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IONOSPHERIC DATA IN JAPAN

FOR JUNE 1974

VOL. 26 No. 6

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RADIO RESEARCH LABORATORIES

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

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

Station	Geographic		Geomagnetic		Technical Method
	Latitude	Longitude	Latitude	Longitude	
Wakkanai	45° 23.6'N	141° 41.1'E	35.3°N	206.0	Vertical Sounding (I)
Akita	39° 43.5'N	140° 08.2'E	29.5°N	205.4	" (I)
Kokubunji	35° 42.4'N	139° 29.3'E	25.4°N	205.4	" (I)
Yamagawa	31° 12.1'N	130° 37.1'E	20.3°N	197.8	" (I)
Okinawa	26° 19.0'N	127° 46.8'E	15.3°N	195.6	" (I)
Hiraiso	36° 22.0'N	140° 37.5'E	26.2°N	206.3	Radio Receiving (S, P)
Inubo	35° 42.2'N	140° 51.5'E	26.0°N	206.8	" (P)

A. IONOSPHERE

Ionospheric observations are carried out at five stations in Japan by means of vertical sounding method.

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

All symbols and terminology in the table or figure of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition) 1972".

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 night *E* layers respectively

fbEs — Blanketing frequency of the *Es* layer, e.g. the lowest ordinary wave frequency visible through *Es*

*f*min — Lowest frequency which shows vertical ionospheric reflections

M(3000)*F2*, M(3000)*F1* — Maximum usable frequency factor a path of 3000 km for transmission 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 A.b.(iii)

b. Symbols

(i) Descriptive Letters

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

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 *f*min.

C — Measurement influenced by, or impossible because of, any nonionospheric 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 a night *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.

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-ionic component present.

(ii) Qualifying Letters

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

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-characteristic 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-ionic component.

(iii) Description of Types of *Es*

When more than one type of *Es* trace is present on the ionogram, the type for the trace used to determine *foEs* must be written first. The number of multiple traces 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 normal *E* layer minimum virtual height or below the night *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 normal *E* layer trace at or above *foE*. The cusp is not symmetrical, the low frequency end of the *Es* trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)

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

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

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

s — A diffuse *Es* trace which rises steadily with

frequency and usually emerges from another type *Es* trace.

d A weak trace at heights below 95 km associated with absorption and large *f*min.

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 night *E*. When *foEs*>*foE* (night *E*) the *Es* type precedes k.

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

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

Median (MED) of a set of numbers is the middle value when the numbers 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

Solar radio observations are carried out on 100, 200 and 500 MHz at Hiraiso. Observation equipments are: a 5 meter parabolic reflector with a total-power receiver for 500 MHz and a 10 meter parabolic reflector with two polarimeters for 100 and 200 MHz. Observations are feasible almost from sunrise to sunset.

Time is expressed in hours, minutes and tenths of minutes U.T. and the unit of flux density is 10^{-22} Wm^{-2} Hz^{-1} for both components of polarization.

a. Daily Data

Flux density. The three-hourly and daily mean values are given.

Variability. The three-hourly and daily mean values are given at 200 MHz only.
Variability is expressed in the following four grades.

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

The number of bursts exceeding the mean flux level is counted.

Daily data with parenthesis mean that observation time does not exceed one third of the period.

b. Distinctive Events

The phenomena are picked up on the following criteria:

1. distinct from the prevailing kind of activity,
2. correlated with other known solar phenomena,
3. remarkable change-over from one situation to another.

Starting time and Time of maximum are given to the nearest minute in general, but to nearest a tenth minute for short intense occurrences of clear commencements. *Date* indicates the day to which *starting time* of event belongs.

Duration is given in minute and to nearest a tenth minute, if short or clear.

Type, is denoted by the following descriptive symbols.

S simple rise and fall of intensity,
C complex variation of intensity,
C+ prolonged broad-band enhancement of radiation, generally of spectral type IV,
F group of bursts, multiple peaks probably belonging to the same event, but separated by relatively short period of quietness,
RF more or less irregular rise and fall of intensity, at metric or decimetric wavelength,
e sudden beginning of burst with steep rise of intensity,
E steep rise of intensity of continuum background,
pi post-burst increase,
ns noise storm.

Peak intensity is the flux density of each important peak of the occurrence, measured above the pre-burst level.

Mean intensity is the flux density averaged over the duration of burst. measured above the pre-burst level.

Polarization is expressed by polarization degree as follows:

0 no apparent polarization,
r or l right- or left-handed polarization degree less than 0.5,
R or L right- or left-handed polarization degree equal to or less than 1,
s oscillatory change of polarization degree less than 0.5,
S oscillatory change of polarization degree equal to or less than 1.

The following letters may be attached to values in table, if necessary.

D greater than,
E less than,
U uncertain or doubtful, also including a case of partial interruption of observed phenomenon.

C. RADIO PROPAGATION

a. Measurement of H. F. Field Strength

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 side-band 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 band width. Particulars of the transmitters and the receiver are summarized in the following table.

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	—
Modulation	50 %	50 %	—
Antenna	λ/2 vertical	λ/2 vertical	4.5 m vertical rod
Bandwidth	—	—	80 Hz for upper side-band
Calibration	—	—	Every an hour

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

CNT number of values from which a median has been computed,
MED median,
UD upper decile, median of the uppermost fifth of values when they are ranked according to magnitude,
LD lower decile, median of the lowest fifth of values when they are ranked according to magnitude,
U uncertain,
E less than,
C influenced by, or impossible because of, any non-propagational reasons,
S influenced by, or impossible because of, interferences or atmospherics.

b. Radio Propagation Quality Figures

The tabulated six-hourly quality figures are calculated for standard waves WWV transmitted from Fort Collins and standard waves WWVH transmitted from Kauai, respectively. *Quality figures* expressing radio propagation conditions are ranged 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 1_0, 1+, 2−, 2_0, 2+, 3−, 3_0, 3+, 4−, 4_0, 4+, 5−, 5_0 stands for an average of six-hourly ones of the two circuits. Abbreviated symbols are as follows.

C artificial accident,
S propagational accident,
U inaccurate.

Radio propagation conditions which can be described with a code in the following

N normal,
U unstable,
W disturbed

are forecast 12 hours in advance and broadcast twice per an hour from JJY Station.

Data on a *geomagnetic storm* correlated with a radio propagation disturbance are tabulated from observation at Kakioka Magnetic Observatory, Japan Meteorological Agency. *Time* (U.T.) is expressed in unit of hour and minute (or tenth of hour), and *range* in gamma. When they are uncertain quantitatively, /'s are replaced with them. Continuation of a geomagnetic storm is denoted by . . .

c. Sudden Ionospheric Disturbances

(i) SWF

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 distinguished by marks', "and'" from these of the 15 MHz wave for WWV and WWVH, respectively. Values of *start, duration, type* and *importance* are obtained from data of the circuit whose drop-out intensity in dB is underlined as xx. When these quantities are not given correctly, they are accompanied by 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 flare, solar radio burst and geomagnetic crochet to SWF is marked by X in accordance with interchange messages of IUWDS and observations at Hiraiso.

(ii) SPA

Data of sudden phase anomaly (SPA) are prepared from the records of phase measurement of VLF radio wave propagation received at Inubo. Characteristics of the VLF radio wave propagation circuits are given on the following table. In the last coloumn, distance of circuit along the great circle is shown.

Transmitter					Distance of Circuit (km)
Name	Location (Geographic Coordinate)	Station Call	Frequency (kHz)	Radiation Power (kW)	
Rugby	52°22'N 001°11'W	GBR	16.0	40	9550
Fort Collins	40°41'N 105°03'W	WWVL	20.0	1.8	9190
Cutler	44°39'N 067°17'W	NAA	17.8	1000	10640
North West Cape	21°49'S 114°10'E	NWC	22.3	1000	6990
Lualualei	21°26'N 158°09'W	NPM	23.4	300	6070
Jim Creek	48°12'N 121°55'W	NPG	18.6	250	7620
Haiku	21°24'N 157°50'W	HA0 HA2 HA3	10.2 12.2 13.6	10	6100
Aldra	66°25'N 013°09'E	AL0 AL2 AL3	10.2 12.3 13.6	10	7820
North Dakota	46°22'N 098°20'W	ND0 ND2 ND3	10.2 12.85 13.6	10	9150

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by —, and indistinguishable record is spaced out, and multi-peak event is marked by *.

Out of more than two circuits on which the same SPA event is observed, the *phase advance* on the circuit on which the SPA is the most remarkable or distinct is underlined. As for the underlined *phase advance, start, end* and *maximum* times are obtained.

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

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

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

IONOSPHERIC DATA

JUN. 1974 | FXI (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	X 46	X 50																	A	A	X 66	X 67
2	X 55	S 50	X 48	X 48																	X 72	X 72	S	X 65
3	X 56	X 52	X 52	X 48																	A	S 70	A	X 65
4	X 62	S 59	U S 50	49																	A	X 67	X 65	X 60
5	X 58	I A 58	X 55	X 52																	X 75	X 71	X 70	X 67
6	X 64	X 61	X 60	X 58																	X 74	X 73	X 71	X 67
7	X 61	X 60	X 60	X 57																	X 79	X 75	X 68	X 68
8	X 65	X 62	X 60	X 62																	X 85	X 85	X 75	X 61
9	X 56	X 55	X 54	X 54																	X 71	X 76	X 75	X 68
10	X 61	X 60	X 57	X 58																	S	X 86	X 84	X 80
11	S	S	S	U S 70																	X 81	X 84	X 86	X 83
12	X 71	I S 67	X 63	X 58																	X 80	X 78	S 76	X 66
13	X 65	X 60	X 58	X 55																	X 73	X 65	A	S
14	S	A	S	S 50																	X 80	X 81	A	X 64
15	X 60	A	S 50	I A 48																	X 85	X 71	X 64	X 62
16	A	65	70	50																	A	A	S 68	71
17	68	A	S	A																69	77	72	61	58
18	S	S	44	47																	X 65	X 63	65	S
19	X 55	56	50	X 47																	X 77	X 65	A	63
20	60	52	X 50	X 50																	X 82	X 75	X 70	X 60
21	X 59	X 55	X 52	X 50																	X 76	X 72	X 68	X 62
22	S 57	X 59	X 55	S 52																	X 74	A	A	S
23	X 60	S 60	X 54	X 57																	X 72	X 65	X 64	X 63
24	X 63	X 60	S 58	60	53	66															X 69	68	68	62
25	55	S 50	U S 47	U S 49																	X 80	U S 77	S	A
26	U S 58	U S 54	S 52	48																	S 94	X 78	X 61	X 64
27	X 50	S 55	S 43	X 45																	A	X 58	S 62	S 60
28	X 54	X 40	A	X 34																	X 58	X 65	X 63	X 57
29	X 58	X 52	X 50	S 53																	X 60	X 63	X 55	U S 53
30	S 50	U S 47	S 46	X 43																	X 72	X 71	X 58	X 57
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	24	26	29	1	1														1	24	27	23	26
MED	X 59	57	X 52	X 50	53	66														69	X 76	X 72	X 68	X 64
UQ	X 62	X 60	X 58	X 57																	X 80	X 76	X 70	X 67
LQ	X 56	52	50	X 48																	X 72	X 66	X 64	X 60

JUN. 1974 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF2 (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S 48	S 43	40	43	35	A 44	54	43	49	R 53	50	A	47	R 51	A 55	A	A	55	58	57	A 65	A 65	59	60
2	49	45	45	41	S 43	51	55	C	C	C	C	C	C	C	C	A	63	A	A	A	A	S 63	A	58
3	55	S 52	U S 43	F	F 40	45	510	A	A	A	A	A	A	53	53	57	A	A	I A 60	A	A	60	58	53
4	51	I A 51	48	45	43	48	51	57	59	60	54	55	A	57	59	I C 64	65	67	A	65	68	64	63	60
5	57	54	53	51	49	47	52	56	61	58	54	53	53	51	52	53	59	61	63	60	67	66	64	60
6	54	53	53	50	53	51	55	58	A	A	58	54	58	53	55	53	C	C	C	C	72	68	61	61
7	58	55	53	55	54	45	54	62	64	62	59	I A 60	58	58	56	55	58	57	57	69	78	78	68	54
8	50	48	47	47	49	57	66	58	A	54	A	R	51	53	A	A	A	51	51	54	64	70	68	61
9	54	53	50	51	48	55	55	55	60	59	A	A	58	68	61	A	59	66	77	A	S	79	77	73
10	S	S	S	U S 64	U S 61	61	56	66	73	79	83	73	A	A	A	69	73	U S 70	78	76	74	77	79	76
11	64	I S 60	56	51	S 40	A	A	47	53	51	48	51	A	A	51	60	54	56	54	60	73	71	S 69	59
12	58	53	51	48	45	48	59	65	61	A	A	55	A	53	65	73	68	A	65	81	66	58	A	S
13	S	A	S	S 43	42	44	45	47	51	49	59	57	59	55	58	57	53	55	53	60	73	74	A	57
14	53	A	S 43	I A 40	44	57	A	A	A	A	53	51	A	58	A	60	A	A	56	A	78	64	57	55
15	A	F	F	F	A	53	A	A	A	51	A	A	A	A	A	A	A	A	A	63	A	A	S 61	F
16	F	A	S	A	35	A	53	A	A	A	A	A	A	50	51	I A 53	51	A	A	F 58	F 67	F	F	U F 51
17	S	S	F	F 40	43	50	59	A	51	A	A	48	A	50	51	54	A	54	59	A	58	56	F	S
18	48	F 46	F 41	40	45	52	53	I A 51	51	A	A	A	A	53	A	50	53	53	I A 57	67	70	58	A	F
19	F	F 45	43	43	44	53	50	I A 48	49	60	A	A	A	59	A	63	65	A	A	S 83	75	68	63	53
20	52	48	45	43	43	48	61	54	48	48	54	53	58	58	53	52	51	C	61	61	70	65	61	55
21	S 50	52	48	S 45	48	53	56	58	A	A	A	53	54	57	55	A	55	53	55	A 67	A	A	S
22	53	S 53	47	50	49	A	74	56	A	A	A	A	A	A	A	50	52	55	A	65	65	58	57	56
23	56	53	S 51	F	F 44	F	60	A	A	A	A	51	A	A	49	A	50	50	A	53	62	F	F	F 50
24	F 46	S 43	U S 40	U S 42	43	56	57	I A 53	A	A	A	A	50	46	57	55	52	55	63	74	S 73	U S 70	S	A
25	U S 51	U S 47	S 45	41	41	48	A	57	A	A	A	A	63	59	52	56	A	A	A	77	S 87	71	54	57
26	43	S 48	S 36	38	37	41	46	42	R	R	A	A	A	44	A	49	50	53	48	50	A	51	S 55	S 53
27	47	33	A	27	33	A	A	45	43	43	A	A	R	50	50	48	46	46	49	45	51	58	56	50
28	51	45	43	S 46	44	45	50	A	A	55	A	46	50	51	54	55	A	A	55	A	53	56	48	U S 46
29	S 43	U S 40	S 40	36	37	A	A	A	A	A	A	46	A	A	A	46	A	A	50	51	65	64	51	50
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	24	26	29	22	23	20	14	14	10	15	13	22	18	22	19	18	21	22	24	25	20	24
MED	51	48	45	43	44	50	55	56	52	54	54	53	54	53	54	55	54	55	57	62	68	65	61	56
UQ	54	53	50	50	48	53	59	58	61	60	59	55	58	58	57	60	61	57	61	69	73	70	66	60
LQ	48	45	42	41	41	47	52	48	49	51	53	51	51	51	51	52	52	53	54	57	65	58	56	53

The Radio Research Laboratories, Japan

JUN. 1974 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF1 (0.01 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	420	420	440	A	440	430	A	A	A	A	A					
2							A	A	A	A	A	A	A	A	A	A	A	A						
3						360	A	C	C	C	C	C	C	C	C	A	A	A						
4							A	A	A	A	A	A	A	A	440	430		A	A					
5						A	A	410	430		A	460	A	460	450	I C 430	410		A					
6							A	A	A	440	I A 440	450	I A 460	450	450	430	400	A	A					
7						340	390	A	A	A	450	470	460	470	450	430	C	C						
8							400	A	A	A	460	A	470	460	460	440	420	A						
9							400	A	A	A	A	460	A	A	A	A	A	A						
10						360	A	A	A	A	A	A	460	A	A	A	A	A						
11						350	440	A	A	A	A	A	A	A	A	A	A	A						
12						A	A	A	410	A	A	440	A	A	H 440	420	410	380	L 350					
13						350	A	A	A	A	A	450	A	A	450	430	410	A	A					
14							380	430	410	440	A	A	A	430	430	430	400	370						
15							A	A	A	A	A	A	A	A	A	A	A	A	320					
16							A	A	A	A	A	A	A	A	A	A	A	A	A					
17						A	A	A	A	A	A	A	A	A	A	A	420	A	A					
18						A	370	A	410	A	A	440	A	430	430	400	A	A						
19							A	A	A	A	A	A	A	A	A	410	A	370						
20								A	A	A	A	A	A	A	A	A	A	A						
21					250	340	A	A	410	430	440	430	440	430	430	430	410	C	340					
22						330	A	A	A	A	A	A	A	A	430	A	460	380	340					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24						330	A	A	A	A	A	A	A	A	430	A	400	A	A					
25						330	A	A	A	A	A	A	A	430	420	A	410	I A 380	A					
26						350	A	A	A	A	A	A	A	430	430	430	A	A	A					
27						290	330	370	R	420	A	A	A	410	A	A	390	360						
28							A	380	410	410	A	A	420	410	420	A	400	380	A					
29						330	A	A	A	A	A	430	430	430	430	A	A	A						
30							A	A	A	A	A	430	A	A	A	410	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	12	7	4	7	6	6	9	8	13	16	13	13	7	4					
MED					250	340	390	395	410	425	445	440	450	430	430	430	410	380	340					
UQ						350	400	420	415	440	460	450	460	450	450	430	410	380	345					
LQ						330	375	375	410	420	440	430	435	430	430	420	400	370	330					

JUN. 1974 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOE (0.01 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					135	200	240	290	305	320	335	335	335	340	330	315	295	265	210	S				
2					S	205	255	290	305	315	330	B	330	A	A	320	295	260	205	S				
3					130	210	265	C	C	C	C	C	C	C	C	A	290	265	210	S				
4					125	205	265	290	305	315	330	330	A	A	A	340	300	270	215	S				
5					A	I A 220	260	300	305	325	330	335	330	335	330	I C 325	300	260	210	S				
6					E	215	260	295	305	320	320	A	A	A	A	320	I A 300	285	210	S				
7					S	205	260	300	315	325	330	325	325	A	A	A	C	C	C	C				
8					S	220	260	300	315	330	335	335	330	325	I A 325	325	295	265	210	S				
9					S	215	270	300	320	330	335	335	335	330	A	A	A	265	200	S				
10					S	215	265	300	315	325	330	330	335	325	A	A	300	270	205	S				
11					A	A	270	300	310	320	I A 325	330	I A 320	310	310	295	A	A	A	S				
12					A	210	255	290	310	325	330	330	330	315	A	A	A	275	210	S				
13					S	205	250	290	300	315	320	310	315	310	A	A	A	A	A	S				
14					A	A	250	285	300	320	315	B	A	A	315	315	285	260	200	S				
15					A	195	245	285	300	305	315	305	A	A	A	330	295	255	205	S				
16					A	A	270	290	300	305	315	315	A	A	A	A	A	250	195	S				
17					A	200	250	285	300	305	315	320	A	A	A	305	295	250	195	E				
18					A	200	235	275	300	305	310	315	A	A	A	310	A	A	A	S				
19					A	200	250	280	300	310	320	A	A	A	A	A	295	A	A	A				
20					140	210	250	290	305	315	325	315	A	A	A	A	A	260	205	140				
21					120	200	235	265	290	305	310	320	315	305	I A 310	305	295	C	210	S				
22					A	200	255	280	300	310	320	320	340	330	325	305	290	260	200	S				
23					A	200	250	290	295	310	320	315	A	A	A	A	295	260	205	130				
24					E	200	255	290	300	305	315	315	315	300	310	300	295	250	200	S				
25					A	210	270	295	305	320	325	325	325	300	325	310	295	265	200	E				
26					A	200	230	285	300	300	A	A	A	A	330	320	290	250	195	A				
27					E	195	230	275	300	310	320	330	335	335	330	305	290	255	205	180				
28					A	205	230	280	300	300	310	315	325	320	330	310	290	250	205	A				
29					S	215	245	280	300	305	325	325	325	325	340	315	295	255	200	S				
30					150	210	245	280	300	305	315	315	A	A	A	325	295	260	205	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					9	27	30	29	29	29	28	24	17	15	13	20	22	24	25	5				
MED					125	205	252	290	300	315	320	322	330	325	325	315	295	260	205	130				
UQ					135	210	260	295	305	320	330	330	335	330	330	322	295	265	210	140				
LQ					E	200	245	280	300	305	315	315	325	310	315	305	290	255	200	E				

JUN. 1974 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOES (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	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 S 15	24	J A 26	J A 28	24	J A 43	J A 43	42	40	38	46	50	G	44	J A 50	J A 79	J A 154	J A 53	J A 45	J A 53	J A 73	J A 73	J A 31	E S 16
2	E S 15	E S 16	J A 30	J A 21	J A 33	J A 51	J A 68	J A 70	J A 70	J A 50	J A 73	J A 85	J A 45	J A 45	J A 61	J A 65	J A 134	J A 46	J A 48	J A 30	J A 38	J A 48	33	J A 31
3	E S 15	E S 14	22	E S 15	19	31	J A 44	C	C	C	C	C	C	C	C	J A 113	J A 69	J A 80	J A 90	J A 135	J A 83	J A 58	J A 103	J A 22
4	J A 21	E	20	22	19	30	J A 53	J A 60	J A 84	J A 146	J A 122	J A 78	J A 90	J A 62	J A 53	43	J A 93	J A 66	J A 65	J A 90	J A 78	J A 55	J A 73	J A 42
5	J A 53	J A 65	J A 41	J A 38	18	34	40	39	50	45	48	J A 64	J A 55	G	G	C	33	J A 66	J A 81	J A 53	J A 29	J A 30	27	J A 23
6	J A 41	26	25	24	18	32	J A 43	J A 53	J A 61	39	J A 51	J A 45	59	39	38	G	J A 41	40	36	J A 43	J A 36	E S 15	J A 30	J A 30
7	E S 15	E S 14	24	24	E S 15	30	35	J A 52	J A 64	J A 80	J A 73	J A 50	G	39	37	33	C	C	C	C	J A 25	J A 25	24	26
8	21	E S 13	E S 14	E S 14	E S 15	G	34	48	J A 51	J A 53	J A 53	J A 70	38	36	35	G	38	J A 45	J A 43	J A 43	J A 32	J A 29	26	E S 15
9	J A 21	E S 15	E S 15	E S 15	E S 16	25	43	J A 55	J A 105	J A 90	J A 100	40	45	50	J A 55	J A 90	J A 56	J A 46	J A 43	J A 53	J A 36	27	E S 17	E S 16
10	E S 16	23	E S 14	E	E S 16	31	J A 49	J A 56	J A 75	J A 80	J A 105	J A 105	J A 76	J A 81	J A 73	J A 80	J A 54	J A 60	J A 75	J A 111	J A 56	J A 54	J A 78	28
11	28	J A 28	J A 25	28	J A 23	J A 24	35	J A 48	J A 62	J A 71	J A 100	J A 63	J A 92	J A 93	J A 93	J A 54	J A 51	J A 58	J A 81	J A 40	J A 40	J A 41	J A 43	E S 16
12	E S 15	J A 53	J A 43	J A 50	26	J A 50	J A 100	39	43	42	45	J A 42	J A 67	J A 54	34	34	33	G	G	E S 17	E S 16	E S 15	E S 16	E S 15
13	E S 15	E S 16	E S 16	21	23	28	39	J A 53	J A 54	J A 64	J A 76	J A 63	J A 72	J A 55	J A 50	38	J A 65	J A 111	J A 45	J A 43	J A 41	J A 131	J A 90	J A 53
14	28	J A 51	J A 33	J A 21	18	J A 33	G	34	33	40	J A 49	J A 50	J A 104	J A 55	J A 40	38	35	G	32	J A 40	J A 40	J A 30	J A 53	J A 33
15	J A 25	J A 54	J A 25	J A 103	J A 55	J A 44	J A 61	J A 101	J A 76	J A 70	J A 71	J A 44	J A 113	J A 81	J A 98	J A 58	J A 100	J A 74	J A 41	J A 89	J A 101	J A 53	J A 43	J A 33
16	J A 98	J A 41	J A 43	J A 60	J A 50	J A 53	J A 64	J A 105	J A 136	J A 55	J A 75	J A 90	J A 100	J A 180	J A 143	J A 95	J A 80	J A 73	J A 173	J A 124	J A 114	J A 88	J A 73	J A 36
17	J A 60	J A 52	J A 33	J A 43	J A 35	J A 45	J A 63	J A 77	J A 83	J A 63	J A 53	J A 60	J A 71	J A 63	J A 113	J A 140	J A 51	J A 78	J A 166	J A 153	E S 15	J A 27	21	J A 23
18	J A 23	J A 23	J A 30	25	J A 23	J A 37	34	J A 63	J A 53	J A 122	J A 114	J A 43	J A 120	J A 60	35	G	J A 50	J A 53	J A 55	J A 85	J A 53	J A 31	J A 35	28
19	J A 58	J A 35	J A 33	J A 25	J A 35	31	J A 53	J A 53	J A 63	J A 73	J A 65	J A 83	J A 152	J A 73	J A 71	J A 43	44	38	J A 75	J A 74	J A 43	J A 30	J A 80	J A 35
20	J A 43	27	25	E S 15	20	27	37	J A 50	J A 51	J A 53	J A 73	J A 68	J A 71	J A 60	J A 54	J A 56	40	J A 160	J A 135	J A 74	J A 65	J A 60	E S 16	E S 16
21	J A 24	J A 30	26	E S 14	20	28	J A 55	J A 50	39	38	J A 54	J A 50	40	37	37	G	33	C	26	26	E S 16	25	J A 21	J A 23
22	J A 25	J A 30	J A 63	J A 54	21	26	40	J A 44	J A 53	J A 64	J A 53	J A 53	J A 81	J A 113	J A 70	J A 142	J A 43	J A 45	J A 65	J A 61	J A 74	J A 83	J A 64	J A 28
23	J A 38	J A 43	J A 53	J A 42	J A 36	J A 75	J A 65	J A 51	J A 56	J A 73	J A 73	J A 56	J A 71	J A 70	J A 62	55	J A 47	J A 71	J A 58	J A 70	J A 43	J A 41	J A 31	E S 15
24	E S 15	J A 30	J A 35	J A 31	J A 26	39	J A 83	J A 85	J A 152	J A 75	J A 83	J A 44	J A 70	J A 73	J A 71	J A 75	J A 56	J A 53	J A 53	J A 48	J A 70	J A 43	J A 32	J A 43
25	J A 23	J A 23	J A 25	J A 22	18	G	J A 53	J A 53	66	J A 75	J A 123	J A 90	J A 50	J A 45	G	J A 62	38	J A 63	J A 48	J A 54	J A 83	J A 63	J A 53	J A 55
26	J A 31	J A 43	J A 24	J A 30	J A 27	J A 43	J A 73	J A 63	J A 73	J A 155	J A 70	J A 58	49	43	39	G	J A 63	J A 123	J A 161	J A 123	J A 55	J A 33	J A 32	J A 28
27	J A 33	E S 15	J A 63	J A 31	J A 43	26	38	J A 43	G	43	J A 74	J A 80	J A 67	38	J A 72	J A 42	J A 51	30	J A 52	G	J A 80	J A 30	J A 33	J A 41
28	J A 28	21	J A 25	J A 28	J A 27	J A 58	J A 91	35	39	J A 52	J A 65	J A 64	39	G	38	J A 45	33	32	J A 40	J A 33	J A 23	J A 25	J A 33	J A 42
29	J A 25	J A 23	20	19	23	32	J A 40	J A 55	J A 74	J A 49	J A 53	J A 61	38	38	45	J A 48	J A 75	J A 65	J A 66	J A 65	E S 16	J A 51	E S 16	E S 16
30	J A 33	J A 23	J A 23	J A 23	J A 42	J A 54	J A 43	J A 49	J A 73	J A 63	J A 93	J A 45	J A 60	J A 80	J A 62	36	J A 58	J A 103	J A 40	J A 53	J A 23	J A 31	E S 15	25
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	29	29	30	30	30	30
MED	J A 25	J A 25	J A 25	J A 24	23	32	J A 44	J A 53	J A 62	J A 63	J A 73	J A 60	J A 67	J A 55	J A 53	J A 48	J A 51	J A 59	J A 53	J A 53	J A 42	J A 37	J A 32	J A 28
UQ	J A 33	J A 41	J A 33	J A 31	J A 33	J A 44	J A 63	J A 60	J A 74	J A 75	J A 83	J A 70	J A 81	J A 73	J A 71	J A 75	J A 65	J A 74	J A 75	J A 85	J A 73	J A 55	J A 53	J A 35
LQ	E S 16	16	23	21	18	28	39	J A 48	J A 51	J A 49	J A 53	J A 50	45	39	38	36	40	J A 45	J A 43	J A 43	J A 29	J A 29	24	E S 16

JUN. 1974 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FBES (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	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 S 15	E	20	21	G	A A 43	43	40	40	G	41	A A 50	G	40	A A 50	A A 79	A A 154	41	45	50	A A 73	A A 73	20	E S 16
2	E S 15	E S 16	26	20	31	A A 51	A A 68	A A 70	A A 70	47	A A 73	A A 85	45	45	A A 61	A A 65	A A 134	46	46	30	35	40	30	22
3	E S 15	E S 14	E	E S 15	G	30	39	C	C	C	C	C	C	C	C	A A 113	57	A A 80	A A 90	A A 135	A A 83	42	A A 103	20
4	20	E	E	E	G	G	45	A A 60	A A 84	A A 146	A A 122	A A 78	A A 90	48	43	42	A A 93	A A 66	A A 65	A A 90	A A 78	28	54	42
5	45	A A 65	40	30	16	34	40	G	40	44	G	50	A A 55	G	G	C	G	57	A A 81	47	28	26	18	E
6	20	17	E	E	G	G	41	46	54	G	48	40	47	36	35	G	39	39	36	34	27	E S 15	27	22
7	E S 15	E S 14	E	E	E S 15	G	G	43	A A 64	A A 80	40	G	G	38	36	33	C	C	C	C	21	20	E	19
8	E	E S 15	E S 14	E S 14	E S 15	G	G	45	50	50	42	A A 70	G	G	35	G	G	42	42	43	30	E	E	E S 15
9	E	E S 15	E S 15	E S 15	E S 16	G	35	47	A A 105	50	A A 100	G	45	48	A A 55	A A 90	A A 56	44	41	47	29	20	E S 17	E S 16
10	E S 16	E	E S 14	E	E S 16	G	42	50	57	45	A A 105	A A 105	44	54	53	A A 80	53	54	67	A A 111	E S 56	50	E	E
11	E	E	E	E	20	24	G	47	58	67	45	53	A A 92	A A 93	A A 93	45	50	51	60	40	30	41	E	E S 16
12	E S 15	41	30	40	16	A A 50	A A 100	39	38	42	43	G	A A 67	A A 54	34	33	30	G	G	E S 17	E S 16	E S 15	E S 16	E S 15
13	E S 15	E S 16	E S 16	E	G	G	38	47	53	A A 64	A A 76	40	A A 72	45	42	36	34	A A 111	39	41	38	29	A A 90	20
14	E	A A 51	27	E	15	22	G	G	G	G	47	45	47	40	G	G	G	G	G	38	37	E	A A 53	38
15	20	A A 54	E	A A 103	40	G	A A 61	A A 101	A A 76	A A 70	44	44	A A 113	50	A A 98	52	A A 100	A A 74	26	A A 89	20	48	35	31
16	A A 98	40	21	29	A A 50	43	A A 64	A A 105	A A 136	42	A A 75	A A 90	A A 100	A A 180	A A 143	A A 95	A A 80	A A 73	A A 173	34	A A 114	A A 88	40	28
17	40	A A 52	E	A A 43	17	A A 45	49	A A 77	A A 83	A A 63	A A 53	A A 60	A A 71	44	45	A A 140	G	A A 78	A A 166	45	E S 15	25	E	E
18	E	E	E	E	16	34	G	A A 63	40	A A 122	A A 114	37	A A 120	41	34	G	A A 50	42	55	A A 85	32	22	28	20
19	25	23	16	20	30	G	50	A A 53	45	A A 73	A A 65	A A 83	A A 152	45	A A 71	34	43	32	A A 75	46	42	25	A A 80	30
20	36	E	E	E S 15	G	G	G	A A 50	45	48	A A 73	A A 68	A A 71	55	A A 54	54	40	A A 160	A A 135	74	55	48	E S 16	E S 16
21	20	21	E	E S 14	G	G	50	41	G	G	G	G	G	G	36	G	G	C	G	G	E S 16	E	19	E
22	22	21	E	E	15	G	39	44	A A 53	A A 64	A A 53	44	50	48	41	A A 142	G	G	G	A A 61	53	A A 83	A A 64	22
23	28	36	34	30	35	A A 75	55	42	A A 56	A A 73	A A 73	A A 56	A A 71	A A 70	A A 62	47	47	48	A A 58	60	40	20	28	E S 15
24	E S 15	E	E	25	17	30	54	A A 85	A A 152	A A 75	A A 83	43	A A 70	A A 73	40	A A 75	G	42	A A 53	40	40	E	25	22
25	E	18	18	16	16	G	40	A A 53	A A 66	A A 75	A A 123	A A 90	45	G	G	41	G	42	40	54	30	30	45	A A 55
26	28	25	20	E	22	32	A A 73	48	A A 73	A A 155	A A 70	A A 58	46	39	G	G	A A 63	A A 123	A A 161	57	20	23	22	28
27	33	E S 15	E	E	32	G	G	G	G	G	A A 74	A A 80	A A 67	G	A A 72	41	G	G	42	G	A A 80	28	31	40
28	27	E	A A 25	E	22	A A 58	A A 91	G	G	37	A A 65	A A 64	G	G	G	43	G	G	34	24	19	24	30	33
29	23	E	E	E	G	30	37	A A 55	A A 74	44	A A 53	42	41	G	G	43	A A 75	A A 65	40	A A 65	E S 16	35	E S 16	E S 16
30	30	E	E	E	30	A A 54	A A 43	A A 49	A A 73	A A 63	A A 93	42	A A 60	A A 80	A A 62	G	A A 58	A A 103	35	45	21	30	E S 15	E
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	29	29	30	30	30	30
MED	20	16	E E 14	E E 14	16	23	42	47	56	50	A A 65	50	A A 55	45	42	43	43	47	45	46	30	27	26	20
UQ	28	25	20	21	22	43	54	A A 55	A A 73	A A 73	A A 76	A A 70	A A 71	54	A A 61	A A 75	A A 58	A A 74	A A 67	61	U 48	41	40	28
LQ	E S 15	E	E	E	G	G	35	42	40	42	45	42	45	36	34	33	G	40	36	38	21	20	E E 16	E S 15

The Radio Research Laboratories, Japan

JUN. 1974 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 F-MIN (0.1 MHZ) 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45 23.6 N. Long. 141 41.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	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 S 15	E S 15	E S 13	E S 15	E	14	15	18	16	21	15	20	26	21	20	16	17	15	12	E S 14	E S 15	E S 15	E S 12	E S 16
2	E S 15	E S 16	E S 15	E S 15	E S 15	13	16	15	16	17	20	33	21	20	26	27	20	17	16	E S 14	E S 11	E S 16	E S 16	E S 15
3	E S 15	E S 14	E S 14	E S 15	E	11	15	C	C	C	C	C	C	C	C	18	14	16	11	E S 15	E S 15	E S 15	E S 15	E S 15
4	E S 16	E	E S 15	E S 15	E	12	15	16	20	20	20	17	15	21	20	21	18	15	12	E S 14	E S 15	E S 15	E S 15	E
5	E S 15	E S 15	E S 15	E	E	E	12	15	15	25	16	23	20	18	21	C	15	14	E	E S 12	E	E S 15	E S 16	E S 15
6	E S 15	E S 15	E S 16	E S 16	E	11	14	15	15	16	20	20	20	23	17	16	16	11	11	E S 14	E S 15	E S 15	E S 16	E S 15
7	E S 15	E S 14	E S 13	E S 15	E S 15	12	13	15	15	20	17	16	20	16	20	24	C	C	C	C	E S 15	E S 15	E S 16	E S 15
8	E S 15	E S 13	E S 14	E S 14	E S 15	14	16	16	15	16	16	22	20	16	15	20	15	15	15	E S 11	E S 15	E S 15	E S 16	E S 15
9	E S 16	E S 15	E S 15	E S 15	E S 16	12	16	16	16	16	20	21	20	20	25	16	16	16	11	E S 12	E	E S 15	E S 17	E S 16
10	E S 16	E S 16	E S 14	E	E S 16	11	12	15	21	16	20	21	17	20	16	17	16	16	14	E S 15	E S 16	E S 15	E S 16	E S 15
11	E S 16	E S 15	E S 16	E S 15	E	E	12	15	15	20	20	20	25	20	20	17	16	17	12	E S 15	E S 15	E S 15	E S 15	E S 16
12	E S 15	E S 15	E S 14	E S 16	E	11	15	15	17	17	23	20	27	17	17	17	17	14	11	E S 17	E S 16	E S 15	E S 16	E S 15
13	E S 15	E S 16	E S 16	E S 15	E S 15	13	14	16	15	16	17	16	20	20	20	16	15	15	11	E S 15	E S 15	E S 15	E S 15	E S 15
14	E S 15	E S 15	E S 15	E S 15	E	E	15	15	16	20	21	35	20	20	19	16	15	15	16	E S 14	E S 16	E S 15	E S 19	E S 15
15	E S 15	E S 15	E S 15	E S 14	E	12	11	16	16	21	20	20	16	17	21	17	16	16	11	E S 15	E S 15	E S 15	E S 15	E S 16
16	E S 16	E S 15	E S 14	E S 15	E	E	14	16	17	20	29	20	29	21	20	20	19	15	15	E S 15	E S 15	E S 16	E S 16	E S 16
17	E S 16	E S 15	E S 15	E	E	13	15	16	15	21	16	20	17	20	23	16	15	16	15	E	E S 15	E S 15	E S 15	E S 15
18	E S 15	E S 15	E S 15	E S 15	E	12	16	14	16	16	17	19	17	17	20	17	15	16	14	E S 15	E	E S 16	E S 15	E S 15
19	E S 15	E S 15	E S 15	E S 15	E	11	14	16	19	16	20	28	30	16	20	16	17	16	11	E	E S 15	E S 15	E S 15	E S 16
20	E S 15	E S 16	E S 15	E S 15	E	E	15	15	15	16	17	17	20	18	20	20	15	14	12	E	E S 15	E S 15	E S 16	E S 16
21	E S 15	E S 15	E S 15	E S 14	E	11	14	15	16	15	16	20	20	21	17	17	17	C	E	E S 15	E S 16	E S 16	E S 16	E S 16
22	E S 15	E S 15	E S 15	E S 15	E	15	15	16	16	15	16	17	16	20	21	16	16	16	12	E S 14	E S 14	E S 15	E S 16	E S 15
23	E S 16	E S 15	E S 15	E	E	11	11	16	15	15	17	16	20	20	22	25	16	16	15	E	E S 15	E S 15	E S 16	E S 15
24	E S 15	E S 15	E S 16	E	E	14	13	15	16	16	20	20	20	16	15	16	16	17	15	E S 14	E	E S 15	E S 15	E S 15
25	E S 16	E S 15	E S 15	E	E	12	16	16	17	21	15	26	22	16	20	20	16	16	14	E	E S 15	E S 16	E S 15	E S 16
26	E S 16	E S 15	E S 15	E S 16	E	11	13	17	16	17	17	17	17	17	16	15	16	14	11	E	E S 15	E S 15	E S 15	E S 15
27	E S 15	E S 15	E S 15	E	E	12	11	16	15	16	20	16	29	20	17	17	15	15	E	11	E S 15	E S 15	E S 15	E S 16
28	E S 16	E S 15	E S 15	E S 15	E	15	14	16	20	16	21	16	25	21	21	18	20	15	11	E	E S 15	E S 15	E S 17	E S 15
29	E S 15	E S 15	E S 15	E S 15	E S 14	14	17	15	16	20	20	30	23	29	21	20	16	14	13	E S 35	E S 16	E S 15	E S 16	E S 16
30	E S 16	E S 15	E S 15	E	E	11	16	17	21	16	20	20	30	20	21	21	17	15	12	E S 15	E S 15	E S 15	E S 15	E S 16
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	28	29	29	30	30	30	30
MED	E S 15	E S 15	E S 15	E S 15	E	12	14	16	16	16	20	20	20	20	20	17	16	15	12	E S 14	E S 15	E S 15	E S 16	E S 15
UQ	E S 16	E S 15	E S 15	E S 15	E	13	15	16	17	20	20	21	25	20	21	20	17	16	14	E S 15	E S 15	E S 15	E S 16	E S 16
LQ	E S 15	E S 15	E S 15	E	E	11	13	15	15	16	17	17	20	17	17	16	15	15	11	E E 11	E S 15	E S 15	E S 15	E S 15

JUN. 1974 F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F2 (0.01) | 135° E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	275	300	305	A	300	320	285	R	270	A	245	R	A	A	A	295	295	290	A	A	290	290
2	290	S 280	270	270	295	A	A	A	A	300	A	A	275	295	A	A	A	300	290	295	285	285	S	295
3	270	285	280	300	S 285	285	290	C	C	C	C	C	C	C	C	A	290	A	A	A	A	S 275	A	285
4	290	S 285	U S 300	F	F 275	270	285	A	A	A	A	A	A	285	285	305	A	A	I A 310	A	A	305	285	285
5	275	I A 280	290	295	290	315	275	285	305	315	315	300	A	290	295	I C 295	300	320	A	310	295	290	285	290
6	290	280	285	325	300	290	275	305	305	310	300	275	300	295	280	275	300	305	300	290	285	290	295	295
7	285	285	285	290	320	290	300	295	A	A	310	300	305	275	320	300	C	C	C	C	310	315	300	300
8	300	300	290	315	335	310	285	305	310	320	305	I A 315	300	310	315	300	310	310	300	285	310	310	340	295
9	285	290	300	295	290	305	320	320	A	305	A	R	275	280	A	A	A	280	310	280	280	295	295	300
10	295	275	290	295	300	315	325	305	315	310	A	A	285	295	310	A	290	275	290	A	S	290	285	285
11	S	S	S	U S 295	U S 295	345	245	275	290	305	315	330	A	A	A	310	310	U S 310	310	305	295	285	290	305
12	275	I S 270	270	315	S 275	A	A	280	275	275	260	275	A	A	260	300	295	305	295	265	275	280	S 305	280
13	295	270	295	300	290	290	305	340	330	A	A	310	A	270	275	305	310	A	305	320	295	285	A	S
14	S	A	S	S 300	310	320	310	275	315	290	300	300	305	300	305	310	300	315	285	285	300	325	A	280
15	285	A	S 295	I A 290	315	335	A	A	A	A	315	290	A	290	A	300	A	A	305	A	310	310	280	275
16	A	F	F	F	A	270	A	A	A	280	A	A	A	A	A	A	A	A	A	300	A	A	S 280	F
17	F	A	S	A	270	A	300	A	A	A	A	A	A	270	275	I A 290	280	A	A	F 295	F 300	F	F	U F 275
18	S	S	F	F 300	300	300	335	A	315	A	A	260	A	285	285	320	A	300	290	A	310	270	F	S
19	290	F 295	F 295	300	310	360	285	I A 310	315	A	A	A	A	300	A	280	300	310	I A 300	330	325	295	A	F
20	F	F 280	280	280	325	340	335	I A 340	290	325	A	A	A	305	A	300	295	A	A	S 310	325	295	310	285
21	290	290	300	280	290	290	320	320	330	285	310	285	310	305	315	310	315	C	315	295	315	295	300	295
22	S 295	290	300	S 310	300	310	310	310	A	A	A	320	280	310	315	A	310	315	315	A	300	A	A	S
23	300	S 300	285	300	305	A	325	340	A	A	A	A	A	A	A	300	310	315	A	310	305	300	300	295
24	295	285	S 300	F	F 285	F	310	A	A	A	A	280	A	A	280	A	320	320	A	330	290	F	F	F 335
25	F 305	S 280	U S 290	U S 285	325	315	310	I A 300	A	A	A	A	290	240	310	315	285	310	300	310	S 310	U S 295	S	A
26	U S 295	U S 300	S 280	300	295	300	A	300	A	A	A	A	315	305	280	280	A	A	A	285	S 330	340	270	295
27	265	S 270	S 280	270	265	260	305	250	R	R	A	A	A	235	A	275	280	300	305	295	A	275	S 295	S 315
28	320	280	A	280	265	A	A	290	355	235	A	A	R	280	290	295	255	300	300	290	280	295	285	280
29	275	290	280	S 285	305	300	300	A	A	325	A	335	280	280	275	305	A	A	325	A	285	305	290	U S 305
30	S 285	U S 300	S 280	290	295	A	A	A	A	A	A	265	A	A	A	285	A	A	300	295	310	315	290	285
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	24	26	29	22	23	20	14	14	10	15	13	22	18	22	19	18	21	22	24	25	20	24
MED	290	285	288	295	295	302	305	305	312	305	308	300	290	290	288	300	300	308	300	295	300	295	290	292
UQ	295	290	295	300	305	315	315	320	315	315	315	312	305	300	310	305	310	315	310	310	310	305	300	298
LQ	285	280	280	285	290	290	288	288	290	285	300	278	280	280	280	290	290	300	295	290	288	285	285	285

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JUN. 1974 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F1 (0.01) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	A	405	A	A	370	A	A	A	A	A	A					
2							A	A	A	A	A	A	A	A	A	A	A	A						
3						335	A	C	C	C	C	C	C	C	C	A	A	A						
4							A	A	A	A	A	A	A	A	A	A	A	A						
5						A	A	365	I A 390	A	380	A	A	370	360	I C 370	350	A						
6							A	A	A	385	I A 400	400	I A 380	395	375	370	A	A	A					
7						355	360	A	A	A	375	380	380	370	365	350	C	C						
8							360	A	A	A	A	A	390	385	370	370	345	A						
9							A	A	A	A	A	390	A	A	A	A	A	A						
10						340	A	A	A	A	A	A	A	A	A	A	A	A						
11						365	335	A	A	A	A	A	A	A	A	A	A	A						
12						A	A	A	A	A	A	385	A	A	H 395	365	345	340	L 340					
13						345	A	A	A	A	A	370	A	A	A	360	350	A	A					
14							350	330	365	385	A	A	A	395	385	370	375	350						
15							A	A	A	A	A	A	A	A	A	A	A	A	360					
16							A	A	A	A	A	A	A	A	A	A	A	A	A					
17						A	A	A	A	A	A	A	A	A	A	A	335	A	A					
18						A	350	A	A	A	A	400	A	A	380	380	A	A						
19							A	A	A	A	A	A	A	A	A	390	A	355						
20								A	A	A	A	A	A	A	A	A	A	A						
21					345	345	A	A	400	395	385	400	385	385	360	370	345	C	360					
22						360	A	A	A	A	A	A	A	A	A	A	325	370	370					
23							A	A	A	A	A	A	A	A	A	A	A	A	A					
24						A	A	A	A	A	A	A	A	A	A	A	360	A	A					
25						265	A	A	A	A	A	A	A	400	390	A	365	I A 360	A					
26						A	A	A	A	A	A	A	A	395	375	370	A	A	A					
27						345	360	385	R	425	A	A	A	400	A	A	360	345						
28							A	360	390	390	A	A	390	400	360	A	365	345	A					
29						A	A	A	A	A	A	A	A	370	390	A	A	A						
30							A	A	A	A	A	A	A	A	A	390	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	9	6	4	4	6	4	7	6	11	12	12	12	7	4					
MED					345	345	355	362	390	392	382	390	382	395	375	370	350	350	360					
UQ						355	360	375	395	405	392	400	390	398	388	375	362	358	365					
LQ						340	350	345	378	385	378	382	380	378	362	368	345	345	350					

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JUN. 1974 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1974 | H'F2 (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							320	340	390	R	440	A	530	R	A	A	A	325	315					
2							A	A	A	350	350	350	420	370	A	A	A	350						
3						315	320	C	C	C	C	C	C	C	C	A	A	A						
4							365	A	A	A	A	A	A	400	395	345	A	A						
5						300	400	360	325	300	350	365	A	380	375	I C 320	310	A						
6							400	345	350	320	385	420	375	395	415	395	340	300	270					
7						320	335	350	A	A	335	375	350	415	315	330	C	C						
8							350	305	310	305	330	A	365	345	350	350	320	310						
9							280	295	A	A	A	R	455	405	A	A	A	370						
10						285	250	A	A	315	A	A	400	350	305	A	A	375						
11						250	470	375	350	A	300	280	A	A	A	315	300	305						
12						A	A	400	395	425	495	445	A	A	460	335	335	315	300					
13						350	300	260	295	A	A	350	A	450	370	310	290	A	295					
14							305	455	350	380	370	360	325	350	345	325	325	305						
15							A	A	A	A	350	390	A	375	A	A	A	A	280					
16							A	A	A	390	A	A	A	A	A	A	A	A	A					
17						A	A	A	A	A	A	A	A	450	420	I A 380	385	A	A					
18						310	265	A	335	A	A	475	A	405	385	315	A	320						
19							A	A	325	A	A	A	A	365	A	415	345	325						
20								I A 285	395	300	A	A	A	A	A	350	315	A						
21					320	350	I A 285	275	295	405	350	390	325	325	315	345	345	C	275					
22						305	275	285	A	A	A	340	A	330	350	A	345	300	280					
23							A	265	A	A	A	A	A	A	A	380	350	315	A					
24						315	A	A	A	A	A	420	A	A	420	A	320	305	A					
25						285	305	A	A	A	A	A	400	600	325	340	370	320	300					
26						320	A	345	A	A	A	A	300	325	395	405	A	A	A					
27						440	350	510	R	R	A	A	A	575	A	410	385	330						
28							A	400	565	600	A	A	R	420	400	400	425	375	325					
29						345	325	A	A	A 280	520	410	405	405	350	A	A							
30							A	A	A	A	A	495	A	A	A	445	A	A	325					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	14	18	17	13	12	12	15	12	21	18	20	17	17	10					
MED					320	315	320	345	350	335	350	390	388	395	372	348	340	320	298					
UQ						345	350	375	390	398	412	420	412	415	400	398	350	330	315					
LQ						300	285	285	325	302	342	355	338	350	345	328	320	305	280					

The Radio Research Laboratories. Japan

JUN. 1974 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1974 | H'F (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	265	305	280	250	A	A	A	A	200	I A 240	A	240	A	A	A	A	A	A	A	A	A	250	250
2	255	290	305	295	A 300	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A 270	I A 275	I A 280	260	265
3	275	270	290	235	260	250	A	C	C	C	C	C	C	C	C	A	A	A	A	A	A	A	A	275
4	255	270	230	245	265	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A 295	A	A
5	A	A	A	300	250	A	A	230	I A 230	I A 210	240	A	A	215	250	I C 230	235	A	A	A	260	260	255	270
6	295	265	250	230	265	240	A	A	A	225	I A 215	205	I A 215	200	210	220	A	A	A	A	265	250	260	260
7	250	270	250	265	260	250	250	A	A	A	225	220	200	200	225	230	C	C	C	C	250	245	245	265
8	250	265	260	245	215	220	250	A	A	A	A	A	205	215	215	215	250	A	A	A	250	240	215	240
9	245	260	260	265	260	240	A	A	A	A	A	200	A	A	A	A	A	A	A	A	A 300	250	245	250
10	250	290	275	255	230	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	280
11	300	275	260	240	245	250	255	A	A	A	A	A	A	A	A	A	A	A	A	A	275	I A 300	285	250
12	290	I A 300	305	I A 280	H 230	A	A	A	A	A	A	230	A	A	H 205	220	205	250	240	300	270	255	240	265
13	250	275	270	250	250	260	A	A	A	A	A	250	A	A	A	245	215	A	A	A	A	A 305	A	285
14	250	I A 310	335	255	250	235	210	225	215	230	A	A	A	250	215	240	240	220	250	A	A	235	A	A
15	290	A	280	I A 295	I A 305	250	A	A	A	A	A	A	A	A	A	A	A	A	250	A	255	A	A	A
16	A	A	250	290	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A 295
17	A	A	265	A	275	A	A	A	A	A	A	A	A	A	A	A	245	A	A	A	250	250	240	265
18	300	300	300	275	250	I A 250	250	A	A	A	A	215	A	A	200	225	A	A	A	A	A	280	285	265
19	305	275	265	280	A 275	215	A	A	A	A	A	A	A	A	A	220	A	240	A	A	A	260	A	A 300
20	A	295	290	285	230	240	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	225	260
21	265	295	255	265	270	245	A	A	210	210	225	225	215	210	250	205	200	C	240	270	240	225	245	250
22	275	270	255	250	250	235	A	A	A	A	A	A	A	A	A	A	250	250	225	A	A	A	A	235
23	280	I A 300	A 320	A 290	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	255	300	250
24	270	260	240	300	250	A	A	A	A	A	A	A	A	A	A	A	250	A	A	A	A	270	265	235
25	250	275	280	285	240	245	A	A	A	A	A	A	A	225	210	A	250	I A 260	A	A	A 250	A 260	A	A
26	290	300	290	255	270	A	A	A	A	A	A	A	A	205	240	220	A	A	A	A	240	225	295	265
27	A	255	320	320	A	255	260	205	210	205	A	A	A	240	A	A	210	250	A	270	A	A 300	A	A
28	250	300	A	320	370	A	A	250	205	230	A	A	220	220	250	A	225	235	A	260	275	290	300	345 A
29	300	260	290	265	270	A	A	A	A	A	A	A	A	250	250	A	A	A	A	A	275	I A 260	255	250
30	I A 300	275	300	280	A	A	A	A	A	A	A	A	A	A	A	240	A	A	A	A	250	250	250	285
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	28	29	26	18	7	4	5	7	5	7	6	11	12	12	12	7	5	5	16	23	20	25
MED	270	275	278	275	255	248	250	228	210	210	225	220	215	215	220	222	238	250	240	270	258	260	255	265
UQ	290	295	300	290	270	250	252	240	215	228	240	228	220	232	250	235	250	250	250	270	275	280 A	278	275
LQ	250	265	258	255	250	240	250	215	210	208	225	210	205	208	210	220	212	238	240	270	250	250	245	250

JUN. 1974 | H'F (KM)

IONOSPHERIC DATA

JUN. 1974 | H'E (KM) | 135° E Mean Time (G. M. T. + 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					120	115	110	105	105	105	105	110	110	105	105	105	110	110	110	S				
2					S	110	105	105	105	105	105	B	105	A	A	110	110	110	110	S				
3					115	115	105	C	C	C	C	C	C	C	C	A	105	105	110	S				
4					105	I A 110	110	105	100	105	105	105	A	A	A	110	110	105	110	S				
5					A	I A 105	105	105	100	100	105	105	105	105	105	I C 105	110	105	105	S				
6					E	115	105	105	105	100	105	A	A	A	A	100	I A 105	105	105	S				
7					S	110	105	105	100	100	100	100	100	A	A	A	C	C	C	C				
8					S	125	110	105	105	100	100	100	105	105	I A 105	105	105	105	115	S				
9					S	115	110	105	105	100	100	105	100	100	A	A	A	110	110	S				
10					S	115	105	105	105	100	105	105	105	105	A	A	105	105	105	S				
11					A	A	105	105	105	100	I A 100	100	I A 100	105	105	105	A	A	A	S				
12					A	110	105	105	110	100	105	105	105	105	A	A	A	105	105	S				
13					S	110	105	105	105	100	100	100	100	105	A	A	A	A	A	S				
14					A	A	105	105	105	105	105	B	A	A	115	100	105	105	110	S				
15					A	110	110	105	105	105	100	105	A	A	A	105	105	110	110	S				
16					A	A	105	110	105	105	110	105	A	A	A	A	A	105	110	S				
17					A	120	110	105	105	105	100	100	A	A	A	105	105	110	110	E				
18					A	115	110	105	105	105	100	100	A	A	A	105	A	A	A	S				
19					A	105	105	105	105	105	105	A	A	A	A	A	115	A	A	A				
20					125	115	110	105	105	105	105	100	A	A	A	A	A	105	110	115				
21					110	110	105	105	100	100	100	105	105	100	I A 100	105	105	C	A	S				
22					A	115	105	105	105	100	100	100	105	105	105	105	105	105	105	S				
23					A	115	110	105	100	100	100	100	A	A	A	A	105	105	110	115				
24					E	115	105	105	105	105	100	105	105	100	100	105	105	105	115	S				
25					A	115	110	105	105	105	100	105	105	100	105	105	105	105	105	E				
26					A	110	105	100	100	100	A	A	A	A	115	100	105	105	105	A				
27					E	115	105	105	105	105	105	105	105	110	105	105	105	105	105	120				
28					A	115	105	105	110	100	100	100	105	105	110	105	110	105	105	A				
29					S	110	110	105	105	100	105	105	105	110	110	110	105	105	105	S				
30					115	115	110	105	105	105	105	105	A	A	A	105	105	105	105	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					6	27	30	29	29	29	28	24	17	15	13	20	22	24	24	3				
MED					115	115	105	105	105	100	102	105	105	105	105	105	105	105	110	115				
UQ					120	115	110	105	105	105	105	105	105	105	110	105	110	105	110	118				
LQ					110	110	105	105	105	100	100	100	105	102	105	105	105	105	105	115				

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JUN. 1974 | H'E (KM)

IONOSPHERIC DATA

JUN. 1974 | H'ES (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N, Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	120	115	120	125	115	110	115	110	120	120	110	G	130	115	115	110	110	115	110	110	105	105	S
2	S	S	115	110	125	115	120	110	110	110	110	110	110	105	140	135	120	120	115	115	110	110	105	105
3	S	S	105	S	125	120	120	C	C	C	C	C	C	C	C	110	105	115	110	110	110	110	110	100
4	100	E	100	100	115	120	110	110	105	105	110	105	105	100	105	135	110	110	110	110	110	110	105	105
5	105	100	100	100	100	115	110	115	110	110	110	110	105	G	G	C	140	115	110	110	105	105	100	105
6	100	100	100	100	140	120	115	110	110	110	110	105	100	100	100	G	105	115	115	105	105	S	105	105
7	S	S	100	100	S	120	120	115	110	110	105	105	G	105	105	100	C	C	C	C	110	110	105	105
8	105	S	S	S	S	G	125	120	115	110	110	105	110	110	105	G	125	115	115	110	110	105	105	S
9	100	S	S	S	S	125	120	115	110	110	110	110	110	110	100	100	100	115	115	110	105	105	S	S
10	S	100	S	E	S	125	115	110	110	110	110	105	110	105	100	115	110	110	110	110	110	110	110	105
11	100	100	100	100	100	100	120	110	110	105	105	105	100	105	105	105	100	100	100	120	115	110	110	S
12	S	100	100	100	100	120	110	110	115	110	110	110	110	105	105	105	105	G	G	S	S	S	S	S
13	S	S	S	125	125	125	115	110	110	110	105	105	105	105	105	105	100	100	100	105	110	115	110	110
14	100	100	100	100	100	100	G	120	125	115	105	105	105	100	115	120	115	G	120	110	110	105	105	105
15	100	100	100	110	110	115	120	110	110	110	105	105	100	100	100	130	110	115	120	110	110	105	115	105
16	105	100	100	100	100	115	115	110	105	105	110	110	105	100	115	100	120	115	115	115	110	110	105	105
17	100	100	100	100	100	120	115	110	110	110	105	105	100	100	100	115	135	115	110	105	S	105	110	105
18	100	100	100	100	100	120	125	110	115	110	105	110	100	100	100	G	120	100	110	105	105	105	105	105
19	100	100	100	100	100	120	115	110	110	110	105	105	100	100	100	100	115	115	110	105	110	105	105	105
20	100	100	100	S	125	125	120	110	110	105	105	105	105	100	100	100	120	110	110	115	110	105	S	S
21	100	100	100	S	120	110	110	105	120	115	110	110	105	105	100	G	105	C	125	115	S	105	105	100
22	100	100	100	100	110	120	120	115	110	110	110	110	120	115	120	115	115	115	110	115	115	110	105	105
23	100	100	100	100	120	115	110	115	110	110	110	105	105	100	100	120	115	115	115	115	110	110	105	S
24	S	100	100	100	100	125	115	110	110	115	105	105	105	105	110	105	120	115	110	115	115	115	105	105
25	105	100	100	100	100	G	115	110	110	110	105	105	105	105	G	120	130	115	110	110	110	105	105	105
26	100	100	100	100	105	115	110	110	105	105	100	100	100	100	125	G	110	110	110	110	105	105	110	105
27	125	S	120	110	110	120	115	115	G	120	110	115	120	150	115	115	125	140	115	G	110	115	105	100
28	100	110	105	110	120	115	115	115	120	110	110	115	110	G	125	120	120	115	110	105	105	105	105	105
29	105	100	115	125	125	120	115	110	110	110	105	105	115	115	130	120	110	110	110	105	S	105	S	S
30	100	100	110	105	115	115	110	110	110	110	105	110	100	100	100	150	115	110	110	110	110	105	S	105
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	22	26	24	26	28	29	29	28	29	29	29	27	27	27	24	29	26	28	27	26	28	25	22
MED	100	100	100	100	110	120	115	110	110	110	110	105	105	105	105	115	115	115	110	110	110	105	105	105
UQ	105	100	105	110	125	120	120	115	110	110	110	110	110	105	115	120	120	115	115	115	110	110	110	105
LQ	100	100	100	100	100	115	110	110	110	110	105	105	100	100	100	105	110	110	110	108	110	105	105	105

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JUN. 1974 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1974 | TYPES OF ES | 135° E Mean Time (G. M. T.+ 9h)

Station WAKKANAI Lat. 45° 23.6' N. Long. 141° 41.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		F1	F3	F2	C1	C2	C2	C1	C2	C1	C1	C1		H1	C2	C2	C4	C2	C3	C5	F4	F4	F2	
2			F2	F1	C3	C2	C3	C5	C3	C1	C2	C2	C1	L1	HL21	H2	C2	C2	C3	C2	F3	F3	F3	F2
3			F1		C1	C2	C1									L3	C3	C3	C6	C6	F5	F6	F4	F2
4	F2		F1	F1	C1	CL11	C2	C2	C4	C4	C3	C3	L2	L1	L1	H1	C3	C2	C5	C6	F4	F3	F3	F6
5	F3	F3	F4	F3	L1	CL11	C1	C1	C1	C1	C1	C2	C2				HL11	C4	C3	C3	F3	F2	F2	F2
6	F2	F2	F1	F1	H1	C1	C3	C2	C3	C1	C1	L1	L2	L1	L1		L2	C4	C3	C4	F4		F2	F4
7			F1	F1		C2	C2	C2	C2	C2	C2	C1		L1	L1	L1					F2	F2	F1	F1
8	F1						C1	C1	C3	C2	C1	C4	C1	C1	L1		C1	C3	C3	C3	F5	F2	F1	
9	F1					C1	C2	C2	C3	C3	C2	C1	C1	C1	L2	L2	L2	C2	C2	C3	F2	F2		
10		F1				C2	C1	C2	C2	C2	C2	C2	C2	C2	L2	CL31	C2	C2	C4	C5	F3	F2	F1	F1
11	F1	F3	F1	F1	L2	L2	C2	C2	C2	C2	L2	C2	L2	L3	C4	C2	L2	L3	L3	C3	F2	F3	F2	
12		F3	F3	F3	L1	C3	C3	C1	C1	C1	C1	C1	C2	C2	L1	L1	L1							
13				F1	C2	C2	C2	C2	C2	C3	C3	C1	C2	C2	L2	L2	L1	L2	L2	L3	F3	F3	F3	F2
14	F1	F3	F5	F2	L1	L1		C1	H1	C1	C1	C2	L2	L1	CL11	C1	C1		C1	C4	F5	F1	F3	F3
15	F2	F2	F2	F4	L3	C2	C1	C2	C2	C3	L2	C2	L4	L2	L3	H2	C4	C2	C2	C3	F2	F3	F2	F2
16	F2	F4	F3	F3	L4	CL21	C5	C3	C2	C2	C2	C4	L3	L3	CL22	L3	CL12	C2	C3	C2	F3	F2	F2	F2
17	F2	F3	F1	F3	L2	C1	C3	C2	C2	C2	C2	C1	L2	L2	L2	C2	H1	C5	C2	C2		F2	F1	F2
18	F2	F2	F2	F2	L1	C3	C1	C2	C1	C2	C2	C1	L3	L1	L1		CL22	L3	CL22	C3	F3	F2	F2	F2
19	F2	F3	F1	F3	L3	C2	C4	C3	C2	C2	C2	L2	L4	L2	L2	L1	CL11	CL22	CL32	CL31	F3	F2	F2	F2
20	F3	F1	F1		C1	C1	C2	C2	C2	C1	C3	C3	L2	L2	L4	L3	CL11	C3	C2	C5	F2	F3		
21	F2	F3	F1		C1	C3	C4	C2	H1	C1	C2	C2	C1	C1	L2		C1		CL11	C2		F1	F2	F1
22	F2	F3	F3	F2	L1	C1	C2	C2	C1	C3	C2	C1	C2	C1	C1	C4	C1	C2	C2	C3	F4	F3	F2	F2
23	F2	F5	F5	F4	CL21	C5	C4	C1	C3	C2	C2	C2	L2	L2	L2	CL11	C2	C4	C2	C6	F3	F2	F2	
24		F2	F2	F2	L1	C2	C3	C3	C2	C2	C2	C2	C2	C3	C2	C2	C1	C2	C2	C2	F3	F2	F3	F3
25	F2	F2	F2	F2	L1		C1	C3	C3	C3	C2	C2	C1	C1		C1	H1	C3	C3	C5	F2	F3	F3	F2
26	F2	F3	F2	F2	L2	C3	C2	C2	C3	C2	L2	L2	L1	L1	CL11		C2	C3	C2	L2	F2	F2	F2	F2
27	F4		F2	F2	C3	C1	C2	C1		C1	C2	C1	C2	H2	C2	C1	C1	H1	C2		F4	F1	F2	F2
28	F1	F1	F3	F2	CL21	C5	C3	C1	C1	C2	C2	C1	C1		C1	C2	C1	C1	C3	L3	F2	F3	F1	F3
29	F1	F2	F2	F1	C1	C3	C2	C2	C3	C2	C2	C2	C1	C1	H1	C2	C2	C3	C3	C3		F2		
30	F3	F1	F2	F1	C3	C4	C2	C2	C4	C2	C3	C2	L2	L2	L2	H1	C3	C3	C2	C2	F1	F2		F1
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUN. 1974 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1974 | FXI (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	I R 63	X 62	X 56	54	49																X 65	X 70	X 68	68
2	X 61	X 54	X 51	X 52	X 47																80	76	70	76
3	74	72	63	62	54	61															I A 71	71	69	A
4	67	61	X 62	53	X 46			70													X 69	X 69	X 66	62
5	56	60	61	56	51				80												70	70	I A 70	66
6	65	62	X 61	X 61	56																X 73	78	73	68
7	X 61	X 61	I R 60	X 61	X 58																X 83	X 70	X 67	X 65
8	I R 66	X 64	X 59	X 58	X 57																I R 90	X 81	X 73	X 66
9	X 57	56	58	55	53																74	76	72	67
10	X 62	X 58	56	56																	X 85	83	83	83
11	80	77	77	77	76	68															I A 83	83	86	99
12	86	X 67	64	59	54																X 82	X 82	X 78	X 72
13	X 73	X 61	X 62	X 55																	X 71	X 65	66	X 63
14	60	65	I A 58	60	60																X 80	I A 68	X 63	65
15	66	63	59	57	53																I A 80	85	76	76
16	75	75	71	58	51	55															X 75	73	75	75
17	I A 68	I A 58	52	I R 46																	X 68	76	75	61
18	56	55	53	55	60																X 62	55	55	58
19	56	58	55	52	51																X 65	I A 56	X 52	57
20	57	55	53	55	59															89	89	75	76	80
21	69	62	55	55	56																X 80	X 68	68	I A 66
22	69	X 60	X 56	55	58																77	75	70	70
23	62	63	60	58	53																80	I A 72	I A 73	I A 68
24	66	62	60	I A 58	51																X 70	72	65	62
25	54	52	50	52	54																X 85	78	74	72
26	I A 63	70	68	57	52				81												88	72	X 66	X 64
27	X 52	57	50	49	43																I A 58	61	62	I A 62
28	X 54	50	X 42	X 43																	X 61	X 62	X 61	X 60
29	X 58	X 58	X 55	X 54																	X 74	75	70	57
30	54	A	A	55	54																75	63	64	59
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	29	30	25	3		1	2											1	30	30	30	29
MED	62	61	58	55	54	61		70	80											89	X 75	72	70	66
UQ	68	63	61	58	57	64															82	76	74	72
LQ	57	58	55	54	51	58															X 70	68	66	62

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JUN. 1974 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF2 (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	I R 56	56	49	F 45	F 41	A	A	A	47	47	49	49	I A 50	51	50	I A 50	I A 55	58	60	57	59	64	62	F 59
2	55	48	45	46	41	49	62	63	A	A	A	A	A	62	61	I A 57	I A 58	60	I A 65	67	F 73	F	F	F
3	F	F	F	F	F	F 51	59	70	I A 64	62	I A 59	I A 60	60	I A 63	68	78	80	79	80	73	I A 65	F 63	F	A
4	F	F 51	56	F	39	47	49	F 63	64	I A 58	56	I R 54	58	64	64	69	70	67	68	I A 65	63	63	60	F
5	F	F 51	F	F	F 44	48	55	I A 67	F 73	63	56	57	57	57	68	79	80	79	69	68	F 63	F	A	F
6	F	F	55	55	F 48	46	I A 53	65	60	58	I A 57	57	A	A	56	65	63	64	68	66	67	F	F 65	F 61
7	55	55	56	55	52	52	57	60	69	68	63	66	65	64	64	62	59	60	68	74	77	64	61	59
8	I R 60	58	53	52	51	52	55	63	70	V 70	64	65	60	61	63	63	61	62	65	I A 74	I R 84	75	66	59
9	51	F 48	F 49	F 47	F 46	54	65	68	61	63	A	A	A	A	A	I A 57	I A 57	56	51	56	F 64	F	F 65	F
10	56	52	F 48	F 48	48	53	57	61	64	I A 54	60	I A 67	I A 68	72	69	I A 63	71	I A 74	I A 83	89	78	F 74	F	F
11	F	F	F	F	F	F 59	56	S 69	V 77	77	A	A	A	A	A	A	87	81	78	80	A	F	F	F
12	F	S 61	F	F	F	I A 46	I A 52	55	I A 56	I A 52	58	59	57	55	I A 56	67	64	57	62	66	76	76	72	66
13	67	55	56	49	51	56	69	69	66	I A 60	R 55	62	I A 59	I A 60	I A 70	78	82	78	76	78	65	59	F	S 56
14	F	F	A	F	F 52	48	45	54	58	58	57	56	60	65	64	I A 61	56	58	65	70	74	I A 62	56	F
15	F	F	F	F	F 45	60	I R 48	47	50	I A 54	A	A	A	63	70	79	64	67	I A 73	I A 72	A	F	F	F
16	F	F	F	F	F	F	58	77	I A 72	53	A	A	66	75	67	I A 62	54	71	I A 63	I A 72	69	F	F	F
17	A	A	F	41	36	45	I A 55	64	A	A	A	A	49	53	58	I A 62	61	56	62	68	62	F	F	F
18	F 47	F	F	F	F	53	65	I A 58	59	55	I A 52	50	I A 54	55	A	A	A	I A 57	66	73	56	F	F	F
19	F	F	F	F	F	55	54	A	A	I A 54	I A 53	55	54	59	55	55	I A 58	61	69	72	58	I A 50	S 45	F
20	F	F	F	F	F	46	43	50	57	I A 62	A	A	A	A	65	74	80	84	79	F	F	F	F	F
21	F	F 54	F 46	F	F 47	R 54	71	I A 64	59	I A 55	60	56	56	58	59	66	I A 58	I A 57	61	76	74	61	61	A
22	F	54	50	F	F	49	62	65	I A 68	I A 58	57	51	58	60	65	I S 60	60	60	61	63	F 69	F	F	F
23	F	F	F	F	F 45	50	I A 66	I A 63	I A 62	I A 61	54	A	A	57	63	66	62	A	A	72	F	A	A	A
24	F	F	F	A	F	I A 50	62	64	I A 61	I A 58	I A 59	I A 58	I A 62	57	I A 54	I A 58	62	I A 56	I A 55	58	64	F 64	F	F
25	F	F 44	F	F	F 44	54	53	62	69	71	58	53	50	51	58	65	62	64	66	76	79	F	F	F
26	A	F	F	F	F 44	46	55	64	F 75	63	I A 69	I A 58	60	67	58	I A 56	I A 65	72	88	I A 88	F	F 64	60	58
27	46	F	F	F	F	39	42	C	C	C	C	A	A	E G 44	I A 49	52	53	52	54	53	I A 52	F 52	F 52	I A 54
28	48	F	36	37	I A 34	38	44	47	45	46	E G 44	E G 45	46	55	55	54	47	51	52	56	55	56	55	54
29	52	52	48	48	54	44	52	63	60	I A 57	I A 55	53	55	56	66	68	70	54	I A 58	I A 63	68	F	F	F
30	F	A	A	F	F	A	49	A	A	I A 52	A	A	A	A	48	51	51	54	56	62	F	F	F	F
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	14	13	11	19	27	29	26	25	27	21	20	21	25	27	28	29	29	29	29	24	15	13	9
MED	55	53	49	48	F 45	50	55	63	62	58	57	56	58	59	63	62	62	60	65	70	66	63	61	59
UQ	56	55	55	50	50	54	62	65	69	62	59	60	60	63	66	68	70	71	69	74	74	64	65	59
LQ	50	F 51	48	46	F 42	46	52	60	59	I A 54	55	53	54	55	56	I A 57	58	57	61	63	62	60	56	56

