CRPL-F33

IONOSPHERIC DATA

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PREPARED BY CENTRAL RADIO PROPAGATION LABORATORY
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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 l = 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 of f^oF2 missing because of E are counted as equal to or less than the lower limit of the recorder. Ordinarily, values of virtual heights, f^oF1, and f^oE missing for this reason are omitted from the median count.
   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^oF2, as equal to or less than f^oF1.
   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^oE, 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.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 51 and figures 1 to 99 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:
- Oslo, Norway
- Slough, England
- Tromso, Norway

Canadian Radio Wave Propagation Committee:
- Churchill, Canada
- Clyde, Baffin I.
- Ottawa, Canada
- Portage la Prairie, Manitoba
- Prince Rupert, Canada
- St. John's, Newfoundland

New Zealand Radio Research Committee:
- Campbell I.
- Christchurch (Canterbury University College Observatory)
- Fiji Is.
- Kermadec Is.
- 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:
- Okinawa I.
- Shibata, Japan
- Tokyo, Japan
- Yamakawa, 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

Indian Council of Scientific and Industrial Research, Radio Research Committee:
- Calcutta, India

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

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

Philippine Republic, Department of National Defense:
- Leyte, Philippine Is.

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 them through established channels sooner than they reach 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.

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^oF2 is less than or equal to f^oF1, 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. The following predicted smoothed 12-month running-average Zurich sunspot numbers were used in constructing the contour charts, beginning with August 1945:

Month	Predicted Sunspot No.	Month	Predicted Sunspot No.
April 1947	107	May 1946	67
March 1947	105	April 1946	62
February 1947	90	March 1946	51
January 1947	88	February 1946	46
December 1946	85	January 1946	42
November 1946	83	December 1945	38
October 1946	81	November 1945	36
September 1946	79	October 1945	23
August 1946	77	September 1945	22
July 1946	73	August 1945	20
June 1946	67		

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

The data given in tables 52 to 63 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 64 presents ionosphere character figures for Washington, D.C., during April 1947, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, magnetic K-figures, which are usually covariant with them.

Table 65 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 April 1947.

Table 66 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless Ltd. from March 27 to April 15, 1947, inclusive.

Table 67 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, March 1947, 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 Cheltenham, Maryland, goemagnetic 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 February 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. Beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales.

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 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 68 presents the daily median values of relative sunspot numbers as reported by American observers for April 1947. 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. 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

In table 69 the intensities of the green (λ5303A), first red (λ6374A), and second red (λ6704A) lines of the solar corona as observed during April 1947, by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are given 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) 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.

Table 1

Washington, D. C. (39.0°N, 77.5°W) April 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(345)	7.1						2.6
01	(355)	6.8						2.5
02	(350)	6.8						2.5
03	(340)	6.5						2.5
04	(340)	(6.2)						(2.5)
05	(335)	(6.2)						(2.7)
06	300	6.9						2.7
07	280	8.6						2.8
08	270	9.4	270					2.8
09	310	10.2	250	(5.0)				2.8
10	320	10.6	250	(5.0)				2.7
11	320	11.1	240	(5.5)				2.6
12	350	11.2	260	(6.0)				2.6
13	370	11.1	(270)	(5.9)				2.6
14	350	11.1	255	(5.3)				2.6
15	340	11.0	260	(5.8)				2.6
16	320	10.7	265					2.6
17	320	10.4	270					2.6
18	290	10.4	280					2.7
19	(280)	(9.8)						(2.7)
20	(280)	(8.9)						(2.8)
21	(290)	(8.2)						(2.7)
22	(320)	7.7						2.6
23	(335)	7.2						2.5

Time: 75.0°W.
Sweep: 3.1 Mc to 17.0 Mc. Manual operation.

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	352	5.3					5.5	2.5
01	392	5.0					5.5	2.4
02	380	4.9					5.5	2.3
03	400	4.8					5.0	2.4
04	385	4.6					5.2	2.4
05	370	5.0					3.4	2.4
06	348	5.3				1.9	4.8	2.5
07	295	5.4				2.2	2.4	2.6
08	260	6.3				2.6	2.6	2.8
09	250	6.9				2.8		2.8
10	265	7.6	270	4.5		3.0		2.8
11	300	7.8		4.7		3.1		2.6
12	265	7.9		4.7		3.1	2.7	2.6
13	280	7.8	268•	4.6		3.1		2.7
14	275	8.4	260	4.5		3.0		2.7
15	260	8.6		4.3		2.8	2.9	2.7
16	260	8.6				2.4	2.6	2.7
17	260	7.9				2.0	2.5	2.8
18	260	7.5				1.8	2.8	2.8
19	258	6.8				1.5	2.9	2.7
20	270	5.3				1.3	3.0	2.7
21	320	4.4					4.8	2.7
22	310	4.5					5.5	2.6
23	340	4.4					5.5	2.6

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

Table 3

Adak, Alaska (51.9°N, 176.6°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	4.5						(2.6)
01	305	4.4						2.6
02	320	4.1						(2.6)
03	330	4.1						(2.6)
04	330	3.9						(2.5)
05	330	4.0						(2.5)
06	285	5.2			(120)	(1.9)		2.7
07	240	6.9	260	4.0	120	2.3		3.0
08	230	8.0	240	4.4	110	2.8		3.1
09	230	9.8	225	4.6	110	3.2		3.0
10	240	10.6	220	4.8	110	3.4		3.0
11	235	11.8	210	4.9	110	3.5		3.0
12	230	12.0	220	4.9	110	3.6		2.9
13	230	12.6	220	5.1	110	(3.5)		2.9
14	220	12.4	220	5.0	110	3.4		2.9
15	220	12.3	220	(4.5)	110	3.2		3.0
16	220	11.3	240		110	2.9		3.0
17	220	10.8			120	2.4		3.1
18	220	9.5			130	1.8		3.1
19	220	8.0						3.1
20	220	6.6						3.0
21	240	5.6						2.8
22	260	5.0						2.7
23	295	4.4						(2.6)

Time: 180.0°W.
Sweep: Manual operation.

Table 4

Ottawa, Canada (45.5°N, 75.8°W) March 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	6.2						2.8
01	290	5.4						2.8
02	290	5.5						2.7
03	290	5.0						2.7
04	270	5.3						2.8
05	285	5.3						2.8
06	275	5.8						2.9
07	230	7.0			95	2.4		3.1
08	215	8.1			90	2.9		3.0
09	200	9.7			90	3.6		2.9
10	200	10.2			85	3.7		2.9
11	200	11.7			90	3.8		2.8
12	210	11.8			90	4.1		2.7
13	200	12.6			100	4.0		2.7
14	210	12.2			100	3.9		2.7
15	205	12.6			90	3.8		2.7
16	210	12.2			90	3.3		2.7
17	220	12.1			90	2.7		2.7
18	220	11.6						2.8
19	210	10.2						2.8
20	220	9.2						2.8
21	230	8.0						2.8
22	240	7.5						2.7
23	260	6.4						2.8

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc. Manual operation.

Table 5

Boston, Massachusetts (42.4°N, 71.2°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	315	6.8						2.4
01	322	6.5						2.4
02	320	6.0						2.4
03	330	5.7					1.2	2.5
04	320	5.2					1.2	2.5
05	318	5.0					1.1	2.5
06	300	5.6						2.7
07	288	7.8						2.8
08	280	8.5						2.8
09	275	9.3			130	2.6		2.8
10	280	10.4						2.7
11	280	11.2						2.8
12	280	12.4						2.7
13	283	12.2						2.7
14	283	12.0						2.6
15	275	11.6						2.6
16	275	11.5						2.7
17	283	11.2						2.7
18	283	11.0						2.7
19	280	9.5						2.7
20	285	9.0						2.6
21	300	8.5						2.6
22	300	7.7						2.5
23	305	7.2						2.5

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

Table 6

San Francisco, California (37.4°N, 122.2°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	5.4						2.6
01	300	5.4						2.5
02	320	5.4						2.5
03	325	5.2						2.5
04	320	5.2						2.5
05	330	4.9						2.4
06	300	5.3						2.6
07	245	7.7			125	2.6		2.9
08	240	9.5			120	3.0		3.0
09	230	10.8			120	3.4		2.9
10	230	11.5		5.4	120	3.6		2.8
11	230	12.6	230	5.5	120	3.8		2.7
12	230	13.0			110	3.8		2.7
13	240	13.2			120	3.8		2.7
14	235	13.0			110	3.7		2.7
15	240	13.0			120	3.6		2.7
16	240	12.5			120	3.3		2.7
17	240	11.4			120	2.9		2.8
18	240	11.0						2.8
19	230	9.8						2.8
20	240	8.0						2.9
21	240	6.8						2.8
22	260	6.2						2.8
23	260	5.8						2.6

Time: 120.0°W.
Sweep: 1.5 Mc to 18.5 Mc in 4.5 minutes.

Table 7

White Sands, New Mexico (32.6°N, 106.5°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	6.2					2.2	2.5
01	300	6.0						2.5
02	300	5.8						2.5
03	300	5.7						2.5
04	300	5.4						2.4
05	300	5.5						2.4
06	320	5.4						2.6
07	280	7.8			120	2.2	2.4	2.9
08	280	9.4	240		120	3.0	3.8	2.8
09	300	11.4	240		120	3.4	3.7	2.8
10	300	11.5	240	4.8	120	3.7		2.8
11	300	12.8	240		120	3.8		2.7
12	300	D	240		110	3.9	4.0	2.7
13	310	D	235		110	3.9		(2.7)
14	310	D	240		120	3.8		2.8
15	310	12.3	230		120	3.7		2.7
16	300	12.0	240		120	3.3	3.8	2.7
17	300	11.4	230		115	2.7	3.5	2.8
18	250	11.0			120	1.9		2.8
19	230	9.7						2.8
20	240	8.4						2.8
21	255	7.8						2.8
22	260	7.0						2.7
23	295	6.2						2.6

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

Table 8*

Baton Rouge, Louisiana (30.5°N, 91.2°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	(320)	(6.8)						(2.6)
01	(320)	(6.9)						(2.6)
02	320	7.1						2.6
03	315	6.9						2.6
04	(310)	(6.5)						(2.6)
05	(340)	(6.4)						(2.7)
06	(300)	(6.4)						(2.8)
07	(280)							
08	(270)				120	3.1	(3.6)	
09	(280)		250		120	3.3		
10	(295)		250		120	3.6		
11	(300)		250		120	3.7		
12			250					
13								
14								
15								
16								
17								
18	(250)	(11.2)						(2.9)
19	(255)	(9.5)						(3.0)
20	260	(8.1)						(3.0)
21	295	8.0						2.8
22	300	7.6						2.7
23	310	7.5						2.7

Time: 90.0°W.
Sweep: 2.0 Mc to 15.0 Mc in 5 minutes.
*Data recorded from 19th through 31st, only.

Table 9

San Juan, Puerto Rico (18.4°N, 66.1°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		9.0						2.7
01		8.8						2.8
02		7.8						2.8
03		7.0						2.7
04		6.4						2.6
05		5.9						2.6
06		6.1						2.6
07	270	8.9						2.9
08	270	11.5		3.1			3.7	2.8
09	290	12.4		3.9		3.4	4.1	2.8
10	300	12.6				3.7		2.8
11	310	12.6				3.8		2.8
12	350	12.8				3.9		2.7
13	370	(13.0)				3.9		2.7
14	340	12.8				3.9		2.6
15	335	12.5				3.7	4.0	2.6
16	325	12.2				3.5	4.2	2.6
17	300	12.1		3.1			4.0	2.5
18	290	11.8						2.6
19	285	10.9						2.7
20		10.0						2.7
21		9.0						2.7
22		9.4						2.7
23		9.3						2.7

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

Table 10

Guam I. (13.5°N, 144.8°E) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	240	13.3					3.2	2.9
01	230	12.8					3.3	3.1
02	228	10.9					3.2	3.1
03	222	9.2					3.5	2.9
04	240	8.2					3.4	2.9
05	238	7.0					4.5	3.0
06	242	6.4					4.4	3.0
07	250	9.1					4.5	2.9
08	240	12.7					7.0	2.9
09	230	14.1					7.8	2.7
10	225	14.8					8.8	2.5
11	215	14.7					7.4	2.3
12	210	14.8					7.2	2.2
13	230	15.1	210				7.6	2.2
14	235	15.3	210				8.6	2.2
15	232	15.1	220				7.5	2.3
16	235	15.2					7.2	2.3
17	245	15.1					7.2	2.3
18	268	15.0					5.6	2.3
19	325	14.6					5.1	2.1
20	385	(14.1)					2.6	(2.1)
21	320	(14.3)					3.3	(2.2)
22	260	(14.6)					3.2	(2.6)
23	250	(15.0)					3.2	(2.9)

Time: 150.0°E.
Sweep: Manual operation.

Table 11

Trinidad, Brit. West Indies (10.6°N, 61.2°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	12.0						2.9
01	250	11.0						3.0
02	240	8.8						3.0
03	230	7.0						2.9
04	260	6.4						2.8
05	270	5.7						2.8
06	280	6.6					1.8	2.7
07	250	9.5			120	2.3	2.8	2.9
08	240	12.4			120	3.0	3.6	2.9
09	250	14.2	230	5.0	120	3.6	4.0	2.9
10	260	15.2	230	5.4	120	3.8	4.2	2.8
11	280	15.2	230	5.4	120	4.0	4.4	2.7
12	280	15.3	220	5.2	120	4.0	4.4	2.6
13	280	15.4	220	(5.4)	120	4.0	4.4	2.6
14	300	15.2	220	5.2	120	4.0	4.4	2.6
15	280	15.0	240		120	3.8	4.4	2.6
16	260	14.6	240		120	3.6	4.2	2.5
17	260	14.2	250		120	3.0	3.6	2.6
18	270	14.2			125	2.2	2.6	2.6
19	280	13.6					2.2	2.6
20	280	12.8						2.6
21	260	12.4						2.6
22	270	12.2						2.6
23	280	12.6						2.7

Time: 60.0°W.
Sweep: 1.2 Mc to 15.5 Mc. Manual operation.

Table 12

Palmyra I. (5.9°N, 162.1°W) March 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	13.3					3.6	2.8
01	242	12.1					3.2	2.8
02	245	(11.0)					3.3	2.7
03	248	10.3					2.9	2.7
04	250	10.2					3.1	2.8
05	250	8.5					3.4	2.9
06	250	8.2					3.5	2.9
07	248	10.4			115	2.6	4.4	2.8
08	240	12.8			110	3.5	4.6	2.6
09	230	14.0			110	3.8		2.6
10	235	13.9	220		110	4.0		2.5
11	255	13.8	218		110	4.3		2.4
12	275	14.0	210	5.8	110	4.3		2.3
13	290	13.8	215	7.2	110	4.3		2.3
14	325	14.2	215	7.4	110	4.2		2.4
15	365	14.8	220	7.6	110	3.9		2.5
16	320	14.8	232	7.6	110	3.5	4.4	2.5
17	252	15.0	250		110	3.0	4.3	2.5
18	280	14.8			150	2.2	4.1	2.4
19	350	14.0					3.8	2.3
20	362	13.2					3.0	2.3
21	305	13.8					3.2	2.4
22	250	13.2					4.0	2.7
23	258	13.0					4.0	2.6

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1.6 minutes; supplemented by manual operation above 13.0 Mc.

Table 13

Clyde, Baffin I. (70.5°N, 68.6°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	340	5.2						
01	320	5.3						
02	330	4.6						
03	330	4.8						
04	335	3.4						
05	350	4.6						
06	350	4.9						
07	330	5.4						
08	330	5.7						
09	300	7.4						
10	300	8.6						
11	300	8.1						
12	300	8.6						
13	300	8.8						
14	290	8.4						
15	300	9.4						
16	300	8.9						
17	300	8.2						
18	310	7.3						
19	320	6.0						
20	320	6.2						
21	300	6.2						
22	320	5.6						
23	330	5.1						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 14

Tromso, Norway (69.7°N, 18.9°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07								
08								
09	260	7.2				2.0		
10	255	8.9				2.3		
11	250	10.6				2.3		
12	250	11.2				2.4		
13	242	11.6				2.2		
14	240	11.3				2.2		
15	245	11.2				2.0		
16								
17								
18								
19								
20								
21								
22								
23								

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

Table 15

Churchill, Canada (58.8°N, 94.2°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	5.4					3.8	2.7
01	270	4.9					3.7	2.7
02	270	4.0				2.8	3.6	2.6
03	300	4.7			100	3.0	3.2	2.5
04	320	4.4			120	2.7	3.2	2.6
05	320	4.4			120	2.8	3.0	2.7
06	300	4.4			120	2.8	2.6	2.6
07	280	4.6				3.0	3.3	2.8
08	270	5.9			110	2.9	3.0	3.0
09	260	7.8			110	3.0	2.4	3.0
10	250	9.2			115	3.0		3.0
11	250	9.9			120	3.2		2.9
12	250	10.6			120	3.2		2.9
13	250	11.2	260	4.3	120	3.1		2.9
14	250	12.2			120	3.1		2.9
15	240	12.3			120	2.9		2.8
16	235	12.2			140	2.5	2.5	2.9
17	230	11.6				2.4	2.7	2.9
18	250	8.6			120	2.7	2.9	2.9
19	260	6.2				2.5	2.9	2.8
20	260	5.6			110	2.8	3.3	2.8
21	280	5.5			115	2.7	3.2	2.8
22	260	5.1			110	2.6	3.6	2.8
23	260	4.8					3.7	2.8

Time: 90.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute together with manual operation (2.0 Mc to 13.5 Mc).
*These criticals, whose medians are given for all but 3 of the 24 hours, are obtained from the same characteristic traces as the E-layer values, commonly reported only for daylight hours throughout the greater part of the world.

Table 16

Prince Rupert, Canada (54.3°N, 130.3°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	270	3.3						2.9
01	300	3.1						2.9
02	300	2.9						2.8
03	340	2.9					2.7	2.7
04	330	2.8						2.7
05	330	2.8						2.7
06	330	2.7						2.7
07	310	3.1						2.8
08	270	5.4				1.7		3.0
09	240	7.6			120	2.3		3.1
10	240	9.8			120	2.7		3.1
11	240	11.2	230	4.4	120	3.0		3.0
12	240	12.2	230	4.1	120	3.2		3.0
13	240	12.8	230	4.1	120	3.2		2.9
14	240	12.7	230	4.2	120	3.2		2.9
15	240	12.8			120	3.0		2.9
16	240	12.6			120	2.7		2.9
17	235	12.2			130	2.3		2.9
18	230	11.3				1.8		2.9
19	220	9.9						3.0
20	220	7.8						3.0
21	230	6.0						3.0
22	250	4.7						3.0
23	250	3.8						3.0

Time: 120.0°W.
Sweep: Manual operation.

Table 17

Portage la Prairie (49.9°N, 98.3°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	4.6						2.8
01	250	4.4						2.8
02	260	4.2						2.7
03	270	4.2					1.6	2.7
04	270	4.1					1.3	2.7
05	260	3.8						2.7
06	260	3.4						2.7
07	260	4.0						2.8
08	240	6.1			120	1.8		3.1
09	230	8.0			110	2.4		3.1
10	220	9.8			110	2.8		3.1
11	220	10.4			100	3.0		3.0
12	230	11.2			110	3.0		3.0
13	220	11.8			110	3.0		3.0
14	220	12.0			110	3.0		2.9
15	230	12.0			110	2.9		2.9
16	230	12.0			110	2.6		2.9
17	230	11.6			120	2.2		3.0
18	220	11.2						3.0
19	210	10.0						3.0
20	210	7.8						3.0
21	220	6.8						2.9
22	230	6.0						3.0
23	245	5.0						2.8

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 2½ minutes.

Table 18

St. John's, Newfoundland (47.6°N, 52.7°W) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	235	6.4						2.9
01	240	F5.9						2.8
02	240	F5.6						2.8
03	240	F5.4					1.8	2.8
04	240	F5.2						2.8
05	230	5.3						2.9
06	230	F5.0						2.9
07	220	6.0						3.1
08	210	8.1			100	2.0	2.3	3.4
09	210	10.0			100	2.9	3.0	3.3
10	210	11.3			100	3.1		3.3
11	210	11.8			100	3.2		3.3
12	210	12.6			100	3.4		3.3
13	210	12.8			100	3.4		3.2
14	210	12.0			100	3.4		3.3
15	210	11.8			100	3.1	2.8	3.3
16	210	11.9			100	2.8	3.0	3.3
17	210	11.6			100	2.2	2.5	3.3
18	210	11.2					1.5	3.3
19	210	10.0					1.3	3.2
20	210	8.9						3.1
21	220	7.7						3.1
22	230	F6.6						3.1
23	230	6.5						3.1

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0 Mc. Manual operation.

Table 19

Peiping, China (39.9°N, 116.4°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.5						3.2
01		5.0						3.3
02		4.9						3.4
03		5.0						3.2
04		5.0						3.2
05		5.4						3.2
06		5.2						3.4
07		5.5						3.4
08		10.0						3.6
09		10.9						3.6
10		11.2						(3.5)
11		11.6						3.5
12		11.3						3.5
13		11.5						3.5
14		11.2						(3.5)
15		11.5						3.5
16		11.2						3.3
17		11.2						3.4
18		10.8						3.5
19		10.2						(3.3)
20		9.6						(3.3)
21		8.0						3.4
22		6.4						3.4
23		5.7						3.3

Time: 120.0°E.

Table 20

Shibata, Japan (38.0°N, 139.5°E) February 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	5.6					1.7	2.9
01	265	5.5					1.6	2.9
02	260	5.4					1.1	3.0
03	250	5.2					1.6	3.0
04	250	4.5					1.3	3.0
05	270	4.1						2.8
06	245	4.4						3.0
07	220	8.7			110	1.9		3.3
08	205	11.4			100	2.9	2.6	3.4
09	210	12.2	210		100	3.4		3.3
10	220	12.8	200		100	3.7	2.8	3.2
11	220	13.2	210		100	3.9	3.4	3.2
12	220	13.1	200		100	3.8	3.4	3.1
13	215	12.9			110	3.8		3.1
14	225	12.2	220		100	3.7	2.9	3.0
15	220	12.2	210		100	3.5	3.2	3.1
16	220	11.4	230		100	3.0	3.1	3.2
17	220	10.9			100	2.2	2.2	3.2
18	210	9.8					1.6	3.2
19	210	8.4					1.8	3.1
20	230	7.9					1.8	3.1
21	230	7.1						3.1
22	240	6.6						3.0
23	255	6.0					1.6	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 15 minutes. Manual operation.

Table 21

Tokyo, Japan (35.7°N, 139.5°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	250	5.8						2.9
01	255	5.6						2.9
02	260	5.3						3.0
03	240	5.2						3.0
04	240	4.4						2.8
05	275	4.2						2.7
06	265	4.3						2.9
07	220	8.9			130	2.0		3.4
08	220	11.4			100	2.8		3.4
09	270	11.8	220		100	3.3		3.3
10	220	12.5	210		100	3.6	3.6	3.2
11	220	13.1	210		100	3.7		3.1
12	230	13.2	210		100	3.8		3.0
13	230	13.0	210		100	3.8	3.4	3.0
14	230	12.6	210		100	3.5		3.0
15	230	12.5	210		100	3.4	3.4	3.0
16	220	12.0	220		100	3.0	3.1	3.0
17	230	11.0			100	2.2	2.4	3.1
18	210	9.9				E	2.4	3.1
19	210	8.6					2.0	3.2
20	220	8.0						3.1
21	220	7.2						3.1
22	240	6.5						3.0
23	260	5.9						2.8

Time: 135.0°E.
Sweep: 1.5 Mc to 15.0 Mc in 15 minutes. Manual operation.

Table 22

Yamakawa, Japan (32.2°N, 130.6°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	270	7.1						2.9
01	280	6.7						2.8
02	280	6.3						2.8
03	270	5.9						3.0
04	250	4.8						2.9
05	310	4.1						2.8
06	320	4.0						2.7
07	280	7.4						3.0
08	245	10.8	245	3.2	120	2.6	3.0	3.2
09	250	12.8	250	3.6	120	3.1	4.0	3.2
10	240	13.4	230		110	3.3	4.3	3.0
11	245	13.8	230		110	3.5	5.0	3.0
12	250	13.9	230	5.0	110	3.6	4.7	2.9
13	260	14.1	230	5.6	110	3.7	5.0	2.8
14	255	14.0	230		110	3.6	4.6	2.8
15	240	13.8	230		100	3.2	4.3	2.8
16	250	13.4	235	4.1	110	3.0	4.0	2.8
17	250	13.0	240	3.5	110	2.6	3.6	2.9
18	240	12.6					3.4	2.9
19	240	11.4					2.4	3.0
20	250	10.6						2.9
21	240	10.6						2.9
22	240	9.3						3.0
23	260	7.8						2.8

Time: 135.0°E.
Sweep: 2.0 Mc to 18.5 Mc in 15 minutes. Lower limit of frequency, 0.8 Mc from February 26 on. Manual operation.

Table 23

Wuchang, China (30.6°N, 114.4°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	7.6						2.8
01	255	7.6						2.9
02	250	6.8						2.9
03	250	6.2						2.9
04	230	5.2						3.0
05	230	4.0						2.9
06	280	3.6						2.7
07	280	6.5			165	1.6		3.0
08	240	10.5			120	2.5		3.2
09	230	12.0			110	3.1		3.1
10	230	13.4	230	5.5	110	3.4		3.0
11	240	13.5	230	5.3	110	3.6		3.0
12	240	14.1	230	5.4	110	3.7		2.8
13	270	14.5	220	5.6	110	3.7		2.8
14	250	14.5	230	5.2	110	3.6		2.8
15	250	14.0	230	5.0	110	3.4		2.8
16	240	13.9	230	5.9	120	3.2		2.8
17	240	13.8			110	2.8		2.8
18	240	13.5			120	2.1		2.9
19	230	12.8					2.1	3.0
20	240	12.3					2.1	3.0
21	230	11.5						3.1
22	230	9.2						2.9
23	240	8.4						2.8

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

Table 24

Chungking, China (29.4°N, 106.8°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	240	8.8					2.8	2.6
01	230	7.6					2.8	2.7
02	230	6.6					2.8	2.7
03	230	5.6					3.3	2.8
04	220	4.5					3.2	3.0
05	240	3.8					3.4	2.7
06	250	4.0					3.7	2.7
07	240	8.4	230		100	2.0	4.1	3.1
08	240	11.3	230		80	3.1	4.7	3.0
09	240	12.3	220		90	3.4	4.8	2.9
10	250	13.4	215		90	3.6	4.7	2.8
11	270	14.0	210	5.5	90	3.8	5.0	2.8
12	300	14.7	205	6.4	90	3.9	4.8	2.7
13	320	15.8	225	6.0	100	4.0	4.7	2.6
14	320	15.8	230	5.8	105	3.8	4.4	2.6
15	300	15.6	225		100	3.5	4.0	2.5
16	285	15.8	230	4.4	90	3.1	3.7	2.5
17	260	15.0	240		100	2.6	3.3	2.6
18	250	14.6					3.2	2.6
19	240	14.2					2.8	2.7
20	230	14.2					2.5	2.6
21	230	12.2					2.4	2.6
22	220	11.5					2.5	2.5
23	230	9.2					2.2	2.5

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes. Manual operation.

Table 25

Okinawa I. (26.3°N, 127.8°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00		11.8					2.4	2.9
01		9.8					2.7	3.0
02		10.2					2.4	2.9
03		8.7					2.6	2.9
04		6.6					2.5	3.0
05		4.7					2.4	2.8
06		4.2					2.4	2.7
07		5.9					2.4	2.7
08		10.5				2.5	3.8	3.2
09		13.0				3.2	4.8	3.0
10		13.7				3.5	5.0	3.0
11		14.3				3.8	5.0	2.9
12		14.5				3.9	5.0	2.8
13		15.0				3.9	4.9	2.7
14		15.0				4.0	4.7	2.7
15		15.1				3.8	4.6	2.7
16		15.5				3.6	4.7	2.7
17		15.2				3.2	3.9	2.8
18		15.0				2.4	2.9	2.9
19		14.9					3.0	2.9
20		15.4					2.7	2.9
21		15.3					2.6	(3.0)
22		15.0					2.4	3.0
23		13.0					2.4	3.0

Time: 135.0°E.
Sweep: Manual operation.

Table 26

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) February 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	260	7.0					2.2	2.9
01	250	6.4					2.4	2.9
02	250	5.8					2.2	2.9
03	270	5.3						2.8
04	270	4.9						2.8
05	275	4.6						2.8
06	250	6.0						3.0
07	230	8.4			100	2.8		3.1
08	240	9.6	220		100	3.4		3.0
09	270	10.6	210		100	(3.7)	4.3	2.9
10	300	11.2	210		100	(3.8)		2.8
11	310	11.8	210	6.2	100	(4.0)		2.7
12	340	12.0	220	6.5	100			2.6
13	350	12.1	210	6.0	100	(4.0)		2.6
14	350	12.0	215	5.8	100	(4.0)		2.7
15	335	12.0	220	6.0	100	(4.0)		2.7
16	315	11.6	220	5.9	100	3.6		2.7
17	295	11.0	230		100	3.3	3.9	2.8
18	250	10.8	250		100	2.5	3.5	2.8
19	245	10.4					2.6	2.9
20	240	9.9					2.1	2.9
21	240	9.0					2.2	2.9
22	250	8.0						2.8
23	255	7.4					2.2	2.8

Time: 30.0°E.
Sweep: 2.0 Mc to 15.0 Mc in 8 seconds.

Table 27

Tromso, Norway (69.7°N, 18.9°E) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00								
01								
02								
03								
04								
05								
06								
07								
08								
09	265	6.7				1.6		
10	240	8.4				1.6		
11	240	9.4				1.7		
12	240	10.0				1.8		
13	237	9.4				1.7		
14	235	9.1				1.6		
15	230	8.6				1.5		
16								
17								
18								
19								
20								
21								
22								
23								

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

Table 28

Churchill, Canada (58.8°N, 94.2°W) January 1947

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	300	4.4				2.9	5.0	2.8
01	280	3.9				2.6	3.3	2.9
02	300	3.8				2.6	3.4	2.9
03	280	4.0				2.8	3.6	2.9
04	300	4.2			110	3.1	3.4	2.8
05	300	4.0			115	3.0	3.2	2.7
06	300	4.2			110	3.0	3.1	2.9
07	285	4.0				2.9	3.3	3.0
08	295	4.6				2.6	3.4	2.8
09	265	6.8			130	3.0	3.1	3.1
10	260	8.8				2.5	3.1	3.1
11	250	10.1			120	2.6	2.7	3.1
12	250	11.2			130	2.8	2.6	3.0
13	250	12.3			130	2.9		3.0
14	240	12.5			125	2.7		3.0
15	240	12.4			130	2.6	2.6	3.0
16	235	11.3				2.6	2.7	2.9
17	250	9.0			120	2.7	2.7	2.9
18	270	6.1			110	3.0	2.6	2.9
19	280	5.3			120	3.0	2.8	2.8
20	300	4.2			120	2.8	2.7	2.8
21	290	4.4			120	2.8	3.4	2.7
22	270	4.4				2.6	3.8	2.8
23	290	4.1				2.5	4.9	2.8

Time: 90.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute; supplemented by manual operation, 2.0 Mc to 13.5 Mc.
*These criticals, although given for the entire 24 hours, nevertheless are obtained from the same characteristic traces as the E-layer values, commonly reported only for daylight hours throughout the greater part of the world.

Table 29

Peiping, China (39.9°N, 116.4°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.8						3.4
01		4.0						3.4
02		3.7						3.4
03		4.2						3.4
04		4.3						3.5
05		4.5						3.6
06		4.6						3.6
07		5.1						3.5
08		8.0						3.6
09		10.2						4.0
10		10.8						4.1
11		11.0						3.9
12		11.3						3.9
13		11.3						3.8
14		11.0						3.8
15		11.2						3.7
16		10.6						3.8
17		10.4						3.8
18		10.2						3.7
19		9.0						3.5
20		8.9						3.5
21		6.8						3.5
22		6.0						3.4
23		4.6						3.4

Time: 120.0°E.

Table 30

Lanchow, China (36.1°N, 103.8°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	375	3.6						2.5
01	340	3.6						2.6
02	360	3.5						2.6
03	320	3.4						2.7
04	320	3.4						2.7
05	340	3.4						2.6
06	320	3.2						2.7
07	300	5.0						2.6
08	250	9.0						3.0
09	280	11.4	240		140	3.1		2.9
10	280	13.0	240	4.6	120	3.4		2.9
11	280	13.8	240	5.0	120	3.6		2.8
12	280	12.6	240		120	3.7		2.8
13	280	12.2	240	5.2	140			2.7
14	290	12.7	245	5.2	135	3.3		2.6
15	290	11.9	240	5.4	140	3.1		2.6
16	280	10.2	255		140	2.9		2.8
17	270	9.8	240	4.2				2.8
18	280	9.5						2.9
19	260	8.1						2.8
20	240	6.6						2.9
21	280	4.6						2.6
22	320	4.0						2.6
23	340	3.7						2.6

Time: 105.0°E.
Sweep: 2.3 Mc to 19.0 Mc in 15 minutes.

