F-860

IONOSPHERIC DATA IN JAPAN

FOR August 2020
VOL. 72 NO. 8

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

NATIONAL INSTITUTE OF INFORMATION
AND COMMUNICATIONS TECHNOLOGY
TOKYO, JAPAN

INTRODUCTION

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

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

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

IONOSPHERE

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

A1. Automatic Scaling

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

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

a. Characteristics of Ionosphere

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

b. Descriptive Letters

The following descriptive letters are used in the tables.

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

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

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

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

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

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

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

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

d. Reliability of Automatic Scaling

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

e. Summary Plot

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

A2. Manual Scaling

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

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

a. Characteristics of Ionosphere

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

b. Symbols

(i) Descriptive Letters

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

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

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

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

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

The types are:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

HOURLY VALUES OF foF2 AT Wakkanai

AUG.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	40	A	A	A	A	33	70	A	51	46	A	A	A	53	A	43	52	44	41	A	51	43	41	A
2	37	A	A	A	33	A	A	49	A	A	49	46	A	A	A	41	49	49	47	48	A	47	41	41
3	A	35	33	32	30	A	A	A	39	A	A	43	A	A	A	52	43	A	42	A	56	55	A	A
4	A	A	A	31	A	A	40	A	42	47	A	A	A	A	A	A	A	45	41	49	51	53	A	43
5	A	A	A	34	33	A	A	A	A	50	49	52	49	A	A	A	A	50	47	87	A	51	49	40
6	A	A	33	A	A	A	48	47	48	48	51	53	A	51	49	48	A	45	A	A	51	54	52	42
7	36	39	37	35	33	37	40	54	49	A	A	A	A	A	49	A	51	A	50	A	53	51	45	40
8	A	A	36	33	32	36	40	43	49	54	53	50	A	45	A	48	46	43	43	A	57	55	45	A
9	40	40	38	36	A	A	A	49	A	A	70	N 49	A	51	A	47	44	40	45	52	59	53	50	46
10	43	39	33	31	34	41	44	45	50	A	A	47	46	49	51	49	47	A	42	44	53	56	51	47
11	35	31	33	A	35	41	43	50	48	46	A	A	49	49	45	A	A	48	47	A	58	N 57	48	54
12	40	35	33	32	A	A	41	54	A	53	49	55	A	A	A	45	A	A	52	54	51	51	47	40
13	40	36	34	36	35	49	37	46	44	49	A	A	49	53	57	48	49	A	A	46	53	50	53	48
14	41	37	36	36	36	39	47	47	57	57	54	47	51	A	A	A	A	44	48	59	56	48	51	39
15	A	35	34	A	A	41	51	44	53	49	58	51	51	46	A	A	A	A	A	61	60	59	47	A
16	35	A	35	35	34	41	42	52	53	A	A	A	48	A	49	48	46	47	67	A	A	A	A	44
17	40	36	37	33	33	A	44	42	A	49	49	54	52	65	A	A	45	A	49	A	49	48	48	A
18	A	37	37	37	38	41	A	A	55	C	C	C	C	C	C	C	C	C	A	A	57	53	51	37
19	A	A	A	37	A	35	A	46	58	C	C	C	C	C	C	52	48	51	41	46	49	44	45	35
20	33	31	33	A	34	39	42	A	42	A	51	49	50	51	47	48	45	45	47	61	62	57	51	A
21	A	A	A	A	32	36	43	A	A	42	59	57	A	A	50	A	44	A	46	54	54	56	55	A
22	A	33	32	34	34	42	41	47	A	A	A	A	56	53	50	46	48	42	45	58	57	51	48	42
23	38	38	40	36	38	39	43	41	A	A	60	A	A	A	52	55	50	52	50	54	50	49	43	41
24	41	36	37	35	33	34	43	43	44	A	57	55	A	48	A	A	49	47	A	A	57	51	43	35
25	33	32	33	30	33	38	41	44	A	46	50	45	A	49	48	47	44	48	48	52	52	51	46	39
26	39	37	38	C	C		C	C	C	C	C	C	C	C	C	C	C	49	57	56	50	50	43	43
27	40	39	36	36	35	37	43	42	48	A	53	47	A	A	A	A	45	49	53	53	51	51	45	A
28	A	A	34	33	24	32	A	A	A	A	A	49	A	A	49	44	45	46	A	55	51	49	40	37
29	35	32	35	35	31	A	39	37	45	A	A	43	A	A	47	43	A	43	44	51	53	52	31	34
30	31	32	37	39	39	39	43	A	46	45	A	A	49	A	A	43	47	A	56	61	53	41	33	A
31	35	33	35	32	33	31	A	A	54	38	A	A	42	47	A	45	43	46	37	A	45	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	21	25	23	23	21	22	20	20	15	15	18	12	14	13	19	21	21	25	20	28	29	27	21
MED	38	36	35	35	33	39	43	46	48	48	53	49	49	50	49	47	46	46	47	54	53	51	47	41
U Q	40	37	37	36	35	41	44	49	53	50	58	53	51	53	50	48	49	49	50	58	57	54	51	43
L Q	35	32	33	32	33	35	41	43	44	46	49	47	48	48	47	44	44	44	42	50	51	49	43	38

HOURLY VALUES OF fEs AT Wakkanai

AUG.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	25	60	72	49	71	27	67	59	78	81	92	60	51	42	40		36	39	40	54	40	28	32	61
2	70	59	55	40	33	39	55	54	110	82	48	46	56	62	38	34	40	45	61	24	72		39	46
3	40	32	34	29	27	43	70	60	58	52	113	41	41	43	40	36	43	67	37	56	36	39	84	39
4	49	38	34	40	40	52	40	58	43	81	91	66	67	59	135	41	44	35	31	91	40	41	60	38
5	60	93	60	32	35	115	58	59	56	51	45		71	116	70	65	72	108	80	81	124	41	44	41
6	43	60	33	60	38	54	60	83	69	52	64	46	77	50		44	60	38	179	41	37	43	60	33
7	36	33	37	26	G	31	38	55	36	44	62	64	48	65	71	66	45	60	40	50	35	33	G	33
8	58	43	26	59	26	28	33	53	49	46	93	50	50		54	59	34	38	61	132	60	34	71	70
9	59	37	30	57	37	39	54	45	51	66	71	72	61	150	110	77	40	32	59	27	38	28	24	G
10	G	132	G	G	G	26	32	34	70	80	62	112	45	48	40	40	88	59	37	29	35	54	46	38
11	G	29	32	59	27		58	40	43	75	92	55	70	40	40	59	69	38	38	60	39	52	43	
12	26	G	156	24	60	84	35	45	83	54		48	97	112	83	50	70	75	114	40	32	28	38	G
13	G	G	G	G	G	54	92	58	37	50	96	86	146	46	44	43	50	60	166	39	27	28	34	33
14	26	G	26	115	178	28	39	42	93	41	72	48	40	71	72	69	83	40	40	35	29	39	40	30
15	70	34	114	58	60	27	40	42	43	46	56	49	64	91	45	49	67	113	72	127	58	47	46	59
16	36	40	39	24	27	59	35		82	87	77	116	55	72	60	57		39	66	77	88	92	69	46
17	39	34	38	38	33	41	39	41	56	43	43	126	57	69	131	72	90	108	91	64	39	48	35	60
18	50	G	32	28	122		111	69	91	C	C	C	C	C	C	C	C	C	113	70	38	39	G	58
19	86	72	91	39	72	32	57	46	38	C	C	C	C	C	C	35	39		33	36	43	34	37	31
20	30	G	31	39	33	30	32	93	92	64	50		41	38	38	34	38	41	29	30	41	35	58	48
21	33	57	57	50	G	30	57	56	71		45	62	57	64	54	51	58	60	55	41	48	44	33	53
22	49	30	G	G	G	30	39	48	85	64	64	71	52	42	41	37	33	32	29	G	G	G	G	32
23	G	G	G	G	G	27	32	44	56	71	50	58	90	64	38	34	38	38	39	36	G	G	43	40
24	54	G	26	57	56	32	34	43	44	47	48	52	89	102	106	50	39	43	60	92	41	85	57	28
25	36	23	27	30	26	29	32	39	48	42	46	39	40	36		40	41	30	G	G	G	G	G	25
26	G	25	29	C	C		C	C	C	C	C	C	C	C	C	C	C	36	53	37	34	28	35	29
27	30	32	31	G	G	G	40	40	43	95	45		52	64	85	128		128	126	84	39	35	41	48
28	41	47	G	G	G		41	44	57	91	62	33	45	47		37	40	34	41	G	28	30	28	G
29	G	25	28	32	26	32	31	69	59	72	41	44	147	38	47	43	43	106	33	G	30	G	G	G
30		G	G	24	31	28	44	115	42	44	74	55	38	56	70	64	93	71	38	29	28	G	30	39
31	31	G	32	38	35	31	70	70	144	97	60	95	85	31	55	37	47	41	36	55	32	58	50	54
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	30	30	27	30	29	30	27	27	25	28	27	25	28	27	29	31	31	31	30	31	30
MED	36	32	32	35	32	31	40	53	56	64	62	55	56	59	54	46	44	41	41	41	38	35	39	38
U Q	50	47	39	50	40	43	58	59	82	81	77	71	74	71	77	61	69	69	72	70	41	44	50	48
L Q	26	G	26	24	G	28	35	42	43	46	48	47	46	42	40	37	39	38	37	29	30	28	30	30

HOURLY VALUES OF fmin AT Wakkanai

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

HOURLY VALUES OF foF2 AT Kokubunji

AUG.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	A	A	A	A	A	36	36	A	A	A	A	53	52	52	A	52	A	44	45	A	49	41	41	38
2	34	A	A	A	26	31	A	49	61	A	47	76	A	A	48	A	A	A	47	49	43	38	34	A
3	A	A	31	A	24	A	A	A	A	69	A	47	A	A	58	68	51	47	55	65	57	54	54	A
4	A	A	33	A	A	A	39	A	A	A	A	A	A	53	A	A	A	44	47	A	A	47	41	39
5	35	32	31	31	31	31	38	A	59	A	A	A	57	53	104	84	48	49	52	52	54	45	41	36
6	35	33	38	A	A	27	A	A	A	61	59	62	A	55	A	51	A	44	49	55	57	62	59	A
7	A	33	34	32	31	33	51	57	53	79	54	51	A	58	A	51	47	53	50	61	55	A	43	43
8	40	36	33	34	30	28	42	54	55	A	48	49	48	47	53	A	A	A	N 51	63	60	55	A	A
9	A	A	A	35	34	33	43	49	64	51	53	51	53	72	46	53	47	41	41	59	61	53	44	39
10	A	36	34	36	29	32	41	46	55	A	50	A	A	A	57	49	49	45	44	54	59	62	45	A
11	A	A	A	A	A	A	49	59	A	49	A	A	A	A	54	47	49	47		A	56	53	51	50
12	A	A	A	A	A	A	37	58	48	A	A	45	54	53	54	35	56	A	48	A	A	A	A	A
13	A	33	A	31	24	A	43	A	49	49	A	A	69	49	49	66	A	42	41	48	53	52	45	39
14	38	A	A	A	A	35	A	52	64	59	65	A	A	53	46	A	58	A	65	62	55	43	41	41
15	A	A	30	26	25	32	45	43	A	A	64	A	A	A	51	A	51	53	A	A	77	A	A	A
16	A	A	A	30	30	30	38	54	65	51	51	A	A	A	A	51	A	44	53	61	63	51	43	38
17	32	34	33	33	30	31	47	47	56	A	48	49	51	72	45	A	52	A	54	53	54	57	57	A
18	A	A	35	32	A	A	42	58	60	53	70	63	57	55	51	49	A	40	44	61	63	60	A	A
19	34	34	33	31	25	29	39	A	A	59	49	47	61	71	66	47	51	A	54	58	47	39	42	40
20	37	33	A	31	31	33	41	47	55	63	A	A	52	49	50	A	A	43	55	68	67	50	A	39
21	A	A	31	30	31	32	A	A	55	63	62	53	A	A	A	48	43	49	48	A	63	49	A	A
22	25	A	31	A	31	31	44	46	51	A	A	A	A	A	A	A	49	52	49	62	63	59	50	44
23	44	42	33	A	A	30	40	60	55	60	61	54	A	57	A	55	62	65	63	57	51	41	34	A
24	35	35	31	33	32	A	A	47	A	51	54	59	51	53	51	52	50	54	A	A	68	50	A	A
25	A	31	31	30	24	27	41	A	54	54	A	A	A	54	57	47	50	51	55	58	55	49	47	43
26	39	35	33	33	29	31	42	41	49	55	55	51	A	46	A	49	61	73	A	67	51	42	44	43
27	40	37	38	34	26	30	42	46	A	A	54	A	54	A	A	64	63	A	56	74	65	49	41	37
28	36	35	34	34	A	31	35	44	55	70	A	A	A	A	A	52	50	A	A	57	50	39	43	35
29	33	33	31	29	30	28	A	51	48	A	55	A	A	A	A	50	46	A	37	A	A	53	A	A
30	30	29	31	30	29	30	45	52	53	A	A	44	A	52	A	47	A	A	63	69	A	A	A	A
31	A	33	31	30	30	26	37	58	46	A	A	50	50	51	53	48	A	A	53	50	51	49	41	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	18	22	21	22	24	24	22	22	17	18	17	13	20	18	23	20	20	26	23	27	27	22	16
MED	35	34	33	31	30	31	42	50	55	59	54	51	53	53	52	51	50	47	50	59	56	50	43	39
U Q	38	35	34	33	31	32	43	57	59	63	61	56	57	56	57	53	54	52	55	63	63	54	47	43
L Q	33	33	31	30	26	29	38	46	51	51	50	48	51	51	49	48	48	44	47	54	51	43	41	38

HOURLY VALUES OF fEs AT Kokubunji

AUG.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	106	73	60	59	70	43	33	41	49	58	67	72		102	112	53	40	37	29	57	34	24	G	41
2	69	107	50	60	33	29	60	93	69	155	107	85	86	101	102	132	55	47	52	50	33	27	40	40
3	41	36	31	30	25	29	91	58	104	92	40	66	52	53	49	37	43	41	53	34	G	G	29	41
4	55	94	36	59	52	40	72	55	55	42	78	39	52	49	50	75	64	70	40	59	85	29	29	G
5	32	31	24	G	G	24	36	40	43	52	57	80	61	61	85		97	117	87	G	35	G	30	
6	G	33	30	40	31	G	39	49	60	61	53	47	71	43	38	38	51	45	40	49	40	49	56	105
7	73	28	33	G	G	G	34	45	53	75	64	76	71	37	65	41	37	51	42	41	66	60	G	38
8	32	33	32	28	29	G	33	48	60	70	63				34	80	56	135	28	52	31	G	111	70
9	110	92	73	36	27	25	57	57	50	46	46	50	54	74	83	33	G	29	27	31	G	24	G	38
10	55	33	28	G	G		32	40	35	55	50	39	60	40	51	50	38	84	38	57	G	G	46	49
11	71	58	60	60	60	57	60	49	79	49	42	52	61	60	51	62	54	67		59	35	33	53	60
12	49	48	81	71	56	62	29	41	50	60	78	84	57	38	84		140	128	135	90	71	60	39	71
13	80	32	45	29	24	39	48	57	78	70	67	64		92	104	64	57	41	27	44	G	29	G	32
14	57	111	38	57	54	28	175	41	56	40	50	49	84	49	56	65	61	61	57	40	38	29	31	31
15	53	43	31	G	27	27	55	47	70	102	78	39	41	40	G	38	39	76	85	92	49	69	39	28
16	57	55	57	28	23	33	32	38	45		G	40	40	55	49	G	95	81	29	28	29	57	G	G
17	G	33	G	28	27	80	46	40	32	68	75	90	65	86	176	97	38	60	73	70	40	46	39	69
18	106	59	26	31	33	31	35	42	56	48	50	50	37	40	47		63	107	80	55	59	49	73	60
19	33	30	26	25	30	G		58	175	59	72	40	40	38	37	36	48	84	44	30	G	31	33	35
20	33	27	33	G	G	G	28	34	35	40	40	40		40	39	64	61	153	34	36	32	35	47	G
21	41	40	31	G	26	27	49	42	50	66	50	G	53	61	78	37	36	32	41	60	57	43	55	94
22	G	40	33	41	24	G	37	43	52	55	79	71	75	87	72	70	43	40	30	G	G	31	33	28
23	G	G	G	47	29	G	32	41	52	53	39	47	53	40	36	38	39	36	33	28	28	G	28	35
24	24	39	43	36	29	36	52	36	37	50	51	G	42	39	38	36	40		71	82	41	G	52	32
25	38	34	22	G	G	G	G	43	41	52	40	50	60	41	33	37	29	33	23	G	G	G	G	G
26	G	G	28	G	G	G	34	40	31	G	41	40	40		38	G	38	56	102	60	36	33	25	G
27	33	33	G	G	G	G	31	40	43	62	37	54	50	57	87	55	51	113	107	48	25	G	G	G
28	G	G	32	G	23	G	34	40	43	50	67	51	85	72	117	53	42	52	72	G	47	37	58	G
29	31	25	24	31	31	28	40	43	41	60	50	103	61	54	82	37	40	63	65	70	84	43	41	34
30	G	G	G	G	24	G	31	40	40	76	42		40	53	74		157	109	65	38	71	79	92	71
31	40	27	G	G	31	G	29	53	52	47	49	39		G	35		53	55	40	33	29	34	33	40
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	30	30	31	31	30	31	29	26	29	31	26	31	30	30	31	31	31	31	30
MED	40	33	31	28	27	26	36	42	50	56	50	50	56	53	51	46	48	60	43	48	35	31	33	36
U Q	57	55	43	41	31	33	52	49	60	68	67	71	65	66	84	64	61	84	72	59	49	46	52	60
L Q	24	28	24	G	23	G	32	40	41	49	42	40	42	40	38	37	39	41	33	31	25	G	25	28

HOURLY VALUES OF fmin AT Kokubunji

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

HOURLY VALUES OF foF2 AT Yamagawa

AUG.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	B 38	37	A	A	A	A	A	A	A	A	A	A	A	A	A	53	53	56	55	53	57	52	B 46	B 42
2	39	40	37	34	34	31	41	56	49	A	47	A	A	58	65	A	51	51	54	56	41	43	B 39	A
3	A	35	A	A	A	A	N 47	51	A	45	A	A	54	A	59	66	A	A	A	A	56	A	A	A
4	A	A	A	A	A	A	43	48	50	A	A	A	A	A	A	A	57	A	A	A	A	51	A	A
5	A	39	38	33	A	A	37	54	51	57	N 47	A	57	A	37	A	53	49	37	55	59	45	44	40
6	39	40	A	A	A	A	40	45	37	63	130	104	49	A	53	A	51	54	A	64	51	53	50	A
7	A	40	A	42	37	34	55	A	A	51	A	A	A	82	75	105	68	66	81	71	59	49	A	47
8	A	A	A	35	A	A	33	57	A	A	A	A	51	A	48	56	61	59	53	A	58	57	A	50
9	42	A	39	36	35	36	41	57	55	51	A	A	57	A	63	55	45	51	A	59	63	47	41	37
10	39	A	38	33	32	A	40	54	50	51	60	A	A	55	57	49	A	A	49	61	73	68	41	33
11	33	A	A	A	A	39	45	51	52	A	A	A	50	50	49	53	A	A	53	52	A	58	47	A
12	A	A	A	A	A	A	A	A	55	55	A	A	A	A	47	A	73	A	39	61	A	A	A	A
13	A	A	A	34	A	A	37	A	57	49	A	A	A		68	65	37	A	A	A	57	A	45	40
14	A	A	40	36	37	38	A	A	57	A	62	A	A	A	A	52	59	65	61	A	A	50	46	47
15	A	37	A	36	A	32	39	48	A	71	A	A	35	A	36	A	59	A	57	72	75	61	B 37	A
16	A	A	A	A	27	A	38	61	N 68	A	A	A	A	51	59	61	54	55	55	67	50	A	A	A
17	A	35	36	33	31	32	39	56	57	A	A	N 46	49	A	59	A	55	52	49	A	55	A	A	37
18	37	A	A	A	A	A	35	47	A	A	A	73	A	47	58	55	60	56	A	59	68	A	A	A
19	A	A	A	A	B 25	A	40	49	55	A	A	A	62	78	A	A	56	A	60	A	57	53	A	40
20	44	38	A	36	B 35	33	36	47	56	59	53	A	52	A	A	A	50	A	56	A	69	53	46	38
21	A	37	34	34	31	N 25	35	A	57	66	59	53	56	A	A	61	A	55	58	A	61	49	36	A
22	39	A	A	A	A	N 26	36	A	54	A	A	63	A	A	A	A	67	58	63	A	74	A	A	A
23	A	A	A	37	A	34	37	56	56	66	54	A	56	56	53	59	71	73	60	59	59	41	35	37
24	35	33	35	37	32	30	37	47	59	55	54	53	52	A	56	58	59	60	47	A	69	A	36	36
25	34	34	A	32	34	B 23	34	47	55	66	A	A	A	A	A	51	56	55	70	60	55	48	44	45
26	42	B 37	35	34	33	33	37	51	48	61	77	A	A	48	47	65	73	81	81	69	A	A	A	45
27	43	39	41	39	B 25	N 25	37	48	A	A	A	66	59	59	59	76	A	55	A	73	81	A	A	40
28	40	40	35	34	33	31	A	56	57	55	53	A	A	A	60	A	56	A	57	64	58	53	41	41
29	41	38	35	32	33	31	35	54	56	47	51	53	48	A	A	54	56	A	A	64	57	A	A	42
30	39	34	31	A	A	A	A	57	56	A	52	53	54	54	A	68	76	64	61	57	54	A	39	A
31	A	37	36	A	A	31	38	51	A	49	53	A	56	55	59	A	55	A	A	58	A	46	42	42
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	16	18	14	19	16	18	26	24	23	18	14	9	17	12	21	19	26	19	22	20	25	19	18	19
MED	39	37	36	34	33	32	38	51	55	55	54	53	54	55	58	58	56	56	56	60	58	51	42	40
U Q	41	39	38	36	34	34	40	56	57	63	60	69	56	58	59	65	61	64	61	65	68	53	46	45
L Q	37	35	35	33	31	30	36	48	51	51	52	53	49	50	48	53	53	54	53	57	55	47	39	37

HOURLY VALUES OF fEs AT Yamagawa

AUG.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	B	32	58	106	110	59	56	81	106	83	64	70	78	113	169	86	40	28	26	30	G	G	B	B
2	G	G	38	G	G	26	G	28	34	47	48	54	54	110	55	64	44	45	35	33	29	36	B	56
3	41	35	34	49	34	39	28	37	69	79	110	93	51	69	54	55	115	77	157	116	50	89	57	56
4	47	57	65	49	51	35	108	36	38	62	106	76	127	76	88	52	50	71	69	60	45	33	56	39
5	39	G	26	31	32	27	25	35	39	51	78	96	134	75	101	61	131	92		113	G	G	G	27
6	G	G	41	56	40	38	49	55	93	56	111	152	110	46	48	72	46	42	59	42	G	49	G	44
7	48	G	60	40	32	28	33	108	73	54	74	90	83	58	78	114	43	44	48	84	G	48	46	69
8	56	47	40	G	37	44	30	160	61	97	66	52	104	91	40	46	43	50	90	175	G	41	48	32
9	142	85	56	27	35	32	24	30	35	43	47	70	72	50	47	39	44	44	61	39	30	28	G	29
10	40	48	59	G	26	30	29	34	N	46	52	62	46	52	56	59	169	110	41	34	32	32	38	G
11	G	48	43	59	36	G	56	155	44	69	109	58	47	47	62	57	52	65	72	41	28	G	30	32
12	43	54	46	54	56	39	40	55	47	58	88	113	150	152	110	114	55	69	128	50	108	91	47	48
13	46	39	36	30	28	23	43	54	52	106	67	49	76		68	91	97	79	106	85	40	27	G	38
14	55	48	49	G	26	33	112	117	161	105	57	73	127	67	46	51	44	36	64	58	59	55	39	G
15	26	G	34	G	31	113	31	41	70	56	56	152	104	92	92	77	62	60	112	71	55	G	B	48
16	44	69	57	46		37	20	34	45	112	60	180	61	50	44	51	58	41	27	25	40	39	49	48
17	43	G	G	24	G	G	32	46	40	51	80	109	72	83	48	61	36	41	67	69	52	49	72	G
18	34	72	48	40	34	38	28	39	74	107	92	60	56	48	50	36	50	51	67	39	154	58	73	80
19	58	53	60	34	B	33	28	38	52	122	77	76	76	51	144	129	49	73	70	58	45	49	38	G
20	G	38	34	28	B	25	113	167	33	40	45	50	39	53	59	59	41	54	45	60	51	30	40	58
21	41	38	G	G	G	40	30	45	108	47	52	50	43	109	95	46	115	44	50	144	110	83	30	60
22	34	57	44	38	41	32	G	174	57	76	56	57	105	163	78	67	60	46	56	60	58	58	56	81
23	94	104	59	34	44	26	32	34	43	47	45	57	49	40	46	31	50	31	38	39	23	G	G	24
24	G	G	30	34	G	24	G	40	39	47	51	48	39	52	48	49	56	71	90	92	60	49	39	38
25	32	G	34	G	G	B	29	34	113	56	57	69	61	110	89	46	44	32	28	23	G	G	G	G
26	G	B	G	G	G	G	G	34	48	57	52	66	50	95	60	60	61	57	29	39	104	57	56	35
27	32	68	32	24	B	G	140	36	73	70	88	48	84	50	48	38	96	62	78	57	83	59	48	34
28	34	28	G	G	25	G	28	33	39	43	54	67	59	60	56	60	44	60	52	81	49	43	41	31
29	30	G	31	G	G	G	G	35	39	43	176	45	50	88	78	60	46	70	73	55	73	84	80	39
30	34	41	27	34	47	54	46	35	58	55	48	38	49	60	92	92	127	89	60	54	34	32	28	92
31	48	G	G	39	26	G	G	35	52	41	40	40	38	46	46	49	54	61	72	56	60	33	35	38
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	31	31	27	30	31	31	30	31	31	31	31	30	31	31	31	31	30	31	31	31	28	30
MED	40	38	38	31	32	31	30	38	52	56	60	66	61	64	59	59	50	57	62	57	45	41	40	38
U Q	47	54	56	40	40	38	46	55	73	79	88	90	104	92	89	72	62	71	73	81	60	57	52	56
L Q	30	G	30	G	G	23	24	34	39	47	52	50	49	50	48	49	44	44	45	39	28	28	29	29

HOURLY VALUES OF fmin AT Yamagawa

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

HOURLY VALUES OF foF2 AT Okinawa

AUG.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	32	31	A	A	A	A	A	48	48	43	A	A	A	61	A	A	55	55	53	54	54	51	49	42
2	39	37	33	33	30	29	35	47	43	46	A	A	A	63	67	61	51	48	60	43	37	37	34	A
3	A	33	30	A	A	A	A	46	A	A	A	A	A	A	A	A	92	83	A	57	A	A	A	A
4	32	A	A	A	A	A	A	A	A	A	A	61	A	44	A	A	C	C	C	C	A	A	39	36
5	38	34	33	31	A	A	A	46	52	55	52	A	50	51	54	A	A	53	64	74	59	41	A	41
6	40	39	32	N 23	B 24	A	A	47	57	55	A	60	A	A	A	A	53	55	A	62	51	49	45	A
7	34	A	33	33	A	A	39	A	51	A	A	64	79	91	107	111	114	111	106	92	74	51	43	A
8	A	A	33	A	A	29	A	57	59	A	A	A	A	A	A	A	59	68	71	60	63	59	48	52
9	45	A	41	36	32	A	38	51	49	50	55	53	57	56	57	56	53	59	68	63	56	48	34	33
10	34	31	29	A	A	A	A	47	49	48	57	62	52	52	53	A	A	A	48	67	76	66	30	29
11	26	24	24	23	N 24	A	38	47	45	A	57	A	51	55	55	55	54	43	A	64	62	56	32	A
12	A	25	A	A	A	A	A	47	A	55	A	A	A	A	52	75	75	A	62	57	61	A	A	A
13	A	34	36	35	A	A	A	A	54	61	A	A	A	70	63	75	76	65	59	52	46	A	A	33
14	32	33	36	34	A	32	33	A	52	A	64	54	A	A	A	69	70	62	61	A	A	51	A	A
15	A	A	31	A	A	24	A	A	71	A	A	A	A	A	A	A	66	62	75	83	85	55	A	A
16	31	A	A	A	26	23	33	55	50	A	49	46	A	A	67	68	62	53	A	68	80	49	A	A
17	A	26	27	A	B 23	N 24	39	50	48	A	53	67	53	61	66	59	A	47	A	50	A	A	A	A
18	A	A	33	25	A	A	A	39	51	61	74	A	52	48	54	61	71	60	56	A	70	51	37	34
19	A	A	37	A	A	A	31	45	54	52	A	A	69	74	66	66	71	80	76	60	53	51	41	40
20	45	37	A	32	26	A	27	47	65	51	55	51	A	53	A	A	50	58	59	69	65	A	37	A
21	A	A	A	A	A	A	A	46	60	A	53	53	A	95	A	A	104	92	64	58	58	A	34	A
22	A	A	A	A	A	A	31	A	A	A	A	A	A	A	A	A	A	82	79	73	75	79	35	A
23	A	33	29	36	30	A	30	51	71	69	A	50	55	66	55	65	73	78	81	73	51	40	A	35
24	33	32	33	33	31	B	27	54	49	46	54	48	46	54	65	58	A	149	98	100	54	A	31	30
25	31	A	28	25	B	B	A	38	A	A	A	A	A	A	A	A	A	A	72	50	52	43	42	39
26	38	33	31	28	A	N	29	40	48	45	59	A	A	50	58	78	85	87	95	84	67	66	47	A
27	46	47	52	37	A	A	30	48	A	A	A	56	55	A	74	69	A	75	A	86	A	A	34	40
28	38	34	31	N	79		28	54	54	54	A	A	60	A	A	59	67	A	81	61	54	55	52	49
29	51	47	40	31	28	26	36	51	48	50	44	54	58	52	56	55	65	61	62	60	54	48	A	41
30	42	A	A	B	N	A	34	52	A	A	51	A	55	A	70	A	80	71	43	A	52	A	A	A
31	A	A	A	26	A	A	32	44	50	A	A	46	A	60	A	49	56	64	74	72	A	41	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	18	22	17	11	7	18	25	24	16	14	15	14	19	18	18	23	26	24	27	25	21	19	15
MED	38	33	33	32	28	26	32	47	51	52	54	54	55	56	60	63	67	63	66	63	58	51	37	39
U Q	42	37	36	34	31	29	36	51	55	55	57	61	58	66	67	69	76	80	77	73	68	55	45	41
L Q	32	31	30	25	24	24	30	46	48	47	52	50	52	52	55	58	55	55	59	57	52	45	34	33

HOURLY VALUES OF fEs AT Okinawa

AUG.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	26	59	60	93	60	58	107	40	45	40	58	64	84	63	77	89	59	41	32	28	31	G	34	G
2	G	G	G	G	G	38	25	124	46	46	47	49	57	55	51	58	47	39	59	48	28	G	G	60
3	58	33	30	59	58	40	48	55	57	92	106	148	112	112	67	89	110	78	140	146	135	170	69	82
4	39	54	59	100	73	93	60	180	53	69	62	61	87	73	110	144	C	C	C	C	60	55	29	48
5	38	32	30	115	34	59	46	25	46	35	163	75	48	47	48	83	115	50	42	30	32	43	49	40
6	27	24	G	G	B	38	180	40	45	74	103	105	156	170	56	56	54	60	80	31	38	28	32	56
7	24	70	30	115	60	92	94	82	45	58	65	61	74	91	86	115	34	33	36	30	36	56	37	59
8	60	55	38	45	41	28	27	33	50	55	53	124	125	70	69	78	47	38	33	36	32	39	46	38
9	145	84	28	176	56	50	49	59	46	46	50	55	50	151	51	50	36	40	36	45	29	G	G	G
10	G	26	G	60	90	26	46	35	42	50	51	57	59	50	52	80	45	60	39	34	35	39	G	G
11	G	G	G	24	28	36	33	43	40	90	39	56	41	49	43	50	46	39	85	40	G	30	28	33
12	30	G	46	72	41	138	54	40	56	180	135	165	142	150	167	59	50	75	81	40	67	45	45	106
13	60	G	G	G	137	92	104	41	170	61	109	136	149	93	88	36	37	38	80	33	33	56	57	38
14	G	28	29	44	60	G	28	58	58	95	67	55	95	57	115	50	55	45	61	96	94	91	60	40
15	49	60	58	38	38	24	49	92	52	71	151	96	157	73	93	151	91	63	54	29	G	56	69	84
16	G	46	73	58	46	27	56	46	45	49	45	51	89	62	58	45	56	51	75	87	89	48	41	53
17	59	24	G	33	B	G	31	39	52	62	48	44	44	48	44	106	71	35	142		151	60	35	54
18	90	60	26	29	29	34	142	40	73	50	63	79	50	52	49	45	37	39	43	77	44	28	G	29
19	60	72	50	38	35	32	25	38	41	48	96	71	59	58	38	52	56	51	54	38	27	29	28	44
20	34	29	40	34	38	33	G	33	77	47	47	48	54	52	64	59	51	50	44	53	49	60	41	60
21	92	115	59	91	60	59	57	38	56	69	53	47	85	65	134	151	47	43	80	40	43	34	180	60
22	71	46	38	53	36	31	30	59	72	67	86	82	76	111	112	115	133	56	67	30	56	48	26	55
23	28	G	69	38	26	46	24	41	41	52	58	50	45	48	47	44	60	50	35	34	28	48	54	32
24	G	G	G	28	G	B	139	39	38	56	45	46	49	48	56	38	60	48	28	35	46	60	31	31
25	31	38	29	G	B	B	106	46	62	89	56	68	62	90	89	91	91	59	50	94	58	23	G	G
26	G	G	G	G	25	G	G	34	40	59	44	76	54	51	58	59	56	54	42	60	33	32	27	70
27	28	30	G	28	39	31	G	41	89	91	61	180	53	74	47	68	93	63	110	60	89	34	38	26
28	G	25	24	G	G	G	G	32	39	47	51	57	56	62	69	37	46	107	69	11	40	43	29	46
29	48	29	33	33	G	G	23	34	37	44	40	46	55	55	48	46	36	39	51	35	28	30	66	35
30	58	46	31	B	G	31	24	40	135	88	54	79	52	150	60	110	45	40	63	144	40	41	48	45
31	130	45	70	54	28	57	G	32	39	60	65	50	53	55	60	51	45	50	61	33	41	33	49	48
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	28	29	31	31	31	31	31	31	31	31	31	31	30	30	30	29	31	31	31	31
MED	34	32	30	38	38	34	46	40	46	59	58	61	59	62	60	59	52	50	56	38	40	41	37	45
U Q	60	55	50	60	59	57	60	55	58	74	86	82	89	91	88	91	60	59	80	60	58	56	49	59
L Q	G	24	G	28	27	26	24	35	41	48	48	50	52	52	49	50	45	39	42	32	31	30	28	32

HOURLY VALUES OF fmin AT Okinawa

AUG.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	15	16	15	13	15	15	16	15	15	15	16	17	16	17	16	14	14	14	15	16	16	16	15	17
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5	15	16	16	61	15	6	15	15	14	15	16	15	16	17	17	11	12	15	14	15	16	15	15	15
6	15	15	16	17	B 15	15	15	15	13	14	14	12	7	38	17	14	13	13	13	15	16	15	15	16
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17	15	15	15	16	B 15	14	15	15	13	13	14	15	16	17	14	16	13	14	7	39	17	17	16	15
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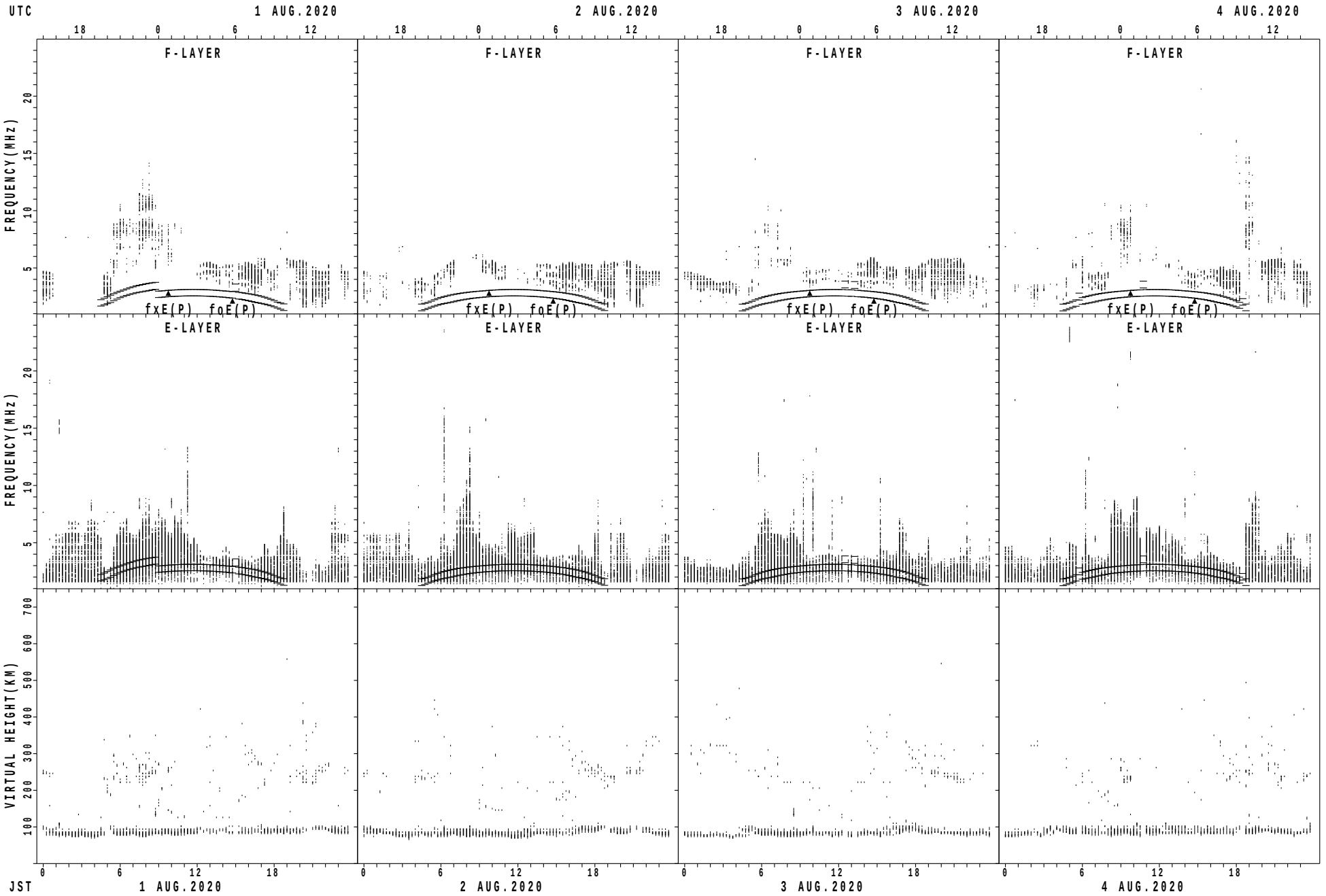
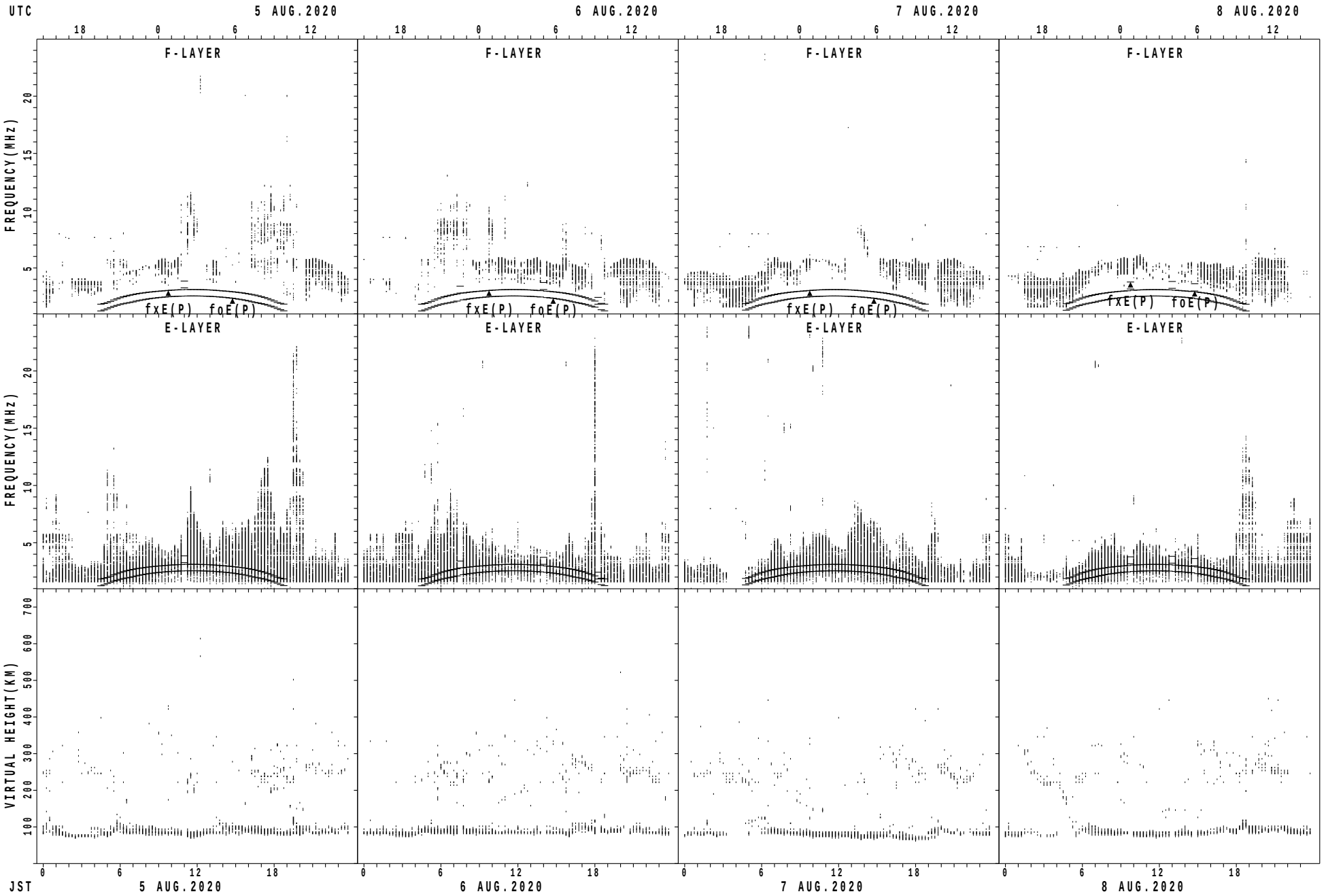
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31
MED	15	15	15	16	15	15	15	15	14	14	15	16	17	17	17	15	14	14	14	15	15	15	15	15
U Q	16	16	15	16	15	16	16	15	15	15	17	17	18	19	17	17	15	15	14	15	16	16	16	16
L Q	15	15	15	15	15	14	15	14	14	14	14	15	16	16	15	14	14	14	13	14	14	15	15	14

SUMMARY PLOTS AT Wakkanai



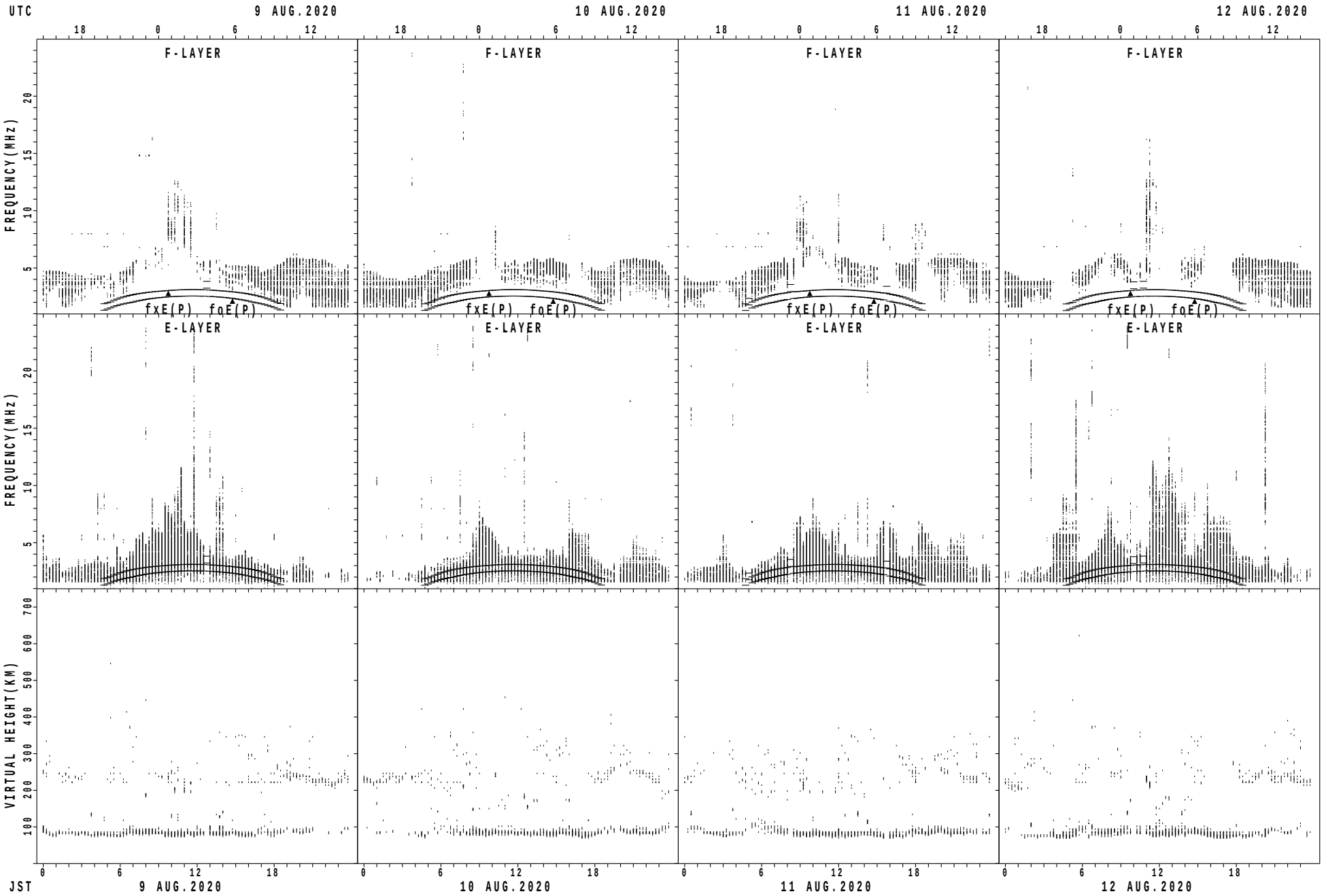
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



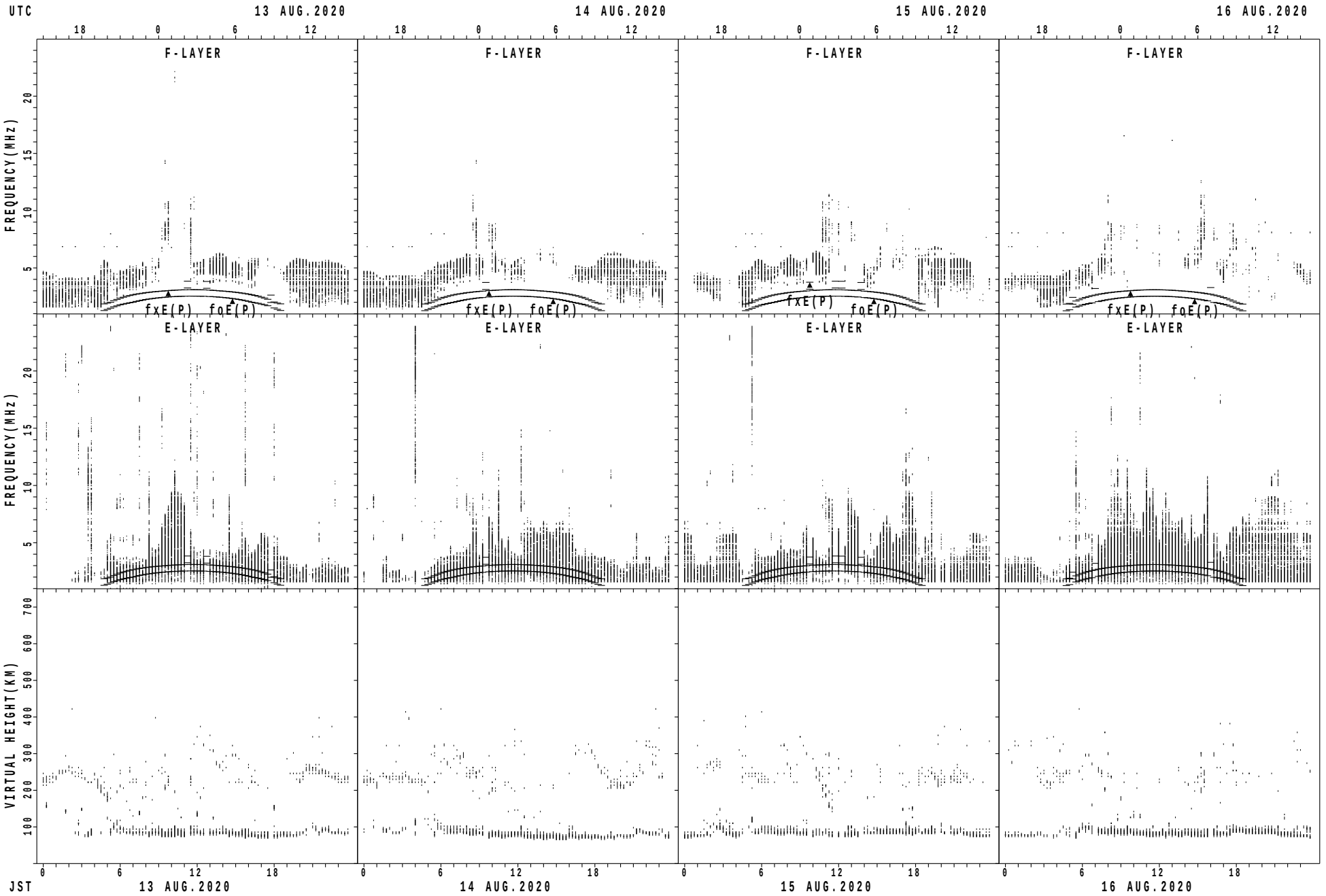
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



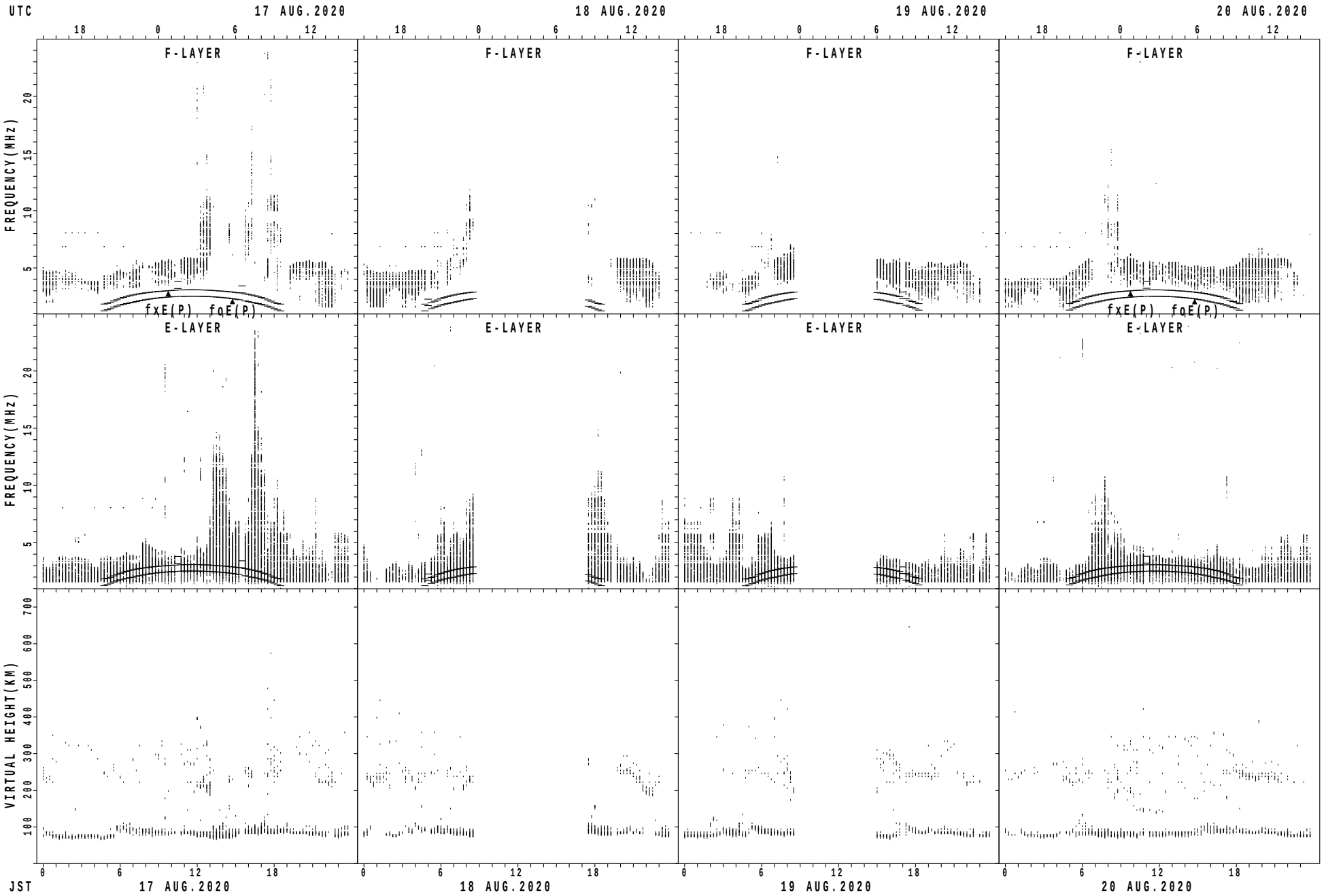
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



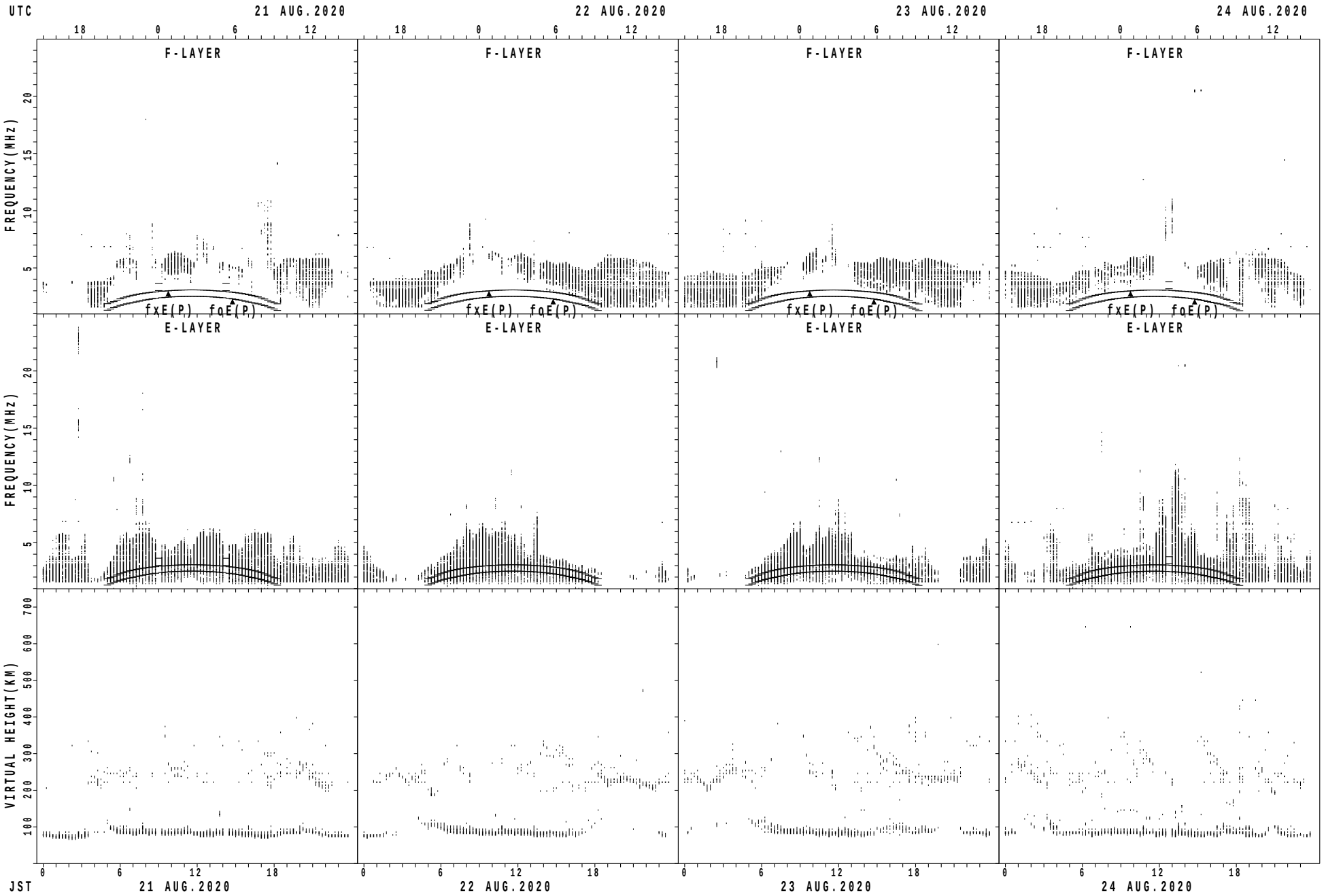
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



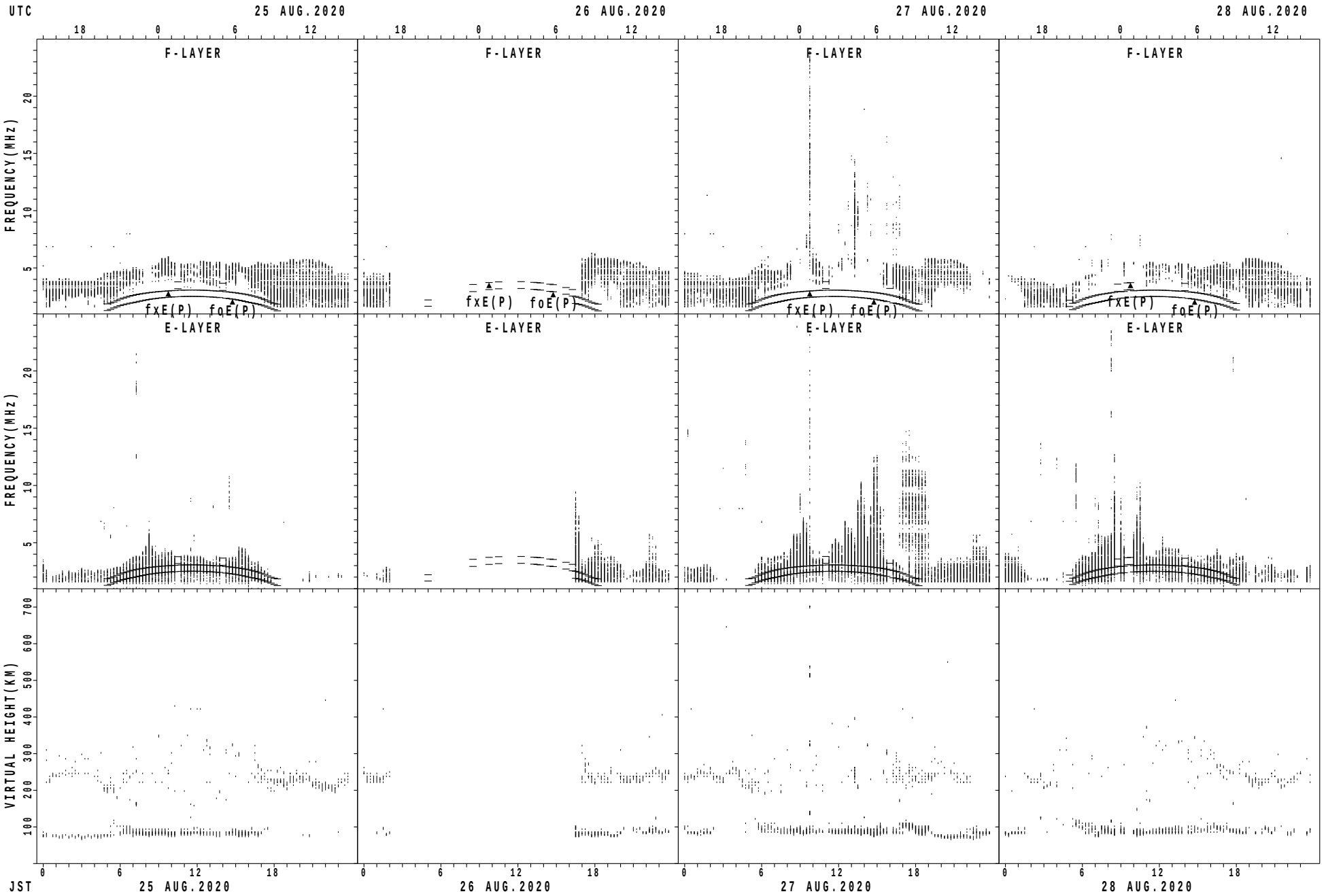
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



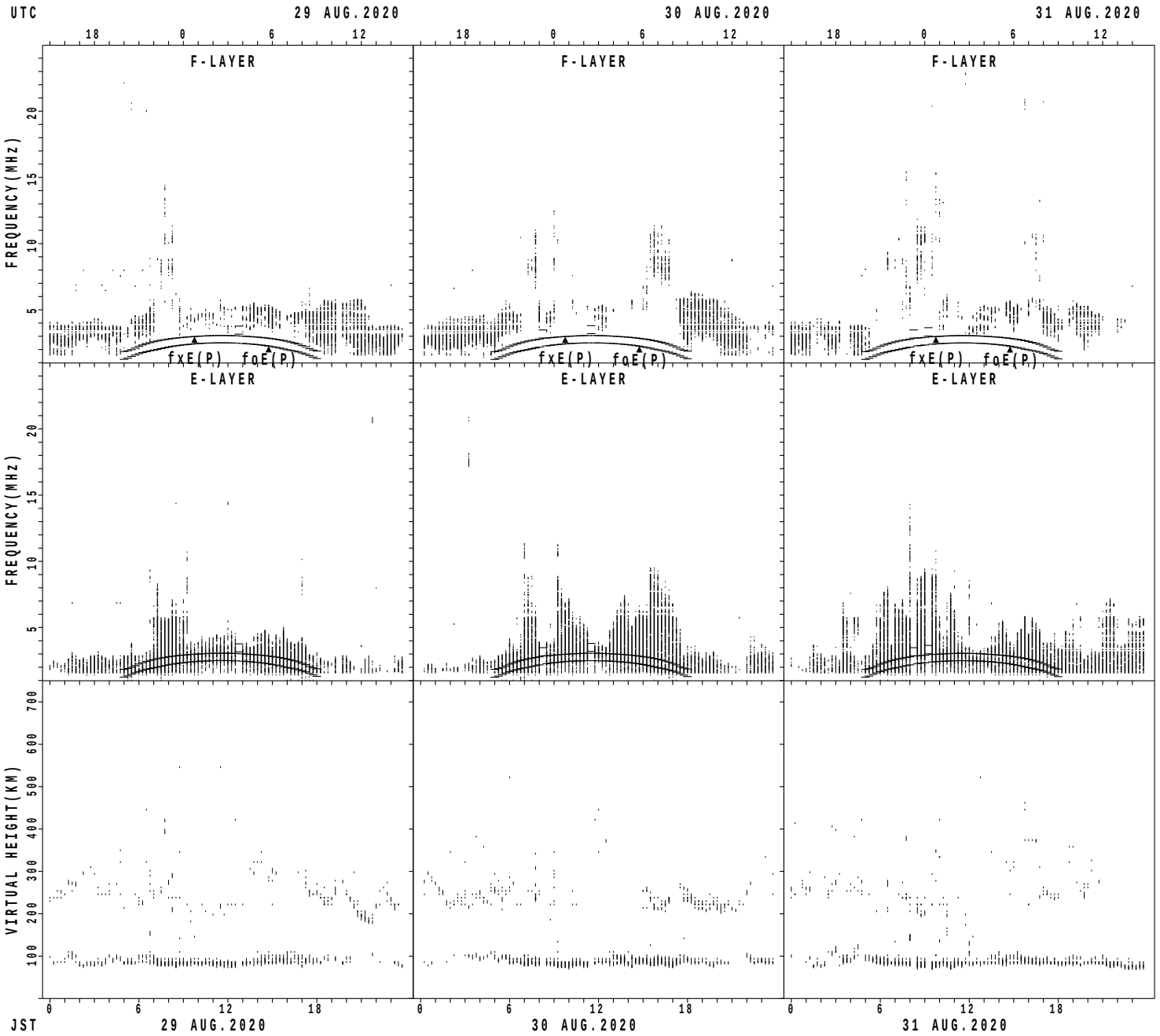
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



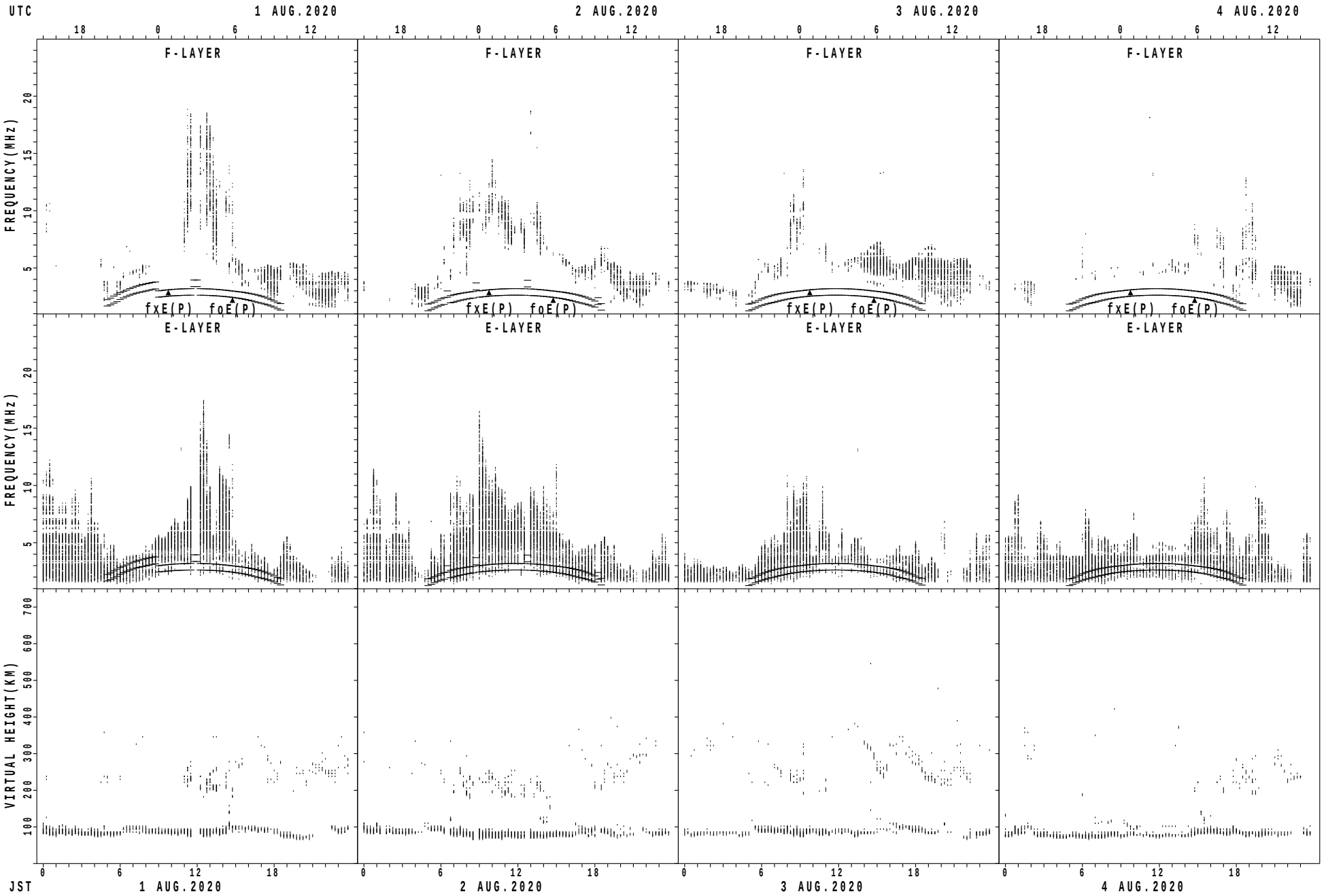
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Wakkanai



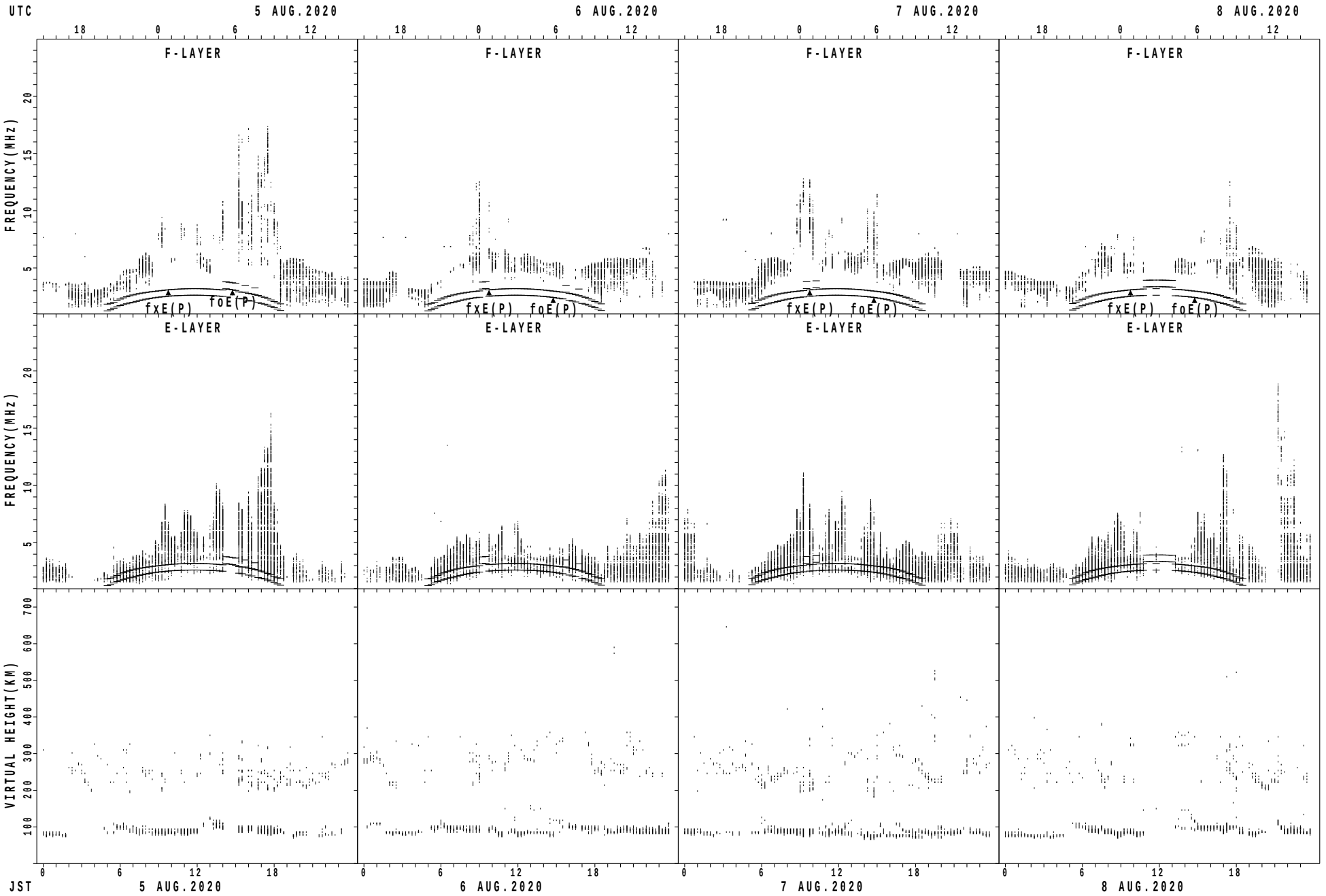
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



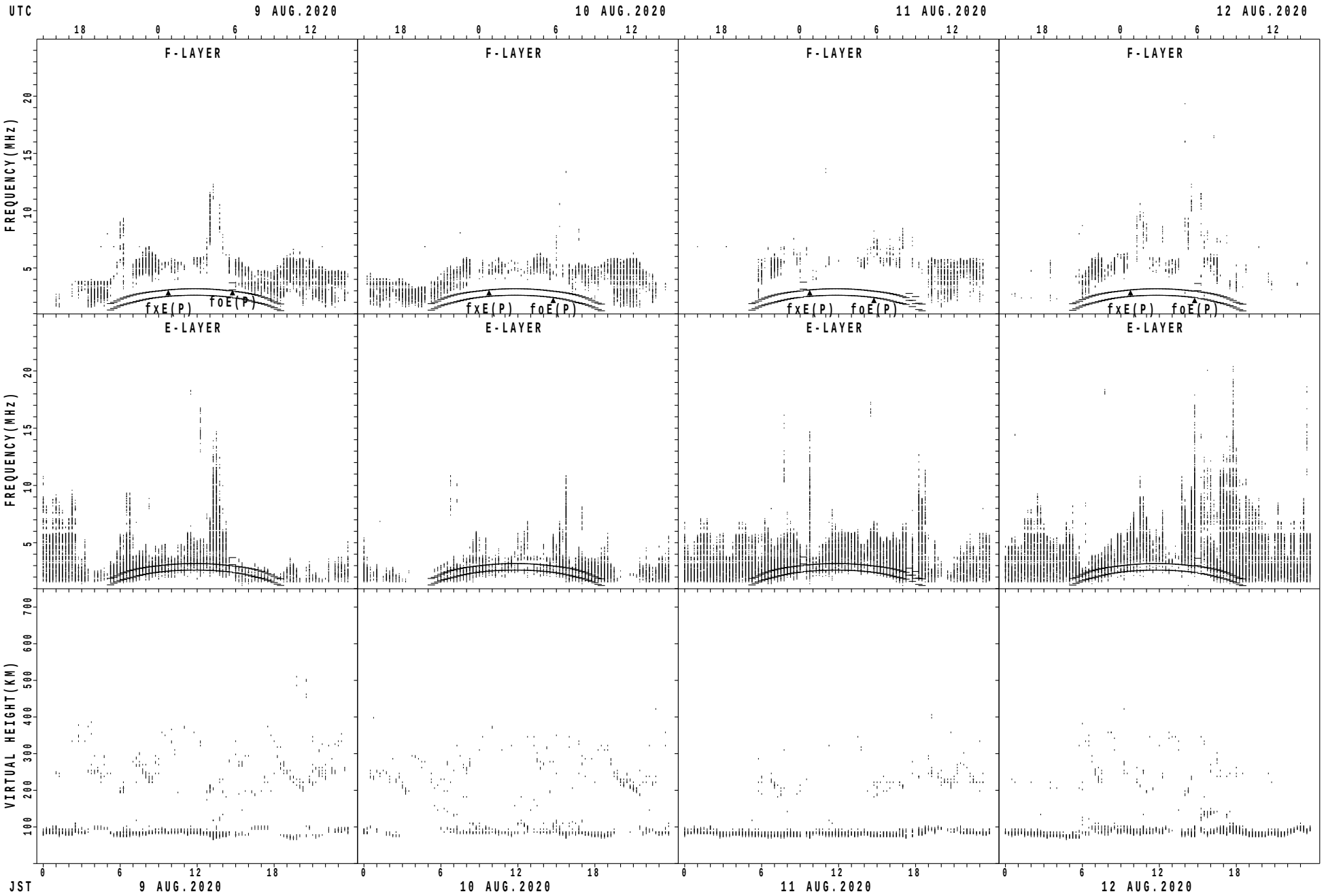
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



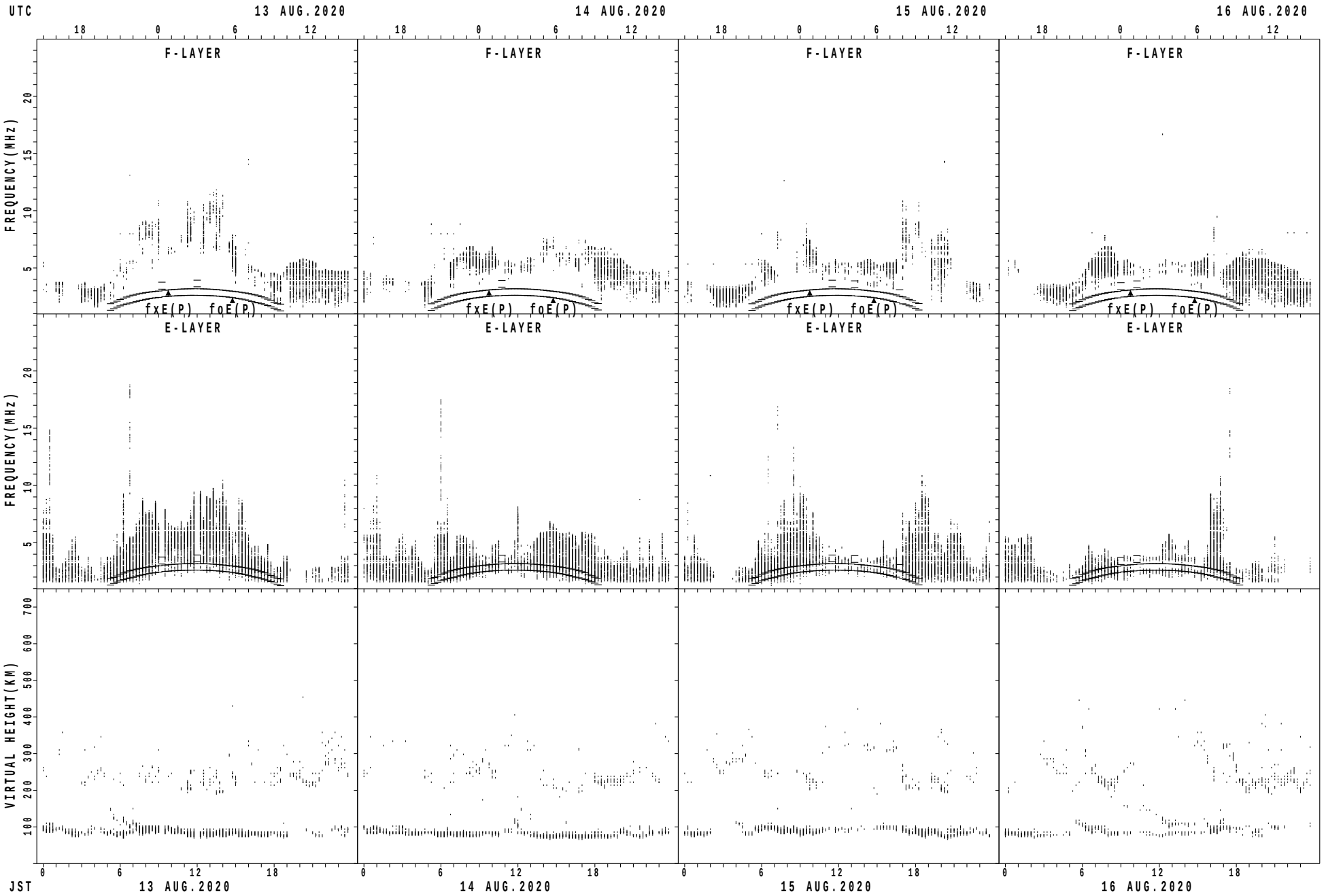
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



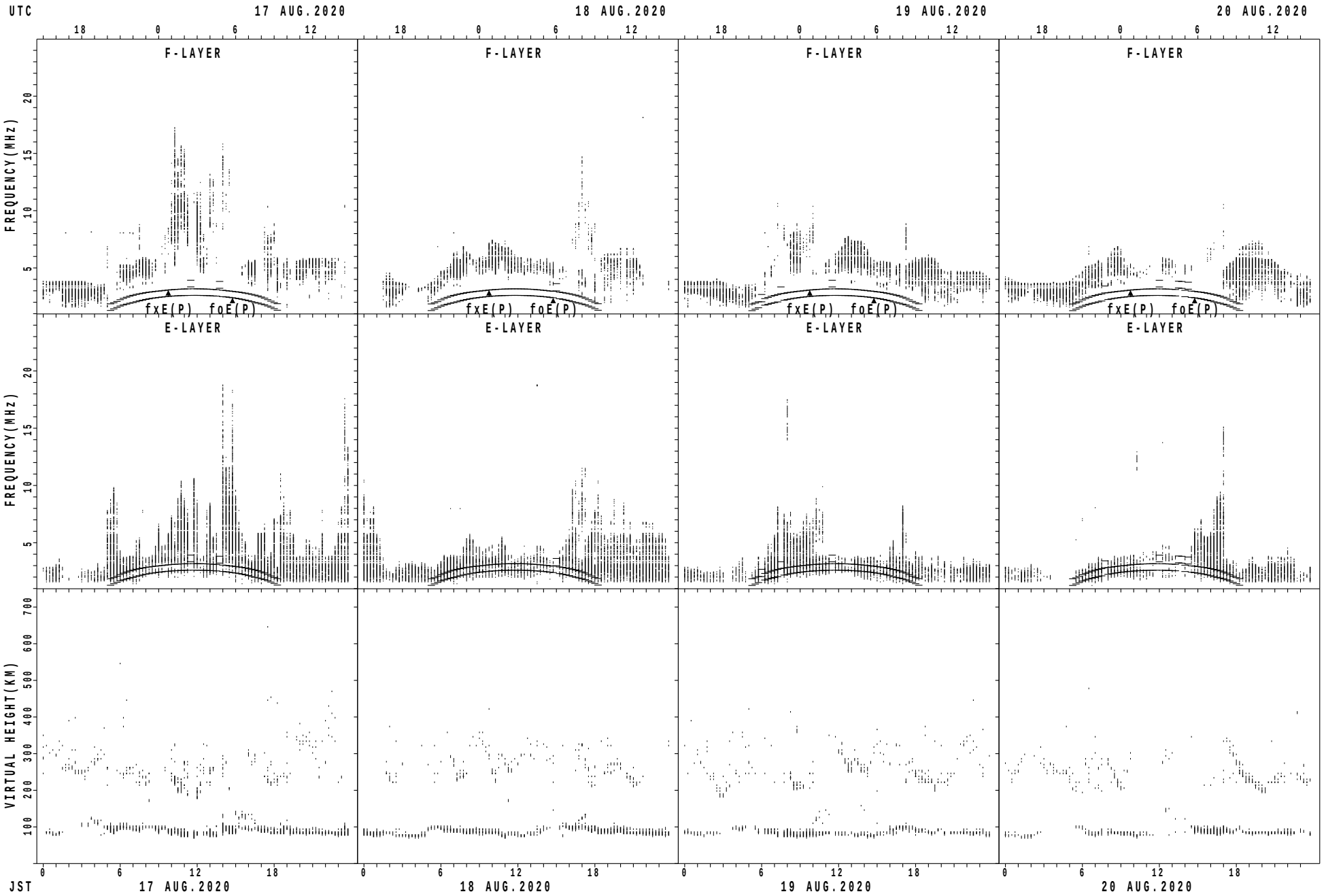
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



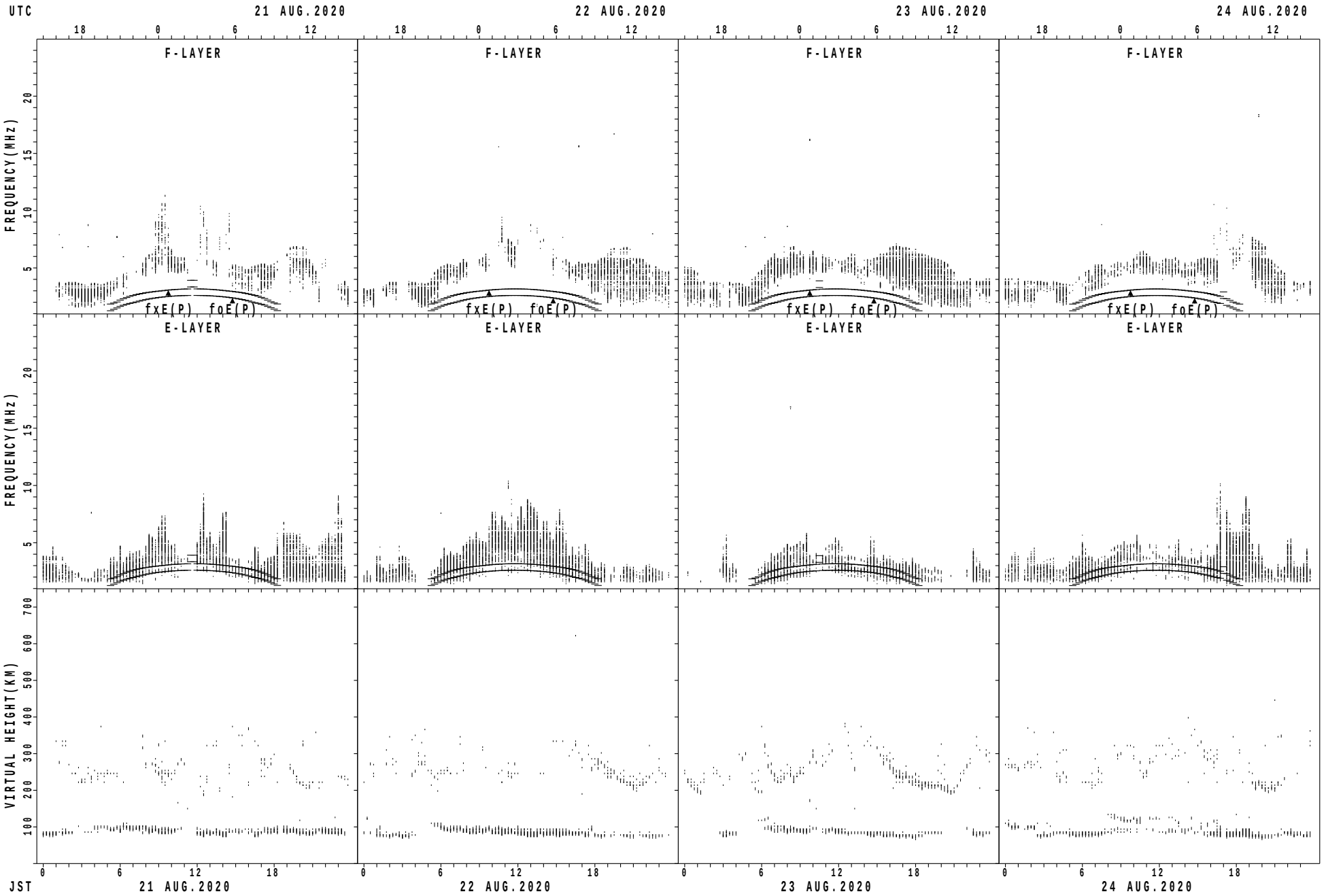
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



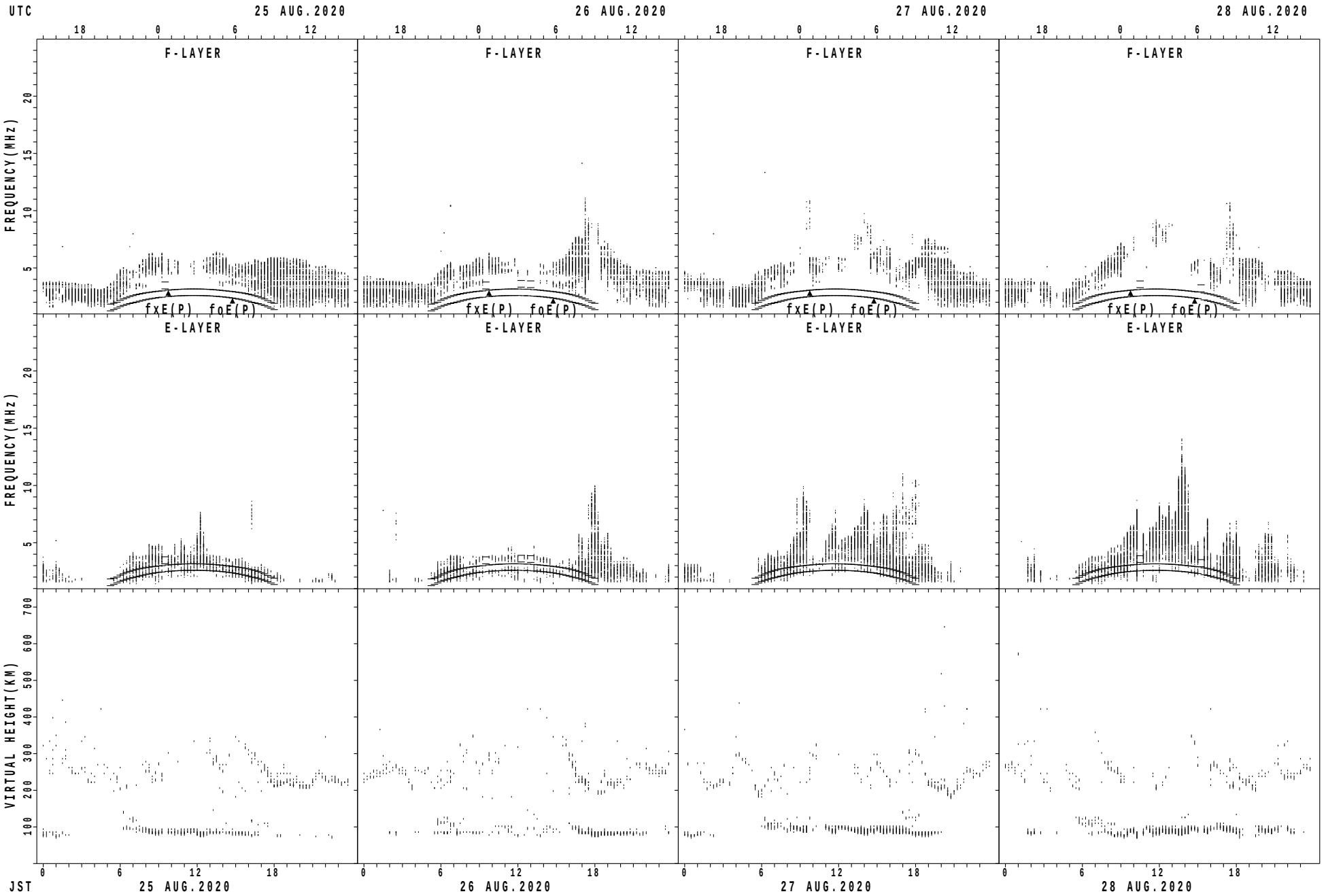
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



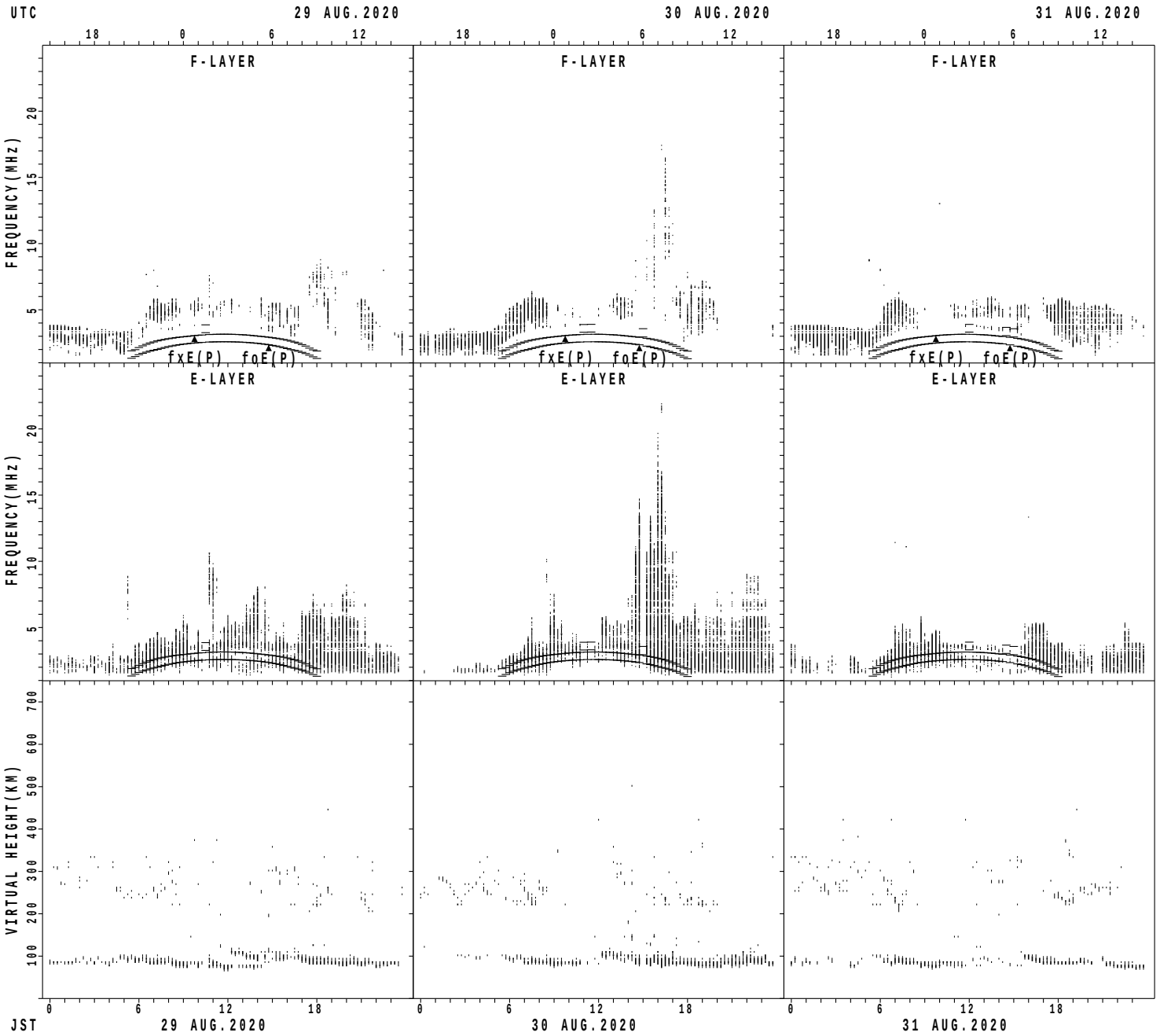
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



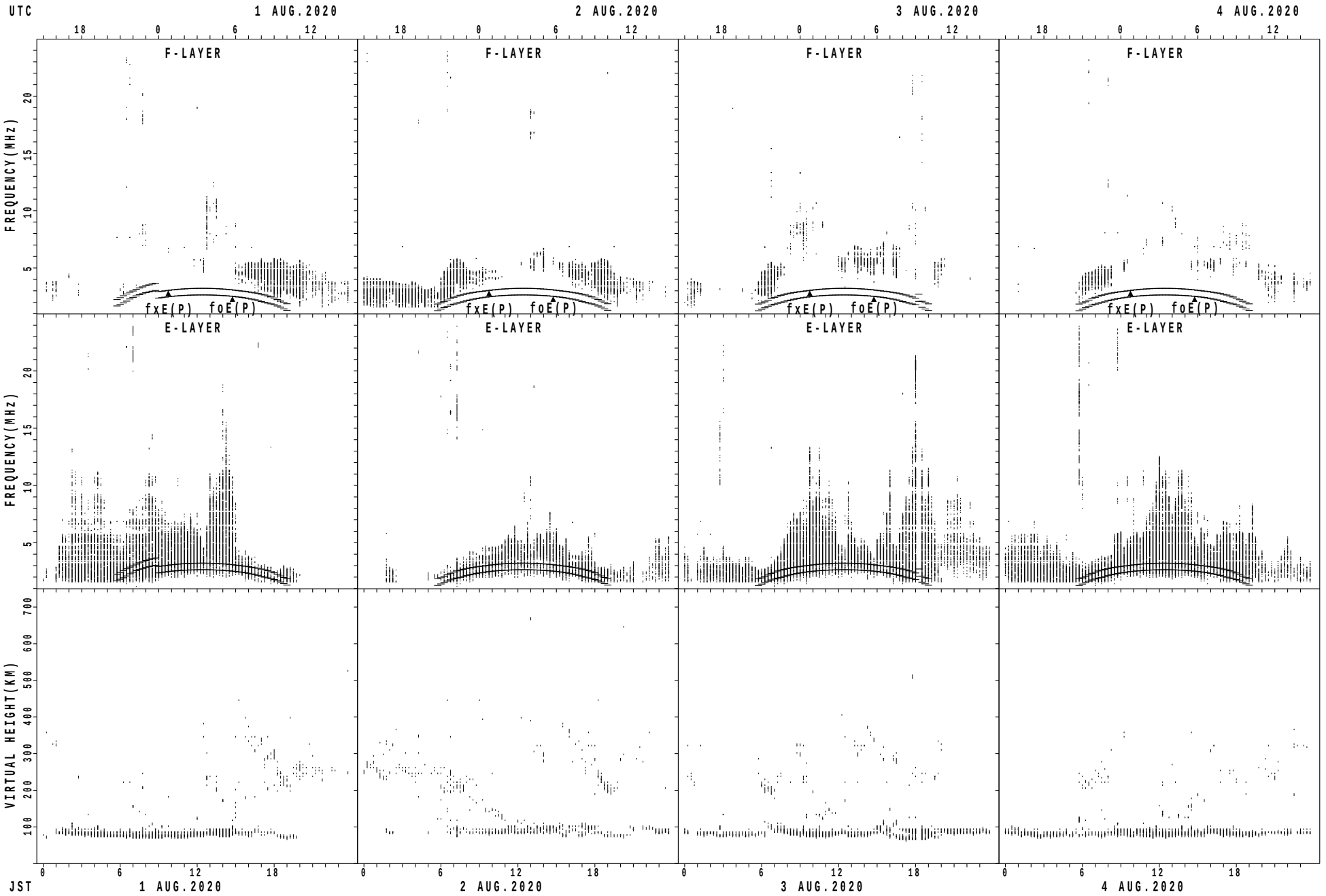
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Kokubunji



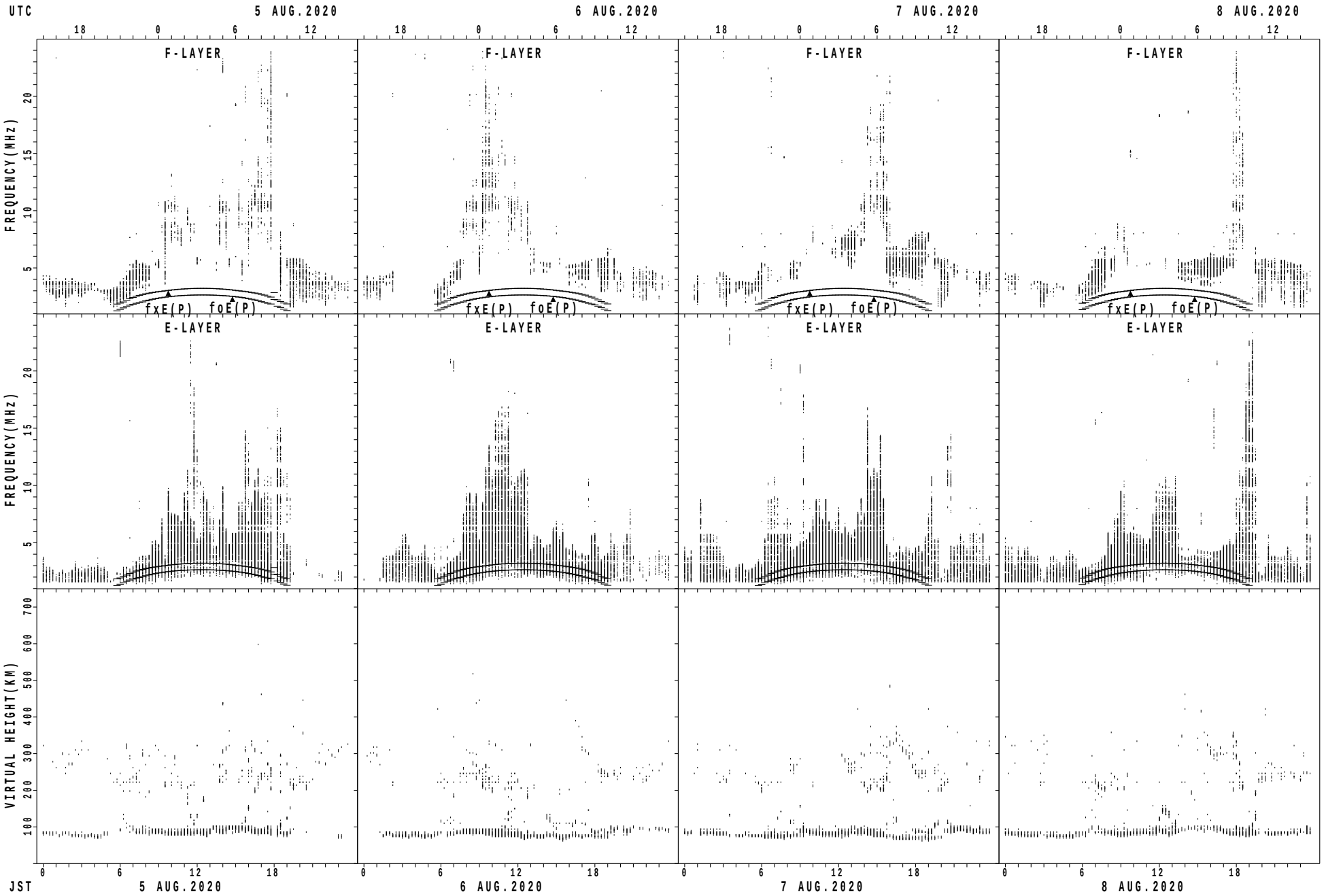
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



