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IONOSPHERIC DATA IN JAPAN

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CONTENTS

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INTRODUCTION

This Series contains data on ionosphere (I), solar radio emission (S) and radio propagation (P) obtained at the following stations under the Communications Research Laboratory, Ministry of Posts and Telecommunications of Japan.

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45°23.5′N	141°41.2′E	35.3°N	206.5°	Vertical Sounding (I)
Kokubunji	35°42.4′N	139°29.3′E	25.5°N	205.8°	Vertical Sounding (I)
Yamagawa	31°12.1′N	130°37.1′E	20.4°N	198.3°	Vertical Sounding (I)
Okinawa	26°16.9′N	127°48.4′E	15.3°N	196.0°	Vertical Sounding (I)
Hiraiso	36°22.0′N	140°37.5′E	26.3°N	206.8°	Radio Receiving (S,P)
Inubo	35°42.2′N	140°51.5′E	25.6°N	207.0°	Radio Receiving (P)

A. IONOSPHERE

Ionospheic 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 computer storage medium as well as graphically on 35 mm photographic film. 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 as well by experienced specialists to supplement automatically-scaled parameters.

A1. Automatic Scaling

Digital ionograms are automatically scaled by the pattern recognition method. The following five factors of ionospheric characteristics are published for the present. 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 ionospheric 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*).

B Impossible measurement because of absorption in the vicinity of *fmin*.

C Impossible measurement because of any failure in observation.

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

N Impossible automatic scaling because of complex echoes.

Blank No digital record because of trouble in the automatic data processing system, but existence of film record.

c. Definitions of the 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 descriptivel etter 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 Handbook 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 *E* layers, respectively
fbEs	Blanketing frequency of the *Es* layer, e.g. the lowest ordinary wave frequency visible through *Es*
fmin	Lowest frequency which shows vertical ionospheric reflections
M(3000)F2 *M(3000)F1*	Maximum usable frequency factor for a path of 3000 km for transmisson by *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 l etters 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 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 particle *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 normnal *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 associated 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.

B. SOLAR RADIO EMISSION

Solar radio observations at 200, 500 and 2800 MHz are carried out at Hiraiso. The observation equipment consists of two parabolic antennas, one with 10-meter diameter for 200 MHz measurements and one with 2-meter diameter for 500 and 2800 MHz measurements, Observations are continuously carried out almost from sunrise to sunset.

B1. Daily Data at Hiraiso

The three-hourly mean and daily mean values of the solar radio emission intensities are tabulated separately for 200 and 500 MHz measurements. The intensities are expressed by the flux density in $10^{-22} Wm^{-2} Hz^{-1}$ unit.

The table for 200 MHz measurements also presents the variability indices defined by the number of impulsive radio bursts within the three-hour intervals as follows:

0 quiet or no burst,
1 a few bursts,
2 many bursts,
3 very many bursts.

The daily variability index is defined as the daily mean of three-hourly indices.

The following symbols are used in the tables, when interference or radio bursts prevented measuring the base-level flux densities or determining the variability indices:

* Measurement impossible because of interference.

B Measurement impossible because of bursts.

Daily data within parentheses mean that the observation time does not exceed one third of the period.

B2. Outstanding Occurrences at Hiraiso

The table is a list of outstanding occurrences of solar radio emission bursts observed at 200, 500 and 2800 MHz during a month.

Listed in the table are the date, frequencies, the type of event, the start time and the time of maximum, both in U.T. expressed in hours, minutes and tenths of a minute, the duration in minutes, the peak and mean flux densities in 10^{-22} Wm^{-2} Hz^{-1} unit, and the polarization.

The type of event is expressed by a combination of a numerical code and a letter symbol in accordance with the " Descriptive Text of Solar Geophysical Data, NOAA " as defined by H. Tanaka in the " Instruction Manual for Monthly Report of Solar Radio Emission, WDC-C2 " in January 1975:

SGD Code	Letter Symbol	Morphological Classification
1	S	Simple 1
2	S/F	Simple 1F
3	S	Simple 2
4	S/F	Simple 2F
5	S	Simple
6	S	Minor
7	C	$Minor^+$
8	S	Spike
20	GRF	Simple 3
21	GRF	Simple 3A
22	GRF	Simple 3F
23	GRF	Simple 3AF
24	R	Rise
25	R	Rise A
26	FAL	Fall
27	RF	Rise and Fall
28	PRE	Precursor
29	PBI	Post Burst Increase
30	PBI	Post Burst Increase A
31	ABS	Post Burst Decrease
32	ABS	Absorption
40	F	Fluctuations
41	F	Group of Bursts
42	SER	Series of Bursts
43	NS	Onset of Noise Storm
44	NS	Noise Storm in progress
45	C	Complex
46	C	Complex F
47	GB	Great Burst
48	C	Major
49	GB	$Major^+$

The polarization is expressed by the polarization degree and sense as follows:

R or L	right- or left-handed polarization,
W,M or S	weak,moderate or strong polarization,
0	almost zero or unable to detect polarization due to small increase of flux,
00	polarization degree of less than 1 percent.

One of the following symbols may be attached after numerical values, if necessary.

D	greater than, or later than,
E	less than or earlier than,
U	approximate, or uncertain.

B3. Summary Plots of $F_{10.7}$ at Hiraiso

The 10.7 cm solar radio flux at Hiraiso is plotted over a one month period. The 10.7 cm flux ($F_{10.7}$) is determined by adjusting the 10.7 cm radio flux measured at Hiraiso to the Pentincton 10.7 cm radio flux. The figure on the right-hand side shows the $F_{10.7}$ index estimated at Hiraiso.

C. RADIO PROPAGATION

C1. H.F. Field Strength at Hiraiso

Field strength observation of 15 MHz standard waves transmitted from WWV and WWVH stations which are located respectively at Fort Collins, Colorado and Kauai, Hawaii, is carried out at Hiraiso. In order to avoid interference among the same frequency waves, the upper sideband of WWV or WWVH with the audio tone 600 Hz is picked up by the use of a narrow band-pass filter with 80 Hz bandwidth.Particulars of the transmitters and the receiver are summarized in the following table.

The tabulated *field strength* expressed in dB above one microvolt per meter is the average of quasi-peak values of the incident upper sideband field intensity for 45 seconds after the universal time indicated on the table. Abbreviated symbols are as follows:

CNT	number of observed values,
MED	median,
UD	value of the uppermost decile when they are ranked according to magnitude,
LD	value of the lowest decile when they are ranked according to magnitude,
U	uncertain,
E	less than,
C	innuenced by, or impossible because of, any artificial accident,
S	influenced by, or impossible because of, interferences or atmospherics.

C2. Radio Propagation Quality Figures at Hiraiso

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and WWVH transmitted from Kauai.

Quality figures expressing radio propagation conditions range over five grades as follows:

1	very poor(very disturbed),
2	poor(disturbed),
3	rather poor(unstable),
4	normal,
5	good.

Whole day quality figure ranged in grades of 1o, 1+, 2-, 2o, 2+, 3-, 3o, 3+, 4-, 4o, 4+, 5-, 5o stands for an average of six-hourly quality figures of the two circuits. Abbreviated symbols are as follows:

C	artificial accident,
S	propagational accident,
U	inaccurate.

Characteristics	Transmitter		Receiver
Station Call	WWV	WWVH	
Location	Fort Collins, Colorado	Kauai, Hawaii	Hiraiso, Ibaraki
latitude	40°41´N	22°00´N	36°22´N
longitude	105°02´W	159°46´W	140°38´E
Distance	9150 km	5910 km	--
Carrier Power	10 kW	10 kW	--
Power in each sideband	625 W	625 W	--
Modulation	50 %	50 %	--
Antenna	λ / 2 vertical	λ / 2 vertical	4.5 m vertical rod
Bandwidth	--	--	80 Hz for upper sideband
Calibration	--	--	Every hour

The column of conditions presents a record of the forecast of *radio propagation conditions* which is applicable to forthcoming 12 hours and broadcast six times par hour from JJY (Japan Standard Wave) staion. The conditions are denoted as follows:

N normal,
U unstable,
W disturbed.

Data on *geomagnetic storms* which are often correlated with radio propagation disturbances are tabulated based on reports from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in hours and minutes (or tenths of an hour) , and *range* in nanotesla. When they are uncertain quantitatively, / 's are used to replace the numerical values. Continuation of a geomagnetic storm is denoted by ---.

C3. Phase Variation in OMEGA Radio Waves at Inubo

The phase values of eight OMEGA radio signals as received at Inubo are depicted for an interval of one month, along with the phase deviation defined as a deviation from a value averaged over the six quietest day within the month. Particulars of the received signals are given in the table below.

In each of the four panels of the figure, the phase (ϕ) is shown in the lower part and the phase deviation ($\Delta\ \phi$) is shown in the upper part. The phase data are sampled every 30 min, so the curves of the phase and phase deviation are composed of 48 data points per day. The phase delay is measured as a positive value.

The polar cap phase anomaly (PCPA) caused by the solar protons are well detected on the Norway signal. The start, end and maximum times of the PCPA are listed in the table next to the figure, where the times are expressed as day / hour & minute in U.T.. The maximum phase deviation in the list is defined as a phase advance (negative values in the figure) in degrees.

C4. Sudden Ionospheric Disturbances

a. Short Wave Fade-out (SWF) at Hiraiso

The table of short wave fade-out (SWF) is prepared from the record of field intensities measured at Hiraiso.

Drop-out intensities of the 10 MHz, the 20 MHz. and the 25 MHz waves are respectively distinguished by marks ´, ´´, and ´´´ from those of the 15 MHz wave for WWV and WWVH. Values of *start, duration, type,* and *importance* are obtained from data of the circuit whose drop-out intensity in dB is underlined as <u>xx</u>. When these quantities could not be determined accurately, they are accompanied by one of the following symbols.

D greater than,
E less than,
U uncertain or doubtful.

Types of fade-out are as follows:

S sudden drop-out and gradual recovery,
SL slow drop-out taking 5 to 15 minutes and gradual recovery,
G gradual and irregular in both drop-out and recovery.

Importance of fade-out is scaled according to its amplitude into nine ascending grades as 1-, 1, 1+, 2-, 2, 2+, 3-, 3, 3+.

Correspondence of solar optical and X-ray flares, and solar radio burst to SWF is marked by X, being determined with data from interchange messages of IUWDS and observations at Hiraiso.

In table (a) SWF, *date* indicates the day to which the *start-time* of the event belongs.

b. Sudden Phase Anomaly (SPA) at Inubo

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio waves received at Inubo. The transmitting stations are listed in the following table.

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by -, an indistinguishable record is spaced out, and a multi-peak event is marked by *. The most remarkable or distinct phase advance is underlined and listed in the column of *Time*.

In table (b) SPA, *date* indicates the day to which the *start-time* of the event belongs.

The following letters may be attached to the value, if necessary.

D greater than,
E less than,
U uncertain or doubtful.

Transmitting Stations

Name	Location (Geographic Coordinates)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Norway	66°25′N	013°08′E	Ω / N	13.6	10	7820
Liberia	06°18′N	010°40′W	Ω / L	13.6	10	14480
Hawaii	21°24′N	157°50′W	Ω / H	13.6	10	6100
North Dakota	46°22′N	098°20′W	Ω / ND	13.6	10	9140
La Reunion	20°58′S	055°17′E	Ω / LR	13.6	10	10970
Argentina	43°03′S	065°11′W	Ω / AR	13.6	10	17640
Australia	38°29′S	146°56′E	Ω / AU	13.6	10	8270
Japan	34°37′N	129°27′E	Ω / J	13.6	10	1040
North West Cape	21°49′S	114°10′E	NWC	22.3	1000	6990

HOURLY VALUES OF FOF2 AT WAKKANAI

MAR.1994

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz 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	47	47	48	42	44	43	61	65	67	70	82	91	90	86	82	78	76	70	62	53	44	49	37	50
2	49	48	48	50	46	44	52	58	71	75	78	90	95	108	87	82	72	68	58	54	50	34	47	35
3	34	46	50	51	46	42	50	67	67	66	90	110	106	90	78	90	88	82	66	58	40	38	38	43
4	A	35	42	42	40	34	29	53	53	61	77	83	80	86	76	80	77	62	54	47	37	37	34	38
5	42	38	42	43	43	38	62	62	65	69	78	80	90	82	77	75	78	84	58	50	38	35	32	41
6	35	35	44	44	42	40	49	64	66	89	86	98	87	86	86	81	84	74	64	52	47	42	46	48
7	38	53	52	49	51	48	54	67	77	84	106	90	86	90	87	86	77	74	71	64	58	53	54	58
8	47	53	34	37	34	N	54	50	68	78	90	96	90	90	110	110	103	82	60	51	48	42	42	43
9	46	52	54	50	30			51	57		84	89	91	84	90	87	86	77	66	66	43	42	48	49
10	43	48	48	40	32	32	34	53	62	70	88	88	86	86	88	87	88	79	73	65	37	42	42	40
11	42	43	38	37	34	28	52	58	55	73	88		86	86	78	81		75	70	51	37	36	34	42
12	41	38	35	38	32	31	32	69	67	90	88	87	86	87	80	80	78	70	71	63	58	50	50	48
13	46	44		42	37		36	66	67	84	80	88	91	89	91	85	72	67	58		51	53	53	53
14	54	38	42	47	42	40	52	52	73	74	91	85	104	106	86	83	87	85	63	54	54	51	50	49
15	43	43	43	46	25	40	54	69	81	80	101	87	88	95	84	80	85	75	69	53	52	50	51	52
16	48	43	43	42	37	38	53	63	89	58	81	80	86		88	82	78	66	66	53	50	52	52	54
17	53	49	44	44	42	38	56	52	64	72	79	90		82	83	86	79		60	47	52	47	51	51
18	49	43	43	40	41	37	59	62	62	68	84	90	90	94	90	85	76	70	62	60	52	54	54	54
19	53	48	48	42	43	45	59	63	67	90	87	85	97	104	90	83	73	64	66	55	54	54	51	52
20	40	37	50	46	43	44	58	66	74	78	89	88	90	97	87	90	87	90	68	52	48	43	26	26
21	37	42	43	40	40	38	72	63	78	78	77	87	90	96	90	88	86	90	83	50	43	34	43	43
22	43	51	52	46	49	37	64	53		56		55	61	66	70	68	66	71	66	54	34	48	50	43
23	36	49	51	54	39	37	53	55	66	72	76	72	81	77	81	78	74	82	66	50	48	37	51	52
24	52	52	52	46	44	37	50	73	71	82	91	98	97	90	88	81	71	68	65	62	58	52	54	57
25	52	53	50	43	43	40	59	66	60	66	61	78	84	78	76	75	70	71	67	54	52	51	37	37
26	46	43	43	42	44	46	51	52	53	64	77	84	76	77	77	66	64	67	66	62	54	52	54	54
27	54	54	54	55	48	47	52	62	66	73	76	82	80	84	72	77	78	72	65	50	50	44	44	43
28	46	46	47	44	42	38	54	61	70	70	88	87	71	81	74	78	74	67	66	63	54	54	54	51
29	54	54	52	54	54	51	64	66	80	90	91	101	102	87	80	76	67	72	65	61	58	54	54	54
30	51	51	52	48	43	43	62	66	70	80	83	96		90	83	82	73	70	64	58	63	51	54	55
31	55	54	51	48	42	32	48	51	50	58	70	62	62	76	68	67	66	66	63	52	52	48	53	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	30	31	30	31	31	28	30	31	30	30	30	30	29	30	31	31	30	30	31	30	31	31	31	31
MED	46	47	48	44	42	39	54	62	67	73	84	88	88	86	83	81	77	72	66	54	50	48	50	49
U Q	52	52	51	48	44	43	59	66	71	80	89	90	91	90	88	86	85	79	67	61	54	52	53	53
L Q	42	43	43	42	37	37	50	53	62	68	78	83	82	82	77	78	72	68	62	51	43	42	42	42

COMMUNICATIONS RESEARCH LABORATORY, JAPAN

HOURLY VALUES OF FES AT WAKKANAI

MAR. 1994

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
3	G	G	G	G	31	G	G	G	G	G	G	G	G	G	G	G	G	G	29	25	24	G	G	G
4	43	33	30	32	G	G	G	G	G	G	G	48	G	53	G	G	G	G	G	G	G	G	G	G
5	G	G	G	G	G	G	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	G	G	G	G	G	G
7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	G	26	G	G	G	G	G
8	G	G	G	G	G	G	25	35	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
9	G	G	G	32	G		G	32	39		G	G	G	G	G	G	G	G	G	G	G	G	G	G
10	G	24	G	34	33	G	28	G	38	G	G	42	G	G	G	G	G	G	G	G	G	G	G	G
11	G	G	G	28	G	G	G	G	G	G	G		G	G	G	G		G	G	G	G	G	G	G
12	G	G	G	29	24	26	29	G	36	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
13	G	G		G	G		G	G	G	49	50	40	G	G	G	G	G	31	38		G	G	G	G
14	G	23	G	G	G	G	G	40	45	54	58	G	45	G	G	G	G	31	G	G	G	G	G	G
15	26	G	24	G	30	G	G	29	45	38	G	G	G	G	G	G	G	G	32	31	27	G	G	G
16	G	G	28	24	G	G	G	G	G	G	G	G	G		G	G	G	38	44	38	26	24	G	G
17	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G		G	G	G	G	G	G
18	G	G	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	28	51	G	G	G	G	G	G	G	G	34	G	G	G	G	32	29
21	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
22	G	G	G	G	G	G	G	G	G	G	G	46	G	G	G	39	G	G	28	25	29	29	G	G
23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	29	23	G
24	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
25	G	G	23	G	G	G	G	G	G	G	46	G	G	G	G	G	G	36	34	31	40	40	G	G
26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	31	33	37	26
27	28	36	30	28	30	25	G	G	G	G	56	G	G	G	G	G	G	G	26	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
29	G	G	G	G	G	G	G	G	G	G	46	G	G	G	G	G	G	G	G	G	G	G	G	25
30	G	G	G	G	G	G	G	34	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G
31	G	G	G	G	G	G	G	G	G	G	G	G	G	50	G	G	42	G	G	G	G	G	G	G
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	30	31	31	29	31	31	31	30	31	30	29	30	31	31	30	30	31	30	31	31	31	31
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
U Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	26	G	G	G	G	G
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF FMIN AT WAKKANAI

MAR. 1994

LAT. 45.4N LON. 141.7E SWEEP 1MHz TO 25MHz 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	15	15	15	15	16	24	29	20	20	20	21	18	20	20	24	20	15	15	15	15	15	16
2	15	14	15	15	15	15	17	24	29	18	32	44	26	27	40	18	26	20	15	15	15	16	15	15
3	15	15	15	15	15	15	17	22	26	17	21	22	22	22	21	20	18	20	15	16	15	15	15	18
4	16	15	15	15	15	15	17	23	45	40	23	26	44	23	31	18	27	20	15	15	16	15	15	16
5	16	15	14	15	15	15	17	24	27	21	43	20	18	44	20	18	24	20	15	16	15	15	17	20
6	15	16	17	14	15	15	16	24	17	18	23	43	45	17	21	20	27	18	15	15	16	15	15	15
7	15	15	15	15	15	15	17	24	18	18	20	21	20	20	21	17	18	20	15	15	15	15	15	15
8	15	15	15	15	15	18	17	18	18	42	33	26	22	22	20	18	24	20	15	15	15	15	15	15
9	16	15	15	15	14		66	16	18		22	22	20	22	17	17	17	21	15	15	15	15	15	15
10	15	15	14	15	15	14	16	23	17	22	27	23	21	17	30	34	24	22	15	15	16	14	16	15
11	15	15	15	16	14	15	18	23	17	18	20		20	45	42	18		22	15	14	15	16	15	15
12	15	15	15	15	15	16	15	23	16	17	22	18	45	46	30	21	29	23	15	15	15	15	15	15
13	15	15		15	15		20	24	16	17	26	23	24	33	42	39	26	17	17		16	16	16	15
14	15	15	16	15	15	14	20	21	27	23	22	28	20	21	20	21	28	17	17	15	15	15	14	16
15	16	15	17	15	15	15	20	22	26	30	44	27	28	22	18	23	26	22	15	16	16	15	16	15
16	15	16	16	15	15	15	20	27	29	24	24	42	45		45	17	16	18	16	15	15	15	15	15
17	15	15	14	15	15	15	18	26	20	23	43	44		46	23	22	26		15	15	15	15	15	15
18	15	14	14	15	15	15	18	26	33	41	22	45	45	45	44	30	20	23	17	17	16	15	15	15
19	15	14	15	15	14	15	20	23	37	45	43	45	47	45	21	18	18	22	15	15	15	15	15	15
20	15	15	15	15	15	15	21	17	18	21	21	21	44	27	46	32	17	17	18	15	15	15	15	14
21	15	15	14	15	15	14	21	27	30	20	21	23	22	20	21	20	17	21	15	15	15	15	16	15
22	16	15	15	15	15	15	20	27		20	20	21	20	48	23	18	16	24	18	15	15	14	16	15
23	16	16	16	17	16	15	21	26	21	47	20	21	46	23	18	17	18	22	16	16	15	15	15	15
24	15	15	15	14	14	14	20	26	18	45	28	27	27	48	22	20	18	21	15	16	15	15	15	15
25	15	15	15	15	15	15	28	17	20	20	21	27	46	46	22	21	17	17	15	15	15	16	16	15
26	16	15	15	15	15	15	21	16	20	23	20	27	22	22	23	20	18	21	16	15	15	15	15	15
27	15	14	15	14	15	15	21	27	17	18	21	18	27	20	42	18	20	23	17	15	15	15	15	15
28	15	15	15	15	16	14	21	27	30	20	24	44	45	24	45	30	18	22	16	15	15	15	15	15
29	15	14	15	15	15	15	22	18	17	17	26	27	22	20	17	17	16	22	16	15	15	15	15	15
30	15	16	14	15	15	15	22	28	16	45	22	47		45	21	18	16	24	17	16	16	17	16	16
31	15	15	16	16	15	17	30	16	18	18	22	29	30	28	20	17	18	21	17	16	15	14	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	30	31	31	29	31	31	30	30	31	30	29	30	31	31	30	30	31	30	31	31	31	31
MED	15	15	15	15	15	15	20	24	20	20	22	26	26	24	22	20	18	21	15	15	15	15	15	15
U Q	15	15	15	15	15	15	21	26	29	30	27	42	45	45	40	21	26	22	17	16	15	15	16	15
L Q	15	15	15	15	15	15	17	21	17	18	21	21	21	21	20	18	17	20	15	15	15	15	15	15

HOURLY VALUES OF FOF2 AT KOKUBUNJI

MAR. 1994

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz 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	64	A	41	60	50		55	87	86	86	83	90	111	98	91	86	81	89	81	26	43	39	50	52
2	57	60	58	49	51	62	32	73	92	92	93	92	112	122	115	102								
3													128	136	106	86		94	62	63	52	60	86	52
4	36	A	57	50	48	61	53	86	98	85			101	97	92	88	99	94	56	41	60	49	46	53
5	52	38	47	49	47			89	80	90						75	84	66	56	53	49	42	42	56
6	47	53	58	44	48	53	39	89	88	83	84	100	100	100	87	78	86	99	67	55	A	A	56	45
7	76	52	51	57	42		27	89	83	83	86	96	95	95	97	94	86	71	68		58	81	50	58
8	51	53	48	39	58	62	52	83	88	68	92	122	104	103	127	131	112	114	87	38	48	52	38	A
9	A	46	51	51	50	37	54	79	97	86			106	92	94	98	113	109	77	51		59	42	53
10	53	43	55	50	24	A	63	90	91	98	96	114	105	110	102	98	107	98	74	40	47		52	A
11	50	46	47	35	30	N	62	76	88	83	104	124	116	93	97	88	96	88	82	43	43	49	43	A
12	48	43	43	38	N		37	78	91	95	102	111	108	102	87	94	93	83	66	67	46	47	44	46
13	46	46	42	42	31	N	49	73	78	81	84	91	110	124	88	78	94	77	58	58	48	57	52	52
14	49	47	48	46	46	44	60	66	76	82	90	106	115	117	94	90	101	95	60	A	A	50	48	52
15		46	A	46	47	34	47	63	91	90	88	105	100	111	91	84	81	85	65	58	46	48		
16	51	52	59	45	36	56	48	78	87	91	120	104	91	86	85	81	92	88	A	50		44	54	45
17	48	47	47	A	38	36	62	82	77	92	108	105	106	105	93	90	82	82	84	50	47		48	61
18	53		44	37		31	53	81	76	70	88	110	117	97	85	91	96	75	73	58	56	57	57	48
19	52	54	46	57	46	34	60	62	73	78	102	106	117	125	108	87	79	77	70	55	50	48	48	51
20	52	48	46	42	41	42	58	73	78	80	92	105	114	102	110	90	100	92	92	50	41	43	49	A
21	46	40	43	44	36		49	76	72	80	97	97	102	104	108	111	117	107	88	46	43	A	38	50
22	A	41	48	50	31	37	52	78	80	88	105	104	112	106	102	94	85	83	80	64	51	A	38	38
23	43	A	43	46	25	N	59	76	82	82	82	101	100	100	98	95	86	88	84	55	44	A	48	58
24	46	A	A	43	38	40	54	88	85	87	93	105	111	108	107	91	82	A	74	60	57	67	53	58
25	59	56	60	59	46	A	80	90	83	92	102	105	110	110	100	85	78	81	81	62	A	56	A	A
26	47	48	44	36	41	46	53	80	67	80														
27																								
28																								
29											113	114	114	110	95	84	78	72	74	56	58	56	56	53
30	57	57	51	52	37		60	73	75	88			112	134	114	101	72	79	90	57	54	53	64	51
31	51	48	61	48	44	69	55	64	90	86	78	97	112	90	79	86	78	78	90	62	39	59	56	51
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	22	25	26	25	16	26	27	27	27	23	23	27	27	27	28	26	26	26	25	22	21	25	21
MED	51	48	48	46	42	43	54	78	83	86	93	105	110	104	97	90	86	86	74	55	48	52	49	52
U Q	53	53	56	50	47	58	60	87	90	90	102	110	114	111	107	94	99	94	84	59	54	58	55	54
L Q	47	46	44	42	36	36	49	73	77	81	86	97	102	97	91	85	81	78	66	48	44	47	43	49

HOURLY VALUES OF FES AT KOKUBUNJI

MAR. 1994

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	28	G	24	G	G	G	43	48	G	G	G	G	G	G	G	G	G	G	32	G	G	G	G
2	G	G	G	G	G	G	G	47	33	G	G	54	55	48	G	44	G	G	G					
3			G			G	G						G	G	G	G	37	32	G	G	G	G	G	38
4	33	41	40	34	27	28	25	41	31	G			48	51	45	41	47	G	G	G	G	G	30	G
5	G	26	G	G	G	G	G	58	48	47						39	G	G	26	G	G	G	G	G
6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	50	G	G	35	32	40	40	90	G	24
7	G	24	25	G	G	G	24	32	33	G	56	47	50	G	42	G	G	58	31	G	G	G	G	G
8	G	G	G	G	G	G	30	40	38	44	53	50	56	G	G	G	G	G	G	G	G	G	28	31
9	35	59	25	G	G	G	G	30	G	41			90	78	G	G	43	G	33	34	28	G	G	G
10	G	G	G	G	25	26	G	30	G	G	50	44	G	G	55	45	46	G	G	G	G	G	G	39
11	28	28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	41
12	G	G	29	23	G	G	G	G	G	G	G	G	49	G	G	G	G	G	G	G	G	G	G	G
13	G	G	G	G	G	G	28	29	40	G	G	G	47	G	41	G	G	G	G	G	G	29	G	G
14	G	G	G	G	24	30	G	G	G	G	G	G	G	G	45	51	64	59	62	34	39	37	28	G
15	G	26	27	24	G	25	32	G	G	G	64	47	49	54	62	G	G	G	G	G	G	26	G	
16	G	27	G	G	23	24	G	G	G	G	G	50	51	G	G	G	G	42	71	57	G	24	29	30
17	28	26	G	38	36	30	G	G	G	G	40	G	G	G	G	G	G	G	G	G	24		G	24
18	G	G	G	G	G	G	G	G	G	G	G	G	48	G	G	G	G	G	G	G	G	G	G	G
19	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33
20	48	G	G	G	G	G	G	G	44	44	50	50	G	49	G	G	G	G	G	G	G	34	27	29
21	33	G	G	G	G	G	32	37	43	56	58	62	55	61	57	G	40	G	G	G	G	72	33	38
22	34	28	G	G	G	G	31	G	G	G	G	G	G	44	43	44	G	G	G	27	30	37	27	G
23	24	34	G	G	G	G	G	G	G	G	G	G	G	45	G	G	G	G	G	G	30	40	30	44
24	32	50	24	G	G	G	G	G	G	G	G	58	80	80	G	60	70	91	60	40	G	G	G	24
25	24	G	G	G	26	29	G	30	G	43	49	G	49	G	G	G	G	36	35	31	55	33	60	34
26	26	26	G	28	G	G	G	G	G	46														
27																								
28																								
29											G	G	G	50	81	53	41	G	G	28	G	G	G	G
30	G	G	G	G	24	G	29	G	G	G			G	G	41	48	G	47	30	30	27	G	29	G
31	26	30	27	30	47	G	34	G	47	59	67	49	57	50	44	45	G	52	60	46	38	27	31	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	27	27	28	27	27	28	28	27	27	27	23	23	27	27	27	28	28	28	28	27	27	26	27	26
MED	G	24	G	G	G	G	G	G	G	G	G	G	47	G	G	G	G	G	G	G	G	G	G	24
U Q	28	28	12	23	24	12	26	32	38	43	50	50	51	50	45	44	38	35	31	32	28	33	29	34
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF FMIN AT KOKUBUNJI

MAR. 1994

LAT. 35.7N LON. 139.5E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

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

HOURLY VALUES OF FOF2 AT YAMAGAWA

MAR.1994

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1				34	25	N		32	67	72	70	82	100	111	92	87	90	90	87	A				
2				30	51	23	51	31	66	81	102	96	98	122	134	122	107	108	96	83				
3				32	37		31	34	72	101	98	108	N	141	138	120	122	106	87	72	64		34	71
4	51	36	A	34	26	26	26	39	80	90	94	90	102	112	107	104	96	80	66	42				
5			46	24	29	32	28	45	72	80	91	94	96	94	86	91	82	74	66	A	30	28	46	35
6	N	N	37	40	32	28	26	35	76	77	77	86	101	105	94	86	89	87	67	A	28	26	25	N
7	27	30	28	32	25	N	26	37	76	75	78	91	90	108	101	94	86	76	78	78	47	31	34	31
8	32	29	31	36	32	26	26	72	65	68	86	103	91	108	124	127	108	103	90	32	25	A	25	37
9	31	A	34	A	A	25	28	37		81	88	88	103	94	111	121	114	90	57	A	31	45		46
10	31	N	29	37		26	24	62	81	88	80	101	104	122	124	111	122	125	87	39	32	31		29
11	A	A	34	34	26		N	54		78	97	122	128	103	111	112	112	105	83	53	46		31	25
12	49		36	30	N		N	30	78	106	97	110	110	108	101	90	94	90	80	66	32	26	25	
13	30	30	26	34	31	30	30	66	71	78	91	97	111	123	110	87	90	84	66	41	42	32	24	46
14	A	31	28	30	32	N	36	N	66	86	86	98	105	121	118	104	108	108	83	A	A	A	A	A
15	A	A	26	29	46		26	41	72	90	82	91	106	112	120	96	86	90	81	A	30	32	A	59
16	A	31	30	20	30	N	30	66	84	97	108	117	106	87	82	87	100	85	86	61	A	A	A	36
17	46		34	34	31	28	A	44	66	98	95	88	101	105	95	90	81	87	78	70	45	34		32
18	31	29	29	30	31	28	26	66	73	80	91	108	118	107	101	87	92	91	77	66	A	30	N	N
19	56	N	28	37	43	30	26	53	66	80	91	109	111	130	116	95	87	90	77	78	45	28	26	31
20	70	42	28	26	26	25	30	42	72	88	92	105	116	120	118	108	96	107	110	72	32	31	37	29
21	28	A	31	31	32	N	28	64	66	77	91	100	108	117	126	122	126	126	87	A	34	26	62	N
22	31	36	42	33	25	32	31	66	78	86	102	106	111	118	121	108	88	90	96	85	A	31	A	A
23	A	29	N	34	26	29	26	61	71	90	86	96	102	111	108	101	83	86	86	64	45	A	A	A
24	34	A	34	A	25	30	32	63	84	87	94	102	107	115	118	110	97	87	82	70	45	34	32	49
25		38	32	N	19	31	30	66	78	94	111	107	118	112	108	95	97	94	87	70	35	34	A	37
26	51	31		40	34	31	32	58	73	77	91	110	114	105	107	105	100	90	87	80	34	31	25	45
27	31	34	36	36	31	23	26	53	66	82	94	107	121	131	118	103	97	101	90	88	37	26	26	28
28	30		46	36	25	26	26	44	70	75	88	105	101	95	87	86	84	87	80	62	A	29	A	A
29	26	29	N	41	26		35	53	74	93	103	105	111	111	108	94	82	75	66	46	A	35	A	71
30	46	46	46	A		N	25	53	68	81	91	104	121	131	130	103	87	83	72	54	45	23	36	46
31	A	25	44	31	30	28		66	84	80	96	116	121	108	102	90	85	76	73	60	37	31	31	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	16	24	27	27	20	26	30	29	31	31	31	30	31	31	31	31	31	31	24	22	22	16	19
MED	31	31	33	34	30	28	28	53	72	81	91	103	106	111	110	101	94	90	82	66	36	31	31	37
U Q	49	36	36	36	32	30	31	64	78	90	97	108	114	121	120	110	107	103	87	75	45	32	35	46
L Q	30	29	28	30	26	26	26	39	66	78	86	94	101	105	101	90	86	85	73	53	32	28	25	31

HOURLY VALUES OF FES AT YAMAGAWA

MAR. 1994

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	30	G	G	G	G
2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
3	G	G	G	G	G	G	G	27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
4	G	25	32	24	26	G	G	G	G	G	G	50	G	G	G	G	G	G	G	G	G	G	G	G
5	29	G	G	28	G	G	23	G	30	G	G	G	G	G	G	G	G	G	G	31	24	G	G	G
6	G	23	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	33	33	24	G	G	G
7	24	G	G	G	27	G	G	G	G	G	G	G	G	G	G	G	G	G	G	25	G	G	G	25
8	G	G	G	G	G	G	G	35	G	G	G	55	G	G	G	G	G	G	G	29	26	28	G	G
9	G	33	31	30	26	G	G	G	G	G	G	G	G	G	G	66	56	50	35	36	26	24		G
10	G	G	G	G		24	G	28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
11	32	26	26	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	G
12	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	24	G	G	25	G
13	G	G	26	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	32	31	30
14	32	G	G	G	G	G	G	22	G	46	G	G	G	G	G	54	50	G	40	92	33	33	33	32
15	31	29	23	27	G	G	G	G	G	G	G	53	60	59	52	G	40	50	G	30	32	G	32	G
16	32	G	31	27	24	G	G	25	G	G	G	G	G	G	G	G	G	G	G	24	72	33	32	26
17	24	G	G	G	G	G	29	33	33	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
18	G	G	G	G	G	G	G	33	G	G	G	G	G	G	G	G	G	G	37	33	27	G	G	G
19	G	G	G	G	G	G	G	24	32	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
20	G	G	G	G	G	G	G	26	G	G	G	44	G	G	G	G	G	G	G	G	G	G	G	G
21	30	30	G	G	G	G	G	G	32	G	G	G	G	G	G	G	76	G	G	33	29	G	G	G
22	23	G	26	G	G	G	G	G	G	G	42	G	G	G	G	G	G	G	G	32	34	31	32	33
23	32	32	32	26	G	G	G	31	33	G	G	G	G	G	G	62	53	G	49	59	28	38	48	32
24	33	33	30	33	26	G	G	33	G	G	G	G	G	G	G	G	G	59	37	29	27	G	G	28
25	33	26	G	24	23	27	G	G	G	G	G	G	G	G	G	G	G	G	G	31	G	32	32	32
26	32	25	G	G	23	G	G	29	G	G	G	G	G	G	G	G	G	G	G	G	G	G	30	32
27	23	26	32	26	G	26	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
28	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	34	33	92	28
29	G	G	G	G	G		G	G	G	G	G	G	G	G	G	G	G	G	G	27	39	30	28	23
30	G	G	26	27		G	G	26	G	G	G	G	G	G	G	G	44	41	36	33	32	24	G	29
31	32	33	G	25	G	G	G	32	G	G	G	G	G	55	53	G	45	G	G	24	G	G	29	32
	00	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	29	28	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31
MED	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	25	G	G	G	G
U Q	32	26	26	26	12	G	G	28	G	G	G	G	G	G	G	G	G	G	G	32	29	30	32	29
L Q	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G

