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IONOSPHERIC DATA IN JAPAN

FOR JULY 1985

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CONTENTS

RADIO RESEARCH LABORATORY
MINISTRY OF POSTS AND TELECOMMUNICATIONS
TOKYO, JAPAN

INTRODUCTION

This Series contains data on ionosphere (I), solar radio emission (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°23.5'N	141°41.2'E	35.3°N	206.5°	Vertical Sounding (I)
Akita	39°43.5'N	140°08.0'E	29.5°N	205.9°	" (I)
Kokubunji	35°42.4'N	139°29.3'E	25.5°N	205.8°	" (I)
Yamagawa	31°12.1'N	130°37.1'E	20.4°N	198.3°	" (I)
Okinawa	26°16.9'N	127°48.4'E	15.3°N	196.0°	" (I)
Hiraiso	36°22.0'N	140°37.5'E	26.3°N	206.8°	Radio Receiving (S, P)
Inubo	35°42.2'N	140°51.5'E	25.6°N	207.0°	" (P)

A. IONOSPHERE

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

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

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

a. Characteristics of Ionosphere

fxI — Top frequency of spread *F* trace

foF2, *foF1*, *foE*, *foEs* — Ordinary wave critical frequency for the *F2*, *F1*, *E* and *Es* including particle *E* layers respectively

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

fmin — Lowest frequency which shows vertical ionospheric reflections

M(3000)F2, *M(3000)F1* — Maximum usable frequency factor for a path of 3000 km for 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 *fmin*.

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

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

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

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

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

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

K Presence of particle *E* layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturebation of parameters-Presence of polar spure traces.

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

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

D Greater than.

E Less than.

I Missing value has been replaced by an interpolated value.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

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

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

(iii) Description of Types of *Es*

When more than one type of *Es* trace 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 particle *E* layer minimum virtual height.

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

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

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

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

a An *Es* trace having a well-defined flat or gradually rising lower edge with stratified and

diffuse traces present above it.

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

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

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

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

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

Median count (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 EMISSION

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.

All symbols and terminology in the table of data are used in accordance with the "Descriptive Text of Solar-Geophysical Data, NOAA" and "Instruction Manual Monthly Report for Solar Radio Emission, WDC-C2".

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. Outstanding Occurrences

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.

Type is denoted by numerical code and letter symbol in parallel as follows:

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

Flux density is the increase of flux over the level at which daily flux is calculated, or the increase of flux over the underlying burst when the event is superposed on another burst of long duration.

Polarization is expressed by the polarization degree and sence as follows:

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

The following symbols may be attached after numerical values in table, if necessary.

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

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

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 six 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 respectively distinguished by marks ', '' and ''' from these of the 15 MHz wave for WWV and WWVH. Values of *start*, *duration*, *type*, and *importance* are obtained from data of the circuit whose drop-out intensity in dB is underlined as 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 optical 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 waves received at Inubo. The transmitting stations are listed in the following table.

Phase advance is shown in unit of degree at its maximum stage. No transmission or no reception during the period is indicated by —, 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.

Transmitting Stations

Name	Location (Geographic Coordinate)		Call Sign	Frequency (kHz)	Radiation Power (kW)	Arc Distance from Inubo (km)
Rugby	52°22'N	001°11'W	GBR	16.0	(750) 60	9550
Jim Creek	48°12'N	121°55'W	NLK	18.6	(1200) 130	7620
North West Cape	21°49'S	114°10'E	NWC	22.3	1000	6990
Aldra	66°25'N	013°09'E	Ω/N	13.6	10	7820
North Dakota	46°22'N	098°21'W	Ω/ND	13.6	10	9140
Haiku	21°24'N	157°50'W	Ω/H	13.6	10	6100
La Reunion	20°58'S	055°17'E	Ω/LR	13.6	10	10970

IONOSPHERIC DATA

JUL. 1985 | FXI (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	X 47	X 47	X 42	43																	X 65	X 67	X 66	X 61
2	X 52	56	50	A	45																A	A	A	A
3	X 50	54	48	51	50																A	X 70	70	78
4	71	58	58	54	53																X 79	X 79	X 75	X 69
5	X 65	X 64	X 60	X 51																	X 78	X 67	X 62	X 59
6	X 57	X 59	X 57	X 51																	X 66	X 65	X 61	X 58
7	X 51	A	56	54																	X 66	A	A	X 59
8	X 56	X 51	X 54	X 51																	X 76	X 67	X 55	X 52
9	X 51	X 49	A	A																	X 75	X 73	X 66	X 62
10	X 60	X 57	57	52	50																X 68	X 67	66	60
11	58	57	A	51	50																X 71	X 66	X 62	X 58
12	X 55	X 52	57	X 47																	X 82	X 87	X 83	X 75
13	X 60	X 47	X 39	X 42																	X 63	X 67	X 64	X 60
14	X 59	X 50	X 47	X 43																	A	X 58	58	63
15	35	30	X 32	X 34																	X 56	X 55	52	50
16	X 46	A	X 40	X 36																	X 64	X 60	X 49	A
17	A	40	X 40	X 40																	X 68	X 73	X 70	X 60
18	X 48	53	42	43																	X 56	60	57	57
19	46	43	38	A	40																A	60	60	60
20	55	52	52	A																	C	C	C	C
21	C	C	C	C																	C	C	C	C
22	C	C	C	C																	X 63	X 60	60	61
23	53	X 49	X 49	X 50	46																68	X 64	A	60
24	50	57	53	44																	X 66	X 60	X 59	X 57
25	52	52	50	47																	X 64	A	55	50
26	X 44	X 43	X 42	X 43																	X 67	64	67	63
27	60	55	A	50																	X 52	X 55	X 52	X 51
28	X 50	X 47	X 47	X 43																	X 72	X 68	A	X 57
29	58	58	57	X 50																	X 68	X 68	X 61	60
30	57	X 50	X 50	X 48																	X 83	X 75	X 67	X 57
31	X 55	X 50	X 50	X 50																	X 75	X 75	X 75	X 59
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	27	26	25	7																25	26	25	27
MED	X 54	X 52	X 50	X 48	50																X 68	X 67	X 62	X 60
UQ	X 58	56	56	X 51	50																X 75	X 70	X 67	61
LQ	X 50	X 48	X 42	X 43	46																X 64	X 60	X 58	X 57

JUL. 1985 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF2 (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	40	40	35	F	35	A	45	48	51	50	52	46	48	48	49	47	50	49	55	60	58	60	59	54
2	45	F	F 43	A	F 37	43	A	A	46	49	A	A	A	A	A	A	A	50	52	58	A	A	A	A
3	43	F 40	F	F	F 40	40	49	53	56	53	A	A	A	A	A	A	A	50	49	A	A	63	F	F
4	F	F	F	F	F	50	56	58	63	57	A	A	A	50	A	52	50	50	A	66	72	72	68	62
5	58	57	53	44	41	39	A	43	45	52	53	50	A	50	49	55	47	57	67	71	71	60	55	52
6	50	52	50	44	43	45	49	53	56	61	A	48	49	51	A	51	50	52	54	58	59	58	54	51
7	44	A	F	F 45	A	42	43	A	A	A	A	A	A	A	A	A	A	A	50	A	59	A	A	52
8	49	44	47	44	43	42	45	47	47	A	A	51	A	A	A	45	47	47	53	60	69	60	48	45
9	44	42	A	A	39	40	49	53	A	A	A	B	58	53	53	55	55	59	55	66	68	66	59	55
10	53	50	F	F	F 42	49	54	A	A	47	R	54	51	45	A	A	44	A	A	A	61	60	F	F
11	F	F	A	F	F 43	50	50	A	51	A	A	54	A	A	53	52	A	56	60	63	64	59	55	51
12	48	45	F	40	42	H 43	51	54	64	A	A	52	53	56	60	A	A	A	A	72	75	80	76	68
13	53	40	32	35	37	36	40	A	R	43	A	E G 45	A	53	53	49	46	45	A	46	56	60	57	53
14	52	43	40	36	33	34	A	A	A	53	A	A	47	A	A	A	A	48	49	55	A	51	F	F
15	F	F 23	25	27	A	50	A	A	A	45	45	A	A	E G 40	E G 40	42	42	A	A	48	49	48	F	F
16	39	A	33	29	35	43	43	49	A	A	A	A	46	49	46	45	45	45	47	53	57	53	42	A
17	A	F 31	33	33	34	38	A	A	45	A	A	A	A	A	A	A	48	48	46	A	61	66	63	53
18	41	F	F	F	29	32	38	A	A	44	A	E G 41	A	43	E G 40	R	40	A	A	44	49	F	F	F
19	F	F 34	F	A	F 30	A	A	51	61	A	A	46	43	43	A	43	46	51	60	60	A	F	F	F
20	F 41	F 40	F	A	A	37	39	42	R	45	A	42	E G 42	R	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	49	51	50	52	56	53	F 50	F
23	F 43	42	42	43	F 36	41	40	41	A	A	A	49	A	A	45	43	51	49	48	60	F	S 57	A	F
24	F	F	F	F	35	37	A	A	A	53	55	A	A	A	46	49	50	50	51	60	59	53	52	50
25	F 45	F	F	F 36	35	40	46	45	49	A	A	53	A	A	A	55	52	54	A	A	57	A	F 45	F
26	S 37	36	35	36	33	37	A	50	A	A	50	A	A	A	A	45	56	56	64	66	60	F	F	F
27	F 50	F	A	F	36	40	A	A	A	A	A	45	A	50	48	55	50	53	63	53	45	48	45	44
28	43	40	40	36	30	34	44	47	A	50	47	50	A	A	A	53	55	54	A	56	65	61	A	50
29	F	F	F	43	43	A	45	53	63	A	A	49	A	A	A	50	50	49	53	59	61	61	54	F
30	F	43	43	41	39	40	45	49	A	55	54	59	A	52	49	A	A	A	53	66	76	68	60	50
31	48	43	43	43	44	43	45	46	A	54	53	52	49	51	53	48	50	47	54	67	68	68	68	52
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	19	15	17	25	26	20	18	13	16	8	18	10	15	14	19	22	23	21	24	24	23	18	16
MED	45	42	40	40	37	40	45	49	51	51	52	50	48	50	49	49	50	50	53	60	60	60	55	52
UQ	50	44	43	43	42	43	49	53	61	54	54	52	51	52	53	52	50	54	55	66	68	64	60	54
LQ	43	40	34	36	35	37	43	46	47	46	48	46	46	46	46	45	46	48	50	54	57	55	50	50

JUL. 1985 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOF1 (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	410	410	A	430	A	420	410	400	390	A	330					
2					250	A	A	A	A	410	A	A	A	A	A	A	A	A	A					
3							A	400	A	420	A	A	A	A	A	A	A	370	350	A				
4						330	370	400	A	A	A	A	A	420	A	410	400	A	A	270				
5						300	A	380	400	A	420	430	A	450	420	410	410	370	330					
6							L	A	410	420	A	420	A	A	A	A	400	380	330					
7					A	310	A	A	A	A	A	A	A	A	A	A	A	A	350	A				
8						310	390	400	420	A	A	A	A	A	A	410	400	380	A					
9							A	A	A	A	A	B	440	440	430	A	400	A	A					
10						L	390	A	A	410	420	420	A	430	A	A	420	A	A	A				
11							380	A	420	A	A	450	A	A	430	420	A	A	A					
12							370	A	410	A	A	440	430	430	430	A	A	A	A					
13					220	300	330	A	390	400	A	450	A	410	410	410	400	A	A	A				
14						A	A	A	A	A	A	A	420	A	A	A	A	A	A					
15					A	320	A	A	A	400	410	A	A	400	400	400	380	A	A					
16							350	A	A	A	A	A	420	410	410	400	390	360	330					
17					230	A	A	A	400	A	A	A	A	A	A	A	A	370	A	A				
18						280	330	A	A	400	A	410	A	400	400	400	370	A	A					
19						A	A	A	A	A	A	420	410	410	A	400	A	370	A					
20					A	310	H 320	380	400	A	A	400	420	410	C	C	C	C	C	C				
21					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22					C	C	C	C	C	C	C	C	C	C	C	C	A	360	A					
23								380	A	A	A	A	A	A	410	390	A	A	A					
24							A	A	A	A	420	A	A	A	410	400	380	A	330					
25						300	340	A	A	A	A	440	A	A	A	400	390	A	A	A				
26							A	A	A	A	A	A	A	A	A	410	A	A	A					
27						A	A	A	A	A	A	430	A	430	420	400	A	A	320					
28						300	360	A	A	420	A	A	A	A	A	420	A	A	A					
29						A	A	A	410	A	A	430	A	A	A	410	400	380	330					
30							370	400	A	H 430	A	A	A	430	430	A	A	A	330	230				
31							A	A	A	A	A	430	A	A	A	A	400	400	330					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					3	10	12	7	10	10	4	14	6	14	13	17	15	10	11	2				
MED					230	305	365	400	410	410	420	430	420	420	410	400	400	370	330	250				
UQ					240	310	375	400	410	420	420	440	430	430	430	410	400	380	330					
LQ					225	300	335	380	400	400	415	420	420	410	410	400	390	370	330					

JUL. 1985 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOE (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	190	A	270	300	310	315	315	310	A	A	305	295	240	A	S				
2					A	180	250	275	285	305	315	320	310	305	295	A	A	A	A	A				
3					A	200	A	300	305	310	310	320	315	305	295	A	A	245	205	120				
4					A	210	250	280	300	310	310	310	310	300	310	300	290	245	200	A				
5					E	200	255	280	290	300	305	310	305	300	A	A	A	250	200	115				
6					125	200	240	275	300	300	305	310	305	300	A	A	A	250	200	A				
7					A	205	250	285	300	305	315	315	310	300	290	A	295	260	200	S				
8					A	185	250	A	300	300	325	320	315	325	310	300	285	250	210	S				
9					S	195	245	280	300	305	A	B	320	A	325	305	295	250	200	S				
10					S	190	A	275	300	300	315	320	310	305	A	A	300	255	205	S				
11					A	A	240	285	295	300	310	310	A	A	A	300	A	A	200	S				
12					A	200	250	285	295	300	305	A	A	325	325	320	295	260	200	S				
13					130	195	240	270	290	300	305	310	A	A	A	300	290	A	200	125				
14					S	190	230	275	290	300	305	300	320	315	310	300	285	240	195	S				
15					120	190	225	265	285	300	A	A	305	A	A	300	A	230	195	A				
16					S	190	230	270	285	300	300	A	A	300	A	A	A	A	190	S				
17					A	185	A	255	290	300	A	300	A	A	A	A	A	250	200	S				
18					E	175	205	260	290	300	A	A	A	320	300	295	290	A	A	S				
19					A	A	220	255	280	295	A	A	A	A	A	300	280	A	170	115				
20					E	185	230	270	290	300	300	305	A	300	C	C	C	C	C	C				
21					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22					C	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A				
23					A	A	230	A	295	300	300	A	A	A	A	305	290	230	190	S				
24					A	A	230	275	295	300	305	305	305	A	A	295	A	A	A	A				
25					E	A	230	270	290	300	305	320	325	325	315	300	275	230	A	A				
26					E	155	230	265	295	300	300	300	A	A	300	A	A	235	200	A				
27					E	185	230	270	295	300	300	300	300	A	A	305	290	250	195	A				
28					E	180	225	275	285	300	310	325	320	325	300	A	A	A	190	E				
29					E	170	220	275	280	300	305	A	A	A	295	A	290	235	195	E				
30					E	170	225	265	295	300	305	305	320	330	315	300	290	240	185	E				
31					E	165	210	265	300	305	305	310	315	305	300	A	285	250	200	E				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					13	24	25	27	29	29	24	21	18	17	15	16	17	20	23	8				
MED					E	190	230	275	295	300	305	310	310	305	300	300	290	248	200	E E 115				
UQ					E	198	245	278	300	300	310	320	320	325	312	305	295	250	200	118				
LQ					E	180	225	268	290	300	305	305	305	300	298	300	285	238	195	E				

JUL. 1985 | FOE (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	JA 28	32	25	ES 11	28	50	55	JA 51	JA 46	40	47	40	50	50	41	G	38	44	38	31	JA 51	30	30	40
2	42	36	JA 43	70	30	JA 63	JA 83	JA 75	JA 54	JA 53	68	JA 83	JA 60	62	JA 65	JA 70	67	JA 55	JA 45	JA 63	80	70	70	60
3	JA 53	36	38	30	29	30	JA 51	41	63	G	64	60	JA 62	JA 67	57	66	62	48	JA 51	JA 83	JA 83	JA 51	JA 48	JA 48
4	43	39	JA 34	ES 15	30	64	42	40	JA 61	JA 59	JA 103	JA 91	JA 74	JA 43	63	67	51	JA 86	JA 126	JA 90	38	47	23	30
5	E	ES 15	ES 15	ES 13	19	29	57	38	40	64	JA 54	48	JA 85	41	45	40	36	35	28	41	43	62	ES 17	ES 15
6	30	24	E	ES 12	G	G	31	50	48	JA 65	JA 93	JA 45	52	50	JA 65	JA 55	34	G	JA 61	JA 63	JA 53	35	JA 41	39
7	40	JA 51	41	JA 51	80	G	50	60	63	51	60	61	65	JA 79	JA 84	JA 63	JA 73	68	JA 161	JA 123	JA 176	JA 86	JA 64	30
8	JA 36	30	30	24	25	28	G	34	G	JA 104	JA 63	JA 62	64	58	53	40	38	33	JA 51	44	40	43	52	38
9	36	43	60	JA 52	JA 50	41	JA 46	58	JA 76	JA 103	JA 161	B	G	40	JA 60	JA 86	36	JA 47	JA 73	JA 86	JA 43	JA 58	JA 55	JA 73
10	41	37	27	30	36	JA 43	JA 64	60	JA 63	36	G	40	JA 78	41	JA 65	JA 62	34	JA 82	JA 72	JA 83	JA 63	JA 50	JA 43	JA 50
11	JA 38	JA 31	JA 63	JA 54	JA 31	34	31	66	JA 83	JA 86	JA 101	JA 50	JA 136	JA 80	41	43	JA 125	JA 66	JA 56	35	JA 83	JA 43	JA 53	JA 60
12	JA 44	36	30	26	23	30	37	JA 83	JA 93	JA 100	JA 73	JA 88	40	JA 43	40	JA 74	64	JA 71	JA 96	JA 101	JA 50	JA 63	38	30
13	ES 15	31	30	21	22	25	30	JA 61	JA 56	41	JA 62	42	JA 70	40	43	G	G	43	52	43	20	22	36	27
14	ES 15	21	ES 11	ES 11	19	35	JA 70	JA 79	JA 71	44	JA 70	JA 70	G	JA 76	JA 136	JA 100	JA 74	JA 50	JA 73	JA 43	JA 110	JA 60	26	37
15	36	38	39	23	35	JA 50	JA 81	JA 123	71	35	40	JA 50	JA 55	JA 43	36	40	40	JA 78	JA 90	JA 50	JA 63	JA 43	JA 53	JA 54
16	41	JA 51	38	30	22	40	37	53	JA 73	54	62	JA 94	JA 43	42	37	34	40	34	G	20	JA 45	JA 50	40	JA 66
17	57	36	22	E	29	41	JA 60	JA 60	43	JA 53	50	JA 55	JA 63	JA 61	54	JA 57	JA 75	34	33	JA 128	JA 53	35	37	30
18	24	33	ES 15	18	30	27	JA 53	50	49	36	49	40	50	G	36	G	40	JA 64	JA 61	35	JA 84	JA 60	39	JA 52
19	41	39	40	JA 61	36	JA 83	70	JA 83	JA 59	JA 86	JA 70	60	57	55	JA 61	36	JA 70	JA 54	JA 63	JA 83	JA 95	JA 43	38	34
20	27	35	JA 83	JA 89	JA 55	27	30	JA 50	38	JA 51	48	49	35	40	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	JA 58	JA 61	JA 63	JA 56	JA 53	JA 43	JA 51	47
23	36	36	35	34	30	27	G	37	JA 65	JA 54	JA 65	53	61	61	35	36	JA 50	JA 83	JA 83	JA 81	JA 51	JA 95	JA 71	42
24	40	31	JA 50	JA 43	39	37	JA 51	JA 72	JA 86	JA 60	40	66	JA 64	JA 61	41	34	JA 44	JA 43	31	30	JA 47	30	34	30
25	JA 50	42	JA 42	E	26	35	33	JA 43	63	52	JA 72	43	60	JA 163	JA 94	JA 61	JA 86	60	JA 87	JA 87	JA 74	57	JA 74	JA 50
26	JA 83	JA 35	30	30	33	JA 36	JA 63	58	JA 77	JA 83	JA 53	JA 56	JA 135	JA 90	JA 53	JA 55	50	JA 88	JA 57	JA 61	JA 63	JA 83	JA 53	24
27	JA 51	JA 34	53	JA 50	35	33	60	JA 68	JA 70	JA 61	JA 55	40	70	JA 50	37	33	JA 54	JA 83	JA 50	30	24	23	JA 36	JA 28
28	JA 32	28	JA 51	41	JA 33	34	JA 41	JA 62	JA 80	JA 44	43	45	JA 80	JA 88	JA 113	70	JA 63	43	JA 115	JA 51	JA 46	JA 83	JA 83	JA 63
29	JA 53	JA 44	JA 49	35	36	JA 58	JA 45	JA 50	41	JA 60	JA 88	JA 88	JA 146	JA 120	JA 98	JA 88	50	G	28	41	JA 43	JA 53	JA 63	JA 50
30	30	JA 37	30	32	30	35	30	35	JA 65	39	JA 50	60	JA 68	G	G	JA 74	JA 130	JA 121	42	JA 93	JA 84	JA 63	30	30
31	33	50	27	30	38	37	JA 62	41	JA 60	JA 58	43	43	50	JA 48	JA 51	55	G	38	28	18	24	27	ES 16	ES 11
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	28	29	29	28	28	29	29	29	29	29	29	29	29
MED	38	36	35	30	30	35	50	58	JA 63	JA 54	JA 62	54	JA 62	JA 50	53	55	50	JA 54	JA 57	JA 56	JA 53	JA 50	41	39
UQ	43	39	43	43	36	41	JA 60	JA 66	JA 71	JA 64	JA 70	JA 64	JA 70	JA 67	JA 65	JA 68	JA 67	JA 71	JA 73	JA 83	JA 80	JA 62	JA 53	JA 50
LQ	30	31	27	18	26	29	33	43	49	44	49	44	50	42	40	36	38	43	42	41	JA 43	43	36	30

JUL. 1985 | FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FBES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N. Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	E	E	E S 11	24	A A 50	40	39	40	G	43	G	45	35	40	G	37	38	25	21	E	E	E	25
2	25	20	29	A A 70	19	41	A A 83	A A 75	41	G	A A 68	A A 83	A A 60	A A 62	A A 65	A A 70	A A 67	47	38	50	A A 80	A A 70	A A 70	A A 60
3	E	E	25	E	17	26	47	37	41	G	A A 64	A A 60	A A 62	A A 67	A A 57	A A 66	A A 62	G	30	A A 83	A A 83	32	34	30
4	25	25	E	E S 15	17	G	G	38	46	50	A A 103	A A 91	A A 74	G	A A 63	39	G	48	A A 126	23	24	30	E	E
5	E	E S 15	E S 15	E S 13	G	G	A A 57	37	37	47	G	G	A A 85	36	38	33	30	G	G	26	20	46	E S 17	E S 15
6	E	E	E	E S 12	G	G	G	47	G	38	A A 93	G	47	43	A A 65	43	34	G	31	40	E	E	30	E
7	E	A A 51	34	28	A A 80	G	40	A A 60	A A 63	A A 51	A A 60	A A 61	A A 65	A A 79	A A 84	A A 63	A A 73	A A 68	27	A A 123	45	A A 86	A A 64	E
8	E	E	E	E	19	26	G	30	G	A A 104	A A 63	44	A A 64	A A 58	A A 53	36	G	G	47	40	33	38	44	34
9	E	34	A A 60	A A 52	27	31	40	50	A A 76	A A 103	A A 161	B	G	38	G	50	G	39	36	23	38	27	41	40
10	30	E	E	E	24	31	27	A A 60	A A 63	G	G	G	44	37	A A 65	A A 62	G	A A 82	A A 72	A A 83	37	40	29	E
11	E	E	A A 63	E	20	24	G	A A 66	40	A A 86	A A 101	42	A A 136	A A 80	33	32	A A 125	42	50	17	E	40	47	21
12	E	E	E	E	17	G	33	41	40	A A 100	A A 73	40	35	41	40	A A 74	A A 64	A A 71	A A 96	50	40	25	30	20
13	E S 15	20	E	E	20	G	27	A A 61	G	G	A A 62	G	A A 70	36	36	G	G	42	A A 52	30	E	E	25	E
14	E S 15	E	E S 11	E S 11	G	31	A A 70	A A 79	A A 71	43	A A 70	A A 70	G	A A 76	A A 136	A A 100	A A 74	40	40	25	A A 110	31	E	E
15	20	19	22	17	A A 35	27	A A 81	A A 123	A A 71	G	34	A A 50	A A 55	37	32	G	G	A A 78	A A 90	23	27	22	31	E
16	E	A A 51	18	E	G	G	32	47	A A 73	A A 54	A A 62	A A 94	35	G	36	30	31	25	G	18	40	32	28	A A 66
17	A A 57	E	E	E	17	30	A A 60	A A 60	G	A A 53	A A 50	A A 55	A A 63	A A 61	A A 54	A A 57	43	G	33	A A 128	40	21	27	E
18	E	E	E S 15	E	18	26	27	A A 50	A A 49	G	A A 49	36	A A 50	G	32	G	34	A A 64	A A 61	20	23	27	E	26
19	E	23	17	A A 61	20	A A 83	A A 70	47	55	A A 86	A A 70	40	38	38	A A 61	G	40	29	40	52	A A 95	30	E	E
20	E	21	E	A A 89	A A 55	G	G	35	35	40	A A 48	G	35	39	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	40	33	47	38	29	38	40	21
23	E	E	E	20	18	20	G	30	A A 65	A A 54	A A 65	45	A A 61	A A 61	34	G	49	40	46	20	32	52	A A 71	E
24	20	E	E	20	20	28	A A 51	A A 72	A A 86	44	G	A A 66	A A 64	A A 61	33	G	32	36	22	18	24	20	25	E
25	E	33	33	E	17	23	30	40	43	A A 52	A A 72	G	A A 60	A A 163	A A 94	G	G	39	A A 87	A A 87	42	A A 57	32	20
26	22	25	E	E	20	34	A A 63	48	A A 77	A A 83	42	A A 56	A A 135	A A 90	A A 53	33	40	38	40	50	47	40	41	E
27	E	30	A A 53	26	22	31	A A 60	A A 68	A A 70	A A 61	A A 55	G	A A 70	36	33	G	40	50	27	16	E	E	30	25
28	20	E	E	E	19	23	32	42	A A 80	40	43	45	A A 80	A A 88	A A 113	36	40	42	A A 115	48	40	32	A A 83	E
29	32	27	35	26	23	A A 58	37	41	40	A A 60	A A 88	36	A A 146	A A 120	A A 98	35	G	G	G	32	38	E	E	E
30	E	36	E	E	20	27	G	G	A A 65	G	49	50	A A 68	G	G	A A 74	A A 130	A A 121	27	20	45	E	E	E
31	E	E	E	E	30	28	40	39	A A 60	47	43	41	45	47	50	43	G	32	G	G	E	E	E S 16	E S 11
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	28	29	29	28	28	29	29	29	29	29	29	29	29
MED	E	15	E	E E 11	20	26	37	47	49	47	A A 62	43	A A 61	43	52	36	37	39	40	30	37	30	30	E
UQ	20	25	25	20	23	31	A A 57	A A 60	A A 70	A A 60	A A 70	A A 58	A A 70	A A 67	A A 65	A A 60	49	48	A A 52	50	42	40	41	25
LQ	E	E	E	E	17	G	27	39	40	G	43	G	45	36	34	G	G	29	27	20	23	20	E E 16	E

The Radio Research Laboratories, Japan

JUL. 1985 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FMIN (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	E	E S 17	E S 11	E	E	11	13	17	19	19	20	20	19	19	19	18	12	10	E S 13	E	E	E	E
2	E	E	E	E	E	10	10	17	19	19	19	19	20	20	19	19	18	12	10	10	E	E S 15	E S 15	E
3	E	E	E	E	E	10	11	21	20	20	20	19	20	20	20	19	18	10	11	10	E S 12	E	E	E
4	E	E	E	E S 15	E	E	11	19	16	19	20	21	25	20	23	19	18	10	10	E	E	E S 15	E	E
5	E	E S 15	E S 15	E S 13	E	11	12	12	19	21	20	19	21	22	20	19	18	10	11	10	E S 14	E	E S 17	E S 15
6	E	E	E	E S 12	E	10	10	11	18	20	21	19	24	20	20	21	18	12	10	10	E	E	E	E
7	E	E	E	E	E	10	11	18	18	20	22	20	20	19	20	18	18	12	10	E S 15	E	E	E	E
8	E	E	E	E	E	10	12	16	19	19	20	20	22	20	19	18	12	10	10	E S 11	E	E S 16	E S 12	E S 17
9	E	E	E S 16	E	E S 12	11	11	17	18	19	18	B	24	22	21	18	18	17	11	E S 12	E	E	E S 16	E
10	E	E	E	E	E S 11	11	18	16	18	20	20	20	20	20	20	18	19	11	12	E S 13	E	E	E	E S 15
11	E	E	E	E	E	E	10	18	19	20	20	21	20	20	19	20	17	11	11	E S 12	E S 15	E	E	E
12	E	E	E	E	E	10	11	17	19	19	20	25	20	20	20	20	19	16	10	E S 11	E S 15	E	E S 15	E S 15
13	E S 15	E	E	E	E	10	11	15	18	18	19	22	20	20	20	19	22	19	10	11	E	E	E	E S 15
14	E S 15	E	E S 11	E S 11	E S 15	12	11	12	18	19	20	21	20	20	20	19	18	17	11	E S 13	E	E	E	E
15	E	E	E	E	E	12	15	18	19	20	20	20	20	20	20	19	18	12	11	10	E	E	E	E
16	E	E	E	E	E S 13	11	10	18	17	20	20	19	20	19	19	18	18	12	10	E S 12	E	E	E S 15	E
17	E	E	E	E	E	10	10	11	18	15	18	18	18	20	20	17	17	10	10	E S 13	E	E	E	E
18	E S 15	E S 15	E S 15	E	E	10	10	12	12	17	19	18	17	18	18	11	18	10	10	E S 12	E	E	E	E
19	E	E	E	E	E	10	10	10	11	12	19	12	18	19	18	19	12	10	10	10	E S 15	E	E S 12	E
20	E S 12	E S 12	E S 13	E	E	11	12	11	19	18	18	20	18	20	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	11	10	10	E	E	E	E	E S 15
23	E S 15	E	E	E	E	E	10	11	12	17	17	19	21	23	19	18	18	10	10	E S 13	E S 15	E	E	E S 16
24	E	E	E	E S 12	E	11	10	10	17	16	19	20	20	19	19	17	12	10	10	E	E	E S 15	E	E S 15
25	E	E	E	E	E	E	16	11	11	18	19	20	20	20	19	19	18	11	10	E	E	E S 16	E	E
26	E	E	E	E	E	E	10	12	17	18	17	19	19	20	19	17	17	11	10	E	E	E	E	E
27	E	E	E	E	E	10	10	10	18	19	19	20	20	20	20	18	11	10	10	10	E S 15	E	E	E
28	E	E	E	E	E	E	10	17	17	18	20	19	20	20	20	19	16	10	15	E	E S 17	E	E S 15	E
29	E S 15	E	E	E	E	E	11	12	12	19	20	21	20	19	18	12	12	10	11	E	E S 17	E	E	E
30	E	E	E	E	E	E	11	10	10	18	19	21	20	20	19	19	17	10	10	E	E	E	E	E S 15
31	E	E	E	E	E	10	10	11	15	18	20	19	19	20	19	20	11	10	10	E	E	E S 15	E S 16	E S 11
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	28	29	29	29	29	29	29	29	29
MED	E	E	E	E	E	10	11	12	18	19	20	20	20	20	20	19	18	10	10	E E 10	E	E	E	E
UQ	E	E	E	E	E	11	11	17	19	20	20	21	20	20	20	19	18	12	11	E S 12	E S 14	E	E S 12	E S 15
LQ	E	E	E	E	E	E	10	11	16	18	19	19	20	20	19	18	16	10	10	E	E	E	E	E

JUL. 1985 | FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | M(3000)F2 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	300	300	315	F	315	A	335	310	325	295	325	295	270	265	265	275	300	295	315	315	300	315	315	335
2	300	F	F 285	A	F 305	285	A	A	310	295	A	A	A	A	A	A	A	A	305	310	A	A	A	A
3	295	F 300	F	F	F 315	285	A	300	350	330	A	A	A	A	A	A	A	320	305	A	A	300	F	F
4	F	F	F	F	F	320	305	320	335	320	A	A	A	275	A	310	300	295	A	290	305	295	295	290
5	290	300	295	285	295	290	A	280	260	305	340	300	A	265	265	310	285	290	305	300	310	315	295	280
6	280	290	300	320	300	320	295	270	350	335	A	270	A	285	A	295	305	290	315	310	305	295	305	305
7	290	A	F	F 295	A	415	A	A	A	A	A	A	A	A	A	A	A	A	280	A	310	A	A	290
8	290	275	275	295	290	310	270	300	300	A	A	295	A	A	A	250	265	275	290	315	320	315	A	290
9	290	275	A	A	305	290	285	A	A	A	A	B	315	300	300	300	325	320	310	295	300	295	305	290
10	300	280	F	F	F 290	285	310	A	A	295	R	320	325	235	A	A	245	A	A	A	310	315	F	F
11	F	F	A	F	F 300	320	350	A	295	A	A	305	A	A	285	270	A	305	320	315	305	310	290	295
12	295	280	F	300	315	H 270	285	275	330	A	A	280	270	295	300	A	A	A	A	290	285	280	290	315
13	265	290	280	260	280	250	250	A	R	255	A	G	A	300	340	305	295	290	A	295	295	290	300	285
14	290	280	275	290	270	A	A	A	A	310	A	A	275	A	A	A	A	275	285	310	A	275	F	F
15	F	F 285	A	295	A	330	A	A	A	275	265	A	A	G	G	245	265	A	A	310	295	295	F	F
16	295	A	320	310	295	330	300	A	A	A	A	A	250	295	265	260	295	310	295	320	320	320	310	A
17	A	F 290	305	305	295	285	A	A	265	A	A	A	A	A	A	A	295	295	295	A	295	295	310	340
18	280	F	F	F	275	245	270	A	A	255	A	G	A	265	G	R	250	A	A	320	290	F	F	F
19	F	F 325	F	A	F 300	A	A	290	315	A	A	280	245	215	A	270	280	335	315	325	A	F	F	F
20	F 295	F 285	F	A	A	310	280	275	R	310	A	335	G	R	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	305	335	320	305	310	300	F 300	F
23	F 295	295	295	325	F 320	340	310	270	A	A	A	305	A	A	300	260	A	295	A	310	F	S	A	F
24	F	F	F	F	315	325	A	A	A	320	345	A	A	A	260	285	320	300	300	315	310	305	305	290
25	F 310	F	F	F 305	315	300	325	290	300	A	A	340	A	A	A	320	290	305	A	A	320	A	F 310	F
26	S 325	315	315	305	305	295	A	A	A	A	340	A	A	A	A	245	310	295	315	320	300	F	F	F
27	F 280	F	A	F	315	300	A	A	A	A	A	255	A	300	280	310	290	A	310	345	285	290	290	270
28	290	295	300	310	300	285	295	280	A	340	255	295	A	A	A	300	325	315	A	305	305	310	A	285
29	F	F	F	350	285	A	290	285	340	A	A	275	A	A	A	290	290	305	320	320	310	310	315	F
30	F	290	290	290	315	300	325	305	A	330	275	325	A	305	285	A	A	A	290	285	290	315	315	300
31	285	295	285	280	320	325	310	270	A	335	350	300	275	315	330	260	335	270	300	290	280	295	300	345
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	21	19	14	17	25	25	18	15	13	16	8	18	9	15	14	19	21	21	20	24	24	22	17	16
MED	290	290	295	300	300	300	298	285	315	310	332	295	270	285	282	285	295	295	305	310	305	300	305	290
UQ	295	298	305	310	315	320	310	300	335	330	342	305	275	300	300	302	305	310	315	318	310	315	310	310
LQ	290	282	285	290	295	285	285	275	300	295	270	275	250	265	265	260	285	290	295	298	295	295	295	288

JUL. 1985 | M(3000)F2 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | M(3000)F1 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	A	365	A	395	A	370	A	375	A	A	350					
2					330	A	A	A	A	425	A	A	A	A	A	A	A	A	A					
3							A	A	A	400	A	A	A	A	A	A	A	355	A	A				
4						340	345	A	A	A	A	A	A	405	A	A	375	A	A	A				
5						335	A	A	A	A	405	420	A	335	A	360	340	340	340					
6							L	A	365	A	A	415	A	A	A	A	375	330	A					
7					A	330	A	A	A	A	A	A	A	A	A	A	A	A	315	A				
8						375	335	350	405	A	A	A	A	A	A	365	350	330	A					
9							A	A	A	A	A	B	365	365	370	A	360	A	A					
10						L	310	A	A	400	405	415	A	395	A	A	320	A	A	A				
11							370	A	A	A	A	A	A	A	385	355	A	A	A					
12							A	A	A	A	A	A	370	A	A	A	A	A	A					
13					A	330	335	A	365	400	A	395	A	395	390	365	355	A	A	A				
14						A	A	A	A	A	A	A	355	A	A	A	A	A	A					
15					A	A	A	A	A	400	390	A	A	390	375	370	370	A	A					
16							A	A	A	A	A	A	380	395	390	375	360	340	335					
17					A	A	A	A	400	A	A	A	A	A	A	A	A	350	A	A				
18						A	335	A	A	425	A	390	A	425	375	400	A	A	A					
19						A	A	A	A	A	A	A	415	365	A	375	A	330	A					
20					A	355	H 345	A	375	A	A	425	415	A	C	C	C	C	C	C				
21					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22					C	C	C	C	C	C	C	C	C	C	C	C	A	A	A					
23								370	A	A	A	A	A	A	390	360	A	A	A					
24							A	A	A	A	430	A	A	A	400	375	A	A	335					
25						350	350	A	A	A	A	385	A	A	A	375	335	A	A	A				
26							A	A	A	A	A	A	A	A	A	360	A	A	A					
27						A	A	A	A	A	A	420	A	370	380	425	A	A	345					
28						345	345	A	A	A	A	A	A	A	A	345	A	A	A					
29						A	A	A	A	A	A	400	A	A	A	365	375	330	355					
30							335	375	A	H 370	A	A	A	385	370	A	A	A	A	A				
31							A	A	A	A	A	A	A	A	A	A	375	A	350					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT					1	8	10	3	5	8	4	10	6	12	10	16	12	8	8					
MED					330	342	340	370	375	400	405	408	375	388	382	368	360	335	342					
UQ						352	345	372	400	412	418	420	415	395	390	375	375	345	350					
LQ						332	335	360	365	385	398	395	365	368	375	360	345	330	335					

JUL. 1985 | M(3000)F1 (0.01)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H'F2 (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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 295	330		315	375	350	415	450	450	340	440	345	350	300					
2					340	A	A	A	365	395	A	A	A	A	A	A	A	A	315					
3							A 325		285	320	A	A	A	A	A	A	A	310	330	A				
4						290	325	300	265	330	A	A	A	425	A	360	330	A	A	305				
5						355	A	450	475	350	310	400	A	440	465	355	400	355	295					
6							L 320	440	275	280	A	450	A	405	A	360	345	350	290					
7					A	360	A	A	A	A	A	A	A	A	A	A	A	A	360	A				
8						300	455	350	370	A	A	360	A	A	A	550	450	400	A					
9							370	A	A	A	A	B	345	375	380	400	320	290	300					
10						L 330	330	A	A	400	R	340	350	640	A	A	600	A	A	A				
11							290	A	375	A	A	350	A	A	405	400	A	315	A					
12							365	370	285	A	A	420	435	375	355	A	A	A	A					
13					365	495	490	A	R	530	A	G	A	360	305	335	360	370	A	300				
14						A	A	A	A	350	A	A	425	A	A	A	A	375	350					
15					A	290	A	A	A	450	460	A	A	G	G	560	485	A	A					
16							350	A	A	A	A	A	550	400	450	490	375	345	350					
17					330	370	A	A	460	A	A	A	A	A	A	A	370	300	325	A				
18						550	450	A	A	470	A	G	A	510	G	R	550	A	A					
19						A	A	A	A	A	A	405	575	670	A	450	400	305	295					
20					A	350	420	420	R	370	A	315	G	R	C	C	C	C	C	C				
21					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22					C	C	C	C	C	C	C	C	C	C	C	C	350	300	A					
23								500	A	A	A	350	A	A	400	515	A	350	A					
24							A	A	A	335	285	A	A	A	495	395	320	330	300					
25						340	310	390	350	A	A	315	A	A	A	325	350	320	A	A				
26							A	A	A	A	320	A	A	A	A	585	330	320	270					
27						300	A	A	A	A	A	525	A	375	485	330	375	A	270					
28						430	330	390	A	315	470	370	A	A	A	360	305	315	A					
29						A	350	340	270	A	A	450	A	A	A	380	400	345	300					
30							315	355	A	300	415	290	A	365	400	A	A	A	335	285				
31							A	415	A	325	280	375	430	375	A	450	325	405	325					
	00	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	13	16	14	12	16	8	18	9	15	13	19	21	20	17	3				
MED					340	350	340	380	332	350	335	388	435	405	405	400	360	338	300	300				
UQ					352	370	395	420	372	398	438	450	550	480	485	470	400	352	330	302				
LQ					335	300	318	340	280	322	298	350	425	375	380	360	330	312	295	292				

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H*F (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	290	275	250	225	260	A	A	A	A	240	A	200	A	200	A	240	A	A	250	255	260	255	250	250
2	275	290	A	A	A 270	A	A	A	A	200	A	A	A	A	A	A	A	A	A	A	A	A	A	A
3	270	300	300	270	250	240	A	A	A	220	A	A	A	A	A	A	A	205	A	A	A	A	A	A 300
4	255	250	255	235	255	245	220	A	A	A	A	A	A	200	A	A	210	A	A	A	250	250	250	295
5	260	250	250	270	250	250	A	A	A	A	200	200	A	250	A	205	205	240	250	255	250	A	250	275
6	300	265	240	240	235	220	225	A	240	A	A	200	A	A	A	A	230	225	A	A	250	280	A 300	275
7	265	A	A	A 280	A	265	A	A	A	A	A	A	A	A	A	A	A	A	260	A	A	A	A	255
8	255	300	300	270	265	235	230	230	210	A	A	A	A	A	A	225	230	215	A	A	A	A	A	A
9	310	A	A	A	285	A	A	A	A	A	A	B	240	230	220	A	215	A	A	275	A	265	A	A
10	A 290	295	250	245	270	A	250	A	A	200	200	200	A	225	A	A	250	A	A	A	A	A	A 275	250
11	290	270	A	265	255	250	215	A	A	A	A	A	A	A	220	230	A	A	A	245	250	A	A	275
12	270	300	245	265	250	250	A	A	A	A	A	A	210	A	A	A	A	A	A	A	A	300	255	245
13	220	300	330	350	A	265	A 245	A	210	200	A	200	A	205	200	215	200	A	A	A	260	275	290	280
14	260	270	295	265	310	A	A	A	A	A	A	A	225	A	A	A	A	A	A	260	A	A 325	260	250
15	A	A	A	280	A	A	A	A	A	200	210	A	A	205	195	220	225	A	A	275	300	270	A	270
16	275	A	270	250	250	240	A	A	A	A	A	A	210	200	215	200	215	225	225	250	A	A 270	275	A
17	A	300	275	275	A	A	A	A	200	A	A	A	A	A	A	A	A	225	A	A	A	265	275	225
18	275	270	300	275	300	A	250	A	A	200	A	225	A	200	225	205	A	A	A	H 250	290	280	275	275
19	290	265	300	A	350	A	A	A	A	A	A	A	210	250	A	225	A	250	A	A	A	285	280	260
20	265	270	285	A	A	250	H 230	A	240	A	A	190	195	A	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A	265	A	A	260
23	270	265	270	240	235	235	230	225	A	A	A	A	A	A	205	215	A	A	A	255	A 255	A	A	245
24	300	270	230	250	250	A 260	A	A	A	A	200	A	A	A	200	210	A	A	200	250	250	270	275	275
25	285	A	A	215	260	265	250	A	A	A	A	240	A	A	A	220	225	A	A	A	A	A	A	270
26	300	290	285	275	300	A	A	A	A	A	A	A	A	A	A	220	A	A	A	A	A	A	A	255
27	290	A 300	A	315	265	A	A	A	A	A	A	200	A	215	225	205	A	A	250	225	270	275	A	310
28	265	260	275	270	290	250	250	A	A	A	A	A	A	A	A	240	A	A	A	A	A	270	A	285
29	305	290	A	255	270	A	A	A	A	A	A	205	A	A	A	205	210	200	230	A 250	A	260	250	255
30	275	A	275	265	250	A	215	205	A	H 200	A	A	A	H 200	225	A	A	A	A	A	A	225	245	250
31	295	285	290	250	A	240	A	A	A	A	A	A	A	A	A	A	205	A	250	265	280	240	255	205
	00	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	23	21	25	23	16	12	3	5	8	4	10	6	12	10	16	12	8	8	13	13	18	16	25
MED	275	275	275	265	260	250	230	225	210	200	200	200	210	205	218	218	215	225	250	255	260	270	268	260
UQ	290	298	295	275	278	255	250	228	240	210	205	205	225	228	225	225	228	232	250	260	270	280	275	275
LQ	265	268	250	250	250	240	222	215	210	200	200	200	210	200	200	205	208	210	228	250	250	260	250	250

JUL. 1985 | H*F (KM)

IONOSPHERIC DATA

JUL. 1985 | H'E (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23·5 N, Long. 141° 41·2 E Sweep 1 MHz to 25 MHz in 24sec 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 110	110	105	105	110	105	105	105	105	105	105	105	105	105	A 110	S 105				
2					A 110	105	110	110	105	105	105	105	105	105	105	A 105	A	A	A	A				
3					A 115	105	115	110	110	105	105	105	105	105	105	A 105	A	105	110	120				
4					A 115	110	110	105	105	105	105	105	110	105	110	105	105	105	105	A 110				
5					E 115	115	105	110	105	105	105	105	105	105	A 105	A 105	A	105	110	110				
6					125 115	105	105	105	105	105	105	105	110	105	105	A 105	105	105	105	A 110				
7					A 110	110	105	105	105	105	110	110	105	105	105	A 105	110	110	105	S 110				
8					A 105	110	110	105	105	105	105	105	105	105	105	105	105	105	105	S 110				
9					S 110	110	105	105	105	A 105	B 110	110	110	110	105	105	105	105	105	S 110				
10					S 110	A 110	105	105	105	105	105	105	105	105	A 105	A 110	110	110	110	S 110				
11					A	A 105	105	105	105	105	105	105	A	A	A	105	A	A	105	S 110				
12					A 110	110	105	105	105	105	A 105	A 110	110	110	110	110	105	110	110	S 110				
13					125 115	110	105	105	105	105	105	105	A	A	A	105	110	110	110	110				
14					S 115	110	105	105	105	105	105	105	110	115	110	110	105	110	110	S 110				
15					125 125	110	110	105	105	105	A 105	A 110	105	A	A	105	A	A	115	A 110				
16					S 120	110	110	105	105	105	105	105	A	105	A	A	A	A	110	S 110				
17					A 105	A	105	105	105	105	A	105	A	A	A	A	A	105	105	S 110				
18					E 110	110	105	105	105	105	A 105	A 110	A	110	110	105	110	A	A	S 110				
19					A	A 110	105	105	105	105	105	105	A	A	A	110	105	A	105	105				
20					E 115	110	110	110	105	105	105	105	A	105	C	C	C	C	C	C				
21					C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C				
22					C	C	C	C	C	C	C	C	C	C	C	C	A	A	A	A				
23					A	A 105	A	105	105	105	105	105	105	A	A	105	110	105	115	S 110				
24					A	A 105	105	105	105	105	105	105	105	A	A	105	A	A	A	A 110				
25					E	A 110	110	105	105	105	105	110	110	110	110	110	110	110	A	A 110				
26					E 105	110	105	105	105	105	105	105	A	105	105	A	A	110	110	A 110				
27					E 110	110	105	105	105	105	105	105	105	A	A	125	105	105	110	A 110				
28					E 115	110	110	105	105	105	105	105	105	110	105	110	A	110	120	E 110				
29					E 110	110	110	105	105	105	A 105	105	A	A	105	105	105	105	115	E 110				
30					E 120	110	105	105	105	105	105	105	110	110	105	105	105	105	115	E 110				
31					E 115	105	105	105	105	105	105	105	105	105	105	105	105	110	115	E 110				
	00	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	24	27	28	29	29	25	24	19	20	17	19	18	21	23	4				
MED					125	112	110	105	105	105	105	105	105	105	105	105	105	105	110	110				
UQ					125	115	110	110	105	105	105	105	110	110	110	110	110	110	112	115				
LQ					125	110	108	105	105	105	105	105	105	105	105	105	105	105	105	108				

