CRPL-F 29

IONOSPHERIC DATA

ISSUED

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PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY
National Bureau of Standards
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CRPL-F 29 CENTRAL RADIO PROPAGATION LABORATORY
NATIONAL BUREAU OF STANDARDS
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CONTENTS

TERMINOLOGY AND SCALING PRACTICES

The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology " in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

> L or 1 = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 Jan. 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
   Values missing because of A, B, C or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
   Values missing because of E are counted as equal to or less than the lower limit of the recorder.
   Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
   Values missing because of G are counted:
   1. For $f^{o}F2$, as equal to or less than $f^{o}F1$.
   2. For h'F2, as equal to or greater than the median.

Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median $f^{o}E$, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered as doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

It is expected that this practice will be of assistance in evaluating the monthly median Washington data.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

"Extent of E" is defined as follows: the highest value of $f^{o}E$. This is usually Es, but may include cases of normal E which were difficult to distinguish from Es, owing to the absence of a definite cusp.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in Tables 1 to 84 and Figs. 1 to 120 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research,
Radio Research Board:
- Brisbane, Australia
- Canberra, Australia
- Cape York, Australia
- Hobart, Tasmania
- Townsville, Australia

British Department of Scientific and Industrial Research,
Radio Research Board:
- Burghead, Scotland
- Colombo, Ceylon
- Falkland Is.
- Oslo, Norway
- Slough, England
- Tromso, Norway

Canadian Radio Wave Propagation Committee:
- Churchill, Canada
- Clyde, Baffin I.
- Gillam, Manitoba (Mobile unit)
- Ottawa, Canada
- Portage la Prairie, Manitoba
- Prince Rupert, Canada
- St. John's, Newfoundland
- Swan River, Manitoba (Mobile unit)
- The Pas, Manitoba (Mobile unit)

New Zealand Radio Research Committee:
- Campbell I.
- Christchurch (Canterbury University College Observatory)
- Kermadec Is.
- Pitcairn I.
- Rarotonga I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of S. Africa
- Johannesburg, Union of S. Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:
Alma Ata, U.S.S.R.
Bay Tiksey, U.S.S.R.
Bukhta Tikhaya, U.S.S.R.
Chita, U.S.S.R.
Leningrad, U.S.S.R.
Moscow, U.S.S.R.
Sverdlovsk, U.S.S.R.
Tomsk, U.S.S.R.

Carnegie Institution of Washington (Department of Terrestrial Magnetism):
Huancayo, Peru
Watheroo, W. Australia

United States Army Signal Corps:
Leyte, Philippine Is.
Okinawa I.
Tokyo, Japan

National Bureau of Standards (Central Radio Propagation Laboratory):
Adak, Alaska
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Fairbanks, Alaska (University of Alaska, College, Alaska)
Guam I.
Maui, Hawaii
Palmyra I.
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico
Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Peshawar, India

Radio Wave Research Laboratories, Central Broadcasting Administration:
Chungking, China
Peiping, China

National Wuhan University:
Leshan, China

French Ministry of Naval Armaments (Section for Scientific Research):
Fribourg, Germany

Beginning with CRPL-F26, publication of tables of so-called "provisional data," reported to the CRPL by telephone or telegraph was discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive it through established channels sooner than it reaches them in the F-series. Furthermore, having two sets of data, "provisional" and "final," for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series. Comments on this decision are invited.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records where spread echoes are present.

b. Omission of values where $f^{\circ}F2$ is less than or equal to $f^{\circ}F1$, leading to erroneously high values of monthly averages or median values.

c. Omission of values where critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the chart since some smoothing of the contours is necessary to allow for the longitude effect within a zone.

Discrepancies between predicted and observed values are often ascribable to these effects.

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in Tables 85 to 96 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

IONOSPHERE DISTURBANCES

Table 97 presents ionosphere character figures for Washington, D.C., during December 1946, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with American magnetic K-figures, which are usually covariant with them.

Table 98 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during December 1946.

Table 99 lists for the station whose location is given the sudden ionosphere disturbances observed at the Brentwood, England receiving station of Cable and Wireless Ltd. during November 1946.

Table 100 gives provisional radio propagation quality figures for North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, November 1946, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day American geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances October 1943 through October 1945," issued 1 Feb. 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Currently, beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales rather than, as hitherto, from the conversion scales of report IRPL-R13, "Ionospheric and Radio Propagation Disturbances, October 1943 through February 1945," issued 24 May 1945.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half-day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question.

Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency usage is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all of the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half-day in either of the two general areas.

AMERICAN RELATIVE SUNSPOT NUMBERS

Table 101 presents the daily median values of relative sunspot numbers as reported by American observers for December 1946. The reports have been reduced, by appropriate constants, approximately to the Zurich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. This method was devised by Mr. A. H. Shapley while a member of the staff of the Department of Terrestrial Magnetism, Carnegie Institution of Washington. Details will be found in his article, "American Observations of Relative Sunspot Numbers in 1945 for Application to Ionospheric Prediction," Popular Astronomy, Vol. 54, No. 7, pp. 351-358, August 1946. The criteria for A observers have been modified slightly, beginning with September 1946. In order for an observer's report to be included in the American sunspot numbers, the mean deviation of the reduction factors for his observations for the four preceding months must have been within 15% of the 4-month running mean of his reduction factors, rather than within an interval of ±0.16 of that running mean. This avoids favoring observers with small reduction factors and discriminating against observers with large reduction factors. In addition sunspot numbers must have been reported for at least one-half of the month during three-quarters of the preceding year. This will tend to restrict the observers to those whose observations are consistent from month to month without rejecting the work of observers for whom weather conditions are unsatisfactory for observations during some months of the year.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

The intensities of the green (λ5303A), first red (λ6374A), and second red (λ6704A) lines of the solar corona as observed by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are tabulated for every 5° from astronomical north for each day on which observations were possible. An arbitrary intensity-scale of approximately 0 to 40 is used. To convert from astronomical north and to determine the

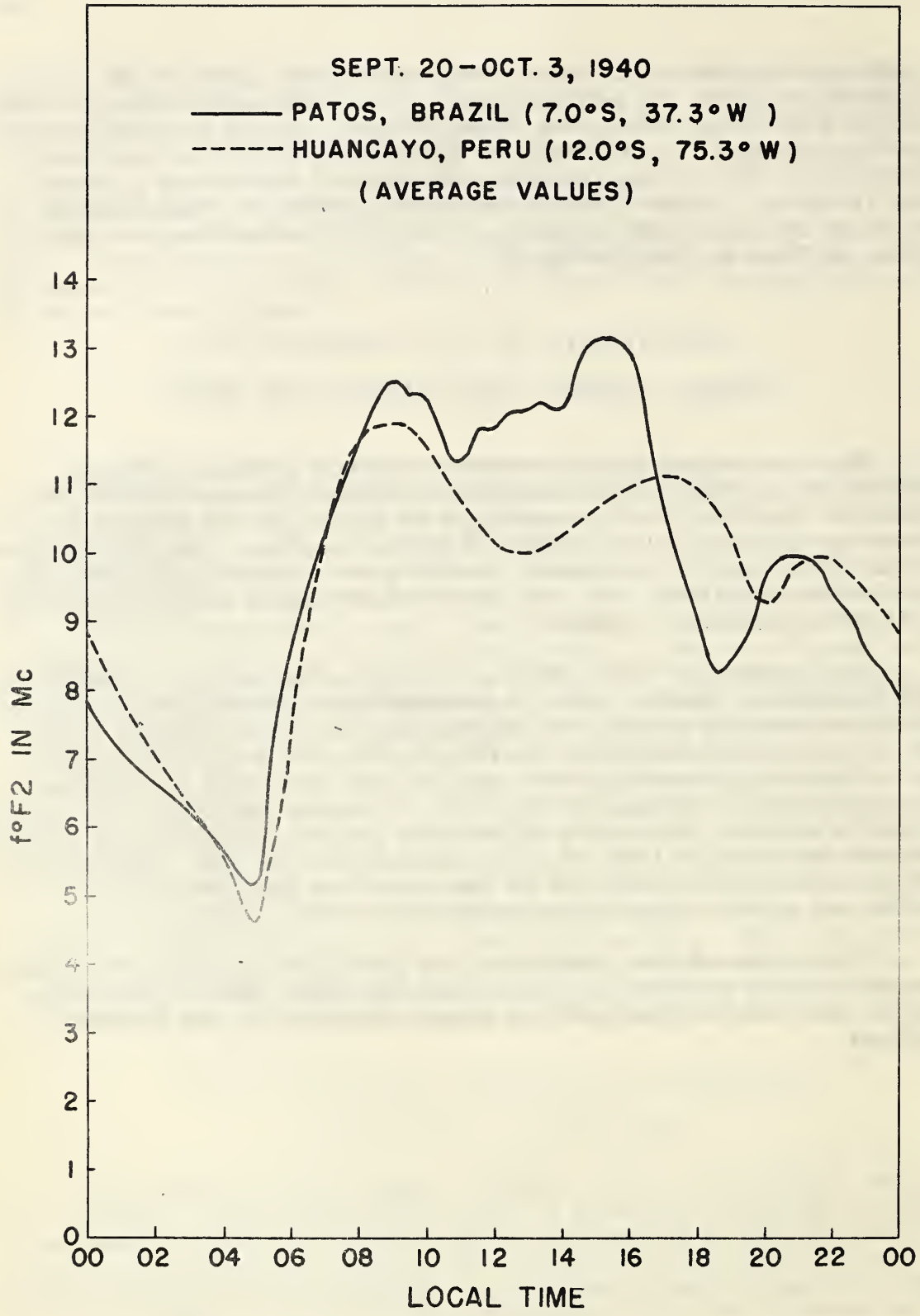
positions relative to the solar rotational equator subtract the algebraic value of the position-angle of the solar axis. This quantity varies from +26 to -26 degrees during the year, and is tabulated in the nautical almanacs. If observations are uncertain, the initials l.w. (low weight) will follow the date. The time of observation in hours GCT is listed. Dashes indicate that the intensity for that position is below the observable threshold. Absence of observation made at a given position is indicated by X.

COMPARISON OF f°F2 RECORDS FOR PATOS, BRAZIL AND HUANCAYO, PERU

The accompanying figure presents a graph of average values of f°F2 at Patos, Brazil, taken during the National Bureau of Standards-National Geographic Society expedition to Brazil for the purpose of observing the total solar eclipse of October 1, 1940. The equipment used, a portable automatic ionospheric recorder, was especially designed for use by the expedition. The data presented were taken from September 20, 1940 through October 3, 1940.

The location of Patos, Brazil, 7.0°S, 37.3°W, less than 3° north of the geomagnetic equator, makes it interesting to compare the data with those for the same period from Huancayo, Peru, located slightly south of the geomagnetic equator at 12.0°S, 75.3°W. The rapid drop in f°F2 occurring during the night hours and the even more rapid rise during the early morning hours, characteristic of records taken near the geomagnetic equator, are clearly in evidence for both stations in the figure. Between the hours of 1000 and 2200, local time, each major dip and rise of the Patos curve is repeated in the curve from Huancayo, with the minima and maxima occurring approximately two hours later.

It is believed that these data from Patos are the only ionospheric characteristics recorded to date, except for those taken at Huancayo, in the vast area of South America between Trinidad and the Falkland Islands.



COMPARISON OF f°F2 RECORDS FOR PATOS, BRAZIL AND HUANCAYO, PERU.

ERRATA

1. CRPL-F25: Delete Table 62 and Figs. 74 and 75.

2. CRPL-F28: Delete "25" under January 1946 for Sverdlovsk, U.S.S.R., pp. 13 and 14.

Table 1

Washington, D.C. (39.0°N, 77.5°W) — Decamber 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	(270)	4.5					2.6	2.8
01	(280)	4.5					2.3	2.8
02	270	4.6						2.8
03	260	4.6					2.2	2.8
04	(250)	4.4					2.6	2.8
05	245	4.2					2.6	2.9
06	250	4.0					2.4	2.9
07	240	5.1					2.8	3.1
08	230	8.2			110	2.1	2.7	3.2
09	220	(10.4)			110	2.8	3.0	(3.2)
10	220	11.3			110	(3.1)		3.1
11	230	11.7			110	(3.3)	3.6	3.1
12	220	12.0			100	(3.4)		3.0
13	230	12.0			110	(3.4)		3.0
14	230	11.6			110	(3.1)		2.9
15	230	11.5			110	2.8	2.9	2.9
16	220	11.3			110	2.2	2.4	3.0
17	220	10.2					2.4	3.0
18	220	8.9					2.4	2.9
19	230	(7.6)					2.4	(3.0)
20	230	(6.2)					2.4	(3.0)
21	230	5.4					2.5	3.0
22	(250)	4.8					2.4	2.9
23	(260)	4.7					2.4	2.9

Time: 75.0°W.
Sweep: 0.75 Mc to 11.5 Mc, automatic; supplemented when neceaeary by manual operation from 8.0 Mc to 17.0 Mc.

Table 2

Fairbanks, Alaeka (64.9°N, 147.8°W) — November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	315	3.0					5.4	2.8
01	336	3.0					5.0	2.6
02	350	3.7					5.5	2.6
03	350	4.2					4.6	2.6
04	360	4.0					5.0	2.6
05	320	4.0					3.6	2.6
06	315	3.8					3.2	2.6
07	300	4.2				1.2	3.2	2.8
08	260	5.0				1.8	3.0	2.9
09	250	6.8				2.0	2.9	3.1
10	245	8.2				2.1	3.0	3.0
11	248	9.7				2.2	3.0	3.1
12	240	10.6				2.3	3.0	3.0
13	240	10.9				2.2	3.0	3.0
14	230	11.2				2.0	2.9	3.1
15	230	10.5				1.6	3.0	3.0
16	230	9.4					3.0	3.0
17	240	7.6					3.0	3.0
18	245	5.4					3.0	3.0
19	260	4.5					3.0	3.0
20	265	3.4					3.0	3.0
21	300	3.0					3.2	3.0
22	285	2.6					3.1	2.9
23	300	2.4					3.4	2.9

Time: 150.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 3*

Adak, Alaska (51.9°N, 176.6°W) — November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	315	2.8						2.8
01								
02								
03								
04								
05								
06	268	3.1						2.9
07	240	5.6						3.1
08	225	8.6	220		125	2.2		3.5
09	225	10.9	220		120	2.6		3.4
10	220	12.2	210		120	2.9		3.3
11								
12	222	13.6	220		118	(3.0)		3.3
13	225	12.9	225		120	2.9		3.3
14	225	11.9			120	2.7		3.3
15								
16	210	9.0						3.3
17								
18	210	5.8						3.4
19	220	3.8						3.3
20	240	2.8						3.3
21	270	2.8						3.1
22	290	2.7						2.9
23	290	2.7						2.8

Time: 180.0°W.
Sweep: Manual operation.
*Obeervations taken: 06-10; 12-14; 16; 18-00.

Table 4

Ottawa, Canada (45.5°N, 75.8°W) — November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	4.5						2.9
01	280	4.4						2.9
02	285	4.1						2.9
03	290	3.8						2.9
04	280	3.6						3.0
05	280	3.5						3.0
06	290	3.4						3.0
07	240	5.4						3.0
08	230	8.2			120	2.4		3.1
09	220	10.4			120	2.7		3.1
10	220	11.6	210	4.0	110	3.0		3.0
11	220	12.2	215	4.4	110	3.2		3.0
12	225	12.6	215	4.4	110	3.2		3.0
13	220	12.6	220	4.2	120	3.2		2.9
14	220	12.5			115	3.0		3.0
15	220	12.0			120	2.6		3.0
16	220	11.8			110	2.2		3.1
17	220	11.2						3.0
18	220	10.0						3.0
19	230	8.1						3.0
20	240	7.0						2.9
21	260	5.8						2.9
22	270	5.3						2.9
23	275	4.9						3.0

Time: 75.0°W.
Sweep: 1.93 Mc to 13.5 Mc. Manual operation.

Table 5

Boston, Massachusetts (42.4°N, 71.2°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	5.1						2.7
01	300	5.0						2.6
02	290	4.8					1.6	2.7
03	298	4.6					1.4	2.6
04	275	4.3					1.3	2.7
05	275	4.0					1.3	2.7
06	275	4.1						2.7
07	265	6.8			142	2.2		3.0
08	250	9.6			142	2.7		3.0
09	250	11.8			140	3.0		3.0
10	255	12.3			140	2.8		3.0
11	260	13.0						2.9
12	260	13.0						2.9
13	265	13.1						2.9
14	260	12.6			132	2.9		2.9
15	255	12.5			135	2.6		2.9
16	250	11.8			145	2.4		2.9
17	250	11.0						2.8
18	250	9.6						2.8
19	255	7.8						2.8
20	270	6.8						2.7
21	282	6.0						2.7
22	300	5.8						2.7
23	300	5.5						2.7

Time: 75.0°W.
Sweep: 0.85 Mc to 13.75 Mc in 1 minute.

Table 6

San Francisco, California (37.4°N, 122.2°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	3.2						2.9
01	290	3.1						2.9
02	300	3.0						2.8
03	300	3.1						2.8
04	300	3.2						2.8
05	300	3.3						2.8
06	300	3.4						2.9
07	250	6.4			120	2.0		3.1
08	240	9.3			120	2.7		3.3
09	230	10.8		4.0	120	3.0		3.3
10	230	11.5	220	4.3	110	3.4		3.2
11	230	11.5	220	4.2	110	3.5		3.2
12	230	11.8	220	4.4	110	3.6		3.2
13	240	11.7			110	3.5		3.1
14	240	11.6			110	3.3		3.2
15	240	11.4			120	3.0		3.2
16	230	11.0			110	2.5		3.2
17	220	10.0					2.4	3.2
18	220	7.7						3.1
19	230	6.7						3.1
20	240	4.8						3.1
21	250	3.6						3.2
22	280	3.2						3.1
23	300	3.0						3.0

Time: 120.0°W.
Sweep: 0.8 Mc to 12.0 Mc in 6 minutes.

Table 7

White Sands, New Mexico (32.6°N, 106.5°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	3.6					3.2	
01	280	3.8					3.0	
02	280	3.7					3.1	
03	280	3.6					3.0	
04	280	3.6					3.0	
05		3.7					3.0	
06		3.6					3.0	
07		6.8				1.9	3.4	
08	240	10.0				2.7	3.7	
09		11.8				3.2	4.8	
10		12.1				3.5	4.3	
11		12.4				3.8		
12	255	12.2				3.8		
13		12.5				3.8	4.3	
14		12.5				3.6	4.2	
15		12.0				3.2	4.0	
16		11.5				2.5	3.9	
17		10.6				2.0	3.4	
18		9.4					3.3	
19		7.5					3.3	
20		5.5					3.4	
21		4.5					3.3	
22		4.0					3.2	
23		3.9					3.3	

Time: 105.0°W.
Sweep: .79 Mc to 14.0 Mc in 2 minutes.

Table 8

Wuchang, China (30.6°N, 114.4°E) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	275	5.5						2.8
01	260	5.4						2.9
02	265	4.5						3.0
03	270	4.5						3.0
04	260	4.0						2.9
05	270	3.3						2.8
06	300	3.5						2.7
07	250	7.4			120	(1.8)		3.1
08	240	10.2			120	2.6		3.3
09	240	12.4	230	4.1	120	3.0		3.2
10	240	12.5	230	4.2	120	3.4		3.2
11	230	13.1	220	4.5	120	3.4		3.1
12	240	13.4	220	4.6	120	3.5		3.0
13	240	14.0	220	5.8	110	3.6		3.0
14	250	14.5			120	3.4		3.0
15	240	14.0			120	3.2		3.0
16	240	14.0			120	2.8		3.0
17	230	13.4			110	2.5		3.0
18	220	12.0			100			3.1
19	225	9.7						3.1
20	230	9.0						3.1
21	230	8.0						3.1
22	240	7.0						3.0
23	250	6.0						2.9

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 9

Baton Rouge, Louisiana (30.5°N, 91.2°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	4.6						3.1
01	300	4.5						3.1
02	300	4.5						3.1
03	290	4.4						3.0
04	290	4.6						3.0
05	290	4.6						3.0
06	290	5.2						3.0
07	260	8.0	250	3.6	130	2.2		3.1
08	260	9.2	250	4.2	120	2.7		3.2
09	250	9.5	245	4.6	120	3.2		3.2
10	260	9.7	240	5.0	120	3.5		3.3
11	260	9.8	240	5.1	120	3.6		3.3
12	260	D	240	5.2	120	3.6		(3.3)
13	260	D	240	5.2	120	3.6		(3.3)
14	260	D	240	5.0	120	3.5		(3.3)
15	260	9.8	240	4.8	120	3.1		3.3
16	250	9.6	240	4.2	120	2.6		3.3
17	260	9.4	250	3.5	130	2.2		3.2
18	250	9.2						3.1
19	250	8.0						3.1
20	250	7.0						3.1
21	260	6.0						3.0
22	270	4.9						3.0
23	280	4.7						3.1

Time: 90.0°W.
Sweep: 1.9 Mc to 9.8 Mc in 3 minutes, 30 seconds.

Table 10

Maui, Hawaii (20.8°N, 156.5°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06	288	8.0	285	4.2		2.4		3.0
07	278	11.0	270	4.6		3.0	3.4	3.1
08	280	12.0	252	5.2		3.4	6.0	3.0
09	280	13.5	250	5.6		3.7	6.0	3.0
10	285	14.0	240	5.5		3.8	4.8	2.9
11	315	14.8	240	5.4		3.9	4.7	2.8
12	315	15.2	250	6.4		3.8	4.8	2.8
13	320	15.0	240	6.6		3.9	5.2	2.8
14	325	15.0	250	6.6		3.8	4.2	2.8
15								
16								
17								
18	300	8.7	268					3.2
19								
20								
21								
22								
23								

Time: 150.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 11

San Juan, Puerto Rico (18.4°N, 66.1°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		5.7						2.9
01		5.1						2.9
02		4.6						2.9
03		4.1						2.9
04		3.8						2.6
05		3.8						2.6
06		4.2						2.7
07	270	8.2						2.9
08	270	10.6		3.1				3.0
09	290	11.4				3.2		3.0
10	290	11.5				3.4		3.0
11	295	11.4				3.6		2.9
12	305	11.4	235	4.8		3.7		2.8
13	305	11.2				3.7		2.8
14	300	11.0				3.5		2.8
15	300	10.7				3.3		2.8
16	280	10.2						2.8
17	275	10.0						3.0
18	270	9.2						3.0
19	285	7.8						2.8
20		7.0						2.8
21		7.1						2.9
22		6.8						2.9
23		6.4						2.9

Time: 60.0°W.
Sweep: 2.8 Mc to 14.0 Mc in 8 minutes.

Table 12

Trinidad, Brit. West Indies (10.6°N, 61.2°W) November 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	230	6.9						3.3
01	220	5.5						3.4
02	230	4.4						3.3
03	255	3.4						3.1
04	290	3.2						2.8
05	270	3.6						3.0
06	260	5.7					2.2	3.1
07	230	9.5			120	2.5	3.0	3.3
08	240	12.0	220	4.5	100	3.1	3.8	3.2
09	260	13.5	220	5.0	110	3.5	4.0	3.2
10	260	14.0	220	5.2	110	3.8	4.3	3.1
11	270	13.6	220	5.3	110	3.9	4.4	3.0
12	280	13.4	220	5.5	110	4.0	4.4	3.0
13	280	13.0	220	5.6	110	3.8	4.7	2.9
14	280	12.6	220	5.4	110	3.7	4.6	2.9
15	280	12.2	220	5.3	110	3.4	4.5	2.8
16	250	12.2	220	4.5	110	2.9	4.0	2.8
17	250	12.4			110	2.5	3.2	2.9
18	240	12.0					3.0	3.0
19	230	11.0					2.6	3.1
20	230	9.8					2.2	3.0
21	250	9.6						3.0
22	240	9.6						3.1
23	220	8.4						3.3

Time: 60.0°W.
Sweep: Manual operation.

Table 13

Burghead, Scotland (57.7°N, 3.5°W) October 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		4.8						
01		5.2						
02		5.4						
03		5.2						
04		5.0						
05		4.8						
06		4.5						
07		5.8						
08		7.2						
09		7.8						
10		7.9						
11		8.0						
12		8.0						
13		8.0						
14		8.0						
15		8.0						
16		7.9						
17		7.9						
18		7.8						
19		7.6						
20		6.7						
21		5.7						
22		5.4						
23		5.1						

Time: Local.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 14

Adak, Alaska (51.9°N, 176.6°W) October 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	305	3.3						2.9
01								
02								
03								
04								
05								
06	265	4.7			115			3.0
07	232	7.2	220		120		2.3	3.4
08	235	9.3	215		120	2.7	2.8	3.4
09	238	10.6	210		120	3.0	3.4	3.5
10	245	12.0	210		120	3.0	4.0	3.3
11								
12	250	12.5	205		115	3.2	3.1	3.3
13	245	12.4	210		115	3.2	3.4	3.4
14	240	11.5	212		115	3.0		3.4
15								
16								
17								
18	205	7.3						3.5
19	215	5.5					2.2	3.5
20	230	4.2						3.4
21	245	3.7						3.1
22	270	3.5						3.0
23	290	3.2						2.9

Time: 180.0°W.
Sweep: Manual operation.

Table 15

St. John's, Newfoundland (47.6°N, 52.7°W) October 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	(245)	(6.1)					2.2	(3.2)
01	(240)	(5.6)					3.2	(3.2)
02	230	(5.4)					3.0	(3.3)
03	(220)	(5.0)					3.1	(3.4)
04	(210)	(4.8)					2.5	(3.3)
05							2.7	
06	(230)	(4.9)						(3.4)
07	200	6.8	195	3.6			2.6	3.7
08	200	8.3	190	4.1	90	2.5		3.8
09	200	9.3	175	3.9	80	2.8		3.7
10	220	9.9	180	4.2	90	3.0	3.0	3.7
11	210	10.5	170	4.2	80	3.1		3.6
12	210	10.8	180	4.2	80	3.2		3.6
13	210	10.8	180	4.4	80	3.2		3.6
14	220	10.8	190	4.5	80	3.2		3.6
15	210	10.6	190	4.2	80	2.9		3.5
16	220	10.5	190	4.0	80	2.6		3.6
17	200	10.4	170	4.4	95	2.2		3.6
18	190	9.9					2.3	3.6
19	180	8.0					2.4	3.6
20	(190)	(7.1)						(3.4)
21	(200)	(6.9)					2.7	(3.3)
22	(240)	(6.3)						(3.2)
23	(240)	6.1					2.5	3.2

Time: 52.5°W.
Sweep: Manual operation.

Table 16

Wuchang, China (30.6°N, 114.4°E) October 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	6.6					2.3	3.0
01	260	6.1					2.6	3.0
02	250	5.6					2.0	3.0
03	240	5.3						3.1
04	220	4.4						3.0
05	280	3.9						2.8
06	280	4.2						2.9
07	220	9.2			120	2.4		3.5
08	220	11.0			100	2.8		3.5
09	220	11.5			100	3.2		3.2
10	220	12.5	210	5.3	100	3.4		3.2
11	220	13.5	200	5.0	100	3.6		3.1
12	230	13.5	195	5.6	100	3.6		3.1
13	240	14.5	210	5.4	100	3.4		3.1
14	245	15.0	215	5.8	100	3.6		3.0
15	230	14.2	220	4.8	105	3.3		3.1
16	230	14.2	220	4.8	105	2.9		3.0
17	230	13.5			100	2.5		3.1
18	220	12.5			100	(2.0)	2.7	3.2
19	220	10.5					2.8	3.1
20	230	9.4					2.8	3.0
21	235	8.9					2.8	3.1
22	240	7.7					3.2	3.1
23	240	7.0					2.6	3.0

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc. Manual operation.

Table 17

Maui, Hawaii (20.8°N, 156.5°W) October 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	6.6						3.0
01	250	5.0						3.1
02	215	5.2						3.0
03	350	3.6						2.8
04	400	2.6						2.6
05	380	2.7						2.5
06	270	5.4						3.0
07	250	9.0		2.8				3.0
08	300	11.2						2.9
09	270	11.4		5.0				2.8
10	300	12.4	250	5.2				2.6
11	350	12.7	250	5.3				2.8
12	350	12.8	250	5.2				3.0
13	320	13.2	240	5.2				3.1
14	300	13.1	200	4.8				3.2
15	300	12.8	245	4.6				2.9
16	250	12.5						3.1
17	250	12.7						3.1
18	250	12.2						3.0
19	245	11.0						3.0
20	250	10.2						2.9
21	255	9.7						2.9
22	270	7.4						3.0
23	250	8.5						3.0

Time: 150.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 18

Tromsø, Norway (69.7°N, 18.9°E) September 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06		(6.1)						
07	(270)	(6.5)				2.7		
08	(258)	6.6				2.6		
09	(290)	(6.7)		4.5		2.8		
10	(327)	6.8		4.2		3.0		
11	320	(6.9)		4.3		3.0		
12	278	6.8		4.6		3.1		
13	277	7.3				3.0		
14	(261)	7.0				2.7		
15	256	6.9				2.5		
16	264	(6.4)				2.4		
17	(258)	6.4				2.4		
18	(280)	(5.8)				2.8		
19	(275)	(5.7)						
20	(295)	(5.2)						
21								
22								
23								

Time: 0.0°.
Sweep: 0.8 Mc to 11.4 Mc in 5 minutes.

Table 19

Burghead, Scotland (57.7°N, 3.5°W) September 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.1						
01		5.1						
02		4.8						
03		4.6						
04		4.6						
05		4.3						
06		5.0						
07		5.9						
08		6.3						
09		7.1						
10		7.4						
11		7.5						
12		7.5						
13		7.6						
14		7.8						
15		7.8						
16		7.9						
17		7.8						
18		7.7						
19		7.6						
20		7.3						
21		6.7						
22		6.0						
23		5.4						

Time: Local.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 20

Portage la Prairie, Manitoba (49.9°N, 98.3°W) September 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	3.4						2.7
01	300	3.0					2.0	2.7
02	305	2.9					2.7	2.6
03	(305)	(3.4)					2.3	2.6
04	310	2.5					(2.4)	2.8
05	280	2.9					2.0	2.8
06	270	4.0			100			3.1
07	250	5.0			110	2.2		3.1
08	280	5.2	225	4.0	110	2.6		3.1
09	310	6.2	215	4.3	100	3.0		2.9
10	345	7.2	210	4.6	100	3.2		3.0
11	340	7.0	200	4.7	100	3.3		2.9
12	350	7.6	210	4.8	100	3.4		2.8
13	350	7.6	220	4.8	100	3.5		2.8
14	315	7.6	220	4.8	105	3.3		2.8
15	330	7.6	215	4.6	110	3.3		2.8
16	265	7.1	240	4.2	100	3.0		3.0
17	265	7.0	240		110	2.6		2.9
18	250	7.0			130	2.2		3.0
19	240	6.4						3.0
20	240	6.4					1.7	3.0
21	240	6.0					2.8	3.0
22	250	4.7					3.0	3.0
23	250	3.8						3.0

Time: 90.0°W.
Sweep: 1.2 Mc to 16.0 Mc in approximately 2 minutes.

Table 21

Okinawa I. (26.3°N, 127.8°E) September 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		9.3						2.7
01		8.8						2.7
02		7.7						2.7
03		7.3						2.8
04		6.1						2.8
05		5.4						2.8
06		6.1						2.8
07		8.6				(2.3)		3.3
08		9.2				2.9		3.2
09		9.6				3.3		3.0
10		10.7				3.6		2.8
11		12.4				3.8		2.8
12		13.7				3.9		2.8
13		13.7				3.9		2.8
14		14.2				3.7		2.8
15		14.2				3.6		2.9
16		14.2				3.4		2.9
17		13.7				(3.0)		3.0
18		13.5						3.0
19		11.8						2.9
20		11.9						2.7
21		11.0						2.6
22		10.6						2.6
23		10.1						2.7

Time: 135.0°E.
Sweep: Manual operation.

Table 22

Leyte, Philippine Is. (11.0°N, 125.0°E) September 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		10.6					3.1	3.0
01		10.2					2.5	3.1
02		9.0					1.8	3.2
03		7.5					2.1	3.2
04		6.2					2.9	3.1
05		5.4					2.7	3.2
06		4.2					2.7	3.1
07		7.4				2.2	3.8	3.0
08		10.3				3.0	5.9	2.9
09		11.6				3.5	5.6	2.6
10		12.1				4.0	8.4	2.4
11		12.0					8.2	2.4
12		11.4					9.0	2.3
13		11.6					7.8	2.3
14		12.0					8.0	2.3
15		12.6					5.7	2.4
16		12.8					7.0	2.4
17		12.3					6.3	2.4
18		11.7				2.4	5.0	2.3
19		10.8					3.4	2.3
20		10.3						2.3
21		10.3					1.8	2.5
22		10.4					2.3	2.7
23		10.3					3.3	2.8

Time: 135.0°E.
Sweep: Manual operation; lower limit of frequency 1.6 Mc.

Table 23

Brisbane, Australia (27.5°S, 153.0°E) September 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	6.4						2.8
01	280	5.8						2.8
02	275	5.4						2.9
03	300	4.8						2.7
04	305	4.6						2.7
05	300	4.4						2.8
06	260	5.6						3.0
07	240	8.5			112	2.7		3.2
08	240	9.7	230		110	3.1		3.1
09	260	10.2	220	5.0	110	3.5		3.1
10	280	10.7	220	5.2	105	3.6		3.0
11	285	10.8	210	5.1	105	3.7		2.9
12	290	10.5	210	5.2	100	3.8		2.9
13	290	10.3	210	5.0	105	3.7		2.9
14	285	9.8	220	4.8	102	3.6		2.9
15	270	9.4	220	4.6	110	3.3		2.9
16	240	8.9	225		115	2.8		3.0
17	240	8.7						2.9
18	240	8.2						2.9
19	260	7.7						2.8
20	280	7.5						2.7
21	280	7.4						2.8
22	280	7.1						2.8
23	280	7.0						2.8

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2 minutes 30 seconds.

Table 24

Cape York, Australia (11.0°S, 142.4°E) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	210	7.8					2.1	
01	200	5.8					2.1	(3.2)
02	200	4.0					2.1	(3.3)
03	250	3.0					2.0	
04	252	3.0					2.1	
05	270	3.0					2.1	
06	270	3.2					2.1	(2.9)
07	250	7.0				(2.0)	2.9	(3.3)
08	250	9.5	230			2.9	3.0	
09	260	11.6	210			3.3	3.7	
10	260	12.4	205	5.3		3.6	4.5	
11	270	12.2	200	5.4		3.7	4.6	(3.2)
12	300	11.9	200	5.6		3.8	4.6	
13	300	11.8	200	5.6		3.8	4.5	
14	300	11.3	200	5.5		3.8	4.4	
15	325	11.0	200	5.7		3.7	3.9	
16	300	10.6	210	5.5		3.4	4.5	
17	278	10.5	250			3.0	3.9	
18	250	10.1				2.2	3.5	
19	250	9.8					3.5	
20	250	10.0					3.2	
21	230	9.2					2.9	
22	230	8.0					2.3	
23	225	8.6					2.2	

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute, 55 seconds.

Table 25

Townsville, Australia (19.4°S, 146.5°E) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	5.3					2.4	3.1
01	240	5.0					2.7	3.2
02	235	4.3					2.4	3.2
03	225	3.6					2.5	3.0
04	265	3.6					2.6	2.7
05	275	3.6					2.5	2.7
06	285	3.9					2.4.	2.9
07	250	7.2			130	2.1	2.8	3.3
08	250	9.0	240	5.0		2.9	3.0	3.3
09	260	9.6	235	5.0		3.3	3.3	3.3
10	270	10.0	230	5.3		3.6	3.0	(3.2)
11	270	10.0	210	5.3	110	3.7	3.0	3.2
12	275	9.3	210	5.2		3.7	3.2	3.1
13	282	9.5	200	5.5		3.7	3.2	3.0
14	290	9.5	200	5.4		3.6	3.2	3.0
15	270	9.2	215	5.0		3.5	3.7	3.1
16	250	9.0	220	5.0		3.1	3.1	3.1
17	250	8.6				2.6	3.1	3.1
18	240	8.0				1.8	3.2	3.1
19	240	7.7					2.9	3.1
20	230	6.8					2.9	2.9
21	250	6.1					2.8	2.9
22	250	6.2					2.8	3.0
23	240	6.0					2.4	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute, 55 seconds.

Table 26 (Supersedes Table 13, CRPL-F25)

Brisbane, Australia (27.5°S, 153.0°E) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	5.2						3.0
01	270	4.8						3.0
02	280	4.7						3.0
03	270	4.4						3.0
04	300	4.0						2.8
05	290	4.2						2.9
06	280	4.6						3.0
07	230	7.5						3.3
08	230	9.0			120	2.8		3.2
09	260	9.9	225		115	3.3		3.2
10	270	10.3	220	5.2	110	3.5		3.2
11	270	10.3	220	5.0	110	3.6	3.6	3.1
12	280	9.5	210	5.1	110	3.7	3.8	3.1
13	280	9.3	210	5.2	115	3.6	3.8	3.0
14	280	9.2	215	5.0	112	3.5	3.6	3.1
15	260	9.0	220		120	3.3	3.2	3.0
16	240	8.5	225		115	2.7		3.1
17	240	8.0						3.1
18	240	7.3						3.0
19	250	6.5						3.0
20	270	6.0						2.8
21	280	5.8						2.9
22	280	5.5						2.9
23	290	5.3						2.9

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2 minutes, 30 seconds.

Table 27

Canberra, Australia (35.3°S, 149.0°E) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	4.4						2.8
01	300	4.4						(2.8)
02	300	4.2						(2.7)
03	300	4.1						(2.8)
04	300	4.0					2.2	2.7
05	300	3.8						(2.7)
06	300	3.6						(2.7)
07	250	5.5				2.0		3.0
08	250	7.8	250	4.1	115	2.6		3.0
09	270	8.8	250	4.3	110	3.0		3.0
10	270	8.9	250	4.5	110	3.3		3.0
11	295	9.2	240	4.5	100	3.5		3.0
12	285	9.0	245	4.6	100	3.6		3.0
13	300	9.0	240	4.5	100	3.5		3.0
14	290	9.0	240	4.5	110	3.4		3.0
15	270	8.5	240	4.1	110	3.1		3.0
16	260	8.4	250	4.0	110	2.9		3.0
17	250	7.6			120	2.1		3.0
18	250	6.6						3.0
19	250	5.9						2.8
20	270	5.5						2.8
21	280	5.2						2.8
22	300	4.6						2.7
23	300	4.5						2.7

Time: 150.0°E.
Sweep: 1.6 Mc to 12.5 Mc in 2 minutes.

Table 28

Hobart, Tasmania (42.8°S, 147.4°E) August 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	255	3.9					1.7	3.0
01	250	3.5						3.0
02	255	3.4					2.4	3.1
03	250	3.1					2.5	3.1
04	250	2.8					2.5	3.1
05	242	2.8					2.0	3.1
06	250	2.7					1.5	3.1
07	248	4.2			162	1.7	2.1	3.3
08	230	6.8			110	2.3	2.5	3.5
09	230	7.9	225		100	2.8	2.8	3.4
10	250	8.6	220		100	3.2	3.4	3.3
11	250	9.2	220	4.4	100	3.3	3.2	3.3
12	250	9.6	208	4.7	100	3.4	3.4	3.3
13	250	9.6	210	4.6	100	3.3	3.5	3.2
14	250	9.3	200	4.5	100	3.2	3.5	3.2
15	250	9.1	210	4.0	100	3.0	3.2	3.2
16	240	9.0	230		100	2.5	2.8	3.2
17	225	8.6			120	2.0	2.6	3.2
18	220	7.5					2.5	3.1
19	225	6.8					2.1	3.1
20	230	5.6					2.4	3.1
21	240	5.0						3.0
22	250	4.6						3.0
23	250	4.2						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute, 55 seconds.

Table 29

Burghead, Scotland (57.7°N, 3.5°W) July 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		6.4						
01		6.5						
02		6.1						
03		5.7						
04		5.6						
05		5.6						
06		6.4						
07		6.4						
08		6.6						
09		6.7						
10		6.7						
11		6.8						
12		6.8						
13		7.0						
14		6.9						
15		7.0						
16		7.0						
17		7.1						
18		7.1						
19		7.3						
20		7.2						
21		7.0						
22		7.2						
23		6.7						

Time: 0.0°.
Sweep: 1.0 Mc to 13.0 Mc. Manual operation.

Table 30*

Slough, England (51.5°N, 0.6°W) July 1946

Time	**	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	393	6.1					1.5	2.6
01	287	5.5					1.6	2.6
02	392	5.0					3.2	2.6
03	380	4.8					2.6	2.6
04	358	4.8					2.8	2.7
05	360	5.3					2.1	2.7
06	336	5.7						2.8
07	326	6.4					3.0	2.9
08	330	6.6						2.8
09	350	6.8					4.6	2.8
10	336	6.9					4.4	2.8
11	337	6.8					4.0	2.8
12	351	6.8					3.5	2.7
13	370	7.0						2.7
14	360	7.0						2.7
15	358	7.0						2.7
16	350	7.1						2.7
17	347	7.1						2.8
18	342	7.2						2.8
19	327	7.5					3.7	2.9
20	334	7.3					3.1	2.8
21	360	7.2					2.8	2.7
22	374	7.0					2.5	2.6
23	389	6.6					2.5	2.5

Time: 0.0°.
Swaep: 0.5 Mc to 16.0 Mc in 4 minutee.
*Madian valuee except F2-M3000, which are computed from average values.
**Height at 0.83 f°F2.

Table 31

Fribourg, Germany (48.0°N, 7.8°E) July 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00		6.3					2.5	
01		5.8					2.5	
02		5.8					2.0	
03		5.3					2.0	
04		5.3					3.0	
05		5.3					3.5	
06		6.3					4.0	
07		6.8					4.0	
08		6.8					5.0	
09		6.8				3.5	5.0	
10		6.3					5.2	
11		6.5				3.5	4.2	
12		6.8				3.5	4.0	
13		6.8				3.5	4.0	
14		6.8				3.5	4.0	
15		6.8				3.5	4.0	
16		6.8					4.0	
17		6.8					4.0	
18		7.3					4.5	
19		7.3					3.5	
20		7.3					3.5	
21		6.8					5.5	
22		6.8					3.0	
23		6.3					3.0	

Time: 7.5°E.
Swaep: 2.0 Mc to 11.5 Mc. Manual operation.

Table 32

Falkland Ie. (51.7°S, 57.7°W) July 1946

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	*	F2-M3000
00		3.0						2.7
01		3.0						
02		2.9						2.7
03		3.0						
04		3.0						2.8
05		3.0						
06		2.6						
07		3.5						
08		6.3					2.6	3.2
09		7.6					3.0	
10		7.8					3.5	3.4
11		8.1					3.6	
12		8.1					3.8	3.4
13		7.8					3.8	
14		7.7					3.8	3.4
15		6.8					3.1	
16		5.9					3.3	3.2
17		4.6					2.9	
18		3.7						3.2
19		3.2						
20		2.8						3.2
21		2.8						
22		2.8						
23		2.9						

Time: 60.0°W.
Sweep: Manual oparation.
*"Extent of E."