Table 31*

Chungking, China (29.4°N, 106.8°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	5.0					2.9	2.6
01	285	4.9					3.0	2.6
02	250	4.9					2.8	2.8
03	240	4.4					2.8	2.8
04	250	3.1					2.8	2.8
05	300	2.8					3.1	2.6
06	265	3.2					3.6	2.8
07	240	7.2	230			(2.0)	4.2	3.1
08	230	10.1	210		90	2.9	4.8	3.1
09	240	11.8	210		80	3.2	5.6	3.0
10	250	12.6	210	5.1	90	3.4	6.8	2.9
11	260	14.0	200	5.3	90	3.5	6.4	2.8
12	270	14.6	200		90	3.7	5.3	2.7
13	300	15.3	220	5.8	100	3.7	5.0	2.7
14	300	15.7	230		100	3.5	4.6	2.7
15	290	15.8	230		100	3.3	4.2	2.7
16	250	14.5	230		100	2.9	3.7	2.7
17	240	12.6	240		100	2.4	3.4	2.8
18	240	11.1					3.6	2.8
19	250	10.2					3.2	2.8
20	230	9.2					3.0	2.8
21	230	7.4					2.8	2.8
22	260	6.2					3.0	2.7
23	265	5.2					2.7	2.7

Time: 105.0°E.
Sweep: 2.1 Mc to 16.1 Mc in 15 minutes. Manual operation.
*Beginning January 23, the upper limit of the recorder is extended to 19.1 Mc and the lower limit is extended to 1.6 Mc between 1700, January 23, and 0800, January 24.

Table 32

Huancayo, Peru (12.0°S, 75.3°W) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	8.4						2.6
01	270	8.0						2.8
02	250	7.8						2.9
03	240	6.8						3.0
04	230	5.6						3.1
05	240	5.1						3.1
06	260	7.6				2.2	2.6	3.0
07	240	10.2				3.0	5.6	2.9
08	230	11.8				3.5	8.3	2.6
09	220	12.1	200	5.0			8.5	2.4
10	250	12.0	200	5.2			10.4	2.2
11	265	11.0	200	5.4			10.4	2.2
12	280	10.6	200	5.5			10.5	2.1
13	285	10.9	200	5.4			10.5	2.2
14	280	11.2	200	5.2			8.4	2.2
15	205	11.7	200	4.9			8.2	2.2
16	230	11.6				3.6	8.1	2.2
17	250	11.7				3.0	7.2	2.3
18	280	11.8				2.2	3.7	2.3
19	320	11.4						2.2
20	385	10.6						2.2
21	390	10.4						2.3
22	340	10.1						2.4
23	325	9.2						2.6

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

Table 33

Watheroo, W. Australia (30.3°S, 115.9°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	275	7.2					3.9	2.6
01	285	6.5					3.6	2.6
02	285	6.5					3.3	2.6
03	280	6.0					3.0	2.6
04	275	5.6					3.1	2.6
05	285	5.4				1.4	2.9	2.6
06	265	6.3	260	3.6		2.1	3.3	2.8
07	308	7.2	248	4.8		2.9	4.2	2.8
08	352	8.1	238	5.2		3.4	4.9	2.7
09	360	8.7	230	5.5		3.7	5.4	2.6
10	372	9.4	215	5.8		3.8	5.0	2.6
11	395	9.8	230	6.0		4.0	5.1	2.5
12	382	10.2	218	5.9		4.0	5.2	2.5
13	390	10.0	225	5.8		4.0	4.7	2.5
14	400	10.0	232	5.8		4.0	5.3	2.5
15	380	9.6	230	5.6		3.8	4.8	2.6
16	382	9.0	230	5.4		3.6	4.7	2.5
17	360	8.3	240	5.1		3.2	4.5	2.6
18	320	8.1	260	4.4		2.6	4.2	2.6
19	280	8.1				1.3	3.8	2.7
20	280	8.1					3.4	2.6
21	285	8.1					3.0	2.6
22	282	7.9					3.3	2.6
23	285	7.5					3.4	2.6

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

Table 34

Christchurch, N.Z. (43.5°S, 172.7°E) January 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	8.0					3.5	2.6
01	280	7.5					3.5	2.6
02	280	6.9					3.2	2.6
03	280	6.4					2.9	2.6
04	270	6.3					2.9	2.7
05	260	6.6				1.6	3.2	2.8
06	250	6.9				2.5	3.9	2.8
07	280	7.8	230	4.8		3.1	5.4	2.8
08	315	8.1	225	5.2		3.4	5.0	2.8
09	320	8.6	220	5.2		3.6	5.8	2.8
10	330	8.7	220	5.8		3.8	5.6	2.8
11	350	8.9	220	5.7		3.9	5.7	2.7
12	385	8.8	200	6.0		3.8	6.0	2.7
13	385	8.8	210	6.0		3.9	5.7	2.7
14	390	8.5	220	5.8		3.8	6.1	2.7
15	370	8.5	225	5.6		3.8	5.4	2.7
16	350	8.6	230	5.4		3.6	5.3	2.7
17	340	8.6	235	5.2		3.2	6.2	2.7
18	280	8.5	240	4.5		2.7	4.4	2.7
19	260	8.4				2.0	3.6	2.6
20	275	8.6				1.2	3.5	2.6
21	280	9.0					3.2	2.6
22	280	8.8					3.2	2.6
23	290	8.6					3.4	2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 35

Huancayo, Peru (12.0°S, 75.3°W) December 1946

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	360							
01	350							
02	330							
03	260	(7.4)						(3.1)
04	240	(6.2)						(3.2)
05	240	5.3						3.0
06	250	8.3				2.4	2.8	3.0
07	230	10.9				3.1	4.4	2.8
08	220	12.4				3.6	7.1	2.7
09	220	12.9				4.0	8.0	2.6
10	220	13.2	210	5.3			8.3	2.5
11	220	13.2	205	5.4			8.2	2.3
12	230	13.0	200	5.4			8.2	2.2
13	230	12.9	200	5.3			8.2	2.2
14	250	13.2	205	5.1			8.0	2.2
15	210	12.1					8.1	2.2
16	220	12.0				3.5	8.3	2.2
17	250	12.0				2.8	5.5	2.2
18	280	11.4				1.9	2.3	2.2
19	320	10.9				0.9		2.3
20	370	10.4						2.1
21	400	8.8						2.1
22	380	(8.4)						(2.3)
23	380							

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

Table 36

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

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		10.5					3.1	2.8
01		10.0					2.9	2.8
02		9.5					2.9	2.8
03		9.3					3.0	2.7
04		8.9					2.8	2.8
05	(285)	8.3					2.9	2.7
06	250	8.5			130	2.3	3.0	2.8
07	240	9.2		5.0		3.0	3.8	2.9
08	300	9.6	235	5.5		3.5	4.7	2.8
09	340	10.0		6.0		3.8	4.7	2.6
10	350	10.8		6.0		4.0	4.9	2.5
11	370	11.6		6.3		(4.1)	3.9	2.6
12	372	12.0		6.3		(4.2)	4.6	2.5
13	368	>12.0	220	6.4		(4.2)	4.0	(2.6)
14	360	12.0	215	6.1		(4.1)	4.8	2.6
15	350	12.0	232	5.9		3.9	4.6	2.7
16	350	11.0	235	5.9		3.6	3.9	2.6
17	330	10.8	240	5.4		3.1	4.9	2.6
18	(265)	10.4			118	2.3	4.8	2.6
19	(275)	10.0					3.8	(2.5)
20		10.0					3.9	(2.6)
21		10.2					3.5	(2.6)
22		>10.0					2.8	(2.6)
23		>10.0					2.8	(2.8)

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

Table 37

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

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	280	10.0					4.6	2.3
01	280	9.3					4.6	2.7
02	295	8.9					3.4	2.6
03	290	8.5						2.6
04	290	8.1						2.7
05	270	8.2						2.7
06	250	8.6			120	2.7		2.8
07	260	9.3			115	3.2	3.0	2.8
08	350	9.5	220	5.4	110	3.6	4.1	2.6
09	360	10.2	220	5.9	105	3.9	4.7	2.6
10	380	10.8	220	6.0	100	3.9	5.8	2.5
11	370	11.5	215	6.2	100	4.1	5.4	2.6
12	370	11.8	215	6.2	100	4.1	4.8	2.6
13	390	11.3	230	6.1	102	4.1	4.5	2.5
14	390	11.0	230	6.0	105	4.0		2.5
15	380	11.0	230	5.6	110	3.8		2.6
16	350	10.6	220	5.6	110	3.5		2.6
17	300	10.2			120	2.9	5.5	2.6
18	270	9.6					5.5	2.6
19	275	9.5					4.7	2.5
20	300	9.5					4.9	2.5
21	320	9.8					5.1	2.5
22	310	10.0					4.6	2.5
23	300	10.4					3.9	2.6

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

Table 38

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

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	288	7.5					5.0	2.6
01	280	7.2					5.2	2.6
02	275	6.7					4.2	2.6
03	285	6.4					3.6	2.6
04	290	6.2					3.1	2.6
05	285	6.2				1.8	3.0	2.7
06	260	6.7	265	4.2		2.4	3.8	2.8
07	295	7.6	245	4.8		3.0	4.3	2.7
08	340	8.2	240	5.3		3.4	5.0	2.7
09	355	9.3	245	5.5		3.7	5.4	2.7
10	380	9.3	235	5.8		3.9	6.1	2.6
11	398	9.9	220	5.6		4.0	5.5	2.5
12	398	10.2	225	5.7		4.0	4.8	2.5
13	395	10.3	230	5.7		4.0	4.6	2.5
14	392	10.2	240	5.8		4.0	4.5	2.5
15	380	10.0	232	5.6		3.8	4.3	2.5
16	370	9.7	240	5.3		3.5	4.8	2.6
17	335	9.4	250	5.0		3.1	4.4	2.6
18	268	9.3	250			2.5	3.9	2.7
19	265	8.9					3.0	2.7
20	265	8.4					3.0	2.7
21	280	8.2					3.0	2.6
22	285	7.8					3.1	2.6
23	295	7.8					3.4	2.6

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

Table 39

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

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	285	9.3					4.8	
01	280	8.7					5.0	
02	278	8.0					4.0	
03	280	7.6					4.2	
04	290	7.4					3.5	
05	278	7.3			100	2.0	3.6	
06	250	7.5	250	4.6	100	2.8	4.2	
07	260	7.8	245	5.0	100	3.3	7.0	
08	345	8.1	240	5.7	100	3.7	7.0	
09	370	8.5		6.0	100	3.9	7.4	
10	380	9.0	240	6.1	100	4.0	7.8	
11	400	9.2	215	6.2	100	4.0	7.3	
12	405	9.2	210	6.2	100	4.0	7.3	
13	400	9.5	210	6.3	100	4.0	7.6	
14	400	9.3	230	6.0	100	4.0	7.0	
15	400	9.3	230	6.2	100	4.1	6.2	
16	398	9.2	240	5.9	100	3.8	4.9	
17	300	9.3	245	5.2	100	3.4	4.8	
18	260	9.0			100	2.8	4.6	
19	280	9.0					5.2	
20	300	8.8					6.0	
21	300	9.2					5.0	
22	308	9.2					6.4	
23	300	9.5					6.6	

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute, 55 seconds.

Table 40

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

Time	h'F2	f°F2	h'F1	F°F1	h'E	f°E	fEs	F2-M3000
00	(298)	7.4					3.3	2.6
01	(275)	6.7					2.9	2.6
02	280	6.2					2.8	2.6
03	(275)	5.6					2.9	2.6
04	288	5.4					2.4	2.6
05	265	5.6	270	3.4	120	2.0	2.6	2.7
06	250	6.0	250	4.4	105	2.7	3.4	2.8
07	350	6.5	225	4.8	105	3.2	3.5	2.7
08	380	7.0	240	5.2	115	3.4	4.2	2.7
09	400	7.2	215	5.4	115	3.7	4.1	2.6
10	425	7.3	240	5.5	110	3.8	4.3	2.5
11	430	7.6	228	5.6		3.9	4.4	2.6
12	405	7.6	215	5.8		3.9	5.2	2.6
13	438	7.7	220	5.6	100	3.9	4.1	2.5
14	418	7.8	210	5.5		3.9	4.9	2.6
15	425	7.5	218	5.5	100	3.8	4.0	2.5
16	400	7.5	215	5.2	100	3.6	3.6	2.6
17	350	7.8	228	5.1	102	3.4	3.5	2.6
18	300	7.9	240	4.8	120	2.8	3.0	2.6
19	(275)	8.0			105	2.2	4.6	2.7
20	278	8.2					4.1	2.7
21	(288)	8.2					5.0	2.6
22	(300)	8.2					3.7	2.5
23	(300)	8.0					2.8	2.5

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

Table 41

Peshawar, India (34.0°N, 71.5°E) November 1946

Time	*	f^oF2	h'F1	f^oF1	h'E	f^oE**	fEs	F2-M3000***
00								
01								
02								
03								
04								
05								
06								
07	(285)	(9.4)				2.8		
08	270	10.5				3.2		3.2
09	300	11.0				3.3		
10	315	12.1				3.5		
11	330	12.2				3.5		
12	360	12.3				3.5		2.9
13	360	12.8				3.5		
14	330	12.8				3.6		
15	345	12.5				3.6		
16	360	11.8				3.6		3.0
17	330	10.8				3.3		
18	330	9.5				3.2		
19	330	8.0				3.3		
20	300	6.5				3.1		3.1
21	330	4.8						
22	360	4.0						
2230	360	3.9						

Time: Local.
Sweep: Manual operation, 1.8 Mc to 16.0 Mc in 5 minutes.
*Height at 0.83 f^oF2.
**Includes both normal and abnormal values of f^oE.
***M3000, average values; other columns, median values.

Table 42

Delhi, India (28.6°N, 77.1°E) November 1946

Time	*	f^oF2	h'F1	f^oF1	h'E	f^oE	fEs	F2-M3000**
00	360	5.4						3.1
01	360	4.8						
02	360	4.5						
03	330	4.6						
04	345	4.5						2.9
05	360	4.2						
06	330	5.2						
07	330	8.7						
08	330	11.0						3.1
09	330	12.0						
10	360	12.5						
11	360	(12.7)						
12	375	(13.0)						
13	360	(13.1)						
14	360	(13.0)						
15	360	(12.9)						
16	360	(12.8)						
17	360	(12.5)						
18	360	11.0						
19	375	10.6						
20	360	9.6						3.0
21	360	8.6						
22	360	6.4						
23	360	5.6						

Time: Local.
Sweep: Manual operation, 1.8 Mc to 16.0 Mc in 5 minutes.
*Height at 0.83 f^oF2.
**M3000, average values; other columns, median values.

Table 43

Bombay, India (19.0°N, 73.0°E) November 1946

Time	*	f^oF2	h'F1	f^oF1	h'E	f^oE	fEs	F2-M3000**
00		12.3						2.9
01		11.8						
02								
03								
04								
05								
06								
07	330	10.1						
08	360	13.0						2.9
09	390	14.0						
10	405	14.5						
11	420	(14.9)						
12		(15.1)						2.7
13		(15.2)						
14		(15.3)						
15		(15.3)						
16		(15.3)						
17		(15.3)						
18		(15.1)						
19		(15.2)						
20		(15.0)						
21		(15.0)						
22		(14.7)						
23								

Time: Local.
Sweep: Manual operation, 1.8 Mc to 16.0 Mc in 5 minutes.
*Height at 0.83 f^oF2.
**M3000, average values; other columns, median values.

Table 44

Madras, India (13.0°N, 80.2°E) November 1946

Time	*	f^oF2	h'F1	f^oF1	h'E	f^oE	fEs	F2-M3000**
00								
01								
02								
03								
04								3.1
05								
06								
07	360	9.4						
08	360	11.9						3.0
09	360	11.5						
10	420	11.6						
11	420	11.5						
12	450	11.3						2.5
13	480	11.4						
14	480	11.5						
15	480	11.6						
16	480	12.0						
17	480	11.8						
18	480	11.3						
19	480	11.0						
20	480	10.8						
21	465	10.8						
22	390	10.5						
23								

Time: Local.
Sweep: Manual operation, 1.8 Mc to 16.0 Mc in 5 minutes.
*Height at 0.83 f^oF2.
**M3000, average values; other columns, median values. Appleton-Beynon parabolic-layer method.

Table 45

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	262	10.0					2.5	2.9
01	255	9.5					2.9	3.0
02	260	9.0					2.6	2.8
03	262	8.5					2.1	2.8
04	255	8.2					1.8	2.8
05	250	7.5					1.3	2.7
06	240	8.5			100	2.2	2.3	2.9
07	238	10.0				2.9	3.3	3.0
08	240	>10.0				3.4	3.9	(3.0)
09	290	>10.0		5.5		3.5	3.8	(2.9)
10	295	>10.0		5.5			4.5	
11	320	>10.0	200	6.2			(4.6)	
12	325	>10.0	215	6.2			3.6	
13	325	>10.0	225	6.2			3.6	
14	325	>10.0		6.0		4.0	3.4	
15	315	>10.0		5.8	100	3.8	3.0	
16	300	>10.0		6.0	100	3.4	2.9	
17	270	>10.0			100	2.8	3.6	
18	255	>10.0					4.3	(2.8)
19	290	10.0					4.0	(2.7)
20	300	>10.0					3.2	(2.7)
21	300	>10.0					2.8	(2.8)
22	290	>10.0					2.5	(2.8)
23	280	>10.0					2.2	(2.8)

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute, 55 seconds.
*Medians doubtful because of extensive record loss at end of month.

Table 46

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	285	9.3						2.7
01	275	8.5						2.7
02	280	7.8						2.6
03	300	7.5						2.6
04	300	7.2						2.6
05	275	7.4						2.7
06	240	8.3				2.6		2.9
07	240	9.1			110	3.1		2.8
08	300	10.0	220	5.4	108	3.5	3.4	2.8
09	320	10.8	210	5.6	100	3.7	4.0	2.7
10	340	11.4	205	6.0	100	3.8	4.3	2.7
11	340	11.7	200	6.0	100	3.9	4.5	2.7
12	350	11.8	205	6.2	100	4.0		(2.7)
13	345	11.7	210	6.0	100	4.0		2.7
14	350	11.5	230	6.0	100	3.8		2.6
15	335	11.0	235		100	3.6		2.7
16	300	10.5	240		102	3.3	3.7	2.7
17	255	10.5			120	2.8	3.7	2.7
18	270	10.0					2.6	2.7
19	270	9.3						2.6
20	300	9.5						2.6
21	310	9.5						2.6
22	305	9.5						2.6
23	300	9.8						2.6

Time: 150.0°E.
Sweep: 2.2 Mc to 12.5 Mc in 2.5 minutes.

Table 47

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	285	7.2					3.3	2.7
01	265	6.8					3.8	2.7
02	270	6.2					3.3	2.5
03	278	5.9					3.3	2.6
04	280	5.6					3.1	2.5
05	292	5.8				1.2	3.0	2.8
06	255	6.8				2.3	3.6	2.9
07	265	7.8	250	4.6		3.0	4.0	2.9
08	370	8.6	240	5.0		3.4	4.2	2.7
09	370	9.0	230	5.5		3.7	4.7	2.7
10	390	9.8	230	5.5		3.8	5.2	2.6
11	360	10.4	228	5.8		3.8	5.0	2.6
12	365	10.8	235	6.0		4.0	5.0	2.6
13	360	10.8	230	5.6		3.9	5.0	2.5
14	360	10.7	242	5.5		3.8	5.1	2.6
15	345	10.4	240	5.5		3.7	4.8	2.5
16	320	10.3	240	5.3		3.3	4.4	2.7
17	270	9.8	250	5.0		2.9	3.8	2.7
18	265	9.5				2.0	3.3	2.8
19	250	9.2				1.1	3.0	2.8
20	250	8.4					2.9	2.6
21	270	7.9					3.0	2.5
22	290	7.4					3.0	2.5
23	290	7.4					3.3	2.5

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

Table 48

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	F2-M3000
00	290	6.4						2.5
01	290	5.8						2.5
02	290	5.8					2.7	2.6
03	290	5.0					2.6	2.5
04	300	4.6					1.7	2.5
05	275	5.0			100	1.9		2.8
06	250	5.7	250	4.0	100	2.6		2.8
07	300	6.4	250	4.6	108	3.1		2.7
08	340	7.2	250	5.1	105	3.4		2.7
09	350	7.4	245	5.3	105	3.5		2.7
10	355	7.8	250	5.5	110	3.7		2.7
11	380	7.6	240	5.5	100	3.8		2.6
12	400	8.0	230	5.8	100	3.5	4.0	2.6
13	378	8.2	225	5.6	100	3.5		2.6
14	372	8.5	230	5.5	100	3.5		2.6
15	350	8.0	240	5.4	100	3.5		2.6
16	345	7.8	242	5.0	105	3.4		2.6
17	300	8.0	250	4.6	102	3.0		2.7
18	260	8.4			115	2.6		2.7
19	275	8.2			125	1.7	2.0	2.7
20	275	7.9					3.0	2.6
21	300	7.6					3.6	2.5
22	295	7.4					3.5	2.5
23	300	7.0					2.8	2.5

Time: 150.0°E.
Sweep: 1.0 Mc to 13 Mc in 1 minute, 55 seconds.

Table 49

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

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	272	6.5					3.2	2.7
01	265	6.3					3.1	2.7
02	250	6.0					3.0	2.8
03	250	5.4					3.0	2.7
04	272	5.2					3.0	2.6
05	290	5.2					3.0	2.7
06	250	6.8				1.8	3.1	3.1
07	260	7.8	245	4.2		2.6	3.3	3.1
08	280	8.7	235	4.8		3.2	3.6	3.0
09	292	9.6	225	5.2		3.6	3.9	2.9
10	310	10.0	225	5.3		3.6	4.0	2.8
11	305	10.5	220	5.5		3.8	4.3	2.8
12	315	11.1	215	5.6		3.8	4.4	2.7
13	315	11.4	225	5.6		3.7	4.0	2.8
14	310	11.3	230	5.7		3.7	3.9	2.8
15	300	10.9	240	5.2		3.5	3.7	2.7
16	285	10.5	240	4.8		3.2	3.4	2.7
17	250	10.1	240	3.3		2.5	3.3	2.8
18	245	9.9				1.7	3.0	2.9
19	232	9.0					3.0	2.9
20	240	8.1					2.8	2.8
21	252	7.5					2.9	2.8
22	275	6.8					3.0	2.7
23	280	6.7					3.1	2.5

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

Table 50*

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) June 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	249	4.7					3.6	
01	255	4.4					3.1	
02	264	3.9					3.2	
03	272	3.8						
04	271	3.9	243	2.7	110	1.8	2.9	
05	305	4.4	222	3.2	116	2.0	3.2	
06	343	4.6	219	3.6	109	2.4	3.6	
07	353	4.8	216	3.8	100	2.6	5.2	
08	327	5.1	210	3.9	100	2.8	5.2	
09	340	5.2	207	4.2	100	2.9	5.6	
10	377	5.2	204	4.2	100	3.0	5.4	
11	341	5.3	204	4.2	100	3.0	6.0	
12	339	5.2	194	4.2	100	3.0	5.2	
13	339	5.2	201	4.2	100	3.0	5.3	
14	326	5.1	201	4.1	100	2.8	4.3	
15	319	5.0	206	4.0	100	2.8	4.4	
16	291	4.8	205	3.7	100	2.7	3.8	
17	279	4.7	215	3.7	110	2.5	4.3	
18	261	4.5	207	3.3	106	2.3	4.3	
19	239	4.6	240	2.9	117	2.0	3.8	
20	249	4.9			113	1.8	4.6	
21	251	5.3					4.3	
22	257	5.5					3.8	
23	257	5.2					4.2	

Time: Local.
*Average values, except fEs, which are median values.

Table 51*

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) May 1944

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	234	4.1					2.8	
01	235	3.6						
02	242	3.3						
03	249	3.2						
04	241	3.6	180	2.8	100			
05	251	4.1	208	3.1	110	2.0		
06	287	4.5	207	3.5	100	2.3		
07	311	4.8	211	3.7	100	2.6	4.0	
08	277	5.2	203	3.8	100	2.8	4.8	
09	299	5.4	203	4.1	100	2.9	4.7	
10	288	5.6	198	4.2	100	3.0	4.6	
11	295	5.4	196	4.1	100	3.1	4.0	
12	301	5.4	199	4.1	100	3.1	4.1	
13	311	5.2	200	4.1	100	3.1		
14	298	5.2	198	3.9	100	3.0		
15	287	5.1	202	3.8	100	2.8	3.8	
16	273	4.8	199	3.7	100	2.7		
17	252	4.7	206	3.5	100	2.5	4.0	
18	224	4.6	210	3.5	100	2.2	3.3	
19	221	4.8	220	3.2	120	2.0	3.8	
20	223	5.2			110	1.9	3.7	
21	221	5.4					3.4	
22	222	5.1					2.8	
23	227	4.6					2.3	

Time: Local.
*Average values, except fEs, which are median values.

TABLE 52

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

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), km (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							(300)	280	260	290	250H	320	(310)	310	[270]C	240	260	260	270					
2							290	280	240	310	320	270	350	370	370	350	330	320	270					
3							(300)	260	260	310	330	340	(350)	320	(320)	(310)	300	260	270					
4							(320)	270	(270)	340	310	[320]C	(330)	370	350	360	370	330	330					
5							270	260	250	300	320	320	300	320	(360)	370	320	320	310					
6							280	310	290	(270)	280	(300)	340	370	310	330	(310)	350	(330)					
7							(280)	250	270	260	320	320	340	[340]B	320	370	330	270	290					
8							280	[270]C	250	260	(300)	300	270	280	(290)	(340)	320	320	280					
9							(380)	350	270	260	270	310H	(270)	370	(270)	340	330	(270)	280					
10							320	280	300	320	[310]C	280	[300]S	(320)	(380)	(330)	300	280	270					
11							320	300	270	320	310	(320)	(350)	(400)	380	320	320	330	320					
12							310K	310K	310K	340K	370K	(420)K	(440)K	370K	(400)K	360K	(350)K	(350)K	330K					
13							320K	290K	300K	300K	320K	360K	350K	(460)K	450K	440K	420K	400K	370K					
14							350K	340K	380K	410K	400K	(550)K	510K	500K	390K	400K	430K	380K	300K	[300]SK	[300]SK	(300)K	(350)K	(370)K
15	(380)K	(360)K	(350)K	(340)K	(350)K	(370)K	320K	(290)K	300K	360K	B K	B K	B K	B K	B K	B K	B K	350K	320K	S K	S K	(360)K	(330)K	(340)
16	(340)	(370)	(370)	(380)	(380)	370	290	290	270	(280)	(300)	(350)	360	340	320	320	320	320	270	260	270	290	(350)	(330)
17	(350)	340K	[340]EK	[330]EK	(320)K	(330)K	320K	290K	380K	450K	510K	(450)K	480K	490K	460K	410K	N K	B K	B K	(420)K	(480)K	N K	N K	B K
18	B K	B K	B K	B K	B K	B K	B K	B K	B K	G K	G K	G K	G K	420K	380K	320K	(270)K	310K	290K	C K	C K	C K	330K	320K
19	350K	(360)K	(390)K	(420)K	(380)K	[350]CK	(300)K	(260)K	(270)K	[300]CK	320K	330K	320K	300K	310	270	280	300	260	300	280	270	290	(310)
20	340	(370)	(410)	(420)	(390)	(350)	[340]D	(340)	(400)	(400)	(470)	320	370	370	330	320	320	270	270	[280]C	[280]C	290	(310)	340
21	(340)	(340)	(340)	(340)	340	(330)	270	260	270	310	320	310	320	300	290	(260)	270	C	C	C	C	C	300	300
22	(310)	320	320	300	290	280	240	250	260	(300)	280	(260)	270	290	300	300	250	270	270	240	(240)	(250)	270	310
23	(310)	(310)	(290)	(290)	(290)	(300)	270	250	270	(270)	(260)	270	280	310	320	330	(310)	(290)	290	C	C	C	(280)	(310)
24	(300)	300	310	300	(310)	(310)	(270)	(250)	(250)	290	280	300	300	270	(320)	310	290	280	290	(270)	(260)	(280)	340	340
25	(370)	(370)	(360)	370	(350)	370	300	300	320	[330]C	350	420	420	400	370	(440)	[420]C	300	300	C	C	C	(320)	(330)
26	(330)	(330)	(330)	320	340	340	270	260	270	[270]C	300	(300)	(320)	310	[340]C	(360)	280	330	300	290	280	(330)	(320)	(360)
27	(350)	(360)	(390)	(360)	(340)	(340)	280	300	310	[360]N	(410)	400	380	370	400	430	410	380	(260)	280	290	300	(340)	(360)
28	(370)	(400)	(360)	330	(360)	(330)	260	260	300	320	[370]C	420	430	370	400	380	380	370	320	C	C	C	(320)	(340)
29	(360)	350	350	350	320	320	320	300	240	290	(340)	400	(420)	(370)H	400	390	360	370	290	C	C	C	C	C
30	C	C	C	C	C	C	290	260	350	340	(350)	(400)	400	400	(390)	460	(370)	390	(350)	C	C	C	C	C
31																								
Median	(345)	(355)	(350)	(340)	(340)	(335)	300	280	270	310	320	320	350	370	350	340	320	320	290	(280)	(280)	(290)	(320)	(335)
Count	14	14	14	14	14	14	27	29	29	30	27	29	29	27	29	29	28	28	28	9	9	9	14	14

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE: 1946 O - 703319

TABLE 53

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

IONOSPHERIC DATA

Form adopted June 1946

f°F2 (Characteristic), Mc (Unit), April (Month), 1947

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.M.C.

Calculated by: B.W.D., V.C.A.

