F—206

IONOSPHERIC DATA IN JAPAN

FOR FEBRUARY 1966

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F—206

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SITE OF THE RADIO WAVE OBSERVATORIES

Ionospheric observation is carried out at the following four observatories in Japan.

	Latitude	Longitude	Site
Wakkanai	45°23.6′N.	141°41.1′E.	Midori-cho, Hokkaido
Akita	39°43.5′N.	140°08.2′E.	Tegata Sumiyoshi-cho, Akita-shi, Akita-ken
Kokubunji	35°42.4′N.	139°29.3′E.	Nukuikita-machi, Tokyo-to
Yamagawa	31°12.1′N.	130°37.1′E.	Yamagawa-machi, Ibusuki-gun, Kagoshima-ken

Solar radio emission and radio propagation conditions are observed at Hiraiso Radio Wave Observatory.

	Latitude	Longitude	Site
Hiraiso	36°22.0′N.	140°37.5′E.	Isozaki-machi, Nakaminato-shi, Ibaraki-ken

SYMBOLS AND TERMINOLOGY

A. IONOSPHERE

All symbols and terminology in the table of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction," 1961.

Terminology

f_0F2, f_0F1, f_0E — The ordinary wave critical frequency for the $F2$, $F1$ and E layers, respectively.

f_0E_s — The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.

f_bE_s — The lowest ordinary wave frequency at which the E_s layer begins to become transparent. This is usually determined from the minimum frequency at which reflections from layers at greater heights are observed.

f-min — The frequency below which no echoes are observed.

$M(3000)F2$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F2$ layer.

$M(3000)F1$ — The maximum usable frequency factor for a path of 3000 km for transmission by $F1$ layer.

$h'F2$ — The minimum virtual height, $h'F2$, refers to the highest, most stable stratification observed in the F region and can only be scaled when such stratification is present.

$h'F$ — The natural and most significant F region virtual height parameter is that for lowest F region stratification. This will be denoted by $h'F$. Thus $h'F$ is identical with the current $h'F2$ when F region stratification is absent, e.g., at night, and with the current $h'F1$ when $F1$ stratification is present.

$h'E_s$ — The lowest virtual height of the trace used to give the f_0E_s.

$hpF2$ — The virtual height of the $F2$ layer measured on the ordinary

wave branch at a frequency equal to $0.834 f_0F2$.

ypF2 The semi-thickness of the *F2* layer deduced from a parabolic fit to the "nose" of the electron density distribution with height and based on the observed *h'f* trace. (The difference between *hpF2* and the virtual height at $0.969 f_0F2$).

a. 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 E_s.

B Measurement influenced by, or impossible because of, absorption in the vicinity of *f*-min.

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. Used in a qualifying sense, see below.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range. Used in a qualifying sense, see below.

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.

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.

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 Intermittent trace.

Z Third magneto-ionic component present.

b. Qualifying Letters

The following letters are entered in the first column before a numerical

value on the monthly tabulation sheets.

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.

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-ionic component.

c. Description of Standard Types of E_s

The eight standard types of E_s are identified by corresponding lower case letters: *f, l, c, h, q, r, a, s.* These letters suggest the names flat, low, cusp, high, equatorial, retardation, auroral and slant, respectively. It is strongly emphasized that these names are not restrictive. The letter '*n*' is used to designate any E_s trace that does not correspond to any of the eight types.

f An E_s trace which shows no appreciable increase of height with frequency. The trace is usually relatively solid at most latitudes. This classification may only be used at night; apparently flat E_s traces observed in the daytime are classified according to their virtual hight: *h* or *l*.

l A flat E_s trace at or below the normal *E* layer minimum virtual height in the day or below the night *E* layer minimum virtual height at night.

c An E_s trace showing a relatively symmetrical cusp at or below f_0E. This is usually continuous with the normal *E* trace, although when the deviative absorption is large, part or all of the cusp may be missing. (Usually a daytime type.)

h An E_s trace showing a discontinuity in height with the normal *E* layer trace at or above f_0E. The cusp is not symmetrical, the low frequency end of the E_s trace lying clearly above the high frequency end of the normal *E* trace. (Usually a daytime type.)

q An E_s trace which is diffuse and non-blanketing over a wide frequency range. The spread is most pronounced at the upper edge of the trace. (This type is common in daytime in the vicinity of the magnetic equator.)

r An E_s trace showing an increase in virtual height at the high frequency end similar to group retardation but which is non-blanketing over part or all of its frequency range. This is distinguished from the usual group retardation (as in the case of an occulting thick *E* layer) by the lack of group retardation in the *F* layer traces at corresponding frequencies and the lack of complete blanketing.

a An E_s having a well defined flat or gradually rising lower edge with stratified and diffuse (spread) traces present above it. These

sometimes extend over several hundred kilometers of virtual height.

s A diffuse E_s trace which rises steadily with frequency and usually emerges from another type E_s trace. The rising trace alone is classified as '*s*'; the horizontal trace is classified separately. At high latitudes the slant trace usually starts to rise from a horizontal E_s trace such as E_s-*l* or E_s-*f*, at frequencies which grealy exceed the *E* layer critical frequency, whereas at low latitudes it usually rises from E_s-*q*, E_s-*c*, or E_s-*h* at frequencies near the regular *E* critical frequency. Type *s* is never used to determine f_0E_s and $h'E_s$. The slant trace is sometimes observed to start at f_0E without echoes clearly identifiable as E_s echoes being seen.

n The designation '*n*' is used to denote an E_s trace which cannot be classified into one of the standard types. When a trace appears to be intermediate between any two classes a choice should be made whenever possible even if it is uncertain. '*n*' should be used sparingly.

d. Multiple Reflections from E_s

When the ionogram shows the presence of multiple reflections from E_s the number of traces seen should be recorded after the letter indicating the type.

B. SOLAR RADIO EMISSION

Solar radio observations are carried out on 200 and 500 Mc/s at Hiraiso Radio Wave Observatory.

Antennas are a broadside array of 6×4 doublets for 200 Mc/s and a parabolic reflector of 5 meter for 500 Mc/s, each having the total power receiver.

Observations are feasible almost from sunrise to sunset.

a. Time and Unit

The time is expressed as U.T.

The unit is 10^{-22} $W \cdot m^{-2} \cdot (c/s)^{-1}$ for both components of polarization.

b. 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 Mc/s 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 flux level is counted.

c. Distinctive Events

The phenomena are picked up on the following criteria:

1. Distinct from the prevailing kind of activity,
2. Correlated with other known solar phenomena,
3. Remarkable change-over from one situation to another.

Starting time and *Time of maximum* are given to nearest minute in general, but to nearest a tenth minute for short intense occurrences or clear commencements.

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

Descriptive type is denoted by the following symbols:

S =Simple rise and fall of intensity;
C =Complex variation of intensity,
C+=Prolonged broad-band enhancement of radiation, generally of spectral type IV;
F =Group of bursts: multiple peaks probably belonging to the same event, but separated by relatively short period of quietness;
RF=More or less irregular rise and fall of intensity, at metric or decimetric wavelengths;
e =Sudden beginning of burst with steep rise of intensity;
E =Steep rise of intensity of continuum background;
p.i.=post-burst increase;
onset storm=clear-cut beginning of a noise storm.

Peak intensity is the flux density of the highest peak reached during the occurrence, measured above the pre-burst level.

Mean intensity is the flux density averaged over the burst's duration, measured above the pre-burst level; therefore, multiplying the duration, the total energy of the occurrence can be estimated.

C. RADIO PROPAGATION CONDITIONS

a. Field Intensities of WWV and WWVH

Field intensity observations of WWV and WWVH transmitted from Washington D.C. and Hawaii, respectively, are carried out at Hiraiso Radio Wave Observatory. In order to avoid interferences with several standard frequency waves on the same frequency, the upper side-band of 440 c/s is picked up by the use of a narrow band pass filter of ± 40 c/s bandwidth.

Tabulated *field intensity* is the average of peak value of the incident upper side-band field intensity in dB above one microvolt per meter. Tne *duration* of observation is two minutes for WWV and three minutes for WWVH following the time indicated in universal time on the table.

Particulars of the transmitter and receiver are summarized in the following tables:

Transmitter

	WWV	WWVH
Location	Washington, D.C. Long. 76°51′ W Lat. 39°00′ N	Maui, Hawaii Long. 156°28′ W Lat. 20°46′ N
Power	3 kW for the upper side-band	0.5kW * for the upper side-band
Antenna	$\lambda/2$ vertical	$\lambda/2$ vertical
Distance	10050 km	6270 km

* Reduced from the carrier power of 2 kW with amplitude modulation of 100%.

Receiver

Antenna	4.5m vertical rod
Bandwidth	±40 c/s for the upper side-band
Calibration	each half hour

Descriptive symbols are as follows:

C: Measurement influenced by, or impossible because of, any non-propagational reasons.

S: Measurement influenced by, or impossible because of, interferences or atmospherics.

( ): Unaccurate measurement influenced by interferences, atmospherics, or non-propagational reasons.

<: Less than the following figure.

b. Radio Propagation Quality Figures

Radio propagation quality figures are usually expressed on the scale that ranges from one to five as follows:

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

The tabulated circuits contain Hamburg (commercial circuit), WWV (frequencies 10, 15, 20Mc broadcast from Washington, D.C.), San Francisco (commercial circuit) and WWVH (frequencies 10, 15Mc broadcast from Hawaii), which are received at Hiraiso Radio Wave Observatory near Tokyo.

Warnings of radio propagation broadcast from JJY station are expressed in three grades:

N=normal
U=unstable
W=disturbed

The letter W expresses disturbed condition expected to be during the following 12 hours after issue. The letter U and N means also unstable or normal conditions, respectively.

Whole day radio quality indices are the averages of the 6-hourly indices of Hamburg WWV and S. F.

Start- and end-time of principal geomagnetic storms closely correlated to radio propagation conditions are tabulated from observations at Kakioka.

c. **Sudden Ionospheric Disturbance (S. I. D.)**

The data of short wave fade-out (SWF) are preparated from the field intensity records on following circuits received at Hiraiso. Characteristics of the phenomenon are classified as follows.

Circuits and Drop-out intensity

WS.....WWV 20 Mc, 15 Mc and 10 Mc (Washington)
SF.....Various commercial circuits (San Francisco)
HA.....WWVH 15 Mc and 10 Mc (Hawaii)
TO.....JJY 15 Mc and 10 Mc (Tokyo)
SH.....BPV 15 Mc and 10 Mc (Shanghai)
HB .....Various commercial circuits(Hamburg)

Start-time and Duration, Types and Importances are described from the data of a circuit whose Drop-out Intensity is underlined. Drop-out Intensities of 10 Mc (’), 15 Mc (none) and 20 Mc (”).

Start-times and Durations

Types

S : sudden drop-out and gradual recoverly
Slow: slow drop-out taking 5 to 15 minutes and gradual recoverly
G : gradual disturbances; fade irregular in both drop-out and recoverly

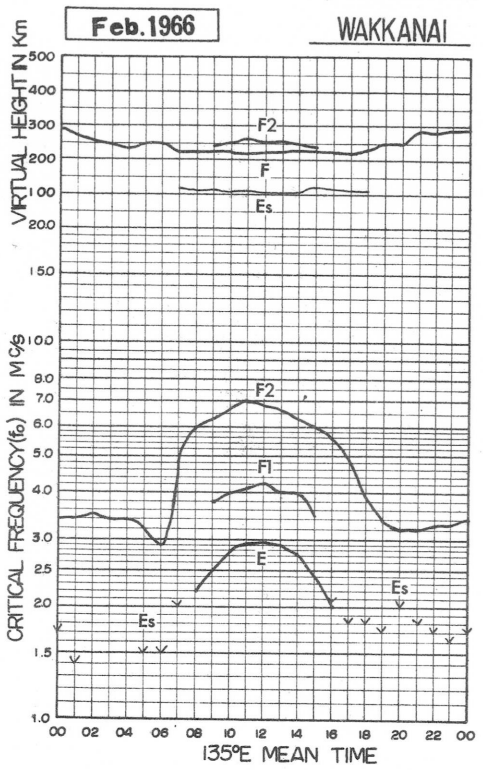
Importances

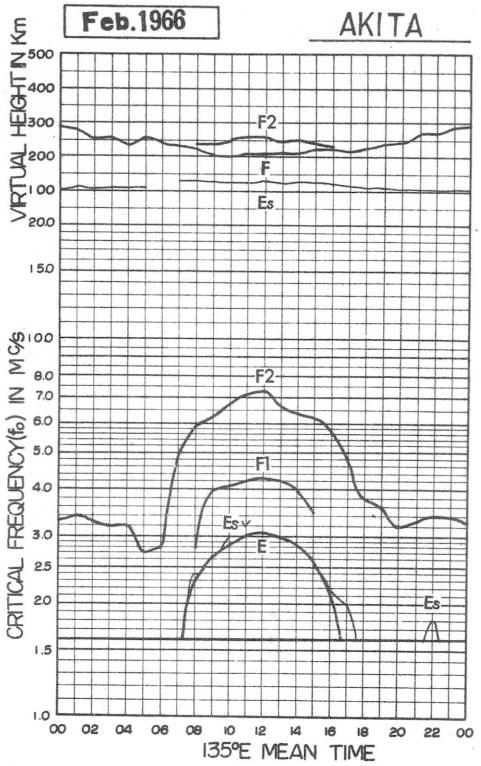
Degrees of SWF are classified into 9 grades according to the amplitude of fade-out;

1−	1	1+
2−	2	2+
3−	3	3+

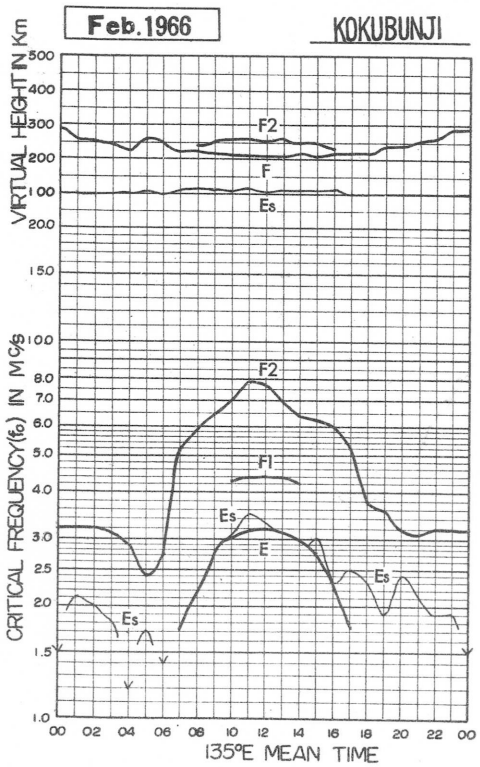
Besides, the time associated phenomena of SID's, that is, solar flare, solar radio noise outburst and crochet (solar flare effect in magnetic record) are given in this table from interchange messages or measurements at Hiraiso.

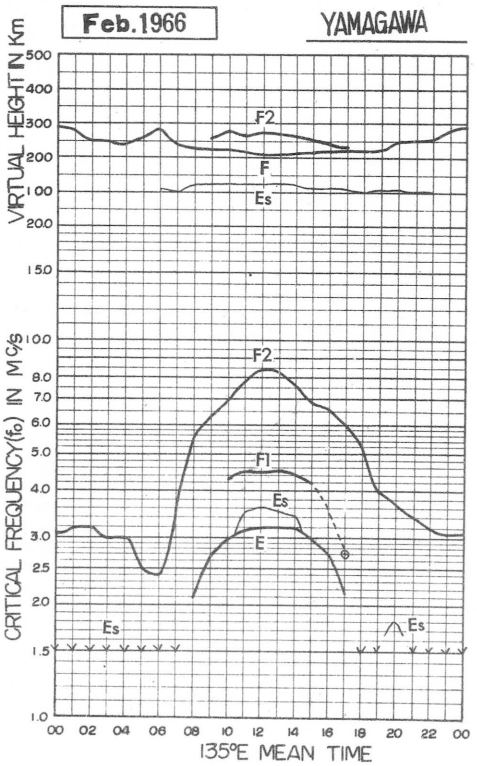
IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
MONTHLY MEDIAN CHARACTERISTICS





IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: WAKKANAI

Feb. 1966

135° E Mean Time (G. M. T. +9h)

CHAR \ HR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	034	034	035	034	034	032	029	048	060	063	066	070	068	066	063	060	056	049	039	034	032	032	033	033
	CNT	16	18	19	21	20	18	21	25	25	25	27	27	26	26	26	25	25	26	25	24	24	24	22	19
	Q R	003	002	004	006	004	007	007	006	007	007	010	011	009	008	006	005	009	009	007	007	006	005	003	003
foF1	MED									350	380	400	410	420	400	400	350								
	CNT									3	14	23	26	25	22	22	17								
foE	MED		E		E	E	E	E	160	220	250	280	295	295	290	275	240	200	130						
	CNT		1		3	4	3	1	1	18	20	24	25	25	26	26	23	15	1						
foEs	MED	E017S	E014S	E	E	E	E015S	E015S	E020S	G	G	G	G	G	G	G	G	E021G	E018S	E018S	E017S	E020S	E018S	E017S	E016S
	CNT	23	24	24	24	23	25	25	25	25	25	27	27	25	26	26	24	25	26	26	25	25	25	25	25
	Q R		D006						D002										D008	D010			D006	D006	D006
f-min	MED	E016S	E013S	E	E	E	E015S	E015S	E017S	011	012	017	019	019	018	018	016	012	E016S	E015S	E016S	E016S	E016S	E016S	E016S
	CNT	23	24	24	24	23	25	25	25	25	25	27	27	25	26	26	24	25	26	26	25	25	25	25	25
M (3000) F2	MED	300	305	310	310	320	320	330	355	360	350	350	340	350	350	350	355	365	350	335	325	310	300	305	305
	CNT	16	18	19	21	20	18	21	25	25	25	27	27	26	26	26	25	25	26	25	24	24	24	22	19
M (3000) F1	MED									380	400	395	385	385	390	390	395								
	CNT									3	14	23	26	25	22	22	17								
h'F2	MED									260	245	250	260	255	255	250	240								
	CNT									3	15	23	26	25	23	23	17								
h'F	MED	290	270	260	250	240	250	250	225	225	225	225	220	225	220	225	230	225	220	235	250	250	285	280	290
	CNT	24	24	24	24	24	25	25	25	25	25	27	27	26	26	25	25	25	26	25	23	24	25	25	25
h'Es	MED	105	105	105	105	105	110	110	115	110	110	105	105	105	105	105	120	115	110	110	105	105	105	105	105
	CNT	3	7	7	8	7	2	3	9	9	12	13	9	8	7	11	10	9	10	9	5	8	7	7	7
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: AKITA

Feb. 1966

135° E Mean Time (G. M. T. +9h)

CHAR \ HR		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	033	034	033	032	032	027	028	050	060	063	068	071	073	066	064	062	057	048	038	036	032	033	034	034
	CNT	23	22	25	26	25	26	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28	23	22	21
	Q R	005	005	003	004	008	006	005	008	009	009	007	012	013	009	007	005	006	012	008	006	005	005	003	006
foF1	MED								210H	280	400	410L	420	430	420L	400L	350L	240							
	CNT								2	6	15	19	22	24	23	19	6	4							
foE	MED								E	230	265	285	300	305	300	285	260	215	E						
	CNT								18	23	26	25	26	25	24	26	24	18	16						
foEs	MED	E	E	E	E	E	E	E	G	024	G	030	E032G	G	G	G	026	022	020	E	E	E	E	018	E
	CNT	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28
	Q R																								
f-min	MED	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
	CNT	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28
M (3000) F2	MED	300	305	310	310	330	315	320	355	360	350	345	345	340	350	355	355	360	355	330	330	315	310	305	300
	CNT	23	22	25	26	25	26	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28	23	22	21
M (3000) F1	MED								420H	410	400	390L	380	375	380L	385L	400L	410							
	CNT								2	6	15	19	22	24	23	19	6	4							
h'F2	MED								230	240	240	255	260	260	250	250	245	235							
	CNT								3	18	28	28	28	28	28	28	27	18							
h'F	MED	290	280	255	255	240	255	245	230	220	200	200	205	205	210	210	230	230	220	225	240	245	270	270	290
	CNT	28	28	28	28	28	27	28	28	28	28	28	28	27	26	27	26	27	28	28	28	28	28	27	28
h'Es	MED	105	110	105	110	110	110	110	130	130	130	125	125	130	125	130	130	120	115	110	110	105	105	105	105
	CNT	9	9	8	6	8	7	4	14	16	14	17	18	13	16	17	18	18	17	14	14	12	14	15	13
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: KOKUBUNJI

Feb. 1966

135° E Mean Time (G.M.T. +9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	032	032	032	031	029	024	027	052	060	065	070	079	078	070	064	063	060	052	038	036	032	031	032	032
	CNT	24	25	25	25	24	26	26	26	25	24	26	25	25	26	25	24	26	24	25	26	24	24	23	23
	Q R	005	006	004	004	008	005	006	008	008	015	008	017	025	012	010	008	006	008	008	008	006	003	003	004
foF1	MED										U410L	430L	440L	440L	440L	U420L	U410L								
	CNT										2	11	21	19	16	8	1								
foE	MED								175	240	280	305	320	320	315	300	275	230	175						
	CNT								16	22	23	24	21	23	22	21	22	20	7						
foEs	MED	E015	021	020	018	E012	017	E014B	G	G	G	031	035	033	G	G	030	023	025	023	019	024	021	019	019
	CNT	26	25	26	26	26	24	26	26	26	26	27	25	25	26	24	24	27	27	26	27	25	26	27	26
	Q R	D008	D013	D011	D011		D010	D008											008	008	D015	D017	D016	D010	D011
f-min	MED	012	011	011	010	010	012	012	013	014	015	015	015	015	015	015	015	014	013	012	012	012	012	E015B	012
	CNT	26	25	26	26	26	24	26	26	26	26	27	25	25	26	24	24	27	27	26	27	25	26	27	26
M (3000) F2	MED	290	295	305	315	320	295	315	350	350	340	330	335	340	340	340	350	350	355	330	310	315	300	290	290
	CNT	24	25	25	25	24	26	26	26	25	24	26	25	25	26	24	24	26	24	25	26	24	24	23	23
M (3000) F1	MED										U360L	375L	375L	370L	370L	U375L	U350L								
	CNT										2	11	21	19	16	8	1								
h'F2	MED									245	255	260	260	255	260	250	250	230							
	CNT									11	26	27	25	25	26	25	24	15							
h'F	MED	290	260	255	250	230	260	250	220	225	220	210	210	210	210	220	210	220	220	220	240	240	255	260	290
	CNT	26	26	26	26	25	25	26	26	26	26	27	25	24	26	24	24	26	25	25	26	24	25	26	27
h'Es	MED	100	100	100	100	100	105	100	110	115	110	110	115	105	110	110	110	110	100	100	100	100	100	100	100
	CNT	12	15	18	17	11	13	9	10	12	14	19	16	16	17	14	19	15	20	22	16	18	16	16	14
hpF2	MED	340	320	310	300	280	310	290	250	250	260	285	275	265	265	260	250	250	250	260	300	290	310	320	330
	CNT	24	24	25	25	24	26	26	26	25	23	26	25	25	25	24	24	26	24	25	26	24	24	22	23
ypF2	MED	060	060	055	050	055	060	055	050	050	045	050	045	050	045	050	050	050	050	060	050	055	055	050	060
	CNT	24	24	25	25	24	26	26	26	25	23	26	25	25	25	24	24	26	24	25	26	24	24	22	23

IONOSPHERIC DATA
LIST OF MEDIAN VALUES

OBSERVED AT: YAMAGAWA

Feb. 1966

135° E Mean Time (G.M.T. +9h)

CHAR	HR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
foF2	MED	031S	032S	032	030	030	025	024	037S	056	064	070	078	084	083	076	069	066	060	052	040S	037S	034S	032S	031S
	CNT	27	28	28	28	27	28	27	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
	Q R	007	006	006	004	007	007	005	005	006	010	017	022	016	026	024	016	012	011	013	009	006	008	005	003
foF1	MED										440L	430	450	450	450	440	420	360L	270						
	CNT										2	19	27	27	27	26	19	3	5						
foE	MED									210	270	300	315	320	320	320	300	270	215						
	CNT									26	26	24	23	23	24	25	21	23	22						
foEs	MED	E015S	E015S	E015	E015B	E015B	E015	E015S	E015S	G	G	G	035	036	035	034	G	027	G	E015S	E015S	018	E015S	E015S	E015S
	CNT	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	28
	Q R			D003	D002			D004	D004											D007	D006	D005	D006	D005	
f-min	MED	E015S	E015S	015	014	015	E015S	E015S	E015S	015	015	015	016	015	016	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
	CNT	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	28
M (3000) F2	MED	295S	300S	310	315	325	310	300	330S	355	335	330	330	335	335	330	340	345	350	350	330S	320S	315S	305S	300S
	CNT	27	28	28	28	27	28	27	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
M (3000) F1	MED										360L	365	370	370	370	365	370	370L	400						
	CNT										2	18	27	27	24	25	19	3	5						
h'F2	MED									245	260	275	270	275	270	260	255	245	235						
	CNT									4	21	26	27	27	27	27	27	27	17						
h'F	MED	290	280	250	250	245	260	280	240	230	225	225	220	210	210	215	215	220	225	220	225	250	250	255	280
	CNT	28	28	28	28	28	28	28	28	28	27	27	27	27	25	26	26	27	27	27	26	27	26	27	28
h'Es	MED	105	105	105	110	110	100	105	100	125	125	125	125	125	125	120	110	110	110	100	105	105	100	100	100
	CNT	7	5	8	8	4	7	10	10	13	10	13	20	21	20	21	19	18	17	13	13	14	10	10	7
hpF2	MED																								
	CNT																								
ypF2	MED																								
	CNT																								

IONOSPHERIC DATA

Feb. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	SF	035F	033F	034	035	039	030	039	060	056	056	060H	057	056	061	056	048	046	036	030	030	032	029	032
2	033	034	034	032	032	027	025	045	056	052	056	060	064H	056	057	052H	047	043	I034A	I032A	030	031	033	I033A
3	S	SF	037F	033F	036F	038	037S	044	059	058	061	060	056	054H	058	I056C	044	036	044	041	035	030	030	034
4	035	034	035	035	I034C	026	026	041	058	061	066	057	059H	061	056	C	C	044	038	031	028	033	033	033
5	033	034	033	033	034	032	029	044	056	073	062	063	071	066	062	060	051	048	043	034	027	032	I034A	S
6	S	031	037	030	032	U034S	027	047	069	073	068	081	080	067	065	055	056	I051A	I039A	031	031	032	032	031
7	C	C	C	C	C	C	C	C	C	C	066	063	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	062	063	I062C	059	057	056	047	037	028	029	A	U032S	S	S
10	S	S	S	U032S	032S	S	S	046	058	056	060	059	061	056	057	057	049	043	A	A	033	032	U033S	033S
11	035S	035F	SF	SF	SF	SF	027	051	060	068	066	068	067	068	065	063	056	045	034	033	I029A	031	033	030
12	028	030	030	031	035	018	U023S	045	063	063	069	063	071	069	058	061	053	053	050	038	036	042	042	040
13	SF	SF	042F	041F	043F	036F	SF	049	063	064	067	057	061	061H	068H	068	055	044	030	026	029	031	033S	SF
14	SF	SF	SF	035F	034F	033F	033	048	057	061	064	082	071	063H	060	064H	053	039	042	038	032	031	033	033
15	031F	033F	034F	SF	030	029	025S	050	057	062	063H	079	070	062	071	058	061	043	038	036	026	026	029	028
16	U033S	032F	030F	033F	036	030	027	050	062	063	078	074	071	067H	070	073	061	045	035	030	030	030	030	030
17	032	032	033	033	034	030	027	046	067	063	063	071	078	067	065	062	060	047	036	C	C	C	C	C
18	C	C	C	C	C	SF	037	054	069	067	073	073	081	073	066	061	058	050	036	033	032	035	035	034
19	034	034	035	035	036	043	027	045	057	060	063	073	067	063	066H	059	061	051	041	037	037	037	037	040
20	040	SF	044F	SF	SF	SF	SF	057	073H	087	091	075H	083	091	082	075	063	063	046	033	036S	SF	A	SF
21	SF	043F	SF	040F	SF	SF	038	063	066	067	073	069	065	070	064	060	060	073	039	036	037	038	SF	SF
22	SF	SF	SF	U045F	SF	SF	034	054	064	067	070	072	067	066	066	065	065	058	040	034	036	043	040	SF
23	036F	037	036	036	034	SF	SF	043S	050	063	073	070	066	069	061	063	062	068	068	050	030	036	036S	040
24	043	043	045	044	043	036	034	057	062	070	067H	069	081	068	061	059	056	057	043	030	031	033	034	033
25	034	035	034	033	028	023	029	048	058	062	077	071	067	063	062	059	057	051	039	036	034	032	034	035
26	035	034	035	031	030	029	030	051	063	065	073	081	073	069	064	059	055	051	041	043	032	033	034	034
27	035	035	035	036	034	034	033	047	064	060	065	074	073	066	060	063	065	053	040	043	042S	039	039	041
28	042	043	043	043	042	036	037	050	057	061	069	072	068	070	067	059	061	053	051	044	041	033	032	035S
29																								
30																								
31																								
No.	16	18	19	21	20	18	21	25	25	25	27	27	26	26	26	25	25	26	25	24	24	24	22	19
Median	034	034	035	034	034	032	029	048	060	063	066	070	068	066	063	060	056	049	039	034	032	032	033	033
U. Q.	036	035	037	038	036	036	034	051	064	067	073	074	073	069	066	063	061	053	043	038	036	036	035	035
L. Q.	033	033	033	032	032	029	027	045	057	060	063	063	064	061	060	058	052	044	036	031	030	031	032	032
Q. R.	003	002	004	006	004	007	007	006	007	007	010	011	009	008	006	005	009	009	007	007	006	005	003	003

foF2

Sweep 1.0 Mc to 18.0 Mc in 4C sec in automatic operation

The Radio Research Laboratories, Japan

W 1

IONOSPHERIC DATA

Feb. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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												400	380	400	U370L	U340L								
2										340		390		400		300								
3											370	U400L	400			C								
4											400L	390	380		A	C								
5										U380L	380	390	400	380	370	330								
6										U380L	400	420	400	400	U370L									
7									C	C	390	U400L	C	C	C	C								
8									C	C	C	C	C	C	C	C								
9									C	C	400	400	I400C	400	400									
10									U340L	U360L	400L	410	430	400L	U380L	330								
11											400	420	420H	U380L	380	U360L								
12											410L	400	410E	400	390									
13										L	400	400	410											
14										350	400L	410	430	410	380									
15												420	420	410	390	350L								
16											420L	420	420	400	410	360								
17												420	420	420L	400	320								
18										370	400	400	400	410	400									
19											400	420	420	400	400	340								
20										I400B	400		430	410	400L	350L								
21										380	410	400	420	B	390	340								
22										400	400	420	420	410	400	360								
23									360	380	420	420	430	420	400									
24									350	400	400	410	420	400	400	340								
25											400	410	410	400	400	360								
26										390	400	420H	420	420	400	350								
27										380	420L	420	430	420	400	380								
28										400	410	420	420	400	410H	380L								
29																								
30																								
31																								
No.									3	14	23	26	25	22	22	17								
Median									350	380	400	410	420	400	400	350								
U. Q.																								
L. Q.																								
Q. R.																								

foF1

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb. 1966 | f_0E | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								S	S	A	A	280	I270B	285H	260	S	S							
2								S	200	240	275	265	290	285	265	215	S							
3								A	A	235	280	290	I290A	285	I255A	I230C	S							
4								S	205	250	280	290	295	290	250	C	C							
5						E		S	200	235	I255R	270	280	285	260	I240A	170							
6					E	E		S	A	240	260	275	280	285	245	225	S							
7							C	C	C	C	280	290	C	C	C	C	C	C						
8							C	C	C	C	C	C	C	C	C	C	C	C						
9							C	C	C	C	A	295	I295C	290	270	235	200							
10				E	E			A	200	I240A	I275A	295	295	290	280	235	170							
11								S	A	A	280	290	295	290	270	230	170	S						
12								S	220	270	290	295	290	290	270	240	185	S						
13							S	S	205	215	I250A	290	I290A	I285A	275	A	A	S						
14							E	S	210	255	290	290	295	290	I270A	240	200	S						
15							S	S	225	I265A	295	300	300	290	275	240	B	S						
16							S	A	230	A	A	A	300	295	I280A	245	195	A						
17							S	S	235	260	I285B	295	300	I290B	275	240	I190B	S						
18							S	S	205	240	275	295	295	290	275	225	S	A						
19		E					S	S	I215S	250	295	300	295	290	280	250	200	S						
20							S	S	225	B	290	B	B	300	280	240	B	S						
21							S	B	225	250	I280A	295	295	I295B	I275B	I240B	B	S						
22							S	160	220	255	I285B	295	295	290	270	245	210	S						
23		S			E		S	S	A	A	285	300	300	290	275	240	195	S						
24				E	E	E	S	A	A	I250R	280	295	290	290	280	245	205	S						
25							S	S	230	270	I290A	295	300	300	290	260	200	S						
26				E			S	S	B	I270R	285	290	I300B	300	285	250	A	S						
27							S	S	235	265	295	300	300	300	290	255	205	S						
28							S	S	230	270	295	300	300	300	280	265	230	130						
29																								
30																								
31																								
No.		1		3	4	3	1	1	18	20	24	25	25	26	26	23	15	1						
Median		E		E	E	E	E	160	220	250	280	295	295	290	275	240	200	130						
U. Q.																								
L. Q.																								
Q. R.																								

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

f_0E

W 3

IONOSPHERIC DATA

Feb. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	E018S	E	E	015	E	E	E015S	E016S	E024S	036	030	G	E030B	G	G	E022S	E020S	E017S	E018S	E020S	E016S	E015S	E017S	E018S
2	E017S	E017S	E014S	E	E	E012S	E015S	E018S	023	G	G	G	G	G	G	G	E020S	026	J070	J036	038	J023	J043	J043
3	031	023	018	E	015	E015S	J030	J023	033	031	023G	028G	033	024G	030	C	J037	J021	E012S	J030	E020S	E017S	E015S	E016S
4	E017S	016	E	015	C	021	E017S	E017S	018G	029	020G	018G	G	033	J043	C	C	J031	J025	E018S	J033	E017S	020	E016S
5	E018S	J020	015	E	E015S	E	E015S	E020S	G	027	G	033	031	G	G	029	G	E016S	E	E	021	J033	J070	J025
6	J030	J023	J025	016	E	E	E018S	E016S	023	G	G	G	G	G	G	030	J044	110	J053	J030	E016S	E012S	E012S	E016S
7	C	C	C	C	C	C	C	C	C	C	G	G	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	029	025G	C	023G	033	035	034	J035	E016S	E016S	J043	030M	E015S	E015S
10	S	E014S	E012S	E	E	E016S	J025	021	G	J036	J032	G	032	G	G	015G	J031	J024	J080	J053	J046	J033	E017S	J021
11	E012S	E012S	E	E	E	E	024	J034	028	031	031	023G	G	G	031	033	033	E016S	J029	J033	039M	E016S	E016S	E015S
12	E017S	J023	E	E	J024	E	E016S	022	027	G	034	J035	020G	G	039	033	027	021	021	E016S	J031	030M	J023	J027
13	E016S	E014S	E	E	E	E015S	E012S	E019S	G	031	032	027G	030	033	029	032	029	J030	E016S	E018S	E020S	E016S	E020S	E014S
14	E012S	E014S	E	E	E	E	E	E017S	G	G	026G	024G	031	023G	031	G	G	E018S	E018S	E020S	E019S	E019S	E016S	E015S
15	E015S	E	023	J023	J027	E012S	E015S	020	G	030	G	G	G	G	G	G	E021B	E017S	E012S	E016S	E017S	E017S	E020S	E015S
16	E015S	E015S	019	E	E	E017S	E015S	021	J041	J041	J073	J045	030	G	J035	G	G	019	E018S	E016S	E016S	E	J023	E016S
17	E015S	E014S	021	016	016	E	E016S	020	G	G	E031B	G	G	E037B	G	G	E027B	E016S	E013S	C	C	C	C	C
18	C	C	C	C	C	E015S	E015S	E019S	G	G	G	G	G	G	020G	029	E020S	030	J043	E017S	E017S	E020S	E016S	E018S
19	E017S	E	E	E	E	E015S	E012S	G	E024S	020G	030	G	G	G	G	G	030	E020S	J031	E018S	E	043	E016S	E016S
20	E016S	E	E	E	E	E015S	E020S	E020S	G	E041B	G	E031B	E040B	G	G	G	E022B	E015S	E013S	E020S	E020S	E020S	J044	J033
21	E017S	J022	015	013	016	E015S	E015S	E030B	G	G	043	G	G	E039B	E036B	E026B	E024B	E020S	E011S	E017S	E016S	E016S	E016S	E016S
22	E018S	E013S	E	015	018	E016S	E019S	G	G	G	G	E035B	G	G	G	G	G	G	E015S	E015S	E013S	E020S	E017S	E016S	E015S
23	E020S	E015S	E	E	E	E015S	E016S	E019S	J032	031	G	G	G	G	G	020G	G	E016S	J023	E015S	J025	J021	J024	J025
24	E012S	E013S	E	E	E	E	E013S	020	031	G	G	G	020G	020G	G	G	G	E017S	E015S	E016S	E016S	E015S	E016S	J023
25	J023	J024	E	018	015	024	E015S	E020S	G	028	030	G	G	024G	020G	G	G	E017S	E018S	E015S	E017S	E020S	E020S	E017S
26	E017S	E	E	E	E	E016S	E016S	E020S	E040B	G	G	G	E032B	G	018G	020G	024	E018S	E017S	E012S	E020S	E020S	E020S	E016S
27	E016S	E015S	E	E	E	E	E015S	E020S	G	G	G	G	G	G	G	G	G	E017S	E016S	E015S	E	E015S	E018S	E016S
28	E016S	E015S	E	E	E	E016S	E015S	023	G	G	G	G	G	G	G	G	G	G	E016S	E011S	E	E018S	E016S	E016S
29																								
30																								
31																								
No.	23	24	24	24	23	25	25	25	25	25	27	27	25	26	26	24	25	26	26	25	25	25	25	25
Median	E017S	E014S	E	E	E	E015S	E015S	E020S	G	G	G	G	G	G	G	G	E021G	E018S	E018S	E017S	E020S	E018S	E017S	E016S
U. Q.	E018	018	015	015	015	E016	E018	020	028	031	030	G	030	G	030	029	030	024	025	E020	E028	022	022	022
L. Q.	E015	E012	E	E	E	E	E015	E018	G	G	G	G	G	G	G	G	G	E016	E015	E015	E016	E016	E016	E016
Q. R.		D006						D002										D008	D010			D006	D006	D006

foEs

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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			E			S	S	S	030	030		B			S	S	S	S	S	S	S	S	S
2	S	S	S			S	S	S	G								S	019	A	A	020	019	020	A
3	025	E016S	016		015	S	018	018	028	G	020G	026G	030	020G	029	C	035	020	S	025	S	S	S	S
4	S	015		E	C	020	S	S	016G	018	020G	018G		G	038	C	C	028	017	S	020	S	E016S	S
5	S	018	014		S		S	S		G		G	G			024		S			E016S	017	A	020
6	020	019	020	013			S	S	020							G	045	A	A	020	S	S	S	S
7	C	C	C	C	C	C	C	C	C	C			C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	027	023G	C	021G	G	G	033	025	S	S	A	019	S	S
10	S	S	S			S	025	016		030	030		G			015G	030	020	A	A	020	025	S	017
11	S	S					016	034	025	029	025	020G			G	G	030	S	026	020	A	S	S	S
12	S	E			022		S	G	018G		020G	025	020G		G	G	G	016	017	S	021	025	021	020
13	S	S				S	S	S		G	031	025G	030	030	021G	026	022	023	S	S	S	S	S	S
14	S	S						S			025G	024G	022G	020G	028			S	S	S	S	S	S	S
15	S		014	020	018	S	S	G		028							B	S	S	S	S	S	S	S
16	S	S	E			S	S	020	019	030	037	031	020		032			018	S	S	S		025	S
17	S	S	015	012	013		S	G			B			B			B	S	S	C	C	C	C	C
18	C	C	C	C	C	S	S	S							018G	G	S	017	025	S	S	S	S	S
19	S					S	S		S	020G	018						G	S	017	S		E017S	S	S
20	S					S	S	S		B		B	B				B	S	S	S	S	S	A	023
21	S	015	015	E	E	S	S	B			030			B	B	B	B	S	S	S	S	S	S	S
22	S	S		012	E	S	S				B							S	S	S	S	S	S	S
23	S	S				S	S	S	028	028						020G		S	011	S	017	E016S	018	E017S
24	S	S					S	020	027				020G	020G				S	S	S	S	S	S	020
25	020	019		012	E	017	S	S		023G	030			022G	020G			S	S	S	S	S	S	S
26	S					S	S	S	B				B		018G	020G	022	S	S	S	S	S	S	S
27	S	S					S	S										S	S	S		S	S	S
28	S	S				S	S	G											S	S		S	S	S
29																								
30																								
31																								
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

f_bEs

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 5

IONOSPHERIC DATA

Feb. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	E018S	E	E	E	E	E	E015S	E016S	E024S	020	020	020	030	021	020	E022S	E020S	E017S	E018S	E020S	E016S	E015S	E017S	E018S
2	E017S	E017S	E014S	E	E	E012S	E015S	E018S	018	018	020	020	020	020	020	020	E020S	E016S	E012S	E012S	E017S	E011S	E015S	E016S
3	E016S	E016S	E	E	E	E015S	010	E012S	010	011	017	011	020	011	011	C	E017S	E	E012S	E018S	E020S	E017S	E015S	E016S
4	E017S	E	E	E	C	E015S	E017S	E017S	011	011	012	011	016	012	011	C	C	010	E016S	E018S	E011S	E017S	E016S	E016S
5	E018S	E015S	010	E	E015S	E	E015S	E020S	011	017	020	020	017	018	018	012	011	E016S	010	E	E016S	E015S	E016S	E016S
6	E015S	E	E	E	E	E	E018S	E016S	015	018	020	020	022	021	020	019	E015S	E	E015S	E015S	E016S	E012S	E012S	E016S
7	C	C	C	C	C	C	C	C	C	C	017	020	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	011	015	C	017	017	013	013	E	E016S	E016S	E015S	E016S	E015S	E015S
10	S	E014S	E012S	E	E	E016S	E018S	E	012	010	011	012	018	011	016	011	011	010	E018S	E013S	E016S	E016S	E017S	E016S
11	E012S	E012S	E	E	E	E	E015S	E015S	012	011	017	016	020	020	017	016	E015S	E016S	E015S	E017S	E015S	E016S	E016S	E015S
12	E017S	E012S	E	E	E	E	E016S	E017S	011	018	016	012	012	020	012	016	E018S	E012S	E013S	E016S	E016S	E016S	E016S	E015S
13	E016S	E014S	E	E	E	E015S	E012S	E019S	012	011	017	017	012	012	011	011	010	E015S	E016S	E018S	E020S	E016S	E020S	E014S
14	E012S	E014S	E	E	E	E	E	E017S	011	011	016	012	017	012	011	017	011	E018S	E018S	E020S	E019S	E019S	E016S	E015S
15	E015S	E	E	E	E	E012S	E015S	E015S	014	012	017	017	020	018	018	017	021	E017S	E012S	E016S	E017S	E017S	E020S	E015S
16	E015S	E015S	E	E	E	E017S	E015S	E	E	010	011	011	010	019	012	011	011	010	E018S	E016S	E016S	E	E011S	E016S
17	E015S	E014S	E	E	E	E	E016S	E015S	011	011	031	020	020	037	017	016	027	E016S	E013S	C	C	C	C	C
18	C	C	C	C	C	E015S	E015S	E019S	011	011	012	019	012	012	011	020	E020S	010	E022S	E017S	E017S	E020S	E016S	E018S
19	E017S	E	E	E	E	E015S	E012S	E012S	E024S	012	017	018	020	020	020	018	011	E020S	010	E018S	E	E017S	E016S	E016S
20	E016S	E	E	E	E	E015S	E020S	E020S	020	041	021	031	040	025	023	020	022	E015S	E013S	E020S	E020S	E020S	E016S	E017S
21	E017S	E	E	E	E	E015S	E015S	030	017	017	018	021	021	039	036	026	024	E020S	E011S	E017S	E016S	E016S	E016S	E016S
22	E018S	E013S	E	E	E	E016S	E019S	E	E	011	035	019	012	022	020	018	011	E015S	E015S	E013S	E020S	E017S	E016S	E015S
23	E020S	E015S	E	E	E	E015S	E016S	E019S	011	018	018	020	018	020	020	011	011	E016S	E	E015S	E015S	E016S	E016S	E017S
24	E012S	E013S	E	E	E	E	E013S	E	011	018	012	020	012	012	018	017	012	E017S	E015S	E016S	E016S	E015S	E016S	E011S
25	E012S	E	E	E	E	E015S	E015S	E020S	011	011	018	020	020	011	012	011	010	E017S	E018S	E015S	E017S	E020S	E020S	E017S
26	E017S	E	E	E	E	E016S	E016S	E020S	040	020	011	019	032	018	011	011	E	E018S	E017S	E012S	E020S	E020S	E020S	E016S
27	E016S	E015S	E	E	E	E	E015S	E020S	011	018	018	018	017	018	018	017	017	E017S	E016S	E015S	E	E015S	E018S	E016S
28	E016S	E015S	E	E	E	E016S	E015S	E017S	011	018	017	020	019	027	020	016	011	010	E016S	E011S	E	E018S	E016S	E016S
29																								
30																								
31																								
No.	23	24	24	24	23	25	25	25	25	25	27	27	25	26	26	24	25	26	26	25	25	25	25	25
Median	E016S	E013S	E	E	E	E015S	E015S	E017S	011	012	017	019	019	018	018	016	012	E016S	E015S	E016S	E016S	E016S	E016S	E016S
U. Q.																								
L. Q.																								
Q. R.																								