Table 33

White Sands, New Mexico (32.6°N, 106.5°W) June 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	5.5					3.4	2.8
01	265	5.4					3.6	2.8
02	280	4.9					3.5	2.8
03	280	4.9					3.4	2.8
04	280	4.3					3.6	2.8
05	275	4.7	230		105	(1.9)	3.6	2.9
06	320	5.0	220	4.0	110	2.6	4.3	2.9
07	400	5.6	220	4.3	105	(3.0)	4.7	2.7
08	390	5.8	210	4.7	110	3.3	4.8	2.8
09	380	(6.5)	200	(4.8)	110	(3.5)	4.8	2.7
10	(380)	(6.7)	205	(5.0)	110	(3.7)	5.0	2.9
11	(420)	(6.7)	200	5.0	105	(3.7)	4.9	2.8
12	(380)	(6.8)	(220)	(5.0)	110	(3.8)	4.8	2.9
13	(360)	(7.0)	220	5.0	110	(3.7)	4.8	2.8
14	340	(6.9)	220	(5.0)	110	(3.7)	4.4	
15	345	(7.2)	220	4.9	110	(3.5)	4.2	2.9
16	350	7.0	220	(4.7)	110	3.4	4.6	2.7
17	325	6.8	230	4.5	110	3.2	4.1	2.8
18	300	6.8	230	(3.8)	100	(2.6)	4.2	2.9
19	260	6.9			110		4.7	3.0
20	250	(6.8)					3.9	2.9
21	240	(6.2)					4.4	2.9
22	280	5.8					3.8	2.8
23	295	5.5					4.4	2.7

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes.

Table 34 (Supersedes Table 17, CRPL-F23)

Watheroo, W. Australia (30.3°S, 115.9°E) May 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	3.7					3.2	2.8
01	260	3.6					3.5	2.8
02	265	3.8					3.3	2.8
03	260	3.6					3.3	2.9
04	250	3.7					3.2	3.0
05	240	3.2					3.3	3.0
06	260	3.0					3.2	2.9
07	240	5.5				1.9	3.7	3.3
08	240	7.8				2.5	3.7	3.4
09	250	9.0	235	4.6		3.0	3.9	3.2
10	265	10.4	240	5.0		3.2	4.0	3.2
11	260	10.3	230	4.8		3.3	4.9	3.2
12	265	10.4	225	4.8		3.4	4.6	3.1
13	270	10.6	225	4.6		3.3	4.4	3.0
14	265	10.5	220	4.5		3.2	4.4	3.1
15	260	10.6	232	4.3		3.0	4.2	3.1
16	240	10.2				2.6	3.5	3.1
17	230	9.4				1.9	3.9	3.2
18	220	7.0					3.8	3.2
19	230	5.0					3.3	3.1
20	240	4.0					3.2	3.0
21	250	3.8					3.2	3.0
22	260	3.6					3.2	2.9
23	260	3.7					3.6	2.8

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 35

Loshan, China (29.5°N, 103.7°E) April 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	8.5						3.0
01	240	8.2						3.0
02	220	7.8						3.2
03	220	5.7						3.1
04	230	5.0						3.0
05	250	5.0						2.9
06	230	6.8			120	2.3		3.2
07	220	8.3			100	2.6		3.3
08	230	9.5	220	5.2	100	3.2		3.2
09	260	10.0	210	5.2	100	3.5		3.0
10	275	12.0	200	5.3	100	3.8		3.0
11	300	13.5	200	5.4	100	3.6		2.9
12	300	14.5	210	5.4	100	3.6		3.0
13	290	14.8	220	5.4	110	3.4		3.0
14	290	14.7	220	5.5	100	3.4		3.0
15	280	14.0	220	5.2	100	3.4		3.0
16	270	13.5	220	4.9	100	3.4		3.1
17	250	13.2	230	4.0	110	2.8		3.1
18	250	12.0			110	2.4		3.2
19	230	11.5			100		3.9	3.1
20	230	10.0			100		2.9	3.0
21	250	9.0						2.9
22	270	8.8					2.4	3.0
23	270	8.6					2.2	3.0

Time: 105.0°E.
Sweep: Manual operation.

Table 36

Bukhta Tikhaya, U.S.S.R. (80.3°N, 52.7°E) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	220	5.4						
01	220	4.2						
02								
03								
04								
05								
06								
07								
08								
09								
10	240	6.2						
11								
12	240	6.2						
13								
14	220	5.7						
15								
16								
17								
18								
19	230	5.8						
20								
21								
22	210	5.9						
23								

Time: 60.0°E.
Sweep: 1.5 Mc to 9.5 Mc in 5 to 10 minutes. Manual operation.

Table 37

Leningrad (WETKAS), U.S.S.R. (60.0°N, 30.3°E) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	3.9						
01	340	3.8						
02	320	3.7						
03	320	3.8						
04	320	3.8						
05	320	3.6						
06	270	4.0			120	1.8		
07	250	5.0			120	1.9		
08	250	5.8			120	2.2		
09	240	6.5			120	2.6		
10	240	7.0			120	2.8		
11	250	7.9			120	2.9		
12	240	8.4			120	3.0		
13	230	8.3			120	3.0		
14	240	8.6			120	2.9		
15	240	8.2			120	2.7		
16	250	8.4			120	2.5		
17	250	7.9			120	2.1		
18	240	7.5			120	1.8		
19	240	6.8			120	2.0		
20	240	5.9						
21	260	5.0						
22	270	4.4						
23	310	4.0						

Time: 30.0°E.
Sweep: Manual operation.

Table 38

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	310	4.1						
01	320	3.8						
02	320	3.7						
03	320	3.6						
04	320	3.5						
05	300	3.4						
06	270	4.1			140	1.9		
07	250	5.6			130	2.1		
08	240	7.2	230	3.9	120	2.5		
09	240	8.3	240	4.2	120	2.8		
10	240	9.2	230	4.3	120	3.0		
11	230	10.0	220	4.4	120	3.2		
12	230	10.1	220	4.4	120	3.2		
13	240	10.1	220		120	3.2		
14	230	10.1	220	4.4	120	3.1		
15	240	9.8	240		120	2.9		
16	240	9.3			130	2.6		
17	240	8.9			140	2.2		
18	240	8.4			140	1.7		
19	240	7.4						
20	250	6.2						
21	260	5.1						
22	270	4.6						
23	300	4.4						

Time: 60.0°E.
Sweep: 1.5 Mc to 14.0 Mc in 5 to 13 minutes. Manual operation.

Table 39*

Tomsk, U.S.S.R. (56.5°N, 84.9°E) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	280	4.1						
01	300	3.8						
02	300	3.7						
03	300	3.5						
04	300	3.4						
05	290	3.3						
06	260	3.6						
07	250	5.4			110	1.8		
08	240	6.8			110	2.2		
09	250	8.1			110	2.7		
10	260	8.6				2.9		
11		9.1						
12		9.1				3.2		
13		9.0						
14	260	8.9						
15	280	9.0			100	2.9		
16	250	8.4			100	2.8		
17	240	8.5			100	2.5		
18	230	8.2			100	2.0		
19	230	7.8						
20	220	7.0						
21	230	6.0						
22	250	4.9						
23	260	4.4						

Time: 90.0°E.
Sweep: 1.2 Mc to 10.0 Mc in 5 to 10 minutes. Manual operation.
*Average values instead of median as for most other stations.

Table 40

Moscow (Kraenaja Pakhra), U.S.S.R. (55.5°N, 37.3°E) March 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		3.7						2.7
01		3.5						2.7
02		3.3						2.7
03		3.2						2.8
04		2.8						2.8
05		2.8						2.9
06	240	4.2						3.1
07	220	5.8	220		100	2.4		3.2
08	220	7.1	210	4.1	100	2.6		3.2
09	240	8.2	210	4.1	90	2.8		3.1
10	240	9.2	200	4.6	90	3.0		3.2
11	240	9.6	200	4.3	90	3.1		3.0
12	240	10.1	190	4.3	90	3.1		3.1
13	240	10.0	200	4.3	90	3.1		3.1
14	230	10.0	200	4.2	90	3.0		3.2
15	230	9.5	200	4.0	100	2.7		3.2
16	220	9.2			100	2.4		3.2
17	220	8.5			110	2.2		(3.2)
18	220	8.2						(3.2)
19	210	7.0						(3.1)
20	220	5.3						3.0
21	240	4.6						2.8
22	240	4.3						2.8
23	260	4.1						2.7

Time: 30.0°E.
Sweep: 2.2 to 16.0 Mc in 50 seconds.

Table 41

Chite, U.S.S.R. (52.0°N, 113.5°E) March 1946

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	360	5.6						
01	350	5.1						
02	360	5.5						
03	360	5.1						
04	370	4.7						
05	380	4.4						
06	380	4.5						
07	300	4.7						
08	270	7.6						
09	280	9.1						
10	260	9.5						
11	250	7.5						
12	250	9.7						
13	250	9.1						
14	250	9.2						
15	250	10.7						
16	260	10.2						
17	260	10.2						
18	270	9.1						
19	300	9.3						
20	290	8.2						
21	300	6.5						
22	300	6.1						
23	310	6.0						

Time: 120.0°E.
Sweep: Manuel operetion.

Table 42

Alma Ata, U.S.S.R. (43.2°N, 76.9°E) March 1946

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	240	4.4						
01	220	4.3						
02	240	4.3						
03	230	4.3						
04	220	4.5						
05	200	4.6						
06	200	5.2			100	2.3		
07	200	7.9			100	2.6		
08	200	9.2			100	2.8		
09	200	10.2			100	3.2		
10	200	10.7			100	3.4		
11	200	11.5			100	3.4		
12	200	11.8			100	3.6		
13	200	11.2			100	3.6		
14	200	11.0			100	3.4		
15	200	10.6			100	3.2		
16	200	10.4			100	3.1		
17	200	9.4			100	2.7		
18	200	8.4			100	2.3		
19	200	7.6			100	2.3		
20	210	6.7						
21	200	5.2						
22	220	4.2						
23	220	4.0						

Time: 75.0°E.
Sweep: 2.0 Mc to 14.0 Mc in 10 to 20 minutes. Manual operation.

Teble 43 (Supereedee Table 10, IRPL-F20)

Loshan, China (29.5°N, 103.7°E) March 1946

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	250	7.2						2.9
01	240	6.6						3.0
02	240	6.2						3.0
03	230	5.8						3.1
04	230	4.8						3.2
05	240	4.1						2.9
06	255	4.5						3.0
07	230	7.8			110	2.3		3.3
08	230	9.2	220		110	2.8		3.2
09	240	10.7	220	4.9	100	3.3		3.1
10	260	12.0	220	5.2	100	3.6		3.0
11	270	13.0	220	5.4	100	3.5		2.9
12	280	14.8	220	5.5	100	3.6		3.0
13	290	15.0	220	5.4	110	3.8		3.0
14	280	14.8	220	5.2	110	3.6		3.0
15	270	14.5	220	5.1	110	3.5		3.1
16	270	14.0	230	5.2	110	3.3		3.1
17	240	14.0	220		110	2.7		3.1
18	230	13.5			105			3.1
19	230	13.0			110			3.1
20	220	12.0			105			3.0
21	230	9.4						3.0
22	240	8.3						3.0
23	250	7.7						3.0

Time: 105.0°E.
Sweep: Manual operetion.

Table 44

Bukhta Tikhaya, U.S.S.R. (80.3°N, 52.7°E) February 1946

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	250	4.7						
01	210	4.4						
02								
03								
04								
05								
06								
07								
08								
09								
10	250	4.2						
11								
12	230	4.5						
13								
14	260	3.4						
15								
16								
17								
18								
19	220	4.4						
20								
21								
22	220	4.6						
23								

Time: 60.0°E.
Sweep: 1.5 Mc to 9.5 Mc in 5 to 10 minutee. Manual operetion.

Table 45*

Leningrad (VETKAS), U.S.S.R. (60.0°N, 30.2°E) February 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07								
08					140	1.8		
09					120	2.2		
10					120	2.2		
11					120	2.5		
12					120	2.7		
13					120	2.7		
14					120	2.5		
15					120	2.3		
16					120	2.0		
17								
18								
19								
20								
21								
22								
23								

Time: 30.0°E.
Sweep: Manual operation.
*Average values instead of median values as for most other stations.

Table 46*

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) February 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	320	2.9						
01	320	2.8						
02	340	2.8						
03	320	2.8						
04	320	3.0						
05	320	2.6						
06	310	2.6						
07	250	3.7						
08	230	6.0			130	1.9		
09	230	7.4			120	2.4		
10	230	8.5			120	2.6		
11	230	8.6			120	2.7		
12	230	9.0			120	2.9		
13	230	9.0			120	2.8		
14	230	9.1			120	2.8		
15	230	8.7			130	2.5		
16	230	8.2			140	2.2		
17	220	7.4			130	1.7		
18	220	5.8						
19	230	4.6						
20	250	3.6						
21	270	3.1						
22	300	3.0						
23	320	2.9						

Time: 60.0°E.
Sweep: 1.5 Mc to 14.0 Mc in 5 to 13 minutes. Manual operation.
*Average values instead of median values as for most other stations.

Table 47

Tomsk, U.S.S.R. (56.5°N, 84.9°E) February 1946*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	2.9						
01	310	2.9						
02	320	3.0						
03	320	2.9						
04	310	2.9						
05	300	2.8						
06	280	2.7						
07	280	2.9						
08	240	5.3				1.7		
09	230	7.2				2.0		
10	230	8.2			110	2.4		
11	240	8.7			110	2.6		
12	250	8.5			110	2.8		
13	250	8.6			100	2.8		
14	240	8.5						
15	240	8.3			100			
16	240	7.8			120	2.4		
17	230	7.6				1.8		
18	220	6.6						
19	240	5.4						
20	240	4.3						
21	250	3.5						
22	270	3.1						
23	300	2.9						

Time: 90.0°E.
Sweep: 1.2 Mc to 10.0 Mc in 5 to 10 minutes. Manual operation.
*Average values instead of median values as for most other stations.

Table 48 (Supersedes Table 60, CRPL-F25)

Moscow (Krasnaja Pekhra), U.S.S.R. (55.5°N, 37.3°E) Feburary 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		2.6						
01		2.6						
02		2.6						
03		2.4						
04		2.4						
05		2.4						
06		2.6						
07	210	4.6						
08	210	6.8				2.4		
09	210	8.1			100	2.6		
10	210	9.0			90	2.7		
11	210	9.4			95	2.8		
12	210	8.9			100	2.8		
13	210	9.2			90	2.8		
14	210	8.8			100	2.6		
15	210	8.2			100	2.5		
16	200	7.7			90	2.4		
17	200	6.0						
18	200	4.6						
19	200	4.0						
20		3.4						
21		2.9						
22		2.6						
23		2.6						

Time: 30.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 50 seconds.

Table 49

Alma Ata, U.S.S.R. (43.2°N, 76.9°E) February 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	220	3.5						
01	225	3.6						
02	220	3.6						
03	240	3.6						
04	220	3.6						
05	220	3.7						
06	200	4.0						
07	200	5.8			100	2.3		
08	200	7.7			100	2.4		
09	200	8.1			100	2.7		
10	200	9.6			100	3.7		
11	200	8.9			100	3.6		
12	200	9.2			100	3.8		
13	200	8.4			110	3.6		
14	200	8.8			100	3.4		
15	200	9.0			110	3.2		
16	200	7.7			100	2.8		
17	200	7.6			100	2.4		
18	200	6.6			100	2.4		
19	220	5.3						
20	220	4.5						
21	240	3.6						
22	240	3.5						
23	240	3.6						

Time: 75.0°E.
Sweep: 2.0 Mc to 14.0 Mc in 10 to 20 minutes. Manual operation.

Table 50 (Supersedes Table 16, IRPL-F20)

Loshan, China (29.5°N, 103.7°E) February 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	285	3.8						2.8
01	275	4.0						2.9
02	260	3.7						3.0
03	270	3.7						3.0
04	250	3.5						3.2
05	250	3.2						3.0
06	270	3.2						2.9
07	235	6.0			115			3.3
08	230	8.4			110	2.6		3.5
09	230	9.2	220	4.3	110	3.1		3.4
10	260	10.4	220	4.9	110	3.4		3.2
11	270	11.8	220	5.2	110	3.4		3.1
12	270	12.0	220	5.1	110	3.8		3.1
13	270	12.5	230	5.1	110	3.8		3.1
14	270	12.2	230	4.8	110	3.8		3.1
15	260	12.2	220	4.7	110	3.2		3.2
16	250	11.3	230	4.8	110	3.0		3.2
17	230	10.5			110	2.5		3.3
18	220	9.2			110			3.3
19	220	7.7			110			3.2
20	220	6.8			100			3.3
21	230	5.6						3.2
22	230	4.7						3.1
23	260	4.0						2.9

Time: 105.0°E.
Sweep: Manual operation.

Table 51 (Supersedes Table 62, CRPL-F25)

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) January 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	2.6						
01	300	2.8						
02	300	2.8						
03	310	2.7						
04	300	2.6						
05	290	2.4						
06	300	2.4						
07	300	2.4						
08	240	4.1				1.7		
09	220	5.9			140	1.9		
10	220	6.7			120	2.2		
11	220	7.2			120	2.4		
12	220	7.4			120	2.4		
13	220	7.3			130	2.4		
14	220	6.6			120	2.3		
15	220	6.2			130	2.0		
16	220	6.0			140	1.7		
17	220	4.6						
18	230	3.4						
19	260	2.5						
20	280	2.2						
21	320	2.2						
22	320	2.4						
23	310	2.5						

Time: 60.0°E.
Sweep: 1.5 Mc to 14.0 Mc in 5 to 13 minutes. Manual operation.

Table 52 (Supersedes Table 34, CRPL-F26)

Moscow (Kraenaja Pakhra), U.S.S.R. (55.5°N, 37.3°E) January 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	2.5						
01	280	2.6						
02	260	2.6						
03	280	2.6						
04	280	2.4						
05	260	2.2						
06	260	E						
07	230	2.7						
08	200	4.7						
09	210	6.3			100	2.6		
10	210	6.8			100	2.5		
11	200	7.0			100	2.5		
12	200	7.5			100	2.6		
13	200	7.4			100	2.7		
14	200	6.6			100	2.4		
15	200	6.1						
16	200	5.2						
17	200	3.8						
18	220	2.7						
19	260	2.3						
20	260	2.2						
21	260	2.2						
22	260	2.3						
23	270	2.4						

Time: 30.0°E.
Sweep: 2.2 to 16.0 Mc in 50 seconds.

Table 53

Loshan, China (29.5°N, 103.7°E) January 1946

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	295	2.9			100			3.0
01	280	3.0			105			3.0
02	280	3.1			110			3.1
03	260	3.1			110			3.3
04	235	3.0						3.2
05	270	2.7			100			3.0
06	270	2.6			105			3.1
07	250	4.6	240	2.4	110			3.4
08	230	6.3	200	2.8	120	2.3		3.7
09	230	7.0	210	3.5	110	2.8	3.2	3.5
10	260	8.3	210	4.4	110	3.0	3.3	3.4
11	260	8.7	210	4.6	110	3.3	3.4	3.4
12	260	9.0	215	4.6	110	3.3		3.4
13	270	8.6	215	4.6	110	3.2		3.4
14	260	8.6	220	4.4	110	3.2		3.4
15	250	8.5	210	4.0	110	3.0		3.4
16	230	7.9	220	3.9	110	2.6		3.6
17	225	6.5	208	3.4	110	2.4		3.7
18	220	5.2			105		2.2	3.5
19	230	4.7			105		2.1	3.5
20	230	4.4			100			3.6
21	230	3.3			100			3.4
22	250	3.0			100			3.1
23	280	2.9			100			3.0

Time: 105.0°E.
Sweep: Manual operation.

Table 54*

Watheroo, W. Australia (30.3°S, 115.9°E) September 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	245	3.1						
01	252	3.0						
02	240	3.1						
03	233	2.9						
04	224	2.7						
05	250	2.7						
06	256	3.1						
07	240	4.3	(230)	(3.3)		2.4		
08	297	4.9	227	3.8		2.6		
09	336	5.2	219	4.0		2.8		
10	333	5.3	212	4.1		3.0		
11	346	5.6	214	4.2		3.0		
12	310	6.3	206	4.2		3.0		
13	305	6.6	214	4.2		3.1		
14	301	6.2	216	4.1		3.1		
15	291	5.7	217	3.9		2.8		
16	259	5.7	222	3.7		2.6		
17	230	5.1	(220)	(2.9)		2.0		
18	225	4.7				1.4		
19	229	4.1						
20	239	3.5						
21	248	3.4						
22	245	3.2						
23	251	3.3						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 55*

Watheroo, W. Australia (30.3°S, 115.9°E) August 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	243	3.0						
01	245	3.0						
02	246	3.0						
03	235	3.0						
04	236	2.8						
05	234	2.5						
06	243	2.3						
07	233	3.9				1.8		
08	230	4.9				2.3		
09	274	5.5	223	3.9		2.6		
10	293	5.7	213	4.1		2.9		
11	294	6.0	212	4.2		2.9		
12	293	6.2	204	4.2		2.9		
13	290	6.5	205	4.2		3.0		
14	282	6.3	205	4.1		2.9		
15	277	6.1	215	3.9		2.8		
16	233	5.7		3.4		2.4		
17	232	5.4				2.0		
18	215	4.6						
19	226	3.5						
20	240	3.1						
21	248	3.2						
22	248	3.2						
23	255	3.0						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 56*

Watheroo, W. Australia (30.3°S, 115.9°E) July 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	247	3.1						
01	239	3.3						
02	244	3.3						
03	232	3.4						
04	221	3.4						
05	213	2.8						
06	224	2.5						
07	225	3.5				1.5		
08	229	4.9				2.1		
09	246	5.3	225	3.7		2.4		
10	270	5.5	219	4.0		2.7		
11	277	5.6	208	4.1		2.8		
12	281	5.9	201	4.1		2.9		
13	278	6.1	197	4.0		2.9		
14	269	5.9	207	4.0		2.8		
15	256	5.7	214	3.7		2.6		
16	242	5.7	(185)	(2.9)		2.3		
17	221	5.3				1.8		
18	210	3.8						
19	226	2.7						
20	226	2.7						
21	240	2.8						
22	240	3.0						
23	242	3.0						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 57*

Wetheroo, W. Australie (30.3°S, 115.9°E) June 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	239	3.3						
01	237	3.3						
02	230	3.4						
03	233	3.4						
04	227	3.4						
05	213	3.1						
06	215	2.7						
07	216	3.7				1.5		
08	220	5.1				2.3		
09	226	5.7	(230)	(3.4)		2.6		
10	232	5.9	213	4.0		2.8		
11	250	6.0	220	4.1		3.0		
12	265	6.3	214	4.2		3.0		
13	258	6.0	214	4.1		2.9		
14	266	6.1	211	4.0		2.8		
15	245	6.2	220	3.8		2.7		
16	225	5.9				2.3		
17	209	5.4				1.6		
18	201	3.9						
19	218	2.9						
20	224	2.8						
21	233	3.0						
22	231	3.2						
23	238	3.2						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 58*

Watheroo, W. Australia (30.3°S, 115.9°E) May 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	248	3.4						
01	245	3.4						
02	245	3.6						
03	241	3.7						
04	228	3.8						
05	220	3.2						
06	228	2.8						
07	222	4.4				1.8		
08	226	5.8				2.3		
09	230	6.2	220	3.8		2.7		
10	262	6.8	227	4.1		2.9		
11	263	7.1	213	4.2		3.0		
12	269	6.7	211	4.2		3.1		
13	275	6.8	213	4.2		3.1		
14	274	7.4	218	4.1		2.9		
15	250	7.6	215	3.8		2.7		
16	232	7.0	217	(3.2)		2.4		
17	212	6.1				1.8		
18	207	4.2						
19	224	3.2						
20	233	2.8						
21	242	3.0						
22	240	3.2						
23	250	3.2						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 59*

Watheroo, W. Australie (30.3°S, 115.9°E) April 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	259	3.5						
01	257	3.5						
02	254	3.6						
03	249	3.8						
04	226	3.6						
05	236	3.3						
06	238	3.3						
07	233	5.2				2.0		
08	239	6.2	242	(3.6)		2.5		
09	265	7.0	227	4.0		2.8		
10	276	7.4	222	4.3		3.0		
11	276	7.9	217	4.4		3.1		
12	282	8.3	214	4.4		3.2		
13	284	8.3	219	4.5		3.1		
14	282	8.3	232	4.3		3.1		
15	265	8.4	232	4.1		2.8		
16	241	8.0	238	(3.7)		2.6		
17	231	7.1				2.1		
18	218	5.8						
19	219	4.4						
20	237	3.7						
21	246	3.6						
22	240	3.6						
23	248	3.4						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 60*

Watheroo, W. Australie (30.3°S, 115.9°E) March 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	267	3.7						
01	258	3.7						
02	257	3.7						
03	244	3.6						
04	242	3.3						
05	245	3.2						
06	256	3.6				1.2		
07	237	5.0				2.1		
08	255	5.6	233	4.2		2.6		
09	288	6.1	225	4.2		2.9		
10	312	6.2	215	4.4		3.1		
11	332	6.7	211	4.5		3.2		
12	325	7.2	210	4.4		3.2		
13	328	7.5	217	4.5		3.2		
14	311	7.3	226	4.4		3.2		
15	308	7.5	231	4.3		3.0		
16	285	7.4	231	4.1		2.8		
17	252	7.0	235	3.8		2.4		
18	239	6.7				1.7		
19	223	5.9						
20	229	4.9						
21	247	4.2						
22	259	3.8						
23	265	3.7						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 61*

Wetheroo, W. Australia (30.3°S, 115.9°E) February 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	264	4.0						
01	253	3.9						
02	249	3.5						
03	257	3.2						
04	245	2.9						
05	260	2.8						
06	247	3.8				1.6		
07	256	4.8	225	3.6		2.2		
08	304	5.2	233	4.0		2.8		
09	321	5.4	216	4.3		3.0		
10	361	5.8	218	4.4		3.2		
11	353	6.2	209	4.5		3.3		
12	340	6.5	210	4.5		3.3		
13	347	6.8	214	4.5		3.4		
14	368	7.0	224	4.4		3.3		
15	314	7.1	227	4.3		3.2		
16	302	6.9	228	4.2		3.0		
17	280	6.5	230	3.8		2.6		
18	255	6.4	230	3.2		2.1		
19	232	6.1						
20	225	5.5						
21	240	4.5						
22	260	4.2						
23	267	4.1						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Averege values.

Table 62*

Wetheroo, W. Australia (30.3°S, 115.9°E) January 1943

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	256	4.4						
01	250	4.1						
02	256	3.7						
03	257	3.4						
04	246	3.2						
05	252	3.0				(1.5)		
06	246	4.0	(225)	3.0		1.9		
07	276	4.7	225	3.8		2.4		
08	322	5.1	216	4.0		2.8		
09	361	5.4	213	4.3		3.1		
10	367	5.8	215	4.4		3.2		
11	367	6.2	221	4.5		3.3		
12	360	6.6	207	4.5		3.4		
13	342	7.0	213	4.4		3.4		
14	325	7.2	226	4.4		3.3		
15	315	6.9	227	4.3		3.2		
16	304	6.7	222	4.2		3.0		
17	293	6.6	230	3.9		2.7		
18	262	6.3	235	3.4		2.1		
19	242	6.0						
20	234	5.8						
21	255	5.1						
22	264	4.8						
23	264	4.5						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Averege values.

Table 63*

Wetheroo, W. Auetrelia (30.3°S, 115.9°E) December 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	265	4.9						
01	250	4.7						
02	256	4.3						
03	256	3.9						
04	255	3.6						
05	261	3.7		(2.3)		1.4		
06	259	4.7	252	3.3		2.1		
07	304	5.1	230	3.9		2.6		
08	359	5.6	227	4.3		2.9		
09	371	6.0	222	4.4		3.2		
10	368	6.4	218	4.5		3.3		
11	360	6.8	212	4.6		3.5		
12	355	7.1	217	4.6		3.5		
13	352	7.1	210	4.6		3.5		
14	339	7.3	226	4.5		3.4		
15	330	7.4	225	4.4		3.3		
16	315	7.2	233	4.3		3.0		
17	298	7.3	240	4.0		2.6		
18	264	7.3	(220)	(3.2)		2.1		
19	239	7.1						
20	230	6.4						
21	252	5.6						
22	267	5.1						
23	265	5.0						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 64*

Wetheroo, W. Australia (30.3°S, 115.9°E) November 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	266	4.4						
01	255	4.3						
02	254	3.9						
03	257	3.6						
04	261	3.4						
05	262	3.6						
06	250	4.6	245	3.3		2.1		
07	269	5.0	235	3.8		2.6		
08	372	5.4	228	4.2		3.0		
09	376	5.8	219	4.4		3.2		
10	368	6.8	212	4.5		3.3		
11	361	6.6	214	4.6		3.4		
12	355	7.1	218	4.6		3.4		
13	340	7.4	217	4.5		3.4		
14	324	7.3	222	4.5		3.3		
15	321	7.4	234	4.4		3.2		
16	309	7.2	234	4.2		2.9		
17	295	7.1	233	3.8		2.5		
18	284	7.1				1.9		
19	232	6.9						
20	228	5.8						
21	248	5.1						
22	271	4.7						
23	278	4.6						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 65*

Watheroo, W. Australia (30.3°S, 115.9°E) October 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	3.8						
01	258	3.6						
02	246	3.5						
03	245	3.1						
04	257	2.9						
05	264	3.0						
06	246	4.1				1.8		
07	276	4.8	230	3.6		2.4		
08	331	(5.3)	225	4.0		2.8		
09	361	5.4	223	4.2		3.0		
10	355	5.7	217	4.3		3.2		
11	365	6.0	212	4.4		3.2		
12	347	6.4	208	4.4		3.2		
13	339	6.7	210	4.4		3.2		
14	330	6.5	224	4.3		3.2		
15	321	6.2	226	4.2		3.0		
16	299	6.0	232	4.0		2.7		
17	259	5.8	229	3.4		2.2		
18	243	5.6				1.6		
19	230	5.2						
20	241	4.6						
21	254	4.1						
22	266	3.9						
23	267	3.8						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 66*

Watheroo, W. Australia (30.3°S, 115.9°E) September 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	239	3.5						
01	236	3.4						
02	223	3.2						
03	224	2.9						
04	239	2.8						
05	246	2.8						
06	246	3.2				1.4		
07	253	4.6				2.2		
08	297	5.3	224	3.9		2.6		
09	305	5.8	218	4.1		2.9		
10	308	6.2	207	4.3		3.0		
11	298	6.5	202	4.3		3.1		
12	289	6.8	201	4.4		3.2		
13	286	6.7	210	4.3		3.2		
14	292	6.3	205	4.3		3.1		
15	283	6.1	209	4.1		2.9		
16	267	5.8	214	3.8		2.6		
17	237	5.5				2.1		
18	224	4.8				1.3		
19	231	4.3						
20	239	3.9						
21	243	3.8						
22	251	3.7						
23	243	3.6						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 67*

Watheroo, W. Australia (30.3°S, 115.9°E) August 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	243	3.3						
01	233	3.3						
02	236	3.4						
03	227	3.4						
04	226	3.3						
05	224	3.0						
06	227	2.9						
07	226	4.0				1.7		
08	242	4.9	(212)	3.4		2.3		
09	261	5.3	219	3.9		2.7		
10	299	5.5	216	4.1		2.8		
11	302	5.7	213	4.2		3.0		
12	301	5.9	209	4.2		3.0		
13	286	6.1	209	4.2		3.0		
14	290	6.0	205	4.1		3.0		
15	269	5.9	210	4.0		2.8		
16	242	5.6	(213)	3.5		2.5		
17	227	5.2				1.9		
18	215	4.3						
19	218	3.5						
20	232	3.1						
21	239	3.2						
22	238	3.3						
23	242	3.3						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 68*

Watheroo, W. Australia (30.3°S, 115.9°E) July 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	242	3.2						
01	231	3.2						
02	242	3.2						
03	243	3.3						
04	225	3.4						
05	217	3.0						
06	223	2.6						
07	220	3.6				1.4		
08	225	4.9				2.2		
09	239	5.3	(214)	(3.7)		2.6		
10	260	5.6	219	4.0		2.8		
11	268	5.8	205	4.1		2.9		
12	280	5.9	210	4.2		3.0		
13	272	6.0	206	4.2		2.9		
14	269	5.9	213	4.0		2.8		
15	263	6.0	217	3.9		2.7		
16	236	5.8	(208)	(3.2)		2.4		
17	222	5.4				1.7		
18	208	4.3						
19	212	3.0						
20	226	2.7						
21	232	2.9						
22	237	3.0						
23	239	3.1						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 69*

Watheroo, W. Australia (30.3°S, 115.9°E) June 1942

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	214	3.4						
01	239	3.4						
02	236	3.5						
03	235	3.5						
04	227	3.6						
05	214	3.2						
06	216	2.8						
07	217	3.7				1.5		
08	223	5.1				2.2		
09	235	5.5	221	3.6		2.7		
10	258	6.1	218	4.0		2.9		
11	259	6.0	213	4.1		3.0		
12	267	6.3	206	4.2		3.0		
13	267	6.4	209	4.2		3.0		
14	256	6.3	210	4.0		2.8		
15	246	6.6	224	3.8		2.7		
16	227	6.1	205	3.1		2.3		
17	210	5.3				1.6		
18	207	3.8						
19	224	2.8						
20	227	2.8						
21	235	3.0						
22	242	3.2						
23	234	3.3						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Averege valuee.

Table 70*

Wetheroo, W. Australia (30.3°S, 115.9°E) May 1942

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	250	3.5						
01	247	3.6						
02	240	3.7						
03	237	3.7						
04	230	3.9						
05	215	3.4						
06	228	3.0						
07	221	4.8				1.8		
08	225	6.3	(198)	(3.0)		2.4		
09	244	7.1	222	4.0		2.8		
10	256	7.9	220	4.3		3.0		
11	265	8.3	220	4.4		3.1		
12	256	7.8	212	4.5		3.2		
13	270	7.8	215	4.4		3.2		
14	262	7.9	212	4.3		3.0		
15	252	8.4	219	4.0		2.8		
16	232	8.0	228	3.4		2.4		
17	215	6.8				1.7		
18	208	5.2						
19	217	3.8						
20	229	3.3						
21	236	3.2						
22	235	3.2						
23	248	3.3						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutee.
*Average velues.

Teble 71*

Watheroo, W. Austrelia (30.3°S, 115.9°E) April 1942

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	262	4.1						
01	256	4.0						
02	259	3.9						
03	246	4.0						
04	234	3.7						
05	243	3.3						
06	242	3.4						
07	228	5.7	(225)	(2.7)		2.0		
08	238	7.2	228	3.9		2.6		
09	251	8.7	223	4.3		2.9		
10	259	8.7	218	4.6		3.1		
11	268	9.2	213	4.7		3.3		
12	265	9.6	207	4.7		3.3		
13	269	9.9	216	4.8		3.3		
14	261	9.9	223	4.6		3.2		
15	254	9.7	226	4.3		3.0		
16	242	9.3	227	3.8		2.6		
17	227	8.6	(225)	(2.8)		2.1		
18	217	7.4				1.4		
19	229	5.7						
20	245	5.0						
21	247	4.7						
22	246	4.3						
23	260	4.2						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutee.
*Average veluas.

Table 72*

Watheroo, W. Australia (30.3°S, 115.9°E) March 1942

Time	h'F2	foF2	h'F1	FoF1	h'E	foE	fEs	F2-M3000
00	266	4.4						
01	258	4.3						
02		4.0						
03	250	3.9						
04	249	3.5						
05	255	3.4						
06	259	3.9				1.3		
07	236	5.7				2.2		
08	253	6.6	218	4.0		2.7		
09	301	6.8	212	4.4		3.0		
10	304	7.4	211	4.7		3.2		
11	320	7.8	200	4.8		3.3		
12	308	8.5	209			3.4		
13	298	8.9	218	4.8		3.4		
14	287	9.0	222	4.8		3.3		
15	280	8.6	222	4.6		3.2		
16	257	8.3	220	4.2		2.9		
17	237	8.1	(220)	(3.9)		2.4		
18	235	7.8				1.6		
19	223	7.0						
20	227	5.9						
21		5.1						
22	264	4.7						
23	271	4.5						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average valuas.

Table 73*

Wetheroo, W. Australie (30.3°S, 115.9°E) February 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	256	4.8						
01	248	4.5						
02	243	4.1						
03	246	3.8						
04	253	3.4						
05	257	3.2						
06	250	4.1				1.6		
07	251	5.3	237	3.7		2.3		
08	306	5.9	218	4.2		2.8		
09	315	6.5	215	4.5		3.1		
10	319	7.0	203	4.6		3.3		
11	304	7.4	202	4.7		3.4		
12	321	7.6	194	4.7		3.4		
13	320	7.8	210	4.7		3.4		
14	311	7.9	215	4.7		3.3		
15	302	7.9	222	4.6		3.3		
16	284	7.4	218	4.3		3.1		
17	256	6.8	217	4.0		2.7		
18	240	6.6				2.1		
19	230	6.2						
20	232	5.8						
21	252	5.3						
22	266	5.1						
23	268	4.9						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Averege velues.

Table 74*

Watheroo, W. Australia (30.3°S, 115.9°E) January 1942

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	252	5.4						
01	256	4.9						
02	257	4.6						
03	251	4.3						
04	254	3.9						
05	257	3.8						
06	259	4.7	233	3.2		2.0		
07	289	5.3	220	4.0		2.5		
08	330	5.7	214	4.3		3.0		
09	370	6.2	211	4.6		3.2		
10	349	6.7	206	4.7		3.4		
11	361	7.0	197	4.6		3.5		
12	356	7.3	199	4.8		3.6		
13	354	7.4	210	4.7		3.6		
14	337	7.6	218	4.7		3.5		
15	319	7.6	213	4.6		3.3		
16	305	7.3	219	4.3		3.1		
17	295	6.9	220	4.1		2.8		
18	253	6.6	229	3.5		2.2		
19	245	6.4						
20	244	5.3						
21	257	5.0						
22	258	5.8						
23	258	5.5						

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Averege values.

Table 75*

Huancayo, Peru (12.0°S, 75.3°W) March 1941

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	238	8.6						
01	239	7.4						
02	258	5.8						
03	265	4.9						
04	280	4.3						
05	296	3.8						
06	273	5.1				1.5		
07	260	8.2	247	4.5		2.4		
08	292	9.9	235	4.7		2.9		
09	306	10.4	231	4.9		3.5		
10	332	10.2	227	5.0		3.8		
11	346	9.9	222	5.0		4.0		
12	352	9.4	223	5.0		4.1		
13	340	9.2	218	4.9		4.0		
14	337	9.5	218	4.9		3.9		
15	320	10.0	219	4.8		3.4		
16	304	10.3	222	4.7		2.8		
17	265	10.4	250	4.6		2.4		
18	279	10.3				1.5		
19	337	9.7						
20	342	9.3						
21	294	9.4						
22	257	9.2						
23	237	9.1						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 76*

San Juan, Puerto Rico (18.4°N, 66.1°W) February 1941

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		4.6						
01		4.4						
02		4.4						
03		4.4						
04		4.3						
05		4.5						
06		4.4						
07		4.2						
08		4.1						
09		3.7						
10		3.9						
11		6.5				2.4		
12		8.0				2.7		
13		8.5		4.5		3.4		
14		9.3		4.6		3.7		
15		9.4		4.7		3.9		
16		9.7		4.7		3.9		
17		9.5		4.8		3.9		
18		9.6		4.7		3.8		
19		9.4		4.4		3.7		
20		9.4		4.0		3.4		
21		9.5				2.8		
22		8.7						
23		6.3						

Time: 0.0°.
*Average values.

Table 77*

Huancayo, Peru (12.0°S, 75.3°W) February 1941

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	242	8.4						
01	248	7.3						
02	260	6.4						
03	265	5.8						
04	267	5.2						
05	256	4.7						
06	261	5.6				1.6		
07	245	8.2	235	4.3		2.4		
08	285	9.5	223	4.8		3.0		
09	308	10.2	223	5.0		3.6		
10	327	10.4	218	5.1		3.9		
11	337	10.2	217	5.1		4.0		
12	347	10.0	213	5.1		4.1		
13	350	10.0	213	5.0		4.1		
14	334	10.4	208	5.0		4.0		
15	323	10.6	215	5.0		3.7		
16	312	10.7	217	4.8		3.0		
17	252	10.6	237	4.6		2.6		
18	269	10.5				1.7		
19	307	10.2						
20	338	9.4						
21	317	8.9						
22	290	8.7						
23	263	8.6						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 78*

Huancayo, Peru (12.0°S, 75.3°W) January 1941

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	298	6.7						
01	284	5.6						
02	280	4.9						
03	271	4.3						
04	261	3.9						
05	271	3.4						
06	263	5.7				1.8		
07	264	8.1	233	4.6		2.5		
08	315	9.2	224	4.9		3.0		
09	334	9.4	218	5.1		3.6		
10	365	9.3	215	5.2		3.9		
11	373	9.1	214	5.2		4.0		
12	385	9.1	208	5.2		4.1		
13	377	9.4	207	5.2		4.0		
14	367	9.8	209	5.1		3.9		
15	348	10.1	214	5.1		3.6		
16	339	10.3	217	5.0		3.1		
17	274	10.4	238	4.8		2.5		
18	275	10.3				1.8		
19	292	10.1				1.0		
20	325	9.1						
21	335	8.3						
22	337	8.0						
23	321	7.6						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 79*

Huancayo, Peru (12.0°S, 75.3°W) December 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	372	6.3						
01	376	5.5						
02	378	5.0						
03	354	4.6						
04	316	4.3						
05	288	4.0				1.0		
06	265	6.7				2.1		
07	276	9.0	240	4.6		2.6		
08	302	10.2	234	4.9		3.2		
09	329	10.7	231	5.2		3.8		
10	350	10.8	228	5.3		4.0		
11	368	10.7	223	5.4		4.2		
12	382	10.4	224	5.4		4.2		
13	379	10.5	221	5.4		4.1		
14	374	10.9	224	5.4		4.0		
15	353	11.4	231	5.2		3.7		
16	340	11.4	232	5.0		3.1		
17	273	11.2	257	4.8		2.4		
18	282	11.0				1.7		
19	306	10.6				1.0		
20	332	9.7						
21	365	8.7						
22	369	8.0						
23	367	7.2						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 80*

Huancayo, Peru (12.0°S, 75.3°W) November 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	286	7.1						
01	272	6.4						
02	274	5.9						
03	259	5.5						
04	261	4.7						
05	269	4.6	264			1.0		
06	259	7.8	252			2.2		
07	257	10.0	238	4.3		2.8		
08	290	11.2	236	4.9		3.4		
09	306	11.7	233	5.0		3.8		
10	313	11.9	228	5.2		4.1		
11	318	11.8	225	5.2		4.1		
12	324	11.6	225	5.2		4.2		
13	321	11.6	223	5.1		4.1		
14	316	11.7	224	5.0		4.0		
15	316	11.6	232	4.9		3.6		
16	291	11.5	240	4.7		3.0		
17	267	11.4				2.3		
18	289	11.2				1.4		
19	326	10.6						
20	331	9.6						
21	345	9.0						
22	348	8.2						
23	319	7.6						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 81*

Huancayo, Peru (12.0°S, 75.3°W) October 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	251	10.3						
01	244	8.6						
02	251	7.2						
03	259	6.4						
04	264	5.5						
05	274	5.1				1.0		
06	264	7.6				2.1		
07	257	10.3				2.8		
08	290	11.8	243	4.9		3.3		
09	302	12.4	234	5.1		3.8		
10	307	12.0	232	5.2		4.1		
11	317	11.2	230	5.2		4.2		
12	317	10.9	226	5.2		4.2		
13	312	11.0	224	5.0		4.0		
14	312	11.3	225	5.0		3.9		
15	304	11.6	228	4.8		3.5		
16	299	11.7	238	4.6		3.0		
17	275	11.7				2.3		
18	298	11.6				1.2		
19	360	11.0						
20	344	10.6						
21	298	10.5						
22	287	10.7						
23	273	10.6						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 82*

Huancayo, Peru (12.0°S, 75.3°W) September 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	234	8.2						
01	240	7.5						
02	250	6.5						
03	255	5.7						
04	266	5.0						
05	270	4.2						
06	276	6.0				1.8		
07	452	9.1				2.7		
08	290	10.4	242	4.8		3.2		
09	306	10.9	233	5.1		3.7		
10	314	10.6	226	5.1		3.9		
11	323	10.3	223	5.1		4.0		
12	329	10.0	223	5.1		4.1		
13	317	10.1	217	5.0		4.0		
14	306	10.2	218	4.9		3.8		
15	293	10.2	222	4.6		3.4		
16	296	10.2	233	4.4		2.9		
17	271	10.2				2.3		
18	309	9.8				1.3		
19	365	9.0						
20	309	8.8						
21	276	9.1						
22	240	8.9						
23	233	8.6						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 83*

Huancayo, Peru (12.0°S, 75.3°W) August 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	227	7.1						
01	232	6.8						
02	231	6.2						
03	236	5.4						
04	249	4.4						
05	262	3.9						
06	289	4.6				1.4		
07	247	7.1				2.5		
08	292	8.6	229	4.8		3.0		
09	317	9.1	224	5.0		3.4		
10	337	8.9	217	5.0		3.7		
11	366	8.9	214	5.1		3.9		
12	377	8.8	211	5.1		3.9		
13	368	8.8	206	5.1		3.9		
14	357	8.8	209	4.9		3.7		
15	319	8.9	215	4.7		3.4		
16	307	8.9	222	4.4		3.0		
17	259	8.8				2.4		
18	295	8.6				1.2		
19	342	7.8						
20	305	7.7						
21	264	7.8						
22	230	7.8						
23	224	7.5						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

Table 84*

Huancayo, Peru (12.0°S, 75.3°W) July 1940

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	214	6.6						
01	216	6.4						
02	219	6.0						
03	231	5.2						
04	243	4.7						
05	245	4.1						
06	270	4.2				1.2		
07	237	6.6				2.3		
08	275	8.2	216	4.6		2.8		
09	290	8.5	206	4.8		3.2		
10	319	8.4	204	5.0		3.5		
11	342	8.3	201	5.1		3.6		
12	352	8.2	202	5.0		3.7		
13	352	8.4	202	5.0		3.6		
14	339	8.3	204	4.9		3.5		
15	317	8.5	205	4.7		3.2		
16	292	8.4	209	4.4		2.8		
17	238	8.2				2.2		
18	281	7.8				1.2		
19	305	7.2						
20	284	7.2						
21	251	7.2						
22	224	7.0						
23	219	6.8						

Time: 75.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.
*Average values.