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							6.7F	8.5	9.5	11.1	11.5H	12.4	12.8	12.8	12.4	12.2	11.8	11.7	11.7					
2							7.8F	8.8	9.4	9.9	10.6	11.9	12.1	12.2	12.0F	12.0	11.7	11.4	11.2					
3							7.6F	(9.7)J	11.0	12.2	12.9	(13.2)	12.8	12.7	12.6	12.5	11.9	11.9	11.5					
4							6.8F	8.7	9.4	9.8	10.8	11.5	11.6	11.6	11.6	11.4	11.3	[11.2]S	11.2					
5							8.1F	(10.4)J	11.5	12.8	13.1	13.4	13.5	13.1	12.7	12.9	12.8	12.6	12.3					
6							6.5	(8.6)P	9.4	(10.3)J	10.9	11.3	11.4	11.7	11.3	11.1	10.7	10.4	10.5					
7							(6.9)P	(8.7)J	10.2	10.9	11.8	11.8	11.5	[11.8]B	12.2	11.6	11.4	11.3	11.1					
8							(7.8)J	[10.5]C	11.4H	12.0	12.0	12.7	12.8	12.5	12.1	12.0	11.6	11.5	11.2					
9							5.0F	5.5F	7.7F	8.8	9.8	10.2H	11.0	10.8	11.2	11.0	10.7	10.5	10.4					
10							5.9	7.3	8.0	9.2	9.5	10.2	10.9	11.0	10.5	(10.6)J	10.5	10.4	10.6					
11							6.7	8.0	8.0	(8.8)J	9.4	(9.9)J	(10.2)J	10.4	10.6	10.6	(9.9)J	(9.7)J	9.4					
12							6.6K	7.1K	(6.9)JK	7.5K	7.3FK	7.6K	(7.7)K	7.9FK	8.0K	8.1FK	8.2FK	8.2FK	8.2FK					
13							(5.6)JK	(6.8)PK	7.2K	8.1K	(8.3)JK	9.1K	9.5K	10.0K	10.1K	10.0K	10.0FK	9.8K	9.7K					
14							6.2FK	6.8FK	6.8K	7.1K	7.4K	7.9K	8.0FK	8.2K	8.6K	8.2K	8.2FK	8.5K	8.5K	[8.3]SK	(7.8)SK	6.9K	(6.5)K	[6.5]FK
15	(6.5)K	(6.7)PK	6.3K	(6.1)PK	(5.2)JK	(4.9)K	5.1K	(6.5)JK	7.0K	7.6K	BK	BK	BK	BK	BK	BK	BK	8.7K	8.7K	SK	SK	(7.7)SK	(6.7)K	(6.9)J
16	(6.6)J	F	N	N	(5.2)P	[5.0]N	6.7F	7.9	8.0	8.2	(8.8)J	9.9	10.4	(10.8)J	10.2	9.9	10.2	10.4	9.8	(9.7)P	8.8	8.2	7.2	(6.5)
17	(6.8)	(6.3)FK	[6.1]FK	(6.0)K	(5.9)FK	[5.6]NK	6.2FK	6.7FK	7.2K	(6.9)JK	6.8K	7.7K	7.6K	7.7K	8.2K	7.6K	NK	BK	BK	FK	FK	NK	NK	BK
18	BK	BK	BK	BK	BK	BK	BK	BK	BK	GK	<(4.5)GK	<4.6GK	<4.6GK	(6.5)K	6.8K	7.4K	7.2K	(8.4)JK	(8.8)JK	CK	CK	CK	(6.3)K	(5.7)FK
19	(5.3)P	(4.9)FK	NK	NK	(5.1)JK	(4.8)JK	4.4K	5.1K	5.8K	6.7K	8.1K	(8.9)JK	(10.3)JK	9.7K	10.3	10.0	9.8	10.1	10.0	9.5	8.8	8.5	7.4	6.8
20	6.5	(5.8)P	(5.1)	5.0	5.2	(4.4)	[4.8]B	5.1	(5.4)J	6.5	(7.3)J	8.3	(8.7)J	9.1	8.7	9.2	(9.1)J	9.0	9.0	[8.4]C	[7.7]C	6.8	6.6	6.5
21	6.5	6.1	6.3	5.8	(6.0)F	5.5	7.9	(10.0)J	(10.0)J	(11.0)J	11.7	12.3	12.4	12.8	12.5	11.6	11.4	C	C	C	C	C	8.0	(7.2)J
22	(7.0)FJ	6.8	6.7	6.4	(6.5)	(6.5)	8.8	9.8	10.7	11.7	11.8	12.0	11.2	12.4	12.0	11.4	11.6	11.1	11.2	[10.3]N	(9.6)	(8.5)J	8.3	7.6
23	7.6	7.3	6.9	6.6	(6.3)J	(6.3)	8.6	9.3	11.0	11.8	11.6	11.8	11.6	11.6	11.2	11.2	11.1	11.0	10.9	C	C	C	8.0	7.5
24	7.6	7.7	6.9	6.5	6.5	6.7	7.4	8.2	9.0	10.0	10.6	11.1	11.4	11.1	11.0	11.0	10.7	10.3	10.2	9.8	9.0	8.5	8.1	8.0
25	7.9	7.3	(7.6)	7.0	(7.0)F	[7.0]F	7.6	9.1	10.1	10.4	10.6	10.6	10.5	11.0	11.3	10.6	10.5	(10.0)J	9.9	C	C	C	(8.2)J	8.0
26	(7.8)J	7.3	(7.2)J	6.1	6.5	(6.8)	10.3	10.7	11.6	12.3	12.3	12.5	12.4	12.6	12.5	11.6	11.7	10.7	10.9	10.4	9.5	(8.2)J	7.5	(7.3)J
27	(7.2)J	6.7	6.4	6.5	6.2	6.2	8.0	(10.2)J	10.3	11.3	11.0	11.0	(11.3)J	11.2	10.9	10.7	10.4	10.6	10.5	10.2	9.3	(8.5)J	7.9	7.8
28	7.6	(7.1)J	(6.9)J	6.7	6.2	6.1	8.1	9.4	10.5	11.6	11.6	11.7	(11.8)J	11.4	11.1	11.0	10.8	10.9	10.9	C	C	C	(8.4)J	7.8
29	7.7	7.3	7.0	(7.0)P	(6.9)P	6.6	8.0	(9.6)	(10.8)J	11.1	(10.3)P	11.1	10.6	10.5H	(10.5)J	10.5	10.1	10.1	10.2	C	C	C	C	C
30	C	C	C	C	C	C	7.3	8.6	10.0	10.8	10.5	10.6	11.2	10.6	10.8	10.7	10.3	10.3	10.1	C	C	C	C	C
31																								
Median	7.1	6.8	6.8	6.5	(6.2)	(6.2)	6.9	8.6	9.4	10.2	10.6	11.1	11.2	11.1	11.1	11.0	10.7	10.4	10.4	(9.8)	(8.9)	(8.2)	7.7	7.2
Count	14	13	12	12	14	14	29	29	29	30	29	29	29	29	29	29	28	28	28	8	8	9	14	14

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE 1946 O - 707110

TABLE 54

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

IONOSPHERIC DATA

Form adopted June 1946

f°F2 (Characteristic), Mc (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

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																								
2																								
3																								
4																								
5																								
6																								
7														12.2										
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18													(5.5)											
19																								
20																								
21																								
22																								
23																								
24												11.3												
25																								
26																								
27																								
28																								
29																								
30																								
31																								
Median																								
Count																								

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 55

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

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), km (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

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								Q	Q	Q	Q	240	250	240	250	Q	Q	Q	Q					
2								Q	Q	250	(240)	250	270	(270)	(260)	260	(250)	(270)	Q					
3								Q	Q	250	230	250	230	240	240	230	260	Q	Q					
4								Q	Q	270	(270)	270	(270)	270	(270)	260	270	270	270					
5								Q	Q	250	250	250	260	280	250	250	250	260	260					
6								270	270	250	[240]^{C}	240	(280)	(270)	260	260	260	260	290					
7								Q	Q	Q	B	(240)	260	B	B	270	270	Q	Q					
8								C	Q	240	240	240	C	(240)	250	240	270	270	Q					
9								Q	Q	Q	Q	230	Q	270	Q	260	270	Q	Q					
10								Q	(270)	260	C	Q	S	250	(290)	260	270	Q	Q					
11								Q	Q	270	240	240	C	C	C	260	270	270	270					
12								Q^{K}	270^{K}	270^{K}	270^{K}	S^{K}	C^{K}	C^{K}	250^{K}	(260)^{K}	(220)^{K}	260^{K}	280^{K}					
13								Q^{K}	280^{K}	260^{K}	250^{K}	280^{K}	(250)^{K}	[270]$^{C}_{K}$	310^{K}	(300)^{K}	340^{K}	370^{K}	320^{K}					
14								310^{K}	C^{K}	(250)^{K}	(260)^{K}	C^{K}	360^{K}	(260)^{K}	250^{K}	270^{K}	310^{K}	C^{K}	Q^{K}					
15								Q^{K}	Q^{K}	290^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	(320)^{K}	Q^{K}					
16								Q	Q	(240)	220	C	C	C	C	C	C	(280)	Q					
17								Q^{K}	(250)^{K}	(290)^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	310^{K}	N^{K}	B^{K}	B^{K}					
18								B^{K}	B^{K}	N^{K}	(300)^{K}	C^{K}	C^{K}	[270]$^{C}_{K}$	270^{K}	270^{K}	Q^{K}	Q^{K}	Q^{K}					
19								Q^{K}	Q^{K}	C^{K}	(240)^{K}	(240)^{K}	260^{K}	270^{K}	C	N	N	Q	Q					
20								Q	C	(240)	N	C	C	C	C	C	C	Q	Q					
21								C	Q	(270)	(270)	(260)	250	230	260	Q	Q	C	C					
22								Q	Q	C	240	220	C	Q	240	240	Q	Q	Q					
23								Q	250	(230)	(230)	230	(260)	(230)	[230]^{C}	(230)	(230)	250	Q					
24								Q	Q	C	220	(240)	210	C	C	230	260	240	Q					
25								Q	300	280	(260)	(310)	C	C	C	290	300	Q	Q					
26								Q	250	240	240	(240)	C	C	C	230	230	(220)	270					
27								260	(270)	(240)	250	C	C	C	C	240	(250)	(250)	Q					
28								Q	240	(250)	[280]^{C}	(300)	(300)	C	C	C	C	270	280					
29								270	Q	(230)	250	280	(250)	(290)	[270]^{C}	260	260	270	Q					
30								Q	260	250	250	240	[240]^{S}	(250)	C	C	(280)	280	(290)					
31																								
Median									270	250	250	240	260	(270)	255	260	265	270	280					
Count									11	23	23	22	16	17	16	22	20	17	9					

Sweep 3.1 Mc to 17.0 Mc In ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702319

Form adopted June 1946

TABLE 56

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

IONOSPHERIC DATA

f°F1 (Characteristic), Mc (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

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								Q	Q	Q	Q	(6.5)	L	L	C	Q	Q	Q	Q					
2								Q	Q	L	L	L	C	C	(6.8)	(6.5)	L	L	Q					
3								Q	Q	L	L	L	L	L	L	L	L	Q	Q					
4								Q	Q	L	L	C	L	L	L	L	L	L	L					
5								Q	Q	L	L	L	L	L	L	L	L	L	L					
6								C	L	L	C	S	S	L	L	L	L	L	L					
7								Q	Q	Q	L	L	L^{F}	B	B	L	L	Q	Q					
8								C	Q	L	L	L	L	L	L^{F}	L	L	L	Q					
9								Q	Q	Q	Q	L	Q	L	Q	L	L	Q	Q					
10								Q	L	(5.2)^{S}	C	Q	S	L	L	L	L	Q	Q					
11								Q	Q	(5.0)	(5.0)	S	C	(6.5)	L	L	L	L	L					
12								Q^{K}	L^{K}	(5.0)^{K}	L^{K}	S^{K}	S^{K}	(5.4)^{K}	[5.4]$^{S}_{K}$	(5.4)$^{F}_{K}$	L^{K}	L$^{F}_{K}$	L^{K}					
13								Q^{K}	Q^{K}	L^{K}	L^{K}	(5.5)^{K}	C^{K}	L^{K}	C^{K}	L^{K}	(5.3)^{K}	L^{K}	L^{K}					
14								C^{K}	C^{K}	5.1^{K}	5.2$^{F}_{K}$	(5.5)^{K}	[5.5]$^{L}_{K}$	(5.5)^{K}	(5.1)^{K}	(5.6)^{K}	L^{K}	L^{K}	Q^{K}					
15								Q^{K}	Q^{K}	49^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	L^{K}	Q^{K}					
16								Q	Q	L	L	L	L	C	C	C	L	L	Q					
17								Q^{K}	L^{K}	(5.2)^{K}	5.1^{K}	[5.2]$^{K}_{K}$	(5.3)^{K}	(5.1)^{K}	(5.2)^{K}	(5.1)^{K}	N^{K}	B^{K}	B^{K}					
18								B^{K}	B^{K}	N^{K}	(4.5)^{K}	4.6^{K}	4.6^{K}	4.7^{K}	49^{K}	L^{K}	Q^{K}	Q^{K}	Q^{K}					
19								Q^{K}	Q^{K}	C^{K}	L^{K}	L^{K}	L^{K}	L^{K}	L	N	N	Q	Q					
20								Q	(3.7)^{S}	(5.0)	N	L	C	C	5.1	L	Q	Q	Q					
21								Q	Q	L	L	L	C	(5.4)	L	Q	Q	C	C					
22								Q	Q	L	C	L	C	Q	L	L	Q	Q	Q					
23								Q	L	L	L	L	L	L	C	L	L	L	Q					
24								Q	Q	C	(5.0)	(5.5)	C	C	C	(6.1)	L	L	Q					
25								Q	C	C	C	L	6.0	6.3	C	L	C	Q	Q					
26								Q	L	C	C	C	C	C	C	L	L	L	L					
27								L	L	L	L	C	L	L	L	L	L	L	Q					
28								Q	L	L	C	(7.2)	[7.1]^{L}	(7.0)	(6.9)	L	L	L	L					
29								L	Q	C	L	6.5	(6.7)	6.6	(6.4)	(6.4)	L	L	Q					
30								Q	L	L	L	(7.1)	[7.0]^{S}	(6.9)	L	S	C	L	C					
31																								
Median										(5.0)	(5.0)	(5.5)	(6.0)	(5.9)	(5.3)	(5.8)								
Count										7	5	9	7	10	8	6								

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702319

TABLE 57

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

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), km (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1							E	E	E	C	C	C	C	C	C	C	E	E	E						
2							E	E	E	C	C	C	C	C	C	C	E	E	E						
3							E	E	E	C	C	C	C	C	C	C	E	E	E						
4							E	E	E	C	C	C	C	C	C	C	E	E	E						
5							E	E	E	C	C	C	C	C	C	C	E	E	E						
6							E	E	E	C	C	C	C	C	C	C	E	E	E						
7							E	E	E	C	B	C	C	B	B	C	E	E	E						
8							E	E	E	C	C	C	C	C	C	C	E	E	E						
9							E	E	E	C	C	C	C	C	C	C	E	E	E						
10							E	E	E	C	C	C	C	C	C	C	E	E	E						
11							E	E	E	C	C	C	C	C	C	C	E	E	E						
12							E K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	E K						
13							E K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	E K						
14							E K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	E K	E K						
15							E K	E K	E K	C K	B K	B K	B K	B K	B K	B K	B K	E K	E K						
16							E	E	E	C	C	C	C	C	C	C	E	E	E						
17							E K	E K	E K	C K	C K	C K	C K	C K	C K	C K	E K	B K	B K						
18							B K	B K	B K	C K	C K	C K	C K	C K	C K	C K	E K	E K	E K						
19							E K	E K	E K	C K	C K	C K	C K	C K	C	C	E	E	E						
20							B	E	E	C	C	C	C	C	C	C	E	E	E						
21							E	E	E	C	C	C	C	C	C	C	E	E	E						
22							E	E	E	C	C	C	C	C	C	C	E	E	E						
23							E	E	E	C	C	C	C	C	C	C	E	E	E						
24							E	E	E	C	C	C	C	C	C	C	E	E	E						
25							E	E	E	C	C	C	C	C	C	C	E	E	E						
26							E	E	E	C	C	C	C	C	C	C	E	E	E						
27							E	E	E	C	C	C	C	C	C	C	E	E	E						
28							E	E	E	C	C	C	C	C	C	C	E	E	E						
29							E	E	E	C	C	C	C	C	C	C	E	E	E						
30							E	E	E	C	C	C	C	C	C	C	E	E	E						
31																									
Median																									
Count																									

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ■ Automatic □

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 702319

TABLE 58

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

Form adopted June 1946

IONOSPHERIC DATA

f°E, Mc, April, 1947
(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. M. C.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							E	E	E	C	C	C	C	C	C	C	E	E	E							
2							E	E	E	C	C	C	C	C	C	C	E	E	E							
3							E	E	E	C	C	C	C	C	C	C	E	E	E							
4							E	E	E	C	C	C	C	C	C	C	E	E	E							
5							E	E	E	C	C	C	C	C	C	C	E	E	E							
6							E	E	E	C	C	C	C	C	C	C	E	E	E							
7							E	E	E	C	B	C	C	B	B	C	E	E	E							
8							E	E	E	C	C	C	C	C	C	C	E	E	E							
9							E	E	E	C	C	C	C	C	C	C	E	E	E							
10							E	E	E	C	C	C	C	C	C	C	E	E	E							
11							E	E	E	C	C	C	C	C	C	C	E	E	E							
12							E^K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	E^K							
13							E^K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	E^K							
14							E^K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	E^K							
15							E^K	E^K	E^K	C^K	B^K	B^K	B^K	B^K	B^K	B^K	B^K	E^K	E^K							
16							E	E	E	C	C	C	$(3.7)^3$	C	C	C	E	E	E							
17							E^K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	B^K	B^K							
18							B^K	B^K	B^K	C^K	C^K	C^K	C^K	C^K	C^K	C^K	E^K	E^K	E^K							
19							E^K	E^K	E^K	C^K	C^K	C^K	C^K	C^K	C	C	E	E	E							
20							B	E	E	C	C	C	C	C	C	C	E	E	E							
21							E	E	E	C	C	C	C	C	C	C	E	E	E							
22							E	E	E	C	C	C	C	C	C	C	E	E	E							
23							E	E	E	C	C	C	C	C	C	C	E	E	E							
24							E	E	E	C	C	C	C	C	C	C	E	E	E							
25							E	E	E	C	C	C	C	C	C	C	E	E	E							
26							E	E	E	C	C	C	C	C	C	C	E	E	E							
27							E	E	E	C	C	C	C	C	C	C	E	E	E							
28							E	E	E	C	C	C	C	C	C	C	E	E	E							
29							E	E	E	C	C	C	C	C	C	C	E	E	E							
30							E	E	E	C	C	C	C	C	C	C	E	E	E							
31																										
Median																										
Count																										

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 703317

TABLE 59

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, km (Unit) April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							E	←										→	E							
2							E	←										→	E							
3							E	←										→	E							
4							E	←										→	E							
5							E	←										→	E							
6							E	←										→	E							
7							E	←										→	E							
8							E	←										→	E							
9							E	←										→	E							
10							E	←										→	E							
11							E	←										→	E							
12							E	←										→	E							
13							E	←										→	E							
14							E	←										→	E	E	E	E	E	E		
15	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
16	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
17	E	E	3.7 C	E	E	E	E	←										→	E	E	E	E	E	E		
18	E	E	E	E	E	E	E	←										→	E	C	C	C	E	E		
19	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
20	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
21	E	E	E	E	E	E	E	←								→	E	C	C	C	C	C	E	E		
22	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
23	E	E	E	E	E	E	E	←										→	E	C	C	C	E	E		
24	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
25	E	E	E	E	E	E	E	←										→	E	C	C	C	E	E		
26	E	E	E	E	E	E	E	←										→	E	E	E	5.9 /120	E	E		
27	E	E	E	E	E	E	E	←										→	E	E	E	E	E	E		
28	E	E	E	E	E	E	E	←										→	E	C	C	C	E	E		
29	E	E	E	(4.7) C	3.8 C	E	E	←										→	E	C	C	C	C	C		
30	C	C	C	C	C	C	E	←										→	E	C	C	C	C	C		
31																										
Median																										
Count																										

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ■ Automatic □

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 702518

TABLE 60

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

Form adopted June 1946

IONOSPHERIC DATA

F2-M1500, ______ (Characteristic) (Unit), April (Month), 1947

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.M. C.

Calculated by: B.W. D., V. C. A.

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							1.7^{F}	1.9	1.8	1.8	1.8^{H}	1.8	1.8	1.8	1.7	1.8	1.8	1.8	1.8					
2							1.8^{F}	1.9	1.9	1.9	1.7	1.6	1.7	1.7	1.7^{F}	1.7	1.7	1.7	1.7					
3							1.8^{F}	$(2.2)^{J}$	2.0	1.8	1.8	(1.9)	1.8	1.9	1.8	1.8	1.7	1.7	1.8					
4							1.6^{F}	1.8	1.7	1.8	1.6	1.7	1.7	1.6	1.6	1.6	1.6	S	1.7					
5							1.9^{F}	$(1.9)^{J}$	1.9	1.9	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8					
6							1.7	$(1.9)^{P}$	2.0	$(1.8)^{J}$	1.7	1.8	1.7	1.7	1.6	1.7	1.7	1.7	1.7					
7							$(1.9)^{P}$	$(2.0)^{J}$	1.9	1.9	1.9	1.7	1.7	B	1.7	1.7	1.7	1.7	1.8					
8							1.8^{J}	C	2.0^{H}	2.0	1.8	1.7	1.7	1.8	1.7	1.8	1.7	1.8	1.8					
9							1.4^{F}	1.6^{F}	1.9^{F}	1.9	1.8	1.8^{H}	1.7	1.7	1.7	1.7	1.7	1.8	1.7					
10							1.7	1.7	1.9	1.9	1.8	1.6	1.7	1.7	1.7	$(1.6)^{J}$	1.7	1.8	1.8					
11							1.8	1.9	1.9	$(1.8)^{J}$	1.8	$(1.8)^{J}$	$(1.6)^{J}$	1.6	1.7	1.7	$(1.8)^{J}$	$(1.8)^{J}$	1.8					
12							1.8^{K}	1.9^{K}	$(1.8)^{FJ}_{K}$	1.8^{K}	1.7^{F}_{K}	1.6^{K}	$(1.6)^{K}$	1.7^{F}_{K}	1.7^{K}	1.7^{F}_{K}	1.9^{F}_{K}	1.8^{F}_{K}	1.8^{F}_{K}					
13							$(1.8)^{J}_{K}$	$(2.1)^{P}_{K}$	2.2^{K}	2.0^{K}	$(2.0)^{J}_{K}$	1.7^{K}	1.7^{K}	1.5^{K}	1.5^{K}	1.5^{K}	1.5^{F}_{K}	1.5^{K}	1.7^{K}					
14							1.7^{F}_{K}	1.9^{F}_{K}	1.7^{K}	1.7^{K}	1.7^{K}	$(1.4)^{K}$	1.5^{F}_{K}	1.5^{K}	1.7^{K}	1.7^{K}	1.6^{F}_{K}	1.7^{K}	1.7^{K}	S^{K}	S^{K}	1.7^{K}	$(1.5)^{K}$	F^{K}
15	$(1.6)^{K}$	$(1.6)^{P}_{K}$	1.7^{K}	$(1.7)^{P}_{K}$	$(1.8)^{J}_{K}$	$(1.7)^{K}$	1.8^{K}	$(1.8)^{J}_{K}$	1.8^{K}	1.8^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	1.7^{K}	1.8^{K}	S^{K}	S^{K}	S^{K}	$(1.7)^{K}$	$(1.7)^{J}$
16	$(1.8)^{J}$	F	N	N	$(1.6)^{P}$	N	1.8^{F}	1.9	1.9	1.8	$(1.8)^{J}$	1.8	1.8	$(1.8)^{J}$	1.9	1.8	1.8	1.8	1.8	$(2.0)^{P}$	1.9	1.8	1.7	1.7
17	(1.7)	$(1.8)^{F}_{K}$	F^{K}	$(1.6)^{K}$	$(1.6)^{F}_{K}$	N^{K}	$(1.7)^{F}_{K}$	1.9^{F}_{K}	1.8^{K}	$(1.6)^{J}_{K}$	1.6^{K}	$(1.5)^{K}$	1.5^{K}	1.5^{K}	1.6^{K}	1.5^{K}	N^{K}	B^{K}	B^{K}	F^{K}	F^{K}	F^{K}	N^{K}	B^{K}
18	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	G^{K}	G^{K}	G^{K}	G^{K}	$(1.8)^{K}$	1.8^{K}	1.9^{K}	1.8^{K}	1.9^{J}_{K}	$(1.8)^{J}_{K}$	C^{K}	C^{K}	C^{K}	1.6^{K}	$(1.7)^{F}_{K}$
19	$(1.7)^{P}_{K}$	$(1.7)^{FJ}_{K}$	N^{K}	N^{K}	$(1.5)^{JP}_{K}$	$(1.5)^{JP}_{K}$	1.9^{K}	2.0^{K}	2.0^{K}	1.8^{K}	1.9^{K}	$(2.0)^{J}_{K}$	$(1.9)^{J}_{K}$	1.9^{K}	1.9	1.9	2.0	1.8	2.0	1.6	1.9	1.9	1.8	1.7
20	1.7	$(1.6)^{P}$	(1.6)	1.6	1.5	(1.8)	B	1.8	$(1.8)^{J}$	1.8	$(1.7)^{J}$	1.9	$(1.8)^{J}$	1.8	1.9	1.8	$(1.7)^{J}$	1.9	1.9	C	C	1.8	1.7	1.7
21	1.7	1.7	1.6	1.7	$(1.6)^{F}$	1.8	2.0	$(2.1)^{J}$	$(1.9)^{J}$	$(1.8)^{J}$	1.7	1.8	1.7	1.8	1.8	1.7	1.7	C	C	C	C	C	1.8	$(1.8)^{J}$
22	$(1.8)^{F}_{J}$	1.7	1.8	1.8	(1.7)	(1.8)	1.9	2.1	2.0	2.0	1.8	2.1	2.1	1.9	1.9	$(1.8)^{J}$	1.9	1.9	1.9	N	(2.1)	$(2.0)^{J}$	1.8	1.8
23	1.7	1.8	1.8	1.9	$(1.9)^{J}$	(1.7)	2.1	2.1	2.0	2.0	2.0	2.0	1.8	1.9	1.8	1.8	1.8	1.9	1.9	C	C	C	(1.8)	1.8
24	1.8	1.7	1.8	1.8	1.7	1.8	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.8	1.9	1.9	1.9	1.9	2.0	1.9	1.7	(1.6)	1.6
25	1.5	1.6	(1.5)	1.6	$(1.5)^{F}$	F	1.7	1.8	1.7	1.7	1.6	1.5	1.5	1.6	1.6	1.5	1.6	$(1.6)^{J}$	1.6	C	C	C	$(1.6)^{J}$	1.6
26	$(1.7)^{J}$	1.7	$(1.7)^{J}$	1.7	1.6	(1.7)	2.0	1.8	1.7	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.7	$(1.6)^{J}$	1.6	$(1.6)^{J}$
27	$(1.6)^{J}$	1.6	1.5	1.5	1.6	1.7	1.8	$(1.8)^{J}$	1.8	1.8	1.7	1.6	$(1.6)^{J}$	1.6	1.6	1.6	1.6	1.6	1.8	1.8	1.7	$(1.8)^{J}$	1.6	1.6
28	1.6	$(1.5)^{J}$	$(1.6)^{J}$	1.6	1.6	1.8	1.8	2.0	1.8	1.8	1.7	1.6	$(1.7)^{J}$	1.7	1.6	1.6	1.7	1.7	1.7	C	C	C	$(1.7)^{J}$	1.6
29	1.6	1.6	1.6	$(1.6)^{P}$	$(1.7)^{P}$	1.7	1.7	(1.9)	$(1.8)^{J}$	1.7	$(1.7)^{P}$	1.7	1.7	1.6^{H}	$(1.7)^{J}$	1.7	1.7	$(1.7)^{J}$	1.7	C	C	C	C	C
30	C	C	C	C	C	C	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.7	C	C	C	C	C
31																								
Median	1.7	1.7	1.6	1.6	(1.6)	1.7	1.8	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	(1.8)	(1.9)	(1.8)	1.7	1.7
Count	14	13	11	12	14	11	28	28	29	30	29	29	29	28	29	29	28	27	29	5	6	8	14	13

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ☒ Automatic ☐

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 703319

TABLE 61

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

IONOSPHERIC DATA

Form adopted June 1946

F2-M3000 (Characteristic), ____ (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

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							2.5F	2.8	2.7	2.7	2.7H	2.7	2.7	2.7	2.6	2.7	2.7	2.7	2.8					
2							2.7F	2.9	2.8	2.9	2.7	2.5	2.6	2.6	2.5F	2.6	2.6	2.6	2.6					
3							2.8F	(3.2)J	2.9	2.7	2.7	(2.8)	2.7	2.8	2.7	2.7	2.5	2.6	2.7					
4							2.4F	2.7	2.6	2.7	2.4	2.7	2.5	2.4	2.4	2.5	2.5	S	2.5					
5							2.8F	(2.9)J	(2.8)	2.9	2.8	2.7	2.6	2.6	2.6	2.6	2.5	2.6	2.8					
6							2.6	(2.8)P	2.9	(2.8)J	2.5	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6					
7							(2.8)P	(2.9)J	2.9	2.9	2.8	2.6	2.6	B	2.6	2.5	2.5	2.6	2.7					
8							(2.7)J	C	3.0H	3.0	2.7	2.6	2.7	2.7	2.6	2.7	2.6	2.7	2.7					
9							2.0F	2.4F	2.8F	2.9	2.7	2.7H	2.6	2.5	2.6	2.6	2.7	2.6	2.6					
10							2.6	2.6	2.8	2.8	2.7	2.5	2.6	2.6	2.6	(2.5)J	2.6	2.7	2.7					
11							2.7	2.9	2.9	(2.7)J	2.6	(2.7)J	(2.4)J	2.4	2.5	2.6	(2.7)J	(2.7)J	2.7					
12							2.7K	2.8K	(2.7)FJK	2.7K	2.6FK	2.5K	(2.5)K	2.6FK	2.6K	2.6FK	2.8FK	2.7FK	2.7FK					
13							(2.8)JK	(3.1)PK	3.3K	2.9K	(3.0)JK	2.6K	2.6K	2.3K	2.3K	2.3K	2.2FK	2.3K	2.5K					
14							2.5FK	2.8FK	2.6K	2.6K	2.6K	(2.1)K	2.2FK	2.3K	2.5K	2.5K	2.4FK	2.6K	2.6K	SK	SK	2.5K	(2.4)K	FK
15	(2.5)K	(2.4)PK	2.6K	(2.6)PK	(2.7)JK	(2.5)K	2.7K	(2.6)JK	2.7K	2.7K	BK	BK	BK	BK	BK	BK	BK	2.6K	2.7K	SK	SK	SK	(2.6)K	(2.5)J
16	(2.7)J	F	N	N	(2.4)P	N	2.7	2.8	2.8	2.8	(2.7)J	2.7	2.7	(2.7)J	2.8	2.7	2.7	2.8	2.7	(2.9)P	2.8	2.7	2.6	(2.6)
17	(2.7)	(2.7)FK	FK	(2.4)K	(2.5)FK	NK	(2.6)FK	2.8FK	2.7K	(2.4)JK	2.4K	(2.3)K	2.3K	2.2K	2.4K	2.3K	NK	BK	BK	FK	FK	NK	NK	BK
18	BK	BK	BK	BK	BK	BK	BK	BK	BK	GK	GK	GK	GK	(2.7)K	2.8K	2.8K	2.7K	(2.9)JK	(2.8)JK	CK	CK	CK	(2.1)K	(2.5)FK
19	(2.6)PK	(2.6)FJK	NK	NK	(2.3)JPK	(2.3)JPK	2.8K	2.9K	2.9K	2.8K	2.9K	(2.9)JK	(2.9)JK	2.8K	2.8	2.9	2.9	2.7	2.9	2.4	2.9	2.8	2.7	2.6
20	2.5	(2.5)P	(2.4)	2.4	2.3	(2.7)	B	2.8	(2.7)J	2.7	(2.7)J	2.8	(2.7)J	2.8	2.8	2.7	(2.6)J	2.9	2.9	C	C	2.7	2.6	2.5
21	2.6	2.5	2.5	2.5	(2.4)F	2.7	3.0	(3.1)J	(2.9)J	(2.8)J	2.7	2.7	2.7	2.8	2.7	2.6	2.6	C	C	C	C	C	2.8	(2.8)J
22	(2.7)FJ	2.6F	2.7	2.8	(2.6)	(2.7)	2.8	3.1	2.9	3.0	2.7	3.1	3.1	2.8	2.9	(2.8)J	2.8	2.8	2.9	N	(3.0)	(3.0)J	2.7	2.8
23	2.6	2.7	2.8	2.8	(2.8)J	(2.7)	3.1	3.1	3.0	3.0	3.0	3.0	2.8	2.9	2.8	2.8	2.7	2.4	2.8	C	C	C	(2.8)	2.7
24	2.7	2.6	2.7	2.7	2.6	2.8	2.9	2.4	2.7	2.8	2.7	2.7	2.8	2.7	2.7	2.9	2.8	2.9	2.9	3.0	2.9	2.7	(2.5)	2.4
25	2.3	2.5	(2.3)	2.4	(2.3)F	F	2.7	2.7	2.5	2.5	2.4	2.3	2.3	2.4	2.5	2.3	2.4	(2.5)J	2.4	C	C	C	(2.5)J	2.5
26	(2.6)J	2.6	(2.6)J	2.6	2.5	(2.6)	2.9	2.8	2.8	2.8	2.6	2.5	2.6	2.6	2.6	2.5	2.7	2.6	2.7	2.7	2.6	(2.5)J	2.5	(2.5)J
27	(2.4)J	2.4	2.3	2.3	2.4	2.5	2.7	(2.8)J	2.7	2.7	2.5	2.5	(2.5)J	2.5	2.5	2.4	2.4	2.5	2.7	2.7	2.6	(2.7)J	2.5	2.5
28	2.4	(2.3)J	(2.4)J	2.5	2.5	2.7	2.7	3.0	2.6	2.7	2.6	2.5	(2.6)J	2.6	2.5	2.5	2.5	2.6	2.6	C	C	C	(2.6)J	2.5
29	2.4	2.4	2.4	(2.4)P	(2.6)P	2.6	2.6	(2.8)	(2.7)J	2.6	(2.6)P	2.6	2.5	2.5H	(2.6)J	2.6	2.6	(2.6)J	2.6	C	C	C	C	C
30	C	C	C	C	C	C	2.6	2.7	2.6	2.7	2.5	2.6	2.6	2.6	2.5	2.4	2.4	2.5	2.6	C	C	C	C	C
31																								
Median	2.6	2.5	2.5	2.5	(2.5)	(2.7)	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	(2.7)	(2.8)	(2.7)	2.6	2.5
Count	14	13	11	12	14	11	28	28	29	30	29	29	29	28	29	29	28	27	28	5	6	8	14	13

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ■ Automatic □

TABLE 62

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

IONOSPHERIC DATA

Form adopted June 1946

FI-M3000 (Characteristic), ____ (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

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								Q	Q	Q	Q	(3.7)	L	L	C	Q	Q	Q	Q							
2								Q	Q	L	L	L	C	C	C	C	L	L	Q							
3								Q	Q	L	L	L	L	L	L	L	L	Q	Q							
4								Q	Q	L	L	C	L	L	L	L	L	L	L							
5								Q	Q	L	L	L	L	L	L	L	L	L	L							
6								C	L	L	C	S	S	L	L	L	L	L	Q							
7								Q	Q	Q	L	L	L^{F}	B	B	L	L	Q	Q							
8								C	Q	L	L	L	L	L	LF	L	L	L	Q							
9								Q	Q	Q	Q	L	Q	L	Q	L	L	Q	Q							
10								Q	L	C	C	Q	S	L	L	L	L	Q	Q							
11								Q	Q	(3.6)	(3.9)	S	C	(3.2)	L	L	L	L	L							
12								Q^{K}	L^{K}	$(3.5)^{K}$	L^{K}	S^{K}	S^{K}	$(3.1)^{K}$	S^{K}	$(3.6)^{F}_{K}$	L^{K}	LF^{K}	L^{K}							
13								Q^{K}	Q^{K}	L^{K}	L^{K}	$(3.4)^{K}$	C^{K}	L^{K}	C^{K}	L^{K}	$(3.1)^{K}$	L^{K}	L^{K}							
14								C^{K}	C^{K}	3.3^{K}	3.3^{F}_{K}	C^{K}	L^{K}	$(3.0)^{K}$	$(3.4)^{K}$	$(3.0)^{K}$	L^{K}	L^{K}	Q^{K}							
15								Q^{K}	Q^{K}	3.4^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	L^{K}	Q^{K}							
16								Q	Q	L	L	L	L	C	C	C	L	L	Q							
17								Q^{K}	L^{K}	$(3.0)^{K}$	C^{K}	N^{K}	C^{K}	C^{K}	C^{K}	$(3.1)^{K}$	N^{K}	B^{K}	B^{K}							
18								B^{K}	B^{K}	N^{K}	N^{K}	C^{K}	C^{K}	3.3^{K}	$(3.6)^{K}$	L^{K}	Q^{K}	Q^{K}	Q^{K}							
19								Q^{K}	Q^{K}	C^{K}	L^{K}	L^{K}	L^{K}	L^{K}	L	N	N	Q	Q							
20								Q	$(3.2)^{J}$	C	N	L	C	C	3.9	L	Q	Q	Q							
21								Q	Q	L	L	L	C	$(3.6)^{P}$	L	Q	Q	C	C							
22								Q	Q	L	C	L	C	Q	L	L	Q	Q	Q							
23								Q	L	L	L	L	L	L	C	L	L	L	Q							
24								Q	Q	C	(3.9)	(3.7)	C	C	C	(3.7)	L	L	Q							
25								Q	C	C	C	L	C	C	C	L	C	Q	Q							
26								Q	L	C	C	C	C	C	C	L	L	L	L							
27								L	L	L	L	C	L	L	L	L	L	L	Q							
28								Q	L	L	C	(3.1)	L	(3.2)	(3.1)	L	L	L	L							
29								L	Q	C	L	3.4	(3.3)	3.4	(3.3)	(3.4)	L	L	Q							
30								Q	L	L	L	(3.2)	S	(3.3)	L	S	C	L	C							
31																										
Median										(3.4)		(3.4)		(3.2)	(3.4)	(3.4)										
Count										5		6		8	5	5										

Sweep 3.1 Mc to 12.0 Mc in ____ min

Manual ☒ Automatic ☐

U.S. GOVERNMENT PRINTING OFFICE 1946 O - 702319

TABLE 63

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

IONOSPHERIC DATA

Form adopted June 1946

E-M1500 (Characteristic), ____ (Unit), April (Month), 1947

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. M. C.