The Radio Research Laboratories, Japan

JUN. 1974 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF1 (0.01 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N, Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	420	430	430	450	I A 450	450	I A 430	A	A	A	L					
2						340	A	A	A	A	A	A	A	460	460	A	A	A	A					
3						360	A	A	A	A	A	A	470	I A 470	470	450	420	A	A					
4						I A 330	I A 390	I A 400	A	A	460	490	I A 470	460	450	H 440	430	A	A					
5						L	L 450	I A 440	430	450	500	460	460	H 470	460	430	430	400	A					
6						L 410	A	A	440	A	A	A	A	A	A	440	420	A	A					
7							A	A	A	A	460	I A 470	470	I A 470	450	450	420	410	L					
8						L	L	420	A	A	I A 470	I A 470	I A 480	470	450	440	420	400	A					
9						L	L	420	460	A	A	A	A	A	A	A	A	390	L					
10							A	420	A	A	A	A	A	450	450	A	A	A	A					
11							L	430	A	A	A	A	A	A	A	A	410	A	L					
12						A	A	A	A	I A 440	I A 450	450	A	A	A	A	420	410	L					
13						L	A	A	A	A	460	I A 460	I A 470	A	A	A	420	390	L					
14						L	L	400	430	430	I A 460	I A 470	450	440	430	I A 440	460	I A 400	A					
15						L	440	410	A	A	A	A	A	A	430	430	410	410	A					
16						360	A	410	I A 420	450	A	A	A	I A 450	I A 430	I A 420	410	370	A					
17						350	A	A	A	A	A	A	440	440	430	I A 420	400	380	A					
18							A	A	A	A	A	450	A	A	A	A	A	A	A					
19						L	380	A	A	A	A	430	440	430	A	A	A	A	A					
20								A	A	A	A	A	A	A	A	430	A	A	A					
21						L	U L 370	A	A	A	I A 430	440	I A 440	I A 440	I A 430	A	A	A	A					
22						A	I A 390	A	A	A	A	450	430	H 450	430	430	410	L 380	350					
23						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
24							A	A	A	A	A	A	A	I A 440	I A 450	I A 430	410	A	A					
25						L	I A 400	I A 410	430	A	A	A	440	I A 460	I A 440	430	410	A	A					
26						350	370	440	430	440	A	A	A	I A 450	I A 450	I A 430	I A 400	380	L					
27						A	330	C	C	C	C	I A 440	I A 430	440	I A 420	410	410	370	L 340					
28						310	340	I A 380	400	430	440	H 450	440	430	430	I A 430	400	I A 380	360					
29							A	A	430	I A 440	A	A	I A 450	450	440	420	A	A	A					
30						A	A	A	A	I A 430	A	A	A	A	430	430	I A 420	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						8	10	12	10	9	10	14	16	20	21	19	20	14	3					
MED						350	385	415	430	440	460	450	450	450	440	430	415	390	350					
UQ						360	I A 400	425	430	440	460	I A 470	470	460	450	440	420	400	355					
LQ						335	370	405	420	430	I A 440	450	440	440	430	430	410	380	345					

The Radio Research Laboratories, Japan

JUN. 1974 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOE (0.01 MHZ) | 135 E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						175	245	280	A 310	330	340	345	A 355	350	345	I A 330	305	260	A	S				
2						200	250	285	310	325	335	A	A	355	345	330	300	260	205	S				
3						185	250	290	315	330	335	A	A	A	345	335	315	275	210	S				
4						A	A	295	310	330	340	I A 350	I A 350	I A 345	340	330	315	275	215	S				
5						185	255	290	315	I A 325	335	345	A	A	A	330	295	255	205	S				
6						210	255	285	310	330	335	A	A	A	A	A	A	265	A	S				
7						190	245	295	320	335	340	350	A	A	A	A	A	A	A	S				
8						185	250	285	310	330	350	355	360	345	320	I A 310	285	260	215	S				
9						185	255	295	315	340	345	355	355	350	325	A	A	A	205	S				
10					E	195	255	290	320	335	340	350	360	I A 350	335	325	300	270	205	S				
11					S	A	265	295	320	345	350	355	355	345	315	I A 300	290	I A 265	I A 210	S				
12					S	195	255	285	310	335	345	345	350	A	A	A	A	A	205	B				
13					S	195	I A 240	280	310	325	330	340	345	A	A	A	A	A	A	S				
14					E	A	245	290	I A 315	310	320	335	340	335	320	305	280	250	180	S				
15					E	185	250	285	305	I A 320	325	A	A	A	A	335	295	245	195	S				
16					S	180	245	285	300	315	330	335	345	I A 340	325	310	280	245	195	S				
17					E	A	250	285	305	325	330	I A 340	I A 350	340	330	315	290	250	200	S				
18					E	A	I A 250	285	295	315	325	335	A	A	A	A	A	A	A	S				
19					E	A	245	280	300	310	320	A 325	A	A	A	A	A	A	205	S				
20					A	200	245	280	310	320	I A 330	335	A	A	A	A	A	245	195	S				
21					S	A	245	280	295	310	320	330	A	A	A	A	A	A	A	S				
22					A	185	235	280	305	315	A	A	A	335	325	305	285	255	210	S				
23					E	170	235	275	300	320	325	335	A	A	A	A	A	255	A	S				
24					E	A	235	275	300	315	325	330	335	A	A	A	A	A	A	S				
25					E	I A 210	255	285	305	320	330	A	A	A	A	A	A	265	A	S				
26					E	A	235	I A 270	A	A	A	A	A	350	340	325	285	245	195	S				
27					E	A	250	C	C	C	C	340	350	350	330	320	290	260	210	B				
28					A	A	240	275	300	320	I A 330	340	I A 345	345	325	315	285	260	A	E				
29					E	A	255	290	310	320	330	335	I A 345	I A 340	335	330	I A 310	I A 270	215	S				
30					E	A	250	275	300	315	325	A	A	A	A	A	300	275	A	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					13	17	29	29	28	28	27	22	15	15	16	17	18	22	19	1				
MED					E	185	250	285	310	322	330	340	350	345	330	325	292	260	205	E				
UQ					E	195	255	290	312	330	340	350	355	350	340	330	300	265	210					
LQ					E	185	245	280	300	315	325	335	345	340	325	310	285	250	198					

The Radio Research Laboratories, Japan

JUN. 1974 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOES (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	JA 25	JA 24	JA 49	JA 56	JA 29	JA 64	JA 105	JA 110	JA 46	48	44	JA 67	JA 60	JA 60	47	JA 61	JA 74	JA 46	JA 35	JA 39	JA 40	JA 53	JA 51	JA 50
2	JA 42	JA 28	JA 28	JA 19	JA 19	27	41	JA 50	JA 68	JA 96	JA 120	JA 148	JA 109	48	47	JA 61	JA 78	JA 64	JA 98	JA 113	JA 54	JA 50	JA 42	JA 34
3	JA 64	JA 36	JA 62	JA 43	JA 27	25	JA 49	JA 64	JA 73	JA 72	JA 98	JA 190	JA 160	JA 79	JA 76	JA 41	JA 95	JA 80	JA 75	JA 60	JA 105	JA 42	JA 37	JA 80
4	JA 79	JA 64	JA 65	JA 37	JA 54	JA 66	45	JA 56	JA 47	JA 75	38	JA 44	JA 79	JA 64	43	G	46	JA 56	JA 64	JA 90	JA 45	JA 66	JA 27	JA 39
5	JA 65	JA 44	JA 43	JA 26	JA 17	G	34	JA 76	41	42	45	44	39	39	40	37	JA 48	JA 50	JA 66	JA 64	JA 80	JA 47	JA 76	JA 52
6	JA 35	JA 33	JA 34	JA 26	JA 24	32	JA 74	JA 66	JA 87	JA 102	JA 72	JA 80	JA 87	JA 69	JA 79	JA 69	36	JA 60	JA 74	JA 46	JA 24	JA 41	JA 24	JA 26
7	JA 18	JA 24	JA 29	JA 26	JA 25	24	JA 45	JA 64	JA 52	JA 50	JA 58	JA 67	JA 78	JA 64	36	35	31	JA 32	28	22	JA 24	JA 22	JA 24	JA 18
8	JA 30	JA 30	JA 24	ES 13	JA 18	28	37	42	JA 62	JA 64	JA 69	JA 54	JA 58	JA 49	42	JA 45	39	39	JA 47	JA 98	JA 31	JA 41	JA 44	JA 24
9	JA 21	JA 18	JA 19	JA 18	ES 14	22	40	40	43	JA 51	JA 82	JA 78	JA 71	JA 97	JA 70	JA 67	JA 62	JA 31	29	JA 65	JA 52	JA 43	JA 33	JA 24
10	JA 25	JA 27	JA 24	JA 24	25	31	JA 82	JA 52	JA 85	JA 89	JA 107	JA 101	JA 122	JA 74	45	JA 84	JA 71	JA 71	JA 99	JA 46	JA 54	JA 80	JA 64	JA 85
11	JA 122	JA 39	JA 41	JA 65	JA 44	JA 32	JA 42	JA 54	JA 66	JA 89	JA 171	JA 89	JA 166	JA 164	JA 142	JA 158	JA 176	JA 79	JA 139	JA 122	JA 184	JA 29	JA 41	JA 25
12	JA 64	M 20	JA 26	JA 36	JA 31	JA 64	JA 64	JA 46	JA 71	JA 67	JA 60	45	47	JA 67	JA 65	JA 73	JA 40	JA 34	JA 25	E 16	JA 25	JA 21	JA 18	M 19
13	ES 14	ES 15	ES 14	ES 14	18	29	JA 56	JA 60	JA 66	JA 76	JA 113	JA 64	JA 70	JA 122	JA 118	JA 131	JA 54	35	JA 54	JA 43	JA 74	JA 76	JA 66	JA 69
14	JA 112	JA 80	JA 121	JA 54	JA 26	JA 30	31	38	JA 47	JA 84	JA 102	50	40	G	34	JA 102	JA 50	JA 59	JA 56	JA 37	JA 36	JA 117	JA 64	JA 54
15	JA 29	JA 27	JA 24	JA 29	JA 65	JA 25	33	JA 41	JA 79	JA 169	JA 90	JA 80	JA 79	JA 54	JA 44	G	JA 84	JA 55	JA 96	JA 94	JA 144	JA 124	JA 80	JA 29
16	JA 54	JA 69	JA 74	JA 44	JA 44	JA 30	JA 60	JA 46	JA 76	JA 110	JA 65	JA 158	JA 88	48	47	JA 65	JA 60	JA 41	JA 78	JA 80	JA 85	JA 65	JA 52	JA 58
17	JA 98	JA 84	JA 45	JA 48	JA 39	32	JA 64	JA 66	JA 114	JA 131	JA 129	JA 119	46	45	57	JA 74	43	JA 14	JA 90	JA 136	D 200	JA 36	JA 56	JA 26
18	JA 20	JA 46	JA 54	JA 42	JA 40	38	JA 54	JA 79	JA 58	JA 70	JA 110	JA 50	JA 145	JA 87	JA 85	JA 86	JA 105	JA 80	JA 85	JA 39	JA 84	JA 79	JA 49	JA 56
19	JA 49	JA 54	JA 36	JA 36	JA 25	26	JA 54	JA 85	JA 130	JA 60	JA 57	JA 67	JA 67	JA 60	JA 53	JA 66	JA 81	JA 56	JA 61	JA 64	JA 82	JA 85	JA 50	JA 39
20	JA 29	JA 24	JA 29	JA 33	JA 30	JA 37	JA 43	JA 54	JA 54	JA 80	JA 113	JA 75	JA 134	JA 164	JA 85	44	JA 74	JA 140	JA 180	JA 121	JA 112	JA 68	JA 47	JA 45
21	JA 24	JA 29	JA 29	JA 29	JA 26	24	JA 41	JA 65	JA 54	JA 66	JA 48	JA 43	JA 75	51	46	JA 46	JA 54	JA 59	JA 53	JA 21	M 21	JA 27	JA 39	JA 75
22	JA 46	JA 84	JA 56	JA 65	JA 71	JA 40	JA 46	JA 51	JA 90	JA 78	JA 101	JA 47	JA 43	40	42	JA 96	JA 46	JA 74	JA 29	JA 47	JA 87	JA 101	JA 51	JA 42
23	JA 56	JA 51	JA 47	JA 54	JA 29	JA 45	JA 85	JA 103	JA 83	JA 76	JA 64	JA 94	JA 84	JA 66	JA 56	JA 70	JA 74	JA 185	D 200	JA 136	JA 138	JA 90	JA 85	JA 89
24	JA 42	JA 54	JA 51	JA 85	JA 79	JA 62	JA 54	JA 129	JA 105	JA 59	JA 103	JA 88	JA 108	JA 58	JA 89	JA 106	JA 75	JA 77	JA 69	JA 46	JA 36	JA 65	JA 54	JA 34
25	JA 39	JA 34	JA 25	JA 20	JA 28	28	JA 51	JA 65	JA 102	JA 89	JA 96	JA 75	JA 65	JA 50	JA 44	JA 42	43	JA 94	JA 83	JA 43	JA 56	JA 84	JA 45	JA 86
26	JA 80	JA 84	JA 42	JA 45	JA 27	24	27	JA 75	JA 75	JA 60	JA 186	JA 124	JA 58	52	JA 65	JA 72	JA 65	JA 51	JA 86	JA 111	JA 56	JA 19	JA 21	JA 28
27	JA 25	JA 29	JA 20	JA 32	JA 28	JA 46	31	C	C	C	C	46	JA 109	G	JA 51	34	36	33	26	JA 28	JA 66	JA 85	JA 34	JA 116
28	JA 34	JA 48	JA 34	JA 28	JA 60	29	JA 43	JA 67	JA 46	39	JA 66	JA 44	JA 52	44	JA 86	JA 71	JA 45	40	JA 51	JA 48	JA 35	JA 20	JA 18	JA 18
29	JA 17	M 21	JA 25	JA 25	JA 29	30	JA 42	JA 87	JA 50	JA 76	JA 70	JA 145	JA 134	JA 59	55	G	JA 48	JA 86	JA 90	JA 100	JA 85	JA 60	JA 39	JA 54
30	JA 48	JA 54	JA 55	JA 65	JA 29	JA 64	JA 60	JA 85	JA 164	JA 88	JA 131	JA 165	JA 124	JA 108	JA 45	JA 45	JA 48	JA 78	JA 63	JA 84	JA 67	JA 51	JA 27	JA 32
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	JA 40	JA 35	JA 35	JA 34	JA 28	30	JA 46	JA 64	JA 68	JA 76	JA 90	JA 75	JA 78	JA 60	JA 52	JA 66	JA 54	JA 59	JA 68	JA 62	JA 61	JA 56	JA 44	JA 40
UQ	JA 64	JA 54	JA 51	JA 48	JA 40	JA 40	JA 60	JA 76	JA 85	JA 89	JA 110	JA 101	JA 109	JA 74	JA 76	JA 74	JA 74	JA 79	JA 90	JA 98	JA 85	JA 80	JA 54	JA 58
LQ	JA 25	JA 27	JA 25	JA 26	JA 25	26	41	JA 51	JA 52	JA 60	JA 64	JA 50	JA 58	48	44	JA 42	JA 45	JA 41	JA 51	JA 43	JA 36	JA 41	JA 33	JA 26

JUN. 1974 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FBES (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39° 43.5' N, Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	18	15	28	28	20	A A 64	A A 105	A A 110	39	38	39	42	A A 60	41	45	A A 61	A A 74	43	32	36	26	37	36	36
2	33	E	E	15	18	24	38	44	A A 68	A A 96	A A 120	A A 148	A A 109	42	44	A A 61	A A 78	58	A A 98	60	51	27	E	28
3	40	19	15	15	15	22	43	60	A A 73	58	A A 98	A A 190	45	A A 79	45	37	38	55	70	37	A A 105	23	27	A A 80
4	28	34	28	28	22	41	43	47	43	A A 75	37	41	49	36	43	G	39	54	55	A A 90	U Y 45	E	21	32
5	35	21	35	E	15	G	29	A A 76	38	39	44	43	38	37	36	35	34	35	34	50	42	42	A A 76	22
6	E	16	28	E	16	30	A A 74	61	39	51	A A 72	52	A A 87	A A 69	52	43	34	59	49	44	20	19	20	E
7	E	19	U Y 29	20	18	22	42	50	46	48	41	58	43	53	36	34	31	30	24	20	21	E	E	E
8	25	17	19	E S 13	E	25	34	40	59	56	53	52	57	44	38	42	37	38	37	A A 98	18	E	21	20
9	E	E	E	E	E S 14	22	34	39	38	50	A A 82	A A 78	A A 71	A A 97	A A 70	A A 67	A A 62	31	29	28	20	24	24	E
10	17	18	E	E	18	29	41	39	45	A A 89	56	A A 101	A A 122	40	38	A A 84	57	A A 71	A A 99	25	27	63	55	54
11	41	18	32	49	17	32	35	35	52	62	A A 171	A A 89	A A 166	A A 164	A A 142	A A 158	38	47	28	51	A A 184	27	30	21
12	54	E	E	E	20	A A 64	A A 64	44	A A 71	A A 67	55	44	46	46	A A 65	59	39	32	19	E B 16	23	E	E	E
13	E S 14	E S 15	E S 14	E S 14	G	26	52	60	58	A A 76	44	49	A A 70	A A 122	A A 118	55	31	32	29	27	30	36	31	34
14	35	49	A A 121	29	19	26	29	31	41	40	45	46	37	G	34	A A 102	43	41	56	25	30	A A 117	21	28
15	21	17	E	16	25	20	27	34	42	A A 169	A A 90	A A 80	A A 79	46	39	G	32	39	A A 96	A A 94	A A 144	65	45	E
16	28	44	38	26	27	27	37	39	A A 76	41	A A 65	A A 158	46	48	46	A A 65	32	35	A A 78	A A 80	E	35	28	30
17	A A 98	A A 84	34	32	21	29	A A 64	57	A A 114	A A 131	A A 129	A A 119	37	43	36	A A 74	32	33	39	39	49	26	33	18
18	E	28	E	26	18	37	52	A A 79	55	44	A A 110	39	A A 145	50	A A 85	A A 86	A A 105	A A 80	58	32	40	31	39	38
19	30	29	23	E	17	22	36	A A 85	A A 130	A A 60	A A 57	42	39	37	47	45	A A 81	53	64	48	32	A A 85	30	22
20	20	18	22	20	17	27	34	42	46	A A 80	A A 113	A A 75	A A 134	A A 164	46	40	71	50	72	75	51	55	36	36
21	18	E	E	18	18	22	30	A A 65	52	A A 66	45	37	47	51	44	45	A A 130	A A 59	U Y 55	21	E	18	18	A A 75
22	30	28	18	E	23	37	39	42	A A 90	A A 78	46	38	36	38	35	39	37	34	23	20	23	20	28	30
23	30	35	19	E	15	43	A A 85	A A 103	A A 83	A A 76	45	A A 94	A A 84	52	48	38	55	A A 185	D A 200	64	62	A A 90	A A 85	A A 89
24	21	31	31	A A 85	E	A A 62	49	48	A A 105	A A 59	A A 103	A A 88	A A 108	53	A A 89	A A 106	39	A A 77	A A 69	35	22	27	39	E
25	22	18	18	16	19	26	42	52	40	44	50	45	43	47	44	40	40	52	35	35	34	38	42	54
26	A A 80	44	27	20	16	22	27	36	40	42	A A 186	A A 124	46	46	47	A A 72	A A 65	34	32	A A 111	24	E	E	27
27	E	18	16	29	19	35	G	C	C	C	C	A A 46	A A 109	G	A A 51	34	34	31	23	23	A A 66	22	27	A A 116
28	18	23	29	18	A A 60	26	29	40	G	35	25	36	37	38	38	46	32	39	29	24	E	E	E	E
29	E	E	E	17	17	25	41	59	38	A A 76	A A 70	51	46	39	39	G	44	41	A A 90	A A 100	26	20	21	26
30	39	A A 54	A A 55	35	19	A A 64	43	A A 85	A A 164	A A 88	A A 131	A A 165	A A 124	A A 108	41	41	46	43	41	21	28	37	18	27
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	24	18	20	18	18	26	40	48	52	A A 60	A A 57	52	53	46	44	45	39	42	45	36	29	27	28	28
UQ	35	31	29	28	20	37	49	61	A A 73	A A 76	A A 103	A A 94	A A 108	53	51	A A 67	62	55	70	64	49	38	36	36
LQ	17	16	E	E	16	22	34	40	40	44	45	43	43	39	38	38	34	34	29	25	22	19	20	18

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JUN. 1974 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | F-MIN (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	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 S 14	E S 13	E S 14	E S 13	E S 14	13	15	15	14	16	16	15	15	18	16	16	16	15	14	E S 13	E S 13	E S 14	E S 14	E S 14
2	E S 13	E S 14	E S 14	E	E	14	14	13	16	14	18	16	16	20	18	17	14	15	15	E S 14	E S 13	E S 14	E S 14	E S 14
3	E S 14	E S 13	E	E	E	13	14	14	16	22	15	16	17	28	16	16	16	16	14	E S 13	E	E S 14	E S 14	E S 14
4	E S 13	E S 13	E S 14	E S 14	E	13	15	15	15	16	15	15	19	18	17	17	15	15	15	E S 13	E S 14	E S 13	E S 14	E S 12
5	E S 14	E	E S 13	E S 14	E	15	15	15	15	15	16	18	16	18	15	15	16	14	15	E S 14	E S 13	E S 14	E S 14	E S 13
6	E S 14	E	E	E S 13	E	14	15	16	16	17	17	16	21	18	15	17	15	15	14	E S 14	E S 13	E S 14	E S 14	E S 14
7	E S 14	E S 14	E S 14	E	E	E	15	16	16	18	17	18	18	20	17	17	14	14	14	E S 14	E S 14	E S 14	E S 14	E S 14
8	E S 14	E	E	E S 13	E S 14	13	15	16	16	20	18	20	20	20	19	17	16	15	15	E S 14	E S 13	E S 13	E S 14	E S 14
9	E S 14	E S 14	E S 14	E S 14	E S 14	15	17	16	15	20	20	18	21	19	18	16	15	16	14	E S 14	E S 14	E S 14	E S 14	E S 14
10	E S 14	E S 14	E S 14	E S 13	E	15	15	16	15	17	17	19	20	17	29	15	18	17	14	E S 14	E S 14	E S 14	E S 13	E S 14
11	E S 14	E S 14	E S 14	E S 14	E S 14	14	16	15	17	17	18	22	17	19	16	16	16	15	14	E S 14	E S 14	E S 14	E S 14	E S 14
12	E S 14	E S 14	E S 14	E S 14	E S 14	14	14	15	15	15	16	17	16	15	16	17	14	14	13	16	E S 13	E S 14	E S 14	E S 14
13	E S 14	E S 15	E S 14	E S 14	E S 14	13	15	17	14	16	17	15	16	14	17	16	15	13	13	E S 14	E S 13	E S 14	E S 14	E S 14
14	E S 14	E S 14	E S 13	E S 13	E	13	15	15	16	15	17	17	15	16	17	16	16	15	13	E S 13	E S 13	E S 14	E S 14	E S 14
15	E S 14	E S 14	E S 14	E	E	13	15	14	15	16	16	16	18	15	17	17	15	16	14	E S 14	E S 14	E S 14	E S 14	E S 14
16	E S 14	E S 14	E S 14	E S 13	E S 14	13	14	15	14	16	15	17	18	18	17	17	15	15	14	E S 14	E S 14	E S 13	E S 14	E S 14
17	E S 14	E S 14	E S 13	E S 13	E	13	15	14	15	17	14	18	16	16	15	17	15	15	15	E S 14	E S 14	E S 14	E S 14	E S 14
18	E S 14	E S 14	E S 13	E	E	14	13	15	15	15	15	17	15	17	18	15	15	14	14	E S 13	E S 14	E S 14	E S 14	E S 14
19	E S 14	E S 14	E S 13	E S 13	E	13	14	13	14	16	16	15	16	17	16	15	15	13	13	E S 13	E S 14	E S 14	E S 14	E S 14
20	E S 14	E S 14	E S 14	E S 14	E	14	13	14	15	15	17	16	16	17	16	16	15	14	14	E S 14	E S 14	E S 13	E S 14	E S 14
21	E S 14	E S 14	E S 14	E S 14	E S 13	14	13	15	16	18	16	17	16	17	17	15	16	15	13	E S 14	E S 12	E S 14	E S 14	E S 14
22	E S 14	E S 13	E S 14	E S 14	E	14	13	14	15	16	16	16	16	16	17	17	15	15	13	E S 13	E S 14	E S 14	E S 13	E S 14
23	E S 14	E S 14	E S 14	E S 14	E	13	15	15	14	15	16	17	18	17	18	21	15	16	13	E S 13	E S 14	E S 13	E S 14	E S 14
24	E S 14	E S 14	E	E S 14	E	14	14	16	15	18	17	19	18	19	19	19	15	16	14	E S 14	E S 14	E S 14	E S 13	E S 14
25	E S 14	E S 14	E S 13	E	E	13	14	14	14	14	14	15	18	18	16	17	13	14	13	E S 14	E S 14	E S 14	E S 14	E S 14
26	E S 14	E	E	E	E	13	13	15	15	16	15	17	17	16	15	16	13	14	12	E S 14	E S 14	E S 14	E S 14	E S 14
27	E S 14	E S 14	E S 13	E	E	14	14	C	C	C	C	15	20	17	16	17	16	16	13	16	E S 13	E S 13	E S 14	E S 14
28	E S 14	E S 14	E S 13	E	E	14	14	16	17	14	16	18	16	16	18	17	15	15	E	E	E S 14	E S 14	E S 14	E S 13
29	E S 14	E S 14	E S 14	E S 13	E	14	15	16	17	16	17	18	14	19	16	17	16	16	13	E S 14	E S 14	E S 14	E S 14	E S 14
30	E S 14	E S 14	E S 14	E	E	13	16	15	16	17	16	16	20	17	17	17	16	14	14	E S 13	E S 14	E S 14	E S 14	E S 13
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	E S 14	E S 14	E S 14	E S 13	E	14	15	15	15	16	16	17	17	17	17	17	15	15	14	E S 14	E S 14	E S 14	E S 14	E S 14
UQ	E S 14	E S 14	E S 14	E S 14	E S 13	14	15	16	16	17	17	18	18	19	18	17	16	16	14	E S 14	E S 14	E S 14	E S 14	E S 14
LQ	E S 14	E S 13	E S 13	E	E	13	14	14	15	15	16	16	16	16	16	16	15	14	13	E S 13	E S 13	E S 14	E S 14	E S 14

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JUN. 1974 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F2 (0.01) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	I R 270	295	285	F 290	F 285	A	A	A	255	255	295	225	I A 255	270	260	I A 260	I A 270	300	300	290	270	280	280	F 285
2	290	295	290	285	290	280	295	305	A	A	A	A	A	285	295	I A 280	I A 270	270	I A 295	300	F 290	F	F	F
3	F	F	F	F	F	F 290	285	315	I A 305	305	I A 295	I A 300	290	I A 290	280	285	295	295	310	320	I A 290	F 285	F	A
4	F	F 290	305	F	305	290	255	F 270	310	I A 290	275	I R 280	270	295	300	295	310	305	300	I A 295	290	290	285	F
5	F	F 280	F	F	F 295	290	270	I A 300	F 300	330	275	295	280	265	290	300	305	315	305	300	F 290	F	A	F
6	F	F	290	310	F 320	270	I A 280	320	300	310	I A 290	285	A	A	285	300	300	310	300	305	295	F	F 305	F 285
7	275	275	280	300	310	295	300	285	305	315	315	305	300	285	305	310	295	290	310	295	310	305	280	290
8	I R 290	290	285	300	315	315	295	300	315	V 305	300	320	I A 300	290	295	300	305	300	285	I A 290	I R 300	310	290	295
9	295	F 300	F 300	F 300	F 310	310	310	335	300	325	A	A	A	A	A	I A 300	I A 300	305	300	290	F 275	F	F 305	F
10	275	280	F 285	F 300	325	355	335	305	305	I A 295	I A 275	I A 295	I A 290	295	305	I A 275	285	I A 275	I A 290	305	280	F 285	F	F
11	F	F	F	F	F	F 320	270	S 280	V 290	290	A	A	A	A	A	A	300	300	290	310	A	F	F	F
12	F	S 260	F	F	F	I A 275	I A 265	275	I A 300	I A 270	300	300	285	275	I A 270	290	305	280	285	270	280	285	285	290
13	290	280	295	290	295	295	310	325	320	I A 315	275	315	I A 280	I A 280	I A 280	280	295	310	305	315	300	285	F	S 295
14	F	F	A	F	F 310	325	320	295	310	310	315	260	285	290	300	I A 310	280	295	290	295	325	I A 305	280	F
15	F	F	F	F	F 315	345	I R 310	355	280	I A 290	A	A	A	265	285	305	285	290	I A 290	I A 290	A	F	F	F
16	F	F	F	F	F	F	275	315	I A 320	280	A	A	300	275	300	I A 300	270	310	I A 295	I A 295	300	F	F	F
17	A	A	F	290	290	285	I A 295	310	A	A	A	A	260	290	285	I A 295	315	290	295	305	265	F	F	F
18	F 300	F	F	F	F	325	340	I A 320	310	290	I A 270	270	I A 275	280	A	A	A	I A 275	290	330	320	F	F	F
19	F	F	F	F	F	350	300	A	A	I A 320	I A 280	280	270	260	280	290	I A 295	300	310	330	330	I A 295	S 275	F
20	F	F	F	F	F	340	315	310	315	I A 300	A	A	A	A	295	285	290	295	295	F	F	F	F	F
21	F	F 295	F 305	F	F 305	R 300	335	I A 340	340	I A 305	305	315	280	310	290	305	I A 300	I A 290	300	305	310	295	290	A
22	F	290	310	F	F	290	320	300	I A 350	I A 350	320	300	295	300	315	I S 310	290	300	310	305	F 300	F	F	F
23	F	F	F	F	F 310	300	A	A	A	A	305	A	A	290	295	310	295	A	A	300	F	A	A	A
24	F	F	F	A	F	I A 300	290	310	I A 325	I A 310	I A 310	I A 315	I A 320	I A 310	I A 270	I A 280	310	I A 285	I A 290	310	285	F 310	F	F
25	F	F 285	F	F	F 310	320	285	305	320	340	340	280	270	270	270	300	315	310	295	295	315	F	F	F
26	A	F	F	F	F 295	285	290	290	F 320	335	I A 305	I A 285	295	305	230	I A 250	I A 270	275	285	I A 315	F	F 295	270	280
27	250	F	F	F	F	250	250	C	C	C	C	A	A	G	I A 255	275	295	295	300	300	I A 285	F 285	F 275	I A 290
28	300	F	285	285	I A 280	265	280	280	280	255	G	G	245	280	280	285	280	280	270	295	290	290	280	280
29	260	290	285	300	315	335	295	305	290	I A 300	A	A	270	280	290	305	320	310	I A 295	I A 285	295	F	F	F
30	F	A	A	F	F	A	235	A	A	I A 295	A	A	A	A	250	275	280	280	300	280	F	F	F	F
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	14	13	11	19	27	28	25	24	26	20	19	21	25	27	28	29	29	29	29	24	15	13	9
MED	290	290	290	300	F 310	300	295	305	308	305	298	295	280	285	285	295	295	295	295	300	292	290	280	290
UQ	292	295	300	300	F 312	322	310	315	320	315	308	302	295	290	295	302	305	305	300	305	305	300	290	290
LQ	272	280	285	290	295	288	278	295	300	I A 290	275	280	270	275	275	280	285	285	290	295	285	285	280	285

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JUN. 1974 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F1 (0.01) | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	405	395	380	I A 370	I A 365	355	I A 375	A	A	A	L					
2						315	A	A	A	A	A	A	A	340	A	A	A	A	A					
3						320	A	A	A	A	A	A	A	A	A	360	350	A	A					
4						A	A	A	A	A	380	350	I A 375	375	I A 370	H 370	355	A	A					
5						L	L 365	I A 380	400	390	370	395	385	H 385	360	375	360	360	A					
6						L 300	A	A	330	A	A	A	A	A	A	A	360	A	A					
7							A	A	A	A	375	I A 380	375	I A 380	380	350	365	340	L					
8						L	L	A	A	A	A	A	A	A	380	I A 355	355	A	A					
9						L	L	I A 365	365	A	A	A	A	A	A	A	A	340	L					
10							A	A	A	A	A	A	A	365	375	A	A	A	A					
11							L	345	A	A	A	A	A	A	A	A	A	A	L					
12						A	A	A	A	A	A	A	A	A	A	A	350	325	L					
13						L	A	A	A	A	A	I A 350	I A 350	A	A	A	350	365	L					
14						L	L	365	I A 370	370	I A 350	I A 355	390	375	370	A	A	A	A					
15						L	360	365	A	A	A	A	A	A	360	360	330	A	A					
16						325	A	A	A	360	A	A	A	I A 380	I A 370	I A 380	365	I A 345	A					
17						320	A	A	A	A	A	A	385	I A 370	370	I A 360	365	355	A					
18							A	A	A	A	A	395	A	A	A	A	A	A	A					
19						L	A	A	A	A	A	A	370	370	A	A	A	A	A					
20								A	A	A	A	A	A	A	A	375	A	A	A					
21						L	U L 365	A	A	A	I A 380	390	A	A	A	A	A	A	A					
22						A	A	A	A	A	A	395	395	H 385	400	355	365	I A 355	355					
23						A	A	A	A	A	A	A	A	A	A	A	A	A	A					
24							A	A	A	A	A	A	A	I A 400	I A 365	I A 350	I A 350	A	A					
25						L	I A 350	I A 360	370	A	A	A	I A 405	I A 350	I A 355	I A 360	A	A	A					
26						325	355	345	390	I A 375	A	A	A	I A 385	I A 355	A	A	365	L					
27						A	365	C	C	C	C	I A 390	I A 400	375	I A 370	375	345	350	L 335					
28						335	350	I A 365	390	400	410	H 395	370	400	370	I A 350	360	I A 355	330					
29							A	A	370	A	A	A	I A 370	380	350	350	A	A	A					
30						A	A	A	A	A	A	A	A	A	A	I A 370	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						7	7	8	9	6	7	11	13	17	17	16	15	11	3					
MED						320	360	365	370	382	380	390	375	375	370	360	355	355	335					
UQ						325	365	365	390	395	380	395	390	385	375	372	362	358	345					
LQ						318	352	352	370	370	372	I A 362	I A 370	370	360	I A 352	350	342	332					

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JUN. 1974 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1974 | H'F2 (KM) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA | Lat. 39° 43.5' N. | Long. 140° 08.2' E | Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	495	555	580	640	A	455	480	A	A	330	290					
2						380	315	310	A	A	A	A	A	375	355	I A 380	A	I A 330	I A 300					
3						350	320	I A 295	A	A	I A 370	I A 360	370	I A 370	360	330	315	300	I A 280					
4						340	480	375	310	A	425	A	430	345	345	330	295	315	315					
5						285	L 405	A	290	295	430	370	410	455	360	310	300	280	265					
6						L 400	A	A	330	340	A	385	A	A	390	340	335	I A 320	295					
7							325	360	315	300	325	335	345	345	345	320	335	335	285					
8						285	255	325	305	300	350	320	I A 365	375	355	340	345	315	310					
9						250	290	265	350	320	A	A	A	A	A	I A 350	I A 340	310	275					
10							280	310	305	I A 315	I A 335	I A 350	I A 350	340	325	I A 360	350	I A 325	I A 310					
11							370	345	315	315	A	A	A	A	A	A	290	290	290					
12						A	A	395	I A 375	A	I A 380	350	395	415	I A 420	360	300	350	305					
13						300	280	295	315	A	445	325	I A 400	I A 380	I A 360	345	285	285	285					
14						255	270	350	320	345	335	455	390	340	340	A	395	340	I A 300					
15						240	520	280	410	I A 390	A	A	A	395	350	300	340	345	I A 320					
16						390	345	285	A	445	A	A	340	320	335	I A 335	445	295	A					
17						350	I A 340	330	A	A	A	A	490	375	370	I A 345	295	330	310					
18							260	A	A	360	A	470	I A 410	390	A	A	A	A	340					
19						235	310	A	A	A	A	400	435	370	395	370	A	A	A					
20								345	325	I A 290	A	A	A	A	345	335	345	280	I A 290					
21						305	250	I A 260	280	I A 360	345	320	400	340	370	310	I A 320	I A 340	I A 300					
22						310	290	260	I A 260	A	325	385	365	340	310	380	340	330	290					
23						A	A	A	A	A	335	A	A	385	345	320	I A 325	A	A					
24							330	305	A	A	I A 330	I A 330	I A 320	I A 330	A	A	315	I A 325	I A 325					
25						250	360	335	285	270	285	430	450	460	410	325	315	320	290					
26						355	335	330	280	280	A	A	370	310	550	A	I A 370	365	300					
27						A	455	C	C	C	C	A	A	G	I A 485	425	350	350	310					
28						450	395	410	440	520	G	G	550	410	405	360	425	380	360					
29							345	I A 325	350	A	A	A	435	435	350	320	280	280	I A 330					
30						A	540	A	A	I A 375	A	A	A	A	520	435	400	370	320					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						18	25	22	20	18	16	17	20	25	26	24	26	27	27					
MED						308	330	325	315	330	348	370	398	375	360	340	335	325	300					
UQ						355	370	345	350	375	428	430	432	410	405	360	350	340	312					
LQ						255	290	295	298	300	332	335	365	340	345	322	300	305	290					

The Radio Research Laboratories, Japan

JUN. 1974 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1974 | H'F (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	255	285	I A 290	290	A	A	A	230	215	230	I A 245	I A 240	260	I A 245	A	A	A	A	275	300	315	310 A	310
2	280	270	290	290	280	275	A	A	A	A	A	A	A	A	A	A	A	A	A	I A 280	310	270	255	320
3	I A 315	280	285	245	235	250	A	A	A	A	A	A	A	A	A	240	A	A	A	245	A	310	330	I A 310
4	290	320 A	265	245	280	I A 250	A	A	A	A	215	230	I A 225	230	I A 230	H 210	A	A	A	A	I A 275	260	275	295
5	I A 320	320	I A 300	290	290	250	235	I A 225	215	215	230	220	215	H 190	230	235	230	A	A	A 290	A 300	I A 320	I A 320	285
6	280	290	290	245	240	275	A	A	A 230	A	A	A	A	A	A	A	240	A	A	280	255	275	250	250
7	290	295	305	255	250	230	A	A	A	A	230	I A 225	I A 230	I A 225	220	240	235	240	245	255	245	225	260	275
8	280	270	270	245	235	250	A	A	A	A	A	A	A	A	225	I A 235	A	A	A	A	260	230	270	250
9	270	275	270	270	255	235	I A 250	I A 245	240	A	A	A	A	A	A	A	A	A 230	I A 265	280	285	270	255	245
10	275	310	305	270	250	230	A	A	A	A	A	A	A	230	230	A	A	A	A	255	280	A	A	A
11	A	300	325	I A 320	255	265	I A 240	245	A	A	A	A	A	A	A	A	A	A	A	265	I A 315	320	I A 335	280
12	I A 305	295	F 230	250	295	A	A	A	A	A	A	A	A	A	A	A	A	255	265	290	290	270	275	255
13	250	270	270	255	280	275	A	A	A	A	A	A	A	A	A	A	230	245	I A 250	235	260	300 A	300	290
14	I A 320	I A 300	I A 270	320	245	I A 245	240	230	I A 230	235	I A 210	I A 240	225	210	240	A	A	A	I A 260	260	240	I A 270	290	310 A
15	310	295	270	290	280	235	230	245	A	A	A	A	A	A	A 240	235	230	A	A	A	A	A	A	255
16	310	315	245	245	320	265	A	A	A	A	A	A	A	I A 230	I A 250	I A 225	225	I A 240	I A 255	I A 275	245	295	330	265
17	A	A	A	A	305	A	A	A	A	A	A	A	215	I A 250	235	I A 260	235	I A 240	I A 255	295	I A 280	285	290	235
18	290	I A 305	295	305	255	250	A	A	A	A	A	205	A	A	A	A	A	A	A	230	245	A	A	A
19	320	315	285	260	245	I A 230	A	A	A	A	A	A	230	230	A	A	A	A	A	245	245	I A 270	I A 300	320
20	320	320	330	280	235	225	I A 255	A	A	A	A	A	A	A	A	A	A	A	A	A	310	I A 260	300	285
21	285	255	250	295	270	240	230	A	A	A	I A 235	215	A	A	A	A	A	A	A	275	230	260	280	I A 300
22	300	310 A	240	290	270	A	A	A	A	A	A	190	210	H 200	195	I A 235	240 A	I A 240	245	265	280	255	290	285
23	300	I A 295	290	290	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	I A 275	A	A	A
24	290	300	295	I A 330	300	A	A	A	A	A	A	A	A	I A 200	A	A	A	A	A	280	270	260	A	235
25	290	300	290	285	295	240	I A 245	I A 240	I A 220	A	A	A	I A 200	A	A	A	A	A	A	265	250	260	I A 290	I A 285
26	I A 285	I A 300	295	290	275	240	205	250	A	A	A	A	A	A	I A 250	A	A	A	A	A	235	235	295	295
27	355	245	305	I A 335	410	A	250	C	C	C	C	I A 190	I A 190	265	I A 245	225	250	240	245	275	A	300	325	I A 300
28	260	290	I A 315	320	I A 345	A 270	A 250	I A 230	215	200	185	H 195	225	230	230	I A 240	230	I A 235	240	255	260	270	290	295
29	295	285	290	275	265	235	A	A	240	A	A	A	A	230	I A 235	245	A	A	A	A	275	290	245	315
30	A	A	A	A	290	A	A	A	A	A	A	A	A	A	A	A	A	A	A	260	265	I A 295	280	310
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	28	28	30	22	11	8	8	4	7	10	11	14	15	12	10	9	10	23	27	26	25	27
MED	290	295	290	288	272	248	240	242	230	215	230	218	225	230	235	235	232	240 A	252	265	270	270	290	285
UQ	310	308	298	292	290	265	I A 250	245	235	225	230	I A 230	228	230	I A 242	240	240	240	I A 260	280	282	295	300	305
LQ	282	278	270	255	250	235	232	I A 230	218	208	212	195	212	210	230	230	230	I A 240	245	255	248	260	275	260

The Radio Research Laboratories, Japan

JUN. 1974 | H'F (KM)

IONOSPHERIC DATA

JUN. 1974 | H'E (KM) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA | Lat. 39° 43.5' N. | Long. 140° 08.2' E | Sweep 1 MHz to 20 MHz in 20 sec | in automatio operation

Hour / Day	00	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 130	115	110	105	105	105	105	105	105	105	110	110	115	120	S				
2						120	110	105	105	105	105	105	105	110	110	110	110	110	120	S				
3						155	155	110	110	110	105	105	105	I B 105	105	105	110	115	120	S				
4						A	A	105	105	105	105	105	105	105	105	110	110	110	115	S				
5						E B 125	115	110	105	105	105	105	105	105	105	105	110	115	120	S				
6						A	115	105	105	105	105	105	105	105	105	105	110	115	120	S				
7						A	115	110	105	110	105	105	105	105	105	105	110	110	A	S				
8						E B 125	115	115	110	110	105	105	105	105	110	110	110	110	125	S				
9						125	115	110	110	115	110	110	105	105	110	110	110	110	110	S				
10					E	E B 130	115	110	110	110	105	105	110	110	E B 120	110	115	115	120	S				
11					S	A	115	110	115	110	105	110	105	110	110	110	110	A	A	S				
12					S	120	120	110	110	110	105	105	105	105	105	110	110	A	A	B				
13					S	A	I A 110	110	105	110	105	105	105	105	105	105	105	110	115	S				
14					E	A	110	105	105	105	105	105	105	110	110	110	110	115	115	S				
15					E	120	115	110	110	105	105	105	105	105	110	115	110	115	120	S				
16					S	E B 125	115	115	105	105	105	105	105	105	105	110	110	110	120	S				
17					E	A	110	110	105	105	105	105	105	110	105	110	110	110	120	S				
18					E	120	110	105	105	105	105	105	105	105	105	105	105	105	105	S				
19					E	E B 125	115	110	105	105	105	105	105	110	A	A	A	A	120	S				
20					A	B	115	110	110	105	105	105	105	105	105	110	110	110	115	S				
21					S	A	105	105	105	105	105	105	105	105	105	105	A	A	A	S				
22					A	B	115	105	110	110	105	105	I A 105	110	110	110	110	115	120	S				
23					E	120	120	110	110	105	105	105	105	105	105	A	A	110	110	S				
24					E	B	115	110	110	110	105	105	105	105	105	105	110	115	115	S				
25					E	115	115	110	110	105	105	105	110	110	105	110	110	115	115	S				
26					E	E B 125	110	105	105	105	105	105	105	105	105	105	105	110	115	S				
27					E	E B 125	115	C	C	C	C	105	110	105	110	110	110	115	115	B				
28					E	B	110	110	110	105	105	105	105	105	105	105	105	110	115	E				
29					E	B	115	110	105	105	105	105	105	105	105	110	110	110	115	S				
30					E	B	110	110	105	110	105	105	105	105	105	105	105	110	115	S				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						16	29	29	29	29	29	30	30	30	29	28	27	26	26					
MED						120	115	110	105	105	105	105	105	105	105	110	110	110	115					
UQ						E B 125	115	110	110	110	105	105	105	110	110	110	110	115	120					
LQ						120	110	105	105	105	105	105	105	105	105	105	110	110	115					

The Radio Research Laboratories, Japan

JUN. 1974 | H'E (KM)

IONOSPHERIC DATA

JUN. 1974 | H'ES (KM) | 135° E Mean Time (G. M. T. + 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	110	110	125	100	140	130	120	120	120	125	120	115	115	120	125	115	115	120	120	110	105	105	105	105
2	105	105	100	100	100	140	125	120	115	110	110	110	110	130	165	140	130	125	120	120	120	110	110	110
3	105	105	110	105	110	130	120	120	115	115	110	110	110	115	130	145	125	120	120	115	115	120	110	110
4	105	105	100	100	100	105	125	115	115	115	125	120	110	140	115	G	135	120	115	115	110	110	115	110
5	100	100	100	110	105	G	145	115	125	115	115	115	115	115	115	145	125	120	120	115	110	110	110	105
6	105	105	100	100	100	130	120	115	115	110	110	110	105	110	110	110	140	120	120	115	110	110	105	105
7	105	100	100	100	100	140	120	115	120	115	115	110	110	110	110	115	110	110	120	120	110	110	110	105
8	105	105	105	S	100	140	135	130	125	120	115	120	120	115	115	110	140	130	125	120	120	120	115	110
9	105	105	105	105	S	135	130	130	130	120	115	115	115	115	115	115	110	110	120	115	115	115	110	105
10	100	100	100	110	120	135	130	125	120	120	115	110	110	110	135	130	130	125	120	120	120	120	115	115
11	110	105	110	105	110	110	130	130	125	120	120	120	115	110	110	135	130	125	120	110	125	125	120	115
12	115	115	115	110	140	130	120	125	120	115	115	115	110	110	110	110	110	100	105	B	115	115	110	110
13	S	S	S	S	140	135	120	115	115	115	110	110	110	110	105	105	110	115	115	115	110	115	110	110
14	110	110	105	105	110	105	150	130	120	120	120	125	135	G	140	120	120	115	115	110	115	110	110	110
15	110	105	105	115	115	135	135	125	120	115	110	110	110	110	115	G	125	120	120	115	110	105	105	115
16	100	105	105	100	105	120	125	120	110	110	115	110	115	130	135	125	135	125	120	115	115	115	115	110
17	105	110	105	100	100	125	120	115	115	110	110	110	130	145	145	130	130	115	120	115	110	115	110	105
18	105	105	100	100	105	125	115	115	115	115	115	110	105	110	105	105	105	105	105	100	100	115	115	110
19	105	105	105	105	105	130	120	115	110	110	110	110	105	110	105	140	125	125	120	115	120	115	110	110
20	105	105	105	100	135	135	130	130	120	115	115	115	110	110	110	130	125	115	115	115	110	110	105	105
21	105	105	110	100	100	115	115	115	115	115	120	120	110	145	140	140	130	125	120	105	115	115	110	110
22	110	110	110	110	120	135	130	120	120	115	110	105	105	140	140	130	135	125	130	120	120	120	120	110
23	110	110	105	100	130	130	125	120	115	115	110	110	110	105	105	105	125	120	115	115	120	115	110	110
24	110	105	105	105	105	120	125	115	115	115	110	115	110	110	110	110	110	115	115	115	115	115	115	110
25	105	105	105	105	105	125	125	115	115	115	115	110	110	115	110	115	135	120	120	115	110	110	110	105
26	105	105	105	105	115	125	115	115	110	110	110	105	105	130	125	125	115	120	115	115	110	120	140	105
27	105	110	140	120	120	120	120	C	C	C	C	125	115	G	125	130	140	145	140	125	110	115	120	115
28	110	105	110	110	125	125	120	115	125	120	105	115	115	125	125	125	125	120	115	110	110	110	110	110
29	105	110	100	100	120	130	125	115	115	115	115	115	110	115	120	G	125	115	115	110	115	115	110	110
30	105	105	100	105	110	120	115	115	110	115	110	110	110	110	115	115	125	115	115	115	105	110	115	110
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	28	29	29	30	29	29	29	29	30	30	28	30	27	30	30	30	29	30	30	30	30
MED	105	105	105	105	110	130	125	115	115	115	115	110	110	115	115	125	125	120	120	115	112	115	110	110
UQ	110	110	110	108	120	135	130	125	120	115	115	115	115	128	130	130	130	125	120	115	115	115	115	110
LQ	105	105	100	100	105	120	120	115	115	115	110	110	110	110	110	112	115	115	115	115	110	110	110	105

The Radio Research Laboratories, Japan

JUN. 1974 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1974 | TYPES OF ES | 135° E Mean Time (G. M. T.+ 9h)

Station AKITA Lat. 39° 43.5' N. Long. 140° 08.2' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 3	F 2	FF 13	F 2	FF 21	H 4	H 3	H 3	H 2	H 1	H 2	C 2	C 2	H 2	H 2	C 2	C 2	C 4	C 4	L 6	F 5	F 4	F 4	F 4
2	F 5	F 2	F 2	F 2	F 1	H 2	H 3	H 3	C 3	C 4	C 4	C 2	C 3	H 2	H 1	H 2	H 5	H 2	C 5	C 4	F 6	F 4	F 2	F 5
3	F 6	F 2	F 2	F 3	F 3	H 3	C 3	C 4	C 3	C 3	C 4	C 2	C 2	C 4	H 2	H 1	H 2	C 3	C 5	C 5	F 6	F 3	F 3	F 4
4	F 4	F 3	F 3	F 5	F 6	L 3	H 3	C 3	C 2	C 2	H 1	H 2	C 2	HC 11	C 2		H 2	C 4	C 4	C 4	F 4	F 3	F 5	F 5
5	F 3	F 3	F 3	F 1	F 1		H 1	C 6	H 2	C 2	C 2	C 2	C 2	C 1	C 1	H 1	H 1	C 2	C 3	C 3	F 4	F 6	F 6	F 5
6	F 3	F 3	F 3	F 2	F 1	HL 31	C 5	C 3	C 2	C 2	C 2	C 2	C 2	C 2	C 2	C 2	H 1	C 4	C 4	C 5	F 4	F 3	F 3	F 2
7	F 2	F 3	F 5	F 4	F 3	HL 21	C 2	C 4	H 2	C 3	C 1	C 3	C 2	C 2	C 2	C 1	C 2	C 2	CL 12	CL 31	F 3	F 1	F 2	F 2
8	F 3	F 3	F 4		F 1	H 3	H 2	H 2	H 2	H 3	C 2	H 2	H 3	C 2	C 2	C 2	H 2	H 2	C 3	C 3	F 6	F 1	F 3	F 3
9	F 3	F 1	F 2	F 1		H 2	H 2	H 2	H 2	C 2	C 3	C 3	C 2	C 3	C 3	C 3	C 5	C 3	C 2	C 5	F 2	F 4	F 4	F 2
10	F 2	F 2	F 2	F 1	C 2	H 2	H 3	H 2	H 3	H 3	C 2	C 2	C 2	C 2	H 1	H 2	H 2	H 5	C 3	C 2	F 3	F 5	F 4	F 4
11	F 4	F 2	F 5	F 5	L 3	L 3	H 2	H 2	H 3	H 3	H 4	H 2	C 3	C 4	C 3	HC 32	H 2	HL 22	HL 22	L 3	F 3	F 3	F 4	F 5
12	F 3	F 1	F 1	F 2	H 3	H 5	C 3	H 3	H 2	C 2	C 3	C 2	C 2	C 2	C 3	C 4	C 3	L 2	L 2		F 4	F 2	F 2	F 2
13					H 1	HL 31	CL 32	C 3	C 3	C 2	C 2	C 3	C 3	C 3	C 3	C 3	C 2	C 3	C 2	C 4	F 4	F 4	F 6	F 4
14	F 2	F 5	F 4	F 3	L 3	L 3	H 2	H 2	H 2	H 2	H 2	H 2	H 1		H 1	H 2	H 2	C 4	C 3	C 4	F 3	F 3	F 2	F 4
15	F 3	F 2	F 2	F 2	C 3	H 1	H 1	H 2	H 2	C 3	C 5	C 3	C 4	C 2	C 2		H 2	C 2	C 4	C 3	F 3	F 5	F 4	F 2
16	F 3	F 3	F 3	F 3	L 3	C 3	H 3	C 2	C 3	C 2	C 3	C 3	C 2	H 2	H 2	H 2	H 2	H 3	C 4	C 4	F 3	F 3	F 6	F 4
17	F 4	F 4	F 5	F 5	L 3	HL 22	C 3	C 4	C 4	C 3	C 2	C 3	H 1	H 2	H 1	H 3	H 2	C 2	C 2	C 2	F 3	F 6	F 4	F 3
18	F 2	F 4	F 3	F 3	L 2	H 4	C 3	C 3	C 5	C 2	C 3	C 2	C 4	C 2	C 3	C 4	C 3	C 4	C 4	L 3	F 4	FF 23	F 6	F 6
19	F 4	F 4	F 3	F 2	L 3	H 2	C 4	C 3	C 4	C 2	C 2	C 2	C 2	C 2	L 2	HL 12	HL 43	HL 23	C 4	C 4	F 3	F 3	F 5	F 2
20	F 2	F 2	F 4	F 2	HL 22	H 2	H 3	H 3	H 3	C 2	C 2	C 3	C 4	C 3	C 3	HC 22	HC 32	C 3	C 5	C 3	F 4	F 4	F 3	F 5
21	F 4	F 1	F 2	F 2	L 2	CL 21	C 2	C 4	C 3	C 4	H 2	H 1	C 2	HC 13	HC 22	HC 22	HL 22	HL 32	HL 32	L 2	F 1	F 2	F 2	F 3
22	F 2	FF 21	F 3	F 3	HL 22	H 2	H 3	H 3	H 2	C 3	C 3	C 2	L 1	H 1	H 1	H 2	H 2	H 2	H 1	C 3	F 4	F 4	F 3	F 4
23	F 4	F 3	F 2	F 2	H 2	H 3	H 6	H 5	C 3	C 2	C 2	C 3	C 4	C 3	C 3	LH 21	HL 33	C 6	C 4	C 3	F 6	F 5	F 4	F 5
24	F 4	F 7	F 4	F 5	L 3	C 3	H 4	C 3	CL 41	C 3	C 3	C 2	C 3	C 2	C 2	C 3	C 2	C 3	C 3	C 5	F 3	F 4	F 5	F 1
25	F 3	F 3	F 3	F 2	L 2	H 2	H 4	C 3	C 2	C 2	C 2	C 2	C 2	C 2	C 3	C 2	H 2	C 3	C 4	C 4	F 3	F 3	F 3	F 4
26	F 6	F 4	F 3	F 6	C 1	H 2	C 2	C 2	C 2	C 3	C 3	C 4	C 4	H 2	H 2	H 2	C 4	C 2	C 4	C 3	F 3	F 1	F 1	F 4
27	F 2	F 3	F 3	F 4	C 3	C 4	C 1					H 2	C 2		H 2	H 1	H 2	H 2	H 1	H 4	F 5	F 3	F 4	F 4
28	F 3	F 3	F 4	F 2	H 4	H 4	C 2	C 3	H 1	H 1	LH 11	C 2	C 1	H 2	H 2	H 2	H 2	C 3	C 3	L 3	F 2	F 2	F 2	F 2
29	F 1	F 1	F 1	F 2	C 4	H 4	H 4	C 4	C 2	C 3	C 3	C 3	C 2	C 2	C 2		H 2	C 3	C 4	L 4	F 5	F 4	F 3	F 4
30	F 4	F 2	F 4	F 4	L 3	C 3	C 5	C 5	C 4	C 3	C 4	C 2	C 3	C 2	C 2	C 2	H 1	C 2	C 3	C 3	F 5	F 3	F 4	F 4
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUN. 1974 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1974 | FXI (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	S	S	A	60															I A 64	X 64	66	67	S 63
2	61	X 56	X 55	S 49	X 49															A	79	I S 70	A	X 67
3	S	A	70	62	65	61														X 72	X 71	X 71	70	70
4	A	65	67	62	48															X 77	X 77	X 72	X 63	66
5	68	65	65	X 58	X 54															77	X 67	68	68	68
6	65	63	64	68	X 52															O R 75	I R 78	X 76	70	X 67
7	X 64	X 62	X 62	X 57	X 52															X 90	X 81	X 66	X 64	X 64
8	X 66	S 62	X 60	65	62															S 94	S 86	I S 81	X 76	S 73
9	X 65	X 59	X 56	57	X 55															A	A	70	X 71	63
10	63	62	62	60	S 57															O R 95	A	R	A	A
11	73	73	75	75	X 70															X 92	X 85	R	93	R
12	X 88	X 76	X 69	70	X 59															X 81	C	C	C 79	C 79
13	X 74	X 67	X 66	X 59	X 62															X 80	X 74	S 68	X 68	69
14	X 60	62	S	62	56															X 93	O S 75	S 63	S 63	X 63
15	S 63	S 63	X 60	X 56	S 54															S	S 77	X 77	S 71	S
16	S	S	S	A	S		61													X 72	S 75	A	70	68
17	S	S	S	A	X 44															X 76	68	X 72	X 67	66
18	58	58	A	54	X 56															X 85	X 59	X 49	54	58
19	57	57	58	X 49	X 49															X 78	X 57	A	A	A
20	R	A	A	X 44	52															X 86	A	A	72	A
21	A	R	68	X 62	X 62															S	S 75	S 62	A	S
22	A	A	A	S	S 51	59														S	C	O S 66	S	67
23	S	63	63	S	62															A	A	A	A	A
24	A	A	A	53	S															X 69	73	78	A	R
25	64	55	X 48	55	54	54	60													X 82	X 77	X 64	68	R
26	67	66	S	60	63															S 98	S 74	S 69	X 63	X 60
27	X 52	61	X 47	X 42	S 39															X 61	A	X 58	A	X 56
28	58	X 52	X 47	X 48	48															S 71	X 62	X 59	X 62	X 60
29	X 58	X 56	X 55	X 53	X 53															X 72	X 74	O X 62	S	O S 64
30	A	S	S	A	S															S	X 64	61	63	S
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	21	20	24	27	3	2													23	23	23	21	20
MED	64	62	X 62	58	54	59	60													X 78	X 74	68	68	66
UQ	66	65	66	62	61	60														X 88	77	72	71	68
LQ	59	58	X 56	X 53	52	56														X 72	X 68	62	X 63	63

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JUN. 1974 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF2 (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	S	S	A	F	I S 42	S 43	50	C	A	A	A	52	52	R 51	53	I A 53	58	58	I A 58	58	F	F	57
2	F 52	50	49	43	43	49	J S 65	68	I A 64	A	A	65	I R 66	67	61	62	64	I A 67	A	I A 71	F	I S 64	A	S 61
3	S	A	F	F	F	F 52	S 63	71	A	A	A	A	64	67	78	90	J R 89	85	81	66	65	65	F	F
4	A	F	F	F	F	44	50	63	73	A	A	A	I A 60	75	74	81	84	I A 74	I A 72	71	71	66	57	F
5	F	F	F	52	48	56	58	77	I A 66	I A 59	56	58	58	64	76	93	I A 88	84	71	71	61	F	F	F
6	F	F	F	F	46	41	58	70	58	A	A	56	57	I A 61	I A 65	69	68	68	I A 70	69	I R 72	70	F	61
7	58	56	56	51	46	51	59	66	I A 72	72	68	71	71	72	71	66	67	74	S 75	S 84	J S 75	60	58	58
8	60	56	J S 54	F 52	F	50	55	64	70	I A 71	I A 67	66	63	I R 67	78	I C 70	68	71	I A 80	88	80	I S 75	70	S 67
9	59	53	50	F	49	53	61	S 72	67	67	66	59	I A 56	I A 55	52	I A 61	65	59	59	I A 64	I A 68	F	65	F
10	F	F	F	F	S 51	I S 58	59	60	I A 58	I A 58	61	I A 64	71	78	73	71	80	76	88	89	A	R	A	A
11	F	F	F	F	64	I A 58	I A 58	I A 72	I A 80	I A 76	A	A	A	79	J R 90	I A 92	98	90	J R 86	86	J R 79	I R 81	F	R
12	82	70	63	F	53	48	54	66	I A 60	I A 58	I A 63	I A 67	I A 63	63	I C 65	73	74	61	66	J R 75	I C 77	I C 76	C 73	C 73
13	68	61	60	53	56	58	61	66	A	A	A	C 61	I A 64	I A 68	I A 73	C 82	I C 92	C	C	J R 74	68	S 62	62	F
14	S 54	F	S	F	F	I A 48	47	I A 56	C 60	U C 62	C	C	63	S 73	I C 72	70	67	J S 76	81	87	69	57	57	57
15	57	57	S 54	50	48	S 56	44	48	53	60	58	A	A	A	76	90	62	68	S 81	I S 76	S 71	S 71	65	I S 62
16	I S 60	I S 60	I S 57	I A 43	I S 36	41	F 55	J S 75	67	A	A	60	71	81	72	63	62	70	V 63	S 66	S 69	I A 68	F	F
17	S	S	S	A	J S 38	46	55	71	I A 62	A	A	A	R	I A 56	59	68	66	58	61	70	F	66	61	F
18	F	F	A	F	50	56	56	I A 60	A	A	63	56	I A 56	I A 58	A	A	A	A	A	79	J R 53	43	F	F
19	F	F	F	43	43	I R 47	56	66	J R 52	A	A	56	A	A	59	A	A	70	81	J R 72	51	A	A	A
20	R	A	A	38	F	I A 39	43	I A 54	71	I A 57	A	A	A	A	75	80	88	96	78	J R 80	A	A	F	A
21	A	R	F	56	56	60	I R 57	A	A	52	63	63	57	60	61	76	A	A	S 74	I S 87	69	56	A	S
22	A	A	A	S	45	F 50	61	72	56	I A 54	I A 53	I A 55	60	65	64	68	S 73	71	S 72	S	C	S 60	I S 56	F
23	S	F	F	S	F	54	I A 67	S 70	57	A	A	55	56	I A 62	S 74	76	A	A	70	A	A	A	A	A
24	A	A	A	F	S	46	A	A	I A 68	I A 71	58	I A 56	60	63	63	66	68	72	58	63	F 65	F	A	R
25	F	F	42	F	F	F	F	I A 63	70	66	53	53	I A 53	I A 56	61	75	75	72	71	76	71	58	F	R
26	F	F	S	F	F	46	50	67	78	61	56	48	58	69	A	A	A	J S 75	102	92	68	63	57	J S 54
27	46	F	S 41	36	33	35	41	42	47	A	E G 43	A	E G 45	48	46	52	I A 54	50	53	55	I A 52	J R 52	I A 51	50
28	F	46	41	42	F	40	I A 45	I A 48	A	43	A	A	48	52	56	51	47	I A 51	55	65	56	J S 53	S 56	S 54
29	S 52	50	49	47	47	40	52	58	65	59	59	I A 55	62	61	I A 72	80	75	53	55	66	S 68	56	I S 58	58
30	A	S	S	A	S	S 41	I A 49	I A 48	I A 51	I A 58	I A 55	A	R	A	A	55	R 55	I A 59	I A 63	I S 64	58	F	F	S
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	10	12	13	18	29	28	28	24	18	16	19	24	26	27	27	25	26	27	28	24	21	14	12
MED	58	56	52	47	48	48	56	66	64	60	58	58	60	64	71	70	68	70	71	72	68	63	58	58
UQ	60	60	56	52	51	54	59	70	70	67	63	64	64	69	74	80	80	75	80	82	71	68	65	62
LQ	53	50	46	43	43	42	50	57	58	I A 58	56	56	56	58	61	64	64	59	62	66	60	57	57	56

The Radio Research Laboratories. Japan

JUN. 1974 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF1 (0.01 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								A	C	A	A	A	470	I A 450	A	A	A	A	A					
2						L	L	420	A	A	A	460	I A 470	460	H 500	430	430		A	A				
3						L	I A 390	450	A	A	A	A	A	L 460	L 450	L 460	A	A						
4							L 400	L 410	A	A	A	A	I A 460	460	450	L 450	L 410	A	A					
5							L	L 420	A	A	I A 480	L 480	L 480	I A 460	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	A	L 410	A	A					
7							L	A	A	A	A	A	A	I A 480	460	450	440	410	L					
8								A	A	A	A	490	A	A	A	I C 470	A	A	A					
9							L	A	450	470	470	480	A	A	A	A	A	420	A					
10							L 400	A	A	A	L 480	A	A	A	I A 460	L 460	A	A	A					
11							A	A	A	A	A	A	A	460	L 450	A	A	L	L					
12						A	A	A	A	A	A	A	A	A	C	440	A	L 370	L					
13							L	A	A	A	A	A	A	A	A	430	L	C	C					
14							A	A	C	430	C	C	450	470	C	A	A	400	A					
15							L	440	420	440	A	A	A	A	A	440	410	A	A					
16							A	A	440	A	A	460	460	S 440	430	I A 430	410	400	L					
17							380	A	A	A	A	A	460	A	A	A	A	L 360	A					
18								A	A	A	L 450	I A 460	A	A	A	A	A	A	A					
19							L	A	L	A	A	A	A	A	A	A	A	A	A					
20							A	A	A	A	A	A	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	460	A	A	A	A	A	A					
22						L	380	A	A	A	A	A	A	A	440	I A 440	420	S 370	L					
23						A	A	A	A	A	A	460	460	A	A	A	A	A	A					
24						A	A	A	A	A	A	A	A	A	A	A	A	L 380	L					
25						L 350	A	A	L 430	I A 430	L 450	L 450	I A 450	I A 450	L 430	L 450	A	L 380	L					
26							A	L 410	A	A	450	460	450	A	A	A	A	A	A					
27						S 260	320	370	A	I A 420	L 430	A	L 450	L 430	L 410	A	I A 400	I A 360	A					
28						L	I A 340	I A 380	A	420	I A 430	I A 430	I A 440	430	420	410	A	A	A					
29						L	L	410	430	I A 440	450	I A 460	450	A	A	A	410	L	L					
30						L	A	A	I A 420	A	A	A	A	A	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	7	9	6	7	9	11	14	12	11	13	9	10						
MED						305	380	410	430	430	450	460	460	460	450	440	410	380						
UQ							395	420	440	440	L 470	470	460	460	455	L 450	420	400						
LQ							360	410	420	425	450	460	450	445	430	430	410	L 370						

The Radio Research Laboratories, Japan

JUN. 1974 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOE (0.01 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						170	240	290	IC 310	320	340	340	350	350	330	330	315	260	150					
2						A	250	280	305	325	340	340	R 350	A	A	A	H 300	260	190					
3						A	A	A	320	IA 330	IA 340	360	365	IR 360	360	345	300	260	200					
4						B	A	295	310	335	IA 345	IA 355	IA 350	IR 360	350	345	320	270	A					
5						B	250	310	310	A	A	A	R	A	A	A	300	260	A					
6						B	A	290	310	340	340	A	A	A	A	A	A	265	A					
7						195	250	300	320	330	345	350	350	A	A	A	A	R	215					
8						180	255	290	320	340	340	355	360	345	330	IC 330	IA 315	270	200					
9						200	250	290	315	340	340	350	IA 350	350	A	A	A	A	A					
10						180	250	280	310	IA 330	A	A	A	A	A	A	A	A	A					
11						B	265	300	330	340	365	A	A	R	R	R	300	270	200					
12						B	260	290	315	345	355	IA 360	A	A	C	A	A	A	R					
13						B	240	290	310	335	345	C 340	A	A	A	A	A	C	C					
14						A	A	275	C 300	IC 325	C	C	340	340	IC 330	315	285	240	S					
15						170	IA 230	270	305	340	A	A	A	A	A	330	285	260	185					
16						170	240	270	305	320	330	340	350	340	IA 340	320	290	255	190					
17						180	225	275	300	A	A	A	350	350	350	330	300	IA 260	190					
18						B	230	280	290	IA 310	315	A	A	A	A	A	A	A	A					
19						B	A	A	A	A	A	A	A	A	IR 340	320	290	A	A					
20						B	210	280	300	IA 320	A	A	A	350	IR 345	310	290	IA 250	A					
21						B	A	260	R 280	310	320	320	A	A	A	A	A	A	200					
22						A	A	A	A	A	A	A	A	A	IR 325	310	290	250	200					
23						175	240	280	295	310	320	320	330	A	A	A	300	255	190					
24						140	250	270	285	IA 310	IA 330	335	IA 330	IA 330	IA 325	A	A	A	A					
25						B	260	280	305	A	A	A	A	A	A	R	IA 295	265	A					
26						B	IA 225	260	A	A	A	350	R 350	IA 350	335	320	285	250	200					
27						155	220	R 280	300	325	350	360	360	355	340	320	280	260	B					
28						B	220	265	IA 295	315	330	340	350	345	340	315	290	250	180					
29						180	235	275	300	320	330	335	A	A	A	A	A	S 270	205					
30						185	240	275	300	310	IA 320	IA 325	A	A	A	A	A	270	200					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						13	23	27	27	24	20	18	15	13	14	14	19	21	16					
MED						180	240	280	305	325	340	340	350	350	340	320	295	260	200					
UQ						180	250	290	310	338	345	355	350	350	345	330	300	265	200					
LQ						170	230	275	300	318	330	335	350	345	330	315	290	255	190					