The Radio Research Laboratories, Japan

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

f-min

W 6

IONOSPHERIC DATA

Feb. 1966 | M(3000) F2 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	SF	300F	305F	310	315	340	335	360	370	355	365	335H	350	340	365	355	375	345	330	320	335	315	315	285
2	315	320	310	315	315	305	325	355	375	385	355	365	355H	365	350	340H	370	340	I345A	I325A	295	300	305	I305A
3	S	SF	330F	315F	335F	330	335F	350	370	380	365	360	375	325H	360	I360C	385	335	340	335	335	310	300	310
4	315	305	305	330	I340C	325	340	345	380	365	365	385	295H	340	345	C	C	345	330	290	300	295	310	320
5	305	325	305	320	305	315	340	350	355	355	355	350	350	350	355	360	355	350	345	345	300	290	I325A	S
6	S	300	345	300	330	U295S	325	360	340	340	340	345	375	355	370	365	355	I350A	I350A	330	300	295	315	320
7	C	C	C	C	C	C	C	C	C	C	355	335	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	350	345	I360C	360	360	360	370	350	320	340	A	U335S	S	S
10	S	S	S	U290S	320S	S	S	360	360	370	350	340	350	355	350	360	370	325	A	A	295	320	U295S	305S
11	320S	315F	SF	SF	SF	SF	345	360	365	350	350	345	345	340	340	350	340	355	340	310	I305A	300	305	305
12	300	290	300	295	340	330	U315S	355	355	350	350	340	345	350	345	350	360	330	340	335	310	310	335	310
13	SF	SF	285F	300F	300F	330F	SF	360	355	360	360	355	345	330H	340H	345	365	365	305	320	310	315	310S	SF
14	SF	SF	SF	315F	310F	310F	330	360	355	340	330	350	355	315H	350	360H	365	335	335	340	345	305	300	305
15	290F	305F	325F	SF	320	310	330S	380	375	350	315H	350	370	360	365	335	375	360	320	335	330	310	310	285
16	U295S	305F	300F	315F	335	305	310	360	360	335	345	340	355	330H	335	350	375	340	330	320	310	300	320	315
17	310	300	305	295	320	335	335	355	360	360	350	340	355	345	370	355	365	350	315	C	C	C	C	C
18	C	C	C	C	C	SF	325	350	360	330	340	340	350	345	360	360	365	345	355	320	310	285	300	320
19	305	310	310	295	330	350	335	355	370	355	335	340	355	350	320H	360	365	360	345	325	325	315	305	300
20	290	SF	270F	SF	SF	SF	SF	335	320H	335	340	310H	325	330	330	345	350	350	335	305	315S	SF	A	SF
21	SF	310F	SF	325F	SF	SF	325	365	365	355	345	350	340	345	350	365	325	345	335	325	310	290	SF	SF
22	SF	SF	SF	U300F	SF	SF	330	360	360	350	340	345	360	355	350	355	355	365	350	325	305	300	300	SF
23	305F	305	315	305	330	SF	SF	325S	290	315	320	340	335	350	345	325	340	325	340	340	300	290	280S	280
24	280	305	315	320	315	315	300	350	340	355	315H	320	335	370	345	355	345	350	350	310	300	270	300	295
25	295	300	320	295	350	315	315	335	350	340	350	350	345	350	340	355	360	355	335	335	325	310	295	315
26	290	305	315	320	315	285	325	355	350	330	330	335	350	350	360	370	370	365	340	330	310	285	300	300
27	285	300	315	310	325	330	310	360	360	345	340	340	340	350	350	350	350	360	325	320	310S	310	310	300
28	300	300	300	300	315	335	335	360	365	350	350	325	345	345	360	340	360	340	335	340	330	310	300	290S
29																								
30																								
31																								
No.	16	18	19	21	20	18	21	25	25	25	27	27	26	26	26	25	25	26	25	24	24	24	22	19
Median	300	305	310	310	320	320	330	355	360	350	350	340	350	350	350	355	365	350	335	325	310	300	305	305
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F2

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 7

IONOSPHERIC DATA

Feb. 1966 | M(3000) F1 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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												400	395	400	U380L	U380L								
2										435		385		390		400								
3											405	U385L	400			C								
4											400L	385	410		A	C								
5										U395L	420	385	380	395	380	400								
6										U395L	390	365	400	400	U380L									
7									C	C	390	U400L	C	C	C	C								
8									C	C	C	C	C	C	C	C								
9									C	C	380	385	I390C	390	400									
10									U380L	U400L	400L	380	390	400L	U395L	395								
11											400	380	380H	U405L	405	U390L								
12											390L	400	390H	390	390									
13										L	400	400	395											
14										430	400L	370	375	390	400									
15												380	380	390	385	430L								
16											380L	380	380	400	365	395								
17												400	385	390L	400	405								
18										405	400	400	380	390	400									
19											395	380	380	390	390	390								
20										I390B	400		I380B	370	390L	400L								
21										400	390	400	390	B	I400B	410								
22										390	400	395	385	390	380	415								
23									350	340	340	375	370	380	375									
24									400	390	400	390	360	390	395	380								
25											380	390	390	390	380	395								
26										390	380	390H	390	380	390	415								
27										410	380L	380	390	380	380	395								
28										400	390	385	385	380	370H	395L								
29																								
30																								
31																								
No.									3	14	23	26	25	22	22	17								
Median									380	400	395	385	385	390	390	395								
U. Q.																								
L. Q.																								
Q. R.																								

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

M(3000) F1

W 8

20

IONOSPHERIC DATA

Feb. 1966 | h'F2 km | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	260	270	245	245								
2										220		250		245		235								
3											230	250	240			C								
4											240	225	255H		250	C								
5										245	230	260	255	250	240	225								
6										260	260	260	225	260	240									
7									C	C	250	250	C	C	C	C								
8									C	C	C	C	C	C	C	C								
9									C	C	260	260	I250C	250	250									
10									245	245	250	275	260	260	250	240								
11											250	270	260	270	255	255								
12											255	260	260	250	250									
13										230	250	250	250											
14										230	245	250	250	265H	250									
15												245	245	250	250	230								
16											260	260	260	250H	275	240								
17												260	250	260	250	235								
18										235	245	250	250	260	245									
19											260	255	250	250	260	245								
20										250	235		270	255	260	240								
21										240	245	250	260	260	250	240								
22										270	250	250	255	250	260	250								
23									390	300	285	265	275	250	250									
24									260	250	250	275	260	250	250	250								
25											250	260	250	250	260	240								
26										255	260	250	250	260	250	245								
27										250	260	270	255	265	250	260								
28										245	250	265	250	260	260	250								
29																								
30																								
31																								
No.									3	15	23	26	25	23	23	17								
Median									260	245	250	260	255	255	250	240								
U. Q.																								
L. Q.																								
Q. R.																								

h'F2

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 9

IONOSPHERIC DATA

Feb. 1966 | h'F km | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	265	275	255	250	225	225	220	225	225	230	230	215	230	240	230	210	225	225	270	245	250	250	300
2	295	275	275	250	240	265	250	230	215	200	230	235	250H	220	245	200	210	225	I245A	A	320	295	280	I295A
3	300A	260	240	240	250	250	250	215	230	210	210	190	225	210H	245	I230C	220	250	235	250	230	260	250	295
4	285	285	260	240	I215C	275	245	225	210	230	215	220	200	250	A	C	C	245A	250	260	300	300	270	270
5	280	260	270	250	260	240	240	230	225	245	225	230	245	215	225	225	225	230	235	215	300	315	I270A	290
6	275	265	250	250	225	270	270	215	235	245	225	215	240	220	240	230	I240A	I225A	I230A	250	275	270	250	255
7	C	C	C	C	C	C	C	C	C	C	245	240	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	210	240	I240C	240	240	230	230	235	250	250	A	290	300	300
10	I255S	250	260	250	235	245	300A	225	215	210	225	225	240	225	225	220	225A	225	A	A	300	300A	295	275
11	260	270	250	230	230	250	275	225	225	240	230	215	200H	200	235	240	235	210	260A	255	I300A	300	275	280
12	300	300	260	255	245	235	275	230	235	240	245	240	225H	245	245	240	220	225	230	245	270	270	250	250
13	280	275	250	250	250	250	235	220	230	225	240	225	220	210H	220H	225H	225	220	250	260	300	275	275	300
14	300	270	250	240	250	245	225	215	215	205	235	250	235	210	225	205H	220	220	250	250	250	275	280	290
15	300	280	255	265	275	240	250	210	210	220	220H	240	245	215	215	220	215	210	240	230	250	285	295	310
16	305	280	295	240	220	245	250	215	220	220H	250	210	210	200	250	230	215	215	235	250	250	250	315A	260
17	250	275	285	285	250	210	220	220	235	225	230	210	240	235B	220	225	225	210	250	C	C	C	C	C
18	C	C	C	C	C	260	250	220	225	210	200	210	220	200	220	230	225	215	235	250	275	315	285	275
19	285	260	255	255	250	215	220	225	215H	230	225	220	210	200	225	225	230	215	220	240	225	260	270	280
20	300	280	290	295	270	225	260	225	225H	I250B	240	220H	I225B	250	230	235	225	220	215	300	285	325	I310A	325
21	300	260	260	210	260	250	250	225	230	205	235	230	235	I220B	I220B	210	245	225	215	250	250	290	290	280
22	280	275	260	250	230	260	245	220	225	210	225	230	210	220	230	240	240	220	210	250	290	250	275	300
23	310	300	290	260	225	260	285	240	250	220	245	220	225	235	225	200H	245	250	225	210	250	275	325	300
24	285	250	250	250	240	250	275	250	230	245	220	200	200	235	225	215	235	225	220	245	255	300	300	315
25	320	300	250	260	210	310	260	230	235	230	210	220	225	210	210	225	225	220	225	250	250	300	315	290
26	295	250	250	220	225	250	260	225	I235B	230	225	200H	215	210	235	235	225	220	235	240	250	300	290	285
27	280	275	260	235	235	230	240	220	245	210	210	245	235	215	230	230	200H	215	230	235	230	265	265	275
28	275	270	250	230	230	240	220	225	225	210	200	200	240	220	210H	235	240	215H	230	215	215	250	265	300
29																								
30																								
31																								
No.	24	24	24	24	24	25	25	25	25	25	27	27	26	26	25	25	25	26	25	23	24	25	25	25
Median	290	270	260	250	240	250	250	225	225	225	225	220	225	220	225	230	225	220	235	250	250	285	280	290
U. Q.																								
L. Q.																								
Q. R.																								

h'F

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 10

IONOSPHERIC DATA

Feb. 1966 | h'Es | km | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N | Long. 141° 41.1'E

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	E	E	105	E	E	S	S	S	105	105	G	B	G	G	S	S	S	S	S	S	S	S	S
2	S	S	S	E	E	S	S	S	145	G	G	G	G	G	G	G	S	110	105	105	105	105	105	105
3	105	100	105	E	110	S	110	110	105	110	110	110	115	100	115	C	110	110	S	105	S	S	S	S
4	S	120	E	120	C	110	S	S	110	110	105	105	G	125	115	C	C	105	110	S	105	S	105	S
5	S	105	105	E	S	E	S	S	G	140	G	150	150	G	G	115	G	S	E	E	110	105	105	105
6	105	105	115	120	E	E	S	S	110	G	G	G	G	G	G	125	115	110	110	110	S	S	S	S
7	C	C	C	C	C	C	C	C	C	C	G	G	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
9	C	C	C	C	C	C	C	C	C	C	105	105	C	105	145	130	125	115	S	S	105	105	S	S
10	S	S	S	E	E	S	110	110	G	105	105	G	150	G	G	105	115	110	105	105	105	105	S	105
11	S	S	E	E	E	E	110	110	105	105	105	105	G	G	150	145	120	S	110	105	105	S	S	S
12	S	105	E	E	115	E	S	150	150	G	140	105	105	G	135	125	120	120	115	S	105	105	105	105
13	S	S	E	E	E	S	S	S	G	110	105	105	105	105	105	105	105	100	S	S	S	S	S	S
14	S	S	E	E	E	E	E	S	G	G	105	105	105	105	105	G	G	S	S	S	S	S	S	S
15	S	E	100	100	100	S	S	145	G	110	G	G	G	G	G	G	B	S	S	S	S	S	S	S
16	S	S	110	E	E	S	S	110	105	105	100	100	100	G	100	G	G	105	S	S	S	E	110	S
17	S	S	100	100	100	E	S	170	G	G	B	G	G	B	G	G	B	S	S	C	C	C	C	C
18	C	C	C	C	C	S	S	S	G	G	G	G	G	G	105	120	S	110	105	S	S	S	S	S
19	S	E	E	E	E	S	S	G	S	105	105	G	G	G	G	G	125	S	110	S	E	105	S	S
20	S	E	E	E	E	S	S	S	G	B	G	B	B	G	G	G	B	S	S	S	S	S	105	105
21	S	110	105	105	105	S	S	B	G	G	110	G	G	B	B	B	B	S	S	S	S	S	S	S
22	S	S	E	105	105	S	S	G	G	G	B	G	G	G	G	G	G	S	S	S	S	S	S	S
23	S	S	E	E	E	S	S	S	110	110	G	G	G	G	G	105	G	S	110	S	110	100	100	100
24	S	S	E	E	E	E	S	115	110	G	G	G	105	105	G	G	G	S	S	S	S	S	S	110
25	110	105	E	105	105	105	S	S	G	105	105	G	G	105	105	G	G	S	S	S	S	S	S	S
26	S	E	E	E	E	S	S	S	B	G	G	G	B	G	105	100	100	S	S	S	S	S	S	S
27	S	S	E	E	E	E	S	S	G	G	G	G	G	G	G	G	G	S	S	S	E	S	S	S
28	S	S	E	E	E	S	S	145	G	G	G	G	G	G	G	G	G	G	S	S	E	S	S	S
29																								
30																								
31																								
No.	3	7	7	8	7	2	3	9	9	12	13	9	8	7	11	10	9	10	9	5	8	7	7	7
Median	105	105	105	105	105	110	110	115	110	110	105	105	105	105	105	120	115	110	110	105	105	105	105	105
U. Q.																								
L. Q.																								
Q. R.																								

h'Es

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

W 11

IONOSPHERIC DATA

Feb. 1966 | Types of Es | 135° E Mean Time (G. M. T. +9h) | Wakkanai | Lat. 45° 23.6'N, Long. 141° 41.1'E

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						1	1													
2									h									f	f3	f	f3	f2	f2	f
3	f	f	f		f		f	1	12	1	1	1	1	1	11		c3	f		f				
4		f		f		f2			1	1	1	1		c	c2			f2	f		f		f	
5		f	f							h		h	h			1					f	f	f2	f
6	f	f2	f2	f					1							c	c2	f3	f	f				
7																								
8																								
9											1	1		1	h	h	c	f			f3	f		
10							f2	1		12	1		h			1	c2	f	f2	f2	f2	f2		f
11							f	13	1	1	1	1			h	h	c		f	f	f			
12		f			f3			h	h1		h1	12	1		h	c	c	c	f		f2	f	f2	f
13										c	1	1	12	1	1	1	1	12						
14											1	1	1	1	1									
15			f	f2	f			h		1														
16			f					1	1	1	12	12	1		1			1					f	
17			f	f	f			h																
18															1	c		1	f					
19										1	1						c		f			f		
20																							f2	f2
21		f	f2	f	f2						1													
22				f	f																			
23									1	12						1			f		f	f	f	f
24								1	1				1	1										f
25	f	f2		f	f	f				1	1			1	1									
26															1	1	1							
27																								
28								h																
29																								
30																								
31																								
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

Types of Es

Sweep 1.0 Mc to 18.0 Mc in 40 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	030F	FS	034F	031F	032	030F	031	046	052	050	057	059	I066C	058	052H	064	051	037	037	034	039S	035	028	028
2	030	032S	031	030	028	028	027	045	054	057	060	061H	069S	061	056	054H	050H	042	035	I030A	028	FS	F	F
3	033	033	034	032	030	031	031S	043	062	054H	053	071	056H	055	054H	063	047	036	036	040S	035	028	029	027
4	030	030	031	032	029	025S	026	044	062	052H	062	063	061	063	067	063	048	052	043	035	031	031S	032	030
5	032	032	029	028	027	029	029	048	055	058	070	071S	064	070	066	055	053	048	042	036	026	029	035	I034R
6	035	035	027S	025	029	026	029	049	059	066	087	102	077	072	063H	054	054	051	049	033	I028A	I031A	032	034S
7	027	028	030	031	034S	025	026	050	056	058	065	066H	070H	073	070H	070	055	047	I035R	031	036S	035	035	036
8	FS	FS	034F	032F	F	FS	FS	044S	055	066	074	071	070	059	057	054	055	039	029	032	030	031	FS	025
9	030F	F	030	025F	028	023	020	044S	058	067	060	063	062	066	056	059	047	041	I031A	030	027	028S	028F	029S
10	031F	031	031	027S	027	025	026	046	060	058	059	062	065	063	058	055	050	042	040	035	034S	034S	031F	F
11	F	F	034F	029	FS	027F	026F	049	054	063	071	078R	074H	I076R	065	059	062	056	039	I030A	I032A	FS	FS	FS
12	FS	031	032S	031	034S	I020A	020	043	061	068	065	065	061	066	063	057	057	046	050S	056S	031S	034F	FS	FS
13	038F	037F	FS	F	040S	FS	FS	049	057	064	065	069	064	063H	066	062	058	046	030	031	032	FS	I035R	032
14	033F	FS	FS	FS	034F	031F	031S	055	054	061	069	086	072	068	062	060	060	043	034	044S	035	028F	032S	FS
15	FS	030S	031F	028	027	027F	025	048	053	059	069	078	082	064	061	062H	055	047	035	040	036	025	029S	030
16	032S	030F	FS	031F	036S	021F	026F	050S	065	067	069	080	079	066	062	069	068	045	039	037	033	030	032	032
17	032	030	030	031	033	027	026	051	063	067	061	065	076	066	064	066	057	048	035	036	037	034	034	034
18	033S	034	034	032	032	032	034	055S	069	076	069	070	081	070	066	062	060	047	037	034	030	FS	FS	033F
19	032F	034S	036	035	037	030	028	051	060	058	064	069	079	062	058	062	060	055	036	036	033	033	035	036
20	036	036	036	035	034S	032F	034	054	077S	090	098	090	094	091	093	082	067	059	038	039	032	033	FS	FS
21	036S	038F	033S	038S	032S	033F	034F	057	070	069	072	070	066	067	071	063	057	060	050	036	039	040S	040S	037
22	039S	042	043	042	042S	041	044F	055	068	065	068	071	078	060	065	061	060	063	040	033	032	037	035	034
23	035	034	034	032	040S	027F	027	046	049H	074S	095	086	081	081	069	058	067	068	065	052	032	FS	037F	FS
24	FS	FS	043F	043F	FS	032F	030	056	069	063	088	090	091	080	066	063	057	053	043	029	032	031	034S	033
25	035S	035	033	029	027	022	026	053S	061	063	070	072H	070	068	067	059	059	048	040	037	037	034	033	034
26	036	036	033	033	030	027	032S	051	065	067	069	078	076	073	071	062	058	051	037	038	039	036	034	035
27	033	033	033	033	035	027	030	052	056	062	064	069	087	076	063	061	066	057	046	035	035	035	037	039S
28	037	036	037	036	036	035S	044S	058	057	061	068	073	078	070	067	065	059	060	047	046S	040S	035S	034	036
29																								
30																								
31																								
No.	23	22	25	26	25	26	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28	23	22	21
Median	033	034	033	032	032	027	028	050	060	063	068	071	073	066	064	062	057	048	038	036	032	033	034	034
U. Q.	036	036	034	033	036	031	031	054	064	067	070	078	079	072	067	063	060	056	043	038	036	035	035	036
L. Q.	031	031	031	029	028	025	026	046	055	058	063	066	066	063	060	058	054	044	035	032	031	030	032	030
Q. R.	005	005	003	004	008	006	005	008	009	009	007	012	013	009	007	005	006	012	008	006	005	005	003	006

foF2

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 1

IONOSPHERIC DATA

Feb. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	330	400L	400L	I420C	400L	340	300								
2										L	400L	LH	L	420L	370L	L								
3										L	L	400	410	410L	350L	L	L							
4									L	320H	400	410L	I400A	420	L	290								
5									270	400H	LH	420	420	420	380L	L	240							
6									A	L	420	420	420L	L	380L	L	A							
7										L	L	L	420L	380	L	L	L							
8								L	270	L	LH	420	420	400L	380L	L								
9									L	400L	L	420	L	420	A	A								
10									L	380L	LH	420	420	410L	380L	350L	L							
11									300	I360A	420L	450H	440H	L	410	L								
12									320	LH	410L	420L	I420A	430L	A									
13										350	400L	I420A	430	430L	400L	L	L							
14										330	L	L	430	430L	400L	L	240							
15										320	LH	450	430	420	410	L	L							
16										L	420L	430	430	L	370	350	L							
17										L	410	420	L	420L	L	LH	L							
18								220H	270	L	380L	420L	430L	420	410	L	L							
19										400L	420	430L	430L	420	LH	L	L							
20									LH	420L	400L	L	430L	430L	410L	360L								
21									LH	L	400H	430L	L	I410A	L	A	A							
22								200	LH	400	400L	450L	430	420L	L	L								
23									LH	410	420	430	440	420	410L	LH	300L							
24									L	L	420	430	420L	LH	380L	L	L							
25									L	400L	420L	420L	420L	420L	400L	L	250							
26									L	L	420L	430	440L	420L	410L	L	L							
27										L	410	L	450	430	420L	L								
28									L	400L	LH	L	430	L	L	400L	L							
29																								
30																								
31																								
No.								2	6	15	19	22	24	23	19	6	4							
Median								210H	280	400	410L	420	430	420L	400L	350L	240							
U. Q.																								
L. Q.																								
Q. R.																								

foF1

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 2

IONOSPHERIC DATA

Feb. 1966 | foE | 0.01 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	230	255	280	295	C	A	265	A	A							
2								E	230	255	280	290	300	290	I275A	A	A							
3								A	A	I250A	A	A	A	A	A	A	A							
4								E	I220A	I260A	280	295	300	A	A	250	A	E						
5								B	220	255	280	I290S	290H	280	275	A	A	E						
6								E	A	255	280	290	300	295	275	240	A	E						
7								B	A	I260A	285	300	305	295	285	255	210	E						
8								E	215	260	285	295	305	300	285	260	220	E						
9								170	220	265	285	295	300	300	275	245	210	E						
10								E	220	265	285	I300A	310	300	290	255	195	E						
11								E	225	I265A	285	295	I300A	300	285	260	A							
12								B	230	280	290	305	310	300	280	260	A							
13								E	225	I260A	I280A	I295A	305	300	280	255	215							
14								180	240	A	A	300	310	305	285	I260R	210	E						
15								195	A	A	A	300	305	I300A	280	250	215	E						
16								E	230	270	290	305	310	305	285	265	210							
17								E	230	280	290	305	310	305	290	270	220	E						
18								E	220	270	285	295	300	305	285	260	215	E						
19								E	220	265	285	300	310	310	295	265	225	E						
20								B	240	280	295	305	310	305	290	265	220	B						
21								170	230	275	290	305	315	305	290	260	220	E						
22								A	235	270	290	305	305	300	290	270	230	E						
23								185	230	265	285	A	A	A	285	265	215	E						
24								A	A	260	285	295	305	300	I290A	270	215	B						
25								190	245	270	290	300	310	305	295	275	225	B						
26								A	240	280	295	310	315	310	295	270	230	170						
27								A	I250A	280	290	305	315	310	300	280	A	A						
28								A	240	280	300	305	310	I305B	295	265	A	A						
29																								
30																								
31																								
No.								18	23	26	25	26	25	24	26	24	18	16						
Median								E	230	265	285	300	305	300	285	260	215	E						
U. Q.																								
L. Q.																								
Q. R.																								

foE

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 3

IONOSPHERIC DATA

Feb. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	J013E	E	E	J012E	J014E	J015E	E	E	J025	G	G	020G	C	029	020G	025	022	J026	J024	J015E	J029	J015E	J015E	J016E
2	E	J023	J016E	E	E	E	E	E	029	G	G	G	034	031	032	032	024	020	J025	J030	J024	J029	J025	J023
3	J015E	J013E	J025	J025	J025	J021	J016E	021M	025	J036	J075	032	032	J033	J033	J027	022	J029	J021	J028	J019	J016E	J018	J018
4	J016E	J018	J020	J013E	J015E	J021	J029	J016E	J023	028	037	035	J058	J033	028	G	022	J025	J020	J028	J020	J026	J019	E
5	J015E	J013E	J014E	J013E	J016E	E	E	J018	G	G	J029	E035S	032	031	030	026	J038	J016E	J018	E	J017	J016E	J015E	J026
6	J034	J018	J016E	J016E	J013E	E	J016E	J018	J073	G	G	G	G	G	G	027	J033	J039	J064	J060	J064	J034	J020	J025
7	J025	J018	J020	J016E	J038	J025	J038	J029	J036	031	032	032	G	G	032	G	G	E	J013E	E	E	J026	J020	E
8	E	E	E	E	018M	J015E	J025	J026	020G	028	G	033	034	033	020G	G	G	J013E	J016E	J022	J015E	J021	J015E	J043
9	J037	J025	J023	J018	J017	J014E	E	G	G	029	G	034	039	040	043	J041	028	023	J039	J027	J015E	J033	J018	J046
10	J023	J021	J018	J023	E	J013E	J020	J018	J024	028	J031	J044	033	G	G	029	026	019	J025	J021	J060	J030	J029	J029
11	E	E	J016E	J025	J017	J018	J016E	J016E	G	J040	J032	038	J043	038	J035	036	J033	J039	J034	J093	J074	J036	J031	J035
12	J018	J025	J026	J026	J028	J029	J014E	025	028	G	035	032	J050	037	J046	J040	J049	J042	J040	J027	J036	J031	J032	J028
13	J018	J016E	J018	J013E	E	E	E	018	028	032	032	J051	027G	024G	G	029	024	J027	J028	J025	J013E	J025	J031	E
14	E	E	E	E	E	E	E	G	026	J030	J034	G	G	024G	023G	025G	G	E	J015E	E	E	E	E	E
15	J014E	E	E	E	E	J018	J016E	G	029	J039	J033	G	G	032	030	024G	023	E	J023	J020	J021	J022	J013E	J020
16	J020	J018	J016E	E	E	E	E	E	G	028	033	033	G	G	G	G	G	021	J025	J016E	E	E	E	E
17	E	J015E	E	E	J017	E	E	E	G	031	032	033	G	G	G	G	024	022	J015E	E	E	E	E	E
18	J013E	E	E	E	E	E	E	E	G	G	G	G	G	G	030	028	021G	J015E	J016E	J018	J012E	J026	E	E
19	J022	J020	J016E	018M	J013E	J015E	E	E	J036	G	031	037	G	035	G	032	033	021	E	E	E	E	J018	J013E
20	J016E	J016E	E	E	J015E	J013E	E	021	G	G	G	030G	G	G	G	G	G	E017B	J012E	E	E	E	E	E
21	E	J015E	J022	J013E	J016E	E	J016E	G	G	J029	J030	036	041	J045	038	037	J043	018	J013E	E	J013E	J013E	J013E	J018
22	J015E	E	E	E	E	018M	J013E	J022	G	G	G	024G	G	G	G	G	G	021	E	E	J013E	E	J019	E
23	E	E	E	E	E	E	E	G	G	G	034	J033	032	J037	031	G	G	E	J015E	J017	J036	J018	J018	J020
24	J023	E	E	J013E	J017	E	E	024	J029	G	G	024G	020G	021G	J031	J029	G	E017B	E	E	E	E	J021	J016E
25	E	E	E	E	E	E	J012E	G	G	G	029G	G	G	G	021G	028	G	E017B	J013E	E	E	E	E	E
26	E	E	E	E	E	E	J013E	021	026	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
27	E	E	E	E	E	E	E	021	032	G	032	G	G	G	G	G	025	J025	J018	E	E	E	J016E	E
28	E	E	E	E	E	E	E	J021	G	030	G	G	G	E036B	G	029	024	J036	J013E	J031	J018	J033	J026	J025
29																								
30																								
31																								
No.	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28
Median	E	E	E	E	E	E	E	G	024	G	030	E032G	G	G	G	026	022	020	E	E	E	E	018	E
U. Q.	019	018	018	E	017	E	E	021	028	030	032	034	034	034	032	029	027	026	025	027	022	028	020	025
L. Q.	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
Q. R.																								

foEs

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 4

IONOSPHERIC DATA

Feb. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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									017			020G	C	029	020G	025	020	E	E		017			
2		E							026				U034R	031	030	027	024	E	E	A	E	E	E	E
3			017	E	017	017		019	024	034	035	031	031	030	028	027	021	023	018	E	E		E	E
4		017	E			020	E		023	027	034	033	045	031	028		022	E	017	E	018	E	E	
5								017			G	S	032	031	028	025	022		E		E			017
6	017	E						E	036							027	030	035	022	E	A	A	E	018
7	E	E	018		019	E	017	026	028	030	032	U032R			030							017	E	
8					E		017	017	018G	028		U033R	033	031	018G					018		E		017
9	020	018	E	E	E					028		034	039	039	043	038	025	022	A	E		017	E	E
10	E	E	E	E			E	E	G	020	G	031	033			028	025	018	019	018	017	E	023	E
11				E	E	E				040	027	035	033	038	032	032	022	031	E	A	A	022	017	020
12	E	020	017	017	025	A		022	027		034	032	048	036	043	030	030	040	031	E	022	E	017	E
13	E		E					018	027	031	031	048	026G	024G		028	023	020	021	E		E	E	
14									025	028	030			023G	022G	022G								
15						E			025	028	030			031	026	022G	019		E	E	E	E		E
16	E	E								028	032	032						018	022					
17					E					030	032	032					023	E						
18															029	027	020G			E		018		
19	017	E		E					E		031	036		035		030	027	019					E	
20								020				030G						B						
21			017							023	022	034	038	045	036	038	039	018						E
22						E		017				020G						021					E	
23											033	033	032	037	030					E	018	E	E	E
24	E				E			022	025			024G	020G	021G	030	023		B					E	
25											028G				020G	028		B						
26								021	025															
27								019	028		032						024	018	E					
28								020		026				B		029	024	020		018	E	018	018	E
29																								
30																								
31																								
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

f_bEs

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 5

IONOSPHERIC DATA

Feb. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	E	E	E	E	017	017	017	017	C	017	017	E	017	E	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	017	017	017	017	018	018	018	017	017	E	E	E	E	E	E	E
3	E	E	E	E	E	E	E	E	E	E	017	017	017	017	017	E	E	E	E	E	E	E	E	E
4	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	017	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	017	017	017	017	E035S	017	017	017	017	E	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	017	018	019	023	022	020	019	018	017	E	E	E	E	E	E	E
7	E	E	E	E	E	E	E	017	017	019	019	022	022	021	019	018	017	E	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	E	017	017	019	018	018	018	017	E	E	E	E	E	E	E	E
9	E	E	E	E	E	E	E	E	E	E	017	017	017	017	017	E	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	E	E	E	017	E	017	017	E	E	E	E	E	E	E	E
11	E	E	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	017	017	018	017	017	017	E	E	E	017	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	017	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	017	017	017	018	018	018	017	E	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	017	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	E	017	017	020	018	017	017	017	017	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	017	017	017	017	017	017	018	018	017	017	017	E	E	E	E	E	E
21	E	E	E	E	E	E	E	E	017	E	017	017	017	E	017	017	017	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	E	017	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	E	E	017	018	018	017	017	017	E	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	E	E	017	017	017	E	E	017	E	E	017	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	E	E	017	017	018	017	E	017	E	017	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	017	017	018	017	018	017	017	E	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	E	017	E	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	E	017	017	017	017	036	017	017	017	E	E	E	E	E	E	E
29																								
30																								
31																								
No.	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	28	28	28	28	28	28	28	28	28
Median	E	E	E	E	E	E	E	E	E	017	017	017	017	017	017	017	017	E	E	E	E	E	E	E
U. Q.																								
L. Q.																								
Q. R.																								

f-min

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Feb. 1966 | M(3000) F2 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	295F	FS	310F	310F	310	340F	340	365	375	365	345	355	I340C	370	325H	370	385	350	325	315	330S	340	335	305
2	305	295S	300	305	320	320	335	355	370	375	370	350H	365H	350	350	335H	335H	335	335	I350A	355	FS	F	F
3	310	300	330	330	315	310	315S	365	380	355H	345	360	340H	365	315H	360	365	355	310	345S	335	330	305	300
4	280	285	305	320	350	345S	320	355	370	360H	370	370	355	325	365	360	365	340	325	335	305	295S	310	300
5	305	320	320	325	305	325	325	370	380	335	340	355S	330	345	355	350	355	350	335	345	310	280	310	I310R
6	295	335	320S	320	315	295	320	365	345	325	335	350	350	355	335H	365	365	325	340	350	I300A	I295A	325	325S
7	300	310	310	320	325S	310	325	355	355	335	360	340H	340H	350	335H	370	380	360	I350R	310	315S	315	315	300
8	FS	FS	310F	305F	F	FS	FS	345S	370	325	345	345	355	355	365	370	325	355	320	330	315	295	FS	305
9	290F	F	310	330F	330	330	310	355S	345	340	340	345	345	370	365	365	345	355	I315A	335	315	320S	295F	275
10	305F	320	325	310S	335	305	325	345	365	350	345	345	350	360	365	350	345	335	345	330	300S	300S	305F	F
11	F	F	320F	305	FS	310F	315F	360	350	340	335	335R	325H	I340R	345	365	350	355	300	I320A	I310A	FS	FS	FS
12	FS	305	315S	315	350S	I310A	320	345	345	320	345	345	345	330	360	335	360	330	320S	350S	315S	315F	FS	FS
13	305F	310F	FS	F	335S	FS	FS	345	360	340	350	360	335	335H	360	350	355	350	315	325	300	FS	I330R	330
14	295F	FS	FS	FS	335F	315F	325S	360	365	345	320	360	355	355	365	345	360	365	305	340S	355	310F	325S	FS
15	FS	300S	325F	305	330	320F	325	365	365	320	355	320	355	370	355	345H	375	360	315	320	355	300	305S	295
16	300S	300F	FS	305F	345S	355F	305F	345S	360	350	325	345	335	355	350	350	375	355	325	325	315	310	305	305
17	305	305	310	310	335	335	315	365	355	360	355	350	350	345	345	370	370	355	325	310	320	310	310	295
18	305S	310	305	295	310	295	320	345S	350	370	340	345	345	335	345	355	360	380	330	325	305	FS	FS	325F
19	300F	315S	310	315	325	335	315	355	375	370	340	330	350	355	335	350	355	365	335	325	320	305	295	285
20	285	290	290	280	305S	315F	325	325	335S	310	295	325	325	310	335	355	365	355	355	315	300	275	FS	FS
21	295S	310F	315S	315S	305	300F	320F	355	350	375	370	345	335	335	350	360	360	340	360	330	295	305S	305S	315
22	280S	300	305	315	305S	305	325F	365	355	375	360	345	355	345	360	350	365	365	365	335	300	310	305	295
23	290	285	290	295	345S	295F	280	325	305H	315S	330	330	340	355	355	340	330	330	345	345	335	FS	290F	FS
24	FS	FS	310F	300F	FS	315F	300	335	350	305	345	335	335	350	355	355	355	355	340	315	295	300	305S	280
25	305S	300	310	315	335	280	310	345S	350	350	350	325H	335	350	355	345	375	385	325	310	320	305	285	305
26	300	315	310	310	320	295	320S	350	350	350	350	335	345	345	355	365	365	360	340	310	315	335	310	295
27	300	295	295	310	335	320	330	365	365	360	350	335	335	355	345	355	360	360	385	305	310	310	315	305S
28	310	305	315	320	330	330S	345S	385	365	335	335	335	340	350	355	355	350	355	330	335S	335S	325S	295	295
29																								
30																								
31																								
No.	23	22	25	26	25	26	26	28	28	28	28	28	28	28	28	28	28	28	28	28	28	23	22	21
Median	300	305	310	310	330	315	320	355	360	350	345	345	340	350	355	355	360	355	330	330	315	310	305	300
U. Q.																								
L. Q.																								
Q. R.																								

M(3000) F2

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

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IONOSPHERIC DATA

Feb. 1966 | M(3000) F1 | 0.01 | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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									415	430	380L	375L	I370C	390L	430	400								
2										L	395L	LH	L	380L	405L	L								
3										L	L	375	390	380L	405L	L	L							
4									L	410H	375	355H	I380A	365	L	405								
5									410	395H	LH	370	375	365	395L	L	415							
6									A	L	365	365	385L	L	400L	L	A							
7										L	L	L	375L	390	L	L	L							
8								L	405	L	LH	370	385	390L	400L	L								
9									L	375L	L	370	L	365	A	A								
10									L	405L	LH	375	380	375L	395L	405L	L							
11									425	I400A	390L	380H	385H	L	385	L								
12									385	LH	380L	385L	I380A	365	A									
13										450	390L	I380A	375	375L	375L	L	L							
14										430	L	L	375	385L	385L	L	420							
15										445	LH	355	375	385	375	L	L							
16										L	390L	380	375	L	400	410	L							
17										L	400	390	L	385L	L	LH	L							
18								405H	415	L	410L	385L	375L	385	370	L	L							
19										400L	400	380L	375L	390	LH	L	L							
20									LH	375L	390L	L	375L	375L	380L	390L								
21									LH	L	405H	390L	L	I380A	L	A	A							
22								440	LH	400	400L	370L	370	395L	L	L								
23									LH	370	360	380	370	380	380L	LH	395L							
24									L	L	360	370	370L	LH	390L	L	L							
25									L	390L	375L	385L	370L	365L	385L	L	405							
26									L	L	375L	385	370L	395L	380L	L	L							
27										L	395	L	370	375	385L	L								
28									L	405L	LH	L	375	L	L	390L	L							
29																								
30																								
31																								
No.								2	6	15	19	22	24	23	19	6	4							
Median								420H	410	400	390L	380	375	380L	385L	400L	410							
U. Q.																								
L. Q.																								
Q. R.																								

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

M(3000) F1

The Radio Research Laboratories, Japan

A 8

IONOSPHERIC DATA

Feb. 1966 | h'F2 km | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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									230	220	270	250	I275C	245	245	240								
2										230	235	255	230	265	255	240								
3										235	245	260	255	245	240	240	225							
4									225	230	240	245	265	295	250	240								
5									225	280L	260	255	250	260	220	240	235							
6									245	250L	270	245	240	245	240	240	235							
7										240	245	245	260	250	240	240	230							
8								230	230	255	260	255	245	270	245	240								
9									240L	270	250	260	270	245	245	240								
10									240	255	250	285	275	255	250	240	235							
11									235	265	265	275	290	245	260	245								
12									245	265	260	255	275	290	245									
13										250	260	255	285	280	255	245	235							
14										240	275	250	255	250	250	245	245							
15										230	255	295	245	245	260	240	225							
16										245	250	250	275	245	245	255	230							
17										245	240	265	255	255	250	245	230							
18								235	235	240	250	255	255	250	255	240	230							
19										240	265	285	255	250	240	255	245							
20									250	285	245	260	270	275	250	245								
21									240	230	260	265	250	280	255	245	240							
22								220	240	230	240	285	255	250	245	250								
23									240	285	260	260	260	245	240	250	245							
24									250	240	255	275	255	240	250	250	230							
25									235	255	250	260	280	265	255	245	230							
26									245	240	255	265	275	260	245	240	240							
27										240	270	285	280	250	265	245								
28									230	255	250	255	270	265	260	250	240							
29																								
30																								
31																								
No.								3	18	28	28	28	28	28	28	27	18							
Median								230	240	240	255	260	260	250	250	245	235							
U. Q.																								
L. Q.																								
Q. R.																								

h'F2

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 9

IONOSPHERIC DATA

Feb. 1966 | h'F | km | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	295	280	270	270	255	245	230	220	200	195	195	185	I190C	235	200	210	220	195	230	245	240	225	235	290
2	295	290	290	270	270	275	245	220	220	190H	185H	180H	I215A	220	205	220	225	210	230	I230A	255	300	255	270
3	270	280	245	230	250	260	245	235	230	225A	I205A	190	205	195H	210	240	225	220	285	235	230	235	275	295
4	300	320	280	255	225	I240A	250	230	220	195	I240A	210H	I220A	200	200H	235	215	230	235	220	280	295	245	290
5	270	245	245	250	270	265	240	220	225	195H	180H	245	225	230	210	230	205	220	230	210	280	310	270	280
6	290	235	230	255	260	290	270	220	I210A	200H	200	200H	205	200H	230	235	I230A	I220A	220	210	I300A	I295A	245	245
7	295	290	280	245	245	245	260	230	225	220	240	240	235	220	240	235	230	215	225	270	245	275	245	275
8	240	260	245	270	240	220	240	220	180	205	185H	245	230	210	220	235	230	210	245	240	250	295	235	290
9	315A	295A	275	245	245	255	E300E	230	220H	230	195	240	A	A	A	A	215	230	I240A	240	255	255	300	340
10	290	255	245	260	245	265	245	240	235	210	185H	210	200	200	210	210	220	225	235	240	275	290	A	310
11	275	255	255	280	270	275	260	210	200	I200A	205	215H	190	AH	225	245	245	230	210	I240A	I250A	I265A	290	I300A
12	290	300	255	280	225	A	E295E	230	245	210H	240	240	I235A	230	I235A	245	240	I240A	255A	210	I240A	255	255	255
13	270	275	255	255	240	260	235	230	225	200	225	I235A	220	220	205	200	225	220	255A	245	245	270	230	235
14	295	290	245	245	240	255	235	235	225	195	190H	195H	205	210	205	230	205	220	260	240	215	280	245	320
15	295	295	250	255	255	235	245	210	220	190	190H	195	190H	220	205	200	210	220	225	245	205	280	275	295
16	280	290	260	270	210	240	270	230	230	200	215	205	200	185H	200	210	235	220	250	230	245	265	270	260
17	260	270	270	270	240	220	270	235	240	235	220	200	195	215	200	205	230	210H	235	255	245	245	270	275
18	280	270	255	285	265	275	245	210H	200	200	200	205	195	210	205	230	225	200	220	235	250	305	335	245
19	290	270	270	255	240	210	255	240	235	200	185H	230	200	205	200H	240	240	215	205	225	235	250	290	295
20	295	295	295	320	265	230	240	240	200H	200H	215	200	240	225	220	220	230	220	205	235	255	300	320	310
21	295	270	245	245	245	285	255	230	200H	230	180H	230	I235A	I240A	245	A	A	230	205	235	270	245	255	255
22	295	280	245	250	245	255	235	185	195H	190H	195H	190H	200	190H	195H	220	235	225	195	240	260	255	290	295
23	300	305	290	290	210	295	300	245	195H	180H	235	215	220H	225	205	200H	230	245	210	210	210	295	295	295
24	280	255	260	285	235	255	250	245	225	205	195	210	195	205H	230	225	225	220	210	220	270	295	290	300
25	280	270	245	250	240	305	270	240	235	220	220	195H	205H	205	240	240	230	220	225	255	240	270	300	285
26	285	245	245	245	230	295	245	240	235	220	200	205	200	205H	230	230	220	210	215	255	240	250	255	265
27	280	280	270	255	230	250	220	230	215	210	200	205	240	220	210	200	240	220	205	245	240	255	285	255
28	270	280	250	240	230	245	225	210	220	195	195	185	235	220B	215	240	230	230	210	230	220	250	280	280
29																								
30																								
31																								
No.	28	28	28	28	28	27	28	28	28	28	28	28	27	26	27	26	27	28	28	28	28	28	27	28
Median	290	280	255	255	240	255	245	230	220	200	200	205	205	210	210	230	230	220	225	240	245	270	270	290
U. Q.																								
L. Q.																								
Q. R.																								

h'F

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 10

IONOSPHERIC DATA

Feb. 1966 | h'Es | km | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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	E	E	E	E	105	G	G	100	C	120	100	125	110	105	110	E	105	E	E	E
2	E	105	E	E	E	E	E	E	155	G	G	G	165	130	130	125	120	110	115	110	110	110	110	110
3	E	E	120	120	110	110	E	110	135	120	110	120	120	125	120	120	110	110	110	105	105	E	110	110
4	E	110	110	E	E	110	115	E	135	130	140	135	120	120	130	G	120	115	110	110	105	110	105	E
5	E	E	E	E	E	E	E	160	G	G	120	S	155	155	E135G	135	110	E	115	E	105	E	E	100
6	100	110	E	E	E	E	E	130	110	G	G	G	G	G	G	140	120	115	110	105	105	100	105	100
7	100	140	135	E	120	120	105	100	100	160	155	145	G	G	135	G	G	E	E	E	E	105	100	E
8	E	E	E	E	125	E	110	110	110	155	G	E170G	155	E160G	100	G	G	E	E	130	E	110	E	105
9	105	105	105	105	105	E	E	G	G	165	G	170	140	140	130	135	135	155	110	130	E	125	105	105
10	115	100	100	100	E	E	115	105	110	105	125	100	E145G	G	G	140	130	145	115	105	105	105	105	105
11	E	E	E	105	130	125	E	E	G	105	105	145	100	145	140	135	135	115	120	110	105	105	110	105
12	105	140	105	120	115	115	E	150	155	G	135	E140G	135	130	140	130	125	115	110	105	105	105	105	105
13	100	E	100	E	E	E	E	145	140	130	125	105	105	105	G	135	135	100	100	100	E	140	130	E
14	E	E	E	E	E	E	E	G	155	135	115	G	G	105	105	100	G	E	E	E	E	E	E	E
15	E	E	E	E	E	105	E	G	125	120	110	G	G	120	110	110	110	E	110	105	105	105	E	115
16	100	110	E	E	E	E	E	E	G	155	135	130	G	G	G	G	G	105	100	E	E	E	E	E
17	E	E	E	E	105	E	E	E	G	155	140	140	G	G	G	G	160	100	E	E	E	E	E	E
18	E	E	E	E	E	E	E	E	G	G	G	G	G	G	145	125	110	E	E	110	E	110	E	E
19	105	105	E	110	E	E	E	E	110	G	145	150	G	140	G	175	130	120	E	E	E	E	105	E
20	E	E	E	E	E	E	E	150	G	G	G	115	G	G	G	G	G	B	E	E	E	E	E	E
21	E	E	105	E	E	E	E	G	G	105	105	145	140	130	130	130	120	120	E	E	E	E	E	100
22	E	E	E	E	E	105	E	110	G	G	G	100	G	G	G	G	G	115	E	E	E	E	105	E
23	E	E	E	E	E	E	E	G	G	G	140	110	105	105	130	G	G	E	E	110	105	105	105	105
24	105	E	E	E	105	E	E	115	110	G	G	105	100	100	100	100	G	B	E	E	E	E	110	E
25	E	E	E	E	E	E	E	G	G	G	115	G	G	G	100	E160G	G	B	E	E	E	E	E	E
26	E	E	E	E	E	E	E	150	155	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
27	E	E	E	E	E	E	E	145	140	G	140	G	G	G	G	G	120	100	95	E	E	E	E	E
28	E	E	E	E	E	E	E	130	G	115	G	G	G	B	G	E145G	135	110	E	105	105	105	100	100
29																								
30																								
31																								
No.	9	9	8	6	8	7	4	14	16	14	17	18	13	16	17	18	18	17	14	14	12	14	15	13
Median	105	110	105	110	110	110	110	130	130	130	125	125	130	125	130	130	120	115	110	110	105	105	105	105
U. Q.																								
L. Q.																								
Q. R.																								

h'Es

Sweep 1.6 Mc to 16.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 11

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IONOSPHERIC DATA

Feb. 1966 | Types of Es | 135° E Mean Time (G. M. T. +9h) | Akita | Lat. 39° 43.5'N | Long. 140° 08.2'E

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									1			1		h	12	h 1	c	f	f		f2			
2		f							h2				h	h2	h2	h	c2	f	f	f5	f2	f2	f2	f2
3			f2	f	f2	f2		1 h	h2	c3	12	c2	h3	h	h	h	13	f2	f2	f2	f2		f	f2
4		f2	f2			f2	f2		h	h2	h2	h	h3	c2	h		c3	c	f2	f2	f3	f2	f2	
5								h			h		h	h	h2	h	12		f		f2			f2
6	f2	f						h	12							h	c3	12	f2	f2	f3	f3	f	f2
7	f2	f	f3		f3	f2	f2	13	12	h h	h	h			h							f2	f2	
8					f		f2	1	1	h		h	h	h	1					f		f2		f2
9	f3	f2	f2	f2	f					h		h	h2	h2	h2	h2	h2	h2 1	f5	f		f2	f2	f3
10	f	f2	f2	f			f2	12	c	1	h 12	12	h			h2	h3	h2	f3	f2	f4	f2	f2	f2
11				f2	f	f2				14	13	h 12	12	h 1	h	h3	h3	f5	f	f3	f3	f3	f2	f6
12	f2	f2	f2 f	f3	f4	f4		h2	h2		h 12	h	h2 12	h 12	h2 1	h2 12	h3 12	f6 f3	f3	f	f5	f3	f3	f2
13	f2		f2					h	h2	h2	h2	13	12	12		h2 12	h2	f3	f3	f2		f	f	
14									h	h	c			12	13	12								
15						f2			c3	h2	c			h	12	12	1 h		f	f2	f2	f2		f2
16	f2	f2								h	h	h2						f2	f4					
17					f					h	h	h					h2	1						
18															h	h	12			f		f2		
19	f2	f2		f					1		h	h h		h		h	h3	c2					f2	
20								h2				12												
21			f3							12	1	h 12	h2 1	h2 1	h	h2	c3	c						f2
22						f		1				1						c3 1					f	
23											h	12	12	13	h					f	f3	f	f2	f2
24	f2				f			c3	c3			12	1	12	12	13							f2	
25											12				12	h								
26								h2	h															
27								h	h		h						c2	12	f2					
28								h		12						h	h	12		f3	f	f3	f	f2
29																								
30																								
31																								
No.																								
Median																								
U. Q.																								
L. Q.																								
Q. R.																								