Calculated by: B. W. D., V. C. A.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							E	E	E	C	C	C	C	C	C	C	E	E	E					
2							E	E	E	C	C	C	C	C	C	C	E	E	E					
3							E	E	E	C	C	C	C	C	C	C	E	E	E					
4							E	E	E	C	C	C	C	C	C	C	E	E	E					
5							E	E	E	C	C	C	C	C	C	C	E	E	C					
6							E	E	E	C	C	C	C	C	C	C	E	E	E					
7							E	E	E	C	B	C	C	B	B	C	E	E	E					
8							E	E	E	C	C	C	C	C	C	C	E	E	E					
9							E	E	E	C	C	C	C	C	C	C	E	E	E					
10							E	E	E	C	C	C	C	C	C	C	E	E	E					
11							E	E	E	C	C	C	C	C	C	C	E	E	E					
12							E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	E^{K}	E^{K}	E^{K}					
13							E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	E^{K}	E^{K}	E^{K}					
14							E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	E^{K}	E^{K}	E^{K}					
15							E^{K}	E^{K}	E^{K}	C^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	B^{K}	E^{K}	E^{K}					
16							E	E	E	C	C	C	C	C	C	C	E	E	E					
17							E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	E^{K}	B^{K}	B^{K}					
18							B^{K}	B^{K}	B^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	E^{K}	E^{K}	E^{K}					
19							E^{K}	E^{K}	E^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C^{K}	C	C	E	E	E					
20							B	E	E	C	C	C	C	C	C	C	E	E	E					
21							E	E	E	C	C	C	C	C	C	C	E	E	E					
22							E	E	E	C	C	C	C	C	C	C	E	E	E					
23							E	E	E	C	C	C	C	C	C	C	E	E	E					
24							E	E	E	C	C	C	C	C	C	C	E	E	E					
25							E	E	E	C	C	C	C	C	C	C	E	E	E					
26							E	E	E	C	C	C	C	C	C	C	E	E	E					
27							E	E	E	C	C	C	C	C	C	C	E	E	E					
28							E	E	E	C	C	C	C	C	C	C	E	E	E					
29							E	E	E	C	C	C	C	C	C	C	E	E	E					
30							E	E	E	C	C	C	C	C	C	C	E	E	E					
31																								
Median																								
Count																								

Sweep 3.1 Mc to 17.0 Mc in ____ min

Manual ■ Automatic □

U. S. GOVERNMENT PRINTING OFFICE : 1946 O - 708519

Table 64

Ionospheric Storminess, April 1947

Day April	Ionosphere character* 00-12 GCT	Ionosphere character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	***	2			2	2
2	***	1			2	2
3	***	2			2	3
4	***	1			3	3
5	***	2			1	2
6	***	1			4	2
7	***	0			1	2
8	***	2			2	3
9	***	1			5	3
10	***	2			3	2
11	***	3			3	2
12	***	5	---/	--//	2	3
13	***	4	---/	--//	2	2
14	***	5	---/	-///	2	2
15	3	***	----	----	3	3
16	2	2	----	0400	3	3
17	3	5	0600	----	3	7
18	***	7	----	----	4	4
19	3	3	----	1900	4	3
20	3	3			4	3
21	1	2			3	1
22	1	1			1	0
23	1	2			1	2
24	1	2			1	0
25	2	2			1	2
26	1	2			2	4
27	2	1			3	3
28	2	1			2	3
29	2	2			3	2
30	***	2			3	3

*Ionosphere character figure (I-figure) for ionospheric 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 Cheltenham, Maryland, magnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to table 53 for detailed explanation.

/Time of beginning unknown because of loss of record.

//Time of ending unknown because of loss of record.

///Dashes indicate continuing storm.

Table 65

Sudden Ionosphere Disturbances Observed at Washington, D.C.

1947 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
April 2	1939	2000	Ohio, D.C., Ontario	0.3	
2	2100	2115	Ohio, D.C., Mexico, Ontario	0.3	
3	1442	1505	Ohio, D.C., England, Ontario	0.2	
3	1552	1610	Ohio, D.C., England, Ontario	0.05	
4	1112	1135	England	0.05	
4	1223	1300	Ohio, D.C., England, Ontario	0.1	
4	1541	1600	Ohio, D.C., England, Ontario	0.3	
4	2030	2100	Ohio, D.C., Mexico, Ontario	0.1	
5	1434	1510	Ohio, D.C., England, Mexico, Ontario	0.0	Terr.mag.pulse** 1435-1445
5	1651	1720	Ohio, D.C., Ontario	0.1	
6	1154	1225	Ohio, D.C., England, Ontario	0.0	
6	1551	***	Ohio, D.C., New Brunswick, Ontario	0.0	
6	1627	1700	Ohio, D.C., Ontario	0.0	
6	1755	1840	Ohio, D.C., Ontario	0.0	
7	1432	1500	Ohio, D.C., England, New Brunswick, Ontario	0.1	
7	1730	1830	Ohio, D.C., Ontario	0.0	
7	1923	1940	Ohio, D.C., Ontario	0.1	
7	2035	2110	Ohio, D.C., Mexico, Ontario	0.2	
8	1449	1530	Ohio, D.C., England, Mexico, Ontario	0.05	
10	1428	1510	Ohio, D.C., England, Mexico, Ontario	0.05	
10	2057	2130	Ohio, D.C., Mexico, New Brunswick, Ontario	0.03	
11	1638	1730	Ohio, D.C., Mexico, Ontario	0.0	
11	1736	1800	Ohio, D.C., England, New Brunswick, Ontario	0.0	

1947 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Other phenomena
April 11	1837	1910	Ohio, D.C., New Brunswick, Ontario	0.0	
12	1704	1735	Ohio, D.C., Mexico, Ontario	0.1	
12	1930	1940	Ohio, D.C., Mexico, Ontario	0.3	
13	1426	1445	Ohio, D.C., Mexico, New Brunswick, Ontario	0.1	
13	1449	1525	Ohio, D.C., Mexico, New Brunswick, Ontario	0.0	
13	1749	1825	Ohio, D.C., Mexico, Ontario	0.0	
13	2135	2200	Ohio, D.C., Mexico	0.2	
15	1447	2230	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.0	
18	1604	1630	Ohio, D.C., Mexico, Ontario	0.3	
23	1839	***	Ohio, D.C., Ontario	0.0	
23	1920	2000	Ohio, D.C., Ontario	0.0	
24	1427	1500	Ohio, D.C., England, Ontario	0.1	
25	1601	1700	Ohio, D.C., England, Mexico, New Brunswick, Ontario	0.0	
28	1422	1520	Ohio, D.C., Ontario	0.1	

*Ratio of received field intensity during SID to average field intensity before and after, for station W2XAL, 6080 kilocycles, 600 kilometers distant, for all SID except the following: Station GLH, 13525 kilocycles, received in New York, 5340 kilometers distant, was used for the SID on April 4 at 1112.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

***Incomplete recovery of SID.

Table 66

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1947 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
March				
27	1358	1515	Somerton	Australia, Ceylon, China, India
29	1215	1250	Brentwood	Austria, Belgian Congo, Brazil, Canary Islands, Chile, China, Colombia, Greece, India, Iran, Madagascar, Palestine, Portugal, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
29	1215	1240	Somerton	Argentina, Ascension Island, Barbados, Gold Coast, Union of S. Africa
30	0930	1000	Brentwood	Austria, Bulgaria, India, Iran, Palestine, Southern Rhodesia, Spain, Syria, Turkey, U.S.S.R., Yugoslavia
30	0935	1010	Somerton	Ascension Island, China, India, Japan, Union of S. Africa
April				
3	0650	0715	Brentwood	Bulgaria, Greece, India, Iran, Kenya, Southern Rhodesia, Turkey, U.S.S.R.
4	1115	1130	Brentwood	Austria, Greece, India, Madagascar, Palestine, Syria, Turkey, U.S.S.R., Yugoslavia
4	1113	1150	Somerton	Ascension Island, Gold Coast, Union of S. Africa
4	1237	1305	Somerton	Ascension Island, Japan, New York
5	0950	1010	Brentwood	Bulgaria, Greece, India, Kenya, Madagascar, Syria, Turkey, U.S.S.R., Zanzibar
5	1435	1500	Brentwood	Bulgaria, Greece, Madagascar, Palestine, Spain
5	1435	1505	Somerton	Argentina, Ascension Island, Australia, Canada, Ceylon, Gold Coast, New York, Union of S. Africa
6	1155	1220	Brentwood	India, Iran, Palestine, Southern Rhodesia, Turkey, U.S.S.R.
6	1153	1230	Somerton	Ascension Island, Australia, Barbados, China, India, Japan, New York, Union of S. Africa
7	0750	0850	Brentwood	Belgian Congo, Bulgaria, Greece, India, Iran, Kenya, Madagascar, Turkey, U.S.S.R.
9	1050	1130	Brentwood	Belgian Congo, Canary Is., Greece, India, Iran, Kenya, Madagascar, Southern Rhodesia, Turkey
10	1025	1050	Brentwood	Austria, Belgian Congo, Brazil, Bulgaria, Canary Is., Greece, India, Iran, Kenya, Madagascar, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Zanzibar

Table 66 (Continued)

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1947 Day	GCT Beginning	End	Receiving station	Location of transmitters
April				
10	1130	1145	Brentwood	Austria, Belgian Congo, Greece, India, Iran, Kenya, Madagascar, Portugal, Southern Rhodesia, Switzerland, Syria, Turkey, Zanzibar
10	1430	1500	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Chile, Colombia, Kenya, Malta, Palestine, Southern Rhodesia, Spain, U.S.S.R.
10	1430	1445	Somerton	Ascension Island, China, Japan
12	0810	0830	Brentwood	Austria, Bahrein Island, Belgian Congo, Canary Is., French Equatorial Africa, Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
12	0805	1000	Somerton	Argentina, Ceylon, Egypt, India, Union of S. Africa
14	1248	1320	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Chile, Colombia, Greece, India, Iran, Kenya, Palestine, Portugal, Southern Rhodesia, Spain, Surinam, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
14	1252	1315	Somerton	Ascension Island, Australia, Barbados, Gold Coast, Japan, Union of S. Africa
15	0915	0955	Brentwood	Austria, Bahrein Island, Belgian Congo, Brazil, Bulgaria, Canary Is., Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Yugoslavia, Zanzibar
15	0915	0945	Somerton	Argentina, Ascension Island, Ceylon, China, Egypt, Gold Coast, India, Japan, New York, Union of S. Africa
15	1230	1250	Brentwood	Austria, Belgian Congo, Brazil, Canary Is., Chile, Falkland Is., Greece, India, Iran, Kenya, Madagascar, Palestine, Portugal, Southern Rhodesia, Spain, Switzerland, Syria, Thailand, Turkey, U.S.S.R., Yugoslavia
15	1233	1255	Somerton	Argentina, Ascension Island, Barbados, Egypt, Gold Coast, Japan, Union of S. Africa

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

Table 67

Provisional Radio Propagation Quality Figures
March 1947
Compared with CRPL Warnings and CRPL Probable Disturbed Period Forecasts

Day	North Atlantic Quality Figure 01-12 GCT	North Atlantic Quality Figure 13-24 GCT	North Atlantic CRPL* Warning 01-12 GCT	North Atlantic CRPL* Warning 13-24 GCT	North Atlantic CRPL** Probable Disturbed Period Forecast	North Atlantic Geomagnetic K_{Ch} 01-12 GCT	North Atlantic Geomagnetic K_{Ch} 13-24 GCT	North Pacific Quality Figure 01-12 GCT	North Pacific Quality Figure 13-24 GCT	North Pacific CRPL* Warning 01-12 GCT	North Pacific CRPL* Warning 13-24 GCT	North Pacific CRPL** Probable Disturbed Period Forecast	North Pacific Geomagnetic K_{Ch} 01-12 GCT	North Pacific Geomagnetic K_{Ch} 13-24 GCT
1	7	7				2	1	6	5				2	1
2	6	6		X		5	5	5	(4)		X		5	5
3	(2)	(4)	X	X		6	6	5	6	X	X		6	6
4	(2)	(4)	X	X		6	3	5	6	X	X		6	3
5	5	6	X	X		3	1	6	5	X	X		3	1
6	7	6				1	1	6	6				1	1
7	7	6				2	4	6	6				2	4
8	(4)	(4)		X		4	6	5	5		X		4	6
9	(3)	5	X	X	X	5	3	6	7	X	X	X	5	3
10	6	6	X		X	2	2	6	6	X		X	2	2
11	6	6			X	2	1	8	5			X	2	1
12	6	6			X	3	3	7	(4)			X	3	3
13	7	(4)				3	3	5	6				3	3
14	(3)	(3)				3	4	(4)	6				3	4
15	(3)	(3)		X		5	5	(4)	7		X		5	5
16	(4)	(4)	X	X		2	3	5	6	X	X		2	3
17	(4)	(3)				4	2	6	6				4	2
18	5	(4)				2	3	6	6				2	3
19	6	5				2	2	6	6				2	2
20	7	6				3	1	6	7				3	1
21	7	6				2	2	7	8				2	2
22	5	5				3	2	6	8				3	2
23	6	5				3	5	6	8				3	5
24	5	7				4	3	7	7				4	3
25	6	6				3	2	7	8				3	2
26	6	(4)				4	3	6	7				4	3
27	6	6				4	3	6	6				4	3
28	(4)	(4)		X		6	3	5	(4)		X		6	3
29	5	(4)	X	X	X	2	3	5	6	X	X	X	2	3
30	5	5	X	X	X	4	3	5	(3)	X	X	X	4	3
31	5	(4)	X	X	X	4	2	6	-	X	X	X	4	2
Score:														
H			9		3					3		2		
M			5		11					3		4		
G			13		13					16		20		
(S)			2		1					6		2		
S			2		3					3		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: March 15, 16.

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_{Ch} on the standard scale of 0 to 9, 9 representing the greatest disturbance.

Table 68

Daily Median Values of American Relative Sunspot Numbers*

April 1947

Date	No.	No.	Date
1	196	16	58
2	178	17	76
3	192	18	92
4	182	19	102
5	173	20	62
6	190	21	76
7	188	22	88
8	168	23	116
9	166	24	153
10	168	25	188
11	138	26	199
12	110	27	184
13	104	28	193
14	82	29	198
15	60	30	184
No. Days 30		Mean	142.1

* Median of data from 17 observers

Table 69

COROHAL OBSERVATIONS AT CLIMAX, COLORADO

April 1947

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

Date	Time of observation GCT	0	5	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
14	1535-1604	8	9	9	10	11	12	12	11	10	15	14	10	7	5	6	12	17	18	17	15	11	9	5	5	4	4	4	4	5	5	6	6	6	6	6	5
											2	4	5	1			1	3	4	3	1																
20	Not Received	4	4	5	5	9	13	11	30	28	28	23	12	11	11	13	12	13	16	22	22	20	13	11	10	7	4	--	--	--	--	10	14	14	11	10	6
								2	4	5	4	3	2	1	2	3	6	4	12	12	10				2	1											
					1	1	2	2	3	3	3	2	1	1	1																						
21	1515-1543	-	-	--	--	8	10	8	17	15	20	17	14	11	9	8	13	20	27	31	28	13	11	9	7	5	4	--	--	--	--	10	11	12	9	5	--
								3	4	4	5	1	1	--	1	1	10	10	14	12	11	9	2	1	1	1											
															1	2	2	2	3	3	3	2	1	1													

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
14	1535-1604	4	5	5	10	9	10	15	17	20	17	17	19	14	14	13	14	24	15	10	7	4	5	5	5	5	5	--	--	--	--	--	--	--	5	4	6
							2	3	3	10	1	3	2	4	4	4	5	5	3	3	3	1															
20	Not Received	5	5	7	8	9	10	10	11	17	23	27	23	28	10	7	12	14	13	16	15	13	13	14	14	13	8	6	5	8	4	--	--	--	--	--	--
											1	3	5	2	1	1	1	1																			
21	1515-1543	--	4	5	8	9	8	10	11	14	30	28	27	22	12	7	11	14	14	15	13	11	11	12	11	9	8	4	--	--	--	--	--	--	--	--	--
											10	2	4	1																							