JUL. 1985 | H'E (KM)

IONOSPHERIC DATA

JUL. 1985 | H'ES (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N. Long. 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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	105	100	100	S	115	110	110	110	110	120	110	115	105	110	105	G	120	110	110	110	105	115	105	100
2	100	100	100	100	100	110	110	110	110	115	105	105	105	105	105	100	100	100	100	110	110	105	105	105
3	100	100	100	100	110	115	105	125	115	G	115	110	110	115	105	105	100	130	115	115	115	115	110	105
4	105	100	100	S	100	100	120	115	115	105	105	105	110	110	110	120	125	120	110	110	110	120	115	105
5	E	S	S	S	130	130	120	120	120	110	110	110	105	105	105	105	110	125	120	110	120	110	S	S
6	105	100	E	S	G	G	110	110	115	110	105	110	105	105	105	105	105	G	115	110	110	105	105	105
7	105	105	105	105	105	G	120	115	110	110	110	110	105	105	105	115	110	115	115	110	105	115	110	105
8	105	100	100	100	110	105	G	115	G	105	110	105	105	115	115	110	120	120	115	110	110	105	105	105
9	105	100	100	100	110	110	110	110	105	105	100	B	G	140	120	110	125	110	110	110	105	105	100	100
10	100	100	100	130	120	115	110	110	105	110	G	105	110	110	105	105	140	110	110	110	110	110	105	115
11	105	105	105	115	100	100	115	105	110	105	105	105	100	100	105	115	105	105	105	110	105	105	105	105
12	100	100	100	100	100	120	120	110	105	105	105	105	105	115	115	120	125	125	110	115	115	110	105	105
13	S	100	105	125	125	115	115	105	110	115	105	110	105	105	100	G	G	115	110	110	130	120	105	105
14	S	100	S	S	130	120	110	110	105	105	105	105	G	125	115	125	115	115	110	115	110	110	105	100
15	100	100	100	120	120	120	110	110	105	105	105	105	105	100	100	125	125	115	115	115	110	110	105	105
16	100	100	100	100	120	100	115	110	105	105	105	105	105	105	105	105	105	100	G	115	105	105	105	105
17	100	105	100	E	100	115	105	105	110	105	105	105	105	105	105	105	105	115	110	110	105	105	105	100
18	100	100	S	120	120	110	110	110	110	105	105	105	100	G	110	G	125	105	105	115	105	105	105	105
19	100	100	100	115	125	105	110	105	110	105	105	105	105	105	115	120	115	105	105	105	100	105	105	110
20	100	125	110	105	105	125	125	115	115	105	105	115	105	110	C	C	C	C	C	C	C	C	C	C
21	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
22	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	100	110	105	105	105	105	110	110
23	105	100	100	100	100	100	G	105	110	105	105	105	105	105	105	115	115	110	110	105	110	110	110	105
24	100	100	120	105	100	100	120	110	105	110	110	110	105	105	100	120	100	100	100	100	115	100	110	110
25	105	105	105	E	105	105	125	115	110	110	110	120	120	115	110	115	110	110	105	105	105	115	115	110
26	105	100	100	100	100	115	110	110	105	105	105	105	105	105	105	105	105	110	110	110	110	105	105	105
27	100	100	100	100	100	115	115	110	105	110	110	105	105	105	100	135	135	115	120	115	140	115	115	105
28	105	105	105	105	105	115	110	110	110	110	110	110	110	110	105	110	105	115	115	115	110	110	110	105
29	105	100	100	100	110	110	110	120	110	105	105	105	105	105	105	110	115	G	115	110	110	105	105	105
30	110	105	110	120	125	120	115	110	105	110	105	110	110	G	G	120	115	110	120	110	110	110	100	100
31	100	100	105	105	115	115	110	115	115	110	110	105	105	105	105	105	G	125	125	145	115	120	S	S
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	28	25	22	28	27	27	29	28	28	28	28	27	27	27	25	27	27	28	29	29	29	27	27
MED	102	100	100	105	110	115	110	110	110	105	105	105	105	105	105	110	115	110	110	110	110	110	105	105
UQ	105	102	105	115	120	115	118	115	110	110	110	110	105	110	110	120	122	115	115	115	110	115	110	105
LQ	100	100	100	100	100	105	110	110	105	105	105	105	105	105	105	105	105	110	108	110	105	105	105	105

JUL. 1985 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | TYPES OF ES | 135° E Mean Time (G.M.T. + 9 h)

Station WAKKANAI Lat. 45° 23.5' N, Long 141° 41.2' E Sweep 1 MHz to 25 MHz in 24sec 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 2	F 2	F 2		CL 31	C 5	C 2	C 3	C 2	C 2	C 2	C 2	L 2	C 2	C 3		C 2	C 4	L 2	C 2	F 2	F 2	F 3	F 4
2	F 2	F 2	F 4	F 4	L 2	C 3	C 4	C 4	C 2	C 1	C 3	C 5	C 3	C 4	C 4	L 4	L 4	L 4	L 2	L 3	F 6	F 5	F 3	F 2
3	F 2	F 2	F 3	F 2	L 1	C 3	C 2	C	C 2		C 2	C 2	C 2	C 4	C 3	L 4	L 5	C 1	C 3	C 4	F 6	F 6	F 4	F 2
4	F 5	F 3	F 2		L 2	LC 11	C 2	C 2	C 2	C 3	C 3	C 3	C 2	C 2	C 3	C 2	C 1	C 3	C 4	L 3	F 3	F 3	F 1	F 2
5					C 1	C 1	C 3	C 2	C 3	C 2	C 1	C 1	C 3	C 2	L 2	L 2	CL 11	C 1	C 2	C 3	F 4	F 4		
6	F 2	F 2					C 1	C 3	C 2	C 2	C 4	C 2	C 2	C 2	C 3	L 3	C 2		C 4	CL 42	F 2	F 2	F 4	F 3
7	F 3	F 5	F 5	F 5	L 3		C 4	C 3	C 3	C 2	C 3	C 2	C 3	C 3	C 3	CL 32	C 5	C 3	C 2	C 3	F 3	F 6	F 7	F 2
8	F 2	F 2	F 2	F 1	L 2	C 2		C 2		C 3	C 4	C 2	C 4	C 2	C 3	C 2	C 1	C 1	C 4	C 3	F 3	F 5	F 4	F 4
9	F 3	F 5	F 4	F 4	C 4	C 3	C 3	C 2	C 3	C 4	L 3			H 1	C 2	C 2	C 1	C 2	C 3	C 3	F 4	F 3	F 6	F 4
10	F 4	F 2	F 1	F 1	C 4	C 3	L 2	C 2	C 2	C 1		C 1	C 2	C 2	L 3	L 2	H 1	C 5	C 6	C 5	F 3	F 4	F 3	F 2
11	F 3	F 2	F 4	FF 12	L 3	L 3	C 2	C 5	C 2	C 3	C 3	C 2	L 3	L 2	L 2	C 2	L 4	L 3	C 4	C 2	F 3	F 2	F 6	F 3
12	F 2	F 2	F 2	F 2	L 1	C 2	C 2	C 2	C 2	C 4	C 3	L 2	L 2	C 2	C 1	C 2	C 3	C 2	C 6	C 6	F 5	F 4	F 4	F 2
13		F 2	F 2	F 2	C 2	C 2	C 2	L 3	C 2	C 1	C 2	C 1	L 2	L 2	L 2			CL 32	C 5	C 3	F 1	F 1	F 4	F 2
14		F 2			C 1	C 4	C 3	C 4	C 2	C 2	C 3	C 2		C 4	C 3	C 2	C 4	C 3	C 4	C 2	F 6	F 4	F 2	F 3
15	F 2	F 3	F 4	F 3	C 5	C 3	C 3	C 4	C 3	C 1	L 1	L 2	C 2	L 2	L 2	C 1	CL 12	CL 22	C 4	CL 21	F 2	F 4	F 4	F 2
16	F 3	F 5	F 2	F 2	C 1	LC 12	C 4	C 3	C 5	C 2	C 3	C 3	C 2	C 1	L 3	L 2	L 2	L 2		C 2	F 5	F 3	F 4	F 4
17	F 4	F 2	F 1		L 2	C 3	L 3	C 4	C 2	C 2	L 2	C 2	L 2	L 2	L 2	L 2	L 3	C 2	C 4	C 5	F 5	F 3	F 3	F 2
18	F 2	F 1		F 2	C 2	C 3	C 2	C 2	L 2	C 2	L 2	L 2	L 2		C 2		C 2	L 5	L 5	C 2	F 3	F 3	F 2	F 2
19	F 2	F 2	F 2	FF 22	CL 12	C 6	C 5	C 4	C 3	C 4	C 3	C 2	L 2	L 2	CL 22	C 2	C 3	L 2	C 3	C 3	F 2	F 3	FF 22	F 2
20	F 2	F 2	F 2	F 4	L 3	C 2	C 2	C 3	C 3	C 2	C 3	C 2	L 1	C 2										
21																								
22																	L 3	CL 22	L 4	L 4	F 4	F 3	F 5	F 4
23	F 3	F 3	F 2	F 2	L 2	L 1		L 2	C 3	C 2	C 3	C 3	C 2	L 2	L 2	C 2	C 2	C 4	C 2	L 3	F 3	F 4	F 4	F 2
24	F 3	F 1	F 1	F 2	L 2	L 3	C 4	C 4	C 4	C 3	C 1	C 2	C 4	L 4	L 2	C 2	L 3	L 4	L 2	L 3	FF 22	F 2	F 3	F 2
25	F 4	F 5	F 4		L 1	L 3	C 2	C 4	C 3	C 2	C 2	C 2	C 2	C 4	C 3	C 2	C 2	C 3	L 5	L 4	F 4	F 3	F 6	F 4
26	F 2	F 3	F 2	F 1	L 1	C 5	C 3	C 2	C 4	C 4	C 3	C 2	L 4	C 2	C 3	L 2	L 4	C 2	C 5	L 6	F 5	F 4	F 5	F 2
27	F 2	F 3	F 3	F 3	L 2	C 3	C 5	C 3	C 4	C 3	C 2	C 2	C 2	L 2	L 2	CL 11	H 2	C 3	C 3	CL 11	F 1	F 1	F 5	F 5
28	F 4	F 2	F 2	F 3	L 2	C 2	C 3	C 3	C 4	C 3	C 2	C 2	C 3	C 5	C 4	C 2	L 2	C 4	C 5	C 5	F 3	F 5	F 6	F 2
29	F 5	F 3	F 7	F 3	C 2	C 4	C 3	C 3	C 2	C 3	C 4	L 2	L 4	L 5	C 5	C 2	C 2		C 2	C 2	F 4	F 3	F 2	F 2
30	F 2	F 6	F 1	F 2	C 2	C 3	C 2	C 2	C 4	C 2	C 3	C 3	C 4			C 3	C 4	C 6	C 2	C 3	F 4	F 2	F 2	F 4
31	F 2	F 3	F 2	F 1	C 3	C 2	C 2	C 4	C 2	C 3	C 2	C 2	C 2	C 3	C 3	C 4		C 2	C 2	C 1	F 1	F 1		
	00	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

JUL. 1985 | TYPES OF ES

IONOSPHERIC DATA

JUL. 1985 | FXI (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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	53	53	52	48	40																73	69	70	58
2	50	52	49	48	45																X 72	72	61	52
3	52	52	52	53	51																X 68	A	62	62
4	59	63	58	54	48																80	80	72	72
5	72	71	72	62	54	45	49														X 72	X 62	X 57	60
6	62	60	59	54	53																X 67	57	57	61
7	55	53	52	53	50	53															X 68	X 55	53	58
8	58	53	55	54	54	52	48	53													X 76	X 63	X 53	53
9	54	51	50	49	43																X 74	74	69	73
10	67	62	63	59	52	54															71	62	54	58
11	53	58	58	54	51																X 69	X 64	X 62	X 61
12	X 56	X 52	X 54	X 49	48																X 88	88	80	X 74
13	X 76	X 58	54	50	49																X 63	X 63	X 63	X 59
14	X 59	X 54	X 50	X 51	X 44																X 64	X 63	X 61	59
15	A	41	43	42	X 38																53	53	54	51
16	A	A	43	41	40																X 64	X 56	50	50
17	44	43	43	40	42																63	69	68	60
18	49	48	43	43	A																X 57	X 54	53	53
19	48	43	40	42	37		50														X 57	59	62	55
20	53	53	49	42	40																X 56	A	53	55
21	53	52	48	43	43																58	60	62	A
22	52	A	A	A	A																62	63	62	52
23	53	54	53	A	40																X 68	X 60	62	63
24	54	56	A	49	48																X 71	X 58	X 53	X 50
25	X 52	52	X 47	X 40	39																X 70	X 58	59	59
26	59	58	56	53	49															X 77	A	A	63	63
27	68	60	53	54	50	52														X 58	X 51	X 52	53	53
28	A	51	60	44	48															X 72	X 71	73	70	54
29	53	53	50	53	49	50														X 67	X 71	X 65	X 54	56
30	54	53	53	50	49															X 75	86	81	81	67
31	65	60	53	56	50															A	76	88	73	60
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	29	29	6	3	1												5	30	28	31	30
MED	54	53	52	50	48	52	49	53												X 72	X 68	63	62	58
UQ	59	58	55	54	50	53	50													X 75	X 72	70	66	61
LQ	52	52	49	43	42	50	48													X 67	X 63	X 58	54	53

JUL. 1985 | FXI (0.1 MHZ)

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IONOSPHERIC DATA

JUL. 1985 | FOF2 (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA | Lat. 39° 43.5' N, Long 140° 08.0' E | Sweep 1 MHz to 25 MHz in 24sec 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 45	F	F	F	F 32	37	50	48	50	52	51	52	A	49	52	50	53	56	A	61	F 66	F	F	F
2	F	F	F	F	F 36	42	52	56	57	A	53	48	A	53	61	58	56	49	50	58	66	F 64	F	F
3	F	F	F	F	F 40	44	43	49	60	56	46	52	48	J R 46	50	54	56	53	60	64	62	A	F	F
4	F	F	F	F	F	A	52	S 60	A	A	A	A	A	A	60	58	56	53	57	66	F 71	F	F	F
5	F	F	F	F	F	F 38	F 41	A	49	53	60	49	49	A	58	59	64	61	75	78	66	56	51	F
6	F	F	F	F	F 42	44	47	49	51	A	A	A	A	A	A	63	A	53	63	68	61	F	F	F
7	F	F	F	F	F	F 46	46	A	A	A	A	A	A	51	53	54	A	50	54	61	62	49	F	F
8	F	F	F	F	F	F 44	F 40	F 44	48	E G 44	52	49	58	54	53	A	A	A	62	69	70	57	47	F 46
9	F 44	F 41	F	F 39	F 35	40	A	55	69	62	54	B	61	57	58	56	66	A	A	65	68	F 68	F 61	F
10	F	F	F	F	F 43	F 44	57	A	53	A	A	A	A	A	E G 42	46	47	49	52	A	F 64	F	F 44	F
11	F	F	F	F	F 42	S 47	54	44	H 53	A	A	54	56	50	56	A	68	70	R 65	65	63	58	56	55
12	50	46	48	43	F 38	44	52	67	68	56	63	59	60	69	62	66	66	67	77	74	82	F	F 72	68
13	70	52	F	F 42	F 40	40	44	40	A	43	47	E G 43	53	62	56	54	50	H 47	51	54	57	57	57	53
14	53	48	44	R 45	R 38	36	45	53	58	56	E G 42	A	54	50	48	48	48	52	54	58	53	57	55	F 51
15	A	F 34	F	F	32	49	50	A	A	48	50	E G 42	A	46	A	52	44	A	49	54	F 46	F	F	F
16	A	A	F 35	F 34	F 32	37	45	47	A	A	A	54	53	54	54	52	51	50	54	61	58	50	F	F 31
17	F 36	F	F	F 31	F	39	38	46	A	A	A	A	A	A	A	A	52	49	50	53	F 56	F	F	F
18	F	F	F	F	A	36	42	A	A	46	A	E G 41	A	E G 41	E G 42	A	A	42	46	47	51	48	F	F
19	F 38	F	F	F	F	34	F 41	50	67	63	A	A	A	A	A	A	51	52	58	60	51	F	F	F
20	F	F	F	F	F	35	39	43	48	51	E G 43	E G 43	E G 42	46	44	50	47	48	A	46	50	A	F	F
21	F	F	F	F 35	F 32	A	A	47	52	51	A	A	49	52	A	52	61	H 54	49	44	F 50	F	F	A
22	F	A	A	A	A	A	41	50	62	56	50	50	A	A	A	52	51	51	52	54	F	F	F	F
23	F	F	F	A	F	35	43	46	49	A	50	A	48	A	49	44	51	57	57	A	62	54	F	F
24	F	F	A	F	F	38	46	51	A	56	57	A	A	53	47	51	55	56	56	63	65	52	47	44
25	46	F 42	41	34	F 31	41	50	43	52	52	53	57	52	53	A	A	61	58	68	75	64	52	F	F
26	F	F	F	F	F	34	45	52	A	A	A	A	A	A	54	50	A	63	69	71	A	A	F	F
27	F	F	F	F	F	F	45	54	58	A	A	51	49	59	57	64	67	A	A	52	45	46	F 44	F
28	A	F	F	F	F	34	A	56	A	A	A	A	A	A	54	57	60	61	61	66	65	F 64	F	F
29	F	F	F	F	F	F 42	46	56	64	59	51	56	48	55	R 56	56	A	56	54	61	65	59	48	F 46
30	F 45	F	F 44	F 42	F	39	A	46	51	56	A	56	56	54	A	57	52	47	54	69	F	F	F	F
31	F	F	F	F	F	40	43	46	A	A	A	55	A	53	51	55	54	46	53	A	F	F	F	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	6	5	9	14	27	27	26	20	18	16	18	16	21	23	25	25	27	27	28	27	16	11	8
MED	F 45	44	44	F 39	F 37	40	45	49	53	54	51	52	52	53	54	54	54	53	54	61	62	56	51	48
UQ	50	48	44	F 42	F 40	44	50	54	61	56	54	55	56	54	56	57	61	56	62	67	66	58	56	54
LQ	F 44	F 41	F 41	F 34	F 32	36	42	46	50	51	48	48	48	50	50	51	51	49	52	54	56	51	47	F 45

The Radio Research Laboratories, Japan

JUL. 1985 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF1 (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long. 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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						L	350	390	400	420	A	A	A	A	430	410	A	370	A					
2							A	A	A	A	430	430	A	420	A	A	380	A	L	L				
3							L	A	410	A	440	440	430	R 430	420	420	400	380	A					
4						A	360	A	A	A	A	A	A	A	A	410	A	370	A	A				
5						290	A	A	A	A	440	430	430	A	A	410	380	360	330					
6							L	390	A	A	A	A	A	A	A	A	A	L 370	330					
7						L	A	A	A	A	A	A	A	A	A	A	A	A	A					
8							L	410	430	440	440	A	440	440	A	A	A	A	A					
9						A	A	A	A	430	440	B	A	450	430	430	400	A	A					
10							370	A	A	A	A	A	A	A	420	420	400	360	A	A				
11							330	L	420	A	A	A	R 430	A	A	A	400	370	A					
12						L	390	400	A	430	A	A	A	430	430	A	400	A	A					
13							330	360	A	410	410	430	A	A	420	410	L	L	L					
14						280	330	A	A	420	420	A	A	A	A	410	390	380	320					
15							A	A	A	410	420	420	A	420	A	400	A	A	320					
16							A	A	A	A	A	A	A	A	410	410	A	370	320					
17							330	A	A	A	A	A	A	A	A	A	A	A	A					
18							A	A	A	400	A	410	A	410	420	A	A	340	A					
19						290	340	A	410	A	A	A	A	A	A	A	380	350	330					
20						L	360	360	380	400	430	430	420	410	420	400	380	370	A					
21							A	A	400	A	A	A	A	420	A	A	370	A	L					
22							A	380	390	A	420	A	A	A	A	A	390	A	A					
23							330	380	A	A	A	A	430	A	A	400	390	A	A	A				
24							360	A	A	A	430	A	A	A	420	A	A	A	320					
25							340	380	A	A	430	A	A	A	A	A	A	A	A					
26							340	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	430	430	A	A	A	A	A	A					
28							A	A	A	A	A	A	A	A	A	A	420	A	A					
29							L 360	380	420	420	440	A	430	440	A	A	A	370	A					
30						330	A	380	A	A	A	A	A	A	A	420	420	400	340					
31							L	390	A	A	A	A	A	A	440	410	410	L 400	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	15	12	9	10	13	8	8	10	11	14	16	15	8					
MED						290	340	380	410	420	430	430	430	425	420	410	395	370	325					
UQ						310	360	390	420	430	440	430	430	440	430	420	400	375	330					
LQ						285	330	380	400	410	420	425	430	420	420	410	380	365	320					

JUL. 1985 | FOF1 (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOE (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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	A	A	A	A	A	A	A	A	295	255	A	S				
2						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
3						190	A	A	A	A	A	345	350	350	335	315	285	250	205	S				
4						A	A	A	A	A	A	A	A	A	A	320	295	A	A	S				
5						A	A	A	A	A	A	A	A	A	A	305	285	255	200	S				
6						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
7						S	A	A	A	A	A	A	A	A	A	A	285	255	A	S				
8						190	A	A	A	330	A	A	355	350	A	A	A	A	A	S				
9						A	A	A	A	A	A	B	A	A	340	310	280	255	A	S				
10						180	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
11						S	A	A	A	A	A	A	355	A	330	A	A	A	A	S				
12						A	A	A	A	A	A	A	A	A	340	325	305	265	A	S				
13						A	230	A	A	A	A	A	A	A	A	305	280	255	A	S				
14						S	A	A	A	A	A	A	330	330	320	310	A	245	A	S				
15						S	A	A	A	A	A	A	A	A	A	A	A	A	S	S				
16						S	230	A	A	A	A	A	A	A	A	A	A	A	A	S				
17						S	A	A	A	A	A	A	A	A	A	A	A	240	A	S				
18						S	210	A	A	A	A	A	A	A	A	A	A	A	A	S				
19						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
20						A	A	A	A	A	A	A	A	A	A	A	A	250	A	S				
21						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
22						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
23						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
24						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
25						S	A	A	A	A	A	A	340	335	320	305	270	245	A	S				
26						S	A	A	A	A	A	A	A	A	A	A	A	A	S					
27						S	A	A	A	305	A	A	A	340	A	305	280	250	A					
28						S	A	A	A	A	A	A	A	340	A	A	280	250	195					
29						S	230	270	A	A	A	A	350	340	325	305	280	A	A					
30						S	A	255	290	A	A	A	A	A	320	305	285	A	A					
31						S	A	260	300	310	325	A	A	A	A	A	A	255	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	4	3	2	3	1	1	6	7	8	11	13	14	3					
MED						190	230	260	295	310	325	345	350	340	328	305	285	252	200					
UQ						190	230	265		320			355	345	338	312	285	255	202					
LQ						185	220	258		308			340	338	320	305	280	250	198					

The Radio Research Laboratories, Japan

JUL. 1985 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43·5 N, Long 140° 08·0 E Sweep 1 MHz to 25 MHz in 24sec 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	J A 51	J A 37	J A 26	J A 44	J A 25	J A 29	J A 50	J A 76	J A 64	J A 50	J A 58	J A 64	J A 66	J A 66	J A 40	J A 33	J A 54	J A 50	J A 65	J A 84	J A 107	J A 87	J A 41	J A 34
2	J A 52	J A 46	J A 24	J A 23	J A 26	25	J A 52	J A 128	J A 87	J A 90	J A 54	J A 46	J A 52	J A 41	J A 46	J A 72	J A 44	J A 45	J A 36	J A 27	J A 56	J A 64	J A 74	J A 53
3	J A 52	J A 24	J A 23	J A 62	E S 16	G	J A 29	J A 80	J A 66	J A 66	J A 46	G	G	42	36	40	37	32	J A 37	J A 44	J A 22	J A 72	J A 48	J A 54
4	J A 42	J A 50	J A 86	J A 52	J A 40	J A 50	J A 46	J A 52	J A 61	J A 86	J A 100	J A 111	J A 134	J A 84	J A 64	G	J A 44	J A 44	J A 99	J A 56	J A 54	J A 24	J A 24	J A 24
5	J A 40	J A 48	J A 45	J A 46	E S 15	24	J A 44	J A 52	J A 55	J A 50	J A 46	J A 45	J A 44	J A 110	J A 50	G	G	G	24	J A 26	J A 35	J A 30	J A 40	J A 51
6	J A 40	J A 80	J A 53	J A 32	J A 38	J A 52	J A 31	J A 35	J A 60	J A 65	J A 111	J A 60	J A 54	J A 66	J A 90	J A 64	J A 84	J A 66	J A 32	J A 36	J A 50	J A 53	J A 46	J A 45
7	J A 29	J A 50	J A 37	J A 72	J A 61	J A 39	J A 47	J A 84	J A 84	J A 84	J A 76	J A 59	J A 106	J A 127	J A 75	J A 50	J A 55	J A 44	J A 65	J A 50	J A 50	J A 75	J A 52	J A 49
8	J A 54	J A 44	J A 28	J A 24	J A 21	G	J A 56	J A 44	38	32	J A 50	J A 49	42	44	J A 74	J A 54	J A 84	J A 128	J A 54	J A 50	J A 62	J A 29	J A 31	J A 31
9	J A 23	J A 20	J A 37	J A 50	J A 20	J A 32	J A 84	J A 84	J A 73	J A 37	J A 37	B	J A 93	J A 42	J A 49	J A 51	J A 70	J A 85	J A 185	J A 108	J A 99	J A 54	J A 54	J A 34
10	J A 32	J A 37	J A 24	J A 18	J A 24	23	J A 42	J A 60	J A 91	J A 58	J A 90	J A 66	J A 57	J A 116	44	J A 38	39	33	38	J A 84	J A 84	J A 84	J A 65	J A 76
11	J A 54	J A 50	J A 32	J A 30	J A 38	J A 44	J A 64	J A 50	J A 37	J A 66	J A 71	J A 86	J A 51	J A 92	J A 50	J A 114	J A 76	32	J A 52	J A 22	E S 16	E S 16	J A 47	J A 29
12	J A 38	J A 33	J A 23	J A 20	J A 26	J A 33	J A 30	J A 51	J A 67	J A 54	J A 66	J A 58	J A 70	J A 39	37	J A 50	G	J A 42	J A 89	J A 54	J A 31	J A 56	J A 52	J A 43
13	J A 24	E S 16	J A 37	J A 36	J A 24	J A 36	J A 27	J A 36	J A 83	J A 50	J A 50	J A 65	J A 72	J A 65	J A 36	37	J A 44	32	J A 32	J A 36	J A 20	J A 25	J A 44	J A 41
14	J A 44	J A 26	J A 28	J A 30	E S 15	24	J A 30	J A 41	J A 42	J A 36	39	J A 47	J A 47	J A 51	J A 51	J A 74	J A 54	33	J A 33	J A 26	J A 25	J A 25	J A 35	J A 54
15	J A 82	J A 42	J A 47	J A 27	J A 26	J A 41	J A 61	J A 110	J A 100	J A 105	J A 38	J A 42	J A 124	J A 44	J A 45	J A 66	J A 54	J A 57	J A 77	J A 74	J A 134	J A 86	J A 53	J A 25
16	J A 53	J A 44	J A 29	J A 24	J A 34	J A 27	J A 41	J A 64	J A 67	J A 70	J A 64	J A 65	J A 52	J A 64	35	J A 34	J A 90	J A 46	J A 50	J A 39	J A 23	J A 25	J A 64	J A 36
17	J A 50	J A 29	J A 29	J A 24	J A 54	J A 30	J A 46	J A 50	J A 120	J A 117	J A 137	J A 130	J A 105	J A 94	J A 54	J A 96	J A 66	J A 74	39	J A 77	J A 52	J A 36	J A 34	J A 33
18	J A 24	J A 33	J A 23	J A 33	J A 47	J A 39	J A 42	J A 66	J A 112	J A 119	J A 46	J A 49	J A 74	J A 70	J A 54	J A 50	J A 66	J A 36	J A 53	J A 88	J A 44	J A 29	J A 32	J A 46
19	J A 44	J A 44	J A 90	J A 23	J A 24	20	31	J A 40	J A 64	J A 108	J A 74	J A 84	J A 88	J A 64	J A 97	J A 84	J A 76	J A 50	J A 34	J A 24	J A 26	J A 65	J A 32	J A 32
20	J A 44	J A 44	J A 18	J A 54	J A 64	29	J A 28	J A 32	36	J A 46	J A 36	J A 38	40	44	39	J A 44	J A 38	32	J A 50	J A 75	J A 54	J A 58	J A 52	J A 48
21	J A 50	J A 46	J A 29	J A 29	J A 28	J A 33	J A 50	J A 58	J A 50	J A 66	J A 72	J A 116	J A 61	J A 40	J A 90	J A 54	J A 54	J A 71	J A 28	J A 40	J A 35	J A 56	J A 50	J A 57
22	J A 82	J A 84	J A 72	J A 60	J A 47	J A 52	J A 52	37	J A 74	J A 66	J A 50	J A 44	J A 90	J A 84	J A 163	J A 123	J A 64	J A 171	J A 46	J A 124	J A 106	J A 84	J A 51	J A 50
23	J A 65	J A 51	J A 29	J A 51	J A 40	J A 34	J A 37	J A 31	J A 70	J A 77	J A 99	J A 69	J A 65	J A 72	J A 45	J A 38	J A 120	J A 90	J A 110	J A 82	J A 84	J A 84	J A 50	J A 50
24	J A 50	J A 44	J A 86	J A 50	J A 52	J A 52	J A 50	J A 59	J A 87	J A 72	J A 46	J A 52	J A 62	J A 54	J A 41	J A 50	J A 69	J A 66	J A 54	J A 65	J A 29	J A 27	J A 24	J A 24
25	J A 29	J A 45	J A 29	J A 42	J A 44	24	J A 32	32	J A 50	J A 66	J A 54	J A 84	J A 47	J A 45	J A 81	J A 94	J A 108	J A 54	J A 57	J A 46	J A 29	J A 38	J A 29	J A 62
26	J A 29	J A 28	J A 40	J A 28	J A 28	J A 29	J A 32	J A 54	J A 112	J A 88	J A 88	J A 84	J A 90	J A 96	J A 53	J A 68	J A 100	J A 70	J A 77	J A 86	J A 176	J A 141	J A 76	J A 77
27	J A 86	J A 83	J A 25	J A 40	J A 37	E S 17	J A 52	J A 108	J A 167	J A 71	J A 86	J A 46	J A 68	J A 50	J A 93	J A 65	J A 42	J A 77	J A 201	J A 53	E S 16	J A 26	J A 42	J A 50
28	J A 76	J A 114	J A 124	J A 87	J A 64	J A 35	J A 76	J A 74	J A 66	J A 82	J A 66	J A 78	J A 218	J A 134	J A 108	J A 104	J A 50	J A 50	J A 38	J A 37	J A 104	J A 34	J A 53	J A 54
29	J A 54	J A 36	J A 23	J A 25	J A 24	J A 28	G	36	J A 46	J A 46	J A 88	J A 109	J A 48	J A 50	J A 78	J A 86	J A 84	J A 54	J A 84	J A 26	J A 24	J A 29	J A 24	J A 32
30	J A 24	J A 20	E S 15	E S 16	J A 23	J A 31	J A 115	34	J A 74	J A 50	J A 95	J A 53	J A 50	J A 50	J A 60	35	32	J A 37	J A 37	J A 98	J A 86	J A 57	J A 84	J A 74
31	J A 24	J A 24	J A 43	J A 23	J A 29	21	31	J A 46	J A 74	J A 67	J A 86	J A 82	J A 70	J A 83	J A 54	J A 70	J A 47	32	J A 50	J A 85	J A 62	J A 50	J A 65	J A 50
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31
MED	J A 44	J A 44	J A 29	J A 32	J A 28	J A 30	J A 44	J A 52	J A 67	J A 66	J A 66	J A 62	J A 65	J A 64	J A 53	J A 54	J A 54	J A 50	J A 50	J A 53	J A 50	J A 53	J A 48	J A 48
UQ	J A 54	J A 49	J A 44	J A 50	J A 42	J A 38	J A 52	J A 70	J A 86	J A 83	J A 87	J A 84	J A 89	J A 84	J A 76	J A 73	J A 76	J A 68	J A 71	J A 83	J A 84	J A 68	J A 53	J A 54
LQ	J A 30	J A 31	J A 24	J A 24	J A 24	24	J A 31	J A 38	J A 58	J A 50	J A 48	J A 47	J A 50	J A 44	J A 44	J A 39	J A 44	34	J A 37	J A 36	J A 28	J A 29	J A 34	J A 34

JUL. 1985 | FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FBES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA | Lat. 39° 43.5' N, Long. 140° 08.0' E | Sweep 1 MHz to 25 MHz in 24sec 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	20	E	E	E	20	29	36	34	36	43	47	AA 66	44	40	33	41	33	AA 65	29	28	45	33	E
2	E	23	E	E	E	22	37	46	43	AA 90	38	39	AA 52	36	44	44	36	35	24	G	20	38	25	25
3	28	E	E	E	ES 16	G	27	41	34	48	38	G	G	40	36	40	34	31	36	25	E	AA 72	35	35
4	25	30	23	28	E	AA 50	30	48	AA 61	AA 86	AA 100	AA 111	AA 134	AA 84	44	G	42	30	52	37	26	E	E	E
5	35	39	E	E	ES 15	24	38	AA 52	41	43	36	39	37	AA 110	45	G	G	G	23	20	18	26	35	30
6	E	36	35	25	22	20	28	32	46	AA 65	AA 111	AA 60	AA 54	AA 66	AA 90	46	AA 84	30	24	21	28	33	38	19
7	E	E	24	24	E	23	39	AA 84	AA 84	AA 84	AA 76	AA 59	AA 106	46	43	48	AA 55	40	45	32	30	19	34	39
8	30	26	E	E	E	G	26	32	35	27	37	47	39	39	44	AA 54	AA 84	AA 128	41	45	30	24	26	24
9	E	E	21	E	E	32	AA 84	50	47	35	36	B	47	40	40	37	36	AA 85	AA 185	58	41	34	23	E
10	E	22	E	E	E	20	33	AA 60	43	AA 58	AA 90	AA 66	AA 57	AA 116	37	38	37	30	38	AA 84	41	E	E	41
11	38	40	22	23	27	24	31	30	33	AA 66	AA 71	46	41	47	50	AA 114	36	28	38	G	ES 16	ES 16	25	24
12	28	19	E	E	19	30	26	36	43	35	45	46	46	36	37	48	G	41	58	54	20	20	E	32
13	E	ES 16	27	E	21	33	25	28	AA 83	34	36	37	46	47	36	36	38	30	25	20	E	E	31	24
14	29	E	18	19	ES 15	20	28	39	40	34	38	AA 47	46	42	45	32	31	29	25	20	23	21	19	40
15	AA 82	E	E	E	20	37	45	AA 110	AA 100	35	35	36	AA 124	36	AA 45	37	42	AA 57	25	30	E	25	21	E
16	AA 53	AA 44	21	18	E	22	37	40	AA 67	AA 70	AA 64	45	43	43	33	31	44	35	21	22	22	20	18	24
17	29	E	E	E	E	25	25	40	AA 120	AA 117	AA 137	AA 130	AA 105	AA 94	AA 54	AA 96	29	42	37	50	41	20	23	23
18	19	24	18	27	AA 47	31	35	AA 66	AA 112	34	AA 46	35	AA 74	37	34	AA 50	AA 66	25	40	41	43	E	E	E
19	22	E	E	E	E	19	26	37	33	42	AA 74	AA 84	AA 88	AA 64	AA 97	AA 84	33	30	23	G	E	20	18	E
20	20	22	18	E	21	19	25	30	31	34	36	37	36	36	36	36	36	27	AA 50	43	40	AA 58	30	32
21	E	E	25	23	18	AA 33	AA 50	45	38	46	AA 72	AA 116	44	37	AA 90	49	35	45	20	20	20	30	25	AA 57
22	22	AA 84	AA 72	AA 60	AA 47	AA 52	36	34	35	43	37	44	AA 90	AA 84	AA 163	45	30	41	40	20	40	31	20	29
23	37	28	20	AA 51	E	22	24	30	47	AA 77	46	AA 69	41	AA 72	43	33	31	37	32	AA 82	40	32	25	30
24	25	28	AA 86	26	28	28	24	47	AA 87	52	40	AA 52	AA 62	51	38	46	44	36	25	42	25	20	E	E
25	24	E	19	18	E	24	28	29	41	44	40	45	45	45	AA 81	AA 94	48	43	50	40	E	E	E	E
26	E	E	E	E	20	18	28	39	AA 112	AA 88	AA 88	AA 84	AA 90	AA 96	45	46	AA 100	42	35	52	AA 176	AA 141	25	E
27	30	25	20	E	18	ES 17	41	41	43	AA 71	AA 86	40	40	44	47	51	41	AA 77	AA 201	E	ES 16	22	20	30
28	AA 76	E	E	23	E	21	AA 76	40	AA 66	AA 82	AA 66	AA 78	AA 218	AA 134	46	45	30	40	36	31	E	26	34	23
29	28	E	E	E	E	21	G	30	39	36	39	47	40	37	46	43	AA 84	28	42	E	E	29	E	E
30	E	E	ES 15	ES 16	E	25	AA 115	32	42	44	AA 95	50	50	46	AA 60	35	31	31	25	32	40	28	23	24
31	E	E	E	E	E	20	27	30	AA 74	AA 67	AA 86	46	AA 70	46	35	32	30	32	44	AA 85	28	26	36	30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31
MED	24	19	18	E	E	22	29	39	43	46	46	47	50	46	44	44	36	35	37	31	25	25	23	24
UQ	30	27	22	23	20	29	38	46	AA 70	AA 70	AA 81	AA 66	AA 81	AA 69	48	48	44	42	44	44	40	32	30	30
LQ	E	E	E	E	E	20	26	32	38	36	38	40	42	40	38	36	31	30	25	20	16	20	18	E

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IONOSPHERIC DATA

JUL. 1985 | FMIN (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long. 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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 16	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	17	17	17	18	16	18	18	17	17	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15
2	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	16	17	18	25	18	18	16	17	17	15	E S 15	E S 16	E S 15	E S 15	E S 15
3	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16	16	20	18	18	17	18	18	18	17	17	17	17	16	E S 15	E S 15	E S 15	E S 15	E S 15
4	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	17	17	18	18	18	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
5	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	18	19	19	19	18	17	17	17	16	E S 16	E S 16	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	E S 16	16	16	16	17	17	20	20	18	17	17	16	16	14	E S 16	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	E S 15	E S 16	16	17	17	17	17	20	17	17	17	18	17	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 15
8	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	18	18	17	19	22	17	17	16	16	15	E S 16	E S 15	E S 15	E S 15	E S 16
9	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	B	21	20	19	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
10	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	20	20	19	22	19	18	17	16	16	E S 16	E S 16	E S 15	E S 15	E S 15
11	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	19	17	16	18	18	19	18	19	19	18	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
12	E S 17	E S 16	E S 15	E S 16	E S 15	E S 15	16	16	18	18	18	20	20	20	17	23	17	16	16	E S 16	E S 16	E S 15	E S 15	E S 15
13	E S 15	E S 16	E S 15	E S 15	E S 15	E S 15	16	16	17	17	17	17	18	18	20	18	17	17	16	E S 16	E S 15	E S 15	E S 15	E S 15
14	E S 16	E S 15	E S 15	E S 14	E S 15	E S 16	16	16	16	17	19	18	20	19	18	16	16	16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 15
15	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16	16	16	19	16	18	18	20	19	19	17	18	16	E S 18	E S 16	E S 15	E S 15	E S 15	E S 15
16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	19	17	17	19	17	18	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
17	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	18	18	17	19	18	16	18	16	17	E S 16	E S 16	E S 16	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	E S 16	16	16	16	19	18	17	17	18	17	17	17	16	16	E S 16	E S 16	E S 15	E S 15	E S 15
19	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	18	18	18	19	18	17	16	15	E S 16	E S 15	E S 15	E S 15	E S 15
20	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	16	18	18	20	19	18	17	17	16	16	14	E S 16	E S 15	E S 15	E S 15	E S 16
21	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	16	20	18	20	20	18	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
22	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	16	19	18	20	22	19	18	18	17	16	15	E S 16	E S 16	E S 15	E S 15	E S 15
23	E S 15	E S 15	E S 15	E S 15	E S 15	E S 15	16	16	17	16	18	18	17	18	17	18	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15
24	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	17	17	17	18	18	18	20	18	17	17	16	16	E S 15	E S 15	E S 16	E S 15	E S 15
25	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	17	18	17	19	18	17	17	16	16	E S 16	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	E S 16	16	16	16	18	18	17	20	18	17	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 16	E S 15
27	E S 15	E S 15	E S 15	E S 15	E S 15	E S 17	16	17	17	17	18	20	18	19	20	17	18	17	14	E S 16	E S 16	E S 15	E S 15	E S 16
28	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	16	17	18	18	18	18	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15
29	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	17	18	19	17	17	17	17	16	E S 16	E S 16	E S 16	E S 15	E S 15	E S 16
30	E S 15	E S 15	E S 15	E S 16	E S 15	E S 16	16	16	17	17	18	17	19	18	17	17	16	16	E S 16	E S 15	E S 16	E S 15	E S 16	E S 15
31	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	19	19	19	18	16	16	17	16	E S 16	E S 16	E S 15	E S 16	E S 15	E S 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	17	18	18	19	18	18	17	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
UQ	E S 16	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	17	18	18	20	20	19	18	18	17	16	16	E S 16	E S 15	E S 15	E S 15	E S 15
LQ	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	16	16	16	17	17	18	18	18	17	17	17	16	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15

JUL. 1985 | FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | M(3000)F2 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA | Lat. 39° 43.5' N, Long. 140° 08.0' E | Sweep 1 MHz to 25 MHz in 24sec 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	F 295	F	F	F	F 340	300	340	325	295	305	300	305	A	295	255	280	315	320	A	300	F 315	F	F	F
2	F	F	F	F	F 310	310	310	320	350	A	335	300	A	285	330	325	335	315	290	305	320	F 330	F	F
3	F	F	F	F	F 335	340	350	305	315	340	275	330	305	J R 260	295	300	310	300	315	315	350	A	F	F
4	F	F	F	F	F	A	325	S 315	A	A	A	A	A	A	300	325	315	300	285	290	F 290	F	F	F
5	F	F	F	F	F	F 290	F 280	A	310	290	340	310	250	A	305	290	305	300	310	335	325	310	285	F
6	F	F	F	F	F 335	350	345	340	310	A	A	A	A	A	A	315	A	295	315	320	325	F	F	F
7	F	F	F	F	F	F 325	305	A	A	A	A	A	A	280	285	310	A	300	295	310	325	305	F	F
8	F	F	F	F	F	F 340	F 340	F 280	310	G	305	260	315	300	315	A	A	A	300	305	330	315	290	F 290
9	F 295	F 285	F	F 330	F 320	295	A	280	320	310	360	B	300	330	325	285	305	A	A	295	300	F 315	F 310	F
10	F	F	F	F	F 315	F 305	290	A	330	A	A	A	A	A	G	245	295	305	290	A	F 310	F	F 315	F
11	F	F	F	F	F 310	S 370	360	340	H 320	A	A	295	295	A	280	A	320	320	R 305	305	335	320	305	300
12	295	295	295	320	F 320	315	275	315	340	295	310	290	290	305	280	285	290	285	285	285	300	F	F 320	280
13	315	290	F	F 250	F 280	280	285	260	A	245	270	G	300	310	325	325	320	H 280	295	320	280	280	295	285
14	295	295	285	R 275	R 285	260	280	285	315	320	G	A	310	280	A	255	280	305	310	295	305	290	310	F 295
15	A	F 295	F	F	310	310	325	A	A	280	315	G	A	275	A	325	295	A	305	320	F 305	F	F	F
16	A	A	F 315	F 340	F 355	340	320	275	A	A	A	305	290	285	295	305	300	305	295	315	340	320	F	F 410
17	F 310	F	F	F 315	F	365	290	305	A	A	A	A	A	A	A	A	310	305	320	A	F 290	F	F	F
18	F	F	F	F	A	A	270	A	A	300	A	G	A	G	G	A	A	280	305	295	315	310	F	F
19	F 320	F	F	F	F	275	F 275	300	345	375	A	A	A	A	A	A	325	325	325	320	315	F	F	F
20	F	F	F	F	F	300	290	285	315	305	G	G	G	270	255	305	325	330	A	330	310	A	F	F
21	F	F	F	F 295	F 335	A	A	A	305	325	A	A	290	300	A	295	345	H 320	330	310	F 300	F	F	A
22	F	A	A	A	A	A	295	315	355	350	355	300	A	A	A	305	325	305	310	315	F	F	F	F
23	F	F	F	A	F	350	320	305	305	A	305	A	320	A	300	255	285	310	275	A	315	310	F	F
24	F	F	A	F	F	325	315	A	A	325	365	A	A	A	290	285	310	315	305	310	325	315	310	300
25	305	F 290	320	325	F 320	335	345	260	305	330	285	335	340	295	A	A	320	305	315	320	325	295	F	F
26	F	F	F	F	F	295	335	350	A	A	A	A	A	A	315	290	A	310	320	340	A	A	F	F
27	F	F	F	F	F	F	305	320	335	A	A	290	270	310	305	300	305	A	A	335	295	285	F 290	F
28	A	F	F	F	F	295	A	355	A	A	A	A	A	A	285	295	290	310	320	310	305	F 305	F	F
29	F	F	F	F	F	F 315	305	315	345	355	280	340	305	305	R 305	300	A	320	310	315	320	325	305	F 300
30	F 300	F	F 295	F 325	F	310	A	305	310	315	A	305	320	290	A	320	315	265	290	300	F	F	F	F
31	F	F	F	F	F	330	325	285	A	A	A	310	A	310	270	325	325	280	290	A	F	F	F	F
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	9	6	5	9	14	26	27	24	20	18	16	18	16	19	22	25	25	27	27	27	27	16	11	8
MED	F 300	292	295	F 320	F 320	312	310	305	315	312	305	300	300	295	295	300	310	305	305	310	315	310	305	298
UQ	F 310	295	315	F 325	F 335	340	330	320	338	330	338	310	312	305	305	315	320	315	315	320	325	318	310	300
LQ	F 295	F 290	295	F 295	F 310	295	290	285	310	295	278	260	290	280	280	285	300	300	292	302	302	300	292	288

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JUL. 1985 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F1 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43·5 N, Long. 140° 08·0 E Sweep 1 MHz to 25 MHz in 24sec 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						L	380	A	410	405	A	A	A	A	A	385	A	A	A					
2							A	A	A	A	395	410	A	415	A	A	415	A	L	L				
3							L	A	405	A	430	430	440	A	425	A	375	365	A					
4						A	350	A	A	A	A	A	A	A	A	390	A	385	A	A				
5						340	A	A	A	A	385	420	415	A	A	380	395	410	360					
6							L	385	A	A	A	A	A	A	A	A	A	L 355	355					
7						L	A	A	A	A	A	A	A	A	A	A	A	A	A					
8							L	350	360	370	400	A	405	A	A	A	A	A	A					
9						A	A	A	A	415	405	B	A	A	A	355	365	A	A					
10							A	A	A	A	A	A	A	A	405	355	A	370	A	A				
11							395	L	405	A	A	A	A	A	A	A	A	380	A					
12						L	325	A	A	415	A	A	A	395	380	A	365	A	A					
13							360	375	A	405	410	375	A	A	405	390	L	L	L					
14						320	365	A	A	380	400	A	A	A	A	365	345	330	345					
15							A	A	A	385	395	430	A	410	A	A	A	A	340					
16							A	A	A	A	A	A	A	A	415	370	A	A	370					
17							385	A	A	A	A	A	A	A	A	A	A	A	A					
18							A	A	A	430	A	415	A	380	360	A	A	380	A					
19						325	405	A	370	A	A	A	A	A	A	A	390	400	340					
20						L	350	410	410	425	395	425	405	390	365	A	A	365	A					
21							A	A	A	A	A	A	A	390	A	A	A	A	L					
22							A	370	390	A	405	A	A	A	A	A	365	A	A					
23							370	380	A	A	A	A	A	A	A	385	355	A	A	A				
24							360	A	A	A	390	A	A	A	380	A	A	A	365					
25							380	370	A	A	410	A	A	A	A	A	A	A	A					
26							375	A	A	A	A	A	A	A	A	A	A	A	A					
27							A	A	A	A	A	395	400	A	A	A	A	A	A					
28							A	A	A	A	A	A	A	A	A	A	350	A	A					
29							L 370	350	A	360	400	A	415	385	A	A	A	370	A					
30						320	A	385	A	A	A	A	A	A	A	370	335	345	315					
31							L	385	A	A	A	A	A	A	385	395	360	L 335	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	14	10	7	10	13	8	6	7	9	11	12	13	8					
MED						322	370	378	405	405	400	418	410	390	385	380	365	370	350					
UQ						332	380	385	408	415	405	428	415	402	405	388	382	380	362					
LQ						320	360	370	380	380	395	402	405	388	380	368	352	355	340					