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JUN. 1974 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOES (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	60	JA 54	33	JA 53	67	42	35	JA 54	C	JA 88	JA 56	JA 77	JA 58	JA 58	50	JA 54	JA 75	JA 121	JA 53	JA 119	JA 62	JA 52	JA 41	36
2	JA 54	35	42	JA 52	JA 26	JA 30	30	JA 42	JA 87	72	83	JA 57	JA 94	JA 61	37	33	43	JA 107	JA 69	JA 123	JA 51	JA 77	63	48
3	60	JA 109	JA 55	JA 74	JA 28	JA 28	JA 76	JA 57	110	90	JA 140	95	JA 64	G	JA 55	40	JA 75	JA 61	29	JA 75	JA 54	JA 44	JA 22	JA 40
4	65	JA 65	JA 53	JA 51	JA 30	JA 43	31	JA 42	JA 62	JA 84	63	75	JA 85	G	JA 66	G	35	80	JA 78	JA 54	JA 64	JA 74	JA 24	JA 28
5	JA 25	JA 28	21	21	22	21	G	35	JA 180	95	JA 53	JA 45	47	49	JA 98	JA 94	JA 108	JA 41	JA 51	JA 51	JA 45	JA 45	JA 41	JA 54
6	JA 51	JA 54	JA 41	JA 54	JA 24	25	JA 51	JA 73	JA 54	63	81	JA 84	JA 58	JA 84	70	JA 54	36	JA 41	JA 90	JA 84	JA 70	JA 35	JA 51	22
7	JA 24	JA 23	JA 21	JA 24	21	25	31	JA 50	JA 81	JA 61	JA 56	JA 57	JA 52	JA 72	JA 47	JA 44	JA 33	31	27	JA 108	JA 129	JA 23	JA 26	JA 26
8	27	22	23	JA 28	20	25	37	JA 57	JA 74	JA 113	JA 137	JA 75	JA 61	JA 91	JA 71	C	50	JA 61	JA 88	JA 41	60	JA 27	JA 37	JA 25
9	JA 30	27	22	22	25	24	33	JA 54	54	48	42	JA 53	JA 57	JA 74	55	JA 82	JA 53	JA 41	JA 46	JA 105	JA 73	90	JA 46	JA 27
10	JA 42	EB 13	24	23	JA 28	24	JA 41	JA 54	JA 100	64	JA 61	JA 101	55	JA 71	JA 54	JA 54	45	JA 55	JA 51	84	JA 85	JA 55	JA 85	71
11	JA 64	JA 60	JA 51	JA 41	JA 29	JA 64	75	JA 91	JA 94	90	91	JA 118	DD 200	G	40	JA 135	JA 88	31	30	JA 41	JA 23	JA 28	JA 51	JA 41
12	JA 41	JA 41	JA 41	JA 54	JA 38	JA 35	JA 41	60	68	91	76	82	80	JA 54	C	36	JA 54	31	G	21	20	JA 30	JA 23	JA 21
13	ES 15	EB 13	EB 13	ES 15	ES 15	EB 16	G	JA 56	82	JA 113	JA 143	60	113	124	140	36	30	C	C	JA 30	JA 57	JA 28	JA 30	JA 42
14	JA 52	81	JA 52	JA 42	JA 27	82	45	JA 56	41	37	C	C	42	47	C	JA 114	JA 78	JA 88	JA 88	JA 54	23	ES 15	JA 24	JA 27
15	25	24	23	22	24	JA 27	JA 27	37	G	48	JA 58	DD 200	139	JA 106	67	41	JA 47	64	JA 65	JA 155	JA 54	69	JA 53	59
16	JA 54	JA 52	JA 47	JA 53	59	25	JA 51	74	JA 74	150	JA 152	46	41	37	41	54	32	JA 51	JA 84	JA 54	84	84	JA 51	JA 58
17	JA 55	JA 53	35	60	JA 54	JA 28	JA 41	JA 71	JA 87	JA 104	JA 123	JA 144	42	JA 91	JA 58	JA 54	JA 48	JA 51	JA 40	JA 41	JA 54	JA 26	JA 54	JA 54
18	JA 25	JA 45	60	JA 41	JA 24	JA 54	36	JA 90	84	71	JA 41	55	80	61	81	81	JA 128	JA 101	JA 90	JA 51	JA 54	JA 30	JA 30	JA 30
19	JA 54	JA 41	JA 50	JA 28	JA 30	JA 31	JA 30	JA 84	JA 74	61	JA 145	52	80	JA 71	JA 75	JA 101	JA 81	JA 65	JA 51	JA 45	JA 49	JA 65	56	52
20	JA 34	49	40	JA 25	JA 25	48	JA 45	JA 61	JA 58	71	JA 121	81	DD 200	JA 105	JA 76	JA 85	JA 84	JA 85	JA 71	JA 111	JA 89	85	JA 51	70
21	JA 85	JA 51	JA 54	JA 41	JA 41	JA 54	30	80	JA 110	60	JA 83	JA 54	40	JA 56	JA 50	JA 73	JA 132	JA 152	JA 84	JA 39	JA 36	23	64	JA 42
22	JA 86	135	JA 75	JA 61	27	JA 34	48	JA 52	JA 71	JA 84	JA 82	JA 66	54	JA 47	37	54	35	54	29	23	C	JA 25	JA 26	32
23	JA 51	68	JA 27	25	21	JA 51	JA 80	JA 107	JA 85	93	94	JA 67	48	JA 73	JA 83	60	JA 87	JA 106	M 183	JA 156	JA 87	JA 107	JA 57	80
24	M 115	JA 111	59	47	JA 23	JA 45	JA 107	JA 84	JA 73	JA 171	50	75	JA 54	66	JA 58	JA 74	42	JA 36	JA 38	JA 40	JA 41	JA 50	68	JA 25
25	JA 24	JA 21	JA 26	JA 23	JA 53	JA 31	JA 54	JA 90	JA 64	JA 54	JA 54	JA 45	90	65	JA 41	G	JA 46	35	30	JA 51	60	JA 30	JA 54	JA 54
26	JA 54	JA 54	JA 54	JA 40	JA 54	25	JA 41	JA 42	JA 48	JA 53	JA 42	41	38	JA 54	JA 139	JA 140	JA 136	JA 55	JA 44	JA 33	58	20	EB 12	ES 15
27	20	JA 24	20	JA 24	JA 16	26	27	31	40	50	39	87	JA 49	42	47	39	66	JA 47	JA 51	JA 30	60	JA 24	JA 80	JA 44
28	JA 40	JA 35	31	JA 30	JA 25	25	50	62	JA 81	42	54	JA 86	49	65	JA 106	JA 52	JA 58	JA 56	JA 42	JA 51	30	32	36	JA 30
29	30	JA 27	25	24	EB 12	24	JA 40	JA 43	JA 54	55	65	JA 79	73	JA 75	JA 78	JA 54	39	33	31	JA 28	JA 26	JA 33	JA 26	JA 54
30	JA 58	48	JA 59	85	JA 30	26	JA 64	JA 65	JA 72	JA 171	JA 76	JA 89	JA 47	JA 139	JA 67	JA 54	JA 50	JA 90	JA 88	JA 76	JA 108	JA 30	23	25
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	30	29	29	30	30	28	29	30	29	29	30	29	30	30	30
MED	JA 51	JA 46	40	JA 40	JA 26	28	41	JA 57	JA 74	72	JA 76	JA 75	58	JA 65	JA 62	JA 54	JA 52	JA 55	JA 51	JA 51	JA 57	JA 32	JA 44	JA 40
UQ	JA 58	JA 54	JA 53	JA 53	JA 30	JA 43	JA 51	JA 74	JA 85	JA 93	JA 94	JA 86	80	JA 75	JA 77	JA 81	JA 81	JA 85	JA 84	JA 84	JA 70	JA 65	JA 54	JA 54
LQ	JA 27	JA 27	24	JA 24	23	25	31	JA 50	JA 58	55	JA 54	JA 55	48	49	48	41	42	JA 41	JA 38	JA 40	JA 45	JA 27	JA 26	JA 27

The Radio Research Laboratories, Japan

JUN. 1974 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FBES (0.1 MHZ) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A A 60	41	E	A A 53	37	E S 42	32	44	C	A A 88	A A 56	A A 77	40	48	46	43	A A 75	55	35	A A 119	25	22	29	35
2	40	29	30	40	19	23	30	40	A A 87	A A 72	A A 83	42	58	40	E S 37	33	34	A A 107	A A 69	A A 123	29	50	A A 63	30
3	28	A A 109	30	40	22	22	55	44	A A 110	A A 90	A A 140	A A 95	52	G	38	40	55	55	25	60	40	25	18	30
4	A A 65	30	20	20	25	39	28	36	54	A A 84	A A 63	A A 75	A A 85	G	43	G	34	A A 80	A A 78	40	30	26	E	21
5	21	20	E	E	E	20	G	34	A A 180	A A 95	50	43	41	49	55	85	A A 108	35	35	39	35	35	35	40
6	35	30	30	32	18	25	45	60	35	A A 63	A A 81	50	50	A A 84	A A 70	50	35	35	A A 90	62	20	16	E	E
7	20	18	19	E	E	23	30	46	A A 81	61	55	55	50	56	44	39	32	31	G	24	51	E	16	16
8	E	E	E	17	E	23	33	55	56	A A 113	A A 137	44	59	52	70	C	50	61	A A 88	41	33	22	23	16
9	16	13	E	E	15	14	31	44	43	42	41	44	A A 57	A A 74	49	A A 82	53	40	45	A A 105	A A 73	55	44	15
10	E	E B 13	E	E	16	21	30	41	A A 100	A A 64	40	A A 101	52	56	54	40	43	54	50	70	A A 85	40	A A 85	A A 71
11	35	35	25	25	24	A A 64	A A 75	A A 91	A A 94	A A 90	91	A A 118	D A 200	G	39	A A 135	75	30	28	36	23	27	41	35
12	32	25	28	25	25	29	40	55	A A 68	A A 91	A A 76	A A 82	A A 80	50	C	36	50	28	G	E	E	25	20	16
13	E S 15	E B 13	E B 13	E S 16	E S 15	E B 16	G	53	A A 82	A A 113	A A 143	54	A A 113	A A 124	A A 140	E C 36	30	C	C	30	28	21	26	35
14	27	27	16	26	26	A A 82	35	A A 56	E C 41	37	C	C	40	44	C	63	45	31	47	46	15	E S 15	19	27
15	15	E	E	13	13	20	25	34	G	40	48	D A 200	A A 139	A A 106	50	40	37	51	59	20	51	56	41	44
16	44	30	40	A A 53	17	19	45	67	41	A A 150	A A 152	42	40	37	40	54	32	G	30	44	45	A A 84	27	45
17	48	25	E	A A 60	16	26	34	50	A A 87	A A 104	A A 123	A A 144	40	A A 91	57	45	37	30	31	26	22	20	33	23
18	24	35	A A 60	28	E	25	28	A A 90	A A 84	A A 71	40	52	A A 80	A A 61	A A 81	A A 81	A A 128	A A 101	A A 90	25	25	25	25	25
19	29	26	30	19	25	25	25	46	32	A A 61	A A 145	48	A A 80	A A 71	50	A A 101	A A 81	58	40	40	35	A A 65	A A 56	A A 52
20	25	A A 49	A A 40	19	19	A A 48	A A 45	A A 61	55	A A 71	A A 121	A A 81	D A 200	A A 105	50	55	45	50	70	75	A A 89	A A 85	30	A A 70
21	A A 85	40	39	30	28	45	26	A A 80	A A 110	46	51	45	40	46	48	66	A A 132	A A 152	57	E S 39	E S 36	E	A A 64	41
22	A A 86	A A 135	A A 75	16	15	19	30	41	44	A A 84	A A 82	A A 66	52	46	36	47	31	30	27	18	C	E	19	E
23	41	45	17	E	E	33	A A 80	64	52	A A 93	A A 94	40	43	A A 73	62	48	A A 87	A A 106	51	A A 156	A A 87	A A 107	A A 57	A A 80
24	A A 115	A A 111	A A 59	15	21	40	A A 107	A A 84	A A 73	A A 171	47	A A 75	50	58	55	35	40	35	28	39	28	34	A A 68	22
25	E	E	20	23	28	25	40	A A 90	40	47	40	40	A A 90	A A 65	39	G	42	32	28	26	55	22	35	40
26	25	28	25	20	19	15	40	35	47	45	39	40	E S 38	46	A A 139	A A 140	A A 136	54	41	21	38	E	E B 12	E S 15
27	E	19	E	19	E	21	26	31	40	A A 50	38	A A 87	40	39	38	39	A A 66	40	31	19	A A 60	E	A A 80	20
28	35	25	25	20	25	24	A A 50	A A 62	A A 81	37	A A 54	A A 86	47	40	37	38	44	A A 56	41	27	18	17	25	24
29	18	17	E	E	E B 12	G	33	37	41	52	40	A A 79	40	52	A A 78	44	38	31	30	26	23	29	22	29
30	A A 58	31	26	A A 85	16	22	A A 64	A A 65	A A 72	A A 171	A A 76	A A 89	47	A A 139	A A 67	45	43	A A 90	A A 88	54	52	E	E	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	30	29	29	30	30	28	29	30	29	29	30	29	30	30	30
MED	28	28	22	20	18	24	33	52	56	A A 72	A A 63	A 66	51	52	50	45	44	50	41	39	34	25	28	28
UQ	44	35	30	30	25	U 31	45	A A 64	A A 84	A A 93	A A 94	A A 86	A A 80	A A 73	64	63	A A 75	58	59	60	51	40	44	40
LQ	18	18	E	14	E E 13	20	28	41	41	50	47	44	40	44	40	39	37	31	30	26	25	16	19	16

JUN. 1974 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | F-MIN (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	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 S 16	12	E S 15	12	13	E S 15	13	16	C	E C 27	17	27	27	27	25	15	15	15	14	13	12	12	13	13
2	12	13	12	E S 15	12	12	13	14	15	18	27	27	23	23	27	16	15	15	14	13	E S 15	E S 15	12	E S 15
3	E S 15	E S 15	12	12	12	12	13	14	15	15	20	19	20	18	19	19	16	16	15	14	E S 15	13	12	E S 15
4	E S 15	E S 15	14	E S 15	E S 15	13	15	16	16	18	18	16	16	22	23	22	18	16	13	E S 15	12	E S 15	E S 15	E S 15
5	E S 16	E S 15	E S 15	E S 15	E S 15	12	14	16	16	16	16	16	16	18	18	16	16	15	15	13	E S 15	E S 15	E S 15	E S 15
6	E S 15	E S 15	E S 15	E S 15	E S 15	14	15	16	16	15	19	19	25	25	26	16	18	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
7	E S 15	E S 15	E S 15	E S 15	13	16	16	16	16	15	17	26	26	27	16	15	15	13	12	12	E S 15	E S 15	14	13
8	E S 16	13	12	11	E S 15	13	13	13	15	16	18	16	20	16	15	C	15	13	13	13	13	12	13	12
9	12	12	E S 15	11	13	13	14	14	16	29	23	27	27	27	23	25	15	17	13	13	E S 15	13	12	13
10	E S 15	13	E S 15	11	12	13	13	15	15	22	16	25	30	26	20	22	16	14	13	13	E S 15	E S 15	E S 15	E S 15
11	E S 15	E S 15	14	14	E S 15	14	14	15	16	15	18	26	18	28	19	16	16	15	15	E S 15	14	E S 15	E S 15	E S 15
12	13	E S 15	E S 15	E S 15	E S 15	15	14	16	16	16	27	20	20	25	C	25	19	14	16	E S 15	E S 15	13	E S 15	12
13	E S 15	13	13	E S 15	E S 15	16	16	18	16	14	16	E C 27	E C 26	E C 27	E C 27	18	15	C	C	13	12	E S 15	12	12
14	E S 15	E S 15	12	E S 15	12	13	14	14	E C 22	E C 34	C	C	15	19	C	15	15	13	13	12	11	E S 15	13	E S 15
15	12	E S 15	13	11	12	13	13	15	15	15	15	15	28	18	17	18	15	13	13	12	11	E S 15	E S 15	14
16	E S 15	13	E S 15	E S 15	12	12	13	13	15	15	15	16	16	17	17	16	15	13	13	13	12	13	14	12
17	E S 16	E S 15	13	12	12	13	14	13	13	16	26	20	26	28	16	16	16	15	14	14	E S 15	E S 15	E S 15	E S 15
18	E S 15	E S 15	E S 15	E S 15	E S 15	15	12	15	16	16	16	25	26	19	19	15	14	15	14	14	E S 15	E S 15	E S 15	E S 15
19	E S 15	E S 15	14	14	13	12	13	15	15	14	16	15	18	15	21	19	20	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
20	E S 15	E S 15	14	E S 15	E S 15	15	14	15	15	18	20	28	25	27	18	26	16	15	15	13	E S 15	E S 16	E S 15	E S 15
21	E S 15	E S 15	E S 15	12	E S 15	14	15	14	15	15	16	15	17	16	15	15	15	15	12	11	E S 15	E S 15	E S 15	E S 15
22	E S 15	13	13	12	12	12	13	13	15	16	15	17	18	17	16	16	15	16	12	12	C	E S 15	12	E S 15
23	12	E S 15	12	E S 15	12	13	13	15	15	15	17	16	15	26	16	26	15	13	15	12	13	13	E S 15	E S 15
24	E S 15	12	11	13	12	12	13	16	16	16	20	19	19	19	18	15	16	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
25	E S 15	E S 15	E S 15	E S 15	E S 15	15	15	16	15	15	16	18	15	15	16	15	15	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
26	E S 15	E S 15	E S 15	E S 15	E S 15	13	15	15	15	15	15	15	25	21	16	15	16	13	13	13	14	13	12	E S 15
27	E S 15	12	12	12	13	12	13	13	15	16	25	25	18	16	16	16	15	15	15	13	E S 15	E S 15	E S 15	E S 15
28	E S 15	E S 15	13	E S 15	13	14	15	15	15	16	16	16	29	17	16	16	15	15	13	12	12	12	E S 15	E S 15
29	E S 15	E S 15	E S 15	E S 15	12	13	13	13	16	16	15	26	29	17	27	15	14	14	12	12	E S 15	12	13	12
30	E S 15	12	12	E S 15	E S 15	13	13	15	15	15	18	27	26	17	16	16	17	15	13	13	13	13	14	13
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	29	30	29	29	30	30	28	29	30	29	29	30	29	30	30	30
MED	E S 15	E S 15	13	E S 15	12	13	14	15	15	16	17	19	21	19	18	16	15	15	14	12	E S 15	E S 15	E S 15	E S 15
UQ	E S 15	E S 15	E S 15	E S 15	E S 15	14	15	16	16	16	20	26	26	26	21	19	16	15	15	14	E S 15	E S 15	E S 15	E S 15
LQ	E S 15	12	12	12	12	12	13	14	15	15	16	16	18	17	16	15	15	14	13	12	12	12	12	12

The Radio Research Laboratories, Japan

JUN. 1974 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F2 (0.01) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	S	S	A	F	I S 300	S 325	300	C	A	A	A	270	270	R 275	300	I A 295	310	315	I A 290	275	F	F	280
2	F 295	280	285	A	285	285	J S 325	315	I A 340	A	A	275	I R 290	300	270	290	285	I A 300	A	I A 290	F	I S 290	A	S 280
3	S	A	F	F	F	F 310	S 300	310	A	A	A	A	285	290	285	310	J R 315	315	335	315	275	275	F	F
4	A	F	F	F	F	A	290	290	330	A	A	A	I A 280	305	285	310	320	A	I A 310	305	295	315	300	F
5	F	F	F	290	305	270	315	350	I A 315	I A 285	A	295	280	285	300	A	A	325	325	310	300	F	F	F
6	F	F	F	F	345	300	310	A	310	A	A	A	A	I A 300	I A 305	320	325	325	I A 315	A	I R 310	300	F	310
7	285	290	300	355	325	335	320	320	A	305	305	280	295	300	325	295	290	315	305 S	300 S	J S 335	290	295	290
8	280	300	J S 300	F 290	F	325	305	305	295	I A 320	I A 310	290	A	I R 290	300	I C 300	295	295	I A 290	305	325	I S 310	300	300 S
9	295	300	300	F	305	320	375	S 340	345	315	305	310	I A 280	I A 310	355	I A 330	320	305	295	I A 290	I A 280	F	310	F
10	F	F	F	F	S 355	I S 360	320	350	I A 310	I A 295	290	I A 300	295	295	305	295	295	290	325	325	A	R	A	A
11	F	F	F	F	315	I A 315	I A 305	I A 305	A	I A 305	A	A	A	295	J R 290	I A 300	315	320	J R 305	310	J R 300	I R 285	F	R
12	305	285	300	F	285	270	275	315	I A 320	I A 305	I A 310	A	A	300	I C 300	305	325	295	310	J C 300	C	C	C 290	C 305
13	310	295	300	300	310	300	330	330	A	A	A	C 285	A	A	A	C 270	C	C	C	J R 315	280	S 290	280	F
14	S 300	F	S	F	F	I A 320	315	I A 315	C 355	U C 330	C	C	285	S 290	I C 290	295	285	J S 285	300	315	310	285	295	280
15	280	280	S 295	305	315	S 340	350	240	290	305	295	A	A	A	270	335	290	280	S 300	I S 290	S 280	S 290	290	I S 280
16	I S 275	I S 305	I S 325	I A 290	I S 280	290	F 270	J S 335	315	A	A	280	280	310	305	305	295	305	V 290	S 295	S 295	I A 300	F	F
17	S	S	S	A	J S 290	310	310	340	I A 335	A	A	A	R	A	A	310	315	310	300	315	F	315	305	F
18	F	F	A	F	325	345	325	A	A	A	315	305	I A 280	I A 290	A	A	A	A	A	350	J R 285	300	F	F
19	F	F	F	320	305	I R 330	310	350	J R 355	A	A	280	A	A	305	A	A	300	345	J R 330	350	A	A	A
20	R	A	A	290	F	A	A	A	360	I A 360	A	A	A	A	295	295	305	335	A	J R 315	A	A	F	A
21	A	R	F	290	300	335	R	A	A	290	305	315	300	305	280	305	A	A	S 295	I S 335	330	280	A	S
22	A	A	A	S	300	F 325	325	345	375	I A 305	I A 285	I A 285	300	305	290	280	S 300	300	S 305	S	C	S 335	I S 300	F
23	S	F	F	S	F	315	I A 330	S 345	315	A	A	300	300	I A 280	S 280	305	A	A	315	A	A	A	A	A
24	A	A	A	F	S	325	A	A	I A 310	I A 320	325	I A 305	300	305	A	290	305	315	305	300	F 300	F	A	R
25	F	F	305	F	F	F	F	A	340	335	315	280	A	A	280	310	320	295	310	305	330	305	F	R
26	F	F	S	F	F	315	285	315	340	325	345	280	275	295	A	A	A	J S 265	315	340	305	285	290	270
27	315	F	S 270	270	265	240	265	245	255	A	G	A	G	275	255	285	I A 305	285	300	315	I A 290	J R 285	I A 295	300
28	F	285	295	305	F	285	A	I A 305	A	250	A	A	A	270	295	285	265	A	320	305	285	J S 275	S 270	S 275
29	S 285	280	290	290	340	305	305	295	325	330	305	I A 265	290	275	I A 290	310	345	305	280	295	S 325	285	I S 290	285
30	A	S	S	A	S	S 290	A	I A 285	I A 270	I A 305	I A 320	A	R	A	A	290	R 280	I A 305	A	S	315	F	F	S
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	11	10	12	12	18	27	24	24	22	18	15	17	18	23	24	26	23	24	25	26	23	20	14	12
MED	295	288	300	290	305	315	312	315	322	305	305	285	285	295	290	300	305	305	305	308	300	290	295	282
UQ	302	300	300	305	325	325	325	340	340	325	315	300	295	302	302	310	318	315	315	315	320	302	300	300
LQ	282	280	292	290	290	295	302	302	310	I A 305	300	280	280	288	280	290	292	295	300	300	285	285	290	280

The Radio Research Laboratories, Japan

JUN. 1974 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F1 (0.01)

135° E Mean Time (G. M. T.+ 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								A	C	A	A	A	345	I A 370	A	A	A	A	A					
2						L	L	A	A	A	A	370	I A 370	390	H 360	385	350	A	A					
3						L	A	A	A	A	A	A	A	L 395	L 380	L 350	A	A						
4							L 335	L 345	A	A	A	A	I A 385	385	375	355	L 370	A	A					
5							L	L 365	A	A	I A 390	L 375	L 335	I A 380	A	A	A	A	A					
6							A	A	A	A	A	A	A	A	A	A	L 370	A	A					
7							L	A	A	A	A	A	A	A	A	375	350	335	L					
8								A	A	A	A	A	A	A	A	C	A	A	A					
9							L	A	A	360	385	375	A	A	A	A	A	A	A					
10							L 350	A	A	A	L 390	A	A	A	I A 370	L 350	A	A	A					
11							A	A	A	A	A	A	A	A	L 375	A	A	L	L					
12						A	A	A	A	A	A	A	A	A	C	370	A	L 370	L					
13							L	A	A	A	A	A	A	A	A	360	L	C	C					
14							A	A	C	375	C	C	380	A	C	A	A	325	A					
15							L	340	380	405	A	A	A	A	A	A	370	A	A					
16							A	A	A	A	A	A	400	S 385	370	A	310	345	L					
17							A	A	A	A	A	A	370	A	A	A	A	L 390	A					
18								A	A	A	L 395	I A 400	A	A	A	A	A	A	A					
19							L	A	L	A	A	A	A	A	A	A	A	A	A					
20							A	A	A	A	A	A	A	A	A	A	A	A	A					
21							L	A	A	A	A	A	370	A	A	A	A	A	A					
22						L	365	A	A	A	A	A	A	A	380	A	355	S 370	L					
23						A	A	A	A	A	A	375	A	A	A	A	A	A	A					
24						A	A	A	A	A	A	A	A	A	A	A	A	L 365	L					
25						L 345	A	A	L 395	I A 405	L 410	L 400	I A 395	I A 385	L 400	L 360	A	L 375	L					
26							A	L 355	A	A	400	390	395	A	A	A	A	A	A					
27						S 325	345	380	A	I A 400	L 400	A	L 380	L 395	L 390	A	I A 350	I A 370	A					
28						L	I A 365	I A 370	A	425	I A 370	I A 375	I A 370	370	405	A	A	A	A					
29						L	L	A	A	A	400	A	355	A	A	A	A	L	L					
30						L	A	A	I A 365	A	A	A	A	A	A	A	A	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	5	6	3	6	9	8	13	9	10	8	8	9						
MED						335	350	360	380	402	395	375	370	385	378	360	352	370						
UQ							365	370	388	405	L 400	395	385	390	L 390	372	370	L 370						
LQ							L 345	L 345	372	375	390	375	370	I A 380	370	L 352	350	345						

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JUN. 1974 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1974 | H'F2 (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								355	C	A	A	A	485	470	455	375	A	E A 350	280					
2						340	260	290	I A 290	A	A	375	345	345	405	355	345	A	A					
3						300	350	315	A	A	A	A	390	380	350	315	I A 295	285						
4							350	350	260	A	A	A	I A 445	320	350	300	300	I A 280	A					
5							280	260	A	A	A	365	385	390	350	I A 315	I A 305	280	A					
6							A 330	I A 285	315	A	A	A	I A 400	I A 380	I A 355	315	315	300	A					
7							290	300	I A 305	310	330	350	330	335	335	350	335	295	290					
8								E A 330	340	I A 310	I A 315	375	A	375	I A 330	I C 330	335	350	A					
9							285	265	280	325	340	345	A	A	355	I A 340	310	335	325					
10							300	245	A	A	360	I A 360	355	350	350	365	335	320	290					
11							I A 285	I A 305	I A 305	I A 315	A	A	A	325	330	I A 310	A 300	285	280					
12						330	380	A 300	A	A	A	A	A	390	C	340	300	340	305					
13							250	A 290	A	A	A	E A 390	A	A	A	345	305	C	C					
14							280	I A 310	290	300	C	C	390	350	C	E A 370	350	335	290					
15							270	550	385	235	380	A	A	A	375	260	335	350	E A 300					
16							395	E A 310	330	A	A	405	370	300	315	340	335	300	300					
17							325	320	A	A	A	A	R	A	A	310	315	320	310					
18								A	A	A	320	I A 380	I A 410	A	A	A	A	A	A					
19							280	270	260	A	A	405	A	A	350	A	A	340	A					
20							A	A	250	I A 275	A	A	A	A	350	340	315	270	A					
21							250	A	A	400	350	310	355	350	395	340	A	A	320					
22						265	285	250	250	A	A	I A 410	360	345	345	350	310	300	280					
23						295	I A 275	E A 300	E A 335	A	A	380	390	I A 400	E A 360	315	A	A	295					
24						305	A	A	A	I A 310	320	I A 355	370	I A 355	A 360	310	340	250	300					
25						340	360	A	270	290	330	420	A	A	400	305	290	280	280					
26							400	310	260	290	295	450	400	335	A	A	A	375	260					
27						510	450	540	475	A	G	A	G	500	500	410	A	400	280					
28						320	I A 425	A	A	550	A	A	A	450	375	420	E A 480	A	290					
29						300	300	350	295	315	350	I A 470	370	400	A	300	255	L 280	340					
30						355	I A 325	A	A	I A 370	I A 350	A	450	A	A	390	U A 400	A	A					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						11	25	23	18	14	13	17	19	21	22	27	23	23	19					
MED						320	300	302	291	310	340	378	390	355	351	340	315	300	290					
UQ						340	350	322	322	325	350	405	405	390	375	351	335	339	302					
LQ						300	280	283	260	290	320	360	365	345	350	312	302	282	280					

The Radio Research Laboratories, Japan

JUN. 1974 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1974 H'F (KM) 135° E Mean Time (G. M. T.+ 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	E A 365	275	A	E A 280	A	E A 250	A	C	A	A	A	E A 250	A	A	A	A	A	A	A	300	300	300	E A 320
2	E A 340	E A 320	330	A	300	275	250	A	A	A	A	E A 250	A	240	H 200	H 200	245	A	A	A	300	E A 300	A	320
3	305	A	290	E A 300	255	250	A	A	A	A	A	A	A	210	240	240	A	A	260	260	A 300	300	315	300
4	A	315	250	250	290	I A 280	240	A	A	A	A	A	I A 240	230	I A 240	230	240	A	A	280	280	280	260	300
5	300	300	300	290	285	240	240	230	I A 210	I A 210	I A 220	250	I A 230	I A 250	A	A	A	A	255	260	280	E A 350	300	310
6	315	315	300	280	240	250	A	A	A	A	A	A	A	A	A	A	240	A	A	I A 280	260	240	250	250
7	290	300	280	240	240	250	250	A	A	A	A	A	A	A	A	250	230	250	250	250	250	225	280	290
8	290	270	255	260	250	230	250	A	A	A	A	A	A	A	A	C	A	A	A	270	250	300	250	270
9	290	275	250	270	250	230	250	I A 235	I A 235	E A 270	215	250	A	A	A	A	A	A	A	A	A	A	295	250
10	290	295	300	290	240	235	240	A	A	A	210	A	A	A	I A 245	260	A	A	A	A 280	I A 295	290	I A 310	A
11	300	330	300	260	250	I A 265	A	A	A	A	A	A	A	I A 230	250	A	A	240	250	250	285	300	A 300	290
12	260	300	280	A 300	A 300	I A 275	A	A	A	A	A	A	A	A	C	215	I A 240	240	260	240	285	290	270	270
13	255	275	265	280	260	250	220	A	A	A	A	A	A	A	A	250	225	C	C	250	275	280	310	330
14	300	300	300	250	290	I A 260	A	A	A	220	C	C	235	A	C	A	A	250	I A 250	250	200	245	280	305
15	300	295	255	250	250	230	235	235	200	220	A	A	A	A	A	A	E A 250	A	A	250	E A 320	E A 330	E A 305	E A 330
16	A	290	E A 270	A	E A 310	260	A	A	A	A	A	I A 210	230	205	E A 260	I A 230	210	255	260	E A 290	E A 300	A	310	E A 350
17	A	290	275	I A 285	300	260	A	A	A	A	A	A	230	A	A	A	I A 240	240	I A 245	250	300	250	280	300
18	310	360	A	300	250	250	240	A	A	A	220	I A 235	A	A	A	A	A	A	A	240	250	315	320	290
19	300	305	300	260	280	280	220	I A 220	220	A	A	A	A	A	A	A	A	A	260	240	250	A	A	A
20	340	I A 320	A	280	220	A	A	A	A	A	A	A	A	A	A	A	A	A	A	I A 285	I A 275	A	300	I A 300
21	I A 295	A 300	290	300	280	250	240	A	A	A	A	A	240	A	A	A	A	A	A	A	I A 240	250	A	E A 350
22	A	A	A	280	270	250	235	A	A	A	A	A	A	I A 220	H 205	A	225	230	260	250	C	220	265	295
23	E A 305	E A 300	260	295	290	A	A	A	A	A	A	235	A	A	A	A	A	A	A	A	A	A	A	A
24	A	A	A	290	245	A	A	A	A	A	A	A	A	A	A	A	A	240	280	290	280	250	I A 300	300
25	300	280	280	300	280	240	A	A	A	I A 230	210	210	I A 210	I A 210	220	205	I A 240	220	260	250	280	280	300	A 300
26	270	290	300	290	280	240	I A 245	260	A	A	200	H 190	210	A	A	A	A	A	A	235	250	260	255	300
27	340	290	310	350	405	295	240	H 230	I A 210	A	240	I A 240	240	240	240	I A 240	I A 240	I A 245	I A 250	280	I A 275	300	I A 285	300
28	A 300	300	300	300	300	280	I A 250	I A 240	A	200	A	A	A	E A 270	205	A	A	A	A	260	250	300	315	305
29	300	300	290	280	210	250	A	A	A	A	200	A	E A 250	A	A	A	A	240	I A 270	290	245	295	250	310
30	A	E A 340	290	A	280	255	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 270	E A 325	300	300	300
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	27	26	26	30	26	17	7	5	6	8	9	11	10	10	10	12	11	14	25	27	25	26	27
MED	300	298	290	281	272	250	240	235	I A 210	218	212	235	232	228	235	235	240	240	260	255	278	285	299	300
UQ	302	308	300	300	290	265	250	238	I A 220	A 225	220	A 250	239	240	A 242	250	240	248	260	280	290	300	305	305
LQ	290	290	270	260	250	240	240	230	I A 210	210	205	210	230	I A 210	205	215	228	240	250	250	250	250	270	292

JUN. 1974 H'F (KM)

IONOSPHERIC DATA

JUN. 1974 | H'E (KM) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	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 S 125	110	105	C	E C 110	100	110	110	110	105	100	105	105	110					
2						A	105	105	100	100	110	110	105	105	B	I A 105	105	105	125					
3						A	A	105	105	A	A	110	110	110	110	110	100	110	115					
4						B	A	110	105	110	I A 110	I A 110	I A 110	110	110	110	110	110	A					
5						B	110	110	105	A	A	A	110	110	A	A	110	110	A					
6						B	A	110	110	110	110	A	A	A	A	A	A	105	A					
7						115	105	110	105	105	105	105	105	105	105	105	105	A	A					
8						140	110	105	100	100	100	100	100	100	100	I C 110	105	105	110					
9						I A 125	110	105	105	105	105	105	105	105	105	I B 105	105	A	A					
10						B	110	105	105	I A 105	A	A	A	A	A	A	A	A	A					
11						B	105	105	105	105	110	A	A	110	105	105	110	100	115					
12						B	110	100	110	105	105	I A 105	A	A	C	A	A	A	105					
13						B	110	110	I A 105	100	100	105	105	I C 105	C	A	A	C	C					
14						A	A	105	100	I C 100	C	C	100	100	I C 100	105	105	105	B					
15						110	I A 110	105	100	100	100	100	I B 100	100	105	100	105	105	115					
16						120	110	105	100	100	100	100	100	100	100	105	105	105	115					
17						130	105	100	100	A	A	A	110	110	110	105	105	I A 110	120					
18						B	115	105	110	I A 100	105	A	A	A	A	A	A	A	A					
19						B	A	A	A	A	A	A	A	A	105	100	100	A	A					
20						B	110	105	110	I A 110	A	A	A	105	105	110	110	I A 110	A					
21						B	A	105	105	100	100	100	100	100	100	A	A	A	120					
22						A	A	A	A	100	100	A	A	A	100	100	100	105	115					
23						125	105	105	100	100	100	100	100	A	A	A	105	105	115					
24						E B 125	105	100	105	I A 100	I A 110	110	I A 105	I A 110	I A 110	A	A	A	A					
25						B	110	110	110	A	A	A	A	A	A	110	I A 110	110	A					
26						B	I A 105	110	A	100	I A 100	I A 105	100	I A 100	100	100	105	105	110					
27						120	100	100	100	110	110	110	110	110	105	110	110	105	B					
28						B	110	110	I A 110	100	100	100	100	100	100	100	100	110	110					
29						B	105	105	100	100	100	I B 100	A	A	A	A	105	E A 110	115					
30						125	110	105	105	100	100	I B 105	B	A	A	A	A	A	125					
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						11	23	28	26	25	22	19	19	20	19	19	22	20	16					
MED						125	110	105	105	100	100	105	105	105	105	105	105	105	115					
UQ						125	110	110	105	105	110	110	110	110	105	110	110	110	118					
LQ						116	105	105	100	100	100	100	100	100	100	100	105	105	110					

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JUN. 1974 | H'E (KM)

IONOSPHERIC DATA

JUN. 1974 | H'ES (KM) | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	110	125	110	105	105	125	125	115	C	110	105	110	110	110	110	125	110	110	105	105	105	105	100	100
2	100	100	100	100	100	100	130	120	110	110	105	110	110	110	120	105	140	125	120	110	115	110	110	105
3	105	105	100	100	100	105	100	115	110	110	110	110	115	G	130	130	115	110	120	100	100	100	100	100
4	100	100	100	100	100	110	100	120	120	110	110	110	110	G	110	G	150	110	110	100	100	100	100	100
5	100	100	100	100	100	110	G	140	110	110	110	110	125	130	110	115	115	115	110	105	105	100	100	100
6	100	100	100	100	100	120	110	110	110	110	105	110	105	105	105	105	130	115	110	100	105	100	100	100
7	100	100	100	100	100	150	125	110	110	110	110	110	105	105	105	105	105	140	135	120	115	115	110	110
8	105	105	105	100	100	140	125	120	120	110	110	115	110	110	105	C	130	120	115	115	110	110	105	105
9	105	105	110	100	100	100	130	115	115	115	110	110	105	105	105	105	105	100	100	100	100	115	115	110
10	110	B	100	120	110	150	135	125	120	105	110	110	105	105	105	105	100	105	100	110	105	105	100	100
11	100	100	100	100	100	100	115	115	115	110	115	110	110	G	150	135	120	135	115	110	100	100	110	105
12	105	105	105	100	100	100	115	120	110	110	110	105	110	110	C	105	100	100	G	100	100	100	100	100
13	S	B	B	S	S	B	G	110	110	110	110	110	105	105	100	105	105	C	C	110	100	110	110	120
14	110	105	105	100	100	105	140	130	125	140	C	C	110	120	C	110	110	110	105	105	105	S	100	100
15	100	100	105	100	120	120	105	135	G	120	110	100	100	105	110	165	130	120	115	110	100	100	100	100
16	120	110	110	110	110	140	130	120	110	110	105	110	140	150	145	130	150	130	115	115	110	110	105	105
17	100	100	100	100	100	130	125	115	110	105	105	105	150	115	145	120	120	115	120	105	100	105	105	100
18	105	105	105	105	100	110	120	110	110	110	115	105	105	105	105	130	120	120	110	105	105	100	100	100
19	100	100	100	100	100	100	100	110	105	105	105	105	105	120	120	110	110	110	110	105	100	100	100	105
20	100	105	100	100	100	130	140	120	120	110	105	105	105	120	125	120	125	115	110	105	100	100	100	100
21	105	100	100	100	100	100	120	110	115	110	105	105	110	100	135	130	125	115	110	110	110	115	135	105
22	105	105	105	100	105	130	135	105	105	100	100	100	100	100	150	125	140	120	120	110	C	105	105	105
23	100	100	100	140	115	120	110	110	110	105	105	105	105	135	135	135	120	115	110	110	110	110	110	105
24	105	100	100	125	125	125	120	115	110	110	110	110	110	105	115	110	115	115	115	105	110	110	110	100
25	100	100	100	100	100	120	120	115	115	110	110	110	105	110	110	G	120	130	110	105	110	100	100	110
26	105	105	100	105	105	105	115	125	115	100	100	125	150	150	120	120	110	115	110	110	105	100	B	S
27	100	130	150	125	S	125	130	130	130	120	140	130	130	140	120	120	110	115	110	105	105	105	100	100
28	100	100	100	100	110	120	115	110	110	125	110	105	125	120	120	125	120	115	110	105	105	100	100	100
29	100	100	100	100	B	135	115	110	115	110	110	110	110	105	105	105	110	145	125	125	120	110	105	120
30	110	110	100	100	120	125	120	115	110	110	110	100	110	100	100	100	105	120	110	110	105	105	130	105
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	28	29	29	27	29	28	30	28	30	29	29	30	27	28	27	30	29	28	30	29	29	29	29
MED	100	100	100	100	100	120	120	115	110	110	110	110	110	110	112	120	118	115	110	105	105	105	100	100
UQ	105	105	105	105	108	130	130	120	115	110	110	110	110	120	128	128	125	120	115	110	110	110	110	105
LQ	100	100	100	100	100	105	115	110	110	110	105	105	105	105	105	105	110	110	110	105	100	100	100	100

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JUN. 1974 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1974 | TYPES OF ES | 135° E Mean Time (G. M. T. + 9h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F2	F2	F1	F3	F3	C4	H4	C2		C2	C3	C2	C2	C2	C2	H2	C4	C2	C3	F5	F3	F5	F7	F4
2	F4	F4	F4	F3	F3	L3	H2	H2	C3	C3	C2	C1	C2	C1	C1	L1	H1	H3	C4	F3	F6	F3	F4	F5
3	F5	F6	F3	F3	F5	L4	L3	C2	C2	C2	C2	C2	C1		H1	H1	C2	C3	H1	F3	F2	F4	F2	F4
4	F4	F3	F3	F3	F3	L3	L1	H2	H2	C2	C1	C2	C2		C2		H1	C4	L3	F4	F5	F5	F2	F4
5	F3	F3	F1	F2	F1	L1		H1	C3	C2	C2	C1	H1	H1	C2	C2	C3	C2	C3	F6	F3	F6	F3	F4
6	F5	F4	F5	F3	F2	H1	C3	C3	C2	C2	C2	C1	C2	C2	C2	C3	H1	C2	C3	F4	F3	F3	F4	F2
7	F3	F4	F4	F2	F1	H1	H2	C3	C3	C3	C2	C2	C2	C2	C2	C2	C2	HL22	HL13	FF61	FF22	FF12	FF22	F2
8	F2	F2	F2	F3	F1	C2	H2	H2	H3	C2	C3	C2	C2	C2	C3		HC22	H4	C4	F4	F3	F6	F2	F3
9	F4	F2	F1	F1	F2	LH11	H2	C3	C3	C2	C1	C2	C2	C2	C2	C3	C3	L2	L6	F4	F3	FF13	F7	F2
10	F6		F1	F1	F2	H2	H2	H2	H2	C2	C1	C2	C2	C2	C1	C2	C1	C3	L3	FF22	F3	F4	F4	F5
11	F3	F4	F3	F3	F5	L4	C3	C3	C3	C3	C2	C3	C3		H1	H2	H2	H1	C2	FF22	F4	F2	F4	F5
12	F5	F4	F4	F3	F5	L3	C3	H2	C3	C2	C2	C2	C2	C2		L1	L3	L1		F1	F1	F4	F4	F2
13								C2	C1	C2	C1	C2	C2	C2	C2	L1	L1			F2	F4	F4	FF22	F6
14	F3	F3	F4	F3	F4	L3	HL12	H3	H1	H1			C1	H1		C1	C2	C2	C3	F4	F1		F4	F3
15	F2	F1	F1	F2	F2	C2	L2	H2		H1	C2	C3	C3	C2	C2	H1	H2	H3	C4	F4	F5	F4	F4	F3
16	FF22	FF24	FF51	F3	F3	H2	H2	H4	C2	C2	C3	C2	H1	H1	HC11	H2	H2	H2	C3	F3	F4	F6	F6	F6
17	F4	F4	F3	F3	F2	H2	H3	C3	C2	C2	C2	L2	H1	C2	H2	H2	H2	C1	H3	F4	F3	F4	F6	F5
18	F5	F6	F3	F4	F2	C2	H2	C3	C3	C2	C1	C2	C2	C2	C2	HC12	H2	CL22	CL22	F2	F3	F3	F3	F3
19	F2	F3	F3	F2	F4	L3	C2	C2	C2	C2	C2	C2	C2	H2	H2	C2	C2	C3	C3	F5	F1	F5	F3	F2
20	F4	F3	F3	F1	F3	H2	H2	H2	H2	C3	C2	C2	L1	H2	H1	H2	H2	C2	C3	F3	F3	F3	F3	F3
21	F3	F3	F4	F3	F3	L4	H1	C2	C2	C2	C2	C2	C1	C2	HC22	HL32	HL32	CL32	CL51	FF43	FF61	F1	FF13	F2
22	F6	F4	F3	F2	F4	HL12	HL12	L2	L2	C2	C2	L3	L2	L2	H1	H1	H1	H1	C2	F6		F4	F3	F3
23	F3	F3	F2	F1	F1	C4	C3	C4	C3	C3	C2	C2	C2	HL22	HL22	HL21	H2	C4	C2	F3	F3	F3	F3	F4
24	F4	F3	F7	F2	F2	C3	H4	C4	C3	C2	C2	C2	C2	C2	C2	C2	C1	C1	C2	F5	F4	F5	F3	F3
25	F2	F2	F3	F3	F3	CL12	H2	C3	C2	C2	C1	C1	C2	C2	C2		HL11	H1	C1	F4	F4	F2	F4	F3
26	F3	F6	F3	F6	F5	LH11	C2	H2	C2	C2	L1	HL11	H1	HL11	H3	H3	C2	C3	C3	F3	F3	F1		
27	F1	FF62	F1	F6	F1	H4	H1	H2	H2	H1	H1	H2	H1	H1	H1	H1	C3	C1	C2	F1	F4	F2	F3	F3
28	F5	F2	F6	F4	F5	H2	C3	C2	C3	H2	C2	C2	H2	H2	H1	H2	H3	C4	C5	F4	F5	F3	F2	F3
29	F3	F2	F1	F1		H1	C3	C2	C2	C3	C1	C2	L1	L2	L3	L2	C2	HL11	HL31	FF51	FF21	F6	F3	F5
30	F4	F7	F5	F2	FF11	C2	C5	C2	C3	C2	C2	C2	C2	L1	L2	L2	L2	HL32	CL41	FF24	F3	FF12	F1	F2
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUN. 1974 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1974 | FXI (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	74	68	X 58	59	53															X 63	X 67	69	69
2	S	74	68	X 58	59	53	70														S	A	S	S
3	S	S	S	62	57	X 44															X 70	X 67	S	S
4	73	69	67	62	41	42															X 86	X 67	72	S
5	69	S 62		S	73	S															A	A	S	A
6	A	S	S	S	60	52															X 88	75	70	S
7	S	S	S	S	S	S			84												82	S	S	S
8	S	S	S	A	S	54	60			81											X 83	S	X 79	S
9	S	S	69	S	S	63	64	86													X 90	S	S	S
10	A	S	S	S	56	48															X 74	X 77	73	S
11	74	65	70	A	64	62															S	X 82	S	85
12	93	S	S	71	X 64	60															X 83	X 84	S	S
13	X 71	X 73	X 69	X 68	X 66																A	S	74	65
14	S	S	S	S	S	S															81	S	68	A
15	S	S	S	S	65	S															S	X 77	X 75	X 77
16	S	S	S	S	52	S															S	S	83	S
17	S	S	S	60	S	52	68														A	A	67	64
18	S	S	S	63	59	X 46															C	C	A	S
19	A	A	S	55	57	44															X 64	S	A	S
20	63	59	48	X 49	34	A															X 76	X 72	S	S
21	S	S	S	S	S	S	58														X 78	X 61	S	S
22	S	A	A	A	A	S															X 89	59	X 58	S
23	X 55	S	S	44	46	S	69														A	A	S	S
24	S	S	S	A	S	48															A	71	A	S
25	S	S	S	60	50	44															S	X 67	X 68	S
26	S	S	58	S	56	X 82															X 65	X 64	62	58
27	S	S	S	X 50	X 47	40															X 59	X 60	A	S
28	S	X 48	A	52	49	X 41															X 61	X 58	X 60	X 61
29	X 62	61	61	61	67	50															X 71	X 52	S	S
30	S	56	X 52	S	S	X 44															X 63	X 62	X 65	X 62
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	9	11	15	21	20	6	1	1	1											19	18	15	8
MED	70	65	67	60	57	49	66	86	84	81											X 76	X 67	69	64
UQ	74	73	68	62	64	54	69														X 83	X 75	74	73
LQ	62	59	60	54	50	44	60														X 64	X 61	66	62

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JUN. 1974 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF2 (0.1 MHZ) | 135 E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31 12.1 N. Long. 130 37.1 E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	I S 63	F	F	S 52	53	47	V 53	59	54	R 49	A	I A 54	I A 56	58	I A 52	56	61	61	54	55	57	S 61	F 63	F
2	F	F	S	F	F	F	F	V 71	59	A	A	I A 70	76	70	I A 62	65	76	81	80	I S 79	S	I A 48	I S 39	S
3	S	S	S	F	F	38	48	62	56	60	63	63	I A 66	73	85	95	101	102	83	71	64	61	U S 60	S
4	F	F	F	F 56	F	F	48	65	69	H 58	58	62	I A 63	79	C	C	88	80	78	79	80	U S 61	F	I S 63
5	J S 63	S	F	S	F	S 58	U S 64	S 71	60	52	57	57	64	77	84	88	94	91	J S 85	A	A	A	S	A
6	A	S	S	S	F	S 44	U S 63	76	A	A	A	A	I R 64	R 69	76	81	I A 78	R	A	A	S 82	S 69	F	S
7	S	S	S	S	S	S 42	49	65	F 78	I C 74	A	A	79	77	83	92	95	94	93	S 97	S 76	S	S	S
8	S	S	S	A	S	S 48	F 54	S 65	79	F 75	69	A	71	82	81	77	76	79	I A 90	U S 88	U S 77	U S 73	S 73	S
9	S	S	U S 63	S	S	F	F 58	F	79	V 72	78	I A 68	68	H 78	I A 83	I A 87	A	A	78	74	84	I S 79	S	S
10	A	S	S	S	F 50	F	51	61	64	59	62	68	H 71	83	86	R 88	R 89	88	S 90	78	69	71	F	S
11	F	F	F	A	F 58	F	54	70	88	A	A	A	I A 78	78	79	85	S 102	U S 100	84	U S 88	I S 83	J S 76	S	F
12	F	S	S	F	58	U S 54	J S 52	70	A	70	A	A	A	J R 76	83	I A 88	93	S 88	83	S 90	J S 77	J S 78	I S 78	S 69
13	65	S 67	J S 63	S 62	60	47	53	57	59	A	A	A	A	A	A	81	I A 102	I S 114	81	I A 67	I A 67	S 70	F	S 59
14	S	S	S	S	S	S	S 55	66	65	I R 55	I A 56	61	74	77	79	88	99	S 105	S 110	I S 94	S 75	I S 66	S 62	I A 59
15	S	S	S	S	S 59	I S 57	57	S 86	S 72	I A 61	52	63	I C 67	78	94	99	I A 74	I A 74	86	81	S 72	71	69	S 71
16	S	S	S	S	S 46	I S 44	53	S 72	63	56	55	65	78	80	75	71	83	S 83	71	68	S 71	I S 81	S 77	S
17	S	S	S	F	S	F 46	F	62	I A 53	A	A	A	A	62	74	70	67	I A 65	71	A	A	A	F 61	F
18	S	S	S	F	F	S 40	45	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	A	S
19	A	A	S	F	J S 51	S 38	U S 53	59	49	51	65	64	63	67	79	J R 87	92	S 101	79	64	S 58	S 48	A	S
20	U S 57	F	F	S 43	S 28	A	A	A	A	51	49	51	58	67	86	91	S 95	S 97	I A 92	90	70	S 66	S	S
21	S	S	S	S	S	S	F 52	A	I A 54	I A 60	64	63	59	I A 61	67	84	92	94	S 94	S 95	72	S 55	I S 54	I S 54
22	S	A	A	A	A	S	50	64	S 69	56	59	I A 57	61	61	I A 63	I A 72	82	84	84	S 98	S 83	S 53	S 52	I S 49
23	49	I S 45	S 40	F	F	S	F 63	70	52	52	60	E G 47	I A 55	67	85	94	103	100	A	A	A	A	S	S
24	S	S	S	A	S	S 42	I A 48	I A 62	80	R 80	60	63	64	70	82	85	73	71	S 75	I A 75	I A 80	F	A	S
25	S	S	S	F	F	F	44	59	67	61	A	A	A	A	65	84	80	79	80	U S 83	S 73	J S 61	S 62	S
26	S	S	J S 52	I S 52	S 50	U S 46	46	58	81	67	I A 52	53	54	58	64	60	72	81	102	85	59	S 58	S 53	S 52
27	I S 50	I S 48	I S 49	44	J S 41	F	32	39	E G 39	E G 42	A	A	E G 43	A	53	48	48	54	A	53	53	S 54	A	S
28	S	S 42	I A 45	F 46	S 43	35	42	52	48	A	E G 43	50	51	I A 52	53	54	54	54	63	S 62	S 55	52	54	S 55
29	S 56	F	F 51	F	F	F	45	46	58	52	54	54	61	67	81	88	73	58	S 64	71	65	S 46	S	S
30	I S 50	S 50	46	I S 46	I S 42	S 38	47	52	55	65	56	I A 54	52	59	61	63	69	66	74	71	57	56	59	S 56
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	5	8	8	13	17	27	26	26	23	19	20	25	26	27	28	28	27	26	25	25	24	15	10
MED	S 56	S 48	S 50	S 49	S 50	S 44	52	63	62	59	58	62	64	70	79	84	82	83	82	79	72	S 61	S 61	S 58
UQ	S 63	S 50	S 58	S 54	58	S 47	54	70	72	66	62	64	71	78	83	88	94	96	90	S 88	S 77	S 71	S 66	S 63
LQ	S 50	I S 45	46	45	S 43	S 40	48	59	54	52	54	54	58	62	64	70	73	72	75	71	64	S 54	S 54	S 54

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JUN. 1974 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 FOF1 (0.01 MHZ) 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	A	A	A	A	A	A	A	440	400	H 400	L					
2							L	L	A	A	A	A	470	A	A	450	I A 440	L 430	A					
3								A	L	L	L 480	L 480	A	A	H 480	I A 470	450	A	L					
4							L	L 410	I A 430	A	I A 470	I A 480	A	A	C	C	450	L 430	L 380	L				
5							L	A	U R 450	U L 480	470	470	470	I A 470	A	A	A	A	A					
6							L	A	A	A	A	A	A	A	470	460	A	A	A					
7								400	A	C	A	A	A	A	A	450	A	A	A					
8							L	A	L 440	A	A	A	A	A	470	H 460	440	A	A	L				
9								L	A	A	A	A	A	A	A	A	A	A	A					
10								A	A	L 460	480	A	470	A	550	A	A	490	L	A				
11							A	A	A	A	A	A	A	470	A	460	L 460	L 420	L					
12							L 360	L	A	A	A	A	A	A	A	A	A	A	A					
13							L	A	A	A	A	A	A	A	A	A	A	A	A					
14							A	A	L	L 480	A	R 490	460	A	I A 470	A	A	410	L 370					
15							L 430	370	410	A	A	A	I C 460	H 450	450	A	A	A	L	L				
16							L	L	A	H 500	480	A	H 460	H 450	H 460	H 440	420	L 410	A	A				
17							L	L	A	A	A	A	A	A	I R 440	I A 430	I A 420	A	A					
18								A	A	C	C	C	C	C	C	C	C	C	C					
19								U L 380	L 400	440	A	A	A	A	A	A	A	A	A					
20							A	A	A	440	460	H 450	H 450	450	A	A	A	A	A					
21								A	A	A	A	A	A	A	A	430	A	A	A					
22							A	L	L 400	H 450	440	A	A	A	A	A	A	A	H 360	L				
23								A	L	L 440	A	470	I A 450	A	A	A	A	A	A					
24							A	A	H 410	A	A	460	A	A	R 450	420	A	A	360	A				
25							A	L 380	410	A	A	A	A	A	A	A	A	R 410	I A 370					
26							A	L 390	H 410	L 440	A	450	I A 460	I A 450	440	I A 430	A	380	A					
27							280	340	390	420	A	A	430	I A 420	420	420	H 420	380	A					
28								L 370	I A 400	I A 420	H 430	I A 440	440	I A 450	I A 440	A	A	A	A					
29								L	H 420	A	A	A	H 460	I A 460	I A 440	H 440	H 430	L 390	H 360	L				
30								L 400	410	430	A	A	A	A	450	H 430	H 420	410	360	L				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	9	13	12	8	9	12	9	14	15	11	12	7					
MED							L 360	L 380	410	440	470	470	460	I A 450	450	440	430	410	360					
UQ							L 395	L 400	420	470	480	480	465	460	470	455	445	L 425	370					
LQ							320	L 370	400	435	450	450	450	I A 450	440	430	420	395	360					

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JUN. 1974 FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOE (0.01 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							190	260	295	320	330	345	340	350	A	A	A	275	210	S				
2							H 200	250	285	310	320	335	350	340	I A 340	340	315	280	230	S				
3							A	A	300	320	340	350	350	360	350	340	H 315	290	225	S				
4							H 200	260	290	315	340	A	A	A	C	C	310	270	230	B				
5							200	255	285	320	I A 330	I A 335	350	I A 350	I A 350	340	320	280	H 240	B				
6							175	I A 260	290	320	330	A	A	A	A	350	320	290	H 230	B				
7							210	270	300	I C 325	345	A	340	A	A	A	A	A	A	S				
8							210	260	300	320	340	345	350	340	A	H 340	320	H 290	230	S				
9							210	270	300	325	340	A	A	A	A	A	A	A	A	S				
10							170	260	290	320	340	I A 340	340	350	A	A	A	A	A	B				
11							A	240	320	330	350	350	360	A	A	A	A	285	A	B				
12							I A 190	260	295	325	340	340	350	A	A	A	A	A	A	S				
13							160	A	A	320	340	345	340	340	340	330	315	280	230	S				
14							A	A	A	A	I A 330	340	345	340	335	325	300	270	220	S				
15							200	260	A	A	A	A	I C 350	H 345	A	A	A	A	A	A				
16							A	250	280	A	A	A	A	A	340	I A 325	I A 315	270	230	S				
17							180	250	290	310	A	A	A	330	340	330	300	270	230	B				
18							160	250	A	C	C	C	C	C	C	C	C	C	C	C				
19							A	A	A	A	A	A	350	340	340	330	305	270	A	B				
20							160	250	A	A	335	340	340	340	340	325	305	270	220	S				
21							A	A	A	A	A	A	A	A	A	A	A	I A 270	220	S				
22							170	260	A	A	A	A	A	A	A	320	300	H 270	230	S				
23							170	245	290	A	A	A	A	350	350	350	310	280	220	S				
24							190	250	290	305	320	I A 325	A	A	A	A	A	A	240	B				
25							200	260	290	A	A	A	A	A	A	A	A	A	A	B				
26							170	250	300	A	A	A	A	A	330	320	295	275	240	B				
27							175	250	280	A	A	A	340	340	330	320	290	270	210	S				
28							170	240	280	315	325	340	360	340	335	325	300	270	210	B				
29							170	240	290	310	320	330	A	A	A	A	A	H 290	230	S				
30							170	250	290	310	330	330	A	A	A	A	315	280	230	B				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							24	25	22	18	19	15	16	15	13	16	18	22	21					
MED							178	250	290	320	335	340	350	340	340	330	310	275	230					
UQ							200	260	300	320	340	345	350	350	340	340	315	280	230					
LQ							170	250	290	310	330	335	340	340	335	325	300	270	220					

The Radio Research Laboratories, Japan

JUN. 1974 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOES (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	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 S 14	E S 15	J A 26	J A 23	22	21	28	J A 55	J A 62	64	J A 71	53	J A 109	55	J A 63	38	34	31	29	18	14	23	49	J A 53
2	J A 52	J A 53	J A 25	J A 33	J A 29	J A 28	J A 25	J A 43	J A 64	87	J A 104	150	J A 88	J A 71	J A 67	G	47	47	J A 49	J A 73	J A 37	J A 84	J A 27	J A 53
3	J A 74	J A 87	J A 63	J A 34	J A 38	J A 41	J A 54	J A 54	44	76	56	41	73	55	47	75	42	J A 46	32	17	J A 20	32	60	J A 32
4	J A 54	J A 63	J A 52	J A 52	J A 62	J A 31	32	34	J A 71	J A 48	J A 57	77	J A 73	J A 61	C	C	32	29	G 21	18	E S 15	23	J A 32	J A 26
5	25	23	23	J A 19	J A 21	21	29	J A 42	J A 46	J A 64	J A 53	43	45	J A 71	J A 61	J A 53	J A 79	J A 84	J A 81	162	183	J A 106	J A 73	J A 84
6	J A 83	J A 59	J A 61	J A 36	J A 26	J A 18	J A 38	J A 64	J A 95	D D 200	146	125	J A 104	82	47	43	J A 88	110	D D 200	D D 200	165	66	J A 51	J A 75
7	J A 65	J A 62	47	J A 30	J A 31	J A 41	30	J A 54	J A 66	C	J A 95	J A 164	J A 55	J A 66	45	42	52	J A 54	J A 70	43	J A 64	J A 62	J A 136	J A 61
8	J A 51	J A 37	J A 54	J A 101	J A 29	J A 29	33	J A 54	75	J A 81	J A 92	180	J A 136	J A 48	43	35	42	J A 58	J A 139	59	J A 31	J A 29	J A 31	J A 61
9	J A 83	J A 52	J A 40	J A 40	J A 34	J A 34	35	J A 49	J A 86	J A 103	J A 66	J A 103	96	J A 74	J A 164	J A 93	110	91	J A 79	J A 69	J A 93	47	J A 36	J A 64
10	J A 95	27	J A 24	25	J A 26	16	39	J A 53	59	J A 66	J A 51	J A 71	48	66	105	J A 80	J A 53	J A 37	J A 56	J A 44	23	J A 61	J A 41	J A 51
11	J A 24	J A 33	J A 60	J A 87	J A 37	J A 42	J A 54	J A 65	J A 74	J A 99	J A 137	181	122	41	J A 87	39	J A 43	34	30	J A 33	J A 41	J A 37	20	J A 49
12	J A 82	J A 50	J A 59	J A 28	J A 32	J A 28	J A 36	J A 41	J A 64	J A 87	J A 74	81	144	J A 74	J A 70	89	J A 58	J A 45	J A 50	J A 37	J A 36	J A 28	J A 27	J A 51
13	J A 29	25	22	J A 20	J A 21	J A 21	22	J A 40	J A 47	J A 93	J A 124	J A 98	J A 142	J A 98	J A 103	J A 67	J A 131	80	J A 64	J A 86	J A 90	J A 53	57	J A 36
14	J A 64	J A 85	71	J A 33	23	113	J A 91	55	J A 81	J A 71	J A 87	J A 95	41	54	78	J A 72	J A 73	38	J A 41	J A 41	J A 52	J A 50	J A 52	71
15	J A 52	J A 46	J A 85	J A 84	J A 41	E S 14	27	J A 64	40	J A 135	J A 91	80	C	42	69	52	J A 88	80	79	J A 64	J A 53	J A 30	J A 34	25
16	J A 32	J A 33	J A 23	J A 64	J A 30	J A 35	24	39	J A 49	36	38	50	39	38	40	35	32	39	J A 48	55	52	J A 51	J A 63	47
17	J A 39	J A 56	J A 33	J A 33	J A 34	J A 39	32	42	J A 86	J A 139	D D 200	D D 200	D D 200	J A 54	J A 57	J A 67	J A 65	J A 94	J A 102	D D 200	J A 170	J A 99	J A 36	J A 52
18	J A 54	J A 53	J A 53	J A 41	J A 35	J A 63	J A 36	J A 97	J A 99	C	C	C	C	C	C	C	C	C	C	C	C	C	J A 84	J A 33
19	J A 83	J A 84	43	J A 51	J A 61	J A 30	J A 53	J A 36	35	42	J A 52	51	52	J A 59	J A 64	J A 78	J A 58	J A 47	J A 78	J A 33	J A 51	J A 61	J A 52	J A 33
20	J A 33	J A 21	J A 31	J A 25	J A 25	J A 60	J A 51	J A 171	J A 103	J A 75	36	37	39	41	J A 139	J A 109	J A 54	87	136	78	J A 24	J A 51	J A 39	J A 53
21	72	J A 64	77	J A 64	J A 45	J A 52	J A 34	J A 89	73	J A 136	J A 100	J A 88	J A 110	J A 124	J A 51	J A 66	J A 84	J A 100	J A 89	J A 109	J A 64	J A 51	J A 40	J A 53
22	66	J A 84	75	93	J A 108	J A 49	J A 47	J A 53	J A 44	J A 46	J A 45	84	J A 90	J A 54	J A 76	J A 91	75	J A 56	36	27	J A 50	J A 30	J A 44	J A 32
23	J A 38	J A 34	J A 41	26	27	J A 26	J A 50	J A 54	J A 64	J A 76	J A 95	J A 78	87	46	59	J A 86	84	J A 66	159	145	J A 168	J A 124	60	J A 32
24	J A 40	J A 52	J A 64	J A 59	J A 74	J A 52	J A 74	J A 87	38	J A 99	J A 64	35	J A 79	J A 54	38	J A 44	J A 71	J A 56	33	J A 79	J A 104	J A 62	J A 64	J A 52
25	J A 66	J A 44	J A 36	J A 34	J A 27	J A 83	J A 51	J A 55	J A 174	J A 89	D D 200	J A 111	J A 133	J A 77	J A 87	J A 87	J A 92	J A 70	J A 49	J A 50	J A 64	J A 57	J A 32	J A 42
26	J A 23	J A 37	J A 52	J A 25	J A 24	20	J A 40	J A 35	J A 64	36	J A 88	47	J A 64	J A 52	41	J A 55	43	38	J A 45	J A 58	J A 37	J A 40	J A 37	J A 27
27	J A 19	J A 26	J A 28	J A 17	17	J A 20	33	29	45	38	43	45	47	64	52	J A 74	J A 125	81	113	J A 84	25	J A 74	J A 86	40
28	33	J A 96	J A 66	J A 68	J A 74	J A 26	32	35	J A 54	J A 66	J A 84	J A 65	G	J A 65	48	43	51	J A 51	38	46	J A 88	J A 52	49	J A 34
29	J A 29	J A 33	27	E B 15	E B 14	E S 15	22	26	34	J A 58	55	J A 90	38	64	J A 71	36	33	G	G 17	22	J A 19	J A 34	J A 33	J A 46
30	J A 30	J A 34	23	J A 21	J A 22	22	J A 52	J A 41	32	82	J A 86	J A 74	67	J A 64	J A 73	J A 56	G 29	38	32	J A 44	J A 26	23	25	J A 32
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	28	29	29	28	29	28	28	29	29	29	29	29	29	30	30
MED	J A 52	J A 48	J A 45	J A 34	J A 30	J A 30	J A 36	J A 53	J A 64	J A 76	J A 84	80	76	J A 61	J A 64	J A 61	J A 58	54	J A 50	J A 55	J A 51	J A 51	J A 42	J A 48
UQ	J A 66	J A 62	J A 61	J A 59	J A 38	J A 42	J A 51	J A 55	J A 75	J A 96	J A 95	103	J A 110	J A 71	J A 77	J A 79	J A 84	J A 80	J A 81	J A 79	J A 88	J A 62	J A 60	J A 53
LQ	J A 30	J A 33	J A 27	J A 25	J A 24	J A 21	30	J A 40	45	J A 61	J A 55	51	48	54	48	42	43	38	36	37	J A 26	J A 32	J A 33	J A 33

The Radio Research Laboratories, Japan

JUN. 1974 | FOES (0.1 MHZ)

IONOSPHERIC DATA

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Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	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 S 14	E S 15	15	13	E	E	G	29	44	42	A A 71	A A 53	A A 109	54	A A 63	35	32	30	29	16	14	E	17	E
2	E	22	17	22	18	18	17	36	46	A A 87	A A 104	A A 150	42	58	A A 67	G	46	37	49	51	31	A A 84	E	28
3	53	25	48	19	25	30	29	42	39	47	53	41	A A 73	48	43	49	41	43	29	17	18	20	52	30
4	51	15	42	21	21	20	G	31	48	45	48	55	A A 73	49	C	C	G	29	G 20	17	E S 15	E	E	17
5	E	20	E	E	15	E	25	41	41	G	37	41	U Y 45	50	50	48	64	64	66	A A 162	A A 183	A A 106	19	A A 84
6	A A 83	54	29	27	18	E	29	57	A A 95	D A 200	A A 146	A A 125	47	67	45	41	A A 88	44	D A 200	D A 200	26	25	50	53
7	31	47	34	15	29	29	26	37	63	C	A A 95	A A 164	54	60	U Y 45	40	45	54	50	43	54	60	E	E
8	E	27	27	A A 101	20	E	30	44	40	60	68	A A 180	50	48	42	G	40	47	A A 139	24	15	15	16	E
9	E	51	22	E	27	26	29	38	65	55	50	A A 103	66	61	A A 164	A A 93	A A 110	A A 91	68	50	75	27	27	55
10	A A 95	E	E	14	E	14	29	46	45	38	37	48	46	54	51	48	46	37	37	42	16	20	20	23
11	16	16	18	A A 87	21	28	43	52	67	A A 99	A A 137	A A 181	A A 122	40	47	37	42	32	27	29	29	37	E	23
12	29	25	30	16	24	24	29	35	A A 64	65	A A 74	A A 81	A A 144	63	61	A A 89	54	43	49	34	31	25	24	26
13	18	E	E	E	17	16	G	38	45	A A 93	A A 124	A A 98	A A 142	A A 98	A A 103	35	A A 131	66	50	A A 86	A A 90	20	52	15
14	E	E	15	E	E	29	50	43	28	32	A A 87	42	37	49	65	56	58	36	32	33	35	28	52	A A 71
15	51	36	41	21	E	E S 14	24	36	G	A A 135	45	39	C	G	42	43	A A 88	A A 80	33	22	52	21	E	16
16	23	E	E	35	20	30	G	29	48	G	34	45	37	37	38	34	U Y 32	34	44	47	42	51	37	32
17	32	40	E	20	16	20	24	38	A A 86	A A 139	D A 200	D A 200	D A 200	48	37	62	51	A A 94	64	D A 200	A A 170	A A 99	28	30
18	36	28	50	15	24	28	30	A A 97	A A 99	C	C	C	C	C	C	C	C	C	C	C	C	C	A A 84	30
19	A A 83	A A 84	31	19	18	E	31	25	G	41	45	49	51	57	57	70	54	30	35	28	20	17	A A 52	30
20	29	17	21	20	20	A A 60	A A 51	A A 171	A A 103	42	G	G	39	39	46	64	47	77	A A 136	68	16	46	39	28
21	52	53	46	40	23	29	27	A A 89	A A 73	A A 136	45	47	50	A A 124	45	35	73	46	70	72	56	25	E	46
22	19	A A 84	A A 75	A A 93	A A 108	E	40	32	37	35	34	A A 84	52	50	A A 76	A A 91	61	52	G	16	40	27	44	19
23	38	21	36	E	E	20	35	44	36	34	49	43	A A 87	46	48	50	66	50	A A 159	A A 145	A A 168	A A 124	27	E
24	20	17	30	A A 59	21	16	A A 74	A A 87	34	68	52	U Y 35	61	50	U Y 38	39	69	50	G	A A 79	A A 104	43	A A 64	35
25	53	20	20	17	E	19	33	33	35	48	D A 200	A A 111	A A 133	A A 77	55	50	50	35	48	46	62	52	19	29
26	E	26	26	25	16	E	35	G	G	33	A A 88	42	51	51	41	45	42	35	45	55	31	40	28	21
27	E	21	23	E	E	E	23	G	33	31	A A 43	A A 45	40	A A 64	39	36	G	34	A A 113	49	16	25	A A 86	20
28	29	27	A A 66	29	20	E	30	30	42	A A 66	34	49	G	A A 65	47	43	49	49	34	37	42	44	24	28
29	20	22	E	E B 15	E B 14	E S 15	21	G	32	48	48	48	36	60	45	35	32	G	G 16	G	E	25	19	35
30	18	20	E	16	16	E	G	31	G	38	47	A A 74	49	49	42	33	G 29	36	30	20	20	E	17	17
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	28	29	29	28	29	28	28	29	29	29	29	29	29	30	30
MED	26	22	24	19	18	17	29	38	43	48	50	49	51	51	46	43	49	43	45	43	31	27	26	28
UQ	51	36	36	27	21	28	33	44	64	A 78	A A 88	A A 103	A A 80	61	59	53	64	52	66	68	56	46	50	32
LQ	14	17	15	14	14	E	23	31	34	36	45	43	44	48	42	35	41	35	30	24	18	20	17	17