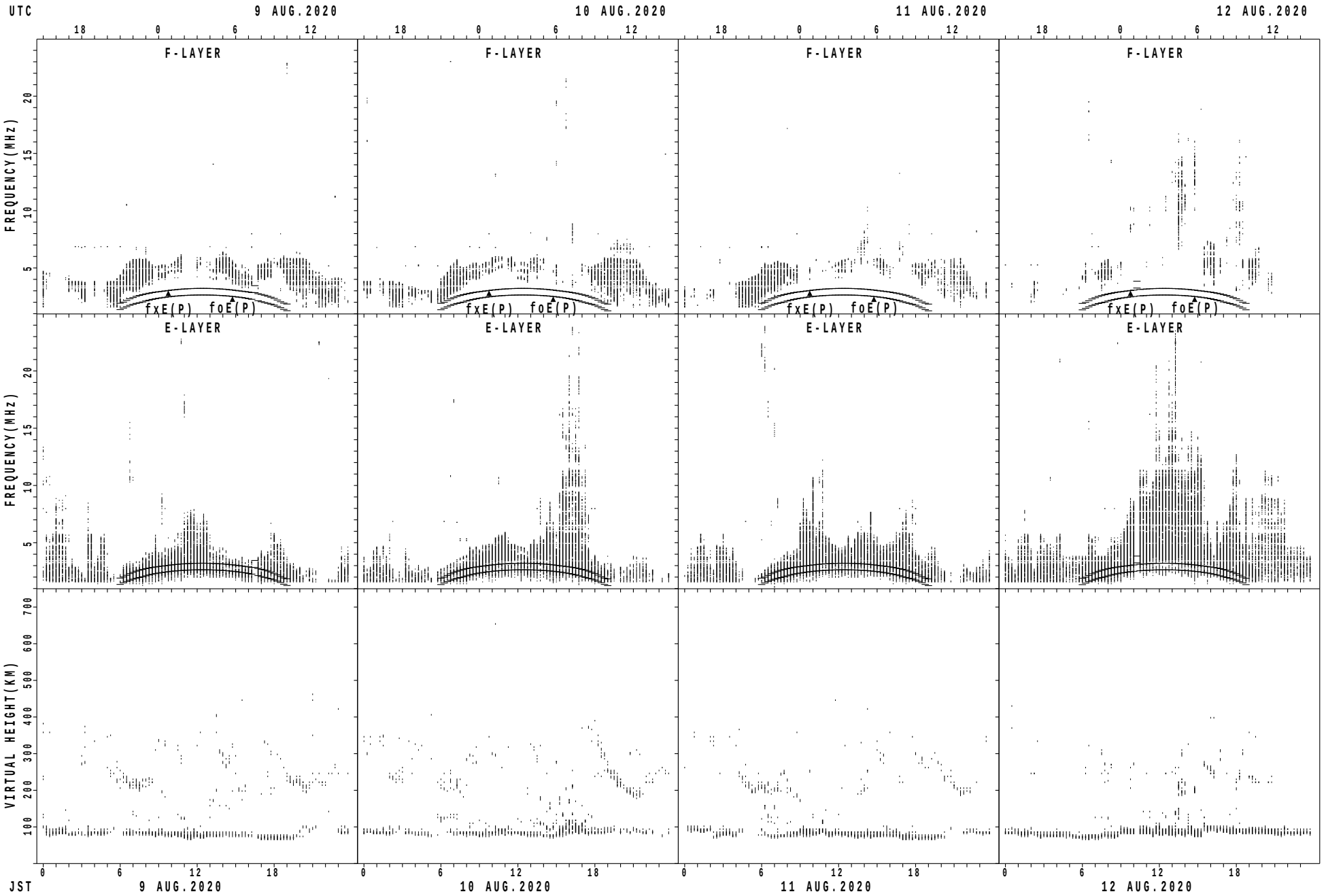
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



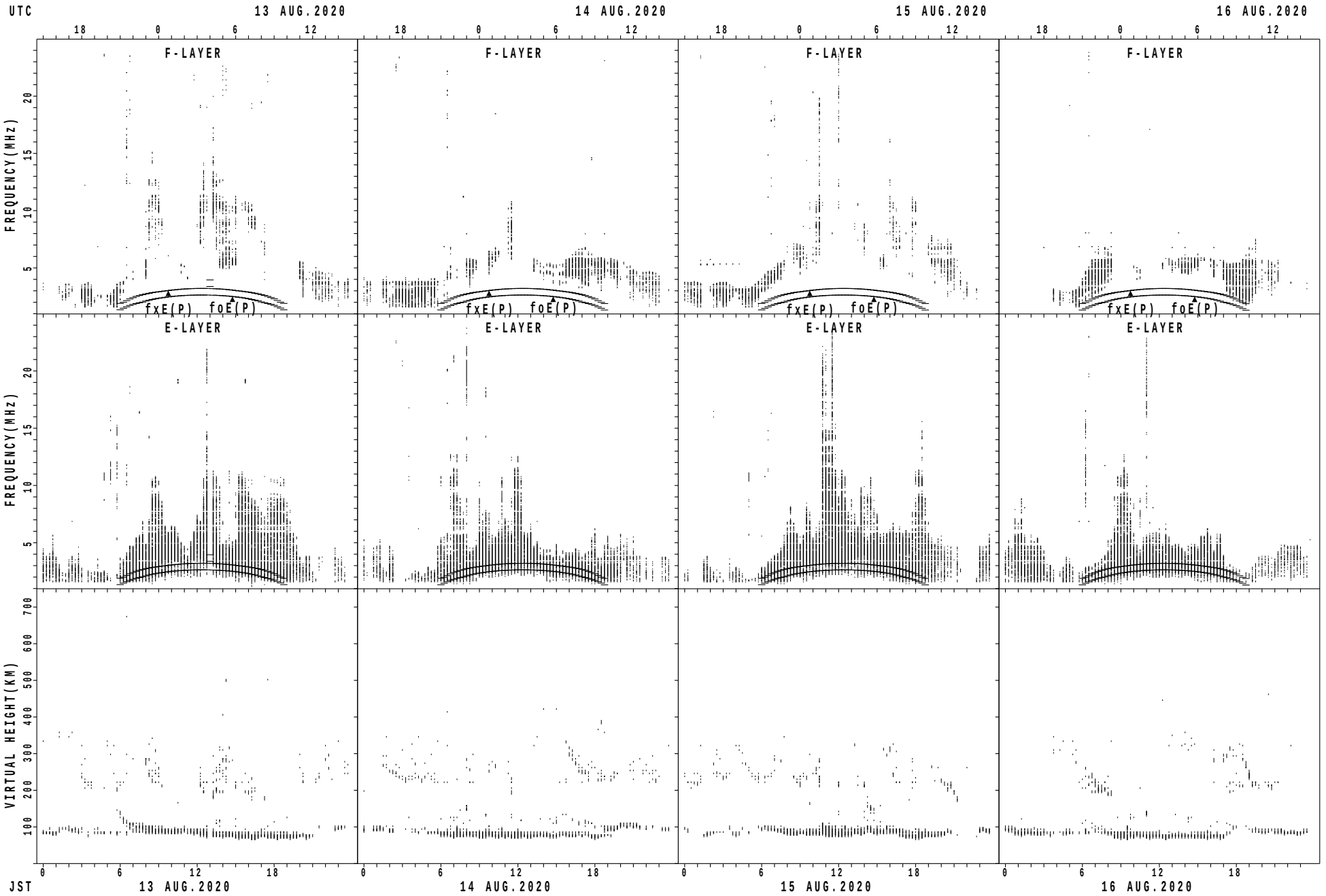
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



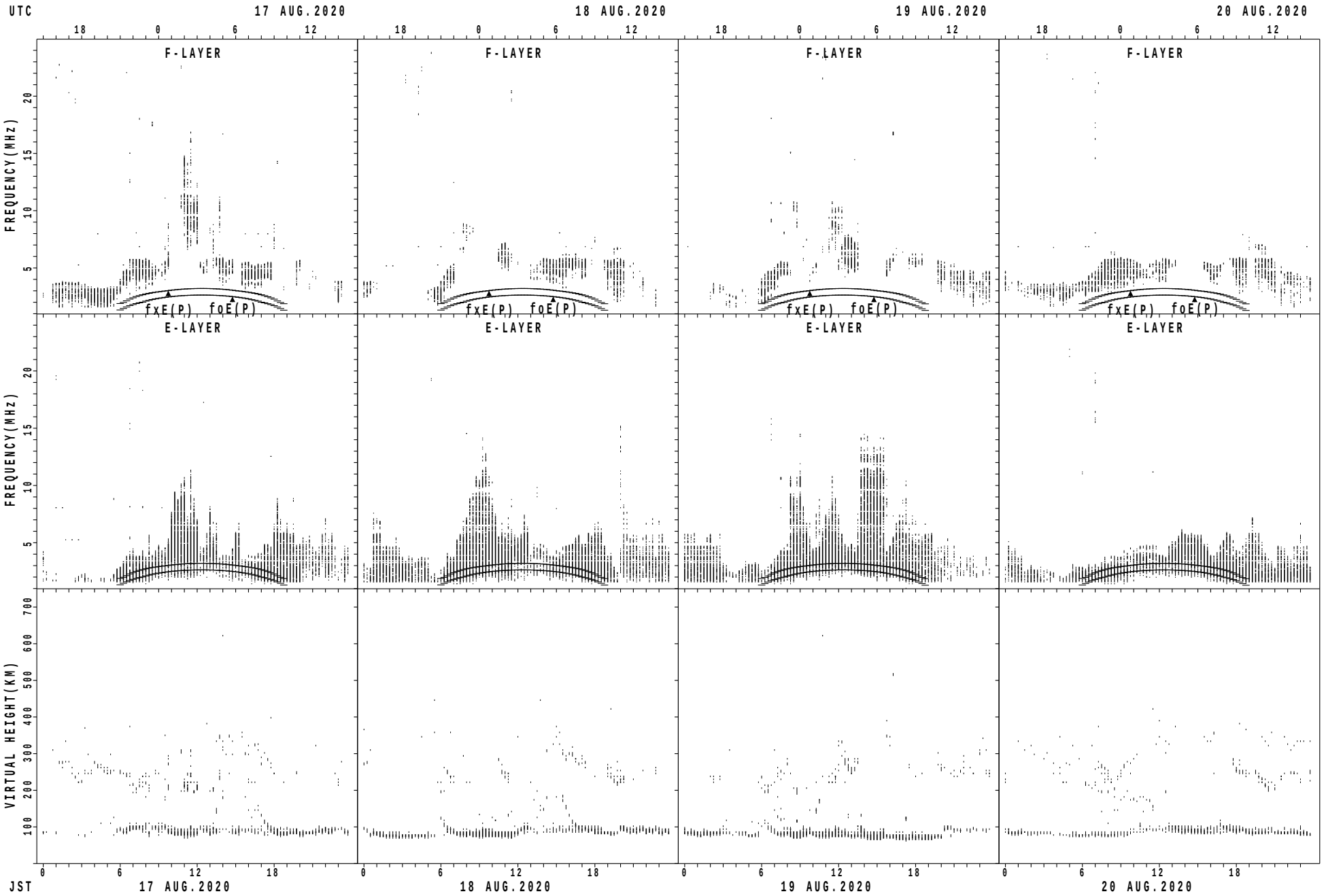
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



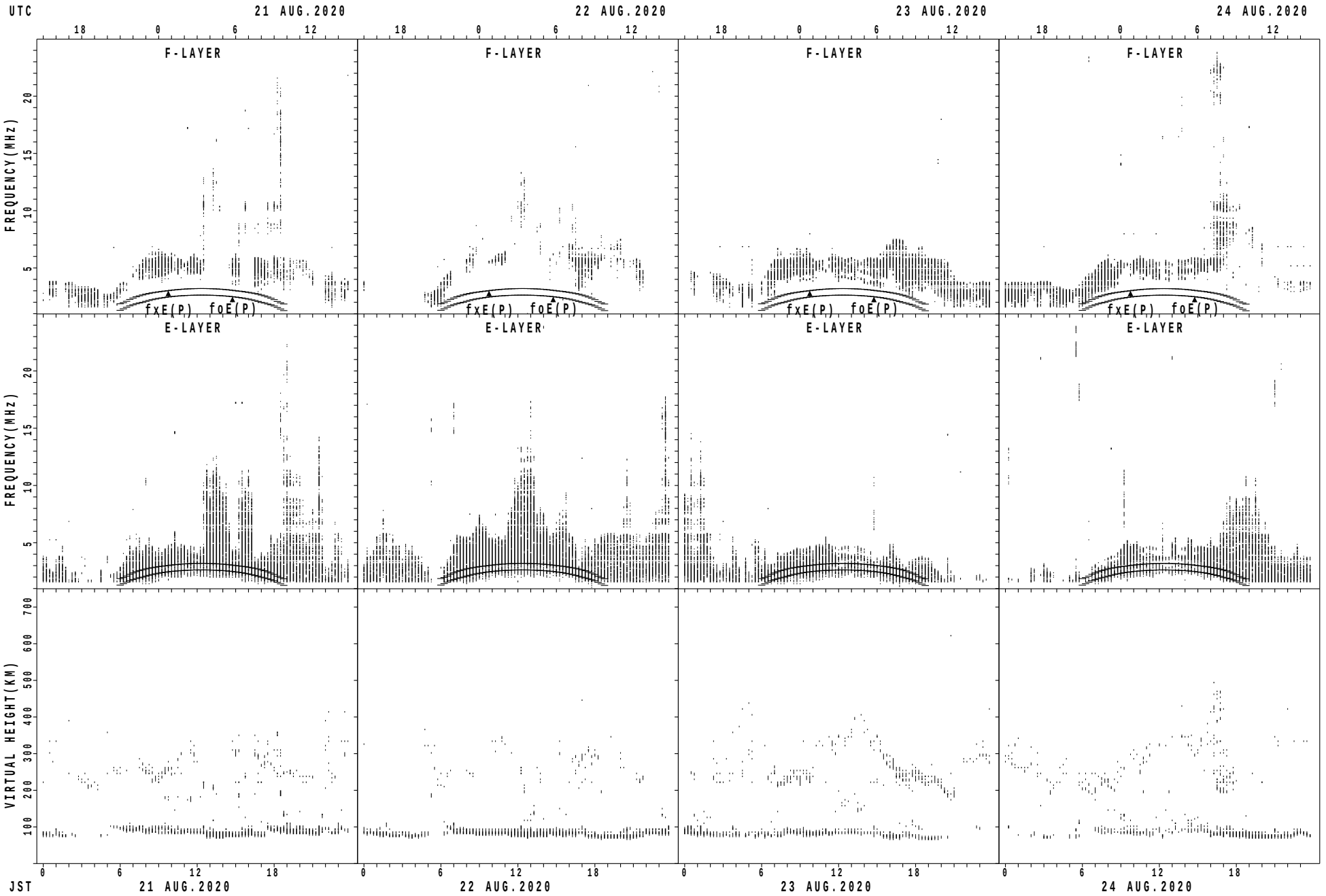
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



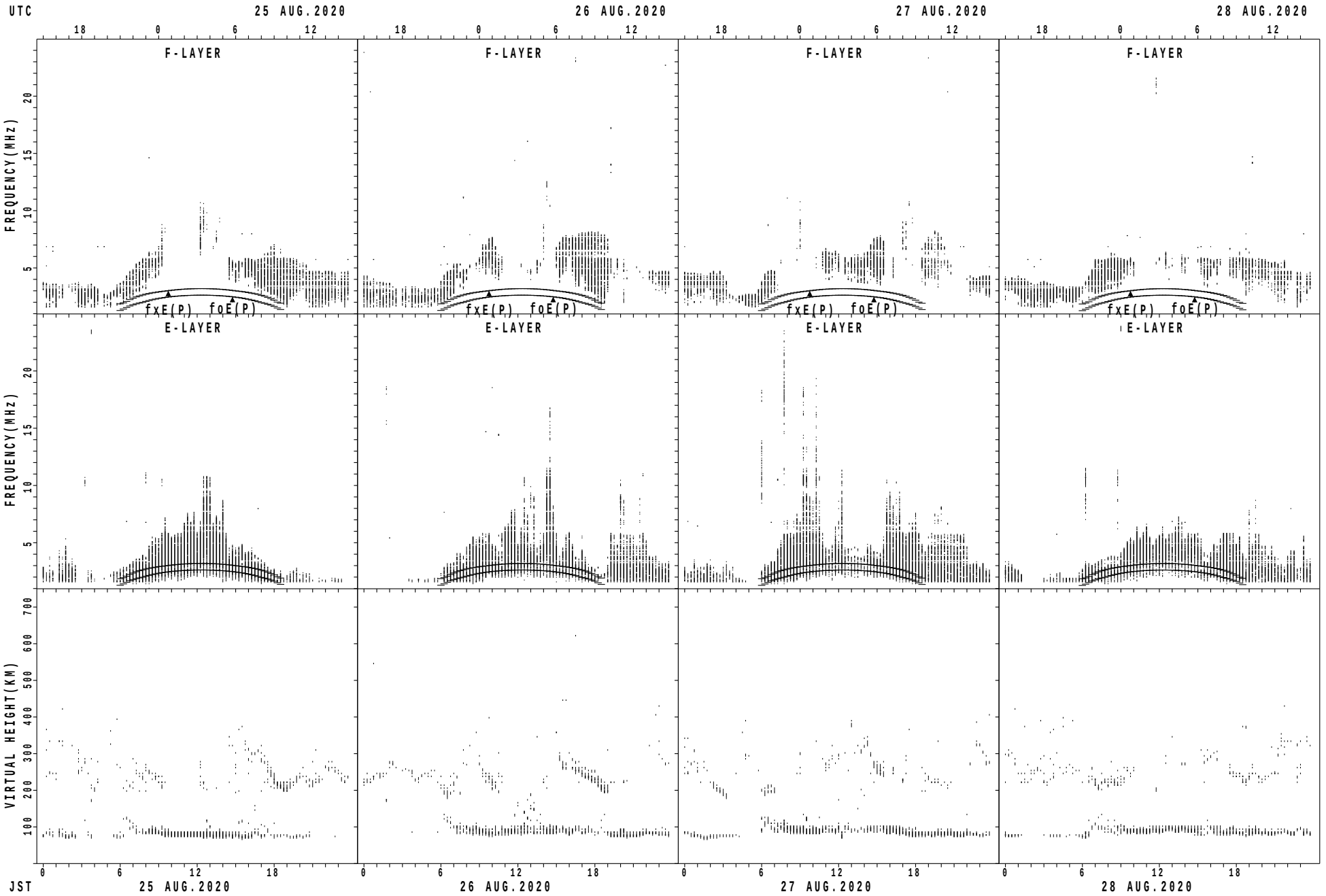
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



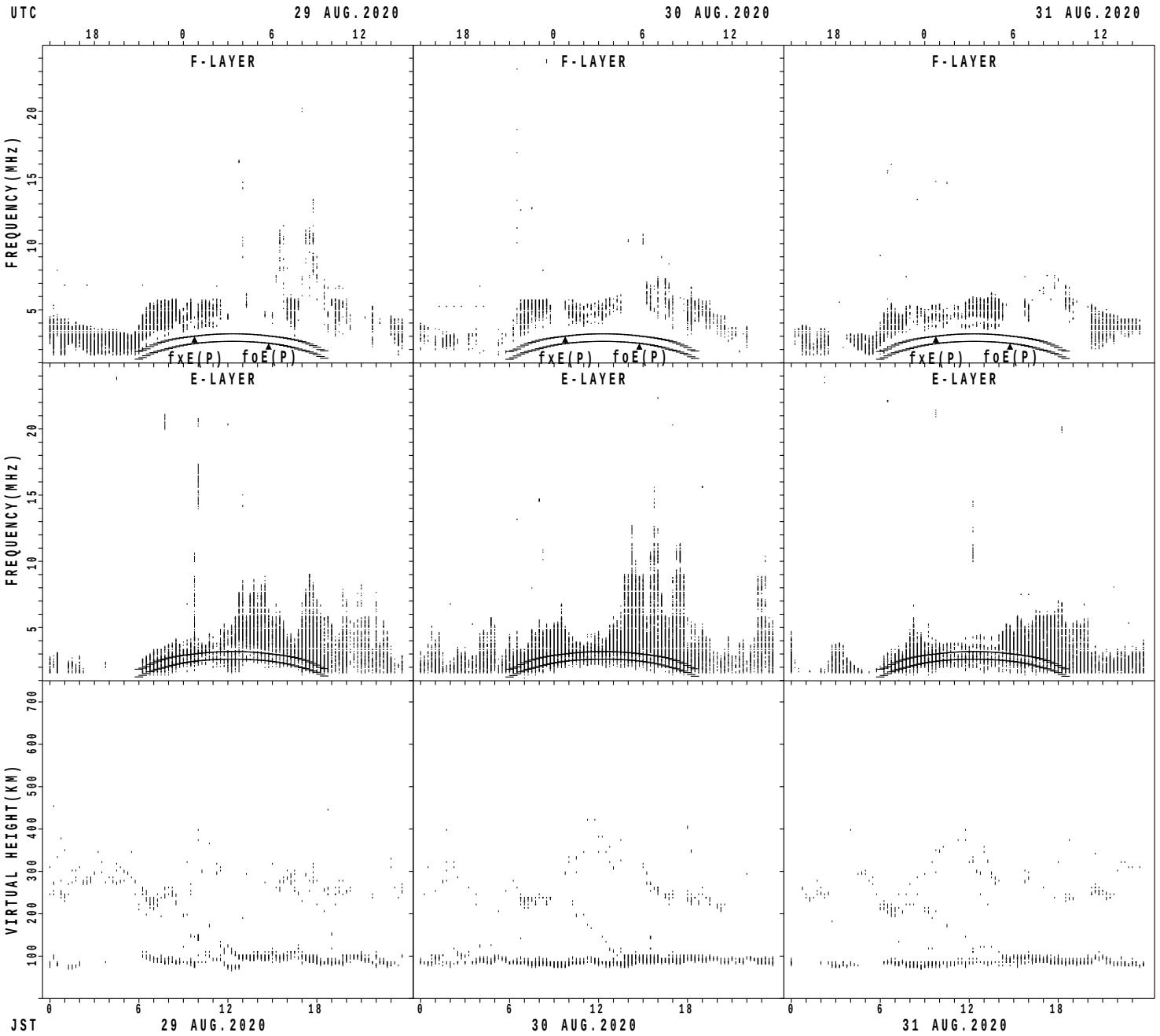
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



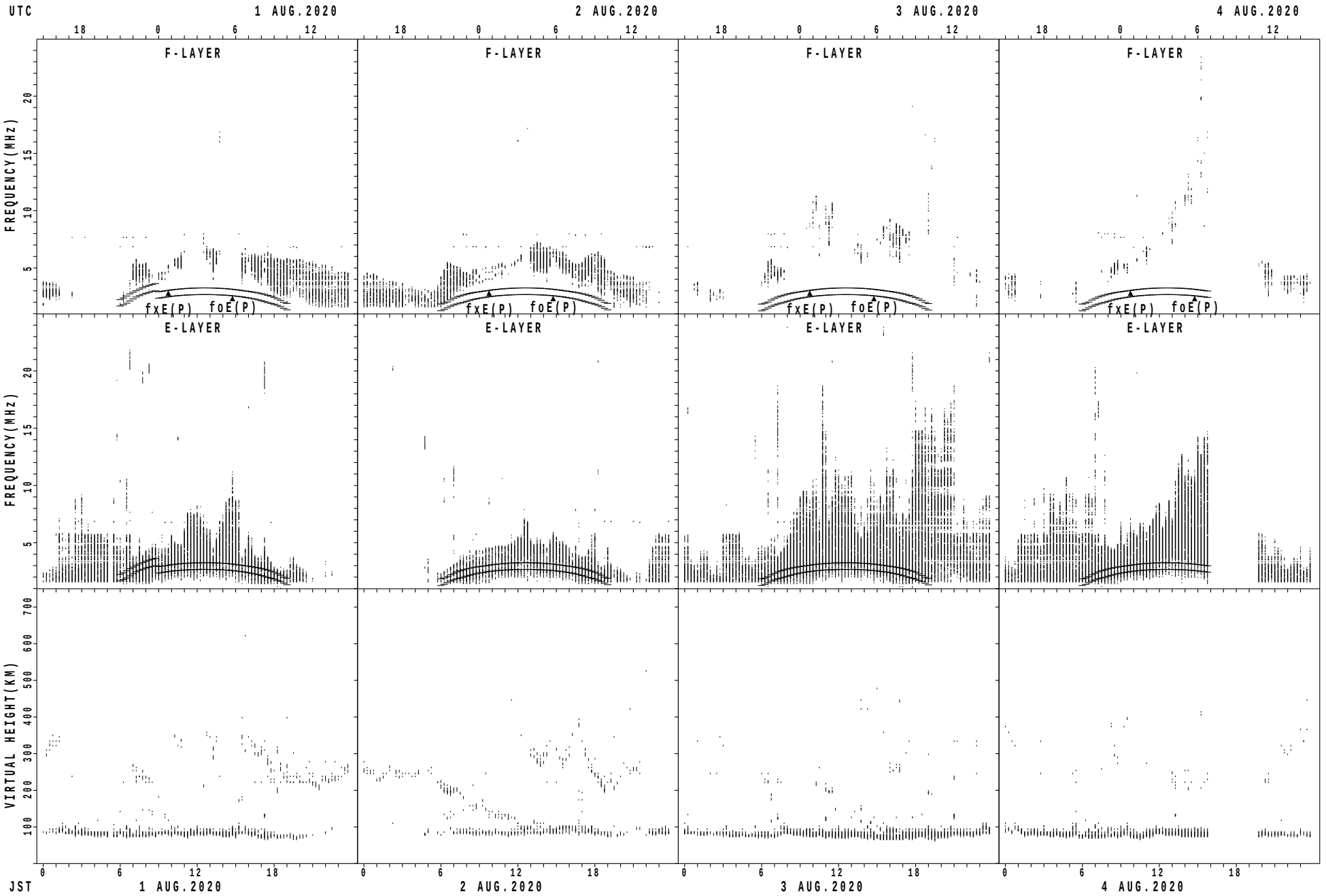
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Yamagawa



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

SUMMARY PLOTS AT Okinawa



fxE(P); PREDICTED VALUE FOR fxE
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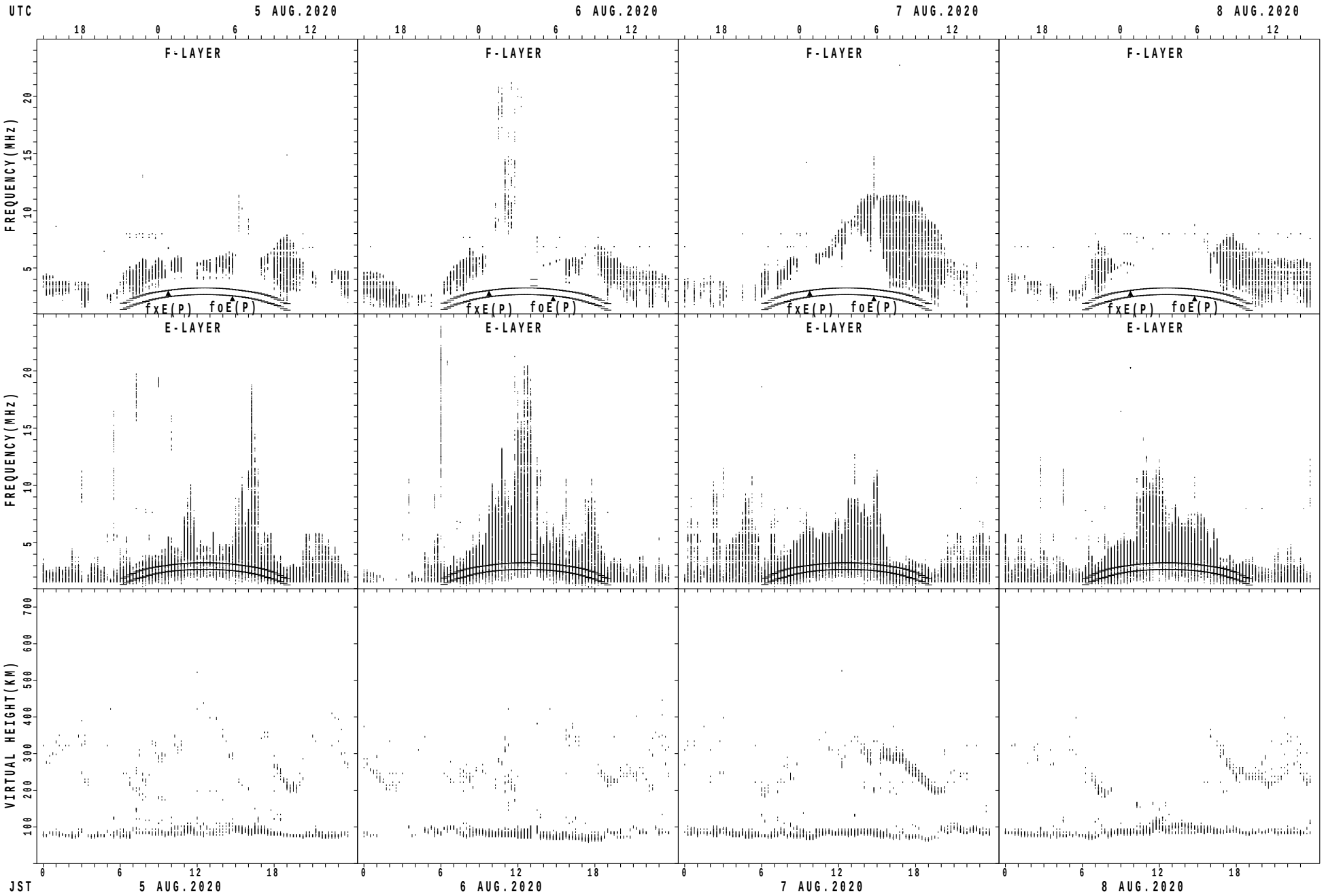
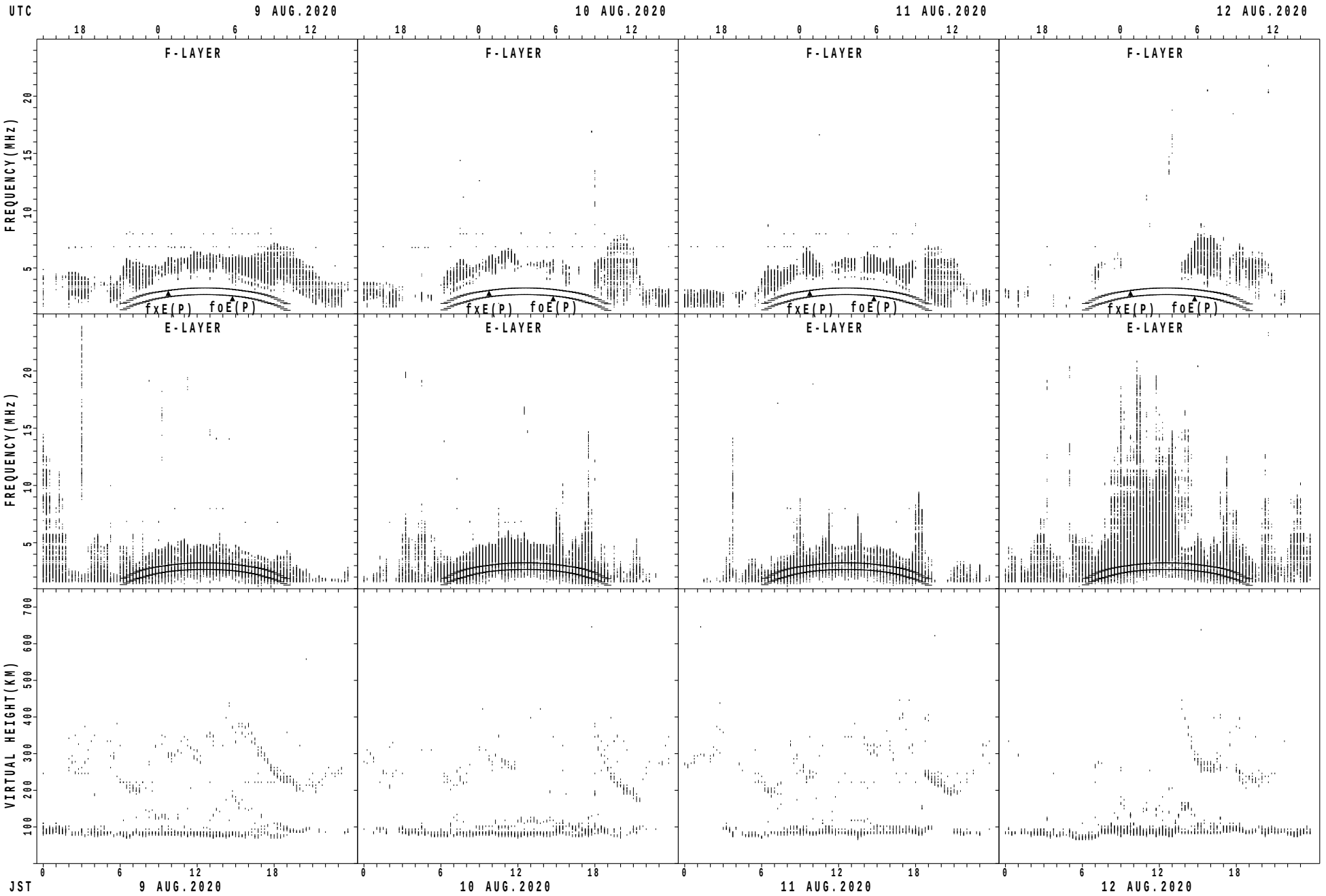
SUMMARY PLOTS AT Okinawa



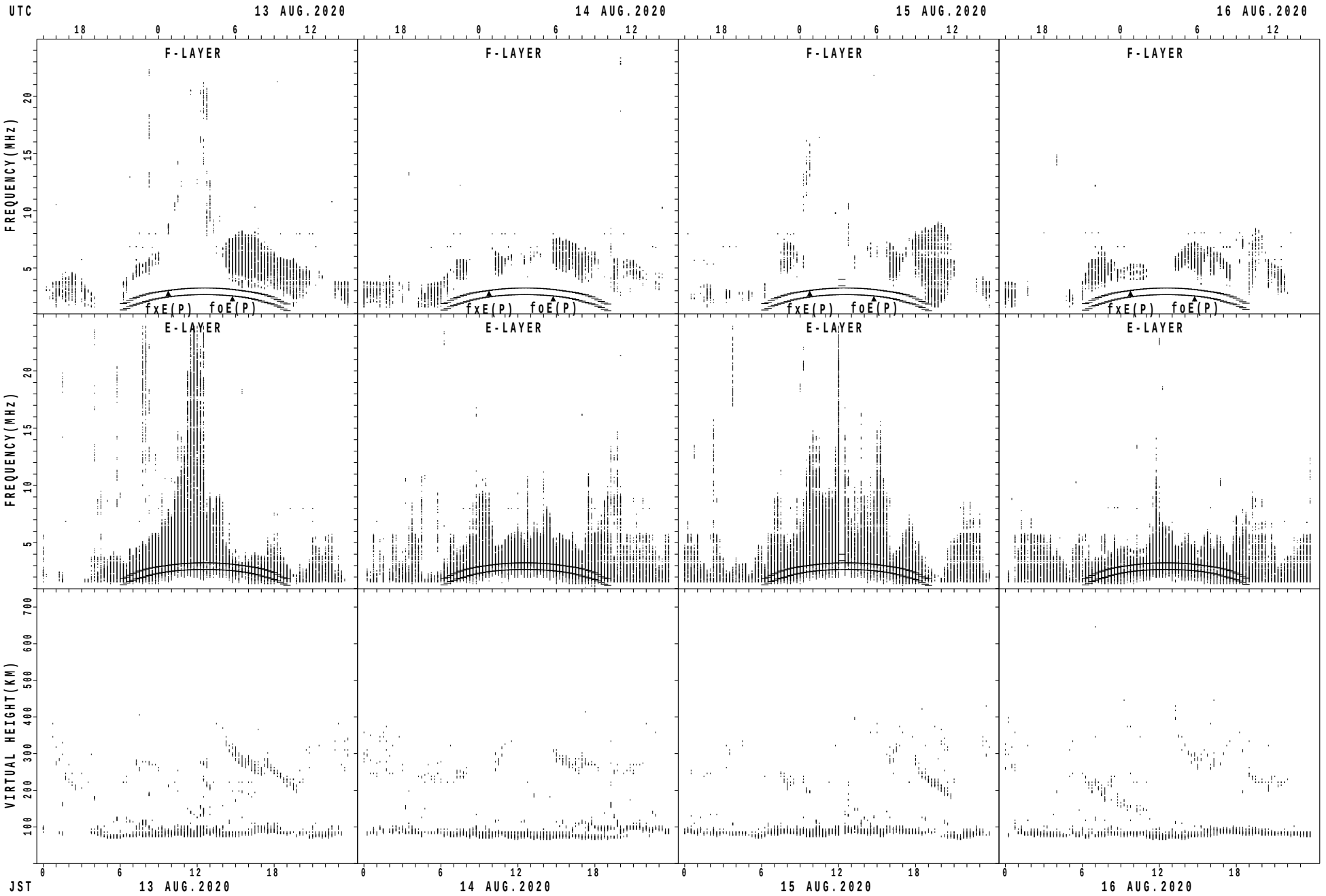
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



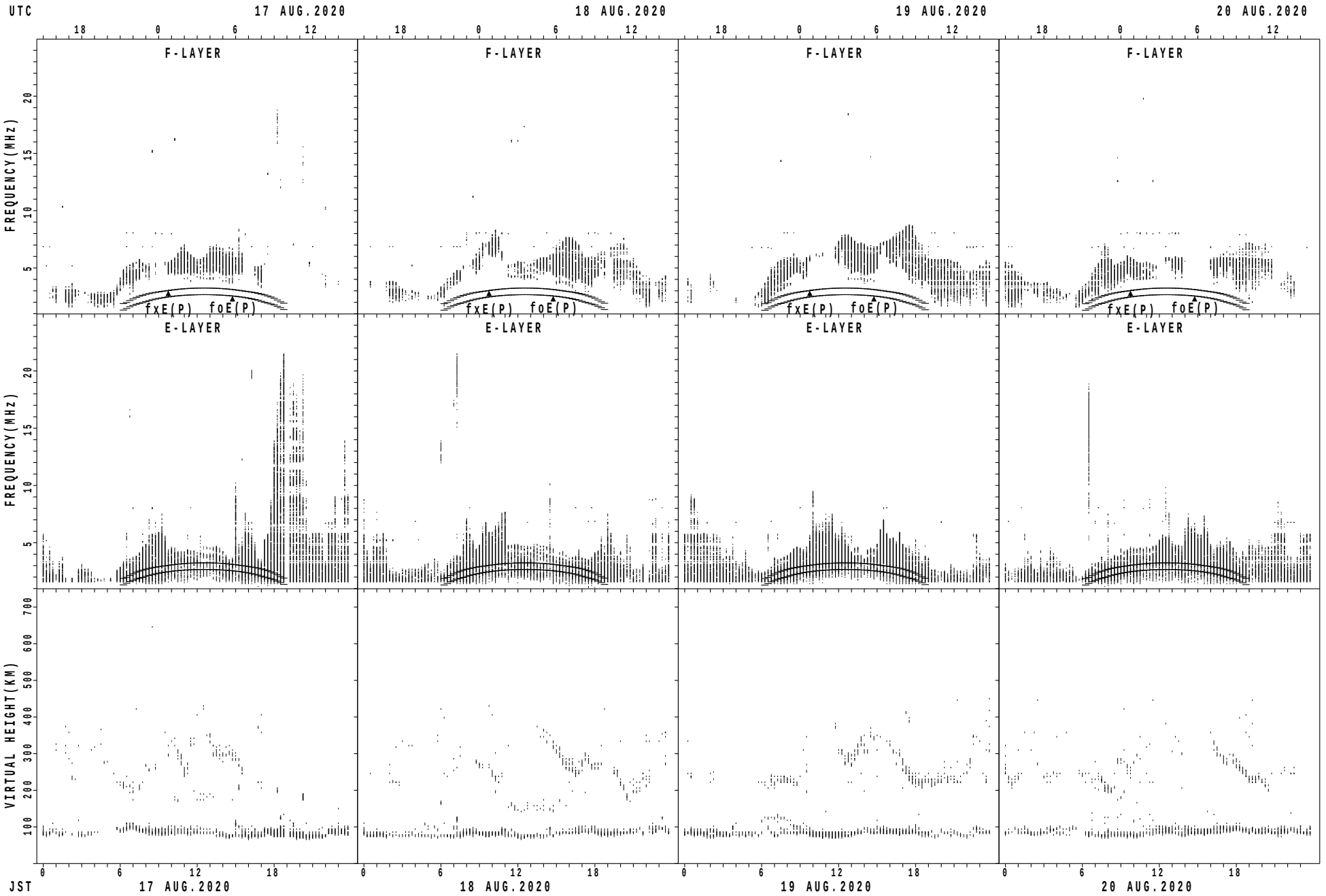
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



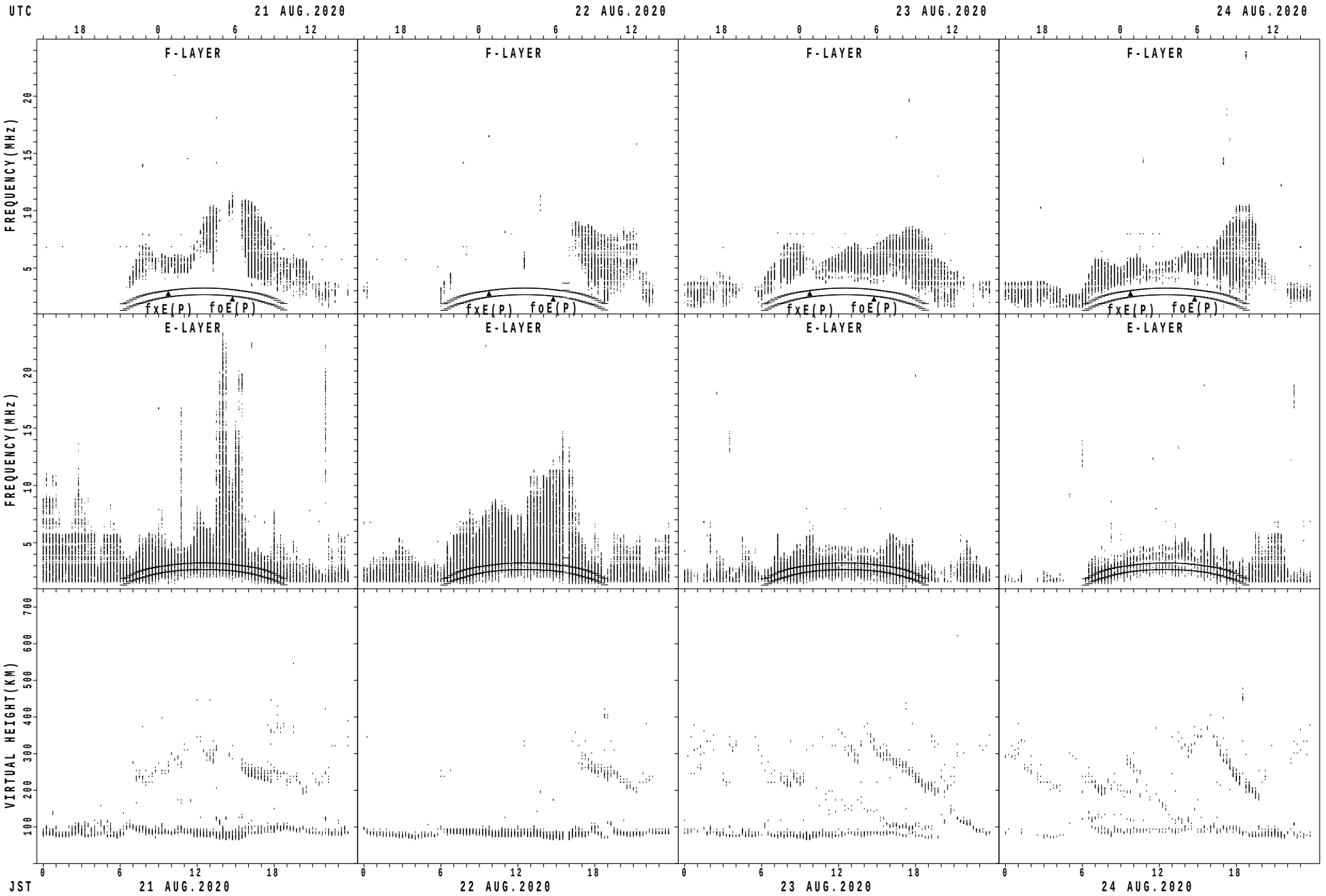
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



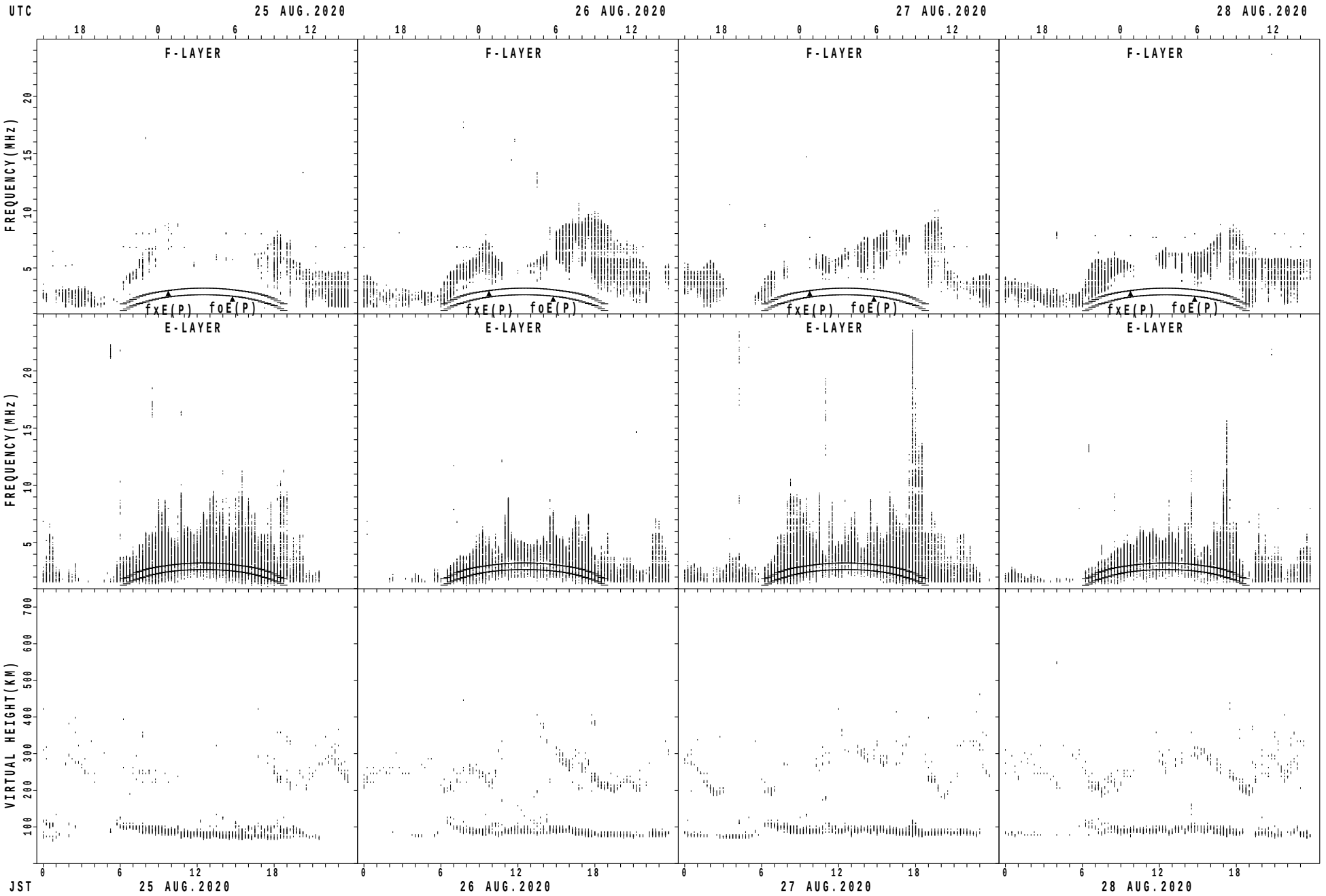
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



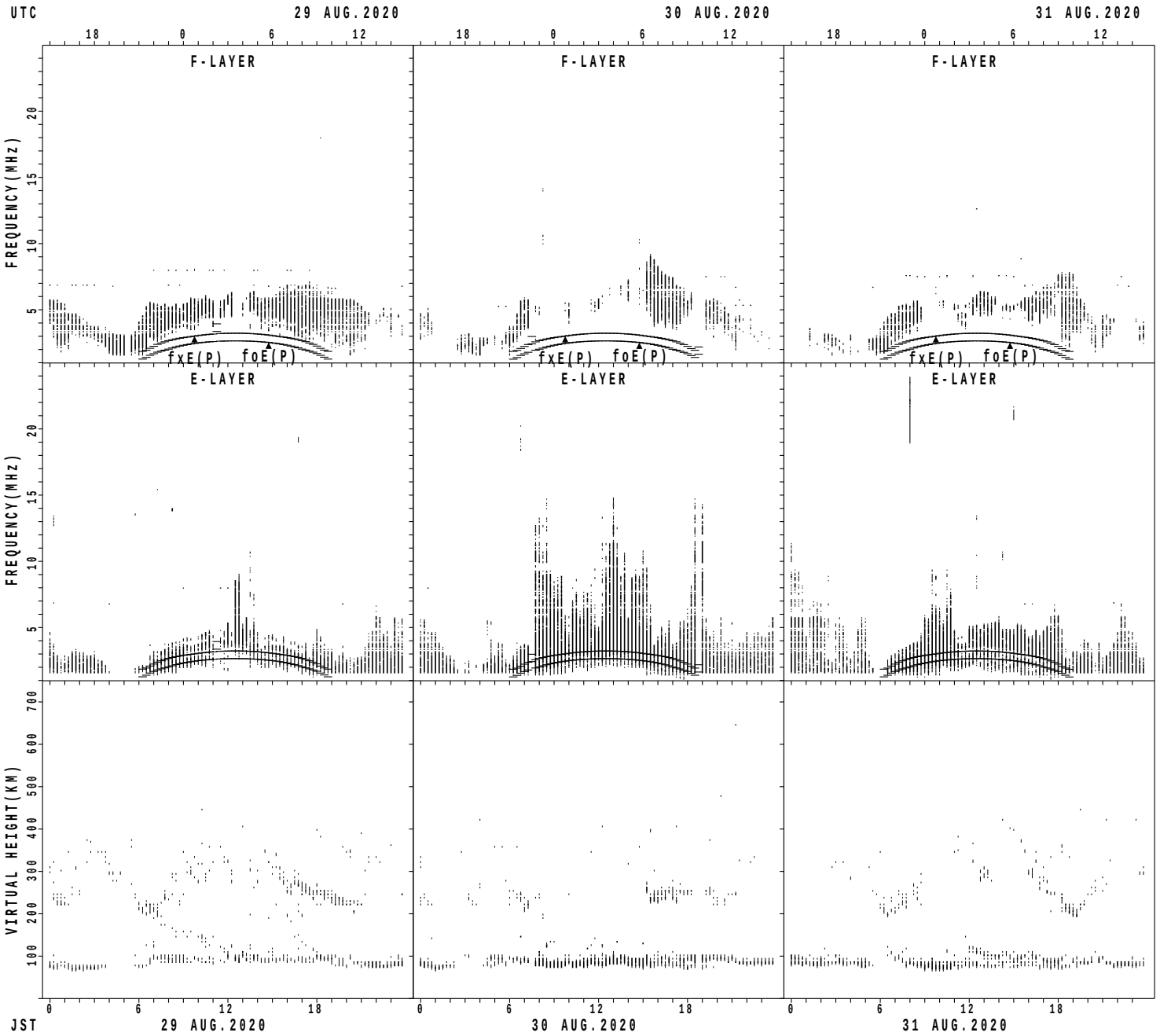
fxE(P); PREDICTED VALUE FOR fxE
foE(P); PREDICTED VALUE FOR foE

SUMMARY PLOTS AT Okinawa



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

SUMMARY PLOTS AT Okinawa



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

MONTHLY MEDIANS OF h'F AND h'Es

AUG.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							2	1									3	1	4	2			1	
MED							232	216									208	202	205	203			208	
U Q							264	108									226	101	218	208			104	
L Q							200	108									198	101	198	198			104	

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	31	31	31	30	27	29	30	30	30	28	28	28	28	28	28	29	29	30	30	30	29	29	30	31
MED	96	96	96	96	98	98	98	96	96	96	95	94	94	96	98	98	96	97	96	96	98	98	96	96
U Q	98	98	98	98	98	98	98	98	98	97	98	98	96	98	100	98	98	98	98	98	98	98	98	98
L Q	94	94	94	94	96	96	96	96	96	94	93	93	92	94	94	96	94	94	94	94	96	96	94	92

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

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1	2	7									4	8	7	2	1	1		
MED						218	195	246									233	221	208	232	218	324		
U Q						109	198	264									269	245	234	232	109	162		
L Q						109	192	224									225	206	200	232	109	162		

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	29	28	29	27	28	26	30	31	31	31	31	28	29	29	31	31	31	31	30	30	30	27	29	29
MED	96	96	96	96	96	97	98	98	96	96	96	96	94	96	96	96	96	96	96	94	96	96	96	96
U Q	96	96	98	98	98	98	100	100	98	96	96	97	96	98	98	98	98	98	98	96	98	96	98	98
L Q	94	94	94	92	95	96	96	96	92	92	94	94	92	94	94	94	94	94	92	92	92	94	94	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									5									4	9	3	4	1		
MED									240									230	238	268	235	214		
U Q									275									241	269	304	238	107		
L Q									215									215	202	216	225	107		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	29	29	30	29	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	27	30
MED	96	96	94	96	96	96	96	98	96	94	94	96	94	96	94	96	96	96	94	92	95	96	96	96
U Q	96	98	96	96	98	98	98	98	98	98	96	98	96	98	98	98	98	96	98	96	96	96	96	96
L Q	94	94	90	92	94	94	94	96	94	94	92	92	92	94	92	94	92	92	92	90	92	92	92	92

MONTHLY MEDIANS OF h'F AND h'Es

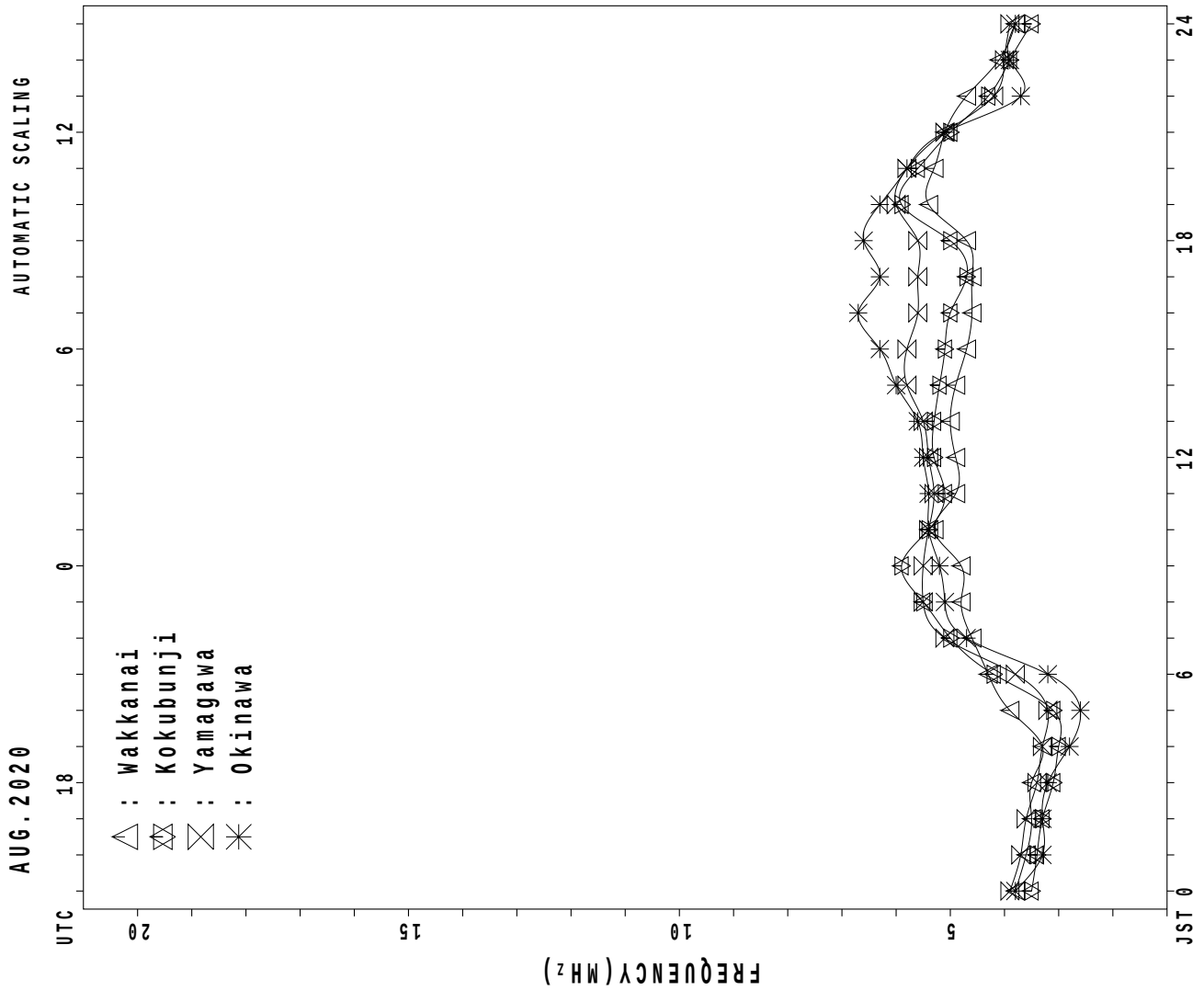
AUG.2020 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

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					1			1	6									13	15	9	4	2		
MED					198			234	219									278	246	226	228	226		
U Q					99			117	222									314	264	237	233	244		
L Q					99			117	200									260	234	211	221	208		

h'Es

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	26	25	26	27	27	31	31	31	31	31	31	31	31	31	30	30	30	29	30	31	30	28
MED	96	95	94	94	94	96	96	96	96	95	96	96	96	96	96	96	97	96	96	95	96	94	96	94
U Q	98	98	98	96	96	96	98	98	98	98	96	98	100	101	99	100	98	98	97	98	98	98	98	96
L Q	92	89	92	92	92	90	92	93	95	94	92	94	94	94	95	93	96	94	94	92	92	90	90	89


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

IONOSPHERIC DATA STATION Wakkanai

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

AUG.2020 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

IONOSPHERIC DATA STATION Wakkanai

AUG.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	A	A	A	A	A	A	L	L	L	L	L	368	316					
2						L	L	L	A	L	L	L	L	L	L	L	L	L	L					
3						L	L	A	A	L	L	L	L	L	L	400	388	L	320					
4						A	A	A	L	A	A	A	A	A	L	396	392	348	304					
5						L	A	L	400	L	L	L	A	L	L	L	A	A	A					
6						A	A	A	A	L	L	436	L	L	L	L	L	L	292					
7						L	L	L	L	424	A	L	L	A	A	L	L	L	L					
8						L	L	396	L	L	L	L	L	L	L	408	L	L	L					
9						L	L	L	L	A	A	A	L	L	L	412	396	L	L					
10						L	L	L	L	L	A	L	436	L	L	L	388	364						
11						L	340	L	L	A	A	A	428	L	L	392	A	368	L					
12							L	L	L	L	L	L	L	A	L	L	L	A	L					
13							L	L	L	400	A	A	L	L	424	408	380	A	L					
14							384	384	L	L	A	L	424	A	A	A	L	360	L					
15						L	332	404	L	L	L	L	A	A	L	L	A	A	L					
16						L	L	L	A	416	L	A	L	L	408	A	A	L	A					
17								L	A	420	L	L	L	A	A	A	A	A	A					
18							A	A	L	C	C	C	C	C	C	C	C	C	L					
19						L	L	L	L	C	C	C	C	C	C	L	L	L						
20							L	A	L	L	L	L	L	L	L	L	L	L	296					
21							A	L	L	416	L	L	388	A	L	A	L	A						
22							384	L	A	A	A	432	L	L	420	L	L	L	L					
23						L	L	L	L	A	L	L	L	L	L	L	L	L						
24						A	352	L	L	L	L	L	L	A	L	L	380	L						
25						L	L	L	L	L	L	L	412	L	412	L	L	L	256					
26						C	C	C	C	C	C	C	C	C	C	C	C	L						
27							396	372	372	L	L	L	428	A	A	L	368	L	L					
28						L	A	L	A	L	424	L	424	416	400	L	L	348						
29							L	L	A	L	L	L	412	L	L	L	L	A						
30							L	A	396	L	A	L	L	A	L	L	A	A						
31							A	A	A	A	L	L	L	L	L	L	L	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							6	4	3	5	1	2	8	1	5	6	7	6	6					
MED							368	390	396	416	424	434	424	416	412	404	388	362	300					
U Q							384	400	400	422			428		422	408	392	368	316					
L Q							340	378	372	408			412		404	396	380	348	292					

IONOSPHERIC DATA STATION Wakkanai

AUG.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						180	228	256	268	308	316	332	328	A	328	280	280	236	220					
2						A	248	268	276	276	276	328	A	344	332	300	284	244	A					
3						A	208	256	268	A	260	A	304	A	A	304	272	U A 240	196					
4						A	200	260	288	288	308	308	324	324	288	276	228	228	168					
5						172	216	216	288	304	304	300	312	308	308	304	276	232	172					
6						A	224	268	288	308	312	320	320	320	292	292	240	232	188					
7						168	224	276	284	284	A	A	A	A	A	A	276	A	A					
8						188	228	264	280	292	300	A	A	252	280	280	280	252	A					
9						A	A	252	288	312	316	316	A	276	308	A	A	236	B					
10						168	204	256	292	316	308	328	316	304	288	284	284	A	A					
11						B	228	260	268	296	A	A	A	320	312	312	260	260	192					
12						B	232	268	284	300	316	316	288	300	A	288	A	A	A					
13						232	232	264	284	312	308	292	284	312	A	A	A	A	A					
14						184	220	268	292	A	A	A	A	A	A	A	264	A	A					
15						B	216	252	280	304	300	292	A	A	296	284	284	216	164					
16						A	228	268	276	296	296	308	308	308	304	272	252	A	196					
17						256	192	260	284	300	316	316	A	A	A	420	272	200	A					
18						216	216	260	284	C	C	C	C	C	C	C	C	C	200					
19						248	228	200	284	C	C	C	C	C	C	284	248	220	B					
20						B	228	264	280	300	316	324	324	324	308	300	276	244	192					
21						224	208	244	268	268	300	300	300	300	300	300	A	A	B					
22						228	228	252	288	300	308	300	292	284	264	A	248	228	204					
23						204	216	252	284	308	308	320	324	304	A	280	272	220	A					
24						A	204	A	296	296	300	328	A	312	A	312	188	232	A					
25						A	208	240	272	284	284	320	320	308	308	244	264	212	B					
26						C	C	C	C	C	C	C	C	C	C	C	C	A	A					
27						B	216	244	292	296	308	324	312	312	312	268	236	232	A					
28						A	208	244	280	308	308	308	308	312	308	292	268	216	A					
29						A	216	252	264	284	308	268	A	312	308	284	260	204						
30						184	196	228	260	272	296	A	320	320	300	288	228	A						
31						B	172	240	268	268	256	252	308	308	296	276	240	196						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						14	29	29	30	26	25	22	18	22	20	24	25	21	11					
MED						196	216	256	284	298	308	316	312	310	306	286	264	232	192					
U Q						228	228	264	288	308	310	324	320	320	308	300	276	238	200					
L Q						180	208	244	272	284	298	300	304	304	294	280	244	216	172					

IONOSPHERIC DATA STATION Wakkanai

AUG.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	JA 25	59	JA 83	JA 53	JA 77	27	69	JA 50	JA 73	JA 61	JA 61	JA 51	JA 43	G 28	39	37	37	33	40	54	JA 38	28	32	JA 82
2	JA 77	JA 51	46	38	34	38	40	JA 50	JA 99	JA 55	JA 48	JA 51	JA 49	JA 61	39	G 36	32	32	58	25	60	30	JA 33	JA 43
3	JA 40	33	JA 31	31	27	JA 32	JA 62	59	JA 52	JA 44	JA 124	JA 33	JA 37	JA 37	JA 33	36	36	JA 61	JA 31	JA 51	34	JA 36	60	39
4	JA 44	JA 32	JA 32	JA 34	44	JA 45	JA 34	JA 51	JA 44	JA 74	JA 83	JA 60	JA 59	JA 54	JA 127	JA 35	JA 37	JA 32	JA 23	JA 62	40	JA 39	JA 54	37
5	JA 84	JA 86	41	32	35	JA 41	JA 50	JA 52	JA 51	JA 47	JA 39	JA 43	JA 62	58	68	JA 59	71	JA 102	82	81	JA 125	42	JA 42	JA 42
6	JA 40	58	32	58	39	54	JA 61	JA 78	JA 61	JA 46	54	38	JA 61	38	JA 38	37	JA 53	32	247	41	JA 37	JA 40	JA 53	40
7	37	33	JA 41	26	E B 16	JA 23	31	JA 53	34	JA 46	JA 56	JA 58	JA 41	JA 58	JA 63	JA 62	38	JA 56	41	48	38	33	33	JA 29
8	JA 52	JA 49	26	JA 52	JA 23	JA 24	35	38	48	38	40	JA 47	JA 44	JA 38	JA 47	JA 55	36	33	JA 59	JA 137	JA 53	JA 31	JA 64	JA 65
9	JA 52	38	30	33	JA 30	39	JA 47	37	JA 44	JA 61	JA 65	JA 65	JA 57	JA 44	JA 77	JA 109	JA 33	32	JA 52	28	38	27	24	26
10	21	26	24	JA 52	24	21	JA 25	32	JA 65	JA 64	JA 59	38	JA 39	38	JA 40	JA 37	JA 56	JA 52	JA 29	JA 23	JA 33	60	JA 42	JA 31
11	26	JA 25	JA 31	JA 85	JA 27	JA 22	JA 52	33	35	75	JA 65	JA 47	JA 63	40	JA 37	JA 65	JA 65	36	38	JA 59	JA 33	JA 53	JA 50	JA 27
12	JA 24	JA 20	25	25	JA 53	JA 77	JA 31	JA 38	JA 77	JA 47	58	JA 42	JA 104	101	JA 79	JA 42	JA 65	JA 69	JA 41	39	JA 34	31	38	28
13	24	21	JA 84	36	JA 49	JA 61	JA 123	JA 52	36	JA 47	JA 89	JA 79	45	39	JA 43	JA 37	JA 42	JA 54	JA 52	JA 31	27	30	JA 52	JA 31
14	26	22	30	JA 144	26	JA 21	32	36	JA 86	41	75	50	41	JA 64	JA 68	JA 68	JA 76	JA 33	40	JA 29	28	31	39	JA 26
15	JA 64	35	JA 35	JA 86	59	JA 21	JA 35	JA 36	36	38	57	JA 35	63	78	38	JA 43	JA 61	63	JA 65	54	JA 52	47	JA 41	JA 53
16	38	JA 41	JA 35	25	JA 25	JA 51	JA 31	JA 39	JA 76	71	JA 57	JA 110	54	JA 64	JA 56	JA 53	JA 81	JA 31	65	JA 72	JA 81	JA 74	JA 65	JA 41
17	JA 51	JA 31	JA 31	JA 31	JA 31	JA 38	JA 33	33	JA 47	37	36	37	JA 53	64	JA 126	JA 65	JA 67	JA 131	JA 62	JA 62	38	JA 51	37	JA 53
18	48	22	33	25	29	JA 28	JA 52	JA 62	60	C	C	C	C	C	C	C	C	C	JA 89	JA 76	JA 31	JA 31	E B 16	JA 31
19	JA 84	JA 64	JA 86	40	JA 71	JA 32	JA 50	JA 48	38	C	C	C	C	C	C	33	JA 38	30	JA 25	JA 27	JA 31	JA 30	JA 30	JA 17
20	JA 23	JA 31	JA 21	JA 31	JA 27	JA 20	G 24	JA 85	JA 84	JA 57	57	JA 57	G 31	38	36	33	33	JA 34	28	JA 21	JA 43	JA 29	JA 51	JA 49
21	JA 31	JA 35	48	JA 47	23	32	JA 52	JA 52	JA 63	JA 52	JA 40	JA 57	JA 49	59	JA 46	JA 46	JA 51	JA 53	41	JA 34	JA 34	JA 38	JA 31	JA 49
22	JA 44	30	23	22	21	31	JA 32	JA 41	JA 61	61	JA 60	JA 65	JA 46	JA 37	34	JA 30	G 30	33	29	E B 16	E B 16	24	28	31
23	30	32	21	JA 26	E B 16	26	26	JA 38	JA 48	JA 63	JA 46	JA 51	JA 84	JA 56	JA 33	34	32	30	JA 42	JA 29	26	E B 16	JA 37	JA 31
24	JA 46	29	29	38	JA 49	JA 23	30	JA 36	38	40	39	44	JA 71	100	JA 50	JA 49	JA 33	56	JA 59	JA 83	JA 35	JA 84	JA 51	32
25	JA 32	22	26	28	25	27	JA 27	JA 31	JA 41	JA 37	JA 40	39	JA 32	36	34	JA 34	JA 36	JA 27	25	E B 15	E B 16	BJ A 28	22	25
26	25	24	34	C	C	C	C	C	C	C	C	C	C	C	C	C	C	JA 25	JA 47	JA 31	JA 27	JA 19	JA 44	JA 27
27	JA 21	JA 21	JA 24	E B 16	20	JA 19	JA 32	32	36	JA 88	JA 55	38	JA 45	JA 57	75	JA 119	JA 33	JA 141	JA 141	JA 83	JA 31	34	JA 36	JA 44
28	JA 37	JA 51	21	21	19	18	JA 34	37	JA 53	JA 83	53	36	JA 39	38	36	33	33	27	JA 35	JA 19	JA 22	JA 27	JA 21	JA 23
29	JA 24	26	27	JA 25	27	JA 22	JA 24	JA 61	JA 51	JA 64	34	JA 37	JA 49	36	39	35	36	JA 37	32	28	JA 24	E B 16	21	21
30	24	21	21	24	31	JA 21	JA 38	JA 64	34	JA 39	JA 67	JA 47	37	JA 48	JA 61	JA 66	94	JA 62	JA 32	JA 24	JA 23	E B 16	JA 30	JA 30
31	JA 27	20	32	JA 31	38	22	JA 65	JA 63	JA 52	94	JA 37	JA 58	JA 51	G 33	42	36	41	34	JA 29	JA 50	JA 23	57	38	JA 52
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	30	30	30	30	30	28	28	28	28	28	28	29	29	30	31	31	31	31	31	31
MED	JA 37	31	31	32	28	JA 27	JA 34	JA 44	JA 51	JA 54	JA 56	JA 47	JA 49	46	JA 42	JA 37	JA 38	JA 34	JA 41	JA 39	JA 34	JA 31	JA 38	JA 31
U Q	JA 48	JA 41	JA 35	JA 47	JA 39	JA 38	JA 52	JA 53	JA 63	JA 64	JA 63	JA 58	JA 60	60	JA 66	JA 60	JA 63	JA 56	JA 59	JA 62	JA 38	JA 42	JA 51	JA 44
L Q	25	22	25	25	24	JA 22	31	36	38	42	40	38	JA 41	38	38	35	33	32	JA 31	JA 27	27	28	30	JA 27

AUG.2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

AUG.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	20	A A 83	18	24	20	A A 69	A A 50	A A 73	A	A A 61	A A 51	A	A	36	31	29	24	G 21	21	20	16	18	16
2	16	17	17	17	E B 16	18	G 22	G 26	A	34	34	36	36	35	34	G 30	30	26	23	E B 16	16	E B 16	18	22
3	21	19	20	16	16	18	G 19	A A 59	A A 52	33	32	32	32	33	32	34	31	27	23	23	18	18	20	A A 39
4	20	E B 16	E B 16	16	19	19	23	28	31	A A 74	A A 83	A A 60	A A 59	A A 54	34	32	32	25	21	A A 62	21	18	18	20
5	16	17	18	16	16	19	A	G 19	32	A	34	A	A A 62	35	A	33	A	A	A	A	A	20	20	20
6	21	E A 22	18	A	19	A A 54	A A 61	A A 78	A A 61	36	36	36	38	35	34	34	G 22	24	G 16	18	18	16	16	16
7	18	17	16	E B 16	E B 16	G 14	23	G 20	32	33	A	A	32	A A 58	A A 63	A	G 24	21	21	27	16	16	E B 16	16
8	20	17	E B 15	E B 16	E B 16	19	G 22	30	33	36	35	33	A	34	G 28	G 28	29	G 16	16	18	16	16	16	16
9	E B 16	17	E B 16	20	17	17	21	A	A	A	A A 65	A	33	34	32	33	28	24	E B 15	16	21	16	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	G 16	G 16	G 22	34	G 28	A	G 31	G 30	33	33	29	G 27	25	21	18	16	E B 16	22	20
11	E B 16	E B 16	16	E B 16	E B 16	E B 16	G 23	G 22	32	A A 75	A	A	35	33	32	G 29	A A 65	G 21	G 17	19	22	26	18	E B 16
12	E B 16	E B 16	E B 16	E B 16	E B 16	16	G 22	G 21	G 23	A	A	A	32	A	A	32	23	A	18	19	18	E B 16	16	E B 16
13	E B 16	E B 15	E B 16	E B 16	E B 16	G 22	G 18	G 22	31	32	A A 89	A A 79	34	34	34	32	29	A 23	23	23	E B 17	E B 17	E B 17	17
14	E B 16	E B 16	E B 16	E B 16	E B 16	G 17	29	30	37	35	A	38	36	A	A A 68	A A 68	G 26	24	23	23	18	18	20	16
15	18	16	18	18	16	E B 16	24	31	33	35	A	35	A	A A 78	35	A	A	A	22	22	24	20	20	16
16	17	17	18	16	E B 16	20	G 21	32	38	34	A	A A 110	A	A	34	36	A A 81	24	A A 65	A A 72	21	22	21	21
17	17	19	22	22	22	G 21	32	32	A	34	34	34	36	A	A	A A 65	A A 67	A	A A 62	20	20	18	E B 16	16
18	17	E B 17	17	E B 17	E B 17	G 17	A A 52	A A 62	A	C	C	C	C	C	C	C	C	C	22	18	18	26	E B 16	17
19	A	20	18	22	17	G 19	24	24	29	C	C	C	C	C	C	G 26	G 22	26	22	16	16	16	17	E B 16
20	E B 16	E B 16	16	24	16	16	G 17	30	30	30	G 31	G 32	G 30	35	33	G 30	30	G 24	G 18	18	18	18	20	A
21	17	18	23	23	16	G 20	A	38	34	34	35	39	34	A	A	A	26	22	18	19	21	16	16	16
22	18	17	E B 16	E B 16	E B 16	G 16	G 20	31	A	A	A A 60	34	34	32	32	30	G 26	G 23	G 19	E B 16	E B 16	E B 17	E B 16	16
23	E B 16	E B 16	E B 16	E B 16	E B 16	G 16	23	31	A	A	A	A	A	33	31	31	28	23	23	18	E B 16	E B 16	23	19
24	20	16	E B 16	16	17	17	G 20	26	G 29	35	38	A	38	A A 100	35	G 31	29	G 22	21	21	21	16	16	E B 16
25	19	E B 16	16	16	E B 16	E B 16	23	G 23	G 26	31	33	G 32	G 32	34	31	29	G 25	G 20	17	E B 15	E B 16	E B 17	E B 16	E B 16
26	16	E B 16	16	C	C	C	C	C	C	C	C	C	C	C	C	C	C	21	20	19	E B 16	E B 16	17	18
27	16	16	E B 16	E B 16	E B 16	E B 16	28	30	33	A	35	35	A	A A 57	A A 75	34	26	G 22	16	E B 16	23	18	18	18
28	18	E B 16	E B 16	E B 16	E B 16	16	A	33	A A 53	A	A	34	34	33	34	G 29	G 26	23	20	E B 16	16	E B 16	17	16
29	E B 16	E B 16	17	17	E B 16	16	G 19	G 23	A A 51	30	32	34	35	34	36	32	30	A	23	E B 16	E B 16	E B 16	E B 16	E B 16
30	E B 16	E B 16	E B 16	E B 16	E B 16	G 16	23	A	32	30	A A 67	34	34	A	A	G 24	A A 94	A	20	16	E B 16	E B 16	E B 16	16
31	E B 16	E B 16	20	E B 16	16	18	A	A A 63	A A 52	A A 94	A	A	G 30	G 32	32	29	G 23	G 17	21	18	16	16	E B 16	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	31	29	30	30	26	28	24	20	18	20	22	21	23	26	27	24	30	30	30	31	31	29
MED	16	E 16	16	16	E B 16	17	23	30	33	34	35	34	34	34	34	31	28	23	21	18	18	16	17	16
U Q	18	17	18	18	17	19	24	A A 32	A A 44	36	A A 61	A A 38	36	A A 44	35	33	A A 30	24	23	21	21	18	20	18
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	16	G 20	G 23	31	32	34	34	G 32	33	32	G 29	G 26	G 22	18	E B 16	E B 16	E B 16	E B 16	E B 16

AUG.2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Wakkanai

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

IONOSPHERIC DATA STATION Wakkanai

AUG.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	312	312	A	Z 320	329	279	A	A	A	280	A	A	306	326	R	291	343	327	316	312	328	331	296	307
2	304	303	304	304	350	290	338	338	337	356	345	305	R	R	295	268	314	330	331	328	313	308	291	290
3	309	308	302	262	316	348	258	A	A	R	415	419	409	270	286	323	286	319	305	311	311	328	344	A
4	312	311	279	315	314	368	353	353	414	A	A	A	A	A	352	R	284	333	330	A	304	292	299	319
5	308	308	307	306	360	345	365	327	342	322	319	329	A	281	289	R	276	267	330	200	310	304	329	317
6	309	289	288	263	359	A	A	A	A	331	339	319	292	331	312	313	331	330	329	319	286	323	320	340
7	305	304	304	F 303	314	347	328	357	389	276	340	340	295	A	A	328	328	319	336	324	304	301	314	314
8	290	289	F 289	289	318	329	362	328	327	333	294	362	294	307	313	310	312	329	325	322	299	F	311	F
9	310	304	319	330	F 329	328	290	330	319	R	A	284	352	319	343	321	343	338	322	312	321	317	314	311
10	334	333	333	298	V 324	329	360	332	342	349	281	312	R	313	317	335	326	335	326	313	301	331	324	352
11	317	316	318	318	318	317	355	355	375	A	338	316	305	302	298	318	A	316	331	312	307	307	342	F 320
12	340	312	306	V 306	305	355	319	309	322	333	330	351	289	335	346	333	302	285	325	330	302	312	312	305
13	317	317	308	311	311	410	385	350	366	330	A	A	309	314	349	349	356	R	245	318	317	303	300	322
14	337	335	316	316	321	349	348	334	363	350	340	345	318	312	A	A	322	319	325	325	324	339	F 277	F
15	344	F 319	F 319	F 316	F	315	350	321	335	310	351	339	338	A	329	326	323	257	R	311	340	339	325	325
16	305	305	304	307	300	328	344	344	362	335	340	A	295	317	314	322	A	319	A	A	R	319	316	337
17	F	316	F	285	297	382	382	343	342	342	346	345	339	267	342	A	A	258	A	300	298	323	319	318
18	312	301	325	305	352	344	307	262	343	C	C	C	C	C	C	C	C	C	327	312	306	347	340	325
19	260	316	318	347	322	322	303	314	345	C	C	C	C	C	C	325	323	353	326	313	307	294	342	334
20	301	318	318	R 317	316	375	331	350	295	352	298	321	319	338	324	343	318	311	324	323	323	319	359	333
21	324	320	312	321	300	340	303	R	287	286	349	353	335	328	354	335	323	323	320	320	320	311	340	344
22	334	334	313	330	329	362	301	315	326	326	353	341	349	362	306	310	337	336	315	319	318	318	329	349
23	346	331	364	306	305	346	343	329	338	288	354	R	349	313	322	322	324	336	338	332	321	314	302	302
24	301	280	296	320	319	348	356	342	316	313	349	334	304	A	342	322	344	338	317	317	316	343	322	322
25	320	304	322	309	324	366	347	347	314	302	349	316	279	336	335	342	324	347	339	320	319	325	321	330
26	336	324	323	C	C	C	C	C	C	C	C	C	C	C	C	C	C	320	360	323	307	319	316	312
27	312	325	327	332	305	357	336	348	348	290	359	318	315	A	A	333	336	338	334	304	326	325	346	320
28	321	308	326	359	350	357	350	313	A	336	353	306	317	348	336	321	328	337	320	320	328	337	325	311
29	310	309	296	324	296	316	363	367	A	314	381	R	292	297	330	329	318	315	312	309	306	347	334	326
30	309	293	328	327	320	320	348	226	347	318	A	292	316	290	319	321	256	319	331	345	338	324	324	R 312
31	309	305	309	298	342	323	350	A	A	A	R	R	R	314	R 305	327	297	352	322	302	308	291	291	302
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	31	29	30	29	29	28	25	24	23	22	21	23	22	24	25	26	29	28	29	30	30	31	28
MED	312	311	313	313	319	345	348	334	342	326	346	329	315	314	323	323	323	327	326	318	312	319	321	320
U Q	324	319	322	321	329	357	356	349	355	336	353	345	338	331	342	333	331	336	331	323	321	331	334	332
L Q	308	304	304	304	308	322	324	318	324	302	338	314	295	302	309	320	312	318	320	312	306	308	311	312

IONOSPHERIC DATA STATION Wakkanai

AUG.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	A	A	A	A	A	A	L	L	L	L	L	357	356					
2						L	L	L	A	L	L	L	L	L	L	L	L	L	L					
3						L	L	A	A	L	L	L	L	L	L	387	384	L	352					
4						A	A	A	L	A	A	A	A	A	L	391	375	375	366					
5						L	A	L	382	L	L	L	A	L	L	L	A	A	A					
6						A	A	A	A	L	L	429	L	L	L	L	L	L	329					
7						L	L	L	L	421	A	L	L	A	A	L	L	L	L					
8						L	L	371	L	L	L	L	L	L	L	367	L	L	L					
9						L	L	L	L	A	A	A	L	L	L	391	358	L	L					
10						L	L	L	L	L	A	L	393	L	L	L	398	366						
11						L	416	L	L	A	A	A	402	L	L	409	A	374	L					
12							L	L	L	L	L	L	L	A	L	L	L	A	L					
13							L	L	L	407	A	A	L	L	389	385	381	A	L					
14							372	369	L	L	A	L	422	A	A	A	L	363	L					
15						L	402	373	L	L	L	L	A	A	L	L	A	A	L					
16						L	L	L	A	412	L	A	L	L	388	A	A	L	A					
17								L	A	394	L	L	L	A	A	A	A	A	A					
18							A	A	L	C	C	C	C	C	C	C	C	C	L					
19						L	L	L	L	C	C	C	C	C	C	L	L	L						
20							L	A	L	L	L	L	L	L	L	L	L	L	360					
21							A	L	L	393	L	L	422	A	L	A	L	A						
22							332	L	A	A	A	411	L	L	385	L	L	L	L					
23						L	L	L	L	A	L	L	L	L	L	L	L	L						
24						A	406	L	L	L	L	L	L	A	L	L	358	L						
25						L	L	L	L	L	L	L	426	L	411	L	L	L	346					
26						C	C	C	C	C	C	C	C	C	C	C	C	L						
27							386	380	415	L	L	L	A	A	A	L	386	L	L					
28						L	A	L	A	L	A	L	402	416	385	L	L	367						
29							L	L	A	L	L	L	390	L	L	L	L	A						
30							L	A	368	L	A	L	L	A	L	L	A	A						
31							A	A	A	A	L	L	L	L	L	L	L	A						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							6	4	3	5		2	7	1	5	6	7	6	6					
MED							394	372	382	407		420	402	416	388	389	381	366	354					
U Q							406	376	415	416			422		400	391	386	374	360					
L Q							372	370	368	394			393		385	385	358	363	346					

AUG.2020 M(3000)F1 (0.01)

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AUG.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	A	A	A	A	A	A	A	300	416	380	294	304	298					
2						330	324	292	262	262	320	320	320	340	304	304	322	298	268					
3						246	A	A	A	348	226	194	210	448	402	322	384	328	330					
4						220	234	216	202	A	A	A	A	A	262	288	404	286	276					
5						250	230	342	300	340	344	322	A	428	428	308	E A 342	A	E A 326					
6						A	A	A	A	310	308	346	A	328	334	350	306	302	280					
7						242	312	266	254	390	E A 292	312	368	A	A	318	310	306	276					
8						232	238	314	328	314	356	272	366	364	374	328	328	314	264					
9						264	350	306	398	300	A	A	300	364	306	344	298	262	290					
10						252	246	288	288	288	A	342	384	340	340	306	318	284						
11						248	248	264	270	A	A 314	350	372	350	368	348	A	294	266					
12							274	352	326	294	318	306	382	290	276	320	364	290	274					
13							242	260	274	326	A	A	372	338	276	292	264	514	466					
14							286	314	260	274	296	308	340	348	A	A	334	318	280					
15						278	244	310	296	346	284	300	298	A	312	336	314	A	282					
16						254	288	298	274	284	302	A	392	350	340	320	A	320	A					
17								280	280	302	296	296	304	A	A	A	A	A	A					
18							A	A	304	C	C	C	C	C	C	C	C	C	260					
19						264	280	332	276	C	C	C	C	C	C	308	308	268						
20							270	272	368	290	356	316	330	306	330	302	336	348	298					
21							A	302	392	396	278	278	302	A	302	302	302	220						
22							346	306	A	A	260	288	288	276	338	300	284	244	300					
23						268	268	292	296	A	270	290	298	350	326	326	298	260						
24						218	232	286	342	346	284	292	352	A	284	302	298	262						
25						228	278	312	296	352	290	332	406	322	314	282	310	266	260					
26						C	C	C	C	C	C	C	C	C	C	C	C	296						
27							286	294	300	A	278	348	362	A	A	306	282	276	250					
28						238	248	348	A	312	284	366	340	322	302	242	320	272						
29							246	262	A	342	262	266	352	354	312	304	326	304						
30							276	A	284	324	A	448	360	386	346	322	A	300						
31							278	A	A	A	278	264	234	348	350	312	336	238						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						17	24	24	23	21	22	23	24	21	24	27	25	27	19					
MED						248	272	296	296	314	289	308	346	348	328	308	312	294	278					
U Q						264	286	313	326	346	314	342	370	359	348	326	335	306	298					
L Q						233	245	276	274	292	278	288	301	322	303	302	298	266	266					

AUG.2020 h'F2 (KM)

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IONOSPHERIC DATA STATION Wakkanai

AUG.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	250	236	A	264	286	204	A	A	A	A	A	A	A	H 176	198	212	200	206	210	230	236	220	244	254
2	Q 212	228	240	240	198	202	206	208	A	190	170	174	178	192	192	196	210	200	200	222	238	238	274	274
3	260	260	274	290	240	214	218	A	A	210	182	166	176	190	212	212	216	A	214	224	236	236	222	A
4	256	272	284	284	A 254	A	A	A	196	A	A	A	A	A	212	212	212	202	202	A	266	250	258	246
5	246	A	A	226	210	208	A	206	206	196	188	224	A	208	A	228	A	A	A	A	A	246	234	250
6	264	232	270	A	204	A	A	A	A	224	210	192	198	186	202	202	202	198	212	220	266	232	238	238
7	266	230	246	Q 246	220	218	226	204	204	190	A	A	198	A	A	A	226	196	196	246	274	232	242	252
8	280	274	Q 260	Q 214	238	190	212	214	206	192	188	182	190	170	196	212	202	202	202	272	250	Q 244	244	244
9	244	250	244	238	242	206	226	A	A	A	A	A	194	198	196	196	198	210	220	262	244	244	228	228
10	240	234	240	Q 240	240	198	204	198	198	202	A	196	208	196	200	208	200	200	210	250	268	242	242	208
11	214	264	268	266	244	202	202	206	196	A	A	A	196	196	200	208	A	216	216	254	270	272	230	240
12	210	Q 214	270	270	258	218	208	222	222	A	A	222	206	A	192	194	224	A	224	224	244	226	246	Q 212
13	236	242	264	258	248	196	192	220	206	206	A	A	200	208	198	208	192	A	214	258	238	Q 262	Q 240	226
14	Q 226	218	240	240	224	208	222	222	216	200	A	224	196	A	A	A	206	224	202	236	228	216	286	Q 226
15	226	226	270	270	246	216	196	198	204	194	A	202	A	A	206	A	A	A	222	246	218	230	238	238
16	Q 260	260	260	238	248	210	210	208	A	198	202	A	A	A	A	A	A	202	A	A	220	216	202	204
17	Q 216	250	256	272	272	214	232	208	A	202	190	210	194	A	A	A	A	A	A	242	256	256	232	250
18	250	Q 222	262	256	212	224	A	A	A	C	C	C	C	C	C	C	C	C	222	242	242	242	194	198
19	A	252	262	242	226	204	238	204	204	C	C	C	C	C	C	202	190	202	240	234	258	258	232	224
20	244	248	202	A	248	226	200	A	190	204	188	180	170	226	194	194	212	218	218	240	240	240	236	A
21	258	258	280	270	232	262	A	212	222	192	202	202	308	A	A	A	194	A	254	254	248	Q 246	196	218
22	208	208	242	236	236	224	224	218	A	A	A	198	192	196	190	192	218	198	210	234	234	234	222	222
23	228	242	216	258	Q 256	216	216	226	A	A	208	A 208	A	186	174	212	220	220	232	240	238	238	284	286
24	292	Q 282	Q 242	242	242	A	206	214	214	214	214	A	214	A	214	192	222	208	262	242	242	210	Q 190	212
25	254	Q 242	242	258	240	190	198	232	206	194	194	194	190	214	198	198	194	206	206	222	242	222	212	212
26	258	242	244	C	C	C	C	C	C	C	C	C	C	C	C	C	C	202	208	244	232	232	240	240
27	234	254	254	232	264	222	212	212	196	226	222	206	A	A	A	222	200	214	214	Q 244	244	230	210	210
28	228	256	234	210	214	200	A	252	A	A	A	194	198	194	198	186	230	224	246	232	238	238	224	244
29	244	268	278	270	254	216	232	218	A	202	202	192	212	198	224	220	212	A	264	248	258	206	216	238
30	244	272	222	246	240	272	218	A	230	194	A	184	202	A	A	A	A	A	242	228	214	216	228	266
31	256	250	270	242	230	246	A	A	A	A	194	204	176	194	224	210	226	A	218	254	254	292	240	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	29	28	30	27	22	21	17	19	15	20	21	17	20	22	23	20	28	28	30	31	31	28
MED	244	249	256	246	240	214	212	212	206	200	194	197	196	196	198	208	210	204	215	242	242	238	234	238
U Q	258	260	270	268	248	222	224	221	215	206	208	207	204	203	209	212	220	215	228	249	256	246	242	248
L Q	228	232	241	239	226	202	204	206	197	194	188	188	190	188	195	196	200	201	209	231	236	226	222	215

IONOSPHERIC DATA STATION Wakkanai

AUG.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						110	92	92	100	100	100	100	100	A	102	102	102	102	108					
2						A	108	104	104	104	92	92	A	110	110	110	96	96	A					
3						A	104	104	96	A	96	A	96	A	A	96	96	104	104					
4						A	104	104	100	100	100	100	104	104	102	102	102	102	102					
5						112	112	110	108	108	90	102	102	102	102	102	102	102	104					
6						A	104	98	98	98	102	102	102	102	102	104	104	110	110					
7						106	104	104	104	98	A	A	A	A	A	A	98	A	A					
8						114	106	96	100	100	94	A	A	94	94	94	112	108	A					
9						A	A	96	96	96	104	104	A	98	98	A	A	104	B					
10						98	112	106	106	106	98	98	98	98	98	98	98	A	A					
11						B	100	112	112	102	A	A	A	94	100	100	94	96	96					
12						B	104	96	96	104	104	104	104	104	A	104	A	A	A					
13						126	110	110	110	110	100	100	100	100	A	A	A	A	A					
14						122	110	110	102	102	A	A	A	A	A	A	92	A	A					
15						B	100	100	100	100	100	92	A	A	98	98	102	102	98					
16						A	112	110	106	106	100	100	100	100	100	100	100	A	114					
17						96	96	96	96	96	96	96	A	A	A	96	104	104	A					
18						110	106	106	104	C	C	C	C	C	C	C	C	C	116					
19						116	104	102	102	C	C	C	C	C	C	92	92	92	B					
20						B	106	102	98	98	98	98	98	100	100	100	100	100	108					
21						114	98	104	104	104	104	100	100	100	98	98	A	A	B					
22						110	108	108	108	100	100	100	100	100	100	A	100	114	128					
23						122	110	110	110	108	104	98	98	98	A	98	98	98	A					
24						A	98	A	98	98	98	98	A	98	A	102	98	110	A					
25						A	106	100	98	96	96	96	102	102	102	102	92	108	B					
26						C	C	C	C	C	C	C	C	C	C	C	C	A	A					
27						B	108	108	102	102	110	108	98	98	100	100	100	100	A					
28						A	104	98	98	98	98	96	100	100	100	108	108	108	A					
29						A	108	104	104	104	98	94	A	98	112	112	104	104						
30						104	104	98	98	96	96	A	96	98	98	108	108	A						
31						B	100	100	100	100	100	102	102	102	102	102	102	102						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						14	29	29	30	27	25	22	18	22	20	24	25	21	11					
MED						111	104	104	101	100	100	100	100	100	100	101	100	102	108					
U Q						116	108	108	104	104	101	102	102	102	102	103	103	108	114					
L Q						106	102	98	98	98	96	96	98	98	98	98	97	100	102					

IONOSPHERIC DATA STATION Wakkanai

AUG.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	108	108	104	104	98	102	102	102	102	102	102	102	104	108	140	106	106	110	114	114	102	104	108	108
2	108	102	102	102	102	102	102	108	100	100	100	100	100	104	104	94	106	106	106	108	108	108	108	102
3	102	98	98	98	92	106	102	102	100	100	100	100	94	94	98	122	118	112	112	106	106	100	100	100
4	100	100	100	104	114	110	110	98	102	108	108	108	112	112	112	112	106	106	106	106	106	106	106	100
5	108	108	96	96	98	104	122	122	106	106	102	94	96	100	114	114	114	104	104	104	104	104	104	104
6	108	100	100	100	100	106	110	110	106	106	106	108	108	108	108	108	104	112	112	106	106	106	106	106
7	98	98	102	94	B	118	116	108	108	102	98	98	98	98	94	98	106	90	90	102	108	102	102	102
8	102	104	100	100	100	122	112	110	108	102	180	94	94	94	104	106	118	116	106	112	112	112	106	106
9	106	100	100	100	100	100	100	106	112	110	104	102	102	102	100	100	100	104	98	110	108	108	100	100
10	100	100	96	98	94	98	150	142	92	104	104	114	102	102	102	102	108	98	98	100	108	108	108	108
11	108	110	102	98	98	118	102	120	110	102	106	100	100	96	96	96	96	96	104	104	104	104	104	106
12	98	94	94	92	92	98	94	104	104	104	106	106	106	106	96	100	100	100	96	96	100	110	102	114
13	102	88	100	100	100	100	100	100	110	110	100	100	106	106	106	102	96	96	96	96	96	112	110	110
14	98	110	110	106	100	114	114	110	108	112	94	94	94	100	96	96	98	96	96	90	90	96	102	102
15	92	92	120	118	100	108	108	108	108	104	104	104	98	100	104	110	110	108	108	100	102	102	102	98
16	98	98	98	90	90	108	116	116	100	104	104	104	102	102	102	102	102	104	108	108	108	100	100	100
17	100	96	92	92	92	94	112	110	110	110	110	98	96	96	96	104	106	106	106	110	102	102	102	100
18	100	100	96	96	116	114	104	104	100	C	C	C	C	C	C	C	C	C	108	108	108	104	B	104
19	96	98	108	108	108	100	106	106	100	C	C	C	C	C	C	134	92	108	104	104	104	104	94	94
20	96	98	96	96	96	96	112	96	98	98	98	106	96	134	120	122	122	104	110	104	104	104	96	96
21	96	92	92	98	98	116	108	100	106	106	106	106	100	102	102	102	102	94	94	106	106	106	100	100
22	98	92	98	98	106	114	114	114	104	104	104	104	104	96	96	96	94	98	128	B	B	100	100	100
23	100	104	104	104	B	132	132	112	106	106	106	106	106	102	102	128	128	104	104	104	104	B	104	104
24	102	102	114	114	106	96	98	98	152	134	134	124	98	98	102	102	92	116	100	100	98	112	102	92
25	92	92	92	84	90	90	114	110	104	104	104	104	94	192	132	102	102	102	128	B	B	96	96	100
26	96	100	100	C	C	C	C	C	C	C	C	C	C	C	C	C	C	102	102	102	102	102	100	100
27	100	104	100	B	104	104	114	118	118	106	114	114	106	106	106	106	102	116	112	112	94	94	94	94
28	96	114	100	100	100	96	116	116	106	106	106	106	108	108	108	140	122	122	110	104	104	112	98	104
29	106	106	96	98	118	102	106	106	100	100	100	100	94	142	114	122	118	108	108	108	108	B	100	100
30	100	100	114	114	110	110	110	102	106	104	98	98	130	116	94	108	108	106	104	104	102	B	110	106
31	106	102	92	122	108	108	108	102	102	102	96	96	112	136	110	114	106	106	100	100	100	100	100	94
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	29	28	30	30	30	30	28	28	28	28	28	28	29	29	30	31	29	29	28	30	31
MED	100	100	100	100	100	105	110	108	106	104	104	103	101	102	103	106	106	105	106	104	104	104	102	100
U Q	106	104	102	104	106	114	114	112	108	106	106	106	106	108	109	114	112	108	110	108	108	108	106	106
L Q	98	98	96	96	97	100	102	102	100	102	100	99	96	99	97	101	100	100	100	101	102	101	100	100

AUG.2020 h'Es (KM)

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IONOSPHERIC DATA STATION Wakkanai

AUG.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	F4	F3	F2	F4	C2	C6	C4	C3	C3	C2	C1	C2	C1	C1	C1	C2	C2	C6	F7	F4	F2	F3	F4
2	F3	F8	F5	F5	F3	L3	C4	C3	C5	C3	C2	C2	L3	C2	C2	C2	C2	C3	L2	F1	F4	F2	F3	F6
3	FQ31	FQ41	F3	F2	F2	C2	C5	C5	C3	L2	C2	L1	C2	L2	L2	C2	C3	C3	C4	F6	F4	F3	F6	F4
4	F5	F2	FF22	F3	F4	C4	CQ41	LC11	C2	C3	C2	C4	C2	C2	C2	C3	C3	C2	C4	F8	F8	F5	F8	F7
5	F4	F4	F5	F7	FF32	CL51	CQ51	C4	C3	C3	C2	C2	C5	C2	C3	C2	C3	C3	C7	F8	FQ71	FQ41	FQ41	FQ71
6	FQ51	FQ61	FQ31	FQ71	FQ61	CQ41	CQ71	CQ31	CQ31	C2	C2	C2	C1	C1	C2	C2	C3	C2	C4	F4	F2	F2	F5	F3
7	F3	F4	F3	F2		C3	CL41	C3	C2	C2	L3	L3	L2	L4	L3	L3	C2	L3	L3	FF42	F3	F4	F1	FQ31
8	FQ31	FQ41	F3	F3	F1	LC11	C2	C3	C3	C2	C2	L2	L2	C2	C2	C2	C2	C2	C4	F3	F4	F4	F4	F5
9	F3	F4	F4	F4	F4	L3	L4	C4	C4	C3	C3	C3	C2	C2	C2	L3	L3	LC32	LC22	F3	F5	F2	F1	F2
10	F1	F2	F1	F1	F2	LC11	C2	C2	LC11	C2	C3	C1	C2	C1	C2	C2	C3	L4	L4	F2	F6	F7	F4	F6
11	F1	FQ21	L3	F3	F2	C1	LC22	C2	C2	C6	LL32	L2	L2	L2	C1	LC21	C6	C3	C5	F3	F4	F4	F4	F2
12	F1	F1	F2	F2	F5	L5	LC22	C4	C5	C2	C2	C2	C2	C3	LC11	C2	L3	L4	LQ31	F5	FQ41	F1	F5	F1
13	F1	F1	F2	F1	F1	LC11	C3	LC22	C2	C3	C5	C5	C2	C2	L2	L3	L3	L4	L5	F4	F2	F1	F3	F3
14	F2	F1	F2	F1	F3	C1	C3	C4	C3	C2	C2	L3	L2	L3	L4	L6	C3	L3	L4	F5	F3	F4	F6	F2
15	F5	F5	FF22	F7	FQ21	C1	C3	C3	C3	C3	C4	C2	C3	C3	C2	C3	C4	C4	C6	F5	F2	F5	F5	F4
16	F3	F4	F4	F2	F2	L3	C4	C4	CQ21	C2	C2	C3	C2	C3	C3	C3	C7	L3	CQ51	FQ71	F9	F8	F7	F7
17	F5	F3	F5	F4	F3	C2	C6	C3	C4	C2	C2	C2	L3	L5	L4	C5	C5	CQ52	L8	F8	F6	F5	F3	F4
18	F3	F1	F4	F2	F1	C3	C4	C4	C5										L3	FQ31	FQ21	FQ51		F4
19	F5	F3	F3	F5	F3	C4	C6	C2	C2							C2	C3	C4	C4	F3	F4	F3	F5	F2
20	F2	F1	F4	F3	F3	L2	C2	C3	C4	C4	C2	C1	LC21	HL11	CL22	CL11	C2	C3	C3	F3	F2	F7	F7	F6
21	F6	F8	F5	FQ31	F2	CL31	C7	C5	C4	C2	C2	C2	C2	C4	C2	C3	C3	L4	L7	F7	F4	F2	F4	F5
22	F9	F3	F2	F2	F1	C2	C4	C4	C6	C4	C3	C1	C2	C2	C3	L3	LC21	LC21	C3			F1	F1	F3
23	F1	F1	F1	F1		C1	C2	C3	C4	C3	C2	C2	C2	C2	L2	C2	C2	C3	L3	FF21	F1		F5	F3
24	F7	F1	FF11	F3	FF33	L2	C3	C3	C2	C2	C2	C2	C2	C5	C2	LC21	C3	C2	L4	F5	F9	F1	F4	F2
25	F6	F2	F2	F2	F1	C1	C2	C2	C3	C2	C2	C1	C1	C2	C2	C2	C2	C2	C1			C1	L3	F1
26	F2	F2	F3															L4	L5	F4	F2	F1	F3	F3
27	F3	F4	F3		F1	L1	C4	C3	C2	C4	C2	C2	C2	C3	C3	C4	C3	C2	L3	F2	F3	F4	F3	F3
28	F4	FQ51	F1	F1	F1	L2	C5	C3	C3	C4	C3	C1	C2	C2	C2	C2	C2	C2	L4	F1	F2	F1	F3	F1
29	F1	F2	F3	FQ32	FQ21	L2	C2	C4	C3	C2	C2	C2	L2	C1	C2	C3	C3	CQ63	F5	F4	FF21		F1	F1
30	F2	FF11	F1	F1	F3	C2	C4	C4	C4	C2	C3	C2	CL11	C2	C3	C3	C5	L5	F2	FF11	F1		F1	F4
31	F2	FF11	F4	F1	F2	C3	C5	C4	C3	C4	C3	C3	C1	C1	C3	C2	C5	C7	F5	F4	F4	F3	F3	F5
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG.2020 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

