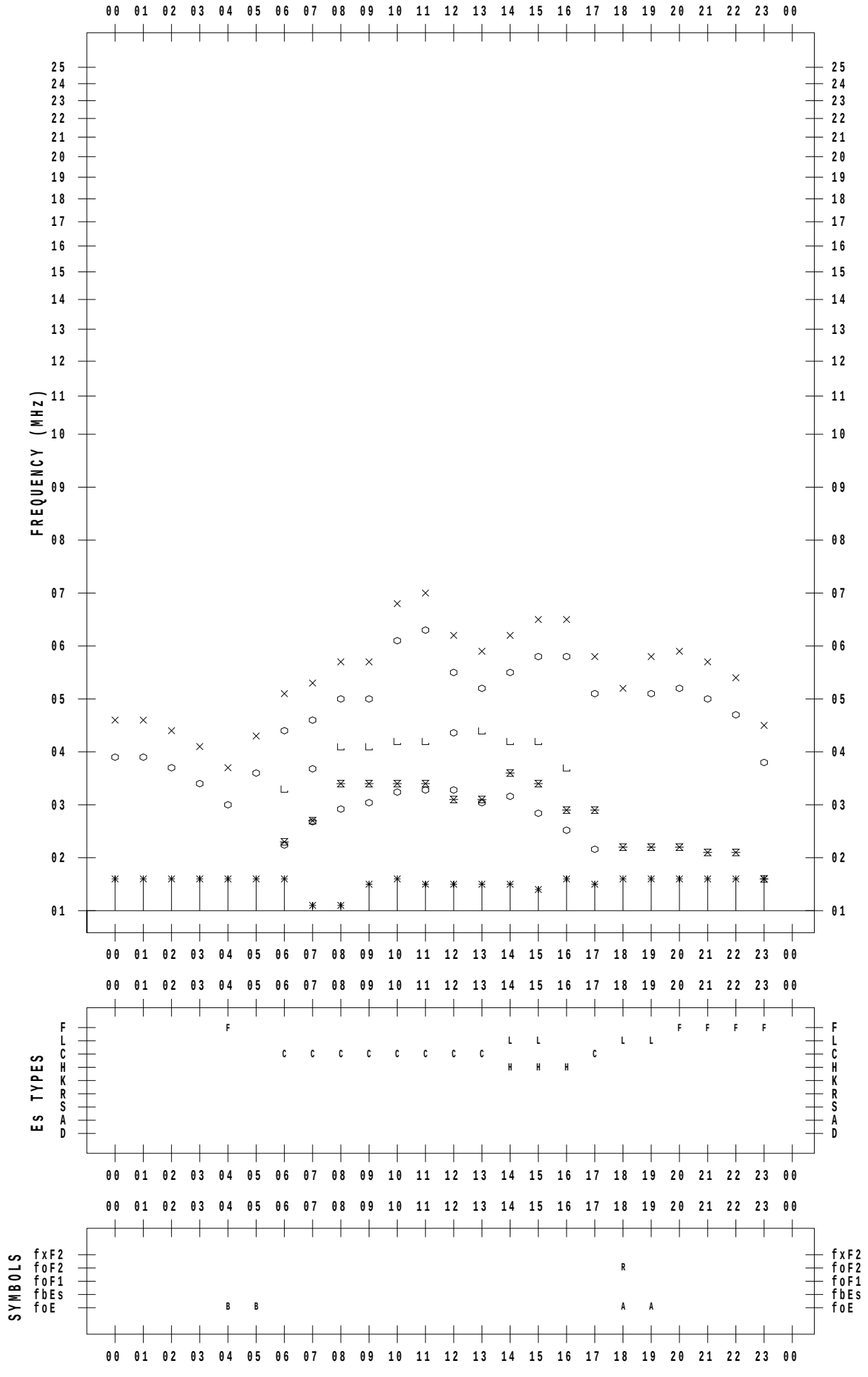
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/18

135 °E MEAN TIME



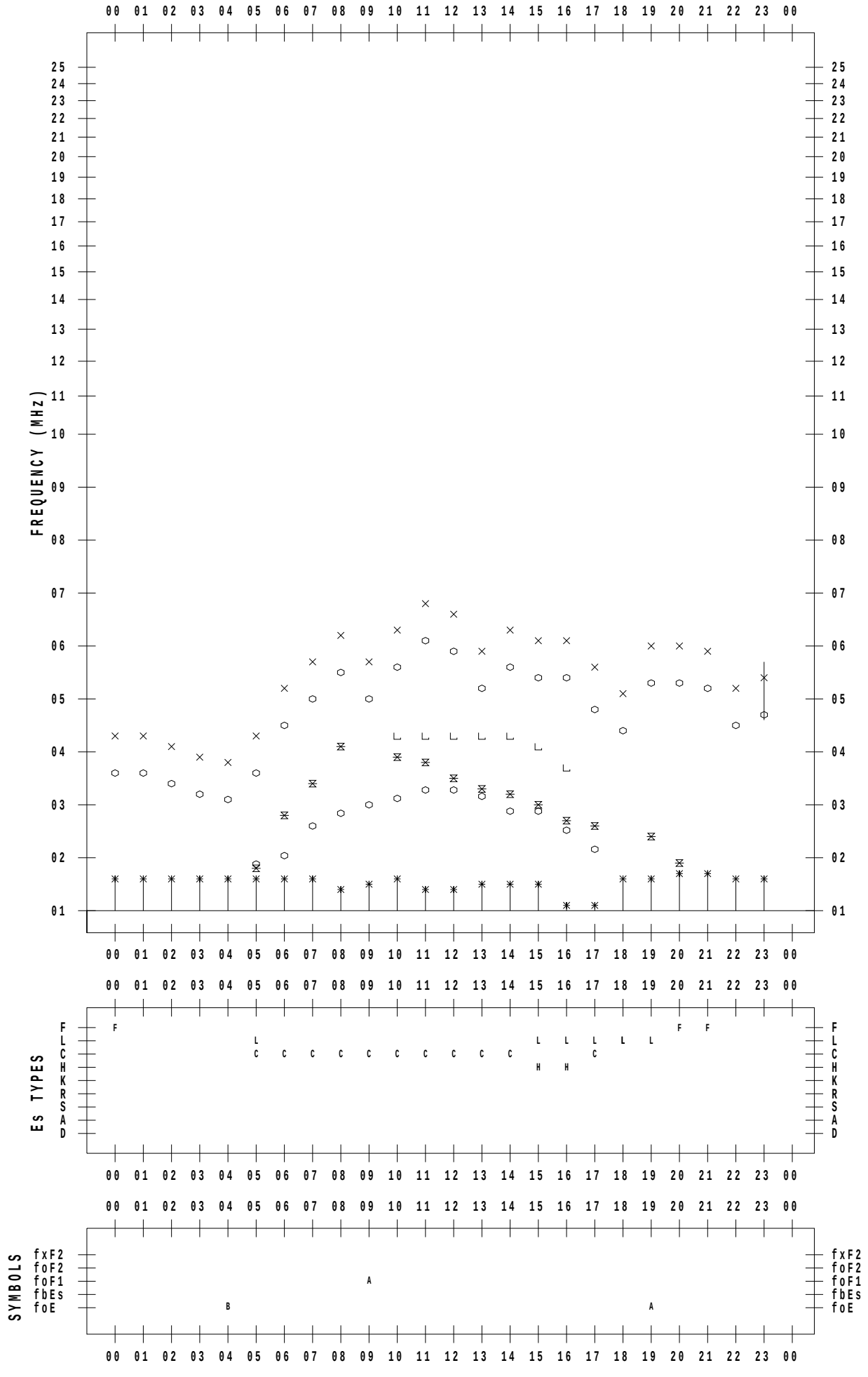
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/19

135 °E MEAN TIME



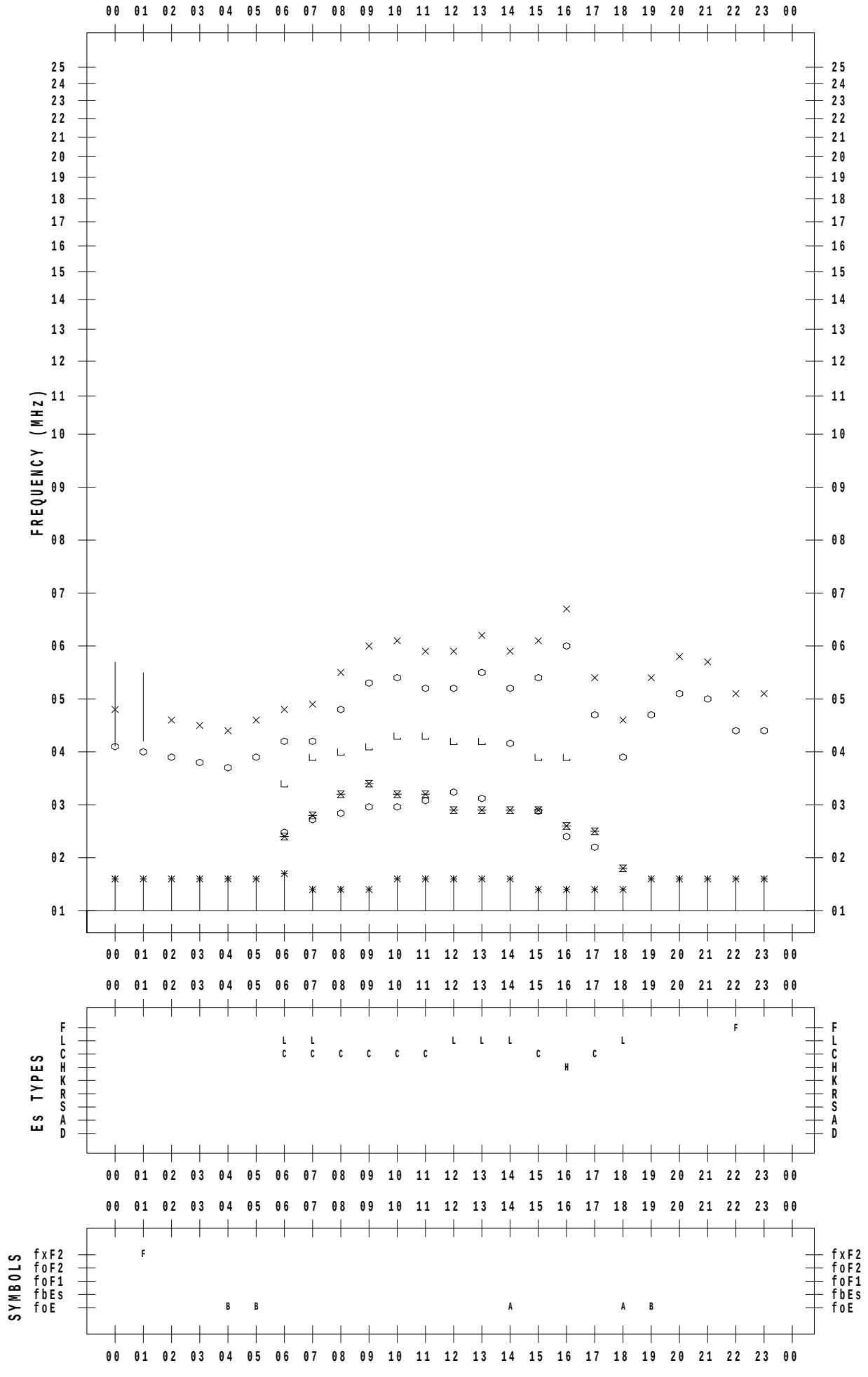
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/20

135 °E MEAN TIME



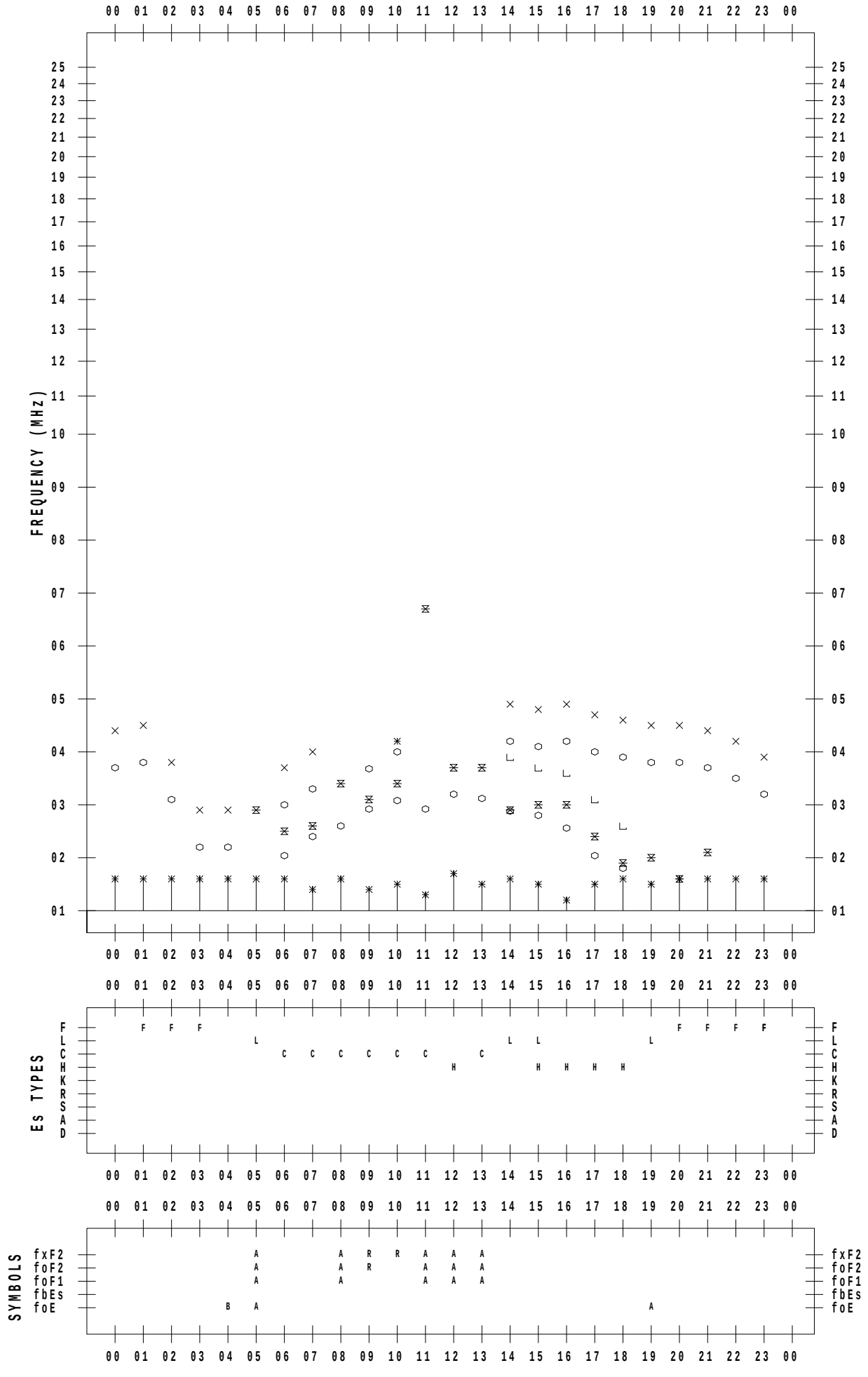
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/21

135 °E MEAN TIME



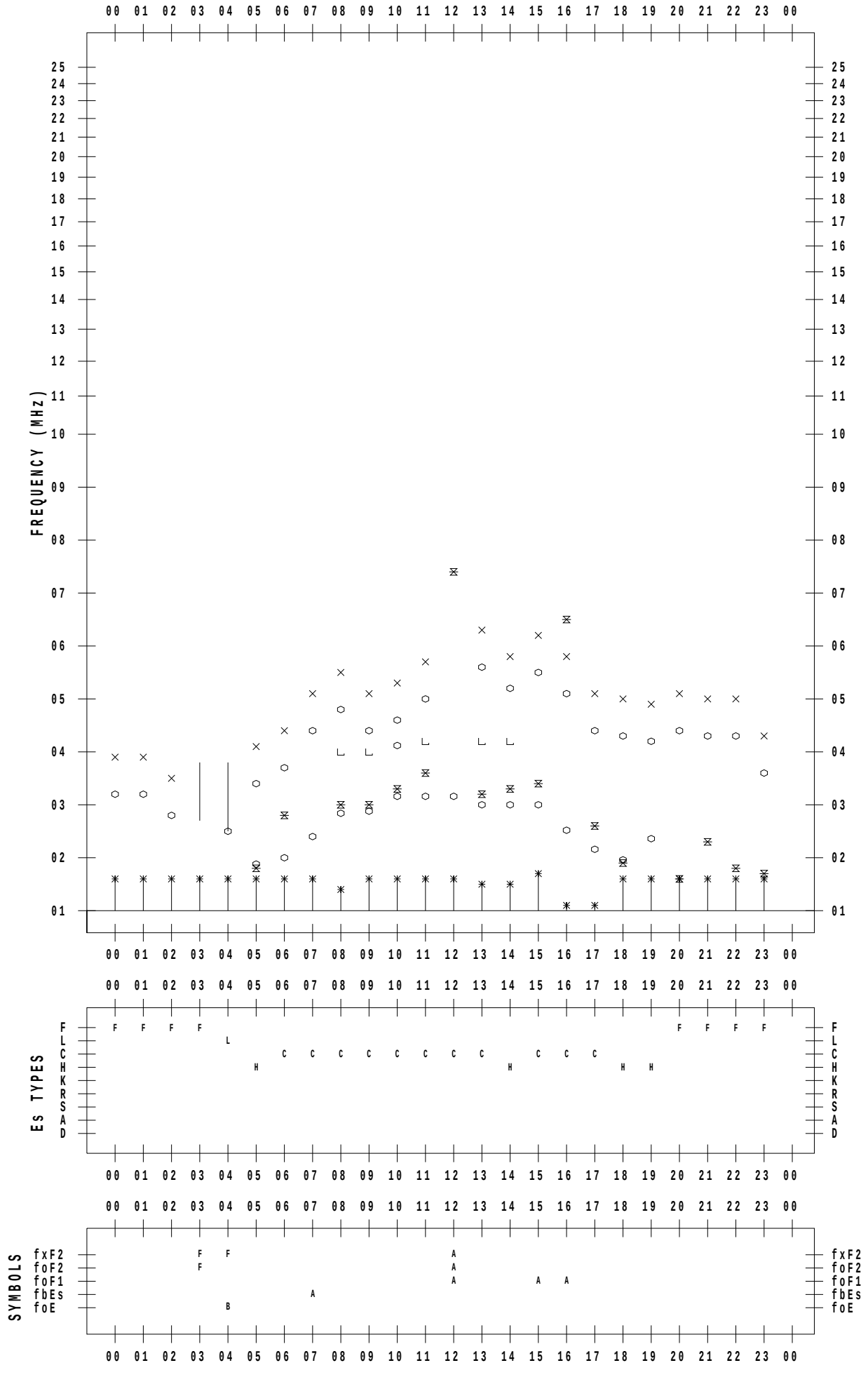
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/22

135 °E MEAN TIME



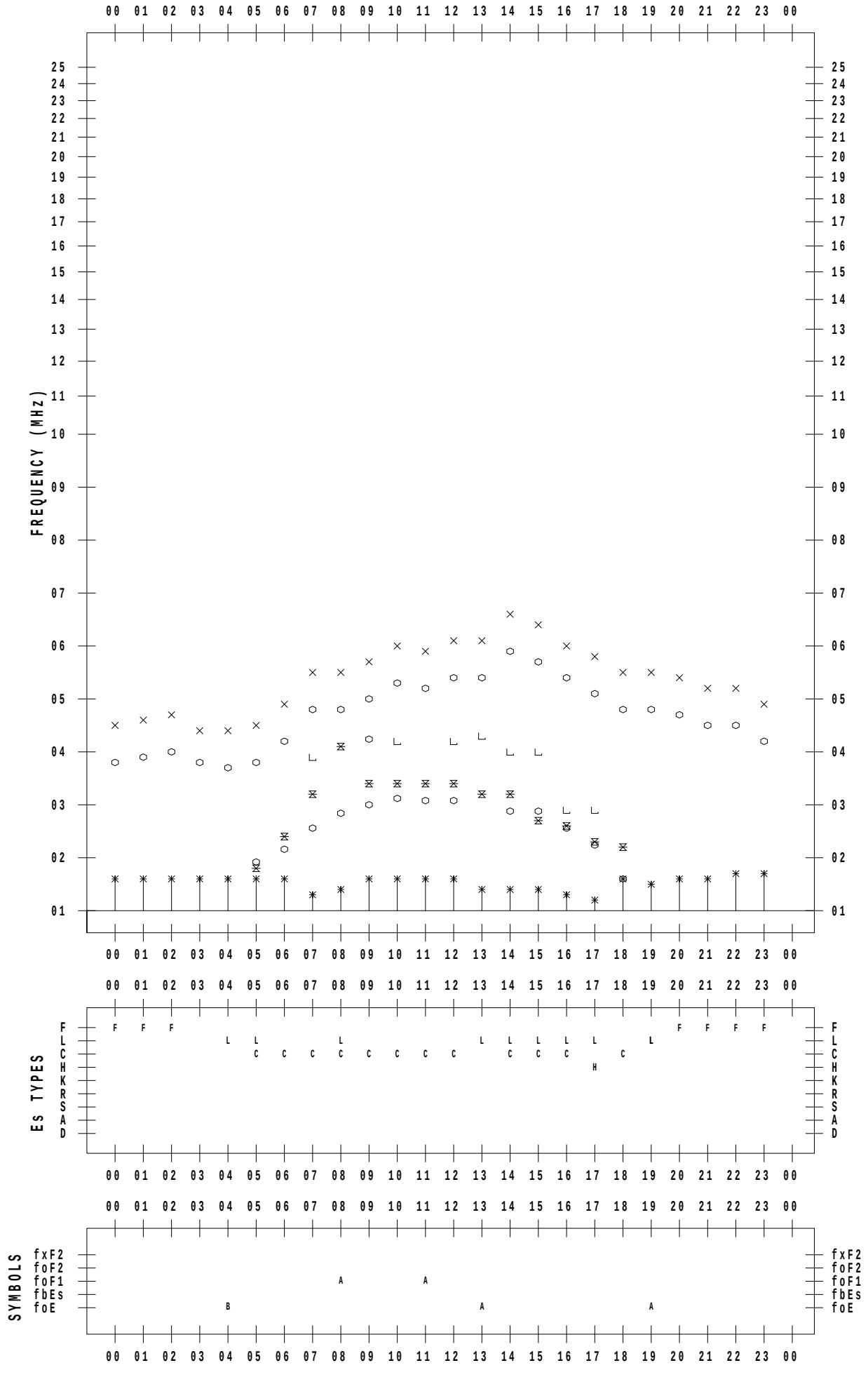
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/23

135 °E MEAN TIME



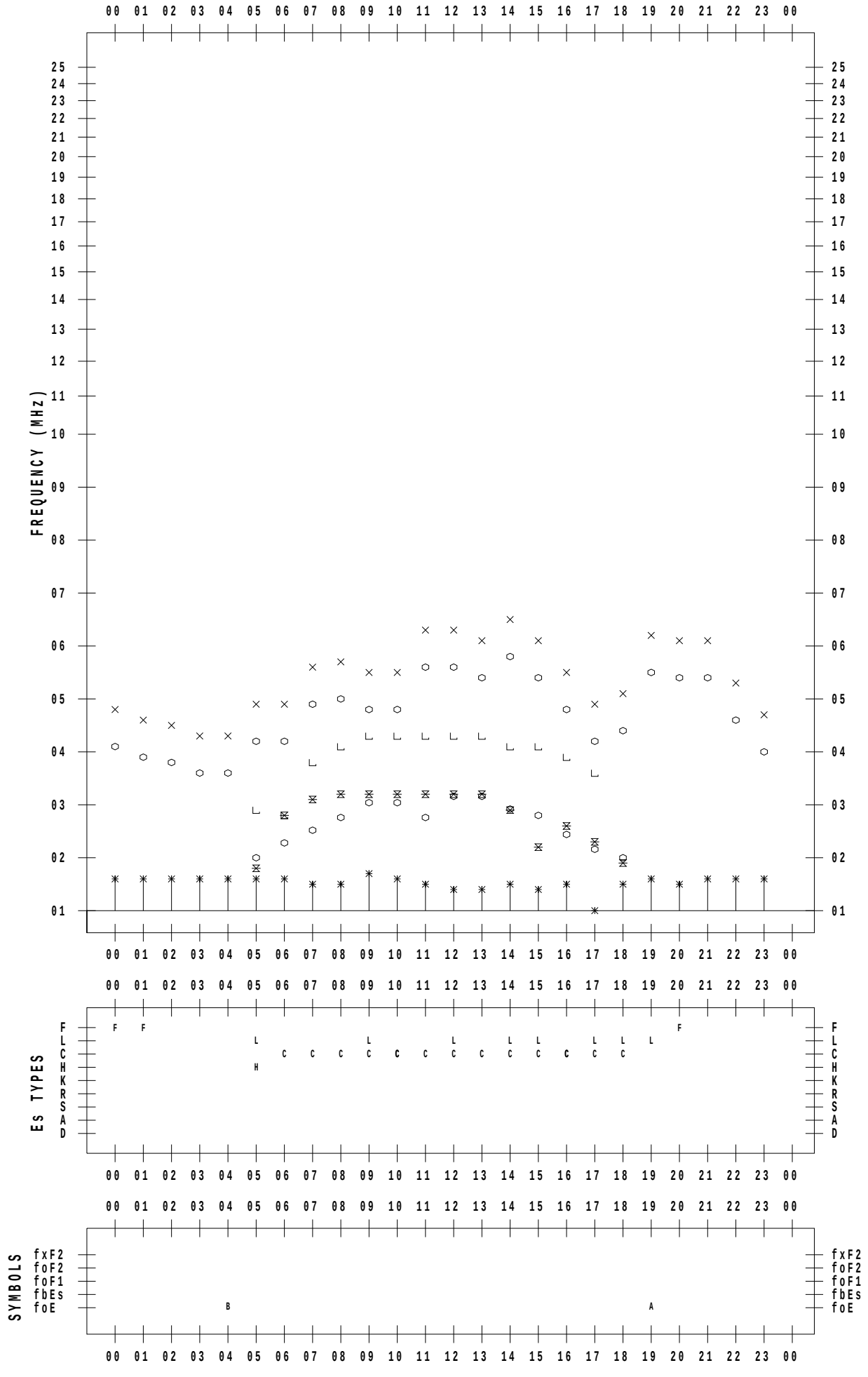
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/24

135 °E MEAN TIME



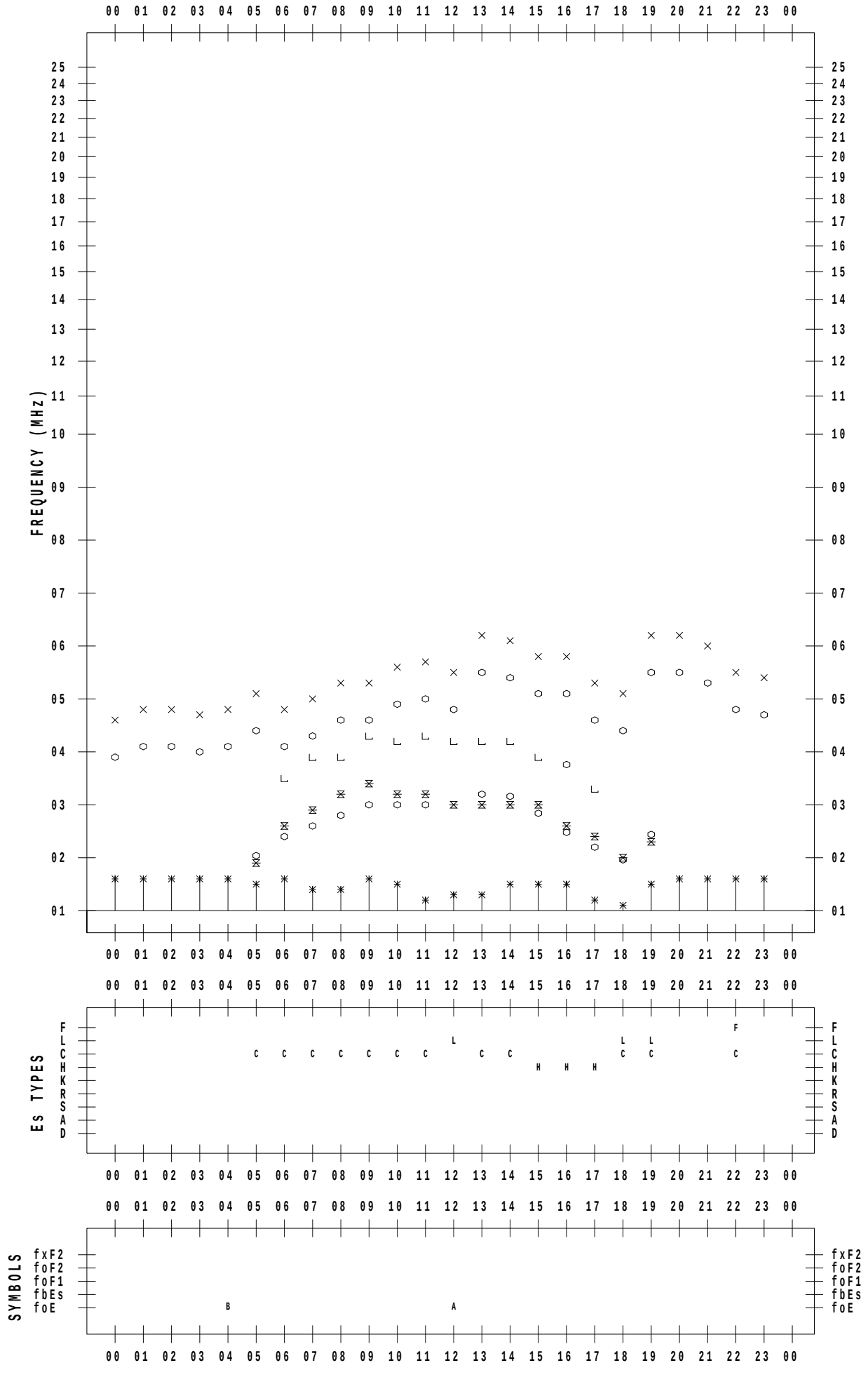
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/25

135 °E MEAN TIME



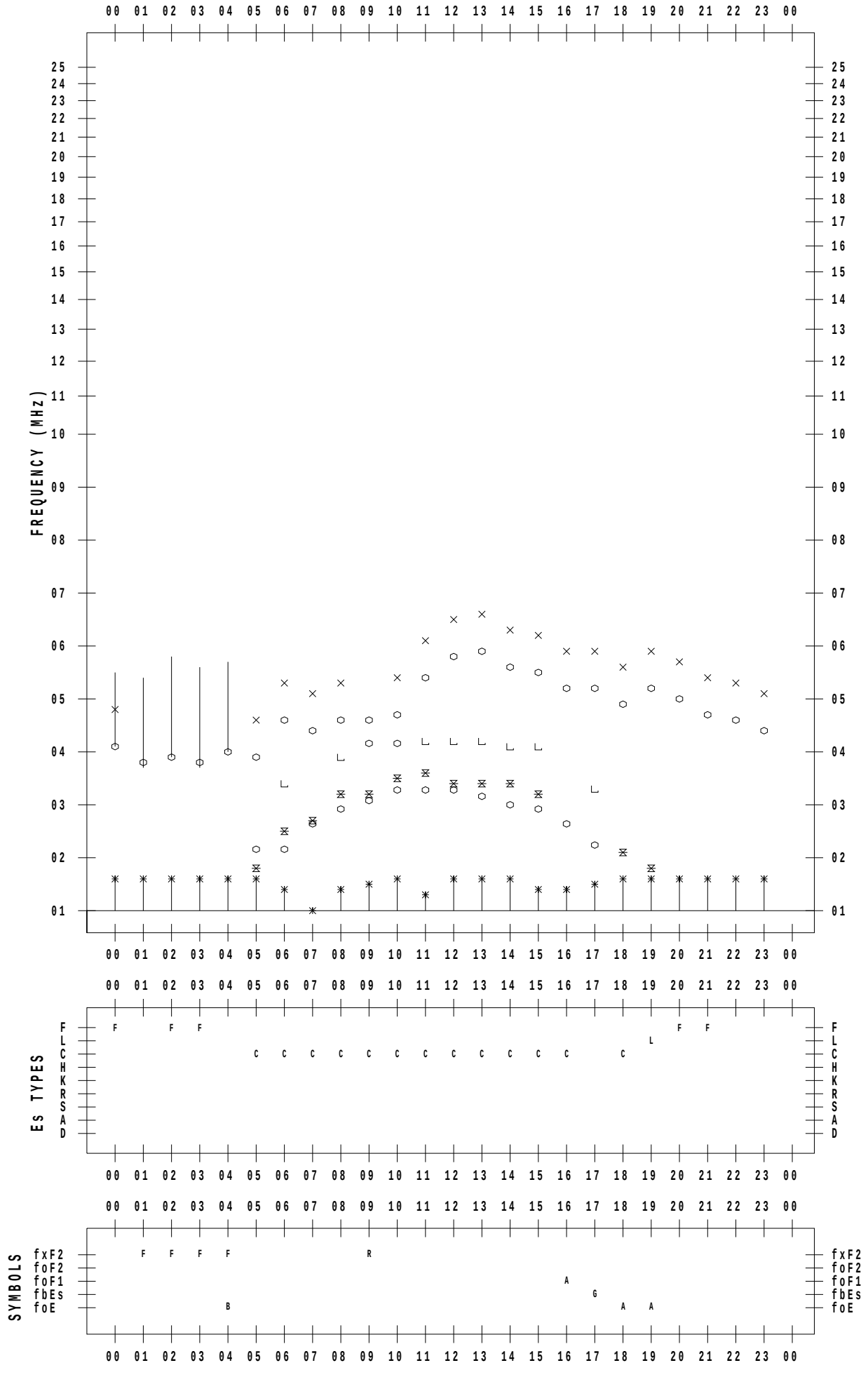
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/26

135 °E MEAN TIME



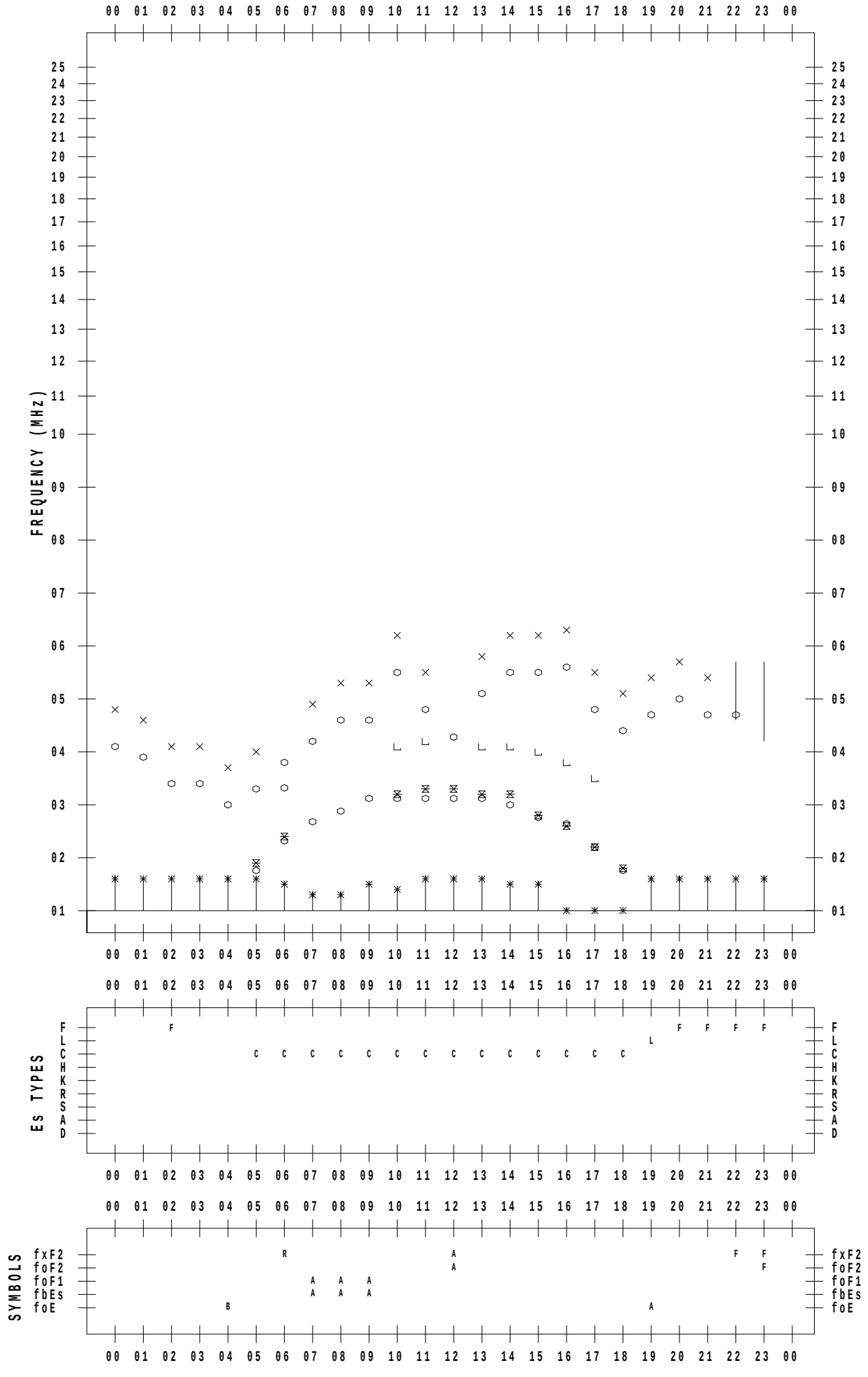
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/27

135 °E MEAN TIME



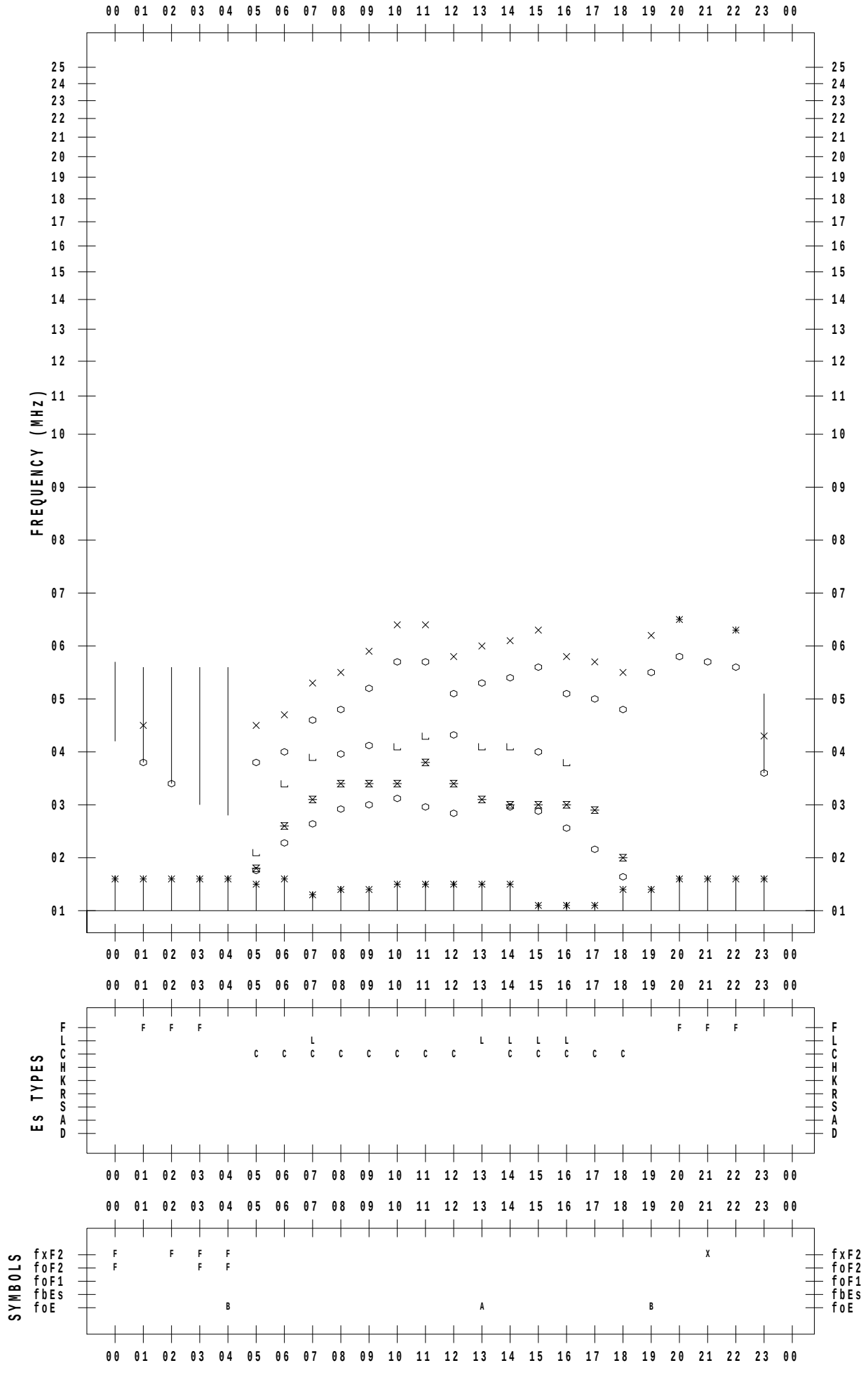
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/28

135 °E MEAN TIME



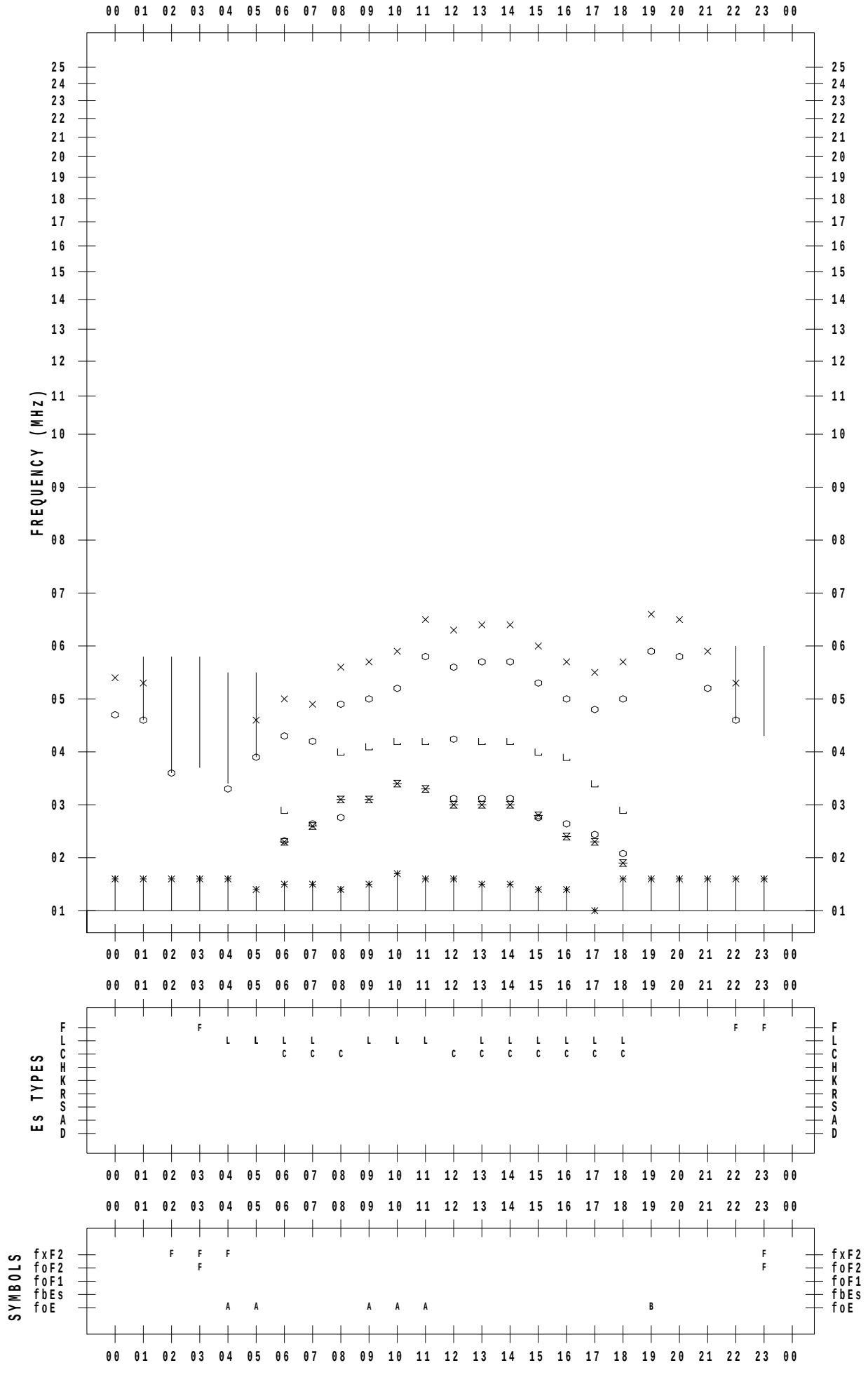
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/29

135 °E MEAN TIME



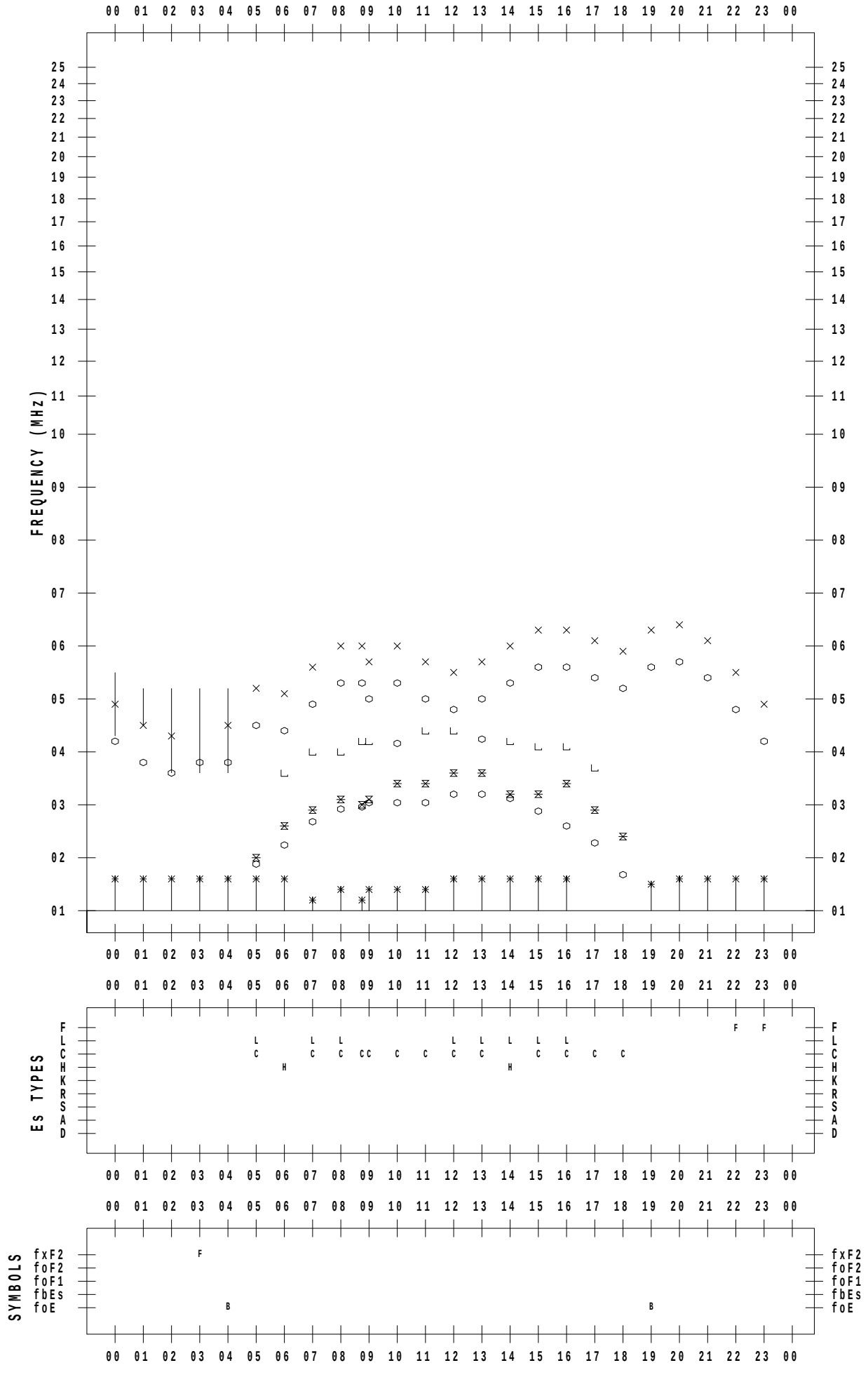
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 4/30