JUL. 1985 | M(3000)F1 (0.01)

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IONOSPHERIC DATA

JUL. 1985 | H*F2 (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long. 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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						375	280	320	380	350	380	365	A	400	475	390	340	305	A					
2							305	300	270	A	300	400	A	390	300	310	295	280	320	285				
3							255	350	305	280	480	340	380	R	400	355	315	335	295					
4						A	295	A	A	A	A	A	A	A	350	305	310	325	A	A 290				
5						380	420	A	350	385	290	370	545	A	345	360	330	340	280					
6							275	280	A	A	A	A	A	A	A	310	A	350	290					
7						275	A	A	A	A	A	A	A	420	390	345	A	355	A					
8							L 280	470	375	G	380	505	345	370	355	A	A	A	320					
9						380	A	A	295	300	270	B	360	310	320	390	315	A	A					
10							315	A	300	A	A	A	A	A	G	560	390	350	340	A				
11							245	270	340	A	A	385	350	A	A	A	295	295	275					
12						310	390	300	275	355	310	370	370	315	370	355	335	320	A					
13							390	510	A	670	470	G	380	340	315	300	310	L 300	300					
14						485	400	360	330	335	G	A	370	400	A	530	405	330	310					
15							A	A	A	420	340	G	A	470	A	330	A	A	305					
16							310	415	A	A	A	375	380	400	355	350	335	340	305					
17							440	355	A	A	A	A	A	A	A	A	330	A	315					
18							425	A	A	390	A	G	A	G	G	A	A	420	A					
19						450	450	345	255	245	A	A	A	A	A	A	320	305	275					
20						350	410	400	350	320	G	G	G	465	545	350	315	310	A					
21							A	A	340	320	A	A	400	380	A	A	270	305	250					
22							390	325	260	260	280	380	A	A	A	355	305	330	A 295					
23							340	350	A	A	A 355	A	355	A	390	520	390	320	330	A				
24							320	A	A	A	250	A	A	A	420	395	320	300	285					
25							250	510	345	320	400	305	305	380	A	A	300	320	A					
26							300	280	A	A	A	A	A	A	345	395	A	305	275					
27							A	305	290	A	A	400	470	345	335	330	300	A	A					
28							A	265	A	A	A	A	A	A	400	355	340	305	275					
29							340	320	260	260	440	295	385	370	355	345	A	295	300					
30						355	A	370	350	330	A	355	320	390	A	320	330	445	340					
31							250	420	A	A	A	355	A	350	460	320	300	400	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						9	24	22	18	17	16	18	16	18	21	24	24	26	21	2				
MED						375	318	348	318	330	368	378	375	385	370	352	318	320	300	288				
UQ						380	395	400	350	385	455	505	392	400	420	390	335	340	315					
LQ						350	280	300	275	300	295	355	352	350	345	325	302	305	280					

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IONOSPHERIC DATA

JUL. 1985 | H'F (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43·5 N, Long. 140° 08·0 E Sweep 1 MHz to 25 MHz in 24sec 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	260	245	270	255	240	230	220	A	205	200	A	A	A	A	A	205	A	A	A	A	260	A	A	240
2	245	A	275	260	270	245	A	A	A	A	205	200	A	200	A	A	210	A	220	250	240	A	230	A
3	A	280	290	255	240	225	225	A	205	A	200	200	200	A	200	A	220	235	A	230	210	A	A	A
4	A	A	240	A	260	A	A	A	A	A	A	A	A	A	A	205	A	200	A	A	285	250	235	270
5	A	A	260	255	270	250	A	A	A	A	205	200	200	A	A	220	220	225	230	245	230	A 240	A	A
6	270	A	A	270	225	240	225	220	A	A	A	A	A	A	A	A	A	210	245	250	235	A	A	275
7	245	290	A	A	270	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	245	245	A	A
8	A	A	285	255	220	235	205	215	215	230	205	A	200	A	A	A	A	A	A	A	220	245	A	A
9	275	280	A 280	245	240	A	A	A	A	200	195	B	A	A	A	A 230	A 230	A	A	A	A	A	270	270
10	270	A 270	250	230	245	220	A	A	A	A	A	A	A	A	205	A	A	235	A	A	A	205	250	A
11	A	A	280	280	A	230	A 220	200	195	A	A	A	A	A	A	A	A	230	A	255	225	240	290	270
12	A 300	275	250	230	245	A	225	A	A	200	A	A	A	210	200	A	245	A	A	A	255	270	220	A
13	245	260	A	E S 330	A 340	A	240	215	A	200	205	210	A	A	210	210	A	220	A 240	260	270	280	A	A
14	A	275	280	285	325	265	250	A	A	200	220	A	A	A	A	H 200	225	240	A	275	255	285	255	A
15	A	300	285	250	280	A	A	A	A	200	200	195	A	200	A	A	A	A	A	A 245	245	A	A	230
16	A	A	280	250	240	250	A	A	A	A	A	A	A	A	200	210	A	A	220	250	210	235	260	A
17	A	290	275	285	280	245	200	A	A	A	A	A	A	A	A	A	A	A	A	A	A	290	275	250
18	325	A	275	A	A	A	A	A	A	200	A	200	A	220	200	A	A	230	A	A	A	250	275	280
19	265	250	265	285	300	250	210	A	225	A	A	A	A	A	A	A	225	220	255	245	205	A 290	275	280
20	255	A 270	250	285	A	255	240	205	195	200	200	195	200	220	A	A	A	205	A	A	A	A	A	A
21	280	280	A	A	260	A	A	A	A	A	A	A	A	220	A	A	A	A	205	250	270	A	A	A
22	A 290	A	A	A	A	A	A	245	220	A	210	A	A	A	A	A	220	A	A	255	A	A	240	A
23	A	A	A 280	A	225	240	235	230	A	A	A	A	A	A	A	230	230	A	A	A	A	A	A	A
24	A	A	A	A	A	A	240	A	A	A	A	A	A	A	230	A	A	A	230	A	235	225	245	280
25	A 290	285	240	250	270	240	215	210	A	A	225	A	A	A	A	A	A	A	A	A	205	245	225	265
26	275	285	250	260	A 260	230	225	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	270	245
27	A	A	A 280	250	275	255	A	A	A	A	A	215	210	A	A	A	A	A	A	215	245	A 295	300	A
28	A	280	270	A	260	240	A	A	A	A	A	A	A	A	A	A	220	A	A	A 250	250	280	A 260	240
29	A	270	295	255	245	245	215	230	A	200	205	A	200	220	A	A	A	225	A	250	230	A 240	250	280
30	230	275	270	235	230	A	A	210	A	A	A	A	A	A	A	205	220	220	220	A	A	A 270	A 245	A
31	280	290	285	250	205	230	A	210	A	A	A	A	A	A	195	200	230	A	A	A	A	250	A	A 230
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	17	19	25	23	26	20	16	11	7	10	12	8	6	7	8	10	12	13	9	16	21	20	19	15
MED	270	280	275	255	260	240	225	215	205	200	205	200	200	220	200	208	222	225	230	250	240	250	255	270
UQ	280	285	280	270	270	250	238	225	218	200	208	205	200	220	208	220	230	230	240	255	255	280	272	278
LQ	255	270	260	250	240	230	215	210	200	200	200	198	200	205	200	205	220	220	220	245	225	240	242	242

JUL. 1985 | H'F (KM)

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IONOSPHERIC DATA

JUL. 1985 | H'E (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43·5 N, Long 140° 08·0 E Sweep 1 MHz to 25 MHz in 24sec 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	110	105	105	105	105	105	105	105	105	110	110	110	S	S				
2						S	110	105	105	105	105	105	110	105	105	105	A	A	A	S				
3						S	110	B 105	105	105	105	105	105	105	105	105	105	110	A	S				
4						S	110	105	105	105	105	105	105	105	105	105	105	105	A	S				
5						S	110	110	105	105	105	105	105	105	105	105	105	105	110	S				
6						S	105	110	105	105	105	105	105	105	105	105	A	A	110	S				
7						S	110	105	105	105	105	110	105	105	A	105	110	110	S	S				
8						S	A	A	105	105	105	105	105	110	105	105	105	A	A	S				
9						S	110	105	105	105	105	B	A	105	110	105	105	110	110	S				
10						S	110	105	105	105	105	105	105	105	105	105	105	105	105	S				
11						S	A	A	105	105	105	105	105	105	105	110	110	110	S	S				
12						S	110	110	105	105	105	105	105	110	105	110	110	110	110	S				
13						S	110	105	105	105	105	105	A	A	A	105	105	110	110	S				
14						S	110	110	105	105	105	105	110	105	105	105	105	110	S	S				
15						S	110	110	110	105	105	105	A	A	105	105	105	A	S	S				
16						S	110	110	105	105	105	105	105	A	105	A	A	A	A	S				
17						S	A	105	105	105	105	105	105	105	105	105	A	110	S	S				
18						S	110	105	105	A	A	A	105	105	105	105	105	105	A	S				
19						S	110	105	105	105	105	105	105	105	105	105	110	110	A	S				
20						110	110	105	105	105	105	105	105	105	105	105	105	110	110	S				
21						S	110	105	105	105	105	105	105	A	A	A	A	A	A	S				
22						S	A	105	105	105	105	105	105	105	A	A	A	105	A	S				
23						S	A	105	105	105	105	105	A	105	105	110	105	110	A	S				
24						S	A	110	105	105	105	105	105	105	105	A	A	A	A	S				
25						S	110	105	105	105	105	105	105	110	105	110	105	105	A	S				
26						S	110	105	105	105	105	105	105	105	105	105	105	105	S					
27						S	110	105	105	105	105	105	105	105	105	105	110	110	110					
28						S	A	A	A	105	105	105	105	105	105	110	105	110	S					
29						S	110	105	105	105	105	105	105	105	105	105	110	110	S					
30						S	110	105	105	105	105	105	105	105	105	105	105	110	S					
31						S	110	105	105	110	105	105	105	105	105	105	A	110	S					
	00	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	24	28	30	30	30	29	27	27	27	27	23	24	8					
MED						110	110	105	105	105	105	105	105	105	105	105	105	110	110					
UQ							110	108	105	105	105	105	105	105	105	105	110	110	110					
LQ							110	105	105	105	105	105	105	105	105	105	105	105	110					

JUL. 1985 | H'E (KM)

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IONOSPHERIC DATA

JUL. 1985 | H'ES (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43·5 N, Long. 140° 08·0 E Sweep 1 MHz to 25 MHz in 24sec 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	105	105	100	105	105	110	110	110	110	110	110	105	105	105	105	120	115	110	110	105	100	100	105	105
2	105	100	95	95	95	120	110	110	110	105	110	110	110	110	105	105	105	100	105	105	110	110	105	100
3	100	100	95	100	S	G	115	105	110	105	115	G	G	145	140	145	135	130	120	110	105	110	110	110
4	110	105	105	100	100	115	110	110	110	110	105	105	105	110	110	G	135	110	110	110	110	125	120	110
5	105	105	105	105	S	130	130	120	110	110	110	110	110	105	105	G	G	G	135	100	100	100	110	105
6	105	100	100	100	100	110	110	110	105	105	105	110	105	105	105	105	100	100	120	100	100	100	105	105
7	110	105	105	105	100	105	125	110	110	110	110	110	105	105	105	120	120	120	110	110	110	105	105	105
8	100	100	100	100	100	G	105	100	135	125	125	120	130	125	120	125	110	100	120	110	110	110	100	100
9	100	95	120	120	120	110	110	105	105	115	110	B	100	110	130	120	115	110	110	110	105	105	100	100
10	100	100	95	100	100	135	120	110	110	110	110	110	105	105	105	105	135	120	115	110	110	110	110	110
11	105	105	100	105	100	100	100	105	115	110	105	110	125	120	120	110	115	125	110	110	S	S	105	100
12	100	100	100	100	120	120	115	115	110	105	105	110	105	110	120	110	G	120	110	110	120	110	110	100
13	105	S	115	100	120	120	120	110	105	110	120	105	105	100	100	140	135	120	120	110	110	115	105	100
14	100	100	105	105	S	125	120	110	110	115	110	110	125	130	130	125	125	130	115	110	110	105	105	100
15	100	100	110	120	120	120	110	110	110	110	110	110	105	100	105	105	125	110	120	110	110	105	100	105
16	105	100	100	100	100	110	120	110	110	110	110	105	105	105	110	105	100	100	100	100	100	100	110	105
17	105	105	105	100	100	100	100	105	105	110	110	110	105	105	110	105	120	115	120	110	105	110	105	100
18	100	100	145	125	125	120	120	105	110	130	100	105	105	105	110	110	110	110	100	100	105	105	100	100
19	95	100	95	95	95	130	110	110	110	110	105	105	110	110	110	110	110	110	100	110	105	105	105	100
20	100	105	95	110	105	115	115	110	110	110	110	110	110	115	125	120	120	120	110	110	110	105	105	105
21	105	100	100	100	100	120	120	110	110	105	105	105	105	100	110	105	100	110	105	100	100	110	120	110
22	105	105	105	105	100	100	100	110	110	110	110	110	105	105	105	100	105	110	105	105	105	105	105	100
23	110	105	105	100	100	100	105	110	110	105	105	105	105	110	110	120	110	110	105	105	100	100	100	100
24	100	100	105	100	100	100	100	110	110	110	110	110	105	105	105	100	100	100	100	100	100	100	100	105
25	110	105	100	105	105	120	115	120	110	115	120	110	125	125	110	115	110	110	105	105	105	100	100	110
26	105	105	105	105	100	105	110	110	105	110	105	105	105	105	110	110	120	110	110	110	110	110	105	105
27	100	100	100	100	105	S	110	110	110	110	105	105	105	130	120	120	135	120	110	110	S	110	115	105
28	105	105	105	105	105	105	105	105	105	105	110	110	110	115	110	150	120	120	115	110	110	110	105	105
29	100	105	105	105	110	110	G	125	105	105	110	110	120	120	110	110	110	120	110	110	110	105	110	110
30	115	120	S	S	105	110	110	110	115	110	110	110	110	110	110	120	120	110	110	105	105	105	105	105
31	110	105	100	105	115	120	120	120	110	110	110	110	105	105	105	105	105	120	110	100	100	95	100	110
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	30	30	28	28	30	31	31	31	31	29	30	31	31	29	29	30	31	31	29	30	31	31
MED	105	102	102	102	100	112	110	110	110	110	110	110	105	110	110	110	115	110	110	110	105	105	105	105
UQ	105	105	105	105	108	120	120	110	110	110	110	110	110	115	115	120	120	120	115	110	110	110	110	105
LQ	100	100	100	100	100	105	110	110	110	108	105	105	105	105	105	105	110	110	105	105	100	100	102	100

JUL. 1985 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | TYPES OF ES | 135° E Mean Time (G.M.T. + 9 h)

Station AKITA Lat. 39° 43.5' N, Long 140° 08.0' E Sweep 1 MHz to 25 MHz in 24sec 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	F2	F2	F2	C2	C3	C2	C2	C1	C2	C2	C3	C2	C2	C1	C2	C2	C2	L2	F3	F3	F6	F2
2	F2	F3	F2	F2	F2	C2	C5	C4	C3	C3	C2	C2	C2	C1	C2	C2	L2	L2	L3	L2	F2	F4	F2	F2
3	F2	F1	F2	F2			C2	C2	C1	C2	C2			H1	H1	H1	H2	HL22	CL41	CL32	F1	F7	F7	F5
4	F4	F5	F2	F3	F2	C5	C3	C4	C4	C4	C4	C3	C3	C3	C2		C2	C1	CL31	C3	F4	F1	F1	F2
5	F7	F6	F2	F3		H2	C3	C4	C2	C2	C1	C1	C1	C3	C2				H1	L2	F2	F3	F7	F4
6	F2	F3	F4	F3	F2	CL21	C2	C2	C3	C3	C4	C2	C3	C4	C3	C2	L4	L2	C2	L5	F3	F4	F4	F5
7	F1	F3	F3	F3	F2	L2	C3	C5	C3	C3	C3	C3	C3	C2	L2	C2	C2	C2	C3	C3	F3	F3	F3	F3
8	F3	F3	F2	F2	F1		L2	L3	H1	C1	C1	C2	C1	C1	C2	C2	C4	L3	CL35	C3	F3	F3	F5	F2
9	F2	F2	F3	F2	F1	C3	C3	C4	C3	C1	C1		L2	C1	C2	C2	C2	C3	C3	C3	F3	F4	F4	F2
10	F2	F2	F2	F1	F1	H1	C3	C3	C2	C4	C2	C2	C3	C3	C1	C2	H1	C1	C2	C5	F4	F2	F2	F5
11	F4	F7	F6	F4	F4	L4	L4	L2	C1	C2	C3	C3	C2	C2	C1	C2	C2	C1	C2	C1			F2	F2
12	F4	F2	F2	F1	FF21	C3	C1	C2	C2	C1	C2	C1	C2	C1	C1	C2		C3	C5	C4	F3	F6	F2	F4
13	F2		F4	F3	F6	C4	C2	C2	C5	C1	C1	C1	L2	L2	L2	H1	H2	C3	C3	C2	F2	F2	F3	F4
14	F4	F2	F4	F6		C3	C2	C2	C2	C1	C1	C3	C1	C2	C2	C1	C2	C2	C5	C4	F5	F6	F4	F5
15	F2	F2	F2	F1	F2	C4	C2	C2	C2	C1	C1	C1	L2	LH11	C2	C2	C2	CL32	C3	C2	F2	F2	F2	F2
16	F4	F5	F5	F3	F2	C2	C3	C3	C3	C4	C3	C2	C2	L2	C1	L2	L3	L4	L2	L2	F3	F3	F3	F7
17	F4	F2	F2	F2	F2	L3	L3	C2	C4	C3	C4	C3	C3	C3	C3	C6	CL21	C2	C2	C4	F5	F4	F2	F3
18	F4	F5	FF11	F3	F6	C6	C4	C5	C3	CL12	L2	L1	C3	C1	C1	C4	C3	C1	L3	L5	F7	F3	F2	F2
19	F3	F2	F2	F2	F2	C1	C2	C3	C2	C2	C4	C3	C2	C2	C2	C3	C2	C2	L3	C1	F1	F3	F3	F2
20	F2	F2	F2	F2	F3	C1	C1	C2	C2	C1	C1	C1	C1	C1	CC12	C2	C1	C2	C4	C3	F5	F4	F7	F7
21	F2	F2	F3	F4	F2	CL31	C3	C3	C2	C2	C2	C3	C2	L2	CL32	L3	L2	CL22	L2	L2	F3	FF23	FF22	F6
22	F4	F4	F4	F6	F3	L3	L5	C2	C2	C2	C2	C2	C4	C3	L3	L2	L2	C3	L2	L2	F3	F2	F2	F3
23	F3	F4	F3	F3	F2	L3	L2	C2	C4	C4	C2	C4	L2	C2	C2	C2	C2	C3	L5	L3	F3	F4	F2	F4
24	F3	F2	F3	F2	F3	L3	LC22	C3	C3	C3	C2	C2	C4	C3	C2	L3	L3	L3	L3	L3	F3	F2	F1	F2
25	F2	F2	F3	F2	F2	C2	C3	C2	C2	C2	C2	C2	C1	C2	C2	C4	C2	C3	L3	L3	F1	F2	F2	F2
26	F1	F2	F2	F2	F5	L2	C3	C3	C4	C5	C5	C3	C3	C3	C2	C2	C4	C3	C3	F3	F4	F6	F2	F2
27	F5	F3	F2	F2	F2		C3	C3	C2	C4	C2	C2	C3	C2	C3	C3	H2	C3	C4	F1		F3	F3	F4
28	F3	F3	F2	F5	F2	L3	L4	L2	L4	C3	C3	C3	C3	C2	C3	HC12	C2	C3	C5	F6	F2	F3	F4	F4
29	F3	F2	F2	F3	F2	C3		C2	C2	C2	C2	C2	C1	C1	C2	C2	C2	C2	C3	F2	F1	F3	F2	F2
30	F2	F1			F2	C4	C3	C2	C2	C2	C3	C2	C2	C2	C2	C1	C1	C3	C4	F2	F3	F4	F2	F3
31	F1	F2	F2	FF21	F1	C2	C2	C2	C3	C3	C3	C2	C3	C2	C1	C2	L2	C2	C3	F4	F3	F3	F4	F4
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUL. 1985 | TYPES OF ES

IONOSPHERIC DATA

JUL. 1985 | FXI (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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	60	54	S 41	S 39	S 41																S 69	S 68	A	S
2	S 56	51	49	S 46	S 42																S	S 71	S	58
3	53	S 49	X 42	49	46																S 70	S 51	A	A
4	S	A	S	40	44																0 S 72	S 70	S 69	62
5	63	61	65	X 57	53																X 68	U S 60	A	56
6	A	A	58	60	S 53																S 71	X 54	53	56
7	S 57	S 53	S	50	S 48																X 65	S 54	X 47	50
8	50	S	50	49	S 46																S 76	70	66	66
9	60	60	60	X 49	X 38																S 75	S 71	70	U S 70
10	70	68	S 62	56	X 51																A	S 56	A	A
11	A	X 52	A	56	55																X 72	S 63	S 60	60
12	X 56	X 51	X 51	X 48	X 44																X 92	S	S 75	S 75
13	S 76	S 69	60	X 55	S 55																X 65	X 65	S 66	63
14	S 60	X 59	X 52	X 51	S 46																S 65	X 63	X 58	S 52
15	X 48	X 41	X 43	X 43	S 40																S 50	52	A	49
16	S 43	S 40	45	S 39	S 35																X 69	X 51	S 47	50
17	U S 41	A	S 41	S 40	S 40																S 62	66	63	60
18	50	S 42	52	50	S 50	44															X 59	X 57	S 52	X 50
19	S 44	X 39	X 39	S 37	S 35																X 61	S 54	S 49	52
20	U S 54	S 48	S 40	39	36																S	S 56	S 54	S
21	S	S 46	X 42	0 S 43	45																X 54	S 55	S 52	55
22	56	A	50	A	S 36																S 65	X 56	S 51	A
23	A	A	60	S 41	S 36																S 71	A	S 56	60
24	56	56	A	A	45																X 71	X 60	X 53	X 51
25	X 51	S 50	S 45	S 43	A																S 79	X 60	X 55	S 50
26	S 52	S 50	54	S 49	S 46																S 43	A	46	60
27	59	S 52	50	49	S 42	44															X 55	X 52	S 49	S 50
28	A	S	S 50	S 46	47																S 69	S 65	S 62	A
29	A	S 45	S 42	S 44	S 42																X 69	X 56	X 52	S 50
30	S 49	S 46	S 46	S 44	X 42																X 76	62	65	A
31	S 60	S 56	S 50	S 56	S 46																S 80	S 76	X 58	S 58
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	24	27	29	30	2															28	28	25	24
MED	56	S 51	50	48	S 44	44															S 69	60	S 55	56
UQ	60	56	53	50	S 47																S 72	S 66	63	60
LQ	50	S 46	S 42	S 43	S 40																X 64	54	S 52	50

JUL. 1985 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF2 (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4 N, Long. 139° 29.3 E Sweep 1 MHz to 20 MHz in 20sec 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	F	S 35	S 33	S 35	39	49	49	50	R 53	R 49	56	R 54	A	53	55	63	60	55	S 61	S 63	S 62	A	S
2	S 50	F	F	S 40	S 36	S 40	50	54	S 62	A	A	47	A	A	67	62	58	52	50	60	I S 69	S 65	S	F
3	F	S 43	36	F	F	42	45	48	71	59	50	49	E G 45	48	50	60	57	59	68	S 68	S 64	S 45	A	A
4	S	A	S	F	F	S 39	A	S 60	56	A	A	A	53	A	70	72	63	56	58	S 65	S 66	S 64	S 63	F
5	F	F	F	51	F	S 40	S 43	A	54	A	60	A	49	63	70	72	S 75	S 70	85	82	S 62	U S 54	A	F
6	A	A	F	F	S 47	42	A	55	58	A	61	52	A	A	70	A	68	A	S 74	S 84	S 65	48	F	F
7	S 51	S 47	S	F	S 42	S 44	S 43	A	A	A	A	A	A	56	58	67	54	54	59	64	59	S 48	S 41	F
8	F	S	F	F	S 40	S 42	41	43	46	55	58	R 52	56	A	56	53	58	S 60	70	A	S 70	F	F	F
9	F	F	F	S 43	32	40	48	57	61	R 59	59	B	56	64	60	60	70	S 73	S 71	S 68	S 69	S 65	F	U S 64
10	F	F	S 56	F	S 45	S 45	55	A	50	53	A	A	E G 45	E G 44	47	50	50	51	54	S 60	A	S 50	A	A
11	A	S 46	A	F	F	S 47	48	51	57	R 56	A	51	A	54	57	68	S 74	S 75	S 70	70	S 66	57	S 54	F
12	50	45	45	42	38	42	50	66	62	A	66	67	68	78	74	79	70	73	S 75	S 77	86	I S 76	S 69	S 69
13	S 70	S 63	F	49	S 49	42	46	44	45	E G 41	E G 43	R 48	59	67	I R 58	62	57	52	57	61	59	59	S 60	F
14	S 54	53	S 46	45	S 40	35	45	56	59	51	R 46	48	50	55	51	52	52	56	50	58	S 59	57	52	S 46
15	42	35	37	S 37	S 34	S 43	S 52	A	55	A	A	E G 43	46	49	53	53	A	50	53	56	S 44	F	A	F
16	S 37	S 34	F	S 33	S 29	S 36	42	48	S 60	A	A	A	59	60	64	61	55	59	58	69	63	45	S 41	F
17	U S 35	A	S 35	S 34	S 34	34	S 44	S 49	47	R 43	R 45	E G 44	E G 44	A	R 46	49	51	51	A	58	S 56	F	F	F
18	F	S 36	F	F	S 44	F	A	A	A	A	A	E G 40	A	A	A	A	R 43	A	A	51	53	S 51	S 46	44
19	S 38	33	33	S 31	S 29	S 31	43	54	69	R 55	A	51	A	A	50	55	58	60	54	S 60	55	S 48	S 43	F
20	U S 48	S 42	S 34	F	F	H 34	S 39	S 48	58	J R 45	E G 43	E G 44	45	52	53	57	55	S 53	49	49	I S 50	S 50	S 48	S
21	S	S 40	36	S 37	F	32	36	A	A	A	R 45	A	A	A	58	65	68	59	A	45	48	S 49	S 46	F
22	F	A	F	A	S 30	A	S 42	49	S 64	A	A	A	50	53	59	63	55	54	I S 57	62	S 59	50	S 45	A
23	A	A	F	S 35	S 30	S 35	41	A	A	55	R 55	A	A	R 51	A	A	R 51	61	S 65	A	S 65	A	S 50	F
24	F	F	A	A	F	S 39	50	S 59	S 60	58	A	A	A	A	R 59	A	58	58	S 60	S 69	S 65	54	47	45
25	45	S 44	S 39	S 37	A	S 40	A	A	53	55	58	51	A	61	A	62	S 75	71	J S 82	J S 80	S 73	54	S 49	S 44
26	S 46	S 44	F	S 43	S 40	S 36	S 49	54	51	48	A	A	A	A	A	60	57	68	S 74	S 83	S 37	A	F	F
27	F	S 46	F	F	S 36	F	44	A	57	50	R 51	51	54	60	66	79	J S 80	S 75	S 71	59	49	46	S 43	S 44
28	A	S	S 44	S 40	F	S 35	44	57	56	51	50	R 51	53	56	62	63	62	S 65	71	S 76	J S 63	S 59	S 56	A
29	A	S 39	S 36	S 38	S 36	41	44	53	65	53	60	59	E G 45	54	A	69	65	63	54	70	S 63	S 50	S 46	S 44
30	S 43	S 40	S 40	S 38	36	38	43	50	61	54	59	R 56	58	A	58	60	55	R	58	S 76	70	F	F	A
31	S 54	S 50	S 44	S 50	S 40	38	45	50	62	56	A	A	A	55	55	58	55	A	55	A	S 74	S 70	S 52	S 52
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	18	15	19	22	28	27	22	27	20	18	19	19	19	26	27	30	27	28	28	30	25	19	9
MED	S 47	S 44	S 37	S 38	S 36	S 40	44	52	58	54	53	51	53	55	58	61	58	59	58	64	S 63	S 54	S 48	S 45
UQ	S 51	S 46	S 44	S 43	S 40	S 42	48	56	62	56	59	52	56	60	64	66	68	66	S 71	S 73	S 66	S 59	S 53	S 52
LQ	S 42	S 39	36	S 36	S 34	36	43	49	54	50	R 46	48	46	52	53	56	55	54	54	60	S 56	S 49	S 46	S 44

The Radio Research Laboratories, Japan

JUL. 1985 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF1 (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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						L	L 350	390	410	430	A	A	R 460	A	R 440	450	410	390	U L 350	L				
2						L	U L 380	A	A	A	A	A	A	A	A	A	A	A	A	A				
3							L 360	390	400	430	450	450	R 450	430	430	420	L 410	370	L 330					
4						L 310	A	A	A	A	A	A	A	A	440	430	H 400	A	U L 340					
5						L	A	A	A	A	A	A	440	440	430	430	400	A	A	A				
6							A	400	410	A	A	A	A	A	A	A	A	A	A					
7						L	A	A	A	A	A	A	A	A	450	430	A	A	L 340					
8							340	L	410	440	A	450	A	A	A	450	A	A	A	A				
9						L	A	A	A	A	440	B	450	450	A	A	A	A	A					
10							A	A	L 420	A	A	A	R 450	440	430	440	400	A	A					
11							A	400	420	450	A	A	A	450	A	430	A	390	A					
12							370	400	430	A	440	A	A	A	A	A	L 440	A	A	A				
13						A	330	360	390	410	R 430	A	440	H 450	A	A	400	L 400	A					
14						250	350	380	400	430	420	430	A	420	430	410	400	370	U L 330					
15						L	A	A	390	A	A	430	A	A	440	410	A	A	U L 340					
16							L	A	A	A	A	A	A	R 450	450	430	A	370	L					
17							360	A	400	A	420	440	440	A	420	400	A	A	A					
18						270	A	A	A	A	A	R 400	A	A	A	A	R 390	A	A					
19						260	340	S 390	A	430	A	A	A	A	420	A	390	370	L					
20							340	380	390	430	R 430	440	430	420	410	S 420	400	360	U L 320					
21						280	A	A	A	A	L	A	A	A	A	A	A	A	A					
22							L	390	A	A	A	A	A	430	430	410	A	370	L					
23							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
24						L	A	A	A	A	A	A	A	A	A	A	A	A	U L 340					
25						L	A	A	400	A	A	A	A	A	A	A	400	370	U L 320					
26						L 280	A	390	420	430	A	A	A	A	A	A	400	370	A					
27						L 290	L 370	A	420	450	A	470	A	A	A	A	A	370	A					
28							340	370	410	450	450	460	A	450	A	420	A	L 400	A					
29							L	390	410	440	440	460	450	430	A	430	400	L 380	A					
30							A	L 420	A	430	A	A	A	A	430	430	A	A	A					
31								400	420	430	A	A	A	A	440	A	400	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						7	12	15	18	14	9	10	9	12	15	17	15	14	9					
MED						280	350	390	410	430	440	445	450	440	430	430	400	370	U L 340					
UQ						L 285	L 365	400	420	440	440	460	R 450	450	440	430	400	390	U L 340					
LQ						265	340	385	400	430	430	430	440	430	430	420	400	370	U L 330					

JUL. 1985 | FOF1 (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOE (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

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	A	A	A	A	A	A	A	A	A	A	290	260	A	B				
2						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
3						160	A	A	A	335	A	350	350	355	340	315	295	A	200	S				
4						160	A	270	300	A	A	A	A	A	A	A	290	250	A	S				
5						S	230	280	A	325	A	A	A	A	A	A	A	A	A	S				
6						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
7						S	A	A	310	330	340	A	A	A	A	325	290	255	A	S				
8						A	A	A	310	335	350	360	355	355	350	320	A	A	200	S				
9						A	235	A	A	A	A	B	A	365	350	330	290	250	A	B				
10						S	A	A	A	A	A	A	A	A	R	A	A	260	A	S				
11						S	A	A	A	330	340	355	360	355	340	330	300	270	195	B				
12						A	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
13						S	A	A	A	A	A	A	A	A	A	320	290	260	190	S				
14						S	220	A	A	A	A	A	350	345	340	310	280	H 250	190	S				
15						A	A	A	A	A	A	A	355	360	340	A	A	250	A	S				
16						S	A	A	A	A	A	A	A	A	A	R	A	A	A	S				
17						A	A	A	A	A	A	A	A	A	325	305	280	250	160	S				
18						S	A	A	A	A	A	A	350	340	325	305	A	A	A	S				
19						S	A	A	A	A	A	A	A	A	345	310	A	A	A	S				
20						S	A	A	A	A	A	A	A	340	A	310	290	250	A	S				
21						S	210	A	A	A	A	340	A	A	A	A	A	A	A	S				
22						S	220	260	290	A	A	345	355	350	335	300	A	250	A	S				
23						S	A	270	290	A	A	A	A	A	A	A	A	A	A	S				
24						S	A	A	A	A	A	A	A	A	A	A	A	A	A	S				
25						S	A	260	A	330	340	345	355	350	340	310	H 280	A	A	S				
26						S	A	A	A	A	A	A	A	A	345	A	A	A	A	S				
27						S	A	A	A	A	A	360	355	345	335	315	290	250	190	S				
28						S	A	A	A	A	A	A	355	350	350	320	285	260	A	S				
29						S	A	260	290	325	340	350	350	345	335	310	290	250	A	S				
30						S	A	260	A	R 320	A	A	A	A	A	A	295	260	A	S				
31						S	A	270	300	320	345	350	340	335	A	A	A	250	A	S				
	00	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	8	7	9	6	9	12	14	15	16	15	17	7					
MED						160	220	265	300	330	340	350	355	350	340	312	290	250	190					
UQ							230	270	305	330	345	355	355	355	345	320	290	260	198					
LQ							220	260	290	325	340	345	350	345	335	310	288	250	190					

The Radio Research Laboratories, Japan

JUL. 1985 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N. Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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	JA 27	JA 27	JA 20	JA 20	JA 28	JA 21	JA 36	JA 78	JA 47	JA 52	JA 58	JA 56	JA 60	59	48	44	35	JA 72	JA 49	20	JA 84	JA 54	JA 85	JA 55
2	JA 54	JA 37	JA 21	JA 21	JA 24	18	JA 30	JA 48	JA 152	DD 200	JA 180	45	JA 60	JA 60	JA 65	JA 86	JA 66	JA 54	JA 55	JA 33	35	JA 33	JA 54	JA 32
3	JA 29	JA 22	17	ES 15	ES 15	20	26	31	34	42	42	G	G	G	41	35	31	29	28	JA 21	JA 41	JA 34	JA 54	JA 81
4	JA 52	JA 52	JA 54	JA 86	JA 30	24	JA 75	61	JA 80	JA 111	JA 111	JA 102	JA 63	JA 115	JA 48	35	35	48	JA 80	JA 52	JA 57	JA 29	22	JA 50
5	JA 29	JA 44	JA 53	35	JA 27	24	51	JA 64	JA 56	JA 57	JA 51	75	40	40	36	JA 40	31	71	92	JA 50	JA 54	JA 81	73	JA 63
6	JA 63	JA 55	JA 61	JA 41	JA 55	JA 45	JA 97	JA 48	JA 70	JA 85	JA 66	JA 50	JA 81	JA 72	JA 79	JA 72	54	JA 85	JA 66	36	JA 27	JA 34	JA 53	JA 65
7	JA 33	JA 69	JA 52	JA 53	86	JA 65	JA 40	JA 64	JA 88	JA 84	JA 94	JA 155	JA 167	82	41	36	42	41	JA 72	35	JA 30	JA 29	JA 37	JA 31
8	JA 38	JA 32	JA 28	20	JA 40	JA 44	JA 53	29	35	47	50	41	48	JA 66	50	JA 67	JA 50	JA 134	52	90	JA 92	JA 69	49	JA 50
9	JA 45	JA 28	26	59	35	JA 23	43	JA 53	JA 93	JA 61	48	B	39	41	50	JA 59	JA 55	JA 50	JA 66	JA 56	JA 91	JA 72	JA 33	JA 30
10	JA 34	JA 30	JA 77	JA 24	JA 18	17	JA 44	JA 93	JA 50	JA 47	JA 84	JA 173	41	40	G 33	JA 41	37	JA 41	46	JA 79	JA 85	JA 64	JA 79	JA 88
11	JA 68	JA 85	JA 64	JA 51	JA 54	JA 39	JA 65	JA 57	JA 48	43	JA 70	JA 77	JA 72	JA 55	66	39	JA 101	JA 45	JA 82	JA 58	JA 53	JA 38	24	JA 29
12	JA 26	20	20	18	19	25	JA 29	34	JA 51	JA 85	JA 62	JA 55	JA 53	JA 67	JA 62	JA 46	JA 40	JA 42	JA 50	JA 52	JA 26	JA 45	JA 37	JA 81
13	JA 43	JA 51	27	25	JA 64	JA 61	30	33	JA 50	36	JA 48	JA 59	44	JA 47	JA 55	42	34	34	JA 47	58	JA 30	JA 30	JA 52	JA 52
14	JA 34	JA 19	JA 27	JA 19	16	16	25	31	JA 44	40	JA 39	JA 42	48	JA 80	40	40	43	29	JA 39	JA 58	JA 67	JA 26	JA 23	JA 32
15	JA 20	JA 25	JA 31	JA 54	JA 21	JA 29	JA 112	94	JA 51	JA 124	61	36	JA 87	43	45	JA 67	JA 68	JA 47	JA 49	JA 31	JA 39	JA 53	JA 47	JA 49
16	20	JA 32	JA 20	JA 29	JA 34	JA 31	36	JA 48	JA 51	JA 68	JA 87	JA 136	JA 91	60	34	G 31	JA 52	29	JA 27	JA 25	JA 26	JA 20	JA 30	JA 39
17	JA 55	JA 55	JA 52	JA 30	JA 22	JA 44	JA 54	JA 85	JA 47	JA 53	JA 52	JA 56	JA 54	JA 72	36	JA 68	JA 50	JA 63	JA 91	JA 89	JA 79	JA 29	JA 65	JA 42
18	JA 34	JA 33	JA 27	39	JA 30	25	JA 53	JA 67	JA 83	JA 85	JA 66	39	52	JA 66	47	JA 68	60	JA 84	JA 84	26	20	JA 41	JA 35	JA 23
19	JA 32	JA 35	JA 20	JA 26	JA 30	25	JA 30	JA 49	JA 52	JA 65	JA 55	JA 58	JA 81	JA 82	G	JA 51	JA 80	32	23	JA 30	JA 28	JA 30	23	JA 30
20	JA 28	JA 29	JA 21	21	JA 19	JA 22	JA 46	JA 48	JA 34	JA 38	36	38	JA 45	36	JA 39	G 27	31	29	JA 30	JA 31	JA 33	JA 51	JA 55	JA 42
21	JA 29	JA 32	JA 34	JA 42	JA 22	21	JA 41	JA 117	JA 79	JA 78	JA 65	JA 50	JA 78	JA 99	JA 100	JA 44	JA 66	JA 50	JA 64	JA 53	JA 25	JA 81	JA 32	JA 29
22	JA 59	JA 62	JA 54	JA 53	JA 48	JA 59	36	JA 54	JA 75	JA 89	JA 85	JA 66	51	39	40	33	JA 85	JA 52	JA 64	JA 28	JA 44	JA 28	JA 37	JA 67
23	JA 65	JA 55	JA 45	JA 28	JA 52	JA 44	32	JA 63	JA 54	JA 52	JA 68	JA 84	JA 75	65	99	JA 50	JA 105	JA 64	JA 44	JA 93	JA 49	JA 66	JA 58	JA 46
24	JA 39	JA 32	JA 55	JA 56	JA 52	JA 31	JA 55	JA 66	JA 54	JA 54	JA 151	JA 78	JA 65	JA 111	JA 63	JA 54	65	JA 68	JA 34	JA 31	JA 31	JA 29	24	20
25	24	JA 25	JA 21	JA 82	JA 61	JA 29	JA 71	JA 55	JA 53	JA 52	JA 50	JA 58	JA 59	49	JA 88	JA 64	38	JA 66	62	JA 30	24	JA 28	JA 26	JA 24
26	JA 25	JA 24	28	20	JA 22	20	JA 50	JA 30	JA 48	39	JA 89	90	JA 82	JA 77	JA 80	JA 101	37	JA 48	JA 47	JA 28	JA 37	JA 44	JA 57	JA 58
27	JA 27	23	JA 58	JA 40	JA 30	JA 18	37	JA 117	34	JA 51	JA 70	42	46	JA 56	47	JA 88	JA 49	JA 50	JA 65	58	JA 39	JA 29	JA 31	JA 54
28	JA 89	JA 73	JA 84	JA 52	JA 54	JA 34	JA 32	JA 32	36	43	42	42	46	JA 55	56	43	JA 82	59	43	JA 30	JA 47	JA 38	JA 53	JA 78
29	JA 79	JA 32	JA 44	JA 62	JA 52	JA 29	25	G	36	37	40	39	JA 47	42	JA 79	58	35	JA 52	JA 49	JA 35	JA 24	JA 21	JA 52	JA 54
30	JA 71	JA 53	JA 29	JA 30	JA 18	JA 46	JA 51	35	JA 51	36	44	JA 61	JA 47	54	40	JA 37	38	JA 56	JA 51	JA 28	JA 33	JA 55	JA 35	JA 85
31	JA 29	ES 15	JA 22	JA 22	JA 24	18	JA 27	JA 44	JA 44	39	JA 91	JA 83	78	JA 65	JA 52	JA 92	JA 33	JA 57	50	JA 79	JA 54	JA 31	JA 35	JA 50
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31
MED	JA 34	JA 32	JA 29	JA 30	JA 30	JA 25	JA 41	JA 53	JA 51	JA 52	JA 62	JA 57	JA 54	JA 60	48	JA 46	49	JA 50	JA 50	JA 35	JA 39	JA 34	JA 37	JA 50
UQ	JA 54	JA 52	JA 54	JA 52	JA 52	JA 42	JA 53	JA 65	JA 63	JA 81	JA 84	JA 78	JA 76	JA 72	JA 64	JA 67	JA 66	JA 64	JA 66	JA 58	JA 54	JA 54	JA 54	JA 60
LQ	JA 28	JA 26	JA 22	JA 22	JA 22	21	31	JA 34	JA 46	42	49	42	46	45	40	40	36	42	JA 45	JA 30	JA 29	JA 29	JA 32	JA 32

JUL. 1985 | FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FBES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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	E	E	E	E	E	19	34	32	33	38	44	45	41	AA 59	40	35	32	29	30	15	17	39	AA 85	19
2	40	30	E	E	E	G	26	44	43	DA 200	AA 180	45	AA 60	AA 60	51	42	45	40	39	28	21	20	27	21
3	20	E	E	E S 15	E S 15	19	26	31	32	35	40	G	G	G	38	35	31	29	26	18	21	E	AA 54	AA 81
4	28	AA 52	22	19	16	21	AA 75	42	42	AA 111	AA 111	AA 102	51	AA 115	39	34	33	43	23	G	30	E	19	36
5	29	31	20	21	E	22	40	AA 64	52	AA 57	47	AA 75	40	40	36	35	30	65	53	42	35	44	AA 73	30
6	AA 63	AA 55	18	19	29	33	AA 97	32	39	AA 85	54	45	AA 81	AA 72	63	AA 72	43	AA 85	40	21	21	19	23	E
7	30	E	25	29	23	23	36	AA 64	AA 88	AA 84	AA 94	AA 155	AA 167	49	38	36	40	38	26	20	26	20	29	20
8	28	29	E	E	15	28	30	27	34	41	46	40	46	AA 66	46	36	41	46	43	AA 90	34	40	24	40
9	25	23	E	19	18	19	37	40	50	46	40	B	39	40	49	46	53	46	40	37	45	41	20	E
10	18	17	28	E	E	17	42	AA 93	40	43	AA 84	AA 173	40	36	G 33	40	33	38	38	33	AA 85	32	AA 79	AA 88
11	AA 68	22	AA 64	16	17	28	35	33	36	39	AA 70	50	AA 72	43	53	36	45	31	36	29	E	E	E	29
12	E	E	E	E	E	19	23	31	35	AA 85	39	50	46	51	58	43	37	40	50	34	16	43	21	42
13	E	28	16	E	23	26	23	28	31	36	40	45	39	38	50	40	G	29	43	30	16	21	17	40
14	21	E	20	E	15	16	24	30	35	37	36	37	43	35	37	36	32	28	23	51	50	19	21	18
15	E	E	20	19	E	21	44	AA 94	31	AA 124	AA 61	35	45	43	37	34	AA 68	38	29	20	17	E	AA 47	E
16	E	20	E	E	E	19	32	46	45	AA 68	AA 87	AA 136	51	40	34	G 31	43	28	26	20	23	E	17	E
17	30	AA 55	29	E	E	20	23	40	37	41	37	38	38	AA 72	34	37	40	45	AA 91	31	46	20	35	27
18	26	29	E	18	E	20	AA 53	AA 67	AA 83	AA 85	AA 66	39	AA 52	AA 66	AA 47	AA 68	35	AA 84	AA 84	17	E	18	24	E
19	22	21	E	18	E	20	24	31	40	40	AA 55	44	AA 81	AA 82	G	41	32	29	22	G	E	20	E	E
20	23	25	19	E	E	16	26	27	29	33	34	36	37	35	36	G 25	30	29	23	G	17	29	27	33
21	20	25	18	23	E	20	34	AA 117	AA 79	AA 78	40	AA 50	AA 78	AA 99	50	40	41	35	AA 64	35	20	26	19	E
22	27	AA 62	24	AA 53	21	AA 59	31	32	59	AA 89	AA 85	AA 66	47	38	36	32	54	32	24	20	E	E	27	AA 67
23	AA 65	AA 55	35	19	E	19	29	AA 63	AA 54	45	52	AA 84	AA 75	44	AA 99	AA 50	44	44	34	AA 93	48	AA 66	43	34
24	31	20	AA 55	AA 56	25	26	40	50	52	46	AA 151	AA 78	AA 65	AA 111	56	AA 54	55	37	27	23	20	19	E	E
25	E	E	16	19	AA 61	21	AA 71	AA 55	34	45	45	50	AA 59	45	AA 88	51	36	31	26	G	E	23	E	19
26	E	E	E	E	E	G	42	28	35	38	AA 89	AA 90	AA 82	AA 77	AA 80	50	33	33	41	28	30	AA 44	E	22
27	18	E	E	19	E	G	28	AA 117	34	37	45	41	43	49	45	50	43	30	46	42	19	E	21	37
28	AA 89	21	38	19	20	30	22	28	31	39	38	42	44	39	51	40	49	31	39	25	33	E	34	AA 78
29	AA 79	20	16	17	17	27	23	G	35	36	39	38	40	40	AA 79	38	33	30	40	19	E	17	E	19
30	E	E	E	20	E	21	41	31	44	35	44	50	45	AA 54	38	33	37	AA 56	45	16	21	18	35	AA 85
31	16	E S 15	E	E	E	16	26	35	38	36	AA 91	AA 83	AA 78	45	40	44	31	AA 57	44	AA 79	18	19	31	30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31
MED	23	21	16	18	E	20	32	35	38	43	47	48	46	45	45	40	37	37	39	25	21	20	24	27
UQ	30	29	23	19	18	24	40	AA 59	48	AA 81	AA 84	AA 78	AA 68	AA 66	52	45	44	44	44	34	32	30	34	38
LQ	E E 16	E	E	E	E	19	26	31	34	38	40	40	40	40	37	35	32	30	26	18	16	E E 17	18	E E 18