AUG.2020 fxI (0.1MHz)

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IONOSPHERIC DATA STATION Kokubunji

AUG.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

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

IONOSPHERIC DATA STATION Kokubunji

AUG.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							336	368	A	A	A	A	A	A	A	A	UL 396	364	L					
2						A	UL 372	A	A	A	A	A	A	A		A		A	A					
3							A	A	A	A	A	UL 448	476	A	UL 440	UL 424	412	368	A					
4						A	UL 380	384		A	A	UL 436	A	UL 444	A	A	396	UL 428	A	A				
5						A	UL 360	UL 404	400	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	448	436	404	A	380	A	A				
7							L	A	A	A	A	A	A	A	A	420	408	A	A	A				
8						L	L	UL 384	A	A	UL 448	440	436	UL 428	436	A	A	A	L					
9							A	L	404	428	448	464	452	A	A	428	L	376	L					
10							UL 364	UL 396	416	A	A	444	A	432	A	A	396	L						
11							UL 348	A	416	UL 464	UL 432	456	A	A	A	A	A	A	C					
12			A	A		A	UL 364	UL 376	408	A	A	A	A	UL 440	A	A	A	A	L					
13						A		A	A	A	A	A	A	A	A	420	404							
14							A	392	L	416	448	440	448	A	A	A	A	A						
15							A		UL 416	A	A	448	UL 460	UL 460	428	UL 436	UL 396	A	A	A				
16							344	UL 380	L	428	428	UL 448	A	A	UL 484	420	A	380	L					
17							A		404	A	A	A	UL 452	A	A	A	A	A	A					
18							UL 352	376	A	432	UL 436	A	UL 440	448		A	L	UL 364	UL 368	L				
19							A	A	A	A	436	UL 452		UL 440	A	UL 420	A	A	A					
20							UL 364	UL 396	UL 420	420		A	UL 428	436	A	UL 420	A	A	364	UL 300				
21							A	UL 376	A	A	A	428	A	A	A	408	392	L	A	A				
22							A	UL 408	A	A	A	A	A	A	A	A	L	A	L					
23								UL 384	A	A	432	UL 452	UL 452	444	428	UL 412	392	L						
24								UL 392	UL 412	A	A	A	UL 444	436	424	UL 412	UL 420	A	A	A				
25								A	396	A	UL 436	A	A	440	420	424	388	L						
26							L		412	UL 420	UL 436	436	A	A	UL 408	UL 428	UL 428	A	A					
27								368	UL 412	A	420	A	UL 448	A	A	404	A	L	L					
28								376	400	A	A	A	A	A	A	A	L		A					
29							UL 328	A	396	A	A	UL 436	A	A	A	UL 404	388	A	A					
30							L	368	408	UL 428	UL 412	UL 432	UL 440	A	A	A	A	A						
31							L	UL 364	UL 388	UL 420	UL 432	424	428	UL 416	UL 408	408	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	18	16	9	13	17	13	12	11	16	14	8	1					
MED							UL 360	UL 382	408	428	UL 436	440	UL 448	440	428	420	396	372	UL 300					
U Q							UL 364	UL 392	UL 414	UL 430	442	UL 450	UL 452	446	UL 436	UL 424	408	380						
L Q							344	376	400	420	430	434	438	434	UL 420	408	392	366						

AUG.2020 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Kokubunji

AUG.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						B	A	A	A	A	A	A	A	A	A	A	A	U R 320	U R 192					
2						B	A	A	A	A	A	A	A	A		A		A	A					
3						B	A	A	A	A	A	A	A	A	A	A	U A 284	A	A					
4						B	A	A		A	A	A	A	A	A	A	A	A	A	A				
5						B	A	A	U A 284	A	A	A	A	A	A	A	A	A	A	B				
6							U A 236	A	A	A	A	U A 340	A	A	A	U A 304	A	A	A	B				
7						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
8						B	A	A	A	A	A	U A 320	U R 364	U A 344	U A 320	A	A	A	U R 204	B				
9						B	A	A	A	A	A	A	A	A	A	U A 324	U R 300	U R 248	U R 180	B				
10						B	U A 244	U A 256	A	A	U A 344	U R 356	A	U A 368	A	A	A	A	A	A				
11						B	A	A	A	A	A	A	A	A	A	A	A	A	C	B				
12			A	A		B	U A 204	A	A	A	A	A	A	A	A	A	A	A	A	A				
13						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
14						B	A	A	A	R 352	A	A	A	A	A	A	A	A		A				
15						B	A	A	A	A	A	U A 348	U A 360	U A 344	R	A	A	A	A	A		A		
16						B	A	A	A	A	U R 340	U A 336	A	A	A	R	A	A	A	B				
17						B	A	A	A	A	A	A	A	A	A	A	U A 280	A	A	B				
18						B	A	A	A	A	A	A	U R 356	U R 352	A	U A 316	A	U A 248	A	B				
19						B	A	A	A	A	A	U A 352	A	U A 340	U R 332	A	A	A	A	B				
20						B	U R 212	A	U A 288	A	U A 352	R	U A 364	U A 352	A	A	A	U R 264	A	B				
21						B	A	A	A	A	A	A	A	A	A	A	R	U A 248	A	B				
22						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
23						B	U A 204	U A 260	A	A	A	A	A	A	U A 332	A	A	A	A	B				
24						B	A	276	U A 296	U A 332	A	A	A	A	A	A	U A 288	A	A	B				
25						B	U A 232	U A 256	A	A	A	A	A	A	A	U R 308	U R 280	A	A	B				
26						B	U A 208	U A 252	U A 284	U R 344	A	A	U R 356	U A 340	A	A	A	A	A	B				
27						B	A	A	A	A	U A 336	A	A	A	A	A	A	A	A					
28						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
29						B	A	A	A	A	A	A	A	A	A	U A 300	A	A	A					
30						B	A	A	A	A	A	R	A	A	A	A	A	A	A					
31						B	A	A	A	A	A	U A 336	U A 352	A	A	U A 292	A	A	A	B				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							7	5	4	3	4	7	6	7	3	6	5	5	3					
MED							U A 212	U A 256	U A 286	U R 344	U A 342	U A 340	U 358	U A 344	U A 332	U A 306	U A 284	U R 248	U R 192					
U Q							U A 236	268	U A 292	R 352	U A 348	U 352	U 364	U 352	U R 332	U A 316	U 294	U R 292	U R 204					
L Q							U A 204	U A 254	U A 284	U A 332	U 338	U A 336	U 356	U A 340	U A 320	U A 300	U 280	U A 248	U R 180					

AUG.2020 foE (0.01MHz)

IONOSPHERIC DATA STATION Kokubunji

AUG.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	J A 88	J A 66	J A 53	J A 53	J A 65	J A 43	J A 31	J A 36	J A 44	J A 52	J A 62	J A 67	J A 150	J A 96	J A 106	J A 50	J A 36	G	G	J A 51	J A 28	J A 25	22	J A 40
2	J A 65	J A 118	J A 53	J A 66	J A 30	J A 29	J A 55	J A 87	J A 74	J A 166	J A 106	J A 84	J A 82	J A 99	J A 65	J A 136	J A 54	48	J A 49	J A 44	J A 24	J A 24	J A 40	J A 40
3	J A 41	J A 34	J A 29	J A 26	J A 23	J A 27	J A 44	J A 52	J A 101	J A 87	J A 49	J A 67	J A 48	J A 48	J A 47	37	38	J A 39	J A 46	J A 30	J A 54	E B 16	J A 26	J A 51
4	J A 41	J A 98	J A 34	J A 56	J A 49	J A 38	J A 36	J A 41	J A 51	43	J A 55	41	J A 47	40	J A 46	J A 70	J A 58	J A 40	J A 38	62	J A 80	J A 26	J A 23	J A 47
5	J A 33	J A 30	22	E B 17	22	J A 23	J A 33	J A 35	38	J A 51	J A 53	J A 77	J A 58	J A 62	J A 82	J A 74	J A 95	J A 117	J A 89	24	J A 32	22	J A 30	22
6	J A 27	J A 34	J A 26	J A 36	J A 32	E B 17	32	J A 44	J A 55	J A 63	J A 56	42	J A 70	35	38	38	J A 46	J A 42	J A 35	50	J A 42	J A 47	J A 53	J A 120
7	J A 67	J A 22	J A 29	J A 26	J A 22	26	28	J A 39	J A 48	J A 78	J A 62	J A 71	J A 60	45	J A 63	J A 39	35	J A 46	J A 39	J A 40	J A 66	J A 64	J A 27	J A 42
8	J A 31	J A 42	J A 30	J A 22	J A 31	24	30	J A 42	J A 55	J A 65	J A 60	41	G	38	40	J A 75	J A 53	J A 131	G	J A 52	J A 32	E B 15	J A 109	J A 88
9	J A 85	J A 89	J A 69	J A 32	J A 25	26	J A 53	J A 35	J A 44	J A 42	40	J A 44	J A 52	J A 69	J A 59	J G 30	G	G	G	J A 27	23	23	23	J A 34
10	J A 51	J A 34	J A 26	22	21	J A 32	G	33	35	J A 53	42	G	J A 54	39	J A 47	J A 45	34	J A 34	J A 36	J A 55	J A 22	J A 23	J A 47	J A 34
11	J A 67	J A 53	J A 53	J A 58	J A 53	J A 53	J A 35	J A 45	J A 54	J A 45	J A 39	J A 49	J A 58	J A 54	J A 46	J A 58	J A 50	J A 67	C	J A 34	J A 33	J A 44	J A 48	J A 53
12	J A 44	J A 45	J A 78	J A 64	J A 51	J A 66	24	34	J A 46	J A 56	J A 74	J A 79	J A 51	G	J A 79	J A 122	J A 54	J A 123	J A 140	J A 86	J A 80	J A 52	J A 36	J A 66
13	J A 75	J A 32	J A 41	J A 26	J A 31	J A 33	J A 42	J A 51	J A 80	J A 66	J A 64	J A 63	J A 106	J A 86	J A 106	J A 60	J A 52	J A 40	J A 29	J A 41	E B 16	J A 25	22	J A 27
14	J A 54	J A 105	J A 39	J A 53	J A 55	J A 28	J A 63	J A 38	J A 55	J G 34	J A 44	J A 43	J A 77	J A 43	J A 51	J A 60	J A 56	J A 59	J A 52	J A 39	J A 36	J A 24	J A 27	J A 31
15	J A 50	J A 49	J A 27	22	J A 23	J A 25	J A 52	J A 42	J A 64	J A 94	J A 74	40	41	41	G	39	38	J A 70	J A 80	J A 84	J A 44	J A 66	J A 36	J A 29
16	J A 53	J A 52	J A 54	J A 25	24	J A 30	J A 27	J A 34	37	J A 36	G	41	40	J A 48	44	G	J A 89	J A 92	J A 26	J A 25	J A 27	J A 52	J A 34	E B 16
17	J A 33	J A 33	22	J A 25	J A 30	J A 74	J A 44	34	33	J A 64	J A 72	J A 89	J A 76	J A 84	J A 122	J A 91	38	J A 56	J A 67	J A 53	J A 37	J A 44	J A 34	J A 64
18	J A 88	J A 54	J A 26	J A 30	J A 30	J A 29	J A 32	J A 39	J A 49	J A 43	J A 44	J A 49	G	G	39	39	J A 61	J A 33	J A 76	J A 51	J A 63	J A 47	J A 76	J A 53
19	J A 32	J A 26	23	24	J A 28	22	J A 43	J A 54	J A 66	J A 61	J A 62	42	41	39	39	36	J A 44	J A 78	J A 39	J A 32	J A 25	J A 28	J A 30	J A 32
20	J A 30	J A 30	J A 28	22	22	E B 15	G	J A 30	35	J A 38	42	G 28	G	43	40	J A 60	J A 56	J A 145	J A 31	J A 33	J A 33	J A 33	J A 44	J A 23
21	J A 37	J A 42	J A 32	23	J A 21	J A 25	44	J A 37	J A 44	J A 62	J A 48	37	J A 48	J A 57	J A 72	J A 32	G	28	J A 36	J A 65	J A 54	J A 42	J A 52	J A 89
22	J A 25	J A 34	J A 30	J A 44	24	E B 16	J A 32	J A 40	J A 48	J A 51	J A 73	J A 65	J A 74	J A 83	J A 70	J A 64	J A 38	J A 42	J A 26	J A 23	J A 25	J A 28	J A 32	J A 29
23	22	J A 22	E B 15	J A 44	26	E B 16	25	34	J A 48	J A 48	37	41	J A 50	37	37	J A 36	J A 35	27	J A 29	J A 25	J A 29	E B 16	J A 23	J A 31
24	24	J A 44	J A 46	J A 32	J A 24	J A 33	J A 46	32	38	44	44	41	42	41	39	38	37	J A 73	J A 56	J A 78	J A 36	20	J A 53	J A 29
25	J A 34	J A 31	21	21	E B 16	24	26	J A 39	J A 38	J A 48	40	J A 47	J A 58	J A 40	38	G	G	26	26	E B 15	20	20	22	E B 16
26	E B 16	E B 16	J A 24	E B 16	21	E B 16	27	34	32	G	36	40	42	39	38	33	34	J A 53	J A 98	J A 66	J A 33	J A 30	24	J A 25
27	J A 34	J A 28	21	E B 16	E B 16	E B 17	25	J A 39	39	J A 56	38	J A 51	J A 56	J A 53	J A 86	J A 55	J A 48	J A 68	J A 42	J A 50	J A 22	E B 16	E B 16	J A 23
28	20	E B 16	J A 29	22	22	J A 25	28	34	36	41	J A 62	J A 48	J A 84	J A 76	J A 112	J A 48	J A 44	J A 47	J A 66	22	J A 50	J A 35	J A 63	22
29	J A 28	J A 28	J A 24	J A 27	J A 27	J A 25	J A 34	J A 38	J A 38	J A 55	J A 45	J A 99	J A 57	J A 52	J A 76	38	J A 36	J A 59	J A 66	J A 67	J A 83	J A 46	J A 38	J A 34
30	20	E B 16	E B 15	22	24	20	J A 28	J A 40	J A 37	J A 73	J A 40	G	41	J A 52	J A 52	J A 111	J A 196	J A 102	J A 64	J A 50	J A 79	J A 74	J A 102	J A 67
31	J A 36	J A 28	20	J A 22	J A 24	22	J A 26	J A 51	J A 49	J A 44	J A 49	40	38	38	36	34	J A 50	J A 49	J A 38	J A 28	J A 29	35	J A 29	J A 36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31
MED	J A 36	J A 34	J A 29	J A 26	J A 24	J A 25	J A 32	J A 39	J A 46	J A 52	J A 49	J A 44	J A 52	J A 45	J A 47	J A 45	J A 44	J A 49	J A 39	J A 44	J A 33	J A 28	J A 34	J A 34
U Q	J A 54	J A 52	J A 41	J A 44	J A 31	J A 32	J A 44	J A 42	J A 55	J A 64	J A 62	J A 67	J A 70	J A 62	J A 76	J A 64	J A 54	J A 73	J A 66	J A 55	J A 54	J A 46	J A 48	J A 53
L Q	28	J A 28	23	22	22	E B 22	27	34	38	J 43	40	41	41	39	39	36	36	39	29	J A 28	J A 25	23	24	27

AUG.2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

AUG.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	A A 88	A A 66	A A 53	A A 53	A A 65	20	24	32	38	A A 52	A A 62	A A 67	A A 150	A A 96	A A 106	44	31	G	G	44	25	E B 15	E B 16	20
2	24	A A 118	20	22	E B 17	20	26	A A 87	44	A A 166	A A 106	A A 84	A A 82	A A 99	A A 65	52	47	44	42	40	20	20	19	21
3	21	21	18	18	E B 16	18	A A 44	38	43	A A 87	A A 49	38	44	44	37	35	35	30	37	23	E B 17	E B 16	20	27
4	24	23	E B 18	A A 56	24	A A 38	24	31	A A 51	41	47	38	44	39	43	A A 70	34	32	30	20	A A 80	18	E B 16	E B 16
5	20	E B 16	E B 16	E B 17	E B 17	18	25	31	36	A A 51	46	A A 77	52	43	A A 82	A A 74	A A 95	A A 117	32	E B 15	E B 16	E B 16	E B 16	19
6	E B 16	E B 16	19	A A 36	19	E B 17	31	38	49	43	44	41	46	32	36	36	38	34	26	46	E B 16	26	26	22
7	A A 67	E B 16	E B 17	E B 16	E B 16	18	26	34	42	A A 78	A A 62	44	54	43	47	36	32	41	32	29	E B 16	A A 64	E B 16	20
8	20	E B 16	19	E B 16	E B 16	20	25	32	42	49	38	39	G	37	38	A A 75	45	45	G	20	E B 16	E B 15	22	17
9	23	E B 16	A A 69	19	E B 16	20	31	28	35	38	38	40	39	A A 69	A A 59	G 24	G	G	G	20	21	21	E B 16	19
10	20	E B 16	E B 15	E B 15	E B 16	20	G	31	34	40	40	G	46	38	42	42	33	28	22	22	E B 16	E B 16	E B 17	20
11	19	24	23	A A 58	A A 53	21	23	36	36	39	34	42	46	50	42	A A 58	44	A A 67	C	24	E B 16	E B 16	32	40
12	26	24	23	A A 64	27	A A 66	24	32	37	44	A A 74	A A 79	48	G	43	A A 122	40	A A 123	24	24	42	22	22	A A 66
13	A A 75	20	A A 41	17	E B 17	26	34	A A 51	A A 80	A A 66	46	A A 63	A A 106	A A 86	A A 106	34	32	30	21	21	E B 16	E B 16	E B 16	E B 16
14	E B 16	E B 16	25	20	22	20	A A 63	32	33	G 28	39	38	38	41	A A 51	A A 60	A A 56	50	29	26	19	18	20	E B 16
15	18	24	E B 16	17	E B 15	E B 18	35	31	35	45	44	40	40	39	G	36	34	36	35	46	22	24	24	18
16	20	23	23	18	E B 16	21	24	30	36	32	G	40	39	46	42	G	A A 89	27	20	E B 16	17	E B 16	E B 16	E B 16
17	E B 16	17	E B 16	E B 16	E B 15	18	40	32	31	A A 64	A A 72	A A 89	41	A A 84	46	A A 91	35	A A 56	A A 67	E B 16	25	25	25	38
18	24	24	E B 16	E B 16	19	E B 16	26	29	42	35	37	43	G	G	38	37	30	27	21	23	23	25	22	24
19	E B 16	19	E B 16	E B 16	E B 16	E B 16	31	A A 54	48	43	40	40	40	37	36	34	35	A A 78	26	18	22	19	19	19
20	22	E B 17	23	E B 16	E B 16	E B 15	G	26	32	34	40	G 26	G	39	38	A A 60	A A 56	G 26	19	22	E B 16	22	20	E B 16
21	24	E B 16	E B 16	E B 16	E B 15	E B 16	A A 44	33	38	53	42	35	42	48	A A 72	32	G	26	34	40	32	27	A A 52	18
22	E B 16	E B 16	E B 16	22	E B 16	E B 16	28	34	38	43	46	52	51	A A 83	A A 70	46	29	32	21	E B 16	E B 16	E B 16	20	20
23	E B 16	E B 16	E B 15	23	22	E B 16	24	33	42	44	36	39	38	34	36	30	29	26	24	18	E B 16	E B 16	E B 16	23
24	E B 16	E B 16	E B 16	22	17	21	25	31	37	44	42	40	40	39	37	35	34	44	42	46	26	19	A A 53	20
25	20	E B 15	E B 16	E B 16	E B 16	E B 16	24	33	33	42	38	A A 47	44	37	34	G	G	24	17	E B 15	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	22	28	31	G	34	39	40	36	36	32	30	32	A A 98	26	20	24	E B 17	E B 17
27	E B 16	E B 16	E B 16	E B 16	E B 16	E B 17	23	32	35	A A 56	38	46	38	47	A A 86	35	36	29	21	22	E B 16	E B 16	E B 16	E B 16
28	16	E B 16	E B 16	E B 16	E B 16	E B 16	26	30	35	40	A A 62	40	A A 84	A A 76	A A 112	44	32	36	A A 66	20	20	22	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	24	33	34	43	41	39	43	44	A A 76	33	33	A A 59	A A 66	35	A A 83	24	24	E B 16
30	E B 16	E B 16	E B 15	E B 16	E B 16	E B 16	20	28	32	35	35	G	38	42	44	A A 111	41	37	32	20	21	A A 74	22	25
31	E B 16	E B 16	E B 16	E B 17	E B 17	E B 16	21	29	32	34	34	38	38	36	34	31	34	43	30	19	21	32	23	23
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31
MED	20	E B 16	E B 16	E B 17	E B 16	18	25	32	36	43	41	40	42	42	43	36	34	34	28	22	20	19	20	19
U Q	24	23	23	A A 22	19	20	31	34	42	A A 52	A A 47	A A 47	48	A A 50	A A 70	A A 60	41	A A 45	35	29	23	24	23	23
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	24	30	34	38	38	38	38	37	37	33	31	27	21	E B 19	E B 16	E B 16	E B 16	E B 16

AUG.2020 fbEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Kokubunji

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

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AUG.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	A	A	A	A	A	355	287	310	351	A	A	A	A	A	A	363	301	324	340	310	316	323	322	313
2	F	A	321	361	F	348	330	A	372	A	A	A	A	A	A	330	328	333	362	337	324	278	F	F
3	F	305	F	282	288	303	A	362	360	A	A	289	252	292	317	339	322	318	322	333	321	F	339	315
4	F	F	F	A	F	A	344	316	A	264	318	R 291	294	321	310	A	273	323	335	316	A	296	312	313
5	316	321	311	323	311	334	317	316	364	A	301	A	326	340	A	A	A	A	346	323	331	330	320	314
6	F	F	F	A	319	353	339	316	336	358	352	357	319	350	313	340	317	302	331	316	318	F	F	F
7	A	F	328	327	303	335	391	370	361	A	A	312	329	325	338	323	300	340	320	345	354	A	F	F
8	F	295	322	F	F	342	305	332	382	374	339	322	320	294	320	A	322	326	307	315	334	316	300	F
9	F	F	A	F	F	327	332	350	361	372	328	309	341	A	A	349	333	309	303	318	346	336	305	F
10	316	329	329	352	294	332	327	341	379	341	324	283	325	331	362	322	323	337	311	310	335	344	355	322
11	349	322	318	A	A	307	361	394	366	323	255	297	326	322	360	A	338	A	C	316	327	324	326	371
12	331	320	312	A	353	A	300	362	314	353	A	A	344	316	338	A	358	A	325	328	384	379	327	A
13	A	F	A	F	F	332	384	A	A	A	332	A	A	A	A	373	336	344	342	317	318	346	F	F
14	F	327	F	F	335	339	A	348	359	366	374	324	261	340	A	A	A	346	351	330	329	328	312	343
15	F	F	F	F	F	329	344	358	351	356	394	297	321	307	334	310	320	331	324	313	363	F	F	322
16	340	331	319	F	322	321	307	350	388	343	362	341	304	319	277	317	A	318	332	343	352	F	319	328
17	F	F	F	336	F	333	358	345	379	A	A	A	319	A	335	A	348	A	A	332	F	F	F	F
18	F	F	F	F	336	324	340	339	355	305	354	333	346	335	323	338	301	323	344	318	314	344	361	333
19	306	F	338	F	F	317	318	A	343	379	329	286	312	346	354	310	331	A	348	332	336	323	289	F
20	306	317	324	327	325	346	315	335	358	411	350	322	335	351	328	A	A	309	316	331	365	339	325	342
21	330	313	314	316	322	351	A	291	353	367	376	356	335	344	A	322	303	341	318	331	371	346	A	F
22	F	F	F	315	F	F	349	326	361	323	334	341	340	A	A	344	333	341	319	331	334	350	325	325
23	323	364	321	326	308	309	315	374	341	364	333	344	325	341	328	316	331	347	355	336	338	339	311	F
24	F	F	F	F	F	382	324	337	279	346	341	379	329	347	342	325	346	316	314	335	359	355	A	321
25	F	F	F	318	328	337	360	348	366	372	344	A	333	332	360	311	345	334	360	327	336	324	331	323
26	326	316	312	335	311	328	364	375	357	365	371	340	336	313	298	291	328	365	A	361	332	302	306	313
27	F	F	355	372	296	315	382	377	R 267	A	339	321	342	332	A	346	370	341	306	343	343	339	321	333
28	308	306	F	335	314	344	349	332	352	382	A	R 341	A	A	A	360	349	343	A	349	350	F	321	318
29	F	F	310	307	325	317	265	369	330	284	362	337	340	316	A	325	344	A	A	324	A	327	336	311
30	325	307	318	326	312	306	328	355	361	323	269	249	310	328	350	A	336	337	347	360	393	A	297	316
31	F	F	F	296	F	F	332	393	349	317	R 265	313	309	287	352	305	328	339	335	321	325	311	321	297
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	14	16	17	18	27	28	28	29	23	24	24	27	24	20	22	27	25	26	31	28	23	23	20
MED	324	318	320	326	316	332	332	348	358	356	339	322	326	330	334	325	331	334	332	330	336	330	321	322
U Q	330	327	326	336	325	344	354	366	365	372	358	341	336	340	351	344	344	341	346	336	353	344	327	330
L Q	312	307	313	316	308	317	316	332	346	323	326	297	312	316	318	316	320	320	318	317	326	323	311	314

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AUG.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							388	385	A	A	A	A	A	A	A	A	UL 399	376	L					
2						A	UL 349	A	A	A	A	A	A	A		A		A	A					
3							A	A	A	A	A	UL 431	427	A	UL 384	UL 396	390	380	A					
4						A	UL 361	381		A	A	UL 407	A	UL 439	A	A	388	UL 333	A	A				
5						A	UL 363	UL 384	391	A	A	A	A	A	A	A	A	A	A					
6							A	A	A	A	A	A	A	438	409	427	A	380	A	A				
7							L	A	A	A	A	A	A	A	A	401	382	A	A	A				
8						L	L	UL 400	A	A	UL 409	417	455	UL 461	382	A	A	A	L					
9							A	L	419	424	398	392	402	A	A	384	L	364	L					
10							UL 378	UL 397	418	A	A	413	A	423	A	A	425	L						
11							UL 391	A	441	UL 407	UL 430	380	A	A	A	A	A	A	C					
12			A	A		A	UL 365	UL 406	404	A	A	A	A	UL 431	A	A	A	A	L					
13						A		A	A	A	A	A	A	A	A	380	391							
14							A	387	L	400	423	392	422	A	A	A	A	A						
15							A		UL 396	A	A	425	UL 360	UL 335	416	UL 399	UL 381	A	A	A				
16							370	UL 415	L	427	422	UL 438	A	A	UL 383	380	A	367	L					
17							A		429	A	A	A	UL 383	A	A	A	A	A	A					
18							UL 372	389	A	427	UL 436	A	UL 392	425		A	L	UL 361	UL 363	L				
19							A	A	A	A	409	UL 395	A	UL 424	A	UL 399	A	A	A					
20							UL 360	UL 392	UL 397	413	A	UL 449	459	A	UL 418	A	A	369	UL 362					
21							A	UL 420	A	A	A	429	A	A	A	423	380	L	A	A				
22							A	UL 388	A	A	A	A	A	A	A	A	L	A	L					
23								UL 379	A	A	433	UL 379	UL 426	417	393	UL 391	359	L						
24								UL 386	UL 406	A	A	A	UL 402	391	403	UL 400	UL 343	A	A	A				
25								A	399	A	UL 423	A	A	398	405	402	373	L						
26							L		389	UL 413	UL 429	411	A	A	UL 443	UL 358	UL 356	A	A					
27								404	UL 413	A	428	A	UL 410	A	A	403	A	L	L					
28								378	383	A	A	A	A	A	A	A	L		A					
29							UL 365	A	392	A	A	UL 392	A	A	A	UL 423	373	A	A					
30							L	386	411	UL 392	UL 437	UL 410	UL 406	A	A	A	A	A						
31							L	UL 387	UL 408	UL 431	UL 414	389	386	UL 401	UL 410	374	A	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	18	16	9	13	17	13	12	11	16	14	8	1					
MED							UL 365	UL 388	405	413	UL 423	410	UL 406	424	405	399	380	368	UL 362					
U Q							UL 378	UL 400	416	427	UL 432	UL 427	426	UL 434	UL 416	402	390	378						
L Q							UL 361	385	394	UL 404	412	392	UL 389	400	UL 384	382	UL 361	UL 364						

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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							412	334	300	A	A	A	A	A	A	274	362	318	270					
2						E A 246	322	A	232	A	A	A	A	A		E A 316		E A 306	E A 274					
3							A	266	E A 260	A	A	386	366	382	328	264	320	320	264					
4						A	400	340		E A 414	E A 344	356	E A 412	338	346	A	448	328	264	264				
5						228	346	344	240	A	E A 326	A	E A 326	300		A	A	A	238					
6							E A 274	E A 332	E A 322	264	256	256	316	286	352	300	E A 316	364	268	E A 300				
7							234	234	240	A	A	324	E A 324	302	284	314	356	272	E A 272	230				
8						284	320	278	226	242	324	344	368	E A 400	316	A	E A 312	E A 288	288					
9							E A 244	290	242	264	328	360	312	A	A	300	292	346	328					
10							332	288	252	308	324	402	318	316	270	330	320	272						
11							238	218	264	338	R 386	366	E A 336	E A 338	264	A	E A 296	A	C					
12			E A 288	A		A	380	256	352	260	A	A	E A 304	340	292	A	262	A	262					
13						E A 284		A	A	A	E A 318	A	A	A	A	228	302							
14							A	278	246	246	236	314	432	304	A	A	A	E A 298						
15							270		280	252	218	358	338	358	322	342	312	280	266	286				
16							364	262	222	300	278	358	374	342	436	330	A	314	260					
17							254		224	A	A	A	334	A	E A 312	A	298	A	A					
18							288	270	242	332	250	270	270	292	326	312	368	338	284					
19							338	A	254	212	314	404	302	258	258	354	266	A	248					
20							338	308	272	216	E A 340	322	314	288	320	A	A	320	276					
21							A	424	268	244	236	262	300	E A 296	A	328	366	274	E A 288	E A 280				
22							238	308	256	304	296	264	260	A	A	276	276	262	286					
23								244	258	248	280	276	324	294	314	322	268	244						
24								298	386	288	286	242	314	290	300	312	288	E A 310	264	256				
25								E A 256	256	256	290	A	310	308	260	352	294	270						
26							250		284	258	256	316	308	E A 320	374	374	290	228	A					
27								246	378	A	294	E A 304	304	312	A	278	222	270	280					
28								330	264	232	A	E A 254	A	A	A	E A 264	264		A					
29							442	262	290	E A 446	264	310	302	E A 330	A	302	300	A	A					
30							280	266	270	332	394	406	366	316	274	A	276	260						
31							302	232	286	344	354	350	372	388	276	336	298	E A 306	240					
	00	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			4	22	25	29	23	24	24	27	24	20	22	26	23	20	6				
MED			E A 288			U 251	311	274	259	261	287	323	315	308	313	312	296	U 286	266	U 258				
U Q						284	346	319	285	332	327	359	366	339	327	330	320	320	282	286				
L Q						237	254	256	242	246	260	273	304	295	275	278	276	270	263	256				

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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	A	A	A	A	A	212	208	226	A	A	A	A	A	A	A	A	196	218	210	E A 278	E A 230	E B 230	E B 242	E A 254
2	E A 264	A	E A 256	228	E B 242	A	210	A	A	A	A	A	A	A	A	A	E A 298	A	A	E A 272	E A 228	E A 280	E A 284	E A 290
3	E A 292	E A 302	E A 270	E A 294	E B 290	230	A	A	A	A	A	188	190	A	198	194	206	218	A	228	208	E B 228	216	E A 262
4	E A 302	E A 280	E B 264	A	E A 244	A	208	224	A	A	A	196	A	192	A	A	202	214	A	A	A	E A 254	E B 228	E B 228
5	E A 268	E B 256	E B 260	E B 246	E B 276	A	200	200	206	A	A	A	A	A	A	A	A	A	A	210	212	212	226	E A 268
6	E B 276	E B 276	220	A	E A 270	E B 220	A	A	A	A	A	A	A	190	200	200	A	E A 236	A	A	E B 234	E A 282	E B 238	E A 236
7	A	E B 252	E B 240	E A 244	244	224	204	A	A	A	A	A	A	A	A	204	204	A	A	A	202	A	E B 240	E A 246
8	E A 248	E B 244	E A 274	E B 244	208	226	214	214	A	A	208	208	178	176	E A 238	A	A	A	204	E A 238	218	E B 224	E A 266	210
9	E A 288	E B 244	A	E A 248	E B 244	E A 238	A	222	206	196	198	198	198	A	A	198	198	192	210	E A 238	210	214	E B 230	E A 252
10	E A 266	E B 254	226	206	E B 260	E B 234	214	192	188	A	A	188	A	202	A	A	184	202	218	E A 256	214	204	202	E A 232
11	E A 220	E A 224	E A 278	A	A	E A 272	178	A	178	188	188	E A 250	A	A	A	A	A	A	C	E B 246	216	214	E A 252	E A 230
12	E A 302	E A 300	A	A	E A 288	A	212	212	200	A	A	A	A	196	A	A	A	A	200	E A 232	206	206	E A 282	A
13	A	E A 296	A	202	E B 232	A	208	A	A	A	A	A	A	A	A	200	200	196	216	E A 244	E B 232	216	E B 264	E B 250
14	E B 236	E B 250	E A 264	E A 258	E A 252	226	A	210	224	216	190	190	190	A	A	A	A	A	230	212	210	210	E A 240	212
15	E A 232	E A 294	E B 250	E B 238	E B 256	226	A	196	198	A	A	198	210	E A 238	198	198	212	A	A	A	204	200	E A 232	E A 240
16	E A 252	E A 230	E A 292	E A 258	E A 240	E B 266	192	194	202	178	190	198	A	A	E A 234	188	A	192	206	204	204	E B 216	E B 230	204
17	E B 218	E A 270	E B 256	E B 234	E B 236	226	A	202	188	A	A	A	E A 232	A	A	A	A	A	A	208	E A 302	E A 274	E A 256	E A 330
18	E A 258	E A 230	E B 228	E B 240	E A 274	E B 236	212	208	A	186	186	A	186	182	A	200	226	200	226	E A 248	E A 240	224	218	E A 290
19	E B 244	E A 276	E B 232	E B 196	E B 238	240	A	A	A	A	220	220	A	200	A	200	A	A	A	208	210	E A 238	E A 292	E A 238
20	E A 256	E B 240	E B 300	E A 250	E B 238	216	194	192	202	192	A	182	178	A	192	A	A	212	212	214	204	212	210	226
21	E A 256	E B 280	E B 246	218	E B 220	210	A	206	A	A	A	206	A	A	A	192	198	206	A	A	212	212	A	212
22	E B 224	E B 248	E B 248	E A 288	E B 238	224	A	200	A	A	A	A	A	A	A	A	200	A	220	E B 230	222	206	206	E A 226
23	E B 232	E B 202	E B 210	E A 278	E A 280	E B 246	190	212	A	A	180	196	194	180	188	188	194	192	216	212	208	192	E B 256	E A 278
24	E B 258	E B 252	E B 252	E A 240	222	212	210	210	202	A	A	A	208	224	210	204	E A 260	A	A	A	204	204	A	E A 244
25	E A 280	E B 280	E B 256	E B 256	220	E B 232	212	A	204	A	196	A	A	196	196	194	194	204	212	212	212	212	226	E B 226
26	E B 218	E B 232	E B 248	E B 244	E B 220	224	200	200	208	190	182	196	A	A	190	188	198	A	A	210	208	E A 246	E B 254	E B 238
27	E B 264	E B 244	E B 214	E B 214	E B 270	E B 228	196	198	198	A	196	A	196	A	A	214	A	222	E A 230	210	204	E B 194	E B 226	E B 226
28	E B 250	E B 242	E B 242	E B 224	E B 238	220	208	216	226	A	A	A	A	A	A	A	206	E A 240	A	222	210	E A 232	E B 230	E B 244
29	E B 256	E B 250	E B 268	E B 284	E B 266	E B 230	214	A	214	A	A	214	A	A	A	198	214	A	A	E A 246	A	E A 236	E A 228	E B 256
30	E B 236	E B 264	E B 260	E B 244	E B 268	E B 246	206	202	200	200	198	196	200	A	A	A	A	A	216	216	204	A	E A 326	E A 292
31	E B 242	E B 270	E B 262	E B 260	E B 260	E B 250	204	210	200	198	194	210	210	208	194	196	A	A	A	222	E A 234	E A 254	E A 242	E A 284
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	27	26	29	26	22	22	18	9	13	17	13	12	11	17	18	15	15	25	29	29	29	30
MED	E A 256	E B 252	E B 256	E B 244	E B 244	220	208	207	202	192	194	197	195	195	196	198	200	204	214	215	208	208	E 238	E A 242
U Q	E A 267	E A 278	E A 264	E A 258	E 269	E 238	212	212	206	199	198	209	209	205	E A 210	200	212	218	220	E A 245	E A 225	E A 237	E A 256	E A 262
L Q	E B 236	E B 243	E B 240	228	E B 237	224	200	200	198	187	187	193	188	186	192	193	198	196	210	211	205	208	226	226

AUG.2020 h'F (KM)

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IONOSPHERIC DATA STATION Kokubunji

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

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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						B	A	A	A	A	A	A	A	A	A	A	A	124	118					
2						B	A	A	A	A	A	A	A	A		A		A	A					
3						B	A	A	A	A	A	A	A	A	A	110	110	A	A					
4						B	A	A		A	A	114	A	A	A	A	A	A	A	A				
5						B	A	114	108	A	A	A	A	112	A	A	A	A	A	B				
6							112	A	A	A	A	90	A	A	112	102	A	A	A	B				
7						B	112	A	A	A	A	108	A	108	A	A	A	A	A	B				
8						B	108	108	A	A	A	110	110	110	108	A	A	A	116	B				
9						B	A	A	A	A	A	A	A	A	A	112	112	112	110	B				
10						B	122	118	114	114	112	108	108	108	108	112	114	A	A	A				
11						B	A	A	A	A	A	A	A	A	A	A	A	A	C	B				
12			A	A		B	114	114	A	A	A	A	A	108	A	A	A	A	A	A				
13						B	110	114	A	A	A	A	A	A	A	A	A	A	A	B				
14						B	A	A	A	112	A	A	112	114	A	A	A	A		A				
15						B	A	A	A	A	A	114	112	108	108	108	A	A	A	A		A		
16						B	A	A	A	A	108	108	110	110	110	110	A	A	A	B				
17						B	A	A	110	A	A	A	A	A	A	A	110	A	A	B				
18						B	A	A	A	A	A	A	108	108	A	108	108	108	A	B				
19						B	A	A	A	A	A	108	A	108	108	108	108	A	A	B				
20						B	110	A	108	A	112	108	108	114	110	A	A	116	A	B				
21						B	A	A	A	A	A	A	A	A	A	A	114	114	A	B				
22						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
23						B	114	114	A	A	A	A	A	A	114	A	A	112	A	B				
24						B	A	110	108	108	110	108	108	114	A	110	110	A	A	B				
25						B	114	114	A	A	A	A	A	A	114	112	108	108	A	B				
26						B	112	112	114	114	110	110	110	110	110	110	110	A	A	B				
27						B	122	122	108	A	108	A	A	A	A	A	A	A	A					
28						B	A	108	108	108	A	A	A	A	A	A	A	A	A	B				
29						B	A	A	A	A	A	A	A	108	A	112	110	A	A					
30						B	A	A	A	A	A	112	116	114	A	A	A	A	A					
31						B	A	A	A	A	A	108	108	108	106	114	A	A	A	B				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							11	11	8	5	6	13	11	16	11	13	11	7	3					
MED							112	114	108	112	110	108	110	109	110	110	110	112	116					
U Q							114	114	112	114	112	111	112	113	112	112	112	116	118					
L Q							110	110	108	108	108	108	108	108	108	108	108	108	110					

AUG.2020 h'E (KM)

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AUG.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	96	90	90	90	90	90	90	98	98	96	96	94	86	86	88	98	98	G	G	82	82	84	90	90
2	96	96	98	92	92	98	98	92	90	82	82	82	82	82	82	82	82	98	98	92	84	84	96	92
3	92	92	92	92	90	90	90	94	94	92	100	92	98	94	94	114	112	104	96	90	110	B	78	88
4	88	90	104	92	88	86	88	84	84	80	88	110	96	92	86	92	92	92	92	86	86	86	86	94
5	94	94	94	B	108	86	96	110	108	98	98	94	94	122	106	106	100	98	94	108	94	88	102	90
6	104	114	90	90	90	B	118	104	104	102	102	144	88	88	118	114	106	106	104	104	94	94	94	94
7	94	94	92	92	92	104	112	94	94	94	94	110	100	116	80	80	84	94	94	92	90	90	96	94
8	88	88	86	80	80	92	112	112	96	92	92	130	G	116	142	102	102	96	G	96	92	B	92	92
9	94	94	94	94	102	96	90	94	92	92	92	92	92	88	88	82	G	G	G	82	82	82	82	92
10	92	92	92	92	92	104	G	126	122	116	162	G	110	140	118	116	112	96	92	88	100	94	94	94
11	84	90	90	90	90	88	88	88	88	88	88	88	86	86	88	88	88	88	C	94	94	94	92	90
12	90	90	90	82	82	78	120	116	100	100	96	96	96	G	90	90	90	90	90	90	86	86	94	102
13	102	102	96	94	98	90	120	118	104	102	100	92	90	88	90	90	88	88	86	86	B	84	84	92
14	100	92	92	92	92	94	90	90	90	90	90	90	106	120	84	86	86	82	82	82	94	84	84	90
15	90	90	90	108	108	84	96	102	100	94	94	158	158	158	G	114	104	98	98	96	84	90	90	90
16	92	92	92	92	92	86	108	102	92	92	G	142	124	108	108	G	96	100	100	100	94	100	100	B
17	102	92	92	104	114	100	100	100	112	102	92	86	86	94	92	92	136	100	96	98	94	94	94	88
18	88	88	88	88	88	100	100	100	90	88	90	84	G	G	92	122	110	120	98	98	96	92	90	90
19	90	90	86	104	104	100	100	98	90	90	90	140	92	148	142	112	108	102	102	96	98	94	94	94
20	88	84	82	82	82	B	G	90	142	88	150	90	G	136	118	94	94	96	96	96	90	90	90	90
21	88	88	88	88	104	100	100	98	96	96	90	98	98	90	84	94	G	114	98	100	92	92	92	92
22	92	92	82	80	80	B	100	100	100	96	96	94	94	90	90	90	88	88	88	86	80	80	80	80
23	80	90	B	82	82	B	120	114	94	94	90	90	94	94	146	90	84	116	82	88	84	B	98	86
24	90	106	106	90	90	88	88	156	132	124	116	116	124	124	102	110	110	86	92	92	82	82	92	92
25	92	84	84	84	B	86	144	116	98	92	90	90	90	90	108	G	G	120	78	B	84	84	84	B
26	B	B	88	B	88	B	118	116	136	G	118	106	154	142	112	120	114	94	88	88	88	88	88	88
27	88	88	88	B	B	B	124	122	116	104	158	98	98	98	94	102	102	100	92	92	90	B	B	88
28	80	B	84	96	96	94	116	120	116	114	98	98	90	94	94	94	96	96	94	84	96	96	100	100
29	94	96	96	96	88	96	96	96	94	82	86	86	86	112	98	118	114	96	94	94	88	88	88	88
30	116	B	B	104	102	104	104	104	98	92	92	G	116	112	104	96	100	94	94	94	92	92	92	92
31	92	90	90	90	90	94	98	98	96	92	92	148	122	116	114	114	100	100	94	90	90	98	88	86
	00	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	28	29	28	29	25	29	31	31	30	30	29	28	29	30	29	28	29	27	30	30	27	30	29
MED	92	91	90	92	90	94	100	100	98	93	93	94	95	98	94	96	100	96	94	92	90	90	92	90
U Q	94	94	93	94	100	100	117	116	108	100	100	113	108	121	112	114	109	101	98	96	94	94	94	93
L Q	88	90	88	88	88	87	93	94	92	90	90	90	90	90	88	90	89	93	90	88	84	84	88	88

IONOSPHERIC DATA STATION Kokubunji

AUG. 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	F5	F6	F4	F4	L2	L3	L2	L2	L3	L3	L3	L4	L4	L4	L2	L2			F5	F4	F2	F1	F2
2	F2	F5	F4	F4	F2	L4	L4	L4	L4	L4	L4	L4	L4	L4	L3	L3	L3	L3	L4	F4	F3	F2	F6	F2
3	F2	F4	F2	F3	F2	L2	L3	L3	L3	L4	L2	L2	L2	L2	L2	C1	C1	L2	L4	F5	F1		F3	F2
4	F4	F2	F2	F6	F3	L4	L4	L3	L3	L2	L2	C1	L2	L2	L2	L3	L2	L2	L3	L4	F6	F2	F2	F2
5	F3	F2	F2		F2	L2	L3	C2	C2	L3	L2	L3	L2	C2	L3	L3	L4	L4	L5	L1	F3	F1	F2	F2
6	F1	F2	F4	F6	F6		C3	L3	L3	L2	L2	H2	L2	L1	C1	C1	L2	L3	L3	L2	F3	F3	F6	F5
7	F7	F3	F3	F2	F1	L2	C2	L2	L2	L5	L3	CL22	L2	C2	L3	L3	L2	L6	L4	L4	F3	F4	F2	F4
8	F5	F2	F5	F4	F3	L2	C2	C3	L3	L2	L2	H1		C1	H1	L3	L2	L2		L3	F3		F5	F4
9	F5	F2	F6	F5	F3	L3	L3	L2	L2	L2	L2	L2	L2	L3	L3	L2				L2	F2	F2	F2	F3
10	F5	F3	F3	F1	F1	L2		C2	C1	C2	H1		C1	H1	C1	C2	C2	L2	L2	L2	F1	F1	F2	F4
11	F3	F6	F3	F4	F5	L3	L4	L3	L3	L2	L2	L2	L2	L2	L2	L3	L3	L4		L4	F1	F3	F8	F7
12	F6	F7	F6	F6	F5	L4	C2	C2	L2	L2	L3	L3	L2		L2	L3	L2	L3	L3	L3	F4	F2	F2	F5
13	F8	F5	F5	F3	F2	L4	CL33	C4	L5	L4	L3	L3	L3	L3	L4	L3	L2	L4	L3	L3		F2	F1	F2
14	F2	F3	F7	F2	F2	L2	L3	L3	L2	L2	L2	L2	C1	CL12	L3	L3	L3	L3	L3	L4	F3	F2	F2	F2
15	F3	F3	F2	F1	F2	L2	L3	L3	L3	L2	L3	H1	HL11	H1		C1	L2	L3	L5	L3	L4	L3	F3	F2
16	F3	F6	F4	F2	F2	L2	L2	L3	L3	L1		H1	C1	C1	C1		L3	L2	L2	L1	F2	F2	F2	
17	F2	F4	F2	F2	F1	L4	L4	L2	C1	L2	L2	L4	L2	L3	L2	L2	H2	L5	L4	L2	F5	F5	F5	F6
18	F4	F5	F2	F3	F2	L2	L2	L2	L3	L2	L2	L3			L2	C2	C2	C2	L6	L4	F7	F8	F5	F4
19	F2	F2	F3	F1	F2	L1	L4	L3	L3	L3	L2	HL11	L2	HL22	HL22	CL11	C2	L3	L3	L2	F2	F2	F2	F2
20	F2	F2	F2	F1	F1			L3	H1	L1	HL11	L2		H1	C1	L2	L3	L2	L2	L4	F1	F6	F3	F2
21	F5	F2	F3	F2	F2	L2	L3	L2	L2	L3	L2	L1	L3	L2	L3	L2		C1	L5	L6	F5	F4	F7	F5
22	F2	F2	F2	F3	F2		L3	L3	L2	L3	L2	L3	L3	L3	L3	L3	L3	L2	L2	L2	F2	F3	F2	F2
23	F2	F2		F4	F2		C2	C2	L2	L2	L2	L2	L1	L1	H1	L1	L2	CL21	L4	L2	F1		F3	F6
24	F2	F3	F2	F3	F2	L3	L3	HL12	H1	C1	C1	C1	C1	CL11	L2	C1	CL22	L3	L3	L4	F5	F1	F5	F3
25	F5	F5	F2	F2		L1	H2	C2	L2	L2	L2	L2	L2	L1	C1			C1	L2		F1	F2	F3	
26			F2		F2		C2	C2	CL11		C1	C1	H1	H1	C1	C1	C2	L4	L4	L4	F5	F5	F3	F2
27	F2	F2	F2				C2	C3	C2	L3	H1	L2	L2	L2	L3	L2	L2	L2	L3	L3	F1			F1
28	F1		F2	F2	F2	L1	L3	C1	CL12	CL22	C3	L2	L4	L3	L3	L2	L2	L5	L4	L2	F2	F3	F2	F2
29	F2	F2	F2	F2	F4	L3	L3	L4	L2	L3	L3	L2	L2	C2	L2	C1	C3	L3	L4	L6	F6	F4	F4	F2
30	F1			F2	F2	L2	L2	L2	L2	L2	L2		C1	C2	L2	L4	L3	L5	L4	L4	F2	F3	F3	F5
31	F2	F2	F2	F2	F3	L2	L2	L3	L2	L3	L2	H1	H1	C1	C1	C1	L2	L3	L5	L4	F3	F7	F7	F4
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG. 2020 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

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

IONOSPHERIC DATA STATION Yamagawa

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

IONOSPHERIC DATA STATION Yamagawa

AUG.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						A	UL 360	A	404	A	A	A	A	A	A	428	404	388	UL 376					
2							L	L	L	420	UL 432	A	A	UL 436	A	A	UL 412	384	L					
3						A			A	A	A	A	452	A	UL 428	A	A	A	A	A		A		
4						A			UL 400	A	A	A	A	A	440	432		A	A	A	A		A	
5								L	UL 392	408	A	A	A	A	A	A	A	A	A	A				
6						A		356	A	A	A	A	A	456	444	A	424	392	A					
7								A	404	A	A	A	A	A	A	A	424	384	A	A				
8						A		L	A	A	A	444	448	444	452	UL 436	408	A	A					
9								L	388	UL 432	436	436	448	444	432	UL 448	420	392	A					
10								L	UL 416	412	A	A	UL 448	A	A		A	388	364	A				
11								L		404	A	456	448	448	A	420	416	A	L					
12						A	A		400	A	A	A	A	A	A	A	A	A	UL 412					
13									A	A	A	440	A	A	A	A	A	A	A	A				
14								A	UL 400	A	428	A	A	A	440	A	404	380	A					
15								UL 412	A	A	A	A	A	A	A	A	A	A	A	A				
16								L	L	A	UL 452	440	440	432	432	416	416	376	UL 344					
17								L	L	428	A	A	A	A	440	A	404	A	A	A			A	
18								C	A	A	A	440	A	UL 432	444	432	A	A	A					
19						A		UL 440	A	A	436	A	440	A	UL 432	A	404	A	A	A				
20								L	380	404	448	412	436	A	A	A	408	A	A	A				
21								UL 380	A	412	420	436	436	A	A	420	A	380	A					
22								A	A	A	A	436	A	A	A	A	404	380	L	A				
23								L	396	416	432	448	448	444	440	420	396	UL 388	L					
24									UL 400	A	A	432	UL 460	A	436	A	A	380	A					
25							L		L	A	A	A	UL 432	428	A	416	392	384	L					
26								L		A	A	A	428	428	UL 440	412	A	A	L					
27									A	A	432	440	440	436	416	404	A	A	A	A				
28								L	L	416	A	A	A	436	424	A	UL 408	A	A					
29								L	UL 408	420	428	440	UL 440	A	A	432	404	A	A	A				
30								L	L	UL 428	UL 436	444	432	A	A	A	A	A	A					
31									388	UL 408	432	428	428	428	416	416	A	A	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	4	13	13	12	15	17	13	16	14	17	13	4					
MED							UL 360	UL 396	400	416	432	440	440	436	438	420	408	384	UL 370					
U Q								UL 426	404	424	436	444	448	444	440	432	416	388	UL 394					
L Q								368	390	408	430	436	434	430	430	416	404	380	354					

AUG.2020 foF1 (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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	A	A	A	A	A	A	A	A	A	A	A	U A 268	U R 224	B				
2						B	U R 192	236	284	U A 308	A	A	A	A	A	A	A	A	A	B				
3						B	U R 200	U A 248	A	A	A	A	A	A	A	A	A	A	A	B	A	A		
4						B	U R 212	U A 244	A	A	A	A	A	A	A	A	A	A	A	B			A	
5							U R 212	U R 248	A	A	A	A	A	A	A	A	A	A	A	B				
6						B	U R 224	A	A	A	A	A	A	U R 400	A	A	U A 300	A	A	B				
7						B		A	A	A	A	A	A	A	A	A	U A 300	A	A	B				
8						B	U R 204	U A 232	A	A	A	A	A	A	A	A	A	A	A	B				
9						B	U R 184	A	A	A	U R 348	A	A	A	R	U R 348	U R 316	A	A	B				
10						B	U R 200	U A 244	U A 276	A	U A 324	A	A	A	A	U A 320	A	A	A	B				
11							U R 184	U R 252	A	A	A	A	A	A	A	A	A	A	A	B				
12						B	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
13						B	U R 208	A	A	A	A	A	A	A	A	A	A	A	A	B				
14							A	A	A	A	A	A	A	A	A	A	A	A	A	B				
15						B		A	A	A	A	A	A	A	A	A	A	A	A	B	A			
16						A	A	A	A	A	A	A	A	A	A	A	A	A	U A 208	B				
17						B	A	A	A	A	A	A	A	A	A	A	U A 300	U A 260	A	B			A	
18						B	U R 200	C	A	A	A	A	A	A	U A 332	U A 324	U A 312	A	A	B				
19						B	A	U A 248	A	A	A	A	A	A	A	A	A	A	A	B				
20						B	A	A	U A 280	U R 332	352	368	U R 388	A	A	A	U R 320	260	A	B				
21						B	A	A	A	A	A	A	U R 348	A	A	A	A	A	A	B				
22						B	A	A	A	A	A	A	A	A	A	A	A	U R 268	A	B				
23						B	A	U A 208	A	A	A	A	352	R	U A 344	U A 320	A	U A 272	A	B				
24						B	A	U R 252	U A 272	U A 308	U A 324	A	U A 344	A	U R 332	A	A	A	A	B				
25						B	A	U A 248	A	A	A	A	A	A	A	A	A	252	U R 208	B				
26						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
27						B	U R 188	A	A	A	A	A	A	A	A	U A 312	A	A	A	B				
28						B	A	U R 260	A	A	A	A	A	A	A	A	A	A	A	B				
29						B		A	A	U A 300	A	U A 336	A	A	A	U A 316	A	A	A	B				
30						B	A	A	A	A	A	A	A	A	A	A	A	A	A	B				
31						B		A	A	A	316	344	340	U A 332	A	A	A	A	A	B				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							12	12	4	4	5	3	5	2	3	6	6	6	3					
MED							U R 200	U A 248	U A 278	U A 308	U 324	344	U 348	U 366	U A 332	U A 320	U A 306	U 264	U R 208					
U Q							U R 210	U R 250	282	U 320	350	368	370		U A 344	U A 324	U R 316	U 268	U R 224					
L Q							U R 190	U A 240	U A 274	U A 304	320	U A 336	342		U A 332	U A 316	U A 300	260	U A 208					

AUG.2020 foE (0.01MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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 29	J A 28	J A 44	J A 104	J A 108	J A 53	J A 54	J A 75	J A 67	J A 82	J A 61	J A 70	J A 59	J A 109	J A 124	J A 43	J A 35	32	G	J A 26	23	E B 18	E B 22	E B 16
2	E B 16	E B 16	J A 32	E B 16	22	J A 25	G	27	33	37	41	J A 50	J A 49	44	J A 52	J A 60	J A 48	44	J A 32	J A 30	J A 27	J A 32	J A 35	J A 52
3	J A 45	J A 30	J A 32	J A 49	J A 32	J A 36	G	30	J A 64	J A 73	J A 86	J A 65	J A 50	J A 64	J A 51	J A 49	J A 109	J A 72	J A 152	J A 113	J A 55	J A 91	J A 53	J A 56
4	J A 43	J A 53	J A 64	J A 44	J A 55	J A 32	J A 35	29	32	J A 56	J A 54	J A 74	J A 121	J A 74	J A 81	J A 49	J A 46	66	J A 66	J A 55	J A 44	J A 36	J A 53	J A 41
5	J A 42	22	J A 22	J A 26	J A 29	J A 24	G	G	34	J A 46	J A 73	J A 90	J A 51	J A 72	J A 96	J A 59	J A 67	J A 88	J A 186	J A 49	E B 17	J A 29	E B 16	J A 31
6	J A 29	E B 17	J A 42	J A 52	J A 36	J A 34	J A 44	30	J A 95	J A 53	J A 107	J A 103	J A 104	G	J A 44	J A 65	39	36	J A 55	J A 38	J A 40	J A 53	20	J A 50
7	J A 44	E B 16	J A 54	J A 36	J A 29	J A 26	J A 29	J A 85	J A 44	J A 49	J A 74	J A 85	J A 79	J A 56	J A 72	J A 109	37	35	J A 42	J A 78	23	J A 46	J A 48	J A 76
8	J A 54	J A 52	J A 40	21	J A 38	J A 41	G	27	J A 58	J A 90	J A 61	J A 48	J A 58	J A 84	40	39	36	J A 45	J A 88	J A 224	24	J A 43	J A 52	J A 36
9	J A 32	J A 82	J A 30	J A 27	J A 35	J A 40	G	28	32	36	G	J A 66	J A 52	J A 40	G	G	G	J A 40	J A 58	J A 36	J A 28	J A 28	22	J A 29
10	J A 33	J A 43	J A 51	21	J A 28	J A 28	G	29	34	39	J A 50	J A 57	40	45	J A 52	J A 52	J A 64	J A 48	J A 36	J A 33	J A 28	J A 42	J A 40	23
11	23	J A 48	J A 40	J A 50	J A 39	21	G	G	35	J A 64	J A 104	J A 52	42	J A 44	J A 60	J A 52	J A 48	J A 62	J A 39	J A 41	J A 25	J A 22	J A 26	J A 32
12	J A 42	J A 50	J A 40	C	J A 51	J A 34	J A 36	32	J A 42	J A 56	J A 84	J A 89	J A 146	J A 176	J A 108	J A 148	J A 50	J A 65	J A 125	J A 54	J A 109	J A 106	J A 50	J A 48
13	J A 44	J A 36	J A 32	J A 30	J A 23	J A 29	G	J A 45	J A 52	J A 100	J A 64	J A 46	J A 71	J A 104	J A 48	J A 50	J A 95	J A 76	J A 77	J A 72	J A 39	J A 27	E B 16	J A 34
14	J A 52	J A 51	J A 49	E B 16	J A 24	J A 32	J A 50	J A 111	34	J A 98	J A 56	J A 68	J A 122	J A 62	39	44	J A 38	33	J A 46	J A 52	J A 54	J A 55	J A 36	21
15	J A 26	19	J A 32	21	J A 26	J A 112	J A 25	J A 36	J A 66	J A 53	J A 58	J A 177	J A 101	J A 71	J A 55	J A 73	J A 62	J A 55	J A 102	J A 71	J A 53	J A 26	E B 16	J A 49
16	J A 46	J A 67	J A 53	J A 42	J A 24	J A 33	J A 26	28	J A 41	J A 106	J A 54	J A 53	43	J A 47	41	J A 48	J A 53	J A 37	24	24	J A 39	J A 40	J A 44	J A 44
17	J A 38	J A 26	E B 16	22	21	20	J A 28	J A 49	34	J A 46	J A 78	J A 106	J A 66	J A 78	38	J A 56	36	35	J A 63	J A 71	J A 51	J A 49	J A 68	J A 31
18	J A 34	J A 66	J A 46	J A 33	J A 36	J A 34	G	C	J A 70	J A 101	J A 88	J A 62	J A 50	41	36	37	42	J A 46	J A 62	J A 38	J A 41	J A 53	J A 76	J A 83
19	J A 53	J A 50	J A 54	J A 34	25	33	J A 25	31	36	J A 116	J A 42	J A 73	56	J A 46	J A 122	J A 126	J A 44	J A 72	J A 56	J A 55	J A 30	J A 48	J A 34	J A 25
20	J A 34	J A 36	J A 32	J A 29	21	24	J A 29	J A 29	J G 28	G	37	37	G	J A 51	J A 56	J A 53	G	J A 51	J A 40	61	J A 54	J A 30	J A 38	J A 75
21	J A 43	J A 38	21	J A 32	E B 16	J A 46	J A 27	J A 39	J A 47	J A 43	J A 52	J A 46	G	J A 107	J A 95	J A 48	J A 110	J A 44	J A 53	J A 84	J A 110	J A 82	J A 27	J A 52
22	J A 34	J A 53	J A 42	J A 31	J A 35	J A 30	J A 26	J A 44	J A 52	J A 73	J A 52	J A 58	J A 97	J A 111	J A 73	J A 68	J A 56	G	J A 54	J A 56	J A 54	J A 54	J A 54	J A 81
23	J A 88	J A 43	J A 42	J A 28	J A 43	J A 28	J A 36	29	J A 38	J A 42	J A 42	J A 53	39	G	40	35	J A 46	29	J A 32	J A 39	22	E B 16	E B 16	23
24	E B 16	22	J A 41	J A 29	23	24	J A 39	G	32	40	J A 46	40	38	45	41	42	J A 52	J A 68	J A 84	J A 85	54	J A 51	J A 33	J A 33
25	J A 31	22	J A 33	E B 16	J A 28	24	J A 33	28	32	J A 55	J A 52	J A 66	J A 62	J A 89	J A 84	40	J A 41	31	J A 26	J A 23	24	20	20	20
26	E B 16	E B 16	20	E B 16	20	22	J A 26	28	J A 43	J A 54	J A 50	J A 61	J A 44	J A 49	J A 57	J A 56	J A 55	J A 39	22	J A 34	J A 104	J A 53	J A 53	J A 34
27	J A 31	J A 27	J A 32	22	21	18	G	J A 34	J A 67	J A 64	J A 81	J A 42	J A 65	39	36	37	J A 92	J A 65	J A 72	J A 46	J A 80	J A 54	J A 47	J A 35
28	J A 35	J A 23	E B 16	22	24	22	J A 30	G	33	36	J A 51	J A 66	J A 54	J A 57	J A 52	J A 56	J A 40	J A 57	J A 51	J A 79	J A 43	J A 46	J A 41	J A 41
29	J A 32	23	J A 41	23	23	J A 36	E B 16	J A 30	J A 36	33	36	38	44	J A 81	J A 73	J A 58	J A 48	J A 65	J A 69	J A 50	J A 69	J A 101	J A 45	J A 37
30	J A 33	J A 38	26	J A 30	J A 40	J A 48	J A 42	J A 33	J A 54	J A 50	44	38	J A 43	J A 56	J A 88	J A 85	J A 123	J A 65	J A 39	J A 53	J A 30	J A 33	J A 32	J A 88
31	J A 45	22	21	J A 34	J A 25	E B 16	24	J A 32	J A 50	J A 42	35	37	38	41	40	J A 44	J A 52	J A 56	J A 69	J A 50	J A 52	J A 32	J A 32	J A 34
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 34	J A 36	J A 40	J A 29	J A 28	J A 30	J A 26	30	J A 41	J A 53	J A 54	J A 61	J A 52	J A 56	J A 52	J A 52	J A 48	J A 48	J A 55	J A 52	J A 41	J A 43	J A 36	J A 36
U Q	J A 44	J A 50	J A 44	J A 34	J A 36	J A 36	J A 35	J A 36	J A 54	J A 73	J A 74	J A 73	J A 71	J A 81	J A 81	J A 60	J A 62	J A 65	J A 72	J A 71	J A 54	J A 53	J A 50	J A 52
L Q	31	22	30	22	23	24	G	28	34	42	44	46	43	44	40	43	39	36	J A 39	J A 38	27	J A 29	E B 22	31

AUG.2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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	20	20	24	A A 108	A A 53	29	A A 75	35	A A 82	A A 61	44	A A 59	A A 109	A A 124	37	34	31	G	20	E B 16	E B 18	E B 22	E B 16
2	E B 16	E B 16	E B 17	E B 16	E B 16	E B 16	G	25	32	34	40	43	43	41	43	45	32	31	25	20	20	26	27	A A 52
3	A A 45	23	20	22	19	21	G	27	A A 64	A A 73	A A 86	51	40	44	37	43	A A 109	A A 72	32	A A 113	34	A A 91	A A 53	A A 56
4	26	20	A A 64	23	23	A A 32	G 21	28	32	41	42	48	A A 121	48	42	38	40	A A 66	36	41	35	21	A A 53	22
5	22	E B 16	E B 16	E B 15	20	20	G	G	30	36	A A 73	A A 90	44	A A 72	A A 96	46	44	44	A A 186	34	E B 17	E B 16	E B 16	22
6	22	E B 17	28	A A 52	A A 36	A A 34	G 21	26	A A 95	43	A A 107	A A 103	A A 104	G	38	A A 65	34	34	A A 55	30	27	E B 17	E B 17	20
7	32	E B 16	26	19	19	18	22	41	35	44	A A 74	A A 85	58	46	60	A A 109	36	33	34	A A 78	E B 16	33	24	E B 16
8	E B 16	19	19	E B 16	E B 16	24	G	27	53	A A 90	44	40	37	40	37	37	36	39	43	21	E B 17	27	22	E B 16
9	E B 16	A A 82	E B 16	E B 16	E B 17	E B 15	G	26	30	34	G	36	38	35	G	G	G	30	38	23	16	21	E B 17	E B 16
10	E B 16	28	E B 16	E B 16	E B 16	E B 16	G	27	33	38	43	A A 57	38	42	44	40	36	32	26	20	E B 16	E B 16	E B 16	E B 16
11	E B 16	E B 16	E B 16	A A 50	E B 16	E B 16	G	G	32	36	47	40	38	38	A A 60	36	36	A A 62	28	26	22	E B 17	19	A A 32
12	25	24	E B 16	C	E B 16	21	22	25	30	42	A A 84	44	A A 146	A A 176	A A 108	A A 148	38	A A 65	24	28	A A 109	A A 106	A A 50	A A 48
13	21	19	E B 16	E B 16	E B 17	E B 16	G	34	37	A A 100	A A 64	40	44	A A 104	43	42	A A 95	A A 76	A A 77	A A 72	24	20	E B 16	E B 16
14	19	24	E B 16	E B 16	E B 16	E B 16	24	A A 111	31	44	37	A A 68	A A 122	49	39	42	32	30	33	34	A A 54	E B 16	19	E B 16
15	E B 16	E B 16	18	E B 16	19	E B 16	20	25	A A 66	43	43	A A 177	A A 101	45	A A 55	43	46	48	40	36	38	24	E B 16	A A 49
16	A A 46	A A 67	A A 53	20	E B 16	E B 16	18	26	33	A A 106	36	36	40	38	39	38	35	30	23	20	30	30	34	30
17	19	E B 16	E B 16	E B 16	E B 16	E B 16	20	27	31	34	A A 78	A A 106	A A 66	A A 78	34	A A 56	34	32	A A 63	A A 71	34	34	A A 68	E B 17
18	18	19	21	20	A A 36	E B 16	G	C	A A 70	A A 101	48	39	43	39	36	36	40	38	A A 62	30	19	22	24	21
19	20	31	E B 16	E B 16	E B 17	A A 33	17	29	36	A A 116	39	43	40	42	39	A A 126	37	48	40	A A 55	24	22	22	E B 16
20	E B 16	20	18	E B 17	E B 17	E B 16	20	24	G 22	G	37	G 36	G	43	A A 56	43	G	36	33	50	E B 17	27	21	E B 16
21	18	E B 16	E B 17	16	E B 16	E B 16	20	31	39	34	36	39	G	50	A A 95	34	A A 110	29	33	30	22	26	E B 16	19
22	E B 16	A A 53	19	19	19	E B 16	E B 16	39	43	A A 73	45	40	A A 97	A A 111	A A 73	43	34	G	25	A A 56	32	23	30	26
23	A A 88	22	20	20	E B 16	E B 16	18	26	34	34	36	36	37	G	38	34	30	G 27	23	24	E B 16	E B 16	E B 16	E B 16
24	E B 16	E B 16	17	20	E B 16	E B 16	E B 17	G	32	38	42	38	38	43	39	40	44	29	A A 84	42	23	21	22	E B 16
25	18	E B 16	20	E B 16	E B 16	E B 15	16	G 24	31	42	43	A A 66	39	38	44	36	33	27	G 18	E B 15	19	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	20	26	38	44	41	44	40	38	39	36	48	35	21	20	19	35	A A 53	24
27	19	18	E B 16	19	E B 16	E B 16	G	29	A A 67	44	37	37	38	38	36	35	59	38	A A 72	41	38	27	22	20
28	19	E B 16	E B 16	E B 16	E B 16	E B 16	19	G	30	34	40	A A 66	46	36	37	44	35	A A 57	38	21	19	E B 16	23	E B 16
29	E B 15	16	E B 16	E B 16	E B 16	E B 16	E B 16	23	29	32	34	37	40	41	48	37	35	49	A A 69	40	28	35	23	E B 16
30	E B 16	E B 17	E B 16	22	18	E B 16	E B 16	20	31	34	35	36	38	42	49	60	35	36	26	28	24	24	18	A A 88
31	A A 45	E B 16	E B 16	23	18	E B 16	E B 16	24	27	32	34	36	36	36	36	36	37	A A 56	45	47	34	E B 16	20	17
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	30	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	19	18	E B 17	16	E B 16	E B 16	21	26	33	42	42	43	40	42	42	40	36	36	34	30	23	22	22	17
U Q	22	23	20	20	19	20	G	29	A A 39	A A 73	A A 61	A A 66	A A 59	A A 49	A A 56	A A 45	44	A A 49	A A 55	A A 47	34	27	A A 27	A A 26
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 18	G 24	31	34	37	37	38	38	37	36	34	30	25	21	E B 17	E B 17	E B 17	E B 16

AUG.2020 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Yamagawa

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

IONOSPHERIC DATA STATION Yamagawa

AUG.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	F	F	F	F	A	A	317	A	303	A	A	319	A	A	A	327	317	304	328	348	318	321	317	328
2	320	320	308	323	F	315	359	378	379	292	299	293	312	315	338	339	312	343	336	371	309	305	312	A
3	A	F	295	296	310	F	380	375	A	A	A	319	287	317	307	302	A	A	320	A	305	A	A	A
4	F	F	A	318	F	A	388	353	336	303	327	355	A	299	245	296	346	A	340	333	316	320	A	301
5	F	317	333	308	352	341	344	353	366	342	A	A	335	A	A	333	304	332	A	321	330	304	F	320
6	F	F	F	A	A	A	361	327	A	353	A	A	A	356	314	A	300	325	A	337	F	319	331	312
7	F	F	F	F	327	342	389	387	355	356	A	A	324	325	321	A	294	301	333	A	351	F	F	344
8	F	F	F	F	F	333	329	368	375	A	337	315	317	332	275	330	324	326	323	321	326	321	310	324
9	F	A	F	F	F	F	354	372	390	332	255	347	351	318	335	342	272	327	331	333	340	336	329	285
10	F	F	F	338	305	325	367	358	328	342	353	A	252	328	334	324	310	297	286	313	346	365	346	324
11	319	329	F	A	F	F	353	372	393	345	343	333	294	307	A	341	320	A	335	323	311	350	364	A
12	F	315	F	C	339	313	343	349	384	317	A	374	A	A	A	A	361	A	239	356	A	A	A	A
13	F	F	F	F	F	F	386	376	353	A	A	303	298	A	342	337	A	A	A	A	323	340	317	290
14	307	F	289	F	F	F	F	A	354	354	357	A	A	309	295	303	333	357	349	352	A	333	323	329
15	F	352	314	320	296	329	361	336	A	381	338	A	A	311	A	311	325	340	312	309	346	R 364	312	A
16	A	A	A	F	304	F	338	385	407	A	362	238	278	324	316	336	321	334	316	340	363	348	368	344
17	308	310	318	336	321	310	365	402	389	320	A	A	A	A	330	A	324	327	A	A	318	319	A	F
18	F	F	F	F	A	354	336	C	A	A	344	364	331	275	318	300	334	335	A	325	335	F	F	F
19	F	334	354	403	344	A	372	337	365	A	268	321	308	343	323	A	320	344	356	A	318	358	329	F
20	F	F	F	F	339	300	318	354	370	340	345	289	309	313	A	289	317	321	337	326	357	364	F	F
21	F	332	326	349	364	357	343	291	349	378	368	329	354	331	A	332	A	342	342	316	352	349	F	F
22	F	A	F	F	349	F	341	349	364	A	341	329	A	A	A	312	317	317	328	A	323	352	325	303
23	A	F	F	F	F	F	321	355	377	373	353	311	320	306	298	318	335	358	348	353	362	342	308	299
24	F	307	311	F	338	F	361	346	376	370	344	348	319	325	316	329	312	310	A	347	377	F	318	317
25	321	F	313	301	365	F	343	341	348	387	399	A	311	346	314	325	331	334	354	354	319	328	307	318
26	349	330	326	327	340	342	359	359	363	360	392	375	278	284	250	304	318	342	342	369	318	325	A	301
27	F	330	330	399	345	F	372	384	A	353	329	356	335	299	314	347	359	324	A	340	363	322	F	295
28	F	F	305	F	F	F	342	364	370	389	377	A	323	332	357	327	335	A	341	339	F	322	F	F
29	F	F	F	F	299	313	332	371	336	314	303	330	329	346	319	330	339	324	A	327	341	317	305	F
30	345	346	300	324	348	331	318	378	374	338	316	330	313	334	315	340	344	364	352	335	359	312	330	A
31	A	319	317	310	302	304	359	392	378	343	323	319	326	321	358	244	343	A	334	351	331	F	315	296
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	13	15	14	19	15	30	28	26	23	23	22	23	25	23	26	28	24	23	25	27	25	19	18
MED	320	329	314	324	339	329	354	362	368	345	343	329	317	321	316	327	322	330	335	337	331	328	318	314
U Q	345	333	326	338	348	342	365	377	378	370	357	348	329	332	334	336	335	342	342	352	352	350	330	324
L Q	308	316	305	310	305	313	338	349	353	332	323	315	298	308	307	304	314	322	323	324	318	320	312	299

AUG.2020 M(3000)F2 (0.01)

IONOSPHERIC DATA STATION Yamagawa

AUG.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						A	UL 374	A	328	A	A	A	A	A	A	415	414	386	UL 358					
2							L	L	L	430	UL 389	A	A	UL 407	A	A	UL 405	395	L					
3						A			A	A	A	A	392	A	UL 413	A	A	A	A	A		A		
4						A			UL 387	A	A	A	A	A	335	387		A	A	A	A		A	
5								L	UL 405	394	A	A	A	A	A	A	A	A	A	A				
6						A		403	A	A	A	A	A	407	427	A	392	346	A					
7								A	403	A	A	A	A	A	A	A	394	394	A	A				
8						A		L	A	A	A	441	437	422	406	UL 363	386	A	A					
9								L	442	UL 405	414	423	405	441	448	UL 378	385	358	A					
10								L	UL 398	433	A	A	UL 427	A	A		A	358	377	A				
11								L		447	A	410	418	420	A	404	399	A	L					
12						A	A		388	A	A	A	A	A	A	A	A	A	UL 307					
13									A	A	A	423	A	A	A	A	A	A	A	A				
14								A	UL 392	A	423	A	A	A	386	A	385	381	A					
15								UL 355	A	A	A	A	A	A	A	A	A	A	A	A				
16								L	L	A	UL 413	437	413	427	396	413	385	383	UL 370					
17								L	L	404	A	A	A	A	415	A	390	A	A	A			A	
18								C	A	A	A	412	A	UL 423	449	410	A	A	A					
19						A		UL 330	A	A	422	A	375	A	UL 378	A	372	A	A	A				
20								L	412	427	415	490	435	A	A	A	388	A	A	A				
21								UL 355	A	426	444	415	433	A	A	401	A	374	A					
22								A	A	A	A	398	A	A	A	A	386	387	L	A				
23								L	393	405	434	420	415	417	380	400	375	UL 380	L					
24									UL 405	A	A	444	UL 372	A	390	A	A	377	A					
25							L		L	A	A	A	UL 419	416	A	428	399	383	L					
26								L		A	A	A	469	444	UL 395	412	A	A	L					
27									A	A	406	418	440	427	444	417	A	A	A	A				
28								L	L	400	A	A	A	418	396	A	UL 409	A	A					
29								L	UL 368	406	421	407	UL 376	A	A	376	370	A	A	A				
30								L	L	UL 392	UL 410	412	419	A	A	A	A	A	A					
31									388	UL 402	411	433	411	404	416	383	A	A	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	4	13	13	12	15	17	13	16	14	17	13	4					
MED							UL 374	UL 355	393	405	414	420	418	420	401	402	388	381	UL 364					
U Q								379	405	428	422	437	434	427	422	413	399	386	374					
L Q								UL 342	388	401	410	412	398	412	388	383	385	366	UL 332					

AUG.2020 M(3000)F1 (0.01)

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AUG.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						A 312	402	A	418	A	A	322	A	A	A	344	330	330	292					
2							270	238	238	388	376	416	372	354	282	292	344	288	288					
3						E A 312			A	A	A	E A 338	380	314	314	330	A	A	268	A		A		
4						A			298	E A 362	328	284	A	E A 346	458	376	284	A	E A 258	E A 294			A	
5								250	250	308	A	A	296	A	A	314	E A 376	330	A	E A 232				
6						A		336	A	254	A	A	A	306	346	A	372	310	A					
7								236	286	E A 290	A	A	E A 312	256	E A 302	A	334	312	254	A				
8						E A 296		242	256	A	326	370	360	322	410	310	310	282	E A 320					
9								236	222	342	484	280	310	334	284	298	474	320	E A 280					
10								256	296	302	284	A	C 450	328	304		E A 292	334	360	264				
11								244		308	E A 284	340	372	356	A	304	346	A	290					
12						E A 300	230		236	344	A	244	A	A	A	A	246	A	502					
13									262	A	A	384	382	A	286	276	A	A	A	A				
14								A	260	266	264	A	A	E A 388	410	386	298	248	248					
15								294	A	216	E A 276	A	A	E A 374	A	338	308	E A 324	E A 292	E A 258				
16								224	214	A	296	564	468	340	324	290	294	288	296					
17								230	228	388	A	A	A	A	318	A	294	282	A	A			A	
18								C	A	A	E A 258	242	310	456	330	354	274	274	A					
19						A		302	272	A	488	348	318	252	314	A	314	E A 286	246	A				
20								272	242	242	274	450	350	336	A	416	336	310	258	E A 278				
21								386	244	228	248	314	280	E A 308	A	292	A	276	256					
22								E A 288	256	A	290	288	A	A	A	316	280	290	272	A				
23								258	242	224	256	352	350	350	350	336	270	232	250					
24									220	246	284	284	322	334	350	308	316	316	A					
25							264		264	236	E A 240	A	354	270	332	320	288	288	230					
26								244		268	216	E A 268	466	440	420	314	E A 258	244	238					
27									A	258	312	258	290	370	310	256	E A 278	270	A	230				
28								240	224	224	242	A	E A 344	310	272	290	290	A	234					
29								242	272	370	398	310	324	286	E A 344	314	284	E A 326	A	E A 258				
30								236	236	306	330	330	338	302	E A 320	E A 320	250	228	236					
31									256	288	342	358	314	340	278	538	280	A	E A 270	E A 244				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	4	20	24	23	23	22	23	25	23	25	28	24	23	8				
MED						E A 300	267	244	253	U 277	284	322	344	328	319	314	294	288	261	E A 258				
U Q						E A 312	336	280	268	342	330	358	372	355	350	341	332	318	292	E A 271				
L Q						E A 296	247	237	236	242	258	284	312	307	302	295	280	275	248	E A 238				

AUG.2020 h'F2 (KM)

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AUG.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	EA252	EA290	EA254	EA294	A	A	212	A	EA272	A	A	A	A	A	A	196	182	204	204	210	EB228	EB218	EB230	EB234
2	EB240	EB250	226	EB250	226	EB244	208	196	194	192	EA234	A	A	222	A	A	178	186	194	204	EA234	EA286	EA284	A
3	A	EA248	EA296	EA346	EA298	A	210	198	A	A	A	A	196	A	196	A	A	A	A	A	EA278	A	A	A
4	EA308	EA278	A	EA302	EA266	A	206	216	202	A	A	A	A	A	EA282	216	A	A	A	A	EA264	EA230	A	EA312
5	EA262	EB248	EB248	EB258	EA234	EA262	212	202	186	EA220	A	A	A	A	A	A	A	A	A	A	218	218	EB264	EA278
6	EA286	EB272	EA260	A	A	A	220	198	A	A	A	A	A	214	202	A	194	EA268	A	EA230	EA252	EB218	EB218	EA246
7	EA332	EB244	EA300	210	EA238	226	200	A	200	A	A	A	A	A	A	A	200	214	A	A	202	EA250	EA244	210
8	218	EA240	EA282	208	EB246	A	220	200	A	A	A	182	182	188	188	EA250	196	A	A	224	EB226	EA234	EA234	EB224
9	214	A	EB244	EB244	EB274	EB230	212	192	184	192	190	190	190	188	178	178	190	204	A	224	206	204	206	EB240
10	EB276	EA314	222	EB222	EB238	EB264	204	200	198	196	A	A	192	A	A	204	A	226	226	A	204	192	192	EB226
11	EB248	EB264	EB264	A	EB246	EB206	212	194	194	194	A	194	194	194	A	194	194	A	206	EA230	EA248	210	194	A
12	EA320	EA314	EB236	C	EB236	A	A	200	198	A	A	A	A	A	A	A	A	A	198	224	A	A	A	A
13	EA294	EA294	EB282	EB230	EB210	EB272	198	222	A	A	A	202	A	A	A	A	A	A	A	A	EA234	222	EB240	EB260
14	EA240	EA282	EB252	EB228	EB228	EB240	EA240	A	196	A	194	A	A	A	198	A	202	202	A	214	A	EB228	EA238	EB226
15	240	214	EA250	EB236	EA272	EB244	208	206	A	A	A	A	A	A	A	A	A	A	A	A	214	190	EB216	A
16	A	A	A	EA240	EB260	EB286	212	196	200	A	196	194	208	180	210	210	210	188	214	238	210	210	EA240	EA264
17	EA274	EB274	EB248	EB224	EB262	EB238	220	196	188	188	A	A	A	A	186	A	204	A	A	A	EA254	EA266	A	206
18	EA262	EA252	EA232	EA312	A	EB238	198	C	A	A	A	210	A	210	192	184	A	A	A	EA234	224	204	EA232	EA266
19	EA252	EA272	EB220	188	EB242	A	200	200	A	A	198	A	EA256	A	EA254	A	EA274	A	A	A	EB240	222	EA240	EB274
20	212	EA258	EA254	EB252	226	EB224	212	180	194	194	194	176	194	A	A	A	208	A	A	A	202	200	EA236	214
21	EA214	EB242	EB232	EB218	EB208	EB226	224	238	A	186	184	198	182	A	A	212	A	212	A	EA238	210	210	EB284	EA292
22	EB292	A	EA292	EA252	EA274	EB254	202	A	A	A	A	EA230	A	A	A	A	214	208	212	A	EA252	216	EA236	EA256
23	A	EA246	222	220	EB240	EB244	212	200	216	190	192	192	192	192	210	210	208	192	204	204	208	194	EB250	EB278
24	EB278	EB248	EA248	224	EB222	EB242	202	192	182	A	A	182	220	A	EA236	A	A	214	A	212	188	208	EA270	EB258
25	EA252	EB230	EA292	EB250	198	EB254	196	194	196	A	A	A	210	208	A	186	198	198	198	202	EA212	212	EB256	EB224
26	EB214	EB234	EB252	EB240	EB222	EB232	208	196	EA242	A	A	A	184	184	206	206	A	A	200	196	EA254	EA258	A	EA270
27	EA240	EA240	220	188	EB226	EB266	208	200	A	A	198	190	184	184	184	184	A	A	A	A	210	210	EA254	EA278
28	EA256	EB228	EB228	220	EB220	EB236	214	204	198	198	A	A	A	186	200	A	194	A	A	212	200	210	EA280	220
29	EB234	EB234	EB260	EB268	EB268	EB268	204	202	192	192	184	184	200	A	A	214	214	A	A	A	EA238	EA264	EA264	EB238
30	EB238	EB234	EB264	EA270	EA242	EB258	216	204	198	198	198	192	194	A	A	A	A	A	A	216	208	EA288	EA272	A
31	A	EB240	EB240	EA306	EA302	EB280	EB206	204	204	200	198	188	188	202	200	220	A	A	A	A	EA274	214	EA236	EA258
	00	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	28	28	24	30	26	21	13	12	15	17	13	16	15	17	13	10	17	29	29	26	25
MED	EA252	EA248	EA250	EA240	EB239	EB244	208	200	197	193	194	191	193	192	197	205	199	204	204	213	EA224	208	EA240	EA256
U Q	EA278	EA273	EA264	EA263	EA264	EB263	212	204	201	198	198	198	204	209	EA210	214	209	214	212	EA230	EA250	EA232	EA264	EA272
L Q	EA238	EB240	232	221	EB226	EB234	204	196	193	191	191	184	186	185	190	186	194	195	198	207	208	209	EA232	225

AUG.2020 h'F (KM)

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AUG.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	A	A	A	A	A	A	A	A	A	A	A	108	108	B				
2						B	108	108	108	108	108	108	108	108	108	A	A	A	A	B				
3						B	112	118	A	A	A	A	A	A	A	118	A	A	A	B	A	A		
4						B	122	122	120	A	A	A	A	A	A	A	A	A	A	B			A	
5							126	124	114	A	A	A	A	A	A	A	A	A	A	B				
6						B	114	114	A	A	A	A	A	108	A	108	108	110	A	B				
7						B		A	110	A	A	A	A	A	A	A	114	108	A	B				
8						B	108	108	A	A	A	A	A	A	108	110	110	A	A	B				
9						B	134	118	118	118	110	A	A	A	108	108	108	A	A	B				
10						B	118	112	108	108	112	A	112	112	112	108	A	A	A	B				
11							108	108	108	A	A	A	A	A	A	A	A	A	A	B				
12						B	A	114	A	A	A	A	A	A	A	A	A	A	A	A				
13						B	126	116	116	A	A	A	A	A	A	A	A	A	A	B				
14							A	A	114	A	A	A	A	A	A	A	A	A	A	B				
15						B		A	A	A	A	A	A	A	A	A	A	A	A	B	A			
16						A	A	110	A	A	A	A	110	A	110	A	A	A	116	B				
17						B	A	A	A	A	A	A	A	A	A	A	112	112	A	B			A	
18						B	112	C	A	A	A	A	A	110	112	110	108	A	A	B				
19						B	A	112	112	A	A	A	A	A	A	A	A	A	A	B				
20						B	A	A	108	108	108	106	112	A	A	A	112	112	A	B				
21						B	A	A	A	A	A	A	106	A	A	A	A	A	A	B				
22						B	A	A	A	A	A	A	A	A	A	A	A	106	A	B				
23						B	A	110	A	A	A	A	112	112	110	110	A	106	110	B				
24						B	A	110	112	112	112	112	106	114	110	110	A	A	A	B				
25						B	A	116	116	A	A	A	A	A	A	114	A	114	114	B				
26						B	A	116	112	A	A	A	A	110	A	A	A	A	A	B				
27						B	122	122	A	A	A	A	A	A	A	120	A	A	A	B				
28						B	A	120	114	112	A	A	A	A	A	A	A	A	A	B				
29						B		A	A	108	108	112	112	A	A	110	A	A	A	B				
30						B	A	A	A	A	A	110	A	A	A	A	A	A	A	B				
31						B		A	A	A	110	118	114	108	C 112	A	A	A	A	B				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							12	19	15	7	7	6	9	8	9	11	7	8	4					
MED							116	114	112	108	110	111	112	110	110	110	110	109	112					
U Q							124	118	116	112	112	112	112	112	C 112	114	112	112	115					
L Q							110	110	108	108	108	108	107	108	108	108	108	107	109					

IONOSPHERIC DATA STATION Yamagawa

AUG.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	82	88	88	88	88	86	86	80	84	84	84	84	84	88	88	90	90	166	G	84	82	B	B	B
2	B	B	92	B	94	84	G	168	134	126	134	126	118	116	116	100	98	102	102	86	82	94	92	92
3	92	84	88	88	86	90	G	112	96	88	88	88	90	90	90	108	94	94	94	94	86	86	82	A
4	86	86	86	86	86	88	88	136	134	88	88	88	88	88	86	86	86	86	84	84	86	86	86	84
5	84	84	84	84	84	84	G	G	108	94	88	88	88	88	92	102	100	96	90	88	B	94	B	74
6	78	B	86	78	86	88	88	112	96	98	90	90	90	G	84	112	118	114	90	90	102	94	96	96
7	88	B	88	88	90	90	90	86	112	94	90	86	86	90	88	86	112	122	100	96	86	94	94	94
8	86	86	86	86	84	88	G	118	92	90	90	90	98	96	118	120	122	96	94	92	84	84	84	94
9	108	96	92	92	92	92	G	126	126	120	G	82	82	90	G	G	G	80	78	78	90	98	98	96
10	96	90	90	90	90	88	G	120	120	118	118	94	110	112	112	112	100	96	92	94	90	96	96	96
11	96	96	98	90	92	94	G	G	116	98	88	88	128	82	82	82	92	86	82	82	76	92	92	92
12	92	94	94	C	88	86	80	116	88	96	92	92	92	92	92	88	102	96	98	98	92	92	92	92
13	92	92	92	92	92	98	G	108	108	100	100	100	90	90	84	84	84	84	84	84	82	84	B	96
14	96	96	96	B	96	88	88	84	128	84	82	82	84	84	112	112	90	118	84	92	104	104	104	98
15	98	98	92	92	88	92	96	96	96	96	96	92	92	92	92	92	98	90	84	84	82	88	B	92
16	100	92	92	92	90	92	104	112	92	84	84	84	120	82	122	88	82	80	150	102	90	90	90	90
17	90	90	B	90	86	110	104	104	100	98	92	92	92	92	96	94	138	138	94	94	86	88	96	96
18	96	90	84	84	80	86	G	C	86	86	86	84	84	136	136	158	136	104	98	94	98	100	94	94
19	96	86	86	90	90	84	100	124	120	88	88	88	88	84	84	80	80	80	78	76	74	92	92	92
20	92	92	92	92	92	88	88	88	90	G	158	146	G	106	98	98	G	110	94	94	92	92	92	92
21	92	92	92	92	B	80	100	100	98	98	98	96	G	90	86	86	90	88	96	94	92	92	92	92
22	92	92	90	88	86	88	96	92	92	90	88	84	84	84	82	88	88	G	84	82	86	86	88	88
23	88	92	92	92	92	84	92	110	96	96	96	96	132	G	130	140	80	132	110	74	76	B	B	90
24	B	88	88	84	84	74	76	G	128	120	112	112	120	114	128	110	88	88	88	82	84	84	84	90
25	90	90	82	B	82	86	88	142	112	94	94	86	86	86	84	114	80	134	82	80	80	80	80	80
26	B	B	86	B	86	92	96	112	112	98	94	94	100	110	100	98	94	92	92	86	86	86	86	88
27	88	86	88	88	88	86	G	120	104	98	94	94	96	96	96	136	92	90	86	86	86	86	86	86
28	86	86	B	86	86	86	84	G	108	108	96	96	96	94	96	94	96	94	90	90	88	88	88	94
29	90	90	86	86	86	100	B	100	96	118	118	146	126	102	102	112	106	102	94	88	96	96	92	88
30	88	98	84	100	100	92	92	92	92	92	86	128	92	108	100	100	100	100	100	98	102	102	102	96
31	96	96	96	88	88	B	98	94	90	88	120	148	138	118	110	102	100	96	94	92	88	98	96	92
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	29	26	30	30	20	26	31	30	30	31	29	29	30	30	29	30	30	31	30	29	26	29
MED	92	90	88	88	88	88	91	111	100	96	92	92	92	92	96	99	94	96	92	88	86	92	92	92
U Q	96	94	92	92	92	92	97	120	116	98	98	96	114	107	112	112	101	110	96	94	92	95	96	95
L Q	88	86	86	86	86	86	88	94	92	88	88	86	87	88	86	88	88	88	84	84	82	86	86	89

AUG.2020 h'Es (KM)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Yamagawa

AUG.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	F2	F5	F6	F6	L5	L6	L6	L6	L3	L3	L3	L3	L3	L3	L2	L2	H1		L4	F1			
2			F3		F1	L2		H1	H2	C2	CL21	CL22	CL22	C1	C2	L3	L2	L2	L4	L2	F2	F4	F4	F9
3	F7	F4	F3	F3	F3	L4		C2	L8	L4	L5	L3	L2	L2	L2	C2	L3	LL56	LL34	L3	F2	F3	F3	F3
4	F4	F2	F6	F3	F4	L5	L4	HL22	HL22	L3	L3	L3	L4	L3	L3	L2	L3	L4	L4	L4	F4	F3	F6	F3
5	F3	F2	F2	F2	F4	L2			C2	L3	L5	L5	L3	L3	L4	L3	L5	L3	L6	L4		F1		F3
6	F1		F4	F7	F4	L4	L1	C3	L6	L2	L8	L6	L5		L2	CL33	CL12	CL23	L5	L4	F2	F2	F1	F2
7	F9		F7	F7	F9	L9	L7	L4	CL22	L5	L5	L4	L4	L3	L3	L8	C2	CL24	LL73	LL94	F2	F8	F8	F3
8	F6	F5	F5	F1	F2	L5		CL22	L7	L7	L4	L2	L2	L3	C1	C1	C1	L6	L7	L4	F2	F9	F6	F3
9	F1	F7	F5	F2	F2	L2		C2	C2	C2		L2	L2	L2				L4	L6	L4	F3	F3	F1	F3
10	F2	F8	F6	F2	F3	L2		C2	C2	CL22	C3	L4	CL11	C2	CL22	CL22	L3	L3	L4	L3	F1	F1	F1	F1
11	F2	F2	F2	F6	F2	L1			C2	L2	L3	LC32	CL13	L3	L4	L3	L3	L6	L4	L6	F2	F2	F4	F5
12	F6	F7	F6		F3	L6	L7	CL24	L3	L3	L6	L3	L4	L3	L3	L5	L3	L4	L3	L4	F3	F5	F3	F4
13	F4	F2	F2	F2	F2	L2		C3	C3	L5	L3	L1	L3	L6	L4	L3	L6	L6	L7	L8	F3	F2		F2
14	F4	F2	F2		F2	L4	L3	L6	CL33	L4	L3	L5	L3	L3	CL12	CL22	L4	CL22	L7	L3	F2	F1	F2	F1
15	F2	F2	F5	F2	F3	L2	L4	L3	L4	L3	L3	L3	L3	L3	L4	L2	L2	L6	L7	L4	L2	F1		F5
16	F4	F7	F6	F2	F2	L2	L2	C3	L4	L6	L3	L2	CL12	L2	CL13	L3	L4	L3	H1	L2	F5	F4	F5	F3
17	F1	F1		F2	F1	L1	L5	L3	L3	L2	L6	L5	L4	L4	L1	L3	H1	H3	L6	L6	F4	F7	F3	F1
18	F3	F3	F3	F3	F2	L2			L6	L5	L3	L2	L2	C1	H1	H1	H3	L4	L7	L8	F1	F3	F3	F2
19	F2	F6	F4	F1	F2	L6	L1	C2	CL32	L5	L2	L3	L2	L3	L3	L6	L4	L6	L6	L7	F3	F2	F2	F2
20	F2	F4	F3	F2	F1	L2	L2	L2	L2		H1	H1		L2	L3	L3		C3	L4	L9	F3	F4	F8	F6
21	F6	F3	F2	F2		L2	L4	L4	L4	L2	L2	L3		L5	L7	L3	L4	L4	L5	L5	F4	F3	F4	F3
22	F2	F6	F6	F3	F6	L2	L2	L6	L5	L6	L5	L3	L4	L3	L4	L4	L3		L4	L7	F6	F4	F3	F6
23	F8	F4	F7	F6	F2	L2	L3	C3	L5	L2	L3	L2	H1		H1	H1	L4	H2	CL22	L4	F2			F2
24		F2	F2	F3	F1	L2	L1		H2	C3	CL32	C2	C1	C2	C2	C2	L3	L4	L5	L6	F4	F4	F4	F4
25	F3	F2	F5		F2	L2	L2	H2	C2	L4	L5	L4	L3	L3	L5	C2	L4	H2	L2	L2	F4	F2	F1	F2
26			F1		F1	L3	L2	C3	C3	L4	L4	L3	L2	C2	L3	L2	L4	L3	L3	L3	F4	F8	F8	F6
27	F3	F7	F4	F4	F4	L2		C3	L5	L4	L2	L2	L2	L2	L1	C2	L7	L7	L5	L5	F6	F6	F6	F2
28	F8	F4		F3	F2	L2	L4		C1	C2	L3	L3	L3	L2	L2	L4	L2	L4	L4	L3	F3	F3	F3	F2
29	F2	F2	F2	F1	F1	L1		L3	L3	C1	C1	H1	CL22	L2	L2	C2	L2	L7	L7	L6	F4	F4	F3	F3
30	F2	F2	F2	F7	F5	L5	L3	L2	L3	L4	L3	C1	L2	CL22	L3	L4	L4	L5	L6	L4	F2	F6	F5	F5
31	F6	F2	F2	F6	F6		L4	L4	L4	L3	CL12	C1	H1	C1	C2	L2	L4	L5	L9	L9	F9	F2	F5	F3
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG.2020 TYPES OF Es

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG.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 38	X 36	X 37	A	A	A															X 63	X 58	X 54	X 49
2	X 47	X 45	X 41	X 38	X 34	X 33															X 46	X 44	X 42	A
3	A	X 38	X 34	X 33	A	X 29															X 71	X 60	X 51	48
4	47	X 44	X 42	44	A	X 32											C	C	C	C	X 63	X 48	X 46	X 44
5	X 44	X 40	X 40	X 38	X 33	X 29															X 64	X 48	X 48	51
6	X 46	X 48	X 40	X 29	X 27	X 28															X 58	X 54	X 52	X 41
7	X 42	X 37	X 39	47	X 35	X 38															X 80	X 57	X 49	A
8	A	48	44	39	34	X 32															X 68	X 65	58	59
9	X 51	X 46	X 47	X 43	X 39	X 39															X 62	X 53	X 41	X 40
10	X 40	X 38	X 38	X 35	X 30	X 29															X 81	X 70	X 36	X 34
11	X 34	X 32	X 32	X 29	X 28	X 31															X 70	X 61	X 40	X 33
12	X 34	X 31	X 31	38	34	X 25															X 67	X 39	X 32	A
13	36	46	49	46	33	A															X 53	X 48	X 43	44
14	48	X 38	48	X 36	A	39															X 59	X 59	X 49	47
15	A	X 39	X 36	37	33	X 31	A														X 88	X 59	X 44	X 44
16	42	X 38	39	X 32	X 32	X 30															X 83	X 56	X 42	X 32
17	36	38	38	33	32	X 29															A	X 54	X 45	48
18	46	X 38	42	33	34	X 26															X 75	X 60	X 43	48
19	48	X 38	X 46	A	X 24	X 25															X 60	X 56	X 50	58
20	59	48	X 38	X 38	X 34	X 28															X 70	X 55	48	A
21	A	A	X 37	X 38	X 28	A															X 64	X 45	X 39	X 37
22	45	35	X 32	A	X 31	X 25															X 80	X 83	X 40	X 38
23	X 38	X 39	X 35	X 39	X 31	X 32														X 77	X 59	X 48	A	X 41
24	X 39	X 39	X 39	X 39	X 36	X 28															X 61	X 44	39	39
25	X 34	X 32	X 32	36	X 28	X 25															X 58	X 50	X 48	50
26	48	X 40	X 37	X 34	X 32	X 31															X 74	X 74	55	X 52
27	56	54	58	X 43	A	X 27															X 88	X 48	X 42	46
28	X 43	41	X 38	X 33	X 33	X 29															X 65	71	X 59	65
29	65	57	X 45	45	38	X 31															X 66	X 54	53	56
30	X 50	X 32	X 30	X 33	X 30	X 30															X 64	X 49	X 44	X 41
31	A	X 38	X 34	X 32	X 29	X 31															X 52	X 48	X 44	X 43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	30	31	28	26	28														1	30	31	30	27
MED	X 44	X 38	X 38	X 38	X 32	X 30														X 77	X 64	X 54	X 44	X 44
U Q	48	45	42	39	X 34	X 32															X 74	X 60	X 50	50
L Q	X 38	X 38	X 35	X 33	X 30	X 28															X 60	X 48	X 42	X 40