TABLE 85

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), km (Unit), December (Month), 1949

Observed at Washington, D. C.

Lat. 39.0° N, Long. 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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	[26]F	290	290	270	240	230	(220)	[22]F	220	230	210	200	220	230	220	240	[22]F	210	230	220	240	250	240	(270)
2	[26]C	[27]C	[28]C	[26]C	[24]C	[24]C	[24]C	[23]C	[23]C	220	220	220	230	230	220	230	230	220	[23]C	240	250	250	260	260
3	270	260	250	(240)	[25]A	240	240	230	230	230	220	220	210	220	(220)	220	210	210	[21]C	230	240	240	[27]C	(270)
4	[27]C	(270)	270	(260)	270	260	(260)	230	220	220	230	210	220	240	230	[23]F	220	210	220	220	220	(230)	(270)	(270)
5	270	(260)	(290)	(280)	(260)	270	(250)	230	220	230	220	220	200	220	[21]F	[21]C	210	220	210	230	220	230	260	250
6	250	(320)	(300)	270	(270)	(240)	(220)	230	230	220	210	230	220	220	220	220	210	220	240	220	(240)	230	250	270
7	(310)	310	310	270	(250)	250	260	250	220	230	220	220	220	220	230	230	210	200	210	230	(240)	240	(250)	(280)
8	(280)	(280)	260	250	240	230	250	240	230	220	230	230	220	230	230	230	220	220	230	230	230	240	250	
9	(270)	(270)	(280)	(280)	280	250	240	230	220	220	210	220	220	230	230	220	220	220	220	230	230	(230)	(260)	250
10	(250)	260	250	250	260	(240)	(250)	240	230	220	220	230	220	220	[23]C	230	230	230	210	220	(230)	230	250	(250)
11	(260)	270	(280)	250	(250)	(240)	250	250	230	220	220	220	[22]F	240	240	240	230	220	220	250	(240)	240	250	(260)
12	(270)	280	250	250	240	230	(240)	270	230	230	230	240	(240)	[24]F	230	230	230	[21]C	[23]C	(250)	220	230	250	240
13	230	(260)	(260)	(270)	(270)	(270)	(250)	240	230	220	230	230	220	260	230	(220)	220	[22]C	[22]C	220	230	230	230	250
14	(270)	(280)	(290)	270	(250)	(230)	(250)	240	220	230	210	[23]C	[23]C	230	220	230	230	220	[21]C	230	250	240	(260)	250
15	(250)	(270)	(270)	(260)	(240)	250	240	240	220	[22]F	230	230	220	220	230	230	240	[23]C	[23]C	230	230	(230)	(260)	(260)
16	250	[27]C	270	(260)	(280)	250	250	250	220	220	[22]F	230	230	230	230	240	220	C	C	C	[23]C	230	240	(260)
17	250	(290)	290	250	[25]A	(230)	[230]C	240	230	220	220	210	240	260	220	240	220	[23]C	[23]C	(240)	[23]C	230	(260)	260
18	270	(280)	270	280	(270)	[26]A	[25]C	250	220	230	230	220	230	230	230	230	220	230	220	230	230	230	(250)	(270)
19	(280)	(290)	270	270	(290)	(290)	270	[26]F	230	230	230	210	220	240	230	230	220	C	C	C	220	240	250	250
20	270	280	260	250	240	260	260	[25]C	240	230	220	[23]F	220	(220)	[22]C	230	230	210	230	220	210	230	(250)	(270)
21	290	[29]C	(300)	(300)	(270)	250	(240)	C																C
22	C																							C
23	C							C	230	230	230	220	230	240	230	230	220	220	220	240	240	(240)	(260)	
24	(280)	310	290	270	250	240	240	230	230	220	230	230	230	230	220	230	230	220	220	230	250	250	(260)	(260)
25	250	280	270	260	(270)	280	260	250	220	230	230	240	250	240	240	230	230	240	230	250	230	230	250	260
26	(280)	300	280	250	250	250	(250)	240	230	220	240	230	230	240	230	230	220	220	210	220	200	230	240	240
27	(260)	(290)	280	290	280	270	260	280	220	230	210	230	230	220	240	230	230	220	220	220	240	230	(260)	(280)
28	C	C	C	C	C	C	C	C	C	C	[22]C	230	230	[23]C	230	230	220	220	220	230	230	(260)	(250)	260
29	(280)	(270)	260	250	230	230	220	230	220	230	230	(240)	260	(220)	[23]C	(230)	230	220	220	230	220	260	(270)	(270)
30	260	260	270	250	240	230	(250)	240	230	220	220	210	210	250	240	230	220	210	210	230	230	240	(260)	(280)
31	(280)	(290)	270	250	230	(230)	250	240	220	220	220	230	220	250	220	230	220	220	230	220	230	(250)	(270)	(260)
Median	(270)	(280)	270	260	(250)	245	250	240	230	220	220	230	220	230	230	230	220	220	220	230	230	230	(250)	(260)
Count	28	28	28	28	28	28	28	27	27	28	29	29	29	29	29	29	29	27	27	27	29	29	29	29

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ■

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 732519

TABLE 86

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), December (Month), 1946

National Bureau Of Standards (Institution)

Observed at Washington, D. C.

Lat 39.0°N, Long. 77.5° W — 75° W Mean Time

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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	(3.8)J	(3.8)	4.3	5.0	5.1	4.6	(4.6)	(5.3)	c	c	(9.6)	(10.2)J	(11.0)	c	c	11.0	11.6	10.0	(8.6)	[6.9]c	(5.5)	(5.4)	4.9	4.7
2	[4.6]c	[4.6]c	[4.8]c	[4.9]c	[4.4]c	[4.3]c	[4.2]c	c	c	c	10.4	(10.5)	(12.2)	(11.5)	[11.5]c	11.5	11.3	c	c	c	c	(5.7)	(5.6)	5.2
3	(5.3)	(5.5)	5.2	5.1	(4.5)	(4.2)	3.9	5.1	[7.9]c	[9.3]c	10.4	10.7	[11.1]c	11.4	[11.2]c	10.8	10.6	(9.3)	[7.5]c	(5.9)	4.8	(3.9)J	3.2	(3.3)
4	3.3	(3.5)	(3.7)	(3.5)	(3.7)J	3.7	3.8	5.7	8.2	[9.7]c	[10.3]c	(10.7)	11.7	11.6	11.6	11.6	11.3	10.1	8.6	8.5	[6.2]c	(5.4)	4.6	(4.4)J
5	(4.5)	(4.1)J	(4.1)J	[4.2]c	(4.3)J	3.9	[4.0]c	5.8	8.5	(10.6)J	12.3	12.6	c	c	12.8	12.5	11.5	11.4	9.2	[8.3]c	(7.4)	(6.4)J	(6.1)J	(5.5)
6	5.0	(5.0)	5.1	(5.6)	(5.6)J	(5.5)J	5.2	5.6	[8.1]c	(10.0)	11.7	12.3	12.0	12.5	11.6	11.3	11.1	c	c	c	(6.4)	5.4	(5.5)J	4.8
7	4.6	5.0	5.1	5.1	5.0	4.5	(4.0)	5.3	8.2	[10.0]c	11.7	12.8	12.6	12.4	12.7	12.5	12.3	10.8	9.4	[7.5]c	(6.4)	(5.2)	4.8	4.7
8	4.8	4.7	5.1	(5.2)	4.5	(4.4)	3.8	5.0	(9.0)	(10.0)	11.1	11.2	11.6	11.6	11.6	10.9	11.4	(9.3)	8.8	[7.6]c	(6.4)	5.6	4.8	4.2
9	(3.7)	3.7	4.0	4.2	4.2	4.4	4.4	5.2	8.4	(10.4)	(11.0)	11.6	11.6	11.8	11.8	11.3	11.2	10.0	(8.8)	8.6	(5.9)	4.8	4.6	(4.7)
10	4.6	4.6	4.8	4.3F	4.1F	3.9	3.6	4.8	8.2	[9.4]c	10.4	11.2	(11.2)	11.2	11.6	11.3	[10.7]c	9.8	[9.1]c	8.6	(6.0)	4.7	4.9	4.5
11	4.1	4.3	4.2	4.2	4.2	3.9	4.0	[4.8]c	8.4	(9.4)J	10.7	11.3	11.0	11.3	11.5	11.5	11.5	11.3	9.2	9.2	[7.0]c	4.6	4.3	3.7
12	3.8	4.0F	4.4	4.3	4.3	4.0	3.3	4.3F	7.4	(10.5)	11.3	11.6	12.0	12.6	11.6	11.5	11.1	10.6	10.0	8.8	[7.2]c	(5.7)	(5.4)	(5.5)
13	4.3	4.0	3.5	3.4	3.4	(3.1)F	3.5	5.1	c	c	10.7	11.7	11.5	11.8	[11.7]c	11.6	c	c	c	c	c	5.2	c	c
14	3.7	3.6	3.9	4.2	(4.3)J	4.2	3.6	4.9	c	c	10.7	[11.6]c	(11.1)	11.7	11.2	11.5	10.9	(9.7)	8.4	[6.5]c	[6.0]c	5.9	4.5	(4.1)J
15	3.9	3.8	4.0	4.0	3.9	3.6	3.4	4.7	8.1	(10.5)J	11.3	11.0	11.5	(11.5)	(11.2)	11.6	11.3	10.7	9.3	(7.8)J	(6.4)	(5.2)J	4.9	4.7
16	4.5	4.4	4.6	4.6	4.3	4.1	4.0	(5.6)J	10.0	(11.3)	(11.8)	(13.0)	[13.2]c	(13.3)	13.1	(12.9)	12.4	[11.6]c	10.6	9.5	(7.7)	6.7	6.0	(5.8)J
17	4.8	4.6	4.9	5.0	5.0	4.5	[4.2]c	5.3	(9.7)	(11.2)	11.7	[11.7]c	12.3	(12.9)	12.6	12.5	11.6	11.5	9.6	(8.2)	[6.2]c	5.3	4.9	4.9
18	4.6	4.5	4.5F	4.3F	4.6	4.3	4.1	5.5	8.5	12.0	(12.0)	12.3	12.3	12.3	12.1	11.8	[11.3]c	10.8	9.0	(7.2)	(7.0)	5.5	4.9	4.8
19	4.7	4.8	4.7	4.6	4.3	(4.1)J	4.2	[5.1]c	8.0	(10.0)J	11.5	(12.1)	13.1	[13.5]c	(13.2)	[12.3]c	(12.1)	c	c	c	c	6.4	(5.7)	5.7
20	(5.0)	(5.3)	5.2	(5.3)	5.1	4.8	4.5	[5.9]c	8.4	10.8	12.2	[12.5]c	[12.3]c	(12.0)	[12.2]c	(11.4)	[11.3]c	[10.4]c	8.9	9.6	(5.0)J	4.6	(4.4)	(3.7)J
21	(4.0)	[4.0]c	4.2	4.6	4.5	4.0	3.8	c→																→c
22	c→																							→c
23	c→								→c	(10.6)	(11.9)	[12.1]c	(12.5)	(12.5)	12.5	11.4	c	c	[9.0]c	7.5	[6.4]c	(5.4)	4.7	4.6
24	4.8	4.8	5.0	5.1	5.0	4.6	4.4	4.3	8.5	(10.3)	(11.1)	12.3	(12.4)	(11.5)J	(11.5)	(11.3)	[10.3]c	(9.4)	8.3	(7.3)	(5.8)J	5.4	(4.9)J	4.8
25	4.6	4.5	4.5	4.3	4.3	4.3	4.5	5.3	7.7	10.6	12.0	11.7	11.3	11.3	11.5	[10.7]c	[10.1]c	(10.2)J	7.2	8.6	8.2	(7.2)J	(5.9)J	5.3
26	5.0	5.1	5.2	5.1	5.0	4.5F	4.4F	4.8	8.6	10.5	12.4	(12.1)J	13.3	(13.2)	(12.6)J	C	C	C	10.0	9.0	(6.4)	(6.1)	5.8	(5.1)
27	4.9	4.5F	(3.9)F	3.3	3.3	3.2	3.2	4.5	8.2	10.5	(11.3)	[12.0]c	12.7	[12.5]c	[11.9]c	[11.2]c	[10.8]c	[9.9]c	8.3	7.7	(6.2)J	(5.4)	(3.9)J	(4.0)J
28	c	C	C	C	C	C	C	C	C	C	10.3	11.3	12.2	12.4	12.0	12.0	11.4	[10.2]c	8.1	[6.8]c	5.9	4.6	4.1	(3.9)J
29	4.3	(4.5)	4.6	4.7	4.6	3.9	3.3	4.4	7.3	10.1	11.3	12.5	12.3	12.2	[12.3]c	(11.6)	(11.5)	(10.3)	(9.0)	[7.3]c	6.0	5.0	4.3	4.3
30	4.4	(4.0)	(4.2)J	4.3	4.2	3.9	3.6	4.3	(8.2)	9.6	(11.1)	(11.5)	(12.0)	12.5	11.5	11.8	10.4	9.2	(8.0)	(7.6)	5.7	4.6	4.3	(4.2)
31	4.4	4.6	5.0	5.0	4.6	3.5	3.4	3.9	(7.6)J	9.4	(9.9)	11.0	11.5	11.3	11.5	11.4	10.6	9.3	[7.8]c	(7.4)	(5.8)	4.6	(4.1)	(3.9)J
Median	4.5	4.5	4.6	4.6	4.4	4.2	4.0	5.1	8.2	(10.4)	11.3	11.7	12.0	12.0	11.6	11.5	11.3	10.2	8.9	(7.6)	(6.2)	5.4	4.8	4.7
Count	28	28	28	28	28	28	28	26	23	24	29	29	28	27	28	28	26	23	25	25	26	29	28	28

Sweep: 0.75 to 11.5 Mc, automatic; supplemented when necessary by manual operation from 8.0 Mc to 17.0 Mc.

Sweep ____ Mc to ____ Mc in ____ min

Manual ☐ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 702549

TABLE 87

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), December (Month), 1946

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	[3.8]C	[4.1]C	[4.6]C	[5.1]C	[4.9]C	[4.6]C	[5.0]C	C	C	C	[9.9]C	[10.5]C	C	C	C	[11.3]C	[11.0]C	[9.4]C	[7.7]C	[6.0]C	[5.4]C	[5.1]C	[4.8]C	[4.6]C
2	[4.6]C	4.6	[4.9]C	[4.7]C	[4.3]C	[4.2]C	C	C	C	C	[10.4]C	[11.3]C	[11.8]C	[11.5]C	[11.5]C	[11.4]C	C	C	C	C	(5.7)	(5.6)	(5.5)	(5.3)
3	(5.5)	(5.4)	(5.2)	5.0	4.4	4.1	4.0	6.8	(8.6)	[7.9]C	[10.6]C	[10.9]C	[11.3]C	[11.3]C	[11.1]C	[10.7]C	[10.1]C	[8.5]C	(5.8)	(4.9)J	(4.1)J	(3.3)	(3.3)	3.3
4	(3.6)	[3.6]C	(3.7)J	(3.6)	(3.7)	[3.7]C	[4.7]C	[7.0]C	(9.3)	(10.0)	(10.6)	11.2	[11.5]C	[11.6]C	[11.6]C	[11.5]C	[10.9]C	8.8	[8.5]C	[7.9]C	(5.5)	[5.1]C	(4.7)	(4.3)J
5	(4.3)J	(4.0)	(4.2)J	(4.2)J	(4.2)J	3.9	4.6	7.4	[9.5]C	11.5	[12.5]C	C	C	C	[12.7]C	[12.0]C	[11.4]C	(10.6)	[8.7]C	[7.8]C	6.4	(6.1)	(5.7)	(5.2)
6	(4.5)	(5.1)	(5.1)	(5.7)J	(5.7)J	(5.5)	[5.2]C	6.9	(9.4)	(10.5)	[12.1]C	[12.2]C	[12.4]C	[12.1]C	11.1	11.2	C	C	C	C	(5.9)J	5.2	5.0	4.6
7	4.6	5.0	5.2	5.0	4.9	(4.1)	(4.0)	(7.4)	[9.0]C	[10.9]C	[12.3]C	[12.7]C	[12.5]C	[12.5]C	[12.6]C	[12.4]C	[11.6]C	[10.1]C	8.0	[7.0]C	(5.5)	5.0	4.8	4.8
8	4.9	5.2	(5.2)	(5.1)	4.4	4.0	3.8F	6.8	(9.7)	(11.0)	(11.2)	11.3	[11.6]C	(11.5)	[11.3]C	[11.2]C	[10.3]C	[9.0]C	[8.]C	[6.9]C	(5.9)	(5.2)	(4.4)J	3.8
9	3.7	[3.8]C	4.1	4.2	4.4	4.4	4.2	(7.0)	8.8	[10.7]C	11.6	[11.6]C	11.8	[11.8]C	[11.6]C	[11.2]C	[10.7]C	9.6	[8.7]C	(6.2)	(5.1)	4.6	4.8	4.4
10	4.6	4.8	[4.6]C	(4.1)J	4.0F	3.8	3.7	6.1	8.6	(10.0)	[10.8]C	[11.2]C	11.3	[11.4]C	[11.5]C	[11.0]C	[10.2]C	9.3	[8.9]C	(6.5)J	5.6	4.6	4.5	4.4
11	4.3	4.3	4.3	4.2	4.0	4.0	3.9	6.1	9.4	[10.0]C	(11.3)	10.8	(11.0)	[11.4]C	[11.5]C	[11.5]C	[11.4]C	10.2	[9.2]C	[8.5]C	5.2	4.4	3.8	(3.8)J
12	4.1	(4.3)J	(4.4)	(4.2)	4.2	3.6	2.9F	6.3	9.4	10.5	(11.3)	[11.8]C	[12.4]C	[12.0]C	[11.6]C	[11.3]C	[10.9]C	[10.3]C	[9.4]C	[8.2]C	[6.5]C	(5.3)	(5.3)	5.1
13	(3.9)	(3.7)	3.5	3.3	(3.0)F3	3.4	(3.9)	C	C	C	[11.2]C	[11.6]C	[11.7]C	[11.8]C	[11.6]C	C	C	C	C	C	C	4.3	C	C
14	3.6	(3.8)	(4.1)J	4.3	4.3	(3.7)	3.6	C	C	C	[11.2]C	12.0	(11.6)	[11.5]C	[11.4]C	[11.2]C	[10.4]C	9.6	(6.8)	[6.2]C	(5.8)	4.8	4.4	(4.1)J
15	(3.8)	4.0	4.0	(4.1)	3.8	3.5	3.2	6.5	9.3	11.1	[11.2]C	[11.2]C	11.2	(11.5)	(11.5)	[11.5]C	[11.6]C	9.8	[8.5]C	[7.1]C	(5.8)J	(4.8)	4.7	(4.7)
16	4.5	(4.5)	4.6	4.5	(4.3)J	(4.0)	[4.5]C	[8.0]C	[10.7]C	11.5	[11.9]C	(12.6)	[13.3]C	(13.2)	[13.0]C	[12.7]C	[12.0]C	[11.1]C	[10.1]C	[8.6]C	7.0	(6.4)J	5.8	5.2
17	(4.3)	4.5	5.0	5.1	4.8	4.3	4.3	7.6	10.9	(11.5)	(11.5)	[12.0]C	[12.7]C	[12.7]C	[12.6]C	[12.0]C	[11.6]C	[10.7]C	[9.0]C	6.6	5.8	5.0	5.0	4.7
18	4.5	4.5	4.4F	4.7	4.5F	4.2	4.1	[7.0]C	11.2	[12.0]C	12.2	[12.3]C	(12.1)	(12.5)	[11.9]C	(11.5)	11.0	(9.3)	[8.2]C	[7.1]C	(6.3)J	5.0	(4.9)J	4.8
19	4.8	4.8	4.6	4.3	4.1	(4.0)	(4.1)J	6.6	9.6	10.7	11.5	(12.2)	[13.3]C	(13.6)	[13.0]C	[12.4]C	(12.2)	C	C	C	C	6.0	(5.2)	[5.3]C
20	(5.0)	(5.3)	(5.7)	5.2	5.0	4.8	4.9	[7.0]C	(9.6)	11.3	(12.4)	12.4	12.1	(12.4)	[11.7]C	[11.4]C	(11.2)	[9.7]C	(8.1)J	(6.9)	[5.0]C	(3.8)J	(3.7)J	(3.9)J
21	[4.0]C	4.1	4.2	4.6	(4.3)	(3.3)F	C																	C
22	C																							C
23	C	C	C	C	C	C	C	C	C	(10.6)J	(12.2)	(11.9)	(12.3)	[12.5]C	(12.8)	C	C	(9.8)	(8.4)	6.7	[5.8]C	(5.6)J	4.7	4.5
24	4.3	5.0	5.0	5.1	5.0	4.3	3.9	6.2	(10.3)J	11.0	[11.5]C	12.4	(12.0)	(11.5)	(11.2)	10.7	[10.0]	(9.0)	7.6	6.2	(5.8)	5.0	4.9	4.7
25	4.2	4.3	4.4	4.2	4.2	4.6	4.1	7.2	(9.8)J	11.0	11.3	11.4	11.4H	(11.6)	11.2	(10.1)	[10.2]C	8.8	8.0	8.9	7.6	(6.4)J	5.7	5.0
26	5.0	5.3	5.0	5.0	5.0	4.7	4.4	6.8	(9.4)	10.8	12.0	12.9	[13.5]C	[12.9]C	C	C	C	(10.5)J	[9.7]C	[8.0]C	(7.0)	6.0	5.6	(5.1)
27	5.0	4.0	3.8	(4.0)J	3.8	3.7	3.8	6.2	9.3	(11.2)	11.5	(12.9)	(12.6)	(12.4)	11.4	[11.0]C	(10.6)	(9.2)	(8.4)	(6.8)	5.3	[4.6]C	(3.9)J	C
28	C	C	C	C	C	C	C	C	C	C	11.0	12.2	[12.3]C	[12.2]C	11.5	11.5	[11.2]C	8.9	(7.0)	6.6	4.8	4.4	4.2	(4.1)J
29	4.2	4.5	4.6	4.6	4.1	(3.7)	3.4	(6.2)J	[8.5]C	10.1	11.1	11.5	[12.3]C	[12.3]C	12.2	(11.4)	(10.7)	9.8	(7.8)	[6.5]C	5.4	4.6	4.3	4.5
30	(4.2)J	4.0	4.3	4.3	(4.0)	3.7	3.6	[6.0]C	9.2	(11.2)	11.4	(11.2)	11.4	11.3	[11.7]C	10.9	[9.9]C	9.0	[7.8]C	(6.4)	5.5	4.3	(4.1)J	4.3
31	4.5	4.7	4.9	4.9	3.9	3.5	3.3	5.6	8.6	9.8	10.6	(11.2)	(11.3)	11.6	11.4	11.1	9.7	(8.0)J	[7.2]C	(5.9)	4.8	(4.1)J	4.1	(3.9)J
Median	4.3	4.5	4.6	4.6	4.3	4.0	4.0	6.8	(9.4)	(10.8)	(11.3)	(11.7)	(12.0)	(11.8)	(11.6)	(11.4)	(10.9)	(9.6)	(8.2)	(6.8)	(5.7)	5.0	4.8	4.6
Count	28	28	28	28	28	28	26	23	23	24	29	28	27	27	27	26	24	25	25	25	27	29	28	27

Sweep: 0.75 to 11.5 Mc, automatic; suplemented when necessary by monual operation from 8.0 Mc to 17.0 Mc.

Sweep ____ Mc to ____ Mc in ____ min

Manual ☐ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 765519

TABLE 88

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), km (Unit), December (Month), 1946

Observed at Washington, D.C.

Lat 39.0° N, Long. 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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													c	e	c											
2																										
3																										
4																										
5												210	c	c												
6																										
7																										
8																										
9																										
10																										
11														210		210										
12																										
13														220												
14																										
15																										
16																										
17														220												
18																										
19																										
20																										
21											c	c	c	c	c	c										
22											c	c	c	c	c	c										
23																c										
24																										
25												220	220													
26															c	c										
27																										
28																										
29													210													
30																										
31														210												
Median																										
Count												2	2	4		1										

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 703518

TABLE 89

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), December (Month), 1946

Observed at Washington, D. C.

Lat. 39.0° N, Long. 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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													C	C	C											
2																										
3																										
4																										
5												L	C	C												
6																										
7																										
8																										
9																										
10																										
11														L		3.9										
12																										
13														L												
14																										
15																										
16																										
17														5.0												
18																										
19																										
20																										
21											C	C	C	C	C	C										
22											C	C	C	C	C	C										
23																C										
24																										
25												L	L													
26															C	C										
27																										
28																										
29													L													
30																										
31														L												
Median																										
Count														1		1										

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 725519

TABLE 90

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'E (Characteristic), km (Unit), December (Month), 1946

Observed at Washington, D. C.

Lat 39.0° N, Long 77.5° W — 75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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								C	C	110	100	100	110	110	(100)	100	[100]^{C}	100						
2								C	[110]^{C}	110	110	110	110	110	110	110	110^{H}	C						
3								C	100^{H}	110	110	100	110	110	110	110	110							
4								C	110	110^{H}	100^{H}	100	100^{H}	100	110	[110]^{C}	(120)							
5								C	110	110	110	110	110	110	110	[110]^{C}	120	C						
6								C	110	110^{H}	110	110	110	110	100	110	120							
7								C	110	110	100	100	100	100	100	100	120^{H}							
8								C	(110)^{H}	100	100	100	100	[110]^{C}	100	100	110							
9								C	110	100	100	100	100	100	100	100	100							
10								C	110	100	100	100	100	100	100	110	100							
11								C	110^{H}	110	110	110	[100]^{C}	100	100	110	[100]^{C}							
12								C	100	110	110	110	110	110	[110]^{C}	110	120							
13								C	110	110	110	110	110	110	110	110	110							
14								C	120	110	110	[100]^{C}	[110]^{C}	110	110	110	110^{H}							
15								C	120	110	110	110	100	100	100	110	120^{H}							
16								C	110	110	110	100	100	110	110	(100)	110							
17								C	110^{H}	110	100	110	110^{H}	110	110	120	120							
18								C	110^{H}	110^{H}	110	100	100	100	100	110	(110)	C						
19								C	120^{H}	110	110	110	100	100	100	100	110							
20								C	(100)	110	100	[110]^{C}	100	110	[110]^{C}	[110]^{C}	110							
21								C	C	C	C	C	C	C	C	C	C							
22								C	C	C	C	C	C	C	C	C	C							
23								C	C	110	110	110	100	110	110	110	110^{H}	C						
24								C	110^{H}	120^{H}	110	110	110	110	110	110	120							
25								C	110^{H}	120	110	110	100	120	120	110	120	C						
26								C	120	120	110	110	110	120	120	120	120							
27								C	120	120	110	110	120	120	120	110	120							
28								C	C	C	[100]^{C}	110	100	[100]^{C}	110	(110)	C	C						
29								C	(130)^{H}	120	110	120	110	110	110	120	(130)							
30								C	120^{H}	120	110	110	110	120	110	120	120	C						
31								C	120^{H}	110^{H}	110	110	100	100	110	110	(110)	C						
Median									110	110	110	110	100	110	110	110	110							
Count									26	28	29	29	29	29	29	29	28							

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 705519

TABLE 91

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), December (Month), 1946

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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								C	C	A	3.0	3.2	3.3	3.3	3.1	C	C	C						
2								C	[2.3]C	2.6	(3.1)	3.3	3.4	3.3	2.9	(2.7)	1.7H	C						
3								C	1.9H	(2.7)	(3.2)	(3.3)	[3.4]C	3.3	[3.1]C	(2.4)	A							
4								C	2.4	2.6H	3.0H	3.3	3.3H	3.2	3.0	[2.7]C	2.1							
5								C	2.3	2.7	3.1	3.3	3.3	3.3	[3.1]C	[2.6]C	2.1	C						
6								C	A	2.7H	3.0	[3.3]C	[3.3]C	[3.3]C	[3.1]C	2.7	(2.1)							
7								C	2.1	2.7	(3.1)	3.3	3.5	[3.4]C	(3.2)	[2.7]A	2.2H							
8								C	2.1H	2.6	3.3	(3.3)	(3.5)	[3.4]C	[3.1]C	(2.8)	2.0							
9								C	2.1	(2.8)	(3.2)	[3.5]C	3.5	3.5	(3.2)	C	A							
10								C	A	2.9	3.2	3.3	[3.4]C	3.3	[2.9]C	2.8	A							
11								C	2.1H	2.8	[3.1]C	[3.4]C	[3.4]C	3.4	[3.2]C	2.8	2.1H							
12								C	A	2.8	[3.1]C	C	C	C	C	2.8	A							
13								C	2.1	2.8	3.2	[3.5]C	C	C	C	A	A							
14								C	2.3	2.9	A	C	C	(3.4)	[3.1]C	2.8	1.9H							
15								C	2.4	2.8	[3.2]C	3.4	3.4	[3.3]C	[3.3]C	2.9	2.2H							
16								C	2.2	2.8	C	A	A	A	A	A	2.3							
17								C	2.1H	2.8	(3.2)	(3.4)	(3.4)H	[3.4]C	(3.3)	(2.9)	(2.3)							
18								C	(2.1)H	2.8H	(3.1)	(3.4)	[3.5]A	3.4	[3.0]C	2.9	2.4	C						
19								C	2.0H	(2.7)	(3.1)	3.4	3.5	3.3	(3.2)	2.7	A							
20								C	(2.4)	2.7	(3.3)	[3.4]C	(3.5)	C	C	C	A							
21								C	C	C	C	C	C	C	C	C	C	C						
22								C	C	C	C	C	C	C	C	C	C	C						
23								C	C	2.8	[3.2]C	3.3	(3.5)	(3.4)	[3.2]C	2.8	1.9H	C						
24								C	2.0H	2.6H	[3.1]C	[3.4]C	[3.5]C	[3.4]C	3.3	2.8	2.1							
25								C	2.0H	[2.9]A	3.3	3.4	[3.4]C	[3.4]C	[3.0]C	(2.7)	A	C						
26								C	2.2	2.8	3.1	A	A	C	C	C	2.4							
27								C	2.2	[2.7]A	(3.0)	[3.3]A	[3.4]A	(3.3)	[3.2]A	(2.4)	[2.4]A							
28								C	C	C	[3.3]C	(3.5)	[3.5]C	[3.4]C	3.2	2.7	(2.3)	1.7						
29								C	1.9H	2.6	(3.0)	C	C	C	C	2.7	2.3							
30								C	(1.8)H	2.7	[3.1]C	(3.3)	3.3	[3.3]C	[3.2]C	2.9	2.4	C						
31								C	1.7H	2.5H	3.0	3.3	[3.4]C	[3.4]C	(3.1)	2.7	[2.4]A	1.6						
Median								C	2.1	2.8	(3.1)	(3.3)	(3.4)	(3.4)	(3.1)	2.8	2.2							
Count									23	27	27	24	23	23	23	23	20	2						

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 92

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, km (Unit) December (Month), 1946

Observed at Washington, D. C.

Lat. 39.0° N, Long 77.5° W — 75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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	C	2.4 110	C	C	2.4 100	C	C	C	C	3.6 110	3.5 110	(3.6) 110	(4.2) 110	C	C	(3.6) 100	C	C	3.3 110	2.4 110	C	2.5 100	2.4 100	C
2	2.4 110	2.4 110	C	2.2 100	2.4 100	2.6 100	2.4 110	2.8 100	C	C	C	C	C	C	C	C	3.5 100	3.3 100	C				2.4 110	2.0 100
3	2.7 110	2.6 100	2.6 120		5.1 110	2.6 100		3.3 100		3.9 110		3.8 120	3.4 130		2.8 130	2.7 120	2.4 100	3.7 100	4.3 100	2.4 110	3.6 100	2.2 110	2.3 100	2.6 100
4	3.3 90	2.7 100		2.5 100	2.9 100	(5.3) 110	3.3 110	3.7 110					3.8 120	3.5 150	3.9 130			2.3 100	3.5 110	(5.1) 110	2.3 110	2.5 100	(3.4) 100	3.2 110
5	2.7 100		2.3 100	2.4 110	2.7 100	2.3 120	2.3 120	2.8 120	2.7 110	3.8 100		3.8 130			C	C			2.3 100	C	2.4 110		2.3 120	2.4 110
6		2.3 110	2.9 110	2.7 100	2.9 110			3.5 110	3.9 110	3.9 120						2.9 130	2.4 130	2.8 90	2.4 100			2.3 110	2.9 100	2.3 110
7	2.3 100		2.3 100	2.3 120	2.4 100	2.3 110	2.8 110	3.0 100	3.9 100	3.0 180	4.0 100	3.5 120				2.7 100			2.8 110	2.9 110	2.9 100	2.4 100		
8	2.8 100	2.3 100			2.4 90		2.6 110	3.3 100	3.9 100	2.9 100				3.8 130	3.2 110	3.4 110 H	2.5 110	2.4 100	3.2 110	2.9 110		2.8 100	2.8 110	2.8 110
9	2.4 110	2.[illegible] 100				2.4 110	2.4 120	3.6 100	2.3 120		3.7 100	5.0 100	3.9 100		3.3 120		2.8 100	3.9 100	3.5 100	2.8 100	2.4 100	2.9 110	2.7 110	2.4 100
10	2.4 100	2.4 100	2.8 100	2.9 100	2.9 100		2.3 100	5.7 100	3.3 100					3.6 100			2.4 100	2.5 100					(2.9) 100	2.8 100
11	2.9 100	2.6 100	2.5 100			2.9 100	2.9 100		3.9 110 H	3.3 120	3.6 120	3.8 120	3.7 130	3.5 140	C	2.9 120	2.4 100	2.3 100	2.0 100	1.7 100	(1.8) 100	(1.8) 100		
12	1.8 100	2.3 100		2.4 100		2.7 100	3.8 100	5.1 100	6.4 100	3.7 100 H	3.6 140						2.4 120	C	(1.8) 120	(2.4) 110		1.8 100	2.8 110	2.8 110
13		2.5 100	2.4 110			2.3 100		C		2.9 110						4.3 110	4.6 110	C	C	(2.9) 120	(3.7) 110	2.8 100	2.4 130	2.3 110
14	2.4 110	2.7 100	2.7 110	2.8 110		2.3 110	2.4 110		3.8 100	4.7 120	3.9 120	3.9 110				2.6 100	2.8 100	2.8 100		2.4 100	3.5 110	3.7 100	(3.5) 110	2.9 100
15	2.9 100	2.8 100		2.8 100	2.7 110	(2.5) 110	2.7 100	2.8 100	2.9 100			3.6 120				2.9 100	2.9 100		C	C		2.8 100	2.2 110	2.3 110
16	2.3 110	2.4 100		4.0 100	4.0 100	2.9 110	2.7 100	(2.9) 100	2.9 (90)	(2.9) (90)	3.7 120	5.2 110	5.2 110	3.5 110	3.3 110	3.6 100	(2.9) 100	C	C	(3.5) 110	3.2 110	2.9 100	2.3 110	3.3 110
17	3.0 100	2.8 110	2.9 100	6.1 100	5.2 110	4.1 110	2.3 120	(2.3) 110	2.7 150							2.9 100	3.0 100	C	C	2.3 110	2.3 100	2.8 100	2.7 100	2.7 100
18	5.1 100	2.7 100			3.8 100	5.2 110	(3.5) 110	(2.8) 110	2.9 100						4.0 120	3.2 (120)	2.8 100	2.4 100	(2.9) 100	2.3 100	(2.9) 100	(2.3) 100	2.7 100	(2.8) 100
19	2.3 100	2.3 100	2.3 100	2.9 90	3.3 100		2.8 100	3.5 100		3.7 100						2.8 100	4.4 110	C	C	C	C	2.3 100		2.2 100
20	2.8 100 H				2.7 100	3.7 110	2.9 100	C	2.9 100	3.3 (110)	3.5 130	3.6 130	3.9 120		C	3.2 110	2.8 110	2.8 120	2.0 120		C			
21	C	C					3.7 110	C ◄																C ◄
22	C ◄																							C ◄
23	C ◄								► C	3.6 140	3.8 150	4.5 130	3.8 110	3.6 130			2.2 110	2.9 110	3.3 110	2.9 110	2.7 100	2.7 100		
24				2.3 100	3.8 100	2.9 100	2.9 100	5.0 100	2.9 100	2.9 100	C	4.5 90	3.8 130	3.8 130	3.3 120		2.4 130	2.7 110		3.7 110	3.4 100	3.5 110	2.6 110	2.3 110
25	2.3 100				2.7 110	5.0 130		2.0 120		3.3 110			3.5 120	3.5 120	3.6 120	3.0 120	2.4 110		3.3 100	2.7 110	3.5 110	3.5 100	3.2 100	2.7 110
26	2.7 100					2.8 110	2.8 130	2.3 120		5.6 120	7.0 110	3.8 120	3.6 110		3.2 120	2.8 140			2.2 (120)		2.3 110		2.3 100	
27	2.7 100									6.6 120	3.8 110	5.2 120	5.1 110	3.7 120	3.8 120	2.9 110	2.3 120							C
28	C ◄				► C ◄					► C		3.9 130	C	C		2.9 110	2.3 110	2.2 110			2.8 110	3.2 110		
29						2.9 120											2.7 100				2.4 100	2.3 100	3.5 90	3.7 110	5.2 100	3.5 100
30	3.4 100				1.9 100	2.8 100			2.7 120				3.5 120					2.9 110	2.9 100	3.4 100	2.9 100	2.7 100	4.6 110	2.8 90
31	(2.7) 90			(2.7) 100	2.7 100	(2.7) 90						3.4 170		3.6 120		2.9 120	2.7 130					2.2 120		
Median	2.6	2.3	* *	2.2	2.6	2.6	2.4	2.8	2.7	3.0	* *	3.6	* *	* *	* *	2.9	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4
Count	26	27	26	27	28	27	27	24	25	27	27	28	27	26	24	27	28	23	23	26	26	29	29	27

* * Median fE_s less than median f^oE or less than lower limiting frequency of recorder.

Sweep 0.5 Mc to 11.5 Mc in 3.4 min

Monual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1948 O - 702519

TABLE 93

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-MI500, ____, December, 1946
(Characteristic) (Unit) (Month)

National Bureau Of Standards
(Institution)

Observed at Washington, D.C.

Scaled by: M. S. L., J. L. S.

Lat 39.0°N, Long 77.5°W

75° W Mean Time

Calculated by: A. M. K., B. W. D.