The Radio Research Laboratories, Japan

JUL. 1985 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FMIN (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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	ES 15	ES 14	ES 15	ES 14	ES 14	ES 15	14	16	14	17	16	16	21	20	19	19	16	15	14	13	ES 15	ES 16	ES 16	ES 16
2	ES 15	ES 15	ES 15	ES 15	ES 16	13	14	15	16	16	20	20	20	20	19	16	14	13	15	ES 16	ES 15	ES 16	ES 15	ES 16
3	ES 15	ES 14	ES 15	ES 15	ES 15	ES 14	14	21	19	20	16	17	19	20	20	16	16	13	15	ES 16	ES 15	ES 16	ES 16	ES 16
4	ES 16	13	ES 15	ES 15	ES 15	ES 15	15	14	15	16	17	19	20	20	20	16	14	15	14	ES 15	ES 16	ES 16	ES 16	ES 15
5	ES 16	ES 15	ES 15	ES 15	ES 15	ES 15	15	15	16	16	16	19	17	19	16	18	14	14	16	ES 15	ES 14	ES 16	ES 16	ES 15
6	ES 16	ES 15	ES 15	ES 15	13	ES 14	13	14	16	17	19	20	20	20	20	15	15	14	14	ES 16	ES 15	ES 16	ES 16	ES 16
7	ES 15	ES 15	ES 15	ES 15	ES 15	ES 14	15	15	16	15	16	16	20	20	19	16	16	15	14	ES 15	ES 14	ES 15	ES 16	ES 14
8	ES 16	ES 15	ES 15	ES 15	13	ES 14	13	14	16	16	17	21	21	21	19	16	16	14	14	ES 14	ES 15	ES 16	ES 16	ES 16
9	ES 16	ES 15	ES 14	ES 16	ES 14	ES 14	14	14	16	17	20	B	33	22	20	18	16	14	14	13	ES 15	ES 16	ES 15	ES 16
10	ES 15	ES 15	ES 15	ES 15	ES 14	ES 15	14	14	17	17	20	20	20	21	19	20	17	16	14	ES 15	ES 15	ES 15	ES 16	ES 15
11	ES 15	ES 15	ES 15	ES 15	ES 14	ES 14	14	15	15	16	20	20	23	21	20	18	16	15	14	13	ES 16	ES 16	ES 16	ES 15
12	ES 15	ES 15	ES 15	13	ES 15	ES 14	14	14	14	20	19	20	20	20	20	22	15	14	13	ES 14	ES 14	ES 16	ES 16	ES 15
13	ES 15	ES 15	ES 14	13	13	ES 15	14	13	15	16	20	17	20	19	20	16	16	14	13	ES 15	ES 14	ES 14	ES 15	ES 15
14	ES 15	ES 15	ES 15	13	ES 14	ES 15	14	15	16	16	17	19	19	19	16	16	15	14	15	ES 14	ES 15	ES 15	ES 16	ES 15
15	ES 16	ES 14	13	ES 15	ES 15	ES 14	14	16	14	20	20	21	23	20	20	16	16	14	14	ES 15	ES 15	ES 16	ES 15	ES 15
16	ES 15	ES 15	ES 15	ES 15	ES 15	ES 14	15	15	15	16	15	19	19	19	22	15	16	14	15	ES 14	ES 14	ES 15	ES 15	ES 16
17	ES 15	ES 15	ES 15	ES 14	ES 14	13	14	15	15	16	16	20	19	19	19	17	15	15	15	ES 16	ES 16	ES 15	ES 16	ES 15
18	ES 15	ES 14	ES 14	ES 15	ES 15	ES 15	15	15	15	16	21	20	20	20	15	16	15	14	14	ES 14	ES 15	ES 15	ES 16	ES 16
19	ES 15	ES 15	ES 15	ES 15	ES 15	ES 16	15	14	16	16	16	20	20	20	21	19	15	14	16	ES 15	ES 15	ES 16	ES 16	ES 15
20	ES 15	ES 15	ES 15	ES 15	ES 14	ES 14	14	14	15	18	19	20	21	19	20	18	16	16	14	ES 15	ES 15	ES 16	ES 15	ES 16
21	ES 16	ES 15	ES 15	ES 15	ES 15	ES 14	13	14	15	19	17	20	18	21	20	19	15	15	15	ES 16	ES 15	ES 15	ES 16	ES 16
22	ES 15	ES 14	ES 14	ES 15	ES 15	ES 15	16	14	15	15	19	20	20	20	20	16	15	15	14	ES 15	ES 16	ES 16	ES 15	ES 16
23	ES 14	ES 14	ES 15	ES 15	ES 15	ES 15	14	14	14	16	15	16	21	15	16	16	14	14	14	ES 16	ES 15	ES 15	ES 14	ES 15
24	ES 16	ES 15	ES 14	ES 15	ES 14	ES 14	14	15	15	16	20	20	20	20	17	14	15	13	14	ES 15	ES 16	ES 15	ES 16	ES 16
25	ES 16	ES 15	13	ES 15	ES 14	ES 14	15	14	15	16	19	15	21	19	17	16	15	15	13	ES 16	ES 16	ES 14	ES 16	ES 14
26	ES 16	ES 15	ES 15	13	ES 15	ES 15	15	14	15	16	16	20	20	20	17	20	16	15	13	ES 16	ES 16	ES 16	ES 16	ES 15
27	ES 16	ES 16	ES 16	ES 15	ES 15	ES 16	14	15	16	16	19	21	17	21	19	15	14	15	14	ES 15	ES 15	ES 15	ES 15	ES 15
28	ES 16	ES 15	13	ES 15	ES 15	ES 14	13	14	15	15	19	17	18	16	18	15	15	15	15	ES 14	ES 15	ES 16	ES 15	ES 15
29	ES 15	ES 14	ES 15	ES 15	ES 15	ES 14	15	14	14	15	22	20	19	16	19	16	16	16	16	ES 15	ES 16	ES 15	ES 15	ES 15
30	ES 15	ES 15	ES 15	ES 15	ES 16	ES 14	14	14	15	16	19	20	20	20	19	15	15	14	14	ES 15	ES 15	ES 16	ES 16	ES 15
31	ES 15	ES 15	ES 15	ES 15	ES 15	ES 15	15	16	16	20	20	20	22	19	16	15	15	14	14	ES 15	ES 15	ES 16	ES 16	ES 15
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	ES 15	ES 15	ES 15	ES 15	ES 15	ES 14	14	14	15	16	19	20	20	20	19	16	15	14	14	ES 15	ES 15	ES 16	ES 16	ES 15
UQ	ES 16	ES 15	ES 15	ES 15	ES 15	ES 15	15	15	16	17	20	20	21	20	20	18	16	15	15	ES 16	ES 16	ES 16	ES 16	ES 16
LQ	ES 15	ES 14	ES 14	ES 15	ES 14	ES 14	14	14	15	16	16	19	19	19	18	16	15	14	14	ES 14	ES 15	ES 15	ES 15	ES 15

JUL. 1985 | FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F2 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

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	F	F	S 280	S 300	S 305	315	330	310	305	R 320	R 270	310	R 305	A	290	295	310	320	300	S 295	S 295	S 310	A	S
2	S 280	F	F	S 300	S 310	S 295	305	310	S 320	A	A	265	A	A	320	315	310	310	295	300	I S 310	S 315	S	F
3	F	S 290	310	F	F	310	305	290	330	325	300	320	G	270	275	300	280	300	310	S 310	S 315	S 310	A	A
4	S	A	S	F	F	S 280	A	S 310	330	A	A	A	A	A	295	305	315	300	290	S 290	S 305	S 305	S 300	F
5	F	F	F	305	F	S 285	A	A	A	A	320	A	255	295	290	295	S 300	S 280	305	320	S 305	U S 290	A	F
6	A	A	F	F	S 310	320	A	325	335	A	315	300	A	A	305	A	300	A	S 300	S 305	S 315	290	F	F
7	S 295	S 275	S	F	S 280	S 320	S 295	A	A	A	A	A	A	280	280	305	300	300	310	310	315	S 305	S 280	F
8	F	S	F	F	S 305	S 315	340	320	280	310	315	R 290	300	A	295	285	290	S 285	290	A	S 300	F	F	F
9	F	F	F	S 310	300	300	280	300	330	R 310	305	B	275	305	295	280	300	S 305	S 300	S 295	S 300	S 310	F	U S 295
10	F	F	S 300	F	S 315	S 295	300	A	310	310	A	A	G	G	270	295	290	300	300	S 300	A	S 305	A	A
11	A	S 300	A	F	F	S 330	320	315	310	R 330	A	A	A	275	A	290	S 305	S 315	S 310	300	S 310	300	S 290	F
12	300	295	295	315	310	300	290	310	315	A	310	315	275	290	285	300	280	295	S 290	S 285	300	I S 300	S 285	S 275
13	S 285	S 290	F	270	S 280	280	280	270	290	G	G	R 255	300	320	I R 300	320	320	310	315	315	285	285	S 290	F
14	S 290	300	S 300	300	S 285	265	270	295	315	290	R 285	265	280	320	290	290	290	310	300	300	S 310	300	295	S 290
15	310	295	300	S 300	S 300	S 300	S 320	A	305	A	A	G	A	275	300	300	A	310	310	315	S 295	F	A	F
16	S 290	S 280	F	S 290	S 300	S 320	280	A	S 305	A	A	A	290	280	295	300	305	310	310	310	320	280	S 295	F
17	U S 290	A	S 290	S 285	S 290	310	S 310	S 320	285	R 245	R 260	G	G	A	R 280	295	305	300	A	310	S 295	F	F	F
18	F	S 290	F	F	S 280	F	A	A	A	A	A	G	A	A	A	A	R 285	A	A	295	305	S 290	S 310	310
19	S 305	305	305	S 300	S 280	S 260	290	325	325	R 340	A	310	A	A	280	310	320	310	305	S 300	310	S 310	S 300	F
20	U S 300	S 285	S 300	F	F	H 280	S 285	S 290	330	J R 315	G	G	270	300	300	310	295	S 320	320	315	I S 300	S 290	S 300	S
21	S	S 290	290	S 280	F	280	280	A	A	A	R 290	A	A	A	305	315	320	325	A	295	295	S 300	S 305	F
22	F	A	F	A	S 290	A	S 300	310	S 320	A	A	A	275	295	305	310	A	305	I S 310	300	S 305	310	S 325	A
23	A	A	F	S 310	S 290	S 320	320	A	A	315	R 305	A	A	R 305	A	A	R 280	285	S 295	A	S 320	A	S 290	F
24	F	F	A	A	F	S 295	305	S 320	S 315	325	A	A	A	A	R 320	A	A	300	S 305	S 305	S 310	S 310	300	280
25	305	S 290	S 305	S 300	A	S 320	A	A	300	310	310	A	A	300	A	285	S 300	295	J S 305	J S 310	S 310	310	S 300	S 300
26	S 290	S 290	F	S 300	S 300	S 300	S 310	320	330	330	A	A	A	A	A	310	295	300	S 310	S 325	S 320	A	F	F
27	F	S 285	F	F	S 300	F	280	A	330	290	R 285	265	295	300	295	295	J S 300	S 310	S 315	310	290	285	S 275	S 285
28	A	S	S 310	S 300	F	S 305	310	335	345	320	300	R 300	290	290	315	305	280	S 305	315	S 315	J S 310	S 305	S 300	A
29	A	S 295	S 305	S 295	S 305	310	305	310	320	310	305	300	G	280	A	300	305	320	305	315	S 310	S 290	S 290	S 290
30	S 290	S 295	S 295	S 300	295	320	A	305	320	300	320	R 315	305	A	310	310	310	R	295	S 305	315	F	F	A
31	S 290	S 280	S 280	S 320	S 310	300	330	300	330	310	A	A	A	305	300	310	305	A	295	A	S 300	S 295	S 305	S 290
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	14	18	15	19	22	28	25	21	26	20	18	17	17	19	25	27	28	27	28	28	30	25	19	9
MED	S 290	S 290	S 300	S 300	S 300	S 300	305	310	320	310	302	290	275	295	295	300	300	305	305	305	S 308	S 300	S 300	S 290
UQ	S 300	S 295	S 305	S 302	S 305	318	310	320	330	322	310	310	295	302	305	310	308	310	310	312	S 310	S 310	S 300	S 295
LQ	S 290	S 285	S 292	S 298	S 290	S 290	285	300	305	305	R 285	255	255	280	290	295	290	300	298	S 300	S 300	S 290	S 290	S 285

JUL. 1985 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F1 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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						L	L 350	350	370	360	A	A	R 350	A	R 340	340	340	335	U L 340	L				
2						L	U L 330	A	A	A	A	A	A	A	A	A	A	A	A	A				
3							L 340	350	360	350	360	360	R 360	380	345	340	L 330	335	L 340					
4						L 320	A	A	A	A	A	A	A	A	340	345	H 340	A	U L 340					
5						L	A	A	A	A	A	A	365	350	345	340	335	A	A	A				
6							A	345	A	A	A	A	A	A	A	A	A	A	A					
7						L	A	A	A	A	A	A	A	A	345	340	A	A	L 330					
8							370	L	320	A	A	350	A	A	A	340	A	A	A	A				
9						L	A	A	A	A	370	B	350	340	A	A	A	A	A					
10							A	A	A	A	A	A	360	340	345	340	345	A	A					
11							A	350	345	350	A	A	A	A	A	350	A	340	A					
12							330	345	340	A	360	A	A	A	A	A	L 330	A	A	A				
13						A	340	350	350	350	R 350	A	345	H 360	A	A	350	L 325	A					
14						310	330	345	345	345	340	350	A	350	340	340	330	330	U L 330					
15						L	A	A	340	A	A	360	A	A	360	365	A	A	U L 330					
16							L	A	A	A	A	A	A	R 350	350	345	A	340	L					
17							340	A	330	A	370	350	340	A	350	A	A	A	A					
18						325	A	A	A	A	A	R 340	A	A	A	A	R 340	A	A					
19						330	340	S 330	A	365	A	A	A	A	345	A	340	325	L					
20							320	330	350	350	R 345	340	350	345	350	S 340	345	345	U L 340					
21						330	A	A	A	A	L	A	A	A	A	A	A	A	A					
22							L	330	A	A	A	A	A	360	360	350	A	340	L					
23							A	A	A	A	A	A	A	A	A	A	A	A	A	A				
24						L	A	A	A	A	A	A	A	A	A	A	A	A	U L 340					
25						L	A	A	345	A	A	A	A	A	A	A	325	325	U L 340					
26						L 330	A	345	345	375	A	A	A	A	A	A	330	340	A					
27						L 320	L 340	A	350	330	A	325	A	A	A	A	A	340	A					
28							325	350	340	360	365	350	A	340	A	345	A	L 320	A					
29							L	345	350	345	375	360	350	350	A	340	345	L 340	A					
30							A	L 330	A	360	A	A	A	A	340	335	A	A	A					
31								380	370	360	A	A	A	A	350	A	340	A	A					
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						7	12	15	16	13	9	10	9	11	15	16	15	14	9					
MED						325	340	345	345	350	360	350	350	350	345	340	340	338	U L 340					
UQ						330	340	350	350	360	370	360	360	355	350	345	342	340	U L 340					
LQ						320	330	338	340	350	350	340	350	342	342	340	330	325	U L 330					

JUL. 1985 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUL. 1985 | H'F2 (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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						290	260	315	340	310	470	335	390	A	405	385	315	280	305	260				
2						345	315	320	280	A	A	540	A	A	295	300	315	320	E A 335	275				
3							350	410	260	270	385	320	G	490	465	340	330	325	265					
4						380	A	280	280	A	A	A	A	A	335	300	295	330	315					
5						L 335	A	A	E A 325	A	290	A	590	370	335	340	310	A	275	235				
6							A	300	285	A	E A 325	390	A	A	E A 345	A	315	A	305					
7						280	E A 350	A	A	A	A	A	A	405	405	315	345	350	305					
8							260	250	440	340	325	390	370	A	375	420	355	345	290	A				
9						300	400	350	255	330	330	B	415	335	375	395	E A 330	295	270					
10							335	A	320	355	A	A	G	G	480	415	380	355	305					
11							255	310	295	275	A	A	A	465	E A 450	340	300	270	275					
12							370	295	280	A	325	355	400	320	345	315	360	305	A 300	E A 300				
13						375	400	455	415	G	G	515	350	285	R 350	295	290	310	295					
14						465	440	320	H 305	410	420	495	445	320	400	405	380	300	310					
15						295	E A 310	A	320	A	A	G	E A 325	475	370	330	A	325	305					
16							L 400	A	315	A	A	A	385	375	345	310	330	290	270					
17							340	315	335	585	R 530	G	G	A	455	395	325	E A 335	A					
18						F 410	A	A	A	A	A	G	A	A	A	A	R 435	A	A					
19						500	375	285	260	250	A	340	A	A	425	325	275	280	280					
20							400	370	265	R 345	G	G	505	360	345	330	355	295	285					
21						465	440	A	A	A	400	A	A	A	E A 350	305	275	255	A					
22							L 340	325	E A 305	A	A	A	A	390	325	300	A	305	275					
23							250	A	A	320	E A 350	A	A	350	A	A	405	E A 345	300	A				
24						300	310	275	285	285	A	A	A	A	E A 320	A	E A 360	305	295					
25						270	A	A	335	320	315	A	A	350	A	E A 370	295	300	275					
26						345	E A 305	270	280	290	A	A	A	A	A	E A 325	365	300	275					
27						345	L 395	A	265	410	405	530	385	E A 370	355	310	270	285	255					
28							365	255	250	325	385	375	395	395	345	320	E A 365	310	265					
29							L 370	315	270	310	315	350	G	410	A	310	290	270	E A 305					
30							A	315	290	340	305	350	360	A	335	330	335	A	E A 325					
31								320	280	320	A	A	A	370	355	330	305	A	E A 340					
	00	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	24	21	27	20	18	17	17	19	26	27	29	26	28	4				
MED						345	350	315	282	322	368	390	408	370	350	328	322	302	286	258				
UQ						395	398	320	319	350	420	540	590	408	402	348	358	322	304	282				
LQ						298	U 285	285	275	300	320	350	385	346	340	310	298	290	275	248				

The Radio Research Laboratories, Japan

JUL. 1985 | H'F2 (KM)

IONOSPHERIC DATA

JUL. 1985 | H'F (KM) | 135° E Mean Time (G.M.T. + 9 h)

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	275	270	285	270	245	235	E A 255	240	205	210	A	A	215	A	E A 260	225	220	230	E A 275	250	265	265	A	E A 335
2	E A 335	E A 320	285	265	250	H 215	H 195	A	A	A	A	A	A	A	A	A	A	A	A	A	240	225	E A 275	275
3	275	270	260	250	250	H 240	220	240	H 220	H 200	200	H 190	180	175	E A 255	H 225	H 220	H 220	245	245	240	205	A	A
4	E A 340	A	250	230	260	255	A	A	A	A	A	A	A	A	E A 255	H 215	215	A	250	H 280	250	255	250	E A 330
5	E A 320	E A 350	260	255	295	265	A	A	A	A	A	A	190	225	E A 255	240	H 215	A	A	A	280	A	A	E A 355
6	A	A	285	255	255	E A 280	A	225	A	A	A	A	A	A	A	A	A	A	A	240	220	255	E A 310	315
7	E A 315	265	E A 375	E A 350	285	E A 255	A	A	A	A	A	A	A	A	230	270	A	A	E A 265	250	240	260	E A 370	350
8	E A 325	340	325	275	250	235	215	H 200	H 205	A	A	215	A	A	A	225	A	A	A	A	255	E A 300	295	E A 335
9	300	E A 300	270	240	270	255	A	A	A	A	190	B	H 190	E A 255	A	A	A	A	A	A 260	E A 300	265	280	265
10	285	255	250	245	235	230	A	A	A	A	A	A	225	210	H 205	205	245	A	A	E A 270	A	E A 275	A	A
11	A	290	A	275	250	230	A	230	225	E A 250	A	A	A	A	A	235	A	220	A	250	235	255	260	E A 295
12	265	275	260	230	255	H 245	225	215	235	A	205	A	A	A	A	A	E A 265	A	A	A	260	E A 270	260	E A 345
13	250	265	305	315	320	A	240	230	220	230	225	A	E A 255	210	A	A	225	220	A	255	275	305	290	E A 325
14	290	255	275	275	295	290	250	H 235	230	225	225	225	A	215	255	E A 250	H 245	230	245	A	A	290	240	275
15	250	275	E A 300	280	250	265	A	A	E A 245	A	A	195	A	A	205	220	A	A	E A 270	225	255	275	A	280
16	280	E A 355	280	230	260	270	E A 265	A	A	A	A	A	A	220	220	H 205	A	H 215	245	240	225	235	280	275
17	A	A	E A 345	275	250	230	H 190	A	E A 285	A	190	220	230	A	215	A	A	A	A	255	A	295	E A 310	E A 305
18	E A 300	A	250	315	280	E A 270	A	A	A	A	A	E A 260	A	A	A	A	230	A	A	265	235	250	265	250
19	265	E A 295	275	260	305	E A 255	H 215	225	A	E A 235	A	A	A	A	235	A	E A 240	H 225	H 205	245	220	250	280	305
20	260	E A 295	260	305	285	255	250	H 230	H 185	H 190	H 175	215	205	205	215	245	205	215	H 230	255	255	310	280	E A 350
21	290	E A 310	315	E A 340	270	235	A	A	A	A	E A 250	A	A	A	A	A	A	A	A	E A 305	260	E A 275	255	300
22	E A 305	A	225	A	A	A	E A 275	240	A	A	A	A	A	H 210	215	H 210	A	E A 255	A 235	240	250	220	275	A
23	A	A	225	255	275	250	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 255	A	E A 315	E A 300
24	E A 300	235	A	A	E A 325	A	A	A	A	A	A	A	A	A	A	A	A	A	E A 260	250	225	255	260	300
25	285	265	230	260	A	245	A	A	200	A	A	A	A	A	A	A	E A 250	E A 250	E A 255	240	215	235	240	E A 295
26	300	285	265	270	260	270	A	210	220	210	A	A	A	A	A	A	H 240	E A 275	A	A 230	E A 235	A	285	270
27	280	275	285	275	270	250	230	A	H 210	220	A	E A 250	A	A	A	A	A	215	A	E A 265	270	270	320	A
28	A	305	E A 320	255	275	A	H 210	225	190	220	185	E A 250	A	E A 245	A	A	A	E A 250	A	250	E A 265	265	E A 275	A
29	A	290	310	275	250	260	H 230	H 215	205	210	180	225	220	E A 255	A	E A 255	H 225	220	A	250	225	240	255	280
30	285	275	270	255	240	240	A	225	A	190	A	A	A	A	H 230	H 215	A	A	A	235	225	290	E A 330	A
31	300	285	290	230	200	220	230	E A 250	A 230	200	A	A	A	A	230	A	225	A	A	A	250	260	E A 245	A 305
	00	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	25	29	29	29	27	16	16	16	13	10	10	9	11	15	15	15	14	12	24	28	28	26	25
MED	278	275	270	262	260	245	224	226	214	210	192	214	210	212	222	222	222	220	U 233	249	245	258	268	U 282
UQ	E A 300	E A 300	292	275	278	258	240	235	226	222	215	E A 250	222	225	U 242	236	235	E A 250	E A 262	255	258	272	288	E A 330
LQ	275	270	260	255	250	235	215	220	205	200	185	215	190	210	215	H 215	220	220	240	240	228	250	258	278

JUL. 1985 | H'F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H'E (KM)

135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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 130	A	105	105	105	A	A	A	A	A	A	105	105	110	B				
2						120	110	105	A	A	A	A	A	A	A	A	A	A	A	S				
3						E S 145	A	A	A	105	105	105	105	105	105	E A 120	A 120	A	A 125	S				
4						E S 125	110	105	105	105	105	105	105	105	105	A	105	105	A 125	S				
5						S	110	110	105	105	105	105	105	105	105	A	A	A	A	S				
6						S	A	A	105	105	105	105	105	105	A	A	A	A	A	S				
7						S	A	A	105	105	105	105	A	A	105	105	110	110	A	S				
8						A	A	A	110	105	105	105	105	105	110	105	A	A	E A 125	S				
9						A	105	105	A	A	A	B	A	110	105	105	105	110	110	B				
10						S	105	105	A	A	A	A	105	A	A	A	A	E A 120	A	S				
11						S	A	A	A	105	105	105	105	105	105	105	105	110	110	B				
12						120	110	105	105	105	105	105	A	A	A	105	105	A	A	S				
13						S	110	A	A	A	105	105	A	A	A	A 110	E A 125	A 120	115	S				
14						S	E A 130	A	A	A	A	A	105	105	105	105	105	105	120	S				
15						115	110	105	105	A	A	105	105	A 115	A 115	A	A	E A 140	A	S				
16						S	A	110	105	105	A	A	A	A	A	A	A	A	A	S				
17						A	A	A	A	A	A	A	A	A	105	105	E A 125	A 115	115	S				
18						S	A	A	A	A	A	A	105	105	105	105	A	A	A	S				
19						S	A	105	105	A	105	105	A	A	105	105	A	105	A	S				
20						S	A	A	A	A	A	A	A	E A 125	A	A 115	E A 125	110	115	S				
21						S	115	105	105	105	105	105	105	A	A	A	A	A	A	S				
22						S	110	105	110	105	A	E A 125	105	105	105	105	110	110	115	S				
23						S	A	105	E A 125	A	A 115	105	105	105	105	105	105	110	115	S				
24						S	A	105	105	105	A	A	A	A	A	A	A	A	A	S				
25						S	115	105	105	105	105	105	105	105	105	105	105	105	A	S				
26						S	A	110	105	105	105	A	105	105	105	A	A	A	A	S				
27						S	A	105	105	A	A	105	100	105	A 110	105	A 115	110	115	S				
28						S	A	A	A	A	A	105	105	105	105	105	105	110	120	S				
29						S	A	105	100	100	105	105	105	100	105	105	105	110	110	S				
30						S	A 110	E A 120	A	A 120	A	A	A	A	A	A	105	110	115	S				
31						S	115	110	105	105	105	105	105	105	A	A	A 110	105	120	S				
	00	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	14	20	19	18	16	19	19	19	19	18	19	20	17					
MED						118	110	105	105	105	105	105	105	105	105	105	105	110	115					
UQ						E S 130	112	106	105	105	105	105	105	105	105	105	A 110	110	120					
LQ						120	110	105	105	105	105	105	105	105	105	105	105	105	115					

JUL. 1985 | H'E (KM)

IONOSPHERIC DATA

JUL. 1985 | H'ES (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station KOKUBUNJI TOKYO Lat. 35° 42.4' N, Long. 139° 29.3' E Sweep 1 MHz to 20 MHz in 20sec 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	105	115	120	110	130	110	110	110	110	105	105	105	105	105	105	125	115	110	110	100	100	100	100
2	100	100	100	95	125	120	115	110	105	105	105	105	105	105	105	105	105	100	100	100	100	105	105	105
3	105	105	100	S	S	150	160	115	110	120	110	G	G	G	150	150	155	135	125	120	110	125	105	105
4	105	105	105	100	105	120	115	115	110	110	105	105	105	105	110	145	125	120	115	115	105	100	120	110
5	105	105	105	105	130	130	125	115	115	115	110	105	110	110	110	105	105	120	100	100	100	110	110	105
6	100	95	115	115	115	110	110	105	110	110	105	105	105	105	105	105	100	100	100	100	100	100	110	105
7	105	105	95	105	105	105	130	120	110	110	110	105	105	105	115	140	125	120	110	110	105	105	100	100
8	100	95	95	95	105	105	100	105	160	130	130	135	125	125	130	125	105	115	115	115	110	115	120	110
9	135	95	95	105	110	115	110	110	105	105	105	B	110	150	130	120	120	115	110	110	105	105	105	100
10	100	100	100	100	110	135	110	110	115	110	105	105	110	105	105	105	140	125	115	110	110	110	110	110
11	105	105	100	100	100	100	100	105	100	125	115	125	125	120	115	120	110	115	110	105	100	100	100	100
12	95	95	95	100	100	120	115	110	105	105	110	105	105	105	105	110	105	105	105	115	115	110	105	105
13	105	100	120	115	120	120	115	105	105	105	110	105	105	105	100	130	145	125	115	110	110	105	100	100
14	100	100	105	115	110	140	125	105	105	105	105	105	125	120	140	130	125	130	115	110	105	100	100	100
15	100	110	110	105	110	120	115	110	110	105	105	115	115	145	140	125	125	125	120	115	110	110	110	105
16	100	100	100	100	105	110	115	115	110	110	105	105	100	100	105	110	100	100	100	100	100	100	105	105
17	105	100	100	100	100	105	105	100	105	105	105	105	105	105	140	120	125	115	110	110	110	110	110	100
18	100	95	130	120	110	125	110	110	105	100	105	105	125	120	120	115	100	105	100	105	100	95	95	100
19	95	95	95	95	110	110	110	110	105	105	110	110	105	105	G	115	105	110	105	105	100	100	100	105
20	95	95	95	95	120	110	110	105	105	105	105	130	105	140	105	105	135	125	115	110	105	105	105	105
21	100	100	100	95	130	130	115	110	105	105	115	115	110	100	110	105	100	100	100	100	95	105	110	115
22	110	105	100	100	105	105	130	120	115	110	105	125	125	130	130	120	115	120	110	110	105	105	100	105
23	115	105	105	105	100	105	130	120	115	110	105	105	110	110	115	110	115	110	110	100	105	95	95	95
24	100	100	105	100	100	120	115	115	110	110	105	105	105	105	105	100	100	100	100	95	95	95	100	95
25	105	110	105	105	105	110	115	110	120	115	115	135	130	125	115	125	120	110	105	105	100	100	100	100
26	115	110	115	105	115	100	110	115	110	110	105	105	105	130	120	120	130	120	110	110	105	105	105	105
27	100	95	110	105	105	115	120	110	105	105	105	165	145	125	135	120	130	125	115	115	120	145	115	110
28	110	110	100	105	105	105	105	105	105	120	125	E G 180	120	115	125	130	125	120	110	110	105	105	105	100
29	100	105	105	105	105	105	105	G	125	140	130	135	120	125	115	125	125	115	110	115	110	110	110	105
30	105	110	105	105	105	115	110	120	115	120	115	110	105	105	105	105	120	110	110	110	105	105	105	105
31	105	S	130	125	120	120	130	120	120	120	115	110	110	105	105	100	115	115	115	105	100	105	105	105
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	30	31	30	30	31	31	30	31	31	31	29	30	30	30	31	31	31	31	31	31	31	31	31
MED	100	100	105	105	108	115	115	110	110	110	105	105	110	108	115	120	120	115	110	110	105	105	105	105
UQ	105	105	108	105	115	120	118	115	115	115	112	120	120	125	130	125	125	120	115	110	110	110	110	105
LQ	100	95	100	100	105	105	110	105	105	105	105	105	105	105	105	105	105	110	105	105	100	100	100	100

JUL. 1985 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | TYPES OF ES | 135° E Mean Time (G.M.T. + 9 h)

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	F 2	F 3	F 2	F 2	F 2	CL 11	CL 32	C 3	C 2	C 2	L 2	L 2	L 1	L 2	L 2	L 2	H 1	C 3	C 4	L 1	F 3	F 6	F 5	F 3
2	F 5	F 3	F 2	F 2	FF 11	CL 31	C 2	C 3	L 2	L 3	L 2	L 2	L 2	L 2	L 3	L 2	L 2	L 3	L 5	L 4	F 3	F 4	F 3	F 5
3	F 3	F 2	F 1			H 2	HL 12	L 1	L 1	C 1	C 1				H 1	HL 11	HL 22	HL 24	CL 41	CL 12	FF 34	FF 12	FF 32	F 6
4	F 4	F 7	F 2	F 3	F 3	C 5	C 5	C 4	C 3	C 2	C 3	C 2	C 2	C 2	C 2	HL 11	H 2	C 3	CL 41	LL 22	FF 42	F 3	F 3	F 6
5	F 6	F 7	F 6	F 3	F 3	C 2	C 5	C 4	C 2	C 2	C 2	C 2	C 1	C 2	C 2	L 3	L 2	CL 33	L 3	L 4	F 5	FF 24	FF 43	FF 33
6	F 6	F 6	FF 22	FF 41	FF 71	L 4	L 4	L 3	C 2	C 3	C 3	C 2	C 2	C 3	L 3	L 3	L 3	L 3	L 4	L 3	F 4	F 3	FF 14	FF 32
7	FF 62	FF 22	F 3	FF 63	FF 51	L 4	HL 43	HL 32	C 3	C 3	C 3	C 3	L 3	L 2	C 1	H 2	H 2	C 5	L 2	L 3	F 5	F 4	F 6	F 6
8	F 5	F 3	F 2	F 2	FF 31	L 5	L 3	L 2	H 1	H 1	H 1	H 1	H 2	H 3	H 2	H 1	LC 32	CL 23	CL 42	CL 51	F 5	FF 42	FF 13	FF 34
9	FF 15	F 6	F 5	FF 31	FF 51	L 2	C 4	C 4	L 3	L 2	L 2		L 1	H 1	H 1	H 2	C 2	C 3	C 3	C 4	F 4	F 4	F 3	F 3
10	F 5	F 2	F 3	F 2	FF 11	C 2	C 3	C 2	CL 21	CL 21	L 2	L 2	C 1	L 2	L 1	L 2	HL 12	HL 32	CL 52	CL 63	FF 42	F 4	F 3	F 5
11	F 5	F 5	F 5	F 2	F 5	L 5	L 4	L 3	L 2	C 2	C 2	C 2	H 2	H 2	C 2	C 2	C 3	C 3	C 4	L 4	F 3	F 3	F 2	F 4
12	F 2	F 2	F 1	F 1	F 1	C 2	C 2	C 2	C 2	C 2	C 2	C 2	L 2	L 2	L 2	C 2	C 3	L 4	L 4	C 5	F 6	F 7	F 4	F 4
13	F 4	F 4	FF 22	FF 22	F 6	C 4	C 2	L 2	L 2	L 2	C 2	C 2	L 2	L 2	L 3	HL 21	HL 21	HL 22	C 3	C 5	F 3	F 7	F 2	F 3
14	F 2	F 2	F 6	F 3	F 2	H 2	CL 32	L 2	L 2	L 3	L 2	L 1	H 2	C 1	H 1	H 1	H 2	H 2	C 3	C 6	F 5	F 7	F 7	F 4
15	F 3	FF 22	FF 72	F 3	F 2	C 3	C 3	C 3	C 2	L 2	L 2	C 1	C 1	HL 11	HL 11	HL 12	HL 32	CL 33	CL 22	C 4	F 4	F 2	F 6	F 3
16	F 2	F 6	F 2	FF 22	F 2	L 2	CL 32	C 4	C 2	C 3	L 3	L 3	L 2	L 2	L 1	L 1	L 3	L 4	L 3	L 6	F 5	F 2	F 4	F 2
17	F 4	F 5	F 4	F 2	F 2	L 3	L 3	L 2	L 3	L 2	L 2	L 2	L 2	L 3	H 1	C 2	HL 23	CL 31	C 4	C 3	F 5	F 3	F 3	F 3
18	F 4	F 6	FF 22	FF 22	F 3	C 3	CL 63	CL 32	L 3	L 3	L 1	L 2	H 2	H 2	H 2	C 3	L 2	L 3	L 3	L 2	F 2	F 3	F 3	F 3
19	F 3	F 4	F 2	F 2	FF 22	LL 21	L 2	C 2	C 4	L 2	C 2	C 2	L 3	L 2		C 1	L 2	C 3	L 3	L 4	F 3	F 5	F 2	FF 22
20	F 4	F 3	F 3	F 2	FF 11	L 2	L 3	L 2	L 1	L 2	L 1	HL 11	L 1	HL 11	L 1	L 1	HL 11	C 1	C 2	LL 21	F 3	F 5	F 4	F 6
21	F 4	F 5	F 5	F 3	FF 11	C 4	C 4	C 3	C 3	C 3	C 3	C 2	C 3	L 3	CL 22	L 2	L 2	L 4	L 4	L 3	F 2	FF 33	FF 22	FF 22
22	FF 42	FF 52	F 3	F 3	F 5	L 3	HL 32	H 3	C 4	C 3	L 3	HL 31	H 1	H 1	H 1	C 1	C 3	C 2	C 3	C 3	F 2	F 1	F 4	F 4
23	FF 72	F 4	F 5	F 2	F 3	LH 11	HL 33	C 4	CL 32	CL 22	CL 31	C 3	C 2	C 2	C 2	C 3	C 2	C 4	C 5	L 5	FF 76	F 6	F 4	F 3
24	F 3	F 3	FF 32	F 4	F 3	CL 66	CL 53	C 3	C 3	C 2	L 2	L 2	L 2	L 3	L 2	L 4	L 4	L 3	L 5	L 3	F 4	F 3	F 1	F 2
25	FF 22	F 2	F 3	F 2	F 4	L 3	C 4	C 3	C 2	C 2	C 2	H 2	H 2	H 1	C 2	C 3	C 2	C 3	L 3	L 3	F 2	F 6	F 3	F 3
26	FF 21	FF 21	FF 21	F 2	F 2	LC 11	L 3	C 2	C 3	C 2	C 3	L 2	C 3	HC 33	H 2	HL 21	HL 12	HL 33	CL 43	CL 72	F 4	F 7	F 4	F 4
27	F 5	F 2	FF 22	FF 22	FF 22	L 1	CL 32	C 3	C 2	L 3	L 2	H 1	H 1	H 2	HL 21	H 3	HL 21	H 3	C 4	C 6	F 3	FF 21	F 6	F 4
28	F 4	F 4	F 5	F 4	F 4	L 6	L 2	L 2	L 2	CL 12	CL 12	HC 11	C 1	C 2	HC 21	HH 21	H 3	H 3	C 5	L 7	F 6	F 2	F 6	F 4
29	F 5	F 5	F 6	F 4	F 4	L 5	L 4		H 2	H 1	H 2	H 1	H 1	H 1	C 2	C 2	C 2	C 4	C 3	C 3	F 3	F 6	F 2	F 3
30	F 2	F 2	F 2	F 4	FF 21	L 2	CL 42	CL 22	CL 22	CL 21	CL 12	LL 21	L 1	L 2	L 2	LH 11	C 2	C 3	C 3	LL 23	F 3	F 2	F 6	F 5
31	F 3		F 2	F 1	F 2	C 1	C 2	C 3	C 2	C 1	C 2	C 2	C 2	C 2	L 2	L 2	CL 11	C 3	C 4	L 4	F 3	FF 33	FF 22	FF 32
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUL. 1985 | TYPES OF ES

IONOSPHERIC DATA

JUL. 1985 | FXI (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	66	60	57	55	53	X 44															X 79	X 68	X 53	X 52
2	X 45	48	X 47	X 42	X 40	42															X 75	X 72	X 50	48
3	53	56	57	54	45	46															X 60	X 47	X 44	X 40
4	A	45	45	43	40	A															A	69	70	71
5	70	64	70	X 51	A	X 39															S 65	X 59	X 56	X 57
6	X 58	X 60	68	X 60	X 45	X 43															X 80	X 63	X 58	X 57
7	X 55	X 55	56	X 59	X 49	X 46															X 68	X 55	42	44
8	44	A	S	S	X 41	X 33															X 76	S 61	X 58	X 55
9	S 52	X 45	S 45	S	U S 49	X 34															X 68	X 69	70	X 70
10	70	X 56	54	S	S	U S 43															X 60	U S 54	S 45	S
11	A	A	S	X 43	O S 41	S 31															X 82	X 68	S 58	X 51
12	60	59	S 53	U S 52	S 49	S 46															S 94	X 78	S 77	S 73
13	S 71	X 64	S 62	67	X 58	X 49															X 63	X 67	U S 71	X 65
14	S 62	X 56	X 47	X 45	S 46	X 41															X 71	S 50	X 50	46
15	48	49	49	X 46	S 37	X 36															U S 61	51	55	65
16	59	58	58	54	40	A															S 57	U S 41	X 38	A
17	39	40	36	37	35	S 35															X 65	58	60	U S 50
18	69	49	U S 51	A	S	X 39															A	S 55	50	55
19	50	43	40	40	35	S 33															X 65	X 66	S 63	S 56
20	X 49	S 44	48	46	42	U S 37															S 59	S 56	45	44
21	55	54	43	35	35	X 31															X 53	S 55	S 49	X 42
22	44	46	47	40	35	36															X 66	X 59	X 55	F 58
23	60	61	55	47	47	46															X 81	X 66	55	50
24	50	53	57	X 37	X 36	38															X 71	X 49	X 47	X 47
25	X 44	S 45	X 40	S 43	X 36	X 34															X 90	X 53	X 40	X 40
26	X 41	48	46	46	43	X 40															H 49	X 38	X 35	42
27	40	42	40	40	A	A															X 68	X 60	X 50	51
28	50	55	49	50	47	X 43															X 75	X 63	X 55	64
29	S	X 57	X 56	S 51	X 49	X 37															X 77	X 54	X 48	S 47
30	X 47	X 44	S	X 41	X 40	X 36															X 87	S 54	S 53	S
31	S	S	50	X 60	S 39	33															X 82	X 71	X 68	X 68
	00	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	27	27	28															29	31	31	28
MED	52	54	50	46	41	X 38															X 68	X 59	X 53	52
UQ	60	58	56	53	47	X 43															X 79	X 66	58	61
LQ	46	45	46	42	38	34															X 63	54	X 48	46

JUL. 1985 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF2 (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	F	F	F	F	38	A	54	53	54	59	49	46	A	53	68	71	62	58	64	73	62	47	46
2	39	F	41	36	34	F 32	40	56	59	49	A	53	A	A	61	64	54	56	64	65	69	66	44	F
3	F	F	F	F	F	F	42	60	54	54	50	A	A	48	54	59	66	78	79	66	54	41	38	34
4	A	F	F	F	F	A	42	57	53	C	C	C	C	C	C	C	C	C	C	61	A	S 63	F	F
5	F	F	F	45	A	33	A	A	59	A	A	A	A	A	A	93	88	83	93	79	59	53	50	51
6	52	54	F	54	39	37	49	55	53	59	A	A	A	68	76	A	A	86	96	94	74	57	52	51
7	49	49	F	53	43	40	41	53	A	56	44	A	48	51	62	72	70	57	63	77	62	49	F	F
8	F	A	S	S	S 35	27	39	44	51	57	50	53	55	R 54	57	61	64	69	67	S 72	70	55	52	49
9	S 46	39	39	A	U S 43	28	J S 42	53	A	51	64	B	A	A	A	66	78	85	73	64	S 62	J S 63	F	J S 64
10	F	J S 50	F	S	S	37	45	59	65	65	63	50	E G 45	50	56	52	55	57	61	61	55	48	S 39	S
11	A	A	S	36	35	26	40	49	55	52	57	A	A	A	62	68	76	70	75	80	76	S 62	U S 52	45
12	F	F	47	U S 46	S 42	40	51	R 61	52	55	53	58	60	H 73	78	78	R 81	82	80	84	S 88	S 72	S 71	67
13	66	58	56	F 57	51	42	S 47	48	43	E G 40	E G 41	50	54	55	54	58	55	53	R 62	61	57	U S 61	J S 65	59
14	56	S 50	S 41	40	S 41	35	40	55	52	48	50	53	59	57	54	53	61	63	66	65	65	45	S 45	F
15	U F 40	U F 39	U F 38	40	U S 31	30	38	A	65	57	50	A	59	U R 76	77	60	R 61	I C 64	67	U S 63	U S 55	F	U F 45	U F 50
16	F	F	F	F	F 34	A	38	A	R	A	A	55	55	A	81	80	74	69	S 61	U H 73	S 51	S 35	32	A
17	F	U F 30	F 26	F 26	U F 26	S 29	38	47	53	49	R 45	E G 43	A	J R 45	49	47	47	53	57	56	59	F 49	F	U S 44
18	F	F 39	U S 45	A	S	33	A	A	48	E G 39	A	R	44	A	46	47	47	R	A	A	A	S 49	F	U F 46
19	U F 41	U F 34	F 31	F 30	F 27	S 27	36	56	52	46	43	49	A	50	53	61	62	51	45	51	59	60	S 57	S 50
20	43	S 38	F 37	S 36	F 33	U S 31	39	56	60	R 44	E G 41	45	49	58	52	U S 50	53	55	53	U H 48	S 53	S 50	F	F
21	F	F	F	F 24	F 26	S 25	43	E G 37	68	47	E G 42	45	52	59	72	A	A	A	49	A	47	U S 49	S 43	36
22	F	F	F	F	F	F	37	51	52	49	A	A	A	A	A	60	65	64	68	63	60	53	J S 49	F 52
23	F	F	F	F	F	F	34	42	53	A	A	A	A	A	A	A	A	55	73	68	75	60	F	F
24	F	F	F	31	30	F 28	37	56	60	51	45	A	A	59	A	A	A	73	67	65	65	43	41	41
25	38	S 39	34	S 37	30	28	37	47	58	60	49	50	54	62	64	74	91	99	93	92	84	47	34	34
26	35	F	F	F	F	34	48	47	48	H 50	50	W	48	56	64	67	58	67	84	73	H 43	32	S 29	F
27	F	F	F 30	F	A	A	41	60	50	56	55	51	58	56	73	88	88	73	73	70	62	54	44	F
28	F	F	F	F	F 36	37	47	56	57	48	47	52	53	57	A	65	A	76	86	78	69	57	49	F
29	S	J S 51	49	J S 45	44	31	S 40	50	50	62	60	50	57	58	73	88	74	60	62	71	71	S 49	42	41
30	S 41	39	A	35	34	30	40	55	51	56	59	59	54	62	64	64	64	60	70	93	81	S 49	47	S
31	S	S	F 40	J S 54	33	F 22	36	50	66	60	54	62	69	68	56	61	66	63	66	I C 76	S 76	66	62	S 62
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	14	14	18	21	25	28	27	28	27	23	18	19	21	24	26	25	28	29	29	29	30	24	19
MED	42	39	40	38	34	31	40	54	53	52	50	50	54	57	62	64	65	64	67	68	62	53	46	49
UQ	50	50	45	46	41	37	42	56	59	56	56	53	58	62	72	72	74	74	75	77	73	61	52	52
LQ	40	F 39	F 34	35	31	28	38	48	52	48	45	49	48	54	54	59	58	57	62	63	57	49	42	42

The Radio Research Laboratories, Japan

JUL. 1985 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF1 (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	L 380	A	A	420	420	430	A	420	A	L 420	L 380	L 340	L				
2								L	L 390	A	A	L 430	A	A	A	420	L 420	L 400	L 360	L				
3								L 370	L 410	420	U L 440	A	A	L 430	L 430	L 420	410	L 390	L 350					
4								A	L 410	C	C	C	C	C	C	C	C	C	C	A				
5							A	A	L 390	A	A	A	A	A	A	L 420	A	L 400	L					
6								L	L 420	L 420	A	A	A	A	A	A	A	A	A					
7								L	A	A	A	A	L 430	L 440	A	A	L 410	L 390	L 360	L				
8								U L 380	410	420	470	A	R 450	440	A	H 430	510	A	370	L				
9								390	A	430	A	B	A	A	A	440	420	400	A					
10							U L 330	L	A	430	440	450	450	440	H 440	430	H 410	400	360	L				
11								A	410	A	A	A	A	A	440	450	410	A	370	L				
12							L	L	400	420	440	A	R 450	A	A	A	410	400	390	L				
13							300	A	490	400	410	A	430	440	440	A	420	400	360	A				
14							310	360	400	440	420	440	440	440	440	420	410	400	350	L				
15									A	420	440	A	430	A	420	A	A	C	450					
16								A	A	A	A	430	A	A	A	A	A	370	350					
17								360	390	A	420	430	A	420	H 410	H 410	390	A	340	L				
18								A	A	390	A	410	410	A	A	410	390	360	A	A				
19								360	400	430	420	410	A	R 420	A	A	400	H 380	A	L				
20							L	360	390	410	410	410	R 430	R 420	U R 400	410	R 400	360	L 350	L				
21							L	370	360	H 400	420	430	430	A	A	A	A	A	450	A				
22								L 350	L 390	U L 420	A	A	A	A	A	A	U L 410	L 380	L 360					
23								350	A	A	A	A	A	A	A	A	A	A	L 350	A				
24								L	U L 390	A	U L 430	A	A	A	A	A	A	A	A					
25							L	L 370	L 390	L 410	U L 440	440	430	L 430	L 430	L 410	400	L 380	L 360	L				
26							A	A	L	L 420	L 420	W 430	A	L 430	L 430	A	A	A	L					
27							L	L	L 390	L 420	L 430	L 450	L 440	L 450	L 430	L 420	L 410	L 410	L					
28							L	A	L 430	A	L 420	A	450	A	A	A	A	L 400	L					
29								U L 390	L 400	420	A	460	A	A	A	A	A	400	360	L				
30							L	380	L 410	440	440	450	H 480	H 450	440	H 450	420	A	A	L				
31								L 360	410	430	460	440	450	A	A	450	420	400	370	C				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							3	15	22	20	19	16	16	13	13	15	20	20	20					
MED							310	370	L 400	420	430	430	435	440	430	420	410	400	360					
UQ							320	L 380	410	430	440	445	450	440	440	435	420	400	370					
LQ							305	360	L 390	415	420	425	430	430	420	415	405	380	L 350					