AUG.2020 fxI (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG.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	32	30	31	A	A	A	26	48	50	E G 41	53	60	60	62	60	58	58	58	56	56	57	51	48	43
2	41	39	35	32	28	27	38	47	42	44	46	46	53	64	65	62	53	50	60	48	40	38	36	A
3	A	32	28	27	A	23	36	46	41	A	A	66	74	70	66	72	92	80	A	A	65	54	45	F 39
4	F 31	38	36	F 34	A	26	38	45	43	52	49	63	A	A	A	A	C	C	C	C	57	42	40	38
5	38	34	34	32	27	23	32	45	53	54	51	A	50	53	56	58	A	55	63	75	58	42	42	F 41
6	40	42	34	23	21	22	28	48	57	54	A	A	A	A	48	52	53	56	65	63	52	48	46	35
7	36	31	33	F 31	29	32	40	42	52	49	55	63	78	89	108	109	112	114	106	91	74	52	43	A
8	A	F 40	F 33	F 30	F 27	26	30	58	58	49	49	52	56	A	A	A	59	69	70	61	62	59	F 48	F 49
9	45	40	41	37	33	33	37	52	48	48	54	54	59	58	58	56	56	59	68	61	56	47	35	34
10	34	32	32	29	24	23	30	46	48	48	57	61	52	51	52	54	47	47	51	65	75	64	30	28
11	28	26	26	23	22	25	36	46	44	55	58	A	51	55	57	56	54	48	53	64	64	55	34	27
12	28	25	25	F 30	F 22	18	A	46	A	58	58	A	48	A	53	74	74	59	66	58	61	33	26	A
13	F 24	F 32	F 37	F	F 26	A	28	41	51	60	A	A	A	A	65	74	77	68	60	53	47	42	37	F 33
14	F 34	32	F 32	30	A	F 32	33	48	52	A	64	54	56	58	60	71	69	61	61	A	J R 53	53	43	F 33
15	A	33	30	F 27	F 26	25	A	A	69	55	A	A	A	58	63	71	68	61	75	80	82	53	38	38
16	F 31	32	F 27	26	26	24	32	54	50	45	48	E G 45	54	54	66	66	63	54	A	69	77	50	36	26
17	F 26	F 27	F 26	F 24	F 24	23	38	50	48	50	52	66	53	65	65	H 63	48	48	A	A	A	48	39	F 38
18	F 38	32	F 32	F 25	F 26	21	28	41	A	63	75	53	52	49	56	66	71	61	56	63	69	54	37	F 30
19	F 34	32	40	A	18	19	29	46	55	48	57	57	71	73	67	65	72	79	74	60	54	50	44	F 38
20	F 46	F 38	32	32	28	22	28	45	63	50	53	50	48	54	51	48	53	58	60	68	64	49	F 40	A
21	A	A	31	32	20	A	26	46	66	56	54	54	70	98	108	108	103	92	68	58	58	39	33	31
22	F 28	F 25	26	A	25	19	28	44	60	53	A	A	56	64	A	A	85	82	79	72	74	77	34	32
23	32	33	29	33	25	27	30	50	69	67	51	50	57	64	58	68	75	77	80	71	53	42	A	34
24	33	31	33	33	30	22	26	54	49	46	56	E G 47	51	53	60	58	62	78	98	100	55	38	F 31	F 28
25	28	26	26	F 26	22	19	A	43	A	A	47	52	51	53	60	53	58	60	73	70	52	44	42	F 38
26	F 39	34	31	28	26	25	28	44	48	63	63	A	A	50	58	77	84	87	95	83	68	68	F 48	46
27	F 45	F 42	49	36	A	21	29	43	48	52	56	56	54	61	70	73	80	72	72	84	82	42	36	F 36
28	37	F 32	32	27	27	23	27	54	54	52	E G 47	A	58	59	57	60	66	73	80	63	59	F 59	50	F 49
29	F 50	F 47	39	F 33	F 26	25	35	50	48	50	54	52	57	52	56	55	64	63	62	63	60	48	F 46	F 46
30	44	27	24	27	24	24	32	58	52	A	51	54	55	60	68	82	79	70	61	59	58	43	38	35
31	A	32	28	26	23	25	31	44	49	48	52	50	53	59	52	50	56	62	73	72	46	42	38	37
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	30	31	27	26	28	28	30	28	27	26	22	26	26	28	28	29	30	27	27	30	31	30	27
MED	34	32	32	30	26	24	30	46	50	52	54	54	54	58	60	64	66	62	68	64	58	48	38	36
U Q	40	38	34	32	27	26	36	50	56	55	57	60	58	64	66	72	78	77	75	72	68	54	44	F 39
L Q	F 31	31	28	26	23	22	28	44	48	48	51	50	52	53	56	56	56	58	60	60	54	42	36	32

AUG.2020 foF2 (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG. 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

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								360	L 392	412	A	A	A	440	A	A	A	384	L					
2								L	L	L 416	420	432	A	A	432	U A 436	412	384	L					
3										A	A	A	A	A	A	A	U A 416	A	A	A				
4										416	A	A	A	A	A	A	C	C	C	C				
5									L 364	416	424	A	436	440	432	A	A	400	U L 360					
6									392	A	A	A	A	A	440	416	412	A	A					
7									L 392	A	452	A	A	A	A	A	396	396	360					
8								L		U L 444	A	A	A	A	A	A	U A 408	392	360					
9								L		L 424	428	A	440	444	A	U A 424	404	384	356					
10									L	420	A	A	A	436	U A 440	A	416	388	352	L				
11									U L 356	412	428	A	444	444	436	424	396	388	A					
12							A		A	424	424	A	440	A	424	U A 420	A	A	A					
13									A 392	A	A	A	A	A	A	L 420	408	388	L					
14								U L 356	L 396	A	A	A	A	U A 460	A	A	A	388	A	A				
15								A	L 376	A	A	A	A	444	A	420	416	U A 376	A					
16								L	A 396	404	428	452	A	A	U A 432	424	408	392	A					
17								L	A	L 416	424	428	440	436	428	416	A	U L 388	A	A				
18								U L 360	A	A	A	436	444	460	428	420	400	400	A					
19									396	400	432	428	428	432	424	U A 432	A	A	L					
20									L 384	408	412	L 424	444	436	U A 432	A	396	A	344					
21								U L 348	384	416	424	436	A	A	A	A	U A 404	376	A					
22										A	A	A	A	U A 444	A	A	A	384	336					
23								L	392	388	L 436	444	448	428	424	416	A	384	L					
24									L		420	472	440	440	A	408	A	372	U R 284					
25							A		A	A	U L 424	A	432	A	U A 436	U A 428	U A 408	376	L					
26									L	400	424	A	A	A	U A 432	A	404	A	A					
27									L	U L 412	428	428	440	A	428	A	A	A	A					
28									U L 376	412	472	A	A	A	A	424	400	A						
29								L	U L 348	424	416	436	A	L 460	432	416	392	L 372	L					
30								L	U L 404	A	428	A	440	A	416	A	392	376						
31									L	A	U A 420	424	U A 424	A	428	412	388	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	16	19	20	12	14	15	18	17	20	21	8					
MED								U L 358	L 392	416	424	434	440	440	432	420	404	384	354					
U Q								360	L 394	420	428	440	444	444	U A 432	U A 424	410	390	360					
L Q								U L 352	U L 376	408	422	428	436	436	428	416	396	376	340					

AUG. 2020 foF1 (0.01MHz)

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IONOSPHERIC DATA STATION Okinawa

AUG.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	A	A	A	A	U A 360	332	320	A	U A 296	A	A	A				
2								B 204	A	A	328	340	344	344	344	328	304	276	A	A				
3								A A	A	292	A	A	A	A	A	A	A	A	A	A				
4								A A	268	A	A	A	348	340	332	312	C	C	C	C				
5								A 200	244	284	312	340	344	336	336	328	308	A	A	A				
6								A 220	A	296	308	324	332	A	A	A	304	A	A	A				
7								B A	276	308	A	328	348	332	332	312	304	264	216	A				
8								A A	A	292	308	A	A	A	348	328	308	280	216	A				
9								B A	A	A	328	332	A	A	336	320	304	A	212	A				
10								B A	264	A	320	A	A	A	332	320	308	276	A	B				
11								A 196	A	284	A	336	336	324	A	316	304	272	A	A				
12								A 200	252	A	320	324	A	332	A	A	300	268	204	A				
13								A A	A	A	A	A	A	A	A	324	A	272	A	A				
14								A A	A	A	A	A	A	A	A	A	A	A	A	A				
15								A	268	A	A	A	344	A	A	A	312	268	A	B				
16								B A	A	264	A	A	A	A	A	320	288	252	200	A				
17								A 216	U A 264	U A 296	U A 300	A	A	328	324	320	A	A	A	A				
18								B A	256	284	A	336	A	A	332	324	296	264	A	A				
19								B 224	236	296	A	A	A	A	320	316	308	260	A	A				
20								B 184	232	300	324	340	A	A	A	308	A	264	192	A				
21								B 220	U A 260	A	A	A	312	A	A	A	304	256	184	A				
22								B U A 196	U A 260	U A 300	A	324	A	A	A	A	A	A	A	B				
23								B A	A	A	A	336	340	336	336	316	296	252	200					
24								B 196	256	292	320	340	340	344	336	328	300	268	212	A				
25								A 200	252	292	308	A	A	A	A	A	A	A	A	A				
26								B 176	268	280	316	332	340	336	332	320	288	A	A	A				
27								B 192	U A 260	A	300	U A 324	340	316	312	312	292	244	A	A				
28								B 204	260	292	312	336	340	336	332	320	280	A	A	B				
29								B 220	U A 252	284	316	328	340	344	336	328	296	252	192	B				
30								B 176	U A 228	A	A	A	A	A	A	A	284	240	A	A				
31								B A	240	A	A	328	348	336	328	308	284	240	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								17	20	17	15	17	16	15	18	21	23	19	10					
MED								200	258	292	316	332	340	336	332	320	300	264	202					
U Q								218	264	296	320	338	346	340	336	326	304	272	212					
L Q								194	248	284	308	326	340	332	328	314	292	252	192					

IONOSPHERIC DATA STATION Okinawa

AUG.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 22	J A 24	J A 54	J A 100	J A 62	J A 53	J A 46	J A 34	J A 38	J A 39	J A 56	J A 59	J A 78	J A 59	J A 64	J A 82	J A 56	J A 35	28	J A 26	J A 26	J A 20	J A 40	E B 16
2	E B 16	E B 16	E B 16	E B 16	E B 16	J A 31	J A 21	26	28	36	40	43	J A 51	J A 49	J A 47	J A 54	J A 42	J A 36	J A 54	J A 42	J A 26	20	20	J A 53
3	J A 53	J A 27	J A 22	J A 53	J A 52	J A 33	J A 43	J A 40	J A 49	J A 85	J A 100	J A 145	J A 109	J A 86	J A 62	J A 82	J A 103	J A 71	J A 143	J A 144	J A 144	J A 62	J A 82	J A 82
4	J A 40	J A 48	J A 53	J A 102	J A 72	J A 78	J A 54	J A 51	J A 46	J A 62	J A 56	J A 57	J A 80	J A 66	J A 103	J A 137	C	C	C	C	J A 53	J A 50	J A 25	J A 48
5	J A 40	J A 28	J A 25	J A 18	J A 32	J A 22	J A 39	26	31	36	J A 52	J A 68	40	42	39	J A 84	J A 108	J A 52	J A 36	J A 24	J A 32	J A 39	J A 47	J A 37
6	J A 22	J A 19	J A 19	J A 20	J A 16	J A 36	J A 29	J A 33	J A 40	J A 55	J A 96	J A 102	J A 151	J A 188	J A 53	J A 50	38	J A 56	J A 70	J A 26	J A 32	J A 22	J A 25	J A 38
7	J A 20	J A 65	J A 28	J A 22	J A 52	J A 88	J A 26	J A 69	J A 41	J A 51	J A 57	J A 54	J A 69	J A 84	J A 80	J A 108	35	G	30	J A 27	J A 31	J A 51	J A 36	J A 52
8	J A 64	J A 50	J A 38	J A 42	J A 36	J A 22	J A 22	J A 28	J A 53	J A 47	J A 47	J A 119	J A 96	J A 63	J A 64	J A 72	J A 43	33	27	J A 30	J A 27	J A 38	J A 41	J A 37
9	J A 149	J A 78	J A 28	J A 17	J A 52	J A 45	J A 43	J A 52	32	40	43	J A 49	J A 45	J A 41	44	43	36	34	30	J A 38	J A 25	19	J A 18	20
10	J A 18	J A 22	E B 16	J A 53	J A 52	J A 18	J A 42	J A 29	J A 36	J A 44	J A 44	J A 56	J A 53	J A 44	J A 45	J A 72	J A 41	J A 54	J A 41	J A 28	J A 30	J A 43	J A 18	E B 16
11	19	E B 16	J A 16	J A 21	J A 23	J A 31	J A 26	26	32	J A 85	38	J A 50	41	42	41	43	39	31	J A 82	J A 42	18	J A 24	J A 32	J A 26
12	J A 24	J A 31	J A 41	J A 66	J A 35	J A 18	J A 42	J A 36	J A 50	J A 182	J A 136	J A 103	J A 137	J A 143	J A 44	J A 56	J A 44	J A 68	J A 74	J A 39	J A 76	J A 46	J A 40	J A 85
13	J A 53	J A 19	E B 16	E B 17	J A 33	J A 30	J A 34	J A 36	J A 48	J A 58	J A 69	J A 129	J A 282	J A 90	J A 85	36	G	J A 33	J A 74	J A 26	J A 29	J A 53	J A 42	J A 34
14	J A 20	J A 22	J A 39	J A 38	J A 66	J A 18	J A 29	J A 52	J A 52	J A 88	J A 63	J A 49	J A 62	J A 51	J A 70	J A 46	J A 49	J A 38	J A 54	J A 90	J A 100	J A 99	J A 54	J A 33
15	J A 46	J A 53	J A 33	J A 33	J A 35	J A 21	J A 46	J A 87	J A 52	J A 66	J A 148	J A 89	J A 294	J A 66	J A 78	J A 146	J A 49	J A 59	J A 51	J A 24	J A 20	J A 52	J A 65	J A 82
16	J A 22	J A 42	J A 77	J A 51	J A 42	J A 24	J A 48	J A 31	J A 38	32	39	41	J A 66	J A 56	J A 54	38	J A 50	44	J A 69	J A 84	J A 82	J A 42	J A 36	J A 48
17	J A 60	J A 24	J A 17	J A 26	J A 17	J A 15	J A 26	J A 34	J A 46	J A 59	J A 42	38	38	38	38	J A 100	J A 70	31	J A 137	J A 197	J A 166	J A 66	J A 31	J A 52
18	J A 87	J A 84	J A 26	J A 26	J A 26	J A 29	J A 22	J A 37	J A 77	J A 44	J A 62	J A 72	J A 53	J A 38	36	36	34	32	J A 38	J A 76	J A 39	J A 25	J A 22	J A 26
19	J A 52	J A 76	J A 52	J A 37	J A 19	J A 27	J A 20	J A 32	J A 35	J A 40	J A 91	J A 66	J A 52	J A 39	38	J A 48	J A 48	J A 46	J A 48	J A 33	J A 20	J A 28	J A 25	J A 42
20	J A 28	J A 26	J A 37	J A 28	J A 32	J A 29	J A 18	J A 29	J A 31	J A 34	J A 40	J A 39	J A 48	J A 48	J A 61	J A 55	J A 43	J A 43	J A 41	J A 52	J A 46	J A 54	J A 38	J A 59
21	J A 86	J A 110	J A 55	J A 88	J A 60	J A 61	J A 48	J A 31	J A 52	J A 62	J A 47	J A 41	J A 80	J A 60	J A 228	J A 154	J A 40	36	J A 75	J A 40	J A 42	J A 28	J A 30	J A 53
22	J A 30	J A 41	J A 39	J A 48	J A 32	J A 26	J A 30	J A 53	J A 65	J A 62	J A 82	J A 76	J A 70	J A 105	J A 105	J A 111	J A 136	J A 53	J A 62	20	J A 51	J A 51	J A 19	J A 53
23	J A 41	J A 20	J A 72	J A 36	J A 24	J A 42	J A 17	J A 37	J A 34	J A 48	J A 52	J A 38	J A 38	J A 41	J A 41	J A 38	J A 56	J A 46	J A 31	J A 29	J A 28	J A 43	J A 48	J A 26
24	J A 16	J A 17	J A 19	J A 21	J A 18	E B 16	J A 18	J A 34	J A 31	J A 34	J A 39	J A 39	J A 38	J A 42	J A 50	J A 37	J A 54	J A 42	G	J A 34	J A 50	J A 70	J A 26	J A 28
25	J A 32	J A 32	J A 27	J A 21	J A 20	J A 22	J A 33	J A 41	J A 58	J A 83	J A 49	J A 62	J A 56	J A 86	J A 72	J A 96	J A 84	J A 52	J A 50	J A 98	J A 52	E B 16	E B 16	E B 16
26	19	E B 16	J A 16	J A 21	J A 19	E B 16	J A 16	J A 28	J A 33	J A 54	J A 40	J A 69	J A 46	J A 46	J A 55	J A 53	J A 50	J A 53	J A 36	J A 63	J A 28	J A 26	J A 24	J A 66
27	J A 23	J A 27	J A 22	J A 26	J A 34	J A 29	J A 19	J A 36	J A 82	J A 90	J A 54	J A 39	J A 48	J A 61	J A 40	J A 63	J A 89	J A 57	J A 172	J A 55	J A 85	J A 46	J A 41	J A 21
28	J A 19	J A 22	J A 20	J A 20	J A 20	J A 18	E B 16	J A 26	J A 32	J A 42	J A 46	J A 54	J A 52	J A 56	J A 62	G	J A 45	J A 100	J A 62	J A 18	J A 36	J A 29	J A 32	J A 42
29	J A 46	J A 30	J A 33	J A 32	J A 23	J A 20	J A 20	J A 29	J A 31	J A 37	J A 39	J A 39	J A 48	J A 47	J A 45	J A 39	J A 35	J A 32	J A 44	J A 29	J A 28	J A 24	J A 64	J A 43
30	J A 52	J A 40	J A 25	J A 20	J A 18	J A 32	J A 18	J A 33	J A 129	J A 82	J A 48	J A 75	J A 48	J A 143	J A 53	J A 104	J A 42	J A 33	J A 60	J A 142	J A 46	J A 40	J A 44	J A 46
31	J A 143	J A 39	J A 69	J A 22	J A 27	J A 52	J A 18	J A 26	J A 32	J A 54	J A 60	J A 43	J A 46	J A 49	J A 53	J A 44	J A 38	J A 50	J A 62	J A 28	J A 36	J A 29	J A 52	J A 43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31
MED	J A 32	J A 28	J A 28	J A 26	J A 32	J A 29	J A 26	J A 34	J A 40	J A 54	J A 52	J A 56	J A 53	J A 56	J A 53	J A 55	J A 44	J A 44	J A 52	J A 36	J A 36	J A 40	J A 36	J A 42
U Q	J A 53	J A 48	J A 41	J A 48	J A 52	J A 36	J A 42	J A 40	J A 52	J A 66	J A 63	J A 75	J A 80	J A 84	J A 70	J A 96	J A 56	J A 53	J A 70	J A 63	J A 52	J A 51	J A 44	J A 53
L Q	J A 20	J A 22	J A 19	J A 21	J A 20	J A 20	J A 19	J A 29	J A 32	J A 40	J A 42	J A 41	J A 46	J A 42	J A 44	J A 43	J A 39	J A 33	J A 36	J A 27	J A 28	J A 25	J A 25	J A 26

AUG.2020 foEs (0.1MHz)

NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, JAPAN

IONOSPHERIC DATA STATION Okinawa

AUG.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	20	A A 100	A A 62	A A 53	E B 16	29	32	33	44	48	49	40	52	45	49	28	24	20	20	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	26	28	36	40	40	46	46	40	44	36	30	30	31	E B 16	E B 16	E B 16	A A 53
3	A A 53	19	E B 16	E B 16	A A 52	E B 16	21	20	37	A A 85	A A 100	52	46	54	47	46	42	48	A A 143	A A 144	45	32	28	24
4	E B 16	E B 16	22	E B 16	A A 72	E B 16	27	27	34	38	44	47	A A 80	A A 66	A A 103	A A 137	C	C	C	C	46	23	E B 16	E B 16
5	19	E B 16	E B 16	E B 16	E B 16	E B 16	24	23	30	34	39	A A 68	38	40	37	46	A A 108	30	30	20	21	18	24	22
6	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	19	28	35	47	A A 96	A A 102	A A 151	A A 188	39	40	36	40	40	21	30	19	23	20
7	E B 16	E B 16	E B 16	E B 16	24	20	E B 16	24	32	46	44	50	52	64	71	93	32	G	28	21	30	19	E B 16	A A 52
8	A A 64	25	E B 16	18	E B 16	E B 16	18	25	36	42	45	46	46	A A 63	A A 64	A A 72	41	29	25	26	17	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 16	23	32	38	41	47	40	39	43	42	35	32	29	26	21	E B 16	E B 16	E B 16
10	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	27	34	41	44	48	46	41	44	49	35	32	24	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	19	25	30	35	36	A A 50	39	41	40	38	36	30	42	20	E B 16	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	A A 42	28	A A 50	37	37	A A 103	38	A A 143	37	42	40	42	35	25	22	E B 16	23	A A 85
13	E B 16	E B 16	E B 16	E B 17	E B 16	A A 30	21	32	37	48	A A 69	A A 129	A A 282	A A 90	50	35	G	30	23	20	E B 16	18	23	E B 16
14	E B 16	E B 16	E B 16	E B 16	A A 66	E B 16	17	30	32	A A 88	52	45	51	46	48	44	46	37	44	A A 90	E B 16	E B 16	E B 16	18
15	A A 46	18	E B 16	E B 16	E B 16	E B 16	A A 46	A A 87	32	40	A A 148	A A 89	A A 294	41	46	37	32	38	36	E B 16	E B 16	29	17	E B 16
16	E B 16	E B 16	E B 16	18	19	E B 16	E B 16	28	32	30	38	40	45	49	43	38	34	36	A A 69	26	54	31	E B 16	E B 16
17	18	E B 16	E B 16	E B 16	E B 16	E B 16	22	26	40	37	38	36	36	37	36	38	44	29	A A 137	A A 197	A A 166	34	18	21
18	19	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	A A 77	44	53	39	42	38	36	36	33	29	33	44	27	20	E B 16	E B 16
19	23	21	E B 16	A A 37	E B 16	E B 16	E B 16	26	34	38	40	42	39	39	37	43	47	42	24	28	E B 16	E B 16	E B 16	19
20	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	30	33	37	38	40	38	43	44	33	39	28	36	28	24	E B 16	A A 59
21	A A 86	A A 110	19	E B 16	E B 16	A A 61	E B 16	28	33	34	36	40	45	53	65	71	40	34	40	25	17	E B 16	18	E B 16
22	E B 16	E B 16	17	A A 48	20	E B 16	E B 16	40	52	51	A A 82	A A 76	50	44	A A 105	A A 111	42	26	27	E B 16	23	25	18	E B 16
23	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	31	35	36	38	37	40	40	36	44	33	24	28	20	E B 16	A A 48	E B 16
24	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	28	31	34	36	37	37	41	49	36	50	34	G	20	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	E B 16	A A 33	35	A A 58	A A 83	42	44	38	44	44	43	41	30	28	44	28	E B 16	E B 16	E B 16
26	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	34	35	A A 69	A A 46	44	43	50	37	42	33	19	24	18	E B 16	40
27	E B 16	22	E B 16	18	A A 34	E B 16	E B 16	27	33	34	37	36	41	51	38	43	53	40	57	28	17	21	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	25	30	38	38	A A 54	46	51	50	G	33	69	50	E B 16	E B 16	16	E B 16	22
29	25	E B 16	18	21	E B 16	E B 16	E B 16	26	29	36	38	38	46	44	36	37	33	28	25	E B 16	E B 16	E B 16	E B 16	E B 16
30	E B 16	18	16	E B 16	E B 16	17	E B 16	22	33	A A 82	34	44	41	51	38	42	34	29	34	42	E B 16	E B 16	28	E B 16
31	A A 143	21	21	E B 16	E B 16	19	E B 16	24	30	40	42	37	42	43	41	40	34	47	59	25	28	21	30	20
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	31	31
MED	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	26	32	38	40	46	45	44	43	43	36	32	32	25	20	18	E B 16	E B 16
U Q	A A 19	18	16	17	A A 19	16	21	28	36	46	A A 45	A A 54	49	A A 53	50	46	44	40	42	31	28	22	23	22
L Q	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	E B 16	25	31	34	37	39	39	40	38	38	34	29	25	E B 20	E B 16	E B 16	E B 16	E B 16

AUG.2020 fbEs (0.1MHz)

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IONOSPHERIC DATA STATION Okinawa

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

IONOSPHERIC DATA STATION Okinawa

AUG.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	315	313	331	A	A	A	346	361	371	G	321	336	312	328	323	302	311	315	325	319	344	339	321	316
2	318	324	323	330	346	337	389	406	407	291	287	263	306	326	334	328	330	306	352	367	326	312	318	A
3	A	324	337	322	A	314	364	394	394	A	A	322	323	297	267	272	340	331	A	A	329	355	308	F340
4	F292	290	309	F347	A	320	403	388	364	359	278	339	A	A	A	A	C	C	C	C	352	310	302	293
5	305	315	311	336	329	304	351	354	391	341	312	A	276	289	303	320	A	309	316	359	346	293	296	F307
6	319	335	327	330	328	315	357	375	361	355	A	A	A	A	261	302	311	303	318	349	325	323	341	309
7	313	279	319	F318	321	344	393	382	344	374	326	309	322	312	301	328	309	293	318	342	349	351	310	A
8	A	F327	F322	F327	F302	331	328	383	407	342	353	322	332	A	A	A	299	299	340	317	329	325	F315	F334
9	329	302	319	324	318	320	359	395	375	342	344	311	338	300	318	313	290	315	331	352	356	349	314	318
10	315	307	375	348	348	322	354	366	379	348	360	357	364	311	318	332	265	300	293	314	353	382	316	312
11	311	318	305	319	333	345	380	383	353	354	365	A	295	307	313	325	321	288	319	334	341	364	331	320
12	318	314	341	F345	F354	317	A	351	A	352	355	A	313	A	292	332	343	338	331	343	352	341	302	A
13	F342	F329	F354	F	F330	A	365	334	349	364	A	A	A	A	314	311	315	319	347	353	335	308	337	F312
14	F321	346	F330	346	A	F343	328	354	357	A	369	329	312	271	295	308	333	332	352	A	286	335	308	F301
15	A	292	339	F351	F328	321	A	A	387	365	A	A	A	300	298	286	318	298	309	335	349	380	329	312
16	F307	324	F318	318	308	338	354	389	398	342	294	G	315	298	315	337	340	326	A	323	392	354	349	312
17	F289	F287	F327	F321	F316	321	384	396	352	356	314	364	293	290	314	H303	324	287	A	A	A	335	308	F292
18	F337	302	F336	F322	F324	333	333	328	A	340	349	347	307	235	308	291	328	327	336	325	353	350	334	F293
19	F331	314	369	A	324	337	354	367	384	377	318	331	306	325	302	303	296	323	361	340	317	327	292	F307
20	330	F323	304	325	345	312	355	359	403	347	358	345	263	328	322	284	310	334	323	352	357	368	F330	A
21	A	A	301	362	366	A	348	346	394	354	341	313	290	287	301	328	329	330	321	351	365	346	345	308
22	F322	F307	299	A	331	339	365	357	388	365	A	A	287	307	A	A	309	314	317	326	317	376	325	301
23	317	333	321	345	311	325	318	348	378	382	338	287	295	313	288	311	323	333	348	360	324	317	A	305
24	309	302	328	361	378	302	326	374	385	372	359	G	295	311	327	299	282	302	340	374	368	309	F312	F295
25	316	299	314	F318	337	358	A	375	A	A	345	327	322	311	335	315	325	322	341	357	359	320	297	F335
26	F358	337	331	336	324	331	340	365	353	368	376	A	A	279	300	301	328	330	347	353	324	347	F304	294
27	F316	F334	358	389	A	294	383	388	365	342	331	324	288	314	313	311	324	313	306	338	384	337	313	F287
28	308	F337	302	322	369	305	324	380	376	403	G	A	336	346	320	322	323	340	366	332	313	F292	F317	F318
29	F336	F328	335	F289	F299	308	365	370	349	313	345	323	319	286	339	324	346	341	341	334	338	309	F309	F282
30	360	335	312	342	331	316	347	386	358	A	340	327	296	302	312	327	353	346	353	324	353	323	286	305
31	A	295	333	311	298	328	351	365	351	343	351	333	306	332	335	306	323	327	337	369	337	308	292	277
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	30	31	27	26	28	28	30	28	27	26	22	26	26	28	28	29	30	27	27	30	31	30	27
MED	318	316	327	330	328	322	354	372	376	354	342	326	306	307	313	311	323	320	336	342	345	335	314	307
U Q	F330	329	336	346	345	337	365	386	390	365	355	336	322	314	321	326	330	331	347	353	353	351	329	F316
L Q	311	302	312	F321	318	314	343	357	355	342	318	311	295	290	300	302	310	303	318	326	326	312	304	F294

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AUG.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								386	L 413	439	A	A	A	426	A	A	A	402	L					
2								L	L	L 414	421	381	A	A	409	A	398	409	L					
3										A	A	A	A	A	A	A	A	A	A	A				
4										384	A	A	A	A	A	A	C	C	C	C				
5									L 434	422	440	A	427	442	439	A	A	372	U L 374					
6									404	A	A	A	A	A	459	A	378	A	A					
7									L 409	A	A	A	A	A	A	A	412	360	370					
8								L		U A 405	A	A	A	A	A	A	A	374	380					
9								L		L 379	415	A	460	405	A	A	399	383	374					
10									L	A	A	A	A	433	A	A	413	374	359	L				
11									U L 448	436	416	A	398	416	409	426	409	380	A					
12							A		A	411	419	A	456	A	459	A	A	A	A					
13									A	A	A	A	A	A	A	422	397	376	L					
14								U L 389	L 389	A	A	A	A	A	A	A	A	A	A	A				
15								A	L 395	A	A	A	A	398	A	413	373	A	A					
16								L	A 435	469	408	418	A	A	A	375	394	A 369	A					
17								L	A	L 410	427	426	423	430	417	409	A	U L 377	A	A				
18								U L 368	A	A	A	430	423	429	455	405	405	L 372	A					
19									391	A 426	414	A	413	407	422	A	A	A	L					
20									L 401	447	455	L 458	429	409	A	A	374	A	371					
21								U L 377	399	411	438	436	A	A	A	A	A	389	A					
22										A	A	A	A	A	A	A	A	371	363					
23								L	384	442	L 424	441	432	410	416	387	A	372	L					
24									L		437	387	438	393	A	398	A	399	U R 412					
25							A		A	A	A	A	416	A	A	A	A	382	L					
26									L	421	415	A	A	A	A	A	369	A	A					
27									L	U L 386	410	435	423	A	411	A	A	A	A					
28									U L 401	416	393	A	A	A	A	394	401	A						
29								L	U L 425	382	407	414	A	A	399	405	407	L 381	L					
30								L	U L 378	A	388	A	388	A	415	A	413	368						
31									L	A	A	427	A	A	A	A	405	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								4	15	18	17	11	13	12	12	10	16	19	8					
MED								U L 382	L 401	415	416	427	423	413	416	405	400	376	372					
U Q								388	L 425	436	432	436	435	430	447	413	408	383	U 377					
L Q								U L 372	391	405	409	414	414	406	410	394	386	372	366					

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AUG.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								262	246	G	332	300	322	310	306	342	324	312	246					
2								210	204	422	436	504	364	306	290	300	308	346	248					
3										A	A	306	296	334	410	372	264	268	A	A				
4										280	442	290	A	A	A	A	C	C	C	C				
5									226	294	360	A	422	406	360	322	A	336	276					
6									248	272	A	A	A	A	504	382	336	342	280					
7									280	266	328	340	282	288	300	294	296	290	254					
8								230		U L 308	294	348	316	A	A	A	356	310	250					
9								206		304	296	348	300	350	330	346	366	306	256					
10									240	300	270	272	278	364	352	318	480	376	352	270				
11									L 230	274	252	A	400	354	340	308	326	406	304					
12							A		A	262	280	A	378	A	404	282	270	286	262					
13									274	250	A	A	A	A	300	298	284	262	252					
14								264	260	A	252	314	338	408	356	294	278	276	244	A				
15								A	222	248	A	A	A	352	340	320	290	338	278					
16								226	202	298	398	G	348	378	316	280	272	288	A					
17								210	262	292	352	260	372	346	296	296	E A 320	374	A	A				
18								302	A	280	250	278	374	610	356	322	272	284	272					
19									238	234	308	308	318	282	320	328	318	270	224					
20									210	290	274	310	494	318	336	426	346	290	278					
21								284	218	276	292	326	332	292	314	274	258	250	252					
22										E A 284	A	A	406	326	A	A	304	278	262					
23								252	228	232	296	416	378	322	364	308	290	266	234					
24									238		262	G	400	358	320	358	374	294	244					
25							A		A	A	308	328	342	352	298	346	314	296	256					
26									L 266	248	230	A	A	442	356	304	272	266	240					
27									264	288	312	316	390	318	304	312	272	290	310					
28									234	220	G	A	298	292	328	304	286	E A 316						
29								226	L 240	356	292	334	334	406	290	308	270	266	252					
30								224	254	A	302	316	380	348	316	280	244	252						
31									258	302	282	326	370	304	306	372	306	292	274					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								12	23	26	26	22	26	26	28	28	29	30	25	1				
MED								228	240	281	296	321	356	347	324	310	293	290	256	270				
U Q								263	260	300	332	348	380	364	356	344	325	316	277					
L Q								217	226	262	274	306	318	310	305	297	272	270	247					

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AUG.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	264	296	234	A	A	A	224	200	192	180	A	A	A	210	A	A	A	186	212	228	228	222	232	232
2	256	230	260	242	240	248	218	190	166	198	222	252	A	A	226	A	214	190	232	202	230	252	244	A
3	A	290	232	246	A	298	228	196	216	A	A	A	A	A	A	A	A	A	A	A	260	230	272	246
4	290	304	274	230	A	268	186	216	204	E A 238	A	A	A	A	A	A	C	C	C	C	E A 250	E A 228	256	292
5	270	270	248	244	246	280	240	198	176	198	192	A	190	194	184	A	A	196	226	220	208	252	278	292
6	250	236	206	222	280	274	244	222	210	A	A	A	A	A	170	A	A 214	A	A	226	242	238	224	248
7	250	326	234	246	E A 308	252	200	196	188	A	E A 244	A	A	A	A	A	202	204	214	220	202	202	232	A
8	A	E A 274	238	252	262	276	232	206	198	E A 240	A	A	A	A	A	A	A	204	218	236	228	208	218	240
9	226	274	256	238	248	254	216	196	208	E A 244	A 216	A	178	200	A	A	222	222	224	222	202	212	228	244
10	264	258	212	240	266	270	210	210	216	A	A	A	A	212	A	A	186	244	228	240	206	184	236	276
11	274	280	286	298	282	234	216	198	172	172	194	A	220	216	222	192	222	194	A	240	218	196	210	288
12	256	290	256	230	244	306	A	214	A	202	192	A	170	A	168	A	A	A	A	226	212	200	E A 356	A
13	302	262	214	188	216	A	A 238	E A 252	A	A	A	A	A	A	A	178	184	194	194	222	196	266	240	286
14	270	234	240	244	A	232	224	216	210	A	A	A	A	A	A	A	A	A	A	A	326	208	252	294
15	A	306	236	234	272	256	A	A	208	A	A	A	A	230	A	200	H 204	A	A	230	200	194	228	260
16	262	270	256	274	E A 316	230	222	200	188	170	216	208	A	A	A	270	208	E A 258	A	254	208	208	208	272
17	318	294	252	272	278	270	212	190	A	204	188	184	178	182	176	208	A	206	A	A	A	244	244	E A 296
18	252	292	208	222	236	244	228	214	A	A	A	196	220	210	178	198	204	210	A	266	216	192	218	302
19	276	260	198	A	316	278	216	218	220	E A 216	212	A	214	218	196	A	A	A	214	228	228	218	236	288
20	236	222	264	230	220	276	220	220	202	178	170	168	192	198	A	A	220	A	226	232	210	202	234	A
21	A	A	266	212	242	A	220	232	212	188	184	194	A	A	A	A	A	A 222	A	222	204	202	244	290
22	292	Q 314	324	A	E A 300	274	226	E A 274	234	A	A	A	A	A	A	A	A	200	240	246	220	204	214	252
23	250	256	266	228	292	280	240	214	214	190	202	190	176	226	216	228	A	234	208	222	200	228	A	276
24	278	278	248	212	206	288	242	226	206	208	180	200	184	244	A	224	A	234	210	210	184	266	264	286
25	258	306	272	260	256	252	A	226	A	A	A	A	202	A	A	A	A	210	236	218	218	230	278	264
26	216	232	252	238	260	262	214	210	210	198	190	A	A	A	A	A	E A 244	A	A	208	214	212	210	E A 348
27	266	246	206	198	A	316	218	212	230	202	202	184	206	A	204	A	A	A	A	234	186	210	262	288
28	238	232	252	238	216	276	232	218	206	208	184	A	A	A	A	190	200	A	232	206	226	274	236	266
29	260	228	226	Q 310	290	284	220	204	184	218	226	212	A	E A 308	190	216	206	208	238	230	212	202	290	312
30	206	238	268	238	248	280	230	218	222	A	206	A	254	A	208	A	206	210	238	264	212	220	E A 328	268
31	A	300	250	274	316	260	216	212	198	A	A	190	A	A	A	E A 328	210	A	A	208	218	252	E A 324	318
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	30	31	28	26	28	28	30	26	19	18	11	13	13	12	11	16	19	17	27	30	31	30	27
MED	261	271	250	238	254	272	221	212	207	196	196	194	192	211	193	204	206	207	226	226	212	212	236	281
U Q	274	294	264	249	290	280	231	218	214	E A 216	216	208	217	228	212	228	217	222	234	236	228	238	264	292
L Q	250	238	232	229	242	253	216	200	192	188	188	184	178	199	177	192	203	196	213	220	204	202	228	260

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AUG.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	A	A	A	A	100	104	102	A	102	A	A	A				
2							B	108	A	A	108	108	108	106	106	106	106	106	A	A				
3							A	A	A	106	A	A	A	A	A	A	A	A	A	A				
4							A	A	104	A	A	A	104	104	104	104	C	C	C	C				
5							A	104	102	106	106	102	106	106	106	106	106	A	A	A				
6							A	108	A	100	100	100	100	A	A	A	104	A	A	A				
7							B	A	106	106	A	106	104	104	104	104	108	100	104	A				
8							A	A	A	104	104	A	A	A	106	106	106	106	102	A				
9							B	A	A	A	102	102	A	A	106	102	102	A	102	A				
10							B	A	102	A	102	A	A	A	116	110	106	106	A	B				
11							A	106	A	106	A	104	104	104	A	104	104	104	A	A				
12							A	110	110	A	104	104	A	104	A	A	104	104	104	A				
13							A	A	A	A	A	A	A	A	A	114	A	110	A	A				
14							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
15								A	102	A	A	A	102	A	A	A	108	108	A	B				
16							B	A	A	100	A	A	A	A	A	106	106	104	102	A				
17							A	106	106	106	104	A	A	104	104	106	A	A	A	A				
18							B	A	106	100	A	102	A	A	106	106	106	106	A	A				
19							B	120	102	102	A	A	A	A	100	106	106	106	A	A				
20							B	110	102	102	102	106	A	A	A	104	A	106	106	A				
21							B	110	110	A	A	A	102	A	A	A	102	102	102	A				
22							B	102	102	102	A	102	A	A	A	A	A	A	A	B				
23							B	A	A	A	A	108	102	110	110	110	108	108	108					
24							B	102	102	102	102	102	102	102	102	102	102	104	108	A				
25							A	104	104	104	104	A	A	A	A	A	A	A	A	A				
26							B	104	104	104	104	104	104	104	104	104	104	A	A	A				
27							B	110	108	A	108	102	102	102	102	106	106	102	A	A				
28							B	108	106	104	104	104	104	104	102	102	110	A	A	B				
29							B	132	104	104	104	104	100	108	108	108	106	106	106	B				
30							B	106	102	A	A	A	A	A	A	A	104	104	A	A				
31							B	A	108	A	A	108	106	106	106	104	104	102	A	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								17	20	17	15	17	16	15	18	21	23	19	10					
MED								108	104	104	104	104	103	104	105	106	106	106	104					
U Q								110	106	106	104	106	104	106	106	106	106	106	106					
L Q								104	102	102	102	102	102	104	102	104	104	104	102					

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AUG.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	100	96	94	92	92	92	92	94	112	104	104	102	98	94	98	98	88	88	86	84	90	B
2	B	B	B	B	B	98	90	150	138	152	144	132	118	116	116	110	110	116	96	92	92	92	84	100
3	100	96	94	94	94	88	90	90	112	104	98	128	94	98	112	112	102	100	96	98	98	96	96	94
4	108	106	96	96	96	92	90	92	110	110	110	110	102	100	100	100	C	C	C	C	92	92	92	94
5	94	94	90	96	86	92	88	128	120	114	108	106	116	110	132	110	100	110	98	94	92	92	88	88
6	88	88	84	88	90	100	98	114	114	102	98	98	96	96	92	90	124	86	84	100	96	106	98	98
7	96	96	94	94	90	90	90	90	120	108	88	104	102	100	100	96	114	G	108	80	104	108	96	100
8	98	96	94	94	90	90	90	90	108	104	104	108	118	118	118	108	110	112	102	96	96	96	96	96
9	96	102	104	88	96	96	92	92	168	132	118	112	112	116	164	172	152	128	118	104	100	102	100	100
10	100	100	B	98	98	96	92	124	118	116	116	118	120	128	118	110	116	106	114	102	98	98	98	B
11	102	B	104	102	102	90	90	162	134	102	120	114	148	122	124	114	108	108	102	102	82	96	96	94
12	94	120	94	94	88	86	84	122	108	102	114	100	100	100	114	118	118	108	106	100	100	100	94	96
13	98	98	B	B	94	86	88	124	118	114	102	102	102	102	110	120	G	108	106	96	94	90	90	100
14	94	94	98	104	100	94	94	92	94	92	92	92	92	90	90	90	116	122	116	110	100	114	106	106
15	96	96	92	100	92	92	92	96	108	100	100	96	100	104	102	106	124	108	100	98	86	86	96	94
16	94	98	94	94	94	94	98	92	102	108	160	148	90	110	112	170	108	102	100	100	96	96	96	92
17	98	96	96	94	92	104	106	116	110	104	104	104	104	150	112	120	106	126	98	94	94	90	90	104
18	96	96	96	90	90	108	88	112	100	102	96	106	90	152	146	172	150	130	104	96	96	100	106	110
19	98	98	100	94	94	94	128	130	124	112	98	94	94	140	112	112	104	100	110	100	98	98	88	100
20	94	98	96	96	100	104	92	138	120	128	118	136	114	114	112	106	104	114	112	100	100	100	100	102
21	94	108	116	116	118	120	96	114	108	104	100	104	98	94	98	96	116	114	108	110	102	100	96	120
22	104	92	94	90	84	86	100	102	102	102	102	98	98	98	96	92	92	96	102	84	96	98	98	98
23	102	96	104	94	90	90	94	92	94	94	92	94	154	160	164	134	120	116	114	106	140	146	122	104
24	98	98	94	82	84	B	172	134	150	132	132	130	126	126	116	182	114	116	G	96	92	96	96	96
25	124	88	84	84	88	88	116	112	108	108	108	94	96	114	90	118	112	112	112	100	100	82	B	B
26	102	B	92	92	90	B	88	126	114	104	114	104	108	118	110	106	106	98	96	92	92	88	98	92
27	98	92	96	88	88	88	94	122	112	100	104	114	104	100	102	102	104	102	104	96	96	96	96	96
28	94	96	90	90	90	90	B	126	116	108	112	106	112	104	100	G	114	100	96	86	96	90	98	94
29	86	94	86	86	90	90	90	110	104	156	154	142	112	116	108	120	128	134	112	108	112	94	94	104
30	96	86	90	112	96	108	104	108	116	96	106	96	128	108	112	104	116	118	110	110	106	106	98	98
31	100	96	96	94	94	94	98	122	120	88	94	116	126	116	114	114	118	108	104	102	98	102	94	94
	00	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	28	28	29	30	29	30	31	31	31	31	31	31	31	31	30	29	29	29	30	31	31	30	28
MED	97	96	94	94	92	92	92	114	112	104	106	106	104	110	112	110	114	108	104	99	96	96	96	98
U Q	100	98	97	96	96	97	98	126	120	114	116	116	118	118	116	120	118	116	111	102	100	100	98	101
L Q	94	94	92	90	90	90	90	92	108	102	98	98	98	100	100	102	105	101	98	94	92	92	94	94

IONOSPHERIC DATA STATION Okinawa

AUG.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	F1	F2	F4	F3	F8	FQ61	L2	L3	L2	LH21	CL21	CL32	C3	C2	L4	L4	L2	L2	L1	L2	F2	F1	F1	
2						F1	L1	H1	HL11	HL11	H1	H1	C2	C2	C2	C3	C2	C1	L3	L3	F2	F1	F1	F5
3	F3	F4	F2	F2	F6	F3	L5	L3	C3	C6	L7	CL14	L4	L3	CL24	CL25	CL23	CL43	L5	L5	F3	F2	F2	F2
4	F2	F6	F7	F3	F8	F3	L3	L2	C3	CL32	CL22	CL21	C4	C2	C6	C7					F6	F4	F2	F2
5	F3	F2	F5	F1	F5	F1	L4	L4	C1	C1	C2	C3	C1	C1	H1	C3	C3	CQ21	L5	L4	F5	F5	F4	F2
6	F1	F1	F1	F1	F2	F2	L3	C2	CL22	C3	L5	L5	L7	L5	L4	L3	CL13	L3	LQ31	L4	FF32	FF22	F3	F6
7	F2	F3	F4	F2	F5	F7	LC11	LC22	CL22	CL32	LC42	C2	C4	C5	C5	L6	CL11		CL42	L3	F6	F2	F2	F9
8	FQ31	F6	F5	F3	F2	F5	L3	LC41	CL31	C4	C3	CQ21	CQ21	C3	C4	C4	C3	C1	C1	L3	F2	F3	FQ21	F3
9	F2	F3	F1	F4	F3	F3	L3	LH12	HHL11	H2	C2	C2	CL21	CL11	HL11	HL11	H1	CL21	CL31	CL31	F8	F1	F3	F1
10	F2	F2		F5	F2	F2	L3	CL32	CL21	C2	C2	CL21	CL22	CL21	CL11	C3	C2	C2	C1	C2	FF21	FF11	F1	
11	F1		F2	F2	F2	F3	L4	HC11	HC11	CH11	CL11	C2	H1	CL11	CL11	C1	C1	C1	C6	C2	F1	F3	F3	F3
12	F3	F1	F2	F2	F3	F1	L4	CL32	C4	C3	C3	C4	C5	C5	CH11	C1	C2	C4	C5	C5	F2	F2	F4	F3
13	F1	F1			F3	F6	L4	CL33	CL34	CL33	C5	C6	C7	C5	CL32	CL11		C2	C2	L3	F2	F3	FF32	FF21
14	F1	F2	F2	F3	F9	F2	L2	L5	L3	L5	L3	L2	L4	L4	L4	LC22	CL22	CL33	CL45	CL43	FF21	FF21	F2	F8
15	F5	FF23	F3	F2	F2	F2	L4	L5	C3	C4	C4	L3	C6	C2	C3	C2	C1	C4	C7	L3	F3	F6	FF34	F2
16	F1	F2	F3	F2	F4	F1	L3	LH21	C2	C1	HL11	HL11	L2	CL32	CL12	HCL11	C2	C2	C6	C7	F4	F6	F3	F4
17	F5	F2	F1	F3	F1	F1	C2	C2	C4	C3	C1	C1	C1	HC11	CL11	C1	CL34	CL22	L9	LQ61	FQ51	F4	F2	F2
18	F2	F4	F2	F2	F1	F1	L2	CL22	C7	C3	L3	C2	LH21	HL11	HL11	HL11	H1	HC21	C4	L5	F3	F3	F3	F2
19	F3	F3	FF13	F3	F2	F2	CL11	HL22		C2	L2	L3	L2	HL12	C1	C2	C2	C3	C3	C4	F1	F1	F2	F2
20	F3	F2	F3	F2	F2	FF22	L1	H2	CL12	C1	C1	H1	C1	C1	C2	C3	C2	C3	C3	C4	F4	F3	FF41	F5
21	F4	FF17	FF24	FF33	FF13	FF12	L3	C3	C3	C2	C2	C1	L3	L2	L3	L5	C2	C1	C2	C2	F3	F2	F4	FF12
22	F2	F3	F3	F4	F3	FF11	L1	C6	C7	C4	C6	L5	L3	L3	L5	L8	L4	L2	C3	L2	F5	FQ31	F3	F3
23	FF21	F1	FF12	F4	F2	F3	L1	L5	L2	L2	L1	LH11	HL11	H1	HC11	H1	C3	C3	C2	FF22	F1	F2	F7	F4
24	F1	F1	F1	F2	F1		H1	H3	H1	H1	H1	H1	C1	C1	C2	H1	C3	C2		L4	F1	F4	F2	F2
25	FF12	FF21	FF21	F1	F1	F1	C7	C3	C3	C5	C2	L2	L2	CL13	L3	CL23	CL22	CL22	CL13	CL33	FF22	F2		
26	F1		F2	F1	F2		L1	C2	C2	C2	C1	C3	CH11	C2	C2	C4	C2	L4	L4	L3	F3	F3	F2	F4
27	F2	F2	F1	F5	F5	F2	L1	C4	C3	C2	C2	C2	C1	C2	C1	C3	C3	C3	C5	L7	F4	F6	F3	F2
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29	F2	F2	F2	F2	F1	F1	L1	CH11	C1	HC11	H1	H1	C2	CH11	C1	C1	C1	H2	C3	C1	FF12		F5	FF13
30	F3	F3	F1	F1	F1	F4	C2	C3	CL13	L5	C1	L4	CL11	C4	CL11	CL32	C2	CL11	CL52	CL83	F2	F3	F3	F6
31	F2	F3	F3	F4	F5	F6	L1	C2	C3	L3	L4	C1	C2	C1	C2	C2	C1	C4	CL22		F9	F3	F4	F3
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

AUG.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

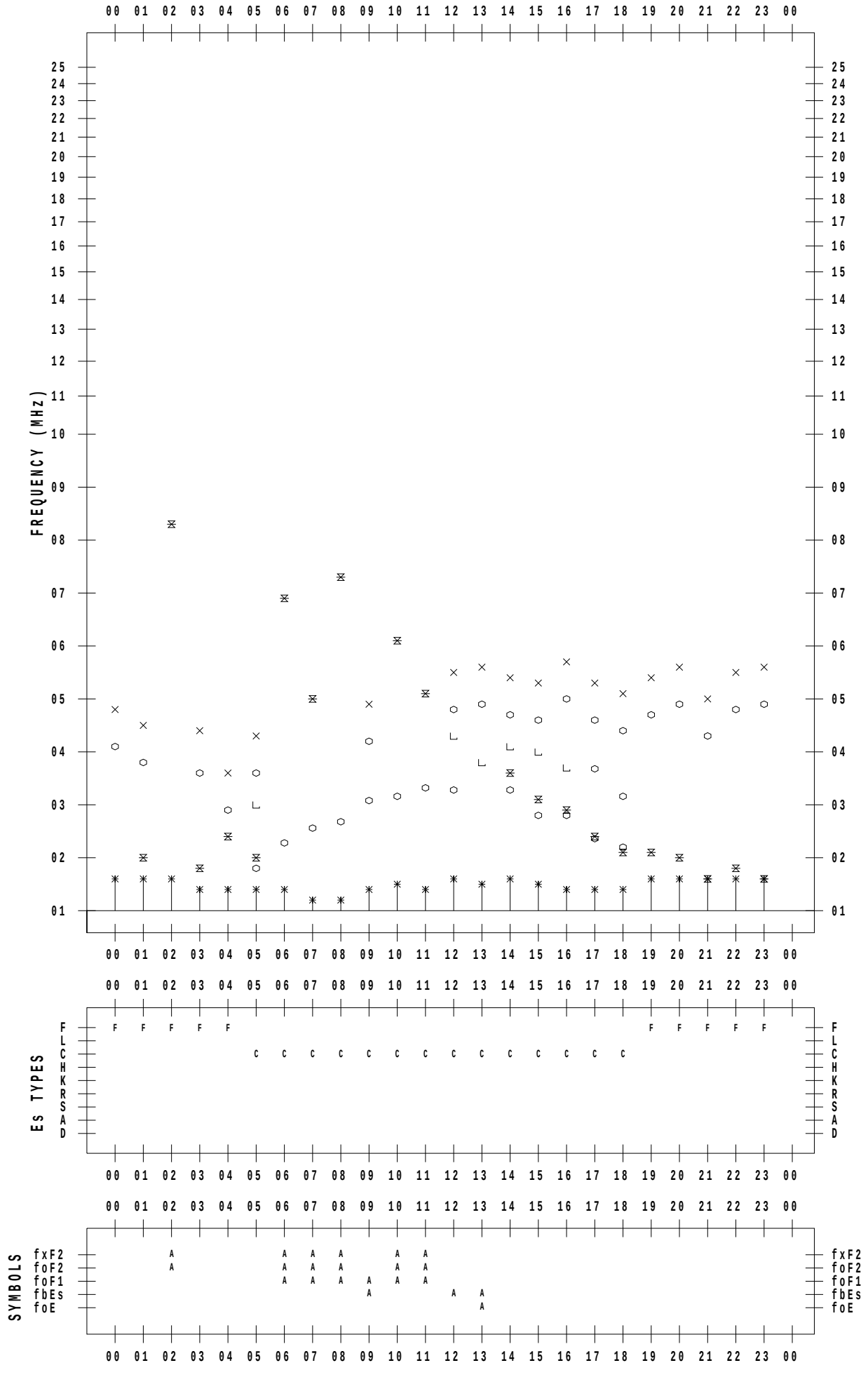
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 1

135 °E MEAN TIME



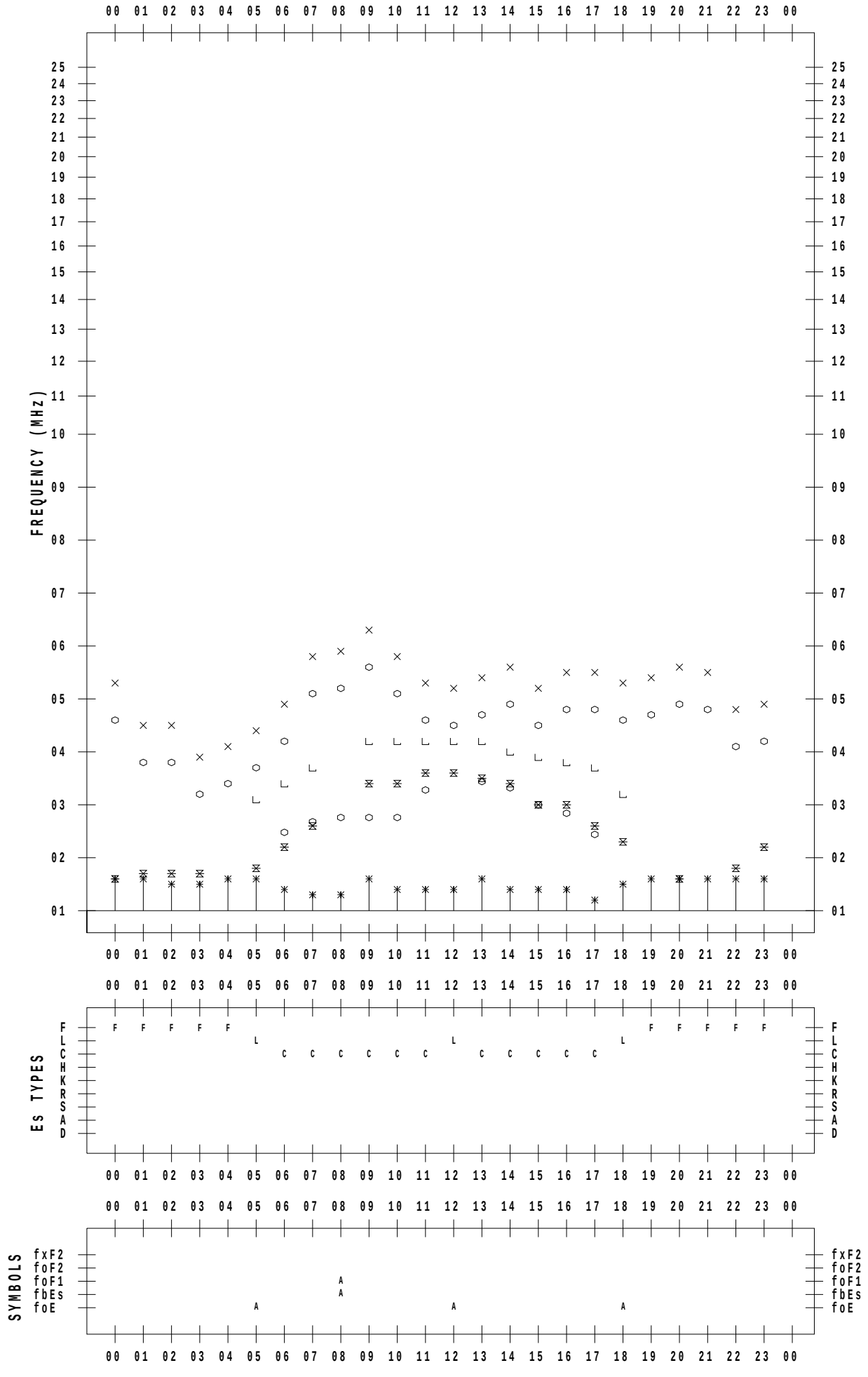
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 2

135 °E MEAN TIME



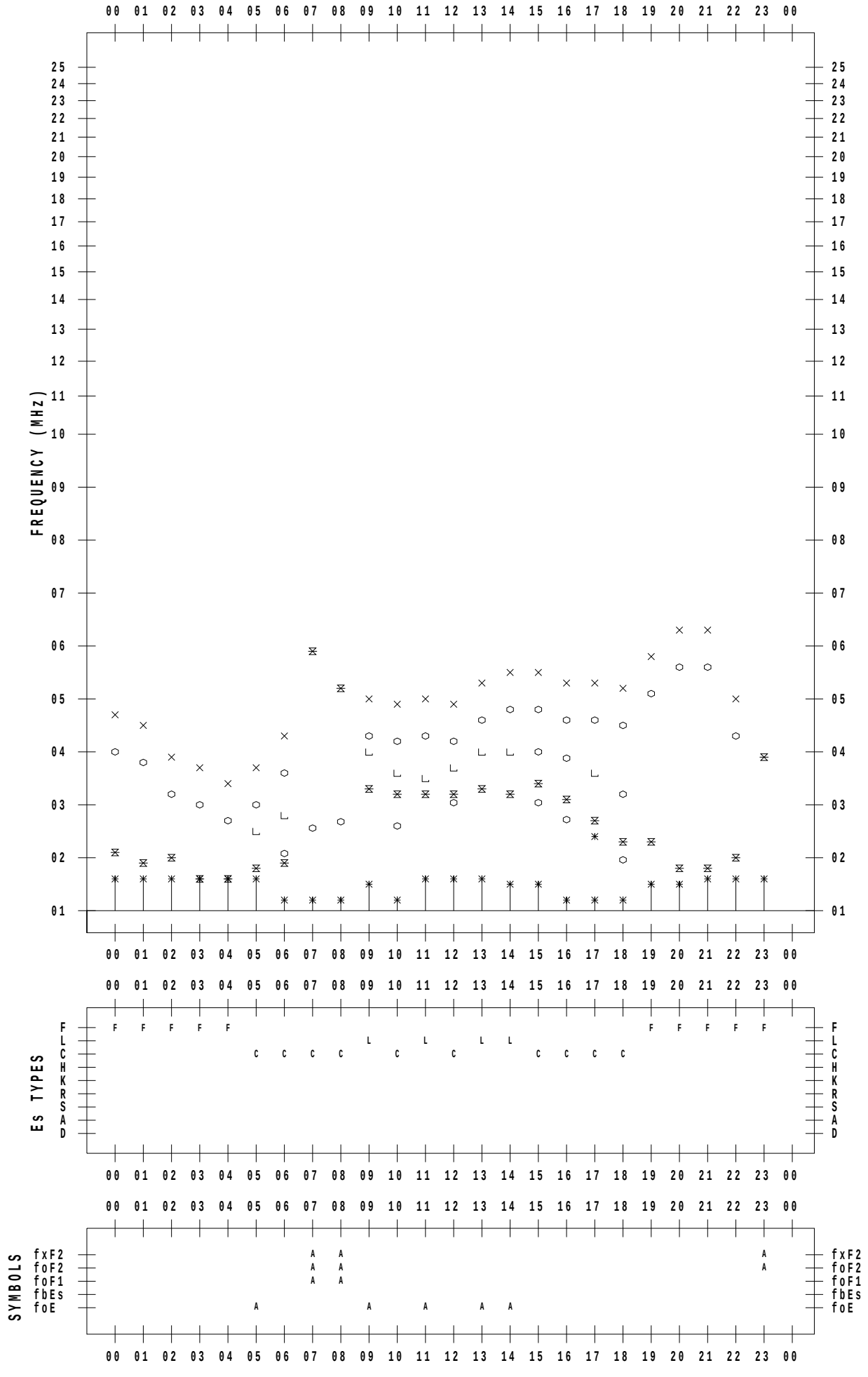
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 3

135 °E MEAN TIME



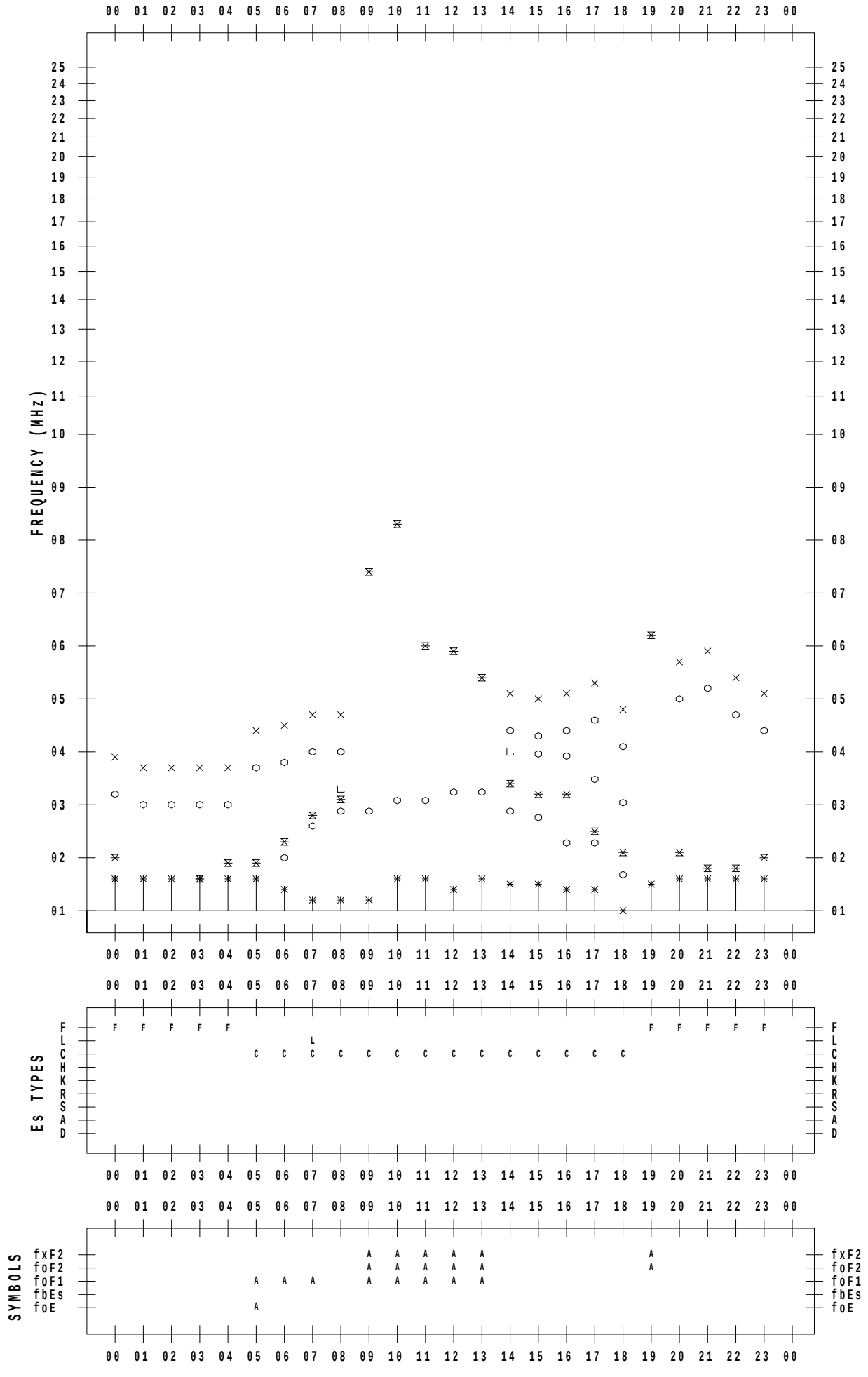
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 4

135 °E MEAN TIME



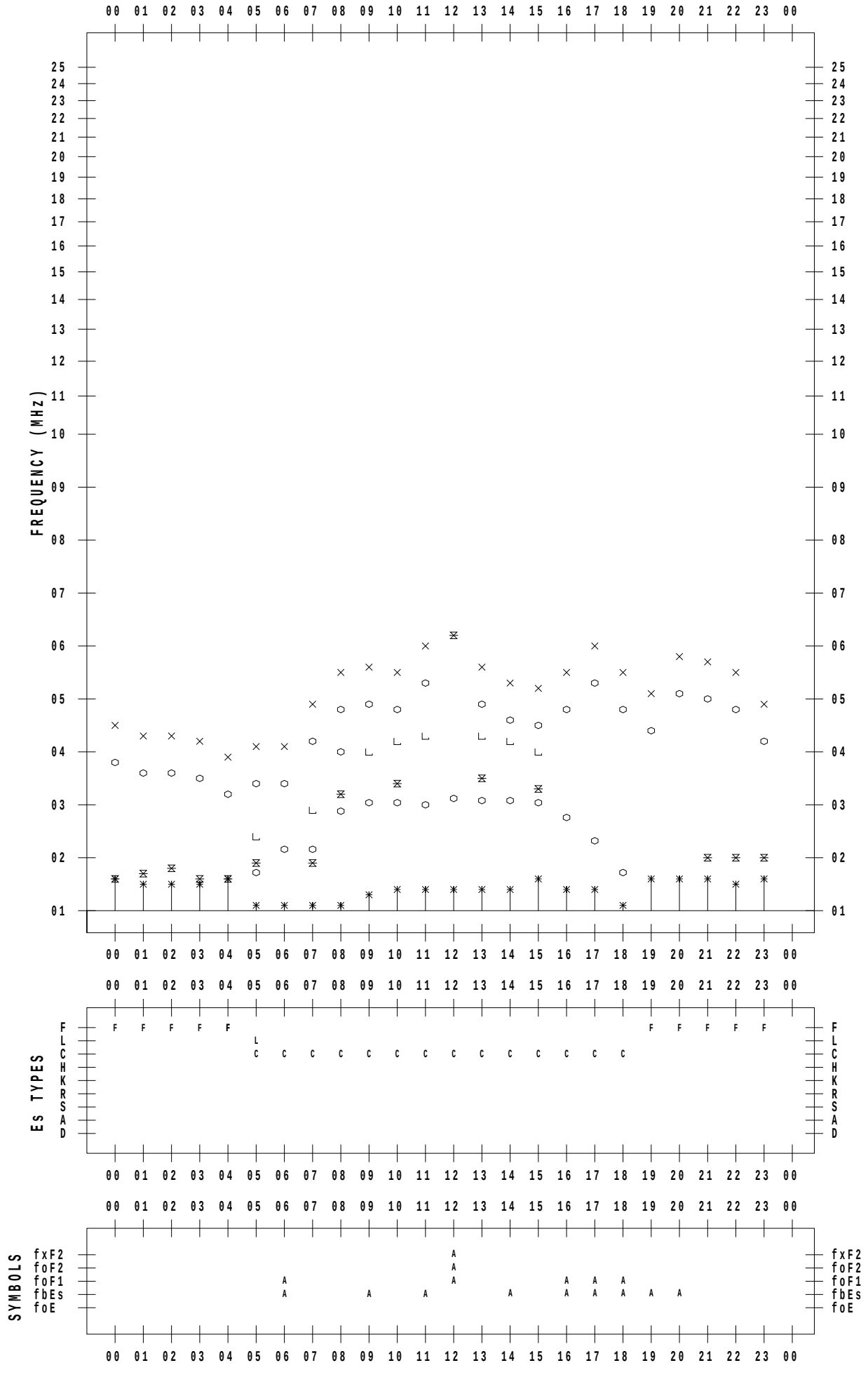
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 5

135 °E MEAN TIME



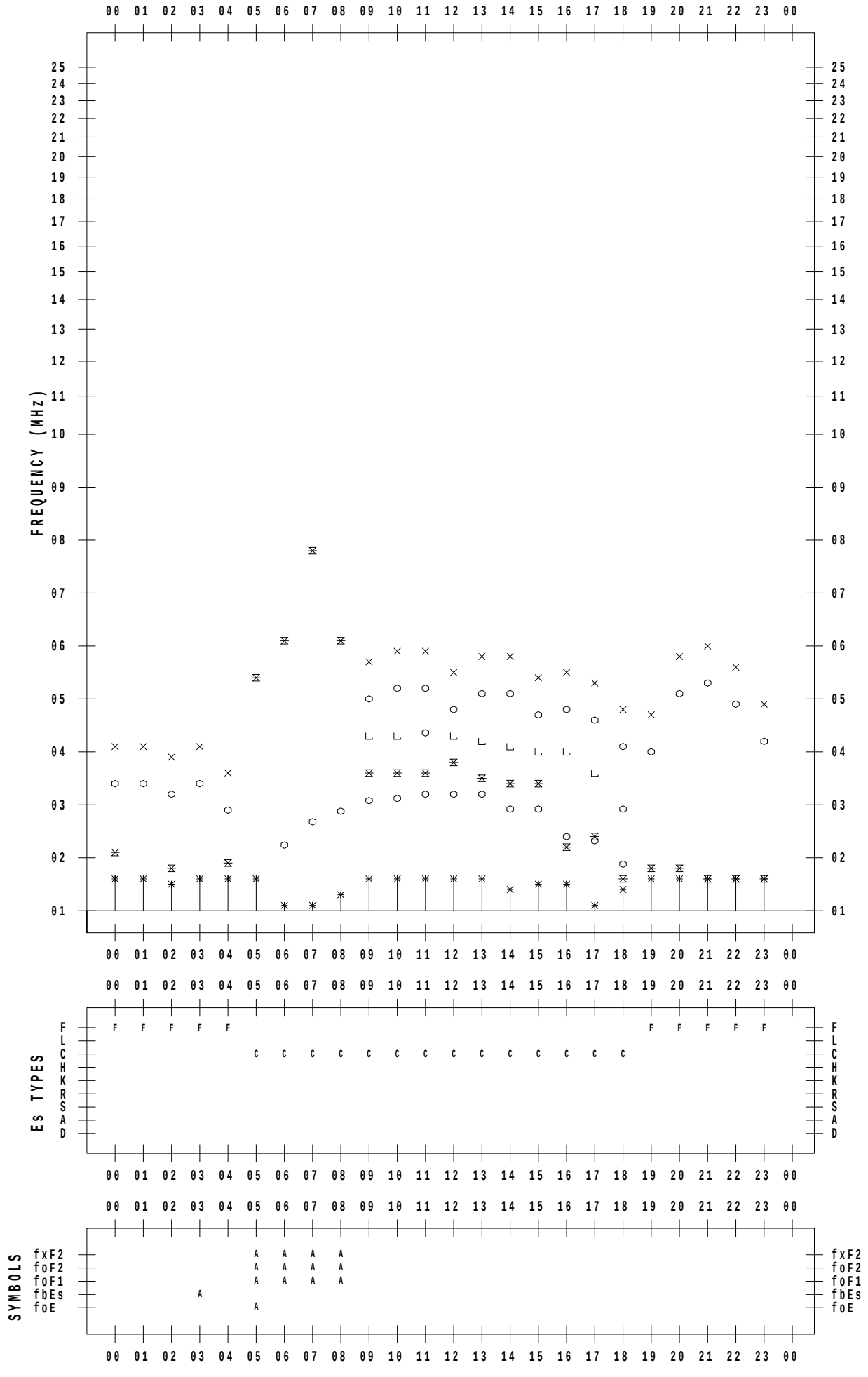
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 6

135 °E MEAN TIME



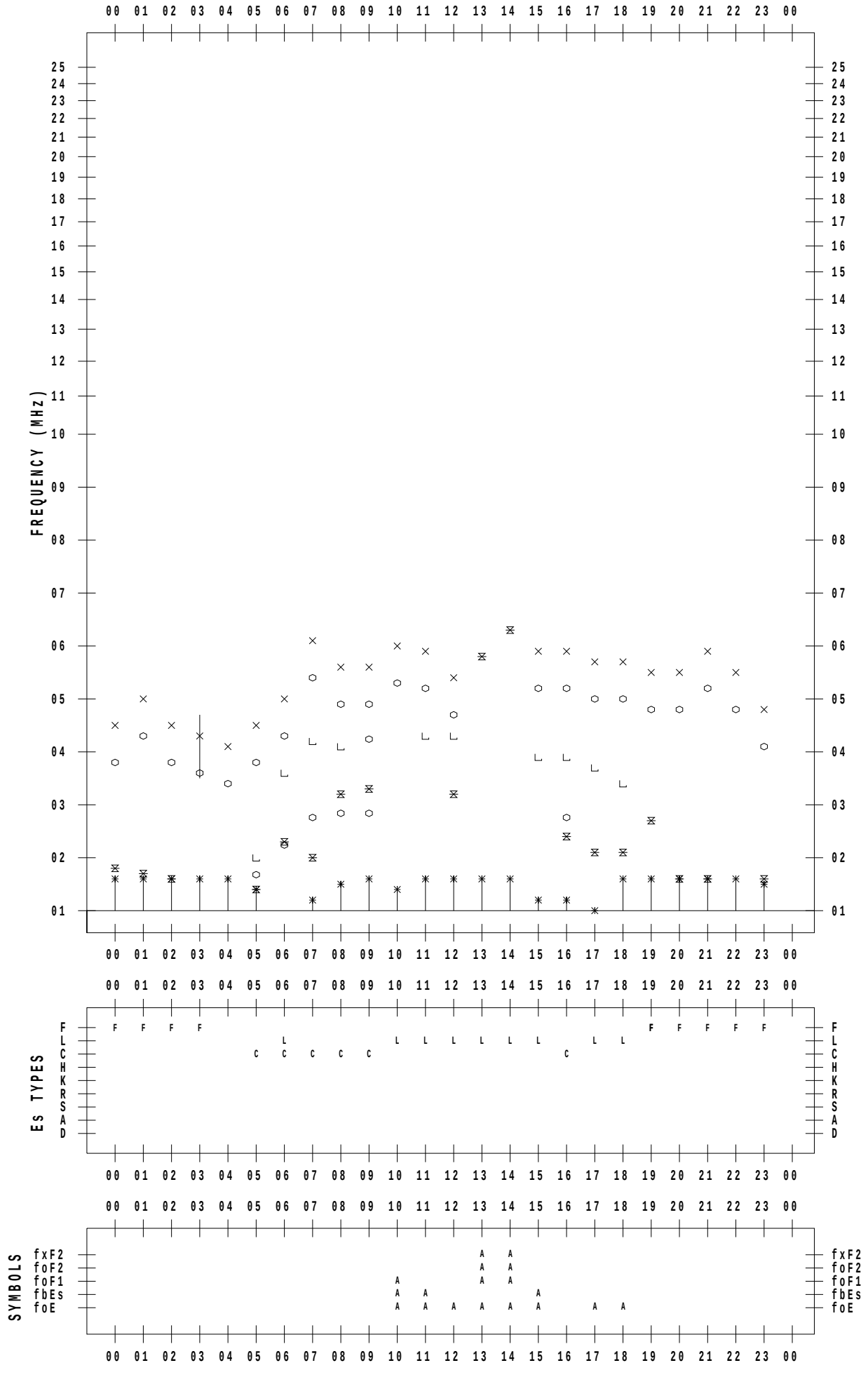
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 7

135 °E MEAN TIME



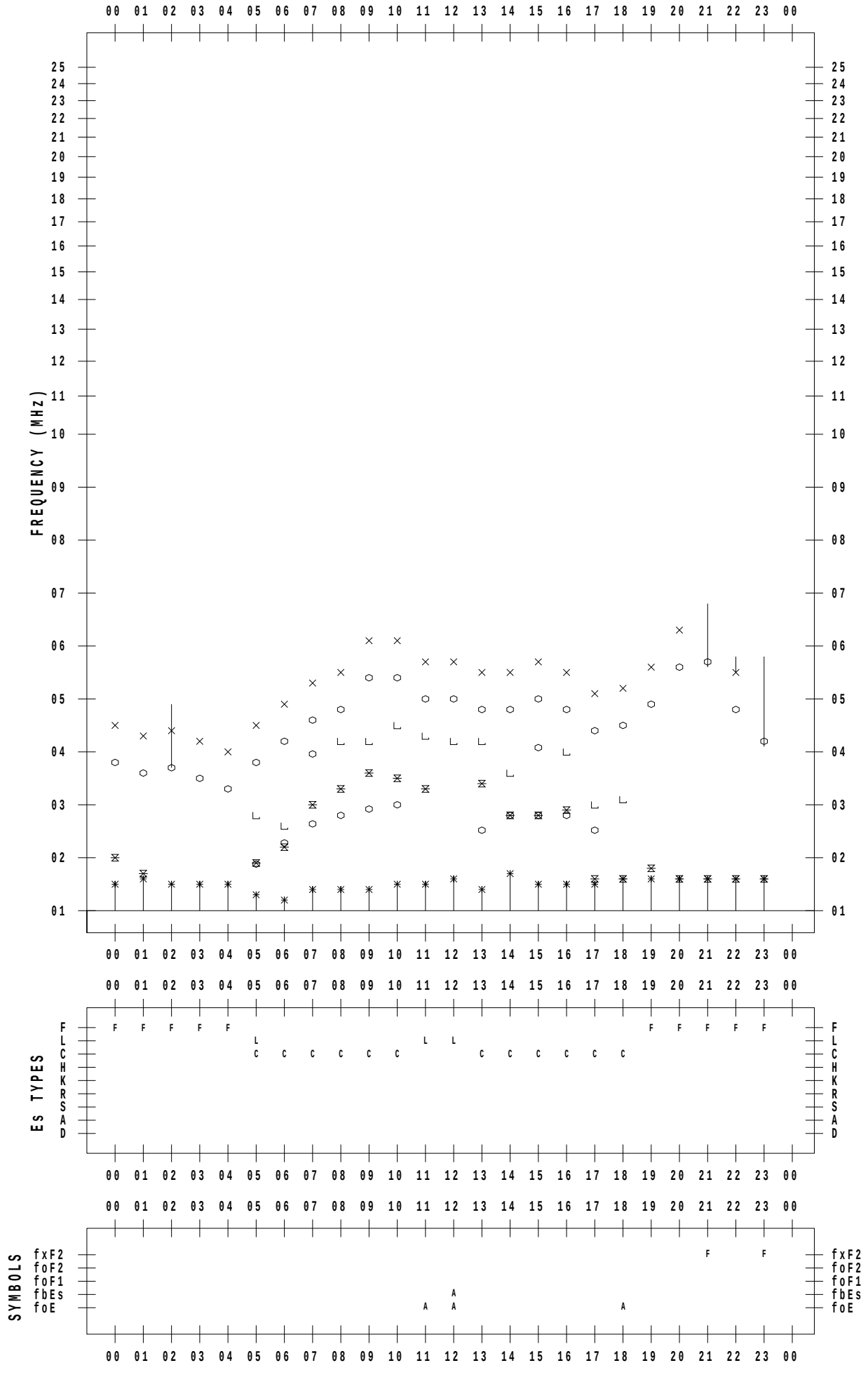
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 8

135 °E MEAN TIME



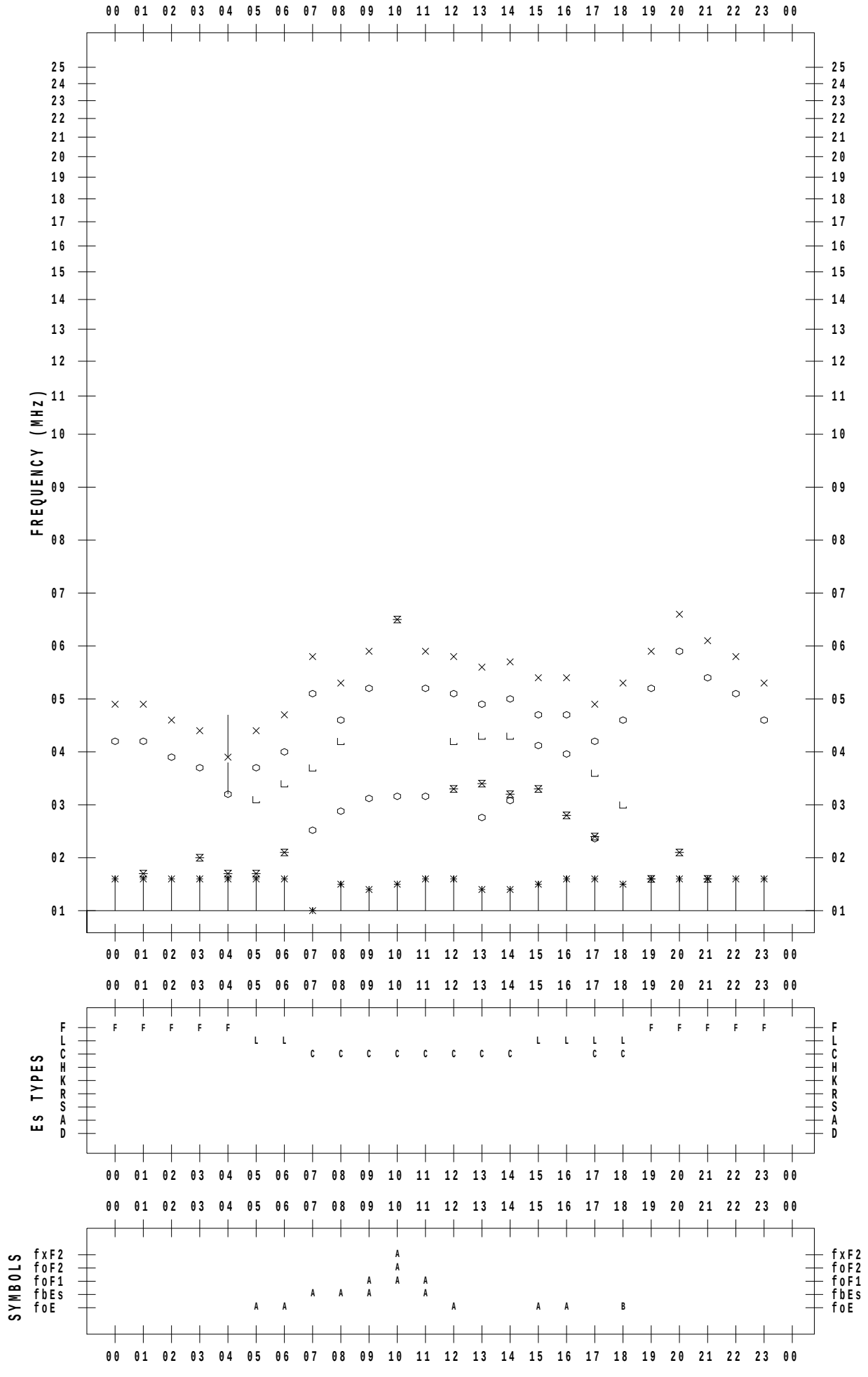
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/ 9

135 °E MEAN TIME



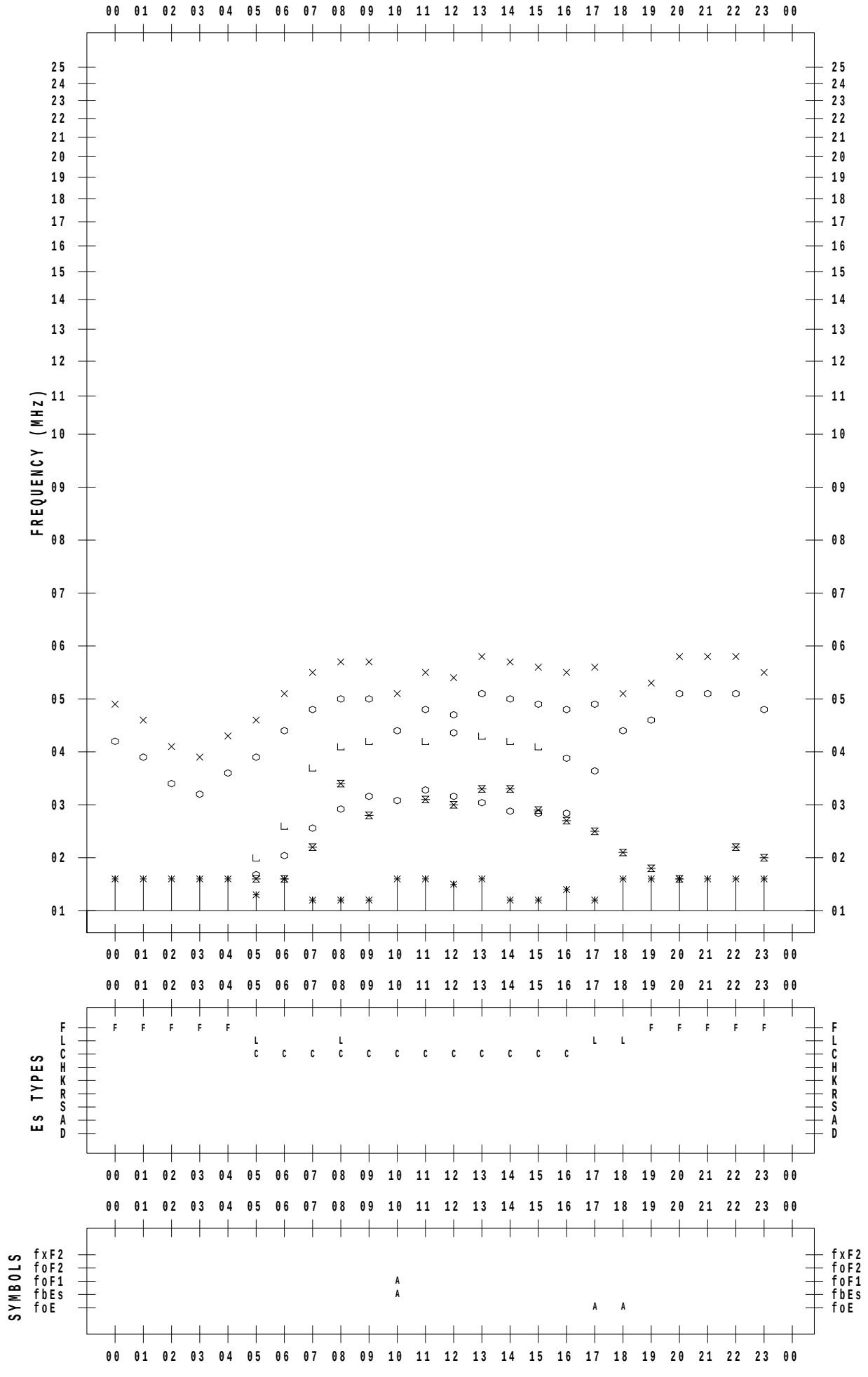
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/10

135 °E MEAN TIME



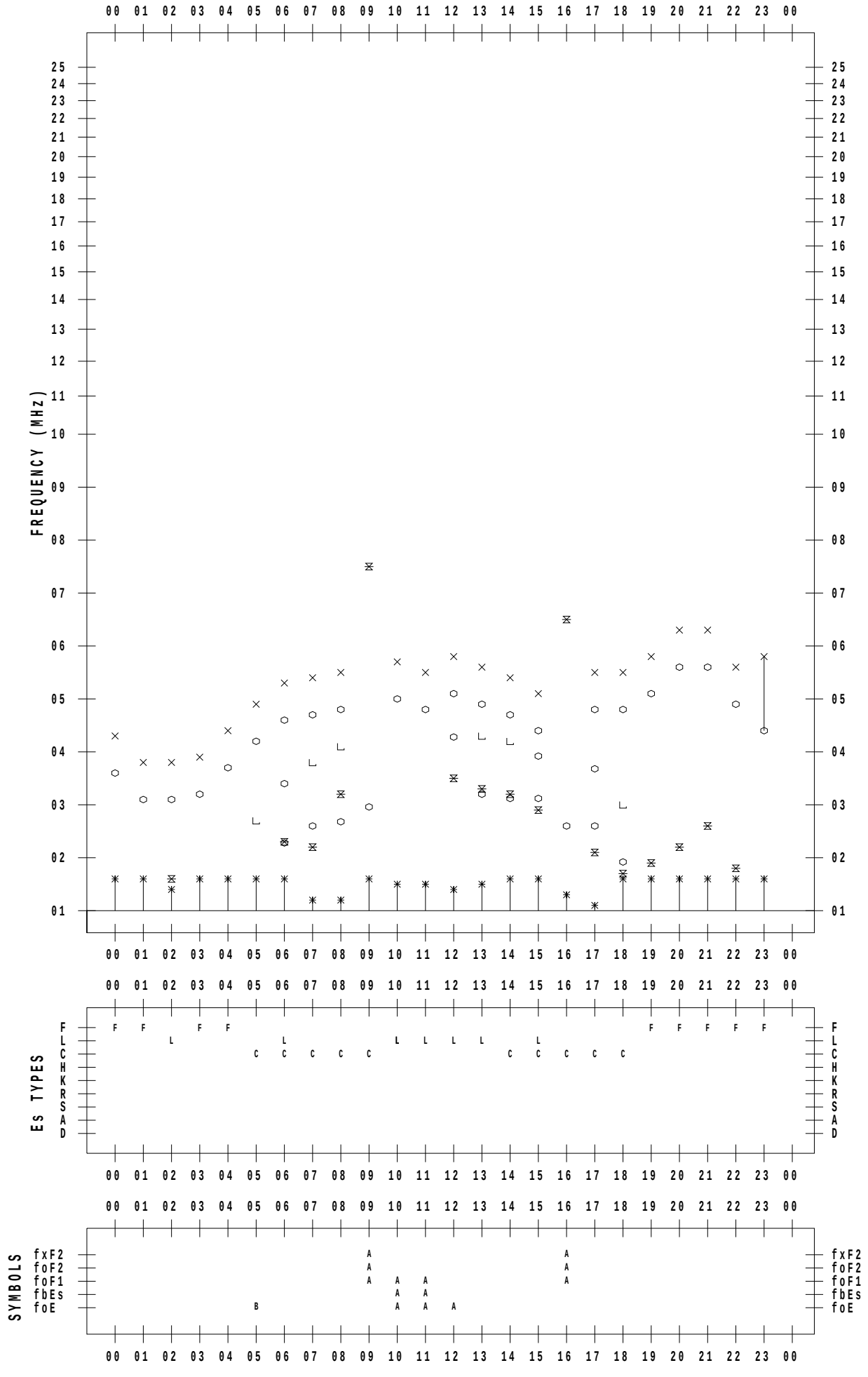
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/11

135 °E MEAN TIME



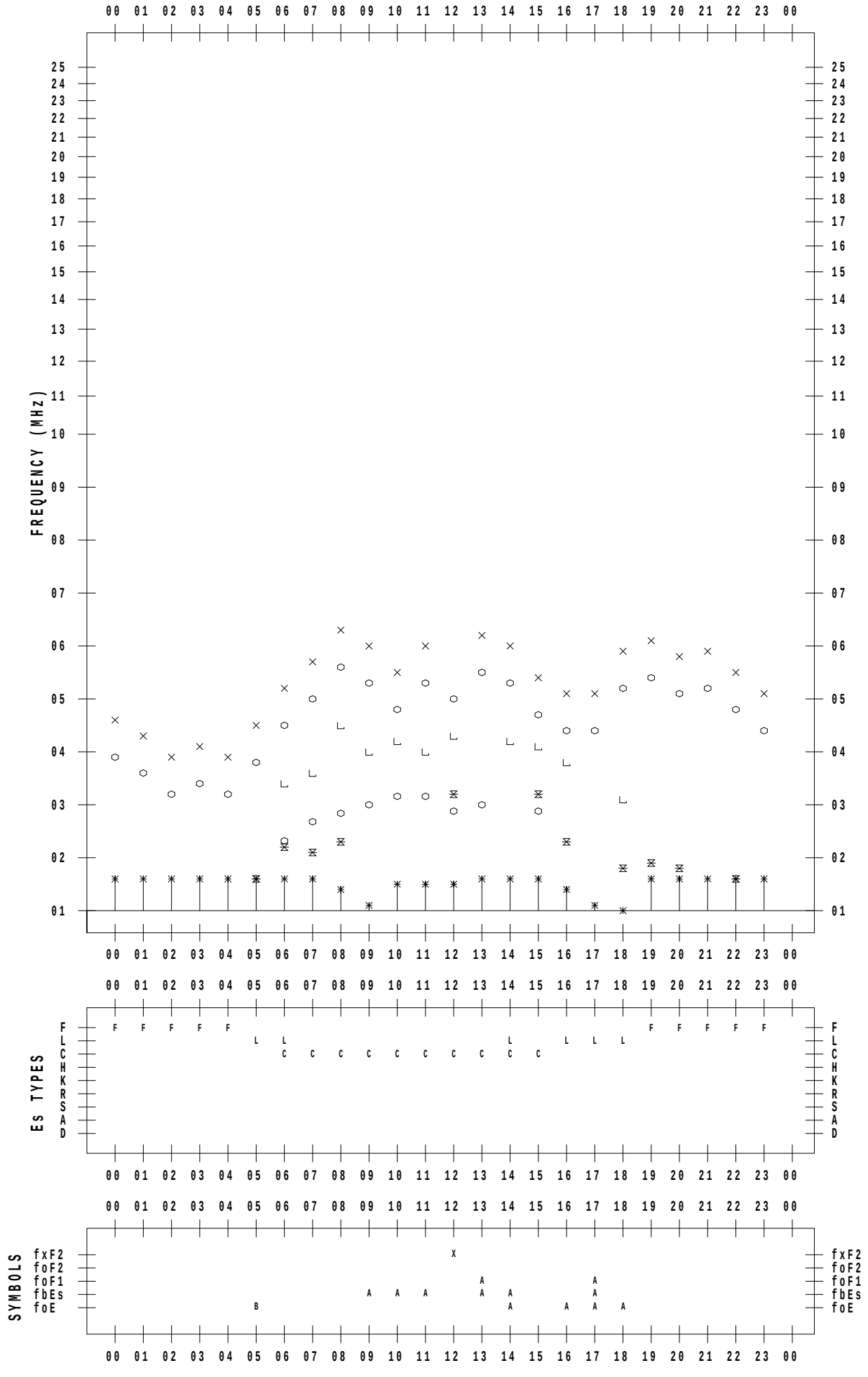
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/12

135 °E MEAN TIME



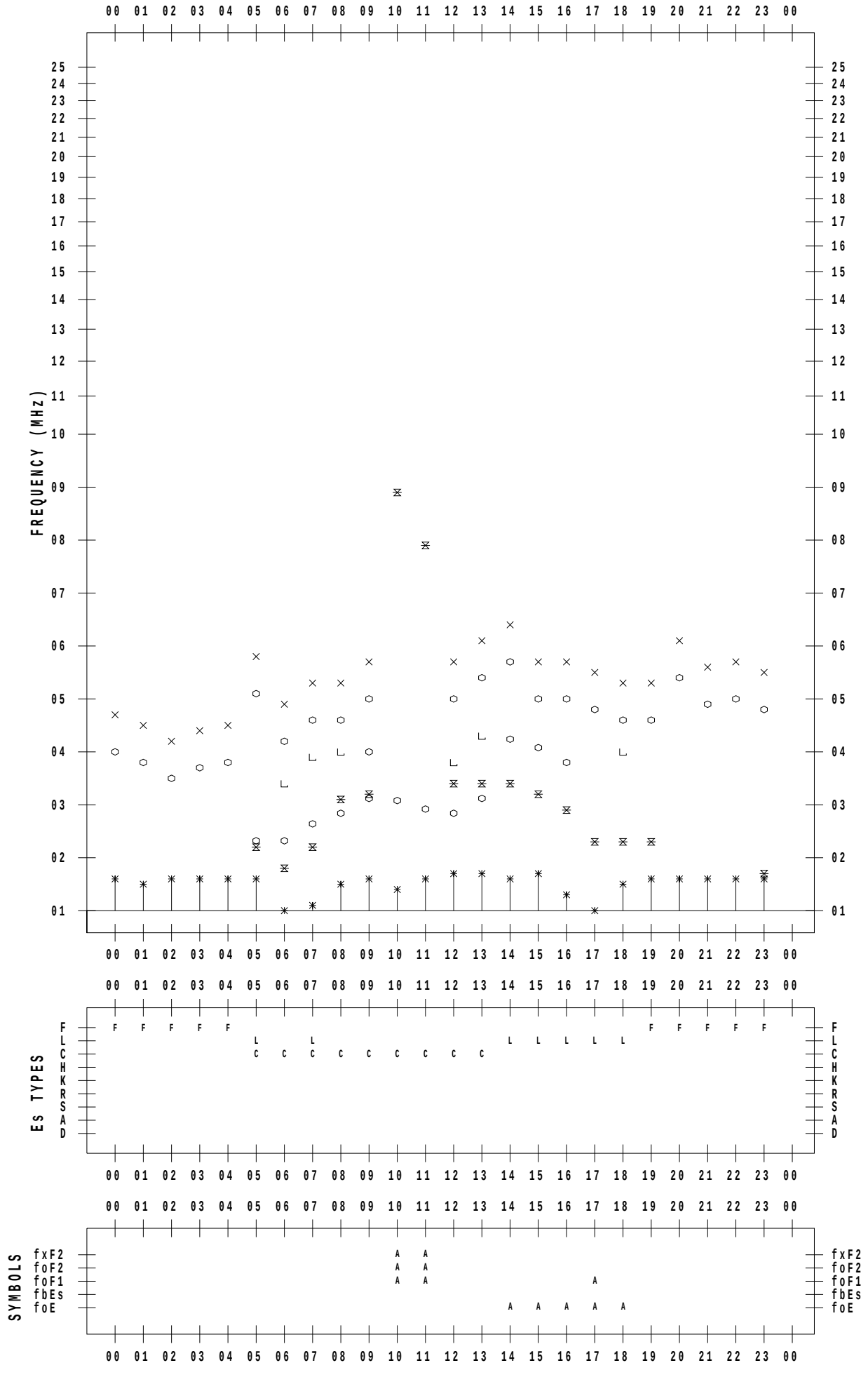
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/13

135 °E MEAN TIME



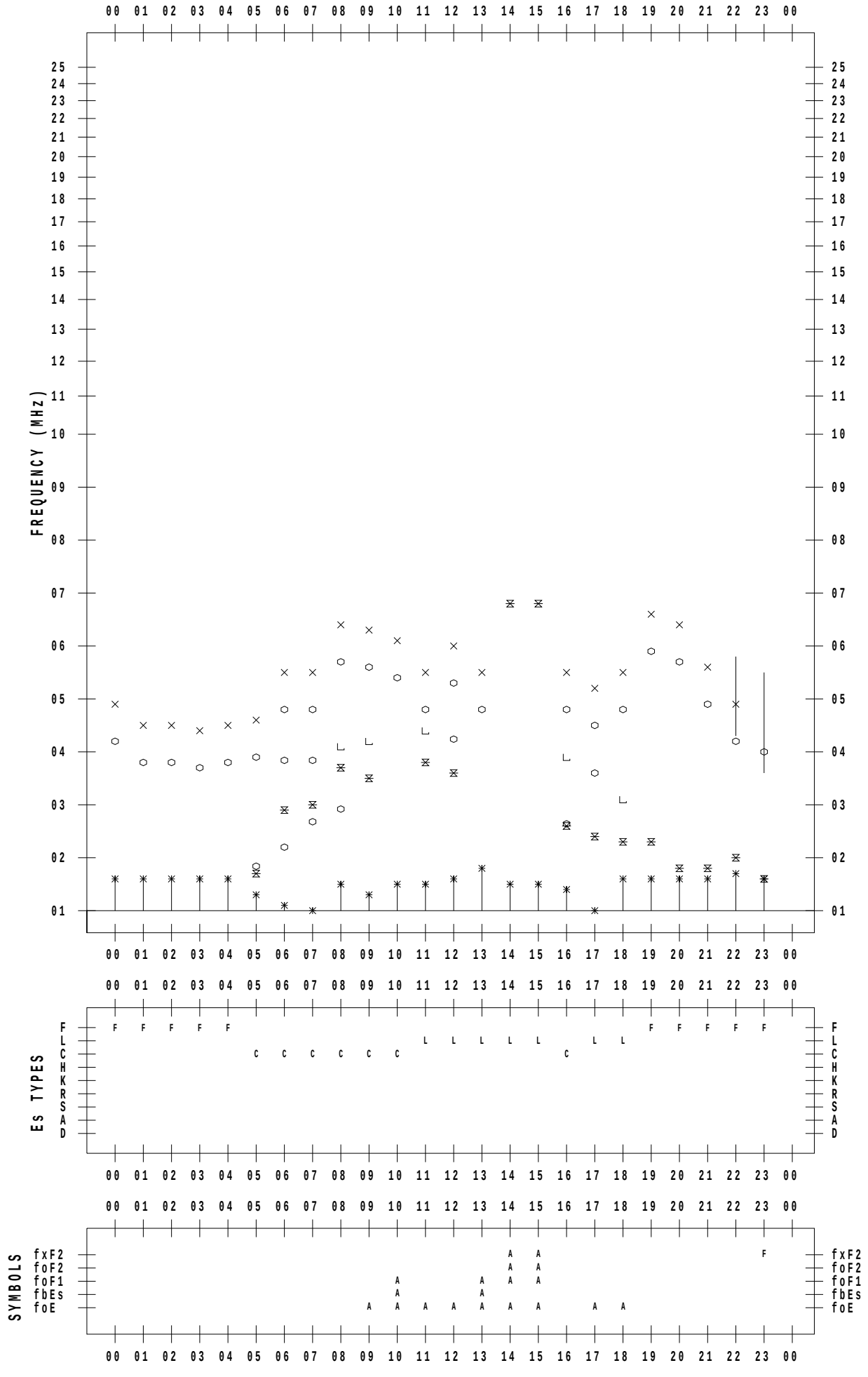
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/14