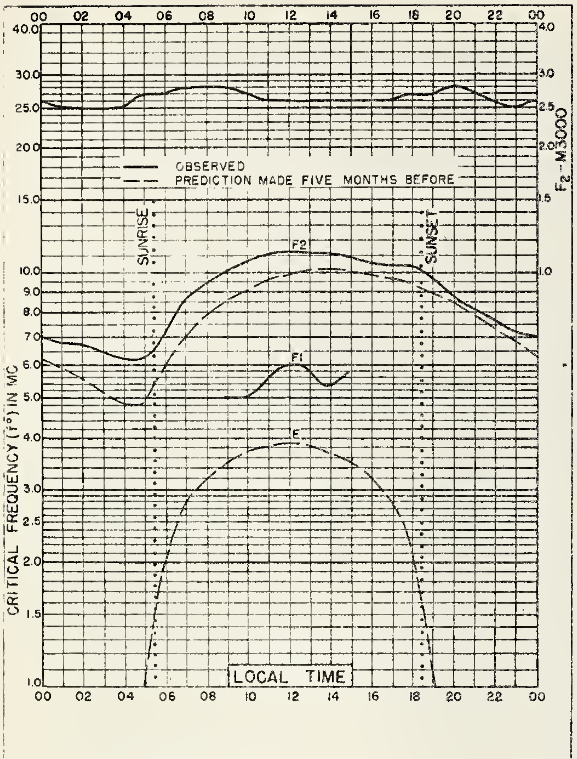

Fig. 1. WASHINGTON, D. C.
39.0°N, 77.5°W APRIL 1947

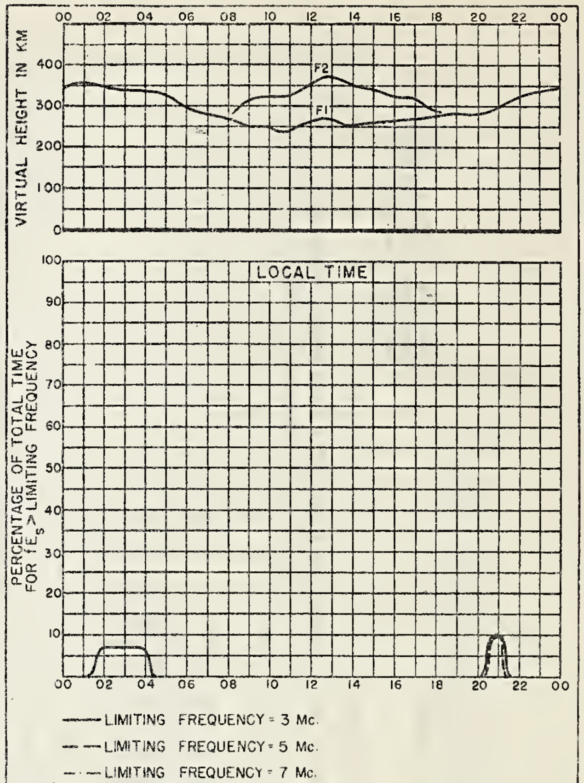

Fig. 2. WASHINGTON, D. C. APRIL 1947

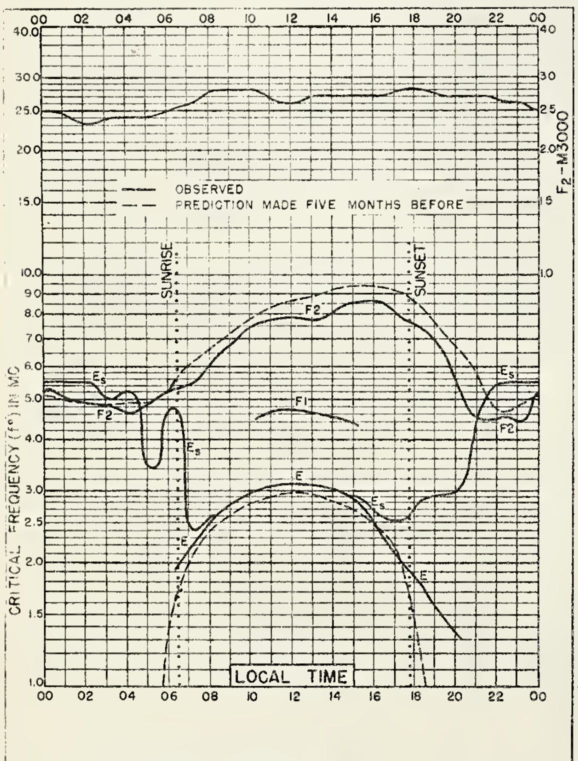

Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W MARCH 1947

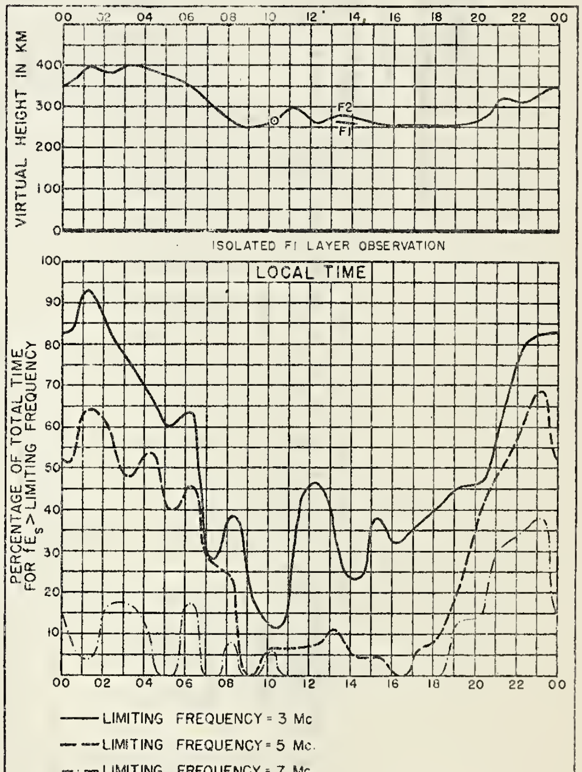

Fig. 4. FAIRBANKS, ALASKA MARCH 1947

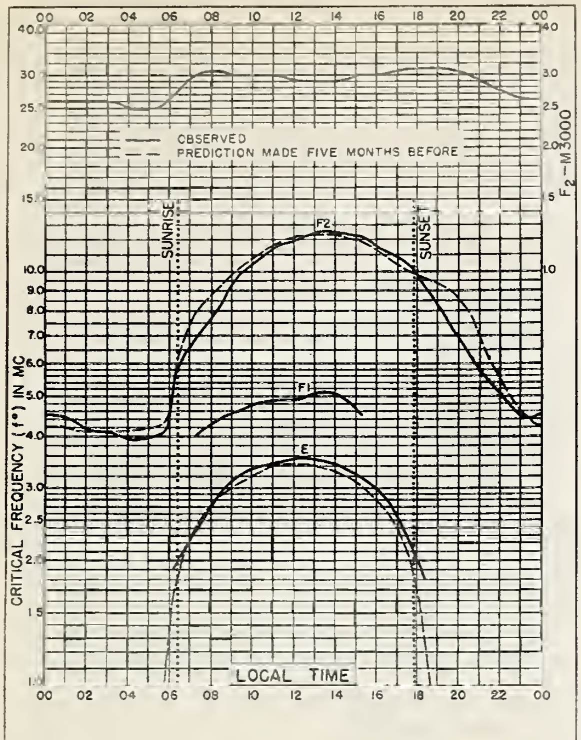

Fig. 5. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1947

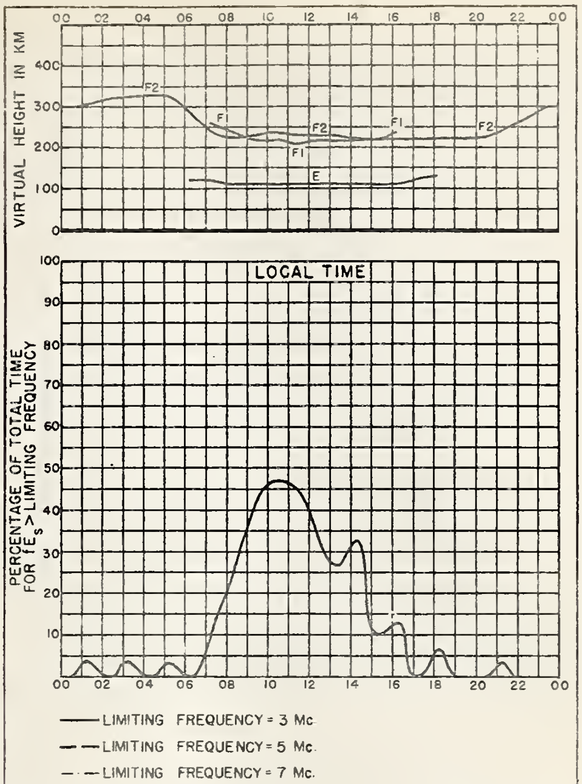

Fig. 6. ADAK, ALASKA MARCH 1947

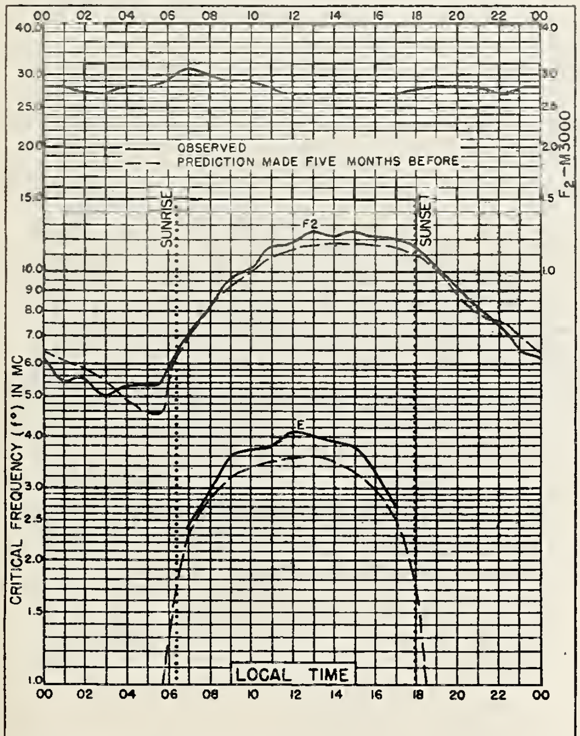

Fig. 7. OTTAWA, CANADA
45.5°N, 75.8°W MARCH 1947

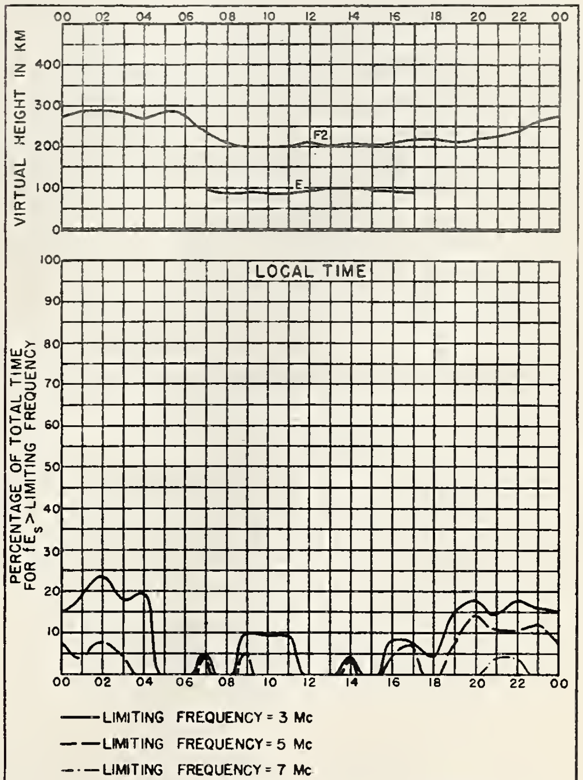

Fig. 8. OTTAWA, CANADA MARCH 1947

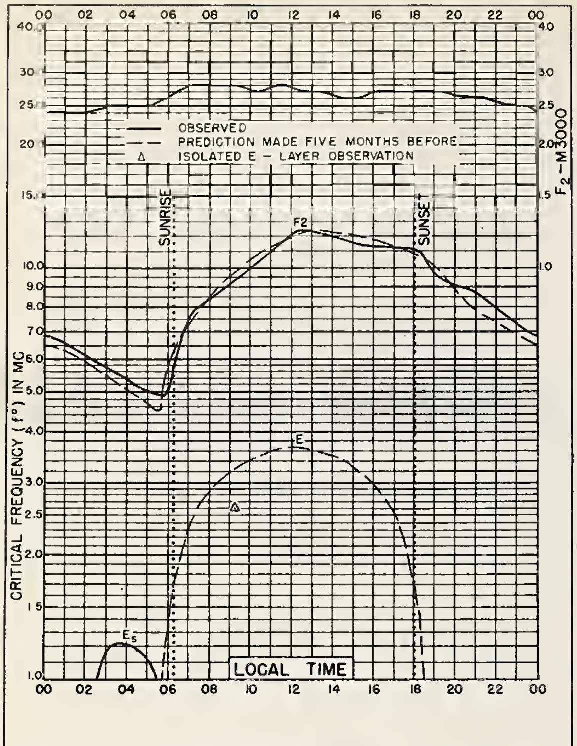

Fig. 9. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W MARCH 1947

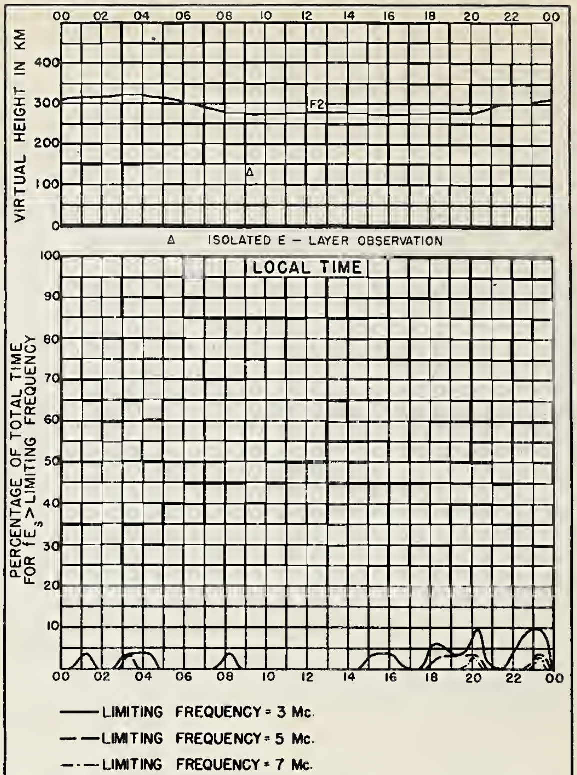

Fig.10. BOSTON, MASSACHUSETTS MARCH 1947

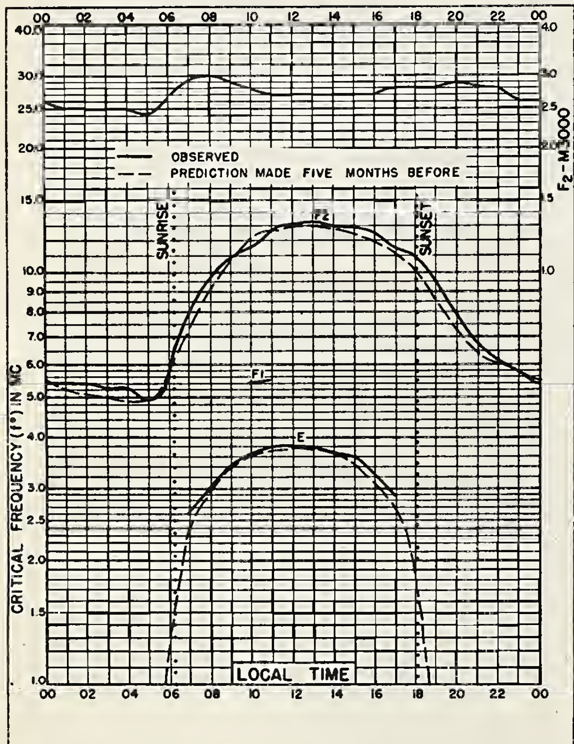

Fig. 11. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W MARCH 1947

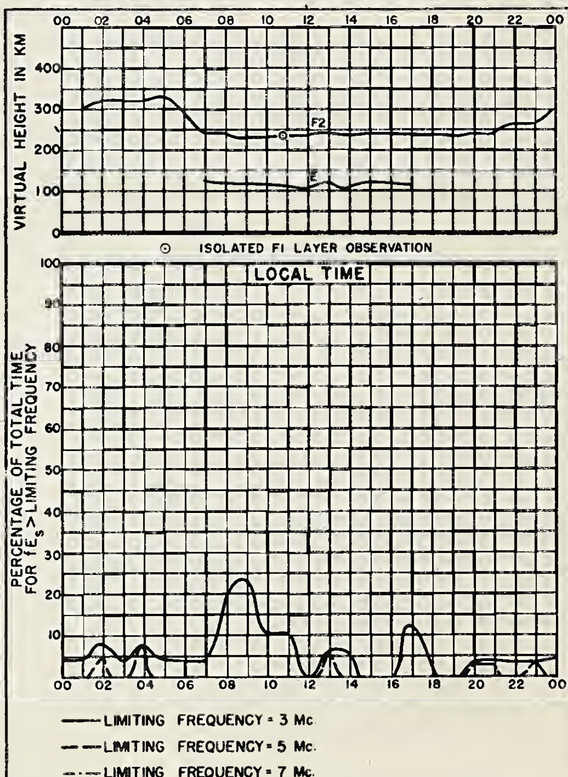

Fig. 12. SAN FRANCISCO, CALIFORNIA MARCH 1947

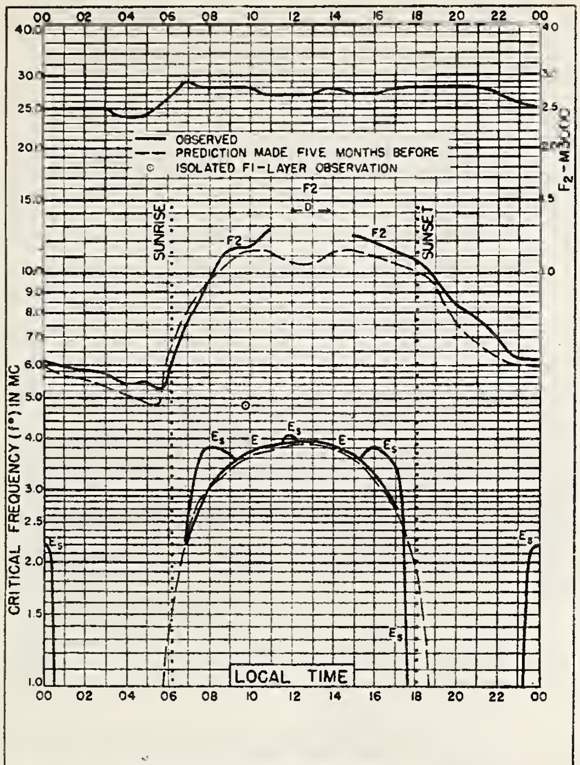

Fig. 13. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W MARCH 1947

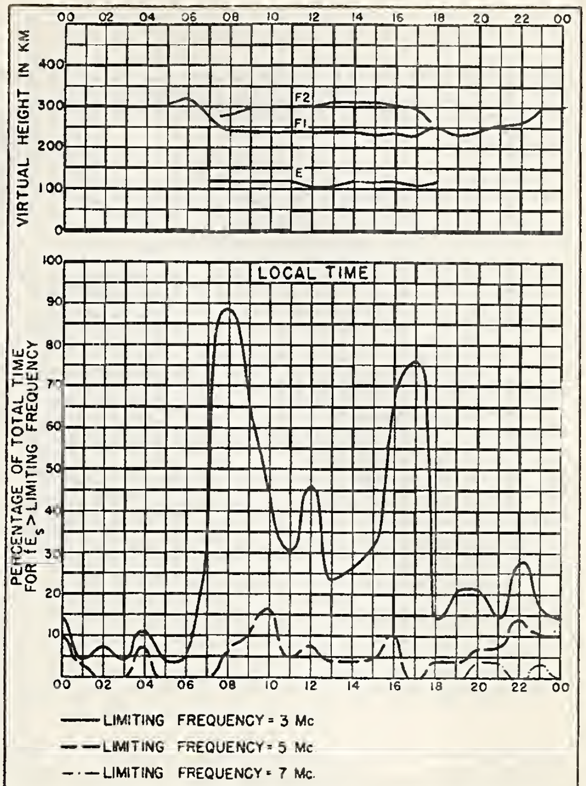

Fig. 14. WHITE SANDS, NEW MEXICO MARCH 1947

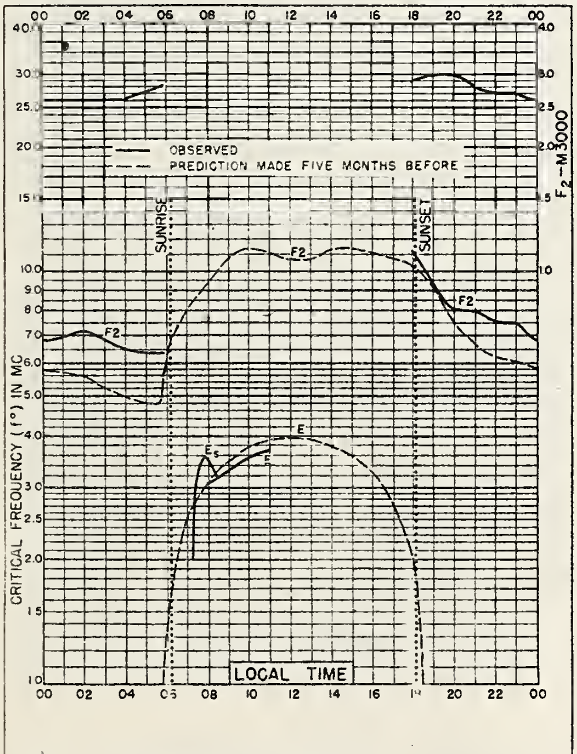

Fig 15. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W MARCH 1947

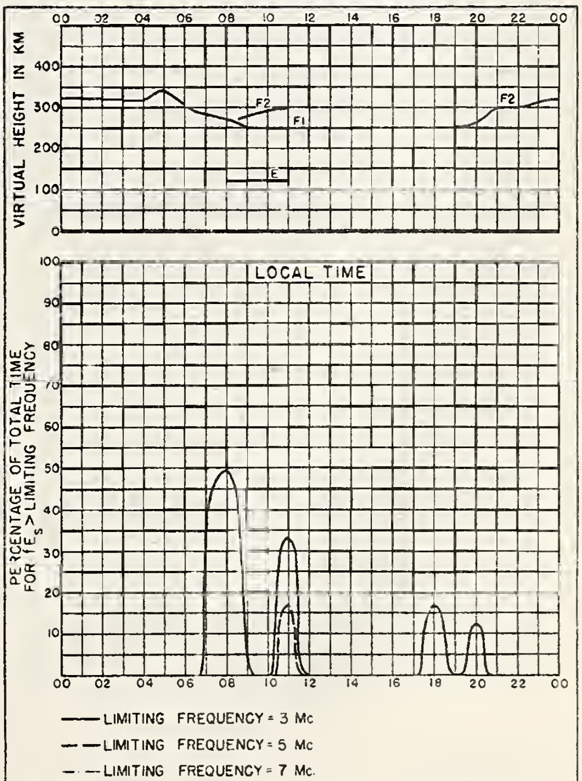

Fig. 16. BATON ROUGE, LOUISIANA MARCH 1947

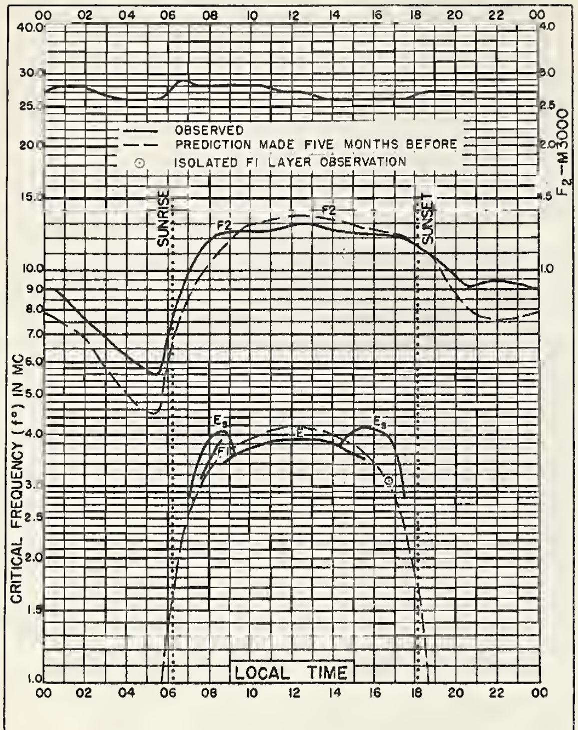

Fig. 17. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W MARCH 1947

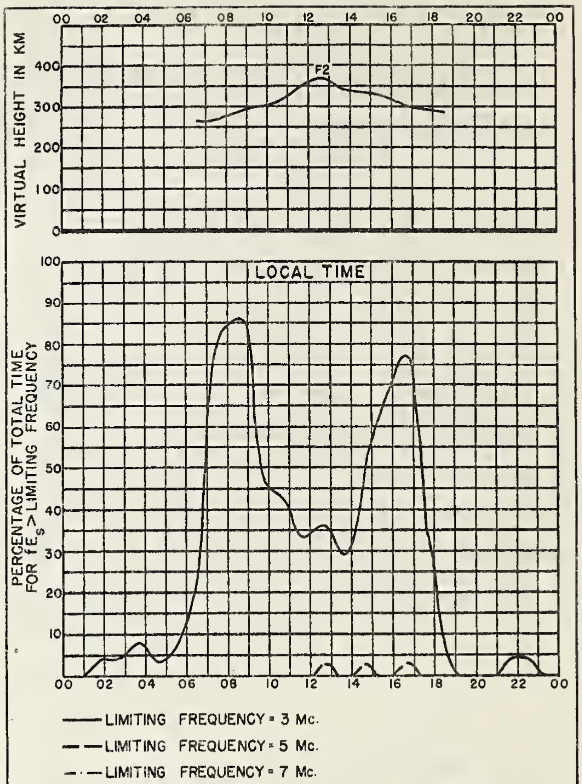

Fig. 18. SAN JUAN, PUERTO RICO MARCH 1947

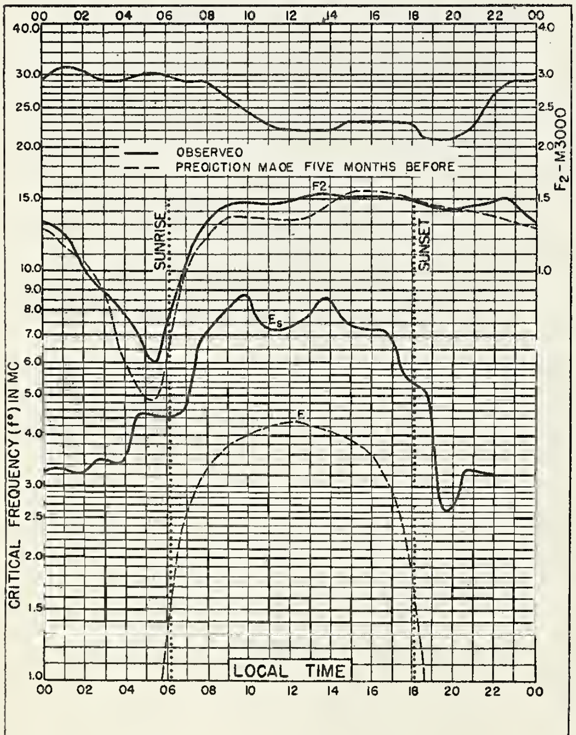

Fig. 19. GUAM I.
13.5°N, 144.8°E MARCH 1947

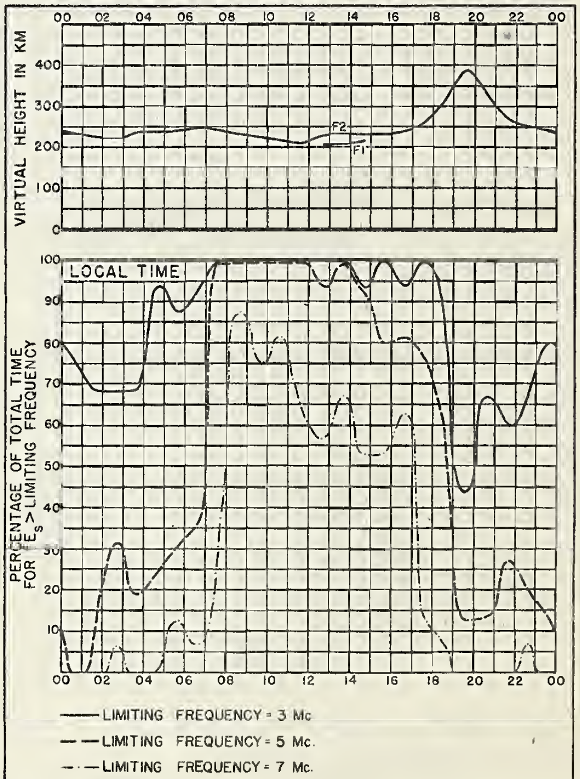

Fig 20. GUAM I. MARCH 1947

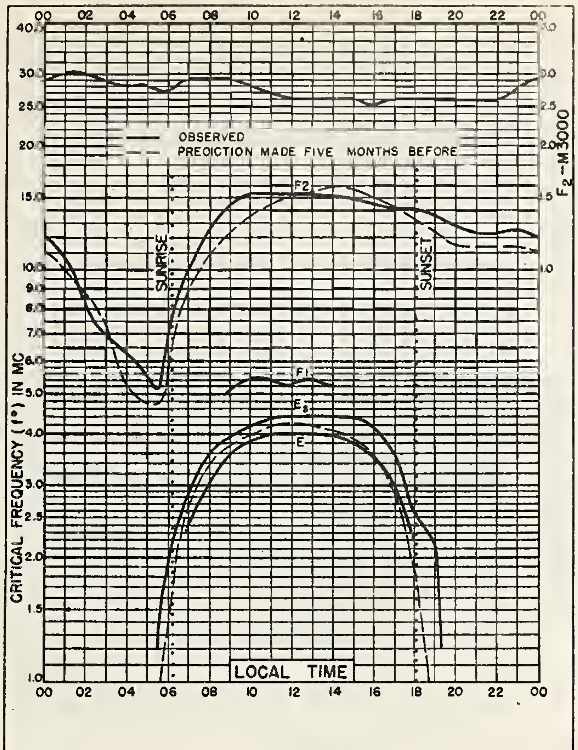

Fig. 21. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W MARCH 1947

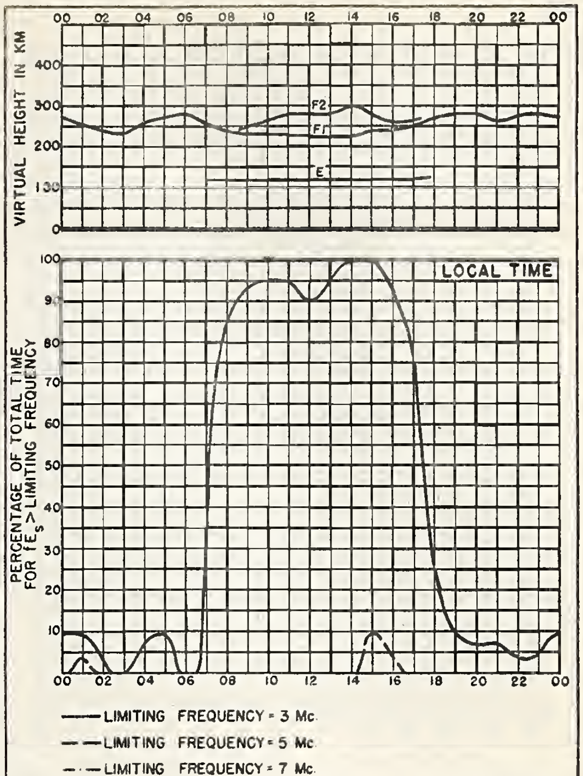

Fig. 22. TRINIDAD, BRIT. WEST INDIES MARCH 1947

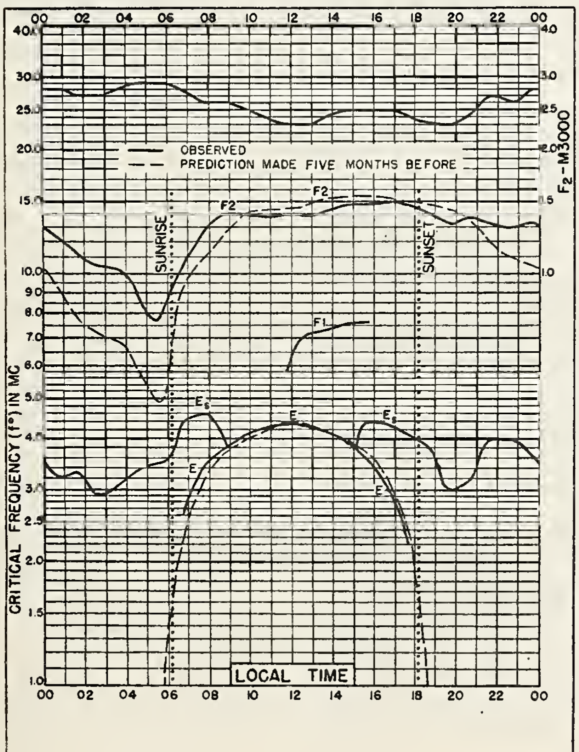

Fig. 23. PALMYRA I.
5.9°N, 162.1°W MARCH 1947

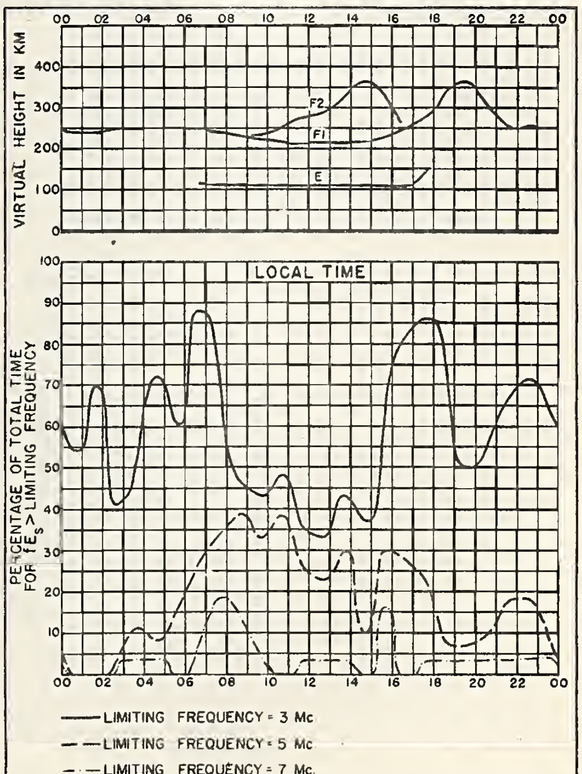

Fig. 24. PALMYRA I. MARCH 1947

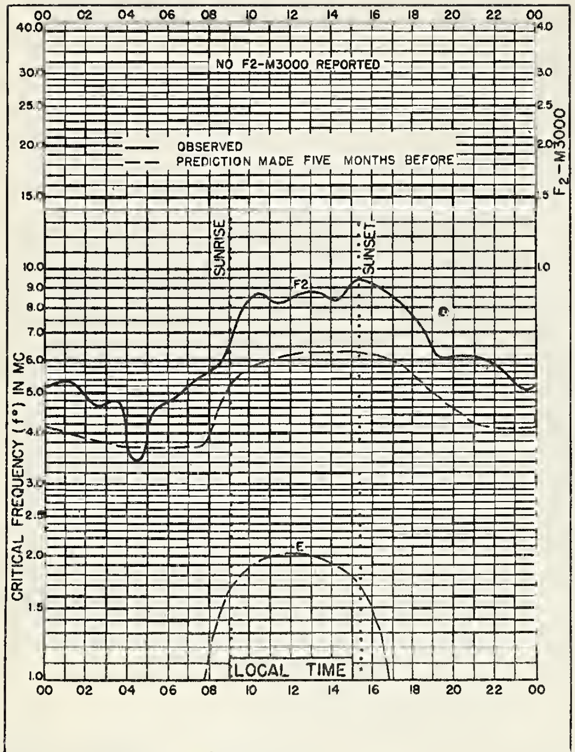

Fig. 25. CLYDE, BAFFIN I.
70.5°N, 68.6°W FEBRUARY 1947

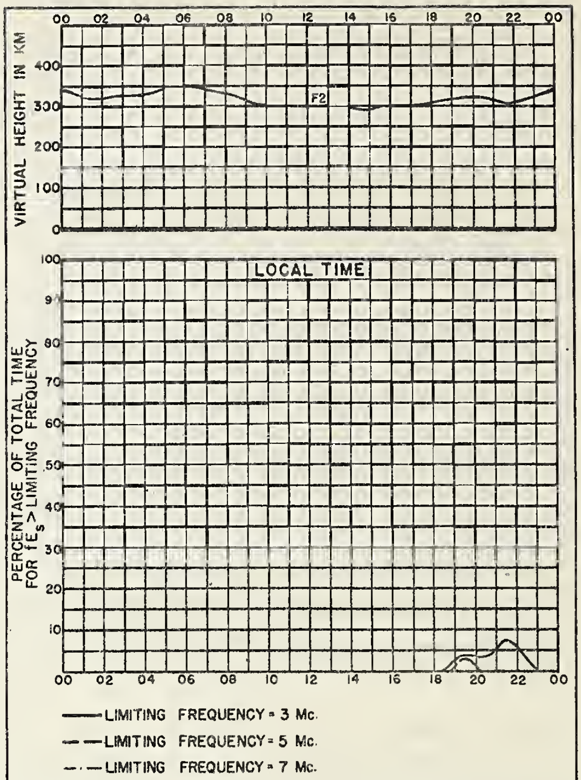

Fig. 26. CLYDE, BAFFIN I. FEBRUARY 1947

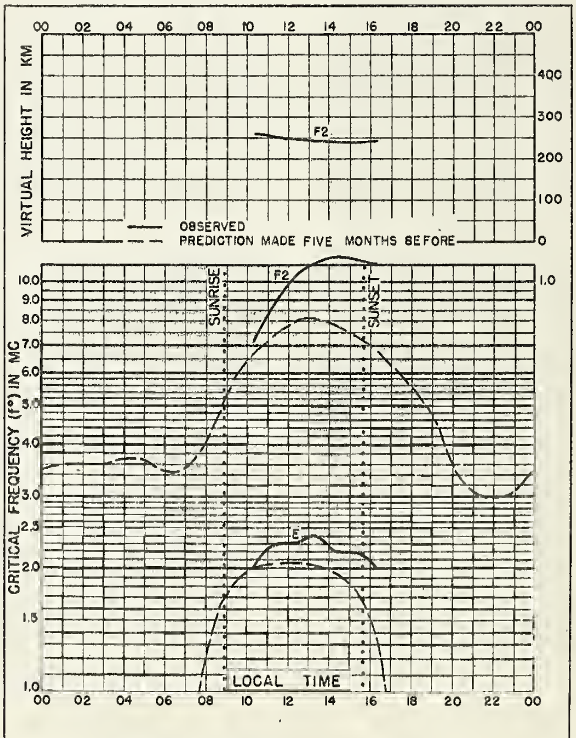