The Radio Research Laboratories, Japan

JUN. 1974 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | F-MIN (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E S 14	E S 15	E	E	E	E	E S 15	15	15	15	19	24	19	22	18	20	17	15	15	E S 14	E S 12	E S 15	E S 15	E S 15
2	E S 15	E S 15	E S 14	E	11	E	12	13	15	15	21	20	18	22	24	16	15	15	14	E S 14	E S 14	E S 15	E S 15	E S 15
3	E S 15	E S 15	E S 13	E	12	E	12	14	15	15	19	19	18	18	18	17	16	15	15	E S 12	E S 15	E S 14	E	E S 14
4	E S 15	E S 12	E	E	E	E S 15	13	14	15	19	18	19	24	20	C	C	16	19	16	12	E S 15	E S 14	E S 14	E S 15
5	E S 15	E S 15	E S 14	E S 14	E	E S 14	13	14	14	17	18	19	19	20	20	19	16	15	13	13	E S 14	E S 15	E S 15	E S 14
6	E S 15	E S 15	E S 13	E S 15	E	E S 15	13	15	16	15	19	19	21	20	20	20	17	15	13	13	E S 14	E S 14	E S 13	E S 14
7	E S 15	E S 15	E S 14	13	12	15	12	15	15	C	19	18	20	20	20	20	18	15	14	E S 14	E S 15	E S 15	E S 15	E S 15
8	E S 15	E S 15	E S 15	E S 13	E S 13	E S 15	E S 15	15	15	16	18	21	22	21	21	19	18	16	13	E S 15	E S 13	E S 13	E S 13	E S 15
9	E S 15	E S 15	E S 14	E S 15	12	E S 15	E S 15	15	16	16	20	22	24	21	20	19	18	15	15	E S 13	E S 15	E S 15	E S 14	E S 15
10	E S 14	E S 15	E S 15	E	E S 13	E S 12	12	15	15	16	21	19	21	20	21	20	18	15	14	12	E S 14	E S 15	E S 15	E S 15
11	E S 15	E S 15	E S 12	E S 13	13	E S 13	15	15	16	19	17	21	21	20	19	17	19	15	15	11	E S 15	E S 15	E S 15	E S 15
12	E S 15	E S 15	E S 14	11	E S 15	12	13	14	16	15	19	21	19	21	21	20	15	15	13	E S 15	E S 15	E S 15	E S 15	E S 15
13	E S 15	E S 15	E S 15	E S 15	E S 14	E S 14	13	14	15	16	18	19	22	22	17	16	15	14	14	E S 14	E S 14	E S 15	E S 14	E S 14
14	E S 15	E S 14	E S 13	E S 13	E S 15	E S 14	13	13	15	15	18	19	19	19	20	16	17	14	14	E S 13	E S 14	E S 14	E S 15	E S 14
15	E S 14	E S 15	E S 14	E S 14	E S 14	E S 14	13	13	14	15	17	21	C	20	20	20	17	14	13	11	E S 14	E S 15	E S 15	E S 15
16	E S 14	E S 15	E S 15	E S 15	E	E S 15	13	14	14	16	20	18	20	20	20	17	16	14	14	E S 14	E S 15	E S 14	E S 15	E S 14
17	E S 15	E S 15	E S 15	E	12	E S 14	14	15	15	16	17	19	21	21	22	18	17	15	E S 14	13	E S 14	E S 14	E S 12	E S 14
18	E S 15	E S 14	E S 14	12	E S 13	E S 13	12	15	14	C	C	C	C	C	C	C	C	C	C	C	C	C	E S 15	E S 15
19	E S 15	E S 15	E S 14	E S 14	E S 14	E S 15	13	15	17	15	17	18	22	21	22	18	15	15	14	12	E S 15	E S 15	E S 15	E S 14
20	E S 15	E S 15	E S 14	E S 15	E	E S 15	13	13	15	19	19	21	21	21	17	19	16	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
21	E S 15	E S 15	E S 14	E S 13	12	E S 15	E S 14	15	15	16	19	20	20	20	19	19	16	15	14	E S 13	E S 15	E S 15	E S 15	E S 15
22	E S 12	E S 15	E S 15	14	13	E S 14	E S 14	14	15	16	16	20	18	21	19	18	16	15	15	E S 14	E S 15	E S 15	E S 15	E S 15
23	E S 15	E S 15	E S 14	E S 15	E S 15	E S 14	15	15	15	15	17	18	19	22	21	23	15	15	15	E S 15	E S 15	E S 15	E S 15	E S 15
24	E S 15	E S 15	11	12	12	13	E S 14	15	16	16	18	20	22	26	22	17	18	14	14	14	E S 15	E S 13	E S 15	E S 13
25	E S 15	E	11	E S 14	14	14	13	15	15	16	16	18	17	21	21	18	15	15	13	15	E S 15	E S 14	E S 15	E S 14
26	E S 15	E S 14	E S 13	11	E	E S 15	12	14	14	15	18	18	20	19	20	17	16	14	15	13	E S 15	E S 15	E S 15	E S 15
27	E S 15	E S 14	E	14	13	E S 14	13	13	15	16	16	19	22	21	17	16	16	15	15	E S 14	E S 15	E S 15	E S 15	E S 15
28	12	E S 14	13	E S 13	13	E S 15	E S 14	14	17	16	18	23	18	19	20	16	16	150	150	14	E S 15	E S 15	E S 15	E S 15
29	E S 15	E S 15	E S 15	15	14	E S 15	13	15	17	17	18	21	20	21	21	18	16	15	14	E S 14	E S 15	E S 13	E S 15	E S 15
30	E S 14	E S 14	14	12	11	E S 15	14	15	16	19	20	19	21	21	21	20	17	17	15	14	E S 15	E S 14	E S 15	E S 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	28	29	29	28	29	28	28	29	29	29	29	29	29	30	30
MED	E S 15	E S 15	E S 14	E E 13	E E 12	E S 14	13	15	15	16	18	19	20	21	20	18	16	15	14	E S 14	E S 15	E S 15	E S 15	E S 15
UQ	E S 15	E S 15	E S 14	E S 14	E S 14	E S 15	14	15	16	16	19	21	22	21	21	20	17	15	15	E S 14	E S 15	E S 15	E S 15	E S 15
LQ	E S 15	E S 14	E S 13	E E 11	11	E S 13	13	14	15	15	17	19	19	20	19	17	16	15	14	12	E S 14	E S 14	E S 15	E S 14

The Radio Research Laboratories, Japan

JUN. 1974 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F2 (0.01) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	I S 270	F	F	S 280	300	300	V 300	320	295	R 320	A	I A 255	I A 270	295	A	285	295	310	295	290	270	S 270	F 285	F
2	F	F	S	F	F	F	F	V 330	310	A	A	I A 290	295	290	I A 280	285	295	305	305	I S 290	S	I A 295	I S 255	S
3	S	S	S	F	F	310	300	325	325	300	295	285	A	280	270	285	305	320	335	310	285	290	A	S
4	F	F	F	F 310	F	F	290	315	335	H 325	305	285	I A 270	275	C	C	285	295	295	305	305	U S 285	F	I S 285
5	J S 270	S	F	S	F	S 295	U S 330	S 330	335	345	300	270	275	280	295	295	300	305	J S 305	A	A	A	S	A
6	A	S	S	S	F	S 300	U S 335	360	A	A	A	A	R	A	295	310	A	R	A	A	S 305	S 305	F	S
7	S	S	S	S	S	S 300	305	325	F 320	C	A	A	275	285	285	285	295	305	305	S 315	S 325	S	S	S
8	S	S	S	A	S	S 315	F 315	S 325	330	F 310	A	A	270	295	300	300	290	290	I A 300	U S 305	U S 325	U S 285	S 290	S
9	S	S	U S 315	S	S	F	F 300	F	325	V 285	320	A	A	H 265	A	A	A	A	A	285	310	I S 330	S	S
10	A	S	S	S	F 340	F	340	345	360	320	295	280	H 280	280	280	R 290	R 285	295	S 290	285	280	290	F	S
11	F	F	F	A	F 280	F	260	270	310	A	A	A	I A 300	295	285	275	S 295	U S 315	290	U S 280	I S 295	J S 280	S	F
12	F	S	S	F	285	U S 280	J S 260	315	A	320	A	A	A	J R 270	290	A	295	S 305	285	S 290	J S 275	J S 270	I S 295	S 290
13	280	S 290	J S 290	S 295	320	315	330	335	330	A	A	A	A	A	A	270	I A 290	I S 340	315	I A 295	I A 280	S 295	F	S 285
14	S	S	S	S	S	S	S 325	335	355	R	A	280	285	275	270	285	295	S 300	S 325	I S 320	S 305	I S 290	S 290	I A 275
15	S	S	S	S	S 280	I S 275	265	S 325	S 355	I A 290	260	285	I C 260	265	275	315	A	A	295	310	S 285	295	275	S 285
16	S	S	S	S	S 270	I S 270	320	S 320	350	275	275	285	315	305	305	280	295	S 305	315	295	S 280	I S 295	S 325	S
17	S	S	S	F	S	F 305	F	370	I A 310	A	A	A	A	290	300	300	310	A	295	A	A	A	F 295	F
18	S	S	S	F	F	S 310	340	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	A	S
19	A	A	S	F	J S 285	S 330	U S 355	360	355	275	320	310	285	265	275	J R 285	305	S 330	325	345	S 320	S 295	A	S
20	U S 290	F	F	S 325	S 290	A	A	A	A	355	295	245	275	270	290	290	S 290	S 290	I A 305	310	285	S 280	S	S
21	S	S	S	S	S	S	F 355	A	I A 325	I A 300	320	325	280	I A 285	260	275	295	305	S 310	S 325	335	S 275	I S 280	I S 285
22	S	A	A	A	A	S	325	345	S 340	285	320	I A 305	295	295	I A 275	I A 280	285	290	295	S 315	S 325	S 305	S 290	I S 295
23	305	I S 290	S 275	F	F	S	F 350	360	345	320	350	G	I A 265	255	280	285	300	320	A	A	A	A	S	S
24	S	S	S	A	S	S 295	I A 280	I A 305	335	R 330	285	300	A	275	285	310	A	290	S 300	I A 300	I A 320	F	A	S
25	S	S	S	F	F	F	340	355	345	345	A	A	A	A	285	300	290	295	310	U S 310	S 325	J S 285	S 295	S
26	S	S	J S 345	I S 310	S 300	U S 300	295	310	335	375	I A 340	305	275	280	305	260	260	275	335	345	320	S 290	S 300	S 265
27	S	I S 280	I S 300	275	J S 275	F	245	295	G	G	A	A	G	A	285	255	215	295	A	A	285	S 280	A	S
28	S	S 265	I A 260	F 285	S 295	320	290	305	300	A	G	R	260	I A 245	265	275	275	275	300	S 325	S 295	270	265	S 275
29	S 270	F	F 275	F	F	F	355	305	310	A	295	260	280	275	295	315	330	290	S 285	315	325	S 285	S	S
30	I S 275	S 285	265	I S 290	I S 305	S 305	310	315	285	340	275	A	255	290	290	285	295	305	310	315	285	270	280	S 285
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	5	8	8	13	17	27	26	26	20	17	17	21	25	25	26	25	25	25	24	25	24	14	10
MED	S 275	S 285	S 282	S 292	S 290	S 300	315	325	330	320	295	285	275	280	285	285	295	305	305	310	305	S 288	S 290	S 285
UQ	285	S 290	S 308	S 310	S 300	310	338	345	345	335	320	300	285	290	295	300	295	305	310	315	S 320	S 295	S 295	S 285
LQ	S 270	S 280	270	282	S 280	S 295	292	315	310	288	285	270	270	270	275	280	290	290	295	292	285	S 280	280	S 275

The Radio Research Laboratories, Japan

JUN. 1974 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F1 (0.01) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	A	A	A	A	A	A	A	365	375	H 350	L					
2							L	L	A	A	A	A	385	A	A	340	A	L 335	A					
3								A	L	L	A	L 355	A	A	A	A	A	A	L					
4							L	L 330	I A 355	A	A	A	A	A	C	C	345	L 345	L 335	L				
5							L	A	U R 395	U L 355	A	375	A	A	A	A	A	A	A					
6							L	A	A	A	A	A	A	A	A	370	A	A	A					
7								A	A	C	A	A	A	A	A	355	A	A	A					
8							L	A	L 355	A	A	A	A	A	385	H 370	A	A	A	L				
9								L	A	A	A	A	A	A	A	A	A	A	A					
10								A	A	L 350	375	A	A	A	380	A	A	A	L	A				
11							A	A	A	A	A	A	A	375	A	395	L 335	L 345	L					
12							L 305	L	A	A	A	A	A	A	A	A	A	A	A					
13							L	A	A	A	A	A	A	A	A	A	A	A	A					
14							A	A	L	L 345	A	R 345	395	A	A	A	A	A	L 350					
15							L 305	A	390	A	A	A	C	H 375	A	A	A	A	L	L				
16							L	L	A	H 340	355	A	H 390	H 400	H 370	H 410	360	L 345	A	A				
17							L	L	A	A	A	A	A	A	I R 390	A	A	A	A					
18								A	A	C	C	C	C	C	C	C	C	C	C					
19								U L 385	L 395	A	A	A	A	A	A	A	A	A	A					
20							A	A	A	365	390	H 405	H 380	400	A	A	A	A	A					
21								A	A	A	A	A	A	A	A	A	A	A	A					
22							A	L	A	H 410	A	A	A	A	A	A	A	A	H 345	L				
23								A	L	L 390	A	360	A	A	A	A	A	A	A					
24							A	A	H 365	A	A	400	A	A	R 380	400	A	A	345	A				
25							A	L 380	365	A	A	A	A	A	A	A	A	R 355	A					
26							A	L 355	H 390	L 375	A	390	A	A	395	A	A	A	A					
27							345	375	395	370	A	A	375	I A 365	355	370	H 355	370	A					
28								L 345	I A 360	I A 375	H 395	I A 400	410	I A 375	A	A	A	A	A					
29								L	H 360	A	A	A	H 370	I A 390	I A 405	H 385	H 375	L 385	H 335	L				
30								L 355	375	375	A	A	A	A	375	H 380	H 355	350	345	L				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	7	12	11	4	8	7	7	9	11	7	9	6					
MED							L 305	L 355	370	370	382	382	385	375	380	370	355	L 350	345					
UQ							325	L 378	392	375	392	400	392	395	390	390	368	355	345					
LQ							L 305	L 350	360	352	365	358	378	375	375	368	350	L 345	335					

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JUN. 1974 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1974 | H'F2 (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								295	360	310	A	A	A	375	A	385	340	305	260					
2							260	235	265	A	A	A	325	335	I A 385	360	310	295	280					
3								260	260	335	340	335	I A 345	355	340	325	285	280	255					
4							325	290	255	275	350	E A 390	A	355	C	C	295	295	305	265				
5							260	240	290	305	370	425	390	345	320	315	305	290	300					
6							255	240	A	A	A	A	390	A	345	305	A	305	A					
7								290	E A 300	C	A	A	345	E A 350	345	325	300	295	275					
8							285	290	275	E A 305	A	A	390	325	325	325	310	320	I A 285	245				
9								260	E A 290	A	295	A	A	E A 360	A	A	A	A	A					
10								285	250	305	355	375	320	345	315	315	320	300	290	275				
11							E A 360	350	E A 290	A	A	A	A	305	335	355	300	275	295					
12							400	280	A	E A 340	A	A	A	E A 375	325	A	280	285	305					
13							270	240	280	A	A	A	A	A	A	360	I A 320	230	260					
14							A	260	245	305	A	370	350	315	E A 390	325	320	290	255					
15							380	260	235	A	490	390	C	390	340	275	I A 295	I A 290	275	240				
16							290	270	250	405	415	385	300	305	300	350	305	290	255	E A 300				
17							235	230	A	A	A	A	A	385	320	E A 350	320	A	A					
18								A	A	C	C	C	C	C	C	C	C	C	C					
19								245	255	440	305	335	E A 355	410	355	355	305	255	255					
20							A	A	A	275	390	520	400	400	320	310	300	E A 330	A					
21								A	A	A	310	295	390	I A 375	375	335	E A 315	290	290					
22							275	250	260	320	300	I A 350	350	350	A	A	340	300	290	250				
23								230	245	295	260	G	A	415	340	325	300	275	A					
24							A	A	255	290	360	355	I A 370	360	335	300	A	340	300	A				
25							270	250	270	270	A	A	A	A	E A 400	305	320	310	275					
26							340	300	265	230	A	375	E A 450	E A 400	340	440	375	350	250					
27							555	410	G	G	A	A	G	A	390	495	590	350	A					
28								330	355	A	G	A	470	I A 505	450	400	E A 400	E A 410	310					
29								345	325	E A 300	400	480	400	E A 400	330	280	290	300	330	250				
30								300	380	280	H 325	A	490	375	365	375	330	300	290	245				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							15	26	24	19	16	15	19	25	24	25	26	27	23	8				
MED							280	265	264	300	352	375	380	355	339	325	308	295	285	249				
UQ							341	295	290	322	395	408	398	382	360	360	320	305	298	264				
LQ							265	245	255	280	308	352	346	340	325	315	300	290	260	245				

The Radio Research Laboratories, Japan

JUN. 1974 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1974 | H'F (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	285	250	235	265	240	225	235	H 245	A	A	A	A	A	A	A	235	215	H 230	235	265	275	285	285	275
2	280	E A 305	320	310	260	265	240	A	A	A	A	A	215	A	A	235	A	A	A	250	225	A	360	335
3	E A 335	315	E A 335	235	235	I A 235	250	I A 235	E A 235	A	I A 215	225	A	A	A	A	A	A	250	H 240	255	280	A	E A 360
4	E A 350	315	285	235	240	E A 305	225	235	A	A	I A 230	I A 225	A	A	C	C	240	H 220	230	240	245	240	295	305
5	295	305	305	280	265	260	245	I A 225	E A 240	H 185	A	E A 240	A	A	A	A	A	A	A	A	A	A	270	A
6	A	A	E A 320	280	265	270	E A 250	A	A	A	A	A	A	A	A	A	A	A	A	A	240	245	A	A
7	E A 310	E A 350	E A 305	220	250	E A 300	E A 250	A	A	C	A	A	A	A	Y	E A 260	A	A	A	E A 250	E A 260	A	270	280
8	290	285	275	I A 280	250	240	E A 250	A	A	A	A	A	A	A	225	H 195	A	A	A	A	225	245	275	290
9	250	E A 300	245	295	E A 295	280	H 240	E A 250	A	A	A	A	A	A	A	A	A	A	A	E A 300	A	235	250	A
10	A	285	295	295	220	230	240	A	A	E A 240	210	I A 230	A	A	E A 250	A	A	A	E A 280	I A 260	240	270	325	300
11	230	300	300	I A 290	250	275	A	A	A	A	A	A	A	220	A	200	A	225	245	270	265	E A 320	270	315
12	305	320	E A 315	255	280	300	E A 290	A	A	A	A	A	A	A	A	A	A	A	A	265	295	300	275	255
13	290	285	275	265	235	225	H 240	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	I A 260	255
14	305	250	250	220	250	E A 300	I A 245	I A 240	230	225	A	E A 255	200	A	A	A	A	A	E A 250	240	225	275	A	A
15	A	325	340	260	250	H 290	250	I A 245	230	A	A	A	C	H 210	A	A	A	A	250	E A 250	E A 305	255	250	270
16	325	275	240	E A 275	330	E A 350	250	H 225	A	H 225	220	I A 220	H 200	H 200	H 225	H 175	E Y 225	225	A	A	E A 320	E A 300	230	E A 310
17	E A 320	E A 300	250	245	265	275	230	A	A	A	A	A	A	A	H 200	A	A	A	A	A	A	A	260	320
18	340	340	A	260	230	235	260	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	A	330
19	A	A	310	260	275	240	240	205	210	A	A	A	A	A	A	A	A	A	A	225	225	250	A	E A 350
20	320	320	310	240	E A 330	A	A	A	A	E A 250	200	H 180	H 210	205	A	A	A	A	A	E A 280	225	E A 325	330	290
21	E A 310	E A 300	E A 300	E A 330	295	230	220	A	A	A	A	A	A	A	A	A	A	A	A	E A 270	E A 250	290	290	A
22	300	A	A	A	A	250	A	230	I A 210	H 200	I A 205	A	A	A	A	A	A	A	H 215	230	210	245	A	280
23	E A 300	280	A	F 300	300	270	240	I A 220	200	H 190	A	E A 250	A	A	A	A	A	A	A	A	A	A	E A 340	310
24	275	245	E A 330	A	295	275	A	A	A	A	A	200	A	A	220	240	A	A	225	I A 260	I A 250	250	A	350
25	A	360	250	260	255	255	A	E A 240	230	A	A	A	A	A	A	A	A	E A 250	A	250	E A 290	E A 350	290	320
26	290	275	270	285	270	275	A	H 220	H 205	H 200	I A 210	E A 250	A	A	E A 230	A	A	A	A	230	E A 255	E A 350	275	355
27	325	330	290	315	315	370	E A 280	245	220	215	A	A	E A 250	A	A	235	H 220	E A 240	A	A	255	300	A	380
28	305	E A 350	A	E A 295	250	250	275	E A 245	A	A	H 190	I A 200	200	I A 205	A	A	A	A	A	255	E A 300	A	305	325
29	330	320	285	280	225	220	H 225	H 200	H 180	A	A	A	H 200	A	A	H 200	H 190	220	H 200	240	210	250	E A 340	340
30	300	280	275	260	250	240	H 255	E A 230	210	E A 250	A	A	A	A	E A 250	H 210	H 240	E A 250	E A 250	240	230	270	280	250
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	27	26	28	29	29	24	17	12	10	8	11	7	5	7	10	6	8	11	21	24	23	22	25
MED	298	292	282	265	252	258	242	A 230	212	U 208	210	U A 212	200	205	U 212	214	220	224	235	245	U 238	260	276	305
UQ	312	319	302	287	275	278	249	A 240	228	E A 240	218	E A 245	208	210	E A 240	235	240	E A 245	248	260	A 260	286	298	330
LQ	290	278	270	258	250	240	240	222	208	H 200	202	210	200	205	222	H 200	H 215	222	228	240	225	250	270	280

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JUN. 1974 | H'F (KM)

IONOSPHERIC DATA

JUN. 1974 | H'E (KM) | 135 E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							115	110	105	100	100	100	100	100	100	100	100	105	105	S				
2							E A 130	110	105	100	100	100	100	100	100	100	100	105	110	S				
3							A	A	105	100	100	105	105	105	105	100	105	105	115	S				
4							125	105	105	105	105	105	E B 110	E B 110	C	C	E B 110	110	E A 130	B				
5							125	115	110	105	105	105	105	110	110	E A 130	110	E A 120	105	B				
6							120	105	105	100	100	100	100	100	100	100	100	105	110	B				
7							125	105	100	I C 105	100	100	100	100	100	100	100	105	A	S				
8							120	105	105	100	100	100	100	100	100	100	100	100	110	S				
9							125	105	105	105	100	100	100	100	100	A	A	A	A	S				
10							115	105	105	105	105	100	105	105	105	105	105	105	A	B				
11							A	110	105	105	105	105	105	105	105	A	A	A	A	B				
12							110	110	105	105	105	105	105	105	105	A	A	A	A	S				
13							115	I A 110	105	100	100	100	100	100	100	100	100	100	110	S				
14							A	A	A	A	A	100	100	100	100	100	100	105	105	S				
15							115	105	100	100	100	100	I C 100	100	100	100	100	105	A	A				
16							115	105	100	100	105	100	100	100	100	100	100	105	E A 125	S				
17							120	105	100	100	100	100	105	105	105	105	105	110	115	B				
18							120	110	105	C	C	C	C	C	C	C	C	C	C	C				
19							A	A	105	105	105	105	105	E A 110	E A 120	E A 115	105	E A 115	A	B				
20							115	105	105	100	E A 120	100	100	100	100	100	100	105	105	S				
21							A	100	100	100	100	100	100	100	100	100	A	A	E A 120	S				
22							120	105	A	100	100	100	100	100	100	100	100	E A 120	110	S				
23							120	110	105	100	100	100	100	105	105	105	100	110	110	S				
24							125	105	105	105	105	100	105	110	105	105	105	105	120	B				
25							125	110	105	105	105	105	105	105	105	105	105	A	A	B				
26							115	105	105	105	105	105	I A 105	105	105	105	105	105	115	B				
27							120	105	105	A	A	A	100	100	100	100	105	105	110	S				
28							120	E A 110	105	100	100	100	100	100	100	100	100	105	110	B				
29							E A 120	E A 110	105	105	100	100	100	100	105	105	105	105	110	S				
30							120	110	105	105	105	100	100	100	100	100	110	A	E A 120	B				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							25	27	28	27	27	28	29	29	28	25	25	23	21					
MED							120	105	105	100	100	100	100	100	100	100	100	105	110					
UQ							122	110	105	105	105	105	105	105	105	105	105	106	112					
LQ							115	105	105	100	100	100	100	100	100	100	100	105	110					

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JUN. 1974 | H'E (KM)

IONOSPHERIC DATA

JUN. 1974 | H'ES (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	95	95	115	120	130	120	115	105	120	125	110	110	105	105	105	120	115	115	110	105	100	100
2	100	100	100	100	100	100	100	125	120	115	110	110	110	105	110	G	140	120	115	105	100	100	95	95
3	95	95	95	95	95	95	95	95	120	115	130	160	115	125	135	115	120	115	110	110	110	100	95	100
4	100	100	100	100	95	95	125	120	120	120	125	120	120	110	C	C	125	120	110	135	S	100	115	120
5	120	100	100	100	110	105	130	115	115	120	115	170	145	110	130	135	125	120	115	105	105	105	105	100
6	100	100	100	100	100	100	115	110	105	105	105	100	100	100	105	140	125	115	110	105	105	105	100	100
7	100	100	100	100	120	100	120	115	105	C	105	125	100	100	100	145	100	100	100	120	115	105	105	105
8	105	105	100	100	95	120	120	115	110	110	105	105	105	105	105	120	140	120	110	105	105	105	105	105
9	105	100	100	100	100	105	120	115	105	105	105	100	100	100	100	100	100	100	95	95	95	95	95	105
10	105	95	100	100	110	105	120	110	110	110	110	105	105	105	105	100	100	100	115	115	100	105	115	115
11	105	100	100	100	100	130	120	105	115	110	105	105	105	105	105	100	100	130	125	100	100	100	100	100
12	100	105	105	105	105	105	110	115	115	115	110	105	105	105	100	100	100	100	100	100	100	95	110	105
13	105	105	100	100	100	105	140	125	115	110	105	105	105	105	105	120	125	120	115	110	110	110	110	105
14	105	105	105	100	100	105	100	100	95	115	110	105	130	115	110	105	110	110	110	105	100	100	100	100
15	100	100	105	105	105	S	150	130	110	100	105	105	C	130	105	105	115	110	110	105	95	95	95	95
16	105	105	105	105	105	105	115	120	110	110	105	105	110	105	150	105	105	130	115	115	110	105	100	100
17	100	100	100	100	95	95	125	115	105	105	105	100	105	110	120	125	120	120	115	110	105	110	110	115
18	105	105	105	100	105	105	115	110	105	C	C	C	C	C	C	C	C	C	C	C	C	C	100	105
19	105	105	105	105	100	100	100	105	150	130	130	125	125	125	120	120	120	130	110	120	115	110	100	105
20	100	100	100	100	100	110	120	105	105	105	150	160	170	135	125	120	120	110	105	105	100	100	100	100
21	100	100	100	95	95	105	95	105	105	105	105	105	105	100	100	100	120	120	110	110	110	110	120	105
22	105	100	100	100	100	105	120	120	120	105	100	100	100	100	120	115	115	115	120	100	110	105	105	100
23	100	100	100	125	140	110	110	110	110	105	105	105	100	150	130	130	120	115	110	105	105	100	100	110
24	105	105	105	105	105	115	120	110	110	105	105	110	105	100	105	105	100	100	125	110	110	105	105	105
25	105	100	100	100	100	115	115	110	105	105	105	105	105	105	105	105	105	100	100	100	100	105	105	110
26	110	105	105	105	105	105	120	130	110	130	105	130	100	110	130	125	120	120	115	110	110	105	105	105
27	125	105	120	125	135	130	120	140	125	105	140	130	130	115	115	115	115	115	105	100	110	100	100	105
28	110	110	105	105	105	105	125	125	120	110	110	110	G	125	125	125	120	115	105	105	105	95	95	95
29	95	95	95	B	B	S	140	140	140	110	105	105	105	100	100	100	105	G	100	100	95	115	110	105
30	100	100	110	110	110	110	100	110	120	110	105	105	100	100	100	100	105	125	115	105	100	100	95	105
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	30	29	29	28	30	30	30	28	29	29	27	29	28	27	29	28	29	29	28	29	30	30
MED	105	100	100	100	100	105	120	115	110	110	105	105	105	105	105	115	115	115	110	105	105	105	100	105
UQ	105	105	105	105	105	110	125	120	120	115	110	125	112	115	122	122	120	120	115	110	110	105	105	105
LQ	100	100	100	100	100	102	110	110	105	105	105	105	102	100	105	102	105	110	105	105	100	100	100	100

The Radio Research Laboratories, Japan

JUN. 1974 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1974 | TYPES OF ES | 135° E Mean Time (G. M. T. + 9h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 20 MHz in 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1			F2	F2	F1	F1	H2	H3	C3	C2	H3	H3	C3	C3	C4	C1	C1	H1	C4	C1	F2	F2	F3	F3
2	F6	F5	F6	F4	F5	F4	LH32	H3	H2	C6	C3	C3	C2	C3	C3		H2	H2	C3	C5	F7	F5	F3	F6
3	F5	F5	F6	F7	F5	F6	L4	L4	H2	C2	H1	H1	C2	H2	H1	H2	H2	C2	C2	C1	F5	F7	F5	F7
4	F8	F4	F6	F7	F5	F5	C3	H2	H3	C2	H2	C3	C3	C2			H1	C1	L1	H1		F1	FF21	FF31
5	FF21	F4	F1	F1	F4	FF11	H4	C3	C3	C1	CH21	HC11	HH11	C3	HC21	HL21	H3	CL32	C3	C5	F5	F5	F4	F5
6	F4	F4	F3	F4	F2	F1	C4	C3	C6	C4	C4	C4	C3	C4	C2	H1	H4	C4	C7	C6	F4	F4	F7	F6
7	F5	F5	F8	FF63	FF23	F3	CL41	C5	C5		C4	HC23	C2	C4	C1	HC12	C2	C3	L4	CL13	FF77	FF63	FF34	F4
8	F4	F5	F5	F4	F3	FF11	C3	C4	C3	C5	C3	C4	C2	C1	C1	C1	H2	H3	C4	C5	F2	F4	F4	FF21
9	F4	F7	F4	F3	F4	FF53	CL11	C3	C4	C3	C2	C4	C3	C3	C4	L4	L4	L7	L5	L4	F7	F4	F4	F5
10	F5	F2	F2	F2	FF11	F2	C5	C3	C3	C2	C1	C2	C2	C2	C2	C2	C3	C2	CL33	CL63	F2	FF32	FF32	F5
11	F3	F3	F3	F4	F2	FF25	HL33	C4	C3	C3	C4	C2	C2	C2	C2	L2	L3	HL23	HL24	L5	F7	F5	F1	F2
12	F3	F3	F4	F4	F5	F6	C5	C3	C3	C3	C5	C7	C5	C3	C4	L6	L3	L5	L6	L4	F6	F6	FF22	FF32
13	FF32	FF22	F1	F1	F3	F2	H2	HL32	C2	C3	C2	C4	C3	C4	C4	CH12	H3	HL61	C6	C7	F7	FF25	FF33	FF32
14	FF33	F4	F3	F3	F2	F5	L6	L5	LH31	CL22	CL41	C3	H1	C2	C2	C3	C3	C3	C5	L7	F6	F7	F5	F4
15	F5	F5	F4	F3	F3		H2	H4	C2	CH32	C3	CH22		H1	C2	C2	CC33	CC33	CL53	CL25	F7	F7	F3	F2
16	FF52	FF51	F4	F5	FF53	F6	C3	H3	C5	C2	C1	C2	C1	C2	H1	C1	C2	H2	CL34	CL55	F7	F6	F4	F5
17	F7	F4	F4	F7	F4	F4	C3	C4	C3	C4	C3	C3	C2	C2	H2	H2	H2	C5	C4	C5	F5	F7	F6	F4
18	F7	F4	F5	F4	F5	F5	C4	C4	C5														F5	F3
19	F3	F4	F4	F6	F3	F2	L4	LH32	HC22	HC22	HC12	HC22	H2	HL21	CL21	CL41	C2	HCL23	CL44	CL42	FF24	FF24	F4	F7
20	F6	F5	F4	F3	F4	FF23	C5	C4	C6	C2	HC11	H1	HH11	H1	H3	C3	CL21	CL61	C5	C7	FF52	F5	FF71	F6
21	F4	F6	F5	F6	F6	FF25	L4	C4	C5	C5	C2	C2	C2	C4	C2	CH32	HL63	CL33	CL62	CL73	FF74	FF53	FF22	F7
22	F7	F4	F4	F5	F6	F3	H4	C4	CL32	C2	CH21	C4	C2	C3	HC22	C4	C5	CL22	C2	LC21	FF33	F5	F6	F5
23	F6	F6	F5	F1	FF21	F6	C5	C3	C3	C2	C3	C2	C3	H1	H2	H2	H3	C4	C5	C4	F6	F5	F4	F2
24	F5	F5	F4	FF42	F4	F3	C5	C5	C3	C4	C3	C1	C3	C2	C1	C2	C4	C5	HL12	CL34	F6	F5	F5	F7
25	F5	F4	F3	F2	F2	F3	C5	C4	C2	C3	C3	C4	C3	C3	C2	C3	C3	L3	L6	L3	F5	FF27	F3	F6
26	F4	F7	F4	F6	F3	F2	C4	H3	CH21	HC12	C3	HC12	L3	C1	HC11	H2	C2	C2	C6	C7	F7	F7	F4	F5
27	F3	F5	F6	F2	F1	F2	C2	H1	HC22	CH22	HL11	HL11	H1	C3	C1	C1	C2	C3	C4	LC11	F2	F4	F6	F5
28	F2	F6	F5	F5	F6	F2	H3	HL21	H3	C3	C2	C2		H2	H2	H2	C2	C4	C6	C6	FF17	F5	F6	F3
29	F5	F3	F2				HHL22	HL11	H2	C2	C2	C2	C1	C2	C3	C2	C2		L1	LH11	F3	FF51	F4	F4
30	F4	F4	F2	F3	F1	F1	LC13	C3	C1	C2	C2	C3	C3	C3	C2	L1	L1	HL22	CL32	C4	F5	F1	F2	FF23
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUN. 1974 | TYPES OF ES

IONOSPHERIC DATA

JUN. 1974 | FXI (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	X 68	X 68	X 69	R 63	R 59	X 55															X 63	I A 65	X 66	X 64
2	X 62	X 59	X 54	X 56	X 55	X 56															X 74	X 59	X 54	X 55
3	X 54	S 54	X 50	X 50	A	X 32															X 75	X 78	X 67	U S 62
4	U S 71	S 74	X 72	X 64	X 40	S 38															X 96	X 74	X 74	X 72
5	X 73	X 74	X 70	R 67	X 66	X 61															X 93	X 70	S 70	75
6	78	75	U S 62	U S 63	S 64	X 65															S 93	A	A	A
7	A	60	74	X 57	U S 44	45															A	X 86	X 82	U S 68
8	U S 77	R	80	75	70	U S 46															X 78	U S 68	S 71	U R 68
9	X 60	X 60	68	47	54																S 102	S 89	X 66	68
10	72	59	X 59	63	R 55																X 88	X 76	R 74	O R 66
11	U S 69	70	U S 68	O S 63	X 62																S 102	X 89	X 85	X 82
12	X 48	X 69	U R 73	78	X 74																C	C	C	C
13	C	C	C	C	C																S 78	S 79	U S 72	I R 69
14	72	72	A	A	X 54																	X 74	X 70	X 70
15	X 81	R 89	X 95	R 86	R 71	64	65															X 80	X 81	U R 80
16	X 80	X 78	S 74	X 67	55	50																X 91	X 59	48
17	52	U R 60	X 60	X 48	S 41																	S 65		A
18	A	U S 68	S 68	S 64	X 59																	X 59	X 60	S
19	S 51	58	53	X 58	45																	X 58	X 55	53
20	55	59	50	X 47	X 40																	X 78	S 64	X 67
21	S 64	76	77	70	S 58																	A	A	A
22	A	U S 59	A	S 51	S																	A	X 54	X 51
23	X 47	X 46	X 44	X 44	R 42																	X 59	X 52	55
24	50	A	60	52	45																	X 62	U S 50	54
25	55	X 51	58	55	S 53																	X 68	X 68	S 66
26	S 64	O R 64	X 60	58	50																	X 64	X 65	I A 58
27	X 56	X 51	X 53	47	35																	X 51	X 49	X 46
28	R 46	S 48	I A 49	A	A																	C	C	C
29	C	C	C	C	C																	S 56	S 53	S 55
30	X 60	X 58	S 53	50	51																	S 66	X 65	X 66
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	26	26	26	25	10	1														11	24	26	24
MED	62	60	61	58	54	52	65														X 88	X 69	X 66	66
UQ	72	72	72	64	59	X 61															94	X 78	X 71	68
LQ	X 54	58	X 53	50	45	45															X 76	X 60	X 55	55

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JUN. 1974 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF2 (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26°19.0'N, Long. 127°46.8'E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	62	R 62	R 63	57	R 53	49	46	56	U R 62	51	50	53	59	61	I A 55	63	65	I A 64	62	54	57	I A 59	60	58
2	56	53	48	50	49	50	58	56	59	I A 60	63	79	84	I A 74	69	77	93	100	94	83	68	53	48	49
3	48	S 48	44	44	I A 36	26	45	60	61	62	66	74	82	89	102	I A 107	R 116	I A 100	90	79	69	72	61	U S 56
4	U S 65	S 68	66	58	34	S 32	48	68	69	61	62	65	70	84	95	95	94	99	95	102	90	68	68	66
5	67	68	64	R 61	60	55	65	62	59	51	56	63	72	89	91	94	98	R 100	106	91	87	S 64	S 64	F
6	F	F	U S 56	U S 57	S 58	59	70	65	55	61	R 61	I A 64	I A 74	85	87	87	88	A	A	A	87	A	A	A
7	A	F 54	F	S 51	U S 38	F	45	S 62	76	A	A	74	84	88	94	103	102	108	110	108	I A 80	80	76	U S 62
8	U S 71	R	F	F	U F 58	U S 40	S 48	I A 63	I A 68	73	65	I A 71	82	88	93	85	91	96	103	A	72	U S 62	S 65	U R 62
9	54	R 54	F	F	F	F	51	76	77	81	92	I A 90	96	102	94	105	R 107	107	91	S 87	96	83	60	F
10	F	F	S 53	F	J R 49	S 37	47	63	64	59	66	67	I A 79	91	I A 103	105	104	106	92	I A 88	82	70	68	S 60
11	U S 63	F	U S 62	57	56	47	45	58	78	A	58	72	82	91	85	93	107	110	94	97	S 96	83	79	76
12	R 78	S 63	U R 67	F	68	56	S 47	S 63	83	75	I A 76	84	I A 90	96	105	110	112	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	61	60	70	I A 70	75	78	88	110	97	88	I A 66	S 72	S 73	U S 66	I R 63
14	F	F	A	A	S 48	I S 46	57	67	63	55	57	68	80	83	88	96	108	116	110	92	80	68	64	64
15	75	R 83	89	R 80	R 65	F	F	R 104	53	47	C	C	81	88	100	90	84	86	R 102	96	S 76	S 74	75	U R 74
16	74	S 72	S 68	S 61	F	F	54	67	53	55	66	71	81	76	81	84	93	90	88	I A 72	S 75	85	53	F
17	F	U R 54	S 54	42	35	I A 38	47	51	52	59	61	60	60	70	I R 83	80	74	76	71	77	S 78	S	F	A
18	A	U S 62	S 62	S 58	S 53	30	41	I A 50	I A 57	I A 62	56	62	I A 68	80	87	90	97	92	94	92	S 76	S 53	J S 54	S
19	S 45	F	F	52	F	S 36	45	I A 50	50	55	72	63	64	65	S 84	94	100	98	91	90	S 62	J S 52	49	F
20	F	F	F	41	34	S 32	54	S 61	57	54	45	I C 57	68	76	89	94	94	94	104	88	76	S 72	U R 58	S 61
21	58	F	F	F	S 52	S 41	47	53	55	59	65	72	A	R 64	78	93	A	120	I A 113	98	I C 65	A	A	A
22	A	U S 53	I A 50	S 45	S	S 35	48	56	64	63	61	62	68	70	70	82	87	92	102	102	68	I A 59	48	45
23	41	40	38	38	R 36	43	55	55	51	67	I A 54	E G 47	53	66	R 86	100	106	110	104	77	53	53	46	F
24	F	A	F	F	F	U S 41	40	57	67	A	66	I A 70	I A 78	83	93	91	88	92	107	87	87	56	U S 44	F
25	F	45	F	F	S 47	I A 38	45	55	I A 61	64	I A 66	I A 65	56	I A 62	75	85	88	96	U R 102	96	I S 70	62	62	S 60
26	S 58	S 58	54	F	F	U S 50	43	52	76	64	55	53	60	59	70	71	I A 78	90	96	80	57	58	59	I A 52
27	50	45	47	F	F	19	A	A	E G 37	A	A	A	A	R 49	51	I A 48	53	54	I C 52	54	57	45	43	40
28	R 41	S 42	I A 42	A	A	A	A	S 46	A	A	45	49	A	50	53	56	56	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	63	49	52	59	80	83	87	72	79	84	85	S 72	S 50	47	S 49
30	S 54	S 52	S 47	F	F	33	42	53	77	62	49	53	R 61	67	73	75	84	93	90	68	67	S 60	59	60
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	19	19	16	19	23	25	27	27	25	27	28	27	30	30	30	29	27	27	26	28	25	25	18
MED	58	54	54	54	49	40	47	58	61	61	61	65	72	78	86	90	93	96	94	88	74	62	60	60
UQ	67	62	64	58	57	48	54	63	68	63	66	72	82	88	93	95	104	103	104	96	81	72	65	63
LQ	50	50	48	44	37	34	45	54	55	55	56	58	62	66	75	82	84	91	90	77	68	56	49	52

The Radio Research Laboratories, Japan

JUN. 1974 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOF1 (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N. Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	A	450	450	A	460	460	A	A	A	A	A					
2								L	L	A	L 490	I A 480	I A 480	I A 500	470	460	450	A	L					
3								L	L	L	L 510	L 480	490	A	A	A	A	A	A					
4								L	L	L	490	500	480	470	460	L 470	L 460	L	L					
5							L	L	L	L	L 470	A	480	470	A	A	A	A	L					
6							L	L	L	L 490	U L 500	A	A	A	A	A	A	A	A					
7								L	A	A	A	A	A	A	A	A	A	A	A					
8								A	A	A	L 470	A	A	A	A	480	A	A	A					
9								A	A	A	A	A	A	A	A	A	L	440	L	L				
10								A	A	A	A	A	A	A	A	470	A	L 430	L	A				
11								L	A	A	I A 480	480	490	480	A	470	A	L	L	L				
12								A	L	A	A	A	A	A	A	A	A	C	C	C				
13								C	C	L	A	A	A	A	460	A	430	A	A	A				
14								L	L		L 480	I A 460	470	A	A	A	A	A	A	A				
15							L	A	L	A	C	C	A	A	450	A	A	A	L	L				
16								L 320	L	L 450	450	460	460	470	450	440	430	L 480	A	A				
17								L	L 480	L 460	450	460	A	450	I A 450	A	440	A	L	A				
18								A	A	A	A	A	A	A	A	I A 460	A	A	L	A				
19								A	L 470	430	440	A	450	460	I A 450	I A 450	420	L 410	L	A				
20							L	L	L	L 430	L 440	I C 450	450	A	A	A	A	A	A	A				
21							L	L	L 400	L 450	A	A	A	A	A	A	A	A	A	A				
22								L	410	L 440	L 450	450	470	460	A	A	A	A	A	A				
23								L	L 480	A	A	47	A	A	A	A	A	400	L	A				
24								A	A	A	A	A	A	A	450	440	440	380	L	L				
25								L	A	A	A	A	A	A	A	A	A	A	A	A				
26								L 410	L	L 440	450	450	450	I A 450	I A 440	I A 440	A	400	L	A				
27								A	R 370	A	A	A	A	A	R 430	A	400	L 390	C	L				
28								A	A	A	420	A	A	450	R 430	A	A	C	C	C				
29								C	C	L 400	L 470	450	450	450	460	430	L 450	410	L	L				
30								U L 400	L 420	L 430	L 450	450	460	450	460	440	430	420	L	L				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	7	11	18	13	14	13	13	12	10	10						
MED								L 400	L 420	L 440	L 460	460	465	460	450	455	435	410						
UQ								L 405	L 475	L 450	L 480	480	480	470	460	470	450	L 430						
LQ								L 360	405	L 430	450	450	450	450	450	440	430	400						

The Radio Research Laboratories, Japan

JUN. 1974 | FOF1 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FOE (0.01 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A	A	I A 300	330	345	355	365	355	370	350	A	A	A	A				
2							A	A	I A 280	315	I A 330	A	A	A	R 360	340	330	285	235	S				
3							A	240	285	A	A	A	R 365	370	360	335	320	A	A	A				
4							A	I A 230	A	A	A	A	A	365	350	R 360	330	290	235	S				
5							A	230	A	A	A	A	A	A	A	A	A	290	A	A				
6							S	255	290	I A 320	355	A	A	A	U R 370	350	335	295	A	A				
7							A	A	A	A	A	345	340	I A 340	I A 345	350	I A 325	I A 300	240	A				
8							S	A	A	A	A	A	A	A	A	A	335	295	240	A				
9						S	A	A	A	A	A	A	A	A	A	A	A	A	230	A				
10						S	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
11						S	A	A	A	A	A	A	A	A	A	A	A	A	240	A				
12						S	A	A	A	A	A	A	A	A	A	A	A	C	C	C				
13						C	C	C	C	A	A	A	A	A	A	350	325	285	A	A				
14						S	180	I A 220	A	A	A	A	A	A	I A 355	335	305	A	A	A	B			
15						S	A	A	R 280	R 310	C	C	R 370	I A 345	335	335	320	A	A	A	S			
16						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	S			
17						B	A	A	A	A	A	A	A	I A 365	R 350	335	315	A	A	A	B			
18						B	A	A	A	A	A	A	A	A	350	A	A	A	A	A	B			
19						S	A	A	A	A	A	A	A	A	350	335	310	270	A	A	B			
20						A	A	A	275	I A 305	R 335	I C 350	365	R 355	350	335	310	A	A	A	S			
21						S	170	240	275	A	A	A	A	A	A	A	A	A	A	A	C			
22						S	A	A	A	A	A	A	A	A	A	325	305	280	A	A	A			
23						A	A	A	A	A	A	A	355	R 370	R 365	B	320	290	A	A	B			
24						A	I A 235	A	A	A	A	A	A	A	A	A	A	A	A	A	S			
25						S	A	A	A	A	A	A	A	A	A	A	A	A	A	A	S			
26						S	A	245	A	A	A	I A 355	R 370	I A 360	350	340	I A 310	280	235	A	A			
27						S	A	220	280	I A 305	330	I A 350	A	A	R 355	I A 330	310	I A 280	I C 235	A	S			
28						B	A	240	I A 280	A	A	340	350	R 350	I A 345	330	310	C	C	C	C			
29						C	C	C	C	A	A	A	A	A	A	A	A	A	I A 230	A	A			
30						A	A	A	A	A	A	A	A	A	A	A	A	295	A	R 170	S			
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	9	9	6	5	6	8	10	16	16	17	13	9	1				
MED							180	240	280	312	335	350	365	358	350	335	320	290	235	R 170				
UQ							208	240	285	320	345	I 355	R 368	365	360	350	325	295	240					
LQ							175	230	280	I A 305	330	345	352	350	350	335	310	280	235					

The Radio Research Laboratories, Japan

JUN. 1974 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUN. 1974 FOES (0.1 MHZ) 135° E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26° 19.0' N. Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J A 31	J A 20	J A 17	M 18	E B 18	M 19	23	29	54	38	36	J A 55	49	45	J A 80	J A 75	J A 84	J A 82	J A 41	J A 30	J A 37	J A 80	J A 42	J A 32
2	J A 38	J A 53	J A 41	J A 29	J A 20	J A 21	J A 25	30	J A 51	J A 84	J A 144	J A 96	J A 90	J A 200	G	42	46	J A 49	36	J A 27	J A 34	J A 36	J A 39	J A 70
3	J A 44	J A 38	J A 24	J A 40	J A 52	J A 26	24	35	35	J A 48	J A 54	43	45	51	J A 60	J A 116	J A 126	M 180	J A 100	J A 68	J A 75	J A 51	J A 52	J A 53
4	J A 50	J A 45	J A 50	J A 45	J A 30	J A 36	J A 27	J A 27	J A 38	J A 63	J A 64	J A 60	J A 49	43	J A 43	G	J A 40	G	28	18	J A 18	E	E S 16	E S 16
5	E S 16	J A 21	J A 24	J A 19	J A 18	J A 20	20	G	J A 38	J A 38	J A 58	J A 57	J A 70	J A 51	J A 72	J A 85	J A 60	J A 96	J A 128	J A 84	J A 108	J A 104	J A 37	J A 60
6	J A 70	J A 65	J A 50	J A 60	J A 26	J A 34	20	28	J A 50	J A 52	47	J A 116	J A 120	54	J A 60	J A 60	J A 158	J A 195	J A 138	J A 200	J A 195	J A 122	J A 134	J A 119
7	J A 45	J A 43	J A 51	J A 40	J A 31	J A 26	J A 34	J A 41	J A 90	J A 170	M 200	J A 58	J A 71	J A 84	J A 62	J A 62	J A 56	J A 52	J A 54	J A 76	J A 85	J A 42	J A 21	J A 24
8	M 22	J A 38	J A 38	J A 21	J A 18	M 22	J A 40	J A 81	J A 90	J A 78	J A 104	J A 123	J A 53	J A 63	J A 60	J A 40	J A 52	J A 80	J A 94	J A 90	J A 61	J A 120	J A 85	J A 65
9	J A 41	J A 35	J A 53	J A 39	J A 120	J A 26	J A 37	J A 88	J A 140	J A 104	J A 93	J A 180	J A 100	J A 85	J A 83	J A 95	J A 46	J A 49	J A 41	J A 33	J A 29	J A 33	J A 25	J A 34
10	J A 37	J A 49	J A 50	J A 51	J A 29	J A 32	J A 33	J A 65	J A 64	J A 84	J A 70	J A 74	J A 124	J A 95	J A 136	J A 67	J A 48	J A 44	J A 44	J A 156	J A 24	M 23	E S 16	J A 27
11	J A 41	J A 28	J A 26	J A 42	J A 25	J A 22	J A 49	35	J A 80	J A 100	J A 84	41	J A 47	J A 80	J A 50	J A 42	J A 51	J A 41	28	J A 29	J A 25	J A 37	J A 37	J A 34
12	M 18	21	J A 41	J A 54	J A 38	J A 40	J A 51	J A 43	J A 44	J A 90	J A 90	J A 71	J A 120	J A 94	J A 124	J A 74	J A 60	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	J A 50	J A 64	J A 74	J A 74	J A 66	J A 49	J A 60	44	J A 64	J A 84	J A 108	J A 90	J A 84	J A 105	J A 54
14	J A 95	J A 43	J A 82	J A 52	J A 44	J A 30	J A 30	J A 70	39	J A 65	J A 64	J A 69	J A 44	J A 70	J A 71	J A 91	J A 85	J A 82	J A 68	J A 53	J A 80	J A 36	J A 25	J A 29
15	J A 25	J A 37	J A 34	J A 40	J A 28	J A 31	26	J A 51	43	46	C	C	47	J A 99	41	J A 80	J A 71	J A 85	J A 84	J A 25	M 23	J A 30	J A 31	30
16	J A 20	M 22	J A 37	J A 36	J A 24	J A 30	J A 48	J A 36	35	J A 52	J A 64	J A 61	J A 64	J A 45	38	J A 41	34	39	J A 44	J A 80	J A 40	J A 31	J A 70	J A 34
17	J A 30	J A 45	J A 39	J A 50	J A 30	J A 47	J A 36	J A 51	J A 60	J A 77	J A 74	J A 84	J A 85	48	J A 87	J A 50	J A 50	J A 120	J A 177	J A 130	J A 84	J A 54	J A 94	J A 61
18	J A 54	J A 50	J A 62	J A 94	J A 50	J A 45	J A 31	J A 121	J A 96	J A 114	J A 84	J A 55	J A 124	J A 85	J A 64	J A 64	J A 65	J A 62	J A 62	J A 50	J A 21	J A 84	J A 52	J A 34
19	J A 40	J A 29	J A 24	J A 44	J A 61	J A 51	J A 46	J A 64	J A 52	44	J A 46	49	46	J A 42	J A 62	J A 74	J A 41	J A 49	32	J A 41	J A 60	J A 35	J A 20	M 20
20	M 18	E B 14	J A 23	J A 33	J A 23	J A 24	J A 84	J A 34	J A 53	J A 44	37	C	44	J A 54	J A 58	J A 54	J A 102	J A 52	J A 68	J A 54	J A 60	J A 85	J A 41	J A 25
21	J A 34	J A 35	J A 52	J A 28	J A 21	M 17	M 23	J A 37	J A 40	J A 54	J A 90	J A 138	J A 104	J A 65	J A 75	J A 122	J A 127	J A 124	J A 204	J A 144	C	J A 180	J A 88	J A 83
22	J A 89	J A 51	J A 84	J A 25	J A 39	J A 51	J A 32	J A 39	37	J A 44	J A 40	J A 40	J A 48	J A 48	J A 58	J A 75	J A 74	J A 60	J A 52	J A 51	J A 60	J A 84	J A 33	J A 25
23	J A 21	J A 24	J A 44	J A 50	J A 38	J A 55	J A 84	J A 140	J A 52	J A 105	J A 94	44	49	J A 89	50	48	J A 96	37	J A 42	J A 31	J A 30	J A 29	J A 32	J A 27
24	J A 36	J A 84	J A 34	J A 54	J A 52	J A 50	J A 27	J A 48	J A 115	J A 92	J A 81	J A 106	J A 80	J A 62	41	J A 38	J A 75	J A 36	J A 47	J A 21	J A 38	J A 40	J A 40	J A 30
25	J A 33	J A 29	J A 35	J A 64	J A 62	J A 102	J A 58	J A 88	J A 104	J A 80	J A 142	J A 75	J A 95	J A 124	J A 85	J A 84	J A 70	J A 94	J A 60	J A 59	J A 56	J A 45	J A 51	J A 30
26	J A 41	J A 26	J A 44	J A 51	J A 36	J A 36	J A 24	J A 35	J A 41	39	40	J A 50	43	J A 60	J A 62	46	J A 90	35	32	J A 27	J A 24	J A 24	J A 51	J A 120
27	J A 32	J A 52	J A 34	J A 24	M 22	J A 32	J A 76	J A 74	J A 46	42	50	46	44	44	41	J A 60	J A 42	J A 52	C	J A 21	M 22	M 22	J A 18	M 17
28	J A 35	J A 24	J A 52	J A 44	J A 70	J A 70	J A 80	J A 114	J A 75	J A 85	J A 128	48	J A 87	52	42	45	J A 51	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	J A 49	35	J A 41	J A 41	J A 45	J A 44	J A 59	J A 49	J A 33	J A 29	J A 32	J A 33	J A 20	24	J A 25
30	J A 26	J A 21	J A 27	J A 18	J A 24	J A 26	24	30	J A 40	J A 40	J A 64	J A 50	J A 45	J A 49	J A 49	J A 53	J A 39	J A 33	25	18	J A 40	J A 32	J A 31	J A 30
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	30	29	28	30	30	30	30	30	28	27	28	27	28	28	28
MED	J A 36	J A 36	J A 40	J A 41	J A 30	J A 32	J A 32	J A 42	J A 52	J A 58	J A 64	J A 59	J A 58	J A 61	J A 60	J A 60	J A 58	J A 52	J A 52	J A 50	J A 40	J A 38	J A 38	J A 31
UQ	J A 42	J A 47	J A 50	J A 51	J A 47	J A 46	J A 48	J A 72	J A 78	J A 85	J A 90	J A 80	J A 90	J A 85	J A 72	J A 75	J A 84	J A 84	J A 84	J A 82	J A 68	J A 84	J A 52	J A 57
LQ	J A 26	J A 24	J A 30	J A 28	J A 24	J A 25	24	34	J A 40	J A 44	J A 50	J A 48	46	J A 48	J A 44	J A 46	J A 46	J A 40	J A 38	J A 28	J A 27	J A 30	J A 25	J A 26

The Radio Research Laboratories, Japan

JUN. 1974 FOES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | FBES (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	24	19	17	E	E B 18	19	20	29	50	34	36	49	43	41	A A 80	48	54	A A 82	40	27	27	A A 80	22	17
2	22	16	29	16	E	15	21	29	39	A A 84	37	74	77	A A 200	G	40	40	45	35	25	30	30	20	18
3	20	21	23	25	A A 52	24	23	30	32	33	40	42	45	50	51	A A 116	95	A A 180	60	68	55	38	30	21
4	19	26	24	22	19	21	19	24	33	42	38	40	37	40	37	G	31	G	27	U Y 18	15	E	E S 16	E S 16
5	E S 16	20	16	E	14	E	20	G	30	33	39	48	39	40	49	58	50	85	32	30	50	40	20	29
6	U A 38	35	25	35	17	16	19	27	33	35	38	A A 116	A A 120	46	48	60	50	A A 195	A A 138	A A 200	77	A A 122	A A 134	A A 119
7	A A 45	39	U A 45	35	29	U A 24	20	34	U A 65	A A 170	A A 200	56	68	76	61	59	46	46	40	47	A A 85	36	20	18
8	E	E	E	E	14	E	26	A A 81	A A 90	67	44	A A 123	48	55	54	37	50	77	94	A A 90	37	U S 40	U S 50	24
9	22	E	30	35	U S 25	17	32	65	65	63	57	A A 180	65	66	80	68	41	29	20	23	25	24	19	28
10	19	21	18	U A 36	E	23	27	49	55	53	56	63	A A 124	78	A A 136	44	47	35	38	A A 156	20	15	E S 16	25
11	25	U A 24	17	22	20	G	19	34	65	A A 100	53	41	43	42	49	42	46	36	27	20	23	29	28	25
12	E	E	25	18	22	40	37	37	35	72	A A 90	64	A A 120	92	95	U A 56	48	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	42	58	60	A A 74	54	45	54	42	59	52	A A 108	19	50	19	19
14	E	25	A A 82	A A 52	38	18	15	27	35	39	40	57	42	59	52	65	84	80	42	53	50	25	18	E
15	20	31	21	27	26	20	20	38	40	45	C	C	46	63	39	65	47	85	32	17	16	29	U A 29	29
16	17	21	22	15	17	U A 20	37	27	30	38	35	40	43	38	36	37	33	35	43	A A 80	28	E	21	22
17	21	35	25	31	20	A A 47	21	27	35	38	40	42	48	43	60	45	42	41	30	61	51	40	45	A A 61
18	A A 54	30	22	18	29	23	25	A A 121	A A 96	A A 114	45	48	A A 124	67	55	55	60	58	32	31	20	U A 25	27	30
19	20	18	22	35	25	31	32	A A 64	37	41	40	48	42	37	60	74	34	32	28	29	20	34	E	20
20	E	E B 14	E	16	19	13	27	25	25	32	36	C	42	54	49	52	79	46	68	53	45	55	35	17
21	28	25	40	24	20	G	G	18	36	35	50	58	A A 104	50	65	65	A A 127	U A 90	A A 204	65	C	A A 180	A A 88	A A 83
22	A A 89	E	A A 84	E	28	21	28	28	30	33	34	35	39	40	44	70	73	49	51	48	50	A A 84	21	19
23	17	19	28	19	17	16	38	32	34	45	A A 94	43	48	55	49	45	65	30	33	26	16	15	20	E
24	21	A A 84	16	16	21	21	18	40	64	A A 92	63	A A 106	A A 80	49	39	37	32	30	25	17	28	18	34	21
25	33	18	17	22	20	A A 102	30	30	A A 104	44	A A 142	A A 75	52	A A 124	50	42	51	65	32	46	30	22	39	22
26	28	20	16	25	16	G	16	21	29	35	35	35	41	52	54	45	A A 90	33	30	23	18	20	42	A A 120
27	E	E	25	15	16	G	A A 76	A A 74	34	A A 42	A A 50	A A 46	A A 44	44	39	A A 60	35	32	C	19	G	E	E	E
28	25	21	A A 52	A A 44	A A 70	A A 70	A A 80	44	A A 75	A A 85	36	45	A A 87	37	40	43	44	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	34	35	38	35	40	39	40	38	29	23	27	25	E	20	E
30	16	18	17	15	15	15	20	25	33	35	38	40	39	39	38	40	34	25	25	18	21	U A 30	20	U A 25
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	30	29	28	30	30	30	30	30	28	27	28	27	28	28	28
MED	20	20	22	22	20	20	22	30	36	42	40	48	47	50	49	50	47	46	33	30	27	30	21	22
UQ	26	26	28	33	26	24	31	42	64	67	56	64	A A 77	63	60	60	60	78	47	63	48	40	34	28
LQ	16	17	17	16	16	14	20	27	33	35	37	42	42	40	39	42	40	32	29	23	20	19	20	18

The Radio Research Laboratories, Japan

JUN. 1974 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | F-MIN (0.1 MHZ) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N. Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E S 15	14	13	18	13	14	15	20	19	21	20	20	18	17	18	18	16	15	14	E S 14	E S 15	E S 15	E S 16
2	E S 16	E S 15	E S 15	E S 15	12	11	14	14	15	20	17	22	21	19	22	22	17	15	15	E S 15	14	E S 16	E S 16	E S 15
3	E S 16	E S 16	E S 15	E S 15	11	14	14	14	16	15	20	21	21	20	20	20	17	15	14	14	E S 15	E S 14	E S 16	E S 16
4	E S 16	12	E	E	11	E S 15	11	16	15	16	22	20	20	20	21	25	17	15	15	E S 16	E S 14	E	E S 16	E S 16
5	E S 16	E	12	E S 15	12	E S 16	E S 16	14	15	18	21	16	16	18	17	21	17	14	15	11	14	11	E S 14	E S 16
6	E S 16	E S 15	E S 15	E S 15	14	E S 14	E S 14	11	14	16	22	22	20	19	24	22	18	19	15	14	12	E S 16	13	E S 15
7	E S 15	11	E S 15	12	11	E S 15	E	13	18	17	17	23	18	20	22	17	19	15	13	E	E S 15	12	E S 15	E S 15
8	E S 15	E S 15	E S 14	E S 15	E	E S 16	E S 14	15	17	17	22	25	22	22	21	21	20	16	16	13	12	E S 15	13	E S 15
9	E S 15	E S 15	12	E S 15	11	E S 15	E S 15	14	17	20	21	20	22	20	21	20	19	17	15	14	E S 15	11	E S 16	E S 15
10	E S 16	E S 15	E S 16	11	12	E S 16	14	13	14	16	18	21	20	21	20	19	20	18	15	14	13	13	E S 16	E S 16
11	13	12	12	12	13	E S 16	14	15	16	17	17	21	20	18	27	20	17	16	14	11	E S 15	E S 16	E S 16	E S 15
12	E S 15	E S 15	E S 16	13	14	E S 15	15	14	15	17	20	19	21	18	18	17	16	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	17	15	18	20	17	17	17	20	17	14	13	E S 15	E S 15	E S 15	E S 16
14	14	E S 16	11	14	E S 15	E S 15	11	14	14	15	19	20	19	20	18	19	18	16	15	14	14	E S 16	E S 16	E S 16
15	13	E S 15	E S 15	E S 16	E S 15	E S 15	14	13	16	15	C	C	19	24	17	16	17	15	14	15	E S 15	E S 15	E S 16	E S 15
16	E S 15	E S 15	13	11	E	E	14	15	15	16	17	16	19	22	17	21	15	15	14	14	E S 15	E S 16	E S 16	E S 16
17	12	E S 15	12	11	11	11	14	14	15	15	21	17	19	18	20	18	17	15	15	13	12	E S 16	E S 16	11
18	E S 16	13	11	13	E	11	14	14	15	14	20	22	21	17	19	21	18	16	14	14	13	14	E S 15	E S 15
19	E S 15	14	E S 15	11	11	E S 16	E S 16	14	16	18	17	20	20	21	21	18	17	15	14	13	12	E S 15	E S 16	E S 16
20	E S 16	14	E S 15	E S 15	11	E	14	13	15	15	17	C	19	24	20	17	17	17	14	14	E S 15	E S 15	14	E S 16
21	14	13	E S 15	E S 15	14	E S 15	15	14	14	17	17	20	20	22	18	17	16	15	14	11	C	E S 15	E S 15	E S 16
22	E S 16	E S 16	E S 15	E S 15	11	E S 15	13	15	14	16	19	18	18	22	17	16	15	14	14	12	14	E S 15	E S 15	14
23	E S 16	E S 15	E S 15	12	E S 14	11	14	14	15	16	20	18	18	20	22	39	17	16	14	14	13	13	E S 15	E S 16
24	E S 15	E S 16	13	11	12	13	14	14	14	19	20	17	22	19	17	19	15	18	16	14	E S 15	14	E S 15	13
25	E S 15	E S 16	E S 15	11	13	E S 15	14	14	17	19	21	20	20	20	19	18	18	17	14	14	E S 15	15	E S 15	E S 16
26	E S 15	E S 15	12	12	11	E S 15	E S 14	14	15	16	15	16	18	16	18	16	17	14	17	14	11	E S 15	E S 16	E S 15
27	E S 16	E S 15	E S 15	14	12	E S 16	E S 15	14	15	16	20	20	23	22	21	19	17	15	C	E C 17	E S 15	E S 16	13	13
28	E S 15	E S 15	E S 15	E S 15	E	13	11	14	14	16	18	20	19	20	21	17	17	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	14	21	21	22	21	20	18	20	15	15	12	11	E S 16	E S 16	E S 16
30	E S 15	12	11	11	11	11	12	13	16	21	20	21	21	21	25	18	20	17	15	11	E S 15	E S 16	E S 16	E S 15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	30	29	28	30	30	30	30	30	28	27	28	27	28	28	28
MED	E S 15	E S 15	E S 15	12	12	E S 15	14	14	15	16	20	20	20	20	20	18	17	16	15	14	E S 14	E S 15	E S 16	E S 16
UQ	E S 16	E S 15	E S 15	E S 15	13	E S 15	14	14	16	18	21	21	21	21	21	21	18	17	15	14	E S 15	E S 16	E S 16	E S 16
LQ	E S 15	13	12	11	11	12	14	14	14	16	17	18	19	18	18	17	17	15	14	12	12	12	E S 15	E S 15

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JUN. 1974 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F2 (0.01) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26 19.0 N. Long. 127 46.8 E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	290 R	300 R	300	310 R	340	300	300	330 U R	285	245	230	280	300	A	290	310	A	320	310	265	270 I A	280	280
2	280	275	265	280	310	310	350	335	320	A	265	255	300	A	265	270	295	310	310	310	290	285	270	260
3	280	275 S	295	300	300 I A	300	320	320	315	300	280	270	255	270	290	A	315 R	A	300	295	285	300	280	260 U S
4	290 U S	300 S	310	335	290	260 S	330	340	345	310	305	280	265	265	285	295	285	295	300	300	335	275	270	280
5	270	275	270	300 R	305	310	360	350	330	350	280	275	270	290	290	280	285	310 R	310	315	300	315 S	275 S	F
6	F	F	290 U S	290 U S	305 S	290	355	320	355	300	310 R	A	A	270	280	290	290	A	A	A	330	A	A	A
7	A	280 F	F	340 S	310 U S	F	310	310 S	330	A	A	260	260	265	275	290	290	300	315	335	A	280	280	280 U S
8	275 U S	R	F	F	305 U F	330 U S	310 S	A	A	310	290	A	260	280	285	285	300	300	330	A	300	290 U S	290 S	320 U R
9	320	320 R	F	F	F	F	300	310	320	290	290	A	270	270	270	280	300 R	310	300	295 S	310	320	280	F
10	F	F	310 S	F	350 J R	310 S	330	340	330	290	300	280	A	270	295 I A	300	310	320	280	A	295	280	290	270 S
11	290 U S	F	280 U S	310	310	310	290	290	320	A	270	300	280	300	270	270	300	310	280	290	300 S	280	260	280
12	280 R	280 S	300 U R	F	300	310	320 S	290 S	300	310	A	270	A	A	290	300	300	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	340	320 I A	290	A	280	260	260	320	310	320	A	280 S	300 S	290 U S	280 I R
14	F	F	A	A	310 S	315 I S	350	370	350	320	275	285	270	275	270	280	295	320	315	320	310	300	280	280
15	270	280 R	310	300 R	285 R	F	F	380 R	395	340	C	C	260	270	300	280	275	260	310 R	350	310 S	270 S	280	280 U R
16	270	280 S	300 S	300 S	F	F	340	360	330	290	300	290	280	290	285	270	300	300	320	290 I A	300 S	330	370	F
17	F	330 U R	330 S	330	310	310 I A	330	330	310	305	300	280	290	280	305 I R	290	290	290	270	290	310 S	S	F	A
18	A	270 U S	290 S	300 S	340 S	330	340	A	A	320 I A	320	300	A	280	290	275	290	300	300	340	310 S	340 S	270 J S	S
19	300 S	F	F	370	F	360 S	380	355 I A	310	300	310	330	240	250	280 S	300	320	310	310	340	300 S	280 J S	275	F
20	F	F	F	290	300	290 S	350	360 S	360	370	350	C	280	270	280	290	290	290	310	310	290	300 S	290 U R	290 S
21	290	F	F	F	310 S	350 S	355	320	330	290	310	300	A	250 R	260	280	A	320	A	360	C	A	A	A
22	A	290 U S	A	360 S	S	300 S	320	340	350	325	295	280	260	270	260	275	285	300	315	350	330	A	300	290
23	280	300	280	275	300 R	350	365	360	285	350	A	G	260	250	270 R	290	300	330	345	340	280	280	280	F
24	F	A	F	F	F	300 U S	315	330	305	A	A	270 I A	270 I A	270	280	290	275	290	325	310	350	350	280 U S	F
25	F	310	F	F	305 S	320 I A	330	340	A	330	325 I A	A	280	A	265	280	285	300	340 U R	340	310 I S	300	290	295 S
26	290 S	300 S	310	F	F	310 U S	285	300	370	340	320	285	290	250	280	260	A	300	315	360	290	270	290	265 I A
27	260	250	275	F	F	265	A	A	G	A	A	A	A	255 R	280	A	275	275	C	285	300	300	270	265
28	265 R	290 S	295 I A	A	A	A	A	305 S	A	A	225	255	A	260	260	270	275	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	340	280	260	260	280	285	290	280	280	300	310	330 S	290 S	265	270 S
30	270 S	290 S	300 S	F	F	310	310	310	340	350	340	250	290 R	280	280	280	280	300	340	310	310	300 S	280	290
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	18	19	18	16	19	23	25	25	24	24	24	23	22	27	29	28	28	25	25	24	26	24	25	18
MED	280	290	298	300	305	310	330	330	330	315	300	280	270	270	280	280	290	300	310	310	300	295	280	280
UQ	290	300	310	332	310	325	350	350	348	340	315	288	280	280	285	290	300	310	320	340	310	300	290	290
LQ	270	278	280	295	300	300	310	310	312	300	280	260	260	265	270	275	285	295	300	298	290	280	275	270

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JUN. 1974 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUN. 1974 | M(3000)F1 (0.01)

135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	A	350	365	A	370	380	A	A	A	A	A					
2								L	L	A	L 355	A	A	A	360	350	335	A	L					
3								L	L	L	L 345	L 365	350	A	A	A	A	A	A					
4								L	L	L	355	350	375	400	380	L 370	L 350	L	L					
5							L	L	L	L	L 400	A	370	380	A	A	A	A	L					
6							L	L	L	L 370	U L 370	A	A	A	A	A	A	A	A					
7								L	A	A	A	A	A	A	A	A	A	A	A					
8								A	A	A	L 375	A	A	A	A	360	A	A	A					
9								A	A	A	A	A	A	A	A	A	L	350	L	L				
10								A	A	A	A	A	A	A	A	A	A	L 360	L	A				
11								L	A	A	A	350	360	370	A	A	A	L	L	L				
12								A	L	A	A	A	A	A	A	A	A	C	C	C				
13								C	C	L	A	A	A	A	A	A	A	A	A	A				
14								L	L		L 320	A	385	A	A	A	A	A	A	A				
15							L	A	L	A	C	C	A	A	390	A	A	A	L	L				
16								L 410	L	L 360	375	380	385	385	410	380	370	L 350	A	A				
17								L	L 340	L 340	370	400	A	A	A	A	A	A	L	A				
18								A	A	A	A	A	A	A	A	A	A	A	L	A				
19								A	L 380	A	415	A	380	360	A	A	380	L 370	L	A				
20							L	L	L	L 410	L 420	C	390	A	A	A	A	A	A	A				
21							L	L	L 380	L 390	A	A	A	A	A	A	A	A	A	A				
22								L	390	L 370	L 405	390	380	385	A	A	A	A	A	A				
23								L	L 340	A	A	A	A	A	A	A	A	365	L	A				
24								A	A	A	A	A	A	A	400	380	370	380	L	L				
25								L	A	A	A	A	A	A	A	A	A	A	A	A				
26								L 340	L	L 370	390	400	390	I A 390	I A 405	I A 405	A	360	L	A				
27								A	A	A	A	A	A	A	R 400	A	380	L 355	C	L				
28								A	A	A	390	A	A	400	R 390	A	A	C	C	C				
29								C	C	L 390	L 370	410	410	360	400	410	L 350	360	L	L				
30								U L 350	L 370	L 380	L 400	410	420	400	380	390	360	355	L	L				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								3	6	10	17	9	13	11	10	8	8	10						
MED								L 350	L 375	L 370	L 375	390	380	385	395	380	365	360						
UQ								L 380	L 380	L 390	L 400	400	390	395	400	398	375	365						
LQ								L 345	L 340	L 360	L 365	365	370	375	380	365	350	355						