HOURLY VALUES OF FMIN AT YAMAGAWA

MAR. 1994

LAT. 31.2N LON. 130.6E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16	15	15	15	16	15	17	15	16	16	18	20	18	49	18	15	16	15	15	15	15	15	15
2	15	15	15	15	16	15	15	20	16	15	17	17	50	47	46	22	16	16	15	15	15	15	15	15
3	15	15	17	15	15	15	15	15	16	16	16	16	20	48	45	22	16	15	17	15	15	15	15	15
4	15	16	15	15	15	15	15	15	15	17	18	26	50	49	23	46	20	15	21	15	15	15	15	15
5	16	15	15	15	15	15	15	20	16	15	22	46	18	48	22	20	15	15	15	15	15	15	15	15
6	16	15	15	15	15	17	16	15	16	17	17	21	23	26	24	48	17	15	15	15	16	17	16	16
7	15	15	15	16	15	16	15	21	15	16	21	22	49	49	52	22	18	17	20	16	16	16	16	15
8	15	15	15	15	15	16	15	15	17	16	22	22	64	52	54	22	16	16	20	16	16	15	15	15
9	15	15	15	15	15	15	15	15	16	16	23	52	50	62	22	23	15	16	15	15	15	15		15
10	15	16	15	15		16	15	15	16	16	17	22	21	64	50	16	46	15	16	15	15	16	15	15
11	15	15	16	16	15		18	21	18	15	17	17	48	48	47	20	20	15	14	15	15	22	15	15
12	15	15	15	15	15		17	15	15	16	16	21	22	23	23	18		17	16	15	15	15	15	16
13	15	15	15	15	15	15	16	16	15	45	17	23	54	50	17	51	17	18	21	15	15	15	15	15
14	15	16	15	15	15	16	16	15	15	15	15	48	49	24	21	20	16	16	16	15	15	15	15	15
15	15	15	15	15	15	17	15	22	15	16	21	20	40	40	24	22	18	17	15	15	15	16	16	15
16	16	15	15	15	16	16	15	15	15	16	17	48	48	50	46	22	18	23	21	16	15	15	15	15
17	15	15	15	15	15	15	15	15	15	15	16	21	52	16	15	23	18	16	21	15	15	15	15	15
18	15	15	15	15	15	16	16	15	17	18	21	20	52	26	49	20	16	15	15	15	15	15	16	18
19	16	15	15	15	15	16	15	15	18	17	20	49	62	49	49	23	22	17	21	15	15	15	16	15
20	15	15	15	16	15	15	16	16	16	17	24	50	49	52	50	18	47	17	16	15	15	15	15	15
21	15	15	15	15	15	15	15	17	16	16	18	23	23	49	49	21	17	15	18	15	15	15	15	16
22	16	15	15	15	15	15	15	17	18	16	21	48	22	54	45	20	17	15	18	15	15	15	15	15
23	15	15	15	15	15	17	15	17	15	16	20	23	20	50	50	26	17	15	15	15	15	15	15	15
24	15	15	15	15	15	15	15	16	15	18	18	47	48	46	48	21	17	15	15	15	15	15	15	15
25	15	15	15	15	15	15	15	21	16	16	21	52	49	50	50	22	20	16	20	15	15	15	15	15
26	15	15	15	15	15	15	15	15	16	17	17	48	56	48	49	46	16	16	18	15	15	15	15	15
27	16	15	15	15	15	16	15	24	17	18	16	47	23	49	23	20	16	16	16	15	15	15	15	15
28	15	16	15	15	15	16	15	16	16	20	17	24	24	48	18	16	15	16	21	15	15	15	15	15
29	16	15	15	15	15		15	23	15	16	18	49	48	50	20	17	17	16	17	15	15	16	15	15
30	15	15	15	15		17	15	26	15	16	21	23	53	49	52	18	15	16	14	15	15	16	15	15
31	15	15	15	15	16	15	16	15	16	16	18	22	46	48	21	48	18	15	18	15	15	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	31	29	28	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	30	31
MED	15	15	15	15	15	16	15	16	16	16	18	23	48	49	46	22	17	16	16	15	15	15	15	15
U Q	16	15	15	15	15	16	16	20	16	17	21	48	50	50	49	23	18	16	20	15	15	15	15	15
L Q	15	15	15	15	15	15	15	15	15	16	17	21	23	46	22	20	16	15	15	15	15	15	15	15

HOURLY VALUES OF FOF2 AT OKINAWA

MAR. 1994

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz 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	40	38	40	42	40	36	42	65	77	74	86	108	105	105	111	135	97	107	88	64	54	51	26
2	38	40	22	35	36	25		42	66	78	126	108	108	120	144	146	144	170	162	145	107	80	61	36
3	42	43	45	53	45	28		42	62	98	105	104	120	139	163	193	146	119	120	110	87	85	62	53
4	50	54	62	62	32	38	43	54	84	95	103	102	103	110	117	130	119	107	91	87	85	78	53	42
5	37	26	23	36	35	34	18	53	74	80	97	102	95	108	118	111	107	108	88	87	85	84	67	25
6	41	60	46	44	40		N	42	74	78	85	95	111	103	111	112	110	109	88	66	62	60	60	58
7	52	43	28	42	40	26	30	62	78	77	80	113	105	118	121	118	108	110	104	111	106	62	64	66
8	53	29	54	43	32	44	61	88	75	90	82	104	102	111	138	138	111	107	107	84	71	61	55	52
9	54	60	62	60	A	A	A	60	71	82	100	90	95	110	118	121	120	102	85	78	77	66	42	41
10	27	54	62	32	A	N	28	60	81	90	87	100	105	127	134	140	146	147	111	105	87	84	72	62
11	55										101	120	111	110	118	143	131	128	110	76	71	69	62	53
12	51	55	60	A	36	A		52	76	90	108	112	131	118	118	111	108	107	110	87	77	58	43	52
13	38																			70	66	47	52	53
14	43	37	41	28	41	43	29	54	72	85	103	96	110	121	128	141	143	138	120	88	85	A	61	26
15	23	48	51	54	62	36	A	62	67	80	93	103	110	120	130	121	107	110	110	108	83	54	47	60
16	61	58	57	33	26	34	34	63	76	90	111	121	122	102	91	106	108	120	90	90	87	26	43	42
17	43	28	44	51	37	37	30	54	80	82	111		91	109	110	101	99	104	90	88	83	66	52	64
18	60											110	109				110	106	90	73	62	53	43	42
19	42	26	53	44	35	49	26	54	55	76	102	111	120	130	121	100	96	105	91	87	87	60	46	44
20	55											114	120	133	134	162	141	144	157	162	121	107	92	85
21	79	79	77	54	45	30		55	76	77	104	106	111	128	144	144	145	142	121	105	108	76	62	53
22	52	A	51	42	31	31	25	54	84	90	105	105	108	120	131	110	111	110	106	87	81	66		62
23	62	26	65	42	31	29	30	55	77	100	94	99	110	118	119	108	92	96	104	85	78	65	A	42
24	63											105	117			141	127	130	121	105	84	66	58	62
25	67	54	61	64	59	34	A	53	77	101	110	111	120	118	112	118	121	109	86	87	78	48	50	52
26	53	55	A	24	41	43	A	54	70	90	91	106	118	110	118	127	142	142	127	110	85	72	A	53
27	29	54	59	62	70	28	A	52	62	92	106	110	131	162	162	90	145	152	145	131	106	88	87	81
28	62	65	79	67	42	32	37		66	85	97	107	105	101	107	109	107	97	90	80	A	45	A	A
29	34	A	63	66	30	A	51	54	77	92	106	110	116	127	122	120	105	90	80	66	59	N	51	53
30	60	68	78	66		A	N	53	72	84	91	111	130	145	140	120	111	101	88	72	55	54	53	33
31	28	52	52	53	43	36	A	61	78	73	88	119	121	120	117	111	105	90	85	85	66	52	26	58
	00	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	24	25	25	23	20	14	25	26	26	27	29	30	28	28	29	30	30	30	31	30	29	27	30
MED	51	53	54	44	40	34	30	54	74	85	101	106	110	118	120	120	111	109	105	87	83	65	53	53
U Q	60	56	62	61	43	39	37	60	77	90	106	111	120	127	134	140	141	130	120	105	87	77	62	60
L Q	38	38	44	38	32	29	28	52	67	78	91	102	105	110	117	110	107	104	90	80	71	54	47	42

HOURLY VALUES OF FES AT OKINAWA

MAR. 1994

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	G	G	G	G	G	G	G	24	38	G	44	G	59	48	49	45	43	39	35	31	G	G	G	G
2	G	G	27	G	G	G	G	24	34	39	45	45	47	49	49	48	71	41	G	26	G	G	24	G
3	28	G	G	G	G	11	G	28	G	150	G	G	G	61	79	57	44	39	G	26	24	G	G	G
4	G	G	G	29	34	26	25	28	30	57	44	66	50	52	49	48	44	38	G	32	30	G	G	G
5	G	34	28	G	G	25	24	25	44	35	G	41	G	74	44	65	46	G	37	36	G	G	24	24
6	G	G	G	G	G		G	23	34	38	39	58	G	G	G	G	42	G	37	33	26	G	28	G
7	G	G	30	58	G	25	22	25	30	36	44	47	46	47	46	G	G	36	32	24	25	G	G	G
8	23	G	31	26	26	G	G	G	35	48	56	59	53	79	66	48	62	39	84	65	40	G	G	G
9	G	32	27	32	34	32	30	26	32	36	39	G	G	G	G	42	40	40	37	33	34	31	32	39
10	38	38	32	G	35	24	G	29	40	G	58	45	45	46	45	44	G	G	G	32	24	G	G	G
11	38										G	68	51	51	56	44	48	46	G	G	G	24	G	39
12	28	G	32	35	24	30		48	36	36	43	G	66	G	G	G	G	39	G	G	G	G	G	24
13	G																			G	G	G	G	G
14	G	32	G	G	G	58	G	29	30	43	46	59	50	54	G	44	74	G	G	G	26	48	30	33
15	28	28	26	32	26	30	28	27	36	46	51	62	68	72	83	84	58	42	G	32	27	G	G	G
16	G	41	48	59	35	24	25	29	36	43	57	49	59	47	78	57	G	G	44	76	37	45	G	24
17	G	32	G	G	G	G	G	28	35	41	45		50	46	44	44	44	47	40	37	33	24	G	25
18	29											42	43				41	55	38	39	31	28	24	G
19	G	32	28	G	G	G	G	68	30	44	46	79	G	45	G	58	G	G	G	G	G	26	G	G
20	G											46	55	G	58	G	G	G	G	G	G	G	G	24
21	26	G	32	G	G	G	G	28	42	44	60	64	52	G	G	G	G	61	35	33	34	28	G	G
22	G	50	33	54	33	36	36	41	43	42	79	51	52	56	59	G	G	38	G	G	G	30		60
23	40	40	40	66	41	20	25	30	38	43	49	51	63	52	66	77	58	61	38	G	G	24	66	25
24	33											G	49			59	41	G	G	G	G	39	38	34
25	G	G	G	G	28	G	32	26	34	40	40	66	51	50	56	G	41	G	G	G	G	G	30	58
26	40	29	59	26	24	G	27	30	36	G	44	46	54	49	48	46	60	G	G	25	31	G	35	37
27	38	30	30	48	40	31	30	32	34	54	G	G	54	50	44	42	G	38	36	G	30	32	34	G
28	G	G	G	G	G	25	G	174	38	44	54	49	50	49	60	42	42	41	60	58	86	84	106	70
29	41	90	N	42	25	25	G	28	40	41	59	63	59	59	G	43	G	G	G	30	33	G	32	24
30	G	G	G	G		24	G	31	33	41	47	48	47	48	46	46	42	G	G	30	32	33	G	39
31	34	28	G	G	G	24	30	49	45	43	65	55	55	G	76	45	41	G	G	G	24	G	26	32
	00	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	26	25	26	25	25	25	26	26	26	27	29	30	28	28	29	30	30	30	31	31	31	30	31
MED	G	28	27	G	24	24	G	28	36	42	45	49	50	49	48	44	42	38	G	26	25	G	G	24
U Q	33	32	32	35	33	28	27	31	38	44	56	60	55	53	59	52	46	41	37	33	32	30	30	34
L Q	G	G	G	G	G	G	G	26	33	36	40	41	46	45	22	21	G	G	G	G	G	G	G	G

HOURLY VALUES OF FMIN AT OKINAWA

MAR. 1994

LAT. 26.3N LON. 127.8E SWEEP 1MHz TO 25MHz AUTOMATIC SCALING

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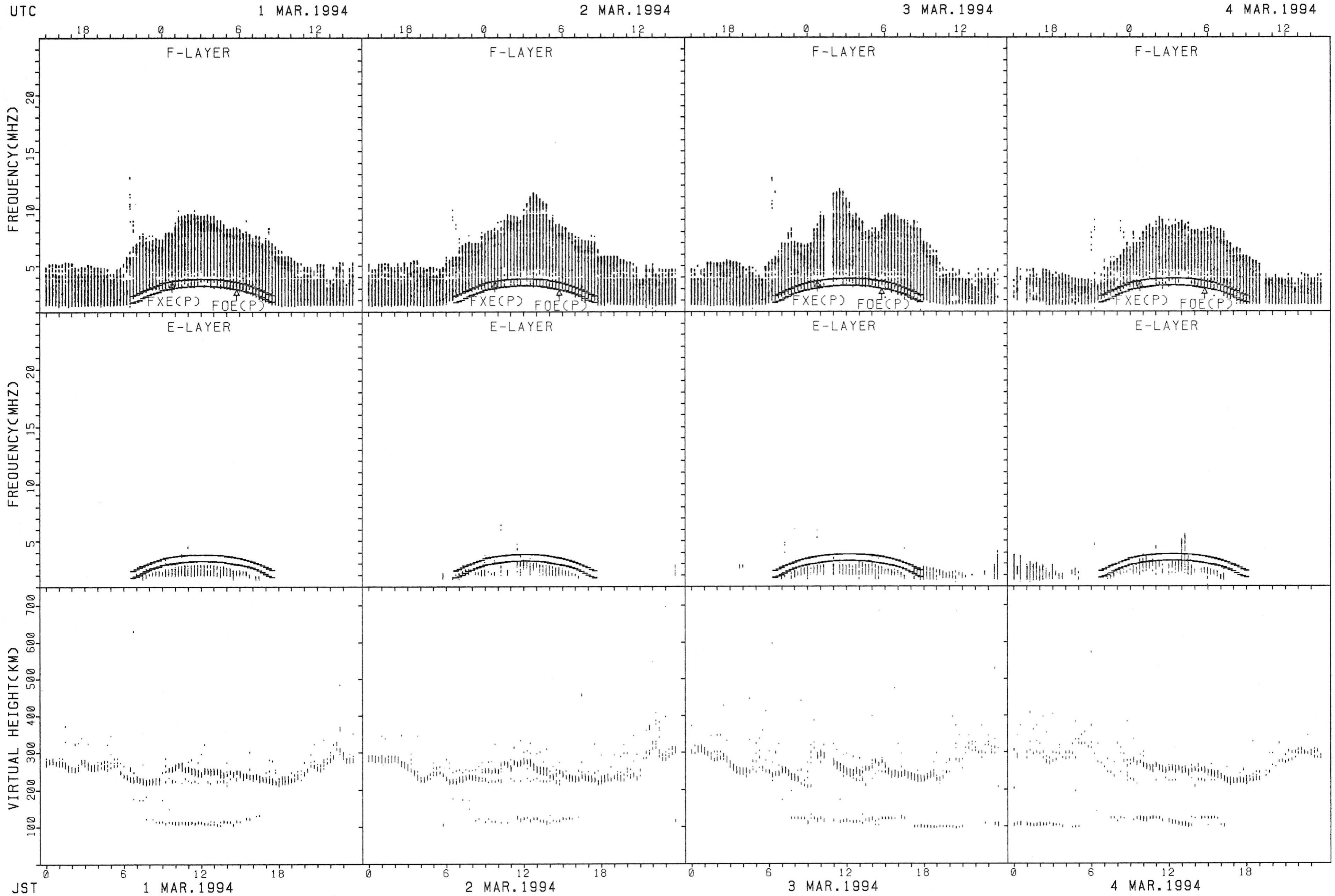
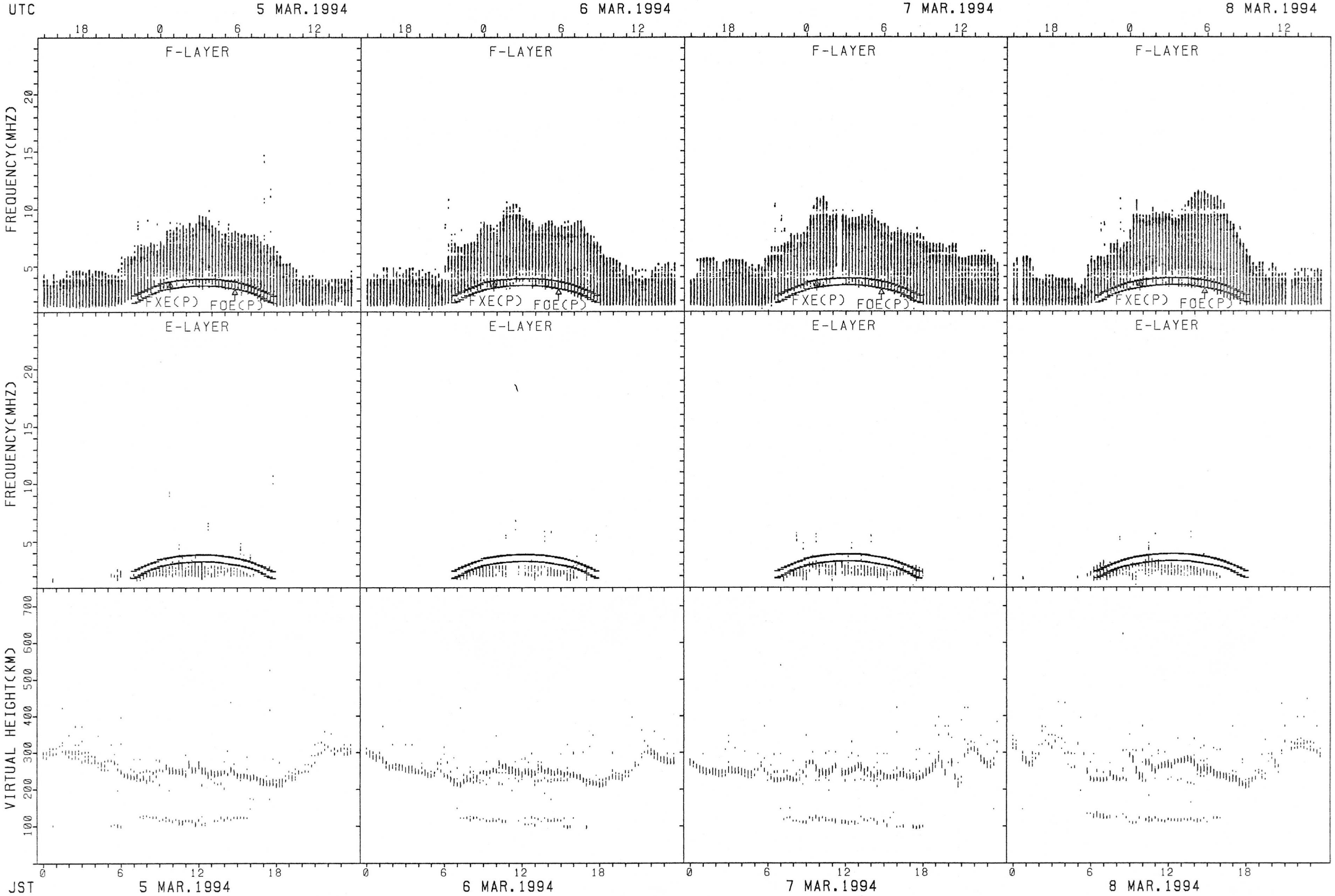
31	14	15	15	15	15	15	14	14	14	14	17	22	22	20	28	21	15	15	14	15	15	15	14	15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	26	26	26	25	25	25	26	26	26	27	29	30	28	28	29	30	30	30	31	31	31	30	31
MED	15	15	14	14	14	15	15	14	14	14	15	17	18	18	19	17	16	14	14	15	14	15	14	15
U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

SUMMARY PLOTS AT WAKKANAI



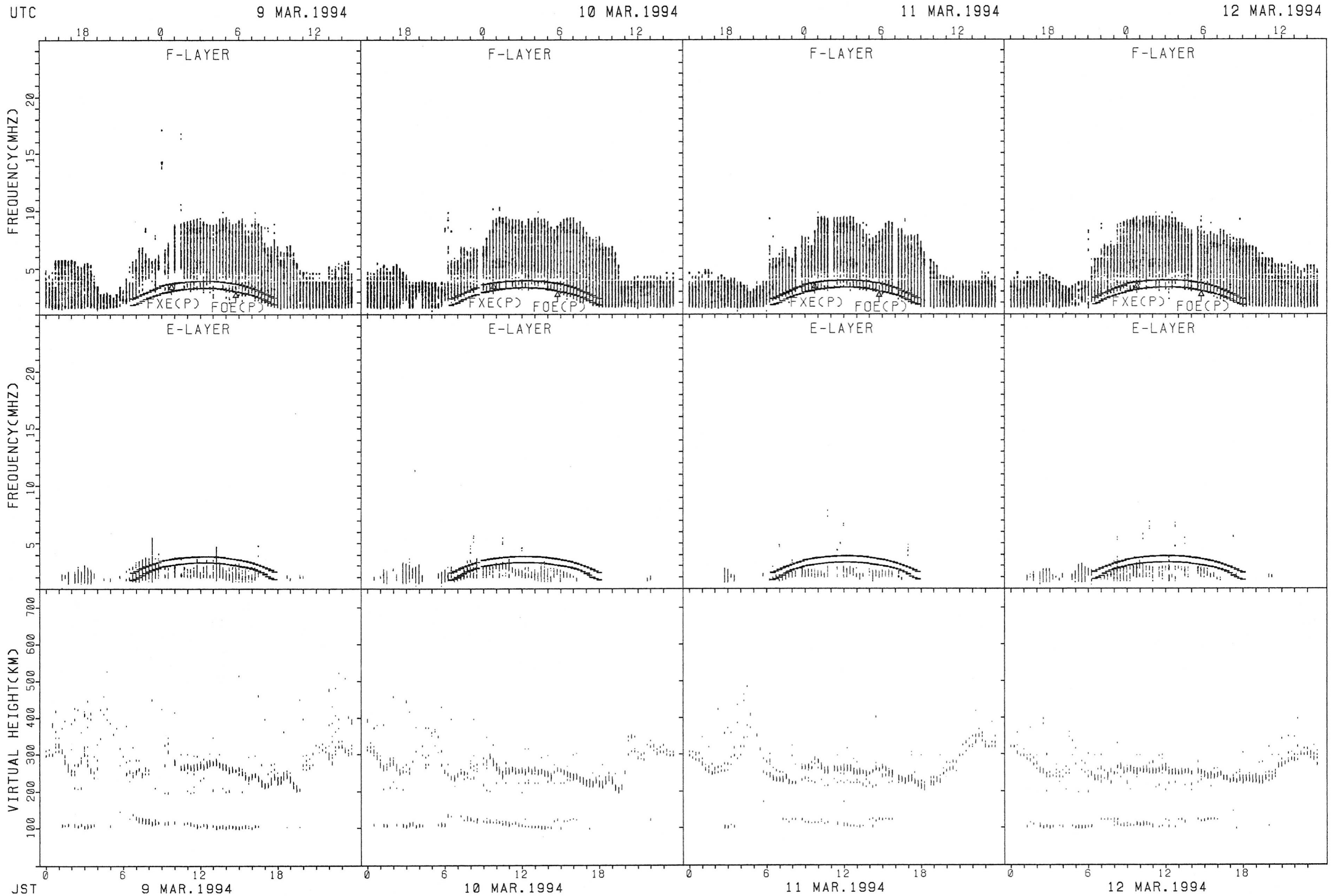
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT WAKKANAI

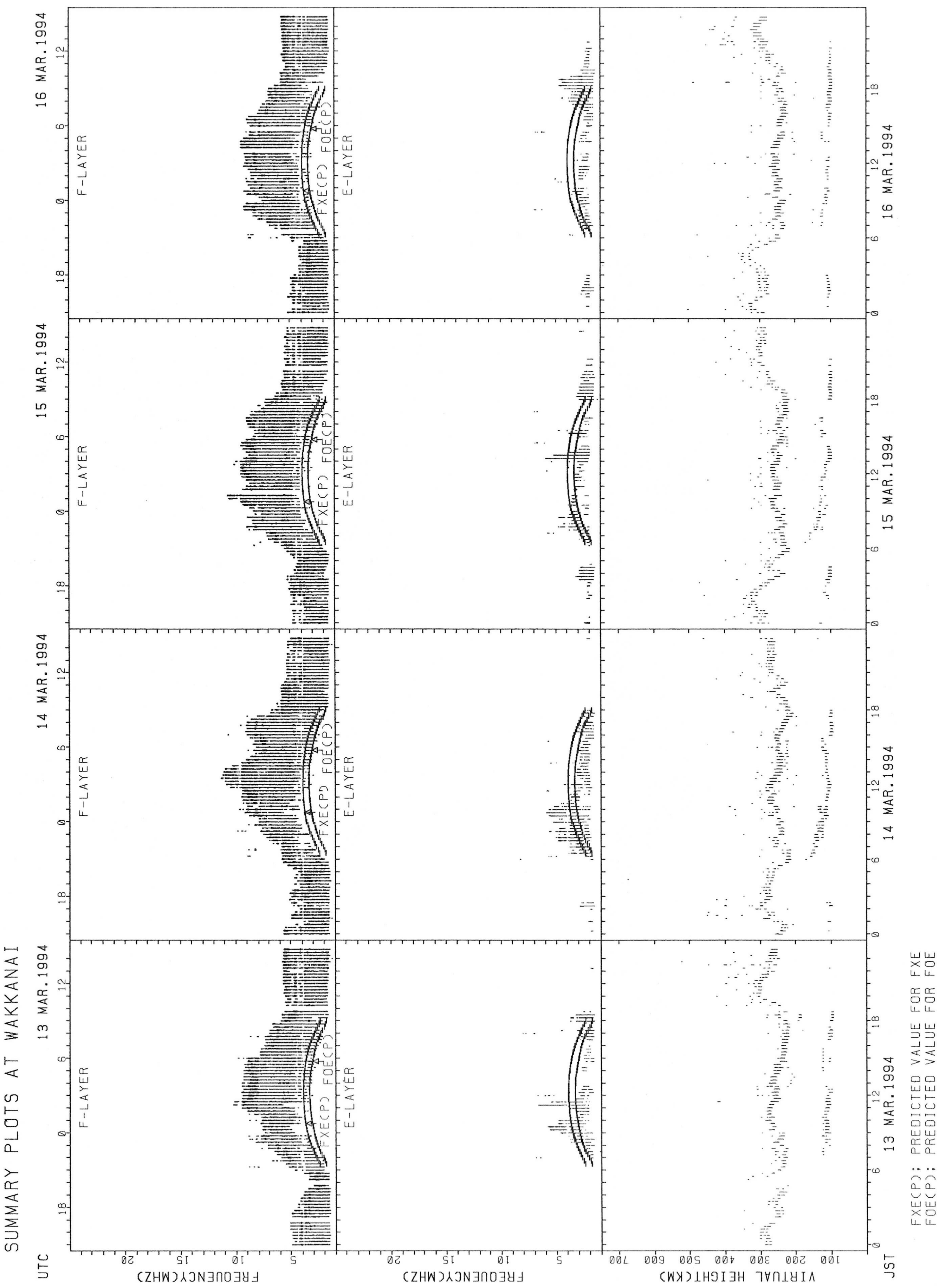


FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

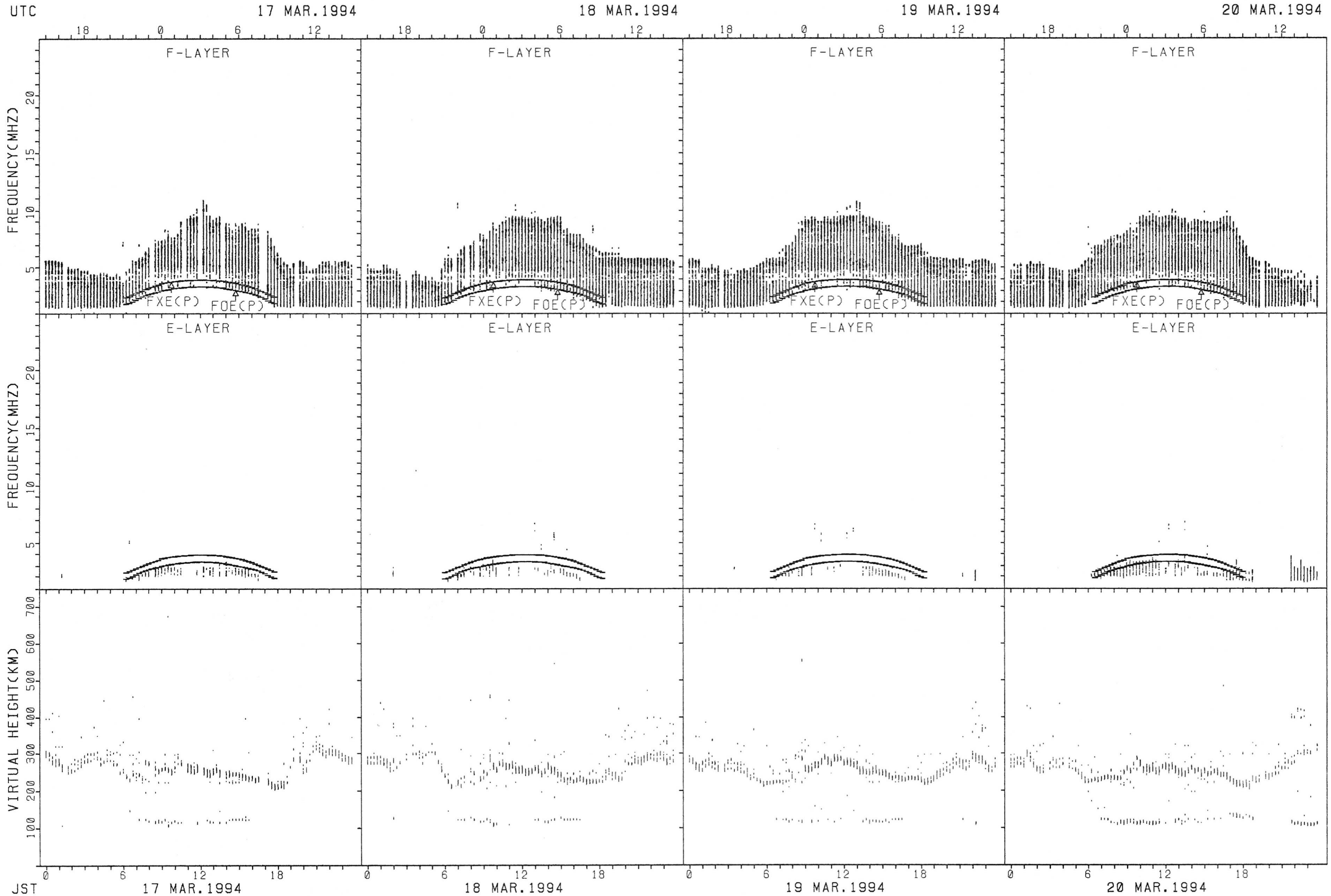
SUMMARY PLOTS AT WAKKANAI



FXE(P): PREDICTED VALUE FOR FXE
FOE(P): PREDICTED VALUE FOR FOE

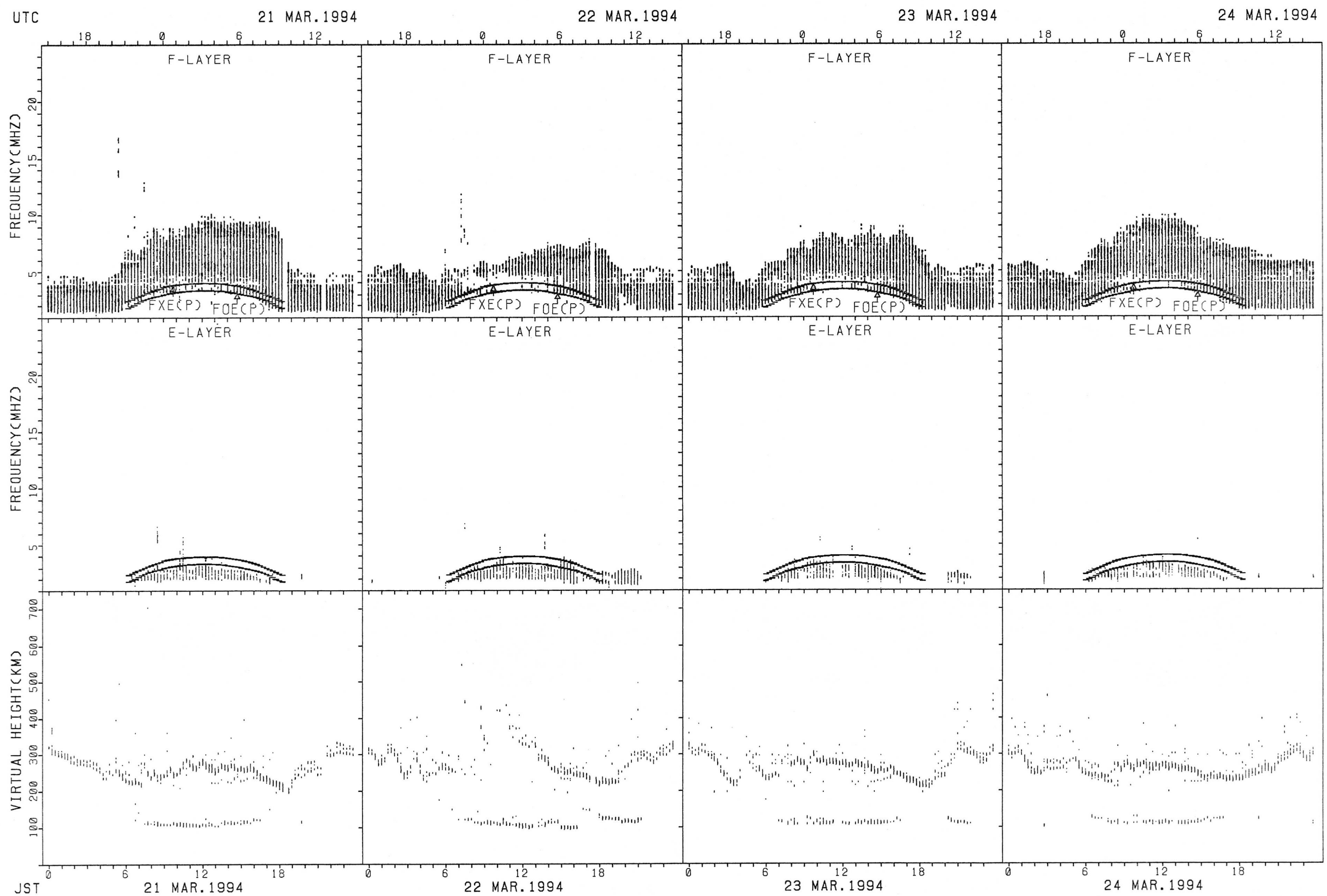

SUMMARY PLOTS AT WAKKANAI
UTC
JST
13 MAR.1994
14 MAR.1994
15 MAR.1994
16 MAR.1994
F-LAYER
E-LAYER
FXE(P) FOE(P)
FREQUENCY(MHZ)
VIRTUAL HEIGHT(KM)
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT WAKKANAI



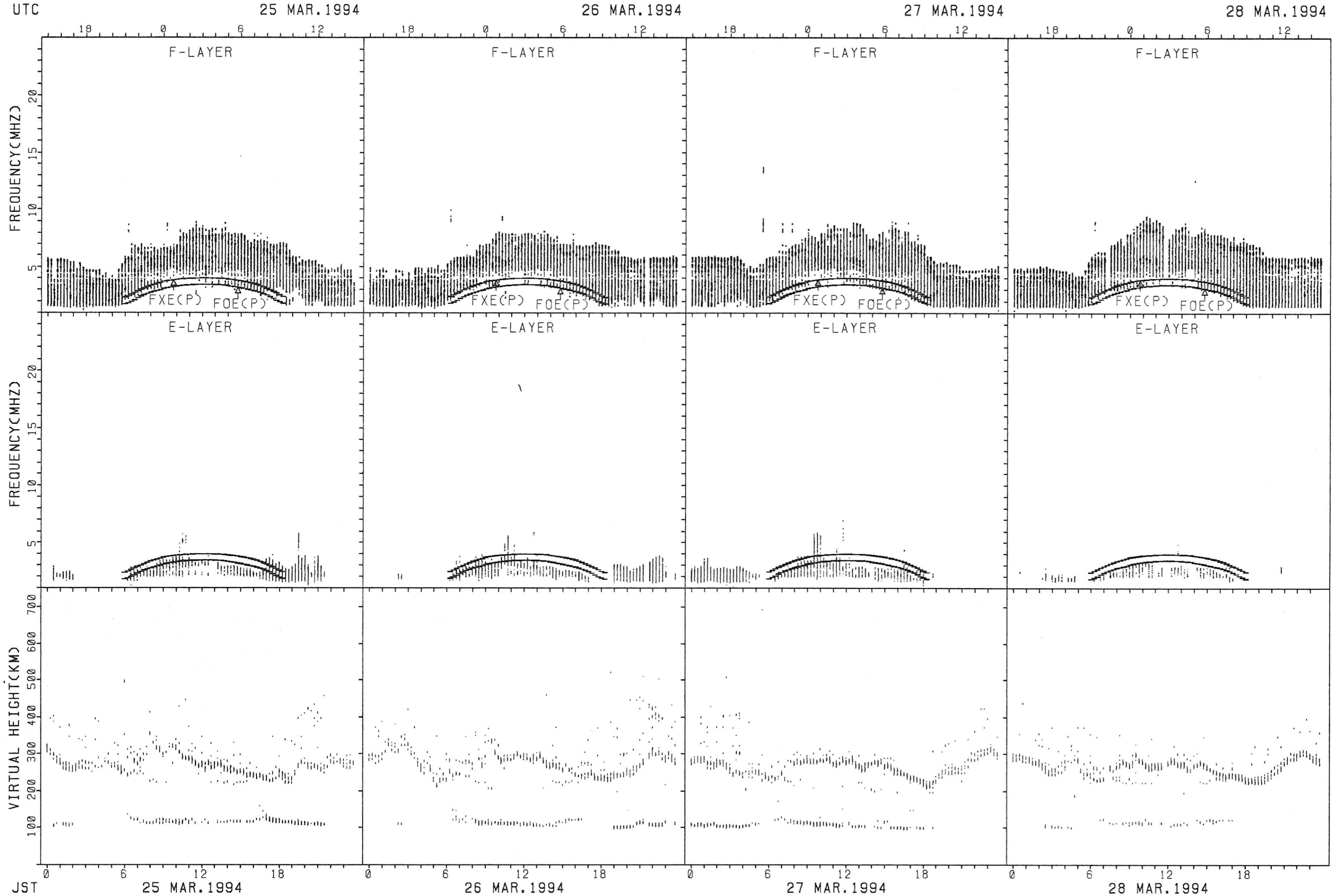
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT WAKKANAI