Fig. 27. TROMSO, NORWAY
69.7°N, 18.9°E FEBRUARY 1947

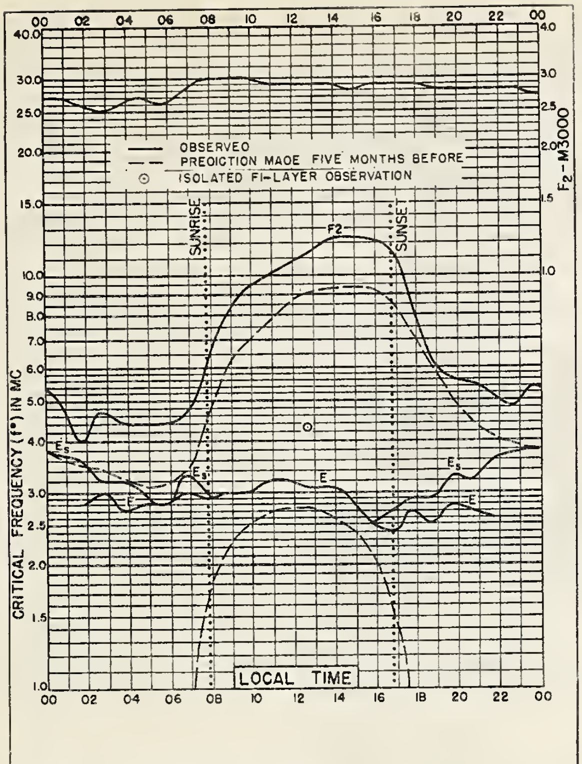

Fig. 28. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1947

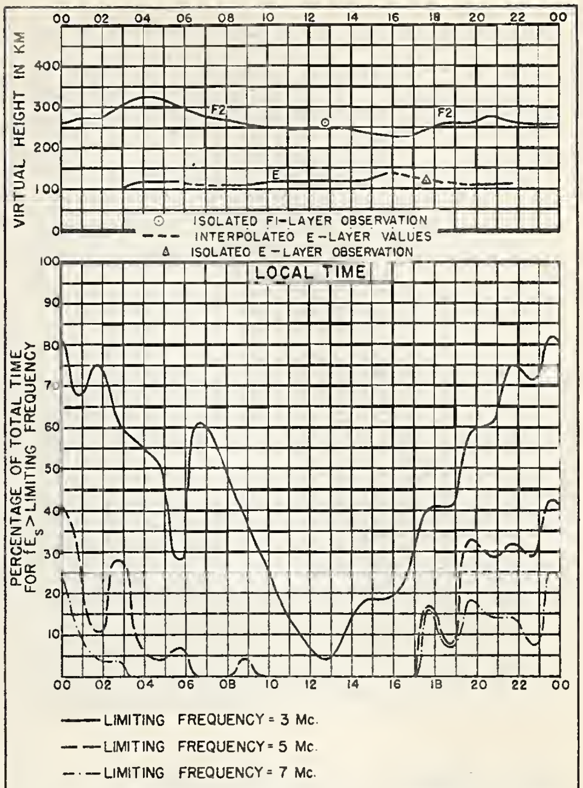

Fig. 29. CHURCHILL, CANADA FEBRUARY 1947

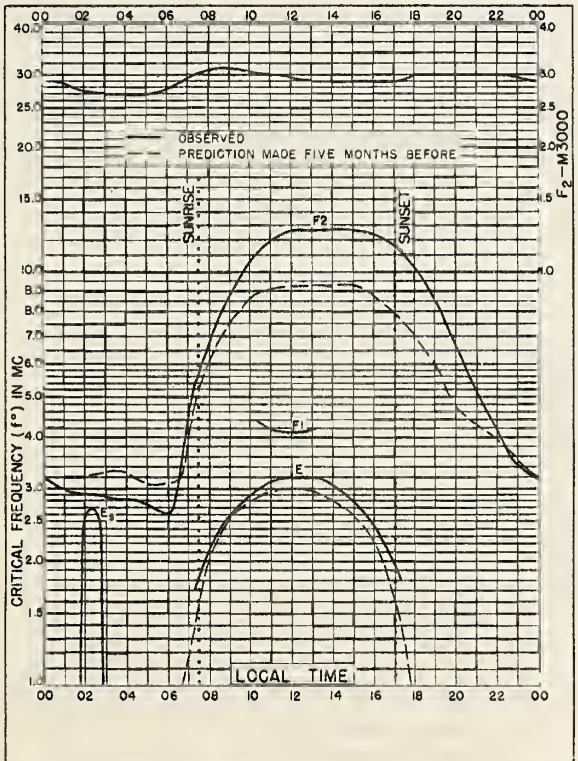

Fig. 30. PRINCE RUPERT, CANADA
54.3°N, 130.3°W FEBRUARY 1947

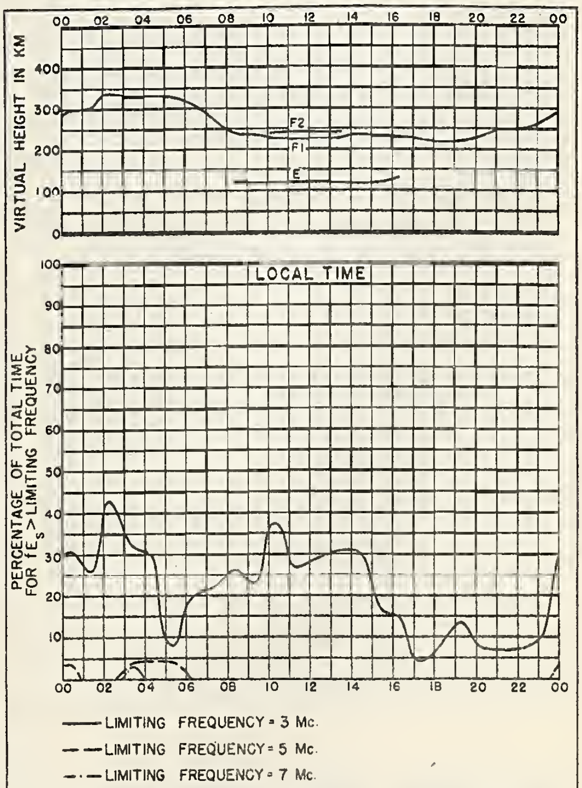

Fig. 31. PRINCE RUPERT, CANADA FEBRUARY 1947

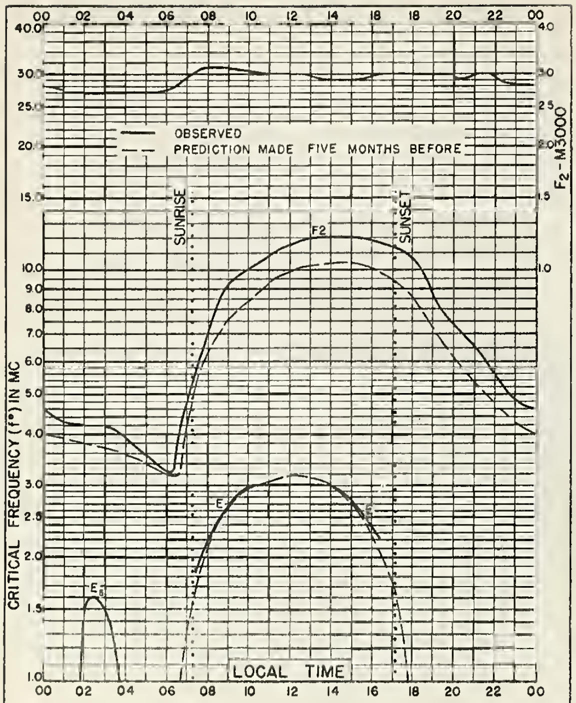

Fig. 32. PORTAGE la PRAIRIE, MANITOBA
49.9°N, 98.3°W FEBRUARY 1947

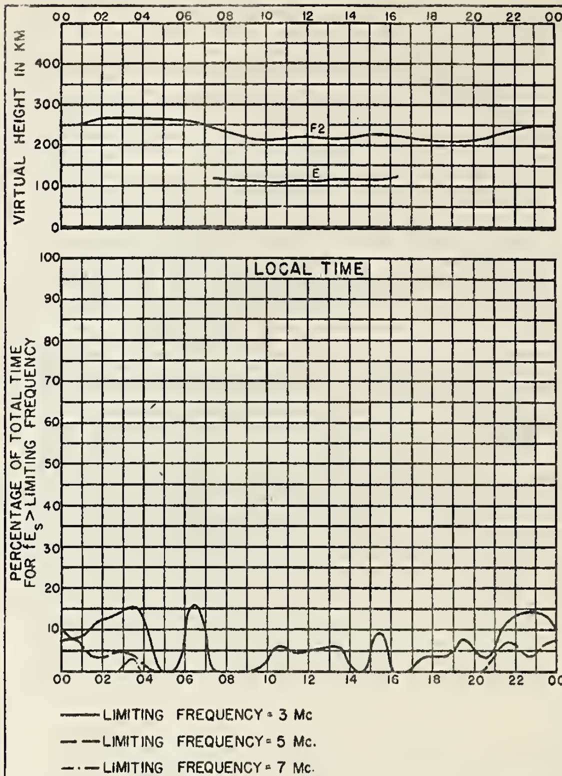

Fig. 33. PORTAGE la PRAIRIE, MANITOBA FEBRUARY 1947

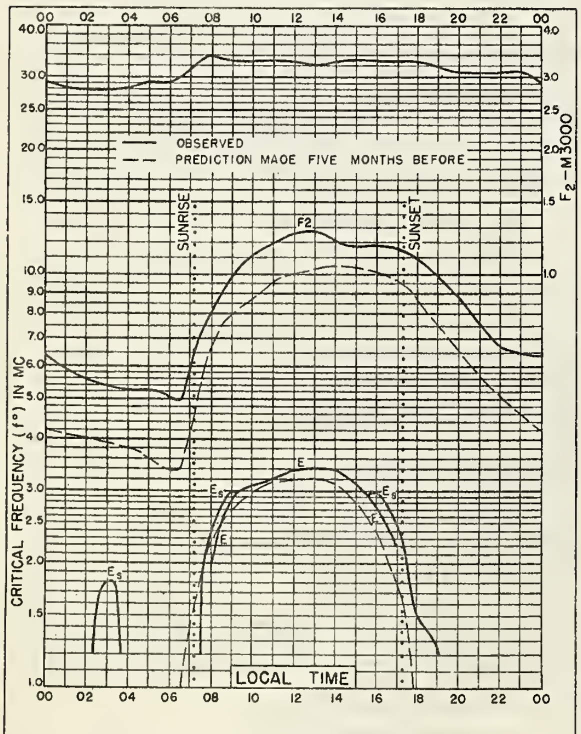

Fig. 34. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W FEBRUARY 1947

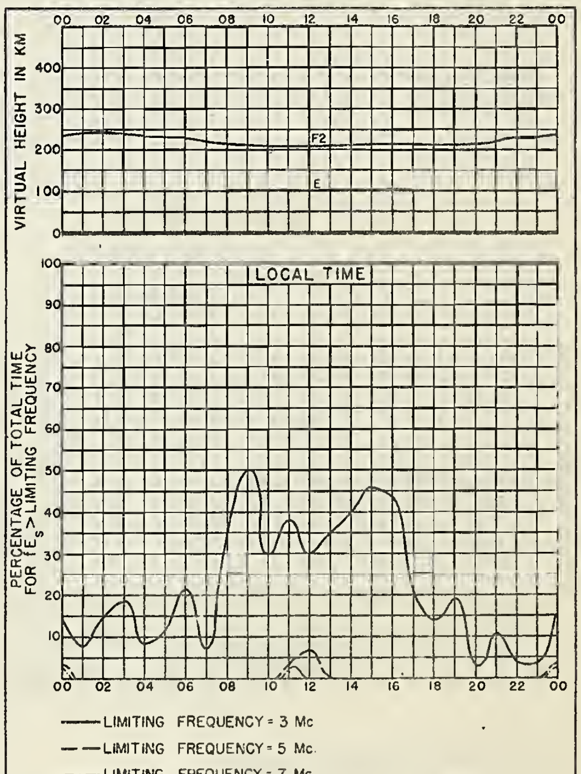

Fig. 35. ST. JOHN'S, NEWFOUNDLAND FEBRUARY 1947

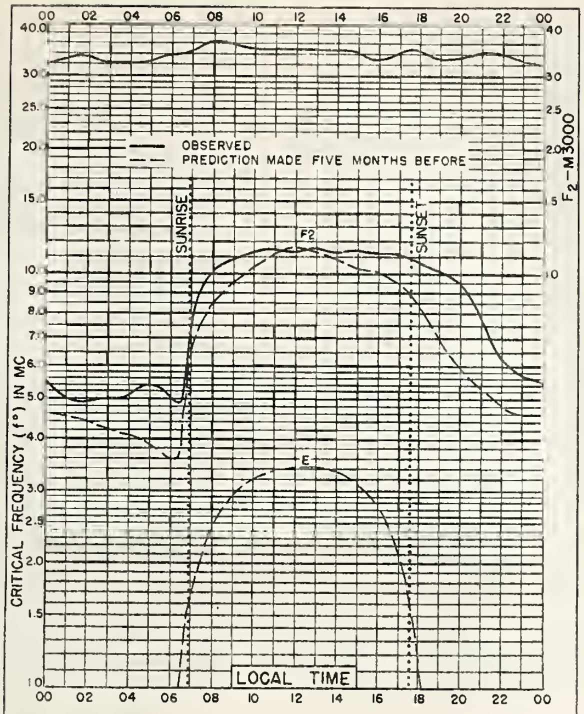

Fig. 36. PEIPING, CHINA
39.9°N, 116.4°E FEBRUARY 1947

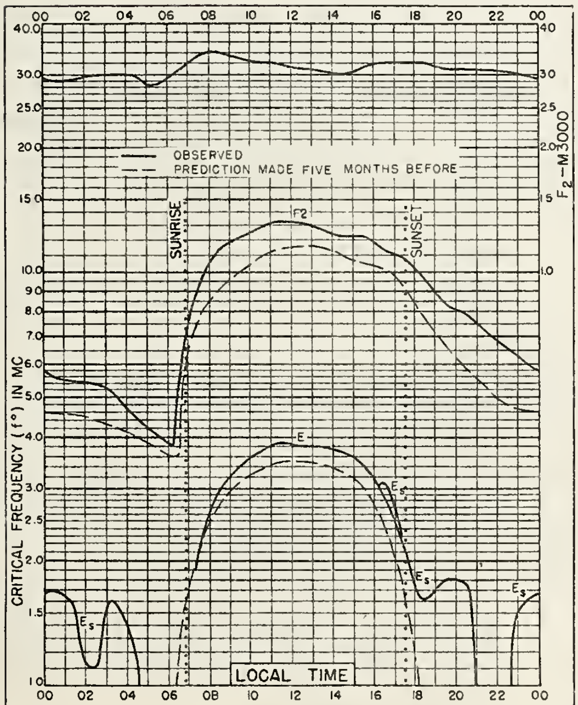

Fig. 37. SHIBATA, JAPAN
38.0°N, 139.3°E FEBRUARY 1947

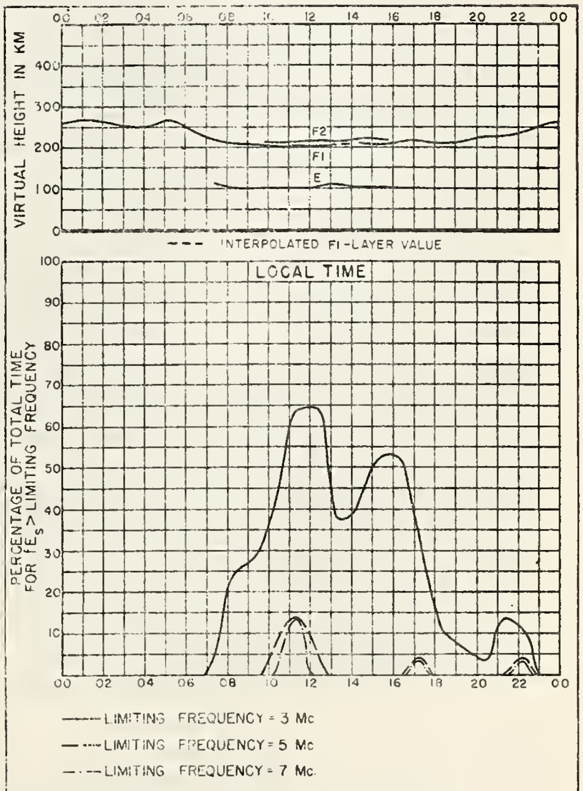

Fig. 38. SHIBATA, JAPAN FEBRUARY 1947

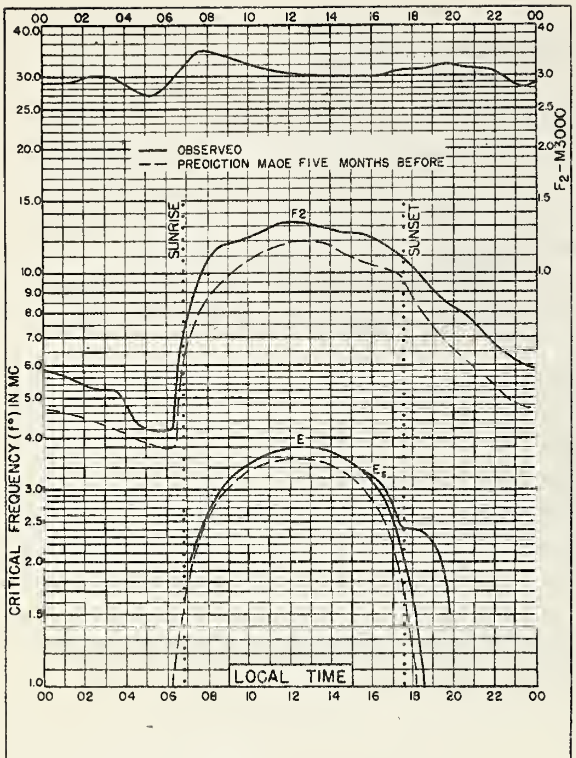

Fig. 39. TOKYO, JAPAN
35.7°N, 139.5°E FEBRUARY 1947

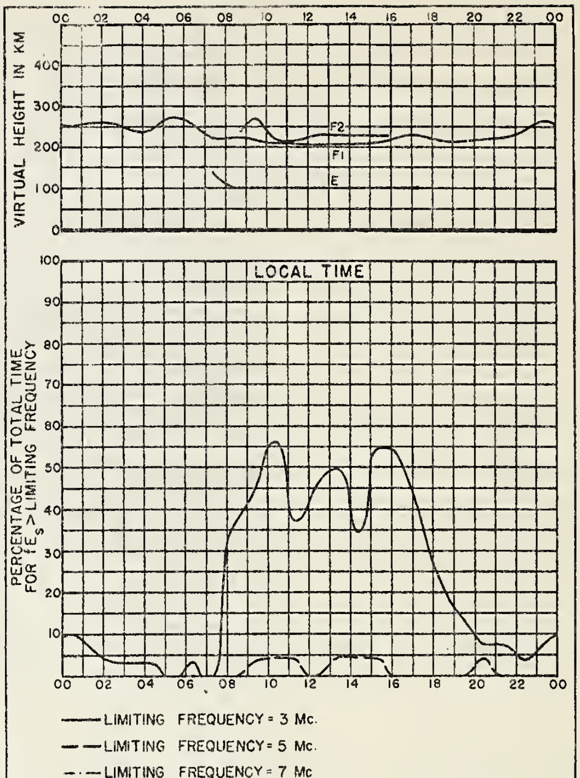

Fig. 40. TOKYO, JAPAN FEBRUARY 1947

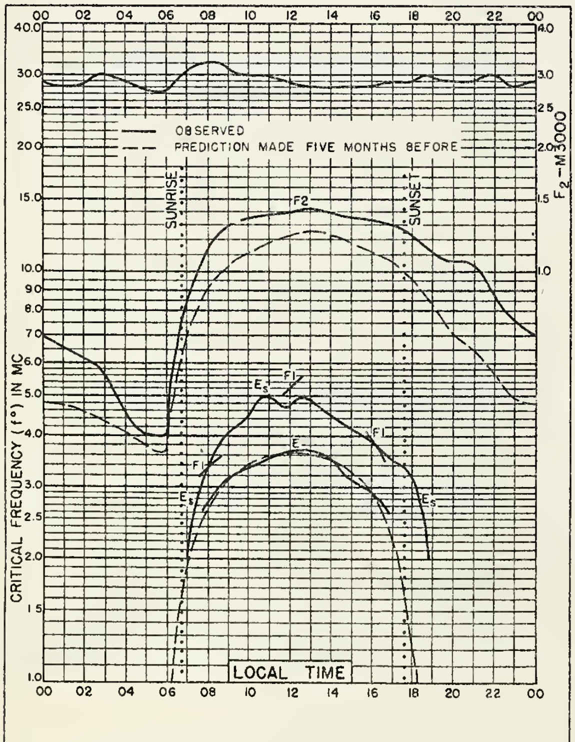

Fig. 41. YAMAKAWA, JAPAN
32.2°N. 130.6°E FEBRUARY 1947

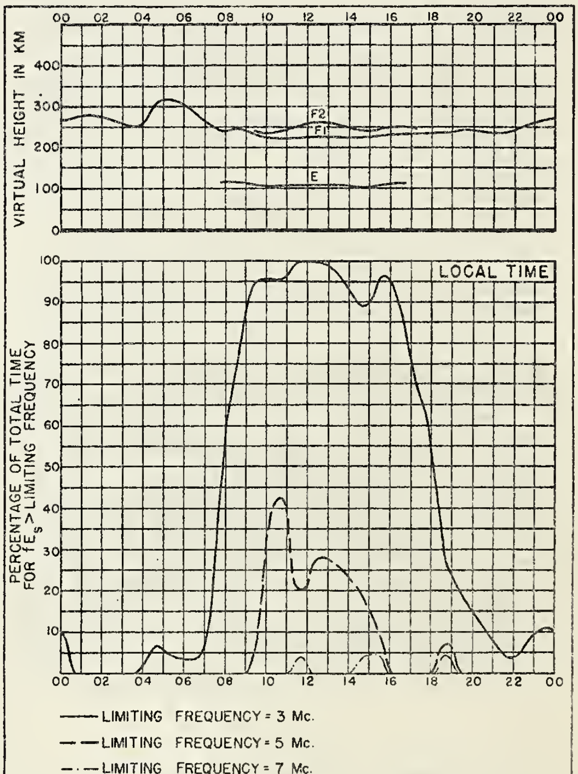

Fig. 42. YAMAKAWA, JAPAN FEBRUARY 1947

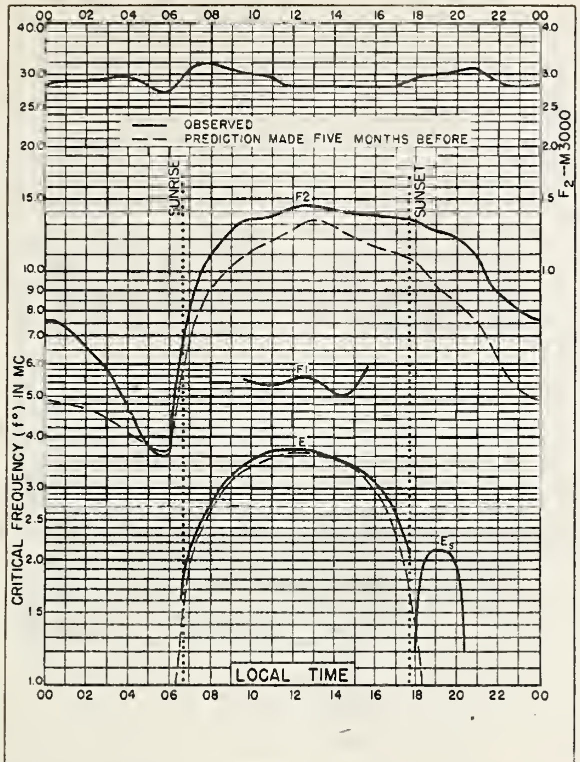

Fig. 43. WUCHANG, CHINA
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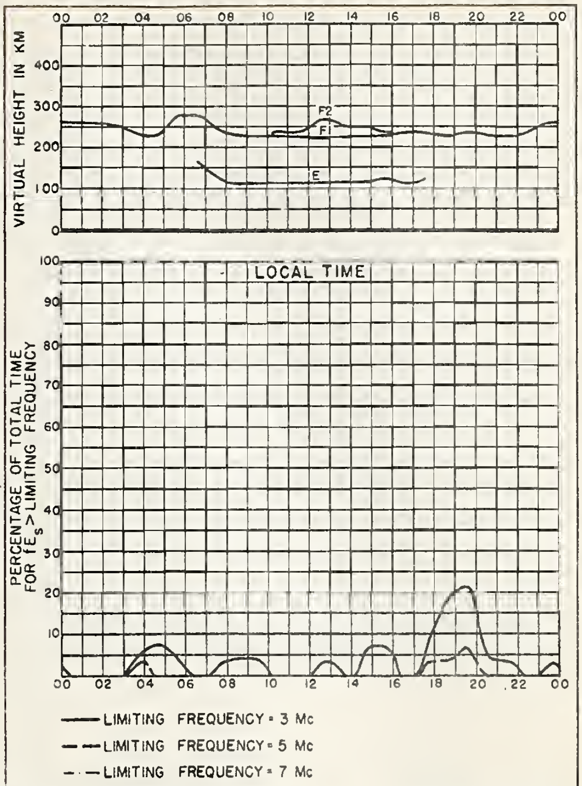
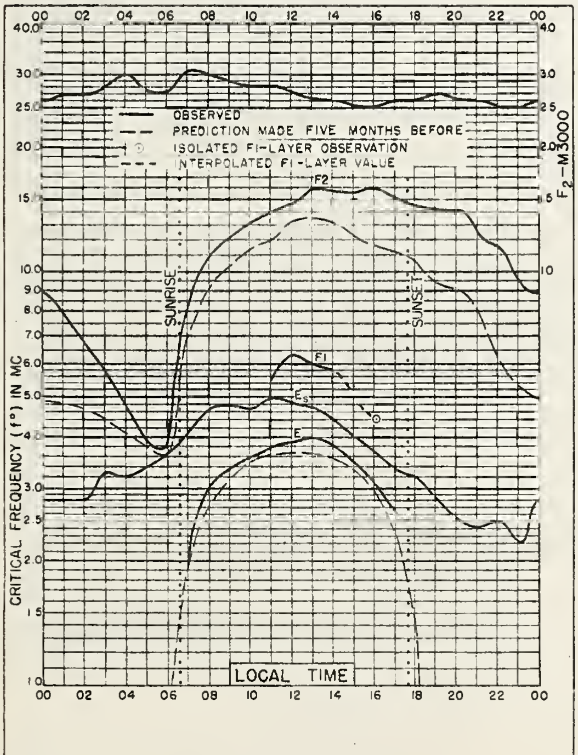


Fig. 44. WUCHANG, CHINA FEBRUARY 1947



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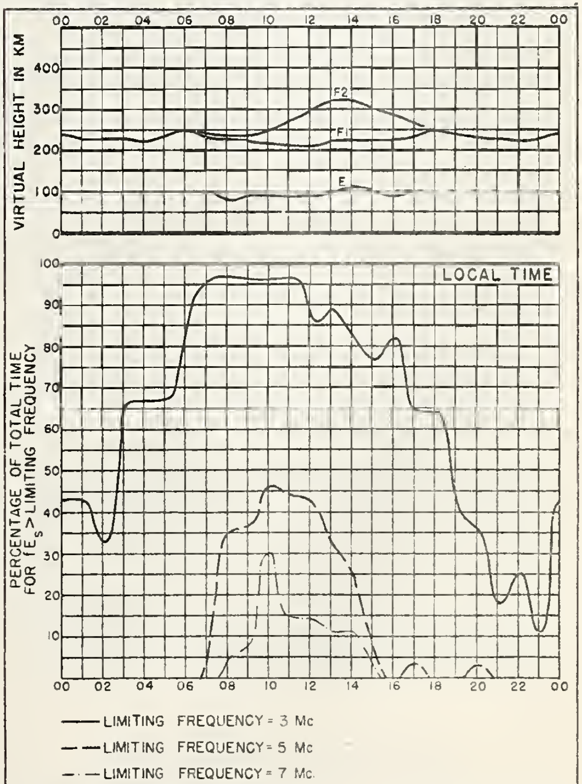

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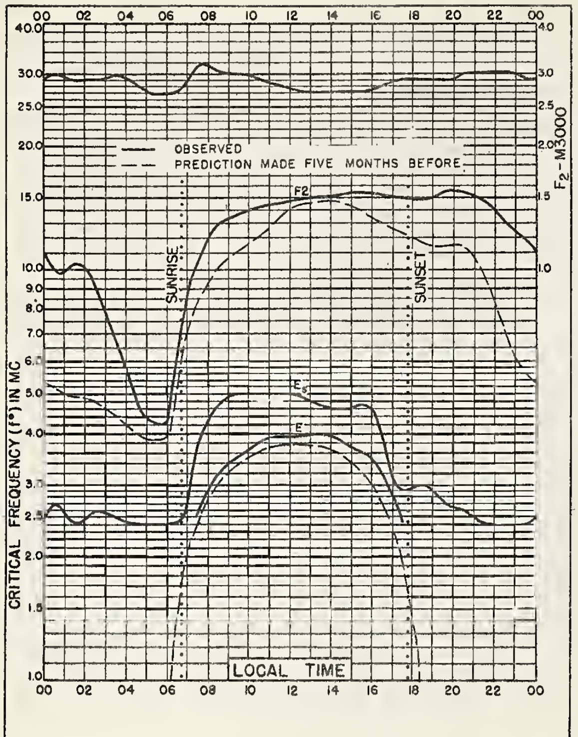

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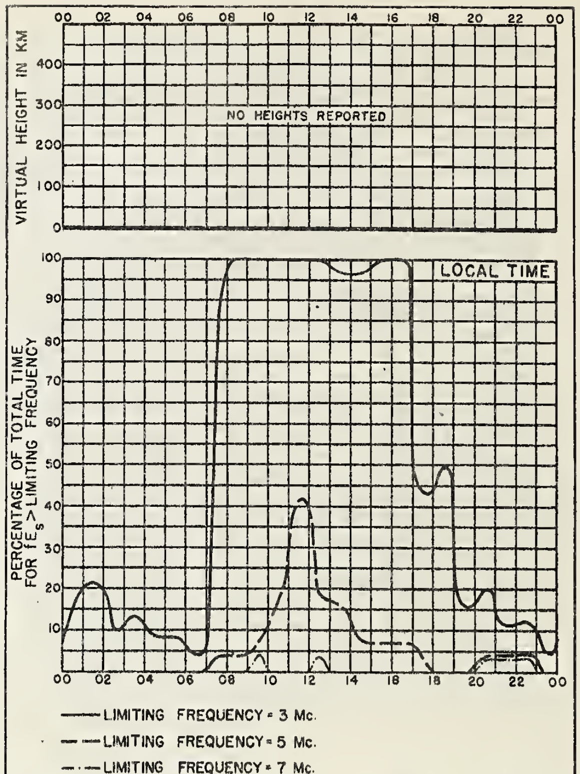

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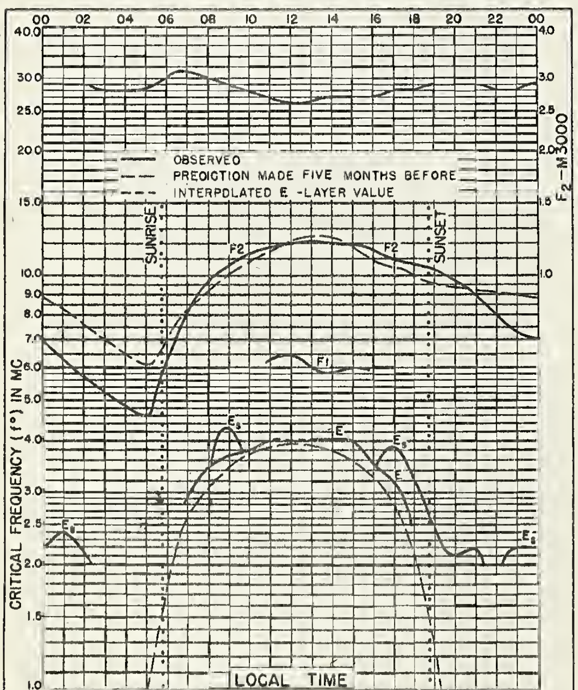

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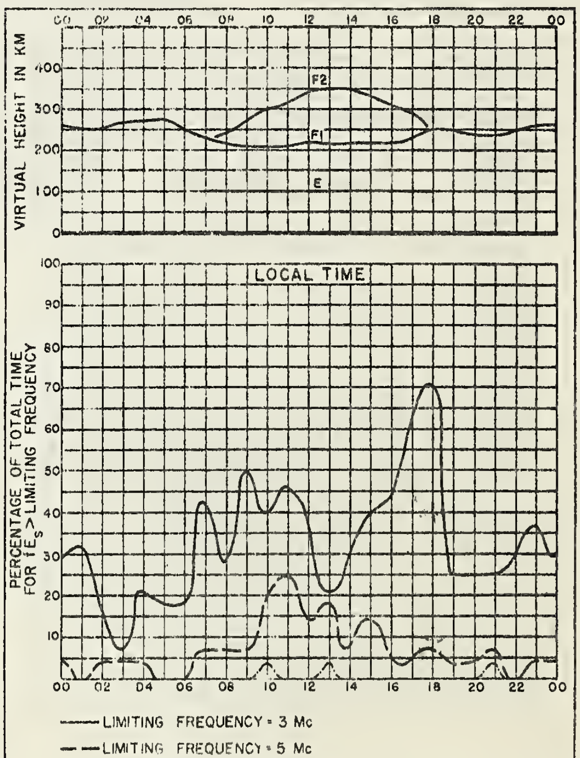

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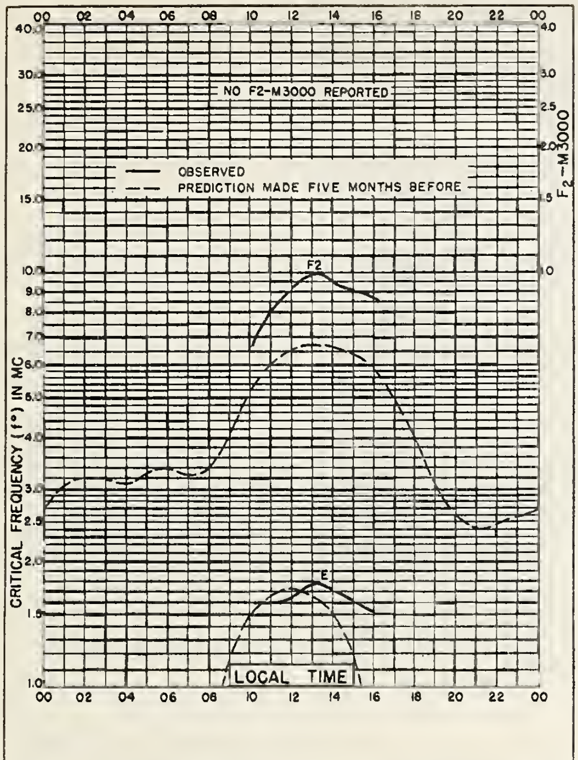

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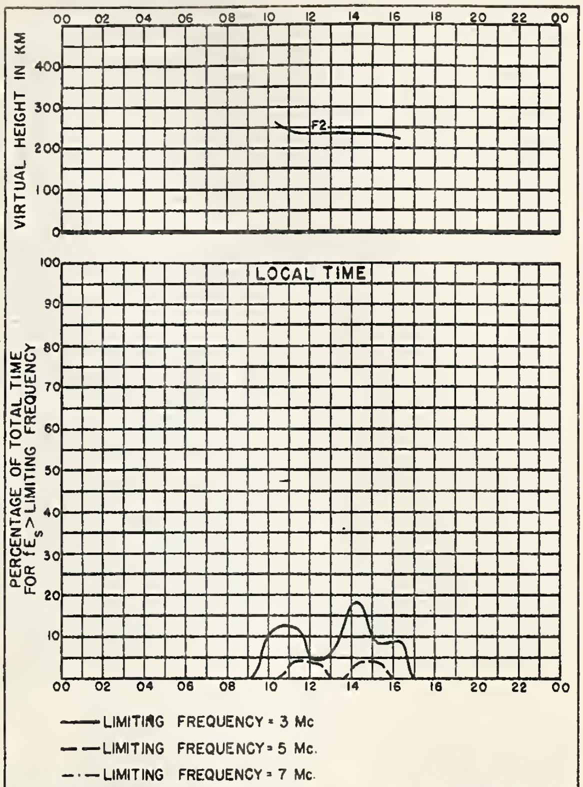

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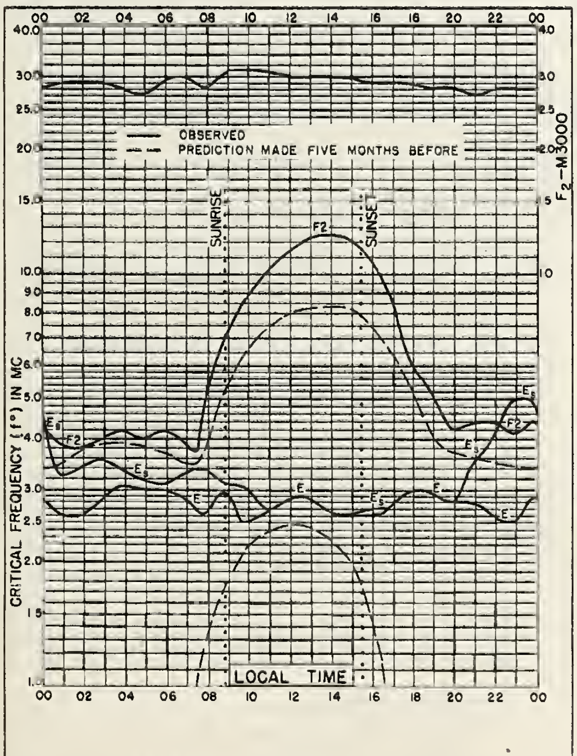