JUL. 1985 | FOF1 (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOE (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	A	A	A	A	A	A	A	A	A	A	A	A	S				
2							S	240	280	A	A	A	A	A	A	A	A	A	A	S				
3							200	285	A	A	A	A	A	A	A	A	A	A	A	S				
4							S	245	300	C	C	C	C	C	C	C	C	C	C	S				
5							170	245	R 300	310	A	A	A	A	A	A	A	A	A	S				
6							S	A	285	325	A	A	A	R 340	A	A	A	A	A	S				
7							170	250	300	A	A	360	A	355	345	A	A	A	225	S				
8							S	220	A	A	355	355	360	360	A	340	A	A	A	S				
9							S	A	280	A	A	B	350	A	A	A	A	A	215	S				
10							190	235	270	A	A	A	A	350	R 345	R 330	U R 310	270	H 240	S				
11							A	A	A	310	335	R 350	R 355	350	A	335	R 310	255	A	S				
12							S	260	A	300	340	A	A	A	A	A	A	A	A	S				
13							175	A	A	295	A	A	335	A	A	A	A	265	215	S				
14							S	A	A	A	A	A	345	U R 370	R 355	330	315	260	H 215	S				
15							S	A	A	A	A	A	A	A	A	A	295	C	A	S				
16							S	A	A	295	A	A	A	A	A	A	A	A	A	A				
17							S	A	A	A	A	A	A	R 340	340	R 320	295	260	220	S				
18							S	A	A	A	325	R 340	340	345	350	R 320	295	260	A	S				
19							S	A	260	295	A	345	A	340	325	305	275	250	A	A				
20							S	295	A	A	A	340	R 340	A	330	U R 325	295	H 260	A	S				
21							S	230	275	295	305	325	R 345	R 330	A	A	A	A	A	A				
22							S	A	A	300	320	R 330	R 340	345	335	R 320	300	A	A	S				
23							S	R 230	R 280	A	A	A	A	A	330	315	A	A	A	S				
24							S	240	A	A	A	A	A	A	A	A	A	A	A	S				
25							S	A	A	A	R 345	345	350	340	335	325	300	260	210	S				
26							S	A	A	A	R 330	340	350	350	335	320	305	270	220	S				
27							S	A	A	A	A	345	A	350	340	320	305	265	R 220	S				
28							S	A	A	A	A	350	350	345	340	325	300	275	220	S				
29							S	A	A	305	330	A	355	345	330	R 320	305	275	220	S				
30							S	240	275	310	A	A	A	A	350	340	310	285	A	S				
31							185	H 240	290	310	340	A	350	345	A	A	A	A	A	C				
	00	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	14	12	12	10	12	14	17	15	16	15	14	11					
MED							180	240	280	302	332	345	350	345	340	322	300	262	220					
UQ							190	250	295	310	340	350	350	350	345	330	308	270	220					
LQ							170	235	275	295	325	340	340	340	332	320	295	260	215					

JUL. 1985 | FOE (0.01 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N. Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24 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	JA 39	JA 44	JA 35	JA 28	JA 52	JA 51	JA 60	JA 90	JA 87	JA 80	JA 90	JA 81	JA 70	JA 78	JA 48	JA 78	JA 53	JA 41	JA 41	ES 16	JA 27	JA 18	JA 27	JA 25
2	JA 51	JA 38	JA 24	JA 17	ES 16	ES 16	22	JA 34	JA 40	JA 55	JA 162	JA 85	JA 196	JA 77	JA 64	JA 51	JA 50	JA 41	JA 41	JA 24	JA 26	JA 25	JA 51	JA 84
3	JA 38	JA 36	JA 81	JA 65	JA 29	JA 41	JA 25	G	JA 42	JA 70	JA 42	JA 56	JA 51	JA 44	JA 44	JA 42	JA 34	JA 33	JA 37	JA 47	JA 41	JA 24	JA 25	JA 20
4	JA 50	JA 43	JA 36	JA 42	JA 50	JA 50	JA 42	JA 44	JA 75	C	C	C	C	C	C	C	C	C	C	JA 50	JA 141	JA 34	ES 16	JA 41
5	JA 30	JA 21	JA 28	JA 18	JA 53	JA 21	JA 53	JA 67	JA 46	JA 85	JA 72	JA 98	JA 120	JA 163	JA 156	JA 47	JA 51	JA 32	JA 35	JA 86	JA 61	JA 33	JA 65	JA 33
6	JA 25	ES 16	ES 16	ES 16	ES 16	JA 42	JA 79	29	JA 40	G	JA 125	JA 78	JA 94	JA 63	JA 71	JA 91	JA 82	JA 80	JA 63	JA 87	JA 77	JA 31	JA 17	JA 17
7	JA 23	ES 16	JA 33	JA 26	JA 17	ES 16	24	36	JA 64	JA 53	JA 61	JA 82	JA 74	41	JA 63	45	JA 42	33	29	JA 30	JA 40	JA 60	JA 25	JA 33
8	JA 25	JA 72	JA 65	JA 44	JA 32	JA 36	24	JA 32	JA 41	46	41	JA 69	JA 89	JA 89	JA 76	G	53	JA 47	JA 29	JA 36	JA 42	JA 27	JA 17	JA 27
9	JA 20	JA 18	JA 66	JA 46	JA 145	JA 50	JA 52	JA 51	JA 65	JA 73	JA 80	B	84	JA 84	JA 81	JA 48	40	30	63	43	JA 56	JA 42	JA 51	JA 71
10	JA 36	JA 54	JA 58	JA 43	JA 25	JA 31	JA 29	32	JA 73	JA 104	JA 49	JA 50	JA 44	G	G	35	G	36	30	18	JA 17	JA 65	JA 76	JA 51
11	JA 116	JA 51	JA 59	JA 43	JA 19	JA 64	JA 32	JA 46	37	53	JA 55	JA 63	JA 65	JA 75	JA 54	43	42	JA 48	JA 51	22	JA 33	JA 51	JA 53	JA 28
12	JA 34	JA 29	19	ES 16	ES 16	JA 20	JA 52	JA 33	35	41	41	JA 50	JA 55	JA 56	JA 54	JA 81	36	50	JA 46	JA 39	JA 21	45	JA 29	JA 39
13	JA 32	JA 39	JA 17	ES 16	JA 23	JA 47	27	45	JA 44	JA 44	JA 43	50	40	37	48	JA 54	JA 44	38	32	JA 37	JA 41	JA 39	JA 37	JA 29
14	ES 16	JA 20	JA 18	JA 20	JA 18	JA 63	JA 29	JA 43	JA 57	JA 45	39	40	G	43	40	47	JA 50	35	34	25	18	JA 33	JA 62	JA 28
15	28	19	25	JA 38	24	JA 37	23	JA 109	JA 168	JA 40	JA 81	JA 104	JA 50	JA 73	JA 44	61	JA 64	C	43	JA 40	JA 136	JA 82	JA 40	JA 37
16	JA 40	28	29	38	21	JA 43	39	JA 87	JA 80	JA 62	JA 61	JA 45	JA 142	JA 74	JA 87	70	JA 50	JA 35	29	22	20	18	JA 21	JA 37
17	JA 54	JA 38	JA 37	JA 24	JA 20	JA 43	JA 26	JA 28	JA 41	JA 54	JA 41	42	JA 78	35	JA 39	JA 98	JA 64	JA 45	31	JA 40	JA 75	JA 38	JA 24	JA 86
18	39	JA 22	JA 64	JA 64	JA 79	JA 39	JA 72	JA 101	JA 54	55	JA 55	JA 56	40	JA 105	41	40	37	JA 53	JA 80	JA 120	JA 89	JA 34	JA 25	JA 25
19	48	43	18	17	JA 21	JA 17	JA 30	JA 43	34	34	36	37	JA 72	JA 48	44	JA 70	71	32	JA 36	JA 30	JA 33	JA 23	ES 16	20
20	JA 33	JA 22	19	18	19	JA 18	18	JA 32	JA 40	JA 34	JA 40	JA 36	JA 37	JA 35	35	G 29	36	31	25	18	JA 17	20	JA 18	JA 33
21	JA 33	JA 30	JA 50	JA 24	ES 16	ES 16	23	35	39	38	JA 88	JA 126	45	JA 78	JA 47	JA 199	JA 98	JA 53	48	JA 63	JA 45	JA 47	JA 31	JA 41
22	JA 21	JA 30	JA 52	JA 64	JA 54	JA 84	24	29	36	41	JA 78	JA 73	JA 92	JA 72	JA 65	JA 55	JA 46	JA 36	JA 26	JA 27	JA 38	JA 33	JA 40	JA 32
23	JA 21	JA 65	JA 64	JA 64	JA 64	JA 51	27	JA 32	JA 61	JA 87	JA 90	JA 91	JA 111	JA 110	JA 72	JA 84	JA 107	JA 56	JA 33	JA 33	JA 43	JA 33	JA 63	JA 41
24	JA 32	JA 36	JA 24	JA 24	JA 23	ES 16	ES 16	G	JA 44	JA 51	JA 40	JA 46	JA 56	JA 65	JA 133	JA 119	JA 82	JA 102	JA 44	JA 27	JA 24	JA 41	JA 36	JA 29
25	JA 26	JA 21	JA 17	JA 18	JA 25	JA 22	JA 21	JA 26	JA 36	JA 41	39	38	42	39	37	G	38	37	25	ES 16	ES 16	ES 16	ES 16	JA 33
26	17	JA 47	JA 51	JA 77	JA 65	JA 64	JA 54	JA 44	JA 50	JA 50	43	43	45	JA 50	48	JA 56	JA 60	JA 73	JA 41	JA 33	JA 20	JA 24	JA 32	JA 22
27	JA 42	JA 24	JA 25	JA 53	JA 60	JA 78	JA 26	JA 64	30	JA 44	40	39	43	44	45	43	39	JA 51	JA 38	JA 36	ES 16	ES 16	ES 16	JA 44
28	JA 26	JA 50	JA 31	JA 52	JA 29	JA 39	JA 52	JA 84	JA 53	JA 47	JA 61	JA 52	44	JA 72	JA 97	JA 56	JA 70	G	30	JA 37	JA 36	JA 52	JA 33	JA 77
29	JA 43	JA 29	JA 41	JA 37	JA 29	JA 36	JA 33	JA 36	JA 43	37	49	JA 54	48	47	50	57	JA 70	JA 67	34	24	JA 25	JA 33	JA 21	ES 16
30	JA 19	JA 39	JA 41	JA 17	JA 18	ES 16	23	JA 40	36	39	JA 44	JA 45	43	JA 49	40	41	34	JA 46	JA 50	JA 36	JA 51	JA 29	JA 40	JA 36
31	JA 21	JA 17	JA 22	JA 37	JA 18	ES 16	22	35	JA 46	42	JA 74	JA 110	47	JA 64	JA 77	JA 66	JA 41	JA 50	31	C	JA 32	JA 24	JA 63	JA 25
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	29	30	30	30	30	30	29	30	30	31	31	31	31
MED	JA 32	JA 30	JA 33	JA 37	JA 24	JA 39	JA 27	JA 36	JA 44	JA 46	JA 52	JA 54	JA 53	JA 64	JA 49	JA 54	JA 50	JA 41	JA 36	JA 34	JA 36	JA 33	JA 31	JA 33
UQ	JA 40	JA 43	JA 52	JA 45	JA 51	JA 50	JA 47	JA 48	JA 59	JA 55	JA 78	JA 81	JA 84	JA 77	JA 72	JA 70	JA 64	JA 51	JA 44	JA 40	JA 48	JA 42	JA 46	JA 41
LQ	JA 24	JA 22	JA 23	JA 18	JA 18	JA 19	24	32	JA 40	41	41	JA 45	44	44	44	43	39	35	30	24	JA 22	JA 24	JA 21	JA 26

JUL. 1985 | FOES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FBES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	29	20	25	E	E	25	AA 60	34	45	42	36	37	37	AA 78	39	42	36	32	23	ES 16	24	E	E	E
2	E	20	E	E	ES 16	ES 16	20	28	33	43	AA 162	41	AA 196	AA 77	46	37	32	35	30	17	E	E	E	E
3	E	E	E	E	E	E	23	G	34	37	35	AA 56	AA 51	38	38	38	32	31	29	28	27	20	E	E
4	AA 50	22	22	21	E	AA 50	20	44	37	C	C	C	C	C	C	C	C	C	C	38	AA 141	27	ES 16	20
5	20	E	18	E	AA 53	E	AA 53	AA 67	36	AA 85	AA 72	AA 98	AA 120	AA 163	AA 156	41	48	30	30	18	52	29	35	E
6	19	ES 16	ES 16	ES 16	ES 16	23	41	29	33	G	AA 125	AA 78	AA 94	55	38	AA 91	AA 82	61	43	62	40	29	E	E
7	E	ES 16	19	18	E	ES 16	23	30	AA 64	42	40	AA 82	40	40	54	43	35	30	29	18	32	30	20	25
8	20	29	E	23	23	E	22	27	35	35	40	49	42	40	50	G	45	44	27	19	34	20	E	21
9	E	E	21	AA 46	25	19	36	29	AA 65	40	45	B	AA 84	AA 84	AA 81	40	38	30	61	35	40	31	33	52
10	E	37	19	22	E	E	24	30	43	35	36	40	38	G	G	35	G	35	30	18	E	E	E	26
11	AA 116	AA 51	E	30	E	E	18	41	34	49	48	AA 63	AA 65	AA 75	41	G	35	48	33	20	29	25	20	19
12	E	E	E	ES 16	ES 16	E	27	G	31	35	38	45	42	52	45	50	34	36	24	20	19	44	24	32
13	30	26	E	ES 16	19	E	25	40	37	38	38	43	39	37	40	45	31	34	30	35	E	E	E	20
14	ES 16	E	E	E	E	20	19	31	35	39	36	G	G	42	39	41	38	32	32	22	E	29	E	25
15	24	19	E	20	E	E	20	AA 109	56	35	41	AA 104	37	63	36	46	51	C	26	20	20	28	E	23
16	24	23	24	25	19	AA 43	27	AA 87	38	AA 62	AA 61	39	48	AA 74	74	49	42	26	21	G	E	E	E	AA 37
17	E	E	E	E	E	17	20	26	30	43	33	37	AA 78	G	36	G	32	39	30	22	26	21	20	39
18	17	E	42	AA 64	21	22	AA 72	AA 101	45	35	AA 55	39	39	AA 105	41	36	35	35	AA 80	AA 120	AA 89	21	E	E
19	21	18	E	E	E	E	26	25	30	G	33	G	AA 72	40	43	44	34	30	34	20	E	19	ES 16	E
20	20	E	E	E	E	E	17	29	34	32	34	G	31	34	35	G 23	32	G	23	G	E	E	E	E
21	17	20	E	E	ES 16	ES 16	19	26	32	33	36	37	40	57	44	AA 199	AA 98	AA 53	28	AA 63	34	34	E	17
22	E	23	30	E	E	23	20	25	34	39	AA 78	AA 73	AA 92	AA 72	AA 65	53	38	31	24	23	22	24	E	18
23	E	22	20	E	E	E	26	27	48	AA 87	AA 90	AA 91	AA 111	AA 110	AA 72	AA 84	AA 107	51	32	33	E	32	20	32
24	31	30	23	20	E	ES 16	ES 16	G	29	48	38	AA 46	AA 56	53	AA 133	AA 119	AA 82	60	40	25	23	29	21	20
25	21	20	E	E	E	E	19	24	31	35	36	37	41	36	36	G	34	35	25	ES 16	ES 16	ES 16	ES 16	20
26	E	20	E	24	E	E	43	35	39	35	38	41	44	39	41	44	54	40	30	32	E	E	E	E
27	E	E	E	E	AA 60	AA 78	25	28	29	32	39	39	42	42	39	38	34	32	30	29	ES 16	ES 16	ES 16	E
28	E	E	19	20	18	20	25	37	38	42	40	46	43	54	AA 97	53	AA 70	G	30	36	29	42	E	30
29	29	E	21	20	E	17	27	29	33	36	47	40	46	45	47	53	45	33	31	21	25	31	17	ES 16
30	E	19	AA 41	E	E	ES 16	21	29	34	36	35	42	41	39	39	40	34	46	43	24	26	E	E	E
31	E	E	E	19	E	ES 16	21	33	38	40	42	41	44	48	46	37	31	32	30	C	31	20	17	22
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	29	30	30	30	30	30	29	30	30	31	31	31	31
MED	17	19	E	16	E	16	23	29	35	38	40	41	44	50	42	42	36	34	30	22	24	21	E	20
UQ	22	22	21	20	17	20	27	36	38	42	48	AA 56	AA 72	AA 74	54	50	48	40	32	33	32	29	18	25
LQ	E	E	E	E	E	E	20	26	33	35	36	39	40	39	39	37	34	31	27	18	E	E E 16	E	E

JUL. 1985 | FBES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FMIN (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	16	18	18	20	20	19	17	16	15	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
2	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	16	18	19	20	19	16	16	16	ES 16	ES 15	ES 16	ES 16	ES 16	ES 16
3	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 15	17	17	16	19	23	20	21	20	18	16	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
4	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	C	C	C	C	C	C	C	C	C	C	ES 16	ES 16	ES 16	ES 16	ES 16
5	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	18	19	21	22	22	21	20	17	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
6	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	17	18	19	21	24	19	19	18	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
7	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	17	17	18	21	20	18	18	16	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
8	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	15	17	18	20	20	20	20	20	17	17	14	ES 16	ES 16	ES 16	ES 16	ES 16
9	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	13	15	16	16	B	26	23	20	20	20	15	14	ES 16	ES 16	ES 16	ES 16	ES 16
10	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	16	17	16	20	21	21	23	23	20	17	15	ES 16	ES 16	ES 16	ES 16	ES 16
11	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	15	16	18	20	20	22	18	18	20	17	15	ES 16	ES 16	ES 16	ES 16	ES 16
12	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	16	16	20	20	20	20	20	21	16	15	14	ES 16	ES 16	ES 16	ES 16	ES 16
13	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	15	16	17	19	20	20	20	20	19	16	14	ES 16	ES 16	ES 16	ES 16	ES 16
14	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	15	16	18	19	22	20	18	18	16	15	14	ES 16	ES 16	ES 16	ES 16	ES 16
15	ES 16	ES 16	ES 16	ES 16	ES 15	ES 16	ES 16	ES 16	16	17	17	20	17	20	19	17	17	C	16	15	ES 16	ES 16	ES 16	ES 16
16	ES 16	ES 16	ES 16	ES 15	ES 16	ES 16	ES 16	15	16	16	18	20	20	18	17	19	16	16	15	16	ES 16	ES 16	ES 16	ES 15
17	ES 15	ES 16	ES 15	ES 16	ES 16	ES 16	ES 15	16	17	15	17	17	17	20	17	19	16	14	16	ES 16	ES 16	ES 16	ES 16	ES 16
18	ES 15	ES 15	ES 16	ES 16	ES 16	ES 16	ES 15	ES 15	16	16	16	18	19	17	17	17	16	15	16	ES 16	ES 16	ES 16	ES 15	ES 16
19	ES 16	ES 15	ES 16	ES 15	ES 16	ES 16	ES 16	ES 15	16	16	17	18	19	22	20	17	16	15	14	13	ES 15	ES 16	ES 16	ES 15
20	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	16	18	20	20	23	22	17	17	15	15	16	ES 16	ES 16	ES 16	ES 16
21	ES 16	ES 16	ES 15	ES 16	ES 16	ES 16	ES 16	16	15	17	16	18	21	21	18	17	16	14	ES 15	ES 16	ES 16	ES 16	ES 16	ES 16
22	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	15	18	19	18	20	19	17	17	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
23	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	17	16	19	19	18	18	17	16	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
24	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	20	19	19	21	18	16	16	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
25	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	17	18	18	18	21	18	16	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
26	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	18	18	20	20	20	20	18	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
27	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	18	18	19	20	20	20	16	17	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
28	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	17	17	17	19	18	18	20	18	18	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
29	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	18	20	21	20	19	17	16	15	15	ES 16	ES 16	ES 16	ES 16	ES 16
30	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	16	20	19	22	20	20	20	16	15	15	ES 16	ES 16	ES 16	ES 16	ES 16
31	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	15	17	17	19	19	20	16	18	15	15	16	C	ES 16	ES 16	ES 16	ES 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	30	30	30	30	30	30	30	29	30	30	31	31	31	31
MED	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	16	18	19	20	20	19	18	16	16	16	ES 16	ES 16	ES 16	ES 16	ES 16
UQ	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	16	17	18	20	21	21	20	20	17	16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16
LQ	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 16	ES 15	16	16	17	18	19	20	18	17	16	15	14	ES 16	ES 16	ES 16	ES 16	ES 16

JUL. 1985 | FMIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | M(3000)F2 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	F	F	F	F	330	A	335	320	325	330	295	250	A	265	310	340	315	300	295	320	355	295	315
2	295	F	315	320	325	F 345	300	340	355	325	A	300	A	A	305	310	285	295	305	305	320	340	320	F
3	F	F	F	F	F	F	310	350	325	335	330	A	A	260	295	290	285	315	330	335	335	315	315	310
4	A	F	F	F	F	A	335	370	330	C	C	C	C	C	C	C	C	C	C	285	A	S 300	F	F
5	F	F	F	310	A	335	A	A	340	A	A	A	A	A	A	300	295	275	320	335	315	285	280	285
6	290	285	F	340	335	310	335	300	320	330	A	A	A	280	300	A	A	280	300	330	350	300	290	295
7	285	295	F	310	360	300	315	340	A	340	365	A	250	255	280	305	320	290	300	320	330	325	F	F
8	F	A	S	S	S 330	350	325	320	320	345	305	335	310	R 285	285	295	285	305	285	S 305	315	285	295	285
9	S 290	355	305	A	U S 325	310	J S 335	320	A	290	335	B	A	A	A	270	280	310	310	310	S 280	J S 295	F	J S 295
10	F	J S 320	F	S	S	310	305	320	320	340	330	290	G	260	285	290	305	310	310	325	310	295	S 290	S
11	A	A	S	345	350	295	325	330	335	300	315	A	A	A	285	270	305	285	295	305	330	S 310	U S 305	315
12	F	F	290	U S 295	S 305	325	335	R 355	335	325	275	300	280	H 275	295	270	R 270	280	275	290	S 305	S 315	S 270	280
13	305	300	265	F 265	280	280	S 255	290	315	G	G	265	300	300	290	310	310	315	R 320	325	280	U S 285	J S 325	295
14	305	S 295	S 290	295	S 290	285	270	325	345	305	275	285	305	310	280	275	300	285	310	310	310	320	S 285	F
15	U F 300	U F 280	U F 290	335	U S 340	300	315	A	325	325	300	A	295	U R 275	305	310	R 295	I C 315	315	U S 315	U S 300	F	U F 290	U F 280
16	F	F	F	F	F 325	A	315	A	R	A	A	300	265	A	290	300	305	335	S 310	U H 310	S 350	S 300	280	A
17	F	U F 300	F 305	F 305	U F 305	S 345	330	330	330	315	R 275	G	A	J R 220	295	285	275	300	325	310	330	F 295	F	U S 295
18	F	F 280	U S 300	A	S	320	A	A	310	G	A	R	250	A	270	310	295	R	A	A	A	S 315	F	U F 295
19	U F 330	U F 310	F 305	F 315	F 315	S 295	320	365	355	310	315	295	A	280	290	320	330	345	290	305	295	290	S 315	S 320
20	325	S 290	F 285	S 320	F 320	U S 320	320	340	375	R 330	G	265	275	325	315	U S 300	310	320	310	U H 290	S 310	S 340	F	F
21	F	F	F	F 290	F 305	S 300	350	G	365	360	G	245	280	A	305	A	A	A	325	A	285	U S 295	S 325	305
22	F	F	F	F	F	F	350	345	365	325	A	A	A	A	A	300	290	305	300	300	310	330	J S 315	F 315
23	F	F	F	F	F	F	350	310	360	A	A	A	A	A	A	A	A	325	300	295	320	335	F	F
24	F	F	F	320	335	F 305	325	355	365	370	300	A	A	305	A	A	A	315	320	305	340	335	290	290
25	300	S 295	310	S 310	335	320	325	320	325	340	255	280	285	300	280	270	295	315	300	320	325	360	295	295
26	300	F	F	F	F	325	375	370	355	H 330	320	W	250	295	295	330	285	290	335	315	H 325	310	S 275	F
27	F	F	F 335	F	A	A	340	360	330	285	345	285	300	275	300	310	330	300	315	335	305	315	270	F
28	F	F	F	F	F 345	350	350	375	395	345	320	290	290	300	A	300	A	290	310	315	335	340	305	F
29	S	J S 295	310	J S 320	310	345	S 330	320	330	340	350	230	300	270	285	320	325	320	305	320	340	S 310	300	295
30	S 295	295	A	325	315	310	320	325	320	305	340	310	260	315	295	280	295	275	285	320	360	S 280	280	S
31	S	S	F 295	J S 335	375	F 320	330	320	350	335	310	305	315	310	290	285	305	305	280	I C 320	S 315	290	290	S 300
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	12	14	14	18	21	25	28	27	28	27	23	19	19	20	24	26	25	28	29	29	29	30	24	19
MED	300	295	302	318	325	320	325	330	332	325	315	290	280	282	290	300	295	305	310	310	320	310	292	295
UQ	305	300	310	325	335	330	335	352	355	340	330	300	300	302	298	310	310	315	315	320	330	330	310	308
LQ	292	290	290	305	310	300	315	320	322	308	275	265	255	272	285	285	285	290	300	305	310	295	282	292

The Radio Research Laboratories, Japan

JUL. 1985 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F1 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	A	405	415	405	A	390	A	A	L 380	L 365	L				
2								L	L 385	A	A	L 395	A	A	A	380	L 370	L 350	L 345	L				
3								L 380	L 400	390	U L 385	A	A	L 405	L 385	L 380	380	L 360	L 370					
4								A	L 365	C	C	C	C	C	C	C	C	C	C	A				
5							A	A	A	A	A	A	A	A	A	A	A	L 360	L					
6								L	L 355	L 380	A	A	A	A	A	A	A	A	A					
7								L	A	A	A	A	L 395	L 375	A	A	L 365	L 370	L 345	L				
8								U L 345	365	380	355	A	A	395	A	H 380	385	A	350	L				
9								355	A	A	A	B	A	A	A	A	365	345	A					
10							U L 355	L	A	400	410	400	385	405	H 400	385	H 380	350	340	L				
11								A	385	A	A	A	A	A	A	340	390	A	A	L				
12							L	L	375	420	395	A	R 365	A	A	A	370	A	325	L				
13							315	A	A	400	395	A	A	385	A	A	355	340	355	A				
14							325	360	A	350	390	380	385	A	A	A	A	345	A	L				
15									A	380	A	A	405	A	380	A	A	C	275					
16								A	A	A	A	A	A	A	A	A	A	390	355					
17								375	395	A	405	405	A	430	H 390	H 390	370	A	350	L				
18								A	A	385	A	A	415	A	A	365	370	A	A	A				
19								390	400	380	415	425	A	A	A	A	375	H 370	A	L				
20							L	345	360	400	425	425	R 405	R 415	U R 410	A	R 375	390	L 385	L				
21							L	350	390	H 410	390	420	420	A	A	A	A	A	A	A				
22								L 370	L 395	U L 405	A	A	A	A	A	A	A	L 370	L 360					
23								400	A	A	A	A	A	A	A	A	A	A	A	A				
24								L	U L 385	A	U L 395	A	A	A	A	A	A	A	A					
25							L	L 350	L 385	L 390	U L 365	375	370	L 395	L 395	L 380	385	A	L 360	L				
26							A	A	L	L 405	L 405	W 395	A	L 370	A	A	A	A	L					
27							L	L	L 410	L 405	L 385	L 390	L 395	L 390	L 405	A	L 380	L 365	L					
28							L	A	A	A	L 415	A	A	A	A	A	A	L 360	L					
29								U L 360	L 390	410	A	370	A	A	A	A	A	355	340	L				
30							L	365	L 390	395	400	400	H 395	H 445	365	H 375	365	A	A	L				
31								A	A	A	A	410	A	A	A	360	370	350	345	C				
	00	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	13	17	18	17	14	12	11	9	10	17	17	16					
MED							325	360	L 385	398	395	400	395	395	390	380	370	360	350					
UQ							340	375	L 395	405	405	415	405	410	400	380	380	L 370	L 360					
LQ							320	350	L 375	380	390	390	385	L 388	385	365	370	350	342					

JUL. 1985 | M(3000)F1 (0.01)

IONOSPHERIC DATA

JUL. 1985 | H*F2 (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	290	A	320	300	380	575	A	455	320	275	305	315	300				
2								280	250	320	A	380	A	A	340	325	390	365	300	280				
3								270	290	290	320	A	A	500	390	370	350	300	270					
4								250	300	C	C	C	C	C	C	C	C	C	C	A				
5							A	A	290	A	A	A	A	A	A	310	310	340	270					
6								270	305	280	A	A	A	A	A	A	A	E A 340	295					
7								280	A	305	A	A	540	500	A	325	295	270	310	260				
8								U L 310	340	280	420	E A 365	370	400	E A 395	345	340	305	330	255				
9								305	A	395	295	B	A	A	A	380	345	285	E A 310					
10							320	275	300	270	290	400	G	495	380	395	355	320	305	250				
11								E A 295	285	E A 380	335	A	A	A	380	380	300	340	290	260				
12							270	240	270	305	430	360	400	365	330	355	345	315	330	285				
13							405	A 365	345	G	G	460	410	360	395	340	340	330	285	255				
14							430	290	260	370	435	405	340	355	400	430	345	345	300	250				
15									E A 295	280	375	A	370	360	285	325	E A 355	C	280					
16								A	260	A	A	350	E A 460	A	E A 375	305	305	275	300					
17								295	305	345	460	G	A	655	390	410	405	345	285	260				
18								A	E A 360	G	A	600	550	A	475	370	375	460	A	A				
19								240	255	L 330	L 360	395	A	435	395	305	280	275	E A 275	270				
20							310	280	245	315	G	500	430	310	335	380	345	305	310	L 260				
21							245	G	240	260	G	605	410	A	310	A	A	A	280	A				
22								270	270	330	A	A	A	A	A	A	330	310	300					
23								375	A	A	A	A	A	A	A	A	A	A	E A 295	280				
24								260	250	270	380	A	A	A	A	A	A	330	280					
25							320	325	295	270	430	445	395	340	375	375	310	290	280	250				
26							270	275	275	300	350	W	525	380	350	300	A	350	270					
27							270	250	270	365	300	430	360	440	335	305	260	300	290					
28							265	240	240	310	340	A	400	A	A	A	A	325	275					
29								300	280	285	280	600	370	425	345	285	280	300	295	250				
30							L 300	295	300	350	295	350	475	335	345	360	345	E A 360	300	255				
31								305	260	285	345	345	315	315	370	385	315	320	320	C				
	00	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	27	27	27	22	19	19	17	22	24	24	27	29	16				
MED							300	280	275	308	355	405	405	380	368	350	338	315	292	260				
UQ							320	302	299	343	430	550	500	440	395	380	346	338	302	275				
LQ							270	270	260	282	300	372	370	355	338	315	302	300	280	252				

JUL. 1985 | H*F2 (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H'F (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	EA 390	A 250	EA 290	S 250	ES 275	A 240	A	EA 265	A	A	200	200	H 195	A	A 245	A	EA 260	230	225	240	250	215	ES 275	ES 260
2	ES 280	EA 330	ES 275	ES 260	ES 265	S 240	A 250	230	225	A	A	A 250	A	A	A	A 230	220	A 250	A 240	A 245	245	205	250	ES 280
3	ES 300	ES 275	ES 260	S 240	ES 275	ES 275	240	230	220	H 205	H 200	A	A	H 190	220	A 230	H 200	A 240	A 240	240	230	A 250	S 250	S 245
4	A	A	EA 310	A 250	ES 290	A	240	A	A 250	C	C	C	C	C	C	C	C	C	C	A	A	EA 280	ES 275	EA 300
5	A	ES 290	230	S 250	A	S 245	A	A	A	A	A	A	A	A	A	A	A	H 230	EA 250	230	A	EA 290	A	ES 320
6	EA 310	ES 295	S 250	215	240	EA 300	A	230	225	220	A	A	A	A	A	A	A	A	A	EA 270	245	250	ES 275	ES 290
7	ES 295	ES 300	EA 300	255	200	ES 290	245	240	A	A	A	A	230	A 250	A	A	A 250	A 250	A 250	A 250	240	A 260	EA 330	A
8	A 325	A	S 320	A 275	EA 250	220	250	230	EA 240	220	A	A	A	EA 230	A	H 185	H 230	A	235	250	EA 255	EA 270	ES 270	EA 295
9	275	255	285	A	A 235	EA 285	A	210	A	A	A	B	A	A	A	A	EA 250	240	A	A 255	A	A 295	EA 315	A
10	S 245	EA 290	A 245	A 280	S 285	280	250	225	A	200	190	200	H 200	200	H 200	H 210	205	EA 250	EA 250	240	220	ES 210	S 265	EA 355
11	A	A	S 305	EA 285	205	ES 280	240	A	215	A	A	A	A	A	A	260	215	A	A	A 250	A 240	A 240	A 250	A 280
12	295	295	S 255	280	S 250	245	A	210	215	190	215	A	A	A	A	A	A 220	A	250	265	255	EA 245	300	EA 310
13	EA 255	EA 255	S 320	315	315	S 335	A	A	A	EA 210	EA 220	A	A	215	A	A	245	A	EA 265	A	265	280	285	285
14	270	S 240	265	280	270	EA 350	250	A	A	A	210	200	215	A	A	A	A	A 245	A	A	235	EA 240	350	EA 300
15	EA 310	EA 300	ES 300	250	245	ES 260	245	A	A	230	EA 250	A	200	A	A 230	A	A	C	215	H 235	245	EA 300	ES 300	Q 280
16	EA 330	EA 320	A 270	230	230	A	EA 270	A	A	A	A	A	A	A	A	A	A	210	215	235	195	ES 250	ES 300	A
17	ES 305	ES 300	ES 305	ES 310	ES 260	255	210	205	195	A	H 180	205	A	195	H 200	H 205	220	A	EA 265	EA 250	245	275	EA 285	EA 350
18	EA 280	ES 310	EA 350	A	EA 270	EA 280	A	A	A	230	A	EA 240	210	A	A	EA 250	255	A	A	A	A	250	ES 270	ES 270
19	EA 250	EA 280	ES 295	ES 275	ES 310	ES 300	EA 250	200	180	H 195	195	175	A	A	A	A	230	205	A	EA 260	265	260	245	250
20	240	ES 285	ES 295	260	245	ES 270	225	EA 230	A	200	190	190	190	195	195	A	H 195	230	225	205	ES 250	225	245	ES 300
21	ES 275	ES 275	ES 350	ES 330	ES 300	ES 280	240	220	240	195	205	195	210	A	A	A	A	A	EA 250	A	EA 340	EA 295	245	EA 275
22	ES 325	EA 280	EA 260	ES 270	ES 270	240	240	H 200	220	230	A	A	A	A	A	A	A	225	240	250	255	230	250	245
23	ES 280	240	EA 280	215	ES 270	230	A 240	225	A	A	A	A	A	A	A	A	A	A	A	A	245	240	EA 290	EA 300
24	EA 300	EA 350	240	EA 280	ES 275	ES 295	240	H 220	H 200	A	220	A	A	A	A	A	A	A	A	A 250	230	EA 260	EA 300	EA 315
25	EA 310	EA 295	ES 290	250	250	255	240	230	H 200	225	EA 250	230	A 240	220	220	H 265	225	A	EA 245	245	200	195	ES 300	EA 330
26	ES 300	EA 330	ES 310	EA 350	ES 300	S 255	A	A	A	H 200	205	220	A	A 240	A	A	A	A	A 240	220	200	ES 280	ES 365	ES 300
27	ES 350	ES 270	ES 270	ES 300	A	A	A 240	220	H 200	H 190	EA 245	225	EA 240	EA 240	220	A	220	230	EA 250	230	245	230	ES 290	ES 330
28	ES 320	ES 295	EA 280	260	EA 290	240	240	A	A	A	H 200	A	A	A	A	A	A	230	A 250	250	245	EA 270	ES 270	EA 300
29	EA 320	260	A 285	270	250	A 250	EA 255	215	H 200	190	A	EA 235	A	A	A	A	A	EA 230	EA 260	EA 245	A 215	EA 250	A 270	A 290
30	285	A 300	A	S 250	250	280	235	240	215	200	200	EA 240	200	H 180	260	230	EA 220	A	A	A	A 210	ES 245	S 295	295
31	S 295	300	280	245	195	ES 280	255	A	A	A	A	EA 215	A	A	A	A 205	210	EA 230	EA 250	C	A 235	A 260	A 250	A 275
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	30	29	29	28	23	20	16	17	17	15	11	11	9	10	18	16	21	23	27	31	30	28
MED	EE 298	EE 292	EE 285	255	U 230	U 248	240	222	215	200	202	208	205	205	220	225	220	230	UA 232	242	242	U 228	EE 275	EE 295
UQ	EA 315	EE 300	ES 305	EE 280	ES 275	ES 282	248	230	224	220	212	A 226	217	A 226	230	A 250	238	A 241	EA 250	A 250	248	A 261	EE 300	EA 305
LQ	U 259	EE 272	252	250	240	242	240	212	200	195	200	199	200	195	200	H 205	212	230	232	236	230	U 225	248	U 262

JUL. 1985 | H'F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H'E (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N, Long 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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 115	110	110	115	115	115	115	110	115	A	A	A	S					
2							S 115	115	115	115	115	110	115	115	110	A	A	A	S					
3							S 125	120	115	110	115	120	115	115	115	A	A	A	A	S				
4							S 115	115	C	C	C	C	C	C	C	C	C	C	S					
5							S 120	115	120	115	115	115	120	120	115	115	A	A	S					
6							S 120	115	115	110	110	115	120	115	A	A	A	A	S					
7							E S 140	120	115	115	115	115	115	115	115	115	115	115	115	S				
8							S 110	110	A	110	110	110	110	115	110	110	110	110	A	S				
9							S A	105	110	105	B	110	110	110	110	110	110	105	S					
10							S 110	105	110	110	110	110	110	110	110	110	110	115	S					
11							A A	110	110	110	110	110	110	110	110	110	110	115	S					
12							S 115	H 110	110	110	110	110	110	110	A	A	A	A	S					
13							S 110	105	105	105	105	110	105	110	A	A	105	110	S					
14							S 110	A	110	110	110	110	110	110	110	110	110	H 110	S					
15							S 110	110	105	105	110	105	105	105	A	105	C	A	S					
16							S 105	110	105	105	105	110	105	105	A	A	A	A	A					
17							S A	110	105	105	110	105	110	110	105	105	110	115	S					
18							S A	110	105	105	110	110	110	110	105	110	105	110	S					
19							S 110	110	110	110	110	110	110	110	110	110	110	110	A					
20							S 110	110	A	110	110	A	A	A	E A 120	105	H 105	115	S					
21							S 110	110	110	105	115	110	110	110	A	A	A	A	A					
22							S A	A	115	115	115	115	120	115	115	120	120	120	S					
23							S 115	115	115	115	115	115	115	115	115	115	115	120	S					
24							S 120	115	115	115	115	110	115	A	A	A	A	A	S					
25							S A	A	A	115	115	115	115	120	115	115	115	120	S					
26							S A	115	115	110	115	115	115	115	115	115	115	A	S					
27							S A	A	A	115	115	115	115	115	115	115	115	120	S					
28							S A	A	A	A	115	115	115	110	115	115	115	115	S					
29							S A	A	110	105	A	110	110	110	110	H 110	110	120	S					
30							S 110	110	110	A	110	110	110	105	105	105	110	115	S					
31							S 115	110	110	110	110	110	110	A	A	A	A	A	C					
	00	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	21	25	25	28	28	29	29	27	21	20	19	17					
MED							S 128	115	110	110	110	110	110	110	110	110	110	110	115					
UQ								115	115	115	115	115	115	115	115	115	115	115	120					
LQ								110	110	110	105	110	110	110	110	110	110	110	110					

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JUL. 1985 | H'E (KM)

IONOSPHERIC DATA

JUL. 1985 | H'ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12·1' N, Long. 130° 37·1' E Sweep 1 MHz to 25 MHz in 24sec 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	105	110	115	110	110	115	110	110	110	115	115	115	110	110	110	105	105	105	S	100	100	105	100
2	100	100	100	100	S	S	120	120	120	120	120	110	110	110	110	110	105	100	100	100	105	100	120	120
3	120	115	115	110	115	115	130	G	120	110	115	115	115	120	115	105	105	100	100	100	100	100	100	100
4	120	110	115	110	110	105	115	120	115	C	C	C	C	C	C	C	C	C	C	120	105	105	S	115
5	110	115	105	115	110	120	130	125	125	120	115	110	110	105	105	110	130	105	100	100	100	100	125	125
6	100	S	S	S	S	110	105	115	130	G	110	110	110	110	110	100	100	100	100	100	100	100	100	100
7	100	S	110	100	100	S	145	140	125	120	125	125	130	150	140	140	140	140	120	120	115	110	100	100
8	100	120	110	110	110	110	105	110	105	110	130	120	115	115	110	G	110	115	110	100	100	100	100	120
9	100	100	115	115	110	110	105	105	105	105	105	B	105	105	105	110	110	145	115	110	110	110	110	110
10	105	100	105	100	105	120	120	115	110	110	105	105	115	G	G	150	G	125	125	120	120	120	115	115
11	110	110	105	110	120	105	105	105	135	125	120	120	115	110	120	120	115	110	110	110	105	105	100	100
12	100	100	105	S	S	120	110	130	120	115	110	110	110	110	110	105	110	105	105	100	120	110	115	110
13	110	110	115	S	115	115	120	110	105	105	105	105	115	150	105	100	105	130	120	110	110	105	100	100
14	S	105	110	110	115	105	110	105	105	110	110	140	G	135	145	125	125	130	120	120	105	110	105	100
15	100	100	115	110	110	110	110	105	105	110	110	105	105	105	105	120	115	C	115	115	115	105	105	100
16	100	100	95	95	95	105	105	110	110	105	105	105	135	105	105	105	105	100	105	100	105	105	105	105
17	105	105	105	105	120	105	105	105	110	105	120	110	105	E G 180	150	125	120	120	120	120	110	110	100	110
18	110	110	110	110	115	110	105	105	105	110	125	125	125	110	160	140	125	110	105	105	100	100	100	100
19	110	105	115	115	115	105	110	105	115	125	125	125	110	120	120	110	110	110	105	105	100	115	S	110
20	95	110	95	100	110	105	105	105	110	110	115	120	105	110	E G 145	105	130	120	110	150	105	100	100	105
21	105	105	105	110	S	S	130	125	120	120	110	115	140	115	105	105	100	100	100	95	95	105	110	110
22	120	110	110	110	110	110	145	150	140	140	125	125	130	130	120	120	120	120	120	100	105	120	115	105
23	100	100	110	120	115	110	130	125	125	115	115	115	115	115	120	115	110	110	115	110	100	100	100	100
24	100	100	100	100	100	S	S	G	120	105	110	110	105	105	100	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	110	110	110	110	110	150	150	145	160	160	G	140	120	120	S	S	S	S	130
26	120	105	110	120	115	115	110	110	110	115	140	140	140	130	140	130	120	120	120	115	130	125	115	115
27	115	125	120	100	115	110	110	105	105	105	150	165	150	140	130	130	140	125	120	115	S	S	S	120
28	115	115	110	110	110	105	105	100	100	105	110	140	130	130	120	120	120	G	125	115	115	115	110	120
29	110	100	105	105	105	105	105	105	105	150	130	130	130	130	125	120	120	115	120	115	110	110	110	S
30	110	110	105	110	110	S	125	120	120	115	110	110	105	110	130	140	140	115	110	110	110	110	105	105
31	105	110	105	100	100	S	175	125	125	115	115	110	115	110	105	110	105	100	105	C	105	105	110	100
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	29	30	28	27	25	30	29	31	29	30	29	29	29	29	28	29	28	30	28	29	29	27	30
MED	105	105	110	110	110	110	110	110	110	110	115	115	115	112	118	112	115	112	110	110	105	105	105	105
UQ	110	110	110	110	115	110	125	120	120	120	125	125	130	130	130	125	125	120	120	115	110	110	110	115
LQ	100	100	105	100	108	105	105	105	105	110	110	110	110	110	105	105	105	102	105	100	100	100	100	100

JUL. 1985 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | TYPES OF ES | 135° E Mean Time (G.M.T. + 9 h)

Station YAMAGAWA Lat. 31° 12.1' N. Long. 130° 37.1' E Sweep 1 MHz to 25 MHz in 24sec 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	F7	F3	F3	F3	F2	F3	C4	C4	C4	C3	C2	C2	C2	C3	C3	C2	L2	L3	L1		F3	F1	F2	F3
2	F2	F3	F2	F2			C4	C3	C6	C3	C4	C2	C5	C5	C3	C3	L2	L5	L6	L3	F2	F1	F2	F2
3	F3	F5	F3	F3	F2	F2	C3		C2	C3	C2	C3	C2	C2	C2	L3	L3	L3	L4	L4	F4	F5	F2	F3
4	F7	F5	F7	F3	F4	F6	C4	C5	C4											C5	F4	F5		F5
5	F4	F1	F3	F2	F6	F2	C6	C5	C3	C5	C4	C5	C5	C6	C4	C2	CC32	L3	L4	L3	F7	F4	FF22	F2
6	F2					F6	L5	C3	C2		C5	C6	C5	C4	C6	L5	L8	L6	L5	L5	F6	F5	F2	F2
7	F2		F2	F2	F2		H3	H3	C4	C3	C3	C4	C2	H1	H3	HC22	HC12	HC22	C3	C3	F7	FF34	F2	F8
8	F3	FF51	F2	F6	F7	F2	C6	C2	C3	L2	H1	C3	C3	C3	C3		C2	CL34	CL33	L2	F4	F6	F1	F7
9	F2	F1	F3	F4	F3	F2	L4	L2	C3	C3	C3		C3	C4	C5	C2	C3	HC11	C7	C7	F7	F4	F7	F4
10	F3	F4	FF15	F3	F2	F6	C6	C2	C3	C2	C2	HC12	C2			H1		C2	CL21	C4	F1	FF13	FF31	F7
11	F3	F3	F2	F5	F1	F2	LH31	L4	HC22	C3	C3	C3	C3	C3	C2	C2	C2	C2	L3	L2	F4	F7	F4	F3
12	F2	F2	F1			F1	C2	C1	C2	C2	C1	C2	C2	C3	C2	L3	L2	L3	L4	L5	F7	F6	F7	F4
13	F6	F5	F2		F7	F5	C5	C5	C4	C3	C2	C3	HC11	HC11	C2	L4	LH11	C3	C3	C6	F3	F2	F2	F2
14		F1	F1	F2	F4	F5	C4	C5	L3	C3	C2	C1		H2	H1	C2	C2	C3	C4	C2	F1	F4	F4	F7
15	F7	F5	FF22	F3	F2	F2	L4	C6	C4	C2	C2	C4	C2	C4	C2	CL31	C4		CL32	L3	FF32	F5	F2	F5
16	F2	F4	F2	F2	F5	F4	L4	C5	C5	C5	C3	C2	CC33	C6	C5	L4	L5	LH21	LH42	LH11	F1	F1	F2	F5
17	F2	F3	F4	F2	F1	F3	L4	L4	C3	C4	C1	C2	C4	H1	H1	C2	C2	C3	C4	CL23	FF23	FF14	F6	FF42
18	FF21	F3	F4	F7	F4	F6	L7	L6	C4	C3	C2	CC21	C2	C3	H1	H2	C2	C4	C5	L5	F6	F3	F2	F2
19	FF21	FF21	F1	F1	F1	F1	L4	C3	C2	C2	C1	C1	C4	C2	C2	C2	C2	C4	C6	LL33	F2	F4		F1
20	F4	F1	F1	F1	F2	F2	L2	C2	C3	L1	C1	CH11	L1	LH11	HL11	L1	C1	C1	C2	H1	F1	F2	F2	F2
21	F3	FF31	F3	F2			C2	C2	C2	C2	C3	C1	H1	C3	C4	L6	L7	L5	L3	L6	F6	FF55	FF22	FF21
22	F2	F7	F7	F4	F2	F6	HL22	HL13	HL32	H3	C4	C2	C6	C3	C4	C4	C3	C3	C3	L5	F3	F3	F3	F3
23	F2	F2	FF23	FF12	F2	F2	C4	C3	C4	C5	C4	C6	C3	C3	C4	C5	C4	C3	C5	C7	F4	F7	F5	F5
24	F5	F6	F3	F5	F2				C2	C4	C2	C4	C3	C4	L5	L7	L6	L5	L6	L8	F5	F3	F4	F3
25	F4	F3	F2	F2	F2	F2	L2	L2	L3	L2	H2	H1	H1	H2	H1		H2	C4	C3					F3
26	F2	F2	F2	F5	F3	F3	L4	L4	C3	C3	H2	H2	H3	H2	H2	H2	C4	C4	CL62	C7	F2	F4	F2	F2
27	F3	F2	F2	F2	F3	F5	L5	L4	L3	L2	HC22	H1	HC22	H2	H3	H2	H2	C3	C4	C5				F2
28	F2	F2	F5	F2	FF22	F2	63	L3	L4	L4	L3	H2	H2	H4	C5	C4	C3		C4	C7	F5	F6	F2	F6
29	F7	F2	F2	F6	F3	F6	L4	L5	L3	H2	H3	HL21	H3	H2	H2	C2	C5	C3	C3	C4	F6	F7	F4	
30	F2	F5	F5	F1	F2		C4	C3	C2	C3	L1	C2	C2	C2	C1	H2	H1	C6	C5	L5	F6	F3	F4	F4
31	F5	F5	F2	F5	F3		H2	C5	C4	C3	C3	C3	C2	C2	L2	L3	L2	L3	L4		F7	F5	FF22	F6
	00	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