Types of Es

Sweep 1.0 Mc to 10.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

A 12

IONOSPHERIC DATA

Feb. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35°42.4'N | Long. 139°29.3'E

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	U028F	U028S	029	027	029	027	027	U045R	I045R	I048R	U050R	C	U069S	U064R	U056R	R	U061R	A	032	036	U035S	030	026	026
2	026	028	029	029	028	029	027	043S	U053R	056	U062R	061	U063R	U060R	U056R	I056C	053	044	033	033S	028	028S	U027F	U028F
3	U028F	029F	032	028	024	U024R	023	049	056	053	060	061	065	056	053	U065S	060S	044	030	038	037S	030	027	025
4	025	026	028	028	029	024	024	U047R	U062S	058	061	067R	064R	056	U064R	061	U052R	045	045	043S	032S	029F	U030F	032
5	U031S	033S	030	025	023	023	026S	050	U054R	056	066	085	066	065	C	C	059	U053R	037S	035	028	030	033	031F
6	032S	036S	022	022	024S	025	028	058	061	068	101R	116	093	U070S	064	058	055	052	050	029	027S	030F	U030F	U029F
7	028	030	030	031	030	026S	027	046	U062R	067	069	U073R	C	I065R	I070R	U066S	061S	048	I034C	030	C	C	032	033S
8	C	C	C	C	C	C	C	C	C	062	S	084	063	065S	I060C	057	048	043	025	030	030	031	029S	026
9	030	031	030	029	023	021	020	043	056	070	074	074	065	067	061	055	054	044	032	030	032	029	F	027F
10	028	032	030	026	024	023	024	048	060	063	057	063	066	067	057	056	A	A	A	A	033	032	031	032F
11	032F	032F	U034F	F	025	024F	025F	054	055	060	071	097	103	108	085	068	058	061	037	028	034	034	F	F
12	F	036	038	033	A	022	I025A	043	055	068	073	069	063	I062A	064	062	060	A	A	054	A	A	030	030
13	030	029	031	031	029	027	028	051	057	058	070	083	068	069	064	058	059	051	I036A	031	030	F	F	029
14	031	C	F	030F	U030F	024F	030	054	060	059	069	084	086	J074R	065	060	060	051	032	038	038	029	F	F
15	U028F	031F	030	030	028	025	024	048	055	058	072	083	095	069	060	062	058	050	038	039	039	025	028	031
16	033	029F	030F	030F	034	020	024	050	064	073	074	083	089	079	067	064	067	054	038	040S	036	034	033	034
17	034	034	033	032	032	022	025	053S	060	069	069	059	071	076	062	070	057	053	037	036	C	033	034	034
18	033	034	033	031	032	031	032	056	071	J078S	073	080	089	074	063	064	064	050	037	036	030	030	031F	C
19	034	032	035	033	036	I025C	028	057	064	063	061	067	J080R	071	060	061	I069S	064	038	036	032	031	032	033
20	033	033	034	031	032	029	033	051	U072R	J075S	J102R	099	109	107	108	101	066	054	042	041	032	031	033	034
21	037	038	037	032	030	029	029	056	074S	073S	067	C	C	C	C	C	061	052	055	035	035	039	037	032F
22	032	035	037	035	037	035	040	056	064S	J080S	065	072	078	070	071	064	065	059	048	031	032	032	032	032
23	033	032	032F	032	036	024F	024	052	065	081	094	J101R	098	082	J074S	058	066	069	072	053	034	032F	U035F	F
24	F	U042F	042F	J042F	F	032	032	058	071	075	098	107	102R	089	069	065	063	058	043	032	031	031	033	033
25	036	037	032	031	024	022	026	054R	U063S	C	I067C	J067R	J075S	I074C	U072S	U067R	060	049	J040S	033	038	033	032	034
26	034S	039	029	030	027	I028C	032	057	C	C	071	070	082	080	074	066	062	052	040	032	039	038	036	034
27	033	033	032	035	034	023	032	056	058	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	071	079	082	077	068	065	069	063	040	040	034	033	033	033
29																								
30																								
31																								
Count	24	25	25	25	24	26	26	26	25	24	26	25	25	26	25	24	26	24	25	26	24	24	23	23
Median	032	032	032	031	029	024	027	052	060	065	070	079	078	070	064	063	060	052	038	036	032	031	032	032
U.Q.	033	036	034	032	032	028	030	056	064	073	073	084	091	077	070	066	064	056	042	039	036	033	033	033
L.Q.	028	030	030	028	024	023	024	048	056	058	065	067	066	065	060	058	058	048	034	031	030	030	030	029
Q.R.	005	006	004	004	008	005	006	008	008	015	008	017	025	012	010	008	006	008	008	008	006	003	003	004

foF2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 1

37

IONOSPHERIC DATA

Feb. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	390L	C	420L	420L	L		L							
2										L	L	410L	420L	430L	L	C	L							
3									L	L	420L	430L	420L	L	L	L	L							
4										L	L	420L	420	L	400L	L								
5										L	440L	L	430L	420L	C	C								
6										A	430L	410L	L	430L	L	L								
7									L	L	L	420L	C	L	L	L								
8								C	C	410L	430L	440L	430L	420L	C	L	L							
9									L	L	430L	440	A	L	L	L	L							
10									L	U410L	L	440L	A	430	L	L	A							
11									L	L	440L	450L	440L	420	L	A								
12										L	L	L	L	A	A	A								
13										L	L	440L	U440L	450L	420L	A	A							
14										L	L	450L	450L	450L	U420L	L								
15										A	L	440	450L	440L	U420L	L	L							
16										L	L	450L	440L	U450L	U430L	L								
17										L	L	U430L	L	L	L	L								
18									L	L	440L	460L	450	U440L	L	L	L							
19									L	L	L	L	460L	L	L	L	L							
20										L	L	U450L	460L	L	450L	U410L	L							
21										L	L	C	C	C	C	C								
22										L	L	450L	U440L	440L	U420L	L	L							
23									L	L	L	440L	460	L	430L	L								
24									L	L	U440L	440	A	430L	L	L	L							
25									L	L	L	L	460L	L	L	L	L							
26									L	L	420L	450L	470L	450L	L	L	L							
27										C	C	C	C	C	C	C	C							
28									C	C	U430L	440	460L	450	L	L	L							
29																								
30																								
31																								
Count										2	11	21	19	16	8	1								
Median										U410L	430L	440L	440L	440L	U420L	U410L								
U.Q.																								
L.Q.																								
Q.R.																								

foF1

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 2

IONOSPHERIC DATA

Feb. 1966 | foE | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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								B	I230A	I270R	I300A	I300C	I305A	I290R	290	250	B	B						
2								B	230	265	I300A	I315R	320	315	I300R	I270C	230	B						
3								B	215	290	A	A	A	A	A	A	A	B						
4								B	225	275	295	305	315	A	A	A	A	B						
5								B	220	265	300R	310	I310A	A	C	C	220	B						
6								B	R	A	300	320R	320R	305	290	270	A	B						
7								A	R	275	305	315	I320C	315	I290R	I270A	230	B						
8								C	C	270	290	320	325	315	I305C	270	225	B						
9								B	230	280	300	320	320	320	300	275	230	B						
10								B	240	280	300	320	I320A	320R	290	260	220	B						
11								A	230	280	300	320	325	315	305	280	210	B						
12								170	240	I280A	315	320	320	310	300	280	A	B						
13								150	230	280	310	I315A	I320A	320	300	275	A	A						
14								160	260	295	315	A	A	A	A	A	220	S						
15								I180A	A	A	A	A	320	320	305	270	220	B						
16								175	270	280	305	A	330	315	300	265	220	B						
17								160	240	290	325	320	330	315	A	285	240	B						
18								180	255	285	310	315	325	310	I295A	I265A	225	160						
19								160	240	290	315	330	335	I320A	I300A	I280A	250	190						
20								175	I250A	290	325	330	330	320	300	280	220	150						
21								180	240	295	315	C	C	C	C	C	C	A						
22								170	245	I270A	300	325	325	I320A	300	I260A	230	A						
23								175	250	280	305	320	320	I310A	305	280	245	185						
24								180	A	A	A	A	A	320	310	280	240	170						
25								210	255	285	I310R	320	325	315	315	280	255	180						
26								205	255	295	315	330	330	330	310R	I290A	250	A						
27								205	260	C	C	C	C	C	C	C	C	C						
28								C	C	C	315	320	330	I330R	315	290	245	175						
29																								
30																								
31																								
Count								16	22	23	24	21	23	22	21	22	20	7						
Median								175	240	280	305	320	320	315	300	275	230	175						
U.Q.																								
L.Q.																								
Q.R.																								

foE

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 3

IONOSPHERIC DATA

Feb. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	E013B	J022	020	024	022	E013B	E014B	023	J025	G	032	C	031	G	033	J038	023	J040	J038	J028	J025	020	024	J024
2	E015S	022	020	023	024	020	E011B	E014B	028	G	031	G	G	G	G	C	G	J030	023	022	E014B	E013B	J025	J025
3	J027	022	023	020	023	J023	021	018	025	G	J038	J043	J038	J035	J033	J031	025	E015B	E014B	023	023	E015S	018	021
4	E012B	J029	023	025	J024	E011B	E011B	E015B	G	G	G	036	G	J036	J038	032	030	031	023	J028	E013B	J023	J019	J035
5	019	J021	022	018	E	020	019	021	G	030	G	G	J033	J036	C	C	G	J054	024	019	024	022	019	E014B
6	E013B	E011B	E011B	E011B	018	E013B	E012B	J028	G	J051	G	G	G	G	G	030	J031	019	J026	J031	J036	J029	J035	024
7	E013B	E012B	E	023	J018	J043	J040	J030	021G	021G	038	036	C	036	J040	J039	G	G	C	E015S	C	C	021	023
8	C	C	C	C	C	C	C	C	C	G	G	038	036	036	C	G	G	020	022	J018	020	021	022	E012B
9	E012B	J025	024	J031	024	J022	024	024	G	022G	035	037	041	J043	037	032	026	020	019	023M	J040	J036	E012B	J024
10	J033	J024	019	018	E	021M	022	024	G	022G	J028G	035	048	G	G	036	J062	J090	J056	J047	J044	J034	J035	J025
11	J035	J023	J024	J022	J024	023	023	J025	J022G	021G	J026G	030G	J025G	036	037	J053	J032	J031	J030	031M	J037S	J034	J032	J035
12	025M	J028	J025	J024	J043	J036	033	G	G	031	035	037	J042	068	J041	J041	J038	050M	068M	J060	J040	J040	J032	J024
13	021	020M	018	021M	E012B	018	E012B	G	028	035	037	035	J035	J027G	J028G	J040	J041	J030	040M	J054	J036	J031	E011B	J031
14	J025	C	J018	E	E	E	E012B	G	G	G	J033	J033	J036	J038	J047	031	025	J025	J023	E012B	E011B	E013B	E012B	E012B
15	019	021M	024M	022M	E012B	J024	J019	J019	J030	049	J052	J041	036	J030G	G	J028	023	J026	J024	J025	023M	J016	E012B	E015S
16	J021	J026	J030	J018	E011B	E012B	E011B	G	G	G	036	038	G	J029G	G	022G	018G	J027	J023	E012B	E015S	E015S	E015S	E012B
17	E015S	E013B	019M	J020	E014B	E013B	E013B	G	G	034	037	J043	036	J028G	038	026G	G	021	019	E014S	C	E012B	E015S	E013B
18	J026	J021	E013B	E	E	E013B	E015S	G	G	G	021G	G	G	G	032	J029G	J025	020	E011B	E014B	J024	E011B	J024	C
19	021	E011B	J024	J018	J018	C	E015S	G	G	G	036	038	039	037	J034	J030	G	J025	J016S	E013B	E011B	021	E015S	J025
20	J019	E013B	E013B	J018	E	J017	E011B	G	025	G	J030G	G	G	G	021G	G	G	G	022M	E012B	J018	E	E011B	E013B
21	E011B	J017	018	E013B	E	E	E011B	G	G	032	G	C	C	C	C	C	043M	J040	J032	E011B	023	024	E015S	E011B
22	E	E	J026	020	E011B	E011B	J015	G	017G	J030	G	G	J023G	J037	J025G	J029	G	J025	023	E015S	J026	E017S	E015S	018
23	E015S	E	E011B	E	E	E	E014S	G	031	032	038	G	035	034	G	G	G	G	J018	J020	J024	J023	J025	E012B
24	E013B	J028	E012B	E011B	024	024M	E011B	G	J035	J041	J043	044	J056	J025G	G	G	G	G	E011B	E011B	E012B	E012B	018	E012B
25	E013B	E011B	023M	E011B	J012	017M	J013S	G	G	G	J026G	J031G	G	G	G	G	G	G	E011B	J013S	025M	J021	J030S	020M
26	E015S	E011B	E	E	E	C	E013B	G	G	G	G	G	G	G	G	J032	G	023	J018	E014B	E015S	E011B	E015S	E015S
27	E015S	E011B	E	E	E	E011B	E011B	024	J030	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	031	031	G	J025	J022	J028	J030S	J024	E013B
29																								
30																								
31																								
Count	26	25	26	26	26	24	26	26	26	26	27	25	25	26	24	24	27	27	26	27	25	26	27	26
Median	E015	021	020	018	E012	017	E014B	G	G	G	031	035	033	G	G	030	023	025	023	019	024	021	019	019
U.Q.	021	024	024	022	023	022	019	023	025	032	037	038	037	036	037	034	031	031	026	028	032	029	025	024
L.Q.	E013	E011	E013	E011	E	E012	E011	G	G	G	G	G	G	G	G	G	G	023	018	E013	E015	E013	E015	E013
Q.R.	D008	D013	D011	D011		D010	D008											008	008	D015	D017	D016	D010	D011

foEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 4

IONOSPHERIC DATA

Feb. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	B	E	E	014	E	B	B	G	023		030	C	031		030	033	023	A	021	017	016	E	016	E
2	S	E	E	013	015	E	B	B	026		030					C		017	E	E	B	B	015	E
3	016	E	E	E	014	014	E	016	022		033	033	033	030	033	026	023	B	B	E	E	S	016	E
4	B	023	015	015	015	B	B	B				035		033	036	027	026	025	E	020	B	015	016	016
5	E	015	E	E		E	E	020		029			033	031	C	C		017	015	E	E	E	015	B
6	B	B	B	B	E	B	B	019		041						029	030	018	E	020	E	016	016	E
7	B	B		E	E	016	E	025	021G	021G	036	034	C	034	038	032			C	S	C	C	E	019
8	C	C	C	C	C	C	C	C	C			035	034	035	C			018	E	011	E	016	E	B
9	B	012	013	017	013	E	E	020		020G	033	037	041	040	035	032	026	G	E	E	022	015	B	015
10	019	014	E	E		013	E	017		021G	025G	035	045			033	A	A	A	A	024	016	025	E
11	016	016	015	E	E	E	015	018	G	018G	024G	026G	025G	036	034	049	029	030	025	023	025	020	021	015
12	015	E	017	019	A	016	A			030	035	037	040	A	040	040	038	A	A	040	A	A	016	016
13	015	E	E	E	B	E	B		028	033	034	034	034	026G	025G	040	040	028	A	017	019	016	B	019
14	018	C	E				B				033	033	033	033	035	027	020	G	E	B	B	B	B	B
15	E	016	015	012	B	014	E	019	027	040	038	034	035	026G		024	020	020	019	016	E	E	B	S
16	017	E	015	E	B	B	B				033	033		027G		017G	016G	018	016	B	S	S	S	B
17	S	B	E	E	B	B	B			032	034	037	035	023G	035	029		G	E	S	C	B	S	B
18	015	E	B			B	S				020G				032	028	022	G	B	B	014	B	E	C
19	E	B	E	E	E	C	S				035	037	037	035	031	029		G	014	B	B	E	S	016
20	E	B	B	E		E	B		025		025G				021G				E	B	E		B	B
21	B	E	E	B			B			031		C	C	C	C	C	036	039	031	B	014	E	S	B
22			E	E	B	B			016G	029			022G	033	017G	029		018	E	S	016	S	S	E
23	S		B				S		030	032	036		034	033					016	017	017	015	016	B
24	B	016	B	B	015	013	B		030	032	035	040	046	020G					B	B	B	B	E	B
25	B	B	E	B	E	E	E				022G	025G							B	E	018	E	025	E
26	S	B				C	B									029		020	E	B	S	B	S	S
27	S	B				B	B	G	022	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C						030	029		020	E	015	015	E	B
29																								
30																								
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

f_bEs

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 5

IONOSPHERIC DATA

Feb. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	013	014	012	012	014	013	014	017	015	015	016	C	016	017	016	015	015	013	012	012	013	014	E015S	E015S
2	E015S	011	011	010	010	013	011	014	014	014	016	015	016	015	016	C	015	014	E016S	013	014	013	014	E015S
3	E015S	012	012	013	012	013	014	014	014	014	014	017	015	014	015	014	012	015	014	E015S	013	E015S	E015S	013
4	012	010	011	011	E	011	011	015	014	014	014	015	015	015	015	014	013	012	011	011	013	012	010	012
5	013	011	010	010	010	011	012	016	012	015	016	015	015	016	C	C	013	013	013	013	013	014	014	014
6	013	011	011	011	010	013	012	015	014	015	012	016	023	017	017	016	015	014	012	012	E015S	014	014	012
7	013	012	010	010	010	013	012	011	014	015	016	023	C	017	021	017	015	015	C	E015S	C	C	E015S	014
8	C	C	C	C	C	C	C	C	C	016	015	018	020	016	C	014	012	015	012	E	012	014	E015S	012
9	012	011	011	013	010	013	014	012	013	014	014	014	014	015	015	014	014	014	013	E015S	011	012	012	010
10	012	010	011	013	010	010	013	011	012	015	014	014	014	018	015	015	012	011	010	E015S	010	E015S	013	010
11	013	010	010	010	E	011	010	010	012	015	014	015	014	015	015	015	015	013	011	013	E015S	013	011	011
12	011	E	E	010	010	010	010	014	014	016	016	015	016	018	016	014	013	016	E015S	012	E015S	E013S	E015S	012
13	011	011	013	013	012	011	012	012	013	014	015	014	015	016	015	015	015	011	E014S	E015S	013	011	011	010
14	012	C	011	010	010	010	012	013	014	013	014	015	015	015	015	015	014	E015S	012	012	011	013	012	012
15	E015S	011	012	010	012	012	E014S	012	012	015	012	015	015	015	015	015	014	012	013	E013S	E015S	012	012	E015S
16	E015S	013	013	011	011	012	011	013	015	015	015	015	016	015	015	014	015	013	E015S	012	E015S	E015S	E015S	012
17	E015S	013	012	011	014	013	013	012	015	014	014	015	017	015	015	015	014	016	013	E014S	C	012	E015S	013
18	012	013	013	010	010	013	E015S	014	013	016	015	015	015	015	013	014	014	013	011	014	011	011	012	C
19	013	011	011	E	010	C	E015S	013	013	014	016	016	016	015	015	014	014	013	011	013	011	013	E015S	011
20	013	013	013	010	010	012	011	013	013	016	015	016	016	016	016	016	013	013	E014S	012	011	010	011	013
21	011	011	013	013	010	010	011	014	013	014	014	C	C	C	C	C	E025C	011	010	011	010	E015S	E015S	011
22	010	010	010	011	011	011	012	013	014	014	015	014	013	014	013	015	015	013	E015S	E015S	010	E017S	E015S	E015S
23	E015S	010	011	010	010	010	E014S	012	014	014	015	016	016	015	016	015	014	012	011	011	011	011	E015S	012
24	013	012	012	011	010	011	011	013	015	015	014	014	013	014	017	016	013	012	011	011	012	012	013	012
25	013	011	011	011	013	E015S	011	013	015	016	014	015	014	016	015	015	015	015	011	011	011	013	E015S	011
26	E015S	011	010	010	010	C	013	012	013	015	016	014	015	016	015	015	013	011	013	014	E015S	011	E015S	E015S
27	E015S	011	010	010	010	011	011	014	011	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	017	016	016	028	017	015	014	012	010	E015S	E014S	E014S	E015S	013
29																								
30																								
31																								
Count	26	25	26	26	26	24	26	26	26	26	27	25	25	26	24	24	27	27	26	27	25	26	27	26
Median	012	011	011	010	010	012	012	013	014	015	015	015	015	015	015	015	014	013	012	012	012	012	E015S	012
U.Q.																								
L.Q.																								
Q.R.																								

f-min | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb.1966 | M(3000) F2 0.01 | **135° E Mean Time** (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N Long. 139° 29.3'E

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	U270F	U275S	320	305	325	320	350	U365R	I380R	I380R	U385R	C	U335S	U355R	U345R	R	U370R	A	290	315	U315S	320	345	290
2	290	310	295	295	305	295	320	365S	U370R	350	U330R	345	U340R	U350R	U355R	I350C	360	355	335	325S	325	305S	U290F	U295F
3	U285F	295F	315	360	315	U290R	305	355	355	350	345	325	365	345	345	U340S	365S	360	300	310	340S	335	340	285
4	270	280	300	320	330	320	335	U350R	U350S	340	340	350R	355R	350	U340R	360	U375R	340	330	340S	310S	295F	U300F	290
5	U280S	325S	355	340	340	285	320S	360	U355R	350	310	340	360	340	C	C	340	U350R	335S	330	295	285	295	275F
6	305S	335S	320	305	325S	290	310	350	350	300	325R	350	370	U345S	345	350	355	360	340	315	285S	305F	U290F	U330F
7	305	300	305	335	350	295S	330	350	U325R	335	340	U355R	C	I340R	R	U365S	365S	370	I340C	295	C	C	300	280S
8	C	C	C	C	C	C	C	C	C	320	S	345	350	335S	I345C	350	355	340	340	305	305	310	315S	295
9	300	300	305	315	310	310	320	345	335	345	335	350	350	355	350	345	350	365	315	305	315	310	F	260F
10	290	310	335	345	315	330	310	335	350	340	350	335	350	355	360	350	A	A	A	A	305	295	255	315F
11	265F	300F	U325F	F	285	290F	305F	370	365	330	315	310	340	345	330	335	345	345	320	300	295	280	F	F
12	F	285	285	325	A	305	I320A	350	350	335	330	345	335	I330A	345	355	340	A	A	350	A	A	300	315
13	280	280	305	300	310	285	320	360	370	340	340	340	350	335	340	355	335	345	I330A	310	330	F	F	320
14	285	C	F	320F	U320F	290F	315	350	350	330	310	325	340	J330R	340	335	350	355	315	315	315	310	F	F
15	U270F	295F	325	315	355	330	355	360	360	340	320	325	340	345	350	370	345	355	315	280	335	300	295	295
16	290	275F	300F	310F	350	295	305	340	340	340	335	325	340	335	340	350	355	350	310	315S	330	315	290	295
17	295	295	300	315	340	275	310	355S	350	350	360	360	335	355	335	355	340	355	335	295	C	310	295	290
18	300	305	305	300	300	290	310	350	350	J345S	340	335	350	330	335	345	345	360	320	310	315	295	275F	C
19	290	295	310	295	335	I300C	315	350	345	350	330	325	J325R	350	350	330	I350S	360	330	335	315	290	290	275
20	275	280	275	260	340	310	300	315	U330R	J325S	J325R	315	315	310	320	335	355	365	325	295	315	275	265	265
21	280	285	325	315	315	295	330	345	355S	355S	325	C	C	C	C	C	345	340	350	315	290	310	290	280F
22	300	280	300	305	300	285	310	355	360S	J360S	335	330	345	355	340	345	355	355	350	305	315	295	290	280
23	285	280	285F	280	360	315F	290	325	325	310	320	J335R	335	345	J340S	345	345	335	335	340	305	265F	U275F	F
24	F	U295F	290F	J290F	F	305	340	330	350	305	325	330	325R	325	350	350	350	360	330	310	285	290	275	275
25	280	305	315	330	290	275	305	350R	U345S	C	I340C	J325R	J305S	I320C	U335S	U345R	360	345	J325S	305	315	295	290	290
26	290S	310	295	300	290	I290C	310	350	C	C	335	320	330	325	340	345	355	350	340	290	300	315	310	320
27	295	290	290	315	330	305	315	365	360	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	325	330	315	325	325	335	360	350	335	320	320	305	300	295
29																								
30																								
31																								
Count	24	25	25	25	24	26	26	26	25	24	26	25	25	26	24	24	26	24	25	26	24	24	23	23
Median	290	295	305	315	320	295	315	350	350	340	330	335	340	340	340	350	350	355	330	310	315	300	290	290
U.Q.																								
L.Q.																								
Q.R.																								

The Radio Research Laboratories, Japan

M(3000) F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

K 7

IONOSPHERIC DATA

Feb. 1966 | M(3000) F1 0.01 | **135° E Mean Time** (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	425L	C	380L	365L	L		L							
2										L	L	390L	355L	370L	L	C	L							
3									L	L	370L	365L	375L	L	L	L	L							
4										L	L	360L	380	L	375L	L								
5										L	355L	L	380L	380L	C	C								
6										A	355L	400L	L	365L	L	L								
7									L	L	L	375L	C	L	L	L								
8								C	C	345L	365L	365L	380L	370L	C	L	L							
9									L	L	375L	365	A	L	L	L	L							
10									L	U370L	L	385L	A	390	L	L	A							
11									L	L	375L	360L	365L	360	L	A								
12										L	L	L	L	A	A	A								
13										L	L	355L	U365L	375L	375L	A	A							
14										L	L	360L	355L	375L	U380L	L								
15										A	L	365	370L	380L	U380L	L	L							
16										L	L	375L	380L	U360L	U370L	L								
17										L	L	U400L	L	L	L	L								
18									L	L	385L	360L	380	U380L	L	L	L							
19									L	L	L	L	375L	L	L	L	L							
20										L	L	U355L	345L	L	335L	U350L	L							
21										L	L	C	C	C	C	C								
22										L	L	375L	U375L	375L	U375L	L	L							
23									L	L	L	380L	365	L	370L	L								
24									L	L	U365L	380	A	370L	L	L	L							
25									L	L	L	L	370L	L	L	L	L							
26									L	L	380L	380L	365L	360L	L	L	L							
27										C	C	C	C	C	C	C	C							
28									C	C	U395L	385	370L	370	L	L	L							
29																								
30																								
31																								
Count										2	11	21	19	16	8	1								
Median										U360L	375L	375L	370L	370L	U375L	U350L								
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb. 1966 | h'F2 | km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										270	250	C	260	250	240		225							
2										230	280	270	265	265	250	I240C	220							
3									220	255	255	280	235	260	255	255	220							
4										230	250	235	250	250	260	250								
5										230	285	235	250	265	C	C								
6										260	260	240	220	260	250	230								
7									255	260	255	250	C	225	265	215								
8								C	C	280	250	235	245	260	I255C	230	220							
9									255	255	255	250	255	250	250	240	230							
10									250	255	260	260	250	250	240	250	A							
11									220	260	305	240	260	250	240	260								
12										275	260	255	260	I280A	260	250								
13										260	260	275	255	260	250	240	250							
14										260	300	275	250	270	250	255								
15										250A	290	270	260	255	250	240	225							
16										250	255	280	250	255	250	250								
17										255	245	250	270	250	255	240								
18									240	250	250	260	250	270	250	240	240							
19									245	255	270	290	290	250	255	275	230							
20										250	300	275	300	285	265	250	235							
21										245	250	C	C	C	C	C								
22										240	255	260	250	250	255	250	240							
23									260	260	265	250	260	250	250	250								
24									240	290	260	260	250	250	240	250	240							
25									240	260	260	260	300	260	255	250	230							
26									245	250	260	275	270	260	255	250	230							
27										C	C	C	C	C	C	C	C							
28									C	C	290	280	275	260	275	250	245							
29																								
30																								
31																								
Count									11	26	27	25	25	26	25	24	15							
Median									245	255	260	260	255	260	250	250	230							
U.Q.																								
L.Q.																								
Q.R.																								

h'F2 Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 9

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IONOSPHERIC DATA

Feb. 1966 | h'F | km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	300	250	255	250	230	230	220	220	215	180	C	215	210	210	250	225	I220A	285	240	230	225	230	295
2	305	275	260	260	260	255	220	205	220	220	185H	180	230	225	225	I190C	200	210	205	215	210	260	270	280
3	280	270	245	200	230	285	265	220	210	230	220	220	205	220	205	215	215	210	215	250	215	230	230	270
4	360	385	270	250	230	240	230	220	220	210	225	230	210	225	230	215	210	230	225	225	230	260	270	315
5	300	240	220	230	220	270	240	210	220	205	210	260	215	200	C	C	230	200	220	215	275	295	275	305
6	245	225	225	255	240	270	250	225	230	I200A	225	195	210	180	230	215	230	215	220	250	300	270	300	215
7	265	255	250	235	205	265	230	220	250	230	230	215	I225C	230	260	210	225	210	I200C	245	C	C	255	300
8	C	C	C	C	C	C	C	C	C	210	230	230	220	230	I200C	205	200	205	200	230	250	255	240	260
9	270	260	260	265	235	250	275	220	230	250	205	240	A	E250A	205	205	200	205	220	260	260	260	245	310
10	310	250	210	220	220	240	260	220	205	200	205	210	A	205	220	220	A	A	A	A	E260A	270	A	225
11	310	250	210	245	255	260	250	210	200	200	195	220	200	210	230	I235A	230	220	220	310A	300	250	250	305
12	300	280	280	250	A	300A	I270A	220	230	205	250	230	250A	I220A	A	A	E250A	A	A	E250A	A	A	250	250
13	260	300	260	255	240	260	230	210	220	210	205	225	225	210	205	I240A	I245A	240	I220A	250	250	250	300	270
14	300	I295C	245	225	220	245	240	220	220	220	210	205	225	210	220	200	220	210	220	250	210	240	250	300
15	300	260	250	240	220	230	250	205	220	I220A	200	200	245	210	200	205	200	220	225	250	210	240	275	255
16	290	310	275	240	205	E210B	260	230	230	220	210	210	205	195H	210	200	230	210	240	220	225	245	260	270
17	270	250	255	245	210	E225B	255	225	225	230	220	205	200	205	230	210	210	220	210	260	C	230	260	275
18	275	250	255	250	250	270	255	225	220	205	200	200	220	200	210	210	210	205	210	245	240	270	310	I300C
19	275	265	255	255	220	C	290	245	240	240	240	240	225	220	200	200	240	230	205	210	210	240	305	310
20	310	305	310	340	240	270	260	250	250	230	220	210	210	205	225	225	245	225	230	255	225	295	340	340
21	300	290	220	245	230	275	240	240	240	230	220	C	C	C	C	C	240	I235A	220	230	280	255	250	290
22	270	275	255	250	285	255	240	210	225	205	205	200	195	200	200	200	225	210	200	240	245	255	290	300
23	300	290	280	275	200	310	290	245	230	220	220	195	200H	200	205	210	245	225	210	205	220	320	300	290
24	260	260	260	265	240	250	225	250	230	210	220	220	I210A	200	220	220	210	220	205	210	275	290	300	305
25	280	250	230	225	290	310	260	240	230	230	220	210	210	200	220	230	220	210	225	250	260	250	E330A	270
26	290	245	210	255	230	I285C	245	240	230	230	210	205	200	210	230	230	220	220	200	280	260	245	255	260
27	280	260	260	250	220	230	240	230	210	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	195	180H	235	230	225	220	230	220	210	220	240	250	255	275
29																								
30																								
31																								
Count	26	26	26	26	25	25	26	26	26	26	27	25	24	26	24	24	26	25	25	26	24	25	26	27
Median	290	260	255	250	230	260	250	220	225	220	210	210	210	210	220	210	220	220	220	240	240	255	260	290
U.Q.																								
L.Q.																								
Q.R.																								

h'F

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 10

IONOSPHERIC DATA

Feb. 1966 | h'Es | km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N Long. 139° 29.3'E

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	B	100	100	110	100	B	B	110	115	G	105	C	105	G	150	110	110	100	100	100	100	100	100	100
2	S	105	100	100	100	100	B	B	145	G	105	G	G	G	G	C	G	100	100	100	B	B	100	100
3	100	100	100	105	100	100	100	125	120	G	110	105	100	105	105	105	100	B	B	105	100	S	100	100
4	B	110	100	100	100	B	B	B	G	G	G	125	G	105	105	100	105	100	105	100	B	100	100	100
5	100	100	100	100	E	105	100	100	G	160	G	G	105	105	C	C	G	100	125	100	100	105	105	B
6	B	B	B	B	100	B	B	100	G	100	G	G	G	G	G	125	105	100	100	100	100	100	100	100
7	B	B	E	110	110	100	105	100	110	105	150	140	C	120	110	105	G	G	C	S	C	C	100	100
8	C	C	C	C	C	C	C	C	C	G	G	140	155	175	C	G	G	140	130	120	100	100	110	B
9	B	100	100	100	100	100	100	125	G	100	150	150	130	115	115	125	130	100	100	110	100	100	B	100
10	100	100	100	100	E	105	100	100	G	100	100	150	100	G	G	110	110	100	100	100	100	100	100	100
11	100	100	100	120	110	100	100	105	100	100	100	100	100	150	130	110	110	105	105	100	100	100	100	100
12	105	110	115	110	110	105	105	G	G	110	150	130	115	115	120	120	110	105	105	105	100	100	100	100
13	100	100	100	100	B	110	B	G	145	115	110	105	100	100	100	115	110	105	100	100	100	105	B	115
14	110	C	115	E	E	E	B	G	G	G	115	105	105	110	105	100	105	100	100	B	B	B	B	B
15	110	100	100	100	B	100	100	120	115	110	105	105	105	110	G	110	105	100	100	100	100	105	B	S
16	105	105	100	100	B	B	B	G	G	G	145	110	G	105	G	100	100	100	100	B	S	S	S	B
17	S	B	100	100	B	B	B	G	G	140	125	120	125	100	110	110	G	100	100	S	C	B	S	B
18	100	100	B	E	E	B	S	G	G	G	100	G	G	G	100	110	100	100	B	B	110	B	120	C
19	110	B	105	105	105	C	S	G	G	G	170	180	150	110	110	105	G	110	110	B	B	105	S	100
20	100	B	B	100	E	110	B	G	115	G	110	G	G	G	105	G	G	G	105	B	100	E	B	B
21	B	105	105	B	E	E	B	G	G	170	G	C	C	C	C	C	115	105	100	B	100	100	S	B
22	E	E	100	105	B	B	100	G	100	105	G	G	100	110	100	110	G	100	100	S	100	S	S	105
23	S	E	B	E	E	E	S	G	150	150	115	G	115	110	G	G	G	G	110	105	100	100	100	B
24	B	100	B	B	100	105	B	G	105	100	100	100	100	100	G	G	G	G	B	B	B	B	105	B
25	B	B	110	B	B	160	S	G	G	G	110	110	G	G	G	G	G	G	B	110	110	110	105	105
26	S	B	E	E	E	C	B	G	G	G	G	G	G	G	G	110	G	120	100	B	S	B	S	S
27	S	B	E	E	E	B	B	160	110	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	G	G	G	G	G	150	120	G	110	110	105	100	100	B
29																								
30																								
31																								
Count	12	15	18	17	11	13	9	10	12	14	19	16	16	17	14	19	15	20	22	16	18	16	16	14
Median	100	100	100	100	100	105	100	110	115	110	110	115	105	110	110	110	110	100	100	100	100	100	100	100
U.Q.																								
L.Q.																								
Q.R.																								

h'Es

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K11

IONOSPHERIC DATA

Feb. 1966 | Types of Es | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	f2	f			1	1		1		1h		h	c2	12	13	f3	f2	f	f	f	f
2		f	f	f2	f2	f			h		12							1	f	f			f2	f2
3	f2	f2	f	f	f2	f2	f	h	c2		12	12	12	1	12	12	13			f	f		f	f
4		f6	f2	f2	f6							h		12	13	12	13	12	f	f4		f2	f2	f2
5	f2	f2	f2	f		f2	f	1		h			1	12				1	f	f	f2	f	f	
6					f2			1		12						h	12	12	f	f3	f2	f	f2	f2
7				f3	f	f2	f2	12	1	1	h	h		c	c	12							f	f
8												h	h	h				h	f	f	f	f	f	
9		f	f	f3	f2	f2	f2	h2		1	h21	h	h21	h1	c	h2	h	1	f	f	f4	f2		f
10	f3	f2	f	f		f2	f2	1		1	12	h	13			c3	c5	14	f6	f6	f5	f3	f4	f2
11	f4	f2	f2	ff2	f2	f2	f2	12	1	1	12	1	1	h	h2	c3	c4	13	f4	f4	f3	f4	f3	f2
12	f2	f	f3	f4	f4	f3	f3			c2	h	h	c2	c3	c2	c212	c312	14	f6	f3	f5	f6	f3	f2
13	f2	f2	f2	f		f			h	c2	c	12	13	1	12	c2	c4	13	f3	f3	f3	f2		f3
14	f2		f2								c	c2	1	12	12	13	13	1	f					
15	f	f2	f2	f2		f2	f2	12	c2	13	12	12	1h	1		1	12	13	f2	f2	f2	f2		
16	f	f	f2	f							h	c		1		1	1	1	f					
17			f	f3						h	h	c2	h	1	c2	12		1	f					
18	f2	f									1				12	1	12	1			f		f	
19	f2		f2	f	f						h	h	h	c2	12	1		1	f			f		f2
20	f			f		f			12		1				1				f		f			
21		f	f							h							1	13	f4		f2	f3		
22			f	f2			f		1	12			12	1	1	1		12	f		f3			f
23									h2	h	h		c	c					f	f2	f3	f3	f3	
24		f2			f3	f2			13	12	13	14	13	1									f	
25			f		f	f	f				1	1								f	f3	f2	f4	f2
26																1		c2	f					
27								h	1h															
28																h	h2		f2	f	f2	f2	f2	
29																								
30																								
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

Types of Es | Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 12

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IONOSPHERIC DATA

Feb. 1966 | h_pF2 km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U375F	U335S	285	285	280	280	260	U230R	I225R	R	U250R	C	U265S	U255R	U260R	R	U225R	A	330	290	U275S	255	250	320
2	340	325	310	305	300	295	275	225S	U230R	250	U285R	270	U265R	R	U250R	I250C	235	235	235	260S	245	310S	U300F	U320F
3	U310F	310F	280	215	275	U310R	300	240	235	260	255	295	235	270	265	U260S	230S	230	285	285	255S	270	265	330
4	385	A	310	295	250	275	265	U255R	U230S	255	250	250R	250R	250	U260R	255	U220R	260	275	250S	280S	330F	U310F	335
5	U335S	280S	260	265	275	320	275S	230	U245R	235	300	260	250	265	C	C	255	U240R	255S	260	325	335	315	335F
6	290S	260S	275	305	275S	305	295	245	260	325	285R	265	230	U265S	255	250	240	235	275	275	325S	310F	U335F	U240F
7	300	300	295	270	235	305S	275	230	U275R	270	260	U255R	C	I265R	R	U225S	235S	225	I240C	285	C	C	300	330S
8	C	C	C	C	C	C	C	C	C	295	S	260	245	260S	I255C	245	230	240	235	280	295	290	270S	305
9	305	295	290	295	295	280	285	255	275	260	260	250	255	250	250	250	250	230	255	300	290	300	F	390F
10	350	300	250	250	290	280	290	250	250	255	260	270	255	255	250	260	A	A	A	A	300	310	A	295F
11	340F	320F	U250F	F	320	320F	300F	250	240	295	305	260	290	275	260	275	250	250	260	310	300	320	F	F
12	F	345	325	285	A	310	I290A	250	250	295	290	260	260	I290A	260	250	260	A	A	255	A	A	310	290
13	345	340	305	305	300	330	290	245	240	260	270	285	255	270	250	250	270	250	I260A	300	275	F	F	290
14	325	C	F	290F	U290F	355F	300	250	250	285	310	300	260	J280R	250	270	250	250	290	300	280	305	F	F
15	U360F	320F	295	300	250	270	250	220	245	270	300	300	285	260	250	245	250	250	295	300	250	300	340	310
16	345	350F	310F	300F	245	310	300	260	265	260	270	300	270	275	255	250	250	250	300	300S	280	300	325	330
17	325	315	315	295	250	315	300	250S	250	255	250	250	285	250	265	250	260	250	250	320	C	300	320	340
18	320	300	310	305	310	340	300	255	250	J260S	265	275	260	285	280	255	250	245	290	295	295	330	360F	C
19	340	340	310	310	280	I310C	310	260	255	255	290	300	J300R	255	255	295	I250S	250	280	260	290	315	350	370
20	365	350	365	400	270	305	310	300	U285R	J290S	J320R	305	320	305	300	270	250	250	290	320	290	355	400	390
21	350	350	290	300	300	330	290	270	250S	250S	290	C	C	C	C	C	260	260	255	300	320	310	325	340F
22	325	345	320	305	305	330	300	250	250S	J250S	265	280	260	250	260	255	250	250	250	300	290	310	330	350
23	345	350	350F	360	230	380F	320	290	300	300	300	J275R	275	260	J260S	260	260	260	260	260	280	390F	U380F	F
24	F	U325F	340F	J335F	F	305	255	295	250	305	300	290	290R	280	250	255	250	250	260	300	345	335	355	360
25	340	300	290	260	330	335	305	260R	U250S	C	I270C	J290R	J310S	I300C	U260S	U250R	250	250	J280S	310	305	310	345	330
26	330S	300	320	315	330	I330C	300	255	C	C	285	290	290	290	260	255	250	250	250	340	310	300	305	320
27	330	330	330	305	260	300	280	250	250	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	300	300	300	290	300	250	250	250	250	290	280	300	310	330
29																								
30																								
31																								
Count	24	24	25	25	24	26	26	26	25	23	26	25	25	25	24	24	26	24	25	26	24	24	22	23
Median	340	320	310	300	280	310	290	250	250	260	285	275	265	265	260	250	250	250	260	300	290	310	320	330
U.Q.																								
L.Q.																								
Q.R.																								