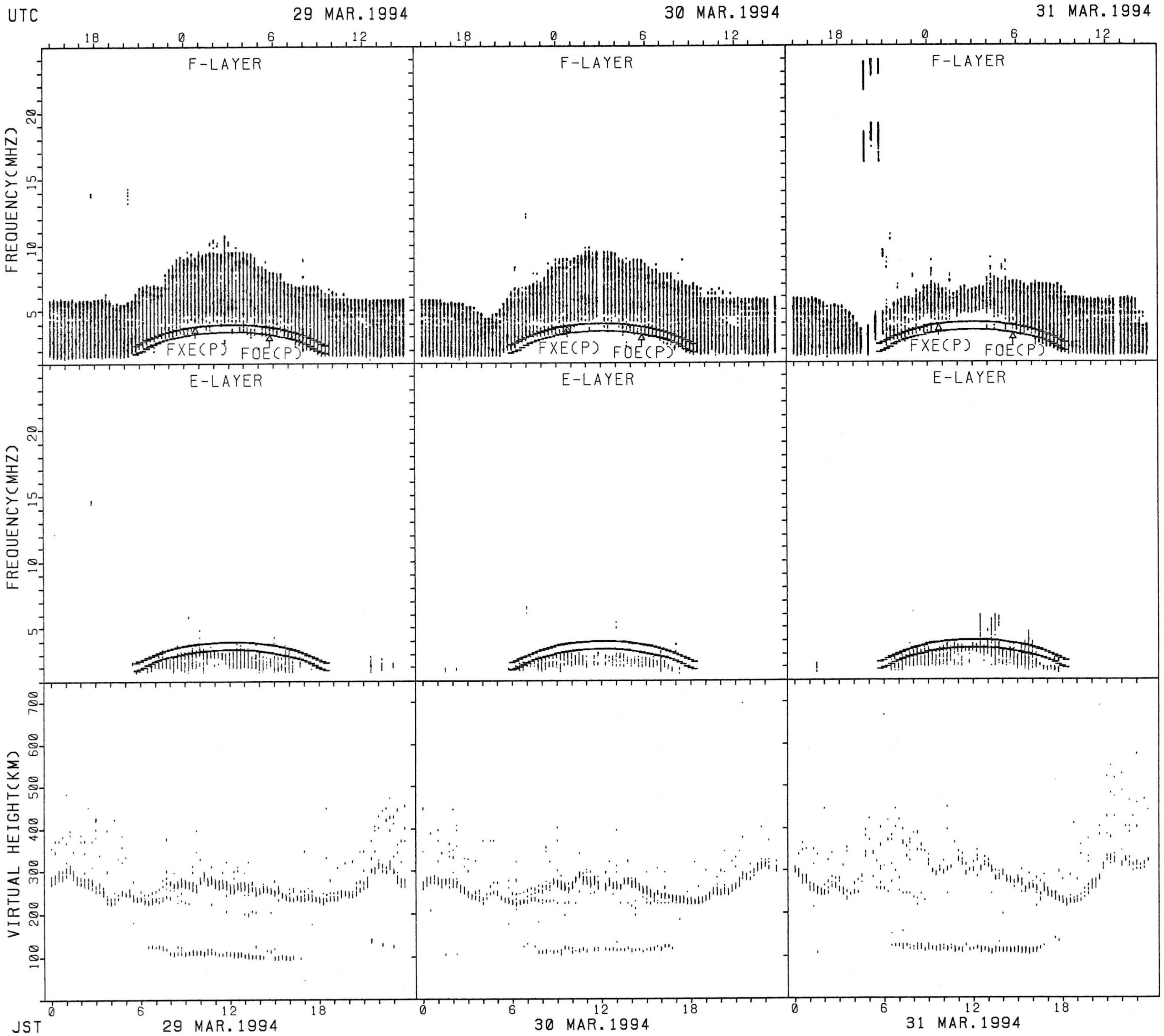
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT WAKKANAI



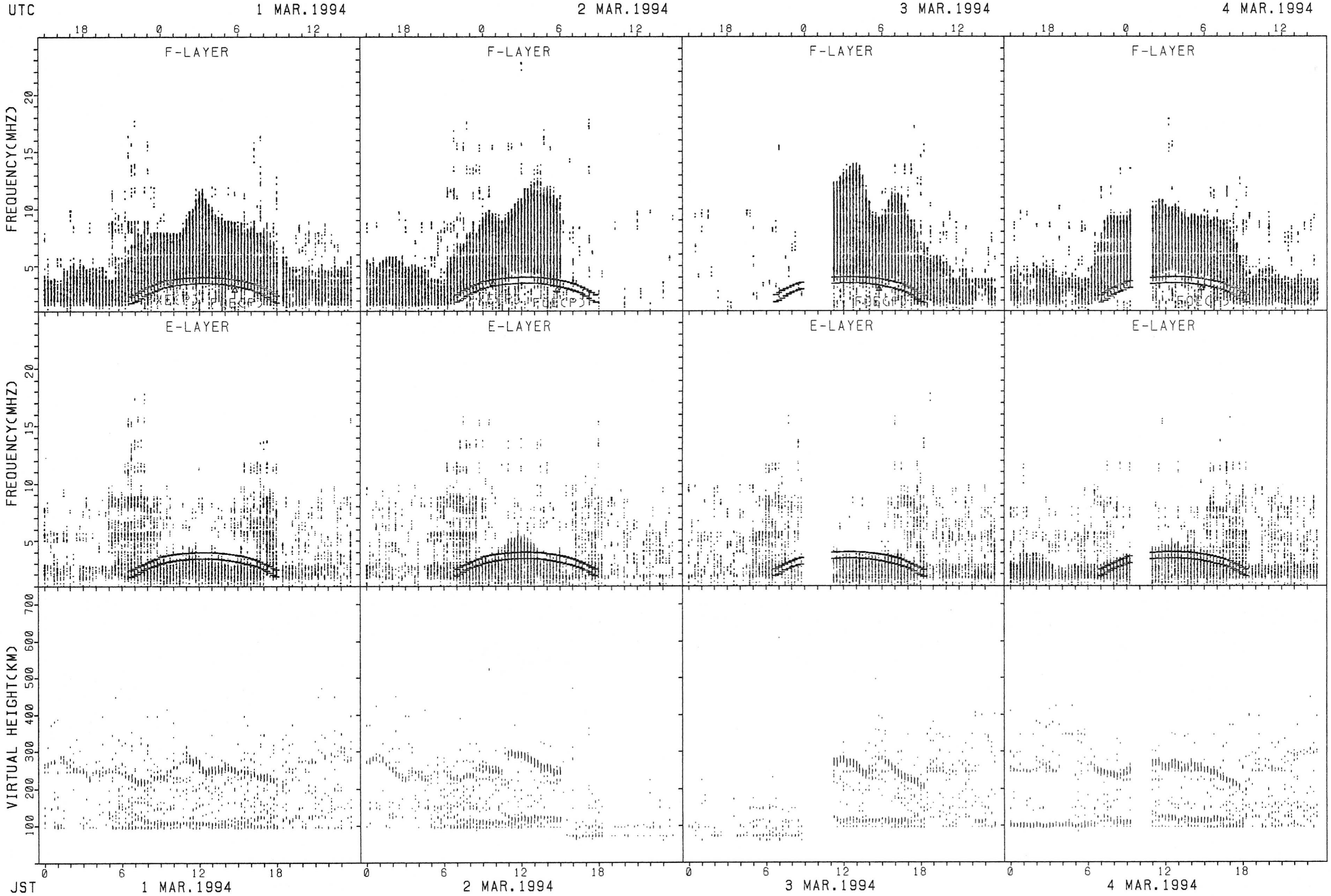
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT WAKKANAI



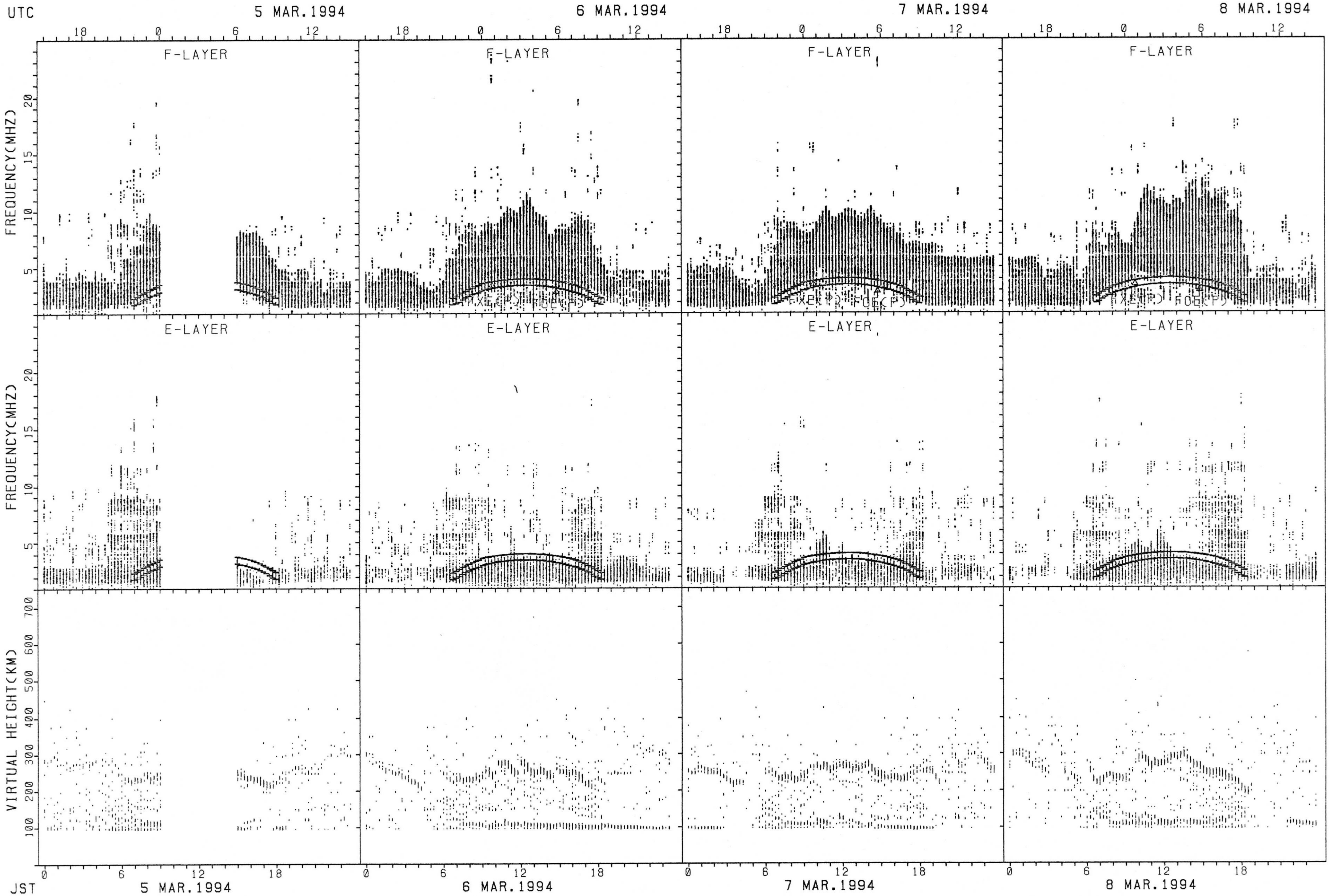
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



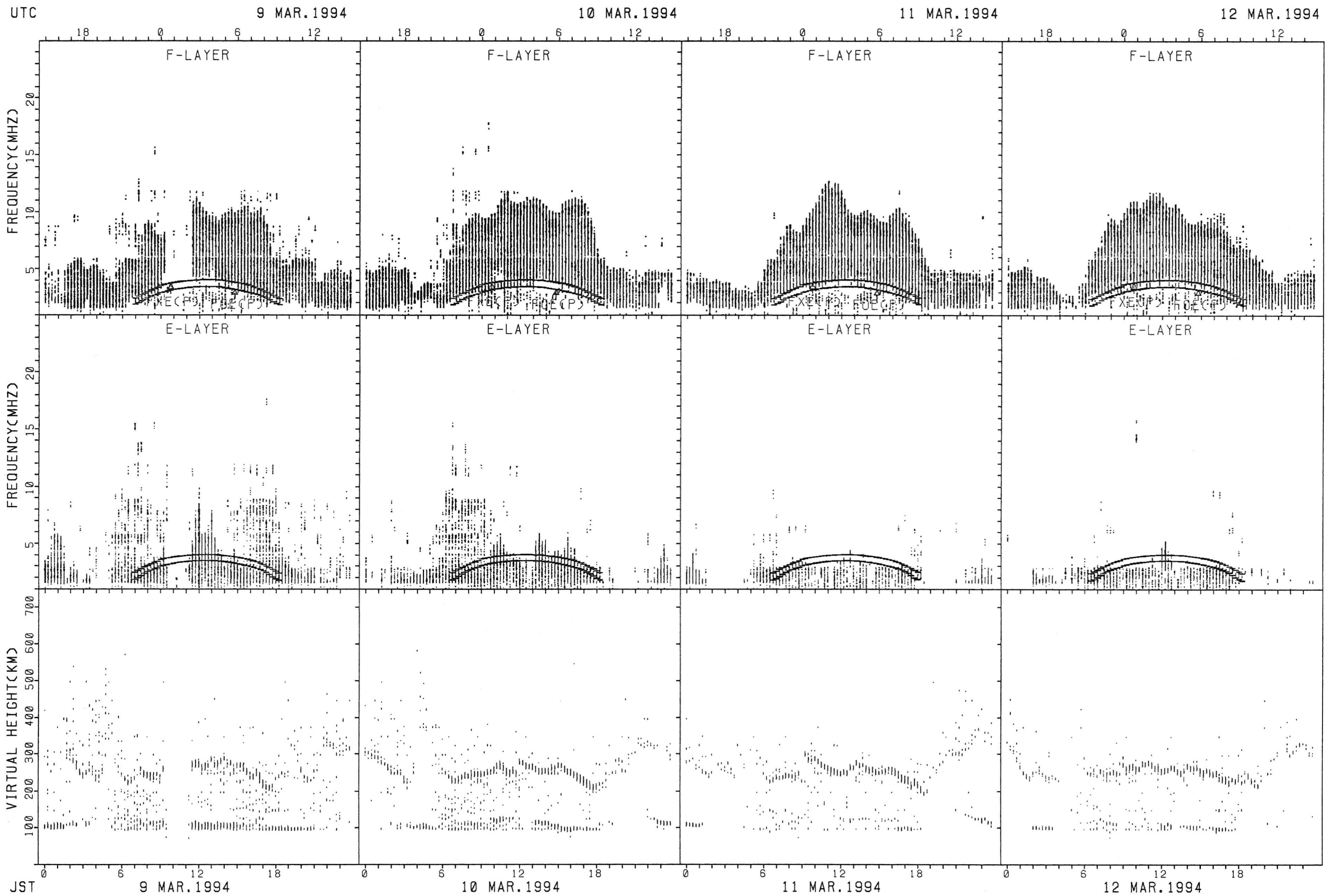
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



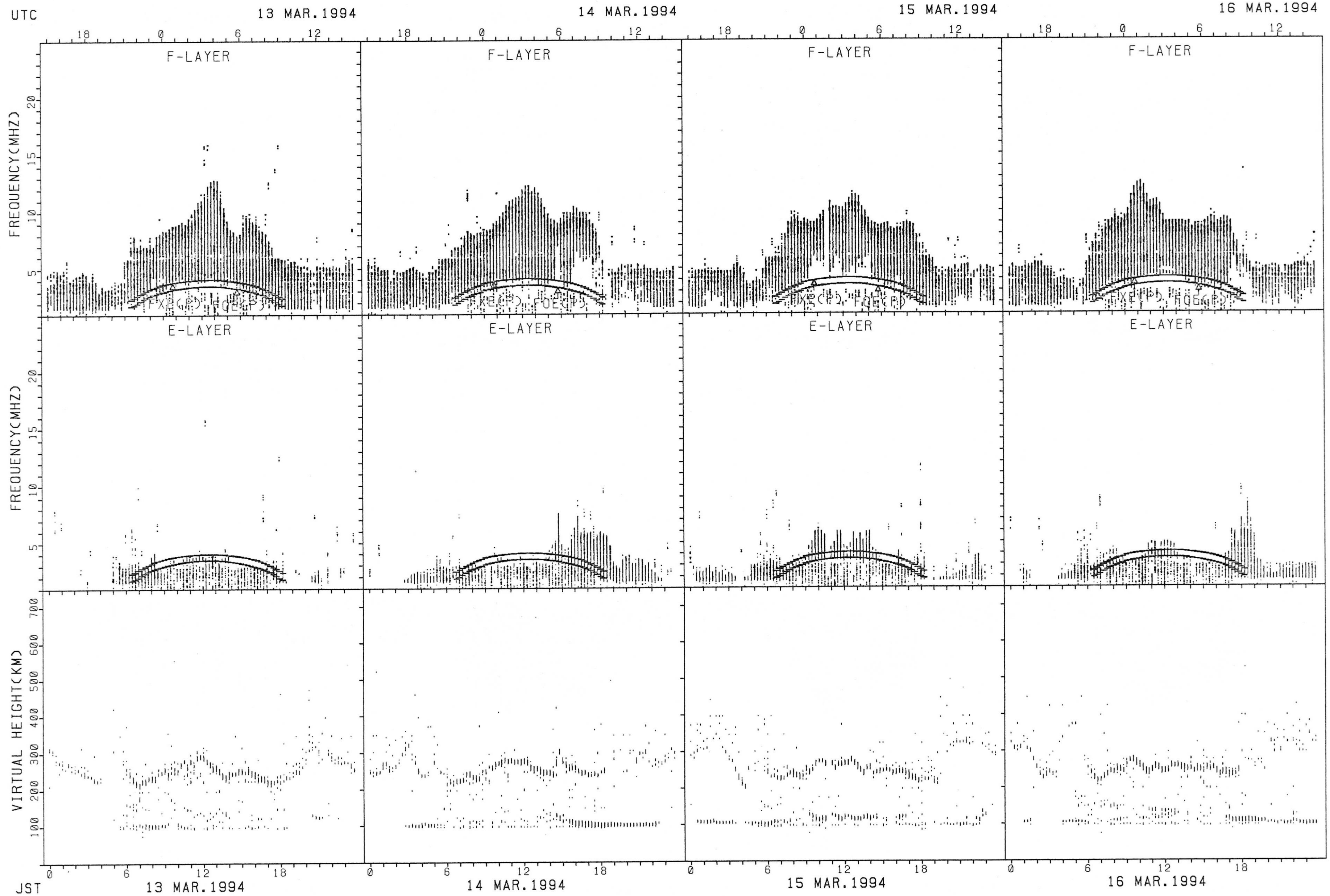
FXE(P): PREDICTED VALUE FOR FXE
FOE(P): PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



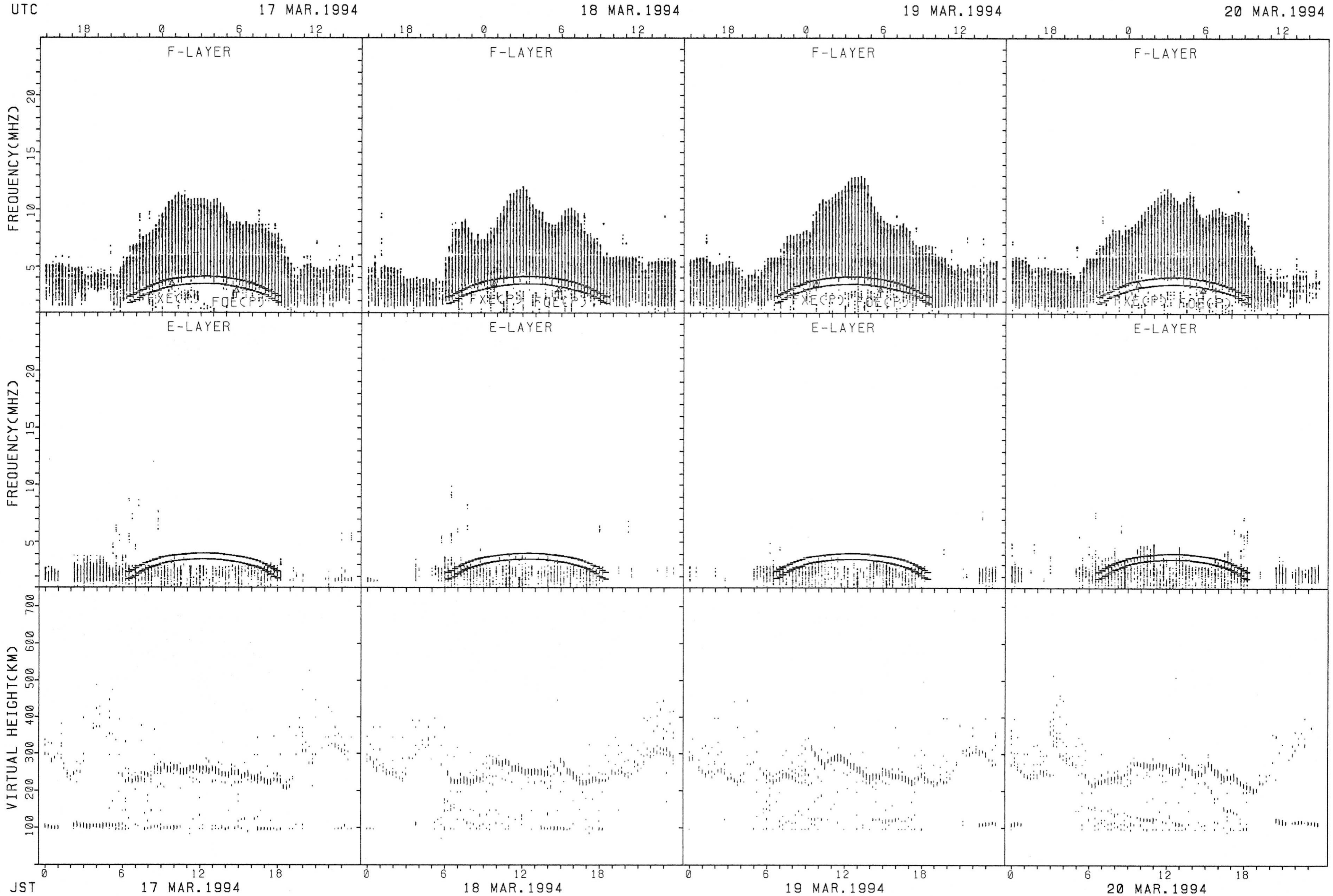
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



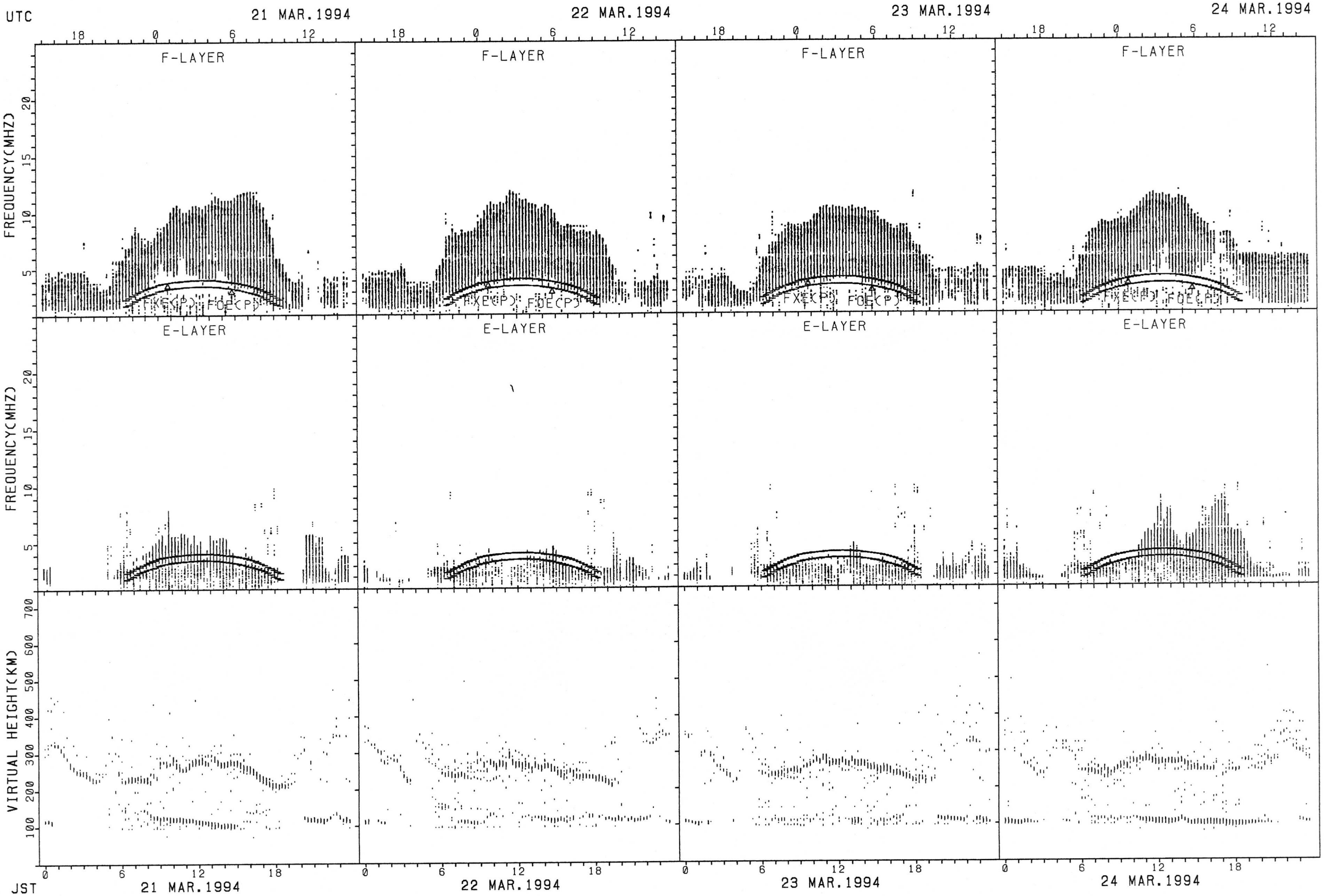
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



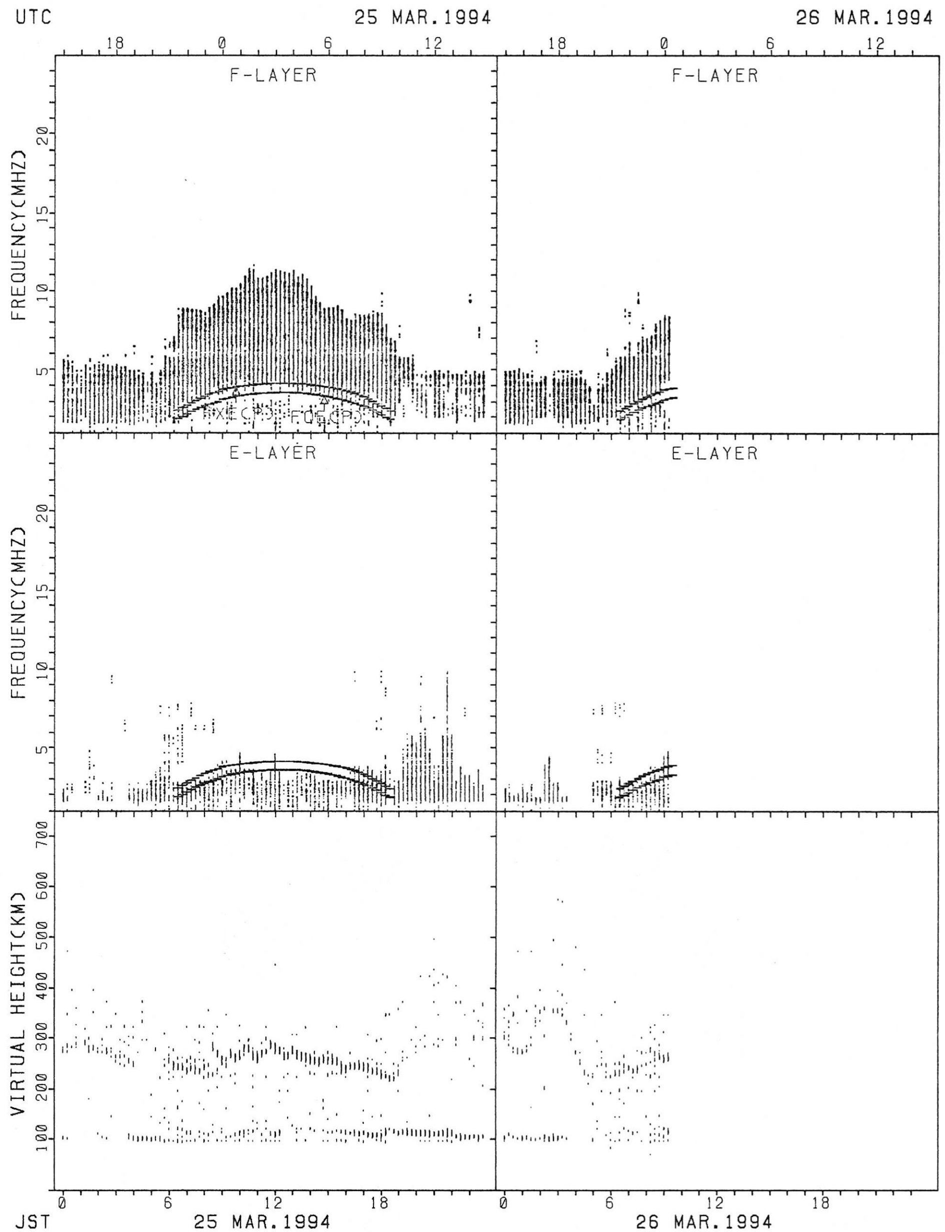
FXE(P): PREDICTED VALUE FOR FXE
FOE(P): PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



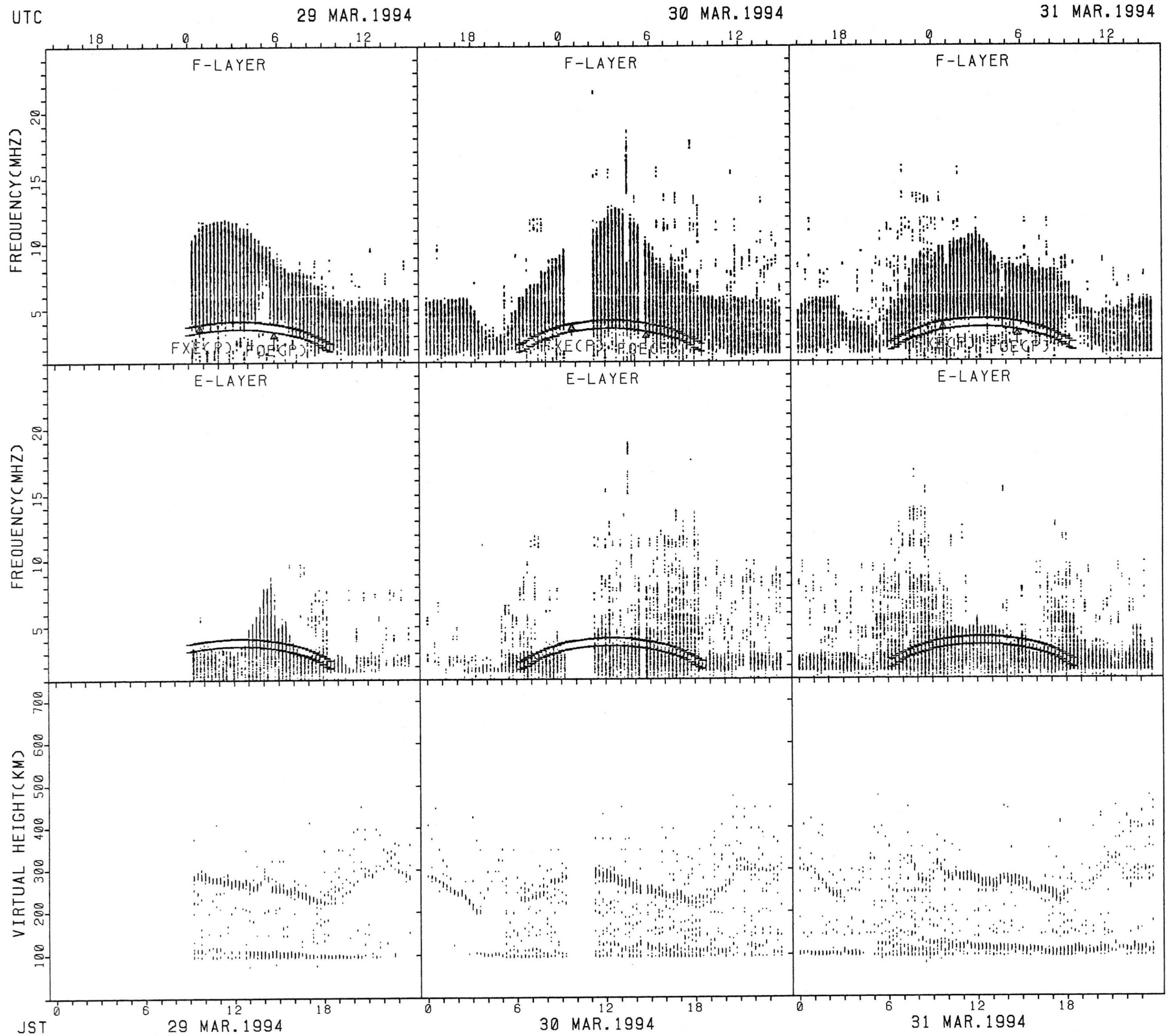
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



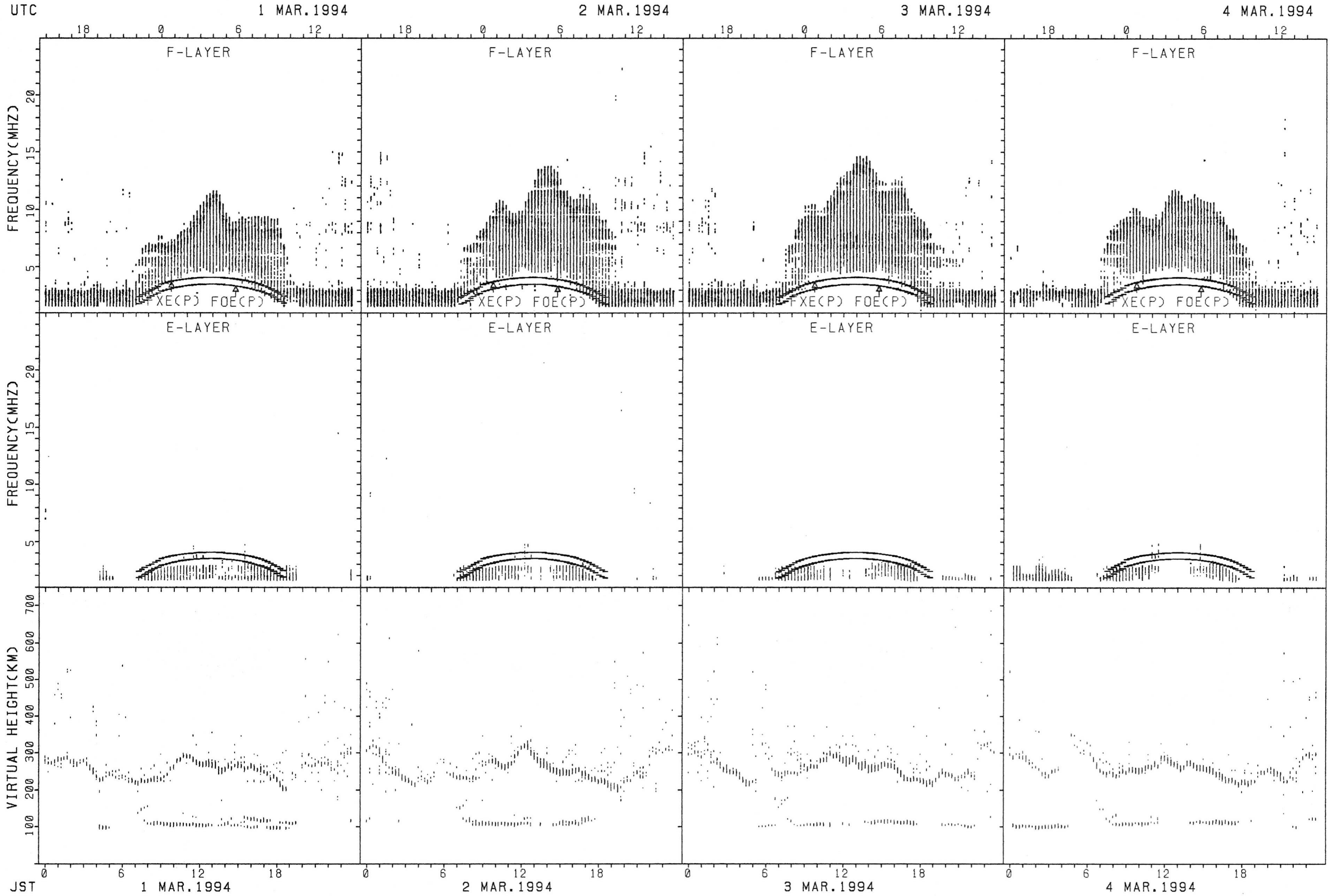
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT KOKUBUNJI TOKYO