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	(1.8)J	(1.7)	1.8	1.9	2.1	2.1	(2.2)	(2.2)	C	C	(2.2)	(2.0)J	(2.1)	C	C	1.8	1.8	2.0	(1.8)	C	(1.9)	(2.0)	1.9	1.9
2	C	C	C	C	C	C	C	C	C	C	2.3	(2.0)	(2.3)	(1.9)	C	2.3	(2.3)	C	C	C	C	(1.9)	(1.9)	1.9
3	(1.9)	(1.9)	1.9	2.0	(1.8)	(1.9)	2.0	2.1	C	C	C	2.3	C	1.9	C	(2.0)	2.0	C	C	(2.1)	2.0	(2.0)J	1.8	(1.9)
4	1.9	(1.8)	(1.9)	(1.9)	(2.0)J	1.9	1.9	2.0	2.2	C	C	(2.2)	1.9	2.0	1.9	1.9	1.9	2.0	(1.9)	(1.9)	C	(2.0)	(1.8)J	(1.9)J
5	(1.9)	(1.8)J	(1.7)J	C	(1.8)J	1.9	C	2.2	2.2	(2.2)J	2.0	1.8	C	C	2.0	2.1	2.0	1.9	1.9	C	(2.2)	(2.0)J	(2.0)J	(2.0)
6	1.7	(1.8)	1.8	(1.9)	(1.8)J	(2.0)	2.0	2.0	C	(2.1)	2.1	2.0	2.0	2.1	2.1	2.1	2.2	C	C	C	(2.0)J	2.0	(2.0)J	1.8
7	1.6	1.7	1.7	1.9	1.9	1.9	(1.9)	2.1	2.2	C	2.2	2.1	2.0	2.1	2.0	2.0	2.2	2.1	2.1	C	(2.0)	(2.0)	1.9	1.8
8	1.8	1.8	1.9	(2.0)	2.1	(1.9)	2.0	2.1	(2.2)	(2.2)	2.2	2.1	2.0	2.0	2.0	2.0	(1.9)	(2.0)	(1.9)	C	(2.0)	2.0	2.0	1.9
9	(1.9)	1.8	1.9	1.8	1.8	1.9	1.9	2.1	2.3	(2.2)	(2.1)	2.0	2.0	2.0	2.0	1.9	2.0	2.0	(1.8)	C	(2.1)	2.0	1.8	(2.0)
10	1.9	1.9	2.0	2.1F	2.0F	2.0	1.9	2.2	2.2	C	2.1	1.8	(2.0)	2.0	1.9	2.0	C	(2.0)	C	1.7	(2.0)	2.0	2.1	2.0
11	1.9	1.8	1.8	2.0	1.9	1.8	1.9	C	2.2	(2.3)J	2.1	2.1	2.0	1.9	1.9	2.0	2.0	1.9	2.0	2.1	C	1.9	1.9	1.8
12	1.8	1.9F	1.9	1.9	1.9	2.1	2.0	1.9F	2.2	(2.2)	2.2	2.1	2.0	2.0	2.1	2.0	2.0	(1.9)	(1.9)	(1.9)	C	(2.1)	(2.1)	(2.1)
13	2.0	1.9	2.0	1.9	1.8	(1.8)F	2.0	2.1	C	C	2.1	2.1	2.0	2.0	C	2.0	C	C	C	C	C	2.2	C	C
14	1.9	1.8	1.8	1.9	(2.0)J	2.1	2.0	2.1	C	C	2.1	C	(2.1)	2.0	1.9	1.9	2.1	(1.9)	C	C	C	2.1	1.9	(1.9)J
15	2.0	1.8	1.9	1.9	1.9	2.0	2.0	1.9	2.1	(2.2)J	2.2	(2.3)	2.1	(1.9)	(2.0)	2.0	2.0	C	C	(2.1)J	(2.1)	(2.1)J	1.9	1.9
16	2.0	1.9	1.9	1.9	1.9	1.9	2.0	(2.0)J	2.1	(2.1)	(3.4)	(2.4)	C	(2.0)	(2.0)	C	2.0	C	(2.0)	(2.2)	(2.0)	1.9	2.0	(2.0)J
17	1.9	1.7	1.8	1.9	2.0	2.0	C	(1.9)	(2.2)	(2.1)	2.2	C	2.0	(2.1)	2.0	1.8	2.1	2.1	(1.9)	(2.0)	C	2.0	1.9	1.9
18	1.8	1.8	1.9F	1.9F	1.9	1.9	2.0	2.0	2.1	2.1	(2.1)	2.0	1.9	1.9	1.9	1.9	C	2.1	1.9	(2.0)	(2.0)	2.1	1.8	1.8
19	1.8	1.7	1.7	1.9	1.7	(1.8)J	1.9	C	2.0	(2.1)J	2.1	(2.0)	1.9	C	(2.1)	C	(2.1)	C	C	C	C	2.0	(1.9)	1.9
20	(2.0)	(1.8)	1.9	(1.9)	1.8	1.9	1.9	C	2.2	2.2	2.1	C	C	(2.0)	C	(1.9)	C	C	2.2	2.0	(2.4)J	2.0	(1.8)	(1.8)J
21	(1.9)	C	1.7	1.7	1.8	2.0	(2.0)	C→																→C
22	C←																							→C
23	C←							→C	(2.2)	(2.1)	C	(2.0)	(2.1)	1.9	2.1	C	C	C	2.0	C	(1.9)	1.8	1.9
24	1.8	1.7	1.8	1.8	1.8	1.8	2.0	1.9	2.2	(2.1)	(2.1)	2.2	(2.0)	(2.1)J	(2.1)	(2.0)	C	(2.2)	2.0	(2.0)	(2.1)J	2.1	(2.0)J	1.9
25	1.9	1.9	1.8	1.8	1.8	1.7	1.9	2.0	2.4	2.3	2.1	2.1	2.2	2.0	2.0	C	C	(2.0)J	1.8	1.8	2.0	(2.1)J	(2.0)J	1.9
26	1.8	1.8	1.8	1.8	2.0	1.9F	1.9F	2.0	2.2	2.0	2.0	(2.0)J	1.9	(2.0)	(1.9)J	C	C	C	2.0	2.1	(1.9)	(2.0)	2.1	(2.1)
27	1.8	1.8F	(1.9)JE	1.8	1.8	1.9	2.0	2.1	2.1	2.3	(2.2)	C	2.0	C	C	C	C	C	1.9	2.0	(2.0)J	(2.0)	(1.9)J	(1.8)J
28	C	C	C	C	C	C	C	C	C	C	2.2	2.1	2.1	1.9	2.0	1.9	1.9	C	2.0	C	2.2	2.1	(1.9)	(1.9)J
29	1.7	(1.9)	1.9	2.0	2.2	2.1	2.0	1.9	2.3	2.2	2.2	2.1	2.1	1.9	C	(2.0)	(2.0)	(2.0)	(2.1)	C	2.2	2.0	1.9	1.9
30	1.9	(2.0)	(1.9)J	1.9	2.0	1.9	1.9	2.1	2.2	2.1	(2.0)	(2.0)	(2.1)	2.1	2.0	1.8	2.0	2.0	(2.0)	(1.9)	2.1	1.9	1.9	(1.8)
31	1.8	1.8	1.8	1.9	2.1	1.8	1.9	2.0	(2.2)J	2.2	(2.1)	2.1	2.0	2.0	1.9	1.9	2.0	2.0	C	(2.0)	(2.1)	2.0	(1.9)	(1.9)J
Median	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.2	(2.2)	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	(2.0)	(2.0)	(2.0)	1.9	1.9
Count	27	26	27	26	27	27	25	23	21	20	27	24	25	25	22	24	20	17	19	17	20	29	28	28

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702519

TABLE 94

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M3000, ____ December, 1946
(Characteristic) (Unit) (Month)

Observed at Washington, D. C.
Lat 39.0° N, Long 77.5° W

75° W Mean Time

National Bureau Of Standards
(Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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	(2.7)J	(2.6)	2.7	2.8	3.1	3.1	(3.2)	(3.2)	C	C	(3.2)	(3.0)J	(3.2)	C	C	2.8	2.8	3.0	(2.8)	C	(2.9)	(3.0)	2.9	2.8
2	C	C	C	C	C	C	C	C	C	C	3.3	(3.0)	(3.3)	(2.9)	C	3.4	(3.4)	C	C	C	C	(2.9)	(2.9)	2.8
3	(2.8)	(2.8)	2.9	3.0	(2.7)	(2.8)	3.0	3.1	C	C	C	3.3	C	2.8	C	(3.0)	3.0	C	C	(3.1)	3.0	(3.0)J	2.7	(2.9)
4	2.8	(2.8)	(2.8)	(2.9)	(2.9)J	2.8	2.8	3.0	3.2	C	C	(3.3)	2.9	3.0	2.8	2.8	2.8	2.9	(2.9)	(2.8)	C	(3.0)	(2.7)	(2.8)J
5	(2.8)	(2.8)J	(2.6)J	C	(2.8)J	2.9	C	3.2	3.3	(3.2)J	2.9	2.8	C	C	3.0	3.1	3.0	2.8	2.8	C	(3.2)	(3.0)J	(3.0)J	(3.0)
6	2.6	(2.7)	2.7	(2.8)	(2.8)J	(3.0)J	3.0	3.0	C	(3.2)	3.1	3.0	2.9	3.1	3.1	3.1	3.2	C	C	C	(3.0)J	3.0	(3.0)J	2.7
7	2.5	2.6	2.6	2.8	2.8	2.8	(2.9)	3.1	3.2	C	3.2	3.1	3.0	3.1	3.0	3.0	3.1	3.1	3.1	C	(3.0)	(3.0)	2.8	2.7
8	2.7	2.7	2.9	(3.0)	3.1	(2.9)	3.0	3.1	(3.2)	(3.3)	3.2	3.2	3.0	3.0	2.9	3.0	(2.9)	(3.0)	(2.8)	C	(2.9)	3.0	3.0	2.9
9	(2.9)	2.7	2.8	2.7	2.8	2.9	2.9	3.1	3.3	(3.2)	(3.1)	3.0	3.0	3.0	3.0	2.9	3.0	3.0	(2.7)	C	(3.1)	3.0	2.8	(3.0)
10	2.8	2.9	3.0	3.1F	3.0F	3.0	2.9	3.2	3.3	C	3.2	2.8	(3.0)	3.0	2.9	2.9	C	(3.0)	C	2.6	(2.9)	3.0	3.0	2.9
11	2.9	2.7	2.8	3.0	2.8	2.8	2.8	C	3.3	(3.3)J	3.1	3.2	3.0	2.8	2.9	3.0	3.0	2.9	2.9	3.1	C	2.9	2.9	2.7
12	2.7	2.8F	2.9	2.8	2.9	3.1	3.0	2.9F	3.3	(3.2)	3.2	3.1	3.0	3.0	3.1	2.9	3.0	(2.9)	(2.8)	(2.8)	C	(3.1)	(3.1)	(3.1)
13	3.0	2.9	3.0	2.9	2.7	(2.7)F	3.0	3.1	C	C	3.1	3.1	3.0	3.0	C	3.0	C	C	C	C	C	3.2	C	C
14	2.8	2.8	2.7	2.8	(2.9)J	3.1	3.0	3.1	C	C	3.1	C	(3.1)	2.9	2.8	2.9	3.0	(2.9)	C	C	C	3.1	2.9	(2.9)J
15	2.9	2.8	2.8	2.9	2.9	3.0	3.0	2.9	3.1	(3.3)J	3.3	(3.4)	3.1	(2.9)	(3.0)	2.9	3.0	C	C	(3.1)J	(3.1)	(3.0)J	2.9	2.9
16	3.0	2.9	2.9	2.8	2.8	2.9	3.0	(3.0)J	3.1	(3.1)	(3.5)	(3.4)	C	(3.0)	(2.9)	C	3.0	C	(3.0)	(3.2)	(3.0)	2.9	3.0	(3.0)J
17	2.8	2.7	2.7	2.8	3.0	3.0	C	(2.9)	(3.2)	(3.1)	3.2	C	3.0	(3.1)	2.9	2.8	3.1	3.1	(2.8)	(3.0)	C	3.0	2.8	2.9
18	2.8	2.8	2.9F	2.8F	2.9	2.9	2.9	3.0	3.1	3.2	(3.1)	2.9	2.9	2.9	2.9	2.8	C	3.1	2.9	(3.0)	(3.0)	3.1	2.8	2.8
19	2.8	2.7	2.7	2.9	2.6	(2.7)J	2.9	C	3.0	(3.1)J	3.1	(3.0)	2.9	C	(3.1)	C	(3.1)	C	C	C	C	3.0	(2.9)	2.9
20	(3.0)	(2.8)	2.8	(2.9)	2.7	2.8	2.9	C	3.2	3.3	3.1	C	C	(3.0)	C	(2.9)	C	C	3.2	3.0	(3.4)J	3.1	(2.8)	(2.8)J
21	(2.8)	C	2.6	2.6	2.8	3.0	(3.0)	C ←																→ C
22	C ←																							→ C
23	C ←								→ C	(3.2)	(3.1)	C	(3.0)	(3.1)	2.9	3.1	C	C	C	3.0	C	(2.9)	2.8	2.8
24	2.7	2.6	2.8	2.8	2.7	2.8	3.0	2.9	3.2	(3.1)	(3.1)	3.2	(3.0)	(3.1)J	(3.1)	(3.0)	C	(3.2)	3.0	(2.9)	(3.1)J	3.1	(3.0)	2.9
25	2.9	2.8	2.7	2.7	2.7	2.6	2.9	3.1	3.5	3.4	3.1	3.1	3.2	2.9	3.0	C	C	(3.0)J	2.8	2.7	2.9	(3.0)J	(3.0)J	2.9
26	2.7	2.7	2.7	2.8	3.0	2.8F	2.9F	3.0	3.2	3.0	2.9	(2.9)J	2.9	(3.0)	(2.8)J	C	C	C	3.0	3.1	(2.9)	(3.0)	3.1	(3.1)
27	2.7	2.7F	(2.8)JF	2.7	2.8	2.9	2.9	3.2	3.1	3.4	(3.2)	C	3.0	C	C	C	C	C	2.8	3.0	(3.0)J	(3.0)	(2.9)J	(2.7)J
28	C	C	C	C	C	C	C	C	C	C	3.2	3.1	3.1	2.9	3.0	2.9	2.9	C	3.0	C	3.2	3.1	(2.9)	(2.9)J
29	2.6	(2.9)	2.8	3.0	3.2	3.1	3.0	2.9	3.4	3.3	3.3	3.1	3.1	2.8	C	(3.0)	(3.0)	(3.0)	(3.0)	C	3.3	2.9	2.8	2.8
30	2.9	(3.0)	(2.8)J	2.9	2.9	2.8	2.9	3.1	3.2	3.1	(3.0)	(3.0)	(3.1)	3.1	2.9	2.7	3.0	3.0	(3.0)	(2.9)	3.1	2.9	2.8	(2.8)
31	2.7	2.8	2.8	2.9	3.1	2.8	2.9	3.0	(3.3)J	3.2	(3.1)	3.1	3.0	3.0	2.9	2.8	3.0	2.9	C	(3.0)	(3.1)	2.9	(2.8)	(2.9)J
Median	2.8	2.8	2.8	2.8	2.8	2.9	2.9	3.1	3.2	(3.2)	3.1	3.1	3.0	3.0	2.9	2.9	3.0	3.0	2.9	(3.0)	(3.0)	3.0	2.9	2.9
Count	27	26	27	26	27	27	25	23	21	20	27	24	25	25	22	24	20	17	19	17	20	29	28	28

Sweep 0.5 Mc to 11.5 Mc in 3.4 min

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U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702519

TABLE 95

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F1-M3000 (Characteristic), ____ (Unit), December (Month), 1946

National Bureau Of Standards (Institution)

Observed at Washington, D. C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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													C	C	C										
2																									
3																									
4																									
5												L	C	C											
6																									
7																									
8																									
9																									
10																									
11														L		3.8									
12																									
13														L											
14																									
15																									
16																									
17														3.9											
18																									
19																									
20																									
21											C	C	C	C	C	C									
22											C	C	C	C	C	C									
23																C									
24																									
25												L	L												
26															C	C									
27																									
28																									
29													L												
30																									
31														L											
Median																									
Count														1		1									

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 762319

TABLE 96

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-M1500 (Characteristic), ____ (Unit), December (Month), 1946

Observed at Washington, D. C.

Lat. 39.0° N, Long. 77.5° W

75° W Mean Time

National Bureau Of Standards (Institution)

Scaled by: M. S. L., J. L. S.

Calculated by: A. M. K., B. W. D.

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								c	c	A	4.0	4.1	4.0	4.0	4.1	c	c	c						
2								c	c	3.8	(3.8)	4.0	4.1	4.1	4.1	(4.0)	4.0"	c						
3								c	3.8"	(4.0)	(3.9)	(4.1)	c	4.2	c	(4.2)	A							
4								c	3.6	3.8"	3.9"	4.0	4.0"	4.0	3.9	c	3.9							
5								c	3.8	4.3	4.0	3.8	3.9	4.0	c	c	4.0	c						
6								c	A	3.9"	4.1	c	c	c	c	4.1	(4.0)							
7								c	4.0	4.0	(4.0)	4.0	3.9	c	4.1	A	4.1"							
8								c	4.0"	3.9	3.7	(3.9)	(4.0)	c	c	(4.0)	(4.3)							
9								c	3.9	(4.0)	(4.0)	c	4.0	4.1	(3.9)	c	A							
10								c	A	4.1	4.1	4.1	c	4.2	c	3.8	A							
11								c	(3.8)"	4.0	c	c	c	4.0	c	4.2	AH							
12								c	A	4.1	c	c	c	c	c	4.1	A							
13								c	4.1	4.1	4.0	c	c	c	c	A	A							
14								c	(3.9)	4.1	A	c	c	4.0	c	4.1	3.7"							
15								c	3.6	4.2	c	4.0	4.1	c	c	4.0	4.2"							
16								c	(3.7)	4.2	c	A	A	A	A	A	3.9							
17								c	4.1"	4.0	(3.9)	(4.0)	(4.1)"	c	(3.6)	(3.9)	(4.0)							
18								c	(3.8)"	3.9"	(4.0)	(3.9)	A	4.1	c	3.8	(3.8)	c						
19								c	4.2"	(3.8)	(4.0)	4.0	3.9	4.2	(4.1)	(4.0)	A							
20								c	(3.8)	(3.9)	(4.0)	c	(4.1)	c	c	c	A							
21								c	c	c	c	c	c	c	c	c	c	c						
22								c	c	c	c	c	c	c	c	c	c	c						
23								c	c	4.0	c	4.1	(4.1)	(4.2)	c	4.2	3.8"	c						
24								c	4.2"	4.2"	c	c	c	c	4.1	4.2	4.1							
25								c	4.3"	A	4.2	4.1	c	c	c	(4.3)	A	c						
26								c	4.1	4.2	4.1	A	A	c	c	c	3.8							
27								c	3.9	A	(4.2)	A	A	(4.0)	A	(4.1)	A							
28								c	c	c	c	(4.2)	c	c	(4.3)	4.3	c	c						
29								c	4.1"	3.9	(4.0)	c	c	c	c	4.1	(3.9)							
30								c	3.9"	4.0	c	(3.8)	4.2	c	c	4.0	4.1	c						
31								c	3.9"	4.0"	4.0	4.0	c	c	(4.1)	4.1	A	c						
Median									3.9	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.0							
Count									23	26	20	17	13	13	10	20	16							

Sweep 0.75 Mc to 11.5 Mc in 3.4 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

Table 97

Ionospheric Storminess, December 1946

Day	Ionospheric Character* 00-12 GCT	12-24 GCT	Principal Storms Beginning GCT	End GCT	Geomagnetic Character** 00-12 GCT	12-24 GCT
December						
1	2	2			0	2
2	1	2			1	2
3	1	2			2	1
4	2	2			1	2
5	2	1			2	2
6	2	2			2	2
7	2	1			2	2
8	1	2			2	1
9	2	2			1	1
10	1	2			2	3
11	1	2			2	3
12	2	2			2	2
13	1	2			2	2
14	2	2			1	0
15	2	2			1	1
16	1	1			1	2
17	1	2			2	1
18	1	1			2	2
19	2	0			3	3
20	1	1			1	0
21	3	***			2	2
22	***	***			3	2
23	***	1			2	2
24	2	2			1	1
25	1	2			1	2
26	2	1			2	2
27	2	1			2	2
28	***	2			2	1
29	1	2			2	1
30	1	2			1	1
31	2	2			1	1

*Ionosphere character figures (I-figure) for ionosphere storminess at Washington, D.C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of American magnetic K-figure, determined by a number of observatories, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to Table 86 for detailed explanation.

Table 98

Sudden Ionosphere Disturbances Observed at Washington, D.C.

Day	GCT Beginning	GCT End	Location of Transmitters	Relative intensity at minimum*	Other Phenomena
December					
11	1645	1710	Ohio, D.C., Mexico, Ontario	0.3	
14	1557	1650	Ohio, D.C., England, Mexico, New Brunswick, New York, Ontario	0.02	Terr.mag.pulse** 1559-1615
22	1528	1620	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.03	
22	1834	1900	Ohio, D.C., Mexico, Ontario	0.2	
28	1526	1610	Ohio, D.C., Mexico	0.3	
28	1818	1845	Ohio, D.C., Mexico, Ontario	0.5	

*Ratio of received field intensity during SID to average field intensity before and after, for station W8XAL, 6080 kilocycles, 600 kilometers distant.
**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

Table 99

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief Cable and Wireless, Ltd.

Day	GCT		Receiving Station	Location of Transmitters
	Beginning	End		
November 5	1015	1400	Brentwood, England	Belgian Congo, Iran, Kenya, Southern Rhodesia, Turkey
21	0925	0945	Brentwood, England	Belgian Congo, Greece, Iran, Kenya, Madagascar, Southern Rhodesia, Switzerland, Zanzibar
21	1640	1725	Brentwood, England	Brazil, Chile, Colombia, Venezuela
23	1025	1045	Brentwood, England	Belgian Congo, Brazil, Iran, Switzerland, Zanzibar

Note.- Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances, for publication as above. Address letters to Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 100

Provisional Radio Propagation Quality Figures
November 1946
Compared with CRPL Warnings and CRPL Probable Disturbed Period Forecasts

Day	North Atlantic						North Pacific					
	Quality Figure		CRPL* Warning		CRPL** Probable Disturbed Period Forecast	Geomagnetic K_A	Quality Figure		CRPL* Warning		CRPL** Probable Disturbed Period Forecast	Geomagnetic K_A
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT / 13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT / 13-24 GCT
1	(4)	5		X		3 3	5	(4)		X		3 3
2	5	5	X	X	X	2 1	6	6	X	X	X	2 1
3	6	6			X	1 1	6	6			X	1 1
4	6	6				1 2	6	5				1 2
5	6	6				2 3	5	5				2 3
6	6	6				3 3	5	6				3 3
7	6	6				2 1	5	5				2 1
8	6	6				0 2	6	6				0 2
9	6	7				2 2	(4)	5				2 2
10	6	6				2 2	7	6				2 2
11	6	6	X			3 2	6	5	X			3 2
12	6	6			X	3 2	6	5			X	3 2
13	6	6			X	1 2	6	7			X	1 2
14	6	6				0 1	5	(4)				0 1
15	6	6				2 3	5	(4)				2 3
16	6	6				3 2	5	5				3 2
17	6	6				1 2	(4)	7				1 2
18	6	6				1 1	5	6				1 1
19	6	6				3 3	5	6				3 3
20	5	6				2 3	5	6				2 3
21	6	5				4 3	5	(4)				4 3
22	5	5				3 2	5	5				3 2
23	5	6			X	2 1	5	(4)			X	2 1
24	6	6			X	3 3	5	6			X	3 3
25	6	5	X		X	3 3	5	6	X		X	3 3
26	6	6				2 1	6	6				2 1
27	6	6				0 0	5	6				0 0
28	7	7				1 1	7	6				1 1
29	7	6				0 0	6	5				0 0
30	6	6				0 1	6	(4)				0 1
Score:												
H			0		0				1		1	
M			1		1				7		7	
G			26		22				19		16	
(S)			1		3				1		3	
S			2		4				2		3	

*Broadcast on WWV, Washington, D. C. Times of warnings recorded to nearest half-day as broadcast.

**In addition to dates marked X, the following were designated as probable disturbed days on forecasts more than eight days in advance of said dates: November 28-29.

Quality Figure Scale:
1 = Useless
2 = Very poor
3 = Poor
4 = Poor to fair
5 = Fair
6 = Fair to good
7 = Good
8 = Very good
9 = Excellent

Symbols
X Warning given or probable disturbed date.
H Quality 4 or worse on day or half-day of warning.
M Quality 4 or worse on day or half-day of no warning.
G Quality 5 or better on day of no warning.
(S) Quality 5 on day of warning.
S Quality 6 or better on day of warning.
( ) Quality 4 or worse (disturbed).

Geomagnetic K_A on the standard scale of 0 to 9, 9 representing the greatest disturbance.

Table 101

Daily Median Values of American Relative Sunspot Numbers*

December 1946

Date	No.	Date	No.
1	92	16	136
2	67	17	124
3	76	18	144
4	98	19	126
5	102	20	98
6	92	21	101
7	96	22	152
8	76	23	134
9	77	24	144
10	112	25	138
11	98	26	152
12	111	27	148
13	106	28	130
14	110	29	125
15	126	30	106
		31	92
No. of Days 31		Mean	112.5

* Median of data from 13 observers.

Table 102

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

December 1946

First row green line 5303A
Second row red line 6374A
Third row red line 6704A

Degrees from astronomical north

Date	Time of observation GCT	0	05	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
2	1655-1735	10	9	3	--	---	2	3	5	7	8	9	11	14	16	18	18	24	15	23	38	14	13	21	33	33	33	33	30	15	12	10	7	5	4	3	2
														1	2	4	3	4	4	1	2			1	13	12	10	12	9	8	1						
7	2210-2221	9	7	4				5	9	7	4	7	10	10	11	15	22	20	20	27	16	13	12	13	16	18	22	13	12	10	7	4	5	4	3	---	---
						1	1	1				1	1		1	1	1	1	1	5	5			1	2	3	2										
															1	1	1	1				1			1	1	1	1	1								
8	2052-2143	6	6	6	5			5	9	10	9	9	10	10	11	17	19	21	21	19	17	15	16	19	14	16	16	16	20	11	7						
																3	2	2	2	3	3	2	7	8	9	4	2	2	3								
16	1957-2027								9	9	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1				
											9	10	10	10	11	12	13	18	25	20	16	11	10	14	16	13	13	14	12								
																		14	16	14	4	3	2	2	3	3	2	10	2								
18	1602-1646					3	4	7	11	10	10	11	13	14	13	13	14	17	19	22	13	9	8	14	22	20	33	26	15	12	10	8	5	2	2	2	2
																	4	5	7				1	3	6	1	1	2	1							
27	2200-2215													13	12	11	12	10			9	10	11	17	14	14	13	13	11								
28	1716-1736						3	5	7	7	10	12	16	18	18	13	10	17	14	12	10	10	12	18	15	25	17	15	12	9							
												1	12	10	2	2	1					1	3	1												
29	1642-1716				6	7	10	9	8	13	15	14	14	13	13	9	13	23	14	10	11	12	14	18	20	20	19	12	10	7							
										3	5	5	11	4	2	2	1																			
												1	1	1	1	1	2	2	1	1	1	1	1	2	2	1	1	1									
30	1654-1710									10	11	11	10	9	10	13	19	17	15	14	13	16	18	20	18	20	17	15	11	8							
													2	3	2	2	3	3	2	2																
31	1653-1725	3	3	3	3	4	6	9	9	15	14	14	13	11	18	32	32	24	14	13	16	32	38	36	29	29	31	17	15	11	9	7	8	9	9	9	4
						1	2					1	2	3	2	5	2				1	2	1	1	2	3	3	5	1								
														1	3	3	3	3	3	3	4	5	5	4	3	3	2	1									

Table 102 (Continued)

Degrees from astronomical north

Date	Time of observation GCT	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
2	1655-1735	--	--	--	--	--	--	--	--	--	--	--	4	12	15	20	30	19	19	17	33	30	10	14	15	15	15	14	13	12	10	7	7	5	5	--	--
																			10	8	4	18	3	5	10	11	10	4									
														2	3	3	2	2	2	3				.2	2	2											
8	2052-2143														8	10	12	15	19	27	12				10	14	13	10	9	9	8	8	8				
																		4	13	16	8	7	7	8	9	9	9	2									
16	1957-2027													10	13	20	20	20	22	18	16	14	14	14	26	23	18	13	14	15	14	12	10				
														8	7	5	4	3	3								10	10								
18	1602-1646				2	3	4	6	6	9	9	8	14	13	18	28	31	38	37	37	32	17	14	26	34	31	30	30	30	27	23	18	10	9	7	6	3
											1	1	1	1	3	5	8	6	6	14	16			4	10	12			10	10	10	2					
																2	3	3	2	2	1	1	1	2	4	3	2	2	2	2	2	2	2	2			
28	1716-1736	5	5	5	6	6	3	2	3	4	8	10	11	15	13	13	14	18	18	16	14	17	38	38	38	30	27	24	15	10	9	5	4	4	6	2	
															1	1	1		1			2	19	27	15	2	1	2	2								
																						1	1	3	3	3	2	1									
29	1642-1716	5	4	4	3	3	3	3	4	4	6	9	11	12	14	18	13	14	18	11	10	18	34	40	40	38	27	25	18	11	8	8	8	8	7	6	5
														3	3	2	1	2	4	2	8	20	25	30	14	7	4	1									
																						1	2	6	4	2	1										
30	1654-1710														9	11	11	11	11	10		8	20	30	28	17	11	8									
															4	9	7	6	3	3	3	4	15	20	21	11	9	5									
31	1653-1725				2	2	4	4	5	5	6	6	14	17	23	26	18	20	29	10	8	12	14	33	35	29	31	17	11	11	10	10	11	11	11	10	5
		1	2	2	2	1	1	1	1					2	10	14	6	14	12	11	11	13	14	20	26	12	12	6									
														1	2	2	1	1	1	1				2	3	2	1										