h_pF2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 13

IONOSPHERIC DATA

Feb. 1966 | ypF2 km | 135° E Mean Time (G.M.T. +9h) | Kokubunji Tokyo | Lat. 35° 42.4'N | Long. 139° 29.3'E

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	U045F	U050S	050	045	035	035	040	U045R	I045R	R	U025R	C	U035S	U040R	U045R	R	U055R	A	030	050	U045S	050	050	055
2	045	025	040	045	045	050	045	050S	U045R	045	U045R	045	U045R	R	U045R	I050C	045	040	060	045S	060	045S	U050F	U055F
3	U050F	045F	050	040	030	U050R	045	045	050	045	050	035	045	040	040	U045S	055S	050	055	055	045S	040	035	035
4	045	A	035	035	055	050	035	U040R	U065S	045	050	035R	035R	045	U050R	030	U045R	045	040	050S	045S	050F	U040F	045
5	U050S	030S	040	035	035	035	045S	045	U040R	065	055	040	040	040	C	C	050	U060R	050S	045	040	045	050	075F
6	045S	045S	050	030	050S	050	050	055	050	045	060R	035	045	U035S	045	045	050	055	035	045	070S	045F	U040F	U065F
7	055	045	050	040	060	040S	040	055	U055R	050	040	U040R	C	I045R	R	U050S	045S	045	I060C	065	C	C	045	050S
8	C	C	C	C	C	C	C	C	C	050	S	045	050	055S	I040C	045	050	045	060	045	055	050	055S	050
9	045	040	055	040	035	045	045	040	045	050	060	045	045	050	050	055	050	060	060	070	055	050	F	060F
10	055	050	055	050	060	065	060	050	040	045	040	070	045	040	040	045	A	A	A	A	050	085	A	065F
11	065F	075F	U070F	F	080	075F	090F	030	050	055	045	050	040	030	070	050	050	050	090	050	075	080	F	F
12	F	060	075	060	A	050	I055A	050	050	040	050	060	060	I045A	050	050	060	A	A	045	A	A	050	060
13	055	065	055	050	055	065	055	045	035	060	040	035	045	050	055	055	050	050	I060A	055	065	F	F	055
14	070	C	F	055F	U060F	050F	050	055	055	045	050	050	050	J050R	060	055	050	050	060	045	045	045	F	F
15	U090F	040F	045	055	050	050	050	060	045	045	050	050	045	050	050	035	055	050	055	055	050	100	060	055
16	045	060F	060F	050F	055	090	055	050	050	045	065	050	050	055	050	050	045	060	050	055S	045	055	075	070
17	070	070	085	060	050	100	055	050S	055	045	045	055	055	045	060	050	050	050	060	080	C	055	080	065
18	060	070	080	090	080	065	060	045	050	J045S	040	055	045	045	065	050	055	055	060	065	060	070	060F	C
19	070	060	070	060	060	I090C	080	040	055	050	060	045	J050R	045	045	050	I050S	050	070	045	065	080	055	080
20	090	050	085	070	055	090	060	070	U060R	J060S	J070R	065	060	090	060	040	050	050	060	075	060	080	075	060
21	055	090	055	040	050	060	050	035	040S	045S	060	C	C	C	C	C	050	060	045	050	080	060	055	065F
22	065	055	035	055	055	070	060	045	045S	J035S	055	040	050	055	050	050	045	040	050	050	060	085	060	050
23	065	060	060F	075	050	070F	060	060	055	055	050	J045R	050	045	J040S	045	045	060	045	050	075	060F	U070F	F
24	F	U075F	065F	J070F	F	055	055	050	050	055	050	040	060R	070	050	045	050	030	060	060	060	065	085	080
25	080	060	050	050	070	075	055	055R	U060S	C	I050C	J060R	J060S	I055C	U050S	U060R	045	050	J050S	050	050	070	050	065
26	070S	055	090	080	075	I070C	055	045	C	C	035	060	050	050	055	045	050	050	060	060	050	055	050	080
27	070	070	070	050	050	085	070	025	040	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
28	C	C	C	C	C	C	C	C	C	C	040	045	050	060	040	045	035	050	055	060	055	055	050	060
29																								
30																								
31																								
Count	24	24	25	25	24	26	26	26	25	23	26	25	25	25	24	24	26	24	25	26	24	24	22	23
Median	060	060	055	050	055	060	055	050	050	045	050	045	050	045	050	050	050	050	060	050	055	055	050	060
U.Q.																								
L.Q.																								
Q.R.																								

ypF2

Sweep 1.0 Mc to 20.0 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

K 14

50

IONOSPHERIC DATA

Feb. 1966 | foF2 | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	023	026S	025	028S	027	024S	023S	035	047	050	056	057S	070S	081	065	J061S	065S	055	036	I036S	J045S	036	025	025
2	026	I028S	030S	030	031	029	026	030S	055	055	059	061	064	063	064	057	056	052	040	037	J033S	I028S	028	030S
3	I029S	I032S	034S	025	023	020	021	036	054S	050	056	068	081	063	058	055	070	058	043	I032S	038	I039S	034	023
4	024S	026	029	030	024	023	024	036S	056	060	059	066	064	066	057	066S	067	I052A	050	048S	I042S	030	I030S	S
5	S	I032S	036	024	022	J022S	023S	J035S	051S	051	056H	068	077	071S	073S	065S	060S	065	049	032H	037	032S	032S	J030S
6	I033S	038S	025	022	021	024	028S	042S	053	064	091S	112	113	085	070	065	064	059	054	046S	038S	041S	I039S	035S
7	I038S	040S	033	031	022	021	026S	J034S	058	063S	068	I088S	J090S	069	U073S	076	073S	055	045	037S	029	I032S	029	030
8	030	030S	030	029	032S	023	024	J032S	055	054H	081	107	087	082	068	058	054	049	041S	032S	J033S	I033S	I034S	031S
9	031	031	031	029	029	025	S	032S	050	068	080	077S	J081S	074S	068	056	057	051	042S	030	034	035S	031S	I024S
10	023S	I027S	028S	028	022S	022	023	030	055S	065S	057	067	I071S	066	056	J061S	057	050	J042S	J036S	J037S	I033A	029S	I032S
11	032S	I035S	I034S	029	026S	029S	I028S	I037S	I054S	058	068	090	111	J121S	105	102	J079S	066	058	043S	031S	032S	U034S	I032S
12	I028S	I030S	U035S	I039S	I036S	022	023	034S	053	061	072S	095S	080S	068	069	J064S	055	057	056	055	039S	025	I028A	I031S
13	J026S	025S	026S	026	027	027	026S	040S	056S	056	066	078	085	107	082	058	057	065S	061S	040	037S	037	026	026
14	028S	027S	029	030S	I031S	028S	023S	I037S	055	J065S	063	074	090	085	086	065S	060S	063	050	038S	I038S	041S	030	030
15	031	030	031	031S	031	029	024S	I035S	055	060	065S	084	088	J097S	085	068	053	059	053	U042S	040S	I036S	029S	027
16	031	030	I034S	032S	I031S	022	022S	035S	058	I077S	080S	J079S	089S	J097S	092S	I076S	065S	066	052	041S	040	038S	036S	I034S
17	I036S	036	036	032	035S	025	024	037S	060	066S	072	070	066	U073S	076S	078S	J065S	073S	058	040	034S	038S	I039S	038
18	I039S	J039S	I036S	033	028	028S	028	042	062S	065S	088	083	082	079	070	071S	066S	060	054	036	035	034S	I033S	033S
19	034	032S	J036S	038S	036S	022	025	040S	060	J064S	065	068	075S	083	074S	J075S	071S	072S	052	I045S	038	030	030	031S
20	031S	031	031	031S	032	031S	024	038S	060H	075S	085	094	111	124	144	140	093	J070S	059	044S	044S	I042S	I040S	I037S
21	039	041S	I046S	J039S	J036S	J027S	I034S	051S	067	072S	070	080	091	J096S	094S	078	066	059	058	051	045	032	028	028S
22	030	029	031	031	I033S	032	031	044S	059	J065S	074S	076S	072	082	078	J077S	068	065	066	045S	029	029	029S	030
23	030	031	033S	031	S	020	021	039	062S	081	089	J096S	102	J098S	094S	069	067	071	068	051	037S	029	032S	033S
24	I032S	I033S	036	036	033	024	025	040S	070	088	I099S	101S	122	126	102S	091	068	061	051	037S	034	035S	035S	036
25	038	041	036	030	029	027	023	040S	067	C	C	C	C	C	C	C	C	C	C	C	C	C	C	036S
26	036	038S	027	028	029	029	030	049S	063S	068	071	075	092	086	077S	080	074	059	049	036	036	I041S	I036S	I031S
27	032	033	030	030	033S	030	027	041	055	059	070	078	084	099S	094S	075S	069	063S	057	042	029	030	033S	033S
28	035S	034S	I035S	031	030	030	028S	045S	059	J064S	069S	067	084	090	080	U075S	068	070S	059S	I036A	I032S	034S	J034S	032S
29																								
30																								
31																								
Count	27	28	28	28	27	28	27	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Median	031S	032S	032	030	030	025	024	037S	056	064	070	078	084	083	076	069	066	060	052	040S	037S	034S	032S	031S
U.Q.	035	036	036	032	033	029	028	040	060	068	080	090	091	097	092	077	069	066	058	045	039	038	034	033
L.Q.	028	030	030	028	026	022	023	035	054	058	063	068	075	071	068	061	057	055	045	036	033	030	029	030
Q.R.	007	006	006	004	007	007	005	005	006	010	017	022	016	026	024	016	012	011	013	009	006	008	005	003

The Radio Research Laboratories, Japan

foF2 | Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

Y 1

IONOSPHERIC DATA

Feb. 1966 | foF1 | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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											410	430L	430	420	400	420	L							
2										L	L	420	430	430	430	400	L	L						
3										L	420	430	430	430	420	L	L							
4										L	L	430	430	430	430	L	360L	I250A						
5												430L	430	440	LH	400L	L							
6										L	430	440	420	430L	440	L	L	280						
7										L	L	450	450	440	430	410	L	L						
8											420	430	440H	440	420	L	L	L						
9										L	430L	430	440	I450A	I430A	400L	L							
10										L	420	440	450	440	430	A	L							
11										L	420	440	440	440	440	390	L	L						
12										L	430	440	450	450	440	410	L	L						
13											430	440	460	450	440	420L	360L	270L						
14										L	L	450	450	460	450	420	390L	L						
15										L	L	450	450	450	450	430	L	270						
16									L	L	440L	450	450	450	440	420	L	L						
17										L	440L	450	450	450	450	L	L							
18									L	450L	430	440	460	430	450	430	L							
19										L	450L	450	450	450	430	430H	L							
20										L	L	450L	430	470	450	430	L	L						
21										L	440L	450	460	460	440	420	L	300						
22										430L	430L	450	460	470	450	440	L	L						
23										L	430	460	460	450	450	L	L							
24										L	440	450	460	460	440	440	L	L						
25									L	C	C	C	C	C	C	C	C	C						
26									L	L	440	450	460	430	430	LH	L	L						
27											450L	450	460	460	450	430	L	L						
28											L	450L	460	I460B	460L	440	L							
29																								
30																								
31																								
Count										2	19	27	27	27	26	19	3	5						
Median										440L	430	450	450	450	440	420	360L	270						
U.Q.																								
L.Q.																								
Q.R.																								

foF1

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

Feb. 1966 | foE | 0.01 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	190	240	I275A	300R	310	310	I295A	280H	250	200H						
2								S	210	260	A	A	A	320	310	295	260	205						
3								S	200H	250	290	A	A	A	A	300	260	200						
4								S	200	250	285	305	315	315	300	A	A	A						
5								S	190	240	280	305	310	310	300	A	A	200						
6								S	180	250	285H	I305A	I315A	I320A	310	300	260	200						
7								S	A	270	305	320	320	320	310	R	270	I190A						
8								S	190H	260	300	320	320	330	320	305	265	230						
9								S	220	270	300	315	320	325R	320	300	260	220						
10								S	185	A	R	315	325	I330R	I320A	300	270	210						
11								S	210	I250A	300	A	A	R	320	300	I260A	220						
12								S	210	270	300	310	325	320	305	300	270	220						
13								S	230	270	300	315	320	320	315	295	250	A						
14								S	220H	270	290	310	320	I320A	I320A	I305R	I265A	220						
15								S	200	260	290	300	A	A	A	A	I270A	A						
16								S	210H	260	290	320H	320	I315A	I315R	300	270	220						
17								S	220H	270	300	320R	330	330	I320A	I295A	255	A						
18								S	220	270	295	305	325	325	310R	R	A	210						
19								S	200	260	300	310	320	I315R	310	I290A	I260A	220						
20								S	220	270	I300A	I315A	325	330	320R	305	270	210						
21								S	215H	280	310R	325	330	340	325	310	275	210						
22								S	220	I260R	I290R	I320A	330	335	330	305	270	220						
23								S	230	270	300	300	305	I320A	320	300	270	220						
24								S	220	270	A	A	330	330	325R	300	270	210						
25								S	A	C	C	C	C	C	C	C	C	C						
26								S	240	280H	310	I325A	340	340	330	305	280	230						
27								S	240H	280H	305	320	330	330	320	A	A	A						
28								S	230	270	310R	I335R	350	I350B	350	315	290	230						
29																								
30																								
31																								
Count									26	26	24	23	23	24	25	21	23	22						
Median									210	270	300	315	320	320	320	300	270	215						
U.Q.																								
L.Q.																								
Q.R.																								

foE

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 3

IONOSPHERIC DATA

Feb. 1966 | foEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	E015S	021M	J018	J017	E015B	J022	022M	E015S	G	030	030	035	034	036	034	026G	G	021	021M	022M	E015S	022M	E015S	E015S
2	J020	E015S	E015B	E	E	021M	E015S	017M	G	G	J035	J035	036	G	G	028G	021G	020G	J023	E015S	E015S	E020S	E015S	E015S
3	J021	E016S	E015B	020M	021M	E015S	021M	019M	024	030	034	J040	036	036	039	G	G	G	E015S	E015S	E015S	E015S	E015S	018M
4	E017S	E015S	022M	E	J020	J018	J018	E015S	G	G	G	036	042	045	040	J040	031	J053	E015S	E015S	E015S	E015S	J018	015S
5	E015S	E015S	E015S	018M	E015B	E015S	E015S	E015S	024	G	032	033	G	036	035	032	J032	J020G	J022	021M	021M	021M	E015S	E015S
6	E015S	E015S	E015B	E016B	E015B	E015B	E015S	E015S	022	G	G	J039	J039	J033	G	G	G	021	E015S	E015S	J019	E015S	E015S	E015S
7	E016S	E015S	E015S	E	E	019M	J029	J022	J023	G	G	G	035	034	034	030G	022G	024	J024	J020	E015S	E015S	E015S	E015S
8	E015S	E015S	E014B	E	E	E015S	018M	023M	019G	G	035	036	G	G	G	G	G	G	E015S	E015S	J020	E015S	E015S	E015S
9	E015S	J022	021M	018M	E014B	J019	J024	020M	020G	G	G	039	039	044	042	G	G	G	E015S	E015S	J020	020	J022	021M
10	E015S	E015S	E015S	E014B	E015B	E015S	E015S	020M	025	028	030G	034	042	043	039	041	033	028	J022	J026	J022	049M	020M	J019
11	E015S	E015S	018M	016M	E	E015S	019M	E015S	G	J039	G	032	J035	021G	034	036	028	020G	017	019M	018M	023M	J019	J029
12	J021	E015S	021M	022M	015	021M	021M	J029	024	G	G	G	036	G	033	G	G	G	E015S	E015S	E015S	017M	J042	J029
13	019M	E015S	E015S	022	J024	021M	E015S	E015S	024	035	042	040	045	045	040	034	028	J030	J022	023M	018M	E015S	E015S	E015S
14	020M	E015S	E015S	J021	E015B	E014B	E015S	019M	025	030	033	035	037	035	035	030G	J033	G	020M	E015S	E015S	E015S	E015S	E015S
15	E015S	J019	017M	E015B	E015B	E015S	E015S	E015S	G	030	037	J060	035	J052	J046	J035	030	J026	E015S	J021	J021	023	J021	E015S
16	E015S	J030	019M	E013B	E015B	E015S	E015S	E015S	G	G	035	036	038	039	031G	025G	J021G	J023	J020	021M	021M	E015S	E015S	E015S
17	E015S	E015S	E015B	E015B	E	E015S	019M	020M	025	029	G	G	036	037	J041	J035	031	J029	J022	021M	E015S	E015S	E015S	E015S
18	020M	019M	E015B	E015B	E015B	E017B	E015S	E015S	G	G	G	G	037	039	036	034	028	020G	E015S	E015S	020M	E015S	J028	021M
19	020M	E015S	018M	E015B	E	E015S	E015S	J017	G	G	034	041	043	035	035	032	027	028	J050	J039	J030	020M	021M	018M
20	E015S	E015S	E015S	E015B	E015B	E015B	E015S	E015S	G	G	032	J038	029G	029G	026G	024G	025G	G	E015S	E015S	E015S	E015S	J020	E015S
21	E015S	E015S	E015S	E015B	E015B	E015S	020	E015S	G	032	G	036	045	039	038	033	036	024	E015S	021M	E015S	E015S	E015S	E015S
22	E015S	E015S	E015B	E014B	E015B	E015B	E015S	E015S	G	G	G	035	G	G	030G	J020G	029	G	E015S	E015S	E015S	E015S	E015S	E015S
23	E015S	E015S	E014B	E	E015B	E015S	E015S	E015S	G	G	G	G	034	034	G	G	G	G	E015S	E015S	E015S	E015S	E015S	E015S
24	E015S	E015S	E015B	E014B	E014B	E014B	E015S	E015S	022G	025G	033	032	G	G	G	G	G	G	E015S	E015S	E015S	E015S	E015S	E015S
25	E015S	E015S	E015B	E015B	E015B	E015B	E015S	E015S	023	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E015S
26	E015S	E015S	E	E015B	E015B	E015B	E015S	E015S	G	G	G	035	G	G	024G	019G	030	025	E015S	E015S	019M	021M	021M	E015S
27	E015S	E015S	E015B	E014B	E015B	E014S	E015S	E015S	G	G	G	G	035	035	036	033	033	J027	022M	020M	018M	E015S	E015S	E015S
28	E015S	E015S	E015B	E015B	E	E015S	E015S	E015S	G	G	G	G	G	E048B	G	G	G	G	J037	J051	J028	J028	E015S	E015S
29																								
30																								
31																								
Count	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	28
Median	E015S	E015S	E015	E015B	E015B	E015	E015S	E015S	G	G	G	035	036	035	034	G	027	G	E015S	E015S	018	E015S	E015S	E015S
U.Q.	E018	E015	018	016	E015	E018	019	019	024	030	034	038	039	039	039	034	031	026	022	021	020	021	020	E016
L.Q.	E015	E015	E015	E014	E	E015	E015	E015	G	G	G	G	G	G	G	G	G	G	E015	E015	E015	E015	E015	E015
Q.R.			D003	D002			D004	D004											D007	D006	D005	D006	D005	

foEs

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

IONOSPHERIC DATA

Feb. 1966 | f_bEs | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	E	E	E	B	016	018	S		027	030	035	033	034	031	026G		021	E	E	S	016	S	S
2	E	S	B			E	S	G			032	032	032			027G	020G	016G	016	S	S	S	S	S
3	018	S	B	E	E	S	E	016	023	029	031	032	032	032	031				S	S	S	S	S	E
4	S	S	E		015	E	E	S				035	040	042	039	031	029	A	S	S	S	S	E	S
5	S	S	S	E	B	S	S	S	G		032	G		035	034	032	026	016	E	E	E	E	S	S
6	S	S	B	B	B	B	S	S	022			031	033	032				019	S	S	016	S	S	S
7	S	S	S			E	017	016	020				035	E034R	034	E030R	022G	022	U022A	E	S	S	S	S
8	S	S	B			S	E	G	G		034	035							S	S	E	S	S	S
9	S	018	016	E	B	015	020	016	G			039	038	043	041				S	S	019	E	E	017
10	S	S	S	B	B	S	S	G	025	028	E030R	G	040	041	039	041	031	025	021	023	E	A	E	E019S
11	S	S	E	E		S	E	S		034		032	034	021G	034	034	E028R	019G	016	E	E	016	018	019
12	018	S	020	016	015	E	E	028	G				035		032				S	S	S	E	A	020
13	016	S	S	E	015	E	S	S	G	032	041	037	041	044	039	033	028	024	022	016	017	S	S	S
14	E	S	S	E	B	B	S	016	G	G	G	034	035	034	033	E030R	031		016	S	S	S	S	S
15	S	018	E	B	B	S	S	S		029	036	035	035	034	035	033	029	022	S	E	021	021	016	S
16	S	018	E	B	B	S	S	S			034	034	036	037	E031R	024G	017G	G	018	E	E	S	S	S
17	S	S	B	B		S	E	G	025	E029R			035	036	035	033	030	023	021	E	S	S	S	S
18	E	E	B	B	B	B	S	S					037	039	035	033	028	020G	S	S	E	S	E028S	E
19	018	S	E	B		S	S	G			033	040	041	035	035	031	E027R	027	034	E039S	E030S	016	E	E
20	S	S	S	B	B	B	S	S			032	035	029G	029G	025G	024G	023G		S	S	S	S	017	S
21	S	S	S	B	B	S	016	S		031		035	041	038	036	033	034	023	S	E	S	S	S	S
22	S	S	B	B	B	B	S	S				033			026G	019G	029		S	S	S	S	S	S
23	S	S	B		B	S	S	S					033	034					S	S	S	S	S	S
24	S	S	B	B	B	B	S	S	019G	025G	032	E032R							S	S	S	S	S	S
25	S	S	B	B	B	B	S	S	E023S	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S
26	S	S		B	B	B	S	S				033			023G	019G	029	025	S	S	E	E	E	S
27	S	S	B	B	B	S	S	S					035	G	035	032	032	027	E	E	E	S	S	S
28	S	S	B	B		S	S	S						B					037	A	E028S	016	S	S
29																								
30																								
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

f_bEs Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 5

IONOSPHERIC DATA

Feb. 1966 | f-min | 0.1 Mc | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	E015S	E015S	015	015	015	E015S	E015S	E015S	015	015	015	015	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
2	E015S	E015S	015	E	E	E015S	E015S	E015S	015	015	015	015	015	015	015	015	014	E015S	E015S	E015S	E015S	E020S	E015S	E015S
3	E015S	E016S	015	013	016	E015S	E015S	E015S	015	015	015	016	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
4	E017S	E015S	015	E	E	E015S	E015S	E015S	015	015	015	018	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
5	E015S	E015S	E015S	E015S	015	E015S	E015S	E015S	015	015	015	015	016	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
6	E015S	E015S	015	016	015	015	E015S	E015S	015	015	015	015	015	015	016	016	015	013	E015S	E015S	E015S	E015S	E015S	E015S
7	E016S	E015S	E015S	E	E	E015S	E015S	E015S	015	015	019	019	021	021	018	018	015	013	E012S	E015S	E015S	E015S	E015S	E015S
8	E015S	E015S	014	E	E	E015S	E015S	E015S	E015S	015	015	019	020	023	019	019	015	015	E015S	E015S	E015S	E015S	E015S	E015S
9	E015S	E015S	E015S	015	014	E	E015S	E015S	015	015	015	016	016	019	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
10	E015S	E015S	E015S	014	015	E015S	E015S	E015S	015	015	015	015	015	012	013	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
11	E015S	E015S	E015S	013	E	E015S	E015S	E015S	015	015	015	016	015	017	017	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
12	E015S	E015S	015	015	E	E015S	E015S	E015S	015	015	017	015	015	016	015	016	015	015	E015S	E015S	E015S	E015S	E015S	E015S
13	E015S	E015S	E015S	014	E	E016S	E015S	E015S	015	014	015	015	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
14	E015S	E015S	E015S	014	015	014	E015S	E015S	015	015	015	015	015	015	015	017	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
15	E015S	E014S	014	015	015	E015S	E015S	E015S	E015S	015	015	015	015	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
16	E015S	E015S	015	013	015	E015S	E015S	E015S	015	015	015	015	015	017	015	015	013	E015S	E014S	E015S	E015S	E015S	E015S	E015S
17	E015S	E015S	015	015	E	E015S	E015S	E015S	015	015	015	018	016	016	016	015	012	E015S	E015S	E015S	E015S	E015S	E015S	E015S
18	E015S	E	015	015	015	017	E015S	E015S	012	015	015	015	015	018	016	015	014	014	E015S	E015S	E015S	E015S	E015S	E015S
19	E015S	E015S	015	015	E	E015S	E015S	E015S	015	015	015	016	016	021	017	015	015	E014S	E015S	E016S	E015S	E015S	E015S	E015S
20	E015S	E015S	E015S	015	015	015	E015S	E015S	015	017	018	018	018	017	019	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
21	E015S	E015S	E015S	015	015	E015S	E015S	E015S	015	015	015	016	015	015	015	015	014	015	E015S	E015S	E015S	E015S	E015S	E015S
22	E015S	E015S	015	014	015	015	E015S	E015S	015	015	E021S	016	015	019	015	015	016	E015S	E015S	E015S	E015S	E015S	E015S	E015S
23	E015S	E015S	014	E	015	E015S	E015S	E015S	015	015	015	015	016	015	017	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
24	E015S	E015S	015	014	014	014	E015S	E015S	015	015	015	017	018	021	016	016	015	015	E015S	E015S	E015S	E015S	E015S	E015S
25	E015S	E015S	015	015	015	015	E015S	E015S	015	C	C	C	C	C	C	C	C	C	C	C	C	C	C	E015S
26	E015S	E015S	E	015	015	015	E015S	E015S	015	015	015	017	016	018	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
27	E015S	E015S	015	014	015	E014S	E015S	E015S	015	015	017	016	015	017	015	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S
28	E015S	E015S	015	015	E	E015S	E015S	E015S	015	017	015	022	021	048	020	016	015	013	E015S	E015S	E015S	E015S	E015S	E015S
29																								
30																								
31																								
Count	28	28	28	28	28	28	28	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	28
Median	E015S	E015S	015	014	015	E015S	E015S	E015S	015	015	015	016	015	016	015	015	015	E015S	E015S	E015S	E015S	E015S	E015S	E015S
U.Q.																								
L.Q.																								
Q.R.																								

f-min

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

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IONOSPHERIC DATA

Feb. 1966 | M(3000) F2 | 0.01 | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	310	260S	290	320S	325	340S	300S	310	360	350	340	340S	315S	345	360	J330S	355S	365	335	I285S	J335S	330	325	295
2	275	I285S	295S	305	340	310	275	335S	365	365	345	340	335	335	350	340	375	365	350	325	J365S	I330S	305	305S
3	I280S	I305S	355S	320	315	300	290	285	380S	380	340	320	350	335	375	320	345	370	350	I300S	290	I335S	355	305
4	280S	280	310	335	340	310	300	310S	355	335	350	340	345	350	330	340S	345	I350A	365	315S	I320S	335	I305S	S
5	S	320	360	340	300	J315S	310S	J335S	355S	365	300H	355	340	330S	355S	355S	315S	350	365	285H	325	315S	285S	J335S
6	I310S	340S	355	370	290	295	305S	345S	340	320	320S	340	345	355	330	355	345	340	355	335S	295S	315S	I320S	265S
7	I305S	325S	310	355	360	295	290S	J325S	355	335S	315	I335S	J345S	335	U330S	340	355S	365	355	350S	370	I320S	315	305
8	305	315S	330	315	345S	310	295	J320S	335	300H	315	345	355	345	355	350	360	365	350S	320S	J305S	I295S	I300S	305S
9	305	305	315	300	330	310	S	330S	340	325	340	340S	J335S	340S	360	335	340	355	355S	305	310	315S	330S	I295S
10	280S	I300S	320S	355	325S	325	330	325	355S	355S	330	330	I350S	345	355	J330S	350	340	J335S	J315S	J330S	I330A	310S	I300S
11	315S	I305S	I325S	345	315S	285S	I320S	I340S	I345S	335	310	310	335	J330S	320	335	J335S	340	360	350S	275S	315S	U325S	I315S
12	I275S	I295S	U300S	I330S	I360S	320	300	310S	340	325	310S	340S	340S	340	330	J340S	345	340	340	335	360S	320	I305A	I325S
13	J310S	295S	280S	290	305	335	310S	330S	355S	355	335	320	305	355	355	345	320	330S	345S	330	325S	325	315	285
14	305S	305S	315	305S	I320S	340S	310S	I340S	335	J350S	325	320	335	335	340	330S	345S	330	360	330S	I320S	330S	335	295
15	295	300	295	315S	325	345	295S	I335S	355	335	325S	325	325	J345S	360	370	345	340	345	U335S	315S	I340S	315S	295
16	325	305	I335S	345S	I345S	295	295S	325S	330	I335S	320S	J315S	325S	J330S	350S	I345S	340S	350	350	315S	325	320S	310S	I310S
17	I300S	305	310	315	345S	310	315	325S	350	335S	320	345	335	U330S	315S	340S	J330S	345S	360	350	280S	305S	I300S	295
18	I305S	J310S	I325S	315	320	290S	290	335	355S	325S	340	335	335	355	330	330S	350S	350	350	330	305	295S	I310S	295S
19	295	290S	J315S	315S	355S	275	300	330S	350	J360S	325	330	320S	330	325S	J335S	340S	360S	370	I350S	335	305	305	305S
20	290S	290	290	290S	315	295S	290	325S	315H	320S	295	290	305	310	320	330	345	J345S	330	300S	295S	I300S	I280S	I280S
21	280	290S	I330S	J315S	J330S	J335S	I310S	355S	360	350S	330	315	320	J325S	350S	335	345	340	340	335	335	315	305	295S
22	295	295	295	295	I290S	315	325	345S	370	J330S	355S	340S	315	330	320	J345S	355	345	350	350S	345	295	295S	300
23	295	290	305S	325	S	270	285	310	320S	320	325	J325S	325	J325S	330S	340	330	350	340	335	335S	275	280S	305S
24	I290S	I295S	310	335	335	300	310	315S	330	320	I330S	315S	320	335	330S	340	340	360	355	325S	290	295S	285S	290
25	295	315	335	305	310	335	310	325S	345	C	C	C	C	C	C	C	C	C	C	C	C	C	C	290S
26	280	320S	315	295	285	285	300	340S	355S	355	340	320	335	335	310S	330	355	355	365	320	295	I315S	I310S	I310S
27	300	305	300	300	335S	345	335	340	365	340	330	320	305	340S	340S	335S	350	365S	355	350	310	300	305S	305S
28	290S	295S	I295S	300	310	315	330S	355S	360	J320S	340S	320	320	330	320	U335S	350	355S	370S	I330A	I315S	305S	J295S	300S
29																								
30																								
31																								
Count	27	28	28	28	27	28	27	28	28	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Median	295S	300S	310	315	325	310	300	330S	355	335	330	330	335	335	330	340	345	350	350	330S	320S	315S	305S	300S
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F2 Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

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IONOSPHERIC DATA

Feb. 1966 | M(3000) F1 | 0.01 | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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											380	375L	380	385	400	360	L							
2										L	L	380	370	370	370	375	L	L						
3										L	360	370	370	375	380	L	L							
4										L	L	370	385	A	375	L	365L	L420A						
5												365L	370	365	LH	375L	L							
6										L	350	360	380	370L	365	L	L	390						
7										L	L	355	355	390	375	370	L	L						
8											355	365	385H	390	385	L	L	L						
9										L	365L	370	365	A	A	400L	L							
10										L	380	365	365	370	375	A	L							
11										L	360	380	365	380	385	385	L	L						
12										L	350	360	355	345	370	370	L	L						
13											A	370	350	A	365	390L	400L	390L						
14										L	L	360	360	355	360	380	370L	L						
15										L	L	360	365	360	365	370	L	435						
16									L	L	370L	380	375	360	365	380	L	L						
17										L	370L	365	375	375	365	L	L							
18									L	350L	370	375	370	375	365	370	L							
19										L	355L	375	380	375	375	365H	L							
20										L	L	375L	395	345	355	350	L	L						
21										L	370L	360	390	365	365	380	L	400						
22										370L	350L	375	370	360	375	360	L	L						
23										L	365	350	350	365	360	L	L							
24										L	365	365	350	355	365	365	L	L						
25									L	C	C	C	C	C	C	C	C	C						
26									L	L	370	375	370	395	385	LH	L	L						
27											340L	360	365	370	360	365	L	L						
28											L	375L	370	I360B	360L	365	L							
29																								
30																								
31																								
Count										2	18	27	27	24	25	19	3	5						
Median										360L	365	370	370	370	365	370	370L	400						
U.Q.																								
L.Q.																								
Q.R.																								

M(3000) F1 Sweep 1.0 Mc to 19.5 Mc in 20 sec, in automatic operation

The Radio Research Laboratories, Japan

Y 8

IONOSPHERIC DATA

Feb. 1966 | h'F2 km | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N, Long. 130° 37.1'E

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											280	280	295	255	255	290	245							
2										245	260	270	275	275	260	250	230	220						
3										240	295	280	240	275	240	300	255							
4										250	270	270	260	265	280	250	245	I230A						
5												240	275	275	245	245	260							
6										290	280	260	255	240	280	255	240	240						
7										255	280	275	250	275	275	255	245	225						
8											295	245	235	250	245	255	240	240						
9										275	255	260	255	260	250	255	255							
10										265	280	280	270	275	275	295	255							
11										265	295	280	250	255	250	250	240	240						
12										270	300	270	255	275	275	255	240	245						
13											270	295	305	260	250	255	250	250						
14										255	275	295	275	270	255	255	250	240						
15										260	290	275	275	250	245	250	240	245						
16									250	270	265	260	280	260	255	250	245	235						
17										245	275	260	275	270	290	255	245							
18									240	280	255	250	270	250	275	270	240							
19										240	280	270	290	270	265	275	250							
20										250	280	270H	300	290	270	245	225	230						
21										240	275	285	290	275	255	255	245	235						
22										275	250	255	280	280	275	250	245	240						
23										280	275	270	270	255	260	250	275							
24										275	260	280	280	255	245	250	240	230						
25									255	C	C	C	C	C	C	C	C	C						
26									230	245	255	275	275	255	280	270	240	225						
27											280	280	290	275	255	255	250	235						
28											270	275	295	280	265	255	250							
29																								
30																								
31																								
Count									4	21	26	27	27	27	27	27	27	17						
Median									245	260	275	270	275	270	260	255	245	235						
U.Q.																								
L.Q.																								
Q.R.																								

h'F2 Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 9

IONOSPHERIC DATA

Feb. 1966 | h'F km | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	255	340	320	295	250	240	E300A	240	210H	195H	200H	200H	180H	200H	195H	235	240	225	200	290	240	225	240	295
2	300	315	290	270	225	250	305	250	230	235	230	205	190H	190H	215	205	230	210	215	225	200	I240S	260	255
3	335	275	230	225	250	E315S	325	245	220	215	200	200	200H	210	225	200	195	225	205	240	265	215	220	275
4	350	330	280	230	225	295	300	240	230	225	220H	240	E245A	A	240	240	220	I215A	225	240	230	240	250	290
5	315	275	225	235	275	280	290	230	230	230H	200H	230	205	220	200H	200	220	240	210	215H	250	255	300	260
6	275	220	215	215	325	295	275	230	240	225H	215	200H	205	200H	215	235	220	205	215	225	250	250	245	315
7	275	245	245	210	200	300	300	250	190H	200H	195H	195H	240	225	210H	230	200H	230	225	215	260	255	240	250
8	255	250	240	230	220	250	300	250	230	200H	240	225	210H	220	235	205	220	240	220	225	250	290	255	280
9	290	290	265	250	245	260	E300A	250	230	230	240	250	245	A	A	220	205H	240	210	240	270	240	235	320
10	340	280	235	220	260	250	260	265	245	210H	230	225	E250A	250	E245A	A	240	230	215	255	245	A	260	I265A
11	270	250	230	225	230	295	250	230	240	240	205H	185H	205H	225	215	205	225	230	210	205	280	270	245	275
12	320	300	290	250	200	280	E300S	E310A	240	240H	230	220	225	215	200	215	210	225	230	225	205	255	I265A	245
13	275	320	330	310	280	270	260	230	230	230	I230A	225	275	I250A	230	215	200	220	225	220	245	230	245	E300S
14	270	280	275	270	245	240	E300S	245	230	235	225	225	225	225	210	210	220	200	220	225	245	235	240	300
15	285	300	275	270	255	245	E300S	240	235	230	230	220	225	210	225	200H	200	185	220	215	250	240	240	E300S
16	275	280	230	220	240	E250S	E300S	245	205H	220H	225	215	200	230	215	220	210	225	210	230	240	230	250	260
17	275	265	250	250	205	270	265	245	240	225	215	220	215	205	205	225	215	220H	220	205	285	255	265	275
18	260	245	250	250	245	300	300	245	230	215H	200H	230	220	E235A	225	200H	215	225	220	225	250	250	I290A	280
19	295	310	255	230	215	E290S	275	240	240	230	225	240	225	200	200	195H	235	235	215	I240A	260	250	275	275
20	300	315	315	305	250	250	300	250	200H	225	250	230	215	205H	225	225	225	220	225	215	245	240	280	295
21	305	290	240	230	235	270	265	235	225	230	230	225	220	230	240	225	230	215	225	215	230	240	255	300
22	300	295	280	275	270	245	250	225	225	205	200	200H	200	200H	200	225	230	230	220	205	225	270	295	300
23	325	300	275	230	200	E390S	360	250	240	230	225	205H	200H	200H	200	225	220H	235	230	215	210	E300S	310	270
24	295	275	250	240	230	250	270	250	200H	200H	200H	200H	210	195H	220	210H	220	220	215	225	270	275	300	290
25	285	245	230	270	255	250	275	245	240	C	C	C	C	C	C	C	C	C	C	C	C	C	C	275
26	290	250	220	280	300	300	285	240	230	225	220	205	205	200	210	200H	240	225	215H	235	270	250	250	265
27	275	250	275	275	245	225	250	200H	200H	200H	220	230	215H	220	225	210	225	240	220	215	250	285	275	275
28	285	280	255	275	245	250	245	225	200H	200H	225	245	220	I215B	245	225	240	240H	225	A	I255A	265	275	280
29																								
30																								
31																								
Count	28	28	28	28	28	28	28	28	28	27	27	27	27	25	26	26	27	27	27	26	27	26	27	28
Median	290	280	250	250	245	260	280	240	230	225	225	220	210	210	215	215	220	225	220	225	250	250	255	280
U.Q.																								
L.Q.																								
Q.R.																								

h'F Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 10

60

IONOSPHERIC DATA

Feb. 1966 | h'Es | km | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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	100	105	105	B	100	100	S	G	120	120	125	130	125	115	105	G	135	105	105	S	100	S	S
2	100	S	B	E	E	100	S	100	G	G	105	105	105	G	G	110	105	100	100	S	S	S	S	S
3	105	S	B	105	105	S	100	100	125	125	125	105	105	105	105	G	G	G	S	S	S	S	S	100
4	S	S	110	E	105	100	100	S	G	G	G	130	125	120	115	110	110	105	S	S	S	S	110	S
5	S	S	S	105	B	S	S	S	155	G	150	140	G	125	120	115	110	110	105	105	110	100	S	S
6	S	S	B	B	B	B	S	S	125	G	G	115	110	110	G	G	G	105	S	S	100	S	S	S
7	S	S	S	E	E	125	120	105	115	G	G	G	130	125	125	120	110	125	100	105	S	S	S	S
8	S	S	B	E	E	S	115	110	105	G	170	150	G	G	G	G	G	G	S	S	130	S	S	S
9	S	105	105	110	B	100	100	100	100	G	G	150	150	135	135	G	G	G	S	S	125	110	100	100
10	S	S	S	B	B	S	S	100	145	120	120	170	145	130	130	125	125	120	110	105	100	100	100	100
11	S	S	125	100	E	S	120	S	G	105	G	110	105	105	145	125	120	115	115	110	110	105	100	100
12	110	S	140	130	125	120	120	120	125	G	G	G	155	G	130	G	G	G	S	S	S	110	105	100
13	105	S	S	125	120	120	S	S	140	125	125	120	120	120	125	120	120	095	095	100	100	S	S	S
14	115	S	S	110	B	B	S	100	155	150	130	135	125	105	105	110	105	G	095	S	S	S	S	S
15	S	100	100	B	B	S	S	S	G	140	120	110	115	125	110	105	105	105	S	110	105	105	105	S
16	S	105	100	B	B	S	S	S	G	G	125	130	125	115	110	105	100	100	100	100	105	S	S	S
17	S	S	B	B	E	S	110	105	140	145	G	G	140	130	100	100	120	100	100	100	S	S	S	S
18	105	105	B	B	B	B	S	S	G	G	G	G	155	140	140	130	115	110	S	S	100	S	105	105
19	105	S	100	B	E	S	S	100	G	G	145	130	125	125	120	120	115	150	100	100	100	100	095	095
20	S	S	S	B	B	B	S	S	G	G	110	105	110	110	105	100	100	G	S	S	S	S	100	S
21	S	S	S	B	B	S	100	S	G	160	G	175	135	130	130	135	120	115	S	100	S	S	S	S
22	S	S	B	B	B	B	S	S	G	G	G	120	G	G	100	100	125	G	S	S	S	S	S	S
23	S	S	B	E	B	S	S	S	G	G	G	G	125	105	G	G	G	G	S	S	S	S	S	S
24	S	S	B	B	B	B	S	S	110	110	110	110	G	G	G	G	G	G	S	S	S	S	S	S
25	S	S	B	B	B	B	S	S	120	C	C	C	C	C	C	C	C	C	C	C	C	C	C	S
26	S	S	E	B	B	B	S	S	G	G	G	125	G	G	100	100	130	120	S	S	115	105	105	S
27	S	S	B	B	B	S	S	S	G	G	G	G	130	130	120	120	105	105	110	105	105	S	S	S
28	S	S	B	B	E	S	S	S	G	G	G	G	G	B	G	G	G	G	110	110	105	100	S	S
29																								
30																								
31																								
Count	7	5	8	8	4	7	10	10	13	10	13	20	21	20	21	19	18	17	13	13	14	10	10	7
Median	105	105	105	110	110	100	105	100	125	125	125	125	125	125	120	110	110	110	100	105	105	100	100	100
U.Q.																								
L.Q.																								
Q.R.																								

h'Es

Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 11

IONOSPHERIC DATA

Feb. 1966 | Types of Es | 135° E Mean Time (G.M.T. +9h) | Yamagawa | Lat. 31° 12.1'N | Long. 130° 37.1'E

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		f2	f6			c2	c	c	h	h2	c	1		h	f	f		f		
2	f					f		1			1	1	1			1	12	12	f2					
3	f2			f	f		f	1	h2	h	h	1	1	1	1									f
4			f		f	f	f					h	c2	c2	c	c	c3	12					f	
5				f					h31		h	h		h2	c	c	12	12	f	f	f	f		
6									h			1	1	1				12			f			
7						f	f2	1	1				h	h	h	c	1	c	f2	f2				
8							f	1	1		h	h									f			
9		f2	f	f		f2	f6	12	1			h	h	h2	h						f	f	f	f
10								13	h 1	c2	c	h	h 1	h 12	h 13	h 12	h2	c21	f2	f3	f2	f2	f	f
11			f	f			f			14		1	1	1	h	h 12	12	12	f	f	f	f	f	f2
12	f4		f2	f2	f	f2	f2	c2	c2				h		h							f	f2	f2
13	f			f	f2	f			h2	h	h2	c	c2	c 12	c 12	c 1	c	13	f2	f2	f			
14	f2			f				12	h2	h	h	h 1	h 1	1	1	1	13		f					
15		f3	f							h	h2	c21	c 1	h 1	1	12	12	12		f	f	f2	f2	
16		f	f								h	h	h	c21	1	1	1	1	f	f	f			
17							f	1	h2	h			h	h 1	12c	13	c 12	14	f2	f				
18	f	f											h	h	h	h	c2	13			f		f3	f
19	f		f					1			h	h2	h	h	c	c	12	h 12	f4	f3	f2	f2	f	f
20											1	12	1	1	1	1	12						f	
21							f2			h		h	h2	h	h 12	h 12	c 12	c2		f				
22												c			12	1	c							
23													h	1										
24									1	1	1	1												
25									12															
26												c			1	1	h	c2			f	f2	f2	
27													h	h	c	c	12	13	f	f	f			
28																			f2	f2	f	f2		
29																								
30																								
31																								
Count																								
Median																								
U.Q.																								
L.Q.																								
Q.R.																								