135 °E MEAN TIME



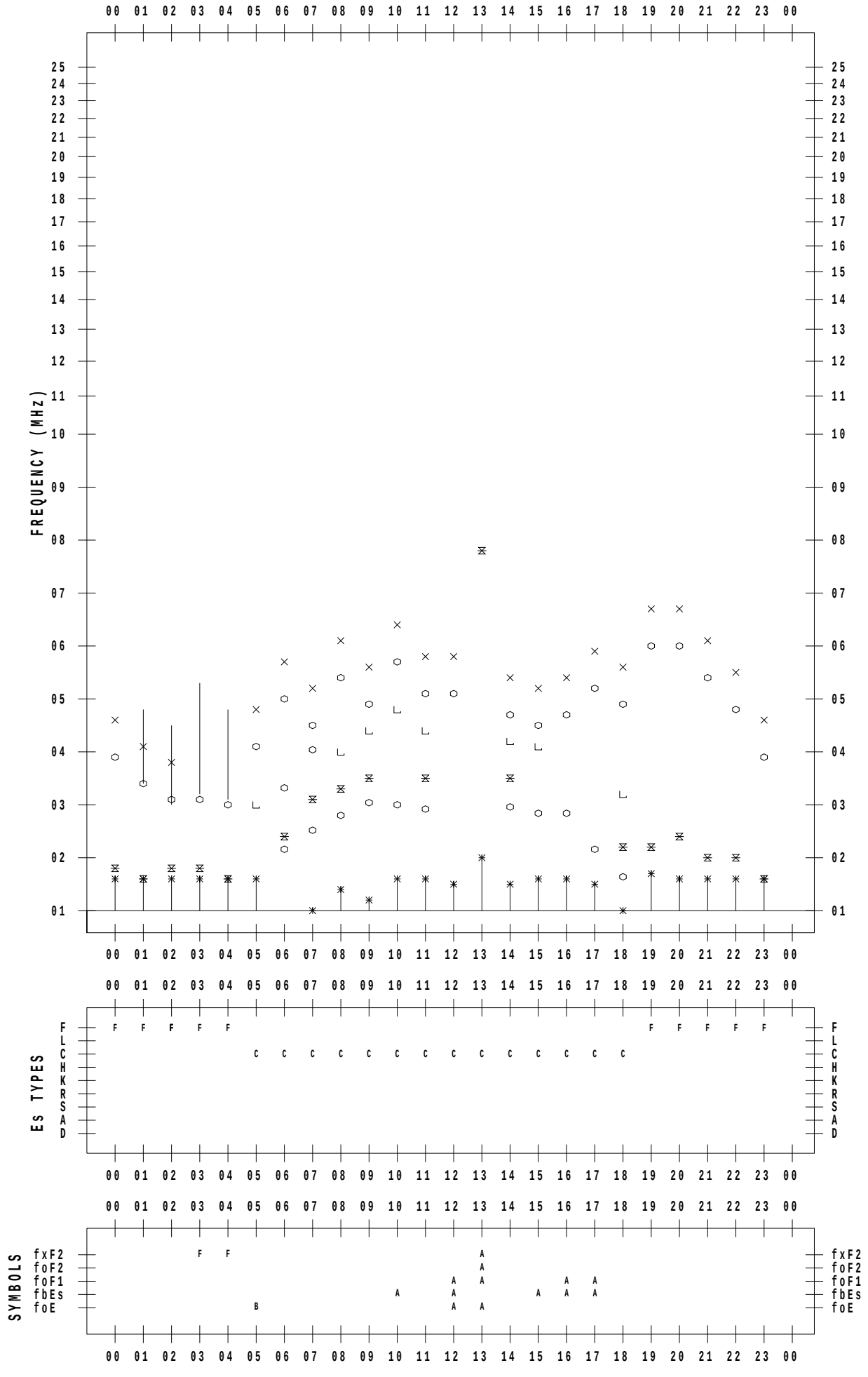
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/15

135 °E MEAN TIME



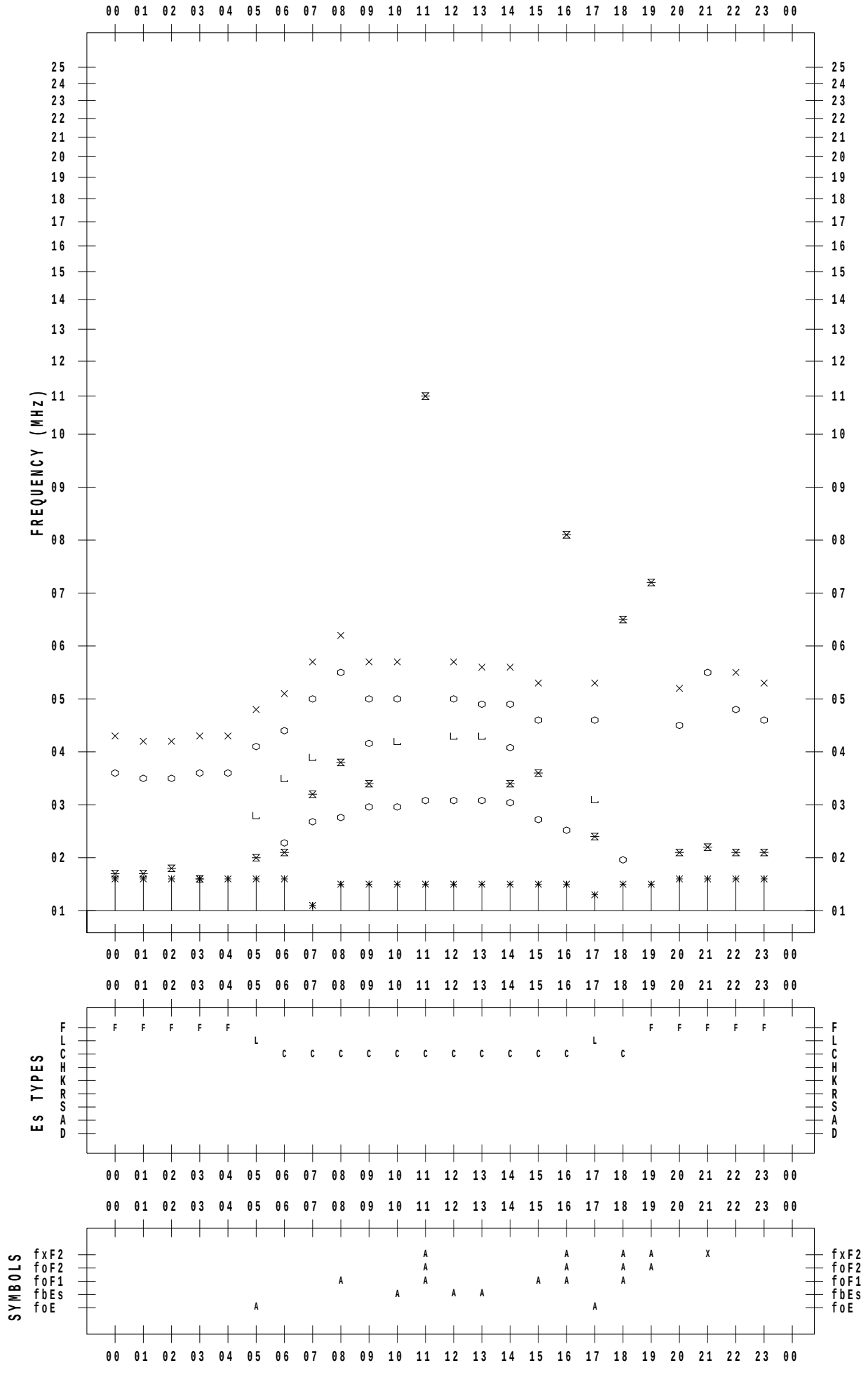
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/16

135 °E MEAN TIME



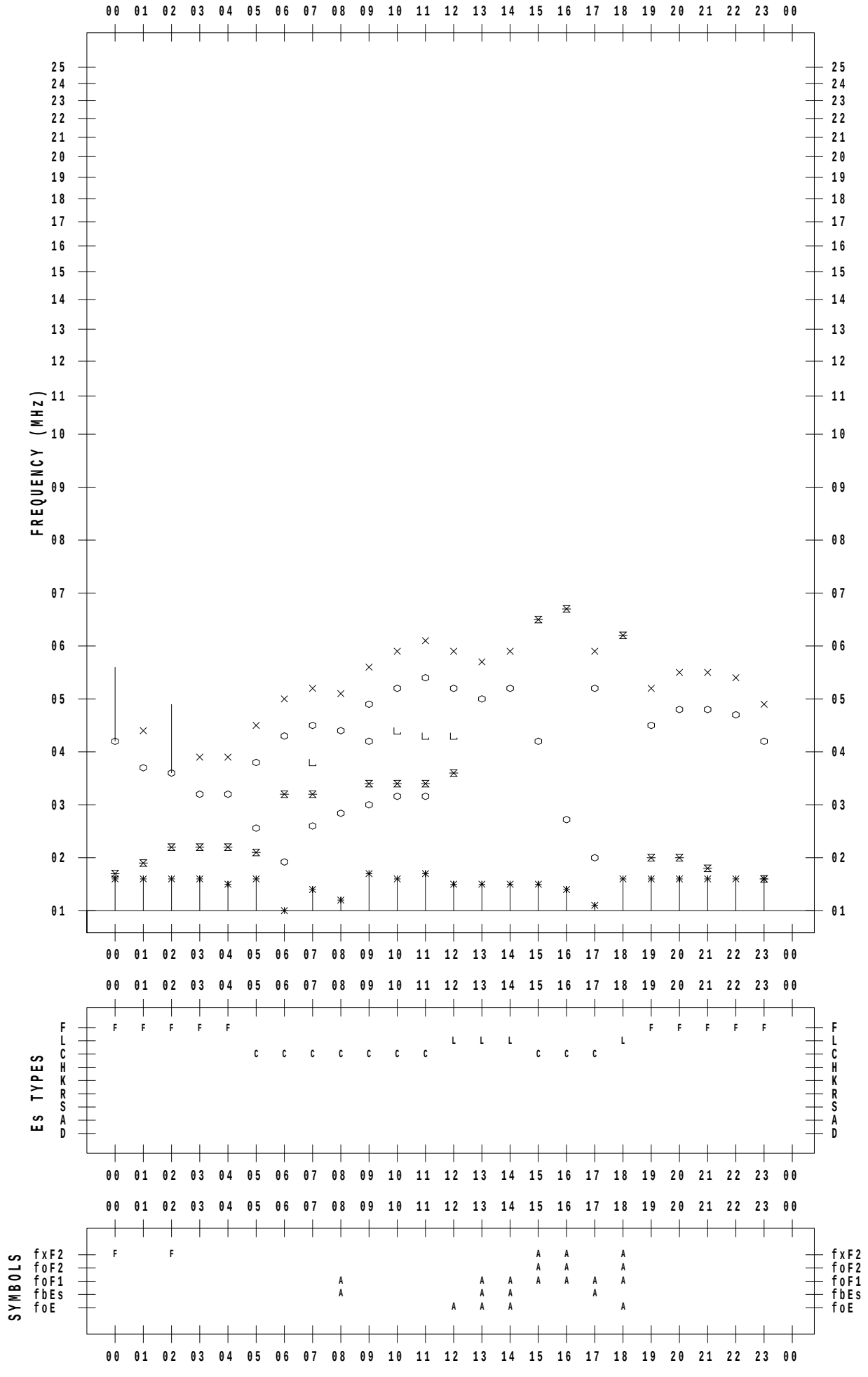
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/17

135 °E MEAN TIME



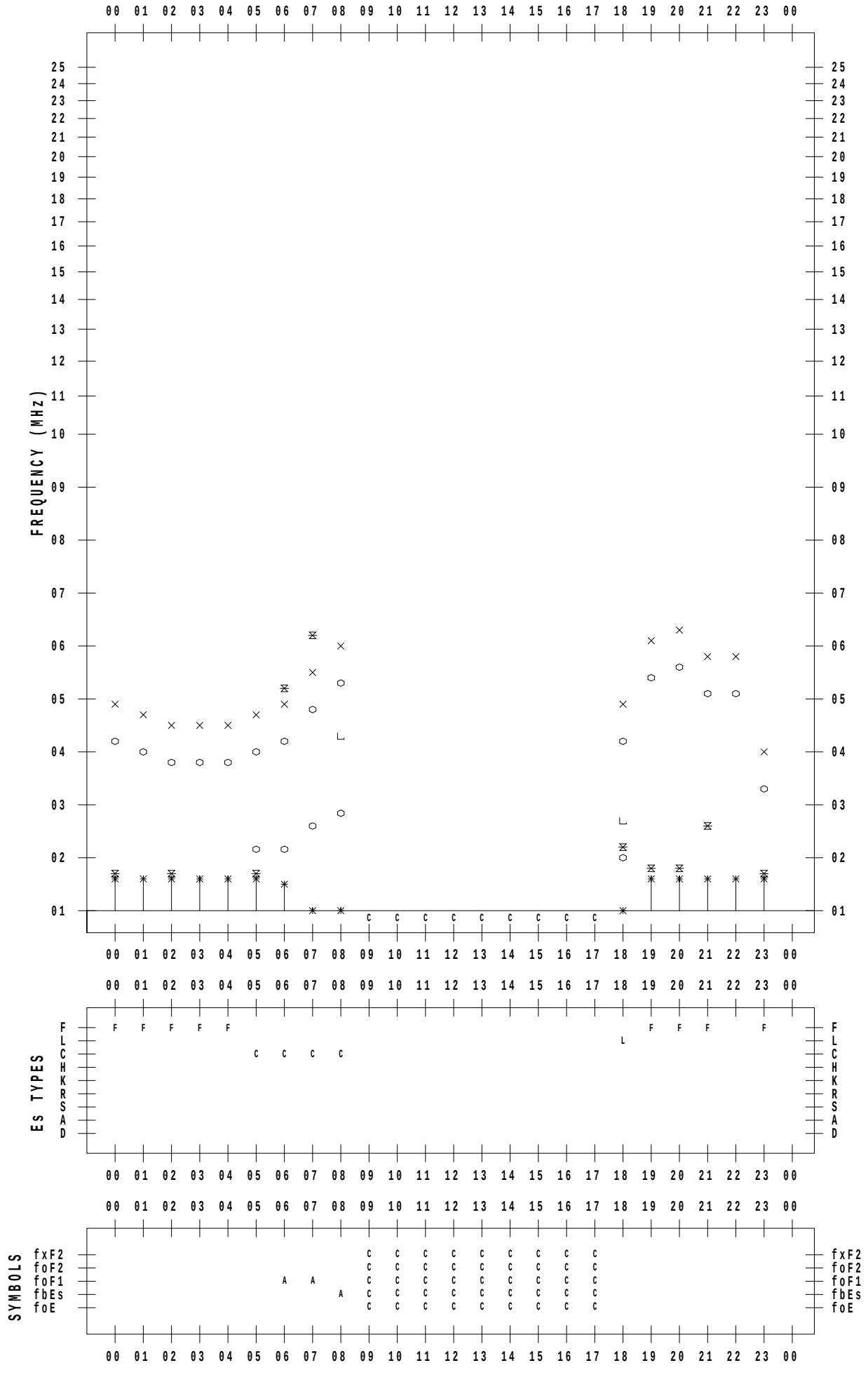
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/18

135 °E MEAN TIME



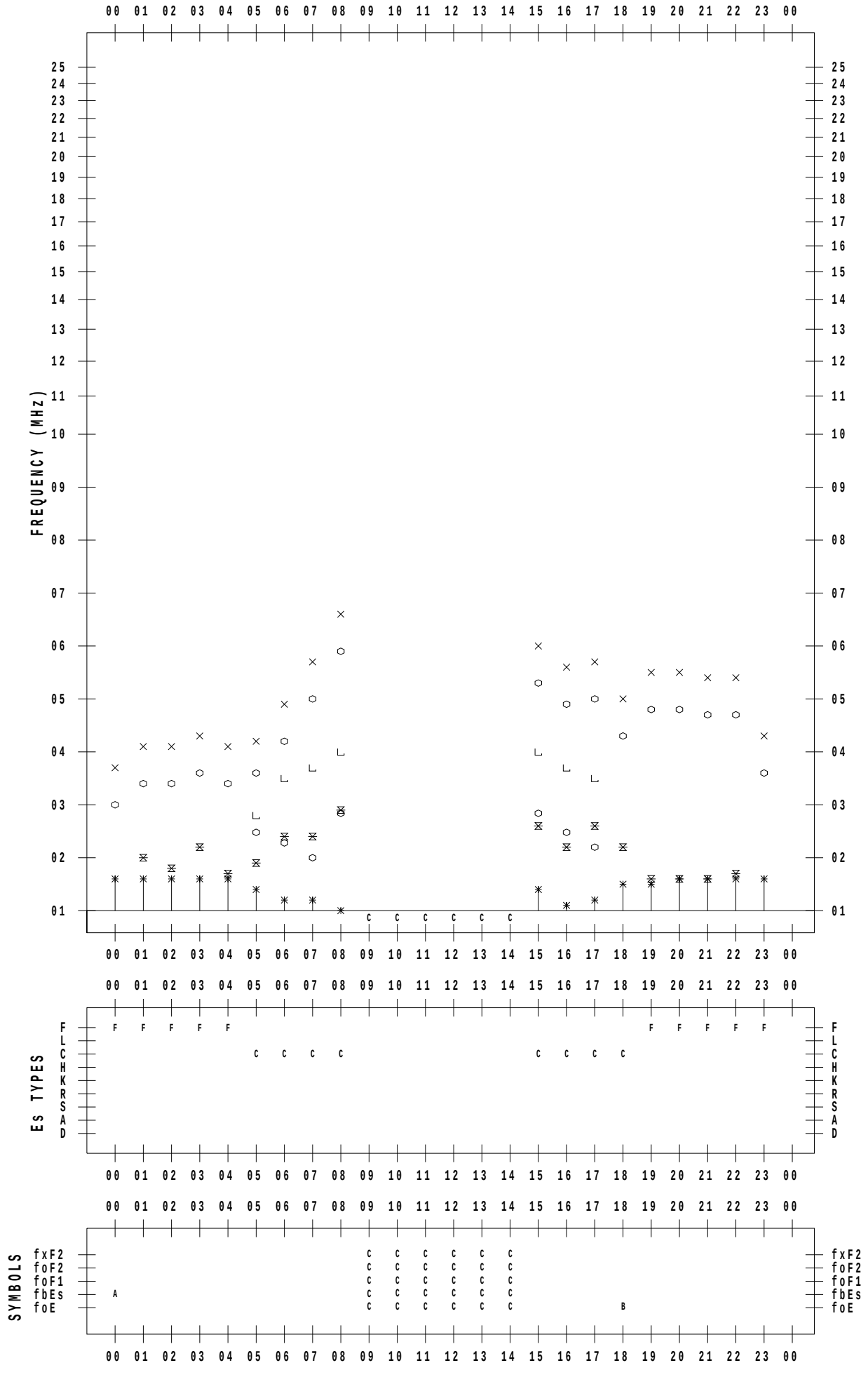
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/19

135 °E MEAN TIME



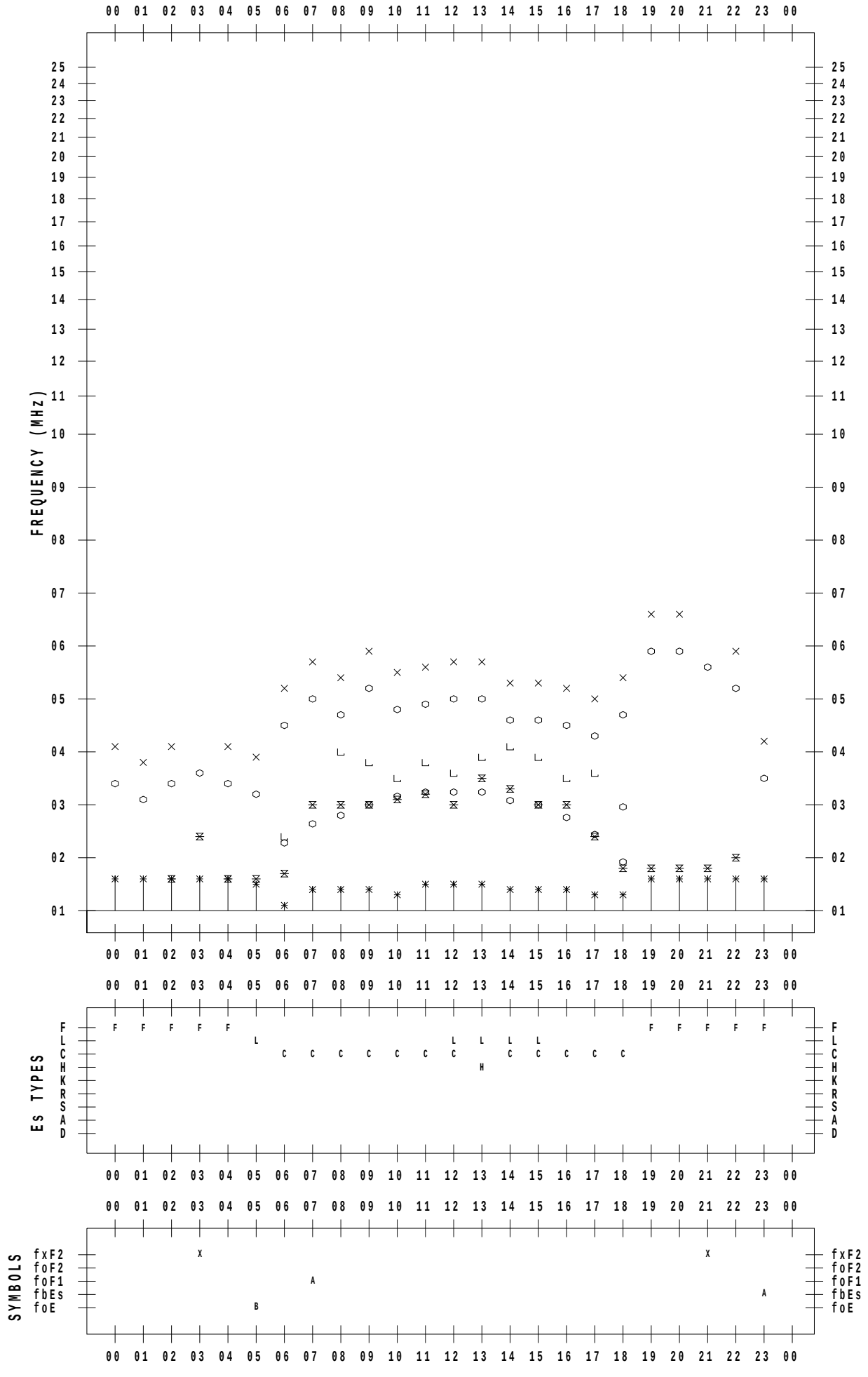
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/20

135 °E MEAN TIME



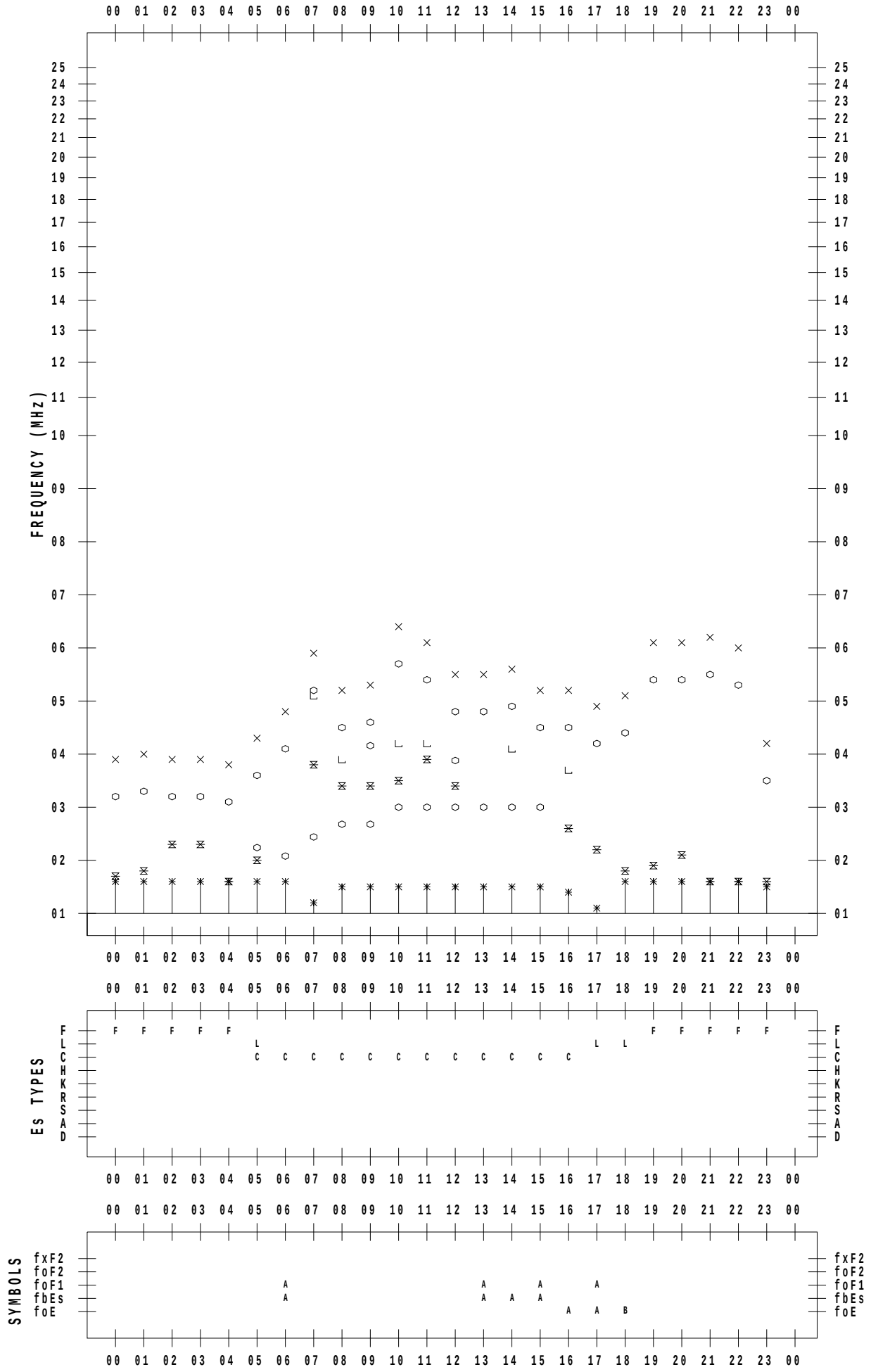
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/21

135 °E MEAN TIME



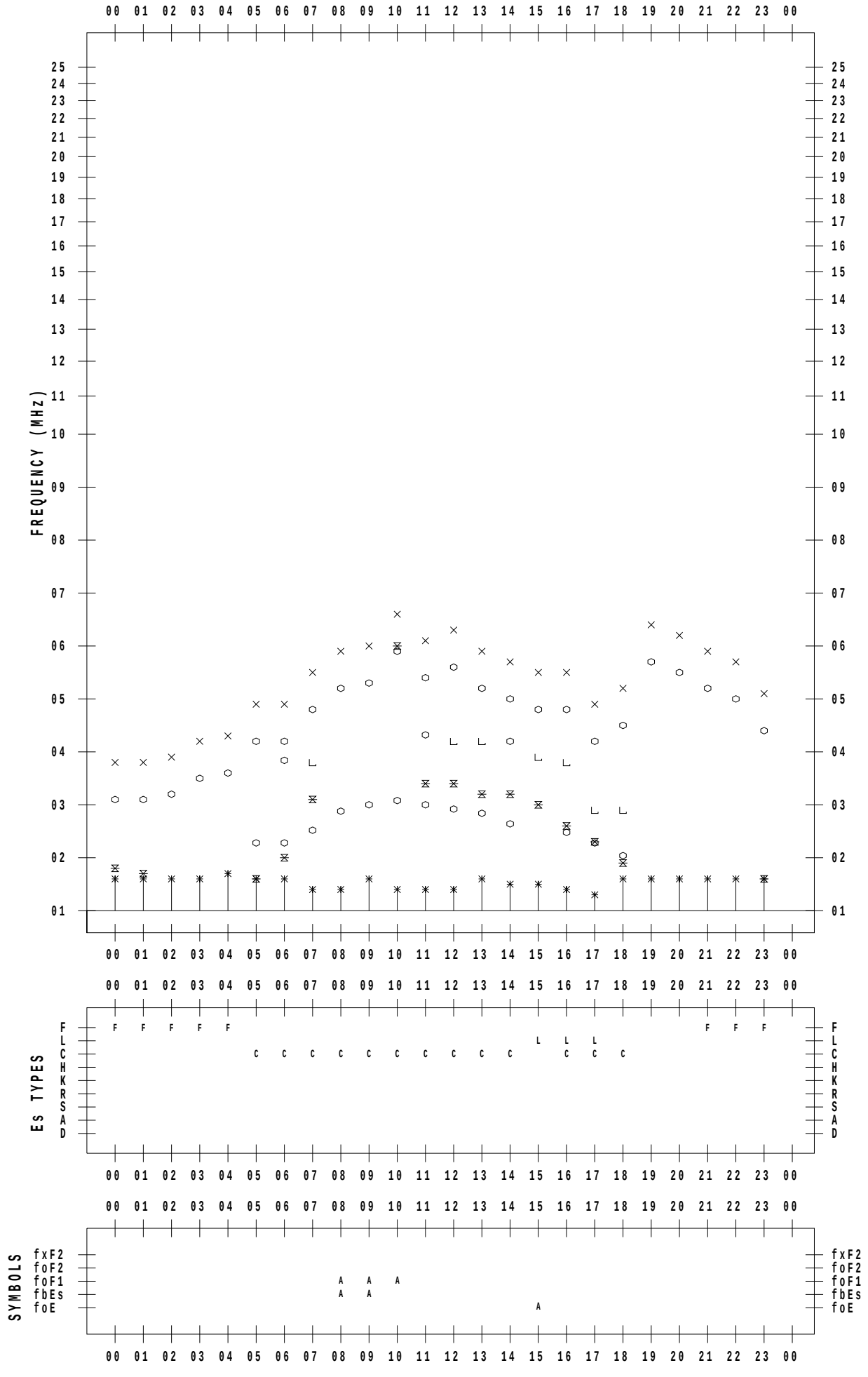
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/22

135 °E MEAN TIME



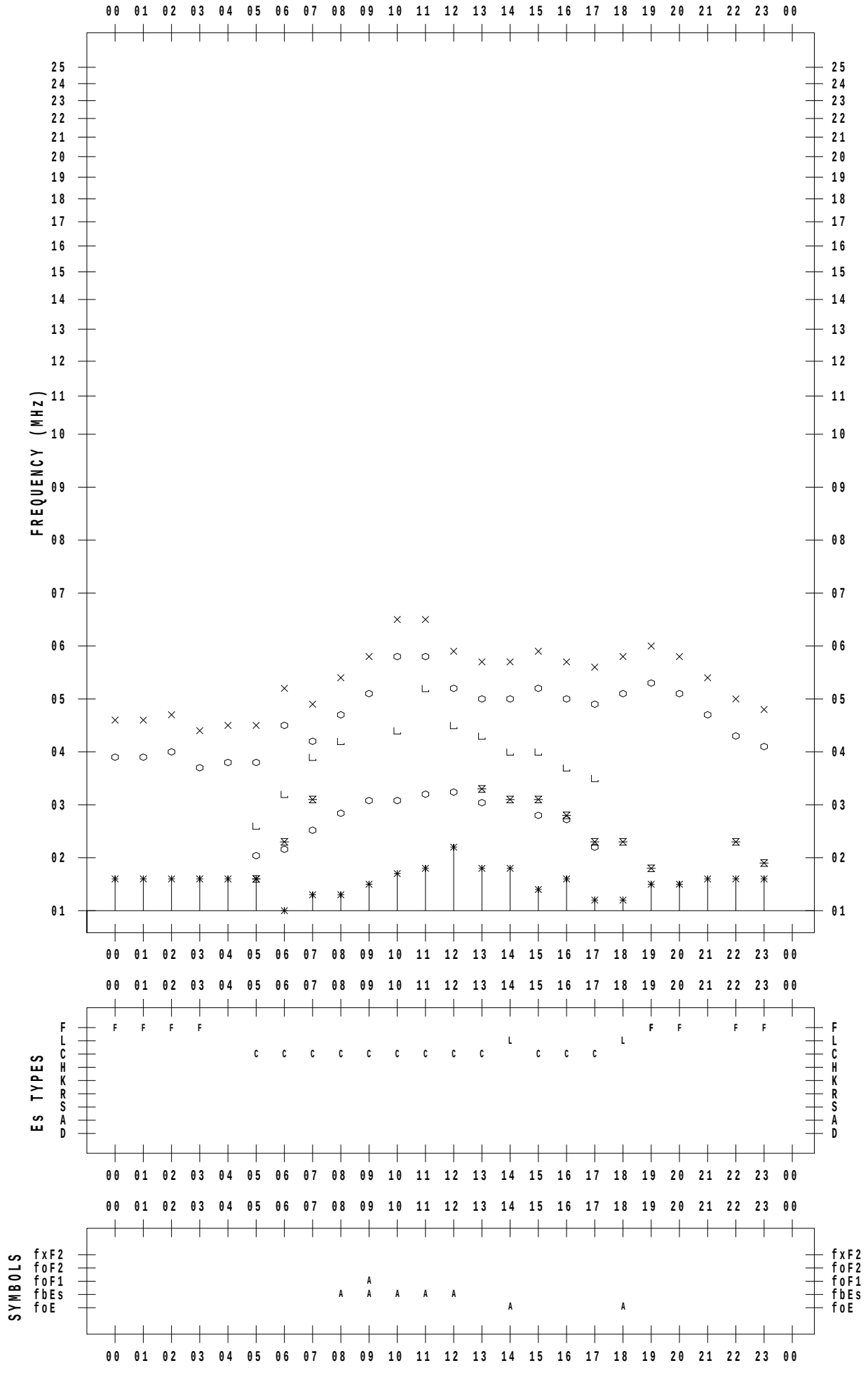
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/23

135 °E MEAN TIME



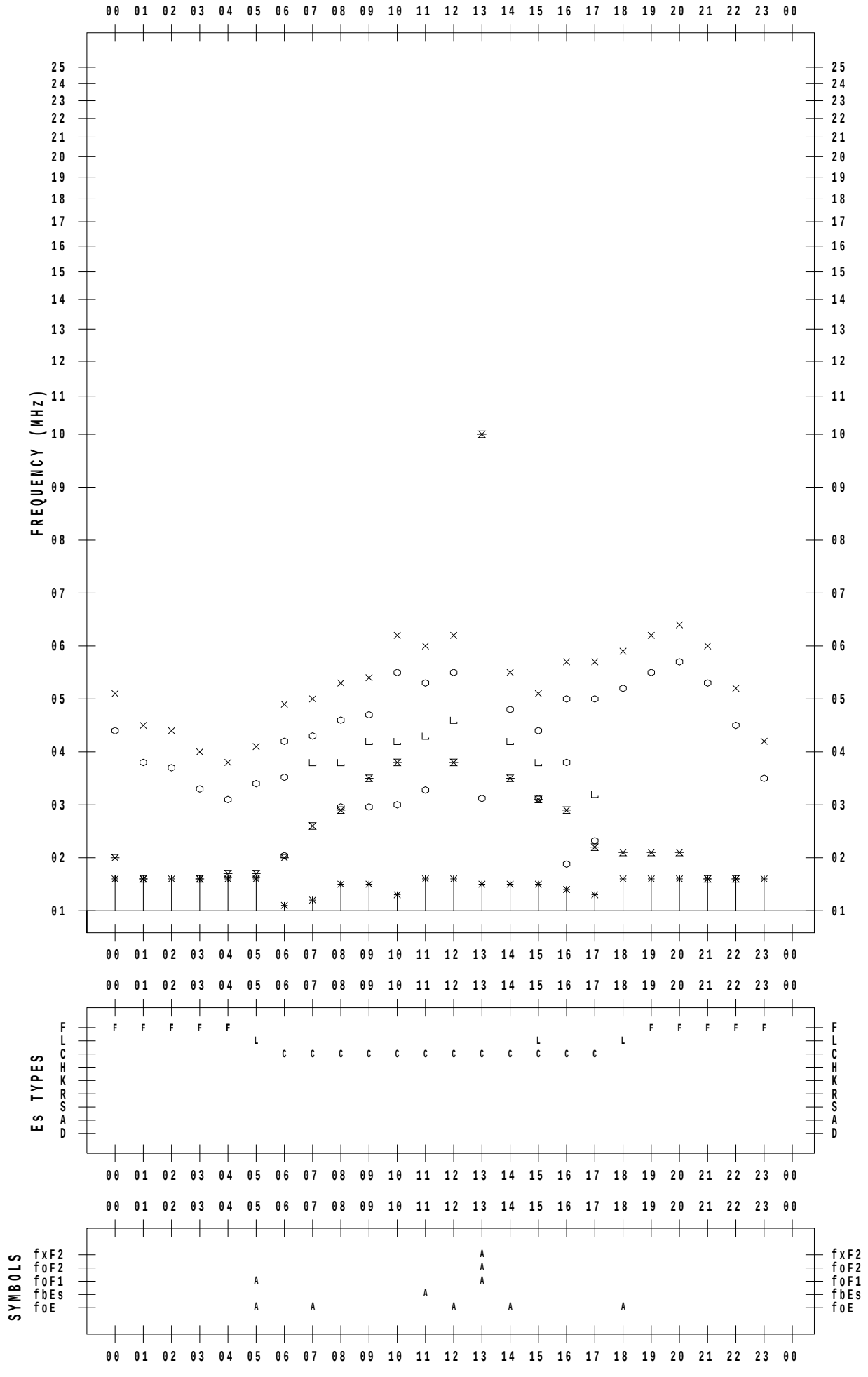
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/24

135 °E MEAN TIME



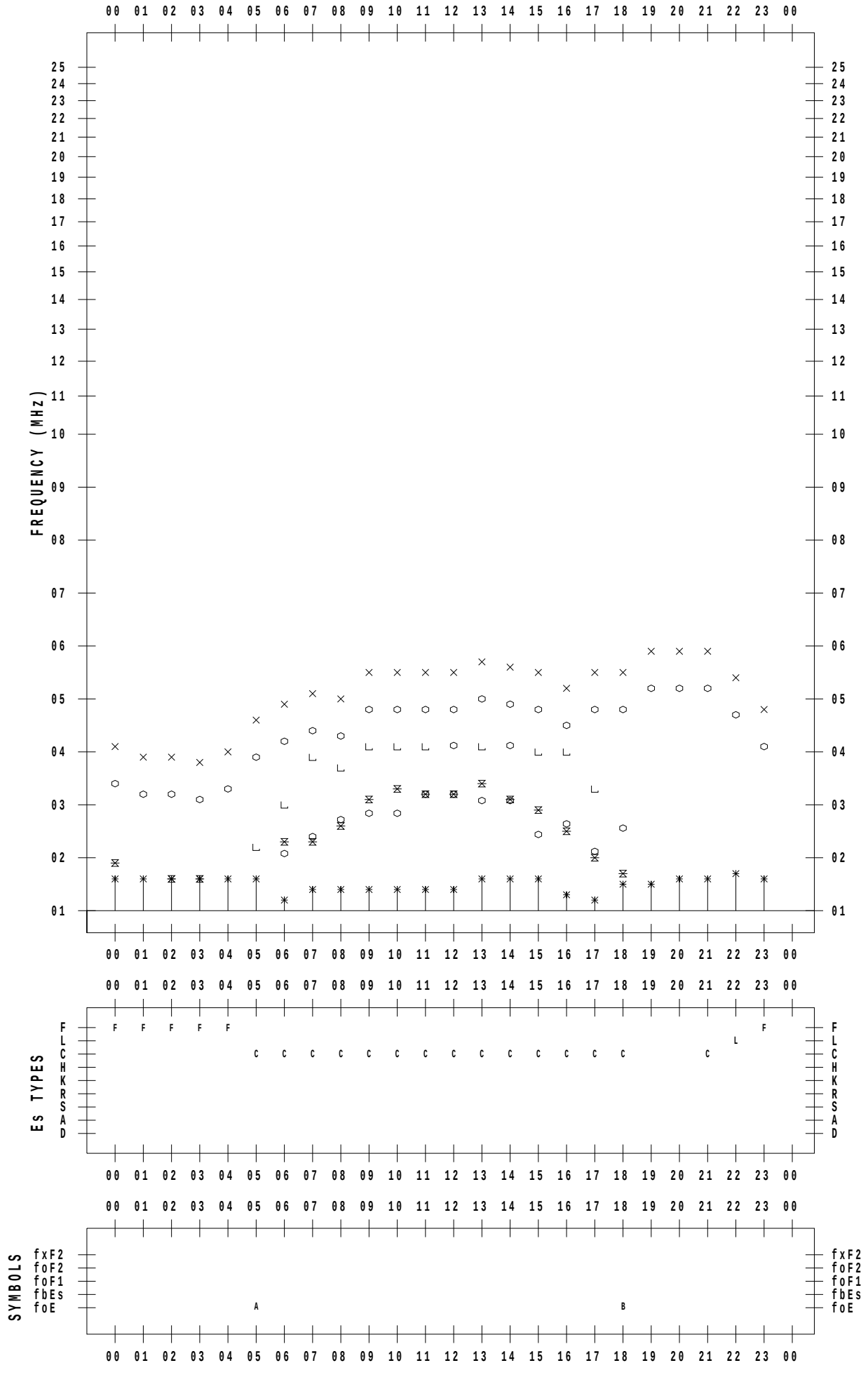
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/25

135 °E MEAN TIME



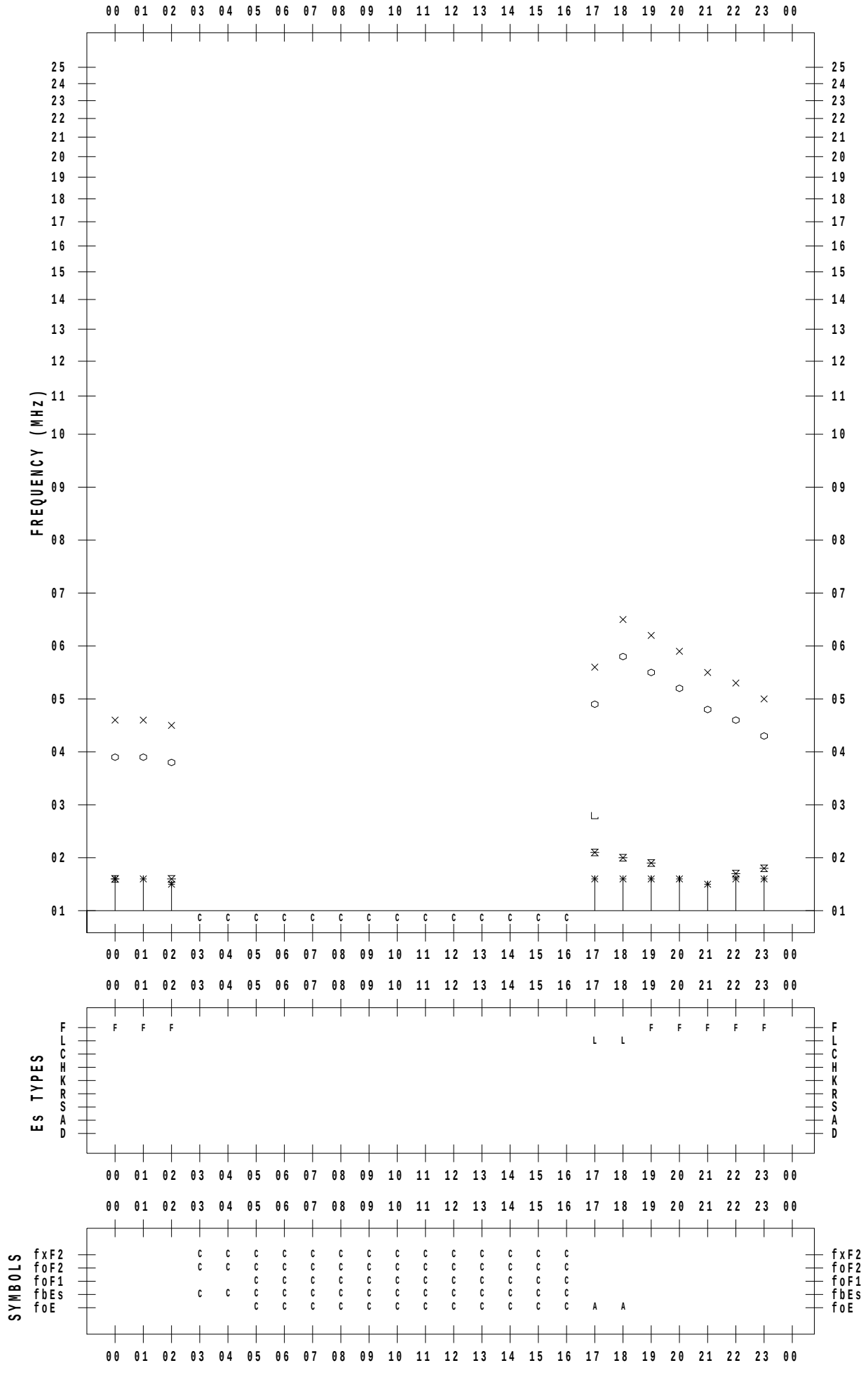
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/26

135 °E MEAN TIME



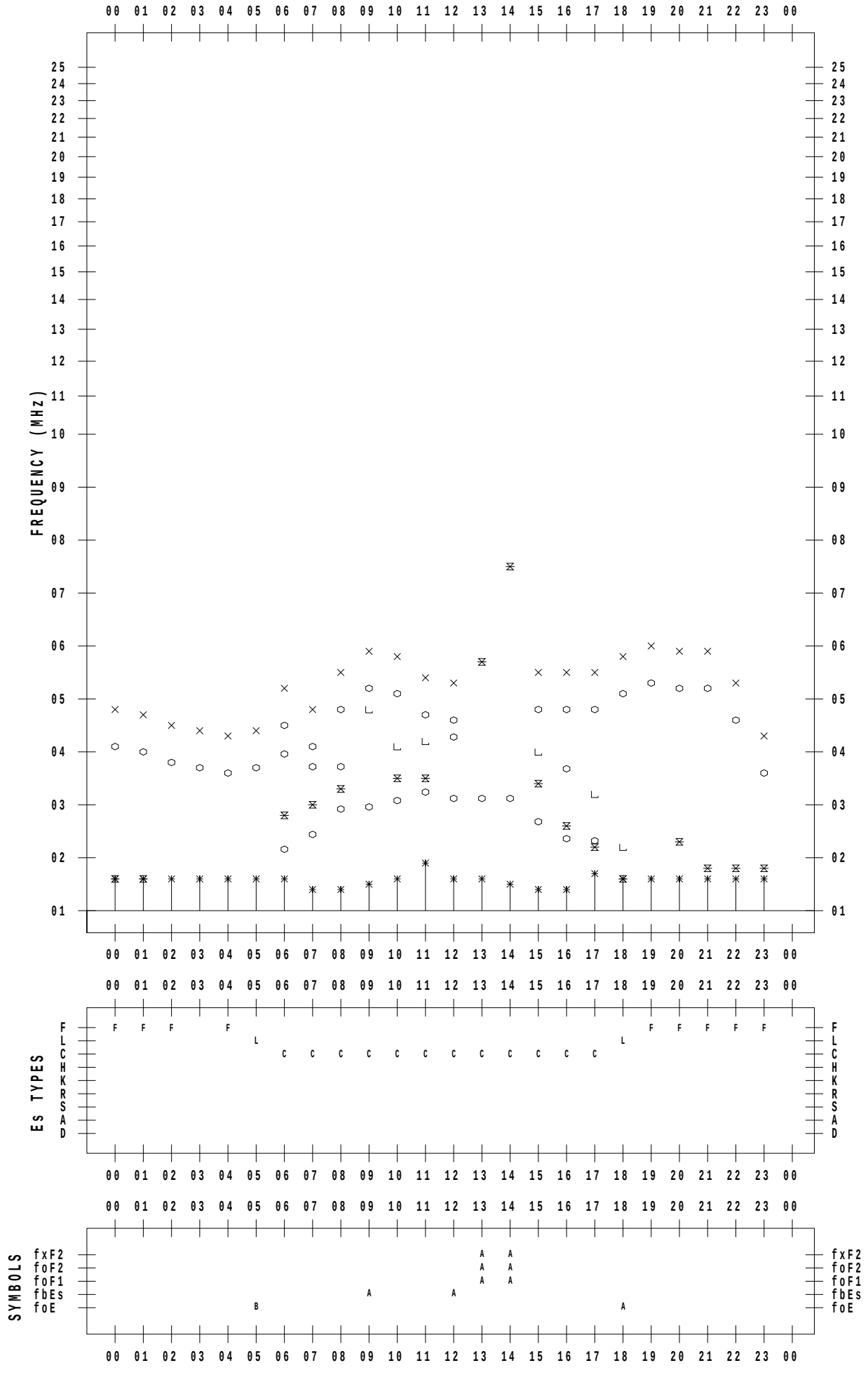
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/27

135 °E MEAN TIME



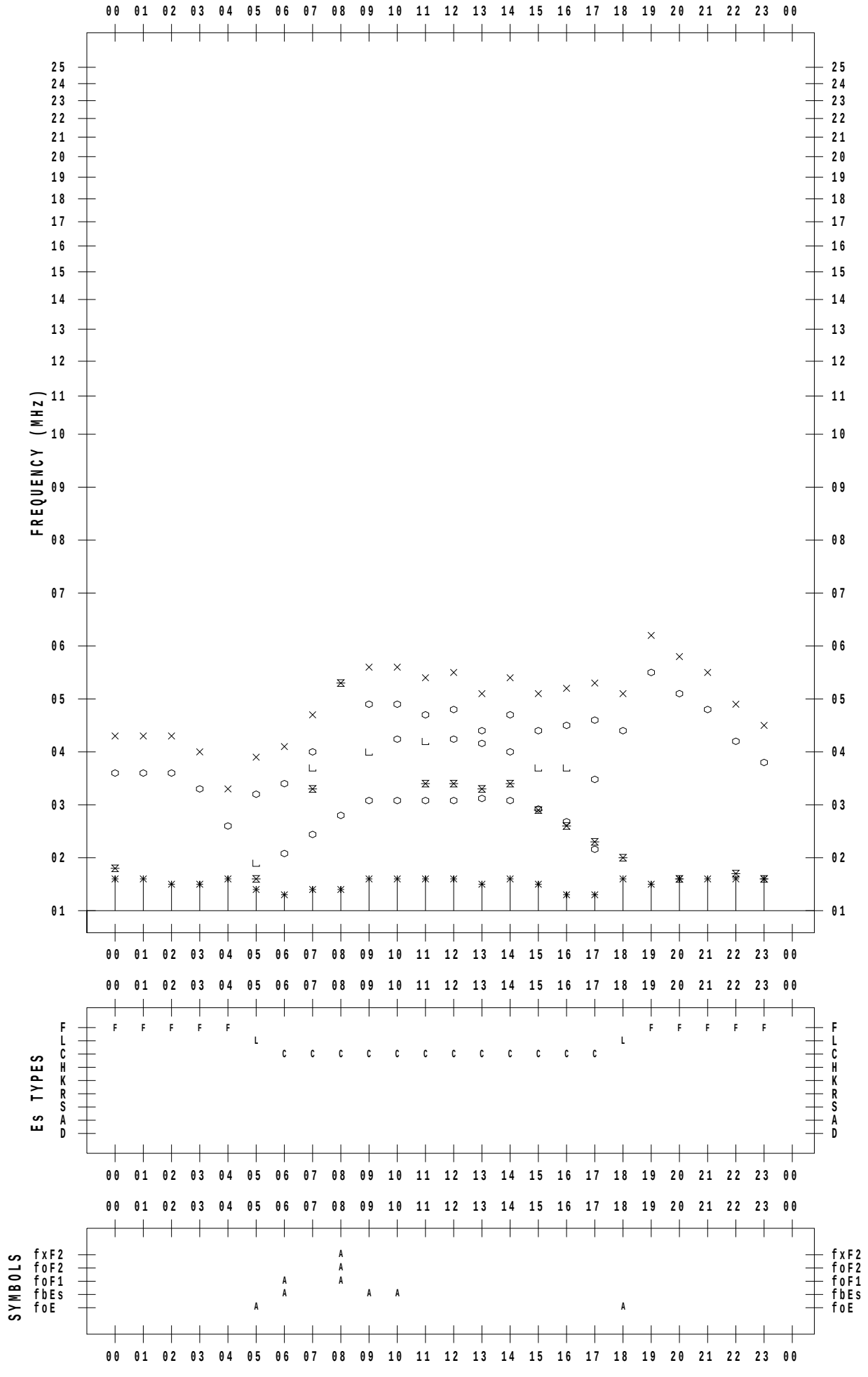
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/28

135 °E MEAN TIME



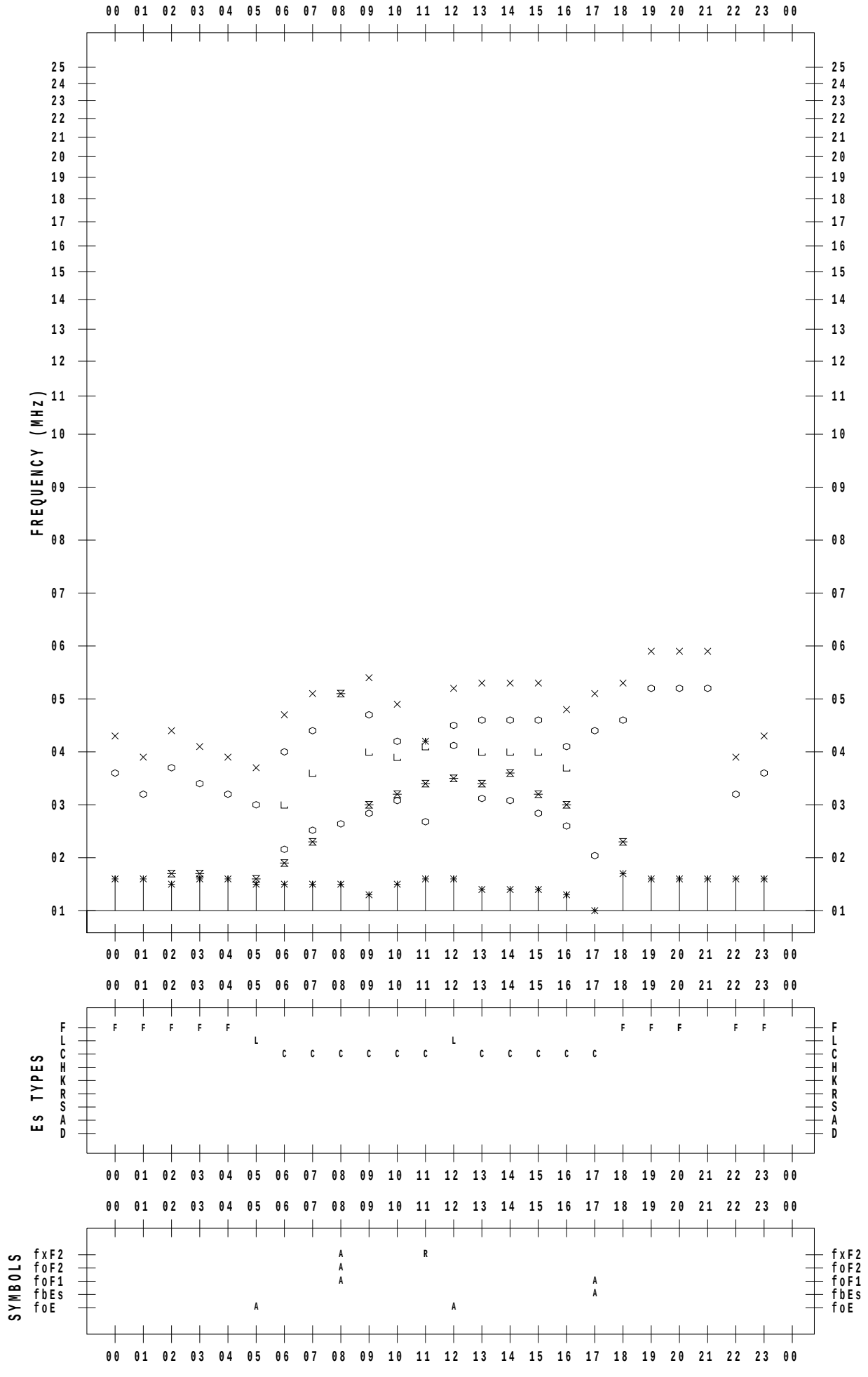
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/29

135 °E MEAN TIME



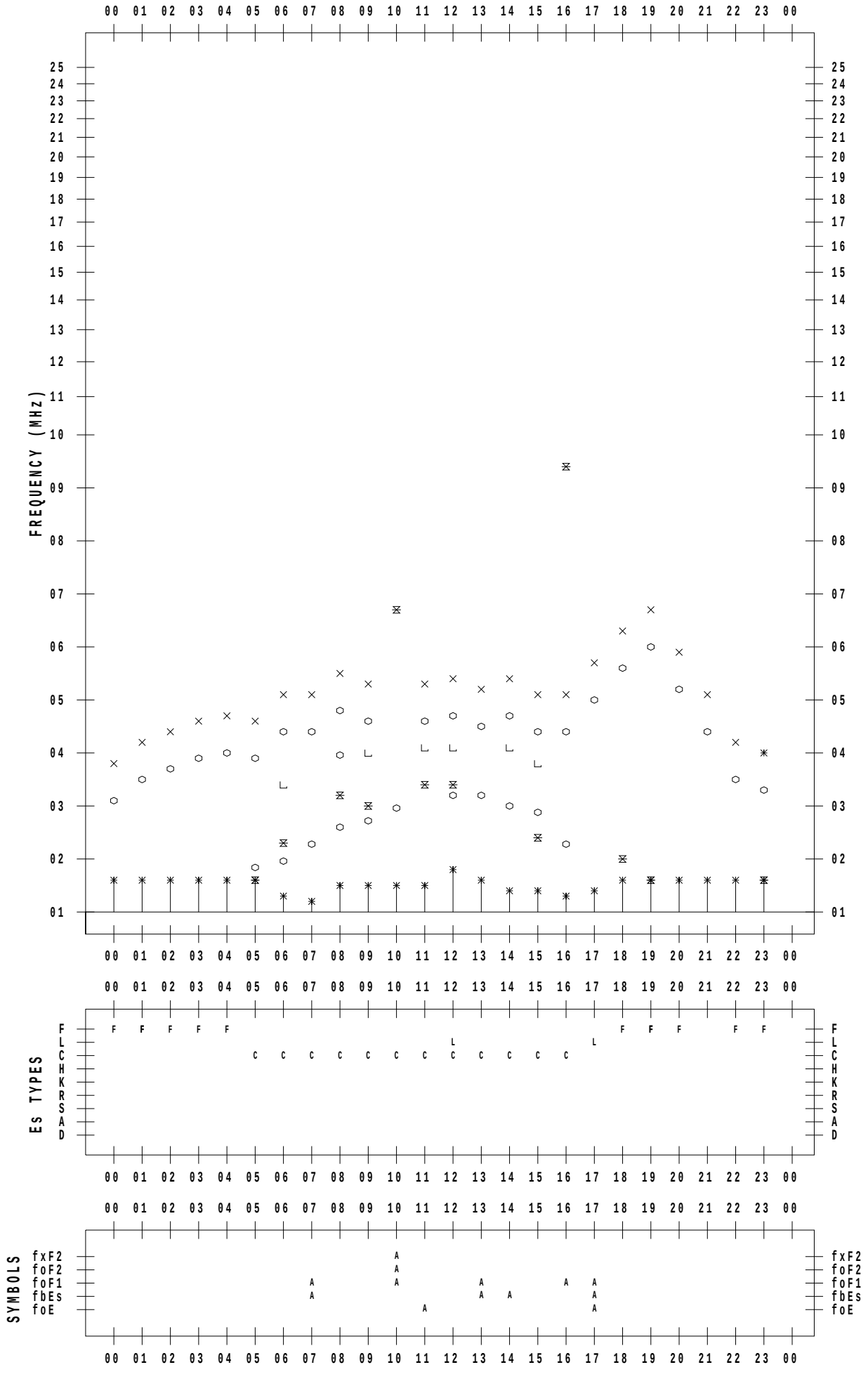
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/30

135 °E MEAN TIME



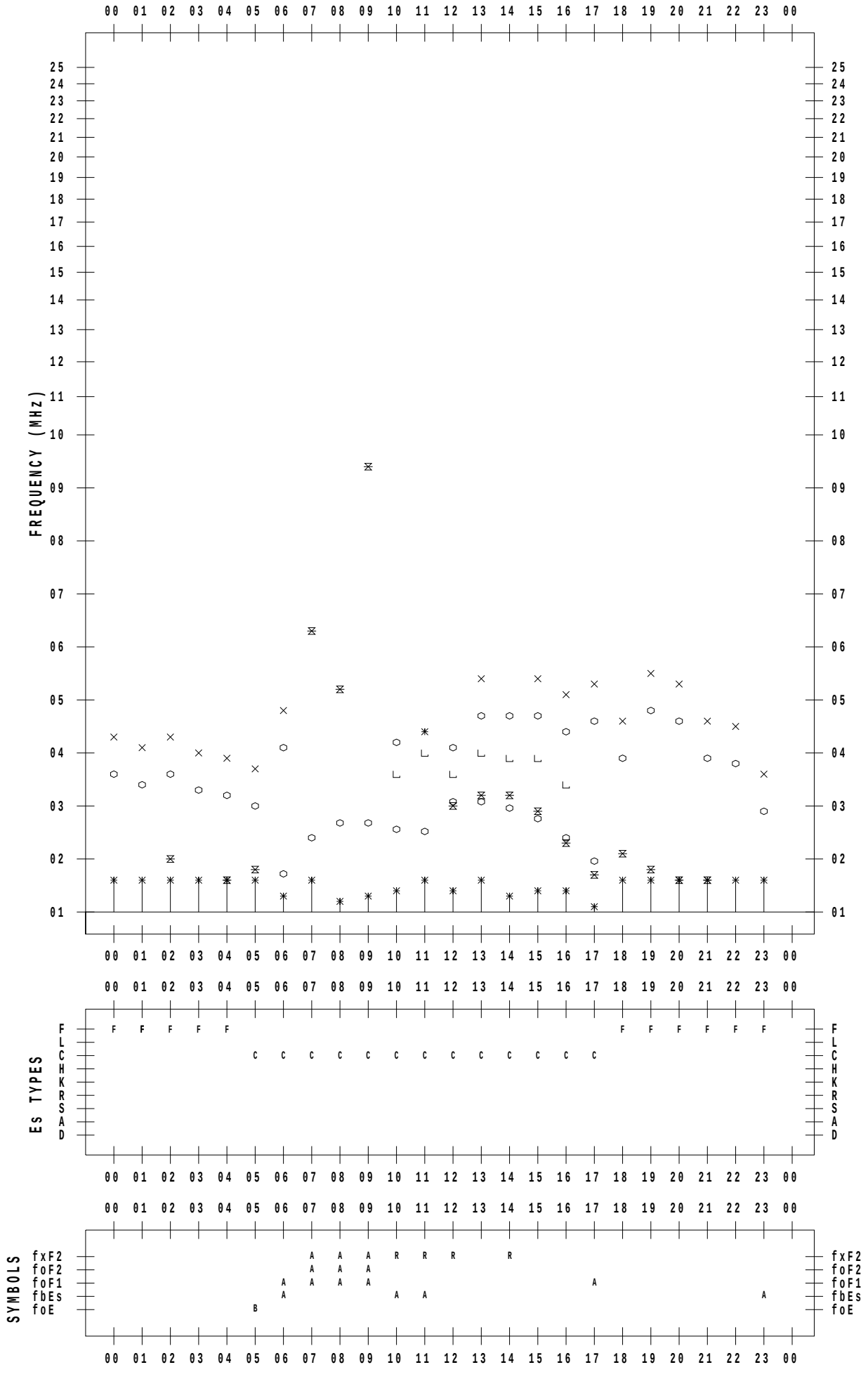
f-PLOT DATA

SCALER : K.FUKUSHIMA

STATION : Wakkanai

DATE : 2020/ 8/31

135 °E MEAN TIME



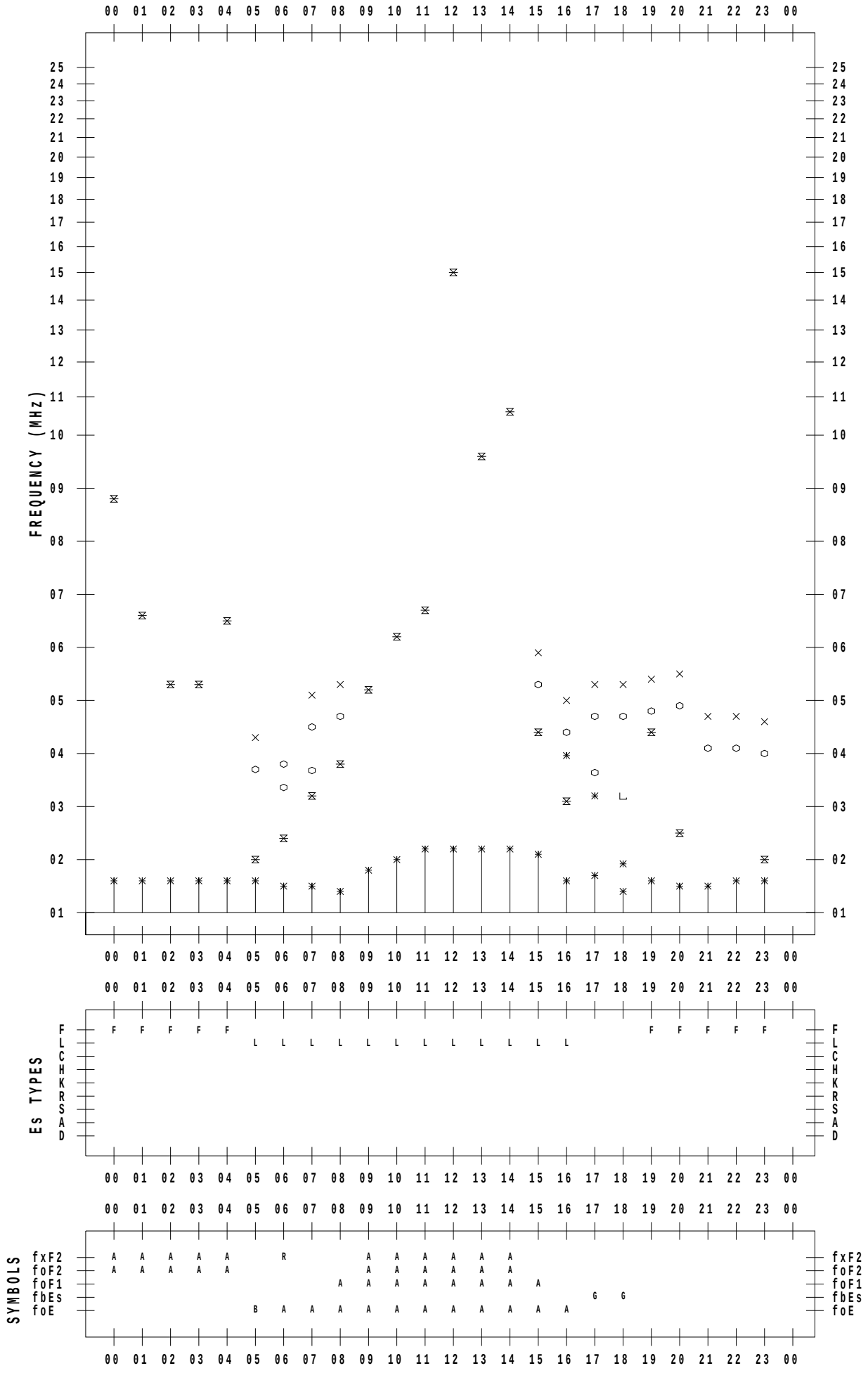
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 1

135 °E MEAN TIME



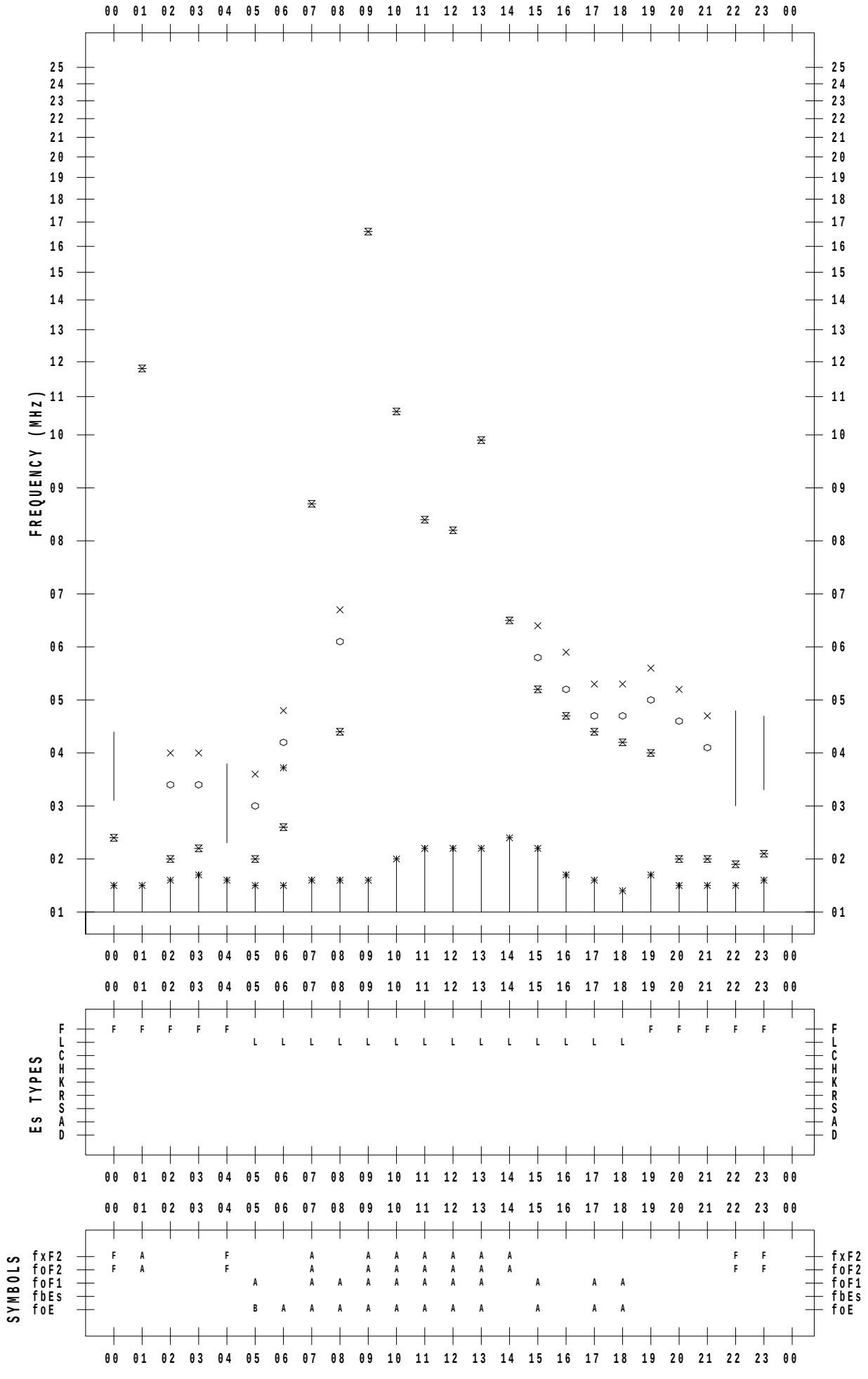
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 2

135 °E MEAN TIME



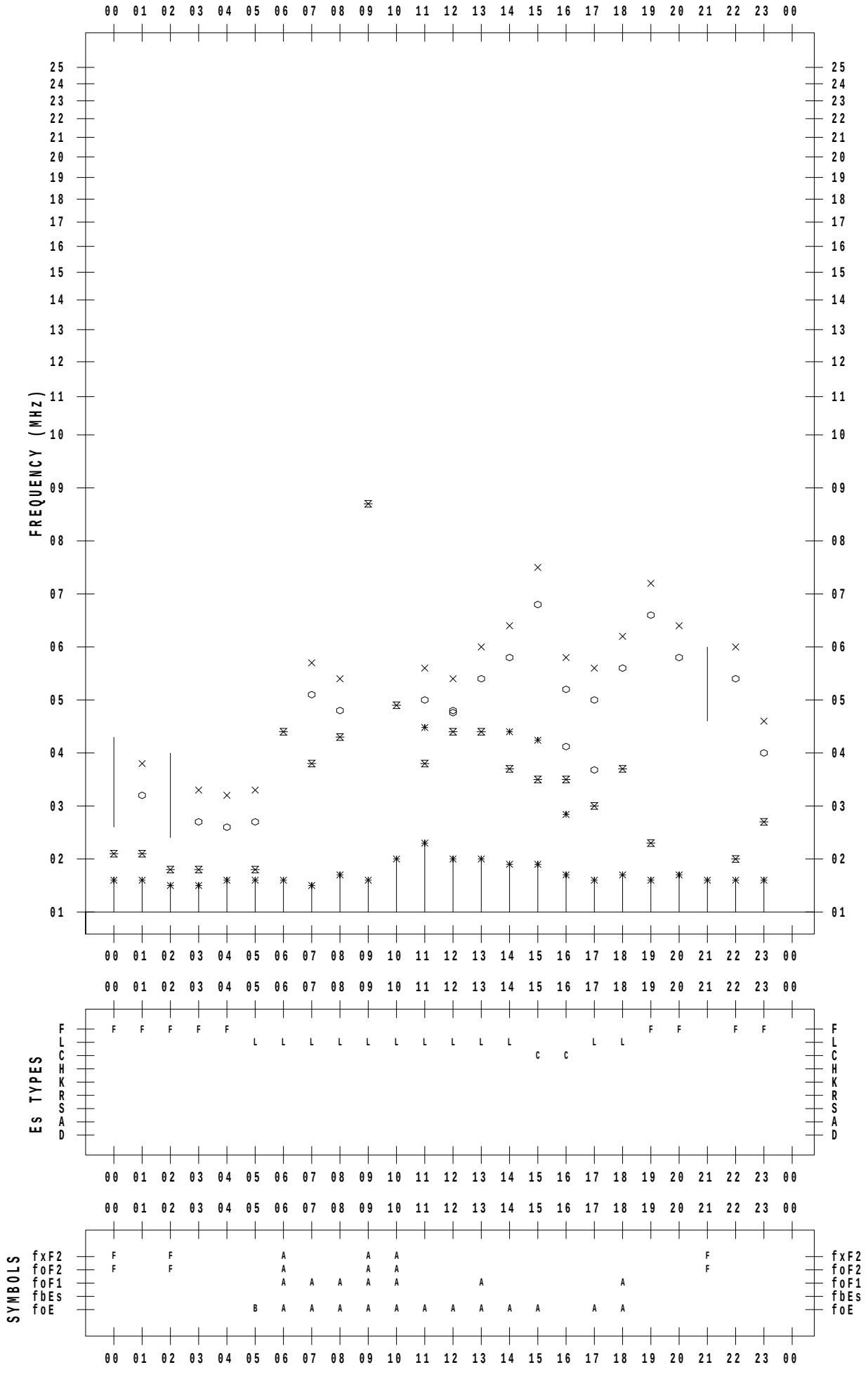
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 3

135 °E MEAN TIME



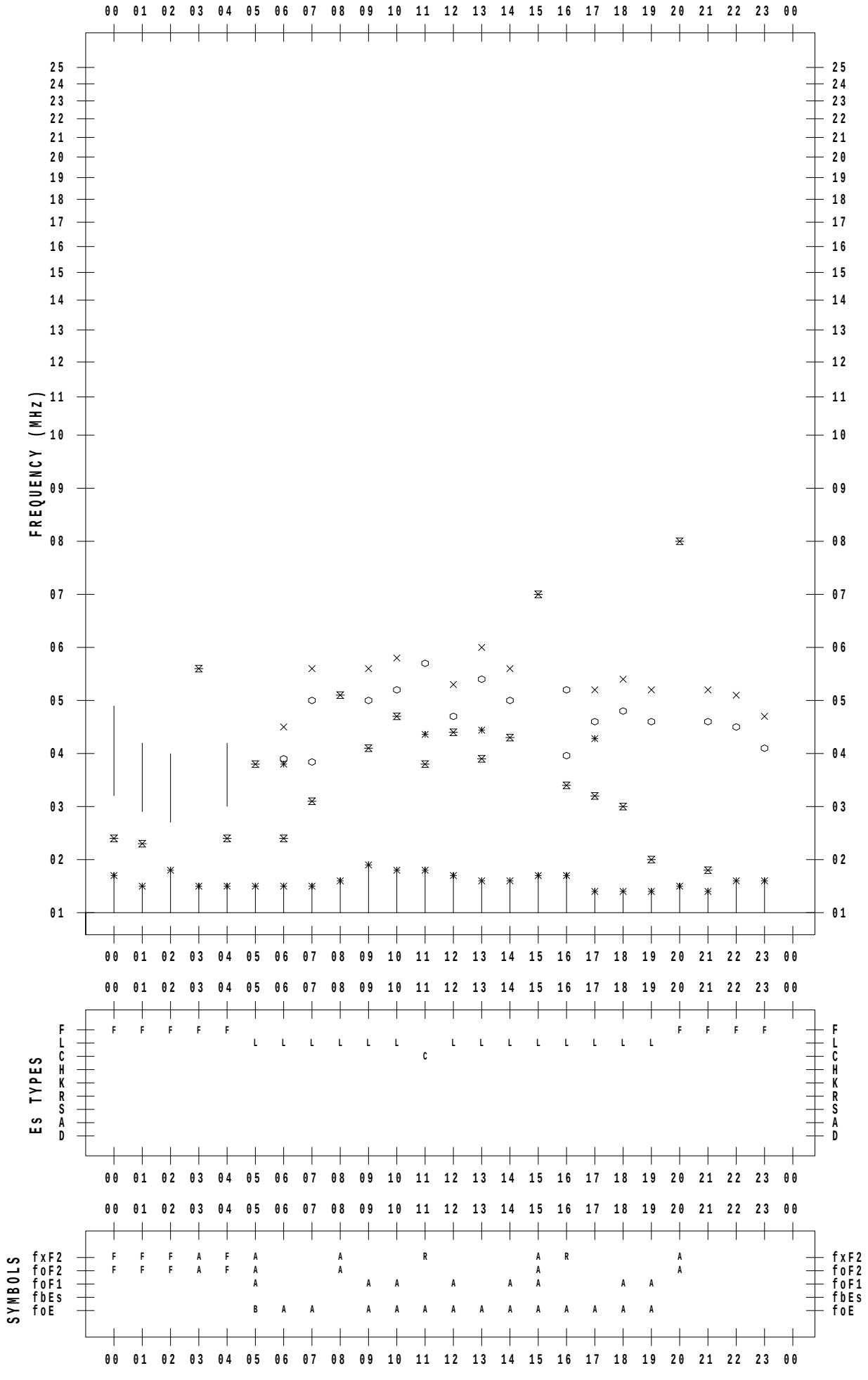
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 4

135 °E MEAN TIME



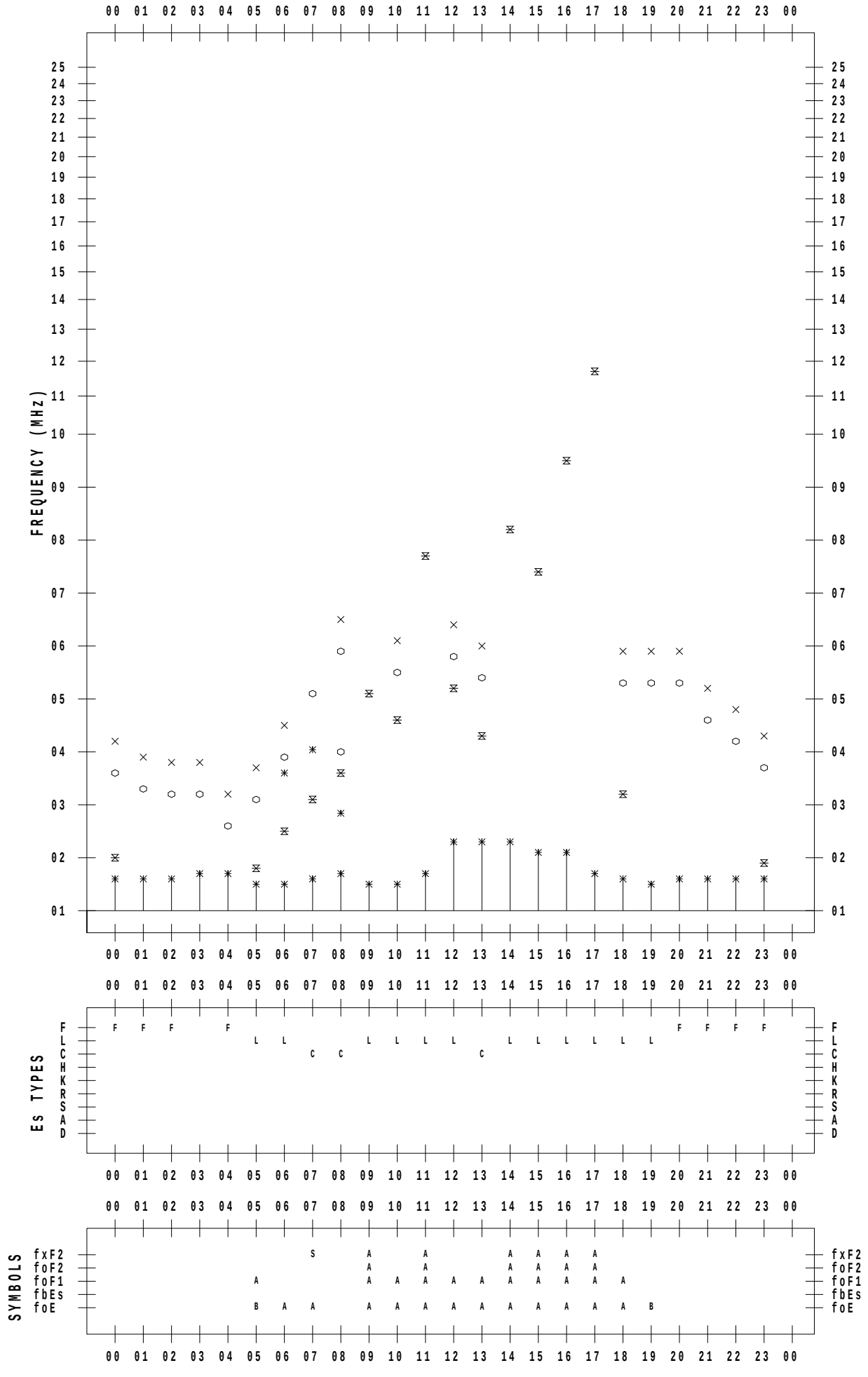
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 5

135 °E MEAN TIME



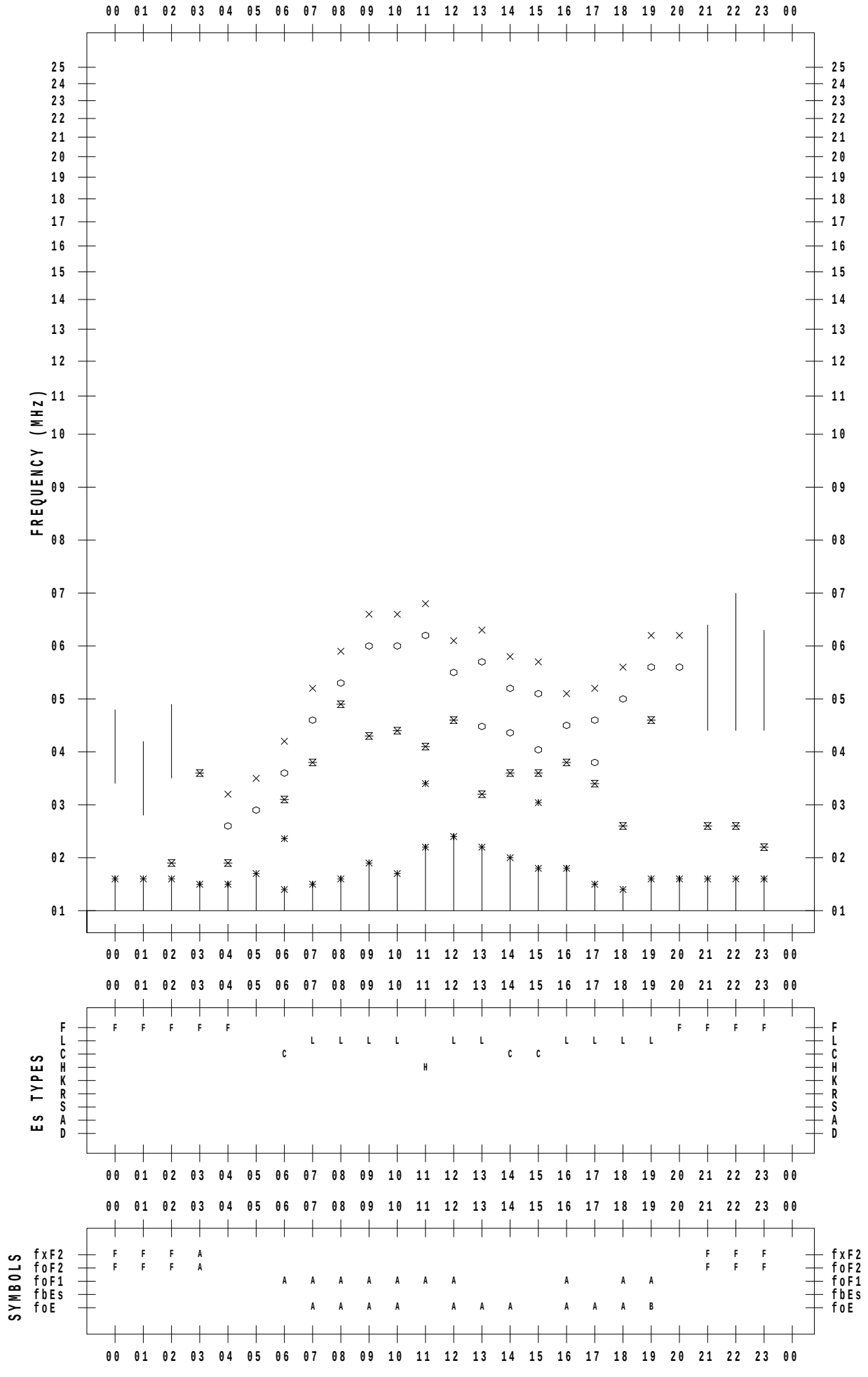
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 6

135 °E MEAN TIME



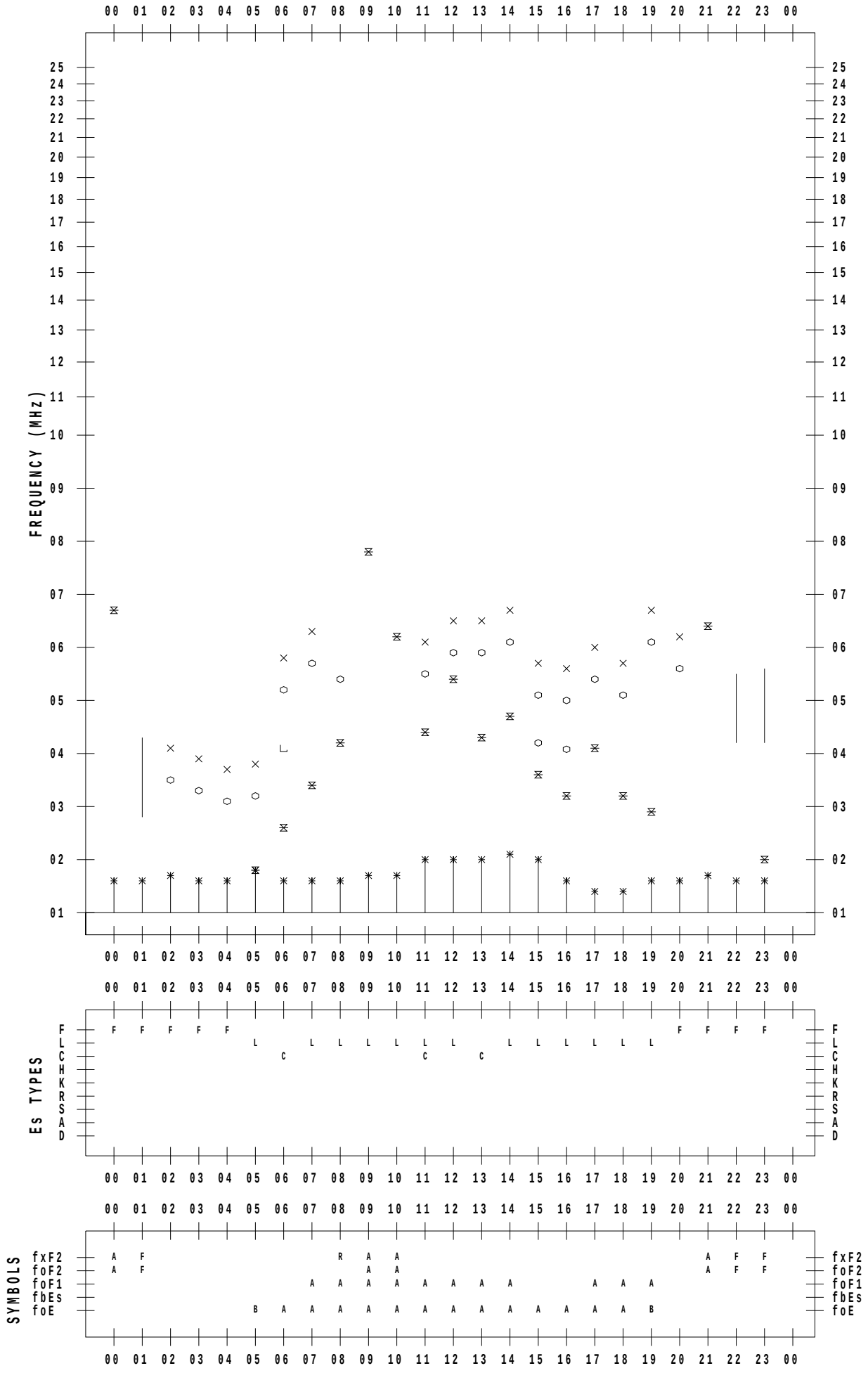
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 7

135 °E MEAN TIME



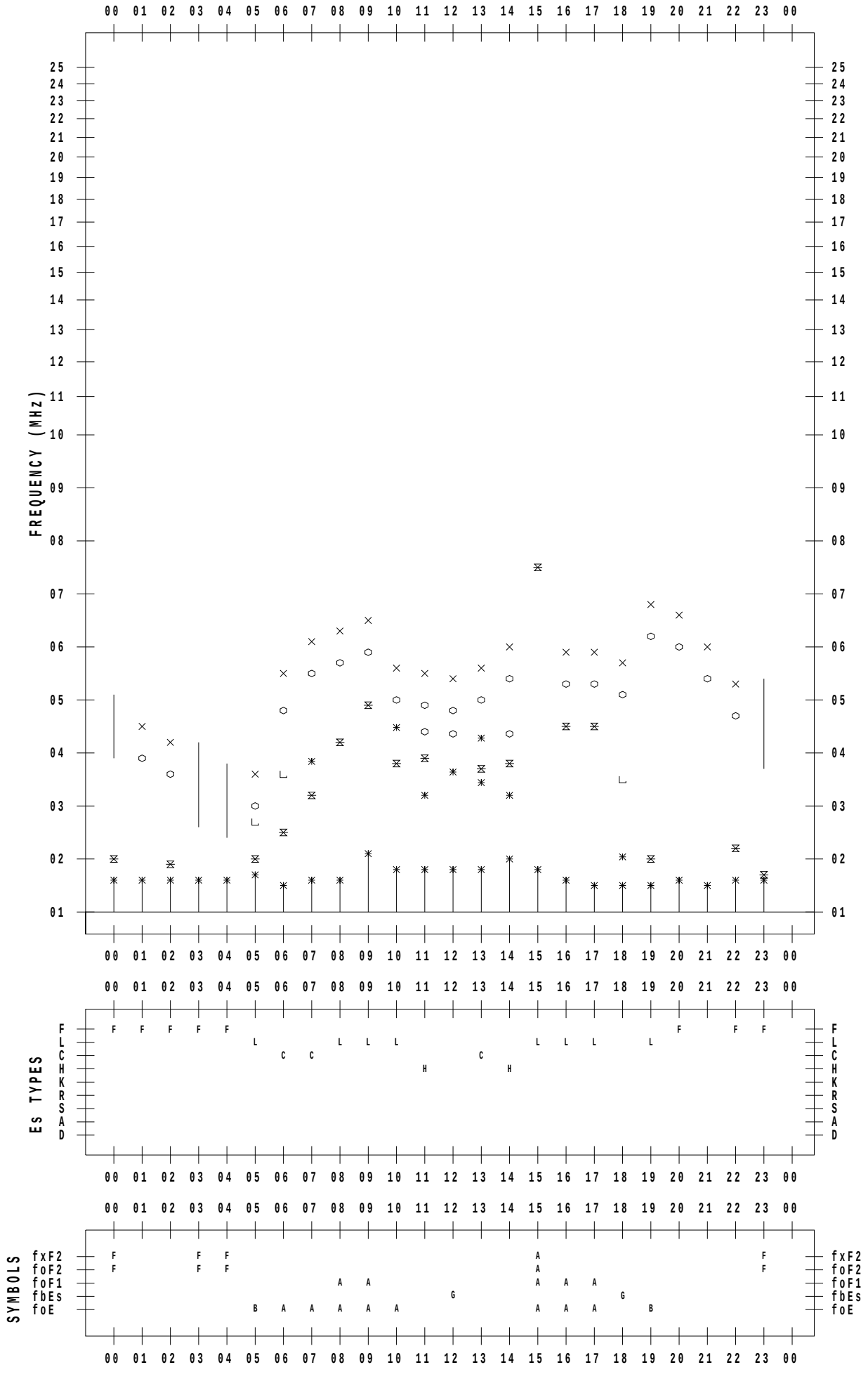
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 8

135 °E MEAN TIME



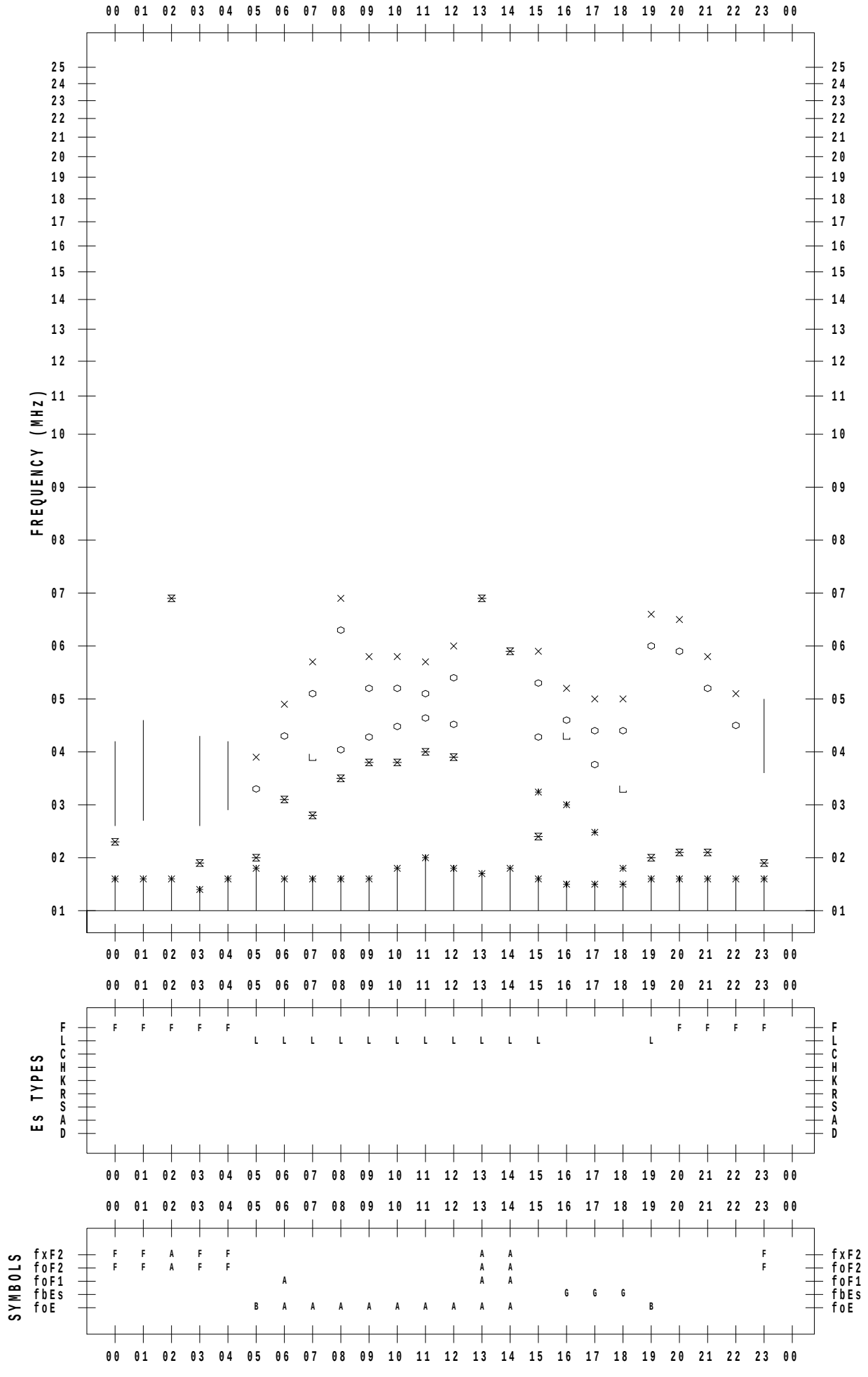
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/ 9

135 °E MEAN TIME



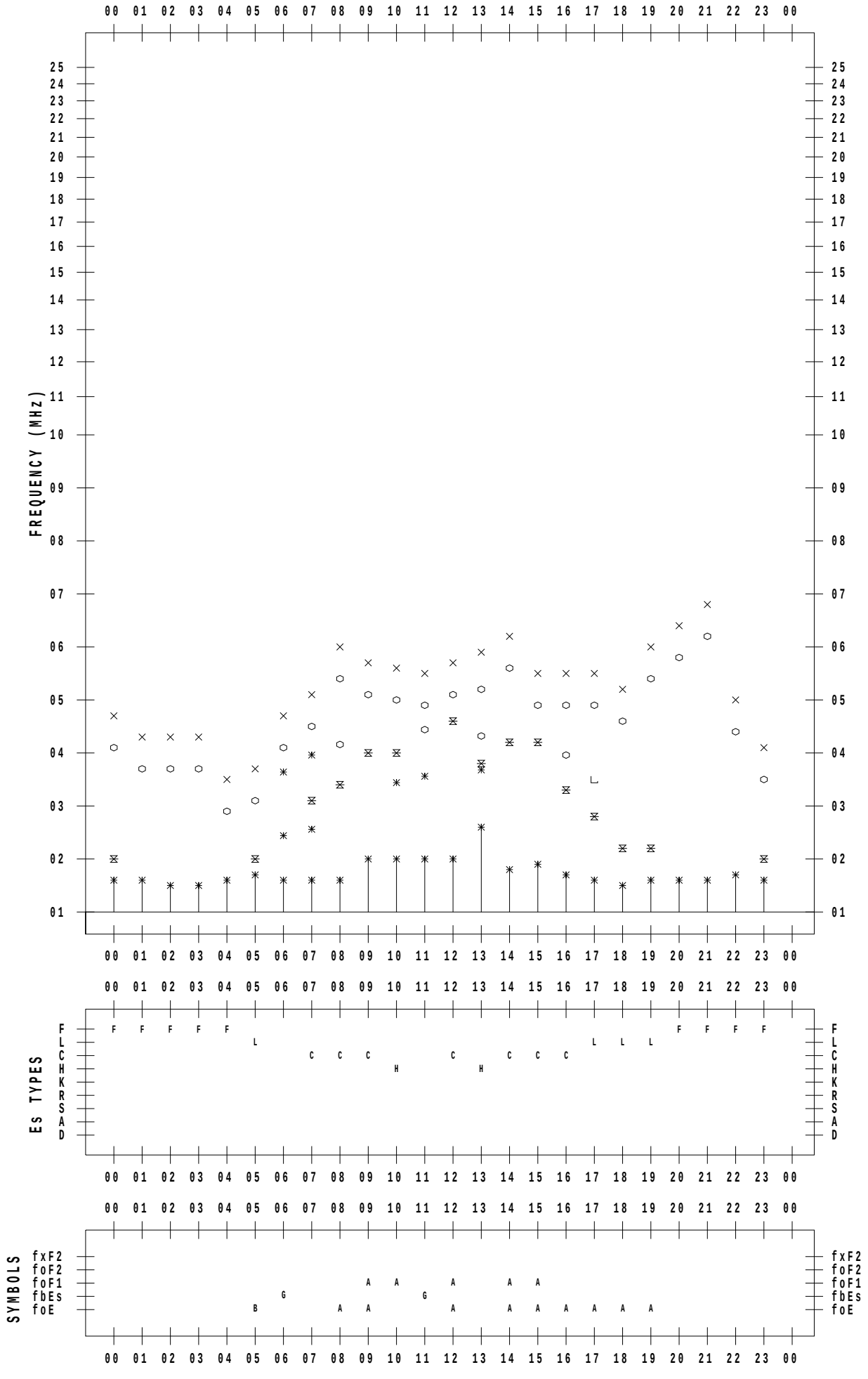
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/10