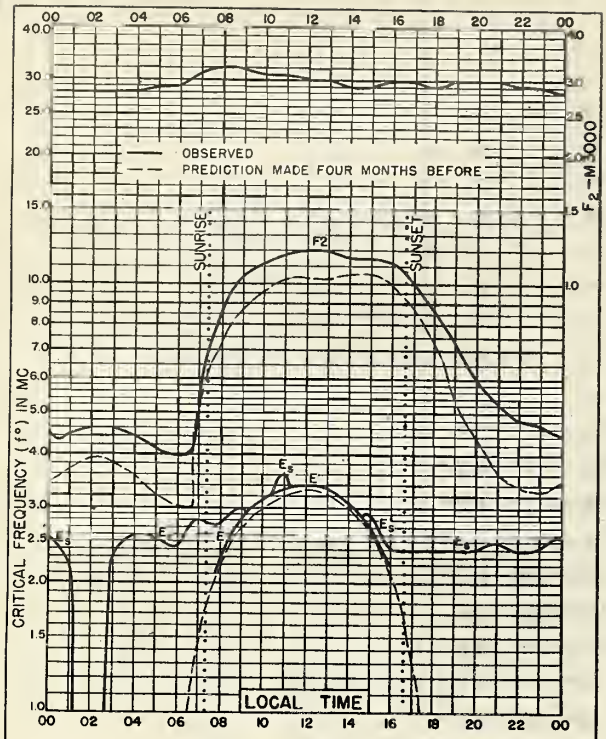


Fig. 1. WASHINGTON, D.C.
39.0°N, 77.5°W DECEMBER 1946

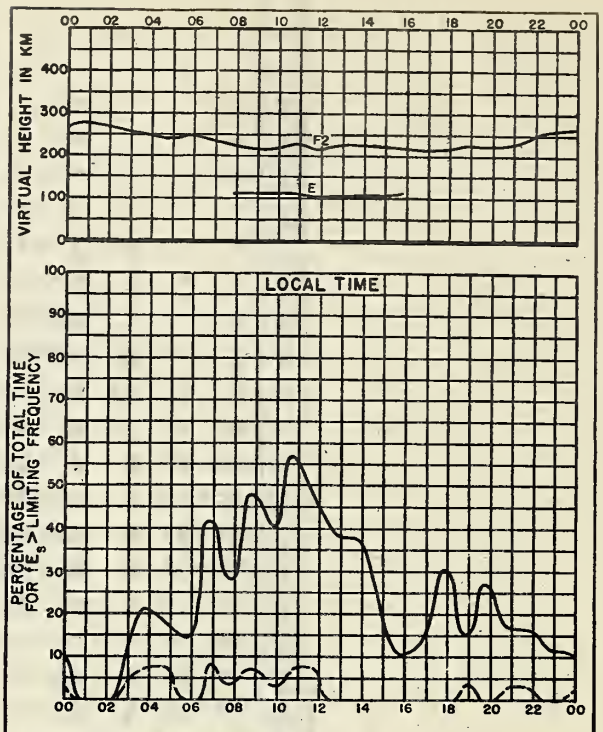


Fig. 2. WASHINGTON, D.C. DECEMBER 1946

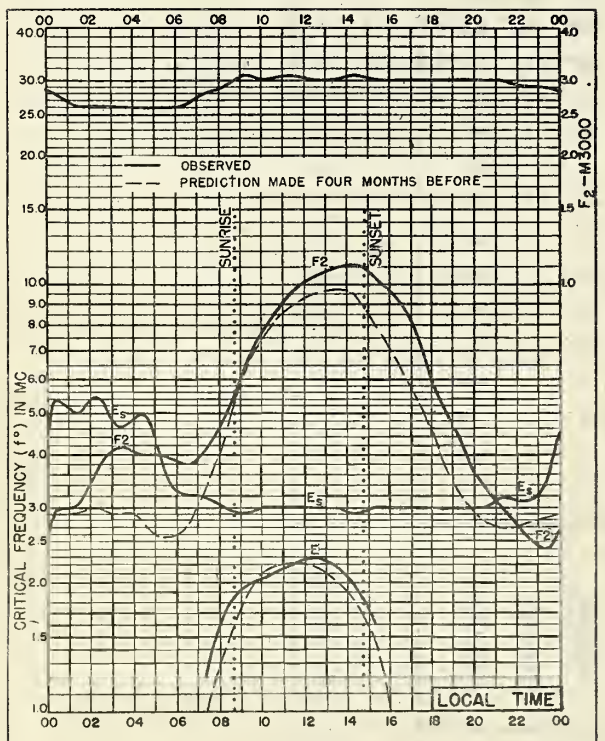


Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER 1946

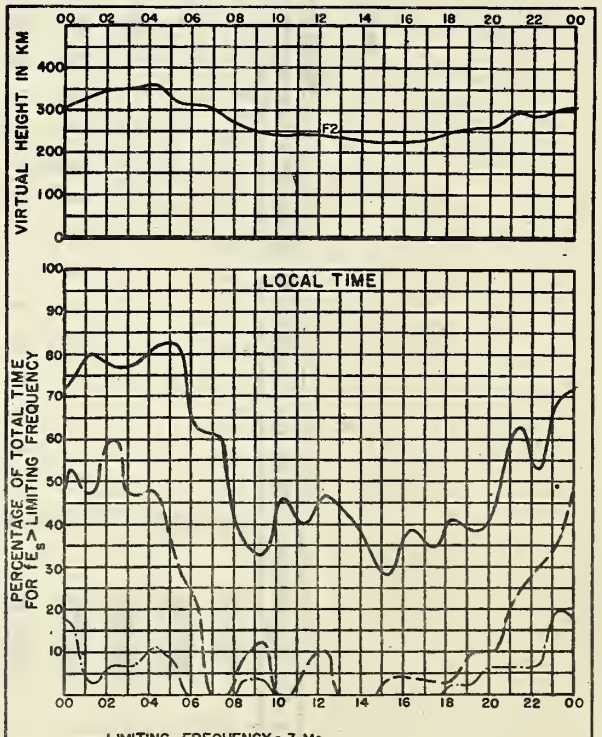


Fig. 4. FAIRBANKS, ALASKA NOVEMBER 1946

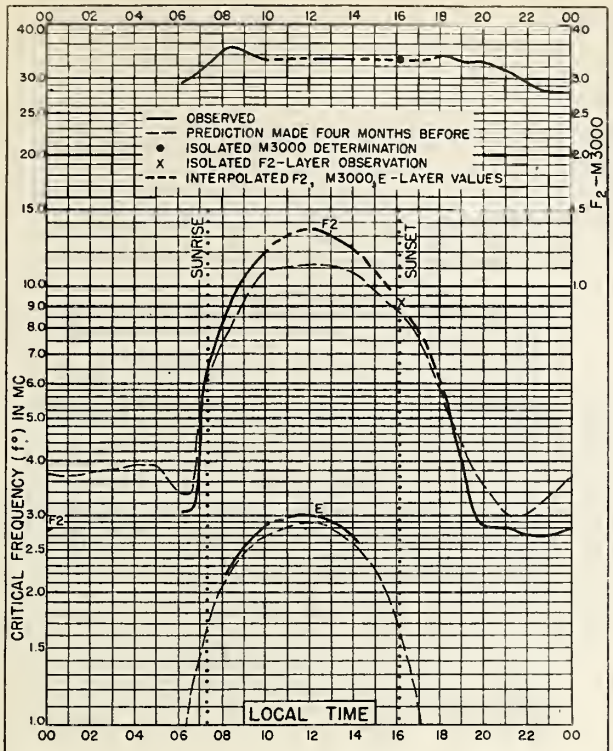


Fig. 5. ADAK, ALASKA
51.9°N, 176.6°W NOVEMBER 1946

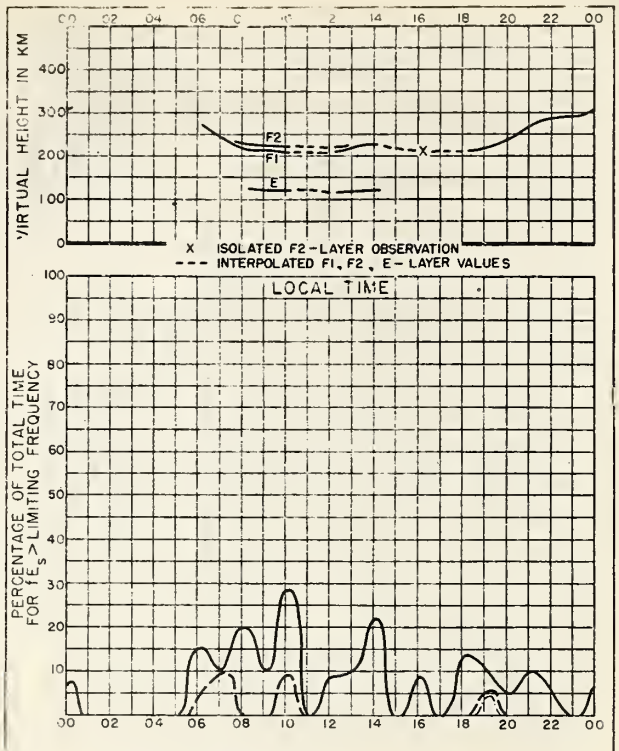


Fig. 6. ADAK, ALASKA NOVEMBER 1946

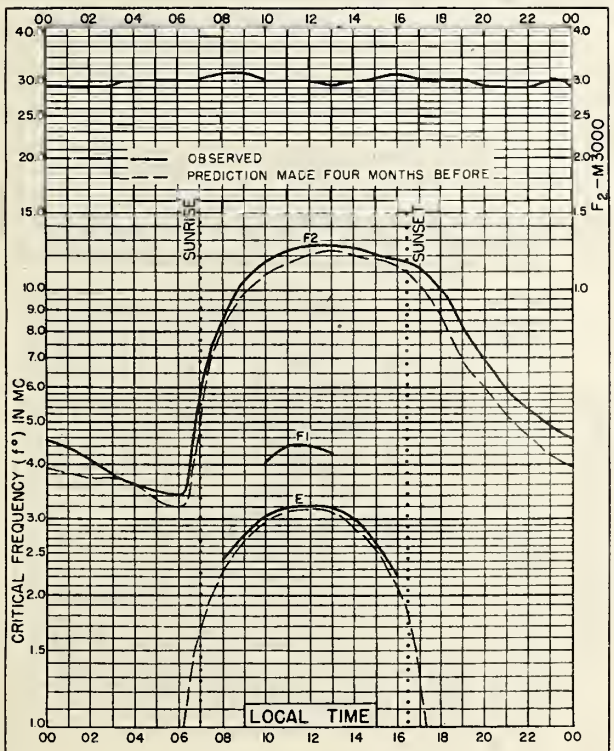


Fig. 7 OTTAWA, CANADA
45.5°N, 75.8°W NOVEMBER 1946

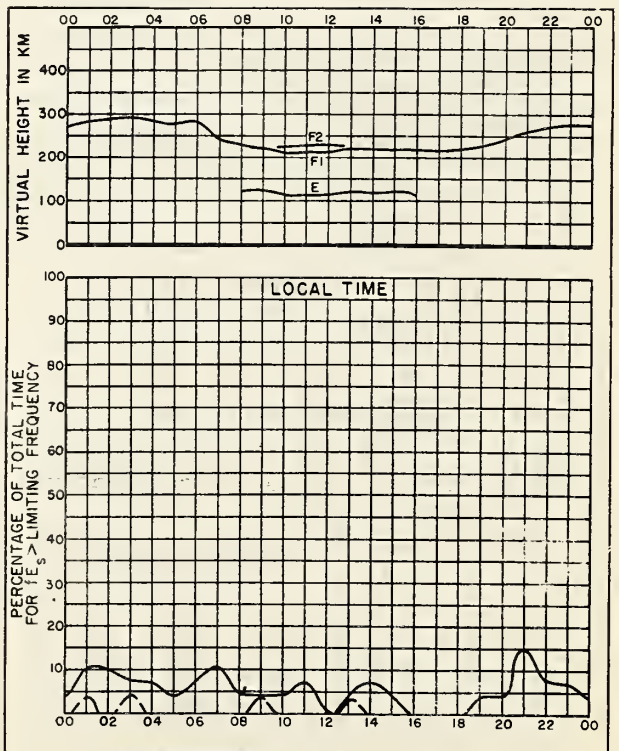


Fig. 8. OTTAWA, CANADA NOVEMBER 1946

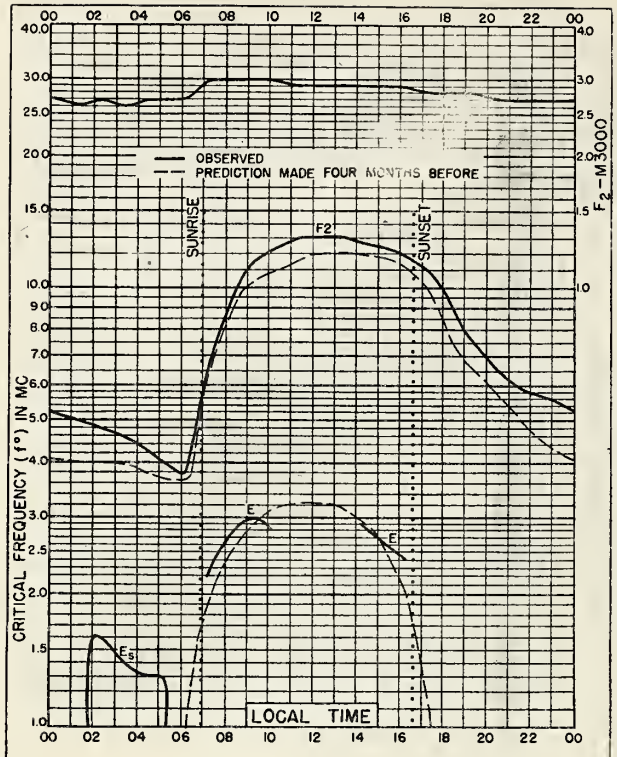


Fig. 9. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W NOVEMBER 1946

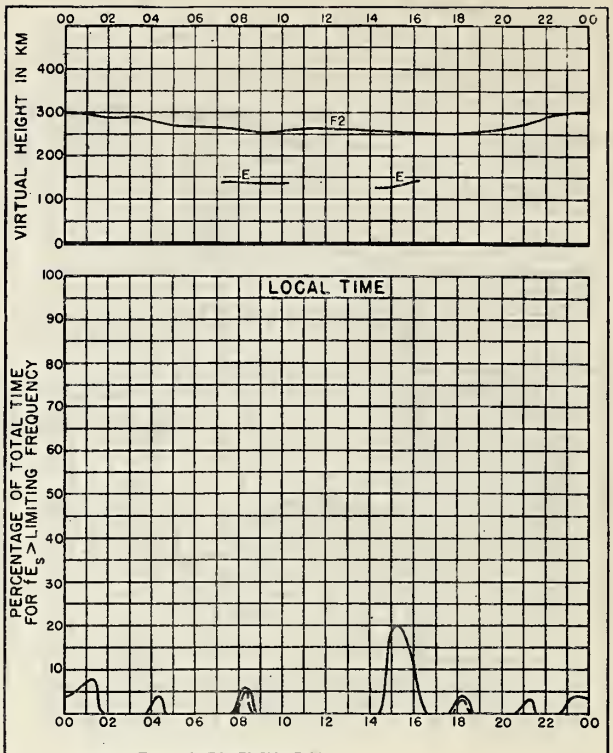


Fig. 10. BOSTON, MASSACHUSETTS NOVEMBER 1946

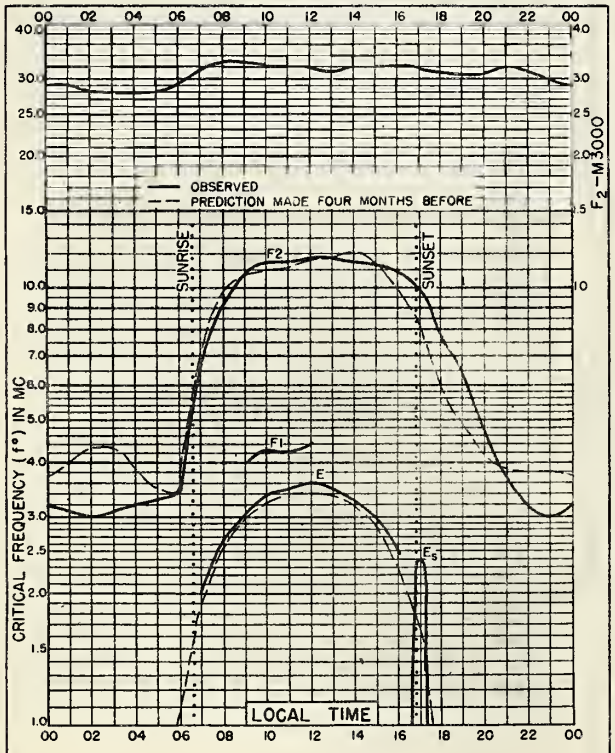


Fig. 11. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W NOVEMBER 1946

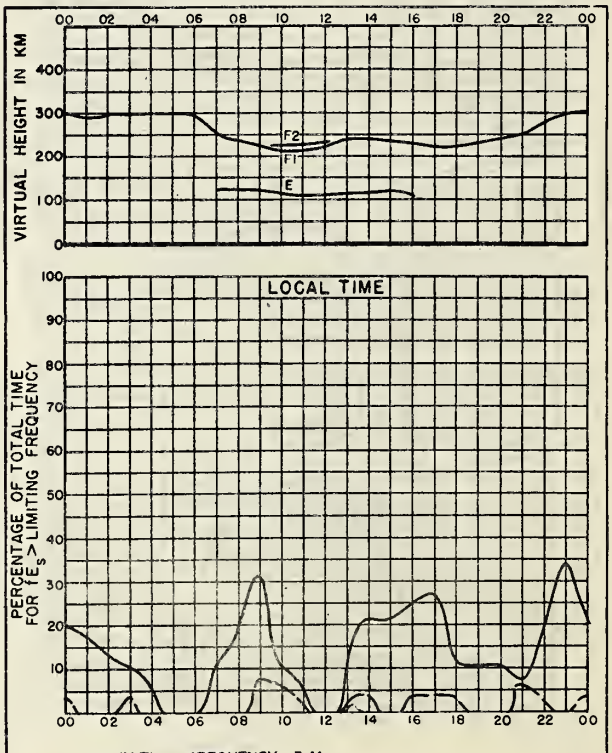


Fig. 12. SAN FRANCISCO, CALIFORNIA NOVEMBER 1946

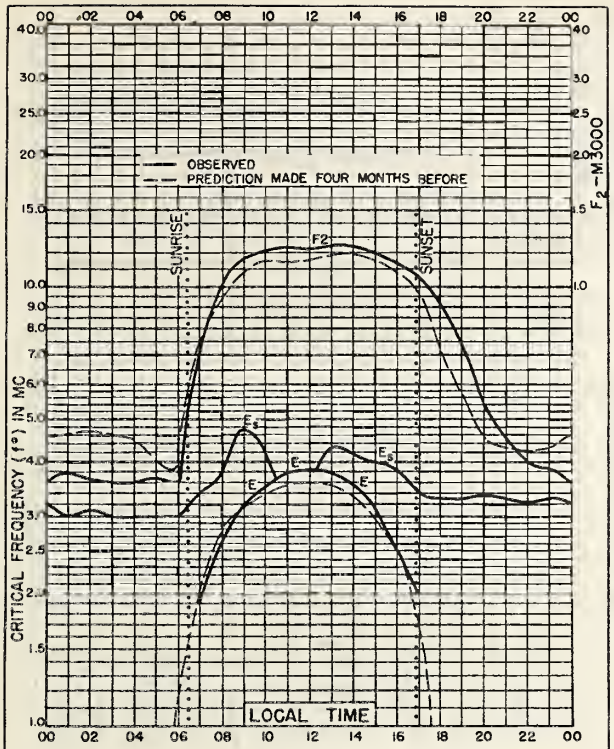


Fig. 13. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W NOVEMBER 1946

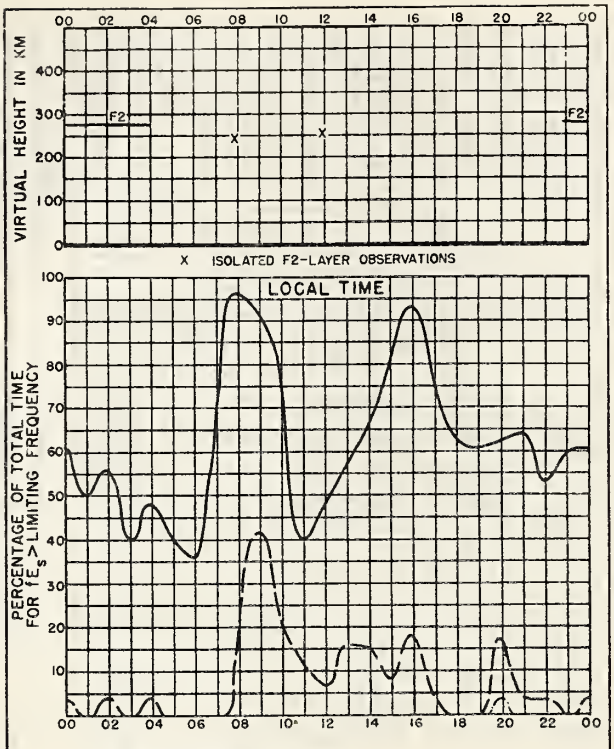


Fig. 14. WHITE SANDS, NEW MEXICO NOVEMBER 1946

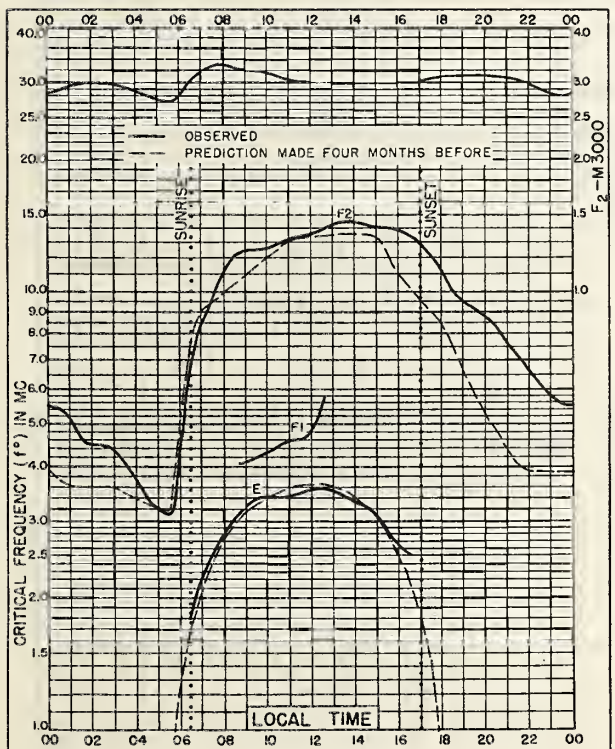


Fig. 15. WUCHANG, CHINA
30.6°N, 114.4°E NOVEMBER 1946

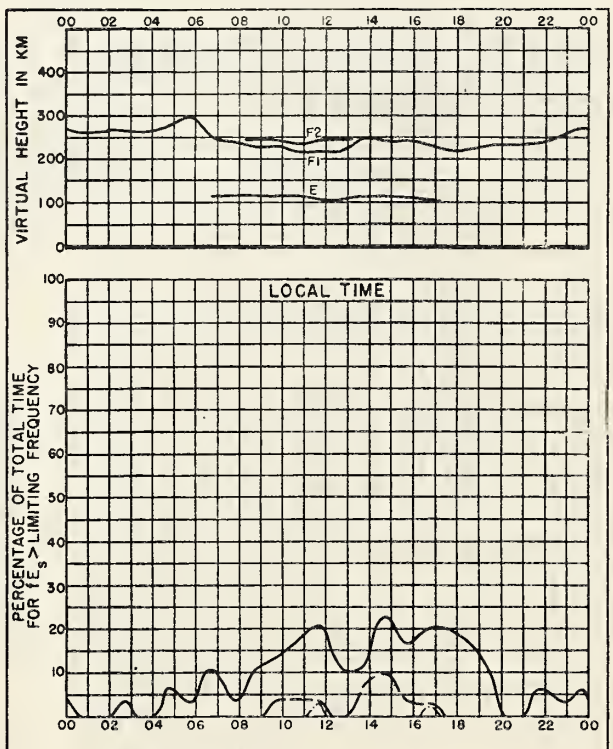


Fig. 16. WUCHANG, CHINA NOVEMBER 1946

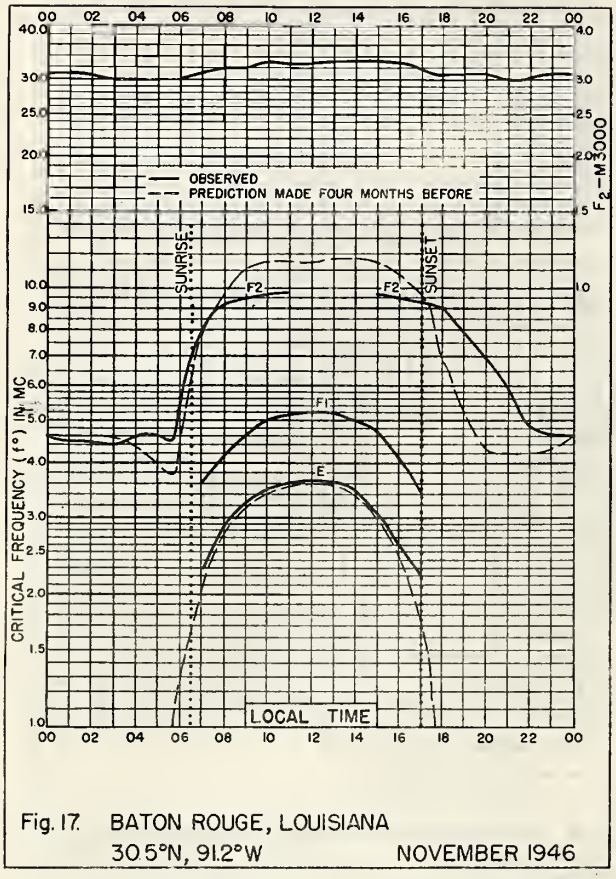


Fig. 17. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W NOVEMBER 1946

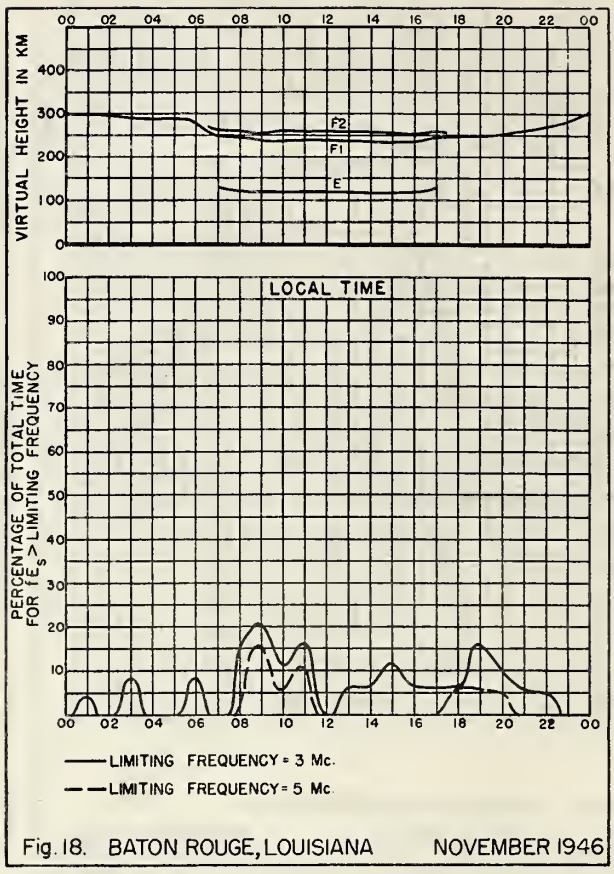


Fig. 18. BATON ROUGE, LOUISIANA NOVEMBER 1946

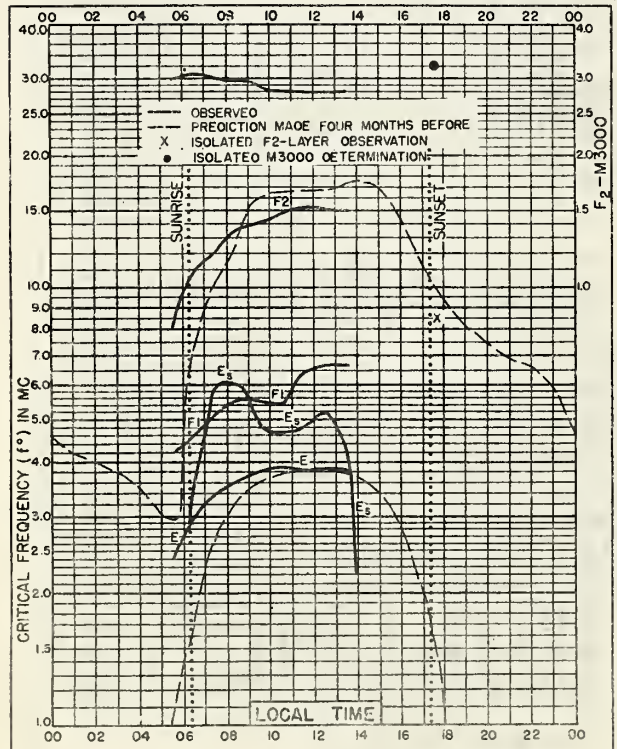


Fig. 19. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1946

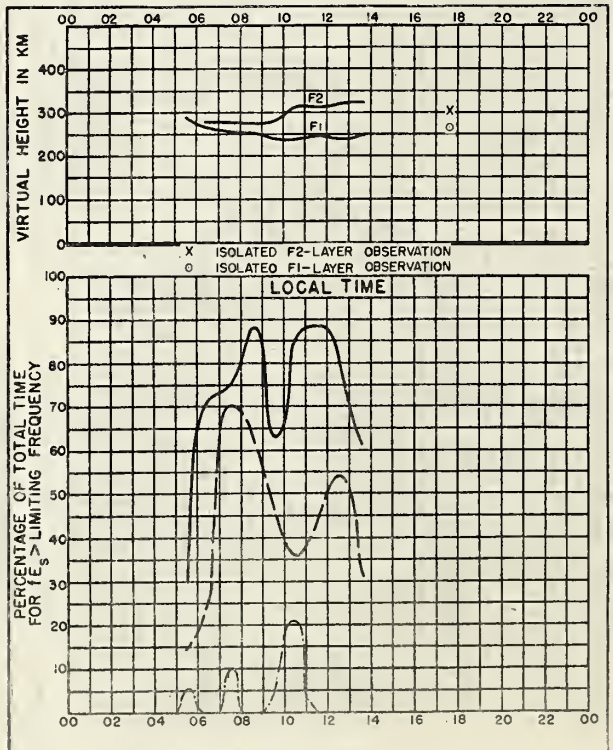


Fig. 20. MAUI, HAWAII NOVEMBER 1946

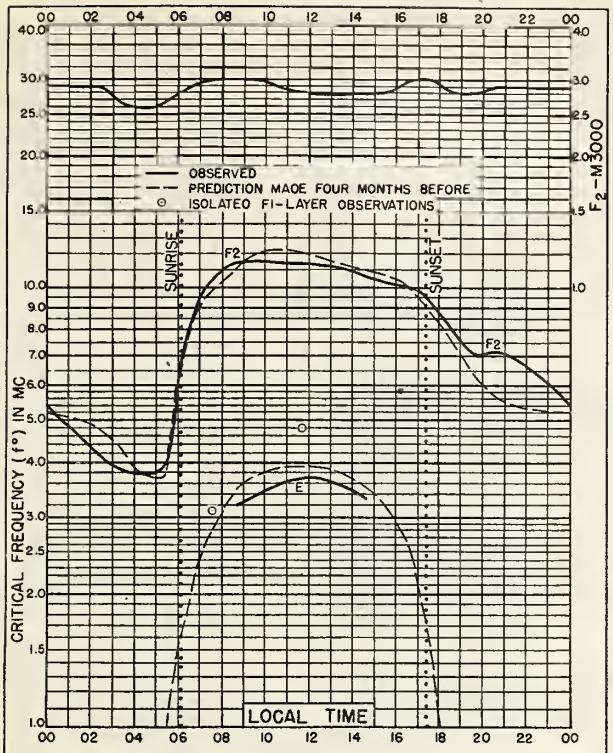


Fig. 21. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W NOVEMBER 1946

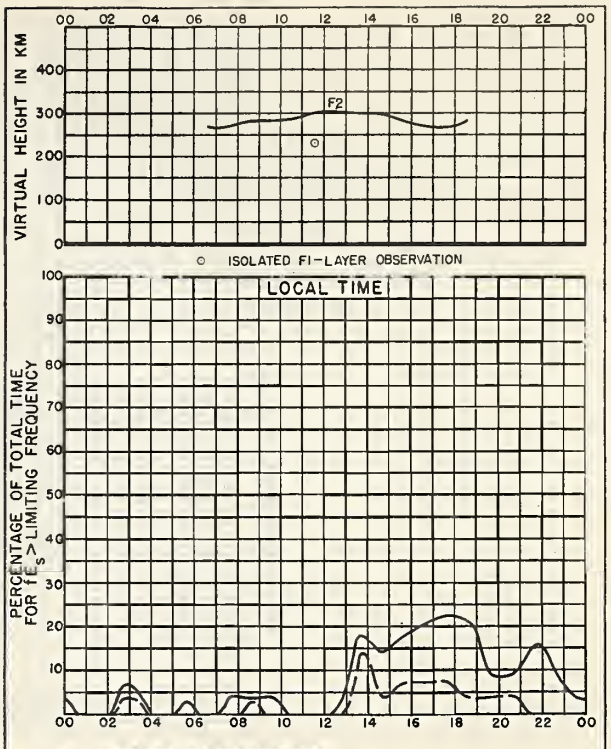


Fig. 22. SAN JUAN, PUERTO RICO NOVEMBER 1946

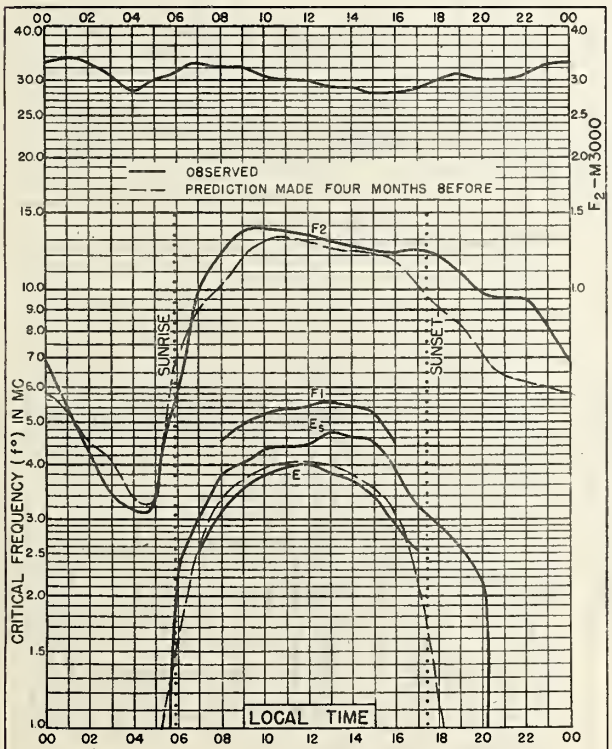


Fig. 23. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W NOVEMBER 1946

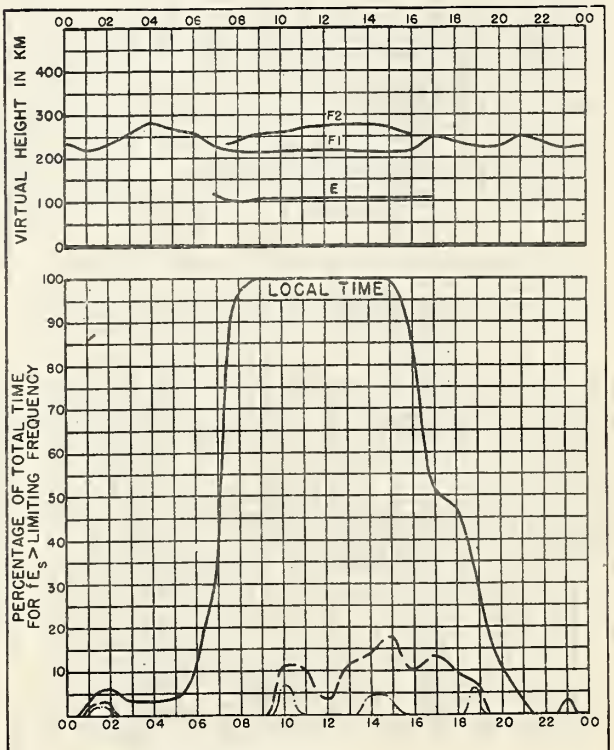


Fig. 24. TRINIDAD, BRIT. WEST INDIES NOVEMBER 1946

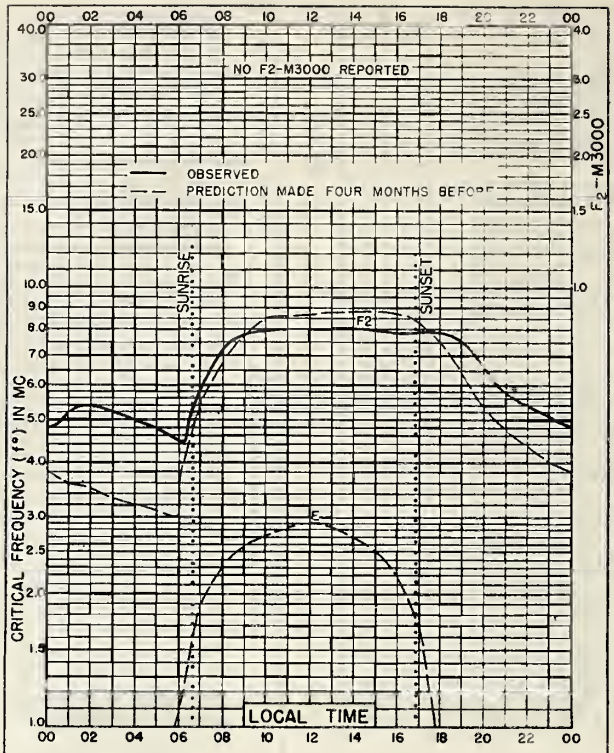


Fig. 25. BURGHEAD, SCOTLAND
57.7°N, 3.5°W OCTOBER 1946

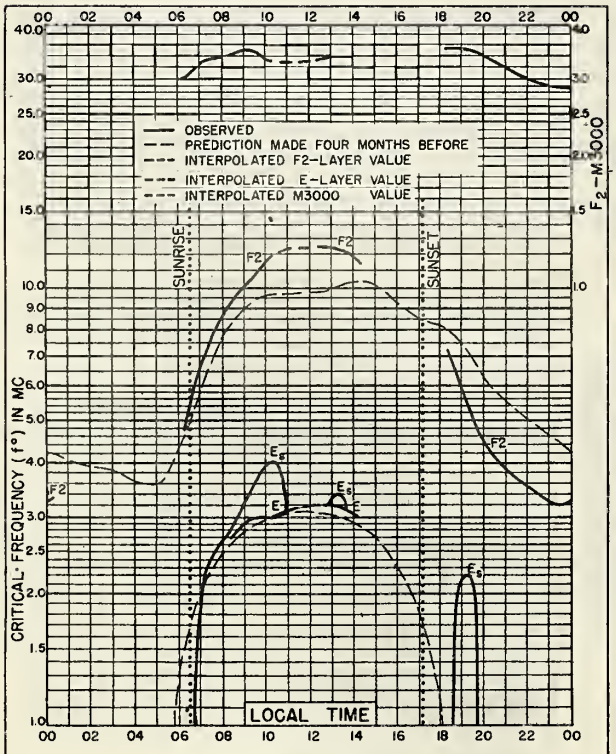


Fig. 26. ADAK, ALASKA
51.9°N, 176.6°W OCTOBER 1946

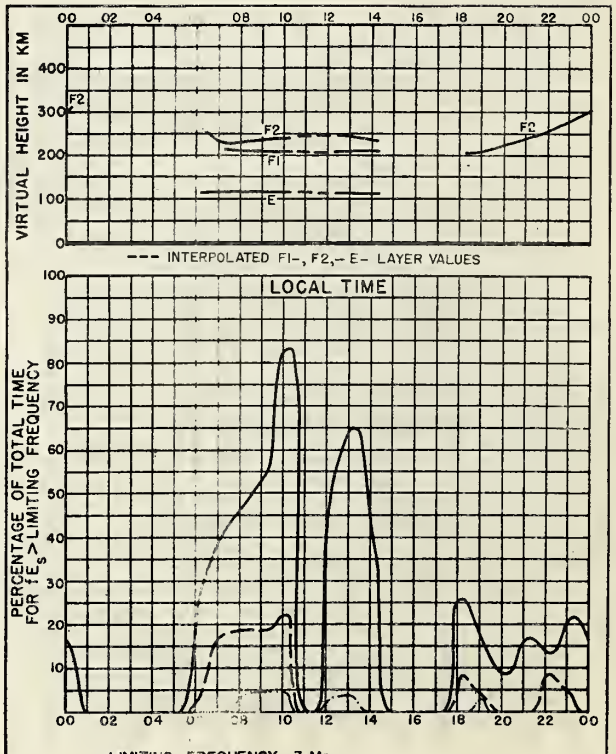


Fig. 27. ADAK, ALASKA OCTOBER 1946

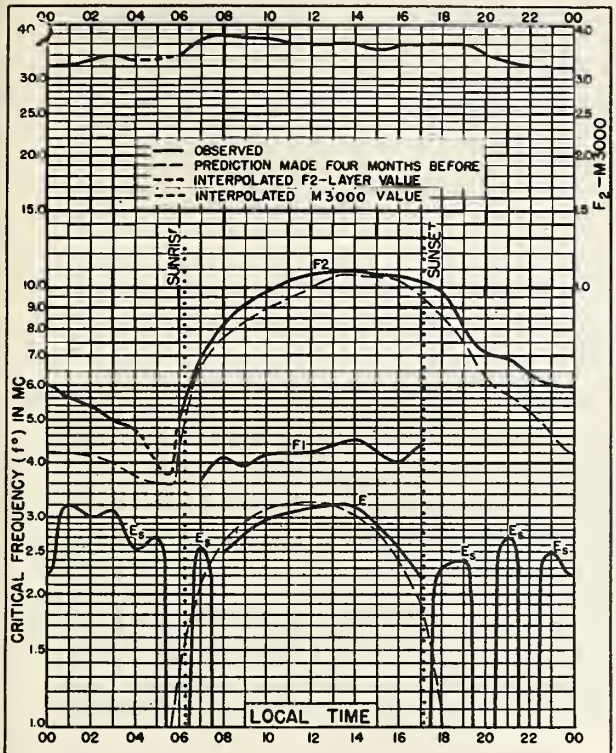


Fig.28. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W OCTOBER 1946

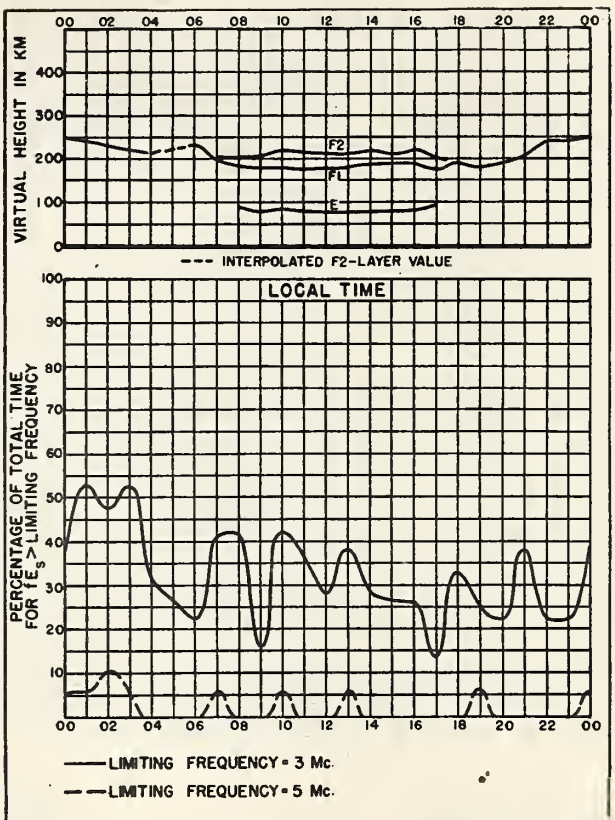


Fig.29. ST. JOHN'S, NEWFOUNDLAND OCTOBER 1946

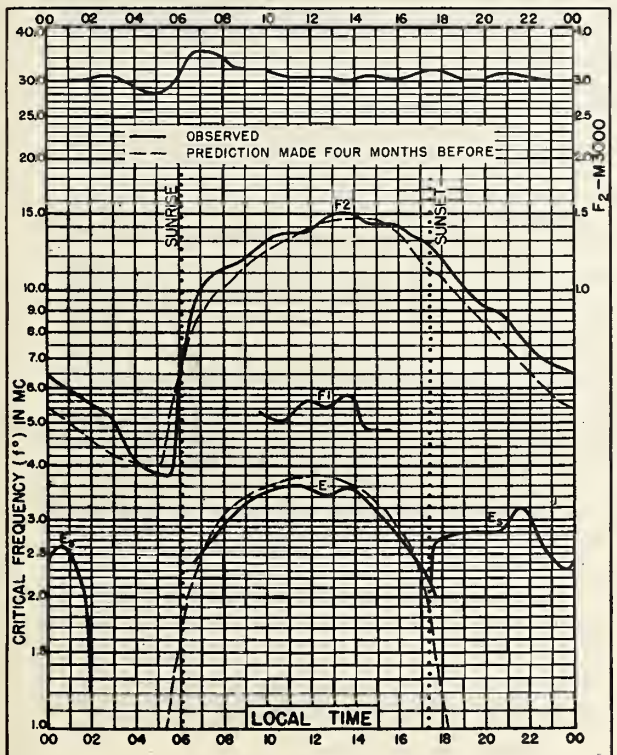


Fig. 30. WUCHANG, CHINA
30.6°N, 114.4°E OCTOBER 1946