Types of Es

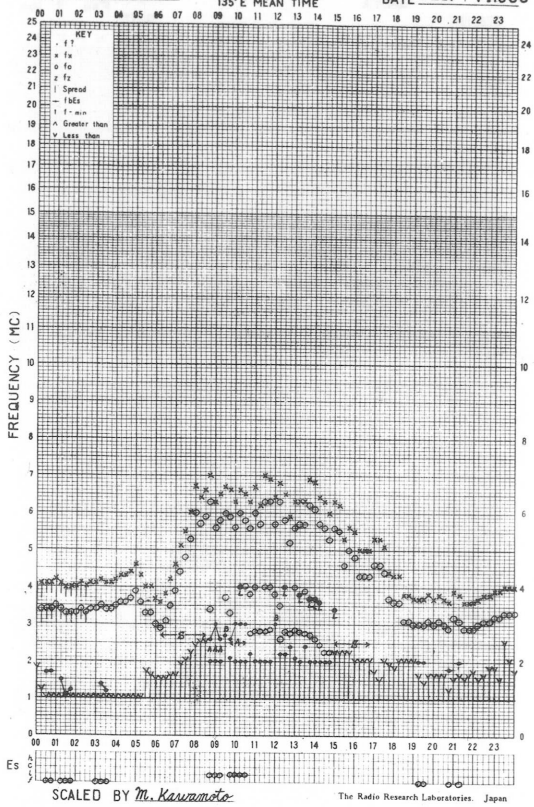
Sweep 1.0 Mc to 19.5 Mc in 20 sec in automatic operation

The Radio Research Laboratories, Japan

Y 12

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE FEB. 1.1966

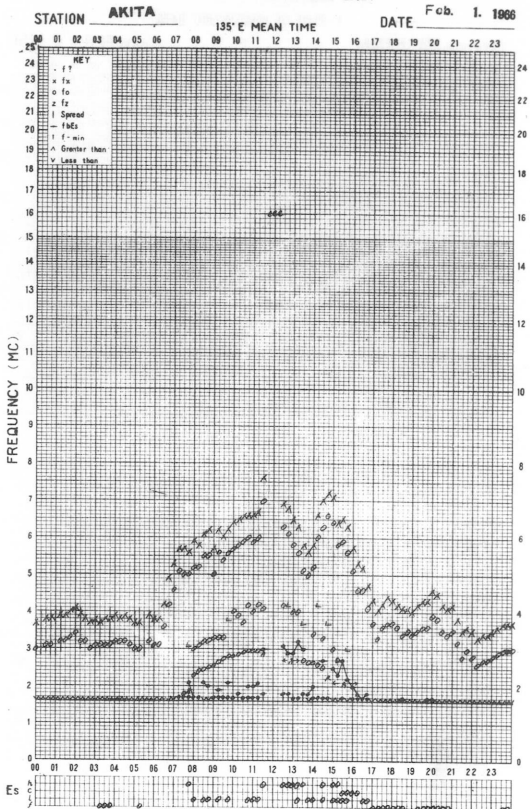


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Feb. 1. 1966

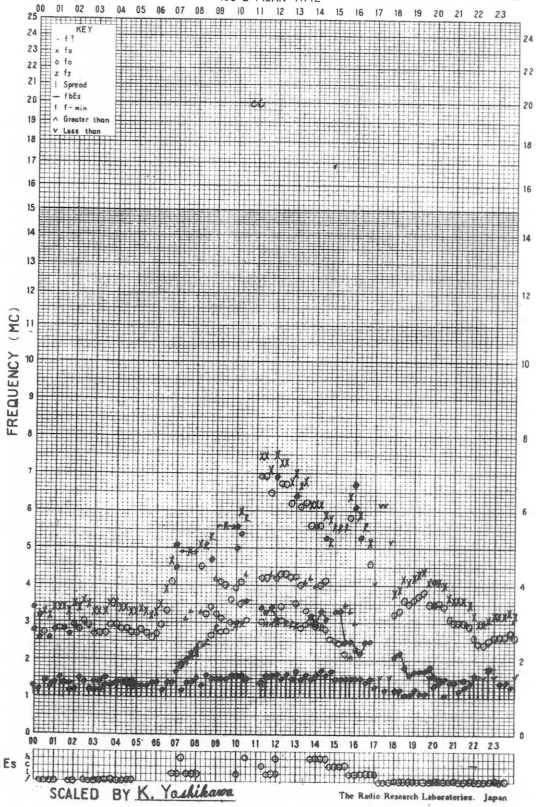


SCALED BY T. ABE

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE FEB. 1.1966

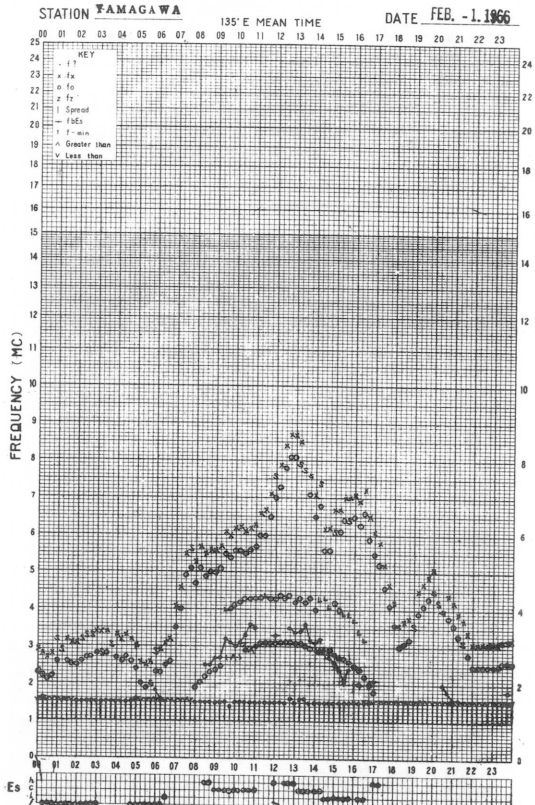


SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE FEB. 1.1966

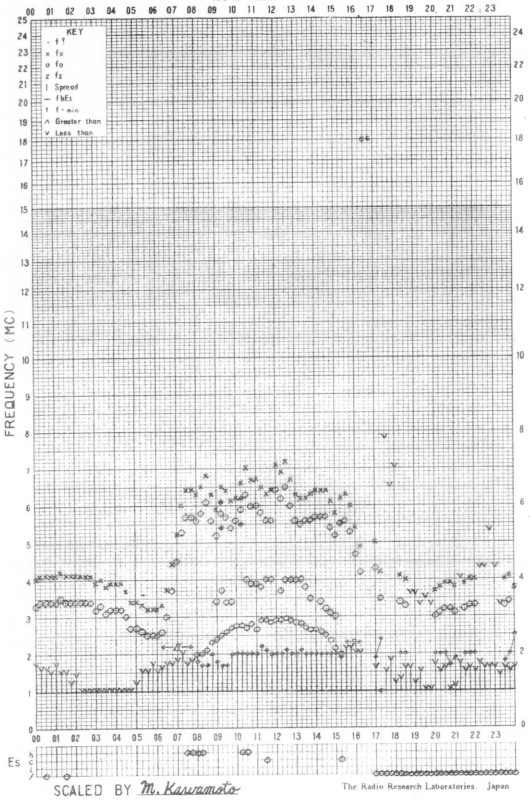


SCALED BY K. Sidomi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE FEB. 2. 1966

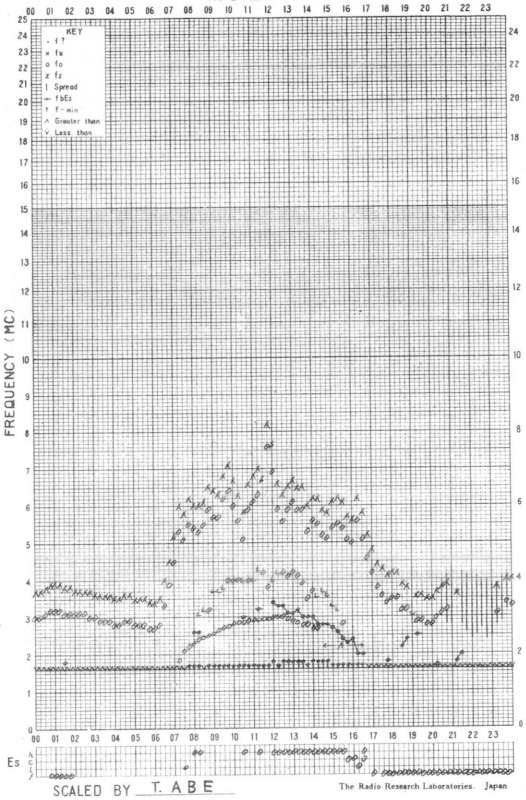


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Feb. 2. 1966

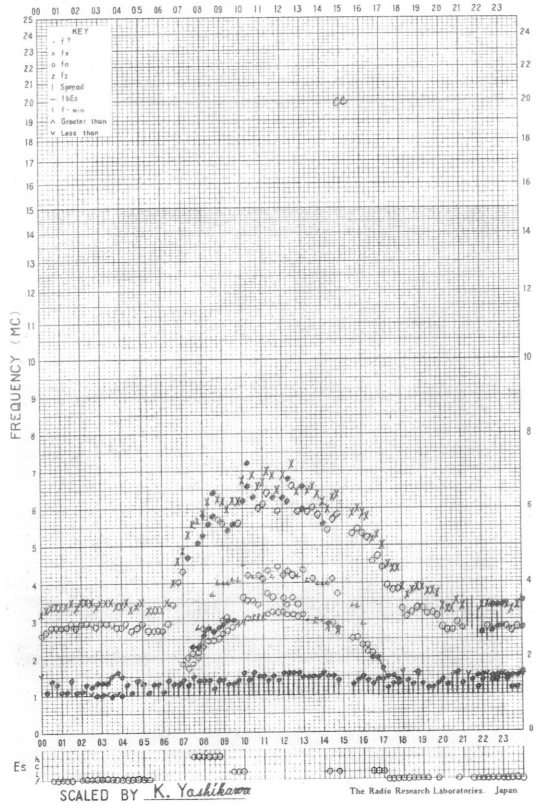


SCALED BY T. ABE

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE FEB. 2 1966

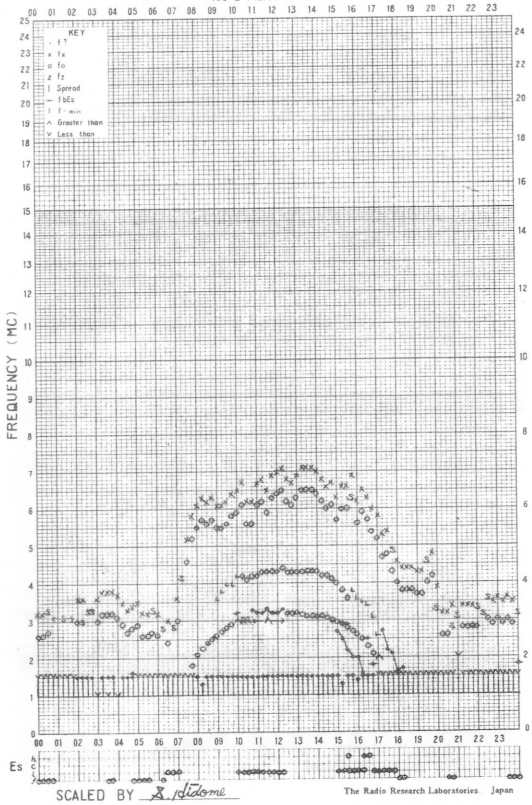


SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE FEB. -2. 1966

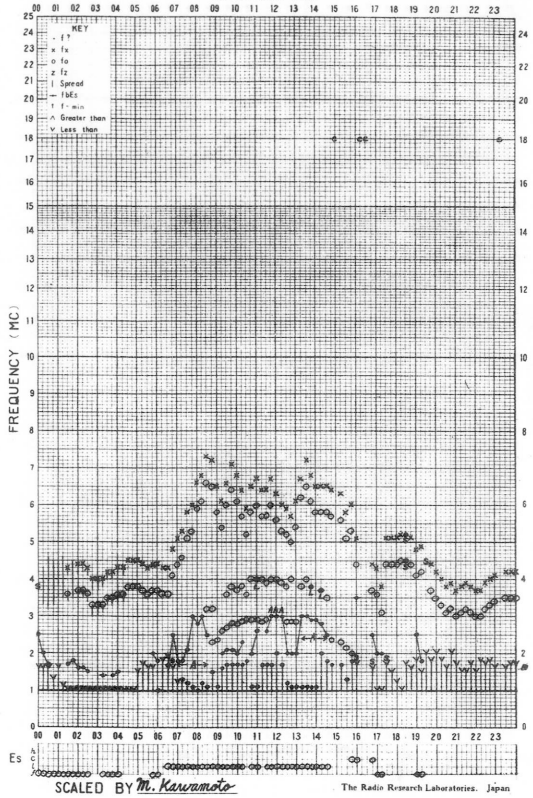


SCALED BY S. Ichidome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE FEB. 3.1966

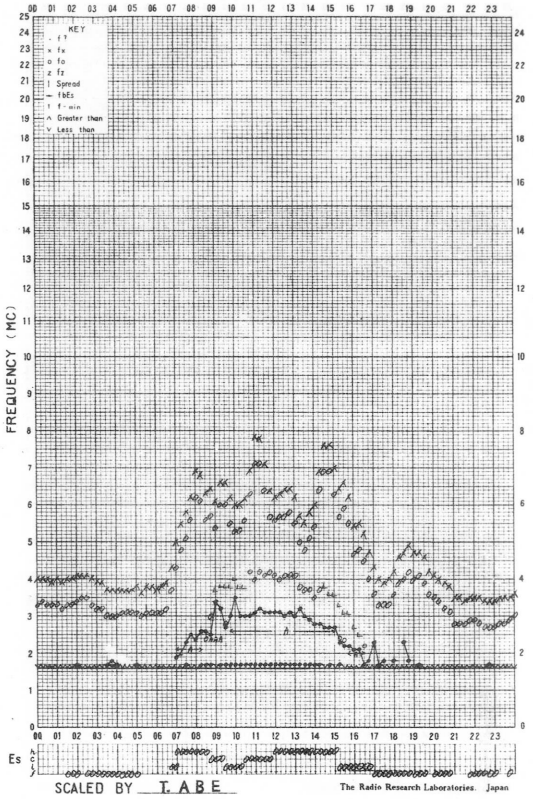


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135°E MEAN TIME DATE Feb. 3. 1966

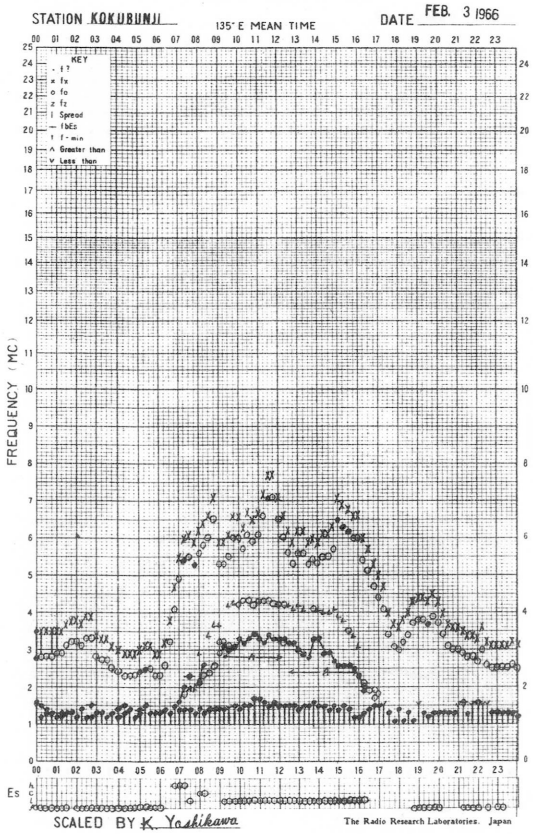


SCALED BY T. ABE

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE FEB. 3 1966

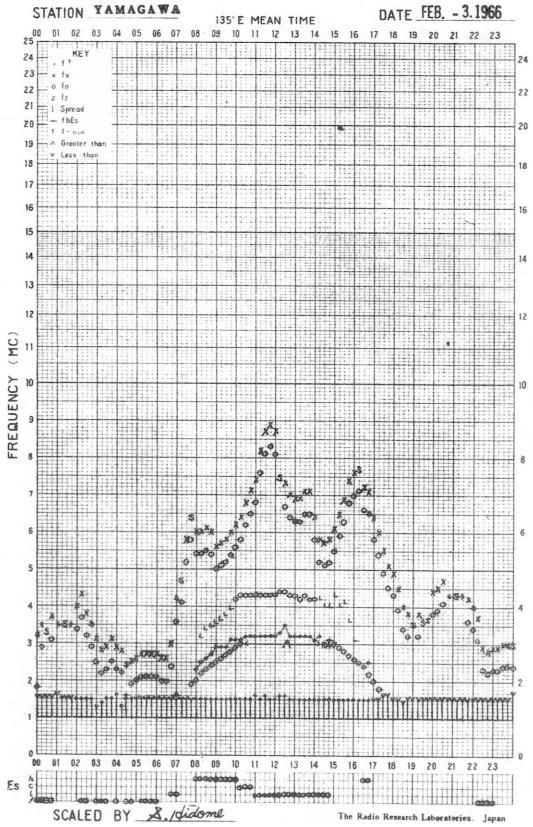


SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE FEB. - 3.1966

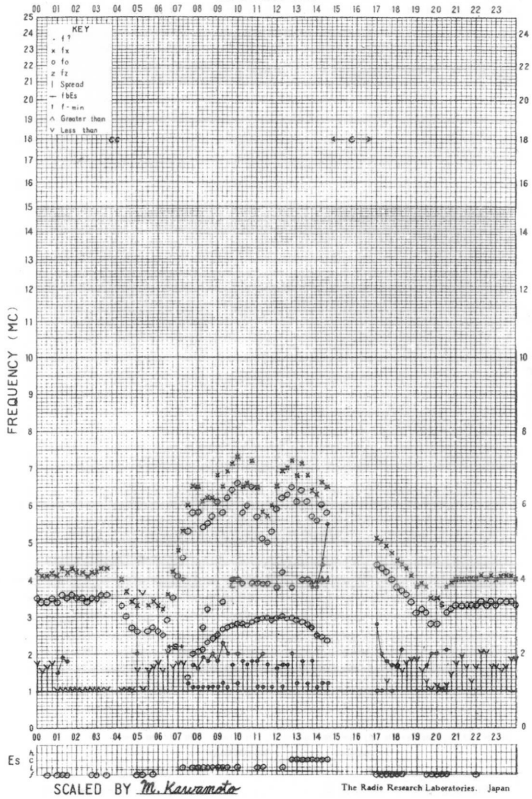


SCALED BY S. Ichiome

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135° E MEAN TIME DATE FEB. 4, 1966

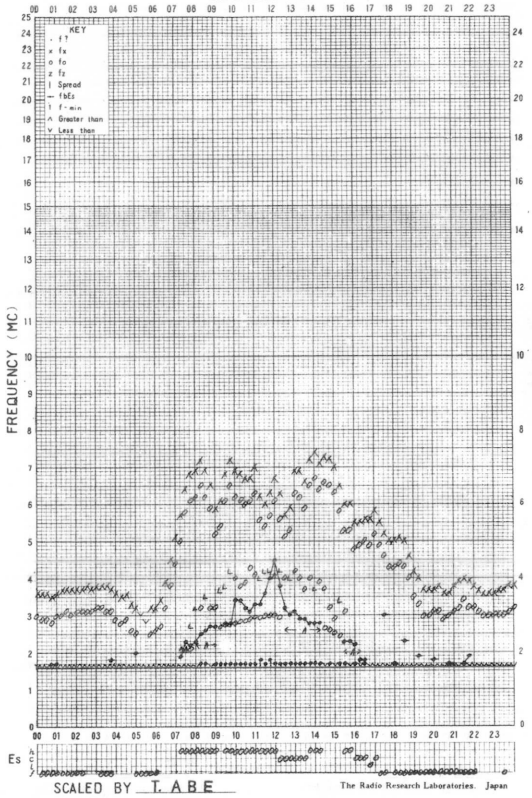


SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION AKITA 135° E MEAN TIME DATE Feb. 4. 1966

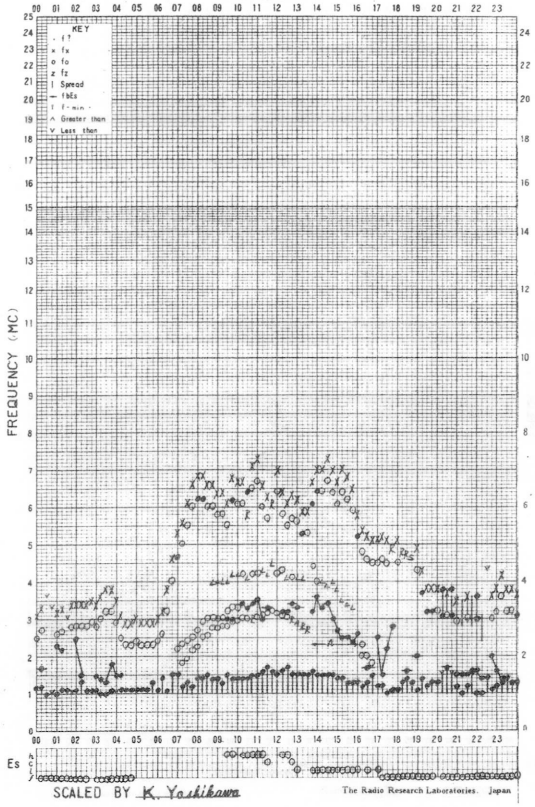


SCALED BY T. ABE

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135° E MEAN TIME DATE FEB. 4 1966

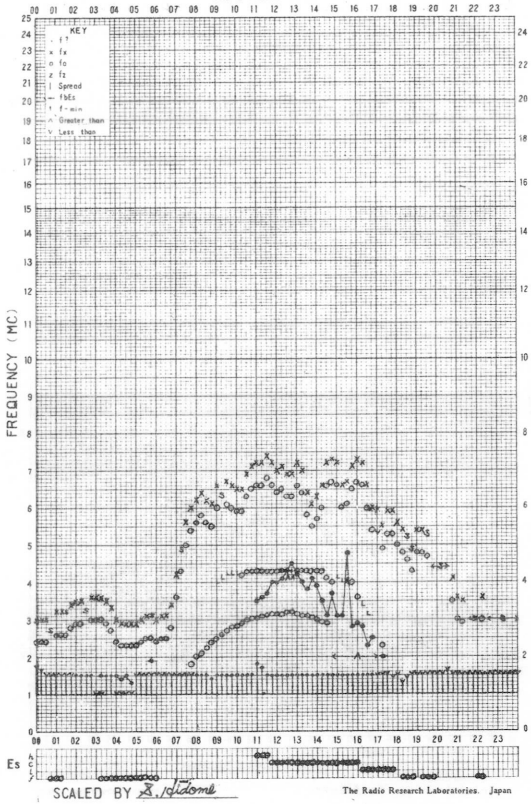


SCALED BY K. Yoshikawa

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135° E MEAN TIME DATE FEB. - 4. 1966

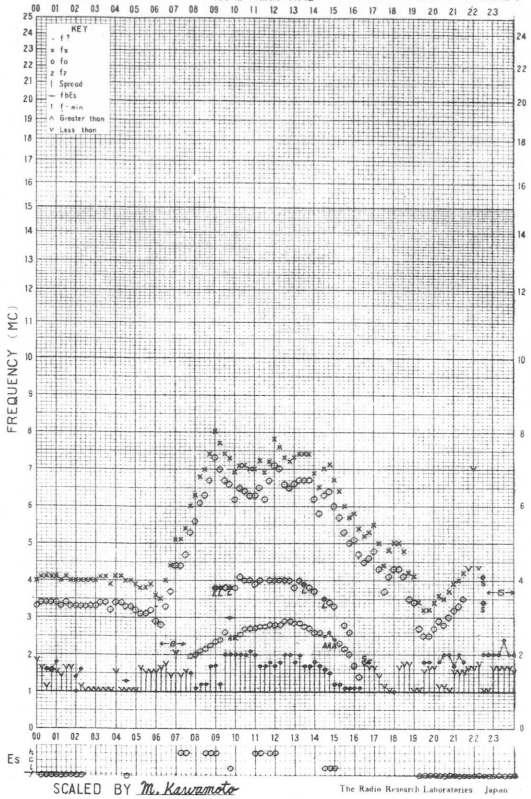


SCALED BY S. Hidomi

The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION WAKKANAI 135°E MEAN TIME DATE FEB. 5.1966



SCALED BY M. Kawamoto The Radio Research Laboratories Japan

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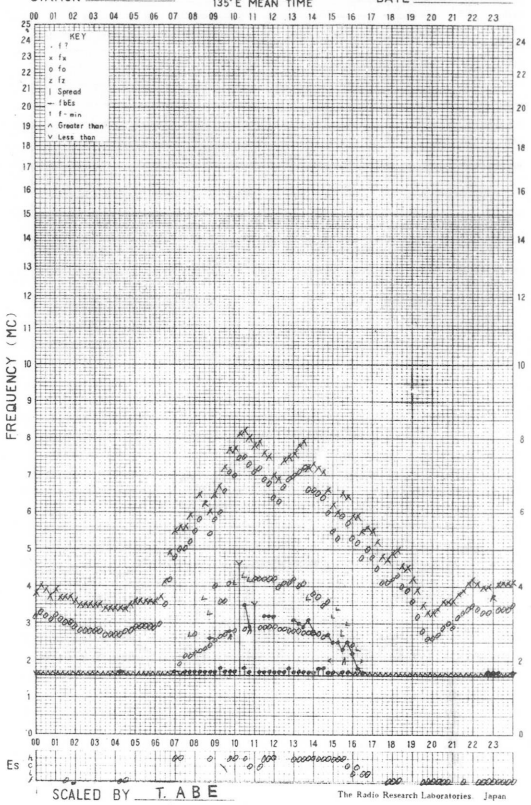

SCALED BY T. ABE The Radio Research Laboratories Japan

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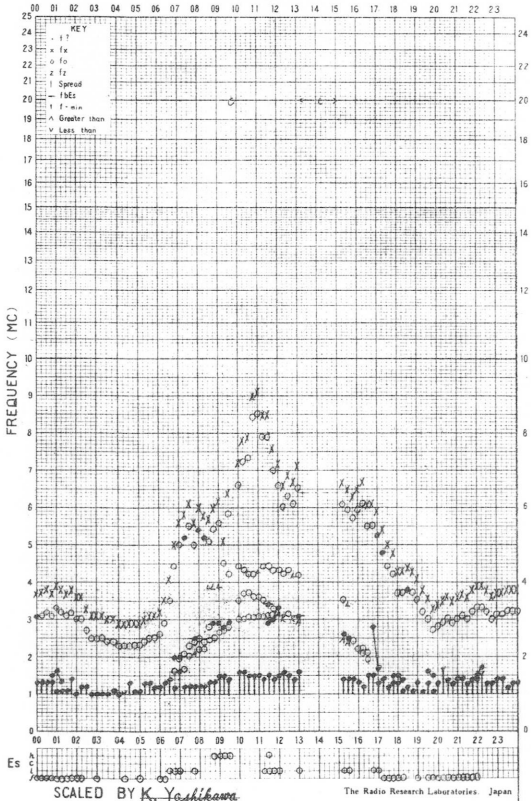

SCALED BY K. Yoshikawa The Radio Research Laboratories Japan

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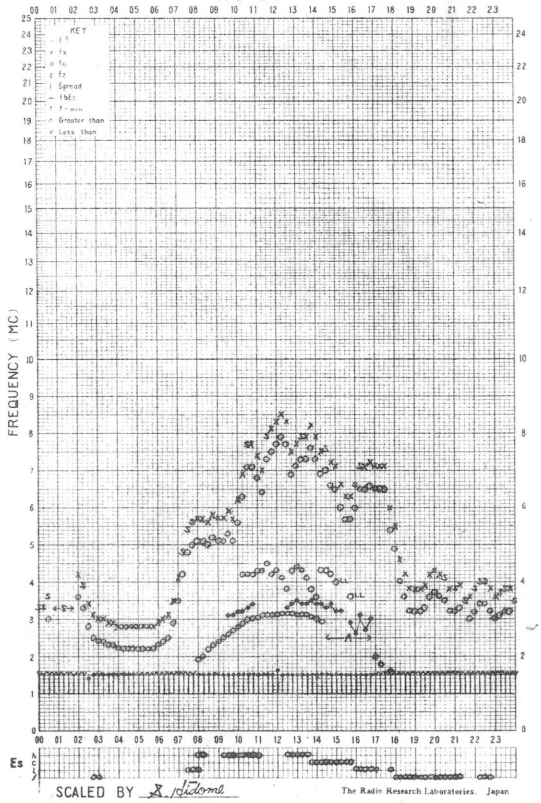

SCALED BY T. Tidomi The Radio Research Laboratories Japan

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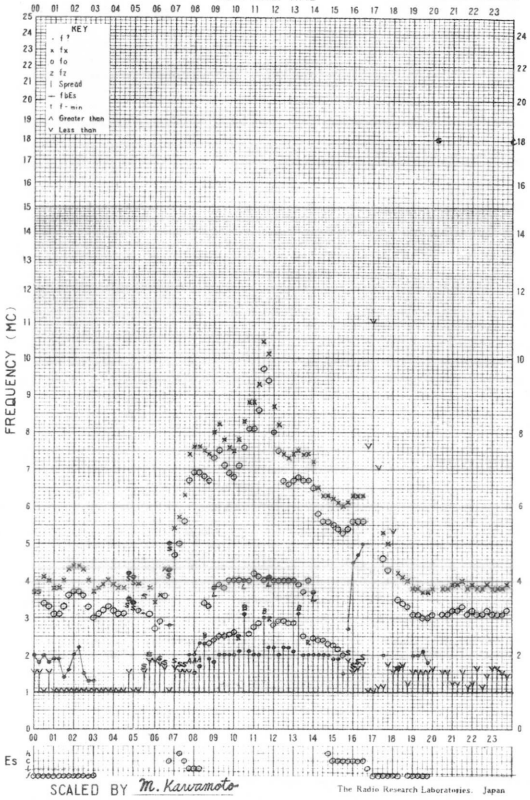

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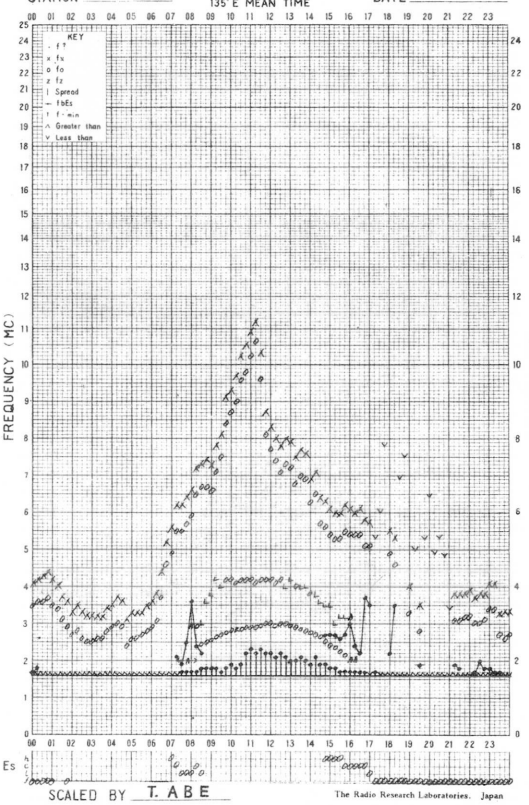

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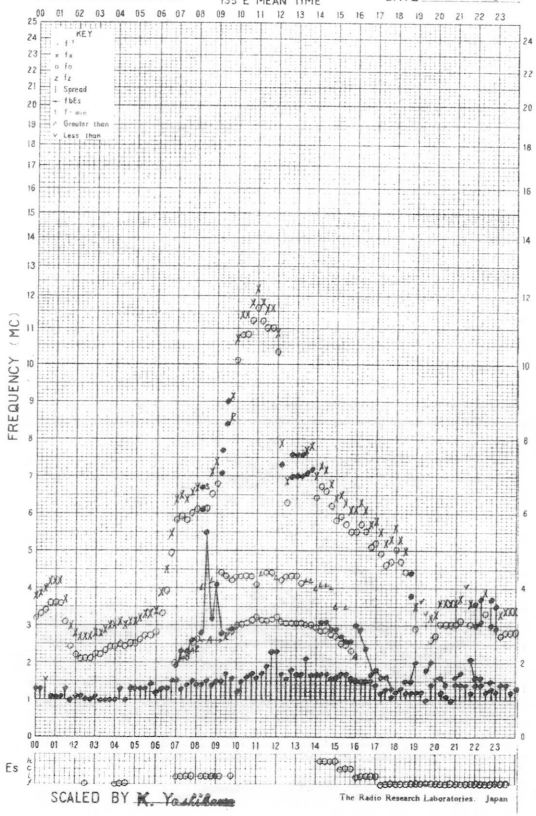

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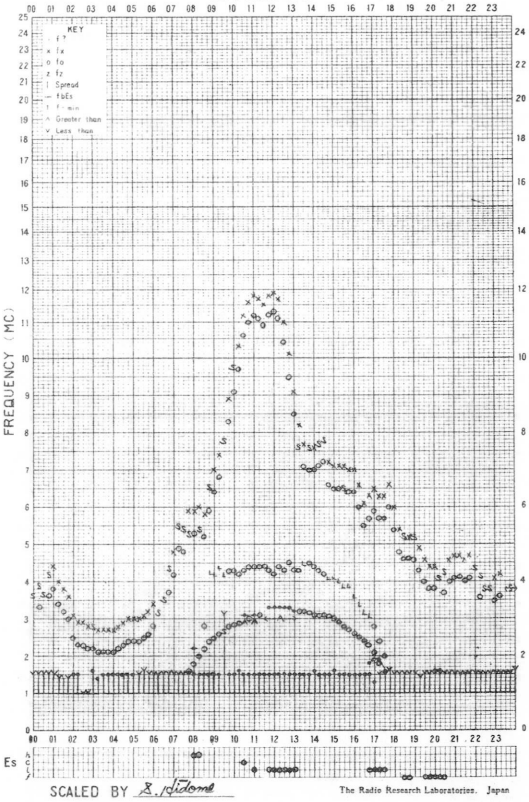

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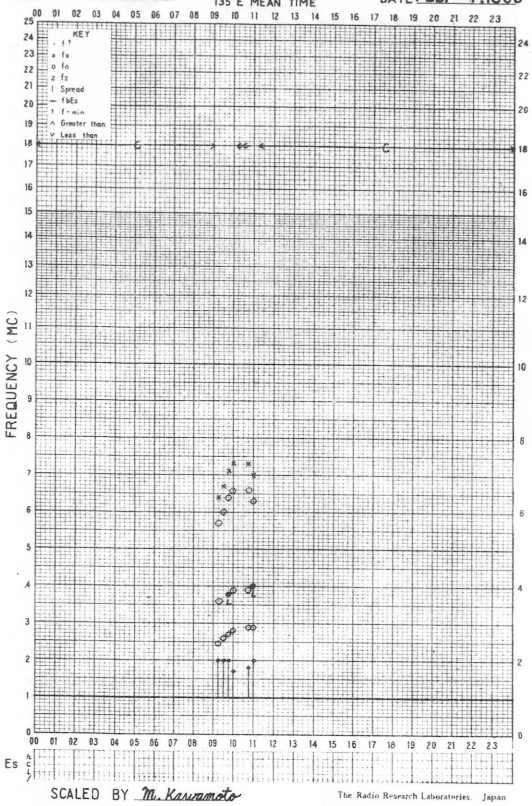

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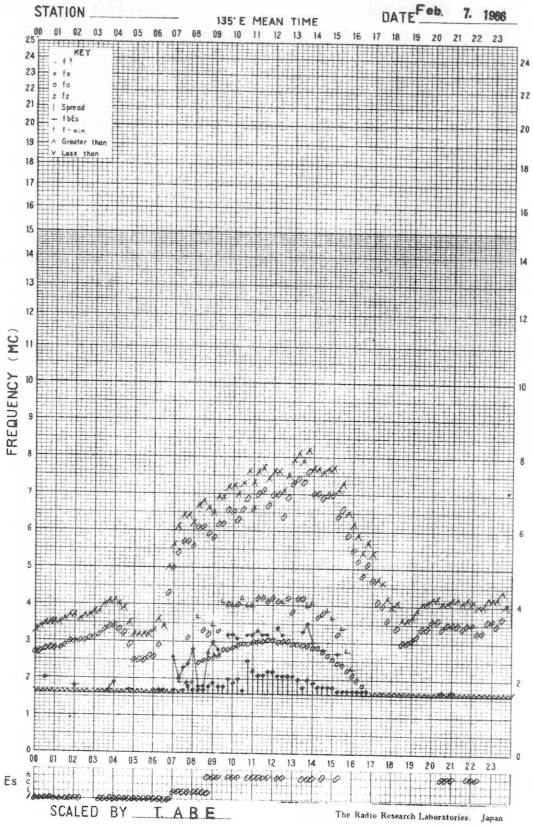

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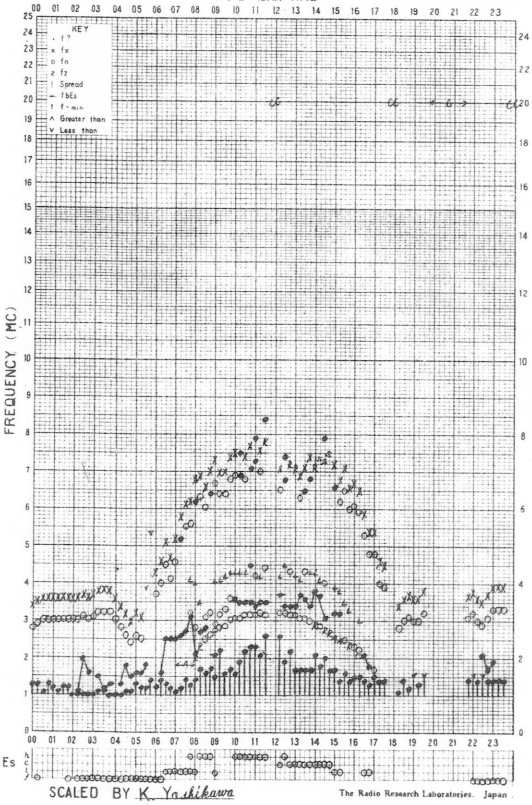

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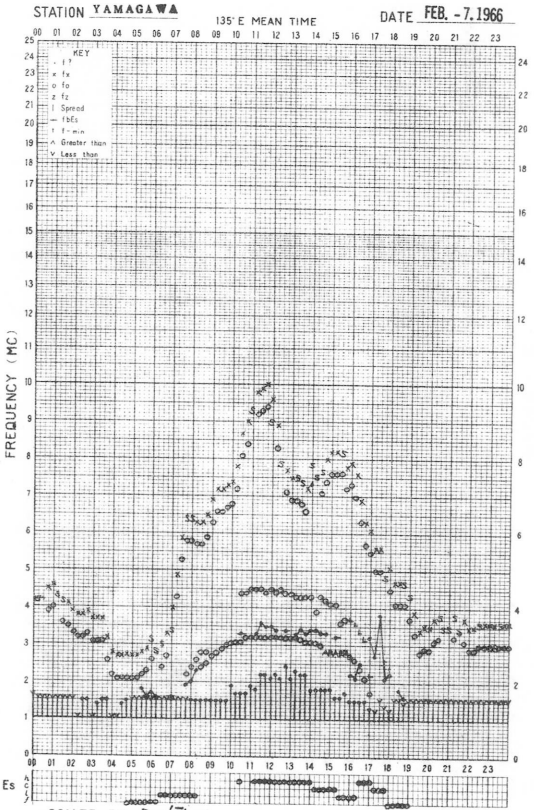

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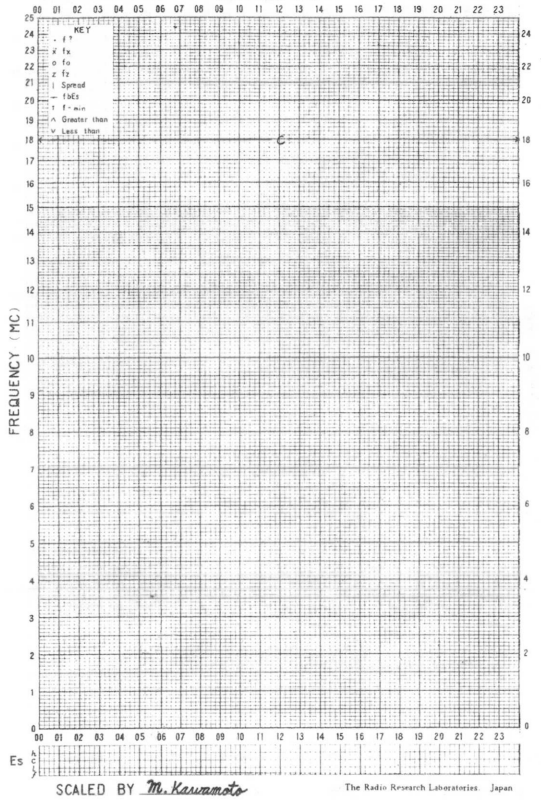

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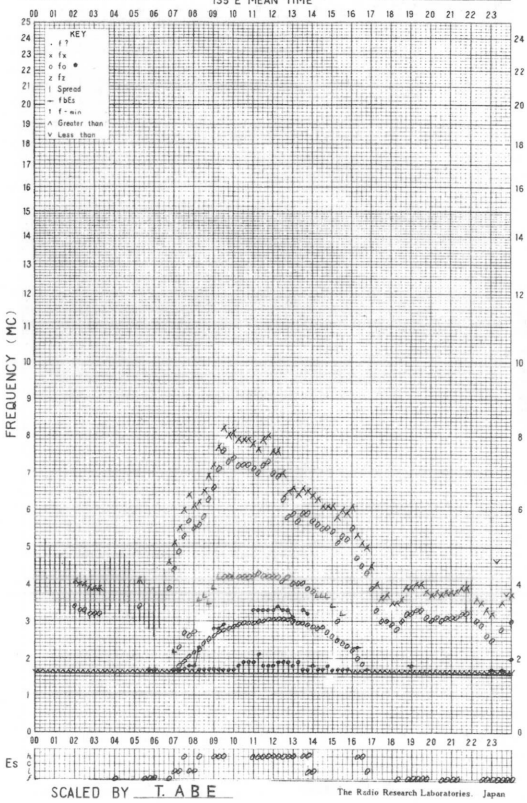

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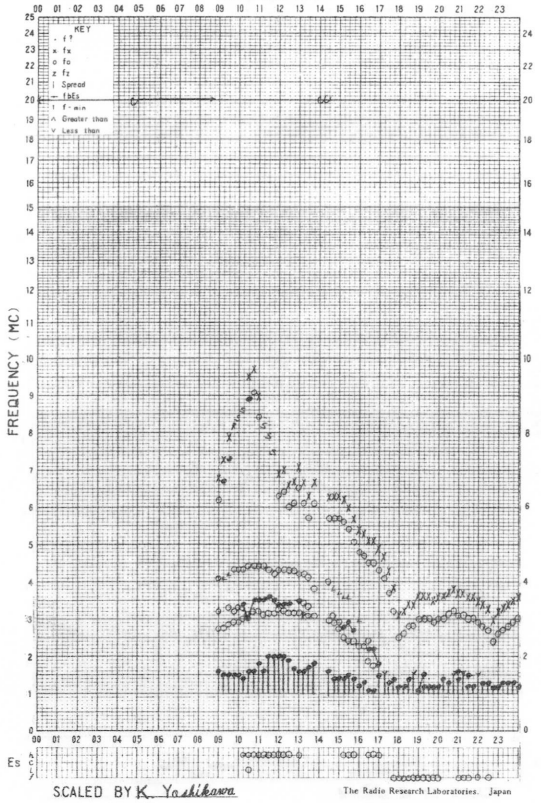

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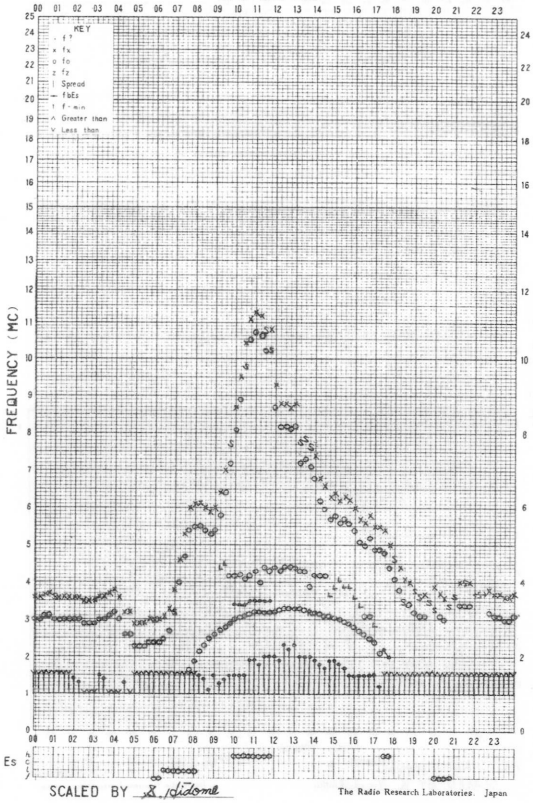