135 °E MEAN TIME



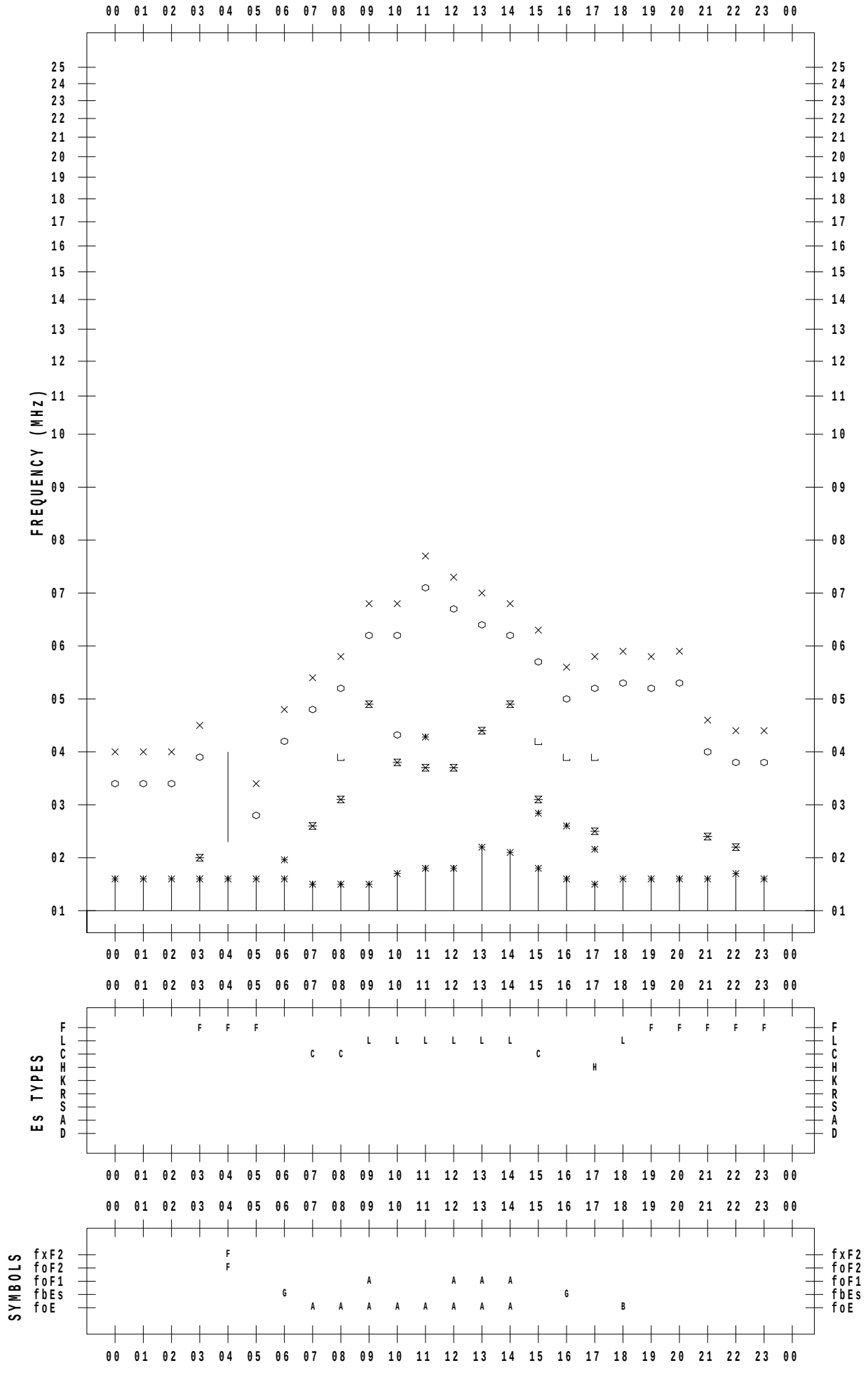
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 1

135 °E MEAN TIME



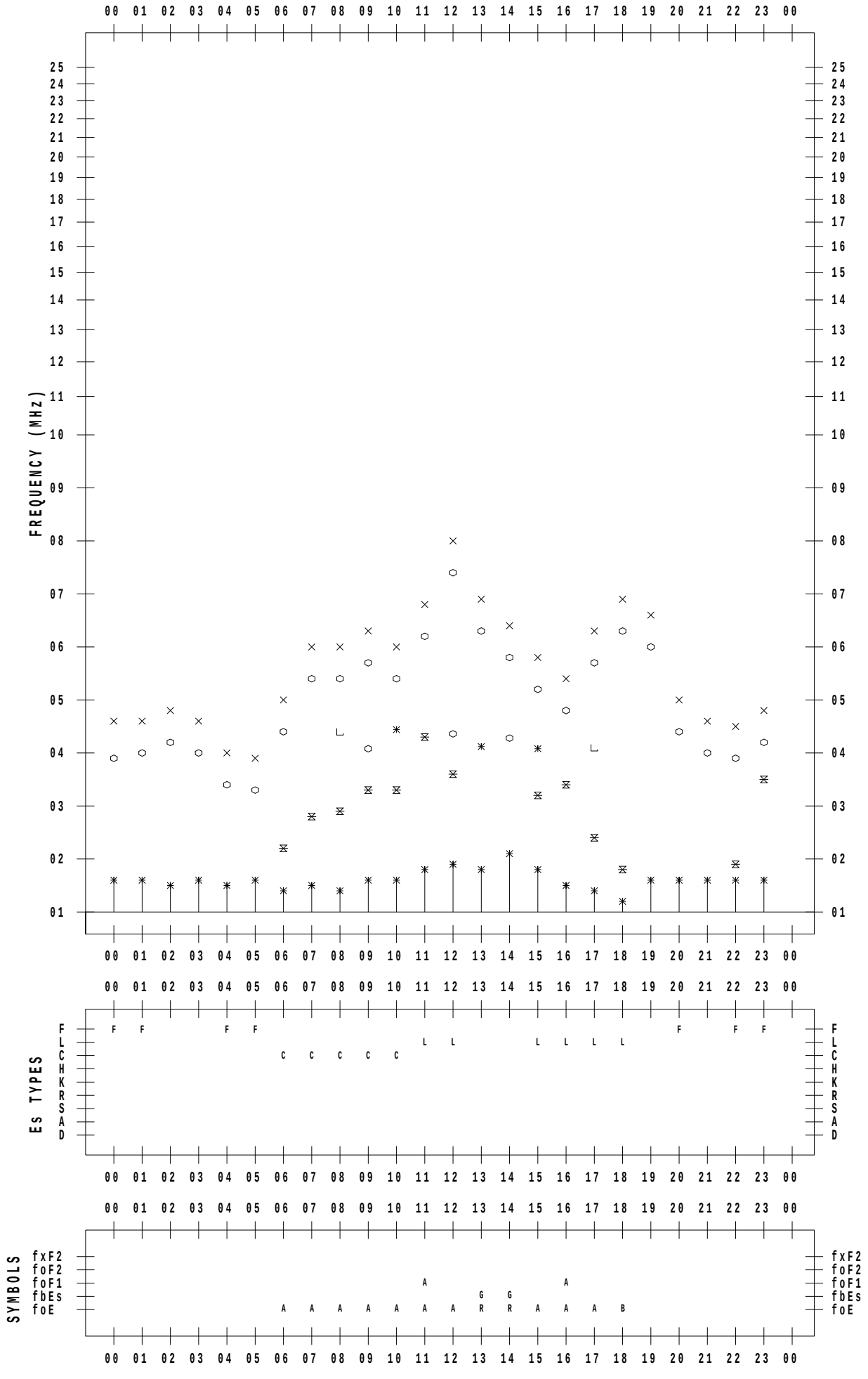
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 2

135 °E MEAN TIME



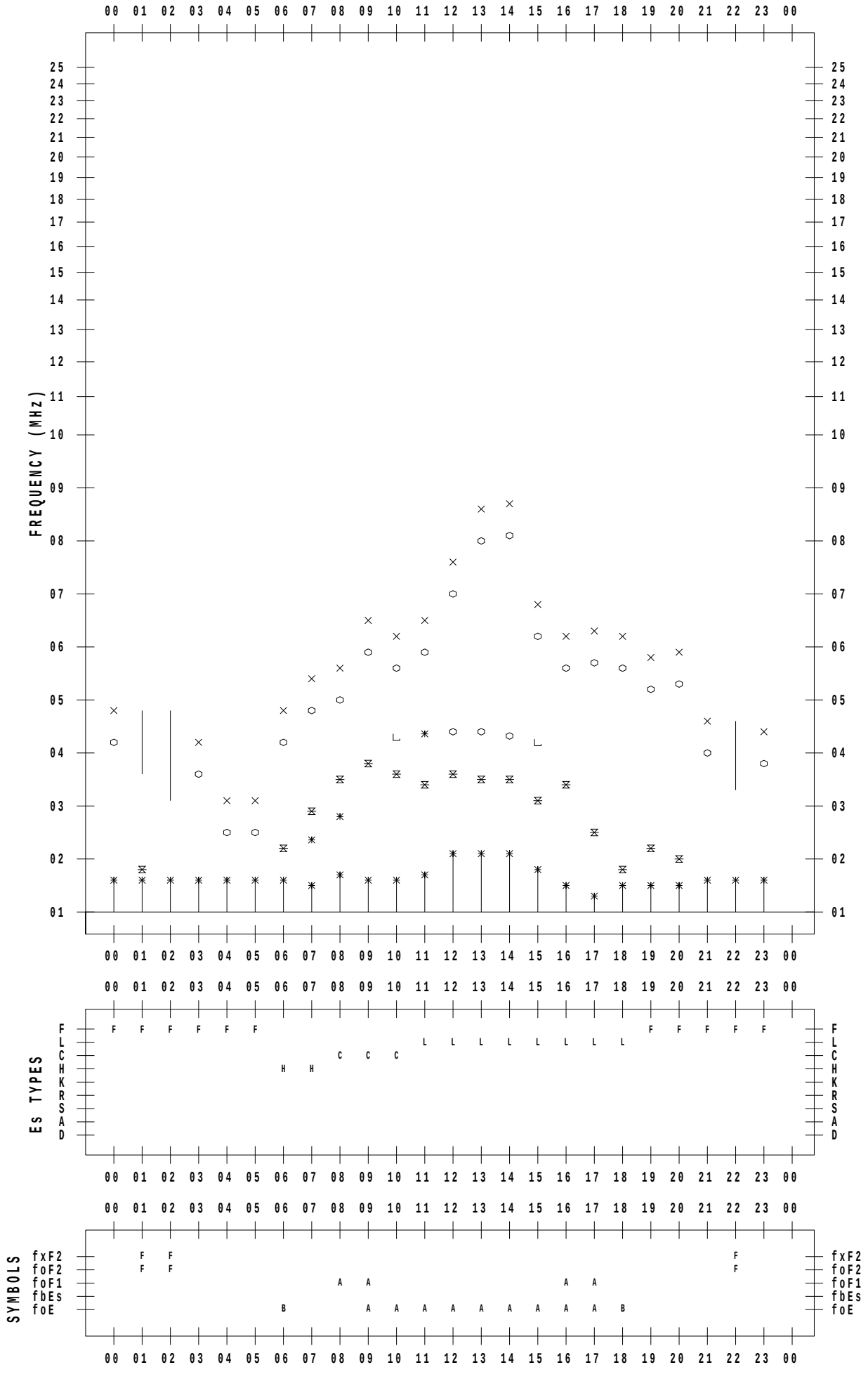
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 3

135 °E MEAN TIME



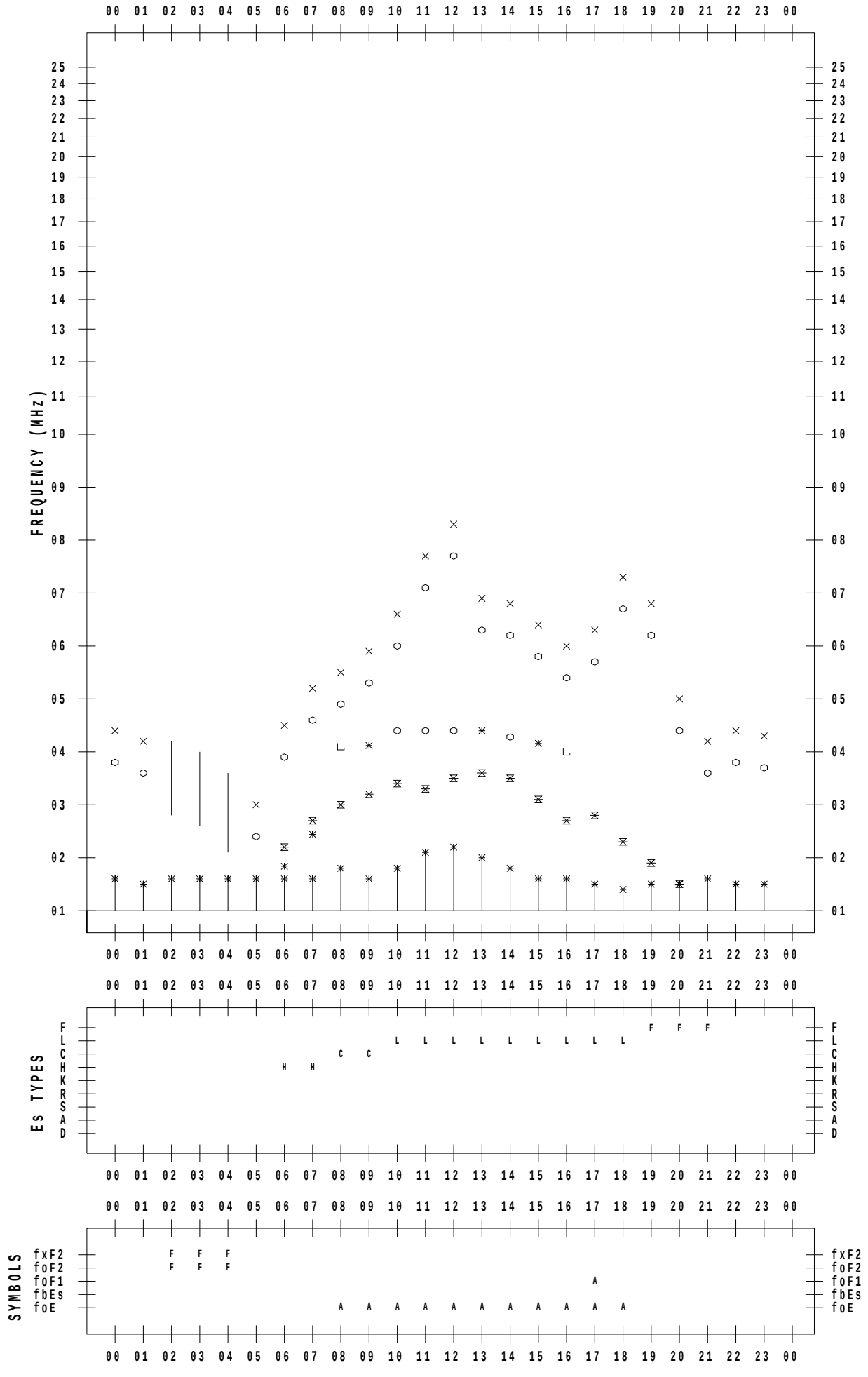
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 4

135 °E MEAN TIME



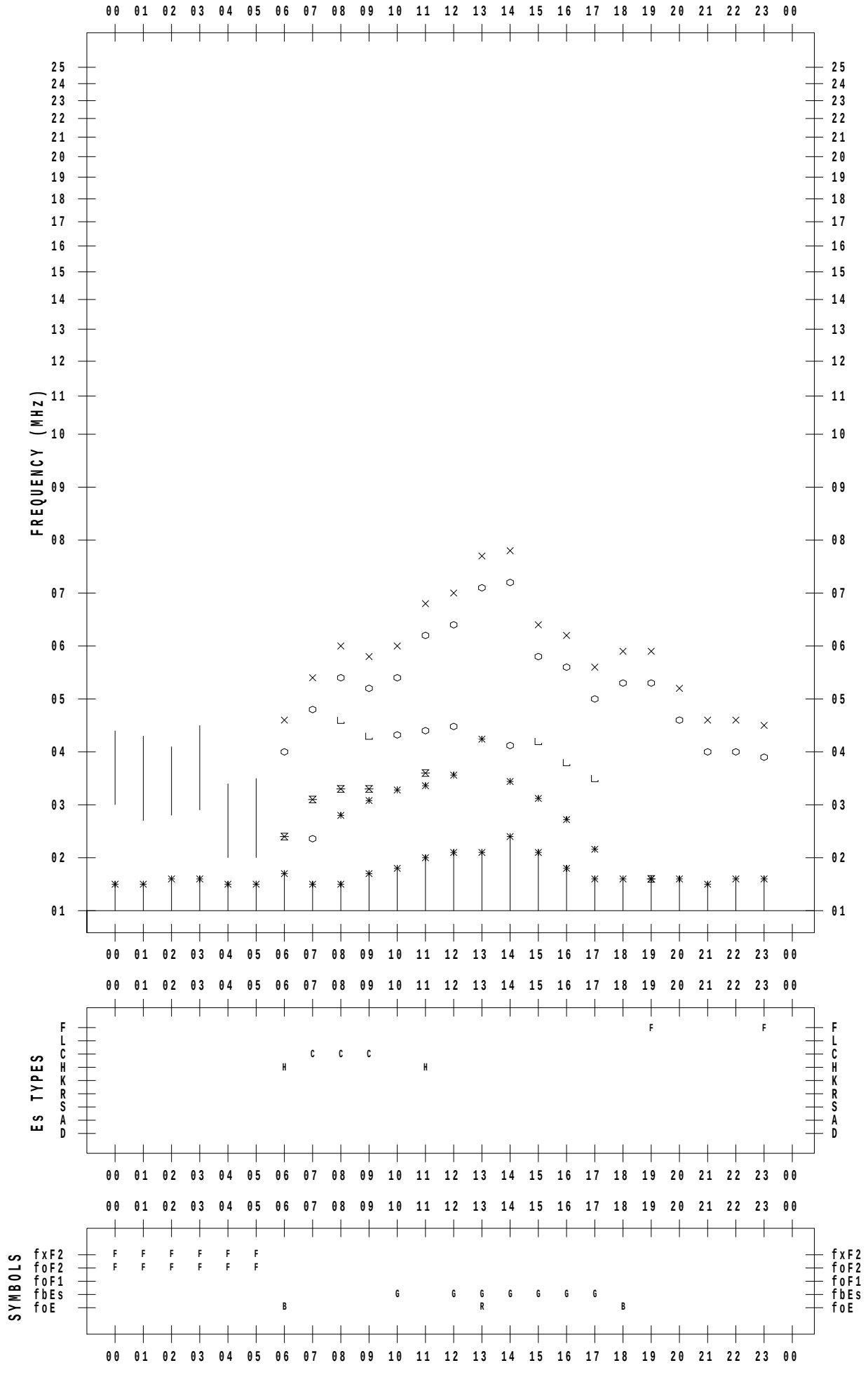
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 5

135 °E MEAN TIME



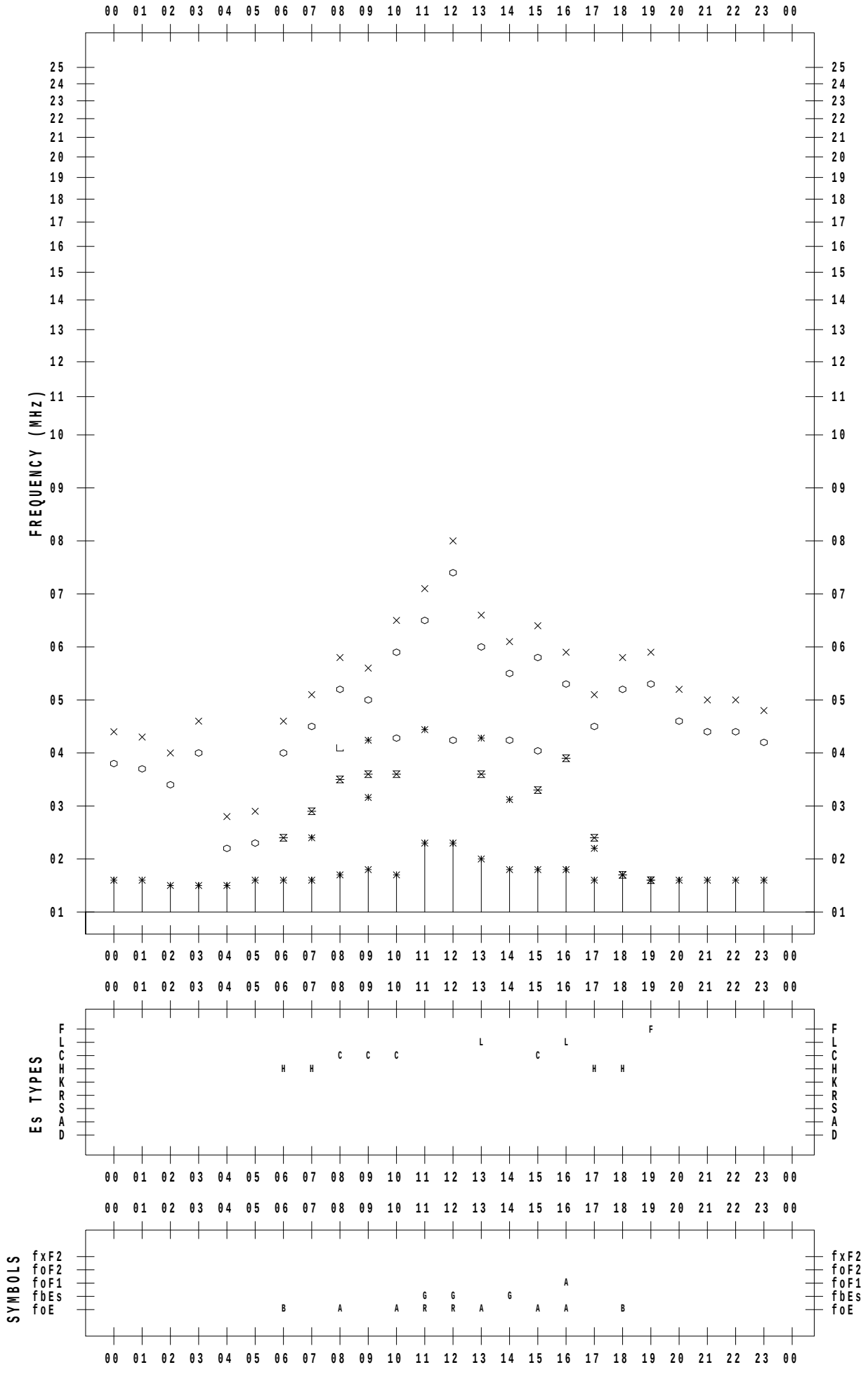
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 6

135 °E MEAN TIME



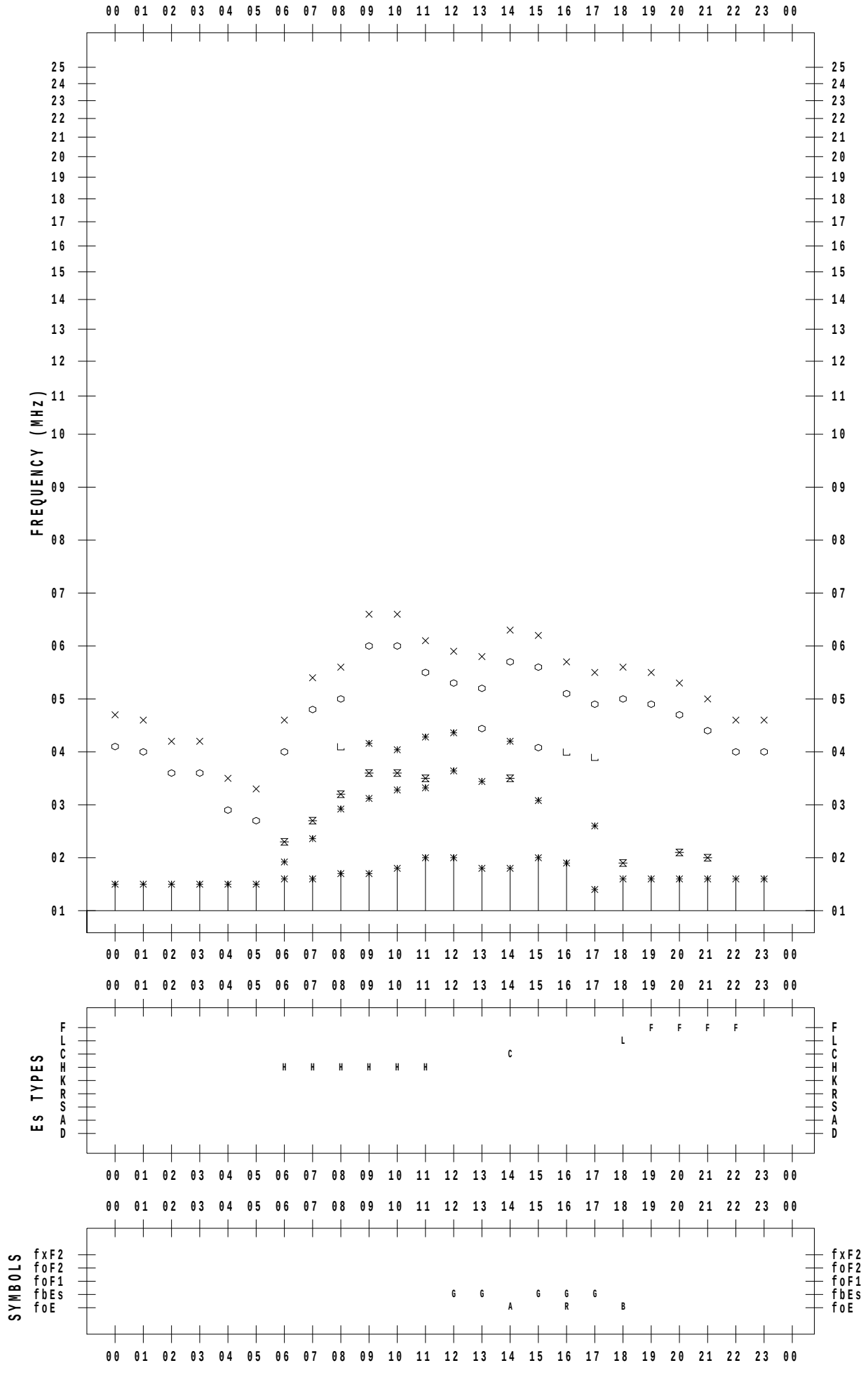
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 7

135 °E MEAN TIME



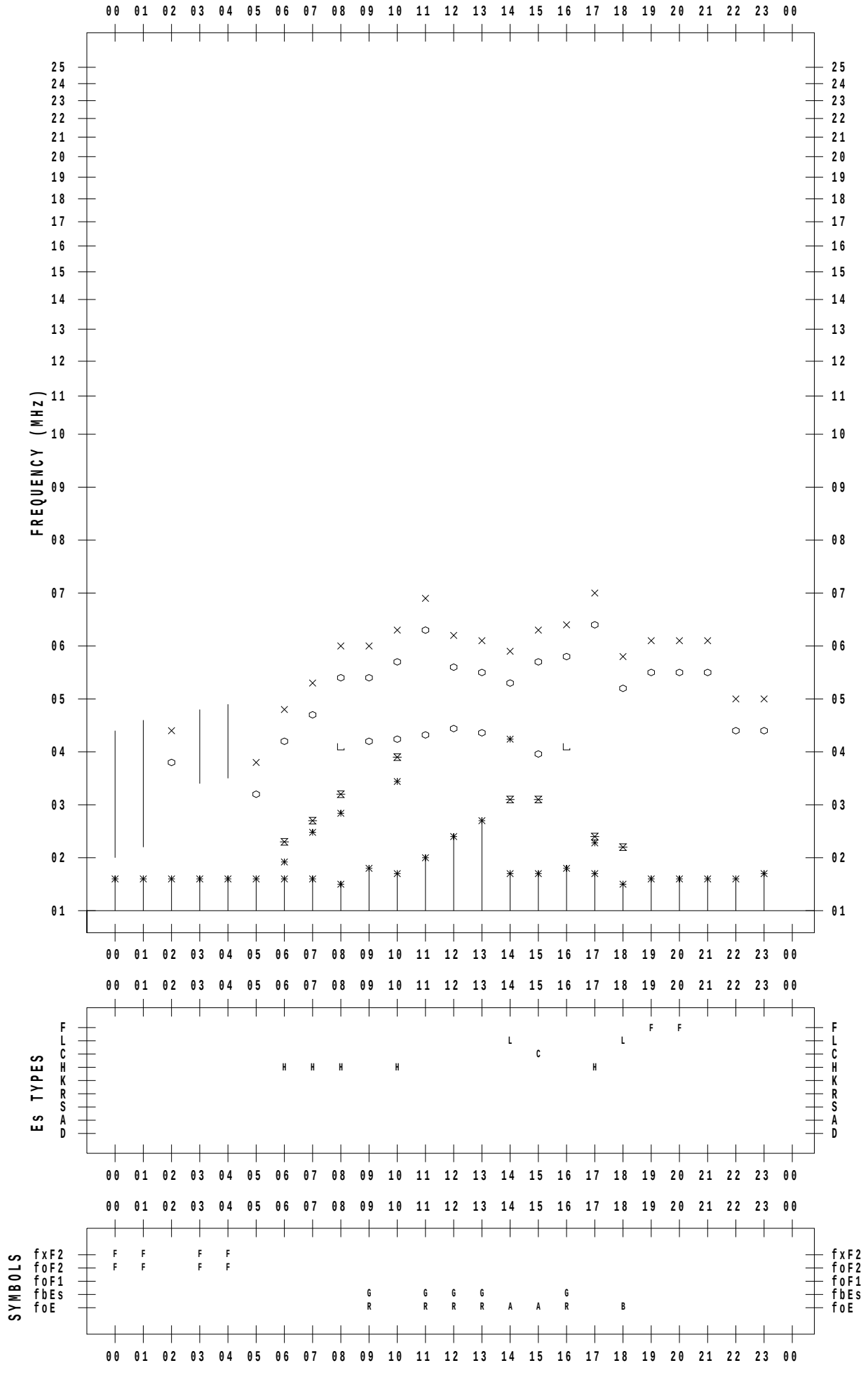
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 8

135 °E MEAN TIME



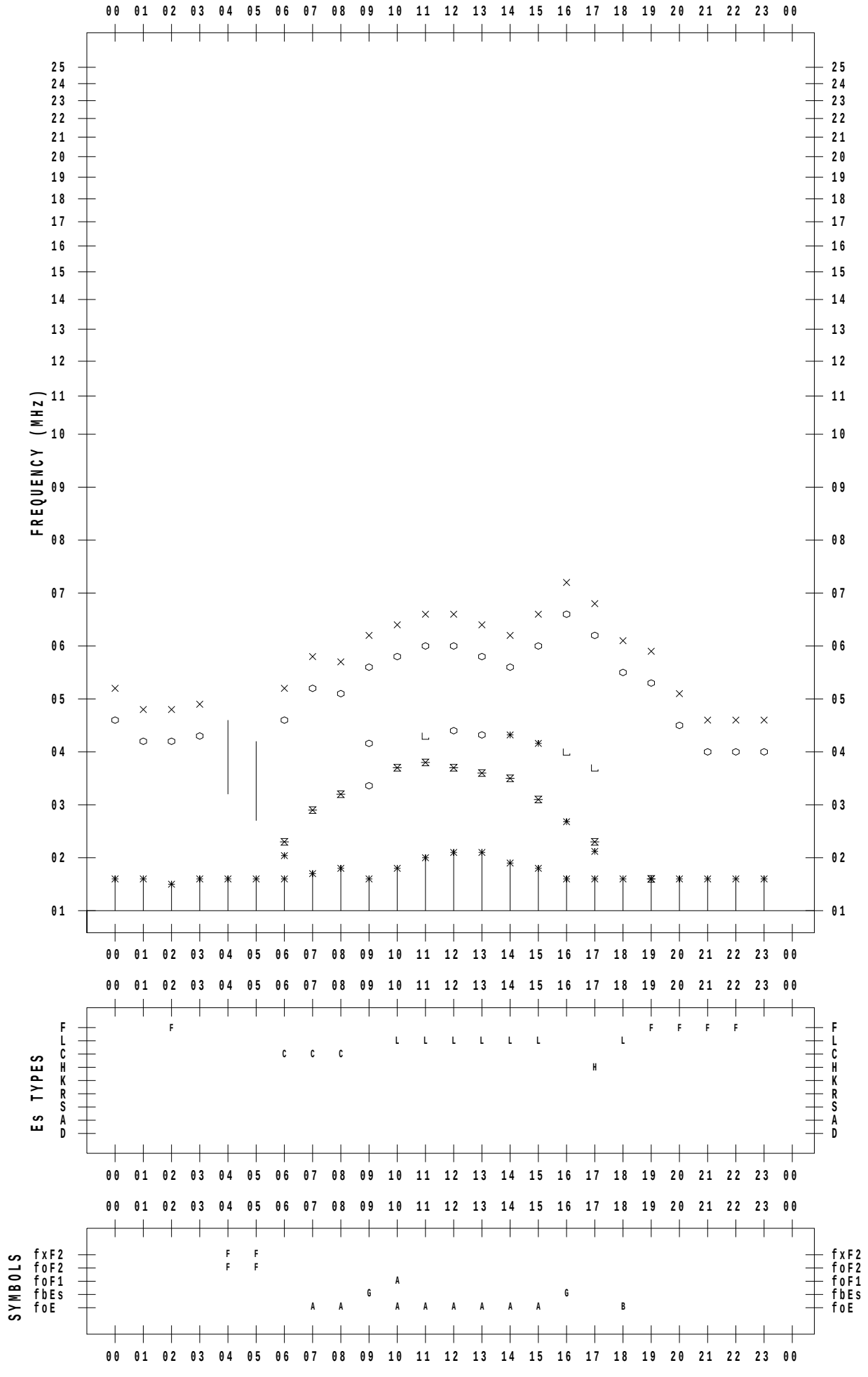
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/ 9

135 °E MEAN TIME



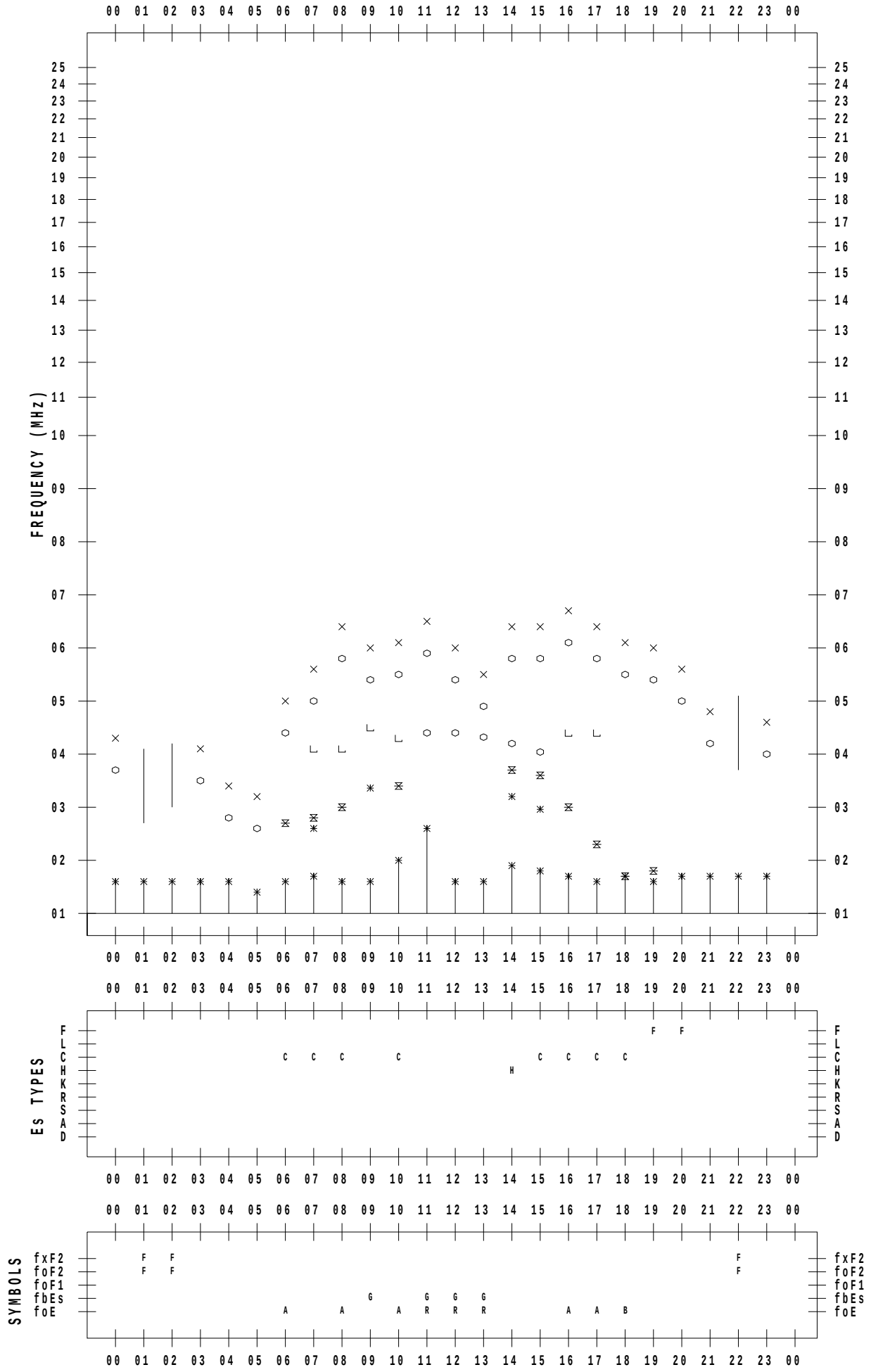
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/10

135 °E MEAN TIME



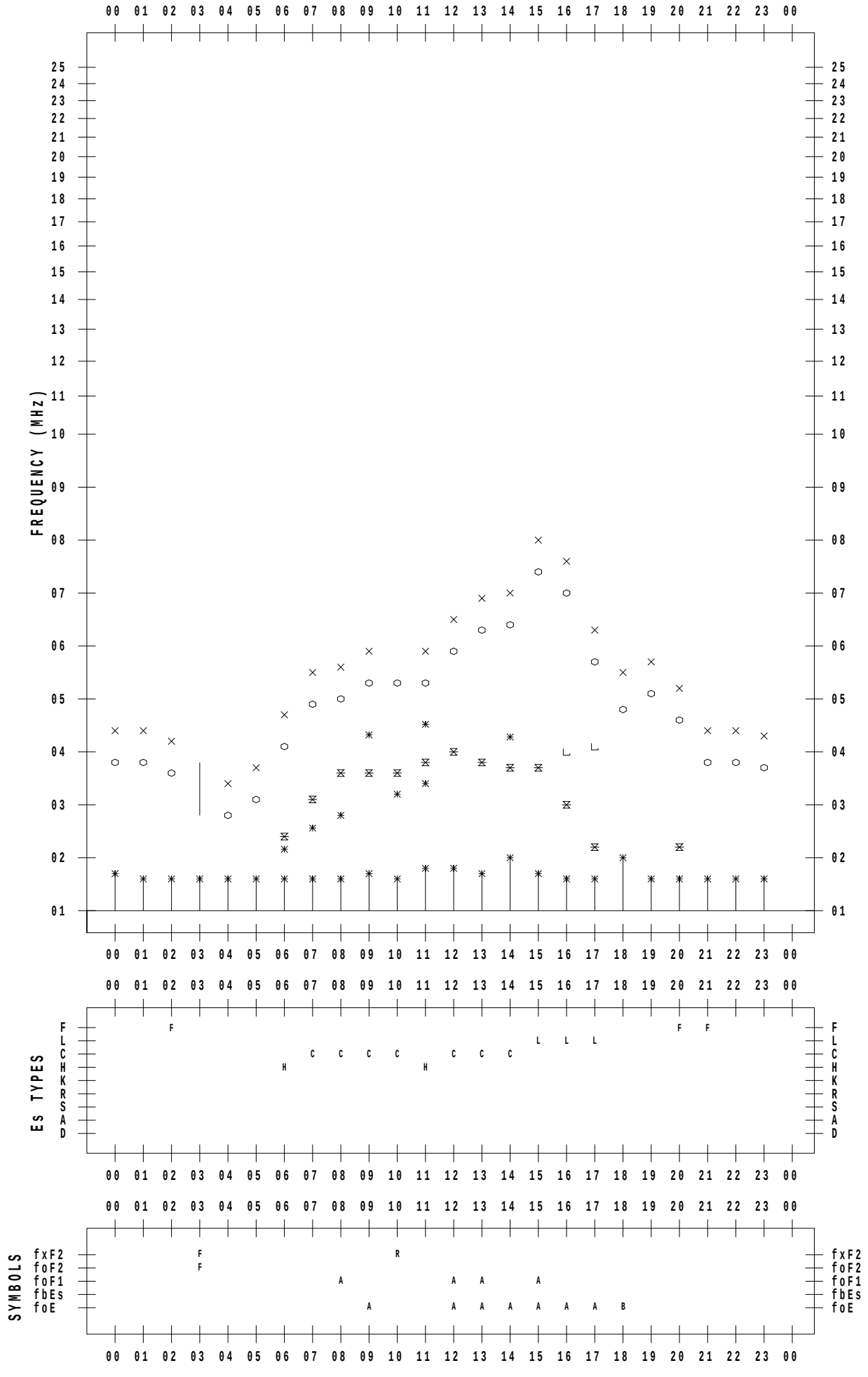
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/11

135 °E MEAN TIME



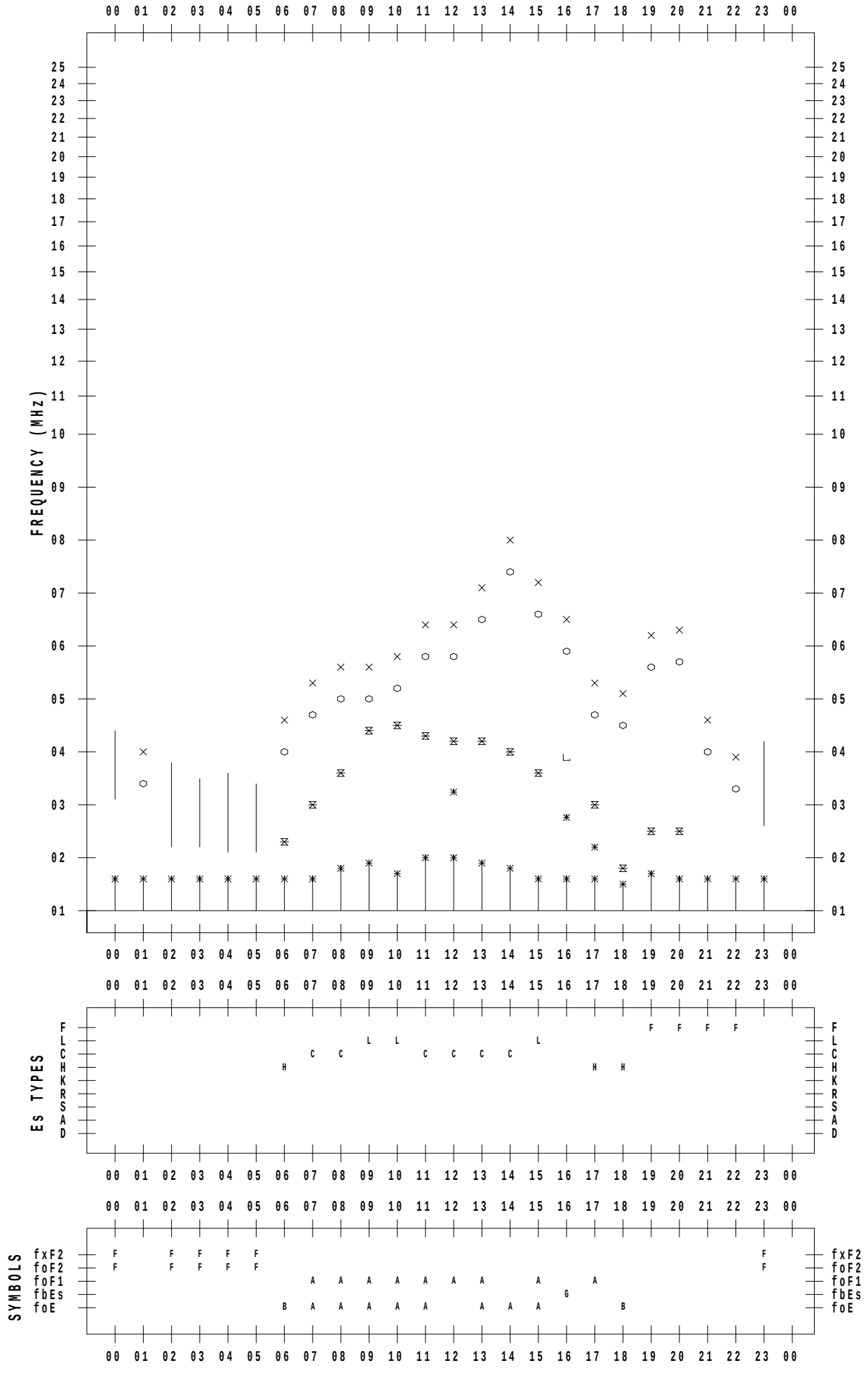
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/12