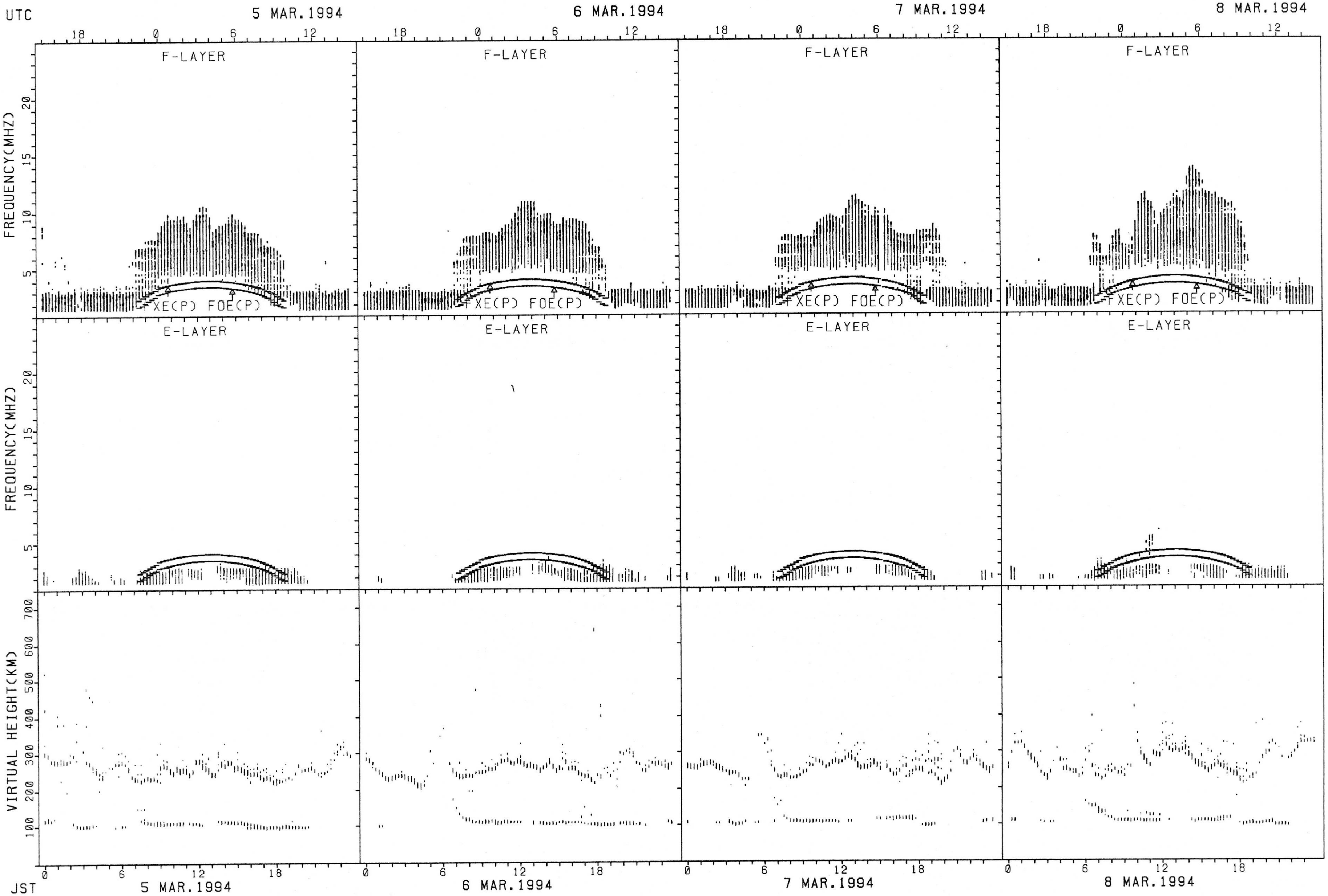
FXE(P): PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



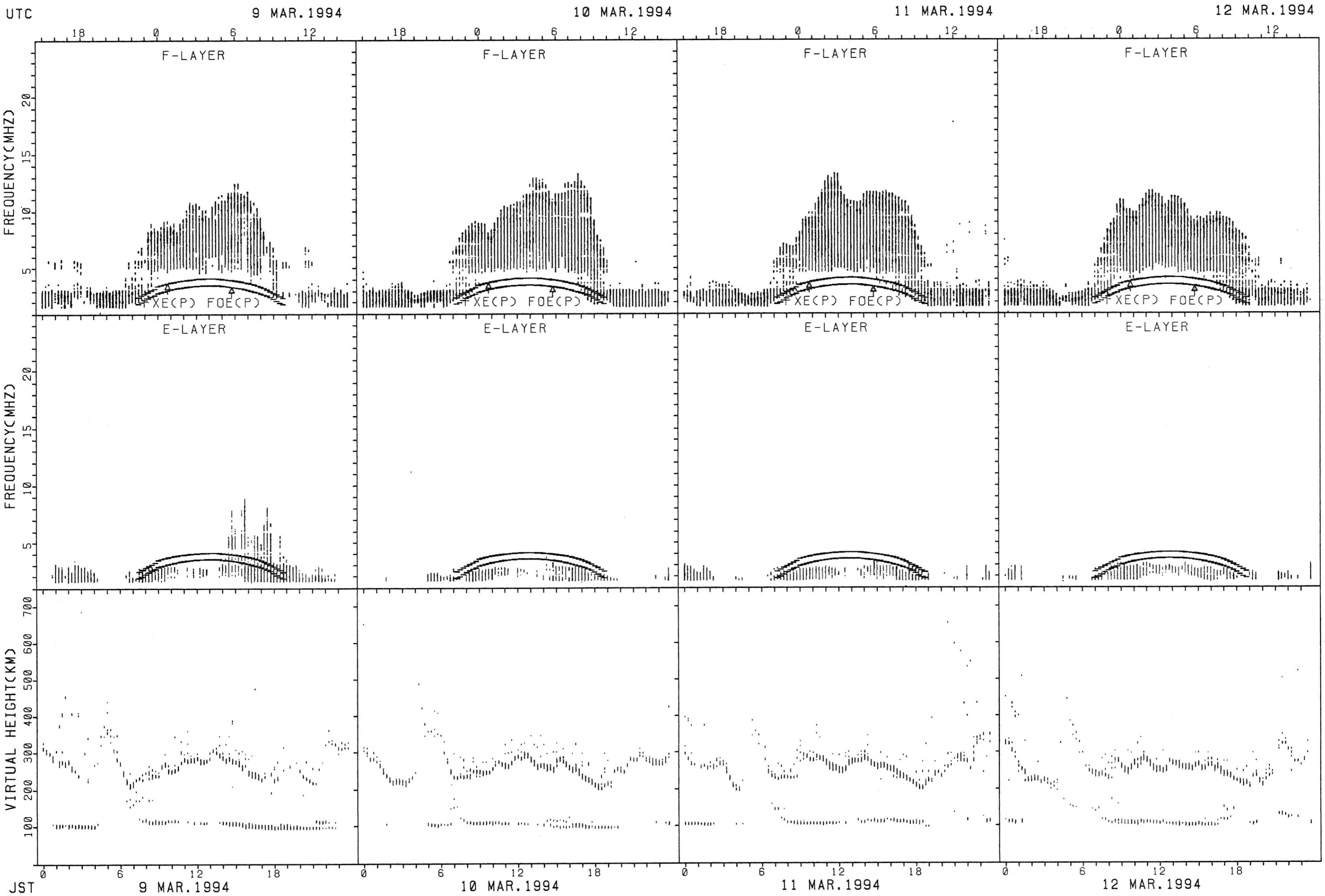
FXE(P): PREDICTED VALUE FOR FXE
FOE(P): PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



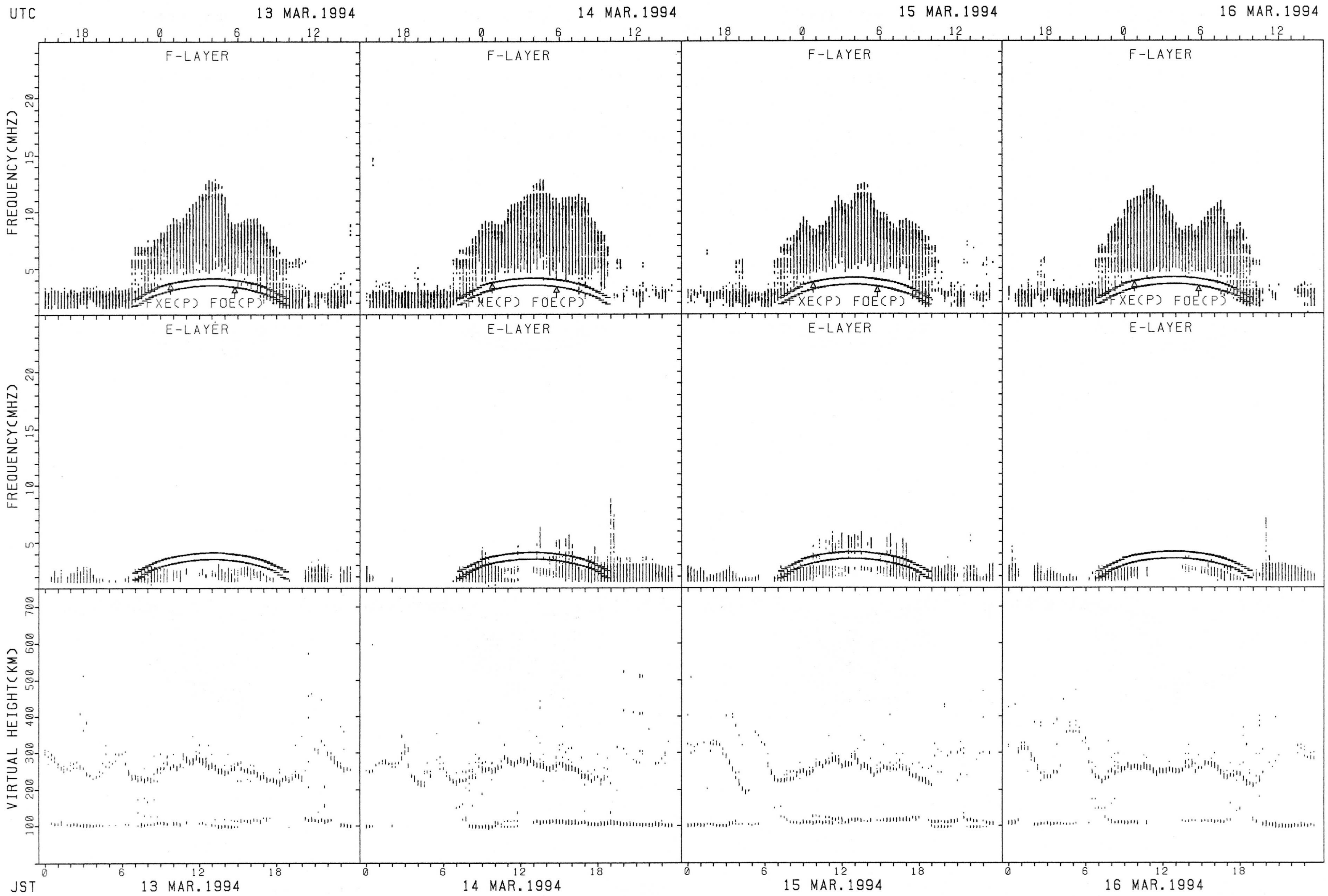
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



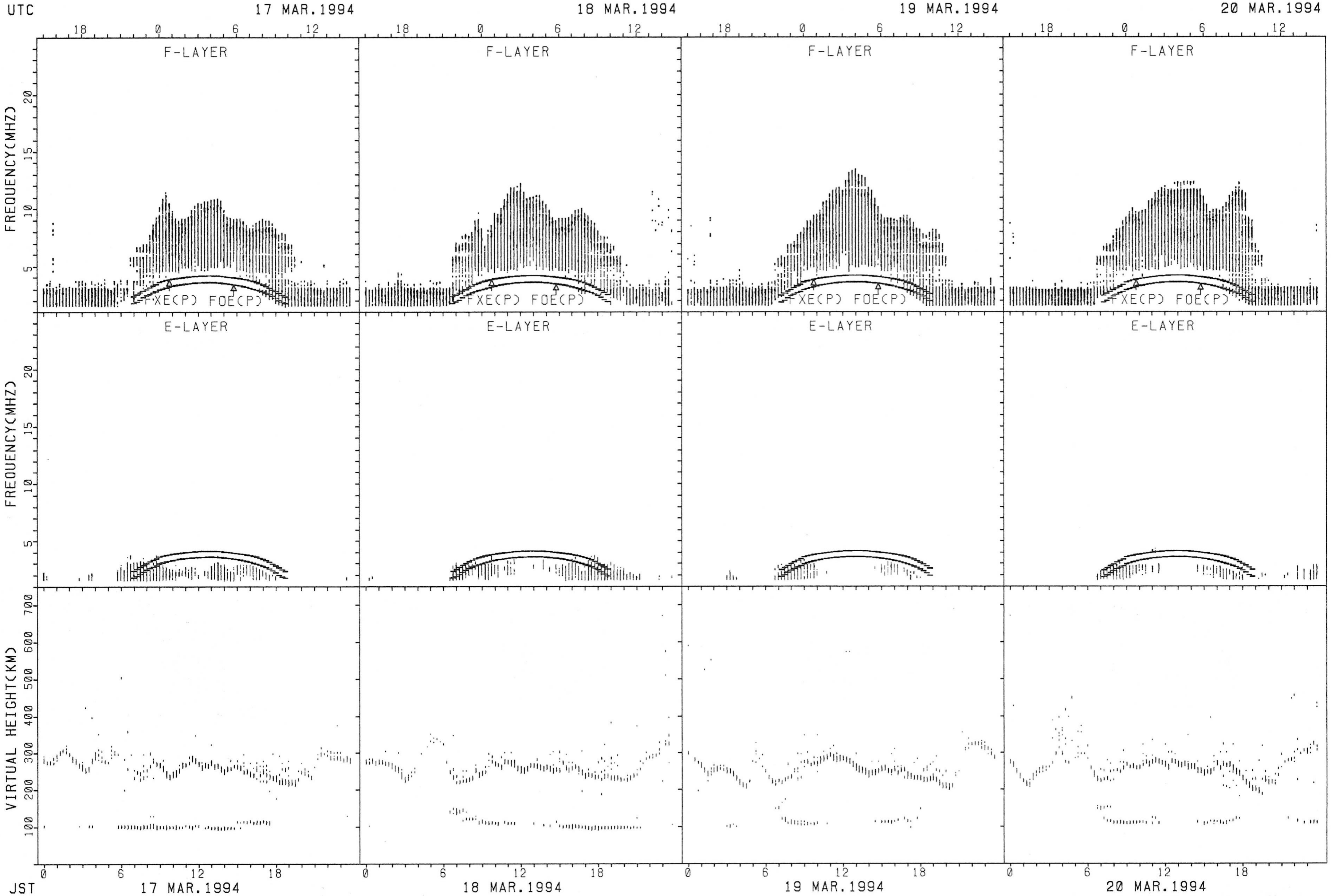
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



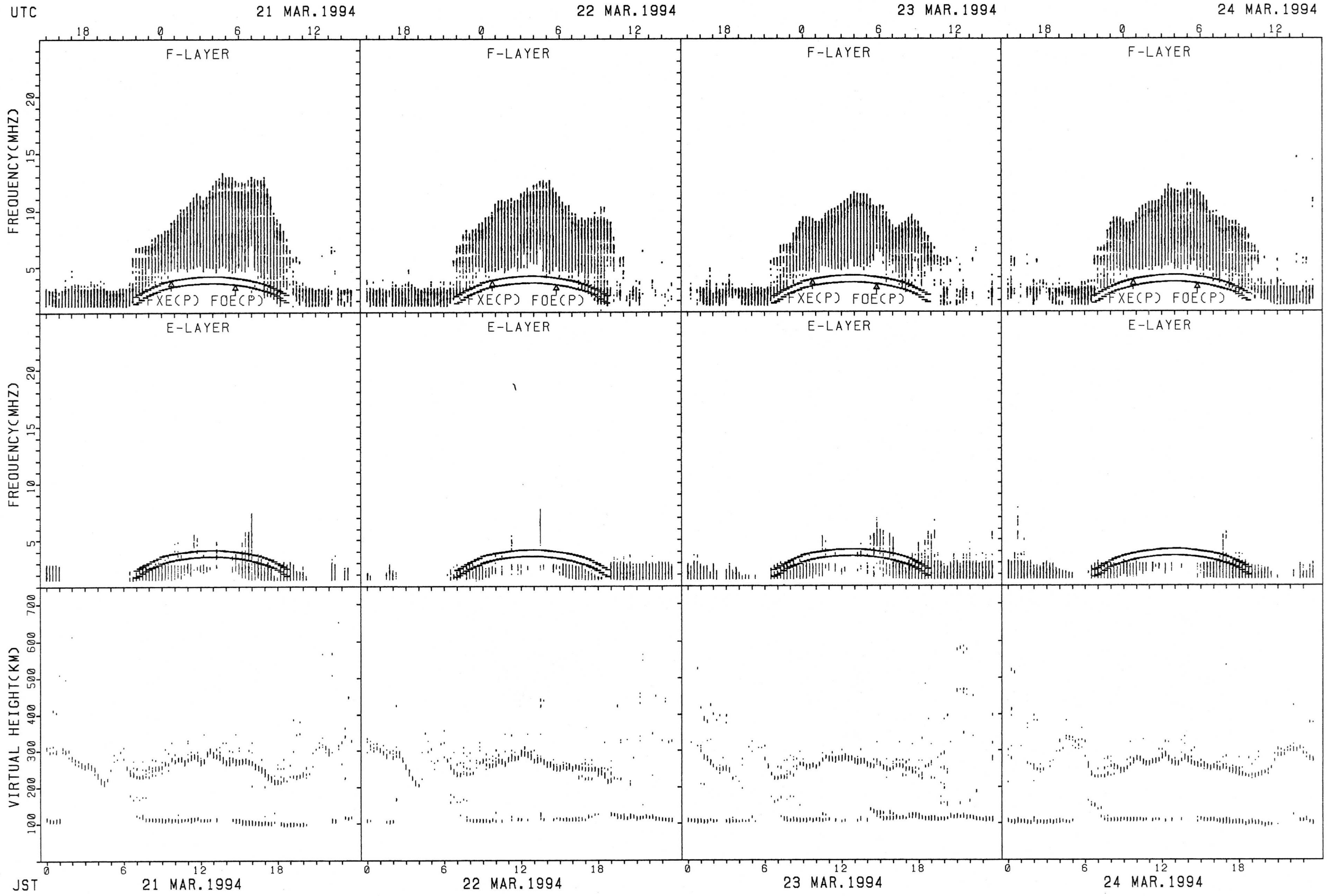
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



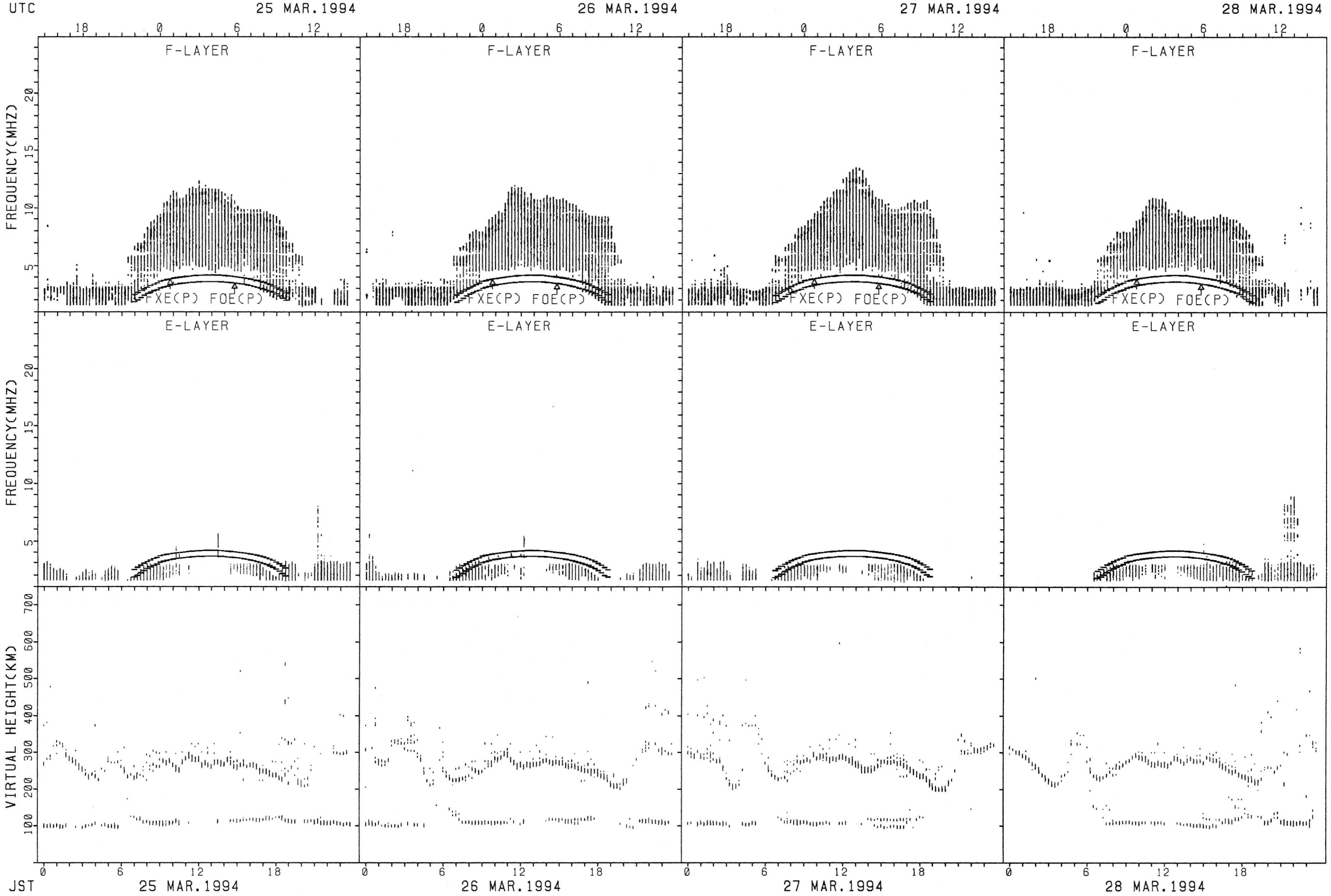
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



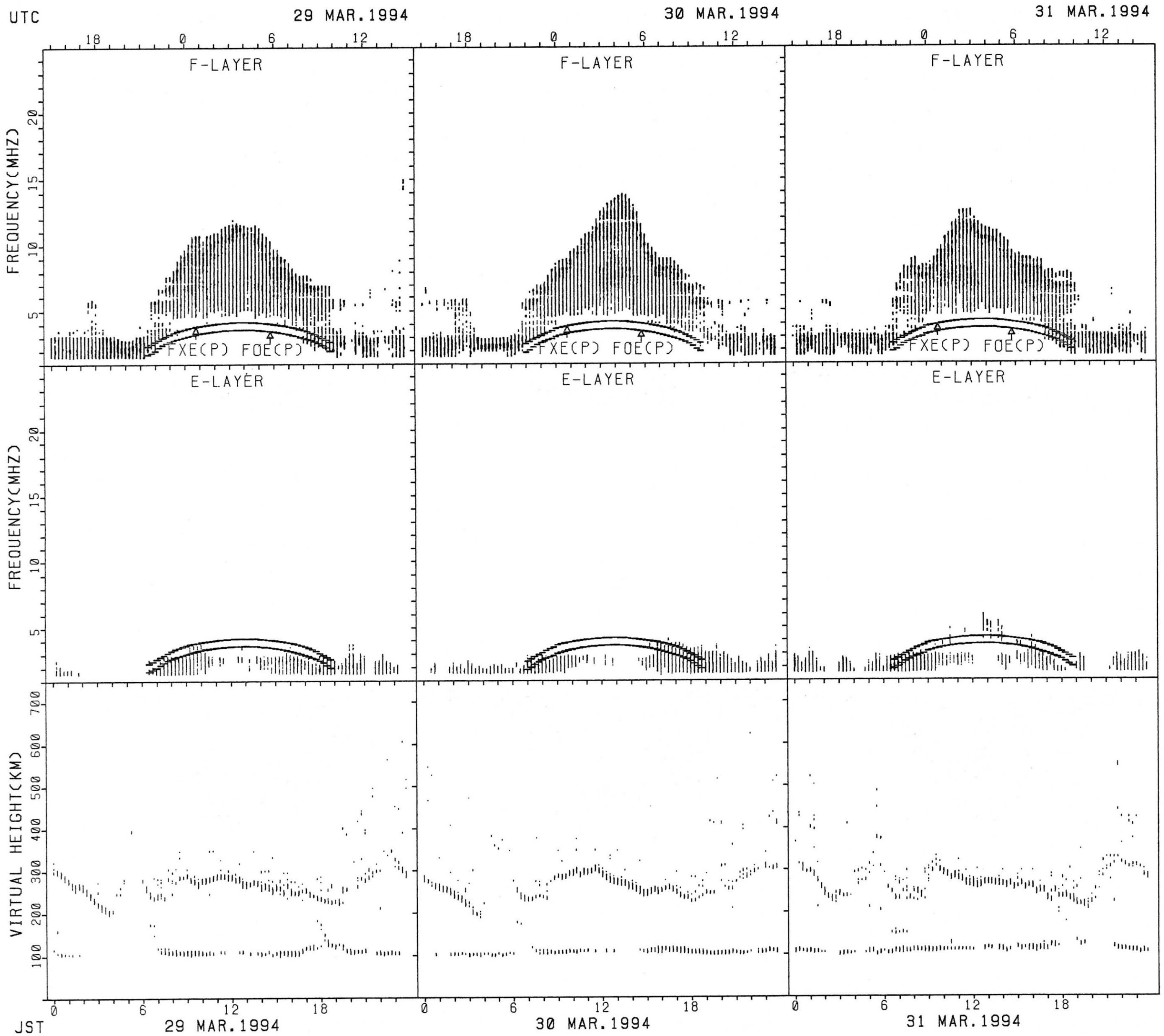
FXE(P): PREDICTED VALUE FOR FXE
FOE(P): PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



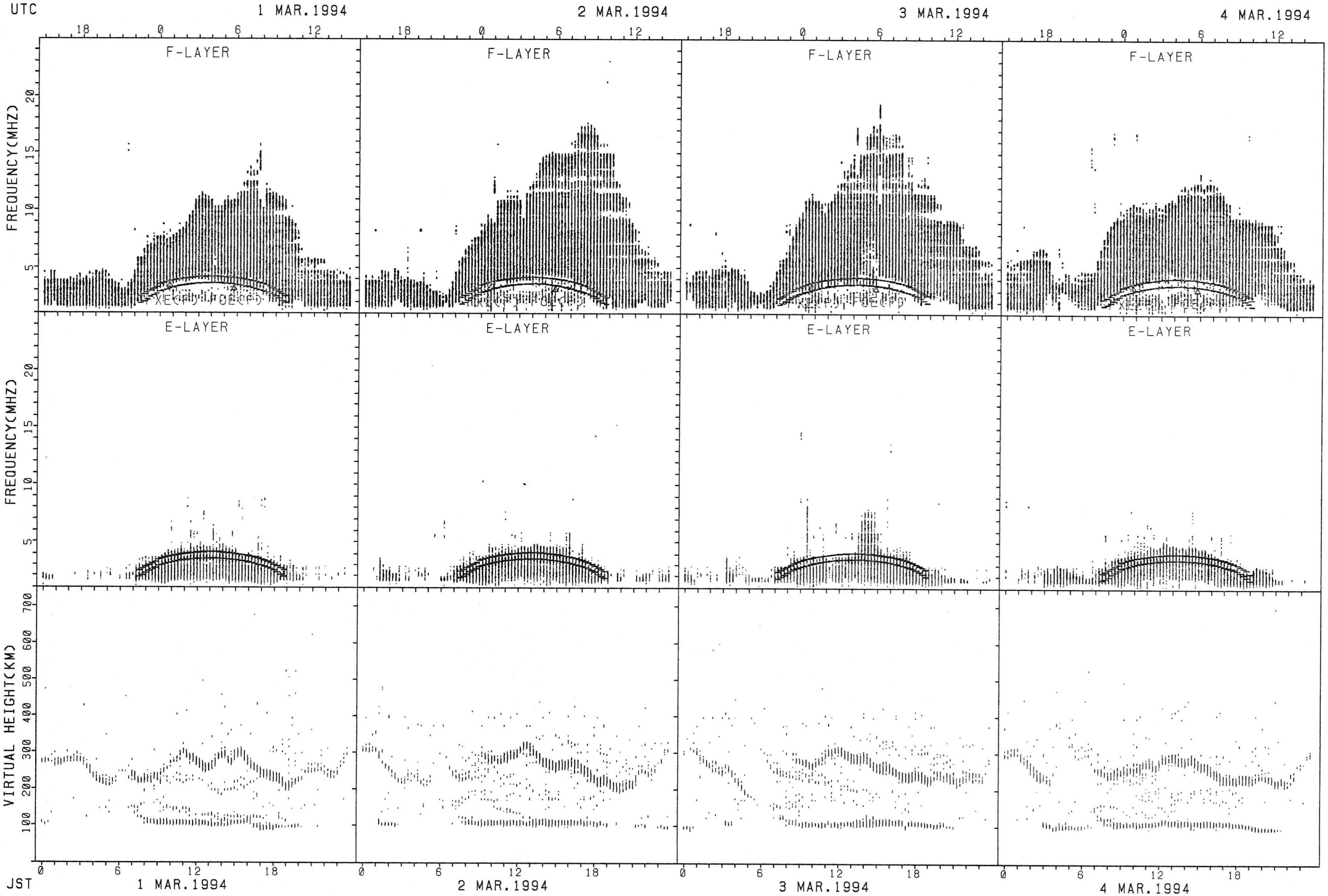
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT YAMAGAWA



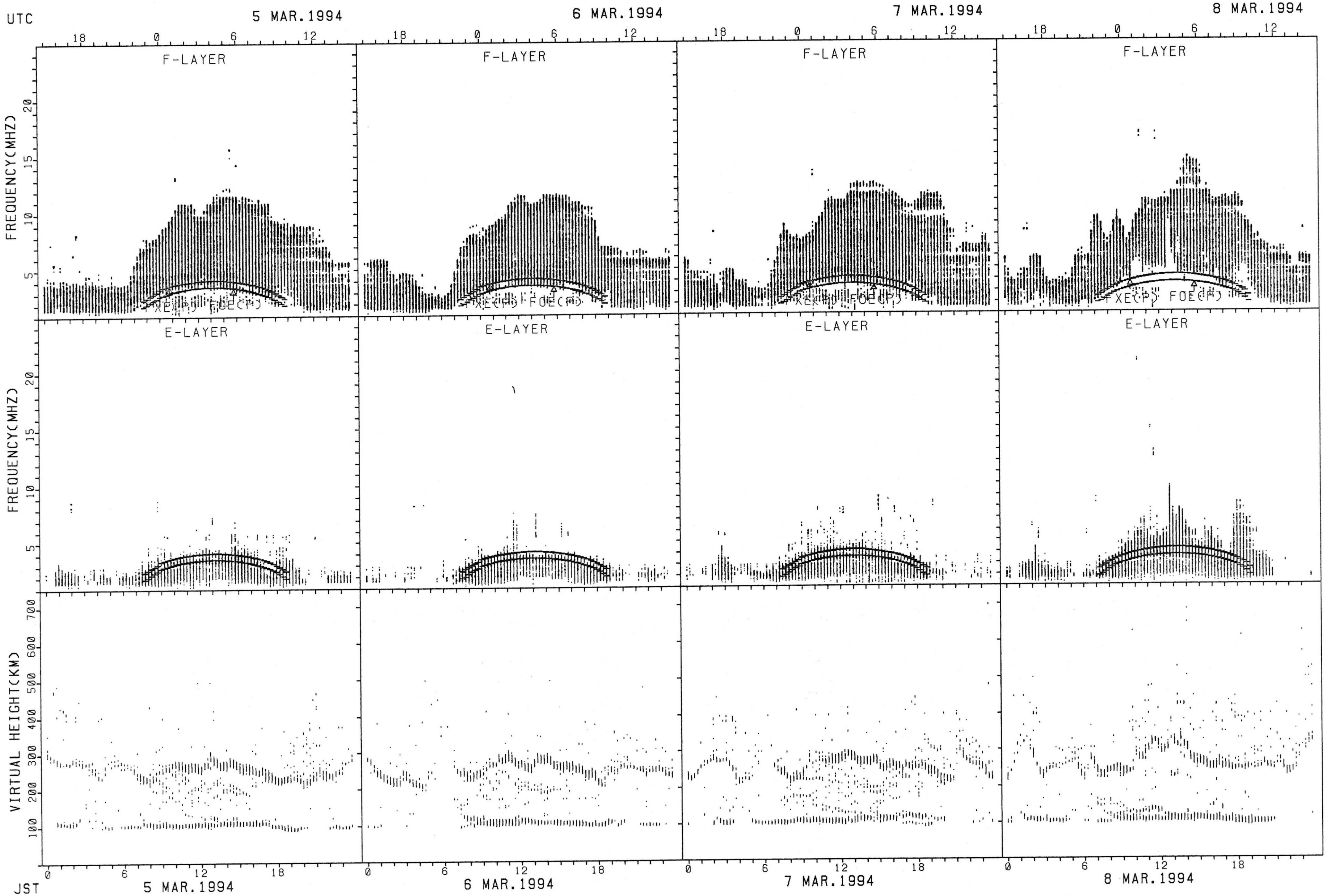
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT OKINAWA



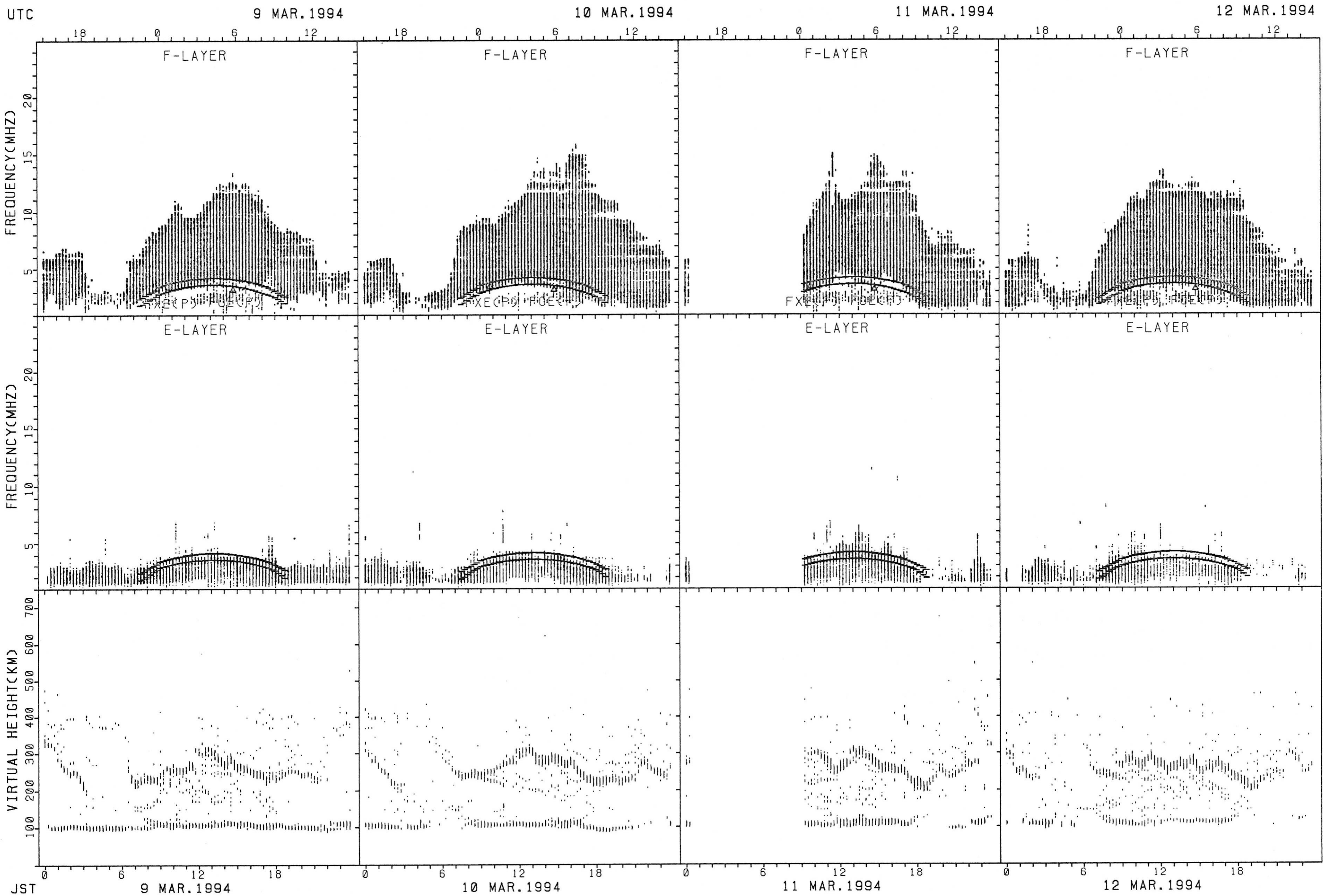
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT OKINAWA