JUL. 1985 | TYPES OF ES

IONOSPHERIC DATA

JUL. 1985 | FXI (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9 N, Long. 127° 48·4 E Sweep 1 MHz to 25 MHz in 24sec 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 43	S 46	S 43	35	U S 38	A															X 87	X 61	X 57	X 49
2	X 48	X 46	X 47	S 47	X 45	X 31															X 80	X 57	X 57	S 50
3	X 50	S 50	S 49	X 45	X 40	X 36															S 53	S 49	S 47	X 38
4	S 37	34	A	34	31	31															S 71	69	S 69	65
5	65	65	65	64	64	49															S 67	S 61	S 64	S 61
6	66	71	77	73	X 50	X 47															X 86	S 75	X 69	S 64
7	S 61	S 60	X 59	X 56	X 55	X 40															S 78	U S 52	X 44	40
8	S 38	U S 42	S 40	U S 40	45	A															X 67	X 64	X 60	X 56
9	X 56	S 54	S 48	50	A	U S 36															X 67	X 69	X 69	O S 73
10	69	70	X 55	U S 44	U S 40	U S 40															S 58	U S 48	U S 43	38
11	U S 38	A	U S 40	X 40	A	A															S 76	S 66	S 55	S 54
12	S 54	S 53	S 50	X 48	X 50	X 48															X 93	X 77	X 69	S 71
13	U S 70	S 66	61	S 63	62	X 57															X 62	S 61	X 60	U S 62
14	U S 55	A	U S 56	X 48	U S 42	X 41															S 63	U S 51	U S 46	X 44
15	X 39	S 40	X 40	S 41	S 32	S 27															S 70	U S 51	U S 51	A
16	U S 46	S 48	S 50	S 47	S 31	S 26															S 39	X 36	X 36	S 34
17	S 34	S 33	S 31	X 30	S 30	X 28															X 63	X 43	S 47	A
18	U S 44	U S 40	U S 41	S 42	S 44	S															X 57	S 49	S 44	S 41
19	S 40	S 40	S 38	S 38	34	34															U S 64	65	U S 64	S 60
20	X 44	S 41	X 39	S 41	A	S 32															X 60	U S 49	A	S 30
21	36	S 32	X 30	X 29	31	33															X 53	U S 53	S 53	U S 48
22	S 46	47	48	U S 53	U S 45	U S 44															X 76	S 64	X 56	X 61
23	S 50	U S 45	X 40	X 39	S 39	X 30															S 93	A	S 45	U S 45
24	X 42	O S 40	X 42	36	34	X 33															S 63	S 48	X 48	S 45
25	S 42	U S 43	U S 42	S 39	X 38	X 36															X 80	X 39	X 33	X 35
26	X 36	S 34	S 40	X 36	X 35	S 36															X 58	X 34	S 35	S 39
27	41	38	39	37	X 34	X 33															S 96	S 64	S 54	S 49
28	49	51	51	S 47	38	39															X 79	S 60	S 54	60
29	64	61	61	52	52	43															X 81	S 58	X 49	S 49
30	X 47	X 45	43	X 52	X 40	X 34															X 76	X 51	47	48
31	49	S 48	X 50	X 53	X 26	X 30															X 80	X 67	X 72	X 67
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	29	30	31	28	27															31	30	30	29
MED	46	S 46	45	44	40	X 36															X 70	S 58	54	S 49
UQ	54	S 53	51	51	45	40															X 80	S 64	X 60	S 61
LQ	S 40	S 40	S 40	38	34	32															62	S 49	S 46	S 41

JUL. 1985 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF2 (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16.9' N, Long. 127° 48.4' E Sweep 1 MHz to 25 MHz in 24sec 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 37	S 40	J S 37	F	S 32	A	R 38	J R 53	53	58	64	47	A	47	60	78	75	68	70	73	81	55	J S 51	S 43
2	42	40	41	S 41	39	S 25	40	53	58	54	50	64	A	A	A	67	70	77	92	89	74	S 51	51	S 44
3	44	S 44	S 43	39	S 34	S 30	39	54	66	A	52	E G 46	A	51	58	64	78	90	84	70	47	S 43	S 41	32
4	31	F	A	F	F	F	R 39	56	55	R 51	R 48	A	R 51	66	R 72	75	68	62	68	69	U S 65	F	S 63	F
5	F	F	F	F	F	F	39	46	R 65	R 50	A	R 49	56	69	R 92	96	R 104	R 113	R 108	R 94	S 61	S 55	58	J S 55
6	F	F	F	F	44	S 41	R 43	R 53	64	55	E G 46	57	54	74	A	A	A	105	108	107	80	69	63	S 58
7	55	54	53	50	49	34	41	R 51	65	R 52	R 53	R 52	E G 45	R 54	63	79	77	69	R 83	88	S 72	U S 46	S 38	F
8	S 32	U S 36	S 34	U S 34	Z 38	A	32	47	59	R 62	53	A	56	62	R 64	R 73	80	73	78	69	S 61	58	54	50
9	S 50	U S 48	S 42	F	A	S 30	A	47	R 54	54	U R 61	A	54	R 62	77	82	88	96	R 91	69	S 61	S 63	63	67
10	F	F	49	S 38	U S 34	S 34	R 45	R 55	63	R 69	63	A	A	57	64	62	64	66	69	76	U S 52	U S 42	37	F
11	U S 32	A	U S 34	S 34	A	A	40	50	50	52	53	A	55	61	63	72	74	78	88	89	70	60	49	48
12	48	47	S 44	42	J S 44	42	50	H 56	57	E G 48	A	59	63	70	80	77	80	88	89	89	87	71	S 63	S 65
13	U S 64	U S 60	F	S 57	F	S 51	U R 38	43	U R 43	A	A	A	R 56	54	53	54	R 58	68	67	60	56	55	54	S 56
14	U S 49	A	U S 50	42	U S 36	35	R 39	48	R 51	R 51	53	R 63	55	54	56	52	67	R 80	75	R 72	57	U S 45	U S 40	S 38
15	S 33	S 34	34	S 35	S 26	S 21	31	51	61	52	A	60	78	89	93	88	90	C	89	J R 74	U S 64	U S 45	U S 45	A
16	U S 40	S 42	J S 44	S 41	S 25	S 20	37	49	52	51	53	A	51	65	79	81	A	73	84	74	S 33	30	30	S 28
17	S 28	S 27	S 25	24	S 24	S 22	33	43	50	53	48	E G 43	E G 43	49	54	50	50	55	62	60	57	37	S 41	A
18	U S 38	U S 34	U S 35	J S 36	S 38	A	28	R 44	R 44	R 44	R 51	A	E G 43	A	48	R 50	49	47	R 51	58	S 51	43	S 38	35
19	S 34	34	32	32	F	F	R 36	R 51	R 49	E G 41	R 48	A	R 53	54	61	68	62	R 49	52	48	S 58	F	S 58	U S 54
20	38	35	33	S 35	A	S 26	36	U R 67	R 52	R 48	E G 42	U R 51	59	60	53	52	59	R 58	61	R 57	54	43	A	S 24
21	F	S 26	S 24	23	F	F	32	R 47	64	E G 43	49	53	54	63	92	73	58	R 62	53	U R 50	47	U S 47	47	U S 42
22	S 40	F	F	S 47	S 39	S 38	R 36	46	R 65	50	U R 48	U R 48	A	62	60	64	81	80	R 88	R 84	S 70	58	U S 50	55
23	U S 44	39	34	S 33	J S 33	24	32	45	52	R 53	49	A	A	A	63	A	A	A	R 81	73	87	A	39	S 39
24	S 36	34	36	F	F	27	34	58	52	R 55	R 54	A	A	63	A	A	66	A	81	R 73	S 57	S 42	42	S 39
25	S 36	U S 37	U S 36	33	32	30	32	50	60	47	E G 44	50	62	64	66	74	94	R 97	96	107	74	H 33	27	29
26	30	S 28	S 34	30	29	J S 30	43	52	49	S 51	49	E G 43	56	59	70	74	68	77	93	80	52	28	S 29	S 33
27	F	F	F	F	J S 28	27	R 45	A	A	54	56	R 58	58	63	78	R 87	90	U R 97	88	R 84	90	S 58	48	S 43
28	F	F	F	U S 41	F	F	51	57	48	49	R 51	56	R 55	64	71	A	78	92	95	84	S 73	54	S 48	F
29	F	F	F	F	F	F	A	R 51	R 54	59	R 52	J R 52	60	74	84	87	88	87	80	80	75	S 52	S 43	S 43
30	S 41	39	F	46	S 34	28	35	R 51	59	63	62	60	72	81	81	80	83	84	106	U R 118	70	45	F	F
31	F	S 42	44	47	20	24	32	49	63	59	58	60	74	88	87	A	79	82	90	90	S 74	S 61	66	S 61
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	21	22	23	20	21	29	30	30	29	27	20	24	28	28	26	28	28	31	31	31	28	29	24
MED	S 38	S 39	S 36	S 38	S 34	S 30	38	51	54	52	52	52	56	62	65	74	76	78	84	74	64	49	48	S 43
UQ	S 44	S 42	S 44	42	S 38	S 34	40	53	63	55	54	60	60	68	80	80	82	89	90	88	74	58	54	S 55
LQ	S 34	S 34	S 34	S 34	S 28	S 25	33	47	51	50	48	48	54	56	60	64	65	67	70	69	S 56	43	S 40	S 36

The Radio Research Laboratories, Japan

JUL. 1985 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOF1 (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16' 9" N, Long 127° 48' 4" E Sweep 1 MHz to 25 MHz in 24sec 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								L	A	A	430	A	A	440	430	A	410	A	L	L				
2								L	L 400	L 420	430	440	A	A	A	430	410	390	A	A				
3							A	L	L 400	A	A	460	A	450	440	430	410	A	A	L				
4								L	A	A	A	A	L 440	A	A	A	420	410	A	L				
5								L 370	A	A	A	L 450	A	A	A	A	A	400	L 380					
6								L	L	L	460	L 450	A	A	A	A	A	L 400	L	A				
7								L	L 390	L	L	L 440	450	L 440	L 430	A	A	410	A					
8								L	410	420	L 430	A	A	A	430	430	410	A	360	L				
9							A		L 420	430	A	A	470	A	450	440	430	420	A	A				
10								L	L 420	A	A	A	A	450	440	430	420	400	370					
11								L	A	440	L 450	A	440	A	440	A	A	A	A					
12							L	L	400	480	A	A	A	A	440	A	A	A	A	A				
13							L	L	L	A	A	A	A	A	430	430	420	400	L 380	A				
14							L	L	L	L	A	A	L	430	430	A	L 410	390	A	A				
15							A	L	L	L 440	A	440	430	440	A	A	420	C	A	A				
16								L	L	400	430	A	430	430	420	A	A	A	A	L				
17								A	L	420	420	430	430	430	420	A	400	380	A	A				
18								L 360	L 380	A	400	A	430	A	420	A	390	370	R 340	A				
19							L 260	L 340	L 380	410	420	A	430	420	A	410	A	410	360					
20							L	L	A	L	420	420	420	430	L 420	420	L 410	L	L	L				
21								L 330	L 400	430	410	410	430	A	A	A	A	A	L	L				
22								L	380	410	L 430	430	A	A	A	A	A	A	A	L				
23									A	A	L 440	A	A	A	A	A	A	A	A	A				
24								L	L	A	L	A	A	430	A	A	A	A	A	A				
25								L	L 390	400	440	430	A	420	430	420	400	380	L 460	L				
26								L	L	L 420	L 430	430	A	A	430	420	A	A	L	A				
27							A	A	A	420	430	440	440	L 450	440	A	430	L 420	L	A				
28								L	L	L	L	L 440	A	A	A	A	A	L 420	L	A				
29							A	L	L	L	L	460	440	A	A	A	A	A	A	A				
30								L	L	420	430	450	460	460	430	A	A	400	360	A				
31								L	L	A	L 450	A	450	A	A	A	A	410	L	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	4	12	15	18	16	15	14	18	10	15	17	8					
MED							L 260	L 350	L 400	420	430	440	440	435	430	430	410	400	365					
UQ								L 365	L 405	430	440	450	445	450	440	430	420	410	L 380					
LQ								L 335	L 385	415	420	430	430	430	430	420	410	390	360					

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | FOE (0.01 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16.9' N, Long 127° 48.4' E Sweep 1 MHz to 25 MHz in 24sec 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	A	A	A	A	A	A	A	A	A	A	A	A	S				
2							S	A	A	A	330	A	A	A	A	A	A	A	A	S				
3							S	255	A	A	A	A	A	A	A	A	A	A	A	S				
4							S	A	A	A	A	A	A	A	R 340	A	A	A	235	A				
5							S	R 220	A	A	A	R 340	R 345	345	A	A	A	A	A	A				
6							S	A	A	A	A	A	A	A	A	A	A	A	A	A				
7							S	R 225	A	A	A	A	A	A	A	A	A	R 280	A	A				
8							S	A	A	A	A	A	A	A	A	A	A	A	R 225	A				
9							A	A	A	A	A	B	360	A	A	A	A	A	A	A				
10							S	R 225	A	A	A	A	A	350	350	R	A	A	170	S				
11							S	A	A	A	335	350	360	365	355	A	325	280	A	S				
12							S	A	A	310	330	350	360	355	A	A	A	A	A	S				
13							S	R 230	A	R 310	A	A	A	A	A	A	315	280	R 225	A				
14							S	A	A	A	A	A	R 350	360	R 355	325	305	R 280	A	A				
15							S	A	A	A	A	A	A	A	A	A	300	C	225	S				
16							S	210	A	A	A	A	A	A	A	A	A	A	A	S				
17							S	230	A	A	A	350	360	365	340	320	300	270	220	S				
18							S	A	A	A	A	A	A	A	A	A	A	A	205	S				
19							S	A	A	A	A	R 330	340	340	335	315	A	A	A	A				
20							S	R 230	A	A	A	A	A	A	A	A	R 310	A	A	A				
21							S	230	A	A	A	A	R 360	R 355	340	325	310	A	A	A				
22							S	R 210	A	A	A	A	A	A	345	320	295	R 255	A	A				
23							S	A	255	A	320	330	340	340	335	320	R 290	R 245	A	S				
24							S	R 230	A	A	A	A	A	A	A	A	A	A	A	A				
25							S	A	A	A	A	A	A	A	A	A	A	A	230	S				
26							S	R 230	A	A	A	340	345	A	A	A	A	A	A	S				
27							S	A	A	A	A	A	A	A	A	A	A	280	R 220	A				
28							S	230	A	A	A	A	A	R 360	355	340	310	R 280	R 230	A				
29							A	A	A	R 310	A	A	A	A	A	A	310	280	225	S				
30							S	210	A	A	A	A	350	355	350	340	315	A	A	S				
31							S	A	A	A	A	A	A	A	A	A	A	A	A	S				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								14	1	3	4	7	11	11	11	8	12	10	11					
MED								R 230	255	R 310	330	340	350	355	345	322	310	280	225					
UQ								R 230		310	332	350	360	360	352	332	312	280	228					
LQ								R 220		R 310	325	335	345	348	340	320	300	R 270	220					

JUL. 1985 | FOE (0.01 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FOES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16' 9" N, Long 127° 48' 4" E Sweep 1 MHz to 25 MHz in 24sec 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	23	JA 29	JA 53	JA 64	JA 28	JA 64	JA 77	JA 84	JA 63	JA 65	JA 88	JA 84	JA 104	JA 64	JA 54	JA 88	JA 52	JA 69	JA 54	JA 20	JA 20	JA 81	JA 25	23
2	23	ES 16	ES 16	JA 24	JA 18	ES 16	ES 16	JA 26	JA 41	JA 44	JA 55	JA 90	JA 163	JA 138	JA 120	JA 44	JA 41	JA 37	JA 62	JA 44	JA 24	ES 16	22	ES 16
3	ES 16	JA 34	JA 54	JA 28	JA 43	JA 64	JA 29	36	JA 65	JA 88	JA 88	JA 68	53	JA 65	JA 44	JA 44	JA 41	JA 74	JA 44	JA 27	JA 26	JA 21	JA 21	JA 25
4	23	23	JA 53	JA 27	JA 26	ES 16	JA 32	26	40	JA 48	JA 48	JA 53	44	46	44	43	36	JA 40	JA 48	JA 26	24	JA 32	23	ES 16
5	23	JA 37	JA 86	JA 43	JA 53	JA 42	JA 36	JA 41	JA 64	JA 75	JA 78	43	JA 53	JA 64	42	JA 93	JA 57	JA 53	JA 48	JA 37	JA 22	ES 16	ES 16	23
6	23	20	JA 24	22	ES 16	JA 20	JA 24	JA 25	JA 53	JA 54	JA 74	JA 54	JA 59	JA 46	JA 90	JA 145	JA 120	JA 110	JA 138	JA 40	JA 40	JA 30	JA 22	21
7	23	19	ES 16	ES 16	ES 16	ES 16	JA 28	JA 36	32	JA 35	39	39	JA 42	JA 77	JA 43	JA 51	JA 47	31	JA 58	JA 26	JA 29	JA 70	22	JA 30
8	JA 23	JA 37	JA 31	JA 26	JA 34	JA 29	ES 16	JA 40	42	39	JA 43	JA 71	JA 63	48	44	JA 54	JA 40	JA 64	JA 40	JA 42	JA 28	JA 29	JA 22	JA 32
9	JA 36	JA 37	ES 16	JA 24	JA 64	JA 64	JA 84	JA 85	JA 58	JA 41	JA 83	JA 84	JA 57	JA 56	JA 76	JA 38	JA 34	JA 36	JA 44	JA 36	JA 24	ES 16	ES 16	JA 50
10	JA 50	JA 51	JA 29	JA 32	JA 24	JA 21	JA 32	JA 30	JA 40	JA 60	JA 76	JA 88	JA 66	43	41	38	JA 33	JA 35	G	ES 16	JA 37	JA 30	JA 24	JA 28
11	JA 51	JA 83	JA 32	JA 36	JA 63	JA 29	20	JA 34	JA 42	JA 39	JA 47	JA 77	JA 54	47	43	JA 51	JA 87	JA 44	JA 54	JA 26	JA 30	JA 25	JA 22	JA 29
12	22	23	ES 16	ES 16	ES 16	ES 16	20	JA 32	35	40	JA 120	JA 54	JA 57	JA 64	JA 64	JA 64	JA 64	JA 84	JA 50	JA 44	JA 21	JA 36	JA 33	JA 26
13	JA 30	JA 54	22	JA 26	JA 46	JA 32	JA 32	32	33	JA 44	JA 76	JA 84	JA 61	JA 46	JA 36	JA 33	34	35	32	JA 32	JA 29	20	JA 22	JA 21
14	JA 30	JA 84	JA 24	JA 23	22	20	JA 25	JA 29	JA 40	JA 42	JA 54	JA 53	43	42	42	JA 57	JA 54	33	40	JA 33	JA 31	JA 30	22	JA 25
15	22	JA 29	JA 21	JA 18	JA 25	JA 21	JA 32	JA 33	37	JA 44	JA 128	JA 43	JA 44	JA 67	JA 76	JA 44	39	C	JA 77	JA 128	JA 51	JA 34	JA 29	JA 42
16	JA 24	JA 36	JA 44	JA 24	JA 27	ES 16	JA 31	JA 32	JA 29	JA 51	JA 47	JA 77	38	38	JA 44	JA 84	JA 110	JA 48	JA 40	JA 30	JA 42	JA 64	ES 16	23
17	JA 26	JA 51	JA 29	ES 16	ES 16	ES 16	ES 16	31	JA 37	JA 36	JA 48	39	G	G	43	JA 43	JA 41	JA 55	JA 36	JA 44	JA 31	23	JA 42	JA 51
18	JA 27	JA 37	JA 29	JA 30	JA 24	33	JA 36	JA 54	JA 41	JA 42	54	JA 76	JA 56	JA 54	JA 53	JA 44	JA 40	JA 42	JA 54	JA 41	JA 51	JA 42	JA 33	JA 26
19	JA 23	JA 22	22	JA 25	JA 25	JA 27	JA 22	JA 32	JA 34	JA 54	JA 65	JA 68	JA 42	JA 54	JA 46	39	JA 54	JA 37	JA 30	JA 22	22	23	JA 29	JA 24
20	22	ES 16	22	ES 16	JA 42	23	ES 16	27	JA 40	JA 43	JA 36	JA 43	JA 40	JA 37	JA 36	JA 36	37	JA 37	JA 25	JA 25	JA 50	JA 53	JA 50	JA 33
21	22	22	JA 23	JA 23	ES 16	ES 16	20	28	JA 40	JA 43	JA 60	41	42	JA 55	JA 70	JA 51	JA 43	40	33	JA 26	JA 32	JA 32	JA 36	JA 79
22	JA 29	JA 33	JA 29	JA 34	JA 33	JA 52	JA 44	28	31	32	40	JA 54	JA 87	JA 60	JA 53	JA 48	JA 65	JA 57	JA 41	JA 24	22	22	22	23
23	22	ES 16	23	ES 16	ES 16	ES 16	19	JA 30	38	JA 54	JA 44	JA 56	JA 120	JA 144	JA 54	JA 94	JA 62	JA 111	JA 120	JA 54	JA 33	JA 43	JA 26	JA 30
24	JA 53	JA 29	JA 20	22	21	ES 16	18	30	JA 34	JA 47	JA 44	J 54	J 70	JA 63	JA 75	JA 70	JA 50	JA 160	84	76	JA 35	JA 32	JA 25	22
25	JA 25	JA 24	JA 25	JA 21	JA 18	JA 19	JA 26	JA 41	JA 31	JA 38	JA 37	JA 64	JA 63	JA 40	JA 41	JA 38	36	32	24	ES 16	22	20	ES 16	ES 16
26	ES 16	21	ES 16	JA 21	ES 16	ES 16	ES 16	G	JA 35	JA 35	JA 43	JA 44	JA 58	JA 75	JA 54	JA 54	JA 50	JA 53	JA 41	JA 31	ES 16	ES 16	JA 25	JA 24
27	JA 30	JA 31	JA 79	JA 36	JA 27	JA 20	JA 35	JA 84	JA 87	JA 65	38	44	41	40	40	45	40	38	32	JA 32	JA 30	22	22	JA 36
28	JA 25	JA 32	JA 36	JA 25	JA 24	ES 16	ES 16	G	JA 50	36	39	44	49	55	49	JA 78	JA 87	33	25	JA 35	JA 30	JA 60	JA 32	JA 64
29	JA 50	JA 36	JA 44	JA 40	JA 27	JA 33	JA 53	JA 33	JA 31	39	40	43	42	45	49	JA 54	JA 65	JA 64	JA 57	JA 65	JA 65	JA 33	JA 30	JA 25
30	20	ES 16	19	19	ES 16	ES 16	JA 21	JA 27	JA 84	JA 47	JA 44	JA 46	JA 41	JA 103	JA 54	JA 54	JA 76	JA 36	JA 44	JA 36	JA 37	JA 36	JA 41	JA 41
31	JA 24	23	20	20	ES 16	JA 18	ES 16	JA 27	JA 41	JA 76	JA 55	JA 74	JA 54	JA 64	JA 76	JA 162	JA 106	JA 64	JA 39	JA 40	JA 24	JA 24	JA 24	JA 36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31
MED	JA 23	JA 29	JA 24	JA 24	JA 24	JA 20	JA 25	JA 32	JA 40	JA 44	JA 48	JA 54	JA 54	JA 55	JA 49	JA 51	JA 50	JA 43	JA 44	JA 33	JA 30	JA 30	JA 24	JA 26
UQ	JA 30	JA 37	JA 34	JA 29	JA 30	JA 30	JA 32	JA 36	JA 46	JA 54	JA 75	JA 75	JA 62	JA 64	JA 59	JA 67	JA 64	JA 64	JA 54	JA 42	JA 36	JA 36	JA 30	JA 34
LQ	22	22	20	20	ES 16	ES 16	18	28	JA 34	JA 39	JA 43	44	42	46	43	JA 44	JA 40	JA 36	JA 34	JA 26	JA 24	22	22	23

JUL. 1985 | FOES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | FBES (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9 N, Long 127° 48·4 E Sweep 1 MHz to 25 MHz in 24sec 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	25	20	E	E	AA 64	28	34	43	25	37	44	AA 104	41	37	43	38	41	30	18	E	38	23	E
2	E	ES 16	ES 16	E	E	ES 16	ES 16	25	33	36	40	41	AA 163	AA 138	AA 120	40	34	33	52	41	E	ES 16	E	ES 16
3	ES 16	E	20	E	E	E	26	28	37	AA 88	44	38	AA 53	41	38	40	37	68	36	17	E	E	E	24
4	20	E	AA 53	E	E	ES 16	30	UY 26	40	42	44	AA 53	41	46	43	43	36	35	37	23	E	29	E	ES 16
5	E	UY 37	E	31	23	23	30	32	41	48	AA 78	39	52	61	UY 42	56	48	38	31	31	E	ES 16	ES 16	E
6	E	E	E	E	ES 16	E	20	25	32	38	41	38	46	46	AA 90	AA 145	AA 120	33	32	36	21	25	20	E
7	20	E	ES 16	ES 16	ES 16	ES 16	27	32	32	32	39	39	41	39	40	45	43	30	56	25	25	E	E	26
8	18	29	27	E	E	AA 29	ES 16	33	33	34	39	AA 71	47	47	40	34	32	53	31	19	24	25	20	26
9	29	23	ES 16	E	AA 64	22	AA 84	34	37	38	48	AA 84	43	46	41	36	26	34	38	27	E	ES 16	ES 16	34
10	37	29	26	25	E	E	26	30	38	44	49	AA 88	AA 66	41	40	38	33	33	G	ES 16	30	29	E	E
11	20	AA 83	21	24	AA 63	AA 29	18	30	39	38	41	AA 77	38	46	41	45	69	40	44	24	20	E	22	20
12	E	E	ES 16	ES 16	ES 16	ES 16	17	28	30	37	AA 120	49	48	50	40	48	50	67	44	44	20	30	25	20
13	20	25	17	E	E	21	18	24	31	AA 44	AA 76	AA 84	44	46	36	33	34	35	30	30	25	19	E	18
14	21	AA 84	24	E	E	E	19	25	26	38	48	51	41	41	41	52	38	33	37	33	21	E	E	20
15	E	26	E	E	E	E	29	30	35	40	AA 128	40	40	38	44	43	38	C	62	50	36	30	29	AA 42
16	E	21	20	E	E	ES 16	24	26	29	38	40	AA 77	35	37	40	62	AA 110	44	40	22	E	E	ES 16	E
17	E	E	E	ES 16	ES 16	ES 16	ES 16	29	35	32	34	37	G	G	40	41	35	35	34	42	31	E	E	AA 51
18	21	E	27	E	E	AA 33	17	30	33	38	38	AA 76	39	AA 54	39	44	36	33	29	29	36	20	E	26
19	E	E	E	E	E	E	G	23	29	37	37	AA 68	37	39	44	37	41	33	30	22	E	E	24	24
20	E	ES 16	E	ES 16	AA 42	E	ES 16	25	37	37	35	36	36	37	35	35	36	37	UY 25	18	29	21	AA 50	E
21	E	E	E	18	ES 16	ES 16	18	28	30	40	39	37	41	53	53	44	43	40	28	20	28	27	27	27
22	E	E	E	E	25	21	19	24	30	32	39	40	AA 87	53	51	47	64	UY 57	40	21	17	21	E	17
23	19	ES 16	E	ES 16	ES 16	ES 16	19	26	34	44	34	AA 56	AA 120	AA 144	46	AA 94	AA 62	AA 111	54	53	33	AA 43	24	25
24	35	27	20	E	E	ES 16	18	28	30	47	41	AA 54	AA 70	41	AA 75	AA 70	47	AA 160	66	46	30	27	18	E
25	E	E	E	E	E	E	17	29	30	30	38	39	46	39	37	34	35	28	G	ES 16	E	E	ES 16	ES 16
26	ES 16	E	ES 16	E	ES 16	ES 16	ES 16	G	31	35	40	39	48	44	38	40	47	43	32	24	ES 16	ES 16	24	E
27	E	E	22	17	E	E	30	AA 84	AA 87	39	38	41	40	40	39	43	35	37	30	32	25	E	E	E
28	20	20	20	21	19	ES 16	ES 16	G	32	35	39	42	48	50	48	AA 78	56	30	24	35	30	E	25	35
29	35	26	39	18	25	18	AA 53	28	30	39	39	42	42	45	45	47	51	52	51	53	40	31	21	24
30	E	ES 16	E	E	ES 16	ES 16	17	27	31	33	40	41	40	40	39	50	70	29	30	32	23	E	E	E
31	E	E	E	E	ES 16	E	ES 16	26	32	43	42	51	40	46	52	AA 162	52	37	32	40	E	E	E	UY 36
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31
MED	E	16	16	E	16	16	18	28	32	38	40	42	43	45	41	44	41	37	32	29	21	16	16	20
UQ	20	26	20	16	ES 16	20	26	30	37	41	44	AA 62	50	48	46	51	52	44	42	38	30	27	24	26
LQ	E	E	E	E	E	E	16	25	30	35	38	39	40	40	39	40	36	33	30	22	E	E	E	E

IONOSPHERIC DATA

JUL. 1985 | FMIN (0.1 MHZ) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9' N. Long. 127° 48·4' E Sweep 1 MHz to 25 MHz in 24sec 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 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	18	17	16	21	21	21	20	19	21	16	14	E S 16	E S 16	E S 16	E S 16	E S 16
2	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	22	20	23	23	27	24	25	24	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
3	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20	22	22	21	24	26	26	25	24	20	15	14	E S 16	E S 16	E S 16	E S 16	E S 16
4	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	18	23	26	23	24	27	23	24	17	14	14	E S 16	E S 16	E S 16	E S 16
5	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	16	22	23	23	26	26	23	18	16	14	15	E S 16	E S 16	E S 16	E S 16
6	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	22	26	22	26	27	21	23	18	15	14	14	E S 16	E S 16	E S 16	E S 16
7	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	27	22	25	27	23	22	20	15	15	14	E S 16	E S 16	E S 16	E S 16
8	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	18	24	27	25	26	25	25	23	19	14	14	E S 16	E S 16	E S 16	E S 16
9	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	15	18	23	44	27	27	25	24	23	16	14	15	E S 16	E S 16	E S 16	E S 16
10	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	16	21	23	24	27	27	28	23	19	14	E S 16	E S 16	E S 16	E S 16	E S 16
11	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	18	18	22	23	25	24	23	20	16	14	E S 16	E S 16	E S 16	E S 16	E S 16
12	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	23	23	28	28	27	22	28	22	17	14	E S 16	E S 16	E S 16	E S 16	E S 16
13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	14	16	23	26	24	30	27	23	23	18	14	15	E S 16	E S 16	E S 16	E S 16
14	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	19	22	26	28	28	27	24	22	17	14	14	E S 16	E S 16	E S 16	E S 16
15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	17	23	18	24	20	22	20	20	18	C 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	17	16	23	22	22	22	22	22	20	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	19	18	27	28	24	22	23	18	16	15	14	E S 16	E S 16	E S 16	E S 16	E S 16
18	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	14	14	15	16	16	24	23	24	22	15	14	16	E S 15	E S 16	E S 16	E S 16	E S 16
19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	23	24	25	23	21	23	24	18	15	14	14	E S 16	E S 16	E S 16	E S 16
20	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	16	18	20	26	20	20	21	18	15	16	16	E S 16	E S 16	E S 16	E S 16
21	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	15	18	18	19	25	23	22	15	16	14	14	E S 16	E S 16	E S 16	E S 16
22	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	15	16	16	20	23	23	22	27	24	24	14	14	14	E S 16	E S 16	E S 16	E S 16
23	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	15	18	20	23	24	22	19	16	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
24	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	22	21	20	21	23	23	20	15	14	14	E S 16	E S 16	E S 16	E S 16
25	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	14	15	16	16	18	20	20	16	16	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
26	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	14	14	18	18	19	20	22	19	16	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
27	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	15	15	18	24	27	25	24	25	17	14	17	14	E S 16	E S 16	E S 16	E S 16
28	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	16	18	21	23	30	17	25	23	17	15	15	14	E S 16	E S 16	E S 16	E S 16
29	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	15	22	15	21	23	26	26	18	17	14	15	E S 16	E S 16	E S 16	E S 16	E S 16
30	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	19	24	23	28	28	23	19	20	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
31	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	18	20	23	25	27	22	25	22	14	14	E S 16	E S 16	E S 16	E S 16	E S 16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31
MED	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	15	15	18	21	23	24	25	23	23	20	15	14	E S 16	E S 16	E S 16	E S 16	E S 16
UQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	16	16	19	23	24	26	27	25	24	22	16	15	E S 16	E S 16	E S 16	E S 16	E S 16
LQ	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	14	15	16	18	21	23	22	22	20	17	14	14	14	E S 16	E S 16	E S 16	E S 16

JUL. 1985 | FMIN (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F2 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9 N, Long. 127° 48·4 E Sweep 1 MHz to 25 MHz in 24sec 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 295	S 300	J S 310	F	S 360	A	R 340	J R 340	340	310	360	320	A	235	275	295	320	310	285	295	335	300	J S 315	S 315
2	310	300	305	S 315	335	S 320	325	340	355	325	280	310	A	A	A	270	270	285	315	335	335	S 295	305	S 295
3	295	S 320	S 325	335	S 350	S 350	335	335	365	A	290	G	A	265	275	265	295	320	345	330	320	S 325	S 340	310
4	290	F	A	F	F	F	R 345	355	370	R 335	R 290	A	R 345	305	R 305	305	295	280	295	295	U S 305	F	S 295	F
5	F	F	F	F	F	F	345	305	R 340	R 350	A	R 240	275	270	R 290	290	R 290	R 295	R 315	R 340	S 280	S 280	285	J S 280
6	F	F	F	F	295	S 290	R 350	R 360	350	365	G	305	260	285	A	A	A	305	315	325	310	305	285	S 295
7	290	295	300	310	345	295	330	R 305	330	R 290	R 285	R 270	G	R 265	275	290	325	275	R 290	330	S 320	U S 335	S 290	F
8	S 295	U S 275	S 295	U S 310	Z 330	A	345	320	340	R 320	320	A	275	290	R 280	R 285	305	295	290	305	S 280	300	285	290
9	S 300	U S 300	S 285	F	A	S 315	A	320	R 335	325	U R 320	A	250	R 260	265	270	285	310	R 335	310	S 285	S 285	285	270
10	F	F	335	S 315	U S 310	S 325	R 345	R 320	325	R 320	355	A	A	280	295	300	295	305	310	335	U S 305	U S 320	285	F
11	U S 295	A	U S 355	S 355	A	A	350	360	340	305	290	A	300	305	270	275	285	280	305	315	330	300	285	280
12	310	295	S 295	285	J S 320	335	360	H 320	350	G	A	290	260	270	285	260	260	280	280	290	285	295	S 270	S 285
13	U S 310	U S 285	F	S 270	F	S 295	U R 275	270	U R 290	A	A	A	R 305	275	275	275	R 300	310	330	350	305	290	285	S 320
14	U S 305	A	U S 290	310	U S 305	290	310	360	R 345	R 285	295	R 310	290	285	285	335	300	R 305	320	R 335	335	U S 335	U S 300	S 290
15	S 305	S 295	295	S 340	S 345	S 285	305	335	350	290	A	260	280	310	315	290	290	C	340	J R 325	U S 345	U S 290	U S 300	A
16	U S 300	S 310	J S 340	S 340	S 360	S 300	350	325	345	335	320	A	235	260	290	300	A	300	320	380	S 350	300	285	S 285
17	S 285	S 295	S 320	290	S 290	S 320	335	325	340	340	290	G	G	265	305	290	280	300	340	325	335	295	S 290	A
18	U S 300	U S 280	U S 285	J S 275	S 340	A	320	R 320	R 365	R 260	R 315	A	G	A	260	R 300	315	285	R 295	300	S 350	325	S 300	285
19	S 295	295	295	310	F	F	R 335	R 370	R 335	G	R 270	A	R 290	275	295	315	340	R 305	315	310	S 285	F	S 310	U S 350
20	300	300	305	S 315	A	S 325	330	U R 375	R 365	R 310	G	U R 275	315	335	290	290	305	R 285	345	R 315	325	360	A	S 310
21	F	S 305	S 310	305	F	F	345	R 320	330	G	285	285	285	275	325	330	285	R 290	320	U R 310	295	U S 320	320	U S 310
22	S 310	F	F	S 295	S 320	S 300	R 345	335	R 385	360	U R 320	U R 260	A	305	290	265	290	280	R 300	R 310	S 320	320	U S 310	320
23	U S 305	320	310	S 320	J S 335	335	330	335	365	R 330	305	A	A	A	270	A	A	A	R 320	295	355	A	280	S 305
24	S 305	300	335	F	F	315	325	355	370	R 310	R 260	A	A	310	A	A	270	A	335	R 320	S 350	S 285	295	S 305
25	S 290	U S 295	U S 335	305	310	300	280	320	365	360	G	260	305	310	270	265	295	310	310	325	310	H 270	260	275
26	300	S 285	S 295	315	310	J S 365	350	375	365	S 315	335	G	285	270	300	310	280	285	335	350	325	355	S 275	S 320
27	F	F	F	F	J S 320	335	R 355	A	A	315	305	R 285	290	280	280	R 305	295	U R 300	305	R 285	350	S 325	270	S 280
28	F	F	F	U S 340	F	F	295	365	375	345	R 295	R 305	R 290	290	290	A	270	305	330	335	S 330	305	S 290	F
29	F	F	F	F	F	F	A	R 335	R 315	340	R 305	J R 265	265	270	295	310	305	335	310	325	320	S 325	S 290	S 290
30	S 290	305	F	305	S 350	340	340	R 335	355	340	320	315	270	275	295	280	290	285	315	U R 355	355	290	F	F
31	F	S 295	320	360	350	335	330	325	335	340	295	285	285	295	285	A	285	280	310	335	S 310	S 295	305	S 295
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	21	22	23	20	21	29	30	30	29	27	20	24	28	28	26	28	28	31	31	31	28	29	24
MED	S 300	S 295	S 308	S 310	S 332	S 320	335	335	348	320	295	280	282	278	288	290	292	298	315	325	320	300	290	S 295
UQ	S 305	300	S 325	S 328	S 348	S 335	345	355	365	340	320	305	290	300	295	305	302	305	330	335	335	325	S 300	S 310
LQ	S 295	S 295	S 295	305	S 310	S 300	325	320	335	305	285	260	260	270	275	275	285	285	305	310	S 305	292	285	S 285

The Radio Research Laboratories, Japan

JUL. 1985 | M(3000)F2 (0.01)

IONOSPHERIC DATA

JUL. 1985 | M(3000)F1 (0.01) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16.9' N, Long. 127° 48.4' E Sweep 1 MHz to 25 MHz in 24 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								L	A	A	420	A	A	365	395	A	365	A	L	L				
2								L	L 375	L 380	370	365	A	A	A	370	340	360	A	A				
3							A	L	L 375	A	A	390	A	400	410	360	390	A	A	L				
4								L	A	A	A	A	L 395	A	A	A	380	340	A	L				
5								L 335	A	A	A	L 400	A	A	A	A	A	325	L 340					
6								L	L	L	380	L 410	A	A	A	A	A	L 335	L	A				
7								L	L 385	L	L	L 385	375	L 410	L 420	A	A	365	A					
8								L	365	390	L 405	A	A	A	395	395	390	A	345	L				
9							A		L 380	360	A	A	360	A	375	365	370	355	A	A				
10								L	L 370	A	A	A	A	390	395	395	380	360	350					
11								L	A	385	L 400	A	430	A	410	A	A	A	A					
12							L	L	375	355	A	A	A	A	385	A	A	A	A	A				
13							L	L	L	A	A	A	A	A	420	395	370	350	L 370	A				
14							L	L	L	L	A	A	L	420	395	A	L 365	385	A	A				
15							A	L	L	L 320	A	410	370	395	A	A	355	C	A	A				
16								L	L	375	370	A	440	420	405	A	A	A	A	L				
17								A	L	380	355	420	430	440	380	A	400	370	A	A				
18								L 335	L 380	A	360	A	395	A	390	A	370	380	R 350	A				
19							L 385	L 395	L 420	315	405	A	395	405	A	390	A	365	375					
20							L	L	A	L	320	450	450	420	L 430	430	430	L	L	L				
21								L 395	L 375	370	390	420	395	A	A	A	A	A	L	L				
22								L	395	415	L 325	420	A	A	A	A	A	A	A	L				
23									A	A	L 410	A	A	A	A	A	A	A	A	A				
24								L	L	A	L	A	A	510	A	A	A	A	A	A				
25								L	L 385	425	385	350	A	405	395	380	375	370	L 270	L				
26								L	L	L 390	L 395	420	A	A	395	355	A	A	L	A				
27							A	A	A	430	420	385	430	L 400	410	A	395	L 370	L	A				
28								L	L	L	L	L 375	A	A	A	A	A	L 355	L	A				
29							A	L	L	L	L	345	395	A	A	A	A	A	A	A				
30								L	L	355	395	400	415	380	420	A	A	350	335	A				
31								L	L	A	L 335	A	375	A	A	A	A	315	L	A				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	4	12	15	18	16	15	14	18	10	15	17	8					
MED							L 385	L 365	L 378	380	388	400	395	405	395	385	375	360	348					
UQ								L 395	L 385	390	405	420	430	420	410	395	390	370	360					
LQ								L 335	L 375	358	360	380	385	395	395	365	368	350	338					

JUL. 1985 | M(3000)F1 (0.01)

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IONOSPHERIC DATA

JUL. 1985 | H'F2 (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9' N, Long. 127° 48·4' E Sweep 1 MHz to 25 MHz in 24sec 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							250	270	295	E A 345	250	E A 360	A	650	400	320	285	315	310	295				
2								260	265	300	445	310	A	A	A	360	390	350	290	240				
3							250	265	250	A	410	G	A	480	405	400	330	300	250	240				
4								265	240	310	A	A	505	350	320	305	325	350	330	285				
5								350	275	A	A	650	A	A	320	335	335	300	270					
6								245	260	250	G	350	490	355	A	A	A	305	285	245				
7								260	255	L 320	375	440	G	490	400	325	290	370	A					
8								330	285	310	305	A	430	360	375	350	300	330	305	250				
9							A		300	320	345	A	540	445	375	375	340	295	265	245				
10								305	290	300	275	A	A	420	350	350	340	320	295					
11								255	255	365	360	A	370	355	390	355	A	345	300					
12							250	250	260	G	A	390	440	400	340	390	370	360	305	290				
13							L 420	L 400	L 420	A	A	A	365	410	450	440	370	310	280	250				
14							L 350	240	265	L 430	A	A	330	425	410	A	340	305	270	250				
15							A	305	260	410	A	450	350	290	300	300	320	C	255	260				
16								290	250	315	340	A	575	400	340	315	A	300	265	210				
17								230	295	275	395	G	G	455	365	400	400	345	265	275				
18								340	285	480	335	A	G	A	475	370	350	385	355	270				
19							255	230	220	G	430	A	380	425	365	300	285	370	315					
20							L 300	240	240	350	G	420	335	310	400	435	350	370	270	240				
21								310	290	G	405	390	400	A	A	280	360	320	290	290				
22								260	220	260	335	490	A	350	A 360	400	340	A 370	290	255				
23									250	A 285	370	A	A	A	385	A	A	A	270	315				
24								240	230	A	500	A	A	340	A	A	365	A	A	A 260				
25								300	245	255	G	480	350	330	395	405	325	295	290	250				
26								225	225	300	315	G	365	A 390	350	305	360	340	260	215				
27							235	A	A	335	360	360	390	390	370	290	330	290	280	240				
28								230	220	255	400	360	410	370	340	A	A	325	265	235				
29							A	280	L 300	280	L 310	450	430	375	335	320	305	A	A	A				
30								260	250	275	295	325	375	350	350	360	360	340	295	230				
31								L 300	285	285	340	400	360	335	320	A	355	330	290	250				
	00	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	28	30	27	25	19	23	26	27	25	26	27	28	25				
MED							252	262	260	310	360	420	400	382	365	350	340	330	288	250				
UQ							L 325	302	285	358	410	485	498	425	398	390	360	350	298	270				
LQ							250	242	245	282	335	360	365	350	340	315	325	305	268	240				

JUL. 1985 | H'F2 (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | H*F (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9 N, Long 127° 48·4 E Sweep 1 MHz to 25 MHz in 24 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	325	310	290	290	255	A	A	A	A	A	210	A	A	E A 245	200	A	A 245	A	250	245	225	A 275	260	275
2	300	290	290	275	220	255	250	205	225	210	E A 250	A	A	A	A	A 255	200	A 250	A	A	225	220	265	290
3	300	270	265	265	260	250	A	240	A	A	A	200	A	200	200	265	220	A	A	240	230	255	225	A
4	A 320	S 330	A	S 260	S	E S 250	A 260	A 240	A	A	A	A	A 240	A	A	A	220	A 265	A	A 255	260	A 275	275	280
5	325	E A 350	S 300	S 230	270	240	A 240	E A 275	A	A	A	200	A	A	A	A	A	A	A 250	225	230	S 280	S 280	S 315
6	S 315	290	240	215	S 240	S 240	240	A 225	A 250	A 245	A 240	200	A	A	A	A	A	A	A 245	A	210	A 250	A 270	S 280
7	A 310	290	265	260	220	S 270	265	A 240	A 220	200	A 225	A 225	E A 250	A 220	A 225	A	A	210	A	250	230	210	S 300	A
8	E A 340	A	E A 360	S 280	S 270	A	250	A	A 240	205	210	A	A	A	A 230	215	220	A	A 250	A 245	250	A 270	A 280	A 330
9	A 300	A 280	S 280	255	A	E A 290	A	A 255	A 235	A	A	A	A	A	E A 240	A 240	215	A 235	A	A	S 270	S 275	S 270	A 300
10	A 330	260	240	A 275	S 300	255	270	A	E A 250	A	A	A	A	E A 230	A 220	A 205	225	A 230	230	240	A 250	A	S 295	S
11	A 350	A	295	250	A	A	245	225	A	200	210	A	200	A	A 250	A	A	A	A	245	205	245	260	295
12	270	275	300	300	240	230	240	210	205	210	A	A	A	A	210	A	A	A	A	A	265	210	325	295
13	275	A 290	E A 320	S	S 305	A 290	A 270	A 240	A 240	A	A	A	A	A	205	H 200	A 240	A	A 250	A	A 290	A 270	S 300	265
14	A 300	A	A 270	S 270	S 290	S 310	A 260	A 230	A 230	A 250	A	A	A 230	A 245	A 250	A	A	A 245	A	A	225	260	S 290	E A 305
15	305	320	280	245	250	S	A	250	A 240	A	A	220	210	210	A	A	A 250	C	A	A	235	310	305	A
16	350	300	260	235	200	S	255	210	200	A 250	A 250	A	190	195	A 250	A	A	A	A	A	200	275	300	S
17	310	300	300	305	295	255	235	A	225	210	200	200	200	200	A 250	A	215	A 250	A	A	240	250	300	A
18	A 300	S 330	A	S 290	240	A	260	A 260	A 245	A	A	A	A 225	A	A 240	A	A 260	A 250	A 250	A	235	A 240	S 275	A
19	S 285	S 280	S 280	S 305	S	S 290	230	210	200	A	200	A	200	210	A	A 230	A	A 230	205	250	S 270	270	255	220
20	S 290	S 290	S 310	260	A	E S 275	220	210	A	A 240	190	190	200	210	205	A 220	A 220	A 245	A 230	A 235	A 260	210	A	S
21	S 300	E S 320	E S 315	A	E S 320	240	240	A 225	210	A	A	190	A	A	A	A	A	A	A 230	A 250	A	A 280	A 265	E A 285
22	S 270	S 255	S 275	270	270	265	250	225	225	190	A 215	A 220	A	A	A	A	A	A	A	A 240	230	230	230	235
23	A 285	S 260	S 255	S 280	250	250	245	220	A	A	190	A	A	A	A	A	A	A	A	A	225	A	A	A 250
24	A	A	A 250	S 260	S 270	E S 290	240	210	210	A	A	A	A	A 225	A	A	A	A	A	A	200	E A 310	A 280	S 280
25	310	305	295	245	255	260	240	A 250	200	H 175	215	200	A	200	210	205	245	205	205	230	200	S 215	305	325
26	320	310	280	275	280	250	225	210	205	215	215	200	A	A	210	A	A	A	A	A	200	200	A	300
27	S 300	S 310	A 300	A 280	S 275	S 255	A	A	A	A 235	210	E A 250	A 215	210	210	A	210	E A 250	E A 250	A	215	215	S 265	E S 310
28	A 315	A 310	A 280	240	A	230	210	210	200	190	A 225	A	A	A	A	A	A	A 235	H 210	A	230	260	E A 305	A
29	E A 310	A 300	A	A 275	240	230	A	A 220	200	210	A 220	A	A	A	A	A	A	A	A	A	A 250	A 250	E A 310	A
30	300	300	275	250	225	245	240	210	205	205	200	230	200	200	200	A	A	H 210	A 250	A	200	260	310	310
31	295	310	270	210	S	255	250	220	210	A	A 250	A	200	A	A	A	A	A	A 260	A	240	250	260	300
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	28	29	24	25	25	26	23	17	19	13	13	14	18	9	14	14	15	13	30	29	28	21
MED	301	295	279	265	256	252	245	224	215	210	212	200	200	208	212	A 220	220	A 238	A 250	245	230	252	278	288
UQ	318	310	296	280	S 275	262	255	A 240	A 235	A 235	A 224	220	A 220	A 218	A 240	A 240	A 245	A 250	A 250	250	250	272	300	302
LQ	300	285	268	250	240	242	240	210	205	200	205	200	200	200	205	205	215	A 230	225	240	215	230	265	278