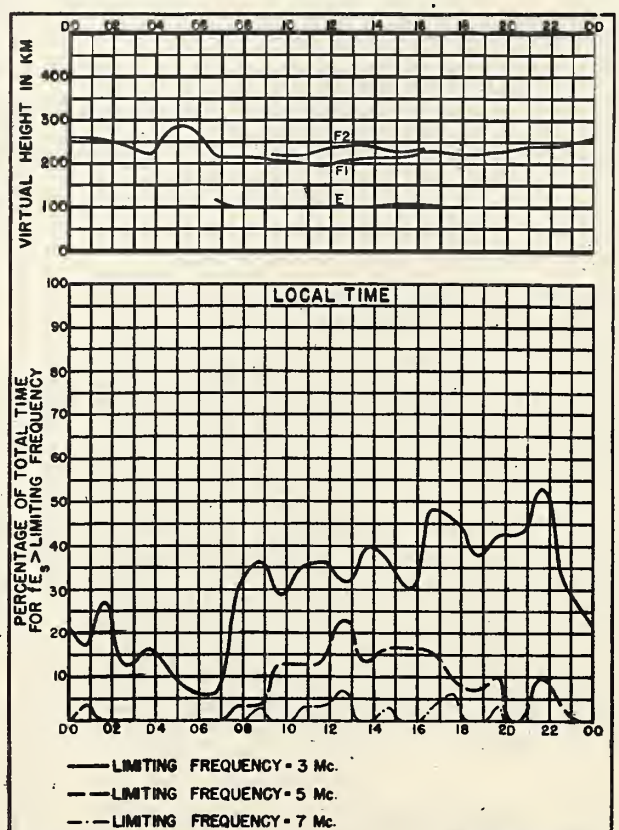


Fig.31. WUCHANG, CHINA OCTOBER 1946

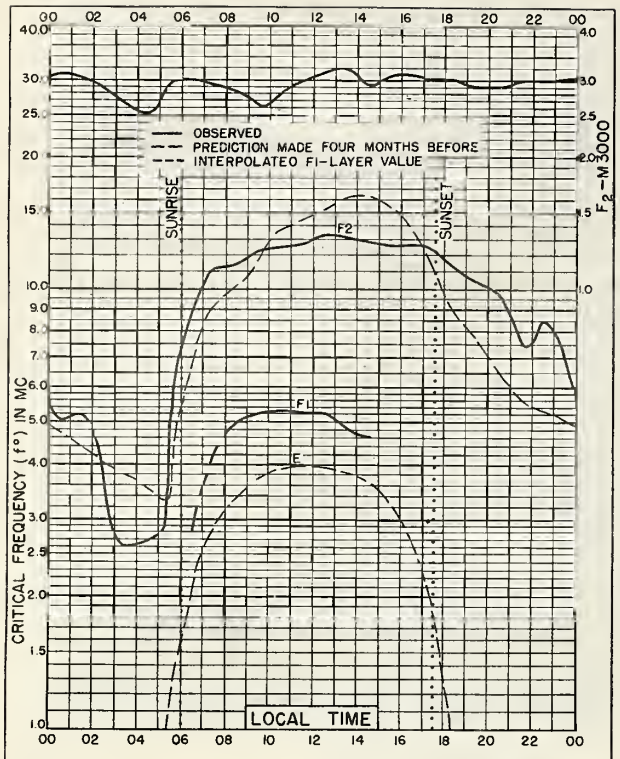


Fig. 32. MAUI, HAWAII
20.8°N, 156.5°W OCTOBER 1946

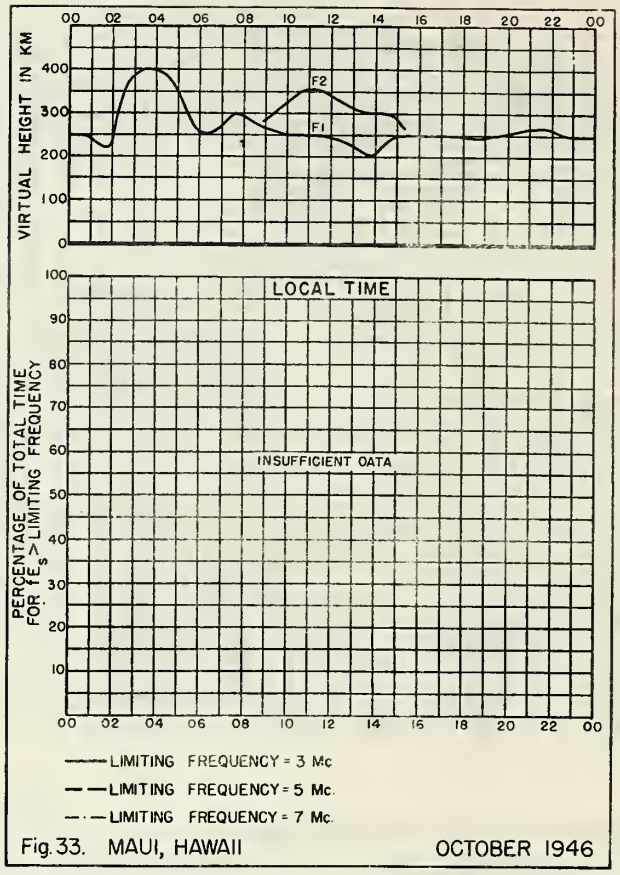


Fig. 33. MAUI, HAWAII OCTOBER 1946

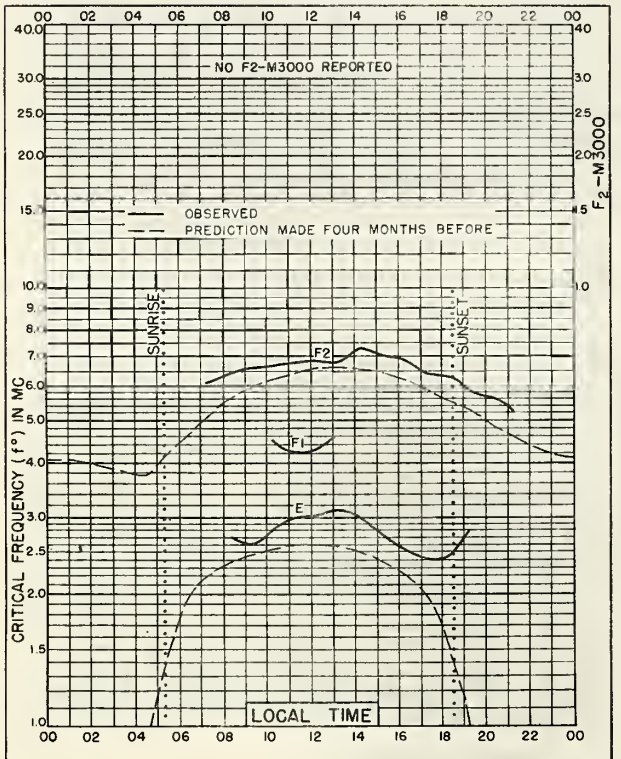


Fig. 34. TROMSO, NORWAY
69.7°N, 18.9°E SEPTEMBER 1946

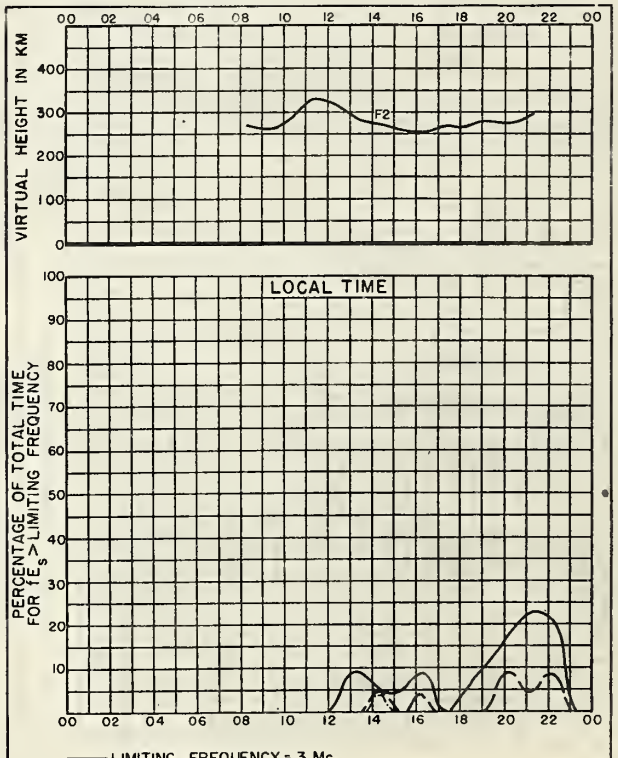


Fig. 35. TROMSO, NORWAY SEPTEMBER 1946

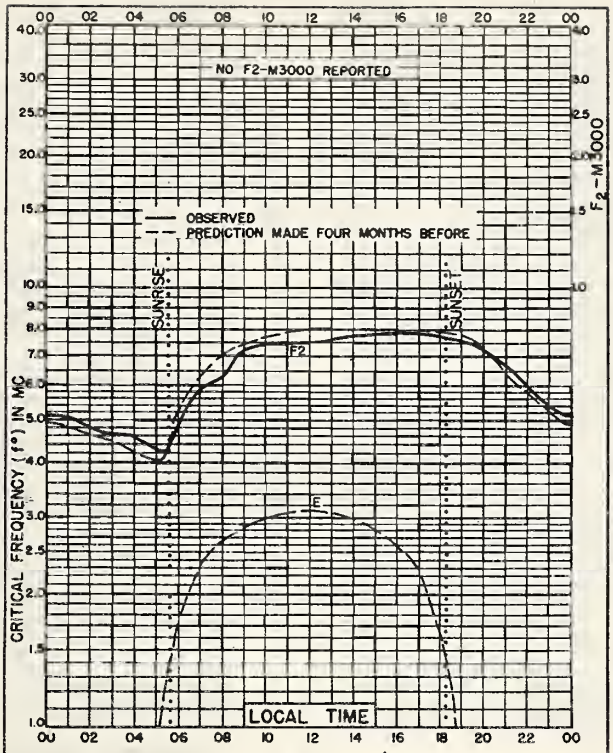


Fig. 36. BURGHEAD, SCOTLAND
57.7°N, 3.5°W SEPTEMBER 1946

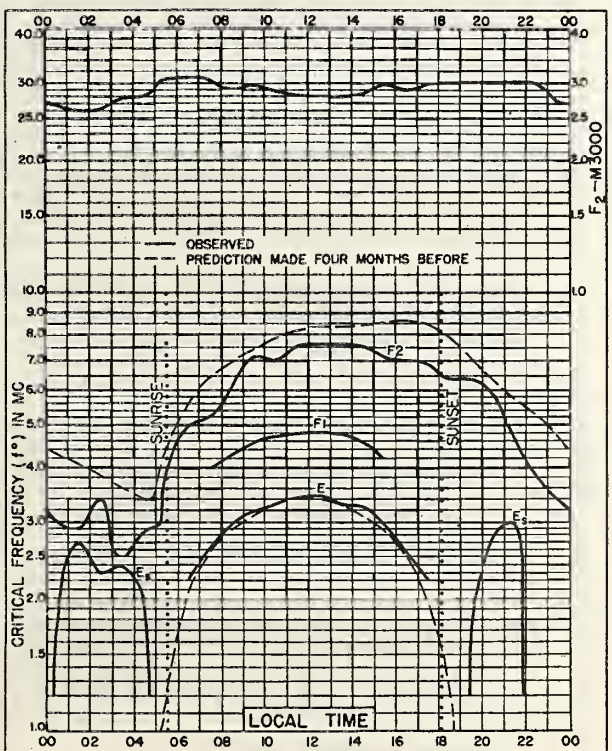


Fig. 37. PORTAGE la PRAIRIE, MANITOBA
49.9°N, 98.3°W SEPTEMBER 1946

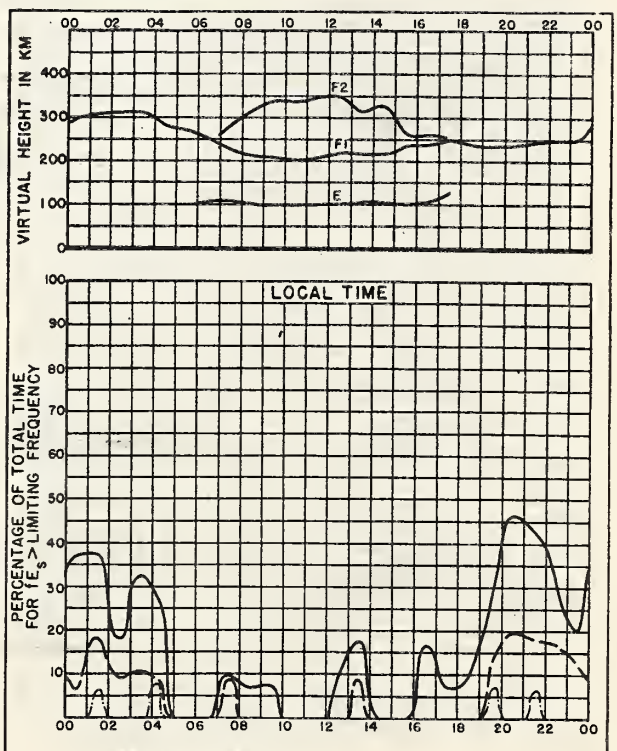


Fig. 38. PORTAGE la PRAIRIE, MANITOBA SEPTEMBER 1946

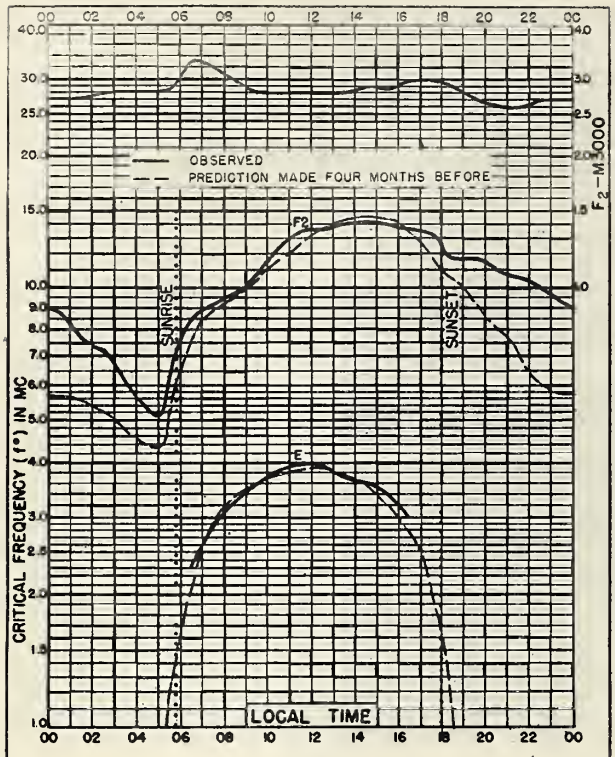


Fig. 39. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1946

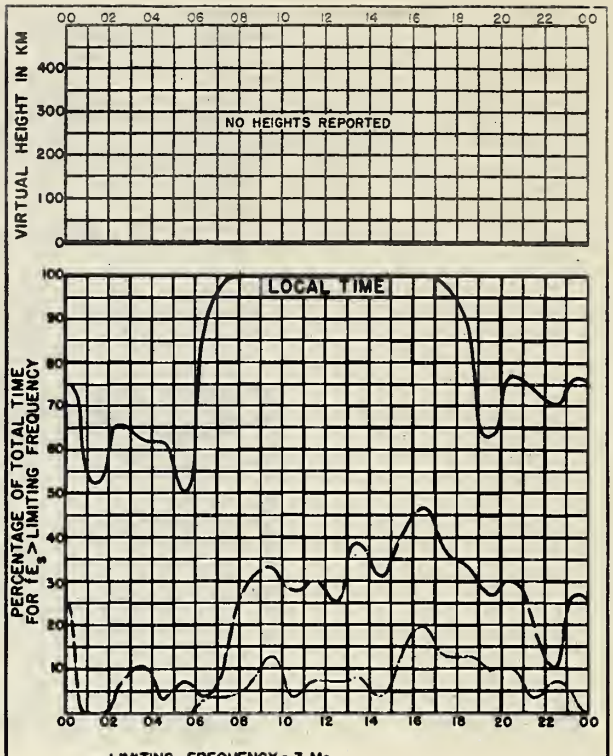


Fig. 40. OKINAWA I SEPTEMBER 1946

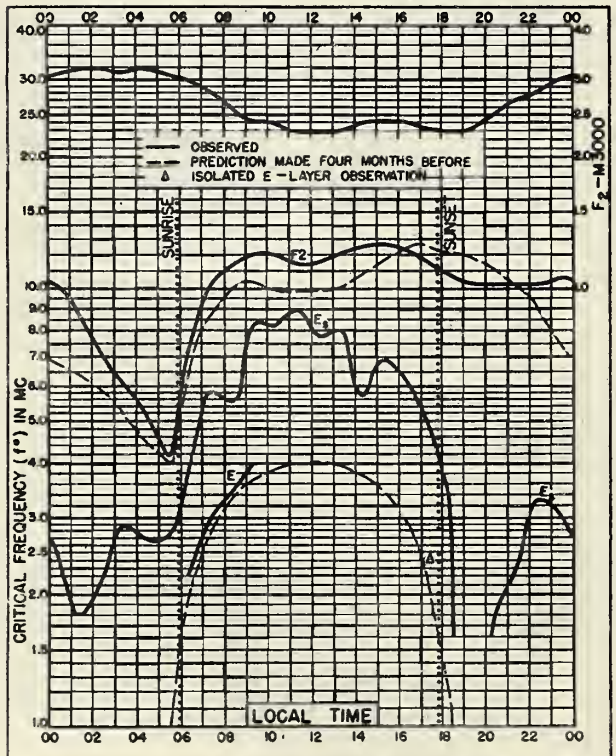


Fig. 41. LEYTE, PHILIPPINE IS.
11.0°N, 125.0°E SEPTEMBER 1946

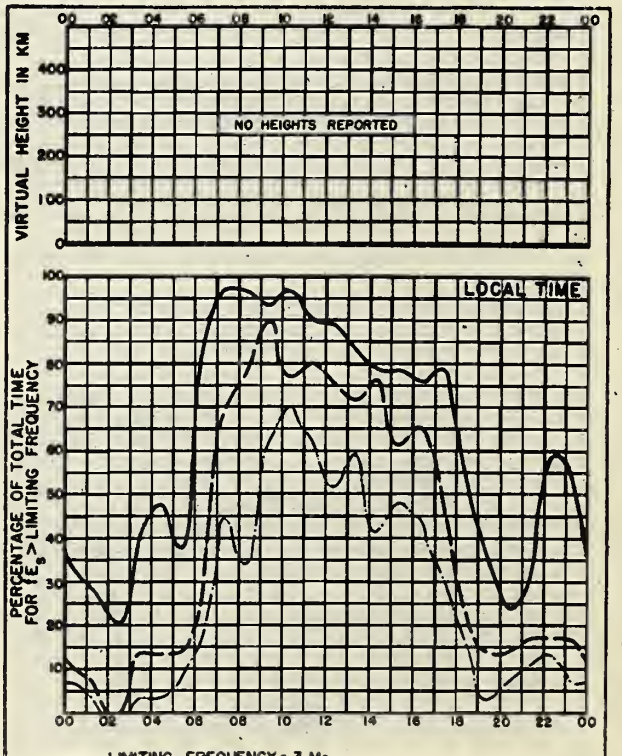


Fig. 42. LEYTE, PHILIPPINE IS. SEPTEMBER 1946

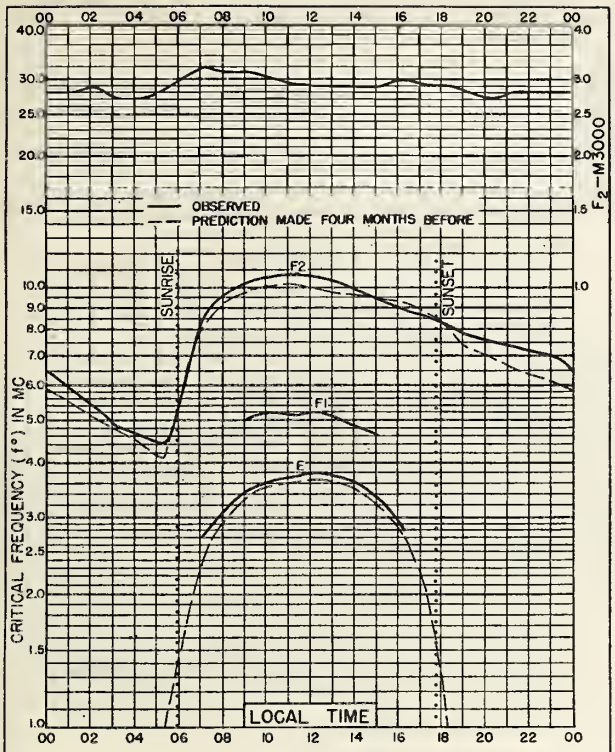


Fig. 43. BRISBANE, AUSTRALIA
27.5°S, 153.0°E SEPTEMBER 1946

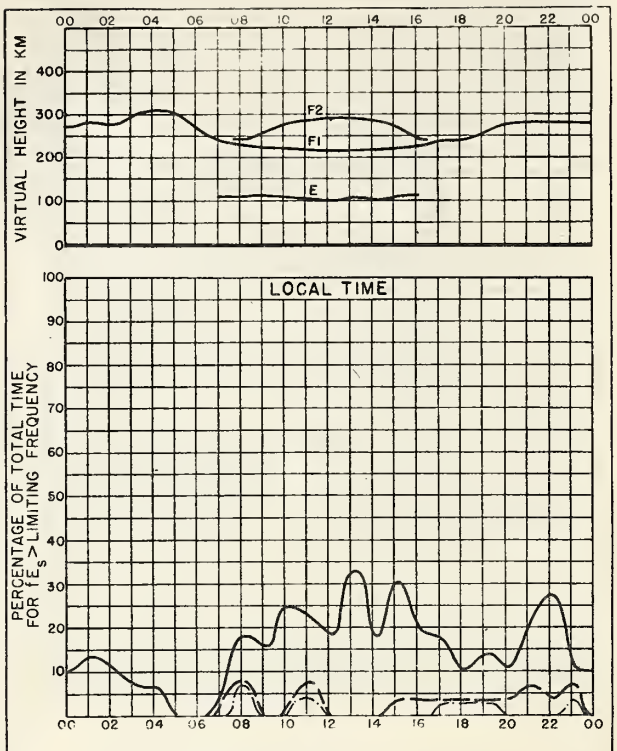


Fig. 44. BRISBANE, AUSTRALIA SEPTEMBER 1946

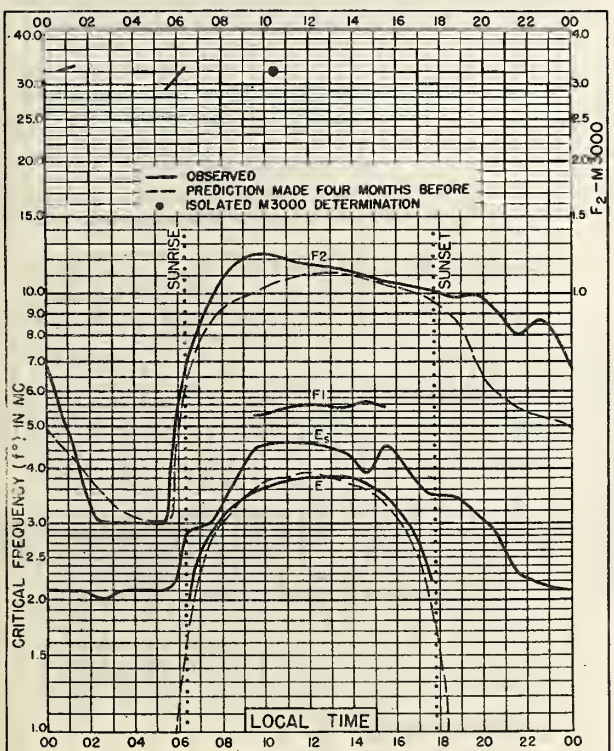


Fig. 45. CAPE YORK, AUSTRALIA
11.0°S, 142.4°E AUGUST 1946

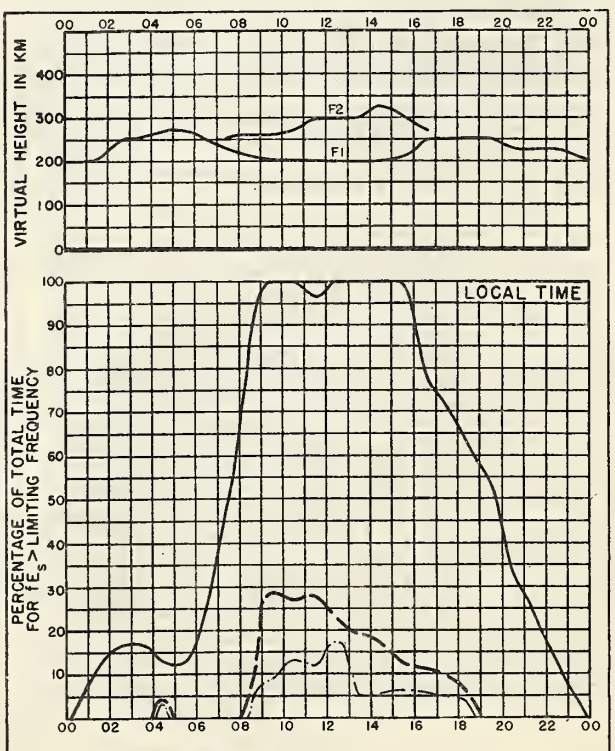


Fig. 46. CAPE YORK, AUSTRALIA AUGUST 1946

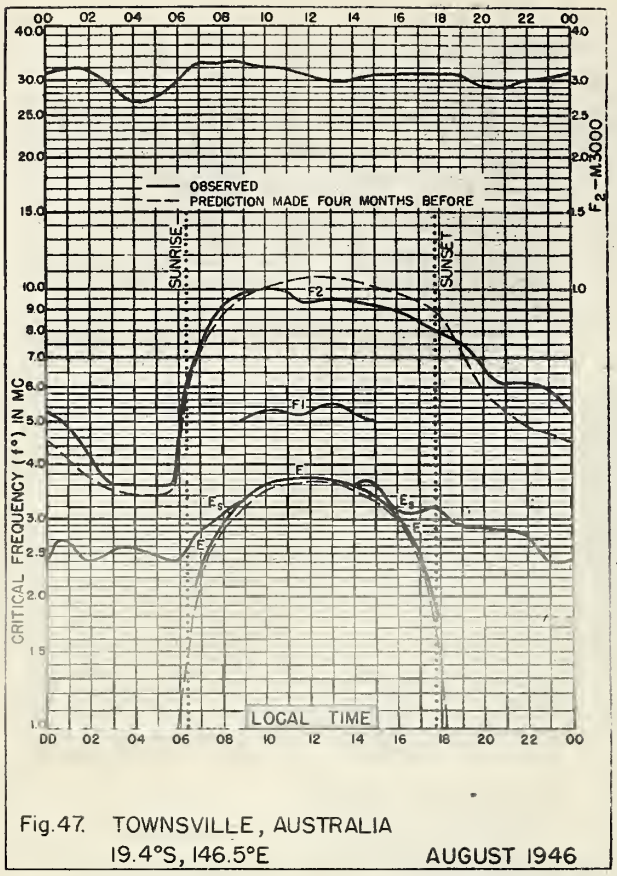


Fig. 47. TOWNSVILLE, AUSTRALIA
19.4°S, 146.5°E AUGUST 1946

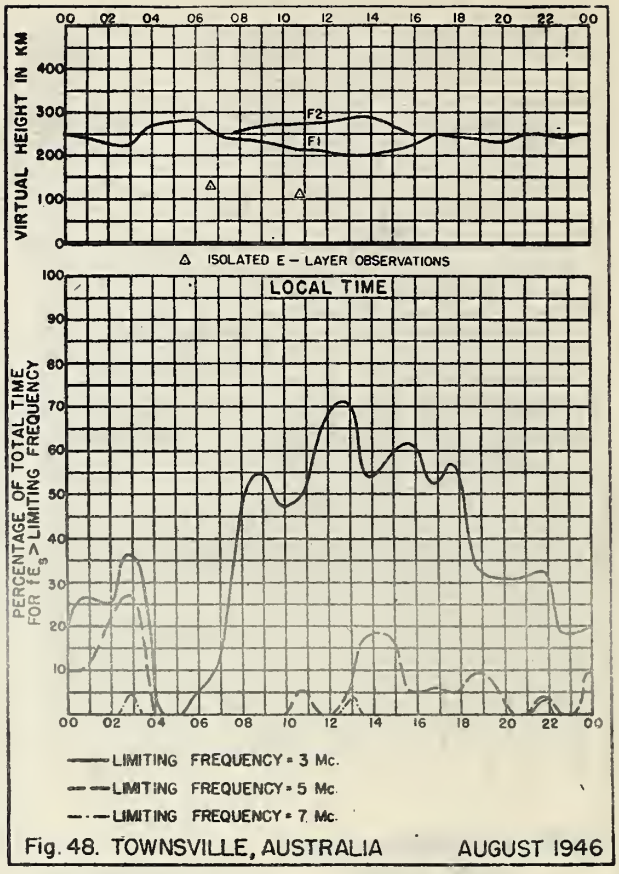


Fig. 48. TOWNSVILLE, AUSTRALIA AUGUST 1946

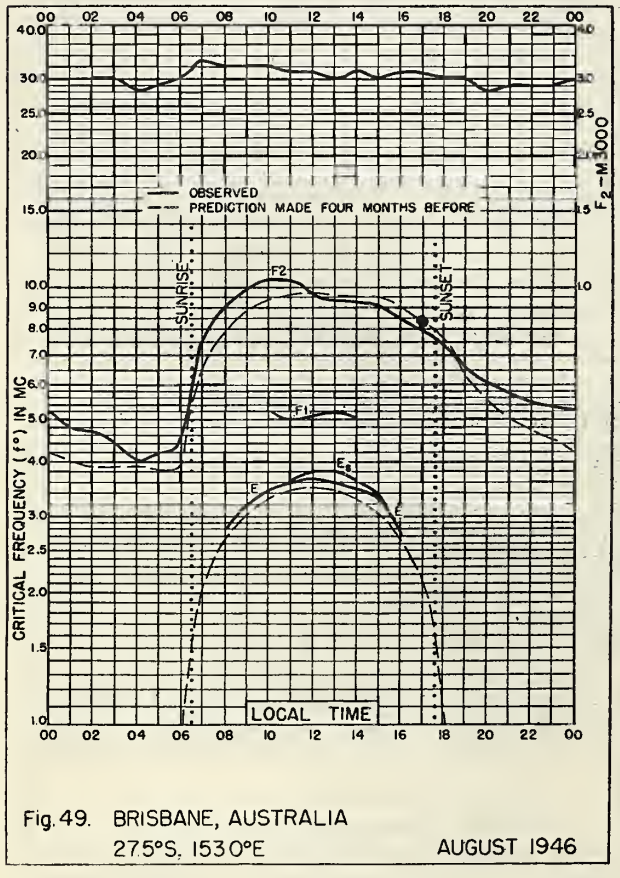


Fig. 49. BRISBANE, AUSTRALIA
27.5°S, 153.0°E AUGUST 1946

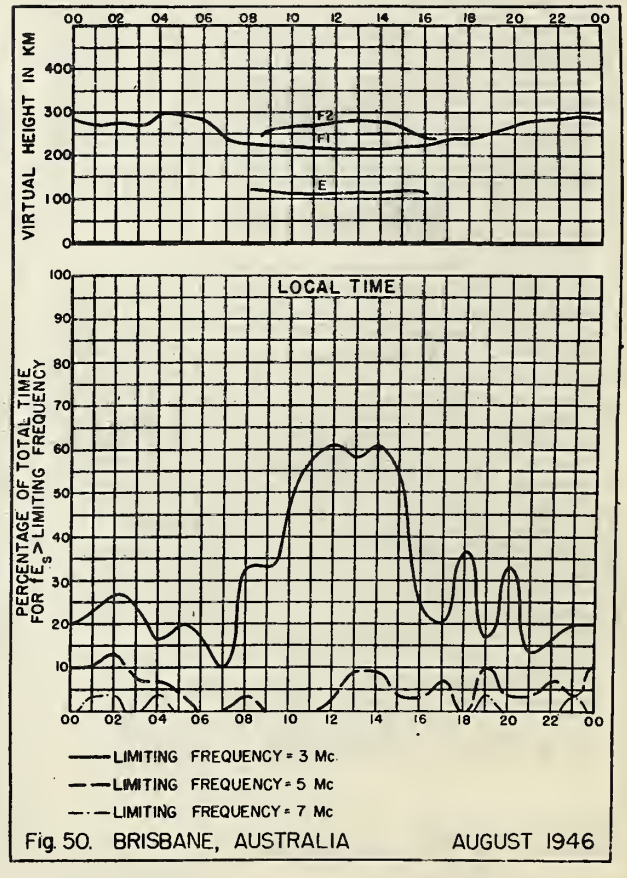


Fig. 50. BRISBANE, AUSTRALIA AUGUST 1946

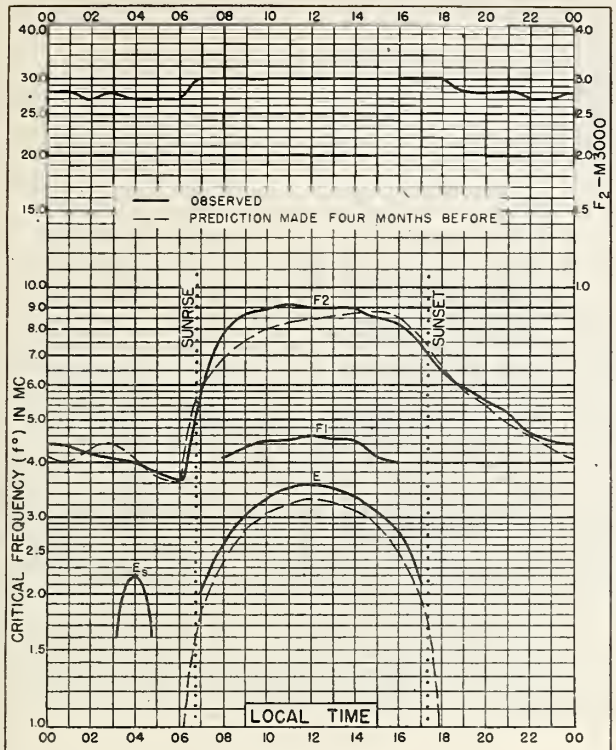


Fig. 51. CANBERRA, AUSTRALIA
35.3°S, 149.0°E AUGUST 1946

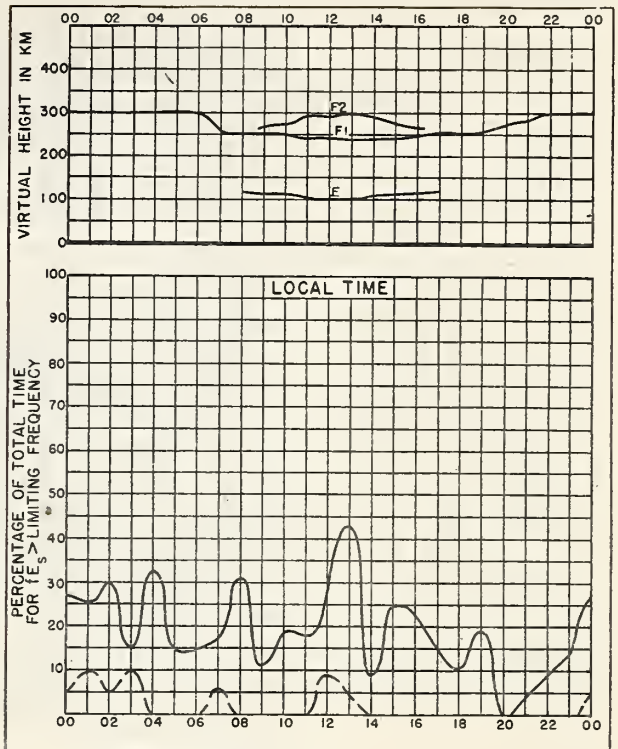


Fig. 52. CANBERRA, AUSTRALIA AUGUST 1946

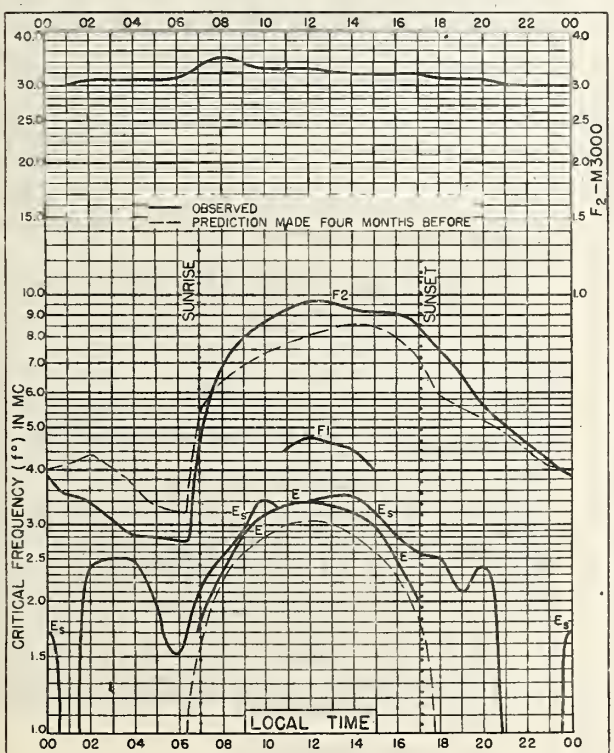


Fig. 53. HOBART, TASMANIA
42.8°S, 147.4°E AUGUST 1946

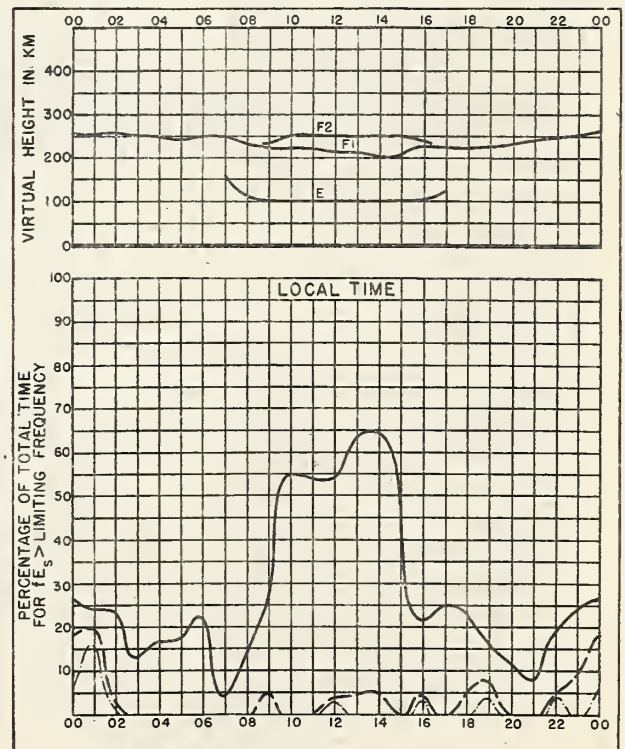


Fig. 54. HOBART, TASMANIA AUGUST 1946

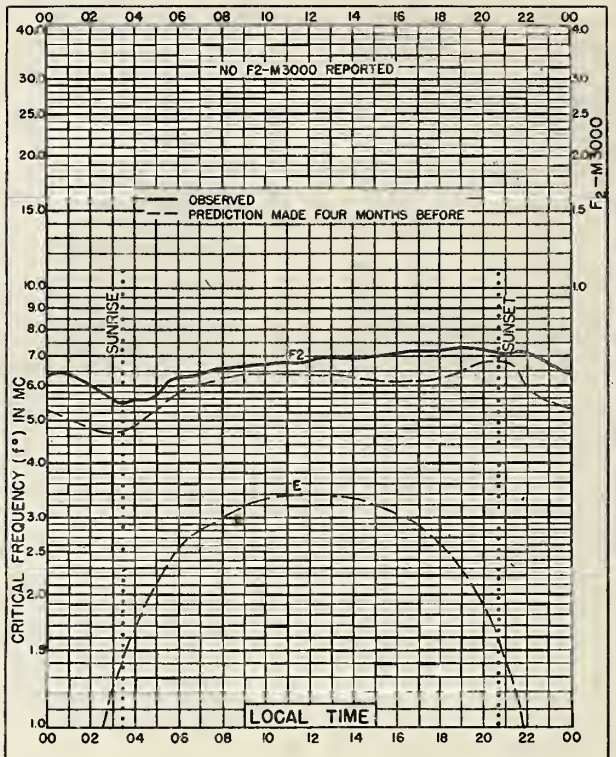


Fig. 55. BURGHEAD, SCOTLAND
57.7°N, 3.5°W JULY 1946

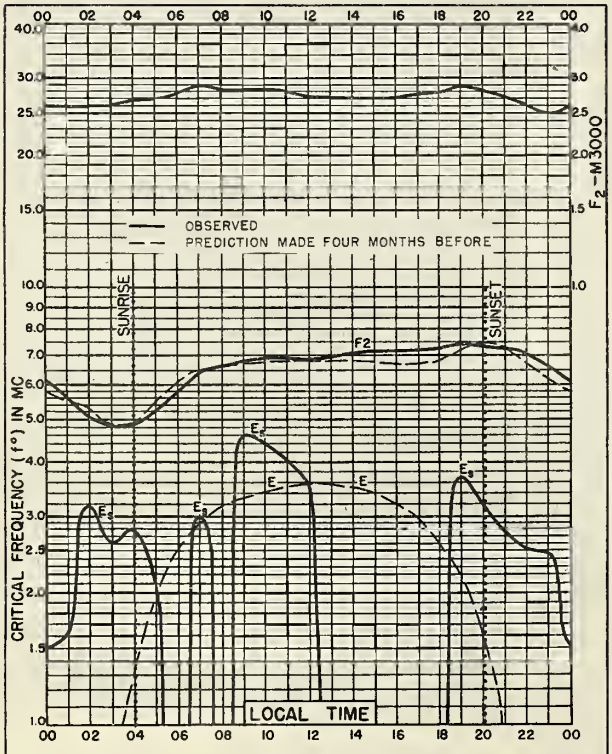


Fig.56. SLOUGH, ENGLAND
51.5°N, 0.6°W JULY 1946

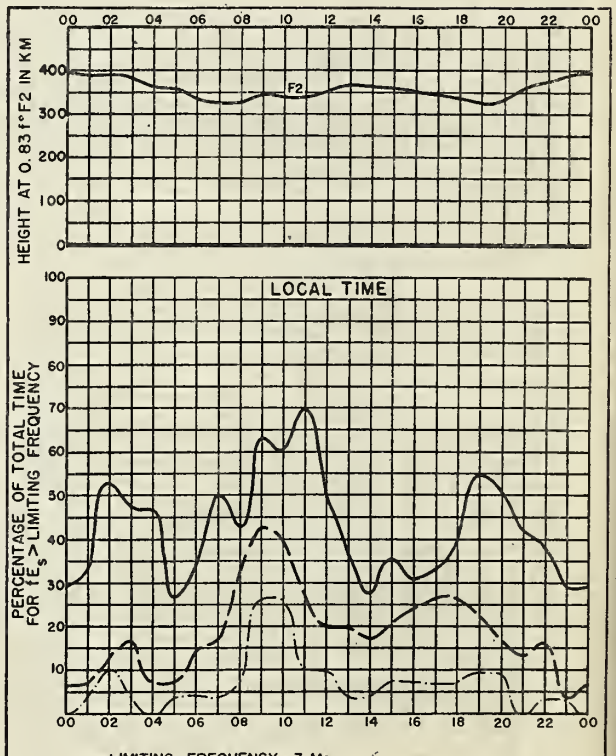


Fig.57. SLOUGH, ENGLAND JULY 1946

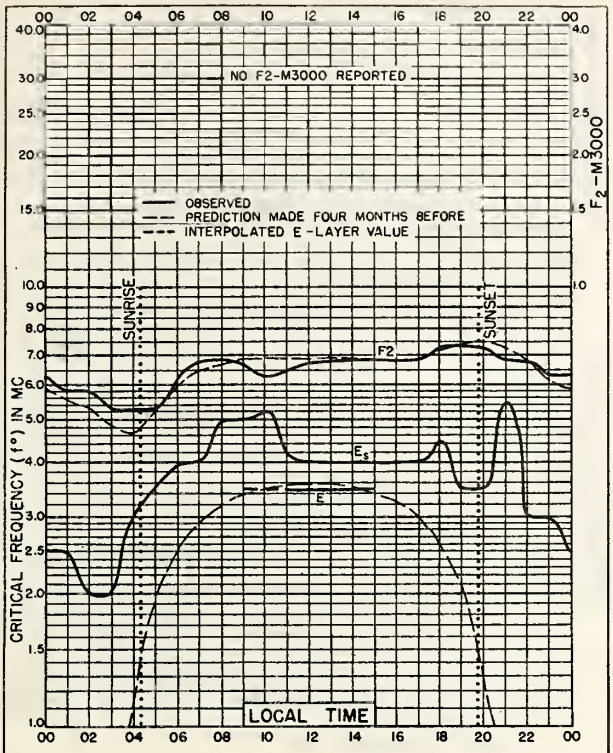


Fig.58. FRIBOURG, GERMANY
48.0°N, 7.8°E JULY 1946

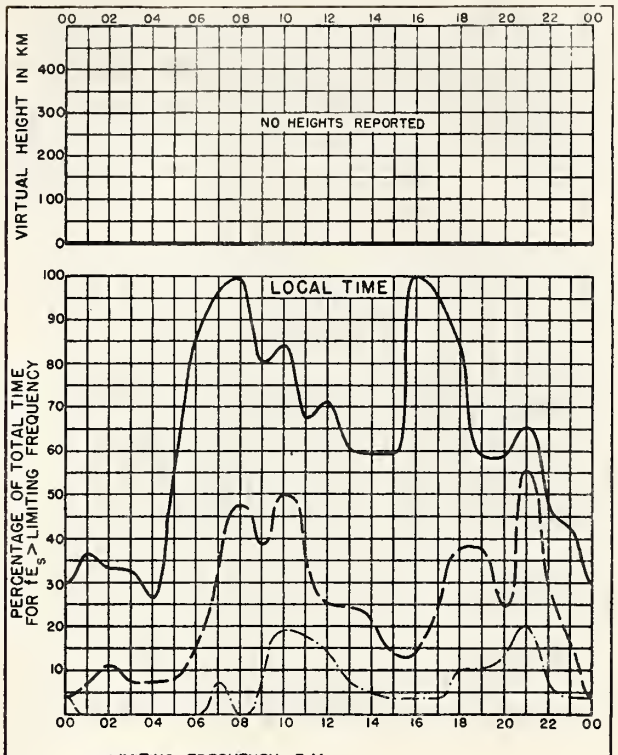


Fig. 59. FRIBOURG, GERMANY JULY 1946

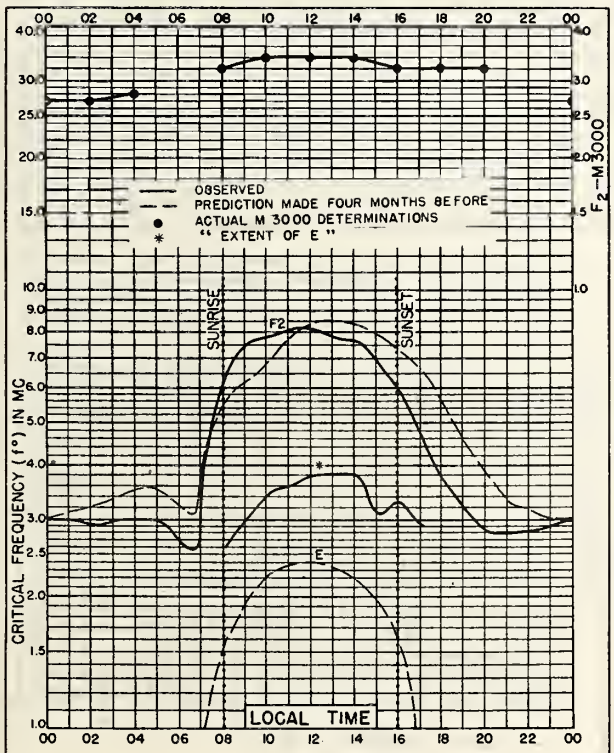


Fig. 60. FALKLAND IS.
51.7°S, 57.7°W JULY 1946

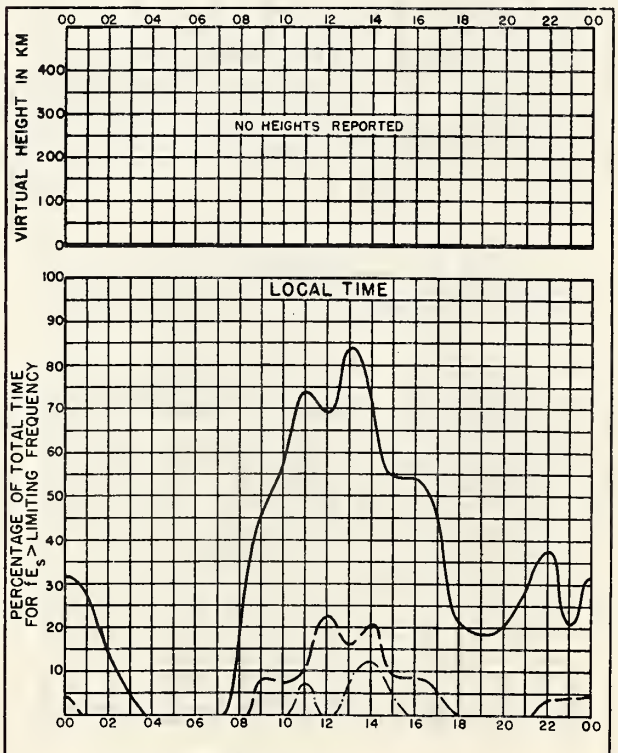


Fig. 61. FALKLAND IS. JULY 1946

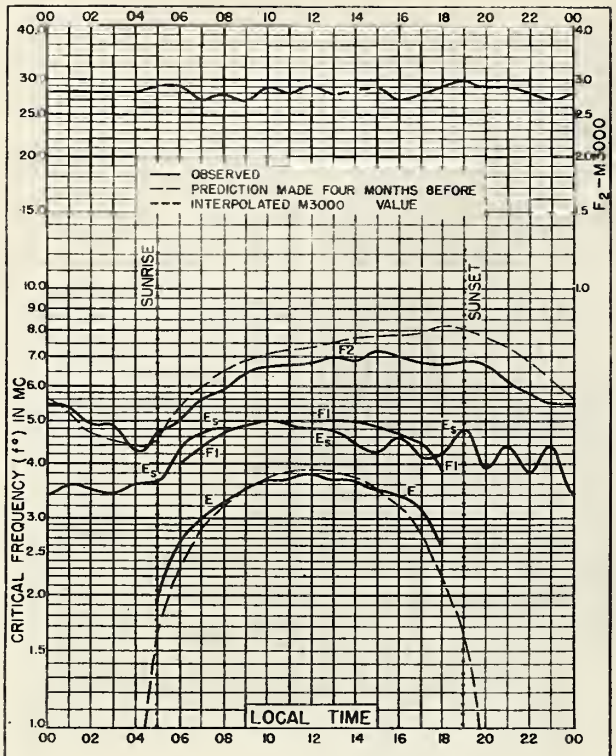


Fig. 62. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W JUNE 1946