135 °E MEAN TIME



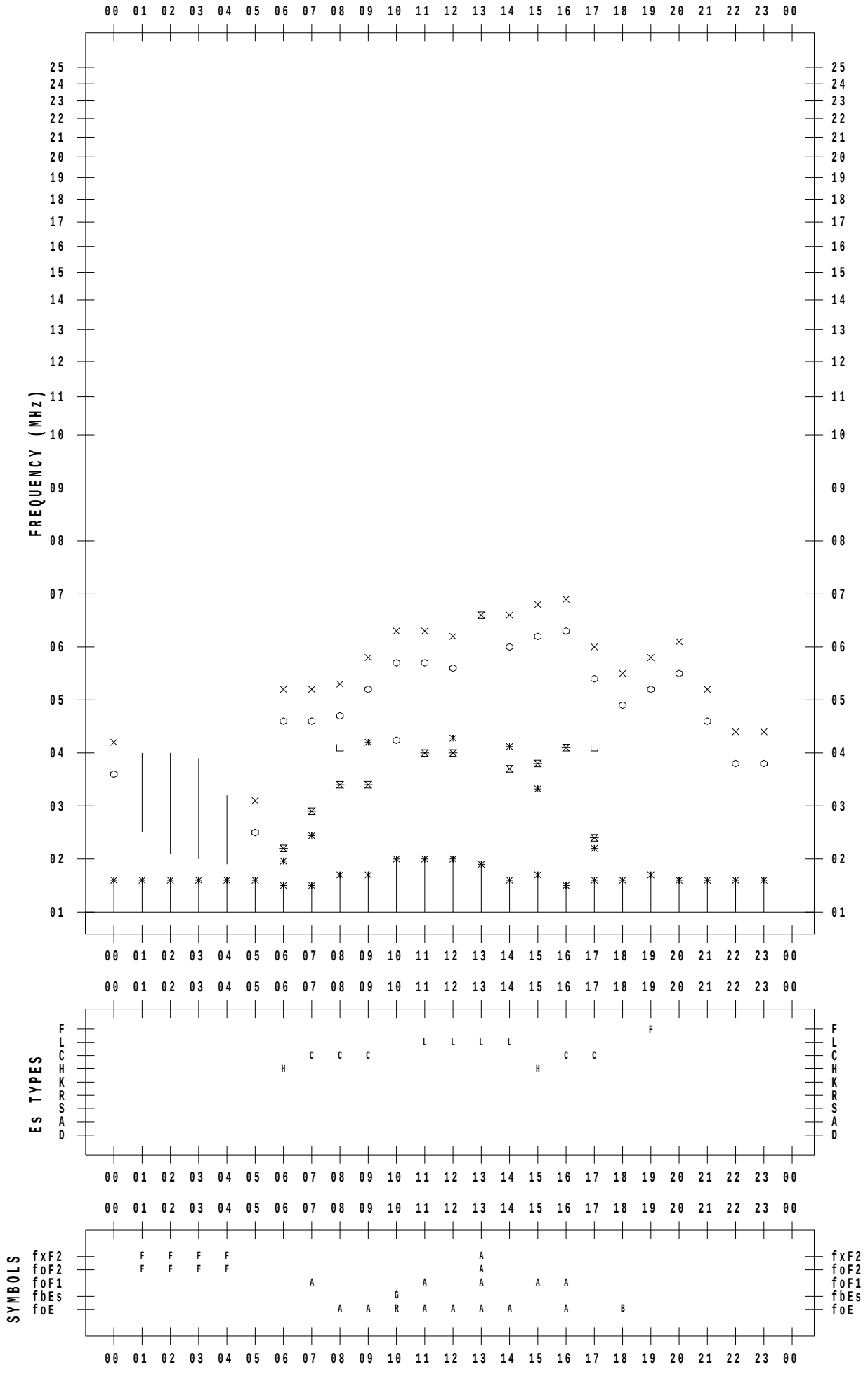
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/13

135 °E MEAN TIME



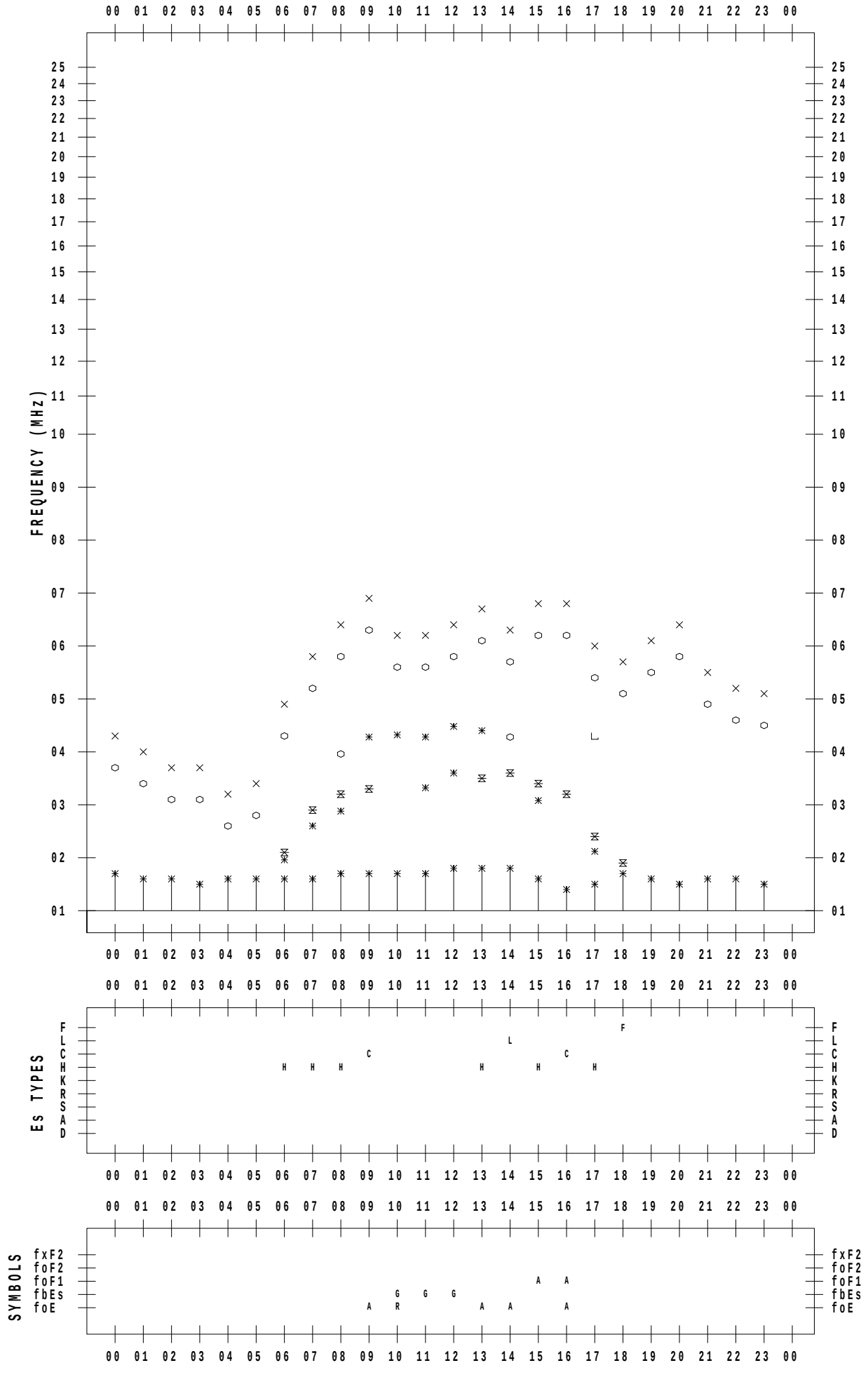
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/14

135 °E MEAN TIME



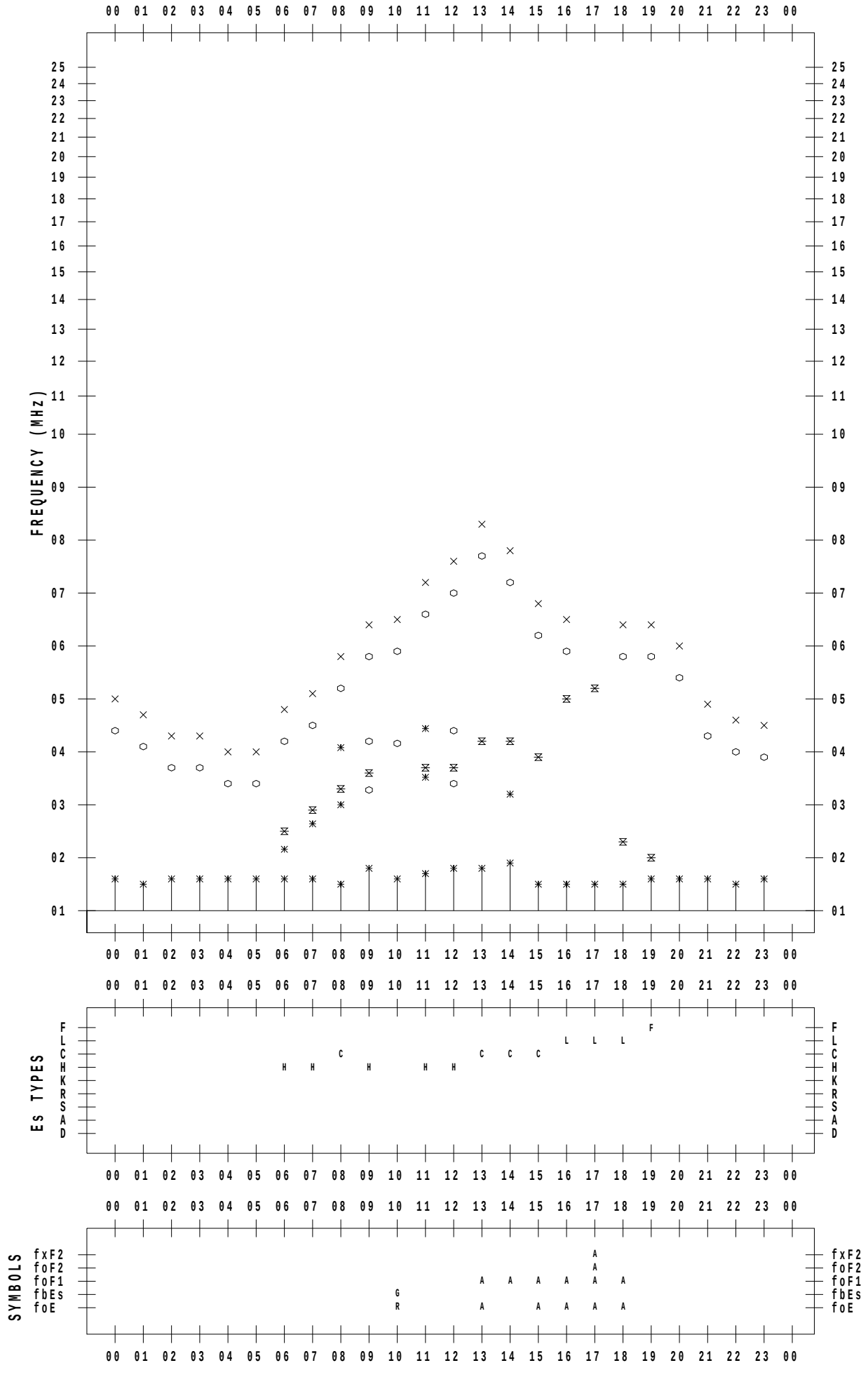
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/15

135 °E MEAN TIME



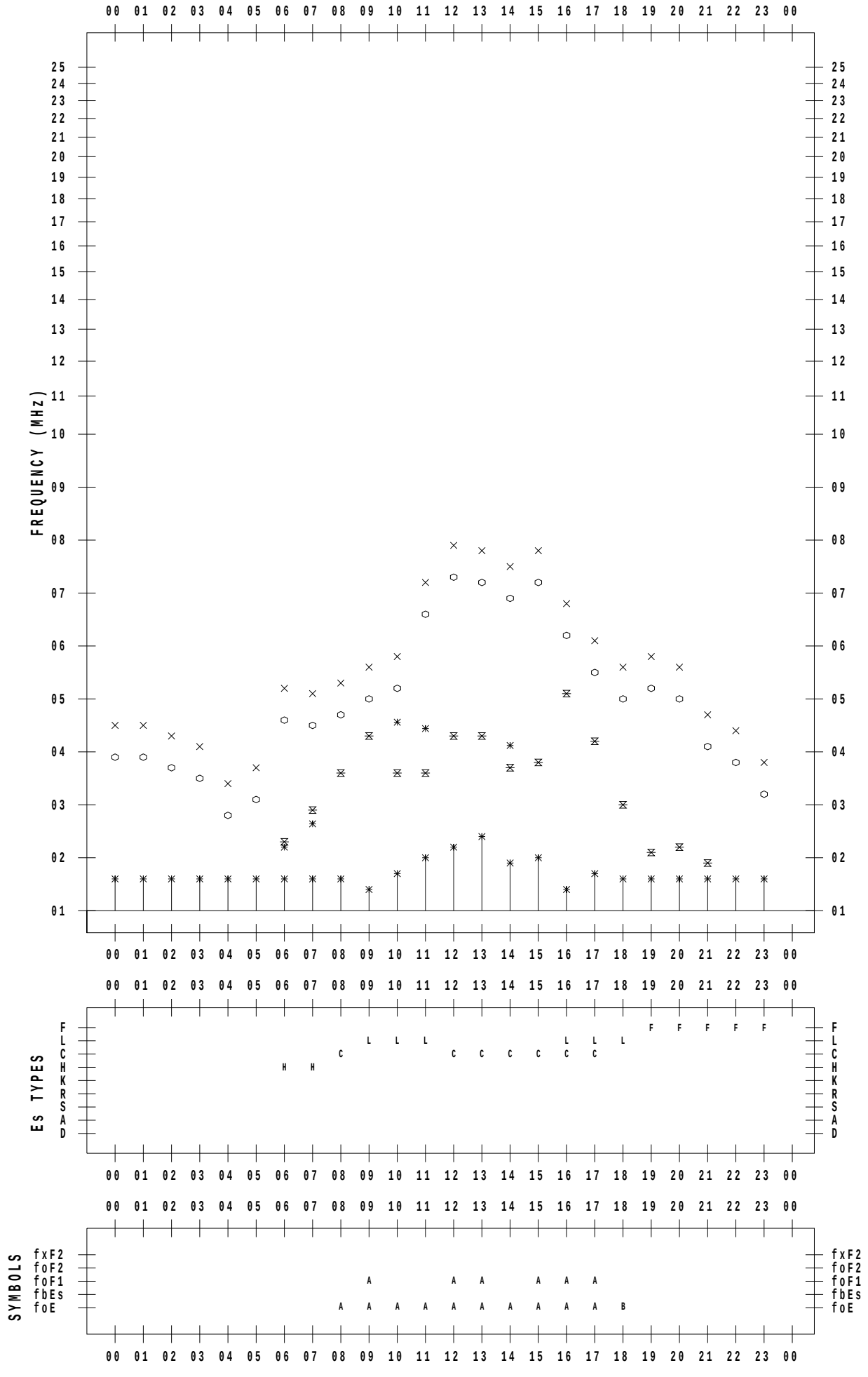
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/16

135 °E MEAN TIME



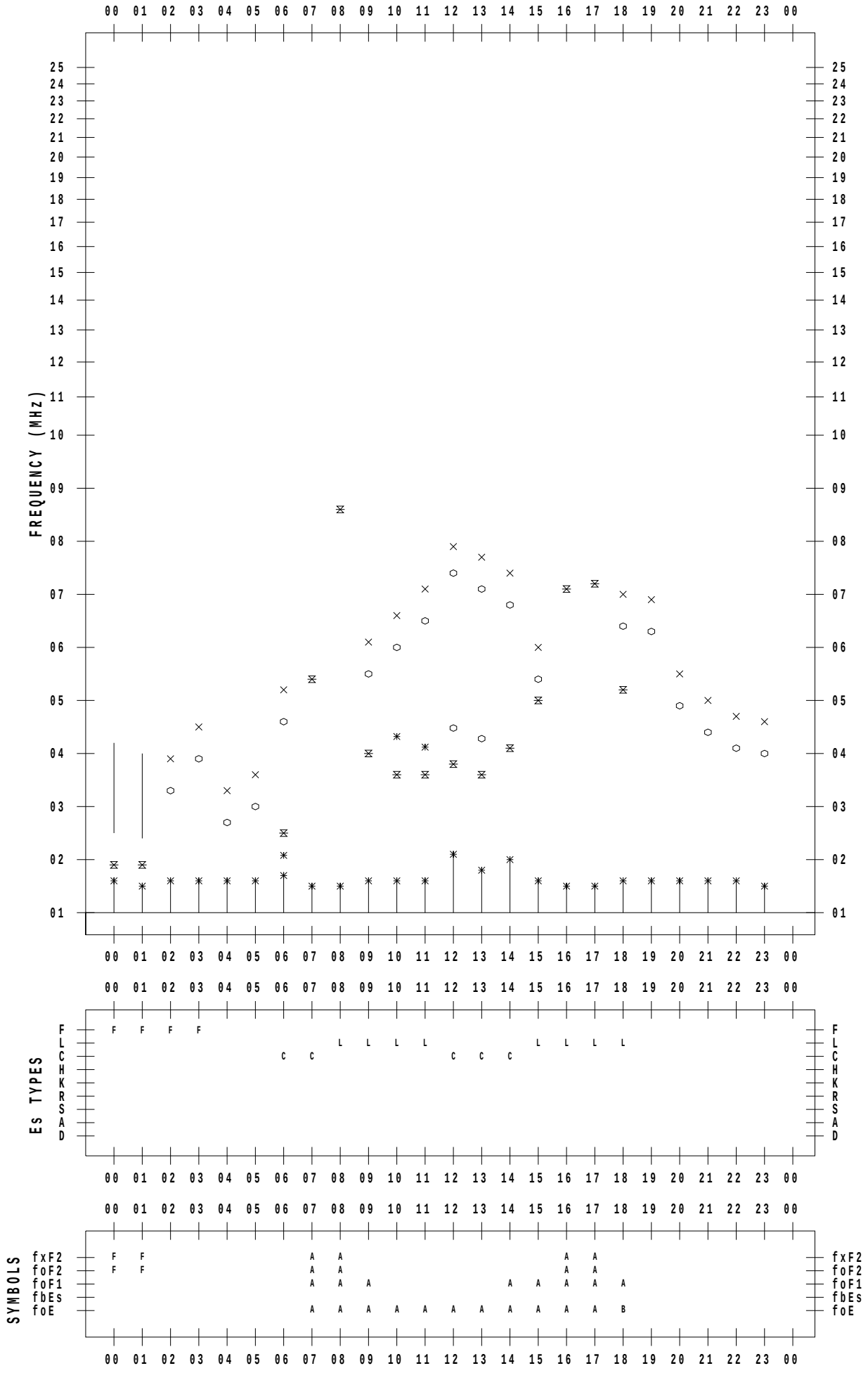
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/17

135 °E MEAN TIME



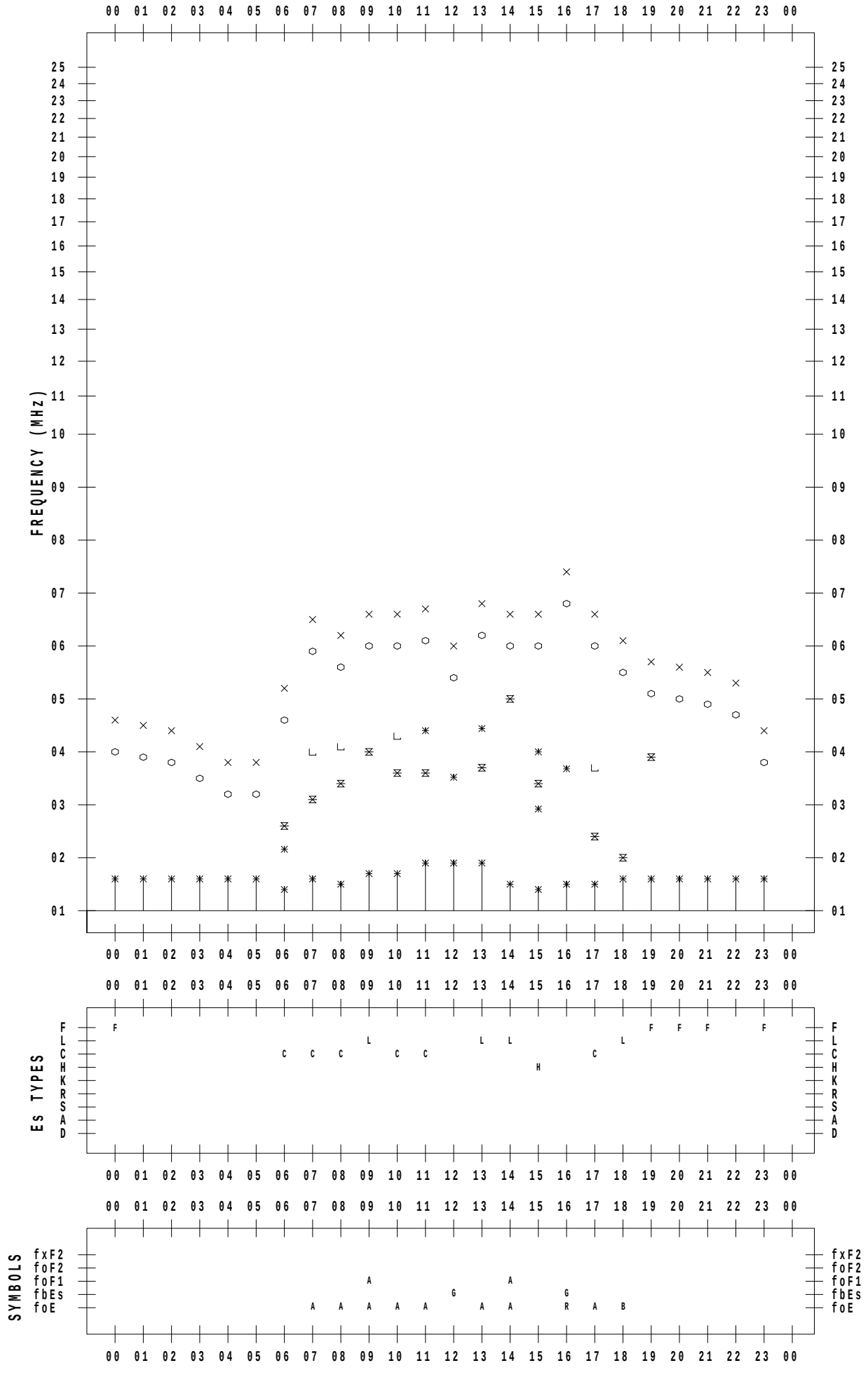
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/18

135 °E MEAN TIME



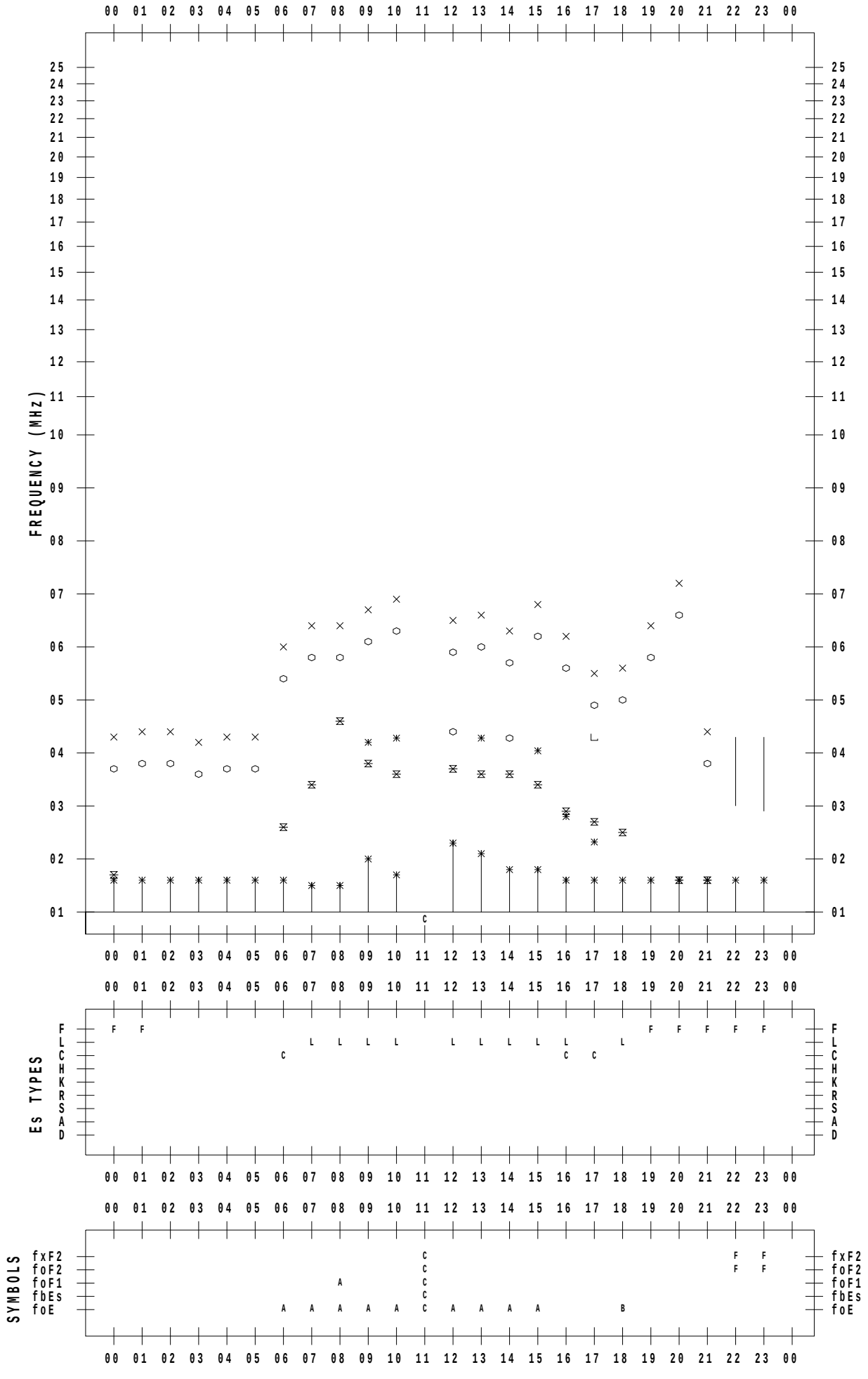
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/19

135 °E MEAN TIME



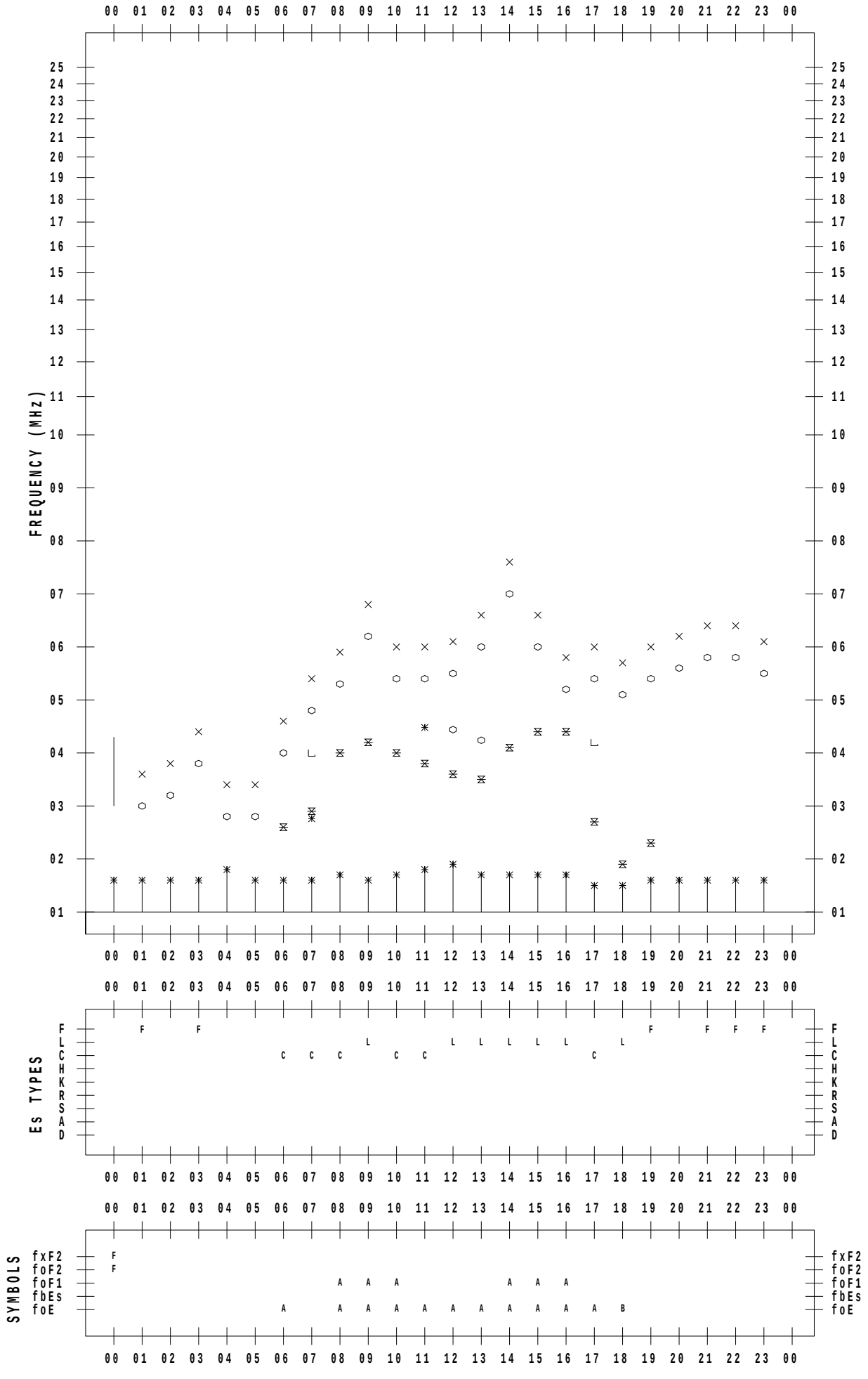
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/20

135 °E MEAN TIME



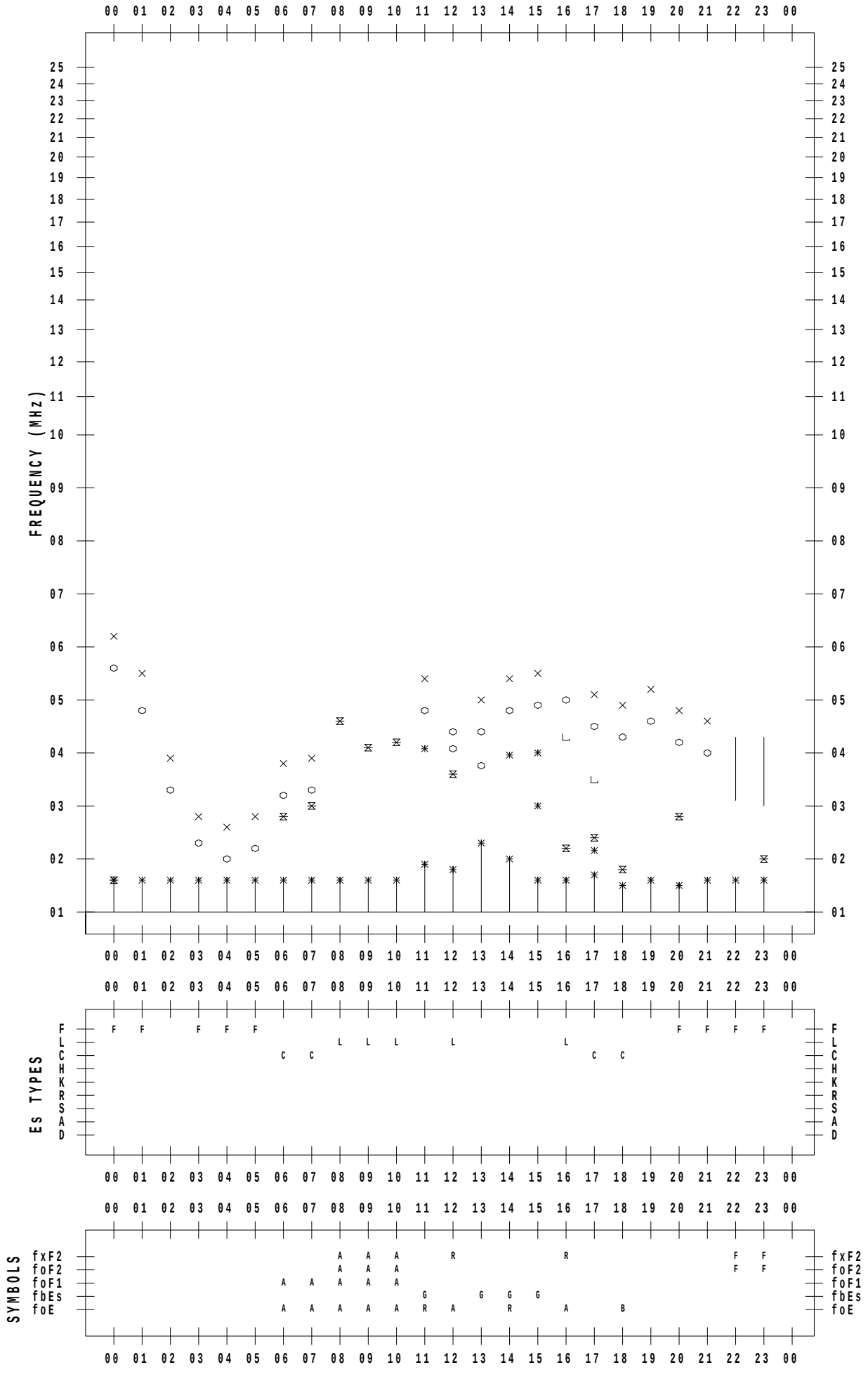
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/21

135 °E MEAN TIME



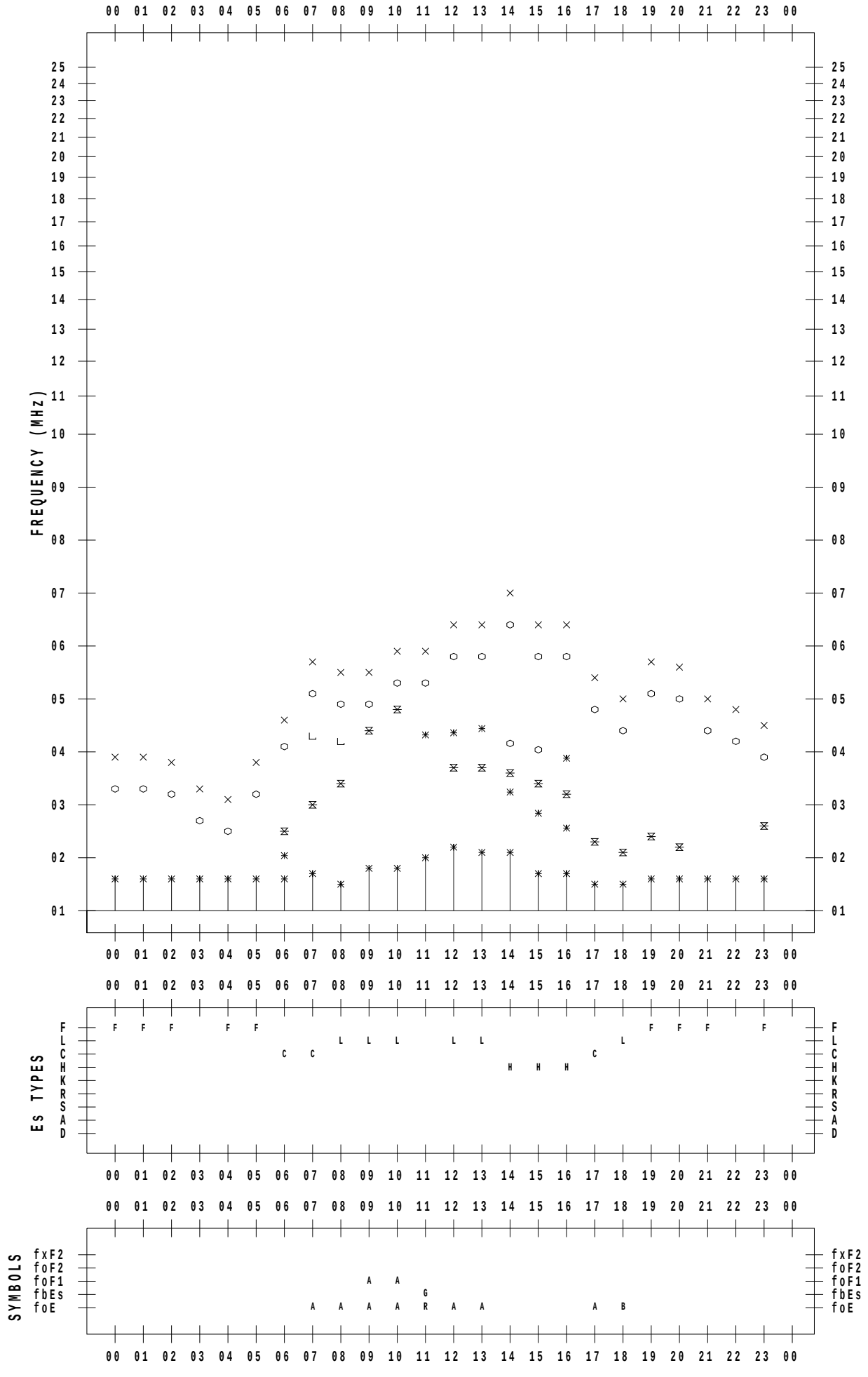
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/22

135 °E MEAN TIME



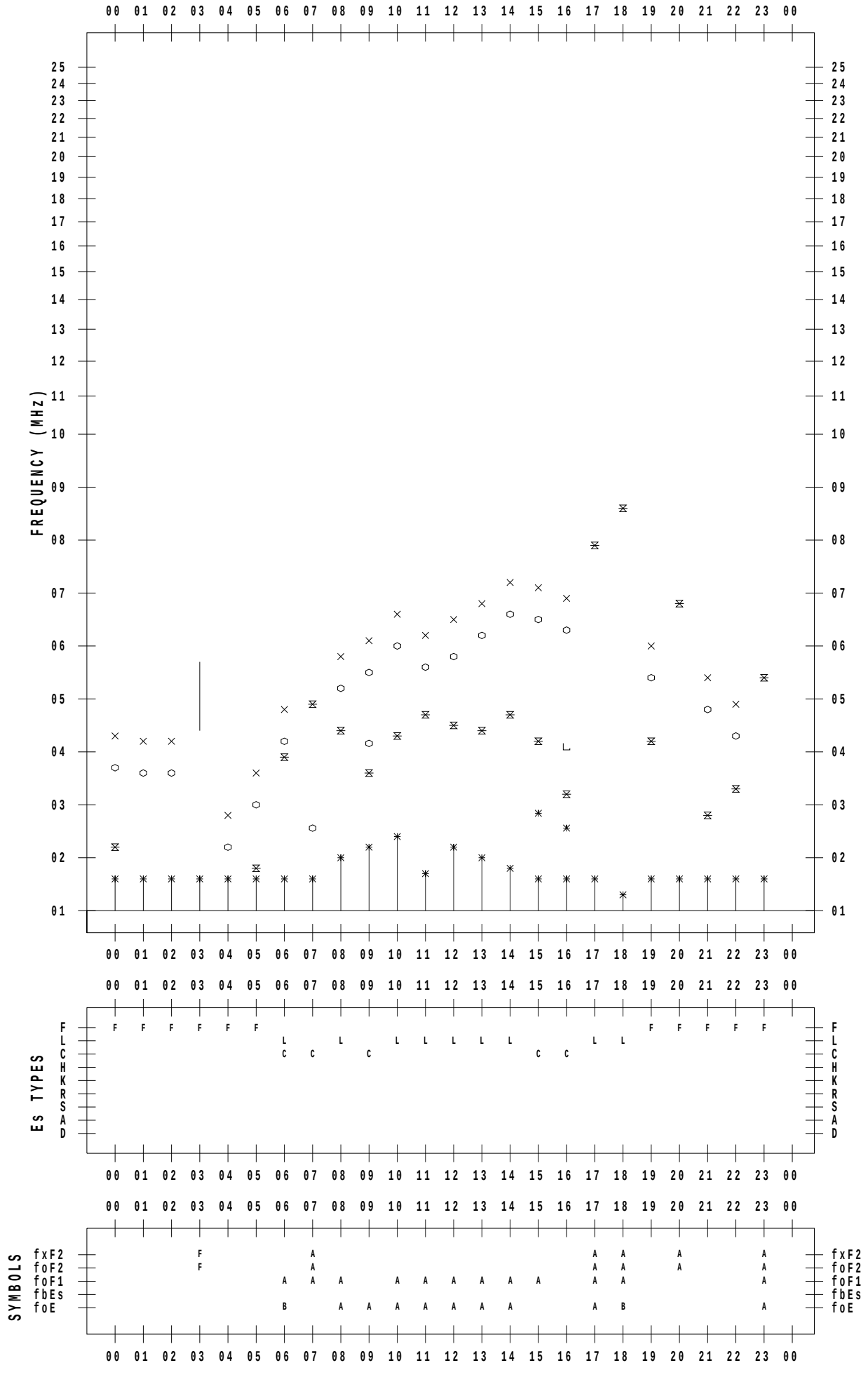
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/23

135 °E MEAN TIME



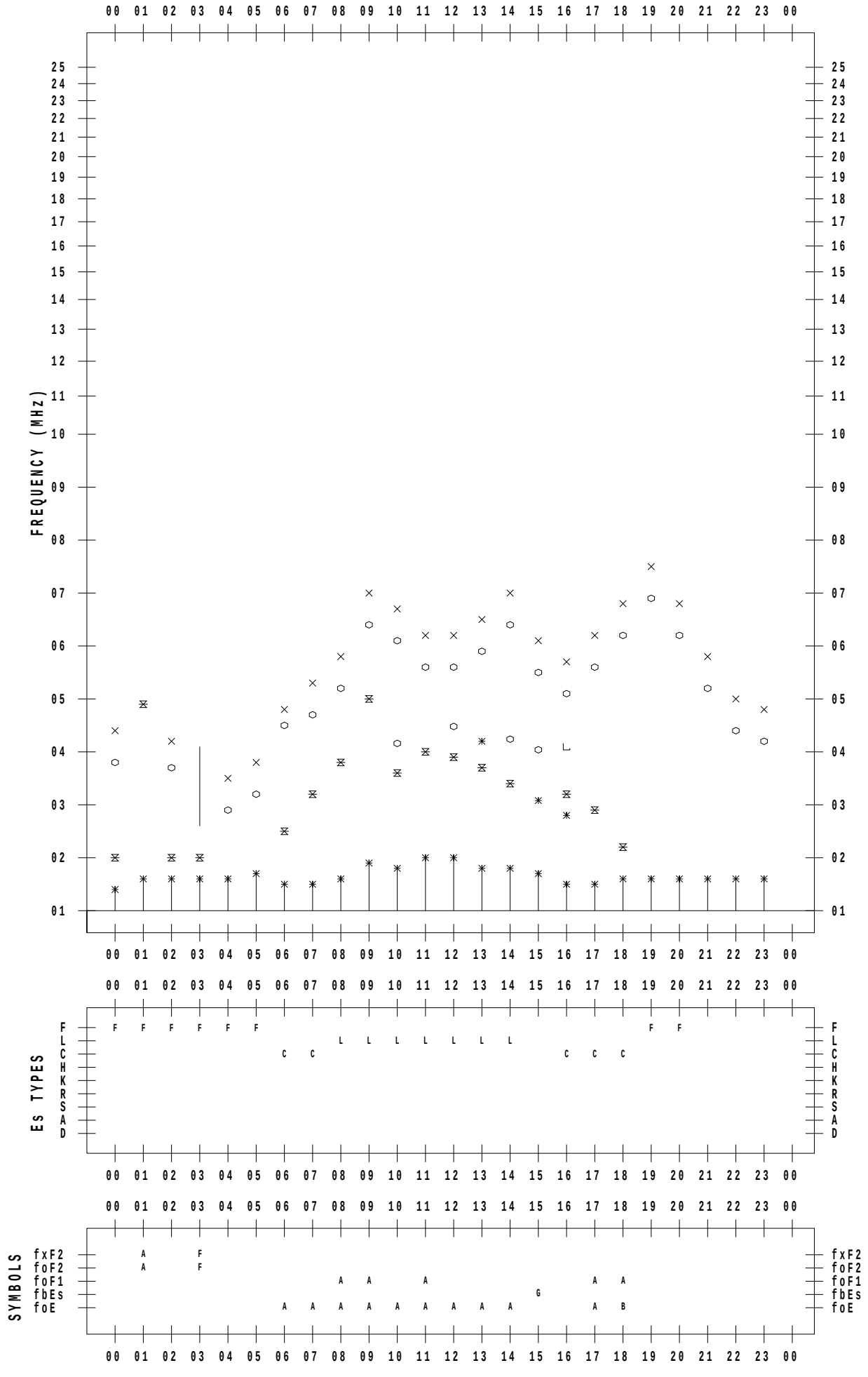
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/24

135 °E MEAN TIME



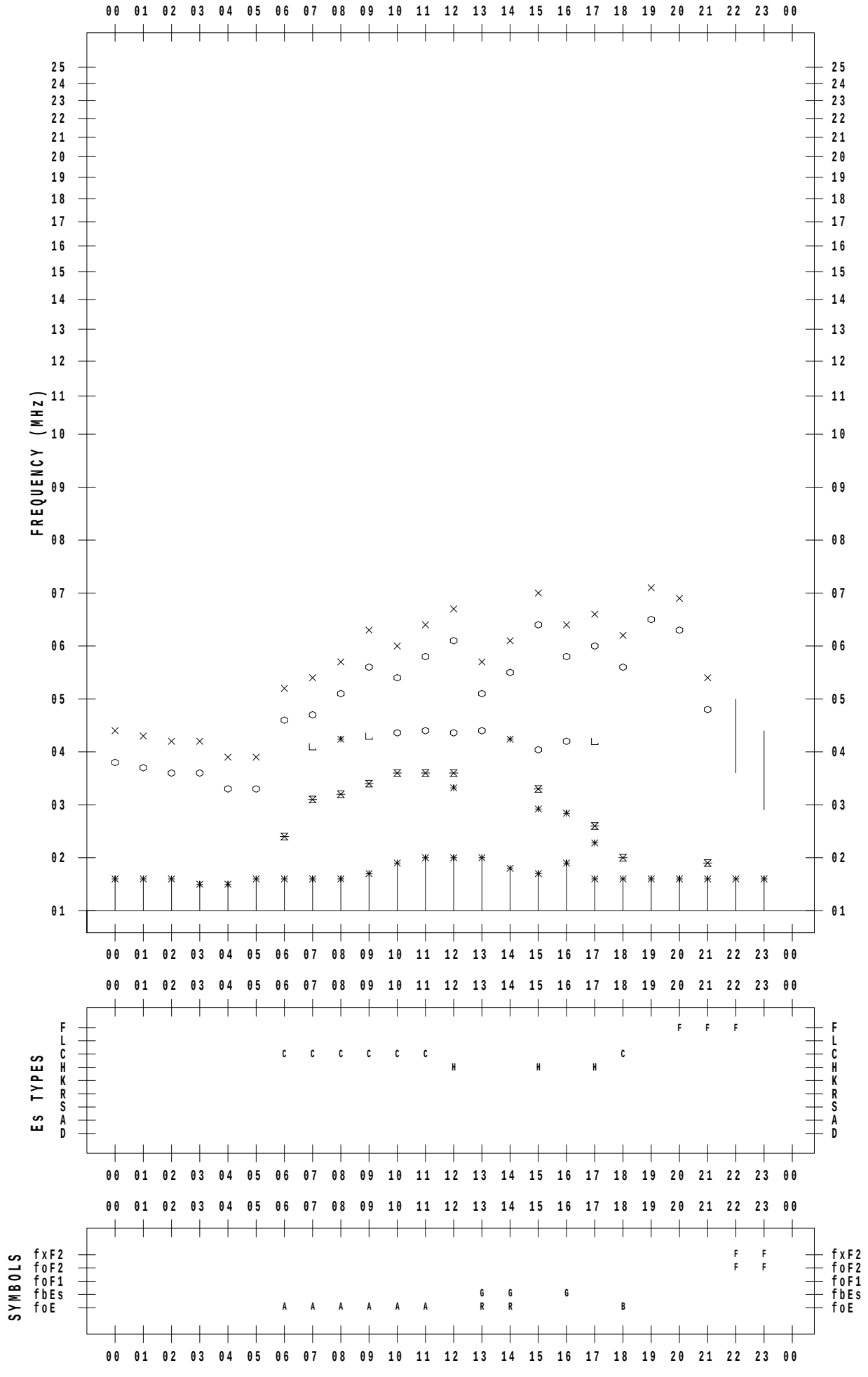
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/25