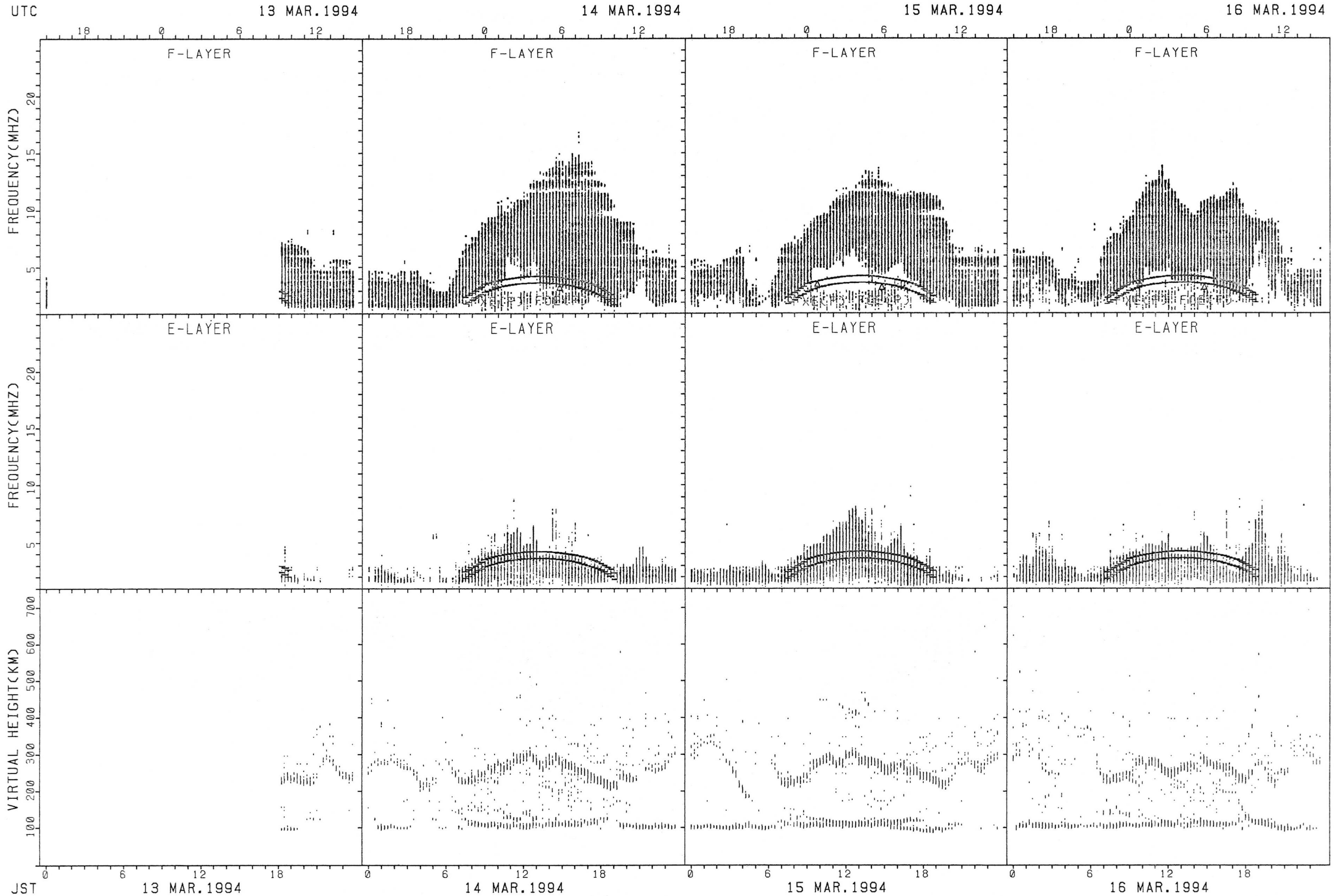
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT OKINAWA



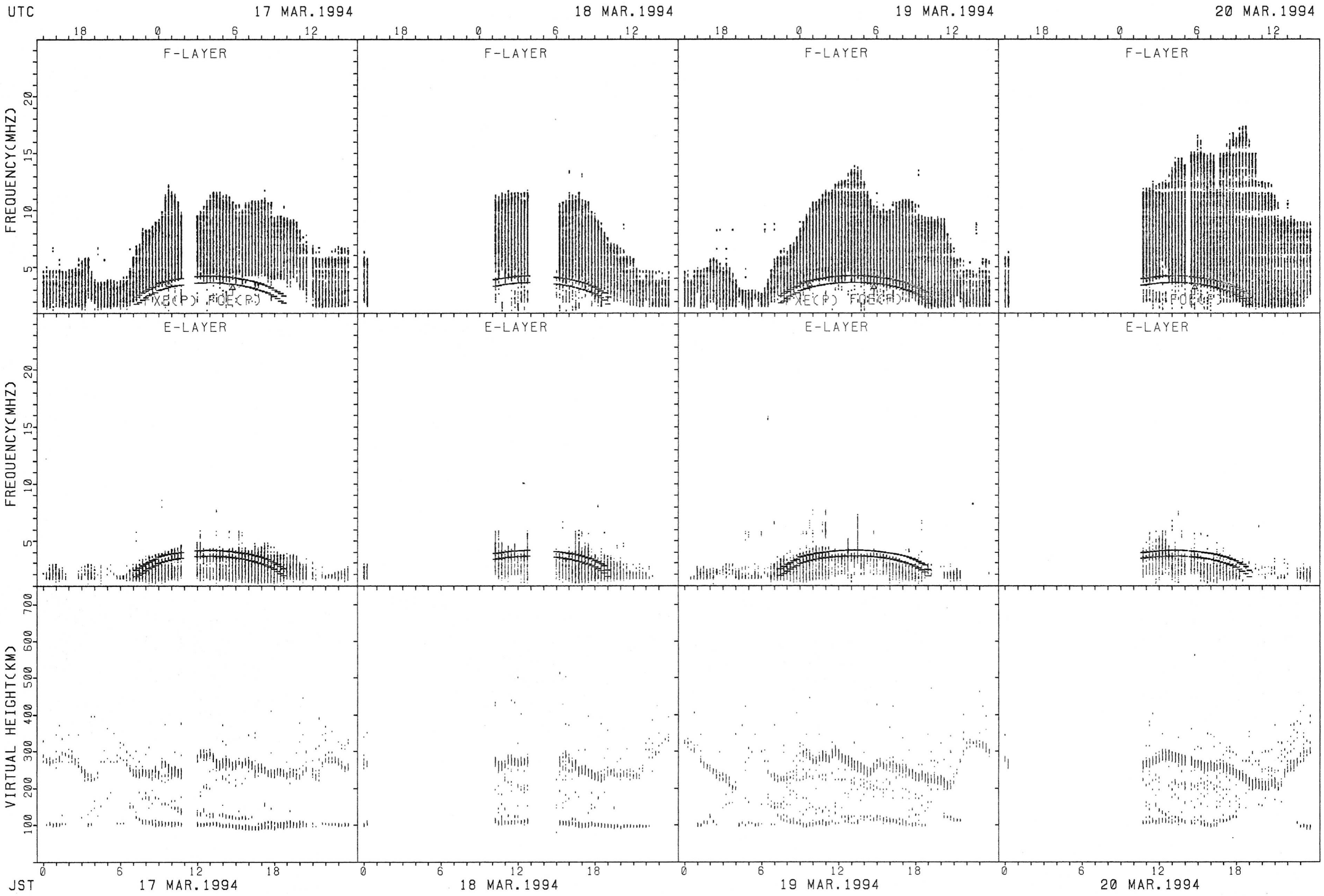
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT OKINAWA

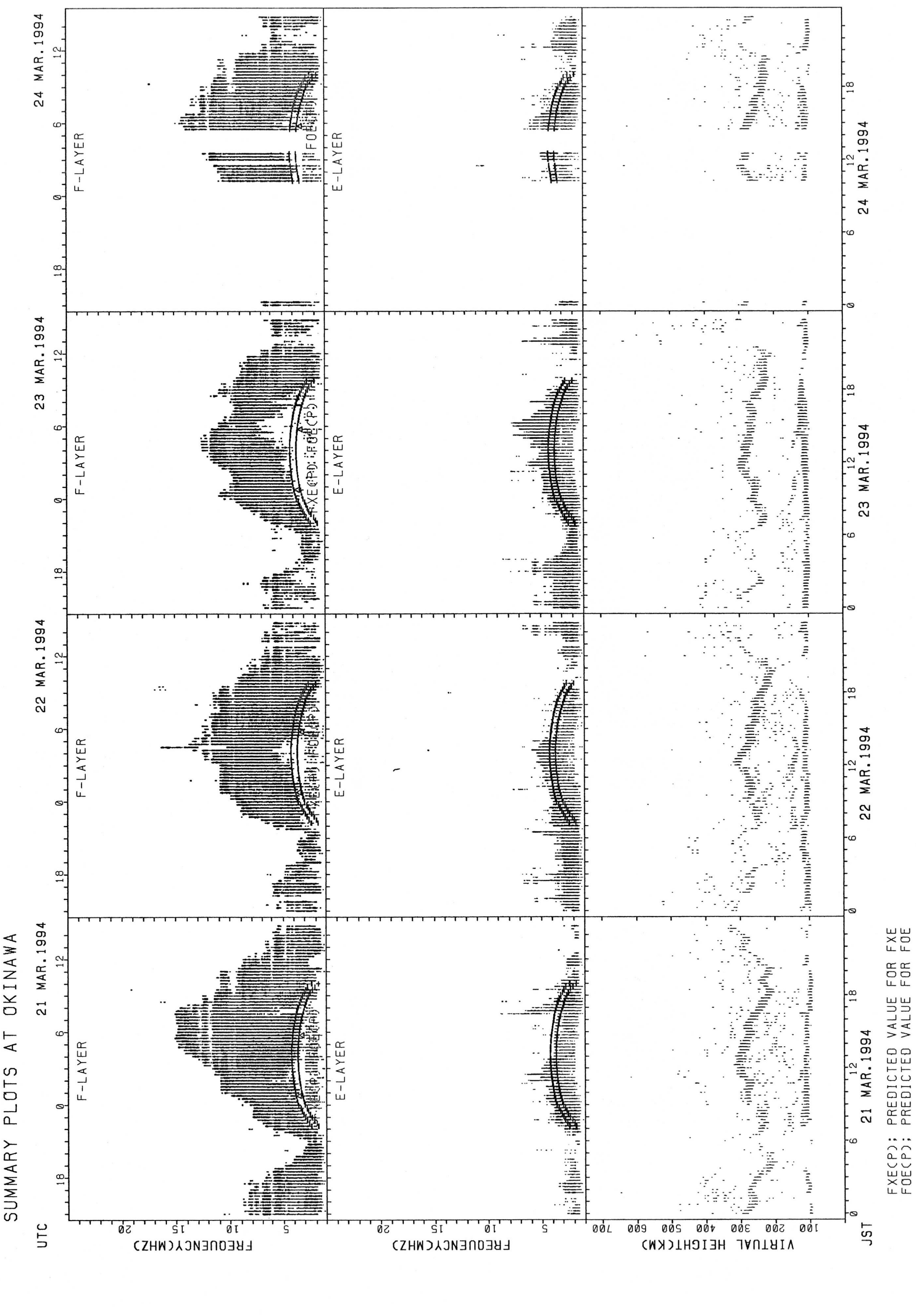


FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT OKINAWA

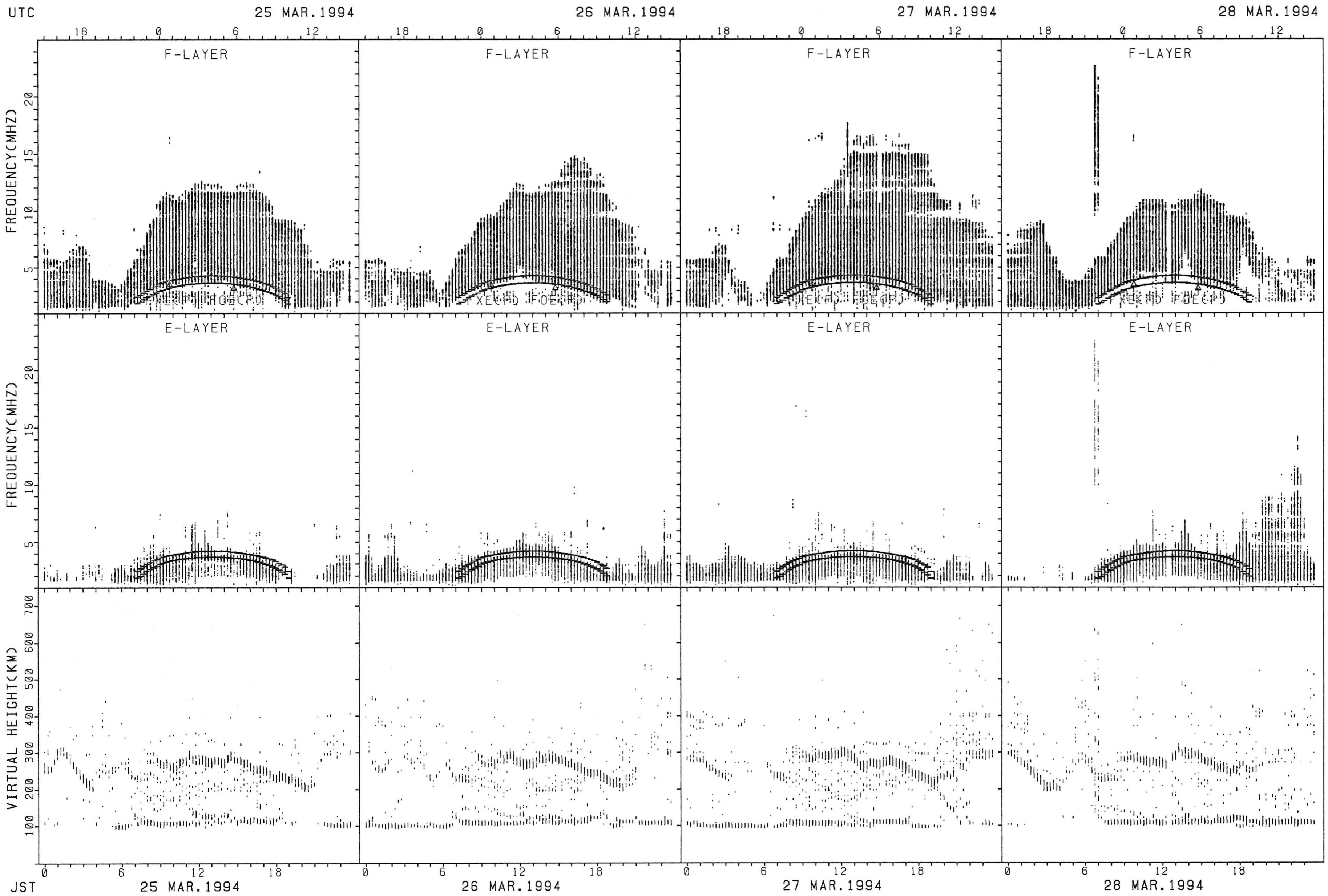


FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE



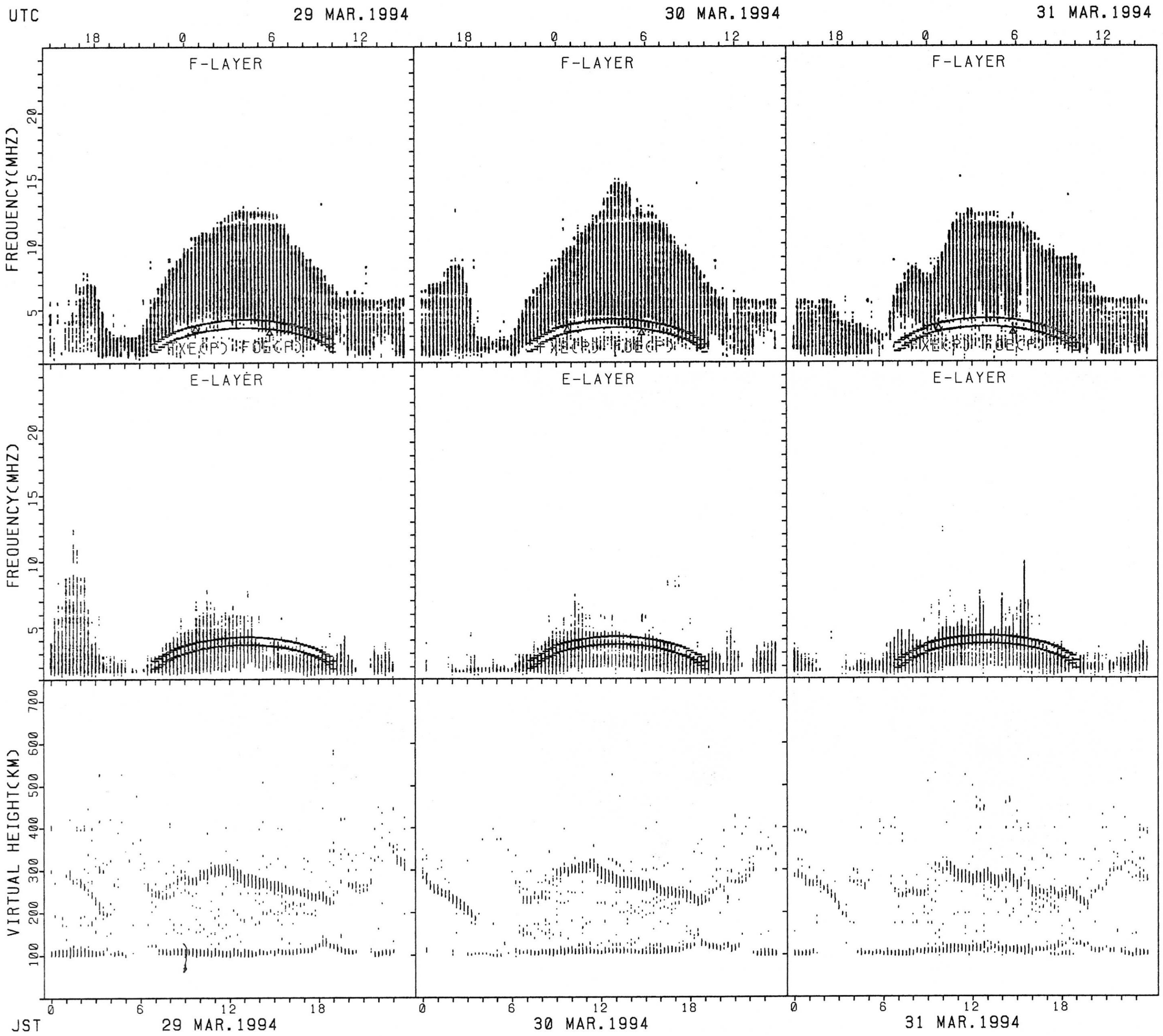
SUMMARY PLOTS AT OKINAWA
UTC
JST
21 MAR.1994
22 MAR.1994
23 MAR.1994
24 MAR.1994
F-LAYER
E-LAYER
FREQUENCY(MHZ)
VIRTUAL HEIGHT(KM)
FXE(P)
FOE(P)
FXE(P); PREDICTED VALUE FOR FXE
FOE(P); PREDICTED VALUE FOR FOE

SUMMARY PLOTS AT 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

MAR. 1994 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

STATION WAKKANAI LAT. 45.4N LON. 141.7E

H'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									21	17						17	28	24	13					
MED									258	260						248	253	250	260					
U Q									281	277						258	261	255	273					
L Q									247	251						244	244	237	249					

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																								
MED																								
U Q																								
L Q																								

STATION KOKUBUNJI LAT. 35.7N LON. 139.5E

H'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								24	28	24							27	29	19					
MED								243	242	258							246	238	242					
U Q								255	253	268							258	247	288					
L Q								225	236	247							244	226	218					

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	12	14					12	14	13	10		10	14	11	12	10	11	12	13	12		11	11	14
MED	106	104					153	149	131	120		119	117	111	113	111	111	113	107	106		113	115	110
U Q	112	109					212	167	221	139		125	123	115	114	117	258	195	186	115		119	117	115
L Q	105	103					120	131	108	115		115	111	107	102	103	103	102	100	101		107	109	105

MONTHLY MEDIANS OF H'F AND H'ES

MAR. 1994 135E MEAN TIME(UTC+9H) AUTOMATIC SCALING

STATION YAMAGAWA LAT. 31.2N LON. 130.6E

H'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									24	30	10						22	31	25					
MED									260	263	265						258	248	246					
U Q									276	278	276						262	256	249					
L Q									252	250	250						250	238	240					

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	15	12	11	12				14												19	15	11	13	13
MED	109	107	107	104				153												105	107	111	113	111
U Q	111	109	107	106				159												117	109	115	118	111
L Q	105	104	105	103				135												101	99	101	107	106

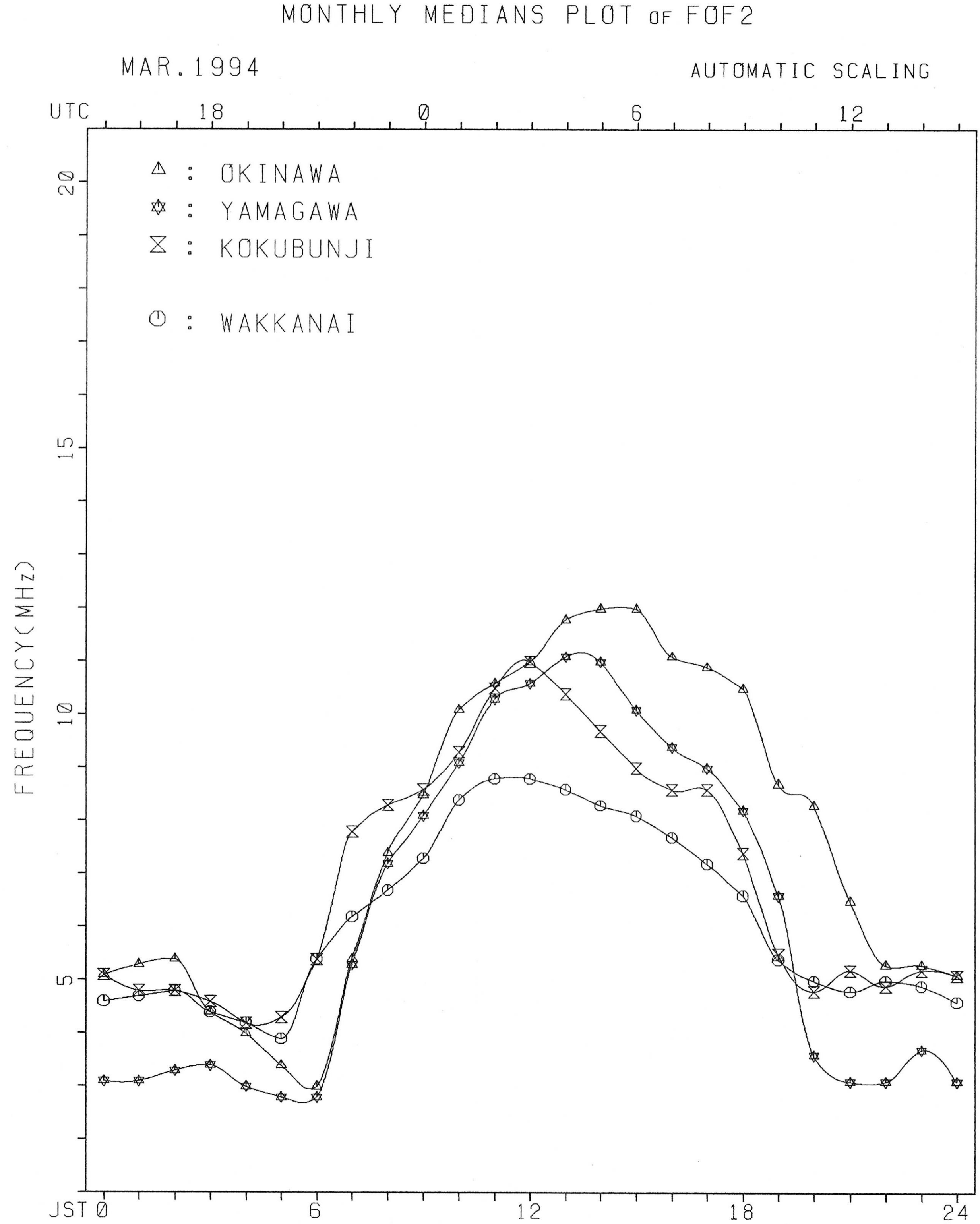
STATION OKINAWA LAT. 26.3N LON. 127.8E

H'F

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									19	24	14							30	30	26	18			
MED									252	266	272							246	239	245	259			
U Q									272	278	282							252	252	262	266			
L Q									246	255	258							242	230	236	250			

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	14	14	15	12	13	16	12	25	29	28	26	23	25	22	21	22	20	18	14	19	19	14	14	17
MED	106	105	107	106	105	106	105	145	149	143	134	121	119	115	119	113	113	113	107	105	109	108	102	107
U Q	109	107	109	109	108	113	107	155	168	171	143	131	125	123	131	119	119	131	119	113	113	115	107	112
L Q	103	101	105	103	101	103	100	109	113	122	119	117	114	113	113	111	110	107	101	97	99	97	101	102


MONTHLY MEDIANS PLOT OF FOF2
MAR.1994
AUTOMATIC SCALING
UTC
18
0
6
12
: OKINAWA
: YAMAGAWA
: KOKUBUNJI
: WAKKANAI
20
15
10
5
FREQUENCY(MHz)
JST 0
6
12
18
24

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 FXI (0.1MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

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

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 FOF2 (0.1MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	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	40	46	45	44	41	48	74	70	74	74	88	111	97	86	80	79	71	68	46	46	42	45	48
2	50	50	54	46	47	37	42	65	73	89	89	92	107	119	114	101	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	127	136	101	90	111	94	63	52	49	43	35	41
4	42	42	45	43	36	37	38	74	91	90	C	C	99	97	90	87	88	74	46	42	44	41	40	40
5	41	41	41	41	40	39	44	67	81	C	C	C	C	C	C	C	C	69	50	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	85	80	82	87	58	39	42	43	43	44
7	48	47	46	45	35	32	39	74	84	76	88	93	93	93	95	87	77	66	70	69	61	59	52	57
8	53	52	51	H 42	47	44	47	66	71	68	94	112	102	105	118	124	112	98	86	40	42	45	43	43
9	44	44	F 46	F 43	F 44	F 34	50	58	89	73	C	C	102	91	93	97	95	93	57	49	59	43	41	44
10	45	44	45	44	F 25	32	42	71	90	91	95	112	104	108	100	97	107	102	62	46	45	40	42	41
11	42	39	36	33	30	28	44	62	83	83	104	122	115	92	97	86	95	91	73	41	41	42	41	39
12	41	43	36	38	28	22	41	66	91	95	104	110	108	102	86	88	87	79	65	62	43	38	42	41
13	42	42	40	41	29	30	47	69	70	80	84	90	109	123	88	78	87	76	57	51	48	49	50	49
14	48	V 46	43	44	45	43	57	66	77	77	89	105	115	117	93	89	100	93	68	44	48	49	45	44
15	45	44	42	45	45	33	50	61	91	91	87	103	99	110	90	82	79	84	67	54	44	47	47	48
16	47	43	49	44	36	35	49	71	87	90	118	102	90	86	84	81	87	87	U R 59	48	45	45	46	48
17	47	46	45	39	F 37	37	46	69	73	92	108	104	106	104	92	84	82	80	75	48	46	43	44	46
18	47	45	42	36	35	33	49	80	74	70	86	110	117	97	84	91	96	73	65	57	59	50	49	50
19	50	53	48	49	36	38	52	60	71	76	101	106	116	124	108	86	82	76	64	59	48	48	48	49
20	51	50	45	42	39	37	58	67	77	79	91	104	112	101	108	88	98	92	87	48	39	39	41	39
21	40	V 39	42	42	34	31	51	74	70	77	97	97	102	105	108	110	115	106	73	45	37	40	39	40
22	38	42	42	48	32	33	50	76	77	86	104	103	112	103	100	93	84	76	76	68	38	A	37	38
23	38	40	38	39	28	26	47	68	77	80	87	100	99	98	97	92	84	82	73	54	42	43	44	46
24	44	43	46	37	38	39	53	78	85	86	92	105	110	107	107	90	81	72	70	60	56	54	52	53
25	52	49	49	49	45	42	R 62	84	82	91	C	C	C	C	C	84	77	80	79	60	44	43	42	43
26	44	42	40	F 37	38	26	46	R 62	66	78	C	C	C	C	C	C	C	75	76	68	47	42	43	45
27	F 46	F 48	F 50	F 42	32	F 30	50	66	71	79	88	R 103	111	110	99	90	81	85	80	55	35	36	36	V 36
28	38	38	39	40	26	25	48	64	73	74	83	114	93	78	80	78	82	81	71	55	48	48	46	R 44
29	48	49	48	48	Z 40	33	50	69	79	96	110	114	112	108	96	80	74	71	62	53	50	52	50	51
30	53	52	53	49	32	30	48	64	74	88	I C 96	I C 102	114	121	113	94	74	76	68	57	53	53	52	52
31	50	52	55	42	37	32	45	62	87	81	95	96	102	87	80	77	74	73	70	50	S 43	R 42	U S 49	U S 47
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	24	24	27	27	28	29	28	30	30	29	29	28	29	29
MED	45	44	45	42	36	33	48	67	77	80	93	104	108	104	96	88	84	80	68	52	45	43	44	44
U Q	49	49	48	45	42	38	50	74	86	90	102	110	112	110	104	92	96	91	73	58	48	48	48	48
L Q	42	42	42	40	32	30	44	64	72	76	88	98	102	97	87	82	80	74	62	46	42	42	41	41

IONOSPHERIC DATA STATION KOKUBUNJI

MAR.1994 FOF1 (0.01MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	U L 500	480	U L 460	U L 460	L	L							
2									L	U L 500	U L 490	U L 500	U L 500	L 480	U L 450	L								
3									C	C	C	C	L 490	L 480	U L 460	L	L							
4									L	L	C	C	U L 480	U L 460	U L 500	L	L							
5								L	L	C	C	C	C	C	C	C	C							
6									C	C	C	C	C	C	U L 460	U L 420	L							
7									L	L	U L 480	U L 460	U L 470	U L 480	U L 460	L	L							
8									L	L	L	L 460	L	U L 480	U L 470	U L 400	L	L						
9									L	L	C	C	U L 470	U L 490	U L 480	L	U L 370							
10									L	L	U L 460	U L 470	U L 510	U L 490	U L 490	L	L							
11									L	U L 540	U L 510	U L 490	U L 480	L	L	L	L							
12									L	U L 430	U L 480	L	U L 500	L 460	L 450	L								
13										L	L	U L 490	L 460	U L 490	U L 450	L	L							
14									L	U L 450	L	U L 500	L 480	L	U L 440	L								
15									L	L		U L 490	L	L	L	L								
16									L	L	L	U L 480	U L 480	L 480	L	L 410	L							
17										U L 460	U L 500	U L 470	L	U L 480	L	U L 430	L							
18									L	L	L 440	L 500	U L 500	U L 470	L	L	L							
19										L	L 470	U L 540	L 490	L 490	U L 460	L	L							
20									L	L	U L 500	U L 470	U L 500	U L 480	U L 470	U L 500		L						
21								L	L	U L 470	U L 520		L 500	L		U L 450	L							
22									L	L	L 500	L	L	U L 480	L	U L 450	L							
23								L	L	L	U L 480	L 480	U L 500	U L 500	L 480	U L 430	L							
24								L	U L 450	U L 460	U L 500	L	L	L	U L 500	L								
25									U L 440	U L 460	C	C	C	C	C	L	L							
26								L		L	C	C	C	C	C	C								
27									L	L	L 500	L 490	L 500	L 480	U L 450	U L 440	L	L						
28									L	L	U L 500	L 480	U L 470	U L 490	L 460	U L 430	L							
29									L	U L 480	L 500	480	L 480	490		L	L							
30									L	U L 500	I C 480	I C 480	490	480	L 460	L 450	U L 400	L						
31								U L 460	L 430	L	460	480	L	L 460	455	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	3	10	18	20	21	22	20	11	2							
MED								U L 460	U L 440	U L 465	U L 495	U L 480	U L 490	U L 480	U L 460	U L 430	U L 385							
U Q									U L 450	U L 500	U L 500	U L 495	U L 500	U L 490	U L 475	U L 450								
L Q									L 430	U L 460	L 480	U L 475	L 480	L 480	U L 452	U L 420								

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 FOE (0.01MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							B	200	260	295	320	335	335	330	U S 320	290	250	170						
2							B	185	270	310	330	345	A 330	A	A	A	C	C						
3							C	C	C	C	C	C	340	335	320	A	A	A						
4							B	190	270	300	C	C	A 335	A	A	A	A	B						
5							B	205	275	C	C	C	C	C	C	C	C	170	B					
6							C	C	C	C	C	C	C	C	A	295	235	A	B					
7							B	H 215	265	305	A 315	A	A	U R 335	A	R	A	A	B					
8					J K 120	J K 135	B	A 215	260	290	A 315	A	A	A	A	290	260	185	B					
9							B	H 215	255	A	C	C	A	A	A	295	250	A	B					
10							B	H 210	260	R 285	A	A	A	B	A	A	A	A	B					
11							B	210	265	A	U R 325	330	A	A	A	275	A	A	B					
12							B	230	280	-R 310	335	U R 340	A	R 330	R	R	R	A	B					
13							B	A	A	R 310	R	R 335	340	335	A	B	265	U S 200	B					
14							140	225	275	R	R	R	345	330	325	310	A	A	B					
15							B	S 220	U R 275	U R 325	A	A 340	U A 335	A	A	B	265	A	B					
16							135	225	290	310	340	A 350	A	A	B	B	R	A	B					
17							B	R	R	290	A	B	B	R	285	255	B	A	B					
18							155	230	275	315	335	U R 345	345	U R 340	325	R	245	R	B					
19							165	250	R 290	320	340	345	B	U R 340	335	A	A	U R 215	B					
20							A	235	295	320	A 340	A 345	A	A	335	U R 325	285	215	B					
21							155	245	310	A 330	U A 340	A 350	A	A	A	310	U S 280	205	B					
22							A 165	240	280	320	330	U R 340	R	A 340	A 320	A	A	200	B					
23							180	R 245	R	R 320	325	R	A	A	335	300	270	210	B					
24							160	R 240	295	335	A	A	A	A	A	A	A	A	B					
25							165	260	R	355	C	C	C	C	C	320	A	A	B					
26							150	245	R	A 305	C	C	C	C	C	C	C	A	B					
27							145	250	R	A	A	R 345	A	R	R 325	U R 310	255	A	B					
28							B	245	295	R	A 320	A	A	340	330	U R 315	A	R	B					
29							155	260	R	A	A	A	B	A	A	A	A	235	B					
30							170	250	I R 280	R	C	C	345	340	A	A	A	215	B					
31							155	245	300	320	335	345	A	A	A	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	1	14	27	22	21	15	14	9	11	11	13	11	11						
MED					J K 120	J K 135	155	230	275	310	330	345	340	335	325	300	260	205						
U Q							165	245	290	320	340	345	345	U R 340	335	U R 312	270	215						
L Q							150	215	265	302	A 320	340	A 335	330	320	290	250	185						

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 FOES (0.1MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	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 12	27	E B 11	21	E B 11	E B 12	E B 12	G	28	32	35	36	G 26	G	G	G	G 23	G	20	J A 26	J A 16	E B 13	E B 13	E B 12
2	E B 13	18	E B 12	E B 13	E B 14	E B 13	E B 13	G	G	34	G	J A 47	J A 49	J A 43	35	J A 39	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	G 34	G 33	G	32	31	J A 24	19	E B 14	J A 14	E B 13	J A 15	23
4	31	J A 35	J A 33	J A 26	J A 20	21	J A 17	G	G	32	C	C	41	J A 44	37	J A 35	30	22	24	E B 14	J A 21	E B 13	20	E B 15
5	E B 14	21	E B 13	E B 12	J A 26	E B 15	17	G	G	C	C	C	C	C	C	C	C	G	J A 23	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	33	G 24	J A 24	J A 29	J A 26	29	J A 34	32	21	22
7	20	22	22	E B 15	E B 14	E B 14	E B 15	G	G 23	G	J A 49	J A 41	J A 44	G	J A 35	G 21	32	25	J A 25	20	E B 14	E B 13	E B 15	E B 13
8	E B 13	E B 13	E B 14	E B 13	J K 12	J K 14	18	26	32	37	J A 45	J A 43	J A 48	34	32	G	G	G	E B 11	18	E B 13	E B 16	J A 21	26
9	J A 29	J A 53	J A 20	19	E B 13	E B 12	E B 13	G	G	35	C	C	87	J A 72	32	G 24	G	24	26	J A 27	23	18	E B 13	E B 12
10	E B 13	E B 12	19	18	24	25	18	G	G	G	J A 44	38	35	E B 33	J A 49	45	41	24	20	20	E B 13	E B 14	20	J A 33
11	27	J A 21	E B 13	E B 13	E B 13	E B 14	18	27	G	34	G	G 28	36	37	33	G	27	J A 22	E B 14	E B 11	E B 12	E B 13	19	J A 38
12	E B 13	E B 12	J A 22	22	17	J A 14	E B 15	G	G	G	36	41	J A 43	G	G 30	G	G 23	27	E B 13	E B 14	E B 13	20	E B 11	E B 10
13	E B 13	E B 15	E B 12	19	E B 12	E B 14	21	27	41	G 25	G 27	40	40	39	41	E B 31	30	G	E B 15	E B 13	E B 13	28	E B 15	E B 14
14	E B 13	E B 12	E B 13	20	23	22	G	G	32	G 26	G	G	39	G	39	J A 46	J A 57	J A 52	J A 56	33	38	35	27	18
15	17	25	J A 21	24	E B 13	24	31	25	G	37	J A 57	40	42	J A 47	J A 57	E B 31	G	24	E B 15	E B 13	J A 19	J A 19	20	25
16	E B 13	J A 19	E B 12	19	21	22	G	26	35	35	G 34	44	43	39	E B 35	E B 30	G	34	70	J A 51	22	23	J A 24	28
17	J A 22	J A 21	E B 12	J A 36	35	J A 23	J A 20	G 21	G 21	G 25	34	E B 35	E B 40	G	G 24	G 24	E B 27	30	22	18	23	E B 13	E B 14	22
18	19	E B 13	E B 10	E B 13	E B 12	E B 12	G	G	G	35	G	G	41	38	40	G 21	G	G	J A 23	E B 13	E B 12	E B 13	E B 13	E B 11
19	E B 12	E B 14	E B 13	E B 14	E B 10	E B 15	G	G	G	35	G 30	39	E B 39	G	G	33	29	G	21	E B 13	E B 14	E B 14	E B 13	J A 27
20	J A 27	19	E B 13	E B 11	E B 12	E B 13	20	27	38	37	43	43	37	J A 42	G	G 30	35	34	19	E B 13	E B 11	J A 26	25	J A 22
21	J A 26	19	E B 12	E B 11	E B 14	E B 12	20	30	39	J A 50	57	J A 55	J A 50	J A 54	57	34	35	27	E B 15	E B 14	E B 13	J A 70	J A 23	J A 30
22	J A 25	J A 21	19	18	E B 15	E B 13	24	29	32	36	37	G	G	39	37	37	J A 31	23	J A 19	J A 21	J A 23	36	J A 21	19
23	23	J A 26	19	E B 12	E B 12	E B 14	G	G	G 26	G	36	36	36	J A 42	G	32	G	G	E B 14	E B 13	28	J A 34	J A 22	J A 42
24	J A 26	J A 42	22	19	E B 13	20	G	G	G	G	36	J A 51	J A 75	J A 73	45	59	61	J A 85	59	40	23	18	E B 13	23
25	21	E B 14	19	E B 14	25	24	G	G	G	42	C	C	C	C	C	G	29	J A 30	J A 31	30	J A 48	32	J A 53	J A 29
26	25	J A 22	19	27	E B 13	E B 13	G	G	G	40	C	C	C	C	C	C	C	32	J A 28	J A 22	J A 47	J A 22	E B 13	J A 24
27	J A 26	J A 52	J A 47	E B 11	J A 24	E B 13	19	G 24	G	39	J A 44	G 29	36	35	38	G 20	G	27	E B 14	E B 13	E B 13	E B 13	20	22
28	E B 13	E B 13	E B 11	E B 12	E B 14	E B 13	E B 18	G	34	G	38	39	37	G 34	G	G	33	G	21	26	28	E B 15	J A 22	20
29	E B 13	E B 11	E B 12	E B 14	E B 12	E B 14	19	G	G	36	34	35	E B 34	J A 43	J A 74	51	J A 34	G 20	19	27	19	E B 14	E B 13	E B 13
30	E B 12	E B 14	E B 13	18	22	19	J A 27	G 21	G 21	G	C	C	40	G	35	38	27	G	J A 19	J A 24	J A 21	E B 11	J A 22	E B 12
31	J A 21	28	23	J A 23	23	E B 15	G	28	34	41	J A 48	41	48	41	37	J A 39	28	J A 23	J A 40	J A 36	34	20	33	J A 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	29	29	29	29	29	29	29	29	29	28	23	23	27	27	28	29	28	30	30	29	29	29	29	29
MED	19	19	E B 13	18	E B 14	E B 14	E G 17	G	G	34	36	39	40	38	35	31	28	24	20	20	19	18	20	22
U Q	J A 26	J A 26	J A 20	20	22	20	20	26	32	37	J A 44	J A 43	J A 44	J A 43	40	38	32	29	J A 26	27	26	27	J A 22	J A 28
L Q	E B 13	E B 14	E B 12	E B 13	E B 12	E B 13	G	G	G	G	G	G 35	36	G	G	G 30	G	G	E B 15	E B 13	E B 13	E B 13	E B 13	E B 14