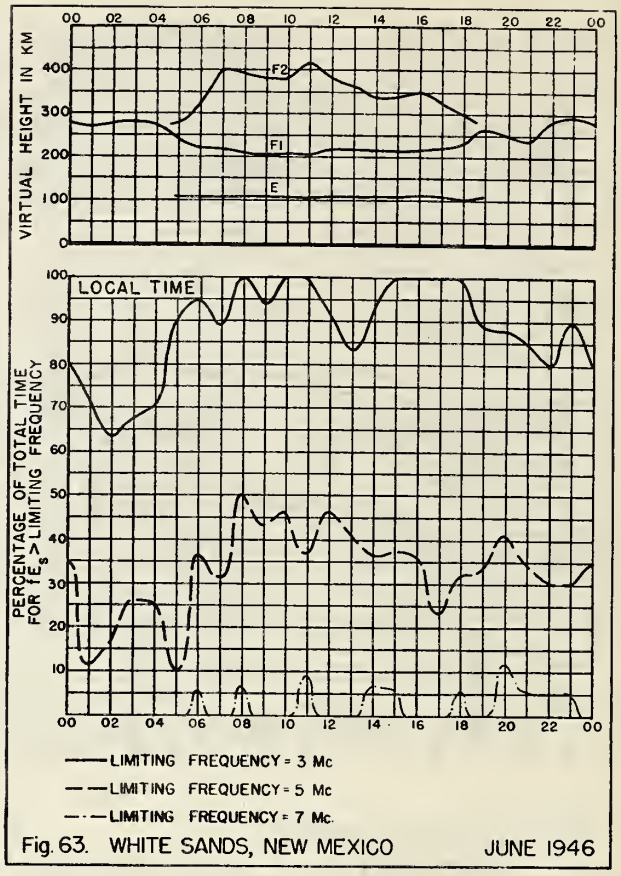


Fig. 63. WHITE SANDS, NEW MEXICO JUNE 1946

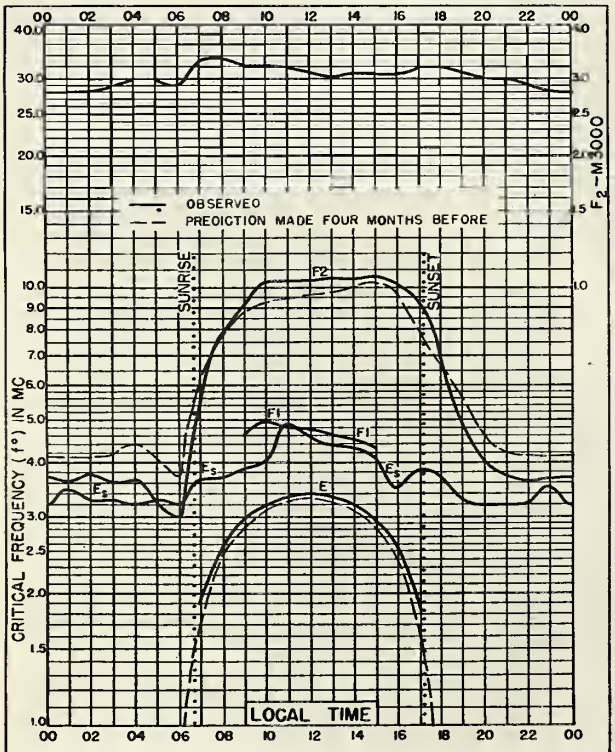


Fig. 64. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E MAY 1946

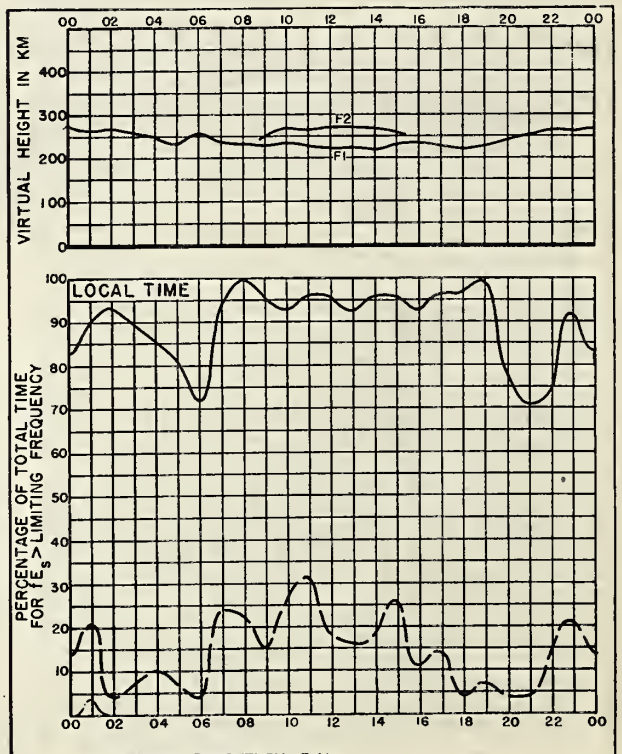


Fig. 65. WATHEROO, W AUSTRALIA MAY 1946

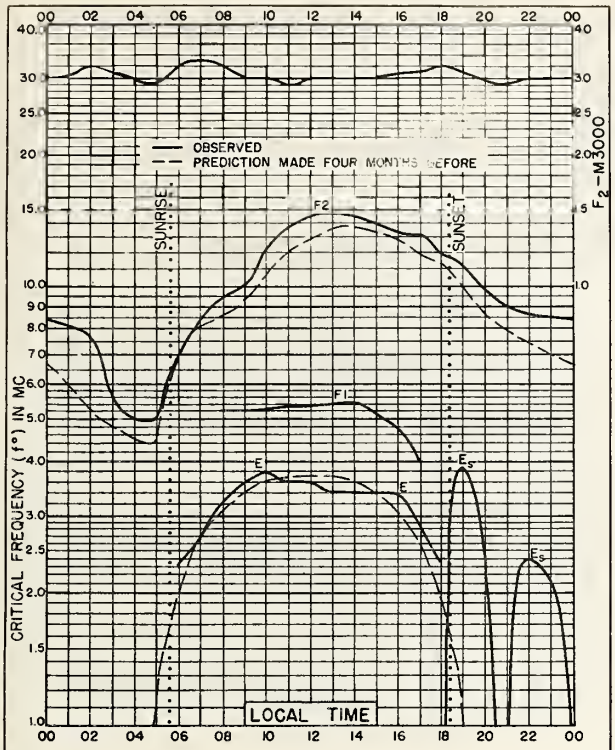


Fig.66. LOSHAN, CHINA
29.5°N, 103.7°E APRIL 1946

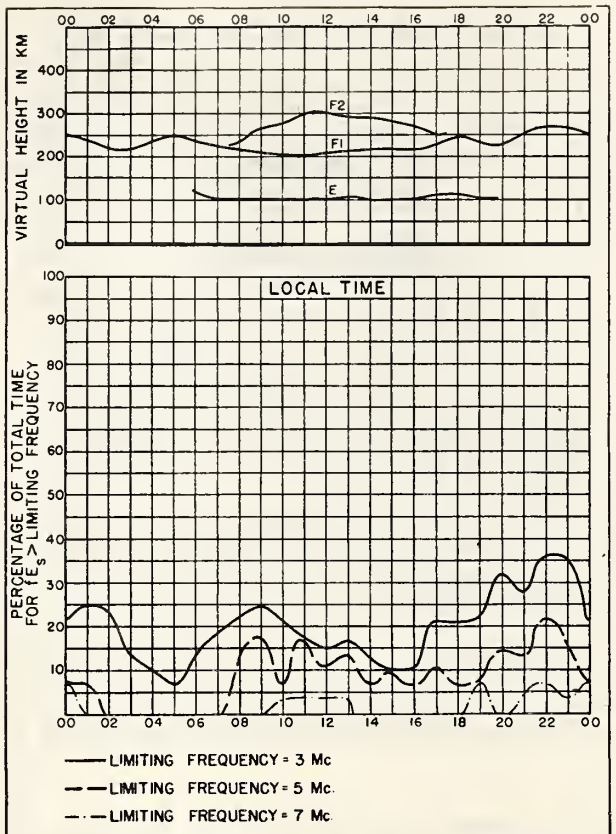


Fig.67. LOSHAN, CHINA APRIL 1946

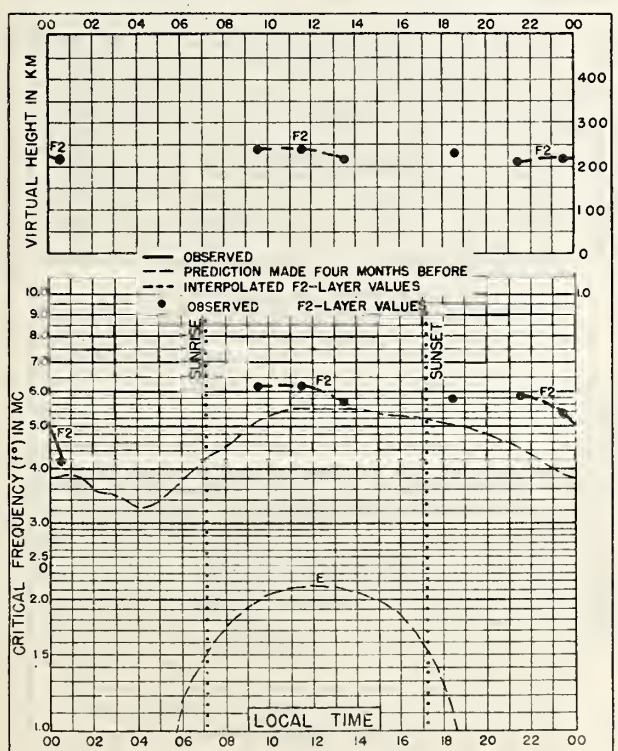


Fig.68 BUKHTA TIKHAYA, U.S.S.R.
80.3°N, 52.7°E MARCH 1946

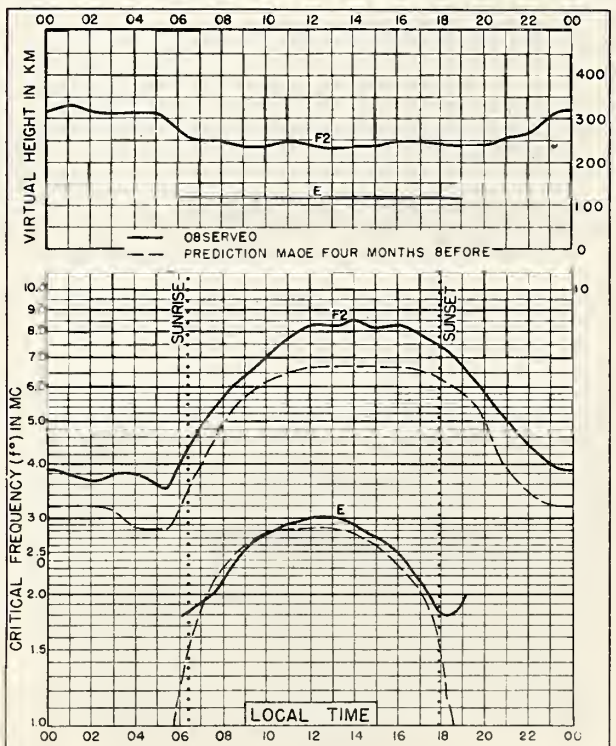


Fig.69. LENINGRAD (WETKAS) U.S.S.R.
60.0°N, 30.3°E MARCH 1946

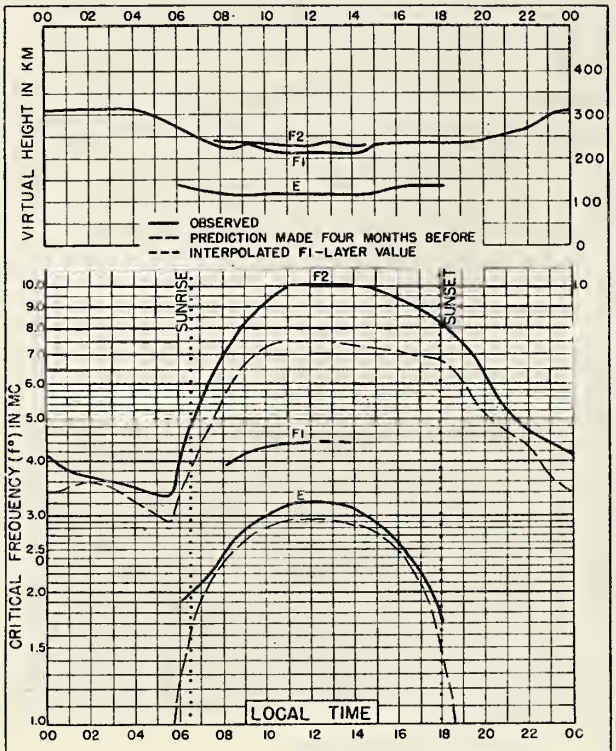


Fig. 70. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E MARCH 1946

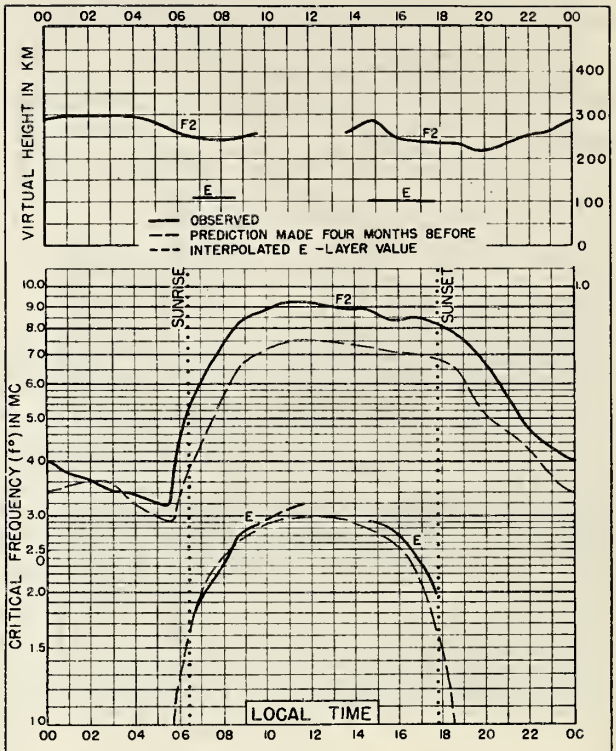


Fig. 71. TOMSK, U.S.S.R.
56.5°N, 84.9E MARCH 1946

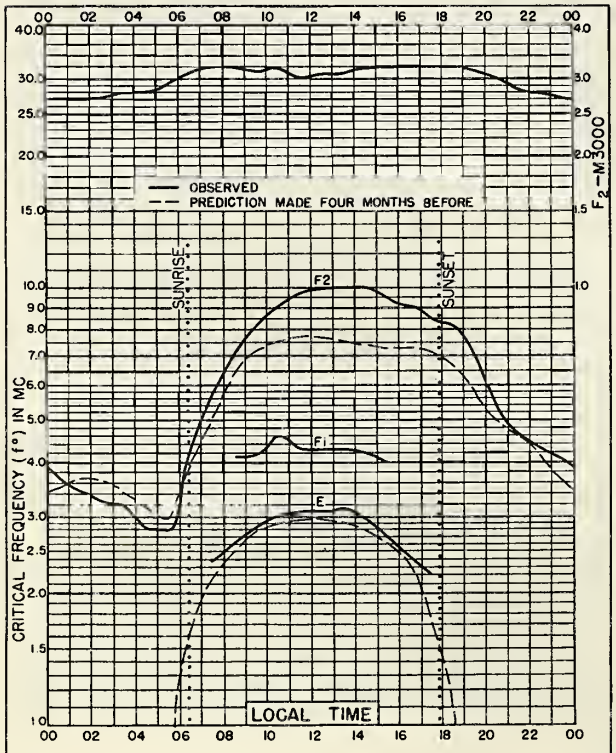


Fig. 72. MOSCOW (KRASNAJA PAKHRA), U.S.S.R.
55.5°N, 37.3°E MARCH 1946

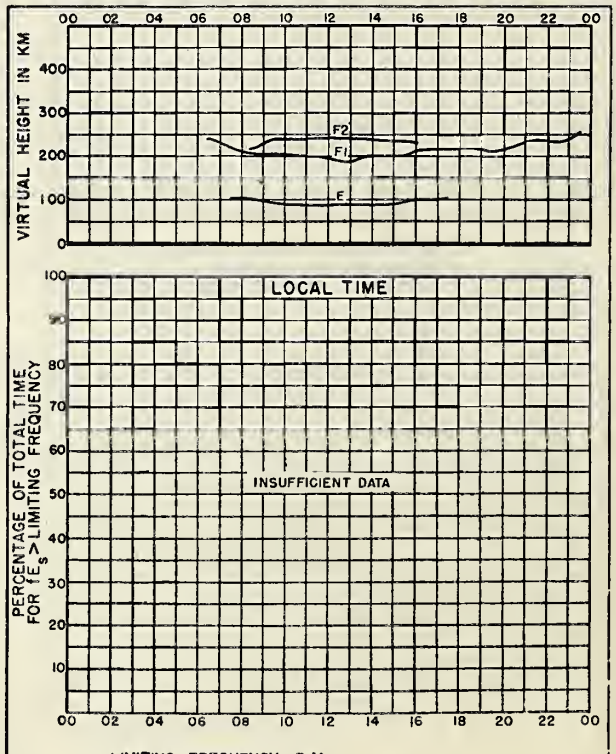


Fig. 73. MOSCOW (KRASNAJA PAKHRA), U.S.S.R. MARCH 1946

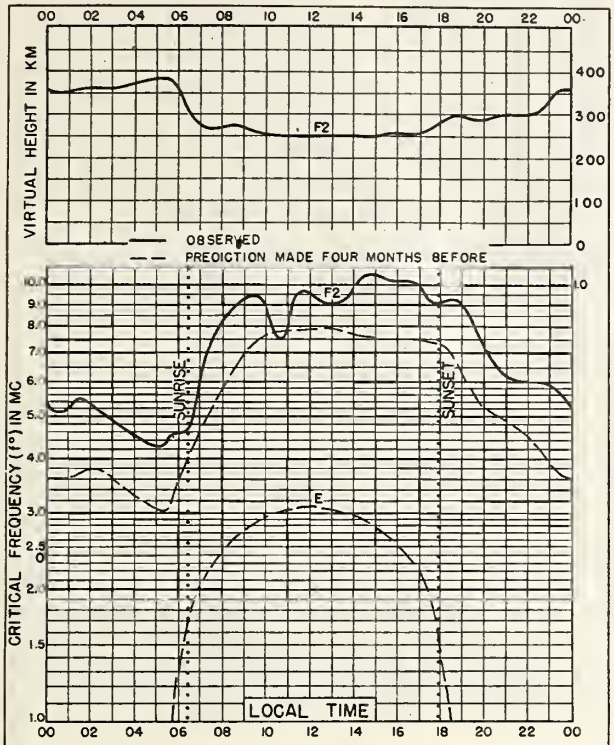


Fig. 74. CHITA, U.S.S.R.
52.0°N, 113.5°E
MARCH 1946

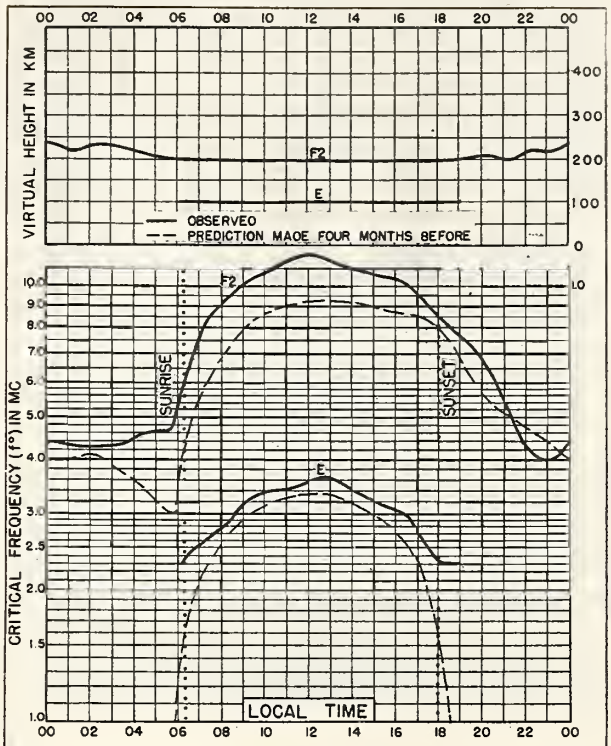


Fig. 75. ALMA ATA, U.S.S.R.
43.2°N, 76.9°E
MARCH 1946

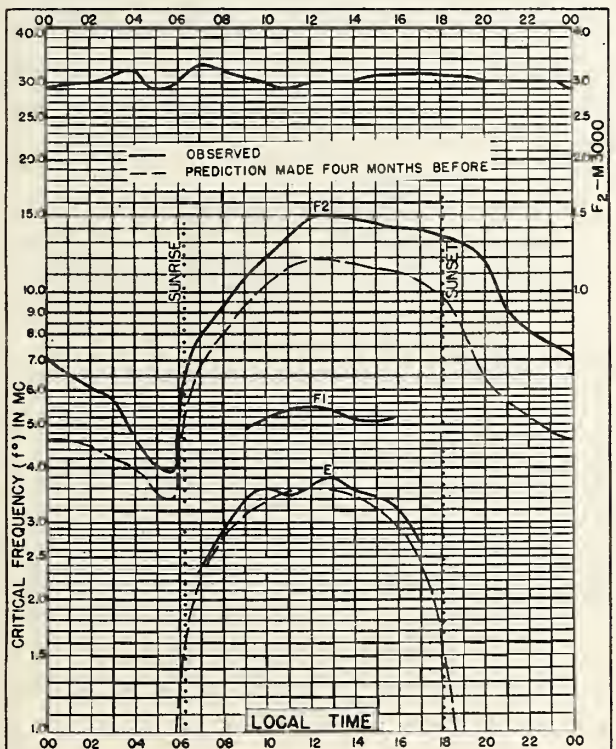


Fig. 76. LOSHAN, CHINA
29.5°N, 103.7°E
MARCH 1946

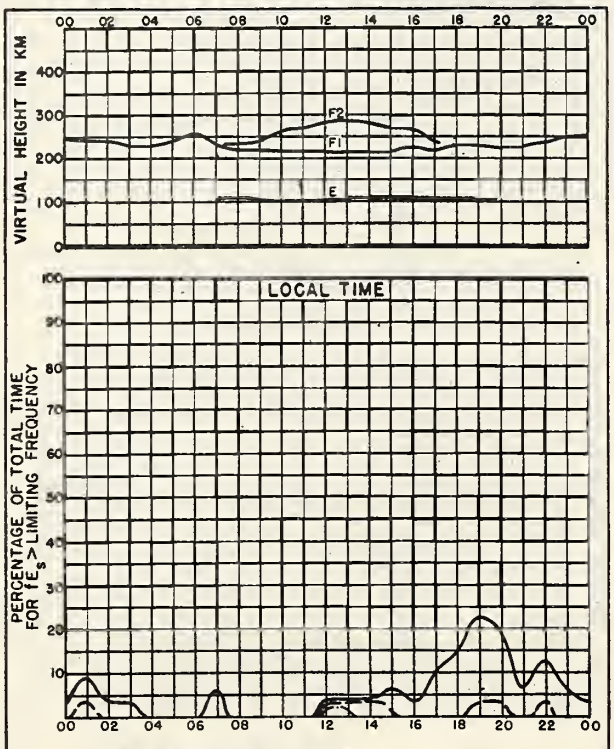


Fig. 77. LOSHAN, CHINA
MARCH 1946

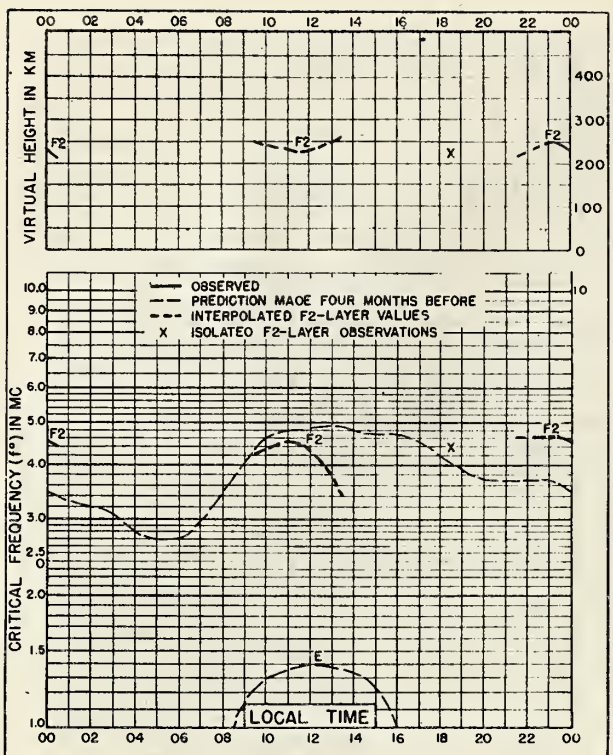


Fig. 78. BUKHTA TIKHAYA, U.S.S.R.
80.3°N, 52.7°E FEBRUARY 1946

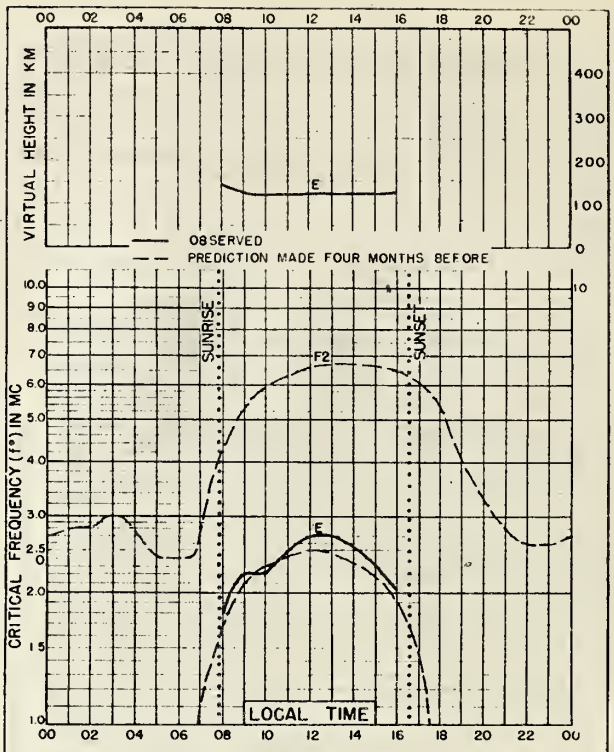


Fig. 79. LENINGRAD (WETKAS), U.S.S.R.
60.0°N, 30.3°E FEBRUARY 1946

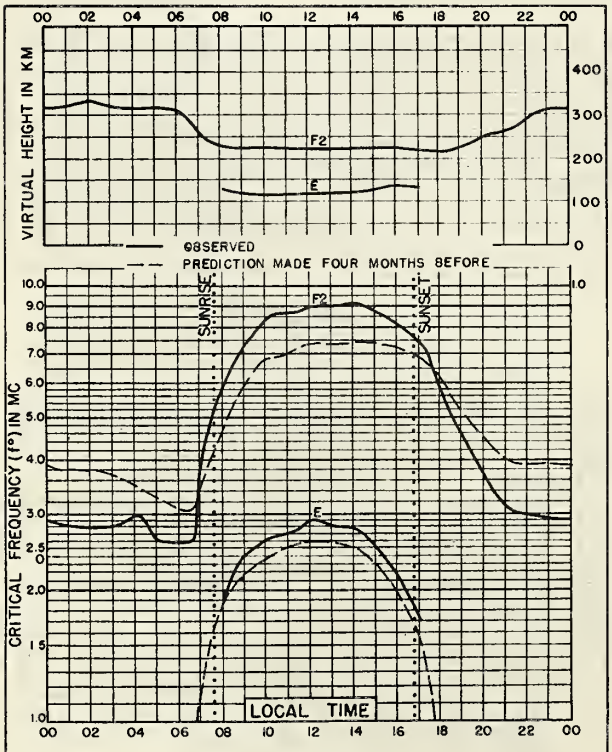


Fig. 80. SVERDLOVAK, U.S.S.R.
56.7°N, 61.1°E FEBRUARY 1946

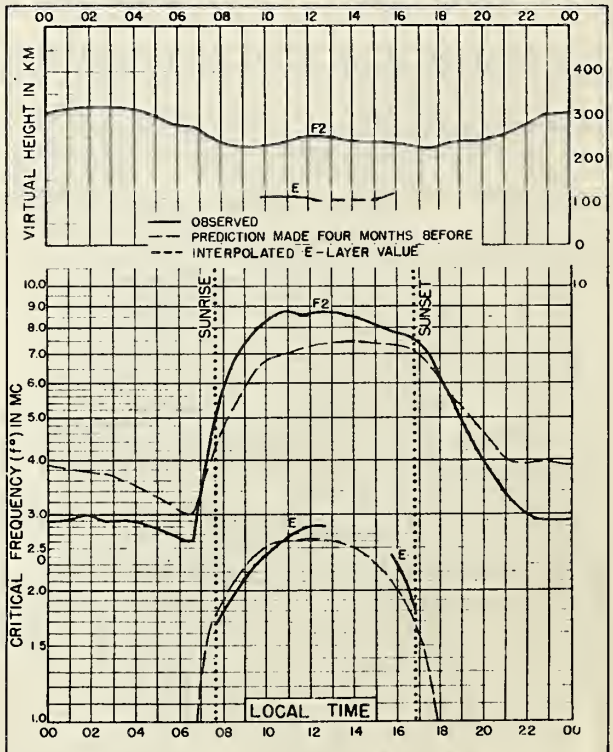


Fig. 81. TOMSK, U.S.S.R.
56.5°N, 84.9°E FEBRUARY 1946

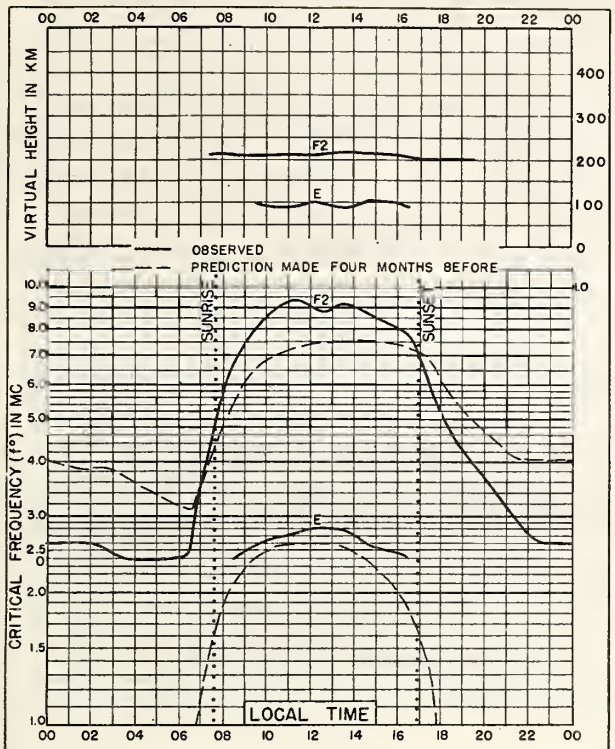


Fig. 82. MOSCOW (KRASNAJA PAKHRA), U.S.S.R.
55.5°N, 37.3°E FEBRUARY 1946

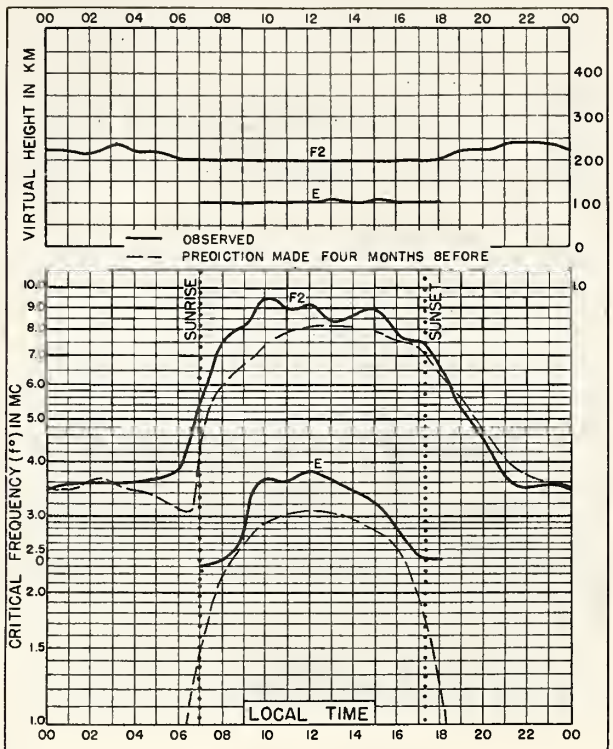


Fig. 83. ALMA ATA, U.S.S.R.
43.2°N, 76.9°E FEBRUARY 1946

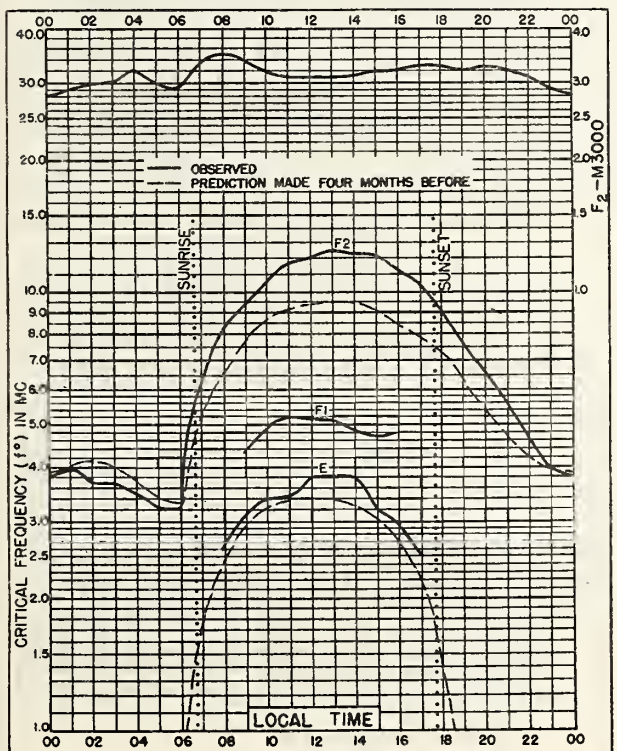


Fig. 84. LOSHAN, CHINA
29.5°N, 103.7°E FEBRUARY 1946

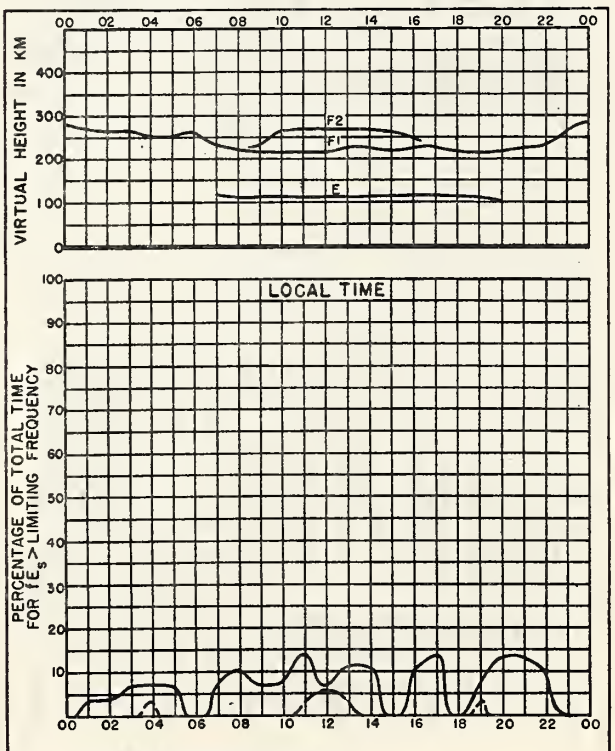


Fig. 85. LOSHAN, CHINA FEBRUARY 1946

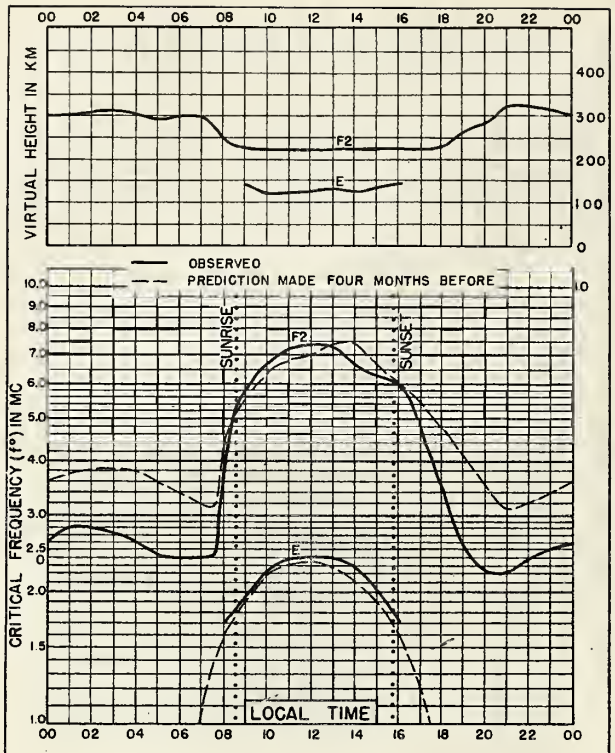


Fig.86. SVERDLOVSK, U.S.S.R.
56.7°N, 61.1°E JANUARY 1946

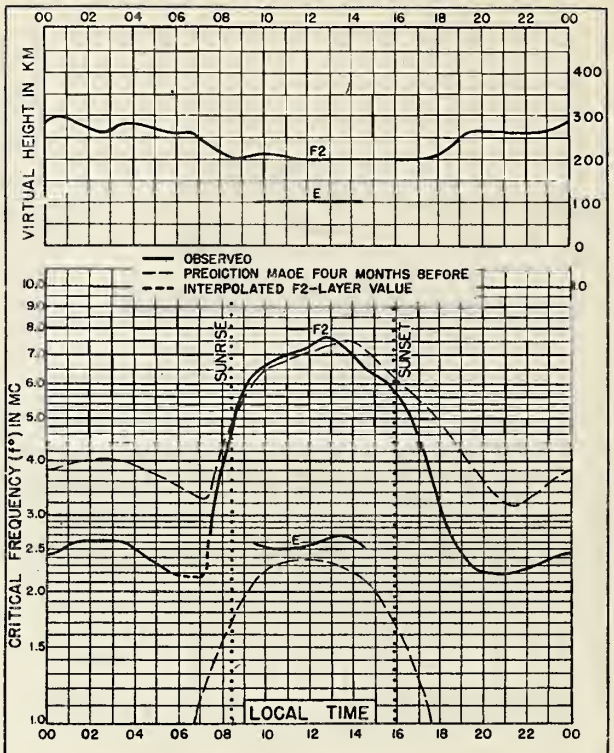
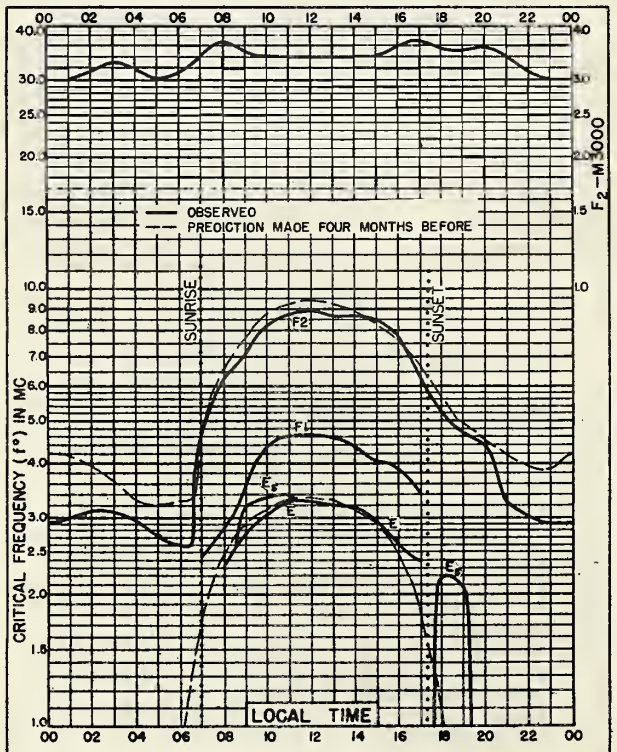


Fig.87. MOSCOW (KRASNAJA PAKHRA), U.S.S.R.
55.5°N, 37.3°E JANUARY 1946



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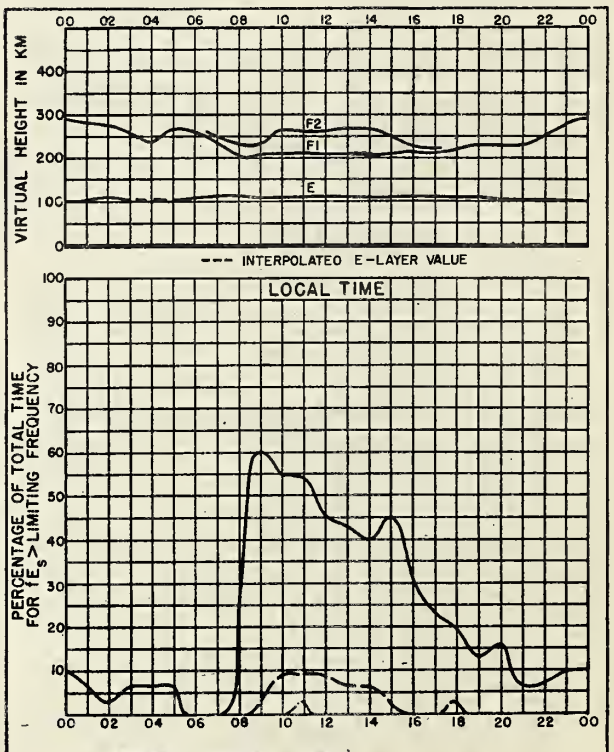

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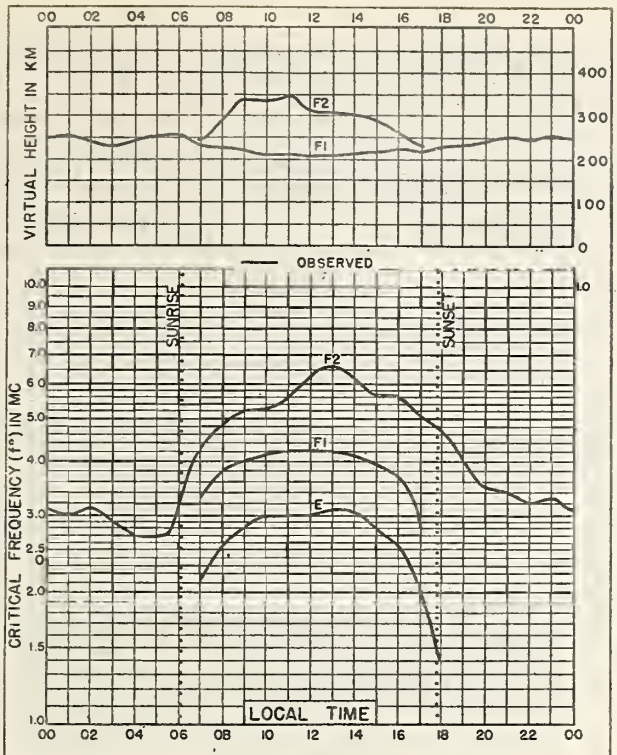

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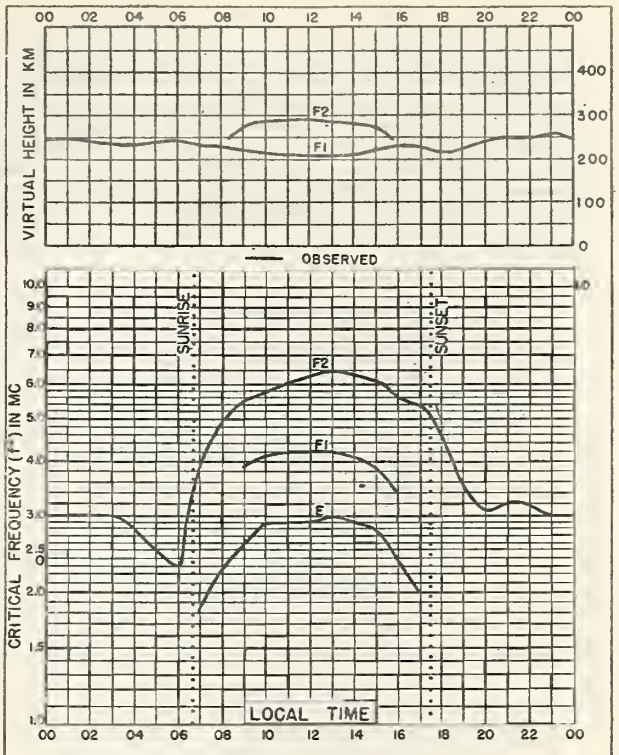

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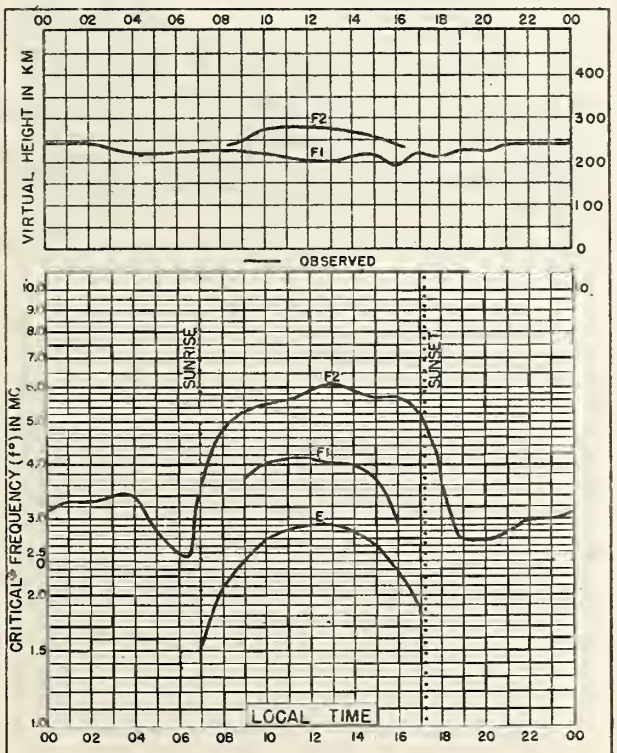