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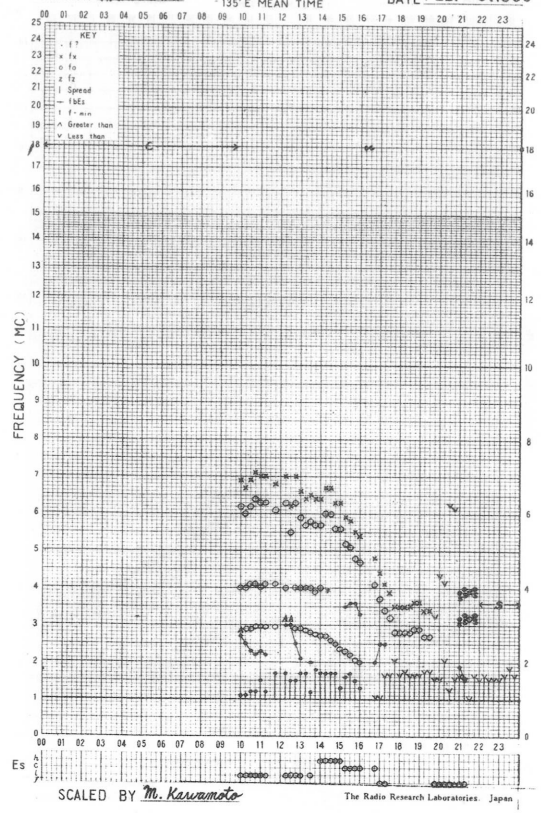

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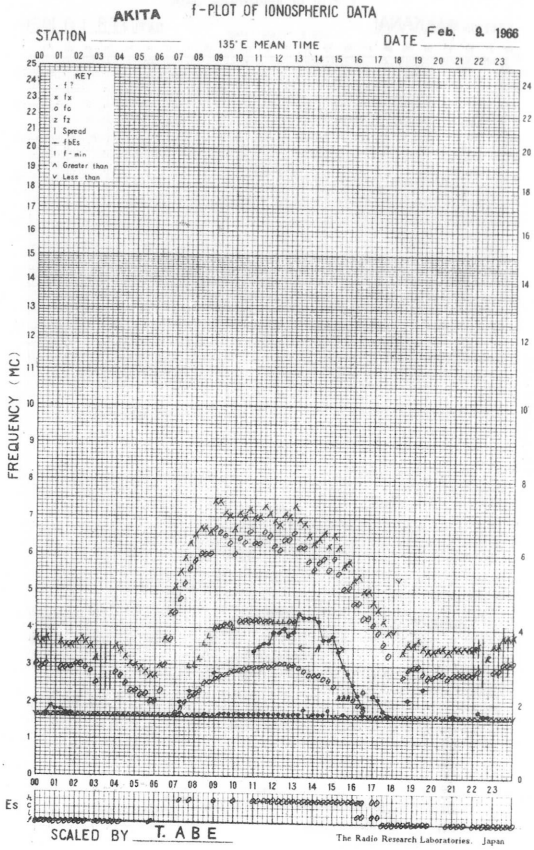

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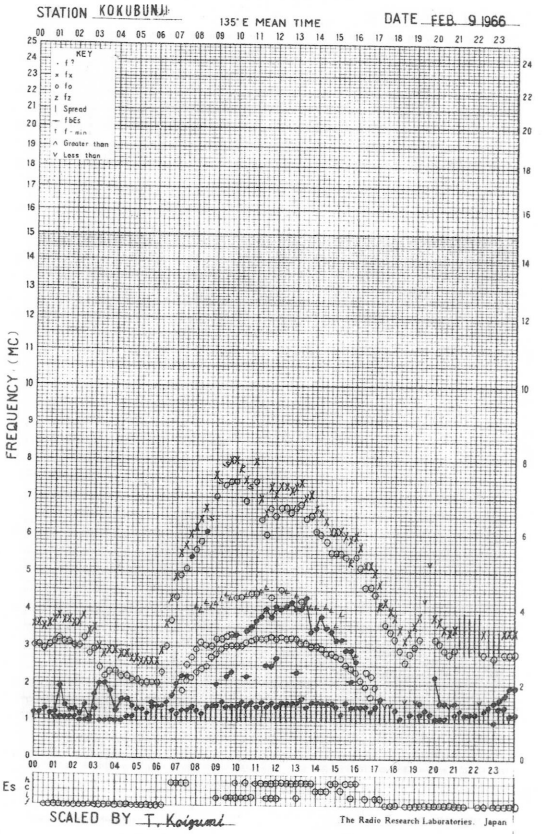

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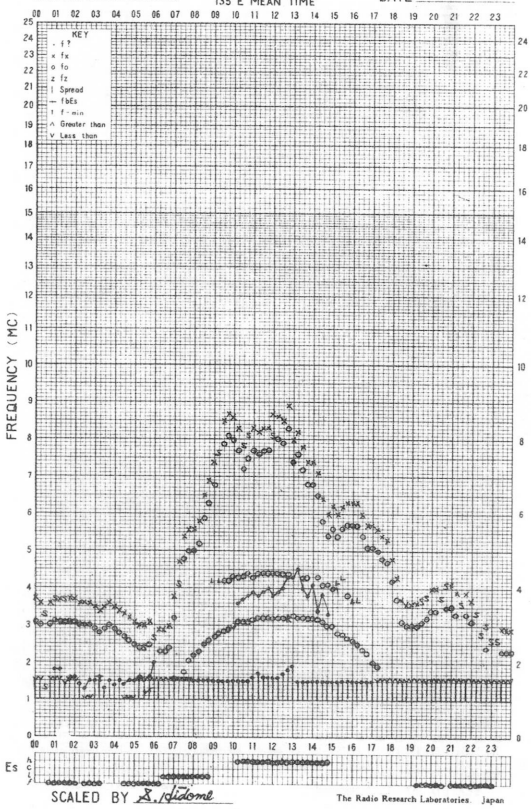

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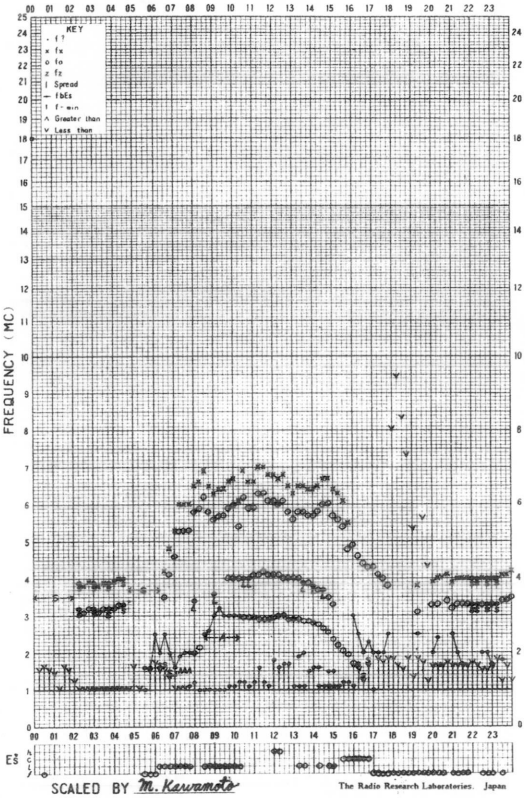

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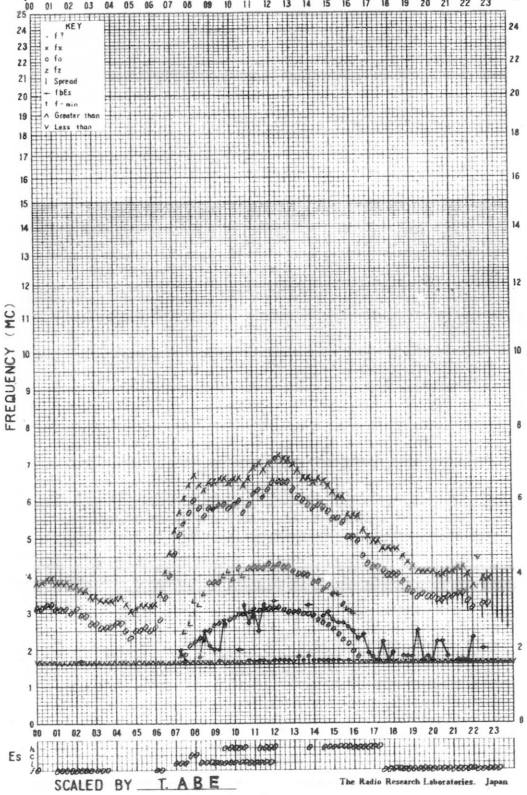

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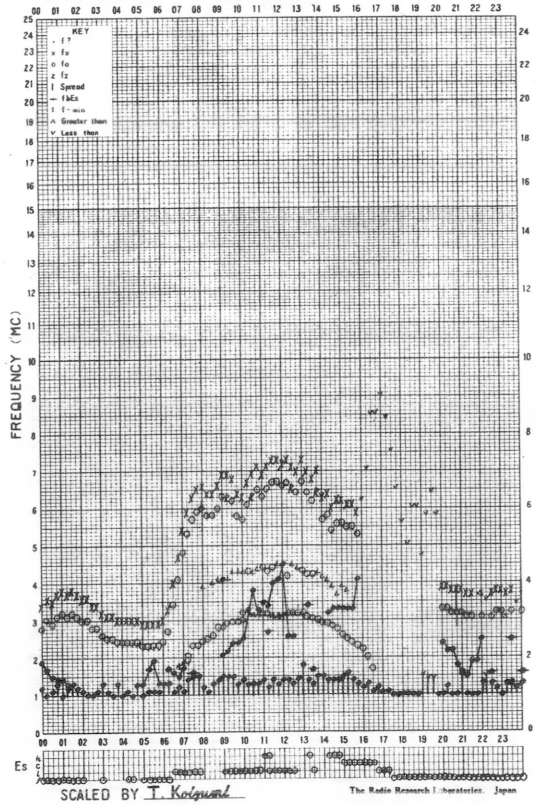

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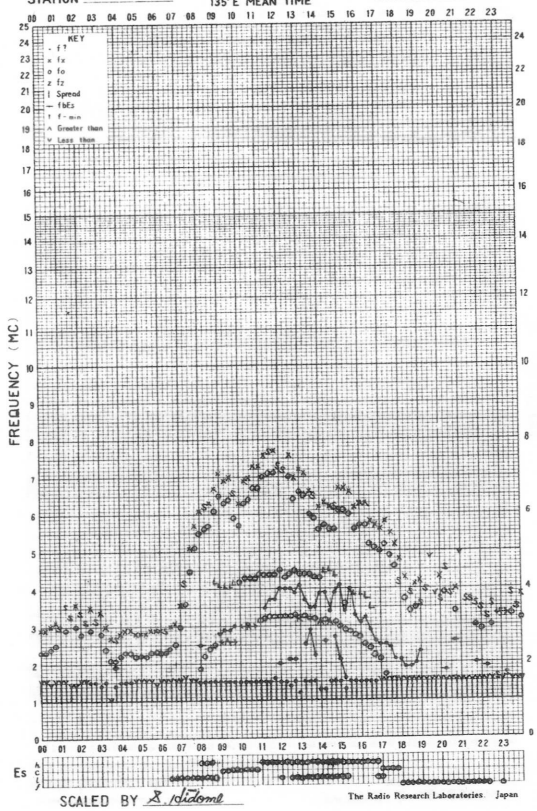

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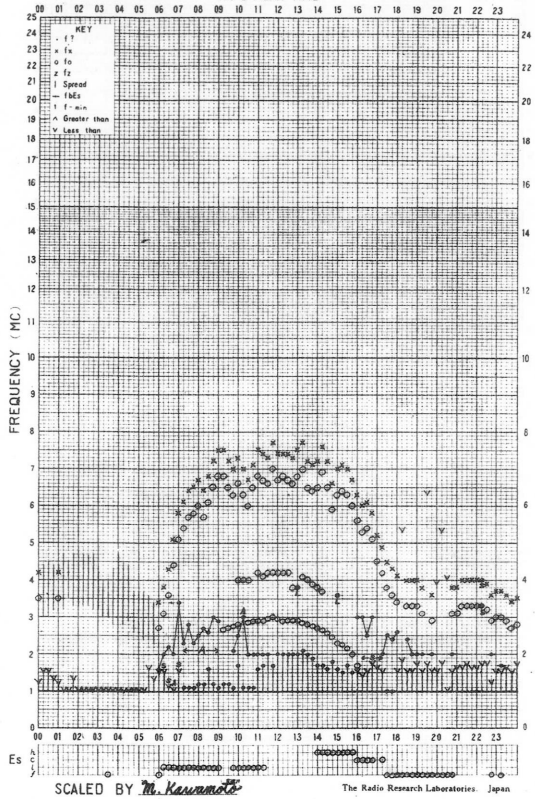

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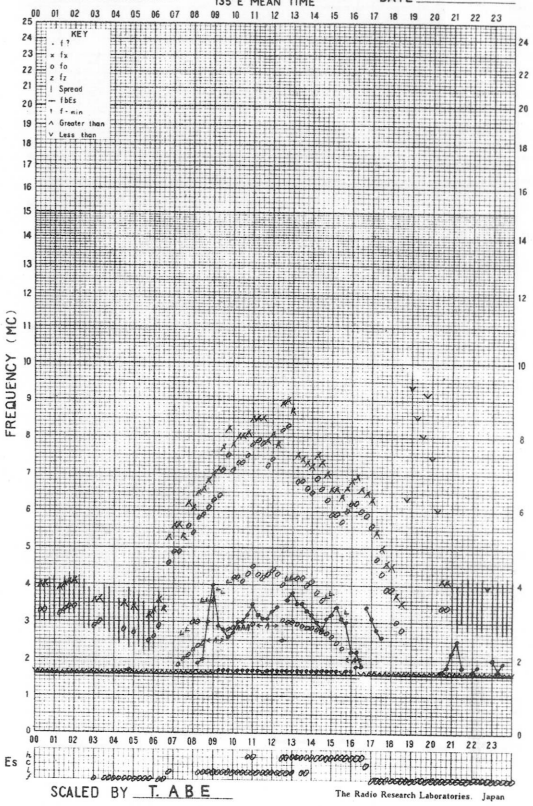

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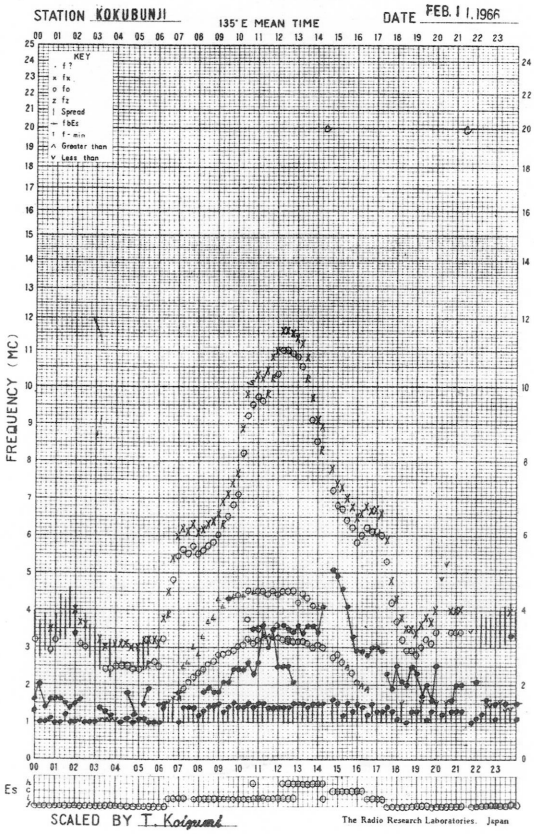

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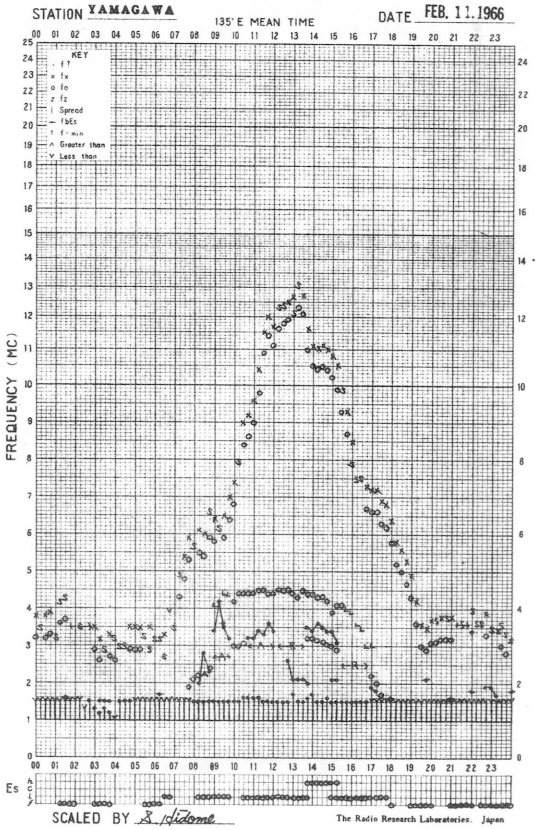

SCALED BY S. Ichitomi The Radio Research Laboratories. Japan

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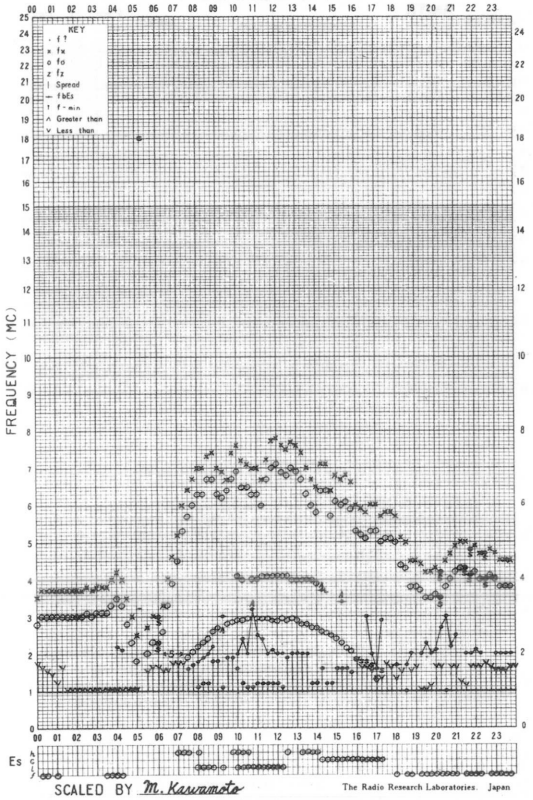

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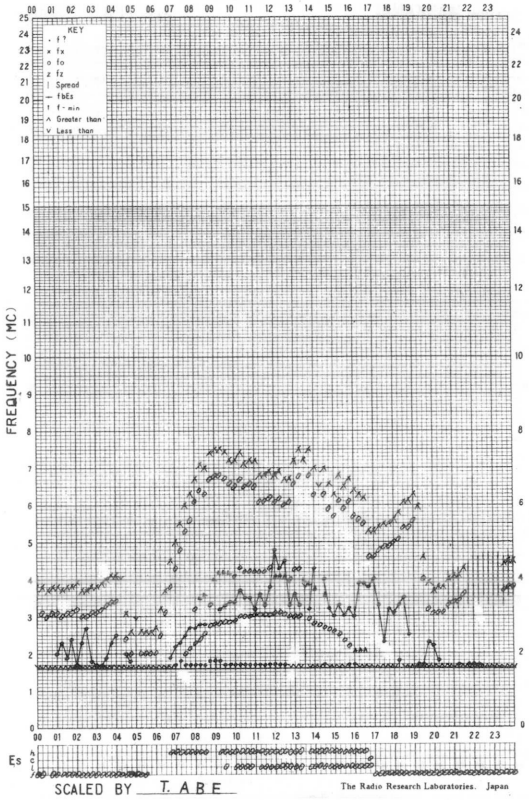

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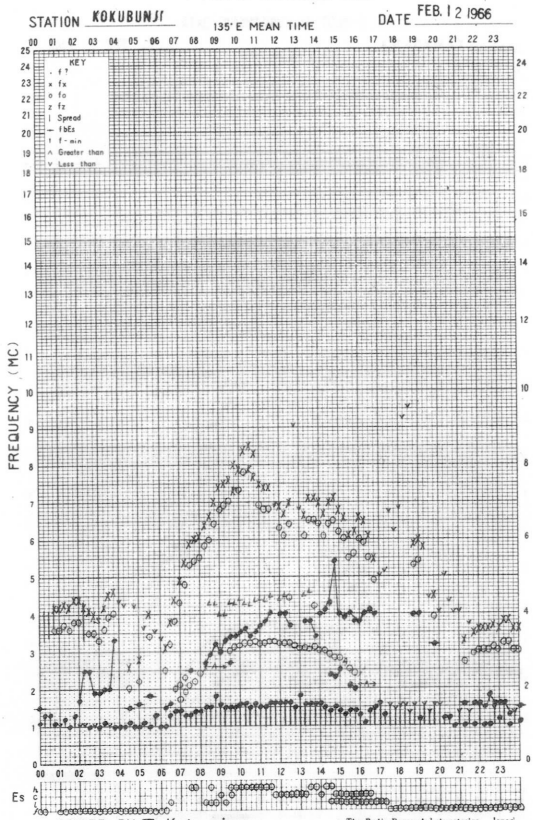

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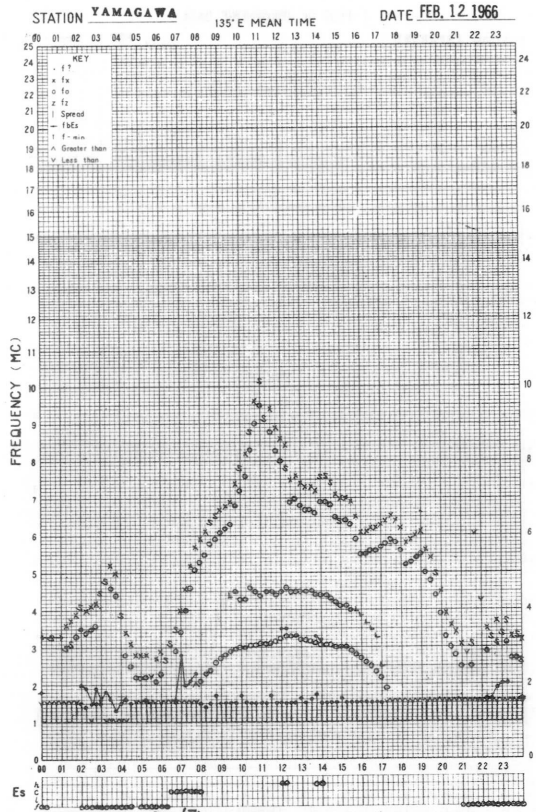

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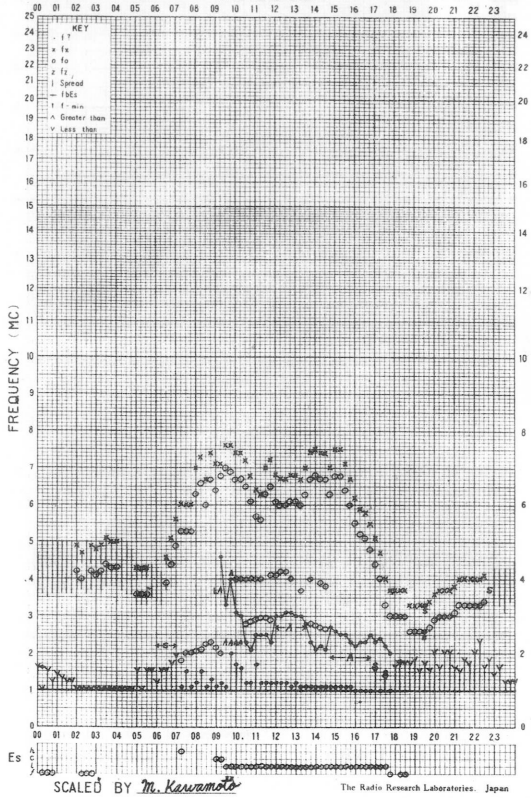

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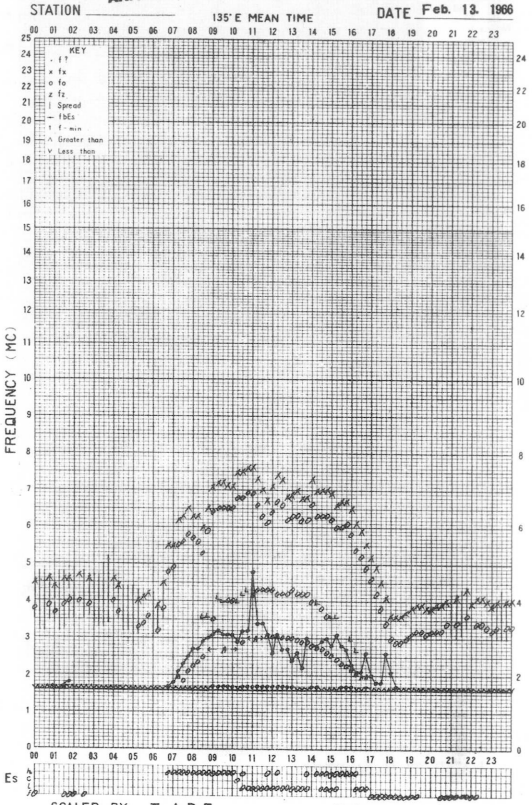

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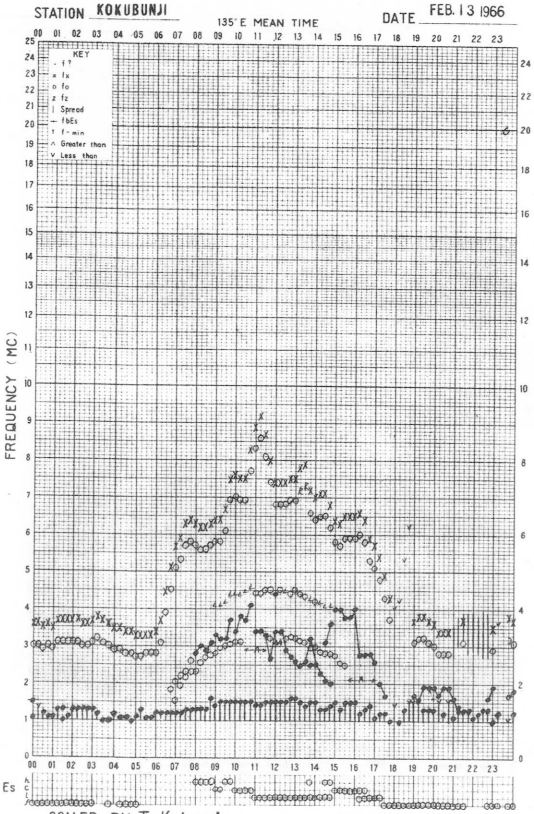

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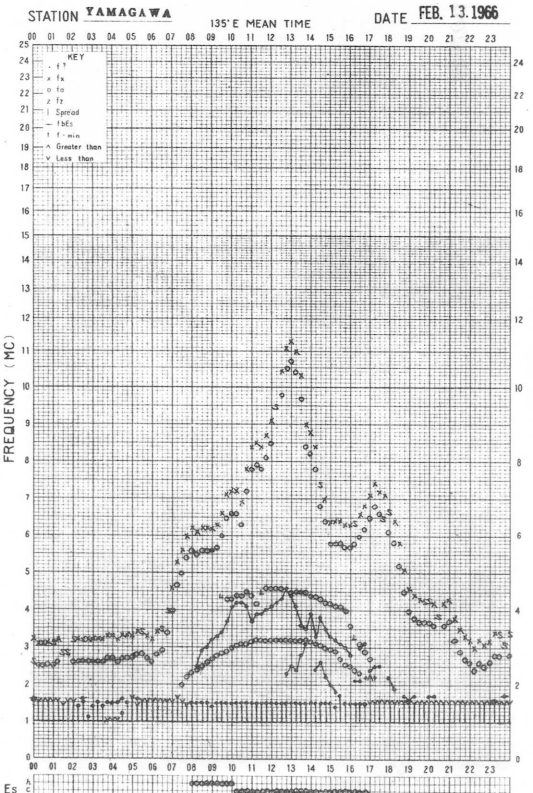

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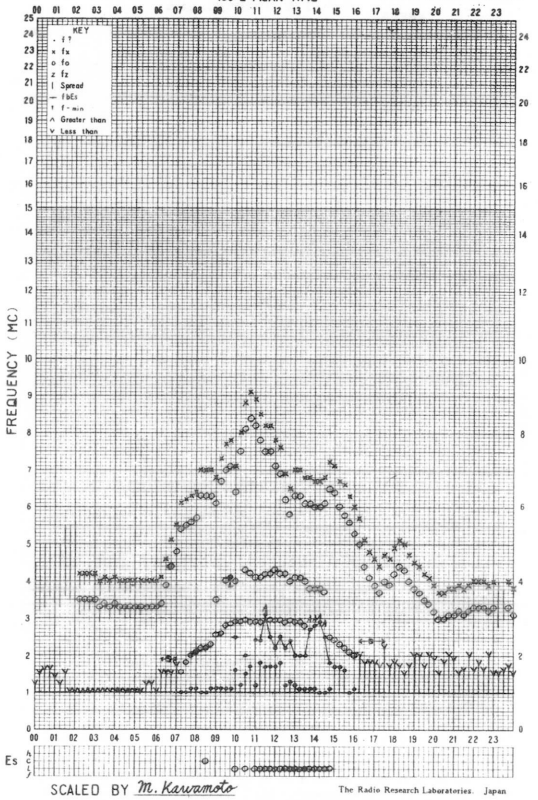

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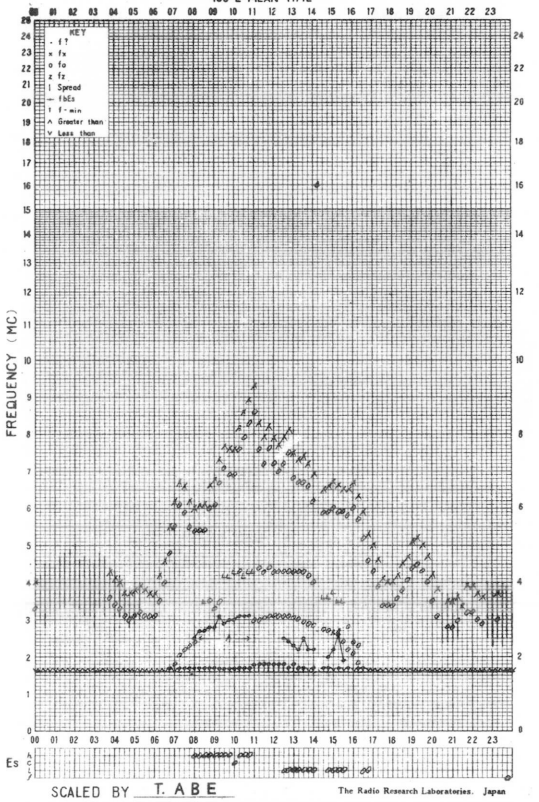

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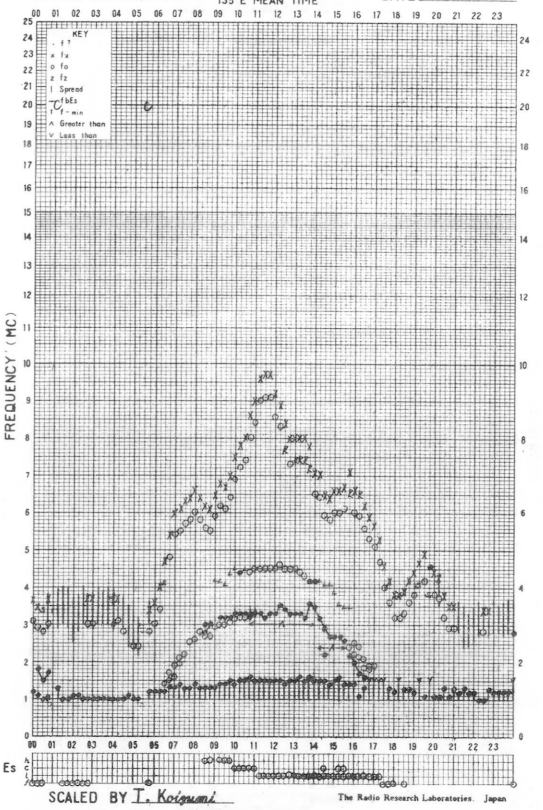

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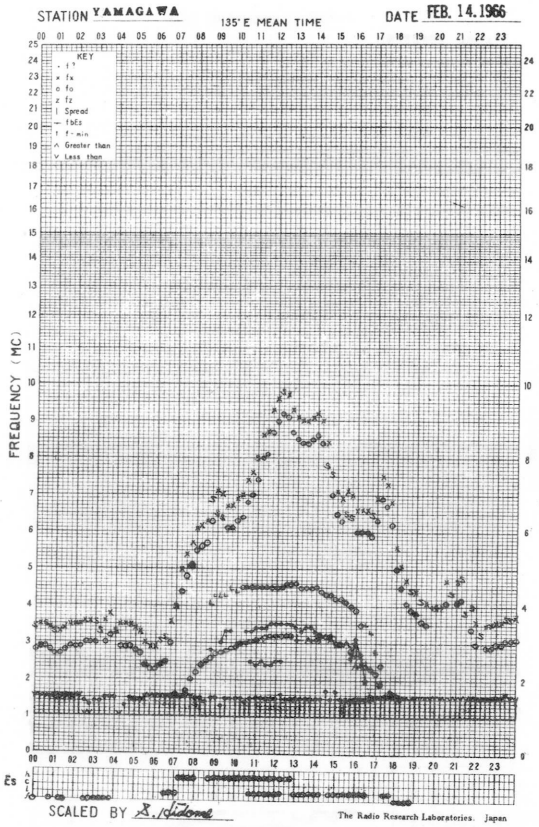

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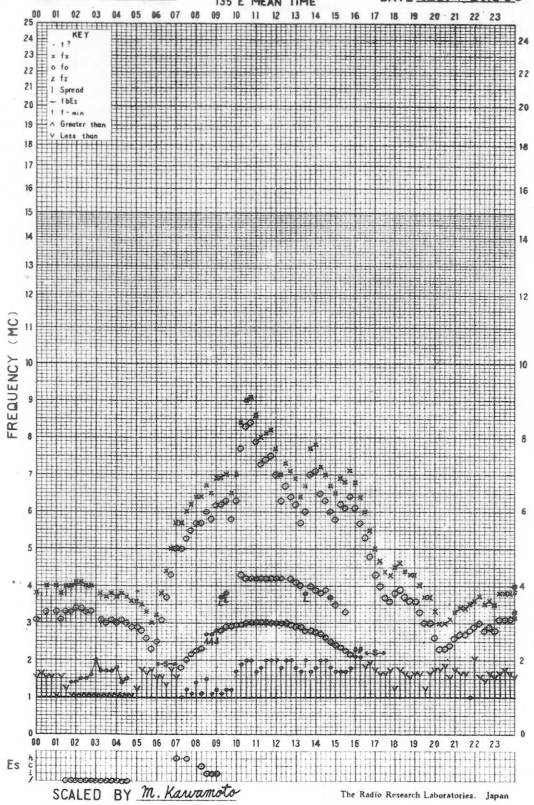

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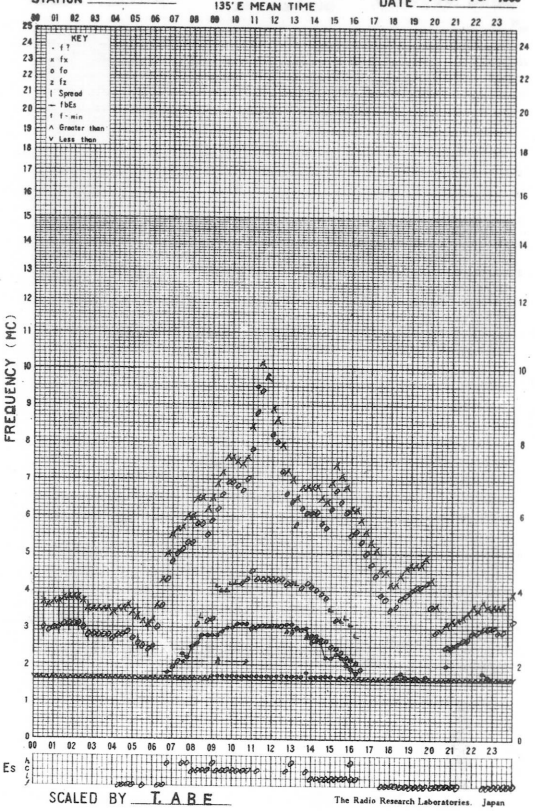

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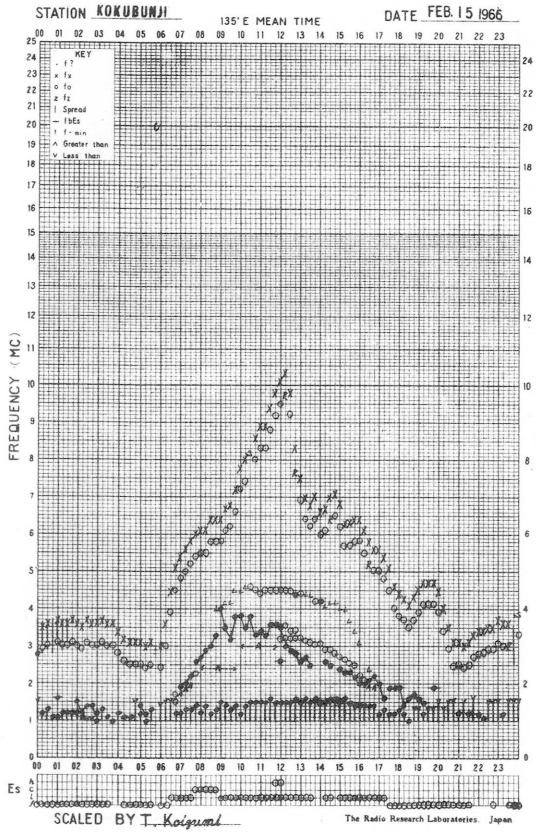

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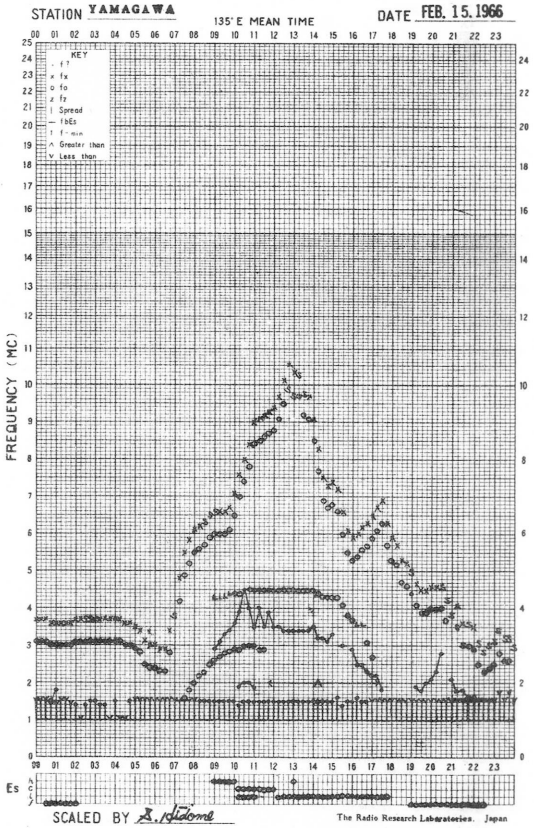

SCALED BY A. Ichome

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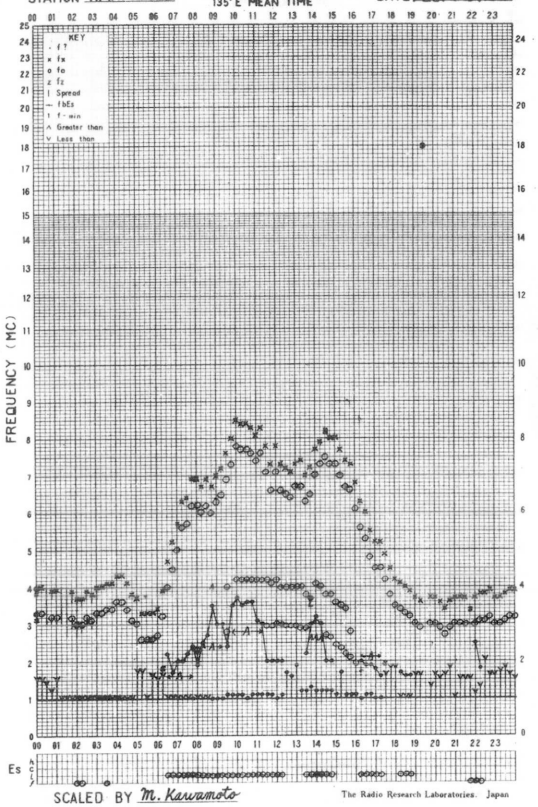

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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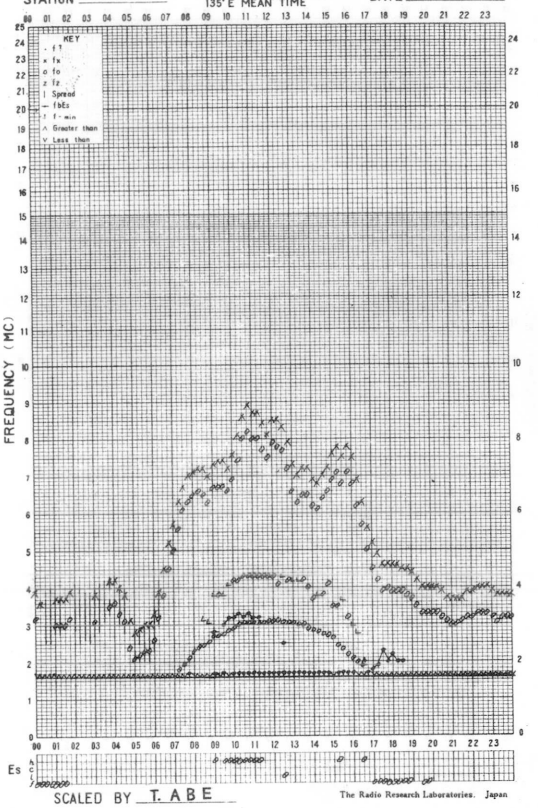

SCALED BY T. ABE The Radio Research Laboratories. Japan

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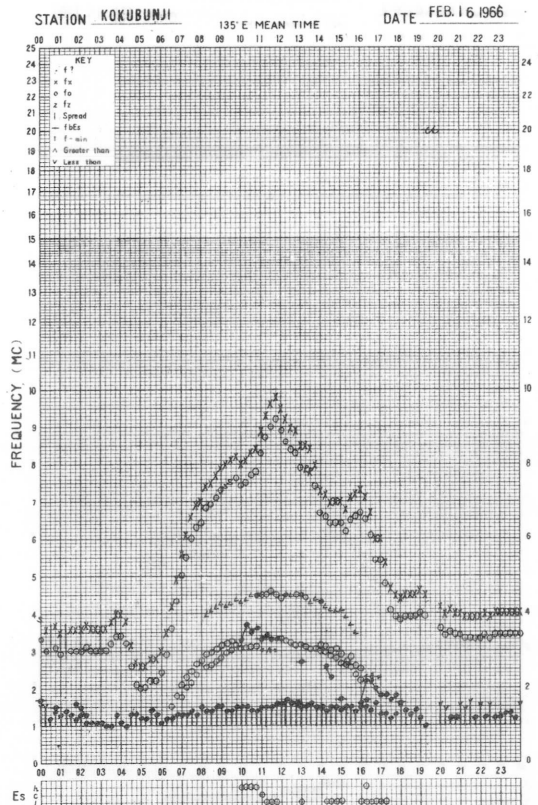

SCALED BY T. Koigumi The Radio Research Laboratories. Japan

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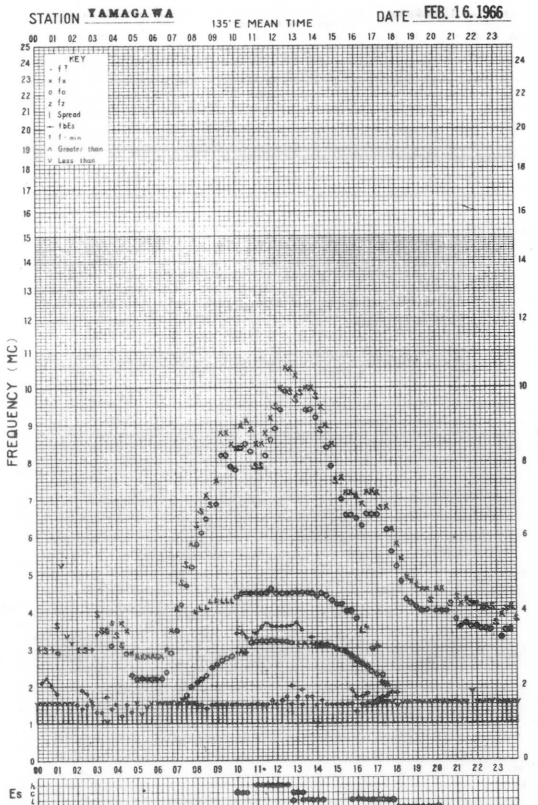