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JUN. 1974 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUN. 1974 | H'F2 (KM) | 135° E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	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	420	530	490	405	370	A	370	330	I A 320	280					
2								220	320	A	L 380	I A 370	A 370	A	400	370	320	290	280					
3								L 280	290	330 L	370	340	390	370	330	I A 345	305	I A 290	280					
4								260	245	310	350	390	400	380	325	300	325	315	300					
5							245	250	260	270 L	400 L	400	380	340	330	340	310	A 350	275					
6							235	230	240	330	345	I A 395	I A 380	355	350	340	325	A	A					
7								L 300	A	A	A	380	A 390	A 420	370	340	310	300	285					
8								A	I A 285	E A 360	H 295	A	390	350	345	345	315	320	310					
9								E A 320	295	350	335	I A 335	E A 375	350	405	370	340	295	275	295				
10								275	300	E A 375	345	E A 430	A	A 410	I A 370	305	310	280	305	A				
11								325	300	A	450	340	355	320	350	375	315	290	300	300				
12								275	265	E A 350	A	380	I A 390	I A 355	355	300	300	C	C	C				
13								C	C	270	A	350	A	350	400	380	295	270	250	A				
14								240	270		L 380	380	355	350	380	360	350	300	250	250				
15							300	225	225	310	C	C	380	380	320	340	340	405	300	325				
16								245	305 L	355 L	350	335	355	295	345	360	320	300	270	A				
17								L 260	350	350	340	395	360	375	335	325	320	300	330	345				
18								A	I A 275	I A 295	320	360	I A 390	350	340	375	340	305	300	250				
19								I A 240	320 L	375	325	280	455	415	390	350	300	295	275	235				
20							265	235	260	255	300 L	C	380	375	350	325	365	330	295	270				
21							230	245	280	380	330	330	A	450	425	370	A	300	I A 265	235				
22								250	250	300	335	370	400	360	400	375	A 360	300	280	240				
23								260	L 390	270	I A 270	G	545	470	390	330	330	265	240	220				
24								280	A	A	A	I A 360	I A 380	375	350	320	370	340	270	260				
25								280	I A 285	290	A	A	410	I A 400	385	340	340	320	270	255				
26								365	230	280	320	420	375	470	370	400	A	300	270	210				
27								A	G	A	A	A	A	I A 490	430	A	420	365	C	L 310				
28								A	A	A	650	490	A	560	470	420	390	C	C	C				
29								C	C	295	440	500	465	345	325	305	330	350	275	255				
30								325	265	270	290 L	520	375	390	350	355	345	305	250	230				
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							5	24	25	23	23	25	25	29	29	29	28	27	26	17				
MED							245	259	285	302	345	380	380	375	355	345	328	300	278	255				
UQ							265	280	300	346	380	410	400	410	390	370	342	320	300	295				
LQ							235	242	260	285	322	350	375	350	345	330	312	295	270	235				

The Radio Research Laboratories, Japan

JUN. 1974 | H'F2 (KM)

IONOSPHERIC DATA

JUN. 1974 | H'F (KM) | 135° E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26° 19.0' N. Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	320	300	250	250	245	225	230	250	I A 240	230	220	I A 260	A 270	240	A	A	A	A	A	265	320	I A 360	300	280
2	330	350	A 380	310	270	250	250	220	A 260	A	215	A	A	A	230	270	A	A	I A 265	255	240	300	325	330
3	310	310	S 300	280	A	A	250	250	220	215	240	240	A 270	A	A	A	A	A	A	A 340	350	300	320	S 350
4	300	280	250	230	260	330	250	225	240	260	210	210	200	210	200	H 230	220	220	245	270	225	230	260	300
5	320	310	300	270	245	245	245	215	200	200	H 180	I A 240	230	240	A	A	A	I A 220	250	250	275	260	330	340
6	320	S 320	S 330	S 320	270	250	240	225	220	H 195	200	A	A	A	A	A	A	A	A	A	295	A	A	A
7	A	350	310	245	290	300	250	250	A	A	A	A	A	A	A	A	A	A	A	250	I A 270	300	260	300
8	300	270	240	280	250	220	250	A	I A 225	A	250	A	A	A	A	225	A	A	A	A	255	300	S 350	280
9	S 320	280	305	300	295	300	300	A	A	A	A	A	A	A	A	A	A	220	225	265	250	225	260	335
10	305	Q 320	275	325	230	275	250	A	A	A	A	A	A	A	A	A	A	250	A	A	250	275	280	330
11	300	310	305	280	255	250	250	A 260	A	A	I A 255	245	250	250	I A 210	I A 205	I A 230	250	235	250	255	275	320	325
12	295	305	325	290	255	290	320	A	250	A	A	A	A	A	A	I A 250	A	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	I A 240	A	A	A	A	I A 240	A	A	A	A	A	300	S 300	265	270
14	280	260	I A 240	I A 265	280	270	245	230	255	220	I A 245	I A 235	215	A	A	A	A	A	A	A	S 250	260	275	320
15	310	320	260	260	270	330	260	I A 250	230	A	C	C	A	A	225	A	A	A	I A 250	220	250	300	300	300
16	305	300	275	215	305	325	270	225	H 205	250	195	260	A 250	225	190	235	215	255	A	A	295	240	225	355
17	350	340	260	260	255	I A 260	250	220	250	250	240	230	I A 235	I A 235	I A 240	I A 230	I A 250	I A 250	240	I A 270	280	245	S 270	A
18	A	330	260	260	230	255	240	I A 230	I A 240	I A 250	A	A	A	A	A	I A 250	A	A	A	I A 245	230	220	340	315
19	345	345	280	240	250	260	240	I A 220	245	I A 240	200	I A 240	A 260	255	A	A	210	230	225	I A 240	230	300	310	330
20	315	295	280	260	295	275	I A 240	215	210	200	190	I C 205	250	A	A	A	A	A	A	A	E A 300	310	325	270
21	300	300	300	255	230	210	215	210	250	200	A	A	A	A	A	A	A	A	A	A	C	A	A	A
22	A	280	I A 270	220	275	295	250	225	200	195	180	200	215	A 240	A	A	A	A	A	A	250	A	270	290
23	310	310	360	325	300	230	240	230	225	A	A	A	A	A	A	A	A	H 210	I A 230	I A 220	215	285	325	310
24	320	A	250	300	310	300	240	A	A	A	A	A	A	A	205	230	220	220	H 210	245	220	220	U A 350	320
25	A 370	280	275	260	260	I A 270	240	240	A	A	A	A	A	A	A	A	A	A	A	A	E A 295	315	305	310
26	300	300	270	315	305	250	240	H 210	235	225	200	210	230	I A 230	I A 225	I A 220	A	240	250	A	260	310	310	I A 340
27	360	360	330	335	370	400	A	A	I A 255	A	A	I A 250	I A 250	A	220	A	240	230	I C 230	260	250	250	280	330
28	A 340	310	I A 295	A	A	I A 280	I A 270	A	A	A	215	A	A	220	A 250	A	A	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	H 190	230	190	180	A 240	220	A 230	255	200	240	250	225	240	320	340
30	325	275	250	255	275	250	245	H 230	250	220	210	205	200	200	210	A 250	235	230	235	240	250	290	310	295
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	27	28	27	26	27	27	21	21	17	18	15	15	12	13	12	9	14	14	17	27	25	26	25
MED	315	310	278	265	270	270	250	225	240	220	212	235	235	238	220	A 230	230	230	238	250	250	285	308	320
UQ	325	320	305	300	295	298	250	240	250	240	240	I A 242	A 250	240	A 230	250	240	250	250	265	280	300	325	330
LQ	300	288	260	255	250	250	240	220	220	200	200	208	215	222	210	A 228	220	220	230	245	245	245	270	300

JUN. 1974 | H'F (KM)

IONOSPHERIC DATA

JUN. 1974 | H'E (KM) | 135° E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatio operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							A 110	110	110	110	110	110	110	110	110	110	110	110	110	A				
2							A	A	I A 120	110	110	110	105	105	110	A 135	110	110	120	S				
3							A 130		I A 120	A	110	110	110	110	110	110	110	110	115	A				
4							A	I A 120	110	110	110	110	110	110	110	110	A 150	110	125	S				
5							A	110	110	110	110	110	110	110	110	110	110	120	110	A				
6							S	110	110	105	105	105	105	105	105	105	105	110	110	A				
7							A	110	110	110	105	110	105	105	110	105	110	I A 130	125	A				
8							S	115	110	110	105	110	105	105	105	105	105	110	120	A				
9						S	130	115	110	105	110	105	105	105	105	105	105	A	A 125	A				
10						S	130	110	110	110	105	105	105	105	105	105	105	110	A	A				
11						S	A	A	110	105	105	105	105	105	105	105	105	105	E A 140	A				
12						S	110	110	105	105	105	105	105	105	105	105	A	C	C	C				
13						C	C	C	C	110	105	105	105	105	105	105	110	120	120	A				
14						S	E A 135	A	105	A	A	A	A	110	110	110	110	110	110	A	B			
15						S	130	110	110	105	C	C	105	110	105	105	110	105	110	A	S			
16						A	A	115	110	105	105	105	105	105	105	105	110	A	A	A	S			
17						B	A	110	105	105	105	105	105	105	105	105	110	110	120	A	B			
18						B	A	110	110	105	105	110	110	105	105	110	110	105	A	A	B			
19						S	A	A	A	110	105	A	A	115	110	110	E A 130	120	A	A	B			
20						A	A	110	105	110	110	I C 110	110	110	110	110	110	115	115	A	S			
21						S	135	125	105	105	105	105	105	105	105	105	A	A	A	A	C			
22						S	A	110	110	105	110	110	105	110	110	105	105	125	130	A	A			
23						A	A	110	A	105	110	A	110	105	110	B	110	110	110	A	B			
24						A	A	110	110	110	110	105	110	110	110	110	A	A	A	A	S			
25						S	A	110	110	110	110	105	110	110	110	105	A	A	A	A	S			
26						S	A	135	A	110	105	110	110	110	110	130	110	120	115	A	A			
27						S	A	110	110	I A 110	110	A	A	110	110	110	110	110	I C 120	A	S			
28						B	A	115	110	110	110	110	110	110	110	110	110	C	C	C	C			
29						C	C	C	C	110	110	110	105	105	105	105	105	105	I A 125	A	A			
30						A	115	115	110	110	105	105	105	105	105	105	105	120	115	A	S			
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							7	24	25	28	28	25	27	30	30	29	26	23	21					
MED							130	110	110	110	108	110	105	105	110	105	110	110	118					
UQ							131	115	110	110	110	110	110	110	110	110	110	120	122					
LQ							122	110	110	105	105	105	105	105	105	105	105	110	110					

The Radio Research Laboratories, Japan

JUN. 1974 | H'E (KM)

IONOSPHERIC DATA

JUN. 1974 | H'ES (KM) | 135° E Mean Time (G. M. T.+ 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	100	100	100	100	B	100	110	135	115	120	150	125	125	130	120	110	110	105	110	115	110	105	105	100
2	100	105	100	100	100	100	100	130	115	110	125	105	105	105	G	150	135	125	120	115	110	105	110	105
3	105	105	100	100	100	100	140	140	140	110	110	180	155	145	140	120	120	115	115	110	110	110	110	110
4	110	100	105	105	100	100	100	115	115	110	110	115	110	115	120	G	110	G	140	130	100	E	S	S
5	S	120	120	120	120	100	165	G	120	120	110	110	110	105	140	105	130	120	115	110	105	110	100	105
6	105	140	130	125	110	140	140	150	120	120	120	115	105	145	145	130	125	120	120	110	105	100	105	105
7	105	105	105	100	100	95	95	120	110	110	105	110	105	130	150	135	140	105	130	120	110	110	100	100
8	100	110	110	100	100	100	120	115	115	115	110	105	110	105	110	110	135	120	120	115	110	110	105	110
9	110	105	105	105	100	130	130	120	115	110	110	105	105	105	105	105	105	105	105	100	100	100	100	95
10	115	110	110	110	105	110	130	120	120	110	110	105	105	105	105	105	105	105	120	115	100	100	S	100
11	120	110	110	110	105	100	110	125	105	105	105	110	110	110	105	105	105	105	130	100	100	100	100	110
12	100	100	115	105	105	110	110	110	105	110	105	105	105	105	100	100	100	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	105	110	115	110	110	115	135	140	130	120	115	115	115	115	120
14	115	110	110	110	105	110	105	105	130	120	100	100	105	120	115	110	110	110	110	110	110	110	105	110
15	105	100	100	100	100	100	145	110	140	140	C	C	150	125	145	125	120	115	115	110	110	100	100	100
16	95	95	115	110	110	110	110	115	115	110	110	105	110	115	110	110	110	140	125	120	100	115	110	110
17	110	105	105	100	100	100	120	115	115	110	110	110	110	140	120	130	130	120	115	110	110	105	115	110
18	110	120	115	115	105	105	105	110	110	105	110	110	110	130	125	125	130	130	125	100	100	110	105	95
19	120	115	110	105	105	105	105	105	105	140	105	140	150	115	130	120	130	120	120	100	100	100	100	100
20	100	B	110	105	105	120	115	115	110	110	155	C	155	135	135	130	115	115	110	110	110	105	105	110
21	105	105	105	105	105	100	100	100	130	115	105	105	105	110	105	100	100	100	120	110	C	110	115	115
22	110	110	110	110	110	110	110	120	110	110	110	110	110	105	105	120	115	120	115	110	110	110	105	105
23	105	105	100	120	110	110	110	110	110	110	110	180	155	130	140	140	120	120	110	110	110	110	110	110
24	110	105	105	110	110	110	120	120	110	105	105	105	105	110	110	110	105	105	105	100	100	100	100	100
25	110	120	110	110	105	105	110	110	110	110	105	110	105	100	105	100	130	100	100	100	125	120	115	115
26	110	110	110	110	105	115	105	110	110	140	120	110	150	125	130	160	115	125	120	115	110	115	110	110
27	130	120	115	125	140	130	110	120	130	145	130	130	135	125	135	120	125	120	C	115	100	100	100	100
28	110	120	110	110	105	105	105	120	120	120	120	125	120	130	130	125	120	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	115	120	110	110	110	110	105	105	105	100	100	100	100	100	100
30	105	115	110	110	110	110	115	120	115	115	110	110	105	105	110	105	105	105	120	170	100	100	100	100
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	27	28	28	27	28	28	27	28	30	29	28	30	30	29	29	30	27	27	28	27	27	26	27
MED	110	110	110	110	105	105	110	115	115	110	110	110	110	115	120	120	118	115	120	110	110	105	105	105
UQ	110	115	110	110	110	110	120	120	120	120	120	115	125	130	135	130	130	120	120	115	110	110	110	110
LQ	105	105	105	102	100	100	105	110	110	110	105	105	105	105	110	105	105	105	110	105	100	100	100	100

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JUN. 1974 | H'ES (KM)

IONOSPHERIC DATA

JUN. 1974 | TYPES OF ES | 135° E Mean Time (G. M. T. + 9h)

Station OKINAWA Lat. 26° 19.0' N, Long. 127° 46.8' E Sweep 1 MHz to 25 MHz in 30 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F 6	F 2	F 2	F 1		FF 31	L 2	CC 12	C 2	C 1	H 1	C 2	C 2	C 1	C 4	C 3	C 4	C 5	C 6	L 3	F 6	F 6	F 5	F 2
2	F 5	F 4	F 4	F 3	F 1	F 4	L 3	CL 24	CL 33	C 3	C 1	C 3	C 3	C 4		HL 21	C 2	C 3	C 5	L 5	F 6	F 6	F 3	F 3
3	F 3	F 3	F 2	F 4	F 3	F 4	CL 21	CL 22	CL 22	LC 22	C 2	HC 11	H 1	H 2	H 2	C 5	C 5	C 4	C 4	L 6	F 6	F 6	F 3	F 4
4	F 4	F 4	F 4	F 6	F 2	F 4	L 2	LC 21	C 2	C 3	C 1	C 1	C 1	C 2	C 1		L 1		CL 11	C 1	F 1			
5		F 6	F 3	F 1	F 2	F 1	H 1		C 1	C 1	C 2	C 3	CH 21	CH 21	CC 23	C 3	CC 42	CL 41	C 3	LL 36	F 4	F 3	F 4	F 6
6	F 6	FF 14	FF 27	FF 43	FF 62	FF 22	C 2	H 1	C 2	C 1	C 1	C 5	C 6	HC 21	H 2	H 2	C 3	C 4	C 7	L 7	F 5	F 4	F 5	F 6
7	F 4	F 6	F 6	F 5	F 5	F 3	L 2	CL 51	C 6	C 6	C 6	C 2	C 5	CC 35	HC 21	C 2	CC 21	L 6	CL 43	LL 66	FF 62	FF 47	F 5	F 2
8	F 7	F 2	F 1	F 2	F 5	F 5	CL 31	C 3	C 3	C 5	C 2	C 3	C 3	C 3	C 3	C 1	H 2	C 4	C 6	L 4	F 4	F 5	F 4	F 3
9	F 2	F 2	F 4	F 2	F 4	L 4	C 5	C 6	C 5	C 4	C 4	C 6	C 5	C 4	C 6	C 5	C 3	LH 32	LH 32	L 6	F 7	F 6	F 5	F 7
10	FF 23	FF 25	F 3	F 4	F 2	L 6	C 5	C 6	C 5	C 4	C 3	C 4	C 6	C 6	C 6	C 3	C 3	C 4	CL 43	LL 43	F 5	F 2		F 3
11	FF 23	F 4	FF 53	FF 51	F 3	L 2	L 4	CL 33	C 5	C 5	C 3	C 2	C 2	C 2	C 2	C 2	C 4	C 4	CL 25	L 3	F 4	F 3	F 6	FF 31
12	F 1	F 1	F 2	F 3	F 5	L 3	C 2	C 6	C 3	C 5	C 5	C 4	C 4	C 6	C 6	C 5	L 5							
13										C 3	C 5	C 3	C 3	C 3	C 2	H 3	H 1	CL 51	CL 51	LL 52	FF 61	F 3	F 2	F 2
14	F 3	F 2	F 4	F 3	F 2	L 4	L 2	L 4	HC 22	CL 23	LC 21	L 3	LC 31	C 2	C 3	C 3	C 3	C 6	C 6	L 4	LL 43	FF 42	F 2	F 5
15	F 3	F 3	F 4	F 1	F 2	L 3	C 2	C 4	H 2	H 2			H 1	CC 31	H 2	C 3	C 3	C 5	C 5	L 2	L 2	F 6	F 7	F 4
16	F 5	F 4	F 3	F 2	F 2	L 6	L 4	C 3	C 2	C 3	C 2	C 2	C 3	C 1	C 2	C 1	C 2	HL 33	CL 54	LL 64	L 4	FF 32	FF 13	F 1
17	F 4	F 6	F 4	F 5	F 5	L 6	L 3	C 3	C 3	C 4	C 2	C 3	C 3	HC 21	C 3	C 4	C 3	C 4	C 3	L 5	L 6	F 3	F 6	F 6
18	F 6	F 5	F 2	F 4	F 6	L 6	L 4	C 6	C 5	C 2	C 2		C 5	CC 43	C 3	CC 21	CC 32	CC 32	LL 34	L 4	L 4	F 4	F 4	F 5
19	FF 22	FF 24	F 3	F 6	F 5	L 4	L 4	L 6	L 3	HC 23	C 3	HL 22	HL 11	CH 11	C 3	C 3	CL 21	CL 22	CL 42	L 3	L 4	F 7	F 5	F 1
20	F 1		F 2	F 2	F 2	L 2	L 3	C 2	CHH 12	CH 21	H 1		H 1	H 2	H 1	C 3	C 4	CL 41	CL 31	LL 64	LL 22	FF 42	F 5	F 3
21	F 5	F 3	F 4	F 3	F 2	L 1	L 1	LH 11	C 5	C 2	C 4	C 3	C 4	C 3	C 5	C 5	L 7	L 5	LL 34	LL 24		FF 47	FF 14	FF 53
22	F 4	F 3	F 6	F 1	F 5	L 4	L 4	C 3	C 3	C 2	C 1	CH 21	C 2	CC 21	CC 31	C 5	C 3	CL 41	CL 41	LL 62	LL 63	F 6	F 3	F 4
23	F 2	F 2	F 2	FF 22	F 2	L 3	L 5	C 4	L 2	C 4	C 4	HH 11	H 2	H 1	H 2	H 1	C 3	C 2	C 4	L 5	L 1	F 2	F 4	F 2
24	FF 22	F 3	F 2	F 3	F 2	L 6	L 2	C 4	C 5	C 4	C 3	C 4	C 2	C 3	C 2	C 2	L 3	L 2	L 4	L 2	L 6	F 4	F 3	F 4
25	F 6	F 1	F 2	F 6	F 4	L 5	L 5	C 4	C 4	C 4	C 4	C 2	C 3	C 4	C 4	CC 21	CL 23	L 5	LL 55	L 7	LL 54	FF 16	FF 43	F 4
26	F 4	F 3	F 3	F 4	F 6	L 2	LC 31	LC 32	CH 22	CC 12	C 1	CH 21	HC 12	C 3	C 2	HL 21	C 5	CL 21	C 3	L 6	L 6	F 2	F 6	F 4
27	F 4	F 2	F 3	F 2	F 1	L 2	L 2	C 5	C 2	CL 21	C 2	CL 21	CL 11	C 1	C 1	C 2	C 2	C 3		L 1	L 2	F 1	F 1	F 1
28	F 2	F 3	F 3	F 6	F 5	L 6	L 6	C 6	C 4	C 4	C 3	C 2	C 4	C 1	C 1	C 2	C 3							
29										C 2	C 1	C 1	C 1	C 2	C 2	C 4	C 2	C 3	LH 53	L 6	L 7	F 3	F 2	F 3
30	F 2	F 3	F 3	F 2	F 2	L 3	C 3	C 1	C 2	C 1	C 2	C 2	C 2	C 2	C 1	C 3	C 2	LH 21	CL 21	HL 11	L 7	F 5	F 3	F 3
31																								
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CNT																								
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UQ																								
LQ																								

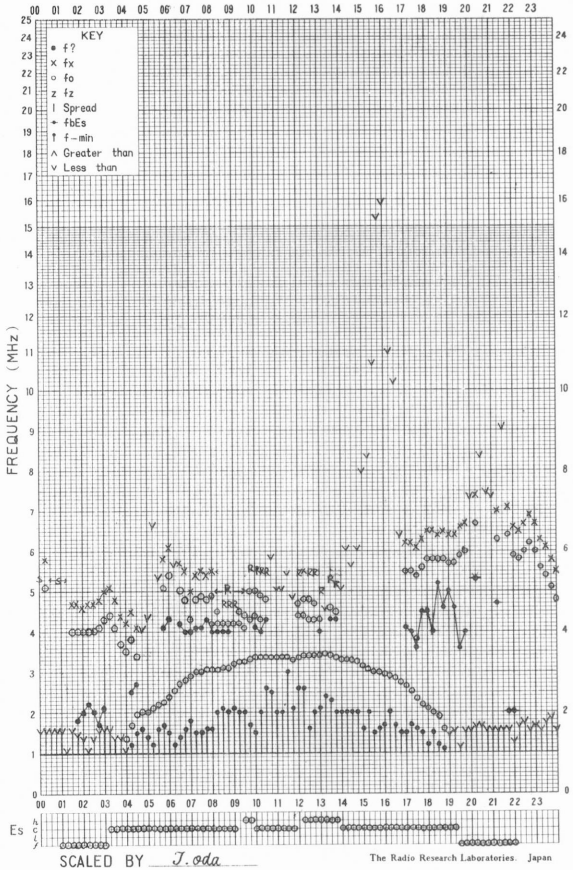
The Radio Research Laboratories, Japan

JUN. 1974 | TYPES OF ES

f-PLOTS OF IONOSPHERIC DATA

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 1. 1974



SCALED BY J. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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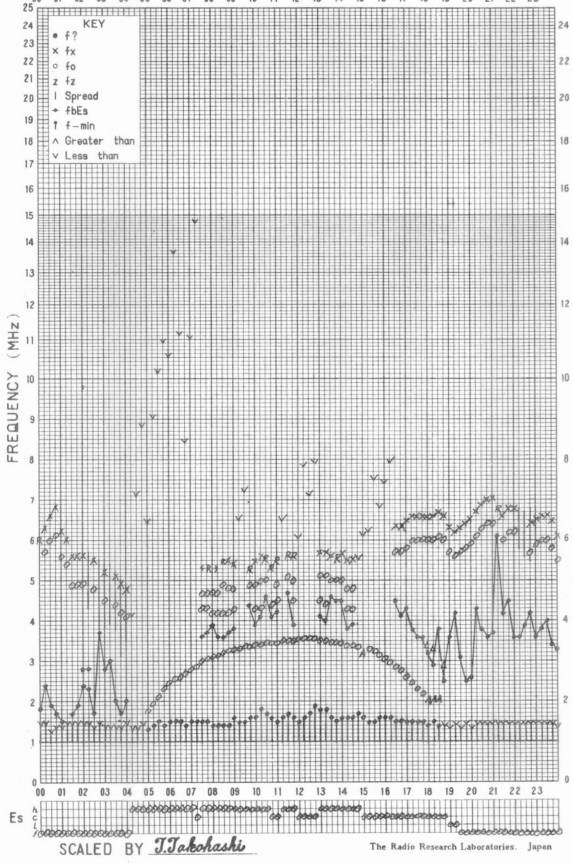

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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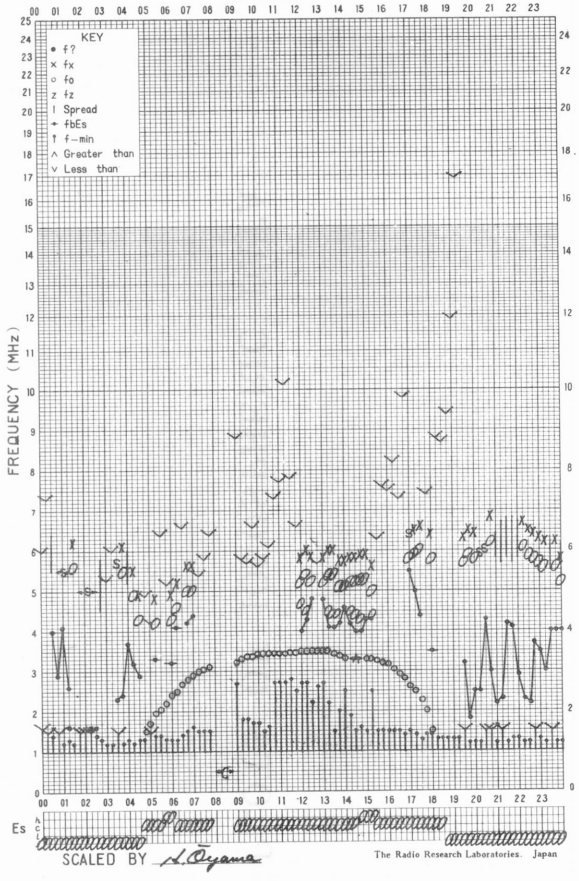

SCALED BY A. Oyama

The Radio Research Laboratories. Japan

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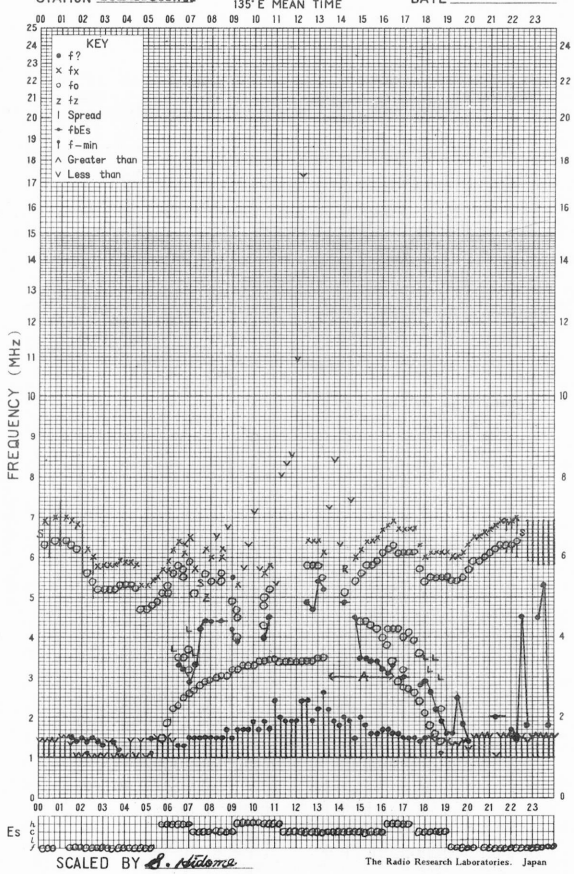

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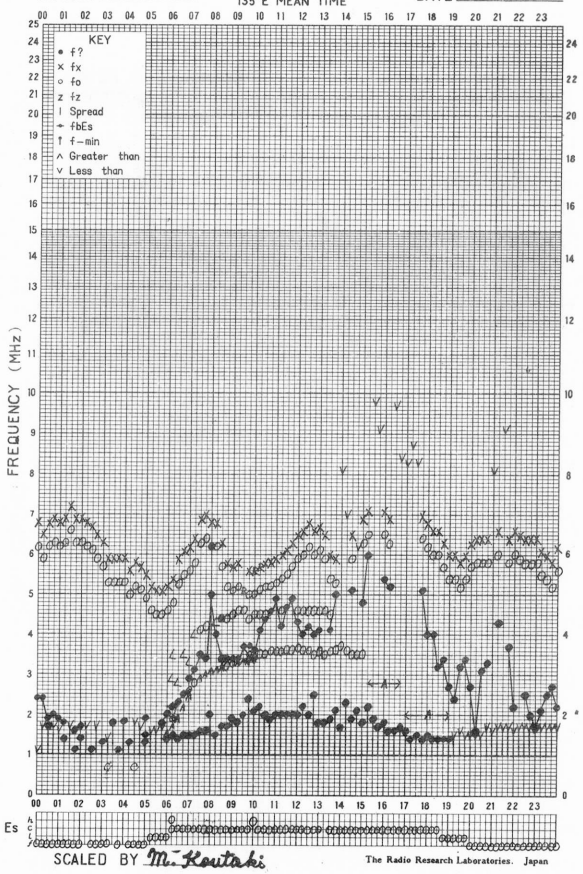

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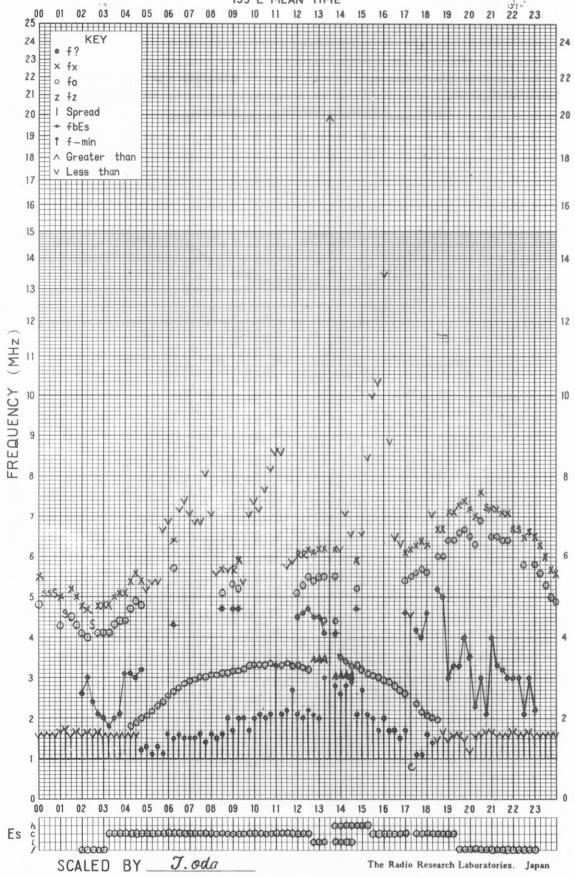

SCALED BY T. oda

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f-PLOT OF IONOSPHERIC DATA

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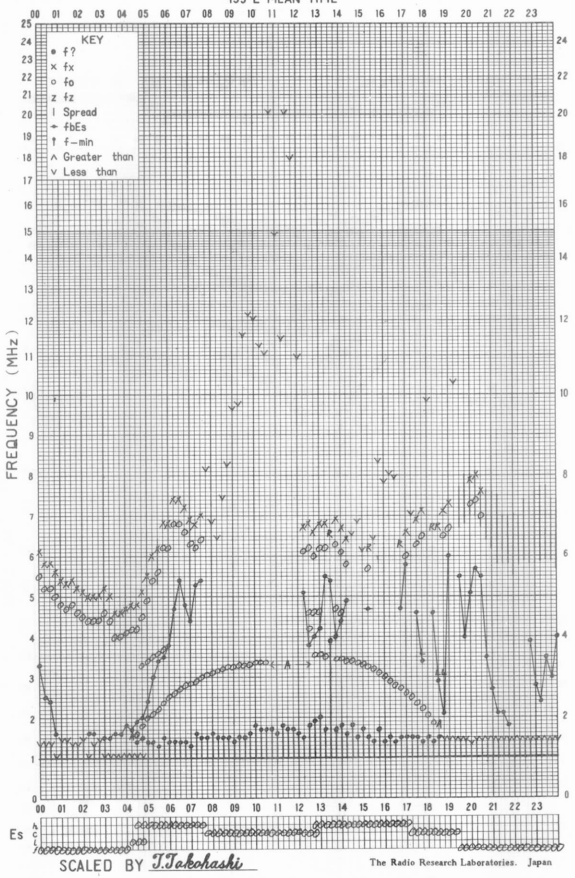

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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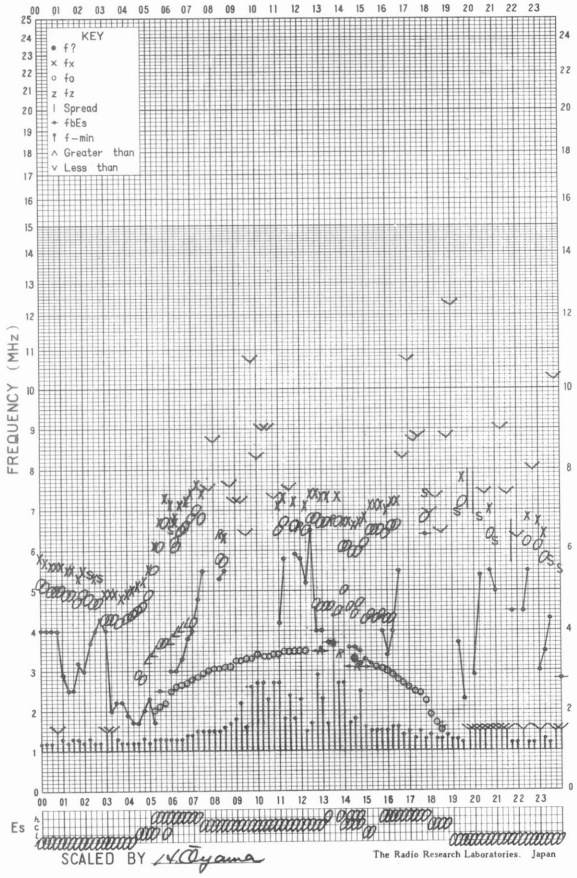

SCALED BY Y. Ōyama

The Radio Research Laboratories. Japan

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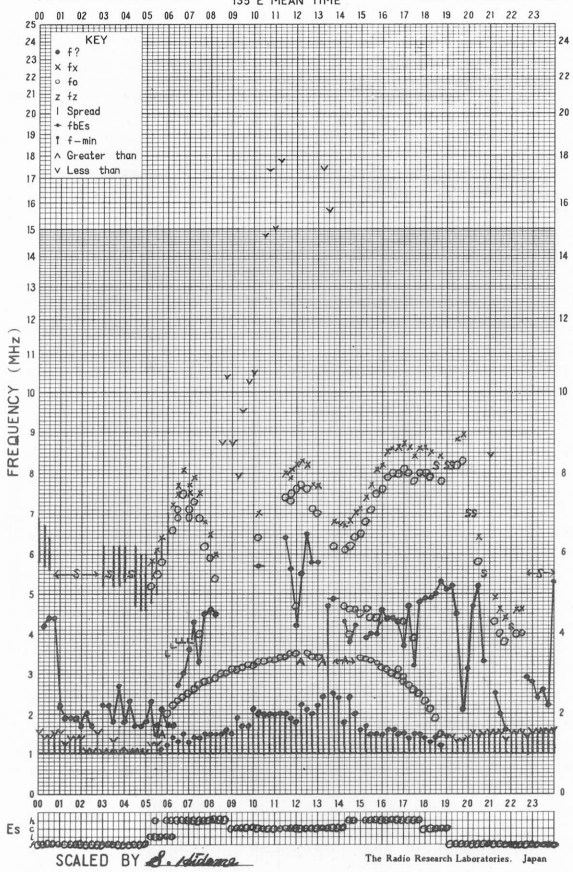

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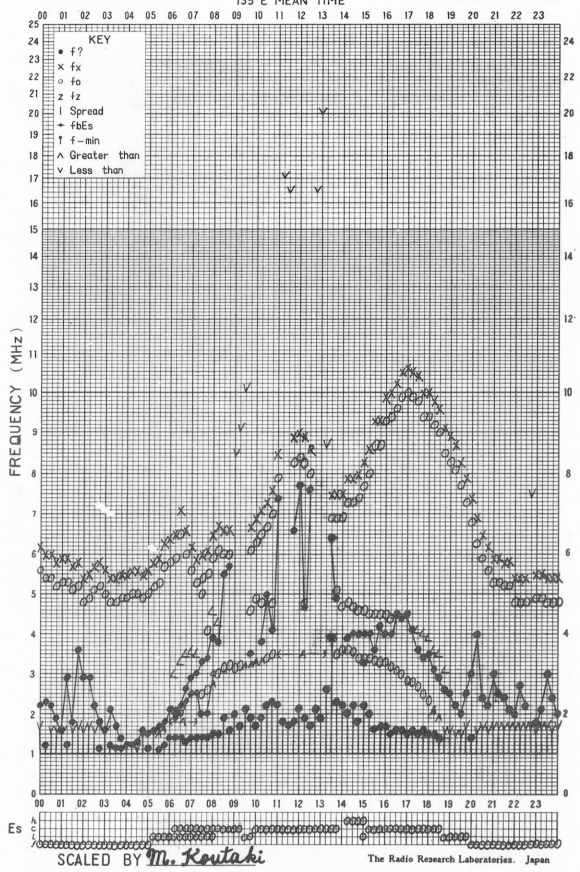

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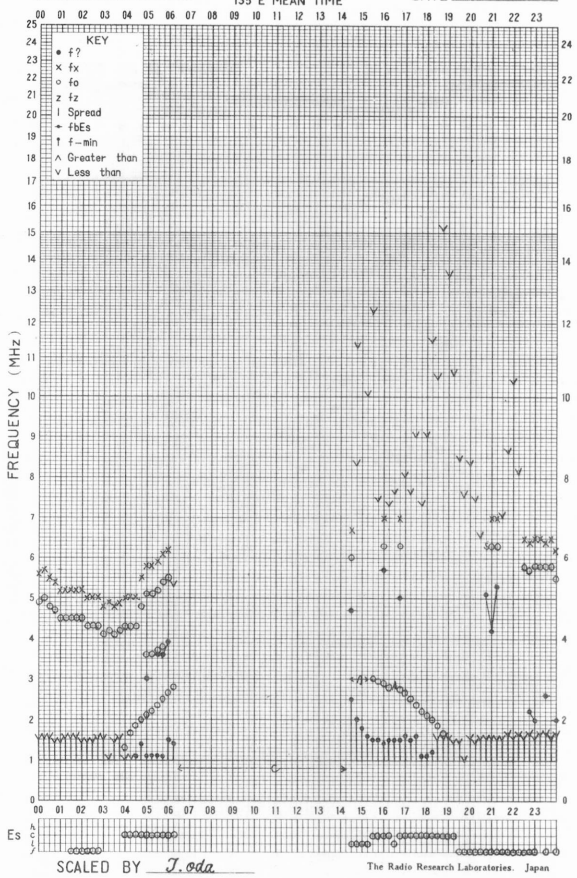

SCALED BY I. oda

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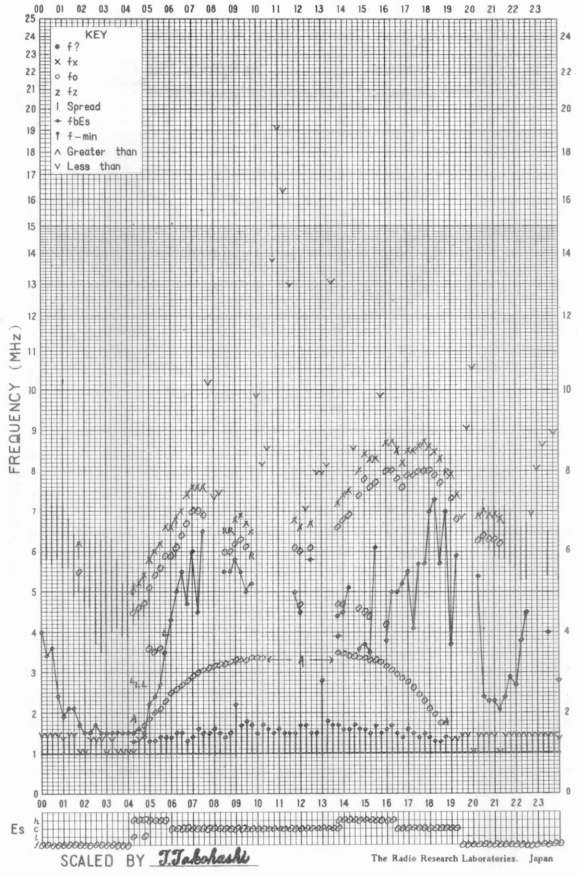

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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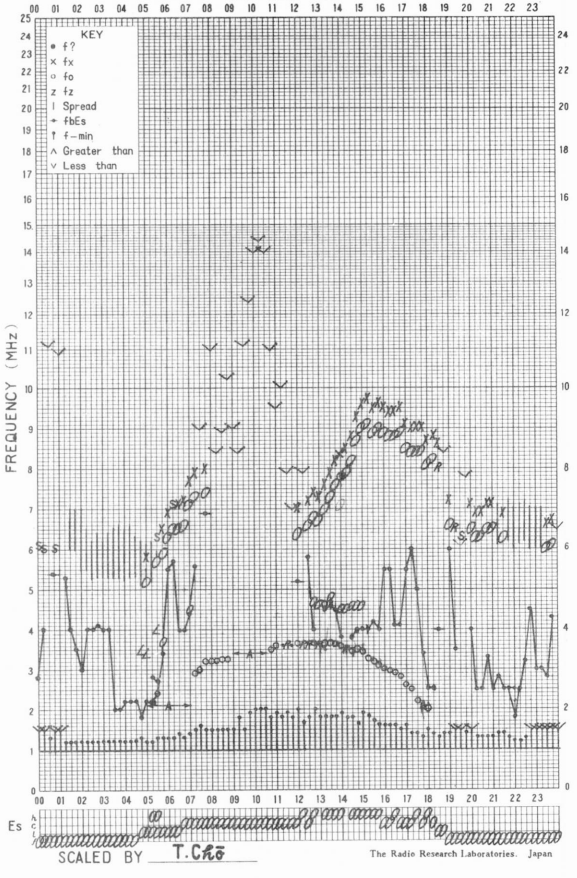

SCALED BY T. Chō

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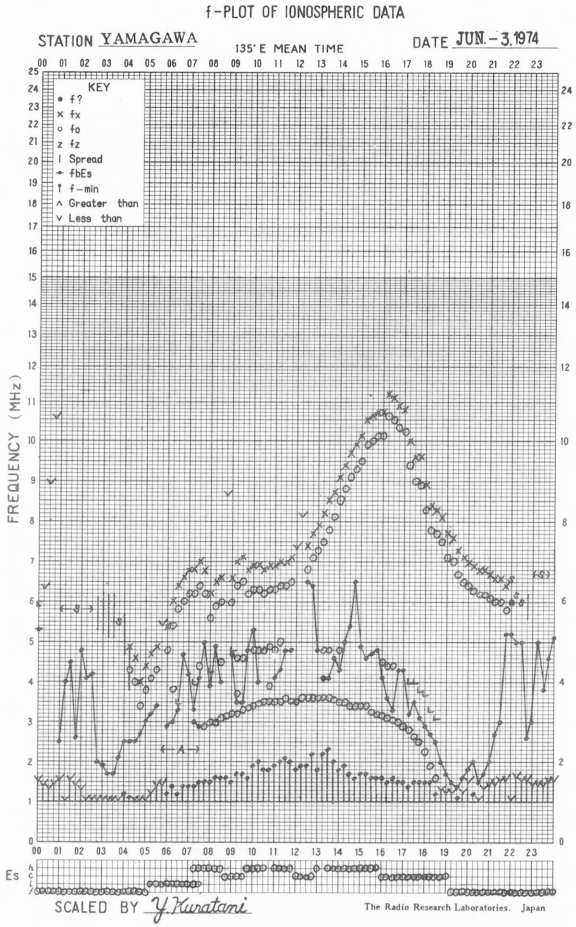
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135° E MEAN TIME
DATE JUN.-3.1974
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FREQUENCY (MHz)
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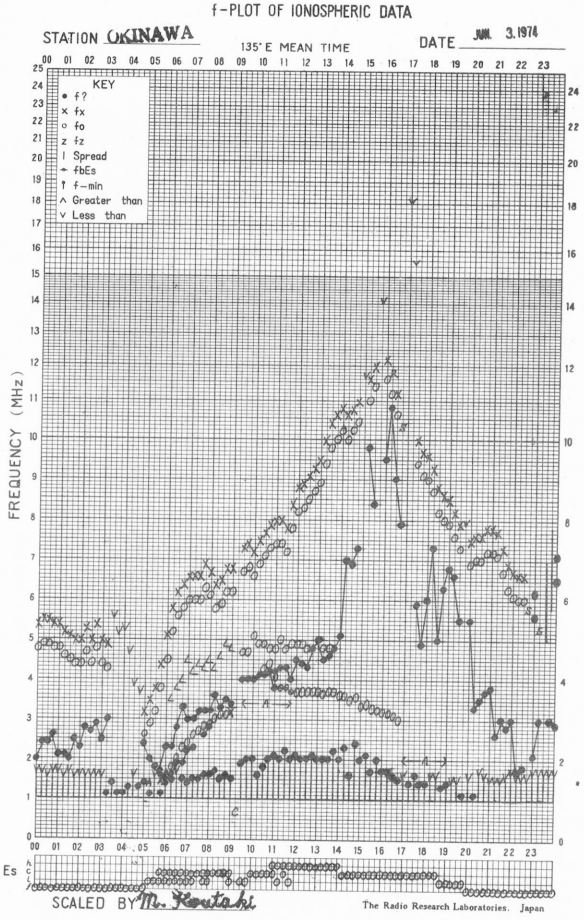
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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DATE JUN. 3.1974
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SCALED BY M. Kouta hi
The Radio Research Laboratories. Japan

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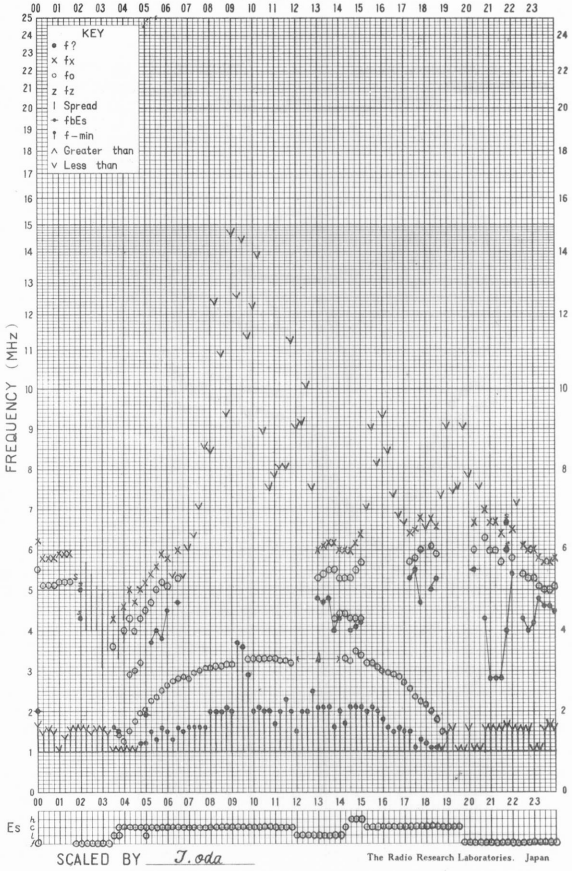

SCALED BY T. oda

The Radio Research Laboratories. Japan

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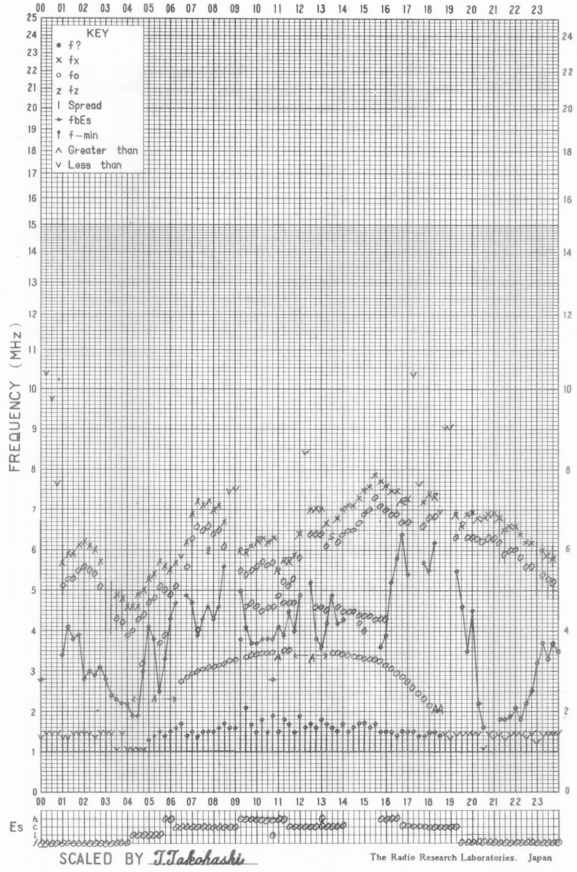

SCALED BY T.Takahashi

The Radio Research Laboratories. Japan

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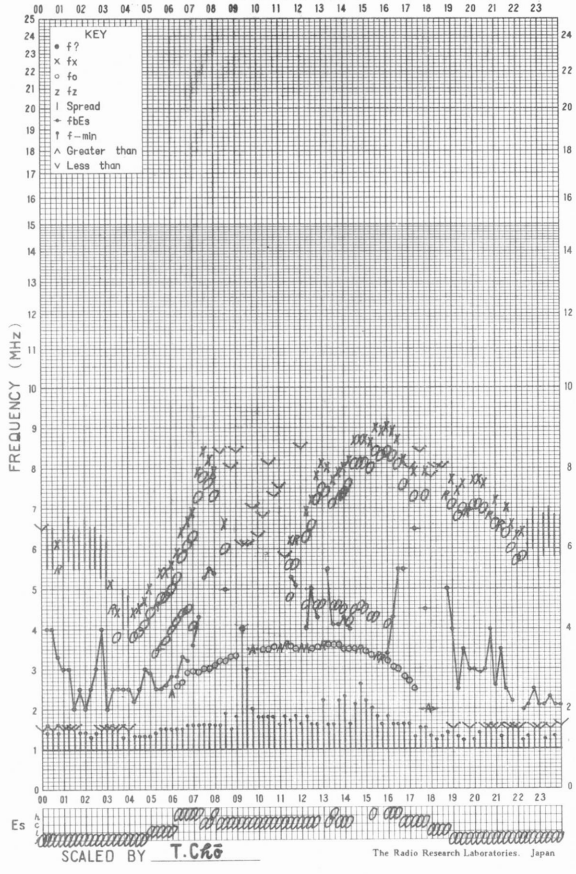

SCALED BY T.CRL

The Radio Research Laboratories. Japan

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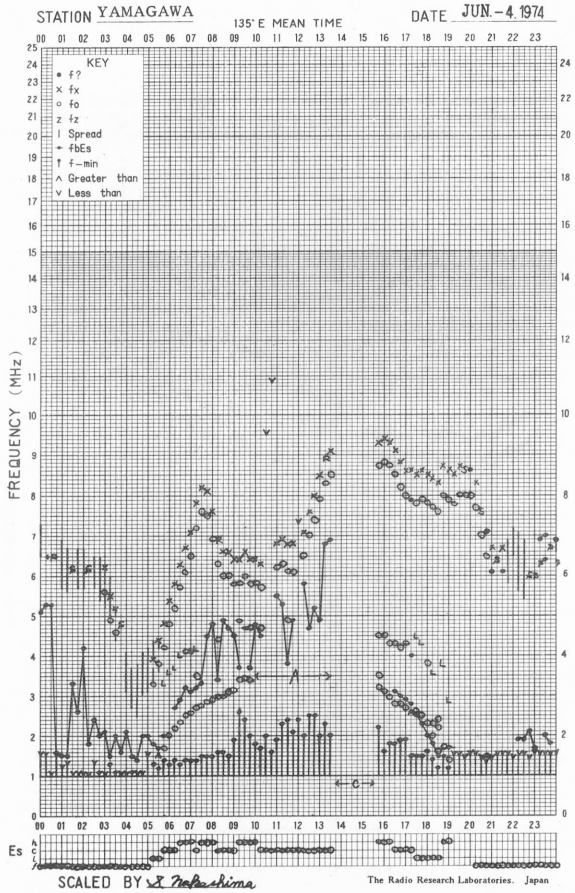

SCALED BY S. Nakashima

The Radio Research Laboratories. Japan

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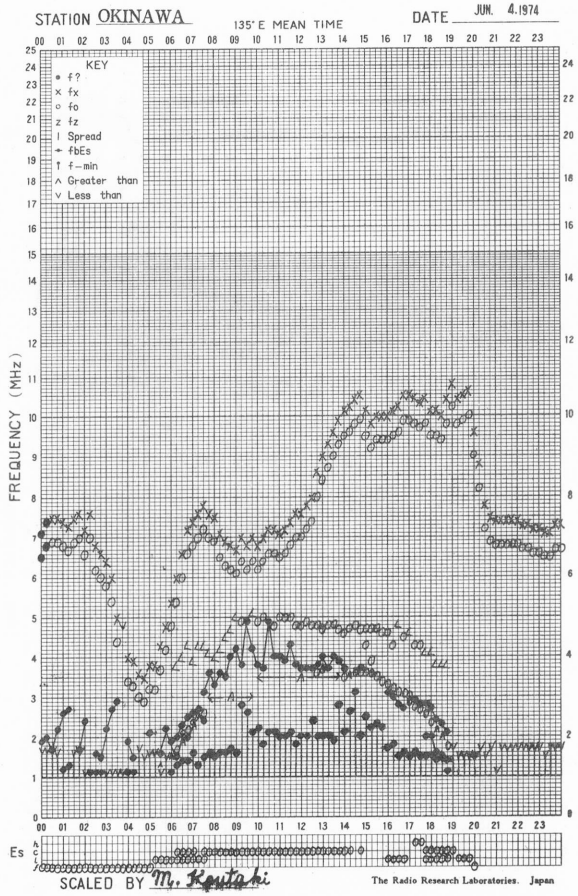

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The Radio Research Laboratories. Japan

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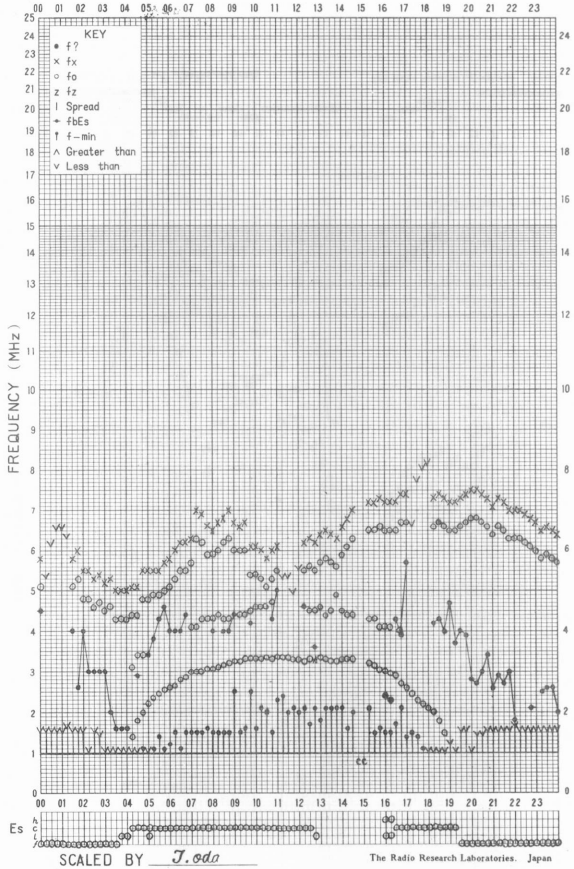

SCALED BY T. oda

The Radio Research Laboratories. Japan

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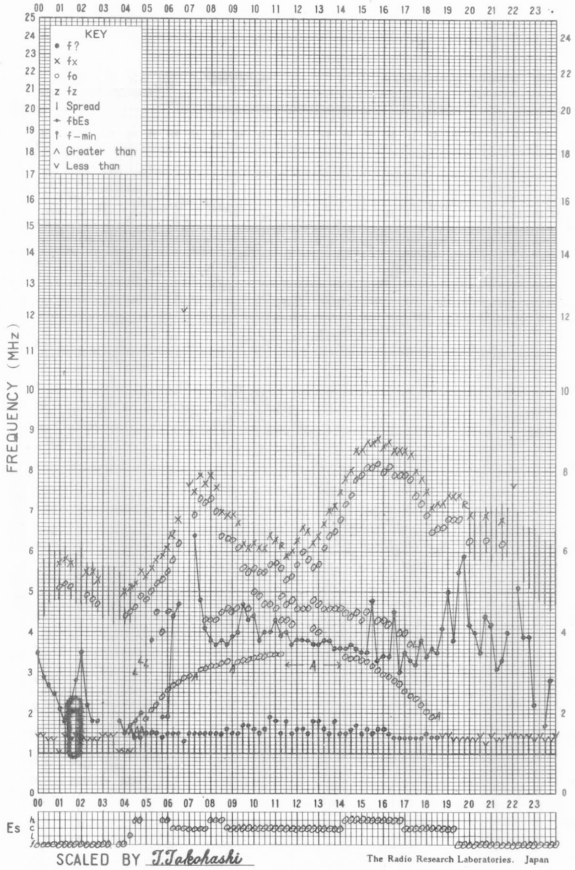

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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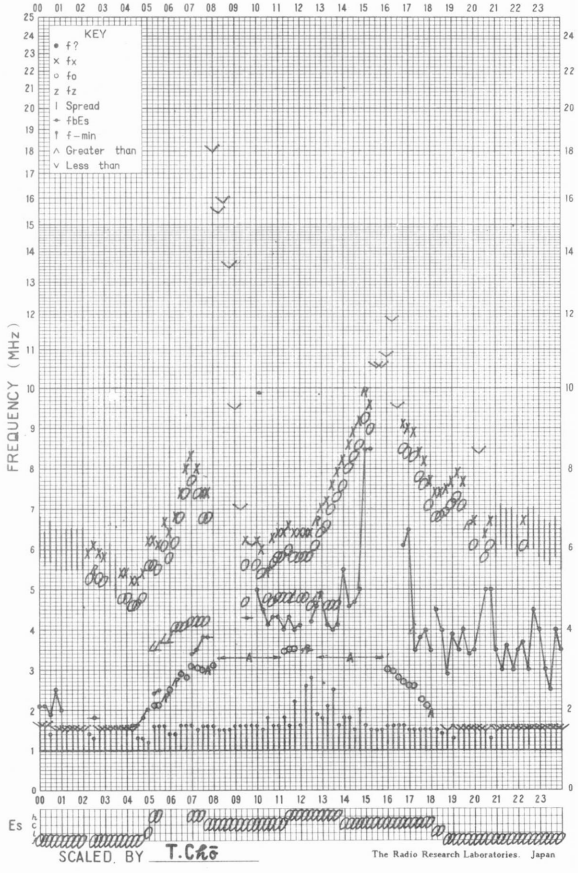
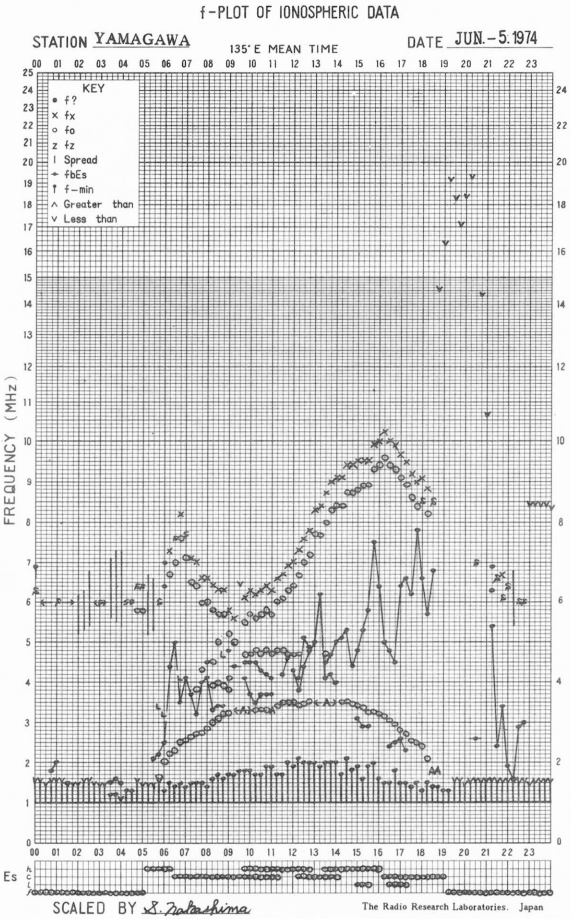


SCALED BY T. Cho

The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE JUN.-5.1974
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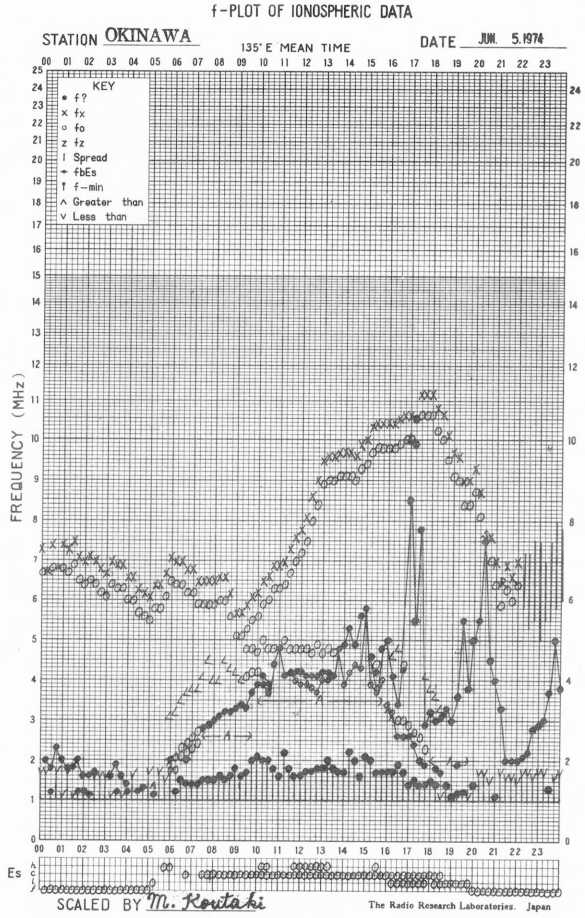
SCALED BY S. Takashima
The Radio Research Laboratories. Japan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DATE JUN. 5.1974
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FREQUENCY (MHz)
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SCALED BY M. Koutaki
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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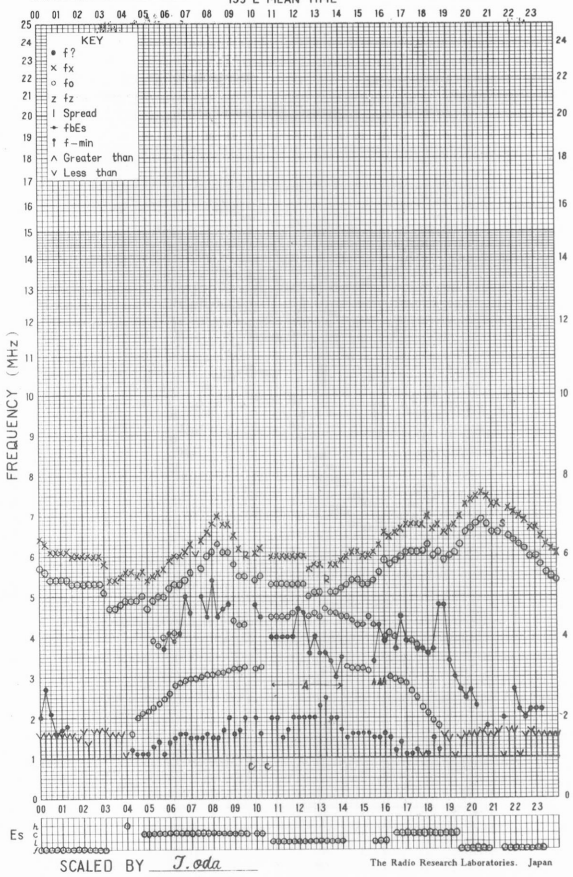

SCALED BY T. oda

The Radio Research Laboratories. Japan

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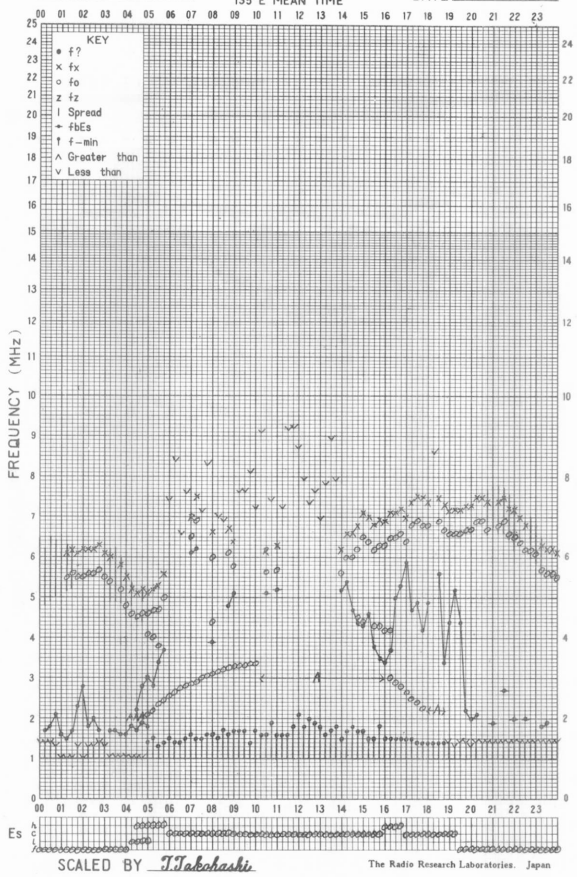

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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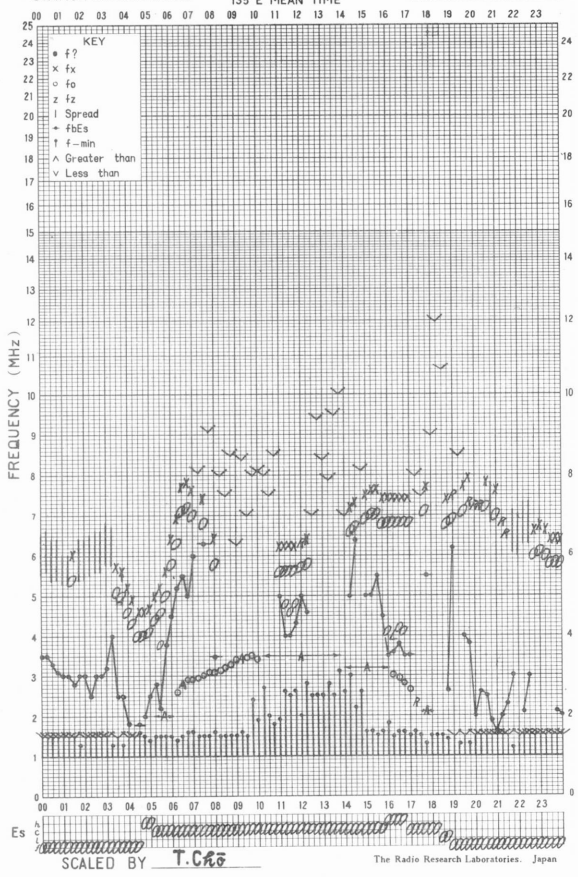
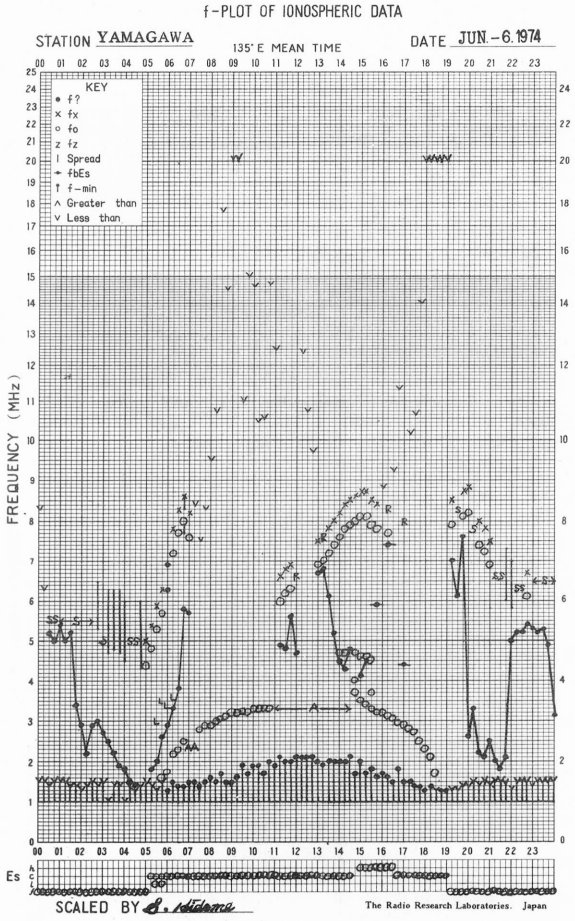


SCALED BY T. Chō

The Radio Research Laboratories. Japan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DATE JUN.-6.1974
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FREQUENCY (MHz)
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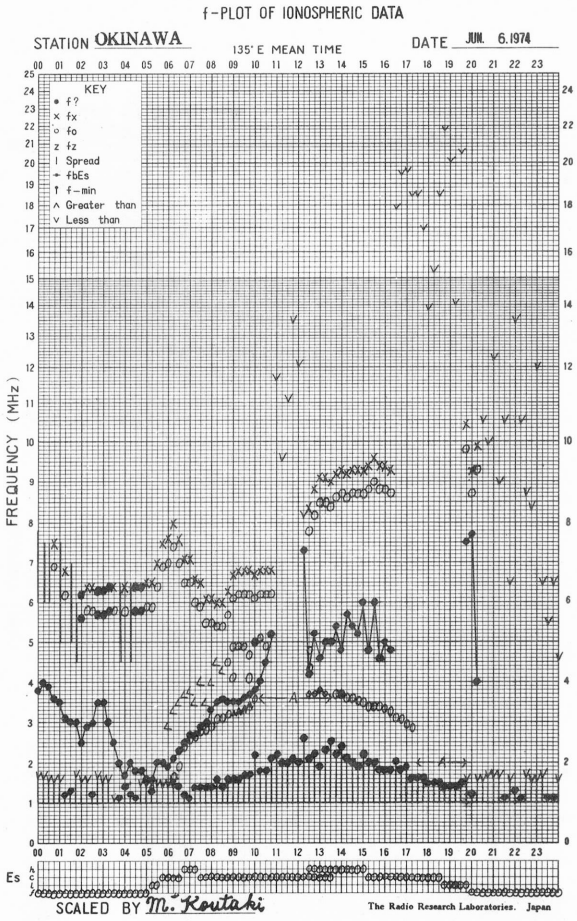
SCALED BY S. Ishidama
The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE JUN. 6.1974
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FREQUENCY (MHz)
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SCALED BY M. Koutaki
The Radio Research Laboratories. Japan

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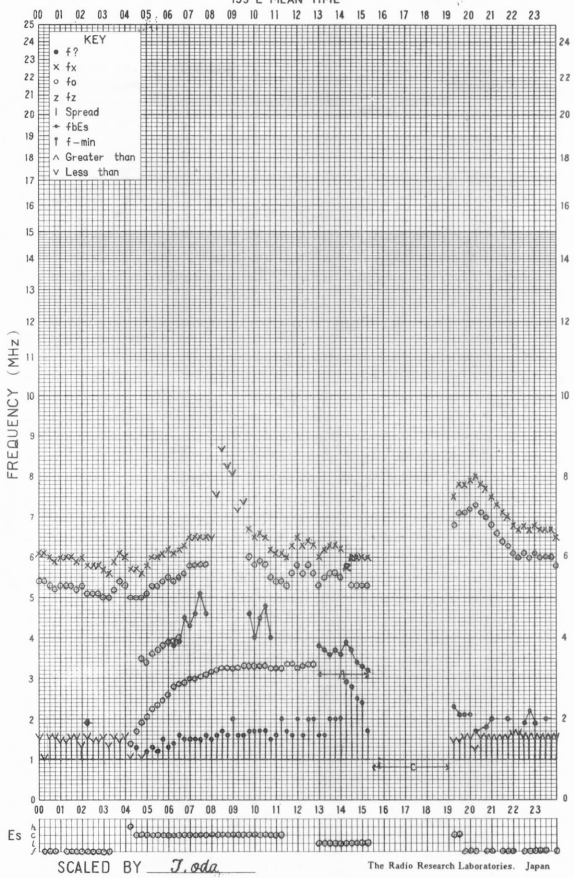