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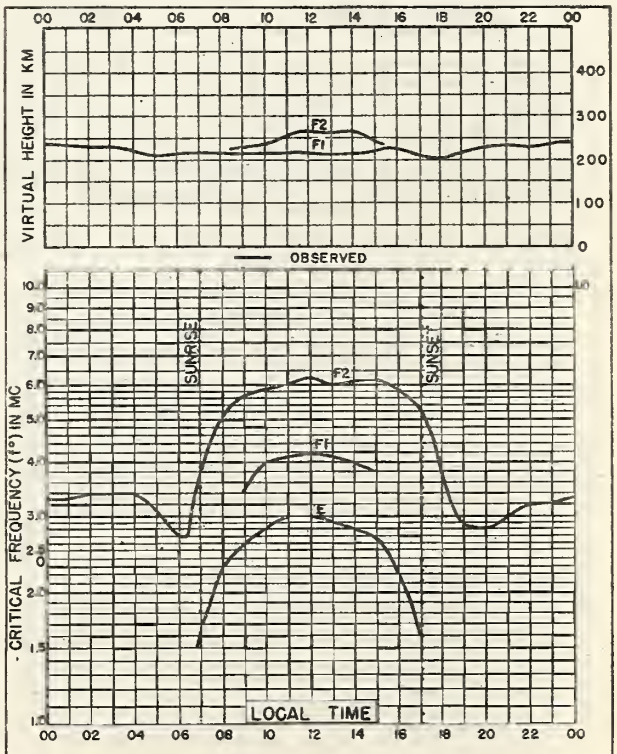

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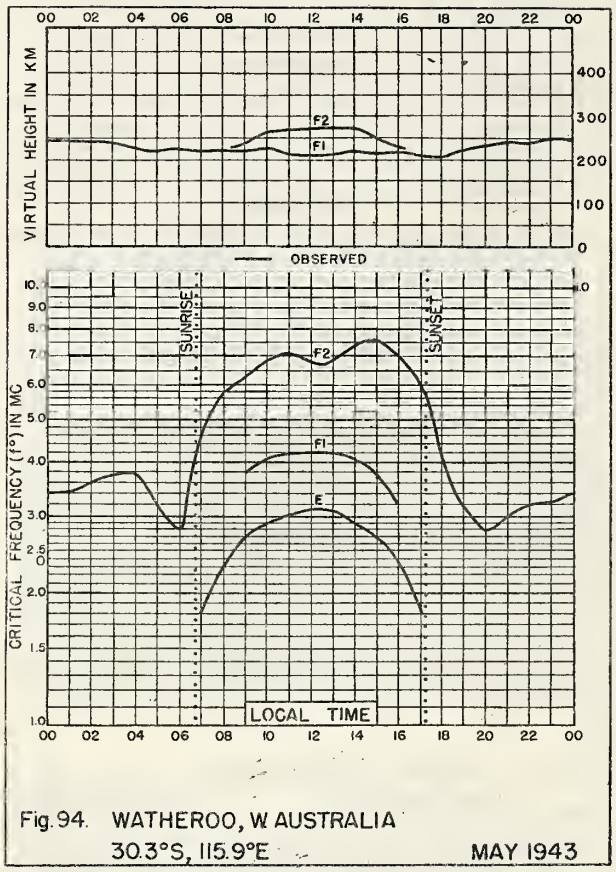

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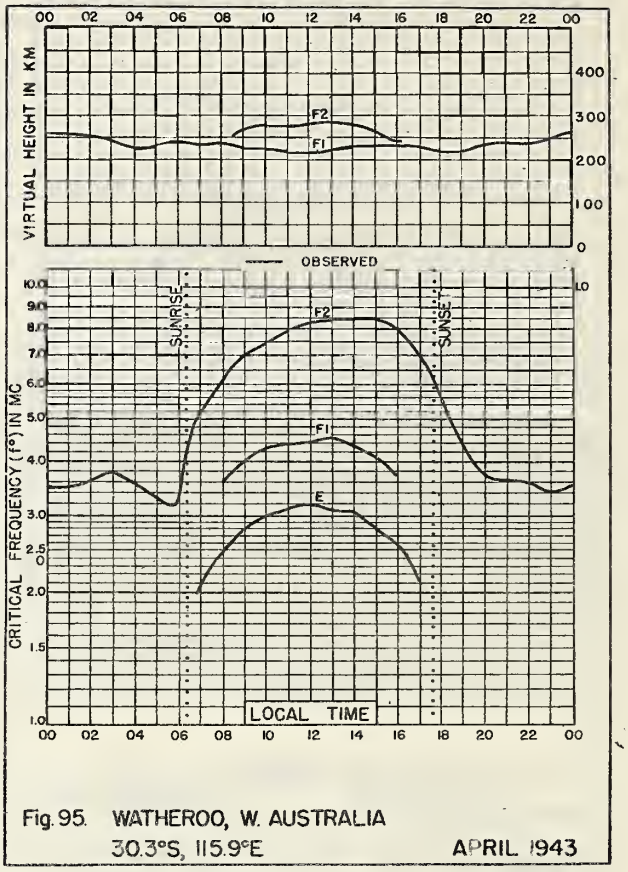

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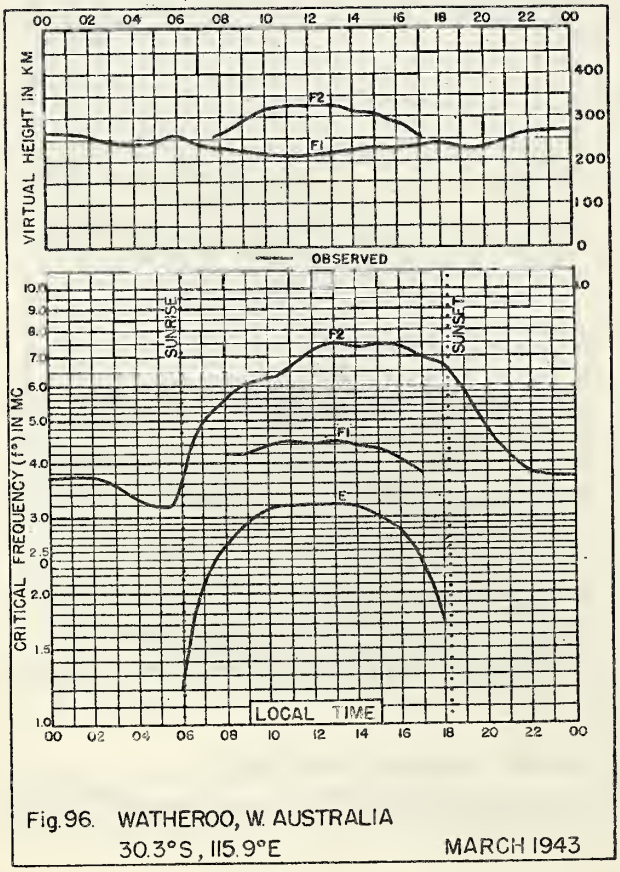

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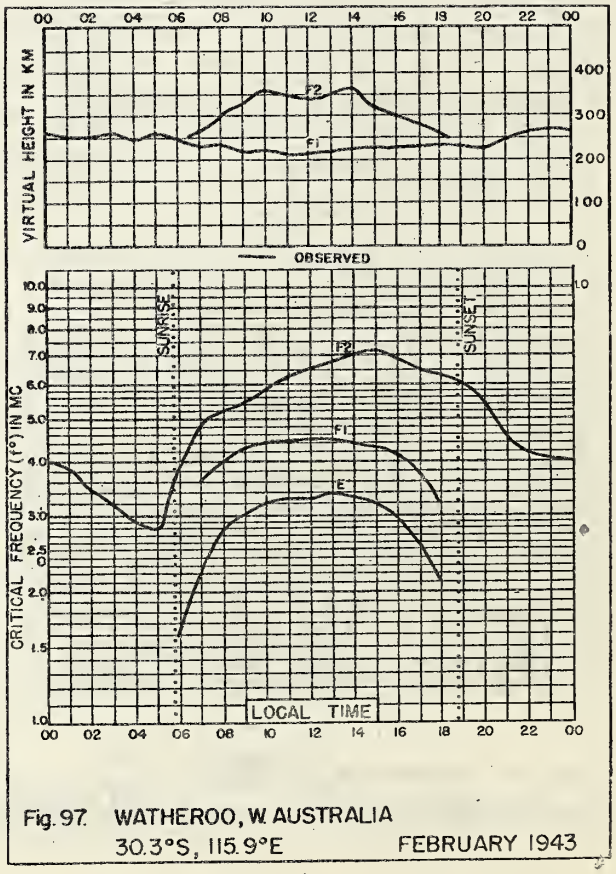

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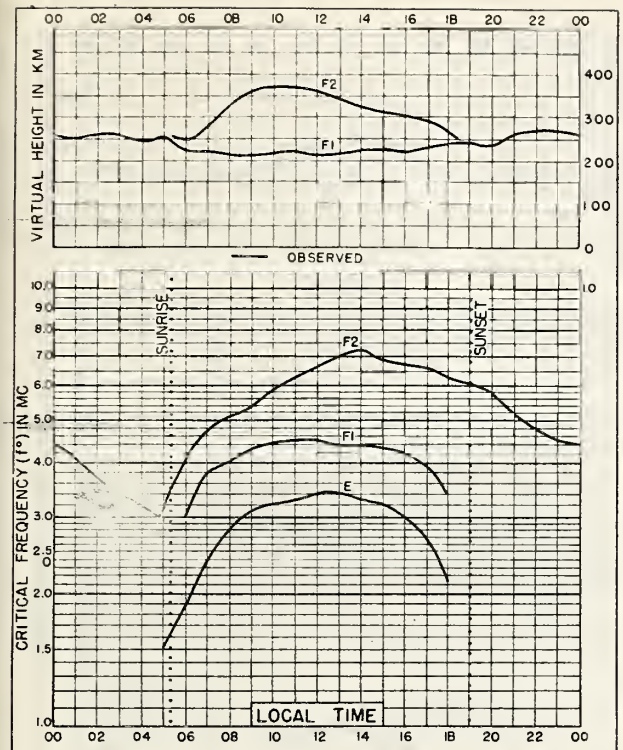

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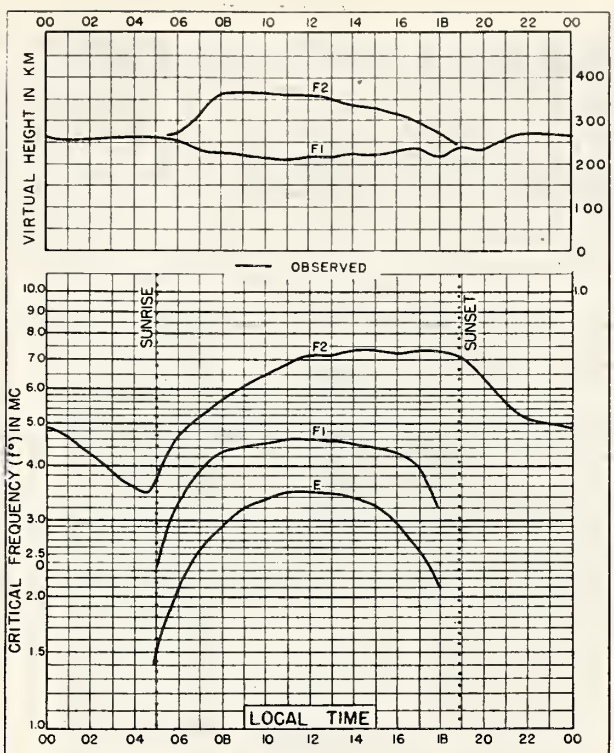

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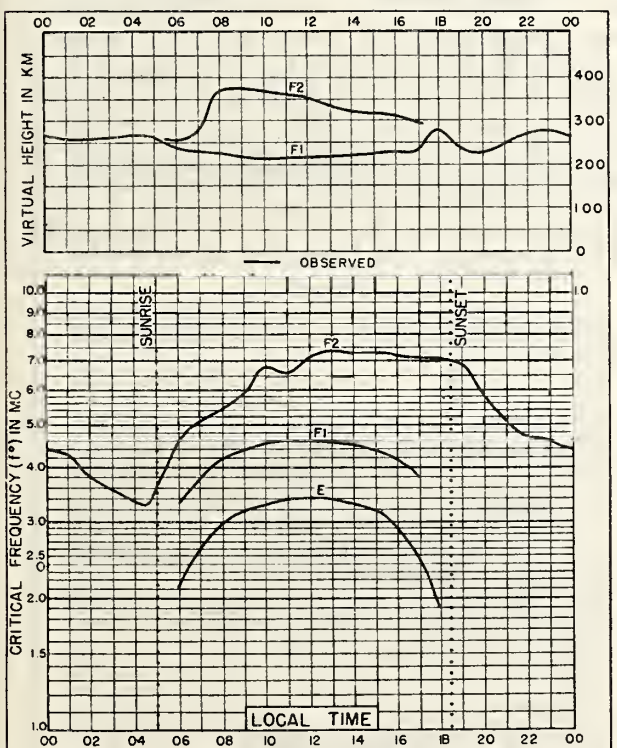

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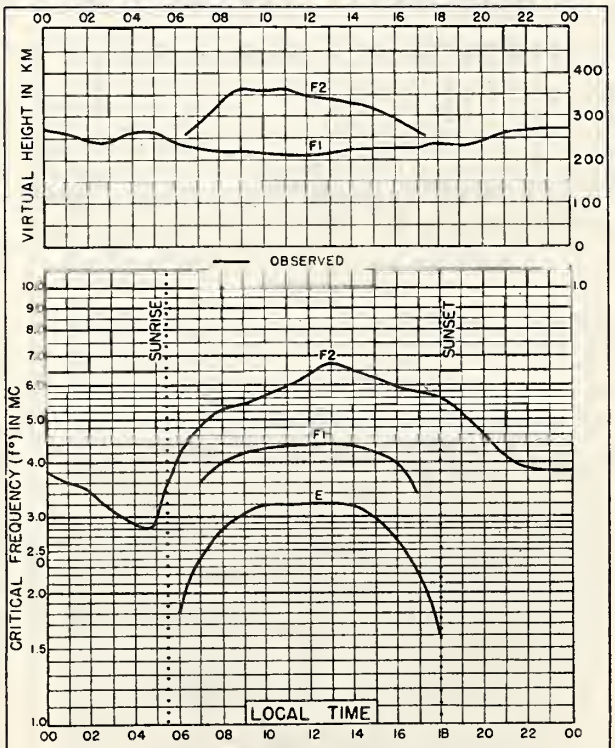

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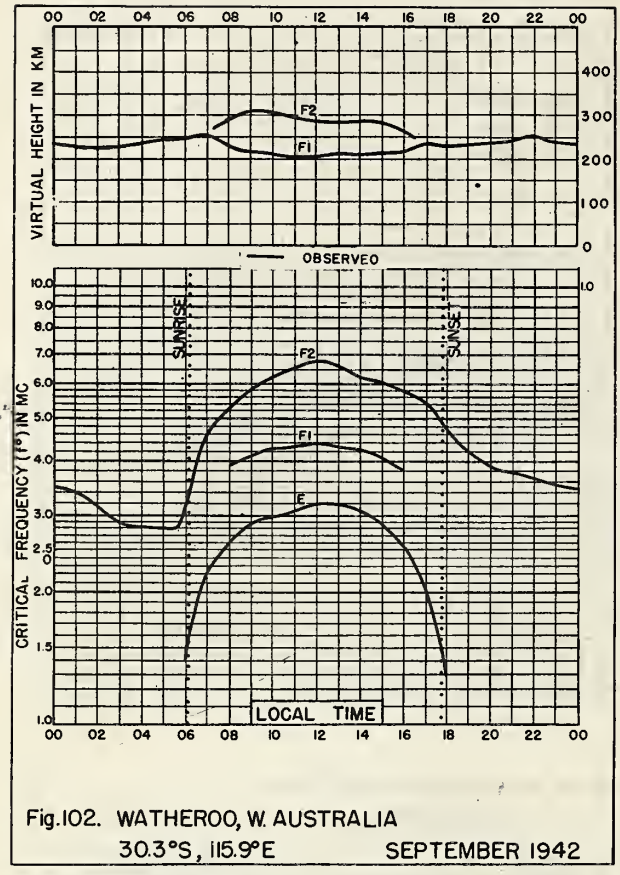

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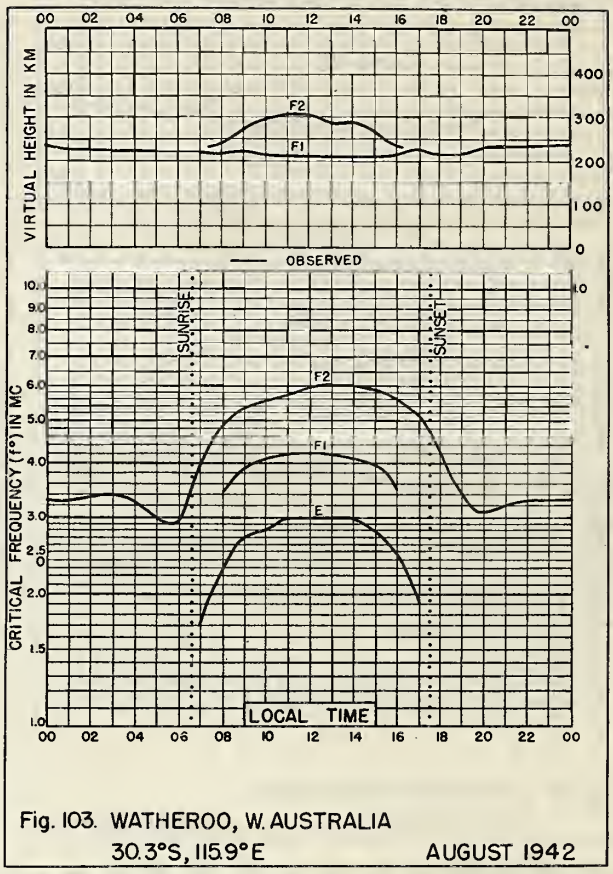

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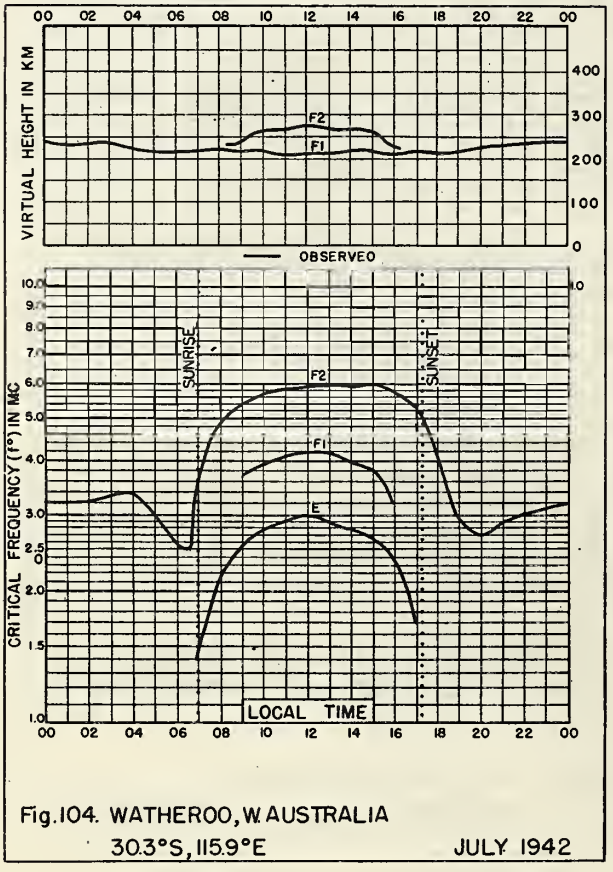

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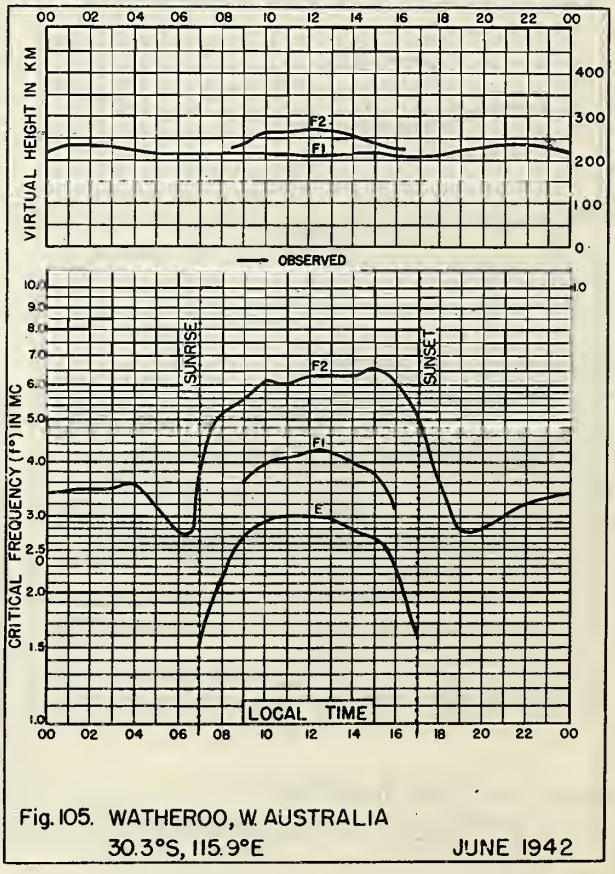

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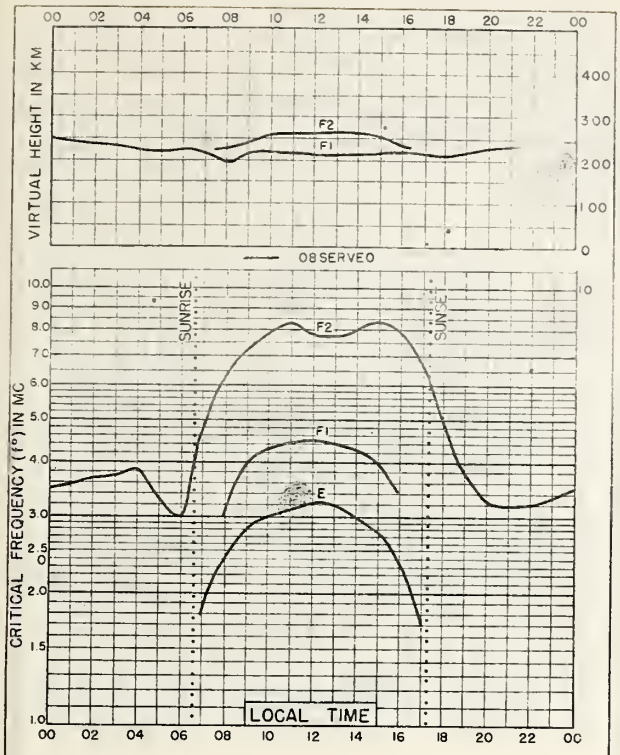

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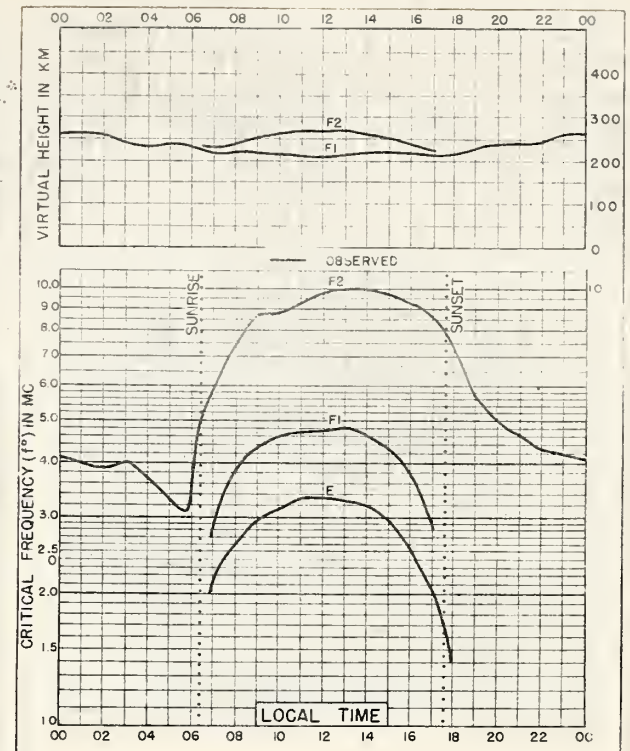

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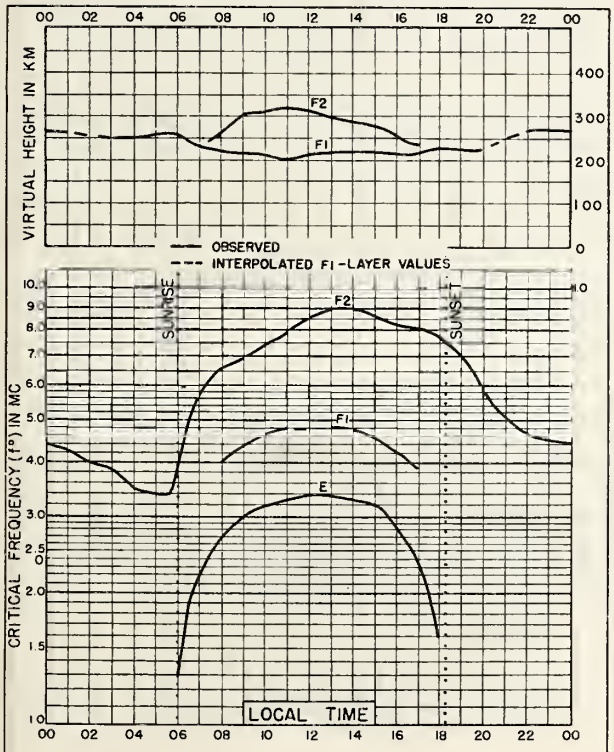

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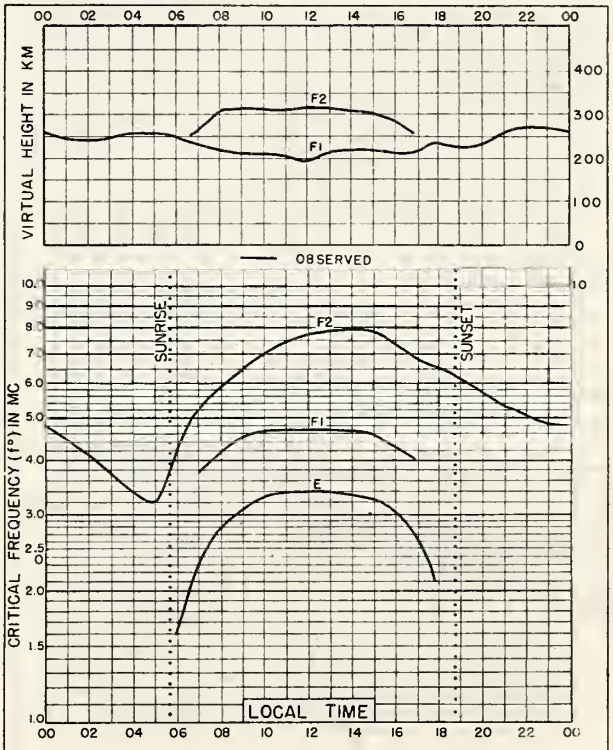

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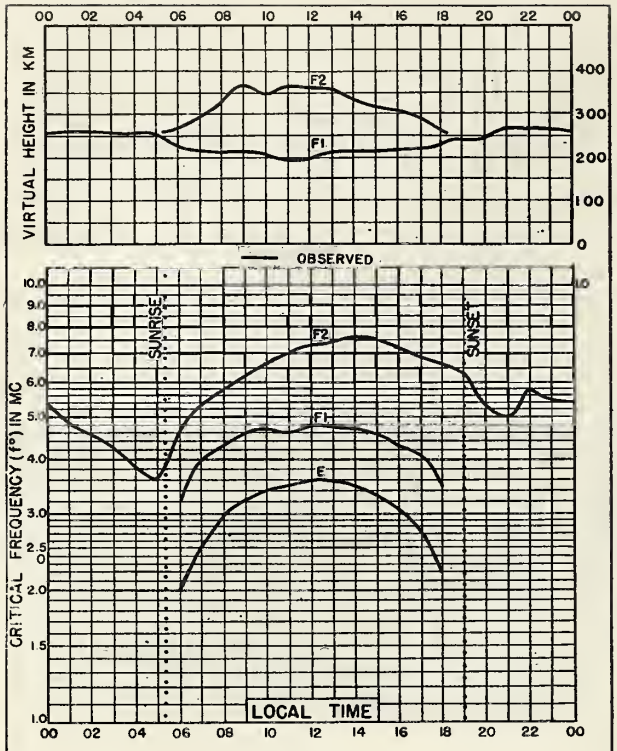

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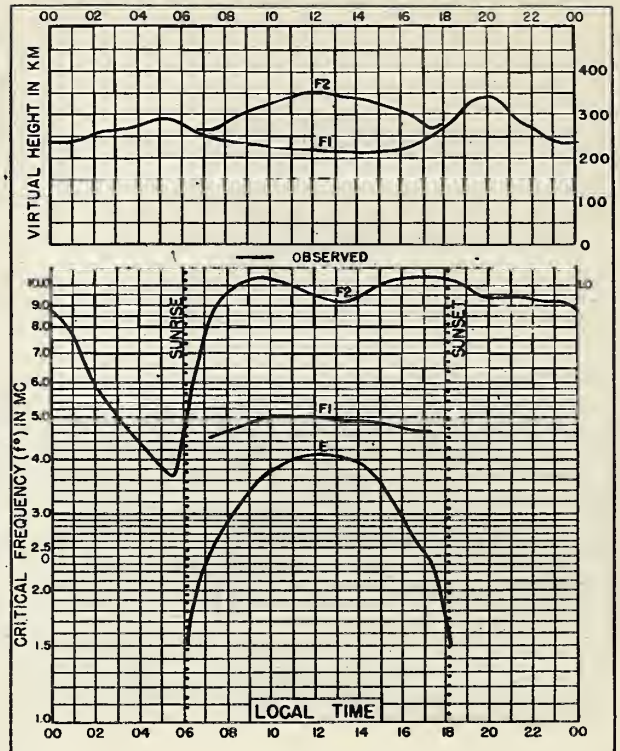

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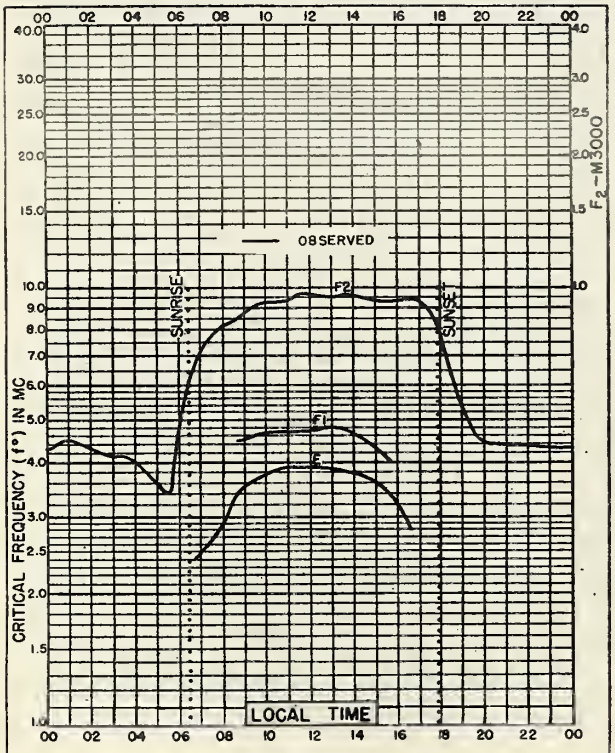

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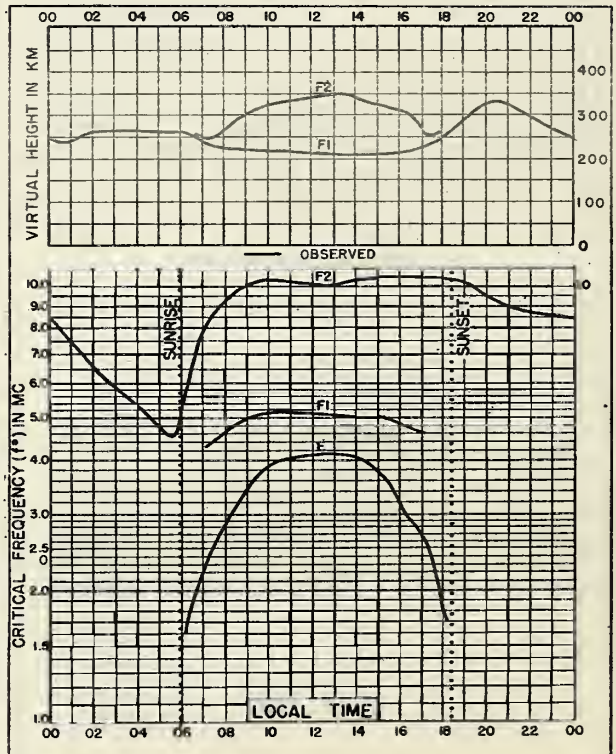

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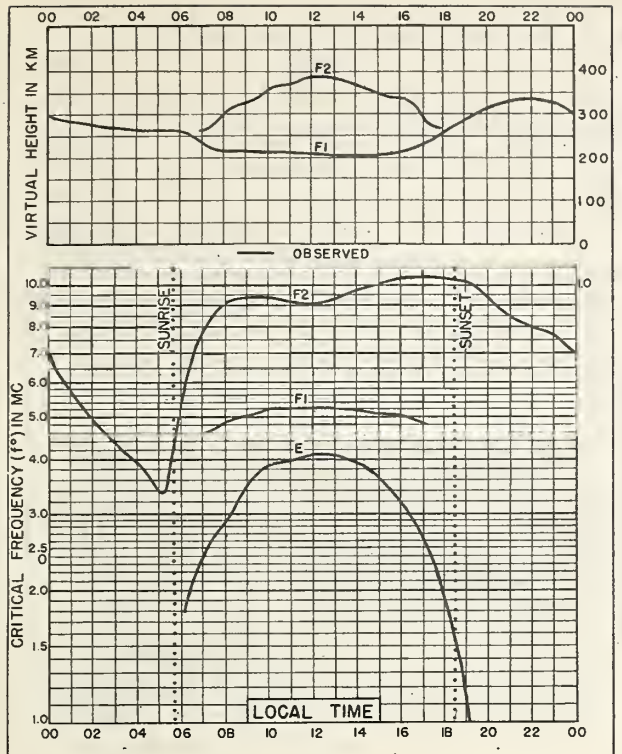

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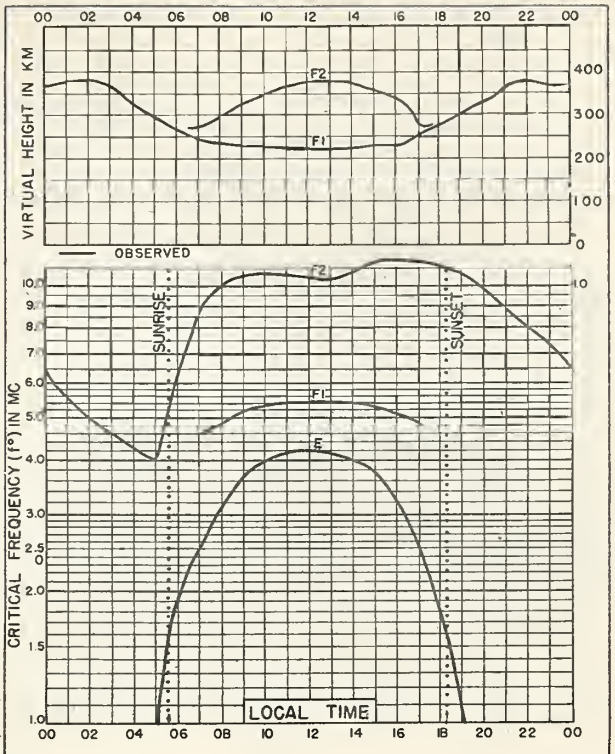

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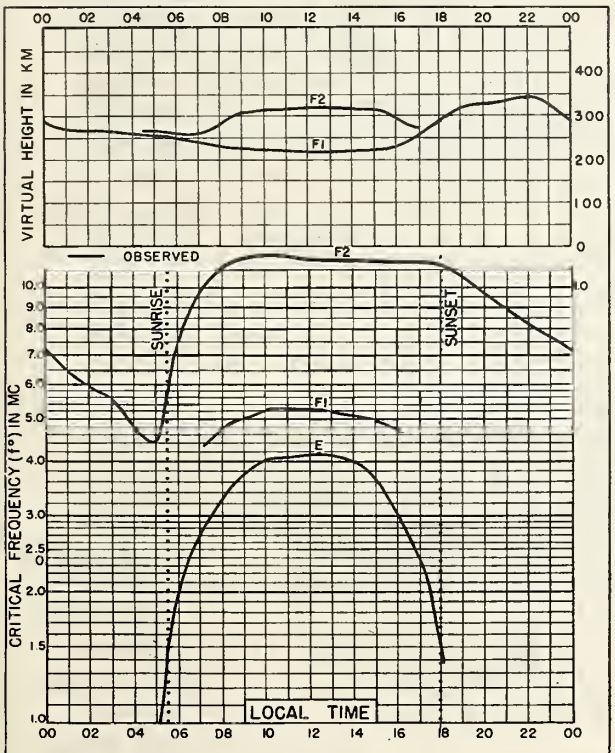

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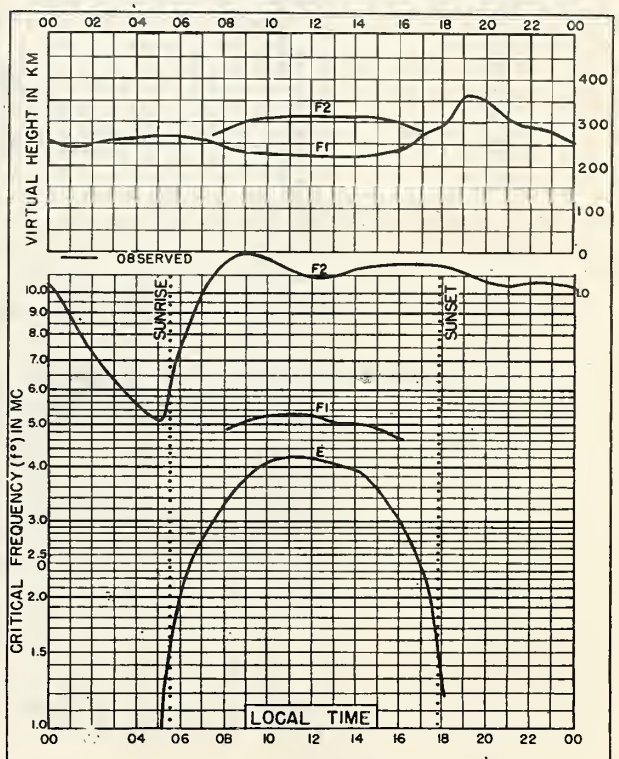

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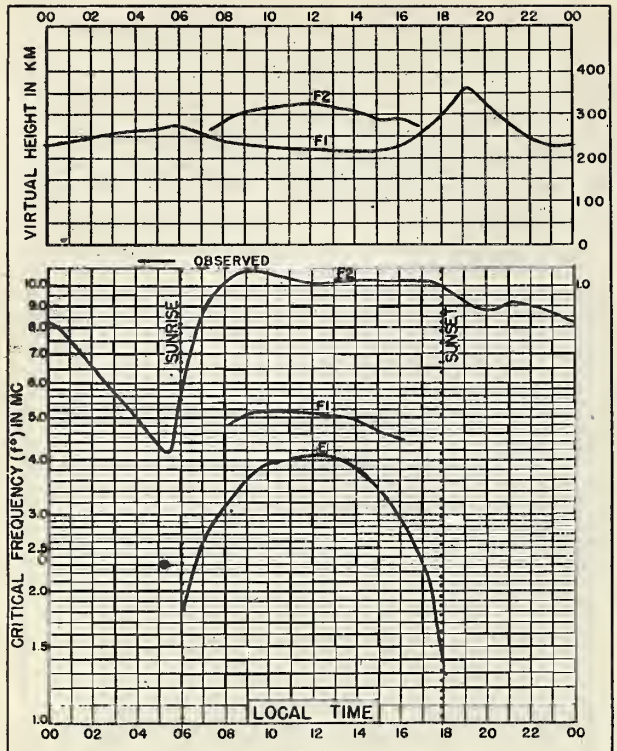

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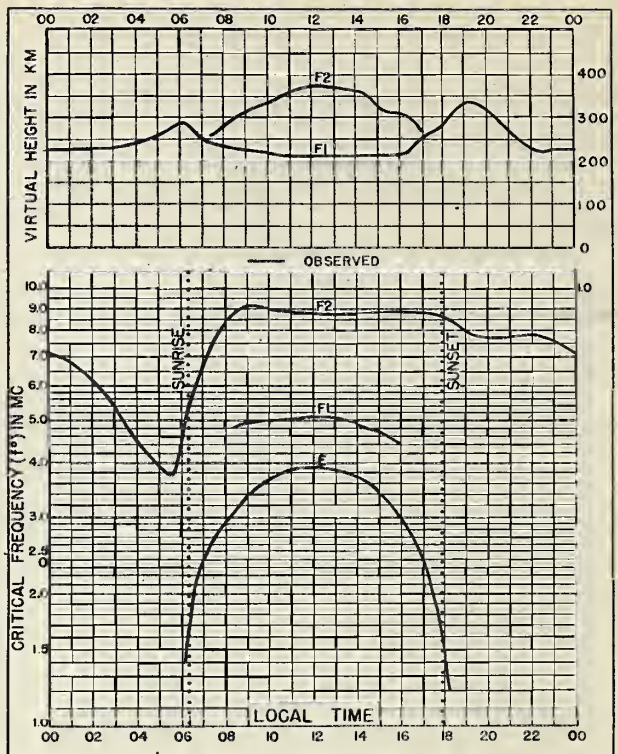

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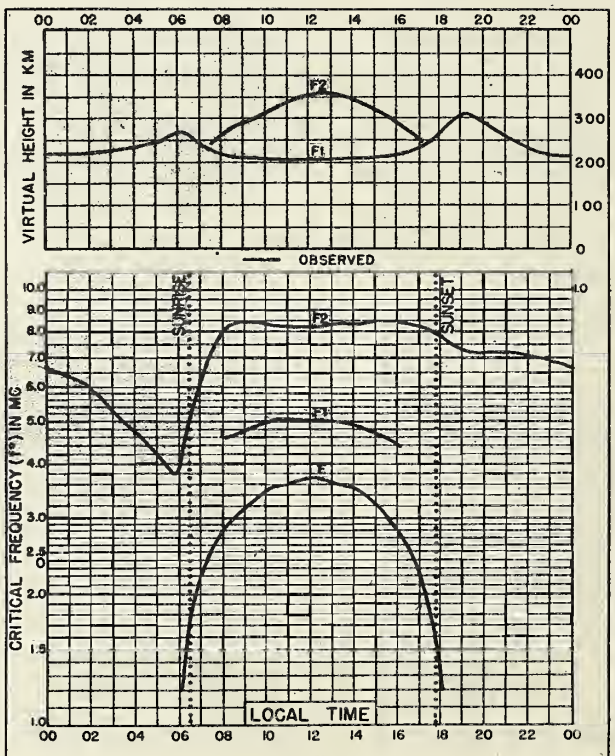

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IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.

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