135 °E MEAN TIME



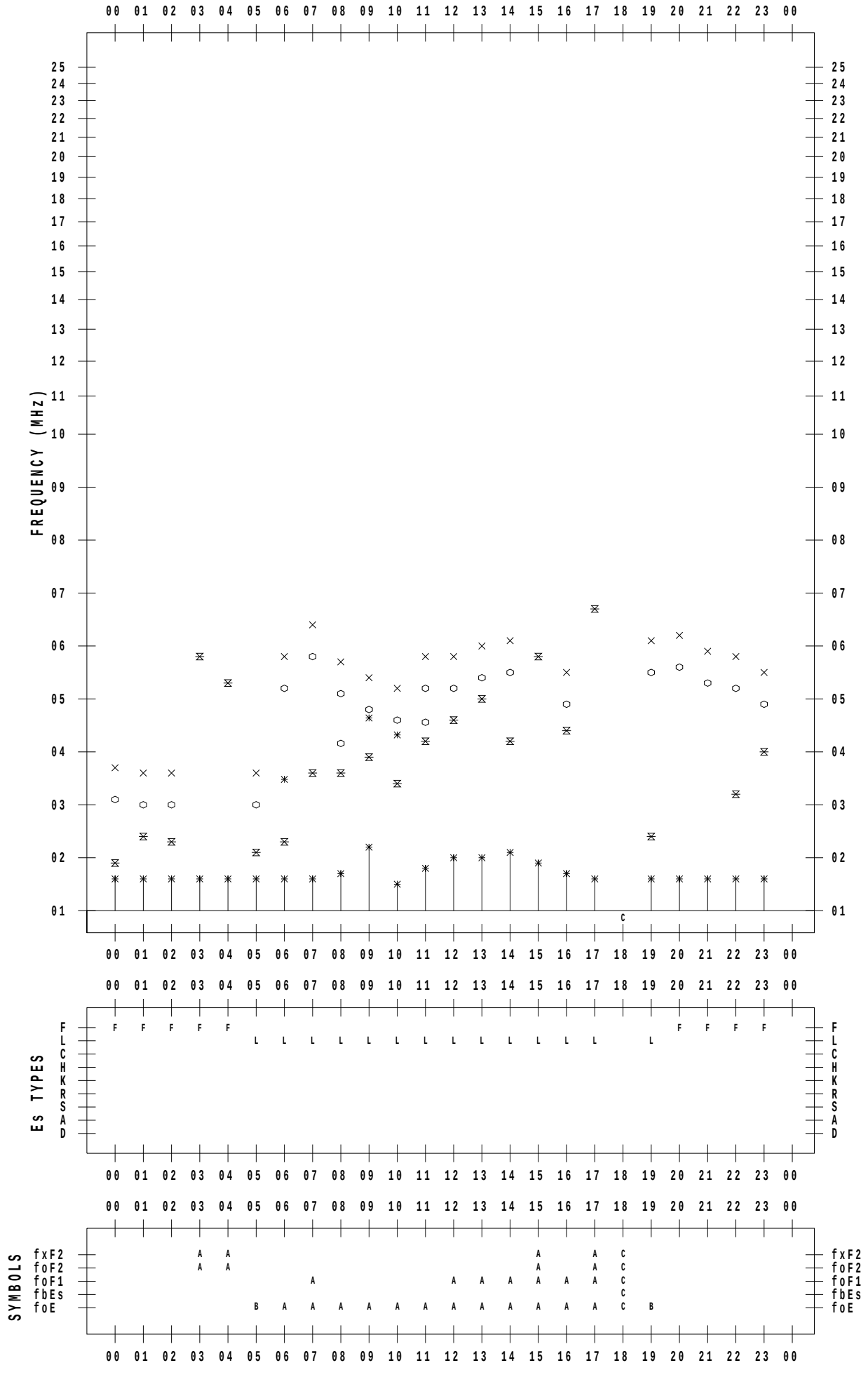
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/11

135 °E MEAN TIME



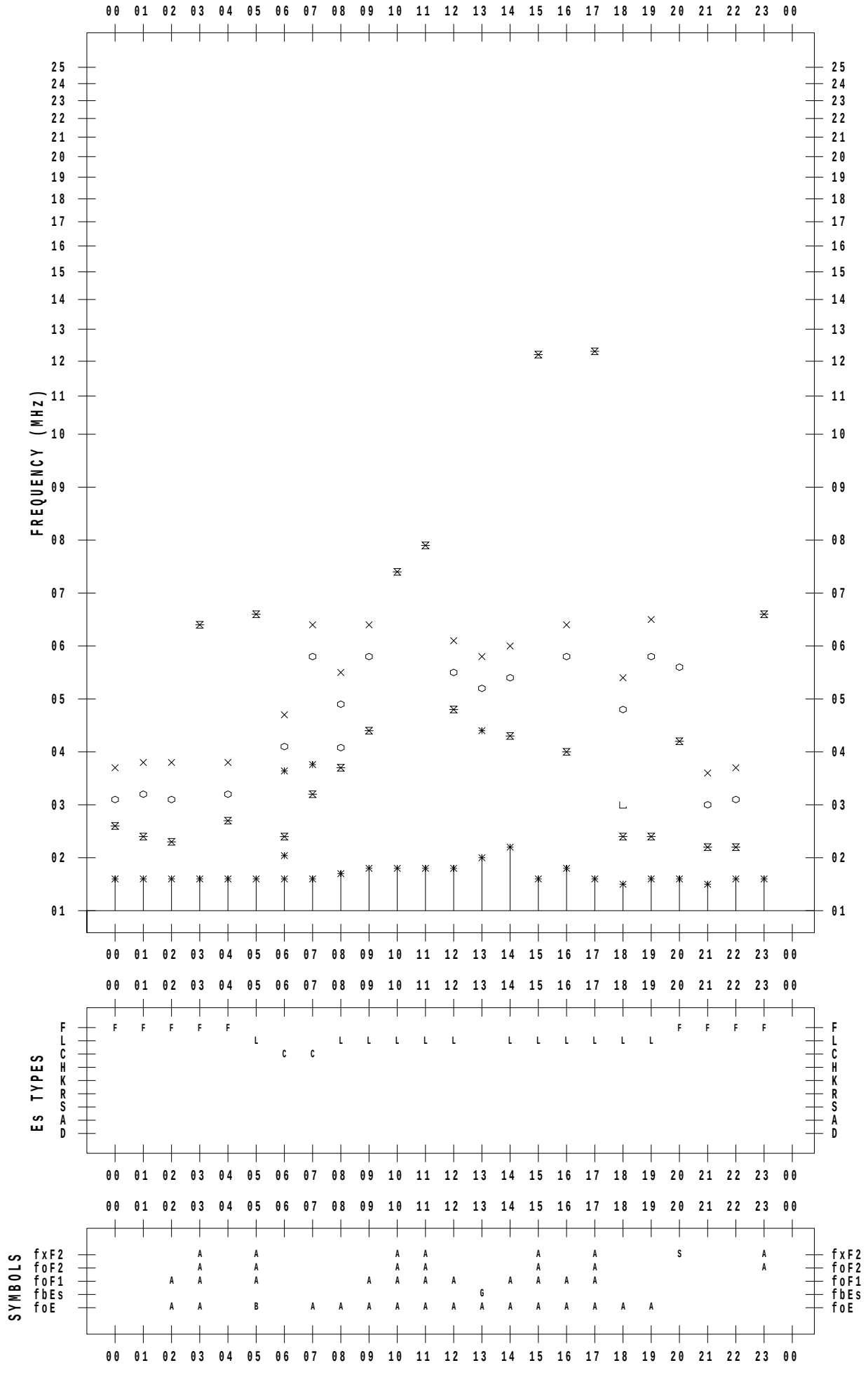
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/12

135 °E MEAN TIME



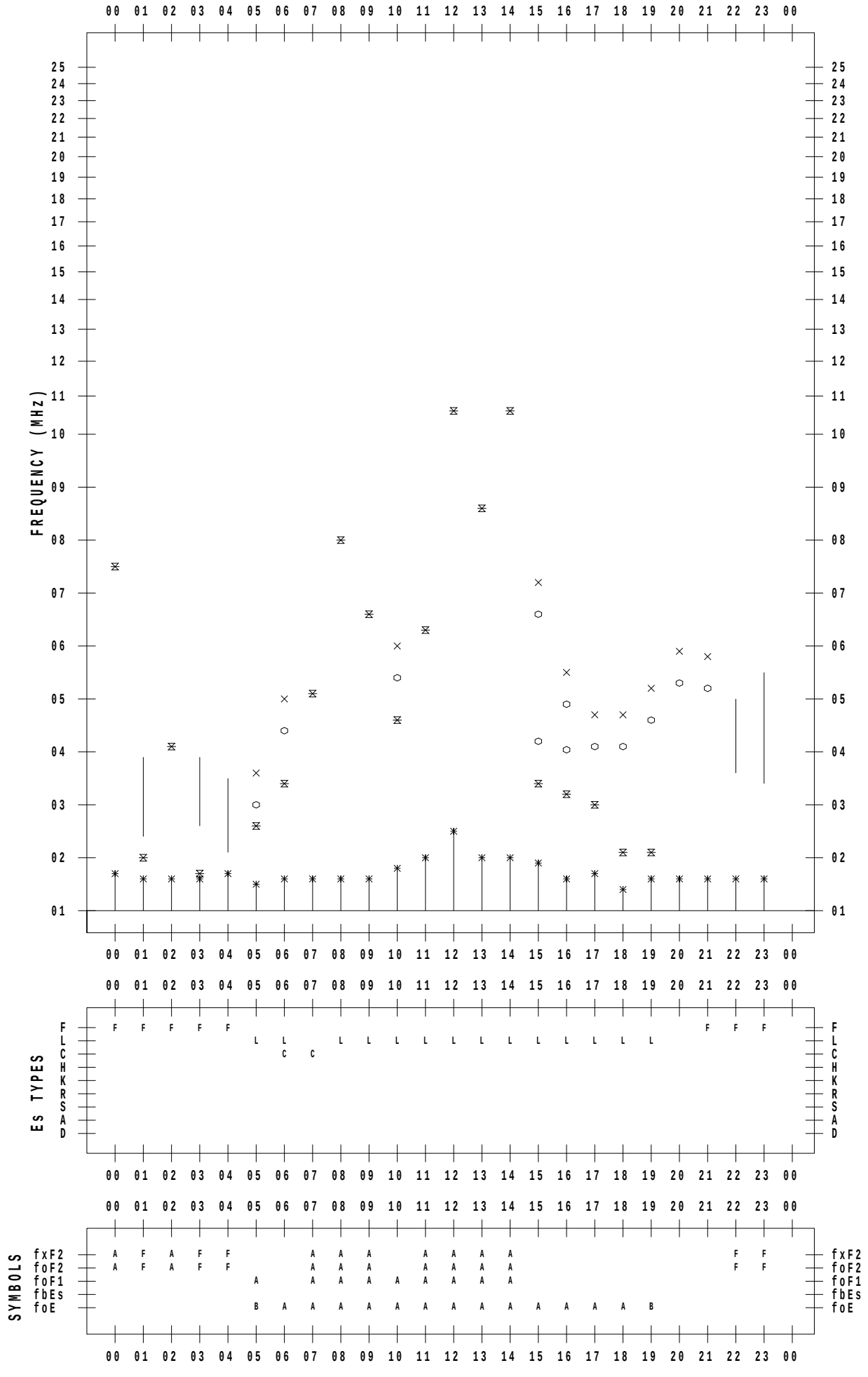
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/13

135 °E MEAN TIME



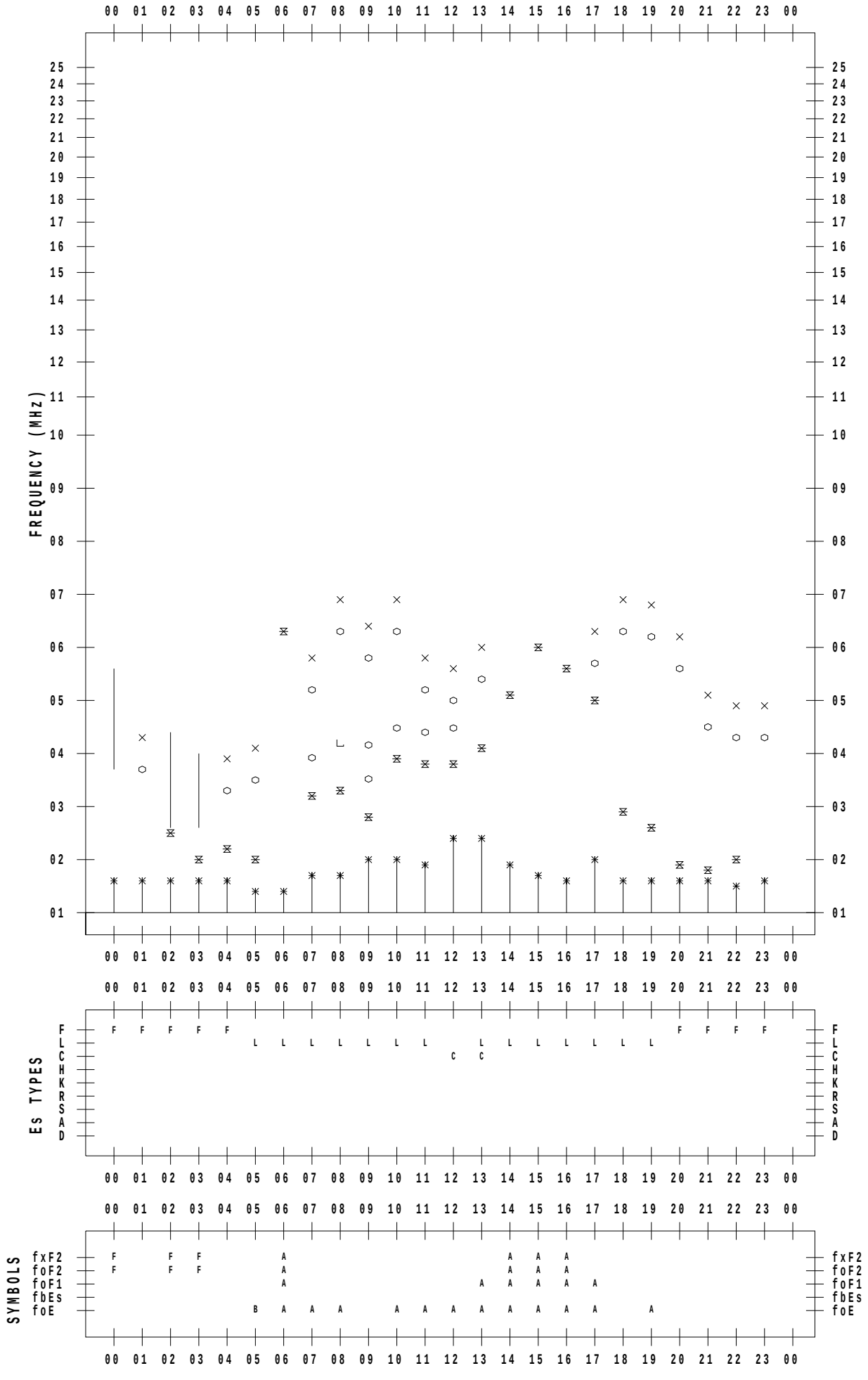
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/14

135 °E MEAN TIME



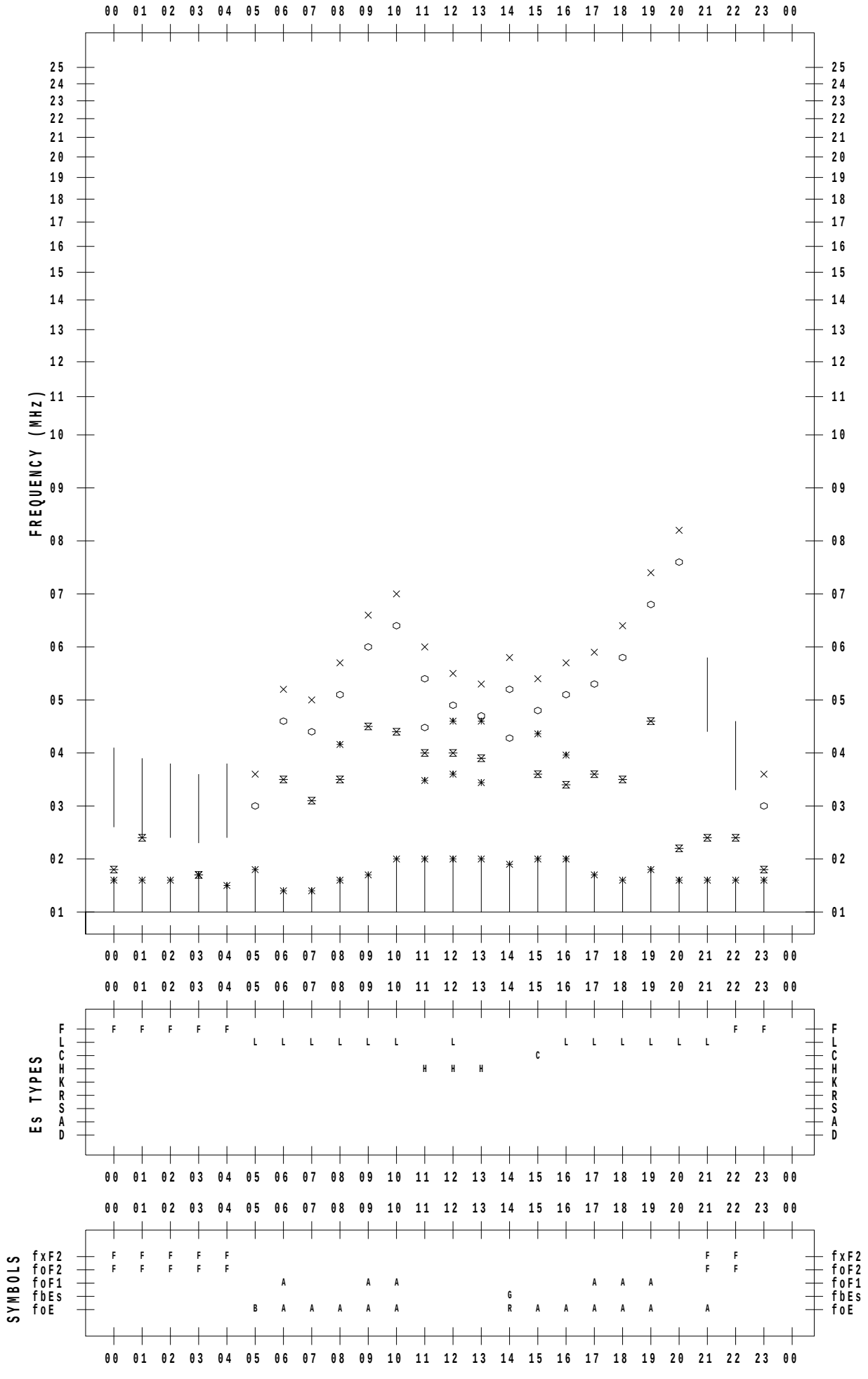
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/15

135 °E MEAN TIME



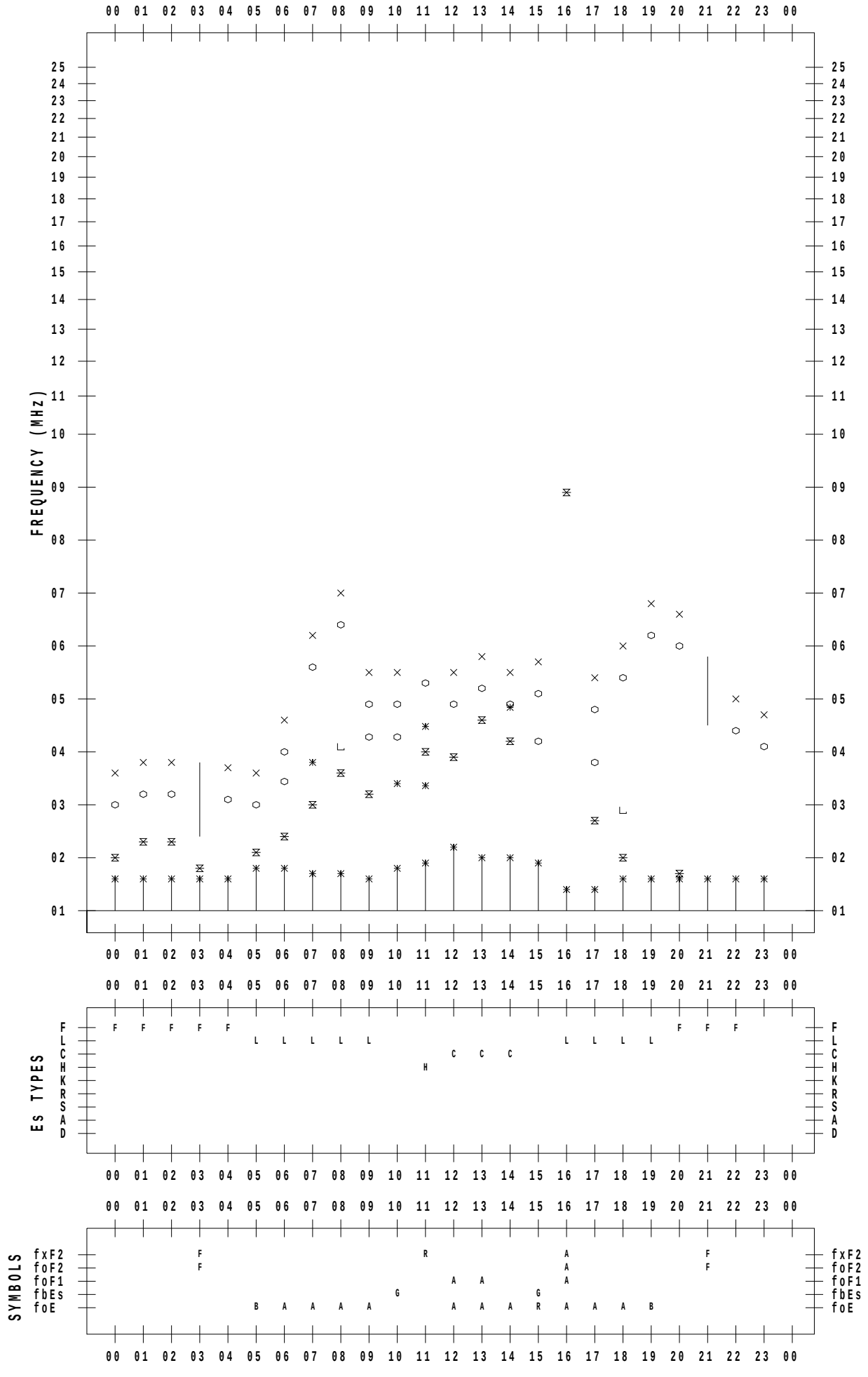
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/16

135 °E MEAN TIME



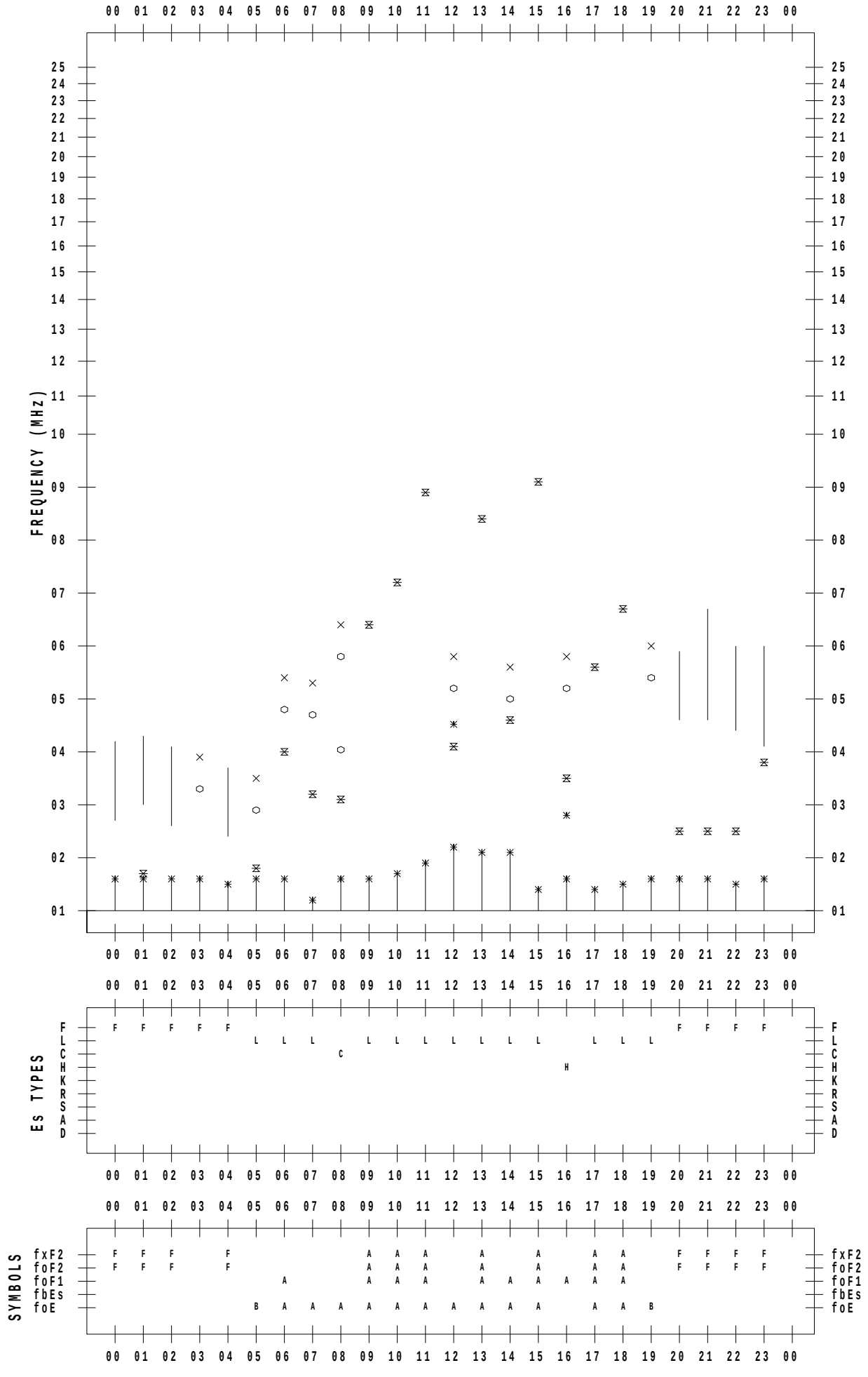
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/17

135 °E MEAN TIME



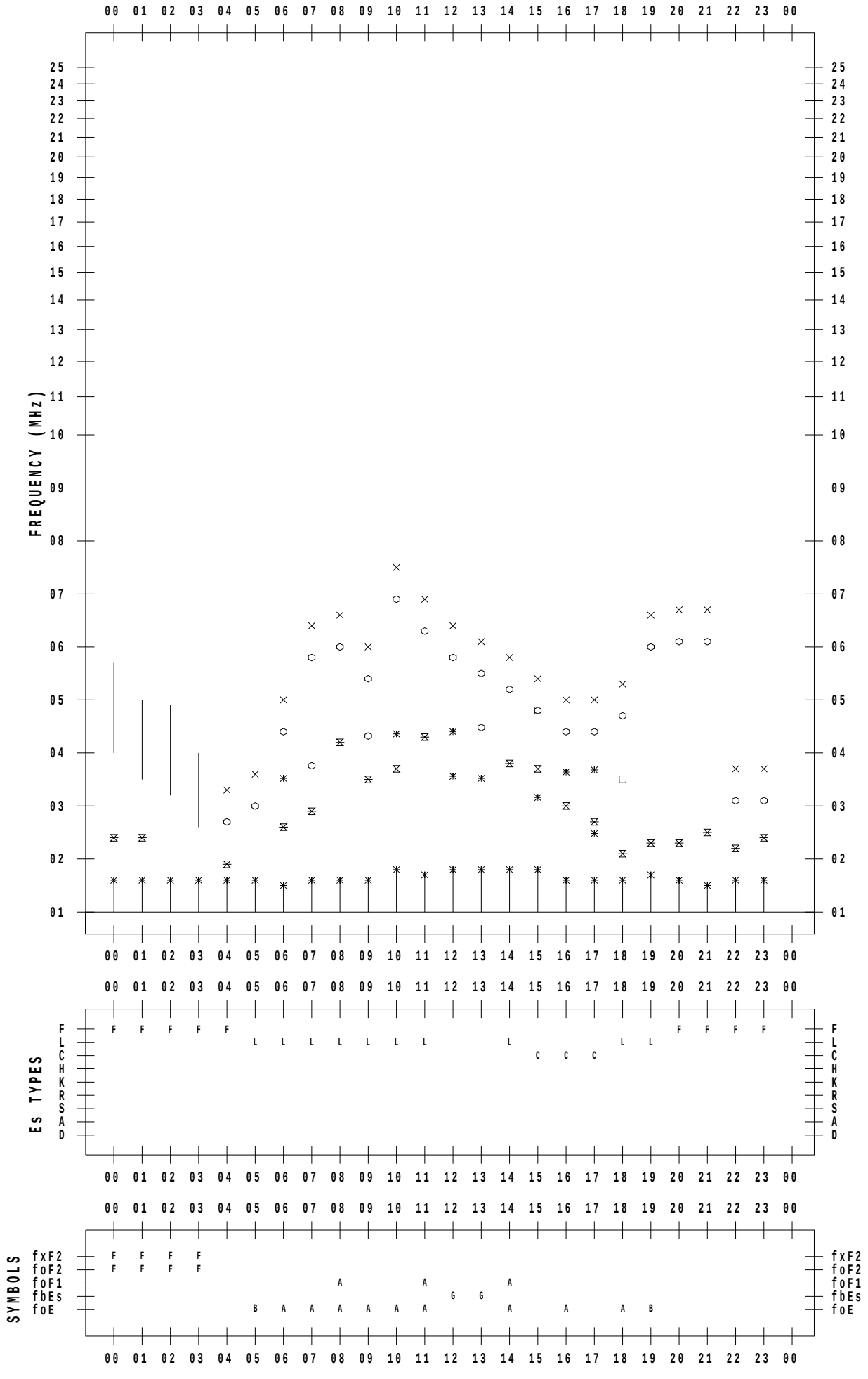
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/18

135 °E MEAN TIME



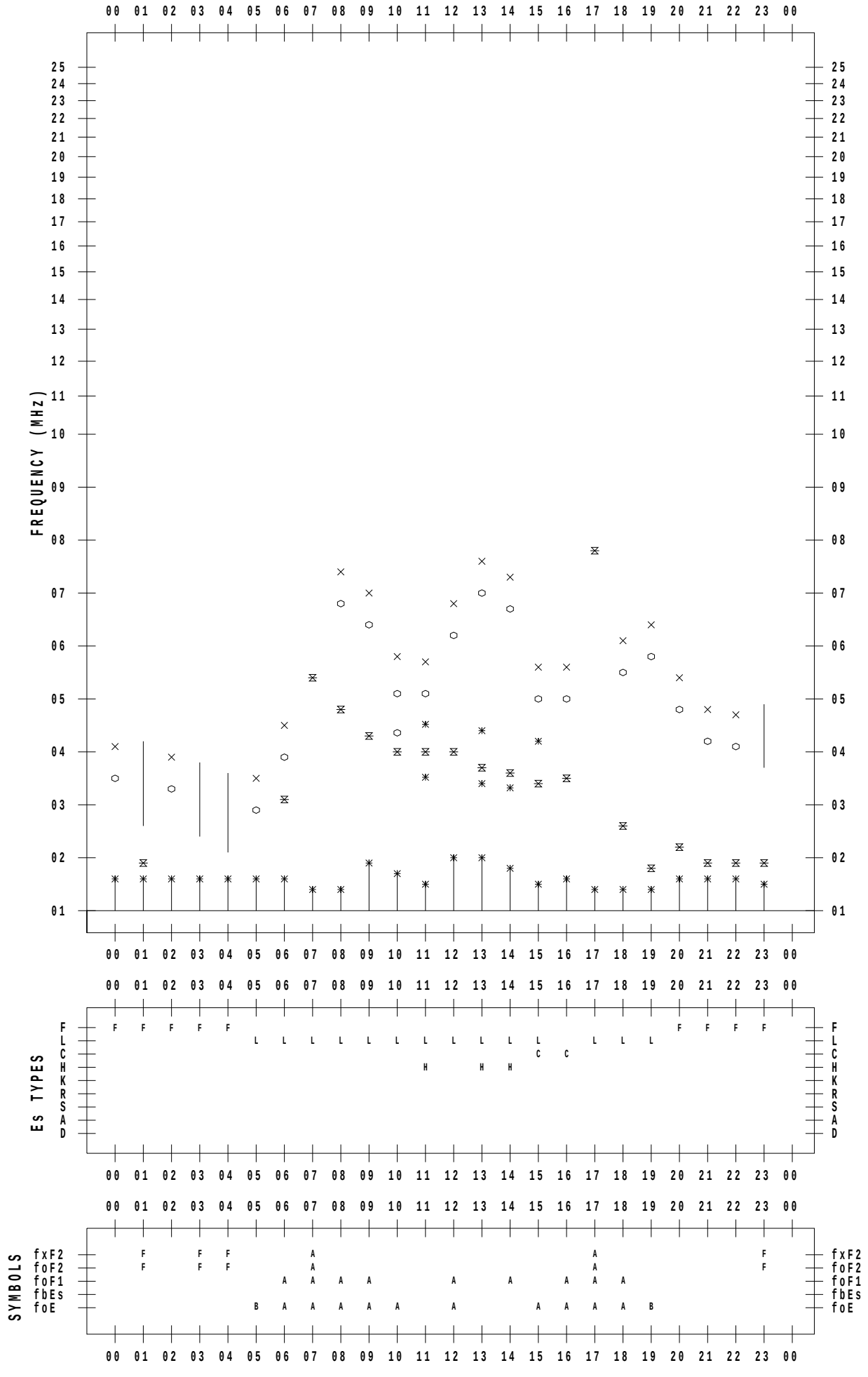
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/19

135 °E MEAN TIME



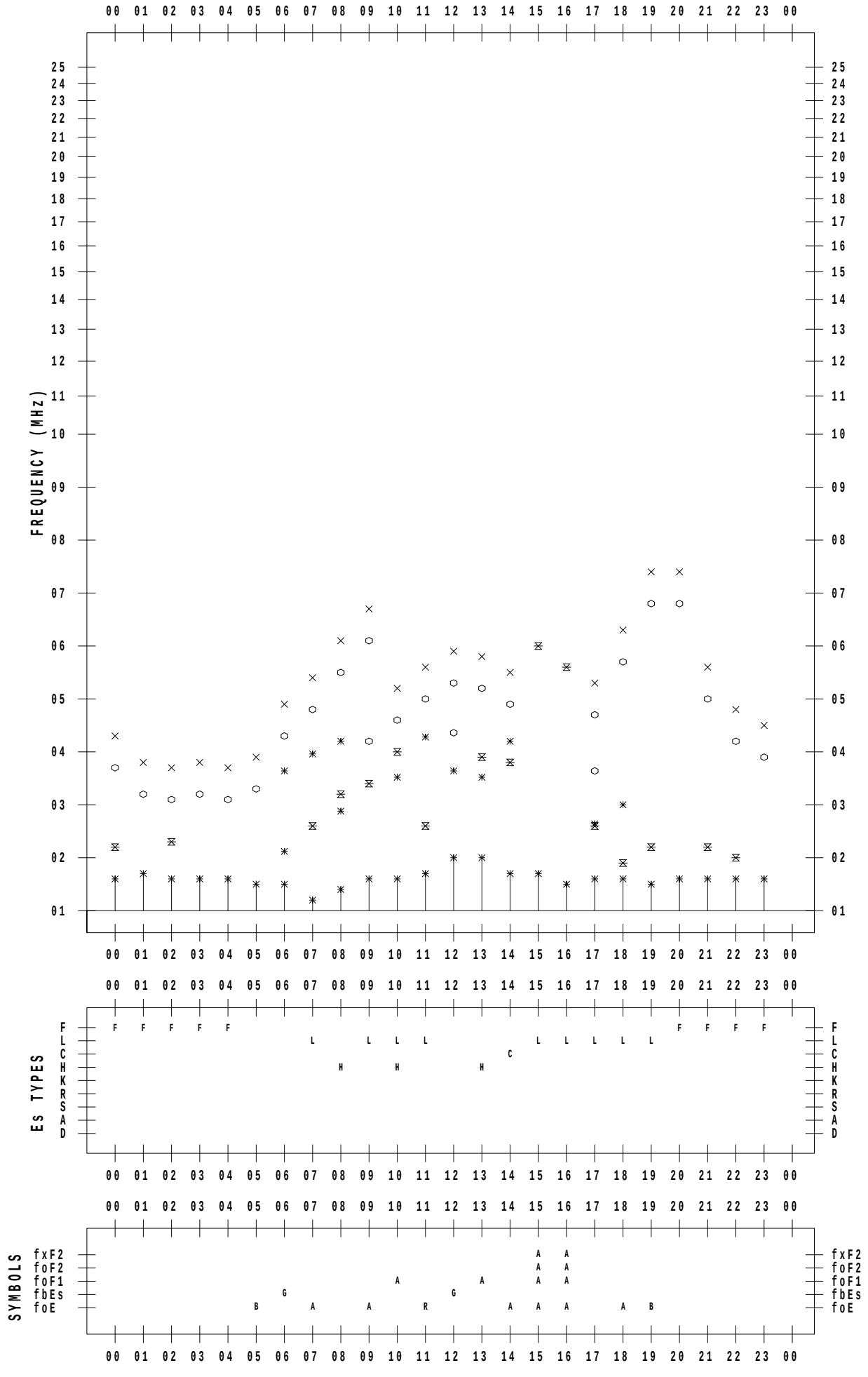
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/20

135 °E MEAN TIME



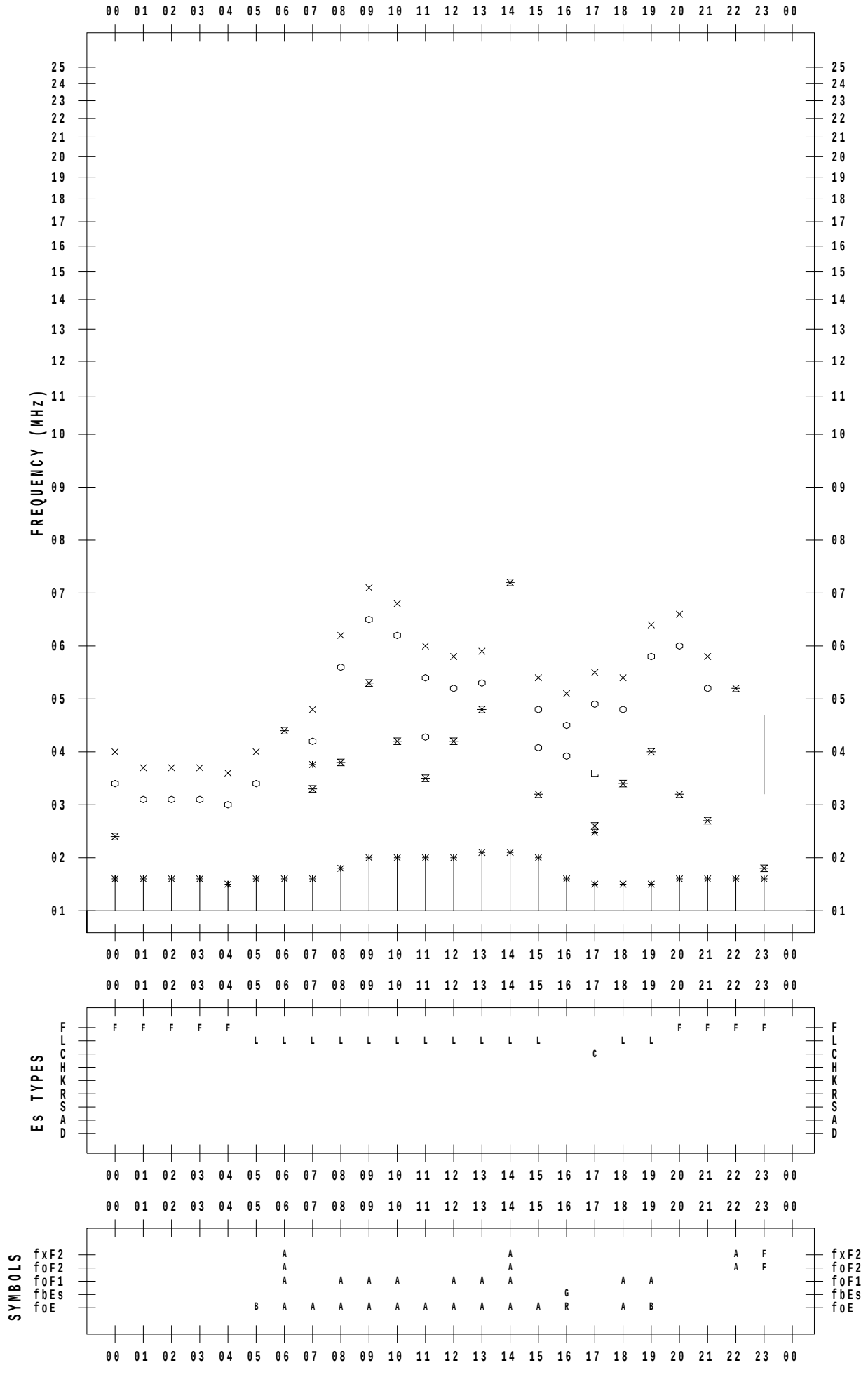
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/21

135 °E MEAN TIME



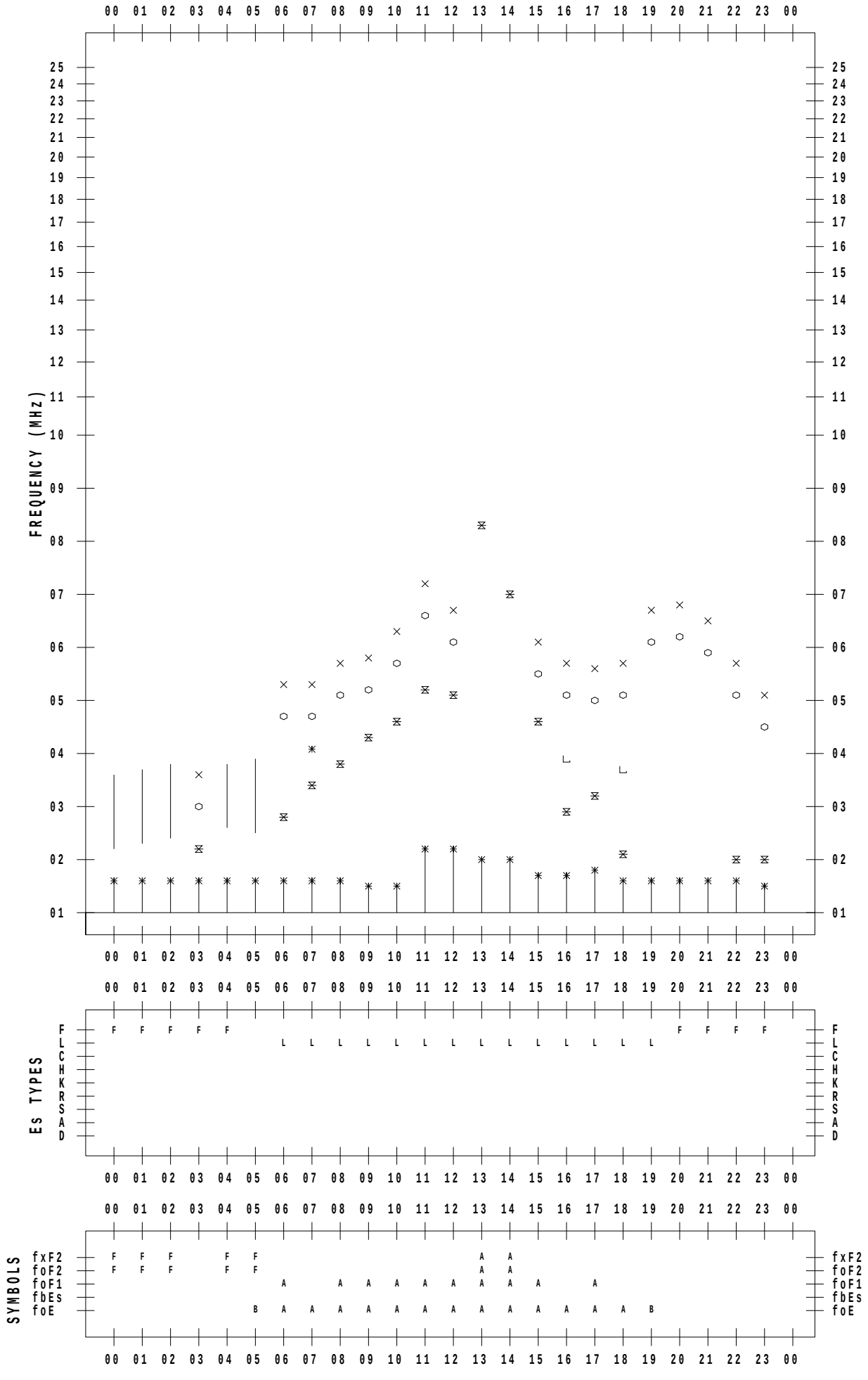
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/22

135 °E MEAN TIME



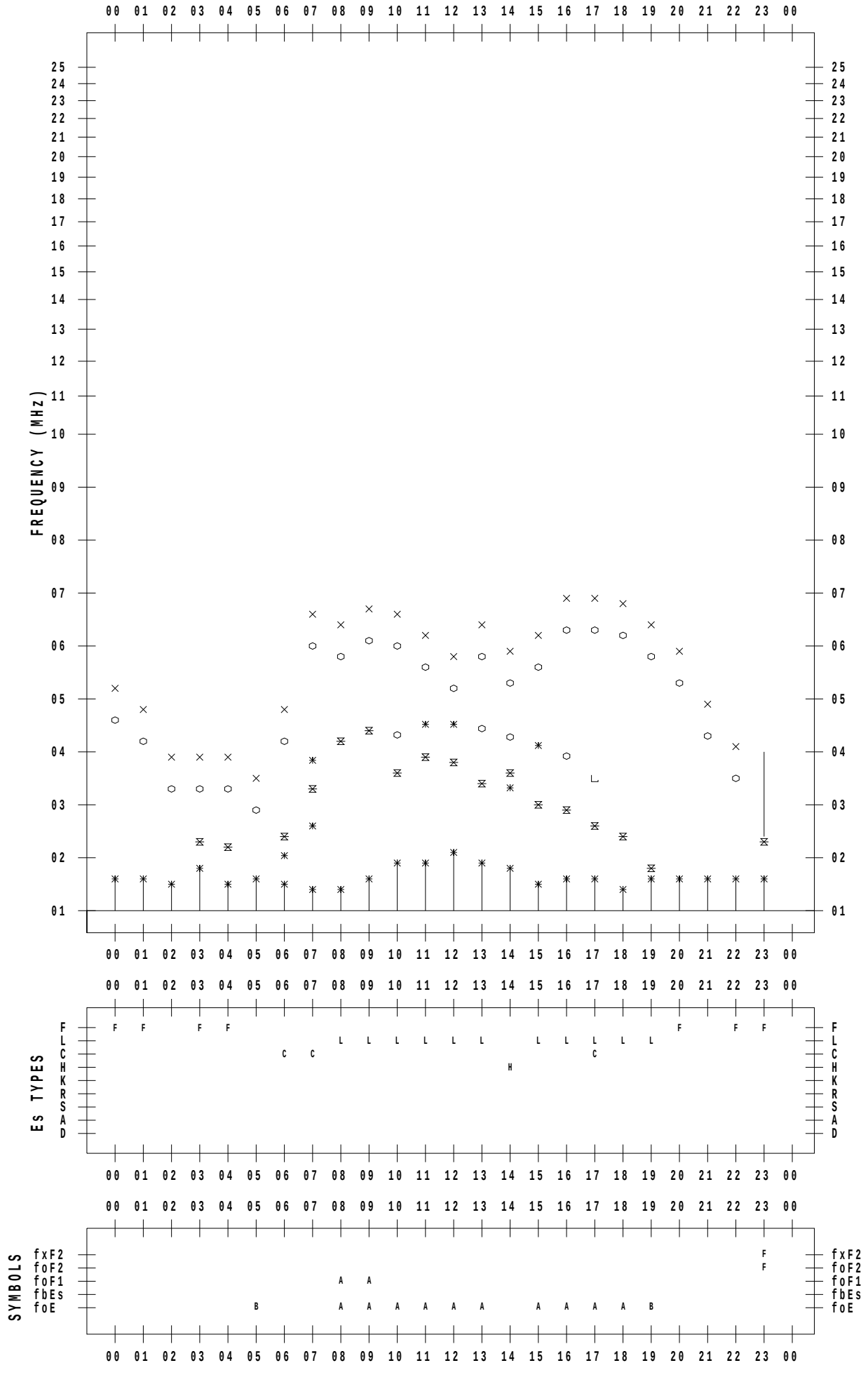
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/23

135 °E MEAN TIME



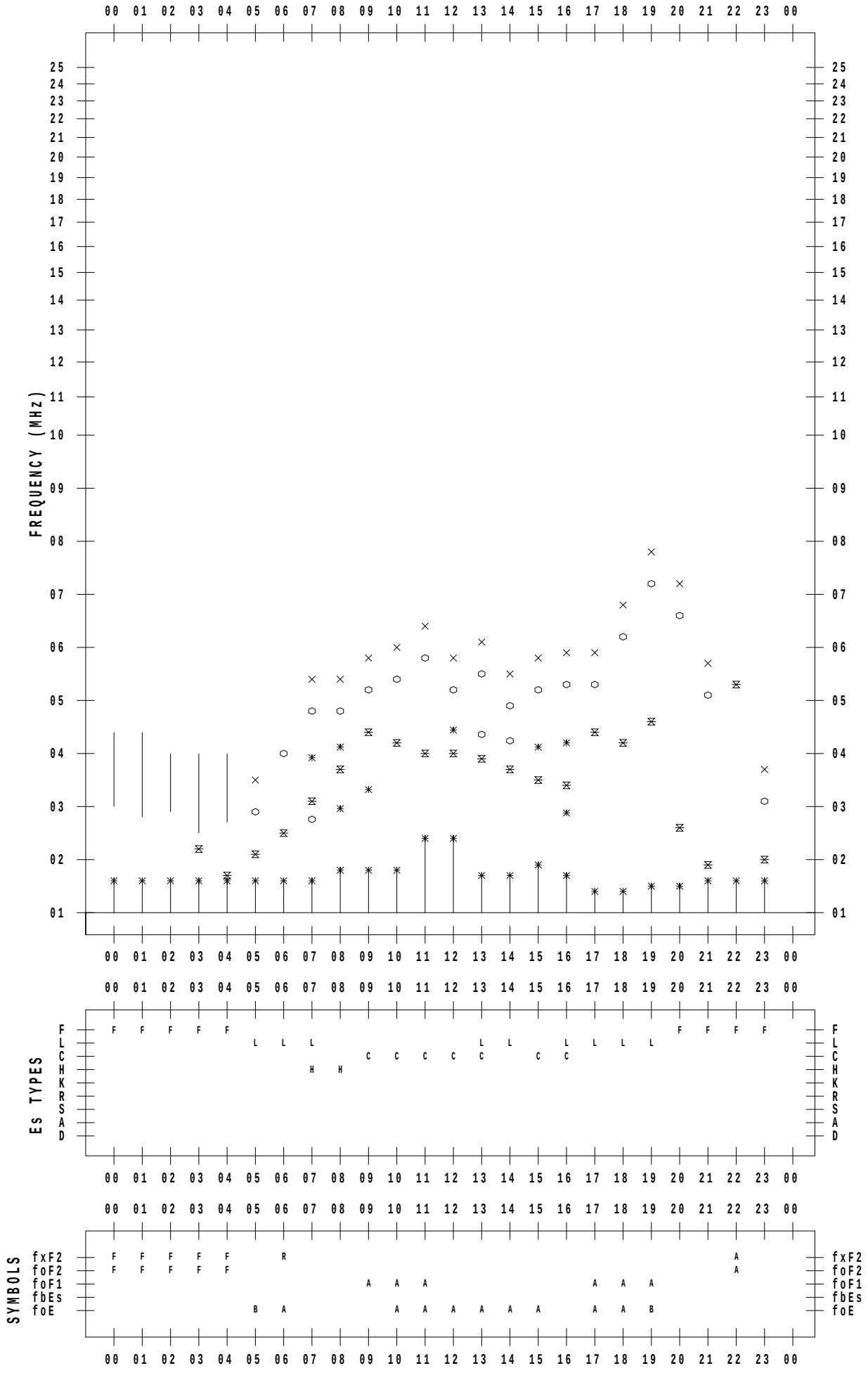
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/24

135 °E MEAN TIME



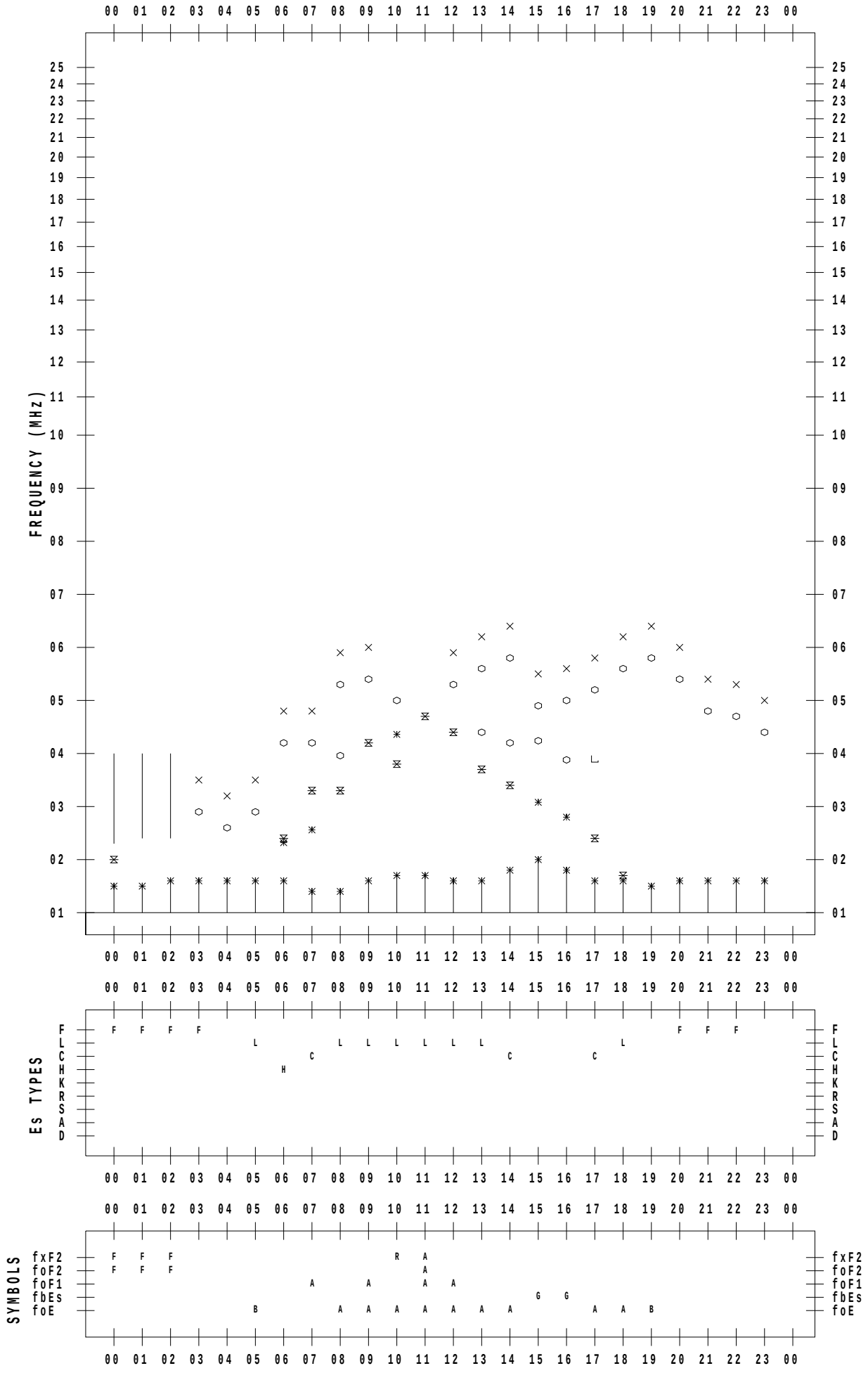
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/25

135 °E MEAN TIME



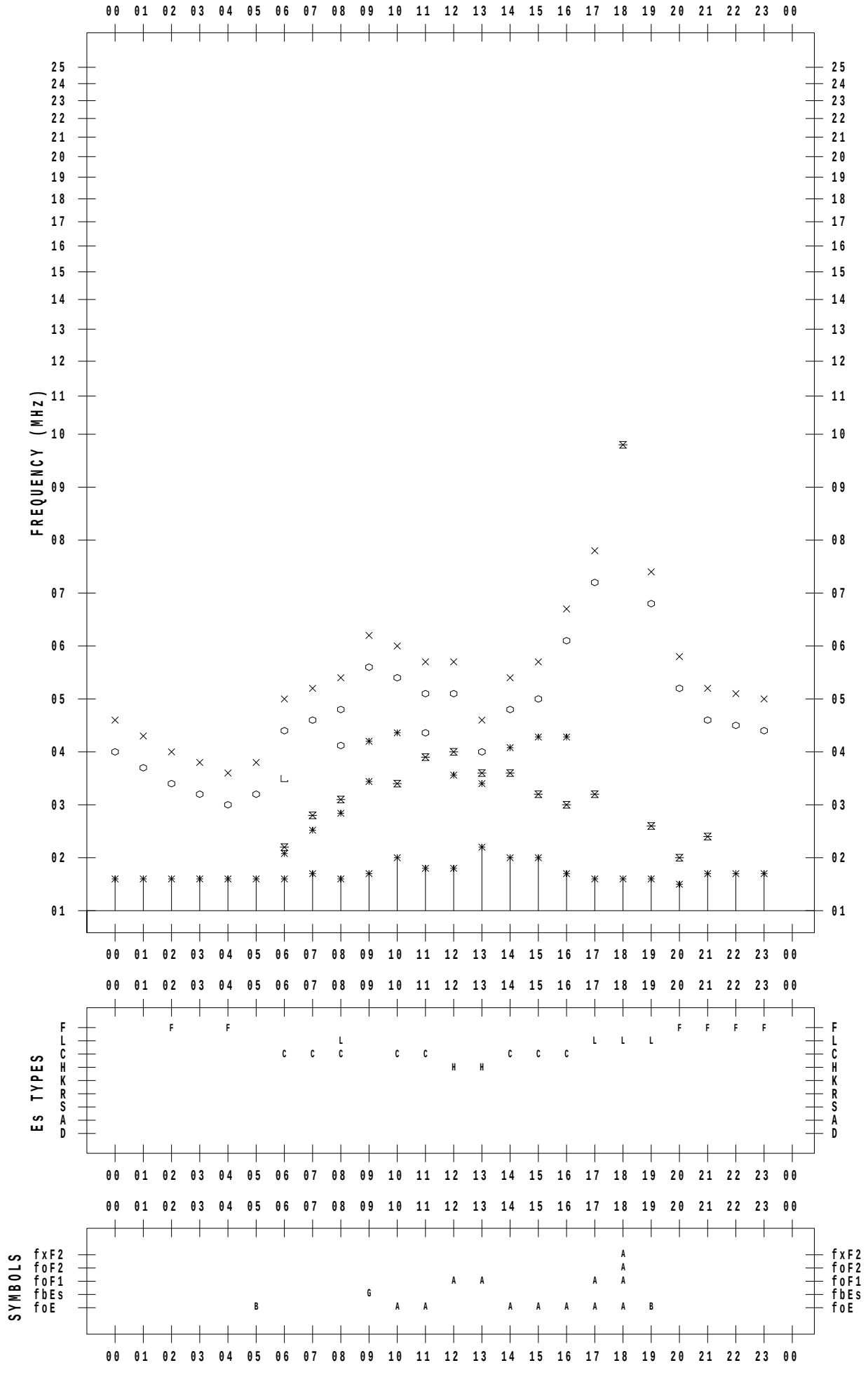
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/26

135 °E MEAN TIME



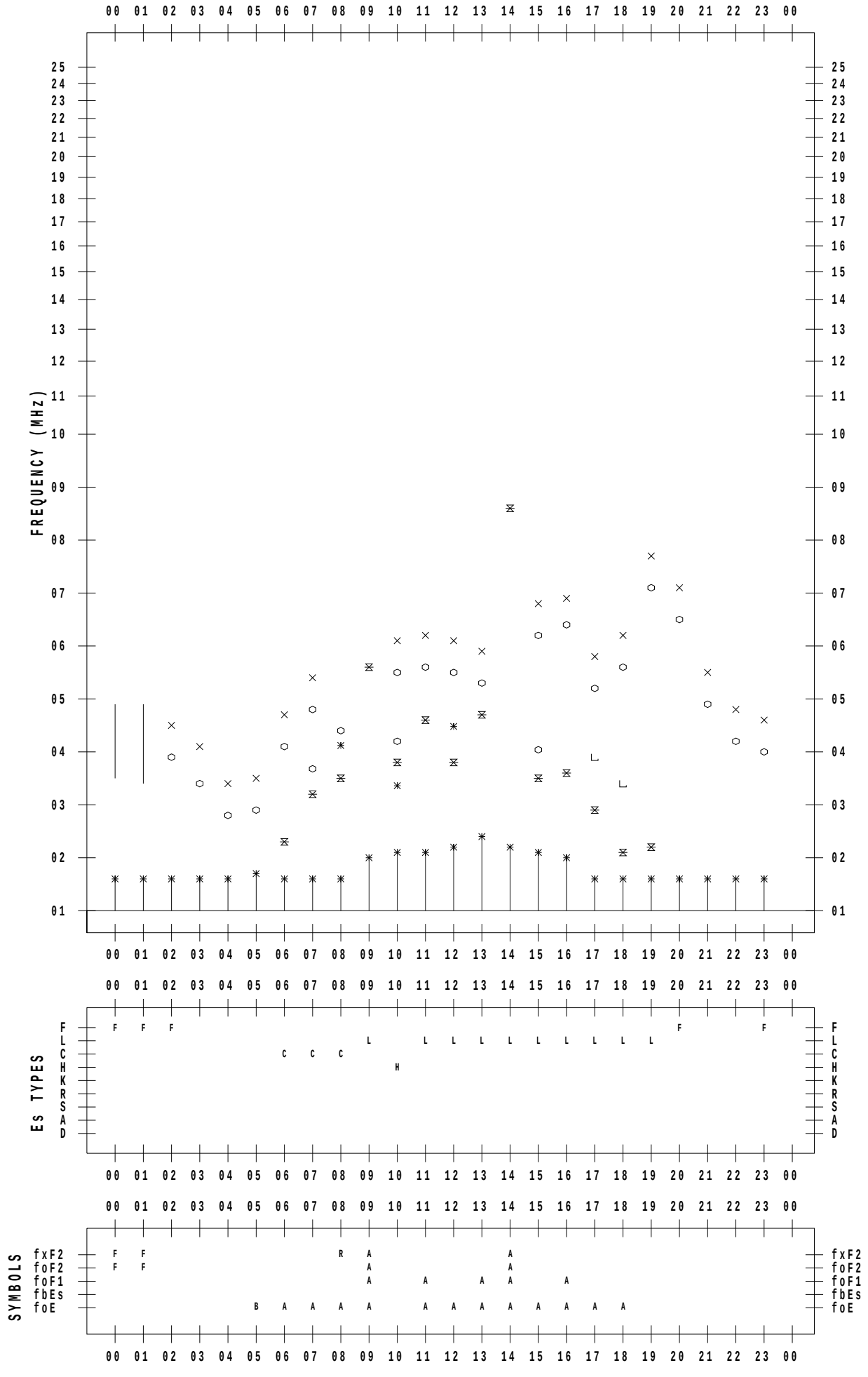
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/27

135 °E MEAN TIME



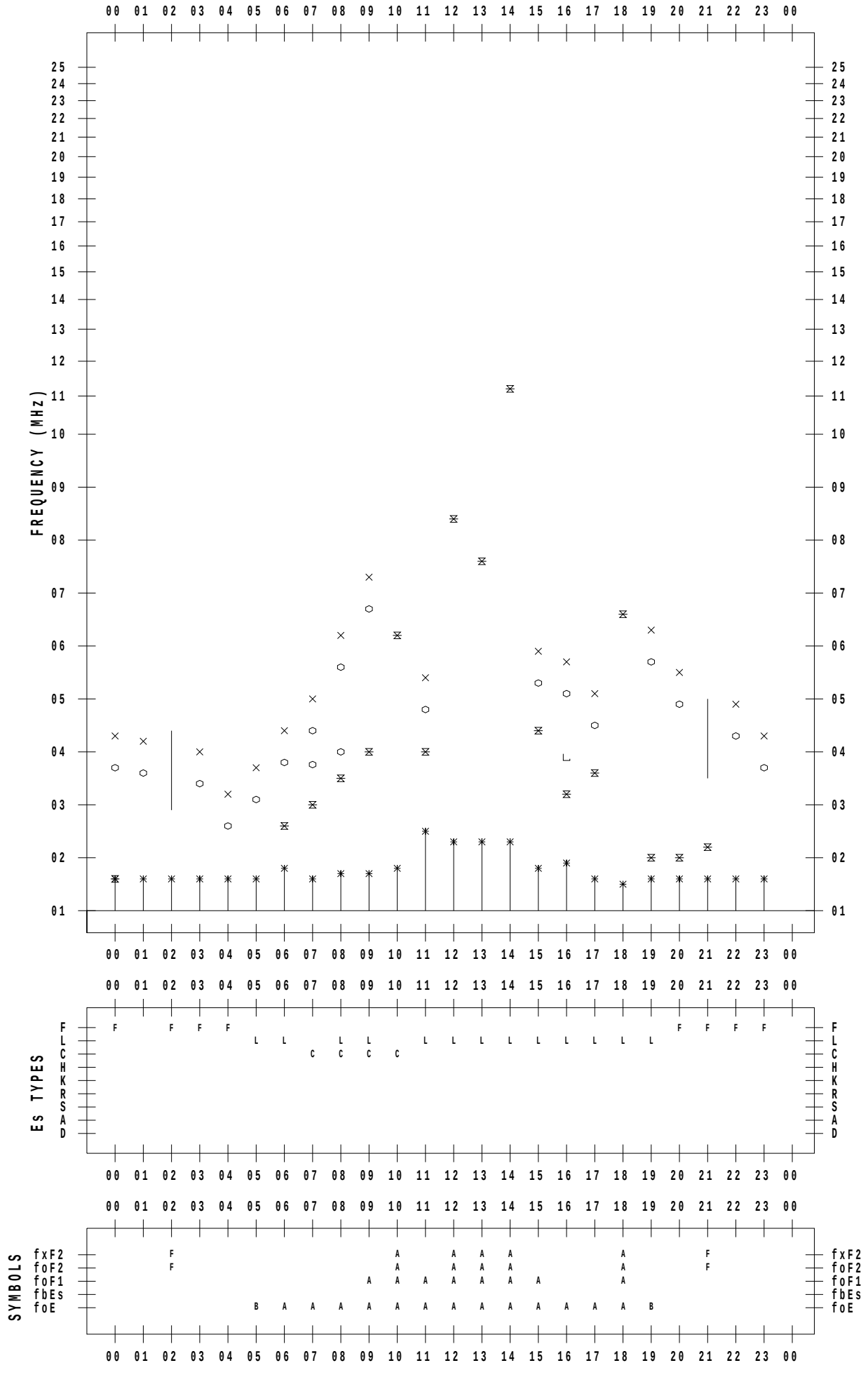
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/28

135 °E MEAN TIME



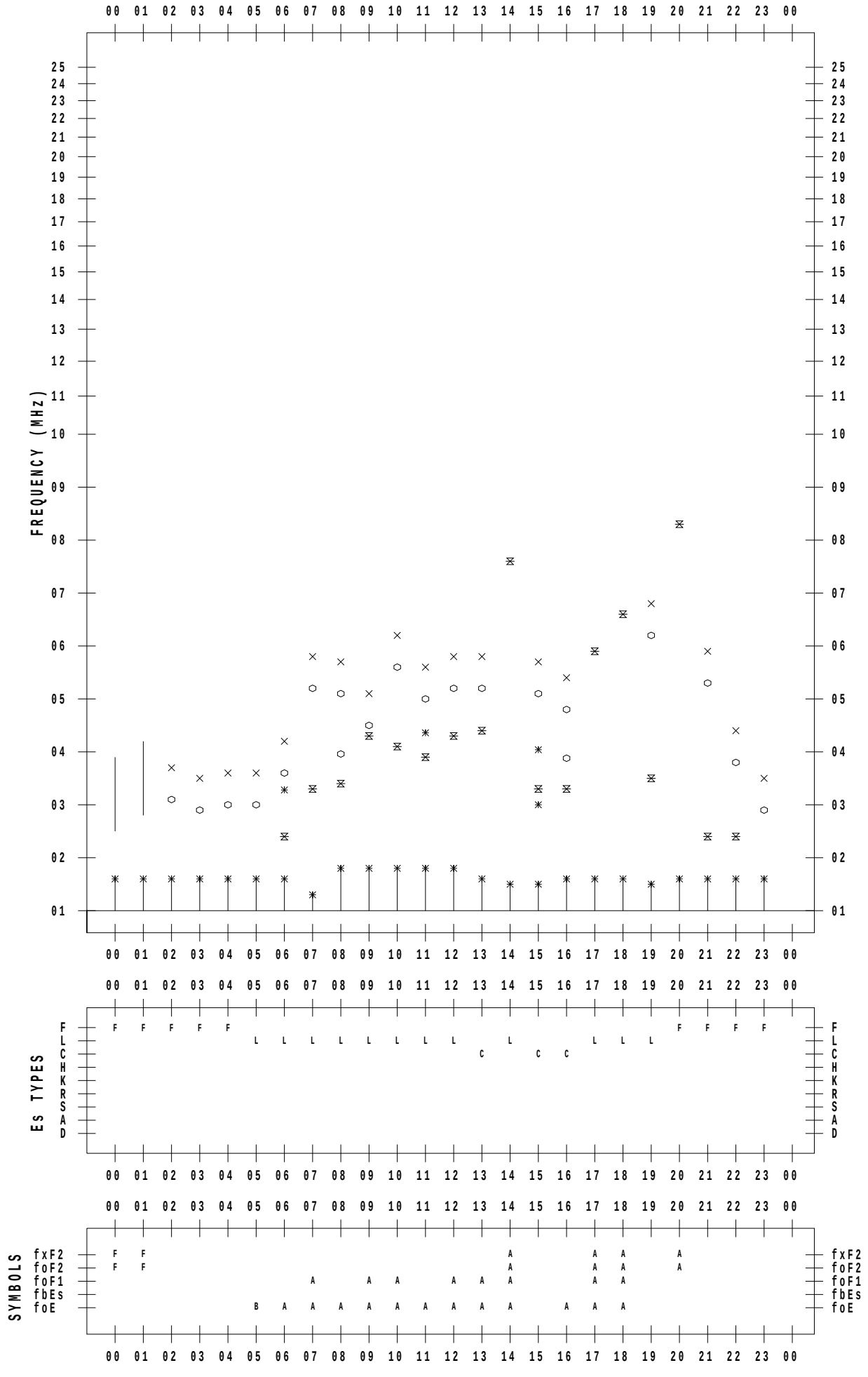
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/29

135 °E MEAN TIME



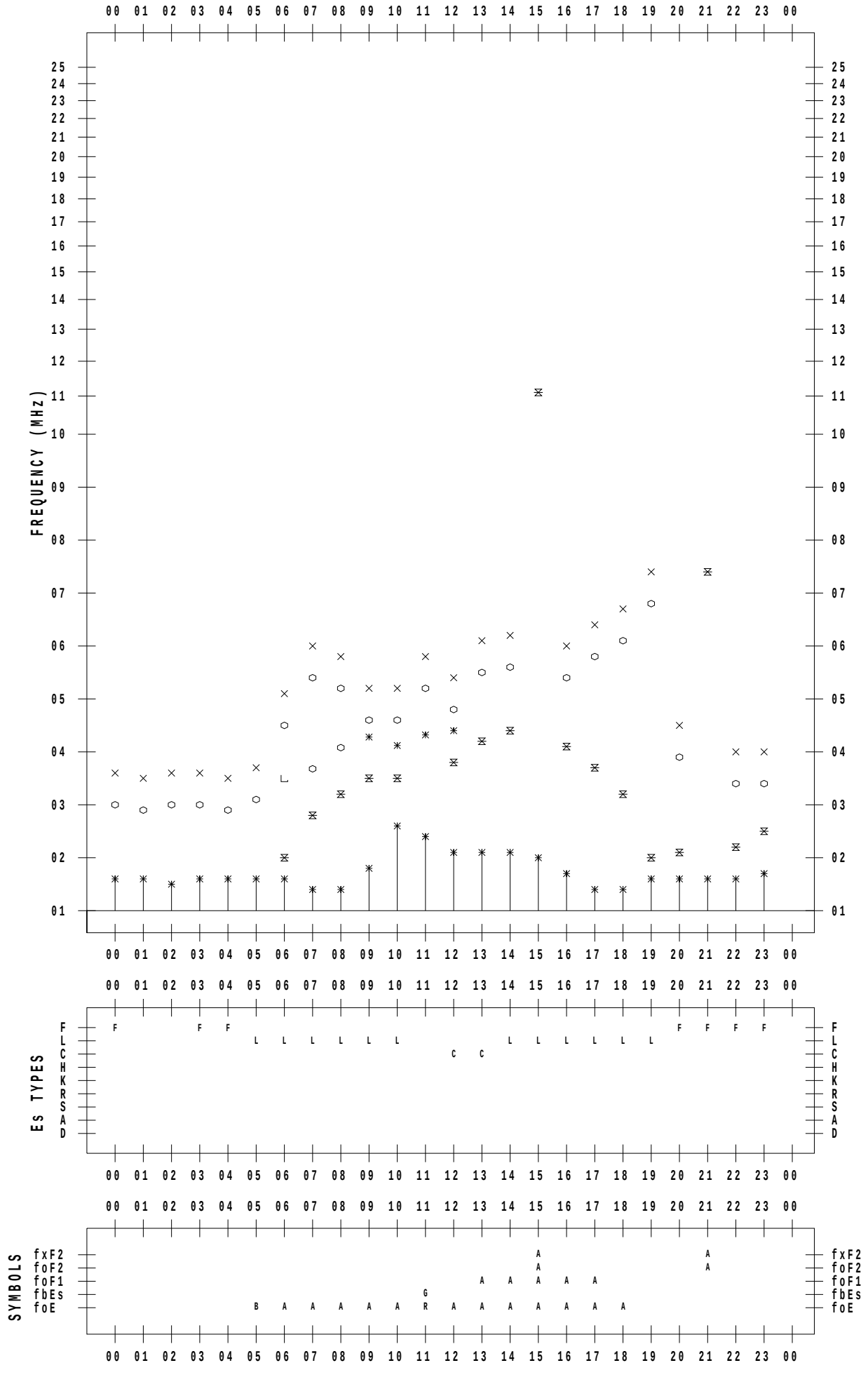
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/30

135 °E MEAN TIME



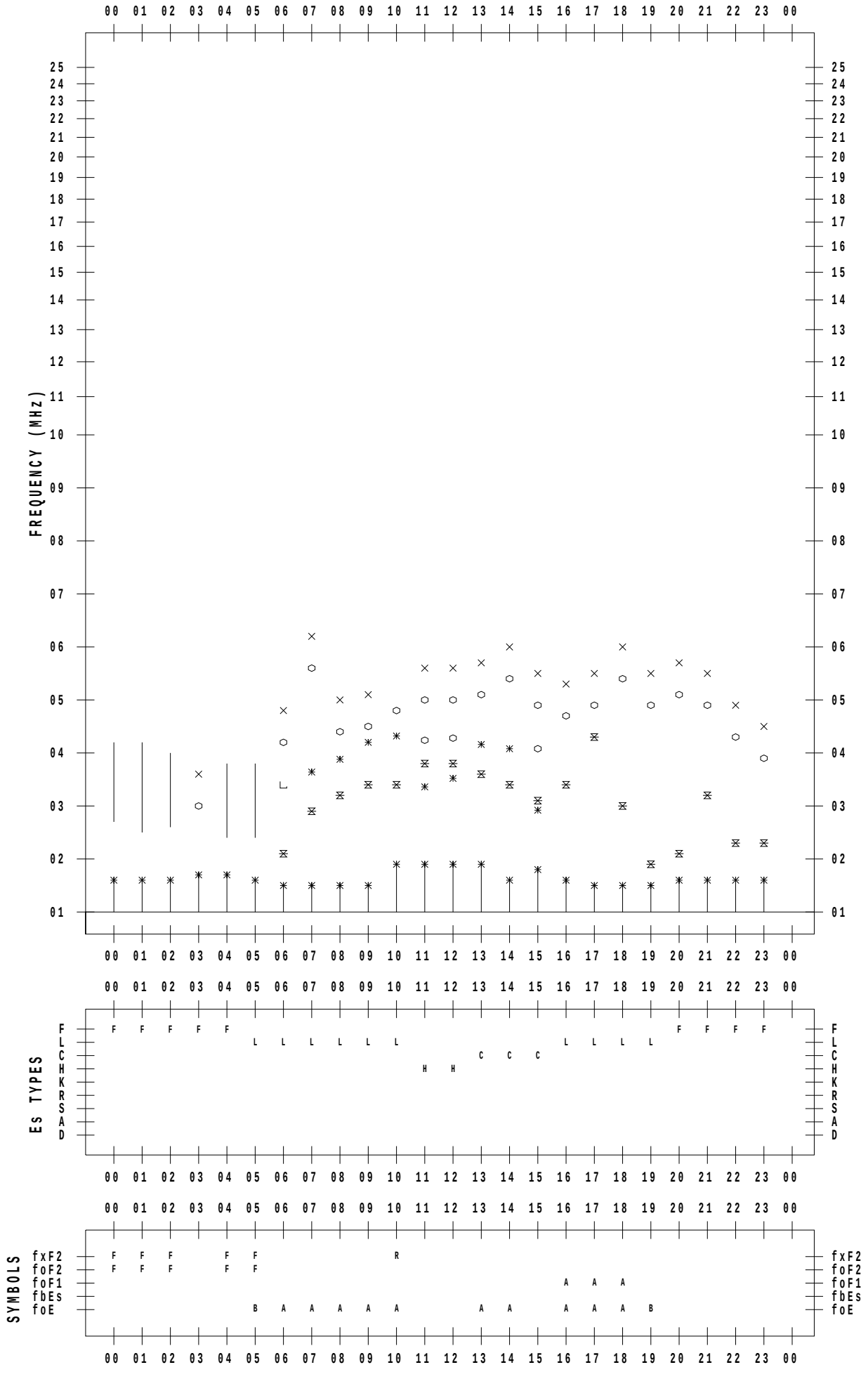
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Kokubunji

DATE : 2020/ 8/31

135 °E MEAN TIME



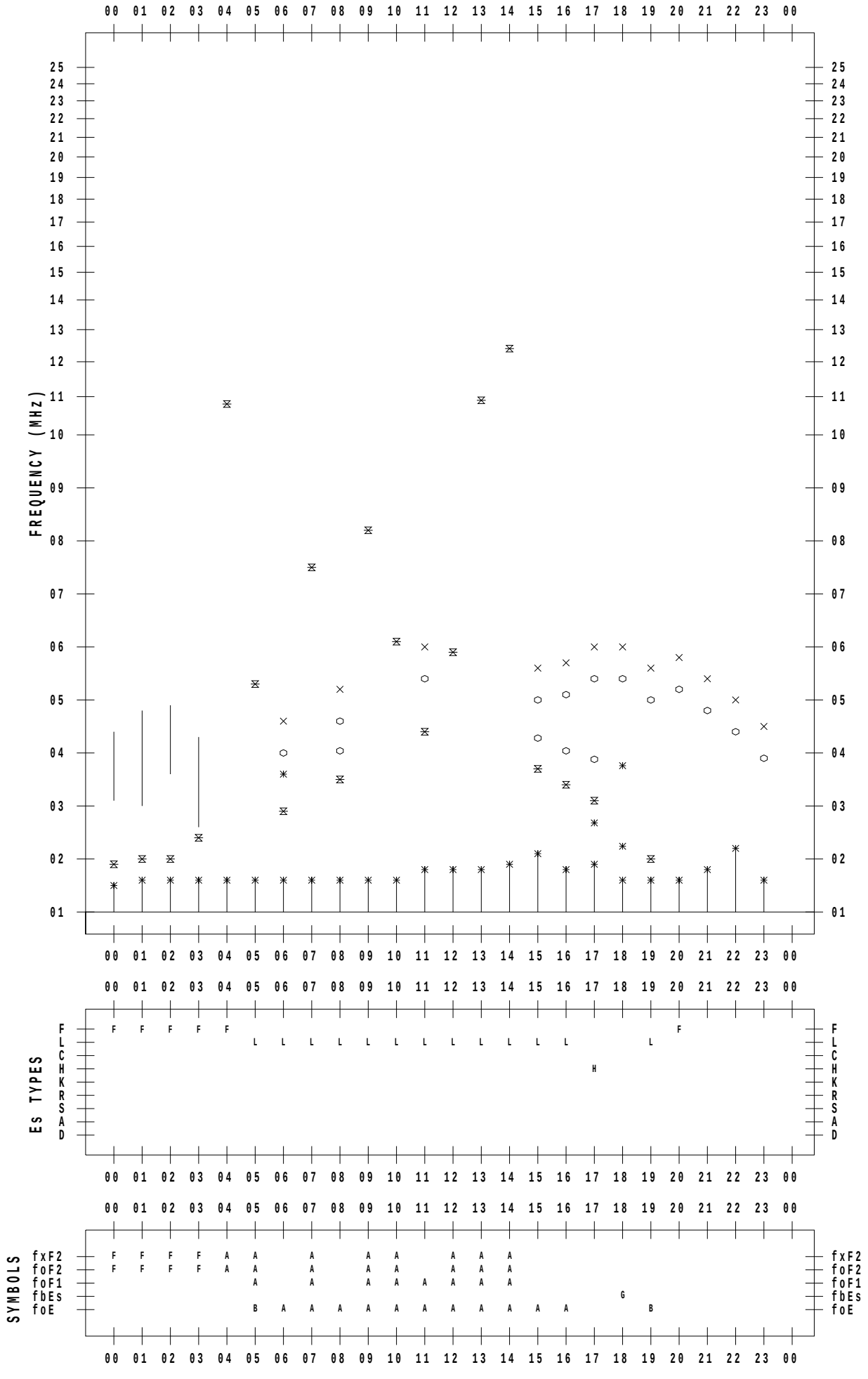
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 1

135 °E MEAN TIME



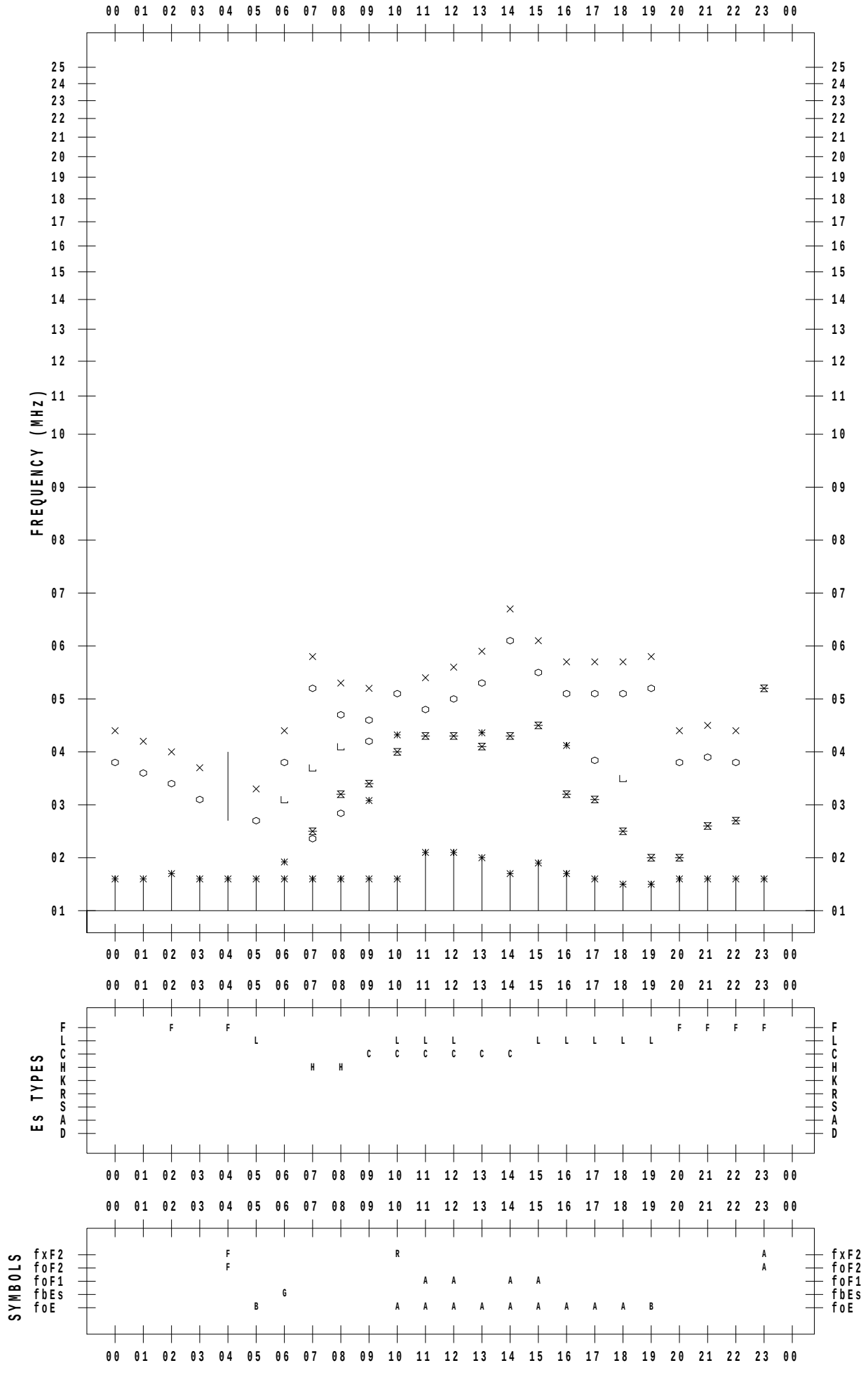
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 2

135 °E MEAN TIME



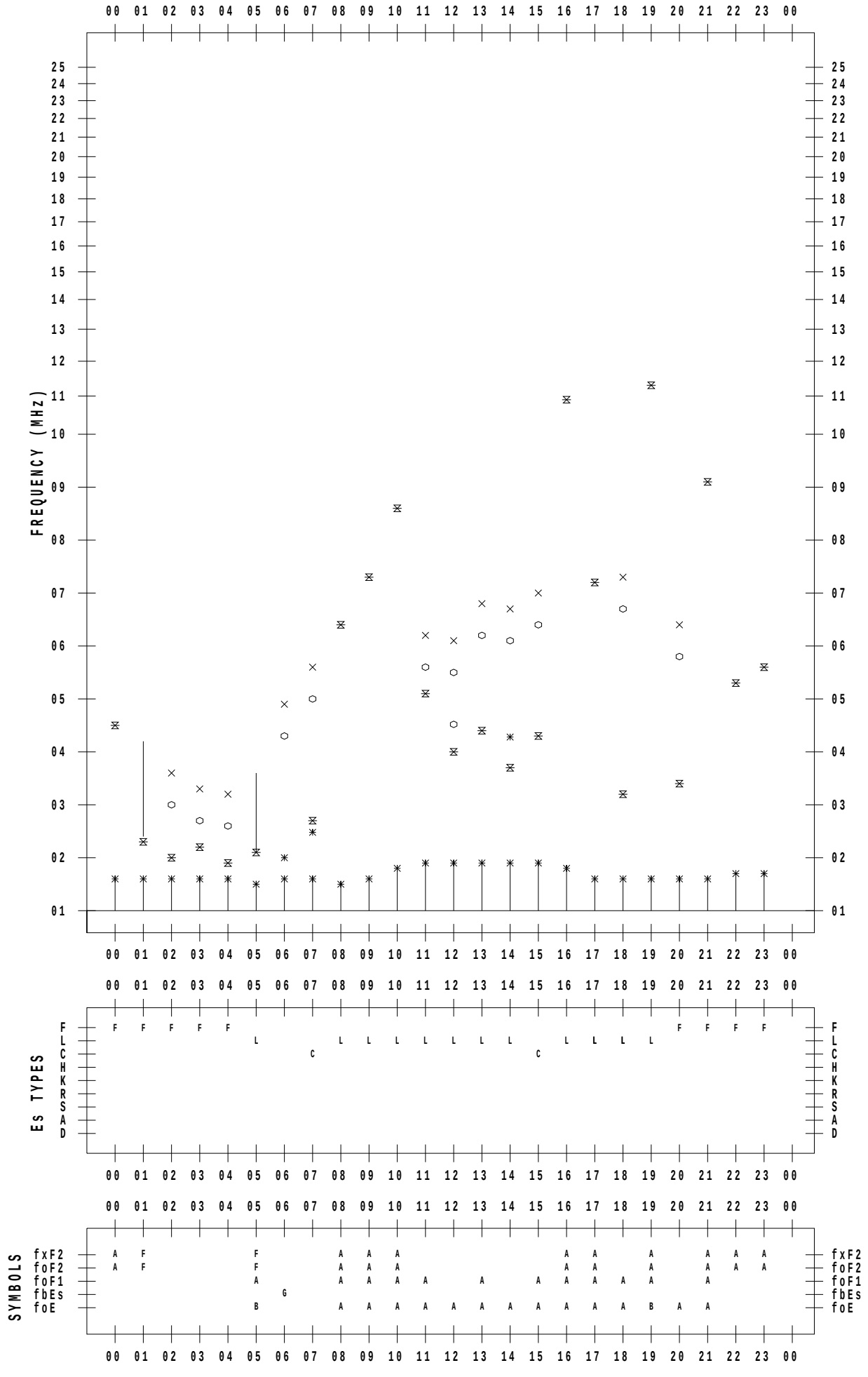
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 3

135 °E MEAN TIME



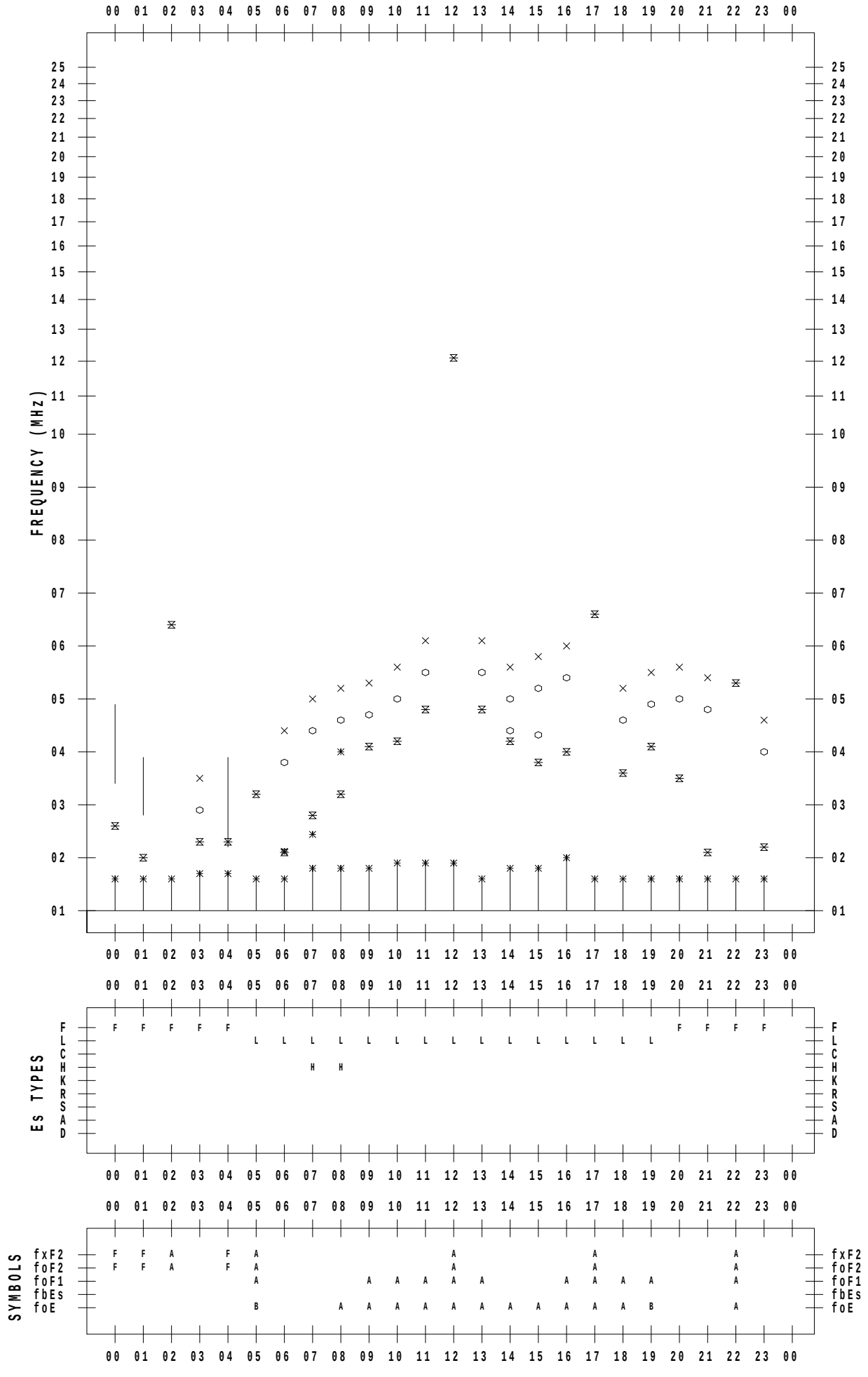
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 4

135 °E MEAN TIME



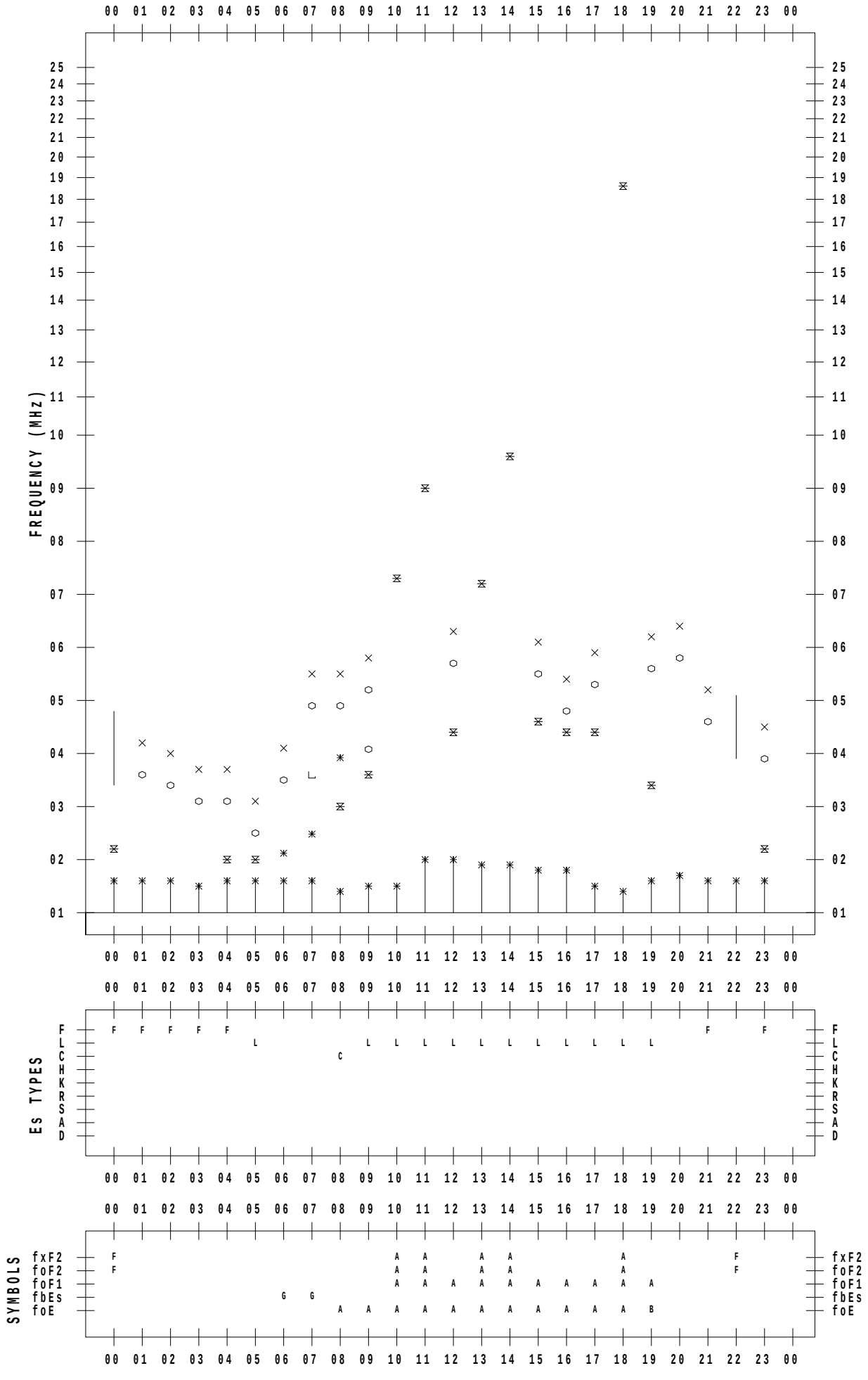
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 5

135 °E MEAN TIME



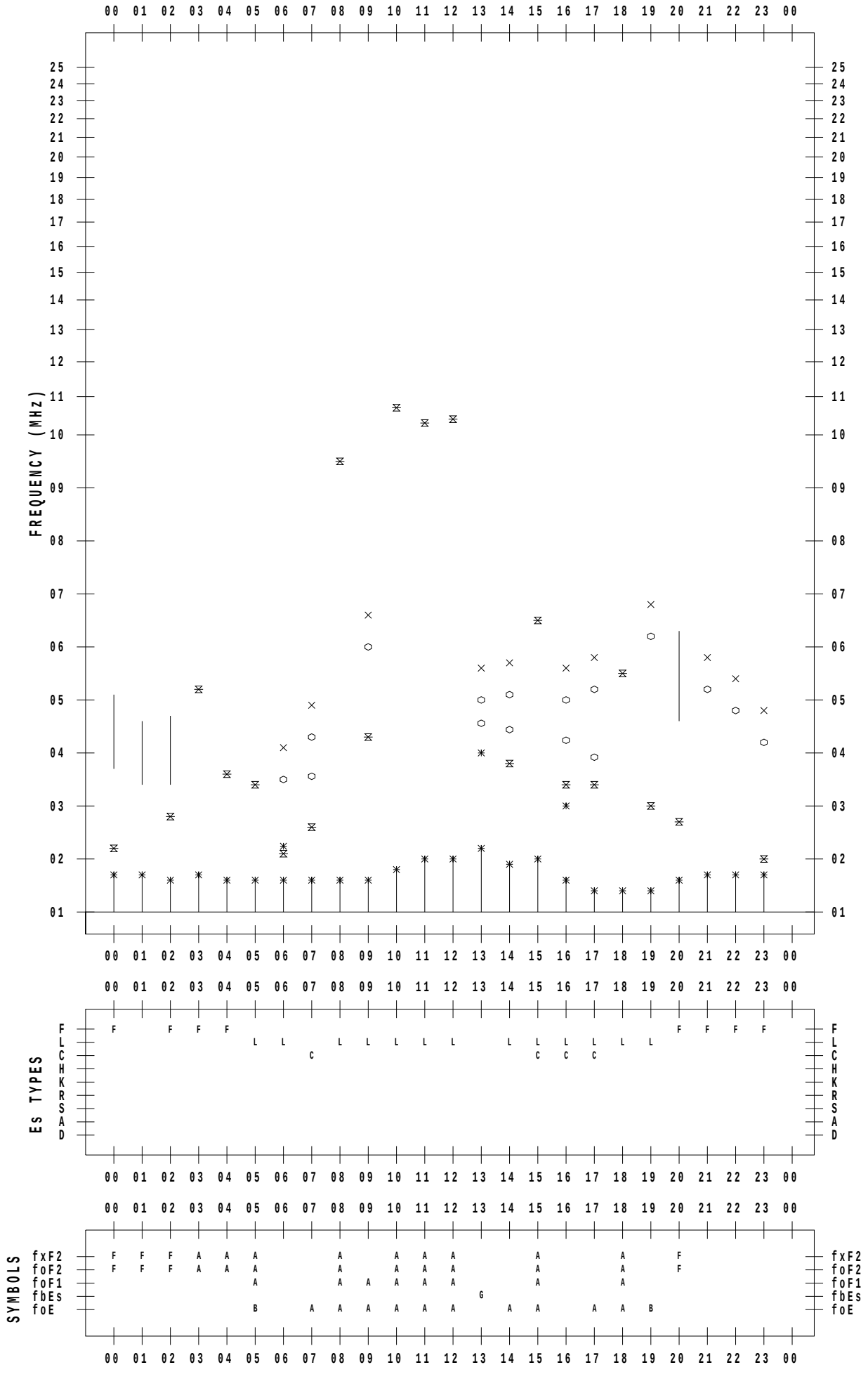
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 6

135 °E MEAN TIME



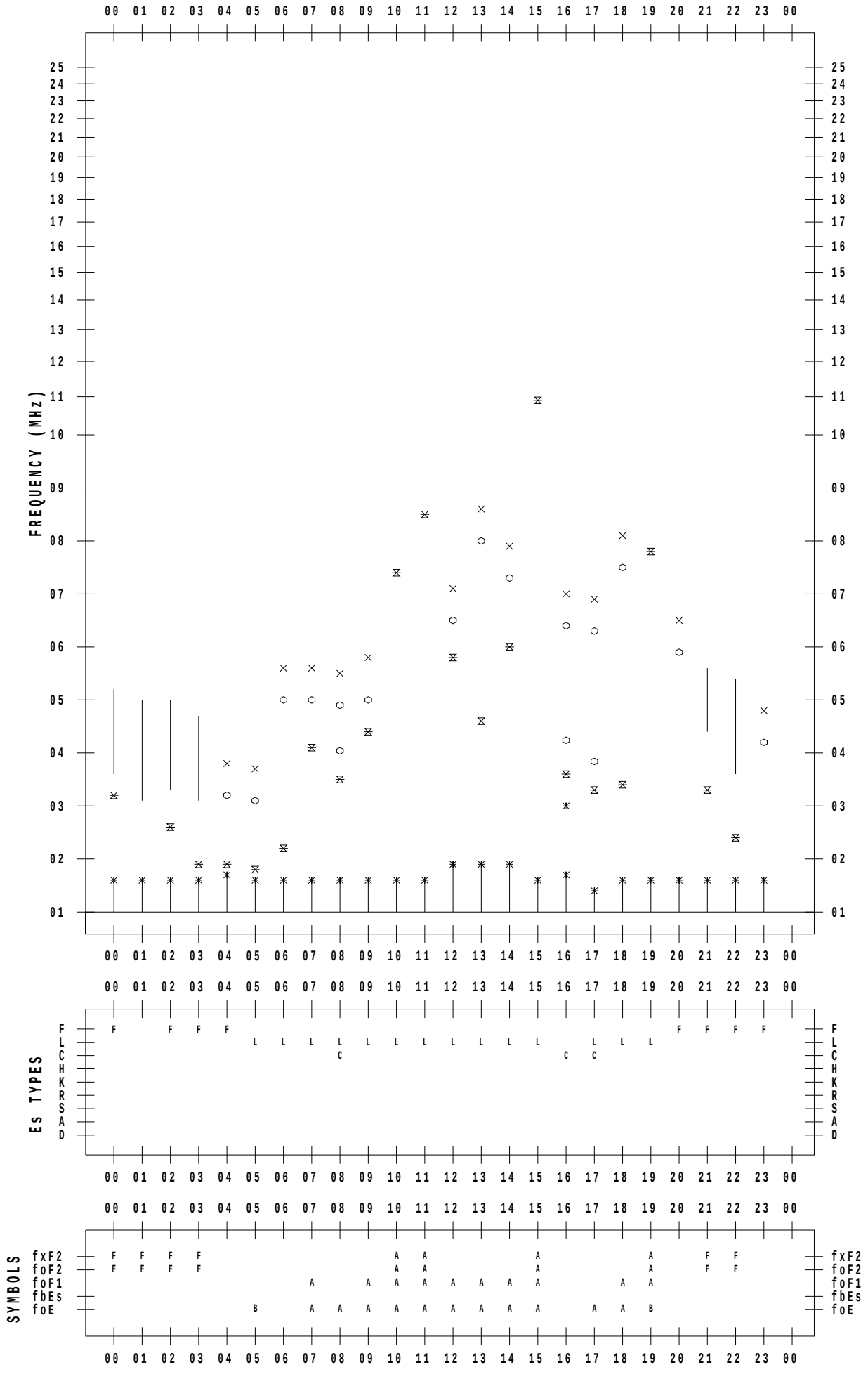
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 7