135 °E MEAN TIME



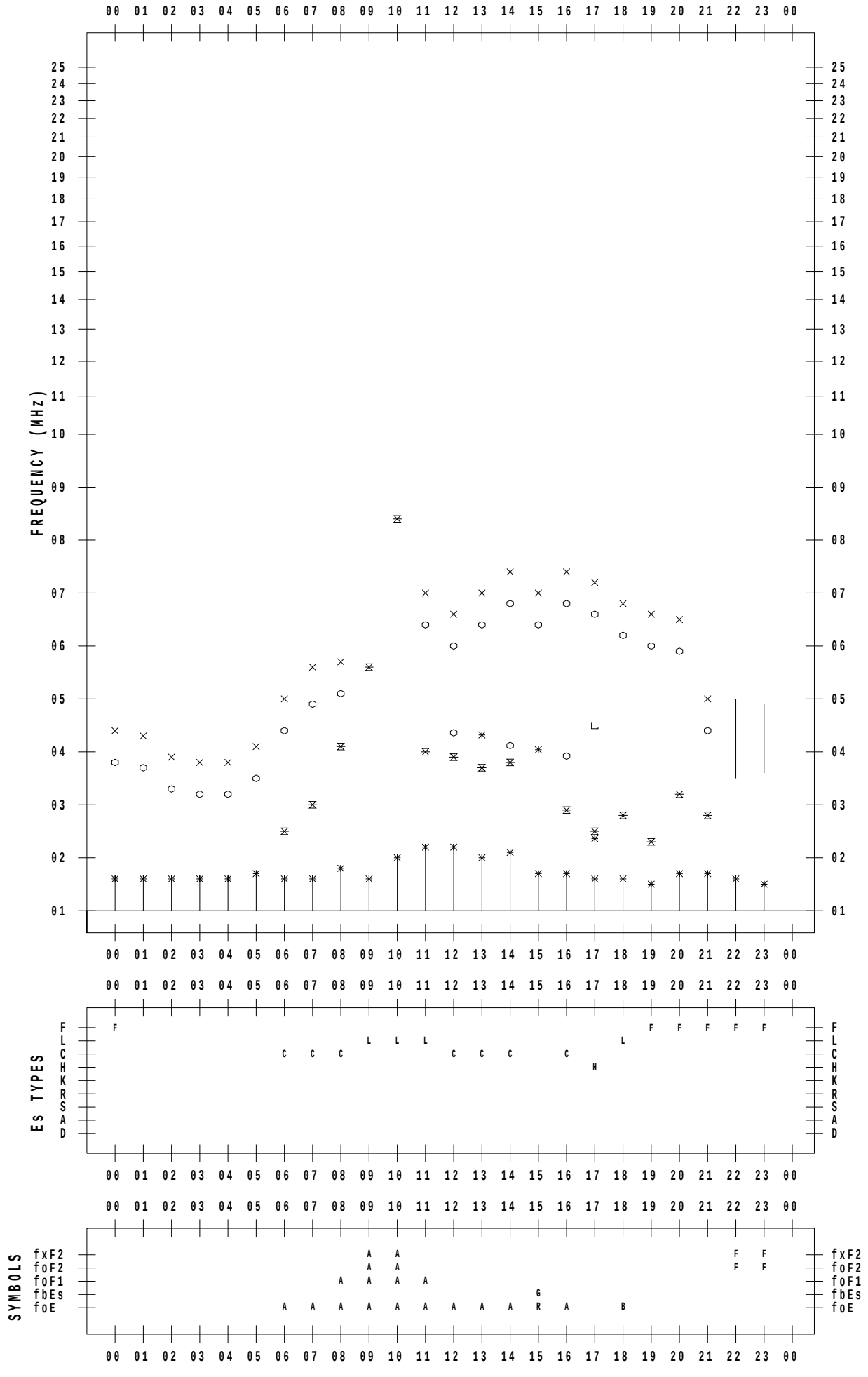
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/26

135 °E MEAN TIME



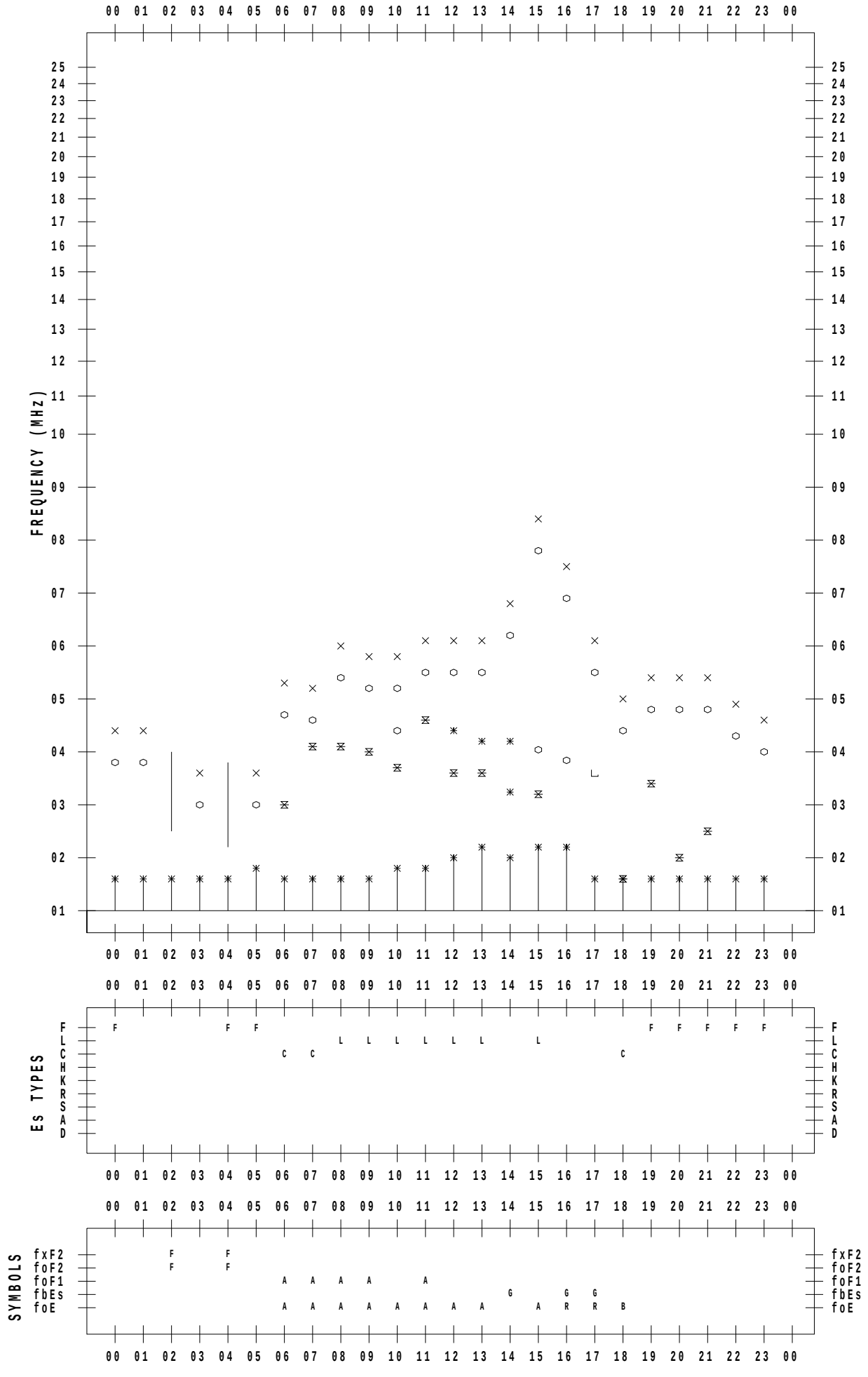
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/27

135 °E MEAN TIME



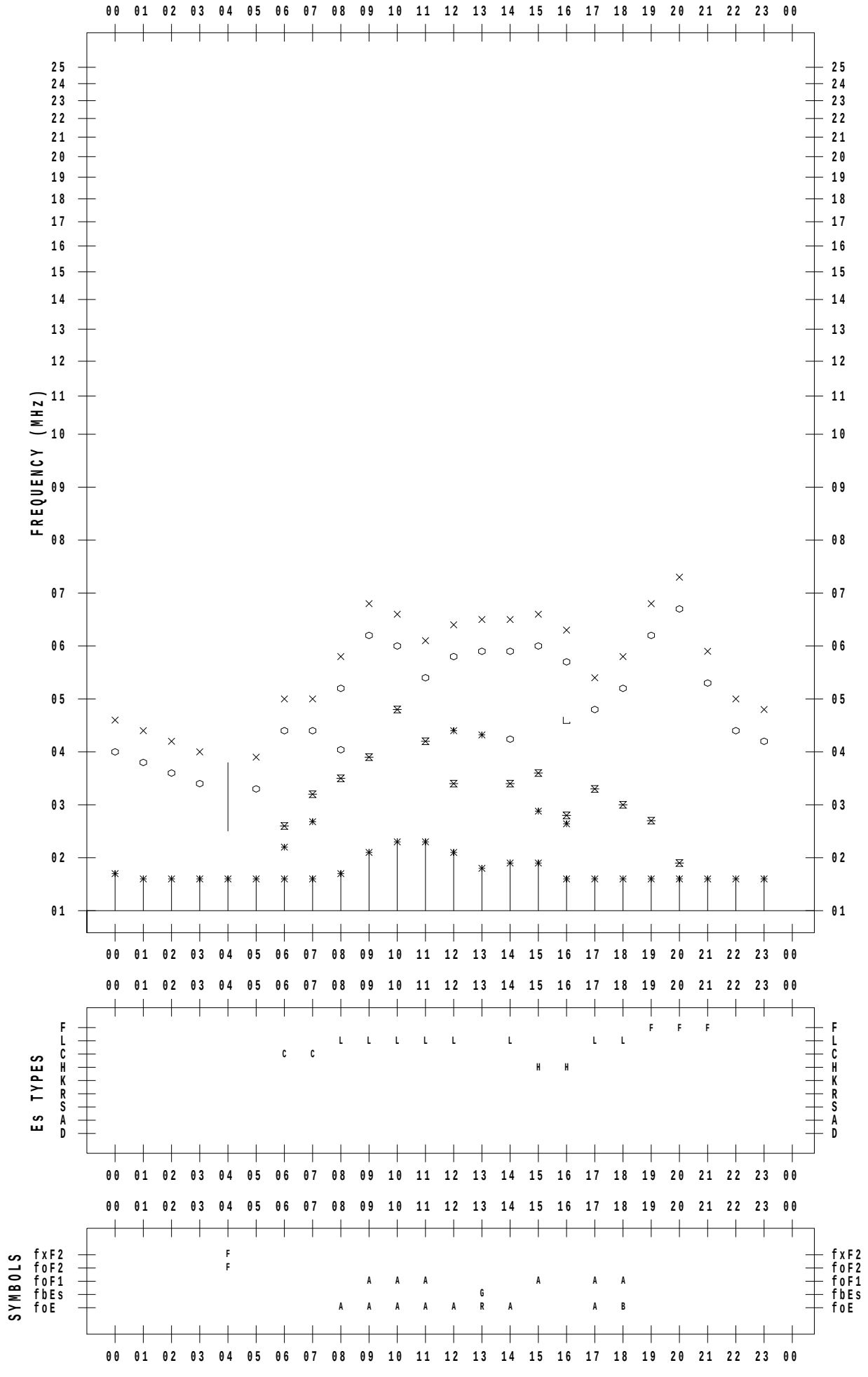
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/28

135 °E MEAN TIME



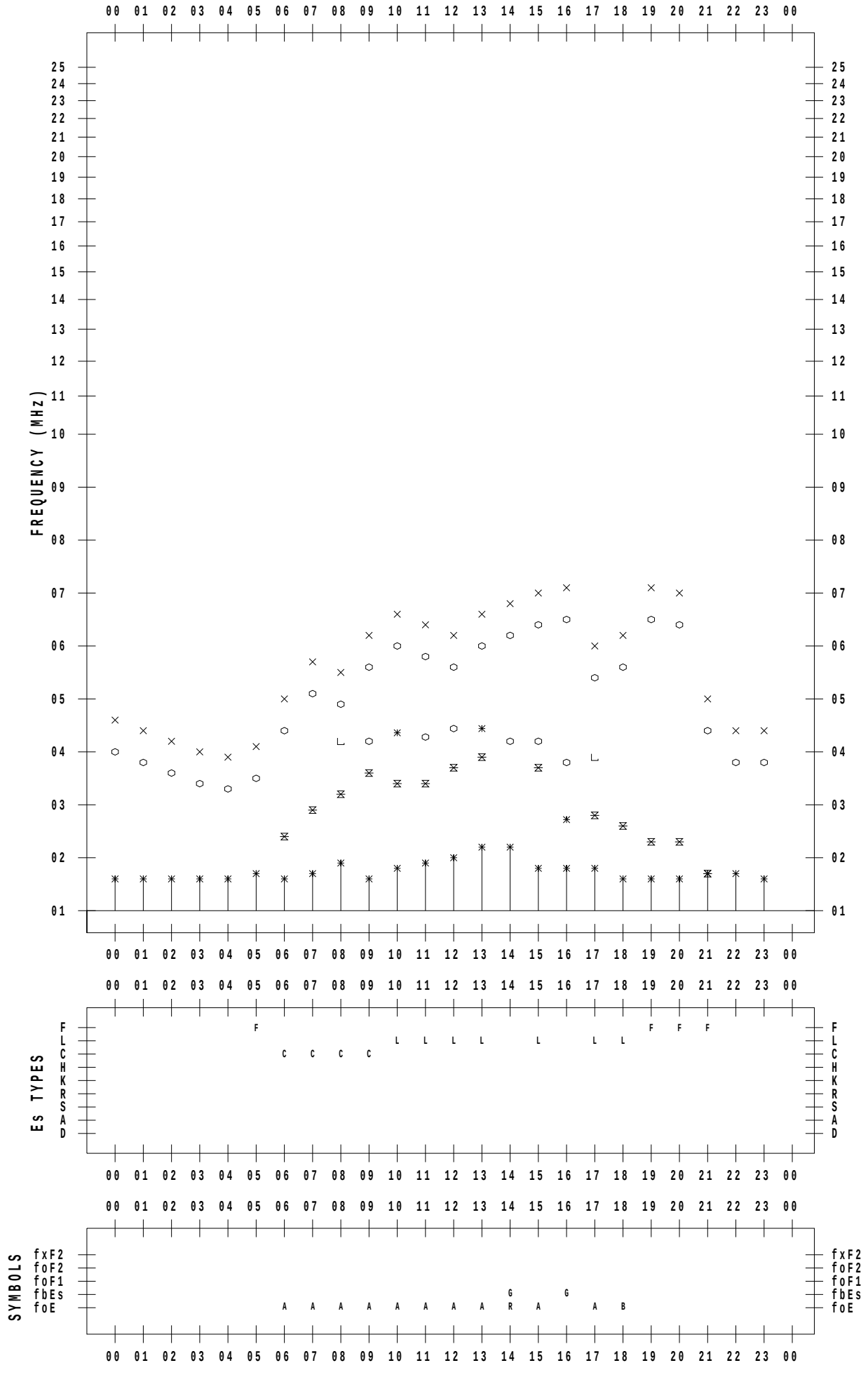
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/29

135 °E MEAN TIME



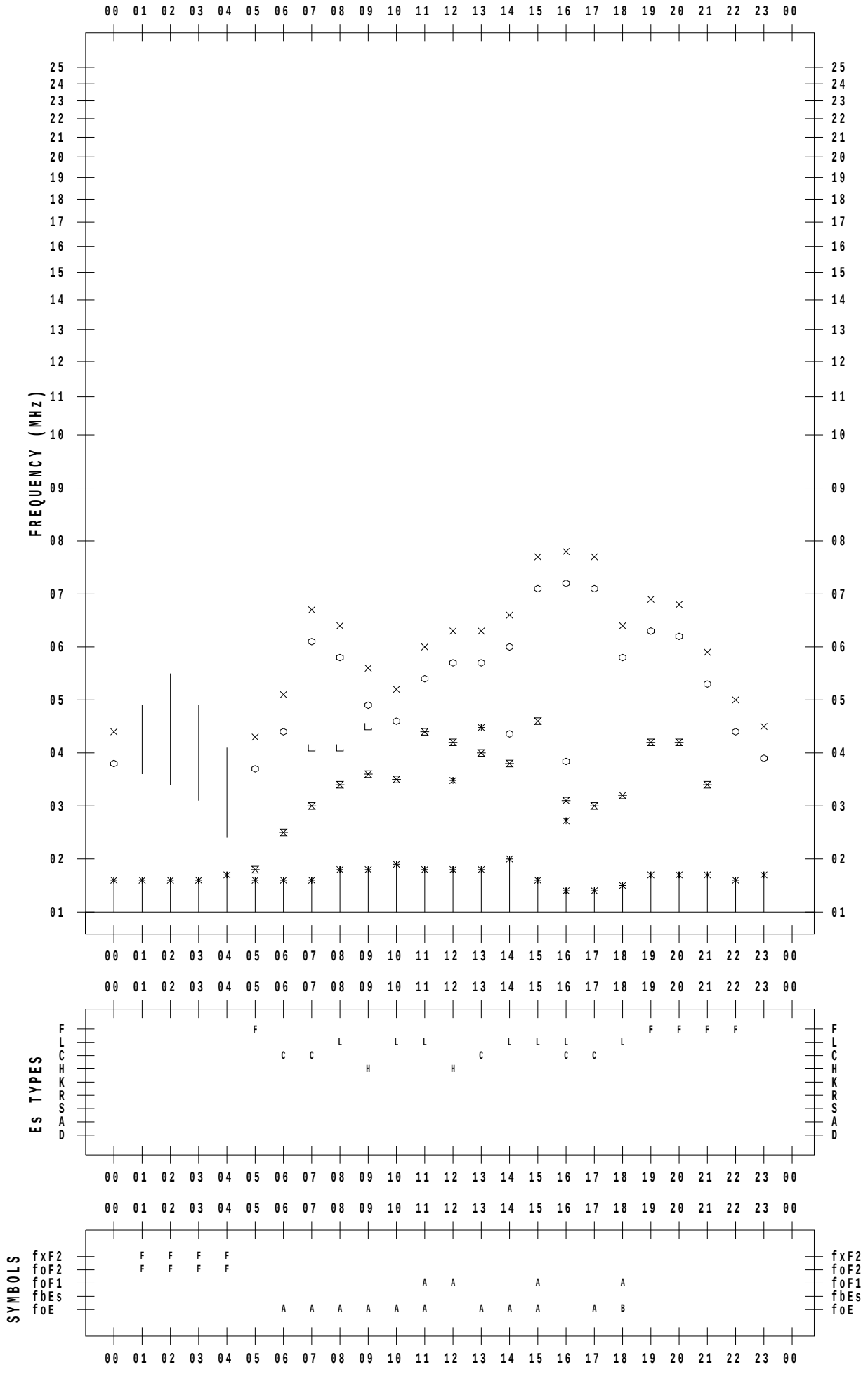
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 4/30

135 °E MEAN TIME



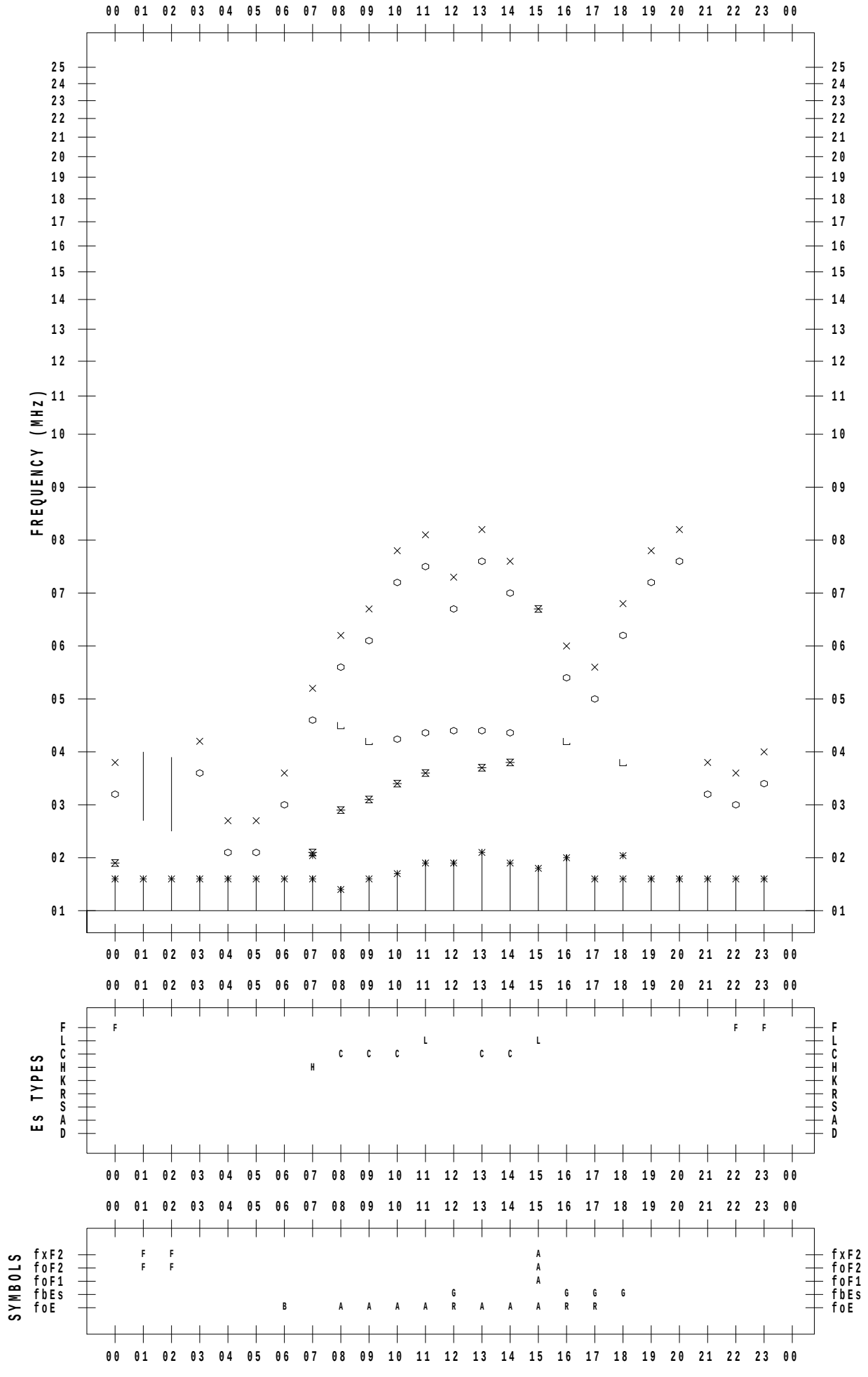
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 1

135 °E MEAN TIME



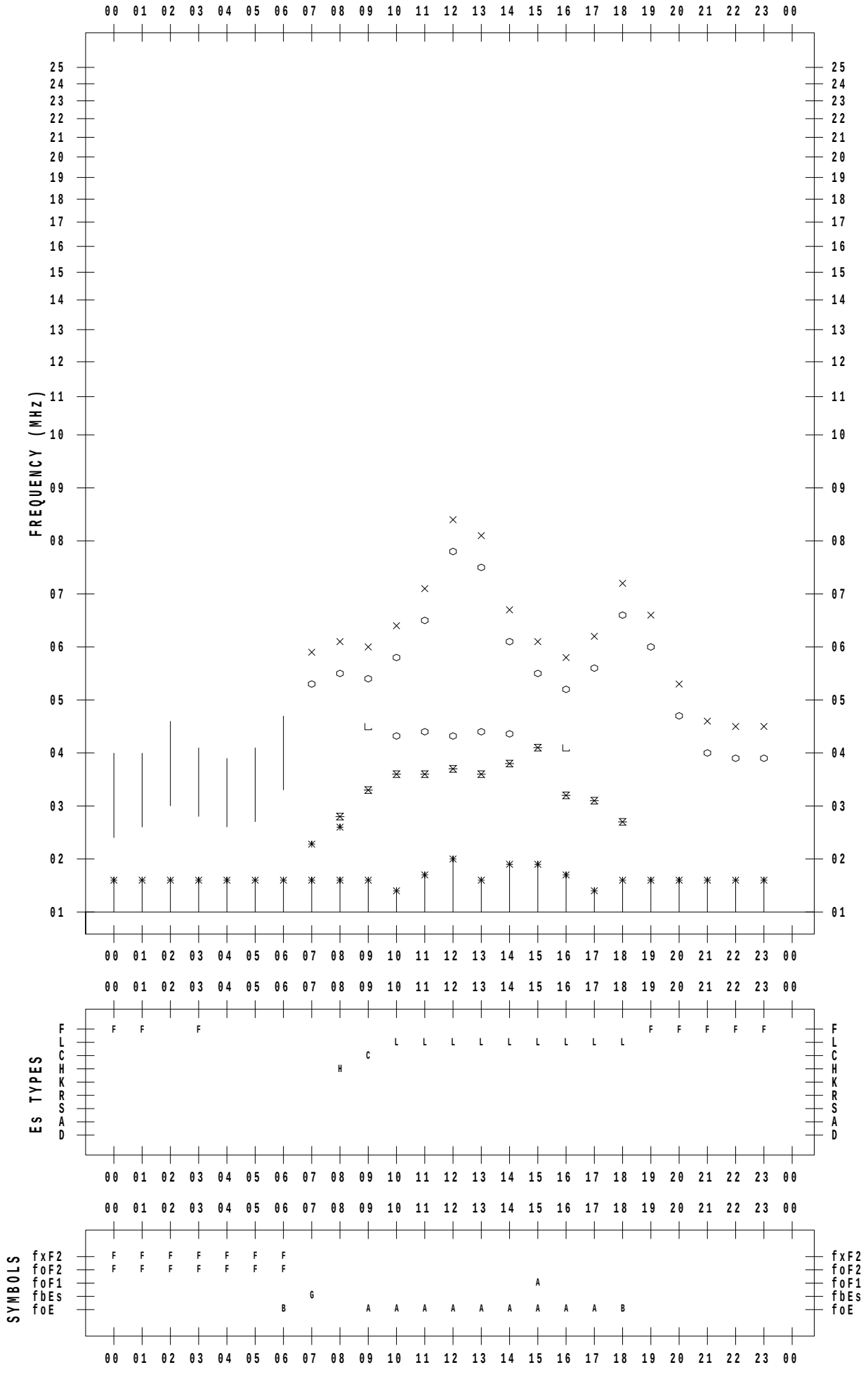
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 2

135 °E MEAN TIME



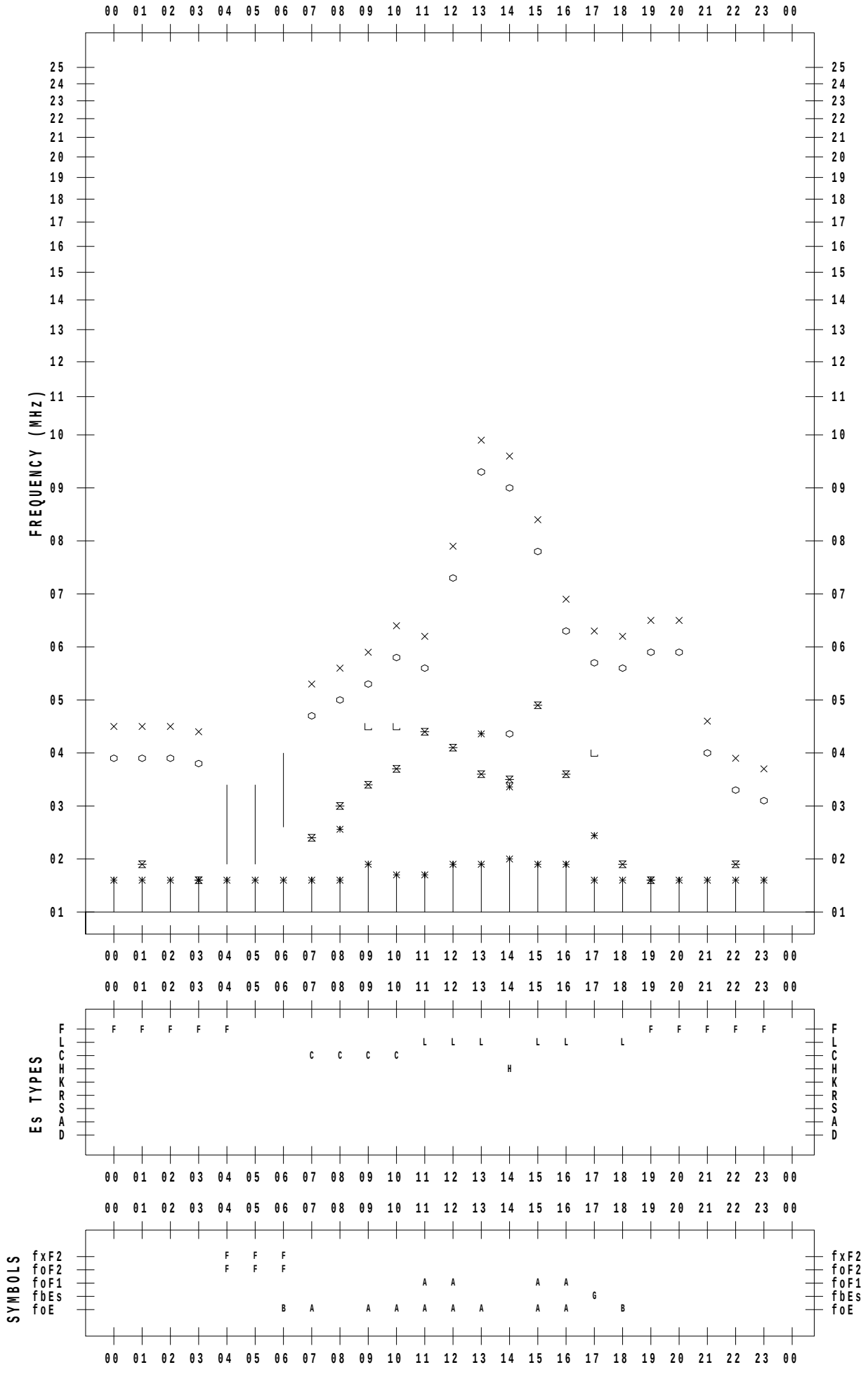
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 3

135 °E MEAN TIME



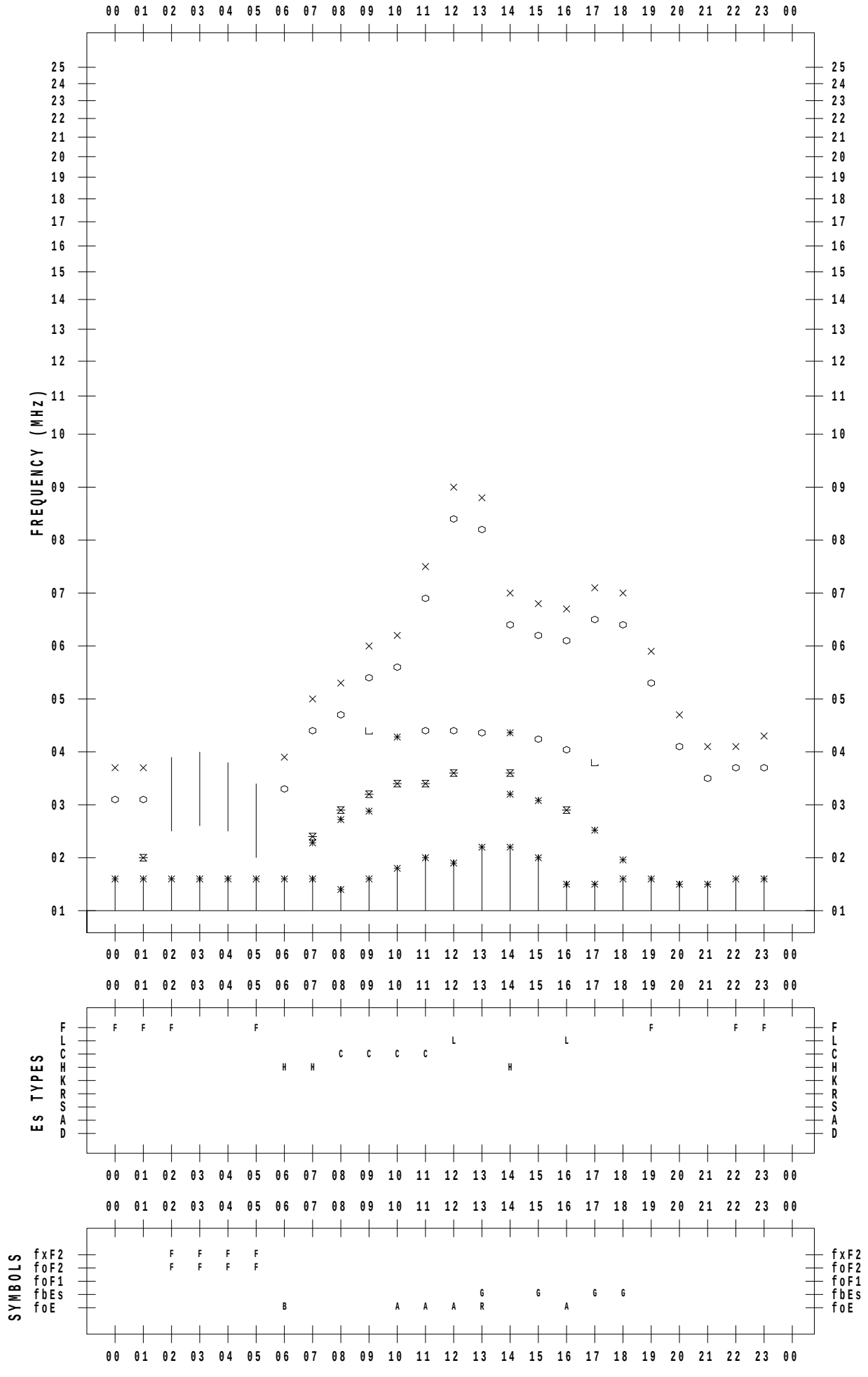
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 4

135 °E MEAN TIME



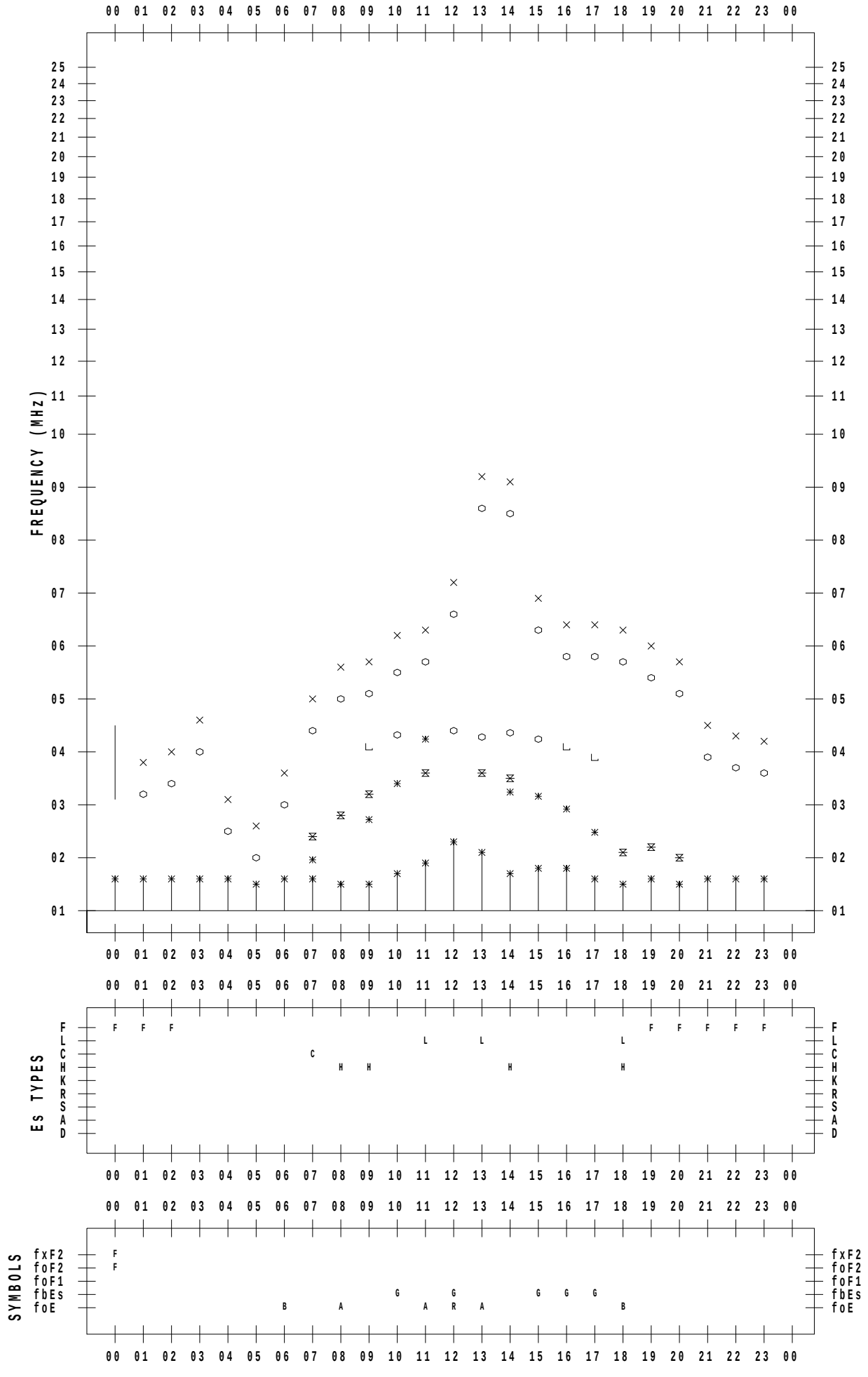
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 5

135 °E MEAN TIME



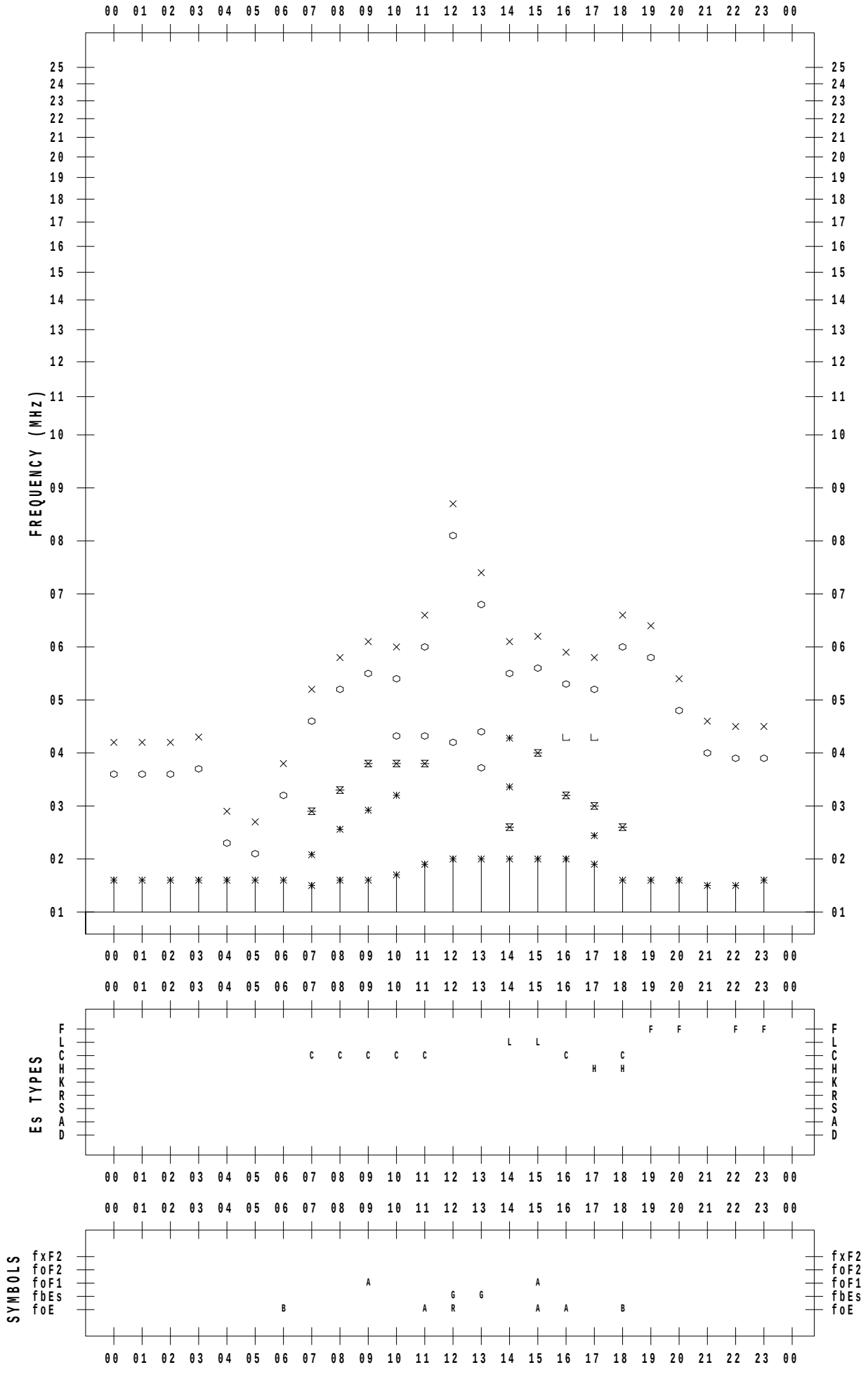
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 6

135 °E MEAN TIME



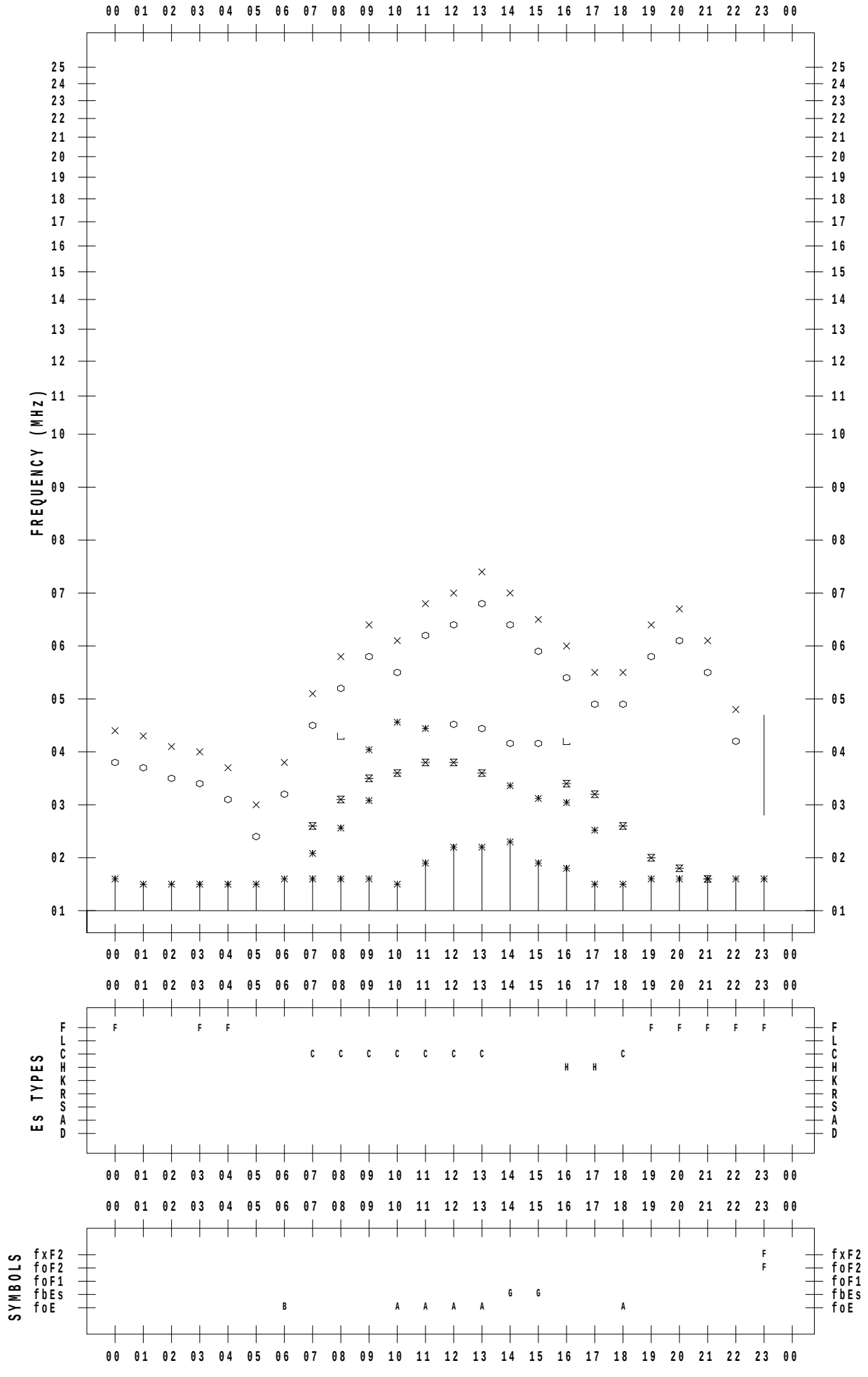
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 7

135 °E MEAN TIME



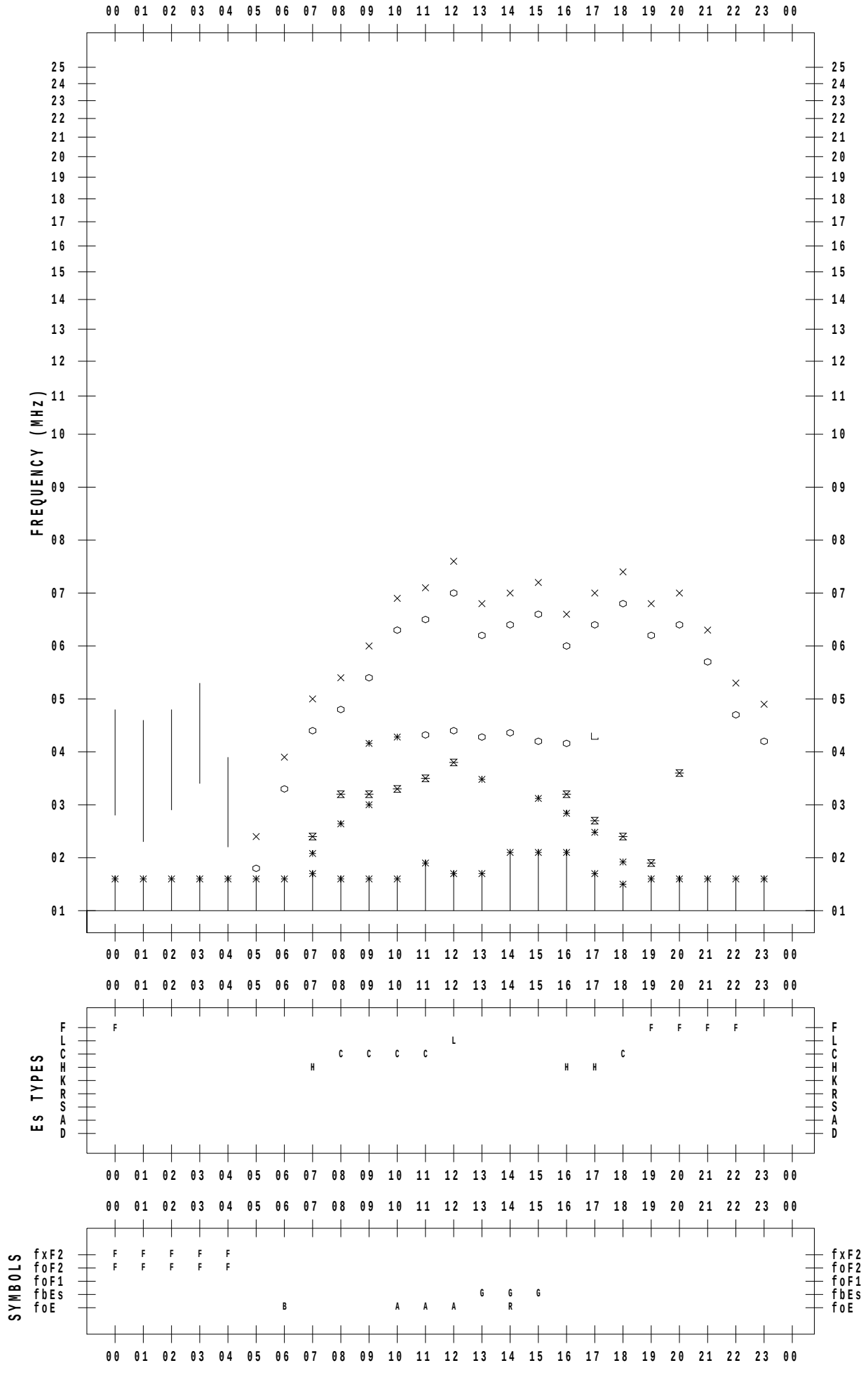
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 8