SCALED BY S. Ichidome The Radio Research Laboratories. Japan

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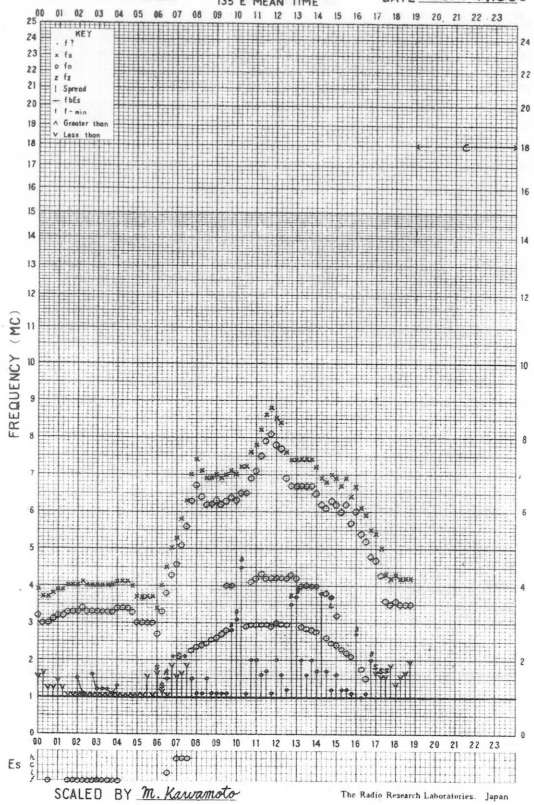

SCALED BY M. Kawamoto

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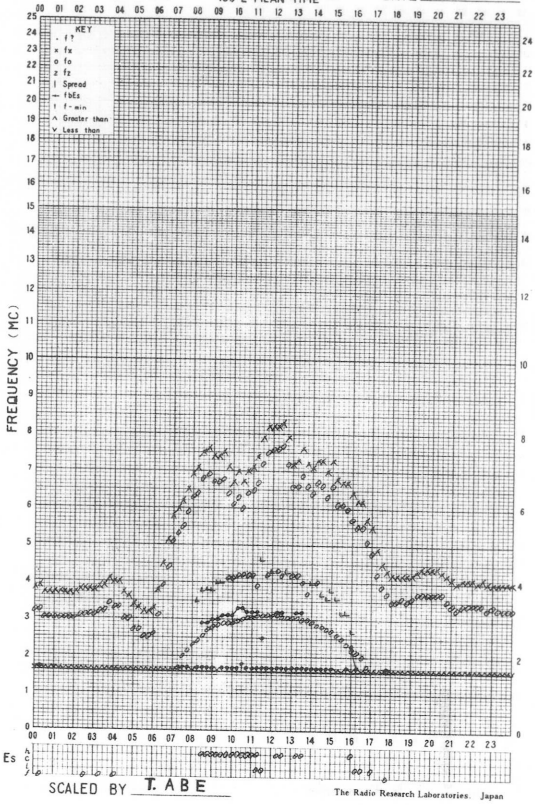

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The Radio Research Laboratories. Japan

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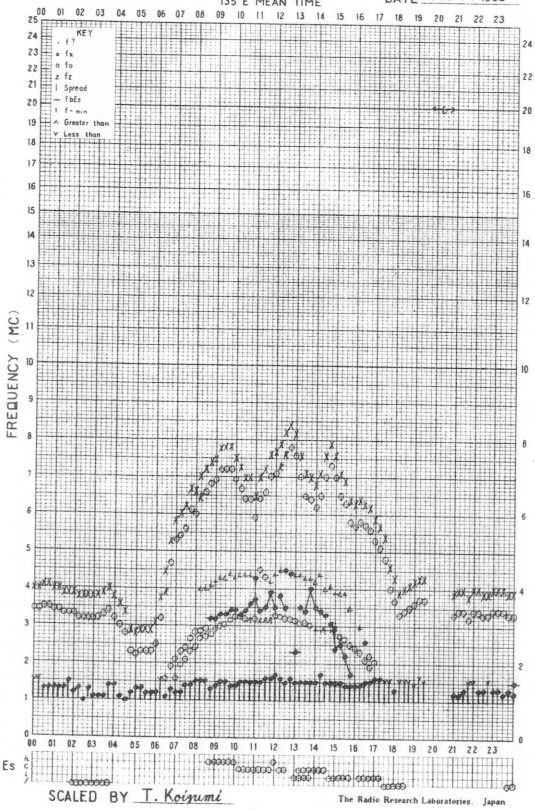

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The Radio Research Laboratories. Japan

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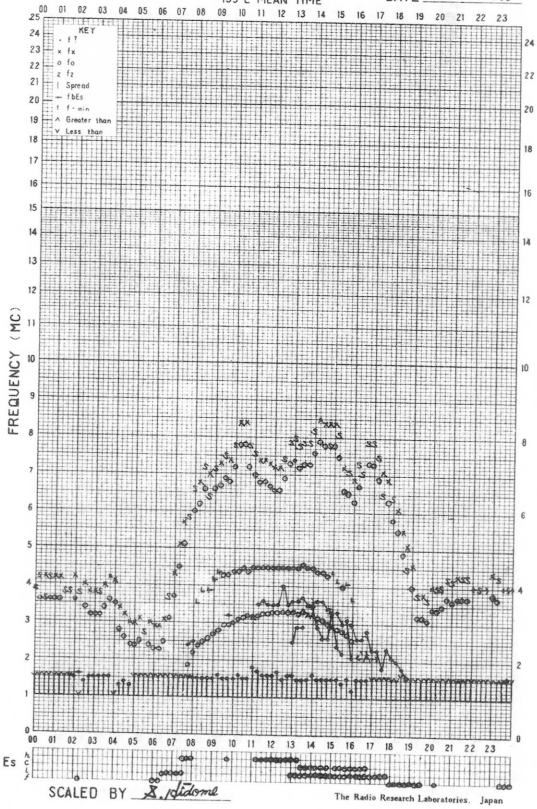

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The Radio Research Laboratories. Japan

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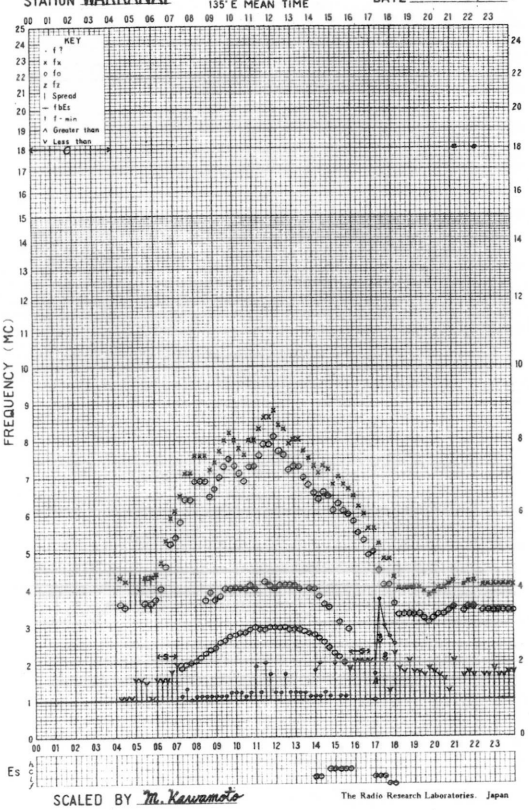

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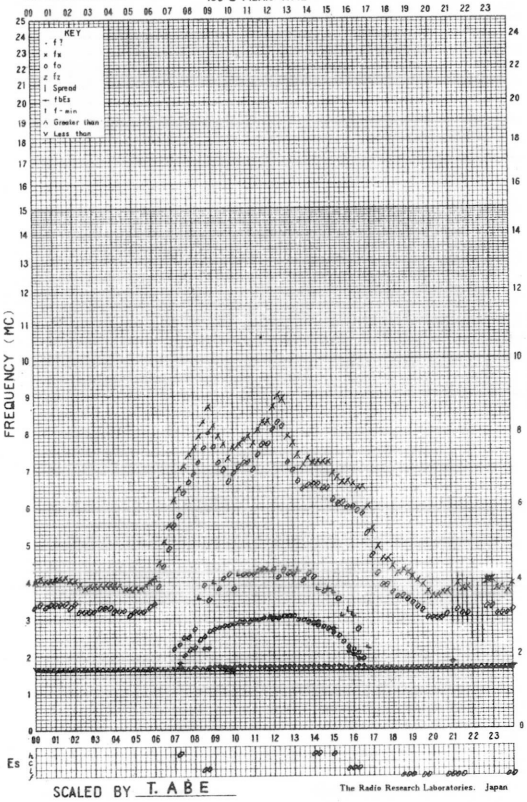

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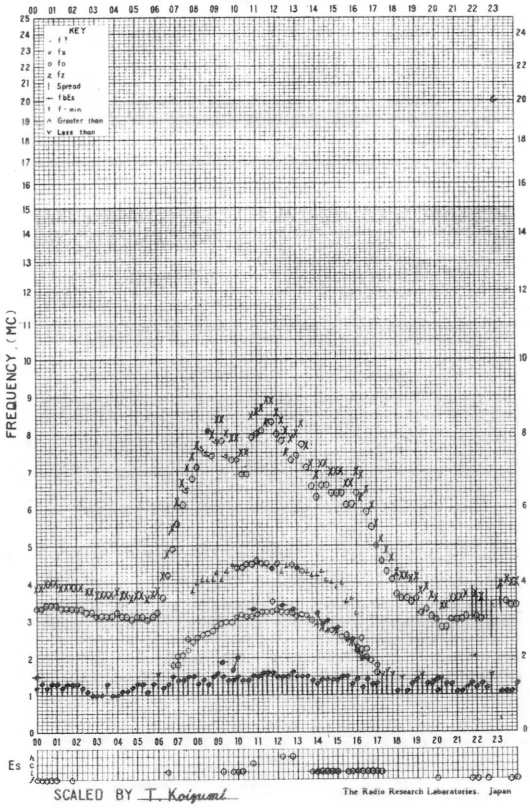

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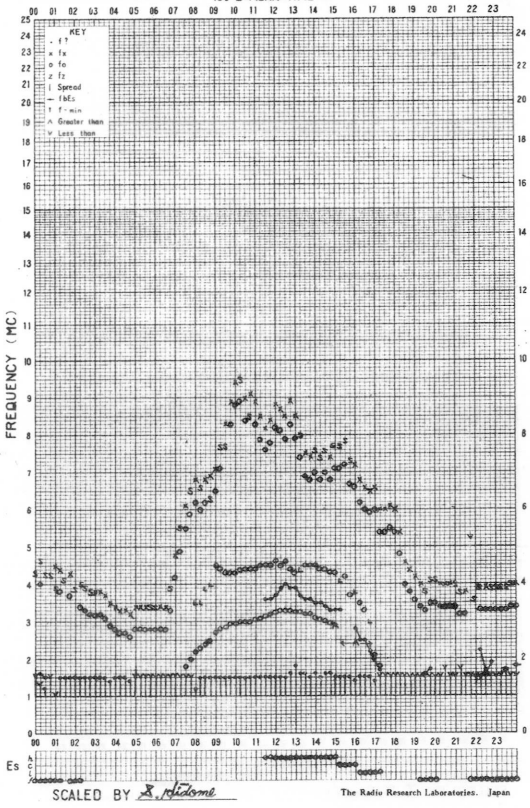

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The Radio Research Laboratories. Japan

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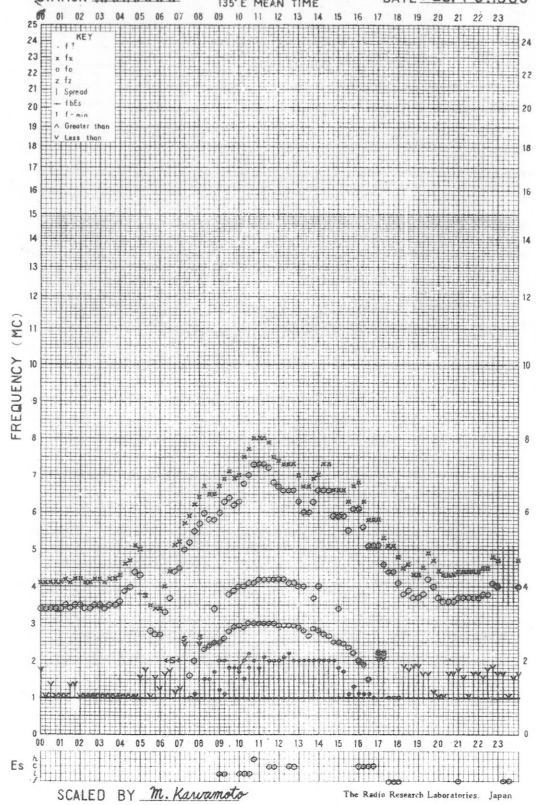

SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

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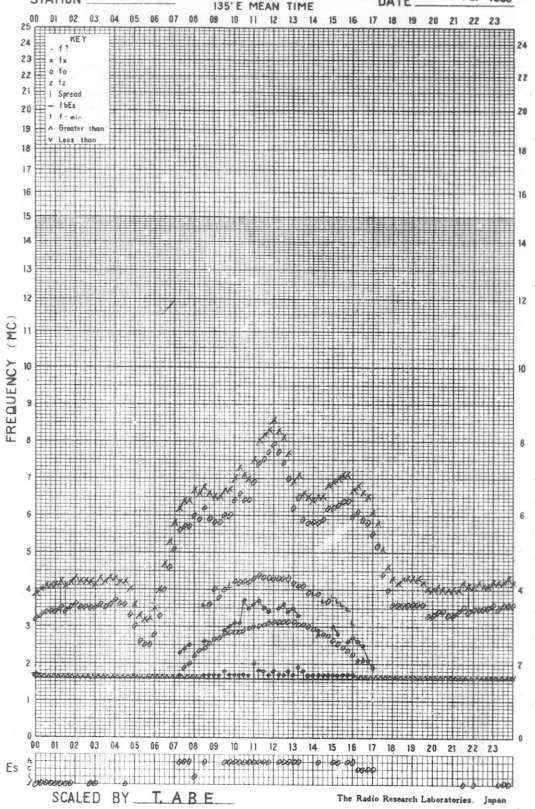

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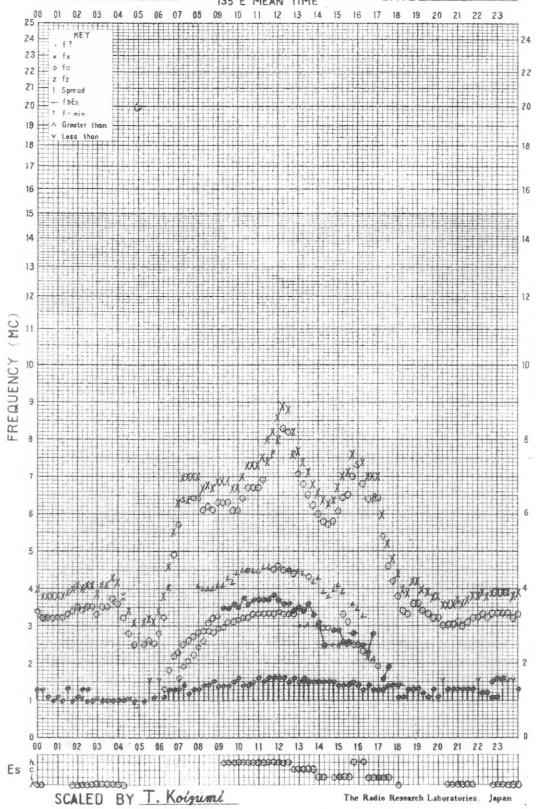

SCALED BY T. Koizumi The Radio Research Laboratories. Japan

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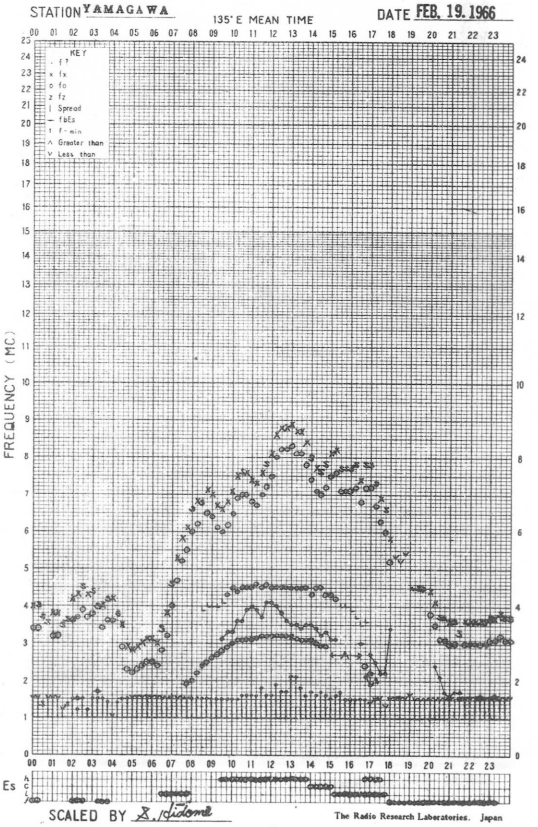

SCALED BY S. Ichidome The Radio Research Laboratories. Japan

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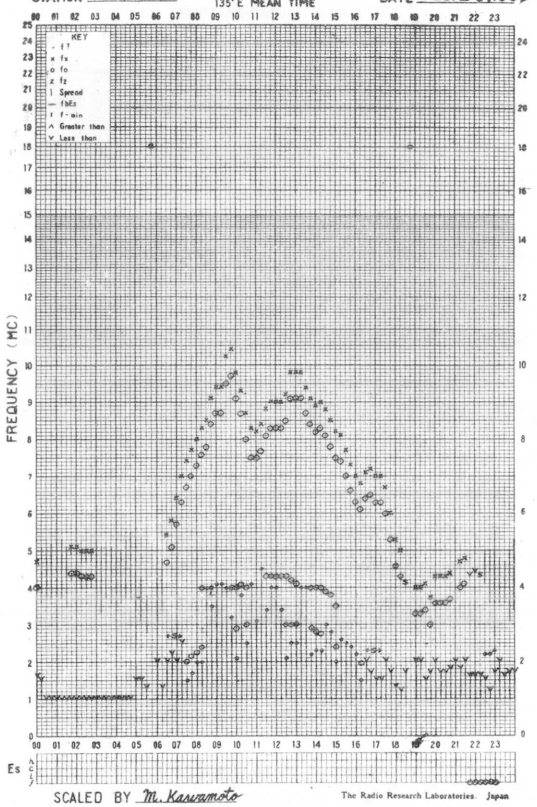

SCALED BY M. Kawamoto

The Radio Research Laboratories. Japan

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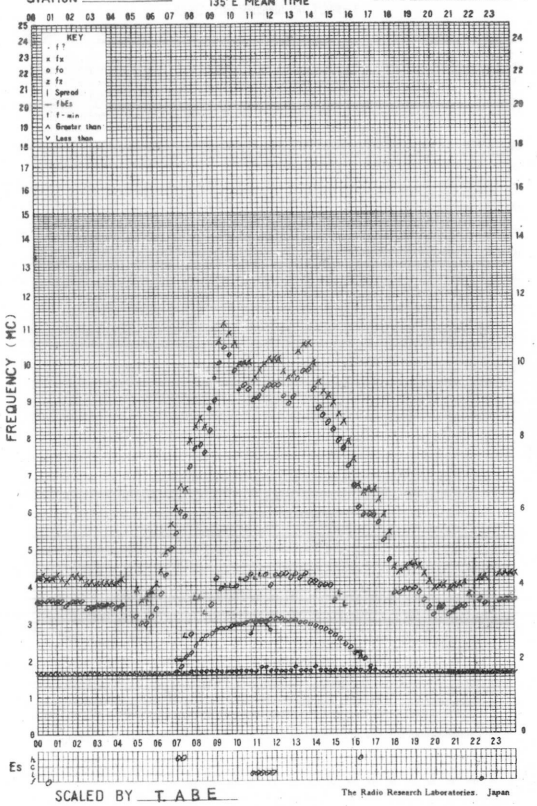

SCALED BY T. ABE

The Radio Research Laboratories. Japan

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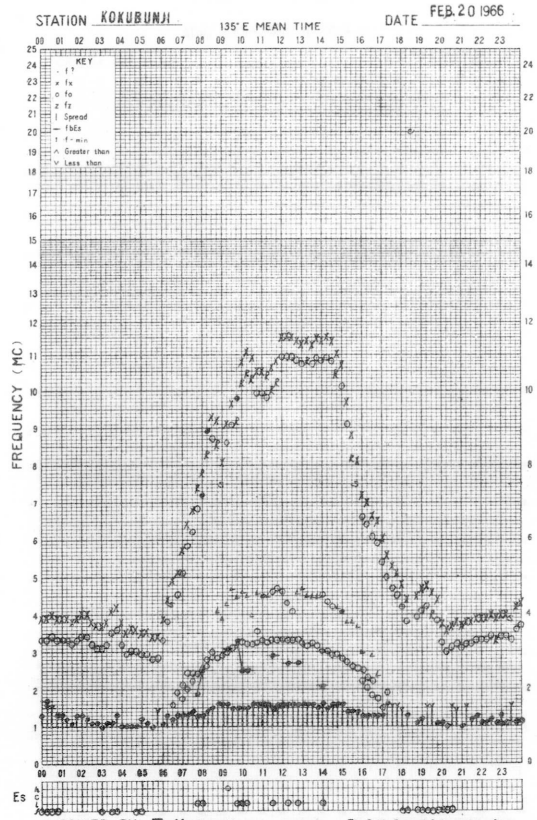

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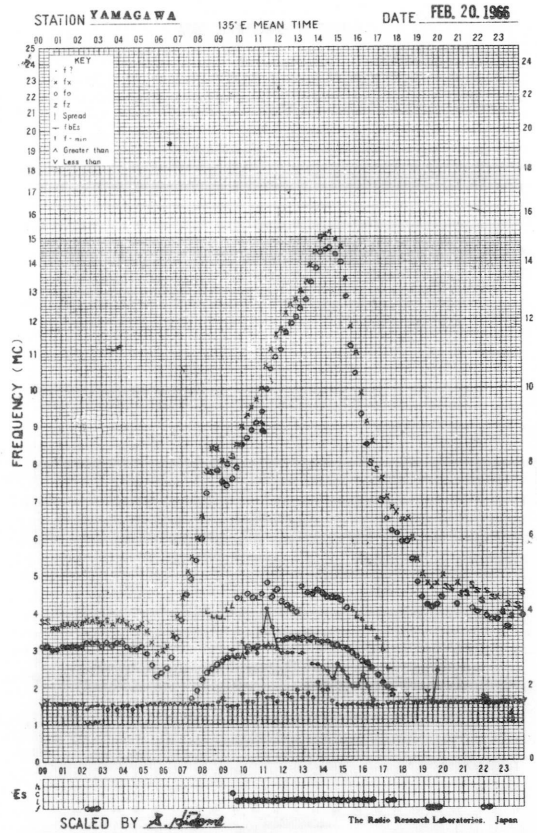

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The Radio Research Laboratories. Japan

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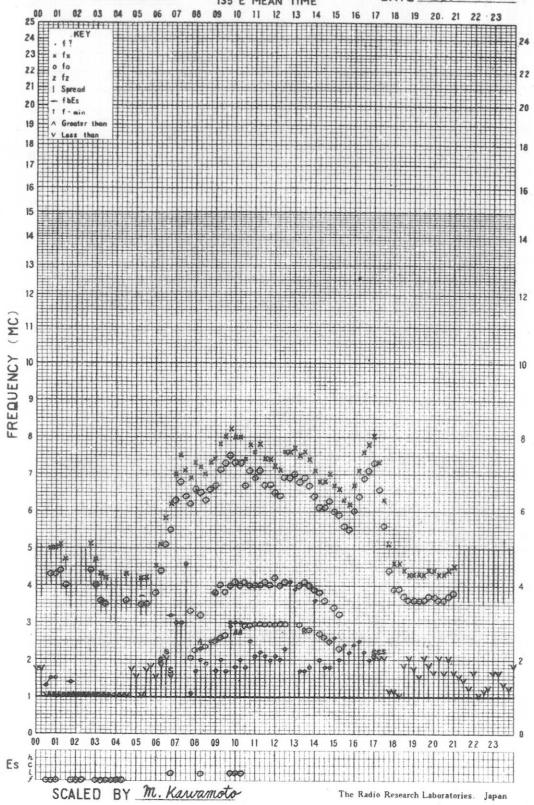

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The Radio Research Laboratories. Japan

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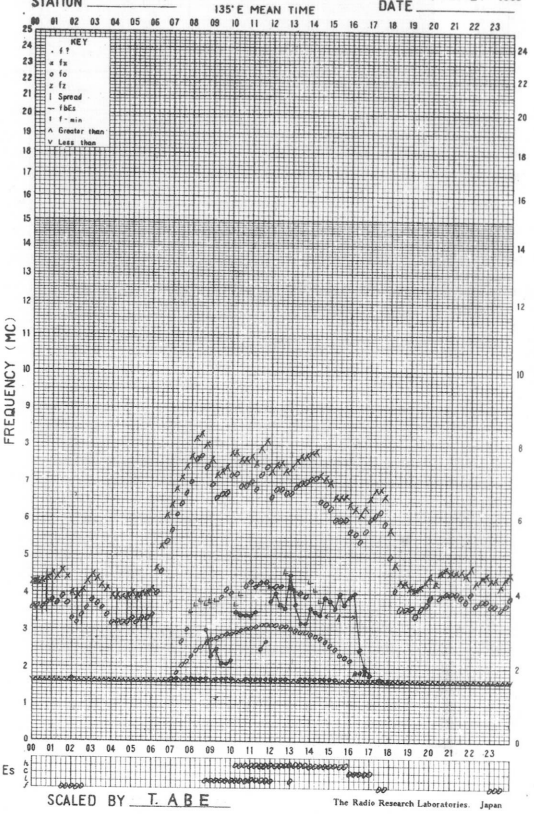

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The Radio Research Laboratories. Japan

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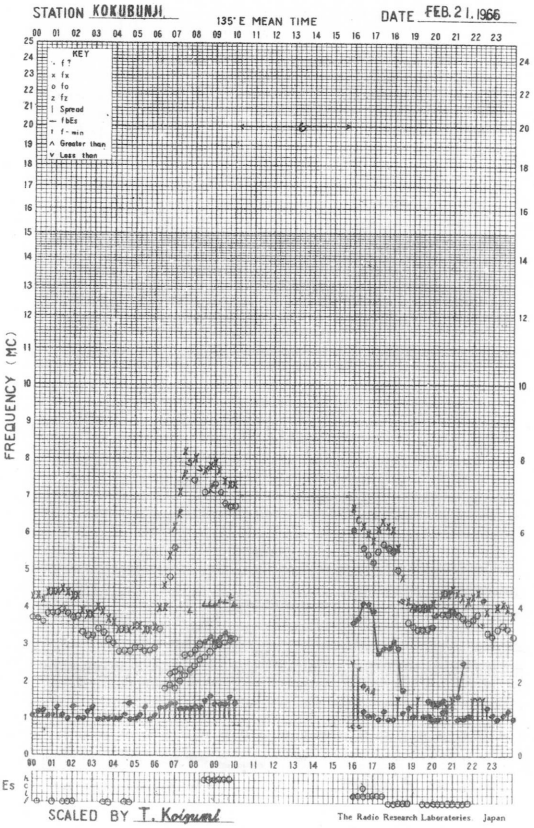

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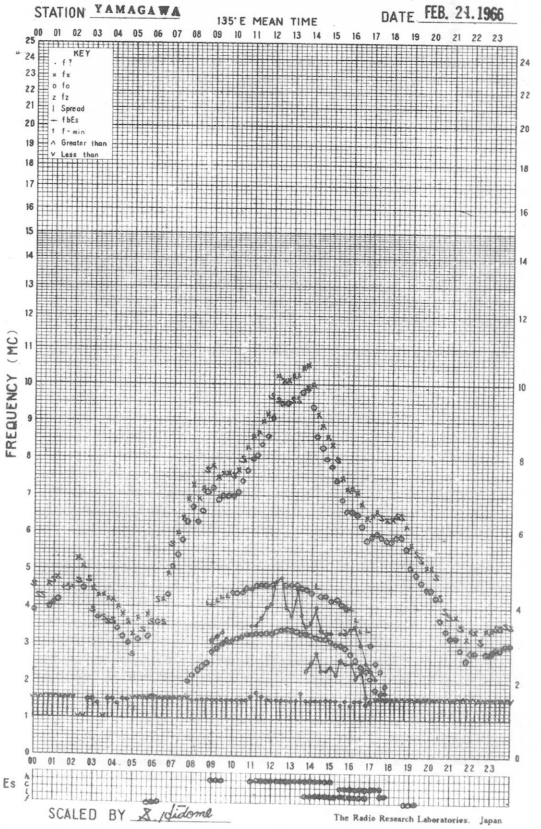

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The Radio Research Laboratories. Japan

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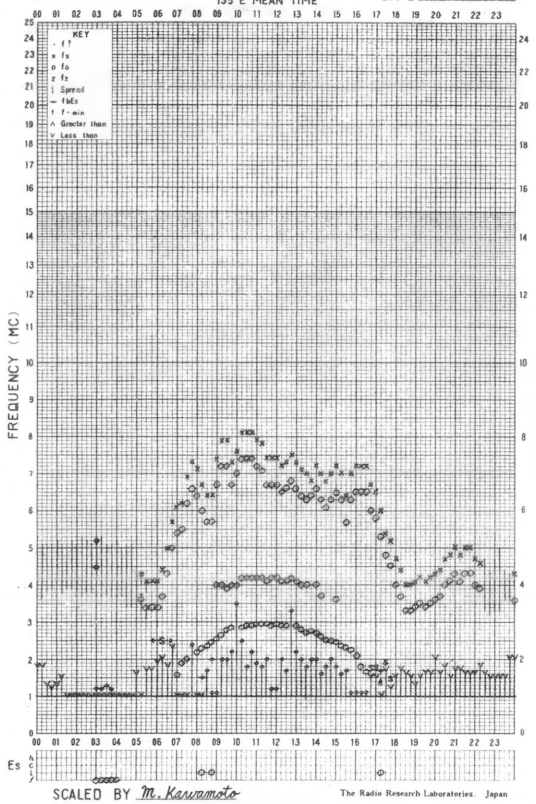

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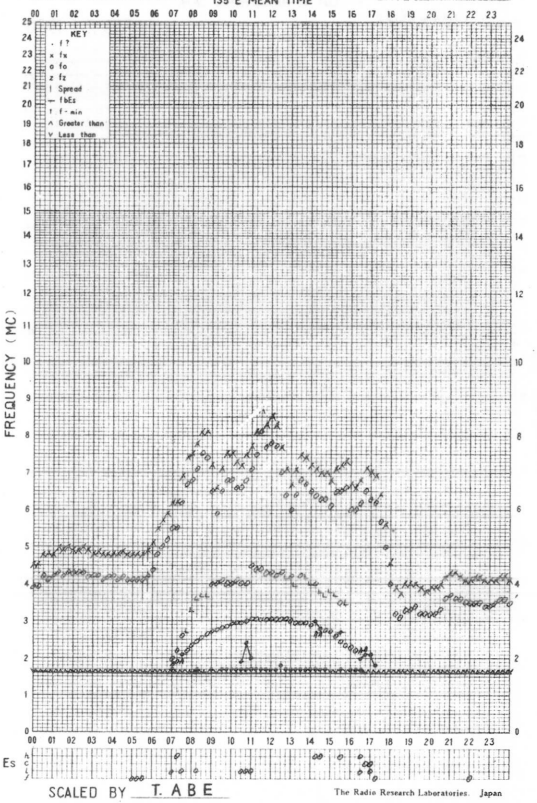

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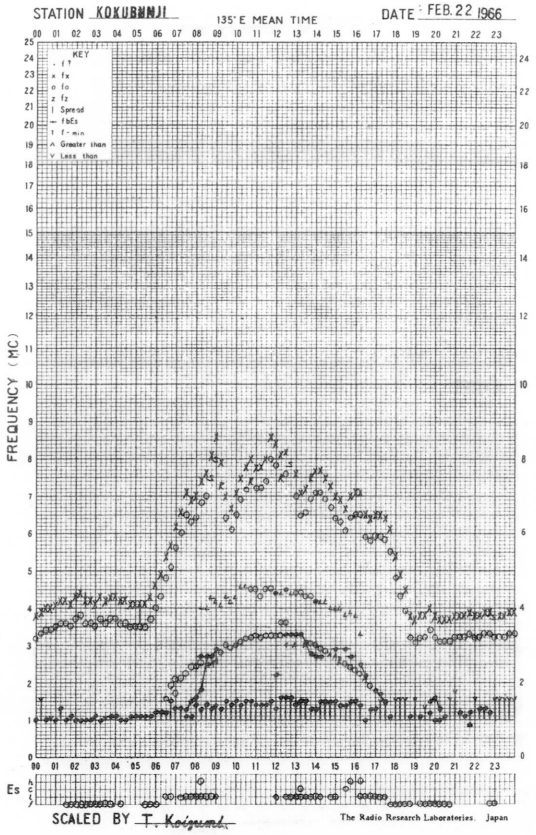

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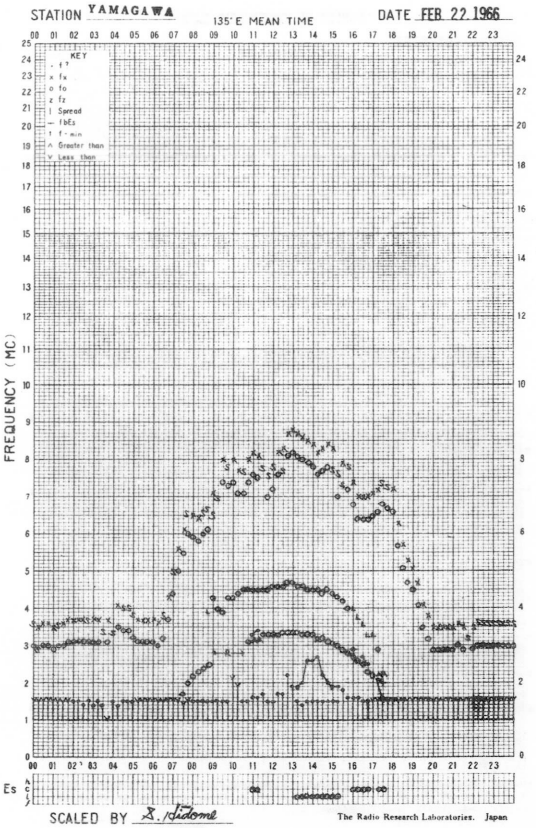

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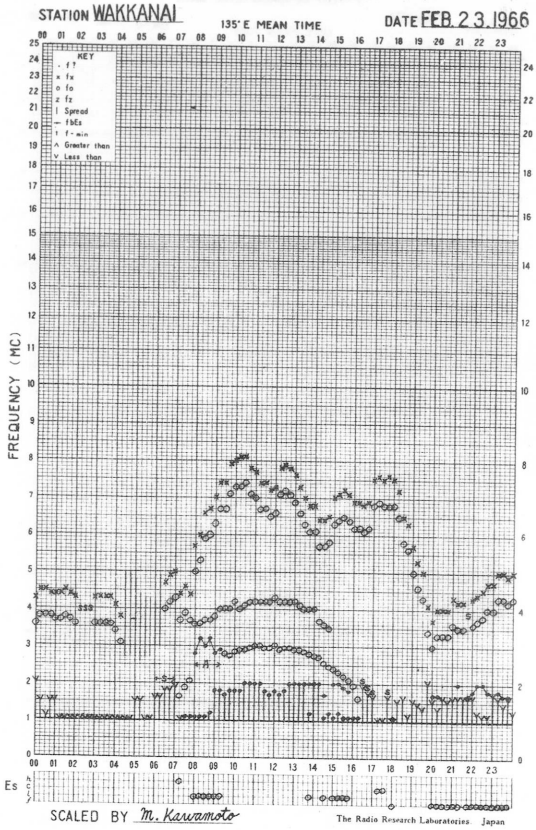

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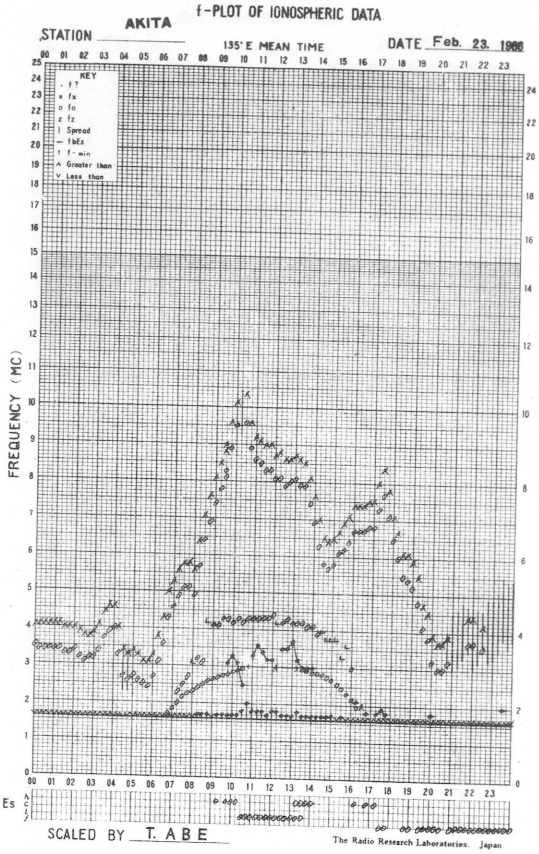

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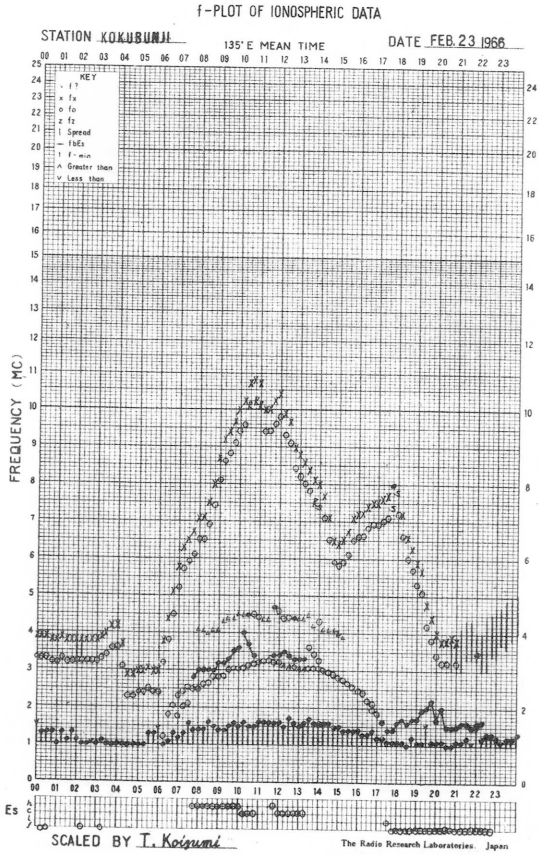

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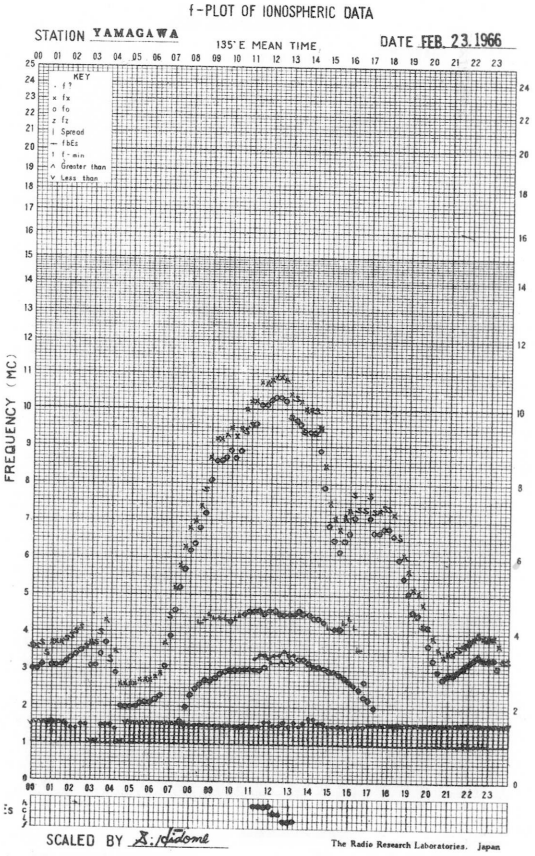

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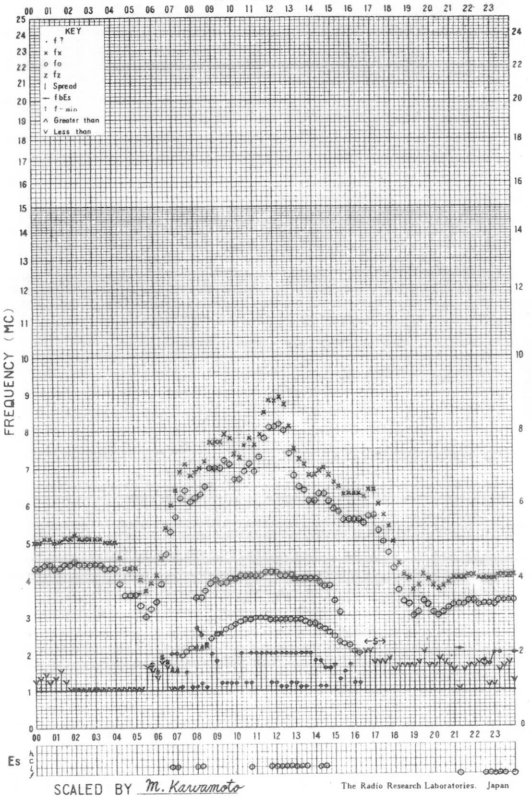

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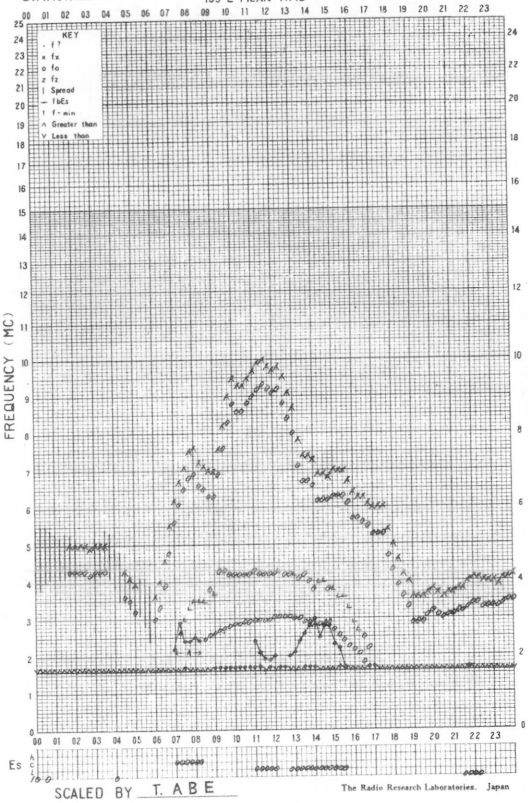

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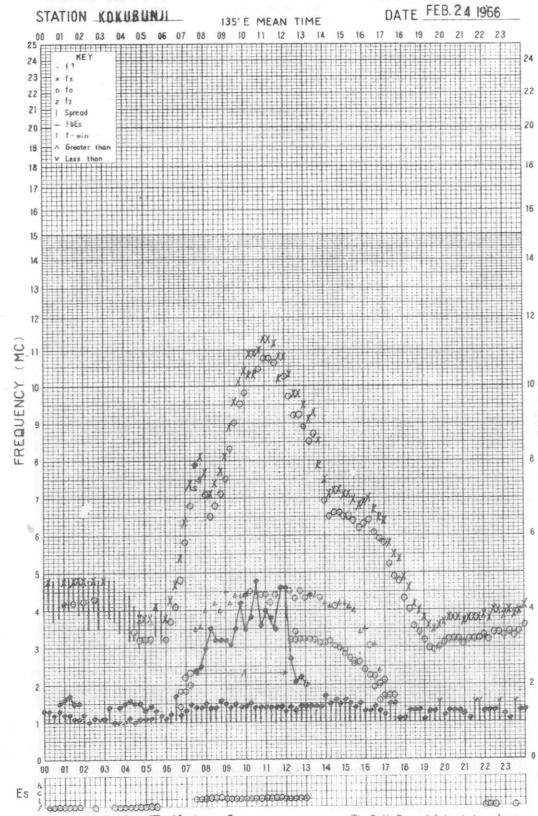

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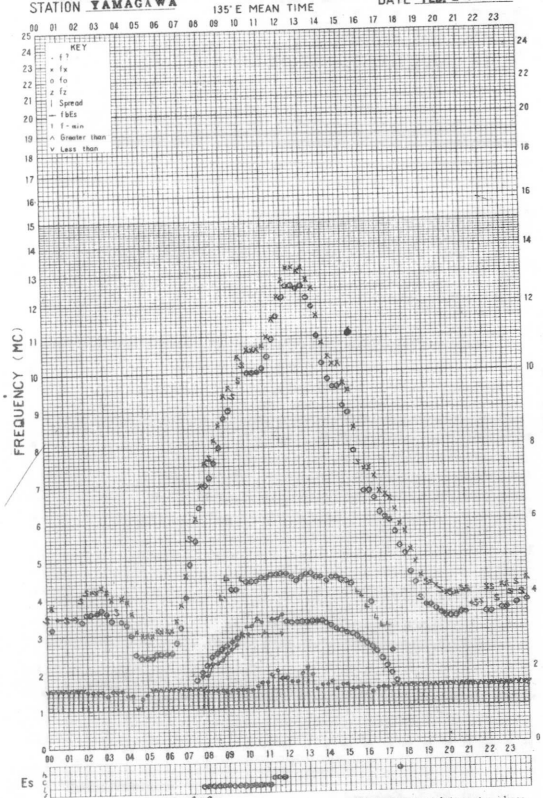