IONOSPHERIC DATA STATION KOKUBUNJI

MAR.1994 FBES (0.1MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	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 12	21	E B 11	E B 13	E B 11	E B 12	E B 12	G	27	32	34	35	G 24	G	G	G	G 19	G	E B 13	E B 13	E B 13	E B 13	E B 13	E B 12
2	E B 13	16	E B 12	E B 13	E B 14	E B 13	E B 13	G	G	33	G	37	37	36	33	30	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	G 32	G 30	G	28	26	22	E B 13	E B 14	E B 12	E B 13	E B 13	E B 11
4	23	18	15	19	17	E B 14	16	G	G	32	C	C	37	40	33	30	28	20	21	E B 14	E B 13	E B 13	E B 13	E B 15
5	E B 14	E B 15	E B 13	E B 12	E B 13	E B 15	E B 13	G	G	C	C	C	C	C	C	C	C	G	17	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	32	G 24	G 22	24	17	23	34	21	E B 12	E B 15
7	E B 15	E B 14	E B 13	E B 15	E B 14	E B 14	E B 15	G	G 22	G	35	35	35	G	33	G 20	27	19	22	E B 13	E B 14	E B 13	E B 15	E B 13
8	E B 13	E B 13	E B 14	E B 13	K 12	K 14	16	25	29	34	41	36	36	34	32	G	G	G	E B 11	E B 15	E B 13	E B 16	16	17
9	25	18	E B 14	E B 13	E B 13	E B 12	E B 13	G	G	34	C	C	42	44	32	G 22	G	21	17	20	E B 13	12	E B 13	E B 12
10	E B 13	E B 12	E B 13	E B 13	E B 12	E B 12	E B 13	G	G	G	34	36	33	E B 33	33	35	34	24	18	E B 14	E B 13	E B 14	E B 13	29
11	19	17	E B 13	E B 13	E B 13	E B 14	18	26	G	33	G	G 27	U Y 36	36	U Y 33	G	27	20	E B 14	E B 11	E B 12	E B 13	E B 13	29
12	E B 13	E B 12	17	15	E B 12	E B 14	E B 15	G	G	G	35	40	40	G	U G 30	G	U G 23	23	E B 13	E B 14	E B 13	E B 13	E B 11	E B 10
13	E B 13	E B 15	E B 12	E B 12	E B 12	E B 14	20	26	34	G 24	G 26	40	39	37	36	E B 31	30	G	E B 15	E B 13	E B 13	19	E B 15	E B 14
14	E B 13	E B 12	E B 13	15	15	E B 12	G	G	29	G 26	G	G	37	G	36	34	51	49	51	22	27	20	20	E B 13
15	E B 13	E B 11	15	15	E B 13	E B 13	20	25	G	37	55	40	40	44	41	E B 31	G	22	E B 15	E B 13	E B 13	17	20	24
16	E B 13	18	E B 12	E B 13	E B 12	E B 13	G	25	33	34	G 33	41	42	39	E B 35	E B 30	G	33	47	27	14	E B 14	18	21
17	19	E B 13	E B 12	20	24	19	18	U G 21	G 19	G 24	33	E B 35	E B 40	G	G 23	G 22	E B 27	27	16	E B 13	E B 15	E B 13	E B 14	E B 12
18	15	E B 13	E B 10	E B 13	E B 12	E B 12	G	G	G	34	G	G	40	37	39	G 21	G	G	16	E B 13	E B 12	E B 13	E B 13	E B 11
19	E B 12	E B 14	E B 13	E B 14	E B 10	E B 15	G	G	G	34	G 30	37	E B 39	G	G	32	25	G	19	E B 13	E B 14	E B 14	E B 13	19
20	14	E B 12	E B 13	E B 11	E B 12	E B 13	18	U Y 27	33	34	42	41	U Y 37	40	G	G 28	34	29	16	E B 13	E B 11	24	17	18
21	14	E B 13	E B 12	E B 11	E B 14	E B 12	20	30	34	42	40	55	40	39	50	33	32	26	E B 15	E B 14	E B 13	33	E B 13	15
22	E B 14	15	E B 13	E B 12	E B 15	E B 13	21	28	31	35	36	G	G	37	36	33	27	22	16	20	18	A A 36	18	E B 13
23	E B 13	23	E B 14	E B 12	E B 12	E B 14	G	G	U G 26	G	35	35	35	37	G	32	G	G	E B 14	E B 13	E B 14	20	16	14
24	18	29	17	E B 13	E B 13	E B 13	G	G	G	G	35	40	42	43	35	38	52	66	45	29	15	E B 11	E B 13	E B 12
25	E B 13	E B 14	E B 13	E B 14	E B 13	17	G	G	G	36	C	C	C	C	C	G	27	23	18	27	21	17	23	23
26	16	E B 14	E B 12	15	E B 13	E B 13	G	G	G	36	C	C	C	C	C	C	C	19	20	E B 13	32	16	E B 13	18
27	22	15	19	E B 11	E B 12	E B 13	18	G 22	G	U Y 39	39	G 28	U Y 35	35	G	G 19	G	22	E B 14	E B 13	E B 13	E B 13	E B 11	E B 13
28	E B 13	E B 13	E B 11	E B 12	E B 14	E B 13	E B 18	G	32	G	36	39	36	G 33	G	G	29	G	19	20	21	E B 15	17	17
29	E B 13	E B 11	E B 12	E B 14	E B 12	E B 14	19	G	G	35	34	35	E B 34	39	72	40	28	G 18	E B 14	22	15	E B 14	E B 13	E B 13
30	E B 12	E B 14	E B 13	E B 12	15	E B 12	G	G 17	G 20	G	C	C	38	G	34	32	27	G	15	E B 14	16	E B 11	18	E B 12
31	16	18	E B 12	E B 11	16	E B 15	G	27	34	40	43	40	46	41	34	38	27	20	25	15	18	16	14	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	29	29	29	29	29	29	29	29	29	28	23	23	27	27	28	29	28	30	30	29	29	29	29	29
MED	E B 13	E B 14	E B 13	E B 13	E B 13	E B 13	G	G	G	34	35	36	37	36	33	E G 30	27	20	16	E B 14	E B 14	E B 14	E B 13	E B 14
U Q	16	18	14	14	14	E B 14	18	25	30	35	39	40	40	39	36	32	28	24	19	20	17	18	17	18
L Q	E B 13	E B 13	E B 12	E B 12	E B 12	E B 12	G	G	G	G	G	G 35	35	G	G	G	G	G	E B 14	E B 13	E B 13	E B 13	E B 13	E B 12

IONOSPHERIC DATA STATION KOKUBUNJI

MAR.1994 FMIN (0.1MHZ) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	12	14	11	13	11	12	12	14	14	14	16	19	16	20	17	13	13	14	13	13	13	13	13	12
2	13	14	12	13	14	13	13	13	13	16	17	19	17	19	16	15	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	16	18	15	16	14	14	13	14	12	13	13	11
4	12	12	12	13	13	14	13	13	13	13	C	C	19	18	17	16	17	18	15	14	13	13	13	15
5	14	15	13	12	13	15	13	15	15	C	C	C	C	C	C	C	C	15	13	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	20	14	13	12	11	13	14	15	12	15
7	15	14	13	15	14	14	15	13	12	16	15	20	19	20	15	13	13	13	11	13	14	13	15	13
8	13	13	14	13	12	13	13	14	14	13	16	16	15	21	16	14	14	14	11	15	13	16	13	14
9	14	14	14	13	13	12	13	14	13	13	C	C	17	20	18	13	11	13	13	13	13	11	13	12
10	13	12	13	13	12	12	13	15	14	14	20	19	16	33	24	17	14	15	14	14	13	14	13	13
11	14	14	13	13	13	14	13	14	15	20	28	22	28	24	15	17	18	13	14	11	12	13	13	12
12	13	12	14	13	12	14	15	12	13	20	20	21	22	26	20	18	15	12	13	14	13	13	11	10
13	13	15	12	12	12	14	15	12	13	18	14	20	20	16	17	31	17	14	15	13	13	14	15	14
14	13	12	13	11	10	12	12	13	18	14	23	ES 25	22	22	20	20	16	15	14	14	12	14	13	13
15	13	11	13	13	13	13	14	15	16	22	29	27	22	25	22	31	20	16	15	13	13	14	14	15
16	13	15	12	13	12	13	12	14	18	19	22	31	26	23	35	30	21	13	14	13	13	14	14	14
17	13	13	12	12	12	13	14	15	15	18	19	35	40	20	16	15	27	13	14	13	15	13	14	12
18	13	13	10	13	12	12	13	17	13	20	21	24	21	22	19	14	20	16	12	13	12	13	13	11
19	12	14	13	14	10	15	15	15	16	18	23	28	39	29	23	20	17	14	14	13	14	14	13	12
20	12	12	13	11	12	13	14	14	17	16	22	22	26	30	15	20	20	15	15	13	11	14	13	13
21	13	13	12	11	14	12	13	13	20	22	25	20	26	23	19	18	ES 22	13	15	14	13	14	13	11
22	14	12	13	12	15	13	12	13	12	16	30	24	22	21	29	19	13	13	13	12	14	13	12	13
23	13	13	14	12	12	14	16	15	18	19	20	21	22	23	24	15	15	14	14	13	14	13	12	12
24	13	12	13	13	13	13	14	13	16	16	20	21	28	24	21	16	18	14	15	15	13	11	13	12
25	13	14	13	14	13	12	14	12	14	19	C	C	C	C	C	20	15	15	13	14	10	13	12	14
26	14	14	12	13	13	13	13	14	17	14	C	C	C	C	C	C	C	14	13	13	14	12	13	14
27	13	11	13	11	12	13	12	13	14	20	21	23	30	20	26	13	13	13	14	13	13	13	11	13
28	13	13	11	12	14	13	18	14	16	20	21	32	29	26	25	20	15	15	15	13	12	15	13	13
29	13	11	12	14	12	14	13	15	16	20	16	30	34	27	23	20	13	13	14	14	12	14	13	13
30	12	14	13	12	13	12	13	14	16	23	C	C	20	20	19	16	14	13	11	14	13	11	14	12
31	12	14	12	11	12	15	13	16	14	18	20	27	21	19	17	14	14	13	13	11	13	13	10	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	29	29	29	29	29	29	29	29	29	28	23	23	27	27	28	29	28	30	30	29	29	29	29	29
MED	13	13	13	13	12	13	13	14	15	18	20	22	22	22	19	16	15	14	14	13	13	13	13	13
U Q	13	14	13	13	13	14	14	15	16	20	23	27	28	25	23	20	18	15	14	14	14	14	13	14
L Q	13	12	12	12	12	12	13	13	13	15	17	20	19	20	16	14	14	13	13	13	12	13	12	12

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 M(3000)F2 (0.01) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	305	290	305	320	305	300	320	365	345	350	340	310	325	335	335	330	335	340	340	310	295	295	300	270
2	300	290	320	325	315	315	315	345	345	320	330	305	310	320	325	335	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	315	325	325	305	325	345	345	295	300	290	265	270
4	300	295	305	320	260	285	290	335	345	330	C	C	330	340	330	340	350	355	335	290	305	305	290	290
5	295	295	300	310	285	295	320	350	345	C	C	C	C	C	C	C	C	360	325	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	355	330	330	355	345	280	285	295	280	295
7	320	305	320	340	325	285	305	350	355	355	320	340	325	325	330	345	345	320	310	300	295	295	270	285
8	295	280	295	H 260	285	340	285	370	345	340	290	335	310	295	310	315	320	335	360	265	275	285	265	280
9	280	300	F 300	F 335	F 340	F 275	330	320	350	330	C	C	325	310	305	320	330	355	320	270	310	310	270	280
10	285	285	315	350	F 250	300	310	355	340	340	315	340	315	325	330	315	335	355	355	285	305	270	285	275
11	305	310	305	300	290	325	330	345	340	290	310	325	340	315	335	330	335	350	345	300	275	295	265	265
12	265	325	335	325	365	290	315	320	335	320	335	325	340	335	330	335	340	345	330	325	300	270	285	275
13	295	305	305	325	325	310	325	360	360	345	315	310	310	335	340	320	345	360	335	305	275	285	295	290
14	325	V 295	305	285	320	295	335	350	355	335	320	325	325	325	330	320	335	350	370	290	285	305	300	290
15	295	280	280	290	335	310	335	355	350	330	325	330	315	330	330	325	335	340	320	330	280	275	275	285
16	270	280	310	315	265	265	320	335	340	320	335	340	350	335	340	320	345	350	A	315	275	295	270	285
17	295	285	335	285	F 270	290	315	350	335	325	335	335	335	330	350	340	335	345	330	315	280	275	280	290
18	295	300	320	300	275	275	310	360	365	340	315	325	335	330	330	315	340	345	340	295	310	300	285	280
19	290	315	295	330	330	295	345	340	335	325	310	310	315	330	345	340	335	360	335	325	305	275	275	290
20	295	325	310	320	285	310	350	345	350	335	320	320	325	315	330	320	335	335	355	310	295	290	280	285
21	280	V 285	305	335	310	305	350	355	350	335	320	325	320	300	320	320	335	345	360	335	280	360	285	270
22	290	285	290	350	275	295	320	330	315	310	330	310	330	330	325	345	340	340	330	355	310	A	275	270
23	275	285	300	315	330	285	330	350	335	330	315	325	325	325	330	340	340	335	335	330	295	275	270	280
24	280	300	305	315	275	280	325	345	350	330	315	315	325	320	325	330	345	A 335	340	300	295	290	280	285
25	295	285	295	310	305	285	R 325	330	325	315	C	C	C	C	C	330	335	335	345	325	320	280	290	295
26	295	300	270	F 260	300	350	345	R 350	325	315	C	C	C	C	C	C	C	330	335	340	300	285	290	285
27	F 300	F 310	F 310	F 325	325	F 310	340	340	325	330	305	R 315	320	325	320	335	325	345	350	355	290	295	285	V 285
28	290	300	310	345	315	285	335	335	345	320	300	330	340	320	330	325	320	335	335	305	290	285	275	R 275
29	290	305	305	325	Z 305	285	335	325	300	305	315	315	320	330	320	335	340	340	330	295	290	285	280	290
30	290	305	325	360	320	295	325	330	320	310	C	C	310	325	330	345	345	345	335	320	300	280	280	285
31	275	295	320	335	310	285	305	285	325	295	315	315	340	350	340	335	340	350	350	335	S 280	R 275	U S 270	U S 275
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	28	23	23	27	27	28	29	28	30	29	29	29	28	29	29
MED	295	295	305	320	305	295	325	345	345	330	315	325	325	325	330	330	335	345	335	310	295	288	280	285
U Q	298	305	318	335	325	310	335	352	350	335	330	330	335	330	335	338	340	350	348	328	302	295	285	290
L Q	282	285	300	305	280	285	315	332	330	318	315	315	315	320	325	320	335	335	330	295	280	278	270	275

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 M(3000)F1 (0.01) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	UL 365	370	UL 380	UL 355	L	L							
2									L	UL 325	UL 365	UL 360	UL 340	L 355	UL 375	L	C	C						
3							C	C	C	C	C	C	L 360	L 350	UL 370	L	L							
4									L	L	C	C	UL 360	UL 370	UL 345	L	L							
5								L	L	C	C	C	C	C	C	C	C							
6							C	C	C	C	C	C	C	C	UL 365	UL 365	L							
7									L	L	UL 375	UL 370	UL 370	UL 375	UL 355	L	L							
8									L	L	L	L 360	L	UL 355	UL 345	UL 375	L	L						
9									L	L	C	C	A	A	UL 380	L	L							
10									L	L	UL 370	UL 365	UL 350	UL 345	L	L	L							
11									L	UL 360	UL 340	L	UL 365	L	L	L	L							
12									L	UL 375	UL 365	L	UL 360	L 370	L 390	L								
13										L	L	UL 375	L 400	UL 365	UL 365	L	L							
14									L	UL 395	L	UL 355	L 360	L	UL 380	L	A	A						
15									L	L	A	UL 360	L	L	L	L								
16									L	L	L	UL 385	UL 380	L 365	L	L 405	L							
17										UL 360	UL 355	UL 365	L	UL 385	L	UL 375	L							
18									L	L	L 395	L 370	UL 365	UL 380	L	L	L							
19										L	L 375	UL 340	L 355	L 355	UL 380	L	L							
20									L	L	UL 360	UL 375	UL 355	UL 380	UL 355	UL 370		L						
21								L	L	A	UL 350	A	L 370	L	A	UL 360	L							
22									L	L	L 360	L	L	UL 380	L	L	L							
23								L	L	L	UL 375	L 375	UL 360	UL 365	L 365	UL 385	L							
24								L	L	UL 375	UL 360	L	L	L	UL 345	L	A	A						
25									UL 370	UL 370	C	C	C	C	C	L	L							
26								L		L	C	C	C	C	C	C	C							
27									L	L	L 360	L 360	L 355	L 360	UL 385	UL 365	L	L						
28									L	L	UL 340	L 355	UL 380	UL 360	L 370	UL 360	L							
29									L	UL 350	L 345	360	L 370	350	A	L	L							
30									L	UL 345	C	C	365	360	L 365	L 365	UL 375	L						
31								UL 325	L 345	L	A	345	L	L 370	360	L	L							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								1	2	9	16	18	20	21	19	10	1							
MED								UL 325	L 358	UL 360	UL 360	UL 362	UL 362	UL 365	UL 365	UL 368	UL 375							
U Q										UL 375	UL 372	UL 370	L 370	UL 378	UL 380	UL 375								
L Q										UL 348	UL 352	L 360	L 358	L 355	UL 355	UL 365								

IONOSPHERIC DATA STATION KOKUBUNJI

MAR.1994 H'F2 (KM) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									225	235	260	300	270	250	260	250	235							
2									245	270	250	300	290	270	255	245	C	C						
3							C	C	C	C	C	C	280	260	250	290	250							
4									240	245	C	C	255	260	270	250	235							
5								235	245	C	C	C	C	C	C	C	C							
6							C	C	C	C	C	C	C	C	245	255	250							
7									235	240	265	255	265	265	270	235	240							
8									235	235	305	260	275	295	280	250	250	230						
9									240	240	C	C	270	290	290	275	240							
10									250	245	260	245	280	265	255	270	250							
11									245	310	290	260	245	265	260	250	255							
12									250	270	255	275	250	260	265	250								
13										260	260	280	290	255	235	255	240							
14									235	250	275	280	275	255	240	280	A 255	A 235						
15									245	255	270	270	270	260	250	255								
16									245	270	260	250	245	260	260	255	245							
17										260	265	255	260	260	245	250	235							
18									225	250	280	270	255	250	245	L 290	240							
19										260	290	285	280	260	235	255	240							
20									240	255	275	265	270	260	250	260		240						
21								230	235	270	285	260	280	295	270	275	255							
22									285	285	270	270	265	250	265	245	255							
23								255	250	255	270	270	270	280	265	250	250							
24								245	240	260	270	280	265	265	265	250	A 250	A						
25									245	255	C	C	C	C	C	260	240							
26								245		260	C	C	C	C	C	C	C							
27									265	260	295	285	270	265	260	255	255	245						
28									255	275	300	275	250	280	275	265	265							
29									275	285	285	275	265	260	EA 285	255	255							
30									265	285	IC 290	IC 295	285	270	255	250	240	240						
31								L 345	270	285	285	275	265	260	270	265	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								6	25	28	24	24	27	27	28	29	25	5						
MED								245	245	260	272	272	270	260	260	255	250	240						
U Q								255	252	270	288	280	280	270	270	265	255	242						
L Q								235	238	250	262	260	260	260	250	250	240	232						

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 H'F (KM) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	255	300	265	255	245	250	250	225	215	215	220	225	205	200	H 205	240	230	225	220	225	265	275	270	300
2	280	285	250	225	240	220	250	230	230	230	220	205	220	230	220	220	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	215	205	225	230	230	225	210	255	240	275	275	335
4	A 305	300	280	260	A 320	320	290	250	240	225	C	C	230	A 240	220	225	240	220	210	260	260	250	285	290
5	290	290	260	260	275	275	250	235	235	C	C	C	C	C	C	C	C	215	210	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	H 205	205	230	220	205	E A 275	A	295	290	290
7	255	260	255	230	225	265	265	235	235	230	215	H 205	220	225	225	230	225	230	245	250	250	275	305	275
8	260	300	265	250	300	235	285	220	235	230	A 255	215	250	230	225	210	235	240	210	260	300	290	325	325
9	A 325	290	290	230	230	345	245	230	215	220	C	C	A	A	H 225	225	220	220	220	285	260	240	330	305
10	305	285	250	225	415	310	265	230	240	225	210	H 205	210	210	220	235	A	220	205	230	255	305	310	E A 365
11	280	255	245	255	280	270	250	235	235	220	H 210	H 215	Y 230	230	235	220	240	230	215	210	280	290	320	E A 385
12	330	260	240	230	220	330	255	240	H 225	220	225	255	A 235	200	220	235	245	230	225	225	225	290	300	310
13	300	265	255	240	220	295	255	210	230	H 190	220	220	215	240	220	H 210	210	220	215	235	285	305	285	270
14	245	260	255	305	235	275	220	220	H 190	210	230	225	H 200	235	225	235	A	A	A 230	A 285	A 325	300	270	270
15	285	310	330	285	215	270	235	230	235	225	A	230	A 245	A	A	220	245	235	215	220	300	310	325	A 310
16	310	320	255	245	290	355	260	220	245	225	A	240	A 240	215	H 205	210	240	230	A	260	265	285	320	305
17	300	290	235	A 280	E A 355	300	240	235	Y 240	220	220	225	B 240	230	225	220	215	225	230	210	305	300	330	300
18	285	260	245	240	305	330	250	225	215	225	210	225	H 215	220	225	H 205	205	220	225	240	250	250	290	300
19	280	255	260	240	220	280	240	230	240	225	H 185	H 200	230	220	220	225	230	225	240	220	220	285	305	300
20	270	245	240	245	285	270	225	225	230	215	E A 260	A 235	230	220	Y 240	H 220	250	230	220	205	245	A 305	310	330
21	300	320	265	245	225	265	230	235	220	A	A 240	A	220	220	A	230	A 250	225	210	215	270	A 255	305	350
22	330	305	280	240	335	260	250	235	235	230	230	H 205	H 215	230	220	230	210	235	230	220	225	A	330	340
23	330	A 325	290	250	215	325	245	235	240	210	220	205	H 190	235	225	215	230	235	215	220	265	310	330	310
24	315	E A 325	260	230	310	300	250	235	225	215	215	H 200	A 250	A	H 205	A	A	A	A	A 270	250	265	310	300
25	280	290	280	260	255	300	260	240	220	225	C	C	C	C	C	225	225	240	230	235	235	290	320	325
26	305	275	325	350	270	215	225	220	230	230	C	C	C	C	C	C	C	245	235	220	A 260	265	300	300
27	315	275	280	210	240	260	245	235	215	A	220	220	220	210	220	225	225	250	225	210	250	300	315	330
28	310	285	260	225	E B 240	340	240	235	235	220	215	A 245	H 220	215	210	225	235	240	225	235	265	280	305	330
29	300	280	265	240	215	290	245	240	235	230	210	210	215	230	A	E A 245	235	235	230	255	270	285	305	300
30	285	265	250	215	230	295	235	235	235	230	I C 220	I C 210	215	200	225	220	215	245	225	230	255	310	310	300
31	305	285	245	220	265	325	255	225	225	E A 260	A	A 235	A	A 245	215	A	220	235	230	220	260	310	290	300
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	26	21	23	25	24	25	27	25	28	28	29	28	28	29	29
MED	300	285	260	240	242	290	250	235	235	225	220	220	220	222	220	225	230	230	222	230	260	290	305	302
U Q	310	300	280	258	295	322	255	235	235	230	228	230	A 232	230	225	230	240	235	230	258	270	302	320	330
L Q	280	262	250	230	225	265	240	225	222	220	212	H 205	215	212	H 218	220	220	222	212	220	250	275	290	300

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 H'E (KM) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	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	125	110	110	110	110	A 120	110	115	110	A 130	130						
2							B	120	115	115	110	110	110	115	115	A	C	C						
3							C	C	C	C	C	C	A	A 130	120	A	A	A						
4							B	120	115	110	C	C	115	120	120	A	A	B						
5							B	120	115	C	C	C	C	C	C	C	C	140	B					
6							C	C	C	C	C	C	C	C	A	A 120	A	A	B					
7							B	120	A 130	110	A 125	110	120	120	A	120	A	A	B					
8					B	B	B	130	115	110	110	110	A	A	A	115	110	125	B					
9							B	120	115	115	C	C	A	A	A	A 130	115	A	B					
10							B	120	115	110	110	110	110	B	A	A	A	A	B					
11							B	125	110	115	120	120	A	A	A	120	A	A	B					
12							B	120	115	115	120	115	A	110	A	115	A	A	B					
13							B	A	A	A 130	120	A	115	A 120	120	B	120	120	B					
14							155	115	115	A	115	120	115	115	120	115	A	A	B					
15							B	125	115	120	120	120	115	A	125	B	125	A	B					
16							130	120	120	115	A	A	A	A	B	B	120	A	B					
17							B	A	120	115	A	B	B	115	A 125	120	B	A	B					
18							140	125	115	120	115	115	115	115	120	110	115	120	B					
19							180	120	115	120	A 120	125	B	E B 145	120	A	A	125	B					
20							A	120	115	110	115	115	A	A	120	E A 140	125	120	B					
21							B 150	120	115	110	115	115	A	A	A	A 120	120	120	B					
22							155	115	110	110	E B 135	115	120	115	125	115	A	115	B					
23							160	120	A	115	110	120	A	A	115	125	115	120	B					
24							155	115	110	115	A	A	A	A	A	A	A	A	B					
25							B 170	115	110	A 120	C	C	C	C	C	120	A	A	B					
26							160	115	115	110	C	C	C	C	C	C	C	A	B					
27							E B 180	A 125	110	110	110	120	A	A 125	115	120	115	A	B					
28							B	115	110	110	110	A	A	A 125	120	120	A	125	B					
29							140	115	115	A	A	A	B	A	A	A	A	A 135	B					
30							150	A 125	115	110	C	C	110	115	A	120	A	115	B					
31							145	A 130	A 130	110	110	120	110	A	110	A	A	A	B					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							14	27	27	26	19	17	12	15	16	18	11	13						
MED							154	120	115	112	115	115	115	115	120	120	120	120						
U Q							160	125	115	115	120	120	118	A 125	120	A 120	125	128						
L Q							145	115	110	110	110	110	110	115	115	115	115	120						

IONOSPHERIC DATA STATION KOKUBUNJI

MAR. 1994 H'ES (KM) 135°E MEAN TIME (G.M.T. + 9H)

LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

D \ H	00	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	100	B	100	B	B	B	G	170	170	150	140	105	G	G	G	115	G	105	120	130	B	B	B
2	B	120	B	B	B	B	B	G	G	E G 190	G	125	120	120	120	120	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	C	C	C	C	C	C	115	120	G	120	115	115	120	B	120	B	150	115
4	110	105	105	105	105	100	105	G	G	E G 180	C	C	125	120	120	115	120	120	115	B	120	B	110	B
5	B	105	B	B	130	B	110	G	G	C	C	C	C	C	C	C	C	G	105	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	105	110	105	100	100	105	100	100	100	100
7	100	95	95	B	B	B	B	G	110	G	120	120	125	G	105	105	100	95	100	95	B	B	B	B
8	B	B	B	B	B	B	140	140	130	120	120	120	110	115	110	G	G	G	B	100	B	B	115	110
9	105	105	110	115	B	B	B	G	G	115	C	C	105	110	110	110	G	110	100	100	100	105	B	B
10	B	B	110	115	105	110	110	G	G	G	120	120	120	B	115	110	95	105	100	115	B	B	125	115
11	110	110	B	B	B	B	140	160	G	130	G	105	125	120	120	G	120	100	B	B	B	B	135	120
12	B	B	100	105	110	155	B	G	G	G	160	E G 200	100	G	105	G	105	100	B	B	B	110	B	B
13	B	B	B	110	B	B	165	110	105	105	105	145	130	140	130	B	160	G	B	B	B	120	B	B
14	B	B	B	105	100	100	G	G	155	115	G	G	145	G	135	125	105	100	100	105	105	105	105	115
15	120	110	110	110	B	110	105	165	G	140	120	130	120	120	120	B	G	120	B	B	120	105	100	130
16	B	110	B	120	110	110	G	160	145	145	120	140	130	130	B	B	G	145	110	110	110	110	125	100
17	110	105	B	105	110	110	110	110	110	105	105	B	B	G	100	105	B	95	95	100	110	B	B	100
18	100	B	B	B	B	B	G	G	G	145	G	G	135	150	135	95	G	G	100	B	B	B	B	B
19	B	B	B	B	B	B	G	G	G	150	100	155	B	G	G	125	120	G	100	B	B	B	B	110
20	110	110	B	B	B	B	155	150	135	135	120	120	115	110	G	110	185	145	140	B	B	120	120	115
21	115	120	B	B	B	B	155	150	140	120	120	120	115	110	100	E G 160	140	140	B	B	B	120	120	120
22	115	115	140	110	B	B	155	155	160	145	130	G	G	120	120	115	120	160	130	120	120	120	120	125
23	115	105	110	B	B	B	G	G	110	G	120	130	120	110	G	150	G	G	B	B	115	110	115	110
24	105	100	105	110	B	105	G	G	G	G	110	105	100	105	110	105	95	95	95	95	105	105	B	110
25	105	B	115	B	105	100	G	G	G	125	C	C	C	C	C	G	115	115	110	115	110	110	115	105
26	105	105	100	105	B	B	G	G	G	120	C	C	C	C	C	C	C	105	105	110	115	115	B	110
27	105	110	110	B	105	B	180	110	G	110	110	110	110	130	150	105	G	120	B	B	B	B	145	130
28	B	B	B	B	B	B	B	G	130	G	120	110	115	110	G	G	115	G	130	115	110	B	115	120
29	B	B	B	B	B	B	155	G	G	110	110	115	B	105	100	100	105	105	105	105	100	B	B	B
30	B	B	B	110	105	105	110	115	110	G	C	C	155	G	120	125	115	G	115	120	110	B	115	B
31	110	105	100	110	105	B	G	150	130	120	120	115	110	110	115	110	105	105	100	105	100	105	110	100
	00	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	13	15	11	10	14	12	14	21	19	19	23	19	21	20	20	21	22	17	18	15	18	20
MED	110	105	110	110	105	108	140	150	130	122	120	120	120	120	115	110	115	105	105	105	110	110	115	112
U Q	112	110	110	110	110	110	155	158	145	145	120	140	125	120	120	122	120	120	115	115	120	120	125	120
L Q	105	105	100	105	105	100	110	112	110	115	110	115	110	110	105	105	105	100	100	100	105	105	110	108

IONOSPHERIC DATA STATION KOKUBUNJI

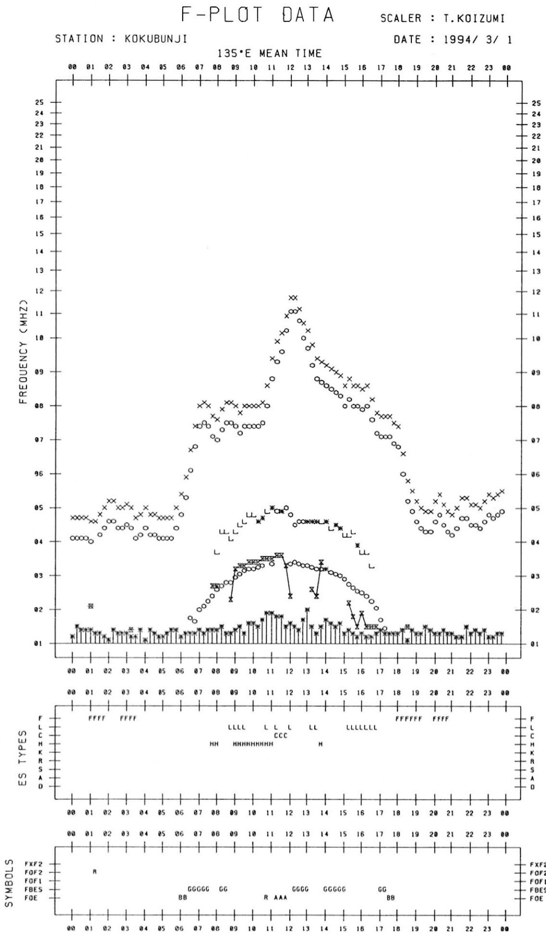
MAR.1994 TYPES OF ES 135°E MEAN TIME (G.M.T. + 9H)

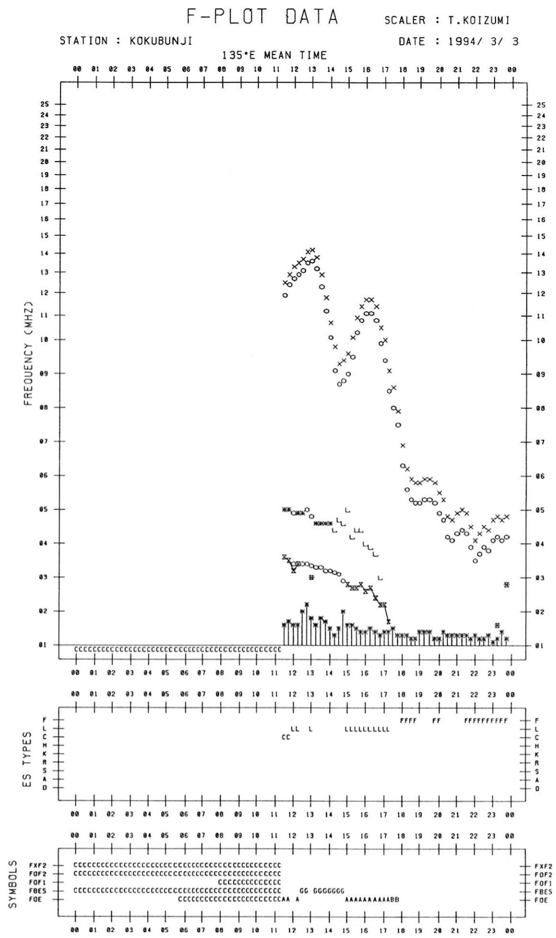
LAT.35°42.4'N LON.139°29.3'E SWEEP 1.0MHZ TO 25.0MHZ IN 24.0SEC IN MANUAL SCALING