135 °E MEAN TIME



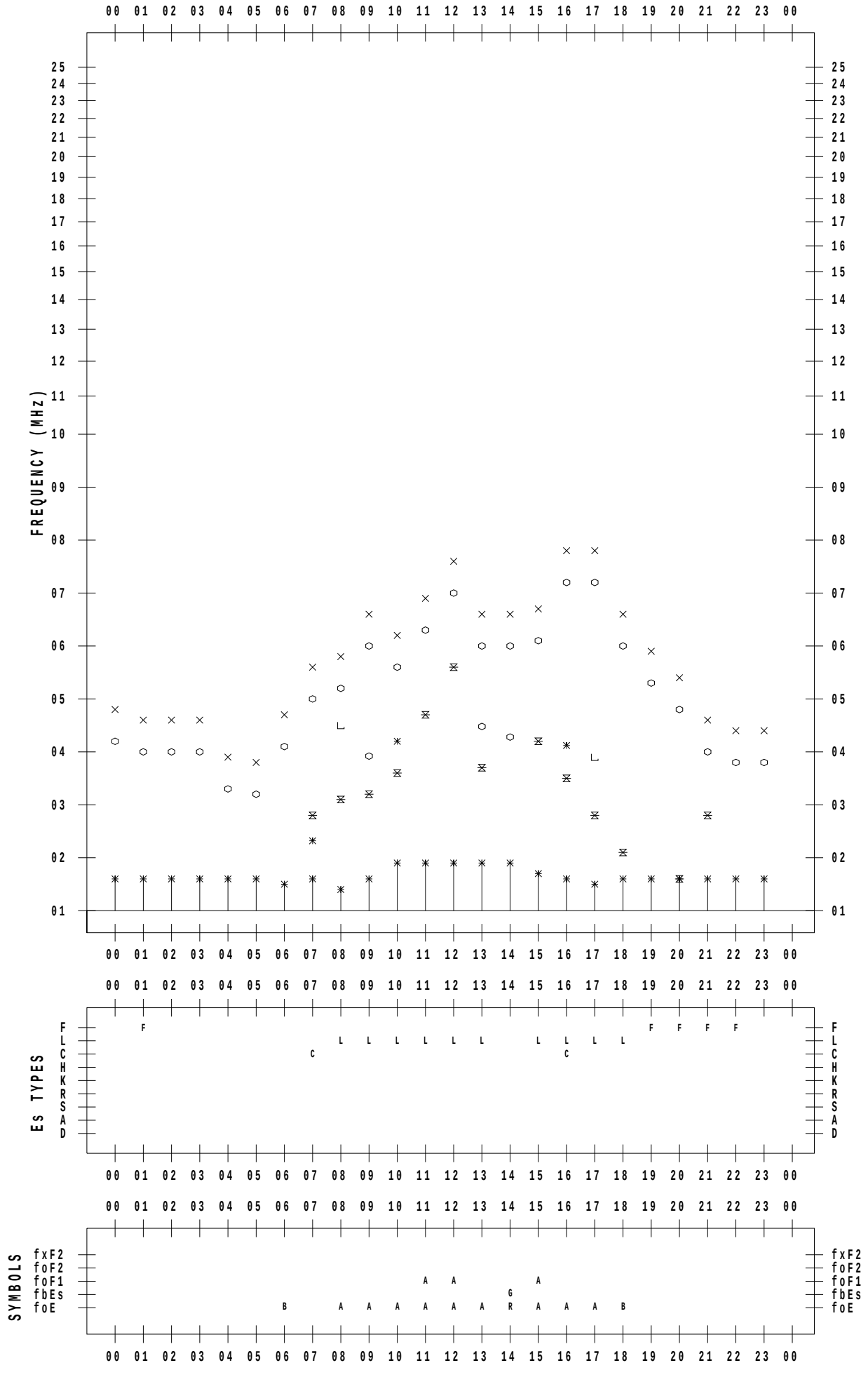
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/ 9

135 °E MEAN TIME



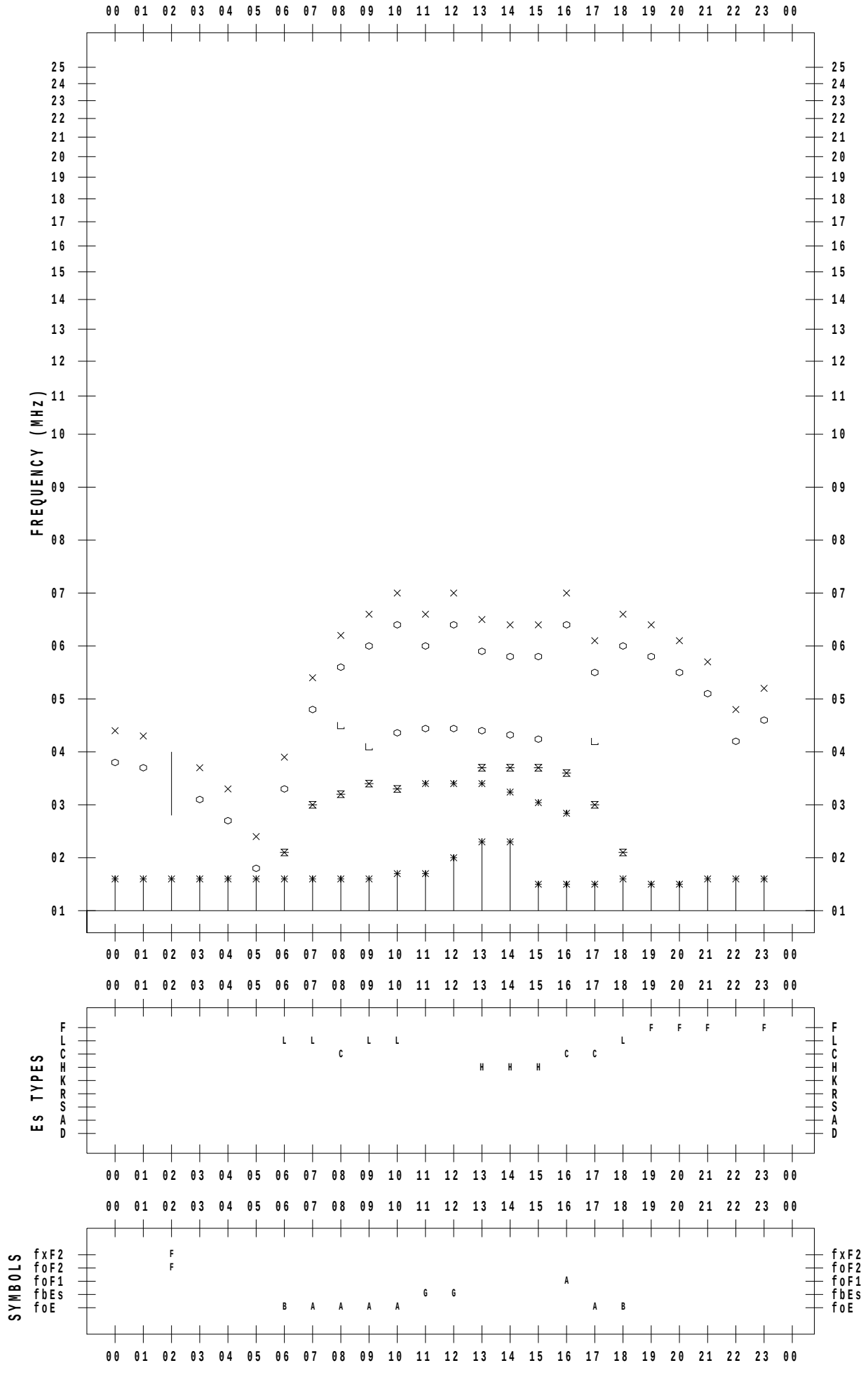
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/10

135 °E MEAN TIME



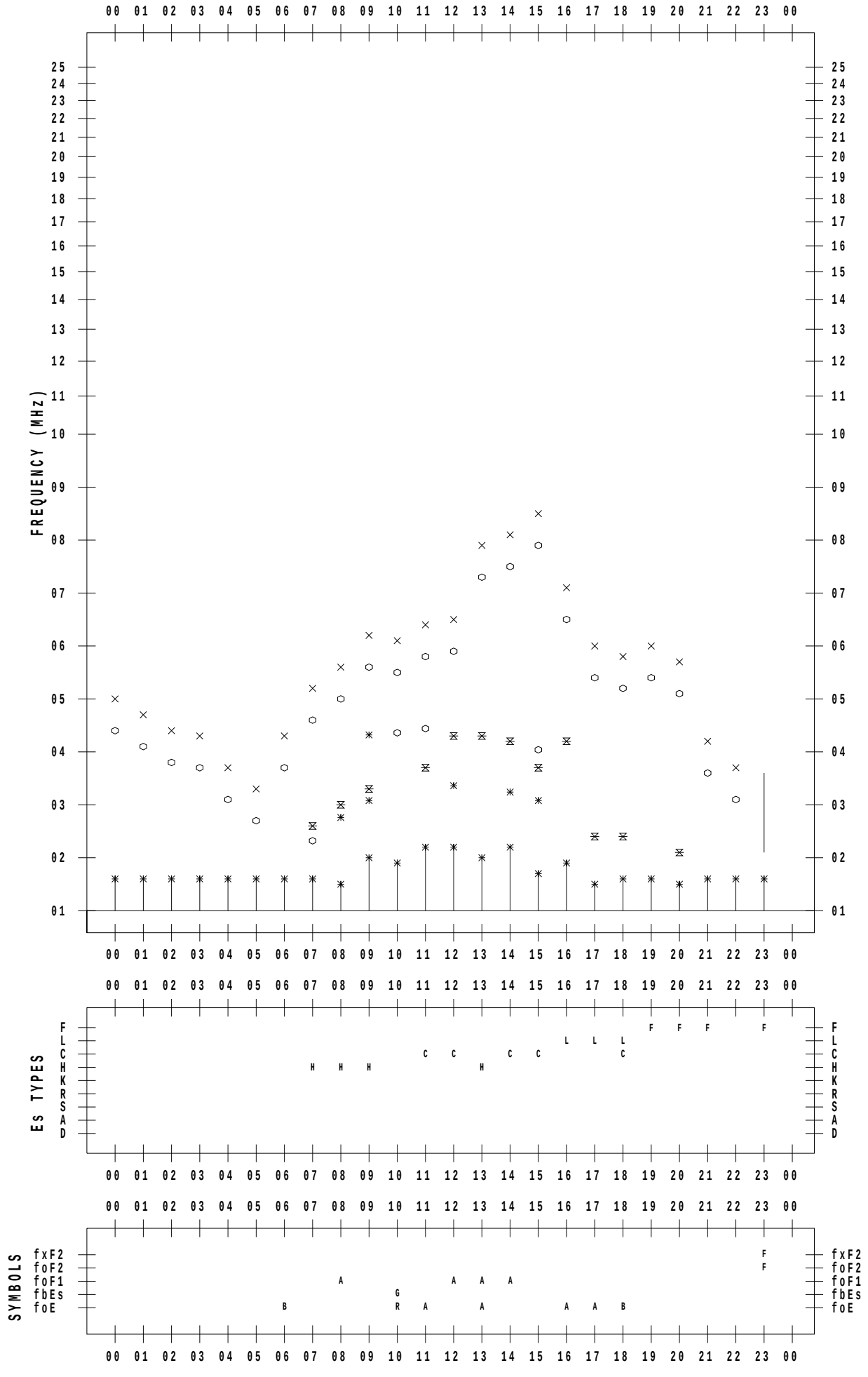
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/11

135 °E MEAN TIME



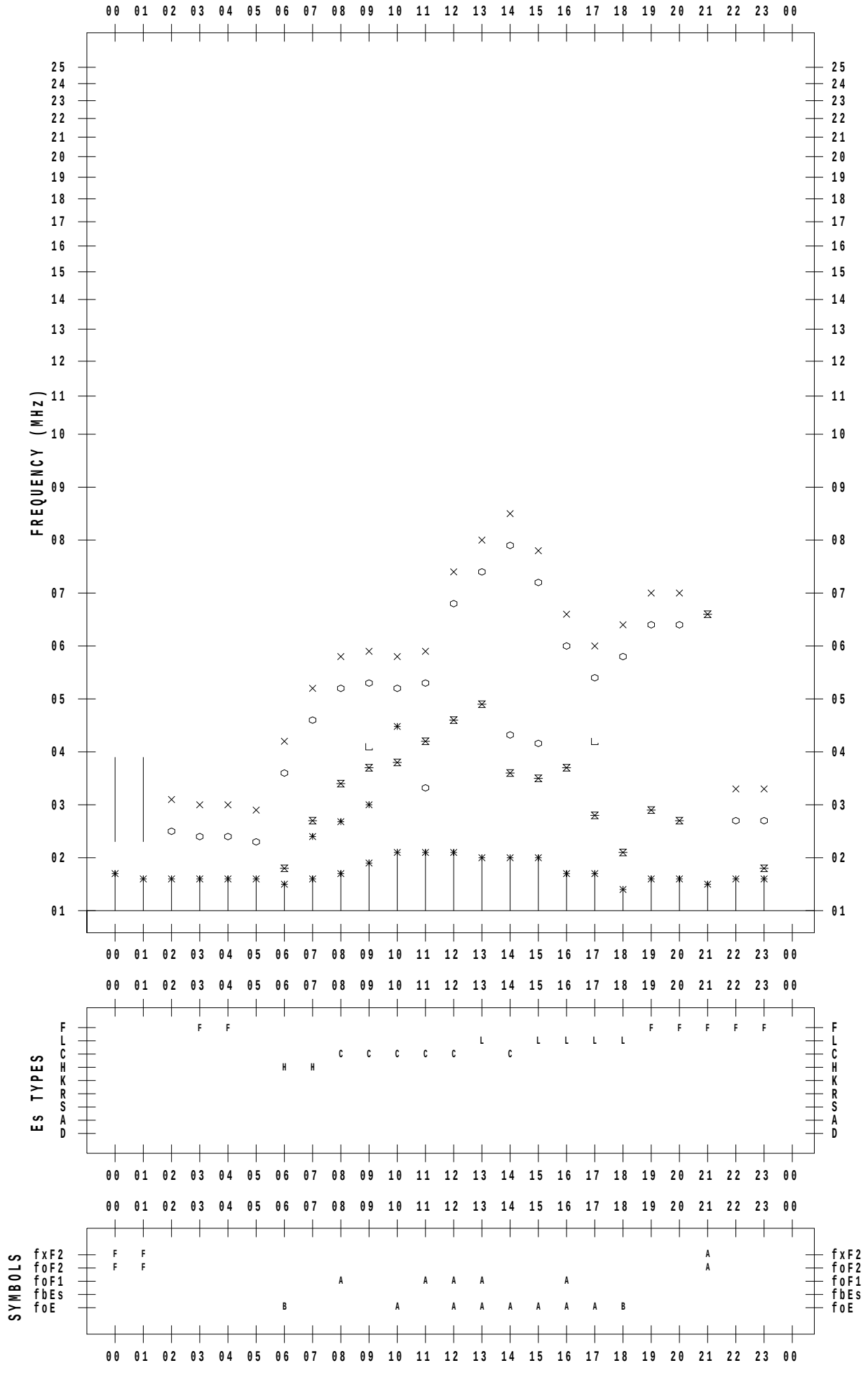
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/12

135 °E MEAN TIME



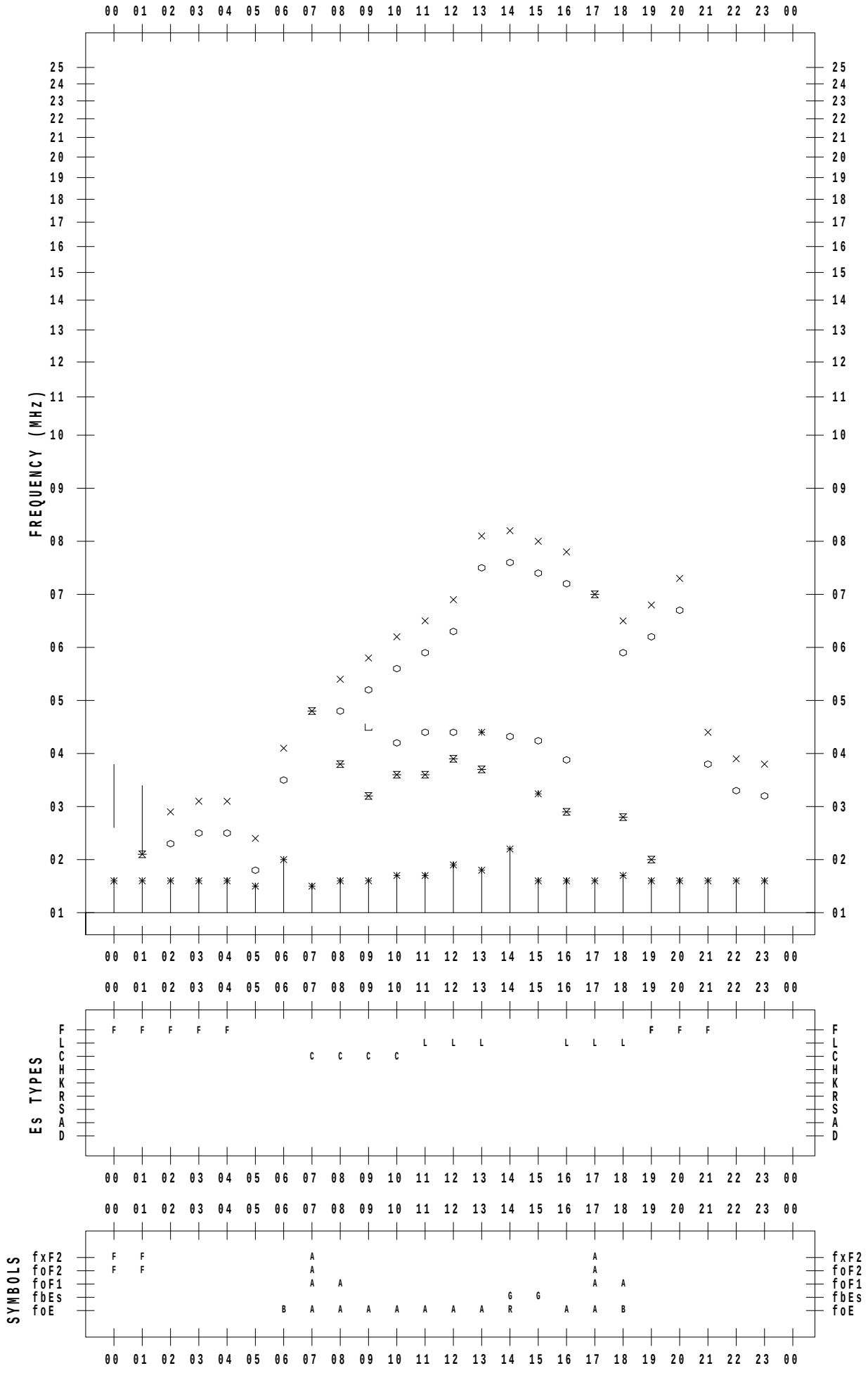
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/13

135 °E MEAN TIME



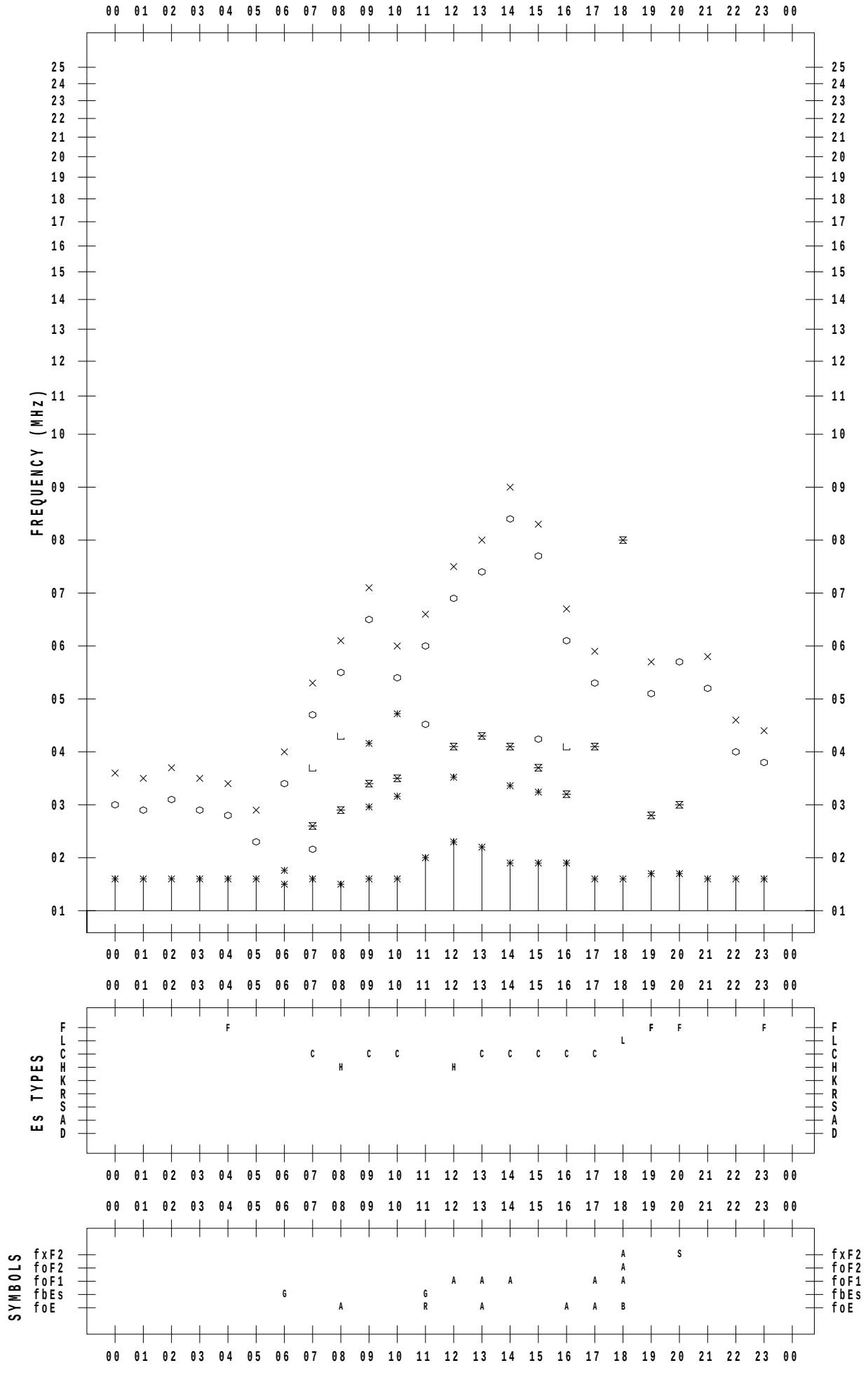
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/14

135 °E MEAN TIME



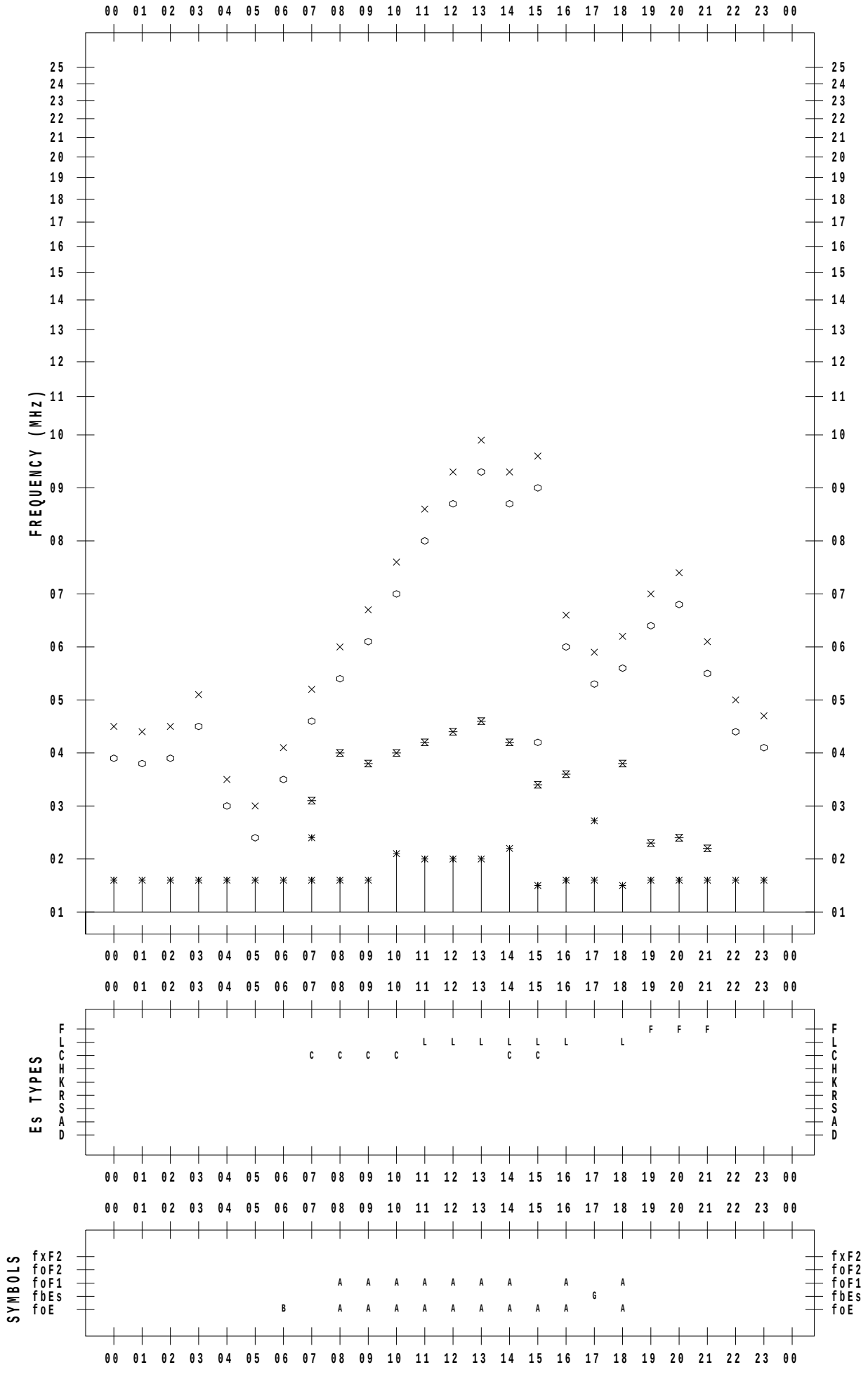
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/15

135 °E MEAN TIME



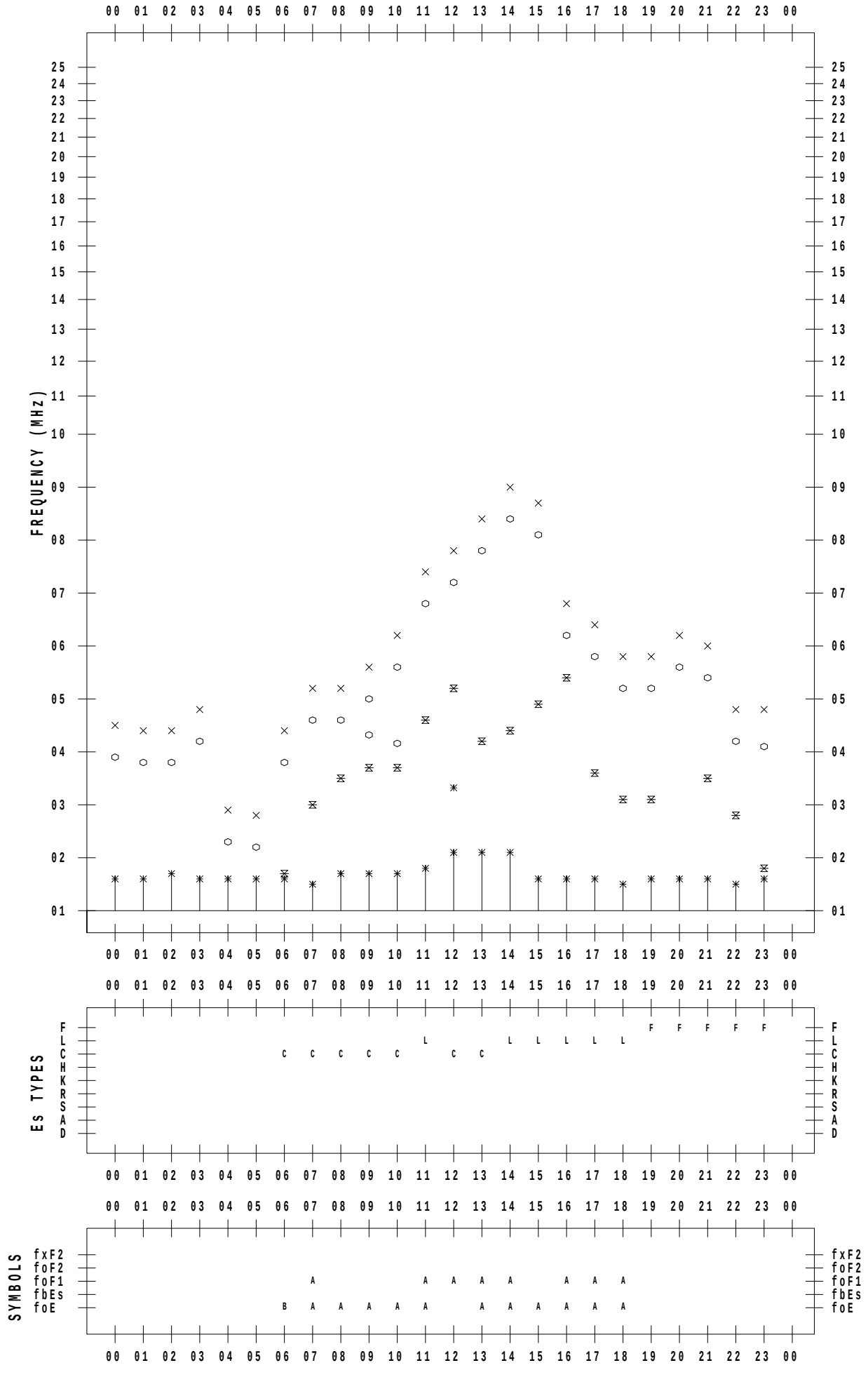
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/16

135 °E MEAN TIME



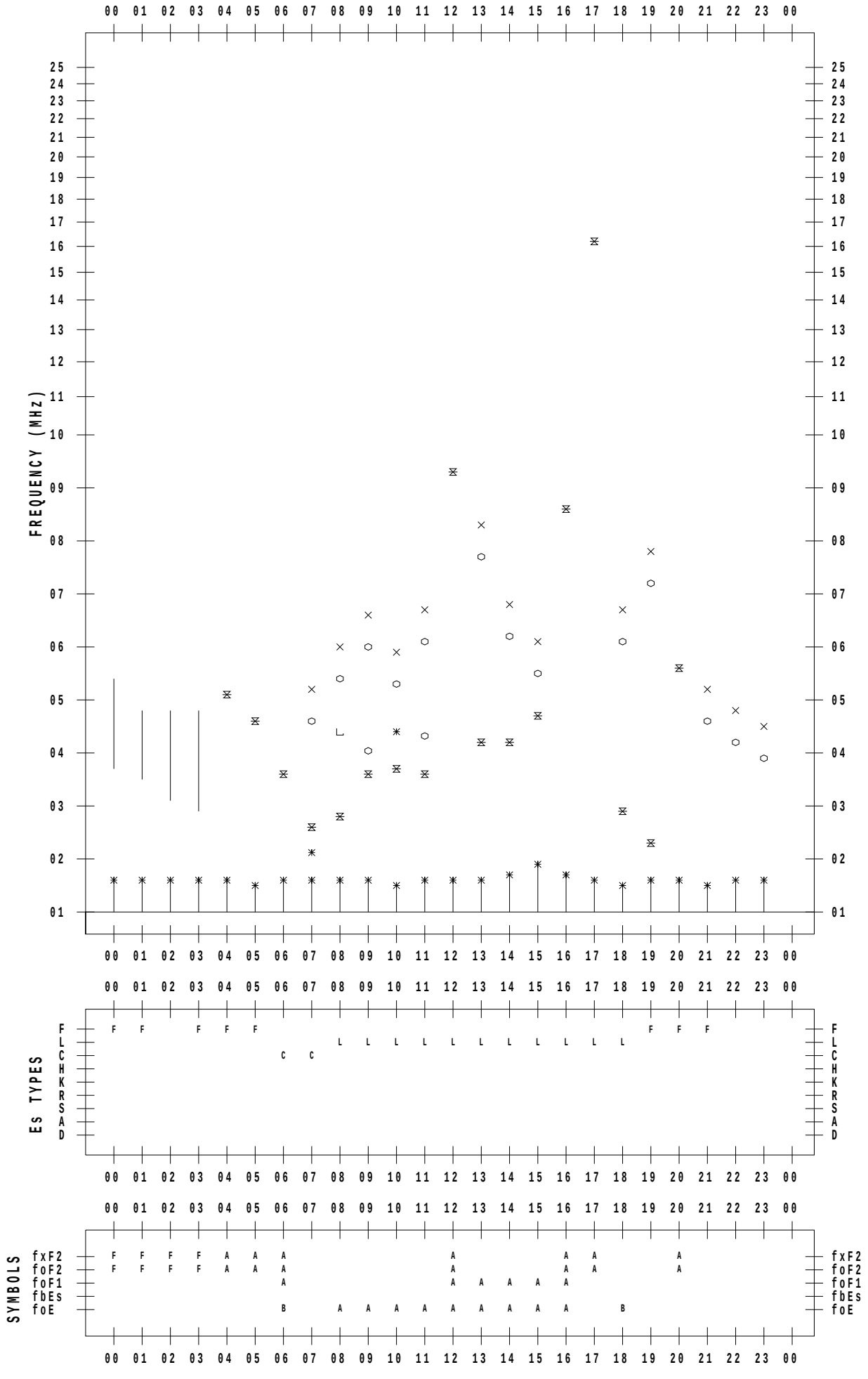
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/17

135 °E MEAN TIME



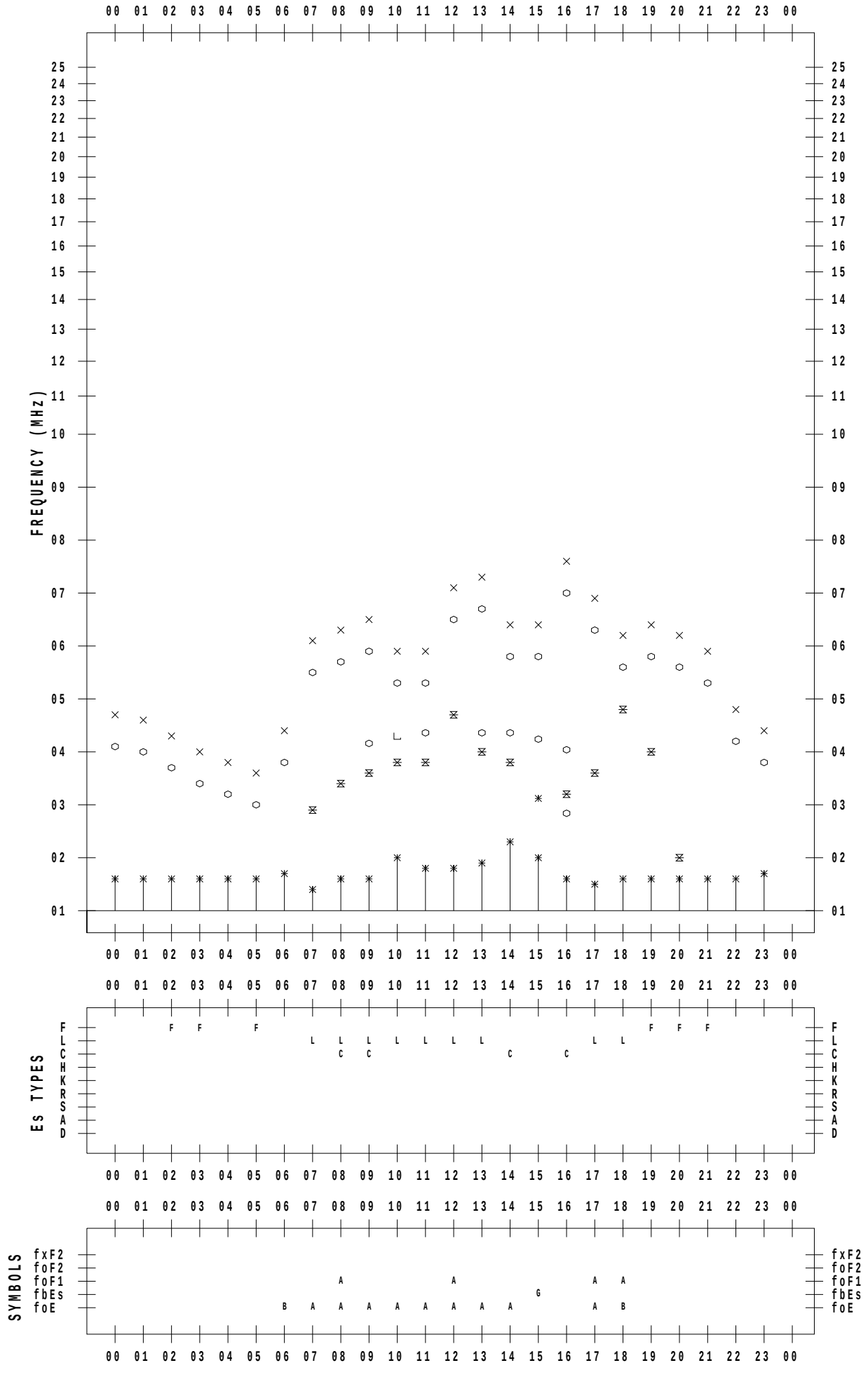
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/18

135 °E MEAN TIME



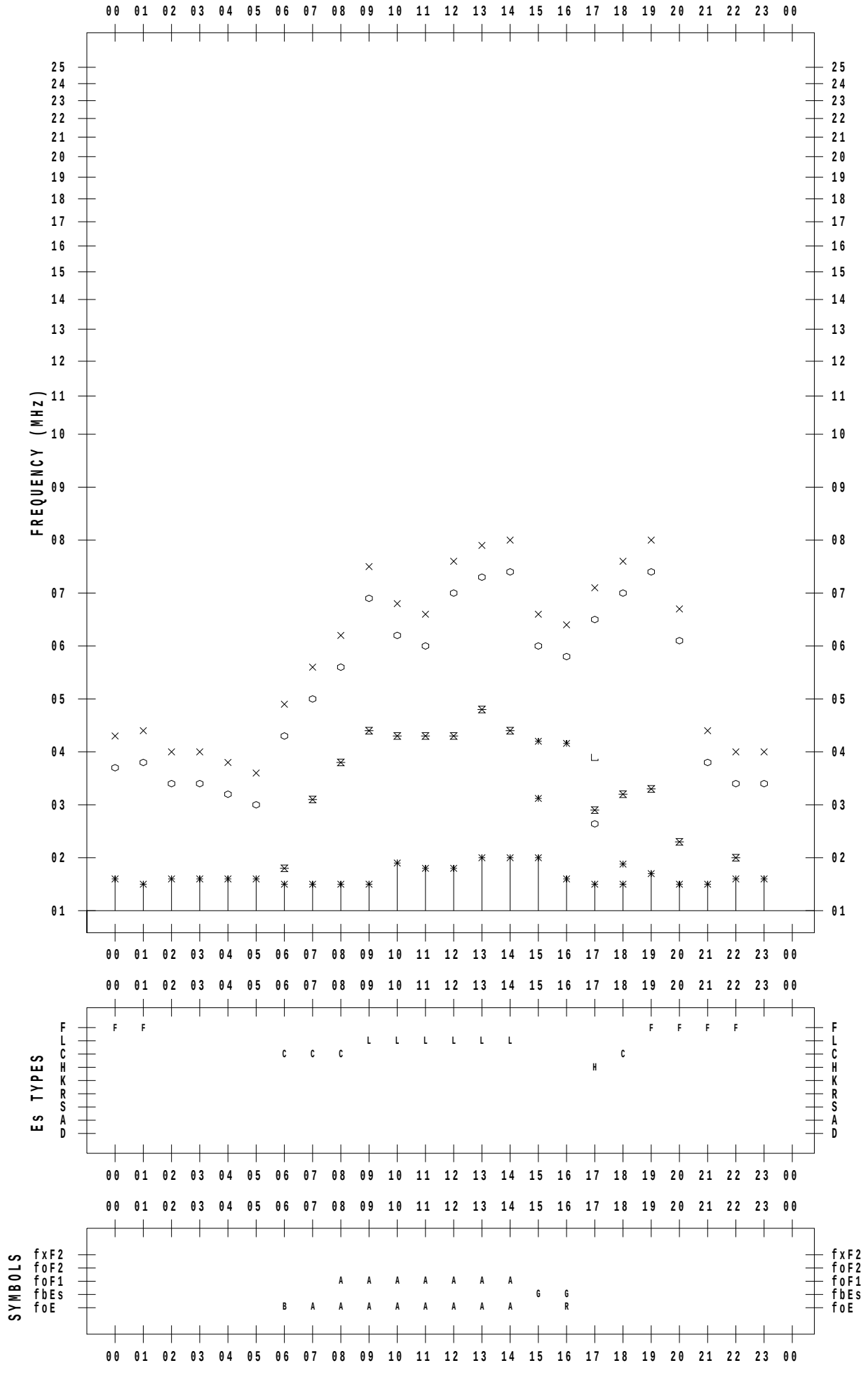
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/19

135 °E MEAN TIME



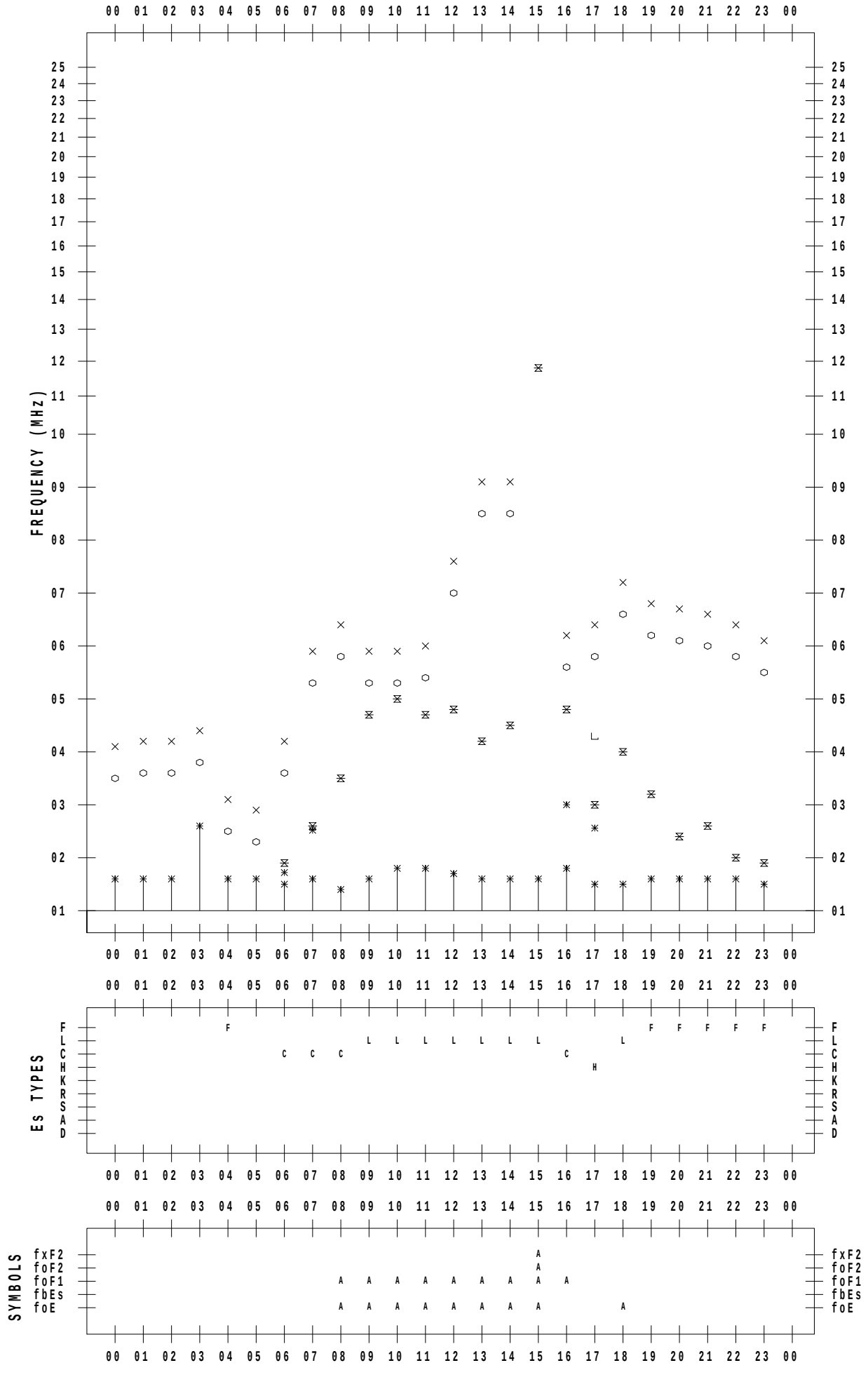
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/20

135 °E MEAN TIME



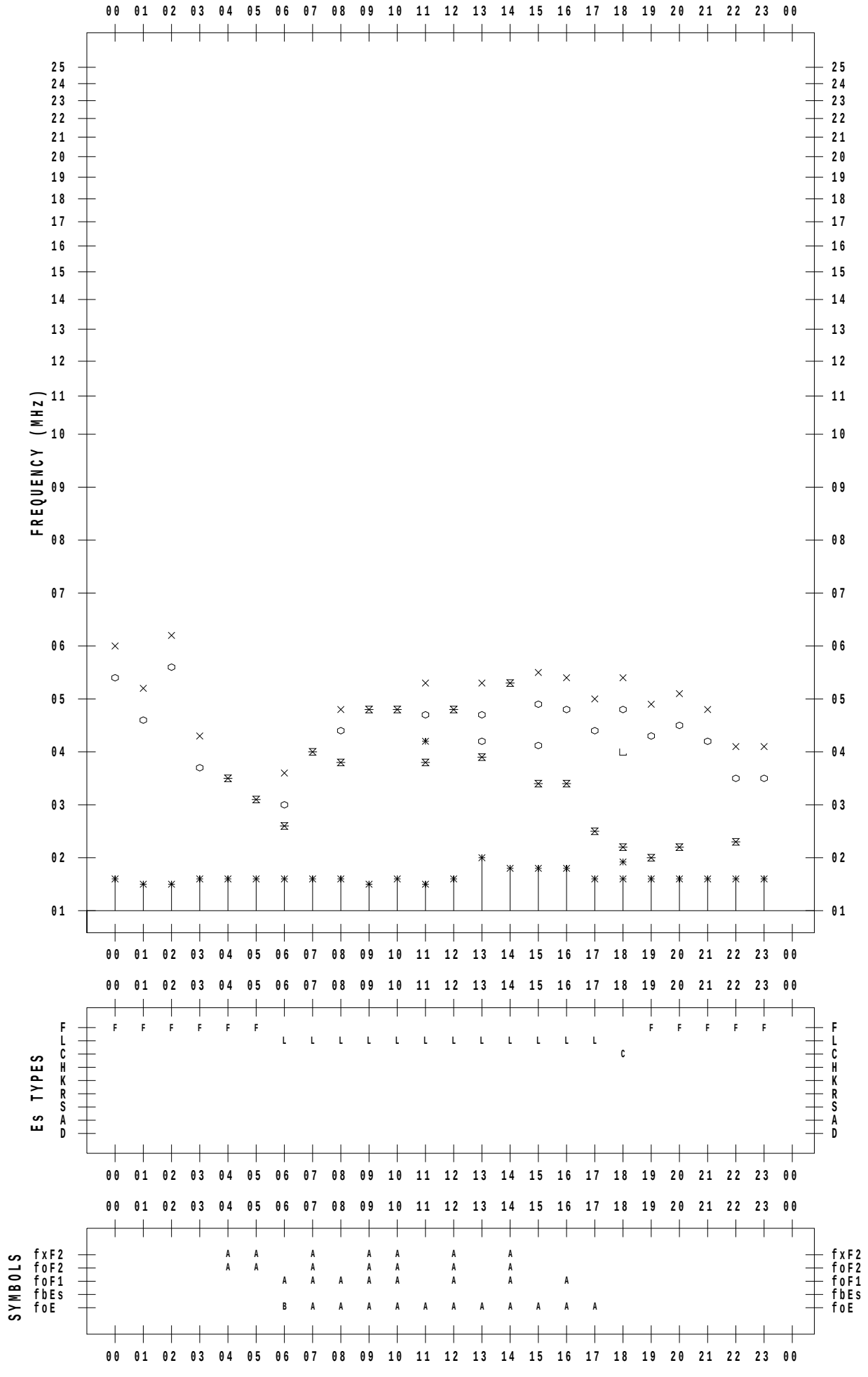
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/21