SCALED BY T. oda

The Radio Research Laboratories. Japan

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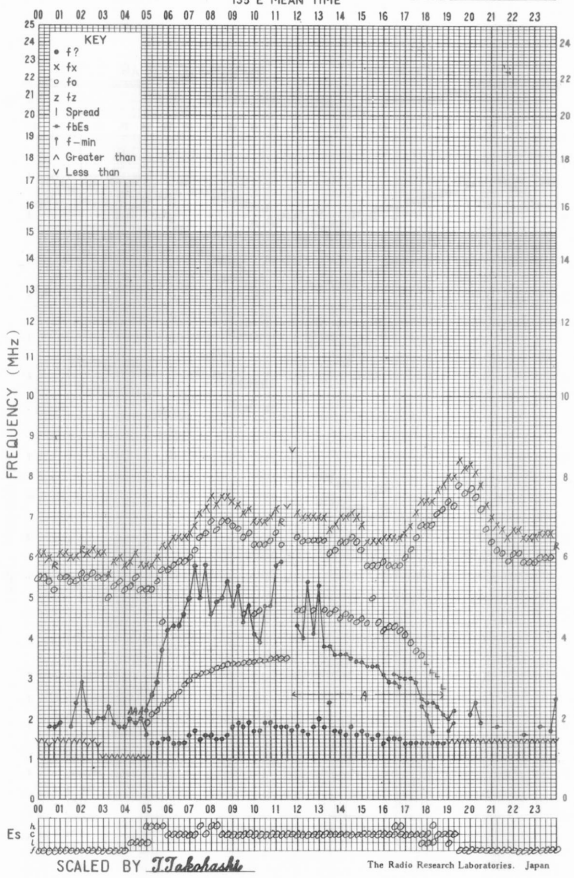

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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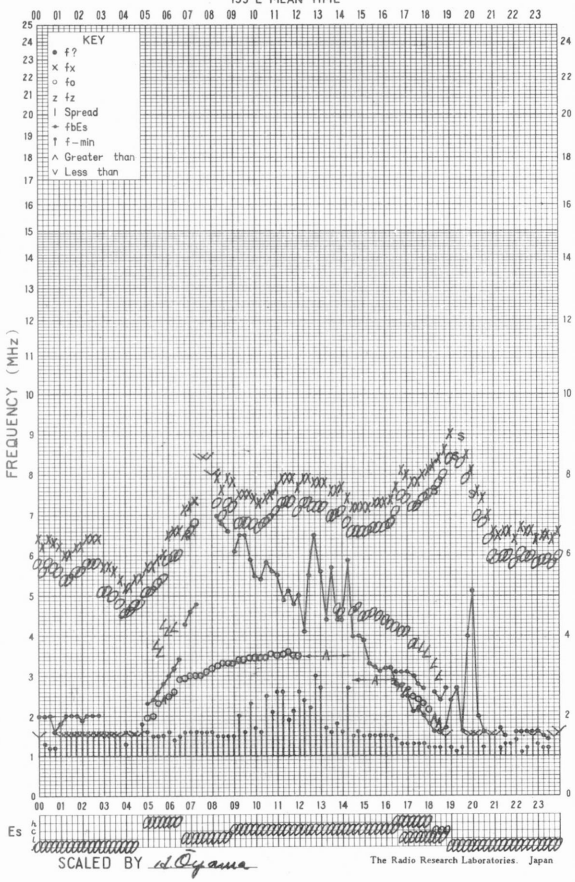

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The Radio Research Laboratories. Japan

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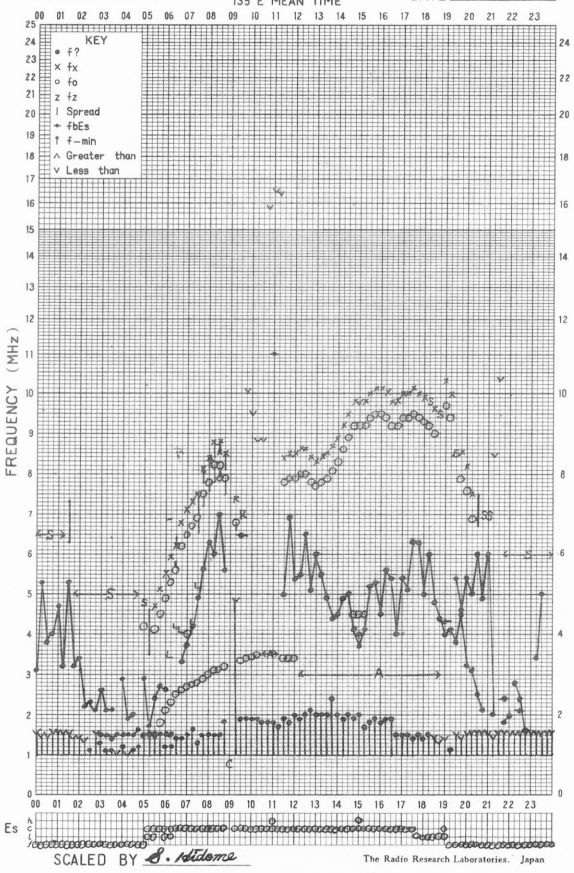

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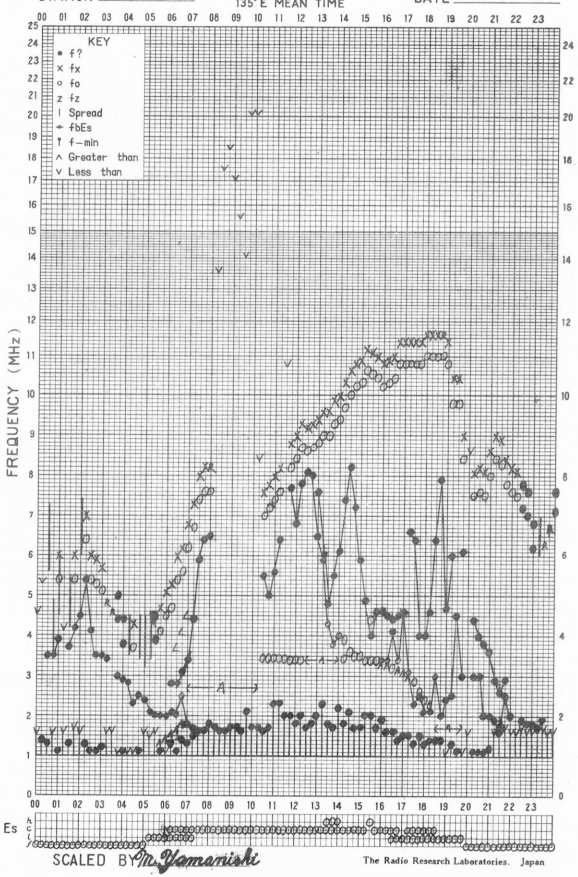

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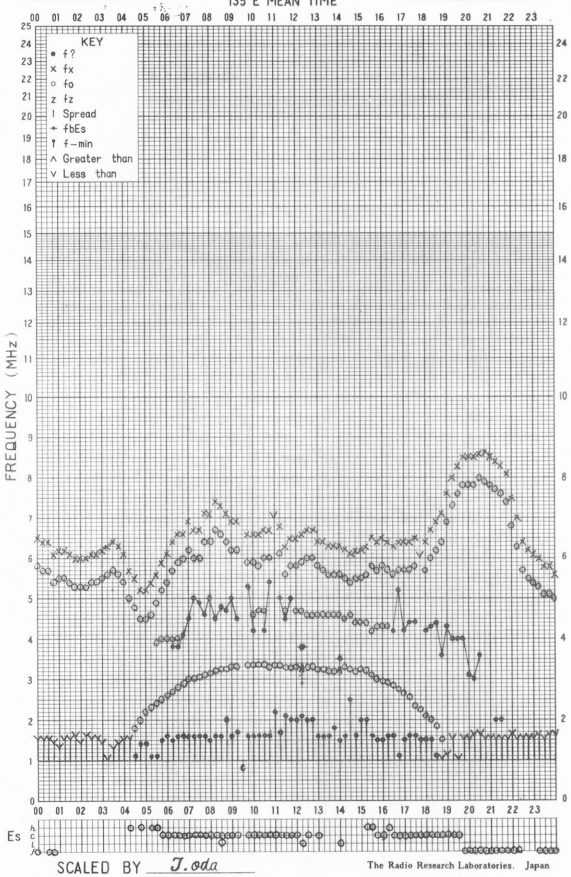

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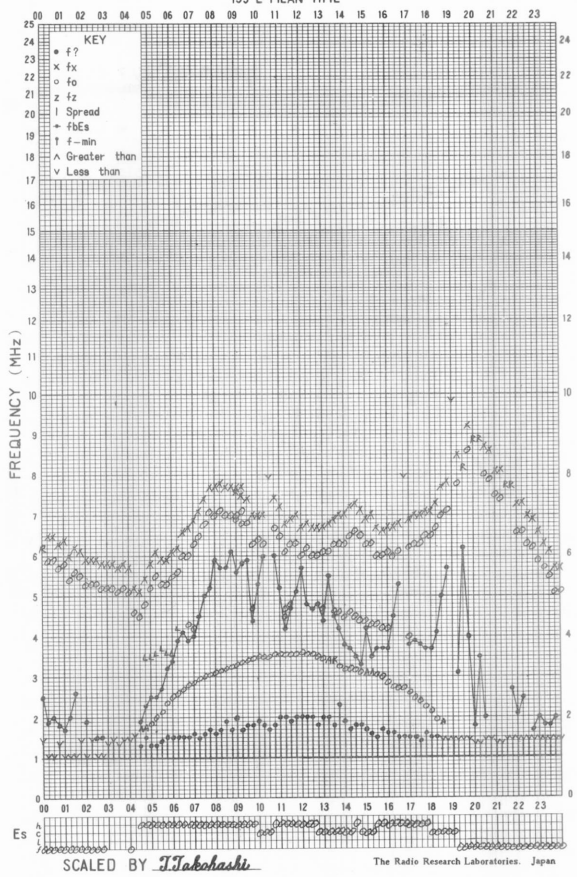

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The Radio Research Laboratories. Japan

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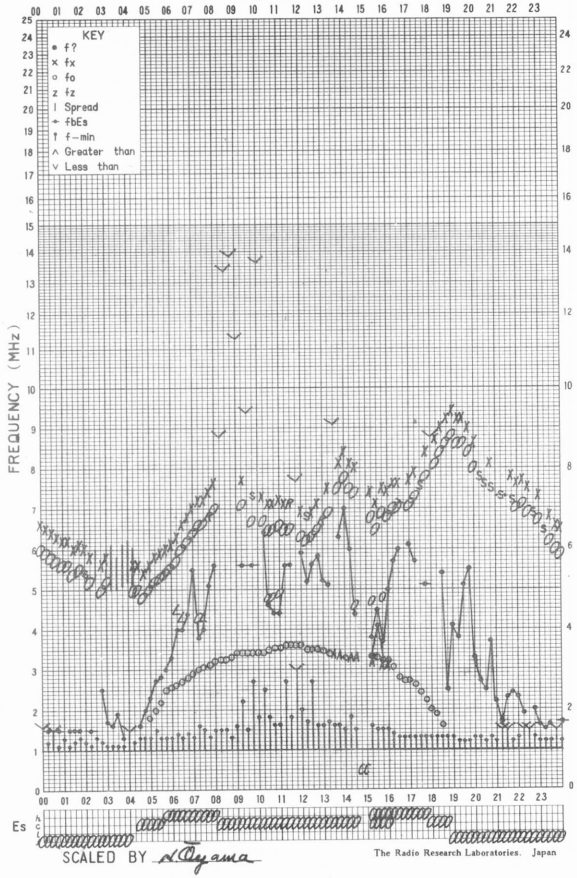

SCALED BY A. Ayama

The Radio Research Laboratories. Japan

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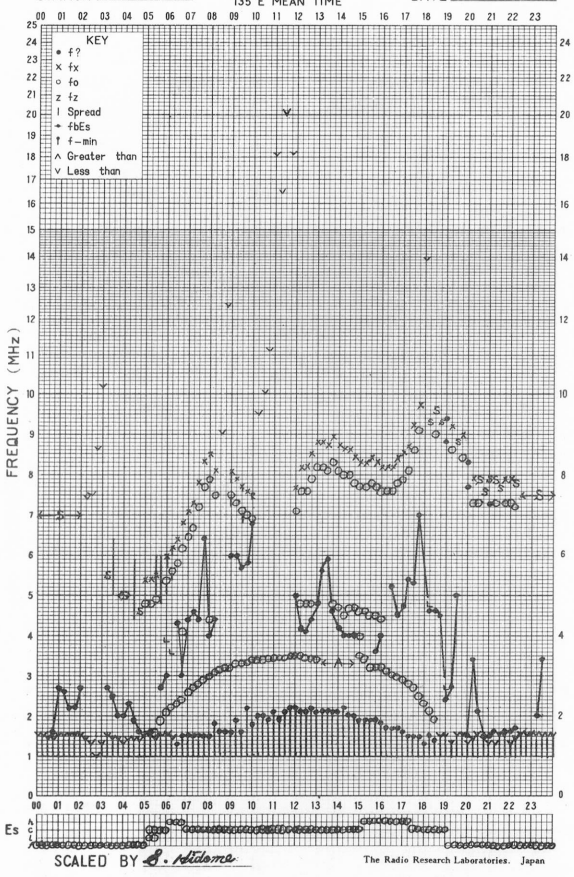

SCALED BY S. Shidoma The Radio Research Laboratories. Japan

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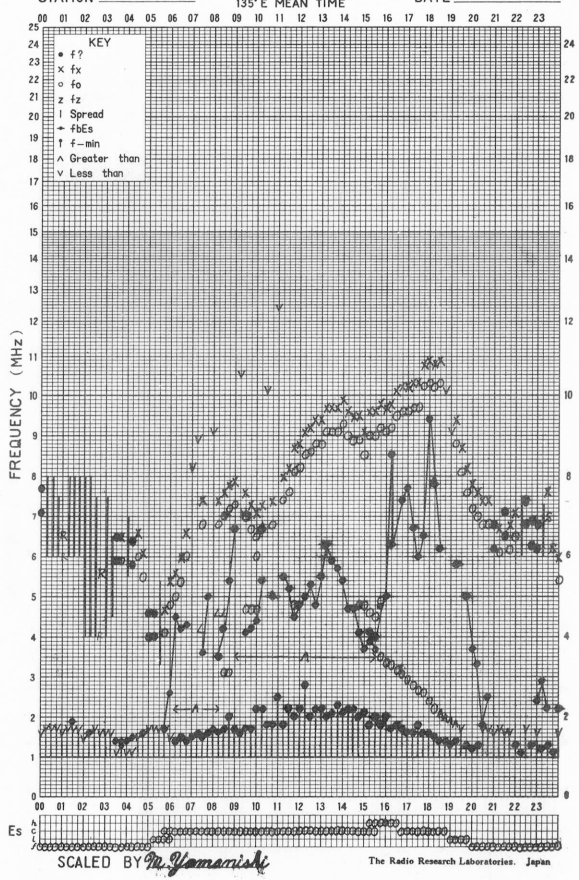
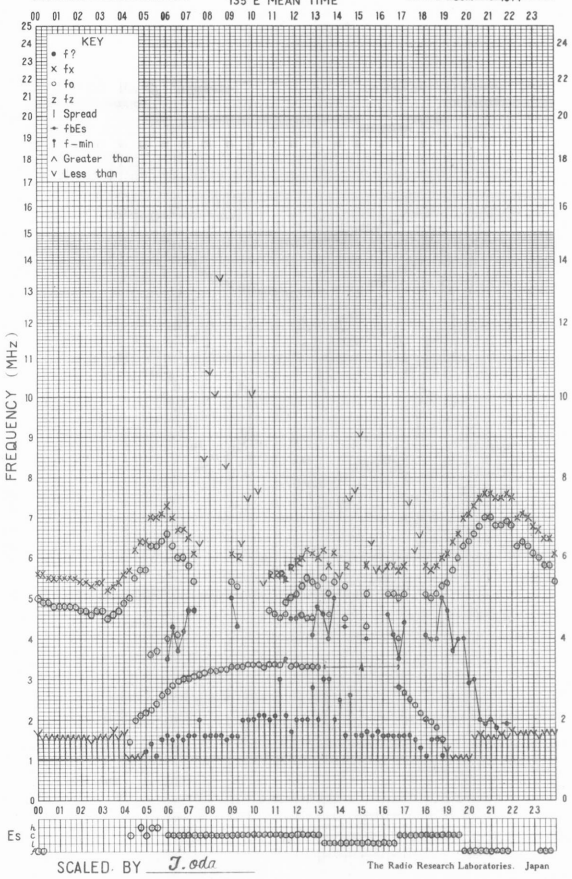


SCALED BY M. Yamanishi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 9. 1974

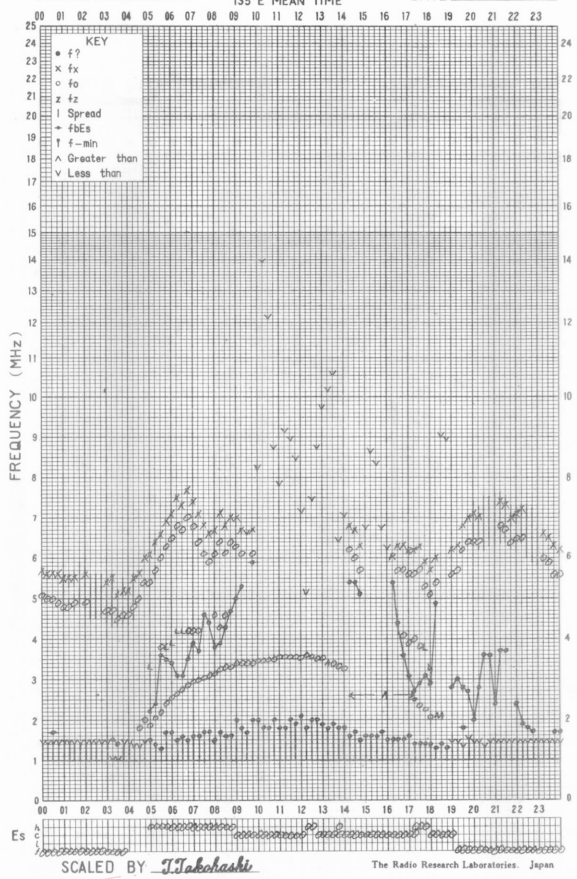


SCALED BY J. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE JUN. 9. 1974

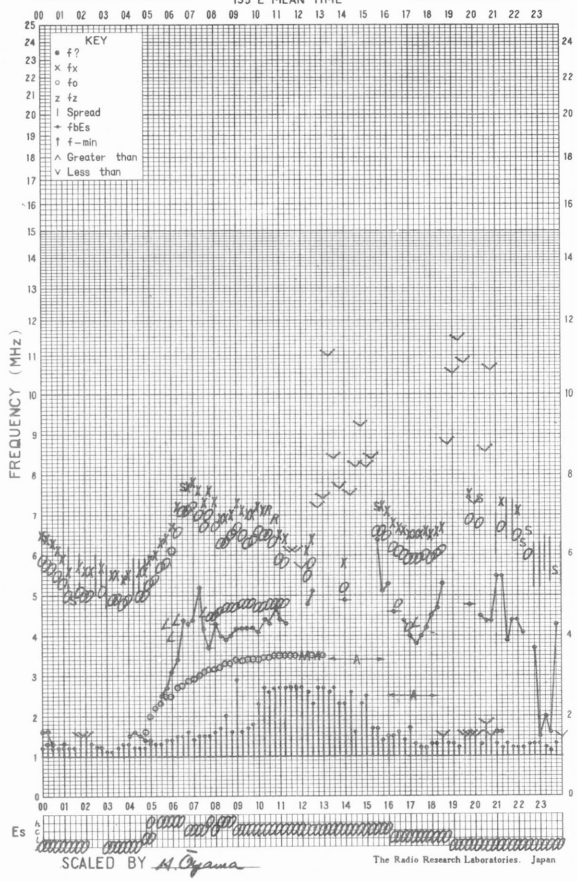


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

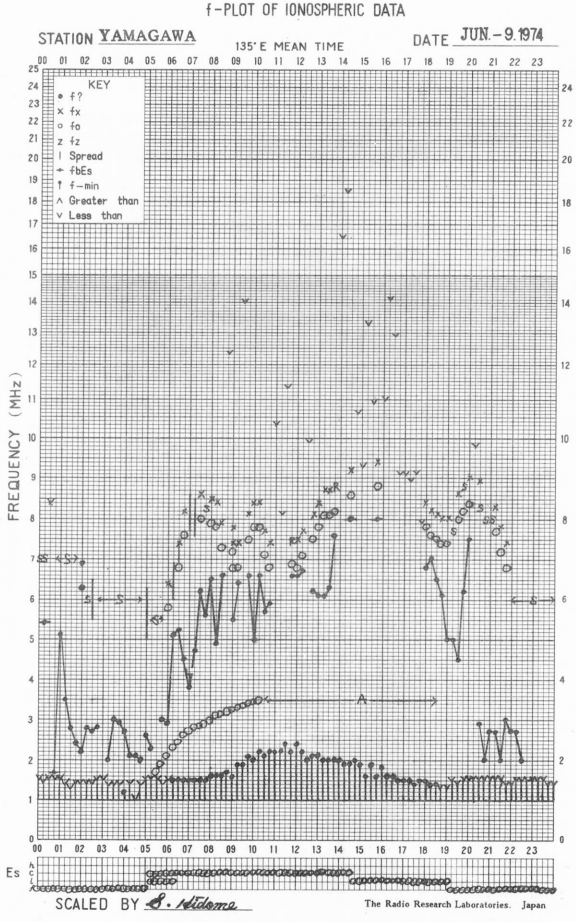
f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 9. 1974



SCALED BY H. Ozawa

The Radio Research Laboratories. Japan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STATION YAMAGAWA
135°E MEAN TIME
DATE JUN.-9.1974
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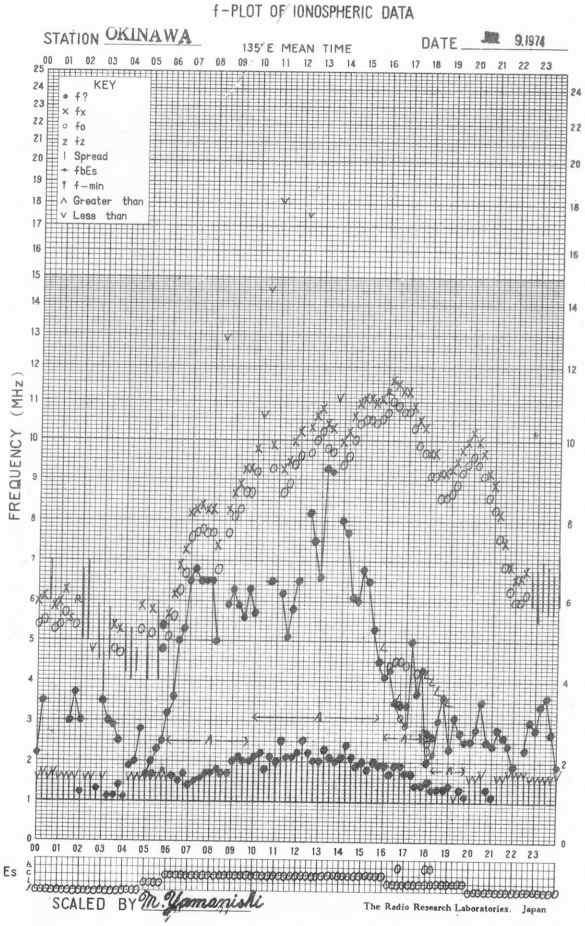
z fz
| Spread
⊣ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY S. Shidome
The Radio Research Laboratories. Japan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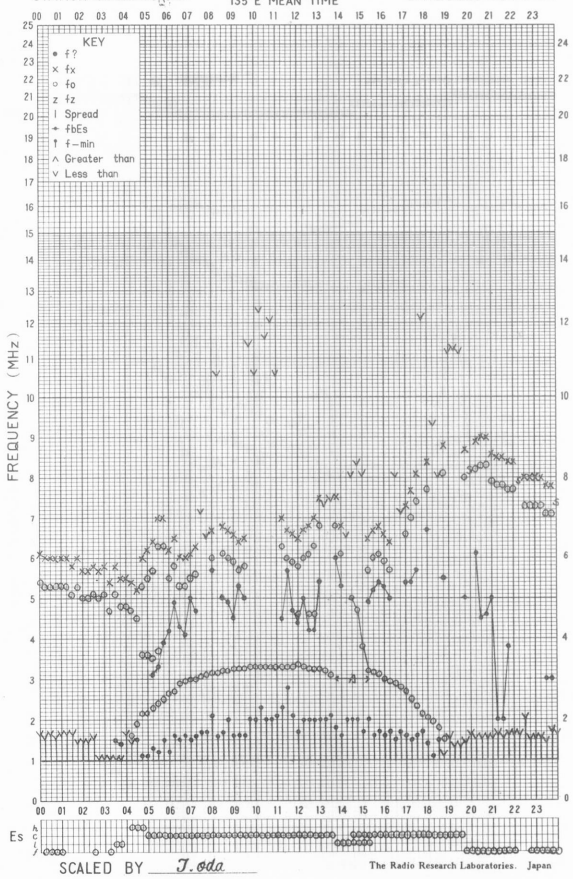
| Spread
⊣ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 10. 1974



SCALED BY T. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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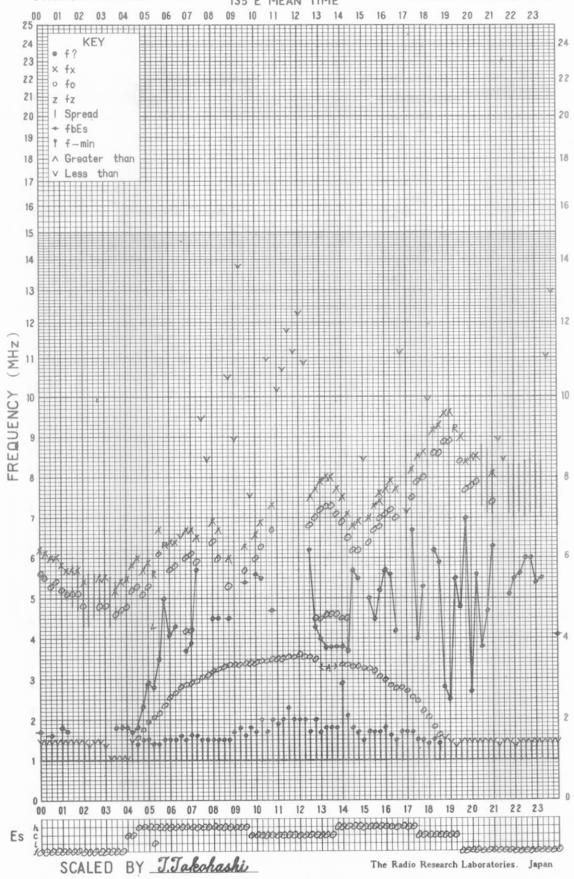
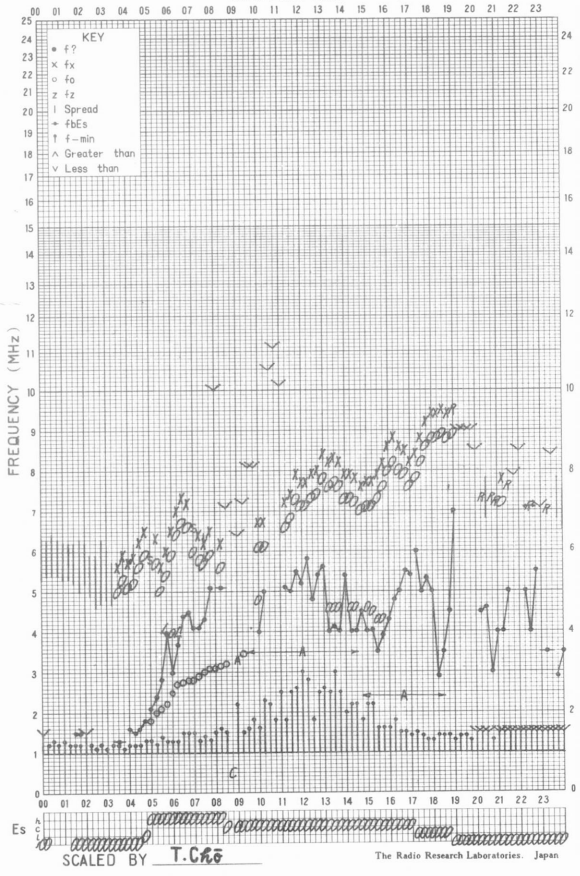


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 10. 1974



SCALED BY T. Cho

The Radio Research Laboratories. Japan

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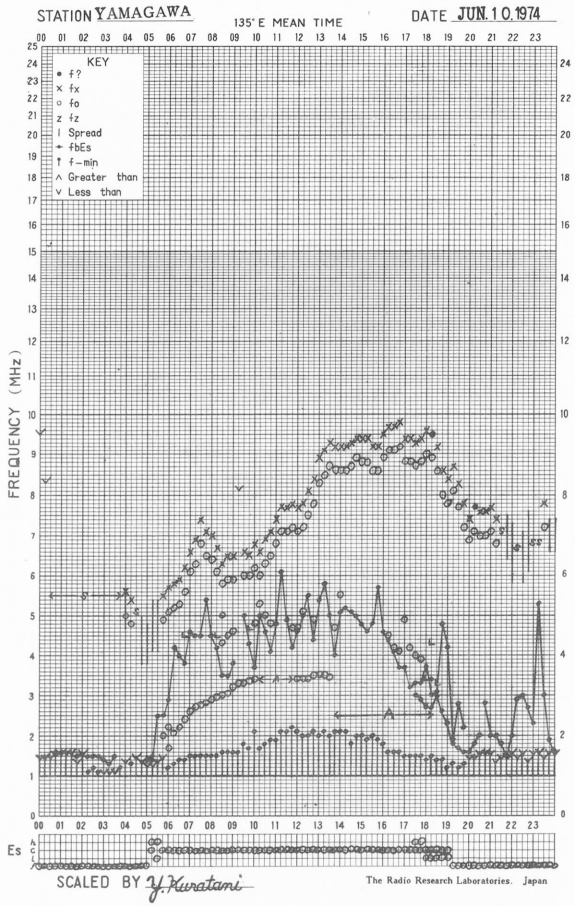
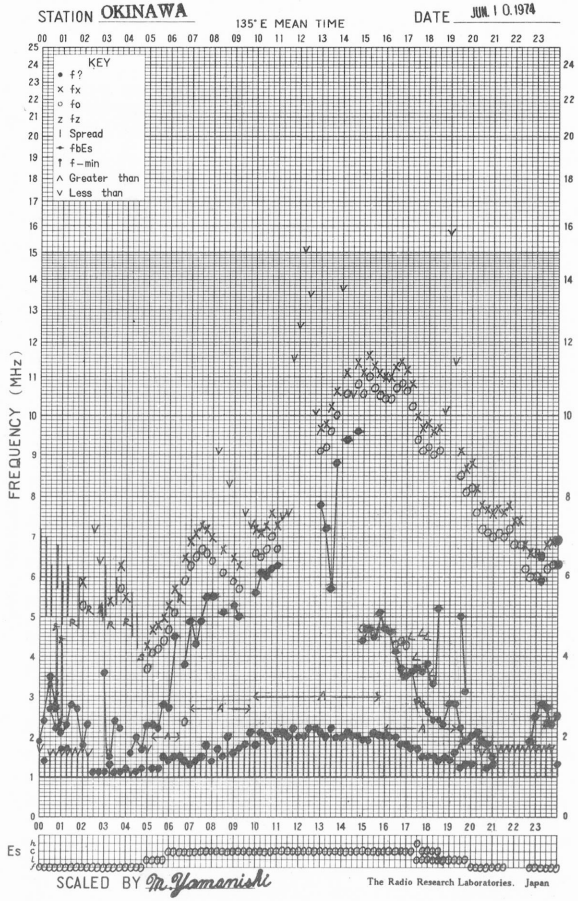
STATION YAMAGAWA 135°E MEAN TIME DATE JUN. 10. 1974



SCALED BY Y. Kuratani The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION OKINAWA 135°E MEAN TIME DATE JUN. 10. 1974



SCALED BY M. Yamanishi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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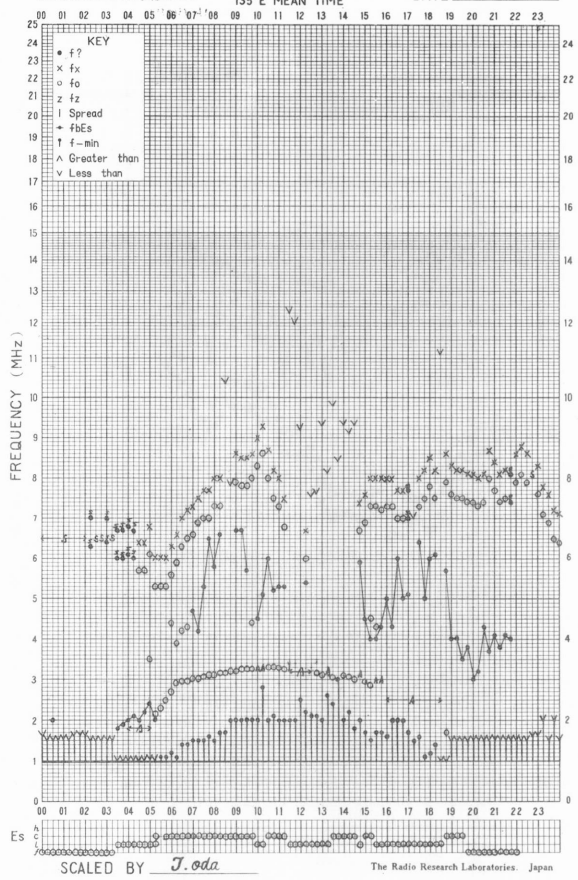

SCALED BY J. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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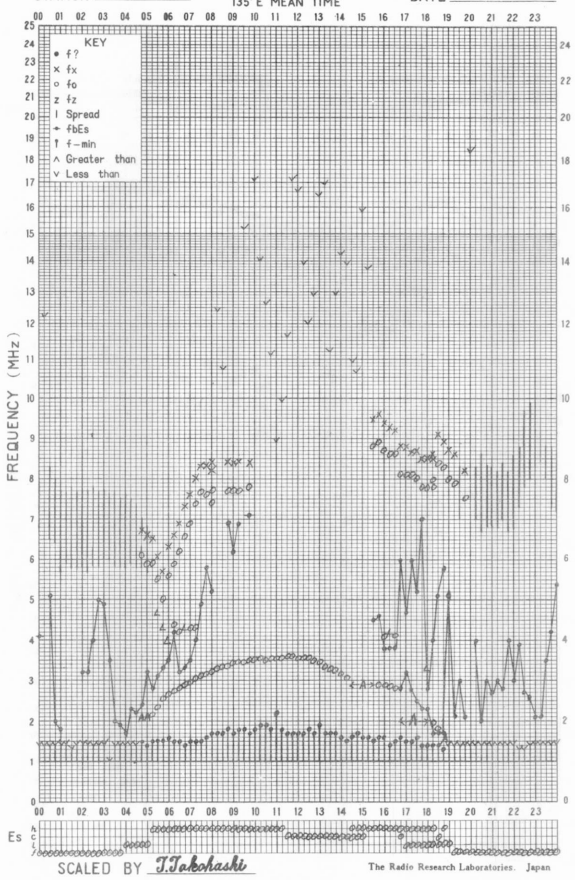
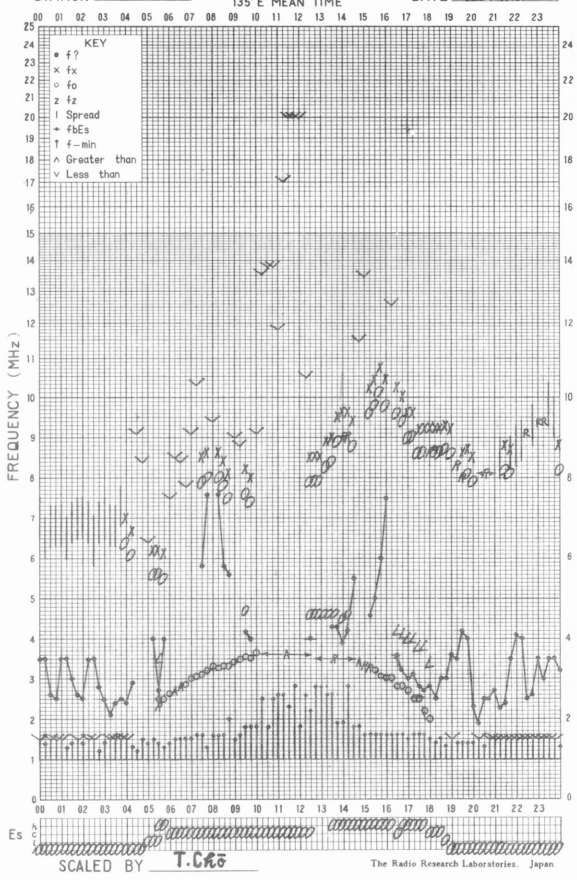


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

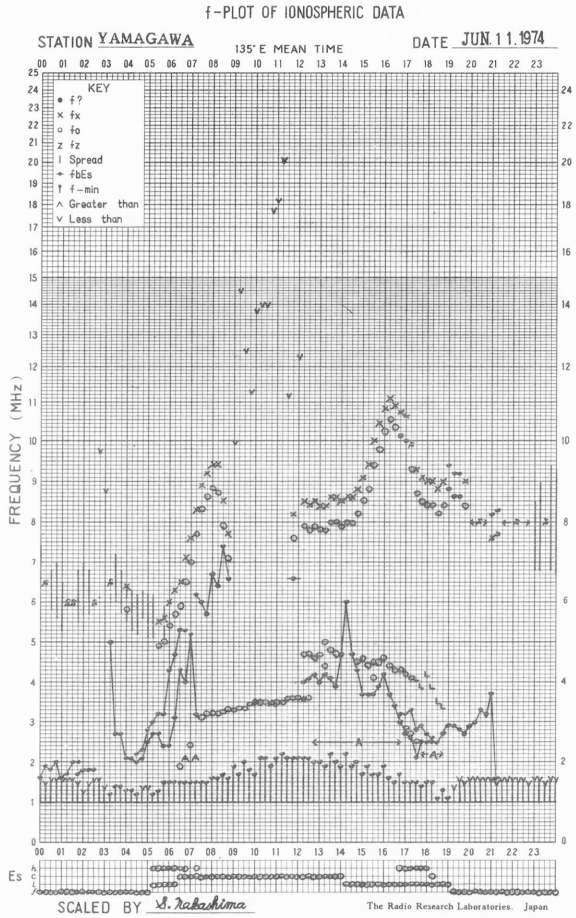
f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 11. 1974



SCALED BY T. Chō

The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE JUN. 1 1. 1974
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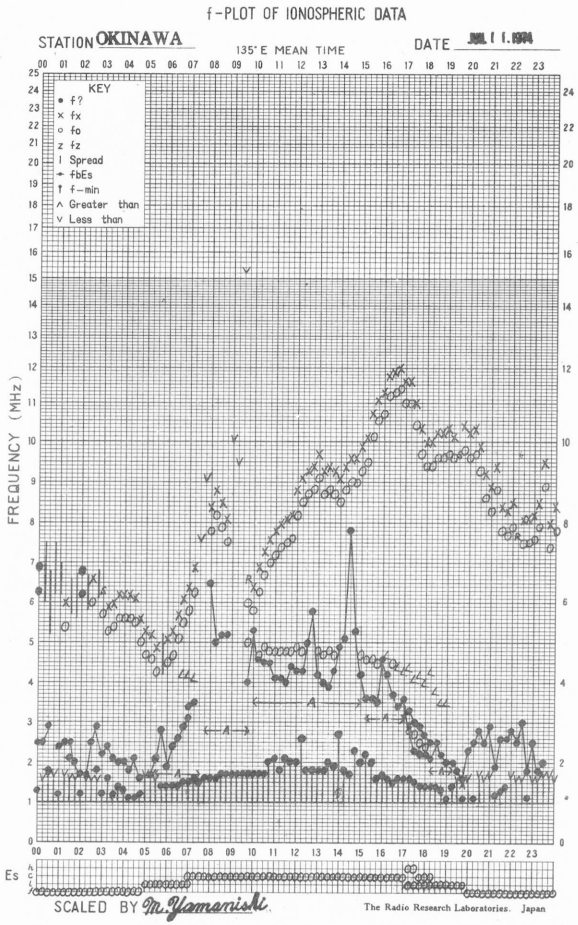
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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DATE JUN. 1 1. 1974
KEY
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FREQUENCY (MHz)
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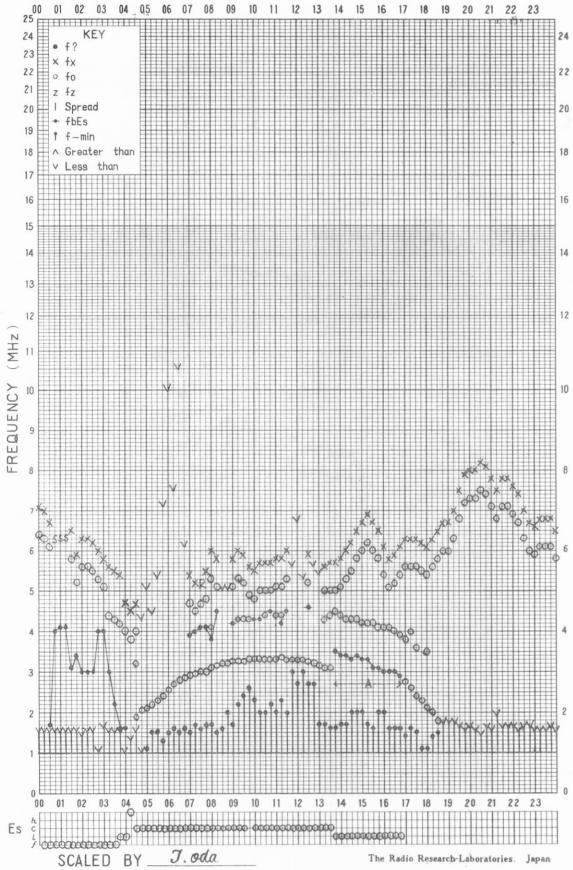
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 12. 1974



SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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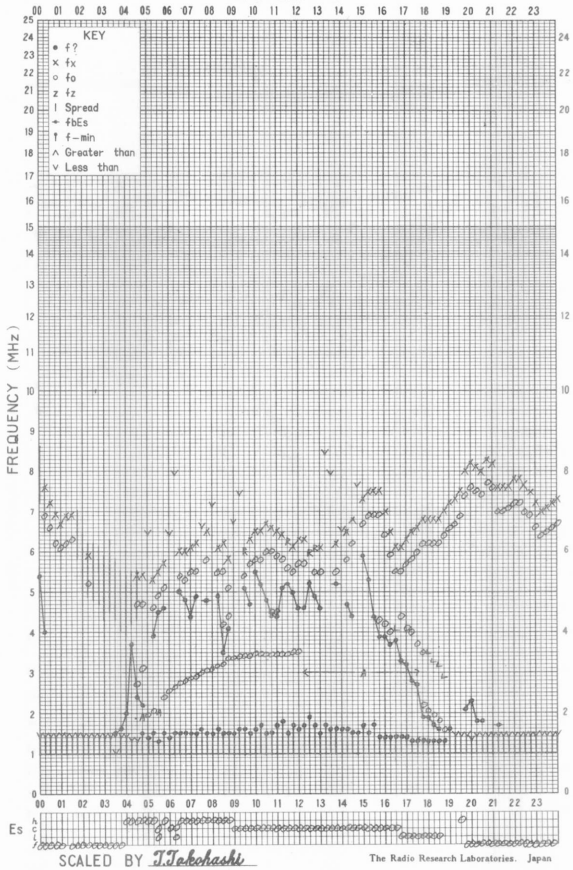

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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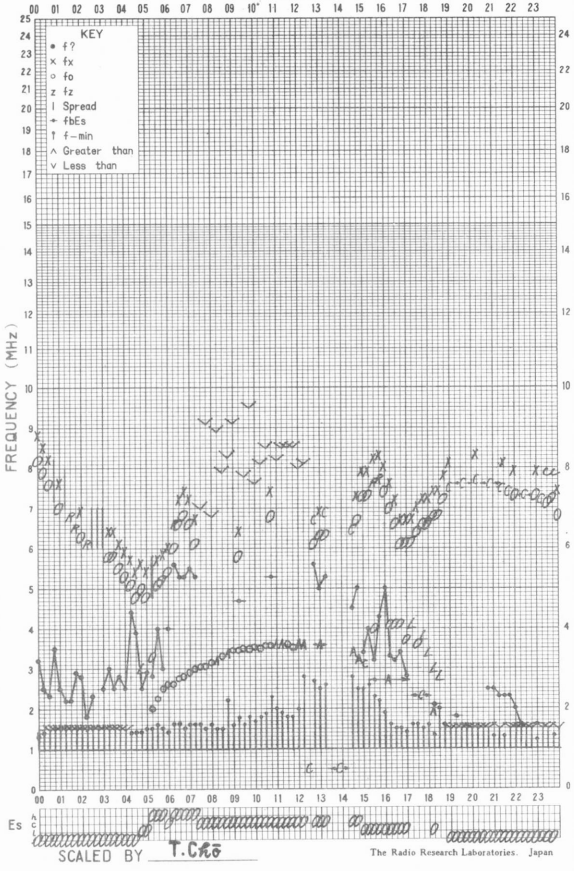
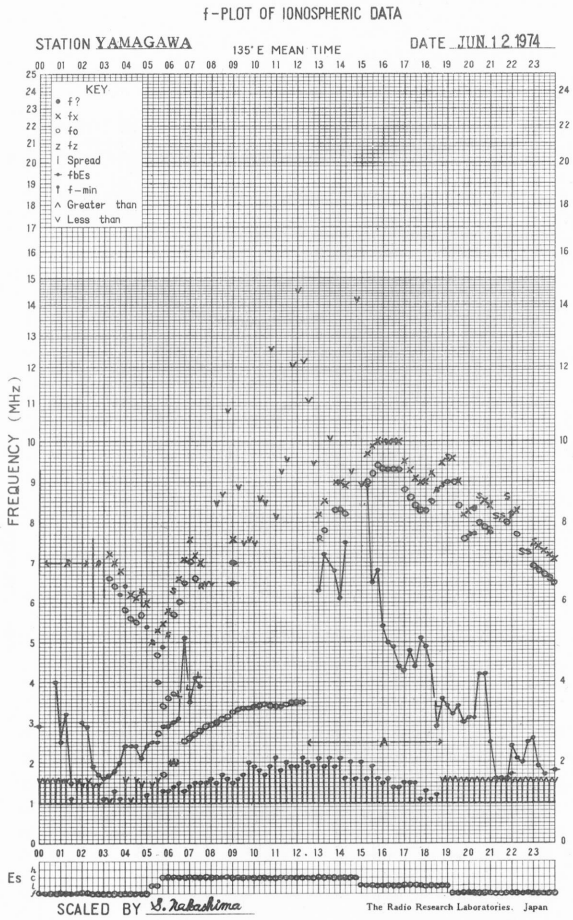


SCALED BY T. Oko

The Radio Research Laboratories. Japan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DATE JUN. 12. 1974
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FREQUENCY (MHz)
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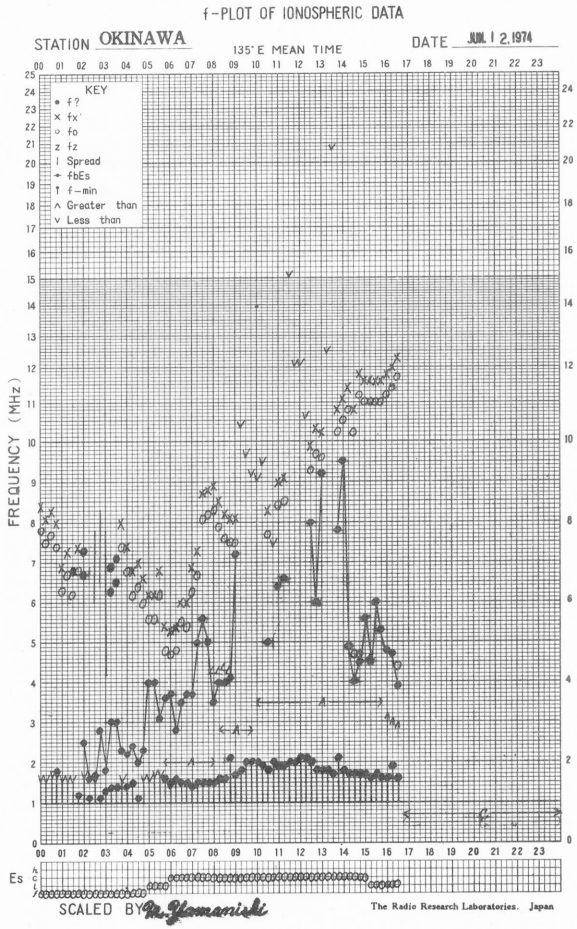
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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DATE JUN. 12. 1974
KEY
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Spread
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Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

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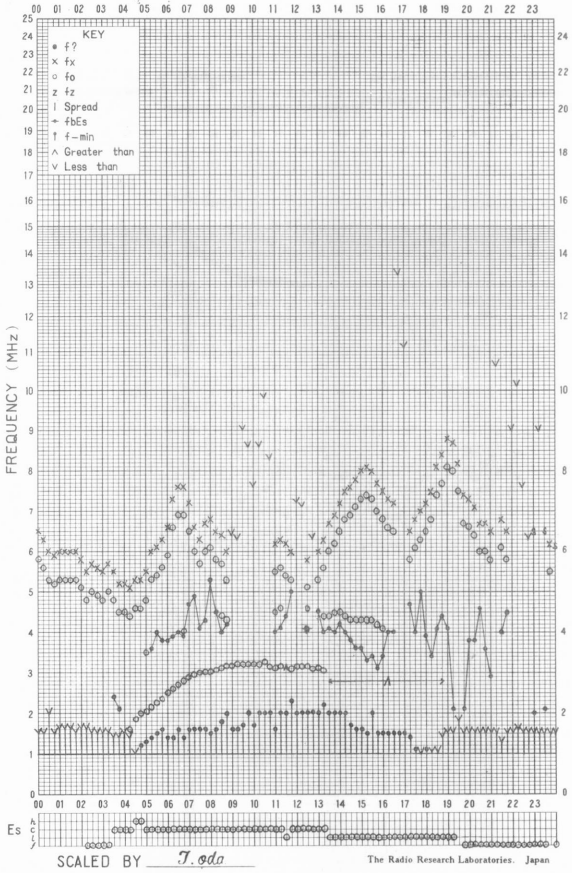

SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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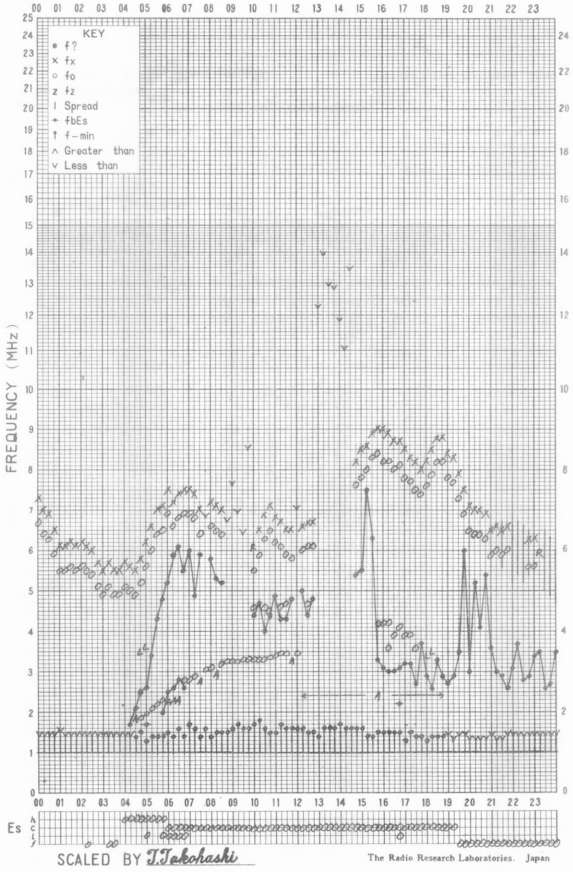

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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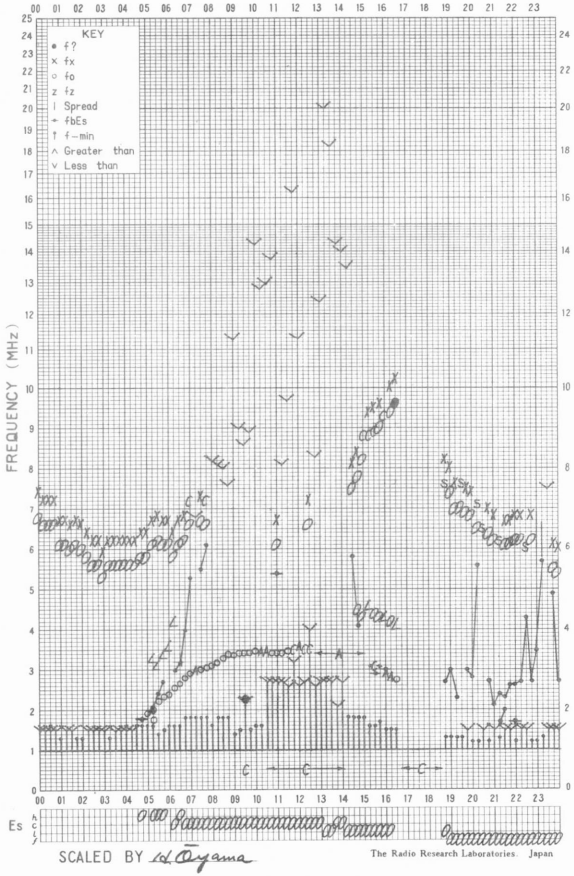
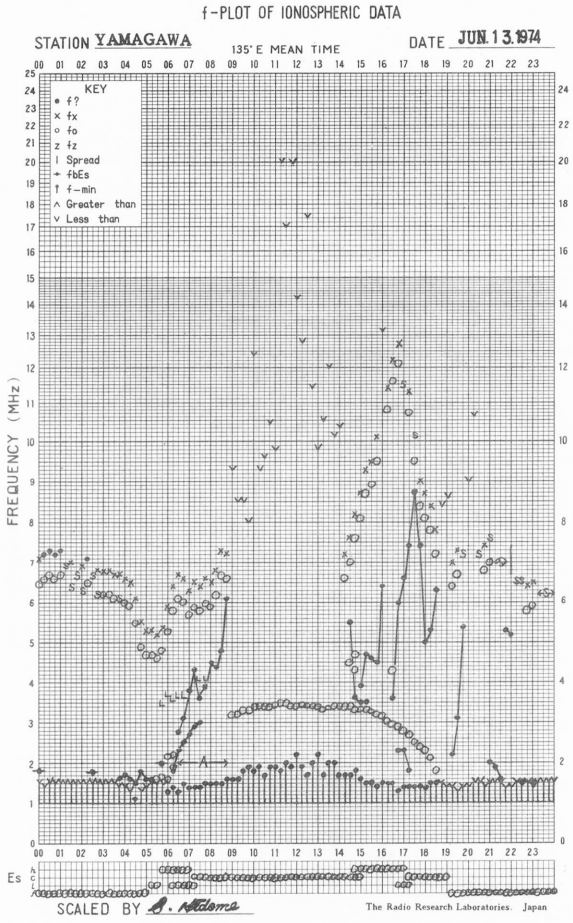


SCALED BY K. Oyama

The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE JUN. 13. 1974
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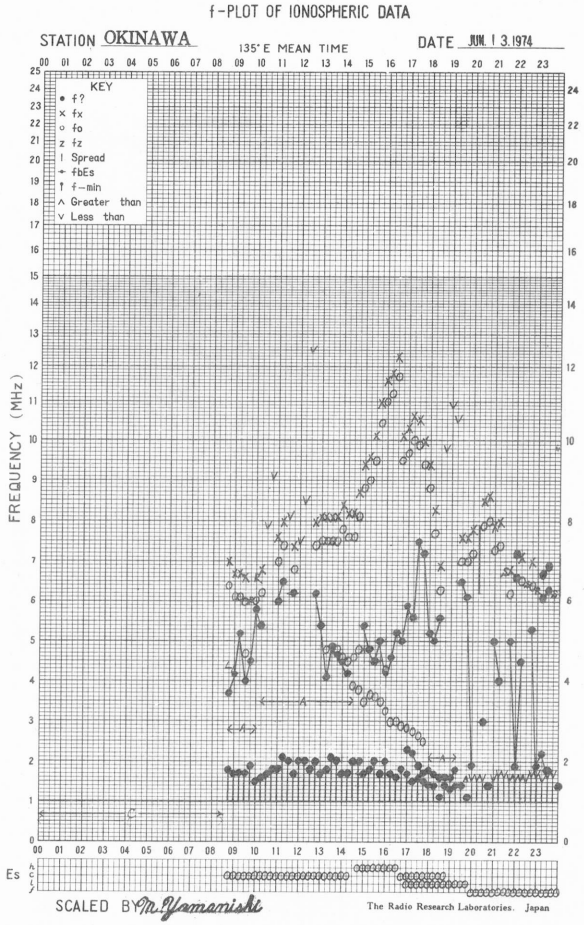
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY S. Kitdoma
The Radio Research Laboratories. Japan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135° E MEAN TIME
DATE JUN. 13. 1974
KEY
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× fx
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| Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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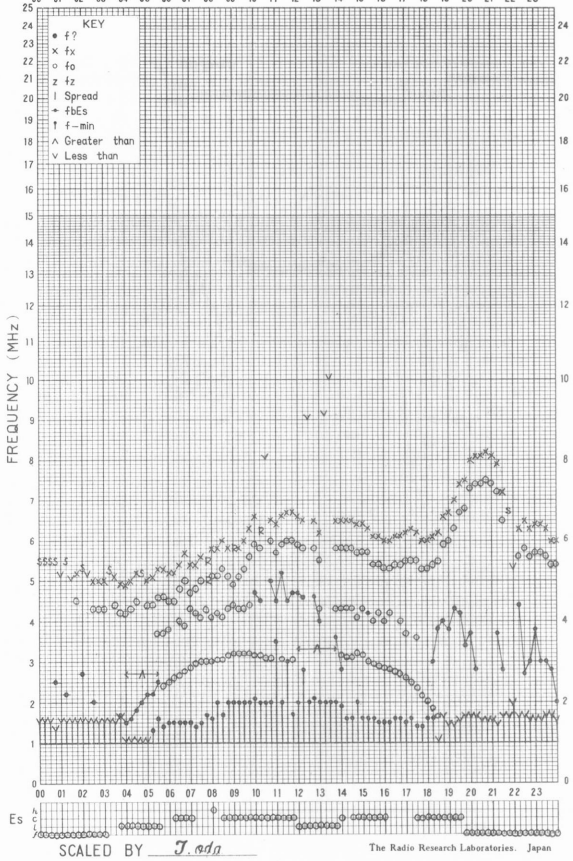

SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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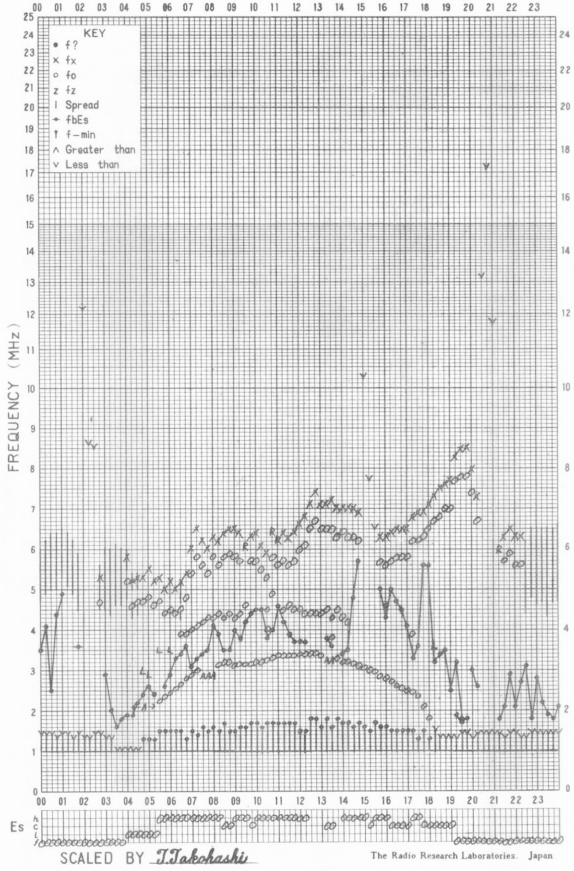

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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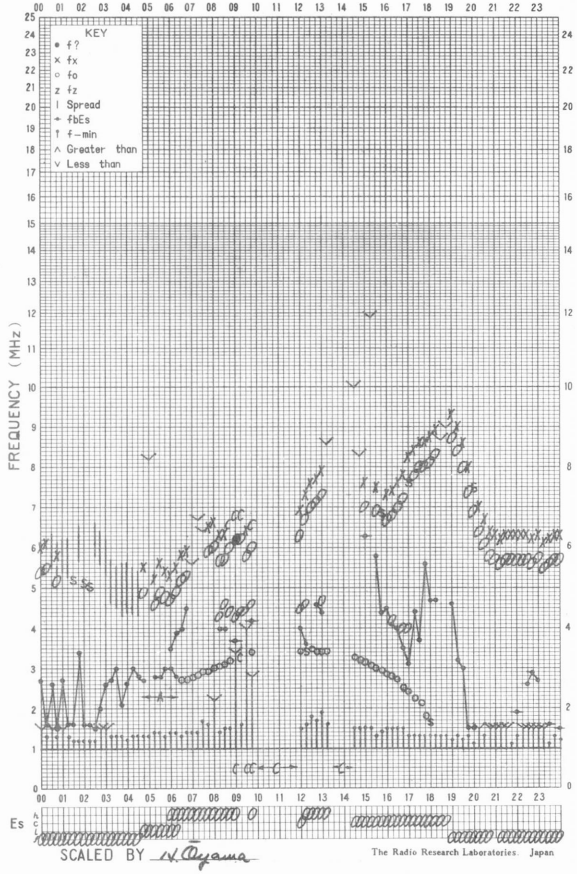

SCALED BY N. Ayama

The Radio Research Laboratories. Japan

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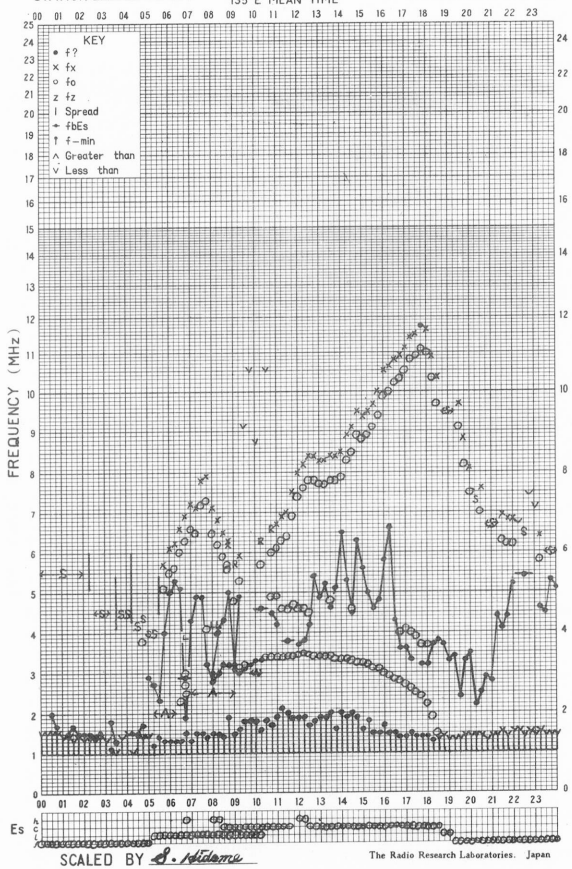

SCALED BY S. Shidome

The Radio Research Laboratories. Japan

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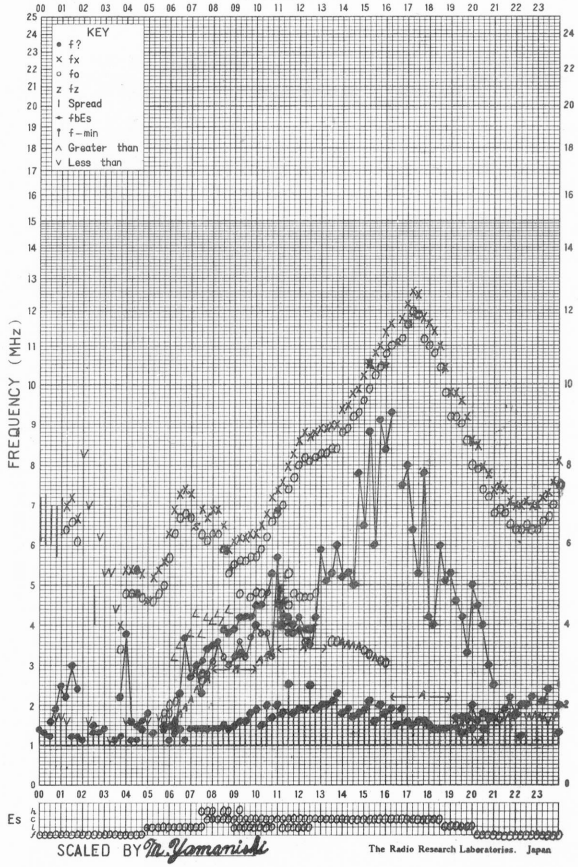

SCALED BY M. Yamanishi

The Radio Research Laboratories. Japan

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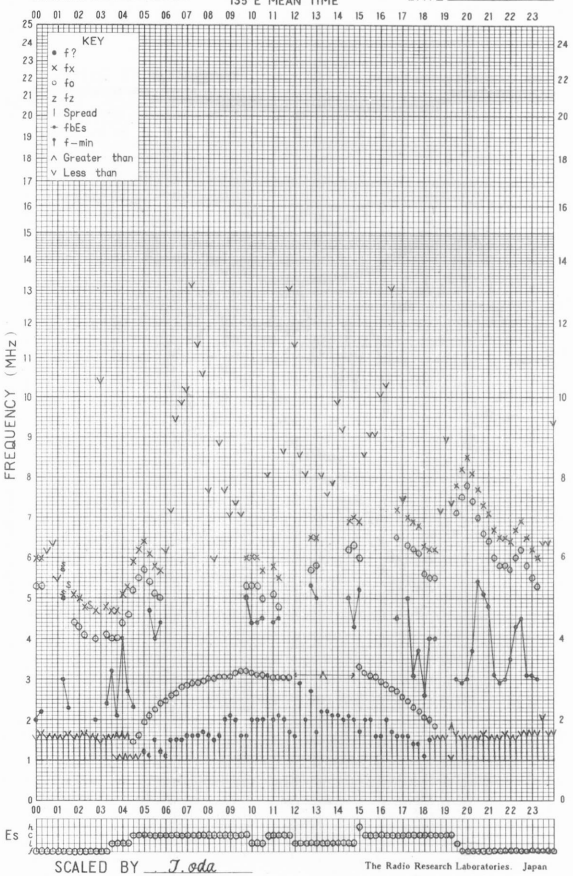

SCALED BY T. oda

The Radio Research Laboratories. Japan

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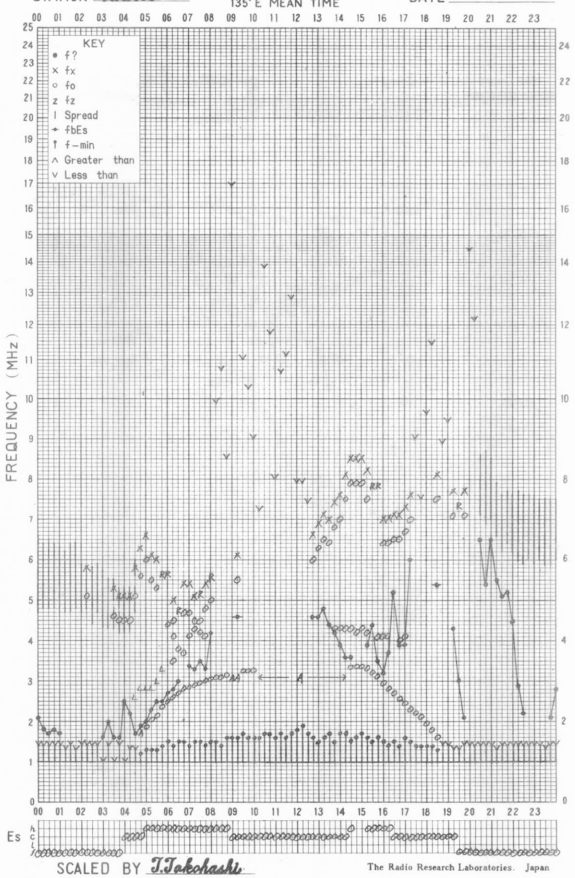

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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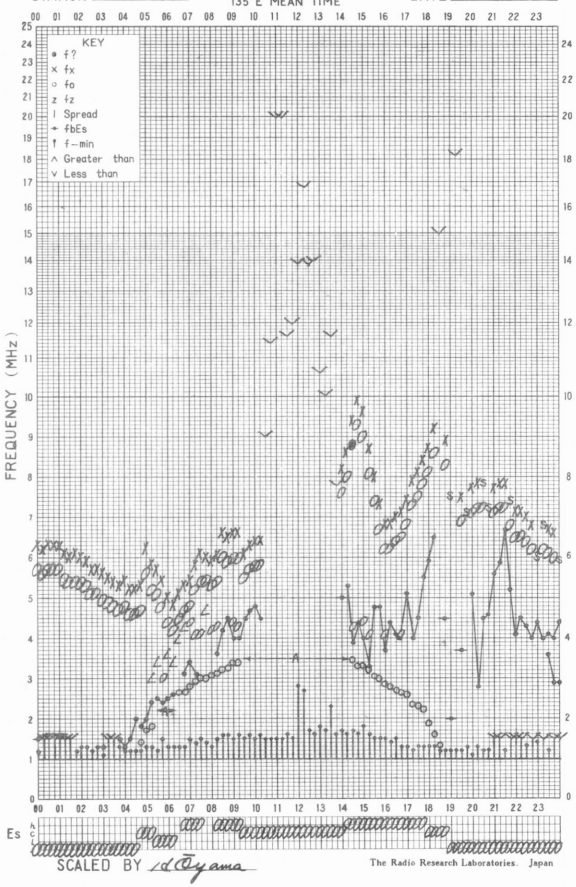

SCALED BY A. Ayama

The Radio Research Laboratories. Japan

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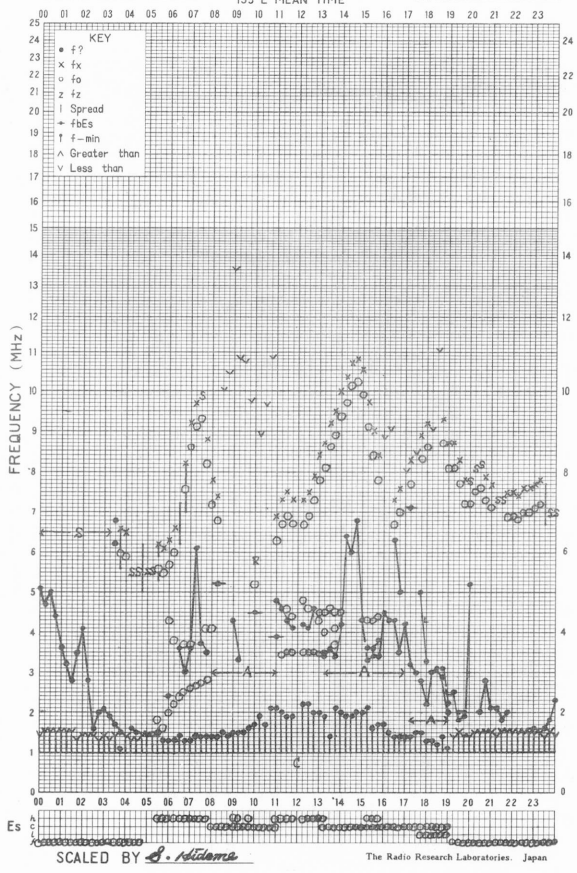