JUL. 1985 | H*F (KM)

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IONOSPHERIC DATA

JUL. 1985 | H'E (KM) | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16.9' N, Long. 127° 48.4' E Sweep 1 MHz to 25 MHz in 24sec 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	A	A	A	A	A	A	A	A	A	A	A	A	S				
2							S	110	110	110	110	110	A	A	A	A	A	A	A	S				
3							S	110	A	A	A	A	A	A	A	A	A	A	A	S				
4							S	105	105	110	110	110	A	A	110	110	110	110	110	A				
5							S	110	110	110	A	110	110	105	110	A	A	A	A	A				
6							S	A	A	110	110	110	110	110	A	A	A	A	A	A				
7							S	110	A	A	105	105	105	105	A	A	A	110	A	A				
8							S	110	A	A	A	110	110	110	A	115	110	110	105	A				
9							A	A	A	A	A	B	110	A	A	A	A	A	A	A				
10							S	110	105	A	A	A	A	115	110	115	A	A	105	S				
11							S	A	A	105	105	110	110	110	110	110	110	110	110	S				
12							S	110	110	110	110	110	110	110	110	A	A	A	A	S				
13							S	110	A	110	A	A	A	A	A	A	110	120	110	A				
14							S	A	A	A	A	105	110	110	110	110	110	110	A	A				
15							S	110	110	A	A	A	A	A	A	A	110	C	110	S				
16							S	110	A	A	A	A	110	A	A	A	A	A	A	S				
17							S	110	A	A	A	110	110	110	110	105	105	105	110	S				
18							S	A	A	A	A	A	A	A	110	A	A	105	110	S				
19							S	A	110	110	A	110	110	110	110	110	A	A	A	A				
20							S	110	105	A	A	A	A	A	A	A	105	A	A	A				
21							S	110	110	105	A	105	110	110	110	105	105	A	A	A				
22							S	105	A	A	110	A	A	A	115	115	110	105	A	A				
23							S	A	110	A	110	110	110	115	115	110	110	105	A	S				
24							S	105	105	A	A	105	105	105	105	105	A	A	A	A				
25							S	A	A	A	A	A	A	A	A	A	A	A	110	S				
26							S	105	A	A	A	105	105	110	110	110	110	110	110	S				
27							S	A	A	A	105	A	A	A	A	A	A	105	105	A				
28							S	110	A	A	A	A	A	110	110	110	105	105	105	A				
29							A	A	A	110	A	A	A	A	A	A	105	105	105	S				
30							S	110	A	A	A	110	110	110	110	110	110	110	110	S				
31							S	115	110	A	A	A	A	A	A	A	A	A	A	S				
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT								20	12	10	9	16	16	16	16	14	15	15	14					
MED								110	110	110	110	110	110	110	110	110	110	110	110					
UQ								110	110	110	110	110	110	110	110	110	110	110	110					
LQ								110	105	110	105	105	110	110	110	110	105	105	105					

JUL. 1985 | H'E (KM)

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IONOSPHERIC DATA

JUL. 1985 | H'ES (KM)

135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9' N, Long 127° 48·4' E Sweep 1 MHz to 25 MHz in 24sec 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	110	105	110	110	110	110	105	105	105	105	105	105	105	105	105	105	105	105	100	100	100	110	100	100
2	100	S	S	100	100	S	S	120	115	115	110	110	105	105	100	105	105	100	100	100	100	S	100	S
3	S	110	110	110	110	110	125	120	105	105	105	105	105	105	105	105	105	100	100	110	100	115	105	110
4	100	100	105	105	110	S	110	110	120	120	120	120	130	125	135	135	135	120	115	110	115	110	125	S
5	105	105	105	105	105	105	125	120	115	115	105	110	110	105	110	105	105	105	100	100	105	S	S	100
6	100	100	110	100	S	110	105	110	110	120	125	120	115	115	110	110	105	125	100	100	100	100	100	100
7	120	100	S	S	S	S	135	130	E G 140	110	115	120	120	125	110	110	110	E G 150	110	110	110	110	100	100
8	125	115	110	110	105	110	S	130	125	135	110	125	120	120	135	120	120	115	110	100	100	100	100	100
9	120	120	S	115	105	110	105	105	105	110	105	110	110	105	105	105	105	100	100	100	100	S	S	105
10	110	110	105	105	105	110	115	120	110	105	105	105	105	125	130	130	110	100	G	S	100	110	100	110
11	110	110	105	105	105	105	145	100	100	130	120	110	120	115	135	120	115	115	110	105	100	105	100	100
12	100	100	S	S	S	S	110	110	115	115	110	110	110	110	110	105	100	100	100	100	100	100	100	110
13	105	110	110	110	110	110	130	135	E G 140	140	110	110	105	105	105	105	E G 160	135	120	110	100	100	110	110
14	110	110	110	110	110	110	110	110	110	110	110	110	135	150	150	125	125	125	115	110	110	110	100	120
15	125	115	110	125	110	110	105	110	110	105	100	105	105	105	100	120	120	C	110	105	100	100	100	100
16	100	100	105	105	105	S	110	110	105	105	105	100	110	105	100	100	100	100	100	110	110	110	S	100
17	115	110	110	S	S	S	S	145	105	105	105	120	G	G	145	130	125	115	110	110	110	100	110	110
18	105	110	110	110	110	105	105	105	110	125	125	115	125	125	120	125	120	115	110	110	105	100	105	110
19	100	105	105	105	105	110	100	110	120	125	130	110	120	125	120	120	110	105	105	105	100	100	100	110
20	110	S	110	S	110	110	S	120	110	105	110	105	105	105	105	105	110	110	105	100	110	110	100	100
21	100	110	110	110	S	S	140	140	120	120	110	120	140	130	120	120	120	120	120	100	100	100	110	110
22	105	105	105	105	105	105	105	110	130	150	115	120	125	125	125	120	110	110	105	100	100	100	100	100
23	95	S	100	S	S	S	130	140	120	120	125	120	120	120	120	110	110	105	105	105	100	100	100	95
24	100	100	100	100	95	S	130	115	115	110	110	115	115	115	110	110	105	120	100	100	100	100	100	100
25	100	100	100	100	100	105	105	105	105	105	105	105	105	105	105	100	105	100	100	S	100	100	S	S
26	S	100	S	110	S	S	S	G	105	105	150	150	125	115	120	120	115	110	110	110	S	S	110	110
27	110	110	110	110	110	110	105	105	105	105	110	140	E G 150	E G 150	E G 150	135	135	130	120	110	110	110	115	110
28	110	110	110	100	100	S	S	G	100	140	E G 155	150	135	130	130	115	110	125	125	110	110	110	100	110
29	105	105	105	105	100	100	105	105	105	E G 160	140	140	140	135	135	120	120	120	115	110	110	105	105	105
30	110	S	105	105	S	S	125	130	105	105	105	110	115	110	115	125	110	115	110	105	105	105	105	105
31	100	105	105	100	S	100	S	125	115	110	110	105	105	105	105	100	100	105	105	105	105	105	105	105
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	26	26	22	19	24	29	31	31	31	31	30	30	31	31	31	30	30	29	30	27	27	28
MED	105	105	108	105	105	110	110	110	110	110	110	110	115	115	112	115	110	111	108	105	100	105	100	105
UQ	110	110	110	110	110	110	128	125	116	121	119	120	125	125	129	120	120	120	110	110	110	110	105	110
LQ	100	100	105	105	105	105	105	110	105	105	105	108	105	105	105	105	105	105	100	100	100	100	100	100

JUL. 1985 | H'ES (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUL. 1985 | TYPES OF ES | 135° E Mean Time (G.M.T. + 9 h)

Station OKINAWA Lat. 26° 16·9 N, Long 127° 48·4 E Sweep 1 MHz to 25 MHz in 24 sec in automatic operation

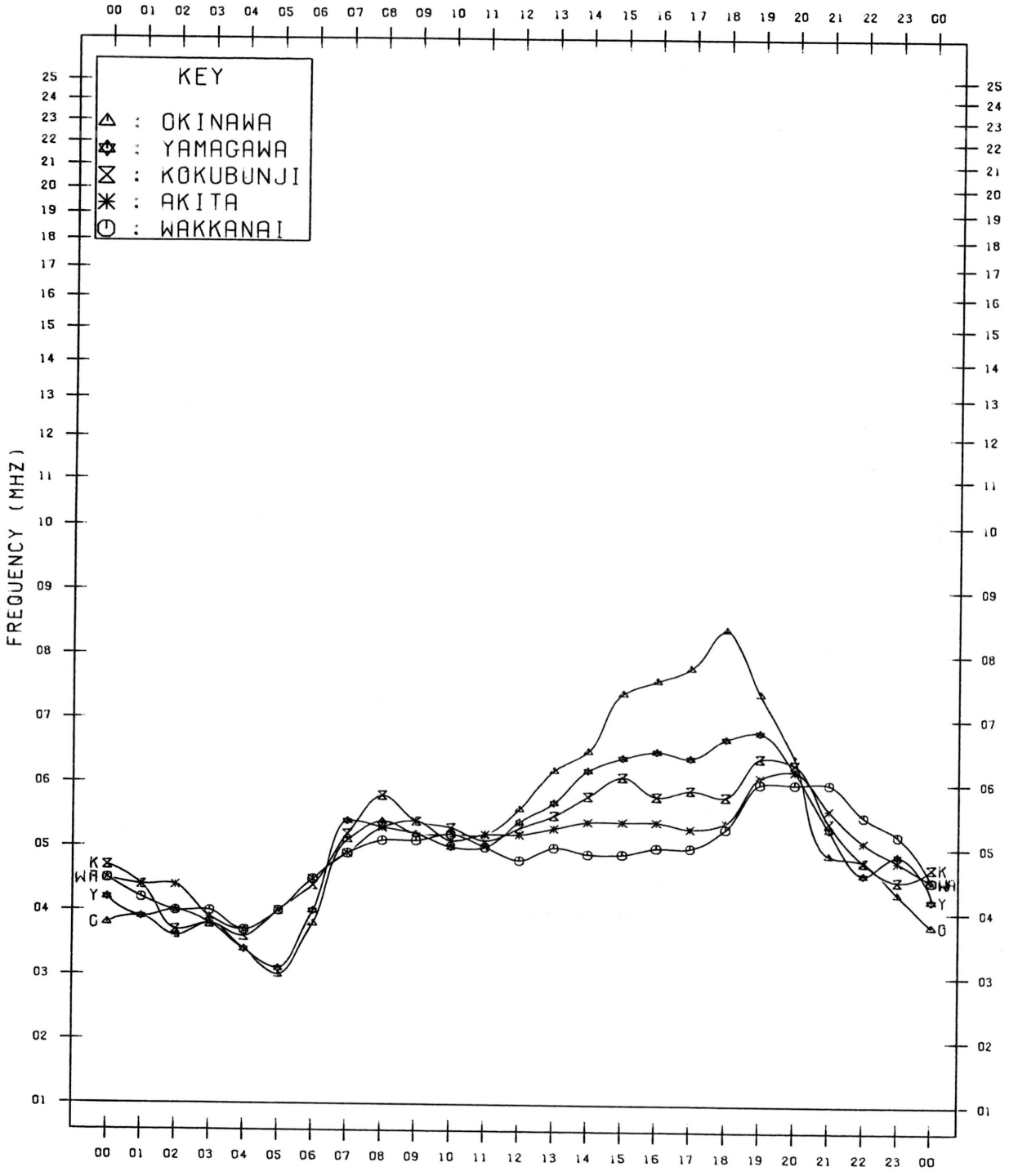
Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	FF 21	F 2	F 2	F 2	F 2	F 2	L 3	L 3	L 3	L 4	L 2	L 3	L 3	L 2	L 2	L 3	L 2	L 4	L 3	L 3	F 2	F 3	F 3	F 2
2	F 3			F 2	F 2			C 1	C 2	C 1	C 2	C 2	L 4	L 6	L 6	L 2	L 2	L 5	L 4	L 5	F 3		F 2	
3		F 3	F 3	F 2	F 3	F 3	C 3	C 1	L 3	L 7	L 3	L 1	L 2	L 2	L 2	L 2	L 3	L 5	L 2	CL 11	F 4	FF 12	F 3	FF 51
4	F 2	F 2	F 2	F 3	F 2		C 5	C 2	C 2	C 2	C 2	C 3	HL 11	HL 11	H 1	HL 21	HL 11	CL 21	C 3	L 2	FF 21	F 6	FF 24	
5	F 3	F 5	F 2	F 5	F 4	F 5	C 5	C 3	C 3	C 4	L 5	C 1	C 3	C 4	C 1	L 5	L 5	L 4	L 4	L 2	F 3			F 1
6	F 3	F 2	FF 21	F 1		F 4	L 2	L 1	L 3	C 1	C 2	C 1	C 2	C 1	L 4	L 7	L 6	CL 13	L 3	L 3	F 5	F 4	F 2	F 2
7	F 4	F 1					H 1	H 4	HL 11	L 1	C 2	C 1	C 1	C 1	L 2	L 3	L 2	H 1	LL 52	L 4	FF 32	F 1	F 1	F 7
8	FF 52	FF 72	FF 72	F 2	F 3	F 5		HL 51	HL 21	HL 11	LH 11	C 2	C 2	C 2	HL 11	C 1	C 1	C 4	C 3	L 4	F 4	F 5	F 4	F 3
9	FF 32	FF 26		F 3	F 6	F 7	L 5	L 5	L 3	L 2	L 3	L 1	C 1	L 2	L 2	L 2	L 1	L 3	L 5	L 3	F 3			F 3
10	F 7	F 3	F 3	F 7	F 2	F 2	C 5	C 2	C 3	L 4	L 3	L 3	L 3	H 1	H 1	H 1	L 1	L 2			F 3	FF 54	F 2	F 2
11	F 4	F 3	F 5	F 7	F 7	F 3	H 1	L 3	L 4	HC 22	C 2	C 3	C 1	C 1	H 1	C 2	C 7	C 4	C 3	L 2	F 3	F 3	F 4	F 4
12	F 4	F 2					L 1	C 2	C 1	C 2	C 4	C 2	C 3	C 3	C 2	L 3	L 4	L 6	L 7	L 3	F 3	F 4	F 4	F 3
13	F 5	F 2	F 1	F 2	F 4	F 2	H 1	H 1	HL 11	H 1	L 2	L 2	L 2	L 2	L 1	L 1	H 1	HL 11	C 2	L 5	F 4	F 1	F 2	F 1
14	F 7	F 6	F 3	F 2	F 1	F 2	L 1	L 1	L 1	L 1	L 3	C 2	H 1	H 1	H 1	C 3	C 2	C 2	CL 41	L 7	F 3	F 2	F 1	FF 31
15	FF 11	F 6	F 3	F 1	F 2	F 2	L 3	C 3	C 2	L 3	L 6	L 2	L 2	L 2	L 2	CL 12	C 1		C 6	L 6	F 4	F 5	F 4	F 5
16	F 2	F 3	F 3	F 2	F 1		C 2	C 1	L 1	L 3	L 3	L 4	C 1	L 1	L 3	L 4	L 6	L 5	L 3	CL 21	F 2	F 2		F 2
17	F 2	F 3	F 2					H 1	L 3	L 2	L 1	C 1			H 1	H 2	H 2	C 3	C 5	C 4	FF 52	F 2	FF 22	FF 26
18	F 3	F 4	F 5	F 4	F 3	F 5	L 4	L 7	L 2	CL 31	CL 21	CL 31	CL 21	CL 21	CH 11	HL 21	CL 21	C 2	C 3	C 6	F 4	F 3	F 5	FF 13
19	F 1	F 2	F 1	F 2	F 3	F 2	L 1	L 1	C 1	C 2	HL 12	C 3	C 1	C 2	C 2	C 1	L 3	L 2	L 2	L 2	F 1	F 4	F 5	FF 43
20	F 1		F 1		F 6	F 1		C 2	C 4	L 3	L 1	L 2	L 1	L 2	L 2	L 2	CL 11	L 2	L 2	L 3	LL 33	LL 22	L 2	L 2
21	F 1	F 1	F 1	F 3			H 1	H 1	C 2	C 3	L 2	C 1	H 1	H 3	C 4	C 3	C 2	CL 22	CL 11	L 3	F 5	F 5	F 3	F 2
22	F 2	F 2	F 2	F 2	F 7	F 7	L 3	LH 21	HL 11	HL 11	CH 11	CL 11	CL 41	CL 31	C 2	C 2	C 4	C 3	L 3	LC 24	F 3	F 3	F 1	F 4
23	F 3		F 1				H 1	HL 23	CL 42	CL 31	C 1	C 3	C 6	C 5	C 3	C 7	C 3	L 5	L 7	L 7	F 8	F 6	F 3	F 4
24	F 5	F 5	F 3	F 2	F 1		C 1	C 2	C 2	L 3	L 2	C 3	C 4	CH 11	C 4	C 7	L 3	LL 27	L 6	L 4	F 6	F 3	F 2	F 2
25	F 2	F 3	F 4	F 2	F 2	FF 22	L 1	L 3	L 2	L 2	L 2	L 2	L 3	L 2	L 2	L 3	L 2	L 2	L 2		F 1	F 1		
26		F 2		F 3					L 2	L 2	HL 12	HL 11	C 2	C 4	C 1	C 2	C 2	C 3	C 5	L 3			F 7	F 4
27	F 4	F 2	F 6	F 3	F 3	F 2	L 6	L 6	L 5	L 3	C 2	HL 21	HL 11	HL 11	HL 11	HL 21	HL 21	H 3	C 2	L 2	FF 32	F 1	F 4	F 3
28	F 2	F 2	F 2	F 1	F 2				L 2	HL 21	HL 11	HL 11	HL 22	H 2	H 2	C 5	C 6	C 1	C 1	L 7	FF 24	F 3	F 2	FF 32
29	F 2	F 2	F 6	F 5	F 7	F 3	L 5	L 2	L 1	H 1	HL 21	HL 21	HL 12	HL 21	HL 21	CL 31	C 3	C 5	C 4	L 6	F 4	F 7	F 7	F 7
30	F 1		F 1	F 1			C 1	C 1	L 1	L 1	L 1	C 1	C 1	C 2	C 1	C 2	C 6	C 1	C 4	L 3	F 3	F 3	FF 21	F 3
31	F 4	F 2	F 1	F 2		F 2		C 2	C 3	L 3	L 2	L 3	L 2	L 2	L 3	L 4	L 3	L 4	L 3	L 4	F 2	F 2	F 5	F 4
	00	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

JUL. 1985 | TYPES OF ES

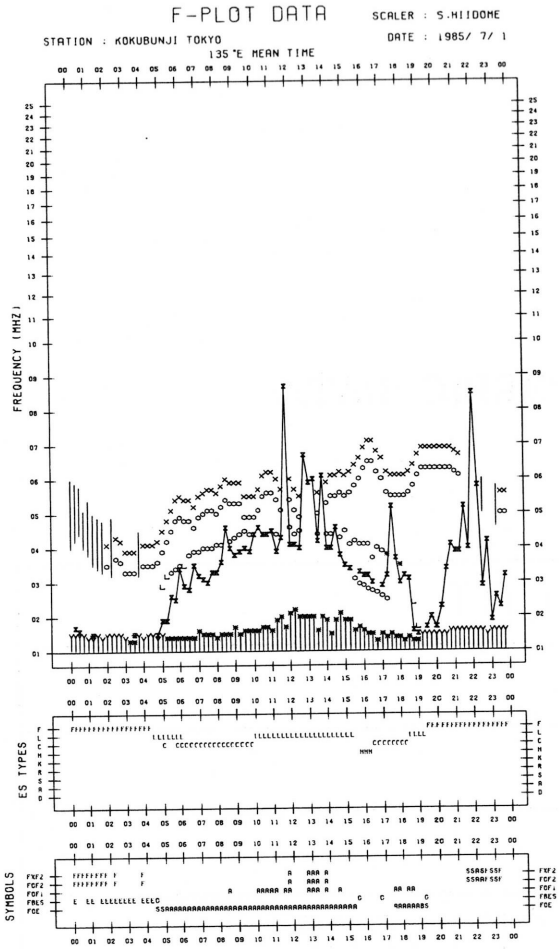
MONTHLY MEDIAN VALUES OF FOF2

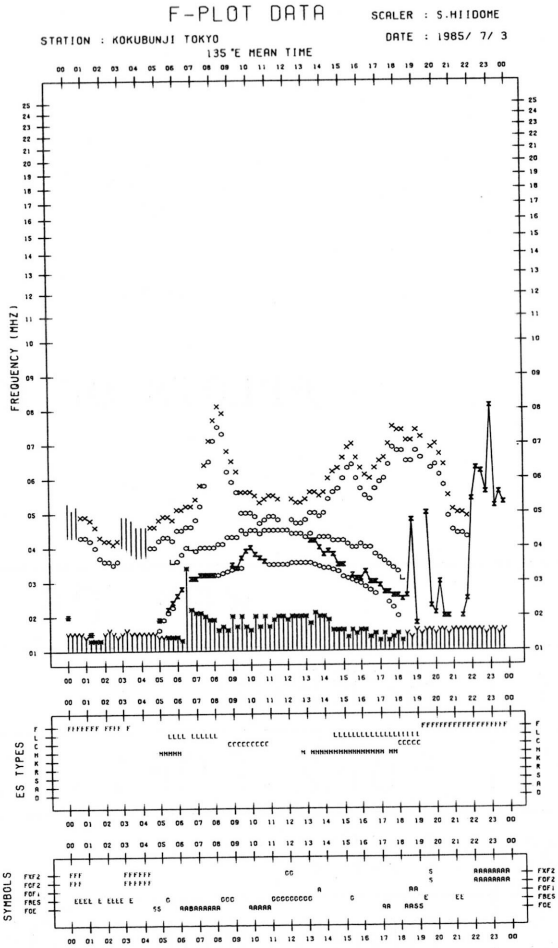
135 °E MEAN TIME JUL. 1985

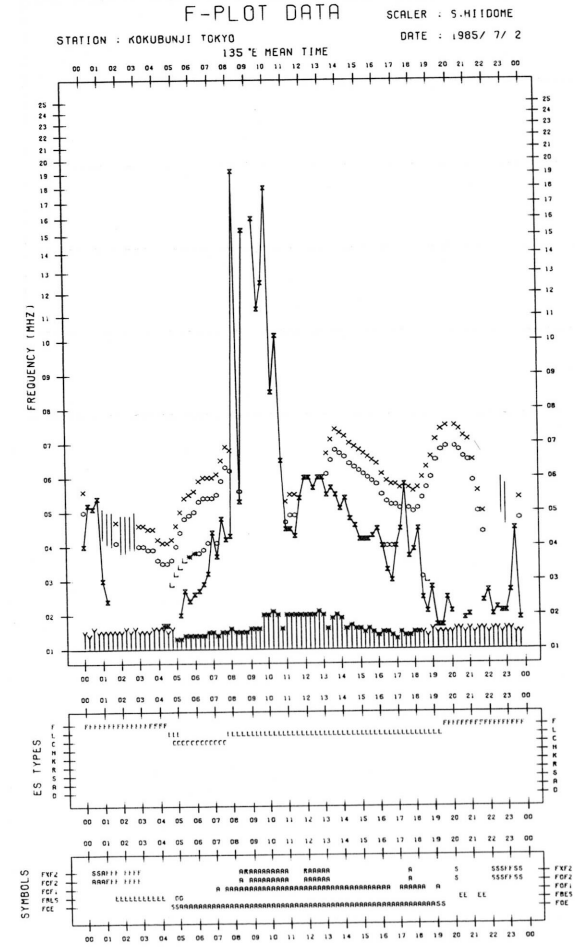


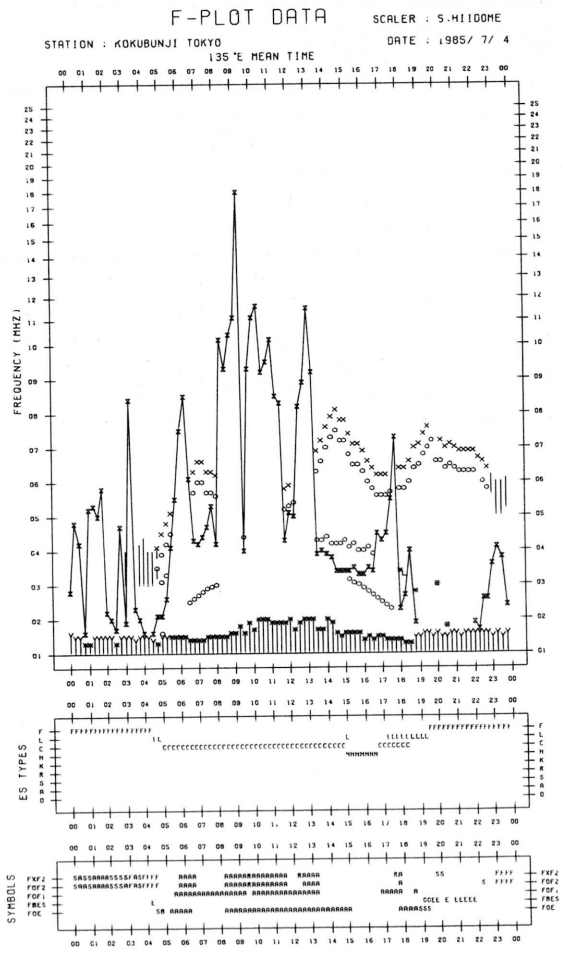
f-PLOTS OF IONOSPHERIC DATA

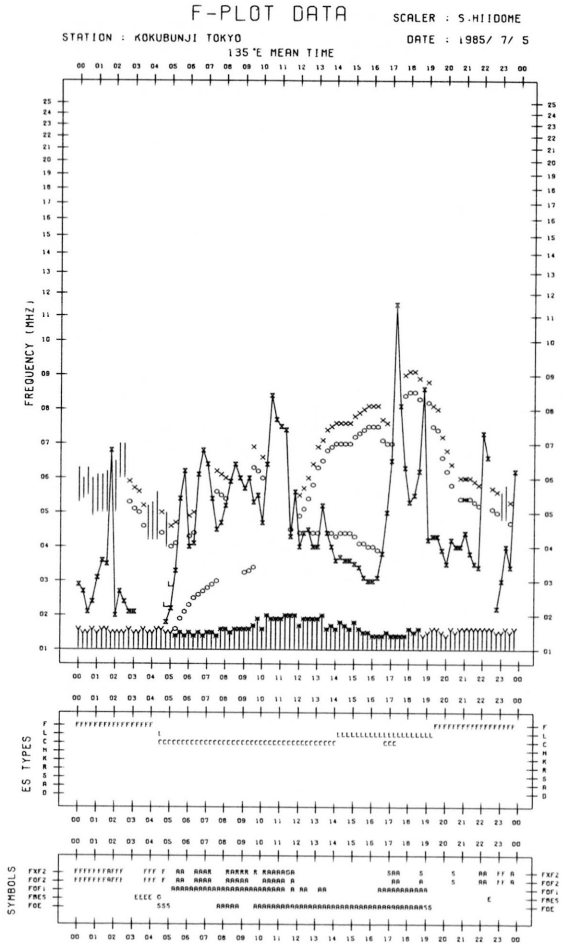
KEY OF F-PLOT	
!	SPREAD
⬡	FOF2,FOF1,FOE
×	FXF2
✳	DOUBTFUL FOF2,FOF1,FOE
⧖	FBES
⌊	ESTIMATED FOF1
*,Y	FMIN
∧	GREATER THAN
∨	LESS THAN

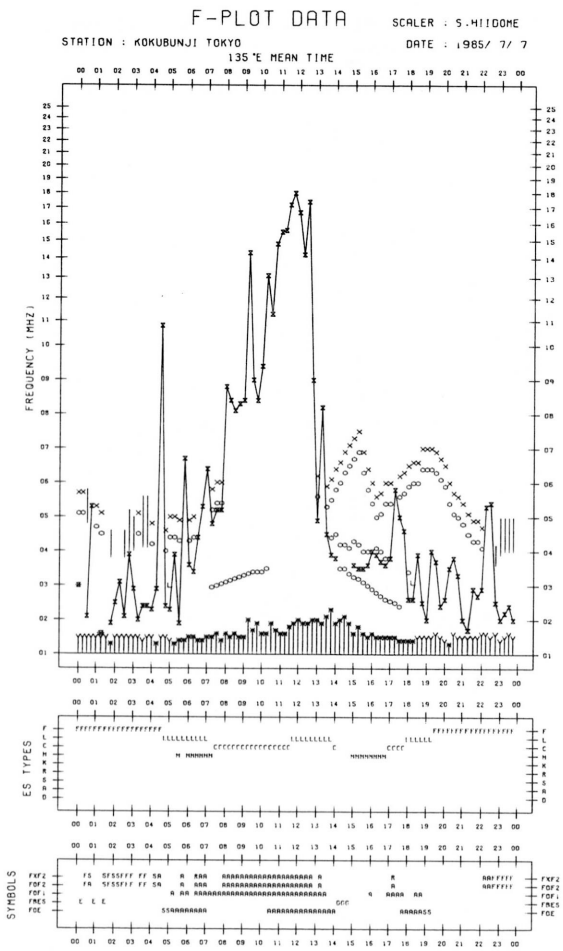

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 1
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 3
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 2
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 4
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 5
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS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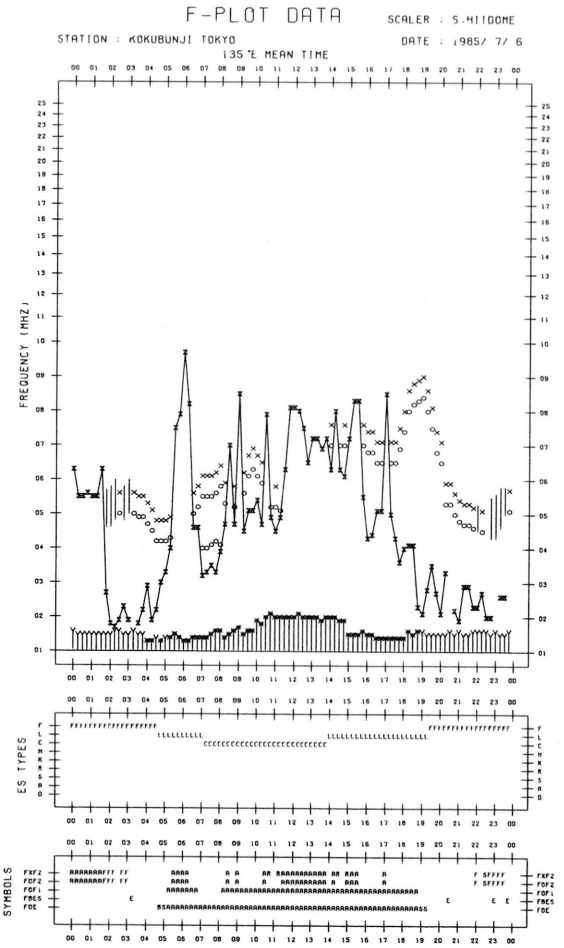
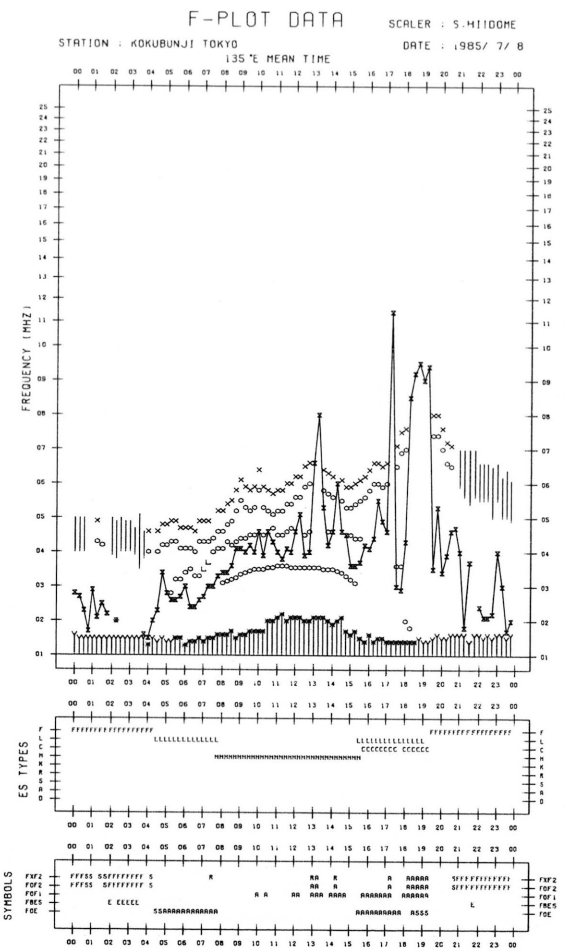
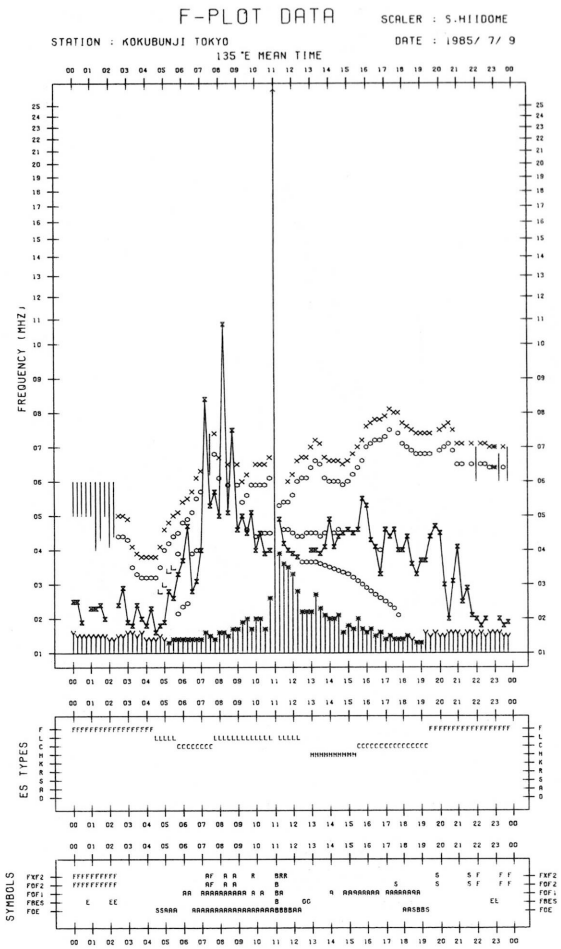
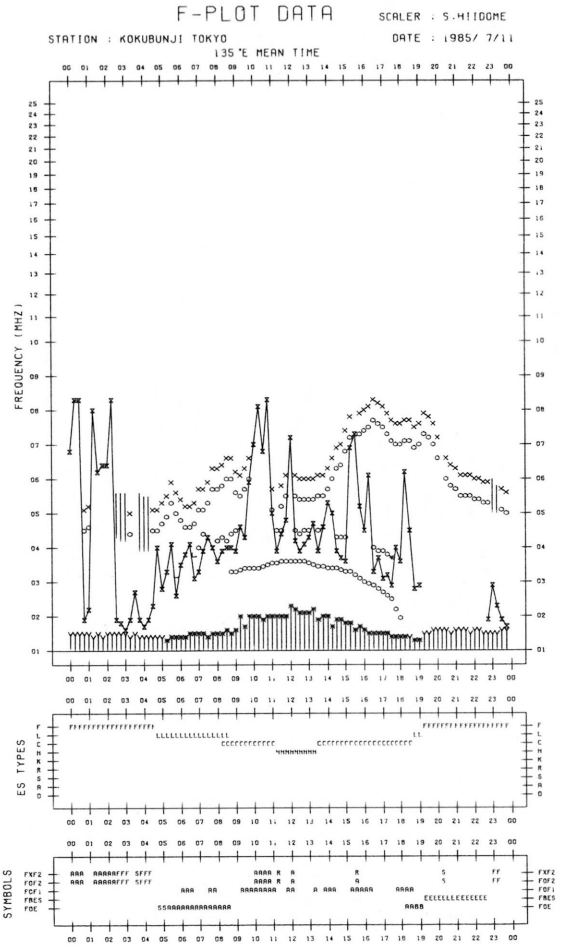
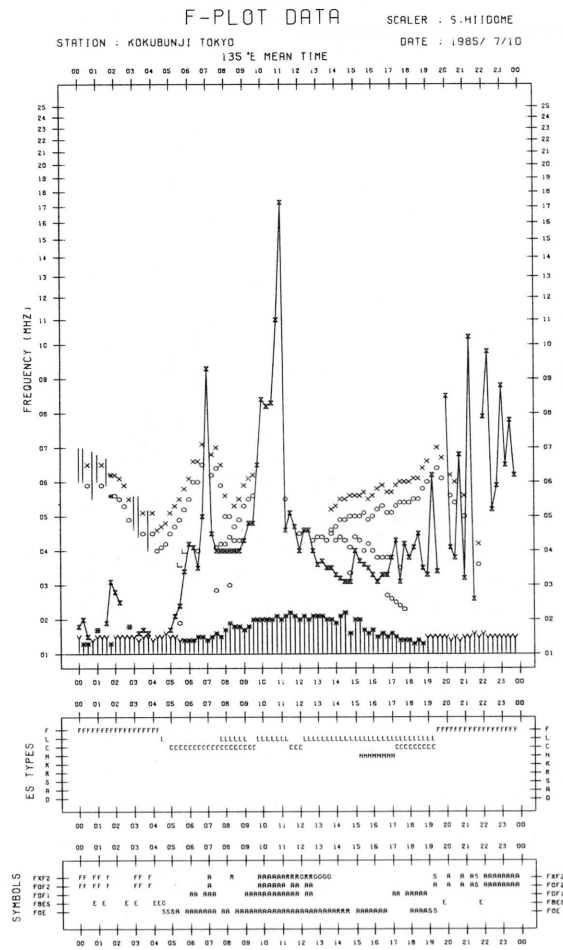
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 7
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

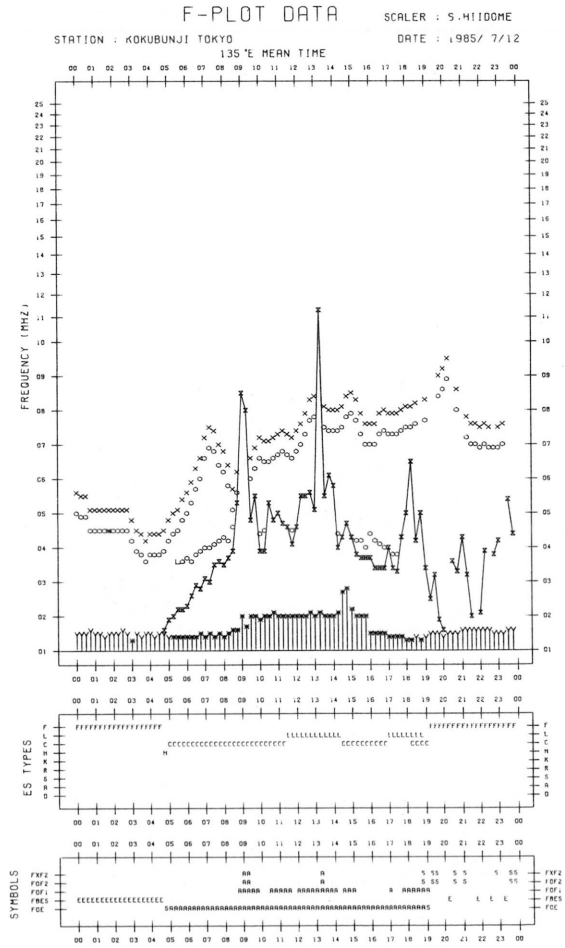

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 6
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

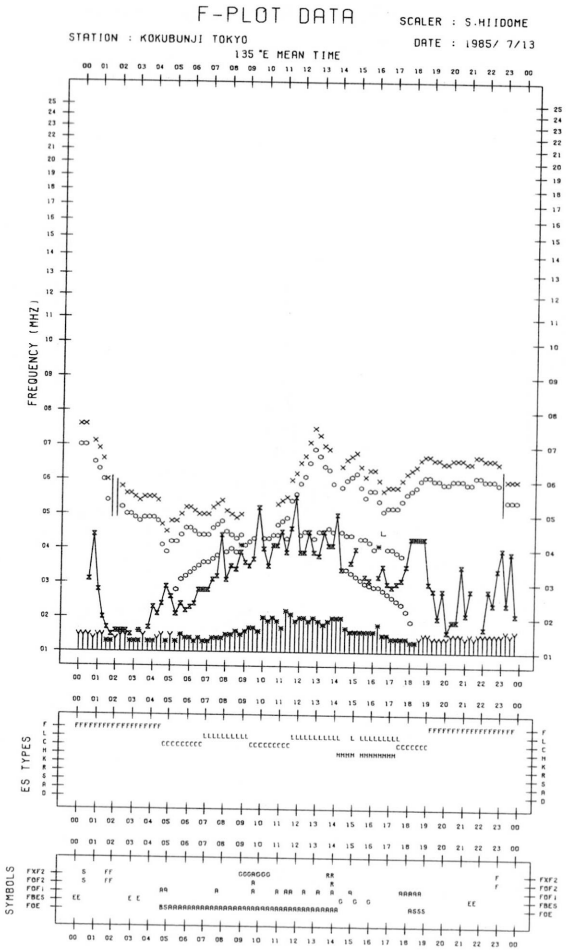

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 8
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

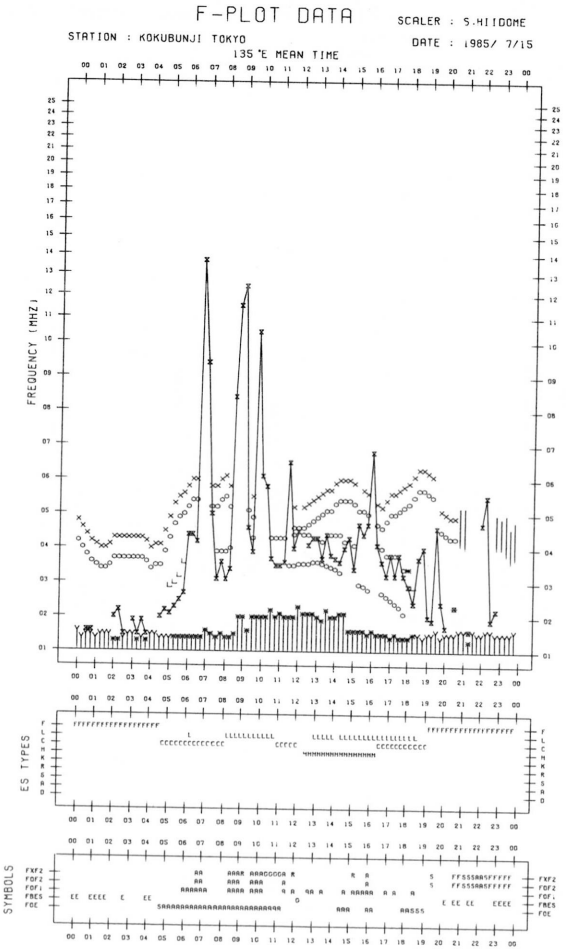

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/ 9
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

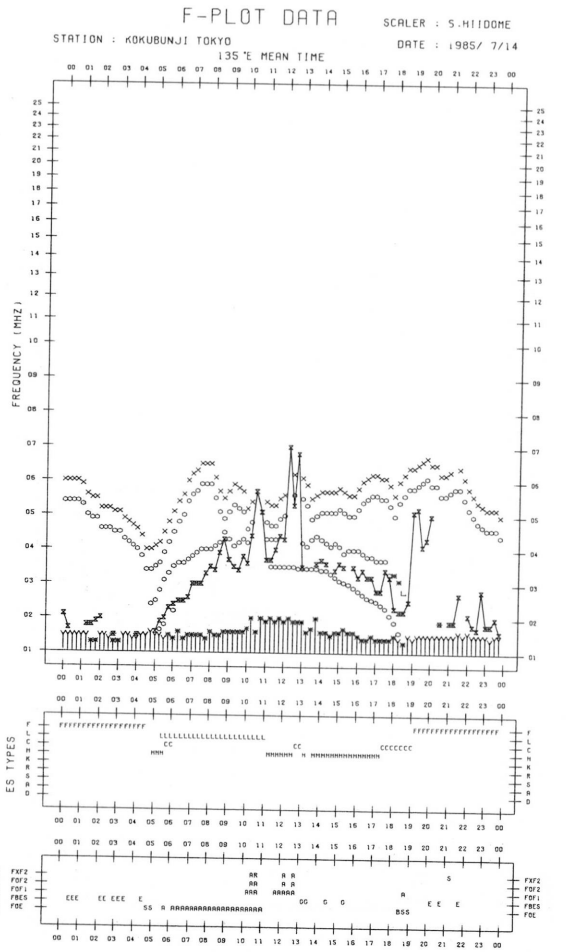

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/11
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

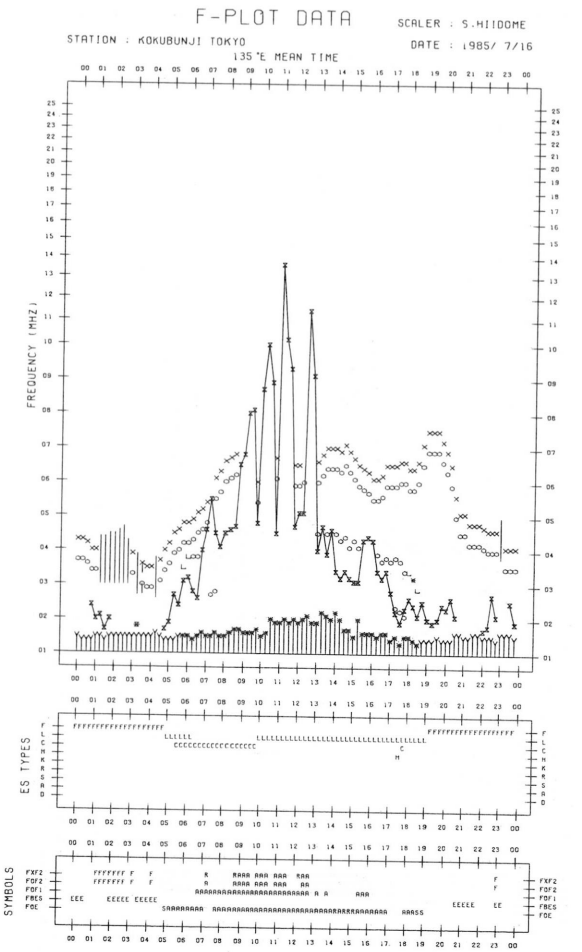

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/10
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