135 °E MEAN TIME



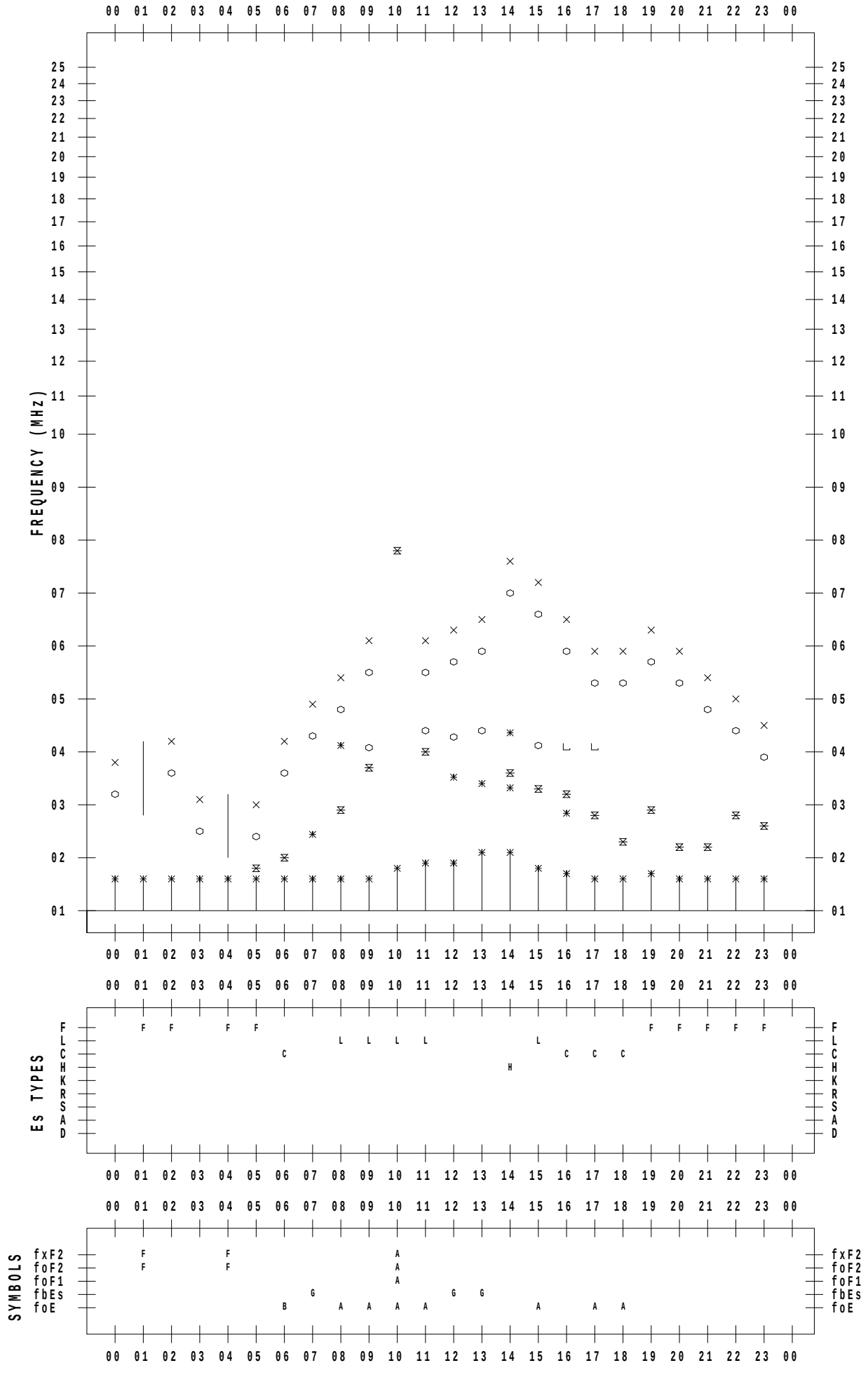
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/22

135 °E MEAN TIME



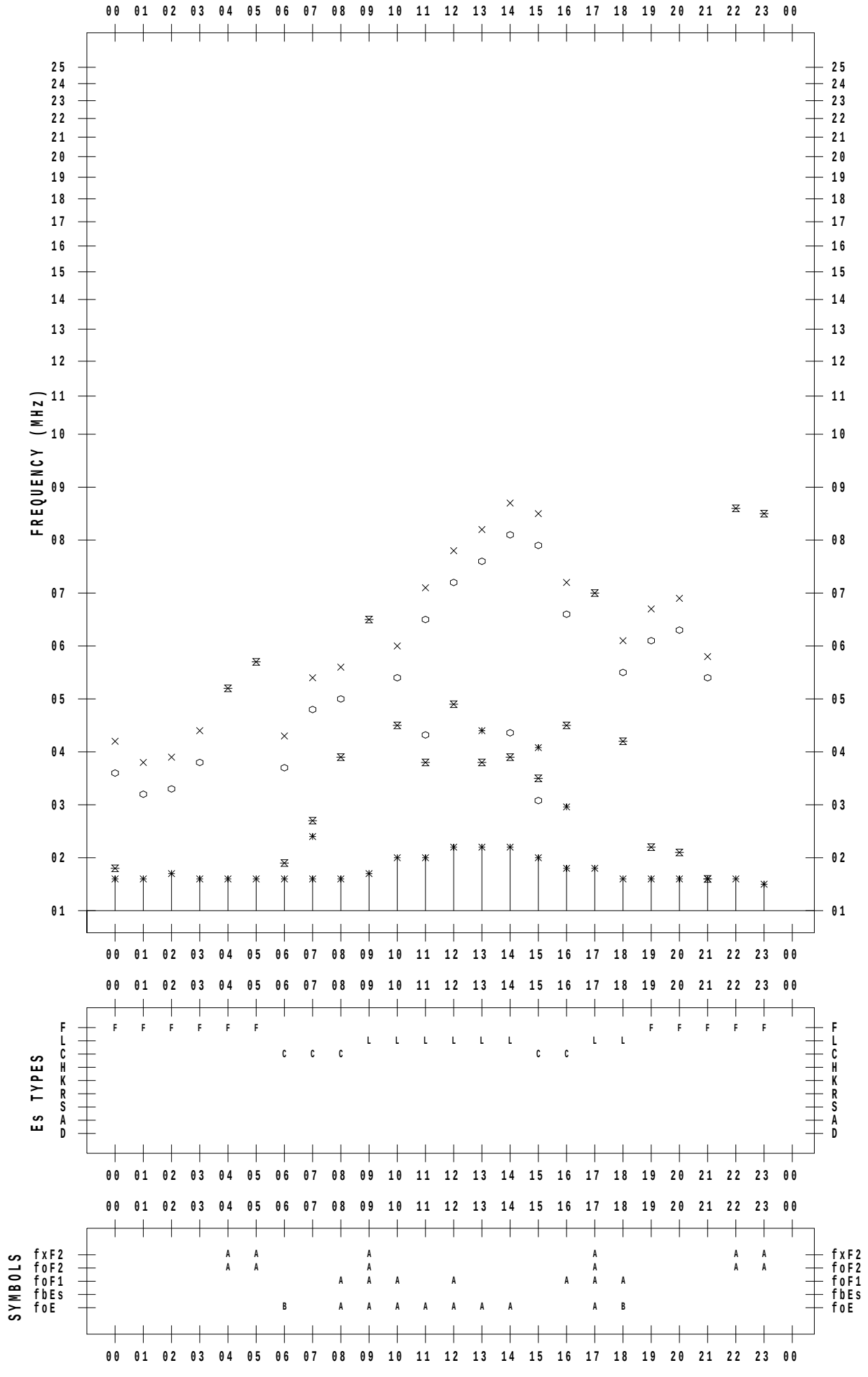
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/23

135 °E MEAN TIME



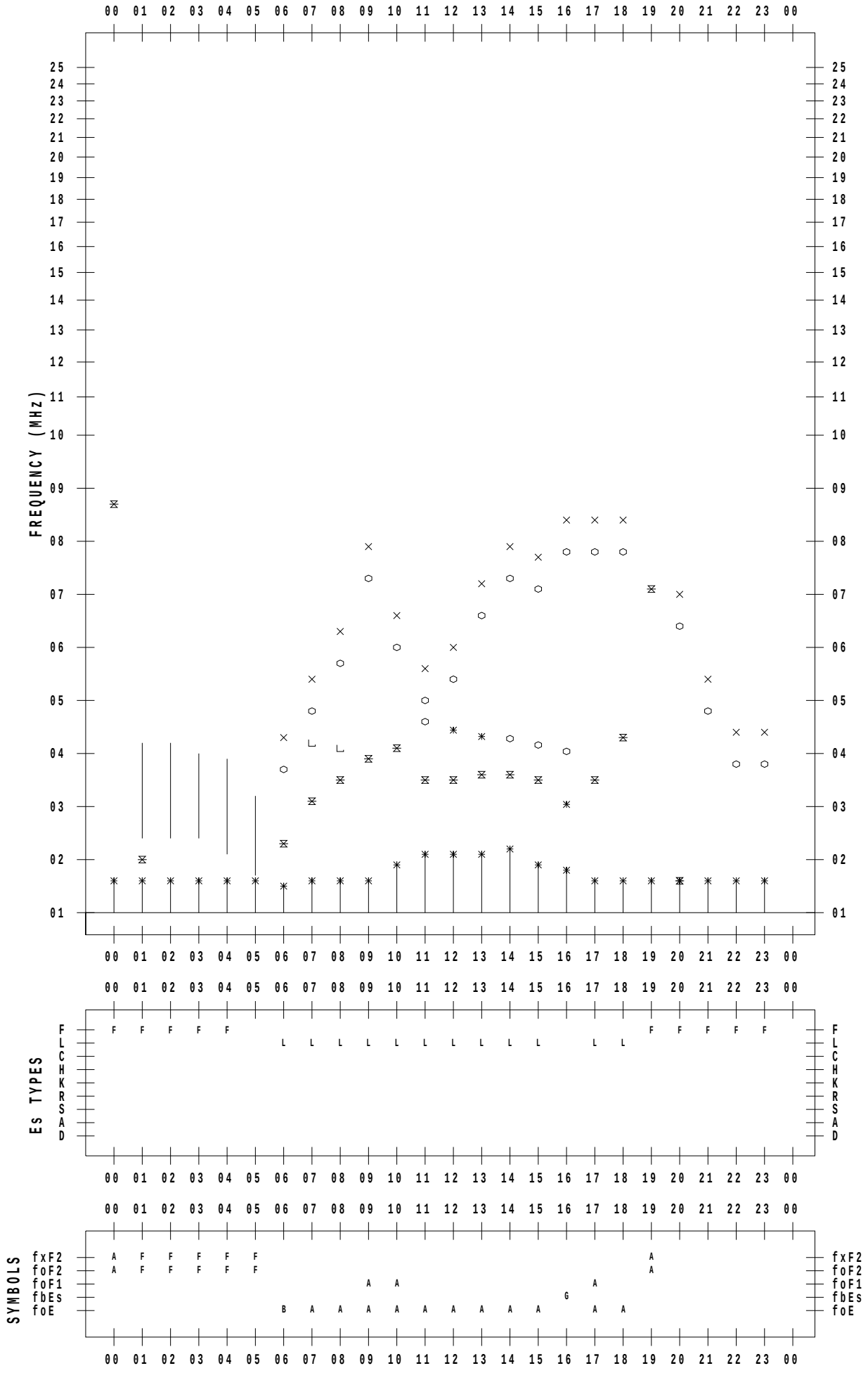
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/24

135 °E MEAN TIME



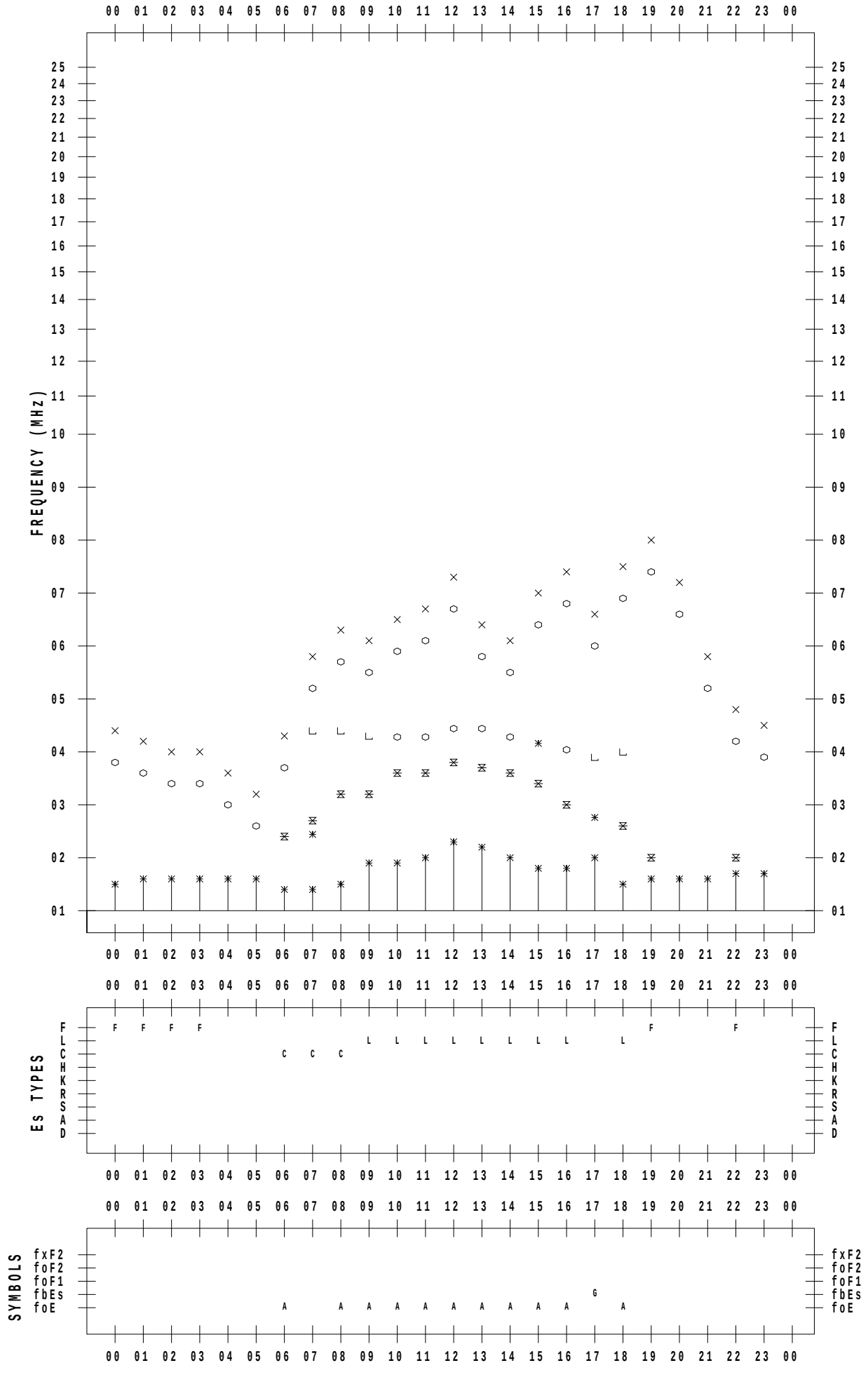
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/25

135 °E MEAN TIME



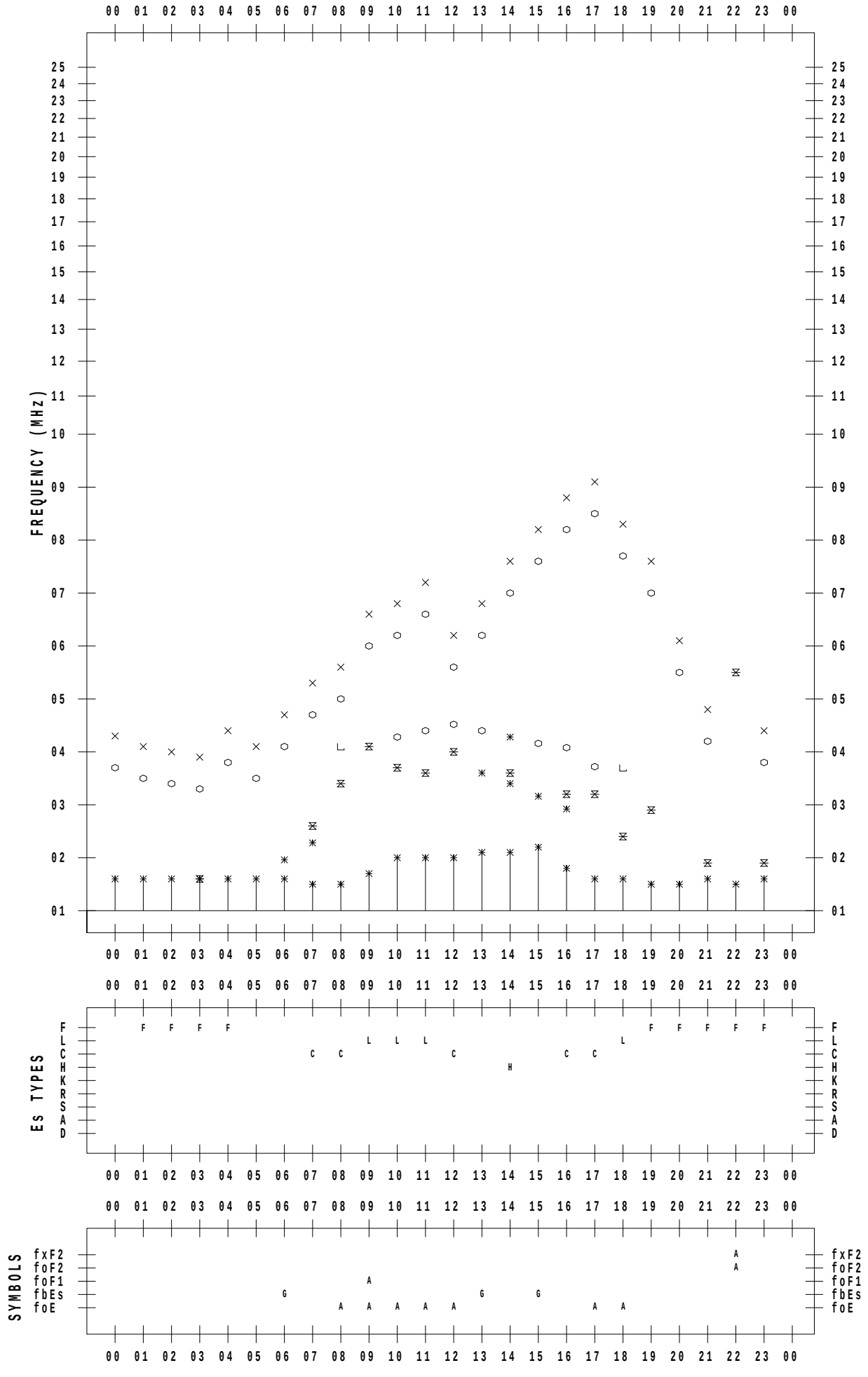
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/26

135 °E MEAN TIME



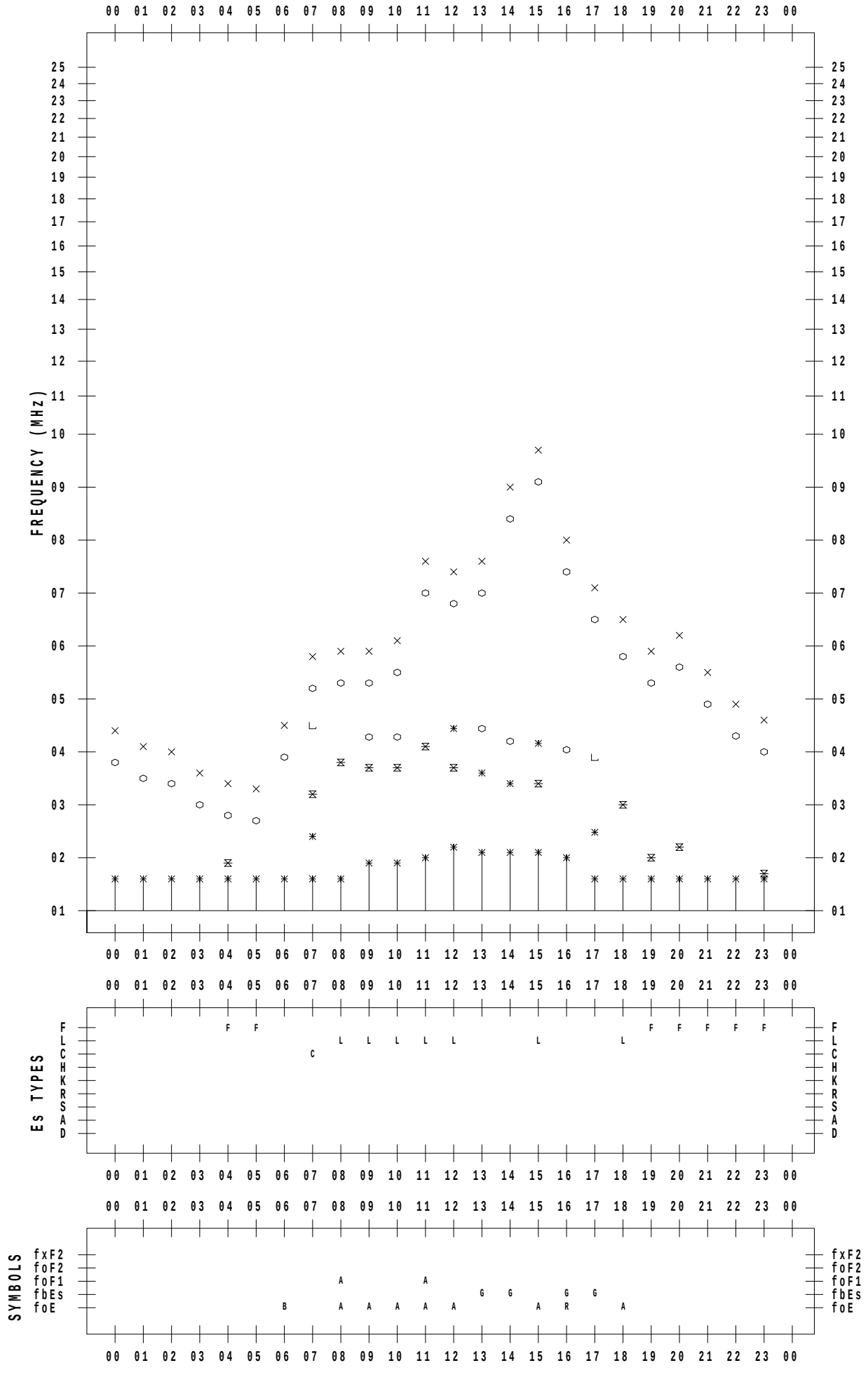
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/27

135 °E MEAN TIME



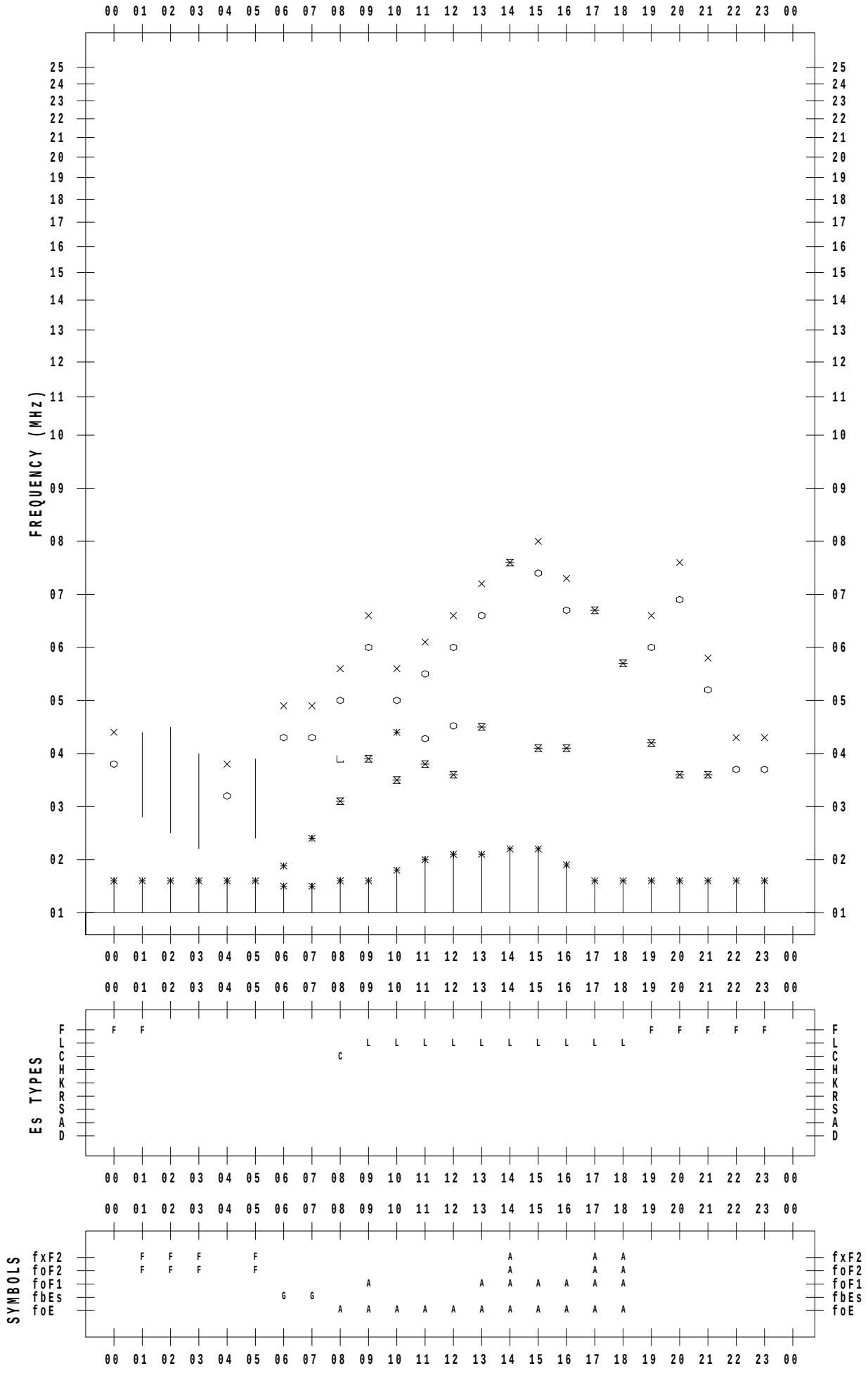
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/28

135 °E MEAN TIME



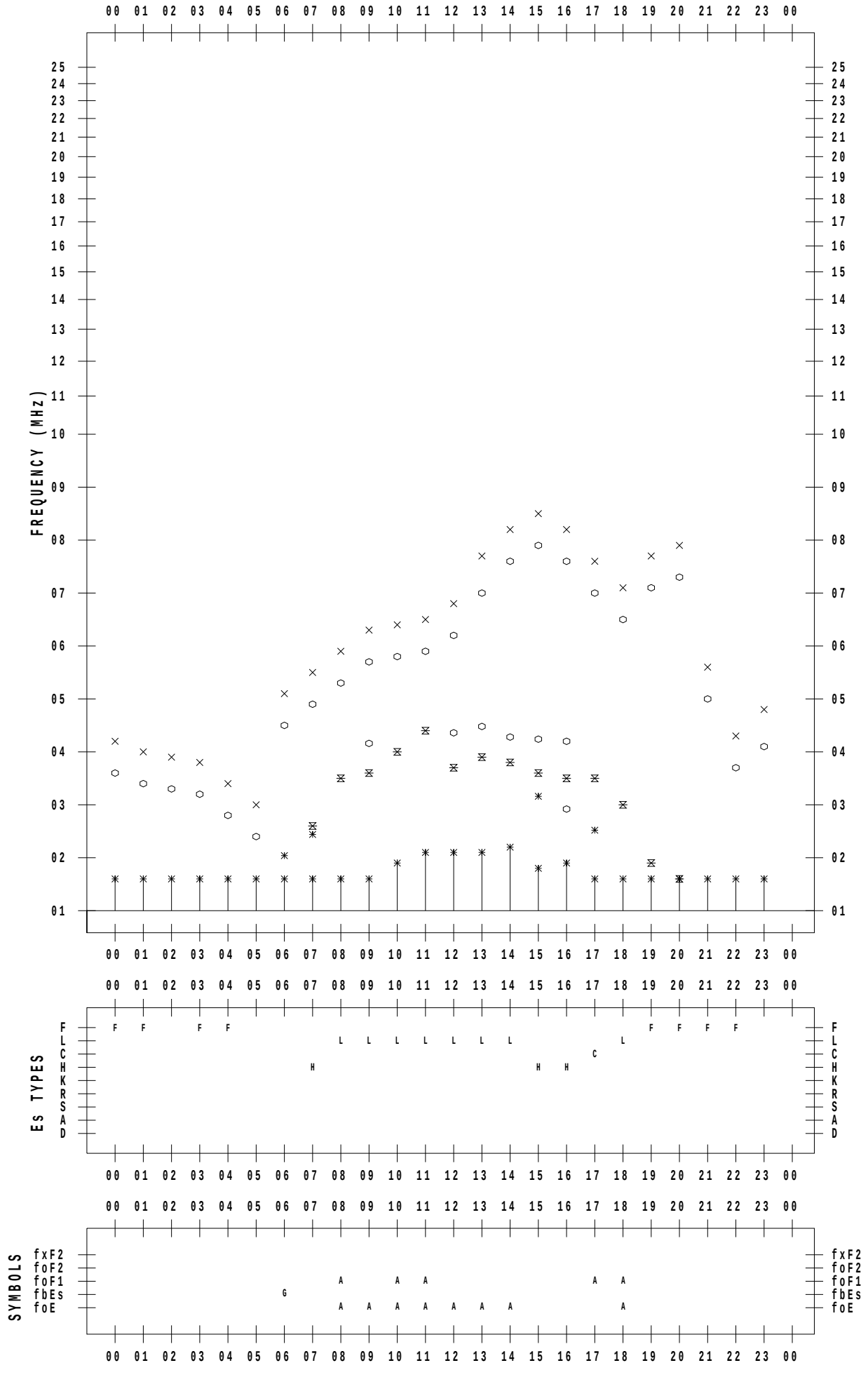
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/29

135 °E MEAN TIME



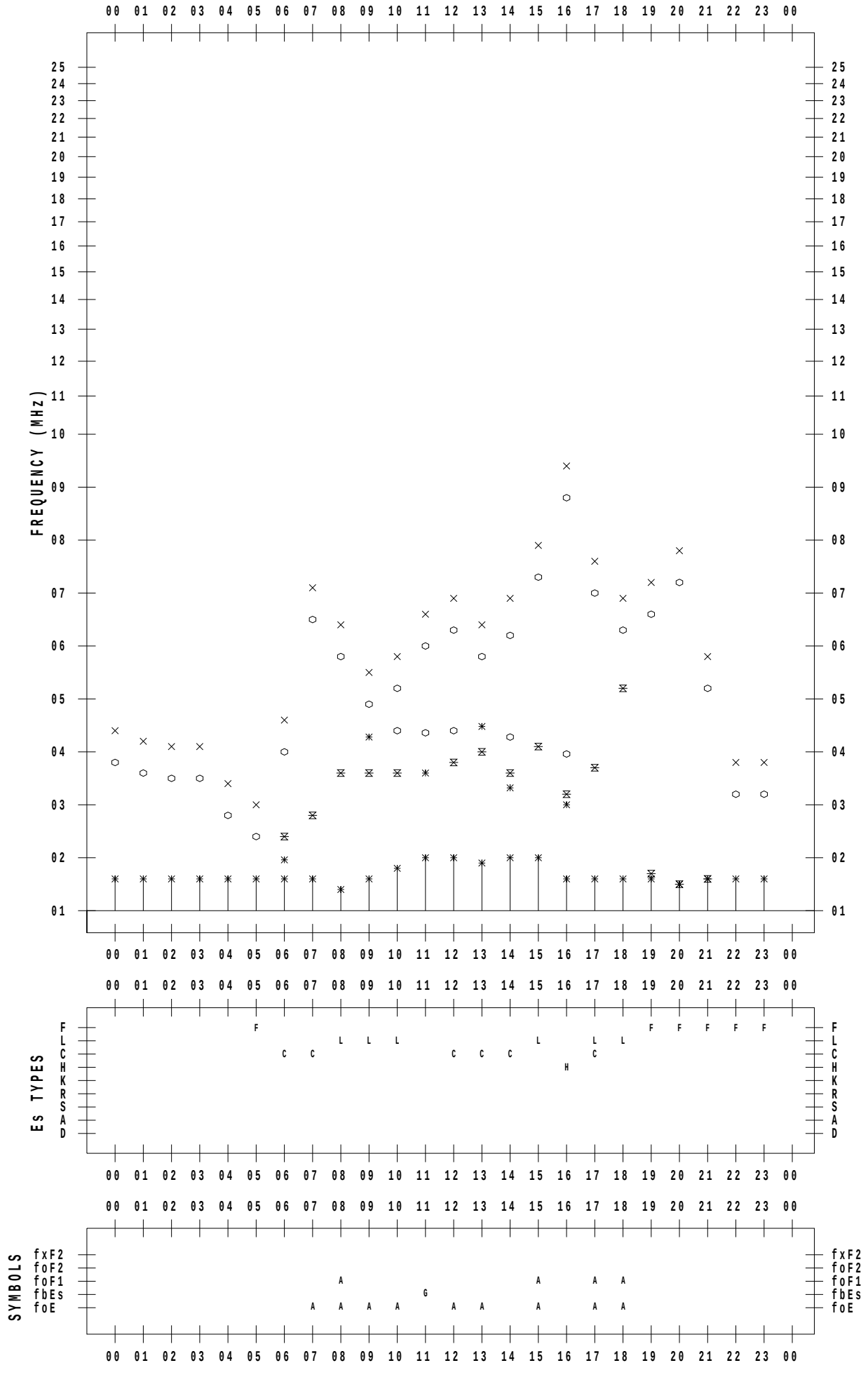
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 4/30

135 °E MEAN TIME



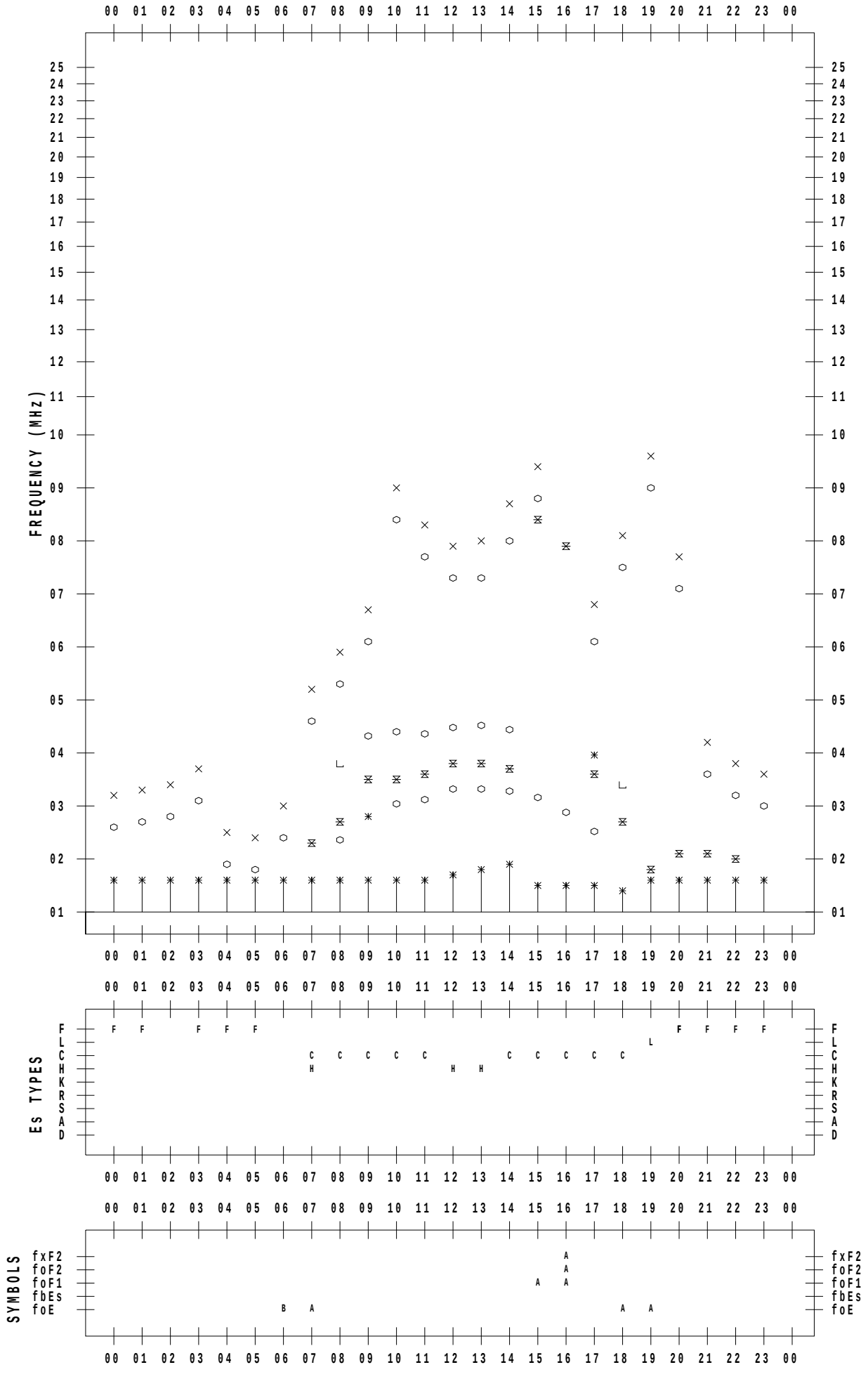
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 1

135 °E MEAN TIME



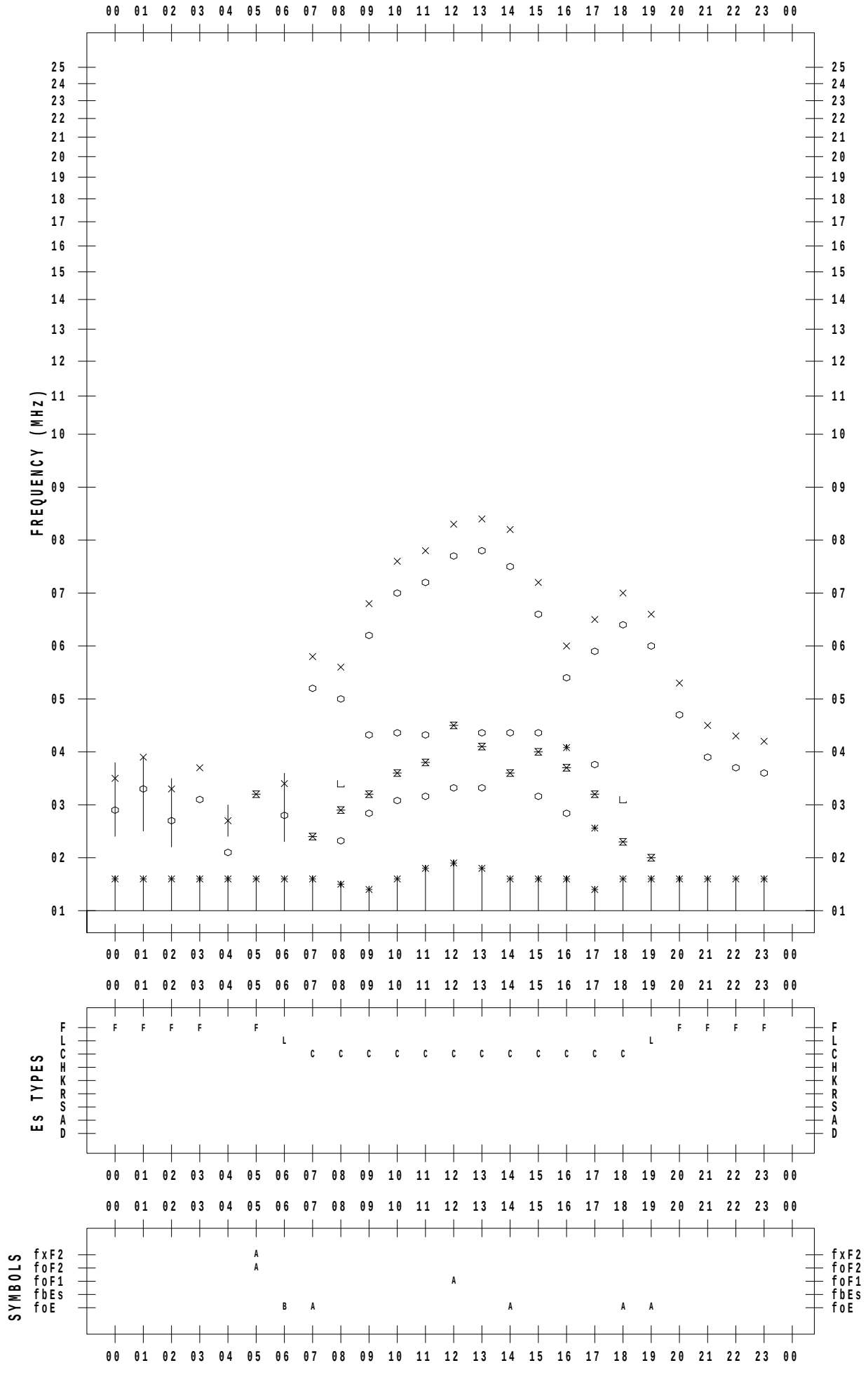
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 2

135 °E MEAN TIME



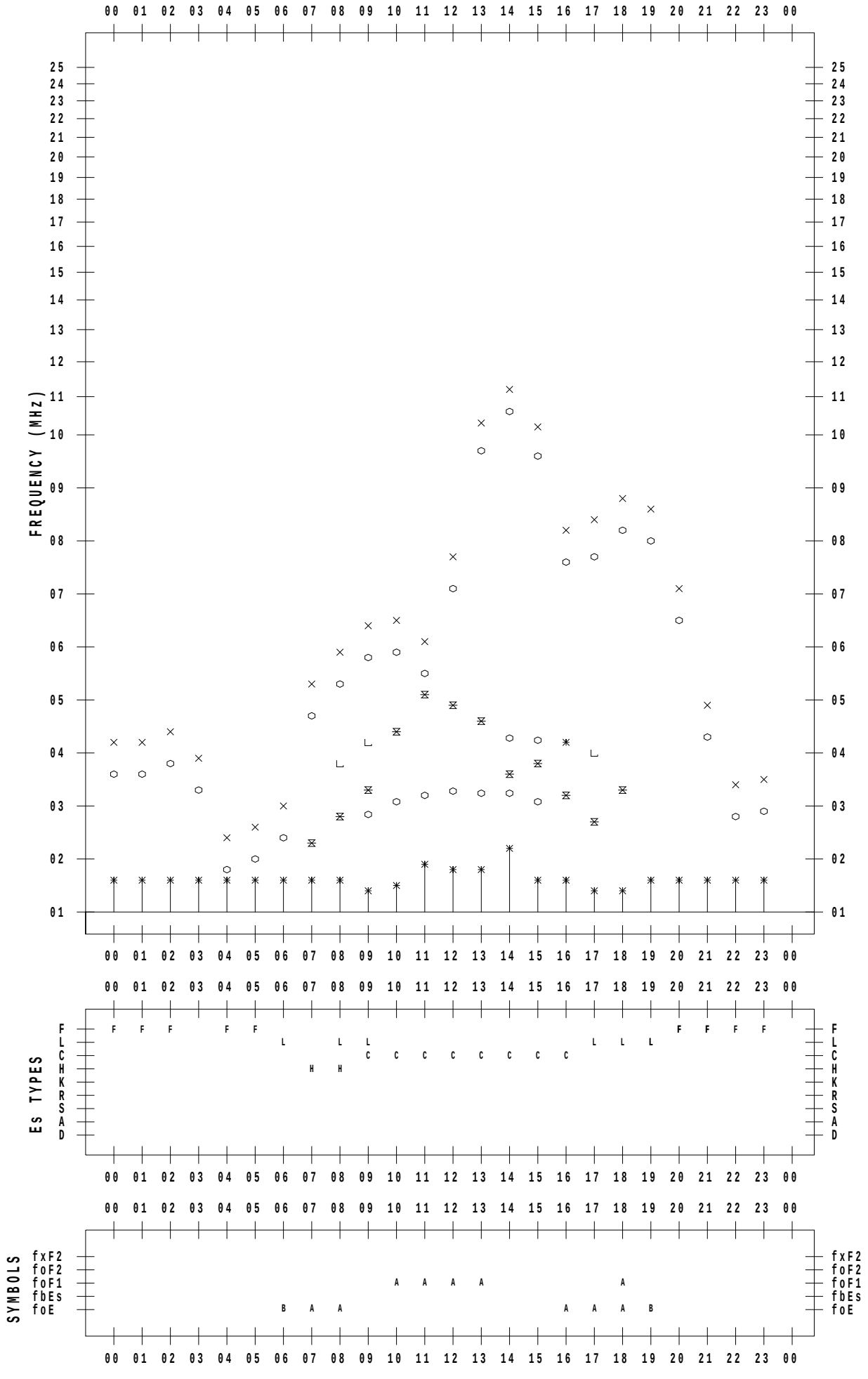
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 3

135 °E MEAN TIME



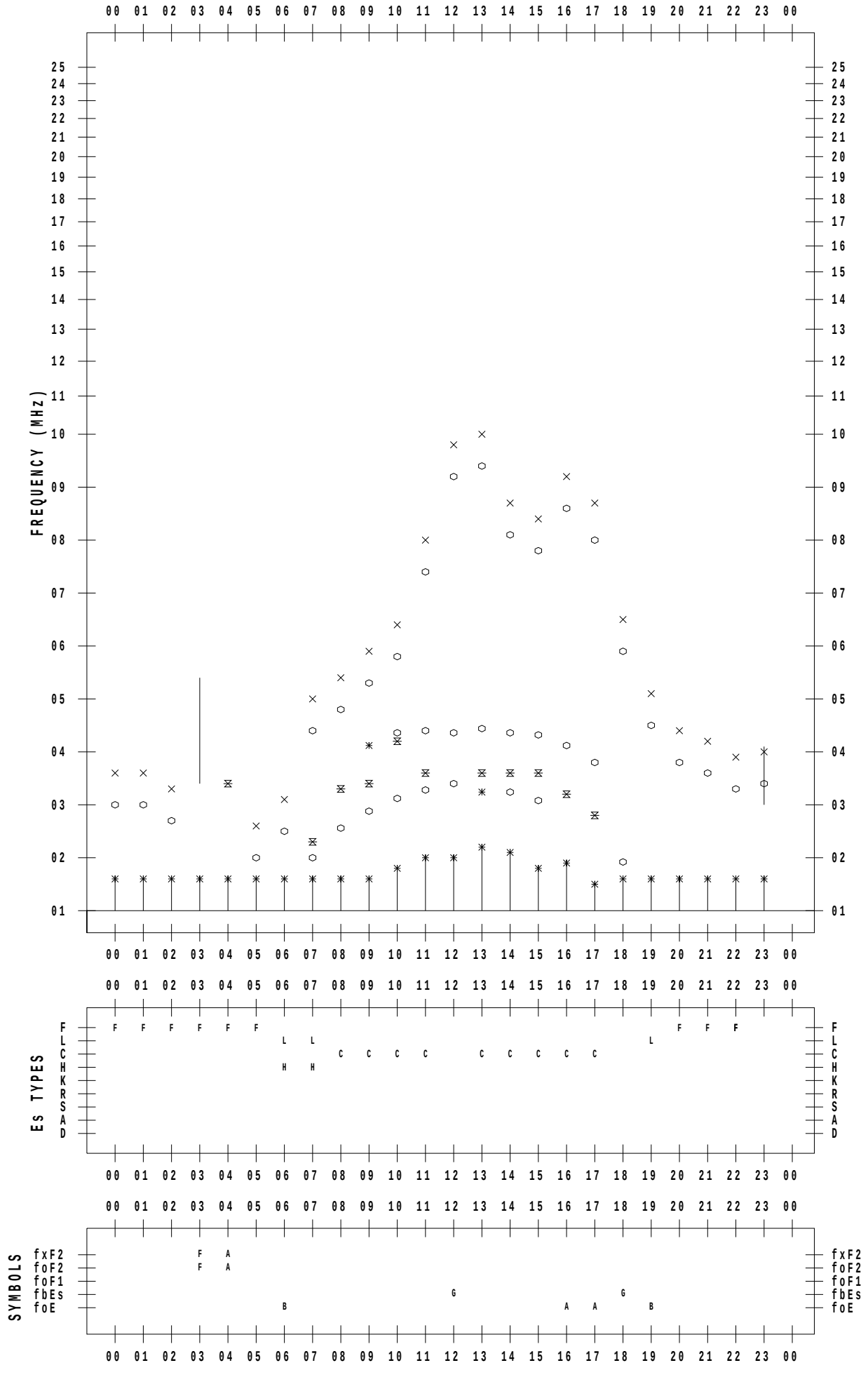
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 4