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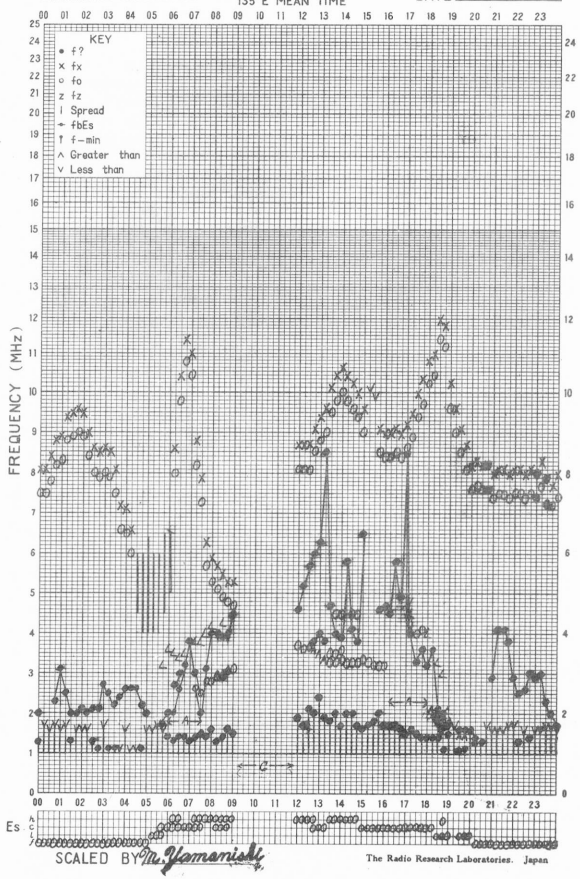

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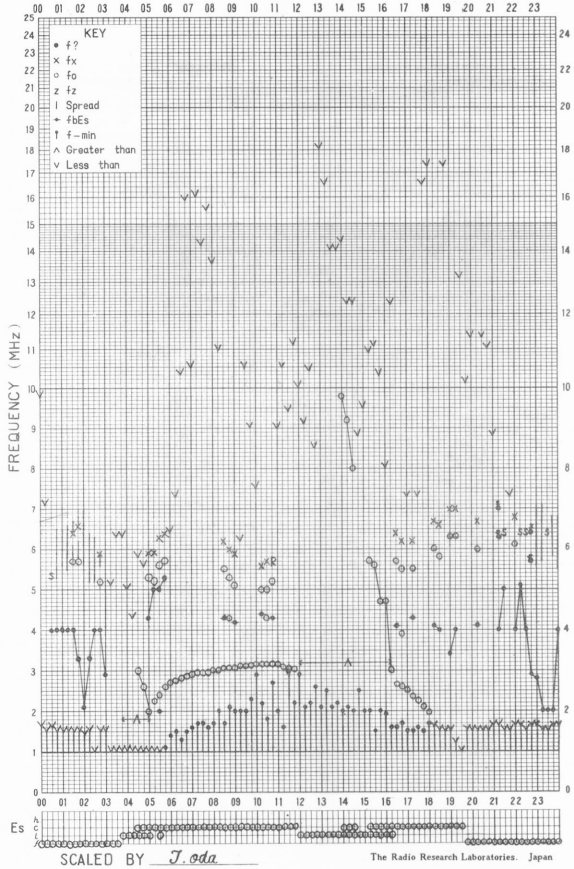

SCALED BY J. oda

The Radio Research Laboratories. Japan

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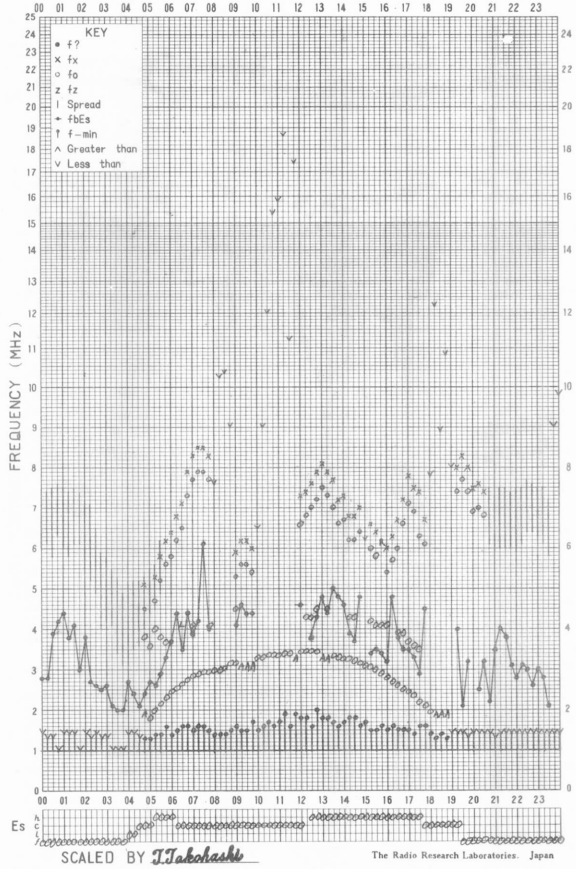

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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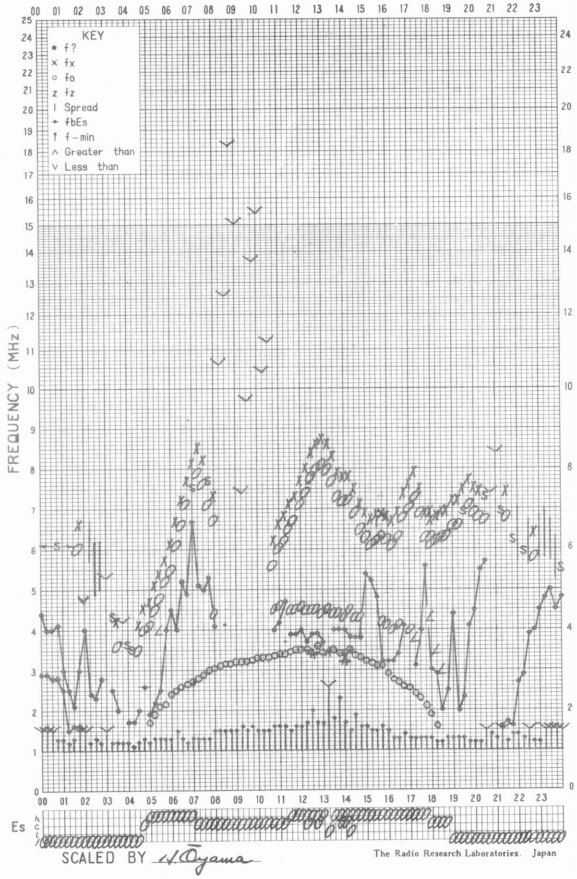

SCALED BY N. Ogawa

The Radio Research Laboratories. Japan

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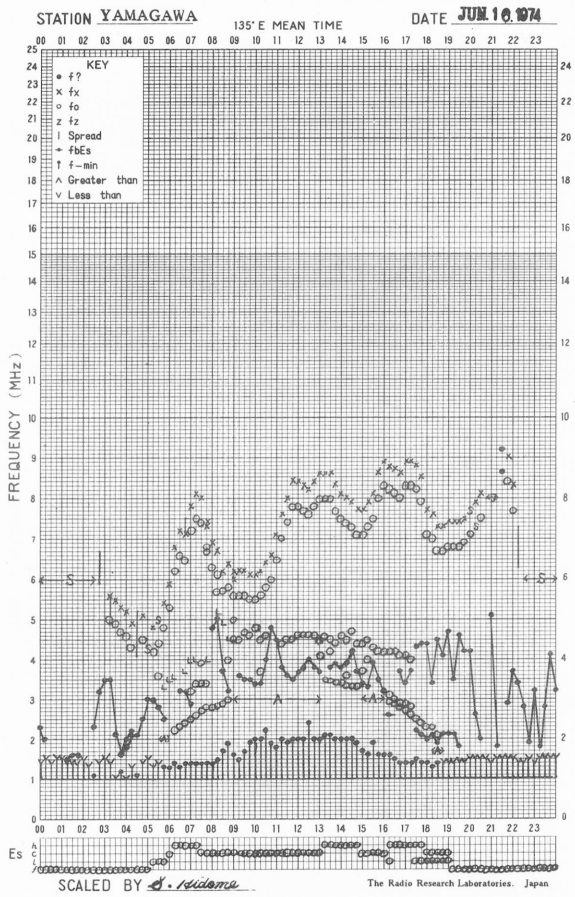

SCALED BY S. Isidoro

The Radio Research Laboratories. Japan

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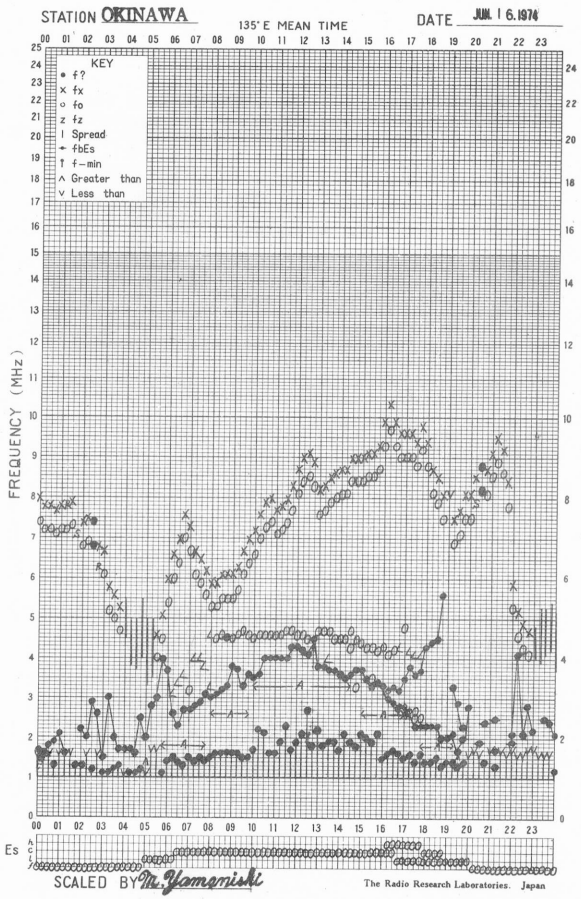

SCALED BY M. Yamanishi

The Radio Research Laboratories. Japan

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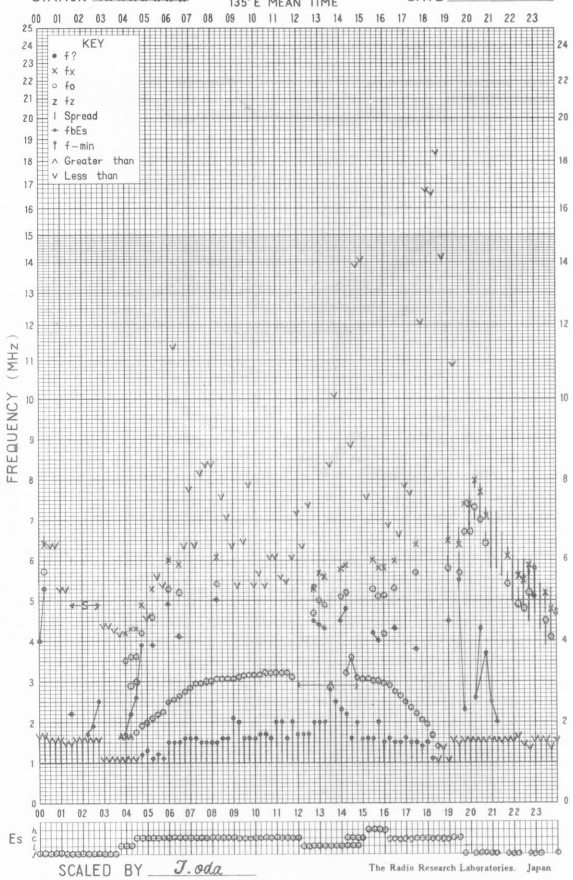

SCALED BY J. oda

The Radio Research Laboratories. Japan

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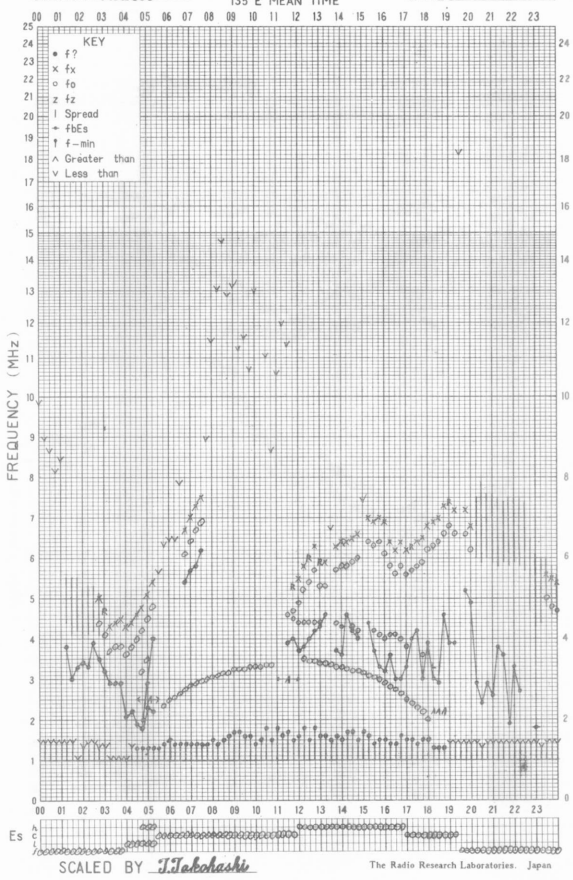
STATION AKITA 135°E MEAN TIME DATE JUN. 17. 1974

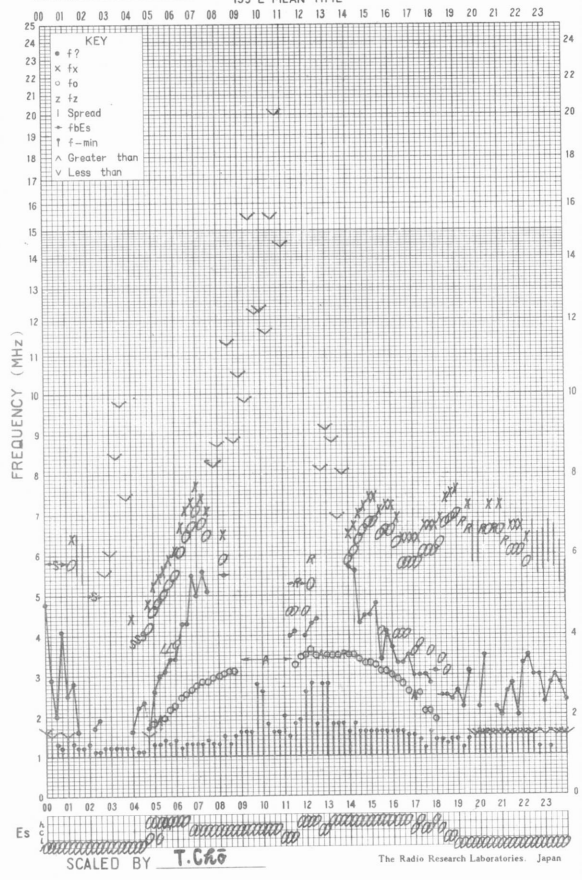


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

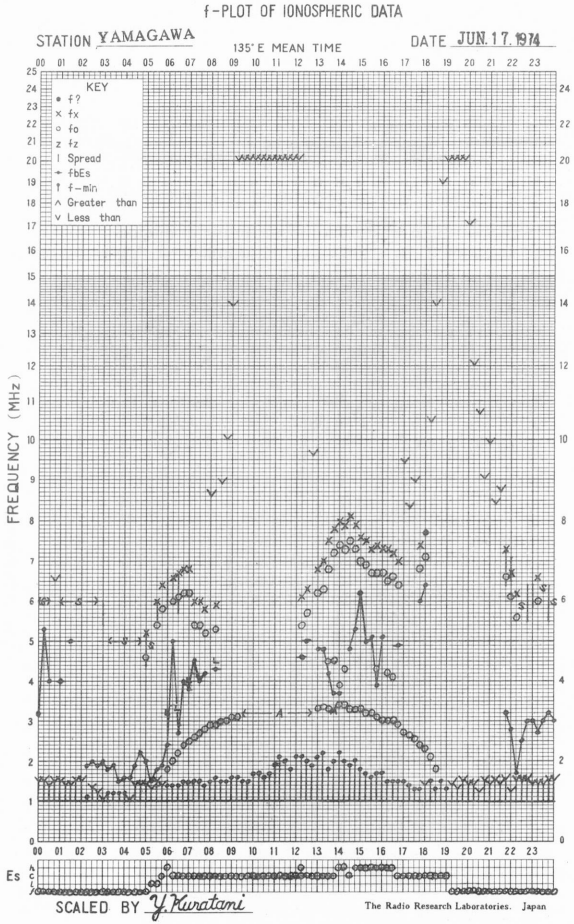
f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 17. 1974



SCALED BY T. Chō

The Radio Research Laboratories. Japan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STATION YAMAGAWA
135° E MEAN TIME
DATE JUN. 17. 1974
KEY
f?
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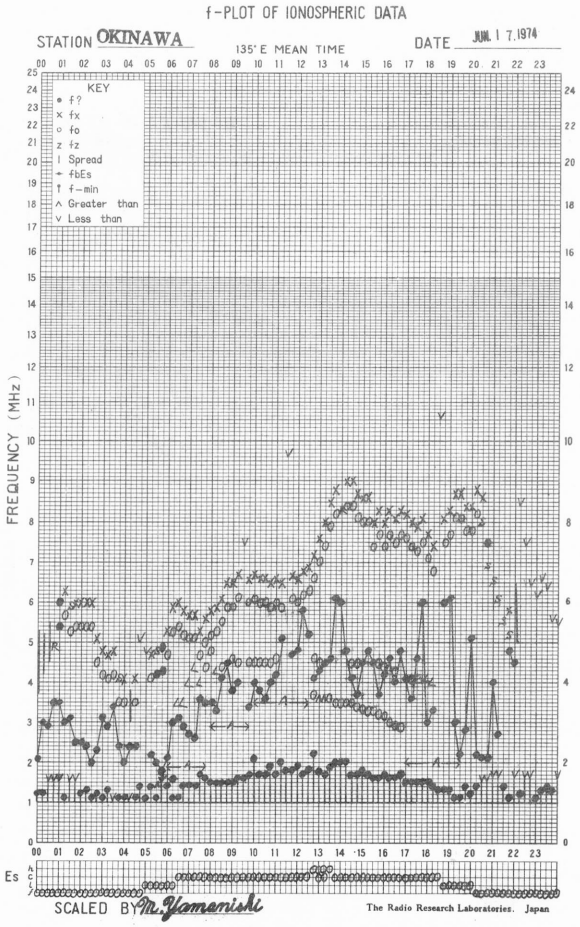
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY Y. Kuratani
The Radio Research Laboratories. Japan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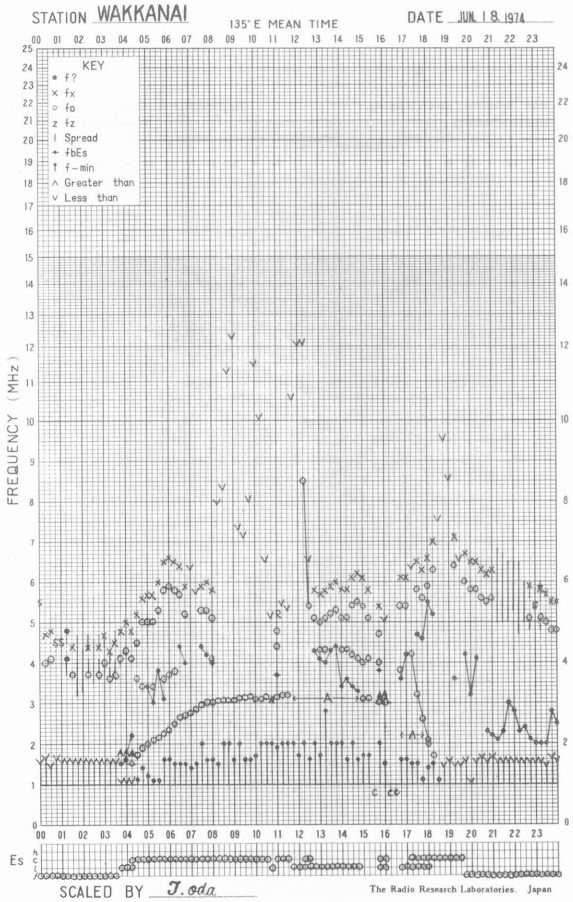
135° E MEAN TIME
DATE JUN. 17. 1974
KEY
f?
fx
fo
fz
Spread
fbEs
f-min
Greater than
Less than
FREQUENCY (MHz)
Es
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 18. 1974



SCALED BY T. oda

The Radio Research Laboratories. Japan

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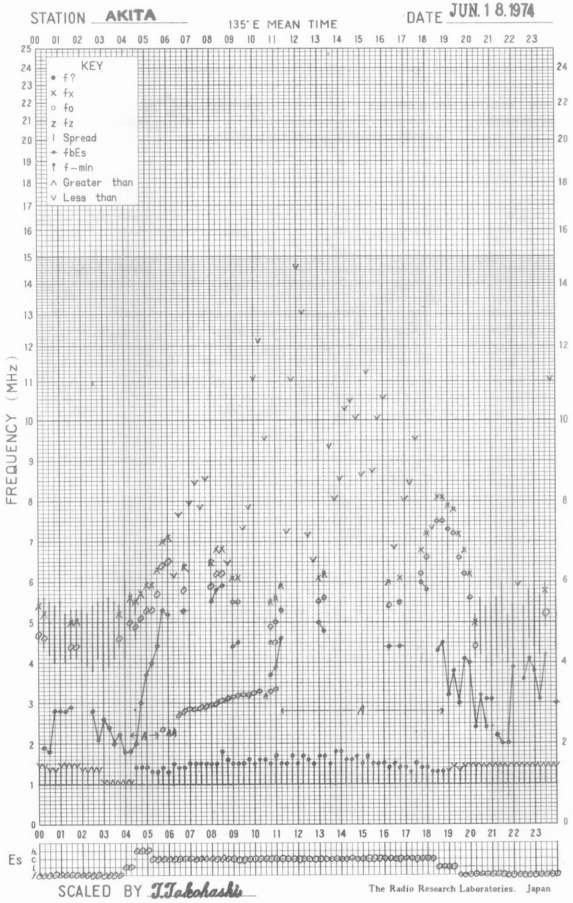

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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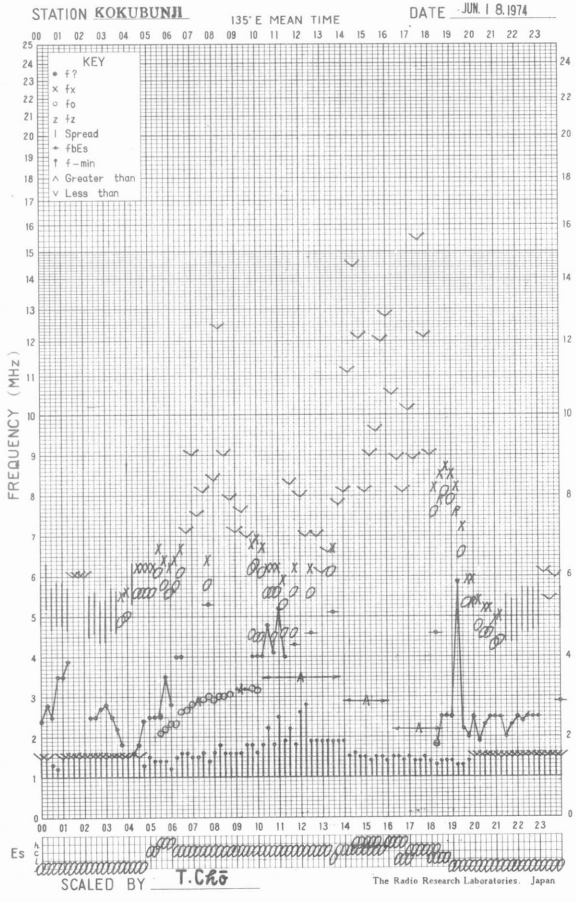
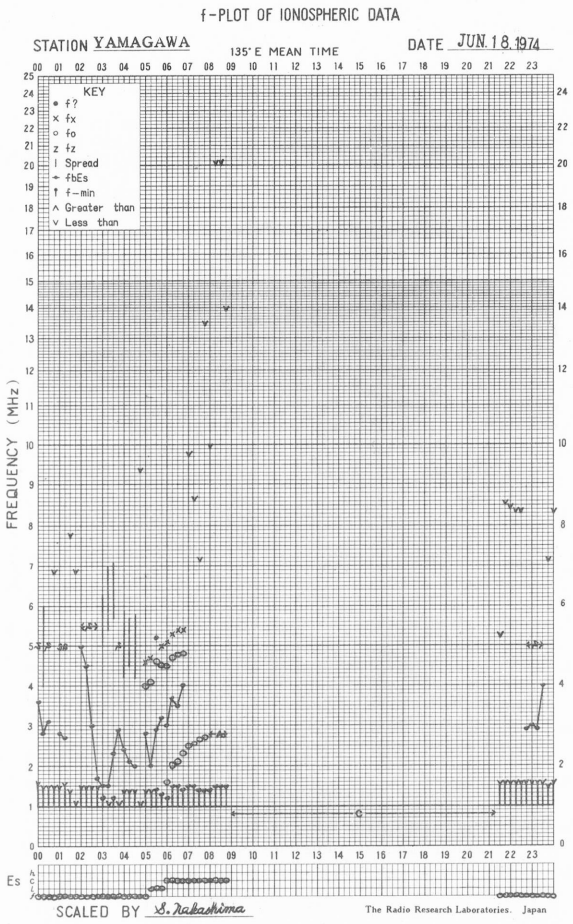


SCALED BY T. Ichō

The Radio Research Laboratories. Japan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STATION YAMAGAWA
135°E MEAN TIME
DATE JUN. 18. 1974
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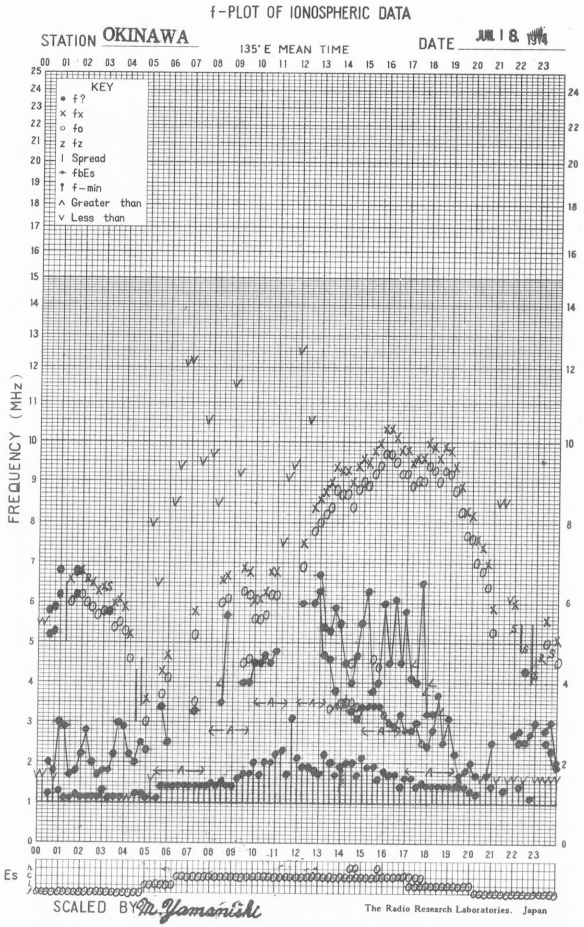
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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DATE JUN. 18. 1974
KEY
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v Less than
FREQUENCY (MHz)
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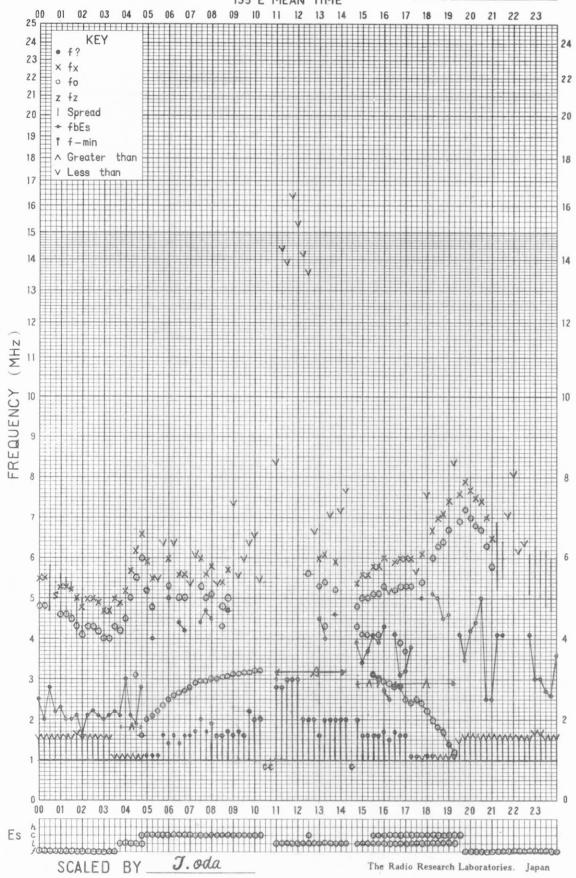
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 19. 1974



SCALED BY J. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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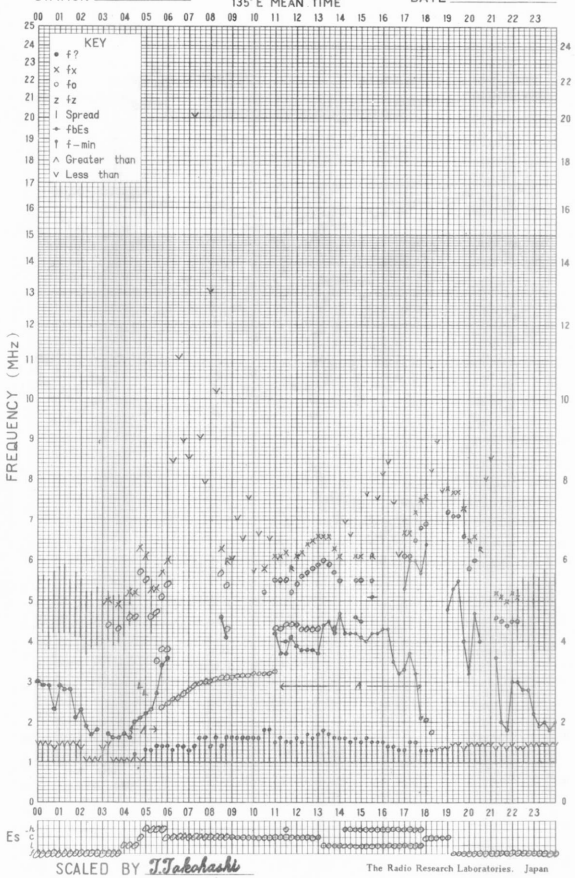

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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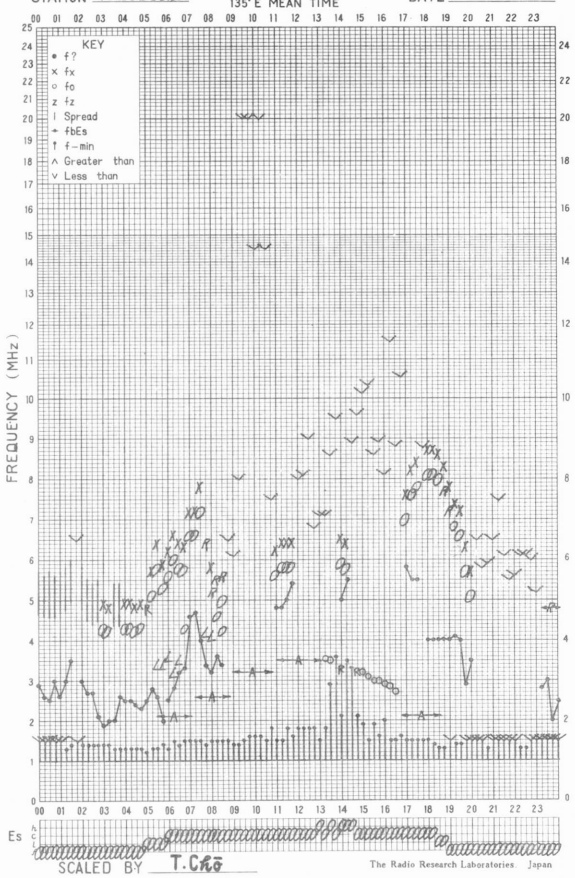
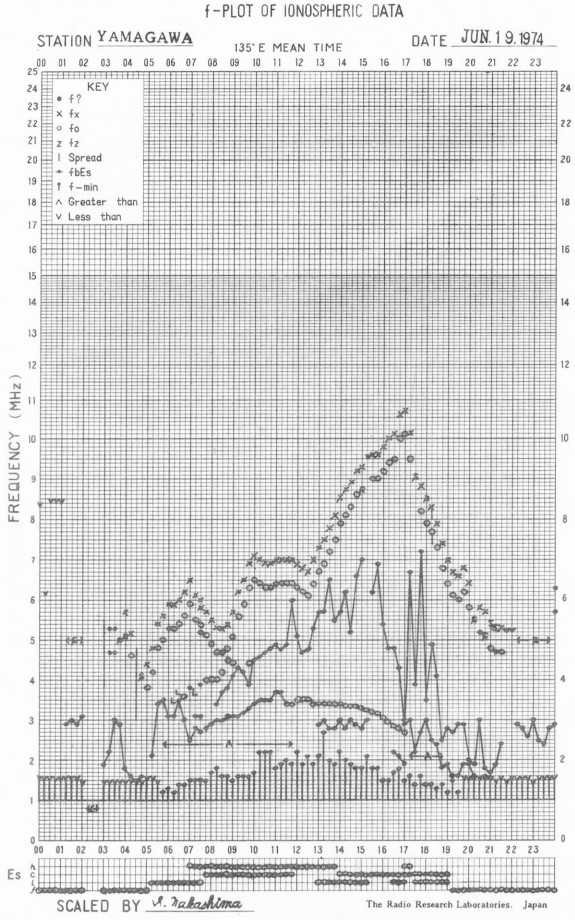


SCALED BY T. Chō

The Radio Research Laboratories. Japan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DATE JUN. 19. 1974
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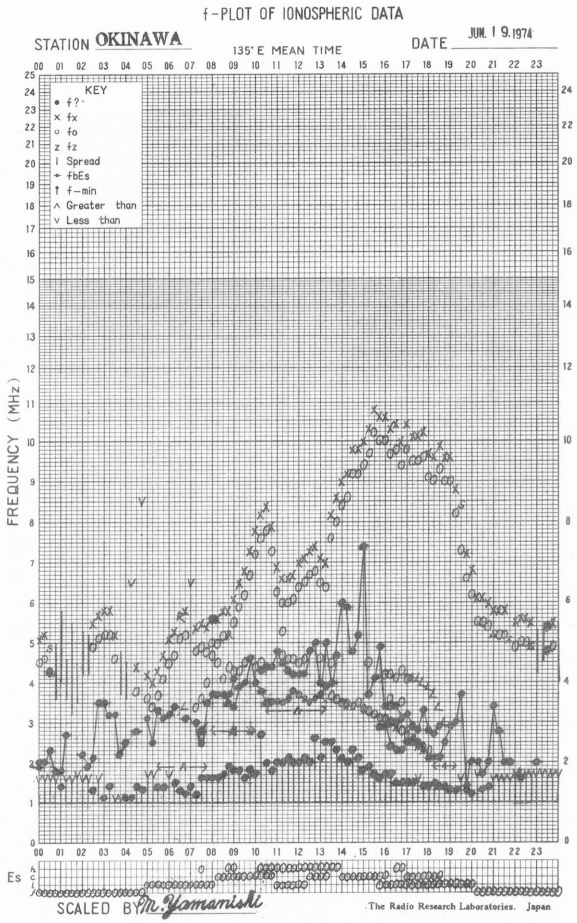
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY A. Nakashima
The Radio Research Laboratories. Japan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KEY
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× fx
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I Spread
⌁ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
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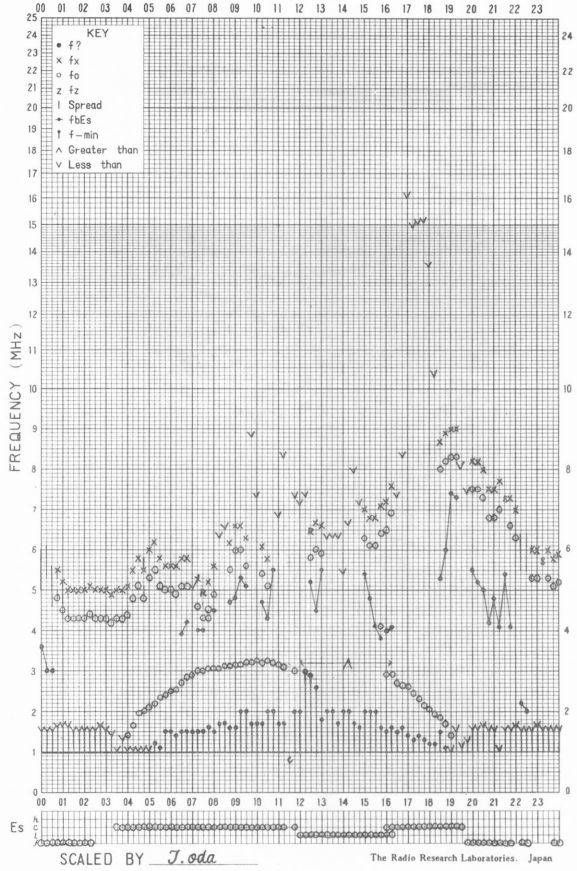
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 20. 1974



SCALED BY J. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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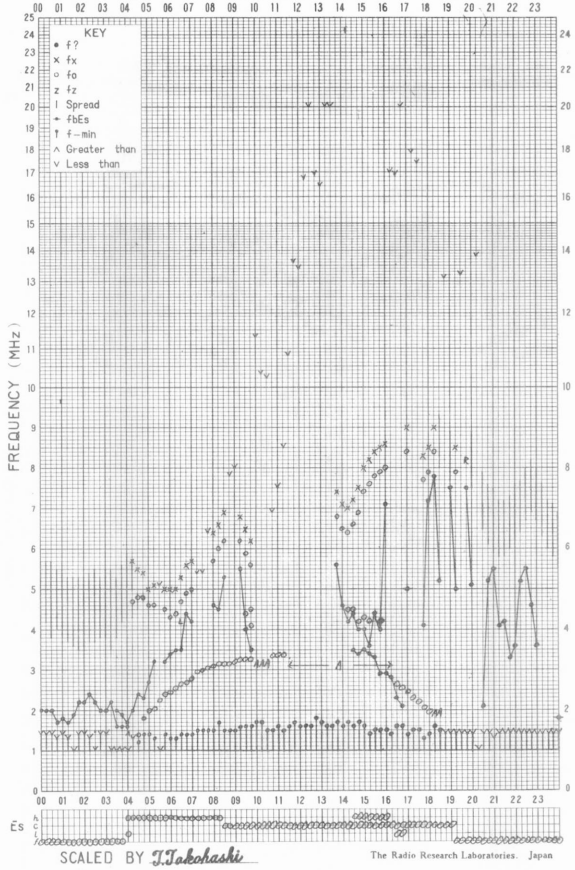

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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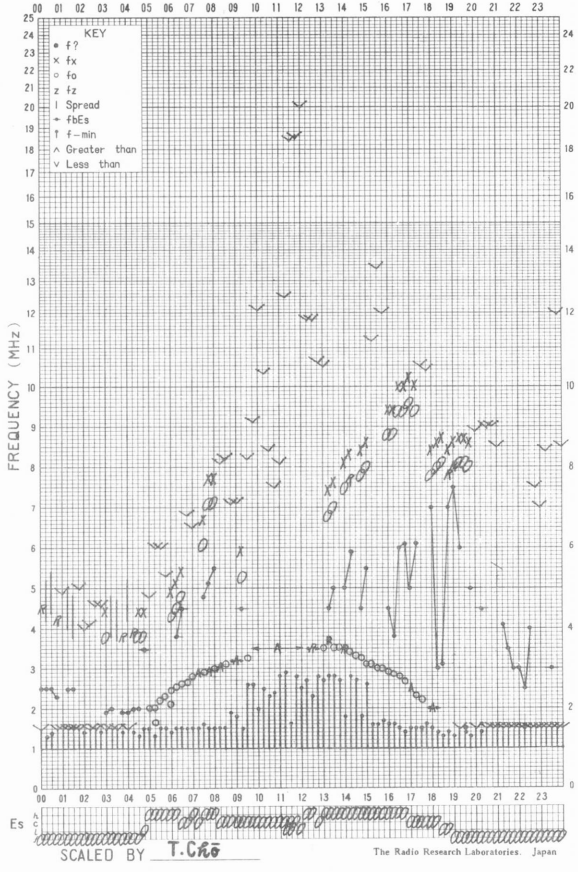

SCALED BY T. Cho

The Radio Research Laboratories. Japan

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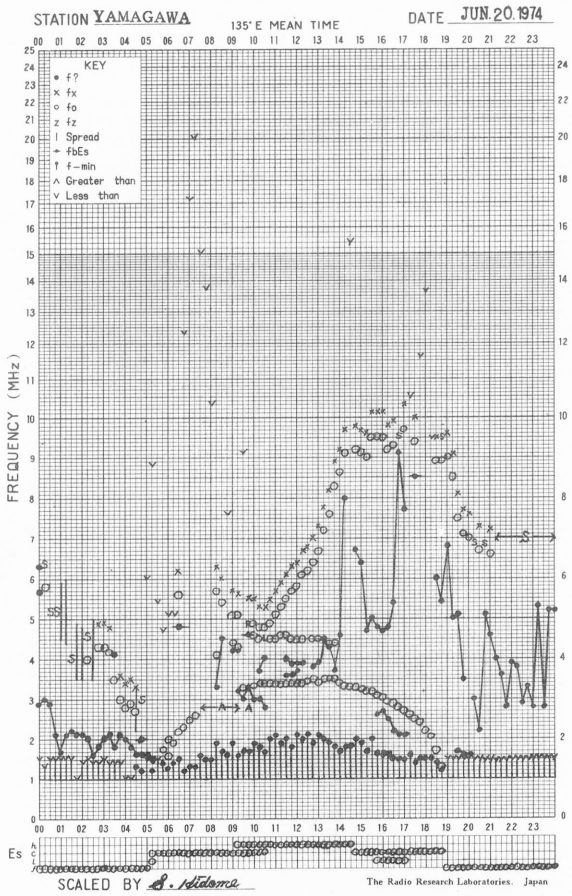

SCALED BY S. Ishidoma

The Radio Research Laboratories. Japan

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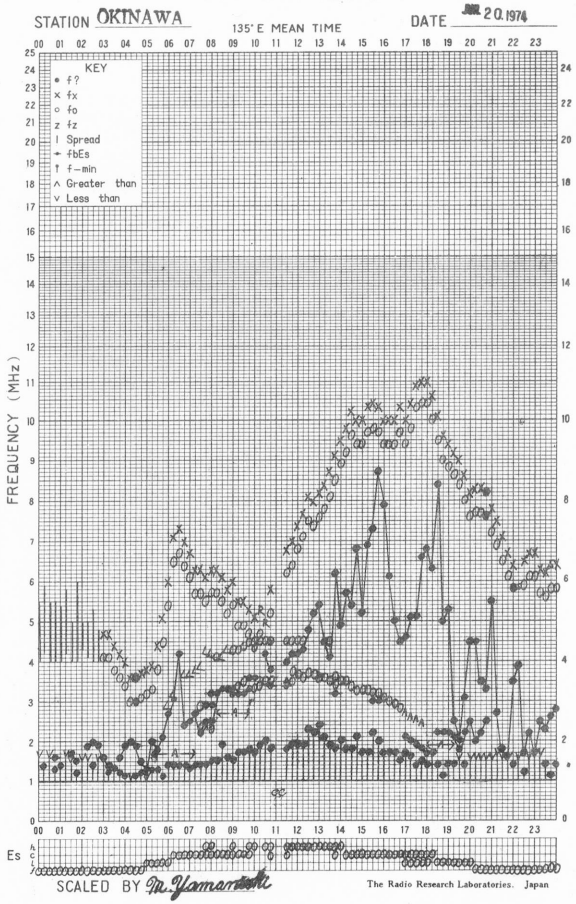

SCALED BY M. Yamamoto

The Radio Research Laboratories. Japan

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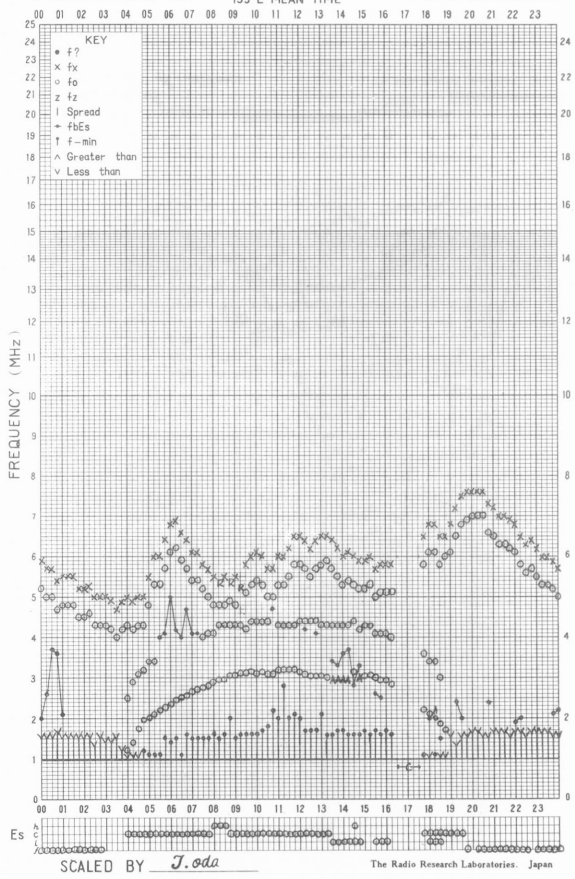

SCALED BY J. oda

The Radio Research Laboratories. Japan

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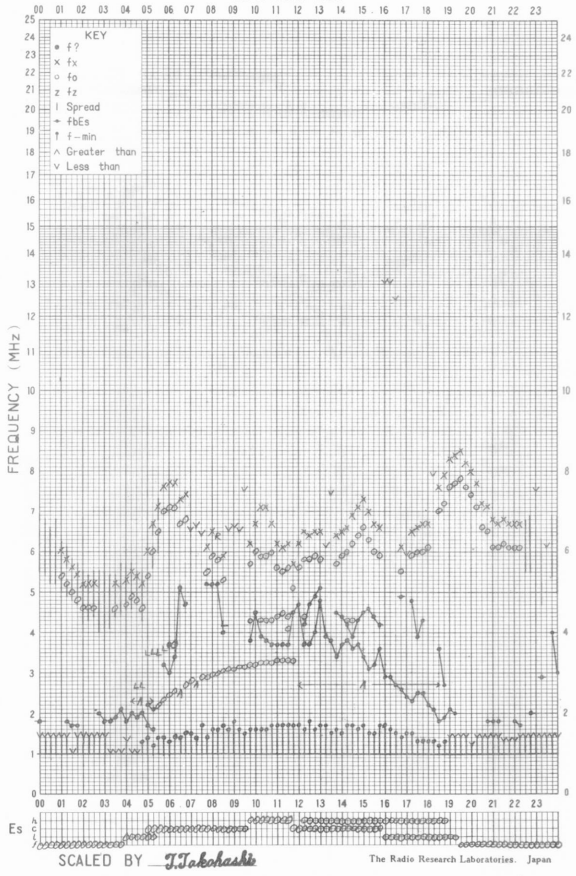

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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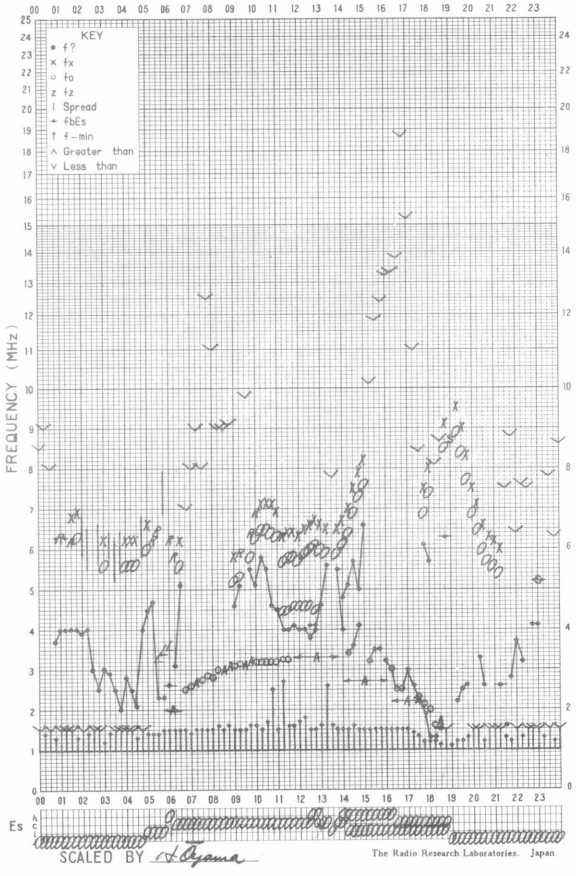

SCALED BY A. Ayama

The Radio Research Laboratories. Japan

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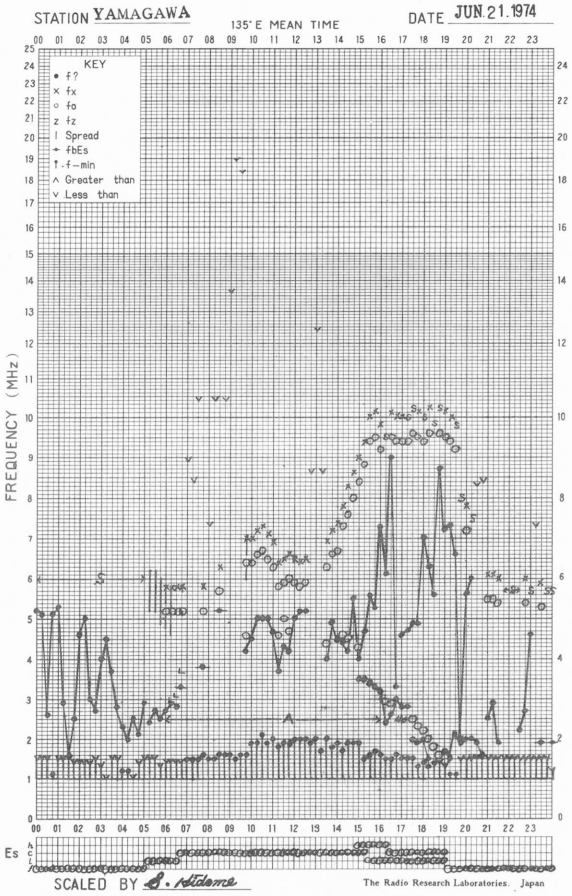

SCALED BY S. Ishidome

The Radio Research Laboratories. Japan

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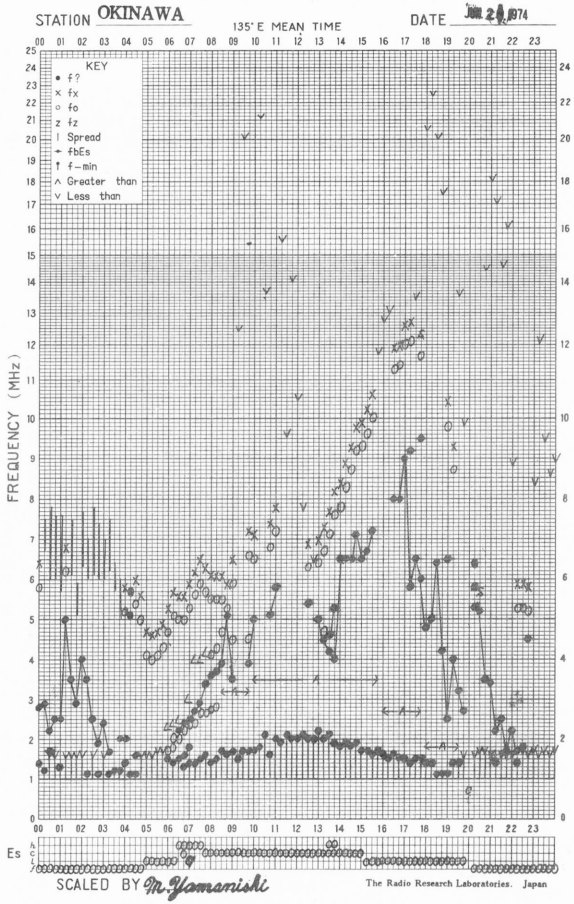

SCALED BY M. Yamanishi

The Radio Research Laboratories. Japan

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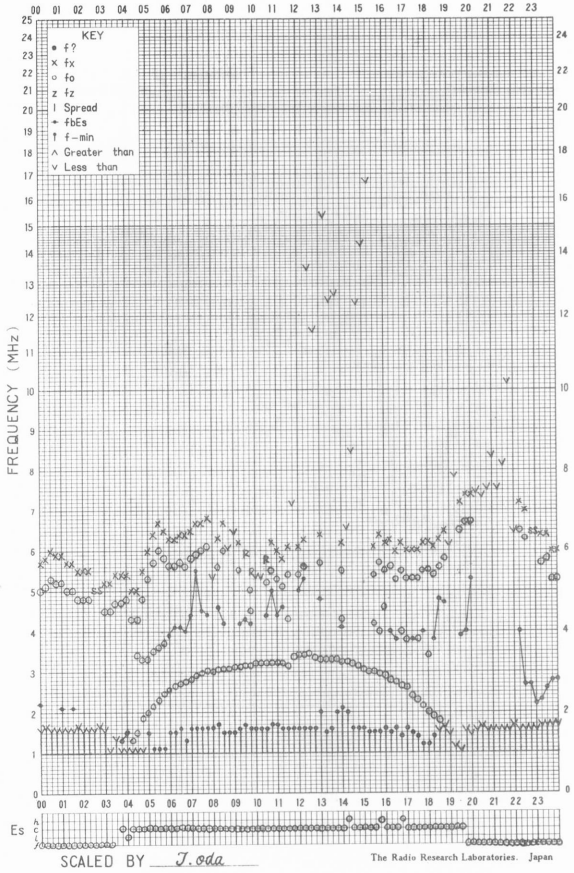

SCALED BY J. Oda

The Radio Research Laboratories. Japan

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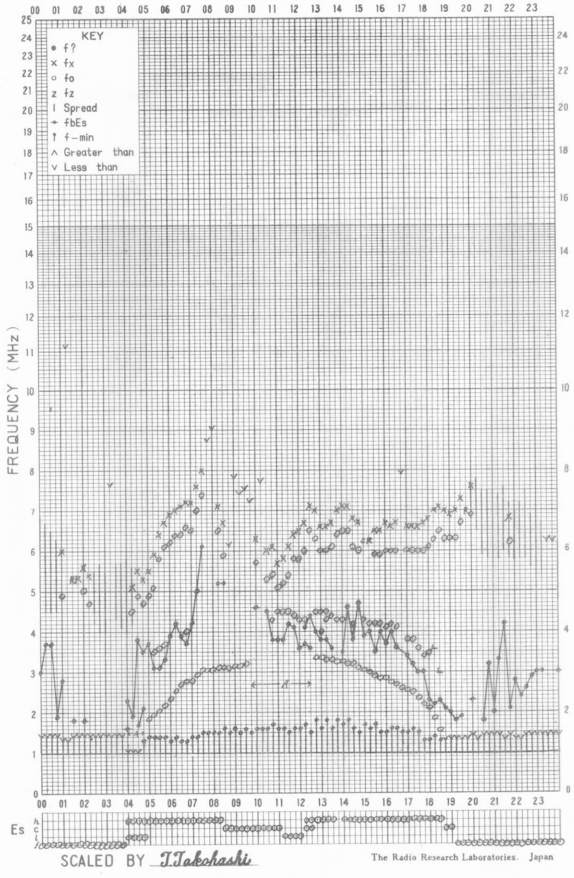

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The Radio Research Laboratories. Japan

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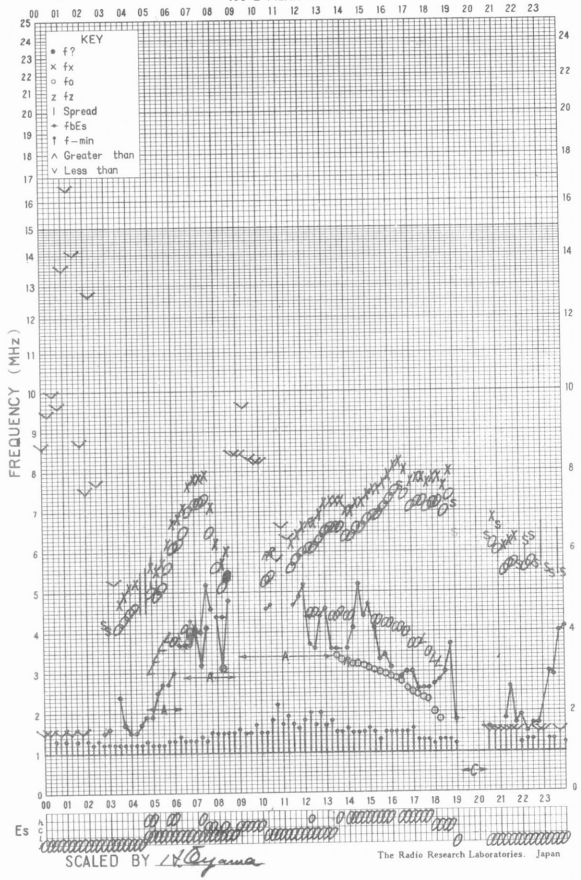
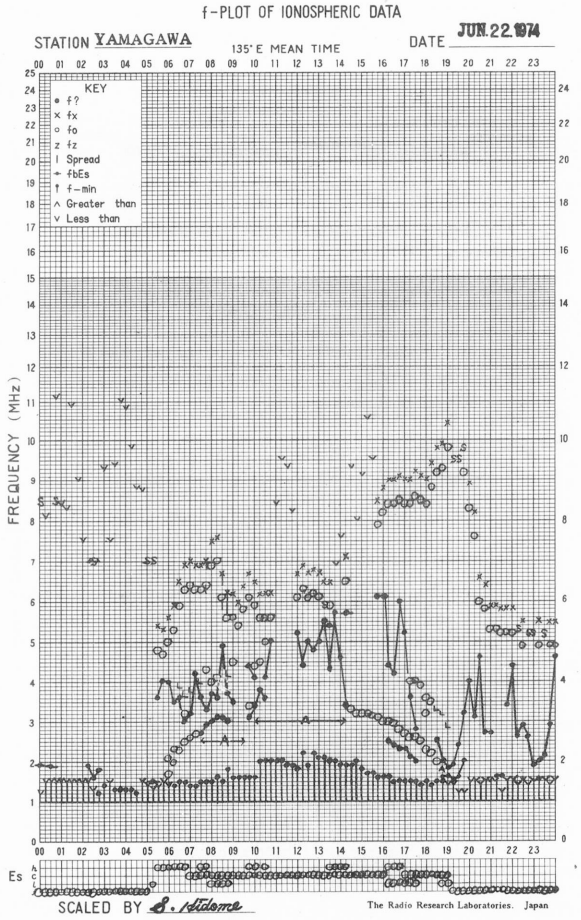


SCALED BY K. Suyama

The Radio Research Laboratories. Japan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STATION YAMAGAWA
135° E MEAN TIME
DATE JUN. 22. 1974
KEY
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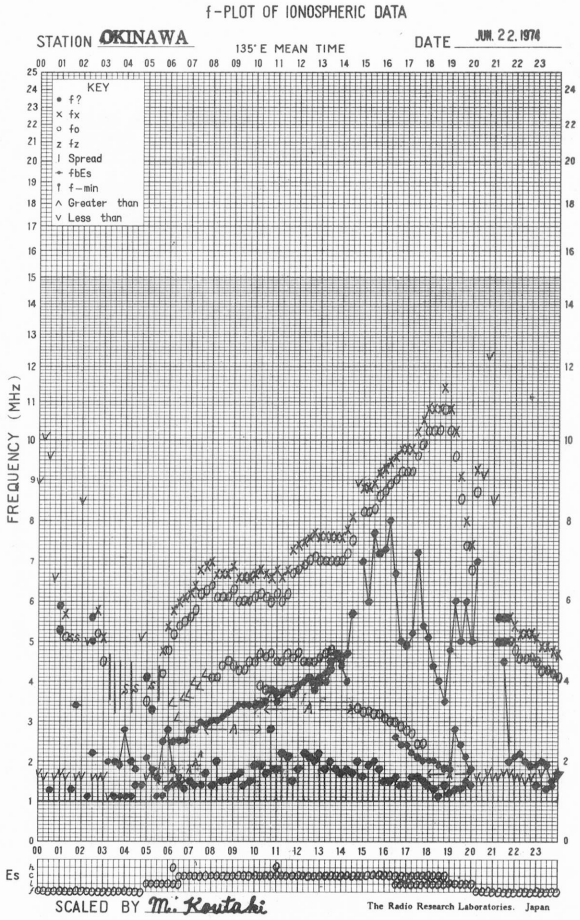
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Iidoma
The Radio Research Laboratories. Japan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DATE JUN. 22. 1974
KEY
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○ fo
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| Spread
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↑ f-min
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v Less than
FREQUENCY (MHz)
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SCALED BY M. Koutaki
The Radio Research Laboratories. Japan

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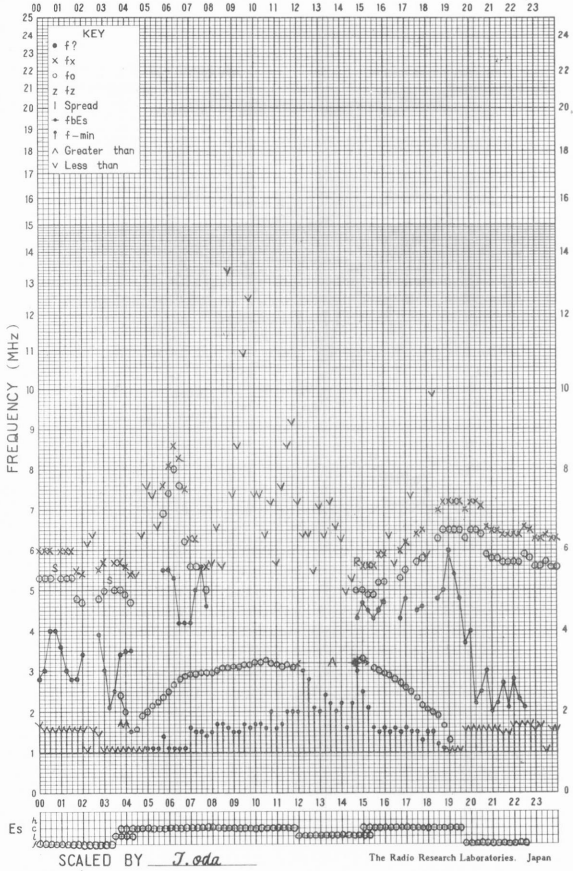

SCALED BY J. Oda

The Radio Research Laboratories. Japan

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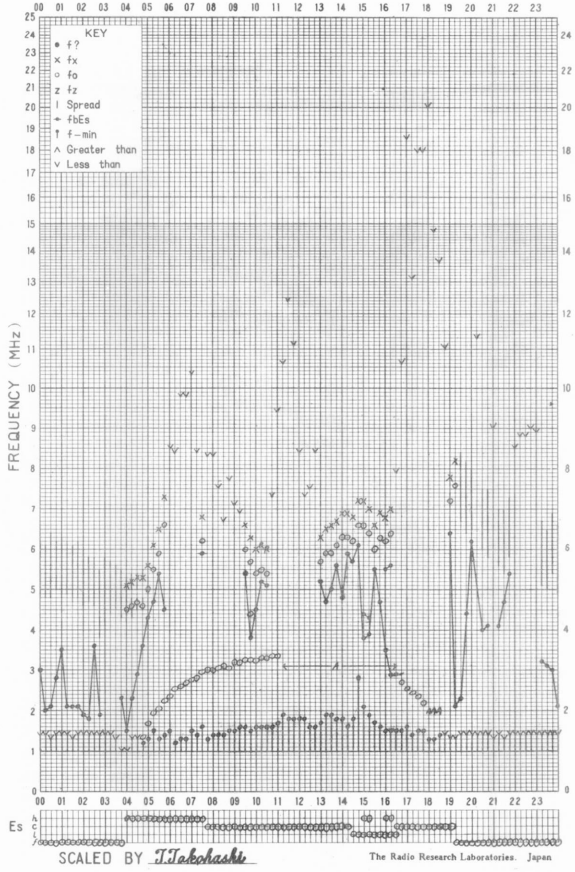

SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

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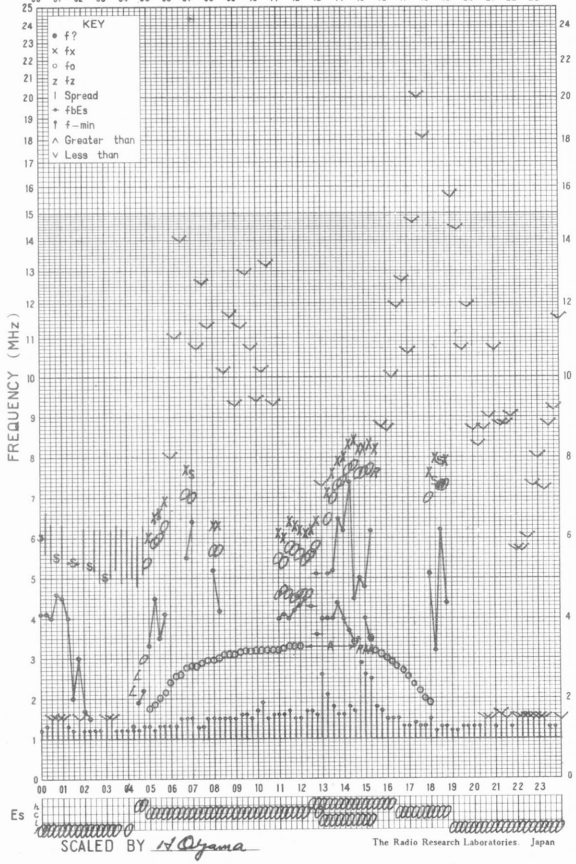

SCALED BY N. Ozawa

The Radio Research Laboratories. Japan

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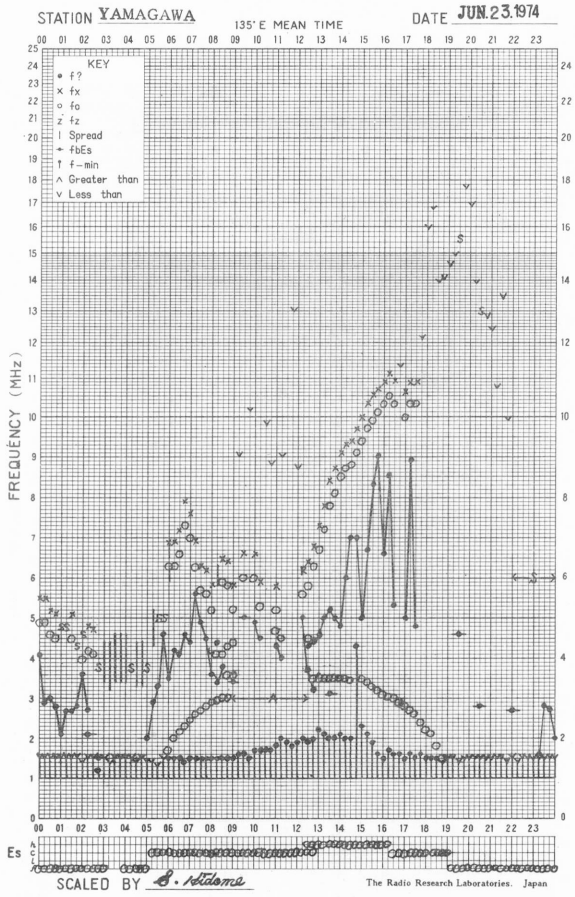

SCALED BY S. Kitsuma

The Radio Research Laboratories. Japan

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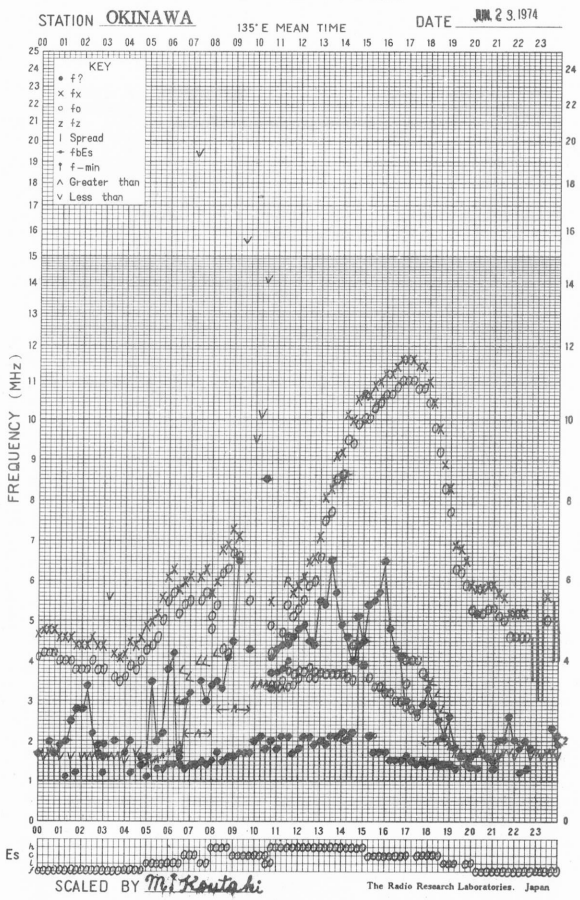

SCALED BY M. Kouyahi

The Radio Research Laboratories. Japan

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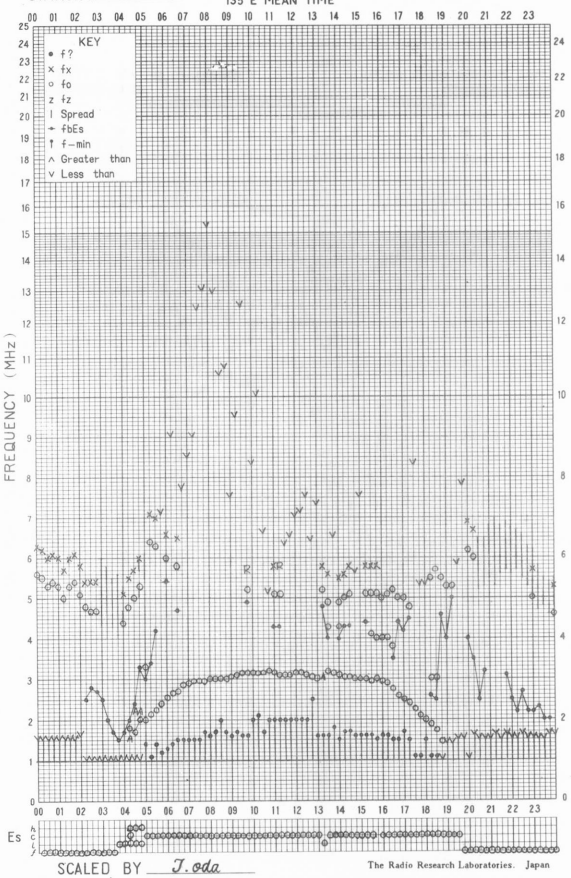

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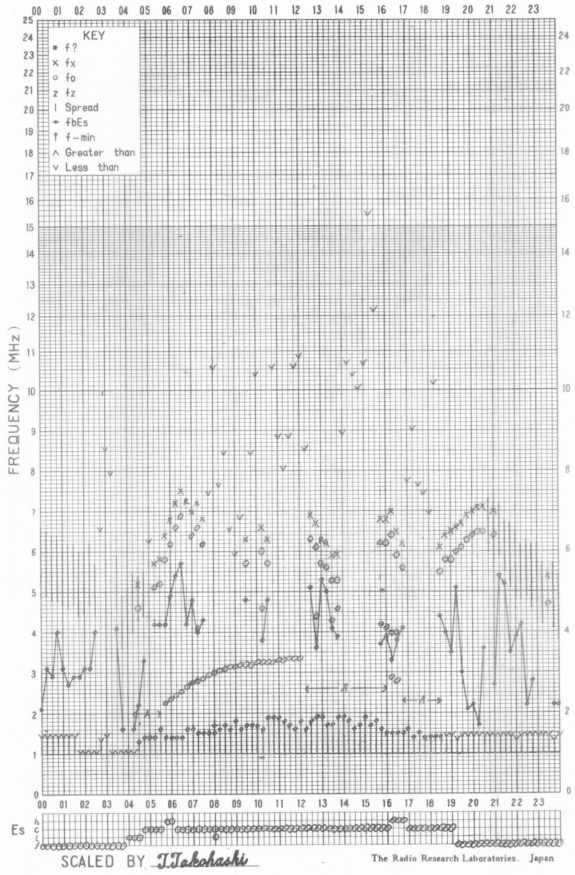