135 °E MEAN TIME



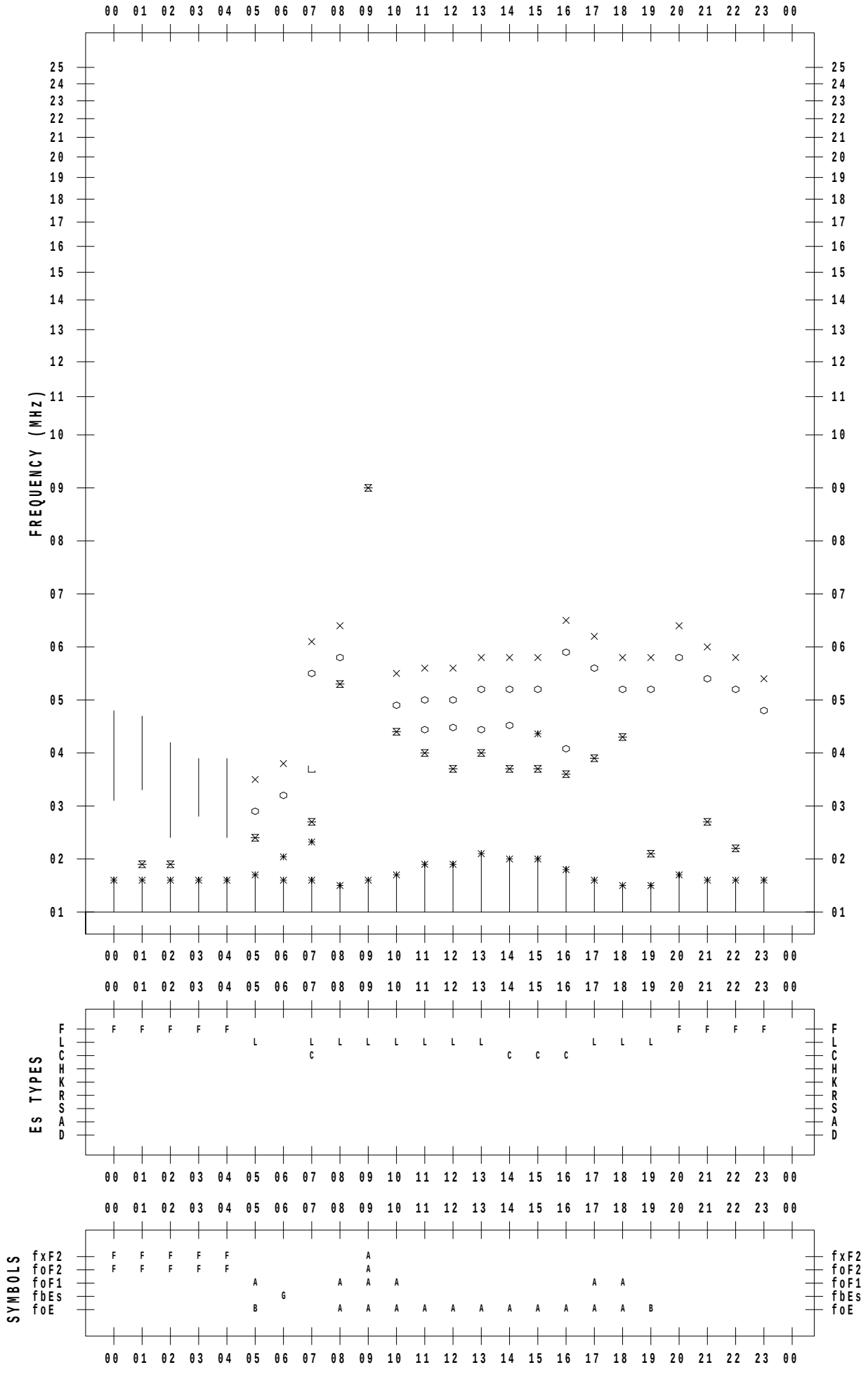
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 8

135 °E MEAN TIME



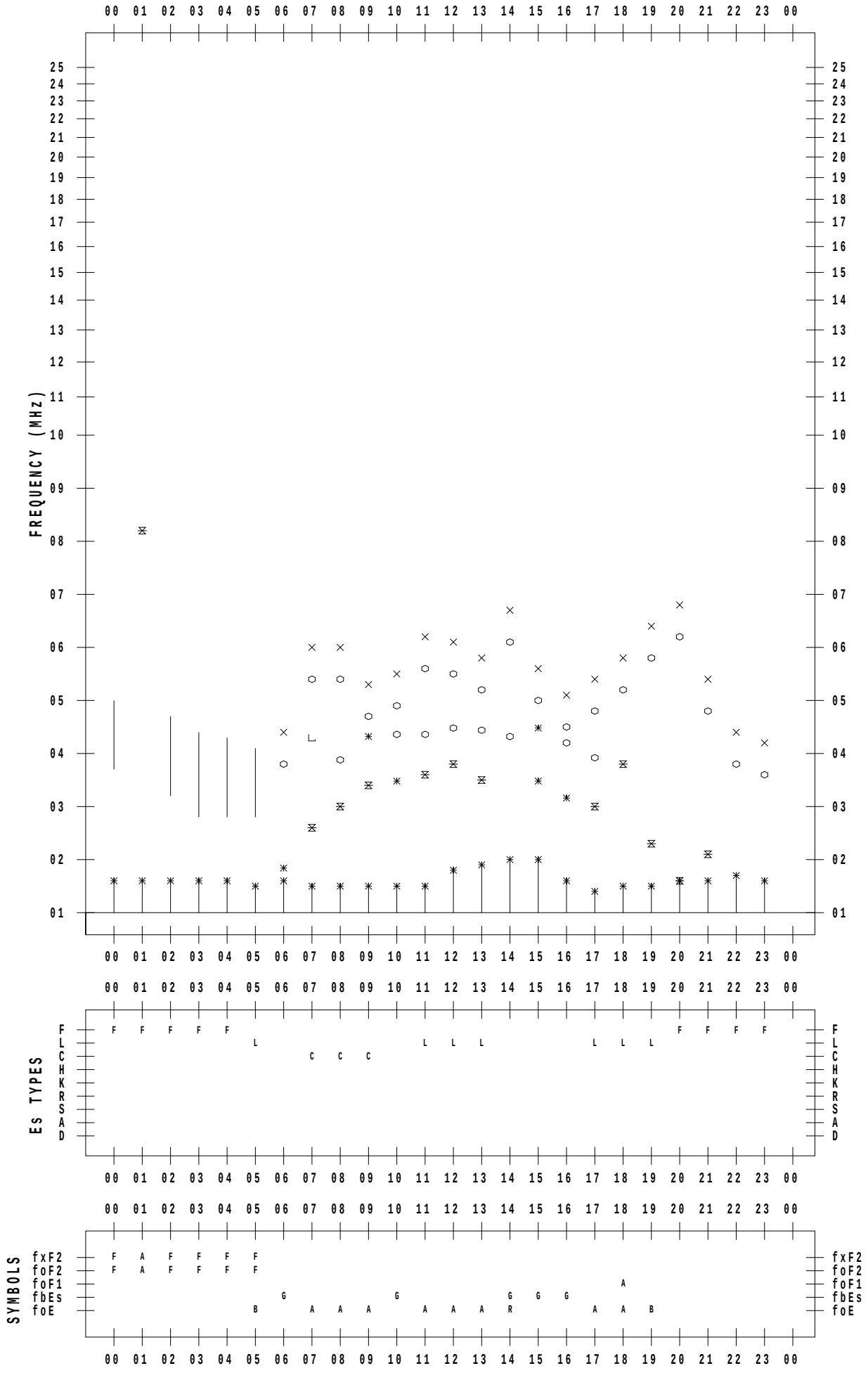
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/ 9

135 °E MEAN TIME



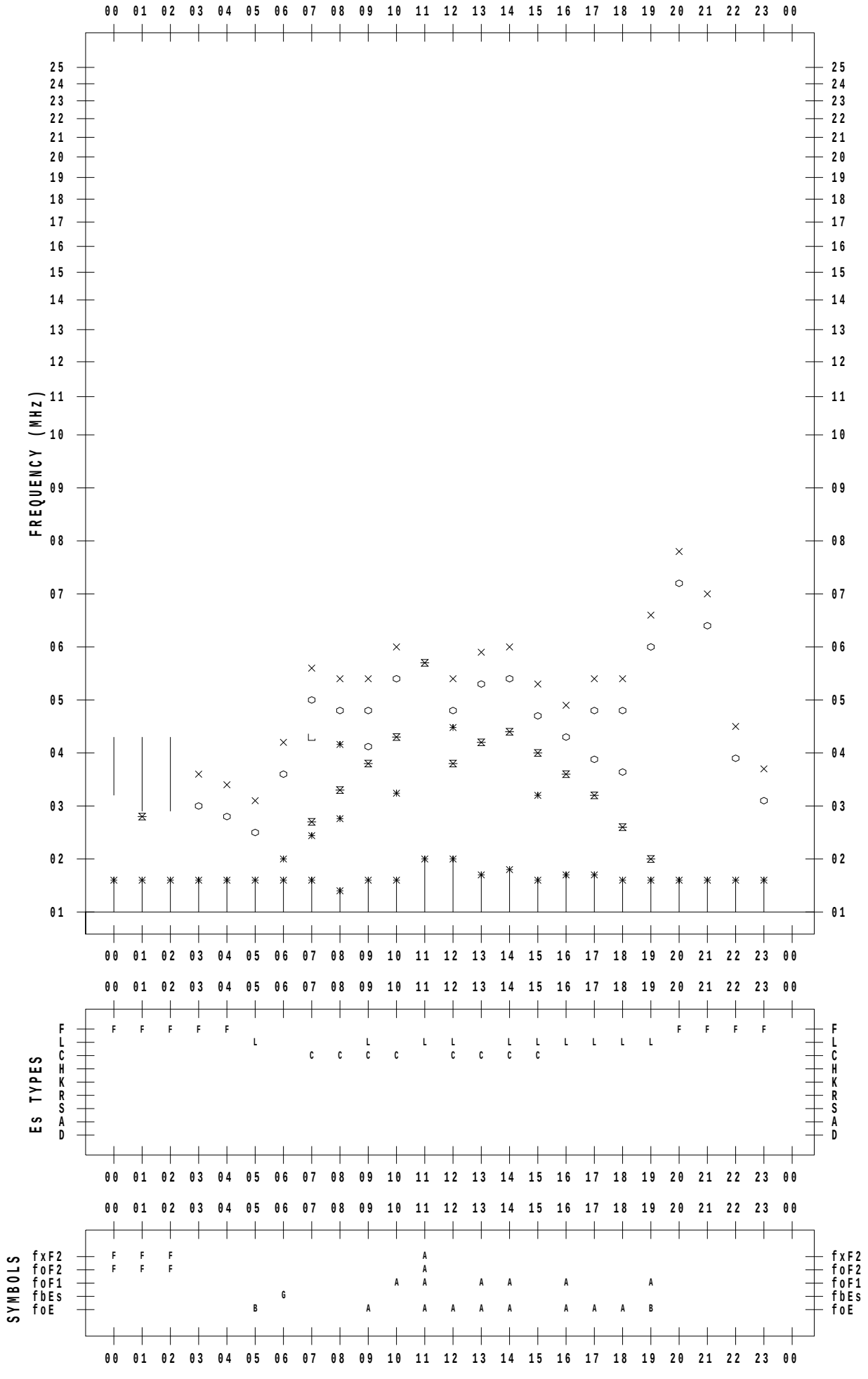
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/10

135 °E MEAN TIME



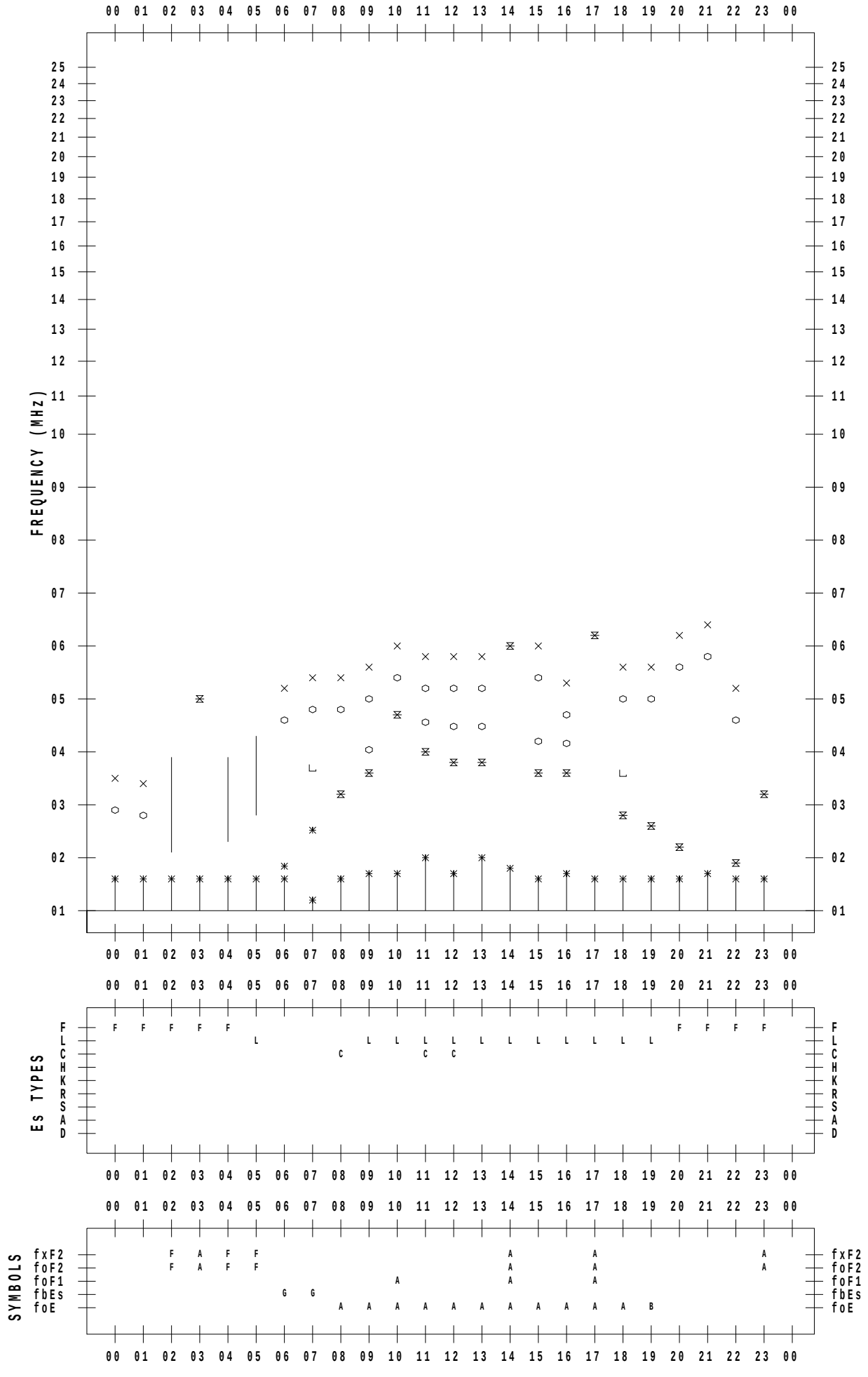
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/11

135 °E MEAN TIME



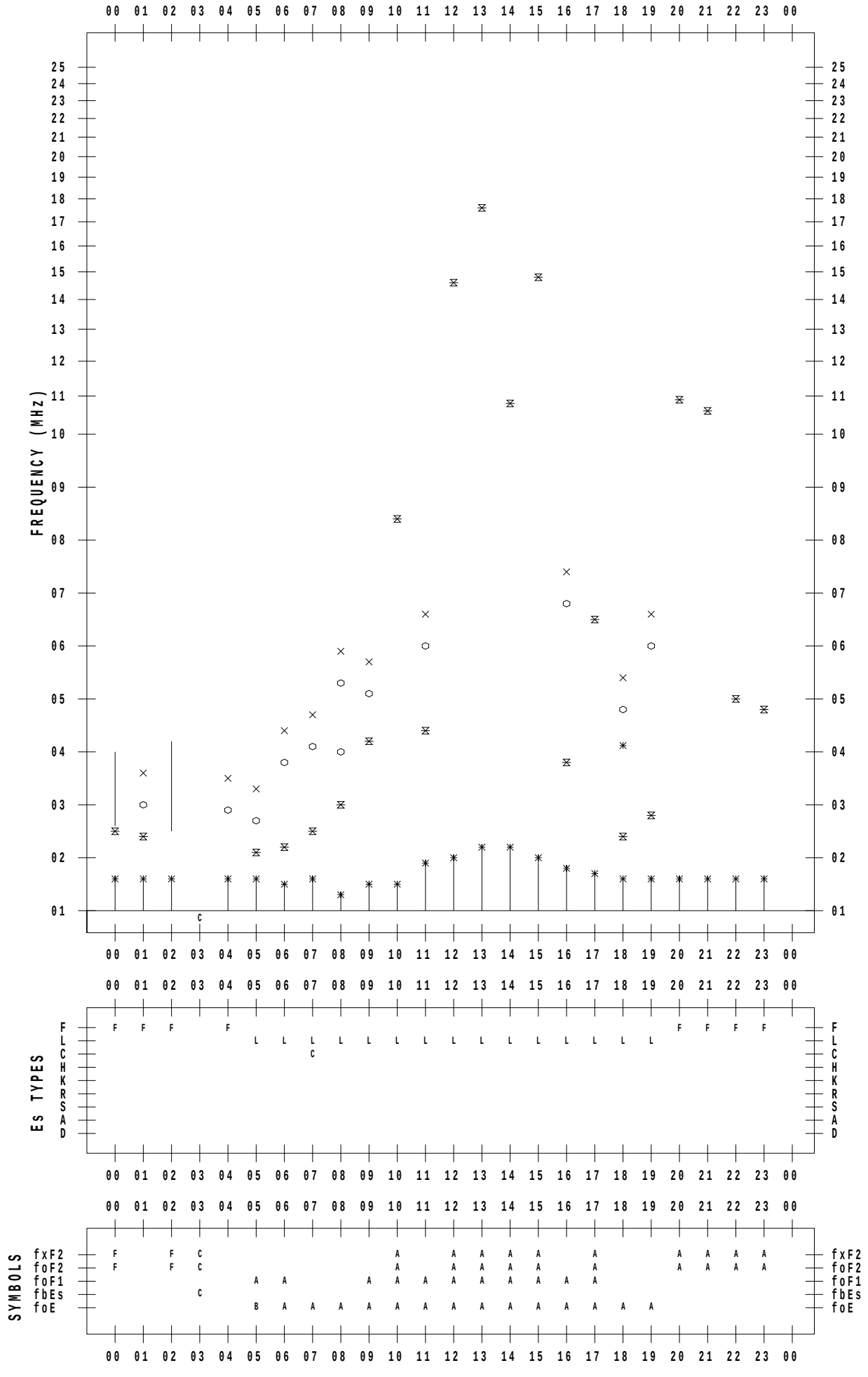
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/12

135 °E MEAN TIME



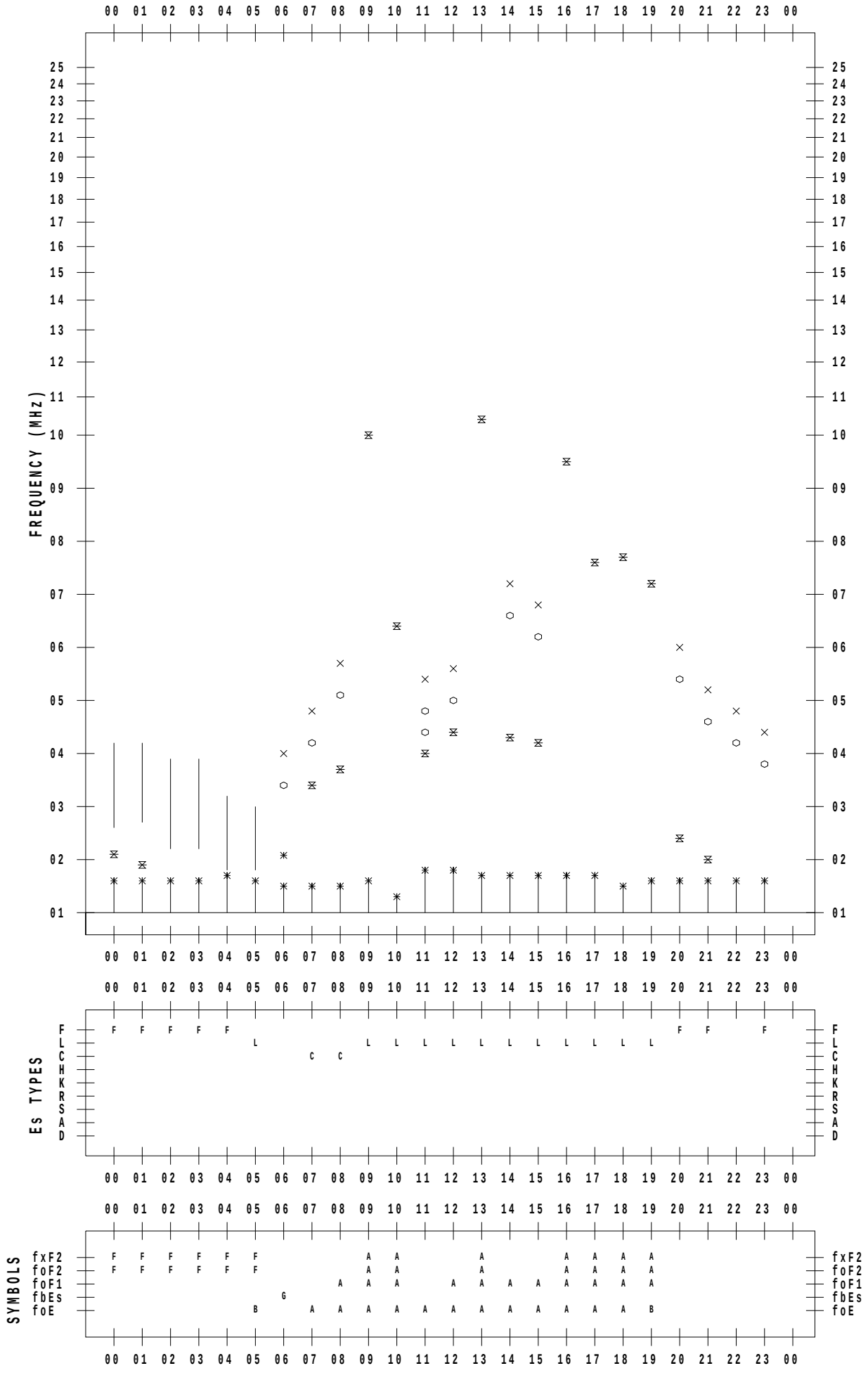
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/13

135 °E MEAN TIME



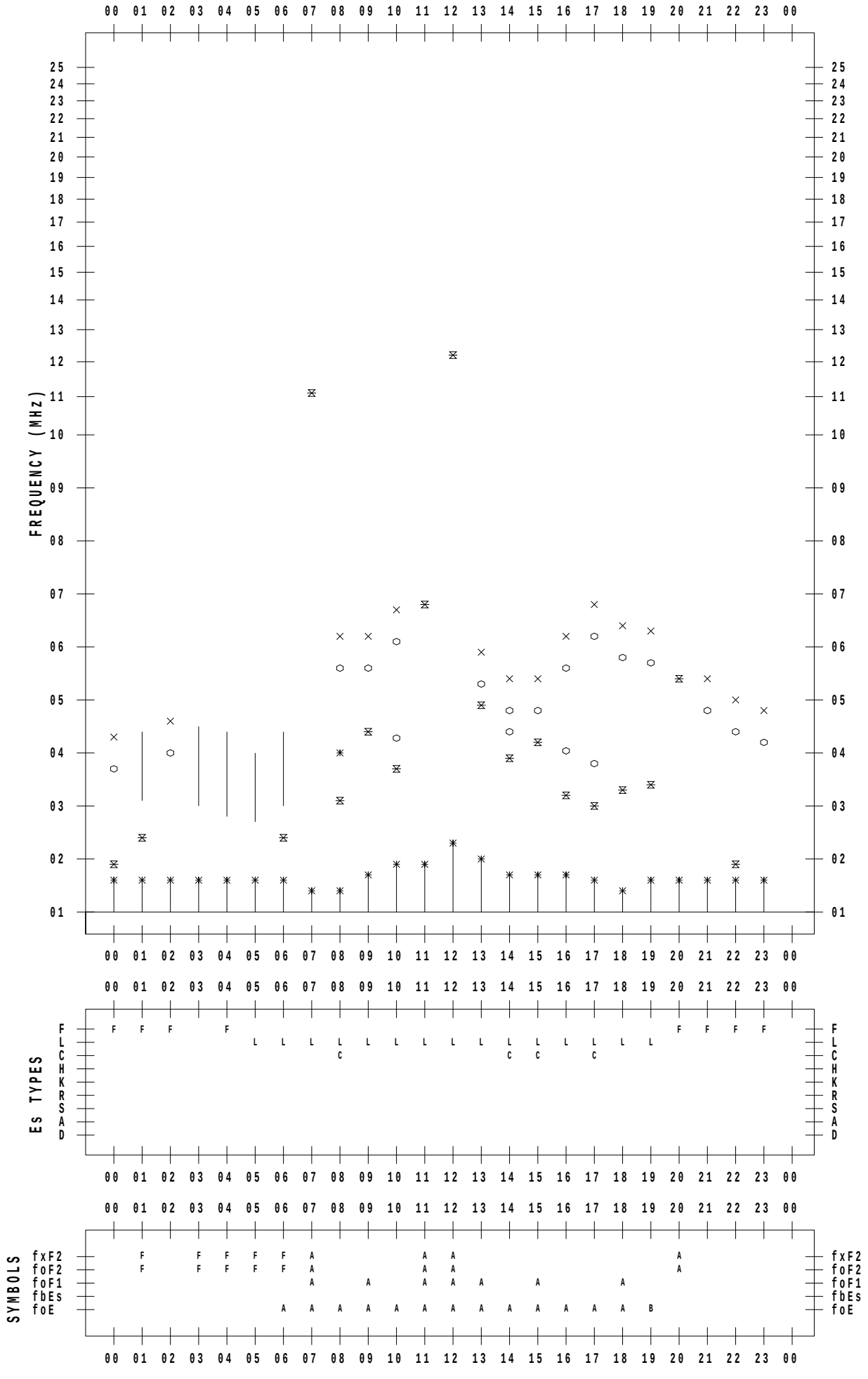
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/14

135 °E MEAN TIME



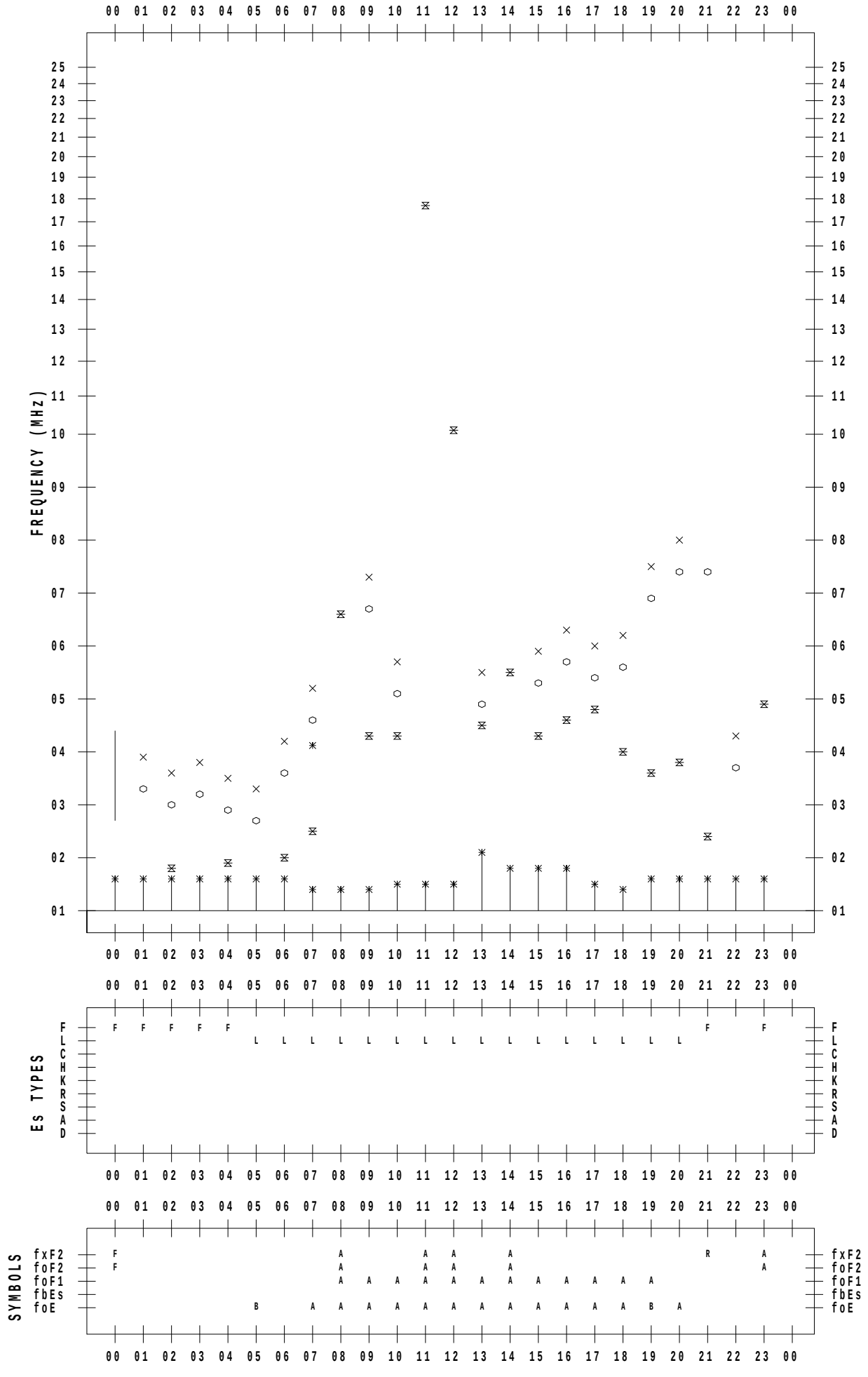
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/15

135 °E MEAN TIME



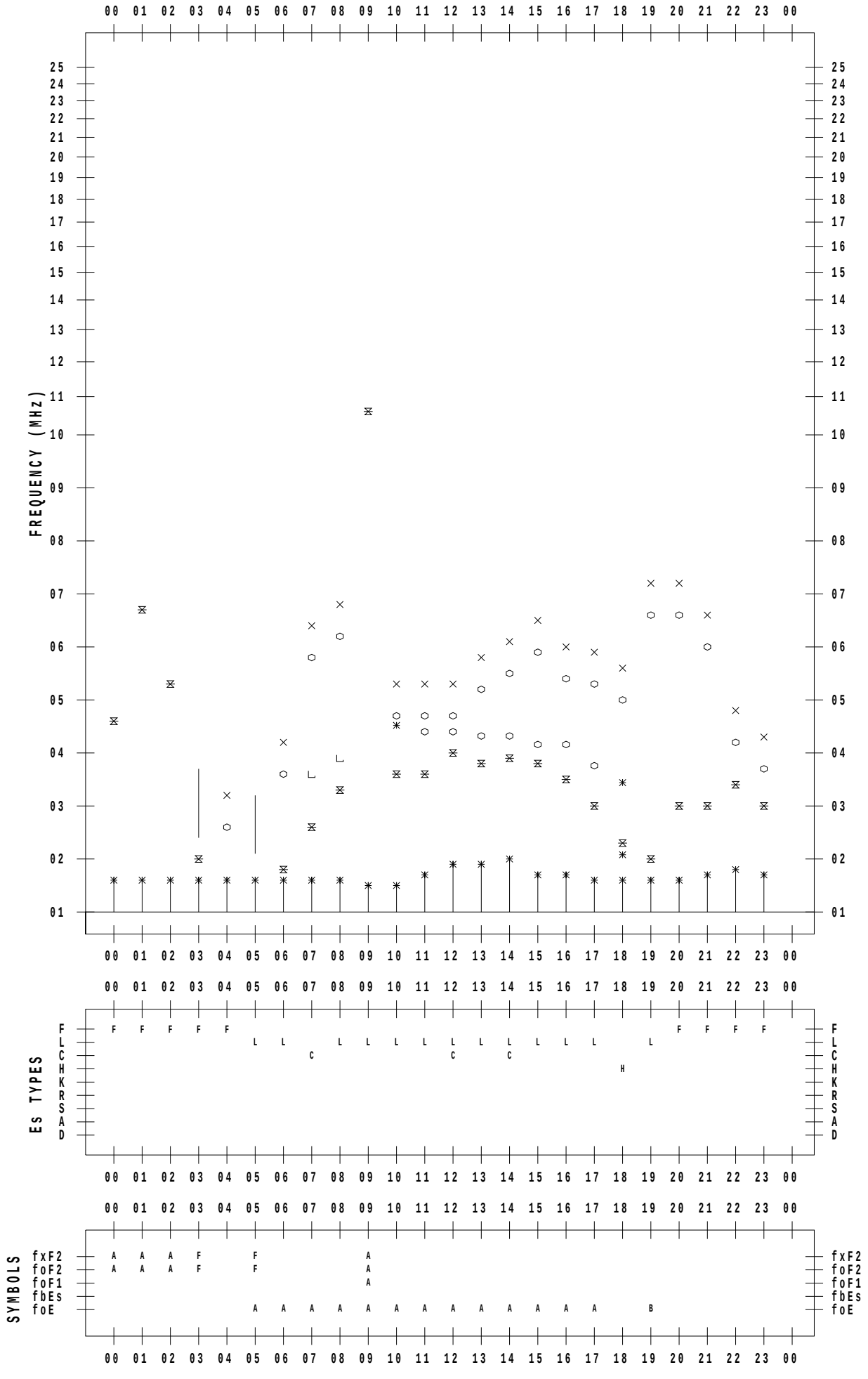
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/16

135 °E MEAN TIME



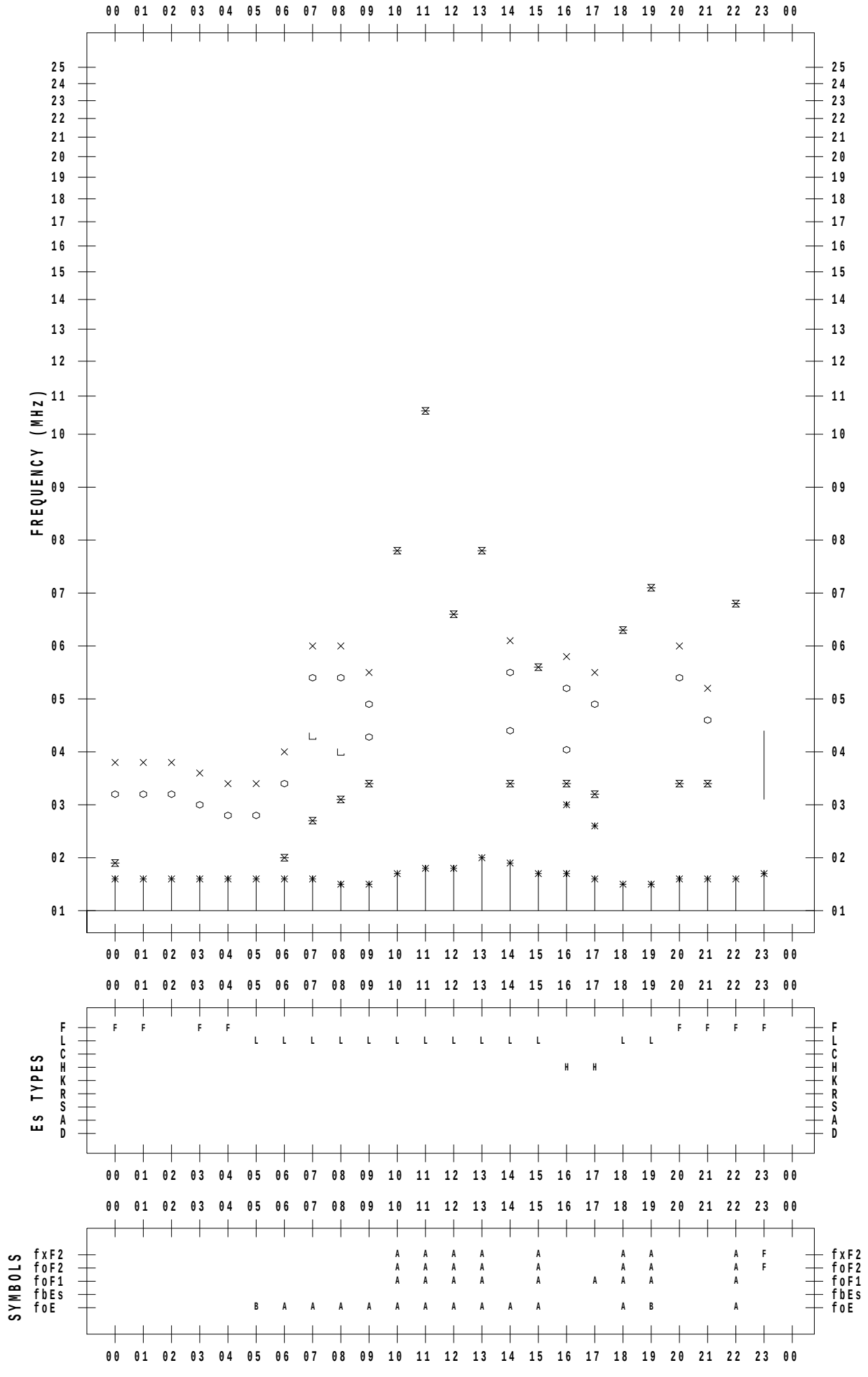
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/17

135 °E MEAN TIME



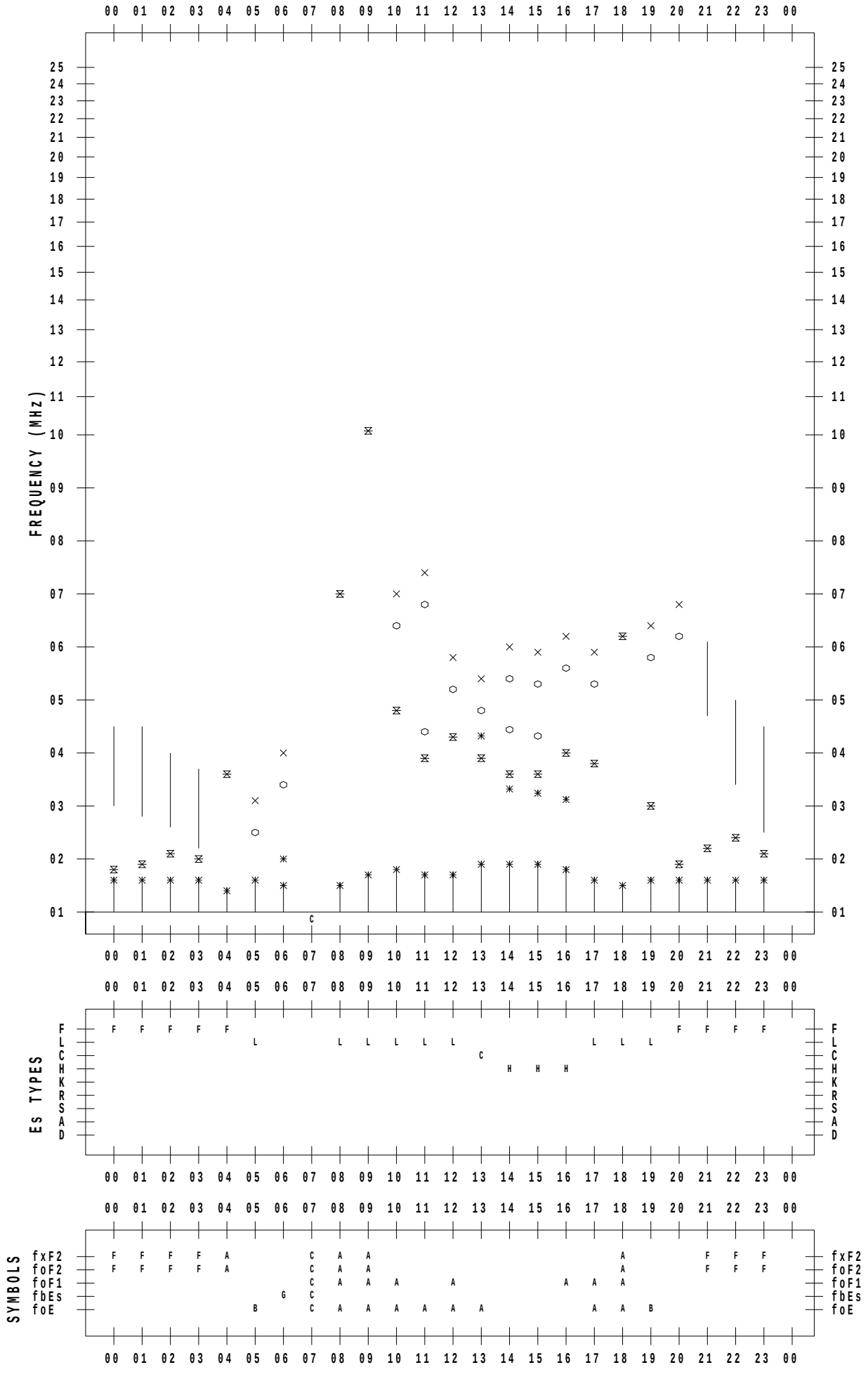
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/18

135 °E MEAN TIME



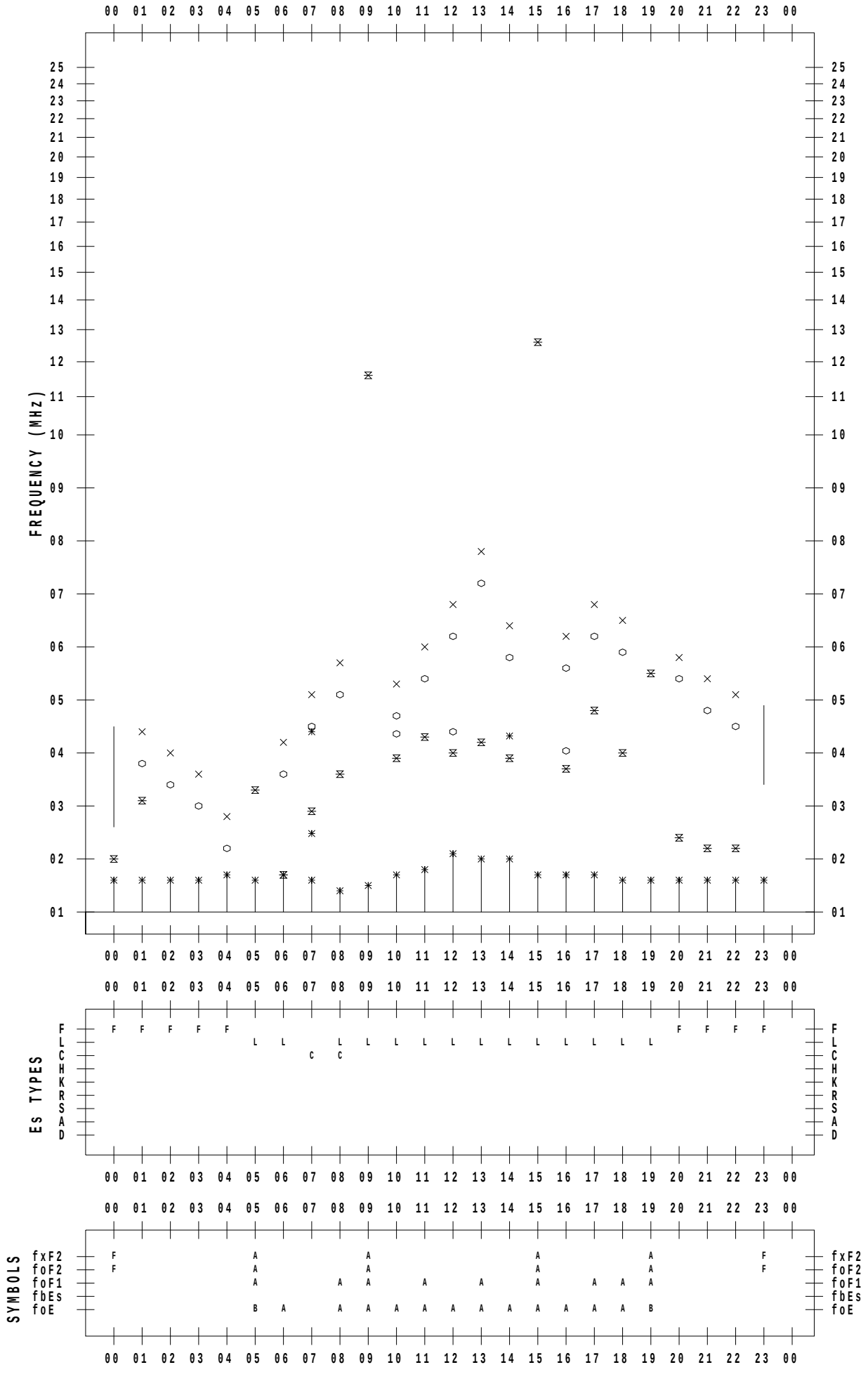
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/19

135 °E MEAN TIME



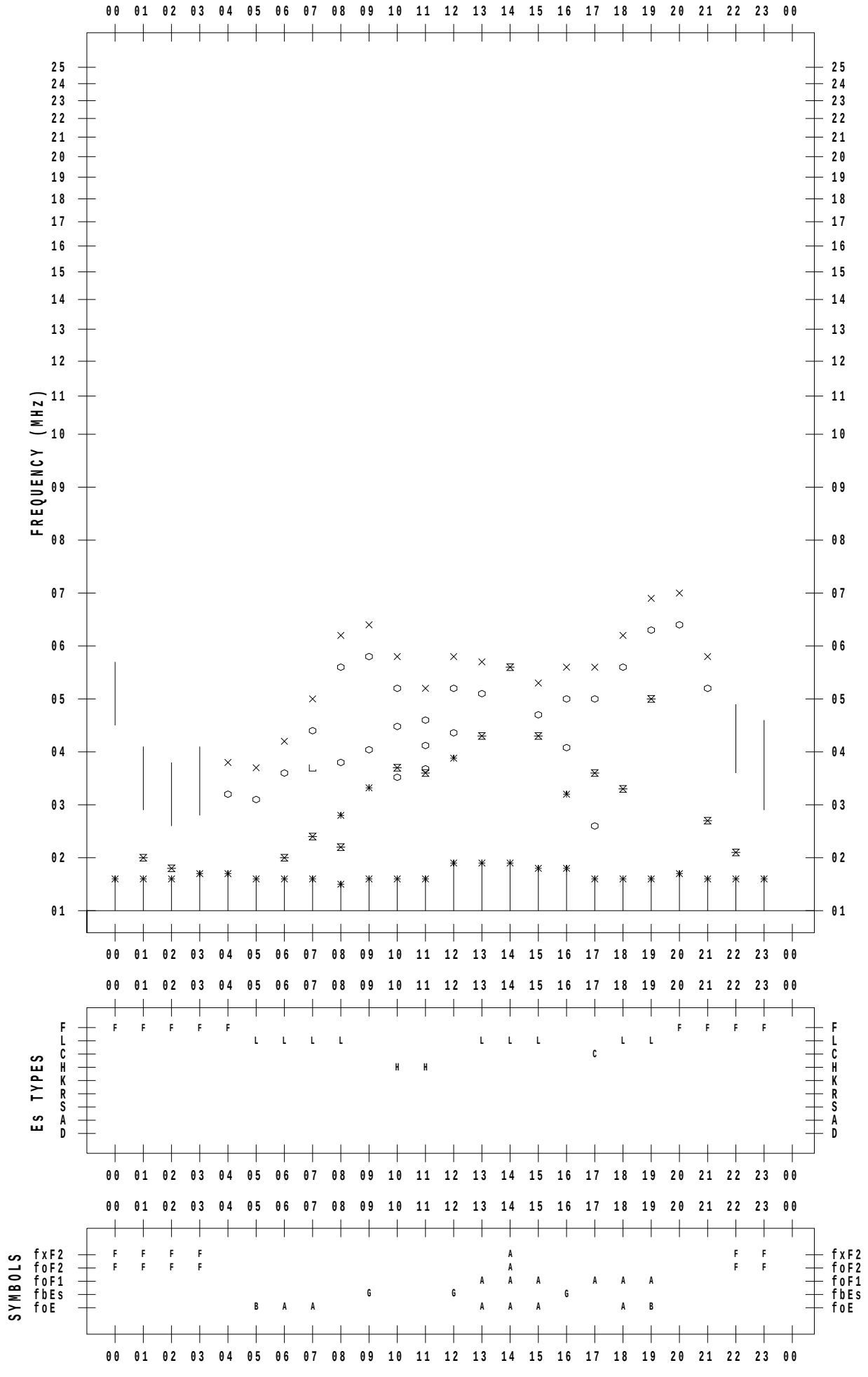
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/20

135 °E MEAN TIME



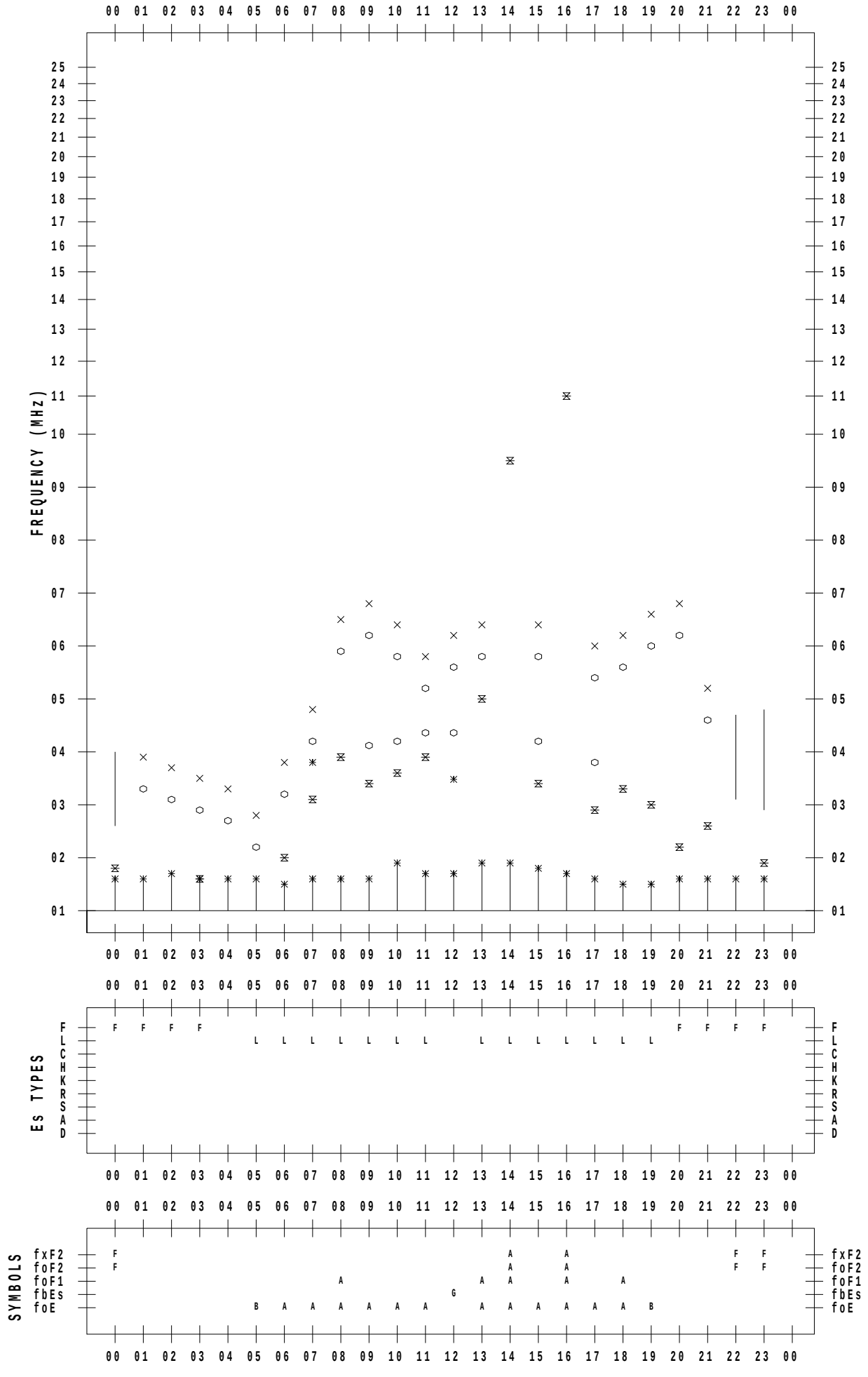
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/21

135 °E MEAN TIME



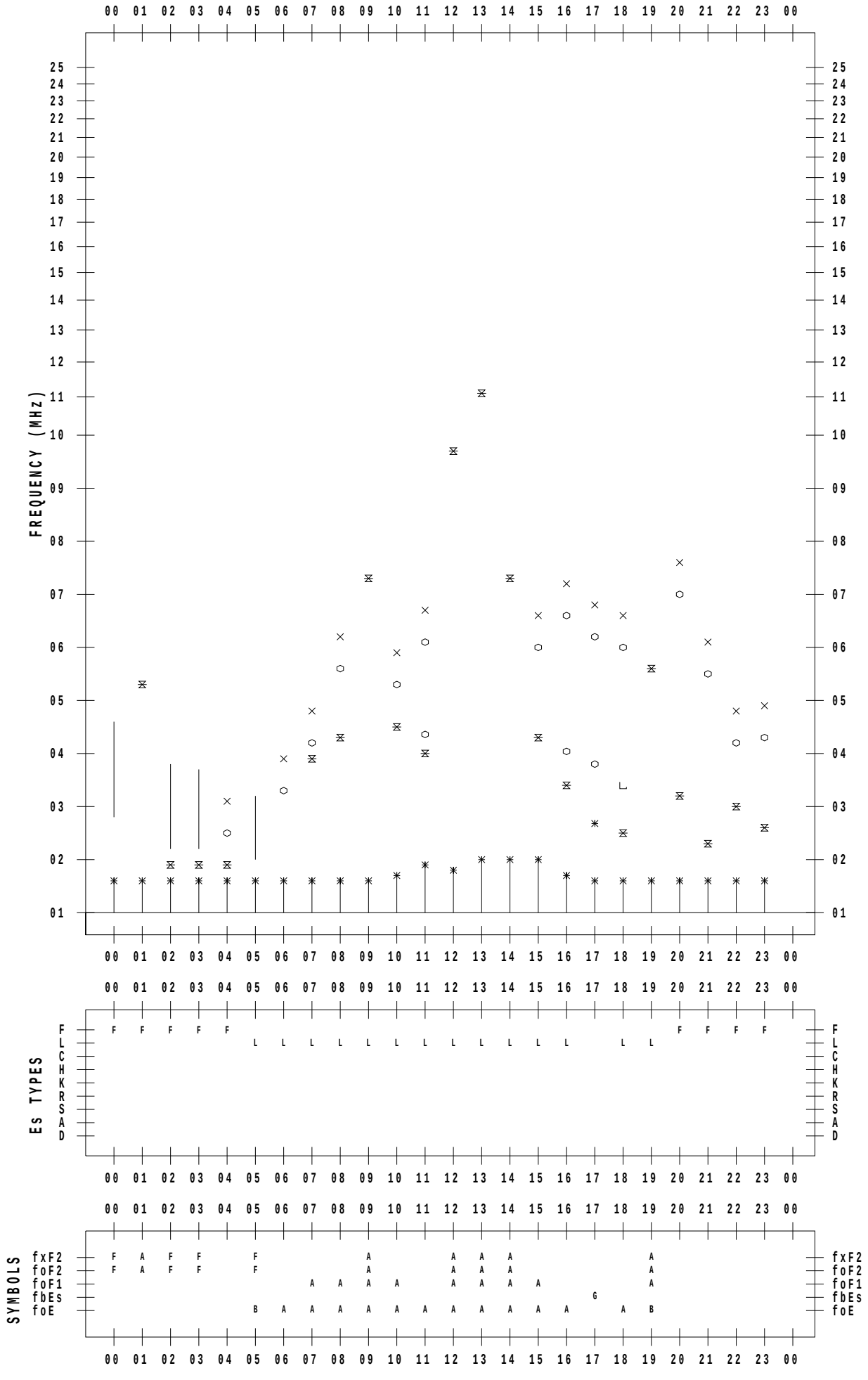
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/22

135 °E MEAN TIME



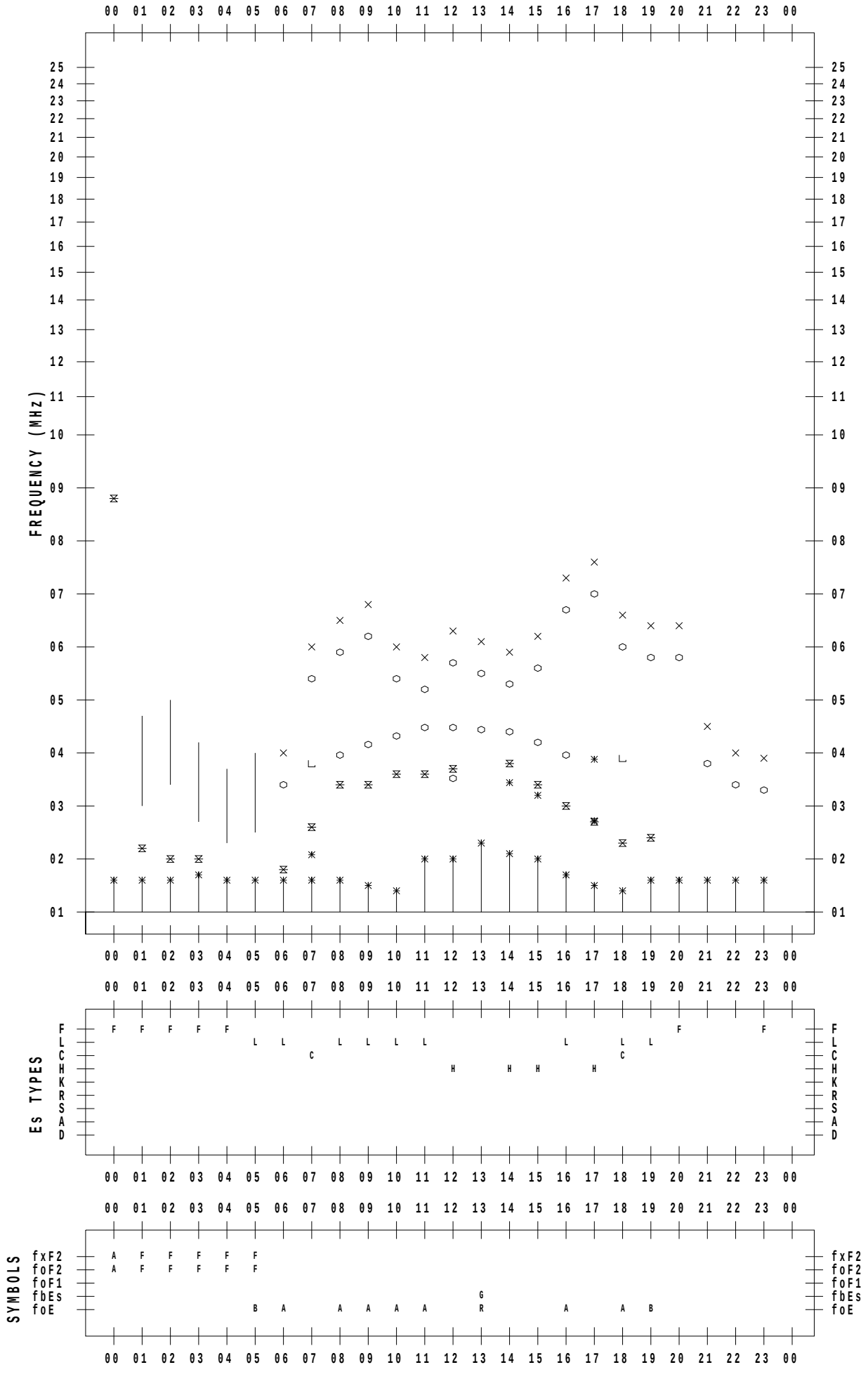
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/23

135 °E MEAN TIME



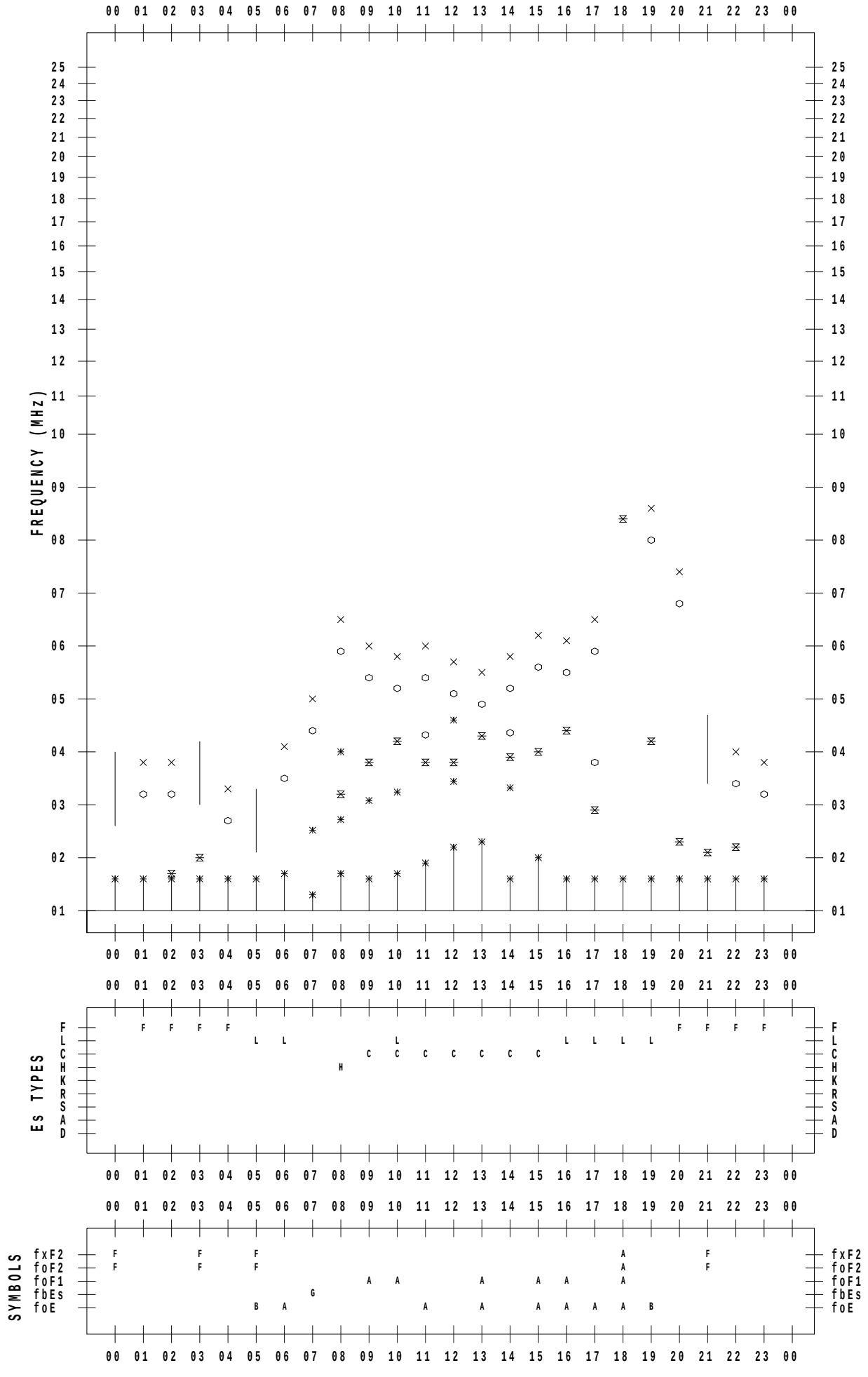
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/24

135 °E MEAN TIME



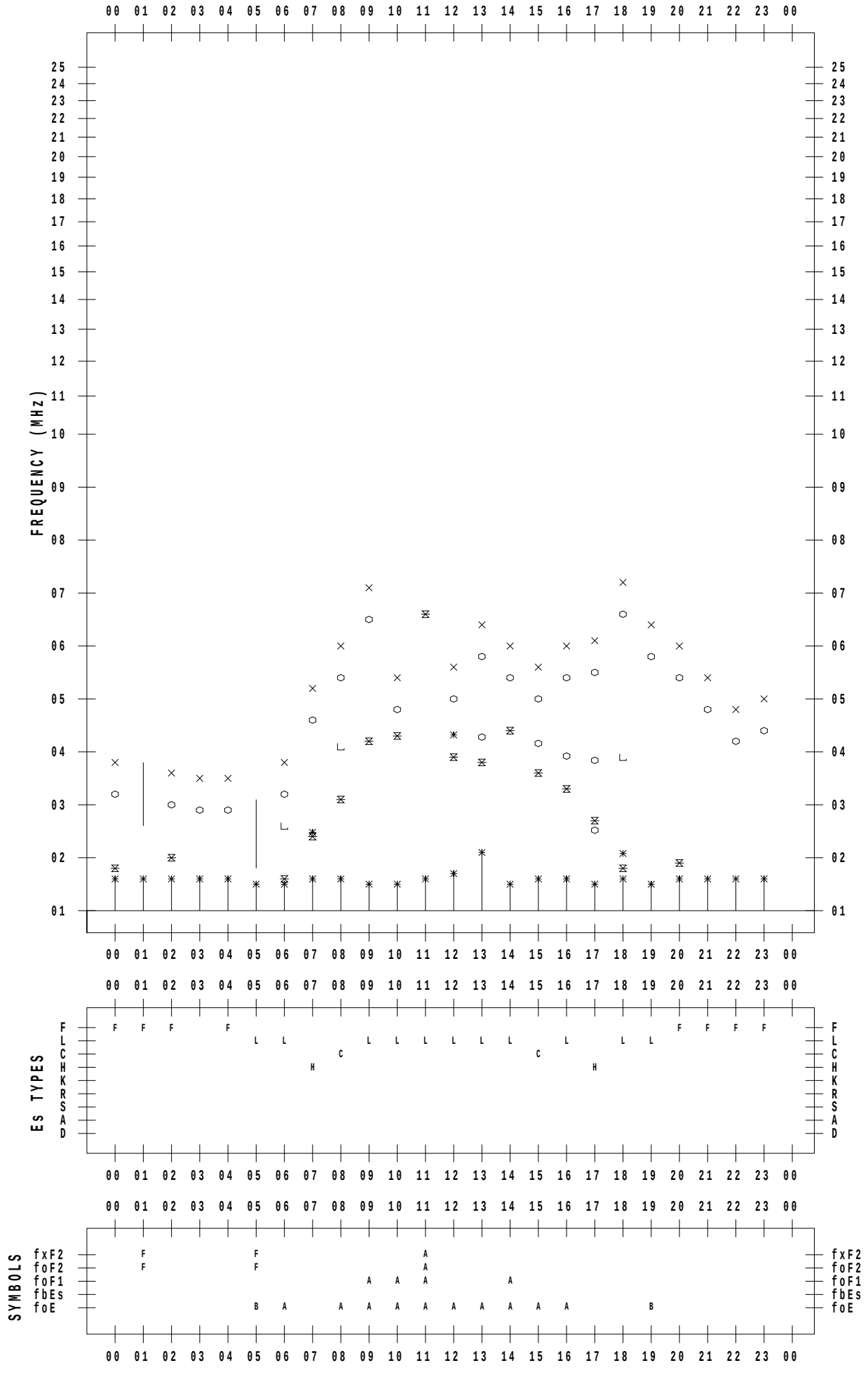
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/25

135 °E MEAN TIME



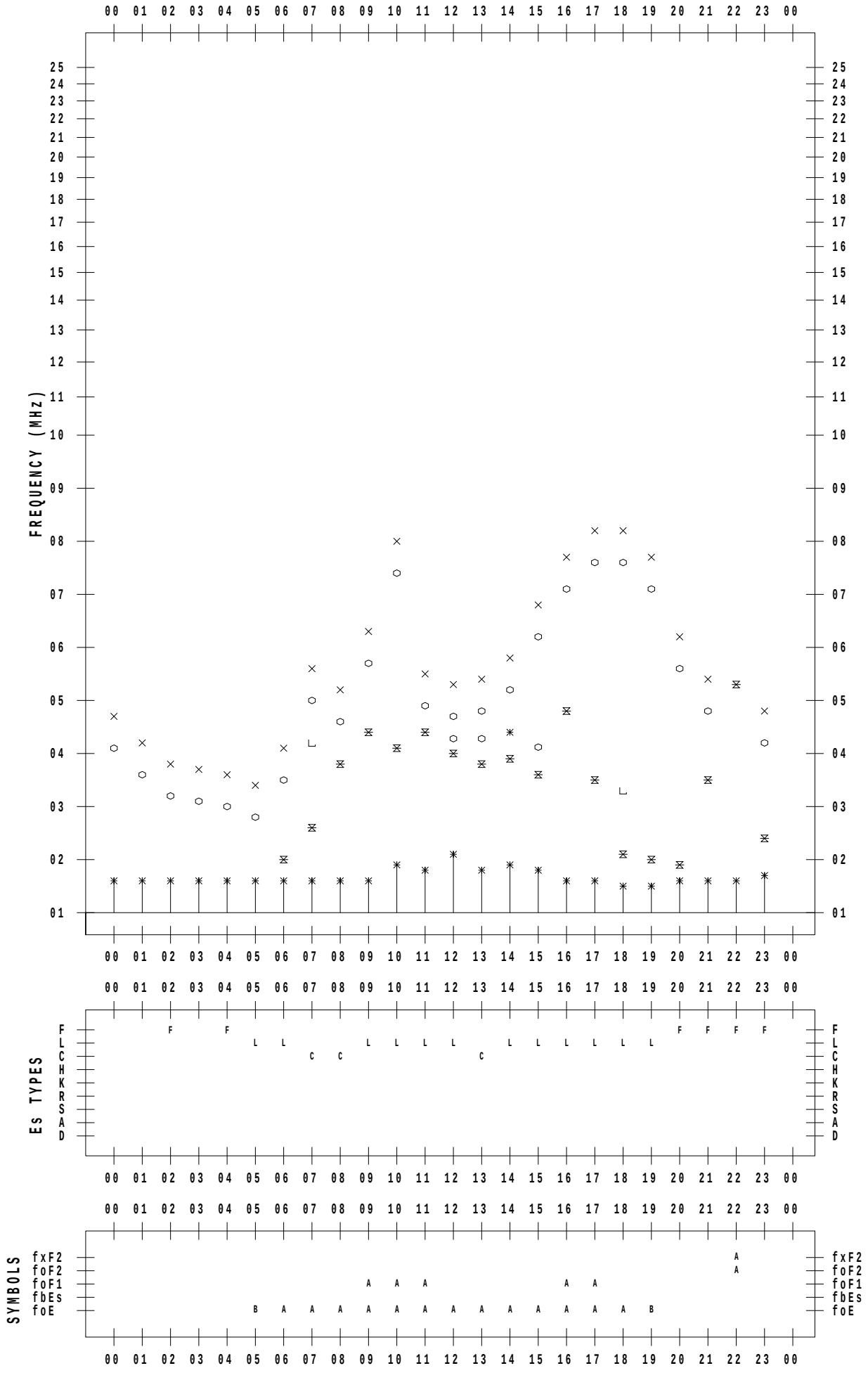
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/26

135 °E MEAN TIME



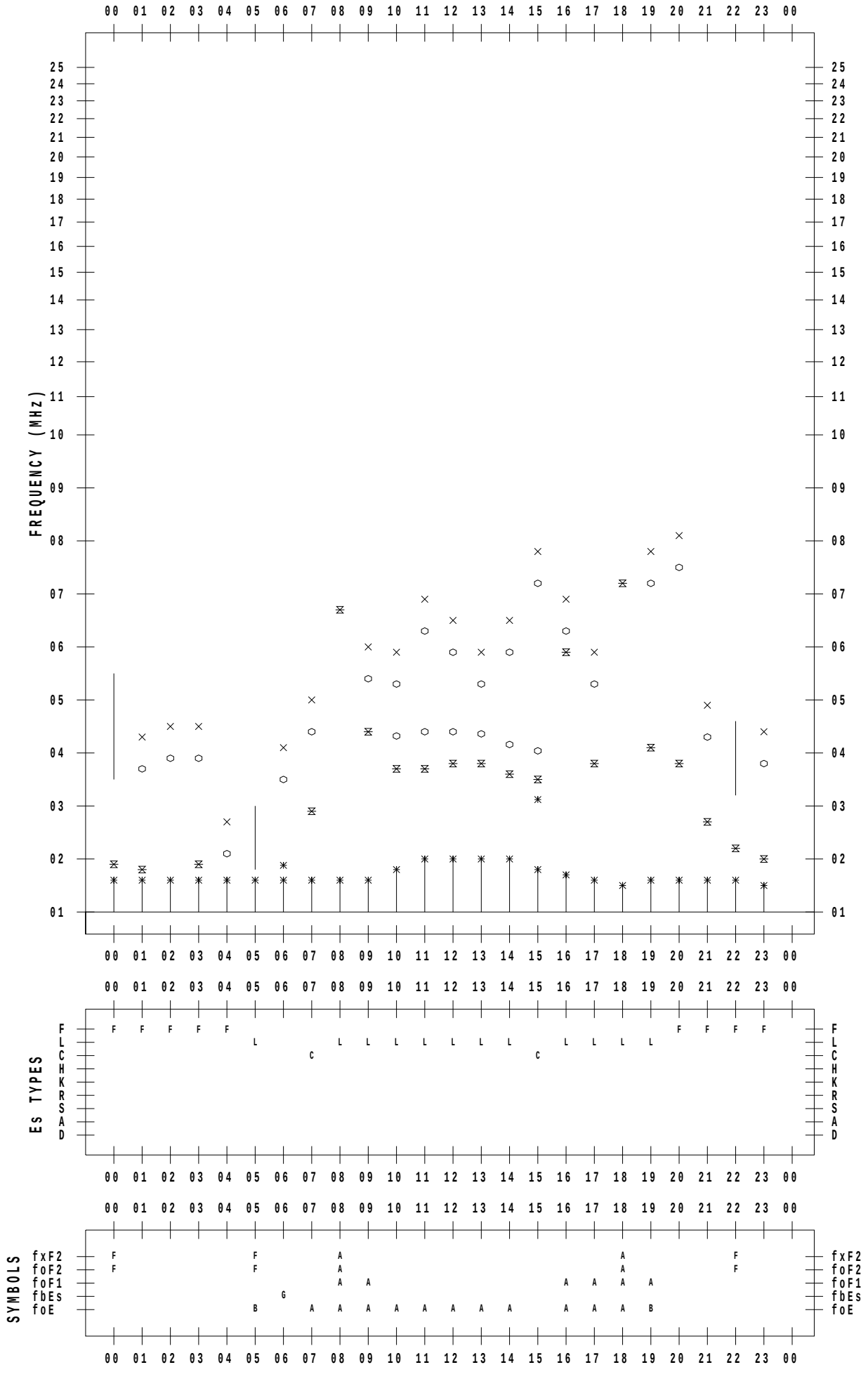
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/27

135 °E MEAN TIME



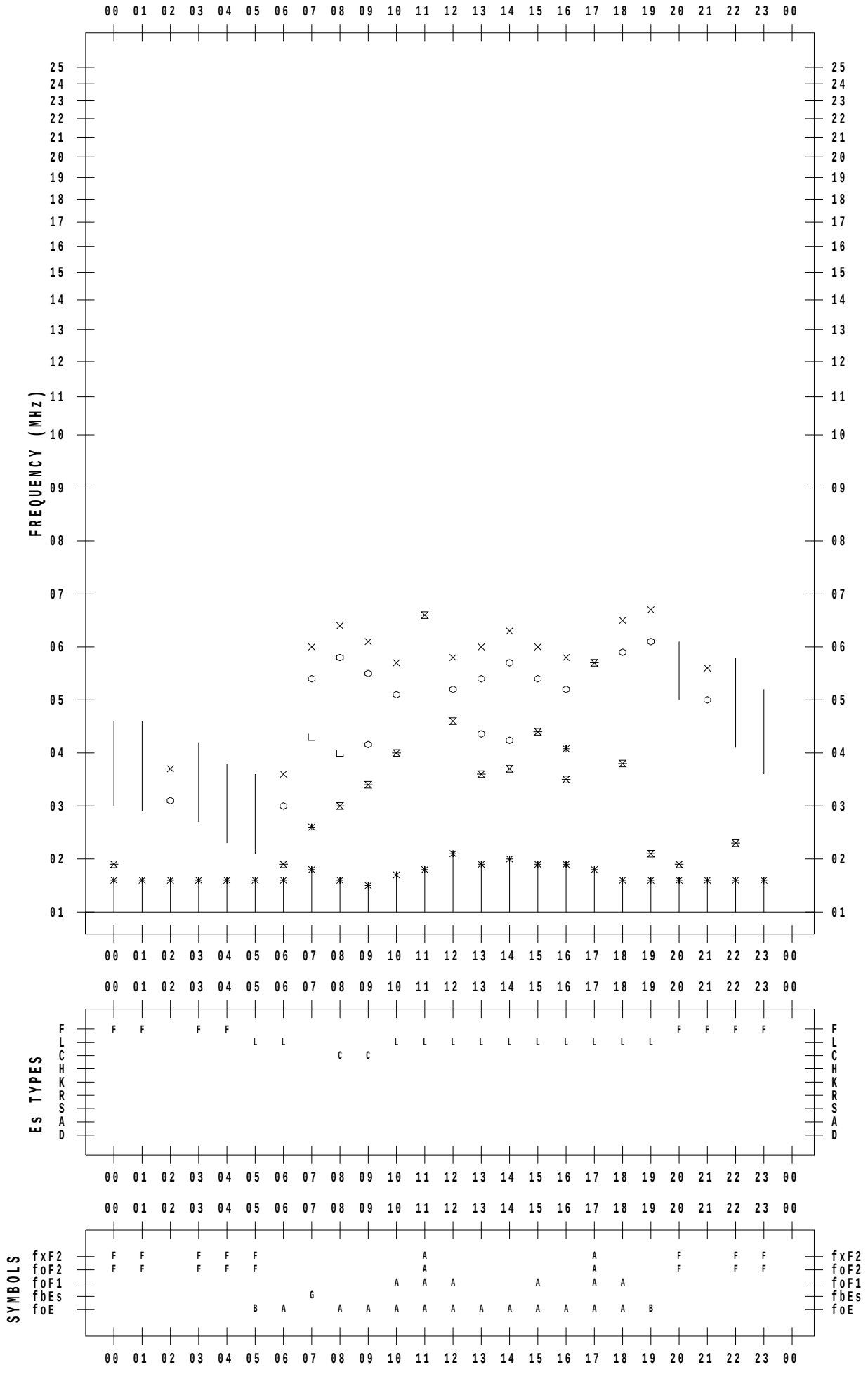
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/28

135 °E MEAN TIME



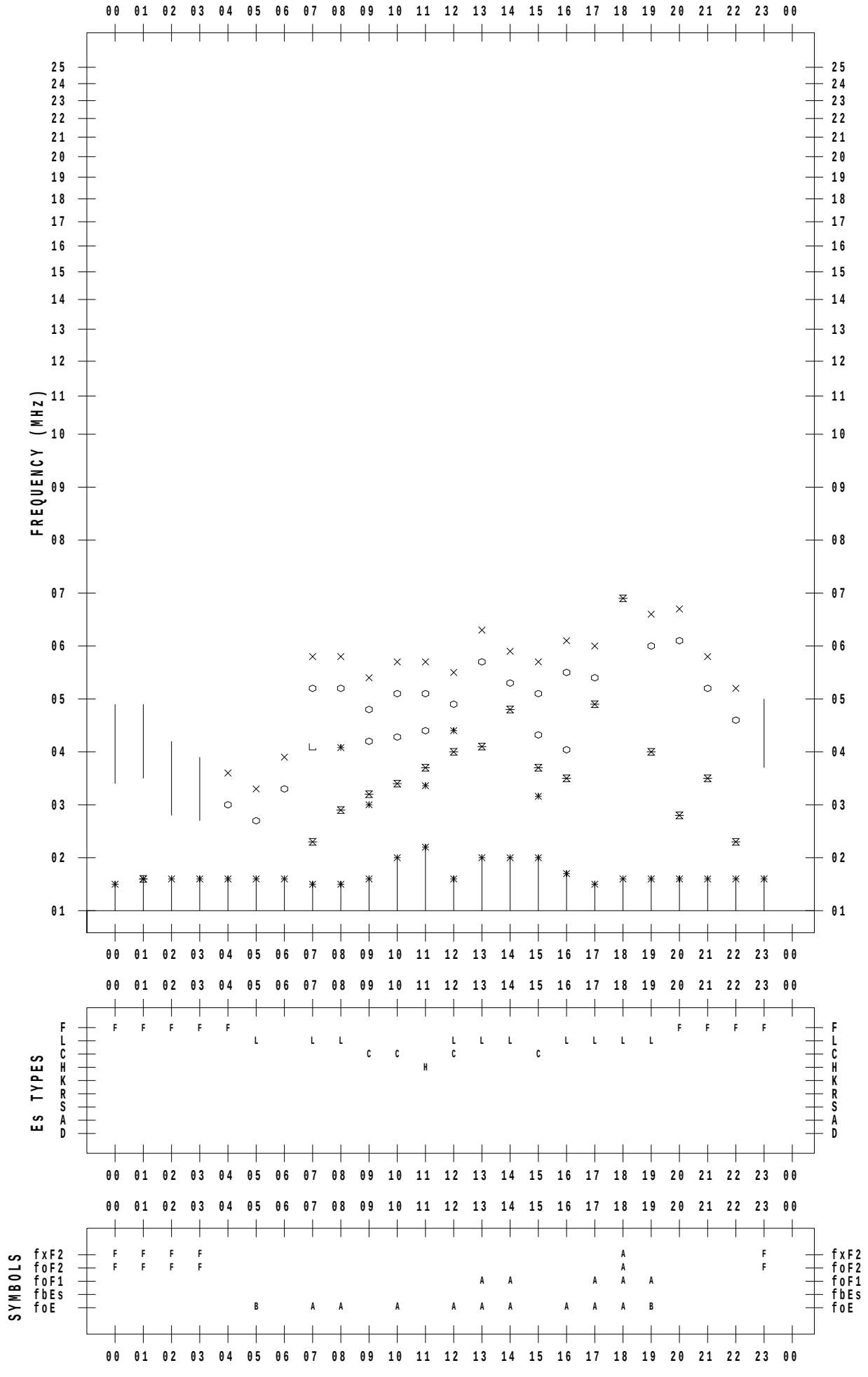
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/29

135 °E MEAN TIME



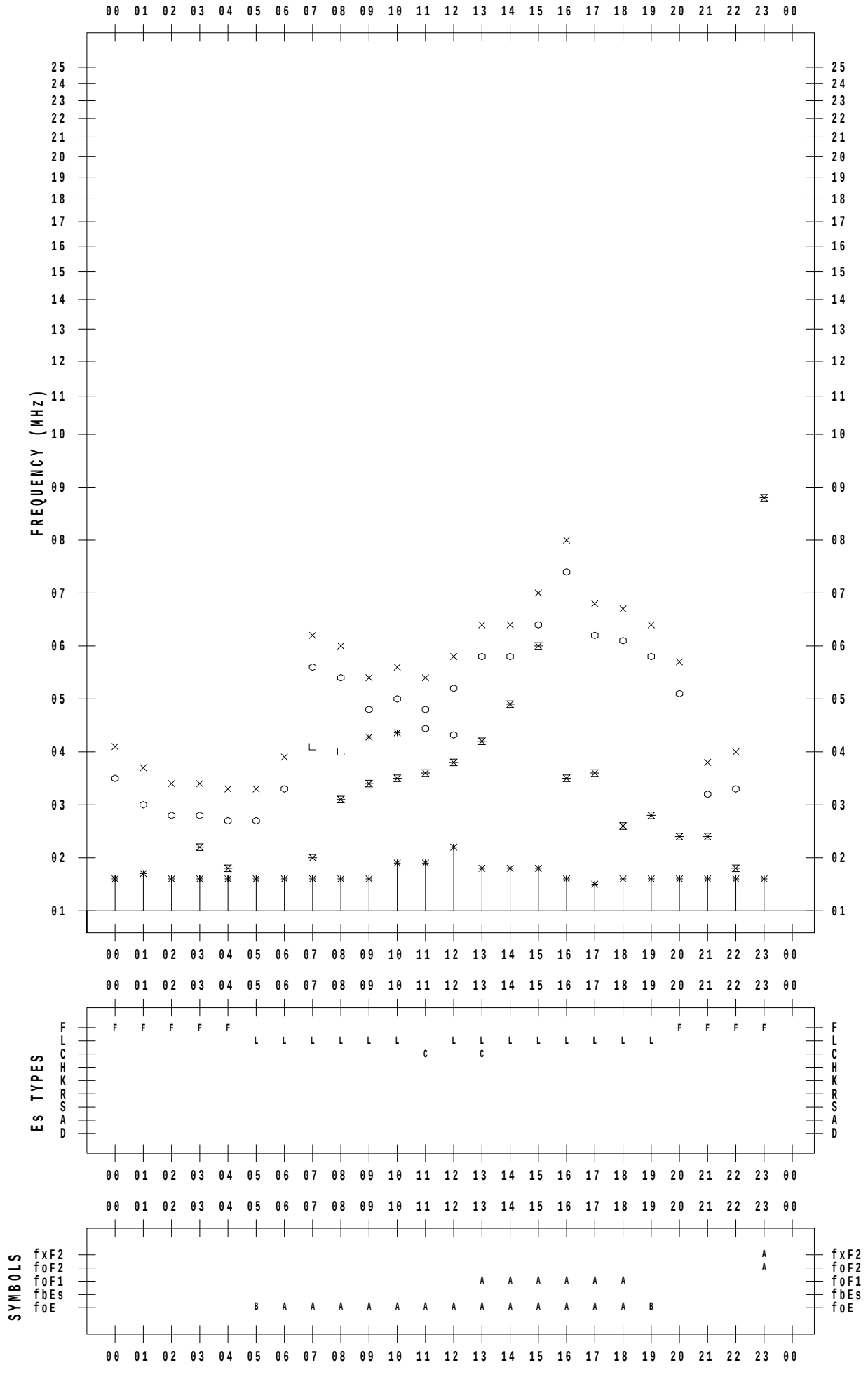
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/30

135 °E MEAN TIME



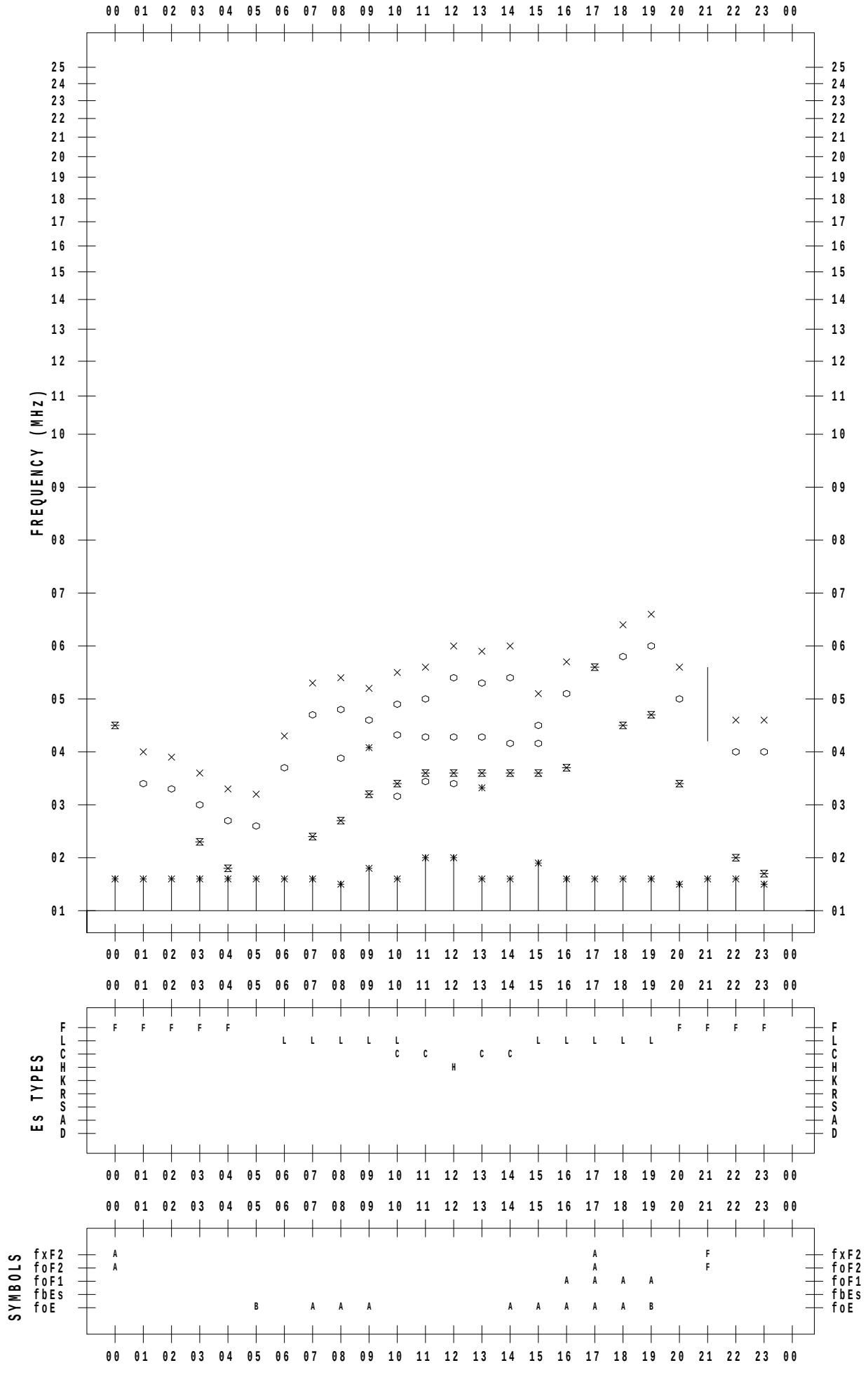
f-PLOT DATA

SCALER : I.NISHIMUTA

STATION : Yamagawa

DATE : 2020/ 8/31

135 °E MEAN TIME



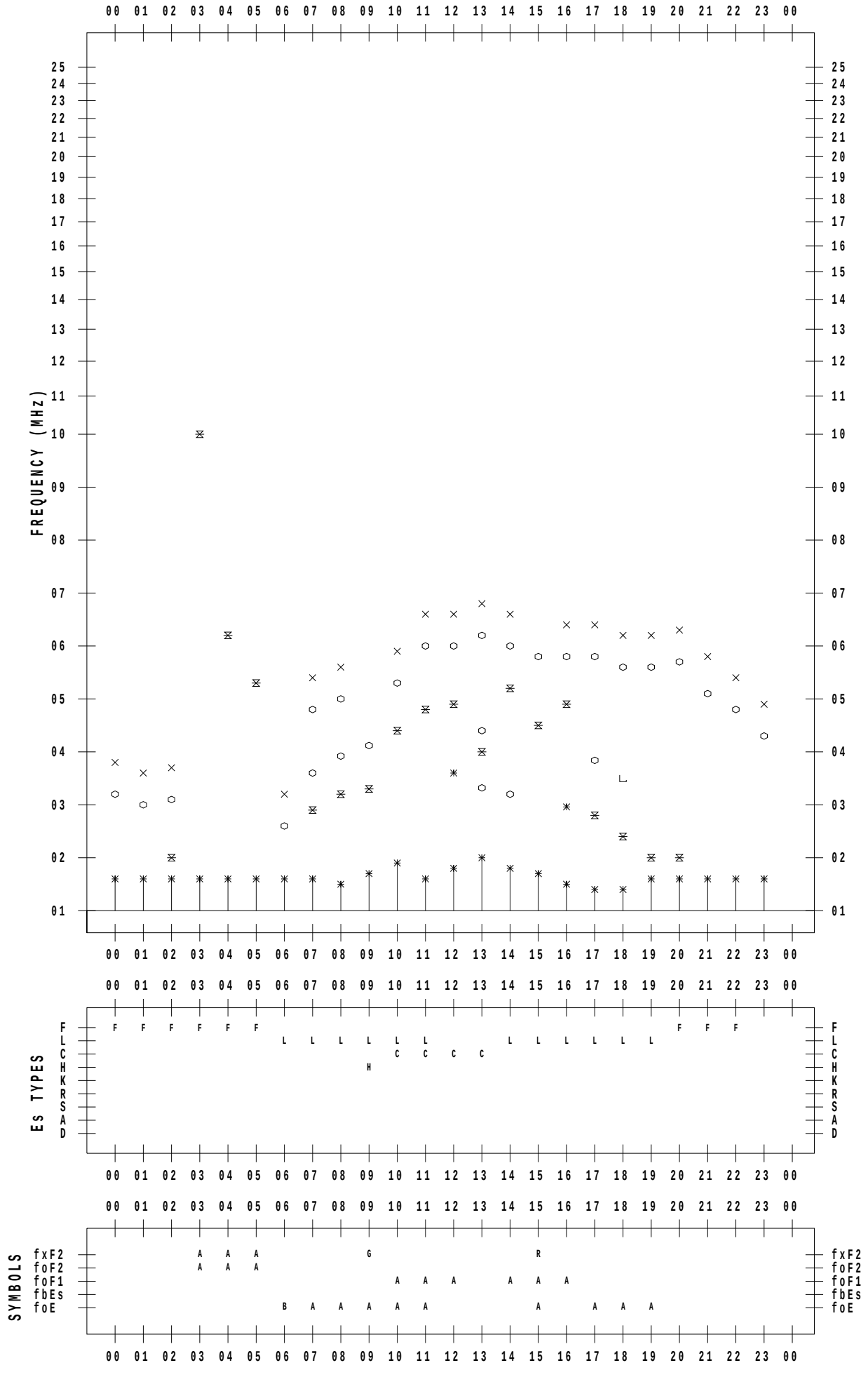
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 1

135 °E MEAN TIME



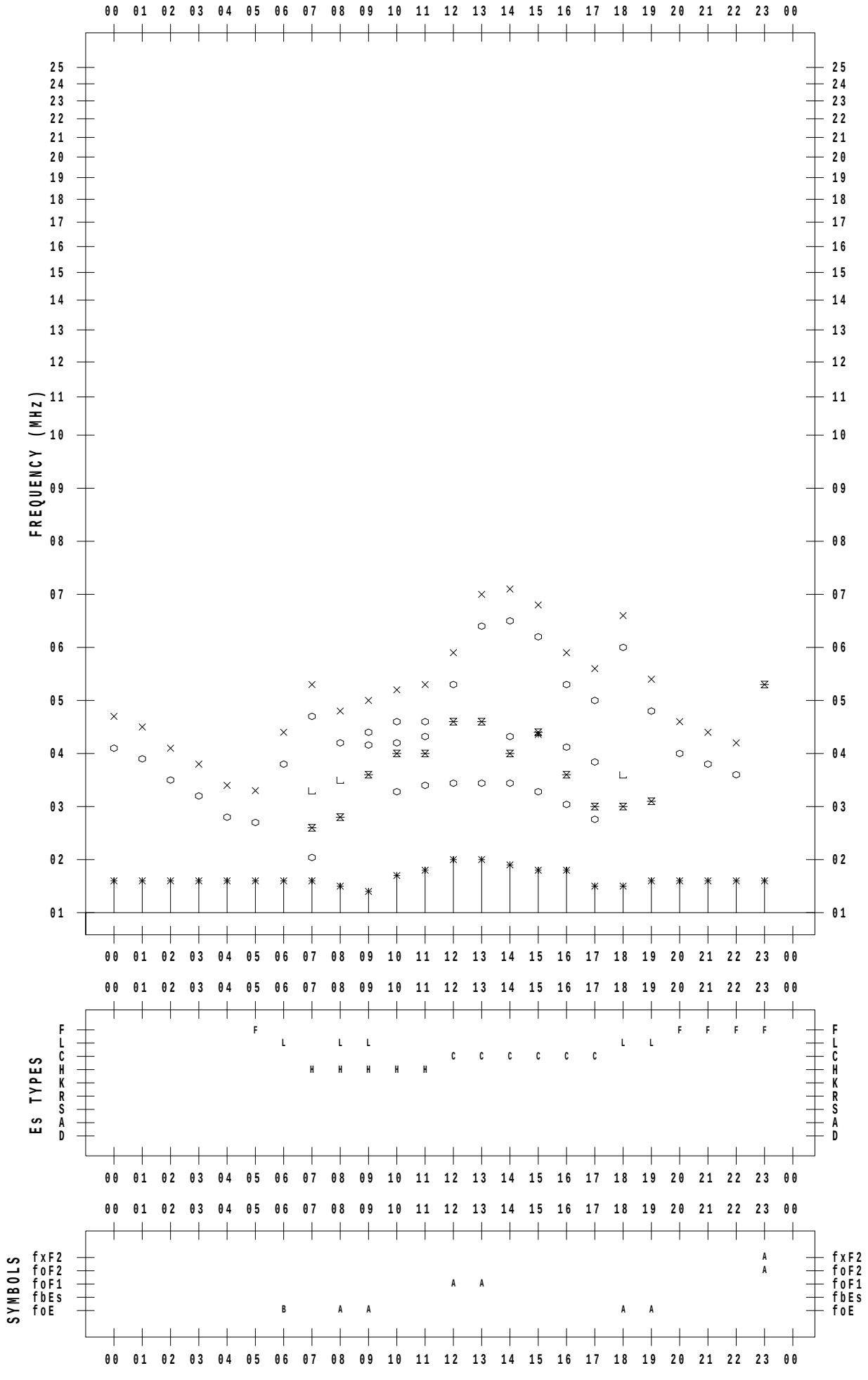
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 2

135 °E MEAN TIME



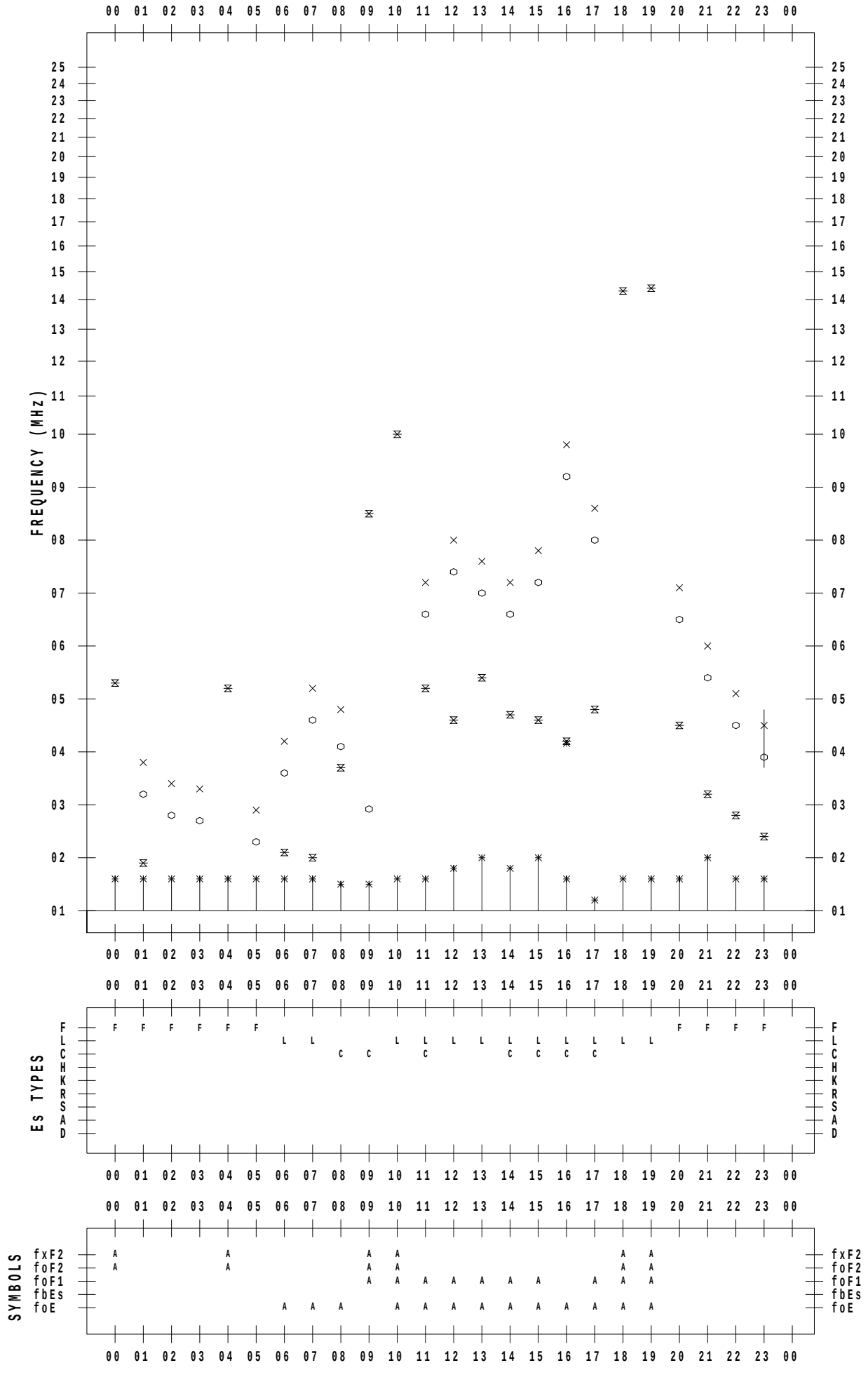
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 3