135 °E MEAN TIME



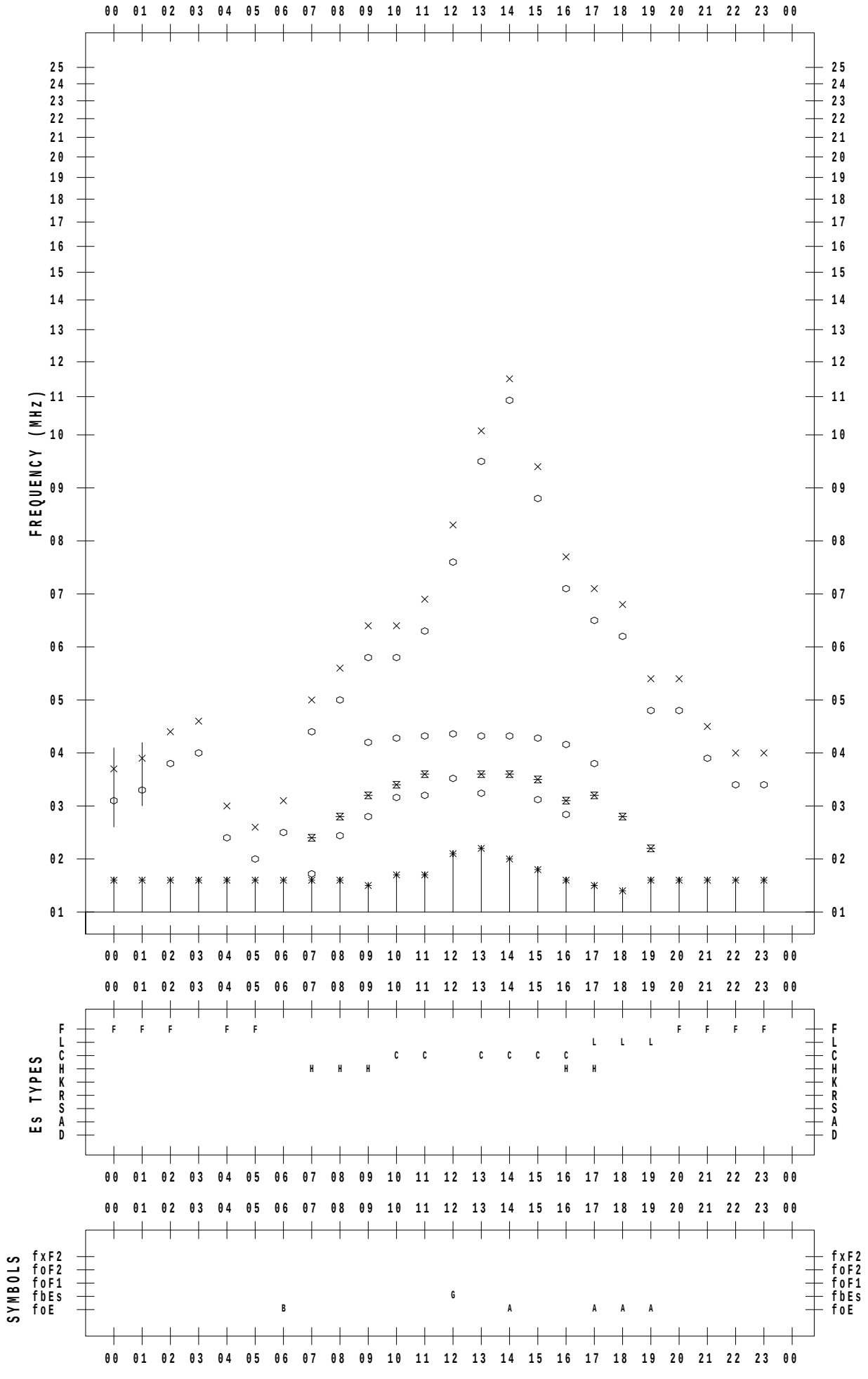
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 5

135 °E MEAN TIME



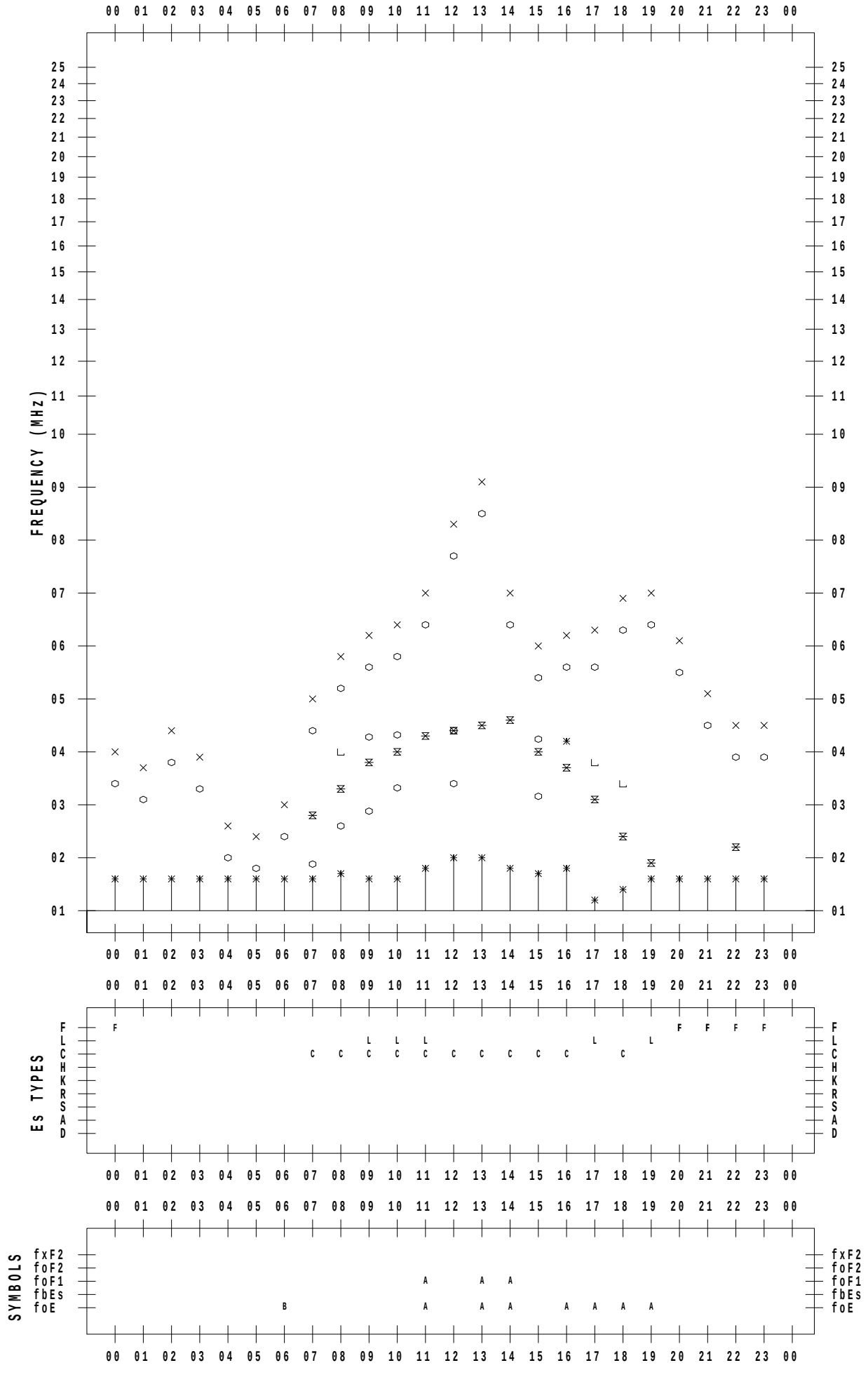
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 6

135 °E MEAN TIME



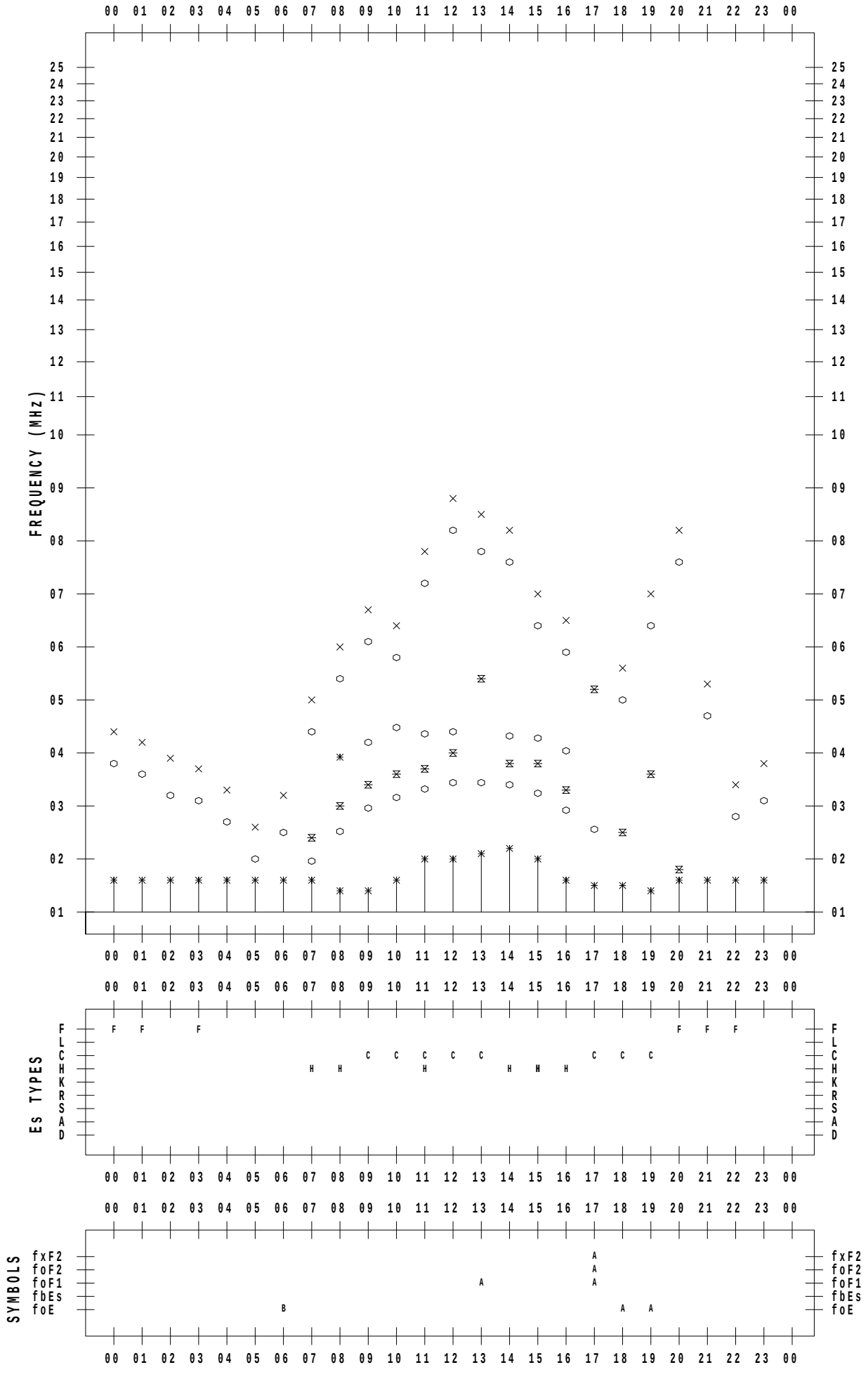
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 7

135 °E MEAN TIME



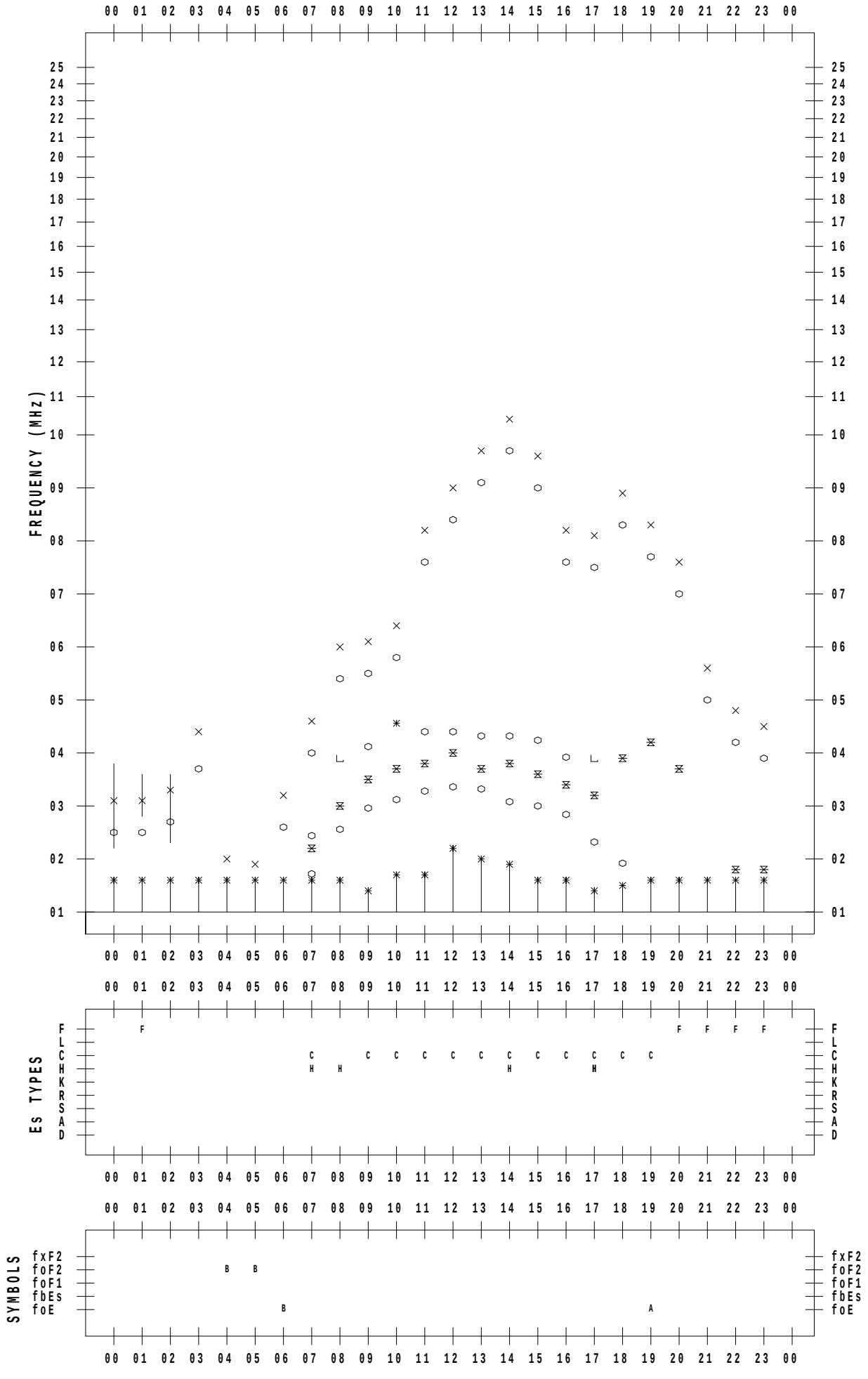
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 8

135 °E MEAN TIME



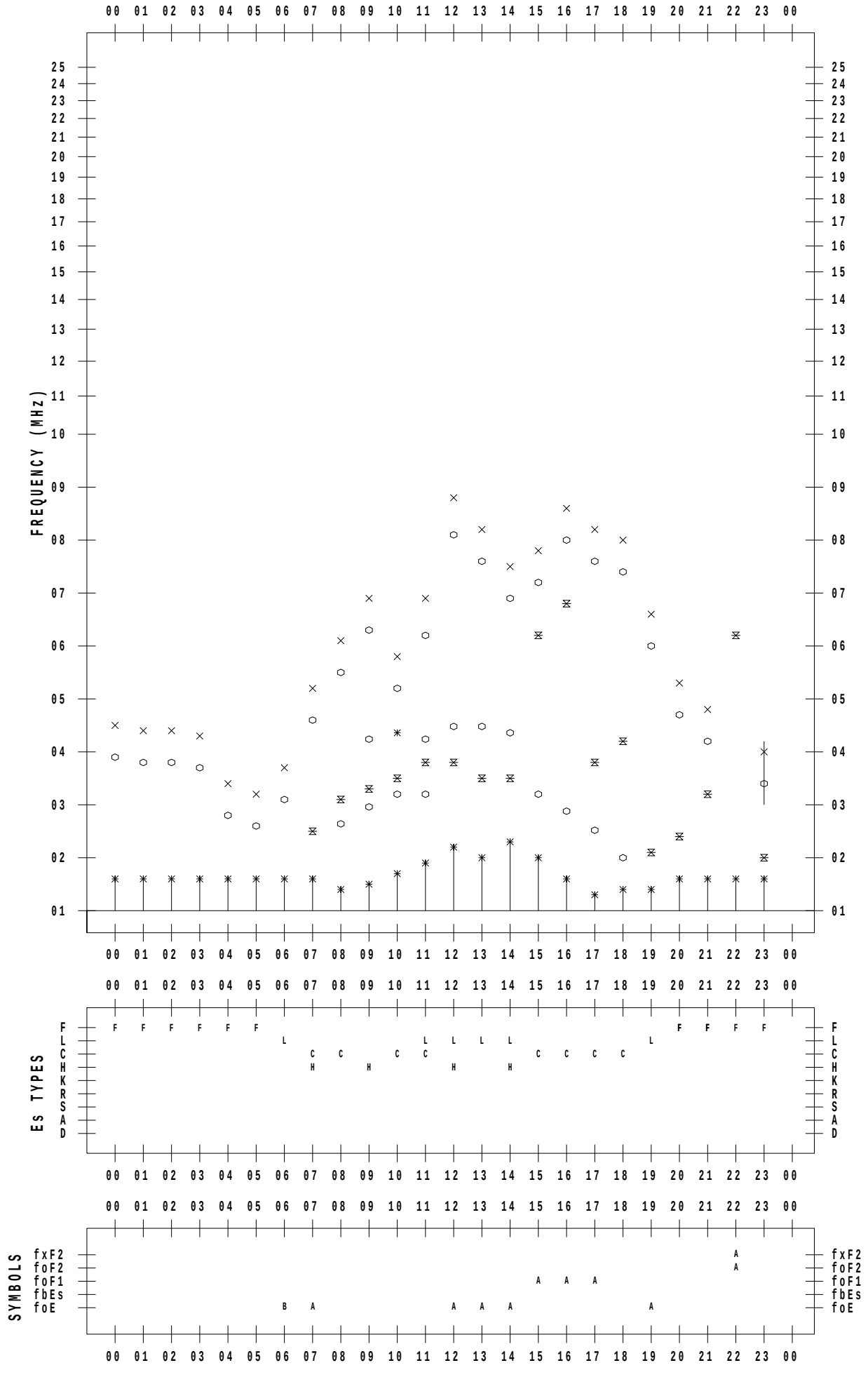
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/ 9

135 °E MEAN TIME



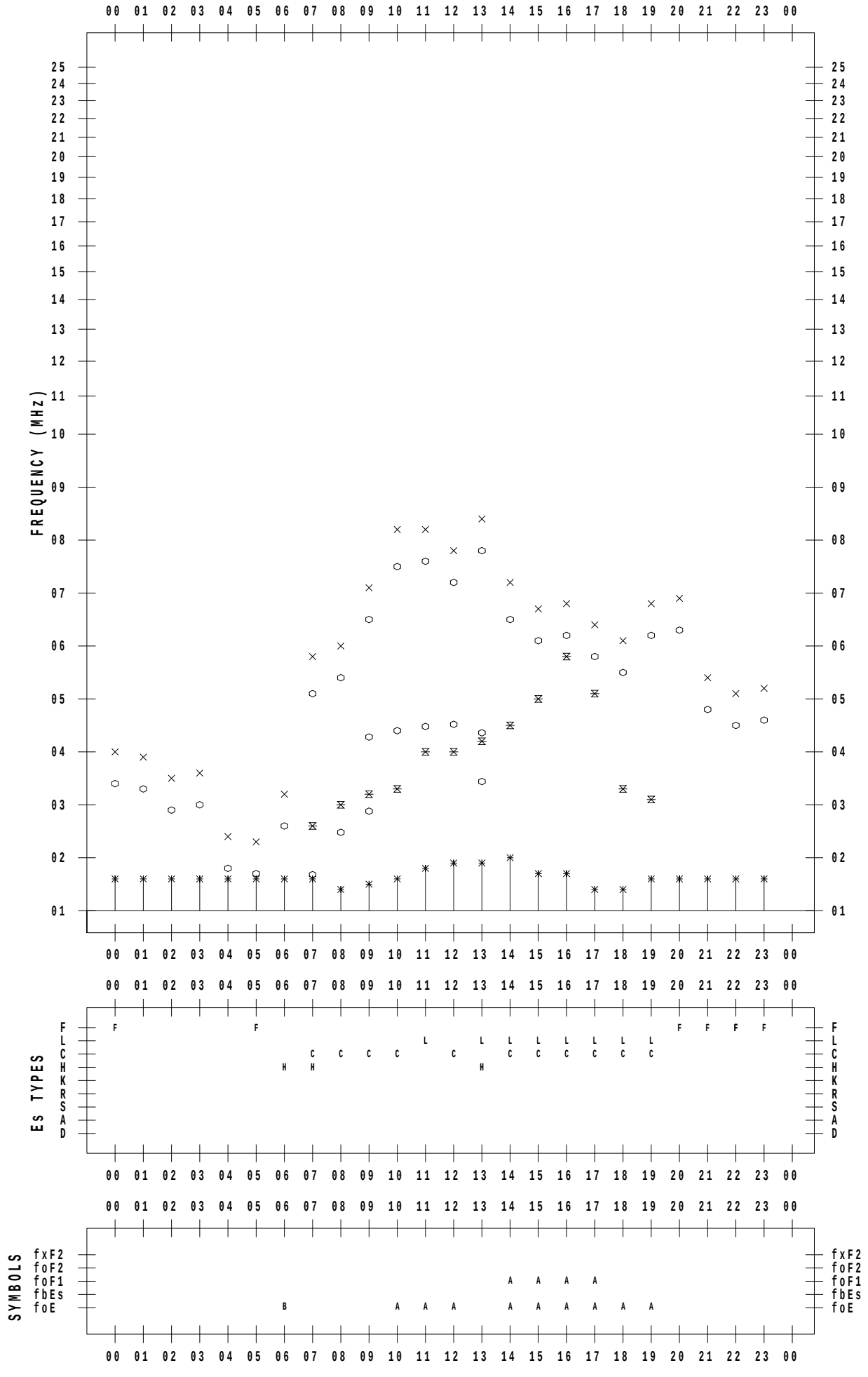
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/10

135 °E MEAN TIME



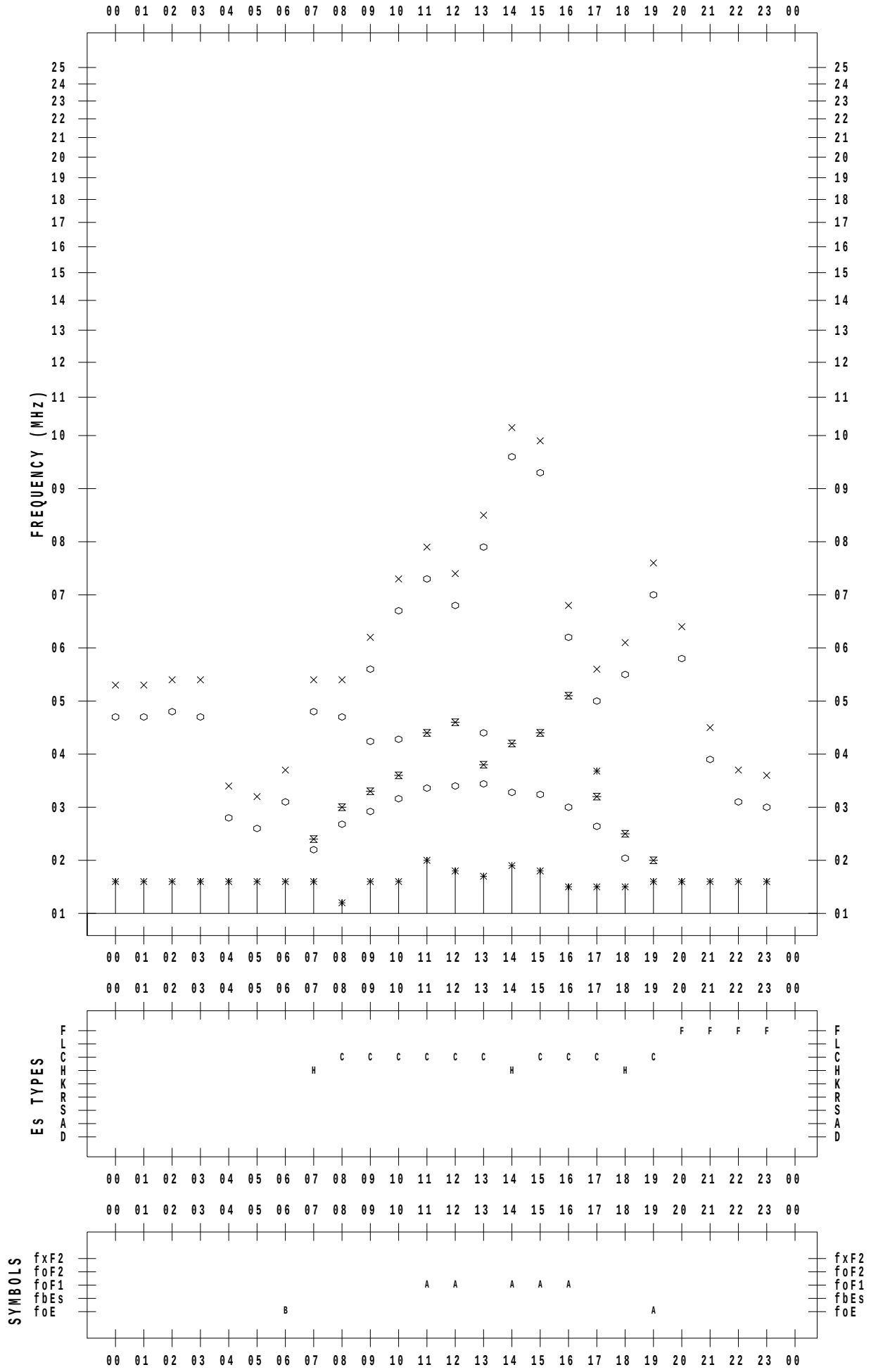
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/11

135 °E MEAN TIME



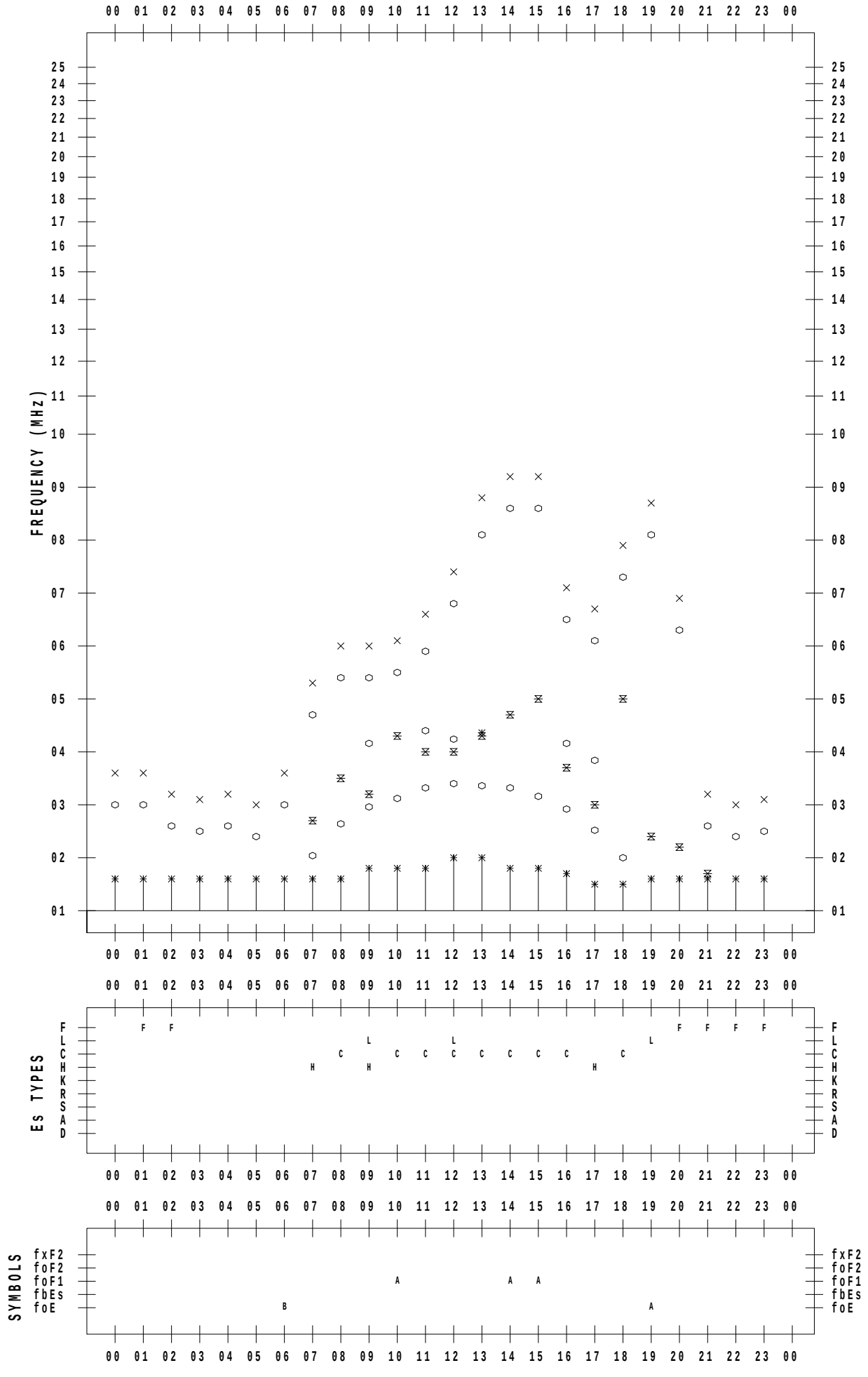
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/12

135 °E MEAN TIME



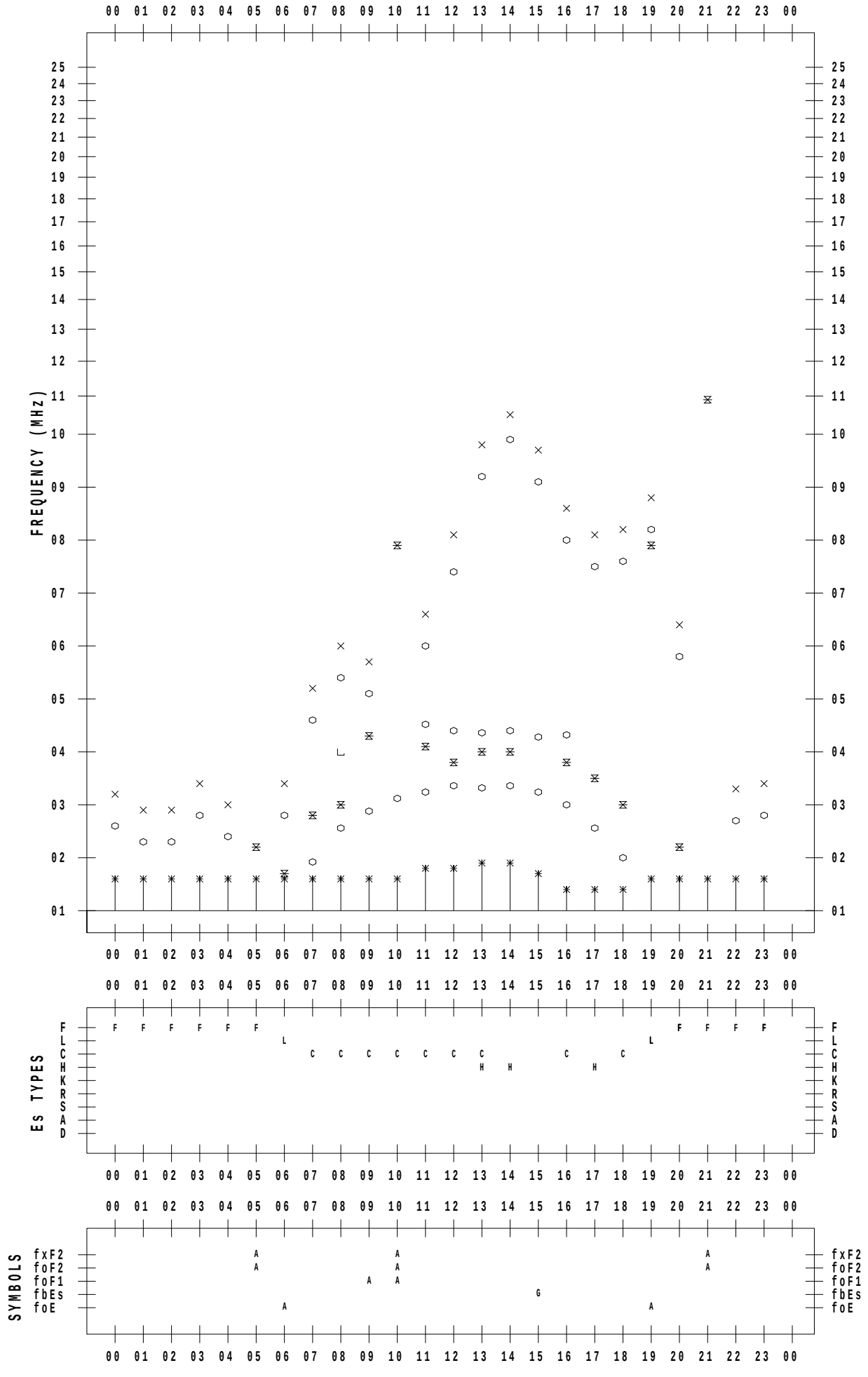
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/13

135 °E MEAN TIME



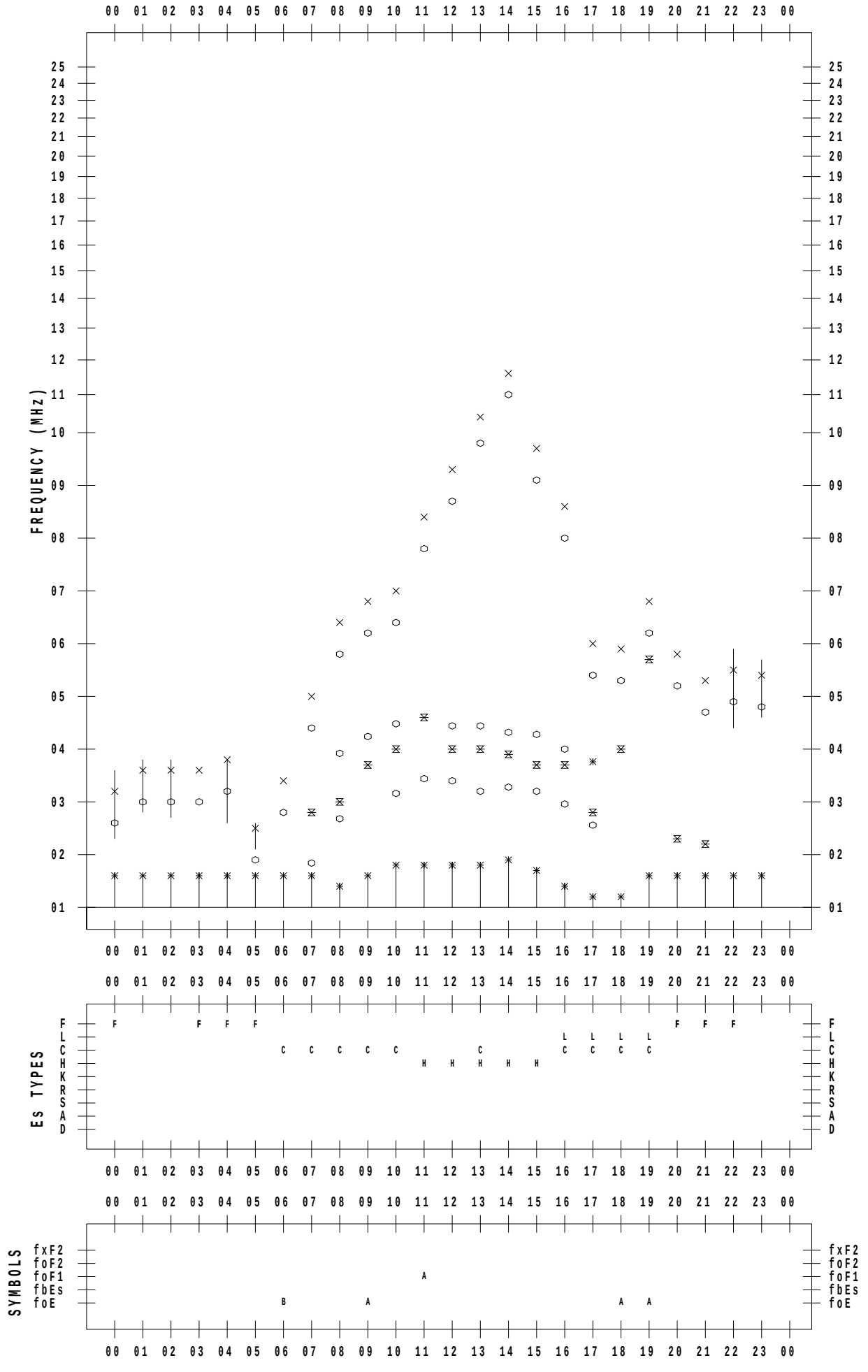
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/14

135 °E MEAN TIME



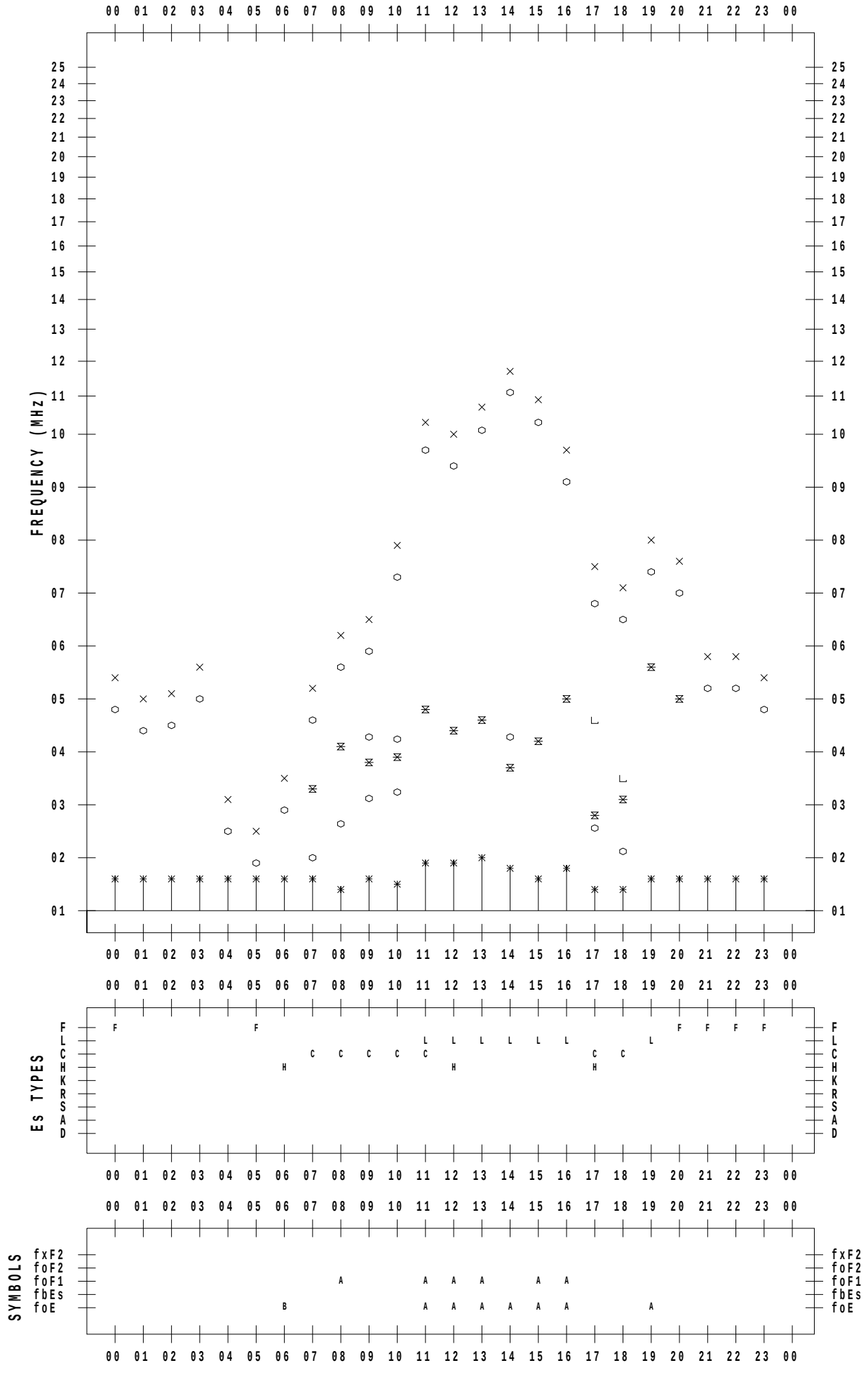
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/15

135 °E MEAN TIME



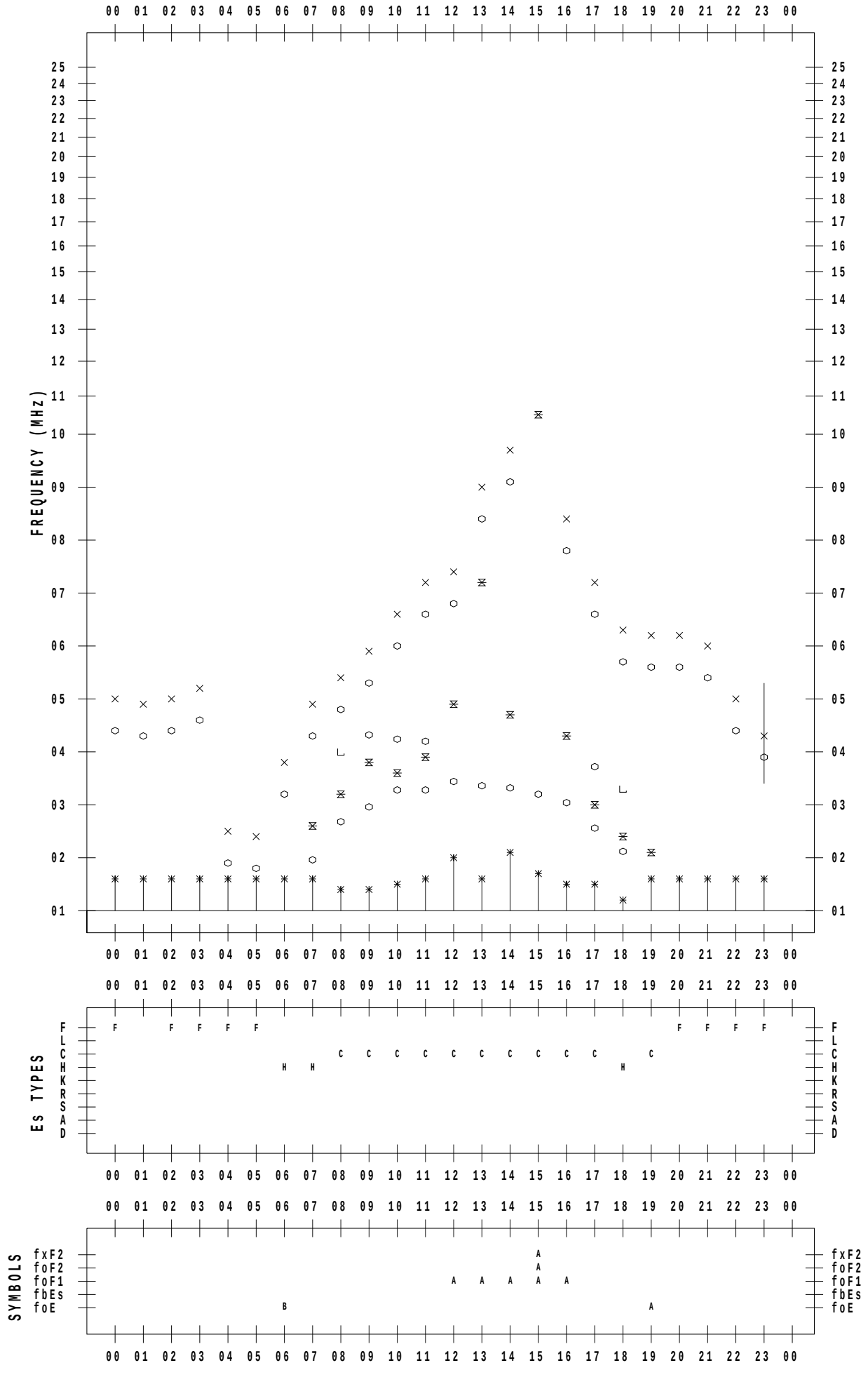
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/16