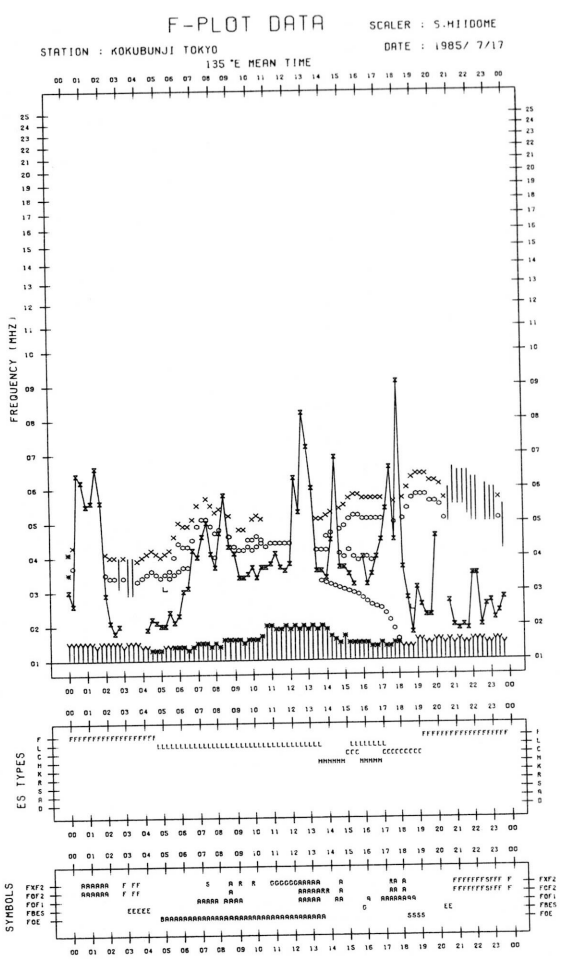

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/12
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

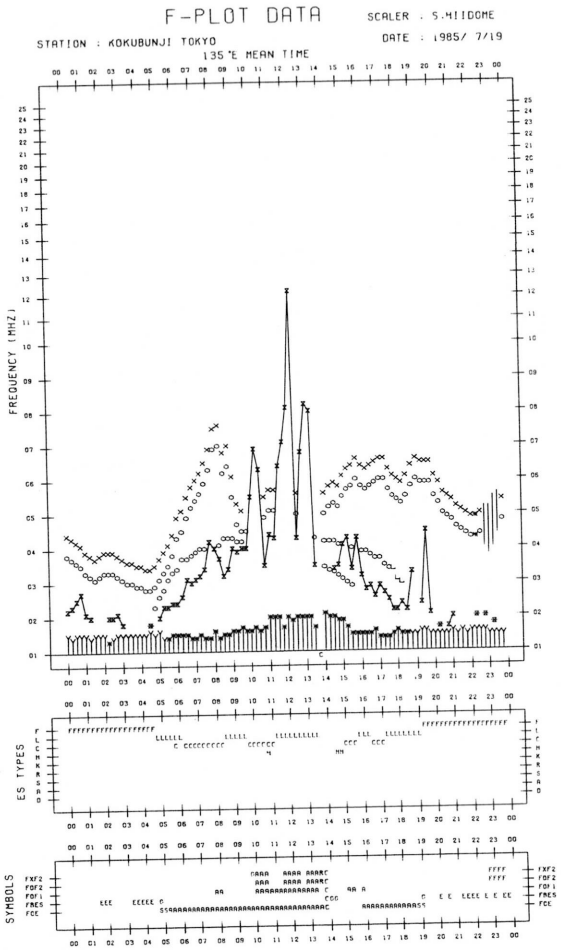

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/13
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

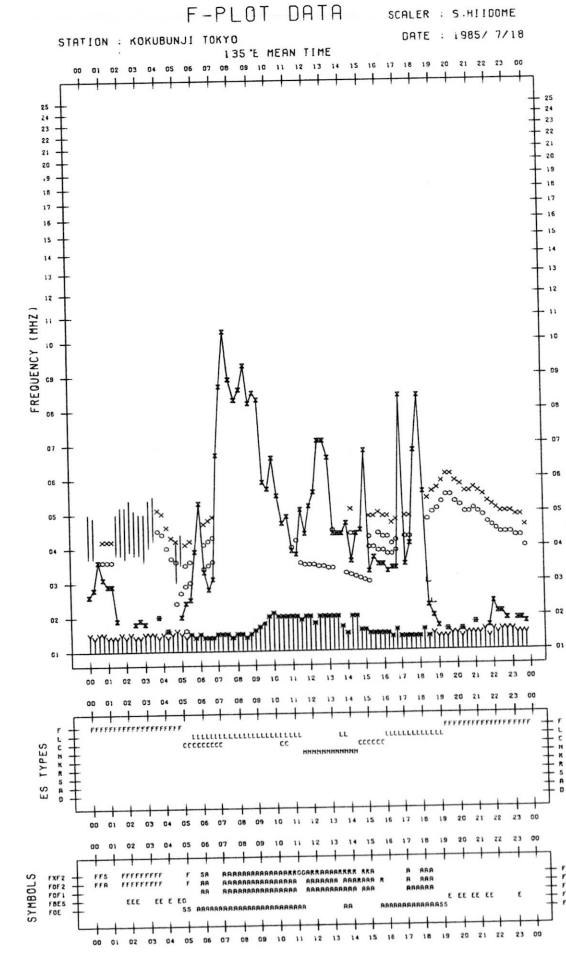

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/15
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

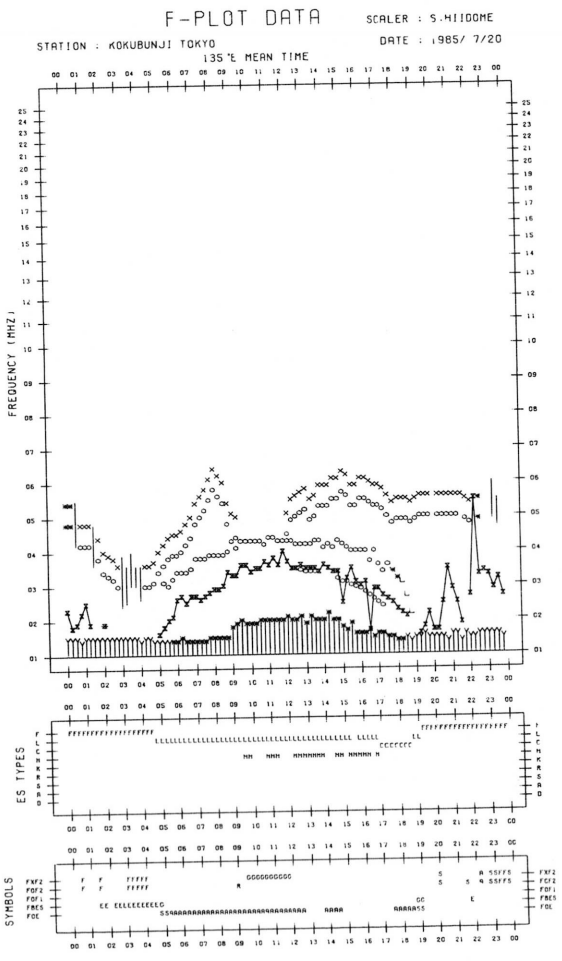

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/14
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

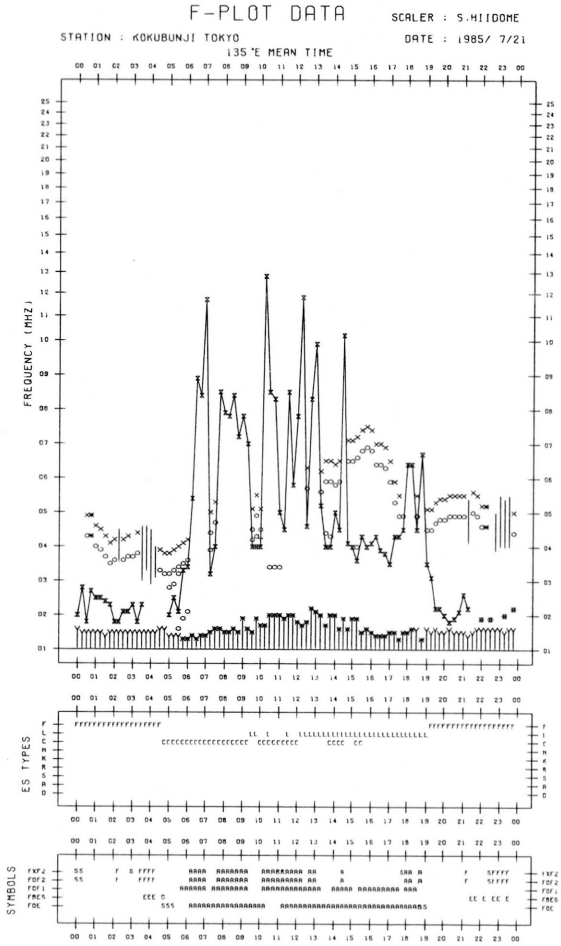

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/16
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

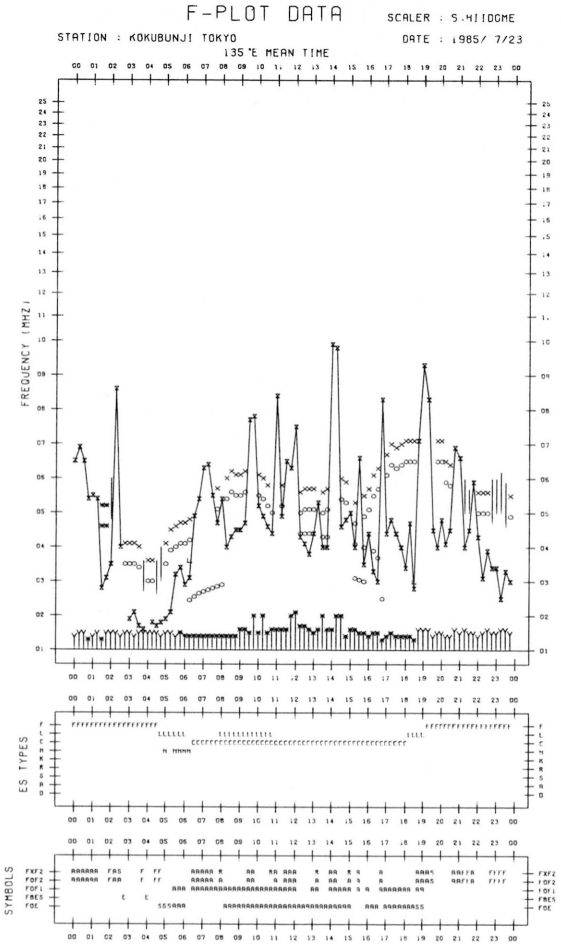

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/17
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS
FXF2
FDF2
FDF1
FMES
FDE

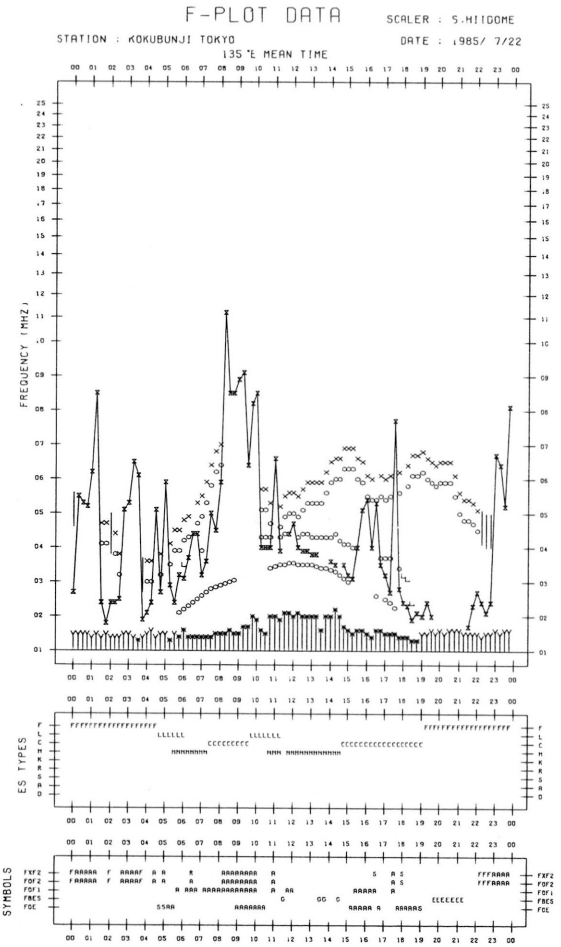

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/19
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS
FXF2
FDF2
FDF1
FMES
FDE

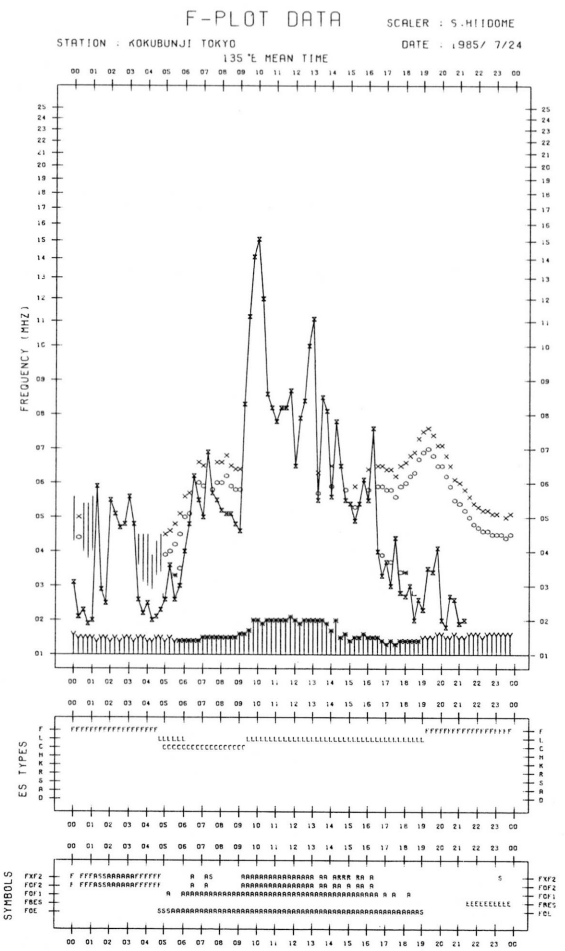

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/18
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS
FXF2
FDF2
FDF1
FMES
FDE

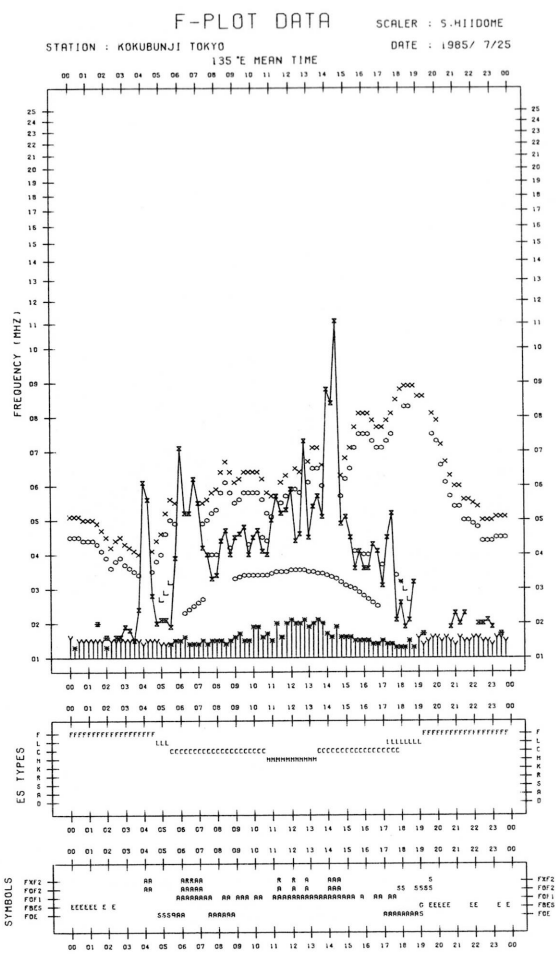

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/20
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS
FXF2
FDF2
FDF1
FMES
FDE

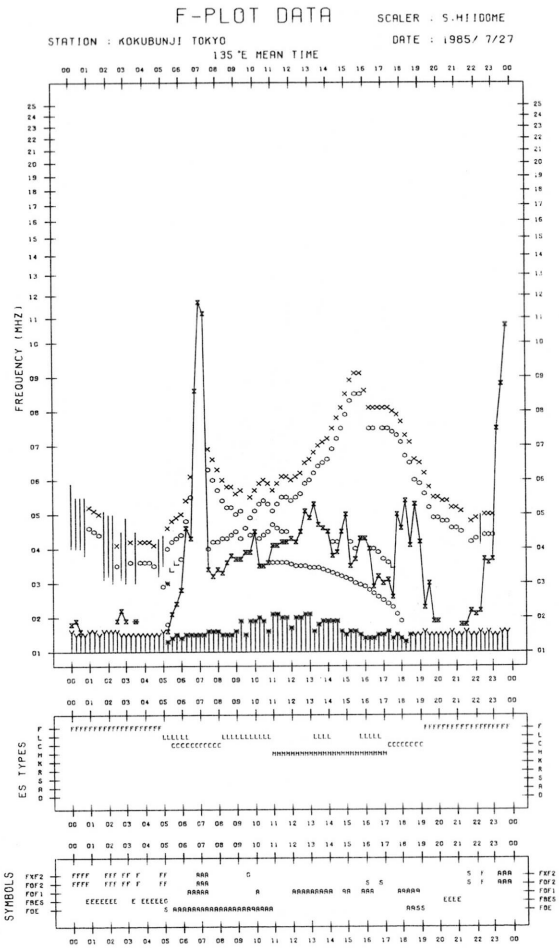

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/21
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

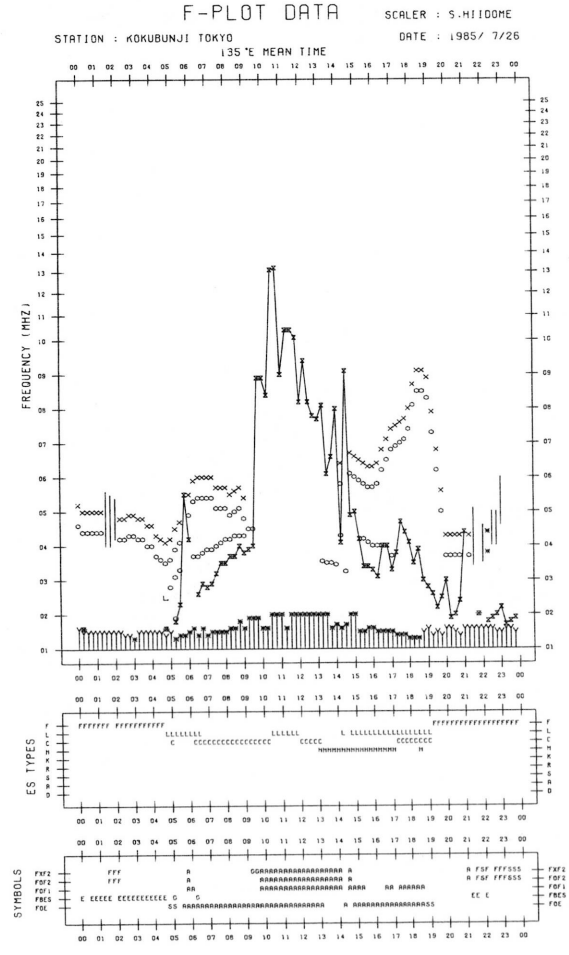

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/23
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

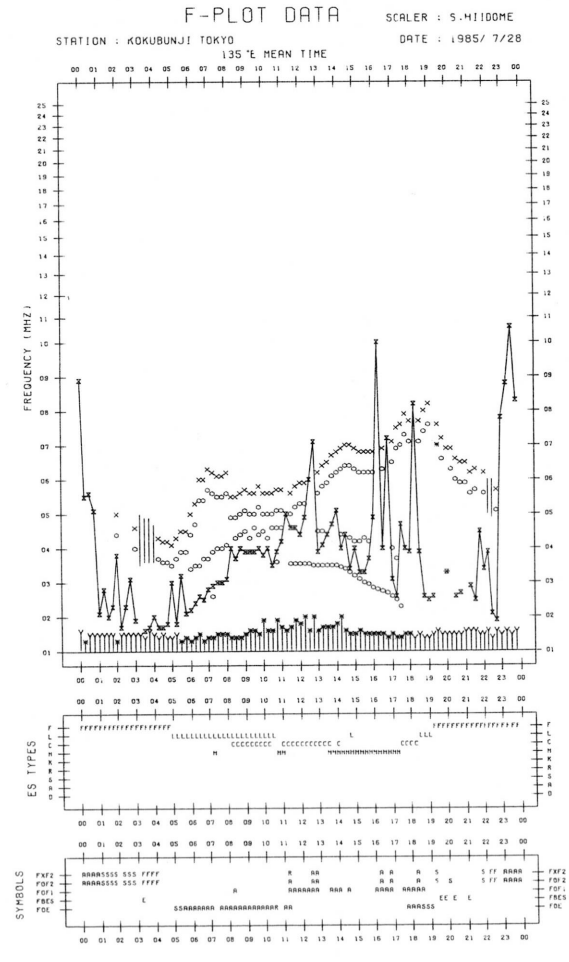

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/22
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

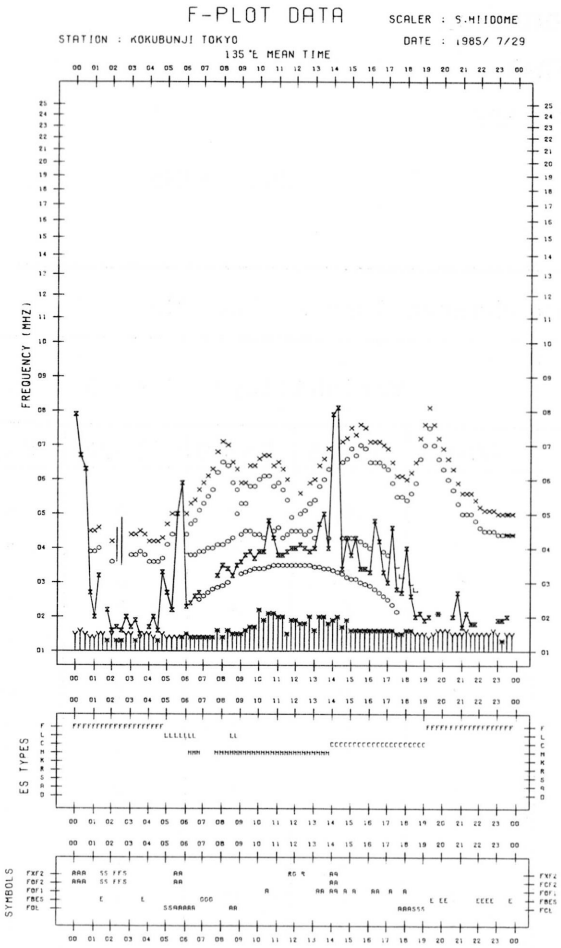

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/24
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

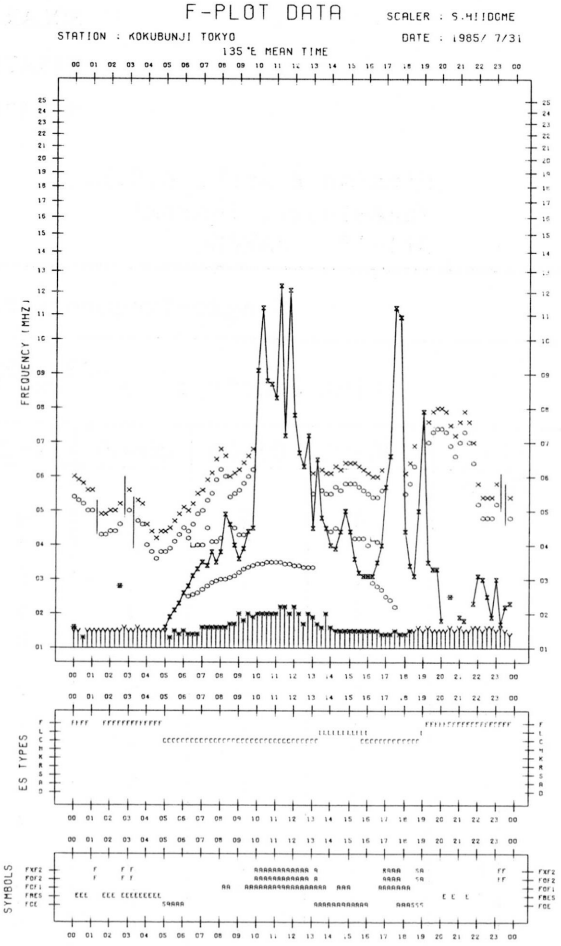

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/25
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

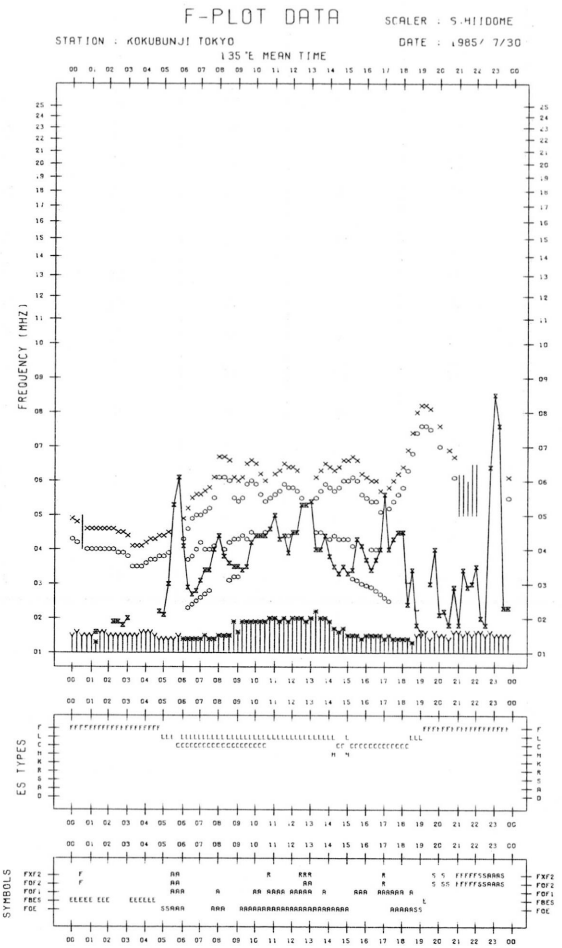

F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/27
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/26
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/28
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/29
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/31
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS


F-PLOT DATA
SCALER : S.HIIDOME
STATION : KOKUBUNJI TOKYO
DATE : 1985/ 7/30
135 °E MEAN TIME
FREQUENCY (MHZ)
ES TYPES
SYMBOLS

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

July 1985

Single-frequency total flux observations at 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	q	q	6	q	6	*	*	*	*	*
2	q	6	q	6	6	*	*	*	*	*
3	7	7	q	6	7	*	*	*	0	*
4	6	q	q	6	6	*	*	*	*	*
5	6	q	q	6	6	*	*	*	*	*
6	6	6	6	7	6	0	0	0	1	0
7	7	7	7	7	7	*	2	1	0	1
8	7	7	7	8	7	*	*	*	1	*
9	8	8	8	8	8	1	1	1	0	1
10	7	7	7	7	7	*	2	2	2	1
11	7	7	q	7	7	*	*	*	*	*
12	7	7	6	7	7	*	*	0	1	*
13	7	6	6	6	6	0	0	*	0	0
14	6	6	6	6	6	*	*	*	*	*
15	6	6	6	6	6	*	*	*	*	*
16	6	6	6	6	6	*	*	*	*	*
17	6	6	6	6	6	0	0	0	0	0
18	6	6	q	6	6	*	*	*	0	*
19	6	6	6	6	6	0	*	*	0	*
20	6	6	6	6	6	*	*	*	*	*
21	6	6	6	-	6	0	*	*	-	*
22	6	6	q	6	6	*	*	*	0	*
23	6	6	q	6	6	*	*	*	0	*
24	6	6	6	6	6	0	*	*	0	*
25	6	6	6	6	6	0	0	0	0	0
26	6	6	6	6	6	0	*	*	*	*
27	6	6	6	6	6	*	*	*	1	*
28	6	6	6	6	6	1	1	0	1	1
29	6	6	6	6	6	2	3	3	1	2
30	6	6	7	6	6	1	1	1	1	1
31	7	6	6	6	6	0	1	*	0	1

Note No observations during the following periods:

21st 1937 - 2345

q: likely quiet.

*: interference.

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

July 1985

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

Note No observations during the following periods:

2nd	0900 - 0950	17th	2245 - 2335
2nd	1950 - 2340	21st	1950 - 2345
6th	2245 - 2357	24th	0900 - 0950
13th	1950 - 2400	24th	1950 - 2340
15th	2100 - 2337	28th	2253 - 2347

SOLAR RADIO EMISSION

HIRAISO (HIRA)

36.37N 140.62E

Hiraiso Branch, R.R.L.,
Nakaminato, Ibaraki,
311-12 JAPAN

July 1985

Outstanding Occurrences

(single-frequency observations)

Normal observing period: 1950 - 0950

JUL 1985	FREQ	STATION	TYPE	START TIME UT	TIME OF MAXIMUM UT	DUR MIN	FLUX DENSITY PEAK	FLUX DENSITY MEAN	POLARIZATION POSITION REMARKS
2	200	HIRA	46 C	2118.4	2129.4	41.7	180	16	WL
	100		46 C	2122.7U	2122.9	20U	300	63U	-
6	200		44 NS	1936E	0131	840D	20	3	WR
7	500		8 S	0222.0	0222.0	0.1	130	-	0
8	200		43 NS	0340	0654	370D	20	4	MR
9	500		48 C	0139.3	0153.0	22.7	700	250	SL
					0156.9		620		ML
					0158.6		430		WL
	500		30 PBI		0202.0	300	42	7	ML
	200		48 C	0148.0	0156.6	160	350	46	WL
					0246.7		130		SL
	100		48 C	0148.5	0156.0	191	2100	350	-
					0211		1050		-
	500		46 C	0214.1	0214.4	1.6	45	17	WL
	500		46 C	0237.3	0244.1	10	150	40	ML
	500		46 C	0250.1	0252.4	3.4	160	30	ML
	200		43 NS	0613	0657	120	17	5	WL
	500		45 C	0807.0	0808.4	3.7	38	20	0
10	500		8 S	0030.7	0030.9	0.3	23	-	WL
	200		43 NS	0435	0505	320D	17	5	0
	500		22 GRF	0505.0	0538.9	70	6	2	WL
	500		45 C	0547.2	0548.9	4.0	10	5	WL
	500		45 C	0604.0	0604.7	4.0	12	6	WL
	200		44 NS	1936E	2039	240D	8	2	0
11	200		44 NS	1936E	2042	240D	12	3	0
	500		41 F	2205.2	2205.2	4.5	15	4	0
17	200		42 SER	0325.3	0326.8	12.3	140	-	0
	500		45 C	0325.6	0334.9	30	10	2	0
	100		42 SER	0325.6	0339.3	26.3	250	-	-
19	100		42 SER	2350.6	2353.0	7.7	740	-	-
	500		27 RF	2356.6	0002.0	15.0	3	2	0
26	500		8 S	2235.0	2235.4	0.6	2	-	0
28	500		8 S	0004.7	0004.7	0.3	5	-	0
	500		42 SER	0308.0	0308.2	7.7	4	-	0
	200		43 NS	2100	0626	760D	9	4	WL
29	500	HIRA	46 C	0606.0	0606.6	3.0	13	2	WL
	200		46 C	0606.0	0606.7	2.0	550	100	0
	100		46 C	0606.3	0606.8	2.8	1800	210	-
31	200		42 SER	0333.0	0335.3	23	105	-	WR
	500		46 C	0333.0	0335.6	3.3	27	4	WL
	200		46 C	0535.3	0535.8	2.6	2600	250	0
	500		45 C	0535.8	0535.8	2.6	22	5	WL
	100		46 C	0535.9	0536.3	2.3	2000	340	-
	200		42 SER	0604.5	0642.0	39	240	-	MR
	100		42 SER	0637.0	0637.6	8	1900	-	-
	500		42 SER	0637.9	0637.9	6.0	5	-	WL

RADIO PROPAGATION

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

JUL 1985 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	-8	-5	-10	-10	ES -14	ES -8	ES -8	ES -6	9	-6	ES -17	ES 0	ES 5	-13	5	-3	ES 5	ES -14	ES -14	ES -14	ES -14	0	ES -5	ES -10
2	ES -6	ES -8	ES -10	-7	ES -7	ES -7	ES -4	1	-1	10	6	4	ES 1	ES 0	ES -4	ES -10	ES -1	ES -4	ES -10	ES -10	ES -10	ES 1	ES -19	-10
3	-9	ES -7	-6	ES -15	-1	1	6	9	1	ES -6	ES -6	ES 6	ES 1	0	-1	0	1	-9	-10	ES -15	-7	-7	ES 1	-4
4	-4	-6	2	ES -10	-1	ES -1	ES 0	3	ES 4	ES 4	ES 5	ES 6	ES 6	ES 6	ES 5	7	ES 0	ES 1	ES 1	ES -4	ES -4	ES 0	ES -4	ES -15
5	ES -15	ES -9	ES -9	ES -5	2	1	ES -6	ES 1	ES 1	ES -9	ES -9	ES 1	ES 3	ES 2	ES 2	1	-9	-12	ES -20	ES -24	ES -24	ES -24	ES 0	ES -24
6	ES -15	ES -15	ES -9	ES -9	ES -9	ES -9	ES -5	ES -5	ES 6	ES -15	ES -15	ES 0	ES -3	ES -6	ES -3	ES -10	ES -16	ES -16	ES -25	ES -25	ES -25	ES -25	ES 1	ES -16
7	ES -15	ES -6	ES -6	ES -6	ES -9	ES -9	ES -3	-5	-2	ES -11	ES -15	ES -9	ES -9	ES -9	-6	1	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24
8	ES -19	ES -10	-7	ES -8	ES -19	ES -19	ES -6	ES -8	ES -6	ES -19	ES -19	ES 4	ES 1	ES 1	ES -4	ES -10	ES -10	ES -10	ES -19	ES -19	-19	1	-2	-19
9	6	ES -15	ES -24	1	-5	-6	-6	ES -9	ES -9	-3	ES -15	-4	ES 1	ES -3	ES -6	-7	ES -15	ES -3	ES -24	ES -6	ES -15	ES -15	ES 3	ES -15
10	ES -19	-10	-10	ES -19	-6	0	-3	-3	2	0	4	4	ES -1	-3	-3	ES -9	ES -9	ES 0	ES -5	-5	-1	-14	ES 4	ES -18
11	ES -19	ES -19	ES 4	ES -10	1	2	4	11	4	2	ES -7	ES 1	ES -6	7	1	-10	ES -8	ES -10	ES -10	ES -18	2	ES -15	ES 0	-10
12	12	-5	5	-2	-5	ES -8	ES -5	ES -2	ES 2	ES -8	ES -8	ES 6	7	ES -1	ES 7	-2	ES -8	ES -2	ES -14	ES -14	ES -23	ES -23	ES -23	ES -23
13	ES -24	ES -24	ES -9	-1	ES -15	ES -9	ES -9	ES -6	ES -9	ES -15	ES -15	ES -2	ES 0	ES -9	ES 2	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24
14	ES -24	ES -24	ES -6	1	-9	ES -15	ES -15	ES -9	ES -2	ES -2	ES -15	ES -15	ES -24	ES -9	ES -9	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -9	ES -9	ES -9
15	ES -15	ES -5	ES -10	ES -10	ES -6	ES -5	1	1	-4	ES -10	ES -10	ES -7	ES -5	ES -10	ES -10	ES -19	ES -15	ES -19	ES -19	ES -19	ES -19	ES -19	ES -6	ES -19
16	ES -18	ES -8	ES -6	ES -9	-11	-4	1	-5	ES -8	ES -9	-5	ES -9	ES -8	ES -4	ES -9	ES -3	ES -18	ES -18	ES -18	ES -18	0	-5	ES -11	ES -3
17	-9	-7	-7	-17	-9	-9	ES -10	3	ES -6	ES -18	ES -14	ES -18	ES -1	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES 2	ES -12	ES -6	ES -18	ES -18
18	ES -8	ES -8	ES -8	ES -8	-4	1	ES -8	ES -6	ES -5	ES -6	ES -23	ES -23	ES -1	ES -14	ES 0	ES -23	ES -8	ES -8	ES -23	ES -23	ES -23	ES -23	ES -12	ES -14
19	ES -14	ES -8	ES -8	ES 12	-8	-10	ES -8	ES -14	ES -5	ES -14	ES -23	ES -14	ES -23	ES -5	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
20	ES -23	ES -9	ES -9	ES -18	ES -18	1	5	7	5	ES -9	ES -4	ES -18	ES -6	ES -18	ES -9	ES -18	ES -18	ES -18	ES -18	ES -18	ES -18	ES -18	ES -18	ES -18
21	-10	ES 5	ES -13	-4	ES 6	ES 6	ES -7	ES -7	ES -7	ES -4	ES 1	ES -2	ES 2	ES -19	ES -10	-2	-5	ES -19	ES -10	ES -2	ES -5	ES -10	ES -10	ES -10
22	-14	ES -6	ES -9	ES -9	ES -5	-6	ES -9	ES 6	ES 5	ES 2	ES 0	ES -3	ES -1	ES -6	ES -6	ES -18	-7	-6	-18	-9	-18	ES -23	-18	ES -18
23	ES -14	ES -8	ES -8	-8	-5	ES -5	ES -3	ES -8	ES -4	ES -8	ES -14	ES -14	ES -5	ES -19	ES -5	ES -14	-8	-8	ES -14	ES -23	ES -23	ES -23	ES 5	ES -14
24	ES -14	ES -14	ES -14	ES -14	ES -14	ES -5	ES -4	ES -4	ES -6	ES -14	ES -14	ES -14	ES 4	ES -23	ES -5	ES -23	2	-8	-5	ES -14	-11	ES -14	ES -2	ES -12
25	ES -14	ES -5	ES -6	ES -8	ES -11	ES -5	ES -11	ES -5	ES -5	ES -8	ES -14	ES 1	ES -8	ES -23	ES -23	-8	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -1	ES -1
26	ES -9	ES -9	ES -9	-12	ES -18	3	ES -9	ES -9	ES -6	ES -18	ES -9	2	ES -3	ES -3	ES -6	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23
27	-10	-9	-3	ES -14	ES -14	-2	ES -8	ES -5	ES -4	ES -8	ES -14	ES 1	ES -1	ES -14	ES -14	-6	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -5	ES -23
28	ES -24	ES -9	ES 2	ES -24	ES -15	ES -15	ES -3	ES -5	ES -9	ES -9	ES -15	ES 2	ES 2	ES 2	ES 4	ES -15	ES -15	ES -15	ES -15	ES -15	ES -15	-2	-4	-2
29	3	ES -9	ES -6	-6	-9	-2	ES -5	ES -9	ES -6	ES -15	0	ES 17	ES -6	ES -24	-3	ES -24	-9	ES -15	-15	-1	-13	-3	-6	-2
30	1	-2	-2	-2	7	8	3	C	ES 2	ES -14	ES -14	ES -1	ES -5	-8	ES -1	ES -23	-14	ES -23	C	ES -23	ES -23	ES -23	-8	-2
31	2	-2	-5	-5	-4	-9	-8	ES -5	ES -2	ES -14	ES -14	ES -8	ES 7	-6	ES 3	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES 2	ES -14

CNT	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31
MED	ES -14	ES -8	ES -8	ES -8	ES -8	ES -5	ES -5	ES -5	ES -4	ES -9	ES -14	ES -1	ES -1	ES -6	ES -4	ES -10	ES -14	ES -15	ES -18	ES -18	ES -19	ES -18	ES -6	ES -15
UD	3	ES -2	ES 2	ES 1	ES 2	ES 3	4	7	ES 5	ES 2	ES 4	ES 6	ES 6	ES 2	ES 5	1	ES 1	ES -2	ES -5	ES -2	-1	ES 0	ES 3	ES -2
LD	ES -24	ES -19	ES -13	ES -18	ES -18	ES -15	ES -10	ES -9	ES -9	ES -18	ES -19	ES -18	ES -9	ES -23	ES -23	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -24	ES -23	ES -24

RADIO PROPAGATION

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

JUL 1985 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	8	10	14	17	14	23	26	22	15	15	18	15	12	10	3	-1	4	17	11	11	19	15	16	10
2	12	7	5	12	23	26	23	25	25	14	12	12	12	11	1	ES -1	ES 1	ES -4	2	13	16	ES -10	6	13
3	6	11	11	8	11	18	25	26	23	20	21	18	8	3	-6	-5	12	10	-6	4	9	12	11	12
4	9	14	13	17	13	24	21	29	28	24	24	22	31	27	ES 7	ES 2	13	12	8	17	13	18	10	10
5	15	7	7	10	15	21	28	26	30	34	3	ES 7	ES 0	ES 2	ES 2	ES -9	-9	17	17	14	9	11	9	0
6	4	3	5	16	18	18	25	26	24	23	19	12	11	10	ES -6	3	6	20	10	7	8	9	5	11
7	9	6	15	16	18	24	24	25	31	24	24	16	6	-4	0	-6	-4	6	4	4	8	6	9	7
8	11	11	13	12	17	24	22	22	27	22	20	16	ES 1	ES -4	ES -10	-8	ES -10	11	10	6	11	5	8	7
9	10	-7	2	22	20	22	26	26	26	26	27	31	19	19	8	-7	ES -2	ES -3	ES -5	17	11	7	2	11
10	7	10	14	11	20	19	21	25	12	9	7	9	-4	ES -3	-3	-9	ES 0	15	14	24	22	12	13	12
11	9	8	11	10	19	24	25	30	22	16	11	9	14	-4	4	3	-6	16	-7	20	20	16	13	17
12	8	12	17	18	22	22	30	29	32	27	34	35	32	4	24	19	19	ES -14	5	-9	18	8	4	7
13	6	5	12	12	21	22	15	10	26	17	-2	ES 1	ES -3	ES 1	ES 5	ES -24	ES -24	8	ES -24	ES -24	10	9	13	5
14	4	2	17	17	12	17	-1	16	18	30	25	23	18	2	4	ES -24	ES -24	ES -24	1	15	7	3	1	1
15	10	1	6	11	12	14	19	24	11	23	2	2	-4	-6	-5	-7	-8	ES -19	ES -19	-6	16	10	6	4
16	12	8	15	22	18	24	27	26	26	15	17	11	4	13	10	6	-6	-11	-4	10	11	10	12	12
17	12	9	13	15	12	22	27	28	22	-3	-5	ES -18	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	ES -23	4	10	10	0	7
18	7	6	3	6	12	16	17	17	14	18	13	8	10	-5	ES -4	ES -23	ES -8	7	5	9	13	15	12	7
19	13	7	7	12	14	22	22	29	28	22	21	16	8	-2	ES -23	ES -23	-5	ES -23	ES -23	7	6	4	4	13
20	2	4	7	10	11	22	24	26	7	7	25	6	12	10	ES -18	ES -18	ES -18	8	7	10	13	10	6	12
21	7	8	9	17	20	20	28	24	17	6	ES 3	9	2	5	7	-4	ES -13	6	5	13	11	8	13	3
22	12	7	8	17	19	27	30	26	26	12	6	9	-1	ES -18	ES -18	-6	ES -18	16	11	19	9	9	8	5
23	4	4	12	15	15	17	22	26	30	-2	18	23	5	-14	-2	-12	19	14	11	5	14	12	8	5
24	-5	2	6	8	5	11	28	28	17	19	15	8	2	ES -23	ES -5	ES -23	ES -23	7	9	15	12	6	9	15
25	16	12	10	16	20	23	28	28	6	7	2	10	8	-6	ES -14	-4	ES -23	0	-1	9	3	8	8	3
26	4	4	7	12	18	27	25	23	22	26	25	7	3	15	3	ES -23	ES -23	-9	-10	6	9	4	-1	6
27	10	12	13	16	20	22	22	30	32	26	27	22	19	14	8	12	24	11	12	13	13	13	17	13
28	6	6	6	15	15	24	26	32	31	25	5	ES 1	3	19	ES -2	ES -15	-7	16	12	12	12	6	14	14
29	10	12	18	15	26	21	26	24	20	14	12	ES 1	2	1	4	3	-5	-3	-2	10	15	11	13	8
30	4	12	13	17	21	24	26	19	20	20	22	7	14	11	7	ES -23	-14	25	8	17	8	8	16	11
31	12	15	11	16	19	18	22	21	19	23	19	24	9	11	ES -14	ES -23	ES -23	ES -23	-8	2	12	4	12	7
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	9	7	11	15	18	22	25	26	23	20	18	10	8	2	ES 0	US -7	ES -7	7	5	10	11	9	9	8
UD	13	12	17	18	22	26	28	30	31	27	27	24	19	19	8	6	19	17	12	19	19	15	16	14
LD	4	2	5	8	11	16	17	17	11	6	ES 2	ES 1	ES -4	ES -18	ES -18	ES -23	ES -23	ES -23	ES -23	-6	7	4	1	3

RADIO PROPAGATION

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Jul. 1985	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 16 12 18 / 06 12 18 24	Principal Geomagnetic Storms Start	End	Range
1	4+	4U 4U 5U S	4 4 5 5	N N N N			
2	4+	S 5U S S	4 4 4 4	N N N N			
3	4+	5U 5U 5U 5U	4 4 4 4	N N N N			
4	4+	5U S S S	4 4 5 4	N N N N			
5	4o	5U S 4U S	4 4 4U 4	U U U U			
6	4o	S S S S	4 4 4 4	U U U U			
7	4o	S 4U S S	4 4 4 4	U U U U			
8	4o	S S S 4U	4 4 4U 4	U U U U			
9	4+	5U S S S	4 5 4 4	N N N N			
10	4o	4U 4U 4U 5U	4 3 4 4	N N N N			
11	4+	5U 5U 4U 4U	4 4 4 4	N N N N			
12	4+	5U S 5U S	4 5 4 4	N N N N			
13	3+	S S S S	4 3 4U 3	U U U U			
14	3+	S S S S	3 4 3 4	U U U U			
15	3+	S 5U S S	3 3 3 3	U N N N			
16	4+	4U 5U S 5U	4 4 4 4	N N N N			
17	3o	4U S S S	4 3 1U 3	N N N N			
18	4-	4U S S S	3 3 4 4	U U U U			
19	3+	S S S S	4 4 3U 3	U N N N			
20	4+	5U 5U S S	4 4 4 4	N N N N			
21	4o	4U S 5U S	4 3 4 4	N N N N			
22	4o	S S 5U 4U	4 4 3 4	N N N N			
23	4o	4U S 5U S	4 4 4 4	N N N N			
24	4-	S S 5U S	3 4 3U 4	N N N N			
25	3+	S S S S	4 3 3 3	N N N N			
26	3+	S S S S	4 4 3 3	N N N N			
27	4+	4U S S S	4 5 5 4	N N N N			
28	4+	S S S 5U	4 4 4 4	N N N N			
29	4o	4U S 4U 5U	4 3 4 4	N N N N			
30	4+	5U S S S	4 4 4 4	N N N N			
31	4-	5U S S S	4 4 3U 3	N N N N			

SUDDEN IONOSPHERIC DISTURBANCES

HIRAISO

Time in U.T.

Jul. 1985	S W F Drop-out Intensities (dB) CO	HA	1)	2)	Start	Duration	Type	Imp.	Correspondence Solar Flare	Solar Noise	Geomag. Crochet
2	x			13	2116	24	G	1	x	x	
9	x		29		0137	93	G	2+	x	x	
12			7		0531	29	S	1-	x		

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

RADIO PROPAGATION

Sudden Ionospheric Disturbance (SPA)

I N U B O

Jul. 1985	S P A							
	Phase Advance (degrees)					Time (U.T.)		
Date	GBR	Ω/ LR	NWC	Ω/H	Ω/ND	Start	End	Maximum
2	51	36		126	104	2107	0000	2133
6		13	14	8		0238	0348	0250
6			11	5		2235	2350	2308
7				7		0010	0038	0014
7			—	4		0038	0107	0046
7	17	36	—	15	23	0521	0634	0533
7	15		—	9		2027	2051	2030
7			—	13	11	2227	2315	2232
8		36	—	8		0404	0434	0410
8		13	—			0847	0923	0852
8		37	—			0950	1045	0958
9			—	9	—	0005	0100	0010
9	43	117	—	101	—	0136	0408	0208
12			9	4		0140	0225	0146
12	31*	113*	80*	41	37	0501	0730	0536
13		15	10			0559	0648	0608
13		41	17			0657	0841	0706
26				11	—	2215	2238	2224
26			9	9	—	2239	2310	2244
28			6	6		2314	2358	2322

IONOSPHERIC DATA IN JAPAN FOR JULY 1985

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2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184 JAPAN.