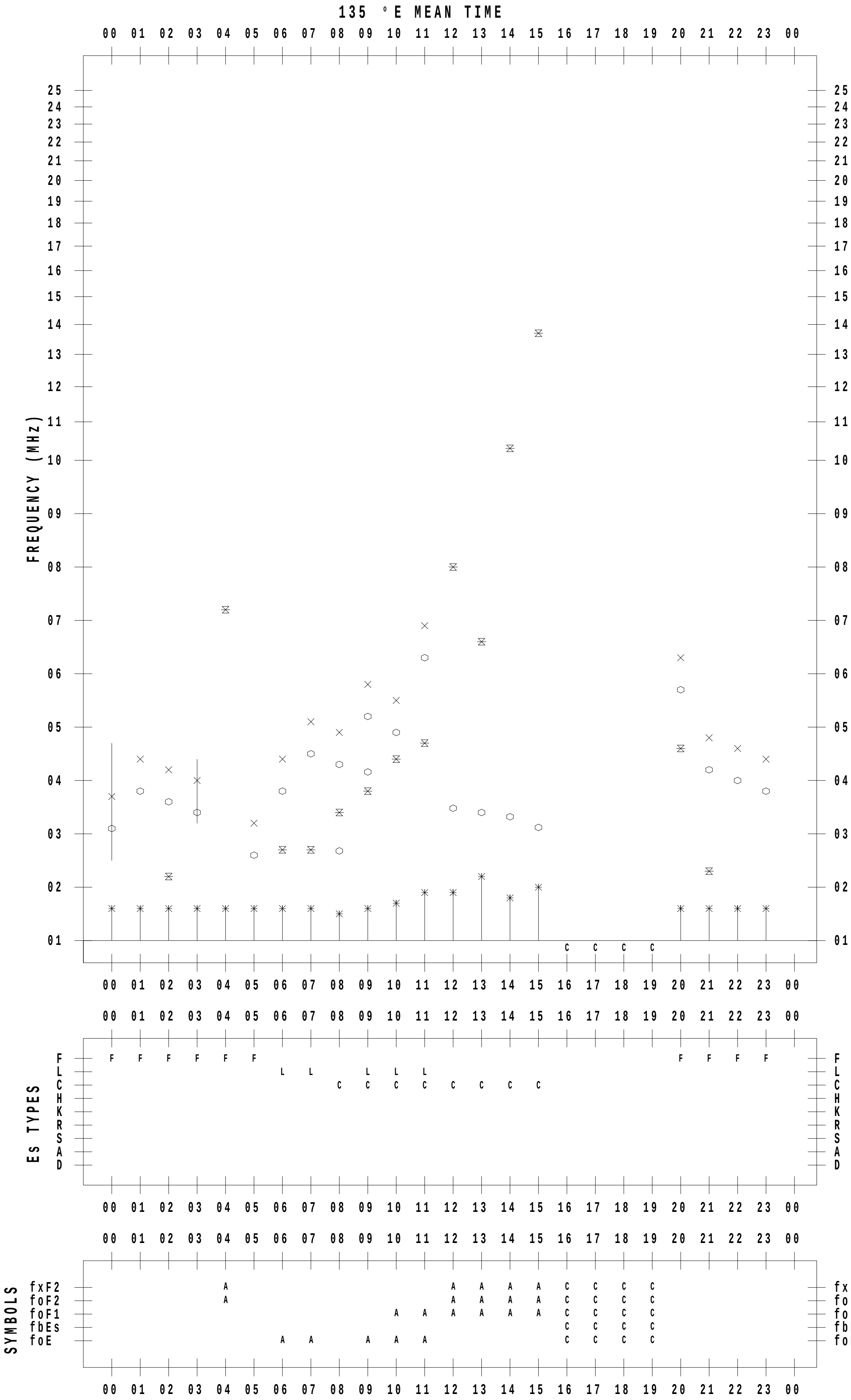
135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa DATE : 2020/ 8/ 4



f-PLOT DATA

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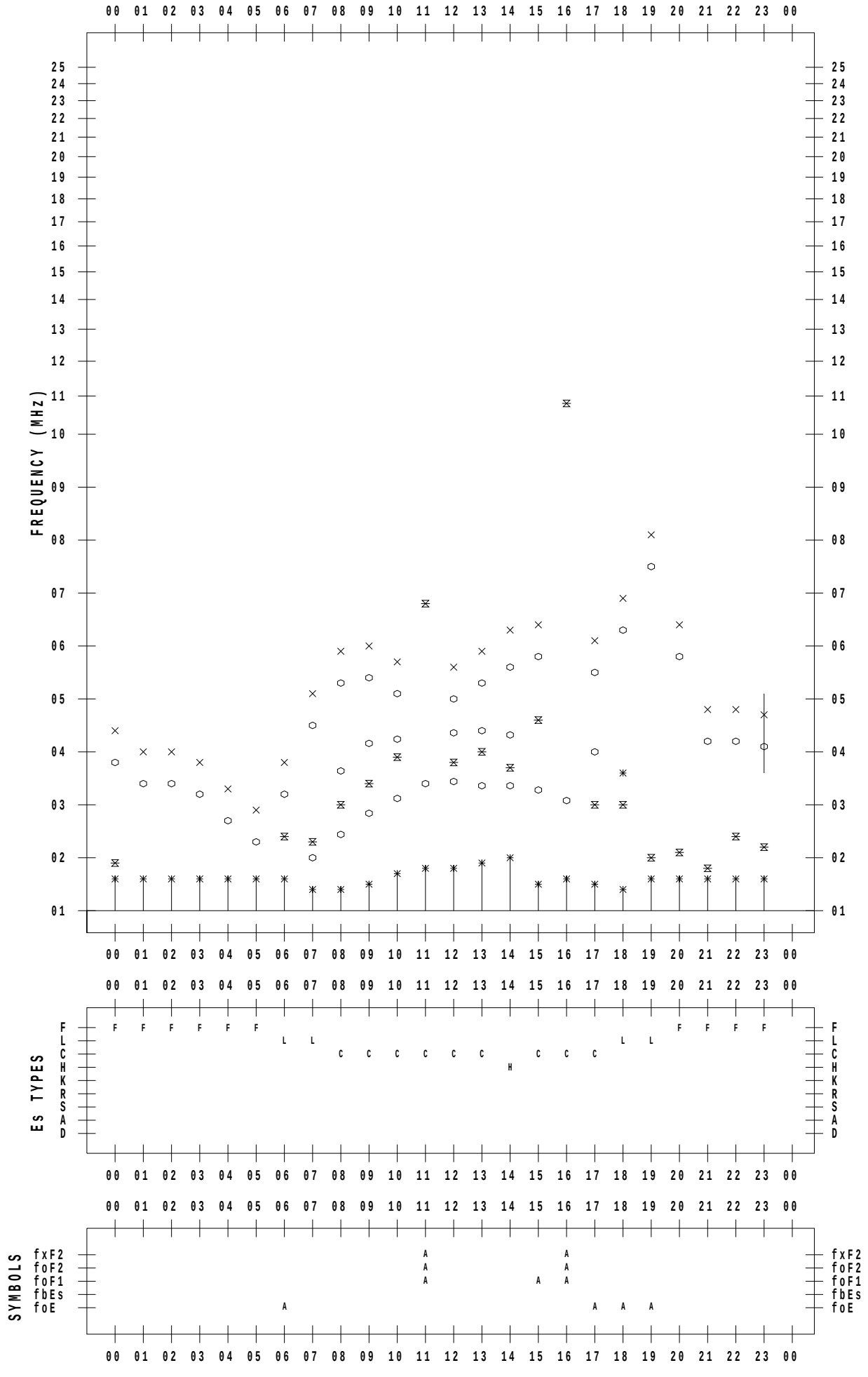
STATION : Okinawa

DATE : 2020/ 8/ 5

135 °E MEAN TIME



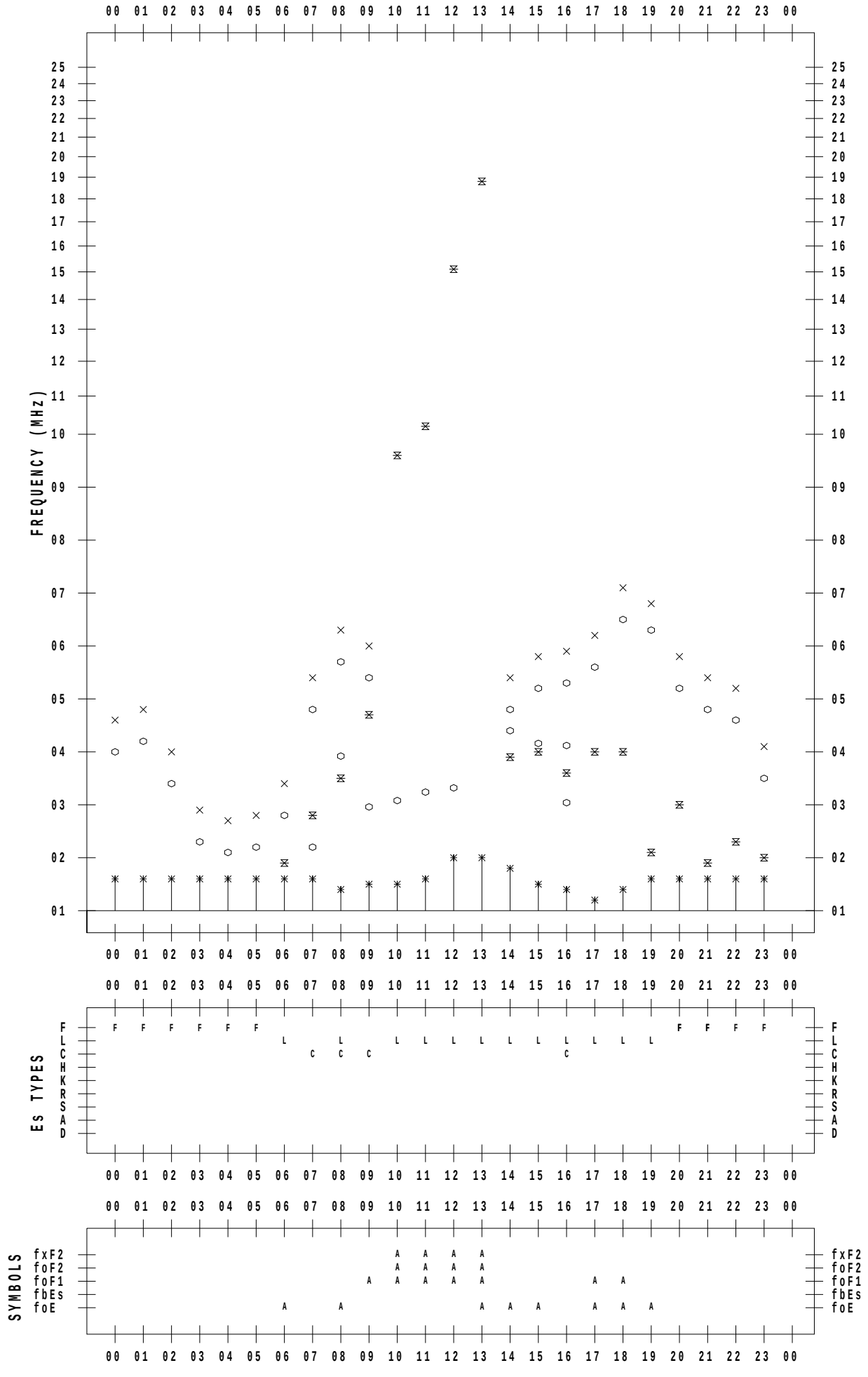
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 6

135 °E MEAN TIME



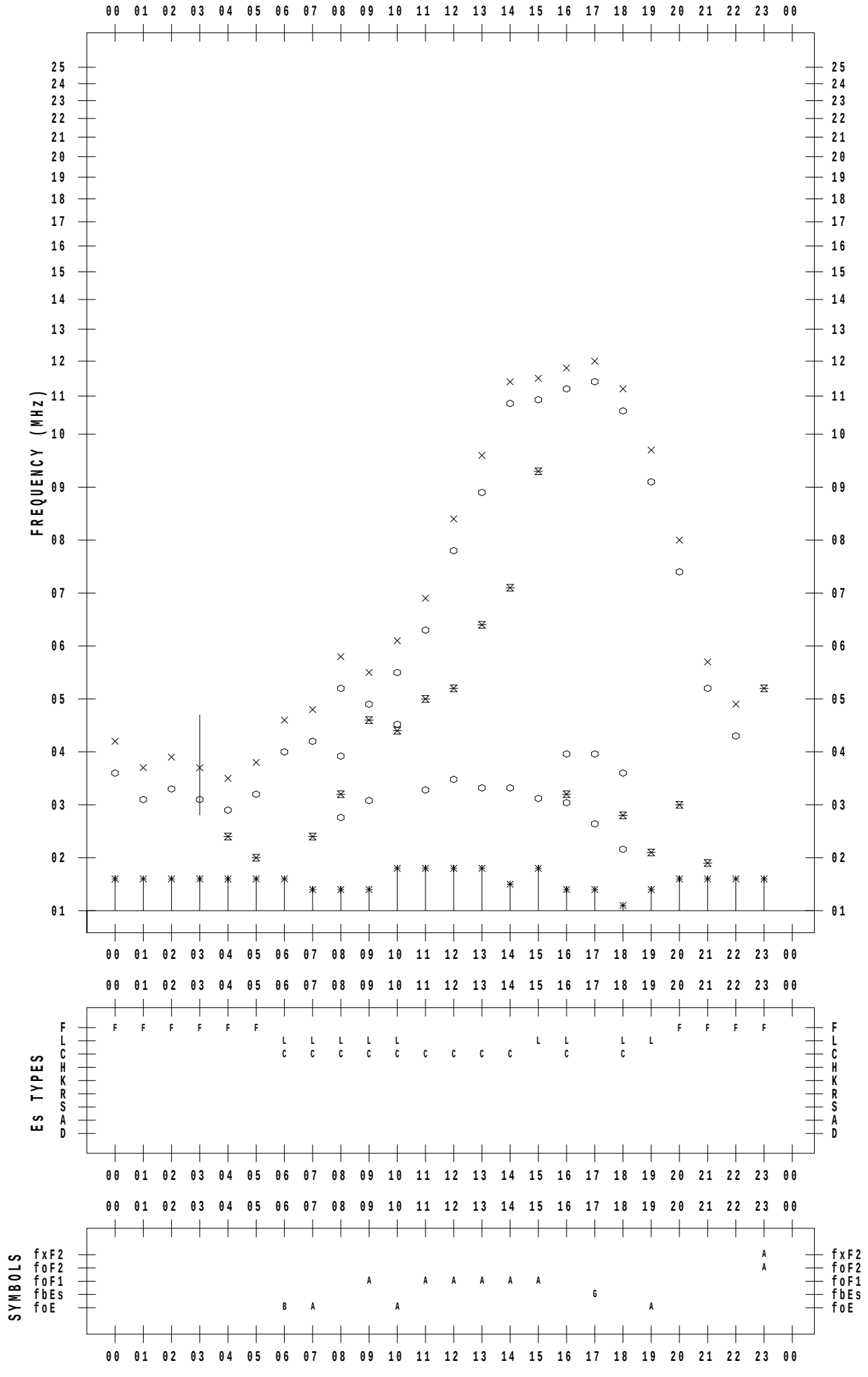
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 7

135 °E MEAN TIME



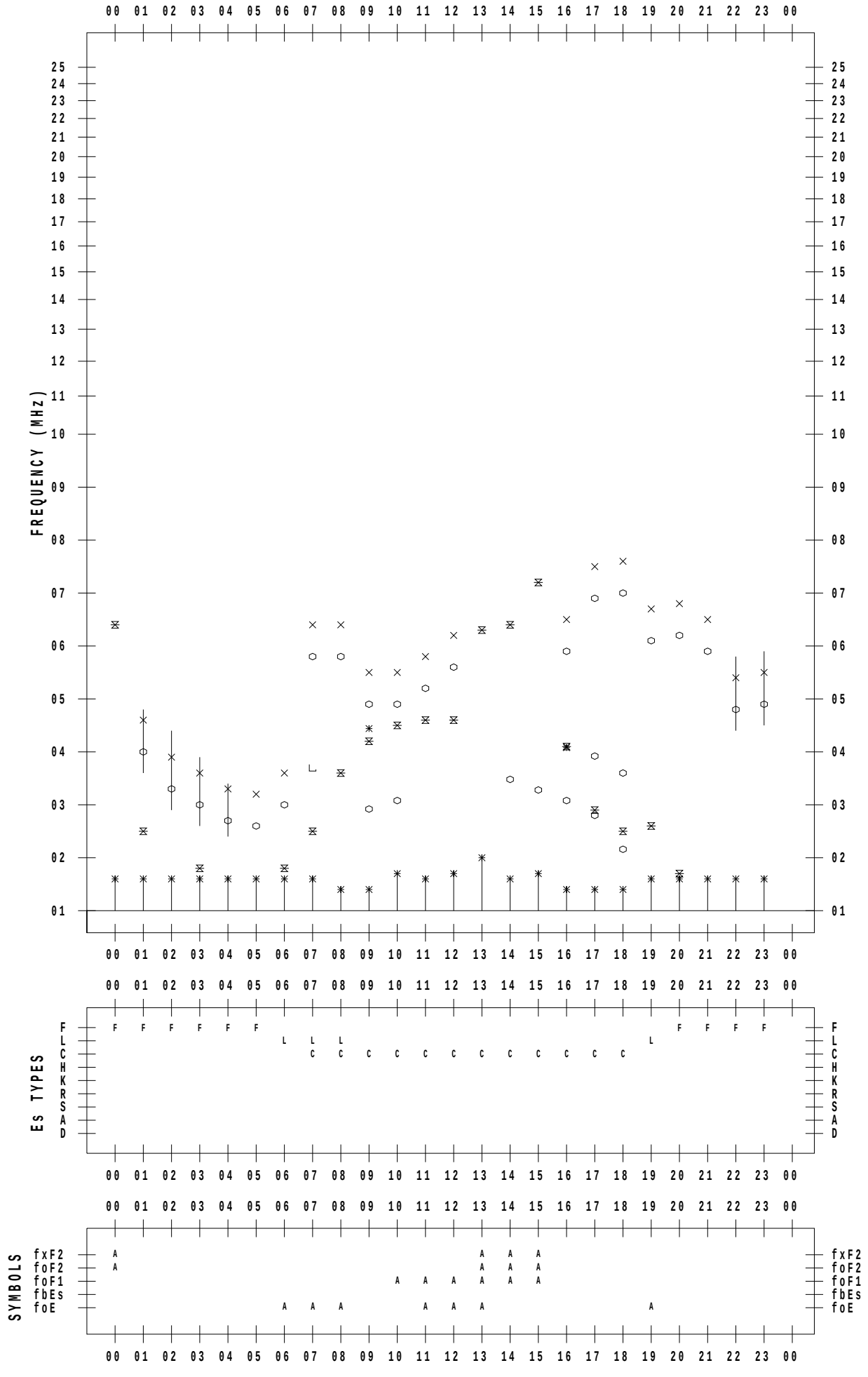
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 8

135 °E MEAN TIME



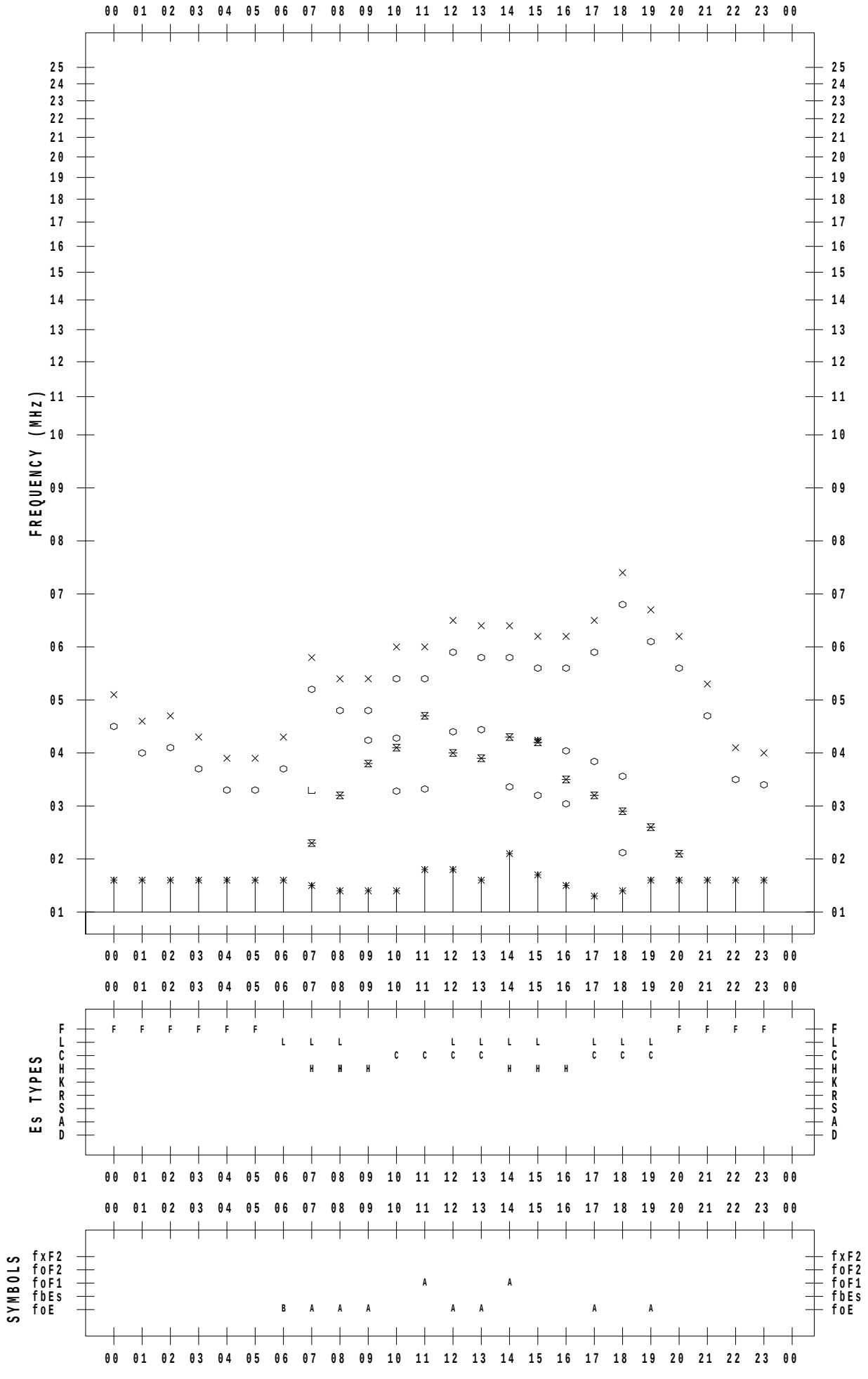
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/ 9

135 °E MEAN TIME



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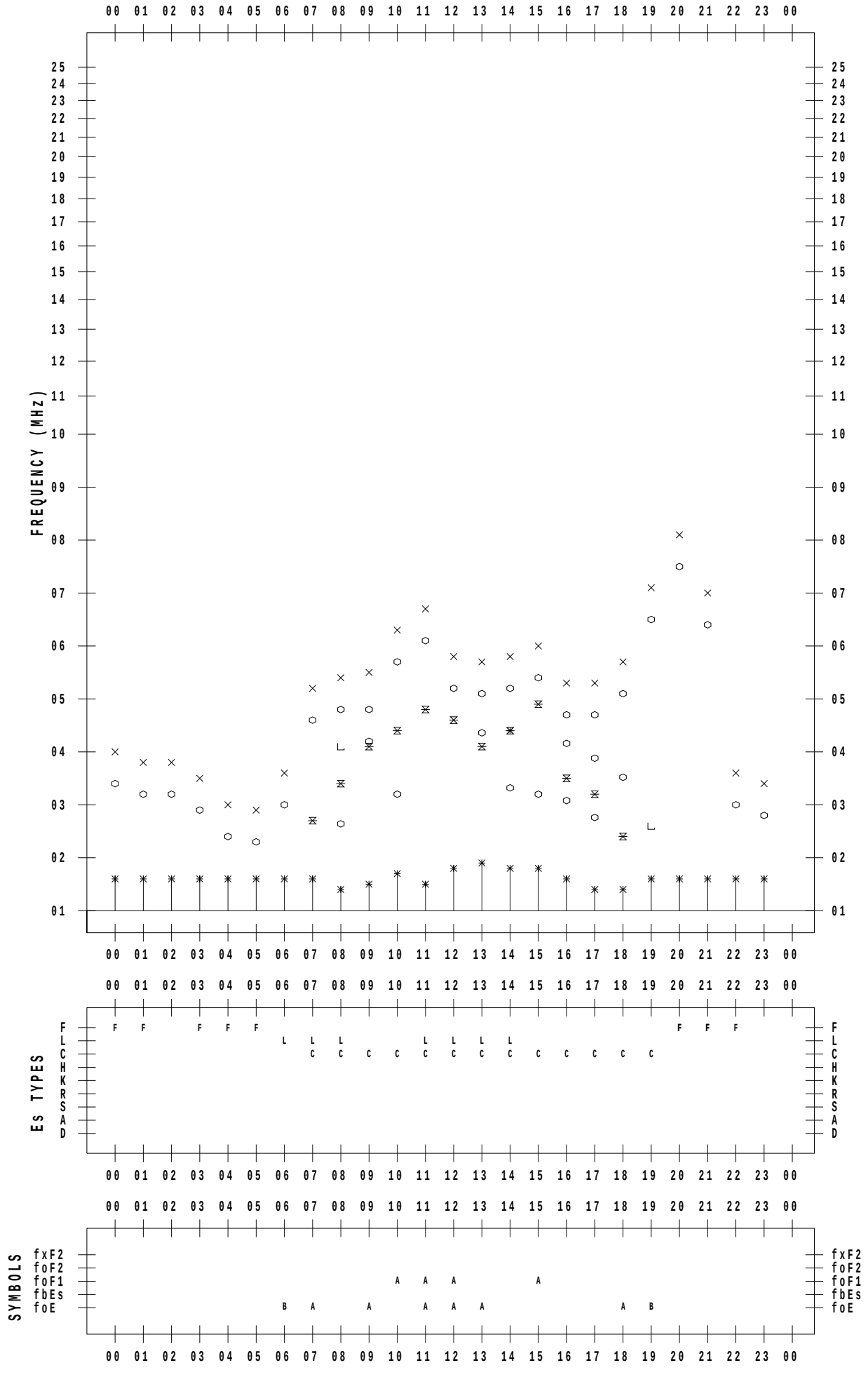
SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/10

135 °E MEAN TIME



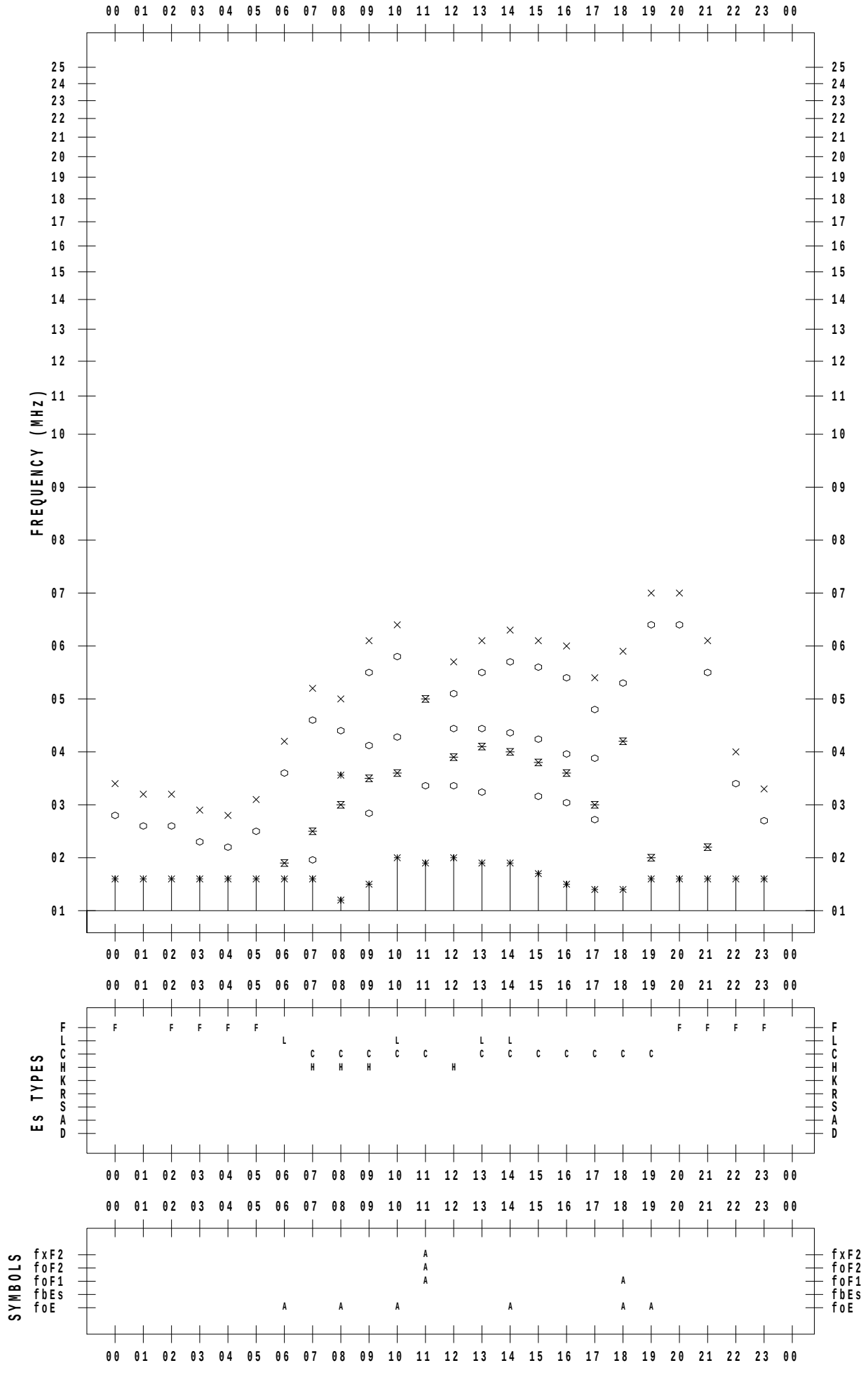
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/11

135 °E MEAN TIME



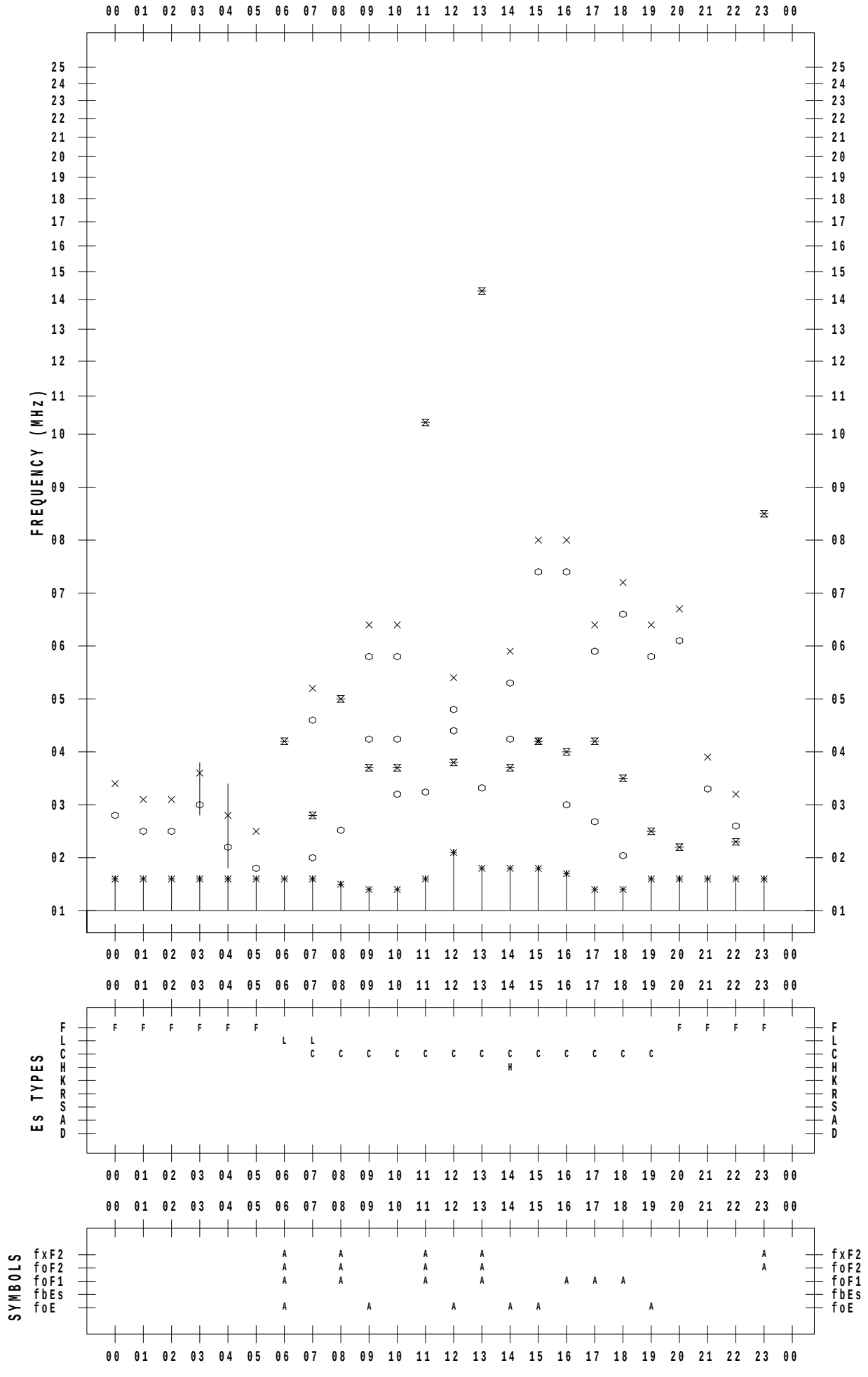
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/12

135 °E MEAN TIME



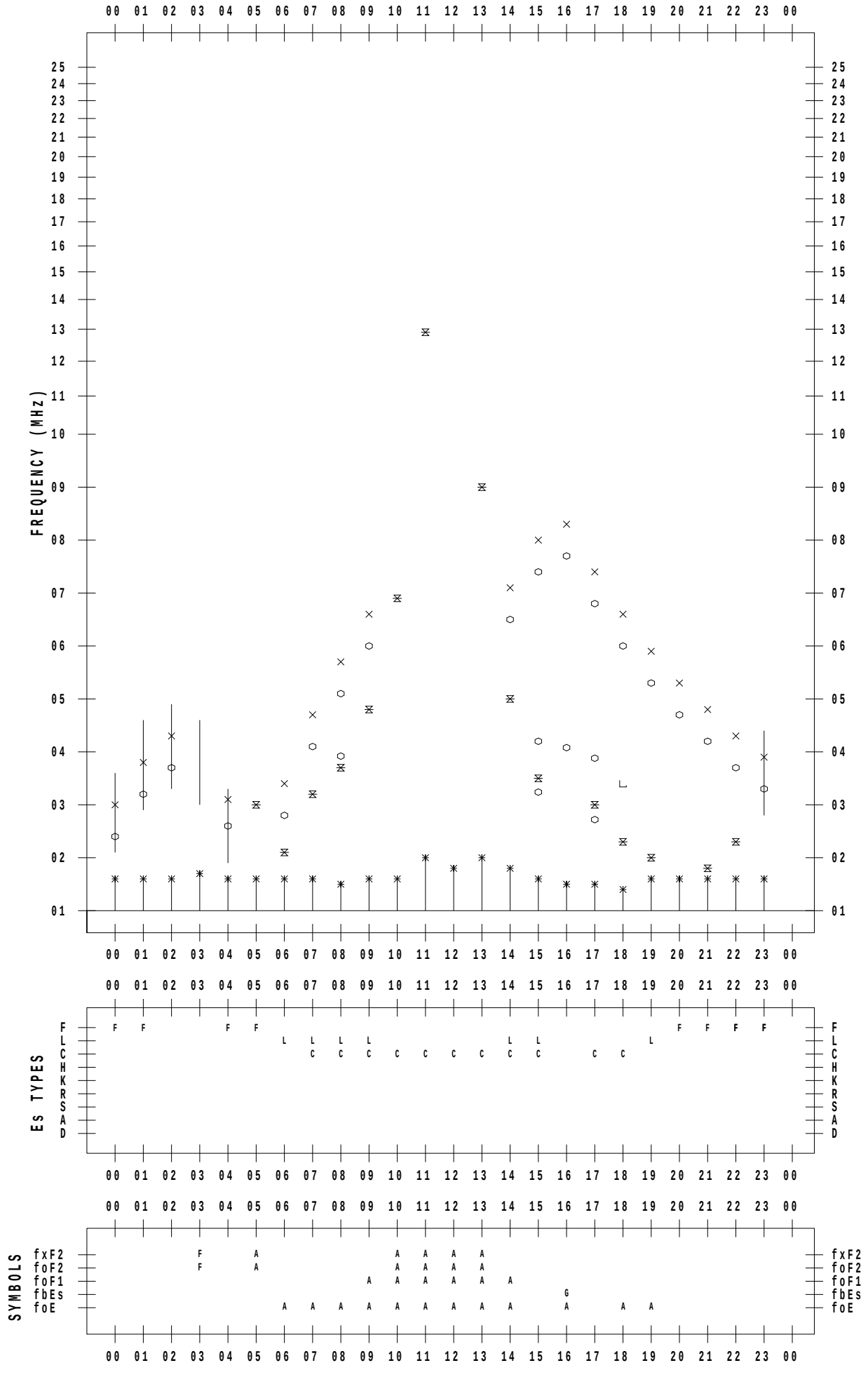
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/13

135 °E MEAN TIME



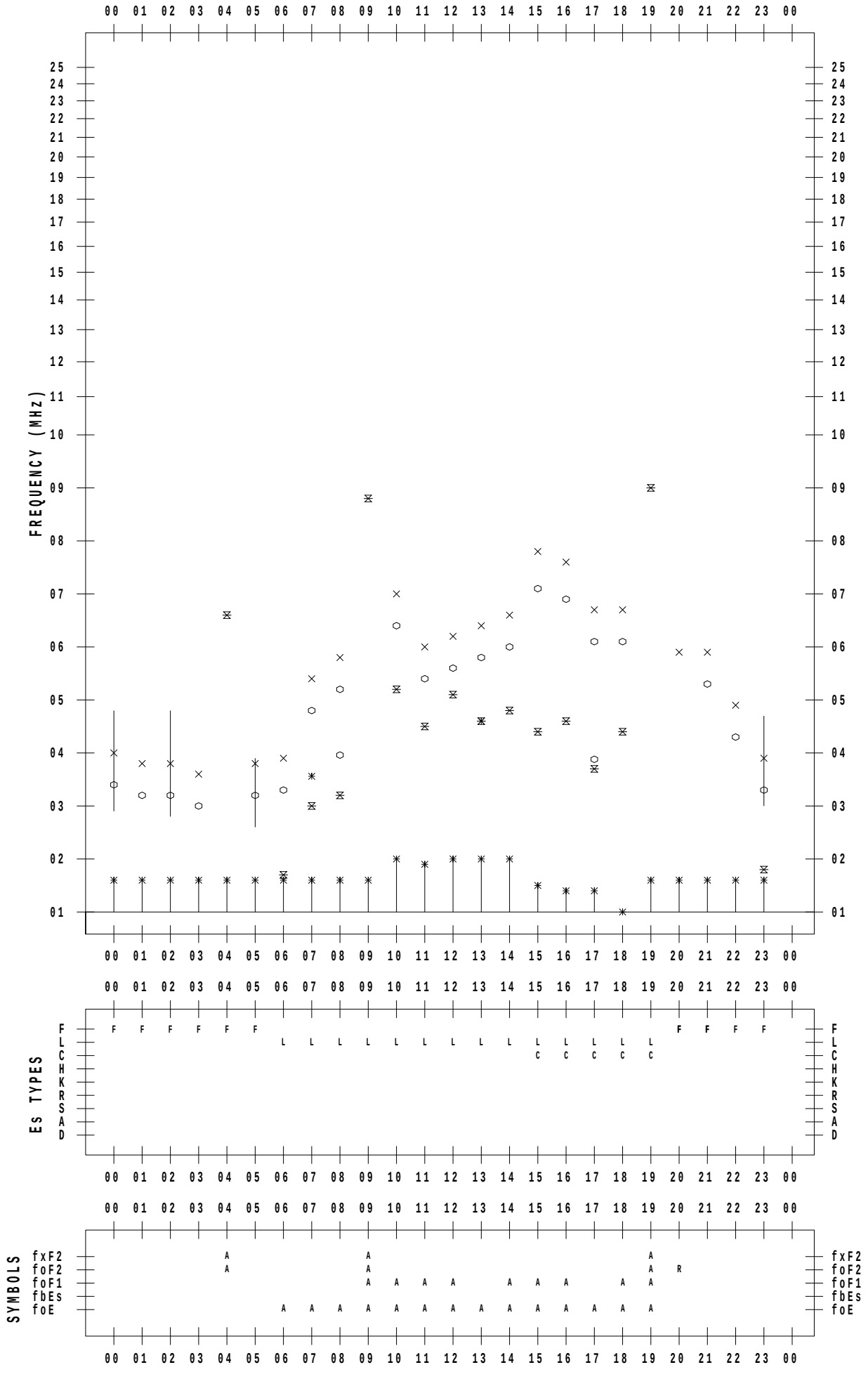
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/14

135 °E MEAN TIME



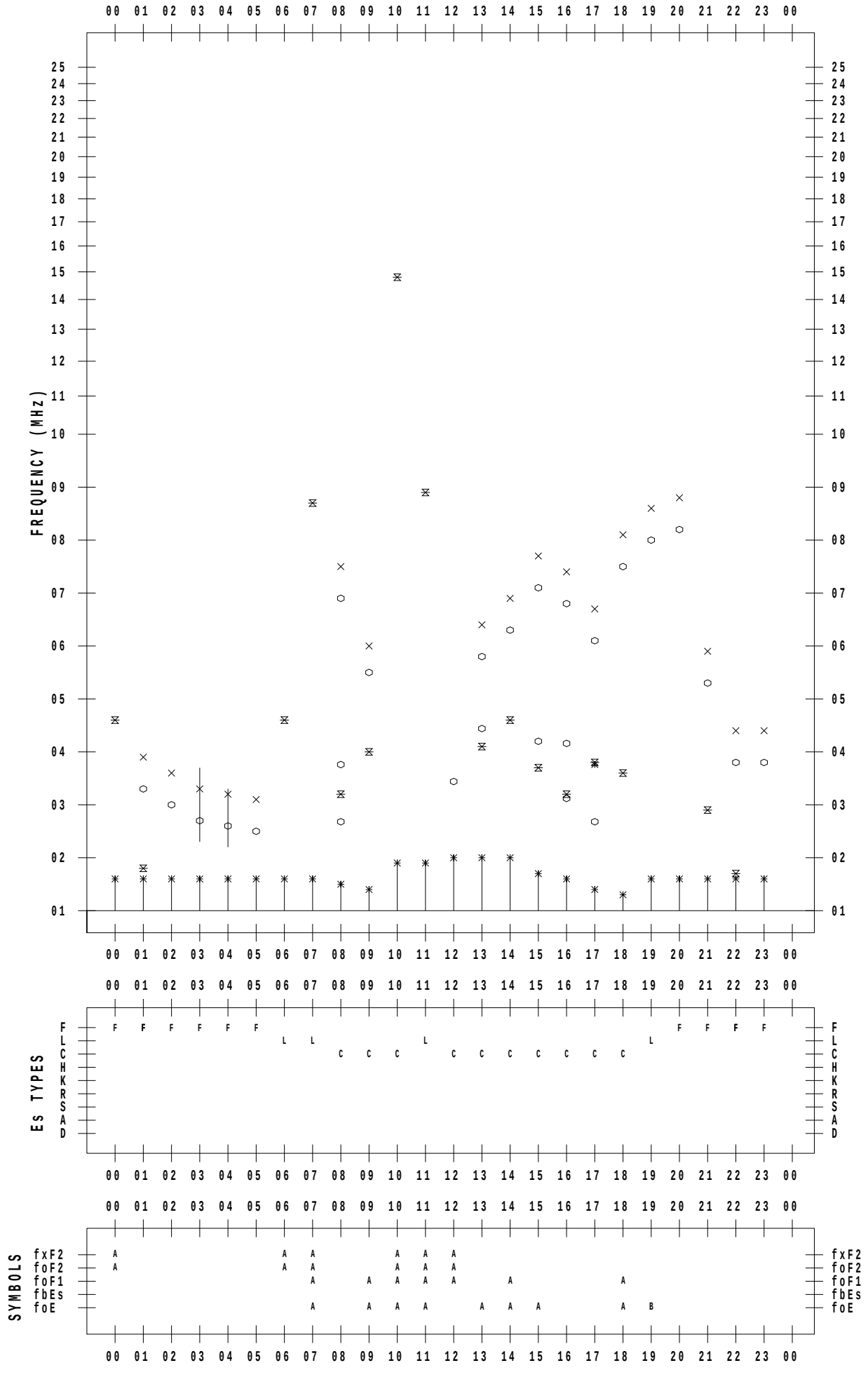
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/15

135 °E MEAN TIME



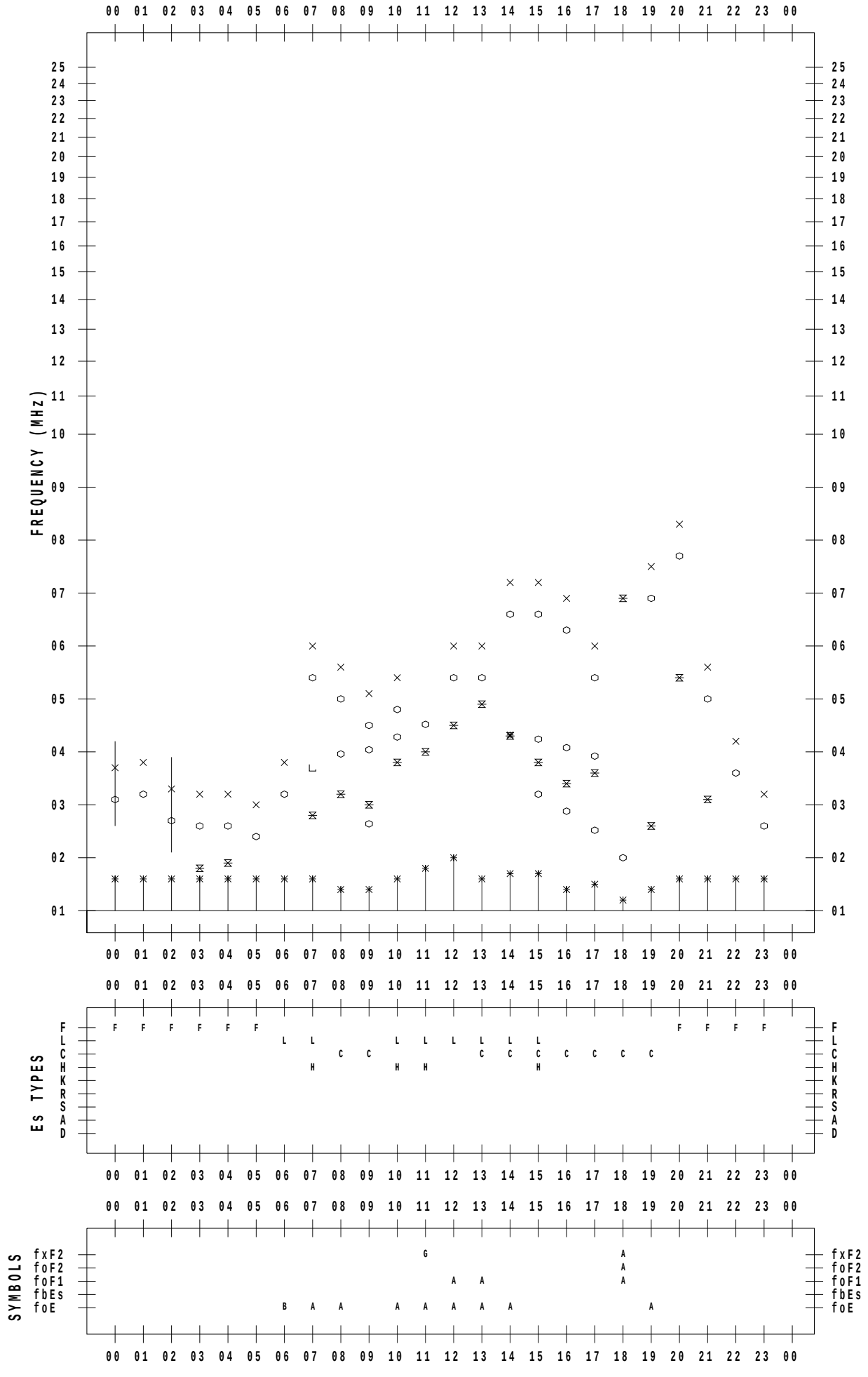
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/16

135 °E MEAN TIME



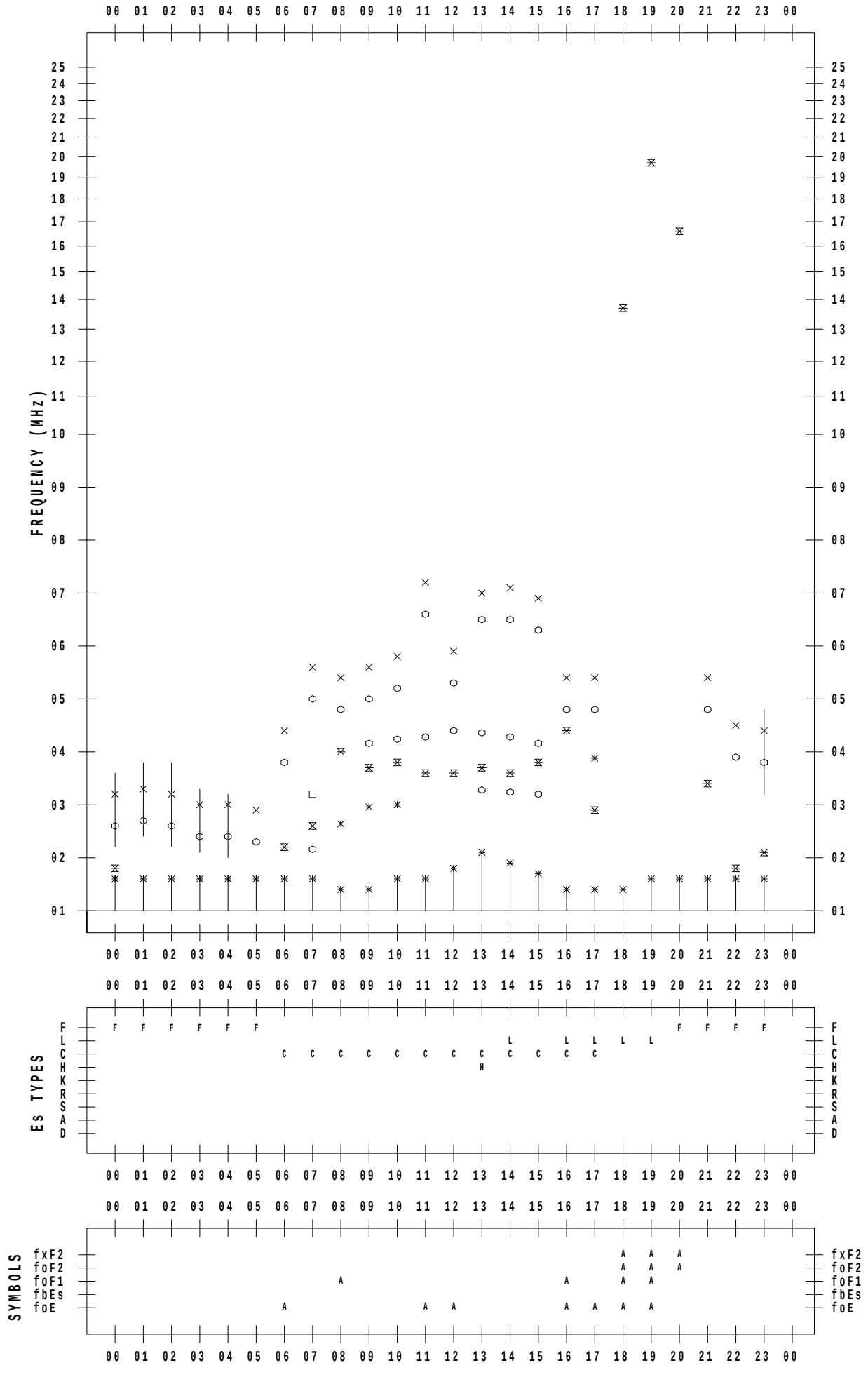
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/17

135 °E MEAN TIME



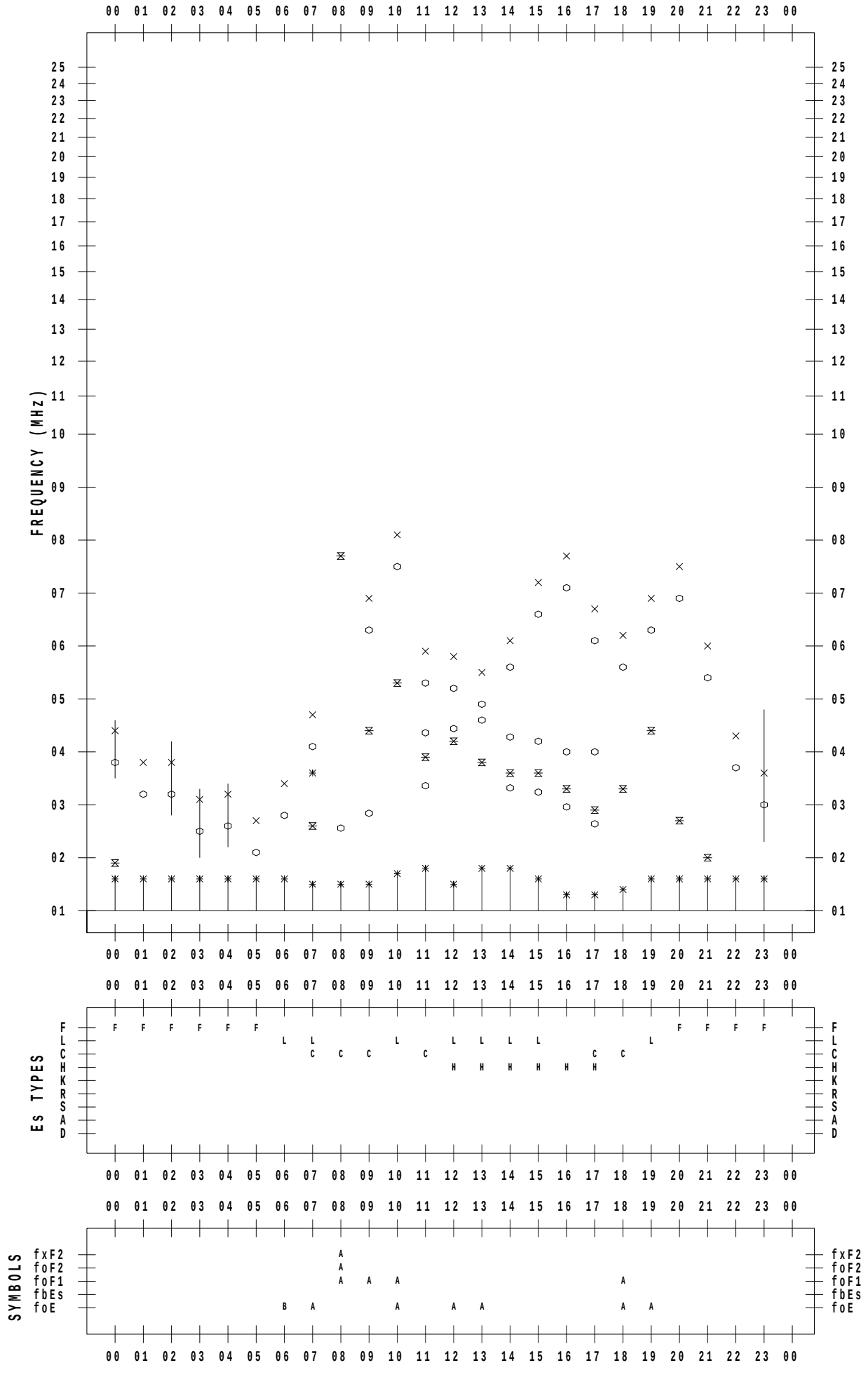
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/18

135 °E MEAN TIME



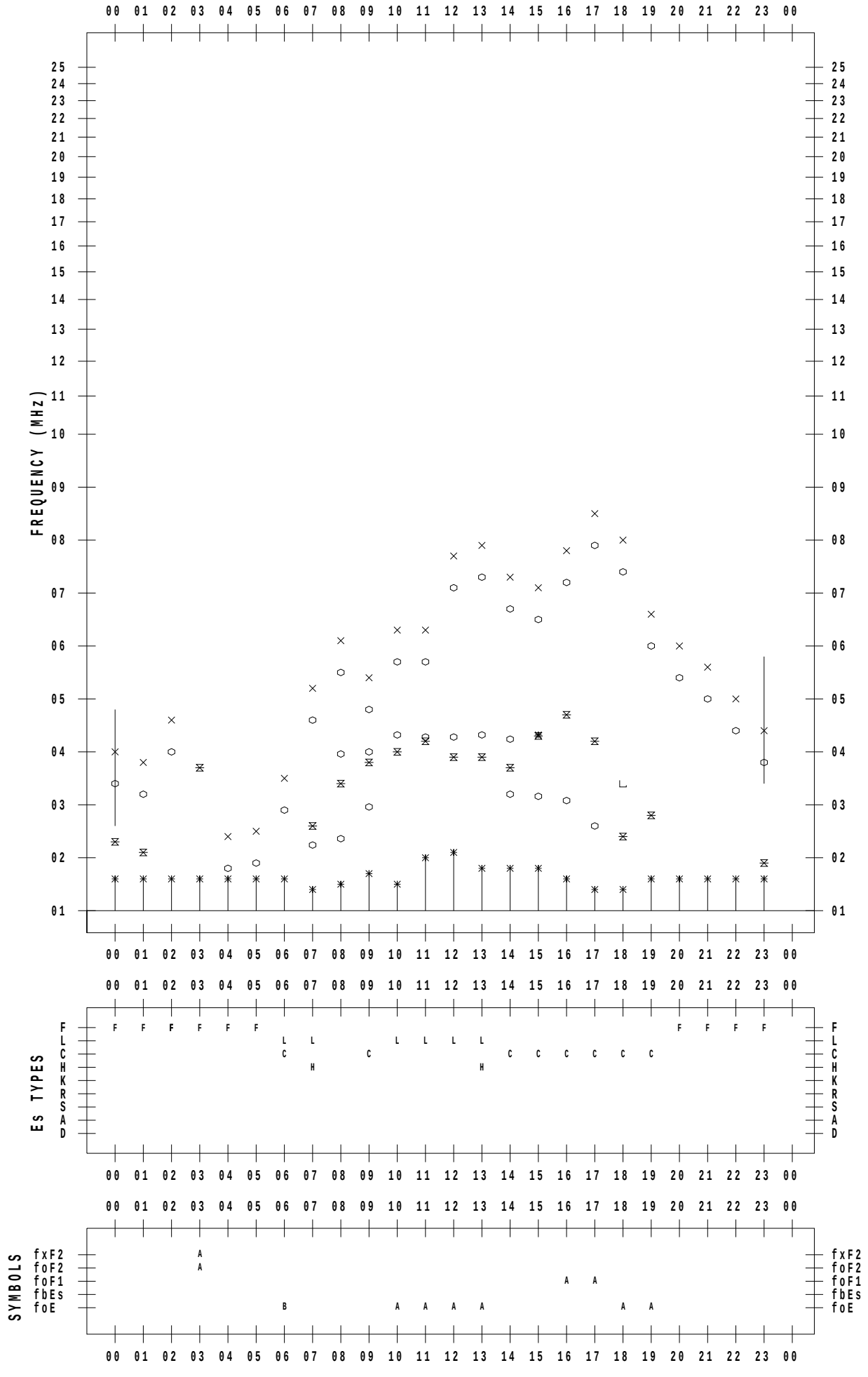
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/19

135 °E MEAN TIME



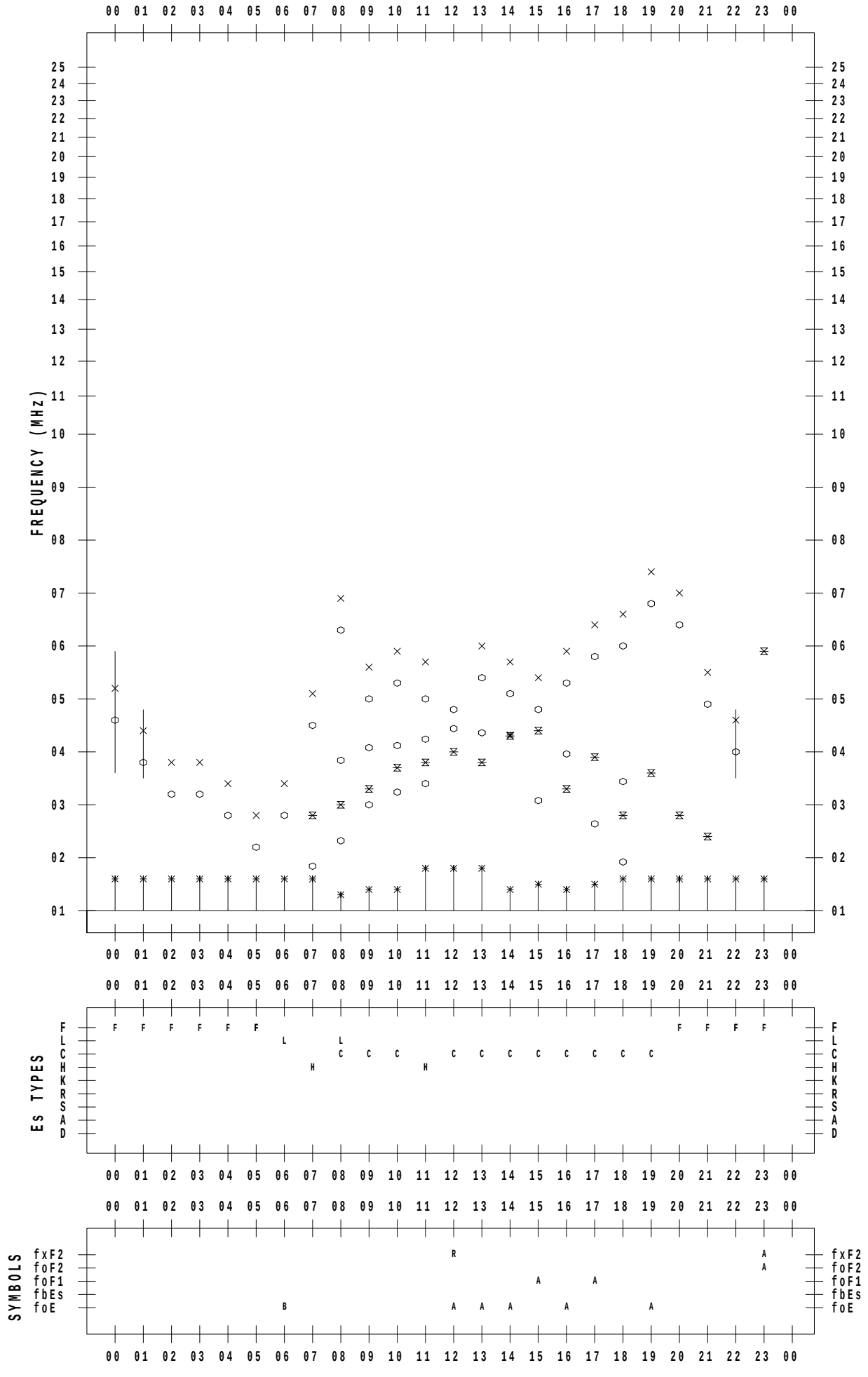
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/20

135 °E MEAN TIME



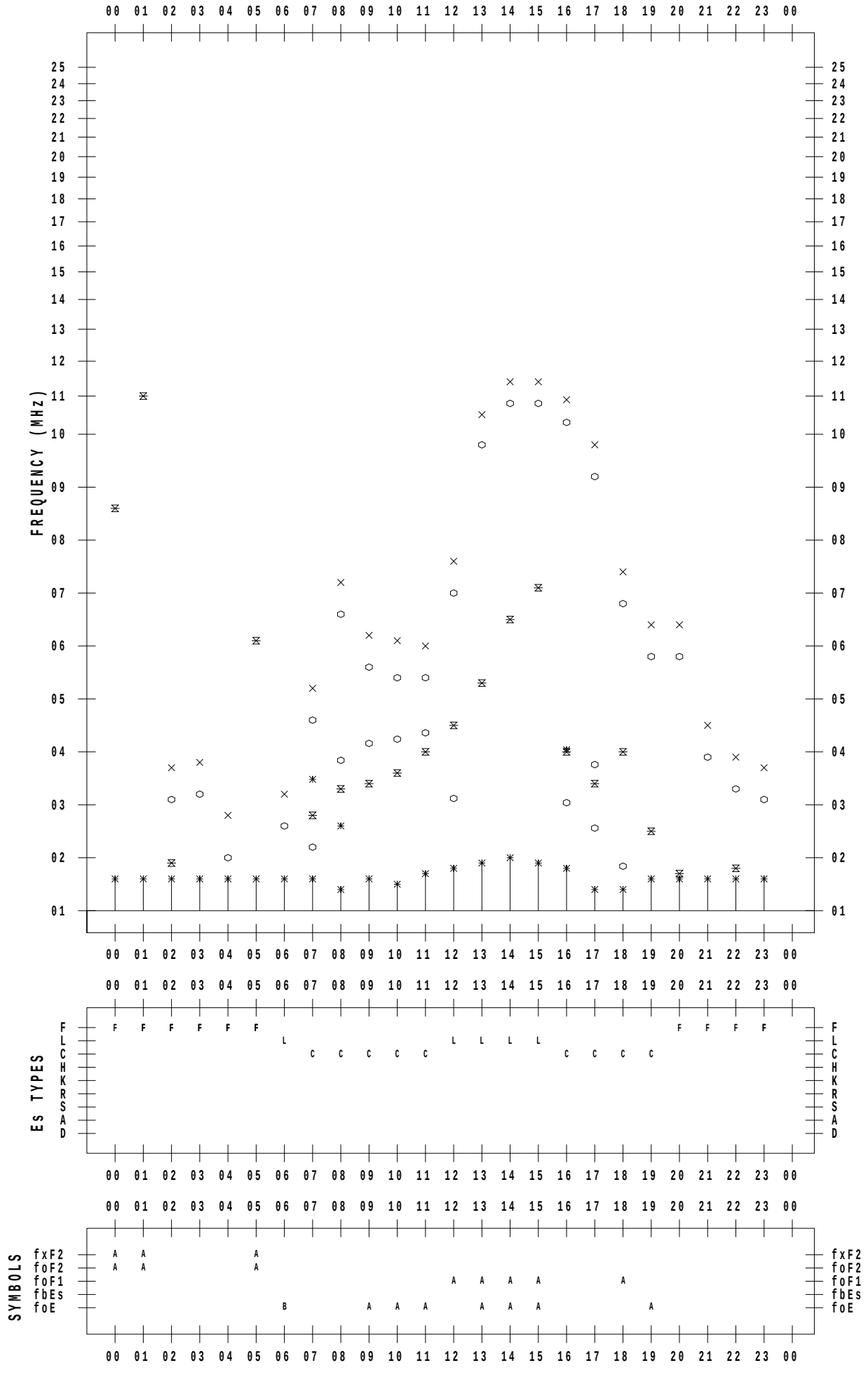
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/21

135 °E MEAN TIME



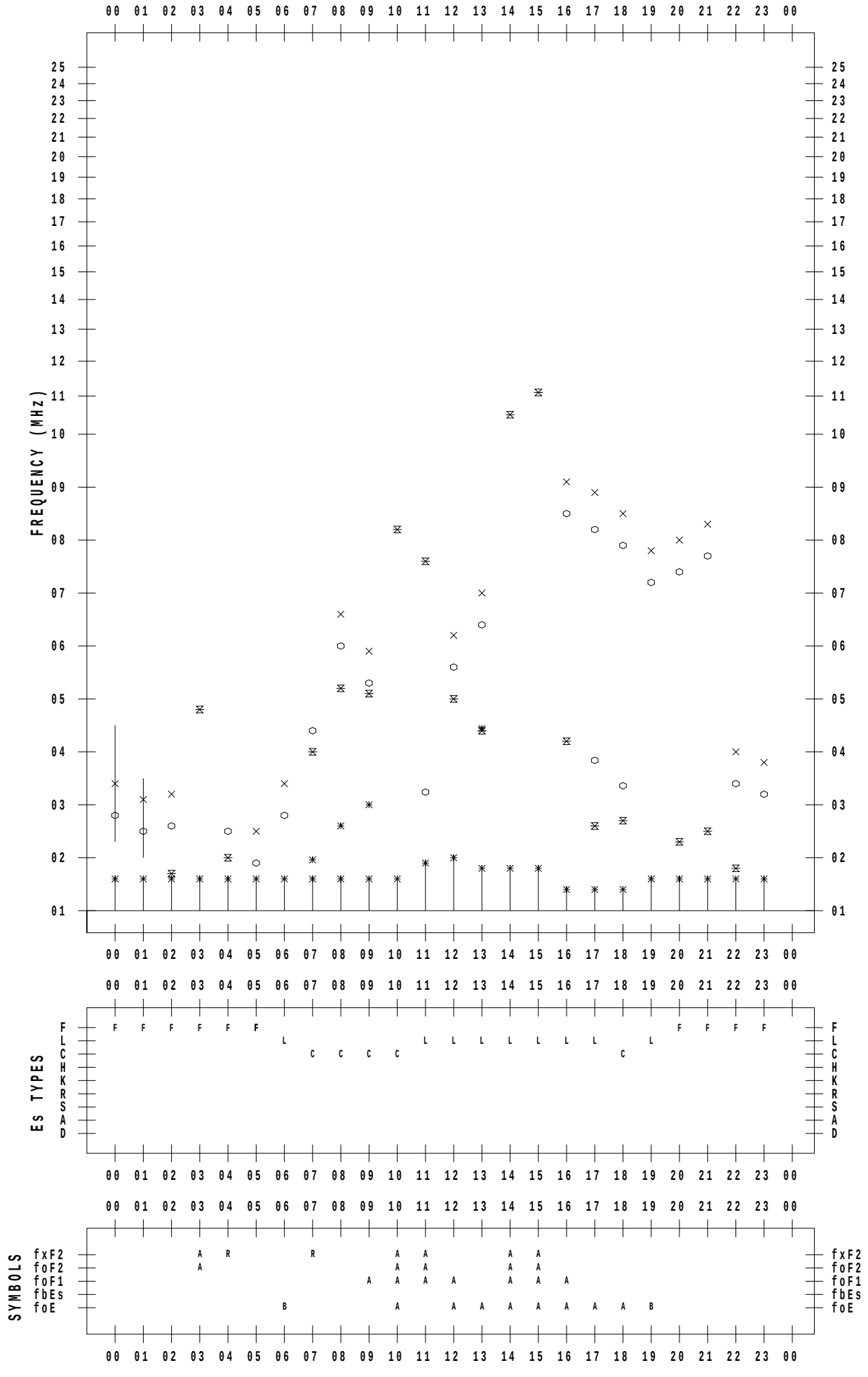
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/22

135 °E MEAN TIME



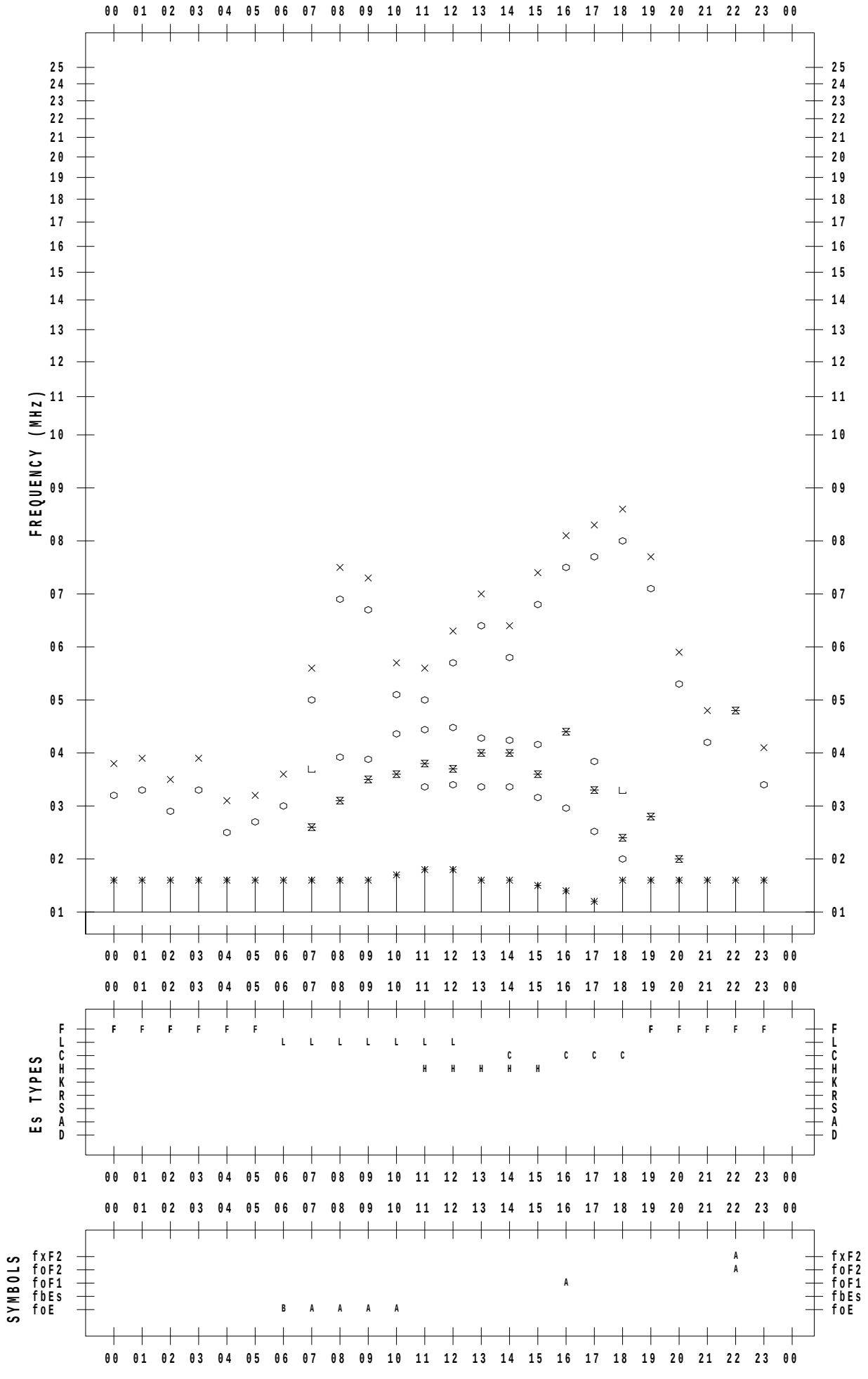
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/23

135 °E MEAN TIME



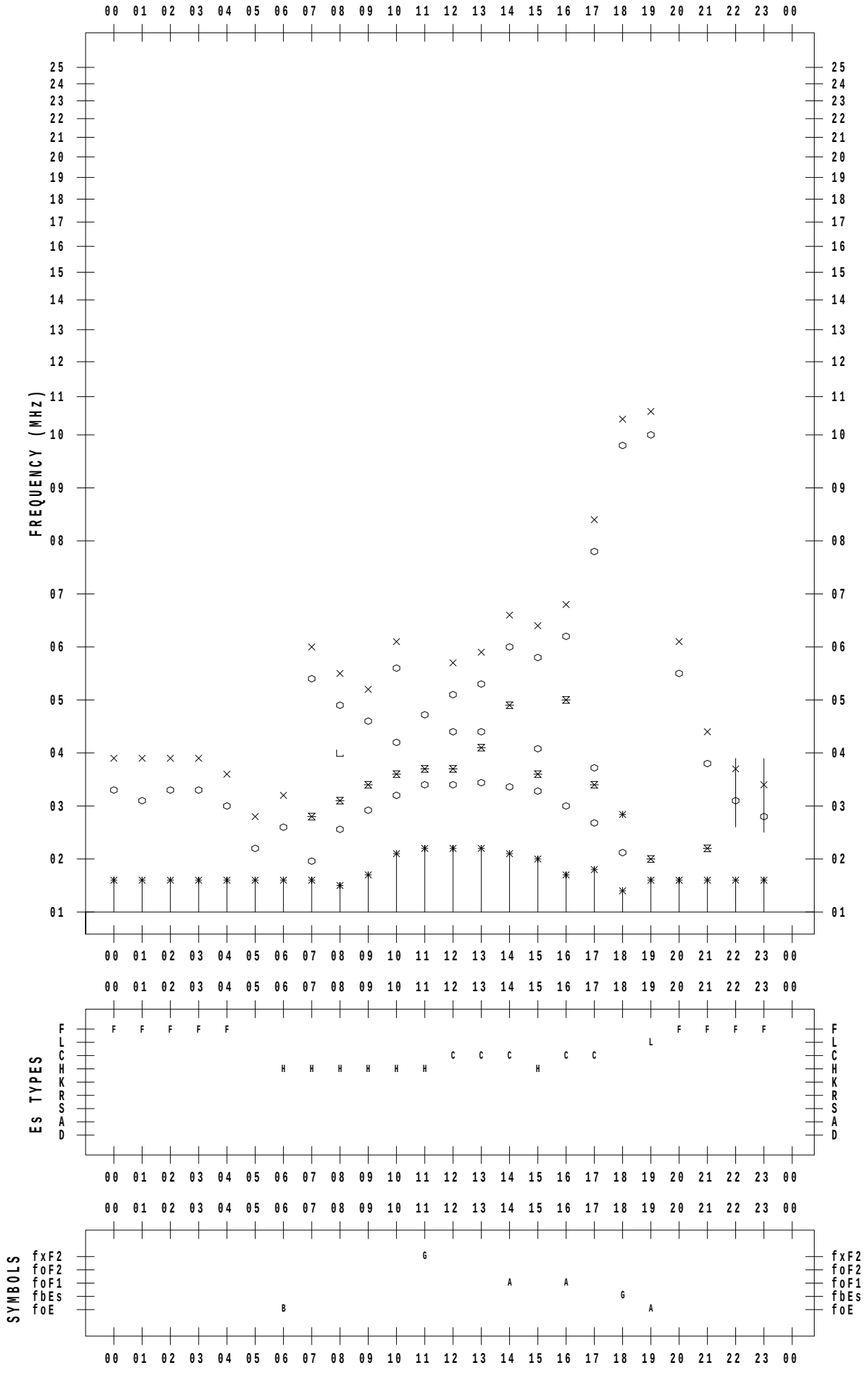
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/24

135 °E MEAN TIME



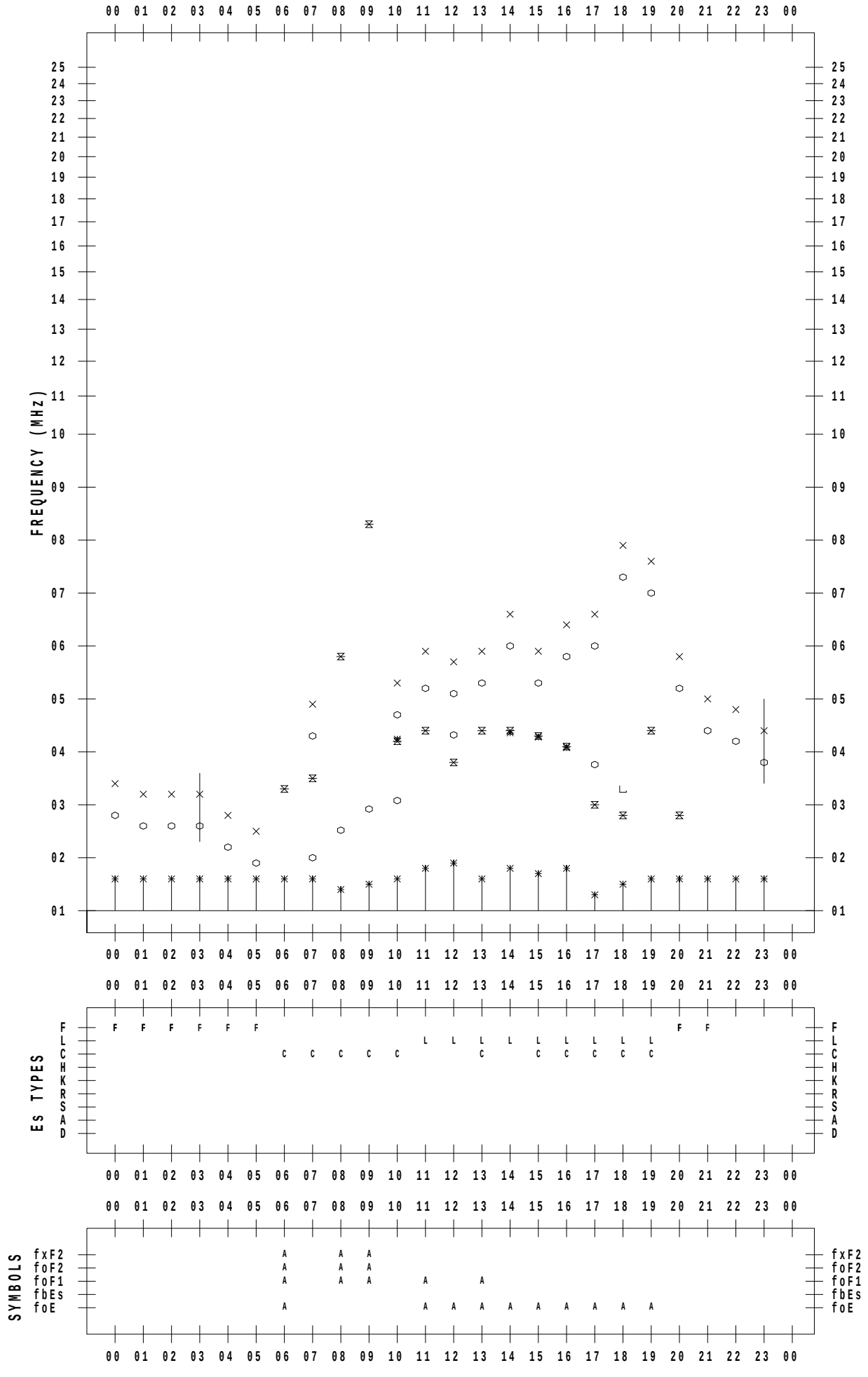
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/25

135 °E MEAN TIME



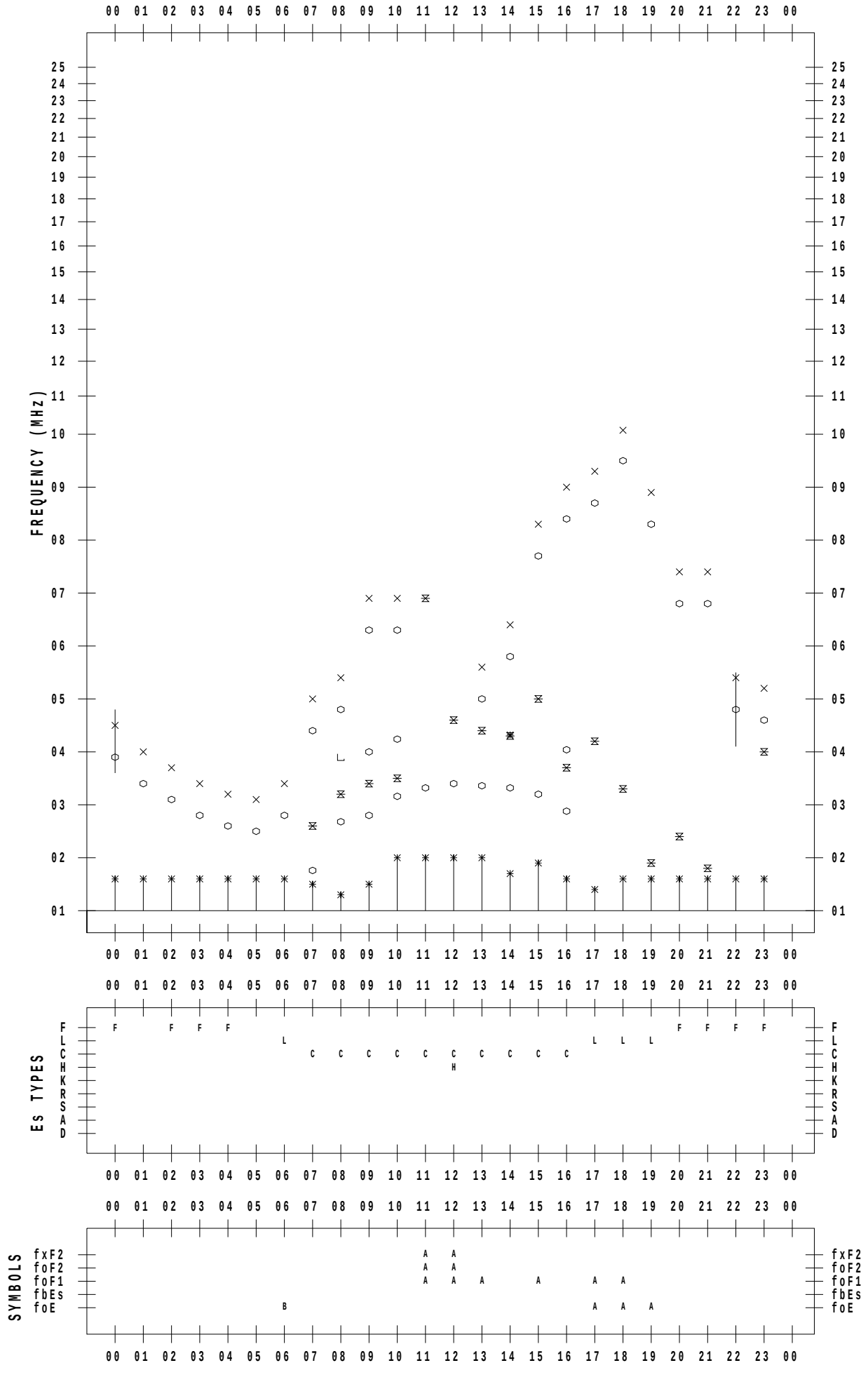
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/26

135 °E MEAN TIME



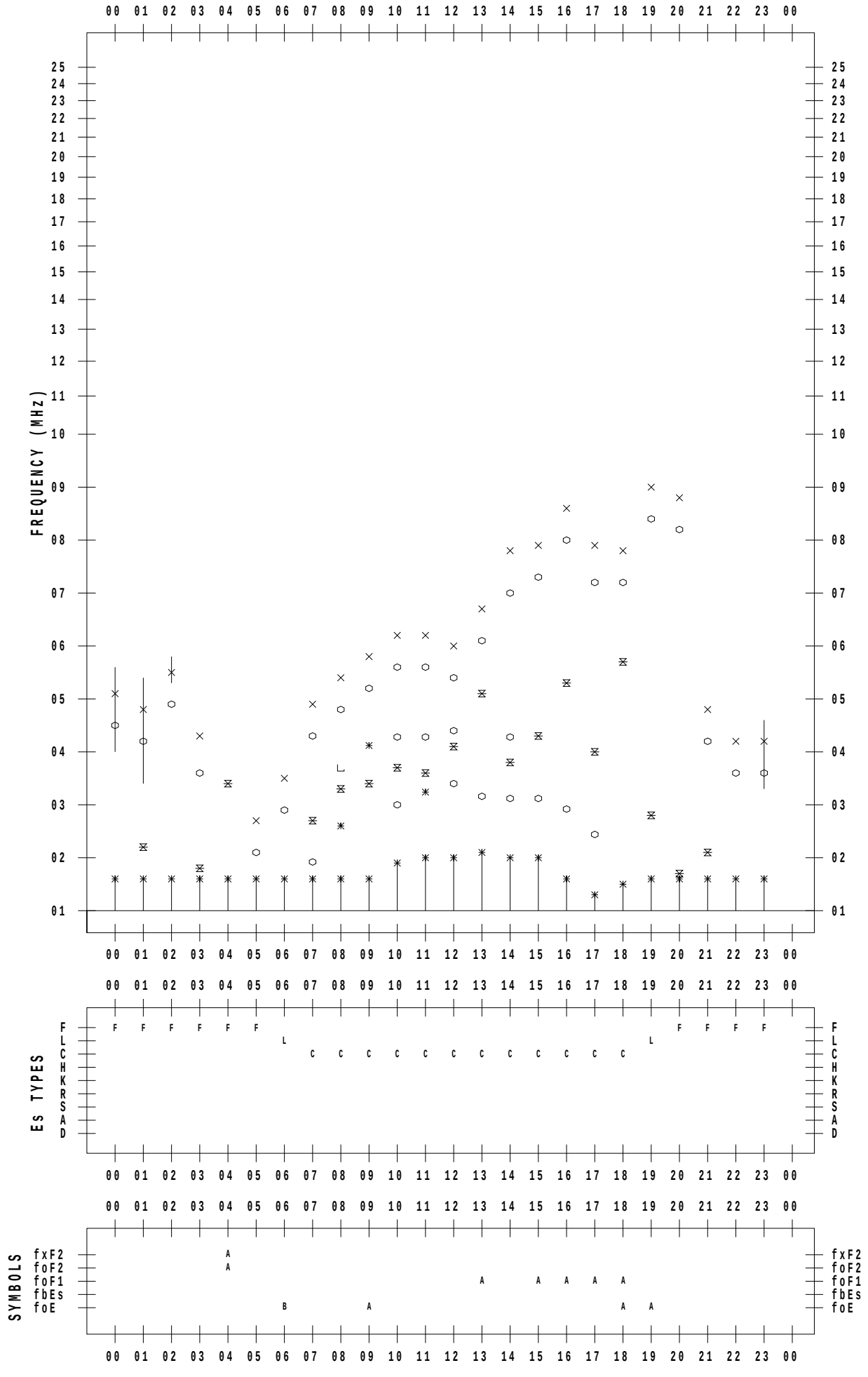
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/27

135 °E MEAN TIME



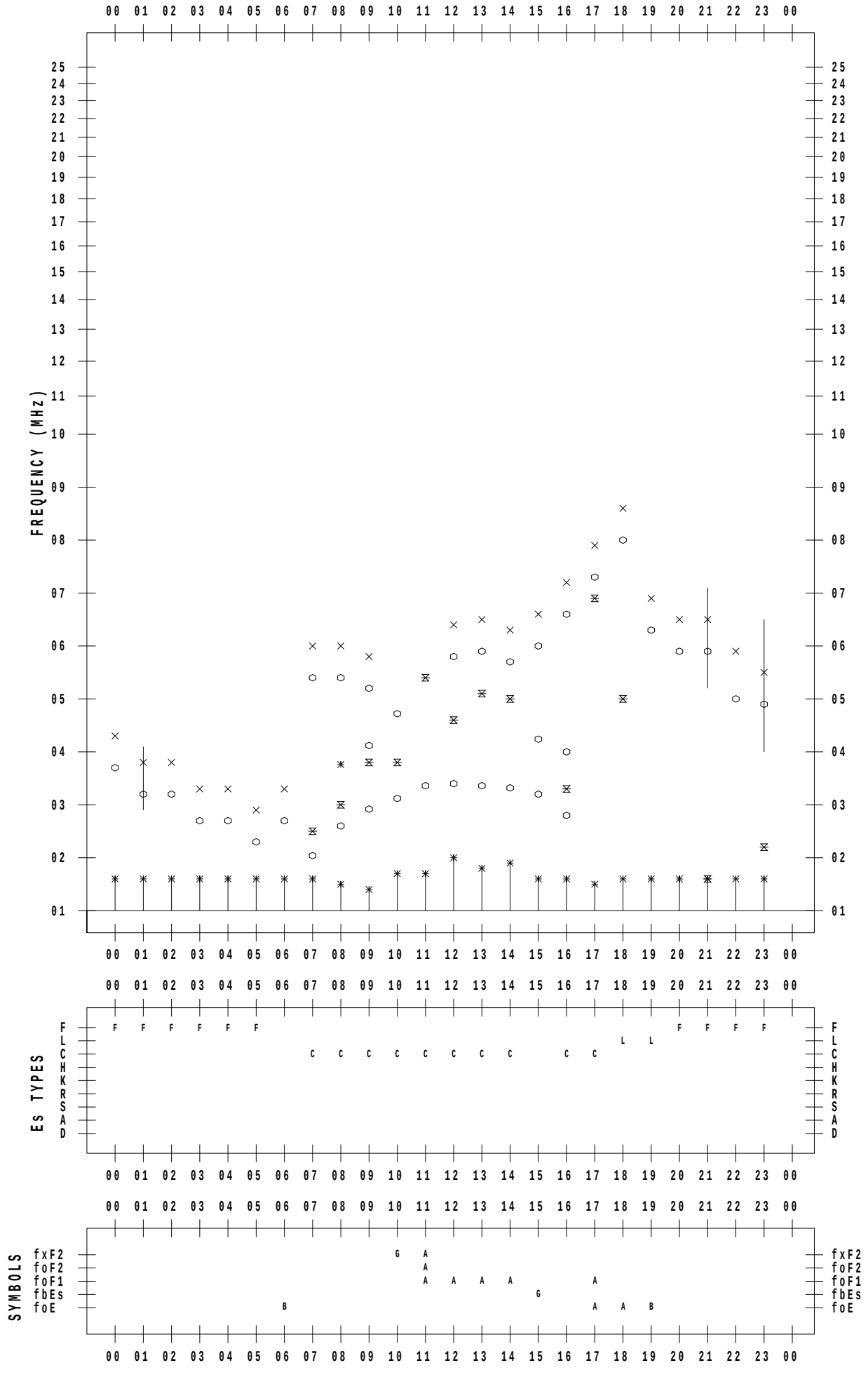
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/28

135 °E MEAN TIME



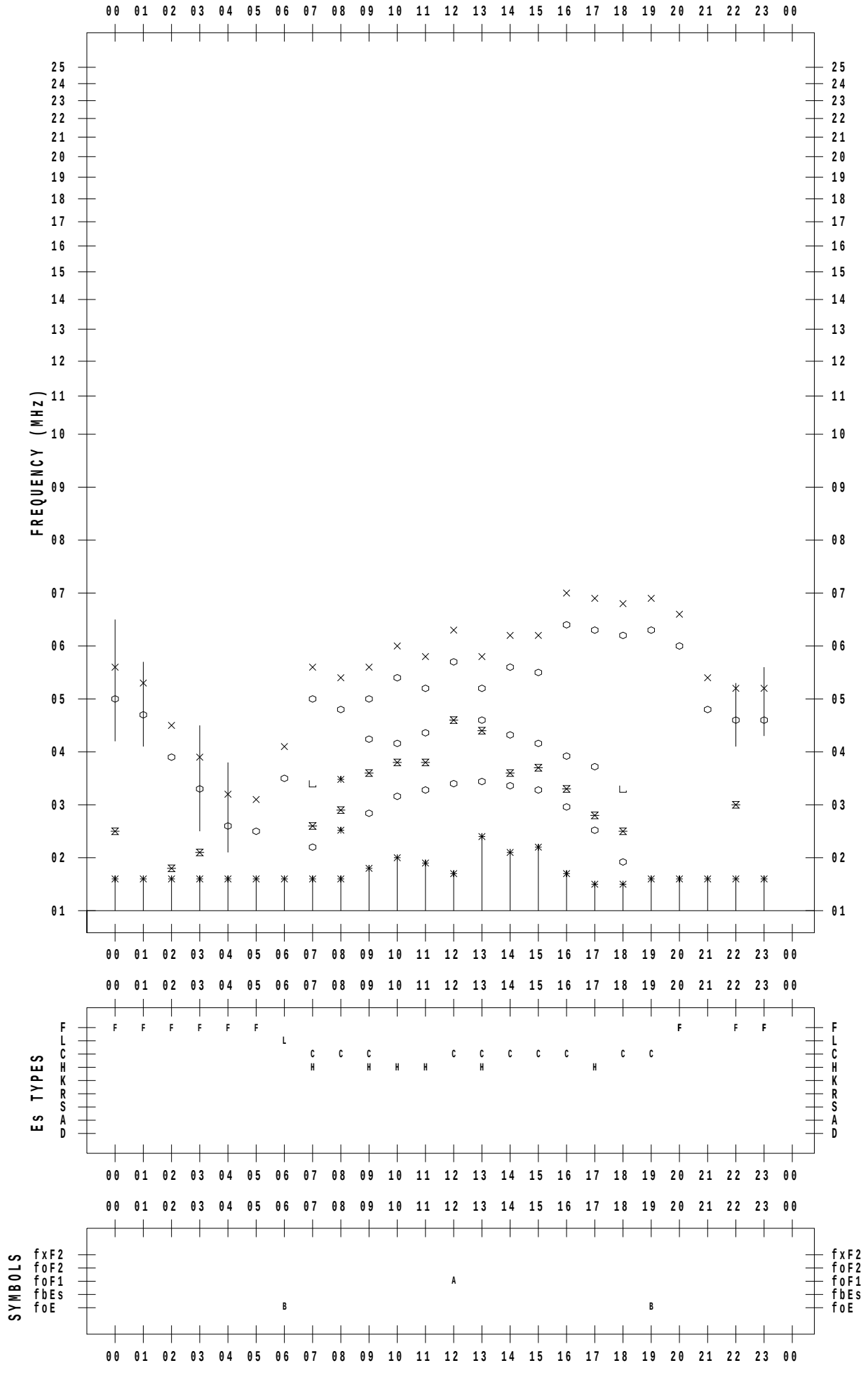
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/29

135 °E MEAN TIME



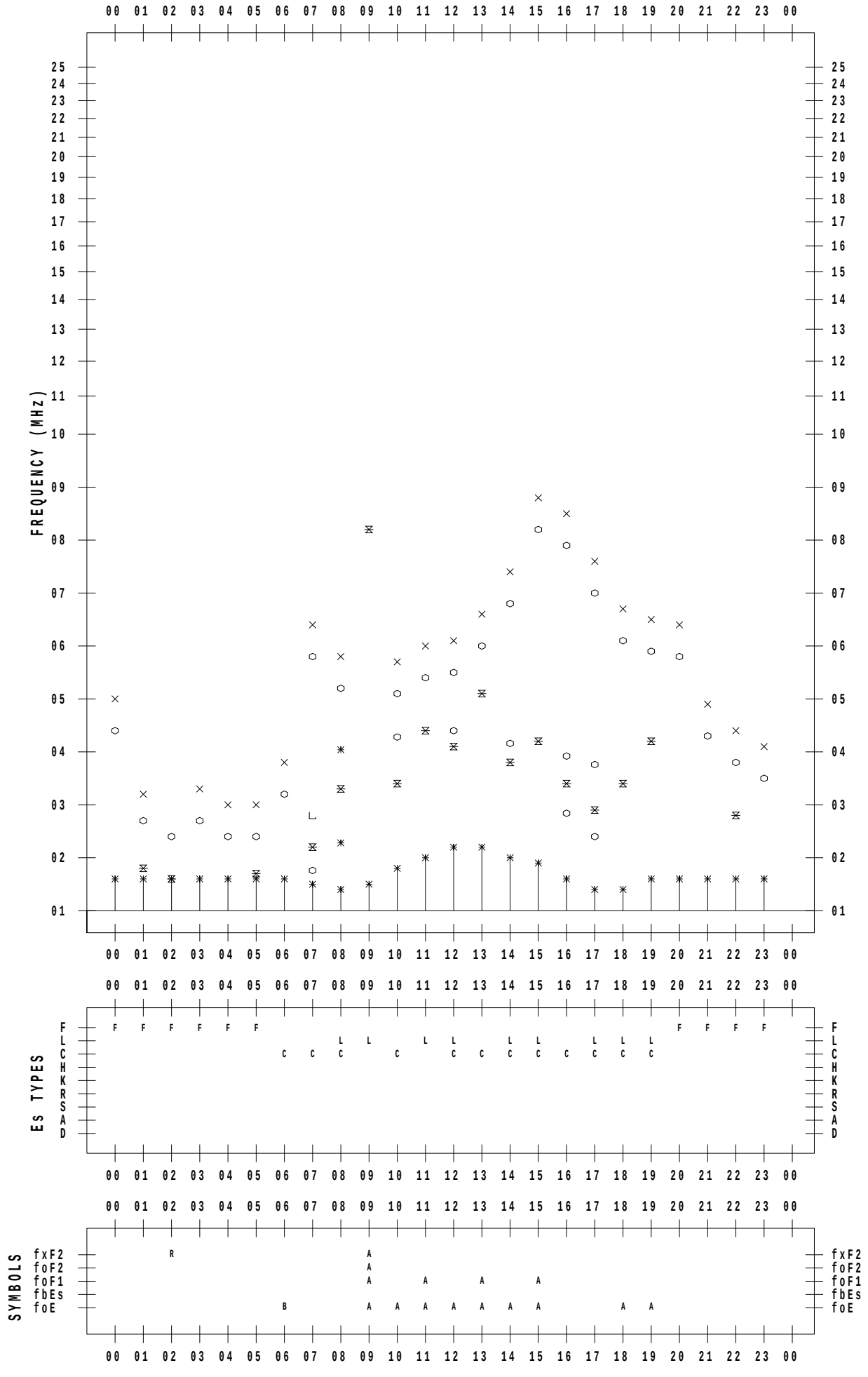
f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/30

135 °E MEAN TIME



f-PLOT DATA

SCALER : I.YAMAZAKI

STATION : Okinawa

DATE : 2020/ 8/31

135 °E MEAN TIME