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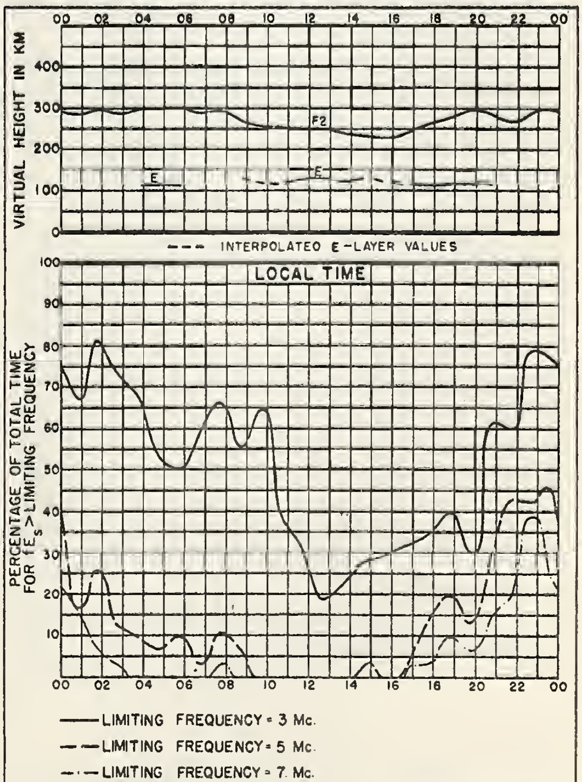

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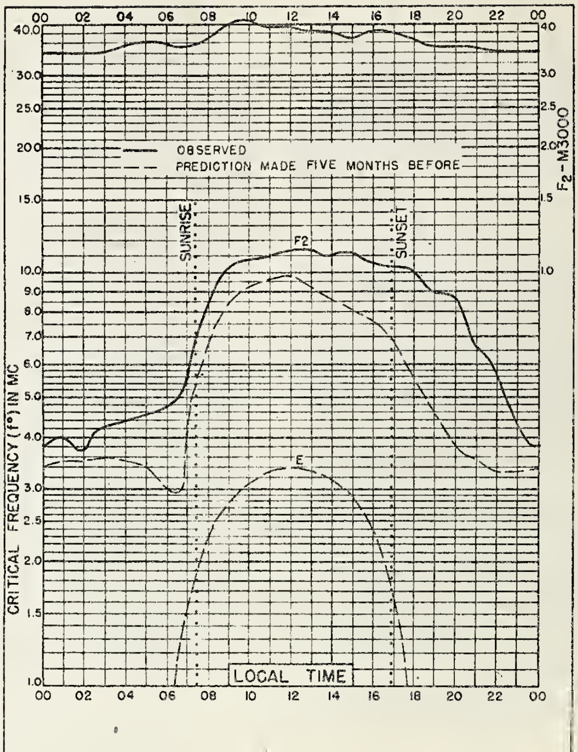

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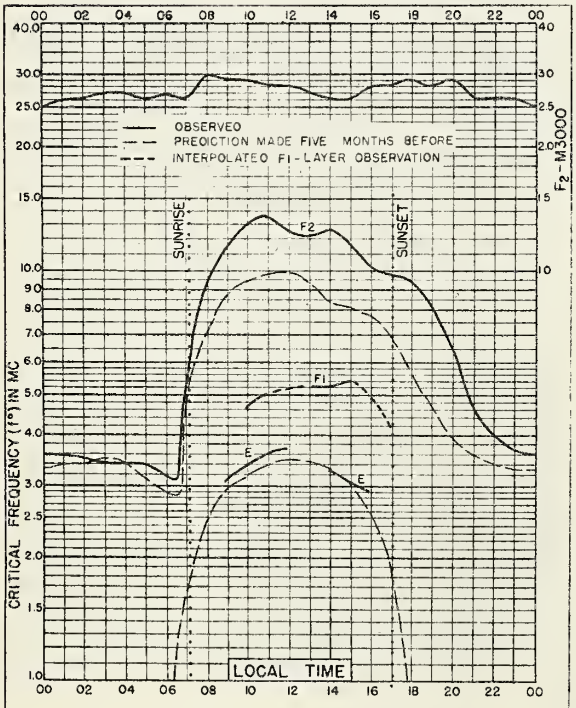

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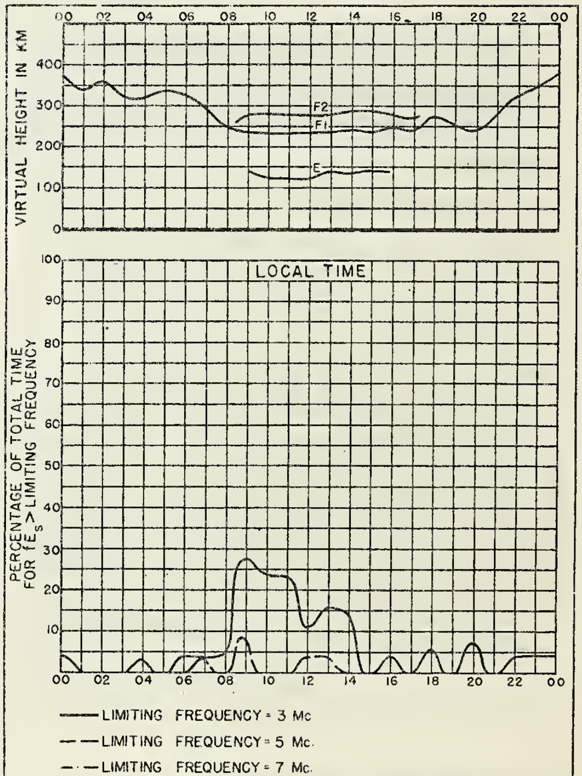

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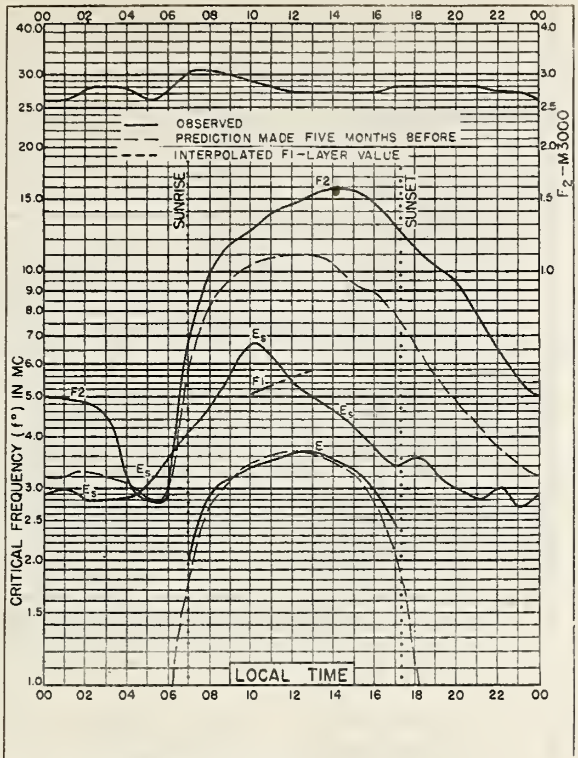

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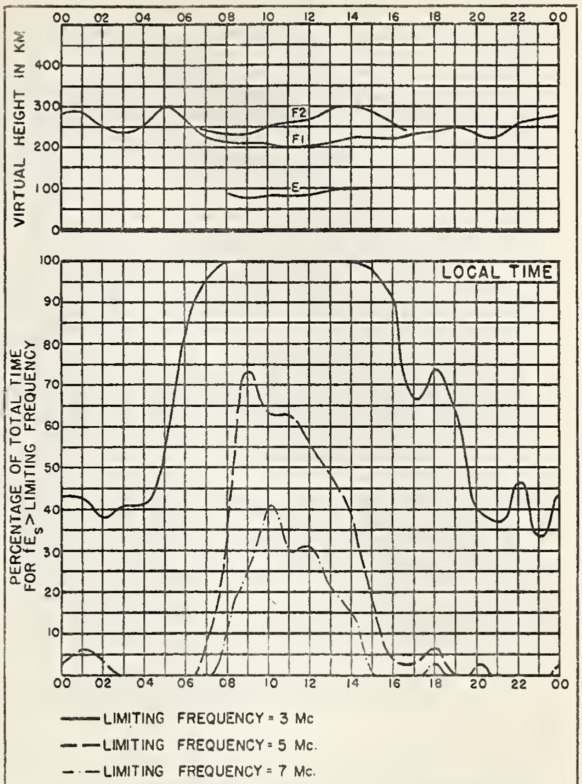

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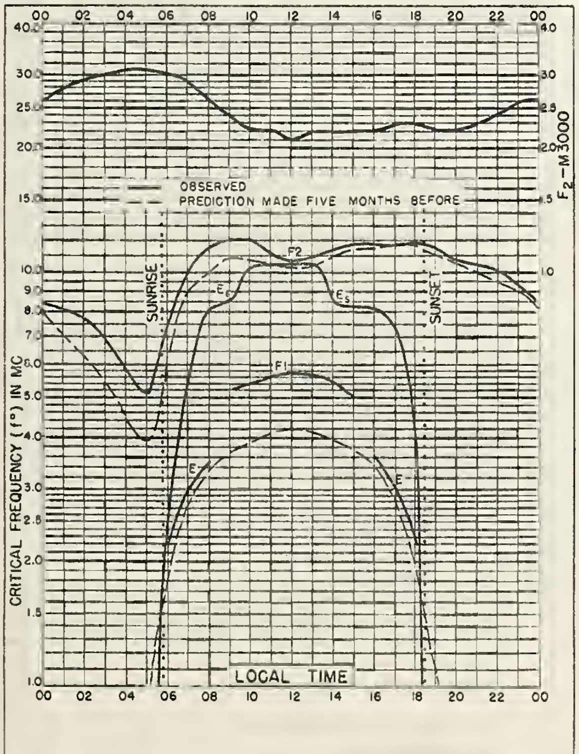

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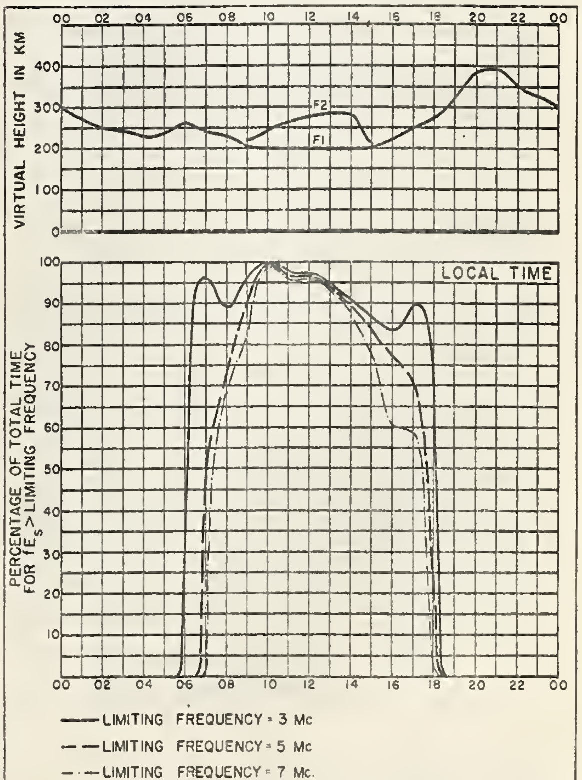

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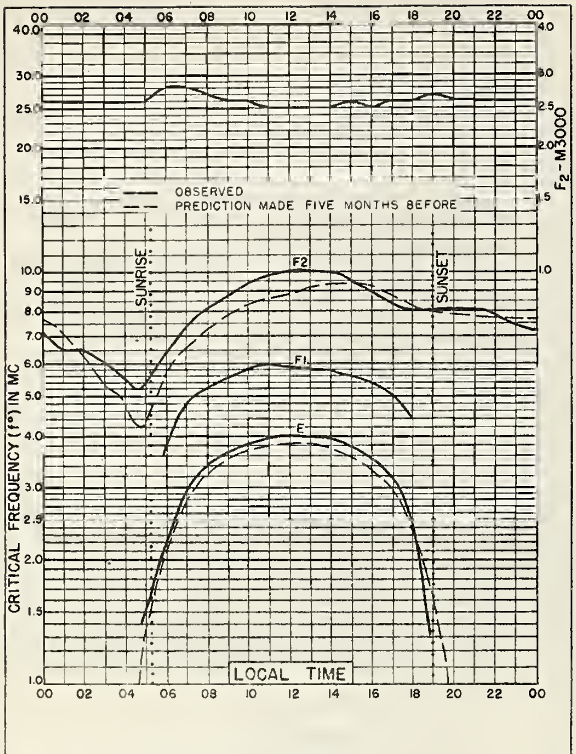

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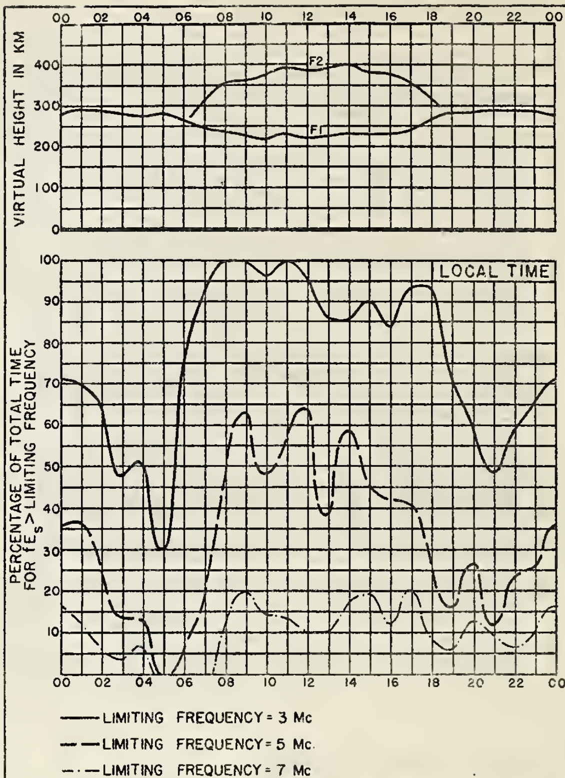

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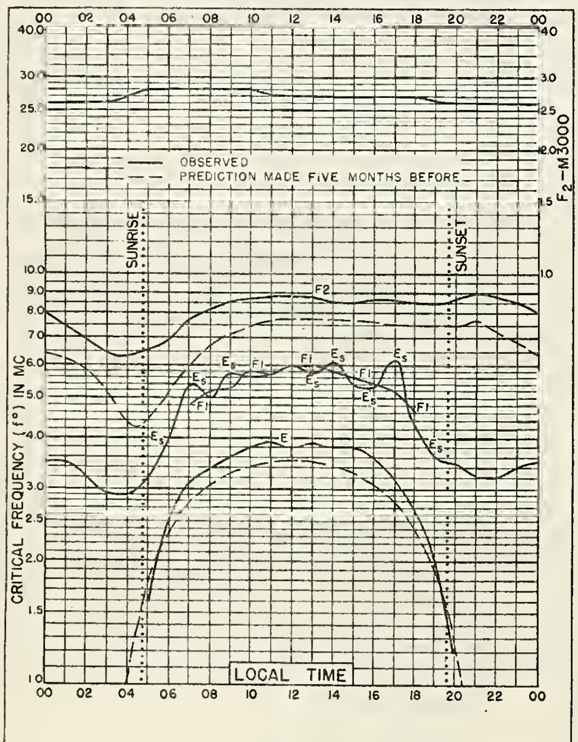

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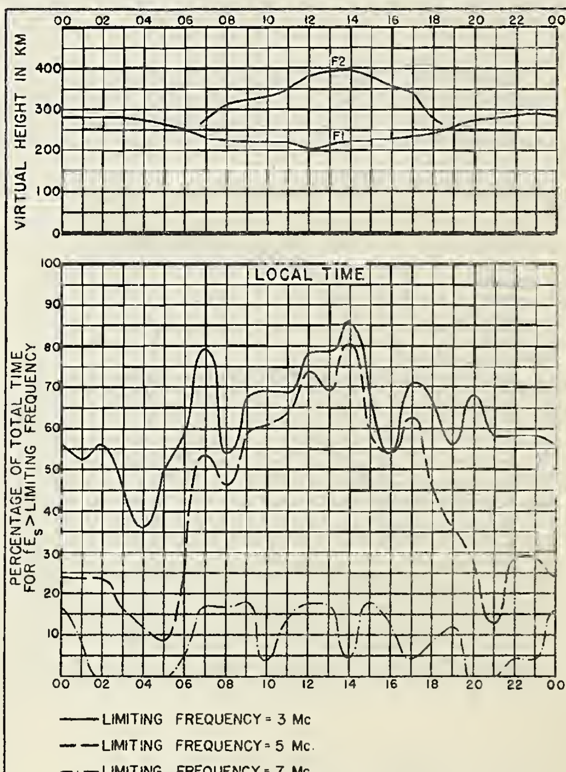

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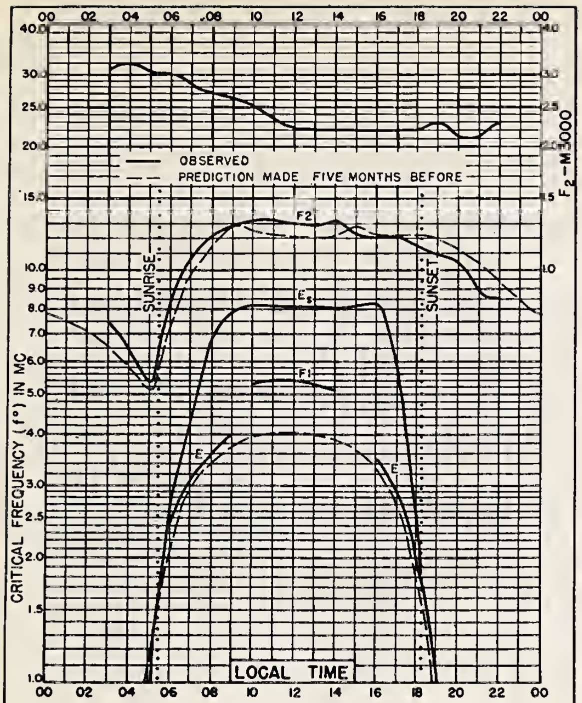

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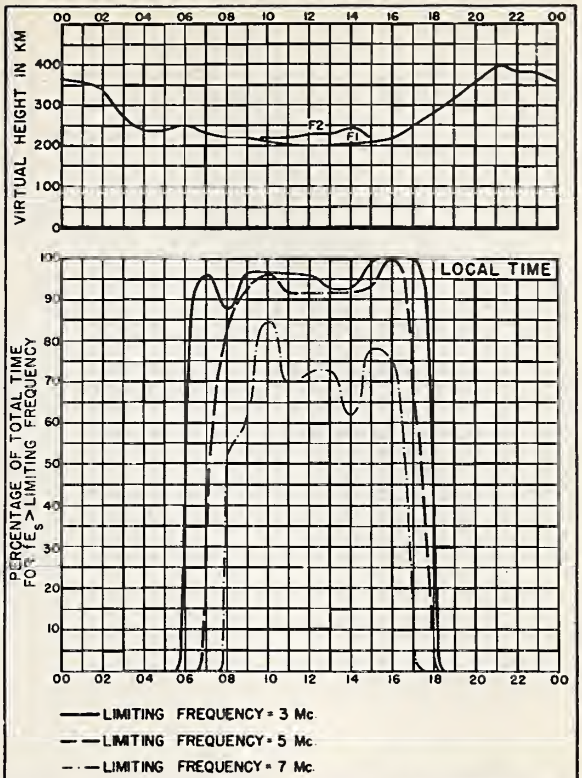

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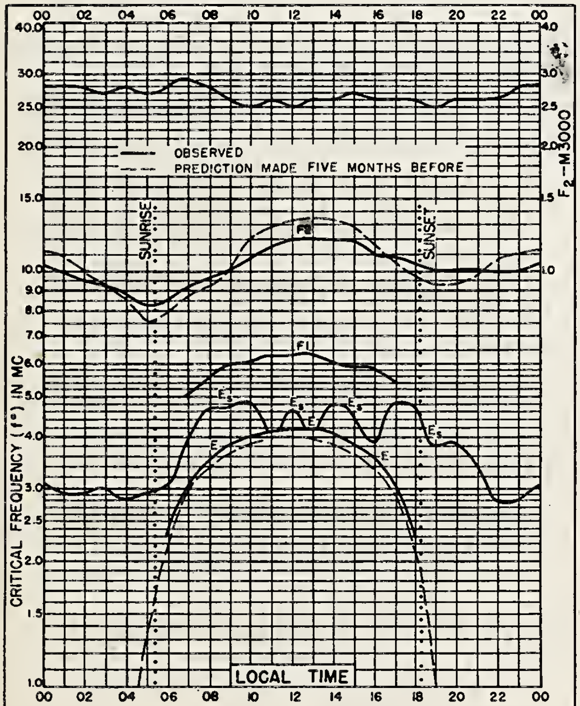

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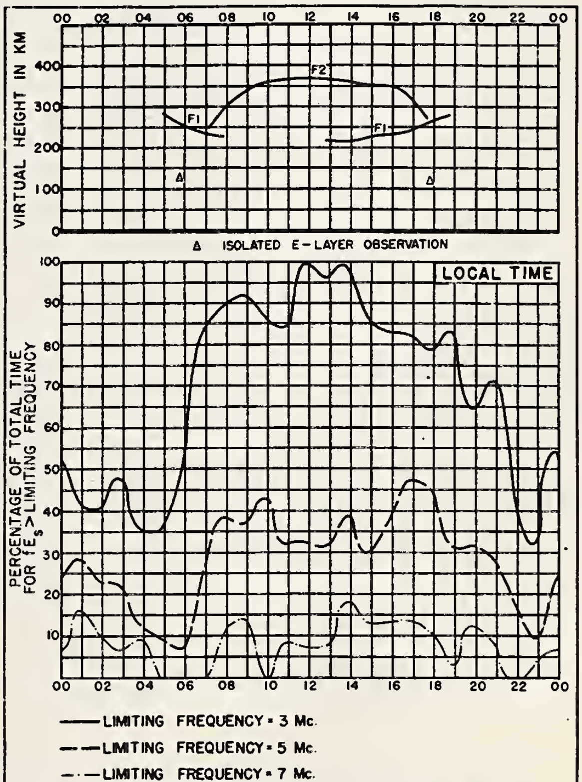

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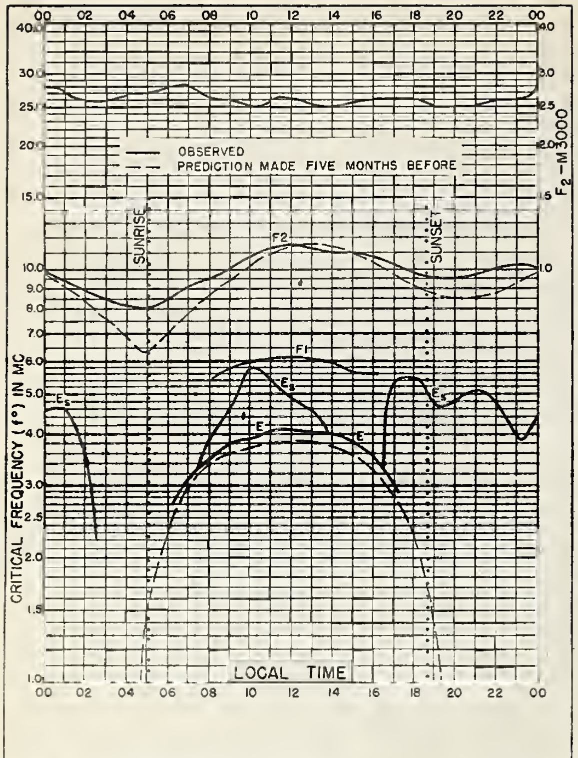

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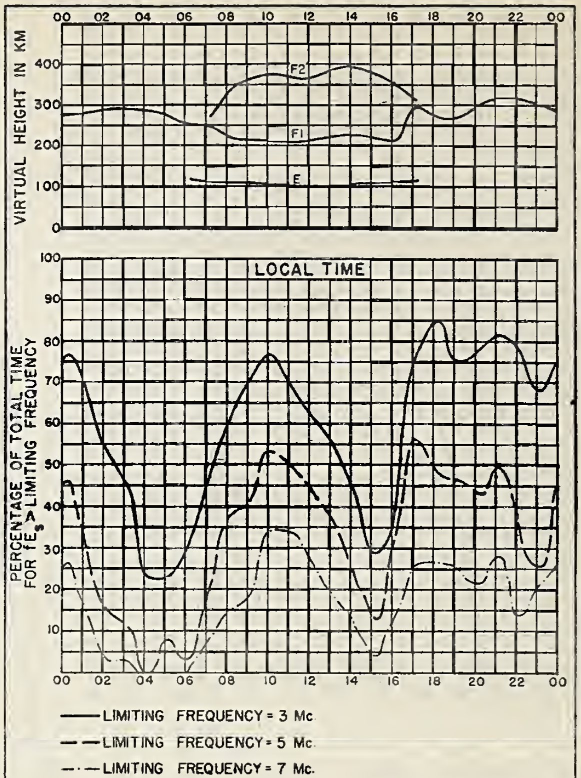

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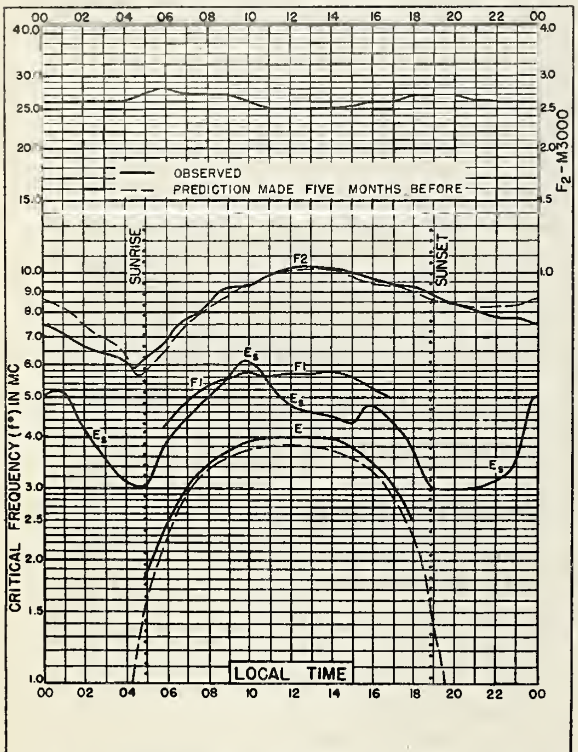

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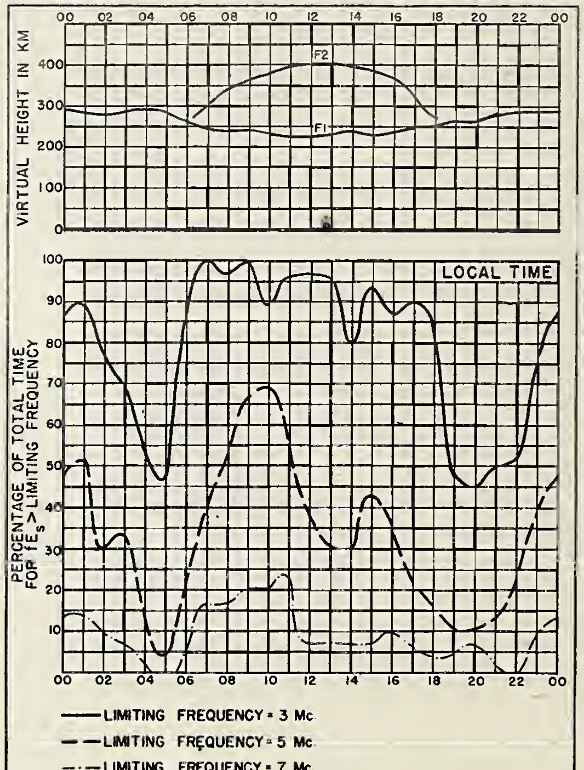

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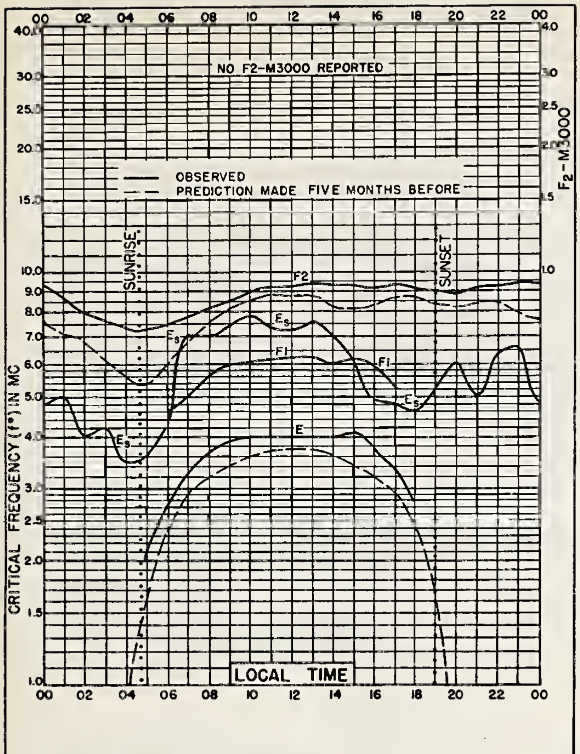

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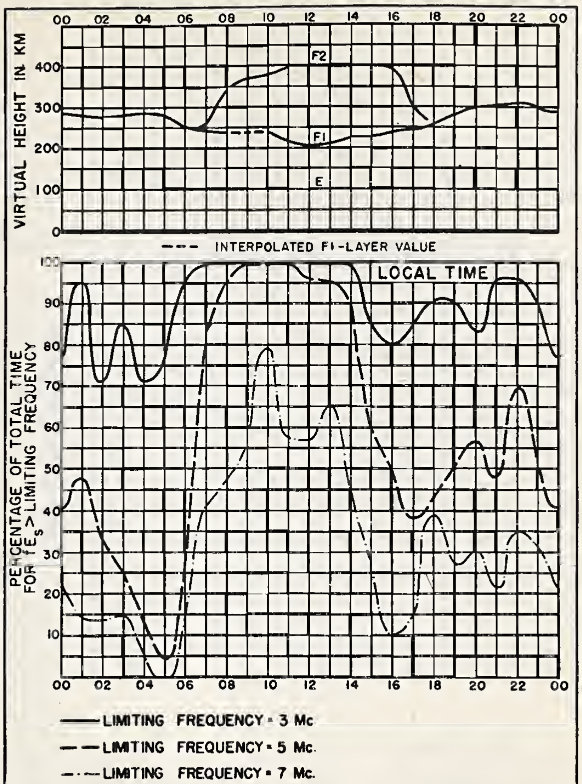

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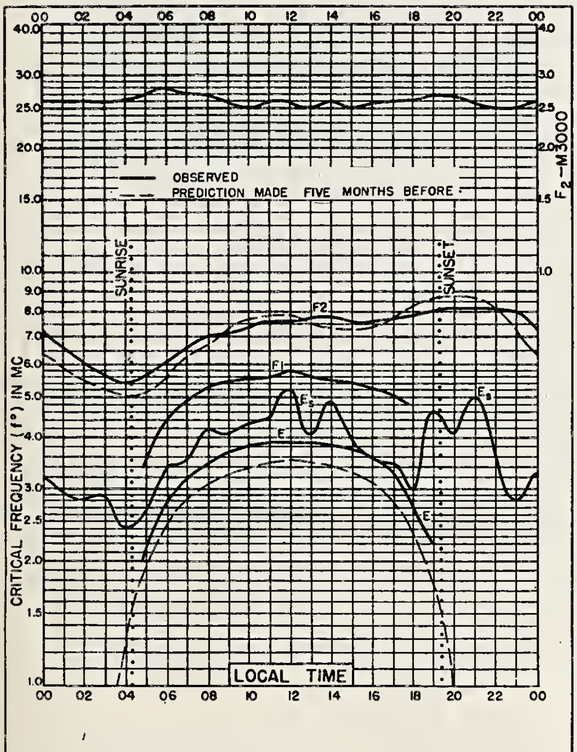