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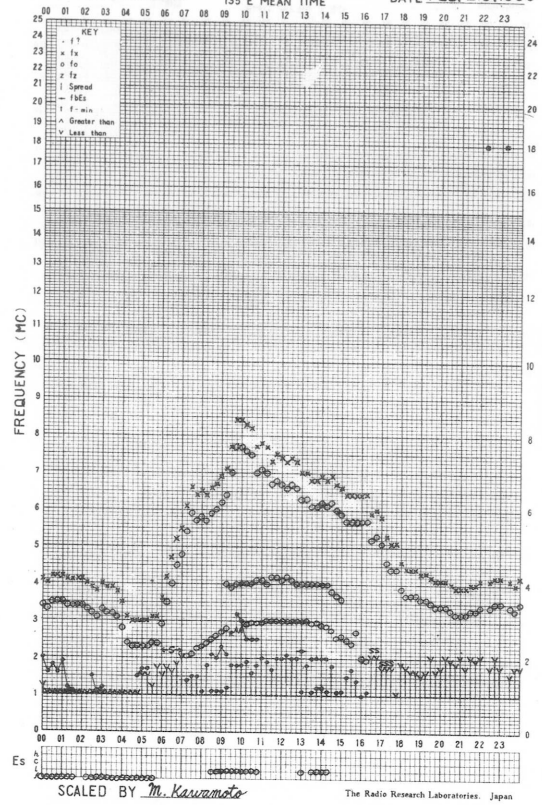

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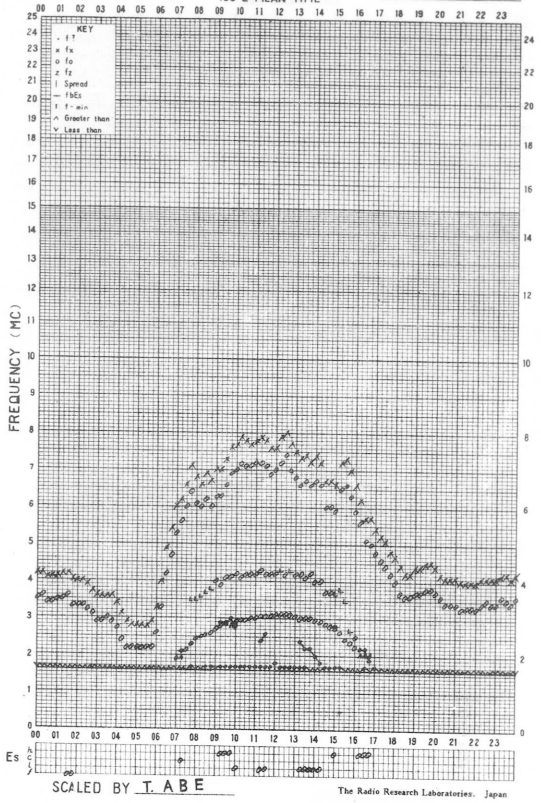

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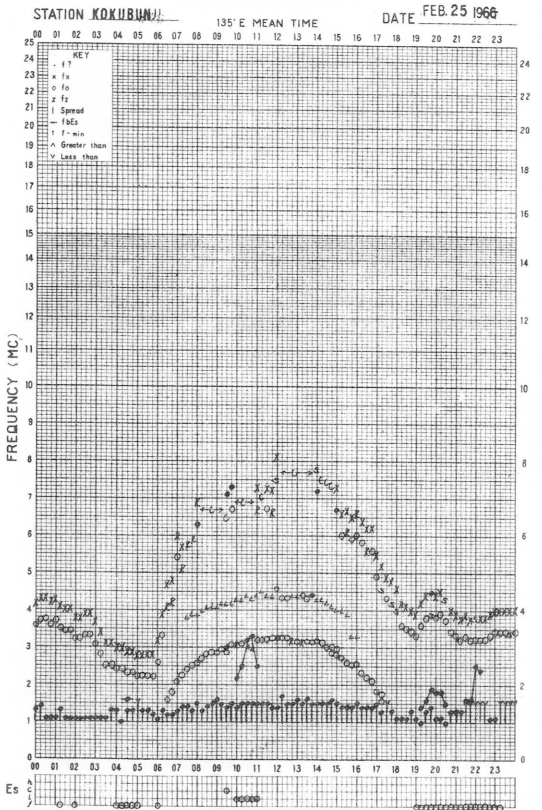

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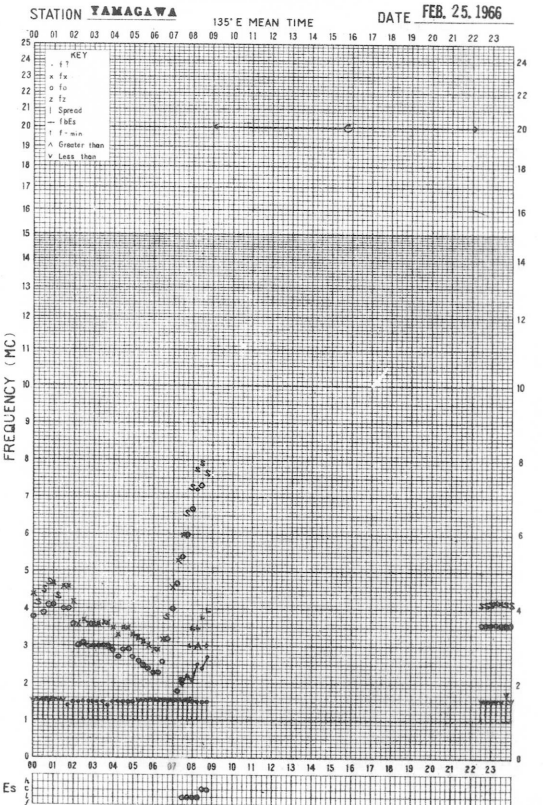

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The Radio Research Laboratories. Japan

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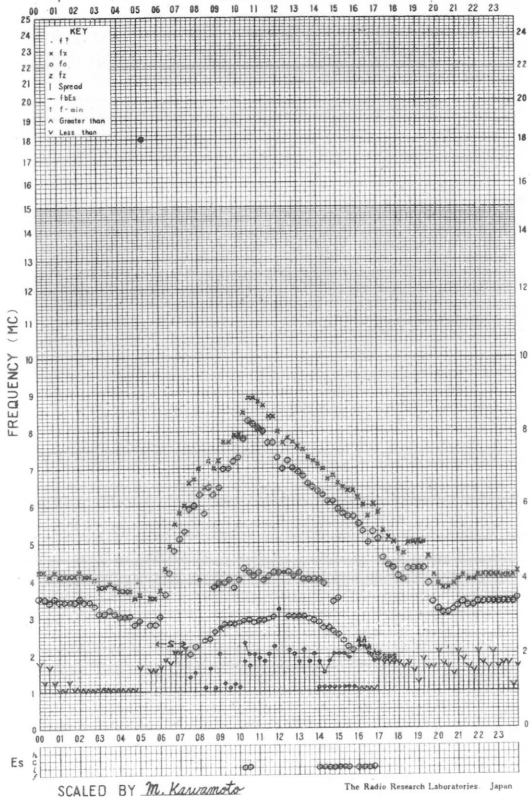

SCALED BY M. Kawamoto

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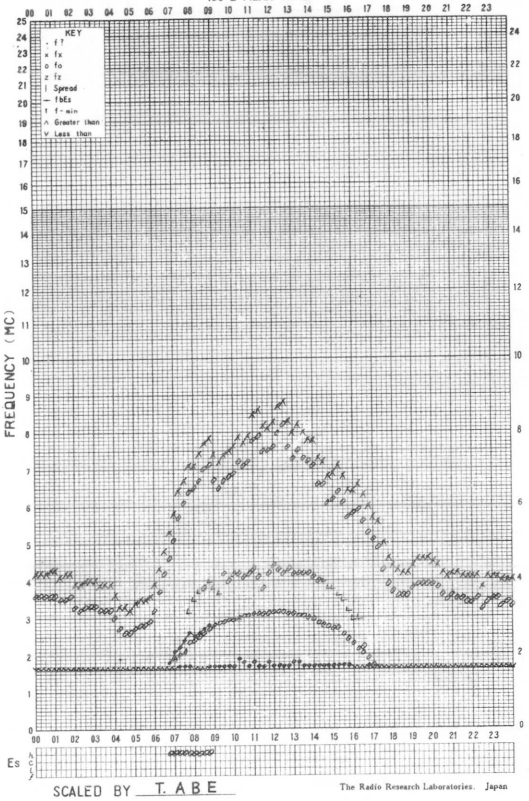

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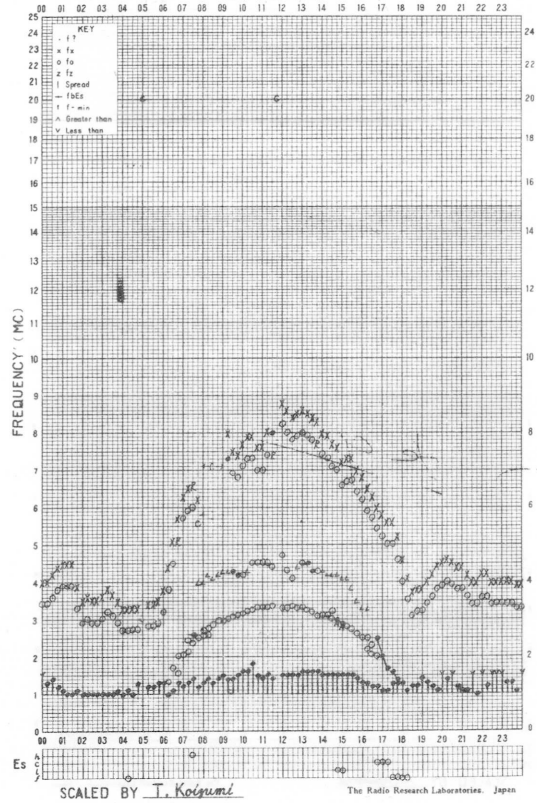

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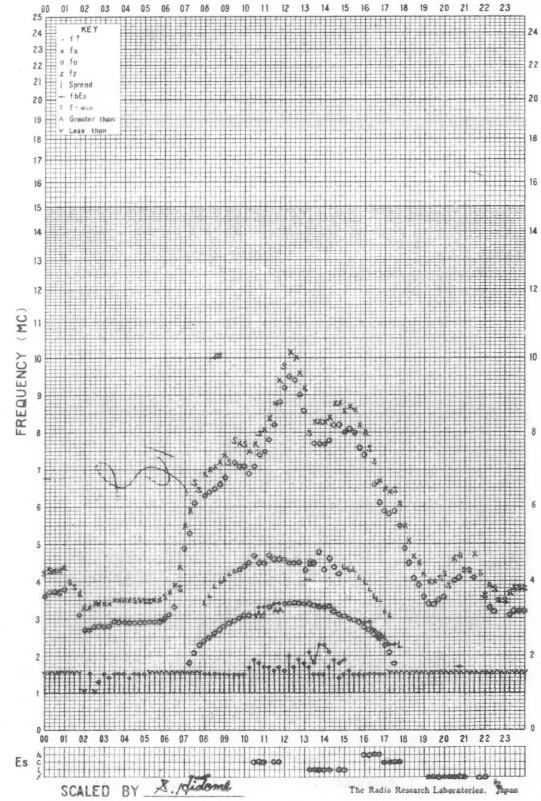

SCALED BY S. Nidomi

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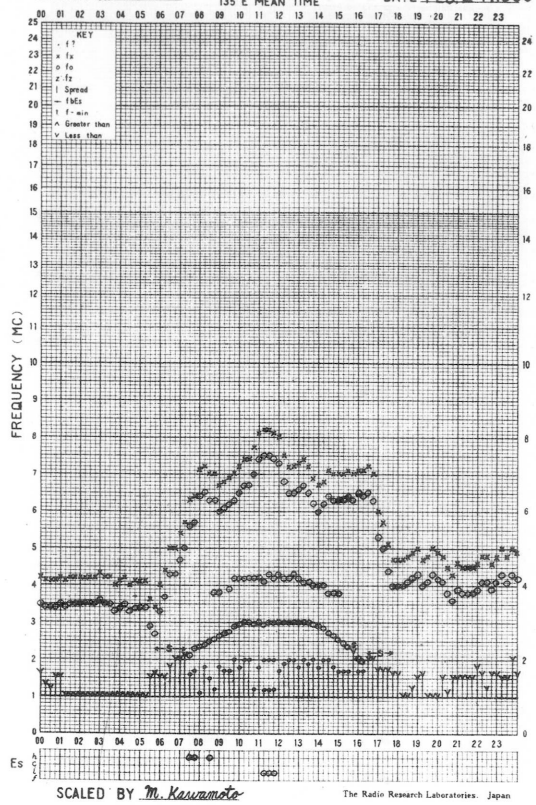
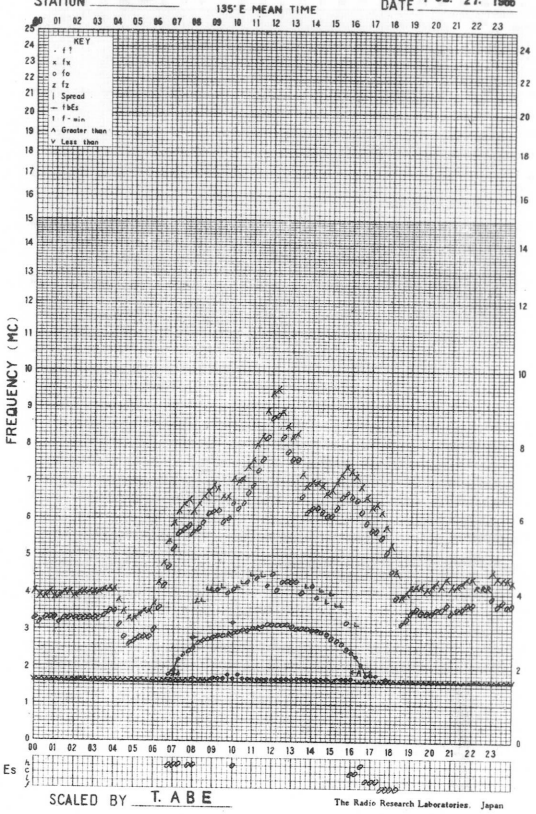
STATION WAKKANAI 135°E MEAN TIME DATE FEB. 27. 1966



SCALED BY M. Kawamoto The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

STATION ABUTA 135°E MEAN TIME DATE Feb. 27. 1966



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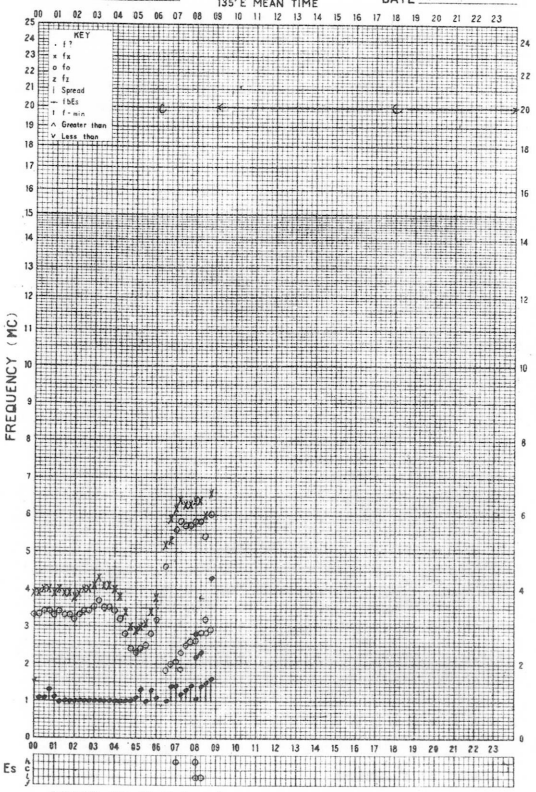
f-PLOT OF IONOSPHERIC DATA

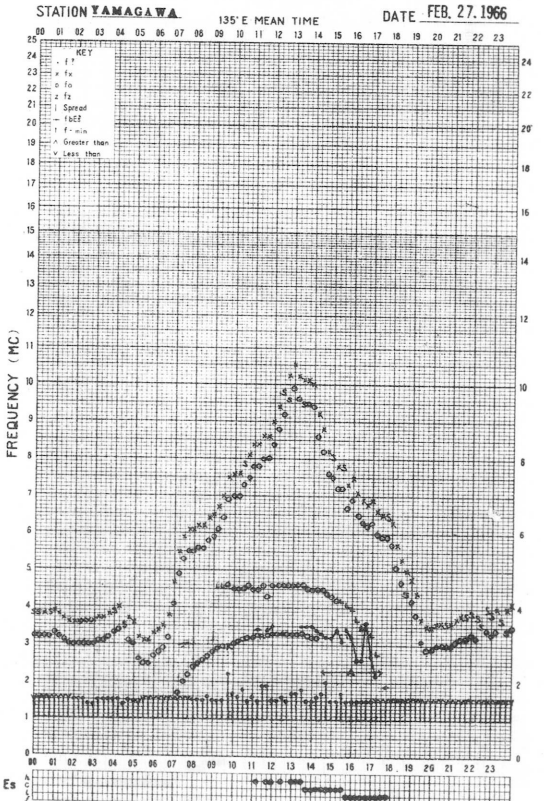
STATION KOKUBUNJI 135°E MEAN TIME DATE FEB. 27 1966



SCALED BY T. Kobayashi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

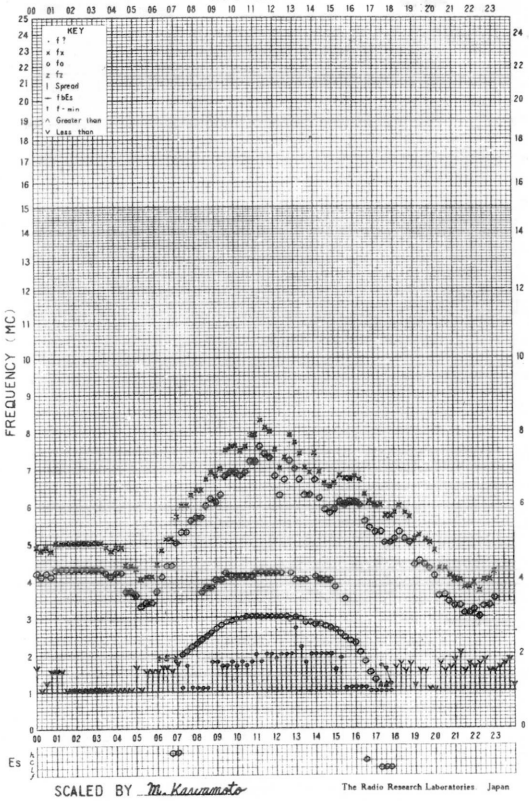
STATION YAMAGAWA 135°E MEAN TIME DATE FEB. 27. 1966



SCALED BY S. Shitomi The Radio Research Laboratories. Japan

f-PLOT OF IONOSPHERIC DATA

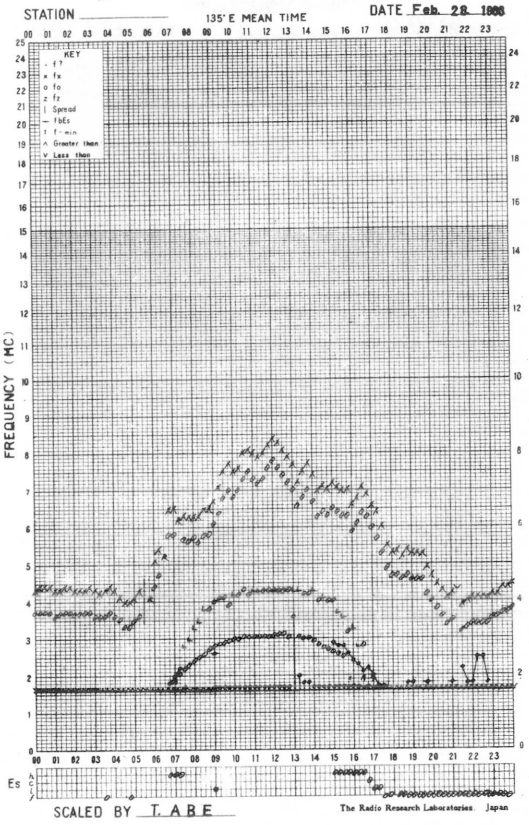
STATION WAKKANAI 135°E MEAN TIME DATE FEB. 28. 1966



SCALED BY M. Kawamoto The Radio Research Laboratories Japan

f-PLOT OF IONOSPHERIC DATA

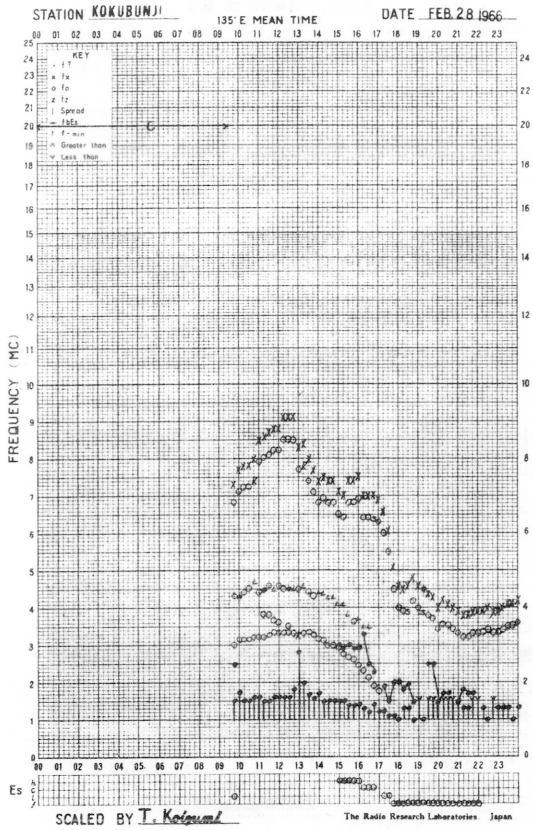
STATION AKITA 135°E MEAN TIME DATE Feb. 28. 1966



SCALED BY T. ABE The Radio Research Laboratories Japan

f-PLOT OF IONOSPHERIC DATA

STATION KOKUBUNJI 135°E MEAN TIME DATE FEB. 28 1966



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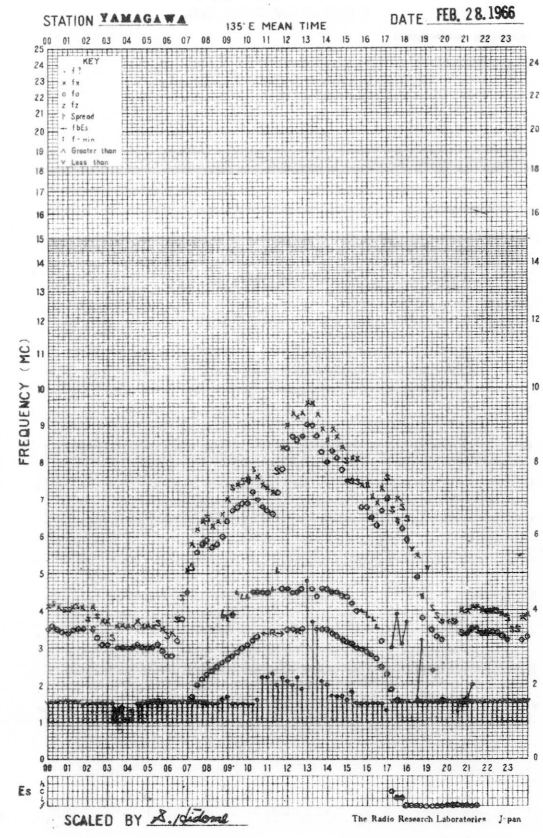
f-PLOT OF IONOSPHERIC DATA

STATION YAMAGAWA 135°E MEAN TIME DATE FEB. 28. 1966



SCALED BY S. Yidomi The Radio Research Laboratories Japan

SOLAR RADIO EMISSION

Flux Density and Variability

Month: February 1966
Observing station: Hiraiso
Frequency: 200 Mc/s

	Flux density 10^{-22} Wm^{-2}(c/s)$^{-1}$					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	q	q	q	0	0	0	0	0
2	q	q	q	q	q	0	0	0	0	0
3	(q)	q	q	(q)	q	(0)	0	0	(0)	0
4	q	q	q	q	q	0	0	0	0	0
5	q	q	q	q	q	0	0	0	0	0
6	q	q	q	q	q	0	1	0	0	0
7	q	q	q	6	q	0	0	0	0	0
8	6	6	6	7	6	0	0	0	0	0
9	7	7	7	7	7	0	0	0	0	0
10	7	8	8	8	8	0	0	0	0	0
11	9	9	7	7	8	0	0	0	0	0
12	7	8	6	7	7	0	0	0	0	0
13	7	7	6	8	7	0	0	0	0	0
14	7	6	6	6	7	0	0	0	0	0
15	6	7	6	5	7	0	0	0	0	0
16	6	7	5	6	6	0	0	0	0	0
17	6	7	7	5	7	0	0	0	0	0
18	6	7	6	7	6	0	0	0	0	0
19	7	6	6	6	7	0	0	0	0	0
20	7	7	7	6	7	0	0	0	0	0
21	7	8	7	(9)	7	0	0	0	(0)	0
22	9	8	8	5	8	0	0	0	0	0
23	7	8	10	8	7	0	1	1	0	1
24	9	6	6	6	7	0	0	0	0	0
25	6	5	5	6	6	0	0	0	0	0
26	7	6	6	5	7	0	0	0	0	0
27	5	5	5	5	5	0	0	0	0	0
28	5	5	5	6	5	0	1	0	0	0

Note No observations during the following periods:

1st	0500-	0615	4th	0130-	0300
3rd	0115-	0300	4th	0450-	0610
3rd	0450-	0600	21st	2120-	2200

" q " means quiet level, while receiver is insensitive

SOLAR RADIO EMISSION

Flux Density

Month: February 1966
Observing station: Hiraiso Frequency: 500 Mc/s

Flux density 10^{-22} $Wm^{-2}(c/s)^{-1}$

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

Distinctive Events

(single-frequency observations)

Month: February 1966
Observing station: Hiraiso
Normal observing period: 2120 - 0820 (sunrise to sunset)

Date	Frequency	Starting time	Time of maximum	Duration	Type	Flux density 10^{-22} Wm^{-2}(c/s)$^{-1}$		Remarks
	Mc/s	UT	UT	minutes		peak	mean	
6	500	0407.4	0407.9	0.5	C	30	-	
	200	0407.2	0408	2	C	310	70	
	500	0421	0421.1	0.5	C	11	-	
	200	0421	0421	1	C	570	180	
11	500	234?	2344.5	~ 3	C	46	20	SWF
28	500	0354.5	0354.5	2	S	27	11	SWF
	200	0354	0354.5	1	C	140	50	SWF

Measurement of H.F. Field Strength (Upper Side-band of WWV)

Feb. 1966 Frequency: 15 Mc/s, Bandwidth: ±40 c/s, Receiving Antenna: Rod (4.5 m) Measured at Hiraiso

UT Date	0015	0115	0215	0315	0415	0515	0615	0715	0815	0915	1015	1115	1215	1315	1415	1515	1615	1715	1815	1915	2015	2115	2215	2315
1	-19	<10s	<16s	<28s	< 7s	< 1s	<14s	(-24)s	<27s	<27s	<27s	< 6s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-31)s	((-31)s	(-30)s	(4)s	(- 3)s
2	<10s	<14s	<14s	<25s	<12s	<11s	<24s	<25s	<20s	C	<30s	<15s	<34s	<30s	<30s	<33s	-26	-24	<30s	<23s	<31s	-23	- 9	- 4
3	- 9	<15s	<19c	C	<10s	< 8s	< 3s	< 8s	<17s	<24s	<10s	< 2s	<30s	<31s	<32s	<32s	<32s	<32s	<31s	<31s	(-31)s	-25	-15	-12
4	<27c	<12s	<13s	<12s	< 0s	((- 4)s	((-10)s	((-13)s	((-14)s	((-16)s	((-10)s	<17s	<30s	<30s	<30s	<30s	<30s	<31s	<31s	<31s	<31s	-28	-12	- 5
5	- 3	(- 8)s	<16s	<27s	<15s	<13s	S	<10s	<17s	<19s	<18s	<27s	<30s	<30s	<25s	<26s	<32s	<31s	<31s	<31s	<30s	-19	- 8	0
6	(-28)s	<21s	<22s	<24s	<13s	<16s	<15s	<16s	<16s	<18s	<18s	<25s	<35s	<35s	<35s	<34s	<33s	<33s	<32s	<33s	(-32)s	-24	-13	-15
7	<13s	<14s	<20s	<36s	<23s	<17s	<13s	<19s	<19s	<27s	<29s	<28s	<36s	<36s	<33s	-22	-27	-23	<33s	-30	-23	-17	- 6	-12
8	-19	<19s	<27s	<28s	<13s	<15s	S	<18s	<26s	<35s	<32s	<36s	<36s	<36s	<35s	<35s	<35s	<35s	<35s	<35s	<32s	-25	-10	-11
9	-14	<20s	<22s	<23s	<17s	<18s	S	<20s	<23s	<22s	<32s	<34s	<35s	<35s	<35s	<35s	<35s	<35s	<35s	<35s	-22	-13	- 3	- 5
10	-11	<19s	<21s	<30s	< 5s	< 6s	C	<20s	<19s	<20s	<23s	<12s	<33s	<33s	<32s	<32s	<32s	<32s	<33s	<33s	(-33)s	- 7	- 7	-14
11	- 6	- 9	<25s	<21s	< 6s	< 4s	S	< 9s	< 8s	<12s	< 8s	<25s	<30s	<30s	<24s	<34s	<34s	<34s	<34s	-33	(-34)s	-16	2	- 6
12	- 3	- 7	-17	-32	< 9s	< 6s	< 5s	<13s	<14s	<19s	<14s	<18s	<32s	-32	<34s	<34s	<34s	<34s	<34s	<34s	<34s	-25	-13	-11
13	-15	<19s	<22s	<19s	<14s	<12s	<11s	<16s	<18s	<32s	<18s	<21s	<31s	<35s	<27s	<35s	<35s	<35s	<35s	<35s	<35s	-27	-17	-14
14	-23	<18s	<21s	<28s	<11s	<18s	<11s	<15s	<21s	<33s	<21s	<10s	<32s	<32s	<30s	<33s	<33s	<32s	<32s	<32s	<32s	-28	-12	-11
15	-14	<13s	<17s	<29s	<12s	<12s	<11s	<17s	<21s	<34s	<35s	<16s	<30s	<36s	<36s	<35s	<35s	<35s	<35s	-27	-32	-14	- 5	- 7
16	- 2	<19s	<17s	<28s	<14s	< 9s	<28s	<26s	<30s	-33	-26	< 6s	<34s	<34s	<34s	<34s	<34s	<34s	<34s	<34s	(-31)s	- 9	- 3	- 4
17	-23	<24s	<23s	<25s	<11s	<10s	<18s	<21s	<22s	<32s	<35s	< 8s	<35s	<35s	<26s	<31s	<35s	-31	-14	-11	-21	-24	-17	- 9
18	-13	<15s	<22s	<20s	-20	-15	<19s	<22s	<20s	<28s	<25s	<10s	<33s	<33s	<33s	<32s	<32s	<33s	<32s	- 8	(-16)s	-12	- 3	5
19	- 5	<20s	<26s	-19	<18s	<13s	S	<21s	<23s	<25s	<30s	<12s	<35s	-11	<35s	<35s	<35s	<35s	<35s	-27	<15s	-12	- 7	- 5
20	6	<20s	<21s	<22s	<26s	<20s	<13s	<18s	<19s	<23s	<33s	<32s	<34s	<34s	<34s	<31s	<33s	-28	<34s	<34s	-31	-26	-12	- 8
21	- 7	<18s	<20s	<32s	<11s	<11s	<13s	<15s	<19s	<16s	<33s	<18s	<33s	<28s	<34s	<34s	(-34)s	(-30)s	-20	-12	-13	-12	-10	- 9
22	-14	-14	<14s	-16	<12s	< 8s	<11s	<16s	<16s	<18s	<33s	<16s	<32s	<33s	<34s	<34s	<34s	<34s	<34s	<34s	<33s	-25	0	- 5
23	2	2	-14	(-20)s	< 9s	<10s	S	<17s	<14s	(-15)s	<15s	<11s	<28s	<29s	<27s	<27s	<28s	< 6s	<28s	<28s	-27	-16	-10	- 4
24	5	<19s	<15s	<17s	< 8s	-10	S	<16s	<17s	<20s	<30s	<34s	<33s	<33s	<33s	<33s	<33s	<33s	<34s	<34s	<34s	-28	-20	-10
25	2	<24s	<22s	<20s	<13s	< 7s	<22s	<20s	<19s	<21s	<34s	<27s	<35s	<35s	<36s	<36s	<35s	<35s	<32s	<32s	<32s	-18	-10	-17
26	-15	-20	<16s	<33s	<10s	<12s	< 7s	<17s	<10s	<22s	<20s	<34s	<34s	<34s	<35s	<35s	<35s	<35s	<34s	<34s	-31	-15	-16	-13
27	- 9	- 7	<18s	-27	< 5s	-10	S	<16s	< 6s	<24s	<34s	<35s	<34s	<33s	<33s	<33s	<33s	<29s	<33s	<32s	<32s	- 7	< 1s	- 1
28	- 4	<18s	<19s	<24s	<13s	<13s	<18s	<13s	<11s	<15s	<18s	<32s	<32s	<33s	<33s	<33s	<33s	<33s	<33s	<33s	-29	- 5	- 1	- 7
Median	(-11)s	((-18)s	((-20)s	((-25)s	((-12)s	((-11)s	((-13)s	((-17)s	((-19)s	((-22)s	((-27)s	((-18)s	((-33)s	((-33)s	((-33)s	((-33)s	((-33)s	((-33)s	((-33)s	((-32)s	(-31)s	-19	(-10)s	- 8
Med. Count	28	28	28	27	28	28	19	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Upper decile	2	- 7	<14s	<17s	< 5s	< 4s	< 5s	<10s	<10s	<15s	<10s	< 6s	<30s	<29s	<26s	<27s	<28s	<24s	<28s	-12	<16s	- 7	< 1s	- 1
Lower decile	<23s	<21s	<25s	<32s	<20s	<18s	<24s	<24s	<26s	<33s	<34s	<34s	<35s	<36s	<35s	<35s	<35s	<35s	<35s	<35s	<34s	-28	<17s	-14

Measurement of H.F. Field Strength (Upper Side-band of WWVH)

Feb. 1966 Frequency: 15 Mc/s, Bandwidth: ±40 c/s, Receiving Antenna: Rod (4.5 m) Measured at Hiraiso

UT / Date	0045	0145	0245	0345	0445	0545	0645	0745	0845	0945	1045	1145	1245	1345	1445	1545	1645	1745	1845	1945	2045	2145	2245	2345
1	9	9	11	14	<4s	<11s	6	2	-9	-26	<2s	<7s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-30)s	((-31)s	(-3)s	(11)s	(11)s	(6)s
2	6	4	9	15	12	16	6	<16s	<29s	-27	<16s	<22s	<33s	<30s	<30s	<33s	<33s	<33s	<20s	<29s	-8	3	6	7
3	4	10	C	15	12	<6s	<3s	<7s	<24s	<8s	((-28)s	<8s	<31s	<32s	<32s	<32s	<32s	-24	<31s	<31s	-26	7	10	9
4	7	11	11	20	(18)c	(-3)c	((-7)s	((-7)s	((-6)s	((-6)s	<2s	<28s	-22	<30s	<30s	<30s	<30s	<31s	<31s	<31s	-9	6	6	4
5	13	C	8	11	15	(-12)s	<14s	<7s	<17s	<13s	<22s	<23s	<30s	<30s	<24s	<33s	<32s	<31s	<31s	<30s	8	15	10	5
6	12	7	7	11	14	<15s	<15s	<11s	<10s	<10s	<11s	<18s	-19	<35s	<34s	<33s	<33s	<32s	-24	-27	2	4	6	7
7	-2	0	3	5	4	<16s	<14s	<16s	<22s	<29s	<21s	<37s	<36s	<36s	<33s	<33s	<35s	<34s	<32s	<33s	4	7	4	6
8	3	5	3	10	3	0	<14s	<14s	<36s	<35s	<36s	<30s	<36s	<35s	<35s	<35s	<35s	<35s	<35s	-30	-17	-6	5	1
9	11	4	4	11	11	-1	5	<14s	<26s	<18s	<35s	<34s	<35s	<35s	<35s	<35s	<35s	<35s	<35s	-27	-2	2	4	1
10	2	7	5	12	12	<9s	-9	-14	-9	-8	(-17)s	<18s	<33s	<32s	<32s	<32s	<32s	<33s	<33s	-11	4	4	7	3
11	4	5	7	14	17	13	20	7	6	(-1)s	<3s	<12s	-18	-24	<26s	<34s	<34s	<34s	<34s	-9	1	3	6	-8
12	6	9	8	14	17	<8s	<1s	<3s	<6s	(0)s	<4s	<23s	<34s	<35s	<34s	<34s	<34s	<34s	<34s	<34s	2	-1	3	7
13	5	8	4	9	13	12	7	-5	<18s	-11	-5	-2	-10	<34s	<35s	<35s	<35s	<35s	<35s	<35s	-5	3	2	4
14	5	5	7	10	12	6	<8s	<9s	<22s	<16s	<5s	<13s	<32s	<32s	<30s	<33s	<32s	<32s	<32s	<32s	7	5	3	1
15	5	8	8	11	15	-4	-2	<10s	<22s	<31s	<36s	<18s	<35s	<36s	<36s	<35s	<35s	<35s	<35s	<35s	-6	6	4	4
16	-1	3	6	10	17	<14s	<8s	<23s	<28s	-23	<34s	<10s	<34s	<33s	<27s	<34s	<34s	<34s	<34s	-31	-9	5	9	-3
17	1	3	9	9	<3s	<16s	<17s	<17s	<22s	<31s	<35s	<9s	<35s	<35s	<26s	<31s	<35s	<35s	<35s	<35s	-2	6	4	-1
18	4	6	7	4	15	-8	(-14)s	<14s	<20s	<22s	<25s	<32s	<28s	<34s	<32s	<32s	<33s	<33s	-29	(-30)s	6	11	7	3
19	2	5	8	9	8	<12s	-18	<5s	<15s	<21s	<15s	<22s	<35s	<35s	<35s	<35s	<35s	-31	-31	<31s	-7	6	6	6
20	0	6	1	10	6	16	<11s	<10s	<16s	<29s	<32s	<32s	<34s	<34s	<34s	<34s	<33s	<34s	<34s	(-34)s	5	5	9	4
21	6	5	6	13	17	<10s	<13s	<13s	<12s	<27s	-29	<20s	<28s	<34s	<30s	<34s	<34s	<34s	<30s	-28	0	4	8	7
22	5	6	6	14	16	<13s	<12s	<12s	<11s	<13s	<33s	<32s	<32s	<34s	<34s	<34s	<34s	-31	-11	-26	-9	0	9	5
23	6	8	9	7	15	11	-10	-11	1	-9	1	<26s	<28s	<25s	<27s	<27s	<28s	<16s	<28s	(-27)s	12	12	16	12
24	6	8	8	8	14	17	-11	-8	-11	<23s	<21s	<26s	<33s	<33s	<33s	<33s	<33s	<33s	<34s	-33	-5	0	4	-1
25	1	4	8	17	13	11	-12	-14	<20s	<22s	<34s	<24s	<35s	<35s	<36s	<36s	<35s	<35s	<32s	<32s	4	0	6	4
26	7	2	4	12	17	4	-10	-13	<19s	<30s	<29s	<26s	<34s	<35s	<35s	<35s	<35s	<34s	<34s	<34s	9	2	5	-6
27	-5	3	7	9	16	4	3	-8	<14s	<27s	<35s	<34s	<34s	<33s	<33s	<33s	<24s	<20s	<32s	<32s	-3	3	6	-1
28	-1	8	4	13	13	<13s	-12	-11	<13s	<16s	<13s	<32s	<32s	<33s	<33s	<33s	<33s	<33s	<33s	-24	-4	5	0	-2
Median	5	6	7	11	14	-5	(-11)s	((-11)s	((-17)s	((-22)s	((-22)s	((-23)s	((-33)s	((-34)s	((-33)s	((-33)s	((-34)s	((-33)s	((-32)s	((-31)s	-2	5	6	4
Med. Count	28	27	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Upper decile	11	9	9	15	17	16	6	<2s	<6s	((-6)s	<2s	<8s	-19	<30s	<26s	((-30)s	<30s	<24s	<24s	-24	8	11	10	7
Lower decile	-1	3	3	7	3	<15s	<15s	<16s	<28s	<31s	<35s	<34s	<35s	<35s	<35s	<35s	<35s	<35s	<35s	<35s	-9	0	3	-3

RADIO PROPAGATION QUALITY FIGURES

HIRAISO

Time in U.T.

Feb. 1966	Whole Day Index	H B 06 12 18 / 12 18 24	W W V 00 06 12 18 / 06 12 18 24	S F 00 06 12 18 / 06 12 18 24	W W V H 00 06 12 18 / 06 12 18 24	Warning 00 06 12 18 / 06 12 18 24	Principal magnetic storms Start	End	ΔH
1	4-	C 4 4	- - - 4	4 4 4 (3)	4 5 - 4	N N N N			
2	4+	C 5 4	- - - 4	4 4 4 5	4 4 - 4	N N N N			
3	4o	C 4 4	- - - 4	(4) 4 4 4	4 4 - 4	N N N N			
4	4o	4 4 3	- - - 4	5 4 4 (4)	4 4 - 4	N N N N			
5	4o	4 4 4	- - - 4	4 4 4 4	4 4 - 4	N N N N			
6	4o	5 4 (4)	- - - 3	5 4 4 4	4 5 - (4)	N N N N			
7	4+	4 4 5	- - - 4	4 4 4 5	4 4 - 4	N N N N			
8	4o	3 4 4	- - - 4	4 4 4 5	4 3 - 4	N N N N			
9	5-	4 4 5	- - - 5	5 5 4 5	(4) 4 (4) 4	N N N N			
10	4+	5 4 4	- - - 4	5 4 4 4	4 4 (4) 4	N N N N			
11	4+	5 5 5	(4) - - 4	4 4 4 4	4 5 (5) 5	N N N N			
12	5-	5 5 4	(4) - - 4	4 5 5 5	4 5 (4) 4	N N N N			
13	4o	4 4 4	4 - - 3	5 4 4 4	5 5 (5) 4	N N N N			
14	4o	4 4 4	4 - - 4	4 4 4 4	4 4 (4) 4	N N N N			
(15)	4o	3 4 4	4 - - 5	5 4 4 (4)	4 3 - 4	N N N N			
(16)	4o	3 (4 4)	(4) - - 4	4 4 4 (4)	4 4 - 4	N N N N			
(17)	4o	3 4 4	4 - - 5	4 4 4 4	4 (3) - 4	N N N N			
18	4o	4 4 C	4 - - 5	4 4 4 4	4 3 - 4	N N N N			
19	4o	4 C C	4 - - 4	(3) 4 4 5	4 4 - 4	N U N N			
20	4o	3 (4 3)	4 - - 3	5 5 4 4	4 3 - 4	N N N N			
21	4o	4 4 4	4 - - 5	3 4 4 (3)	4 4 - 4	N N N N			
22	4o	4 4 4	4 - - 4	(4) 4 4 4	4 3 - 4	N N N N	11.1	---	88γ
23	4o	4 4 (4)	5 - - 4	(4 4) 4 4	4 5 - 4	N N U U	---	---	
24	4-	(3 4 3)	4 - - 3	4 (4) 4 4	4 4 - 4	N N N N	---	21xx	
25	4o	4 (4) 4	4 - - 4	4 4 4 (3)	4 3 - 4	N N N N			
26	4o	4 4 4	4 - - 4	4 4 4 (4)	4 4 - 4	N N N N			
27	4o	C C (4)	4 - - 4	4 4 4 4	4 4 (4) 4	N N N N			
28	4+	4 4 4	4 - - 5	5 4 4 4	4 5 - 4	N N N N			

IQSY GECALERT and ADALERT (Western Pacific Region)

* = MAGSTORM

o = MAGCALME

Δ = COSMIC EVENT

( ) = Regular World Day

C = artificial accident

\- = impossible to evaluate

--- = continuing magnetic storm

( ) = inaccurate

SUDDEN IONOSPHERIC DISTURBANCES

(S.I.D.)

HIRAISO

Time in U.T.

Feb. 1966	S W F										Correspondence		
	Drop-out Intensities (db)						Start-time	Dura-tion	Type	Imp.	Flare	Solar Noise	Mag.
	WS	SF	HA	TO	HB	SH							
11		20	10				23.42	21	S	1+	x		
27		12	10				23.25	26	S	1-	x		
28		45	20				03.49	29	S	3	x		
28	10"	16					23.04	26	S	1	x	x	

IONOSPHERIC DATA IN JAPAN FOR FEBRUARY 1966
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