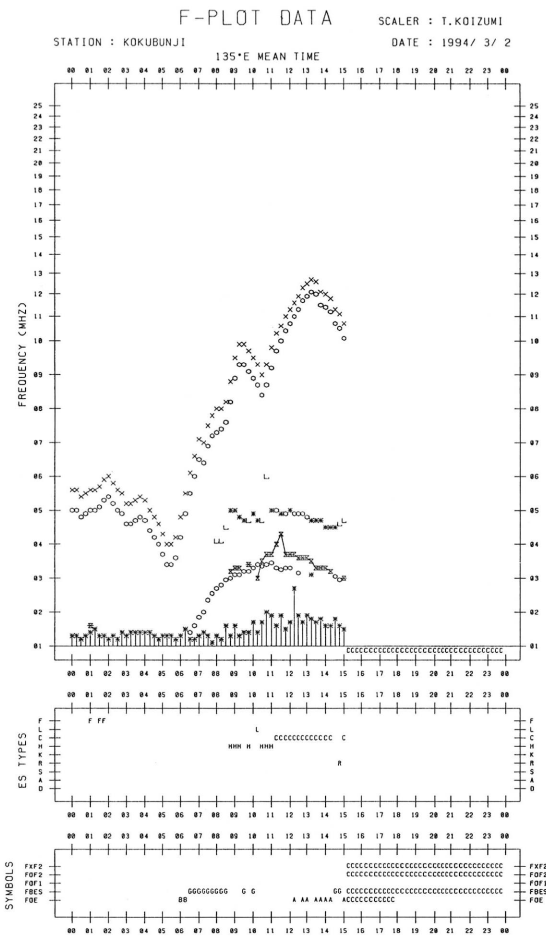
D \ H	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		F3		F3					H1	HL11	H1	H1	L1				L1		F1	F1	F1			
2		F1								H1		H1	C1	C1	C1	C1								
3													L1	L1		L1	L2	L2	F1		F1		F1	F2
4	F5	F4	F2	F4	F3	F2	L2			H1			C1	C2	C1	C1	C2	C2	F1		F1		F2	
5		F1			F1		L1												L2					
6															L1	L1	L2	L3	L3	F2	F3	F4	F2	F2
7	F2	F3	F2						L1		CL11	C1	C1		L2	L1	L3	L2	L2	F1				
8					K1	K1	H1	CL11	H1	C2	C2	C1	C1	L1	L1					F1			F2	F2
9	F4	F2	F1	F1						C1			L2	L2	L1	L2		L1	L2	F3	F1	F2		
10			F1	F1	R1	F3	L1				C1	C1	C1		C1	L2	L4	L1	L1	F1			F1	F3
11	F2	F2					H1	H1		C1		L1	C1	L1	CL11		C1	L1					F1	F4
12			F4	F2	F1	F1					H1	H1	L2		L1		L1	L1				F1		
13				F1			HL11	L2	L2	L1	L1	HL11	HCL11	HL11	C1		H1					F3		
14				F2	F3	F1			H1	L1			H1		H1	C1	L4	L4	L4	F3	F4	F3	F3	F1
15	F1	F2	F2	F2		F3	L2	H1		H1	C2	C1	C1	C2	C2			C1			FF11	F1	F1	F1
16		F1		F1	F1	F2		H1	H1	H1	L1	CL11	CL11	CL11				HL11	L3	F3	F1	F2	FF11	F2
17	F2	F2		F3	F4	F2	L2	L1	L1	L1	L2				L1	L1		L1	L1	F1	F1			F1
18	F1									H1			H1	H1	HL11	L1			L1					
19										H1	L1	H1				C1	C2		LC11					F2
20	F1	F1					C1	H1	H1	H1	C2	C1	C1	L1		L1	H1	H1	H1			F3	F1	F2
21	F1	F2					H1	H1	H1	C1	C2	C2	C1	C1	L2	HL11	H1	H1				F3	F2	F2
22	F2	F1	F1	F1			C1	H1	H1	H1	C1			C1	C1	C1	C1	H1	C1	F2	F2	F3	F1	F1
23	F2	F3	F2						L1		C1	C1	C1	C1		HL11					F2	F2	F1	F2
24	F2	F4	F2	F1		F1					L1	L2	L2	L2	L1	L2	L3	L3	L3	F2	F1	F1		F1
25	F2		F1		F2	F2				CL11							C1	C1	C2	F2	F2	F2	F3	F4
26	F3	F2	F2	F3						C1								L1	L2	F1	F2	F2		F2
27	F2	F3	F3		F2		H1	L1		C2	C1	L1	L2	CL11	H1	L1		R1					F1	F2
28									H1		C1	C2	C1	L1			L1		L1	F2	F2		F2	F2
29							H1			L1	L1	L1		L1	L3	L3	L2	L1	L1	F3	F1			
30				F1	F2	F1	L1	L1	L1				H1		L1	C1	C1		L2	F1	F2		F3	
31	F3	F3	F3	F1	F2			HL11	CL11	H2	C2	C1	C1	C1	C1	C2	L2	L2	LC31	FF21	F3	F2	F2	F2
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
U Q																								
L Q																								

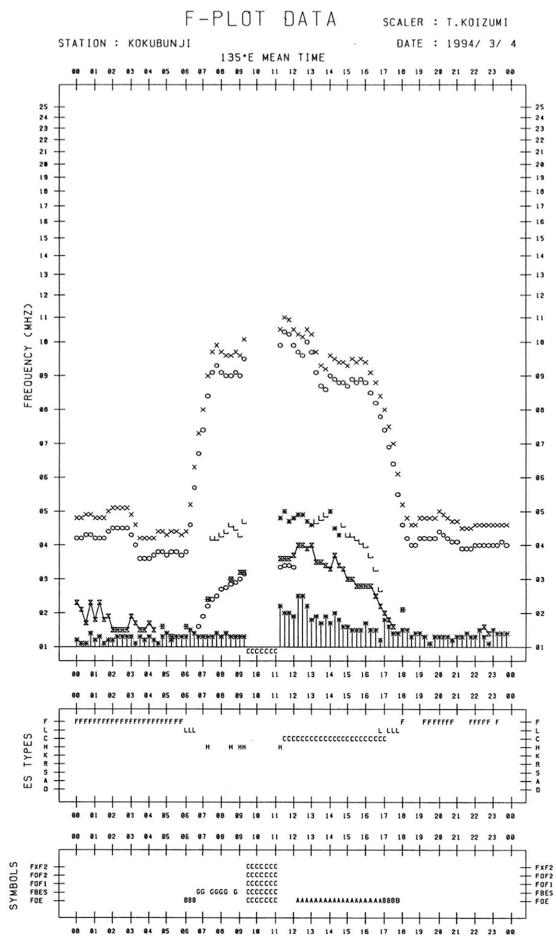
f-PLOTS OF IONOSPHERIC DATA

KEY ØF F-PLØT	
|	SPREAD
⬡	FØF2,FØF1,FØE
×	FXF2
✳	DØUBTFUL FØF2,FØF1,FØE
⌛	FBES
∟	ESTIMATED FØF1
↑,Y	FMIN
∧	GREATER THAN
∨	LESS THAN


F-PLOT DATA
SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/ 1
135°E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/ 3
135°E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/ 2
135°E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/ 4
135°E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

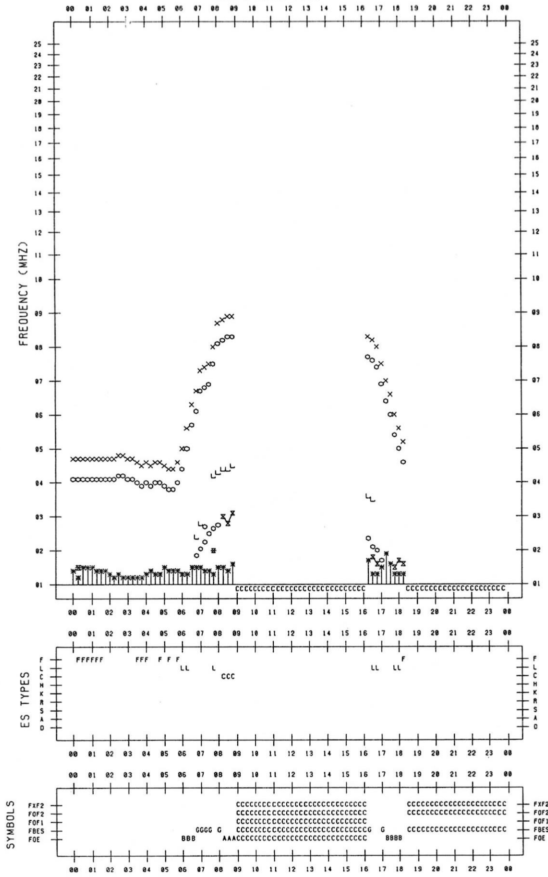
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/ 5

135°E MEAN TIME



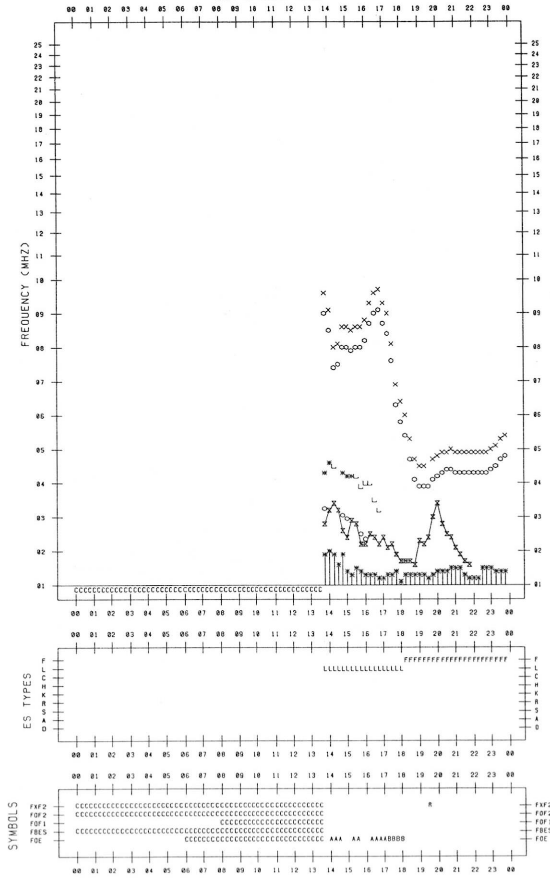
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/ 6

135°E MEAN TIME



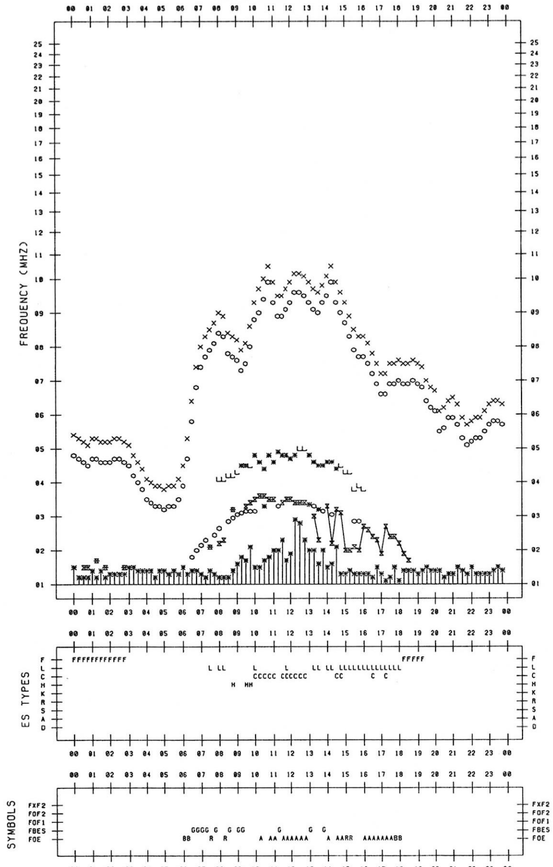
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/ 7

135°E MEAN TIME



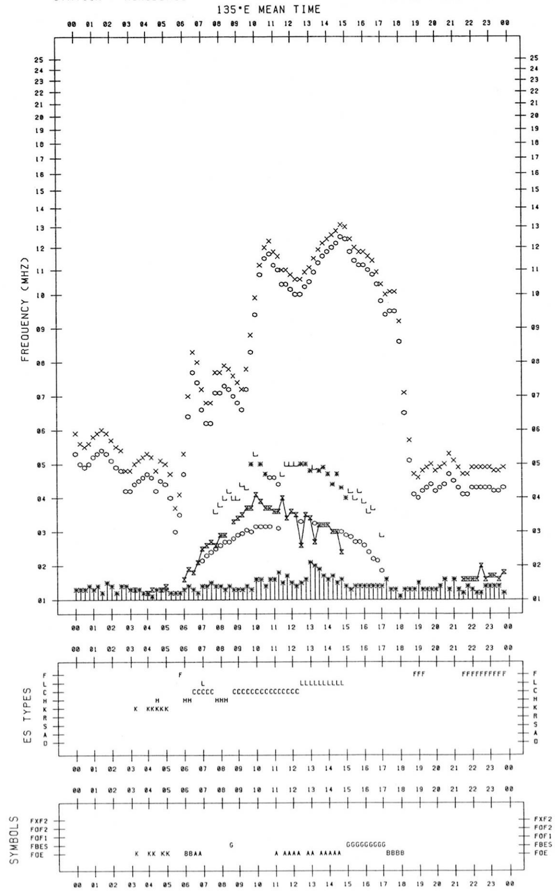
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/ 8

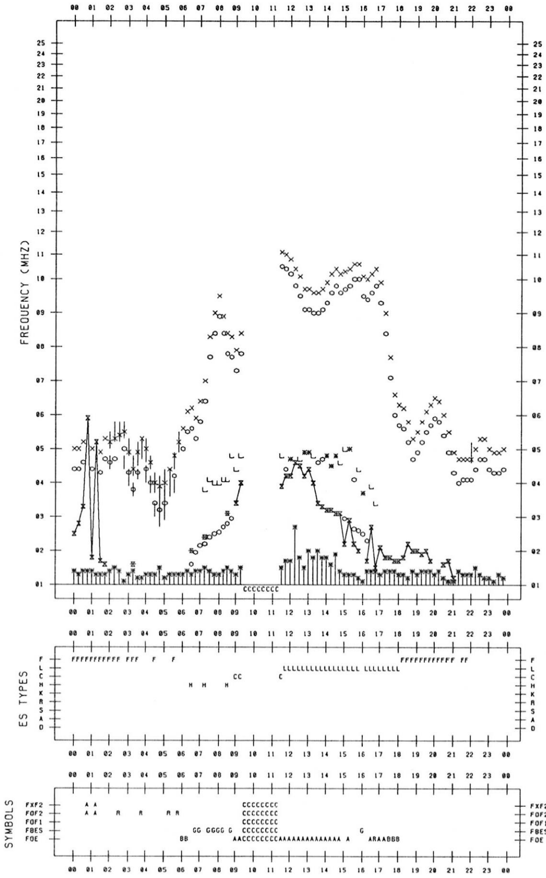
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/ 9

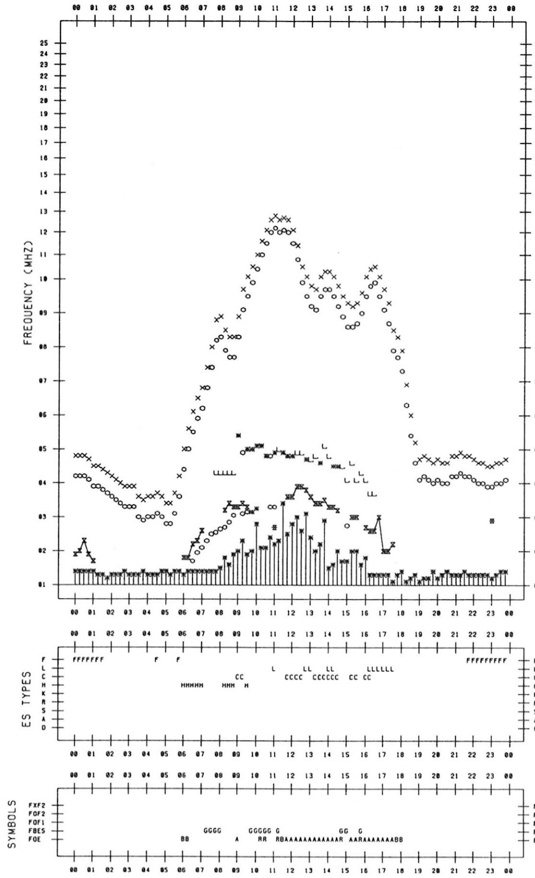
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/11

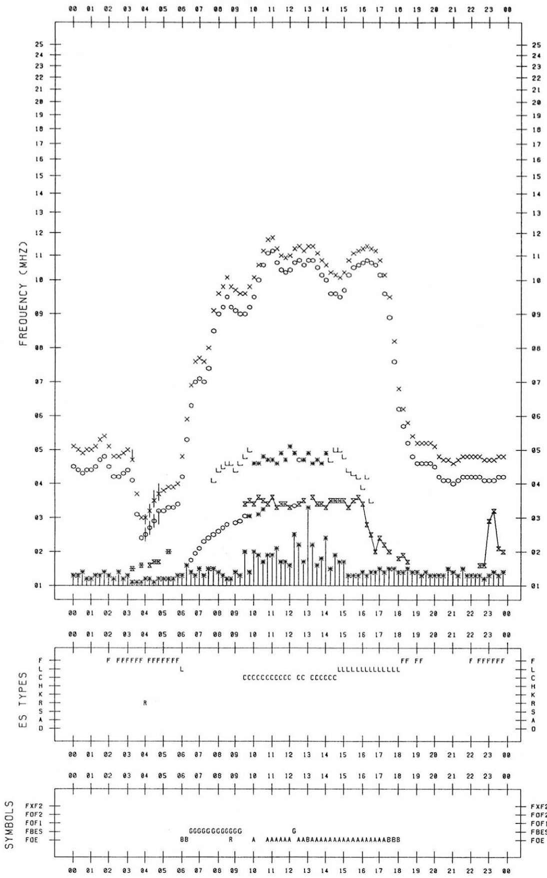
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/10

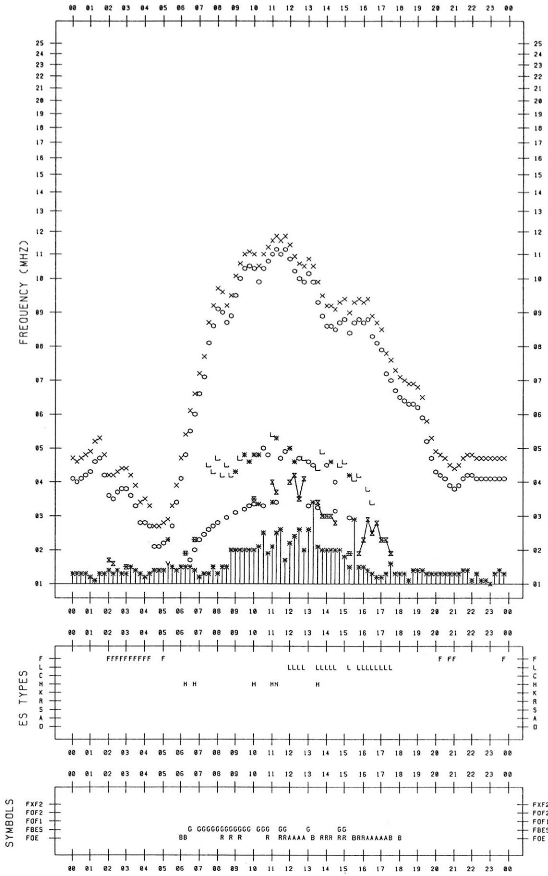
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

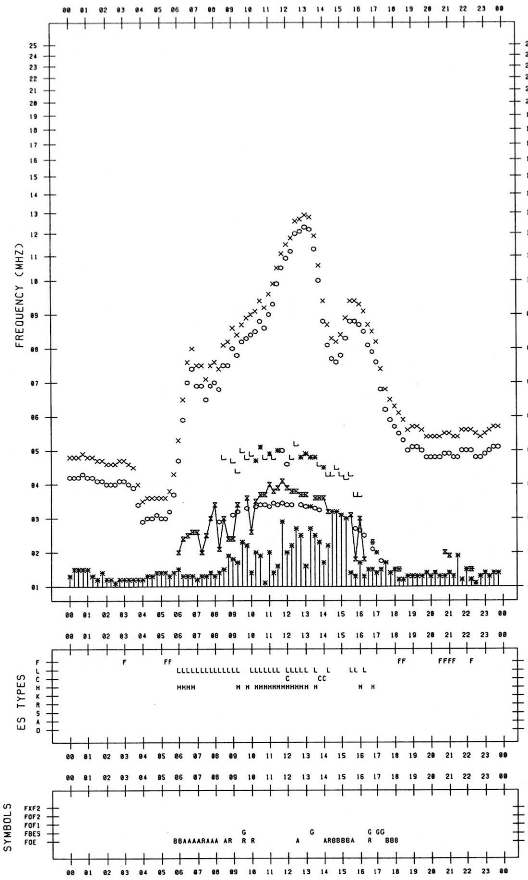
STATION : KOKUBUNJI DATE : 1994/ 3/12

135°E MEAN TIME



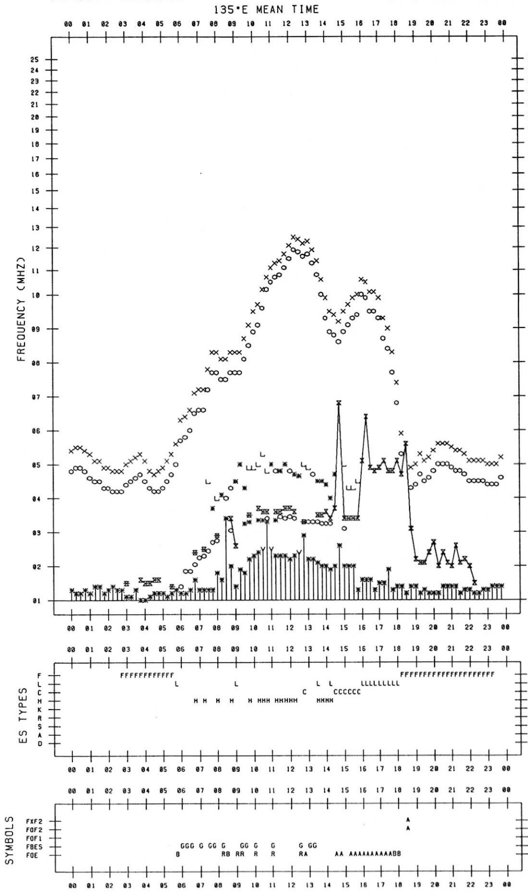
F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/13



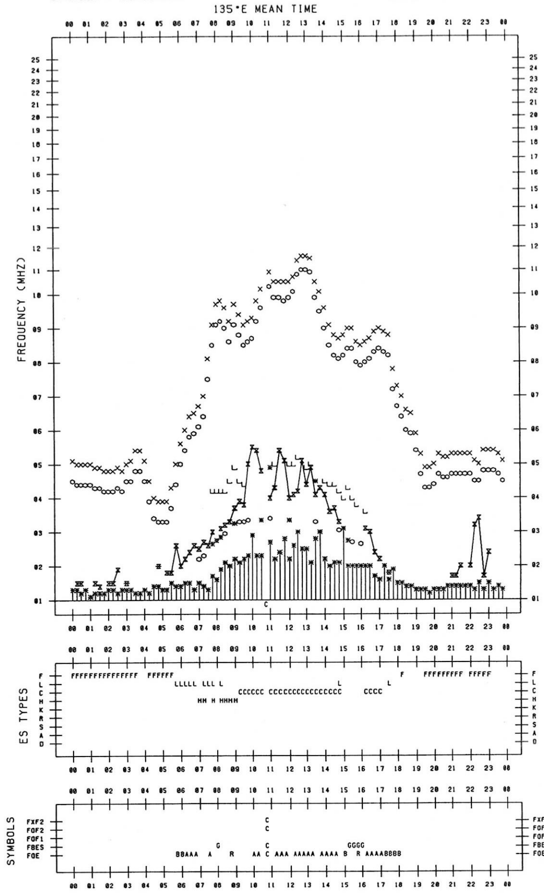
F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/14



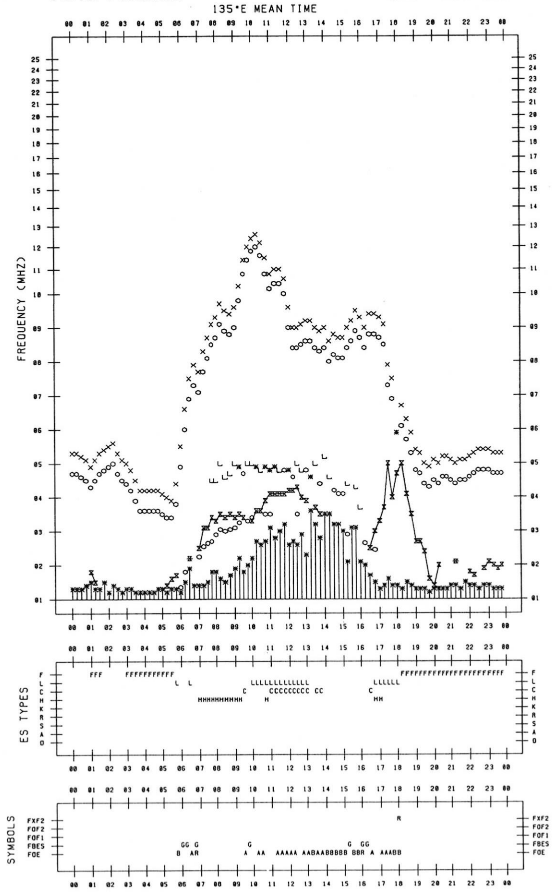
F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/15

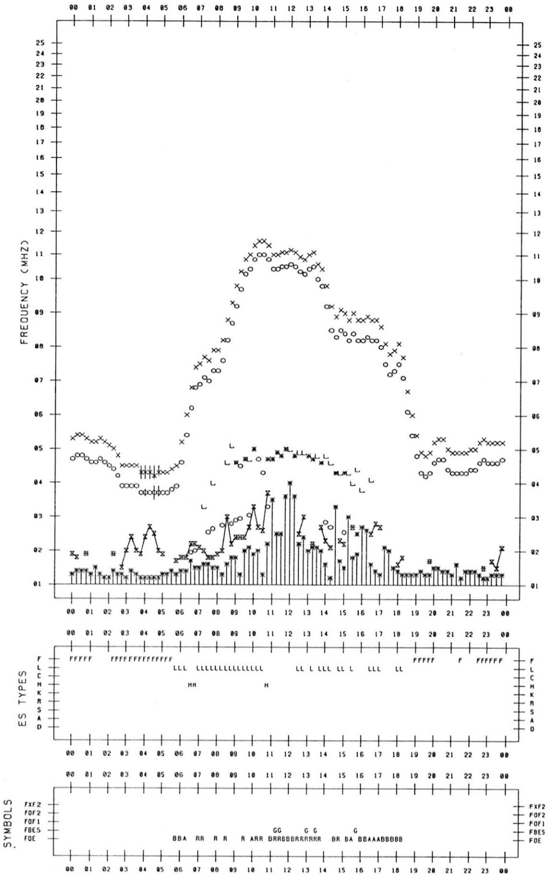


F-PLOT DATA SCALER : T.KOIZUMI

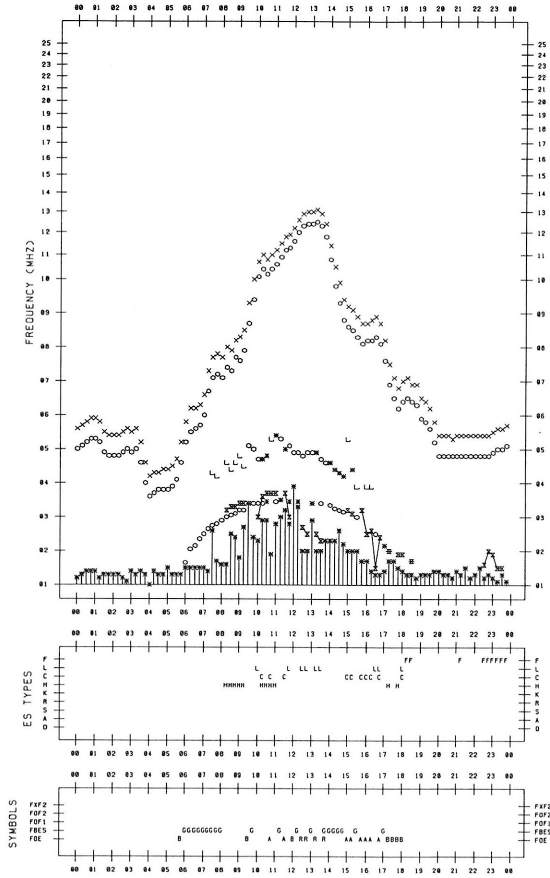
STATION : KOKUBUNJI DATE : 1994/ 3/16



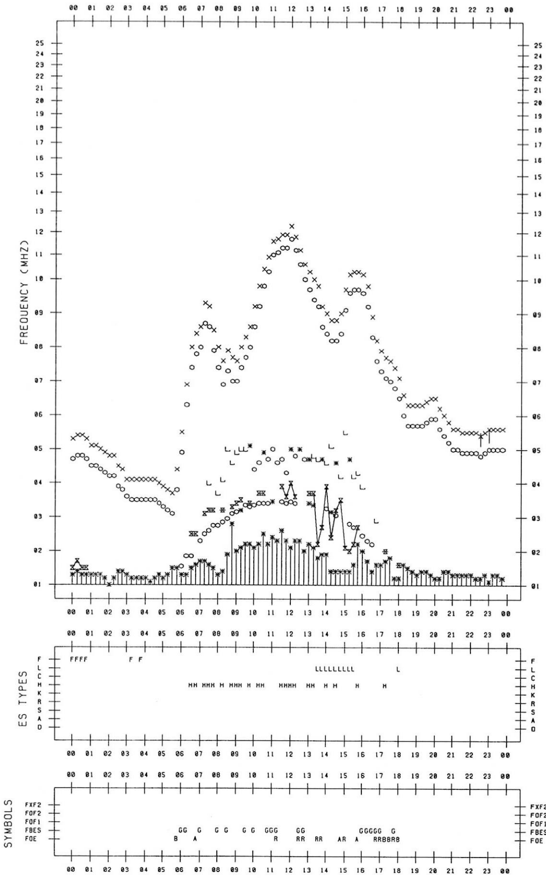
F-PLOT DATA SCALER : T.KOIZUMI
STATION : KOKUBUNJI DATE : 1994/ 3/17
135°E MEAN TIME



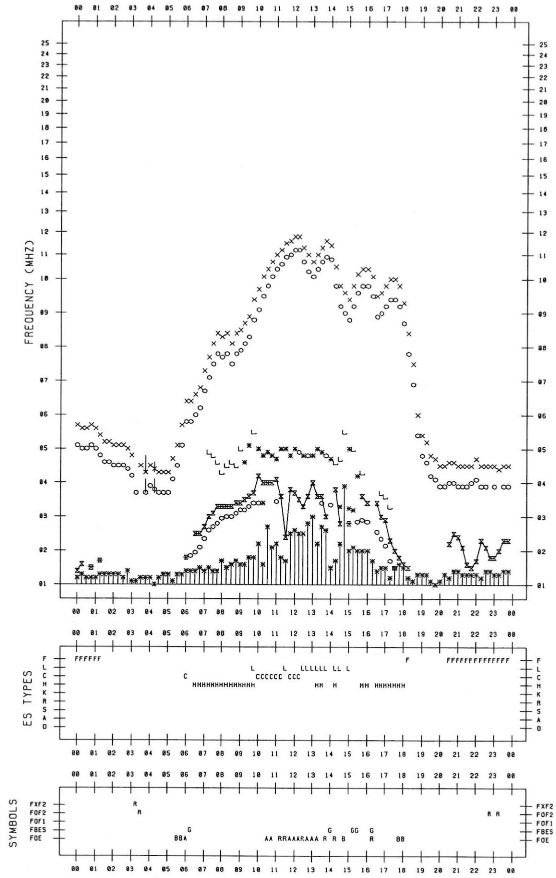
F-PLOT DATA SCALER : T.KOIZUMI
STATION : KOKUBUNJI DATE : 1994/ 3/19
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI
STATION : KOKUBUNJI DATE : 1994/ 3/18
135°E MEAN TIME

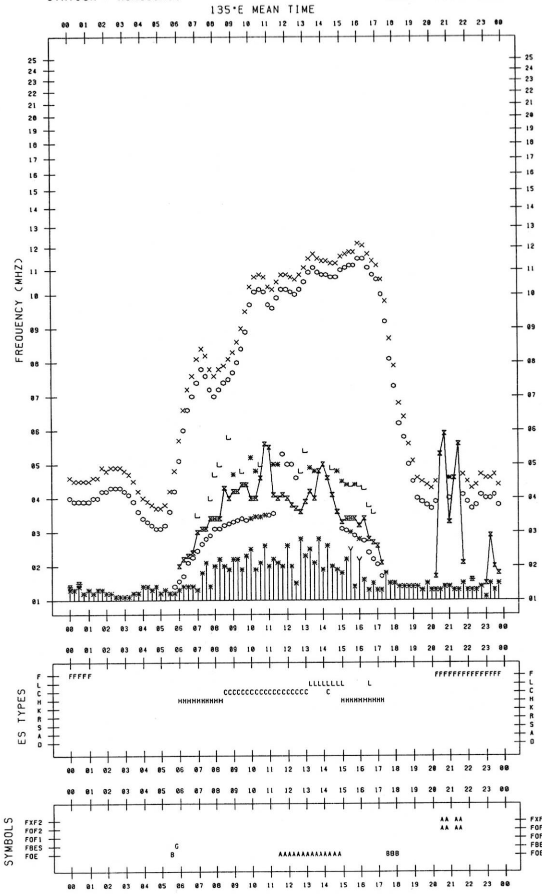


F-PLOT DATA SCALER : T.KOIZUMI
STATION : KOKUBUNJI DATE : 1994/ 3/20
135°E MEAN TIME



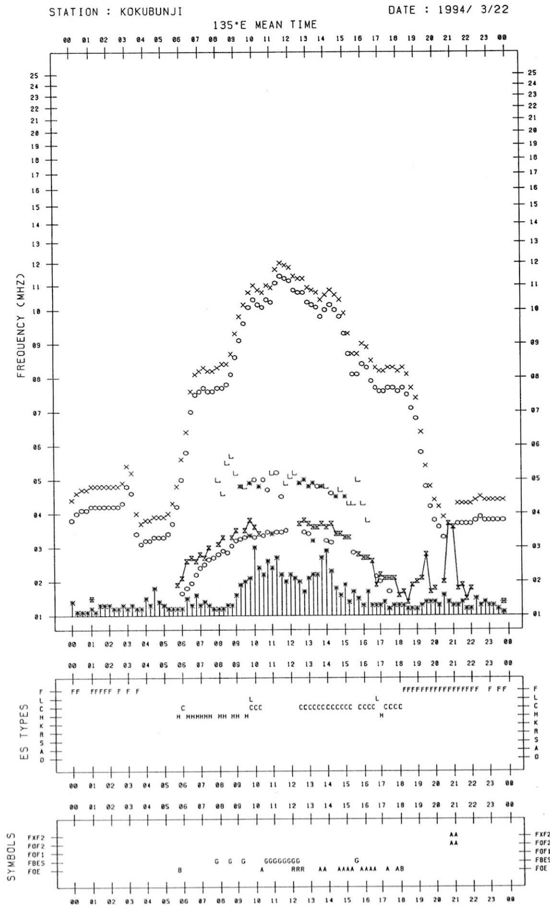
F-PLOT DATA

SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/21



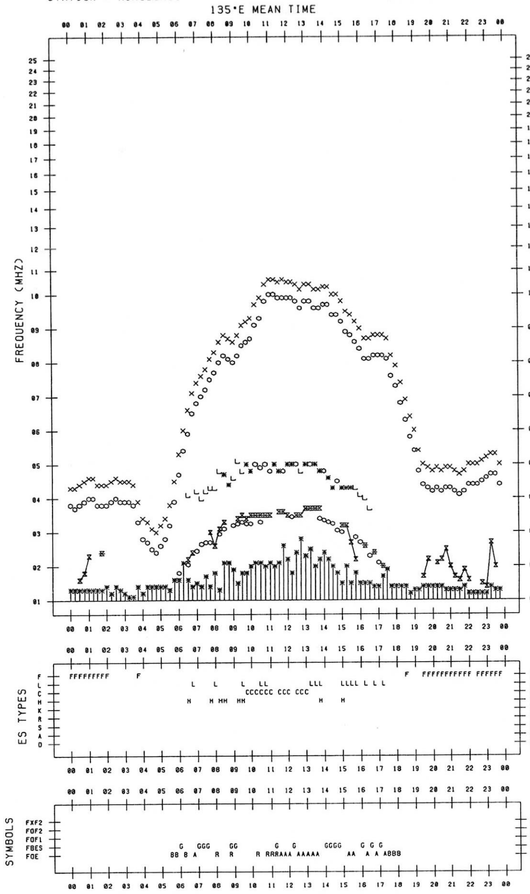
F-PLOT DATA

SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/22



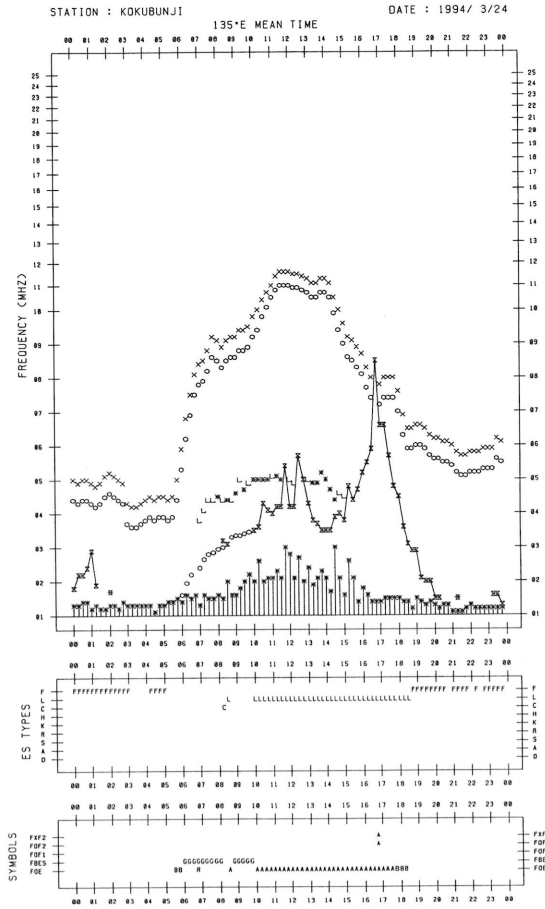
F-PLOT DATA

SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/23



F-PLOT DATA

SCALER : T.KOIZUMI
STATION : KOKUBUNJI
DATE : 1994/ 3/24



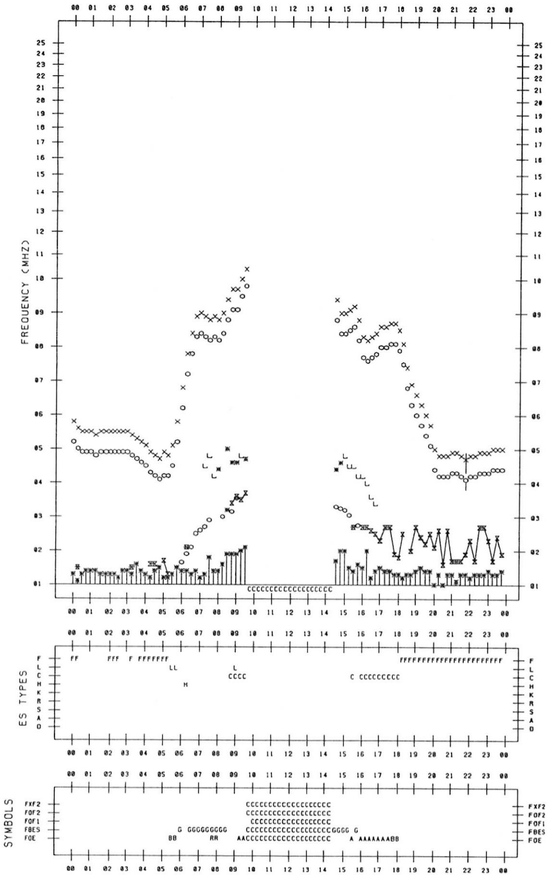
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/25