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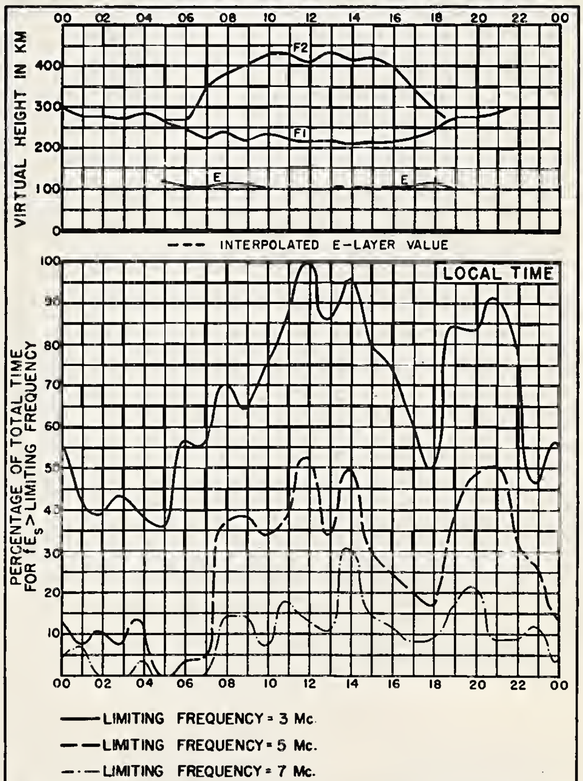

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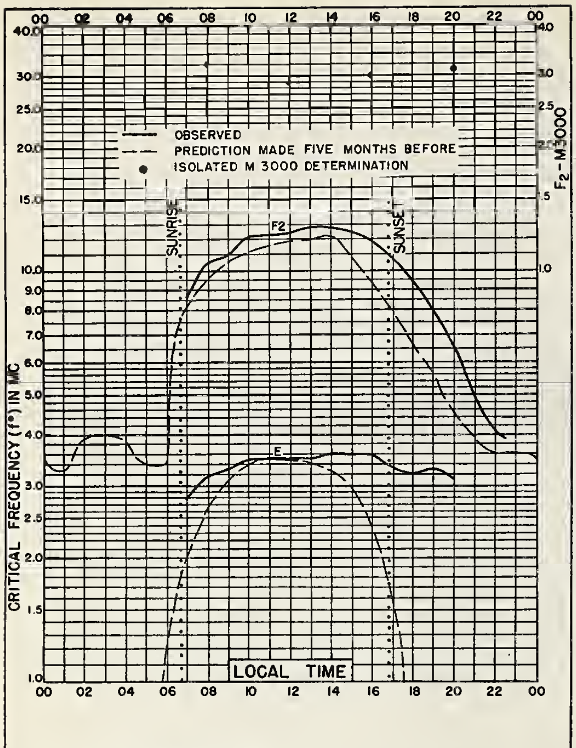

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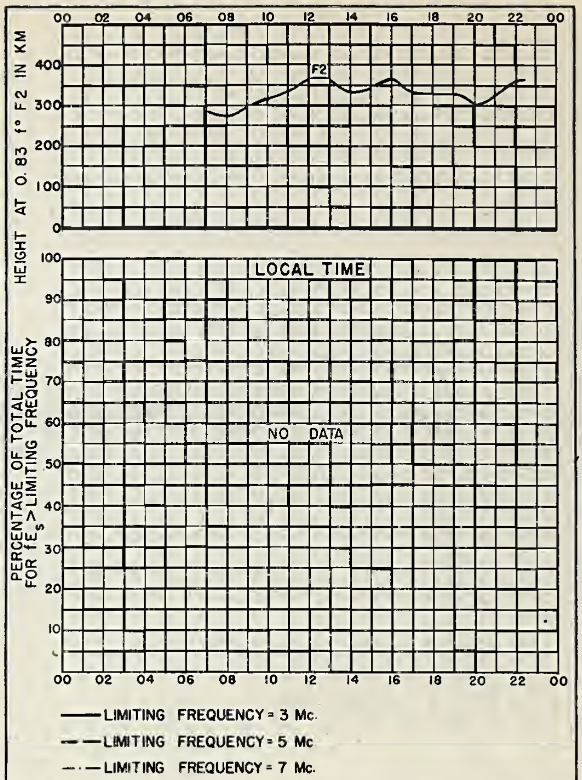

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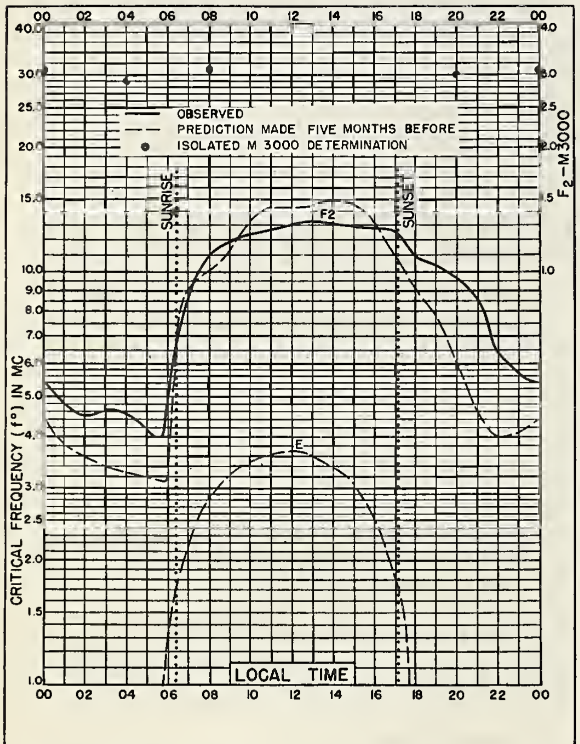

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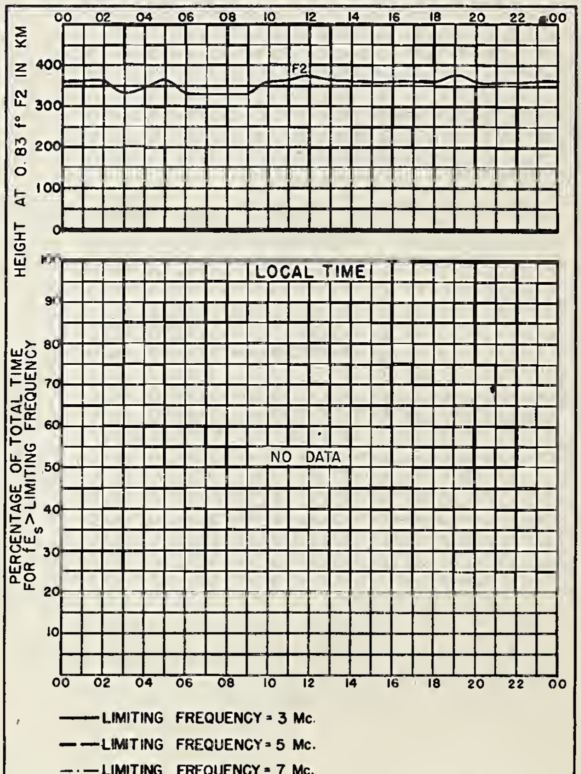

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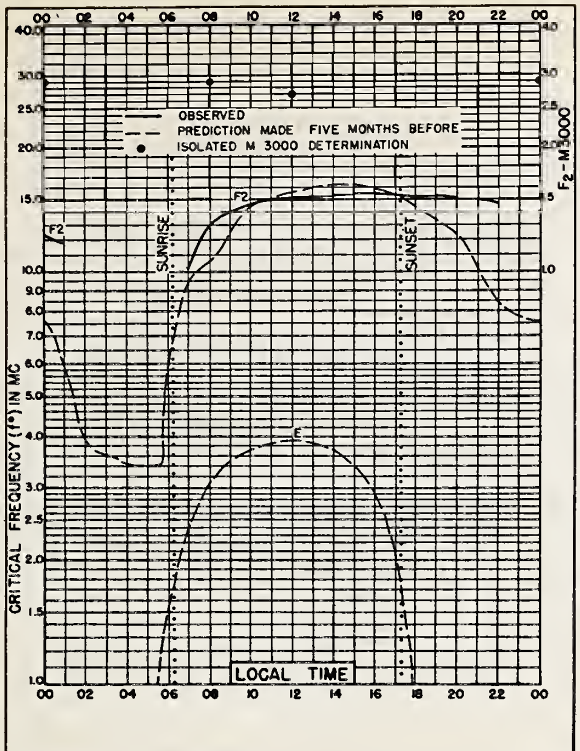

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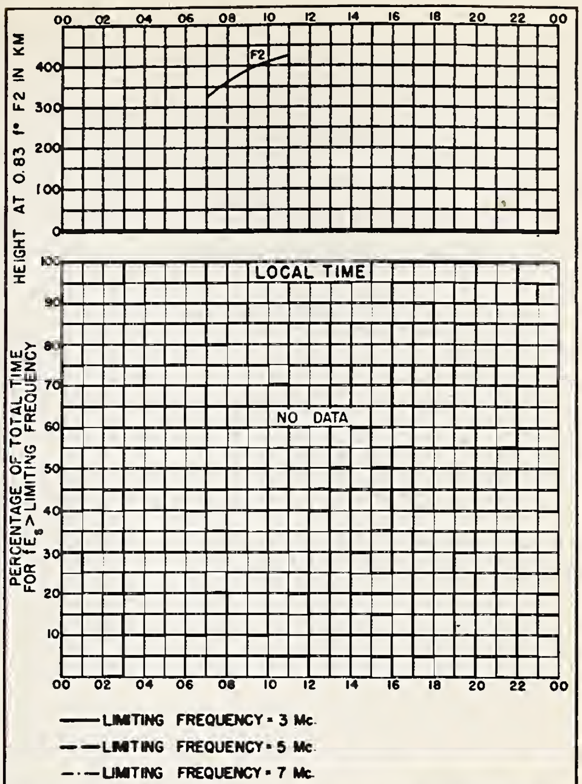

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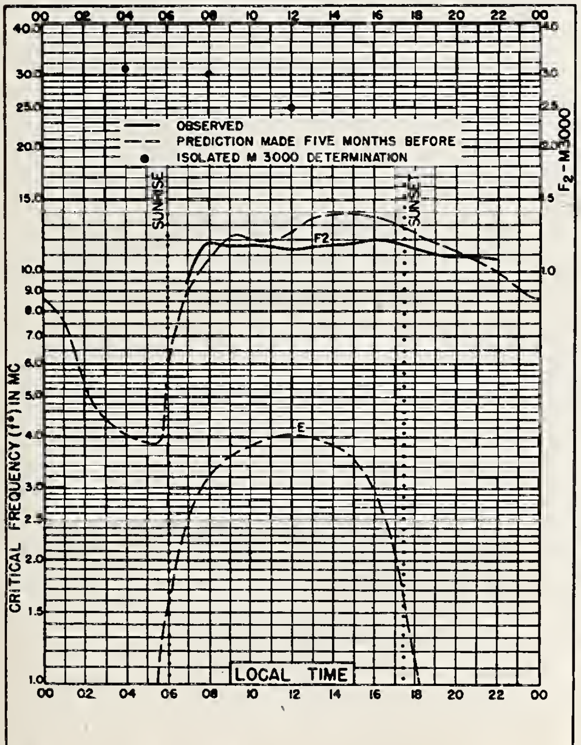

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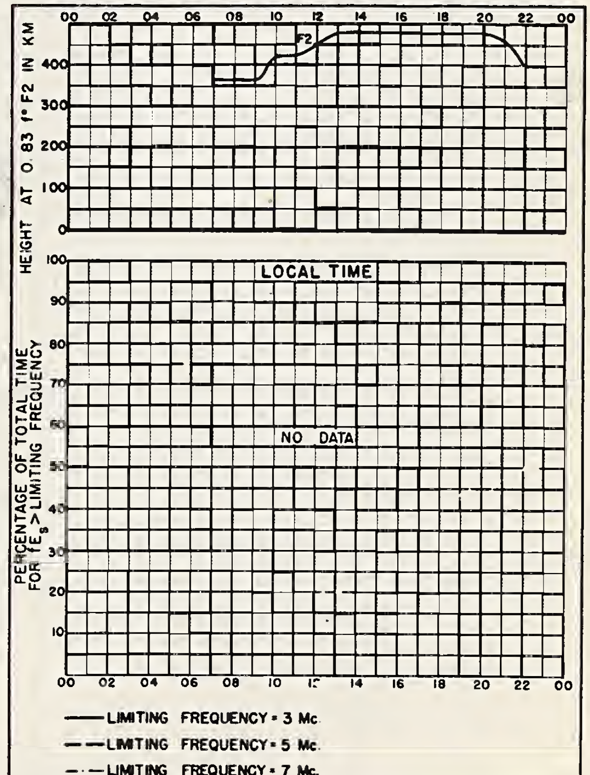

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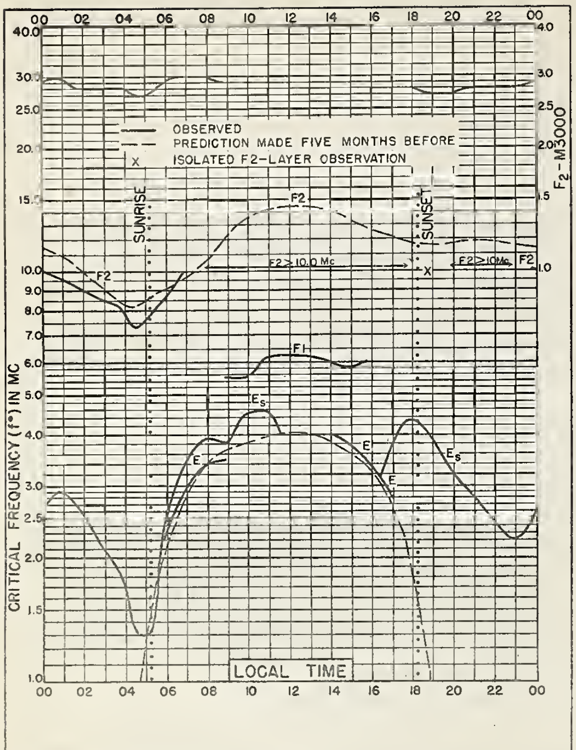

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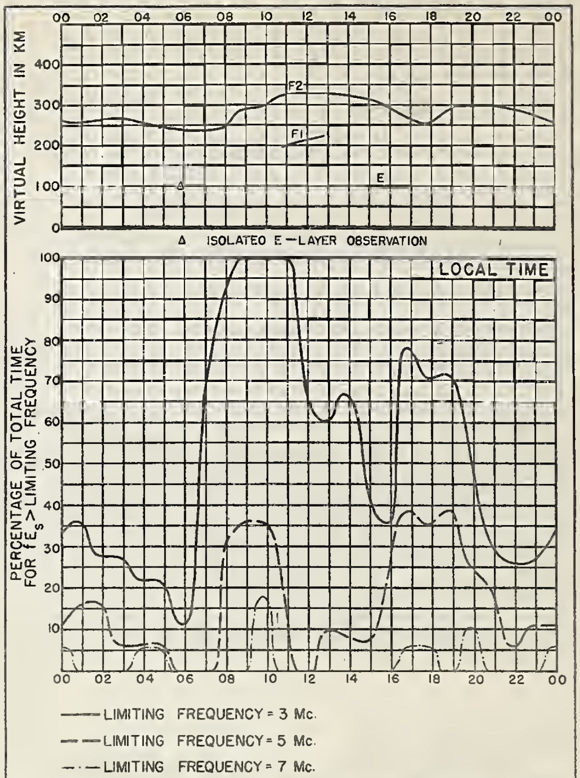

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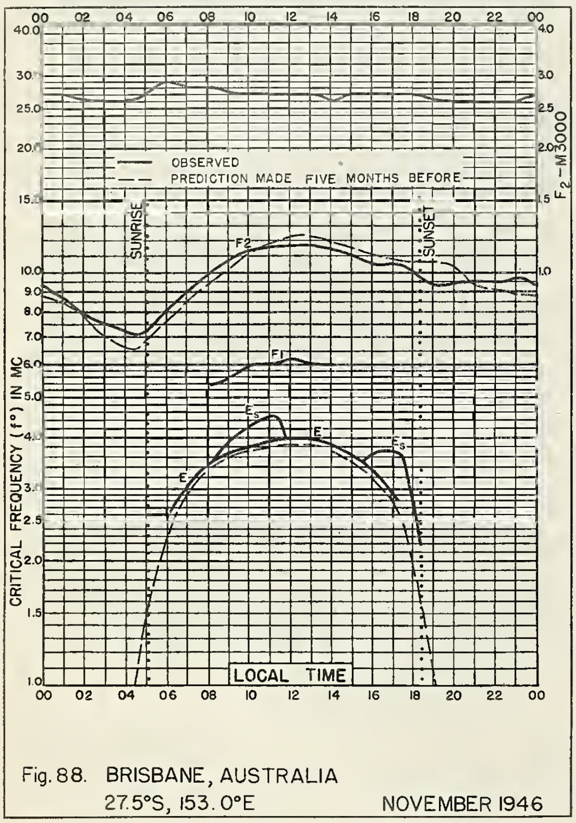

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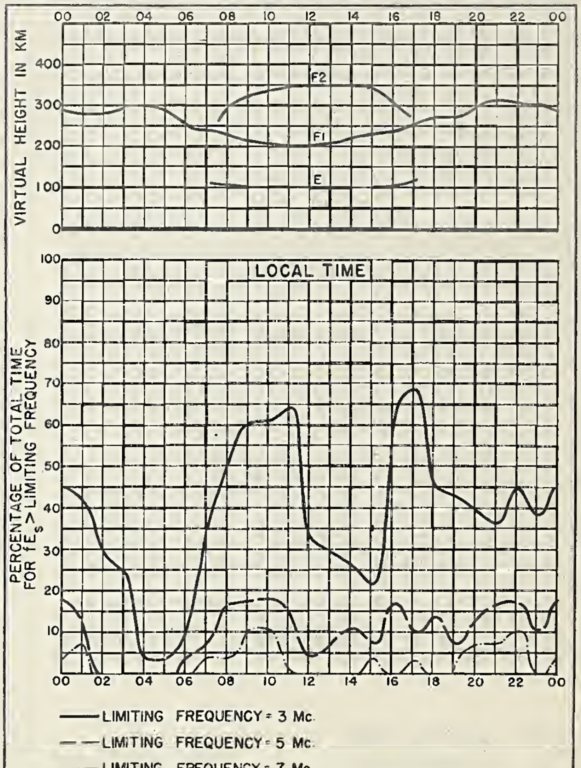

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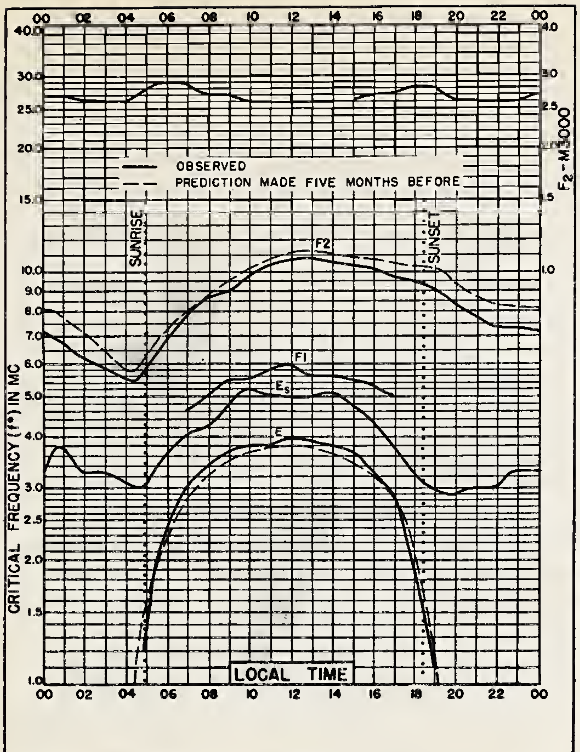

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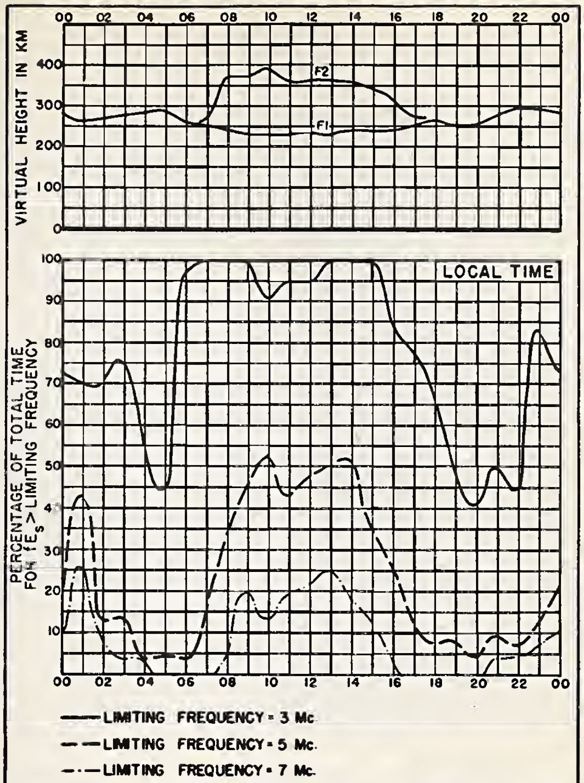

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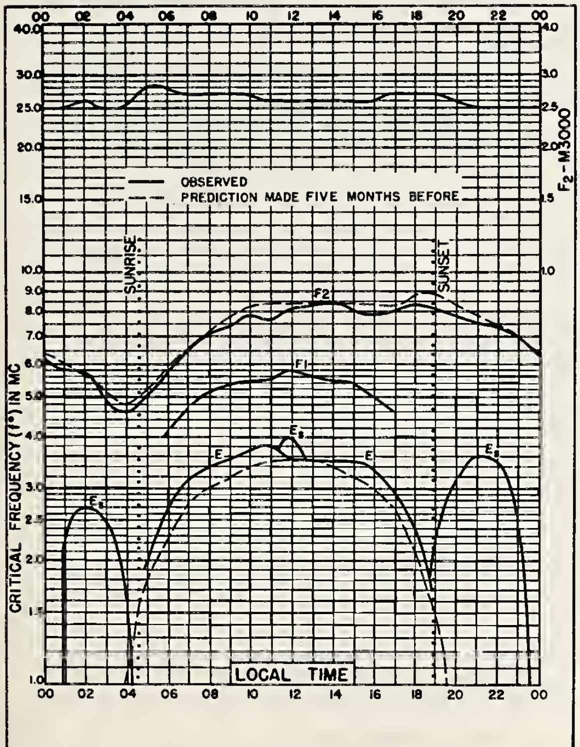

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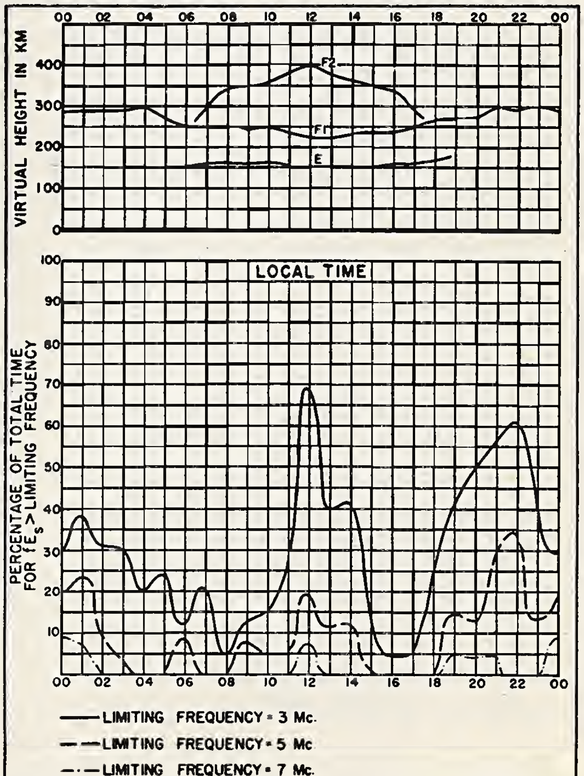

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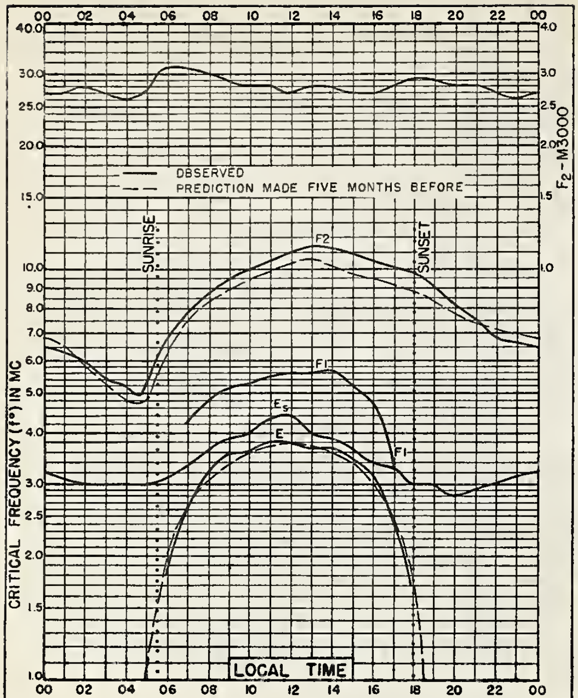

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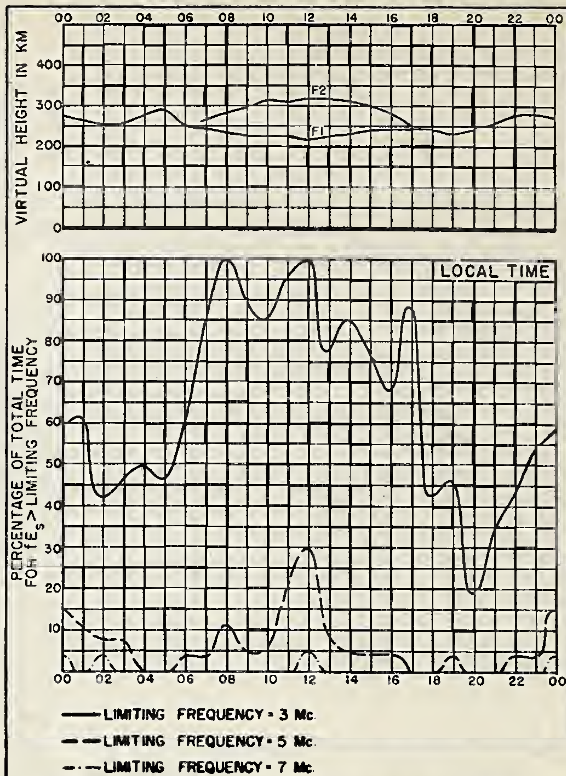

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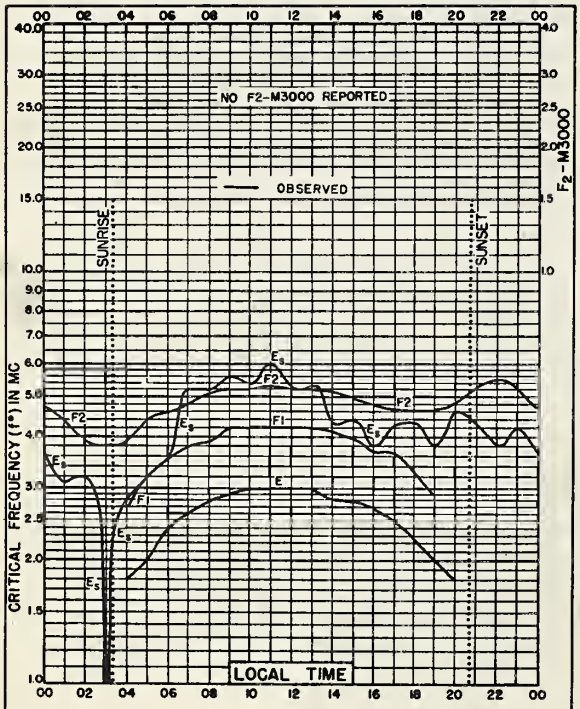

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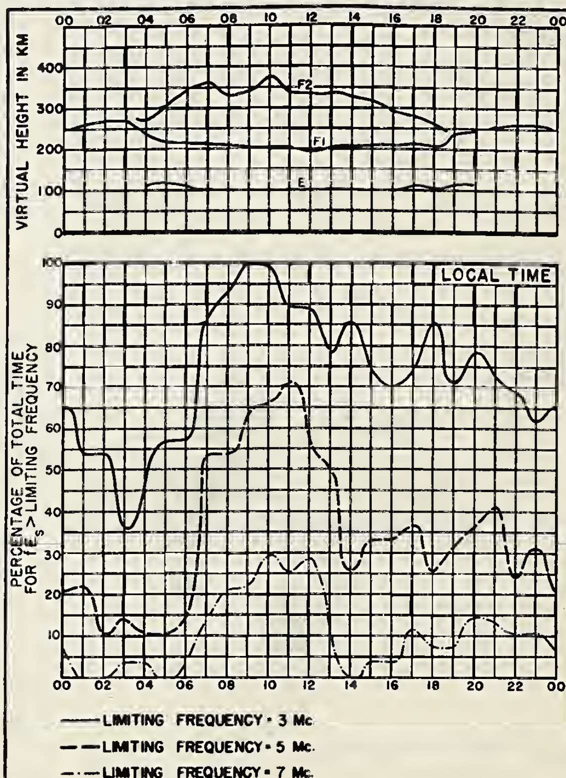

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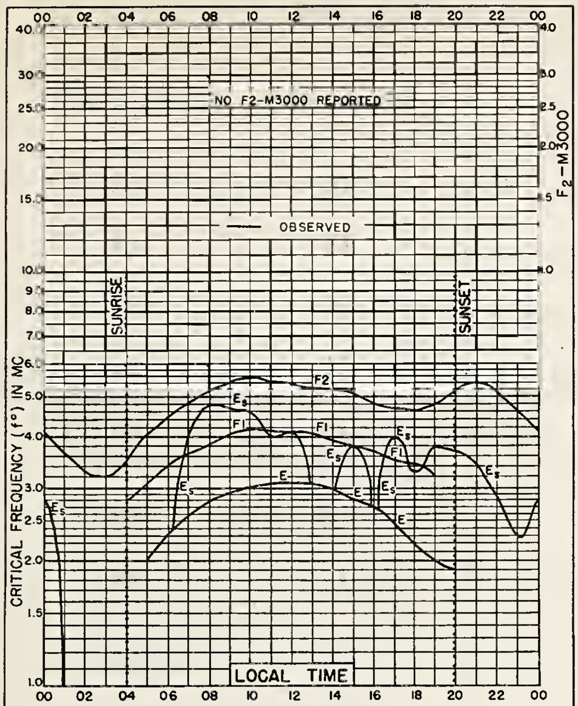

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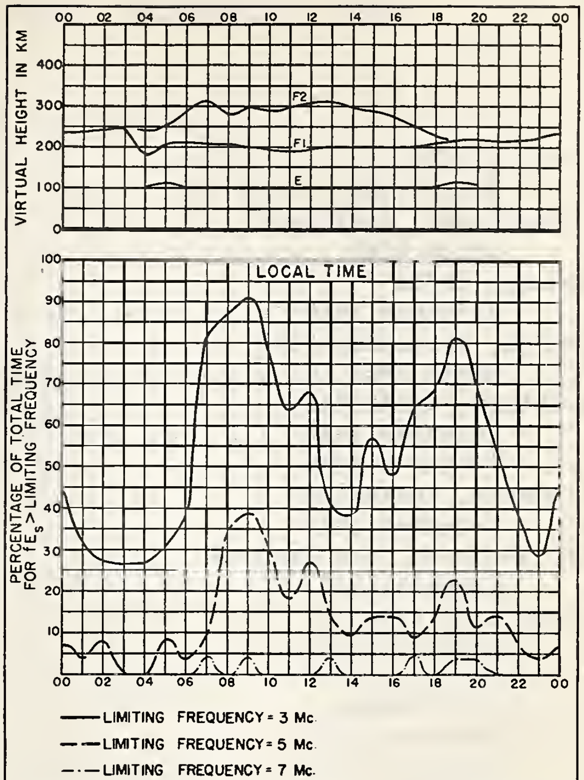

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CRPL–J. Radio Propagation Forecast (of days most likely to be disturbed, during following month).

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*IRPL–A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL–H. Frequency Guide for Operating Personnel.
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Reports on microwave standards.

Reports Issued in Past:

IRPL Radio Propagation Handbook, Part 1. (War Dept. TM 11–499; Navy Dept. DNC–13–1.)
IRPL–C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
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- R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.

IRPL–T. Reports on Tropospheric Propagation.
- T1. Radar Operation and Weather. (Superseded by JANP 101.)
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