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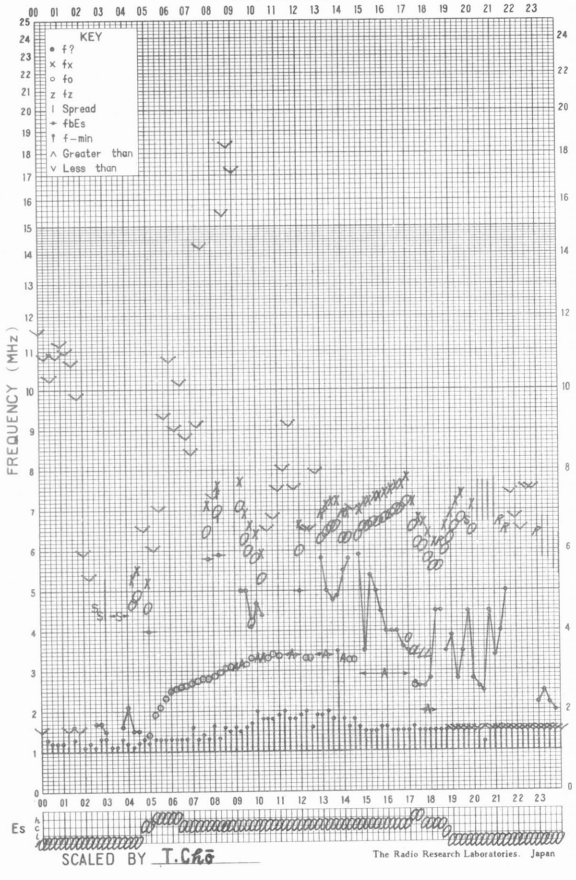

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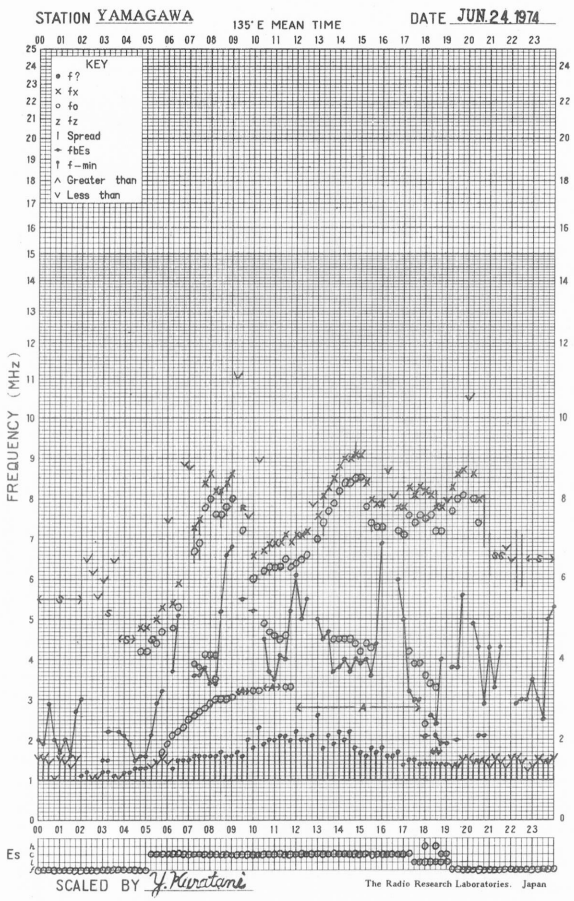

SCALED BY Y. Kuratani

The Radio Research Laboratories. Japan

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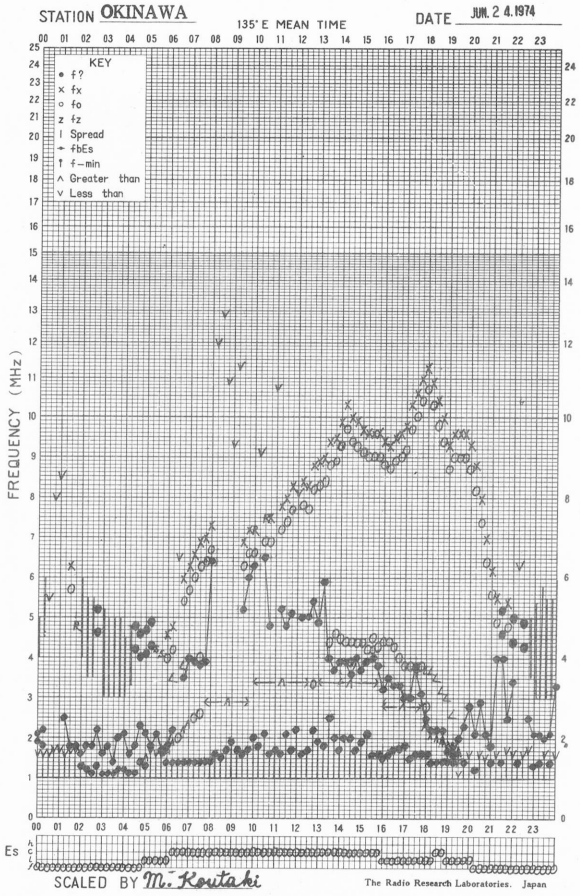

SCALED BY M. Koutaki

The Radio Research Laboratories. Japan

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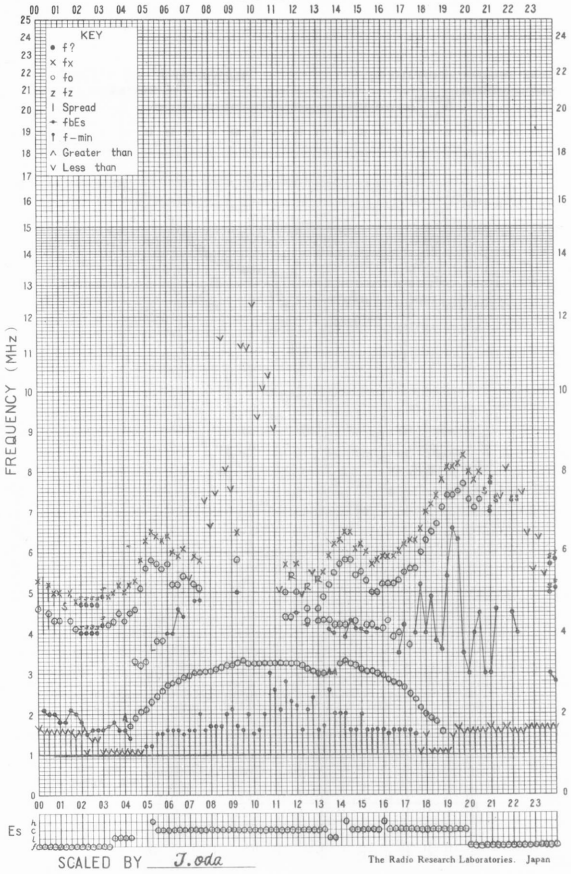

SCALED BY J. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

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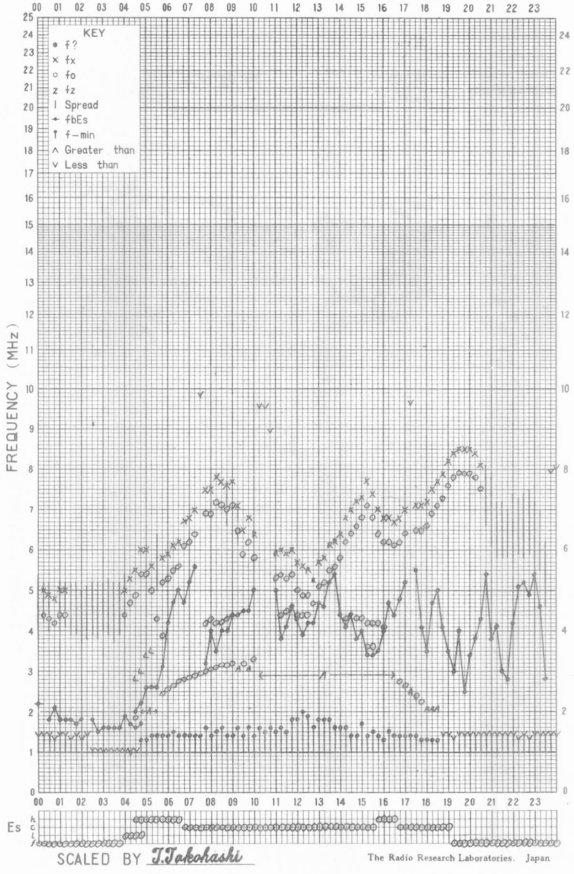
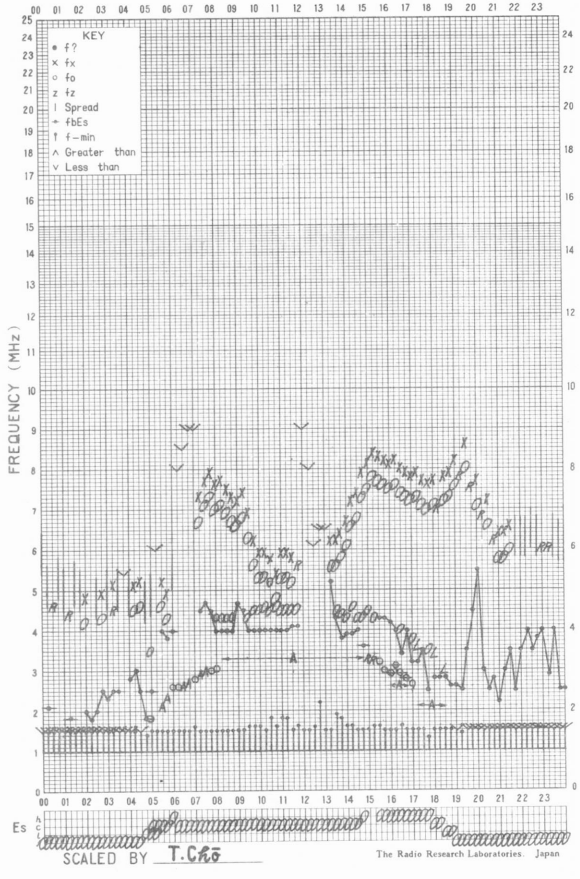


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JUN. 25. 1974

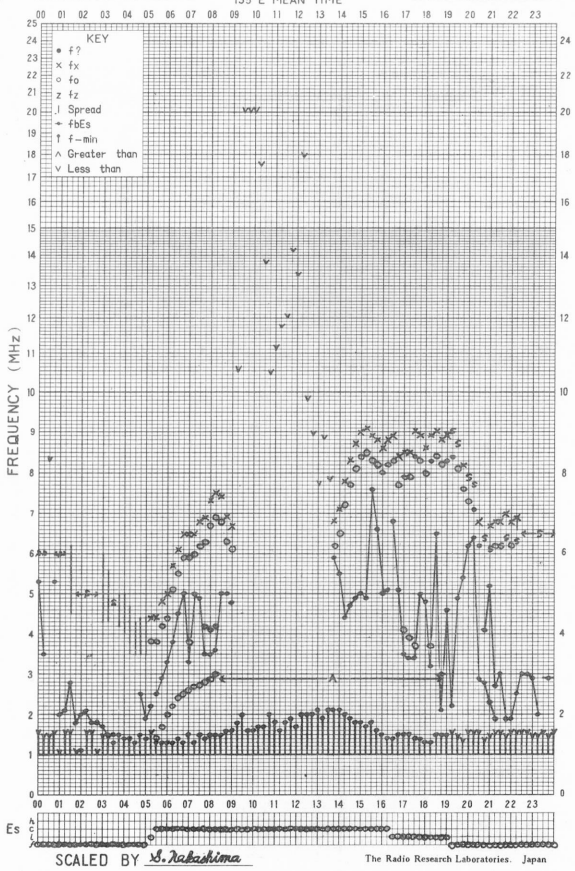


SCALED BY T. Chō

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE JUN. 25. 1974

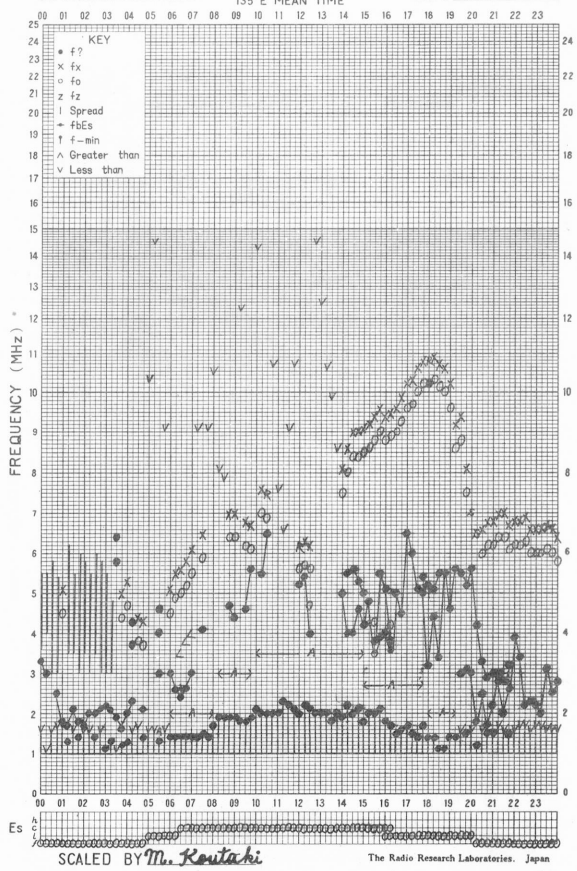


SCALED BY S. Nakashima

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION OKINAWA 135° E MEAN TIME DATE JUN. 25. 1974

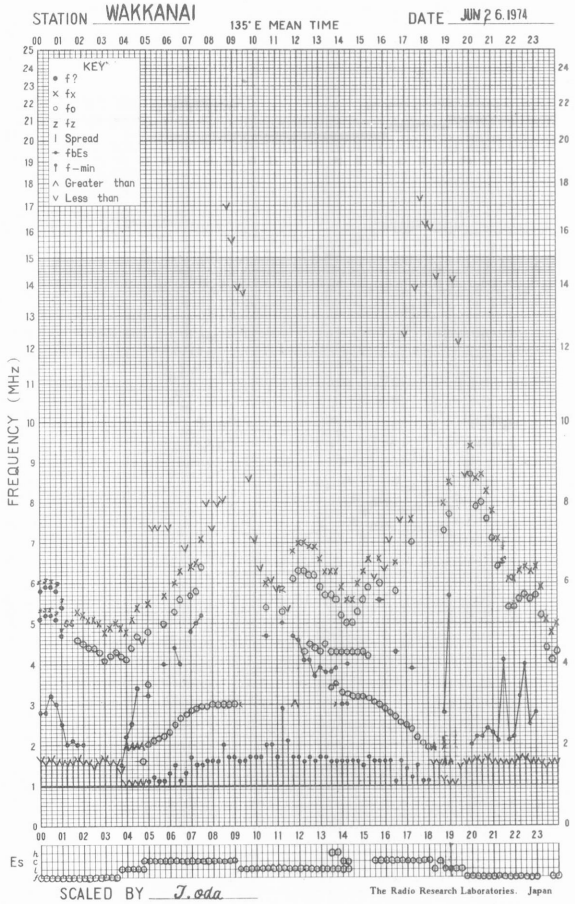


SCALED BY M. Kouta'ki

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN 26 1974

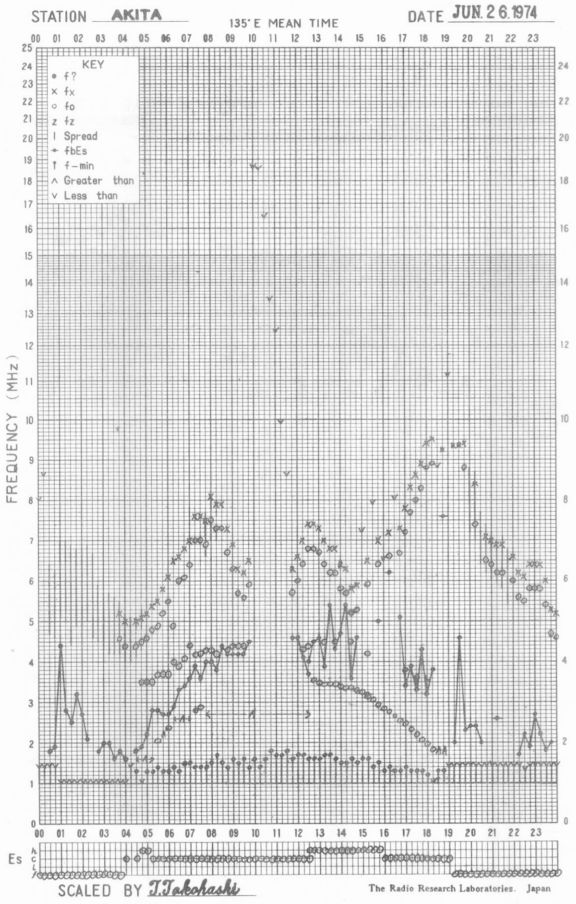


SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE JUN. 26. 1974

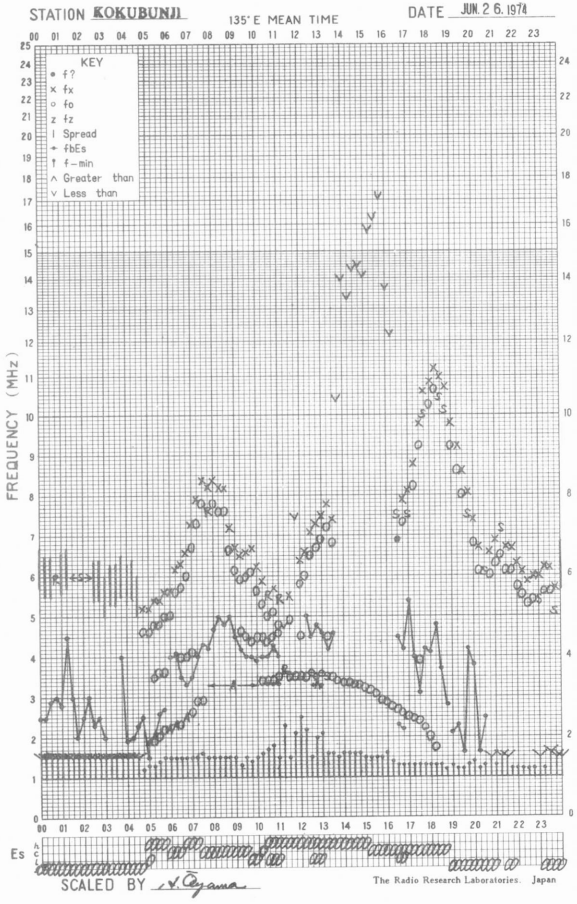


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

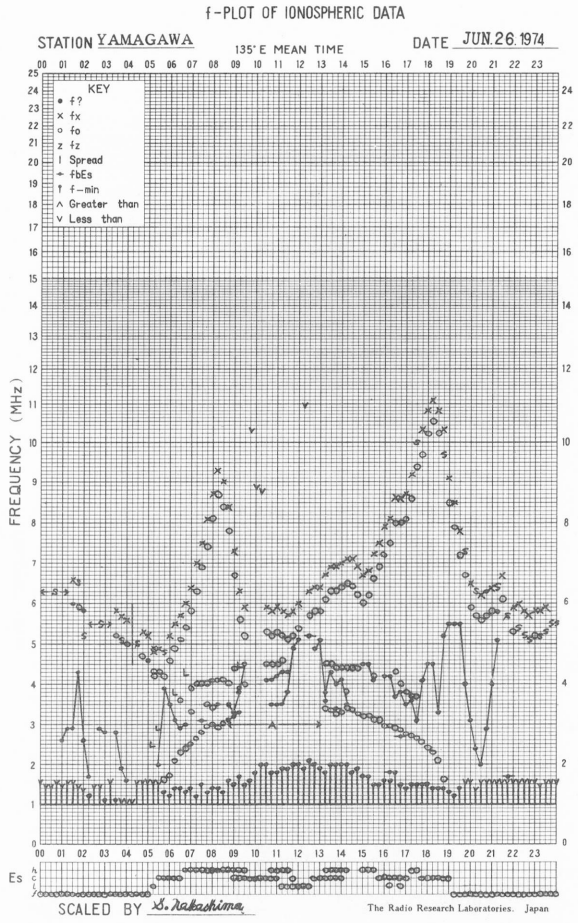
f-PLOT OF IONOSPHERIC DATA

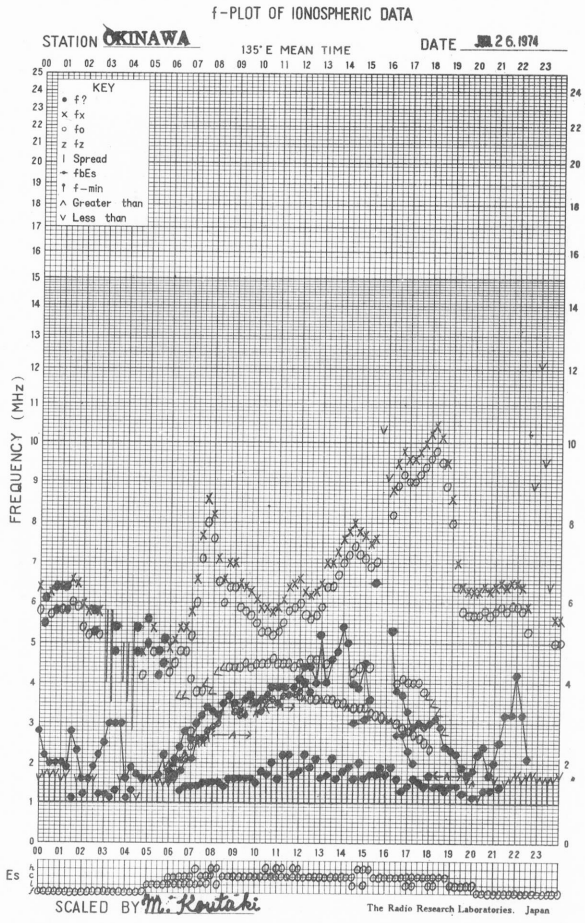
STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 26. 1974



SCALED BY Y. Ogawa

The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE JUN. 26. 1974
KEY
• f?
× fx
○ fo
z fz
| Spread
⊸ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY S. Nakashima
The Radio Research Laboratories. Japan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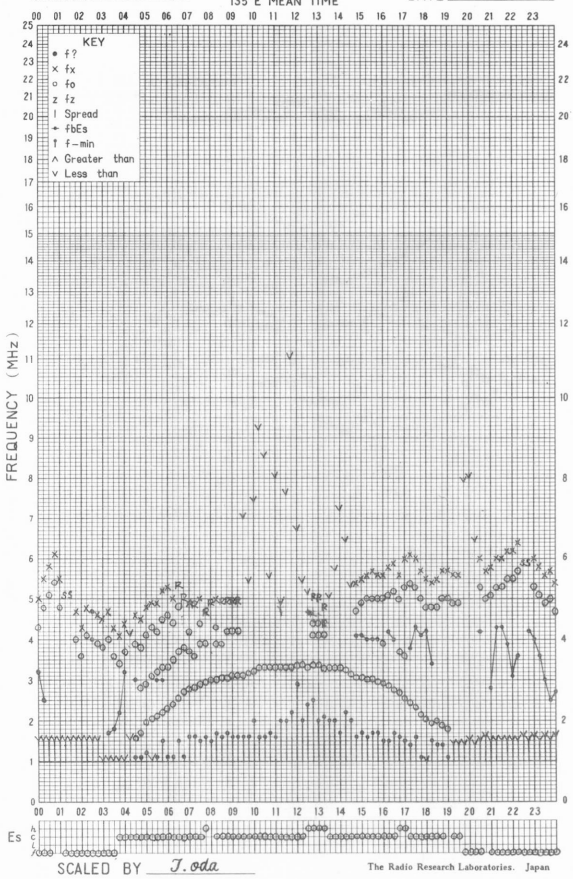
STATION OKINAWA
135° E MEAN TIME
DATE [redacted] 26. 1974
KEY
• f?
× fx
○ fo
z fz
| Spread
⊸ fbEs
↑ f-min
^ Greater than
v Less than
FREQUENCY (MHz)
Es
SCALED BY M. Kouzaki
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN.27.1974

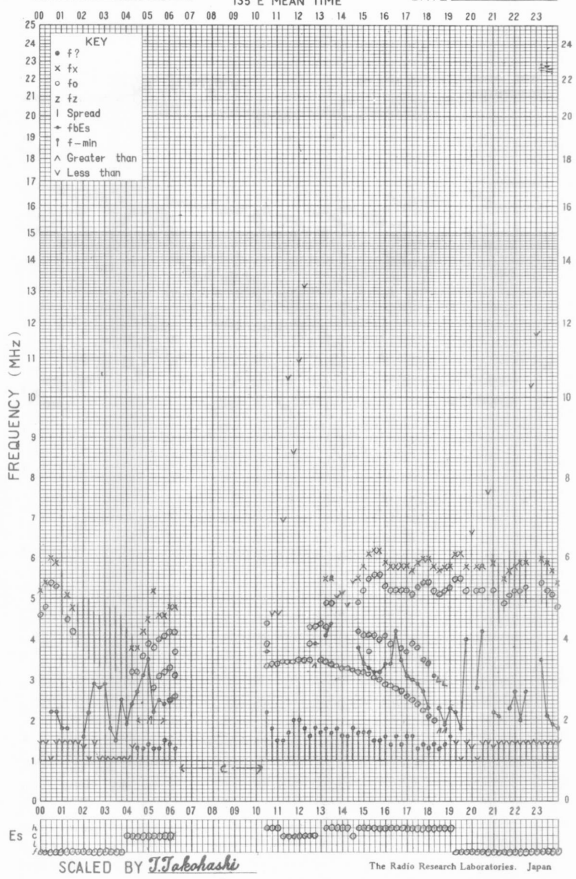


SCALED BY J. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE JUN. 27.1974

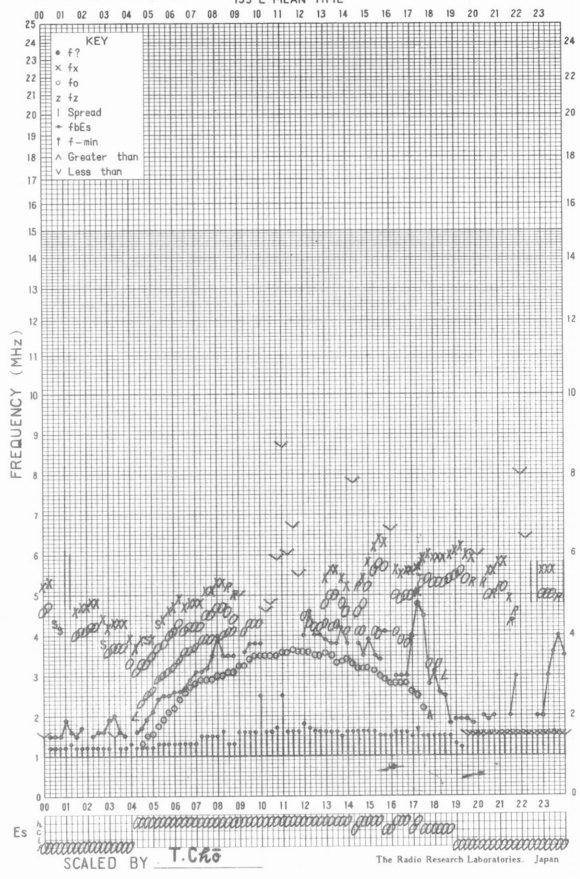


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 27.1974

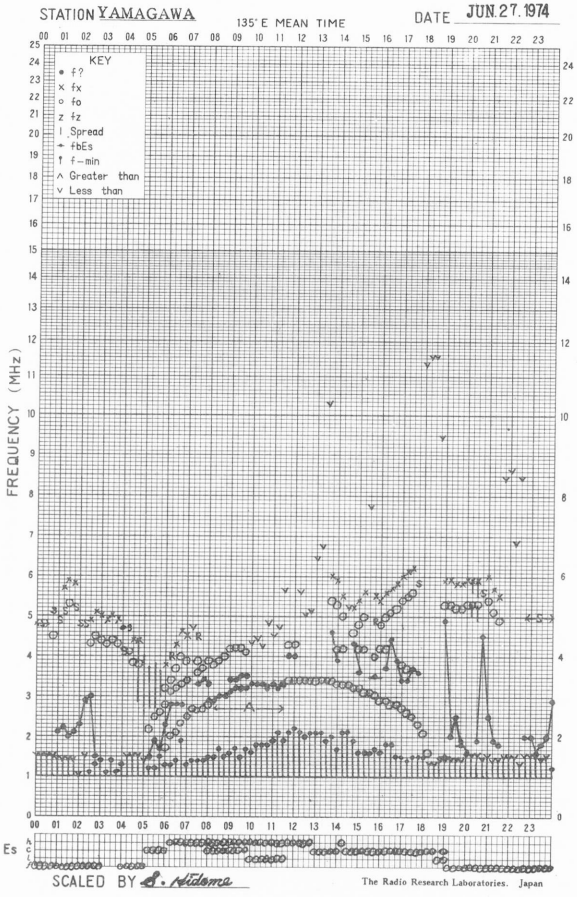


SCALED BY T. Cho

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE JUN. 27. 1974

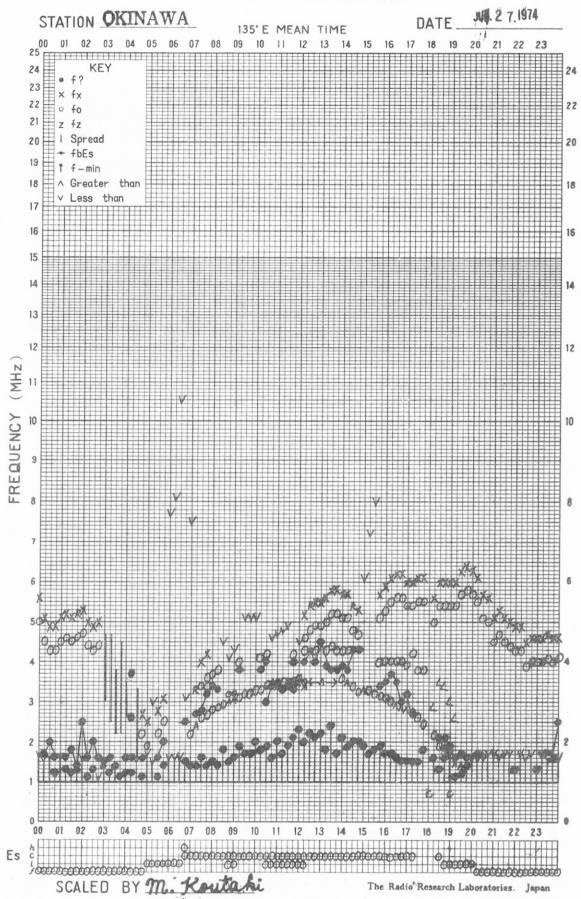


SCALED BY S. Nidome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION OKINAWA 135° E MEAN TIME DATE JUN. 27. 1974

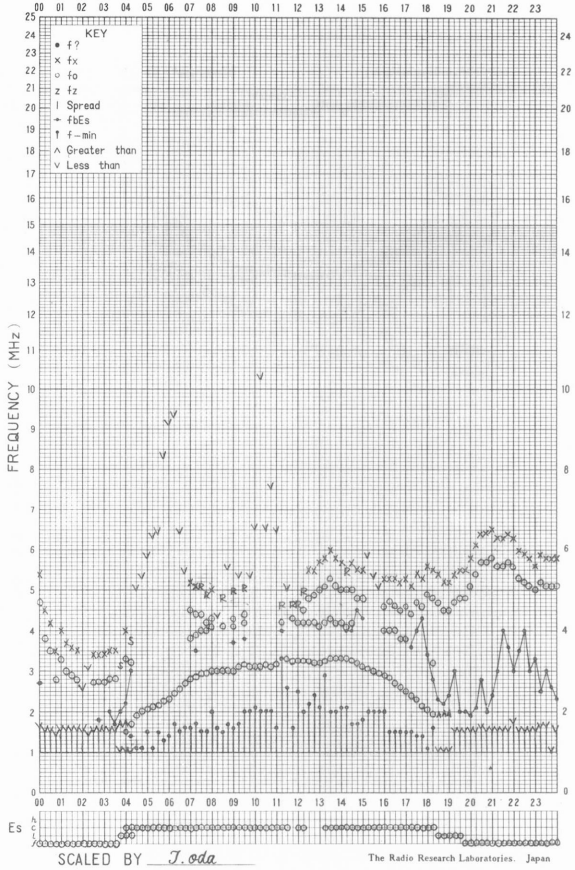


SCALED BY M. Kouzaki

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN. 2 8. 1974

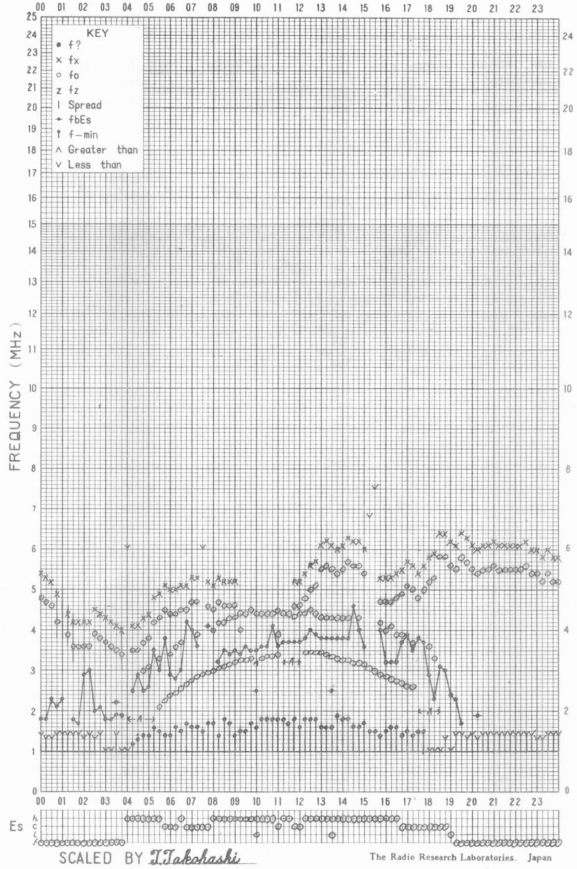


SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE JUN. 2 8. 1974

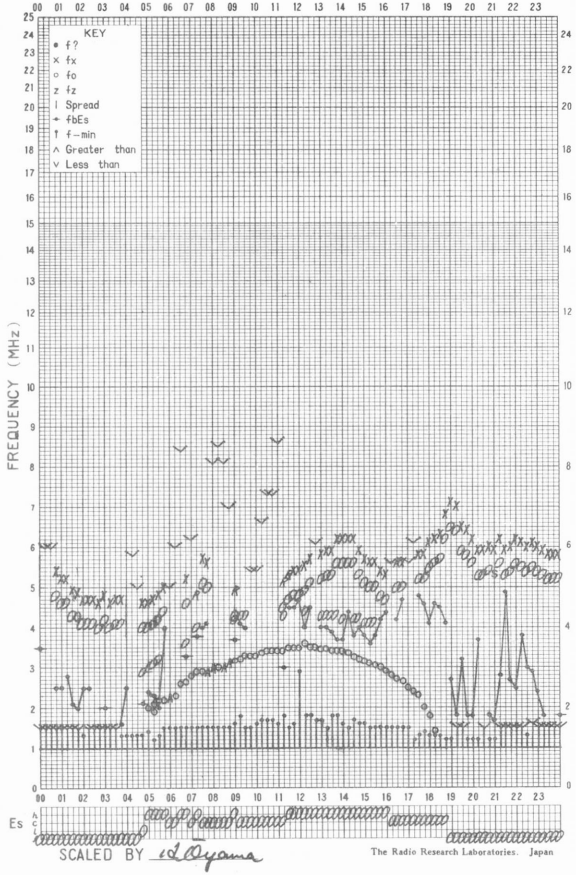


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE JUN. 2 8. 1974

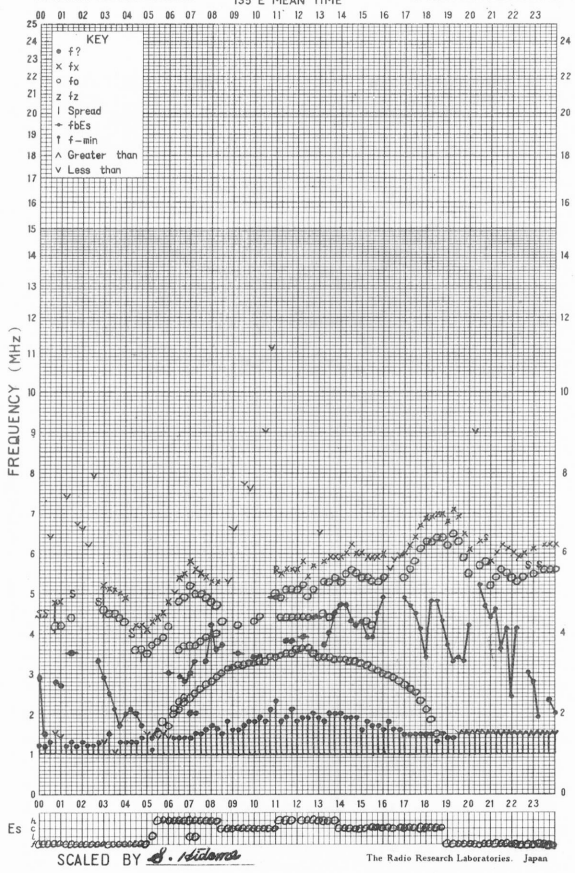


SCALED BY A. Oyama

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE JUN. 28. 1974

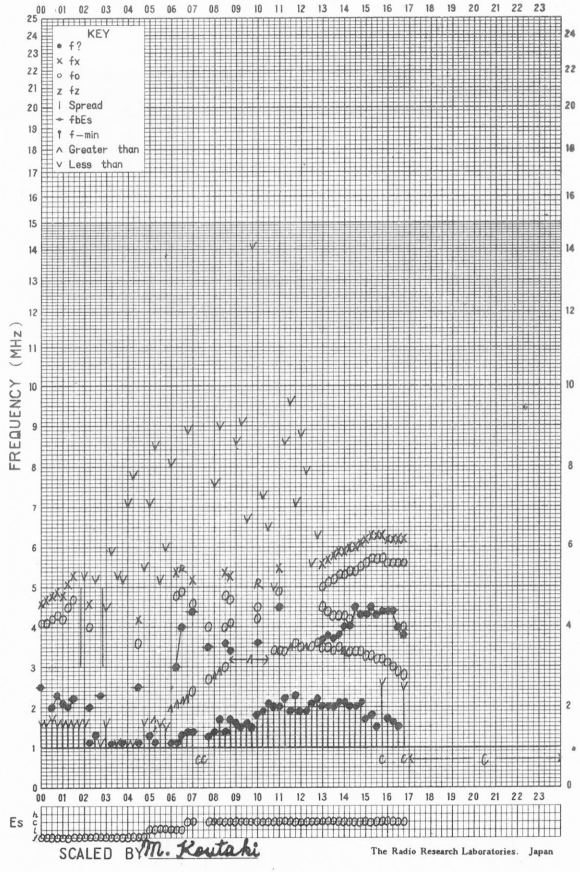


SCALED BY S. Nidawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION OKINAWA 135°E MEAN TIME DATE JUL 28. 1974

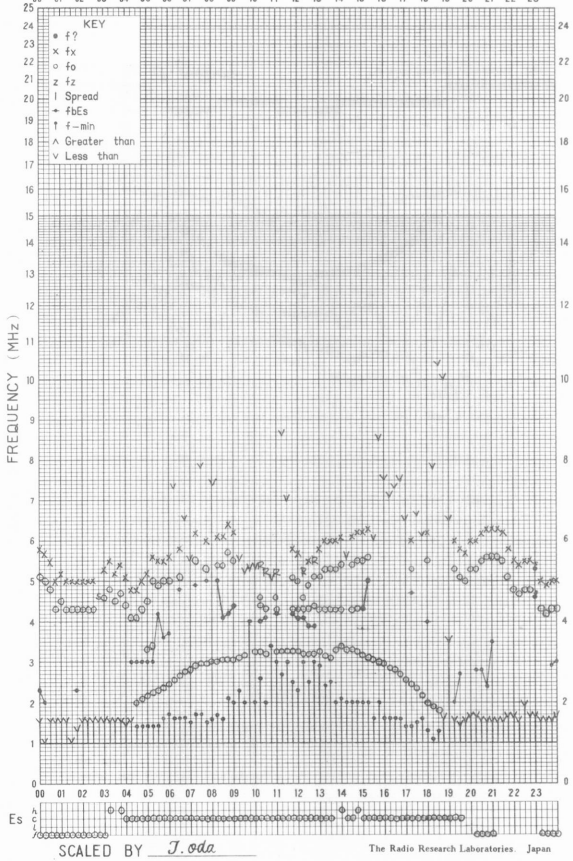


SCALED BY M. Kouta ki

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE JUN 29 1974

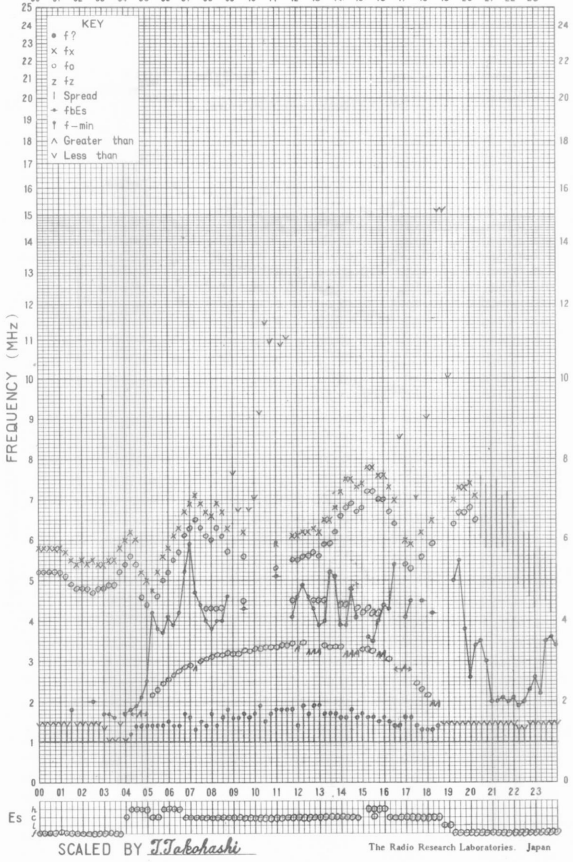


SCALED BY T. oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE JUN 29 1974

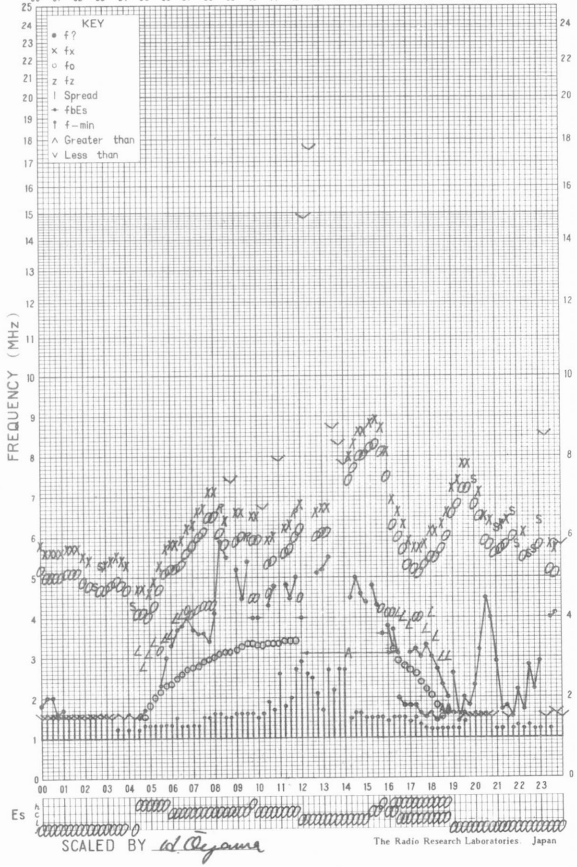


SCALED BY T. Tokohashi

The Radio Research Laboratories. Japan

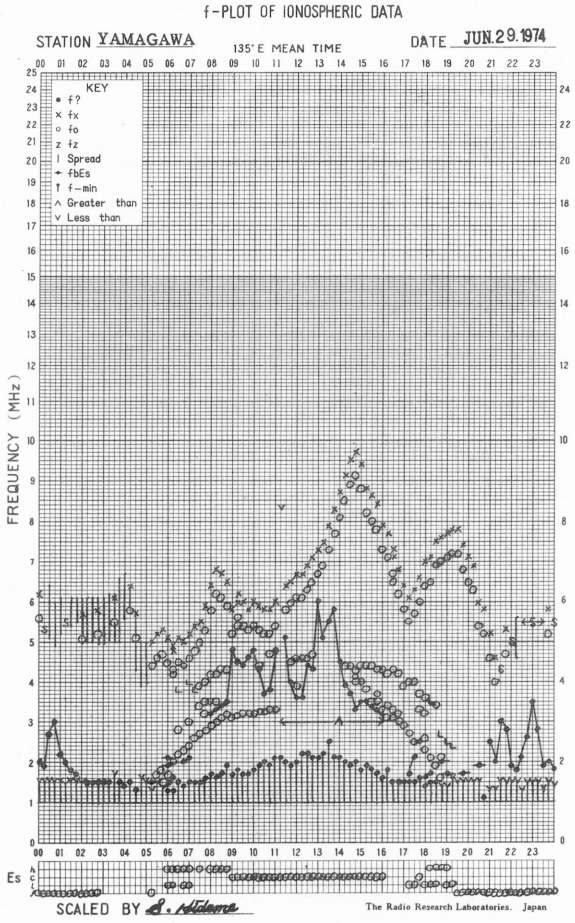
f-PLOT OF IONOSPHERIC DATA

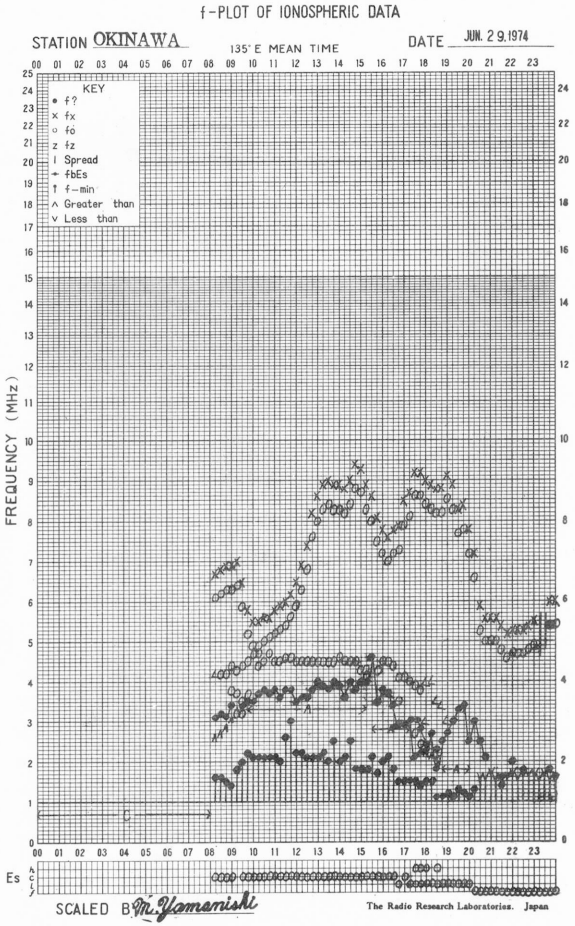
STATION KOKUBUNJI 135°E MEAN TIME DATE JUN 29 1974



SCALED BY M. Ogawa

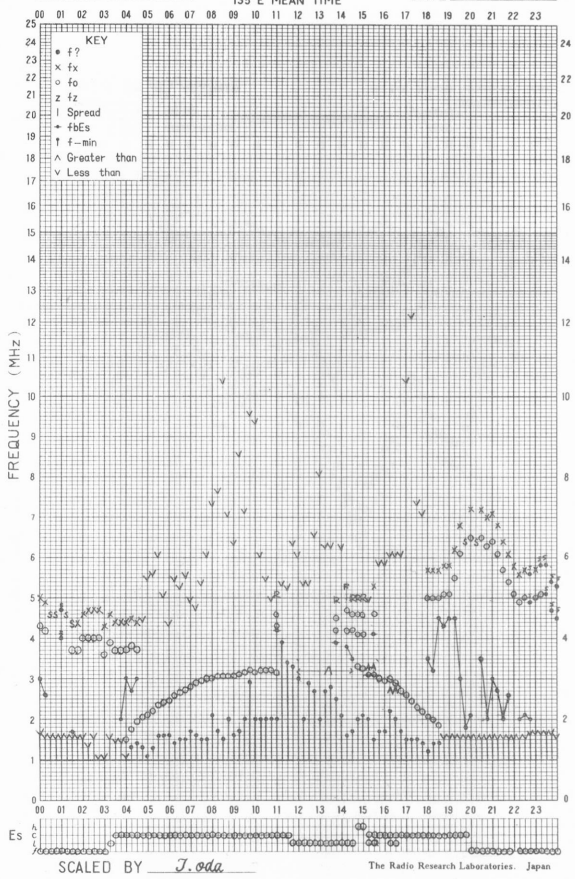
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION YAMAGAWA
135° E MEAN TIME
DATE JUN. 29. 1974
KEY
• f?
× fx
○ fo
z fz
I Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY S. Nitoma
The Radio Research Laboratories. Japan


f-PLOT OF IONOSPHERIC DATA
STATION OKINAWA
135° E MEAN TIME
DATE JUN. 29. 1974
KEY
• f?
× fx
○ fo
z fz
I Spread
⊸ fbEs
↑ f-min
∧ Greater than
∨ Less than
FREQUENCY (MHz)
Es
SCALED BY M. Yamanishi
The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE JUN. 30. 1974

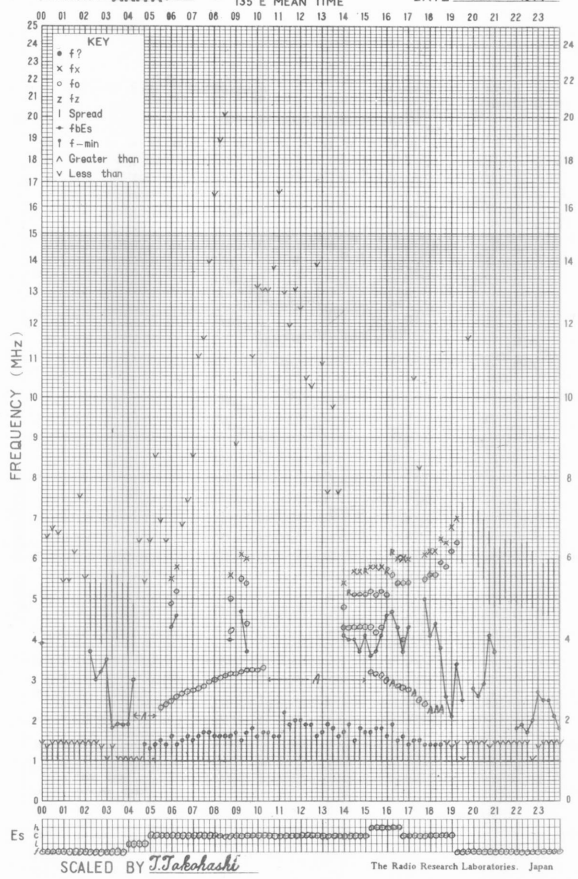


SCALED BY T. Oda

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE JUN. 30. 1974

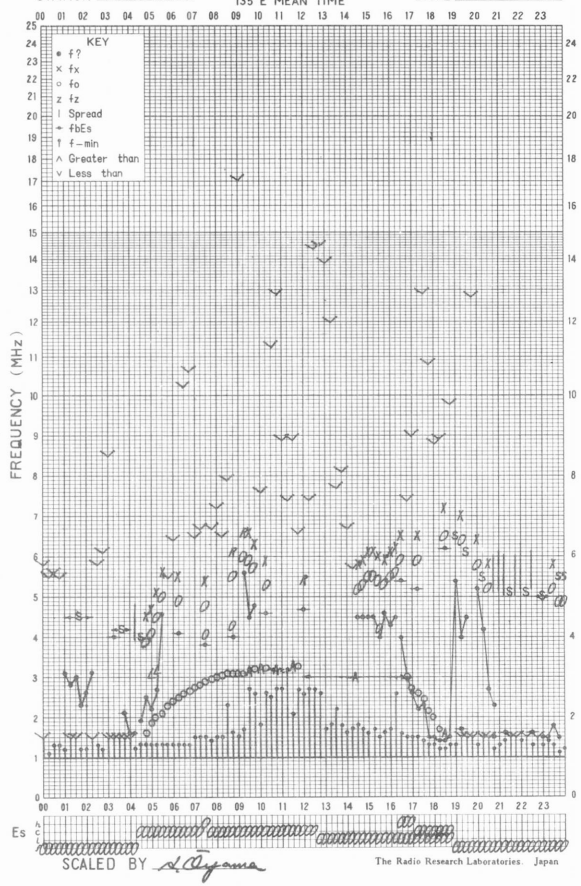


SCALED BY T. Takahashi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE JUN. 30. 1974

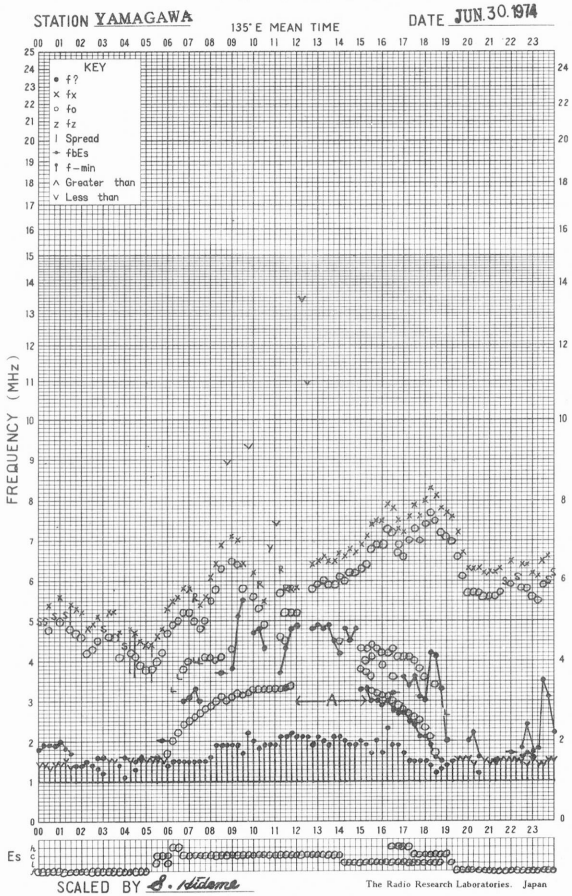


SCALED BY A. Ayama

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE JUN. 30. 1974

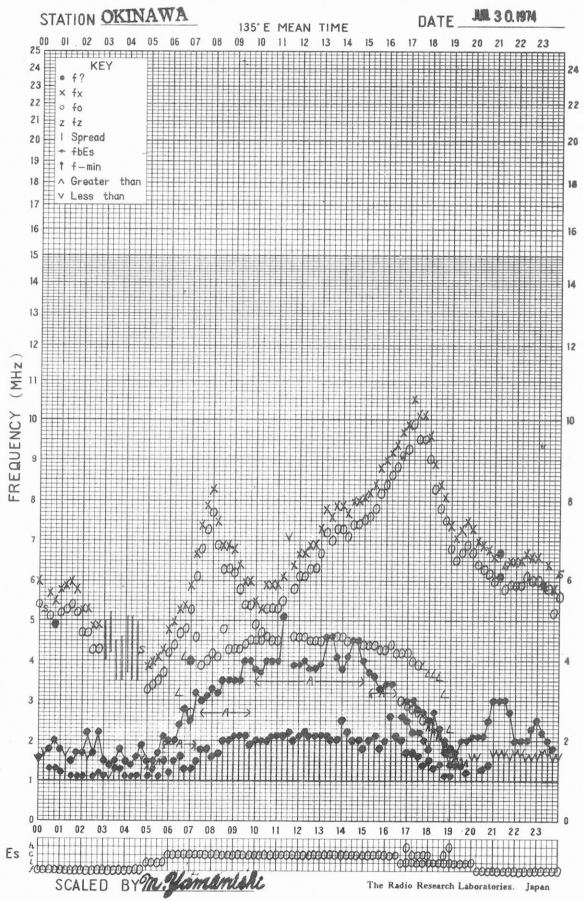


SCALED BY S. Ishizuma

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION OKINAWA 135° E MEAN TIME DATE JUN. 30. 1974



SCALED BY M. Yamanishi

The Radio Research Laboratories. Japan

SOLAR RADIO

Flux Density and Variability

Month: June 1974
Observing station: Hiraiso
Frequency: 200 MHz

	Flux density $10^{-22}Wm^{-2}Hz^{-1}$					Variability 0 to 3				
UT	00-03	03-06	06-09	21-24	Day	00-03	03-06	06-09	21-24	Day
Date										
1	12	10	10	q	11	0	0	0	*	0
2	11	9	10	10	10	0	0	0	0	0
3	10	9	9	10	9	0	0	0	0	0
4	9	8	8	9	9	0	0	0	0	0
5	9	9	10	9	9	0	0	0	0	0
6	10	10	q	14	9	0	*	*	2	0
7	15	17	19	34	16	2	2	1	1	2
8	35	26	22	18	30	1	1	1	1	1
9	18	14	14	12	16	1	1	*	1	1
10	14	11	12	15	12	1	1	1	1	1
11	18	14	13	72	15	2	1	1	2	1
12	51	28	25	17	46	1	2	1	2	2
13	32	51	43	38	33	3	2	2	1	2
14	25	18	23	22	27	1	1	1	2	1
15	15	11	19	24	16	1	1	1	1	1
16	24	21	18	12	22	1	1	1	1	1
17	12	16	41	15	20	1	1	1	1	1
18	13	14	15	15	14	1	1	1	1	1
19	11	10	10	11	11	1	1	1	1	1
20	12	8	9	9	10	1	1	1	0	1
21	8	7	8	9	8	0	0	0	0	0
22	9	8	7	9	8	0	0	*	0	0
23	q	8	(8)	9	8	*	0	(0)	0	0
24	8	7	8	8	8	0	*	0	0	0
25	9	8	8	9	8	*	*	*	0	*
26	q	8	q	10	9	*	*	*	0	*
27	10	8	9	(12)	9	*	0	0	(0)	0
28	10	8	10	10	10	0	0	0	0	0
29	10	8	9	10	9	0	0	0	0	0
30	10	8	9	10	9	0	0	0	0	0

Note No observations during the following periods:

15th 2330- 2400
23rd 0500- 0720
27th 1920- 2250

q: likely quiet.

*: interference.

SOLAR RADIO

Flux Density

Month: June 1974
Observing station: Hiraiso Frequency: 500 MHz

Flux density 10^{-22} $Wm^{-2}Hz^{-1}$

UT	00-03	03-06	06-09	21-24	Day
Date					
1	25	24	23	24	24
2	22	22	23	23	23
3	23	24	24	23	24
4	25	25	26	22	25
5	25	25	26	22	25
6	23	24	24	23	23
7	24	23	23	22	23
8	22	23	22	22	22
9	24	23	22	20	23
10	21	21	20	20	20
11	20	20	20	23	20
12	22	22	21	23	22
13	25	23	20	23	23
14	21	21	20	21	21
15	22	21	21	21	21
16	22	26	23	22	23
17	20	20	21	q	21
18	21	21	21	21	21
19	21	21	21	21	21
20	21	20	20	21	20
21	20	21	21	-	21
22	-	22	22	20	22
23	21	21	21	21	21
24	21	22	21	21	21
25	21	22	21	20	21
26	22	21	21	21	21
27	23	22	22	23	22
28	24	24	23	22	24
29	24	22	22	23	23
30	23	23	23	-	23

Note No observations during the following periods:

6th 0810- 0855
21st 1920- 22nd 0245
30th 1920- 2400

q: likely quiet.

SOLAR RADIO

Distinctive Events

(single-frequency observations)

Month: June 1974
Observing station: Hiraiso
Normal observing period: 1920 0945 (sunrise to sunset)

Date	Freq.	Starting time	Time of maximum	Duration	Type	Flux density 10^{-22}Wm^{-2}Hz^{-1}		Polarization	Remarks
	MHz	UT	UT	minutes		peak	mean		
2	500	0042.9	0043.0	6.5	F	110	-		
		0425.0		5.0	C		290		
			0426.5			840			1st peak
			0427.3			840			2nd peak
	200	0425.5	-	2.5	C	180D	110D	l	
	100	0425.8	0426.6	7.5	C	1000D	100D	l	
	200	0906.5	-	2.0	C	180D	80D	r	
4	500	0009.0	0014.5	8.0	S	10	1		
	200	0009.7	-	8.0	C	180D	80D	rlr	
	100	0009.8	0011.0	8.0	C	1000D	100D	l	
		0021.0	0022.4	44.0	C	300	10	rl	
	200	0028.0	-	11.0	C	180D	50D	r	
6	200	1920E	0312	870D	ns	26	15	L	**
7	200	1920E	0011	870D	ns	56	30	L	**
9	200	1920E	0012	870D	ns	24	15	L	**
10	100	0209.6	0210.5	3.5	C	350	70	L	
		0511.2	0513.2	2.5	C	1000D	300D	L	
11	100	0345.0	0353.2	13.0	C	900	160	RL	
	200	1920E	2353	870D	ns	110	45	L	**
12	200	1920E	0542	870D	ns	110	30	L	**
13	100	0348	0548	164	ns	30	10	R	
	200	2040	2225	320	ns	70	30	Rl	**
	100	2132	2307	185	ns	90	25	L	
	500	2210.0	2241.0	57	RF	10	2		
15	100	0407.0	0407.3	1.0	C	1000D	400D	lr	
16	200	0133.0	0134U	1.0	C	180D	90D	R	
		1920E	0606	870D	ns	50	20	R	**
17	200	0435.0	0436U	2.0	C	180D	60D	r	
	100	0436.0	0436.2	1.0	C	150	40	l	
		0521	0815.5	264D	ns	50	10	L	
	200	1920E	2310	870D	ns	22	14	R	**
	100	1920E	2118	375D	ns	40	10	L	
18	200	0121.0	0121.4	1.5	C	180D	90D	rl	
	100	0121.0	0121.5	1.5	C	1000D	200D	L	
		0703.7	0703.8	1.0	C	95	40	rl	
		2357.0	0000U	6.0	C	900U	200U	l	# 0000-01
19	200	2205	2321	155	RF	40	30	R	
	100	2234	2358	120	RF	30	10	L	
	500	2235	2300.2	40	RF	35	10		
	100	2249.2	2253.3	5.5	C	90	30	l	
30	500	0228.0	0229.0	3.0	S	50	20		
		0709.0	0710.8	6.0	S	110	35		
	100	0753.0	0754.2	1.5	C	200	50	rl	
	200	2224.0	-	21.0	C	180D	110D	O	
	100	2224.0	2227.1	17.0	C	1000D	50D	10	

**: Flux duplicates with steady flux.

#: interrupted by calibration.

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

JUN 1974 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

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

RADIO PROPAGATION

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

JUN 1974 FREQUENCY 15 MHZ BANDWIDTH 80 HZ RECEIVING ANTENNA ROD 4.5 M

MEASURED AT HIRAISO

UT DAY	00H 45M	01H 45M	02H 45M	03H 45M	04H 45M	05H 45M	06H 45M	07H 45M	08H 45M	09H 45M	10H 45M	11H 45M	12H 45M	13H 45M	14H 45M	15H 45M	16H 45M	17H 45M	18H 45M	19H 45M	20H 45M	21H 45M	22H 45M	23H 45M
1	0	-3	-3	ES -9	1	10	12	17	17	16	12	16	16	10	11	ES 1	ES 0	5	6	13	16	9	8	-1
2	3	3	4	4	4	17	17	18	17	14	8	9	-1	ES -3	ES -1	10	ES 1	10	7	11	7	3	-2	0
3	-1	1	6	10	10	14	18	21	17	18	14	10	7	13	10	9	12	8	3	14	9	4	4	1
4	-2	-8	3	12	8	14	19	20	22	16	15	19	15	15	8	ES -1	ES -2	8	5	6	5	3	5	-3
5	-3	-2	5	3	11	14	16	18	19	19	13	18	C	12	11	ES 2	ES 0	9	8	5	4	8	2	-1
6	-2	-2	2	3	10	15	20	19	19	17	11	16	13	15	ES -2	ES -4	ES 1	9	6	5	9	1	-2	-1
7	1	8	5	8	10	15	19	23	23	21	24	18	16	10	5	11	19	11	6	6	8	2	-1	8
8	-3	-3	1	4	15	19	20	21	4	5	20	24	16	16	16	-1	ES -2	-17	0	11	13	7	2	5
9	-3	-3	-1	3	10	17	19	21	18	22	19	22	18	19	9	9	4	2	9	15	9	4	-7	-1
10	-5	6	4	10	16	16	14	17	18	22	21	23	2	18	17	16	18	16	16	12	9	6	9	2
11	9	1	5	10	12	18	20	22	23	18	22	23	25	15	20	11	9	6	12	5	8	8	-4	-9
12	-5	-1	-1	5	11	C	20	21	8	15	17	13	10	10	12	12	-5	13	2	10	10	5	5	2
13	-2	0	1	11	13	14	16	22	17	17	11	11	10	5	11	7	6	4	10	11	-4	-4	10	0
14	3	6	8	6	12	13	15	18	17	13	4	1	5	ES 6	ES 0	ES 1	5	8	7	9	6	5	-2	-2
15	4	6	5	12	13	19	19	22	19	21	ES 0	3	12	18	8	8	13	12	9	2	3	-3	-1	-3
16	-4	4	13	4	13	14	15	14	21	19	2	6	11	ES -1	ES 5	ES 4	ES -2	5	-1	4	3	8	1	3
17	-5	ES -9	-4	6	11	15	22	20	19	18	17	17	13	11	7	2	-3	-7	-1	4	12	4	-3	-4
18	8	11	8	10	14	17	18	18	18	18	14	2	1	14	ES 3	ES 5	5	4	7	13	0	5	1	7
19	-3	0	4	8	12	12	15	18	18	16	9	11	8	7	8	ES -1	ES -2	-7	11	16	2	-2	-4	2
20	-5	-7	-4	6	13	14	18	22	23	20	19	23	20	14	6	8	8	11	8	8	6	-1	-1	ES -22
21	6	5	1	10	5	12	17	17	16	11	12	11	6	6	1	ES 0	ES 4	5	5	21	11	14	8	-1
22	2	9	11	7	10	18	17	18	17	18	16	15	16	16	12	ES 8	ES 9	11	8	11	1	-3	-3	2
23	0	2	5	13	14	9	19	19	17	6	4	ES -1	ES 0	4	ES 2	ES 3	ES 4	-4	8	10	13	2	0	12
24	2	0	5	6	12	14	18	17	17	13	12	16	ES -1	ES 2	ES -4	-1	14	9	12	10	0	0	3	11
25	9	3	6	1	12	20	21	26	20	16	13	6	9	3	6	-1	13	8	0	6	6	7	9	6
26	4	3	5	11	13	12	6	18	26	27	18	17	12	11	ES 1	ES -3	ES -24	ES -24	ES -24	ES -24	-7	-7	-10	0
27	-6	-3	ES -23	2	4	8	13	0	18	24	12	19	8	14	1	ES -4	ES -24	-9	-9	-15	3	-18	-7	-7
28	-13	-13	-9	1	7	16	6	ES -16	3	8	ES -7	ES -10	ES -12	ES -9	ES -1	ES 1	ES -9	ES -24	ES -24	11	7	3	3	0
29	-2	-4	-3	-4	3	17	18	17	18	16	11	13	12	4	ES 1	ES -4	ES -9	-13	-1	2	-2	-4	-1	-1
30	0	-4	-6	3	5	2	10	11	17	16	-1	-3	13	ES -3	ES -4	ES -7	ES 0	-4	-7	-3	-1	-1	ES -24	ES -24
CNT	30	30	30	30	30	29	30	30	30	30	30	30	29	30	30	30	30	30	30	30	30	30	30	30
MED	-2	0	4	6	11	14	18	18	18	17	12	14	11	10	6	ES 2	ES 2	6	6	10	6	3	0	0
UD	8	8	8	12	14	19	20	22	23	22	21	23	18	18	16	11	14	12	12	15	13	8	9	8
LD	-5	-8	-6	1	4	9	10	11	8	ES 8	ES 0	ES -1	ES -1	ES -3	ES -2	ES -4	ES -9	-17	-9	-3	-2	-4	-7	-9

RADIO PROPAGATION

Radio Propagation Quality Figures

HIRAISO

Time in U.T.

Jun. 1974	Whole Day Figure	W W V 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Conditions 00 06 12 18 / 06 12 18 24	Principal Geomagnetic Storms Start	End	Range
1	4-	(3)(4) - (3)	3 4 4 4	N U U U			
2	4o	(3) - - (5)	4 4 4 4	U U U U			
3	4-	(4) - - (3)	4 4 4 4	U U U U			
4	4o	(4)(4) - (4)	4 4 4 4	N N N N			
5	4o	(4) - C (5)	4 4 4 4	N N N N			
6	4o	(4)(4) - (5)	4 4 4 4	N N N N			
7	4+	(4)(5)(4)(5)	4 4 4 4	N N N N			
8	5-	5 (5)(5)(5)	4 4 4 4	N N N N			
9	4+	(5)(5)(4)(5)	4 4 4 4	N N N N			
10	4o	5 (4) - (4)	4 4 4 4	N N N N	18.50	---	92
11	4+	4 (5)(4)(4)	4 4 5 4	N N N N	---	---	
12	4o	(4) - (4)(4)	3 4 4 4	N U U U	---	---	
13	4-	(3) - - (4)	4 4 4 4	U U U U	---	09.0	
14	4o	5 - (4)(4)	4 4 (4) 4	U N N N			
15	4o	(4) - - (4)	4 4 5 4	N N N N			
16	4-	(3) - - (3)	4 4 4 4	U U U U			
17	4o	(4) - - (4)	4 4 4 4	U U U U			
18	4o	(4) - - (4)	4 4 4 4	U U U U			
19	4o	(4)(4) - (4)	4 4 4 4	U U U U			
20	4o	(4)(5) - (4)	4 4 4 4	U U U U			
21	4o	(4)(5) - (4)	4 4 4 4	U N N N			
22	4+	4 (5) - (5)	4 4 4 4	N N N N			
23	4o	4 (5)(4)(5)	4 3 (3) 4	N N N N			
24	4o	4 (5)(4)(4)	4 4 (4) 4	N N N N			
25	4o	(4)(5)(4)(4)	4 4 4 4	N N N N	23.29	---	130
26	3+	(4) - - (3)	4 4 (3) 3	N U U U	---	---	
27	3o	(3) - - (3)	3 4 3 3	W W W W	---	---	
28	3-	(3) - - (3)	3 (2)(2) 4	W W W W	---	---	
29	3+	(3) - - (3)	4 4 3 3	U U U U	---	19.0	
30	3+	(4) - - (3)	4 3 (3) 3	U U U U			

RADIO PROPAGATION
Sudden Ionospheric Disturbance (SWF)

HIRAISO

Time in U.T.

Jun. 1974	S W F							Correspondence		
	Drop-out Intensities (dB)				Start	Duration	Type	Imp.	Solar Flare	Solar Noise	Geomag. Crochet
	CO	HA	1)	2)							
2		×	31		0426	14	S	2	×	×	
4			12		0011	46	G	1		×	
23	5	8	13		0520	90	G	1	×	×	
30		×	15		0228	57	G	1		×	
30			11		0710	30	S	1-		×	
30		×		>23	2224	XX	S	2-	×	×	

NOTES

CO: Colorado (WWV)
HA: Hawaii (WWVH)
1): Australia
2): Teheran

RADIO PROPAGATION

Sudden Ionospheric Disturbance (SPA)

I N U B O

Jun. 1974	S P A								
	Phase Advance (degrees)						Time (U.T.)		
Date	GBR	NAA	NWC	NPG	ND3	AL3	Start	End	Maximum
1			12				0639	0746	0701
2			47	24	25		0043	0204	0052
2	66	55	125	54	71	68	0425	0605	0427
2		15		11			2209	2312	2216
4		40	62	48	51		0010	0135	0026
23	39	19	75*	13	25	40	0530	0649	0552
24				9			2003	2108	2018
26				9			0710	0757	0716
27			16	6			0222	0406	0258
30			28	11			0231	0418	0238
30	33		63				0706	0847	0717
30	49*	88*	67*	112*	95	56	2224	2356	2233

IONOSPHERIC DATA IN JAPAN FOR JUNE 1974
F-306 Vol. 26 No. 6 (Not for Sale)

電離層月報(1974年6月)
第26巻 第6号 (非売品)
1974年10月 1日 印刷
1974年10月15日 発行
編集兼 郵政省 電波研究所
発行所 〒184 東京都小金井市貫井北町4丁目2－1
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