135°E MEAN TIME



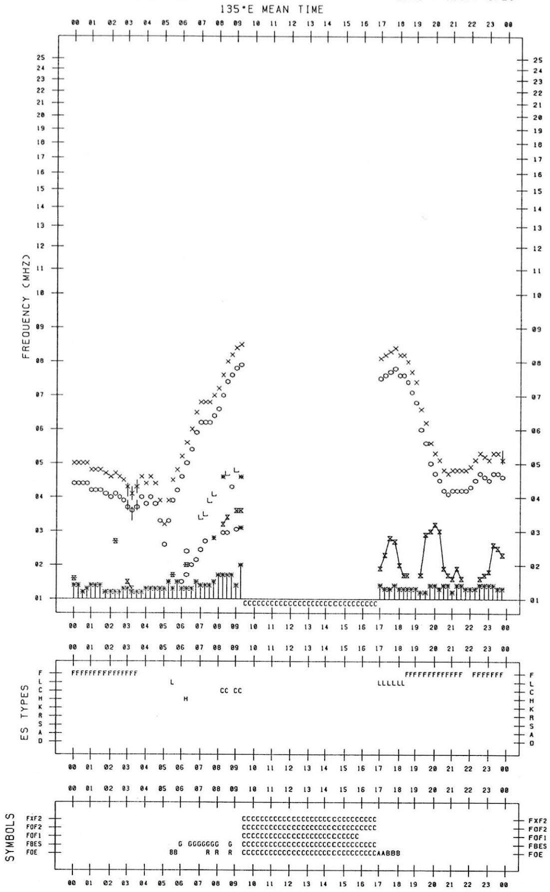
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/26

135°E MEAN TIME



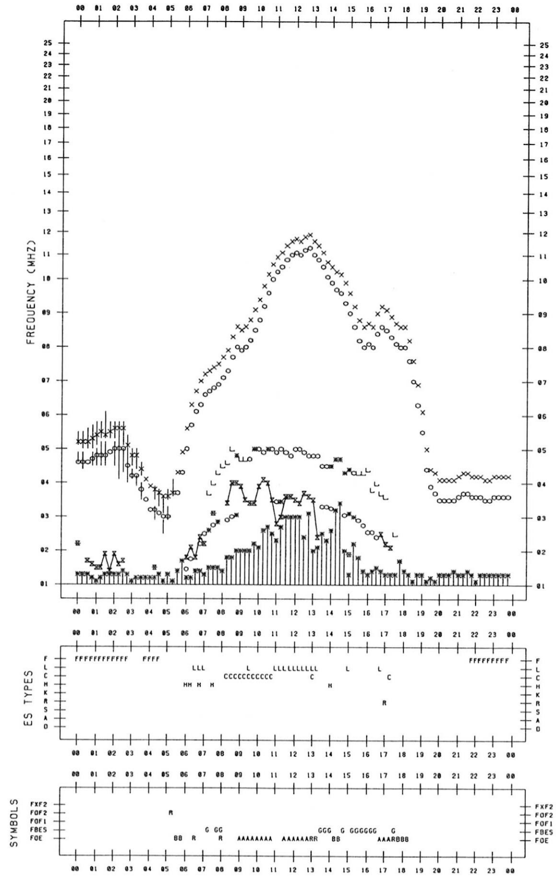
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/27

135°E MEAN TIME



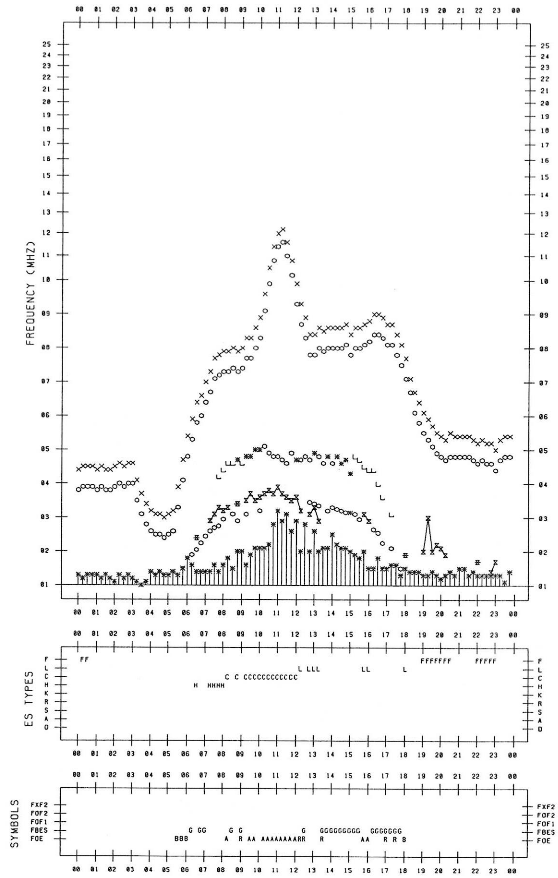
F-PLOT DATA

SCALER : T.KOIZUMI

STATION : KOKUBUNJI

DATE : 1994/ 3/28

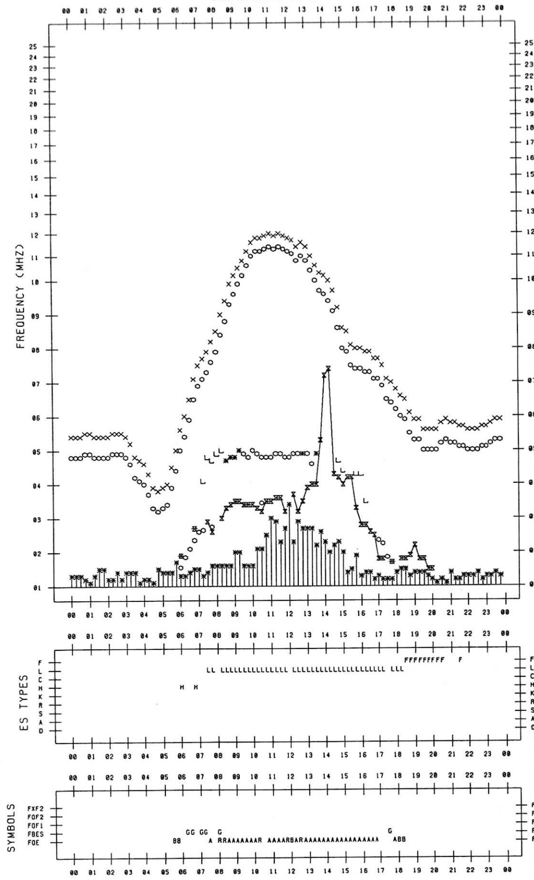
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/29

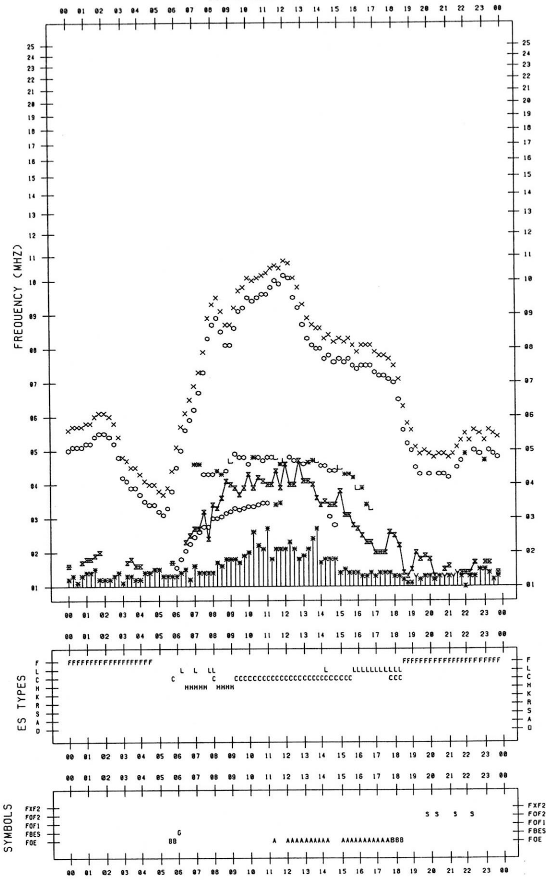
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/31

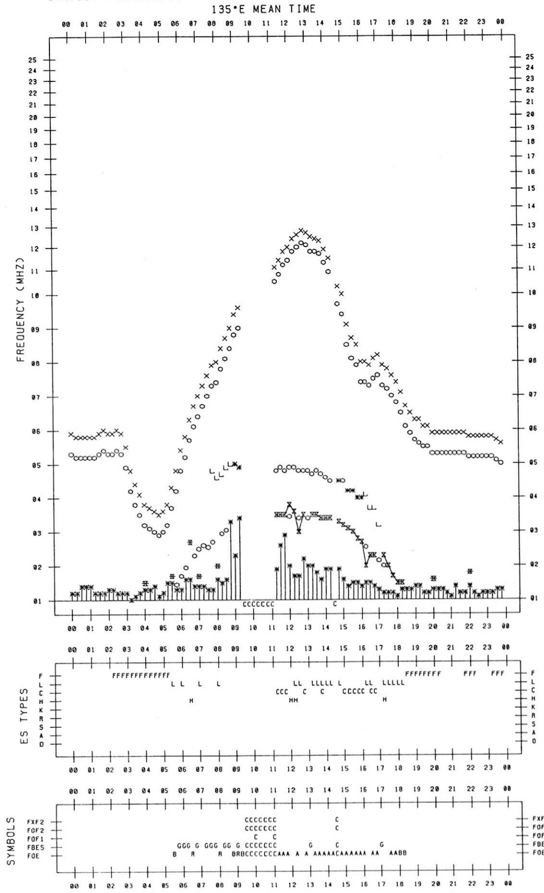
135°E MEAN TIME



F-PLOT DATA SCALER : T.KOIZUMI

STATION : KOKUBUNJI DATE : 1994/ 3/30

135°E MEAN TIME



B. Solar Radio Emission

B1. Daily Data at Hiraiso

200 MHz

Not available until system improvement is completed.

B. Solar Radio Emission

B1. Daily Data at Hiraiso

500 MHz

Hiraiso March 1994

Single-frequency total flux observations at 500 MHz					
Flux density: $10^{-22}Wm^{-2}Hz^{-1}$					
UT	00-03	03-06	06-09	21-24	Day
Date					
1	37	36	36	37	36
2	37	37	36	36	37
3	36	35	35	36	36
4	36	35	35	35	36
5	34	34	35	35	34
6	34	34	35	34	34
7	34	33	33	32	33
8	32	31	32	32	32
9	32	32	33	32	32
10	33	33	33	33	33
11	32	32	32	33	32
12	32	32	32	33	32
13	32	32	32	32	32
14	32	32	31	32	32
15	32	32	32	33	32
16	32	32	32	33	32
17	33	33	33	34	33
18	34	34	34	34	34
19	34	34	34	34	34
20	34	34	34	35	34
21	34	35	34	36	35
22	36	35	35	35	36
23	35	35	35	37	35
24	37	36	37	37	37
25	37	36	36	36	36
26	35	35	35	35	35
27	34	35	35	35	35
28	34	35	34	35	35
29	35	35	34	35	35
30	35	35	34	34	35
31	34	33	34	34	34

B. Solar Radio Emission

B2. Outstanding Occurrences at Hiraiso

Hiraiso | March 1994

Single-frequency observations

Normal observing period: 2050 - 0850 U.T. (sunrise to sunset)

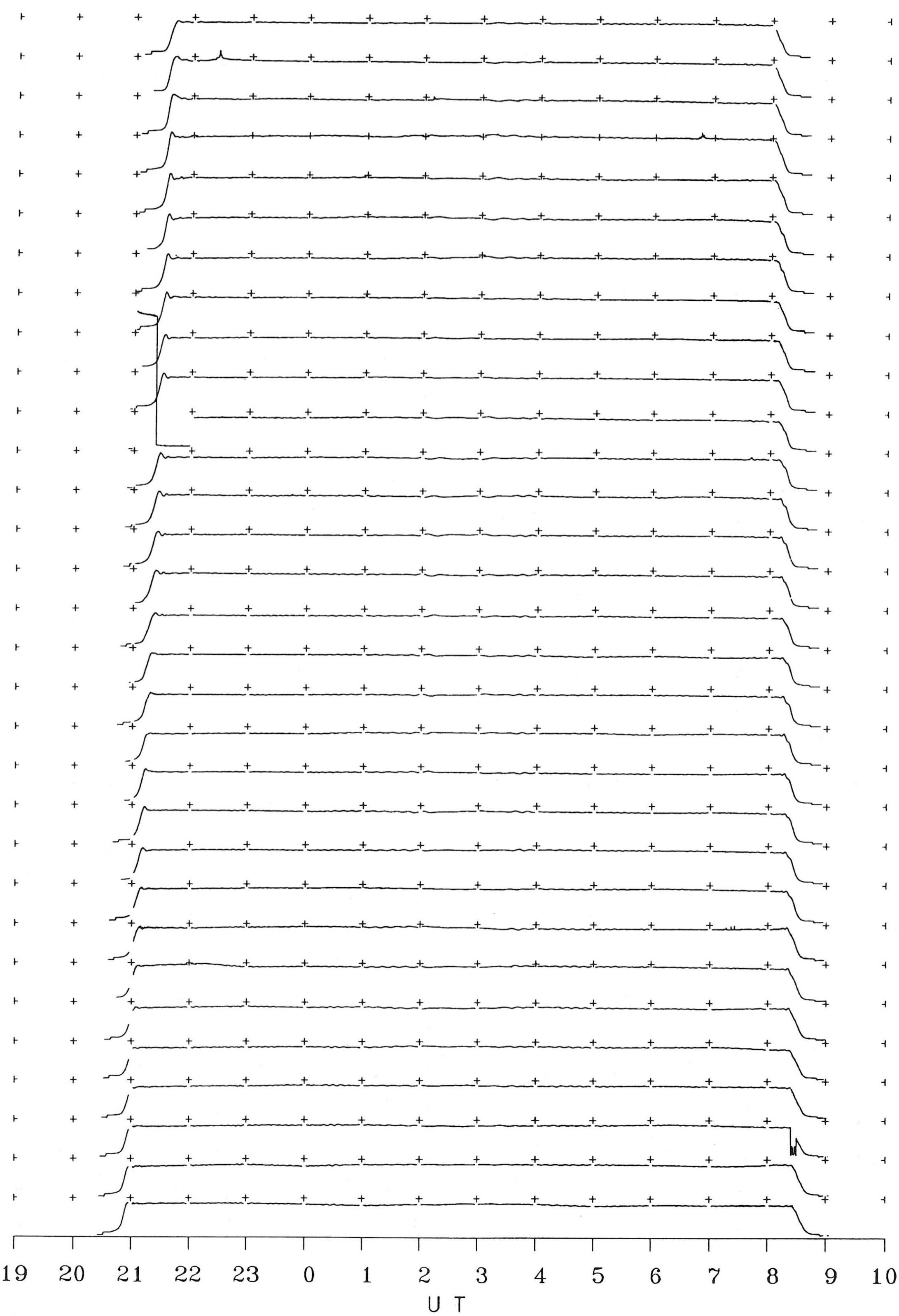
FEB. 1994	FREQ. (MHz)	TYPE	START TIME (U.T.)	TIME OF MAXIMUM (U.T.)	DUR. (MIN.)	FLUX DENSITY ($10^{-22}Wm^{-2}Hz^{-1}$) PEAK	FLUX DENSITY MEAN	POLARIZATION REMARKS
1	2800	21 GRF	2214.5	2224.6	37	11	4	0
	500	41 F	2224.3	2224.6	2.5	3	-	0
	2800	3 S	2225.2	2226.1	2.5	16	8	0
3	2800	45 C	0208.3	0208.6	1.0	7	4	0
	500	42 SER	2317.8	2318.8	2.0	48	-	0
	2800	8 S	2318.0	2318.0	0.3	8	-	0
6	500	46 C	0537.0	0537.4	1.0	7	5	WL
12	500	46 C	0012.3	0012.5	1.0	45	7	0
	2800	1 S	0738.5	0740.6	3.0	10	4	0
15	500	8 S	0353.1	0353.1	0.5	8	-	WR
16	500	46 C	0721.6	0721.8	1.0	32	15	0
17	500	41 F	0500.0	0509.6	11	45	-	0

B. Solar Radio Emission

B3. Summary Plots of $F_{10.7}$ at Hiraiso

March 1994

DAY at 0h UT	$F_{10.7}$ at 3h UT
1	89.7
2	90.0
3	95.3
4	105.3
5	94.0
6	92.9
7	97.0
8	91.2
9	90.3
10	90.6
11	89.6
12	84.1
13	89.7
14	91.4
15	88.1
16	84.4
17	84.9
18	85.6
19	87.2
20	85.6
21	88.3
22	88.8
23	90.4
24	92.2
25	91.8
26	87.0
27	89.1
28	88.5
29	86.1
30	88.2
31	88.2



Note: A vertical grid space corresponds to a 100 sfu.
Elevation angle range ≧ 6°.

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWV)

MAR 1994 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT DAY	00H 17M	01H 17M	02H 17M	03H 17M	04H 17M	05H 17M	06H 17M	07H 17M	08H 17M	09H 17M	10H 17M	11H 17M	12H 17M	13H 17M	14H 17M	15H 17M	16H 17M	17H 17M	18H 17M	19H 17M	20H 17M	21H 17M	22H 17M	23H 17M
1	-9	ES -18	-2	-5	ES -27	ES -27	-12	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-3	ES -27	-12	-6	-2	-9
2	-8	-6	-2	1	-3	ES -18	ES -12	ES -9	ES -6	ES -1	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	9	ES -27	ES -27	-12	-8	-9
3	-6	-6	-1	-1	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-1	-9	ES -27
4	-4	-1	-3	-3	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	-9	ES -30	ES -30	ES -30	ES -30	ES -21	ES -4	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-5	-9	2	-7
12	-11	-9	-15	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	1	-4	1
13	-7	-7	-26	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-12	-9	-4	-4
14	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-16	3	-7	-9
15	-12	-10	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-6	ES -29	ES -8	-10
16	-8	-20	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-11	-14
17	-20	-20	-11	-6	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-14	-14	-14	-17
18	ES -29	C	C	C	C	C	C	ES -11	ES 7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-6	-14	-8
19	-20	-20	-6	-10	ES -29	ES -29	ES -29	-20	-14	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-11	-8	2	-8
20	-17	-20	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-23	-10	-14	-14
21	-14	-16	-8	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-14	ES -29
22	-8	-8	-12	-20	-7	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-14	-25	ES -29
23	-7	-6	-5	5	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-7	-3	4
24	1	-3	-6	-3	-6	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-6	ES -27	ES -27	-6
25	-1	-1	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -26	ES -26	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-12	-6	-14	-6
26	-6	-6	-6	4	-6	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-14	ES -27	ES -27	-12	-3	ES -27	-6	-1	-3	-3
27	-3	-3	-3	-2	7	ES -27	ES -27	ES -27	-12	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-3	-1	-1	-1
28	-1	0	-3	-1	ES -27	-12	ES -27	ES -27	ES -27	ES -26	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-12	4	-3	ES -27	-18	ES -27	-1	4
29	-3	-12	-1	2	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-2	-5	-12	ES -27	-5	-2	4	-3
30	2	-3	-6	-2	ES -27	-18	-9	ES -27	-18	S	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES	-2	-3	1
31	2	-1	ES -27	ES -27	-18	ES -27	ES -27	ES -27	-6	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-12	-1	-6	-8
CNT	24	23	24	24	24	24	24	25	25	24	25	25	25	25	25	25	25	25	24	24	23	24	24	24
MED	-8	-7	-7	-6	ES -27	ES -27	ES -27	ES -27	ES -27	ES -28	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -28	ES -28	-14	-8	-6	-8
UD	2	-1	-1	4	-3	-18	-12	ES -20	ES -6	ES -26	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-12	-3	ES -27	-5	1	2	4
LD	ES -29	ES -20	ES -29	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -29	ES -29	ES -25	ES -29

C. RADIO PROPAGATION

C1. H.F. FIELD STRENGTH (UPPER SIDE-BAND OF WWVH)

MAR 1994 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT / DAY	00H 46M	01H 46M	02H 46M	03H 46M	04H 46M	05H 46M	06H 46M	07H 46M	08H 46M	09H 46M	10H 46M	11H 46M	12H 46M	13H 46M	14H 46M	15H 46M	16H 46M	17H 46M	18H 46M	19H 46M	20H 46M	21H 46M	22H 46M	23H 46M
1	5	5	8	4	9	11	-6	ES -27	ES -27	-21	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	1	9	8	2
2	-1	1	5	5	6	4	-2	-6	ES -1	-12	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-1	5	5	1
3	5	-2	2	3	17	-1	11	9	14	-9	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	5	-9	5	6	-2	-2
4	-2	-1	4	5	15	16	5	1	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	C	C	C	C	C	C
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	6	9	9	6	-9	6	-21	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-12	3	10	2	3
12	2	1	2	9	9	11	6	-11	-4	-12	-7	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	8	11	4	-3
13	-3	-4	3	6	9	1	3	-3	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-15	ES -30	ES -30	ES -30	ES -30	-4	-4	1	6	-7
14	2	-3	2	6	9	9	-2	-15	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	-4	15	-2	3	0
15	-2	-3	-3	3	11	4	6	ES -29	ES -29	-1	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-9	-2	0	4	3	2
16	1	0	5	7	4	7	7	-14	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	4	-6	4	4	4
17	-1	-6	-1	4	6	9	2	-11	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-8	9	1	5	-2
18	4	C	C	C	C	C	C	-2	-10	-14	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	7	4	7	2
19	-20	1	9	7	15	15	12	-14	ES -10	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-10	9	1	1	-2
20	-6	2	0	6	8	14	12	2	-10	ES -29	ES -29	ES -29	ES -29	-6	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	3	-7	-3	-5
21	2	0	-2	3	8	14	14	14	ES -29	-20	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	-6	-6	-10	-3
22	-1	-7	-3	2	4	10	-10	-14	-20	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	ES -29	2	-2	-10	-3
23	-1	4	4	9	9	12	12	-12	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-6	-3	8	4	-1
24	7	-1	7	9	12	9	9	-12	ES -27	-12	4	-12	ES -27	-5	ES -27	ES -27	ES -27	ES -27	ES -27	4	4	4	-4	-1
25	-3	-3	0	7	14	17	14	-1	-6	-12	ES -26	ES -26	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	5	-1	4	-1	3
26	-3	-3	-1	9	11	20	14	-12	-6	-1	4	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	14	-1	4	-1	5
27	-2	0	1	9	11	19	12	-6	ES -6	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	6	2	9	4	-3
28	-3	2	4	4	4	13	14	-1	-3	-12	ES -27	ES -27	-5	ES -27	-18	ES -27	ES -27	-12	ES -27	7	2	11	-1	4
29	1	4	7	9	9	12	12	-12	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-2	-1	4	-1
30	-1	-1	2	9	14	15	17	-12	S	7	7	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	2	-6	0	2	-1
31	-1	-1	4	9	9	14	17	17	10	ES -27	ES -27	ES -27	ES -27	-2	ES -27	ES -27	ES -27	4	-3	-14	-3	-3	-1	-7
CNT	24	23	24	24	24	24	24	25	24	25	25	25	25	25	25	25	25	25	24	24	24	24	24	24
MED	-1	-1	2	6	9	12	10	-11	ES -20	US -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	ES -27	-8	2	4	2	-1
UD	5	4	8	9	15	19	17	9	10	-1	4	ES -27	ES -27	-6	ES -27	ES -27	ES -27	ES -27	-3	7	9	11	7	4
LD	-6	-6	-3	3	4	1	-9	-15	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -30	ES -29	-6	-6	-10	-7

C. Radio Propagation

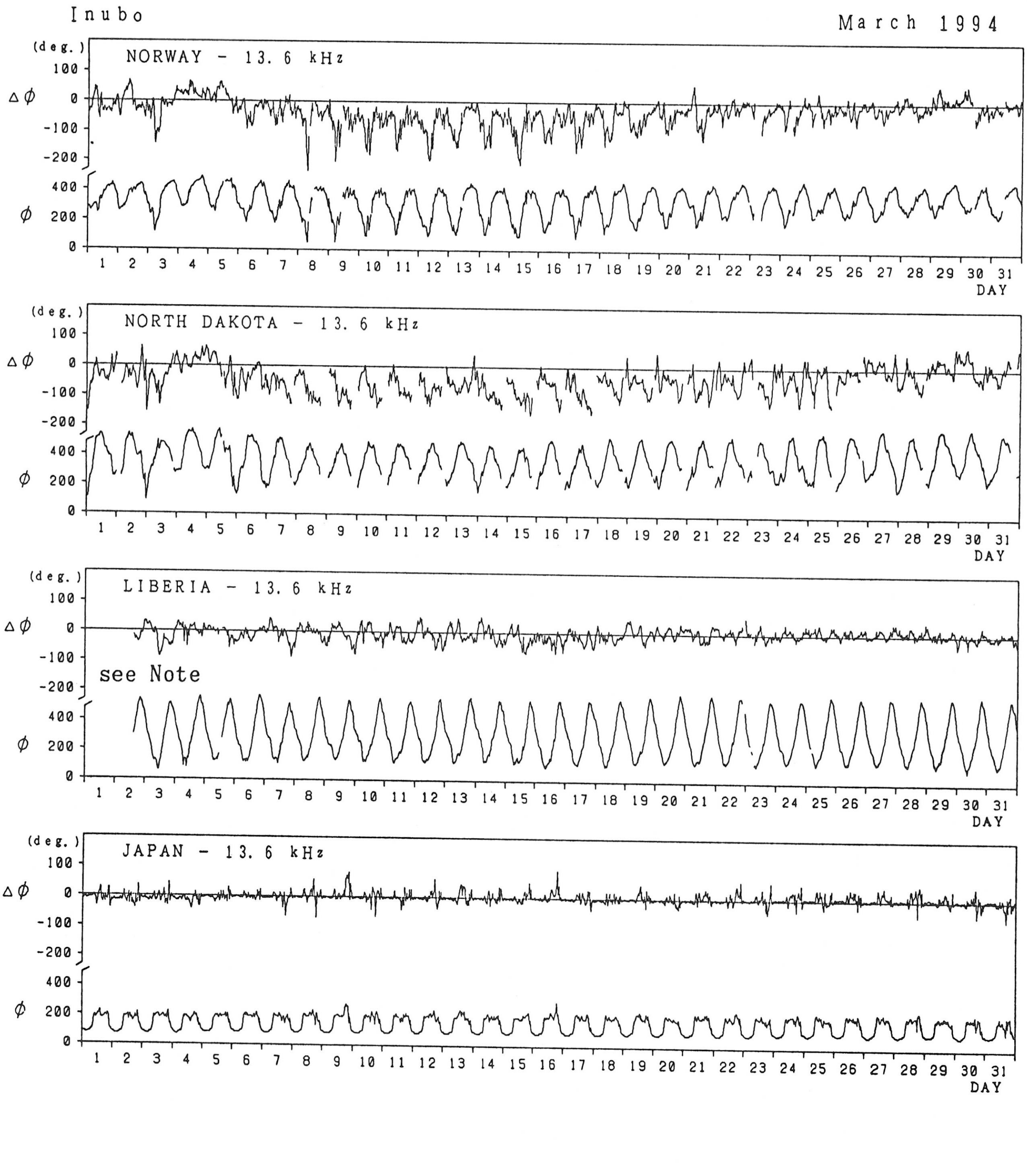
C2. Radio Propagation Quality Figures at Hiraiso

Hiraiso　　　　　　　　　　　　Time in U.T.

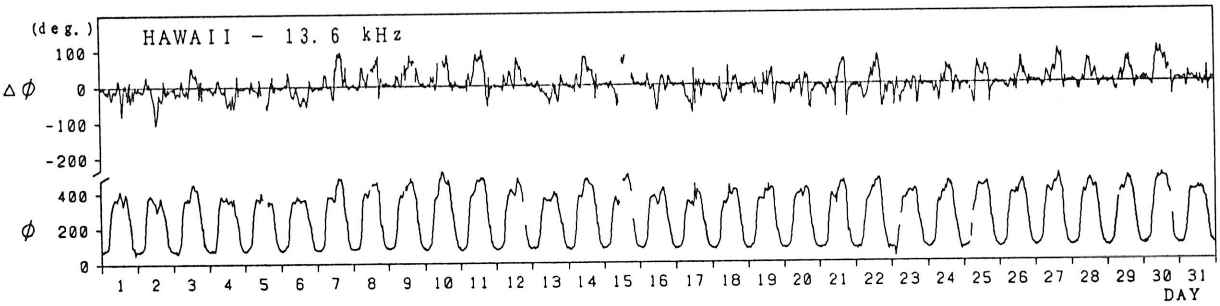
MAR. 1994	Whole Day Figure	WWV 00-06	WWV 06-12	WWV 12-18	WWV 18-24	WWVH 00-06	WWVH 06-12	WWVH 12-18	WWVH 18-24	Condition 00-06	Condition 06-12	Condition 12-18	Condition 18-24	Principal Geomagnetic Storms Start h m	End h	Range nT
1	4- U	4U	-	-	4	4	3U	-	4	N	N	N	N			
2	4o	4	-	-	4	4	4	-	4	N	N	N	N			
3	4-	4	-	-	3U	4	4	-	4	N	N	N	N			
4	4o U	4	-	-	C	4	4U	-	C	N	N	N	N			
5	C	C	C	C	C	C	C	C	C	N	N	N	N			
6	C	C	C	C	C	C	C	C	C	N	N	N	N	22.1	----	111
7	C	C	C	C	C	C	C	C	C	N	N	N	N	----	----	
8	C	C	C	C	C	C	C	C	C	N	N	N	N	----	----	
9	C	C	C	C	C	C	C	C	C	U	U	U	U	----	----	
10	C	C	C	C	C	C	C	C	C	U	U	U	U	----	----	
11	4-	3U	-	-	4	3	4	-	4	U	U	U	U	----	24	
12	4o U	3U	-	-	4U	4	5U	-	4	U	U	U	U			
13	4- U	3U	-	-	4	4	4U	-	4	U	U	U	U			
14	4- U	2U	-	-	4	4	4U	-	4	N	N	N	N			
15	4- U	3U	-	-	4U	4	4U	-	4	N	N	N	N			
16	4- U	3U	-	-	3U	4	4U	-	4	N	N	N	N			
17	4-	3U	-	-	3U	4	4U	-	4	N	N	N	N			
18	4- U	C	-	-	3U	C	5U	-	3	N	N	N	N			
19	4o	3	-	5U	4	4	4U	-	4	N	N	N	N			
20	3+ U	2U	-	-	3	4	4U	-	3	N	N	N	N			
21	3+ U	3	-	-	2U	4	5U	-	3	N	N	N	N			
22	3o U	4	-	-	2U	3	3U	-	3	N	N	N	N			
23	4o U	4	-	-	4U	4	4U	-	4	N	N	N	N			
24	4+ U	4	-	-	4U	4	5U	-	4	N	N	N	N			
25	4o U	3U	-	-	4	4	5U	-	4	N	N	N	N			
26	4+	4	-	5U	4	4	5U	-	4	N	N	N	N			
27	4+	4	-	-	5	4	4U	-	4	N	N	N	N			
28	5-	5	-	5U	4	4	5U	5U	4	N	N	N	N			
29	4+	4	-	5U	5	4	4U	-	3	N	N	N	N			
30	4+	4	5U	-	4	4	5U	-	4	N	N	N	N			
31	4+	4	-	-	4	4	5U	5U	3	N	N	N	N			

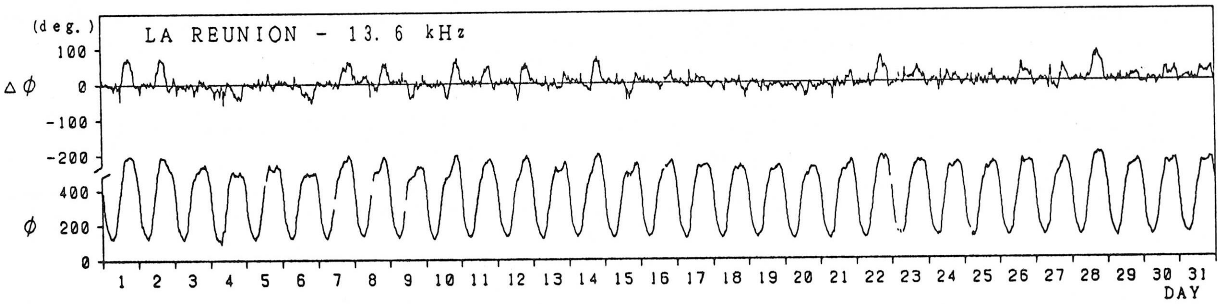
C. Radio Propagation

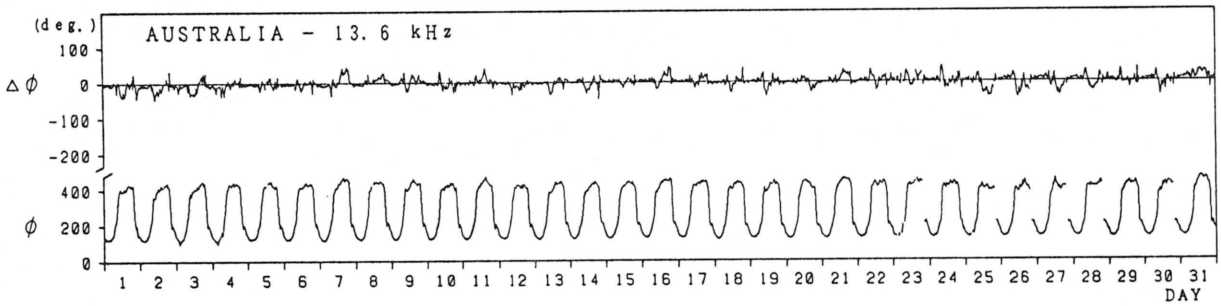
C3. Phase Variation in OMEGA Radio Waves at Inubo

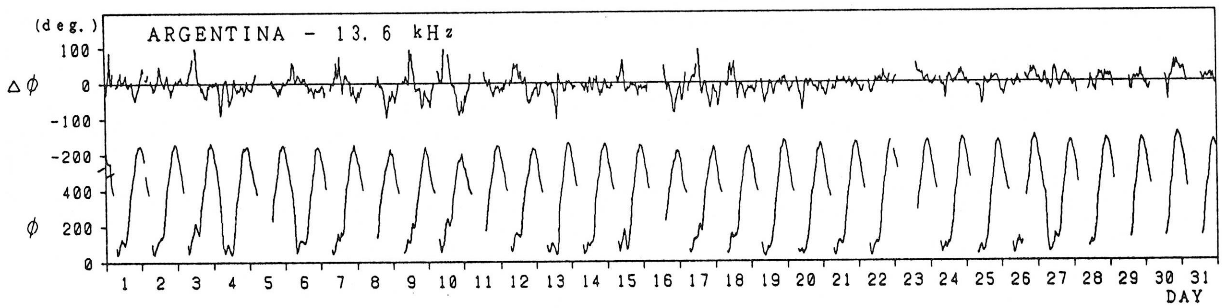


Inubo March 1994









Note : As for LIBERIA-13.6kHz, no record during 24 January 0820 UT - 2 March 1500 UT, due to the maintenance of transmitter.

Polar Cap Phase Anomaly (PCPA) on Norway-Inubo Circuit

<u>NONE</u>

C. Radio Propagation

C4. Sudden Ionospheric Disturbance

(a) Short Wave Fade-out (SWF) at Hiraiso

Hiraiso

Time in U.T.

MAR. 1994	S W F							Correspondence	
	Drop-out Intensities(dB)					Start	Dur.	Type	Imp.	Solar * Flare	Solar Burst
	CO HA AUS MOS BBC										
3	8					0208	22	1 S	1-	x	C

NOTE CO:Colorade(WWV) HA:Hawaii(WWVH) AUS:Australia MOS:Moscow BBC:London
* Optical and X-ray Flares

(b) Sudden Phase Anomaly (SPA) at Inubo

Inubo

Mar. 1994	S P A								
	Phase Advance (degrees)						Time (U.T.)		
Date	Ω/N	Ω/L	Ω/LR	Ω/AU	Ω/H	Ω/ND	Start	End	Maximum
1		–		27	27		2224	2315	2232
2		–		12	12		2306	2337	2312
3	32	29	66	40	36	19	0208	0305	0216
3			14	8	4	20	0336	0403	0346
3		15					1238	1250	1240
3		44					1310	1338	1317
4				9	7		0147	0208D	0152
4			19	15	10		0206	0238D	0216
4			11	8	7		0238E	0259	0245
4	6		11	10	5		0302	0315D	0306
4	13		38	22	14		0315E	0358	0325
4		19	10	5			0611	0630	0617
4		68	53	31		15	0648	0736	0700
4		57	42				0920	1027	0939
4		31	12				1052	1130	1105
9					9	–	2135	2200	2141
12			14				0710	0759	0745
24	17			25	29	28	2205	2256	2221
30			18				0806	0833	0811

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