135 °E MEAN TIME



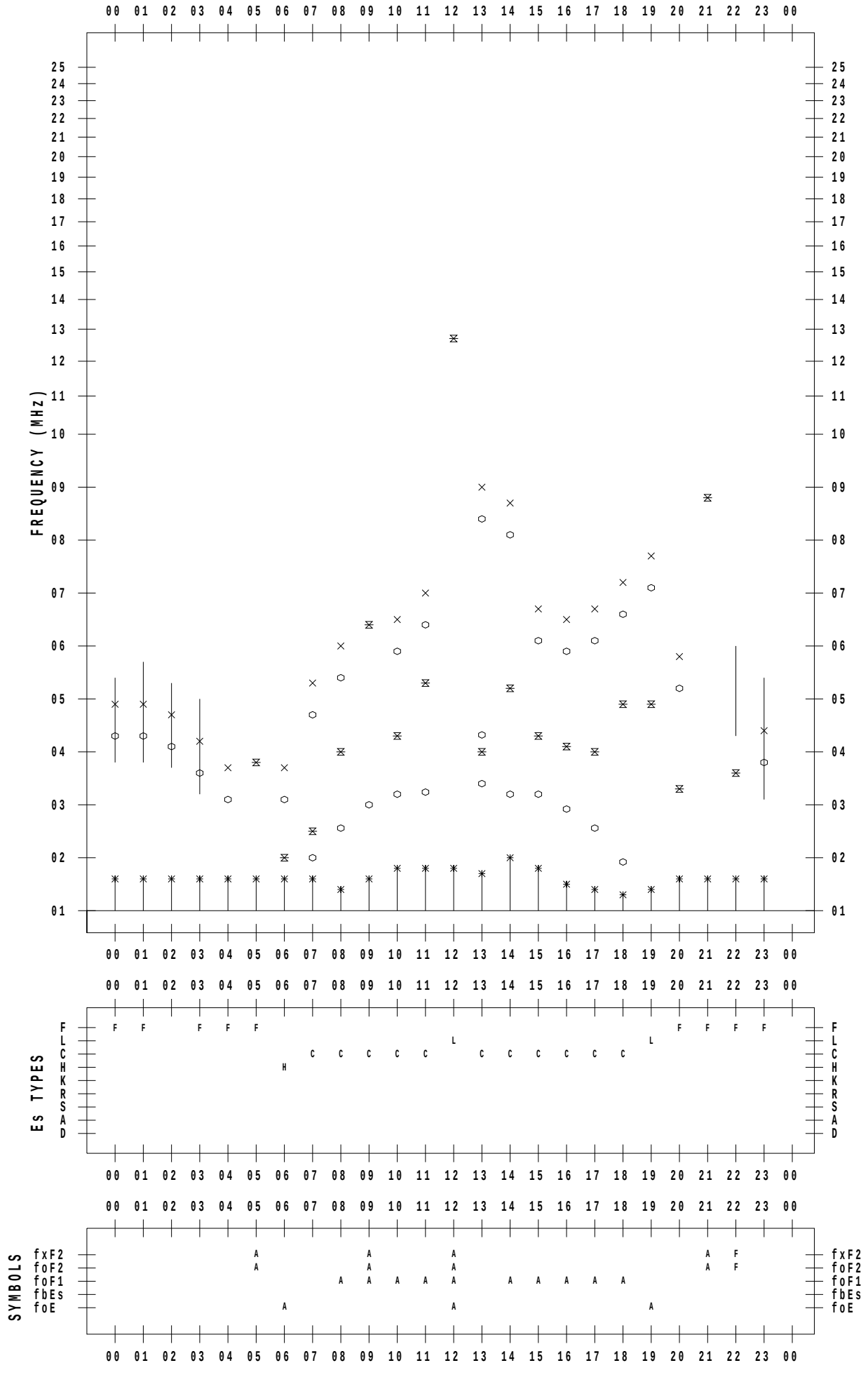
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/17

135 °E MEAN TIME



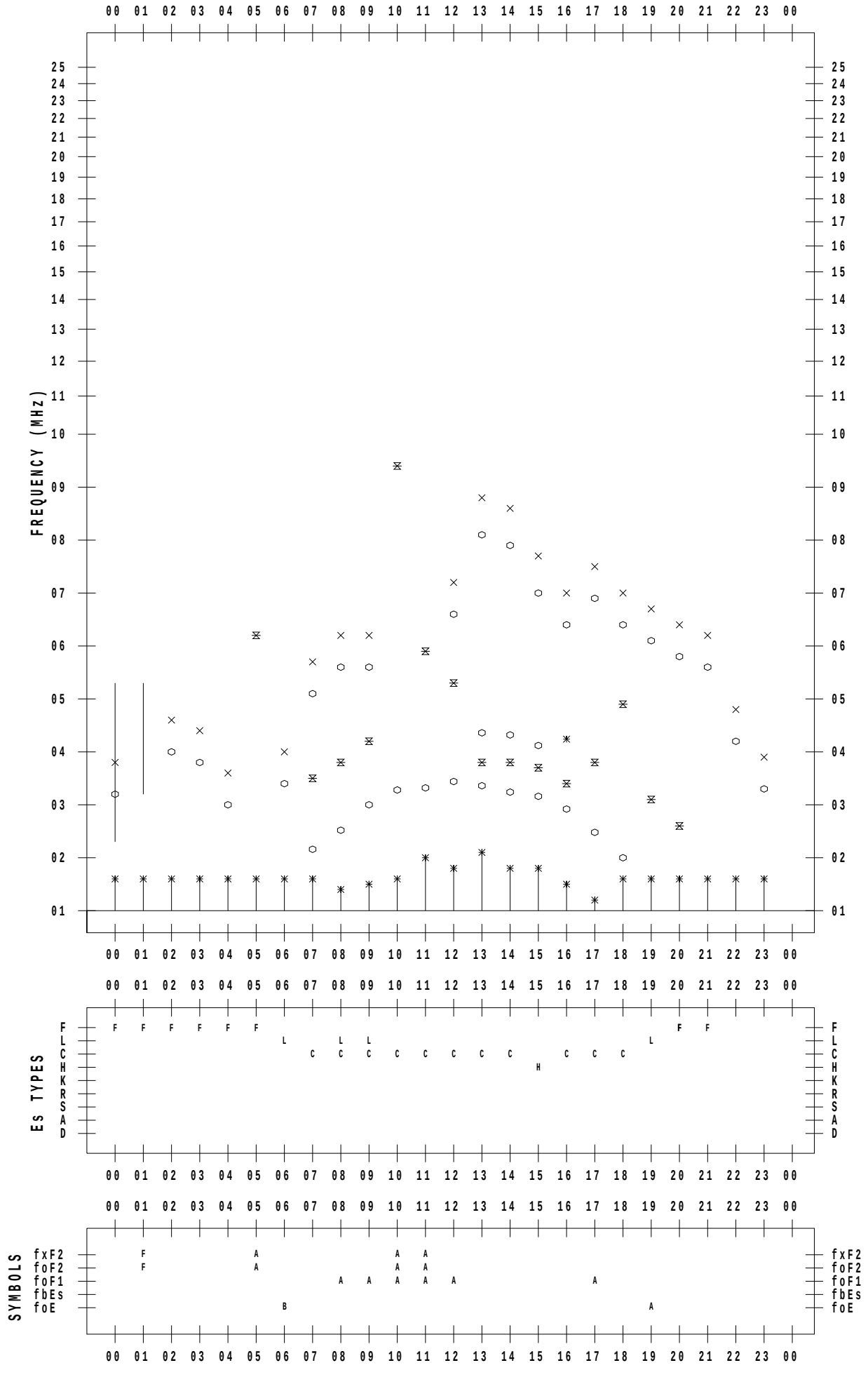
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/18

135 °E MEAN TIME



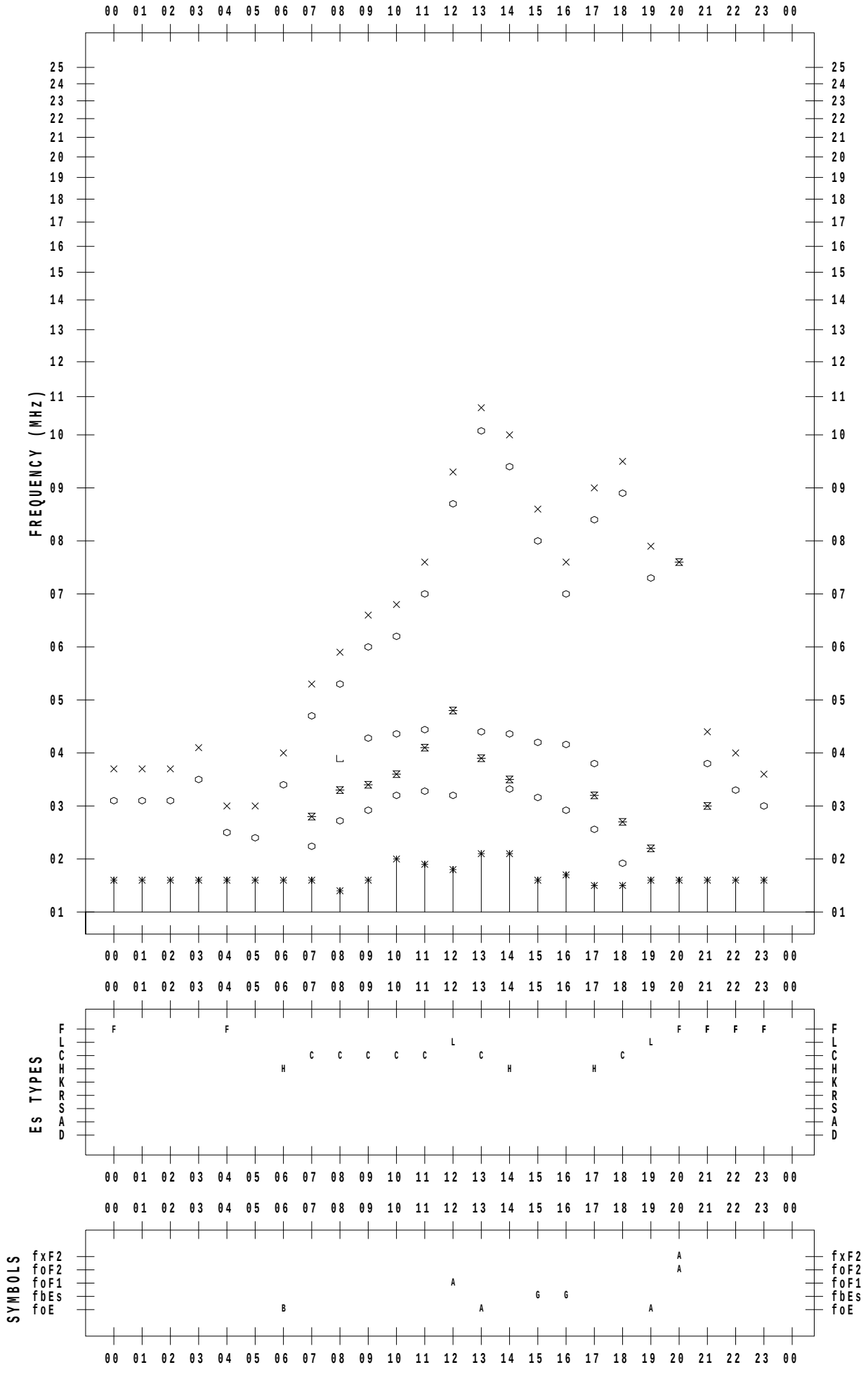
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/19

135 °E MEAN TIME



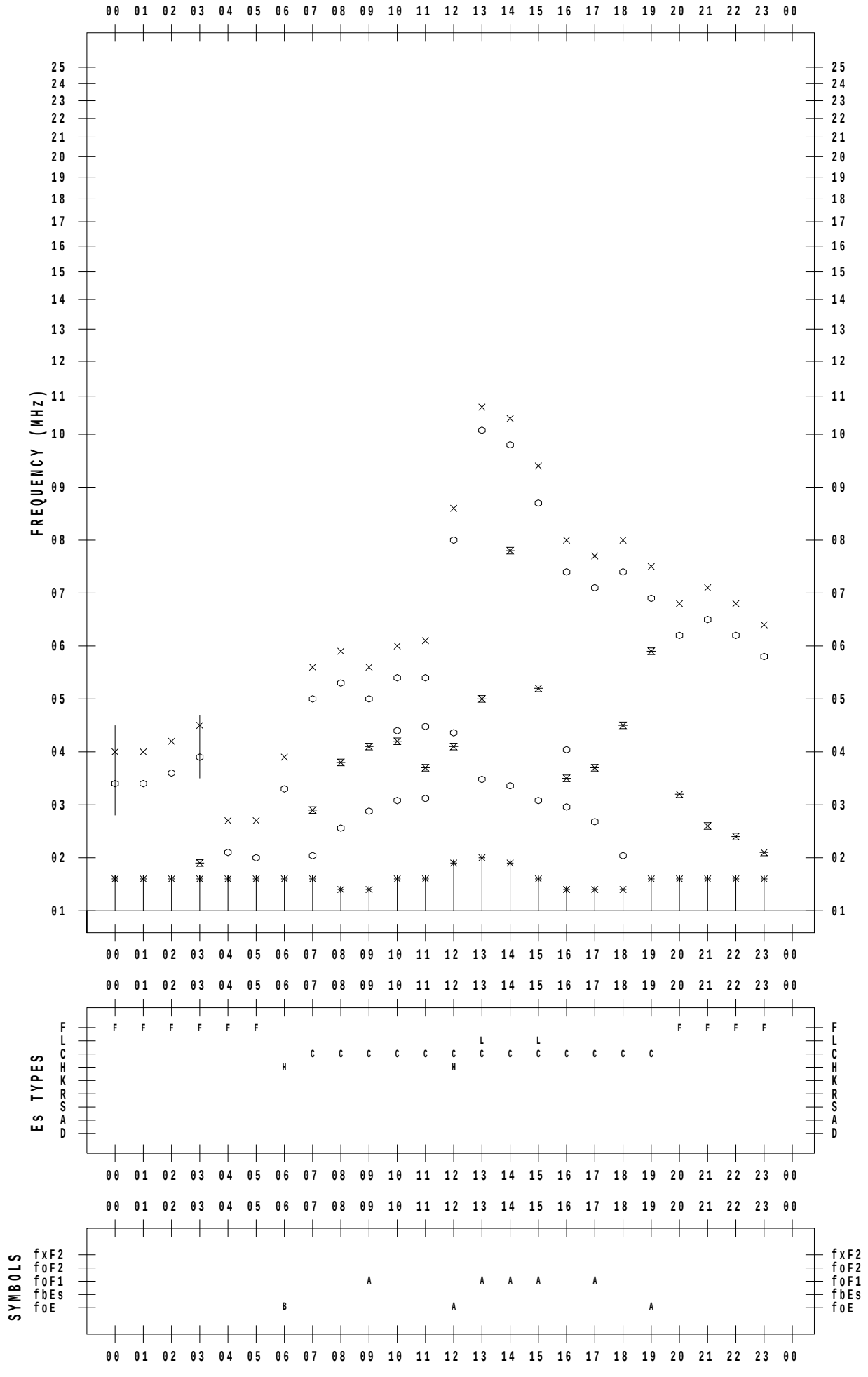
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/20

135 °E MEAN TIME



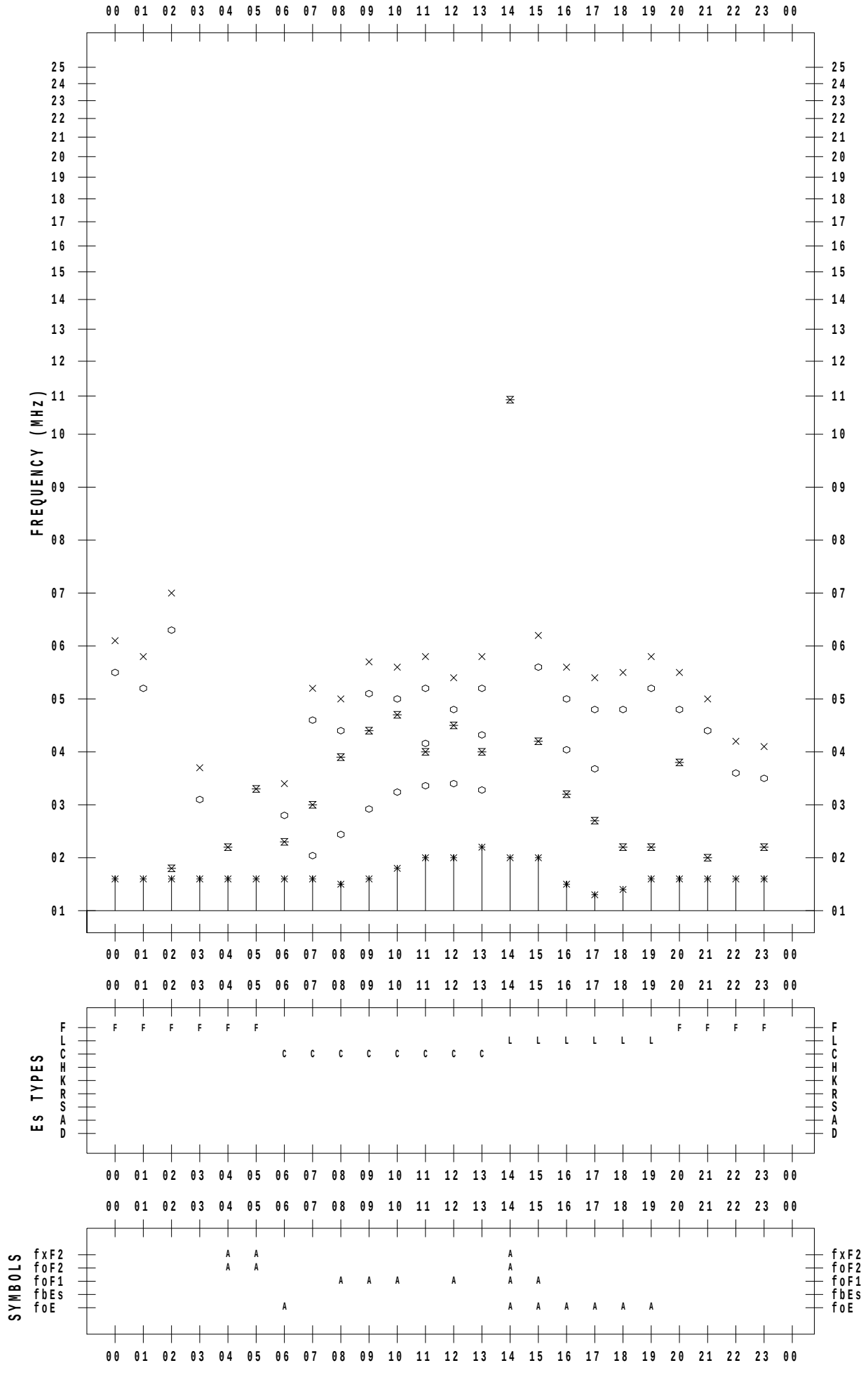
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/21

135 °E MEAN TIME



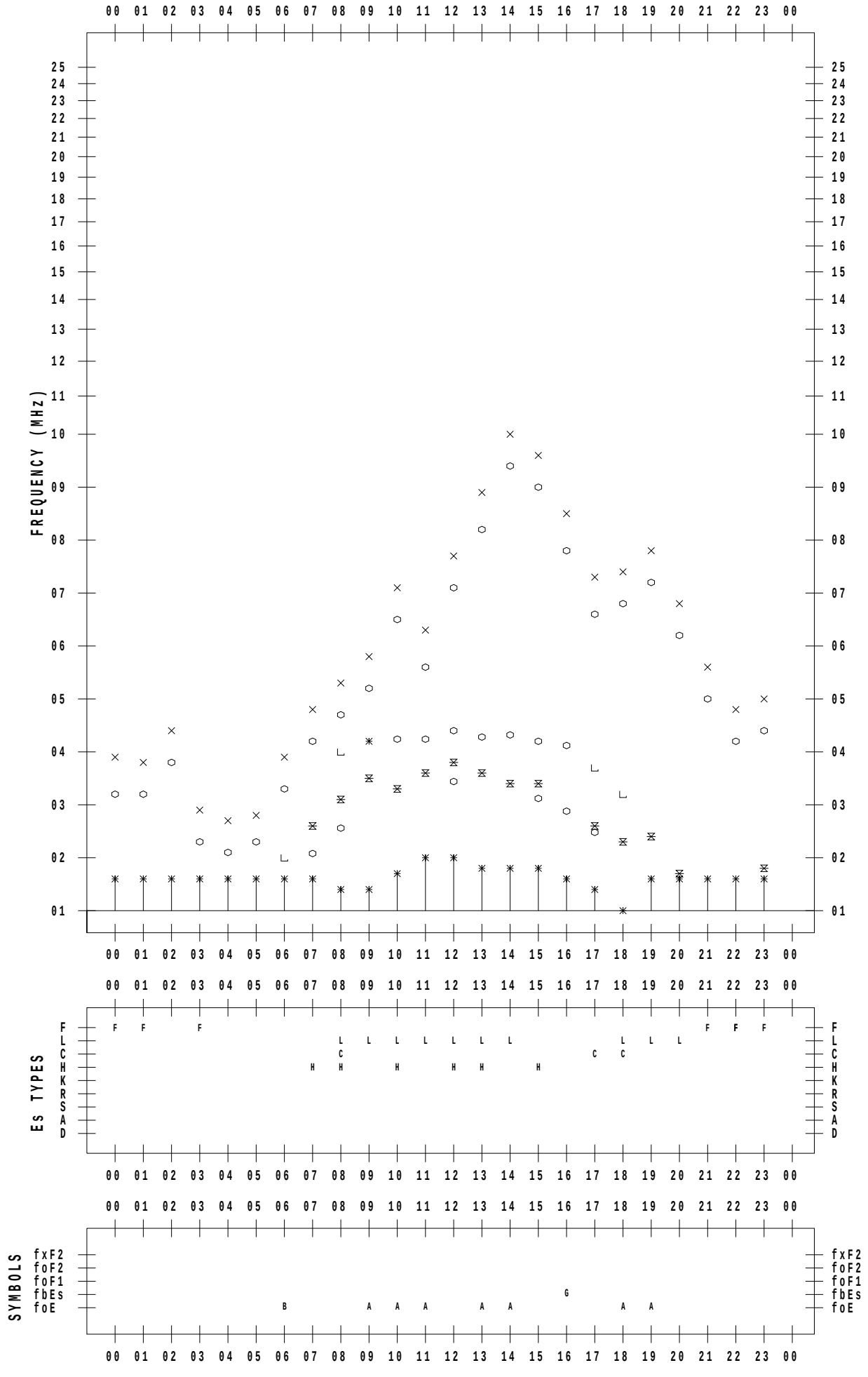
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/22

135 °E MEAN TIME



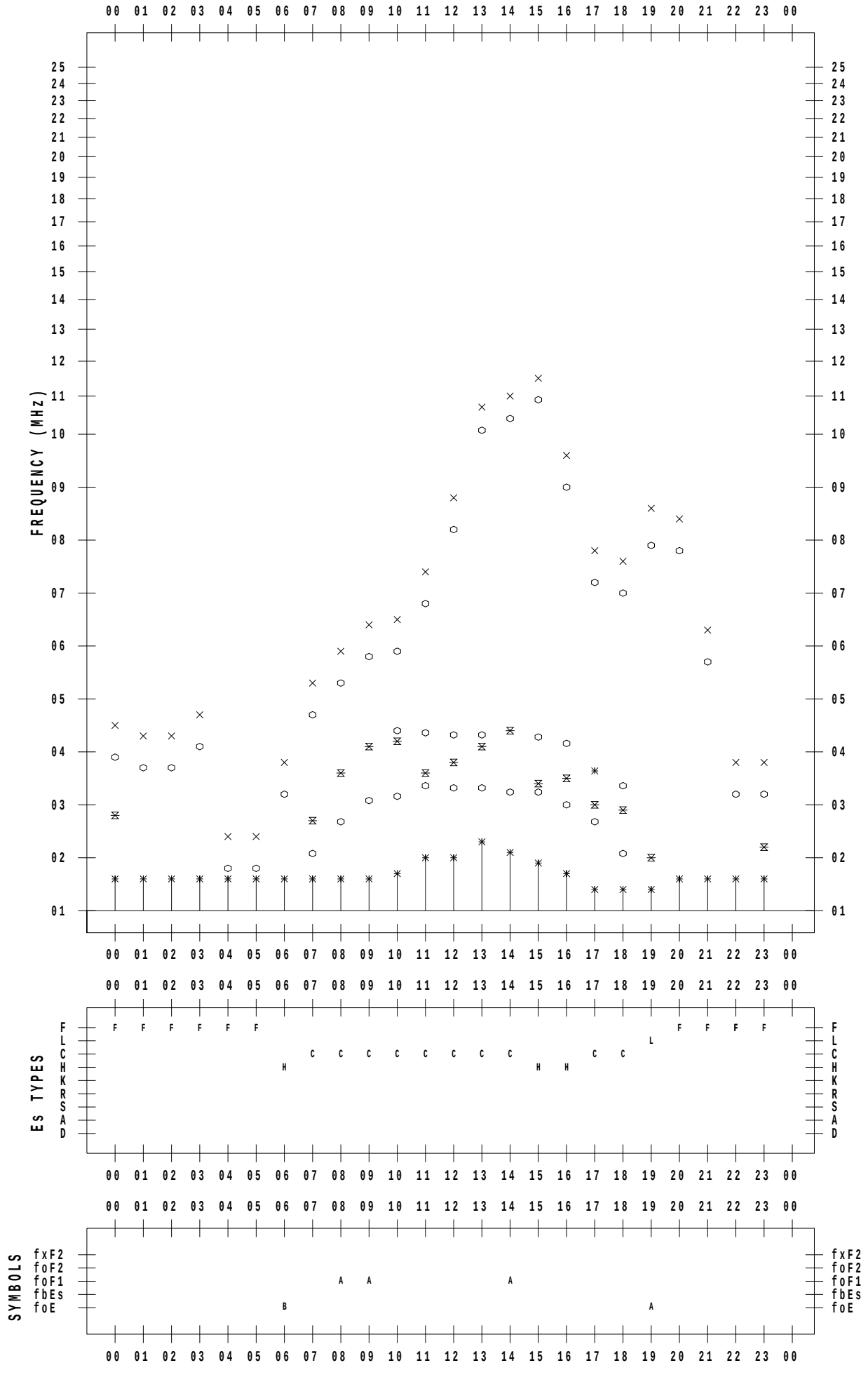
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/23

135 °E MEAN TIME



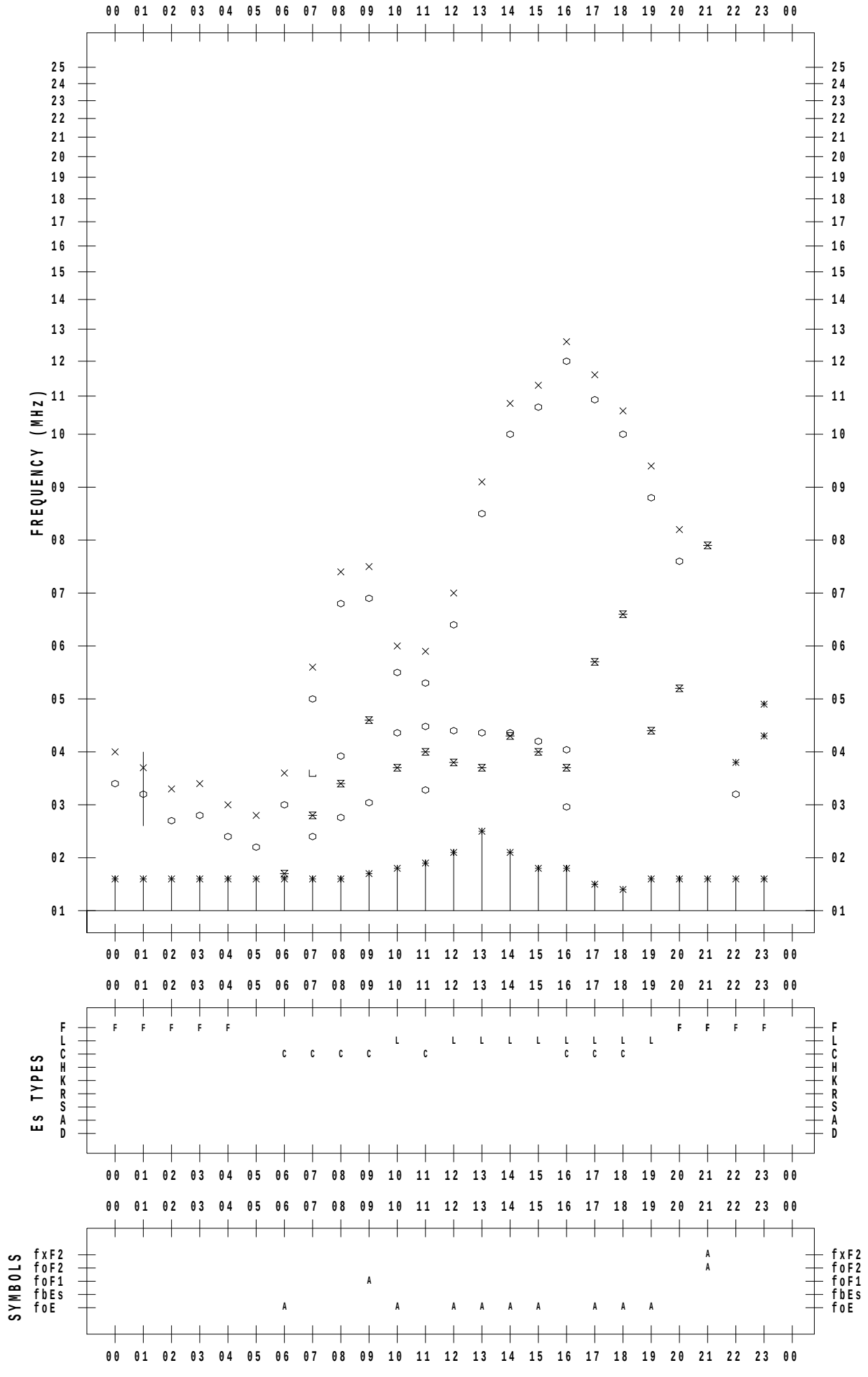
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/24

135 °E MEAN TIME



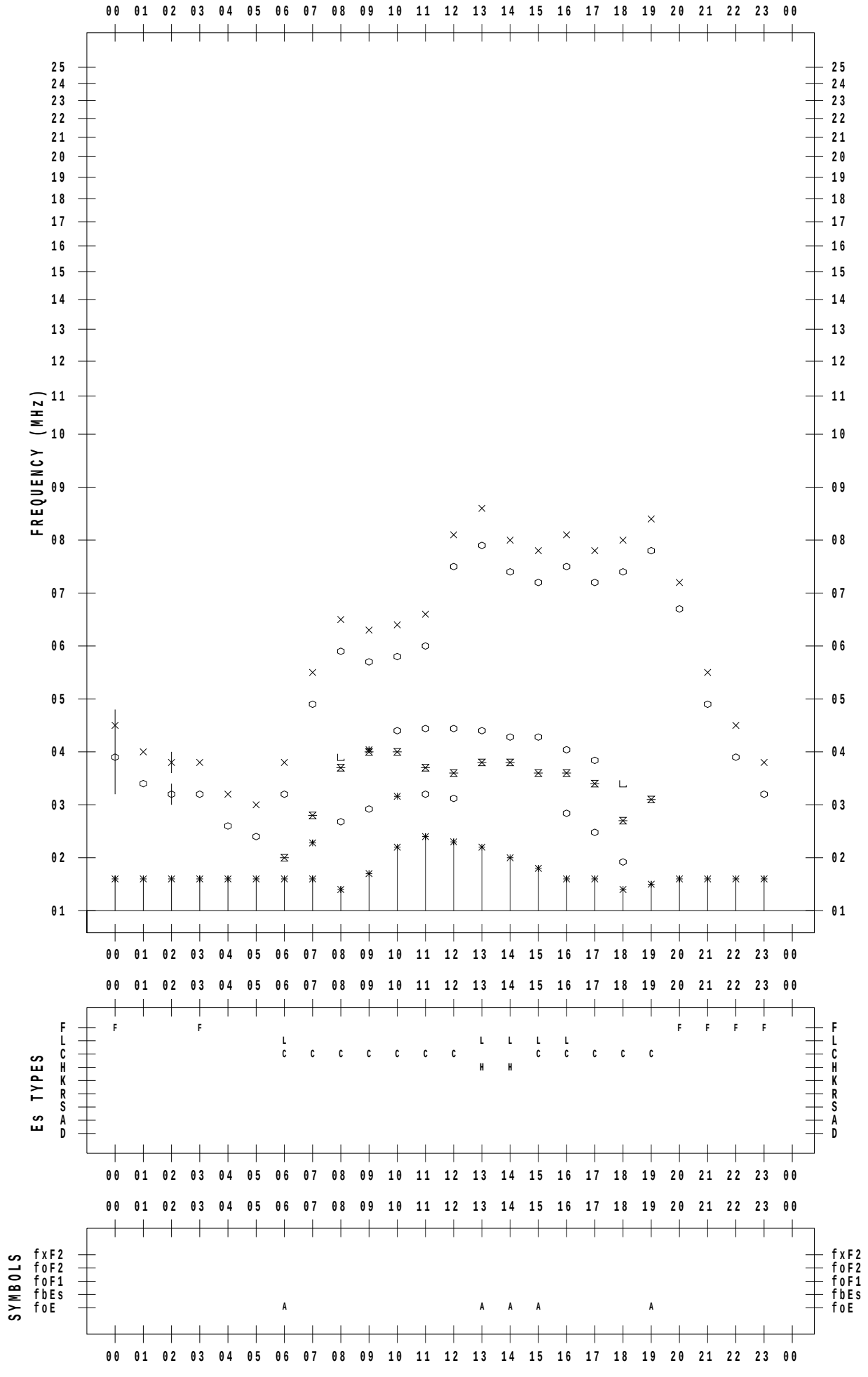
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/25

135 °E MEAN TIME



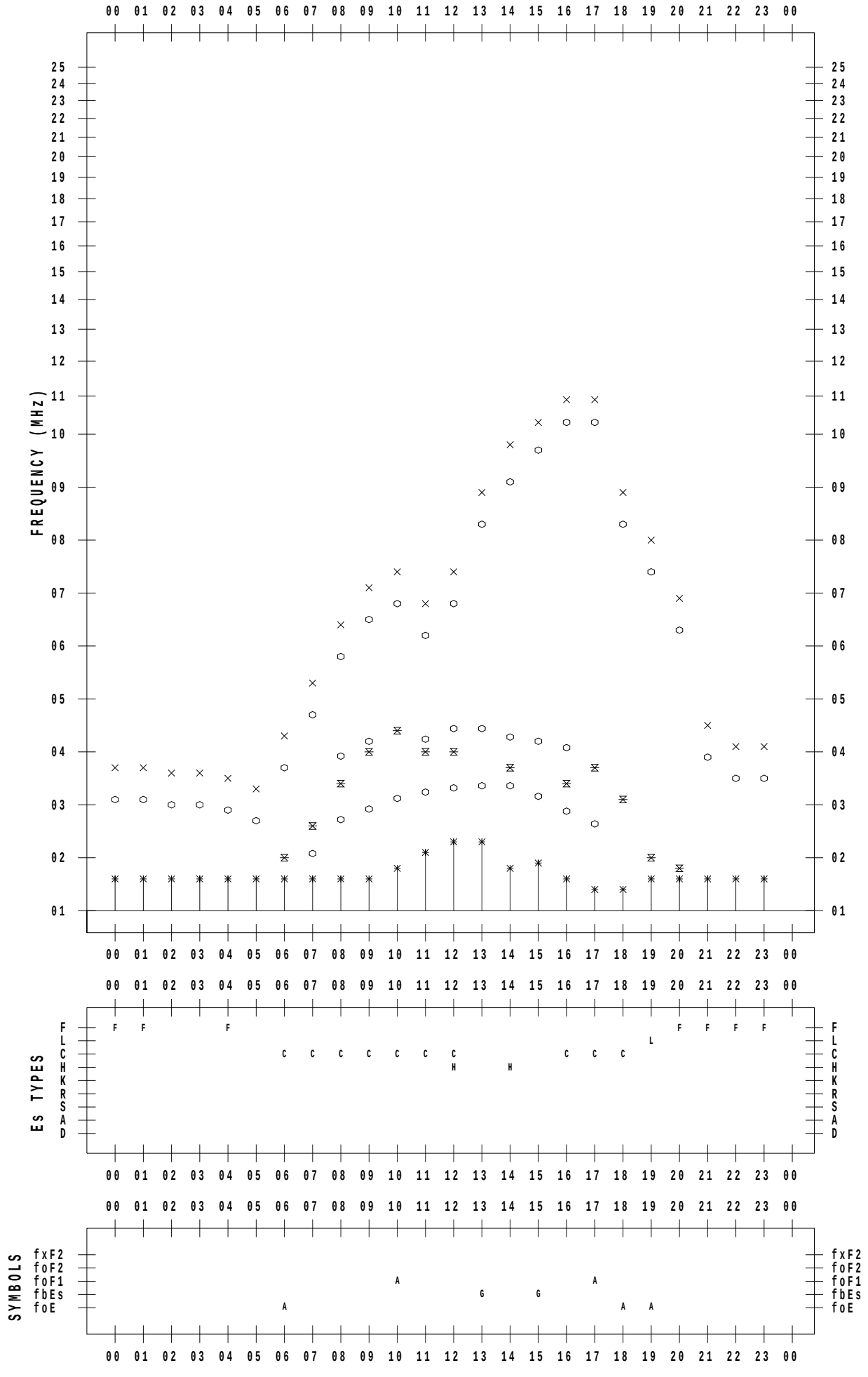
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/26

135 °E MEAN TIME



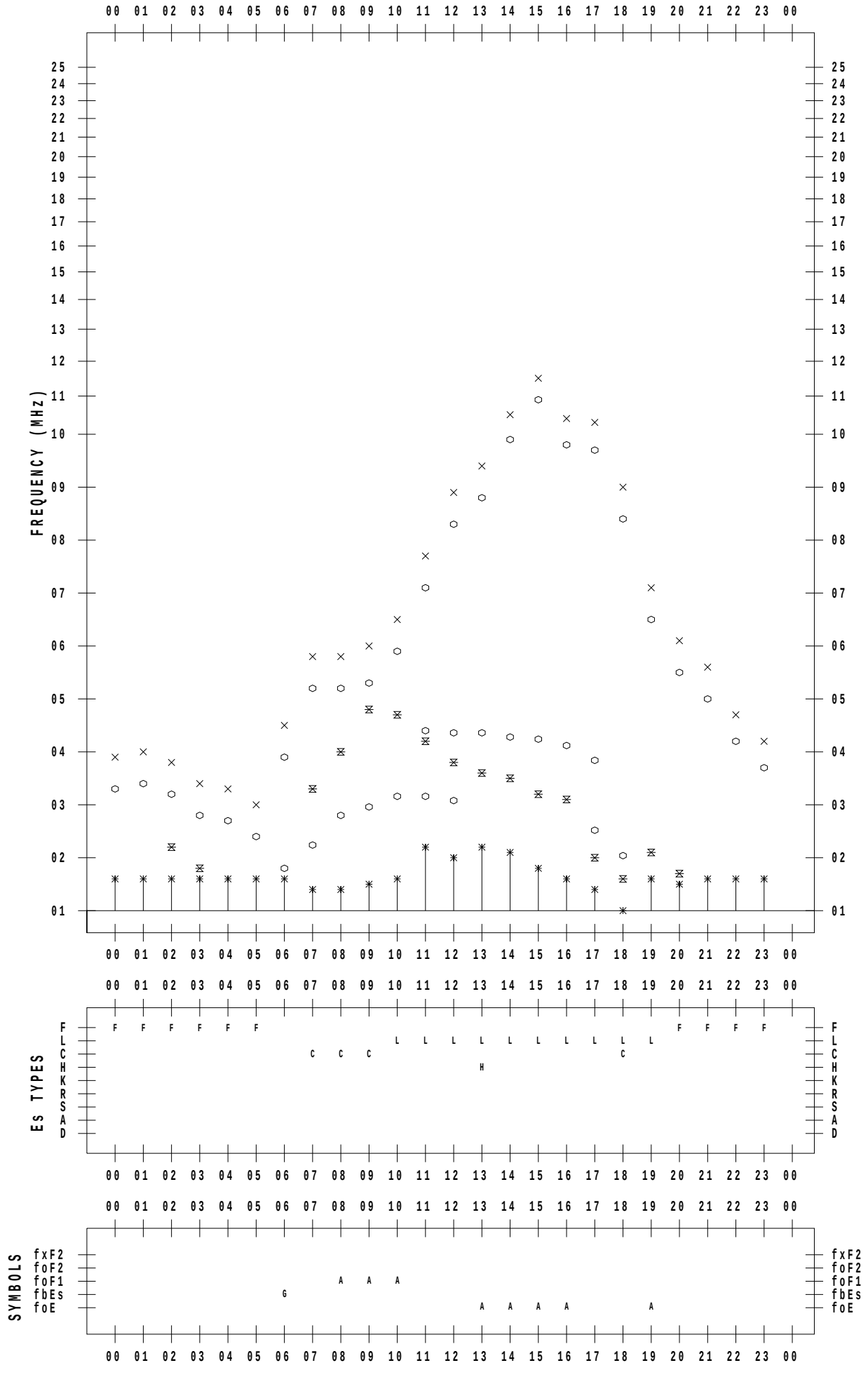
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/27

135 °E MEAN TIME



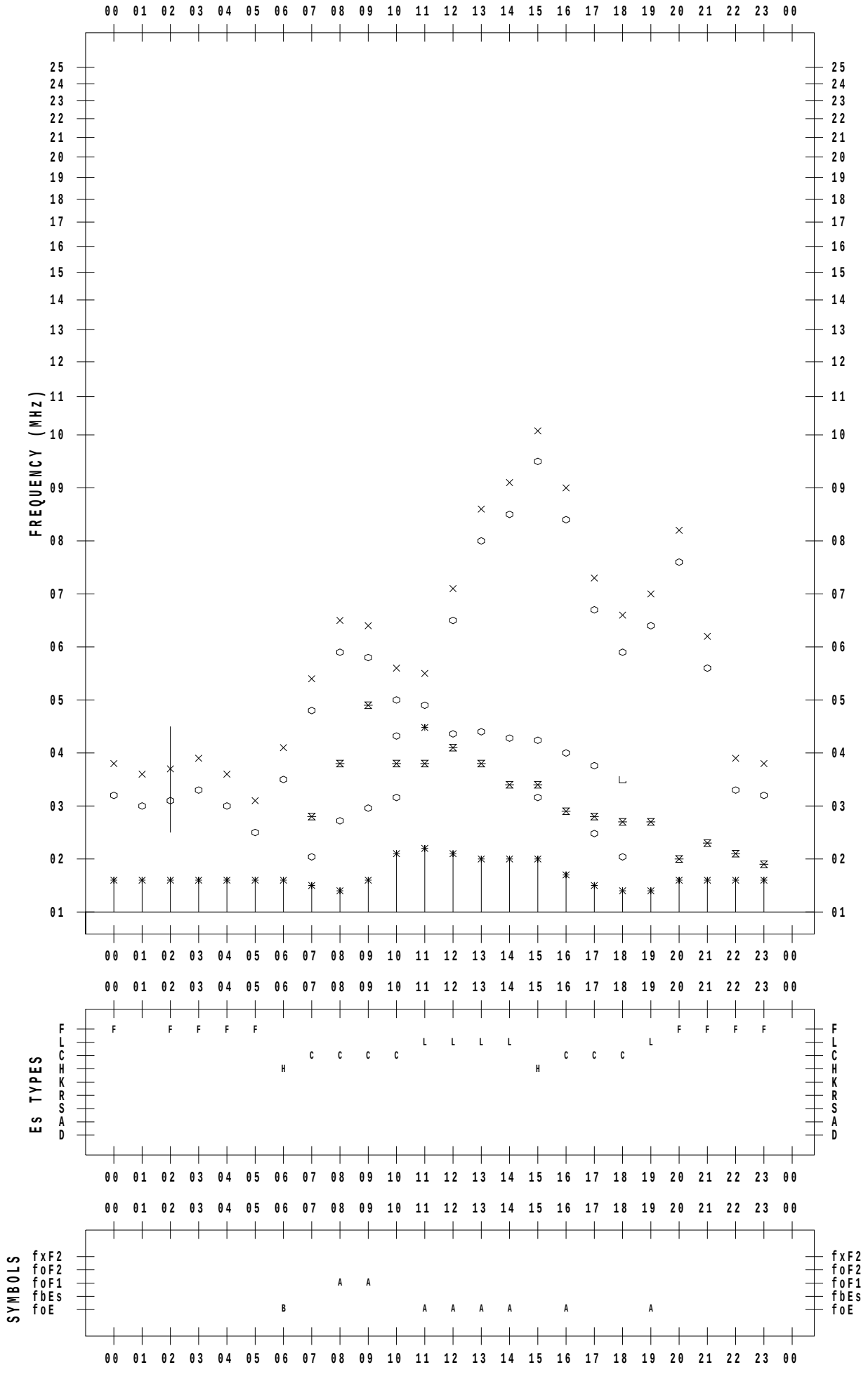
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/28

135 °E MEAN TIME



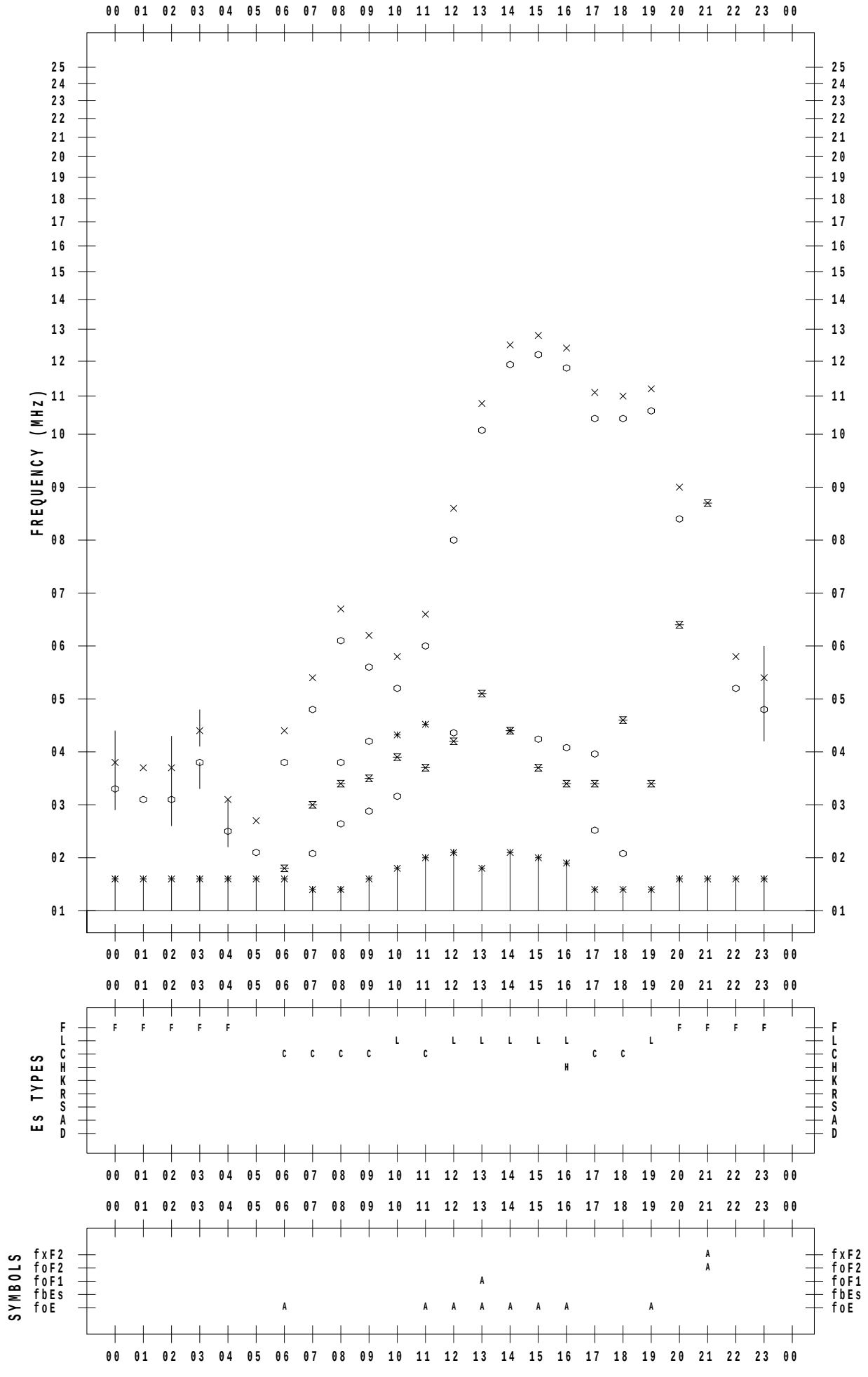
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/29

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 4/30

135 °E MEAN TIME